LONGHORN ARMY AMMUNITION PLANT KARNACK, TEXAS

ADMINISTRATIVE RECORD

Volume 1

2017

Bate Stamp Numbers
00634172 – 00746881

Prepared for
Department of the Army
Longhorn Army Ammunition Plant

1976 – 2017

LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS
ADMINISTRATIVE RECORD – CHRONOLOGICAL INDEX

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2017

A. Title: Meeting Minutes – Longhorn Army Ammunition Plant Restoration Advisory Board (RAB) Meeting Minutes
Author(s): AECOM Technical Services
Recipient: All Stakeholders
Date: October 20, 2016
Bate Stamp: 00634172 – 00634272

B. Title: Report - Draft Final 2nd Annual Remedial Action Operation Report for LHAAP-50, Former Sump Water Tank, Longhorn Army Ammunition Plant, Karnack, Texas
Author(s): AECOM Technical Services
Recipient: U.S. Army Corps of Engineers
Date: November 17, 2016
Bate Stamp: 00634273 – 00654336

C. Title: Meeting Minutes – Longhorn Army Ammunition Plant Monthly Managers' Meeting Minutes
Author(s): AECOM Technical Services
Recipient: All Stakeholders
Date: November 17, 2016
Bate Stamp: 00654337 – 00654357

D. Title: Meeting Minutes – Longhorn Army Ammunition Plant Monthly Managers' Meeting Minutes
Author(s): AECOM Technical Services
Recipient: All Stakeholders
Date: December 15, 2016
Bate Stamp: 00654358 – 00654386

E. Title: Report - Draft Final Supplemental to the Updated Post-Screening Investigation Report for LHAAP-18/24, Burning Ground No. 3 and Unlined Evaporation Pond, Longhorn Army Ammunition Plant, Karnack, Texas
Author(s): AECOM Technical Services
Recipient: U.S. Army Corps of Engineers
Date: December 28, 2016
Bate Stamp: 00654387 – 00692738

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F. Title: Report - Draft Final Remedial Design for LHAAP-16 Landfill, Longhorn Army Ammunition Plant, Karnack, Texas
Author(s): AECOM Technical Services
Recipient: U.S. Army Corps of Engineers
Date: January 18, 2017
Bate Stamp: 00692739 – 00692925

G. Title: Meeting Minutes – Longhorn Army Ammunition Plant Monthly Managers' Meeting Minutes
Author(s): AECOM Technical Services
Recipient: All Stakeholders
Date: January 19, 2017
Bate Stamp: 00692926 – 00692950

H. Title: Report - Final Revised Feasibility Study for LHAAP-18/24, Burning Ground No. 3 and Unlined Evaporation Pond, Longhorn Army Ammunition Plant, Karnack, Texas
Author(s): AECOM Technical Services
Recipient: U.S. Army Corps of Engineers
Date: January 27, 2017
Bate Stamp: 00692951 – 00731961

I. Title: Report - Draft Final 1st Annual Remedial Action Operation Report for LHAAP-67, Above Ground Storage Tank Farm, Longhorn Army Ammunition Plant, Karnack, Texas
Author(s): AECOM Technical Services
Recipient: U.S. Army Corps of Engineers
Date: January 31, 2017
Bate Stamp: 00731962 – 00737041

J. Title: Letter - Cessation of Perimeter Well Sampling Requirement of the December 2, 1999 Dispute Resolution, Longhorn Army Ammunition Plant, Karnack, Texas
Author(s): U.S. Army Corps of Engineers
Recipient: All Stakeholders
Date: February 6, 2017
Bate Stamp: 00737042 – 00737045

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K. Title: Memorandum for Record - Groundwater Sampling Methodology and Perchlorate Analytical Results for September 2016, LHAAP-003-R (Ground Signal Test Area), Longhorn Army Ammunition Plant, Karnack, Texas
Author(s): AECOM Technical Services
Recipient: U.S. Army Corps of Engineers
Date: February 8, 2017
Bate Stamp: 00737046 – 00737220

L. Title: Report - Draft Final 2nd Annual Remedial Action Operation Report for LHAAP-67, Above Ground Storage Tank Farm, Longhorn Army Ammunition Plant, Karnack, Texas
Author(s): AECOM Technical Services
Recipient: U.S. Army Corps of Engineers
Date: February 10, 2017
Bate Stamp: 00737221 – 00740903

M. Title: Meeting Minutes – Longhorn Army Ammunition Plant Monthly Managers' Meeting Minutes
Author(s): AECOM Technical Services
Recipient: All Stakeholders
Date: February 23, 2017
Bate Stamp: 00740904 – 00740931

N. Title: Memorandum for Record - Groundwater Geochemistry Rebound Evaluation for LHAAP-35B(37), Longhorn Army Ammunition Plant, Karnack, Texas
Author(s): AECOM Technical Services
Recipient: U.S. Army Corps of Engineers
Date: February 28, 2017
Bate Stamp: 00740932 – 00741008

O. Title: Report - Draft Final 3rd Annual Remedial Action Operation Report for LHAAP-46, Plant 2 Area, Longhorn Army Ammunition Plant, Karnack, Texas
Author(s): AECOM Technical Services
Recipient: U.S. Army Corps of Engineers
Date: March 15, 2017
Bate Stamp: 00741009 – 00746804

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P.	Title:	Report - Final Record of Decision, LHAAP-04, Longhorn Army Ammunition Plant, Karnack, Texas
	Author(s):	AECOM Technical Services
	Recipient:	U.S. Army Corps of Engineers
	Date:	March 30, 2017
	Bate Stamp:	00746805 – 00746881

AECOM

Subject:	**Final Minutes, Quarterly Restoration Advisory Board (RAB) Meeting, Longhorn Army Ammunition Plant (LHAAP)**
Location of Meeting:	**Karnack Community Center, Karnack, Texas**
Date of Meeting:	**October 20, 2016, 6:00 – 7:30 PM**

Meeting Participants:

LHAAP/BRAC:	Rose M. Zeiler
USACE:	Aaron Williams
USAEC:	Nicholas Smith
AECOM:	Debra Richmann, Marwan Salameh, Elspeth Sharp
USEPA Region 6:	Janetta Coats, Kent Becher (USGS Liaison)
TCEQ:	April Palmie
USFWS:	Paul Bruckwicki
RAB:	**Present:** Paul Fortune, Terry Britt, Judy VanDeventer, Charles Dixon, Richard Le Tourneau, John Pollard, Jr. **Absent:** Ken Burkhalter, Carol Fortune, Lee Guice, Ted Kurz, James Lambright, Nigel R. Shivers, Tom Walker
Public:	Dan Murphy, Rick Lowerre, Carl Turner

An agenda for the RAB meeting, three handouts (Groundwater Treatment Plant [GWTP] – Processed Groundwater Volumes, Harrison Bayou and Goose Prairie Creek – Perchlorate Data, and LHAAP Perimeter Well Monitoring – Perchlorate Data), four Fact Sheets (selected remedies for LHAAP-001-R, LHAAP-003-R, LHAAP-16 and LHAAP-17), responsiveness summaries from each of the Final RODs for LHAAP-001-R, LHAAP-003-R, LHAAP-16, LHAAP-17, and a color copy of the AECOM slide presentation were provided for meeting attendees. In addition, RAB application forms were available at the sign-in table.

Welcome and Introduction

Mr. Paul Fortune, RAB Co-Chair, called the meeting to order.

Mr. Fortune introduced Mr. Dan Murphy and Dr. Carl Turner. Dr. Rose Zeiler said that if they wished to serve on the RAB, there were paper applications at the sign-in table.

Mr. Fortune stated that he noticed there was an announcement in the paper that was a long list of sites for the Army Ammunition Plant, but that he did not see the RAB October 2016 meeting announcement in the newspaper. Dr. Zeiler and Ms. Debra Richmann were surprised; they did

not know what the list of sites that Mr. Fortune referred to seeing in the newspaper was. Ms. Richmann explained that the RAB October 2016 meeting announcement and the Notice of Availability of Final RODs were published in the Marshall News Messenger on October 13, 2016. Additionally, the October 2016 RAB Meeting was publicized in numerous locations including PSAs at three radio stations and two TV events calendars. Also, churches in Karnack were mailed RAB announcements on October 7, 2016, and RAB Meeting fliers were posted at multiple locations in the community. RAB meeting notices and releases of Final RODs were also sent to State, Federal and local officials and local groups. Outreach is summarized on Slide 4 of the presentation materials. Dr. Zeiler considered that the announcement Mr. Fortune saw that included a long list of sites may have been associated with an Army Ammunition Plant in Louisiana.

Open Items - Dr. Rose M. Zeiler

RAB Administrative Issues

Membership Update

Dr. Zeiler discussed the July meeting decision that the RAB membership list be updated to remove those no longer interested in serving. On October 11, 2016, letters were sent to RAB members that have not attended a RAB meeting since 2014. The letters asked members who wished to remain on the Board to contact a RAB member or one of the Co-Chairs on or before the date of the next meeting to express continued interest. Copies of the letters were provided to the RAB members that were in attendance. Letters were sent to the following individuals: Mr. Ken Burkhalter, Mr. Robert Cargill, Mr. Walter Lee Guice, Mr. Ted Kurz, and Mr. Jim Lambright. Recipients of the letters did not express interest to remain on the Board. Mr. Fortune made a motion to remove the inactive members from the Board. Mr. John Pollard Jr. seconded the motion. The abovementioned inactive members will be removed from the Board.

Minutes

Dr. Zeiler asked the RAB members if anyone wanted to make a motion to approve the minutes from the July 2016 RAB meeting. Mr. Richard LeTourneau made a motion to accept the July 2016 minutes and Mr. Fortune seconded the motion. The approved July 2016 RAB minutes will be posted on the LHAAP website.

Meeting Schedule

Dr. Zeiler asked if the standard RAB meeting time (third Thursday of every month) should be changed since it conflicts with Water Board meetings. Two RAB members, Mr. Terry Britt and Ms. Judy VanDeventer are Water Board members. Mr. Fortune asked that the conversation be postponed until Ms. VanDeventer could participate in the discussion; Ms. VanDeventer arrived later to the RAB meeting because she had to attend the Water Board meeting. Later, after Ms. VanDeventer had arrived, discussion on this topic continued. Mr. Pollard stated that he had a conflict with moving the RAB meetings to Tuesdays. Moving the RAB meeting start time to later in the evening was discussed, but was not favorable. Several attendees indicated Mondays

were not suitable due to travel constraints. Ms. VanDeventer and Mr. Britt stated that they would change the regular meeting time of the Water Board meetings to not conflict with the RAB meetings. Ms. VanDeventer and Mr. Britt stated that keeping the RAB meetings the third Thursday of each month was their preference. The discussion concluded that there would be no change to the current RAB meeting schedule. Future meetings will remain on the third Thursday of each month starting at 6:00 p.m.

Website Update

Ms. Richmann said that the website was being updated for the third quarter of the year. Ms. Richmann also stated that in the future, the date for the next RAB meeting will be posted on the website farther in advance of the scheduled meeting.

Site-wide Environmental Restoration Issues – Dr. Zeiler and Ms. Richmann

Dispute Update

Dr. Zeiler discussed that the disputed RODs were finalized for LHAAP-16, LHAAP-17, LHAAP-001-R, and LHAAP-003-R. Copies of the responsiveness summaries from each of the Final RODs were available at the sign-in table, as well as a fact sheet on the ROD for each site. Complete copies of the Final RODs are available at the Marshall Public Library. In response to a question, Ms. Richmann clarified that compact disks with the RODs are at the library, not hard copies.

Ms. Richmann reviewed the remedy for LHAAP-16 (slides 11-13). The remedy includes maintenance of the existing landfill cap, land use controls, and in-situ enhanced bio-remediation, passive bio-barriers, and monitored natural attenuation for volatile organic compounds and perchlorate in groundwater. Mr. Fortune asked for clarification on why groundwater was to be returned to its potential beneficial uses as drinking water, “wherever practicable.” Dr. Zeiler responded that TCE can become trapped in the fine-grained soils and is not able to be treated in that situation, so remediation to drinking water standards might not be “practicable.”

Ms. Richmann reviewed the remedy for LHAAP-17 (slides 14-16). The remedy includes excavation and off-site disposal of soil contaminated with perchlorate and explosives; and extraction, land use controls, and monitored natural attenuation for groundwater contaminated with volatile organic compounds and perchlorate. The LUCs are to prevent human health and ecological exposure. Extracted groundwater goes to the groundwater treatment plant.

The remedial actions for the other two disputed ROD sites, LHAAP-001-R-01 (South Test Area/Bomb Test Area) and LHAAP-003-R-01 (Ground Signal Test Area) were also discussed by Dr. Zeiler and Ms. Richmann (slides 17 through 21). The main remedial technology for both sites is land use controls with limited groundwater sampling for perchlorate – three annual rounds at LHAAP-001-R-01 and a single round at LHAAP-003-R-01. Dr. Zeiler pointed out that signs are in place at the two MMRP sites that note the restrictions.

Post-ROD Schedule for Disputed ROD Sites

Dr. Zeiler discussed the post-ROD schedule for the four disputed ROD sites (slide 22). There is a big gap in the schedule where no draft reports will be submitted from December 2016 through February 2018 due to the follow-on contract award process. AECOM is working to complete reports by November 30, 2016, so that these reports will be available to contractors proposing on the follow-on contract as Government Furnished Information.

LHAAP-4 Draft Final Revised ROD

Ms. Richmann discussed that the Draft Final Revised ROD is undergoing review by EPA and TCEQ.

Updated Schedule

Dr. Zeiler discussed that AECOM is working to complete reports and plans by November 30, 2016, so that these documents may be available for contractors proposing on the follow-on contract. Reports will not be published after November 30, 2016, so that the current contractor does not have an unfair advantage during the upcoming procurement process. The Army plans to issue the request for proposals for the follow-on contract December 1, 2016. The contracting process has to follow federal acquisition regulation (FAR) requirements.

1,4-Dioxane Confirmation Sampling at LHAAP-18/24

Mr. Charles Dixon had previously asked about 1,4-dioxane results at LHAAP-18/24. Ms. Richmann provided a brief recap of the initial round of 1,4-dioxane sampling at LHAAP-18/24, which was performed in October/November 2015. She said the purpose of the second round of sampling performed in June 2016 was to confirm the first round results and determine if a contingency remedy for 1,4-dioxane in groundwater will be needed. In June, a total of 52 monitoring wells at the site were sampled. Detected concentrations exceed the TRRP Tier 1 groundwater residential PCL in samples from six wells during the 2015 event and from four of the wells that were resampled in June 2016. The extent of 1,4-dioxane is limited (slide 28).

Mr. Britt asked if 1,4-dioxane will be treated by the current groundwater treatment plant at the site. Dr. Zeiler said a big driver of revising the FS for this site is to recognize 1,4-dioxane as a contaminant of concern at the site and to identify a contingency remedy. The contingency remedy will be put in place if 1,4-dioxane is not addressed by the remedy implemented to address the other contaminants of concern at the site. Ms. April Palmie added that the groundwater treatment plant is running, which also keeps the groundwater plume controlled and prevents migration.

Defense Environmental Restoration Program (DERP) Update – AECOM (Debra Richmann)

MNA Site Updates (LHAAP-37, 46, 50, 58, 67)

Ms. Richmann provided an overview of the current status of the MNA sites at LHAAP (Slide 29). Dr. Zeiler and Ms. Palmie explained that sampling at LHAAP-37 is discontinued. The Army is waiting for the site to return to baseline conditions, following the Bio-Plug testing, before beginning the quarterly MNA monitoring.

LHAAP-29 Update

Ms. Richmann updated the current status of LHAAP-29, indicating that the Draft RI Addendum has now been reviewed by TCEQ and EPA, and responses to the agency comments were submitted. The RI Addendum was approved by EPA with TCEQ concurrence in August 2016. The FS addendum is in preparation.

LHAAP-18/24 Update

Ms. Richmann updated the current status of LHAAP-18/24 (slide 31). A Draft Revised FS was submitted to EPA and TCEQ for review on October13, 2016. Submittal of the revised FS was originally scheduled for the spring of 2017, but it was expedited due to the follow-on contract procurement schedule.

LHAAP-47 Plant Area 3 Update

Dr. Zeiler explained that Army coordinated its plan to reassess groundwater conditions to get a good understanding of current site contamination. The additional data will be collected to inform the existing Draft Final ROD before it is finalized. The Post-Screening Investigation Work Plan was approved by EPA with TCEQ concurrence on September 30, 2016. However, due to time constraints, the actual investigation will be completed under the next PBR contract.

Groundwater Treatment Plant (GWTP) Update

Dr. Salameh provided an update on the LHAAP GWTP operations. Dr. Salameh was asked by Mr. Lowerre of Caddo Lake Institute what caused occasional perchlorate excursions observed during 2016. Dr. Salameh responded that the excursions were caused by varying factors including low nutrient concentrations and low temperature in the winter that affects biomass viability. Mr. Lowerre then asked what other factors there might be and Dr. Salameh indicated that perchlorate feed concentrations, rainfall and quantity of flow and levels of dissolved oxygen and nitrate could affect performance as well. Mr. Lowerre asked how we use this information to avoid future excursions. Dr. Salameh explained that future excursions are prevented by understanding what has caused issues in the past and making adjustments to prevent future excursions. Ms. Palmie further explained that the reactor beds, which are part of the remedy at the groundwater treatment plant, have their own contained ecosystem that is treating the perchlorate. AECOM samples the nutrients, dissolved oxygen, oxidation-reduction potential,

and pH, and also knows the nutrients that are being added into the system on a regularly scheduled basis. Dr. Salameh stated 800,000 to 1.2 million gallons are treated per month.

Surface Water and Perimeter Well Sampling Update

Ms. Richmann showed the slides with the surface water and perimeter well sampling locations (slide 35). Perchlorate was not detected in any of the samples collected in August 2016 from Harrison Bayou or GPW-1. A trace amount was detected in the sample from GPW-3 (0.141 µg/L), which is below the screening criteria (TRRP Tier 1 groundwater residential PCL of 17 µg/L). Mr. Britt noticed a spike on the graph (slide 36). Ms. Palmie clarified that the spike occurred in August 2009, before the source of the perchlorate was removed.

Groundwater samples were collected in June from the six perimeter wells. Perchlorate was not detected in four of the wells, 108, 110, 111, and 112. Perchlorate was detected below screening criteria (TRRP Tier 1 groundwater residential PCL of 17 µg/L) at wells 133 and 134.

Dr. Zeiler noted that surface water sampling will no longer be necessary when the site remedies are implemented.

Vintage World War II Era and Post-World War II Era Photos

Old photos of the LHAAP were provided in the RAB presentation (slides 39 through 48). The first photo is of LHAAP-49.

Next RAB Meeting Schedule and Closing Remarks

The next RAB meeting will be held on **January 19, 2017,** at the same time (**6:00 – 7:30 p.m.**) at the Karnack Community Center.

Adjourn

Motion to adjourn was made by Mr. Fortune and seconded by Ms. VanDeventer.

October 2016 Meeting Attachments and Handouts:

- Meeting Agenda
- PowerPoint Presentation Slides
- Groundwater Treatment Plant [GWTP] – Processed Groundwater Volumes Handout
- Harrison Bayou and Goose Prairie Creek – Perchlorate Data Handout
- LHAAP Perimeter Well Monitoring – Perchlorate Data Handout
- LHAAP-16, Landfill 16 Selected Remedy Fact Sheet
- LHAAP-17, Burning Ground No. 2/Flashing Area Selected Remedy Fact Sheet
- LHAAP-001-R, South Test Area/Bomb Test Area Selected Remedy Fact Sheet
- LHAAP-003-R, Ground Signal Test Area Selected Remedy Fact Sheet
- LHAAP-16 ROD Responsiveness Summary
- LHAAP-17 ROD Responsiveness Summary
- LHAAP-001-R-01 and LHAAP-003R-01 ROD Responsiveness Summary

Acronyms

µg/L	micrograms per liter
AECOM	AECOM Technical Services, Inc.
BRAC	Base Realignment and Closure
DERP	Defense Environmental Response Program
FAR	Federal Acquisition Regulation
FS	Feasibility Study
GWTP	Groundwater Treatment Plant
LHAAP	Longhorn Army Ammunition Plant
LUCs	Land Use Controls
MMRP	Military Munitions Response Program
MNA	Monitored Natural Attenuation
PBR	Performance-Based Remediation
PCL	Protective Concentration Level
PSA	Public Service Announcement
RAB	Restoration Advisory Board
RI	Remedial Investigation
ROD	Record of Decision
TCE	Trichloroethene
TCEQ	Texas Commission on Environmental Quality
TRRP	Texas Risk Reduction Program
USACE	United States Army Corps of Engineers
USAEC	United States Army Environmental Center
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

LONGHORN ARMY AMMUNITION PLANT
RESTORATION ADVISORY BOARD
Karnack, Texas
(479) 635-0110

AGENDA

DATE:	Thursday, October 20, 2016
TIME:	6:00 – 7:30 PM
PLACE:	Karnack Community Center, Karnack, Texas

06:00 Welcome and Introduction

06:05 Open Items {RMZ}
- RAB Administrative Issues
- Minutes (July 2016 RAB Meeting)
- Website

06:15 Sitewide Environmental Restoration Issues {RMZ}
- Dispute Sites Update
  - Final RODs for LHAAP-16, LHAAP-17, and LHAAP-001-R and LHAAP-003-R
  - Revised Draft Final LHAAP-004 ROD
- Updated Schedule, Environmental Contract Ending
- Ongoing Outreach – Public Notification Efforts for the October 2016 RAB
- Results of 1,4-Dioxane Sampling at LHAAP-18/24

06:35 Defense Environmental Restoration Program (DERP) Update {AECOM}
- MNA Sites Update
- LHAAP-29 Update
- LHAAP-18/24 Update
- LHAAP-47 PSI Update
- Groundwater Treatment Plant (GWTP) Update

07:20 World War II era photos

Next RAB Meeting Schedule and Closing Remarks
- Discuss changing the RAB meeting date to avoid a conflict with Caddo Lake Water Supply Corp. meetings, which meet on the 3rd Thursday of the month from 5:30 – 6:30 p.m.

07:30 Adjourn {RMZ}

AECOM

Longhorn Army Ammunition Plant Restoration Advisory Board Meeting October 20, 2016

AECOM Environment

Agenda

AGENDA

DATE:	Thursday, October 20, 2016
TIME:	6:00 – 7:30 PM
PLACE:	Karnack Community Center, Karnack, Texas

06:00 Welcome and Introduction

06:05 Open Items {RMZ}
- RAB Administrative Issues
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06:15 Sitewide Environmental Restoration Issues {RMZ}
- Dispute Sites Update
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06:35 Defense Environmental Restoration Program (DERP) Update {AECOM}
- MNA Sites Update
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- Discuss changing the RAB meeting date to avoid a conflict with Caddo Lake Water Supply Corp. meetings, which meet on the 3rd Thursday of the month from 5:30 – 6:30 p.m.

07:30 Adjourn {RMZ}

AECOM

Open Items

- RAB Administrative Issues
- Membership Update
- Outreach Efforts
- Minutes from July 2016 RAB Meeting
- Website Update

Ongoing Outreach - Notifications for October RAB Meeting

- Published RAB meeting announcement in Marshall News Messenger on October 13th
- Published Notice of Availability of Final RODs in Marshall News Messenger on October 13th
- Requested the following radio stations to air October RAB Meeting Public Service Announcement (PSA):
  - KMHT Radio 103.9 (Karnack)
  - 98 Rocks (Alpha Media, Shreveport) and
  - Kiss Country 93.7 (Town Square Media, Shreveport)
- Requested PSA to be placed on KTBS Channel 3 and KTAL Channel 6 TV Community/Local Events Calendar
- Sent RAB announcement/agenda by email or USPS to individual RAB members and other interested parties
- Mailed RAB announcement to churches in Karnack on October 7th
- Sent RAB notice and Final RODs news release to State, Federal and local officials and local groups
- Posted RAB Meeting Fliers at multiple locations in the community:
  - Shady Glade Café, Caddo Grocery, Fyffes Corner Store, Circle S Grocery, Run In Grocery, Family Dollar Store, Convenience Store at FM9 and FM199

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The Army Wants You to be Informed!

- The Army is committed to protecting human health and the environment; key to that commitment is engaging the community and increasing public participation in environmental restoration at LHAAP.
- You are encouraged to:
  - Attend RAB meetings and/or become a member of the RAB
  - Visit the Longhorn environmental website at www.longhornaap.com
  - Make suggestions for improving communication – the Army welcomes and appreciates community feedback

AECOM

Minutes from Past RAB Meetings

- Discussion of July 2016 RAB Meeting Minutes/Motion to accept

Website Update

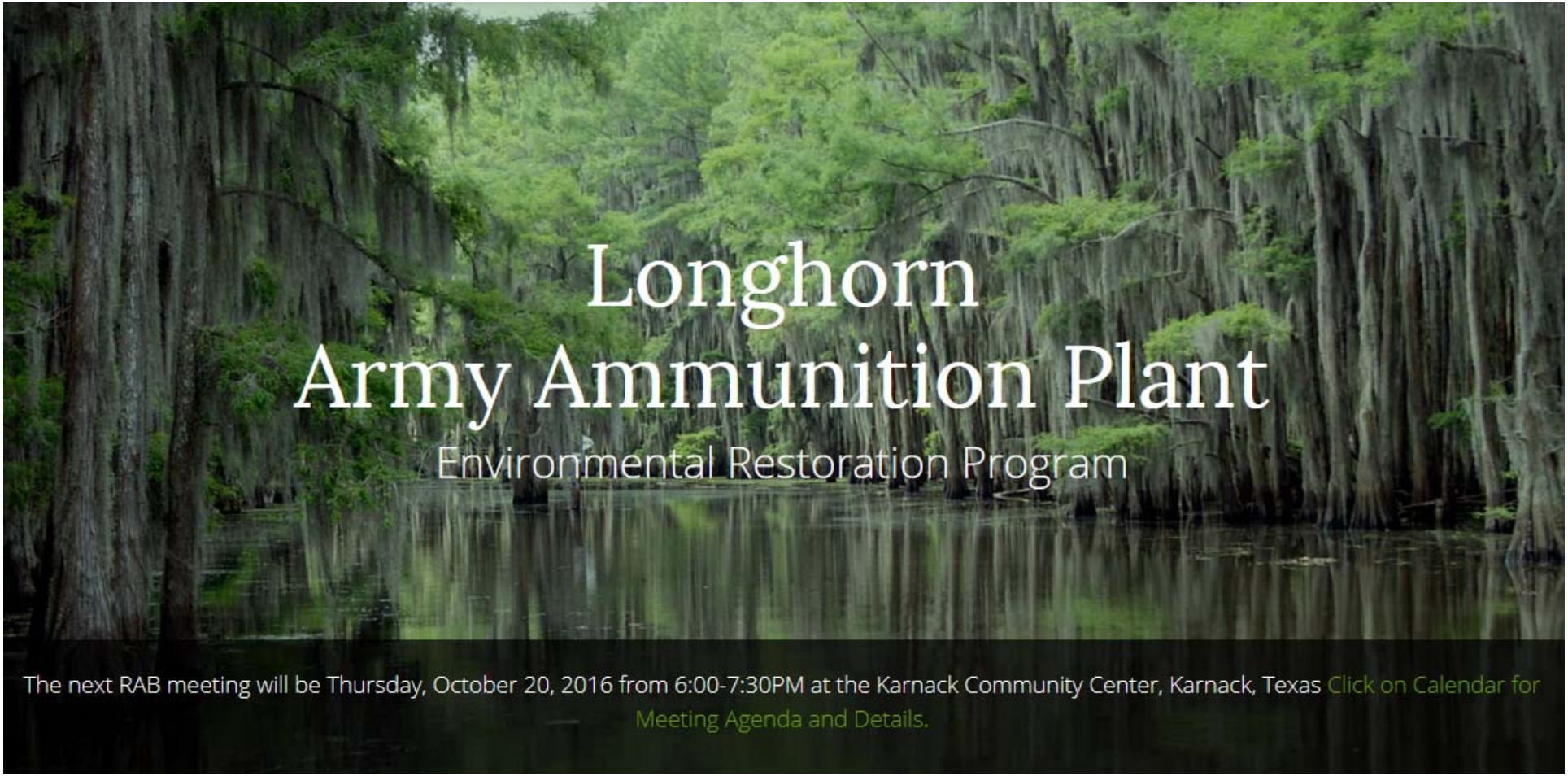

AECOM

Site-wide Environmental Restoration Issues

Active LHAAP Performance-Based Remediation Sites (* Disputed ROD Site)

LHAAP-03	Building 722 Paint Shop
LHAAP-04	Pilot Wastewater Treatment Plant
LHAAP-12	Landfill 12
LHAAP-16	Landfill 16*
LHAAP-17	Burning Ground No.2/Flashing Area*
LHAAP-18	Burning Ground No.3
LHAAP-24	Unlined Evaporation Pond
LHAAP-29	Former TNT Production Area
LHAAP-37	Chemical Laboratory Waste Pad
LHAAP-46	Plant Area 2
LHAAP-47	Plant Area 3
LHAAP-50	Former Sump Water Tank
LHAAP-58	Maintenance Complex
LHAAP-67	Aboveground Storage Tank Farm
LHAAP-001-R	South Test Area/Bomb Test Area*
LHAAP-003-R	Ground Signal Test Area*

AECOM

Longhorn Performance-Based Remediation Sites Map

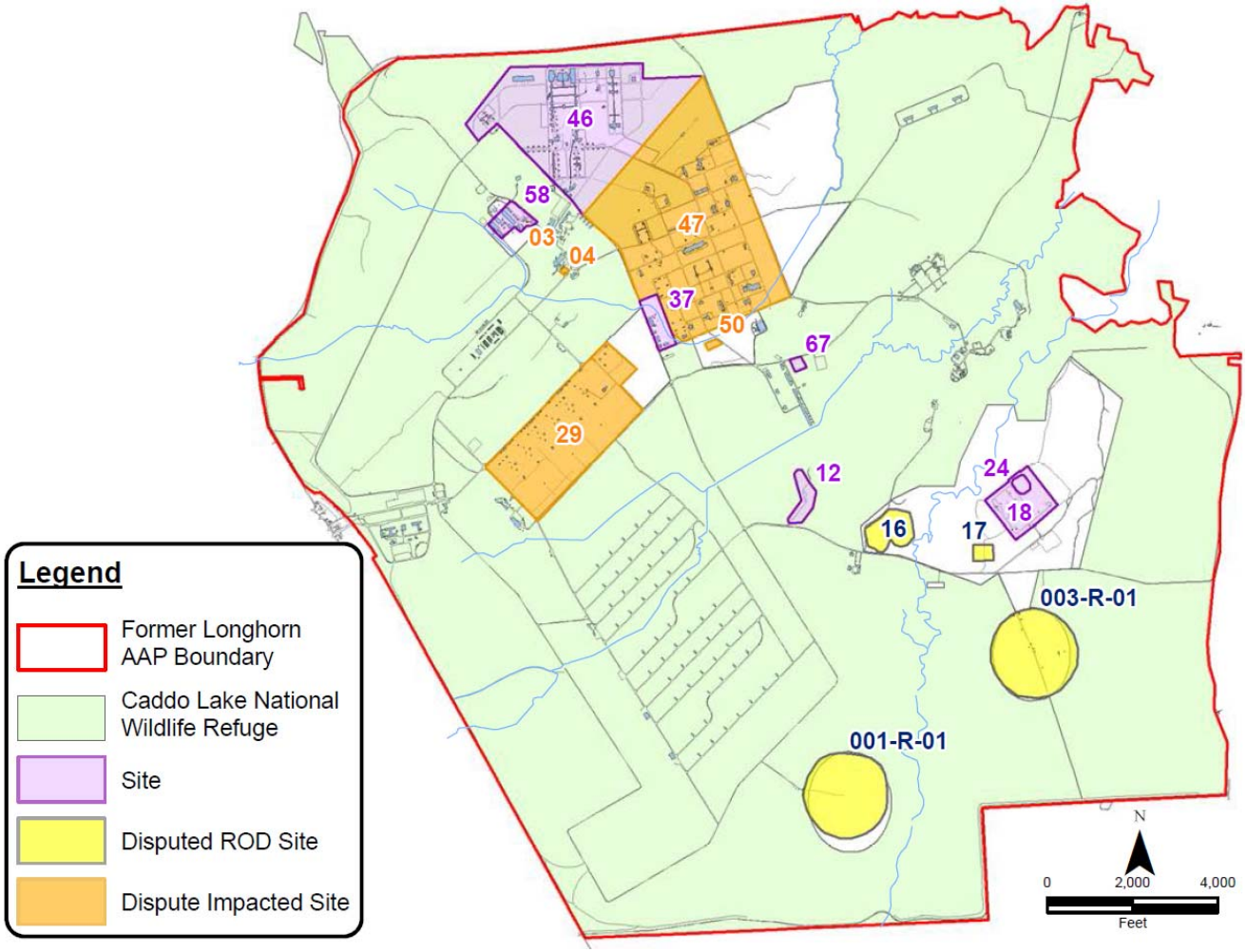

AECOM

Final RODs for Disputed Sites LHAAP-16, LHAAP-17, and LHAAP-001-R and -003-R

- Copies of the Responsiveness Summaries from each of the Final RODs are available at the sign in table
- Complete copies of the Final RODs are available to the public at the Marshall Public Library, 300 S. Alamo, Marshall, Texas, 75670
  - Library hours are 10:00 A.M. to 8:00 P.M. Monday through Thursday, and 10:00 A.M. to 5:30 P.M. Friday and Saturday.
- For more information, contact Dr. Rose M. Zeiler, Longhorn Army Ammunition Plant, P.O. Box 220, Ratcliff, Arkansas, 72951; phone number 479-635-0110; e-mail rose.m.zeiler.civ@mail.mil.

Final RODs for Disputed Sites LHAAP-16, LHAAP-17, and LHAAP-001-R and -003-R (cont.)

Final ROD for LHAAP-16

- The Selected Remedy is **Maintenance of Landfill Cap, Land Use Controls (LUCs), In-Situ Enhanced Bio-remediation, Bio-barriers, and Monitored Natural Attenuation (MNA)**
- The Selected Remedy will achieve the following Remedial Action Objectives (RAOs):
  - Protection of human health and the environment by preventing exposure to landfill wastes;
  - Protection of human health and the environment by reducing leaching and migration of landfill hazardous substances into the groundwater;
  - Protection of human health by preventing human exposure to the contaminated groundwater;
  - Protection of human health and the environment by preventing COCs and COC by-products from migrating to Harrison Bayou at levels that cause surface water in Harrison Bayou to exceed surface water criteria; and
  - Return of groundwater to its potential beneficial uses as drinking water, wherever practicable
- A **Fact Sheet** that provides additional information on the Final LHAAP-16 ROD is available at the check in table

Final RODs for Disputed Sites LHAAP-16, LHAAP-17, and LHAAP-001-R and -003-R (cont.)

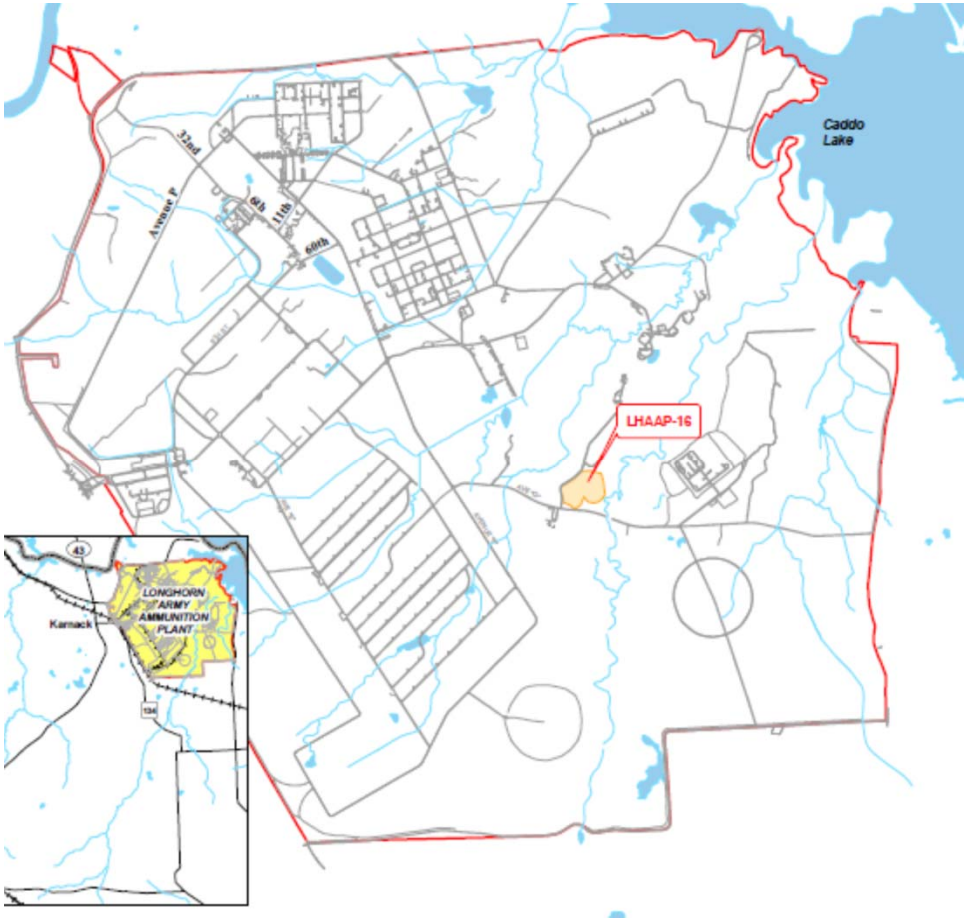

LHAAP-16, Landfill

SELECTED REMEDY: Cap Maintenance, Land Use Controls, In Situ Enhanced Bioremediation, Biobarriers, and Monitored Natural Attenuation

AECOM

Final RODs for Disputed Sites LHAAP-16, LHAAP-17, and LHAAP-001-R and -003-R (cont.)

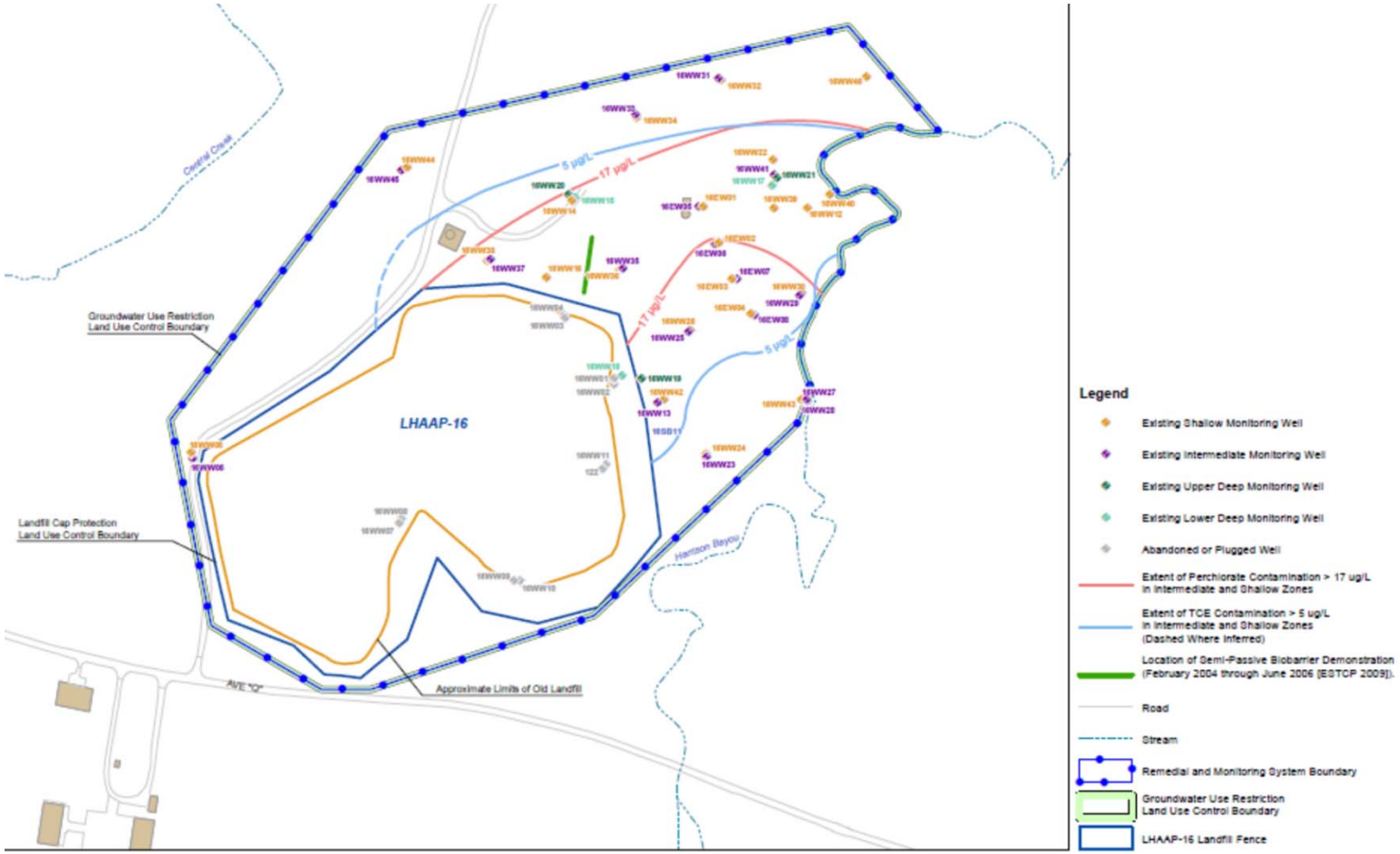

LHAAP-16, Landfill

SELECTED REMEDY: Cap Maintenance, Land Use Controls, In Situ Enhanced Bioremediation, Biobarriers, and Monitored Natural Attenuation

AECOM

Final RODs for Disputed Sites LHAAP-16, LHAAP-17, and LHAAP-001-R and -003-R (cont.)

Final LHAAP-17 ROD

- The Selected Remedy is **Contaminated Soil Removal, Extraction and Treatment of Groundwater, MNA and LUCs**
- The Selected Remedy will achieve the following RAOs:
  - Protection of human health by preventing human exposure to contaminated groundwater and contaminated soil;
  - Protection of human health by preventing further potential degradation of groundwater from contaminated soil;
  - Protection of ecological receptors by preventing exposure to contaminated soil;
  - Protection of human health and the environment by preventing contaminated groundwater from migrating into nearby surface water; and
  - Return of groundwater to its potential beneficial uses as drinking water, wherever practicable
- A **Fact Sheet** that provides additional information on the Final LHAAP-17 ROD is available at the check in table

Final RODs for Disputed Sites LHAAP-16, LHAAP-17, and LHAAP-001-R and -003-R (cont.)

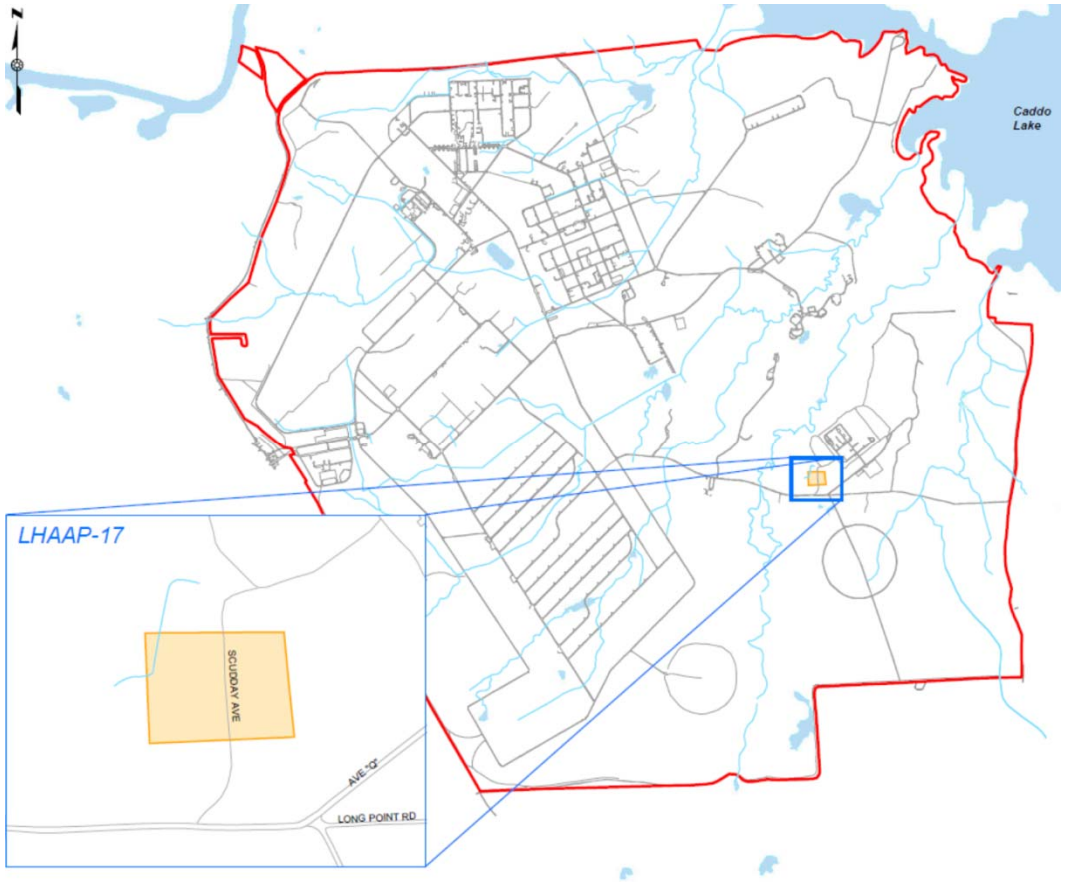

LHAAP-17, Burning Ground No. 2/Flashing Area

SELECTED REMEDY: Excavation and Offsite Disposal of Soil, Groundwater Extraction, Monitored Natural Attenuation and Land Use Controls

AECOM

Final RODs for Disputed Sites LHAAP-16, LHAAP-17, and LHAAP-001-R and -003-R (cont.)

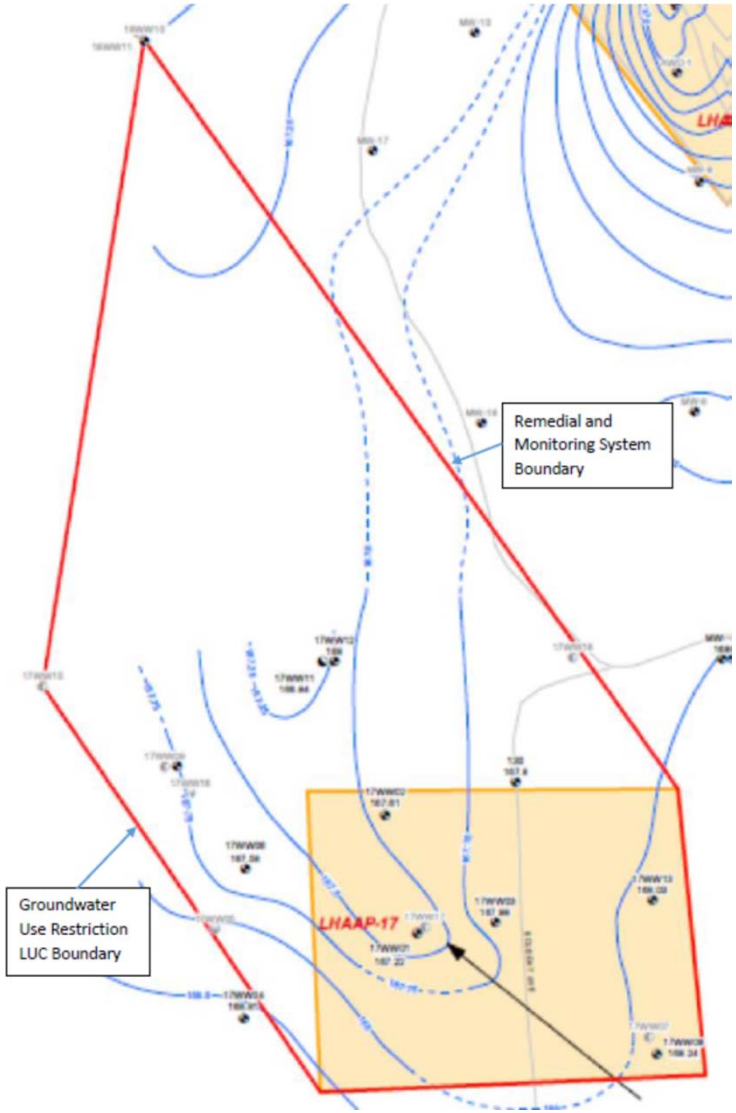

LHAAP-17, Burning Ground No. 2/Flashing Area

SELECTED REMEDY: Excavation and Offsite Disposal of Soil, Groundwater Extraction, Monitored Natural Attenuation and Land Use Controls

AECOM

Final RODs for Disputed Sites LHAAP-16, LHAAP-17, and LHAAP-001-R and -003-R (cont.)

Final RODs for LHAAP-001-R and LHAAP-003-R

- The Selected Remedy is **LUCs and Limited Groundwater Monitoring**
- The Selected Remedy will achieve the following RAO:
  - Protection of human health and safety from explosive hazards that may have remained at the site after the Munitions and Explosives of Concern (MEC) removal action, and confirmation that perchlorate is still present in groundwater at levels below the chemical specific criterion
- Implementation of the LUCs will:
  - Prohibit development and use of the property for residential housing, schools, and child care facilities and playgrounds, and prohibit intrusive activities such as digging and any other activity that will result in explosive safety risks
  - Prohibit residential land use until it is demonstrated that the MEC no longer presents a threat to public/human safety
  - Restricts land use to non-residential until it is demonstrated that MEC no longer presents a threat to public/human safety; and
  - Prohibits intrusive subsurface activities, including digging, until it is demonstrated that MEC no longer presents a threat to public/human safety
- Implementation of Limited Groundwater Monitoring will confirm the perchlorate level is below the residential cleanup level (Texas Risk Reduction Program [TRRP] Tier 1 Groundwater Residential Protective Concentration Level [PCL] of 17 ug/L)
- **Fact Sheets** that provide additional information on the Final LHAAP-001-R and LHAAP-003-R RODs are available at the check in table

Final RODs for Disputed Sites LHAAP-16, LHAAP-17, and LHAAP-001-R and -003-R (cont.)

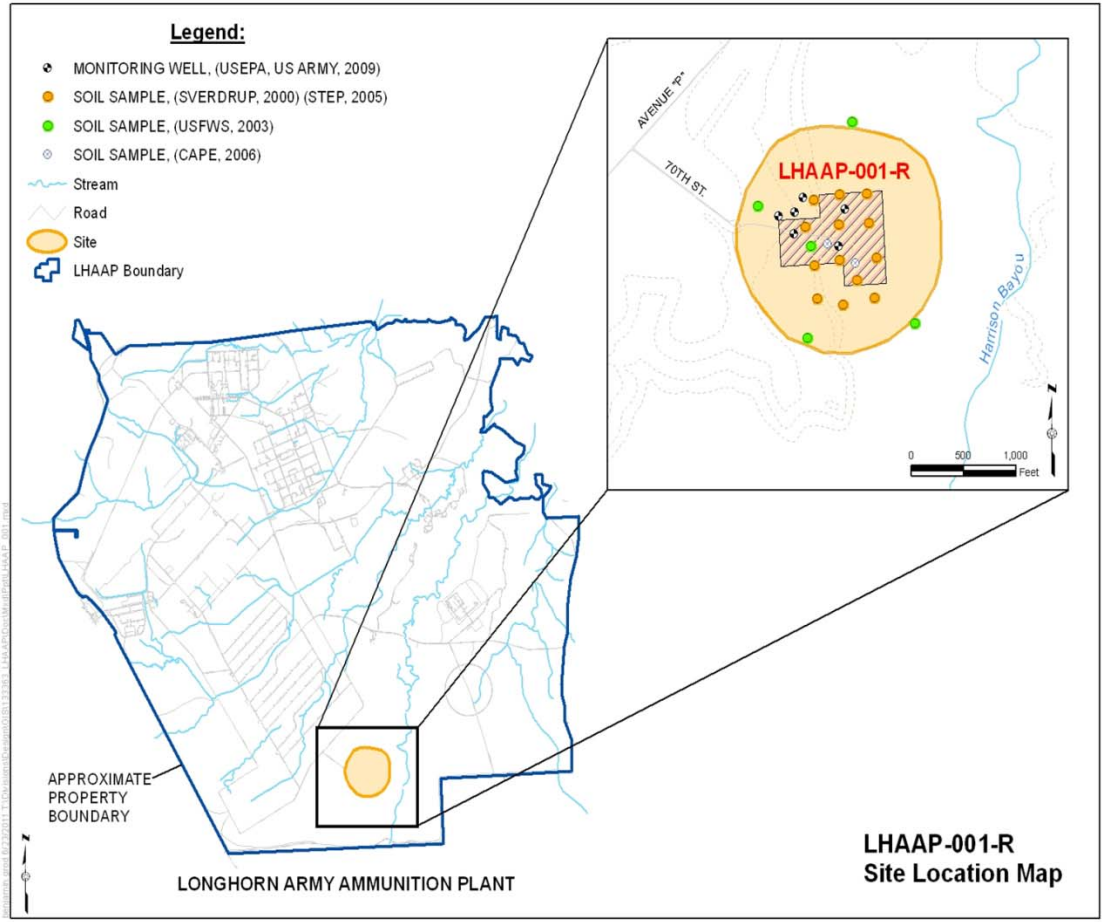

LHAAP-001-R, South Test Area/Bomb Test Area

SELECTED REMEDY: Land Use Controls and Limited Groundwater Monitoring

AECOM

Final RODs for Disputed Sites LHAAP-16, LHAAP-17, and LHAAP-001-R and -003-R (cont.)

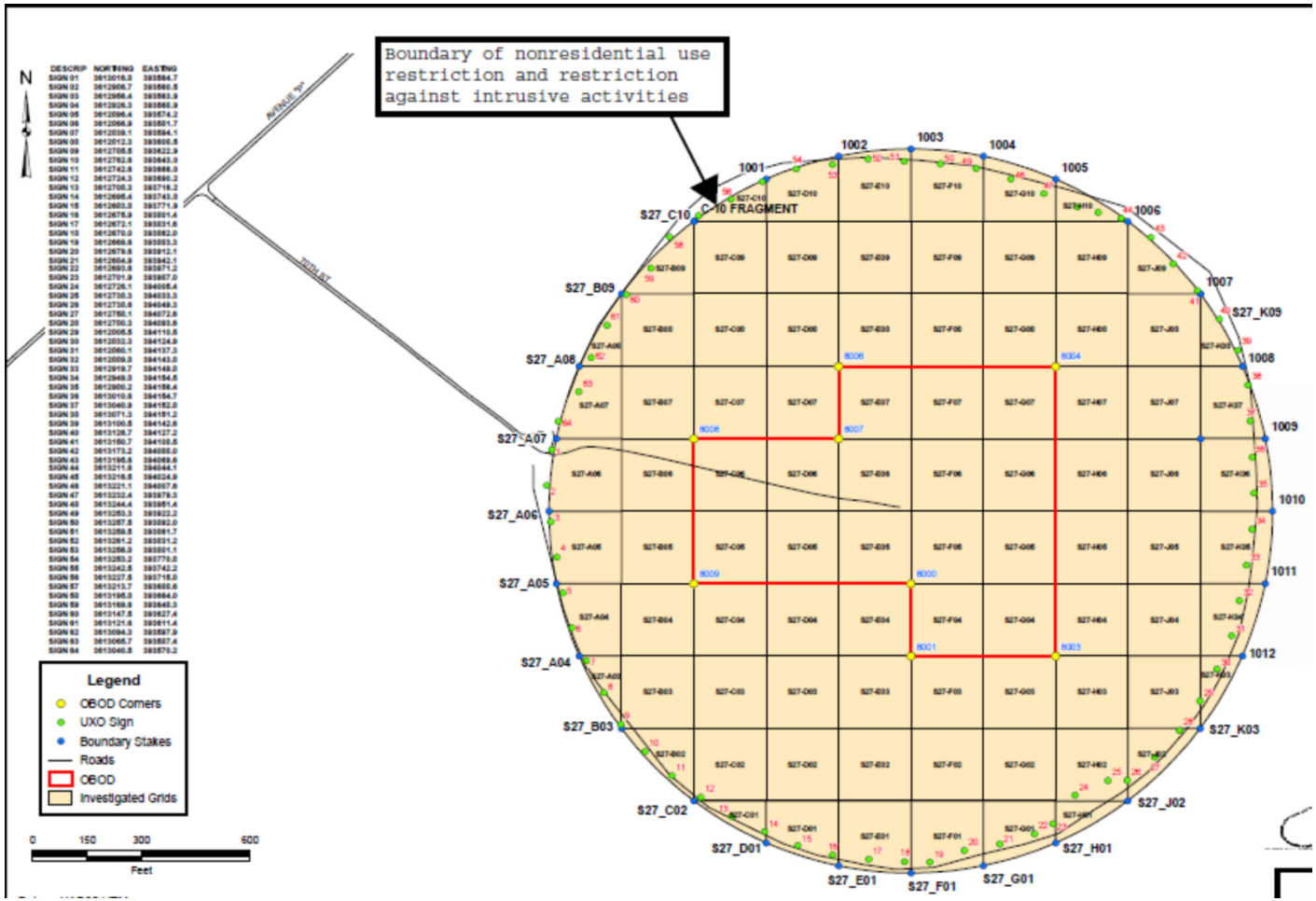

LHAAP-001-R, South Test Area/Bomb Test Area

SELECTED REMEDY: Land Use Controls and Limited Groundwater Monitoring

AECOM

Final RODs for Disputed Sites LHAAP-16, LHAAP-17, and LHAAP-001-R and -003-R (cont.)

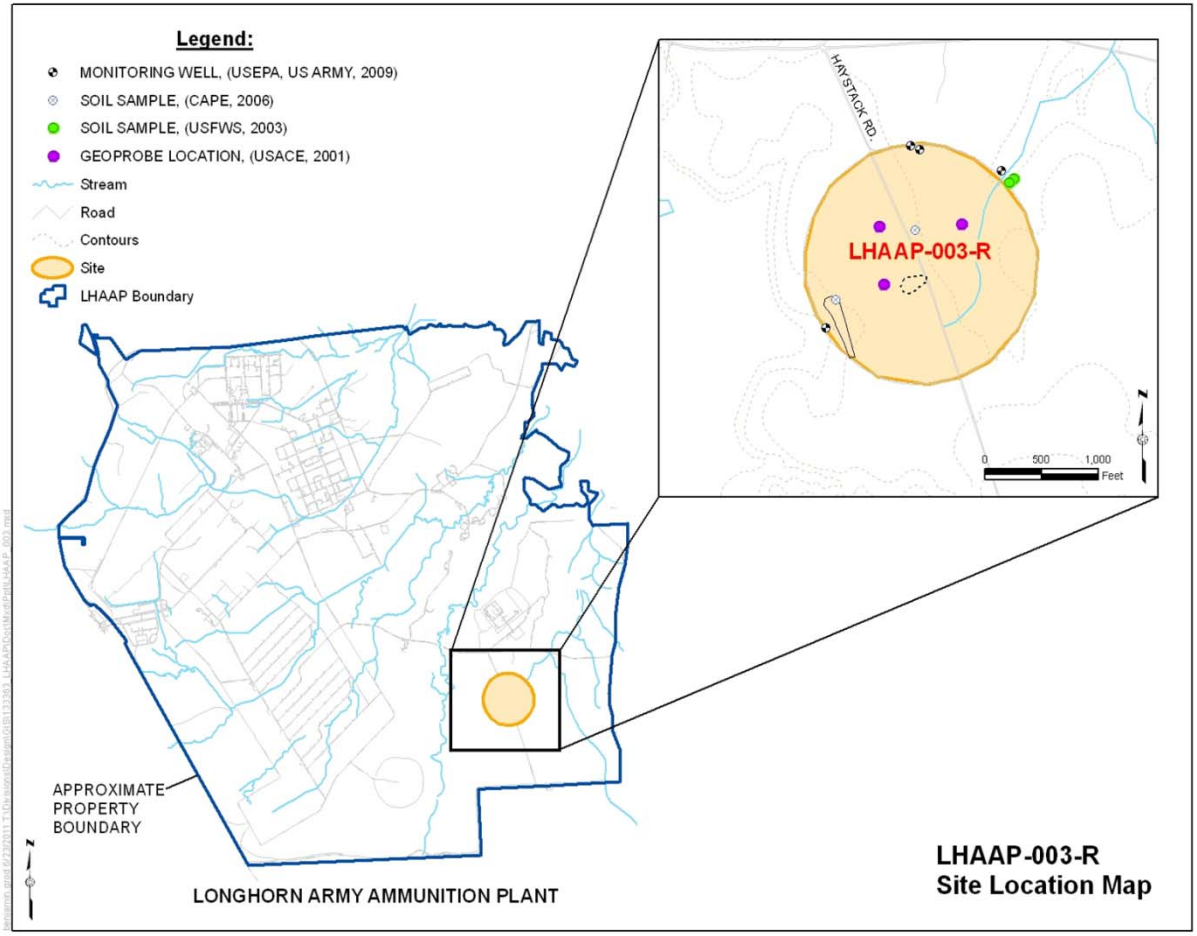

LHAAP-003-R, Ground Signal Test Area

SELECTED REMEDY: Land Use Controls and Limited Groundwater Monitoring

AECOM

Final RODs for Disputed Sites LHAAP-16, LHAAP-17, and LHAAP-001-R and -003-R (cont.)

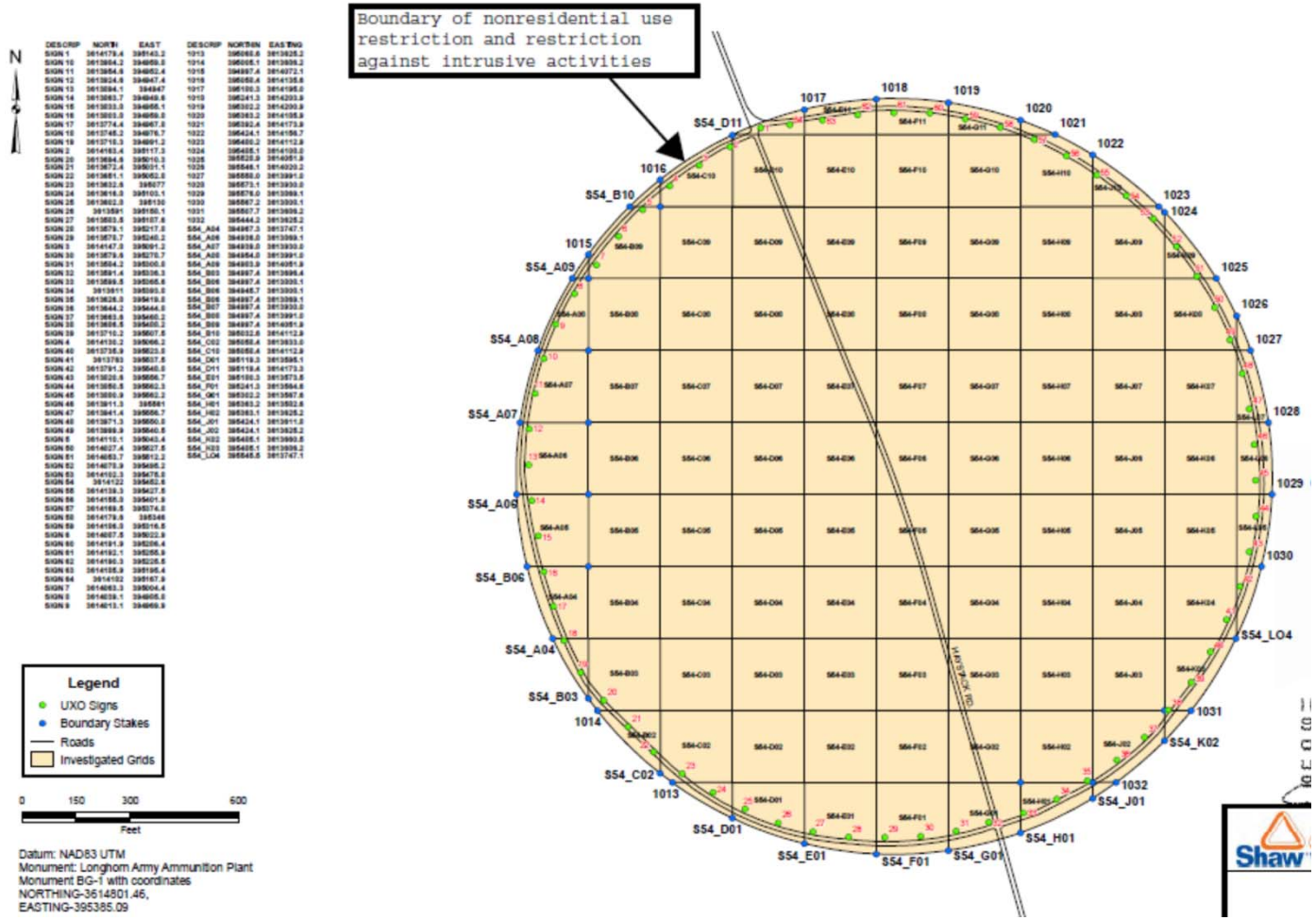

LHAAP-003-R, Ground Signal Test Area

SELECTED REMEDY: Land Use Controls and Limited Groundwater Monitoring

AECOM

Post-ROD Schedule for the Four Disputed ROD Sites

- LHAAP-16
  - Draft Remedial Design (RD) submitted October 14, 2016
  - Draft Remedial Action Work Plan (RAWP) due February 13, 2018
- LHAAP-17
  - Draft Pre-Design Investigation WP submitted September 29, 2016
  - Draft Pre-Design Investigation Report due May 14, 2018
  - Draft RD due November 14, 2018
  - Draft RAWP due April 15, 2019
- LHAAP-001-R
  - Draft Land Use Control RD February 7, 2018
- LHAAP-003-R
  - Draft Land Use Control RD February 7, 2018

Revised Draft Final ROD for Dispute Impacted Site LHAAP-004

Draft Final Revised ROD for LHAAP-004

- The Selected Remedy is **Alternative 3** from the Proposed Plan – **Targeted In-Situ Bioremediation, Long-Term Monitoring (LTM), and LUCs**
- The Selected Remedy will achieve the following RAOs:
  - Protection of human health by preventing ingestion of groundwater contaminated with perchlorate;
  - Return groundwater to its potential beneficial use, wherever practicable, within a reasonable time period, give the site-specific conditions; and
  - Prevent groundwater contaminated with perchlorate from migrating into nearby surface water
- The Draft Final Revised ROD was submitted to EPA and TCEQ earlier this month (October) and is currently undergoing regulatory review

Dispute Impacted Sites

- Other Dispute Impacted Sites
  - LHAAP-03 – Building 722 Paint Shop
  - LHAAP-29 – Former TNT Production Area
  - LHAAP-47 – Plant Area 3
  - LHAAP-50 – Former Sump Water Tank

Updated Schedule, Environmental Contract Ending

- Current AECOM PBR contract ends September 30, 2017
- The deadline for remaining AECOM contract deliverables (reports and plans) is November 30, 2016. These include:
  - Final LHAAP-16 Remedial Design (RD)
  - Final LHAAP-17 Pre-Design Investigation (PDI) Work Plan
  - Final Supplemental to Updated LHAAP-18/24 PSI Report
  - Final LHAAP-18/24 Revised FS
  - Final LHAAP-37 Remedial Action Completion Report (RACR)
  - Final LHAAP-50 Year 1 and Year 2 RA-O Reports
  - Final LHAAP-67 Year 1 and Year 2 RA-O Reports
  - Final LHAAP-002 Year 1 Tech Memo (Oct 2015/Apr 2016)

Updated Schedule, Environmental Contract Ending (cont.)

- Groundwater monitoring will continue at select sites, and results from each event will be documented in a data validation package

- GWTP Operation and Maintenance, Perimeter Wells and Surface Water Sampling; and Mowing/LUC Monitoring will be performed throughout the remaining contract period of performance (September 30, 2017)

Results of 1,4-Dioxane Sampling at LHAAP-18/24

- **RECAP**
  - Groundwater samples were collected from 66 monitoring wells and 7 ICTs at LHAAP-18/24 in late October/early November 2015 to evaluate extent of 1,4-dioxane. 1,4-dioxane was detected (>1 ug/L) in 40 samples. The detected concentrations exceed the Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level (PCL) of 9.1 ug/L in samples from 6 wells (120, 18CPTMW23, AWD-1, MW-12, MW-14, and MW-16) and 4 ICTs (ICT-12E, 13A, 13B, and 14B)
- **1,4-Dioxane Confirmation Sampling Results**
  - In June 2016, a total of 52 monitoring wells at LHAAP-18/24 were sampled for 1,4-dioxane. 1,4-dioxane was detected (>1 ug/L) in 17 samples. The detected concentrations exceed the TRRP Tier 1 Groundwater Residential PCL in samples from four of the wells that were resampled (120, MW-7, MW-14, and MW-16).
  - The maximum 1,4-dioxane concentration detected in the first round of samples from the monitoring wells is 203 ug/L (well 120) vs. 220 ug/L (well 120) in the June 2016 confirmation sampling round. The overall maximum concentration (412 ug/L) was detected in the second round confirmation sample from MW14.
  - The distribution of 1,4-dioxane concentrations detected above the TRRP Tier 1 Groundwater Residential PCL is shown in the following figure.

LHAAP-18/24 First and Second Round Groundwater Confirmation Samples with 1,4-Dioxane Concentrations Above the TRRP Tier 1 Groundwater Residential PCL (9.1 ug/L)

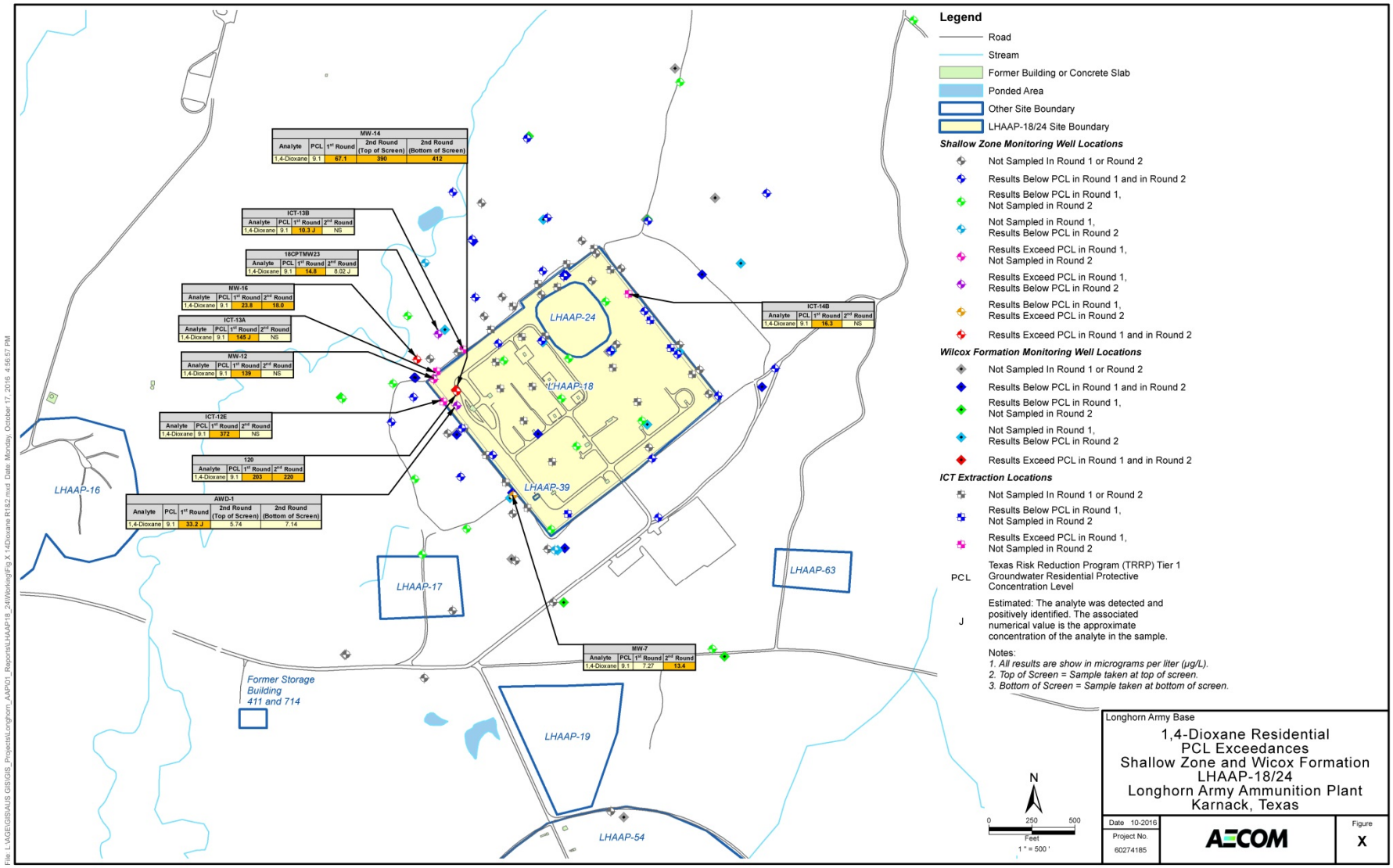

Defense Environmental Restoration Program (DERP) Update

- **Monitored Natural Attenuation Sites Updates**
  - LHAAP-35B (37) – Chemical Laboratory
  - LHAAP-46 – Plant Area 2
  - LHAAP-50 – Former Sump Water Tank
  - LHAAP-35A (58) – Shops Area
  - LHAAP-67 – Aboveground Storage Tank Farm
- Land Use Control Boundary Surveys for groundwater use restriction are complete for all sites
- Final Remedial Action Completion Reports (RACRs) are complete for LHAAP-46, -50, 58, and -67; Draft Final Revised RACR for LHAAP-35B(37) currently undergoing regulatory review
- Year 1 Remedial Action Operation (RA-O) report for LHAAP-50 is undergoing regulatory review; and reports for LHAAP-46 and LHAAP-58 are final
- Year 2 RA-O report for LHAAP-50 is undergoing regulatory review; LHAAP-67 is drafted but not submitted; and reports for LHAAP-46 and LHAAP-58 are final
- Quarterly/Semi-Annual Groundwater Monitoring is ongoing at all sites except LHAAP-35B (37)
  - At LHAAP-35B(37), first quarterly sampling round completed in August; results to determine if quarterly sampling will continue

LHAAP-29 - Former TNT Production Area Update

- To address remedy design and implementation questions at the Draft Final ROD stage, the Remedial Investigation (RI) and Feasibility Study (FS) were re-opened to fill data gaps and a Supplemental Investigation was performed
- An RI Addendum based on the Supplemental Investigation results for LHAAP-29 was submitted to EPA and TCEQ and was approved by EPA with TCEQ concurrence in August 2016. The Final RI Addendum documents achievement of the following objectives:
  - Confirmed the extent of methylene chloride DNAPL in the Intermediate Zone groundwater
  - Confirmed the extent of VOC, perchlorate, and explosives contamination in the Shallow Zone groundwater
  - Determined there is no continuing source of VOC contamination in site soil
  - Characterized physical properties (resistivity, hydraulic conductivity, etc.) and microbial activity in Intermediate Zone to support further FS evaluation of remedial alternatives
- An FS Addendum, which incorporates the supplemental data in the Final RI Addendum to develop and evaluate an additional remedial alternative not included in the previous FS, is currently in preparation

LHAAP-18/24 Former Burning Ground No. 3 and Unlined Evaporation Pond Update

- To evaluate remedy alternatives for LHAAP-18/24, a Draft Revised FS was submitted to EPA and TCEQ and is currently undergoing review
- In addition to groundwater confirmation sampling results for 1,4-dioxane, the Revised FS incorporates the June 2016 semi-annual groundwater monitoring results for VOCs, perchlorate, and total metals
- The Revised FS also uses supplemental data obtained between February and June 2016, which is documented in the Draft Supplemental to the Updated Post-Screening Investigation Report, which includes:
  - DPT soil sampling at 17 locations and analysis for VOCs and perchlorate
  - Installation of seven additional monitoring wells (three screened in the Shallow Zone and four in the Wilcox Fm.), with soil samples collected from well borings to create a vertical profile of VOCs and perchlorate in the unsaturated zone
- Above information was used to prepare the Draft Revised FS for LHAAP-18/24, including contingency remedies for 1,4-dioxane, if necessary, which was submitted to EPA and TCEQ for review on October 13th

LHAAP- 47 Plant Area 3 Update

- Final LHAAP-47 Post-Screening Investigation Work Plan was reviewed and approved by EPA with TCEQ concurrence on September 30th
  - Objectives:
    - ✓ Re-assess VOCs and perchlorate in Shallow Zone and Intermediate Zone groundwater, and
    - ✓ Re-assess potential VOC- and perchlorate-contaminated groundwater contribution to surface water in Goose Prairies Creek and tributaries
  - Scope:
    - ✓ Collection of two grab groundwater samples from each of seven Shallow Zone soil borings and six Intermediate Zone soil borings, and analysis for VOCs and perchlorate;
    - ✓ Installation and development of 13 Shallow Zone monitoring wells and 4 Intermediate Zone monitoring wells
    - ✓ Re-development of existing wells and synoptic water level survey of all site wells
    - ✓ Collection and analysis of groundwater samples from the new wells and up to 30 existing Shallow Zone wells and 10 existing Intermediate Zone wells for VOCs, and/or perchlorate, plus additional constituents included in the ROD
    - ✓ Collection and analysis of four surface water samples for perchlorate and VOCs
- Post-Screening Investigation will be implemented under the next PBR contract

Groundwater Treatment Plant (GWTP) Update

- The GWTP continues to operate to contain the plume at LHAAP-18/24 and LHAAP-16
- Treated groundwater is returned to LHAAP-18/24 through the sprinkler array
- LHAAP-18/24 groundwater compliance monitoring continues per existing sampling plan
- Maintenance and repairs of wells, pumps, tanks, and ancillary equipment is on-going. No major repairs have occurred since the air stripper blower was replaced in January 2016
- The FBR had a number of instances of perchlorate above the effluent limit in 2016. The treated water was released to the burning grounds (no discharge to Harrison Bayou). Potential causes for these excursions were investigated and addressed

GWTP Update (continued)

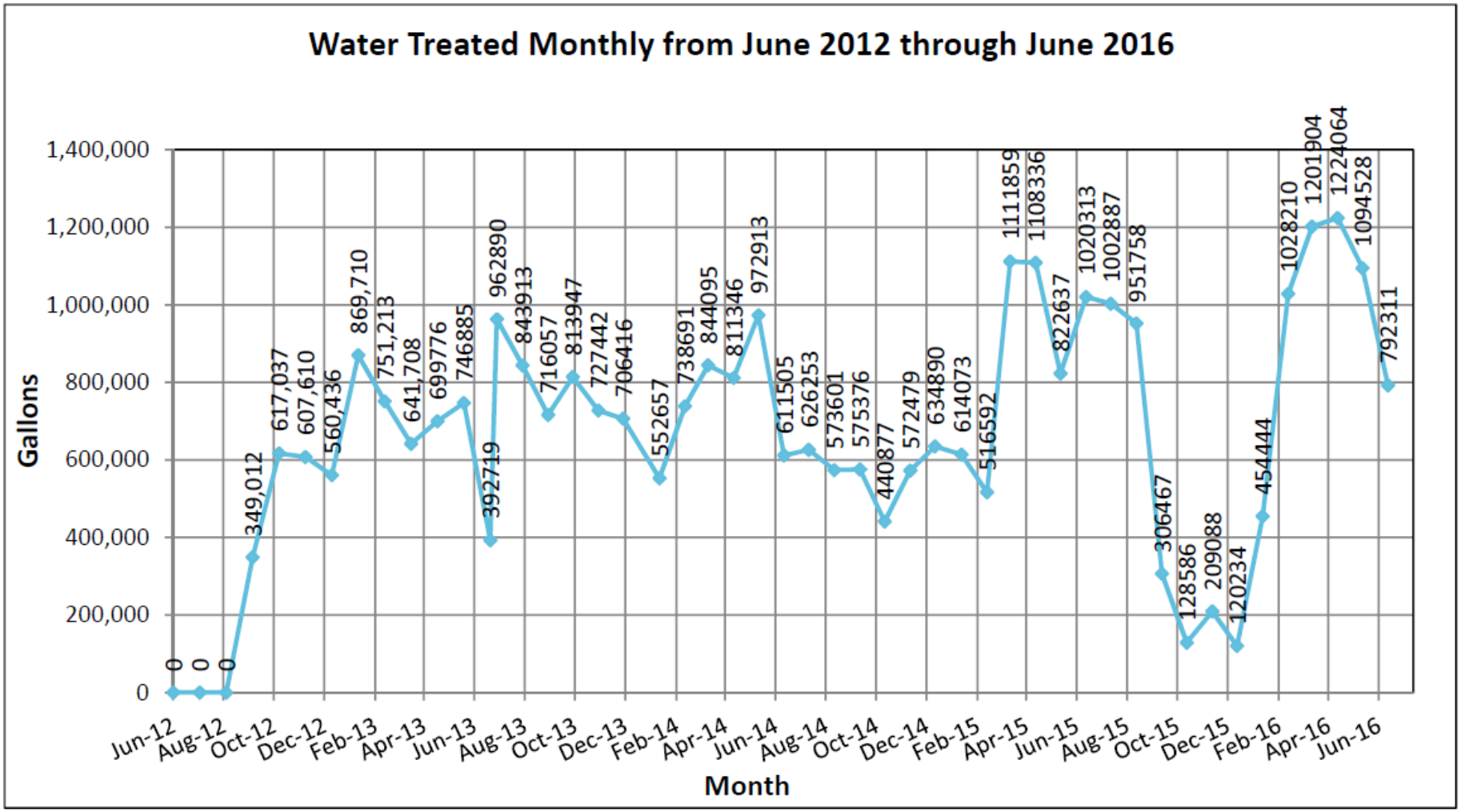

AECOM

Surface Water Sampling Locations

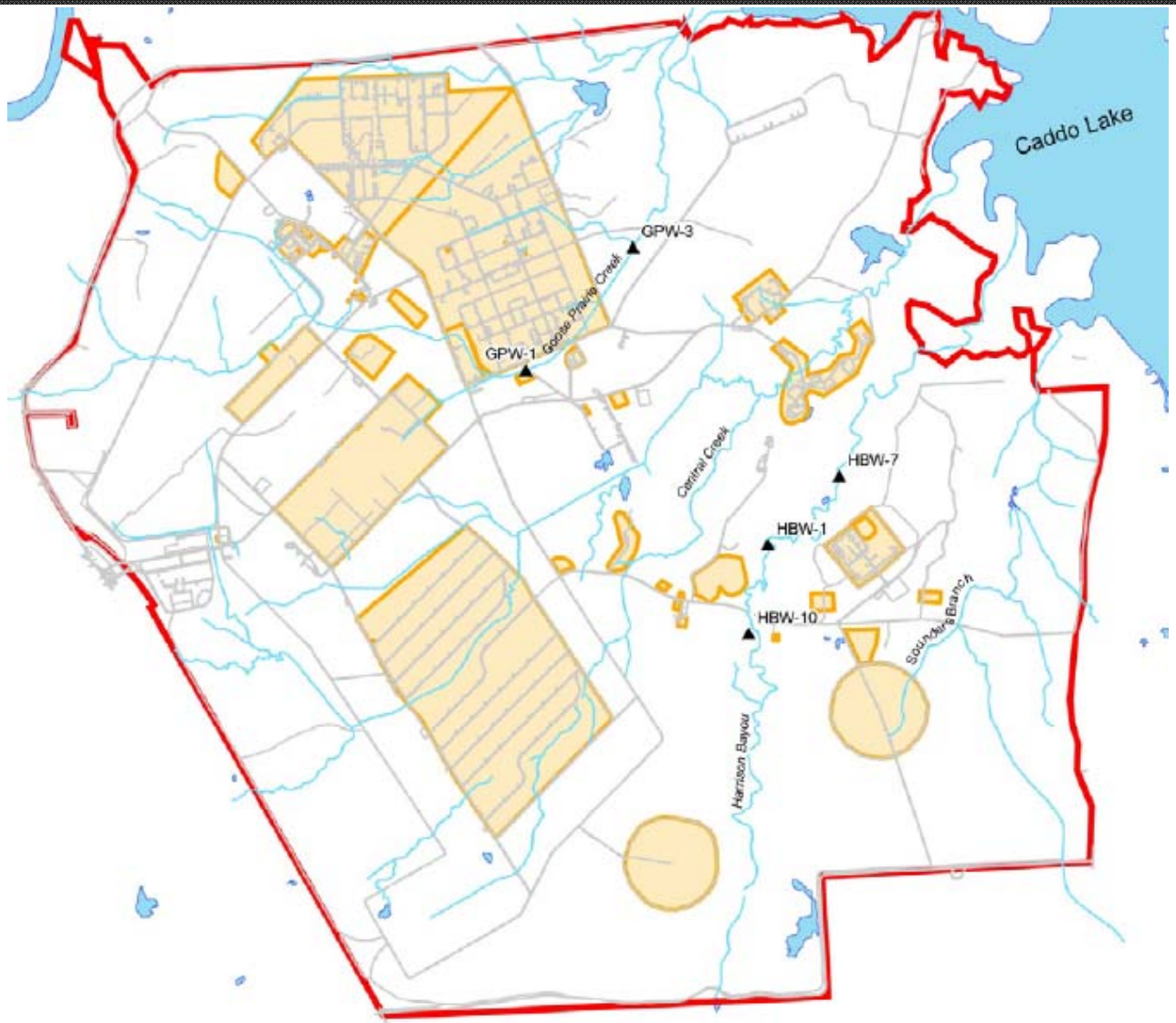

AECOM

Surface Water Sampling

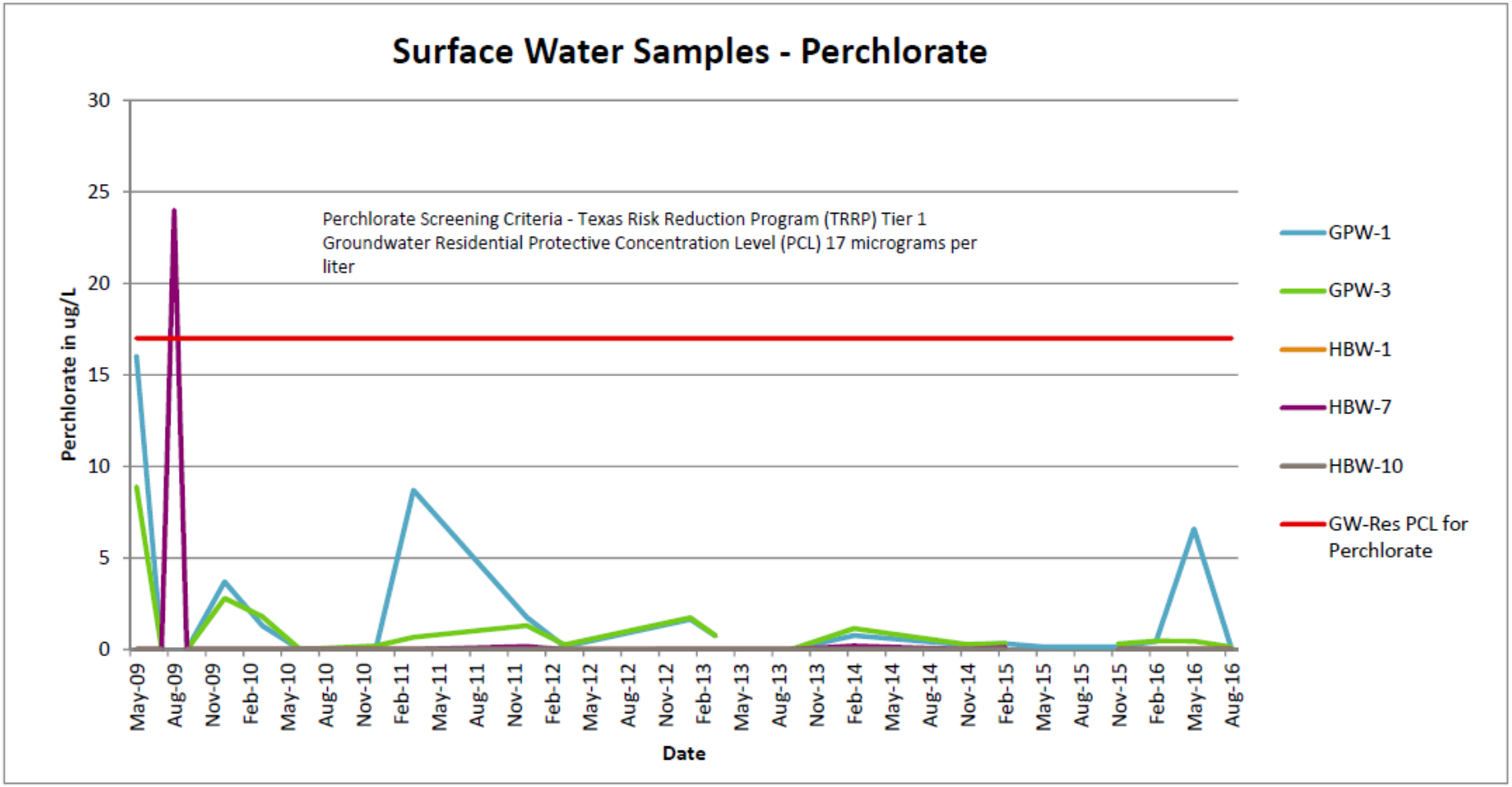

GPW – Goose Prairie Creek
HBW – Harrison Bayou

AECOM

Perimeter Well Locations

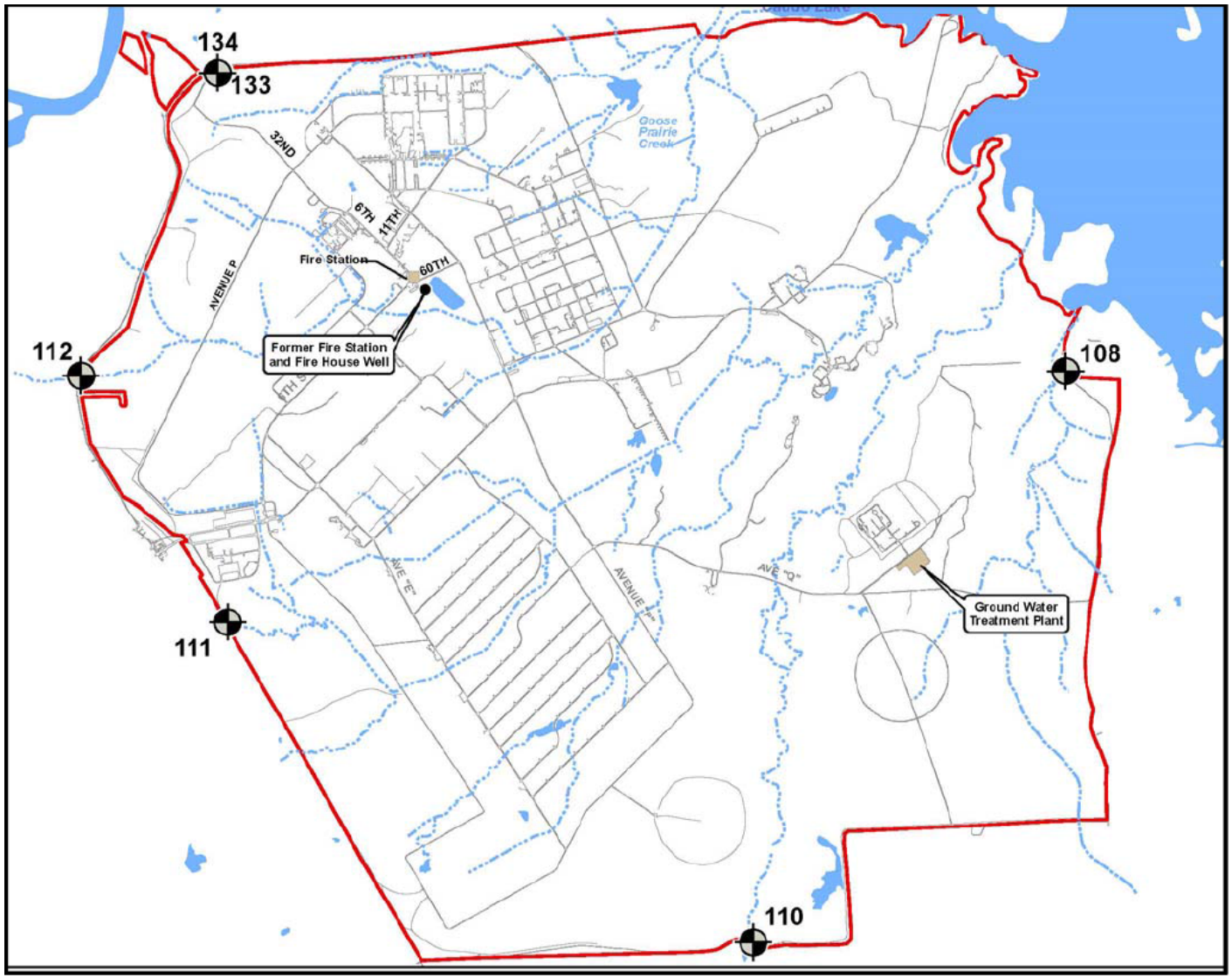

AECOM

Perimeter Well Sampling Update

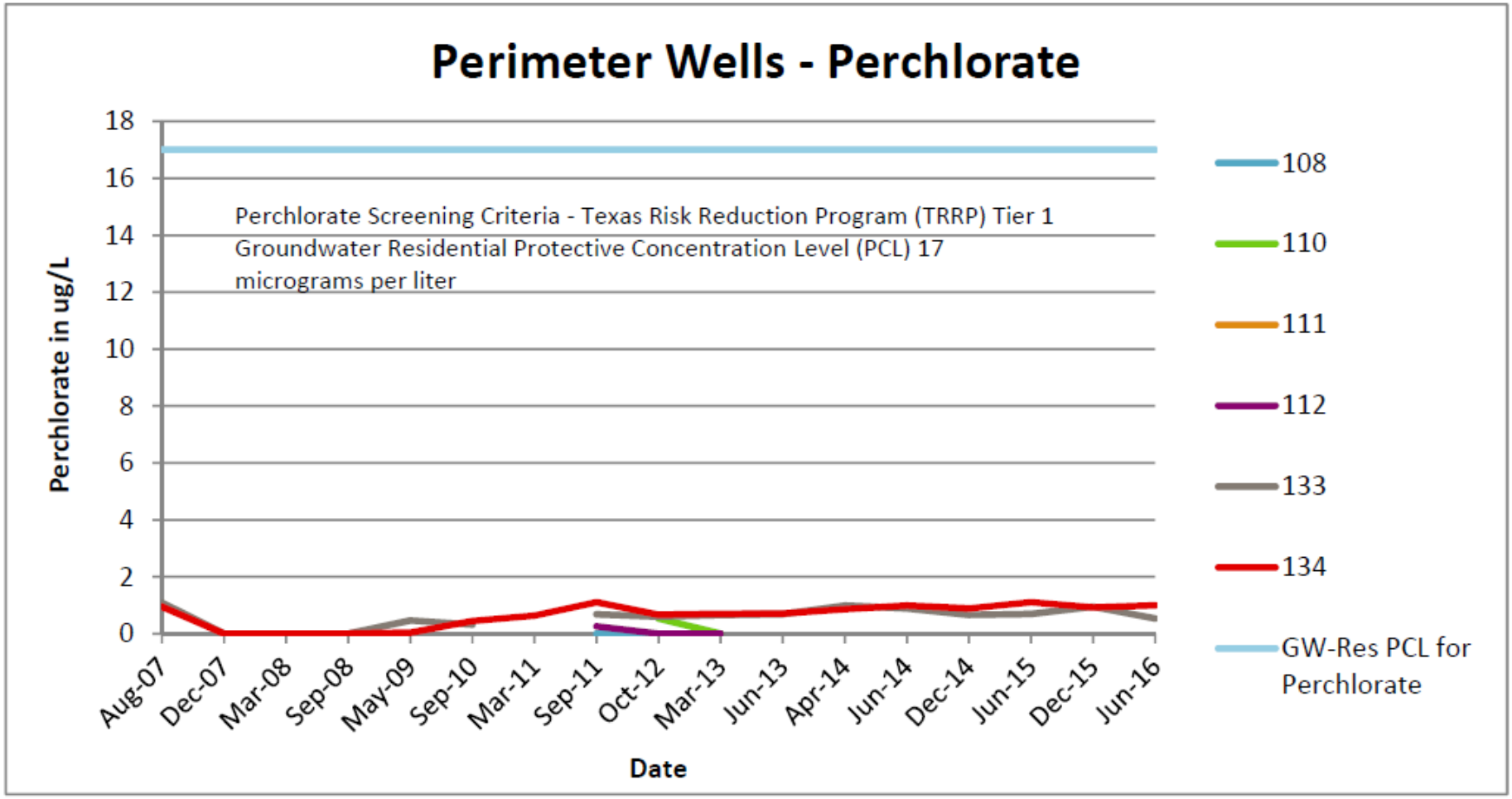

AECOM

Vintage World War II ERA and Post-WW II ERA Photos of Longhorn Army Ammunition Plant

302-A-1

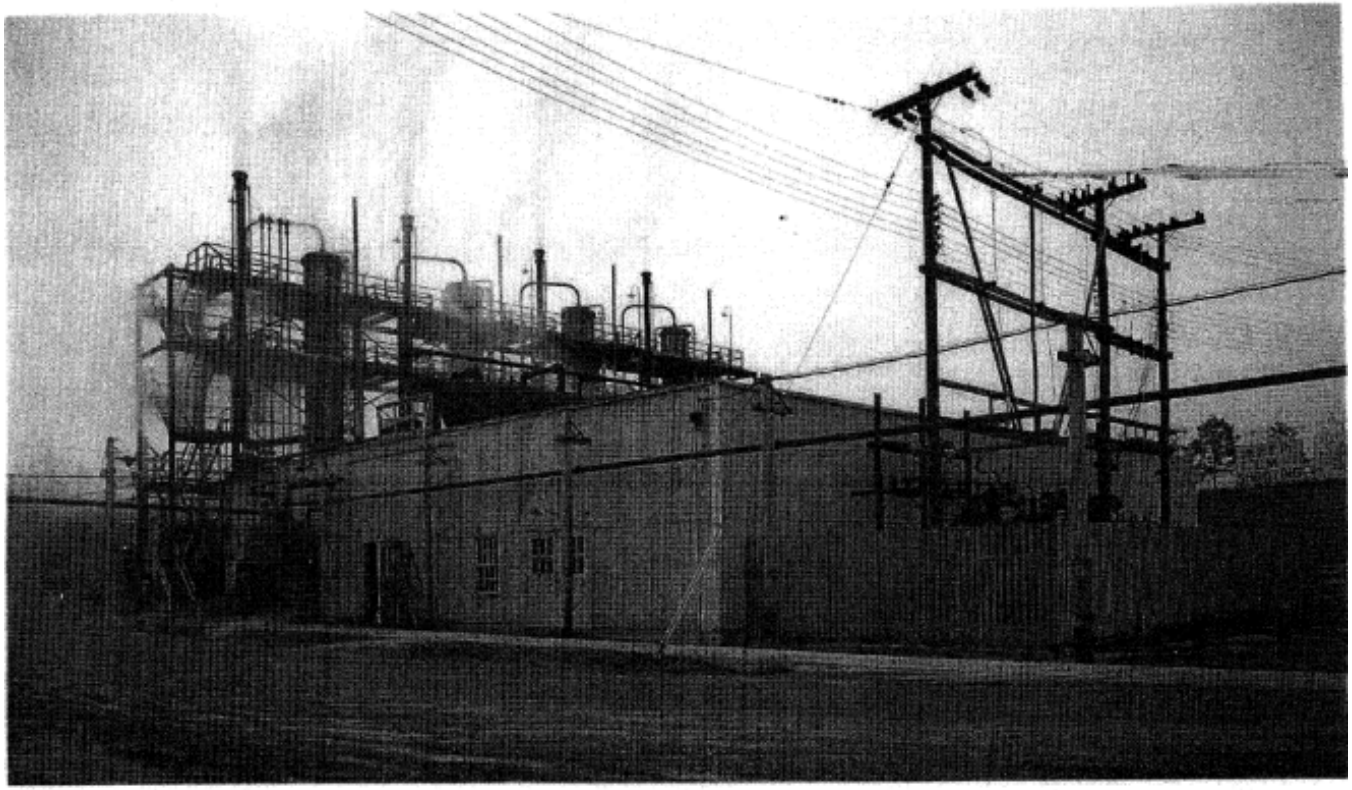

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LONGHORN ORDNANCE WORKS — FEBRUARY 1944.

BUILDING No. 302 A-1 – CONVERSION, ABSORPTION AND COMPRESSION HOUSE, COMPRESSOR HOUSE END, LOOKING SOUTHEAST.

INDUSTRIAL INVENTORY — PAGE No. 53

AECOM

Vintage World War II ERA and Post-WW II ERA Photos of Longhorn Army Ammunition Plant

302 A-1

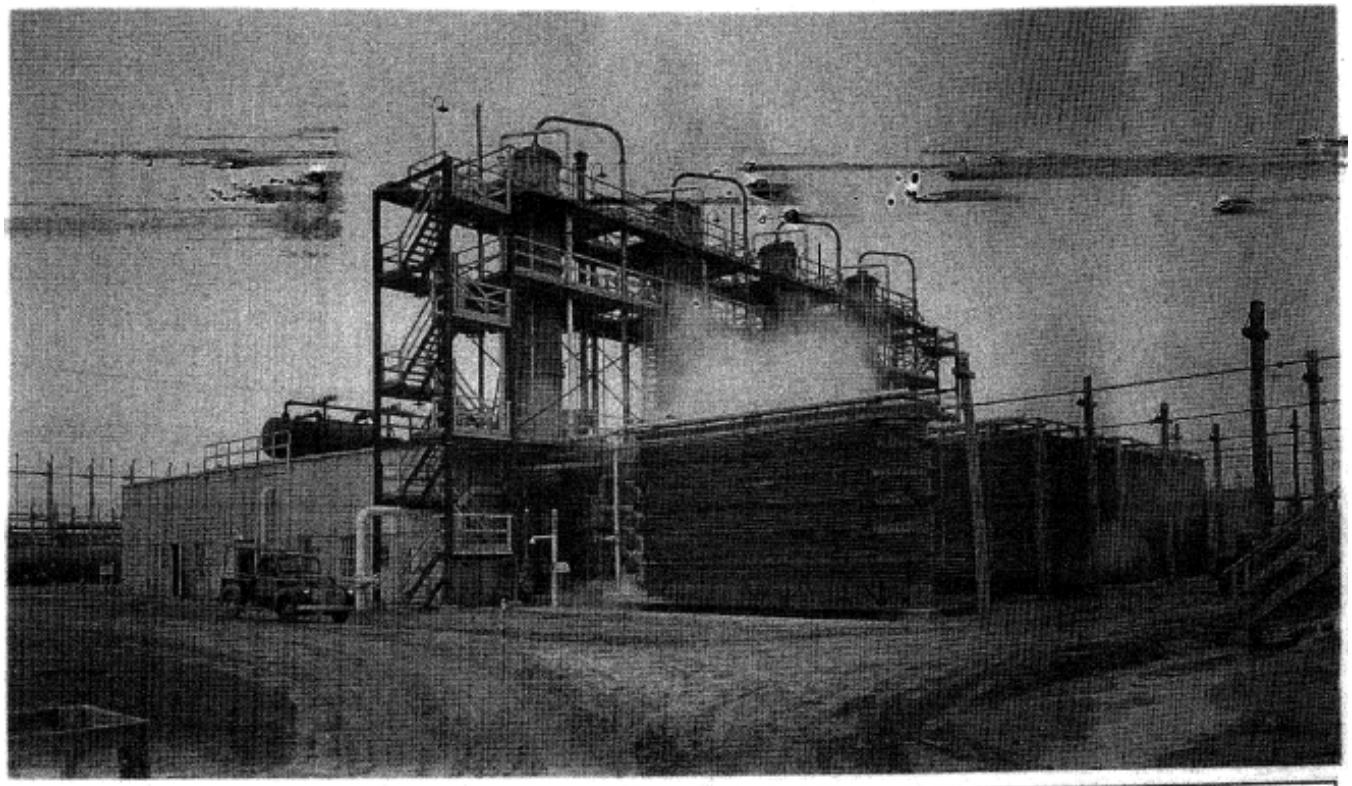

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FEBRUARY 1944.

BUILDING NO. 302 A-1 - CONVERSION, ABSORPTION AND COMPRESSION HOUSE, ABSORPTION COLUMN END, LOOKING NORTHWEST.

INDUSTRIAL INVENTORY

PAGE NO. 52.

AECOM

Vintage World War II ERA and Post-WW II ERA Photos of Longhorn Army Ammunition Plant

302 A-1

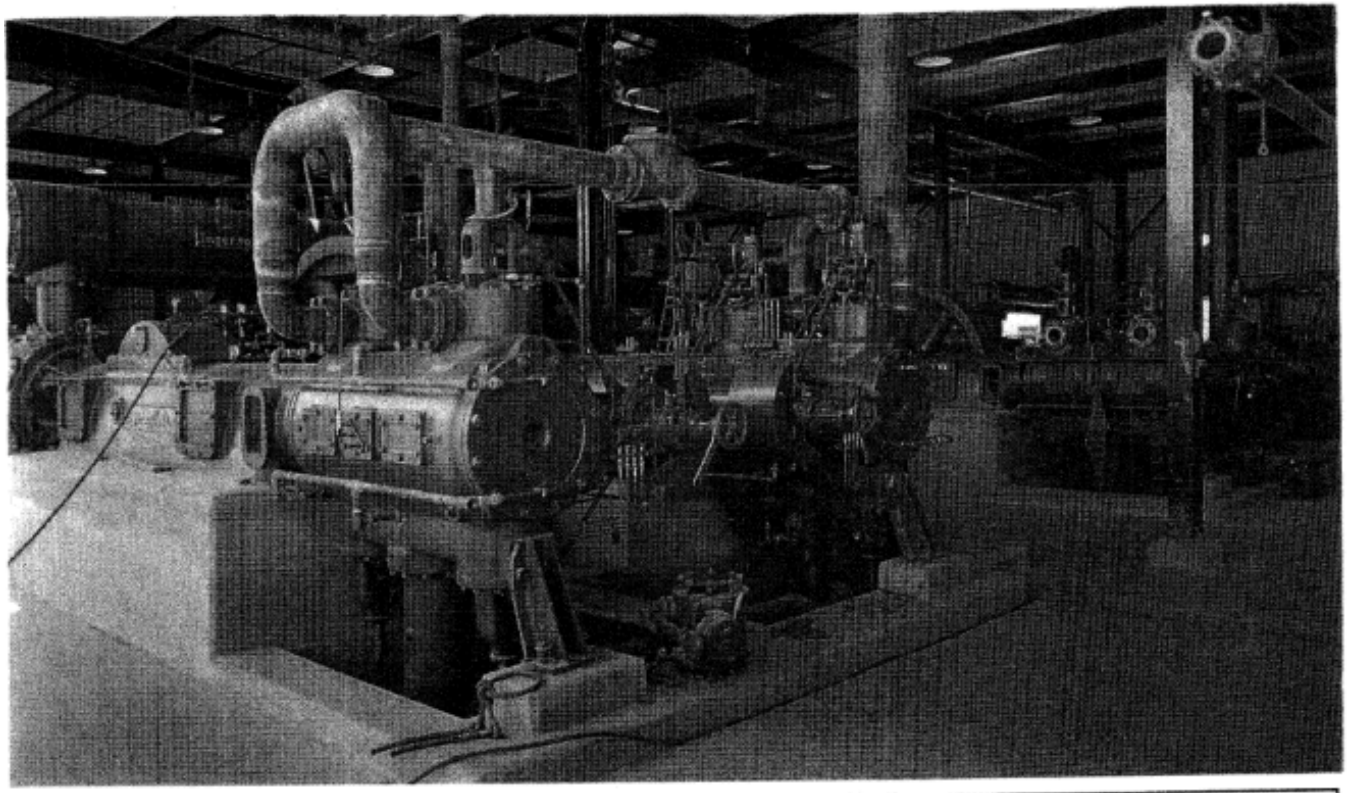

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AUGUST 7, 1942.

BUILDING NO. 302 A-1 - CONVERSION, ABSORPTION AND COMPRESSION HOUSE, LOOKING SOUTHWEST.

INDUSTRIAL INVENTORY

PAGE NO. 54.

AECOM

Vintage World War II ERA and Post-WW II ERA Photos of Longhorn Army Ammunition Plant

302 A-3

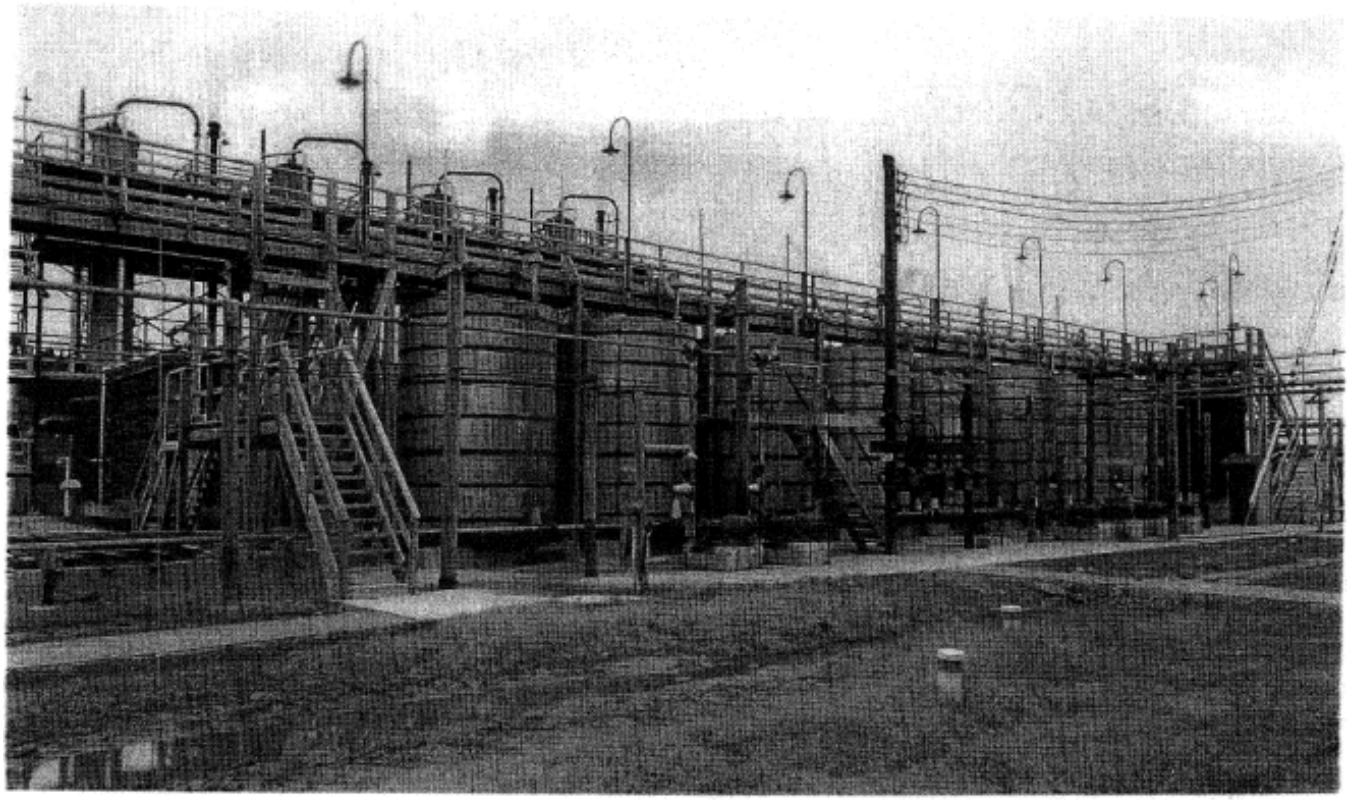

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LONGHORN ORDNANCE WORKS — February 1944.

Structure No. 302 A-3 - 62% N. A. Storage Tanks, looking northwest.

Industrial Inventory — Page No. 92.

AECOM

Vintage World War II ERA and Post-WW II ERA Photos of Longhorn Army Ammunition Plant

305 A-2

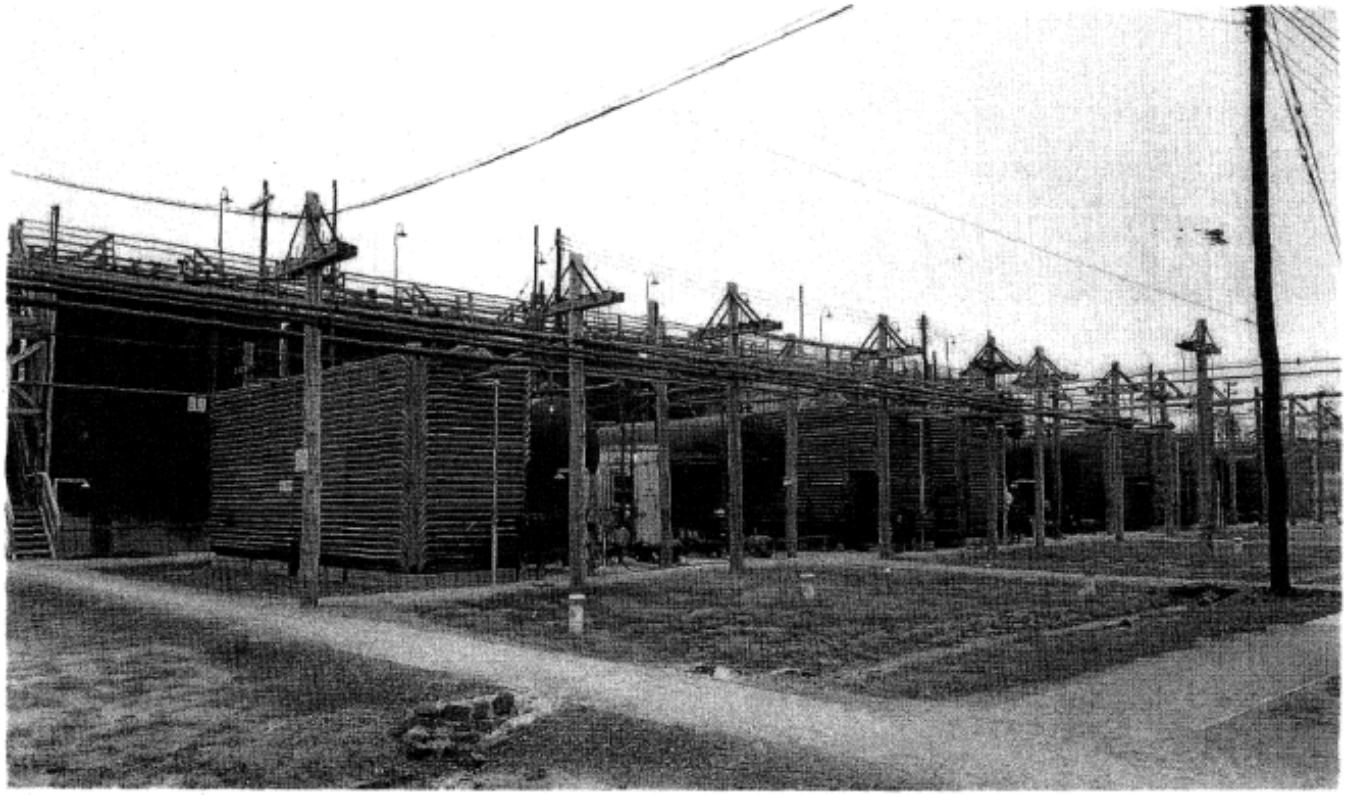

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LONGHORN ORDNANCE WORKS | February 1944.

Structure No. 305 A-2 - Concentrating Mix Circulators and Scale House, looking southeast.

Industrial Inventory | Page No. 93.

AECOM

Vintage World War II ERA and Post-WW II ERA Photos of Longhorn Army Ammunition Plant

303-A

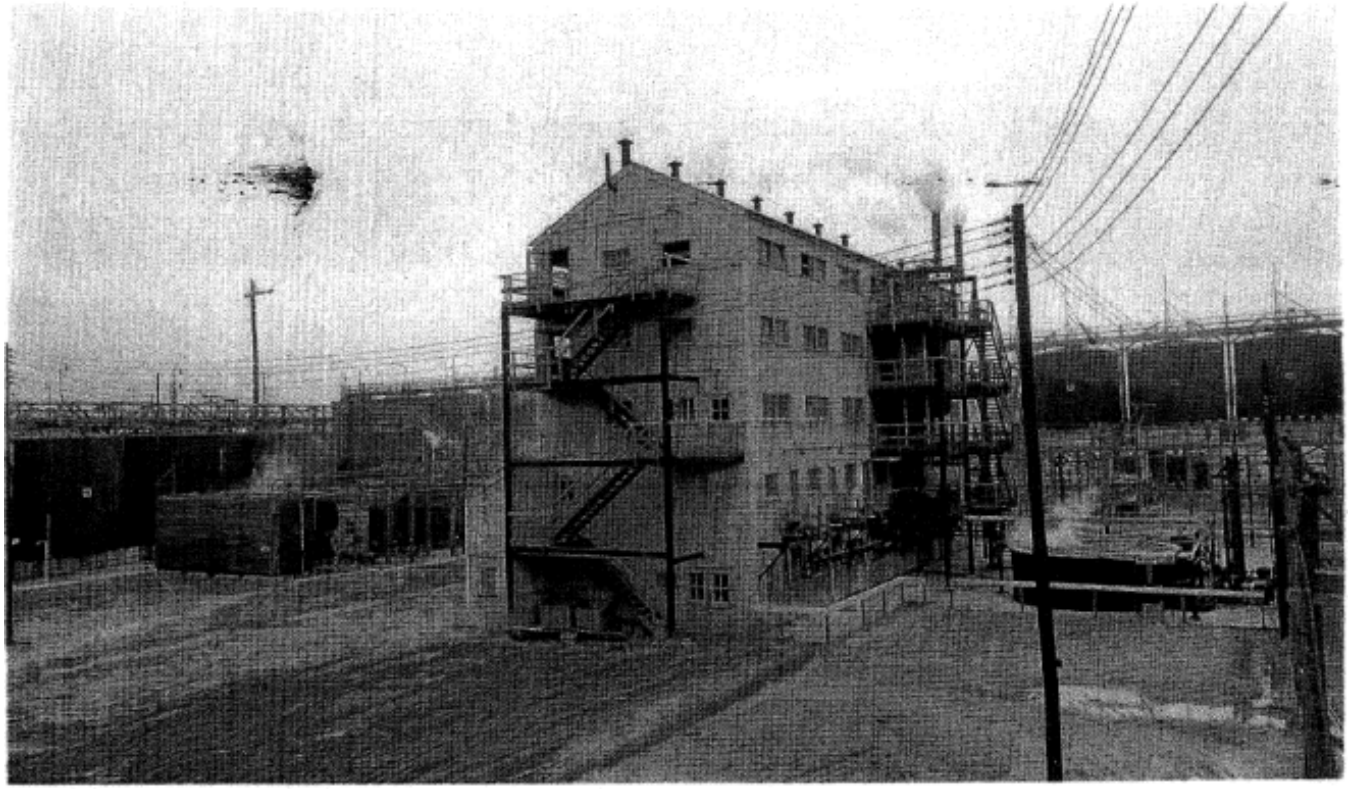

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LONGHORN ORDNANCE WORKS

FEBRUARY 1944.

BUILDING No. 303 A – CONCENTRATOR HOUSE – LOOKING NORTHWEST.

INDUSTRIAL INVENTORY

PAGE No. 56.

AECOM

Vintage World War II ERA and Post-WW II ERA Photos of Longhorn Army Ammunition Plant (cont.)

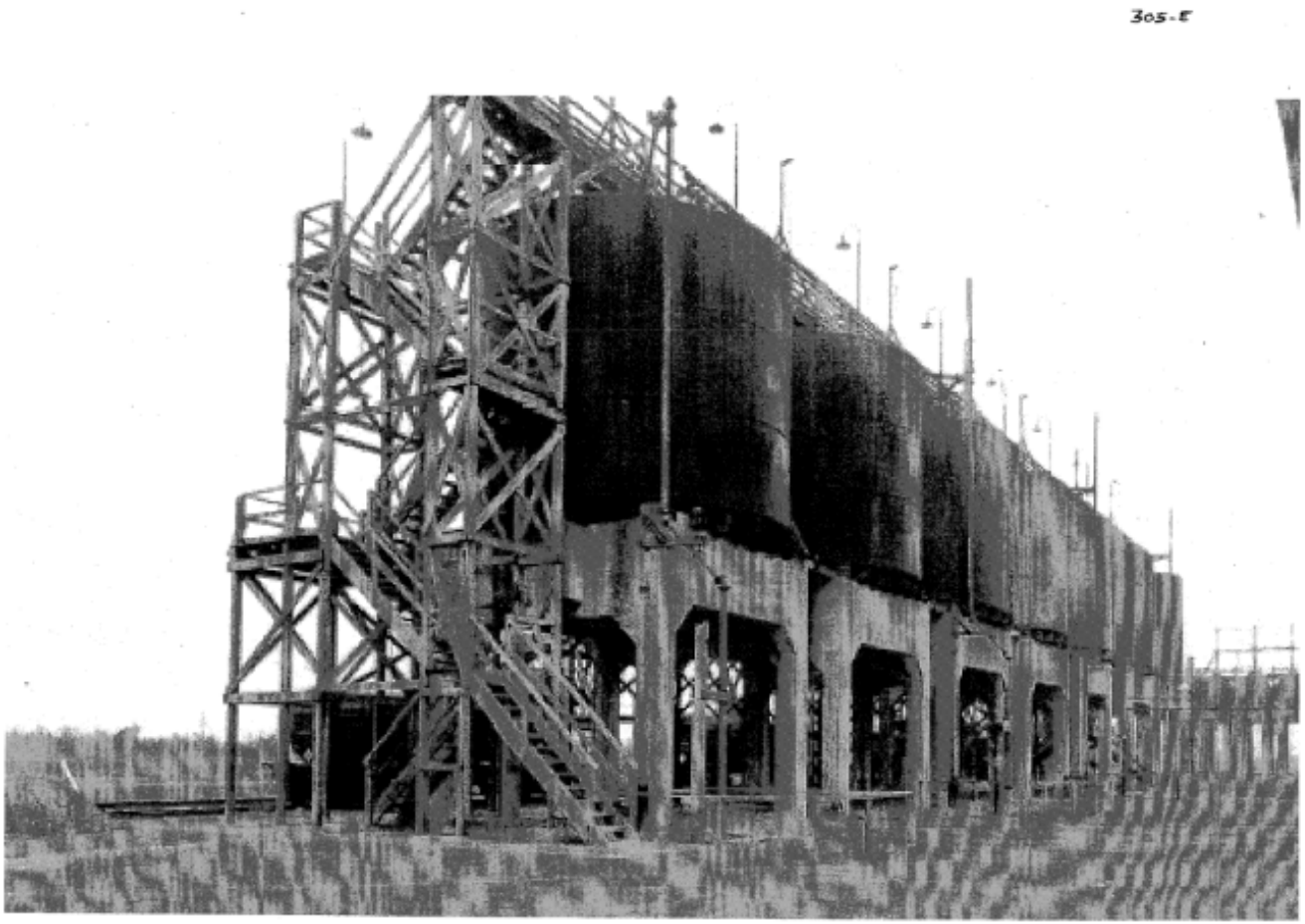

STRUCTURE No. 305-E

AECOM

Vintage World War II ERA and Post-WW II ERA Photos of Longhorn Army Ammunition Plant (cont.)

306-A

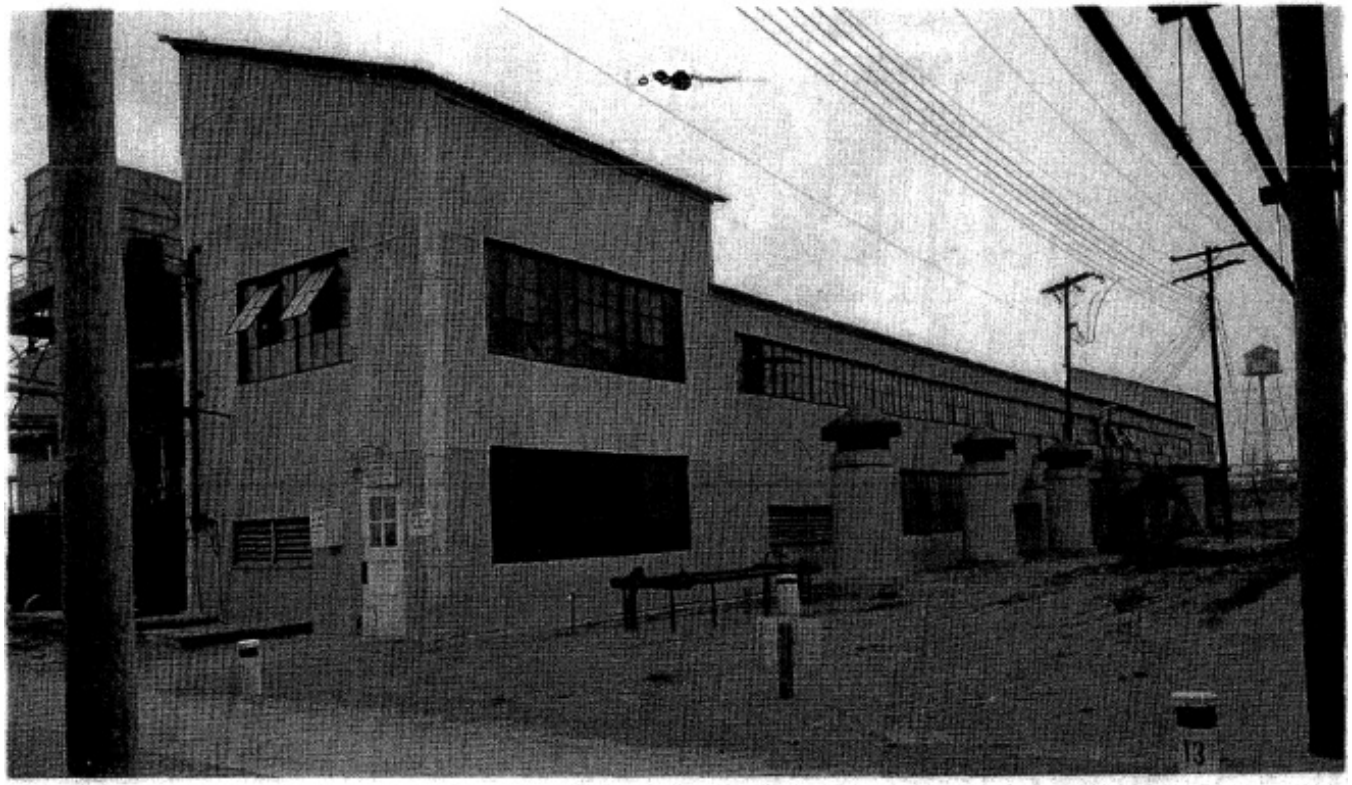

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BUILDING NO. 306 A – DARK S. A. CONCENTRATOR, SHOWING MAIN BUILDING, LOOKING SOUTHEAST.

INDUSTRIAL INVENTORY — PAGE NO. 60.

AECOM

Vintage World War II ERA and Post-WW II ERA Photos of Longhorn Army Ammunition Plant (cont.)

Site 49 - Former Acid Plant

1955 Aerial Photo

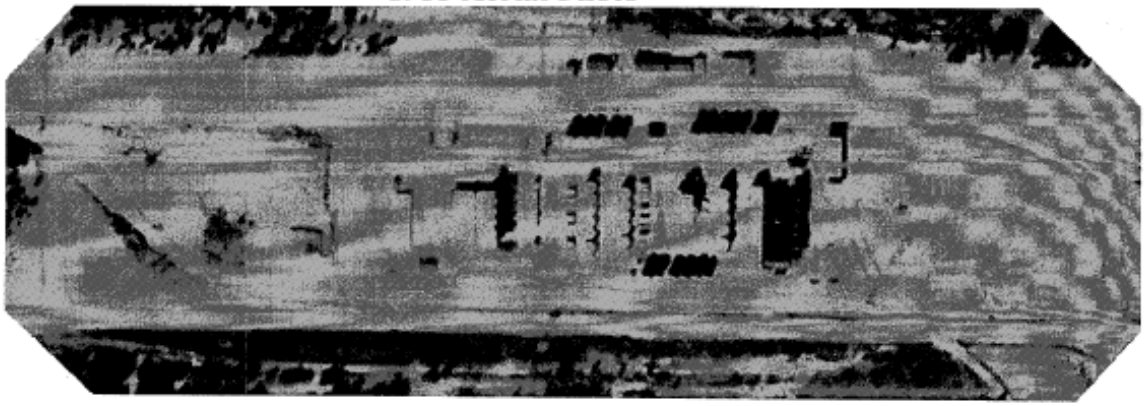

1963 Aerial Photo

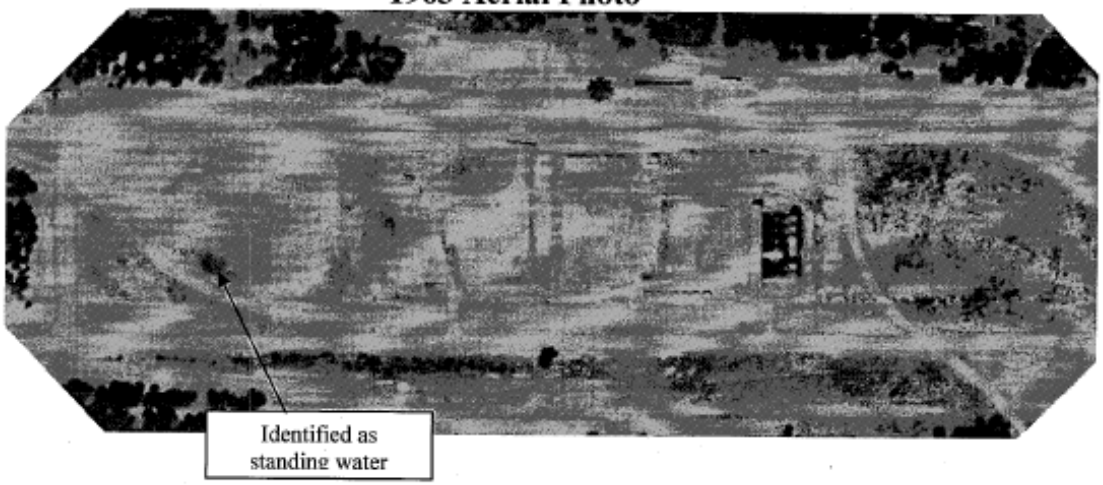

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Vintage World War II ERA and Post-WW II ERA Photos of Longhorn Army Ammunition Plant (cont.)

Next RAB Meeting Schedule and Closing Remarks

- Third Thursday in January 2017 is the 19th
  - Next RAB Meeting would normally be held on January 19th from 6:00 – 7:30 pm at the Karnack Community Center. However, this day/time is creating a conflict with RAB members who also attend the Caddo Lake Water Supply Corporation meetings, which are held the third Thursday of the month
  - Discuss potentially changing the day the RAB meetings are held
- Other Issues/Remarks?

AECOM

Questions?

AECOM

Groundwater Treatment Plant - Processed Groundwater Volumes

The amount of groundwater treated is determined by measuring the number of gallons of processed water.

Processed Water Data
(in gallons)

Oct-07	Nov-07	Dec-07	Jan-08	Feb-08	Mar-08	Apr-08	May-08	Jun-08	Jul-08	Aug-08	Sep-08
1,041,491	848,356	804,822	792,148	665,883	818,872	791,306	568,812	776,904	748,377	690,052	617,199

Oct-08	Nov-08	Dec-08	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09
655,059	619,274	726,118	552,299	598,144	433,800	488,807	526,958	387,644	0	414,853	735,716

Oct-09	Nov-09	Dec-09	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10	Jul-10	Aug-10	Sep-10
808,322	636,306	727,492	391,898	695,343	802,656	894,731	962,121	1,257,977	1,314,924	1,041,495	1,136,547

Oct-10	Nov-10	Dec-10	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11
956,567	705,805	849,712	811,679	668,281	1,090,348	817,325	900,338	916,552	784,369	652,524	733,456

Oct-11	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12
748,102	658,250	684,903	865,453	725,000*	730,000*	980,000*	630,000*	0	0	0	349,012

Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13
617,037	607,610	560,436	869,710	751,213	641,708	699,776	746,885	392,719	962,890	843,913	716,057

Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14
813,974	727,442	706,416	552,657	738,691	844,095	811,346	972,913	611,505	626,253	573,601	575,376

Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15
440,877	572,479	634,890	614,073	516,592	1,111,859	1,108,336	822,637	1,020,313	1,002,887	951,758	306,467

Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16
128,586	209,088	120,234	454,444	1,028,210	1,201,904	1,224,064	1,094,528	792,311

*Indicates Estimate

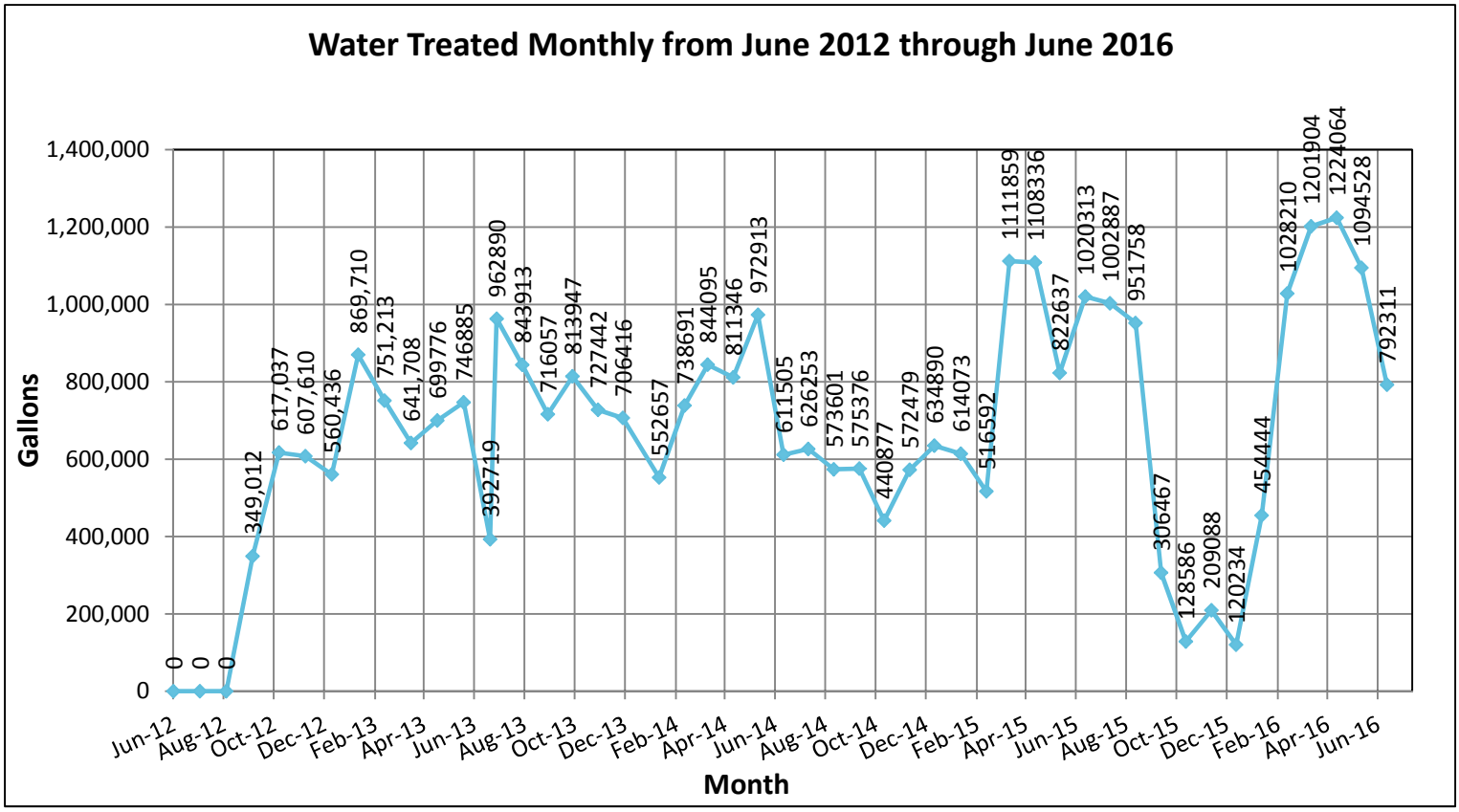

The pounds of chemicals removed for the 2nd Quarter of 2016 can be found below and are calculated by the following formula:

$$\frac{\text{(GWTP Influent Contaminant Concentration [µg/L] x Volume [gallons] x 3.785 [liters per gallon])}}{\text{(453,600,000 µg per pound)}}$$

Approximate Amount of Pounds of Chemicals Removed From LHAAP-18/24, 2nd Quarter 2016

	Trichloroethylene	Methylene Chloride	Perchlorate
Apr-16	105	132	164
May-16	88.1	108	109
Jun-16	120	71.0	139

ND – no data available

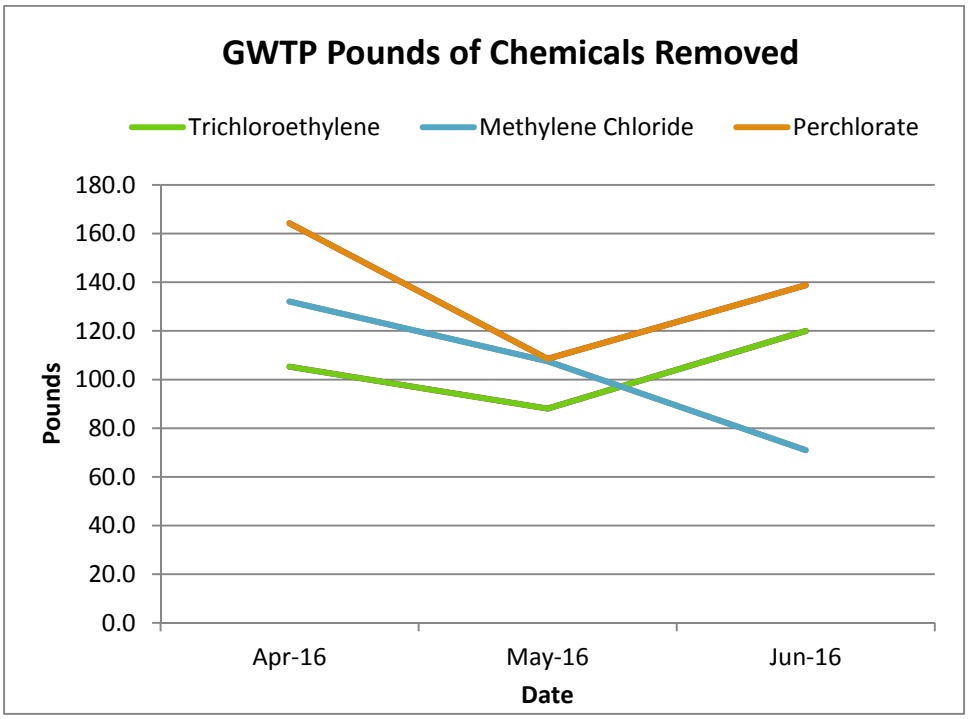

Water Discharge Location and Volume (Gallons)

Month	Harrison Bayou	LHAAP-18/24 Sprinklers	INF Pond
Apr-16	0	1,073,434	0
May-16	0	991,436	0
Jun-16	0	768,600	0

Harrison Bayou and Goose Prairie Creek – Perchlorate Data

Surface water samples are collected quarterly from each location in Harrison Bayou and Goose Prairie Creek, unless the sampling location is dry.

Surface Water Sample Data
(in micrograms per liter)

Quarter	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st
Creek Sample ID	**Jul 1999**	**Sep 1999**	**Feb 2000**	**Apr 2000**	**Aug 2000**	**Dec 2000**	**Feb 2001**	**Apr 2001**	**July 2001**	**Oct 2001**	**Jan 2002**
GPW-1	<1.0U	-	4	<4.0 U	<4.0 U	<4.0 U	-	2.65	<4.0 U	<4.0 U	<4.0 U
GPW-3	<1.0U	<4.0 U	17	8	<4.0 U	<4.0 U	-	2.28	<4.0 U	<4.0 U	<4.0 U
HBW-1	-	<80.0 U	310	23	-	-	<4.0 U	-	<4.0 U	<4.0 U	<4.0 U
HBW-7	-	<8.0 U	370	110	-	-	<4.0 U	-	<4.0 U	<4.0 U	<4.0 U
HBW-10	-	<8.0 U	905	650	<4.0 U	-	<4.0 U	-	<4.0 U	-	-

Quarter	2nd	3rd	4th	1st	2nd	3rd	3rd	4th	2nd	3rd	4th
Creek Sample ID	**June 2002**	**Sept 2002**	**Dec 2002**	**Feb 2003**	**June 2003**	**Aug 2003**	**July 2004**	**Dec 2006**	**May 2007**	**Aug 2007**	**Dec 2007**
GPW-1	<4.0 U	<4.0 U	18.3	18.6	59.9	-	2.25	-	<1.0 U	<1.0 U	10.7
GPW-3	<4.0 U	<4.0 U	5.49	12.6	14.7	-	2.2	-	<1.0 U	<1.0 U	7.48
HBW-1	<4.0 U	<4.0 U	<4.0 U	-	<4.0 U	99.3	<0.2U	<1.0 U	<1.0 U	122	<1.0 U
HBW-7	<4.0 U	<4.0 U	<4.0 U	-	<4.0 U	<4.0 U	<0.2U	<1.0 U	<1.0 U	1.02	<1.0 U
HBW-10	<4.0 U	<4.0 U	<4.0 U	-	<4.0 U	-	<0.2U	<1.0 U	<1.0 U	<1.0 U	<1.0 U

Quarter	1st	2nd	3rd	4th	2nd	3rd	3rd	3rd	4th	1st	2nd
Creek Sample ID	**Mar 2008**	**Jun 2008**	**Sep 2008**	**Dec 2008**	**May 2009**	**Jul 2009**	**Aug 2009**	**Sep 2009**	**Dec 2009**	**Mar 2010**	**Jun 2010**
GPW-1	27	<0.5U	<0.5U	<0.22U	16	<4U	NS	<1.2U	3.7	1.3J	<0.6U
GPW-3	21.9	9.42	1.1	<0.22U	8.9	<4U	NS	<0.6U	2.8	1.8J	<0.6U
HBW-1	<0.5U	<0.5U	<0.5U	<0.22U	<0.55U	<4U	NS	<1.5U	<0.275U	1.5U	<0.6U
HBW-7	<0.5U	<0.5U	<0.5U	<0.22U	<0.55U	<4U	24	<1.2U	<0.275U	1.5U	<0.6U
HBW-10	<0.5U	<0.5U	<0.5U	<0.22U	<0.55U	<4U	NS	<1.5U	<0.275U	1.2U	<0.6U

Quarter	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st
Creek Sample ID	**Sep 2010**	**Dec 2010**	**Mar 2011**	**Jun 2011**	**Sep 2011**	**Dec 2011**	**Mar 2012**	**Jun 2012**	**Not Applicable**	**Jan & Feb 2013**	**Mar 2013**
GPW-1	dry	<0.1U	8.7	dry	dry	1.76	0.163J	dry	NS	1.65	0.735
GPW-3	dry	0.199J	0.673	dry	dry	1.31	0.261	dry	NS	1.74	0.754
HBW-1	dry	<0.1U	<0.2U	dry	dry	<0.1U	0.1U	dry	NS	<0.2U	<0.2U
HBW-7	dry	<0.1U	<0.2U	dry	dry	0.171J	0.1U	dry	NS	<0.2U	<0.2U
HBW-10	dry	<0.1U	<0.2U	dry	dry	<0.1U	0.1U	dry	NS	<0.2U	<0.2U

Quarter	2nd	3rd	4th	1st	2nd	3nd	4th	1st	2nd	3rd	4th
Creek Sample ID	**Jun 2013**	**Sept 2013**	**Dec 2013**	**Feb 2014**	**May 2014**	**Aug 2014**	**Nov 2014**	**Feb 2015**	**May 2015**	**Aug 2015**	**Nov 2015**
GPW-1	dry	<0.2 U	dry	0.766	dry	dry	0.244 J	0.311 J	0.156J	dry	0.142 J
GPW-3	dry	<0.2 U	dry	1.15	dry	dry	0.276 J	0.344 J	dry	dry	0.311 J
HBW-1	<0.2U	<0.2 U	dry	<0.2 U	dry	dry	<0.2 U	<0.2 U	dry	dry	<0.2 U
HBW-7	<0.2U	<0.2 U	dry	0.201 J	dry	dry	<0.2 U	0.124 J	dry	dry	<0.2 U
HBW-10	<0.2U	<0.2 U	dry	<0.2 U	dry	dry	<0.2 U	<0.2 U	dry	dry	<0.2 U

Quarter	1st	2nd	3rd
Creek Sample ID	**Feb 2016**	**May 2016**	**Aug 2016**
GPW-1	0.447	6.59	<0.2 U
GPW-3	0.474	0.457	0.141
HBW-1	<0.2 U	<0.2 U	<0.2 U
HBW-7	<0.2 U	<0.2 U	<0.2 U
HBW-10	<0.2 U	<0.2 U	<0.2 U

NS – not sampled U – non-detect J – Estimated Dry – no surface water

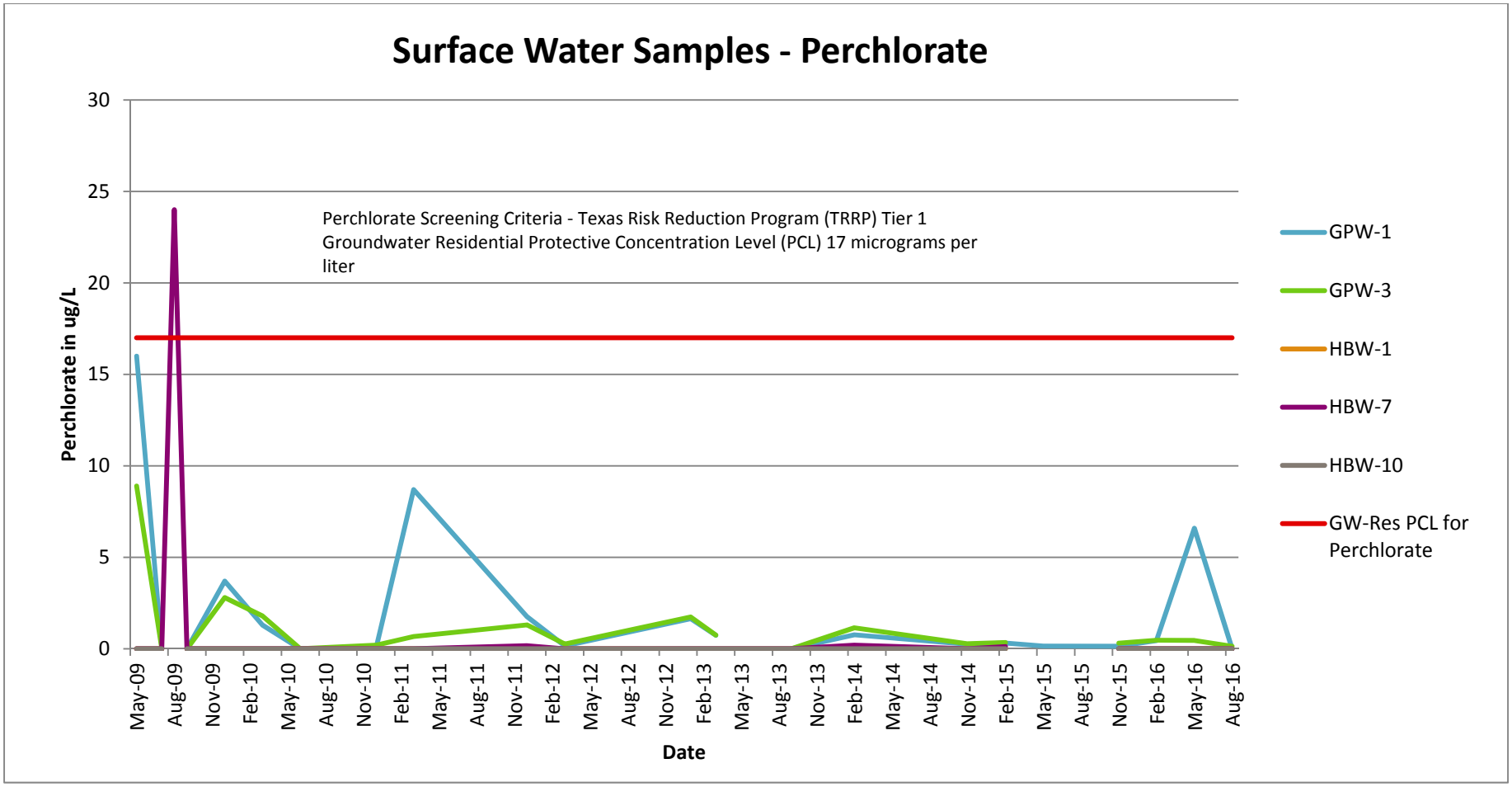
Surface Water Samples - Perchlorate
Perchlorate Screening Criteria - Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level (PCL) 17 micrograms per liter
Perchlorate in ug/L
30
25
20
15
10
5
0
May-09
Aug-09
Nov-09
Feb-10
May-10
Aug-10
Nov-10
Feb-11
May-11
Aug-11
Nov-11
Feb-12
May-12
Aug-12
Nov-12
Feb-13
May-13
Aug-13
Nov-13
Feb-14
May-14
Aug-14
Nov-14
Feb-15
May-15
Aug-15
Nov-15
Feb-16
May-16
Aug-16
Date
GPW-1
GPW-3
HBW-1
HBW-7
HBW-10
GW-Res PCL for Perchlorate

Longhorn Army Ammuntion Plant Creek Sampling Locations

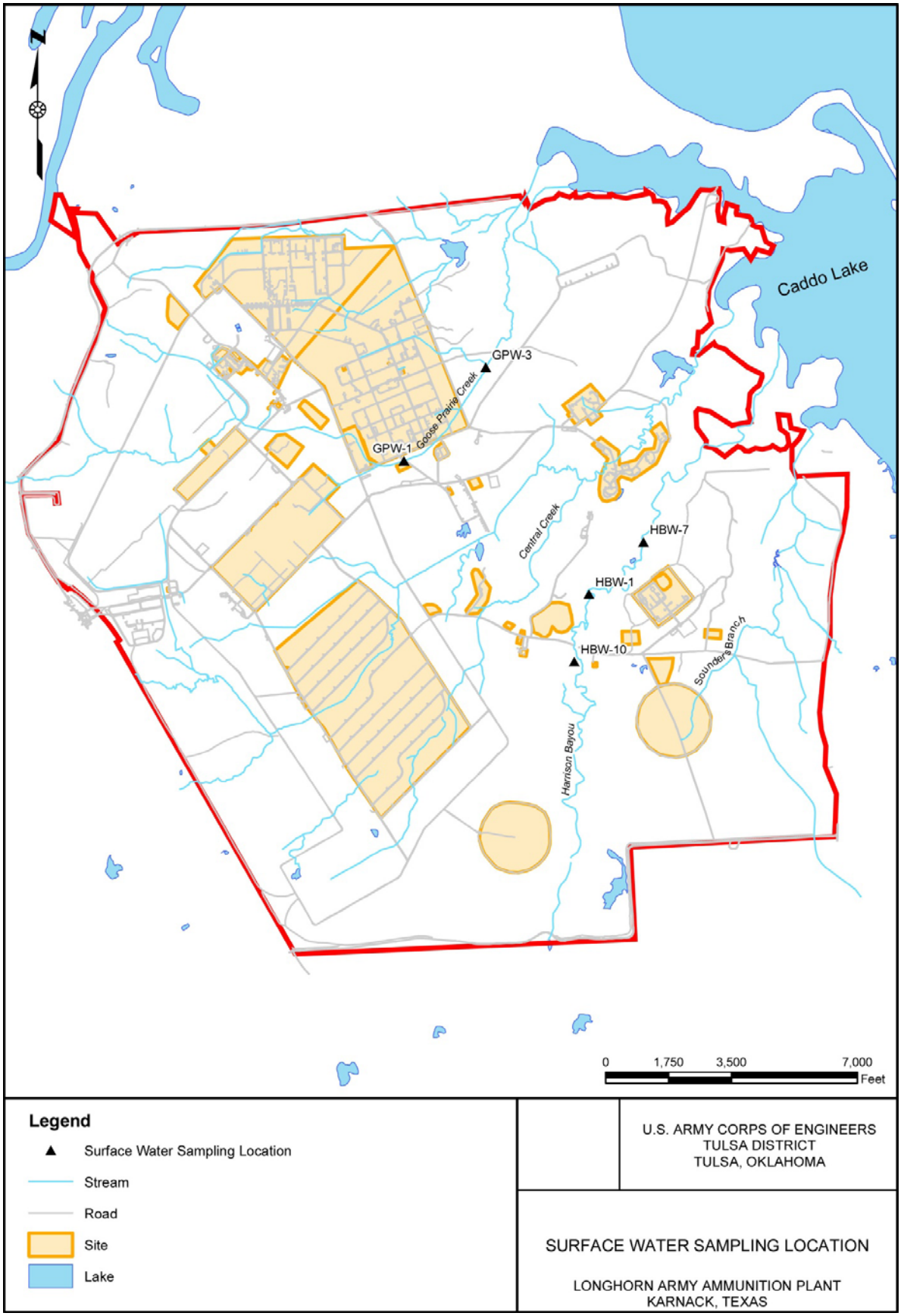

LHAAP Perimeter Well Monitoring – Perchlorate Data

Groundwater samples are currently collected annually from four wells and semi-annually from two wells on the LHAAP perimeter.

Perimeter Well Sample Data
(in micrograms per liter)

Well ID	Jun 2005	Sep 2005	Sep 2006	May 2007	Aug 2007	Dec 2007	Mar 2008	Sep 2008	May 2009	Sep 2009	Mar 2010
108	NS	NS	10 U	NS	0.5 U	NS	NS	2.5 U	NS	1.2 U	NS
110	NS	NS	10 U	NS	10 U	NS	NS	5.0 U	NS	6 U	NS
111	NS	NS	4 U	NS	0.5 U	NS	NS	0.5 U	NS	0.3 U	NS
112	NS	NS	5 U	NS	3 U	NS	NS	2.0 U	NS	3 U	NS
133	0.541	0.597	1.08	1 U	1.09	0.5 U	0.5 U	0.5 U	0.47 J	0.32	Dry
134	0.881	0.725	0.708 J	1 U	0.949 J	0.5 U	0.5 U	0.829 U	0.04 J	0.3 U	0.3 U

Well ID	Sep 2010	Mar 2011	Sep 2011	Oct 2012	Mar 2013	Jun 2013	Apr 2014	Jun 2014	Dec 2014	Jun 2015	Dec 2015
108	3 U	NS	0.1 U	0.2 U	0.2 U	NS	NS	0.2 U	NS	0.566	NS
110	Dry	NS	Dry	0.535	0.2 U	NS	NS	0.2 U	NS	2U	NS
111	Dry	NS	Dry	Dry	1.32	NS	NS	Dry	NS	0.2U	NS
112	3 U	NS	0.26	0.2 U	0.2 U	NS	NS	0.458	NS	2U	NS
133	0.32	Dry	0.68	0.598	0.655	0.685	0.988	0.887	0.665	0.692	0.952
134	0.45	0.636	1.11	0.671	0.698	0.706	0.863	0.989	0.890	1.11	0.925

Well ID	Jun 2016
108	0.2 U
110	0.2 U
111	0.2 U
112	0.2 U
133	0.536
134	0.997

Notes:
J – Estimated U – Non-Detect Dry – Well Dry NS – Not Sampled

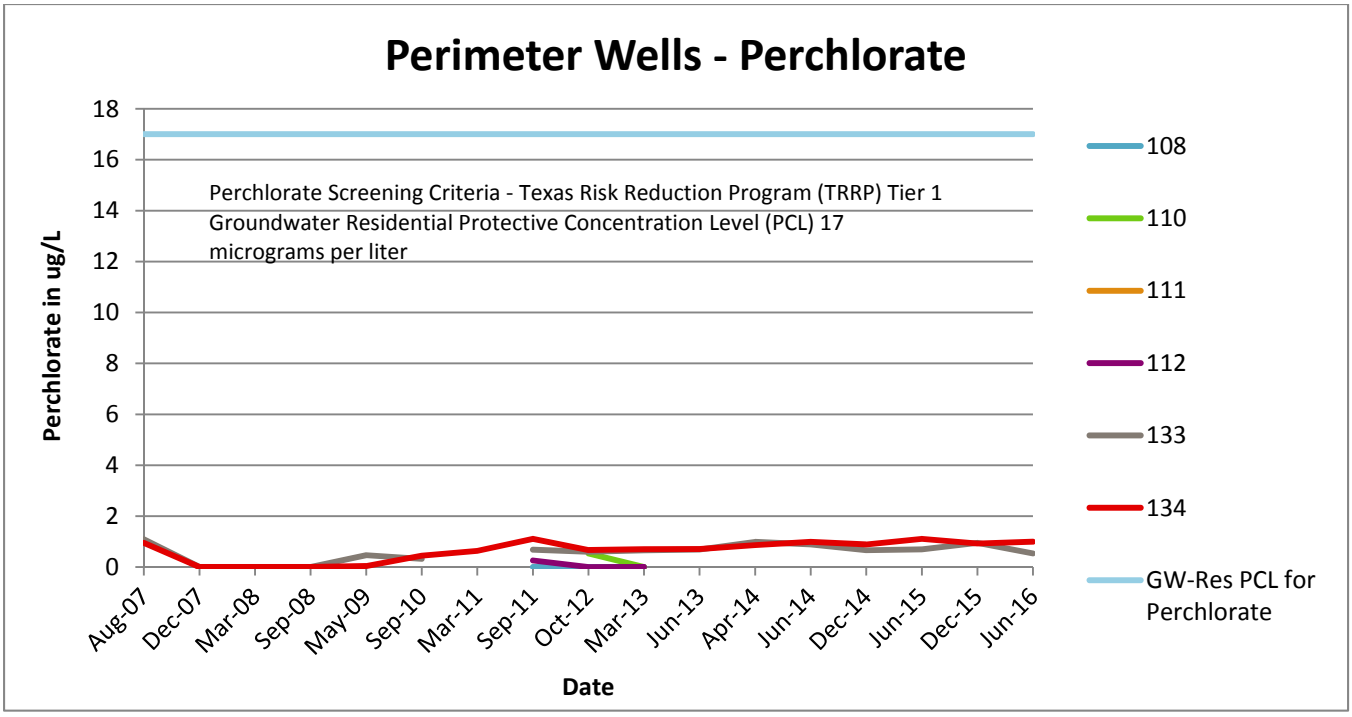

Longhorn Army Ammuntion Plant Map with Perimeter Well Locations

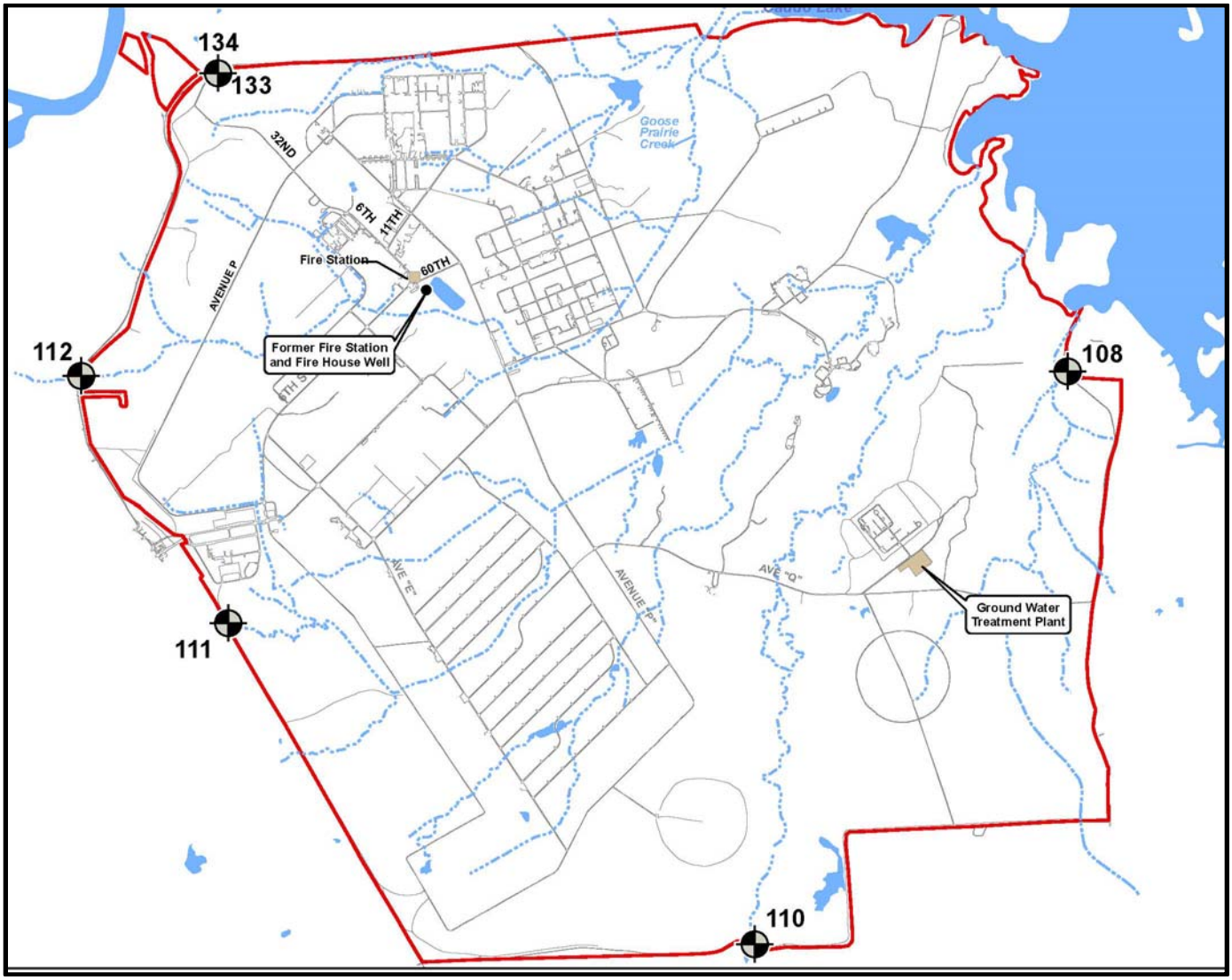

LHAAP-16, Landfill

SELECTED REMEDY: Cap Maintenance, Land Use Controls, In Situ Enhanced Bioremediation, Biobarriers, and Monitored Natural Attenuation

Site History

LHAAP-16 is a capped landfill located in the south-central portion of the Longhorn Army Ammunition Plant (LHAAP). The site encompasses approximately 20 acres, of which approximately 13 acres are covered by the landfill cap. The landfill was established in 1940s and was used for disposal of solid and industrial wastes until the 1980s when disposal activities were terminated. The Army and the USEPA signed a Record of Decision (ROD) in 1995 approving an interim remedial action which included the construction of a multilayer landfill cap that was completed in 1998. In 1996 and 1997, a groundwater extraction system was installed by the Army to prevent the groundwater plume from migrating to Harrison Bayou. After resolution of a dispute between Army and EPA in March 2016, the 2011 Draft Final ROD was revised and the final ROD was finalized in September with a selected remedy of Cap Maintenance, Land Use Controls (LUCs), In Situ Enhanced Bioremediation, Biobarriers, and Monitored Natural Attenuation (MNA).

Site Characteristics

Harrison Bayou runs along the northeastern edge of LHAAP-16. Much of the site is relatively flat, though land becomes steeper near Harrison Bayou. Surface drainage from LHAAP-16 flows mostly through small gullies and ditches to Harrison Bayou which discharges into Caddo Lake to the northeast of the site. The subsurface at the site is composed of medium plastic sandy silt, fine sands, and clay. The clay layers tend to separate the groundwater into shallow, intermediate, upper deep, and deep zones. The groundwater flow direction is northeast toward Harrison Bayou in the shallow, intermediate and deep zones, while flow direction is southeast toward Harrison Bayou in the upper deep groundwater zone. Groundwater flow between the landfill and Harrison Bayou is also influenced by the presence of an extraction well system.

Remedial Action Objectives (RAOs)

- Protection of human health and the environment by preventing exposure to landfill contents;
- Protection of human health and the environment by reducing leaching and migration of landfill hazardous substances into the groundwater;
- Protection of human health by preventing human exposure to the contaminated groundwater;
- Protection of human health and the environment by preventing COCs and COC by-products from migrating into Harrison Bayou at levels that cause surface water in Harrison Bayou to exceed surface water criteria and;
- Return of groundwater to its potential beneficial uses as drinking water, wherever practicable

Chemicals of Concern

In the groundwater, the COCs are trichloroethene [TCE], cis-1,2-dichloroethene [DCE], vinyl chloride [VC]), perchlorate, and five metals (arsenic, chromium, manganese, nickel and thallium).

Description of the Selected Remedy:

Cap Maintenance:
Maintenance and repair of the existing landfill cap.

LUCs include:
- preserve the integrity of the landfill cap, and restrict intrusive activities (e.g., digging) that would degrade or alter the cap, as long as the landfill waste remains at the site or until the levels of COCs allow for unlimited use and unrestricted exposure.
- restrict the use of groundwater to-environmental monitoring and testing only and restricting land use to nonresidential will remain in place until the levels of COCs in surface and subsurface soil and groundwater allow for unlimited use and unrestricted exposure.
- maintain the integrity of any current or future remedial or monitoring systems will remain in place until groundwater cleanup levels of COCs are met.
- prohibit groundwater use (except for environmental monitoring and testing) as a potable source will remain in place until the levels of COCs in soil and groundwater allow for unlimited use and unrestricted exposure.

In Situ Enhanced Bioremediation:
In situ enhanced bioremediation in the most contaminated portion of the shallow and intermediate groundwater zones to reduce contaminant mass and lower the contaminant concentrations.

Biobarriers:
Installation of a biobarrier in the downgradient portion of the contaminant plume to prevent contaminated groundwater from seeping into Harrison Bayou at concentrations that would cause surface water to exceed Texas Surface Water Quality Standards, the Safe Drinking Water Act (SDWA) maximum contaminant levels (MCLs), and in the absence of federal drinking water standards, cleanup levels based on Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Levels (PCLs). A second biobarrier will be installed at the edge of the landfill to control potential migration of volatile organic compounds (VOCs) from the landfill.

MNA:
MNA will be implemented for areas outside the influence of the active remedies to assure protection of human health and the environment by documenting that further reductive dechlorination is occurring within the plume and that contaminant concentrations are being reduced to cleanup levels. MNA will also be implemented in the areas of active remediation following successful implementation of in situ bioremediation and the biobarriers.

CERCLA Five Year Reviews and inspections of physical mechanisms at LHAAP-16.

LHAAP-16, Landfill

00634238

SELECTED REMEDY: Cap Maintenance, Land Use Controls, In Situ Enhanced Bioremediation, Biobarriers, and Monitored Natural Attenuation

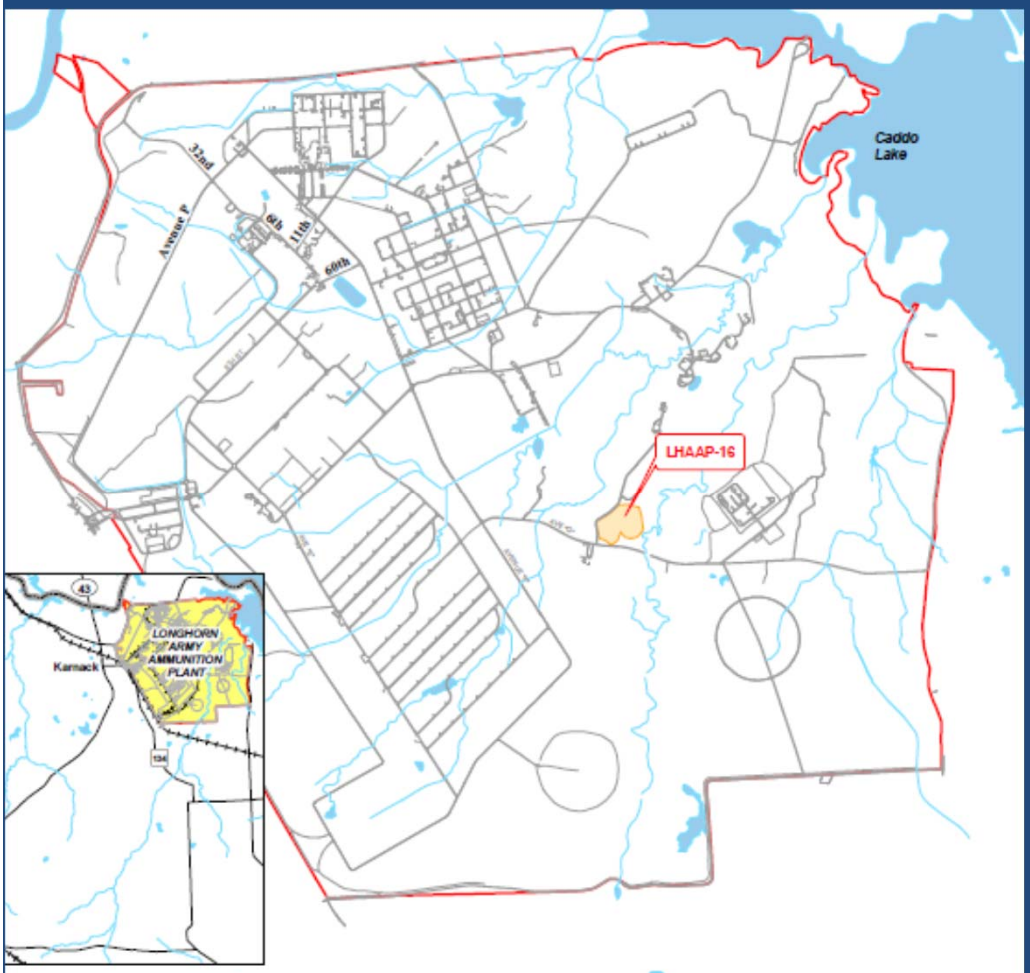

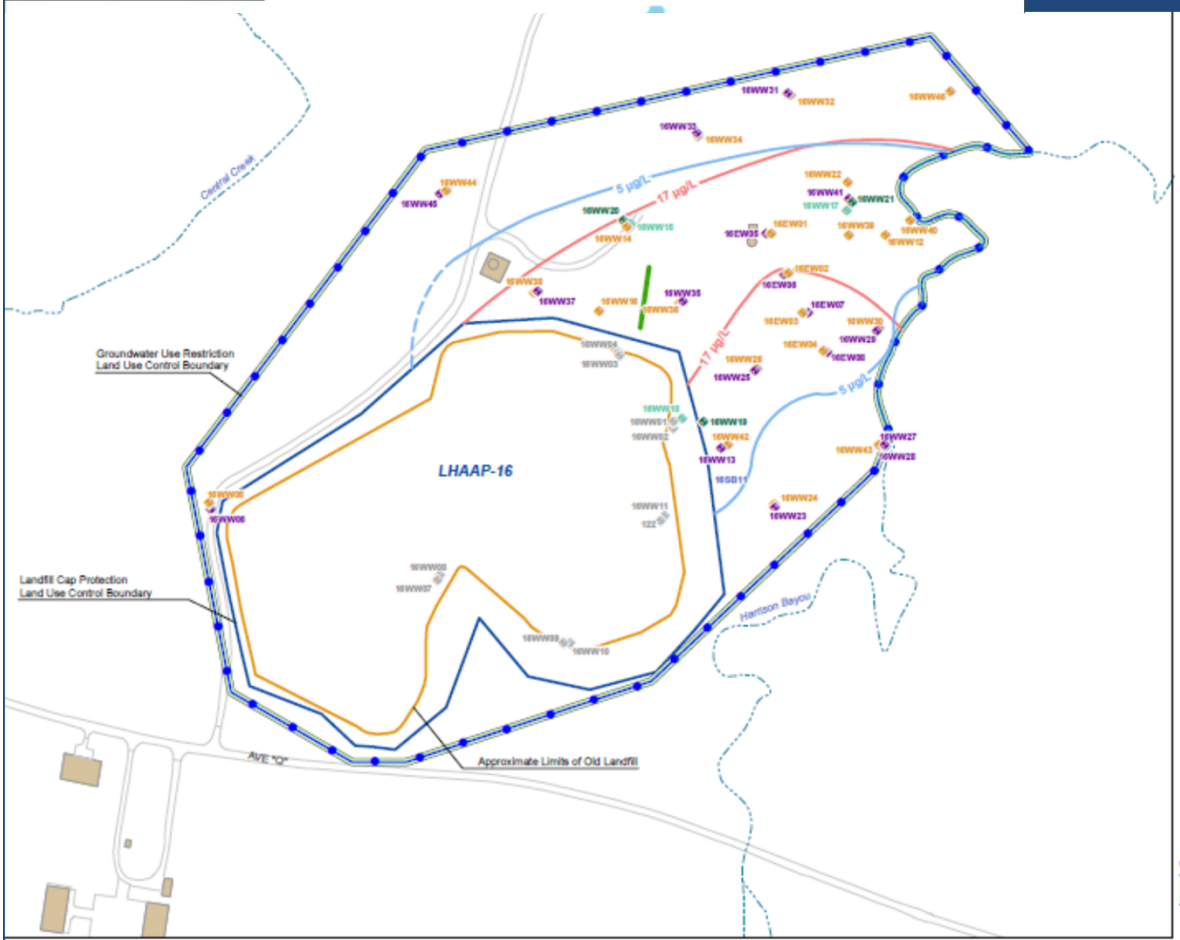

Legend

- Existing Shallow Monitoring Well
- Existing Intermediate Monitoring Well
- Existing Upper Deep Monitoring Well
- Existing Lower Deep Monitoring Well
- Abandoned or Plugged Well
- Extent of Perchlorate Contamination > 17 ug/L in Intermediate and Shallow Zones
- Extent of TCE Contamination > 5 ug/L in Intermediate and Shallow Zones (Dashed Where Inferred)
- Location of Semi-Passive Biobarrier Demonstration (February 2004 through June 2006 [ESTCP 2009]).
- Road
- Stream
- Remedial and Monitoring System Boundary
- Groundwater Use Restriction Land Use Control Boundary
- LHAAP-16 Landfill Fence

LHAAP-17, Burning Ground No. 2/Flashing Area
SELECTED REMEDY: Excavation and Offsite Disposal of Soil, Groundwater Extraction, Monitored Natural Attenuation and Land Use Controls

Site History
LHAAP-17, known as the former Burning Ground No.2/Flashing Area, is located in the southeastern portion of LHAAP and covers approximately 4 acres. Historically, LHAAP-17 was used as a burning ground from 1959 through 1980. Materials burned included trinitrotoluene (TNT), photo flash powder, reject material from Universal Match Corporation and materials removed from the TNT Production Area (LHAAP-29) and the TNT Waste Disposal Area (LHAAP-32). It was also used as a flashing area to decontaminate recoverable metal byproducts. After resolution of a dispute between Army and EPA in March 2016, the 2011 Draft Final ROD was revised and the final ROD was finalized in September with a selected remedy of Excavation and Offsite Disposal of Soil, Groundwater Extraction, Monitored Natural Attenuation (MNA) and implementation of Land Use Controls (LUCs).

Site Characteristics
The surface features include two 184 foot by 305 foot cleared areas separated by a gravel access road. The site is covered with grass, scattered brush, and small trees. The topography is relatively flat. Harrison Bayou is located to the west and north of LHAAP-17 within approximately 1,200 feet of the site. The surface drainage flows to ditches along the boundaries of the site which flow into Harrison Bayou. The bayou discharges to Caddo Lake, a source of drinking water for several neighboring communities in Louisiana. Shallow zone groundwater is approximately 18 to 35 feet below ground surface (bgs), the intermediate zone is approximately 55 feet bgs and the deep zone is approximately 151 feet bgs. The predominant groundwater flow direction in the shallow and intermediate zones varies seasonally, but is generally to the northwest towards Harrison Bayou.

Remedial Action Objectives (RAOs)
- Protection of human health by preventing human exposure to the contaminated groundwater and contaminated soil;
- Protection of human health by preventing further potential degradation of groundwater from contaminated soil;
- Protection of ecological receptors by preventing exposure to the contaminated soil;
- Protection of human health and the environment by preventing contaminated groundwater from migrating into nearby surface water; and
- Return of groundwater to its potential beneficial uses as drinking water, wherever practicable.

Chemicals of Concern
In the soil, chemicals of concern (COCs) are explosives (2,4,6-trinitrotoluene [TNT], 2,4-dinitrotoluene [DNT], 2,6-DNT) and perchlorate (potential soil COC based on groundwater concentrations); and chemicals of potential ecological concern (COPECs) are explosives (2,4,6-TNT, 2,4-DNT, 2,6-DNT); dioxins (2,3,7,8-tetrachlorodibenzo-p-dioxin [TCDD] toxicity equivalence concentration [TEC]); and barium.

In the shallow groundwater zone, the COCs are perchlorate and volatile organic compounds (VOCs) (1,2-dichloroethane [DCA], 1,1-dichloroethene [DCE], cis-1,2-DCE, trichloroethene [TCE], and vinyl chloride [VC]). In the intermediate groundwater zone, the COCs are TCE and its daughter products (DCE and VC).

Description of the Selected Remedy:

Soil Excavation:
The excavation will remove explosives, barium and dioxin contamination for off-site disposal that is a direct risk to the hypothetical future maintenance worker, is a potential source of contaminant migration to groundwater, and poses a risk to ecological receptors.

Groundwater Extraction:
The desired outcome is to reduce perchlorate concentrations in the groundwater to 20,000 ug/L or lower during an operational period of 1.5 years at which point MNA is anticipated to be favorable.

Contingency Remedy for Groundwater Extraction:
If groundwater extraction does not reduce perchlorate levels to 20,000 ug/L in the 1.5 year extraction timeframe, the contingency remedy would implement in situ bioremediation.

MNA:
MNA begins following groundwater extraction activities and the performance objectives of MNA will be evaluated after 2 years.

Contingency Remedy for MNA:
If MNA is found to be ineffective, the contingency remedy would implement in situ bioremediation.

LTM:
If MNA is determined to be effective, monitoring will be conducted to evaluate the remedy performance and determine if the plume conditions remain constant, improve or worsen after the baseline is established.

Implementation of LUCs:
- restrict the use of groundwater to environmental monitoring and testing only and restricting land use to nonresidential will remain in place until the levels of COCs in surface and subsurface soil and groundwater allow for unlimited use and unrestricted exposure.
- maintain the integrity of any current or future remedial or monitoring systems will remain in place until groundwater cleanup levels of COCs are met.
- prohibit groundwater use (except for environmental monitoring and testing) as a potable source will remain in place until the levels of COCs in soil and groundwater allow for unlimited use and unrestricted exposure.

CERCLA Five Year Reviews until the levels of COCs in soil and groundwater allow for unlimited use and unrestricted exposure.

LHAAP-17, Burning Ground No. 2/Flashing Area

00634240

SELECTED REMEDY: Excavation and Offsite Disposal of Soil, Groundwater Extraction, Monitored Natural Attenuation and Land Use Controls

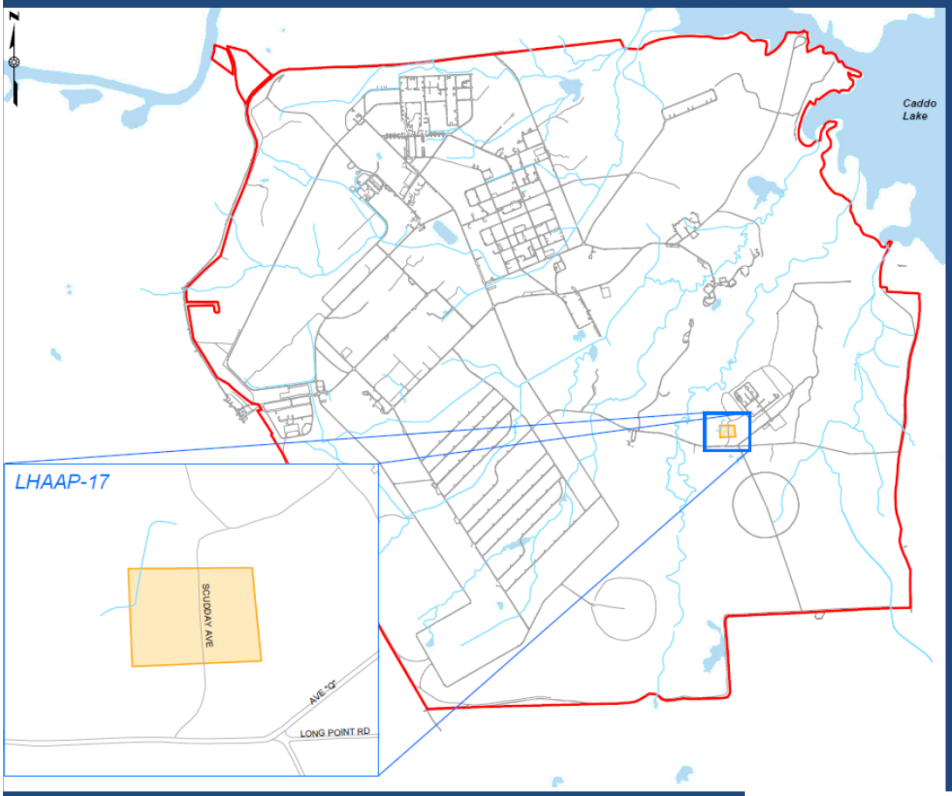

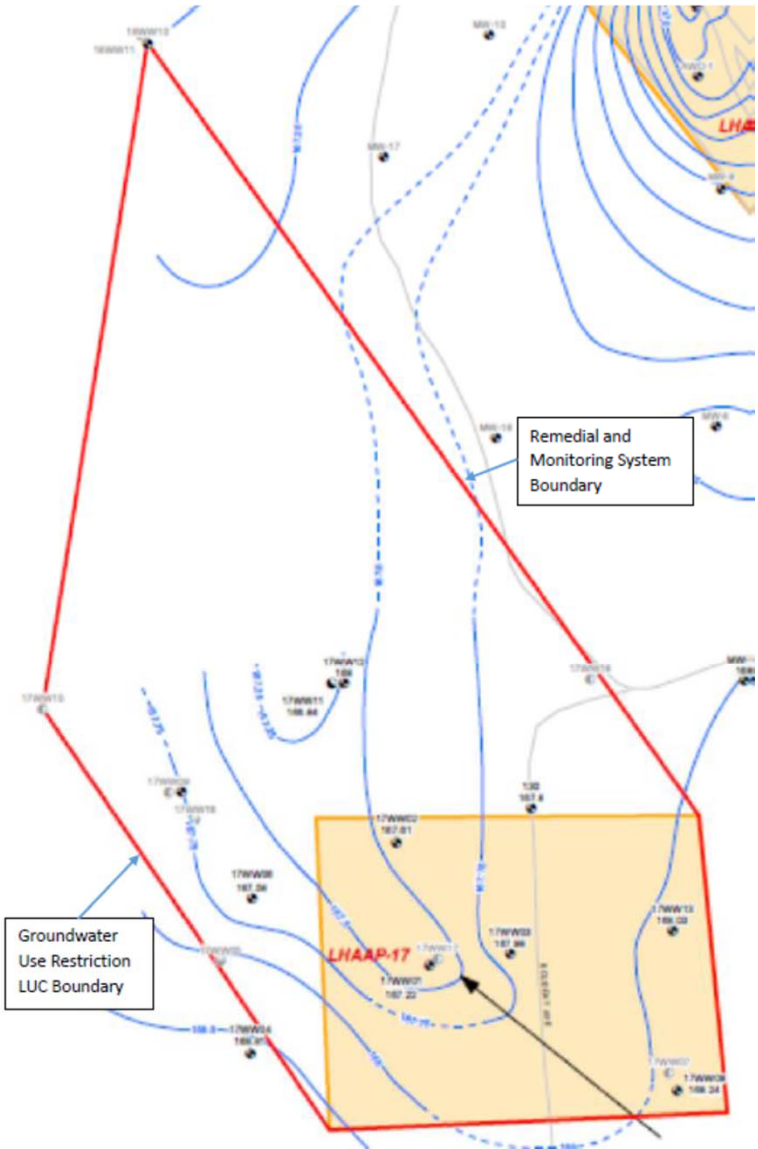

LHAAP-001-R, South Test Area/Bomb Test Area
SELECTED REMEDY: Land Use Controls and Limited Groundwater Monitoring

Site History

LHAAP-001-R, the South Test Area/Bomb Test Area, is located in the southern portion of LHAAP and covers an area of approximately 79 acres. LHAAP-001-R was constructed in 1954 and used for testing photoflash bombs produced at the facility until about 1956. During the late 1950s, illuminating signal devices were also demilitarized within pits excavated in the vicinity of the test pad. During the early 1960s, leaking production items may have been demilitarized by detonation. Leaking white phosphorus (WP) munitions were supposedly disposed of although no primary source documentation concerning this effort was located. A 1984 LHAAP Contamination Survey stated the area had been relatively inactive since the early 1960s and no disposal or testing activities were carried out in this area. LHAAP-001-R is co-located with Installation Restoration Program site LHAAP-27. LHAAP-001-R was identified as a munitions and explosives of concern (MEC) area of concern based on the visual confirmation of MEC. In 2008, a MEC removal action was conducted and LUCs were developed. A total of 384 MEC/material potentially presenting explosive hazard (MPPEH) items and 14 inert items were located and destroyed and a total of 22,139 pounds of munitions debris and 1,876 pounds of cultural debris were removed during the course of clearance. In addition, LUCs were developed that included restrictions against intrusive activities including digging; signage at the perimeter of the site; and an education program for future refuge visitors, staff, and volunteers. After resolution of a dispute between Army and EPA in March 2016, the 2011 Draft Final ROD was revised and the final ROD was finalized in September with a selected remedy of implementation of LUCs and limited groundwater monitoring for perchlorate, in addition to the completed removal action.

Site Characteristics

The topography slopes gently to the east and surface water runoff from the hillside flows generally to the southeast and into Harrison Bayou. Groundwater at the site was encountered between 7 and 9 ft below ground surface. Groundwater is topographically controlled with a general flow direction to the east toward the floodplain of Harrison Bayou. Sampling conducted by the USEPA and Army in 2009 resulted in a detection of perchlorate in one well at a concentration above the Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level (PCL) of 17 ug/L.

Remedial Action Objective (RAO)

- Protection of human health and safety from explosive hazards that may have remained at the site after the MEC removal action and confirmation that perchlorate is present in groundwater at levels below the chemical specific criterion

Description of the Selected Remedy:

Implementation of LUCs:

- to prohibit the development and use of the property for residential housing, elementary and secondary schools, and child care facilities and playgrounds, and to prohibit intrusive activities such as digging or any other activity which could result in explosive safety risks.
- to prohibit residential land use will remain in place until it is demonstrated that the MEC no longer presents a threat to public/human safety.
- to restrict land use to nonresidential will remain in place until it is demonstrated that the MEC no longer presents a threat to public/human safety.
- to prohibit intrusive subsurface activities, including digging, will remain in place until it is demonstrated that the MEC no longer present an explosive hazard

Limited groundwater monitoring:

Limited groundwater monitoring for perchlorate will confirm perchlorate level in groundwater is below the TRRP Tier 1 Groundwater Residential PCL which is the state remedial standard utilized in the absence of a federal drinking water standard.

Five Year Reviews will be conducted because explosive hazards may remain at the sites that do not allow for unlimited use and unrestricted exposure.

LHAAP-001-R, South Test Area/Bomb Test Area

00634242

SELECTED REMEDY: Land Use Controls and Limited Groundwater Monitoring

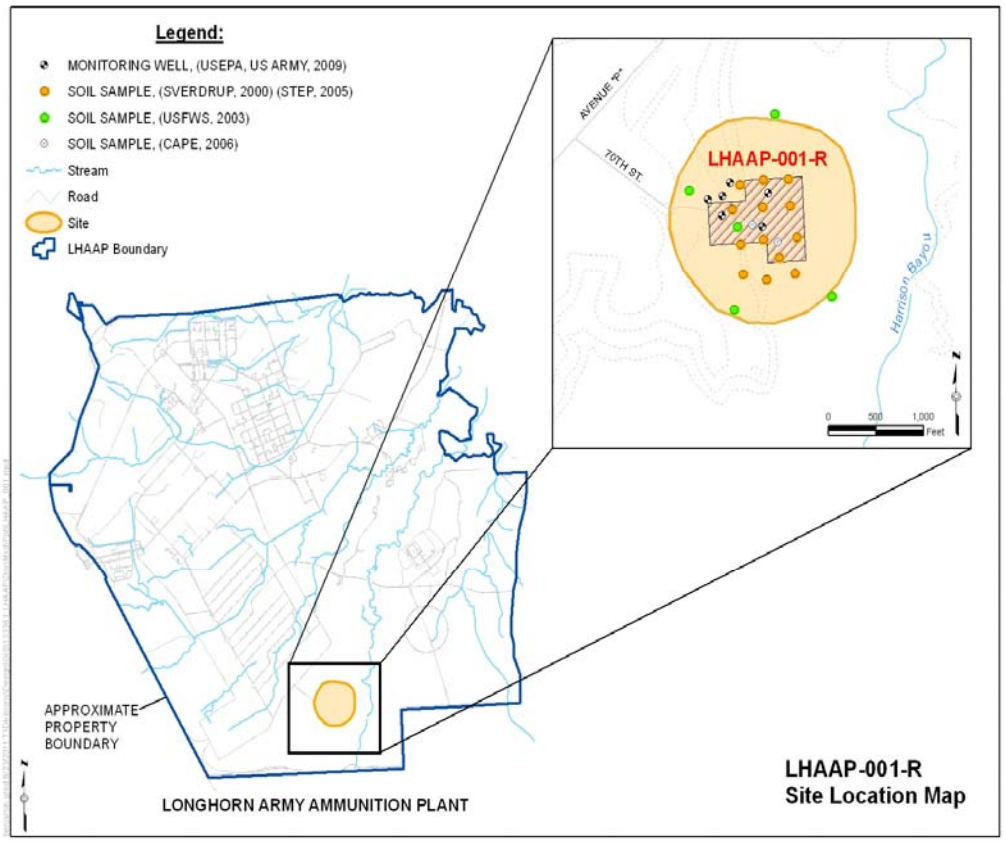

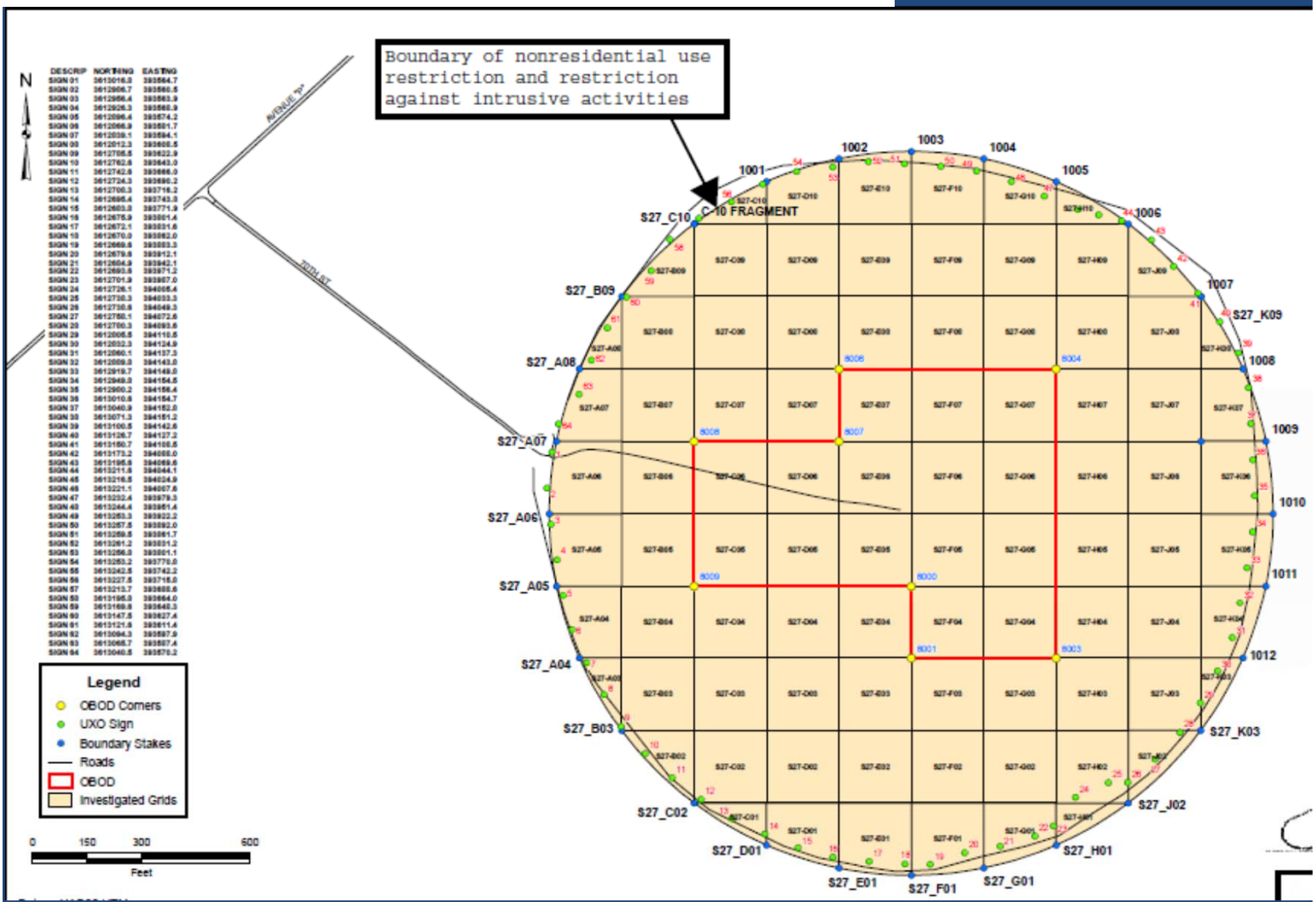

LHAAP-003-R, Ground Signal Test Area

SELECTED REMEDY: Land Use Controls and Limited Groundwater Monitoring

Site History

LHAAP-003-R, the Ground Signal Test Area, is located in the southeastern portion of LHAAP and covers an area of approximately 80 acres. LHAAP-003-R was used intermittently starting in April 1963 for aerial and on-ground testing and destruction of a variety of devices, including pyrotechnic signal devices, red phosphorus smoke wedges, infrared flares, illuminating mortar shells and cartridges, button bombs, and various types of explosive simulators. The site was also used intermittently over a 20-year period for testing and burn-out of rocket motors. From late 1988 through 1991, the site was also used for burn-out of rocket motors in Pershing missiles. Occasionally, leaking white phosphorus (WP) munitions were burned at the site as a demilitarization activity. LHAAP-003-R is co-located with Installation Restoration Program site LHAAP-54. LHAAP-003-R was identified as a munitions and explosives of concern (MEC) area of concern based on the reported presence of MEC. In 2008 MEC removal action was conducted and LUCs were developed. A total of 12 MEC/material potentially presenting explosive hazard (MPPEH) items and one inert item were located and destroyed and 6,880 pounds of munitions debris and 5,981 pounds of cultural debris were removed during the course of surface clearance. In addition, LUCs were designed that include restrictions against intrusive activities including digging; signage at the perimeter of the site; and education programs for future refuge visitors, staff, and volunteers. After resolution of a dispute between Army and EPA in March 2016, the 2011 Draft Final ROD was revised and the final ROD was finalized in September with a selected remedy of implementation of LUCs and limited groundwater monitoring for perchlorate, in addition to the completed removal action.

Site Characteristics

The site is located within the watersheds of Saunders Branch and Harrison Bayou. Both Saunders Branch and Harrison Bayou flow into Caddo Lake. Surface water runoff from the site is towards drainage ditches located alongside the circular dirt road forming the outer margin of the site. The ditches converge to the northeast and the southwest directing surface water to Saunders Branch and Harrison Bayou, respectively. The depth to groundwater at the site averages about 15 feet below ground surface with some seasonal fluctuations. The regional groundwater flow direction is to the north-northeast toward Caddo Lake; however, during periods of high precipitation the groundwater flow direction in the southwestern portion of the site diverts to the northwest towards Harrison Bayou. The additional groundwater sampling conducted by the USEPA and U.S. Army in 2009 indicated that perchlorate was detected in one well at a concentration below the Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level (PCL) of 17 ug/L.

Remedial Action Objective (RAO)

- Protection of human health and safety from explosive hazards that may have remained at the site after the MEC removal action and confirmation that perchlorate is present in groundwater at levels below the chemical specific criterion

Description of the Selected Remedy:

Implementation of LUCs:

- to prohibit the development and use of the property for residential housing, elementary and secondary schools, and child care facilities and playgrounds, and to prohibit intrusive activities such as digging or any other activity which could result in explosive safety risks.
- to prohibit residential land use will remain in place until it is demonstrated that the MEC no longer presents a threat to public/human safety.
- to restrict land use to nonresidential will remain in place until it is demonstrated that the MEC no longer presents a threat to public/human safety.
- to prohibit intrusive subsurface activities, including digging, will remain in place until it is demonstrated that the MEC no longer present an explosive hazard

Limited groundwater monitoring:

Limited groundwater monitoring for perchlorate will confirm perchlorate level in groundwater is below the TRRP Tier 1 Groundwater Residential PCL which is the state remedial standard utilized in the absence of a federal drinking water standard.

Five Year Reviews will be conducted because explosive hazards may remain at the sites that do not allow for unlimited use and unrestricted exposure.

LHAAP-003-R, Ground Signal Test Area

00634244

SELECTED REMEDY: Land Use Controls and Limited Groundwater Monitoring

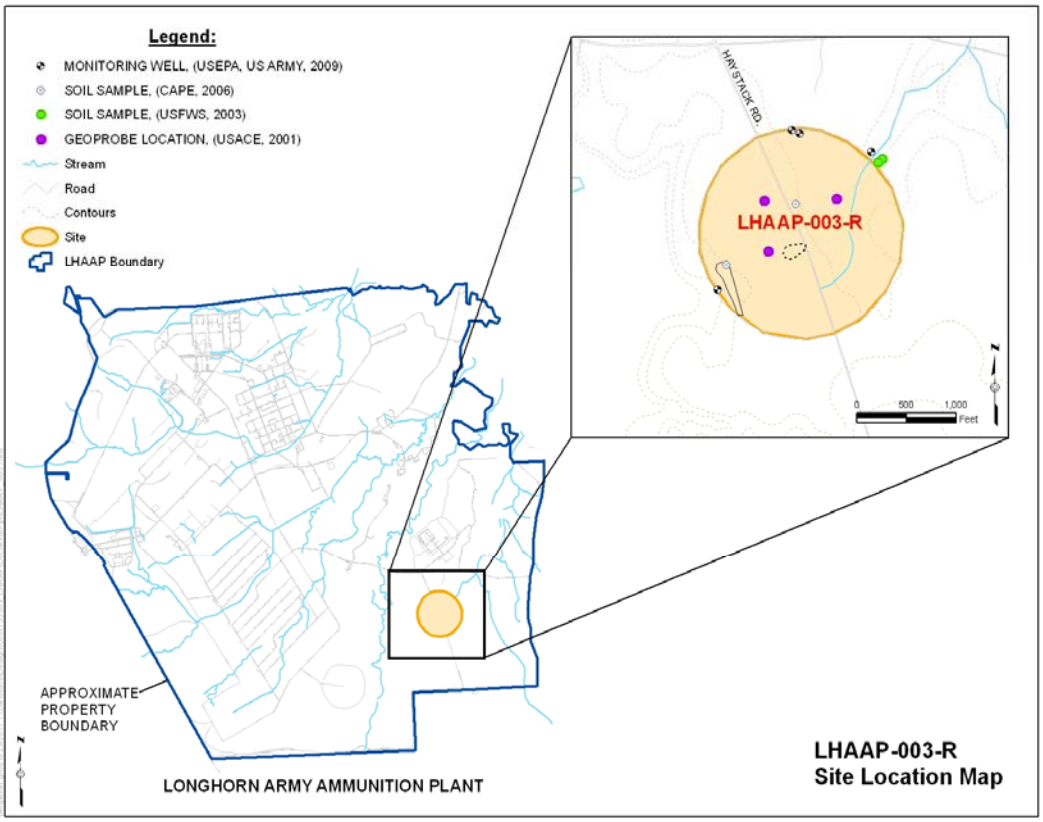

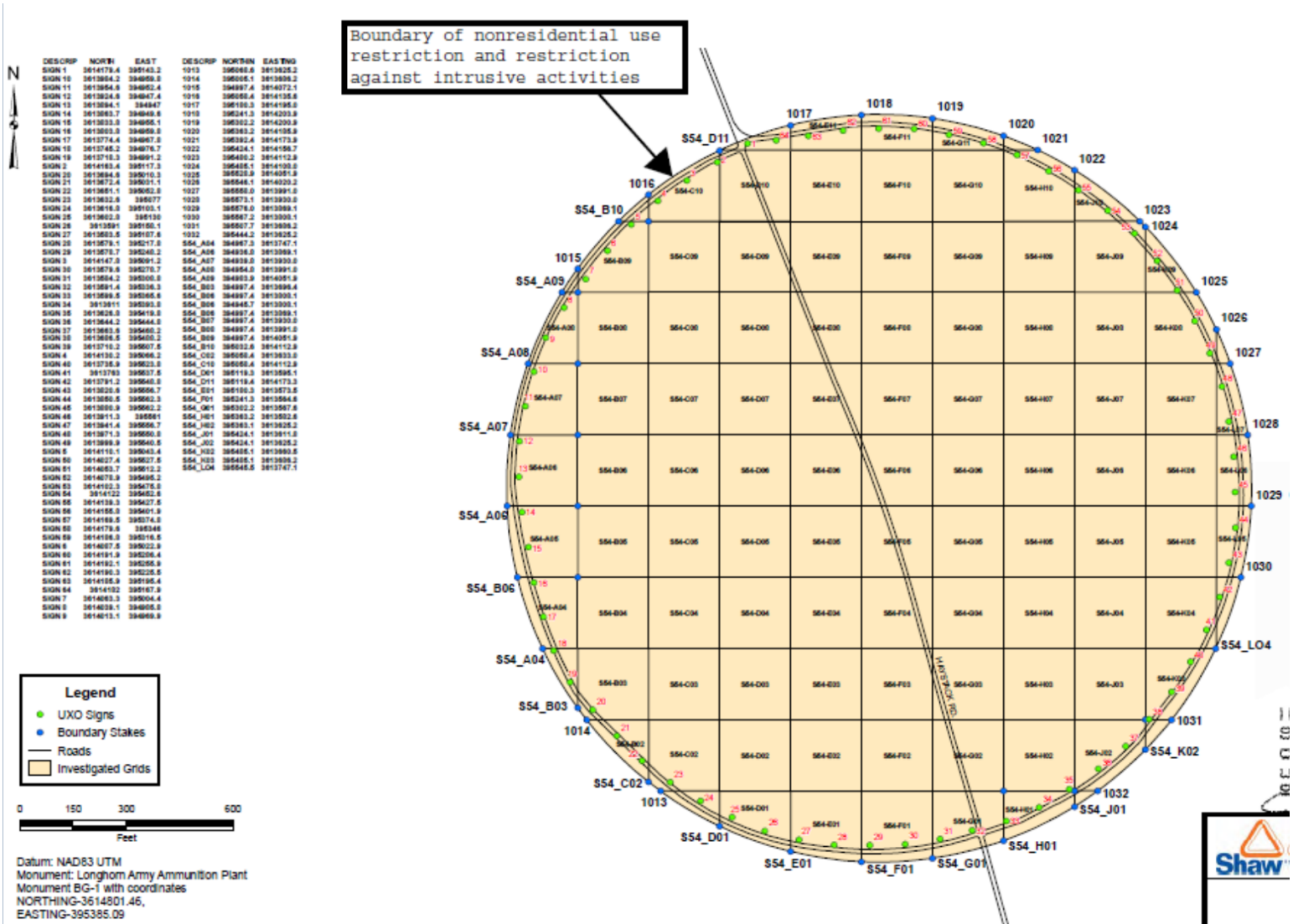

LHAAP-16

3.0 Responsiveness Summary

The Responsiveness Summary serves three purposes. First, it provides the U. S. Army, USEPA, and TCEQ with information about community concerns with the preferred alternative at LHAAP-16 as presented in the Proposed Plan. Second, it shows how the public's comments were considered in the decision-making process for selection of the remedy. Third, it provides a formal mechanism for the U.S. Army to respond to public comments.

The U.S. Army, USEPA, and TCEQ provide information regarding LHAAP-16 through public meetings, the Administrative Record for the facility, and announcements published in the Shreveport Times and Marshall News Messenger newspapers. **Section 2.3** discusses community participation on LHAAP-16, including the dates for the public comment period, the date, location, and time of the public meetings, and the location of the Administrative Record. The following documents related to community involvement were added to the Administrative Record:

- Transcript of the public meeting on October 19, 2010
- Presentation slides from the October 19, 2010 public meeting
- Written questions and comments from the public during the public comment period, and the U.S. Army response to those comments dated March 14, 2011.

3.1 Stakeholder Issues and Lead Agency Responses

This section responds to significant issues raised by stakeholders including the public and community groups that were received in written or verbal form.

Question/comment: The Army states that it could take 280 years to reduce groundwater contaminant concentrations to acceptable levels. It is not reasonable to propose plans that could require water quality monitoring, maintenance of the landfill cap, maintenance of the biobarriers, and maintenance of LUCs for such a length of time.

The Army should take steps to reduce the length of time that will be required to achieve acceptable contaminant concentrations. These steps could include: installation of an effective pump and treat system, modification of the proposed in-situ bioremediation system to cover a greater portion of the site and to operate until acceptable concentrations are achieved, thermal treatment (e.g., steam stripping), and elimination or reduction of the contaminant source by removing the landfill or reducing the mass of contaminants that it contains.

Response: Given the nature of the residual contaminants that are present at LHAAP-16, the length of time that will be required to achieve cleanup levels would be long for any of the remedial alternatives, whether treatment, migration control, or source control by removal.

It is believed that TCE was present within the landfill as DNAPL has dissolved into the groundwater at very high concentrations and migrated to the east (down-gradient of the landfill). This high concentration region acts as a secondary source of groundwater contamination. Although TCE may remain in the landfill, the landfill cover system has significantly reduced the driving force of recharge and added a degree of isolation to the remaining waste. Removal of the landfill would not affect the secondary source of groundwater contamination outside the landfill and would be a very large cost without corresponding benefit.

The LUCs restricting the use of groundwater will be highly effective as will be long term maintenance of the LUCs, given that the reasonably anticipated future use of the site is as a national wildlife refuge (i.e., Caddo Lake National Wildlife Refuge) and the owner a federal agency. Once the property is transferred into the refuge system, the property must be kept as a National Wildlife Refuge unless there is an act of Congress which removes the parcel or the land is exchanged in accordance with the National Wildlife Refuge System Administration Act of 1966 and the National Wildlife Refuge System Act Amendments of 1974. A national wildlife refuge by its very nature includes physical access and use restrictions, and is subject to control and continual inspection by Refuge personnel. The LUCs will restrict access to the groundwater for purposes other than environmental testing until cleanup levels are met. Additionally, access of groundwater through well installations requires a permit from the Texas Department of Licensing and Regulation or Texas Water District authority. The department will be provided a copy of the county recordation that indicates the location of contaminated groundwater at the site and associated restriction.

Since LHAAP-16 is enclosed within a national wildlife refuge with no current or planned use of groundwater for human consumption, plume stability and protection of Harrison Bayou are key measures for evaluation of a remedial strategy. A detailed analysis of alternatives, including those with aggressive treatments, was conducted according to the evaluation criteria identified in the NCP (40CFR 300.430). Advantages, disadvantages, and trade-offs were considered as part of the evaluation process during the feasibility study (Jacobs, 2002). The suggested alternatives were considered in the FS and were not seen as sufficiently advantageous over the preferred alternative (Shaw, 2010).

Question/Comment: Groundwater contamination at LHAAP-16 is caused by contaminants being leached from wastes in the landfill. The landfill could continue to generate large amounts of contaminants for decades or centuries. The Army's preferred alternative does not attempt to reduce the length of time that the landfill will generate contaminants.

The Army should attempt to reduce the length of time the landfill will generate large amounts of contaminants. This could be done by 1) removing the landfill or 2) treating the landfill to reduce the mass of contaminants it contains (e.g., hot-spot removal, flushing with surfactants or solvents, bioremediation, vapor extraction).

Response: It is believed that TCE was present within the landfill as DNAPL has dissolved into the groundwater at very high concentrations and migrated to the east (down-gradient of the landfill). This high concentration region acts as a secondary source of groundwater contamination. Although TCE may remain in the landfill, the landfill cover system has significantly reduced the driving force of recharge and added a degree of isolation to the remaining waste. The biobarrier will be installed at the edge of the landfill to treat/remediate and thereby control potential migration of contaminants from the landfill. Removal of the landfill would not affect the secondary source of groundwater contamination outside the landfill and would be a very large cost without corresponding benefit. Since LHAAP-16 is enclosed within a national wildlife refuge with no current or planned use of groundwater for human consumption, plume stability and protection of Harrison Bayou are more important measures for evaluation of remedial alternatives than the time factor.

In 1998 a landfill system was placed over the site and was completed as part of an early Interim Remedial Action (IRA) in accordance with the USEPA presumptive remedy guidance under CERCLA for municipal landfills (EPA 540-F-93-035) and for military landfills (EPA 540-F-96-020). Capping as opposed to waste treatment or removal, is a presumptive remedy at landfills as it has been shown to be more appropriate in comparison to other remedies. The IRA was intended to be consistent with the final remedy and is considered a component of the final remedy being proposed for LHAAP-16.

Landfill removal and landfill source treatment alternatives were included in the comparative analysis of alternatives performed during the feasibility study (Jacobs, 2002) and during the generation of the proposed plan (Shaw 2010) for LHAAP-16. These remedial alternatives did not demonstrate increases in effectiveness that were balanced by their increased costs and short-term impacts.

Question/Comment: The Army's 280 year estimate of cleanup time due to natural attenuation is not based on solid evidence. It appears that the Army chose this number because it was the cleanup time calculated for natural attenuation of TCE at well 16WW16. However, a longer TCE cleanup time (492 years) was calculated for well 16WW12. In addition, contaminant concentrations in some wells are stable or increasing rather than decreasing (e.g., perchlorate in well 16WW12, and TCE in well 16WW36). The calculated cleanup time due to natural attenuation for these wells would be infinity.

The Army does not address the question of whether the remedial actions it has conducted at the site have affected the cleanup time calculations. That is, are the contaminant reductions seen at the site due to natural attenuation, the remedial actions, or both?

Response: The duration of 280 years was considered as a reasonable estimate based on the prior history of TCE concentrations at 16WW16. The wells with stable or increasing concentrations are in areas where treatment will be applied, or where biobarriers will cut off renewal of contaminants from upgradient areas. Implementing the remedy is expected to expedite attenuation rates, making them faster, so the worst case scenario at 16WW12 was not chosen as a representative case. Instead the second slowest measurable attenuation was used as an initial estimate for duration.

Contaminant reductions thus far are due to a combination of past actions and natural attenuation. Past actions have removed contaminant mass in some areas of the site and can thus be assumed to have reduced cleanup time in those specific areas, though there is insufficient historical data to quantify the extent of that reduction. The areas most affected in this way would be the capture zone of the extraction wells and a small area immediately down-gradient of the semi-passive biobarrier. The cleanup times at locations that are outside the immediate down-gradient vicinity of the semi-passive biobarrier and far from the extraction wells can be assumed to be outside any significant influence from either of those past actions. Most of the wells at the site (e.g., 16WW16, 16WW12, 16WW43, etc.) are outside those influences.

Question/Comment: The Army intends to evaluate the effectiveness of natural attenuation in a 28 month period following the installation of the biobarriers and the in-situ bioremediation system, and after groundwater extraction has been discontinued. This does not appear to make sense. The effects of the remedial actions will persist for some unknown period of time. How will the Army distinguish between the effects of the remedial actions, and the effects of natural attenuation?

Response: The application of biobarriers and bioremediation will be in discrete areas. The effectiveness of remedial actions will be evaluated for wells in those areas. MNA will be evaluated for wells that are outside the remedial action areas.

Question/Comment: The Army should clearly explain how it will determine whether natural attenuation is reducing contaminants concentrations at an acceptable rate.

Response: The Army intends to present details of the MNA remedy implementation in a remedial design for LHAAP-16. The regulatory guidance established by USEPA (1998) for MNA will be followed to demonstrate that natural attenuation is occurring.

Question/Comment: The passive biobarriers will intercept groundwater only in the shallow zone. However, the intermediate zone also contains high concentrations of contaminants. The Army should explain why it chose not to extend the passive barriers into the intermediate zone.

Response: Biobarriers were not extended into the intermediate zone because the intermediate zone does not intersect surface water in Harrison Bayou. The intermediate zone is deeper than the flowline elevation of the bayou. The highest recent COC concentrations in the intermediate zone are more than 10 times lower than recent COC concentrations in the shallow zone. Nonetheless, the intermediate zone will be addressed via bioremediation injections in the most contaminated locations that have been detected within that zone. MNA will be implemented for areas outside the influence of the active remedies. Monitoring will verify protection of human health and the environment by documenting that further reductive dechlorination is occurring within the plume, that the plume is not migrating, and that contaminant concentrations are being reduced to cleanup levels.

Question/Comment: The pumping of the extraction wells may be limiting the lateral expansion of the contaminant plume. After the extraction wells are shut down, the plume may expand such that it will flow around the ends of the down gradient biobarrier. The Army should consider this possibility in its final remedial design.

Response: There are no plans to remove the extraction system, just to turn it off. The extraction wells will be shut down after application of in situ bioremediation. In situ bioremediation is expected to greatly reduce contaminant concentrations in the application area, minimizing the migration of contaminants toward the biobarrier that will be installed near the bayou. The biobarrier at the landfill is expected to treat contaminated groundwater thereby controlling renewal of the plume at the landfill boundary. The biobarrier is a treatment remedy for contaminated groundwater and not a physical barrier to preventing flow of groundwater. The remnants of the plume are expected to attenuate over time, and groundwater monitoring will continue to check for future potential migration.

Question/Comment: Groundwater up-gradient of Harrison Bayou is highly contaminated, and the contaminant plume emanating from the landfill is discharging to Harrison Bayou. However, there is no reason to believe that Harrison Bayou acts as a complete barrier to groundwater flow. A portion of the contaminant plume may extend beyond the bayou. The Army should install monitor wells to the east of Harrison Bayou to determine the full extent of groundwater contamination.

Response: Since 1999, the Army has collected quarterly surface water samples from three locations in Harrison Bayou. During August 2003 and August 2007, perchlorate was detected in the surface water samples collected from one sampling location in Harrison Bayou (HBW-1) indicating there is some discharge by seepage into Harrison Bayou. Except for the 2 quarters, perchlorate was not detected in any other samples during any other sampling events.

Many wells exist on the east side of Harrison Bayou. The pair of wells closest to the east is 18WW10 (shallow) and 18WW11 (intermediate), which show no COC contamination.

Question/Comment: The proposed monitor well network will not detect contaminants that flow to the southeast of the down gradient barrier. The Army should install at least one shallow and one intermediate monitor well between the southeast end of the barrier and Harrison Bayou.

The proposed monitor well network does not include an intermediate monitor well between the down gradient barrier and Harrison Bayou. The Army should install an intermediate monitor well next to well 16WW40.

The proposed monitor well network will not detect contaminants that flow thorough the northern portion of the down gradient barrier. The Army should install at least one shallow and one intermediate monitor well between the northern portion of the barrier and Harrison Bayou.

The extent of the contaminant plume in the shallow aquifer north of well 16WW22, and in the intermediate aquifer north of well 16WW41, is unknown. The Army should install at least one shallow well and one intermediate monitor well to the north of these wells.

Response: The need for installation of additional monitoring wells will be evaluated during the remedial design.

Question/Comment: The Army Corps of Engineers determined that the eastern portion of the site is within the floodplain of Harrison Bayou. It is not clear, however, whether any portion of the landfill itself is in the floodplain. The Army should determine whether any portion of the landfill is within the floodplain. If it is, steps should be taken to protect the landfill from the effects of flooding.

Response: The southeastern edge of the landfill is within the floodplain (U.S. Department of Housing and Urban Development, Flood Hazard Boundary Map, Harrison County, Texas, Unincorporated Area, Community Panel Number 480847 0004 A, Effective date: September 6, 1977, Converted by Letter Effective 11/1/89). This was known at the time the record of decision was signed for design and construction of the landfill. The southeastern portion of the landfill was designed with a compacted soil berm to protect the cap from flood waters. Additionally, the landfill cap is inspected periodically and maintenance is performed as necessary. The design and the follow-up inspection/maintenance activities are expected to be sufficient to protect the landfill from the effects of flooding.

Question/Comment: The Army is proposing only one sampling point on Harrison Bayou near site 16. Thus, if contaminants are detected, the Army will not be able to determine whether they are coming from site 16 or from an upstream source. In addition, this single sampling point will

not detect any site 16 contaminants that enter Harrison Bayou downstream of the point. That is, it will not detect contaminants that may flow around the northern end of the biobarrier, or through the barrier if it fails to function as intended.

Response: Based on groundwater flow and the proximity of Harrison Bayou, sampling location HBW-1 is considered the location most likely to reveal contamination resulting from LHAAP-16. Continued sampling of HBW-1 or a nearby location will be required by the ROD for LHAAP-16. In accordance with a 1999 agreement between Army, TCEQ, and EPA, the Army currently collects quarterly surface water samples from HBW-1 plus two other locations in Harrison Bayou - HBW-10, which is upstream, and HBW-7, which is downstream. While the Army, TCEQ, and EPA might agree to alter the locations of HBW-7 and HBW-10 at some later date, perchlorate results over the last 10 years have indicated that HBW-1 is the location of greatest concern.

In addition, the selected remedy also includes a network of monitoring wells down gradient of the biobarrier in addition to the surface water sampling. Therefore, concentrations of groundwater that has the potential to enter into Harrison Bayou would be known.

Question/Comment: Although Harrison Bayou was not flowing on October 19, 2010, there was a pool of standing water in the streambed. This pool was about 30 feet upstream of well 16WW40, and in the same area as the seep that was sampled in 1995. The pool was approximately 20 feet long, three feet wide, and a few inches deep. This pooled water may be groundwater that has discharged to the streambed. During periods when Harrison Bayou was not flowing, the Army should monitor the streambed for pools of water. If they are present, they should be sampled. The Army should also monitor the banks of Harrison Bayou for seeps and should attempt to sample any that are discovered.

Response: Previous sampling of the standing water in Harrison Bayou indicated that in the past contaminated groundwater discharged by seepage into Harrison Bayou. Because the basis for sampling is protection of human health by protecting the surface water that flows through Harrison Bayou to Caddo Lake, continued sampling of standing water in pools will serve no purpose. Periodic sampling of surface water is already conducted on a quarterly basis at three locations in Harrison Bayou. The banks of Harrison Bayou will be inspected for locations of possible seeps.

Question/Comment: The Army performed a 'streamlined' Human Health Risk Assessment for Harrison Bayou at site 16. This risk assessment found that the excess lifetime cancer risk for dermal contact with Harrison Bayou surface water was 1.62×10^{-5}. This is higher than the lower bound (1.0×10^{-6}) of the EPA target risk range. The streamlined assessment did not estimate the human health risk from drinking the water, nor did it estimate the effects that the water could have on Caddo Lake. The Army stated that a full risk assessment of Harrison Bayou would be conducted as part of the Group 2 risk assessment. However, site 16 does not appear to have been included in

the Group 2 risk assessment. The Army should perform a full Human Health Risk Assessment for Harrison Bayou at site 16.

Response: The calculated risk from surface water ($1.62x10^{-5}$) was within the range of acceptable risk levels for excess lifetime cancer risk ($1x10^{-4}$ to $1x10^{-6}$). The Group 2 Risk Assessment included a risk assessment for Harrison Bayou and sampling location HBW-1, which is associated with LHAAP-16 was included as part of that assessment. Additionally the risk assessment report states "because the depth of this surface water body ranges from a few inches to a few feet, it is unlikely that it would be used to any significant extent for swimming; therefore, the incidental ingestion of surface water is not evaluated".

Question/Comment: Concentrations of antimony and thallium that exceed the EPA MCL are commonly detected in groundwater at site 16. However, the Army has not included antimony or thallium as contaminants of concern (COC). The Army should either include antimony and thallium as a COCs for groundwater at site 16, or explain why they are omitted.

Response: Antimony and thallium are commonly found in groundwater and were detected in groundwater at LHAAP-16. However, they were not found to be significant contributors to cancer risk or non-cancer hazard in groundwater at LHAAP-16 during the human health risk assessment conducted for the site (Jacobs, 2001). The detections of antimony and thallium were erratic and did not appear to represent a plume of contamination. Additionally, they were not detected above background levels in soil at the landfill. These factors indicated that their occurrence was unlikely to be associated with contamination from the landfill. The detections of antimony in groundwater were also within the range of groundwater background values at Longhorn AAP (Shaw, 2007) indicating antimony is naturally occurring at the site. Therefore, antimony has not been included in the list of contaminants of concern at the site. Since thallium does not have a background value and has had historically high detection limits (2003 and 2004 analytical results), additional groundwater sampling for thallium will be integrated into the RD phase for LHAAP-16.

Question/Comment: The Army is using reporting limits for thallium in groundwater that are higher than the EPA MCL. Thus, concentrations of thallium that exceed the MCL may be undetected or unreported. The Army should use a thallium reporting limit that is less than the MCL.

Response: Given the results from 1997 (which had appropriate detection limits) and the lack of significant soil results, the U.S. Army considered thallium in the LHAAP-16 groundwater samples to be naturally occurring sporadic detections that were unrelated to site contamination. However, the Army concurs that analytical results in 2003 and 2004 samples had high detection limits and drive the need for further evaluation of thallium. Thus, thallium will be added to the COC list and

will be the subject of additional groundwater monitoring. Monitoring results will be evaluated at the first five-year review to determine if any further monitoring for thallium is warranted.

Question/Comment: High concentrations of dioxins and/or furans have been detected in surface water and groundwater at site 16. However, neither dioxins nor furans are included as COCs for surface water or groundwater. The Army should either include dioxins and furans as COCs, or explain why they are omitted.

Response: The concentrations of dioxins/furans were evaluated as a composited value for total dioxins/furans based on relative toxicities of the individual chemicals. That composited value is the toxicity equivalent (TEQ), and it can be directly compared with the MCL for dioxin. The highest TEQ dioxin concentration was lower than the MCL, so dioxins/furans were not selected as a COC.

Question/Comment: The Army's compliance level for perchlorate in Harrison Bayou is 26 µg/L, which is TCEQ's groundwater medium specific concentration for residential use (GW-Res). However, the EPA's Health Advisory (HA) level for perchlorate is 15 µg/L. Although the HA is not an enforceable MCL, it is reasonable to assume that when it is finally established, the perchlorate MCL will be similar to the HA. The Army should explain why it did not use the HA level as the cleanup level.

Response: The cleanup level and surface water compliance level for perchlorate is 17 µg/L, which is the TRRP Tier 1 Groundwater Residential PCL. The cleanup level for perchlorate was revised as a result of dispute resolution between the Army and the EPA. If enforceable limits change in the future, or are newly introduced, the difference between the cleanup level and any such new limits will be subject for discussion during the five year reviews.

Question/Comment: The final details of the remedial action will be presented in a Remedial Design (RD). The Army should make the RD available for public review and comment as soon as it is developed. The Army's Proposed Plan does not mention the development of a contingency plan to be invoked if the remedial actions are not performing satisfactorily. A contingency plan should be included in the RD.

Response: The public will be provided with updates on remedial design and remedial action status through the RAB meeting and any concerns can be addressed through this forum. The RD will include performance objectives, schedule and other design criteria and will follow established regulatory guidance for MNA.

The concept of a contingency plan for what to do if the remedy is unsuccessful as implemented is inherent in the process of remediation. The remedy must be determined to be operating properly

and successfully. Other opportunities for implementing contingency plans will occur with each five-year review.

Question/Comment: The Army reported an average groundwater speed in the shallow zone of 36.7 ft/yr. However, groundwater speeds in the shallow zone range from 0.44 ft/yr - 990 ft/yr.

The higher values may be associated with paleochannels, while the lower values may be associated with ancient overbank deposits that border the paleochannels. When evaluating the transport of contaminants in groundwater, we are usually more concerned with the contaminants that flow most rapidly, rather than those that flow at average or lower speeds.

Response: Noted. The groundwater velocity is not directly measured, but is estimated from groundwater gradients and the average of hydraulic conductivities measured in individual wells. There can be considerable variability of hydraulic conductivity from well to well, so using the average hydraulic conductivity is reasonable for calculating the overall groundwater velocity for the entire site.

Question/Comment: Alternative 7 seems to be the path of least resistance rather than a proactive approach. It appears the Army is trying to do as little as possible for a very contaminated site and not fix the problems for LHAAP-16. The relative low cost was based on the Army's 30 year payout and the possible length of time to remediate the landfill is projected to be 280 years. More investigation should be conducted before finalizing the plans for Site 16 Landfill.

Response: More investigation is not considered necessary to understand the contamination and hydrogeology at LHAAP-16. Additional investigations are unlikely to alter the conclusions that have led to the development of remedial alternatives for the site. Delaying implementation of a remedy to perform more investigations would be less protective of human health than proceeding with the preferred remedy. Besides actively treating the more contaminated portions of the groundwater, the preferred remedy will require monitoring, control of groundwater use, and periodic review of the conditions of the site. The components of the remedy that apply to the more contaminated portions of the groundwater would be implemented within a few years – well within the 30 year period of the cost estimate. Due to the future land use, it is reasonable to utilize monitored natural attenuation to address the remaining contamination over a much longer time period. The preferred remedy has been deemed to be protective of the human health and the environment.

Question/Comment: The Army's proposal for dealing with this highly contaminated landfill consist mostly of future monitoring, periodic groundwater water treatment, and implementing some small barrier walls to hopefully slow down the migration of contaminated groundwater into nearby Caddo Lake. Unfortunately, this is already happening, although the Army claims to not

know to what extent. Site 16 landfill remedy has a projected cost of a little less than 2 million dollars for its proposed 30 year clean-up plan. The Army says it will possibly take 280 years to complete the site 16 landfill clean-up; this must indicate that the site is highly contaminated.

Response: A landfill cap and cover system was placed over the site and was completed as part of an early IRA. Landfill cap is a presumptive remedy for municipal landfills (USEPA, 1993) and for military landfills (USEPA, 1996). A landfill cap and cover system eliminated the direct exposure pathway to source area waste material, preventing contaminant transport to surface water via surface runoff, and reducing leaching of contaminants to the groundwater The IRA was intended to be consistent with the final remedy and is considered a component of the final remedy being proposed for LHAAP-16.

Rather than slowing the migration of the contamination, the proposed biobarriers and bioremediation injections are intended to destroy much of the identified contamination. The active remedies that apply to the more contaminated portions of the groundwater would be implemented first and followed by monitored natural attenuation. Due to the future land use, it is reasonable for the preferred alternative to utilize monitored natural attenuation to address the areas outside of the active remedies over a much longer time period.

Question/Comment: Does the Army have a plan for what it intends to do after the first 30 year segment of the clean-up project has been completed? Could it possibly be the same remedy continued, or a new plan at a much greater cost? Or, could it be that nothing will be done because the sands of time have by then washed away all the records and memory of site 16, leaving it for future generations to unknowingly suffer from and possibly have to deal with?

Response: The expectation at this time is that the remedy would continue. At the five-year reviews, the remedy is evaluated and adjusted or changed if necessary.

Question/Comment: The remediation cost is $183.00 per day for LHAAP-16 for 'no' removal of many "known" and "unknown" toxic chemicals buried at the site. Site 16 landfill has been determined by the EPA to be so contaminated it is listed as a Federally Funded Military Superfund Clean-up site. There are most likely metal containers of toxic chemicals buried at the site that will eventually rust through and cause additional soil and groundwater contamination beyond what is currently known or detected.

Response: A detailed analysis of several alternatives including landfill removal was conducted in accordance with the evaluation criteria identified in the NCP (40CFR 300.430). Advantages, disadvantages, and trade-offs were considered as part of the evaluation process during the feasibility study (Jacobs, 2002). The selected remedy for LHAAP-16 was preferred over other

alternatives because it provides the best combination of major trade-offs, is protective of human health and the environment and is compliant with regulatory requirements.

Question/Comment: Nearby Caddo Lake may eventually be home to this toxic waste since it is migrating through the soil and groundwater in that direction.

Response: The history of LHAAP-16 indicates the contamination migrates via groundwater flow, not through transport of soil. Contaminated groundwater does exist at LHAAP-16, but is not flowing into Caddo Lake. While sample results for Harrison Bayou surface water indicate that it is within the allowable water quality limits for the contaminants of concern, the groundwater near the bayou has elevated concentrations of those contaminants. The concern for preventing seepage of contaminants to the bayou was a significant factor in proposing a remedial action that includes a biobarrier to intercept that contamination.

3.2 Technical and Legal Issues

This section is used to expand on technical and legal issues. However, there are no issues of that nature beyond the technical issues already discussed in **Section 3.1**.

LHAAP-17

3.0 Responsiveness Summary

The Responsiveness Summary serves three purposes. First, it provides the U .S. Army, USEPA, and TCEQ with information about community concerns with the preferred alternative at LHAAP-17 as presented in the Proposed Plan. Second, it shows how the public's comments were considered in the decision-making process for selection of the remedy. Third, it provides a formal mechanism for the U.S. Army to respond to public comments.

The U.S. Army, USEPA, and TCEQ provide information regarding LHAAP-17 through public meetings, the Administrative Record for the facility, and announcements published in the Shreveport Times and Marshall News Messenger newspapers. **Section 2.3** discusses community participation on LHAAP-17, including the dates for the public comment period, the date, location, and time of the public meetings, and the location of the Administrative Record. The following documents related to community involvement were added to the Administrative Record:

- Transcript of the public meeting on June 29, 2010
- Presentation slides from the June 29, 2010 public meeting
- Written questions and comments from the public during the public comment period, and the U.S. Army response to those comments dated December 9, 2010.

3.1 Stakeholder Issues and Lead Agency Responses

This section responds to significant issues raised by stakeholders including the public and community groups that were received in written or verbal form. The figures that the commenter makes reference to were provided by the commenter.

Question/comment: The Army intends to stop pumping and treating groundwater once average perchlorate concentrations are reduced to 20,000 µg/L. According to the Army, high concentrations of perchlorate inhibit the natural attenuation of TCE. However, the Army has not presented any evidence to show that there are significant differences in the attenuation of TCE when the perchlorate concentration is below 20,000 µg/L. In fact, TCE concentrations are increasing at monitor wells 130 and 17WW03, even though perchlorate concentrations at these wells are well below 20,000 µg/L (see figures 1a, 1b, 2a, and 2b on the next page). On the other hand, perchlorate concentrations in monitor well 17WW06 are much higher than 20,000 µg/L, but TCE concentrations are decreasing (see figures 3a and 3b). Thus, there does not appear to be a strong relationship between perchlorate concentrations and the attenuation of TCE. The Army should not rely on a reduction in perchlorate concentrations to result in the attenuation of TCE.

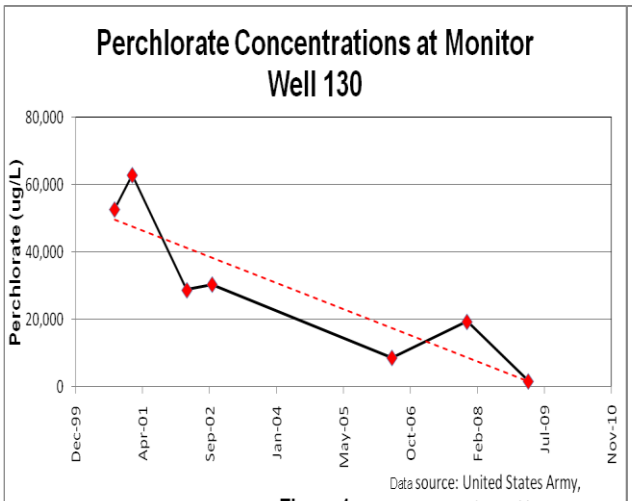

Figure 1a Data source: United States Army, 2010a, appendix A, table A-1.

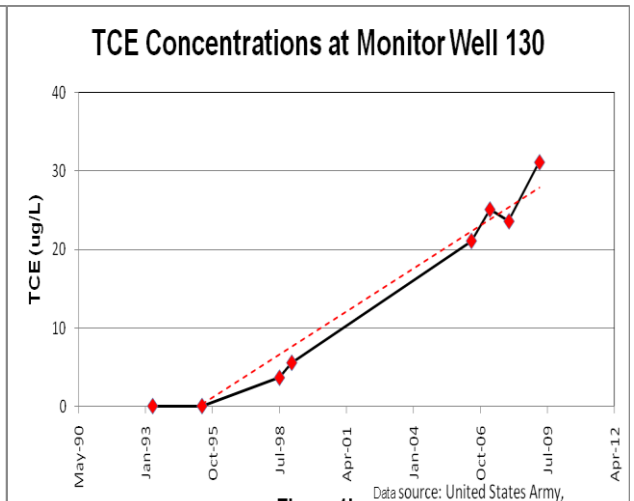

Figure 1b Data source: United States Army, 2010a, appendix A, table A-1.

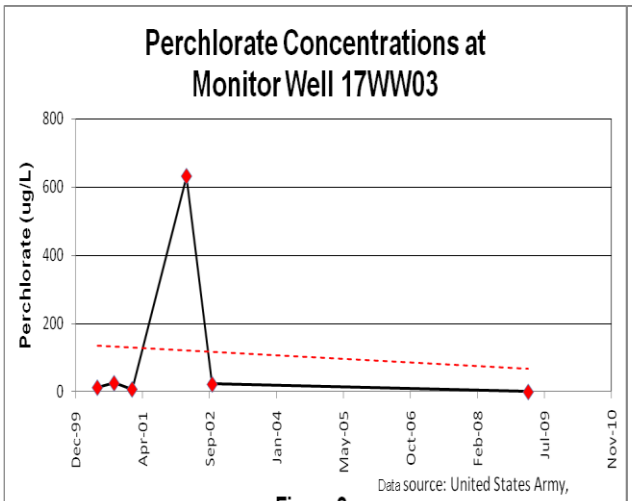

Figure 2a Data source: United States Army, 2010a, appendix A, table A-1.

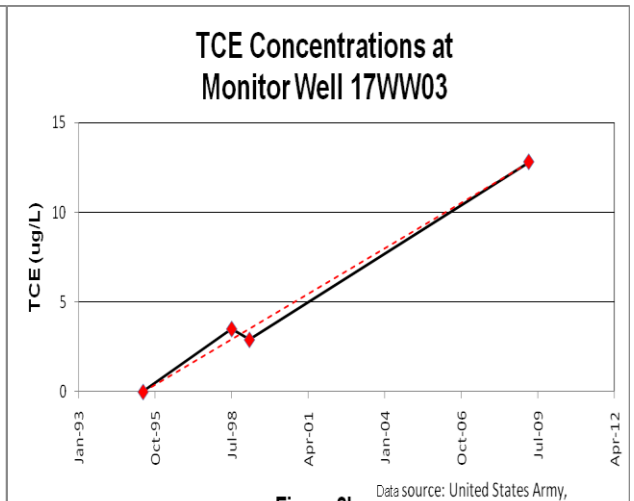

Figure 2b Data source: United States Army, 2010a, appendix A, table A-1.

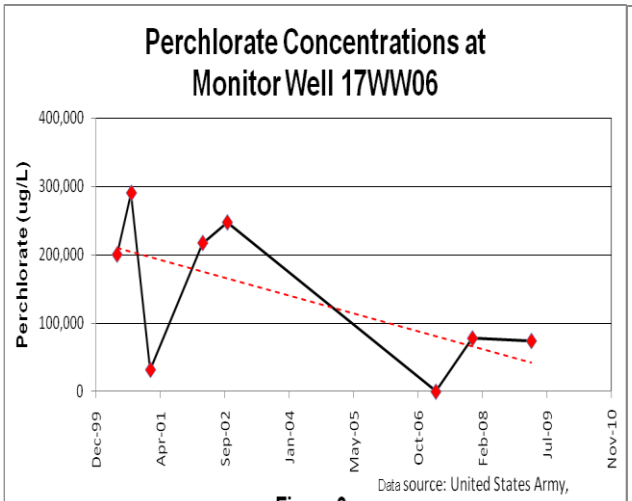

Figure 3a Data source: United States Army, 2010a, appendix A, table A-1.

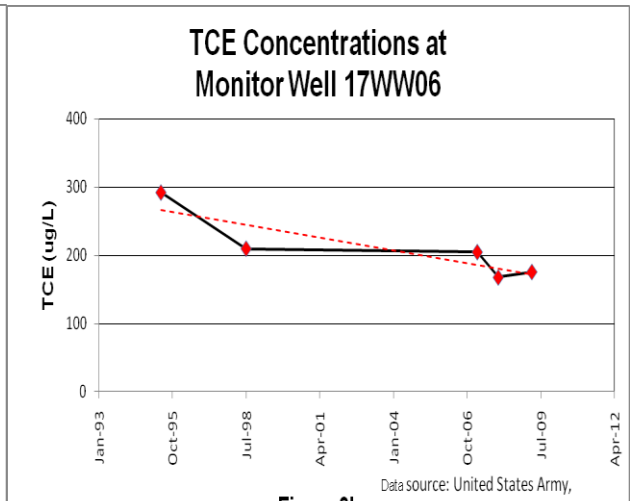

Figure 3b Data source: United States Army, 2010a, appendix A, table A-1.

Response: Studies of natural attenuation and guidance for implementing MNA presume that biologically assisted attenuation proceeds from the most easily reduced compounds to the ones that are most difficult. Perchlorate is more easily reduced than TCE. The microbes that metabolize perchlorate are ubiquitous in the natural environment, and there appears to be no potential "stalling" at daughter products (which can happen with TCE). The perchlorate concentration of 20,000 µg/L was selected based on data from LHAAP-17 and another site at Longhorn. At LHAAP-17, observation of the subsurface conditions is complicated by the perchlorate contaminated soil which may add perchlorate to the groundwater via percolation. The performance of natural attenuation to meet remedial action objectives will be evaluated after soil removal, groundwater pumping, and eight quarterly sampling events. If it is found that the performance objectives are not being met with natural attenuation, a contingent remedy such as in situ bioremediation would be implemented.

Question/comment: It appears that the Army intends to stop pump and treat once the trigger is reached, regardless of the effect that pump and treat is having on contaminant concentrations. This is not a reasonable approach to contaminant clean-up. The Army should evaluate the effectiveness of pump and treat when the trigger is reached. Then, if it is still having a substantial effect on contaminant concentrations, pump and treat should be continued. The pump and treat system should be operated as long as it is causing significant reductions in contaminant concentrations.

Response: The U.S. Army has chosen to implement pump and treat to reduce the highest contaminant concentrations at LHAAP-17 to make conditions more favorable for MNA. Contaminant removal by pump and treat methods operates with diminishing returns – as concentrations decrease, the mass removal rate also falls. Inevitably, a point is reached at which remediation by pump and treat is no longer cost effective. The pump and treat system in conjunction with the site hydrogeological conditions may also be considered ineffective if the system is incapable of reducing perchlorate concentrations at a rate that would be considered productive. As the wording in the comment implies, "substantial effect" and "significant reductions", there is some amount of interpretation involved in deciding when to turn off the pumps. However, pump and treat is not the primary remedy selected or evaluated for LHAAP-17. It is used to assist the primary remedy of MNA by reducing the highest contaminant concentrations. If the pump and treat does not effectively reduce the highest contaminant concentrations in the reasonable time allowed, a contingency remedy such as in situ bioremediation will be implemented.

Question/comment: TCE samples have been collected from 11 monitor wells in the shallow zone. TCE concentrations have exceeded the 5 µg/L MCL in six of these wells. Of these six wells TCE concentrations are rising in four, and dropping in two (see figures 1b, 2b, 3b, 4, 5, and 6). The table below shows the most recent TCE concentrations found in the six wells.

Clearly, natural attenuation is not acting to reduce TCE concentrations throughout the site. Although the Army claims that high concentrations of perchlorate are inhibiting the attenuation of TCE, this assertion is not supported by the data (see first comment). The Army should reevaluate its reliance on natural attenuation to reduce TCE concentrations at Site 17.

Most Recent TCE Concentrations in Shallow Zone Monitor Wells

Wells with increasing concentrations of TCE		Wells with decreasing concentrations of TCE	
Well ID	TCE (µg/L)	Well ID	TCE (µg/L)
130	31.1	17WW04	0.9
17WW01	6090	17WW06	176
17WW02	867		
17WW03	12.8		

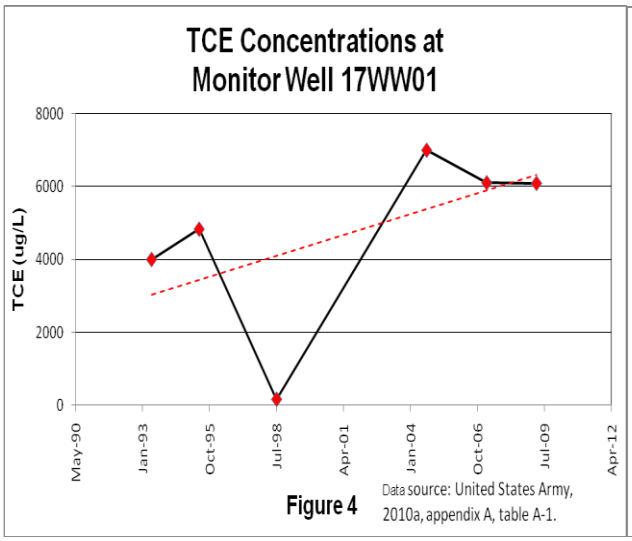

Figure 4 Data source: United States Army, 2010a, appendix A, table A-1.

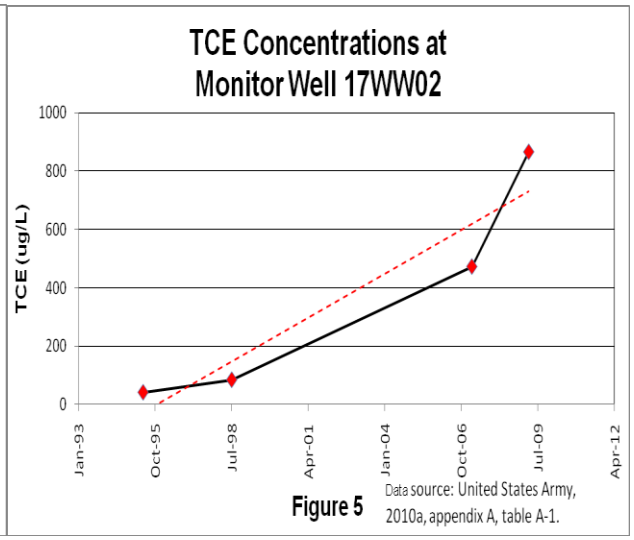

Figure 5 Data source: United States Army, 2010a, appendix A, table A-1.

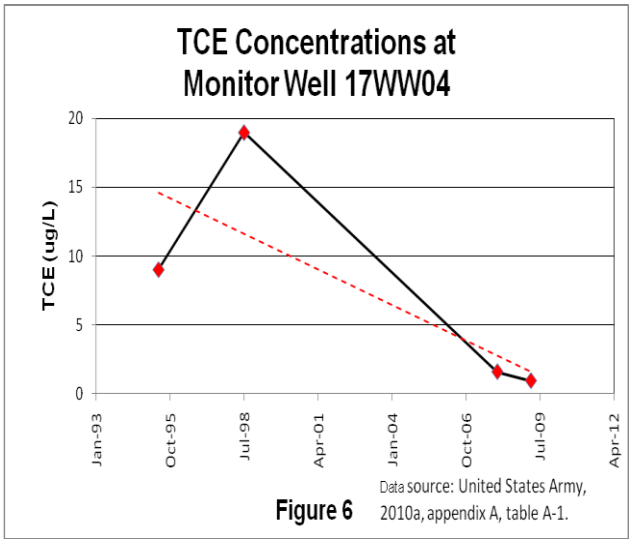

Figure 6 Data source: United States Army, 2010a, appendix A, table A-1.

Response: The most significant increase in TCE concentrations is seen at well 17WW01 between 1998 and 2004. TCE concentrations have declined in this well since 2004. Increases in TCE concentrations at wells 130, 17WW02, and 17WW03 are not as significant and may reflect seasonal variations instead of an overall increase in mass. The groundwater gradient at LHAAP-17 is fairly flat and the diffusion of TCE away from 17WW01 may cause a rise in concentrations in the surrounding wells (i.e., 17WW02 and 17WW03). Even though there are fluctuations in the wells at LHAAP-17, the plume is bounded and there does not appear to be a significant migration of the plume. Additionally, pump and treat will contain the plume and will reduce TCE concentrations (prior to MNA evaluation) as well as the perchlorate.

Under current conditions at LHAAP-17, with the addition of perchlorate from contaminated soil by percolation, natural attenuation cannot be effectively evaluated since the high perchlorate concentrations are inhibiting TCE attenuation. After contaminated soil is removed, groundwater pumping will still disturb natural conditions. It is only after soil is removed and pumping is stopped that an effective MNA evaluation may be made. When that evaluation is complete, and if it is favorable, MNA will continue as the remedy. However, if the evaluation is not favorable, another remedy (e.g., in situ bioremediation) will be implemented to reduce the TCE concentrations.

Question/comment: The Army estimates that natural attenuation will reduce TCE concentrations in the shallow groundwater zone to the clean-up level (5 µg/L) in less than 120 years. It is not reasonable to propose a plan that could require the maintenance of LUCs for a century.

Response: The reasonably anticipated future use of the site is as a wildlife refuge (i.e., Caddo Lake National Wildlife Refuge). Once the property is transferred into the refuge system, the property must be kept as a National Wildlife Refuge unless there is an act of Congress which removes the parcel or the land is exchanged in accordance with the National Wildlife Refuge System Administration Act of 1966 and the National Wildlife Refuge System Act Amendments of 1974. This proposed transfer as a national wildlife refuge, which by its very nature includes physical access and use restrictions, is subject to control and continual inspection by Refuge personnel. Also, the property is intended to remain under ownership and management of a federal government agency. The LUC for groundwater will prohibit access to the groundwater except for environmental testing until cleanup levels are met. Maintenance of the LUC for groundwater use prohibition would require minimal effort and would be reasonable for extended lengths of time. Effectiveness of the LUC will be evaluated as part of the statutory five-year reviews and does not pose additional burden. Additionally, access of groundwater through well installations requires a permit from the Texas Department of Licensing and Regulation or Texas Water District authority. The department will be provided a copy of the county recordation that indicates the location of contaminated groundwater at the site and associated prohibitions.

Question/comment: The clean-up time estimate is based on data from monitor well 17WW06, where TCE concentrations are declining (see figure 3b). However, this estimate does not apply to those portions of Site 17 where TCE concentrations are increasing (see third comment). The Army should provide an estimate of clean-up time for the entire site.

Response: Although there is some uncertainty associated with the cleanup time for the entire site because of the inhibitive effects of perchlorate, the data collected during the two year period of natural attenuation monitoring (post pump and treat) will be used to remove some of the uncertainties associated with the estimate of time to achieve MCLs. The statutory five-year reviews will evaluate the effectiveness of the remedy and estimated durations to reach MCLs and would recommend implementation of other measures if needed.

Question/comment: The Army estimates that natural attenuation will reduce perchlorate concentrations to the clean-up level (17 µg/L) within approximately 15 years. This estimate is based on perchlorate degradation rates (half-lives) calculated for eight monitor wells. However, the Army did not calculate degradation rates for two monitor wells that currently contain high perchlorate concentrations: well 17WW01 (56,000 µg/L) and well 17WW02 (160,000 µg/L). Over the entire period of record, perchlorate concentrations in these two wells have increased, although concentrations in both wells are currently decreasing (see figures 7 and 8). Wells 17WW01 and 17WW02 are important data points that the Army has not accounted for in its estimate. The Army should explain why it did not use data from these wells to estimate the clean-up time for perchlorate at Site 17.

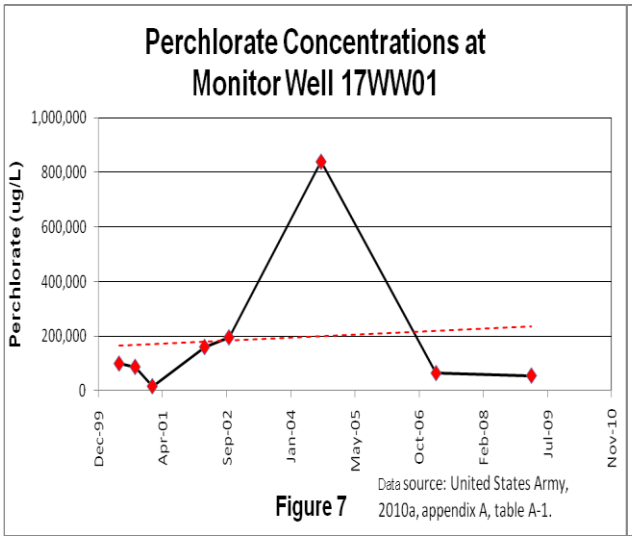

Figure 7 Data source: United States Army, 2010a, appendix A, table A-1.

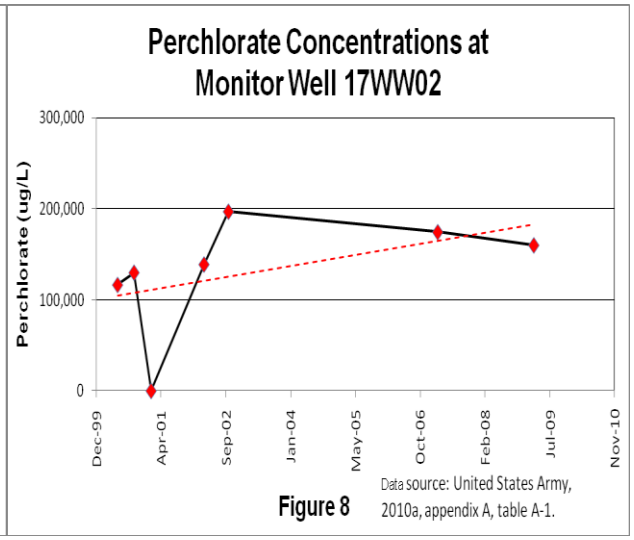

Figure 8 Data source: United States Army, 2010a, appendix A, table A-1.

Response: Data from wells 17WW01 and 17WW02 were not used because those two wells appear to be receiving additional perchlorate as it leaches into groundwater from the overlying contaminated soil. The removal of contaminated soil will end this influx, and the pump and treat activity will reduce perchlorate concentrations in the groundwater at those two wells (to

20,000 µg/L). As the perchlorate concentration at 17WW06 (74,000 µg/L) is significantly higher, the U.S. Army feels that the cleanup time estimated for perchlorate at 17WW06 by MNA provides a reasonable estimate.

Question/comment: The Army does not consider perchlorate to be a COC in the intermediate groundwater zone. However, high concentrations of perchlorate have been detected in intermediate zone monitor well 17WW11. Therefore, perchlorate should be a COC in the intermediate zone.

Response: Well 17WW11 is considered a shallow-intermediate well. There was no distinct clay layer to separate the shallow and intermediate zones. Boring logs for it and surrounding wells were inspected along with groundwater elevations, and it appears to be more reasonably connected with nearby shallow zone monitoring wells than with nearby intermediate zone monitoring wells. As a result, the well 17WW11 has been included with the shallow wells, and within the defined perchlorate plume. Also, perchlorate concentrations were below the detection limit in the intermediate groundwater zone wells (17WW07, 17WW09, 17WW15, and 17WW17).

Question/comment: The Army will present details of the soil excavation plan, the pump and treat system, the groundwater remediation performance objectives, the plan for implementing and evaluating MNA, and the LUC implementation plan, in the RD. However, the RD has not yet been produced. Given its importance, the Army should make the RD available for public review and comment as soon as practicable.

Response: The public will be provided with updates on remedial design and remedial action status through the RAB meeting and any concerns can be addressed through this forum. The RD will include performance objectives, schedule and other design criteria and will follow established regulatory guidance for MNA.

3.2 Technical and Legal Issues

This section is used to expand on technical and legal issues. However, there are no issues of that nature beyond the technical issues already discussed in **Section 3.1**.

LHAAP-001-R-01 and -003-R-01

3.0 Responsiveness Summary

The Responsiveness Summary serves three purposes. First, it provides the U .S. Army, USEPA, and TCEQ with information about community concerns with the remedy at LHAAP-001-R and LHAAP-003-R as presented in the Proposed Plan. Second, it shows how the public's comments were considered in the decision-making process for selection of the remedy. Third, it provides a formal mechanism for the U.S. Army to respond to public comments.

The U.S. Army, USEPA, and TCEQ provide information regarding LHAAP-001-R and LHAAP-003-R through public meetings, the Administrative Record file for the facility, and announcements published in the Shreveport Times and Marshall News Messenger newspapers. **Section 2.3** discusses community participation on LHAAP-001-R and LHAAP-003-R, including the dates for the public comment period, the date, location, and time of the public meetings, and the location of the Administrative Record. The following documents related to community involvement were added to the Administrative Record:

- Transcript of the public meeting on July 21, 2011
- Presentation slides from the July 21, 2011 public meeting
- Questions and comments from the public during the public comment period, and the response to comments from the U.S. Army dated July 27, 2011.

Written comments were received from the general public during the public comment period and Proposed Plan meeting in July 2011 for LHAAP-001-R and LHAAP-003-R. The Proposed Plan was finalized without revision. **Appendix A** contains the public announcement for the Proposed Plan meeting and public comment period.

3.1 Stakeholder Issues and Lead Agency Responses

This section responds to significant issues raised by stakeholders including the public and community groups that were received in written or verbal form.

Question/comment: High concentrations (greater than the MCL) of metals have been found in groundwater at both sites since the early 1980s. In the most recent round of groundwater sampling (2009), high concentrations of beryllium and chromium were detected at site 001-R, and high concentrations of arsenic and chromium were detected at site 003-R.

However, the Army does not intend to monitor metals in groundwater at either site. This is despite the fact that the EPA sent the Army a letter that recommended monitoring metals in groundwater. Letters between the EPA and Army are reproduced in appendix 1.

The Army should monitor metals in groundwater at both sites.

Response: Perchlorate and white phosphorus (WP) are the data gap contaminants of concern for LHAAP-001-R and LHAAP-003-R under the Military Munitions Response Program (MMRP). Metals were addressed at sites LHAAP-27 and LHAAP-54, which are co-located with LHAAP-001-R and LHAAP-003-R respectively, under the 1998 Installation Restoration Program (IRP) ROD. Therefore any metals issues/concerns for these two sites must be addressed with respect to the 1998 IRP ROD and would not be included in this Proposed Plan. Army is in the process of reviewing the new metal results and historical results and has committed to respond to EPA and TCEQ under a path separate from the MMRP.

Question/comment: Soils at sites 001-R and 003-R are contaminated with a variety of metals (e.g., arsenic, barium, cadmium, lead). However, the Army does not plan to remove contaminated soil from either site.

According to the Army, the contaminants do not represent a threat to human health. However, there are problems with the Army's human health risk assessment (HHRA).

First, many of the soil analyses are not useful because of high detection limits (see below).

Second, the HHRA was performed in 1997. Therefore, it did not use the most recent data. The more recent data shows that some metal concentrations are significantly higher than those used in the HHRA (**Table 3-1**). Also, perchlorate was not included in the HHRA.

Table 3-1
Contaminant Concentrations Used in HHRA
Old and New Maximums

Contaminant/Site	Old Maximum (mg/kg)	New Maximum (mg/kg)
Barium/001-R	123	639
Copper/001-R	18.7	41.1
Lead/001-R	18	26.3
Nickel/001-R	2.41	18.6
Thallium/003-R	-	0.2
Perchlorate/001-R	-	28.9 (µg/kg)

The Army should remove contaminated soils from both sites.

Response: Please see response to the first comment above.

Question/comment: In some cases, the Army used detection limits for metals in soil and sediment that are higher than the standards established to protect human health (see **Table 3-2**). Thus, the Army cannot know whether these contaminants are present in concentrations that threaten human health.

Table 3-2
Detection Limits for Metals in Soil and Sediment

Contaminant	Site	Date	Detection Limit (mg/kg)	Standard (TCEQ GWP-Ind, mg/kg)
Antimony	001-R & 003-R	1982	0.76	0.6
	001-R & 003-R	1993	1	0.6
	001-R	1994	1.1-1.3	0.6
	001-R	1996	10.3-10.9	0.6
	003-R	1996/1997	1.1-1.2	0.6
Arsenic	001-R & 003-R	1982	0.3	1
	001-R & 003-R	1993	0.1-1	1
	001-R	1996	2.58-2.74	1
	003-R	1996/1997	0.596-58.7	1
	001-R & 003-R	2003	0.52-0.54	1
Beryllium	001-R & 003-R	1982	0.5	0.4
	001-R	1997	0.62-0.77	0.4
	001-R & 003-R	2003	0.20-0.22	0.4
Cadmium	001-R & 003-R	1982	0.5	0.5
	001-R & 003-R	1993	1	0.5
	001-R	1994	0.56-0.63	0.5
	001-R	1996	2.06-2.19	0.5
	003-R	1996/1997	2.22-2.38	0.5
	001-R & 003-R	2003	0.25-0.27	0.5
Thallium	001-R & 003-R	1982	3	0.2
	001-R & 003-R	1993	0.2	0.2
	001-R	1994	0.55-1.2	0.2
	001-R	1996	15.5-16.4	0.2
	003-R	1996/1997	0.6	0.2

The Army should re-sample soil and sediment at both sites. The samples should be analyzed using detection limits that are lower than the human health-based standards.

Response: Please see response to the first comment above.

Question/comment: The Army does not appear to have done the work required to determine groundwater flow directions at either site. Effective and efficient groundwater monitoring cannot be performed unless groundwater flow directions are known.

The Army should produce maps showing groundwater flow directions at each site.

Response: Hydrogeology was already addressed at sites 001-R and 003-R under the 1998 IRP ROD (see 1997 Remedial Investigation Report). Based on the Hydrogeological Assessment, the groundwater and surface flow direction at LHAAP-003-R are to the northwest and parallel to Sanders Branch and Harrison Bayou and at LHAAP-001-R groundwater flow is northerly. In addition, groundwater surface data from May 2000 (attached) for monitoring wells 127, 128 and 18WW16 at site LHAAP-003-R has been evaluated and confirms a northwest groundwater flow direction. Groundwater surface data from May 2000 for monitoring wells 27WW01, 27WW02, 27WW03, 27WW04, 131 and 132 at site LHAAP-001-R confirm a groundwater flow direction to the northeast. Maps showing groundwater flow direction at each site are attached as **Appendix B**.

Question/comment: There are six monitor wells at site 001-R, and four monitor wells at site 003-R. In addition, one-time grab samples were obtained from borings at each site.

The Army does not know whether there are a sufficient number of monitor wells at each site because it does not know whether the wells are down gradient of contaminated areas (see above comment on groundwater flow directions). The Army should evaluate the need for additional monitor wells after it has determined groundwater flow directions at each site.

Response: Please see the above response. Hydrogeology was already addressed at these sites.

Question/comment: The Army is using a groundwater standard for perchlorate of 72 µg/L. However, the EPA health reference level (HRL) for perchlorate is 15 µg/L. In addition, the EPA has decided to establish a primary drinking water standard (MCL) for perchlorate. When established, the perchlorate MCL will probably be similar to the HRL.

If the Army abandons the monitor wells based on the 72 µg/L standard, it may have to re-install monitor wells when the EPA establishes an MCL for perchlorate.

Until the EPA establishes an MCL for perchlorate, the Army should use a standard that is no greater than 15 µg/L.

Response: The Army is using the TRRP Tier 1 Groundwater Residential PCL of 17 µg/L for comparison of perchlorate in groundwater.

Question/comment: The Army has analyzed soil and water samples for two isomers of dinitrotoluene (DNT): 2,4-DNT and 2,6-DNT. These are the most common isomers in technical grade DNT. However, there are four other isomers of DNT (2,3-DNT; 2,5-DNT; 3,4-DNT; and 3,5-DNT). All of the isomers are toxic.

At the Badger Army Ammunition Plant, high concentrations of the other isomers have been found in groundwater. In some cases, concentrations of the other isomers are significantly higher than the concentrations of 2,4-DNT and 2,6-DNT.

The Army should analyze soil and water samples for all isomers of DNT, not just the 2,4-DNT and 2,6-DNT isomers.

Response: At this time, there are no Federal or State of Texas promulgated screening levels for DNT isomers, other than for 2,4-DNT and 2,6-DNT. However, as part of the CERCLA process, the statutory five-year reviews will evaluate the effectiveness of the remedy, including any changes in ARARs concerning DNT isomers, and would recommend implementation of other measures if needed.

Question/comment: The Army has developed source-receptor conceptual site models for munitions constituents and OE at LHAAP sites 001-R and 003-R. The Army should also develop source-receptor conceptual site models for metals at both sites.

Response: Please see response to the first comment above.

Question/comment: The following documents were listed as primary reference documents in the Final Proposed Plan. However, they do not appear to have been included in the Army Administrative Record.

- CAPE, 2007b, Final Engineering Evaluation/Cost Analysis Action Memorandum Revision 1, Longhorn Army Ammunition Plant, Karnack, Texas, Signed by Thomas Lederle, BRAC Division, ACSIM, United States Army, 5 December.
- Environmental Protection Systems, Inc. (EPS), 1984, Longhorn Army Ammunition Plant Contamination Survey, June.
- EODT Technology, Inc., (EODT), 2009, Final Site Specific Final Report for the MEC Removal Action at the Former Longhorn Army Ammunition Plant, LHAAP-001-R (Site 27) and LHAAP-003-R (Site 54), Karnack, Texas, September.

The Army should ensure that all documents referred to in the Proposed Plan are included in the Administrative Record. If any document has been misfiled or mislabeled in the Administrative Record, the Army should so indicate when referring to that document.

Response: The Final Engineering Evaluation/Cost Analysis Action Memorandum, signed by Thomas Lederle 5 December 2007, is located in the Administrative Record in Volume 9, Year 2008. It is listed out of date in sequence.

The other two references appear to have been overlooked and will be incorporated into the Administrative Record.

DEPARTMENT OF THE ARMY
LONGHORN ARMY AMMUNITION PLANT
POST OFFICE BOX 220
RATCLIFF, AR 72951

November 17, 2016

DAIM-ODB-LO

Mr. Rich Mayer
US Environmental Protection Agency
Federal Facilities Section R6
1445 Ross Avenue
Dallas, TX 75202-2733

Re: Draft Final 2nd Annual Remedial Action Operation Report, LHAAP-50, Former Sump Water Tank, Longhorn Army Ammunition Plant, Karnack, Texas

Dear Mr. Mayer,

The above-referenced document is being transmitted to you for your records and includes revisions based upon your comments on the Draft. In accordance with the FFA, the Draft Final will be considered Final after 30 days without further comment.

The document was prepared by AECOM on behalf of the Army as part of AECOM's Performance Based Remediation contract for the facility. I ask that Debra Richmann, AECOM's Project Manager, be copied on any communications related to the project.

The point of contact for this action is the undersigned. I may be contacted at 479-635-0110, or by email at rose.m.zeiler.civ@mail.mil.

Sincerely,

Rose M. Zeiler

Rose M. Zeiler, Ph.D.
Longhorn AAP Site Manager

Copies furnished:
A. Palmie, TCEQ, Austin, TX
P. Bruckwicki, Caddo Lake NWR, TX
R. Smith, USACE, Tulsa District, OK
A. Williams, USACE, Tulsa District, OK
N. Smith, USAEC, San Antonio, TX
D. Richmann, AECOM – San Antonio, TX (for project files)

DEPARTMENT OF THE ARMY
LONGHORN ARMY AMMUNITION PLANT
POST OFFICE BOX 220
RATCLIFF, AR 72951

November 17, 2016

DAIM-ODB-LO

Ms. April Palmie
Texas Commission on Environmental Quality Superfund Section, MC-136
12100 Park 35 Circle, Bldg D
Austin, TX 78753

Re: Draft Final 2nd Annual Remedial Action Operation Report, LHAAP-50, Former Sump Water Tank, Longhorn Army Ammunition Plant, Karnack, Texas

Dear Ms. Palmie,

The above-referenced document is being transmitted to you for your records and includes revisions based upon your comments on the Draft. In accordance with the FFA, the Draft Final will be considered Final after 30 days without further comment.

The document was prepared by AECOM on behalf of the Army as part of AECOM's Performance Based Remediation contract for the facility. I ask that Debra Richmann, AECOM's Project Manager, be copied on any communications related to the project.

The point of contact for this action is the undersigned. I may be contacted at 479-635-0110, or by email at rose.m.zeiler.civ@mail.mil.

Sincerely,

Rose M. Zeiler

Rose M. Zeiler, Ph.D.
Longhorn AAP Site Manager

Copies furnished:
R. Mayer, USEPA Region 6, Dallas, TX
P. Bruckwicki, Caddo Lake NWR, TX
R. Smith, USACE, Tulsa District, OK
A. Williams, USACE, Tulsa District, OK
N. Smith, USAEC, San Antonio, TX
D. Richmann, AECOM, San Antonio, TX (for project files)

Responses to Comments on
Draft 2nd Annual Remedial Action Operation Report for Site LHAAP-50 (Former Sump Water Tank)
Longhorn Army Ammunition Plant, Karnack, Texas

September 2016

Reviewer: Richard Mayer, EPA

Respondent: Marwan Salameh and Debra Richmann, AECOM

1. Respondent Concurs (C), Does Not Concur (D), Takes Exception (E), or Delete (X).
2. Commentor Agrees (A) with response, or Does not Agree (D) with response.

Comment #	Page	Section/ Paragraph	Comment	C, D, E or X[1]	Response	A or D[2]
1		Appendix E	EPA agrees with the changes except for 50WW19, which EPA recommends continued monitoring.	D	Monitoring well 50WW19 is a fully-penetrating well similar to adjacent monitoring well 50WW17, which is approximately 60 feet away. The groundwater elevations in these wells are only slightly different (≤ 0.16 ft). This area of the site has been below the MCLs/PCLs throughout the 2-year RA(O) monitoring period. Either of these wells provides information that represents the northeastern LUC boundary of the site. Therefore, monitoring one of these wells suffices to capture groundwater characteristics.	
2		Figures	Please add monitoring wells LHSMW54 and 53 to the appropriate Figures.	E	Monitoring well LHSMW53 is not relevant to site 50 and is not discussed in the report. Therefore, LHSMW53 will not be included on the figures. LHSMW54 belongs to LHAAP-47. It is included on Figures 2-1 and 2-10. While the well has been sampled in February 2015, May 2015, and November 2015, as discussed in the report, LHSMW54 should not be sampled and will not be sampled in the future. Any discussion in relation to LHSMW54 pertains to LHAAP-47.	
3		Figure 2-6	The TCE plume should include well 50WW05.	C	Extended the TCE plume to include 50WW05.	
4		General	The following should be considered site COCs: 1,2-dichloroethane; cis-1,2-dichloroethene; vinyl chloride, 1,1-dichlroethene, since they are above the MCL.	C	All of these COCs are included in Section 1.4 (Conceptual Site Model) with the exception of 1,1-dichloroethene, which is now added.	

Responses to Comments on
Draft 2nd Annual Remedial Action Operation Report for Site LHAAP-50 (Former Sump Water Tank)
Longhorn Army Ammunition Plant, Karnack, Texas

September 2016

Reviewer: April Palmie, TCEQ

Respondent: Marwan Salameh and Debra Richmann, AECOM

1. Respondent Concurs (C), Does Not Concur (D), Takes Exception (E), or Delete (X).
2. Commentor Agrees (A) with response, or Does not Agree (D) with response.

Comment #	Page	Section/ Paragraph	Comment	C, D, E or X[1]	Response	A or D[2]
1		Figures	LHSMW53 is missing on all Figures	X	LHSMW53 is incorrectly used in Appendix E of the Year 2 report. LHSMW53 will be corrected to refer to well LHSMW54 in Appendix E. LHSMW54, which is located at LHAAP-47 was sampled during the February 2015, May 2015 and November 2015 events. A new figure (Figure 1-3) has been added that shows all wells associated with LHAAP-50 and nearby wells located at LHAAP-47.	
2		Table 2-1 and Appendix D	50WW28 is missing on Tables 2-1 and Appendix D. Should be no change.	C/X	Added 50WW28 to Table 2-1 and Appendix D in the 1st Year RA(O) report with a note to re-evaluate after one year of quarterly sampling.	
3	1-3	Sections 1.2 and 1.4	Should the groundwater now reference residential, rather than industrial maintenance worker/exposure scenario?	C	The reference to the industrial worker refers to the receptor used in the original risk assessment exposure scenario. The TRRP Residential Groundwater PCL is used in this report for perchlorate. Added cleanup level discussion in the second paragraph of Section 1.4. Also added reference to the dispute decision letter (EPA, 2014) and full citation in the references section.	
4		Figures 2-1and 2-10	Need a note for the data set. 12/15/16 Additional Comment: Figure 2-10 should be using a more current data set. By using the older data set, it really looks like 50WW28 should be retained for monitoring program. Since each figure should be able to stand alone, please replace the data set with one from a recent event to demonstrate the TCE is currently delineated by 50WW16. I think this could be a replacement page.	C C	Added a footnote on Figure 2-1 indicating that the data is from October 2013 sampling event. Data from November 2015 sampling has been added to Figure 2-10.	
5		Figure 2-11	Please replace the inset with the portion from Figure 1-2 with streets and creeks	C	Inset from Figure 1-2 was used for the inset of Figure 2-11.	

Responses to Comments on
Draft 2nd Annual Remedial Action Operation Report for Site LHAAP-50 (Former Sump Water Tank)
Longhorn Army Ammunition Plant, Karnack, Texas

September 2016

Reviewer: April Palmie, TCEQ

Respondent: Marwan Salameh and Debra Richmann, AECOM

1. Respondent Concurs (C), Does Not Concur (D), Takes Exception (E), or Delete (X).
2. Commentor Agrees (A) with response, or Does not Agree (D) with response.

Comment #	Page	Section/ Paragraph	Comment	C, D, E or X[1]	Response	A or D[2]
6		Sections 2.4 and 4	The narrative about GPW-1A results should include brief statement about the soil cover repairs at Site 47 with date of the work.	C	Added narrative about the soil cover repairs at LHAAP-47 to prevent impacting surface water at GPW-1A.	
7		Section 2.5	Concur with abandonment of 50WW03 and 50WW19 but 50WW20 should be retained.	C/E	Text in Section 2.5 will be revised to indicate 50WW20 will not be abandoned. It will only be eliminated from sampling at this time since the plume extent is defined by wells 50WW21, 50WW23, and 50WW24.	
8	General		I generally agree with the reduction of sample locations as proposed. Noted that 50WW17 has different recommendations in Years 1 and 2. I prefer Year 2 proposal which keeps this well for contaminant monitoring.	C	Noted that 50WW17 will be included in the sampling program. The Year 1 recommendation has been revised to match the recommendation proposed in the Year 2 report.	
9	General		At the Five-Year Review, if not earlier, the effectiveness of this remedy should be evaluated. Attenuation is minimal thus far and active treatment of the hot spots should be considered to reduce long-term monitoring commitments.	C	Acknowledged.	

From: Mayer, Richard
Sent: Tuesday, December 13, 2016 9:23 AM
To: Zeiler, Rose M CIV USARMY HQDA ACSIM (US) (rose.m.zeiler.civ@mail.mil) <rose.m.zeiler.civ@mail.mil>
Cc: Aaron.K.Williams@usace.army.mil; Smith, Nicholas B CIV USARMY IMCOM (US <nicholas.b.smith56.civ@mail.mil>; 'Becher, Kent' <kdbecher@usgs.gov>; Tzhone, Stephen <tzhone.stephen@epa.gov>; Burton, Terry <Burton.Terry@epa.gov>; debra.richmann@aecom.com; Richard.P.Smith@usace.army.mil; paul_bruckwicki@fws.gov; Harrison, Dorelle <harrison.dorelle@epa.gov>; April Palmie <april.palmie@tceq.texas.gov>
Subject: FW: EPA Approval of the Longhorn AAP Site 50 Draft Final 2nd RAO Report (and the RTCs)

Good Morning Rose/JoLynn, EPA has reviewed the Longhorn AAP Site 50 Draft Final 2nd RAO Report (including the RTCs) and grants approval.

From: April Palmie <april.palmie@tceq.texas.gov>
Sent: Tuesday, January 31, 2017 2:27 PM
To: Snow, JoLynn; Mayer, Richard
Cc: Williams, Aaron K CIV USARMY CESWT (US); Zeiler, Rose M CIV (US); nicholas.b.smith56.civ@mail.mil; Smith, Richard P CIV USARMY CESWF (US); Richmann, Debra; Sharp, Elspeth; April Palmie
Subject: RE: FOR AGENCY REVIEW - LHAAP-50 Draft Final Year 2 RAO Report

Thank you. I accept the LHAAP-50 Draft Final Year 2 RAO Report and all RTCs.

April Palmie
Project and Grant Manager
Superfund Section
Remediation Division
Texas Commission on Environmental Quality
Phone: (512) 239-4152
Email: April.Palmie@tceq.texas.gov

From: Snow, JoLynn [mailto:JoLynn.Snow@aecom.com]
Sent: Monday, January 30, 2017 1:56 PM
To: April Palmie <april.palmie@tceq.texas.gov>; Mayer, Richard <mayer.richard@epa.gov>
Cc: Williams, Aaron K CIV USARMY CESWT (US) <Aaron.K.Williams@usace.army.mil>; Zeiler, Rose M CIV (US) <rose.m.zeiler.civ@mail.mil>; nicholas.b.smith56.civ@mail.mil; Smith, Richard P CIV USARMY CESWF (US) <Richard.P.Smith@usace.army.mil>; Richmann, Debra <debra.richmann@aecom.com>; Sharp, Elspeth <elspeth.sharp@aecom.com>
Subject: RE: FOR AGENCY REVIEW - LHAAP-50 Draft Final Year 2 RAO Report

Good afternoon April,

Attached is the revised Figure 2-10 you requested along with the revised RTC table incorporating that request. Below is the full PDF file with the revised Figure 2-10 and TCEQ RTC table included. Please let us know if you have any additional comments or if you need anything else.

JoLynn Snow has sent you 1 file using AECOM's File Transfer System.

This file will be available for download until 2/6/2017

File	Description	Size
LHAAP-50 Draft Final Year 2 RAO Report_111616_w-lab data.pdf		419,757KB

Download all files (.zip)

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https://sendfiles.aecom.com/message.aspx?msgId=140925d2-6da3-4055-b110-8d352976c2f1

Thank you,

JoLynn

JoLynn Snow
Project Administrator, AECOM Environment
Direct: 1-210-823-6710
jolynn.snow@aecom.com

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4921 Shed Road, Suite 400
Bossier City, LA, 71111
318- 742-3191
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From: April Palmie [mailto:april.palmie@tceq.texas.gov]
Sent: Thursday, December 15, 2016 9:58 AM
To: Snow, JoLynn; mayer.richard@epa.gov; rose.m.zeiler.civ@mail.mil
Cc: aaron.k.williams@usace.army.mil; nicholas.b.smith56.civ@mail.mil; richard.p.smith@usace.army.mil; Richmann, Debra; Sharp, Elspeth; Combs, Debbie
Subject: RE: FOR AGENCY REVIEW - LHAAP-50 Draft Final Year 2 RAO Report

Good morning. I've reviewed the Draft Final LHAAP-50 2nd Year RAO Report and RTCs. I have one comment on #4 but accept all other responses.

4 – Figure 2-10 should be using a more current data set. By using the older data set, it really looks like 50WW28 should be retained for monitoring program. Since each figure should be able to stand alone, please replace the data set with one from a recent event to demonstrate the TCE is currently delineated by 50WW16. I think this could be a replacement page.

Sincerely,

April Palmie
Project and Grant Manager
Superfund Section
Remediation Division
Texas Commission on Environmental Quality
Phone: (512) 239-4152
Email: April.Palmie@tceq.texas.gov

From: Snow, JoLynn [mailto:JoLynn.Snow@aecom.com]
Sent: Thursday, November 17, 2016 3:52 PM
To: April Palmie <april.palmie@tceq.texas.gov>; mayer.richard@epa.gov
Cc: aaron.k.williams@usace.army.mil; rose.m.zeiler.civ@mail.mil; nicholas.b.smith56.civ@mail.mil; richard.p.smith@usace.army.mil; Richmann, Debra <debra.richmann@aecom.com>; Sharp, Elspeth <elspeth.sharp@aecom.com>; Combs, Debbie <debbie.combs@aecom.com>
Subject: FOR AGENCY REVIEW - LHAAP-50 Draft Final Year 2 RAO Report

Good afternoon,

Please see the link below for the LHAAP-50 Draft Final Year 2 RAO Report. I have also attached a redline document to assist with review. Please let me know if you need anything else.

JoLynn Snow has sent you 1 file using AECOM's File Transfer System.

This file will be available for download until 11/24/2016

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Download all files (.zip)

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https://sendfiles.aecom.com/message.aspx?msgId=4b2760be-7ff7-4e63-9575-14c21ddbe3fd

Thank you,
JoLynn

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DRAFT FINAL
2nd ANNUAL REMEDIAL ACTION OPERATION REPORT
LHAAP-50 (FORMER SUMP WATER TANK)
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

Prepared For:

U.S. Army Corps of Engineers
Tulsa District

Prepared By:

AECOM Technical Services, Inc.

November 2016

DRAFT FINAL
2ND ANNUAL REMEDIAL ACTION OPERATION REPORT
LHAAP-50 FORMER SUMP WATER TANK
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

Prepared For:

U.S. Army Corps of Engineers

Tulsa District

Prepared By:

AECOM Technical Services, Inc.

Contract No. W912DY-09-D-0059

Task Order No. DS01

November 2016

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Acronyms and Abbreviations

µg/L	micrograms per liter
AECOM	AECOM Technical Services, Inc.
ARARs	applicable or relevant and appropriate requirements
amsl	above mean sea level
AST	above ground storage tank
bgs	below ground surface
cis-1,2-DCE	cis-1,2-dichloroethylene
COC	contaminant of concern
1,2-DCA	1,2-dichloroethane
1,1-DCE	1,1-dichloroethylene
DO	dissolved oxygen
ft/yr	feet per year
LHAAP	Longhorn Army Ammunition Plant
LUC	Land Use Control
MCL	maximum contaminant level
mg/L	milligram per liter
MNA	Monitored Natural Attenuation
MSC	Medium Specific Concentrations
mV	millivolts
No.	number
ORP	oxidation-reduction potential
PCE	Tetrachloroethylene
PCL	protective concentration level
RACR	Remedial Action Completion Report
RA(O)	Remedial Action Operation
RAO	Remedial Action Objective
RAWP	Remedial Action Work Plan
ROD	Record of Decision
TAC	Texas Administrative Code
TCE	trichloroethylene
TOC	total organic carbon
TRRP	Texas Risk Reduction Program
U.S.	United States
USACE	U.S. Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USFWS	U. S. Fish and Wildlife Service
UU/UE	unrestricted use and unlimited exposure
VC	vinyl chloride
VOC	volatile organic compound

1 INTRODUCTION

The United States (U.S.) Army Corps of Engineers (USACE), Tulsa District, contracted AECOM Technical Services, Inc. (AECOM), to perform remedial activities at multiple sites at the former Longhorn Army Ammunition Plant (LHAAP) located in Karnack, Texas, under the Huntsville District's Worldwide Environmental Restoration Services Contract Number (No.) W912DY-09-D-0059, Task Order No. DS01. As part of this contract, AECOM is performing groundwater monitoring as part of Remedial Action Operations (RA(O)s) for the Monitored Natural Attenuation (MNA) groundwater remedy at site LHAAP-50. A Final Record of Decision (ROD) was executed for LHAAP-50 in September 2010 (USACE, September 2010). Groundwater monitoring at LHAAP-50 is ongoing as described in the Final Remedial Action Completion Report (RACR) (AECOM, 2016). This RA(O) report represents the second year of RA(O) implementation and summarizes the results of site inspections and sampling activities completed between December 2014 and November 2015. A draft first year RA(O) report which covers the period between October 2013 and November 2014 was prepared in April 2015. This report encompasses and provides analysis for two years of MNA data.

LHAAP is located in east-central Texas in the northeastern corner of Harrison County between State Highway 43 in Karnack, Texas, and the western shore of Caddo Lake (see **Figure 1-1 and Figure 2-1**). The nearest cities are Marshall, Texas, approximately 14 miles to the southwest, and Shreveport, Louisiana, approximately 40 miles to the east. Caddo Lake is a large freshwater lake that bounds the former LHAAP installation to the north and east. The eastern fence is 3.5 miles from the Texas-Louisiana state border. LHAAP-50 is slated for transfer from the Army to U. S. Fish and Wildlife Service (USFWS) for incorporation into the Caddo Lake National Wildlife Refuge in the future.

1.1 Remedial Action Objectives

The Remedial Action Objectives (RAOs) at LHAAP-50 must protect human health and meet applicable or relevant and appropriate requirements (ARARs). There are no ecological risks at the LHAAP-50 site (USACE, 2010).

As specified in the Remedial Action Work Plan (RAWP) (AECOM, 2013), the RAOs for the LHAAP-50 site, consistent with the reasonably anticipated future use as a national wildlife refuge, are:

- Protection of human health by preventing human exposure to the contaminated groundwater;
- Protection of human health and the environment by preventing contaminated groundwater from migrating into nearby surface water; and,
- Return of groundwater to its potential beneficial uses as drinking water, wherever practicable.

1.2 Performance Objectives

The remedy selected for LHAAP-50 includes Soil Removal, Land Use Controls (LUCs), and MNA. The performance objectives at LHAAP-50 consist of three components: excavation and off-site disposal of perchlorate-contaminated soil, physical inspections, and groundwater/surface

water monitoring. The need for additional plume delineation after the implementation of the remedial action (AECOM, 2016) delayed establishment of the LUC boundary. As a component of the LUC implementation, the civil survey of the LUC boundary was conducted in May 2015 and recorded in the Harrison County Courthouse in June 2015. Physical inspections are conducted annually to confirm compliance with the LUC objective of preventing human exposure to groundwater contamination at levels that pose an unacceptable risk to a future maintenance worker; and ensuring that there is no withdrawal or use of groundwater from the site for anything other than environmental monitoring and testing until the cleanup levels are attained. Groundwater monitoring has been in-progress at the site since October 2013, and LHAAP-50 will be included in the facility-wide LHAAP Five-Year Review.

According to the Remedial Design (Shaw, 2011), groundwater monitoring is being performed to demonstrate that natural attenuation is an effective remedy that will attain the RAOs over time and that the groundwater plume will not migrate and discharge to nearby surface water bodies at levels that may present an unacceptable risk to human health and the environment. Groundwater monitoring is being performed in accordance with the RAWP (AECOM, 2013) to:

- Detect changes in environmental conditions that may reduce the efficacy of natural attenuation processes;
- Identify potentially toxic and/or mobile transformation products;
- Verify that the plume is not expanding and poses no unacceptable risk to downgradient receptors;
- Detect new releases of contaminants to the environment that could impact effectiveness of the MNA remedy; and
- Verify attainment of the RAOs.

Groundwater monitoring completed as part of the 2014/2015 RA(O) consisted of four quarterly groundwater gauging events of 29 wells in the shallow zone and one well in the intermediate zone, and four quarterly groundwater sampling events of 26 wells in the shallow zone and one well in the intermediate zone, as specified in the RAWP (AECOM, 2013). Quarterly surface water sampling at points 50SW06 and GPW-1 located at Goose Prairie Creek and at GPW-1A located in a tributary to Goose Prairie Creek was conducted when surface water was present or after rain events exceeding 2 inches. This report summarizes the LUC compliance inspection, monitoring well inspection, maintenance, and repair, results of groundwater and surface water sampling, and an evaluation of MNA.

1.3 Site Description

The LHAAP-50 site (former sump water tank) is in the north-central portion of LHAAP and covers an area of approximately 1 acre (**Figure 1-2**). The LHAAP-50 site is an open area of grass and brush that is bounded by South Crocket Avenue to the northeast, a drainage ditch to the west, a railroad spur to the south, and Goose Prairie Creek to the north. Runoff from the northeastern portion of the site is generally toward the northeast. Runoff is collected by a drainage ditch to the northeast that runs parallel to South Crockett Avenue and eventually joins Goose Prairie Creek. Runoff from the southwestern portion of the site is collected to the west by

a drainage ditch that carries the runoff north into Goose Prairie Creek. Goose Prairie Creek eventually empties into Caddo Lake.

When operational, LHAAP-50 contained a 47,000-gallon capacity aboveground storage tank (AST) which received industrial wastewater from various industrial waste production sumps throughout LHAAP between 1955 and 1988. After the solids were filtered, the storage tank contents were discharged into Goose Prairie Creek upstream of the Goose Prairie Creek bridge on South Crockett Avenue, south of 51st Street (see **Figure 2-1**). The flow in the creek was sufficient to dilute the water to safe levels (Jacobs, 2002). If natural flow in the creek was considered insufficient, clean water was reportedly pumped into the creek to dilute the contents. The AST is no longer present.

The LUC area associated with the groundwater use restriction at LHAAP-50 extends beyond the northern, southern, eastern, and western historical site boundaries and encompasses a total of approximately 77.19 acres. The nearest significant surface water body to LHAAP-50 is Goose Prairie Creek, located approximately 80 feet north of the site, which eventually flows into Caddo Lake. LHAAP-50 has no known areas of archaeological or historical importance.

1.4 Conceptual Site Model

The nature and extent of contamination at LHAAP-50 was evaluated during field investigations conducted between 1992 and 2010. Releases associated with AST operation are the most likely source of contaminants released into the environment. Since the AST has been removed, there is no longer a potential release mechanism for leaks or spills. Perchlorate and volatile organic compounds (VOCs) were released via overland spills, and discharges to the soil and adjacent surface water.

The contaminants of concern (COCs) at the LHAAP-50 site include dissolved phase perchlorate and VOCs including tetrachloroethylene (PCE), trichloroethylene (TCE), 1,1-dichloroethylene (1,1-DCE), 1,2-dichloroethane (1,2-DCA), cis-1,2-dichloroethylene (cis-1,2-DCE), and vinyl chloride (VC) in groundwater, and perchlorate in soil. There are no COCs in other environmental media at the LHAAP-50 site. The presence of these COCs in the soil and groundwater represents the primary driver for remedial action as there are no ecological risks at the LHAAP-50 site. The soil cleanup levels are the Texas Risk Reduction Standard No. 2 Industrial Medium Specific Concentrations (MSCs). The groundwater cleanup levels are the United States Environmental Protection Agency (USEPA) Maximum Contaminant Levels (MCLs) and in the absence of a federal drinking water standards, the Texas Risk Reduction Program Groundwater Residential Protective Concentration Levels (PCLs) (USEPA, 2014).

The area of perchlorate contamination in soil was small and the concentrations of perchlorate did not pose an unacceptable risk to human health (hypothetical future maintenance worker) or ecological receptors. The perchlorate in soil is no longer present after removal and offsite disposal of approximately 183 cubic yards of perchlorate-contaminated soil in September 2013 as described in the Final RACR (AECOM, 2016). An area of groundwater contamination is observed in the shallow groundwater (upper and lower zones) which poses an unacceptable carcinogenic risk and non-carcinogenic hazard to a future maintenance worker under an industrial exposure scenario. There is no groundwater contamination in the intermediate groundwater zone. The potential exposure pathways are via use of groundwater as drinking water and migration of impacted groundwater into surface water. Shallow groundwater is not

used as drinking water at the refuge and this potential exposure pathway is eliminated from any hypothetical receptor because LUCs are in place that prohibit the use of groundwater other than for environmental monitoring and testing. The nearest significant surface water body to LHAAP-50 site is Goose Prairie Creek, approximately 80 feet to the north of the site.

In previous documents, the site hydrogeology was represented as consisting of a shallow zone (approximately 0-30 feet below ground surface [bgs]) and an intermediate zone (approximately 35 to 60 feet bgs). Drilling activities performed during implementation of the remedial action (AECOM, 2016) revealed only a shallow unconfined aquifer extending from ground surface to approximately 60 feet bgs across the site. While intermittent clay layers are present, no true aquiclude exists to prevent vertical communication between ground surface and approximately 60 feet bgs.

The intermediate groundwater zone was identified at 100 feet bgs, underlying a dry unit of clay with some interbedded sands. The clay unit is first encountered across the site at approximately 60 feet bgs.

Because the shallow zone is approximately 60 feet in thickness, the potential for differences in nature and extent of contaminant impacts between upper and lower portions of the shallow zone was recognized. To evaluate this concept, 17 new wells were installed in configurations to separately monitor the upper portion of the shallow zone (12 wells) and the lower portion of the shallow zone (five wells). Additionally, three fully-penetrating wells (50WW17, 50WW19, and 50WW20) were installed with screened intervals across the entire saturated shallow zone. Monitoring well locations are shown on Figure 1-3.

Beginning with the 1st year RA(O) report and in all future reports including this 2nd year RA(O) report, the zone formerly referred to as the shallow zone is referred to as the ‘upper shallow’ zone (0 to 30 feet bgs), the zone formerly referred to as the intermediate zone is referred to as the ‘lower shallow’ zone (30 to 60 feet bgs). The zone formerly referred to as the deep zone is referred to as the intermediate zone (>100 feet bgs).

Based on the groundwater gauging data conducted in October 2013 and reported in the Final RACR (AECOM, 2016), groundwater in the shallow water-bearing zone ranges from approximately 15.97 feet bgs to 24.03 feet bgs, flowing in a northeasterly direction at a gradient of approximately 0.001 ft/ft.

The intermediate water-bearing zone (intermediate zone) underlies the shallow zone at approximately 100 feet bgs. The groundwater surface within the intermediate water-bearing zone was found to be 21.07 feet bgs, indicating confining conditions.

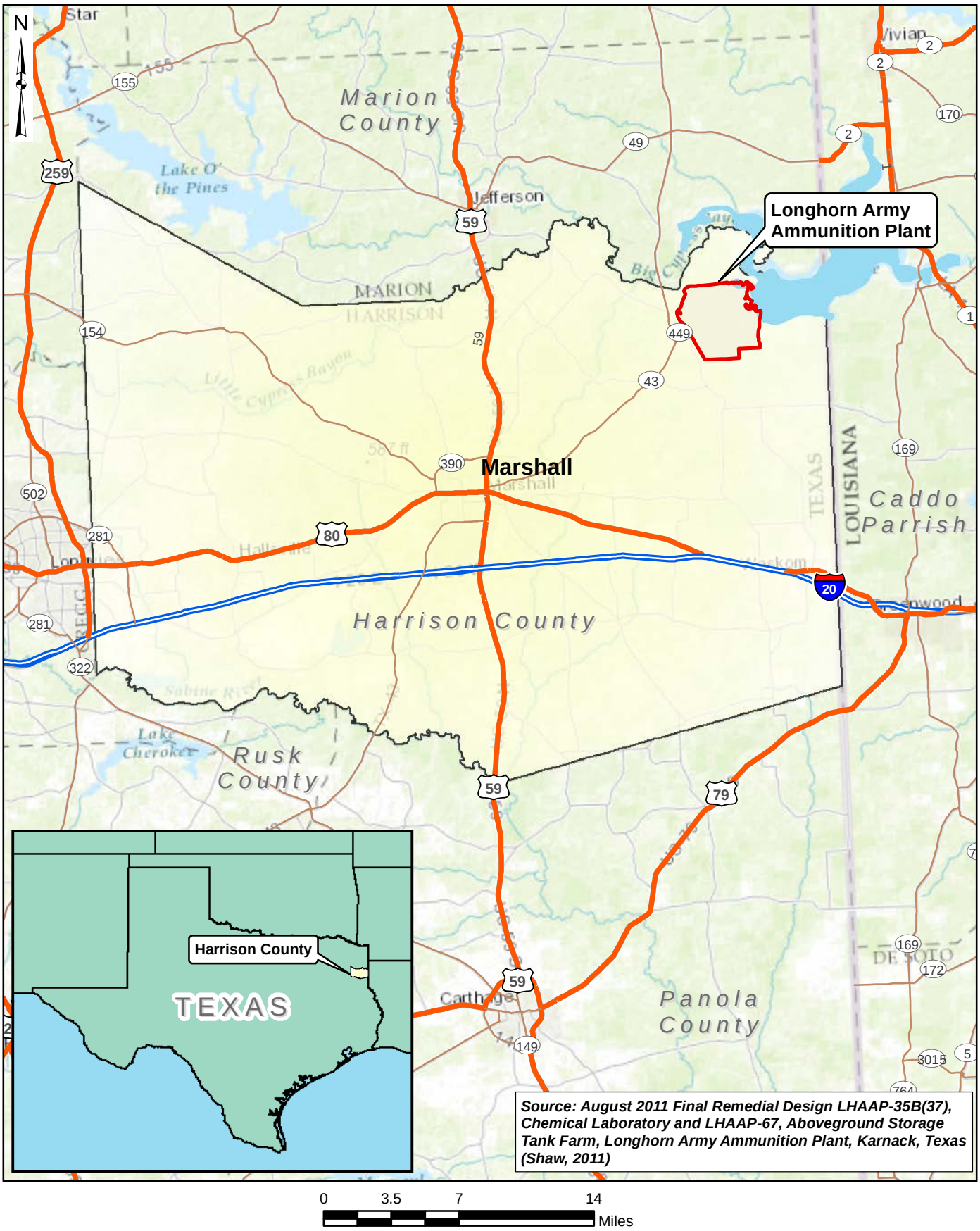

AECOM

Figure 1-1
LHAAP-50 Site Area Map
Remedial Action Operation Report (Year 2)

Longhorn Army Ammunition Plant
Karnack, Texas

60256135

October 2016

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-50\RAO Report\Yr_2_RAO\Fig 1-1 LHAAP50 Area Map.mxd

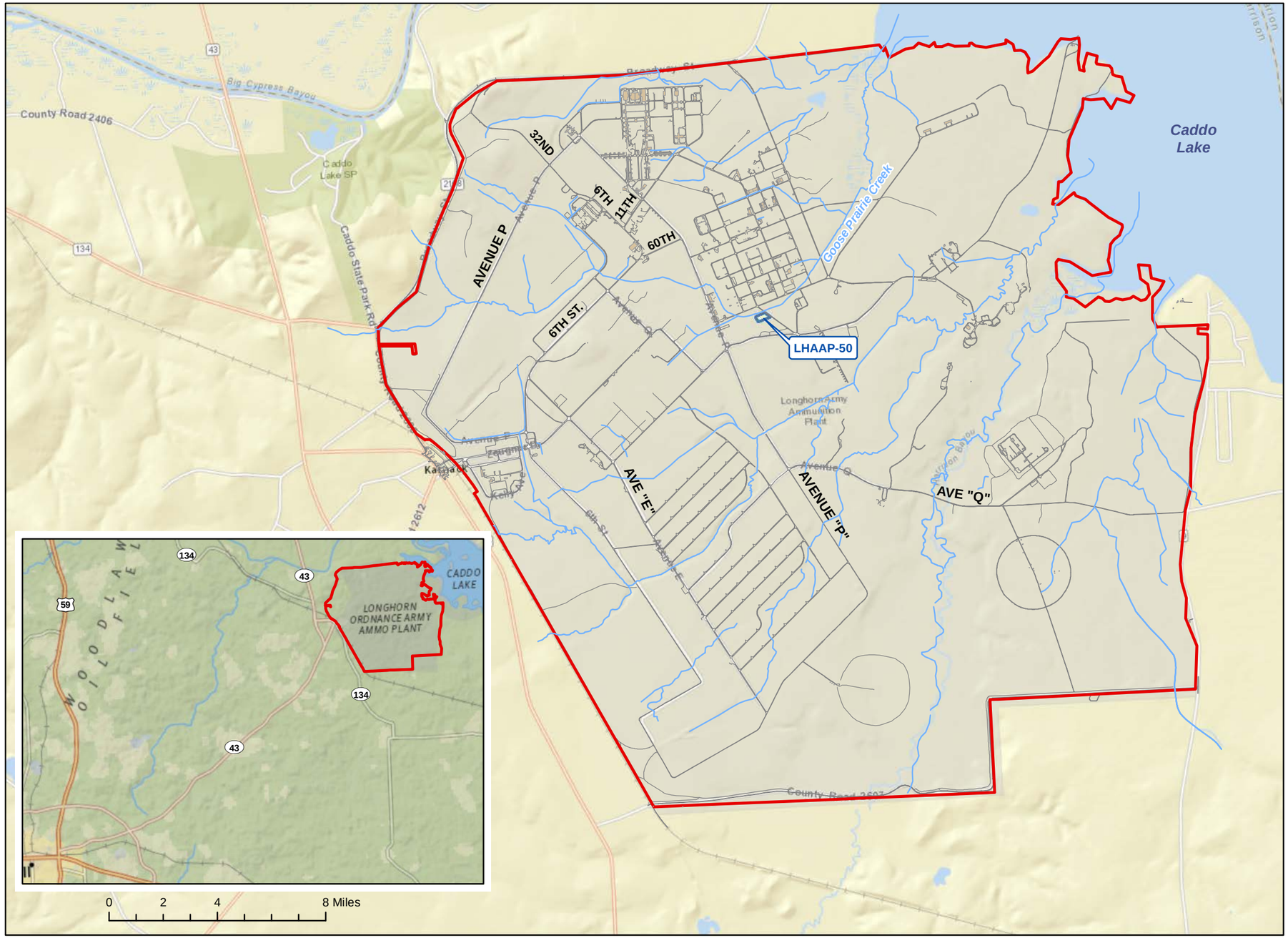

Legend

- Streams
- Roads
- LHAAP Boundary
- LHAAP-50 Site Boundary
- Lake/Pond

AECOM

Figure 1-2
Site Vicinity Map
LHAAP-50 Remedial Action Operations Report (Year 2)
Longhorn Army Ammunition Plant
60256135 Karnack, Texas October 2016

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-50\RAO Report\Yr_2_RAO\Fig 1-2_LHAAP50_Site VicinityMap.mxd

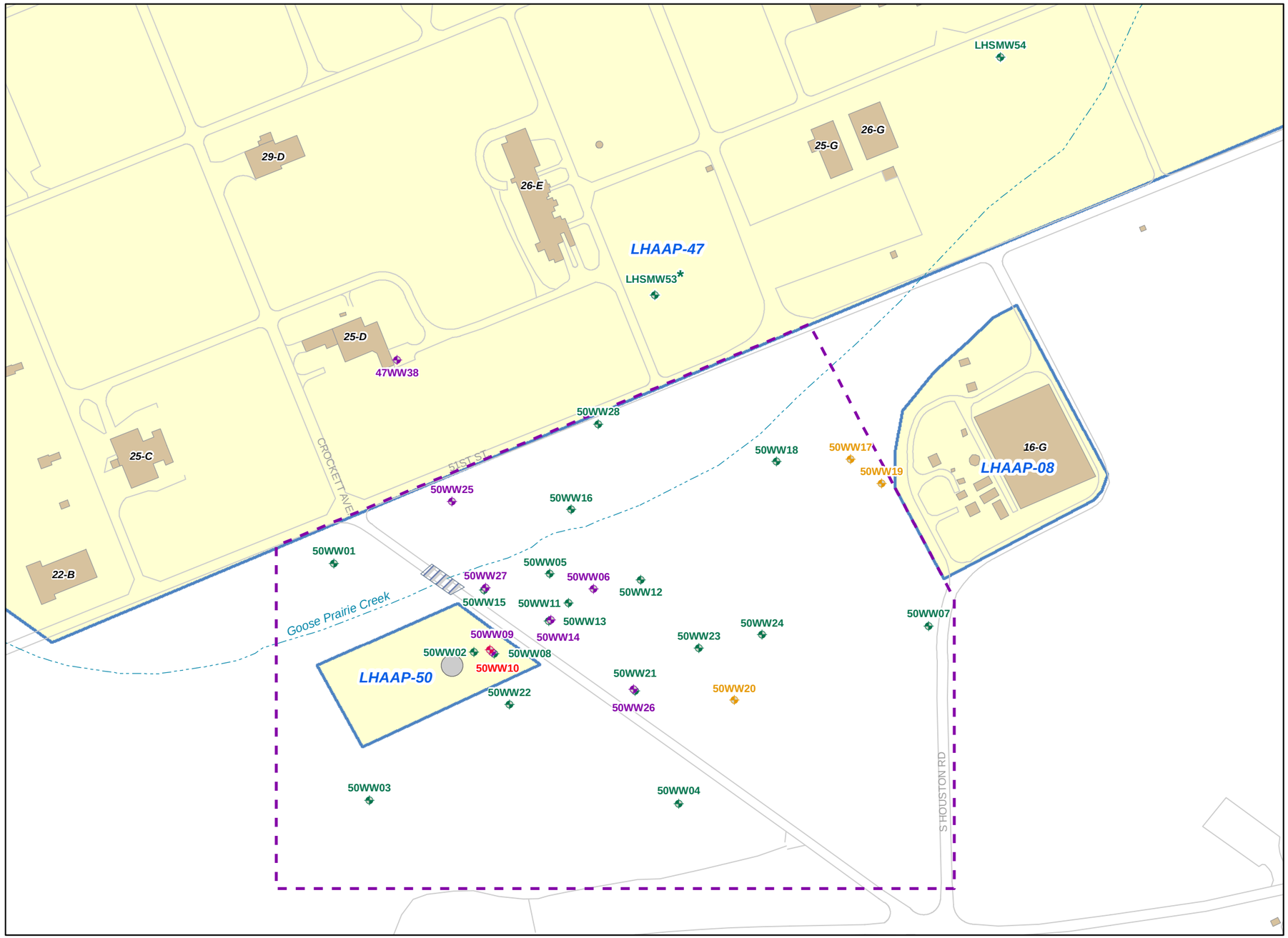

Legend

- Lower Shallow Monitoring Well
- Upper Shallow Monitoring Well
- Fully Penetrating Shallow Monitoring Well
- Intermediate Monitoring Well
- * Not Monitored During Year 2
- Roads
- Goose Prairie Creek
- Proposed Land Use Control Boundary
- Bridges
- Buildings
- Former Storage Tank Location
- Site Boundaries

AECOM

Figure 1-3
Monitoring Well Locations
LHAAP-50 Remedial Action Operations Report (Year 2)

60256135 | Longhorn Army Ammunition Plant, Karnack, Texas | November 2016

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2 SITE ACTIVITIES AT LHAAP-50

2.1 Annual LUC Compliance Inspections, Monitoring, and Repairs

2.1.1 Annual LUC Compliance Inspection

The objectives of the LUCs at LHAAP-50 are to prevent human exposure to groundwater contamination presenting an unacceptable risk to human health and ensure that there is no withdrawal or use of groundwater beneath the site for anything other than environmental monitoring and testing until the cleanup levels are attained. A restriction against use of groundwater will remain in effect until the levels of COCs in groundwater and soil allow unrestricted use and unlimited exposure (UU/UE). Notices of the groundwater use restrictions accompany all property transfer documents and were recorded at the Harrison County Courthouse in June 2015 in accordance with the Texas Administrative Code (TAC) Title 30, §335.566.

The LUCs address the area of the LHAAP-50 site that contains shallow zone groundwater VOC and perchlorate contamination.

A metes and bounds survey of the 77.19-acre LUC boundary has been completed and has been recorded in the Harrison County Courthouse in accordance with TAC Title 30, §335.566. Additionally, the survey plat, legal boundary, and description of the groundwater restriction, in conjunction with a locator map, were provided to the Texas Department of Licensing and Regulation in June 2015.

The need for additional plume delineation after the implementation of the remedial action (AECOM, 2016) delayed establishment of the LUC boundary. A LUC compliance inspection was not conducted in 2014 as the LUC boundary had not been established at the end of the 1st year RA(O) reporting period. A LUC compliance inspection was conducted on July 14, 2015 during the 2nd RA(O) reporting period. No change in land use has occurred. The Annual LUC Compliance Certification Documentation Form for the second year RA(O) period is included in **Appendix A**. No compliance issues or concerns were noted during the annual inspection.

2.1.2 Well Field Operation & Maintenance

Inspections of the conditions/integrity of monitoring wells are conducted during each sampling event and the information recorded on the field sampling forms. Maintenance or repairs are performed as needed, based on observed conditions. For the 2nd annual reporting period, no damage to well bollards, pads, or protective well casings and only minimal encroachment of weeds or brush on the well pads was observed. Mowing the area to control brush and weeds is conducted on a routine basis and as needed to allow access to the wells, typically before sampling events. Mowing is conducted more frequently during the warmer spring and summer months than during the colder fall and winter seasons. Monitoring well identification tag replacement, as well as painting/re-labeling for wells 50WW01, 50WW03, and 50WW04 was completed on August 28, 2015 and for wells 50WW02, 50WW05, and 50WW06 on September 2, 2015. Well redevelopment for wells 50WW05 and 50WW19 to remove silt accumulation was completed on January 22 and 26, 2016. **Appendix B** provides a photo log and well redevelopment forms.

2.2 Installation of New Permanent Groundwater Monitoring Wells

A total of twenty-one new monitoring wells were installed in 2013 and 2014, and identified as 50WW08 through 50WW28. Twelve (12) wells were screened in the upper portion of the shallow groundwater zone, five (5) wells were screened in the lower portion of the shallow groundwater zone, and three wells were installed with screened intervals spanning the entire shallow groundwater zone (fully-penetrating wells). One (1) new well was installed in the intermediate groundwater zone. Monitoring well boring logs and construction logs were included in the LHAAP-50 Final RACR (AECOM, 2016).

2.3 Groundwater Monitoring

For the 2nd year RA(O), quarterly groundwater gauging of 30 monitoring wells and sampling of up to 27 wells were completed in February 2015, May 2015, August 2015, and November 2015. Monitoring wells 47WW38 and LHSMW54 were sampled in February 2015, May 2015, and November 2015 (as discussed later these wells should not be sampled). Although monitoring well 50WW25 is physically located within the LHAAP-50 LUC boundary, the source of perchlorate in this well is at LHAAP-47. Monitoring wells 50WW02, 50WW03 and 50WW04 (upper shallow monitoring wells) continued to be dry during the 2nd year RA(O) sampling events, thus groundwater samples could not be collected from these wells. These wells are located up gradient of the impacted zone and are primarily replaced by data from wells 50WW08, 50WW22, and 50WW21, respectively. Therefore, there were no limitations on data available for use in the MNA evaluation or analysis of plume stability, noting that monitoring well 50WW02 had reported historical concentrations of 110 μg/L for perchlorate and 8,050 μg/L for trichloroethene on April 03, 2009, which are above the cleanup levels.

The monitoring wells are depicted in **Figure 2-1** and listed in **Table 2-1**. Each of the 30 wells was secure and sampled with no major technical issues encountered as depicted in **Table 2-2**.

Before collecting groundwater samples, the wells were gauged using a water level probe and the depth to water was recorded to the nearest 0.01 foot from the top of casing. Water samples were collected using the low-flow sampling technique as described in the groundwater sampling procedures found in the Installation-Wide Work Plan (AECOM, 2014). The objective of using this method was to collect representative samples of the groundwater in the formation adjacent to the well screen, eliminating the mixing of stagnant water above and below the well screen. After water quality parameters stabilized and were within acceptable ranges per the Work Plan, samples were collected at the same low flow rate.

Groundwater sampling forms are presented in **Appendix C**. Chain of custody forms, laboratory reports and data validation reports are presented in **Appendix D**.

2.3.1 Groundwater Elevations and Flow Direction

Shallow groundwater at LHAAP-50 in May 2015 was interpreted to flow in an easterly and northeasterly direction but was primarily interpreted to be northeasterly in February 2015, August 2015, and November 2015 (see **Figures 2-2 through 2-5**). In Figures 2-2 through 2-5, monitoring wells screened in the upper shallow zone or are fully-penetrating were used and wells that are screened in the lower shallow zone (50WW06, 50WW09, 50WW14, 50WW26, and

50WW27) were not used. Groundwater elevation data for 8 RA(O) quarters is shown in **Table 2-1.**

Groundwater elevations generally increased across the site between February 2015 and May 2015, with a range between 1.10 feet and 2.94 feet, averaging an increase of 1.58 feet. Subsequently groundwater elevations decreased between 1.99 and 3.39 feet with an average of approximately 2.60 feet between May 2015 and November 2015 across the site. The May 2015 groundwater elevations were the highest they have been over the entire 2-year RA(O) monitoring period. The high water table in May 2015 could have been the cause of the observed change in groundwater flow direction from mostly northeasterly to easterly/northeasterly. This change in groundwater flow direction observed in May 2015 was short-lived and returned to mostly northeasterly in August 2015.

2.3.2 Groundwater Analytical Results

Analytical results for the quarterly samples are presented in **Table 2-3** and mapped on **Figures 2-6** through **2-9**.

All wells were sampled for VOCs and perchlorate during all sampling events of the 2nd year RA(O), with the following exceptions:

- Wells 50WW02, 50WW03, and 50WW04 were dry during all sampling events;
- 47WW38 and LHSMW54 were not sampled during the August 2015 sampling event. Sampling 47WW38 and LHSMW54 will be discontinued for the LHAAP-50 RA(O) monitoring program, because these wells are not associated with an LHAAP-50 plume. These wells will not be discussed further.

Perchlorate, TCE, PCE, 1,1-DCE, 1,2-DCA, cis-1,2-DCE, and VC are the COCs detected above their respective cleanup levels in the 2nd year RA(O) sampling. Because monitoring wells 50WW25 and 47WW38 represent a separately-sourced perchlorate plume from LHAAP-47, the results from these wells will not be discussed further.

During the February 2015 sampling event, wells 50WW05, 50WW06, 50WW08, 50WW09, 50WW11, 50WW12, 50WW13, 50WW14, 50WW15, 50WW16, 50WW18 50WW20, 50WW21, 50WW22, 50WW27, and 50WW28 had concentrations above laboratory detection limits for select COCs. Multiple wells (50WW05, 50WW06, 50WW08, 50WW09, 50WW11, 50WW12, 50WW13, 50WW14, and 50WW15) had concentrations exceeding COC MCLs and/or the Texas Risk Reduction Program (TRRP) Residential Groundwater Protective Concentration Level (PCL) for perchlorate.

During the May 2015 sampling event, wells 50WW01, 50WW05, 50WW06, 50WW07, 50WW08, 50WW09, 50WW10, 50WW11, 50WW12, 50WW13, 50WW14, 50WW15, 50WW19, 50WW21, 50WW22, 50WW23 50WW24, 50WW27, and 50WW28 had concentrations above laboratory detection limits for select COCs. Multiple wells (50WW05, 50WW06, 50WW08, 50WW09, 50WW11, 50WW12, 50WW13, 50WW14, 50WW15, and 50WW23) had concentrations exceeding COC MCLs/PCL.

During the August 2015 sampling event, wells 50WW01, 50WW05, 50WW06, 50WW08, 50WW09, 50WW10, 50WW11, 50WW12, 50WW13, 50WW14, 50WW15, 50WW16, 50WW17, 50WW18, 50WW21, 50WW22, 50WW23, 50WW27, and 50WW28 had

concentrations above laboratory detection limits for select COCs. Multiple wells (50WW05, 50WW06, 50WW08, 50WW09, 50WW11, 50WW12, 50WW13, 50WW14, and 50WW15) had concentrations exceeding COC MCLs/PCL.

During the November 2015 sampling event, wells 50WW05, 50WW06, 50WW08, 50WW09, 50WW10, 50WW11, 50WW12, 50WW13, 50WW14, 50WW15, 50WW16, 50WW21, 50WW22, 50WW27, and 50WW28 had concentrations above laboratory detection limits for select COCs. Multiple wells (50WW05, 50WW06, 50WW08, 50WW09, 50WW11, 50WW12, 50WW13, 50WW14, and 50WW15) had concentrations exceeding COC MCLs/PCL.

Laboratory analytical results are included in **Appendix D**, and are discussed further in **Section 3**. Historical groundwater analytical results are presented in **Table 2-4**.

2.3.3 Groundwater Sampling Optimization

The results of the 1st year of remedial action groundwater analytical data showed smaller plumes than those presented in the RAWP (AECOM, 2013). As a result, modifications to the list of wells being monitored for MNA parameters and contaminants were proposed in the 1st year RA(O) Report. The 1st year data was corroborated by the analytical results during the 2nd year RA(O) monitoring period. **Appendix E** provides a listing of the monitoring wells associated with the LHAAP-50 MNA groundwater monitoring program and changes to subsequent monitoring events as proposed in the 1st year RA(O) report. Upon further inspection, the 2nd year RA(O) data confirmed these recommendations, which will be applied to subsequent MNA monitoring events. Additional changes may be made for future events, as data from each new sampling event is evaluated.

Two types of changes to the MNA groundwater monitoring program were proposed in the 1st year RA(O) Report: changes to MNA parameter monitoring and changes to contaminant monitoring. With respect to changes in MNA parameter monitoring, the objective is to retain wells representing different contaminant conditions within the aquifer, while eliminating duplications. At this time, monitoring of MNA parameters will continue in at least one well for each combination of contaminants (i.e., high VOC/high perchlorate, moderate VOC/moderate perchlorate, low VOC/low perchlorate, low VOC/high perchlorate, high VOC/low perchlorate, and clean background), and representation of both lower and upper portions of the shallow groundwater zone will be maintained. For changes in contaminant monitoring, wells outside the plume that do not contribute to plume delineation will be eliminated from the sampling program.

To summarize the recommendations presented in **Appendix E,** the 1st year RA(O) monitoring data, which has been corroborated by the 2nd year RA(O) data, indicate that MNA parameter monitoring at 50WW18 and 50WW24 can be discontinued without compromising MNA data because these wells are outside the contaminant plumes. Additionally, 50WW16 should be added to the list of wells for MNA parameter monitoring. Contaminant data indicates contaminant monitoring can be discontinued at 50WW19, while continuing to monitor well 50WW17 located in close proximity of 50WW19. Additionally, wells 50WW07, 50WW20 and 50WW26 do not contribute to plume delineation (i.e., an unimpacted well exists between the named well and the plume) and can be eliminated from sampling. Well 50WW28 does not contribute to plume delineation (i.e., an unimpacted well exists between the named well and the plume) but was retained for re-evaluation after four additional quarters of sampling. Because 2nd year RA(O) quarterly results for 50WW28 and upgradient well 50WW16 were consistently

below the MCLs/PCL or below detection, 50WW28 will be eliminated from future sampling. LHAAP-47 wells 47WW38 and LHSMW54, initially included in the monitoring network to assess potential contribution of contaminants from LHAAP-47 sources, do not contribute to delineation of LHAAP-50 plumes and can be eliminated from sampling. Finally, monitoring wells 50WW03 and 50WW04 are replaced by 50WW22 and 50WW21, wells that are closer to the plume. Therefore, these wells will no longer be included in the RA(O) sampling program. A summary of the new monitoring program should it be approved is presented in **Exhibit 2-1** below and in **Figure 2-10**.

Exhibit 2-1: Proposed Monitoring Program – LHAAP-50

Well ID	Groundwater Zone	LOC	P Conc* (µg/L)	TCE Conc* (µg/L)	DP	Recommendation for Subsequent MNA Monitoring Events	Initial Monitoring Parameters
50WW02	Upper Shallow	UGP	Dry	Dry	Dry	MNA and CONTAMINANT monitoring	VOCs, P, MNA
50WW05	Upper Shallow	CP	0.70 J	210	Yes	CONTAMINANT monitoring	VOCs, P
50WW06	Lower Shallow	DGP	5,860	59.4	Yes	MNA and CONTAMINANT monitoring	VOCs, P, MNA
50WW08	Upper Shallow	UGP	32.4 J	288	Yes	MNA and CONTAMINANT monitoring	VOCs, P, MNA
50WW09	Lower Shallow	UGP	< 1	170	Yes	CONTAMINANT monitoring	VOCs, P
50WW10	Intermediate	UGP	< 0.20	0.766 J	No	CONTAMINANT monitoring	VOCs, P
50WW11	Upper Shallow	CP	22,800	2,670	Yes	MNA and CONTAMINANT monitoring	VOCs, P, MNA
50WW12	Upper Shallow	CP	37,900	17.6	No	MNA and CONTAMINANT monitoring	VOCs, P, MNA
50WW13	Upper Shallow	CP	11,400	7,710	Yes	MNA and CONTAMINANT monitoring	VOCs, P, MNA
50WW14	Lower Shallow	CP	7.5	5.78	Yes	MNA and CONTAMINANT monitoring	VOCs, P, MNA
50WW15	Upper Shallow	SGP	< 1	8.2	Yes	CONTAMINANT monitoring	VOCs, P
50WW16	Upper Shallow	DGP	< 0.20	0.986 J	No	MNA and CONTAMINANT monitoring	VOCs, P, MNA
50WW17	Shallow	DG	< 0.20	< 0.50	No	CONTAMINANT monitoring	VOCs, P
50WW18	Upper Shallow	DG	< 1	< 0.50	No	CONTAMINANT monitoring	VOCs, P
50WW21	Upper Shallow	SG	1.21 J	< 0.50	No	CONTAMINANT monitoring	VOCs, P
50WW22	Upper Shallow	UG	0.642 J	0.454 J	No	MNA and CONTAMINANT monitoring	VOCs, P, MNA
50WW23	Upper Shallow	SG	< 1	< 0.50	No	MNA and CONTAMINANT monitoring	VOCs, P, MNA
50WW24	Upper Shallow	SG	< 1	< 0.50	No	CONTAMINANT monitoring	VOCs, P
50WW27	Lower Shallow	SGP	< 1	< 0.50	Yes	CONTAMINANT monitoring	VOCs, P

DP - TCE biodegradation daughter products
J - estimated concentration
LOC - location of well relative to source/plume (UG-upgradient, DG-downgradient, SG-sidegradient, CP indicates wells at center of the plume, P indicates the well is within the plume)
MNA - Monitored Natural Attenuation parameters
ND - not detected
P - Perchlorate
VOC - volatile organic compounds
* As of November 2015 sampling event in micrograms per liter (µg/L)

2.4 Surface Water Sampling

Two years of quarterly surface water monitoring at Goose Prairie Creek monitoring point GPW-1 adjacent to the LHAAP-50 site is prescribed in the RAWP (AECOM, 2013) following excavation of perchlorate-contaminated surface soils to evaluate the effectiveness of the removal action. Additional surface water samples are to be collected from monitoring point GPW-1A to assess potential contaminant contributions to GPW-1 from the perchlorate-contaminated surface soil area at LHAAP-47. Finally, Goose Prairie Creek location 50SW06 will be sampled to assess the success of the groundwater remedial action in preventing impacts to surface water through migration of groundwater COCs to the surface water body. **Figure 2-11** depicts the surface water sampling locations. Surface water sampling data are included in **Table 2-3**. Quarterly surface water samples were collected from 50SW06 and GPW-1 in February 2015, May 2015, and November of 2015. These two sampling points were dry during the August 2015 sampling event. Surface water samples were collected from GPW-1A in February 2015 and May of 2015; however, it was dry during the August and November 2015 sampling events. In October 2015 and December 2015, limited soil cover repair activities were completed in an area of perchlorate-contaminated surface soils at LHAAP-47, where erosion of the soil cover and exposure of the plastic liner were observed. The repair included placement of a new plastic liner and 6 inches of clean topsoil. The topsoil was seeded with rye grass and covered with erosion matting. The repair was conducted to prevent potentially exposed perchlorate-contaminated soil from impacting surface water in a ditch contributing to Goose Prairie Creek.

Additional surface water samples were collected during rainfall events on February 23, 2015, May 08, 2015, and October 26, 2015. An additional sampling event was conducted on November 19, 2015 at the end of a rainfall event, but while runoff was still occurring. The amount of rainfall that occurred on the day of sampling and 48 hours before each sampling event is presented in **Exhibit 2-2**. The surface water sample collection forms as depicted in Appendix J of the Final RACR (AECOM, 2016) are presented for locations GPW-1 and GPW-1A in **Appendix F**. Some deviations from the sampling protocol occurred on certain occasions (e.g., the time of start of rain to the time a sample is collected and observations of surface runoff were not recorded, and photographs of ground surface and creek conditions were not taken), such as for October 26, 2015 sampling event when heavy rainfall and the highest rainfall amounts recorded occurred over the weekend, or when rain started sometime overnight. In such situations, determining the exact time rain began falling was not possible.

Exhibit 2-2: Summary of Conditions at Time of Surface Water Sampling

Date of Sampling	Sampling Objective	Rain		Concentration (µg/L)	
		Day of Sampling	48 Hours before Sampling	GPW-1	GPW-1A
02/17/15	Quarterly	0.0	1.29	0.737	38.2
02/23/15	RACR Requirement	1.24	0.0	0.311 J	Dry
05/08/15	RACR Requirement	3.00	0.0	0.156 J	16
05/22/15	Quarterly	0.0	1.63	0.213 J	Dry
08/19/15	Quarterly	1.21	0.0	Dry	Dry
10/26/2015	RACR Requirement	0.35	4.98	0.684	Dry
11/13/15	Quarterly	0.0	0.0	0.139 J	Dry
11/19/15	RACR Requirement	0.0	3.31	0.142 J	Dry

J – Concentration is estimated by the analytical laboratory analyst
GWP-1 collected from Goose Prairie Creek
GPW-1A collected from a tributary of Goose Prairie Creek upstream of GPW-1

Perchlorate was detected in all GPW-1 samples, but all concentrations were below the PCL of 17 µg/L. The concentrations of perchlorate varied within a narrow range and were consistently below 1 µg/L in GPW-1. The concentrations of perchlorate in the samples collected from the LHAAP-47 tributary of Goose Prairie Creek were 50 to 100 times greater than the reported concentrations in GPW-1 and contribute to the perchlorate detection in Goose Prairie Creek. The lowest concentration in Goose Prairie Creek was reported when no rainfall occurred in the preceding 48 hours (November 13, 2015 sample at GPW-1).

Correlations between perchlorate concentrations in Goose Prairie Creek and rainfall amounts on the day of sampling, 48 hours before sampling day, and in aggregate are 27%, 45%, and 32%, respectively. This indicates that the occurrence of rain on the day of sampling actually reduces perchlorate concentration in Goose Prairie Creek, while the occurrence of rain 48 hours prior to the day of sampling increases the perchlorate concentration in Goose Prairie Creek, presumably because time is needed for the contamination to migrate from the tributary of Goose Prairie Creek to Goose Prairie Creek.

Because the groundwater elevation has consistently been below the bottom of the surface water sampling locations at locations 50SW06 and GPW-1, the methodology to sample surface water when the groundwater elevation is higher than surface water as depicted in Appendix J of the Final RACR (AECOM, 2016) was not applied. **Exhibit 2-3** summarizes the groundwater elevations for the closest upgradient monitoring wells to surface water sampling locations 50SW06 and GWP-1 along Goose Prairie Creek, compared to the elevation of the bottom of the creek/ditch at those surface water sampling locations. Analytical results for the samples collected from 50SW06, GPW-1, and GPW-1A were below MCLs/PCL for all COCs except perchlorate. One perchlorate concentration of 38.2 µg/L, which exceeds the perchlorate PCL of 17 µg/L, was reported in the sample from GPW-1A collected on February 17, 2015.

Exhibit 2-3: Groundwater Elevation vs. Bottom of Drainage Channel Elevation

Surface Water Sample Location	Bottom of Drainage Channel (ft amsl)	Nearest Upgradient Well	Groundwater Elevation during Surface Water Sampling (ft amsl)	Groundwater Elevation Measurement Date
50SW06	182.902	50WW16	177.53	2/17/15
			179.28	5/22/15
			176.22	11/13/15
GPW-1	185.250	50WW01	178.15	2/17/15
			179.94	5/8/15
			179.94	5/22/15
			177.05	11/13/15

Ft amsl – feet above mean sea level
No upgradient well is identified for surface water sampling location GWP-1A located at LHAAP-47.

2.5 Well Abandonment

The RAWP (AECOM, 2013) states that recommendations for well abandonment would be made in the MNA Performance Evaluation Report. After 8 quarters of MNA sampling, wells 50WW03, and 50WW19 are recommended for abandonment. This recommendation is based on the analysis completed in **Appendix E** and **Section 2.3.3**.

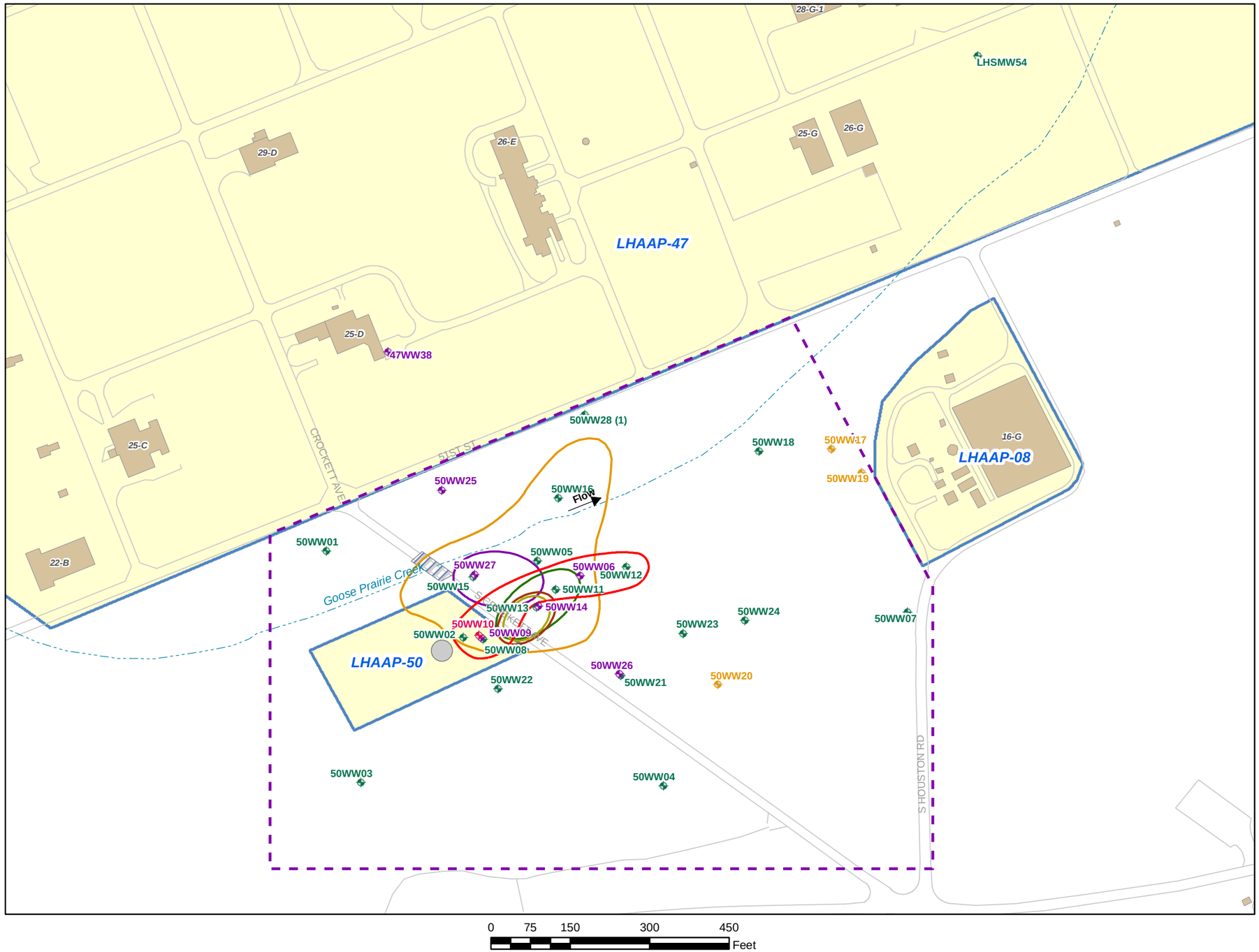

Legend

- Lower Shallow Monitoring Well
- Upper Shallow Monitoring Well
- Fully Penetrating Shallow Monitoring Well
- Intermediate Monitoring Well
- Perchlorate Plume (17 µg/L Extent)
- cis-1,2-Dichloroethene Plume (70 µg/L Extent)
- 1,1-Dichloroethene (7 µg/L Extent) and 1,2-Dichloroethane (5 µg/L Extent) Plumes
- Tetrachloroethene Plume (5 µg/L Extent)
- Trichloroethene Plume (5 µg/L Extent)
- Vinyl Chloride Plume (2 µg/L Extent)
- Roads
- Goose Prairie Creek
- Proposed Land Use Control Boundary
- Bridges
- Buildings
- Former Storage Tank Location
- Site Boundaries

Note:
1. 50WW28 installed in May 2014 and sampled in July 2014.
2. Texas Residential Groundwater Protective Concentration Level for Perchlorate = 17 µg/L.
3. Plumes are based on data from October 2013 except for 50WW28, which was sampled in July 2014.

AECOM

Figure 2-1
Proposed Land Use Control Boundary
LHAAP-50 Remedial Action Operations Report (Year 2)

Longhorn Army Ammunition Plant
Karnack, Texas

60256135 October 2016

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-50\RAO Report\Yr_2_RAO\Fig 2-1_LHAAP50_LU Control Boundary.mxd

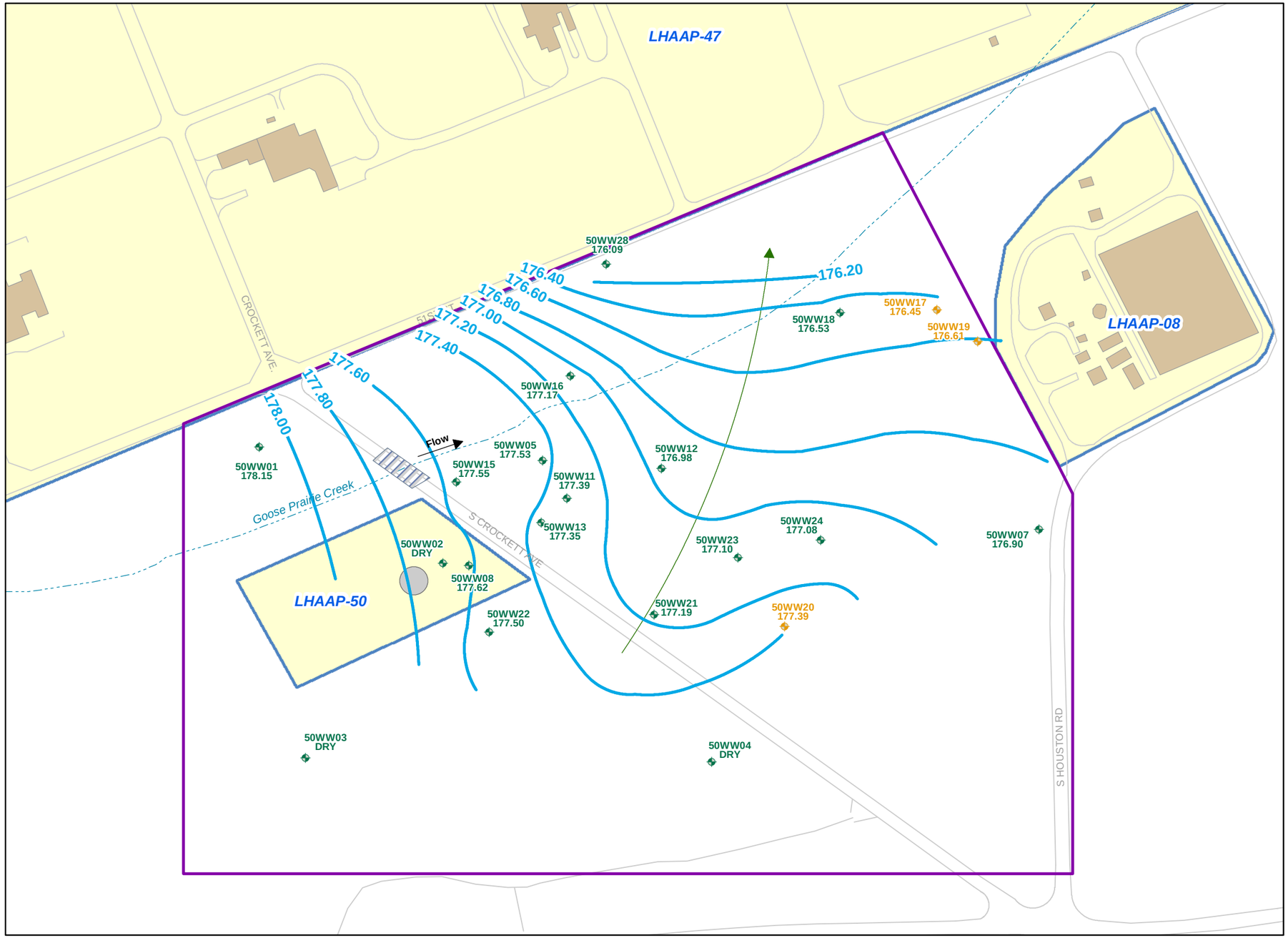

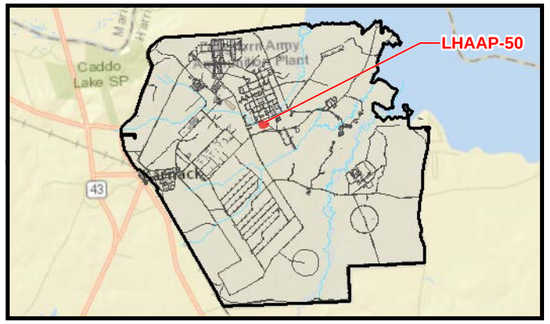

Legend

- Upper Shallow Monitoring Well
- Fully Penetrating Shallow Monitoring Well
- Interpreted Groundwater Flow Direction
- Groundwater Elevation Contour (Dashed Where Inferred)
- Roads
- Goose Prairie Creek
- Land Use Control Boundary
- Bridges
- Former Storage Tank Location
- Buildings
- Site Boundaries

Notes:
1. 50WW01 is not part of the MNA monitoring well network and was not gauged.
2. 50WW19 required redevelopment and was not gauged in October 2013.
3 . Well 50WW28 not installed until May 2014.

N

0 75 150 300 Feet

AECOM

Figure 2-2
Shallow Zone Potentiometric Map
February 2015
LHAAP-50 Remedial Action Operations Report (Year 2)
Longhorn Army Ammunition Plant
Karnack, Texas

60256135 October 2016

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-50\RAO Report\Yr_2_RAO\Fig 2-2_LHAAP50_Shallow Zone Potentiometric Map_Feb2015.mxd

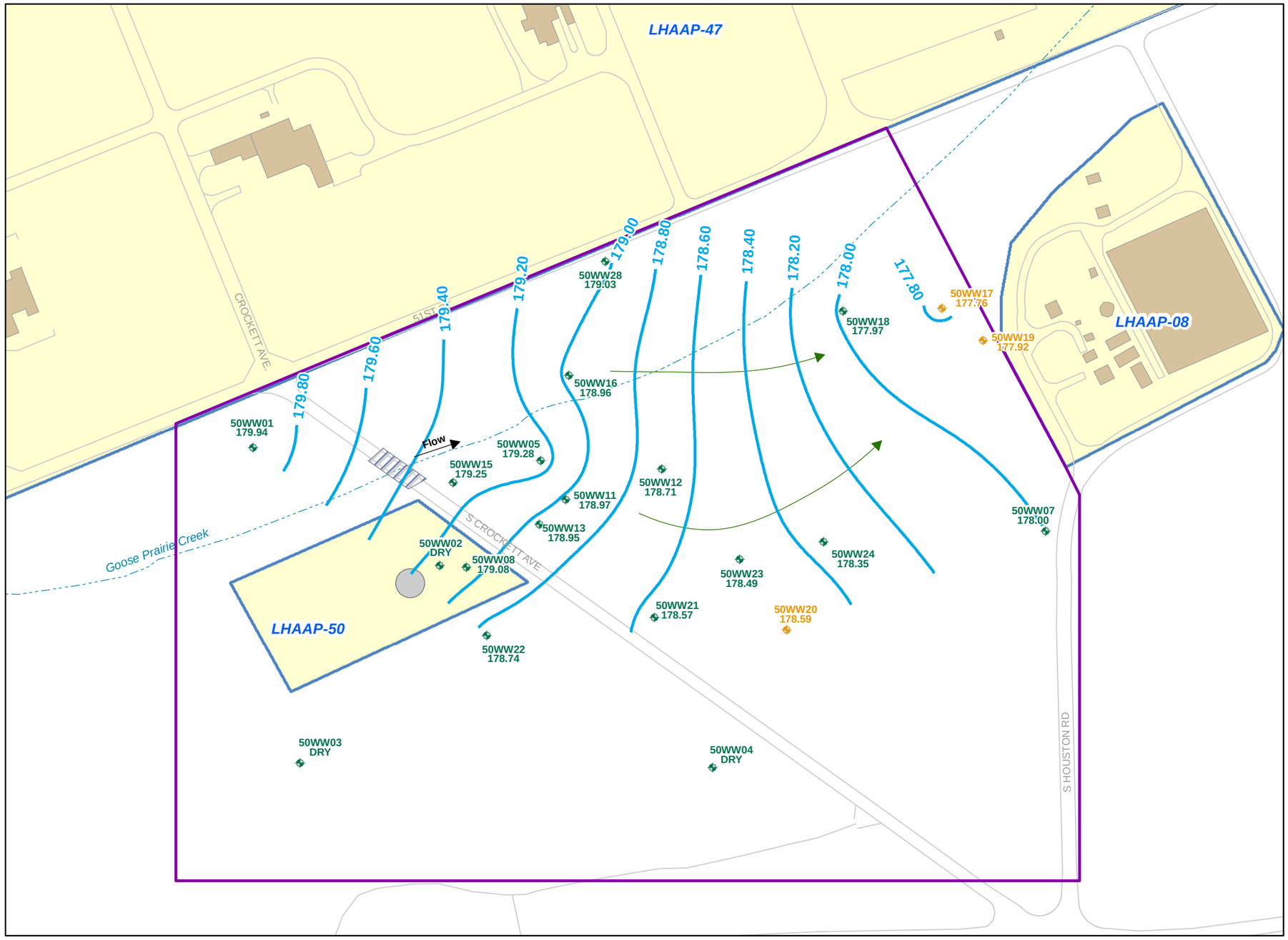

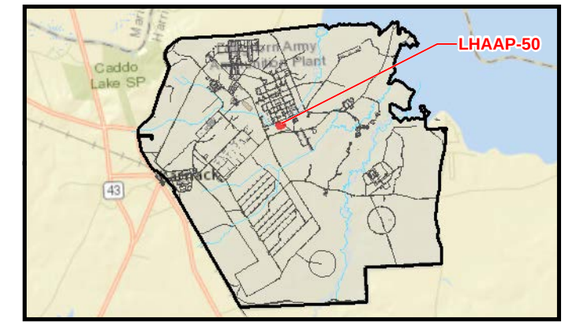

Legend

- Upper Shallow Monitoring Well
- Fully Penetrating Shallow Monitoring Well
- Interpreted Groundwater Flow Direction
- Groundwater Elevation Contour (Dashed Where Inferred)
- Roads
- Goose Prairie Creek
- Land Use Control Boundary
- Bridges
- Buildings
- Former Storage Tank Location
- Site Boundaries

Notes:
1. 50WW01 is not part of the MNA monitoring well network and was not gauged.
2. 50WW19 required redevelopment and was not gauged in October 2013.
3. Well 50WW28 not installed until May 2014.

N

0 75 150 300 Feet

AECOM

Figure 2-3
Shallow Zone Potentiometric Map
May 2015
LHAAP-50 Remedial Action Operations Report (Year 2)
Longhorn Army Ammunition Plant
Karnack, Texas

60256135 October 2016

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-50\RAO Report\Yr_2_RAO\Fig 2-3_LHAAP50_Shallow Zone Potentiometric Map_May2015.mxd

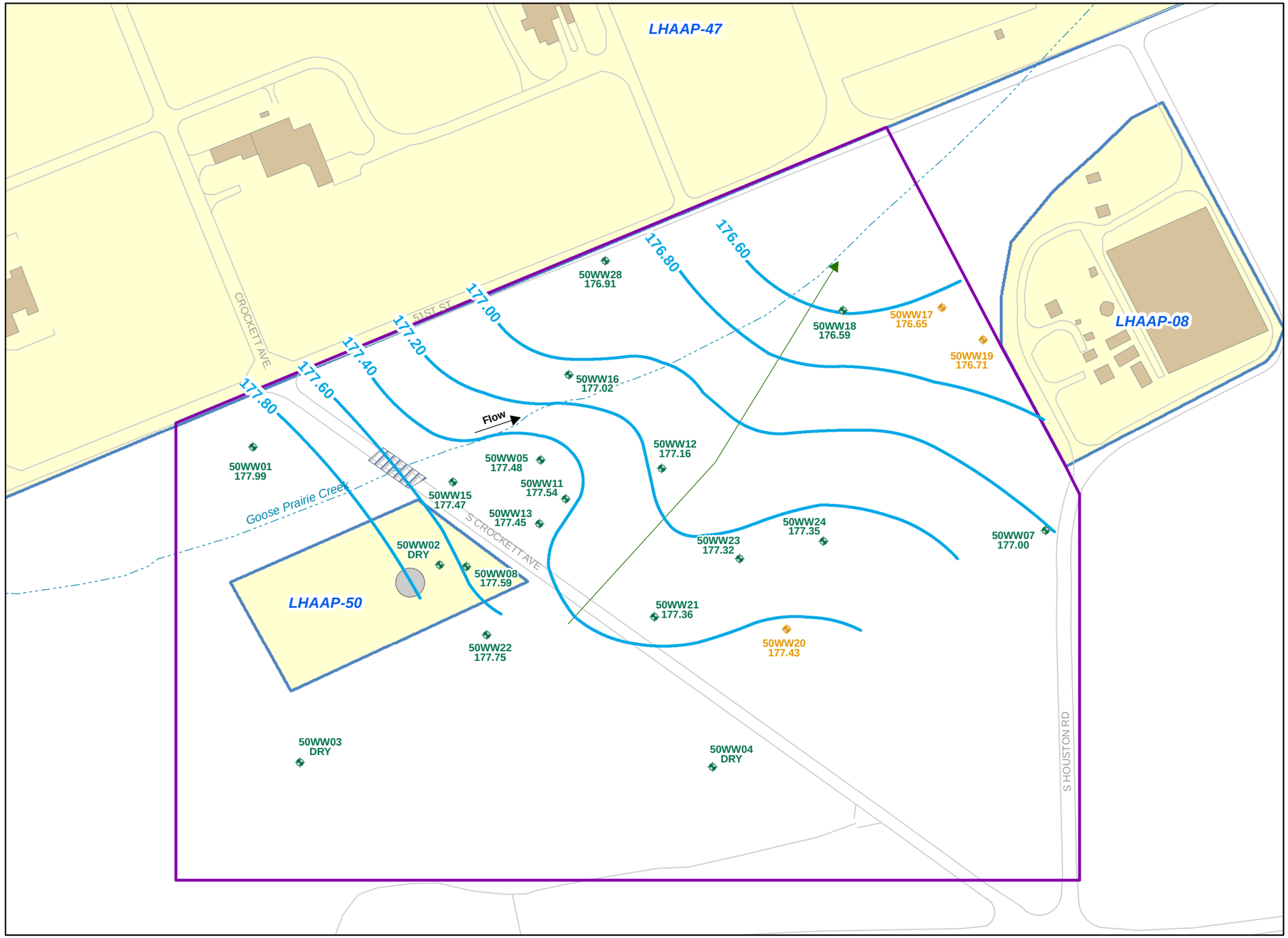

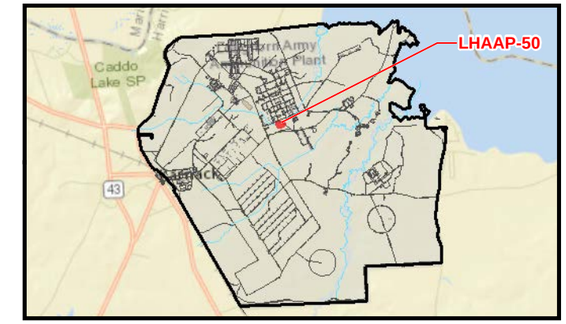

Legend

- Upper Shallow Monitoring Well
- Fully Penetrating Shallow Monitoring Well
- Interpreted Groundwater Flow Direction
- Groundwater Elevation Contour (Dashed Where Inferred)
- Roads
- Goose Prairie Creek
- Land Use Control Boundary
- Bridges
- Buildings
- Former Storage Tank Location
- Site Boundaries

Notes:
1. 50WW01 is not part of the MNA monitoring well network and was not gauged.
2. 50WW19 required redevelopment and was not gauged in October 2013.
3. Well 50WW28 not installed until May 2014.

N

0 75 150 300 Feet

AECOM

Figure 2-4
Shallow Zone Potentiometric Map
August 2015
LHAAP-50 Remedial Action Operations Report (Year 2)
Longhorn Army Ammunition Plant
Karnack, Texas

60256135 October 2016

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-50\RAO Report\Yr_2_RAO\Fig 2-4_LHAAP50_Shallow Zone Potentiometric Map_Aug2015.mxd

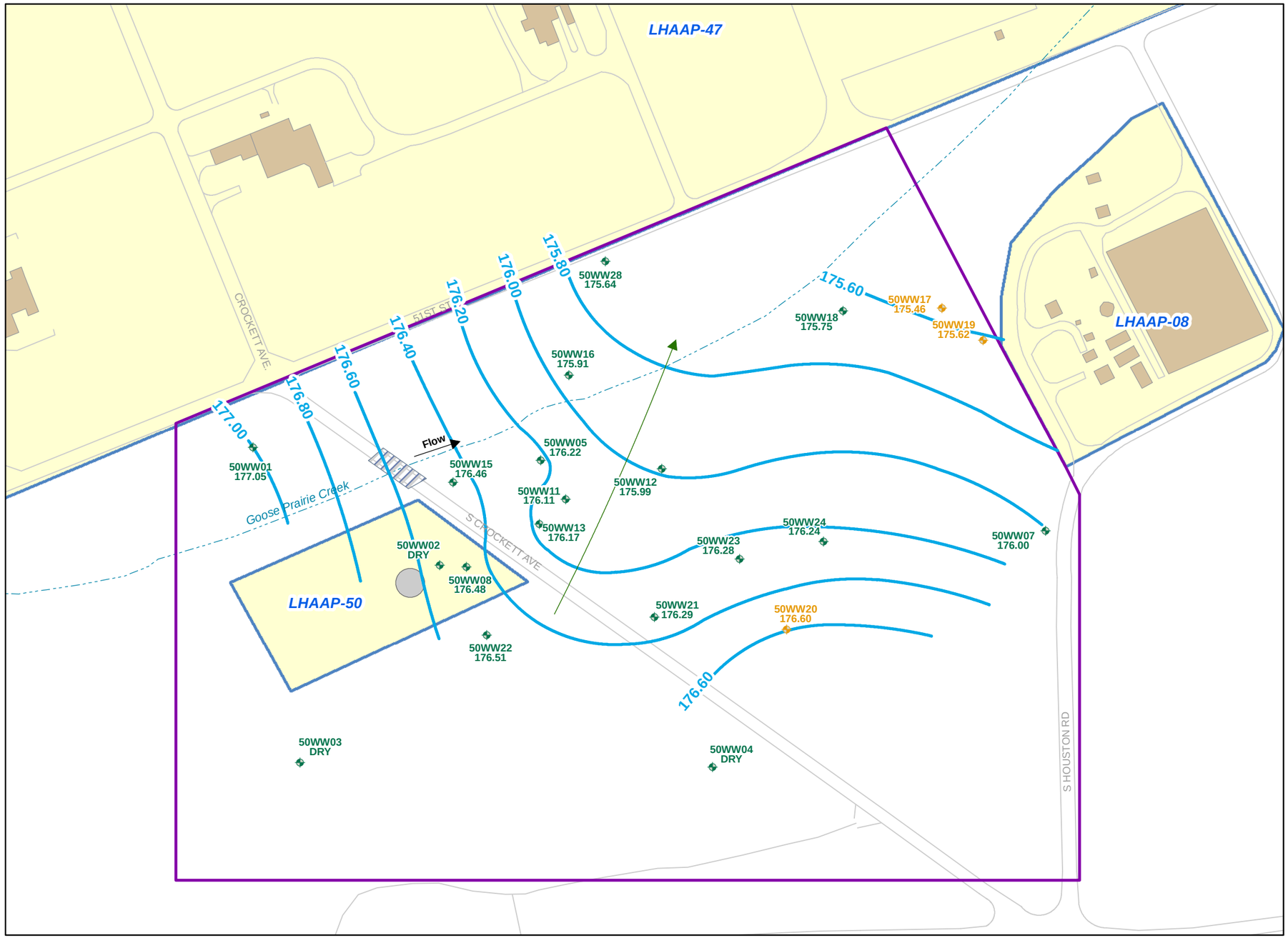

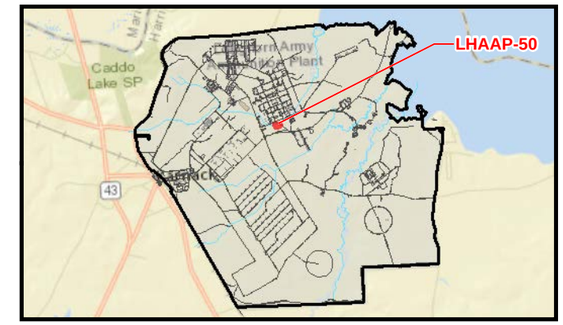

Legend

- Upper Shallow Monitoring Well
- Fully Penetrating Shallow Monitoring Well
- Interpreted Groundwater Flow Direction
- Groundwater Elevation Contour (Dashed Where Inferred)
- Roads
- Goose Prairie Creek
- Land Use Control Boundary
- Bridges
- Buildings
- Former Storage Tank Location
- Site Boundaries

Notes:
1. 50WW01 is not part of the MNA monitoring well network and was not gauged.
2. 50WW19 required redevelopment and was not gauged in October 2013.
3. Well 50WW28 not installed until May 2014.

N

0 75 150 300 Feet

AECOM

Figure 2-5
Shallow Zone Potentiometric Map
November 2015
LHAAP-50 Remedial Action Operations Report (Year 2)
Longhorn Army Ammunition Plant
Karnack, Texas

60256135 October 2016

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-50\RAO Report\Yr_2_RAO\Fig 2-5_LHAAP50_Shallow Zone Potentiometric Map_Nov2015.mxd

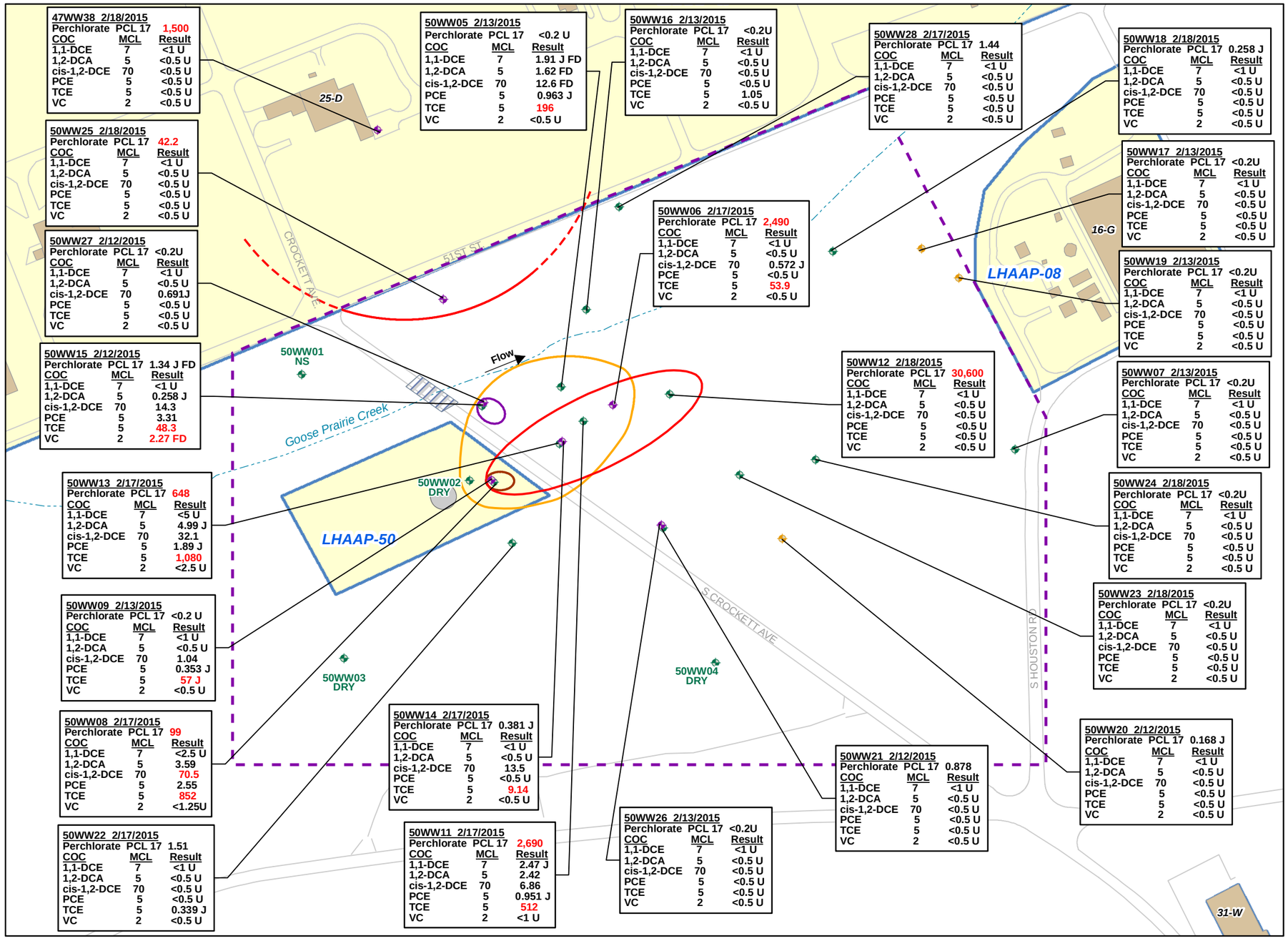

N

Legend

FD	Field Duplicate
J	Estimated Value
U	Result less than laboratory detection limit
MNA	Monitored Natural Attenuation
NS	Not Sampled
ND	No Data
	Lower Shallow Monitoring Well
	Upper Shallow Monitoring Well
	Upper Shallow Monitoring Well
	Perchlorate Plume (17 µg/L Extent) (Dashed Where Inferred)
	cis-1,2-Dichloroethane Plume (70 µg/L Extent)
	Trichloroethene Plume (5 µg/L Extent)
	Vinyl Chloride Plume (2 µg/L Extent)
	Roads
	Goose Prairie Creek
	Proposed Land Use Control Boundary
	Bridges
	Former Storage Tank Location
	Buildings
	Site Boundaries

Notes:
1. 50WW01 is not part of the MNA monitoring well networkand was not sampled.
2. Concentrations are in micrograms per liter (µg/L).
3. Texas Residential Groundwater Protective Concentration Level for Perchlorate = 17 ug/L.

AECOM

Figure 2-6
COC Concentrations in Shallow Groundwater
February 2015
LHAAP-50 Remedial Action Operations Report (Year 2)
Longhorn Army Ammunition Plant
Karnack, Texas

60256135 October 2016

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-50\RAO Report\Yr_2_RAO\Fig 2-6_LHAAP50_COC Conc in Shallow Groundwater_Feb2015.mxd

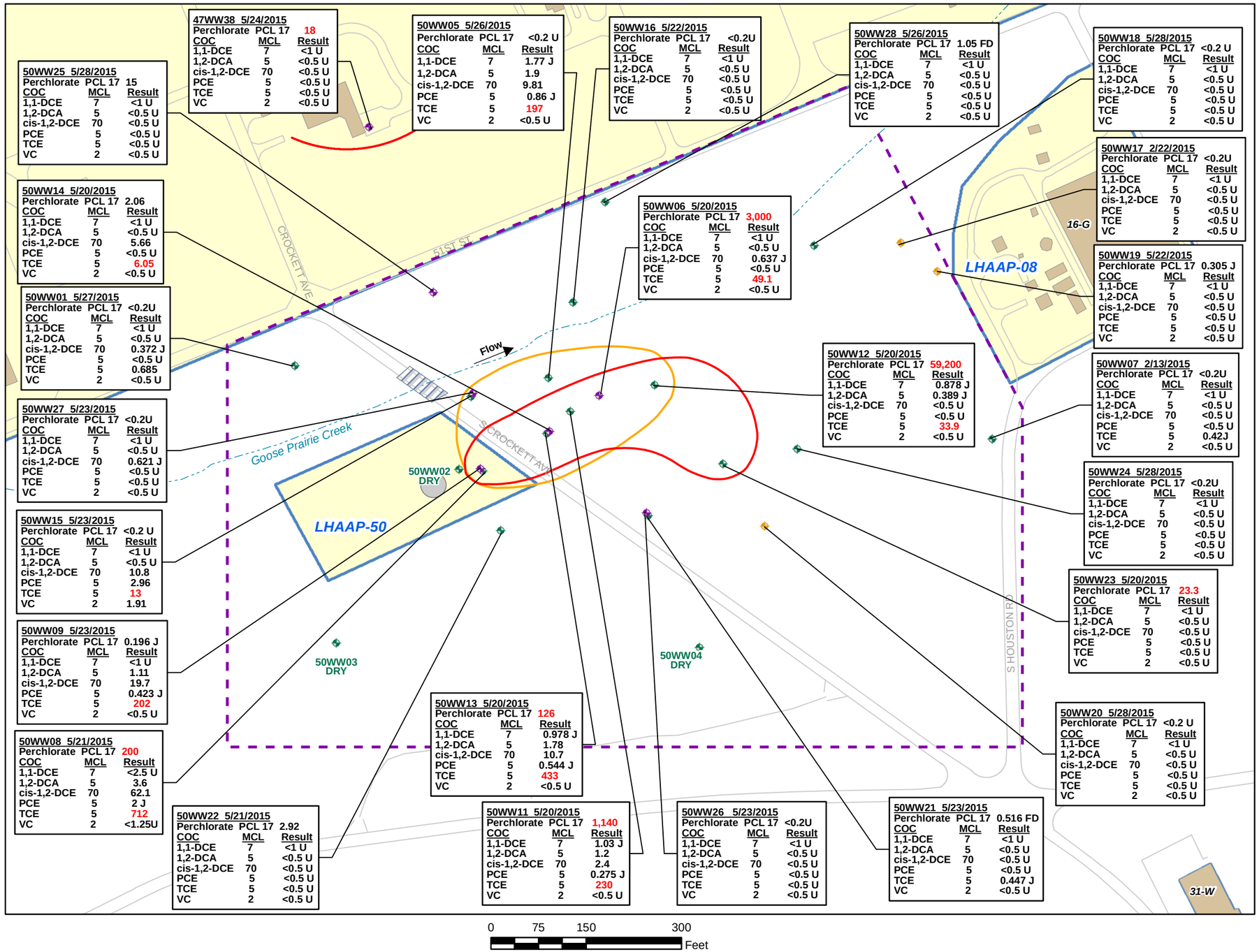

Legend

FD	Field Duplicate
J	Estimated Value
U	Result less than laboratory detection limit
MNA	Monitored Natural Attenuation
NS	Not Sampled
ND	No Data
	Lower Shallow Monitoring Well
	Upper Shallow Monitoring Well
	Fully Penetrating Shallow Monitoring Well
	Perchlorate Plume (17 µg/L Extent)
	Trichloroethene Plume (5 µg/L Extent)
	Roads
	Goose Prairie Creek
	Proposed Land Use Control Boundary
	Bridges
	Former Storage Tank Location
	Buildings
	Site Boundaries

Notes:
1. 50WW01 is not part of the MNA monitoring well network and was not sampled.
2. Concentrations are in micrograms per liter (µg/L).
3. Texas Residential Groundwater Protective Concentration Level for Perchlorate = 17 ug/L.

AECOM

Figure 2-7
COC Concentrations in Shallow Groundwater
May 2015
LHAAP-50 Remedial Action Operations Report (Year 2)
Longhorn Army Ammunition Plant
Karnack, Texas

60256135 October 2016

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-50\RAO Report\Yr_2_RAO\Fig 2-7_LHAAP50_COC Conc in Shallow Groundwater_May2015.mxd

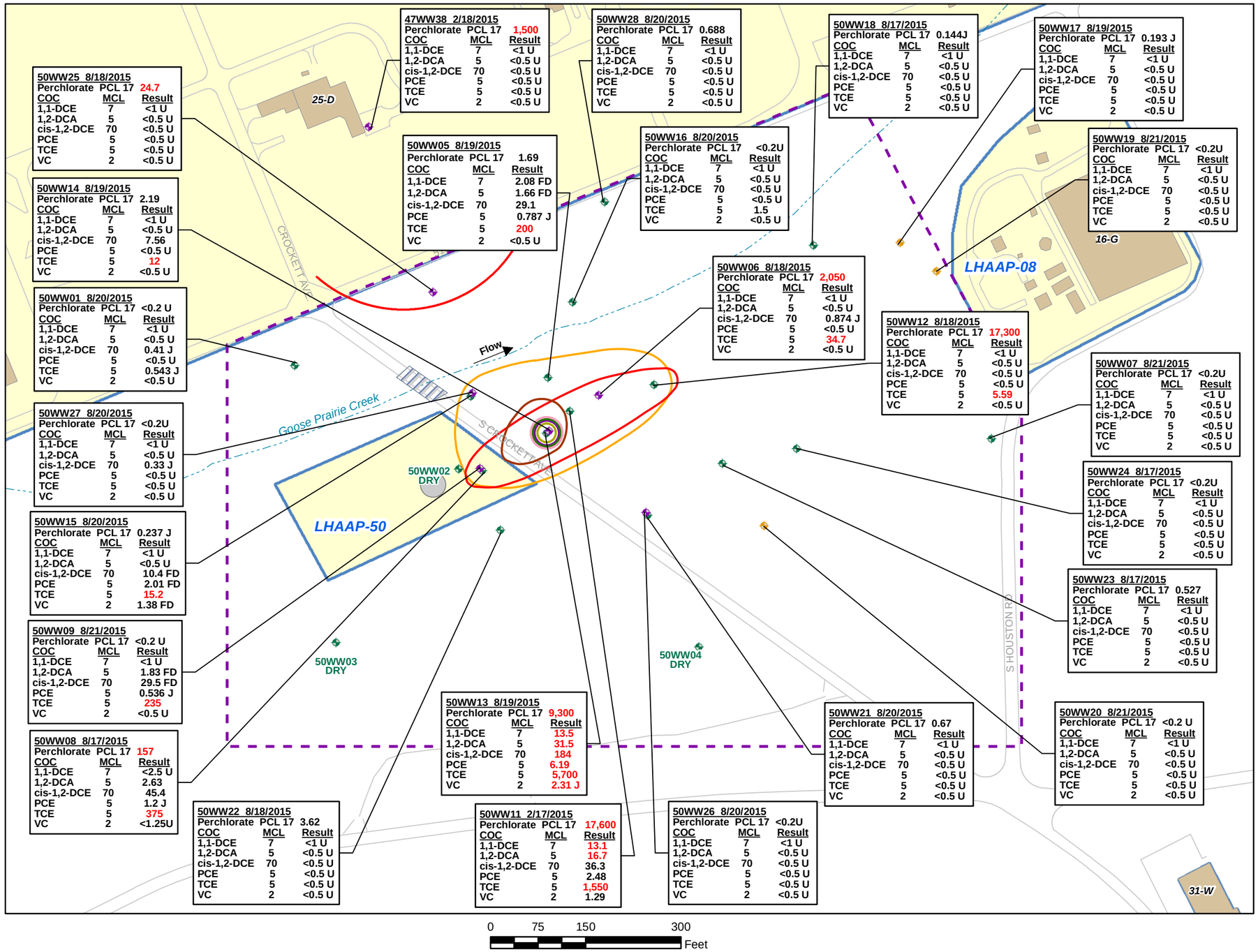

Legend

FD	Field Duplicate
J	Estimated Value
U	Result less than laboratory detection limit
MNA	Monitored Natural Attenuation
NS	Not Sampled
ND	No Data
	Lower Shallow Monitoring Well
	Upper Shallow Monitoring Well
	Fully Penetrating Shallow Monitoring Well
	Perchlorate Plume (17 µg/L Extent)
	cis-1,2-Dichloroethane Plume (70 µg/L Extent)
	1,1-Dichloroethene Plume (7 µg/L Extent)
	1,2-Dichloroethane Plume (5 µg/L Extent)
	Tetrachloroethene Plume (5 µg/L Extent)
	Trichloroethene Plume (5 µg/L Extent)
	Vinyl Chloride Plume (2 µg/L Extent)
	Roads
	Goose Prairie Creek
	Proposed Land Use Control Boundary
	Bridges
	Former Storage Tank Location
	Buildings
	Site Boundaries

Notes:
1. 50WW01 is not part of the MNA monitoring well network and was not sampled.
2. Concentrations are in micrograms per liter (µg/L).
3. Texas Residential Groundwater Protective Concentration Level for Perchlorate = 17 µg/L.

AECOM

Figure 2-8
COC Concentrations in Shallow Groundwater
August 2015
LHAAP-50 Remedial Action Operations Report (Year 2)
Longhorn Army Ammunition Plant
Karnack, Texas

60256135 October 2016

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-50\RAO Report\Yr_2_RAO\Fig 2-8_LHAAP50_COC Conc in Shallow Groundwater_Aug2015.mxd

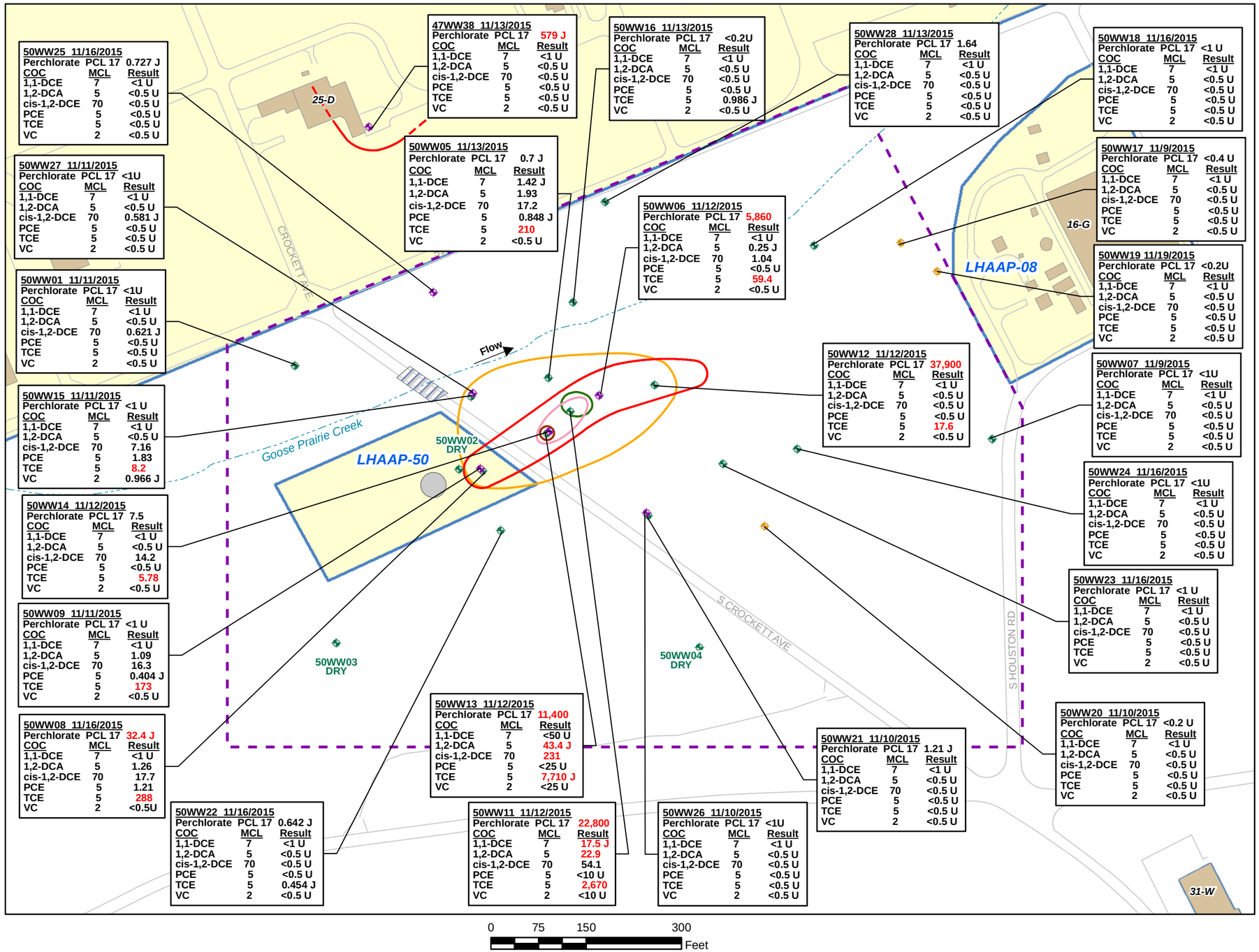

50WW25 11/16/2015

Perchlorate	PCL 17	0.727 J
COC	MCL	Result
1,1-DCE	7	<1 U
1,2-DCA	5	<0.5 U
cis-1,2-DCE	70	<0.5 U
PCE	5	<0.5 U
TCE	5	<0.5 U
VC	2	<0.5 U

47WW38 11/13/2015

Perchlorate	PCL 17	579 J
COC	MCL	Result
1,1-DCE	7	<1 U
1,2-DCA	5	<0.5 U
cis-1,2-DCE	70	<0.5 U
PCE	5	<0.5 U
TCE	5	<0.5 U
VC	2	<0.5 U

50WW16 11/13/2015

Perchlorate	PCL 17	<0.2U
COC	MCL	Result
1,1-DCE	7	<1 U
1,2-DCA	5	<0.5 U
cis-1,2-DCE	70	<0.5 U
PCE	5	<0.5 U
TCE	5	0.986 J
VC	2	<0.5 U

50WW28 11/13/2015

Perchlorate	PCL 17	1.64
COC	MCL	Result
1,1-DCE	7	<1 U
1,2-DCA	5	<0.5 U
cis-1,2-DCE	70	<0.5 U
PCE	5	<0.5 U
TCE	5	<0.5 U
VC	2	<0.5 U

50WW18 11/16/2015

Perchlorate	PCL 17	<1 U
COC	MCL	Result
1,1-DCE	7	<1 U
1,2-DCA	5	<0.5 U
cis-1,2-DCE	70	<0.5 U
PCE	5	<0.5 U
TCE	5	<0.5 U
VC	2	<0.5 U

50WW27 11/11/2015

Perchlorate	PCL 17	<1U
COC	MCL	Result
1,1-DCE	7	<1 U
1,2-DCA	5	<0.5 U
cis-1,2-DCE	70	0.581 J
PCE	5	<0.5 U
TCE	5	<0.5 U
VC	2	<0.5 U

50WW05 11/13/2015

Perchlorate	PCL 17	0.7 J
COC	MCL	Result
1,1-DCE	7	1.42 J
1,2-DCA	5	1.93
cis-1,2-DCE	70	17.2
PCE	5	0.848 J
TCE	5	210
VC	2	<0.5 U

50WW17 11/9/2015

Perchlorate	PCL 17	<0.4 U
COC	MCL	Result
1,1-DCE	7	<1 U
1,2-DCA	5	<0.5 U
cis-1,2-DCE	70	<0.5 U
PCE	5	<0.5 U
TCE	5	<0.5 U
VC	2	<0.5 U

50WW06 11/12/2015

Perchlorate	PCL 17	5,860
COC	MCL	Result
1,1-DCE	7	<1 U
1,2-DCA	5	0.25 J
cis-1,2-DCE	70	1.04
PCE	5	<0.5 U
TCE	5	59.4
VC	2	<0.5 U

50WW19 11/19/2015

Perchlorate	PCL 17	<0.2U
COC	MCL	Result
1,1-DCE	7	<1 U
1,2-DCA	5	<0.5 U
cis-1,2-DCE	70	<0.5 U
PCE	5	<0.5 U
TCE	5	<0.5 U
VC	2	<0.5 U

50WW01 11/11/2015

Perchlorate	PCL 17	<1U
COC	MCL	Result
1,1-DCE	7	<1 U
1,2-DCA	5	<0.5 U
cis-1,2-DCE	70	0.621 J
PCE	5	<0.5 U
TCE	5	<0.5 U
VC	2	<0.5 U

50WW12 11/12/2015

Perchlorate	PCL 17	37,900
COC	MCL	Result
1,1-DCE	7	<1 U
1,2-DCA	5	<0.5 U
cis-1,2-DCE	70	<0.5 U
PCE	5	<0.5 U
TCE	5	17.6
VC	2	<0.5 U

50WW07 11/9/2015

Perchlorate	PCL 17	<1U
COC	MCL	Result
1,1-DCE	7	<1 U
1,2-DCA	5	<0.5 U
cis-1,2-DCE	70	<0.5 U
PCE	5	<0.5 U
TCE	5	<0.5 U
VC	2	<0.5 U

50WW15 11/11/2015

Perchlorate	PCL 17	<1 U
COC	MCL	Result
1,1-DCE	7	<1 U
1,2-DCA	5	<0.5 U
cis-1,2-DCE	70	7.16
PCE	5	1.83
TCE	5	8.2
VC	2	0.966 J

50WW24 11/16/2015

Perchlorate	PCL 17	<1U
COC	MCL	Result
1,1-DCE	7	<1 U
1,2-DCA	5	<0.5 U
cis-1,2-DCE	70	<0.5 U
PCE	5	<0.5 U
TCE	5	<0.5 U
VC	2	<0.5 U

50WW14 11/12/2015

Perchlorate	PCL 17	7.5
COC	MCL	Result
1,1-DCE	7	<1 U
1,2-DCA	5	<0.5 U
cis-1,2-DCE	70	14.2
PCE	5	<0.5 U
TCE	5	5.78
VC	2	<0.5 U

50WW23 11/16/2015

Perchlorate	PCL 17	<1 U
COC	MCL	Result
1,1-DCE	7	<1 U
1,2-DCA	5	<0.5 U
cis-1,2-DCE	70	<0.5 U
PCE	5	<0.5 U
TCE	5	<0.5 U
VC	2	<0.5 U

50WW09 11/11/2015

Perchlorate	PCL 17	<1 U
COC	MCL	Result
1,1-DCE	7	<1 U
1,2-DCA	5	1.09
cis-1,2-DCE	70	16.3
PCE	5	0.404 J
TCE	5	173
VC	2	<0.5 U

50WW20 11/10/2015

Perchlorate	PCL 17	<0.2 U
COC	MCL	Result
1,1-DCE	7	<1 U
1,2-DCA	5	<0.5 U
cis-1,2-DCE	70	<0.5 U
PCE	5	<0.5 U
TCE	5	<0.5 U
VC	2	<0.5 U

50WW13 11/12/2015

Perchlorate	PCL 17	11,400
COC	MCL	Result
1,1-DCE	7	<50 U
1,2-DCA	5	43.4 J
cis-1,2-DCE	70	231
PCE	5	<25 U
TCE	5	7,710 J
VC	2	<25 U

50WW21 11/10/2015

Perchlorate	PCL 17	1.21 J
COC	MCL	Result
1,1-DCE	7	<1 U
1,2-DCA	5	<0.5 U
cis-1,2-DCE	70	<0.5 U
PCE	5	<0.5 U
TCE	5	<0.5 U
VC	2	<0.5 U

50WW08 11/16/2015

Perchlorate	PCL 17	32.4 J
COC	MCL	Result
1,1-DCE	7	<1 U
1,2-DCA	5	1.26
cis-1,2-DCE	70	17.7
PCE	5	1.21
TCE	5	288
VC	2	<0.5U

50WW22 11/16/2015

Perchlorate	PCL 17	0.642 J
COC	MCL	Result
1,1-DCE	7	<1 U
1,2-DCA	5	<0.5 U
cis-1,2-DCE	70	<0.5 U
PCE	5	<0.5 U
TCE	5	0.454 J
VC	2	<0.5 U

50WW11 11/12/2015

Perchlorate	PCL 17	22,800
COC	MCL	Result
1,1-DCE	7	17.5 J
1,2-DCA	5	22.9
cis-1,2-DCE	70	54.1
PCE	5	<10 U
TCE	5	2,670
VC	2	<10 U

50WW26 11/10/2015

Perchlorate	PCL 17	<1U
COC	MCL	Result
1,1-DCE	7	<1 U
1,2-DCA	5	<0.5 U
cis-1,2-DCE	70	<0.5 U
PCE	5	<0.5 U
TCE	5	<0.5 U
VC	2	<0.5 U

Legend

FD	Field Duplicate
J	Estimated Value
U	Result less than laboratory detection limit
MNA	Monitored Natural Attenuation
NS	Not Sampled
ND	No Data
	Lower Shallow Monitoring Well
	Upper Shallow Monitoring Well
	Fully Penetrating Shallow Monitoring Well
	Perchlorate Plume (17 µg/L Extent) (Dashed Where Inferred)
	cis-1,2-Dichloroethane Plume (70 µg/L Extent)
	1,1-Dichloroethene Plume (7 µg/L Extent)
	1,2-Dichloroethane Plume (5 µg/L Extent)
	Trichloroethene Plume (5 µg/L Extent)
	Roads
	Goose Prairie Creek
	Proposed Land Use Control Boundary
	Bridges
	Former Storage Tank Location
	Buildings
	Site Boundaries

Notes:
1. 50WW01 is not part of the MNA monitoring well network and was not sampled.
2. Concentrations are in micrograms per liter (µg/L).
3. Texas Residential Groundwater Protective Concentration Level for Perchlorate = 17 µg/L.

AECOM

Figure 2-9
COC Concentrations in Shallow Groundwater
November 2015
LHAAP-50 Remedial Action Operations Report (Year 2)
Longhorn Army Ammunition Plant
Karnack, Texas

60256135 October 2016

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-50\RAO Report\Yr_2_RAO\Fig 2-9_LHAAP50_COC Conc in Shallow Groundwater_Nov2015.mxd

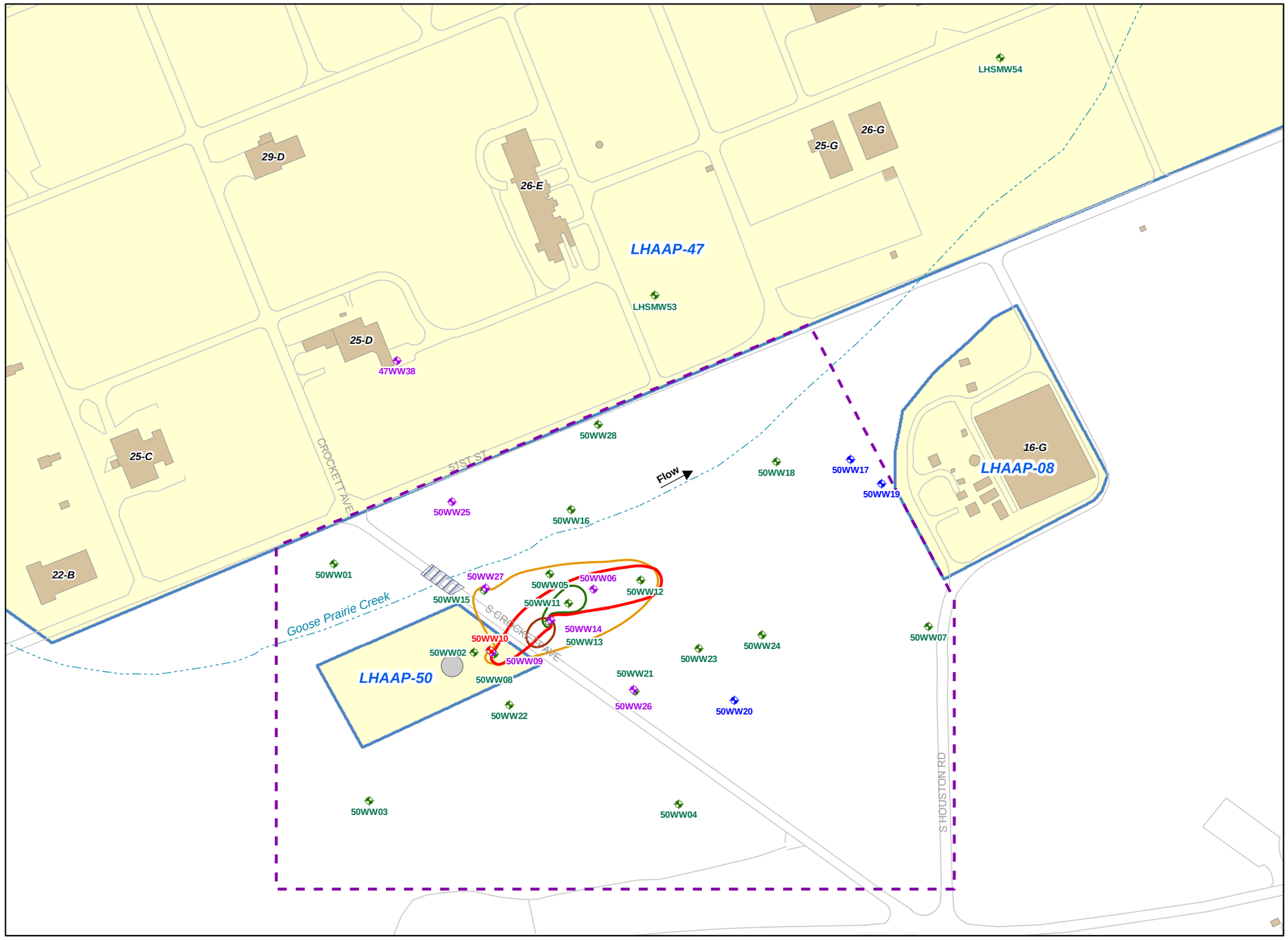

N

Legend

- Lower Shallow Monitoring Well
- Upper Shallow Monitoring Well
- Fully Penetrating Shallow Monitoring Well
- Intermediate Monitoring Well
- Perchlorate Plume (17 µg/L Extent)
- cis-1,2-Dichloroethene Plume (70 µg/L Extent)
- 1,1-Dichloroethene (7 µg/L Extent) and 1,2-Dichloroethane (5 µg/L Extent) Plumes
- Trichloroethene Plume (5 µg/L Extent)
- Roads
- Goose Prairie Creek
- Proposed Land Use Control Boundary
- Bridges
- Buildings
- Former Storage Tank Location
- Site Boundaries

Well ID	Monitoring Parameters
50WW02	VOCs, P, MNA
50WW05	VOCs, P
50WW06	VOCs, P, MNA
50WW08	VOCs, P, MNA
50WW09	VOCs, P
50WW10	VOCs, P
50WW11	VOCs, P, MNA
50WW12	VOCs, P, MNA
50WW13	VOCs, P, MNA
50WW14	VOCs, P, MNA
50WW15	VOCs, P
50WW16	VOCs, P, MNA
50WW18	VOCs, P
50WW21	VOCs, P
50WW22	VOCs, P, MNA
50WW23	VOCs, P, MNA
50WW24	VOCs, P
50WW25	VOCs, P
50WW27	VOCs, P

VOC – volatile organic compounds
P - perchlorate
MNA – monitored natural attenuation

0 75 150 300 450 Feet

Note:
1. Texas Risk Reduction Program Tier I Groundwater Residential Protective Concentration Level for Perchlorate = 17 µg/L.
2. Plumes are based on data from November 2015.

AECOM

Figure 2-10
Proposed RA(O) Monitoring Program
LHAAP-50 Remedial Action Operations Report (Year 2)

Longhorn Army Ammunition Plant
Karnack, Texas

60256135 January 2017

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-50\RAO Report\Yr_2_RAO\Fig 2-10_LHAAP50_Prop RAO YR2 Monitoring Program.mxd

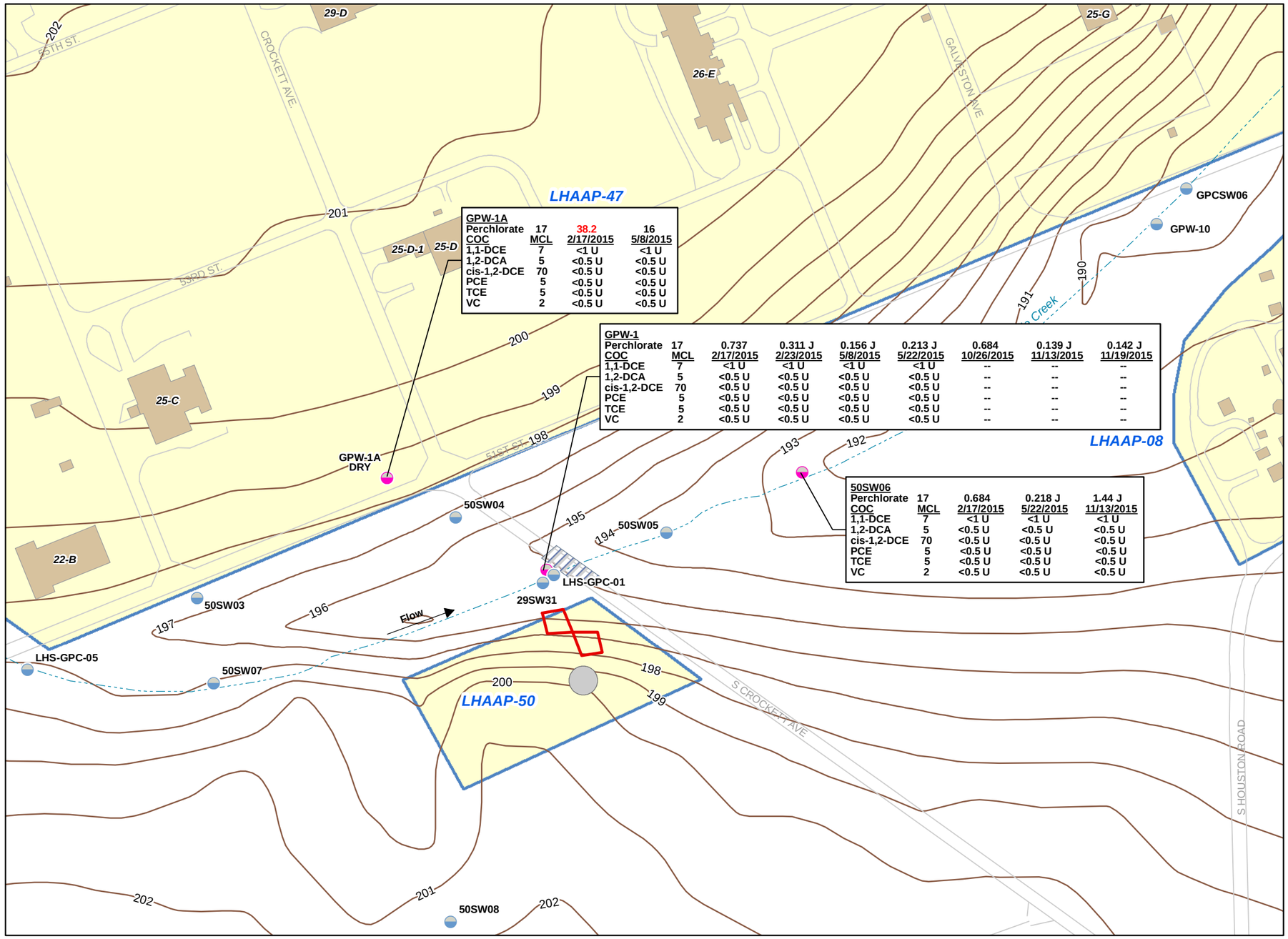

GPW-1A			
Perchlorate	17	38.2	16
COC	MCL	2/17/2015	5/8/2015
1,1-DCE	7	<1 U	<1 U
1,2-DCA	5	<0.5 U	<0.5 U
cis-1,2-DCE	70	<0.5 U	<0.5 U
PCE	5	<0.5 U	<0.5 U
TCE	5	<0.5 U	<0.5 U
VC	2	<0.5 U	<0.5 U

GPW-1								
Perchlorate	17	0.737	0.311 J	0.156 J	0.213 J	0.684	0.139 J	0.142 J
COC	MCL	2/17/2015	2/23/2015	5/8/2015	5/22/2015	10/26/2015	11/13/2015	11/19/2015
1,1-DCE	7	<1 U	<1 U	<1 U	<1 U	--	--	--
1,2-DCA	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	--	--	--
cis-1,2-DCE	70	<0.5 U	<0.5 U	<0.5 U	<0.5 U	--	--	--
PCE	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	--	--	--
TCE	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	--	--	--
VC	2	<0.5 U	<0.5 U	<0.5 U	<0.5 U	--	--	--

50SW06				
Perchlorate	17	0.684	0.218 J	1.44 J
COC	MCL	2/17/2015	5/22/2015	11/13/2015
1,1-DCE	7	<1 U	<1 U	<1 U
1,2-DCA	5	<0.5 U	<0.5 U	<0.5 U
cis-1,2-DCE	70	<0.5 U	<0.5 U	<0.5 U
PCE	5	<0.5 U	<0.5 U	<0.5 U
TCE	5	<0.5 U	<0.5 U	<0.5 U
VC	2	<0.5 U	<0.5 U	<0.5 U

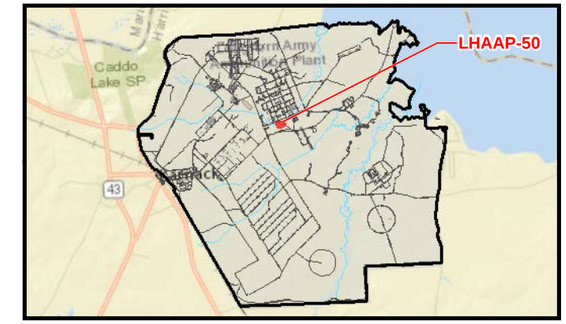

Legend

- Surface Water Sampling Location
- LHAAP-50 Surface Water Sampling Location
- Goose Prairie Creek
- Roads
- Ground Surface Contour (elevation in feet above mean sea level) (contour interval = 1-ft)
- LHAAP-50 Excavation Area
- Bridges
- Former Storage Tank Location
- Buildings
- Site Boundaries

Notes:
1. Surface Water Sampling location GPW-1 and 50SW06 were dry during the August 2015 sampling event and GPW1A was dry during the August and November 2015 sampling events.
2. All units are in micrograms per liter (ug/L).
3. All concentrations are shown in micrograms per liter (µg/L).

N

0 75 150 300 Feet

AECOM

Figure 2-11
Surface Water Sampling Results
LHAAP-50 Remedial Action Operations Report (Year 2)
Longhorn Army Ammunition Plant
Karnack, Texas

60256135 October 2016

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Table 2-1: Groundwater Elevation Data - LHAAP-50

Well ID	Aquifer	Sampling Date	Top of Casing Elevation (ft)	Depth to Water (ft)	Screen Interval (ft from TOC)		Screen Interval (ft MSL)		Groundwater Elevation (ft MSL)
					Top	Bottom	Top	Bottom	
47WW38	Lower Shallow	05/01/13	198.57	21.5	49.85	59.85	148.72	138.72	177.07
		11/12/14	198.57	22.4	49.85	59.85	148.72	138.72	176.17
		02/18/15	198.57	21.45	49.85	59.85	148.72	138.72	177.12
		05/27/15	198.57	19.62	49.85	59.85	148.72	138.72	178.95
		11/13/15	198.57	22.57	49.85	59.85	148.72	138.72	176
50WW01	Upper Shallow	03/12/14	198.5	20.75	13.21	23.21	185.29	175.29	177.75
		11/11/14	198.5	21.97	13.21	23.21	185.29	175.29	176.53
		02/18/15	198.5	20.35	13.21	23.21	185.29	175.29	178.15
		05/26/15	198.5	18.56	13.21	23.21	185.29	175.29	179.94
		08/19/15	198.5	20.51	13.21	23.21	185.29	175.29	177.99
		11/12/15	198.5	21.45	13.21	23.21	185.29	175.29	177.05
50WW02	Upper Shallow	10/30/13	200.74	DRY	12.34	22.24	188.4	178.5	DRY
		03/11/14	200.74		12.34	22.24	188.4	178.5	
		06/24/14	200.74		12.34	22.24	188.4	178.5	
		11/06/14	200.74		12.34	22.24	188.4	178.5	
		02/18/15	200.74		12.34	22.24	188.4	178.5	
		05/21/15	200.74		12.34	22.24	188.4	178.5	
		08/19/15	200.74		12.34	22.24	188.4	178.5	
		11/13/15	200.74		12.34	22.24	188.4	178.5	
50WW03	Upper Shallow	11/05/13	202.94	DRY	13.06	23.06	189.88	179.88	DRY
		03/13/14	202.94		13.06	23.06	189.88	179.88	
		06/24/14	202.94		13.06	23.06	189.88	179.88	
		11/13/14	202.94		13.06	23.06	189.88	179.88	
		02/18/15	202.94		13.06	23.06	189.88	179.88	
		05/22/15	202.94		13.06	23.06	189.88	179.88	
		08/19/15	202.94		13.06	23.06	189.88	179.88	
		11/13/15	202.94		13.06	23.06	189.88	179.88	
50WW04	Upper Shallow	11/05/13	204.51	DRY	12.87	22.87	191.64	181.64	DRY
		03/13/14	204.51		12.87	22.87	191.64	181.64	
		06/24/14	204.51		12.87	22.87	191.64	181.64	
		11/13/14	204.51		12.87	22.87	191.64	181.64	
		02/18/15	204.51		12.87	22.87	191.64	181.64	
		05/22/15	204.51		12.87	22.87	191.64	181.64	
		08/19/15	204.51		12.87	22.87	191.64	181.64	
		11/13/15	204.51		12.87	22.87	191.64	181.64	
50WW05	Upper Shallow	11/05/13	197.6758	21.53	17.24	27.24	180.44	170.44	176.15
		03/17/14	197.6758	20.23	17.24	27.24	180.44	170.44	177.45
		06/20/14	197.6758	19.3	17.24	27.24	180.44	170.44	178.38
		11/11/14	197.6758	21	17.24	27.24	180.44	170.44	176.68
		02/13/15	197.6758	20.15	17.24	27.24	180.44	170.44	177.53
		05/26/15	197.6758	18.4	17.24	27.24	180.44	170.44	179.28
		08/19/15	197.6758	20.2	17.24	27.24	180.44	170.44	177.48
		11/13/15	197.6758	21.46	17.24	27.24	180.44	170.44	176.22
50WW06	Lower Shallow	10/28/13	195.3462	19.6	47.75	57.75	147.60	137.60	175.75
		03/11/14	195.3462	18.05	47.75	57.75	147.60	137.60	177.30
		06/25/14	195.3462	17.4	47.75	57.75	147.60	137.60	177.95
		11/04/14	195.3462	18.81	47.75	57.75	147.60	137.60	176.54
		02/17/15	195.3462	18	47.75	57.75	147.60	137.60	177.35
		05/20/15	195.3462	16.51	47.75	57.75	147.60	137.60	178.84
		08/18/15	195.3462	18.01	47.75	57.75	147.60	137.60	177.34
		11/12/15	195.3462	19.26	47.75	57.75	147.60	137.60	176.09
50WW07	Upper Shallow	11/05/13	202.55	26.7	21.67	31.67	180.88	170.88	175.85
		03/25/14	202.55	25.85	21.67	31.67	180.88	170.88	176.7
		06/20/14	202.55	25.1	21.67	31.67	180.88	170.88	177.45
		11/07/14	202.55	26.2	21.67	31.67	180.88	170.88	176.35
		02/13/15	202.55	25.65	21.67	31.67	180.88	170.88	176.9
		05/26/15	202.55	24.55	21.67	31.67	180.88	170.88	178
		08/21/15	202.55	25.55	21.67	31.67	180.88	170.88	177
		11/09/15	202.55	26.55	21.67	31.67	180.88	170.88	176

Table 2-1: Groundwater Elevation Data - LHAAP-50

Well ID	Aquifer	Sampling Date	Top of Casing Elevation (ft)	Depth to Water (ft)	Screen Interval (ft from TOC)		Screen Interval (ft MSL)		Groundwater Elevation (ft MSL)
					Top	Bottom	Top	Bottom	
50WW08	Upper Shallow	10/30/13	199.67	23.5	17.11	31.71	182.56	167.96	176.17
		03/11/14	199.67	22.2	17.11	31.71	182.56	167.96	177.47
		06/24/14	199.67	21.3	17.11	31.71	182.56	167.96	178.37
		11/06/14	199.67	22.97	17.11	31.71	182.56	167.96	176.7
		02/17/15	199.67	22.05	17.11	31.71	182.56	167.96	177.62
		05/21/15	199.67	20.59	17.11	31.71	182.56	167.96	179.08
		08/17/15	199.67	22.08	17.11	31.71	182.56	167.96	177.59
		11/16/15	199.67	23.19	17.11	31.71	182.56	167.96	176.48
50WW09	Lower Shallow	11/01/13	199.41	23.25	46.75	61.25	152.66	138.16	176.16
		03/14/14	199.41	20.03	46.75	61.25	152.66	138.16	179.38
		06/19/14	199.41	21	46.75	61.25	152.66	138.16	178.41
		11/12/14	199.41	22.65	46.75	61.25	152.66	138.16	176.76
		02/13/15	199.41	21.75	46.75	61.25	152.66	138.16	177.66
		05/23/15	199.41	20.22	46.75	61.25	152.66	138.16	179.19
		08/21/15	199.41	21.89	46.75	61.25	152.66	138.16	177.52
		11/11/15	199.41	22.96	46.75	61.25	152.66	138.16	176.45
50WW10	Intermediate	11/05/13	199.25	23.6	101.43	110.93	97.82	88.32	175.65
		03/14/14	199.25	23.5	101.43	110.93	97.82	88.32	175.75
		06/19/14	199.25	23.44	101.43	110.93	97.82	88.32	175.81
		11/12/14	199.25	23.78	101.43	110.93	97.82	88.32	175.47
		02/13/15	199.25	23.3	101.43	110.93	97.82	88.32	175.95
		05/23/15	199.25	22.6	101.43	110.93	97.82	88.32	176.65
		08/21/15	199.25	23.34	101.43	110.93	97.82	88.32	175.91
		11/11/15	199.25	23.25	101.43	110.93	97.82	88.32	176
50WW11	Upper Shallow	10/28/13	197.07	21.22	22.55	37.05	174.52	160.02	175.85
		03/13/14	197.07	20	22.55	37.05	174.52	160.02	177.07
		06/25/14	197.07	19	22.55	37.05	174.52	160.02	178.07
		11/05/14	197.07	20.53	22.55	37.05	174.52	160.02	176.54
		02/17/15	197.07	19.68	22.55	37.05	174.52	160.02	177.39
		05/20/15	197.07	18.1	22.55	37.05	174.52	160.02	178.97
		08/18/15	197.07	19.53	22.55	37.05	174.52	160.02	177.54
		11/12/15	197.07	20.96	22.55	37.05	174.52	160.02	176.11
50WW12	Upper Shallow	10/23/13	195.66	20	22.5	37	173.16	158.66	175.66
		03/11/14	195.66	18.6	22.5	37	173.16	158.66	177.06
		06/26/14	195.66	17.9	22.5	37	173.16	158.66	177.76
		11/04/14	195.66	19.27	22.5	37	173.16	158.66	176.39
		02/18/15	195.66	18.68	22.5	37	173.16	158.66	176.98
		05/20/15	195.66	16.95	22.5	37	173.16	158.66	178.71
		08/18/15	195.66	18.5	22.5	37	173.16	158.66	177.16
		11/12/15	195.66	19.67	22.5	37	173.16	158.66	175.99
50WW13	Upper Shallow	10/30/13	197.45	21.47	22.44	36.94	175.01	160.51	175.98
		03/12/14	197.45	20.4	22.44	36.94	175.01	160.51	177.05
		06/25/14	197.45	19.38	22.44	36.94	175.01	160.51	178.07
		11/05/14	197.45	20.87	22.44	36.94	175.01	160.51	176.58
		02/17/15	197.45	20.1	22.44	36.94	175.01	160.51	177.35
		05/20/15	197.45	18.5	22.44	36.94	175.01	160.51	178.95
		08/19/15	197.45	20	22.44	36.94	175.01	160.51	177.45
		11/12/15	197.45	21.28	22.44	36.94	175.01	160.51	176.17
50WW14	Lower Shallow	10/28/13	197.52	21.63	45.78	60.28	151.74	137.24	175.89
		03/12/14	197.52	20.48	45.78	60.28	151.74	137.24	177.04
		06/25/14	197.52	19.58	45.78	60.28	151.74	137.24	177.94
		11/05/14	197.52	20.92	45.78	60.28	151.74	137.24	176.6
		02/17/15	197.52	20.18	45.78	60.28	151.74	137.24	177.34
		05/20/15	197.52	18.58	45.78	60.28	151.74	137.24	178.94
		08/19/15	197.52	20.17	45.78	60.28	151.74	137.24	177.35
		11/12/15	197.52	21.43	45.78	60.28	151.74	137.24	176.09

Table 2-1: Groundwater Elevation Data - LHAAP-50

Well ID	Aquifer	Sampling Date	Top of Casing Elevation (ft)	Depth to Water (ft)	Screen Interval (ft from TOC)		Screen Interval (ft MSL)		Groundwater Elevation (ft MSL)
					Top	Bottom	Top	Bottom	
50WW15	Upper Shallow	10/25/13	196.3	20.31	22.25	36.75	174.05	159.55	175.99
		03/17/14	196.3	18.83	22.25	36.75	174.05	159.55	177.47
		06/19/14	196.3	17.85	22.25	36.75	174.05	159.55	178.45
		11/07/14	196.3	19.62	22.25	36.75	174.05	159.55	176.68
		02/12/15	196.3	18.75	22.25	36.75	174.05	159.55	177.55
		05/23/15	196.3	17.05	22.25	36.75	174.05	159.55	179.25
		08/20/15	196.3	18.83	22.25	36.75	174.05	159.55	177.47
		11/11/15	196.3	19.84	22.25	36.75	174.05	159.55	176.46
50WW16	Upper Shallow	10/25/13	196.66	21.07	22.66	37.16	174	159.5	175.59
		03/25/14	196.66	19.47	22.66	37.16	174	159.5	177.19
		06/26/14	196.66	18.75	22.66	37.16	174	159.5	177.91
		11/12/14	196.66	20.4	22.66	37.16	174	159.5	176.26
		02/13/15	196.66	19.49	22.66	37.16	174	159.5	177.17
		05/22/15	196.66	17.7	22.66	37.16	174	159.5	178.96
		08/20/15	196.66	19.64	22.66	37.16	174	159.5	177.02
		11/11/15	196.66	20.75	22.66	37.16	174	159.5	175.91
50WW17	Fully-Screened Shallow	10/25/13	195.13	20.05	22.3	66.8	172.83	128.33	175.08
		03/25/14	195.13	18.47	22.3	66.8	172.83	128.33	176.66
		06/20/14	195.13	17.87	22.3	66.8	172.83	128.33	177.26
		11/11/14	195.13	19.11	22.3	66.8	172.83	128.33	176.02
		02/13/15	195.13	18.68	22.3	66.8	172.83	128.33	176.45
		05/22/15	195.13	17.37	22.3	66.8	172.83	128.33	177.76
		08/19/15	195.13	18.48	22.3	66.8	172.83	128.33	176.65
		11/09/15	195.13	19.67	22.3	66.8	172.83	128.33	175.46
50WW18	Upper Shallow	10/23/13	194.84	19.6	22.37	36.87	172.47	157.97	175.24
		03/26/14	194.84	18.3	22.37	36.87	172.47	157.97	176.54
		06/24/14	194.84	17.63	22.37	36.87	172.47	157.97	177.21
		11/04/14	194.84	18.92	22.37	36.87	172.47	157.97	175.92
		02/18/15	194.84	18.31	22.37	36.87	172.47	157.97	176.53
		05/28/15	194.84	16.87	22.37	36.87	172.47	157.97	177.97
		08/17/15	194.84	18.25	22.37	36.87	172.47	157.97	176.59
		11/16/15	194.84	19.09	22.37	36.87	172.47	157.97	175.75
50WW19	Fully-Screened Shallow	01/14/14	195.96	19.82	21.35	65.85	174.61	130.11	176.14
		03/25/14	195.96	19.41	21.35	65.85	174.61	130.11	176.55
		06/20/14	195.96	18.58	21.35	65.85	174.61	130.11	177.38
		11/11/14	195.96	19.91	21.35	65.85	174.61	130.11	176.05
		02/13/15	195.96	19.35	21.35	65.85	174.61	130.11	176.61
		05/22/15	195.96	18.04	21.35	65.85	174.61	130.11	177.92
		08/21/15	195.96	19.25	21.35	65.85	174.61	130.11	176.71
		11/09/15	195.96	20.34	21.35	65.85	174.61	130.11	175.62
50WW20	Fully-Screened Shallow	11/07/13	202.54	26.55	20.54	55.04	182	147.5	175.99
		03/13/14	202.54	25.5	20.54	55.04	182	147.5	177.04
		06/19/14	202.54	24.55	20.54	55.04	182	147.5	177.99
		11/11/14	202.54	25.8	20.54	55.04	182	147.5	176.74
		02/12/15	202.54	25.15	20.54	55.04	182	147.5	177.39
		05/26/15	202.54	23.95	20.54	55.04	182	147.5	178.59
		08/21/15	202.54	25.11	20.54	55.04	182	147.5	177.43
		11/10/15	202.54	25.94	20.54	55.04	182	147.5	176.6
50WW21	Upper Shallow	10/25/13	200.14	24.5	22.36	36.86	177.78	163.28	175.64
		03/25/14	200.14	23.06	22.36	36.86	177.78	163.28	177.08
		06/20/14	200.14	22.25	22.36	36.86	177.78	163.28	177.89
		11/13/14	200.14	23.75	22.36	36.86	177.78	163.28	176.39
		02/12/15	200.14	22.95	22.36	36.86	177.78	163.28	177.19
		05/23/15	200.14	21.57	22.36	36.86	177.78	163.28	178.57
		08/20/15	200.14	22.78	22.36	36.86	177.78	163.28	177.36
		11/10/15	200.14	23.85	22.36	36.86	177.78	163.28	176.29

Table 2-1: Groundwater Elevation Data - LHAAP-50

Well ID	Aquifer	Sampling Date	Top of Casing Elevation (ft)	Depth to Water (ft)	Screen Interval (ft from TOC)		Screen Interval (ft MSL)		Groundwater Elevation (ft MSL)
					Top	Bottom	Top	Bottom	
50WW22	Upper Shallow	10/23/13	202.1	26.05	21.97	36.57	180.13	165.53	176.05
		03/12/14	202.1	25.13	21.97	36.57	180.13	165.53	176.97
		06/24/14	202.1	23.91	21.97	36.57	180.13	165.53	178.19
		11/06/14	202.1	25.4	21.97	36.57	180.13	165.53	176.7
		02/17/15	202.1	24.6	21.97	36.57	180.13	165.53	177.5
		05/21/15	202.1	23.36	21.97	36.57	180.13	165.53	178.74
		08/18/15	202.1	24.35	21.97	36.57	180.13	165.53	177.75
		11/16/15	202.1	25.59	21.97	36.57	180.13	165.53	176.51
50WW23	Upper Shallow	10/29/13	200.75	24.95	22.42	36.92	178.33	163.83	175.8
		03/13/14	200.75	24.02	22.42	36.92	178.33	163.83	176.73
		06/26/14	200.75	23	22.42	36.92	178.33	163.83	177.75
		11/04/14	200.75	24.27	22.42	36.92	178.33	163.83	176.48
		02/18/15	200.75	23.65	22.42	36.92	178.33	163.83	177.1
		05/20/15	200.75	22.26	22.42	36.92	178.33	163.83	178.49
		08/17/15	200.75	23.43	22.42	36.92	178.33	163.83	177.32
		11/16/15	200.75	24.47	22.42	36.92	178.33	163.83	176.28
50WW24	Upper Shallow	10/29/13	201.63	25.85	22.66	37.16	178.97	164.47	175.78
		03/26/14	201.63	24.7	22.66	37.16	178.97	164.47	176.93
		06/26/14	201.63	23.92	22.66	37.16	178.97	164.47	177.71
		11/04/14	201.63	25.21	22.66	37.16	178.97	164.47	176.42
		02/18/15	201.63	24.55	22.66	37.16	178.97	164.47	177.08
		05/28/15	201.63	23.28	22.66	37.16	178.97	164.47	178.35
		08/17/15	201.63	24.28	22.66	37.16	178.97	164.47	177.35
		11/16/15	201.63	25.39	22.66	37.16	178.97	164.47	176.24
50WW26	Lower Shallow	11/06/13	200.07	24.12	47.49	61.99	152.58	138.08	175.95
		03/26/14	200.07	22.97	47.49	61.99	152.58	138.08	177.1
		02/13/15	200.07	22.82	47.49	61.99	152.58	138.08	177.25
		05/23/15	200.07	21.42	47.49	61.99	152.58	138.08	178.65
		08/20/15	200.07	22.8	47.49	61.99	152.58	138.08	177.27
		11/10/15	200.07	23.82	47.49	61.99	152.58	138.08	176.25
50WW27	Lower Shallow	11/06/13	196.22	20.06	45.28	59.78	150.94	136.44	176.16
		03/17/14	196.22	18.8	45.28	59.78	150.94	136.44	177.42
		11/07/14	196.22	19.6	45.28	59.78	150.94	136.44	176.62
		02/12/15	196.22	18.75	45.28	59.78	150.94	136.44	177.47
		05/23/15	196.22	16.96	45.28	59.78	150.94	136.44	179.26
		08/20/15	196.22	19.85	45.28	59.78	150.94	136.44	176.37
		11/11/15	196.22	19.79	45.28	59.78	150.94	136.44	176.43
50WW28	Upper Shallow	07/09/14	194.71	17.2	16.57	26.57	178.14	168.14	177.51
		11/12/14	194.71	18.65	16.57	26.57	178.14	168.14	176.06
		02/17/15	194.71	18.62	16.57	26.57	178.14	168.14	176.09
		05/26/15	194.71	15.68	16.57	26.57	178.14	168.14	179.03
		08/20/15	194.71	17.8	16.57	26.57	178.14	168.14	176.91
		11/13/15	194.71	19.07	16.57	26.57	178.14	168.14	175.64
LHSMW54	Upper Shallow	04/29/13	193.71	18.6	NA	NA	NA	NA	175.11
		02/18/15	193.71	18.63	NA	NA	NA	NA	175.08
		05/27/15	193.71	16.92	NA	NA	NA	NA	176.79
		11/13/15	193.71	19.71	NA	NA	NA	NA	174

NA - not available

Table 2-2: Overview of Groundwater Sampling Protocols, 2015 - LHAAP-50

Location ID	Date	Sampling Method	Acceptable Water Level Drawdown?	If low-flow sampling, Sample Collected at Flow Rate 0.5 - 1 L/min?	If volume purge sampling, Sample Collected after at least 3 Well Volumes Purged?	Water Quality Parameters Stabilized before Collecting Sample?	Turbidity within Acceptable Range (< 10 NTU if analyzing metals, < 20 NTU if not)?	Other Water Quality Parameters within Normal Range (listed in Table 1, SOP?	If any columns answered no, explain
50WW01	2/18/2015	volume purge (bailing)	no	NA	No	NA	NA	NA	bailed 2 gallons, ran dry, insufficient volume to sample
50WW02	2/18/2015	none	NA	NA	NA	NA	NA	NA	dry well
50WW03	2/18/2015	none	NA	NA	NA	NA	NA	NA	dry well
50WW04	2/18/2015	none	NA	NA	NA	NA	NA	NA	dry well
50WW05	2/13/2015	low-flow	yes	yes	NA	yes	yes	no	temperature not within normal range
50WW06	2/17/2015	low-flow	yes	yes	NA	yes	no	yes	turbidity above acceptable range
50WW07	2/13/2015	low-flow	yes	yes	NA	yes	yes	yes	
50WW08	2/17/2015	low-flow	yes	yes	NA	yes	no	yes	turbidity above acceptable range
50WW09	2/13/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range, turbidity above acceptable range
50WW10	2/13/2015	low-flow	yes	yes	NA	no	yes	no	temperature and pH not within normal range; turbidity did not stabilize
50WW11	2/17/2015	low-flow	yes	yes	NA	yes	no	yes	turbidity above acceptable range
50WW12	2/18/2015	low-flow	yes	yes	NA	yes	no	yes	turbidity above acceptable range
50WW13	2/17/2015	low-flow	yes	yes	NA	yes	no	yes	turbidity above acceptable range
50WW14	2/18/2015	low-flow	yes	yes	NA	yes	no	yes	turbidity above acceptable range
50WW15	2/12/2015	low-flow	yes	yes	NA	yes	yes	no	temperature not within normal range
50WW16	2/13/2015	low-flow	yes	yes	NA	yes	yes	no	pH not within normal range
50WW17	2/13/2015	low-flow	yes	yes	NA	yes	no	yes	turbidity above acceptable range
50WW18	2/18/2015	low-flow	yes	yes	NA	yes	no	yes	turbidity above acceptable range
50WW19	2/13/2015	low-flow	yes	yes	NA	yes	no	yes	turbidity above acceptable range
50WW20	2/12/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW21	2/12/2015	low-flow	yes	yes	NA	yes	yes	no	temperature not within normal range
50WW22	2/17/2015	low-flow	yes	yes	NA	yes	yes	yes	
50WW23	2/18/2015	low-flow	yes	yes	NA	yes	yes	yes	
50WW24	2/18/2015	low-flow	yes	yes	NA	yes	no	yes	turbidity above acceptable range
50WW26	2/13/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW27	2/12/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW28	2/17/2015	low-flow	yes	yes	NA	yes	no	yes	turbidity above acceptable range
LHSMW54*	2/18/2015	low-flow	yes	yes	NA	yes	no	yes	turbidity above acceptable range
47WW38*	2/18/2015	low-flow	yes	yes	NA	yes	no	yes	turbidity above acceptable range

Table 2-2: Overview of Groundwater Sampling Protocols, 2015 - LHAAP-50

Location ID	Date	Sampling Method	Acceptable Water Level Drawdown?	If low-flow sampling, Sample Collected at Flow Rate 0.5 - 1 L/min?	If volume purge sampling, Sample Collected after at least 3 Well Volumes Purged?	Water Quality Parameters Stabilized before Collecting Sample?	Turbidity within Acceptable Range (< 10 NTU if analyzing metals, < 20 NTU if not)?	Other Water Quality Parameters within Normal Range (listed in Table 1, SOP?	If any columns answered no, explain
50WW01	5/26/2015	volume purge (bailing)	NA	NA	No	NA	yes	no	bailed 2 gallons, ran dry, insufficient volume to sample
50WW02	5/21/2015	none	NA	NA	NA	NA	NA	NA	dry well
50WW03	5/22/2015	none	NA	NA	NA	NA	NA	NA	dry well
50WW04	5/22/2015	none	NA	NA	NA	NA	NA	NA	dry well
50WW05	5/26/2015	low-flow	yes	yes	NA	yes	yes	no	temperature not within normal range
50WW06	5/20/2015	low-flow	yes	yes	NA	yes	yes	no	temperature not within normal range
50WW07	5/26/2015	low-flow	yes	yes	NA	yes	yes	no	temperature not within normal range
50WW08	5/21/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW09	5/23/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW10	5/23/2015	low-flow	yes	yes	NA	yes	no	no	temperature and pH not within normal range; turbidity above acceptable range
50WW11	5/20/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW12	5/20/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW13	5/20/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW14	5/20/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW15	5/23/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW16	5/22/2015	low-flow	yes	yes	NA	yes	no	yes	turbidity above acceptable range
50WW17	5/22/2015	low-flow	yes	yes	NA	yes	no	yes	turbidity above acceptable range
50WW18	5/28/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW19	5/22/2015	low-flow	yes	yes	NA	yes	no	yes	turbidity above acceptable range
50WW20	5/26/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW21	5/23/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW22	5/21/2015	low-flow	yes	yes	NA	yes	no	yes	turbidity above acceptable range
50WW23	5/20/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW24	5/28/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW26	5/23/2015	low-flow	yes	yes	NA	yes	yes	no	temperature not within normal range
50WW27	5/23/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW28	5/26/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
LHSMW54*	5/27/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
47WW38*	5/27/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range

Table 2-2: Overview of Groundwater Sampling Protocols, 2015 - LHAAP-50

Location ID	Date	Sampling Method	Acceptable Water Level Drawdown?	If low-flow sampling, Sample Collected at Flow Rate 0.5 - 1 L/min?	If volume purge sampling, Sample Collected after at least 3 Well Volumes Purged?	Water Quality Parameters Stabilized before Collecting Sample?	Turbidity within Acceptable Range (< 10 NTU if analyzing metals, < 20 NTU if not)?	Other Water Quality Parameters within Normal Range (listed in Table 1, SOP?	If any columns answered no, explain
50WW01	8/19/2015	volume purge (bailing)	NA	NA	No	NA	no	no	bailed 2 gallons, ran dry, insufficient volume to sample
50WW02	8/19/2015	none	NA	NA	NA	NA	NA	NA	dry well
50WW03	8/19/2015	none	NA	NA	NA	NA	NA	NA	dry well
50WW04	8/19/2015	none	NA	NA	NA	NA	NA	NA	dry well
50WW05	8/19/2015	low-flow	yes	yes	NA	yes	yes	no	temperature not within normal range
50WW06	8/19/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW07	8/21/2015	low-flow	yes	yes	NA	yes	yes	no	temperature not within normal range
50WW08	8/17/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW09	8/21/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW10	8/21/2015	low-flow	yes	yes	NA	yes	no	no	temperature and pH not within normal range; turbidity above acceptable range
50WW11	8/18/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW12	8/18/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW13	8/19/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW14	8/19/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW15	8/20/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW16	8/20/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW17	8/19/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW18	8/17/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW19	8/21/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW20	8/21/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW21	8/20/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW22	8/18/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW23	8/17/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW24	8/17/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW26	8/20/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW27	8/20/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW28	8/20/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range

Table 2-2: Overview of Groundwater Sampling Protocols, 2015 - LHAAP-50

Location ID	Date	Sampling Method	Acceptable Water Level Drawdown?	If low-flow sampling, Sample Collected at Flow Rate 0.5 - 1 L/min?	If volume purge sampling, Sample Collected after at least 3 Well Volumes Purged?	Water Quality Parameters Stabilized before Collecting Sample?	Turbidity within Acceptable Range (< 10 NTU if analyzing metals, < 20 NTU if not)?	Other Water Quality Parameters within Normal Range (listed in Table 1, SOP?	If any columns answered no, explain
50WW01	11/12/2015	volume purge (bailing)	no	NA	No	NA	NA	NA	bailed 1 gallon, ran dry, insufficient volume to sample
50WW02	11/13/2015	none	NA	NA	NA	NA	NA	NA	dry well
50WW03	11/13/2015	none	NA	NA	NA	NA	NA	NA	dry well
50WW04	11/13/2015	none	NA	NA	NA	NA	NA	NA	dry well
50WW05	11/13/2015	low-flow	yes	yes	NA	no	yes	yes	turbidity did not stabilize
50WW06	11/12/2015	low-flow	yes	yes	NA	yes	yes	no	temperature not within normal range
50WW07	11/9/2015	low-flow	yes	yes	NA	yes	yes	no	temperature not within normal range
50WW08	11/16/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW09	11/11/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW10	11/11/2015	low-flow	yes	yes	NA	no	yes	no	temperature and pH not within normal range; turbidity did not stabilize
50WW11	11/12/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW12	11/13/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW13	11/12/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW14	11/12/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW15	11/11/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW16	11/13/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW17	11/9/2015	low-flow	yes	yes	NA	yes	no	yes	turbidity above acceptable range
50WW18	11/16/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW19	11/9/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW20	11/10/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW21	11/10/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW22	11/16/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW23	11/16/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW24	11/16/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW26	11/10/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW27	11/11/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range
50WW28	11/13/2015	low-flow	yes	yes	NA	yes	no	yes	turbidity above acceptable range
LHSMW54*	11/13/2015	low-flow	yes	yes	NA	no	yes	no	temperature not within normal range; turbidity did not stabilize
47WW38*	11/13/2015	low-flow	yes	yes	NA	yes	no	no	temperature not within normal range; turbidity above acceptable range

* These wells are excluded from the sampling program for LHAAP-50 . Contamination in these wells is from another source.
SOP - standard operating procedure (AECOM, June 2013).

	Normal Range	Acceptable Variability
pH	4.6 to 8.5	±0.1
Temp (^{o}C)	10 to 18	±10%
Specific Conductivity (uS/cm)	10 to 8,000	±3%
Oxidation Reduction Potential (mV)	+400 to -300	±10%
Dissolved Oxygen (mg/L)	< 10	±10%
Turbidity (NTU)	variable	±10%

^{o}C - degree centigrade
uS/cm microseimens per centimeter
mV - millivolt
mg/L - milligram per liter
NTU - nephlometric turbidity unit

Table 2-3: Groundwater Results for Year 1 and 2 - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL/ UTL	47WW38-110613 11/6/2013	47WW38-111214 11/12/2014	47WW38-021815 2/18/2015	47WW38-052715 5/27/2015	47WW38-111315 11/13/2015	50SW06-031414 3/14/2014	50SW06-021715 2/17/2015	50SW06-052215 5/22/2015	50SW06-111315 11/13/2015	50WW01-031314 3/13/2014	50WW01FF-031314 3/13/2014	50WW01-052715 5/27/2015	50WW01-082015 8/20/2015	50WW05-110613 11/6/2013	50WW05-031714 3/17/2014	50WW05-062014 6/20/2014
Well Completion Zone:			**Lower Shallow**					**Surface Water**				**Upper Shallow**				**Upper Shallow**		
Water Quality Parameters																		
Temperature	°C		19.08	17.45	15.38	18.55	18.97	NA	NA	NA	NA	14.07	NA	19.17	2010	19.92	14.53	20.31
pH	pH Units		7.19	6.76	6.17	6.43	5.66	NA	NA	NA	NA	7.44	NA	7.26	6.88	6.92	7.1	5.88
Conductivity	mS/CM		0.717	0.95	1	1.12	1.2	NA	NA	NA	NA	1.21	NA	0.738	0.66	1.52	1.71	1.71
Dissolved Oxygen	mg/L		0.6	0	0	0.75	0	NA	NA	NA	NA	NR	NA	NR	NR	NR	0.75	0.41
Turbidity	NTU		9.6	37.5	13	51.8	24.9	NA	NA	NA	NA	21.1	NA	5.9	10.9	11.9	0.3	4.1
Oxidation Reduction Potential	mV		-130	-35	125	21	137	NA	NA	NA	NA	NR	NA	NR	NR	NR	46	24
Ferrous Iron	mg/L		1.41	NA	1.06	0.39	NA	NA	NA	NA	NA	1.33	NA	0.15	0.08	0.35	0.04	NA
Alkalinity (310.2)																		
ALKALINITY, TOTAL	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	583	NA	NA	N/A	NA	NA	NA
Phosphours (365.4)																		
PHOSPHORUS	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.2 U	NA	NA	N/A	NA	NA	NA
SM4500-S-(-2)-F-2000																		
SULFIDE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	<1 U	NA	NA	N/A	NA	NA	NA
Total Organic Carbon (415.1)																		
TOTAL ORGANIC CARBON (TOC)	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	6.73	NA	NA	N/A	NA	NA	NA
Iron (6010C)																		
IRON	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.1 U	NA	N/A	NA	NA	NA
Manganese (6020A)																		
MANGANESE	mg/L	7.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.002 U	NA	N/A	NA	NA	NA
Perchlorate (6850)																		
PERCHLORATE	ug/L	17	1160 J	860	1500	18	579 J	1.09	0.684	0.218 J	1.44 J	<0.2 U	NA	<0.2 U	<0.2 U	0.397 J	<0.2 U	20.5
Volatile Organic Compounds (8260B)																		
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	0.275 J	<0.25 U	<0.25 U
1,1-DICHLOROETHENE	ug/L	7	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA	<1 U	<1 U	2.57	2.12	2.67
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	NA	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	NA	<2 U	<2 U	<2 U	<2 U	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	0.132 J	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	2.81	2.54	2.82
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	<0.25 U	<0.25 U	0.155 J	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	0.351 J	<0.25 U	<0.25 U	<0.25 U	<0.25 U
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
2-BUTANONE	ug/L	15000	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	NA	<5 U	<5 U	<5 U	<5 U	<5 U
2-CHLOROTOLUENE	ug/L	490	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
2-HEXANONE	ug/L	120	<5 U	<5 U	<5 U	<5 U	<5 UJ	<5 U	<5 U	<5 U	<5 UJ	<5 U	NA	<5 U	<5 U	<5 U	<5 U	<5 U
4-CHLOROTOLUENE	ug/L	490	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	<5 U	<5 U	<5 UJ	<5 UJ	<5 U	<5 U	<5 U	<5 UJ	<5 U	NA	<5 UJ	<5 U	<5 U	<5 U	<5 U
ACETONE	ug/L	22000	3.3 J	<5 U	<5 U	<5 U	<5 UJ	2.87 J	<5 U	2.97 J	<5 UJ	<5 U	NA	<5 U	<5 U	3.28 J	<5 U	<5 U
BENZENE	ug/L	5	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOBENZENE	ug/L	200	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
BROMOFORM	ug/L	120	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U
BROMOMETHANE	ug/L	34	<1 U	<1 U	<1 U	<1 UJ	<1 U	<1 U	<1 UJ	<1 U	<1 U	<1 U	NA	<1 UJ	<1 UJ	<1 U	<1 U	<1 U
CARBON DISULFIDE	ug/L	2400	<1 U	<1 U	<1 U	<1 UJ	<1 UJ	<1 U	<1 U	<1 UJ	<1 UJ	<1 U	NA	<1 UJ	<1 U	<1 U	<1 U	<1 U
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CHLOROBENZENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	0.198 J	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	0.427 J	<0.25 U	<0.25 U	<0.25 U	<0.25 U
CHLOROETHANE	ug/L	98000	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U
CHLOROFORM	ug/L	240	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U

Table 2-3: Groundwater Results for Year 1 and 2 - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL/ UTL	47WW38-110613 11/6/2013	47WW38-111214 11/12/2014	47WW38-021815 2/18/2015	47WW38-052715 5/27/2015	47WW38-111315 11/13/2015	50SW06-031414 3/14/2014	50SW06-021715 2/17/2015	50SW06-052215 5/22/2015	50SW06-111315 11/13/2015	50WW01-031314 3/13/2014	50WW01FF-031314 3/13/2014	50WW01-052715 5/27/2015	50WW01-082015 8/20/2015	50WW05-110613 11/6/2013	50WW05-031714 3/17/2014	50WW05-062014 6/20/2014
CHLOROMETHANE	ug/L	70	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	0.372 J	0.41 J	12.4	10.5	12.6
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOMETHANE	ug/L	120	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ETHYLBENZENE	ug/L	700	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
M,P-XYLENE	ug/L	10000	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U
METHYLENE CHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
NAPHTHALENE	ug/L	490	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
N-BUTYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
N-PROPYLBENZENE	ug/L	980	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
O-XYLENE	ug/L	10000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
STYRENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	1.54	1.01	1.48
TOLUENE	ug/L	1000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U
TRICHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	0.685 J	0.543 J	280	204	270
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
Inorganic Anions (9056)																		
CHLORIDE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	17.4	NA	NA	N/A	NA	NA	NA
NITRATE	mg/L	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.2 U	NA	NA	N/A	NA	NA	NA
NITRITE	mg/L	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.2 U	NA	NA	N/A	NA	NA	NA
SULFATE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	84.6	NA	NA	N/A	NA	NA	NA
Dissolved Gases (RSK-175)																		
CARBON DIOXIDE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	334000	NA	NA	N/A	NA	NA	NA
ETHANE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	<2 U	NA	NA	N/A	NA	NA	NA
ETHENE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	<2 U	NA	NA	N/A	NA	NA	NA
METHANE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	<2 U	NA	NA	N/A	NA	NA	NA

Blue Highlighting Indicates concentrations above the MCL/MSC/PCL

Wells 50WW02, 50WW03 and 50WW04 were dry. No samples collected.

Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter, "FF" indicate sample filtered in the field with 0.45 micron filter. Metals results for "FF" samples are dissolved.

"FD" or "D" in Sample ID indicates a field duplicate sample.

(1) Only limited data validation possible; Not used in plume delineation

(2) Substituted for 50WW08 and 50WW13 October 2013 data for plume delineation

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Limit

mg/L - milligrams per liter

MSC - Medium-Specific Concentrations

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

ug/L - micrograms per liter

UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

UTL - Upper Tolerance Limit

Table 2-3: Groundwater Results for Year 1 and 2 - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL/ UTL	50WW05-111114 11/11/2014	50WW05-021315 2/13/2015	50WW05FD-021315 2/13/2015	50WW05-052615 5/26/2015	50WW05-081915 8/19/2015	50WW05FD-081915 8/19/2015	50WW05-111315 11/13/2015	50WW06-102813 10/28/2013	50WW06F-102813 10/28/2013	50WW06FF-102813 10/28/2013	50WW06-031114 3/11/2014	50WW06FF-031114 3/11/2014	50WW06-062514 6/25/2014	50WW06FF-062514 6/25/2014	50WW06-110414 11/4/2014	50WW06FF-110414 11/4/2014
Well Completion Zone:			**Upper Shallow**							**Lower Shallow**								
Water Quality Parameters																		
Temperature	°C		18.94	20.89	NA	18.87	23.4	NA	16.58	18.31	NA	NA	20.9	NA	21.61	NA	20.02	NA
pH	pH Units		6.76	7.97	NA	7.18	6.51	NA	6.03	6.95	NA	NA	7.35	NA	6.45	NA	6.79	NA
Conductivity	mS/CM		1.48	1.49	NA	1.41	1.39	NA	1.58	0.916	NA	NA	0.915	NA	1.69	NA	1.07	NA
Dissolved Oxygen	mg/L		0	0	NA	0.61	0.21	NA	0.13	1.47	NA	NA	3.97	NA	1.43	NA	0	NA
Turbidity	NTU		2.7	3.8	NA	1	8.2	NA	4.6	32.5	NA	NA	12.4	NA	9.2	NA	5.6	NA
Oxidation Reduction Potential	mV		28	63	NA	23	77	NA	104	-52	NA	NA	149	NA	79	NA	89	NA
Ferrous Iron	mg/L		NA	0.08	NA	0.1	0.08	NA	NA	1.29	NA	NA	0.33	NA	NA	NA	0.03	NA
Alkalinity (310.2)																		
ALKALINITY, TOTAL	mg/L		NA	NA	NA	NA	N/A	N/A	NA	271	NA	NA	322	NA	394	NA	329	NA
Phosphours (365.4)																		
PHOSPHORUS	mg/L		NA	NA	NA	NA	N/A	N/A	NA	<0.2 U	NA	NA	<0.2 U	NA	0.623	NA	<0.2 U	NA
SM4500-S-(-2)-F-2000																		
SULFIDE	mg/L		NA	NA	NA	NA	N/A	N/A	NA	<1 U	NA	NA	<1 U	NA	<0.5 U	NA	<2 U	NA
Total Organic Carbon (415.1)																		
TOTAL ORGANIC CARBON (TOC)	mg/L		NA	NA	NA	NA	N/A	N/A	NA	4.99	NA	NA	6.28	NA	4.9	NA	3.14	NA
Iron (6010C)																		
IRON	mg/L		NA	NA	NA	NA	N/A	N/A	NA	NA	0.265	0.22	NA	<0.1 U	NA	0.0645 J	NA	0.0573 J
Manganese (6020A)																		
MANGANESE	mg/L	7.8	NA	NA	NA	NA	N/A	N/A	NA	NA	NA	0.408	NA	0.00567	NA	0.0347	NA	0.0387
Perchlorate (6850)																		
PERCHLORATE	ug/L	17	<0.2 U	<0.2 U	<0.2 U	<0.2 U	1.69	1.64	0.7 J	670	NA	NA	2090	NA	700	NA	1510	NA
Volatile Organic Compounds (8260B)																		
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
1,1-DICHLOROETHANE	ug/L	4900	0.31 J	<0.25 U	<0.25 U	0.152 J	0.183 J	0.17 J	0.183 J	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA
1,1-DICHLOROETHENE	ug/L	7	2.68	1.76 J	1.91 J	1.77 J	2.02	2.08	1.42 J	<1 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	NA	NA	<0.3 U	NA	<0.3 U	NA	<0.3 U	NA
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	NA	NA	<2 U	NA	<2 U	NA	<2 U	NA
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA
1,2-DICHLOROETHANE	ug/L	5	2.97	1.58	1.62	1.9	1.6	1.66	1.93	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
2-BUTANONE	ug/L	15000	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	NA	NA	<5 U	NA	<5 U	NA	<5 U	NA
2-CHLOROTOLUENE	ug/L	490	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA
2-HEXANONE	ug/L	120	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 UJ	<5 U	NA	NA	<5 U	NA	<5 U	NA	<5 U	NA
4-CHLOROTOLUENE	ug/L	490	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	<5 U	<5 U	<5 UJ	<5 U	<5 U	<5 UJ	<5 U	NA	NA	<5 U	NA	<5 U	NA	<5 U	NA
ACETONE	ug/L	22000	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 UJ	<5 U	NA	NA	<5 U	NA	<5 U	NA	<5 U	NA
BENZENE	ug/L	5	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA
BROMOBENZENE	ug/L	200	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
BROMOFORM	ug/L	120	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA
BROMOMETHANE	ug/L	34	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 UJ	<1 U	<1 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA
CARBON DISULFIDE	ug/L	2400	<1 U	<1 U	<1 U	<1 UJ	<1 U	<1 U	<1 UJ	<1 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
CHLOROBENZENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA
CHLOROETHANE	ug/L	98000	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA
CHLOROFORM	ug/L	240	0.129 J	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA

Table 2-3: Groundwater Results for Year 1 and 2 - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL/ UTL	50WW05-111114 11/11/2014	50WW05-021315 2/13/2015	50WW05FD-021315 2/13/2015	50WW05-052615 5/26/2015	50WW05-081915 8/19/2015	50WW05FD-081915 8/19/2015	50WW05-111315 11/13/2015	50WW06-102813 10/28/2013	50WW06F-102813 10/28/2013	50WW06FF-102813 10/28/2013	50WW06-031114 3/11/2014	50WW06FF-031114 3/11/2014	50WW06-062514 6/25/2014	50WW06FF-062514 6/25/2014	50WW06-110414 11/4/2014	50WW06FF-110414 11/4/2014
CHLOROMETHANE	ug/L	70	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA
CIS-1,2-DICHLOROETHENE	ug/L	70	15.7	11.7	12.6	9.81	29.1	28.1	17.2	0.994 J	NA	NA	0.39 J	NA	0.299 J	NA	1.61	NA
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
DIBROMOMETHANE	ug/L	120	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
ETHYLBENZENE	ug/L	700	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
M,P-XYLENE	ug/L	10000	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA
METHYLENE CHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
NAPHTHALENE	ug/L	490	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA
N-BUTYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
N-PROPYLBENZENE	ug/L	980	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA
O-XYLENE	ug/L	10000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
STYRENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
TETRACHLOROETHENE	ug/L	5	1.6	0.963 J	0.888 J	0.86 J	0.787 J	0.651 J	0.848 J	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
TOLUENE	ug/L	1000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA
TRICHLOROETHENE	ug/L	5	329	193	196	197	200	200	210	20.9	NA	NA	36.5	NA	27.4	NA	36.1	NA
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
Inorganic Anions (9056)																		
CHLORIDE	mg/L		NA	NA	NA	NA	N/A	N/A	NA	201	NA	NA	91.8	NA	262	NA	162	NA
NITRATE	mg/L	10	NA	NA	NA	NA	N/A	N/A	NA	<0.2 U	NA	NA	3.29	NA	<3 U	NA	<0.4 U	NA
NITRITE	mg/L	1	NA	NA	NA	NA	N/A	N/A	NA	<0.2 U	NA	NA	<0.2 U	NA	<3 U	NA	<0.4 U	NA
SULFATE	mg/L		NA	NA	NA	NA	N/A	N/A	NA	72.5	NA	NA	49.2	NA	199	NA	105	NA
Dissolved Gases (RSK-175)																		
CARBON DIOXIDE	ug/L		NA	NA	NA	NA	N/A	N/A	NA	NA	NA	NA	165000	NA	159000	NA	49300	NA
ETHANE	ug/L		NA	NA	NA	NA	N/A	N/A	NA	<2 U	NA	NA	<2 U	NA	<2 U	NA	<2 U	NA
ETHENE	ug/L		NA	NA	NA	NA	N/A	N/A	NA	<2 U	NA	NA	<2 U	NA	<2 U	NA	<2 U	NA
METHANE	ug/L		NA	NA	NA	NA	N/A	N/A	NA	<2 UJ	NA	NA	<2 U	NA	<2 U	NA	<2 U	NA

Blue Highlighting Indicates concentrations above the MCL/MSC/PCL

Wells 50WW02, 50WW03 and 50WW04 were dry. No samples collected.

Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter, "FF" indicate sample filtered in the field with 0.45 micron filter. Metals results for "FF" samples are dissolved.

"FD" or "D" in Sample ID indicates a field duplicate sample.

(1) Only limited data validation possible; Not used in plume delineation

(2) Substituted for 50WW08 and 50WW13 October 2013 data for plume delineation

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Limit

mg/L - milligrams per liter

MSC - Medium-Specific Concentrations

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

ug/L - micrograms per liter

UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

UTL - Upper Tolerance Limit

Table 2-3: Groundwater Results for Year 1 and 2 - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL/ UTL	50WW06-021715 2/17/2015	50WW06FF-021715 2/17/2015	50WW06-052015 5/20/2015	50WW06FF-052015 5/20/2015	50WW06-081815 8/18/2015	50WW06FF-081815 8/18/2015	50WW06-111215 11/12/2015	50WW06FF-111215 11/12/2015	50WW07-110513 11/5/2013	50WW07-032514 3/25/2014	50WW07-062014 6/20/2014	50WW07-110714 11/7/2014	50WW07-021315 2/13/2015	50WW07-052615 5/26/2015	50WW07-082115 8/21/2015	50WW07-110915 11/9/2015
Well Completion Zone:			**Lower Shallow**								**Upper Shallow**							
Water Quality Parameters																		
Temperature	°C		15.67	NA	19.78	NA	23.27	NA	19.48	NA	20.78	14.35	24.1	20.68	14.21	25.13	25.73	18.26
pH	pH Units		6.84	NA	6.3	NA	6.63	NA	5.57	NA	6.91	6.85	5.98	6.56	6.64	7.12	6.82	6.03
Conductivity	mS/CM		0.582	NA	1.14	NA	0.591	NA	0.8	NA	1.17	1.23	1.22	1.21	1.04	1.16	1.45	1.28
Dissolved Oxygen	mg/L		4.27	NA	3.56	NA	1.46	NA	2.18	NA	1.03	1.51	1.22	0.29	0	1.94	0.71	0.64
Turbidity	NTU		58.1	NA	4.4	NA	39.1	NA	8.2	NA	1.3	7.5	14.5	0.8	3	1.5	7	8.9
Oxidation Reduction Potential	mV		119	NA	172	NA	171	NA	199	NA	20	122	16	39	50	75	100	122
Ferrous Iron	mg/L		0.09	NA	0.02	NA	0	NA	NA	NA	0.09	0.76	NA	NA	0.57	0.07	0.18	NA
Alkalinity (310.2)																		
ALKALINITY, TOTAL	mg/L		269	NA	282	NA	284	N/A	275	NA	NA	NA	NA	NA	NA	NA	N/A	NA
Phosphours (365.4)																		
PHOSPHORUS	mg/L		<0.2 U	NA	1.29	NA	<0.2 U	N/A	0.408	NA	NA	NA	NA	NA	NA	NA	N/A	NA
SM4500-S-(-2)-F-2000																		
SULFIDE	mg/L		<1 U	NA	<1 U	NA	<1 UJ	N/A	<1 U	NA	NA	NA	NA	NA	NA	NA	N/A	NA
Total Organic Carbon (415.1)																		
TOTAL ORGANIC CARBON (TOC)	mg/L		2.93	NA	7.51	NA	<3 U	N/A	149	NA	NA	NA	NA	NA	NA	NA	N/A	NA
Iron (6010C)																		
IRON	mg/L		NA	<0.1 U	NA	<0.1 U	N/A	<0.1 U	NA	<0.1 U	NA	NA	NA	NA	NA	NA	N/A	NA
Manganese (6020A)																		
MANGANESE	mg/L	7.8	NA	0.0123	NA	0.192	N/A	0.0133	NA	0.0196	NA	NA	NA	NA	NA	NA	N/A	NA
Perchlorate (6850)																		
PERCHLORATE	ug/L	17	2490	NA	3000	NA	2050	N/A	5860	NA	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<1 U
Volatile Organic Compounds (8260B)																		
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	NA	<0.4 U	NA	<0.4 U	N/A	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 UJ	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	NA	<0.25 U	NA	<0.25 U	N/A	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,1-DICHLOROETHENE	ug/L	7	<1 U	NA	<1 U	NA	<1 U	N/A	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	NA	<0.3 U	NA	<0.3 U	N/A	<0.3 U	NA	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	NA	<1 U	NA	<1 U	N/A	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	NA	<0.4 U	NA	<0.4 U	N/A	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	NA	<2 U	NA	<2 U	N/A	<2 U	NA	<2 U	<2 U	<2 U	<2 UJ	<2 U	<2 U	<2 U	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	NA	<0.25 U	NA	<0.25 U	N/A	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A	0.25 J	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	NA	<0.4 U	NA	<0.4 U	N/A	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	NA	<0.4 U	NA	<0.4 U	N/A	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	NA	<0.25 U	NA	<0.25 U	N/A	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
2-BUTANONE	ug/L	15000	<5 U	NA	<5 U	NA	<5 U	N/A	<5 U	NA	<5 U	<5 U	<5 U	<5 UJ	<5 U	<5 U	<5 U	<5 U
2-CHLOROTOLUENE	ug/L	490	<0.25 U	NA	<0.25 UJ	NA	<0.25 U	N/A	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
2-HEXANONE	ug/L	120	<5 U	NA	<5 U	NA	<5 U	N/A	<5 U	NA	<5 U	<5 U	<5 U	<5 UJ	<5 U	<5 U	<5 U	<5 U
4-CHLOROTOLUENE	ug/L	490	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	NA	<5 U	NA	<5 U	N/A	<5 U	NA	<5 U	<5 U	<5 U	<5 UJ	<5 U	<5 UJ	<5 U	<5 U
ACETONE	ug/L	22000	3.61 J	NA	3.59 J	NA	<5 U	N/A	<5 U	NA	2.55 J	<5 U	<5 U	<5 UJ	<5 U	2.79 J	<5 U	<5 U
BENZENE	ug/L	5	<0.25 U	NA	<0.25 U	NA	<0.25 U	N/A	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOBENZENE	ug/L	200	<0.25 U	NA	<0.25 U	NA	<0.25 U	N/A	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	NA	<0.4 U	NA	<0.4 U	N/A	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
BROMOFORM	ug/L	120	<1 U	NA	<1 U	NA	<1 U	N/A	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
BROMOMETHANE	ug/L	34	<1 U	NA	<1 U	NA	<1 UJ	N/A	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 U
CARBON DISULFIDE	ug/L	2400	<1 U	NA	<1 U	NA	<1 U	N/A	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 U	<1 U
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CHLOROBENZENE	ug/L	100	<0.25 U	NA	<0.25 U	NA	<0.25 U	N/A	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
CHLOROETHANE	ug/L	98000	<1 U	NA	<1 U	NA	<1 U	N/A	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
CHLOROFORM	ug/L	240	0.257 J	NA	<0.25 U	NA	<0.25 U	N/A	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U

Table 2-3: Groundwater Results for Year 1 and 2 - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL/ UTL	50WW06-021715 2/17/2015	50WW06FF-021715 2/17/2015	50WW06-052015 5/20/2015	50WW06FF-052015 5/20/2015	50WW06-081815 8/18/2015	50WW06FF-081815 8/18/2015	50WW06-111215 11/12/2015	50WW06FF-111215 11/12/2015	50WW07-110513 11/5/2013	50WW07-032514 3/25/2014	50WW07-062014 6/20/2014	50WW07-110714 11/7/2014	50WW07-021315 2/13/2015	50WW07-052615 5/26/2015	50WW07-082115 8/21/2015	50WW07-110915 11/9/2015
CHLOROMETHANE	ug/L	70	<1 U	NA	<1 U	NA	<1 U	N/A	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	0.572 J	NA	0.637 J	NA	0.874 J	N/A	1.04	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOMETHANE	ug/L	120	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 UJ	NA	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ETHYLBENZENE	ug/L	700	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
M,P-XYLENE	ug/L	10000	<1 U	NA	<1 U	NA	<1 U	N/A	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
METHYLENE CHLORIDE	ug/L	5	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
NAPHTHALENE	ug/L	490	<0.4 U	NA	<0.4 U	NA	<0.4 U	N/A	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 UJ	<0.4 U	<0.4 U	<0.4 U	<0.4 U
N-BUTYLBENZENE	ug/L	1200	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
N-PROPYLBENZENE	ug/L	980	<0.25 U	NA	<0.25 U	NA	<0.25 U	N/A	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
O-XYLENE	ug/L	10000	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
STYRENE	ug/L	100	<0.25 U	NA	<0.25 U	NA	<0.25 U	N/A	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TOLUENE	ug/L	1000	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	NA	<1 U	NA	<1 U	N/A	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
TRICHLOROETHENE	ug/L	5	53.9	NA	49.1	NA	34.7	N/A	59.4	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	0.42 J	<0.5 U	<0.5 U
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
Inorganic Anions (9056)																		
CHLORIDE	mg/L		74.7 J	NA	218	NA	98.6	N/A	97.9	NA	NA	NA	NA	NA	NA	NA	N/A	NA
NITRATE	mg/L	10	<1 UJ	NA	<1 U	NA	<0.2 U	N/A	0.196 J	NA	NA	NA	NA	NA	NA	NA	N/A	NA
NITRITE	mg/L	1	<1 UJ	NA	0.65 J	NA	<0.2 U	N/A	<0.2 U	NA	NA	NA	NA	NA	NA	NA	N/A	NA
SULFATE	mg/L		36.2 J	NA	157	NA	55.2	N/A	39.8	NA	NA	NA	NA	NA	NA	NA	N/A	NA
Dissolved Gases (RSK-175)																		
CARBON DIOXIDE	ug/L		170000	NA	244000	NA	205000	N/A	806000	NA	NA	NA	NA	NA	NA	NA	N/A	NA
ETHANE	ug/L		<2 U	NA	<2 U	NA	<2 U	N/A	<2 U	NA	NA	NA	NA	NA	NA	NA	N/A	NA
ETHENE	ug/L		<2 U	NA	<2 U	NA	<2 U	N/A	<2 U	NA	NA	NA	NA	NA	NA	NA	N/A	NA
METHANE	ug/L		<2 U	NA	<2 U	NA	<2 U	N/A	<2 U	NA	NA	NA	NA	NA	NA	NA	N/A	NA

Blue Highlighting Indicates concentrations above the MCL/MSC/PCL

Wells 50WW02, 50WW03 and 50WW04 were dry. No samples collected.

Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter, "FF" indicate sample filtered in the field with 0.45 micron filter. Metals results for "FF" samples are dissolved.

"FD" or "D" in Sample ID indicates a field duplicate sample.

(1) Only limited data validation possible; Not used in plume delineation

(2) Substituted for 50WW08 and 50WW13 October 2013 data for plume delineation

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Limit

mg/L - milligrams per liter

MSC - Medium-Specific Concentrations

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

ug/L - micrograms per liter

UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

UTL - Upper Tolerance Limit

Table 2-3: Groundwater Results for Year 1 and 2 - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL/ UTL	50WW08-103013 (1) 10/30/2013	50WW08FF-103013 (1) 10/30/2013	50WW08-031114 (2) 3/11/2014	50WW08FF-031114 (2) 3/11/2014	50WW08-062414 6/24/2014	50WW08FF-062414 6/24/2014	50WW08-110614 11/6/2014	50WW08FF-110614 11/6/2014	50WW08-021715 2/17/2015	50WW08FF-021715 2/17/2015	50WW08-052115 5/21/2015	50WW08FF-052115 5/21/2015	50WW08-081715 8/17/2015	50WW08FF-081715 8/17/2015	50WW08-111615 11/16/2015	50WW08FF-111615 11/16/2015
Well Completion Zone:			**Upper Shallow**															
Water Quality Parameters																		
Temperature	°C		19.8	NA	16.61	NA	21.33	NA	18.95	NA	16.1	NA	18.16	NA	23.39	NA	18.95	NA
pH	pH Units		7.14	NA	7.01	NA	6.23	NA	6.67	NA	6.61	NA	5.85	NA	6.22	NA	5.93	NA
Conductivity	mS/CM		2.2	NA	2.32	NA	2.24	NA	2.25	NA	2.29	NA	2.11	NA	1.93	NA	2.36	NA
Dissolved Oxygen	mg/L		0.87	NA	1.6	NA	1.34	NA	0	NA	0	NA	1.2	NA	0.1	NA	0	NA
Turbidity	NTU		4	NA	8.7	NA	43	NA	3.1	NA	170	NA	42.3	NA	37.3	NA	27.1	NA
Oxidation Reduction Potential	mV		298	NA	460	NA	169	NA	140	NA	134	NA	184	NA	226	NA	223	NA
Ferrous Iron	mg/L		0.34	NA	0	NA	0	NA	0.23	NA	0.79	NA	0.02	NA	0	NA	NA	NA
Alkalinity (310.2)																		
ALKALINITY, TOTAL	mg/L		353	NA	435	NA	461	NA	415	NA	443	NA	429	NA	414	N/A	412	NA
Phosphours (365.4)																		
PHOSPHORUS	mg/L		<0.5 U	NA	<0.2 U	NA	0.337 J	NA	<0.2 U	NA	0.159 J	NA	<0.2 U	NA	0.256 J	N/A	<0.2 U	NA
SM4500-S-(-2)-F-2000																		
SULFIDE	mg/L		1.2	NA	<1 U	NA	<0.5 U	NA	<2 U	NA	<1 U	NA	<1 U	NA	<1 UJ	N/A	<1 U	NA
Total Organic Carbon (415.1)																		
TOTAL ORGANIC CARBON (TOC)	mg/L		505	NA	9.39	NA	9.32	NA	1.17 J	NA	15.1	NA	3.68	NA	<4 U	N/A	61.1	NA
Iron (6010C)																		
IRON	mg/L		<0.1 U	<0.1 U	NA	<0.1 U	NA	<0.1 U	NA	<0.1 U	NA	0.285	NA	<0.1 U	N/A	<0.1 U	NA	<0.1 U
Manganese (6020A)																		
MANGANESE	mg/L	7.8	NA	0.039	NA	0.0244	NA	0.0441	NA	0.0523	NA	0.0569	NA	0.0391	N/A	0.0444	NA	0.0581
Perchlorate (6850)																		
PERCHLORATE	ug/L	17	6404	NA	91.5	NA	132	NA	56.3	NA	99	NA	200	NA	157	N/A	32.4 J	NA
Volatile Organic Compounds (8260B)																		
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	N/A	<0.5 U	NA
1,1,1-TRICHLOROETHANE	ug/L	200	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	N/A	<0.5 U	NA
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<5 U	NA	<0.4 U	NA	<2 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	N/A	<0.4 U	NA
1,1,2-TRICHLOROETHANE	ug/L	5	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	N/A	<0.5 U	NA
1,1-DICHLOROETHANE	ug/L	4900	<5 U	NA	1.97	NA	1.68 J	NA	0.988 J	NA	1.55 J	NA	1.49 J	NA	0.867 J	N/A	0.334 J	NA
1,1-DICHLOROETHENE	ug/L	7	<5 U	NA	1.71 J	NA	<5 U	NA	<2.5 U	NA	<2.5 U	NA	<2.5 U	NA	<2.5 U	N/A	<1 U	NA
1,1-DICHLOROPROPENE	ug/L	9.1	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	N/A	<0.5 U	NA
1,2,3-TRICHLOROBENZENE	ug/L	73	<5 U	NA	<0.3 U	NA	<1.5 U	NA	<0.75 U	NA	<0.75 U	NA	<0.75 U	NA	<0.75 U	N/A	<0.3 U	NA
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<5 U	NA	<1 U	NA	<5 U	NA	<2.5 U	NA	<2.5 U	NA	<2.5 U	NA	<2.5 U	N/A	<1 U	NA
1,2,4-TRICHLOROBENZENE	ug/L	70	<5 U	NA	<0.4 U	NA	<2 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	N/A	<0.4 U	NA
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	N/A	<0.5 U	NA
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<5 U	NA	<2 U	NA	<10 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	N/A	<2 U	NA
1,2-DIBROMOETHANE	ug/L	0.05	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	N/A	<0.5 U	NA
1,2-DICHLOROBENZENE	ug/L	600	<5 U	NA	0.134 J	NA	<1.25 U	NA	<0.626 U	NA	<0.626 U	NA	<0.626 U	NA	<0.626 U	N/A	<0.25 U	NA
1,2-DICHLOROETHANE	ug/L	5	<5 U	NA	5.73	NA	4.36 J	NA	2.12 J	NA	3.59	NA	3.6	NA	2.63	N/A	1.26	NA
1,2-DICHLOROPROPANE	ug/L	5	<5 U	NA	<0.4 U	NA	<2 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	N/A	<0.4 U	NA
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	N/A	<0.5 U	NA
1,3-DICHLOROBENZENE	ug/L	730	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	N/A	<0.5 U	NA
1,3-DICHLOROPROPANE	ug/L	9.1	<5 U	NA	<0.4 U	NA	<2 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	N/A	<0.4 U	NA
1,4-DICHLOROBENZENE	ug/L	75	<5 U	NA	<0.25 U	NA	<1.25 U	NA	<0.626 U	NA	<0.626 U	NA	<0.626 U	NA	<0.626 U	N/A	<0.25 U	NA
2,2-DICHLOROPROPANE	ug/L	13	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	N/A	<0.5 U	NA
2-BUTANONE	ug/L	15000	<5 U	NA	<5 U	NA	<25 U	NA	<12.5 U	NA	<12.5 U	NA	<12.5 U	NA	<12.5 U	N/A	<5 U	NA
2-CHLOROTOLUENE	ug/L	490	<5 U	NA	<0.25 U	NA	<1.25 U	NA	<0.626 U	NA	<0.626 U	NA	<0.626 U	NA	<0.626 U	N/A	<0.25 U	NA
2-HEXANONE	ug/L	120	<5 U	NA	<5 U	NA	<25 U	NA	<12.5 U	NA	<12.5 U	NA	<12.5 U	NA	<12.5 U	N/A	<5 UJ	NA
4-CHLOROTOLUENE	ug/L	490	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	N/A	<0.5 U	NA
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	NA	<5 U	NA	<25 U	NA	<12.5 U	NA	<12.5 U	NA	<12.5 U	NA	<12.5 U	N/A	<5 UJ	NA
ACETONE	ug/L	22000	<5 U	NA	<5 U	NA	<25 U	NA	<12.5 U	NA	<12.5 U	NA	<12.5 U	NA	<12.5 U	N/A	<5 UJ	NA
BENZENE	ug/L	5	<5 U	NA	<0.25 U	NA	<1.25 U	NA	<0.626 U	NA	<0.626 U	NA	<0.626 U	NA	<0.626 U	N/A	<0.25 U	NA
BROMOBENZENE	ug/L	200	<5 U	NA	<0.25 U	NA	<1.25 U	NA	<0.626 U	NA	<0.626 U	NA	<0.626 U	NA	<0.626 U	N/A	<0.25 U	NA
BROMOCHLOROMETHANE	ug/L	980	<5 U	NA	<0.4 U	NA	<2 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	N/A	<0.4 U	NA
BROMODICHLOROMETHANE	ug/L	15	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	N/A	<0.5 U	NA
BROMOFORM	ug/L	120	<5 U	NA	<1 U	NA	<5 U	NA	<2.5 U	NA	<2.5 U	NA	<2.5 U	NA	<2.5 U	N/A	<1 U	NA
BROMOMETHANE	ug/L	34	<5 U	NA	<1 U	NA	<5 U	NA	<2.5 UJ	NA	<2.5 U	NA	<2.5 U	NA	<2.5 UJ	N/A	<1 U	NA
CARBON DISULFIDE	ug/L	2400	<5 U	NA	<1 U	NA	<5 U	NA	<2.5 U	NA	<2.5 U	NA	<2.5 U	NA	<2.5 U	N/A	<1 UJ	NA
CARBON TETRACHLORIDE	ug/L	5	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	N/A	<0.5 U	NA
CHLOROBENZENE	ug/L	100	<5 U	NA	<0.25 U	NA	<1.25 U	NA	<0.626 U	NA	<0.626 U	NA	<0.626 U	NA	<0.626 U	N/A	<0.25 U	NA
CHLOROETHANE	ug/L	98000	<5 U	NA	<1 U	NA	<5 U	NA	<2.5 U	NA	<2.5 U	NA	<2.5 U	NA	<2.5 U	N/A	<1 U	NA
CHLOROFORM	ug/L	240	<5 U	NA	0.818 J	NA	<1.25 U	NA	0.318 J	NA	0.494 J	NA	0.606 J	NA	0.358 J	N/A	<0.25 U	NA

Table 2-3: Groundwater Results for Year 1 and 2 - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL/ UTL	50WW08-103013 [1] 10/30/2013	50WW08FF-103013 [1] 10/30/2013	50WW08-031114 [2] 3/11/2014	50WW08FF-031114 [2] 3/11/2014	50WW08-062414 6/24/2014	50WW08FF-062414 6/24/2014	50WW08-110614 11/6/2014	50WW08FF-110614 11/6/2014	50WW08-021715 2/17/2015	50WW08FF-021715 2/17/2015	50WW08-052115 5/21/2015	50WW08FF-052115 5/21/2015	50WW08-081715 8/17/2015	50WW08FF-081715 8/17/2015	50WW08-111615 11/16/2015	50WW08FF-111615 11/16/2015
CHLOROMETHANE	ug/L	70	<5 U	NA	<1 U	NA	<5 U	NA	<2.5 U	NA	<2.5 U	NA	<2.5 U	NA	<2.5 U	N/A	<1 U	NA
CIS-1,2-DICHLOROETHENE	ug/L	70	30.6	NA	103	NA	86	NA	48.5	NA	70.5	NA	62.1	NA	45.4	N/A	17.7	NA
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	N/A	<0.5 U	NA
DIBROMOCHLOROMETHANE	ug/L	11	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	N/A	<0.5 U	NA
DIBROMOMETHANE	ug/L	120	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	N/A	<0.5 U	NA
DICHLORODIFLUOROMETHANE	ug/L	4900	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<1.25 U	NA	<1.25 UJ	NA	<1.25 U	NA	<1.25 U	N/A	<0.5 U	NA
ETHYLBENZENE	ug/L	700	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	N/A	<0.5 U	NA
HEXACHLOROBUTADIENE	ug/L	12	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	N/A	<0.5 U	NA
ISOPROPYLBENZENE	ug/L	2400	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	N/A	<0.5 U	NA
M,P-XYLENE	ug/L	10000	<5 U	NA	<1 U	NA	<5 U	NA	<2.5 U	NA	<2.5 U	NA	<2.5 U	NA	<2.5 U	N/A	<1 U	NA
METHYLENE CHLORIDE	ug/L	5	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	N/A	<0.5 U	NA
NAPHTHALENE	ug/L	490	<5 U	NA	<0.4 U	NA	<2 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	N/A	<0.4 U	NA
N-BUTYLBENZENE	ug/L	1200	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	N/A	<0.5 U	NA
N-PROPYLBENZENE	ug/L	980	<5 U	NA	<0.25 U	NA	<1.25 U	NA	<0.626 U	NA	<0.626 U	NA	<0.626 U	NA	<0.626 U	N/A	<0.25 U	NA
O-XYLENE	ug/L	10000	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	N/A	<0.5 U	NA
P-ISOPROPYLTOLUENE	ug/L	2400	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	N/A	<0.5 U	NA
SEC-BUTYLBENZENE	ug/L	980	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	N/A	<0.5 U	NA
STYRENE	ug/L	100	<5 U	NA	<0.25 U	NA	<1.25 U	NA	<0.626 U	NA	<0.626 U	NA	<0.626 U	NA	<0.626 U	N/A	<0.25 U	NA
TERT-BUTYLBENZENE	ug/L	980	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	N/A	<0.5 U	NA
TETRACHLOROETHENE	ug/L	5	<5 U	NA	2.15	NA	2.03 J	NA	1.9 J	NA	2.55	NA	2 J	NA	1.2 J	N/A	1.21	NA
TOLUENE	ug/L	1000	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	N/A	<0.5 U	NA
TRANS-1,2-DICHLOROETHENE	ug/L	100	<5 U	NA	0.406 J	NA	<2.5 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	N/A	<0.5 U	NA
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<5 U	NA	<1 U	NA	<5 U	NA	<2.5 U	NA	<2.5 U	NA	<2.5 U	NA	<2.5 U	N/A	<1 U	NA
TRICHLOROETHENE	ug/L	5	247	NA	845	NA	814	NA	685	NA	852	NA	712	NA	375	N/A	288	NA
TRICHLOROFLUOROMETHANE	ug/L	7300	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	N/A	<0.5 U	NA
VINYL CHLORIDE	ug/L	2	<2 U	NA	0.517 J	NA	<2.5 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	NA	<1.25 U	N/A	<0.5 U	NA
Inorganic Anions (9056)																		
CHLORIDE	mg/L		301.9	NA	358	NA	338	NA	364	NA	373 J	NA	322	NA	408	N/A	390	NA
NITRATE	mg/L	10	NA	NA	<1 U	NA	<4 U	NA	<0.6 U	NA	<1 UJ	NA	<1 U	NA	<1 U	N/A	<1 U	NA
NITRITE	mg/L	1	NA	NA	<1 U	NA	<4 U	NA	<0.6 U	NA	<1 UJ	NA	0.545 J	NA	<1 U	N/A	<1 U	NA
SULFATE	mg/L		NA	NA	306	NA	260	NA	334	NA	302 J	NA	293	NA	313	N/A	311	NA
Dissolved Gases (RSK-175)																		
CARBON DIOXIDE	ug/L		NA	NA	208000	NA	194000	NA	61800	NA	444000	NA	331000	NA	618000	N/A	609000	NA
ETHANE	ug/L		<0.01 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	N/A	<2 U	NA
ETHENE	ug/L		<0.01 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	N/A	<2 U	NA
METHANE	ug/L		<0.01 U	NA	2.23 J	NA	<2 U	NA	7.54	NA	2.28 J	NA	2 J	NA	1.16 J	N/A	1.87 J	NA

Blue Highlighting Indicates concentrations above the MCL/MSC/PCL

Wells 50WW02, 50WW03 and 50WW04 were dry. No samples collected.

Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter, "FF" indicate sample filtered in the field with 0.45 micron filter. Metals results for "FF" samples are dissolved.

"FD" or "D" in Sample ID indicates a field duplicate sample.

[1] Only limited data validation possible; Not used in plume delineation

[2] Substituted for 50WW08 and 50WW13 October 2013 data for plume delineation

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Limit

mg/L - milligrams per liter

MSC - Medium-Specific Concentrations

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

ug/L - micrograms per liter

UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

UTL - Upper Tolerance Limit

Table 2-3: Groundwater Results for Year 1 and 2 - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL/ UTL	50WW09-110113 11/1/2013	50WW09-031414 3/14/2014	50WW09-061914 6/19/2014	50WW09-111214 11/12/2014	50WW09-021315 2/13/2015	50WW09-052315 5/23/2015	50WW09-082115 8/21/2015	50WW09FD-082115 8/21/2015	50WW09-111115 11/11/2015	50WW09FD-111115 11/11/2015	50WW10-110513 11/5/2013	50WW10FD-110513 11/5/2013	50WW10-031414 3/14/2014	50WW10-061914 6/19/2014	50WW10FD-061914 6/19/2014	50WW10-111214 11/12/2014	50WW10-021315 2/13/2015
Well Completion Zone:			**Lower Shallow**										**Intermediate**						
Water Quality Parameters																			
Temperature	°C		20.69	15.69	22.4	18.05	18.48	19.32	21.51	NA	20.16	NA	19.6	NA	18.65	22.8	NA	17.59	19.01
pH	pH Units		7.06	6.8	5.98	6.3	5.97	6.16	5.73	NA	6.03	NA	10.2	NA	9.37	6.43	NA	6.4	10.76
Conductivity	mS/CM		2.59	2.66	2.56	2.6	2.43	2.13	2.07	NA	2.45	NA	1.2	NA	1.24	1.15	NA	0.984	0.969
Dissolved Oxygen	mg/L		0.67	0.49	0.55	0	0	0.69	0	NA	0	NA	0.78	NA	0.38	0.64	NA	0	0
Turbidity	NTU		29.7	61.9	39.5	211	217	52.7	280	NA	191	NA	70.1	NA	94.3	54.3	NA	18.2	5
Oxidation Reduction Potential	mV		-161	-57	-54	7	66	-2	72	NA	46	NA	-264	NA	-247	-155	NA	-30	-178
Ferrous Iron	mg/L		1.9	0.78	NA	NA	1.74	1.3	1.46	NA	NA	NA	0.76	NA	0.01	NA	NA	NA	0.22
Alkalinity (310.2)																			
ALKALINITY, TOTAL	mg/L		NA	NA	NA	NA	NA	NA	N/A	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phosphours (365.4)																			
PHOSPHORUS	mg/L		NA	NA	NA	NA	NA	NA	N/A	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA
SM4500-S-(-2)-F-2000																			
SULFIDE	mg/L		NA	NA	NA	NA	NA	NA	N/A	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon (415.1)																			
TOTAL ORGANIC CARBON (TOC)	mg/L		NA	NA	NA	NA	NA	NA	N/A	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron (6010C)																			
IRON	mg/L		NA	NA	NA	NA	NA	NA	N/A	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese (6020A)																			
MANGANESE	mg/L	7.8	NA	NA	NA	NA	NA	NA	N/A	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perchlorate (6850)																			
PERCHLORATE	ug/L	17	<0.2 U	<0.2 U	<0.2 U	0.593	<0.2 U	0.196 J	<0.2 U	<0.2 U	<1 U	<1 U	0.91	0.924	0.272 J	0.499	1.46	<0.2 U	<0.2 U
Volatile Organic Compounds (8260B)																			
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	0.349 J	0.497 J	0.537 J	0.308 J	0.31 J	<0.2 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,1-DICHLOROETHENE	ug/L	7	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 UJ	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 UJ	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.2 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	1.11	1.66	1.83	1.09	1.05	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.2 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
2-BUTANONE	ug/L	15000	<5 UJ	<5 U	<5 UJ	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 UJ	<5 U	<5 U	<5 UJ	<5 U	<5 U	<5 U
2-CHLOROTOLUENE	ug/L	490	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.2 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
2-HEXANONE	ug/L	120	<5 UJ	<5 U	<5 UJ	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 UJ	<5 U	<5 U	<5 UJ	<5 U	<5 U	<5 U
4-CHLOROTOLUENE	ug/L	490	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	<5 UJ	<5 U	<5 UJ	<5 U	<5 U	<5 UJ	<5 U	<5 U	<5 U	<5 U	<5 UJ	<5 U	<5 U	<5 UJ	<5 U	<5 U	<5 U
ACETONE	ug/L	22000	<5 UJ	<5 U	<5 UJ	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	2.72 J	3.73 J	7.67 J	4.57 J	<5 UJ	<5 U	<5 U	<5 U
BENZENE	ug/L	5	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.2 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOBENZENE	ug/L	200	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.2 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
BROMOFORM	ug/L	120	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
BROMOMETHANE	ug/L	34	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 UJ	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
CARBON DISULFIDE	ug/L	2400	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 U	<1 U	<1 UJ	<1 UJ	15.6	17	21.9	8.81	8.71	2.07	1.09 J
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CHLOROBENZENE	ug/L	100	<0.25 U	<0.25 U	0.151 J	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.2 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
CHLOROETHANE	ug/L	98000	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
CHLOROFORM	ug/L	240	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	0.272 J	0.485 J	0.442 J	0.246 J	0.256 J	<0.2 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U

Table 2-3: Groundwater Results for Year 1 and 2 - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL/ UTL	50WW09-110113 11/1/2013	50WW09-031414 3/14/2014	50WW09-061914 6/19/2014	50WW09-111214 11/12/2014	50WW09-021315 2/13/2015	50WW09-052315 5/23/2015	50WW09-082115 8/21/2015	50WW09FD-082115 8/21/2015	50WW09-111115 11/11/2015	50WW09FD-111115 11/11/2015	50WW10-110513 11/5/2013	50WW10FD-110513 11/5/2013	50WW10-031414 3/14/2014	50WW10-061914 6/19/2014	50WW10FD-061914 6/19/2014	50WW10-111214 11/12/2014	50WW10-021315 2/13/2015
CHLOROMETHANE	ug/L	70	0.5 J	<1 U	<1 U	<1 U	<1 U	<1 U	0.535 J	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	0.579 J	1.16	0.36 J	1.04	19.7	29.4	29.5	16.3	16	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOMETHANE	ug/L	120	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ETHYLBENZENE	ug/L	700	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
M,P-XYLENE	ug/L	10000	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
METHYLENE CHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
NAPHTHALENE	ug/L	490	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
N-BUTYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
N-PROPYLBENZENE	ug/L	980	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.2 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
O-XYLENE	ug/L	10000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
STYRENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.2 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	0.353 J	0.423 J	0.536 J	0.34 J	0.404 J	0.393 J	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TOLUENE	ug/L	1000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
TRICHLOROETHENE	ug/L	5	0.26 J	20.2	36.3	19.8	57 J	202	235	228	173	170	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
Inorganic Anions (9056)																			
CHLORIDE	mg/L		NA	NA	NA	NA	NA	NA	N/A	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA
NITRATE	mg/L	10	NA	NA	NA	NA	NA	NA	N/A	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA
NITRITE	mg/L	1	NA	NA	NA	NA	NA	NA	N/A	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA
SULFATE	mg/L		NA	NA	NA	NA	NA	NA	N/A	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Gases (RSK-175)																			
CARBON DIOXIDE	ug/L		NA	NA	NA	NA	NA	NA	N/A	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHANE	ug/L		NA	NA	NA	NA	NA	NA	N/A	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHENE	ug/L		NA	NA	NA	NA	NA	NA	N/A	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHANE	ug/L		NA	NA	NA	NA	NA	NA	N/A	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA

Blue Highlighting Indicates concentrations above the MCL/MSC/PCL

Wells 50WW02, 50WW03 and 50WW04 were dry. No samples collected.

Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter, "FF" indicate sample filtered in the field with 0.45 micron filter. Metals results for "FF" samples are dissolved.

"FD" or "D" in Sample ID indicates a field duplicate sample.

(1) Only limited data validation possible; Not used in plume delineation

(2) Substituted for 50WW08 and 50WW13 October 2013 data for plume delineation

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Limit

mg/L - milligrams per liter

MSC - Medium-Specific Concentrations

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

ug/L - micrograms per liter

UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

UTL - Upper Tolerance Limit

Table 2-3: Groundwater Results for Year 1 and 2 - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL/ UTL	50WW10-052315 5/23/2015	50WW10-082115 8/21/2015	50WW10-111115 11/11/2015	50WW11-102813 10/28/2013	50WW11F-102813 10/28/2013	50WW11FF-102813 10/28/2013	50WW11-031314 3/13/2014	50WW11FF-031314 3/13/2014	50WW11-062514 6/25/2014	50WW11FF-062514 6/25/2014	50WW11-110514 11/5/2014	50WW11FF-110514 11/5/2014	50WW11-021715 2/17/2015	50WW11FF-021715 2/17/2015	50WW11-052015 5/20/2015	50WW11FF-052015 5/20/2015
Well Completion Zone:			**Intermediate**			**Upper Shallow**												
Water Quality Parameters																		
Temperature	°C		22.15	23.92	21.21	18.9	NA	NA	17.03	NA	20.9	NA	19.21	NA	15.45	NA	19.95	NA
pH	pH Units		10.45	10.73	10.62	6.62	NA	NA	6.64	NA	6.58	NA	5.76	NA	6.35	NA	5.78	NA
Conductivity	mS/CM		1.24	1.31	1.27	2.22	NA	NA	1.83	NA	1.96	NA	2.33	NA	1.72	NA	1.56	NA
Dissolved Oxygen	mg/L		1.77	0.96	0.28	0.85	NA	NA	0.47	NA	0.48	NA	0	NA	0	NA	0.51	NA
Turbidity	NTU		83.1	50.3	2.8	16.3	NA	NA	17.3	NA	26.7	NA	48.6	NA	255	NA	198	NA
Oxidation Reduction Potential	mV		-230	-212	-197	46	NA	NA	223	NA	42	NA	139	NA	103	NA	149	NA
Ferrous Iron	mg/L		0.13	0	NA	0.55	NA	NA	0	NA	NA	NA	1.09	NA	0.65	NA	0	NA
Alkalinity (310.2)																		
ALKALINITY, TOTAL	mg/L		NA	N/A	NA	315	NA	NA	293	NA	392	NA	372	NA	307	NA	308	NA
Phosphours (365.4)																		
PHOSPHORUS	mg/L		NA	N/A	NA	<0.2 U	NA	NA	0.402	NA	0.504	NA	0.19 J	NA	<0.2 U	NA	0.665	NA
SM4500-S-(-2)-F-2000																		
SULFIDE	mg/L		NA	N/A	NA	<1 U	NA	NA	<1 U	NA	<0.5 U	NA	<2 U	NA	<1 U	NA	<1 U	NA
Total Organic Carbon (415.1)																		
TOTAL ORGANIC CARBON (TOC)	mg/L		NA	N/A	NA	9.51	NA	NA	8.01	NA	5.03	NA	6.14	NA	3.44	NA	64.2	NA
Iron (6010C)																		
IRON	mg/L		NA	N/A	NA	NA	0.11 J	0.084 J	NA	<0.1 U	NA	<0.1 U	NA	0.216	NA	0.0718 J	NA	<0.1 U
Manganese (6020A)																		
MANGANESE	mg/L	7.8	NA	N/A	NA	NA	NA	0.419	NA	0.169	NA	0.126	NA	0.144	NA	0.123	NA	0.14
Perchlorate (6850)																		
PERCHLORATE	ug/L	17	<0.2 U	<0.2 U	<0.2 U	21700	NA	NA	2570	NA	8910	NA	22300	NA	2690	NA	1140	NA
Volatile Organic Compounds (8260B)																		
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<1.25 U	NA	<1 U	NA	<2.5 U	NA	<1 U	NA	<0.5 U	NA
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<1.25 U	NA	<1 U	NA	<2.5 U	NA	<1 U	NA	<0.5 U	NA
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	NA	<1 U	NA	<0.8 U	NA	<2 U	NA	<0.8 U	NA	<0.4 U	NA
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<1.25 U	NA	<1 U	NA	<2.5 U	NA	<1 U	NA	<0.5 U	NA
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	<0.25 U	<0.25 U	4.4	NA	NA	0.595	NA	1.64 J	NA	5.52	NA	0.638 J	NA	0.3 J	NA
1,1-DICHLOROETHENE	ug/L	7	<1 U	<1 U	<1 U	17.4	NA	NA	1.88	NA	7.35	NA	27.9	NA	2.47 J	NA	1.03 J	NA
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<1.25 U	NA	<1 U	NA	<2.5 U	NA	<1 U	NA	<0.5 U	NA
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	<0.3 U	<0.3 U	<0.3 U	NA	NA	<0.75 U	NA	<0.6 U	NA	<1.5 U	NA	<0.6 U	NA	<0.3 U	NA
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	<1 U	<1 U	<1 U	NA	NA	<2.5 U	NA	<2 U	NA	<5 U	NA	<2 U	NA	<1 U	NA
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	NA	<1 U	NA	<0.8 U	NA	<2 U	NA	<0.8 U	NA	<0.4 U	NA
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<1.25 U	NA	<1 U	NA	<2.5 U	NA	<1 U	NA	<0.5 U	NA
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	<2 U	<2 U	<2 U	NA	NA	<5 U	NA	<4 U	NA	<10 U	NA	<4 U	NA	<2 U	NA
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<1.25 U	NA	<1 U	NA	<2.5 U	NA	<1 U	NA	<0.5 U	NA
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	NA	<0.626 U	NA	<0.5 U	NA	<1.25 U	NA	<0.5 U	NA	<0.25 U	NA
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	15.2	NA	NA	2.28	NA	6.01	NA	24.3	NA	2.42	NA	1.2	NA
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	NA	<1 U	NA	<0.8 U	NA	<2 U	NA	<0.8 U	NA	<0.4 U	NA
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<1.25 U	NA	<1 U	NA	<2.5 U	NA	<1 U	NA	<0.5 U	NA
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<1.25 U	NA	<1 U	NA	<2.5 U	NA	<1 U	NA	<0.5 U	NA
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	NA	<1 U	NA	<0.8 U	NA	<2 U	NA	<0.8 U	NA	<0.4 U	NA
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	NA	<0.626 U	NA	<0.5 U	NA	<1.25 U	NA	<0.5 U	NA	<0.25 U	NA
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<1.25 U	NA	<1 U	NA	<2.5 U	NA	<1 U	NA	<0.5 U	NA
2-BUTANONE	ug/L	15000	<5 U	<5 U	<5 U	<5 UJ	NA	NA	<12.5 U	NA	<10 U	NA	<25 U	NA	<10 U	NA	<5 U	NA
2-CHLOROTOLUENE	ug/L	490	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	NA	<0.626 U	NA	<0.5 U	NA	<1.25 U	NA	<0.5 U	NA	<0.25 UJ	NA
2-HEXANONE	ug/L	120	<5 U	<5 U	<5 U	<5 UJ	NA	NA	<12.5 U	NA	<10 U	NA	<25 U	NA	<10 U	NA	<5 U	NA
4-CHLOROTOLUENE	ug/L	490	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<1.25 U	NA	<1 U	NA	<2.5 U	NA	<1 U	NA	<0.5 U	NA
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	<5 U	<5 U	<5 U	NA	NA	<12.5 U	NA	<10 U	NA	<25 U	NA	<10 U	NA	<5 U	NA
ACETONE	ug/L	22000	<5 U	<5 U	3.95 J	<5 U	NA	NA	<12.5 U	NA	<10 U	NA	<25 U	NA	<10 U	NA	<5 U	NA
BENZENE	ug/L	5	<0.25 U	<0.25 U	<0.25 U	0.31 J	NA	NA	<0.626 U	NA	<0.5 U	NA	<1.25 U	NA	<0.5 U	NA	<0.25 U	NA
BROMOBENZENE	ug/L	200	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	NA	<0.626 U	NA	<0.5 U	NA	<1.25 U	NA	<0.5 U	NA	<0.25 U	NA
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	NA	<1 U	NA	<0.8 U	NA	<2 U	NA	<0.8 U	NA	<0.4 U	NA
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<1.25 U	NA	<1 U	NA	<2.5 U	NA	<1 U	NA	<0.5 U	NA
BROMOFORM	ug/L	120	<1 U	<1 U	<1 U	<1 U	NA	NA	<2.5 U	NA	<2 U	NA	<5 U	NA	<2 U	NA	<1 U	NA
BROMOMETHANE	ug/L	34	<1 U	<1 UJ	<1 U	<1 U	NA	NA	<2.5 U	NA	<2 U	NA	<5 U	NA	<2 U	NA	<1 U	NA
CARBON DISULFIDE	ug/L	2400	1.38 J	0.817 J	0.888 J	<1 U	NA	NA	<2.5 U	NA	<2 U	NA	<5 U	NA	<2 U	NA	<1 U	NA
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<1.25 U	NA	<1 U	NA	<2.5 U	NA	<1 U	NA	<0.5 U	NA
CHLOROBENZENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	NA	<0.626 U	NA	<0.5 U	NA	<1.25 U	NA	<0.5 U	NA	<0.25 U	NA
CHLOROETHANE	ug/L	98000	<1 U	<1 U	<1 U	<1 U	NA	NA	<2.5 U	NA	<2 U	NA	<5 U	NA	<2 U	NA	<1 U	NA
CHLOROFORM	ug/L	240	<0.25 U	<0.25 U	<0.25 U	0.942 J	NA	NA	<0.626 U	NA	<0.5 U	NA	0.737 J	NA	<0.5 U	NA	<0.25 U	NA

Table 2-3: Groundwater Results for Year 1 and 2 - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL/ UTL	50WW10-052315 5/23/2015	50WW10-082115 8/21/2015	50WW10-111115 11/11/2015	50WW11-102813 10/28/2013	50WW11F-102813 10/28/2013	50WW11FF-102813 10/28/2013	50WW11-031314 3/13/2014	50WW11FF-031314 3/13/2014	50WW11-062514 6/25/2014	50WW11FF-062514 6/25/2014	50WW11-110514 11/5/2014	50WW11FF-110514 11/5/2014	50WW11-021715 2/17/2015	50WW11FF-021715 2/17/2015	50WW11-052015 5/20/2015	50WW11FF-052015 5/20/2015
CHLOROMETHANE	ug/L	70	<1 U	<1 U	<1 U	<1 U	NA	NA	<2.5 U	NA	<2 U	NA	<5 UJ	NA	<2 U	NA	<1 U	NA
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	<0.5 U	<0.5 U	43.9	NA	NA	4.46	NA	12.6	NA	70.8	NA	6.86	NA	2.4	NA
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<1.25 U	NA	<1 U	NA	<2.5 U	NA	<1 U	NA	<0.5 U	NA
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<1.25 U	NA	<1 U	NA	<2.5 U	NA	<1 U	NA	<0.5 U	NA
DIBROMOMETHANE	ug/L	120	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<1.25 U	NA	<1 U	NA	<2.5 U	NA	<1 U	NA	<0.5 U	NA
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<1.25 U	NA	<1 U	NA	<2.5 U	NA	<1 U	NA	<0.5 U	NA
ETHYLBENZENE	ug/L	700	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<1.25 U	NA	<1 U	NA	<2.5 U	NA	<1 U	NA	<0.5 U	NA
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<1.25 U	NA	<1 U	NA	<2.5 U	NA	<1 U	NA	<0.5 U	NA
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<1.25 U	NA	<1 U	NA	<2.5 U	NA	<1 U	NA	<0.5 U	NA
M,P-XYLENE	ug/L	10000	<1 U	<1 U	<1 U	<1 U	NA	NA	<2.5 U	NA	<2 U	NA	<5 U	NA	<2 U	NA	<1 U	NA
METHYLENE CHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<1.25 U	NA	<1 U	NA	<2.5 U	NA	<1 U	NA	<0.5 U	NA
NAPHTHALENE	ug/L	490	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	NA	<1 U	NA	<0.8 U	NA	<2 U	NA	<0.8 U	NA	<0.4 U	NA
N-BUTYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<1.25 U	NA	<1 U	NA	<2.5 U	NA	<1 U	NA	<0.5 U	NA
N-PROPYLBENZENE	ug/L	980	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	NA	<0.626 U	NA	<0.5 U	NA	<1.25 U	NA	<0.5 U	NA	<0.25 U	NA
O-XYLENE	ug/L	10000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<1.25 U	NA	<1 U	NA	<2.5 U	NA	<1 U	NA	<0.5 U	NA
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<1.25 U	NA	<1 U	NA	<2.5 U	NA	<1 U	NA	<0.5 U	NA
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<1.25 U	NA	<1 U	NA	<2.5 U	NA	<1 U	NA	<0.5 U	NA
STYRENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	NA	<0.626 U	NA	<0.5 U	NA	<1.25 U	NA	<0.5 U	NA	<0.25 U	NA
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<1.25 U	NA	<1 U	NA	<2.5 U	NA	<1 U	NA	<0.5 U	NA
TETRACHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	2.76	NA	NA	<1.25 U	NA	0.678 J	NA	5.03	NA	0.951 J	NA	0.275 J	NA
TOLUENE	ug/L	1000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<1.25 U	NA	<1 U	NA	<2.5 U	NA	<1 U	NA	<0.5 U	NA
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	<0.5 U	<0.5 U	1.24	NA	NA	<1.25 U	NA	<1 U	NA	1.71 J	NA	<1 U	NA	<0.5 U	NA
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	<1 U	<1 U	<1 U	NA	NA	<2.5 U	NA	<2 U	NA	<5 U	NA	<2 U	NA	<1 U	NA
TRICHLOROETHENE	ug/L	5	0.549 J	0.494 J	0.766 J	2750	NA	NA	362	NA	831	NA	3550	NA	512	NA	230	NA
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	NA	<1.25 U	NA	<1 U	NA	<2.5 U	NA	<1 U	NA	<0.5 U	NA
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<0.5 U	1.95	NA	NA	<1.25 U	NA	0.516 J	NA	3.53 J	NA	<1 U	NA	<0.5 U	NA
Inorganic Anions (9056)																		
CHLORIDE	mg/L		NA	N/A	NA	365	NA	NA	242	NA	286	NA	354	NA	250 J	NA	230	NA
NITRATE	mg/L	10	NA	N/A	NA	<0.4 U	NA	NA	<1 U	NA	<3 U	NA	<0.4 U	NA	<1 UJ	NA	<0.6 U	NA
NITRITE	mg/L	1	NA	N/A	NA	<0.4 U	NA	NA	<1 U	NA	<3 U	NA	<0.4 U	NA	<1 UJ	NA	0.309 J	NA
SULFATE	mg/L		NA	N/A	NA	351	NA	NA	265	NA	305	NA	361	NA	304 J	NA	305	NA
Dissolved Gases (RSK-175)																		
CARBON DIOXIDE	ug/L		NA	N/A	NA	NA	NA	NA	127000	NA	195000	NA	340000	NA	398000	NA	515000	NA
ETHANE	ug/L		NA	N/A	NA	<2 U	NA	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA
ETHENE	ug/L		NA	N/A	NA	<2 U	NA	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA
METHANE	ug/L		NA	N/A	NA	29.1	NA	NA	7.69	NA	<2 U	NA	10.1	NA	10.9	NA	3.82 J	NA

Blue Highlighting Indicates concentrations above the MCL/MSC/PCL

Wells 50WW02, 50WW03 and 50WW04 were dry. No samples collected.

Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter, "FF" indicate sample filtered in the field with 0.45 micron filter. Metals results for "FF" samples are dissolved.

"FD" or "D" in Sample ID indicates a field duplicate sample.

(1) Only limited data validation possible; Not used in plume delineation

(2) Substituted for 50WW08 and 50WW13 October 2013 data for plume delineation

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Limit

mg/L - milligrams per liter

MSC - Medium-Specific Concentrations

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

ug/L - micrograms per liter

UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

UTL - Upper Tolerance Limit

Table 2-3: Groundwater Results for Year 1 and 2 - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL/ UTL	50WW11-081815 8/18/2015	50WW11FF-081815 8/18/2015	50WW11-111215 11/12/2015	50WW11FF-111215 11/12/2015	50WW12-102313 10/23/2013	50WW12F-102313 10/23/2013	50WW12FF-102313 10/23/2013	50WW12-031114 3/11/2014	50WW12FF-031114 3/11/2014	50WW12-062614 6/26/2014	50WW12FF-062614 6/26/2014	50WW12-110414 11/4/2014	50WW12FF-110414 11/4/2014	50WW12-021815 2/18/2015	50WW12FF-021815 2/18/2015	50WW12-052015 5/20/2015
Well Completion Zone:			**Upper Shallow**				**Upper Shallow**											
Water Quality Parameters																		
Temperature	°C		25.29	NA	18.75	NA	20.03	NA	NA	21	NA	18.99	NA	20.49	NA	16.41	NA	20.6
pH	pH Units		5.92	NA	5.53	NA	6.22	NA	NA	6.07	NA	6.11	NA	6.2	NA	6.86	NA	6.35
Conductivity	mS/CM		1.88	NA	2.36	NA	4.4	NA	NA	4.25	NA	4.42	NA	4.65	NA	4.46	NA	4.04
Dissolved Oxygen	mg/L		0	NA	0	NA	0.8	NA	NA	0.8	NA	0.41	NA	0	NA	0	NA	0.72
Turbidity	NTU		231	NA	39	NA	18.9	NA	NA	50.5	NA	2.8	NA	19.3	NA	117	NA	43.8
Oxidation Reduction Potential	mV		187	NA	160	NA	13	NA	NA	145	NA	143	NA	95	NA	143	NA	140
Ferrous Iron	mg/L		0	NA	NA	NA	0.06	NA	NA	0.1	NA	NA	NA	0.04	NA	0	NA	0.05
Alkalinity (310.2)																		
ALKALINITY, TOTAL	mg/L		305	N/A	296	NA	249	NA	NA	207	NA	220	NA	379	NA	218	NA	189
Phosphours (365.4)																		
PHOSPHORUS	mg/L		0.359 J	N/A	0.321 J	NA	<0.2 U	NA	NA	<0.2 U	NA	0.146 J	NA	0.119 J	NA	0.3 J	NA	1.1
SM4500-S-(-2)-F-2000																		
SULFIDE	mg/L		<1 UJ	N/A	<1 U	NA	<1 U	NA	NA	<1 U	NA	<0.5 U	NA	<2 U	NA	<1 U	NA	<1 U
Total Organic Carbon (415.1)																		
TOTAL ORGANIC CARBON (TOC)	mg/L		14.7	N/A	13	NA	11.9	NA	NA	7.33	NA	3.54	NA	6.45	NA	1.09 J	NA	5.38 J
Iron (6010C)																		
IRON	mg/L		N/A	0.0983 J	NA	0.061 J	NA	0.314	0.285	NA	0.0793 J	NA	<0.1 U	NA	0.055 J	NA	0.0632 J	NA
Manganese (6020A)																		
MANGANESE	mg/L	7.8	N/A	0.118	NA	0.108	NA	NA	0.555	NA	0.226	NA	0.155	NA	0.0962	NA	0.108	NA
Perchlorate (6850)																		
PERCHLORATE	ug/L	17	17600	N/A	22800	NA	23600	NA	NA	35700	NA	35500	NA	14300	NA	30600	NA	59200
Volatile Organic Compounds (8260B)																		
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	N/A	<10 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	N/A	<10 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	N/A	<8 U	NA	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	N/A	<10 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	3.08	N/A	4.97 J	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	0.283 J
1,1-DICHLOROETHENE	ug/L	7	13.1	N/A	17.5 J	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	0.878 J
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	N/A	<10 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	N/A	<6 U	NA	<0.3 U	NA	NA	<0.3 U	NA	<0.3 U	NA	<0.3 U	NA	<0.3 U	NA	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	N/A	<20 U	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	N/A	<8 U	NA	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	N/A	<10 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	N/A	<40 U	NA	<2 UJ	NA	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	N/A	<10 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	N/A	<5 U	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	16.7	N/A	22.9	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	0.389 J
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	N/A	<8 U	NA	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	N/A	<10 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	N/A	<10 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	N/A	<8 U	NA	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	N/A	<5 U	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	N/A	<10 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
2-BUTANONE	ug/L	15000	<5 U	N/A	<100 U	NA	<5 U	NA	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U
2-CHLOROTOLUENE	ug/L	490	<0.25 U	N/A	<5 U	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
2-HEXANONE	ug/L	120	<5 U	N/A	<100 U	NA	<5 U	NA	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U
4-CHLOROTOLUENE	ug/L	490	<0.5 U	N/A	<10 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 UJ	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	N/A	<100 U	NA	<5 U	NA	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U
ACETONE	ug/L	22000	<5 U	N/A	<100 U	NA	<5 U	NA	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U
BENZENE	ug/L	5	0.292 J	N/A	<5 U	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
BROMOBENZENE	ug/L	200	<0.25 U	N/A	<5 U	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	N/A	<8 U	NA	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	N/A	<10 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
BROMOFORM	ug/L	120	<1 U	N/A	<20 U	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U
BROMOMETHANE	ug/L	34	<1 UJ	N/A	<20 U	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 UJ	NA	<1 U
CARBON DISULFIDE	ug/L	2400	<1 U	N/A	<20 U	NA	<1 U	NA	NA	0.618 J	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	N/A	<10 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
CHLOROBENZENE	ug/L	100	<0.25 U	N/A	<5 U	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
CHLOROETHANE	ug/L	98000	<1 U	N/A	<20 U	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U
CHLOROFORM	ug/L	240	0.538 J	N/A	<5 U	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U

Table 2-3: Groundwater Results for Year 1 and 2 - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL/ UTL	50WW11-081815 8/18/2015	50WW11FF-081815 8/18/2015	50WW11-111215 11/12/2015	50WW11FF-111215 11/12/2015	50WW12-102313 10/23/2013	50WW12F-102313 10/23/2013	50WW12FF-102313 10/23/2013	50WW12-031114 3/11/2014	50WW12FF-031114 3/11/2014	50WW12-062614 6/26/2014	50WW12FF-062614 6/26/2014	50WW12-110414 11/4/2014	50WW12FF-110414 11/4/2014	50WW12-021815 2/18/2015	50WW12FF-021815 2/18/2015	50WW12-052015 5/20/2015
CHLOROMETHANE	ug/L	70	<1 U	N/A	<20 U	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	36.3	N/A	54.1	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	N/A	<10 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	N/A	<10 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
DIBROMOMETHANE	ug/L	120	<0.5 U	N/A	<10 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	N/A	<10 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
ETHYLBENZENE	ug/L	700	<0.5 U	N/A	<10 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	N/A	<10 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	N/A	<10 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
M,P-XYLENE	ug/L	10000	<1 U	N/A	<20 U	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U
METHYLENE CHLORIDE	ug/L	5	<0.5 U	N/A	<10 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
NAPHTHALENE	ug/L	490	<0.4 U	N/A	<8 U	NA	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U
N-BUTYLBENZENE	ug/L	1200	<0.5 U	N/A	<10 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
N-PROPYLBENZENE	ug/L	980	<0.25 U	N/A	<5 U	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
O-XYLENE	ug/L	10000	<0.5 U	N/A	<10 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	N/A	<10 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	N/A	<10 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
STYRENE	ug/L	100	<0.25 U	N/A	<5 U	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	N/A	<10 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
TETRACHLOROETHENE	ug/L	5	2.48	N/A	<10 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
TOLUENE	ug/L	1000	<0.5 U	N/A	<10 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	0.82 J	N/A	<10 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	N/A	<20 U	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U
TRICHLOROETHENE	ug/L	5	1550	N/A	2670	NA	<0.5 U	NA	NA	0.257 J	NA	0.411 J	NA	<0.5 U	NA	<0.5 U	NA	33.9
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	N/A	<10 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
VINYL CHLORIDE	ug/L	2	1.29	N/A	<10 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
Inorganic Anions (9056)																		
CHLORIDE	mg/L		392	N/A	377	NA	1130	NA	NA	1180	NA	1040	NA	1120	NA	1170	NA	1050
NITRATE	mg/L	10	<1 U	N/A	<1 U	NA	<2 U	NA	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U
NITRITE	mg/L	1	<1 U	N/A	0.64 J	NA	<2 U	NA	NA	<2 U	NA	<2 U	NA	2.09 J	NA	<2 U	NA	2.84 J
SULFATE	mg/L		408	N/A	439	NA	569	NA	NA	529	NA	511	NA	512	NA	546	NA	547
Dissolved Gases (RSK-175)																		
CARBON DIOXIDE	ug/L		534000	N/A	819000	NA	NA	NA	NA	172000	NA	94000	NA	175000	NA	156000	NA	152000
ETHANE	ug/L		<2 U	N/A	<2 U	NA	<2 U	NA	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U
ETHENE	ug/L		<2 U	N/A	<2 U	NA	<2 U	NA	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U
METHANE	ug/L		5.17	N/A	8.84	NA	<2 U	NA	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U

Blue Highlighting Indicates concentrations above the MCL/MSC/PCL

Wells 50WW02, 50WW03 and 50WW04 were dry. No samples collected.

Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter, "FF" indicate sample filtered in the field with 0.45 micron filter. Metals results for "FF" samples are dissolved.

"FD" or "D" in Sample ID indicates a field duplicate sample.

(1) Only limited data validation possible; Not used in plume delineation

(2) Substituted for 50WW08 and 50WW13 October 2013 data for plume delineation

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Limit

mg/L - milligrams per liter

MSC - Medium-Specific Concentrations

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

ug/L - micrograms per liter

UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

UTL - Upper Tolerance Limit

Table 2-3: Groundwater Results for Year 1 and 2 - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL/ UTL	50WW12FF-052015 5/20/2015	50WW12-081815 8/18/2015	50WW12FF-081815 8/18/2015	50WW12-111215 11/12/2015	50WW12FF-111215 11/12/2015	50WW13-103013 (1) 10/30/2013	50WW13FF-103013 (1) 10/30/2013	50WW13-031214 (2) 3/12/2014	50WW13FF-031214 (2) 3/12/2014	50WW13-062514 6/25/2014	50WW13FF-062514 6/25/2014	50WW13-110514 11/5/2014	50WW13FF-110514 11/5/2014	50WW13-021715 2/17/2015	50WW13FF-021715 2/17/2015	50WW13-052015 5/20/2015
Well Completion Zone:			**Upper Shallow**					**Upper Shallow**										
Water Quality Parameters																		
Temperature	°C		NA	21.88	NA	18.89	NA	19.7	NA	15.81	NA	21.33	NA	19.25	NA	15.94	NA	19.75
pH	pH Units		NA	6.28	NA	6.25	NA	6.78	NA	6.65	NA	6.61	NA	6.14	NA	5.96	NA	6.21
Conductivity	mS/CM		NA	4.11	NA	4.66	NA	2.25	NA	2.24	NA	2.22	NA	2.19	NA	2.11	NA	1.99
Dissolved Oxygen	mg/L		NA	0.13	NA	0	NA	0.75	NA	0.74	NA	0.61	NA	0	NA	0	NA	0.78
Turbidity	NTU		NA	103	NA	15.3	NA	9.4	NA	23.1	NA	21.9	NA	18.5	NA	210	NA	38.8
Oxidation Reduction Potential	mV		NA	169	NA	162	NA	63	NA	-10	NA	14	NA	122	NA	88	NA	76
Ferrous Iron	mg/L		NA	NA	NA	NA	NA	0.2	NA	0.42	NA	NA	NA	0	NA	0.24	NA	0.07
Alkalinity (310.2)																		
ALKALINITY, TOTAL	mg/L		NA	293	N/A	282	NA	342	NA	299	NA	393	NA	388	NA	309	NA	318
Phosphours (365.4)																		
PHOSPHORUS	mg/L		NA	1.96	N/A	<0.2 U	NA	<0.5 U	NA	<0.2 UJ	NA	0.271 J	NA	<0.2 UJ	NA	<0.2 U	NA	0.228 J
SM4500-S-(-2)-F-2000																		
SULFIDE	mg/L		NA	<1 UJ	N/A	<1 U	NA	<1 U	NA	<1 U	NA	<0.5 U	NA	<2 U	NA	<1 U	NA	<1 U
Total Organic Carbon (415.1)																		
TOTAL ORGANIC CARBON (TOC)	mg/L		NA	26.3	N/A	67.2	NA	41.8	NA	5.28	NA	3.95	NA	11.1	NA	11	NA	25.6
Iron (6010C)																		
IRON	mg/L		0.105 J	N/A	<0.1 U	NA	<0.1 U	0.68	<0.1 U	NA	0.355	NA	0.0677 J	NA	<0.1 U	NA	0.31	NA
Manganese (6020A)																		
MANGANESE	mg/L	7.8	0.107	N/A	0.0679	NA	0.0581	NA	0.25	NA	0.348	NA	0.0945	NA	0.158	NA	0.19	NA
Perchlorate (6850)																		
PERCHLORATE	ug/L	17	NA	17300	N/A	37900	NA	14.7	NA	510	NA	3110	NA	11700	NA	648	NA	126
Volatile Organic Compounds (8260B)																		
1,1,1,2-TETRACHLOROETHANE	ug/L	35	NA	<0.5 U	N/A	<0.5 U	NA	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<5 U	NA	<2.5 U	NA	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	NA	<0.5 U	N/A	<0.5 U	NA	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<5 U	NA	<2.5 U	NA	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	NA	<0.4 U	N/A	<0.4 U	NA	<5 U	NA	<0.4 U	NA	<2 U	NA	<4 U	NA	<2 U	NA	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	NA	<0.5 U	N/A	<0.5 U	NA	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<5 U	NA	<2.5 U	NA	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	NA	<0.25 U	N/A	<0.25 U	NA	8.7	NA	1.01	NA	2.17 J	NA	8.85 J	NA	0.88 J	NA	0.406 J
1,1-DICHLOROETHENE	ug/L	7	NA	<1 U	N/A	<1 U	NA	16.6	NA	2.54	NA	4.95 J	NA	20.6	NA	<5 U	NA	0.978 J
1,1-DICHLOROPROPENE	ug/L	9.1	NA	<0.5 U	N/A	<0.5 U	NA	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<5 U	NA	<2.5 U	NA	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	NA	<0.3 U	N/A	<0.3 U	NA	<5 U	NA	<0.3 U	NA	<1.5 U	NA	<3 U	NA	<1.5 U	NA	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	NA	<1 U	N/A	<1 U	NA	<5 U	NA	<1 U	NA	<5 UJ	NA	<10 U	NA	<5 U	NA	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	NA	<0.4 U	N/A	<0.4 U	NA	<5 U	NA	<0.4 U	NA	<2 U	NA	<4 U	NA	<2 U	NA	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	NA	<0.5 U	N/A	<0.5 U	NA	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<5 U	NA	<2.5 U	NA	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	NA	<2 U	N/A	<2 U	NA	<5 U	NA	<2 U	NA	<10 UJ	NA	<20 U	NA	<10 U	NA	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	NA	<0.5 U	N/A	<0.5 U	NA	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<5 U	NA	<2.5 U	NA	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	NA	<0.25 U	N/A	<0.25 U	NA	<5 U	NA	<0.25 U	NA	<1.25 U	NA	<2.5 U	NA	<1.25 U	NA	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	NA	<0.5 U	N/A	<0.5 U	NA	42	NA	4.45	NA	10.6	NA	42.4	NA	4.99 J	NA	1.78
1,2-DICHLOROPROPANE	ug/L	5	NA	<0.4 U	N/A	<0.4 U	NA	<5 U	NA	<0.4 U	NA	<2 U	NA	<4 U	NA	<2 U	NA	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	NA	<0.5 U	N/A	<0.5 U	NA	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<5 U	NA	<2.5 U	NA	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	NA	<0.5 U	N/A	<0.5 U	NA	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<5 U	NA	<2.5 U	NA	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	NA	<0.4 U	N/A	<0.4 U	NA	<5 U	NA	<0.4 U	NA	<2 U	NA	<4 U	NA	<2 U	NA	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	NA	<0.25 U	N/A	<0.25 U	NA	<5 U	NA	<0.25 U	NA	<1.25 U	NA	<2.5 U	NA	<1.25 U	NA	<0.25 U
2,2-DICHLOROPROPANE	ug/L	13	NA	<0.5 U	N/A	<0.5 U	NA	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<5 U	NA	<2.5 U	NA	<0.5 U
2-BUTANONE	ug/L	15000	NA	<5 U	N/A	<5 U	NA	<5 U	NA	<5 U	NA	<25 UJ	NA	<50 U	NA	<25 U	NA	<5 U
2-CHLOROTOLUENE	ug/L	490	NA	<0.25 U	N/A	<0.25 U	NA	<5 U	NA	<0.25 U	NA	<1.25 U	NA	<2.5 U	NA	<1.25 U	NA	<0.25 UJ
2-HEXANONE	ug/L	120	NA	<5 U	N/A	<5 U	NA	<5 U	NA	<5 U	NA	<25 UJ	NA	<50 U	NA	<25 U	NA	<5 U
4-CHLOROTOLUENE	ug/L	490	NA	<0.5 U	N/A	<0.5 U	NA	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<5 U	NA	<2.5 U	NA	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	NA	<5 U	N/A	<5 U	NA	<5 U	NA	<5 U	NA	<25 UJ	NA	<50 U	NA	<25 U	NA	<5 U
ACETONE	ug/L	22000	NA	<5 U	N/A	<5 U	NA	<5 U	NA	<5 U	NA	<25 UJ	NA	<50 U	NA	<25 U	NA	<5 U
BENZENE	ug/L	5	NA	<0.25 U	N/A	<0.25 U	NA	<5 U	NA	<0.25 U	NA	<1.25 U	NA	<2.5 U	NA	<1.25 U	NA	<0.25 U
BROMOBENZENE	ug/L	200	NA	<0.25 U	N/A	<0.25 U	NA	<5 U	NA	<0.25 U	NA	<1.25 U	NA	<2.5 U	NA	<1.25 U	NA	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	NA	<0.4 U	N/A	<0.4 U	NA	<5 U	NA	<0.4 U	NA	<2 U	NA	<4 U	NA	<2 U	NA	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	NA	<0.5 U	N/A	<0.5 U	NA	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<5 U	NA	<2.5 U	NA	<0.5 U
BROMOFORM	ug/L	120	NA	<1 U	N/A	<1 U	NA	<5 U	NA	<1 U	NA	<5 U	NA	<10 U	NA	<5 U	NA	<1 U
BROMOMETHANE	ug/L	34	NA	<1 UJ	N/A	<1 U	NA	<5 U	NA	<1 U	NA	<5 U	NA	<10 U	NA	<5 U	NA	<1 U
CARBON DISULFIDE	ug/L	2400	NA	<1 U	N/A	<1 U	NA	<5 U	NA	<1 U	NA	<5 U	NA	<10 U	NA	<5 U	NA	<1 U
CARBON TETRACHLORIDE	ug/L	5	NA	<0.5 U	N/A	<0.5 U	NA	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<5 U	NA	<2.5 U	NA	<0.5 U
CHLOROBENZENE	ug/L	100	NA	<0.25 U	N/A	<0.25 U	NA	<5 U	NA	<0.25 U	NA	<1.25 U	NA	<2.5 U	NA	<1.25 U	NA	<0.25 U
CHLOROETHANE	ug/L	98000	NA	<1 U	N/A	<1 U	NA	<5 U	NA	<1 U	NA	<5 U	NA	<10 U	NA	<5 U	NA	<1 U
CHLOROFORM	ug/L	240	NA	<0.25 U	N/A	<0.25 U	NA	<5 U	NA	0.276 J	NA	0.819 J	NA	4.15 J	NA	<1.25 U	NA	<0.25 U

Table 2-3: Groundwater Results for Year 1 and 2 - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL/ UTL	50WW12FF-052015 5/20/2015	50WW12-081815 8/18/2015	50WW12FF-081815 8/18/2015	50WW12-111215 11/12/2015	50WW12FF-111215 11/12/2015	50WW13-103013 (1) 10/30/2013	50WW13FF-103013 (1) 10/30/2013	50WW13-031214 (2) 3/12/2014	50WW13FF-031214 (2) 3/12/2014	50WW13-062514 6/25/2014	50WW13FF-062514 6/25/2014	50WW13-110514 11/5/2014	50WW13FF-110514 11/5/2014	50WW13-021715 2/17/2015	50WW13FF-021715 2/17/2015	50WW13-052015 5/20/2015
CHLOROMETHANE	ug/L	70	NA	<1 U	N/A	<1 U	NA	<5 U	NA	<1 U	NA	<5 U	NA	<10 U	NA	<5 U	NA	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	NA	<0.5 U	N/A	<0.5 U	NA	205	NA	25	NA	56.3	NA	239	NA	32.1	NA	10.7
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	NA	<0.5 U	N/A	<0.5 U	NA	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<5 U	NA	<2.5 U	NA	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	NA	<0.5 U	N/A	<0.5 U	NA	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<5 U	NA	<2.5 U	NA	<0.5 U
DIBROMOMETHANE	ug/L	120	NA	<0.5 U	N/A	<0.5 U	NA	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<5 U	NA	<2.5 U	NA	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	NA	<0.5 U	N/A	<0.5 U	NA	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<5 U	NA	<2.5 U	NA	<0.5 U
ETHYLBENZENE	ug/L	700	NA	<0.5 U	N/A	<0.5 U	NA	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<5 U	NA	<2.5 U	NA	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	NA	<0.5 U	N/A	<0.5 U	NA	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<5 U	NA	<2.5 U	NA	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	NA	<0.5 U	N/A	<0.5 U	NA	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<5 U	NA	<2.5 U	NA	<0.5 U
M,P-XYLENE	ug/L	10000	NA	<1 U	N/A	<1 U	NA	<5 U	NA	<1 U	NA	<5 U	NA	<10 U	NA	<5 U	NA	<1 U
METHYLENE CHLORIDE	ug/L	5	NA	<0.5 U	N/A	<0.5 U	NA	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<5 U	NA	<2.5 U	NA	<0.5 U
NAPHTHALENE	ug/L	490	NA	<0.4 U	N/A	<0.4 U	NA	<5 U	NA	<0.4 U	NA	<2 U	NA	<4 U	NA	<2 U	NA	<0.4 U
N-BUTYLBENZENE	ug/L	1200	NA	<0.5 U	N/A	<0.5 U	NA	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<5 U	NA	<2.5 U	NA	<0.5 U
N-PROPYLBENZENE	ug/L	980	NA	<0.25 U	N/A	<0.25 U	NA	<5 U	NA	<0.25 U	NA	<1.25 U	NA	<2.5 U	NA	<1.25 U	NA	<0.25 U
O-XYLENE	ug/L	10000	NA	<0.5 U	N/A	<0.5 U	NA	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<5 U	NA	<2.5 U	NA	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	NA	<0.5 U	N/A	<0.5 U	NA	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<5 U	NA	<2.5 U	NA	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	NA	<0.5 U	N/A	<0.5 U	NA	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<5 U	NA	<2.5 U	NA	<0.5 U
STYRENE	ug/L	100	NA	<0.25 U	N/A	<0.25 U	NA	<5 U	NA	<0.25 U	NA	<1.25 U	NA	<2.5 U	NA	<1.25 U	NA	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	NA	<0.5 U	N/A	<0.5 U	NA	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<5 U	NA	<2.5 U	NA	<0.5 U
TETRACHLOROETHENE	ug/L	5	NA	<0.5 U	N/A	<0.5 U	NA	7.2	NA	1.06	NA	1.39 J	NA	7.05 J	NA	1.89 J	NA	0.554 J
TOLUENE	ug/L	1000	NA	<0.5 U	N/A	<0.5 U	NA	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<5 U	NA	<2.5 U	NA	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	NA	<0.5 U	N/A	<0.5 U	NA	<5 U	NA	0.406 J	NA	<2.5 U	NA	2.72 J	NA	<2.5 U	NA	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	NA	<1 U	N/A	<1 U	NA	<5 U	NA	<1 U	NA	<5 U	NA	<10 U	NA	<5 U	NA	<1 U
TRICHLOROETHENE	ug/L	5	NA	5.59	N/A	17.6	NA	3000	NA	823	NA	1840	NA	9150	NA	1080	NA	433
TRICHLOROFLUOROMETHANE	ug/L	7300	NA	<0.5 U	N/A	<0.5 U	NA	<5 U	NA	<0.5 U	NA	<2.5 U	NA	<5 U	NA	<2.5 U	NA	<0.5 U
VINYL CHLORIDE	ug/L	2	NA	<0.5 U	N/A	<0.5 U	NA	<2 U	NA	<0.5 U	NA	<2.5 U	NA	3.36 J	NA	<2.5 U	NA	<0.5 U
Inorganic Anions (9056)																		
CHLORIDE	mg/L		NA	1250	N/A	1110	NA	325.9	NA	372	NA	360	NA	354	NA	372 J	NA	360
NITRATE	mg/L	10	NA	<1 U	N/A	<2 U	NA	NA	NA	<1 U	NA	<3 U	NA	<0.4 U	NA	<2 UJ	NA	<1 U
NITRITE	mg/L	1	NA	<1 U	N/A	1.93 J	NA	NA	NA	<1 U	NA	<3 U	NA	0.266 J	NA	<2 UJ	NA	0.85 J
SULFATE	mg/L		NA	576	N/A	574	NA	NA	NA	327	NA	295	NA	332	NA	302 J	NA	319
Dissolved Gases (RSK-175)																		
CARBON DIOXIDE	ug/L		NA	259000	N/A	309000	NA	NA	NA	83800	NA	62700	NA	247000	NA	444000	NA	121000
ETHANE	ug/L		NA	<2 U	N/A	<2 U	NA	<0.01 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U
ETHENE	ug/L		NA	<2 U	N/A	<2 U	NA	<0.01 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U
METHANE	ug/L		NA	<2 U	N/A	<2 U	NA	0.02	NA	6.41	NA	<2 U	NA	18.8	NA	18.4	NA	2.71 J

Blue Highlighting Indicates concentrations above the MCL/MSC/PCL

Wells 50WW02, 50WW03 and 50WW04 were dry. No samples collected.

Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter, "FF" indicate sample filtered in the field with 0.45 micron filter. Metals results for "FF" samples are dissolved.

"FD" or "D" in Sample ID indicates a field duplicate sample.

(1) Only limited data validation possible; Not used in plume delineation

(2) Substituted for 50WW08 and 50WW13 October 2013 data for plume delineation

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Limit

mg/L - milligrams per liter

MSC - Medium-Specific Concentrations

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

ug/L - micrograms per liter

UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

UTL - Upper Tolerance Limit

Table 2-3: Groundwater Results for Year 1 and 2 - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL/ UTL	50WW13FF-052015 5/20/2015	50WW13-081915 8/19/2015	50WW13FF-081915 8/19/2015	50WW13-111215 11/12/2015	50WW13FF-111215 11/12/2015	50WW14-102813 10/28/2013	50WW14F-102813 10/28/2013	50WW14FF-102813 10/28/2013	50WW14-031214 3/12/2014	50WW14FF-031214 3/12/2014	50WW14-062514 6/25/2014	50WW14FF-062514 6/25/2014	50WW14-110514 11/5/2014	50WW14FF-110514 11/5/2014	50WW14-021715 2/17/2015	50WW14FF-021715 2/17/2015
Well Completion Zone:			**Upper Shallow**					**Lower Shallow**										
Water Quality Parameters																		
Temperature	°C		NA	22.96	NA	18.47	NA	20.07	NA	NA	15.39	NA	19.84	NA	19.38	NA	15.65	NA
pH	pH Units		NA	5.78	NA	5.97	NA	6.6	NA	NA	6.54	NA	6.54	NA	5.8	NA	6.53	NA
Conductivity	mS/CM		NA	1.98	NA	2.27	NA	1.83	NA	NA	2.21	NA	2.2	NA	2.13	NA	2.08	NA
Dissolved Oxygen	mg/L		NA	0	NA	0.06	NA	0.99	NA	NA	0.55	NA	0.5	NA	0	NA	0	NA
Turbidity	NTU		NA	92.1	NA	41.2	NA	82.9	NA	NA	95.9	NA	56.3	NA	19.7	NA	150	NA
Oxidation Reduction Potential	mV		NA	187	NA	154	NA	-113	NA	NA	-55	NA	-109	NA	-14	NA	-22	NA
Ferrous Iron	mg/L		NA	0	NA	NA	NA	2.87	NA	NA	1.28	NA	NA	NA	2.25	NA	2.59	NA
Alkalinity (310.2)																		
ALKALINITY, TOTAL	mg/L		NA	348	N/A	368	NA	300	NA	NA	261	NA	276	NA	266	NA	262	NA
Phosphours (365.4)																		
PHOSPHORUS	mg/L		NA	0.16 J	N/A	2.05	NA	<0.2 U	NA	NA	<0.2 UJ	NA	0.115 J	NA	<0.2 U	NA	<0.2 U	NA
SM4500-S-(-2)-F-2000																		
SULFIDE	mg/L		NA	<1 U	N/A	<1 U	NA	<1 U	NA	NA	<1 U	NA	<0.5 U	NA	<2 U	NA	<1 U	NA
Total Organic Carbon (415.1)																		
TOTAL ORGANIC CARBON (TOC)	mg/L		NA	10.4	N/A	79	NA	5.16	NA	NA	5.41	NA	3.86	NA	3.06	NA	2.69	NA
Iron (6010C)																		
IRON	mg/L		0.242	N/A	0.0542 J	NA	0.0904 J	NA	8.67	8.26	NA	9.21	NA	7.99	NA	7.39	NA	8.11
Manganese (6020A)																		
MANGANESE	mg/L	7.8	0.133	N/A	0.123	NA	0.149	NA	NA	1.05	NA	0.884	NA	0.783	NA	0.625	NA	0.619
Perchlorate (6850)																		
PERCHLORATE	ug/L	17	NA	9300	N/A	11400	NA	5.45	NA	NA	0.256 J	NA	0.121 J	NA	5.37	NA	0.381 J	NA
Volatile Organic Compounds (8260B)																		
1,1,1,2-TETRACHLOROETHANE	ug/L	35	NA	<2.5 U	N/A	<25 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
1,1,1-TRICHLOROETHANE	ug/L	200	NA	<2.5 U	N/A	<25 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	NA	<2 U	N/A	<20 U	NA	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA
1,1,2-TRICHLOROETHANE	ug/L	5	NA	<2.5 U	N/A	<25 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
1,1-DICHLOROETHANE	ug/L	4900	NA	7.03	N/A	6.92 J	NA	0.253 J	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA
1,1-DICHLOROETHENE	ug/L	7	NA	13.5	N/A	<50 U	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA
1,1-DICHLOROPROPENE	ug/L	9.1	NA	<2.5 U	N/A	<25 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
1,2,3-TRICHLOROBENZENE	ug/L	73	NA	<1.5 U	N/A	<15 U	NA	<0.3 U	NA	NA	<0.3 U	NA	<0.3 U	NA	<0.3 U	NA	<0.3 U	NA
1,2,3-TRICHLOROPROPANE	ug/L	0.03	NA	<5 U	N/A	<50 U	NA	<1 U	NA	NA	<1 U	NA	<1 UJ	NA	<1 U	NA	<1 U	NA
1,2,4-TRICHLOROBENZENE	ug/L	70	NA	<2 U	N/A	<20 U	NA	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA
1,2,4-TRIMETHYLBENZENE	ug/L	1200	NA	<2.5 U	N/A	<25 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	NA	<10 U	N/A	<100 U	NA	<2 U	NA	NA	<2 U	NA	<2 UJ	NA	<2 U	NA	<2 U	NA
1,2-DIBROMOETHANE	ug/L	0.05	NA	<2.5 U	N/A	<25 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
1,2-DICHLOROBENZENE	ug/L	600	NA	<1.25 U	N/A	<12.5 U	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA
1,2-DICHLOROETHANE	ug/L	5	NA	31.5	N/A	43.4 J	NA	1.16	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
1,2-DICHLOROPROPANE	ug/L	5	NA	<2 U	N/A	<20 U	NA	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA
1,3,5-TRIMETHYLBENZENE	ug/L	1200	NA	<2.5 U	N/A	<25 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
1,3-DICHLOROBENZENE	ug/L	730	NA	<2.5 U	N/A	<25 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
1,3-DICHLOROPROPANE	ug/L	9.1	NA	<2 U	N/A	<20 U	NA	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA
1,4-DICHLOROBENZENE	ug/L	75	NA	<1.25 U	N/A	<12.5 U	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA
2,2-DICHLOROPROPANE	ug/L	13	NA	<2.5 U	N/A	<25 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
2-BUTANONE	ug/L	15000	NA	<25 U	N/A	<250 U	NA	<5 UJ	NA	NA	<5 U	NA	<5 UJ	NA	<5 U	NA	<5 U	NA
2-CHLOROTOLUENE	ug/L	490	NA	<1.25 U	N/A	<12.5 U	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA
2-HEXANONE	ug/L	120	NA	<25 U	N/A	<250 UJ	NA	<5 UJ	NA	NA	<5 U	NA	<5 UJ	NA	<5 U	NA	<5 U	NA
4-CHLOROTOLUENE	ug/L	490	NA	<2.5 U	N/A	<25 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
4-METHYL-2-PENTANONE	ug/L	2000	NA	<25 U	N/A	<250 UJ	NA	<5 U	NA	NA	<5 U	NA	<5 UJ	NA	<5 U	NA	<5 U	NA
ACETONE	ug/L	22000	NA	<25 U	N/A	<250 U	NA	<5 U	NA	NA	<5 U	NA	<5 UJ	NA	<5 U	NA	<5 U	NA
BENZENE	ug/L	5	NA	0.714 J	N/A	<12.5 U	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA
BROMOBENZENE	ug/L	200	NA	<1.25 U	N/A	<12.5 U	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA
BROMOCHLOROMETHANE	ug/L	980	NA	<2 U	N/A	<20 U	NA	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA
BROMODICHLOROMETHANE	ug/L	15	NA	<2.5 U	N/A	<25 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
BROMOFORM	ug/L	120	NA	<5 U	N/A	<50 U	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA
BROMOMETHANE	ug/L	34	NA	<5 UJ	N/A	<50 U	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA
CARBON DISULFIDE	ug/L	2400	NA	<5 U	N/A	<50 UJ	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA
CARBON TETRACHLORIDE	ug/L	5	NA	<2.5 U	N/A	<25 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
CHLOROBENZENE	ug/L	100	NA	<1.25 U	N/A	<12.5 U	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA
CHLOROETHANE	ug/L	98000	NA	<5 U	N/A	<50 U	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA
CHLOROFORM	ug/L	240	NA	2.78 J	N/A	<12.5 U	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA

Table 2-3: Groundwater Results for Year 1 and 2 - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL/ UTL	50WW13FF-052015 5/20/2015	50WW13-081915 8/19/2015	50WW13FF-081915 8/19/2015	50WW13-111215 11/12/2015	50WW13FF-111215 11/12/2015	50WW14-102813 10/28/2013	50WW14F-102813 10/28/2013	50WW14FF-102813 10/28/2013	50WW14-031214 3/12/2014	50WW14FF-031214 3/12/2014	50WW14-062514 6/25/2014	50WW14FF-062514 6/25/2014	50WW14-110514 11/5/2014	50WW14FF-110514 11/5/2014	50WW14-021715 2/17/2015	50WW14FF-021715 2/17/2015
CHLOROMETHANE	ug/L	70	NA	<5 U	N/A	<50 U	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA
CIS-1,2-DICHLOROETHENE	ug/L	70	NA	184	N/A	231	NA	6.52	NA	NA	1.33	NA	0.826 J	NA	2.39	NA	13.5	NA
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	NA	<2.5 U	N/A	<25 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
DIBROMOCHLOROMETHANE	ug/L	11	NA	<2.5 U	N/A	<25 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
DIBROMOMETHANE	ug/L	120	NA	<2.5 U	N/A	<25 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
DICHLORODIFLUOROMETHANE	ug/L	4900	NA	<2.5 U	N/A	<25 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 UJ	NA
ETHYLBENZENE	ug/L	700	NA	<2.5 U	N/A	<25 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
HEXACHLOROBUTADIENE	ug/L	12	NA	<2.5 U	N/A	<25 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
ISOPROPYLBENZENE	ug/L	2400	NA	<2.5 U	N/A	<25 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
M,P-XYLENE	ug/L	10000	NA	<5 U	N/A	<50 U	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA
METHYLENE CHLORIDE	ug/L	5	NA	<2.5 U	N/A	<25 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
NAPHTHALENE	ug/L	490	NA	<2 U	N/A	<20 U	NA	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA
N-BUTYLBENZENE	ug/L	1200	NA	<2.5 U	N/A	<25 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
N-PROPYLBENZENE	ug/L	980	NA	<1.25 U	N/A	<12.5 U	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA
O-XYLENE	ug/L	10000	NA	<2.5 U	N/A	<25 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
P-ISOPROPYLTOLUENE	ug/L	2400	NA	<2.5 U	N/A	<25 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
SEC-BUTYLBENZENE	ug/L	980	NA	<2.5 U	N/A	<25 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
STYRENE	ug/L	100	NA	<1.25 U	N/A	<12.5 U	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA
TERT-BUTYLBENZENE	ug/L	980	NA	<2.5 U	N/A	<25 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
TETRACHLOROETHENE	ug/L	5	NA	6.19	N/A	<25 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
TOLUENE	ug/L	1000	NA	<2.5 U	N/A	<25 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
TRANS-1,2-DICHLOROETHENE	ug/L	100	NA	2.34 J	N/A	<25 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	NA	<5 U	N/A	<50 U	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA
TRICHLOROETHENE	ug/L	5	NA	5700	N/A	7710 J	NA	93.8	NA	NA	37.4	NA	21.9	NA	26.7	NA	9.14	NA
TRICHLOROFLUOROMETHANE	ug/L	7300	NA	<2.5 U	N/A	<25 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
VINYL CHLORIDE	ug/L	2	NA	2.31 J	N/A	<25 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
Inorganic Anions (9056)																		
CHLORIDE	mg/L		NA	387	N/A	336	NA	346	NA	NA	385	NA	373	NA	344	NA	400 J	NA
NITRATE	mg/L	10	NA	<1 U	N/A	<1 U	NA	<0.4 U	NA	NA	<1 U	NA	<4 U	NA	<0.4 U	NA	<1 UJ	NA
NITRITE	mg/L	1	NA	<1 U	N/A	0.615 J	NA	<0.4 U	NA	NA	<1 U	NA	<4 U	NA	0.392 J	NA	<1 UJ	NA
SULFATE	mg/L		NA	369	N/A	367	NA	271	NA	NA	358	NA	317	NA	255	NA	352 J	NA
Dissolved Gases (RSK-175)																		
CARBON DIOXIDE	ug/L		NA	328000	N/A	464000	NA	NA	NA	NA	78200	NA	88500	NA	183000	NA	241000	NA
ETHANE	ug/L		NA	<2 U	N/A	<2 U	NA	5.1	NA	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA
ETHENE	ug/L		NA	<2 U	N/A	<2 U	NA	6.56	NA	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA
METHANE	ug/L		NA	18.5	N/A	23	NA	<2 UJ	NA	NA	3.96 J	NA	6.27	NA	<2 UJ	NA	5.53	NA

Blue Highlighting Indicates concentrations above the MCL/MSC/PCL

Wells 50WW02, 50WW03 and 50WW04 were dry. No samples collected.

Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter, "FF" indicate sample filtered in the field with 0.45 micron filter. Metals results for "FF" samples are dissolved.

"FD" or "D" in Sample ID indicates a field duplicate sample.

(1) Only limited data validation possible; Not used in plume delineation

(2) Substituted for 50WW08 and 50WW13 October 2013 data for plume delineation

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Limit

mg/L - milligrams per liter

MSC - Medium-Specific Concentrations

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

ug/L - micrograms per liter

UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

UTL - Upper Tolerance Limit

Table 2-3: Groundwater Results for Year 1 and 2 - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL/ UTL	50WW14-052015 5/20/2015	50WW14FF-052015 5/20/2015	50WW14-081915 8/19/2015	50WW14FF-081915 8/19/2015	50WW14-111215 11/12/2015	50WW14FF-111215 11/12/2015	50WW15-102513 10/25/2013	50WW15-031714 3/17/2014	50WW15-061914 6/19/2014	50WW15-110714 11/7/2014	50WW15-021215 2/12/2015	50WW15FD-021215 2/12/2015	50WW15-052315 5/23/2015	50WW15-082015 8/20/2015	50WW15FD-082015 8/20/2015	50WW15-111115 11/11/2015
Well Completion Zone:			**Lower Shallow**						**Upper Shallow**									
Water Quality Parameters																		
Temperature	°C		20.1	NA	21.95	NA	18.4	NA	18.93	15.11	23.1	18.47	19.28	NA	21.82	20.05	NA	20.15
pH	pH Units		5.65	NA	5.97	NA	6.17	NA	6.99	7.15	6.07	6.96	6.69	NA	7.68	5.78	NA	5.74
Conductivity	mS/CM		2	NA	2.03	NA	2.21	NA	1.54	1.77	1.68	1.65	1.54	NA	1.52	1.42	NA	1.82
Dissolved Oxygen	mg/L		0.65	NA	0.12	NA	0	NA	0.62	0.63	0.31	0	0.28	NA	0.51	0	NA	0
Turbidity	NTU		206	NA	435	NA	160	NA	8.5	18.2	83	18.5	5	NA	14.1	113	NA	108
Oxidation Reduction Potential	mV		8	NA	20	NA	-20	NA	24	81	-45	5	81	NA	-20	211	NA	162
Ferrous Iron	mg/L		1.46	NA	4.05	NA	NA	NA	0.1	0.1	NA	NA	0.11	NA	0.26	0	NA	NA
Alkalinity (310.2)																		
ALKALINITY, TOTAL	mg/L		271	NA	265	N/A	254	NA	NA	NA	NA	NA	NA	NA	NA	N/A	N/A	NA
Phosphours (365.4)																		
PHOSPHORUS	mg/L		1.66	NA	0.114 J	N/A	0.719	NA	NA	NA	NA	NA	NA	NA	NA	N/A	N/A	NA
SM4500-S-(-2)-F-2000																		
SULFIDE	mg/L		<1 U	NA	<1 U	N/A	<1 U	NA	NA	NA	NA	NA	NA	NA	NA	N/A	N/A	NA
Total Organic Carbon (415.1)																		
TOTAL ORGANIC CARBON (TOC)	mg/L		36.8	NA	13.7	N/A	16.1	NA	NA	NA	NA	NA	NA	NA	NA	N/A	N/A	NA
Iron (6010C)																		
IRON	mg/L		NA	8.8	N/A	7.69	NA	7.43	NA	NA	NA	NA	NA	NA	NA	N/A	N/A	NA
Manganese (6020A)																		
MANGANESE	mg/L	7.8	NA	0.557	N/A	0.535	NA	0.495	NA	NA	NA	NA	NA	NA	NA	N/A	N/A	NA
Perchlorate (6850)																		
PERCHLORATE	ug/L	17	2.06	NA	2.19	N/A	7.5	NA	<0.2 U	<0.2 U	<0.2 U	<0.2 U	0.942 J	1.34 J	<0.2 U	0.237 J	0.155 J	<1 U
Volatile Organic Compounds (8260B)																		
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	NA	<0.4 U	N/A	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 UJ	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	NA	<0.25 U	N/A	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,1-DICHLOROETHENE	ug/L	7	<1 U	NA	<1 U	N/A	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	NA	<0.3 U	N/A	<0.3 U	NA	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	NA	<1 U	N/A	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	NA	<0.4 U	N/A	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	NA	<2 U	N/A	<2 U	NA	<2 U	<2 U	<2 U	<2 UJ	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	NA	<0.25 U	N/A	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	0.258 J	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	NA	<0.4 U	N/A	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	NA	<0.4 U	N/A	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	NA	<0.25 U	N/A	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
2-BUTANONE	ug/L	15000	<5 U	NA	<5 U	N/A	<5 U	NA	<5 U	<5 U	<5 U	<5 UJ	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
2-CHLOROTOLUENE	ug/L	490	<0.25 U	NA	<0.25 U	N/A	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
2-HEXANONE	ug/L	120	<5 U	NA	<5 U	N/A	<5 U	NA	<5 U	<5 U	<5 U	<5 UJ	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
4-CHLOROTOLUENE	ug/L	490	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	NA	<5 U	N/A	<5 U	NA	<5 U	<5 U	<5 U	<5 UJ	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
ACETONE	ug/L	22000	<5 U	NA	<5 U	N/A	<5 U	NA	<5 U	<5 U	<5 U	<5 UJ	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
BENZENE	ug/L	5	<0.25 U	NA	<0.25 U	N/A	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOBENZENE	ug/L	200	<0.25 U	NA	<0.25 U	N/A	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	NA	<0.4 U	N/A	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
BROMOFORM	ug/L	120	<1 U	NA	<1 U	N/A	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
BROMOMETHANE	ug/L	34	<1 U	NA	<1 UJ	N/A	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 UJ	<1 U
CARBON DISULFIDE	ug/L	2400	<1 U	NA	<1 U	N/A	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 U	<1 U	<1 UJ
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CHLOROBENZENE	ug/L	100	<0.25 U	NA	<0.25 U	N/A	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
CHLOROETHANE	ug/L	98000	<1 U	NA	<1 U	N/A	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
CHLOROFORM	ug/L	240	<0.25 U	NA	<0.25 U	N/A	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U

Table 2-3: Groundwater Results for Year 1 and 2 - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL/ UTL	50WW14-052015 5/20/2015	50WW14FF-052015 5/20/2015	50WW14-081915 8/19/2015	50WW14FF-081915 8/19/2015	50WW14-111215 11/12/2015	50WW14FF-111215 11/12/2015	50WW15-102513 10/25/2013	50WW15-031714 3/17/2014	50WW15-061914 6/19/2014	50WW15-110714 11/7/2014	50WW15-021215 2/12/2015	50WW15FD-021215 2/12/2015	50WW15-052315 5/23/2015	50WW15-082015 8/20/2015	50WW15FD-082015 8/20/2015	50WW15-111115 11/11/2015
CHLOROMETHANE	ug/L	70	<1 U	NA	<1 U	N/A	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	5.66	NA	7.56	N/A	14.2	NA	11.9	13.8	12.9	14.3	14.3	14.2	10.8	10.1	10.4	7.16
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOMETHANE	ug/L	120	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ETHYLBENZENE	ug/L	700	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
M,P-XYLENE	ug/L	10000	<1 U	NA	<1 U	N/A	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
METHYLENE CHLORIDE	ug/L	5	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
NAPHTHALENE	ug/L	490	<0.4 U	NA	<0.4 U	N/A	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 UJ	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
N-BUTYLBENZENE	ug/L	1200	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
N-PROPYLBENZENE	ug/L	980	<0.25 U	NA	<0.25 U	N/A	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
O-XYLENE	ug/L	10000	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
STYRENE	ug/L	100	<0.25 U	NA	<0.25 U	N/A	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	3.25	3.33	3.05	3.34	3.31	3.24	2.96	1.92	2.01	1.83
TOLUENE	ug/L	1000	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	NA	<1 U	N/A	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
TRICHLOROETHENE	ug/L	5	6.05	NA	12	N/A	5.78	NA	17.3	23.5	18.9	35.4	48.3	46.9	13	15.2	15.1	8.2
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	NA	<0.5 U	N/A	<0.5 U	NA	3.24	3.09	2.76	2.69	2.2	2.27	1.91	1.25	1.38	0.966 J
Inorganic Anions (9056)																		
CHLORIDE	mg/L		369	NA	495	N/A	392	NA	NA	NA	NA	NA	NA	NA	NA	N/A	N/A	NA
NITRATE	mg/L	10	<1 U	NA	<1 U	N/A	<1 U	NA	NA	NA	NA	NA	NA	NA	NA	N/A	N/A	NA
NITRITE	mg/L	1	0.73 J	NA	<1 U	N/A	0.805 J	NA	NA	NA	NA	NA	NA	NA	NA	N/A	N/A	NA
SULFATE	mg/L		378	NA	379	N/A	385	NA	NA	NA	NA	NA	NA	NA	NA	N/A	N/A	NA
Dissolved Gases (RSK-175)																		
CARBON DIOXIDE	ug/L		416000	NA	208000	N/A	253000	NA	NA	NA	NA	NA	NA	NA	NA	N/A	N/A	NA
ETHANE	ug/L		<2 U	NA	<2 U	N/A	<2 U	NA	NA	NA	NA	NA	NA	NA	NA	N/A	N/A	NA
ETHENE	ug/L		<2 U	NA	<2 U	N/A	<2 U	NA	NA	NA	NA	NA	NA	NA	NA	N/A	N/A	NA
METHANE	ug/L		2.21 J	NA	10.8	N/A	11.3	NA	NA	NA	NA	NA	NA	NA	NA	N/A	N/A	NA

Blue Highlighting Indicates concentrations above the MCL/MSC/PCL

Wells 50WW02, 50WW03 and 50WW04 were dry. No samples collected.

Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter, "FF" indicate sample filtered in the field with 0.45 micron filter. Metals results for "FF" samples are dissolved.

"FD" or "D" in Sample ID indicates a field duplicate sample.

(1) Only limited data validation possible; Not used in plume delineation

(2) Substituted for 50WW08 and 50WW13 October 2013 data for plume delineation

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Limit

mg/L - milligrams per liter

MSC - Medium-Specific Concentrations

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

ug/L - micrograms per liter

UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

UTL - Upper Tolerance Limit

Table 2-3: Groundwater Results for Year 1 and 2 - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL/ UTL	50WW15FD-111115 11/11/2015	50WW16-102513 10/25/2013	50WW16-032514 3/25/2014	50WW16-062614 6/26/2014	50WW16FD-062614 6/26/2014	50WW16-111214 11/12/2014	50WW16-021315 2/13/2015	50WW16-052215 5/22/2015	50WW16-082015 8/20/2015	50WW16-111315 11/13/2015	50WW17-102513 10/25/2013	50WW17-032514 3/25/2014	50WW17-062014 6/20/2014	50WW17-111114 11/11/2014	50WW17-021315 2/13/2015	50WW17-052215 5/22/2015
Well Completion Zone:			**Upper Shallow**	**Upper Shallow**									**Fully-Screened Shallow**					
Water Quality Parameters																		
Temperature	°C		NA	18.09	14.47	18.81	NA	15.69	17.07	17.89	22.83	18.54	17.35	17.95	21.4	18.5	15.68	17.58
pH	pH Units		NA	7.05	7.16	6.27	NA	7.07	8.64	5.44	5.12	5.14	5.22	6.77	5.68	5.73	6.56	5.48
Conductivity	mS/CM		NA	0.339	0.384	0.416	NA	0.262	0.236	0.256	2	0.226	1.53	1.7	1.71	1.93	2.05	2.15
Dissolved Oxygen	mg/L		NA	0.71	0.53	0.3	NA	0	0	0.49	0	0	0.89	0.36	0.36	0	0	0.45
Turbidity	NTU		NA	54.3	233	49	NA	62.5	170	418	617	376	214	150	318	100	230	245
Oxidation Reduction Potential	mV		NA	169	55	25	NA	59	-46	140	126	224	-30	-84	-78	-1	-43	53
Ferrous Iron	mg/L		NA	0.55	1.53	NA	NA	NA	0.32	0.17	2.02	NA	2.38	2.99	NA	NA	1.43	2.37
Alkalinity (310.2)																		
ALKALINITY, TOTAL	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA	NA	NA
Phosphours (365.4)																		
PHOSPHORUS	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA	NA	NA
SM4500-S-(-2)-F-2000																		
SULFIDE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon (415.1)																		
TOTAL ORGANIC CARBON (TOC)	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA	NA	NA
Iron (6010C)																		
IRON	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA	NA	NA
Manganese (6020A)																		
MANGANESE	mg/L	7.8	NA	NA	NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA	NA	NA
Perchlorate (6850)																		
PERCHLORATE	ug/L	17	<1 U	0.284 J	<0.2 U	0.725	0.682	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	0.51	<0.2 U	1.76	<0.2 U	<0.2 U	<0.2 U
Volatile Organic Compounds (8260B)																		
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,1-DICHLOROETHENE	ug/L	7	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
2-BUTANONE	ug/L	15000	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
2-CHLOROTOLUENE	ug/L	490	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
2-HEXANONE	ug/L	120	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 UJ	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
4-CHLOROTOLUENE	ug/L	490	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 UJ	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
ACETONE	ug/L	22000	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	4.49 J	<5 U	<5 UJ	2.74 J	<5 U	<5 U	<5 U	<5 U	<5 U
BENZENE	ug/L	5	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOBENZENE	ug/L	200	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
BROMOFORM	ug/L	120	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
BROMOMETHANE	ug/L	34	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
CARBON DISULFIDE	ug/L	2400	<1 UJ	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 U	<1 UJ	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CHLOROBENZENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
CHLOROETHANE	ug/L	98000	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
CHLOROFORM	ug/L	240	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U

Table 2-3: Groundwater Results for Year 1 and 2 - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL/ UTL	50WW15FD-111115 11/11/2015	50WW16-102513 10/25/2013	50WW16-032514 3/25/2014	50WW16-062614 6/26/2014	50WW16FD-062614 6/26/2014	50WW16-111214 11/12/2014	50WW16-021315 2/13/2015	50WW16-052215 5/22/2015	50WW16-082015 8/20/2015	50WW16-111315 11/13/2015	50WW17-102513 10/25/2013	50WW17-032514 3/25/2014	50WW17-062014 6/20/2014	50WW17-111114 11/11/2014	50WW17-021315 2/13/2015	50WW17-052215 5/22/2015
CHLOROMETHANE	ug/L	70	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	6.89	0.656 J	0.548 J	0.471 J	0.456 J	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOMETHANE	ug/L	120	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ETHYLBENZENE	ug/L	700	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
M,P-XYLENE	ug/L	10000	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
METHYLENE CHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
NAPHTHALENE	ug/L	490	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
N-BUTYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
N-PROPYLBENZENE	ug/L	980	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
O-XYLENE	ug/L	10000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
STYRENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	1.76	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TOLUENE	ug/L	1000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
TRICHLOROETHENE	ug/L	5	8.05	18.1	11.4	12	11.6	1.05	0.391 J	<0.5 U	1.5	0.986 J	<0.5 U	<0.5 U	0.516 J	<0.5 U	<0.5 U	<0.5 U
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	0.923 J	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
Inorganic Anions (9056)																		
CHLORIDE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA	NA	NA
NITRATE	mg/L	10	NA	NA	NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA	NA	NA
NITRITE	mg/L	1	NA	NA	NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA	NA	NA
SULFATE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA	NA	NA
Dissolved Gases (RSK-175)																		
CARBON DIOXIDE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA	NA	NA
ETHANE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA	NA	NA
ETHENE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA	NA	NA
METHANE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA	NA	NA

Blue Highlighting Indicates concentrations above the MCL/MSC/PCL

Wells 50WW02, 50WW03 and 50WW04 were dry. No samples collected.

Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter, "FF" indicate sample filtered in the field with 0.45 micron filter. Metals results for "FF" samples are dissolved.

"FD" or "D" in Sample ID indicates a field duplicate sample.

(1) Only limited data validation possible; Not used in plume delineation

(2) Substituted for 50WW08 and 50WW13 October 2013 data for plume delineation

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Limit

mg/L - milligrams per liter

MSC - Medium-Specific Concentrations

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

ug/L - micrograms per liter

UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

UTL - Upper Tolerance Limit

Table 2-3: Groundwater Results for Year 1 and 2 - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL/ UTL	50WW17-081915 8/19/2015	50WW17-110915 11/9/2015	50WW18-102313 10/23/2013	50WW18F-102313 10/23/2013	50WW18FF-102313 10/23/2013	50WW18-032614 3/26/2014	50WW18FF-032614 3/26/2014	50WW18-062414 6/24/2014	50WW18FF-062414 6/24/2014	50WW18-110414 11/4/2014	50WW18FF-110414 11/4/2014	50WW18-021815 2/18/2015	50WW18FF-021815 2/18/2015	50WW18-052815 5/28/2015	50WW18FF-052815 5/28/2015	50WW18-081715 8/17/2015
Well Completion Zone:			**Fully-Screened Shallow**		**Upper Shallow**													
Water Quality Parameters																		
Temperature	°C		22.83	17.72	18.23	NA	NA	19.12	NA	20.59	NA	18.71	NA	17.56	NA	19.53	NA	20.35
pH	pH Units		5.12	5.12	6.6	NA	NA	6.75	NA	6.12	NA	6.47	NA	7.44	NA	6.83	NA	6.11
Conductivity	mS/CM		2	2.1	2.87	NA	NA	2.87	NA	2.51	NA	2.9	NA	2.88	NA	2.61	NA	2.54
Dissolved Oxygen	mg/L		0	0	0.79	NA	NA	0.43	NA	0.54	NA	0	NA	0	NA	0.66	NA	0.24
Turbidity	NTU		617	471	20	NA	NA	55.9	NA	30.3	NA	35.9	NA	110	NA	200	NA	322
Oxidation Reduction Potential	mV		126	110	-72	NA	NA	113	NA	150	NA	56	NA	42	NA	72	NA	157
Ferrous Iron	mg/L		2.02	NA	0.45	NA	NA	0.11	NA	NA	NA	0.2	NA	0.12	NA	0	NA	0.05
Alkalinity (310.2)																		
ALKALINITY, TOTAL	mg/L		N/A	NA	342	NA	NA	331	NA	346	NA	355	NA	346	NA	412	NA	330
Phosphours (365.4)																		
PHOSPHORUS	mg/L		N/A	NA	<0.2 U	NA	NA	<0.2 U	NA	<0.2 U	NA	0.128 J	NA	<0.2 U	NA	1.52	NA	<0.2 U
SM4500-S-(-2)-F-2000																		
SULFIDE	mg/L		N/A	NA	<1 U	NA	NA	<1 U	NA	<0.5 U	NA	<2 U	NA	<1 U	NA	<1 U	NA	<1 UJ
Total Organic Carbon (415.1)																		
TOTAL ORGANIC CARBON (TOC)	mg/L		N/A	NA	6.98	NA	NA	4.92	NA	6.71	NA	2.37	NA	5.1 J	NA	<3 U	NA	<5 U
Iron (6010C)																		
IRON	mg/L		N/A	NA	NA	0.39	0.38	NA	<0.1 U	NA	<0.1 U	NA	0.296	NA	0.516	NA	0.0757 J	N/A
Manganese (6020A)																		
MANGANESE	mg/L	7.8	N/A	NA	NA	NA	0.348	NA	0.165	NA	0.0809	NA	0.0767	NA	0.0557	NA	0.0609	N/A
Perchlorate (6850)																		
PERCHLORATE	ug/L	17	0.193 J	<0.4 U	<0.2 U	NA	NA	<0.2 U	NA	0.172 J	NA	<0.2 U	NA	0.258 J	NA	<0.2 U	NA	0.144 J
Volatile Organic Compounds (8260B)																		
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	<0.4 U	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	<0.25 U	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
1,1-DICHLOROETHENE	ug/L	7	<1 U	<1 U	<1 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	<0.3 U	<0.3 U	NA	NA	<0.3 U	NA	<0.3 U	NA	<0.3 U	NA	<0.3 U	NA	<0.3 U	NA	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	<1 U	<1 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	<0.4 U	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	<2 U	<2 UJ	NA	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	<0.25 U	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	<0.4 U	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	<0.4 U	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	<0.25 U	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
2-BUTANONE	ug/L	15000	<5 U	<5 U	<5 U	NA	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U
2-CHLOROTOLUENE	ug/L	490	<0.25 U	<0.25 U	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
2-HEXANONE	ug/L	120	<5 U	<5 U	<5 U	NA	NA	<5 U	NA	<5 U	NA	<5 UJ	NA	<5 U	NA	<5 U	NA	<5 U
4-CHLOROTOLUENE	ug/L	490	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	<5 U	<5 U	NA	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U
ACETONE	ug/L	22000	<5 U	<5 U	<5 U	NA	NA	<5 U	NA	<5 U	NA	<5 UJ	NA	<5 U	NA	<5 U	NA	<5 U
BENZENE	ug/L	5	<0.25 U	<0.25 U	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
BROMOBENZENE	ug/L	200	<0.25 U	<0.25 U	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	<0.4 U	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
BROMOFORM	ug/L	120	<1 U	<1 U	<1 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U
BROMOMETHANE	ug/L	34	<1 UJ	<1 U	<1 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 UJ	NA	<1 U	NA	<1 UJ
CARBON DISULFIDE	ug/L	2400	<1 U	<1 U	<1 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 UJ	NA	<1 U
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
CHLOROBENZENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
CHLOROETHANE	ug/L	98000	<1 U	<1 U	<1 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U
CHLOROFORM	ug/L	240	<0.25 U	<0.25 U	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U

Table 2-3: Groundwater Results for Year 1 and 2 - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL/ UTL	50WW17-081915 8/19/2015	50WW17-110915 11/9/2015	50WW18-102313 10/23/2013	50WW18F-102313 10/23/2013	50WW18FF-102313 10/23/2013	50WW18-032614 3/26/2014	50WW18FF-032614 3/26/2014	50WW18-062414 6/24/2014	50WW18FF-062414 6/24/2014	50WW18-110414 11/4/2014	50WW18FF-110414 11/4/2014	50WW18-021815 2/18/2015	50WW18FF-021815 2/18/2015	50WW18-052815 5/28/2015	50WW18FF-052815 5/28/2015	50WW18-081715 8/17/2015
CHLOROMETHANE	ug/L	70	<1 U	<1 U	<1 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
DIBROMOMETHANE	ug/L	120	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
ETHYLBENZENE	ug/L	700	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
M,P-XYLENE	ug/L	10000	<1 U	<1 U	<1 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U
METHYLENE CHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
NAPHTHALENE	ug/L	490	<0.4 U	<0.4 U	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U
N-BUTYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
N-PROPYLBENZENE	ug/L	980	<0.25 U	<0.25 U	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
O-XYLENE	ug/L	10000	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
STYRENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
TOLUENE	ug/L	1000	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	<1 U	<1 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U
TRICHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
Inorganic Anions (9056)																		
CHLORIDE	mg/L		N/A	NA	714	NA	NA	643	NA	559	NA	679	NA	775	NA	668	NA	806
NITRATE	mg/L	10	N/A	NA	<1 U	NA	NA	<0.8 U	NA	<10 U	NA	<1 U	NA	<1 U	NA	<0.6 U	NA	<1 U
NITRITE	mg/L	1	N/A	NA	<1 U	NA	NA	<0.8 U	NA	<10 U	NA	1.23 J	NA	<1 U	NA	0.999 J	NA	<1 U
SULFATE	mg/L		N/A	NA	160	NA	NA	142	NA	87.6 J	NA	147	NA	154	NA	152	NA	156
Dissolved Gases (RSK-175)																		
CARBON DIOXIDE	ug/L		N/A	NA	NA	NA	NA	148000	NA	187000	NA	69300	NA	117000	NA	114000	NA	473000
ETHANE	ug/L		N/A	NA	<2 U	NA	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U
ETHENE	ug/L		N/A	NA	1.23 J	NA	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U
METHANE	ug/L		N/A	NA	<2 UJ	NA	NA	1.35 J	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	17.5

Blue Highlighting Indicates concentrations above the MCL/MSC/PCL

Wells 50WW02, 50WW03 and 50WW04 were dry. No samples collected.

Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter, "FF" indicate sample filtered in the field with 0.45 micron filter. Metals results for "FF" samples are dissolved.

"FD" or "D" in Sample ID indicates a field duplicate sample.

(1) Only limited data validation possible; Not used in plume delineation

(2) Substituted for 50WW08 and 50WW13 October 2013 data for plume delineation

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Limit

mg/L - milligrams per liter

MSC - Medium-Specific Concentrations

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

ug/L - micrograms per liter

UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

UTL - Upper Tolerance Limit

Table 2-3: Groundwater Results for Year 1 and 2 - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL/ UTL	50WW18FF-081715 8/17/2015	50WW18-111615 11/16/2015	50WW18FF-111615 11/16/2015	50WW19-011414 1/14/2014	50WW19-032514 3/25/2014	50WW19-062014 6/20/2014	50WW19-111114 11/11/2014	50WW19-021315 2/13/2015	50WW19-052215 5/22/2015	50WW19FD-052215 5/22/2015	50WW19-082115 8/21/2015	50WW19-110915 11/9/2015	50WW20-110713 11/7/2013	50WW20-031314 3/13/2014	50WW20FD-031314 3/13/2014	50WW20-061914 6/19/2014
Well Completion Zone:			**Upper Shallow**			**Fully-Screened Shallow**									**Fully-Screened Shallow**			
Water Quality Parameters																		
Temperature	°C		NA	18.58	NA	19.5	18.39	21.52	18.37	16.03	17.41	NA	19.94	18.47	16.32	18.8	NA	23.8
pH	pH Units		NA	5.97	NA	6.35	6.3	5.66	5.26	6.05	5.21	NA	5.23	5.34	6.14	6.48	NA	5.63
Conductivity	mS/CM		NA	3.09	NA	1.35	1.38	1.39	1.3	1.11	1.23	NA	1.06	1.18	1.48	6.31	NA	2.66
Dissolved Oxygen	mg/L		NA	0	NA	0.33	0.37	0.24	0	0.1	0.55	NA	0	0	0.76	0.48	NA	0.3
Turbidity	NTU		NA	104	NA	85.2	147	154	265	213	283	NA	468	400	23.7	60.5	NA	186
Oxidation Reduction Potential	mV		NA	151	NA	-57	-20	-70	56	-7	38	NA	110	72	-45	69	NA	-3
Ferrous Iron	mg/L		NA	NA	NA	NA	1.23	NA	NA	2.04	1.81	NA	1.58	NA	0.83	0.82	NA	NA
Alkalinity (310.2)																		
ALKALINITY, TOTAL	mg/L		N/A	342	NA	NA	NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA
Phosphours (365.4)																		
PHOSPHORUS	mg/L		N/A	<0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA
SM4500-S-(-2)-F-2000																		
SULFIDE	mg/L		N/A	<1 U	NA	NA	NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA
Total Organic Carbon (415.1)																		
TOTAL ORGANIC CARBON (TOC)	mg/L		N/A	56.1	NA	NA	NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA
Iron (6010C)																		
IRON	mg/L		0.116 J	NA	0.0978 J	NA	NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA
Manganese (6020A)																		
MANGANESE	mg/L	7.8	0.0631	NA	0.0521	NA	NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA
Perchlorate (6850)																		
PERCHLORATE	ug/L	17	N/A	<1 U	NA	<0.2 U	<0.2 U	0.48	<0.2 U	<0.2 U	0.305 J	0.198 J	<0.2 U	<0.2 U	<0.2 U	0.697	0.673	<0.2 U
Volatile Organic Compounds (8260B)																		
1,1,1,2-TETRACHLOROETHANE	ug/L	35	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	N/A	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	N/A	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,1-DICHLOROETHENE	ug/L	7	N/A	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,1-DICHLOROPROPENE	ug/L	9.1	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	N/A	<0.3 U	NA	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	N/A	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	N/A	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	N/A	<2 U	NA	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	N/A	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	N/A	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	N/A	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	N/A	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
2,2-DICHLOROPROPANE	ug/L	13	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
2-BUTANONE	ug/L	15000	N/A	<5 U	NA	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
2-CHLOROTOLUENE	ug/L	490	N/A	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
2-HEXANONE	ug/L	120	N/A	<5 UJ	NA	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
4-CHLOROTOLUENE	ug/L	490	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	N/A	<5 UJ	NA	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
ACETONE	ug/L	22000	N/A	<5 UJ	NA	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
BENZENE	ug/L	5	N/A	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOBENZENE	ug/L	200	N/A	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	N/A	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
BROMOFORM	ug/L	120	N/A	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
BROMOMETHANE	ug/L	34	N/A	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 U	<1 U	<1 U	<1 U	<1 U
CARBON DISULFIDE	ug/L	2400	N/A	<1 UJ	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 UJ	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
CARBON TETRACHLORIDE	ug/L	5	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CHLOROBENZENE	ug/L	100	N/A	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
CHLOROETHANE	ug/L	98000	N/A	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
CHLOROFORM	ug/L	240	N/A	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U

Table 2-3: Groundwater Results for Year 1 and 2 - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL/ UTL	50WW18FF-081715 8/17/2015	50WW18-111615 11/16/2015	50WW18FF-111615 11/16/2015	50WW19-011414 1/14/2014	50WW19-032514 3/25/2014	50WW19-062014 6/20/2014	50WW19-111114 11/11/2014	50WW19-021315 2/13/2015	50WW19-052215 5/22/2015	50WW19FD-052215 5/22/2015	50WW19-082115 8/21/2015	50WW19-110915 11/9/2015	50WW20-110713 11/7/2013	50WW20-031314 3/13/2014	50WW20FD-031314 3/13/2014	50WW20-061914 6/19/2014
CHLOROMETHANE	ug/L	70	N/A	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOMETHANE	ug/L	120	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ETHYLBENZENE	ug/L	700	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
M,P-XYLENE	ug/L	10000	N/A	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
METHYLENE CHLORIDE	ug/L	5	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
NAPHTHALENE	ug/L	490	N/A	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
N-BUTYLBENZENE	ug/L	1200	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
N-PROPYLBENZENE	ug/L	980	N/A	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
O-XYLENE	ug/L	10000	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
STYRENE	ug/L	100	N/A	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TOLUENE	ug/L	1000	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	N/A	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
TRICHLOROETHENE	ug/L	5	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRICHLOROFLUOROMETHANE	ug/L	7300	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
Inorganic Anions (9056)																		
CHLORIDE	mg/L		N/A	799	NA	NA	NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA
NITRATE	mg/L	10	N/A	<1 U	NA	NA	NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA
NITRITE	mg/L	1	N/A	<1 U	NA	NA	NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA
SULFATE	mg/L		N/A	160	NA	NA	NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA
Dissolved Gases (RSK-175)																		
CARBON DIOXIDE	ug/L		N/A	528000	NA	NA	NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA
ETHANE	ug/L		N/A	<2 U	NA	NA	NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA
ETHENE	ug/L		N/A	<2 U	NA	NA	NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA
METHANE	ug/L		N/A	<2 U	NA	NA	NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA

Blue Highlighting Indicates concentrations above the MCL/MSC/PCL

Wells 50WW02, 50WW03 and 50WW04 were dry. No samples collected.

Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter, "FF" indicate sample filtered in the field with 0.45 micron filter. Metals results for "FF" samples are dissolved.

"FD" or "D" in Sample ID indicates a field duplicate sample.

(1) Only limited data validation possible; Not used in plume delineation

(2) Substituted for 50WW08 and 50WW13 October 2013 data for plume delineation

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Limit

mg/L - milligrams per liter

MSC - Medium-Specific Concentrations

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

ug/L - micrograms per liter

UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

UTL - Upper Tolerance Limit

Table 2-3: Groundwater Results for Year 1 and 2 - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL/ UTL	50WW20-111114 11/11/2014	50WW20FD-111114 11/11/2014	50WW20-021215 2/12/2015	50WW20-052615 5/26/2015	50WW20-082115 8/21/2015	50WW20-111015 11/10/2015	50WW21-102513 10/25/2013	50WW21FD-102513 10/25/2013	50WW21-032514 3/25/2014	50WW21-062014 6/20/2014	50WW21FD-062014 6/20/2014	50WW21-111314 11/13/2014	50WW21FD-111314 11/13/2014	50WW21-021215 2/12/2015	50WW21-052315 5/23/2015	50WW21FD-052315 5/23/2015
Well Completion Zone:			**Fully-Screened Shallow**						**Upper Shallow**									
Water Quality Parameters																		
Temperature	°C		18.25	NA	18.56	18.61	20.22	19.88	17.7	NA	18.6	21.68	NA	17.09	NA	18.75	29.75	NA
pH	pH Units		5.18	NA	6.97	5.32	5.37	6.1	6.31	NA	6.33	5.72	NA	6.17	NA	6.71	5.95	NA
Conductivity	mS/CM		1.45	NA	5.19	1.96	1.43	1.5	8.34	NA	7.85	7.83	NA	7.7	NA	7.67	6.53	NA
Dissolved Oxygen	mg/L		0	NA	0	0.52	0	0.1	1.55	NA	1.06	1.51	NA	0.34	NA	0.2	0.87	NA
Turbidity	NTU		90.7	NA	153	306	308	126	7.7	NA	8.6	24.5	NA	5.6	NA	4.5	16	NA
Oxidation Reduction Potential	mV		142	NA	-10	76	156	26	38	NA	140	131	NA	147	NA	104	152	NA
Ferrous Iron	mg/L		NA	NA	0.6	2.78	1.41	NA	0.11	NA	0.27	NA	NA	NA	NA	0.15	0.04	NA
Alkalinity (310.2)																		
ALKALINITY, TOTAL	mg/L		NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phosphours (365.4)																		
PHOSPHORUS	mg/L		NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SM4500-S-(-2)-F-2000																		
SULFIDE	mg/L		NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon (415.1)																		
TOTAL ORGANIC CARBON (TOC)	mg/L		NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron (6010C)																		
IRON	mg/L		NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese (6020A)																		
MANGANESE	mg/L	7.8	NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perchlorate (6850)																		
PERCHLORATE	ug/L	17	<0.2 U	<0.2 U	0.168 J	<0.2 U	<0.2 U	<0.2 U	0.731	0.818	0.606	0.964	0.934	0.779	0.779	0.878	0.502	0.516
Volatile Organic Compounds (8260B)																		
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,1-DICHLOROETHENE	ug/L	7	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
2-BUTANONE	ug/L	15000	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
2-CHLOROTOLUENE	ug/L	490	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
2-HEXANONE	ug/L	120	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
4-CHLOROTOLUENE	ug/L	490	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	<5 U	<5 U	<5 UJ	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 UJ	<5 UJ
ACETONE	ug/L	22000	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
BENZENE	ug/L	5	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOBENZENE	ug/L	200	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
BROMOFORM	ug/L	120	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
BROMOMETHANE	ug/L	34	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
CARBON DISULFIDE	ug/L	2400	<1 U	<1 U	<1 U	<1 UJ	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 UJ
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CHLOROBENZENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
CHLOROETHANE	ug/L	98000	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
CHLOROFORM	ug/L	240	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U

Table 2-3: Groundwater Results for Year 1 and 2 - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL/ UTL	50WW20-111114 11/11/2014	50WW20FD-111114 11/11/2014	50WW20-021215 2/12/2015	50WW20-052615 5/26/2015	50WW20-082115 8/21/2015	50WW20-111015 11/10/2015	50WW21-102513 10/25/2013	50WW21FD-102513 10/25/2013	50WW21-032514 3/25/2014	50WW21-062014 6/20/2014	50WW21FD-062014 6/20/2014	50WW21-111314 11/13/2014	50WW21FD-111314 11/13/2014	50WW21-021215 2/12/2015	50WW21-052315 5/23/2015	50WW21FD-052315 5/23/2015
CHLOROMETHANE	ug/L	70	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	0.587 J	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOMETHANE	ug/L	120	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ETHYLBENZENE	ug/L	700	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
M,P-XYLENE	ug/L	10000	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
METHYLENE CHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
NAPHTHALENE	ug/L	490	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
N-BUTYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
N-PROPYLBENZENE	ug/L	980	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
O-XYLENE	ug/L	10000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
STYRENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TOLUENE	ug/L	1000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
TRICHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	0.447 J	<0.5 U
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
Inorganic Anions (9056)																		
CHLORIDE	mg/L		NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NITRATE	mg/L	10	NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NITRITE	mg/L	1	NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SULFATE	mg/L		NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Gases (RSK-175)																		
CARBON DIOXIDE	ug/L		NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHANE	ug/L		NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHENE	ug/L		NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHANE	ug/L		NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Blue Highlighting Indicates concentrations above the MCL/MSC/PCL

Wells 50WW02, 50WW03 and 50WW04 were dry. No samples collected.

Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter, "FF" indicate sample filtered in the field with 0.45 micron filter. Metals results for "FF" samples are dissolved.

"FD" or "D" in Sample ID indicates a field duplicate sample.

(1) Only limited data validation possible; Not used in plume delineation

(2) Substituted for 50WW08 and 50WW13 October 2013 data for plume delineation

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Limit

mg/L - milligrams per liter

MSC - Medium-Specific Concentrations

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

ug/L - micrograms per liter

UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

UTL - Upper Tolerance Limit

Table 2-3: Groundwater Results for Year 1 and 2 - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL/ UTL	50WW21-082015 8/20/2015	50WW21-111015 11/10/2015	50WW22-102313 10/23/2013	50WW22FF-102313 10/23/2013	50WW22-031214 3/12/2014	50WW22FF-031214 3/12/2014	50WW22-062414 6/24/2014	50WW22FF-062414 6/24/2014	50WW22-110614 11/6/2014	50WW22FF-110614 11/6/2014	50WW22-021715 2/17/2015	50WW22FF-021715 2/17/2015	50WW22-052115 5/21/2015	50WW22FF-052115 5/21/2015	50WW22-081815 8/18/2015	50WW22FF-081815 8/18/2015
Well Completion Zone:			**Upper Shallow**		**Upper Shallow**													
Water Quality Parameters																		
Temperature	°C		20.83	20.83	22.64	NA	17.54	NA	22.41	NA	18.47	NA	16.8	NA	17.93	NA	20.73	NA
pH	pH Units		5.69	5.78	6.78	NA	6.72	NA	6.2	NA	6.75	NA	7.48	NA	6.75	NA	7.2	NA
Conductivity	mS/CM		6.83	7.75	5.24	NA	4.43	NA	3.96	NA	4.64	NA	4.58	NA	3.56	NA	3.59	NA
Dissolved Oxygen	mg/L		0.4	0.23	3.53	NA	1.7	NA	1.77	NA	0.58	NA	0.49	NA	1.07	NA	0.88	NA
Turbidity	NTU		87.7	38.7	9.3	NA	30.5	NA	18.6	NA	3.1	NA	3.9	NA	50	NA	58.3	NA
Oxidation Reduction Potential	mV		253	204	66	NA	160	NA	119	NA	137	NA	105	NA	175	NA	137	NA
Ferrous Iron	mg/L		0	NA	0	NA	0	NA	NA	NA	0.11	NA	0.08	NA	0	NA	0	NA
Alkalinity (310.2)																		
ALKALINITY, TOTAL	mg/L		N/A	NA	376	NA	378	NA	387	NA	382	NA	373	NA	346	NA	373	N/A
Phosphours (365.4)																		
PHOSPHORUS	mg/L		N/A	NA	<0.2 U	NA	<0.2 UJ	NA	0.879	NA	<0.2 UJ	NA	1.96	NA	0.854	NA	1.19	N/A
SM4500-S-(-2)-F-2000																		
SULFIDE	mg/L		N/A	NA	<1 U	NA	<1 U	NA	<0.5 U	NA	<2 U	NA	0.681 J	NA	<1 U	NA	<1 UJ	N/A
Total Organic Carbon (415.1)																		
TOTAL ORGANIC CARBON (TOC)	mg/L		N/A	NA	8.8	NA	5.83	NA	11.3	NA	2.86 J	NA	2.31	NA	15.6	NA	2.35 J	N/A
Iron (6010C)																		
IRON	mg/L		N/A	NA	0.873	0.0683 J	NA	<0.1 U	NA	<0.1 U	NA	0.0629 J	NA	0.0711 J	NA	<0.1 U	N/A	<0.1 U
Manganese (6020A)																		
MANGANESE	mg/L	7.8	N/A	NA	NA	0.0839	NA	0.554	NA	0.114	NA	0.00625	NA	0.0235	NA	0.0466	N/A	0.00438
Perchlorate (6850)																		
PERCHLORATE	ug/L	17	0.67	1.21 J	6.97	NA	1.54	NA	2.29	NA	1.06	NA	1.51	NA	2.92	NA	3.62	N/A
Volatile Organic Compounds (8260B)																		
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	N/A
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	N/A
1,1-DICHLOROETHENE	ug/L	7	<1 U	<1 U	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	N/A
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	<0.3 U	<0.3 U	NA	<0.3 U	NA	<0.3 U	NA	<0.3 U	NA	<0.3 U	NA	<0.3 U	NA	<0.3 U	N/A
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	<1 U	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	N/A
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	N/A
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	<2 U	<2 UJ	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	N/A
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	N/A
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	N/A
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	N/A
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	N/A
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A
2-BUTANONE	ug/L	15000	<5 U	<5 U	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	N/A
2-CHLOROTOLUENE	ug/L	490	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	N/A
2-HEXANONE	ug/L	120	<5 U	<5 U	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	N/A
4-CHLOROTOLUENE	ug/L	490	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	<5 U	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	N/A
ACETONE	ug/L	22000	<5 U	<5 U	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	N/A
BENZENE	ug/L	5	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	N/A
BROMOBENZENE	ug/L	200	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	N/A
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	N/A
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A
BROMOFORM	ug/L	120	<1 U	<1 U	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	N/A
BROMOMETHANE	ug/L	34	<1 UJ	<1 U	<1 U	NA	<1 U	NA	<1 U	NA	<1 UJ	NA	<1 U	NA	<1 U	NA	<1 UJ	N/A
CARBON DISULFIDE	ug/L	2400	<1 U	<1 U	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	N/A
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A
CHLOROBENZENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	N/A
CHLOROETHANE	ug/L	98000	<1 U	<1 U	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	N/A
CHLOROFORM	ug/L	240	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	N/A

Table 2-3: Groundwater Results for Year 1 and 2 - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL/ UTL	50WW21-082015 8/20/2015	50WW21-111015 11/10/2015	50WW22-102313 10/23/2013	50WW22FF-102313 10/23/2013	50WW22-031214 3/12/2014	50WW22FF-031214 3/12/2014	50WW22-062414 6/24/2014	50WW22FF-062414 6/24/2014	50WW22-110614 11/6/2014	50WW22FF-110614 11/6/2014	50WW22-021715 2/17/2015	50WW22FF-021715 2/17/2015	50WW22-052115 5/21/2015	50WW22FF-052115 5/21/2015	50WW22-081815 8/18/2015	50WW22FF-081815 8/18/2015
CHLOROMETHANE	ug/L	70	<1 U	<1 U	0.514 J	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	N/A
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A
DIBROMOMETHANE	ug/L	120	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 UJ	NA	<0.5 U	NA	<0.5 U	N/A
ETHYLBENZENE	ug/L	700	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A
M,P-XYLENE	ug/L	10000	<1 U	<1 U	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	N/A
METHYLENE CHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A
NAPHTHALENE	ug/L	490	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	N/A
N-BUTYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A
N-PROPYLBENZENE	ug/L	980	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	N/A
O-XYLENE	ug/L	10000	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A
STYRENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	N/A
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A
TETRACHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A
TOLUENE	ug/L	1000	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	<1 U	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	N/A
TRICHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	0.339 J	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	N/A
Inorganic Anions (9056)																		
CHLORIDE	mg/L		N/A	NA	1310	NA	994	NA	826	NA	1000	NA	1040 J	NA	782	NA	963	N/A
NITRATE	mg/L	10	N/A	NA	<2 U	NA	<2 U	NA	<10 U	NA	<1 U	NA	<1 UJ	NA	<2 U	NA	<1 U	N/A
NITRITE	mg/L	1	N/A	NA	<2 U	NA	<2 U	NA	<10 U	NA	<1 U	NA	<1 UJ	NA	1.54 J	NA	<1 U	N/A
SULFATE	mg/L		N/A	NA	926	NA	654	NA	499	NA	594	NA	601 J	NA	559	NA	521	N/A
Dissolved Gases (RSK-175)																		
CARBON DIOXIDE	ug/L		N/A	NA	NA	NA	139000	NA	208000	NA	65000	NA	98400	NA	56300	NA	52100	N/A
ETHANE	ug/L		N/A	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	N/A
ETHENE	ug/L		N/A	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	N/A
METHANE	ug/L		N/A	NA	<2 U	NA	2.84 J	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	N/A

Blue Highlighting Indicates concentrations above the MCL/MSC/PCL

Wells 50WW02, 50WW03 and 50WW04 were dry. No samples collected.

Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter, "FF" indicate sample filtered in the field with 0.45 micron filter. Metals results for "FF" samples are dissolved.

"FD" or "D" in Sample ID indicates a field duplicate sample.

(1) Only limited data validation possible; Not used in plume delineation

(2) Substituted for 50WW08 and 50WW13 October 2013 data for plume delineation

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Limit

mg/L - milligrams per liter

MSC - Medium-Specific Concentrations

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

ug/L - micrograms per liter

UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

UTL - Upper Tolerance Limit

Table 2-3: Groundwater Results for Year 1 and 2 - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL/ UTL	50WW22-111615 11/16/2015	50WW22FF-111615 11/16/2015	50WW23-102913 10/29/2013	50WW23F-102913 10/29/2013	50WW23FF-102913 10/29/2013	50WW23-031314 3/13/2014	50WW23FF-031314 3/13/2014	50WW23-062614 6/26/2014	50WW23FF-062614 6/26/2014	50WW23-110414 11/4/2014	50WW23FF-110414 11/4/2014	50WW23-021815 2/18/2015	50WW23FF-021815 2/18/2015	50WW23-052015 5/20/2015	50WW23FF-052015 5/20/2015	50WW23-081715 8/17/2015
Well Completion Zone:			**Upper Shallow**		**Upper Shallow**													
Water Quality Parameters																		
Temperature	°C		18.68	NA	19.9	NA	NA	14.75	NA	19.58	NA	20.06	NA	15.45	NA	20.45	NA	24.16
pH	pH Units		7.01	NA	6.23	NA	NA	6.25	NA	6.01	NA	6.2	NA	6.82	NA	5.89	NA	6.44
Conductivity	mS/CM		4.72	NA	6.24	NA	NA	5.99	NA	5.68	NA	5.92	NA	5.75	NA	4.95	NA	5.06
Dissolved Oxygen	mg/L		1.03	NA	2.21	NA	NA	1.67	NA	1.5	NA	0.08	NA	0.12	NA	1.06	NA	0.98
Turbidity	NTU		11.9	NA	17.5	NA	NA	7.1	NA	0.8	NA	6.4	NA	3.9	NA	50.8	NA	50.1
Oxidation Reduction Potential	mV		161	NA	116	NA	NA	192	NA	145	NA	161	NA	177	NA	155	NA	201
Ferrous Iron	mg/L		NA	NA	0.16	NA	NA	1.24	NA	NA	NA	0.22	NA	0.25	NA	0.01	NA	0
Alkalinity (310.2)																		
ALKALINITY, TOTAL	mg/L		395	NA	245	NA	NA	262	NA	235	NA	275	NA	249	NA	206	NA	243
Phosphours (365.4)																		
PHOSPHORUS	mg/L		<0.2 U	NA	<0.2 U	NA	NA	0.484	NA	<0.2 U	NA	0.127 J	NA	<0.2 U	NA	0.248 J	NA	0.347 J
SM4500-S-(-2)-F-2000																		
SULFIDE	mg/L		<1 U	NA	<1 U	NA	NA	<1 U	NA	<0.5 U	NA	0.515	NA	<1 U	NA	0.627 J	NA	<1 UJ
Total Organic Carbon (415.1)																		
TOTAL ORGANIC CARBON (TOC)	mg/L		49.6	NA	3.12 J	NA	NA	6.17	NA	4.86	NA	2.86	NA	1.25 J	NA	22.5	NA	<5 U
Iron (6010C)																		
IRON	mg/L		NA	<0.1 U	NA	<0.1 U	<0.1 U	NA	<0.1 U	NA	0.089 J	NA	<0.1 U	NA	0.0666 J	NA	0.0973 J	N/A
Manganese (6020A)																		
MANGANESE	mg/L	7.8	NA	0.00361 J	NA	NA	0.357	NA	0.244	NA	0.235	NA	0.0745	NA	0.0939	NA	0.143	N/A
Perchlorate (6850)																		
PERCHLORATE	ug/L	17	0.642 J	NA	0.336 J	NA	NA	0.227	NA	0.182 J	NA	<0.2 U	NA	<0.2 U	NA	23.3	NA	0.527
Volatile Organic Compounds (8260B)																		
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	NA	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
1,1-DICHLOROETHENE	ug/L	7	<1 U	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	NA	<0.3 U	NA	NA	<0.3 U	NA	<0.3 U	NA	<0.3 U	NA	<0.3 U	NA	<0.3 U	NA	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	NA	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	NA	<2 U	NA	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	NA	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	NA	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
2-BUTANONE	ug/L	15000	<5 U	NA	<5 U	NA	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U
2-CHLOROTOLUENE	ug/L	490	<0.25 U	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
2-HEXANONE	ug/L	120	<5 UJ	NA	<5 U	NA	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U
4-CHLOROTOLUENE	ug/L	490	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 UJ	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	<5 UJ	NA	<5 U	NA	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U
ACETONE	ug/L	22000	<5 UJ	NA	<5 U	NA	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U
BENZENE	ug/L	5	<0.25 U	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
BROMOBENZENE	ug/L	200	<0.25 U	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	NA	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
BROMOFORM	ug/L	120	<1 U	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U
BROMOMETHANE	ug/L	34	<1 U	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 UJ	NA	<1 U	NA	<1 UJ
CARBON DISULFIDE	ug/L	2400	<1 UJ	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
CHLOROBENZENE	ug/L	100	<0.25 U	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
CHLOROETHANE	ug/L	98000	<1 U	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U
CHLOROFORM	ug/L	240	<0.25 U	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U

Table 2-3: Groundwater Results for Year 1 and 2 - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL/ UTL	50WW22-111615 11/16/2015	50WW22FF-111615 11/16/2015	50WW23-102913 10/29/2013	50WW23F-102913 10/29/2013	50WW23FF-102913 10/29/2013	50WW23-031314 3/13/2014	50WW23FF-031314 3/13/2014	50WW23-062614 6/26/2014	50WW23FF-062614 6/26/2014	50WW23-110414 11/4/2014	50WW23FF-110414 11/4/2014	50WW23-021815 2/18/2015	50WW23FF-021815 2/18/2015	50WW23-052015 5/20/2015	50WW23FF-052015 5/20/2015	50WW23-081715 8/17/2015
CHLOROMETHANE	ug/L	70	<1 U	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
DIBROMOMETHANE	ug/L	120	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
ETHYLBENZENE	ug/L	700	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
M,P-XYLENE	ug/L	10000	<1 U	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U
METHYLENE CHLORIDE	ug/L	5	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
NAPHTHALENE	ug/L	490	<0.4 U	NA	<0.4 U	NA	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U
N-BUTYLBENZENE	ug/L	1200	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
N-PROPYLBENZENE	ug/L	980	<0.25 U	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
O-XYLENE	ug/L	10000	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
STYRENE	ug/L	100	<0.25 U	NA	<0.25 U	NA	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
TOLUENE	ug/L	1000	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	NA	<1 U	NA	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U
TRICHLOROETHENE	ug/L	5	0.454 J	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	NA	<0.5 U	NA	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
Inorganic Anions (9056)																		
CHLORIDE	mg/L		1070	NA	1740	NA	NA	1990	NA	1770	NA	1780	NA	1900	NA	1660	NA	2070
NITRATE	mg/L	10	<1 U	NA	<2 U	NA	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U
NITRITE	mg/L	1	<1 U	NA	<2 U	NA	NA	<2 U	NA	<2 U	NA	2.97 J	NA	<2 U	NA	3.65 J	NA	<2 U
SULFATE	mg/L		636	NA	71.4	NA	NA	59.1	NA	43.6	NA	70.2	NA	67.6	NA	72	NA	78.6
Dissolved Gases (RSK-175)																		
CARBON DIOXIDE	ug/L		79400	NA	NA	NA	NA	321000	NA	104000	NA	129000	NA	155000	NA	398000	NA	147000
ETHANE	ug/L		<2 U	NA	<2 U	NA	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U
ETHENE	ug/L		<2 U	NA	<2 U	NA	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U
METHANE	ug/L		<2 U	NA	<2 U	NA	NA	<2 U	NA	1.01 J	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U

Blue Highlighting Indicates concentrations above the MCL/MSC/PCL

Wells 50WW02, 50WW03 and 50WW04 were dry. No samples collected.

Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter, "FF" indicate sample filtered in the field with 0.45 micron filter. Metals results for "FF" samples are dissolved.

"FD" or "D" in Sample ID indicates a field duplicate sample.

(1) Only limited data validation possible; Not used in plume delineation

(2) Substituted for 50WW08 and 50WW13 October 2013 data for plume delineation

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Limit

mg/L - milligrams per liter

MSC - Medium-Specific Concentrations

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

ug/L - micrograms per liter

UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

UTL - Upper Tolerance Limit

Table 2-3: Groundwater Results for Year 1 and 2 - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL/ UTL	50WW23FF-081715 8/17/2015	50WW23-111615 11/16/2015	50WW23FF-111615 11/16/2015	50WW24-102913 10/29/2013	50WW24FF-102913 10/29/2013	50WW24-032614 3/26/2014	50WW24FF-032614 3/26/2014	50WW24-062614 6/26/2014	50WW24FF-062614 6/26/2014	50WW24-110414 11/4/2014	50WW24FF-110414 11/4/2014	50WW24-021815 2/18/2015	50WW24FF-021815 2/18/2015	50WW24-052815 5/28/2015	50WW24FF-052815 5/28/2015	50WW24-081715 8/17/2015
Well Completion Zone:			**Upper Shallow**			**Upper Shallow**												
Water Quality Parameters																		
Temperature	°C		NA	18.78	NA	18.73	NA	16.49	NA	19.18	NA	19.37	NA	14.4	NA	18.95	NA	20.36
pH	pH Units		NA	6.26	NA	6.84	NA	6.75	NA	6.25	NA	6.51	NA	6.18	NA	5.58	NA	5.96
Conductivity	mS/CM		NA	6.08	NA	2.21	NA	2.04	NA	1.84	NA	1.83	NA	1.84	NA	1.47	NA	1.49
Dissolved Oxygen	mg/L		NA	0.35	NA	1.79	NA	0.96	NA	1.31	NA	0.09	NA	0.11	NA	0.75	NA	0.27
Turbidity	NTU		NA	13.7	NA	9	NA	8.1	NA	23.8	NA	20.9	NA	188	NA	121	NA	91.5
Oxidation Reduction Potential	mV		NA	197	NA	30	NA	80	NA	151	NA	115	NA	207	NA	150	NA	220
Ferrous Iron	mg/L		NA	NA	NA	0.26	NA	0.2	NA	NA	NA	0.01	NA	0.77	NA	0	NA	0
Alkalinity (310.2)																		
ALKALINITY, TOTAL	mg/L		N/A	263	NA	421	NA	314	NA	312	NA	340	NA	303	NA	278	NA	272
Phosphours (365.4)																		
PHOSPHORUS	mg/L		N/A	<0.2 U	NA	<0.2 U	NA	0.317 J	NA	<0.2 U	NA	0.182 J	NA	1.21	NA	<0.2 U	NA	<0.2 U
SM4500-S-(-2)-F-2000																		
SULFIDE	mg/L		N/A	<1 U	NA	<1 U	NA	<1 U	NA	<0.5 U	NA	0.772	NA	6.96	NA	<1 U	NA	<1 UJ
Total Organic Carbon (415.1)																		
TOTAL ORGANIC CARBON (TOC)	mg/L		N/A	39.2	NA	4.02	NA	4.78	NA	3.97	NA	3	NA	1.74 J	NA	<10 U	NA	<4 U
Iron (6010C)																		
IRON	mg/L		<0.1 U	NA	<0.1 U	0.569	<0.1 U	NA	<0.1 U	NA	<0.1 U	NA	0.106 J	NA	<0.1 U	NA	<0.1 U	N/A
Manganese (6020A)																		
MANGANESE	mg/L	7.8	0.0623	NA	0.0425	NA	0.0646	NA	0.0097	NA	0.00835	NA	0.00259 J	NA	0.0115	NA	0.017	N/A
Perchlorate (6850)																		
PERCHLORATE	ug/L	17	N/A	<1 U	NA	0.479	NA	<0.2 U	NA	110	NA	<0.2 U	NA	<0.2 U	NA	<0.2 U	NA	<0.2 U
Volatile Organic Compounds (8260B)																		
1,1,1,2-TETRACHLOROETHANE	ug/L	35	N/A	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	N/A	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	N/A	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	N/A	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	N/A	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
1,1-DICHLOROETHENE	ug/L	7	N/A	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U
1,1-DICHLOROPROPENE	ug/L	9.1	N/A	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	N/A	<0.3 U	NA	<0.3 U	NA	<0.3 U	NA	<0.3 U	NA	<0.3 U	NA	<0.3 U	NA	<0.3 U	NA	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	N/A	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	N/A	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	N/A	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	N/A	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	N/A	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	N/A	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	N/A	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	N/A	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	N/A	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	N/A	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	N/A	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	N/A	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
2,2-DICHLOROPROPANE	ug/L	13	N/A	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
2-BUTANONE	ug/L	15000	N/A	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U
2-CHLOROTOLUENE	ug/L	490	N/A	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
2-HEXANONE	ug/L	120	N/A	<5 UJ	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 UJ	NA	<5 U	NA	<5 U	NA	<5 U
4-CHLOROTOLUENE	ug/L	490	N/A	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 UJ	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	N/A	<5 UJ	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 UJ	NA	<5 U
ACETONE	ug/L	22000	N/A	<5 UJ	NA	<5 U	NA	<5 U	NA	<5 U	NA	<5 UJ	NA	<5 U	NA	<5 U	NA	<5 U
BENZENE	ug/L	5	N/A	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
BROMOBENZENE	ug/L	200	N/A	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	N/A	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	N/A	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
BROMOFORM	ug/L	120	N/A	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U
BROMOMETHANE	ug/L	34	N/A	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 UJ	NA	<1 UJ	NA	<1 UJ
CARBON DISULFIDE	ug/L	2400	N/A	<1 UJ	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 UJ	NA	<1 U
CARBON TETRACHLORIDE	ug/L	5	N/A	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
CHLOROBENZENE	ug/L	100	N/A	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
CHLOROETHANE	ug/L	98000	N/A	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U
CHLOROFORM	ug/L	240	N/A	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U

Table 2-3: Groundwater Results for Year 1 and 2 - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL/ UTL	50WW23FF-081715 8/17/2015	50WW23-111615 11/16/2015	50WW23FF-111615 11/16/2015	50WW24-102913 10/29/2013	50WW24FF-102913 10/29/2013	50WW24-032614 3/26/2014	50WW24FF-032614 3/26/2014	50WW24-062614 6/26/2014	50WW24FF-062614 6/26/2014	50WW24-110414 11/4/2014	50WW24FF-110414 11/4/2014	50WW24-021815 2/18/2015	50WW24FF-021815 2/18/2015	50WW24-052815 5/28/2015	50WW24FF-052815 5/28/2015	50WW24-081715 8/17/2015
CHLOROMETHANE	ug/L	70	N/A	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	N/A	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	N/A	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	N/A	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
DIBROMOMETHANE	ug/L	120	N/A	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	N/A	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
ETHYLBENZENE	ug/L	700	N/A	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	N/A	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	N/A	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
M,P-XYLENE	ug/L	10000	N/A	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U
METHYLENE CHLORIDE	ug/L	5	N/A	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
NAPHTHALENE	ug/L	490	N/A	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U
N-BUTYLBENZENE	ug/L	1200	N/A	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
N-PROPYLBENZENE	ug/L	980	N/A	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
O-XYLENE	ug/L	10000	N/A	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	N/A	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	N/A	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
STYRENE	ug/L	100	N/A	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	N/A	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
TETRACHLOROETHENE	ug/L	5	N/A	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
TOLUENE	ug/L	1000	N/A	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	N/A	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	N/A	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U	NA	<1 U
TRICHLOROETHENE	ug/L	5	N/A	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	0.268 J	NA	<0.5 U
TRICHLOROFLUOROMETHANE	ug/L	7300	N/A	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
VINYL CHLORIDE	ug/L	2	N/A	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
Inorganic Anions (9056)																		
CHLORIDE	mg/L		N/A	2030	NA	437	NA	399	NA	380	NA	391	NA	390	NA	342	NA	427
NITRATE	mg/L	10	N/A	<2 U	NA	<0.4 U	NA	<0.4 U	NA	<3 UJ	NA	<0.6 U	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U
NITRITE	mg/L	1	N/A	<2 U	NA	<0.4 U	NA	<0.4 U	NA	<3 UJ	NA	0.543 J	NA	<0.4 U	NA	0.418 J	NA	<0.4 U
SULFATE	mg/L		N/A	80.5	NA	194	NA	125	NA	85.8	NA	116	NA	109	NA	95	NA	101
Dissolved Gases (RSK-175)																		
CARBON DIOXIDE	ug/L		N/A	230000	NA	NA	NA	146000	NA	181000	NA	68900	NA	494000	NA	544000	NA	580000
ETHANE	ug/L		N/A	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U
ETHENE	ug/L		N/A	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U
METHANE	ug/L		N/A	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U	NA	<2 U

Blue Highlighting Indicates concentrations above the MCL/MSC/PCL

Wells 50WW02, 50WW03 and 50WW04 were dry. No samples collected.

Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter, "FF" indicate sample filtered in the field with 0.45 micron filter. Metals results for "FF" samples are dissolved.

"FD" or "D" in Sample ID indicates a field duplicate sample.

(1) Only limited data validation possible; Not used in plume delineation

(2) Substituted for 50WW08 and 50WW13 October 2013 data for plume delineation

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Limit

mg/L - milligrams per liter

MSC - Medium-Specific Concentrations

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

ug/L - micrograms per liter

UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

UTL - Upper Tolerance Limit

Table 2-3: Groundwater Results for Year 1 and 2 - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL/ UTL	50WW24FF-081715 8/17/2015	50WW24-111615 11/16/2015	50WW24FF-111615 11/16/2015	50WW26-110613 11/6/2013	50WW26FD-110613 11/6/2013	50WW26-032614 3/26/2014	50WW26FD-032614 3/26/2014	50WW26-062014 6/20/2014	50WW26-111314 11/13/2014	50WW26-021315 2/13/2015	50WW26-052315 5/23/2015	50WW26-082015 8/20/2015	50WW26-111015 11/10/2015	50WW26FD-111015 11/10/2015	50WW27-110613 11/6/2013	50WW27-031714 3/17/2014
Well Completion Zone:			**Upper Shallow**			**Lower Shallow**											**Lower Shallow**	
Water Quality Parameters																		
Temperature	°C		NA	18.57	NA	17.53	NA	15.09	NA	20.84	16.09	19.83	27.68	20.69	22.03	NA	19.6	20.29
pH	pH Units		NA	5.72	NA	5.68	NA	5.91	NA	5.5	5.65	6.05	5.78	5.33	5.21	NA	6.8	7
Conductivity	mS/CM		NA	1.8	NA	6.22	NA	5.67	NA	5.1	5.31	4.52	3.23	4.08	4.86	NA	1.34	1.59
Dissolved Oxygen	mg/L		NA	0	NA	0.64	NA	0.76	NA	0.67	0.09	0	0.72	0.32	0.28	NA	0.51	0.25
Turbidity	NTU		NA	100	NA	19.2	NA	75.4	NA	87.5	55.1	101	6.9	259	409	NA	20.7	43.9
Oxidation Reduction Potential	mV		NA	220	NA	82	NA	141	NA	141	157	170	110	238	204	NA	-144	-66
Ferrous Iron	mg/L		NA	NA	NA	0.67	NA	0.73	NA	NA	NA	0.23	1.07	0.05	NA	NA	1.38	1.27
Alkalinity (310.2)																		
ALKALINITY, TOTAL	mg/L		N/A	291	NA	NA	NA	NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA
Phosphours (365.4)																		
PHOSPHORUS	mg/L		N/A	<0.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA
SM4500-S-(-2)-F-2000																		
SULFIDE	mg/L		N/A	<1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA
Total Organic Carbon (415.1)																		
TOTAL ORGANIC CARBON (TOC)	mg/L		N/A	77.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA
Iron (6010C)																		
IRON	mg/L		<0.1 U	NA	<0.1 U	NA	NA	NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA
Manganese (6020A)																		
MANGANESE	mg/L	7.8	0.0351	NA	0.0126	NA	NA	NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA
Perchlorate (6850)																		
PERCHLORATE	ug/L	17	N/A	<1 U	NA	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<1 U	<1 U	<0.2 U	<0.2 U
Volatile Organic Compounds (8260B)																		
1,1,1,2-TETRACHLOROETHANE	ug/L	35	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	N/A	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	N/A	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,1-DICHLOROETHENE	ug/L	7	N/A	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,1-DICHLOROPROPENE	ug/L	9.1	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	N/A	<0.3 U	NA	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	N/A	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	N/A	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	N/A	<2 U	NA	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 UJ	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	N/A	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	N/A	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	N/A	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	N/A	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
2,2-DICHLOROPROPANE	ug/L	13	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
2-BUTANONE	ug/L	15000	N/A	<5 U	NA	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 UJ	<5 U
2-CHLOROTOLUENE	ug/L	490	N/A	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
2-HEXANONE	ug/L	120	N/A	<5 UJ	NA	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 UJ	<5 U
4-CHLOROTOLUENE	ug/L	490	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	N/A	<5 UJ	NA	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 UJ	<5 U
ACETONE	ug/L	22000	N/A	<5 UJ	NA	3.32 J	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 UJ	<5 U
BENZENE	ug/L	5	N/A	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOBENZENE	ug/L	200	N/A	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	N/A	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
BROMOFORM	ug/L	120	N/A	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
BROMOMETHANE	ug/L	34	N/A	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 U	<1 U	<1 U	<1 U
CARBON DISULFIDE	ug/L	2400	N/A	<1 UJ	NA	<1 U	<1 U	<1 U	0.556 J	<1 U	<1 U	<1 U	<1 UJ	<1 U	<1 U	<1 U	<1 U	<1 U
CARBON TETRACHLORIDE	ug/L	5	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CHLOROBENZENE	ug/L	100	N/A	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
CHLOROETHANE	ug/L	98000	N/A	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
CHLOROFORM	ug/L	240	N/A	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U

Table 2-3: Groundwater Results for Year 1 and 2 - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL/ UTL	50WW24FF-081715 8/17/2015	50WW24-111615 11/16/2015	50WW24FF-111615 11/16/2015	50WW26-110613 11/6/2013	50WW26FD-110613 11/6/2013	50WW26-032614 3/26/2014	50WW26FD-032614 3/26/2014	50WW26-062014 6/20/2014	50WW26-111314 11/13/2014	50WW26-021315 2/13/2015	50WW26-052315 5/23/2015	50WW26-082015 8/20/2015	50WW26-111015 11/10/2015	50WW26FD-111015 11/10/2015	50WW27-110613 11/6/2013	50WW27-031714 3/17/2014
CHLOROMETHANE	ug/L	70	N/A	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	0.611 J
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOMETHANE	ug/L	120	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ETHYLBENZENE	ug/L	700	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
M,P-XYLENE	ug/L	10000	N/A	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
METHYLENE CHLORIDE	ug/L	5	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
NAPHTHALENE	ug/L	490	N/A	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
N-BUTYLBENZENE	ug/L	1200	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
N-PROPYLBENZENE	ug/L	980	N/A	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
O-XYLENE	ug/L	10000	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
STYRENE	ug/L	100	N/A	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TOLUENE	ug/L	1000	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	N/A	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
TRICHLOROETHENE	ug/L	5	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRICHLOROFLUOROMETHANE	ug/L	7300	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	N/A	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
Inorganic Anions (9056)																		
CHLORIDE	mg/L		N/A	386	NA	NA	NA	NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA
NITRATE	mg/L	10	N/A	<0.4 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA
NITRITE	mg/L	1	N/A	<0.4 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA
SULFATE	mg/L		N/A	108	NA	NA	NA	NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA
Dissolved Gases (RSK-175)																		
CARBON DIOXIDE	ug/L		N/A	736000	NA	NA	NA	NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA
ETHANE	ug/L		N/A	<2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA
ETHENE	ug/L		N/A	<2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA
METHANE	ug/L		N/A	<2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA

Blue Highlighting Indicates concentrations above the MCL/MSC/PCL

Wells 50WW02, 50WW03 and 50WW04 were dry. No samples collected.

Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter, "FF" indicate sample filtered in the field with 0.45 micron filter. Metals results for "FF" samples are dissolved.

"FD" or "D" in Sample ID indicates a field duplicate sample.

(1) Only limited data validation possible; Not used in plume delineation

(2) Substituted for 50WW08 and 50WW13 October 2013 data for plume delineation

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Limit

mg/L - milligrams per liter

MSC - Medium-Specific Concentrations

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

ug/L - micrograms per liter

UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

UTL - Upper Tolerance Limit

Table 2-3: Groundwater Results for Year 1 and 2 - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL/ UTL	50WW27FD-031714 3/17/2014	50WW27-061914 6/19/2014	50WW27-110714 11/7/2014	50WW27FD-110714 11/7/2014	50WW27-021215 2/12/2015	50WW27-052315 5/23/2015	50WW27-082015 8/20/2015	50WW27-111115 11/11/2015	50WW28-070914 7/9/2014	50WW28-111214 11/12/2014	50WW28-021715 2/17/2015	50WW28FD-021715 2/17/2015	50WW28-052615 5/26/2015	50WW28FD-052615 5/26/2015	50WW28-082015 8/20/2015	50WW28-111315 11/13/2015
Well Completion Zone:			**Lower Shallow**								**Upper Shallow**							
Water Quality Parameters																		
Temperature	°C		NA	21.6	17.7	NA	18.69	20.95	19.8	19.94	22.86	14.45	13.34	NA	26.6	NA	20.85	17.28
pH	pH Units		NA	5.97	6.77	NA	7.51	6.83	5.59	7.08	5.65	5.71	6.42	NA	5.19	NA	4.81	4.4
Conductivity	mS/CM		NA	1.71	1.67	NA	1.57	1.41	1.19	1.58	0.115	0.101	0.117	NA	0.103	NA	0.09	0.116
Dissolved Oxygen	mg/L		NA	0.38	0	NA	0	4.17	0	0.1	3.25	0	1.99	NA	0.72	NA	0	0.02
Turbidity	NTU		NA	71.3	36	NA	117	37.2	200	45	95.5	15.3	55.1	NA	35.8	NA	26	30.3
Oxidation Reduction Potential	mV		NA	-101	-83	NA	-94	18	145	-67	260	181	143	NA	180	NA	303	294
Ferrous Iron	mg/L		NA	NA	NA	NA	1.04	0.88	1.11	NA	NA	NA	0.92	NA	0	NA	0.07	NA
Alkalinity (310.2)																		
ALKALINITY, TOTAL	mg/L		NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA	NA	NA	N/A	NA
Phosphours (365.4)																		
PHOSPHORUS	mg/L		NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA	NA	NA	N/A	NA
SM4500-S-(-2)-F-2000																		
SULFIDE	mg/L		NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA	NA	NA	N/A	NA
Total Organic Carbon (415.1)																		
TOTAL ORGANIC CARBON (TOC)	mg/L		NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA	NA	NA	N/A	NA
Iron (6010C)																		
IRON	mg/L		NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA	NA	NA	N/A	NA
Manganese (6020A)																		
MANGANESE	mg/L	7.8	NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA	NA	NA	N/A	NA
Perchlorate (6850)																		
PERCHLORATE	ug/L	17	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<1 U	2.57	2.01 J	1.44	1.44	1.04	1.05	0.688	1.64
Volatile Organic Compounds (8260B)																		
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	<0.4 U	<0.4 UJ	<0.4 UJ	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,1-DICHLOROETHENE	ug/L	7	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	<2 U	<2 UJ	<2 UJ	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
2-BUTANONE	ug/L	15000	<5 U	<5 U	<5 UJ	<5 UJ	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
2-CHLOROTOLUENE	ug/L	490	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
2-HEXANONE	ug/L	120	<5 U	<5 U	<5 UJ	<5 UJ	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 UJ
4-CHLOROTOLUENE	ug/L	490	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	<5 U	<5 UJ	<5 UJ	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 UJ	<5 U	<5 U	<5 UJ
ACETONE	ug/L	22000	<5 U	<5 U	<5 UJ	<5 UJ	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 UJ
BENZENE	ug/L	5	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOBENZENE	ug/L	200	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
BROMOFORM	ug/L	120	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
BROMOMETHANE	ug/L	34	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 U	<1 U	<1 U	<1 UJ	<1 UJ	<1 U	<1 U	<1 UJ	<1 U
CARBON DISULFIDE	ug/L	2400	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 U	<1 UJ	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 U	<1 U	<1 UJ
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CHLOROBENZENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
CHLOROETHANE	ug/L	98000	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
CHLOROFORM	ug/L	240	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U

Table 2-3: Groundwater Results for Year 1 and 2 - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL/ UTL	50WW27FD-031714 3/17/2014	50WW27-061914 6/19/2014	50WW27-110714 11/7/2014	50WW27FD-110714 11/7/2014	50WW27-021215 2/12/2015	50WW27-052315 5/23/2015	50WW27-082015 8/20/2015	50WW27-111115 11/11/2015	50WW28-070914 7/9/2014	50WW28-111214 11/12/2014	50WW28-021715 2/17/2015	50WW28FD-021715 2/17/2015	50WW28-052615 5/26/2015	50WW28FD-052615 5/26/2015	50WW28-082015 8/20/2015	50WW28-111315 11/13/2015
CHLOROMETHANE	ug/L	70	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	0.518 J	0.871 J	0.529 J	0.493 J	0.691 J	0.709 J	0.33 J	0.581 J	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOMETHANE	ug/L	120	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ETHYLBENZENE	ug/L	700	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
M,P-XYLENE	ug/L	10000	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
METHYLENE CHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
NAPHTHALENE	ug/L	490	<0.4 U	<0.4 U	<0.4 UJ	<0.4 UJ	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
N-BUTYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
N-PROPYLBENZENE	ug/L	980	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
O-XYLENE	ug/L	10000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
STYRENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TOLUENE	ug/L	1000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
TRICHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	0.251 J	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
Inorganic Anions (9056)																		
CHLORIDE	mg/L		NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA	NA	NA	N/A	NA
NITRATE	mg/L	10	NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA	NA	NA	N/A	NA
NITRITE	mg/L	1	NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA	NA	NA	N/A	NA
SULFATE	mg/L		NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA	NA	NA	N/A	NA
Dissolved Gases (RSK-175)																		
CARBON DIOXIDE	ug/L		NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA	NA	NA	N/A	NA
ETHANE	ug/L		NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA	NA	NA	N/A	NA
ETHENE	ug/L		NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA	NA	NA	N/A	NA
METHANE	ug/L		NA	NA	NA	NA	NA	NA	N/A	NA	NA	NA	NA	NA	NA	NA	N/A	NA

Blue Highlighting Indicates concentrations above the MCL/MSC/PCL

Wells 50WW02, 50WW03 and 50WW04 were dry. No samples collected.

Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter, "FF" indicate sample filtered in the field with 0.45 micron filter. Metals results for "FF" samples are dissolved.

"FD" or "D" in Sample ID indicates a field duplicate sample.

(1) Only limited data validation possible; Not used in plume delineation

(2) Substituted for 50WW08 and 50WW13 October 2013 data for plume delineation

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Limit

mg/L - milligrams per liter

MSC - Medium-Specific Concentrations

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

ug/L - micrograms per liter

UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

UTL - Upper Tolerance Limit

Table 2-3: Groundwater Results for Year 1 and 2 - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL/ UTL	GPW1-031414 3/14/2014	GPW1-021715 2/17/2015	GPW1-050815 5/8/2015	GPW1-052215 5/22/2015	GPW1-111315 11/13/2015	GPW1A-021715 2/17/2015	GPW1A-050815 5/8/2015	LHSMW54-110713 11/7/2013	LHSMW54-021815 2/18/2015	LHSMW54-052715 5/27/2015	LHSMW54-111315 11/13/2015
Well Completion Zone:			**Surface Water**							**Upper Shallow**			
Water Quality Parameters													
Temperature	°C		NA	NA	NA	NA	NA	NA	NA	16.91	17.2	18.49	18.57
pH	pH Units		NA	NA	NA	NA	NA	NA	NA	6.61	7.46	6.3	5.89
Conductivity	mS/CM		NA	NA	NA	NA	NA	NA	NA	1.33	1.37	1.27	1.43
Dissolved Oxygen	mg/L		NA	NA	NA	NA	NA	NA	NA	0.97	0	0.71	0.07
Turbidity	NTU		NA	NA	NA	NA	NA	NA	NA	0	17.5	15.1	1.1
Oxidation Reduction Potential	mV		NA	NA	NA	NA	NA	NA	NA	-16	24	83	132
Ferrous Iron	mg/L		NA	NA	NA	NA	NA	NA	NA	1.85	0.27	0.22	NA
Alkalinity (310.2)													
ALKALINITY, TOTAL	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phosphours (365.4)													
PHOSPHORUS	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SM4500-S-(-2)-F-2000													
SULFIDE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Organic Carbon (415.1)													
TOTAL ORGANIC CARBON (TOC)	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron (6010C)													
IRON	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese (6020A)													
MANGANESE	mg/L	7.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Perchlorate (6850)													
PERCHLORATE	ug/L	17	1.2	0.737	0.156 J	0.213 J	0.139 J	38.2	16	<0.2 U	0.271 J	<0.2 U	<1 UJ
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,1-DICHLOROETHENE	ug/L	7	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
2-BUTANONE	ug/L	15000	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
2-CHLOROTOLUENE	ug/L	490	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
2-HEXANONE	ug/L	120	<5 U	<5 U	<5 U	<5 U	<5 UJ	<5 U	<5 U	<5 U	<5 U	<5 U	<5 UJ
4-CHLOROTOLUENE	ug/L	490	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	<5 U	<5 U	<5 U	<5 UJ	<5 U	<5 U	<5 U	<5 U	<5 UJ	<5 UJ
ACETONE	ug/L	22000	3.39 J	<5 U	5.18 J	2.97 J	<5 UJ	<5 U	2.55 J	2.52 J	<5 U	3.5 J	<5 UJ
BENZENE	ug/L	5	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOBENZENE	ug/L	200	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
BROMOFORM	ug/L	120	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
BROMOMETHANE	ug/L	34	<1 U	<1 UJ	<1 U	<1 U	<1 U	<1 UJ	<1 U	<1 U	<1 U	<1 UJ	<1 U
CARBON DISULFIDE	ug/L	2400	<1 U	<1 U	<1 U	<1 UJ	<1 UJ	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 UJ
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CHLOROBENZENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
CHLOROETHANE	ug/L	98000	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
CHLOROFORM	ug/L	240	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U

Table 2-3: Groundwater Results for Year 1 and 2 - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL/ UTL	GPW1-031414 3/14/2014	GPW1-021715 2/17/2015	GPW1-050815 5/8/2015	GPW1-052215 5/22/2015	GPW1-111315 11/13/2015	GPW1A-021715 2/17/2015	GPW1A-050815 5/8/2015	LHSMW54-110713 11/7/2013	LHSMW54-021815 2/18/2015	LHSMW54-052715 5/27/2015	LHSMW54-111315 11/13/2015
CHLOROMETHANE	ug/L	70	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	0.392 J	0.316 J	0.261 J	0.323 J
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOMETHANE	ug/L	120	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	<0.5 U
ETHYLBENZENE	ug/L	700	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
M,P-XYLENE	ug/L	10000	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
METHYLENE CHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
NAPHTHALENE	ug/L	490	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U
N-BUTYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
N-PROPYLBENZENE	ug/L	980	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
O-XYLENE	ug/L	10000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
STYRENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TOLUENE	ug/L	1000	<0.5 U	<0.5 U	0.389 J	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
TRICHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	112	93.8	95.9	88.3
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
Inorganic Anions (9056)													
CHLORIDE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NITRATE	mg/L	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NITRITE	mg/L	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SULFATE	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Gases (RSK-175)													
CARBON DIOXIDE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHANE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ETHENE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
METHANE	ug/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Blue Highlighting Indicates concentrations above the MCL/MSC/PCL

Wells 50WW02, 50WW03 and 50WW04 were dry. No samples collected.

Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter, "FF" indicate sample filtered in the field with 0.45 micron filter. Metals results for "FF" samples are dissolved.

"FD" or "D" in Sample ID indicates a field duplicate sample.

(1) Only limited data validation possible; Not used in plume delineation

(2) Substituted for 50WW08 and 50WW13 October 2013 data for plume delineation

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Limit

mg/L - milligrams per liter

MSC - Medium-Specific Concentrations

NA - not analyzed

NR – not reportable due to sample being taken from bailer

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

ug/L - micrograms per liter

UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

UTL - Upper Tolerance Limit

Table 2-4: Historical COC Concentrations - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL	47WW38-100901 9/1/2010	47WW38-100901-FD 9/1/2010	47WW38-110613 11/6/2013	47WW38-111214 11/12/2014	47WW38-021815 2/18/2015	47WW38-052715 5/27/2015	47WW38-111315 11/13/2015	50SW06-021715 2/17/2015	50SW06-052215 5/22/2015	50SW06-111315 11/13/2015	50WW01-031314 3/13/2014	50WW01-052715 5/27/2015	50WW01-082015 8/20/2015	50WW02-980930 9/30/1998
Well Completion Zone:			**Lower Shallow**							**Surface Water**			**Upper Shallow**			**Upper Shallow**
PERCHLORATE	ug/L	17	4110	4520	1160 J	860	1500	18	579 J	0.684	0.218 J	1.44 J	<0.2 U	<0.2 U	<0.2 U	NA
1,1-DICHLOROETHENE	ug/L	7	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	50
1,2-DICHLOROETHANE	ug/L	5	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	98
CIS-1,2-DICHLOROETHENE	ug/L	70	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	0.372 J	0.41 J	2100
TETRACHLOROETHENE	ug/L	5	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	35
TRICHLOROETHENE	ug/L	5	0.565 J	0.605 J	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	0.685 J	0.543 J	2900
VINYL CHLORIDE	ug/L	2	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	100

Blue Highlighting Indicates Analyte Detected Above MCL/MSC/PCL

(1) Only limited data validation possible; Not used in plume delineation

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

MCL/MSC - Maximum Contaminant Limit/Medium-Specific Concentrations

NA - not analyzed

PCL - Texas Residential Groundwater protective concentration level

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-4: Historical COC Concentrations - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL	50WW02-981022 10/22/1998	50WW02-000524 5/24/2000	50WW02-001003 10/3/2000	50WW02-010209 2/9/2001	50WW02-020311 3/11/2002	50WW02-020921 9/21/2002	50WW02-040830 8/30/2004	50WW02-050511 5/11/2005	50WW02-FEB2007 2/23/2007	50WW02-040309 4/3/2009	50WW03-980930 9/30/1998	50WW03-000522 5/22/2000	50WW03-001002 10/2/2000	50WW03-010209 2/9/2001
Well Completion Zone:			**Upper Shallow**										**Upper Shallow**			
PERCHLORATE	ug/L	17	18000	4190	9950	10000	6840	7600	2500	1630	532	110	NA	810	<8 U	<1.4 U
1,1-DICHLOROETHENE	ug/L	7	NA	<350 U	<200 U	NA	NA	NA	20	4.81	6.5	<50 U	<1 U	NA	NA	NA
1,2-DICHLOROETHANE	ug/L	5	NA	<350 U	79	NA	NA	NA	58	20.2	18.8	18 J	<1 U	NA	NA	NA
CIS-1,2-DICHLOROETHENE	ug/L	70	NA	3100	4060	NA	NA	NA	1800 J	954	855	978	<1 U	NA	NA	NA
TETRACHLOROETHENE	ug/L	5	NA	<350 U	<200 U	NA	NA	NA	28	6.87	9.3	<50 U	<1 U	NA	NA	NA
TRICHLOROETHENE	ug/L	5	NA	18000	16100	NA	NA	NA	9200 J	4840	5420	8050	0.57	NA	NA	NA
VINYL CHLORIDE	ug/L	2	NA	<350 U	<200 U	NA	NA	NA	36	8.56	15.2	<50 U	<1 U	NA	NA	NA

Blue Highlighting Indicates Analyte Detected Above MCL/MSC/PCL

(1) Only limited data validation possible; Not used in plume delineation

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

MCL/MSC - Maximum Contaminant Limit/Medium-Specific Concentrations

NA - not analyzed

PCL - Texas Residential Groundwater protective concentration level

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-4: Historical COC Concentrations - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL	50WW03-020312 3/12/2002	50WW03-020921 9/21/2002	50WW03-040830 8/30/2004	50WW03-050511 5/11/2005	50WW03-FEB2007 2/24/2007	50WW04-980930 9/30/1998	50WW04-981022 10/22/1998	50WW04-000522 5/22/2000	50WW04-001002 10/2/2000	50WW04-020312 3/12/2002	50WW04-020921 9/21/2002	50WW04-040831 8/31/2004	50WW04-050510 5/10/2005	50WW05-020921 9/21/2002
Well Completion Zone:			**Upper Shallow**					**Upper Shallow**								**Upper Shallow**
PERCHLORATE	ug/L	17	<4 U	<4 U	<1 U	<4 U	<10 U	NA	<1 U	<1 U	<16 U	<4 U	<4 U	<1 U	<5 U	5850
1,1-DICHLOROETHENE	ug/L	7	NA	NA	<5 U	<1 U	<2 U	<1 U	NA	NA	NA	NA	NA	<5 U	<1 U	NA
1,2-DICHLOROETHANE	ug/L	5	NA	NA	<5 U	<1 U	<2 U	<1 U	NA	NA	NA	NA	NA	<5 U	<1 U	NA
CIS-1,2-DICHLOROETHENE	ug/L	70	NA	NA	<5 U	<1 U	<2 U	0.64	NA	NA	NA	NA	NA	<5 U	<1 U	NA
TETRACHLOROETHENE	ug/L	5	NA	NA	<5 U	<1 U	<2 U	<1 U	NA	NA	NA	NA	NA	<5 U	<1 U	NA
TRICHLOROETHENE	ug/L	5	NA	NA	8	<1 U	<2 U	9.4	NA	NA	NA	NA	NA	2 J	<1 U	NA
VINYL CHLORIDE	ug/L	2	NA	NA	<5 U	<1 U	<2 U	<1 U	NA	NA	NA	NA	NA	<5 U	<1 U	NA

Blue Highlighting Indicates Analyte Detected Above MCL/MSC/PCL

(1) Only limited data validation possible; Not used in plume delineation

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

MCL/MSC - Maximum Contaminant Limit/Medium-Specific Concentrations

NA - not analyzed

PCL - Texas Residential Groundwater protective concentration level

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-4: Historical COC Concentrations - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL	50WW05-050511 5/11/2005	50WW05-FEB2007 2/23/2007	50WW05-040409 4/4/2009	50WW05-100805 8/5/2010	50WW05-110613 11/6/2013	50WW05-031714 3/17/2014	50WW05-062014 6/20/2014	50WW05-111114 11/11/2014	50WW05-021315 2/13/2015	50WW05FD-021315 2/13/2015	50WW05-052615 5/26/2015	50WW05-081915 8/19/2015	50WW05FD-081915 8/19/2015	50WW05-111315 11/13/2015
Well Completion Zone:			**Upper Shallow**													
PERCHLORATE	ug/L	17	719	27.8	<4 U	0.189 J	0.397 J	<0.2 U	20.5	<0.2 U	<0.2 U	<0.2 U	<0.2 U	1.69	1.64	0.7 J
1,1-DICHLOROETHENE	ug/L	7	21.6	12.9	4.61 J	5.73	2.57	2.12	2.67	2.68	1.76 J	1.91 J	1.77 J	2.02	2.08	1.42 J
1,2-DICHLOROETHANE	ug/L	5	24.1	13.5	7.39	7.91	2.81	2.54	2.82	2.97	1.58	1.62	1.9	1.6	1.66	1.93
CIS-1,2-DICHLOROETHENE	ug/L	70	66.3	48.2	29	30.1	12.4	10.5	12.6	15.7	11.7	12.6	9.81	29.1	28.1	17.2
TETRACHLOROETHENE	ug/L	5	6.76	5.1	1.61 J	2.64 J	1.54	1.01	1.48	1.6	0.963 J	0.888 J	0.86 J	0.787 J	0.651 J	0.848 J
TRICHLOROETHENE	ug/L	5	3130	1460	601	788	280	204	270	329	193	196	197	200	200	210
VINYL CHLORIDE	ug/L	2	3.69	2.5	<5 U	1.48 J	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U

Blue Highlighting Indicates Analyte Detected Above MCL/MSC/PCL

(1) Only limited data validation possible; Not used in plume delineation

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

MCL/MSC - Maximum Contaminant Limit/Medium-Specific Concentrations

NA - not analyzed

PCL - Texas Residential Groundwater protective concentration level

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-4: Historical COC Concentrations - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL	50WW06-040830 8/30/2004	50WW06-050511 5/11/2005	50WW06-FEB2007 2/22/2007	50WW06-100807 8/7/2010	50WW06-100807-FD 8/7/2010	50WW06-102813 10/28/2013	50WW06-031114 3/11/2014	50WW06-062514 6/25/2014	50WW06-110414 11/4/2014	50WW06-021715 2/17/2015	50WW06-052015 5/20/2015	50WW06-081815 8/18/2015	50WW06-111215 11/12/2015	50WW07-021908 2/19/2008
Well Completion Zone:			**Lower Shallow**													**Upper Shallow**
PERCHLORATE	ug/L	17	6.7	24.8	<10 U	113	131	670	2090	700	1510	2490	3000	2050	5860	NA
1,1-DICHLOROETHENE	ug/L	7	<5 U	<1 U	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,2-DICHLOROETHANE	ug/L	5	<5 U	<1 U	<2 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	0.25 J	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	<5 U	0.332 J	<2 U	<1 U	<1 U	0.994 J	0.39 J	0.299 J	1.61	0.572 J	0.637 J	0.874 J	1.04	<1 U
TETRACHLOROETHENE	ug/L	5	<5 U	<1 U	<2 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U
TRICHLOROETHENE	ug/L	5	15	4.7	2	3.33	3.28	20.9	36.5	27.4	36.1	53.9	49.1	34.7	59.4	<1 U
VINYL CHLORIDE	ug/L	2	<5 U	<1 U	<2 U	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<1 U

Blue Highlighting Indicates Analyte Detected Above MCL/MSC/PCL

(1) Only limited data validation possible; Not used in plume delineation

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

MCL/MSC - Maximum Contaminant Limit/Medium-Specific Concentrations

NA - not analyzed

PCL - Texas Residential Groundwater protective concentration level

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-4: Historical COC Concentrations - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL	50WW07-040409 4/4/2009	50WW07-100807 8/7/2010	50WW07-110513 11/5/2013	50WW07-032514 3/25/2014	50WW07-062014 6/20/2014	50WW07-110714 11/7/2014	50WW07-021315 2/13/2015	50WW07-052615 5/26/2015	50WW07-082115 8/21/2015	50WW07-110915 11/9/2015	50WW08-103013 (1) 10/30/2013	50WW08-031114 3/11/2014	50WW08-062414 6/24/2014	50WW08-110614 11/6/2014
Well Completion Zone:			**Upper Shallow**										**Upper Shallow**			
PERCHLORATE	ug/L	17	<4 U	0.262	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<1 U	6404	91.5	132	56.3
1,1-DICHLOROETHENE	ug/L	7	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<5 U	1.71 J	<5 U	<2.5 U
1,2-DICHLOROETHANE	ug/L	5	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	5.73	4.36 J	2.12 J
CIS-1,2-DICHLOROETHENE	ug/L	70	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	30.6	103	86	48.5
TETRACHLOROETHENE	ug/L	5	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	2.15	2.03 J	1.9 J
TRICHLOROETHENE	ug/L	5	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	0.42 J	<0.5 U	<0.5 U	247	845	814	685
VINYL CHLORIDE	ug/L	2	<1 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<2 U	0.517 J	<2.5 U	<1.25 U

Blue Highlighting Indicates Analyte Detected Above MCL/MSC/PCL

(1) Only limited data validation possible; Not used in plume delineation

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

MCL/MSC - Maximum Contaminant Limit/Medium-Specific Concentrations

NA - not analyzed

PCL - Texas Residential Groundwater protective concentration level

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-4: Historical COC Concentrations - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL	50WW08-021715 2/17/2015	50WW08-052115 5/21/2015	50WW08-081715 8/17/2015	50WW08-111615 11/16/2015	50WW09-110113 11/1/2013	50WW09-031414 3/14/2014	50WW09-061914 6/19/2014	50WW09-111214 11/12/2014	50WW09-021315 2/13/2015	50WW09-052315 5/23/2015	50WW09-082115 8/21/2015	50WW09FD-082115 8/21/2015	50WW09-111115 11/11/2015	50WW09FD-111115 11/11/2015
Well Completion Zone:			**Upper Shallow**				**Lower Shallow**									
PERCHLORATE	ug/L	17	99	200	157	32.4 J	<0.2 U	<0.2 U	<0.2 U	0.593	<0.2 U	0.196 J	<0.2 U	<0.2 U	<1 U	<1 U
1,1-DICHLOROETHENE	ug/L	7	<2.5 U	<2.5 U	<2.5 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,2-DICHLOROETHANE	ug/L	5	3.59	3.6	2.63	1.26	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	1.11	1.66	1.83	1.09	1.05
CIS-1,2-DICHLOROETHENE	ug/L	70	70.5	62.1	45.4	17.7	<0.5 U	0.579 J	1.16	0.36 J	1.04	19.7	29.4	29.5	16.3	16
TETRACHLOROETHENE	ug/L	5	2.55	2 J	1.2 J	1.21	<0.5 U	<0.5 U	<0.5 U	<0.5 U	0.353 J	0.423 J	0.536 J	0.34 J	0.404 J	0.393 J
TRICHLOROETHENE	ug/L	5	852	712	375	288	0.26 J	20.2	36.3	19.8	57 J	202	235	228	173	170
VINYL CHLORIDE	ug/L	2	<1.25 U	<1.25 U	<1.25 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U

Blue Highlighting Indicates Analyte Detected Above MCL/MSC/PCL

(1) Only limited data validation possible; Not used in plume delineation

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

MCL/MSC - Maximum Contaminant Limit/Medium-Specific Concentrations

NA - not analyzed

PCL - Texas Residential Groundwater protective concentration level

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-4: Historical COC Concentrations - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL	50WW10-110513 11/5/2013	50WW10FD-110513 11/5/2013	50WW10-031414 3/14/2014	50WW10-061914 6/19/2014	50WW10FD-061914 6/19/2014	50WW10-111214 11/12/2014	50WW10-021315 2/13/2015	50WW10-052315 5/23/2015	50WW10-082115 8/21/2015	50WW10-111115 11/11/2015	50WW11-102813 10/28/2013	50WW11-031314 3/13/2014	50WW11-062514 6/25/2014	50WW11-110514 11/5/2014
Well Completion Zone:			**Intermediate**										**Upper Shallow**			
PERCHLORATE	ug/L	17	0.906	0.924	0.272 J	0.499	1.46	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	21700	2570	8910	22300
1,1-DICHLOROETHENE	ug/L	7	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	17.4	1.88 J	7.35	27.9
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	15.2	2.28 J	6.01	24.3
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	43.9	4.46	12.6	70.8
TETRACHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	2.76	<1.25 U	0.678 J	5.03
TRICHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	0.549 J	0.494 J	0.766 J	2750	362	831	3550
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	1.95	<1.25 U	0.516 J	3.53 J

Blue Highlighting Indicates Analyte Detected Above MCL/MSC/PCL

(1) Only limited data validation possible; Not used in plume delineation

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

MCL/MSC - Maximum Contaminant Limit/Medium-Specific Concentrations

NA - not analyzed

PCL - Texas Residential Groundwater protective concentration level

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-4: Historical COC Concentrations - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL	50WW11-021715 2/17/2015	50WW11-052015 5/20/2015	50WW11-081815 8/18/2015	50WW11-111215 11/12/2015	50WW12-102313 10/23/2013	50WW12-031114 3/11/2014	50WW12-062614 6/26/2014	50WW12-110414 11/4/2014	50WW12-021815 2/18/2015	50WW12-052015 5/20/2015	50WW12-081815 8/18/2015	50WW12-111215 11/12/2015	50WW13-103013 (1) 10/30/2013	50WW13-031214 3/12/2014
Well Completion Zone:			**Upper Shallow**				**Upper Shallow**								**Upper Shallow**	
PERCHLORATE	ug/L	17	2690	1140	17600	22800	23600	35700	35500	14300	30600	59200	17300	37900	14.7	510
1,1-DICHLOROETHENE	ug/L	7	2.47 J	1.03 J	13.1	17.5 J	<1 U	<1 U	<1 U	<1 U	<1 U	0.878 J	<1 U	<1 U	16.6	2.54
1,2-DICHLOROETHANE	ug/L	5	2.42	1.2	16.7	22.9	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	0.389 J	<0.5 U	<0.5 U	42	4.45
CIS-1,2-DICHLOROETHENE	ug/L	70	6.86	2.4	36.3	54.1	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	205	25
TETRACHLOROETHENE	ug/L	5	0.951 J	0.275 J	2.48	<10 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	7.2	1.06
TRICHLOROETHENE	ug/L	5	512	230	1550	2670	<0.5 U	0.257 J	0.411 J	<0.5 U	<0.5 U	33.9	5.59	17.6	3000	823
VINYL CHLORIDE	ug/L	2	<1 U	<0.5 U	1.29	<10 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<2 U	<0.5 U

Blue Highlighting Indicates Analyte Detected Above MCL/MSC/PCL

(1) Only limited data validation possible; Not used in plume delineation

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

MCL/MSC - Maximum Contaminant Limit/Medium-Specific Concentrations

NA - not analyzed

PCL - Texas Residential Groundwater protective concentration level

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-4: Historical COC Concentrations - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL	50WW13-062514 6/25/2014	50WW13-110514 11/5/2014	50WW13-021715 2/17/2015	50WW13-052015 5/20/2015	50WW13-081915 8/19/2015	50WW13-111215 11/12/2015	50WW14-102813 10/28/2013	50WW14-031214 3/12/2014	50WW14-062514 6/25/2014	50WW14-110514 11/5/2014	50WW14-021715 2/17/2015	50WW14-052015 5/20/2015	50WW14-081915 8/19/2015	50WW14-111215 11/12/2015
Well Completion Zone:			**Upper Shallow**						**Lower Shallow**							
PERCHLORATE	ug/L	17	3110	11700	648	126	9300	11400	5.45	0.256 J	0.121 J	5.37	0.381 J	2.06	2.19	7.5
1,1-DICHLOROETHENE	ug/L	7	4.95 J	20.6	<5 U	0.978 J	13.5	<50 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,2-DICHLOROETHANE	ug/L	5	10.6	42.4	4.99 J	1.78	31.5	43.4 J	1.16	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CIS-1,2-DICHLOROETHENE	ug/L	70	56.3	239	32.1	10.7	184	231	6.52	1.33	0.826 J	2.39	13.5	5.66	7.56	14.2
TETRACHLOROETHENE	ug/L	5	1.39 J	7.05 J	1.89 J	0.554 J	6.19	<25 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRICHLOROETHENE	ug/L	5	1840	9150	1080	433	5700	7710 J	93.8	37.4	21.9	26.7	9.14	6.05	12	5.78
VINYL CHLORIDE	ug/L	2	<2.5 U	3.36 J	<2.5 U	<0.5 U	2.31 J	<25 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U

Blue Highlighting Indicates Analyte Detected Above MCL/MSC/PCL

(1) Only limited data validation possible; Not used in plume delineation

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PCL - Texas Residential Groundwater protective concentration level

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-4: Historical COC Concentrations - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL	50WW15-102513 10/25/2013	50WW15-031714 3/17/2014	50WW15-061914 6/19/2014	50WW15-110714 11/7/2014	50WW15-021215 2/12/2015	50WW15FD-021215 2/12/2015	50WW15-052315 5/23/2015	50WW15-082015 8/20/2015	50WW15FD-082015 8/20/2015	50WW15-111115 11/11/2015	50WW15FD-111115 11/11/2015	50WW16-102513 10/25/2013	50WW16-032514 3/25/2014	50WW16-062614 6/26/2014
Well Completion Zone:			**Upper Shallow**											**Upper Shallow**		
PERCHLORATE	ug/L	17	<0.2 U	<0.2 U	<0.2 U	<0.2 U	0.942 J	1.34 J	<0.2 U	0.237 J	0.155 J	<1 U	<1 U	0.284 J	<0.2 U	0.725
1,1-DICHLOROETHENE	ug/L	7	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	0.258 J	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CIS-1,2-DICHLOROETHENE	ug/L	70	11.9	13.8	12.9	14.3	14.3	14.2	10.8	10.1	10.4	7.16	6.89	0.656 J	0.548 J	0.471 J
TETRACHLOROETHENE	ug/L	5	3.25	3.33	3.05	3.34	3.31	3.24	2.96	1.92	2.01	1.83	1.76	<0.5 U	<0.5 U	<0.5 U
TRICHLOROETHENE	ug/L	5	17.3	23.5	18.9	35.4	48.3	46.9	13	15.2	15.1	8.2	8.05	18.1	11.4	12
VINYL CHLORIDE	ug/L	2	3.24	3.09	2.76	2.69	2.2	2.27	1.91	1.25	1.38	0.966 J	0.923 J	<0.5 U	<0.5 U	<0.5 U

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MCL/MSC - Maximum Contaminant Limit/Medium-Specific Concentrations

NA - not analyzed

PCL - Texas Residential Groundwater protective concentration level

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-4: Historical COC Concentrations - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL	50WW16FD-062614 6/26/2014	50WW16-111214 11/12/2014	50WW16-021315 2/13/2015	50WW16-052215 5/22/2015	50WW16-082015 8/20/2015	50WW16-111315 11/13/2015	50WW17-102513 10/25/2013	50WW17-032514 3/25/2014	50WW17-062014 6/20/2014	50WW17-111114 11/11/2014	50WW17-021315 2/13/2015	50WW17-052215 5/22/2015	50WW17-081915 8/19/2015	50WW17-110915 11/9/2015
Well Completion Zone:			**Upper Shallow**						**Fully-Screened Shallow**							
PERCHLORATE	ug/L	17	0.682	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	0.51	<0.2 U	1.76	<0.2 U	<0.2 U	<0.2 U	0.193 J	<0.4 U
1,1-DICHLOROETHENE	ug/L	7	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CIS-1,2-DICHLOROETHENE	ug/L	70	0.456 J	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRICHLOROETHENE	ug/L	5	11.6	1.05	0.391 J	<0.5 U	1.5	0.986 J	<0.5 U	<0.5 U	0.516 J	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U

Blue Highlighting Indicates Analyte Detected Above MCL/MSC/PCL

(1) Only limited data validation possible; Not used in plume delineation

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

MCL/MSC - Maximum Contaminant Limit/Medium-Specific Concentrations

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PCL - Texas Residential Groundwater protective concentration level

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-4: Historical COC Concentrations - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL	50WW18-102313 10/23/2013	50WW18-032614 3/26/2014	50WW18-062414 6/24/2014	50WW18-110414 11/4/2014	50WW18-021815 2/18/2015	50WW18-052815 5/28/2015	50WW18-081715 8/17/2015	50WW18-111615 11/16/2015	50WW19-011414 1/14/2014	50WW19-032514 3/25/2014	50WW19-062014 6/20/2014	50WW19-111114 11/11/2014	50WW19-021315 2/13/2015	50WW19-052215 5/22/2015
Well Completion Zone:			**Upper Shallow**								**Fully-Screened Shallow**					
PERCHLORATE	ug/L	17	<0.2 U	<0.2 U	0.172 J	<0.2 U	0.258 J	<0.2 U	0.144 J	<1 U	<0.2 U	<0.2 U	0.48	<0.2 U	<0.2 U	0.305 J
1,1-DICHLOROETHENE	ug/L	7	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRICHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U

Blue Highlighting Indicates Analyte Detected Above MCL/MSC/PCL

(1) Only limited data validation possible; Not used in plume delineation

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MCL - maximum contaminant level

MCL/MSC - Maximum Contaminant Limit/Medium-Specific Concentrations

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PCL - Texas Residential Groundwater protective concentration level

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-4: Historical COC Concentrations - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL	50WW19FD-052215 5/22/2015	50WW19-082115 8/21/2015	50WW19-110915 11/9/2015	50WW20-110713 11/7/2013	50WW20-031314 3/13/2014	50WW20FD-031314 3/13/2014	50WW20-061914 6/19/2014	50WW20-111114 11/11/2014	50WW20FD-111114 11/11/2014	50WW20-021215 2/12/2015	50WW20-052615 5/26/2015	50WW20-082115 8/21/2015	50WW20-111015 11/10/2015	50WW21-102513 10/25/2013
Well Completion Zone:			**Fully-Screened Shallow**			**Fully-Screened Shallow**										**Upper Shallow**
PERCHLORATE	ug/L	17	0.198 J	<0.2 U	<0.2 U	<0.2 U	0.697	0.673	<0.2 U	<0.2 U	<0.2 U	0.168 J	<0.2 U	<0.2 U	<0.2 U	0.731
1,1-DICHLOROETHENE	ug/L	7	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRICHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U

Blue Highlighting Indicates Analyte Detected Above MCL/MSC/PCL

(1) Only limited data validation possible; Not used in plume delineation

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MCL/MSC - Maximum Contaminant Limit/Medium-Specific Concentrations

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PCL - Texas Residential Groundwater protective concentration level

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-4: Historical COC Concentrations - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL	50WW21FD-102513 10/25/2013	50WW21-032514 3/25/2014	50WW21-062014 6/20/2014	50WW21FD-062014 6/20/2014	50WW21-111314 11/13/2014	50WW21FD-111314 11/13/2014	50WW21-021215 2/12/2015	50WW21-052315 5/23/2015	50WW21FD-052315 5/23/2015	50WW21-082015 8/20/2015	50WW21-111015 11/10/2015	50WW22-102313 10/23/2013	50WW22-031214 3/12/2014	50WW22-062414 6/24/2014
Well Completion Zone:			**Upper Shallow**											**Upper Shallow**		
PERCHLORATE	ug/L	17	0.818	0.606	0.964	0.934	0.779	0.779	0.878	0.502	0.516	0.67	1.21 J	6.97	1.54	2.29
1,1-DICHLOROETHENE	ug/L	7	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRICHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	0.447 J	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U

Blue Highlighting Indicates Analyte Detected Above MCL/MSC/PCL

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U - Analyte was not detected.

µg/L - microgram per liter

Table 2-4: Historical COC Concentrations - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL	50WW22-110614 11/6/2014	50WW22-021715 2/17/2015	50WW22-052115 5/21/2015	50WW22-081815 8/18/2015	50WW22-111615 11/16/2015	50WW23-102913 10/29/2013	50WW23-031314 3/13/2014	50WW23-062614 6/26/2014	50WW23-110414 11/4/2014	50WW23-021815 2/18/2015	50WW23-052015 5/20/2015	50WW23-081715 8/17/2015	50WW23-111615 11/16/2015	50WW24-102913 10/29/2013
Well Completion Zone:			**Upper Shallow**					**Upper Shallow**								**Upper Shallow**
PERCHLORATE	ug/L	17	1.06	1.51	2.92	3.62	0.642 J	0.336 J	0.227 J	0.182 J	<0.2 U	<0.2 U	23.3	0.527	<1 U	0.479
1,1-DICHLOROETHENE	ug/L	7	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRICHLOROETHENE	ug/L	5	0.339 J	<0.5 U	<0.5 U	<0.5 U	0.454 J	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U

Blue Highlighting Indicates Analyte Detected Above MCL/MSC/PCL

(1) Only limited data validation possible; Not used in plume delineation

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U - Analyte was not detected.

µg/L - microgram per liter

Table 2-4: Historical COC Concentrations - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL	50WW24-032614 3/26/2014	50WW24-062614 6/26/2014	50WW24-110414 11/4/2014	50WW24-021815 2/18/2015	50WW24-052815 5/28/2015	50WW24-081715 8/17/2015	50WW24-111615 11/16/2015	50WW26-110613 11/6/2013	50WW26FD-110613 11/6/2013	50WW26-032614 3/26/2014	50WW26FD-032614 3/26/2014	50WW26-062014 6/20/2014	50WW26-111314 11/13/2014	50WW26-021315 2/13/2015
Well Completion Zone:			**Upper Shallow**							**Lower Shallow**						
PERCHLORATE	ug/L	17	<0.2 U	110	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<1 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U
1,1-DICHLOROETHENE	ug/L	7	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRICHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	0.268 J	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U

Blue Highlighting Indicates Analyte Detected Above MCL/MSC/PCL

(1) Only limited data validation possible; Not used in plume delineation

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

MCL/MSC - Maximum Contaminant Limit/Medium-Specific Concentrations

NA - not analyzed

PCL - Texas Residential Groundwater protective concentration level

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-4: Historical COC Concentrations - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL	50WW26-052315 5/23/2015	50WW26-082015 8/20/2015	50WW26-111015 11/10/2015	50WW26FD-111015 11/10/2015	50WW27-110613 11/6/2013	50WW27-031714 3/17/2014	50WW27FD-031714 3/17/2014	50WW27-061914 6/19/2014	50WW27-110714 11/7/2014	50WW27FD-110714 11/7/2014	50WW27-021215 2/12/2015	50WW27-052315 5/23/2015	50WW27-082015 8/20/2015	50WW27-111115 11/11/2015
Well Completion Zone:			**Lower Shallow**				**Lower Shallow**									
PERCHLORATE	ug/L	17	<0.2 U	<0.2 U	<1 U	<1 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<1 U
1,1-DICHLOROETHENE	ug/L	7	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	0.611 J	0.518 J	0.871 J	0.529 J	0.493 J	0.691 J	0.709 J	0.33 J	0.581 J
TETRACHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRICHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	0.251 J	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U

Blue Highlighting Indicates Analyte Detected Above MCL/MSC/PCL

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MCL - maximum contaminant level

MCL/MSC - Maximum Contaminant Limit/Medium-Specific Concentrations

NA - not analyzed

PCL - Texas Residential Groundwater protective concentration level

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-4: Historical COC Concentrations - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL	50WW28-070914 7/9/2014	50WW28-111214 11/12/2014	50WW28-021715 2/17/2015	50WW28FD-021715 2/17/2015	50WW28-052615 5/26/2015	50WW28FD-052615 5/26/2015	50WW28-082015 8/20/2015	50WW28-111315 11/13/2015	GPW1-021715 2/17/2015	GPW1-050815 5/8/2015	GPW1-052215 5/22/2015	GPW1-111315 11/13/2015	GPW1A-021715 2/17/2015	GPW1A-050815 5/8/2015
Well Completion Zone:			Upper Shallow								Surface Water				Surface Water	
PERCHLORATE	ug/L	17	2.57	2.01 J	1.44	1.44	1.04	1.05	0.688	1.64	0.737	0.156 J	0.213 J	0.139 J	38.2	16
1,1-DICHLOROETHENE	ug/L	7	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRICHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U

Blue Highlighting Indicates Analyte Detected Above MCL/MSC/PCL

(1) Only limited data validation possible; Not used in plume delineation

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

MCL/MSC - Maximum Contaminant Limit/Medium-Specific Concentrations

NA - not analyzed

PCL - Texas Residential Groundwater protective concentration level

U - Analyte was not detected.

µg/L - microgram per liter

Table 2-4: Historical COC Concentrations - LHAAP-50

Sample ID: / Sample Date:	Units	MCL/ MSC/ PCL	LHSMW54-941209 12/9/1994	LHSMW54-960212 2/12/1996	LHSMW54-960821 8/21/1996	LHSMW54-980520 5/20/1998	LHSMW54-000521 5/21/2000	LHSMW54-020309 3/9/2002	LHSMW54-020921 9/21/2002	LHSMW54-100806 8/6/2010	LHSMW54-101707 10/17/2007	LHSMW54-110713 11/7/2013	LHSMW54-021815 2/18/2015	LHSMW54-052715 5/27/2015	LHSMW54-111315 11/13/2015
Well Completion Zone:			**Upper Shallow**												
PERCHLORATE	ug/L	17	NA	NA	NA	NA	<1 U	<4 U	<4 U	<0.2 U	<1 U	<0.2 U	0.271 J	<0.2 U	<1 UJ
1,1-DICHLOROETHENE	ug/L	7	<5 U	NA	<0.2 U	<1 U	NA	NA	NA	<2.5 U	<1 U	<1 U	<1 U	<1 U	<1 U
1,2-DICHLOROETHANE	ug/L	5	<5 U	NA	<0.31 U	<1 U	NA	NA	NA	<2.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CIS-1,2-DICHLOROETHENE	ug/L	70	NA	NA	<0.2 U	0.7	NA	NA	NA	0.657 J	1.59	0.392 J	0.316 J	0.261 J	0.323 J
TETRACHLOROETHENE	ug/L	5	<5 U	NA	<0.25 U	<1 U	NA	NA	NA	<2.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRICHLOROETHENE	ug/L	5	12	11	15.7	210	NA	NA	NA	369	601	112	93.8	95.9	88.3
VINYL CHLORIDE	ug/L	2	NA	NA	<0.24 U	<1 U	NA	NA	NA	<2.5 U	<1 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U

Blue Highlighting Indicates Analyte Detected Above MCL/MSC/PCL

(1) Only limited data validation possible; Not used in plume delineation

J - Estimated value; analyte concentration was less than the limit of quantification

MCL - maximum contaminant level

MCL/MSC - Maximum Contaminant Limit/Medium-Specific Concentrations

NA - not analyzed

PCL - Texas Residential Groundwater protective concentration level

U - Analyte was not detected.

µg/L - microgram per liter

3 NATURAL ATTENUATION EVALUTION

The following sections present the results of the natural attenuation evaluation in accordance with the three lines of evidence discussed in the RAWP (AECOM, 2013) for LHAAP-50 groundwater COCs. The discussion below pertains only to the shallow aquifer where COCs are detected above cleanup levels.

3.1 First Line of Evidence: Change in COC Concentrations over Time and with Distance

Natural attenuation is the combination of multiple mechanisms, including biodegradation, volatilization, dilution, advection, and absorption that reduce contaminant concentrations. The decrease of COC concentrations over time and distance in the absence of any other treatment is evidence of natural attenuation. The change in groundwater COC concentrations over time and with distance was evaluated at LHAAP-50. COC concentrations in select wells for the period are identified on **Figure 3-1**.

Twenty-eight (28) monitoring wells are included in the monitoring program for collection and analysis of VOCs and perchlorate, as identified on **Table 3-1**. Sixteen (16) of the selected wells are located in the upper portion of the shallow zone, eight in the lower portion of the shallow zone, three fully-screened across the shallow zone, and one in the intermediate zone. These wells have been selected in the Final RACR (AECOM, 2016) for their placement relative to VOC and perchlorate plumes to monitor effectiveness of natural attenuation at the LHAAP-50 site.

Of all the wells included in the monitoring program, the only wells that had COCs above cleanup levels are 50WW05, 50WW06, 50WW08, 50WW09, 50WW11, 50WW12, 50WW13, 50WW14, 50WW15, and 50WW23. COCs were detected above their respective cleanup levels for 50WW25, 47WW38 and LHSMW54; however, these COCs are associated with a source from LHAAP-47 and are not part of LHAAP-50 monitoring program. The other wells in the monitoring program did not contain COCs above the cleanup levels in the four 2nd year RA(O) sampling events. The same observations were made during the 1st year RA(O) with the exception of TCE detections above the MCL of 5 µg/L in monitoring well 50WW16 in 3 sampling events and perchlorate detection above the PCL of 17 µg/L in 50WW24 in one sampling event (**Table 2-4**).

The presence of TCE daughter compounds cis-1,2-DCE and VC in 50WW05, 50WW08, 50WW09, 50WW11, 50WW13, 50WW14, and 50WW15 indicate that reductive dechlorination is occurring within the shallow zone plume.

The Final RACR for LHAAP-50 indicates that monitoring wells 50WW06, 50WW08, 50WW11 and 50WW12 would be the primary focus of perchlorate analysis at the site because they historically showed the highest perchlorate concentrations. Since the October 2013 monitoring event, 50WW13 has had increasing concentrations of perchlorate, and therefore is also discussed herein. Additionally, the Final RACR states that monitoring wells 50WW08, 50WW11, 50WW13 and 50WW14 were expected to be the primary focus of VOC analysis at the site because they historically showed the highest VOC concentrations. During the 2014-2015

monitoring period, 50WW05 also had significant concentrations of VOCs, and is therefore included in the discussion below.

Mann-Kendall statistical trend analysis for the data collected during the 2-year RA(O) period was completed for various COCs for monitoring wells 50WW05, 50WW06, 50WW08, 50WW11, 50WW12, 50WW13, and 50WW14. The trend analysis results are presented in **Appendix G** in graphical format with statistical results presented on the right hand side. The U.S. EPA's ProUCL version 5.0 was used for this analysis. The dates on the x-axis of each graph in **Appendix G** are displayed in numerical format rather than in a date format as required by the program. The concentrations of COCs are presented on the y-axis in µg/L. Half of the detection limit was used for non-detect results, where applicable. The average concentration of the sample and its duplicate was used when field duplicate samples were collected. The level of significance was 5%. A summary table of the Mann-Kendall results is presented below in **Exhibit 3-1**.

Well 50WW05

Dating back to 2002, a total of 13 data sets are available for this well (**Table 2-4**). Perchlorate was detected at levels of 5,850 micrograms per liter (µg/L) in 2002, 719 µg/L in 2005, 27.8 µg/L in 2007, and 20.5 in 2014. However, since then, perchlorate has remained below the cleanup level (PCL) of 17 µg/L. Also in 2005, several VOCs were detected above their MCLs including PCE, TCE, 1,1-DCE, 1,2-DCA, and VC. The concentrations of these VOCs have decreased over time, and only TCE has been detected above the MCL during the 2-year RA(O) period. TCE concentrations during the 2nd year RA(O) period were between 193 µg/L and 210 µg/L. The TCE concentrations are slightly lower than the 1st year RA(O) monitoring period, which ranged from 204 µg/L to 329 µg/L. The current TCE levels are approximately an order of magnitude lower than those detected in 2005 (3,130 µg/L) and 2007 (1,460 µg/L). Earlier data also show that PCE, 1,1-DCE, 1,2-DCA, and VC exceeded their respective MCLs until 2010 and have since remained below the MCLs. The decreasing trends in this well are a line of evidence supporting MNA. The presence of PCE/TCE daughter products such as cis-1,2-DCE and VC (in the historical data set) indicates that reductive dechlorination is taking place.

The Mann-Kendall trend analysis for 50WW05 was conducted for TCE during the past two years. The results indicate no significant trend in concentrations for TCE over the 2-year RA(O) period but with a general trend line pointing downward.

Well 50WW06

Dating back to 2004, a total of 12 data sets are available for this well (**Table 2-4**). Perchlorate and TCE are the only COCs detected in this well above their respective PCL/MCL. Perchlorate was initially detected above the PCL at 24.8 µg/L in 2005. There was a gradual increase to 2,090 µg/L in March 2014 and to 5,860 µg/L in November 2015. The TCE concentration in this well was 15 µg/L in 2004 and remained below the MCL until 2013. TCE concentrations increased during the 2-year RA(O) period from a low of 20.9 µg/L in October 2013 to a high of 59.4 µg/L in November 2015.

The Mann-Kendall trend analysis for 50WW06 was conducted for perchlorate and TCE during the past two years. The results indicate statistically-significant evidence of an increasing trend for perchlorate and no significant trend in TCE concentrations but with a trend line pointing upward. These results indicate migration of COCs into this well.

Well 50WW08

Eight data sets are available for this well. Perchlorate, cis-1,2-DCE, and TCE were detected in this well above their respective PCL/MCLs during one or more sampling events. 1,2-DCA was also detected above the MCL during the March 2014 sampling event at a concentration of 5.73 µg/L but has been below the MCL since then. In the previous monitoring period (1st RA(O)) perchlorate decreased from 6,404 µg/L in October 2013 to 56.3 µg/L in November 2014. The high perchlorate concentration in October 2013 is likely suspect as a complete data validation set was not made available and the reported concentration could not be verified. Perchlorate concentrations initially increased during this sampling period to 200 µg/L in May 2015 before decreasing to 32.4 J µg/L in November 2015. The cis-1,2-DCE concentrations initially increased during this monitoring period to 70.5 µg/L in February 2015 then decreased to 17.7 µg/L in November 2015. The presence of cis-1,2-DCE indicates the occurrence of reductive dechlorination of TCE. TCE concentrations have, on average, fluctuated during the previous monitoring period (1st RA(O)). After increasing in concentration to 852 µg/L in February 2015, TCE concentrations decreased to 288 µg/L in November 2015. 50WW08 was installed in August 2013; therefore historical data is not available.

The Mann-Kendall trend analysis for 50WW08 was conducted for perchlorate, TCE, and cis-1,2-DCE during the past two years. The results indicate no significant trend in concentrations for these COCs but the trend lines are pointing downward.

Well 50WW11

Eight data sets are available for this well. Perchlorate, TCE, 1,1-DCE, and 1,2-DCA were detected above their respective PCL/MCLs during the 2015 monitoring period. All seven COCs were detected above their respective PCL/MCLs during the 1st year RA(O) monitoring period. Perchlorate concentrations initially decreased to 2,690 µg/L in February 2015 from 22,300 µg/L detected in November 2014. Perchlorate concentrations decreased further to 1,140 µg/L in May 2015 before increasing to 22,800 µg/L in November 2015. The perchlorate concentrations in the prior monitoring period (1st year RA(O)) exhibited a similar decreasing and then increasing trend. Similar to the perchlorate TCE concentrations initially decreased from the previous sampling event of November 2014 from 3,550 µg/L to 512 µg/L in February 2015 and further to 230 µg/L in May 2015, before increasing to 2,670 µg/L in November 2015. In the previous monitoring period (1st year RA(O) period), TCE decreased from 2,750 µg/L in October 2013 to 362 µg/L in March 2014 then increased to 3,550 µg/L in November 2014. Based on the perchlorate and TCE concentrations over the course of the 2-year RA(O) monitoring period, it appears that the increase and decrease of these two constituents over time is seasonal; however, additional monitoring is required to confirm this. 1,1-DCE and 1,2-DCA were detected above their MCLs in August 2015 and November 2015. The concentrations of 1,1-DCE and 1,2-DCA increased from below their respective MCLs in February 2015 and May 2015 to 17.5 µg/L and 22.9 µg/L, respectively, in November 2015. The compounds cis-1,2-DCE, PCE, and VC were not detected above their respective MCLs during the 2nd year RA(O) period. However, these COCs were reported above their MCLs in November 2014. 50WW11 was installed in August 2013; therefore historical analytical data is not available.

The Mann-Kendall trend analysis for 50WW11 was conducted for perchlorate, TCE, and 1,1-DCE during the past two years. The results indicate no significant trend in concentrations for

these COCs over the 2-year RA(O) period with the trend lines either pointing slightly upward or slightly downward.

Well 50WW12

Eight data sets are available for this well. Perchlorate and TCE were detected above the PCL/MCL in this well during the 2015 monitoring period. Previously, only perchlorate was detected above its PCL. The concentrations of perchlorate fluctuated during this monitoring period between a low of 17,300 µg/L in August 2015 to a high of 59,200 µg/L in May 2015. A similar fluctuation of perchlorate concentrations was also observed during the 1st year RA(O) period. TCE was detected for the first time above its MCL in May 2015 at a concentration of 33.9 µg/L before decreasing to a concentration of 5.59 µg/L in August 2015 and 17.6 µg/L in November 2015. 50WW12 was installed in August 2013; therefore historical data is not available.

The Mann-Kendall trend analysis for 50WW12 was conducted for perchlorate and TCE during the past two years. The results indicate no significant evidence of trend in concentrations for perchlorate with the trend lines pointing upward. The TCE results indicate statistically-significant evidence of an increasing trend during the 2-year RA(O) period. These results indicate migration of COCs into this well.

Well 50WW13

Eight data sets are available for this well. All COCs were detected in this well above their respective PCL/MCLs during at least one 2015 sampling event. Perchlorate concentrations decreased from 11,700 µg/L in November 2014 to 648 µg/L in February 2015 and 126 µg/L in May 2015 before increasing to 11,400 µg/L in November 2015. Similar to perchlorate, TCE concentrations in this well experienced a decrease from a concentration of 9,150 µg/L in November 2014 to 1,080 µg/L in February 2015 and 433 in May 2015 before increasing to 7,710 J µg/L in November 2015. The 1st year RA(O) period exhibited a similar decrease then increase in TCE concentrations. Based on the review of this data over two monitoring periods it appears that the increase and decrease of these two COCs may be seasonal (inverse correlation between groundwater elevation and COC concentrations was discerned for all COCs over a two year period and the correlation coefficient varied between -16% for vinyl chloride and -78% for 1,2-dichloroethane). 1,2-DCA and cis-1,2-DCE also exhibited a decrease and subsequent increase in concentrations during the two RA(O) monitoring periods. The concentrations for these two COCs ended the 2nd year RA(O) monitoring period (November 2015) above their MCLs at 43.4 J µg/L and 231 µg/L, respectively. PCE, 1,1-DCE and VC concentrations also exhibited a decrease and subsequent increase in concentrations during both RA(O) monitoring periods. The reporting limits for PCE, 1,1-DCE, and VC for the November 2015 sampling event were higher than the MCLs for these constituents so the results could not be compared to the MCLs. 50WW13 was installed in August 2013; therefore historical data is not available.

The Mann-Kendall trend analysis for 50WW13 was conducted for perchlorate, TCE, cis-1,2-DCE, and 1,2-DCA during the past two years. The results indicate no significant trend in concentrations for perchlorate, TCE, cis-1,2-DCE, and 1,2-DCA over the 2-year RA(O) period with the trend lines pointing upward.

Well 50WW14

Eight data sets are available for this well. Only TCE has been detected above the MCL in this well, with concentrations decreasing from 9.14 µg/L in February 2015 to 5.78 µg/L in November 2015. This decreasing trend is a continuation of what was observed in the 1st year RA(O) monitoring period, with concentrations decreasing from 93.8 µg/L in October 2013 to 26.7 µg/L in November 2014. Simultaneously, the concentration of cis-1,2-DCE appears to be increasing in this well from 6.52 µg/L in October 2013 to 14.2 µg/L in November 2015, indicating the potential occurrence of biodegradation in this well (a -29% correlation was observed between these two COCs during the 2-year RA(O) period). 50WW14 was installed in August 2013; therefore historical data is not available. The Mann-Kendall trend analysis in 50WW14 was conducted for TCE during the past two years. The results indicate a statistically significant evidence of a decreasing trend in concentrations.

Exhibit 3-1: Mann-Kendall Trend Summary

Monitoring Well	Perchlorate	TCE	cis-1,2-DCE	1,1-DCE	1,2-DCA
50WW05	--	No significant trend	--	--	--
50WW06	**Significant Increase**	No significant trend	--	--	--
50WW08	No significant trend	No significant trend	No significant trend	--	--
50WW11	No significant trend	No significant trend	No significant trend	No significant trend	No significant trend
50WW12	No significant trend	**Significant Increase**	--	--	--
50WW13	No significant trend	No significant trend	No significant trend	--	No significant trend
50WW14	--	**Significant Decrease**	--	--	--

-- indicates no trend analysis was completed for the parameter because the concentrations are non-detect or below the cleanup standard

3.1.1 Plume Stability

COC plume maps completed for each sampling event in the shallow zone are presented in **Figures 2-6** through **2-9**. TCE and perchlorate are the most widespread COCs in the shallow groundwater. The COC data over the 2nd year RA(O) monitoring period indicate that the plumes are showing overall stable conditions with the exception of TCE, which expanded slightly in 2015 towards 50WW12. The calculated groundwater velocity in the shallow zone ranges between 0.11 feet per year (ft/yr) to 0.39 ft/yr (Jacobs, 2002). The low groundwater velocity, coupled with partitioning of COCs onto the soil, is the main reason the groundwater plumes are generally stable or expanding slowly.

Based on the general direction of groundwater flow (towards the northeast), the following wells can be considered to be along the groundwater flow path for the TCE plume: 50WW22, 50WW13, 50WW05, 50WW16, and 50WW28. The COCs in upgradient well 50WW22 have remained below the cleanup levels. The TCE plume is more widespread whereas the perchlorate

plume appears narrower and occurring in the flow path of 50WW02, 50WW08, 50WW13, 50WW11, 50WW06, 50WW12, and 50WW18 or 50WW24 as downgradient wells, depending on groundwater flow direction, which appears to be influenced by groundwater levels. The center of the TCE plume appears to be around well 50WW13 and that of perchlorate is around well 50WW12, similar as observed during the 1st year RA(O) period.

In-plume well 50WW13 generally exhibits the highest levels of TCE which have increased during the 2nd year RA(O) monitoring period (see **Figure 3-1**). However, in comparison with the previous monitoring period (1st RA(O)) the TCE concentrations had dropped during the first half of this monitoring period before increasing again. The increase and decrease in concentrations over time appear seasonally affected by groundwater elevations and general groundwater flow direction. The lowest TCE concentrations in 50WW13 occurred in March 2014, June 2014, February 2015, and May 2015. The groundwater table elevation during these four events was higher or rising compared to the other four sampling events of November 2013, November 2014, August 2015, and November 2015, where the water table was lower or falling. The same analysis applies to the perchlorate concentration in 50WW13. A similar observation is also made for in-plume well 50WW11 for TCE and perchlorate. These observations are substantiated with the negative correlation coefficients between groundwater elevations and COC concentrations for the COCs in the 50WW11 and 50WW13. The correlation coefficients for 50WW11 between groundwater elevations and COC concentrations ranged between -38% and -77% and for 50WW13 between -16% and -78%.

TCE concentration in in-plume well 50WW05 appears to be stable with seasonal conditions and has a -37% correlation coefficient with groundwater elevation. TCE concentration in 50WW16 along the TCE flow path has decreased over the two year RA(O) period from above the MCL to below the MCL. This decrease indicates that natural attenuation is taking place in reducing the plume extent. Downgradient well 50WW28 remains unimpacted.

The highest levels of perchlorate are in well 50WW12. The perchlorate plume also appears to be stable, possibly even shrinking due to the concentration of perchlorate decreasing in 50WW08 to 32.4 J µg/L in November 2015 (upgradient well 50WW02 remains dry although historically this well contained perchlorate above the PCL with the most recent measurement of 110 µg/L reported on April 03, 2009). The perchlorate levels appear to fluctuate in well 50WW12 over the past two monitoring periods and show a slight overall increase over time; whereas the perchlorate level appears to increase and decrease seasonally within in-plume wells 50WW13 and 50WW11 over the same time period. Concentrations of perchlorate in in-plume well 50WW06 located between 50WW11 and 50WW12 appears to increase steadily over time with a statistically significant evidence of an increasing trend. 50WW06 is a lower shallow zone monitoring well with the top of the screen located at approximately 30 feet below the groundwater elevation. The increase in perchlorate concentration in this well indicates continued vertical expansion of the plume into the lower shallow zone. A similar observation cannot be made in co-located upper shallow zone well 50WW13 and lower shallow zone well 50WW14. In fact, TCE concentration in lower shallow zone well 50WW14 showed a statistically significant decrease over time. The contrary was observed in co-located wells 50WW08 and 50WW09, whereby TCE concentration increased in lower shallow zone well 50WW09 from 0.26 J µg/L in November 2013 to 173 µg/L in November 2015. Overall, concentrations of COCs away from the most impacted wells 50WW11, 50WW12, and 50WW13 have had no increase in

COC concentrations or detections of new COCs at boundary area wells 50WW28, 50WW18, 50WW19, 50WW07, 50WW23, and 50WW24 indicating no plume migration. The only exception to this trend is the perchlorate concentration in the May 2015 sample from 50WW23, which was reported above the PCL at 23.3 ug/L.

A review of the data in individual wells over the course of the monitoring period does not indicate any definite correlation between groundwater elevations and COC concentrations. **Figure 3-1** provides the groundwater level plotted along concentration profile over time for the shallow plume. Comparing the correlation coefficient for TCE with groundwater level for each of seven monitoring wells presented in **Figure 3-1** indicates a range of -77% (inverse correlation) to 62% (direct correlation). Similarly, comparing the correlation coefficients for perchlorate with groundwater level for each of seven monitoring wells presented in **Figure 3-1** indicates a range of -75% (inverse correlation) to 65% (direct correlation). These two sets of data indicate that there is no consistent response of COC concentration to groundwater level change. For most wells, the correlation coefficients of various COC concentration changes to groundwater level change are not similar. For example, for 50WW08, the TCE correlation coefficient is 62% and the perchlorate correlation coefficient is -50%. However, consistent correlations were observed for 50WW11 and 50WW14 between concentrations of all the COCs and groundwater elevations as discussed above. Both of these wells are screened in the upper shallow zone.

3.2 Second Line of Evidence: Geochemical Indicators

Table 3-1 identifies the wells that were chosen to be evaluated for MNA performance parameters. Some geochemical indicators are collected in the field, and are recorded for all sampling events for all wells. The field parameters for LHAAP-50 wells include: dissolved oxygen (DO), oxidation-reduction potential (ORP), pH, conductivity, turbidity, and temperature.

DO is the most thermodynamically favored electron acceptor used by microbes for biodegradation of organic carbon, whether natural or anthropogenic (USEPA, 1998). Anaerobic bacteria generally cannot function at DO concentrations greater than about 0.5 milligrams per liter (mg/L) and hence, reductive dechlorination will not occur. DO levels during the 2nd year RA(O) monitoring are presented in **Table 2-3** and varied between 0 and 4.27 mg/L (50WW06 in February 2015). Most importantly, wells with COCs above the PCL/MCLs (50WW05, 50WW06, 50WW08, 50WW09, 50WW11, 50WW12, 50WW13, 50WW14, and 50WW15) had DO concentrations ranging between 0 and 1.6 mg/L with the exception of 50WW06 which had DO concentrations of 4.27 mg/L in February 2015, 3.56 mg/L in May 2015, 1.46 mg/L in August 2015, and 2.18 mg/L in November 2015. 50WW06 is the well that showed a significant increase in perchlorate concentration trend. The low DO concentrations in impacted wells (except in 50WW06) provide support for occurrence of anaerobic natural degradation of the COCs.

The ORP levels indicate how oxidative or reductive the groundwater is in the aquifer matrix and provide real-time data if conditions are conducive for anaerobic biodegradation. ORP values less than 50 millivolts (mV) are indicative that the aquifer is reaching anaerobic conditions and are favorable for the biological reductive dechlorination of chlorinated ethenes and ethanes. The ORP measurements at LHAAP-50 during the 2nd year RA(O) monitoring period ranged between -230 mV to 303 mV, indicating the presence of anaerobic and aerobic zones across the site. Of

the nine monitoring wells with concentrations of COCs above the cleanup levels, only monitoring wells 50WW06, 50WW09, 50WW14, and 50WW15 had recorded negative ORP values. These conditions are amenable to reductive dechlorination; however, the general conditions of the entire plume would be characterized as oxidative.

After DO has been depleted in the microbiological treatment zone, nitrate may be used as an electron acceptor for anaerobic biodegradation of organic carbon via denitrification. In order for reductive dechlorination to occur, nitrate concentrations in the contaminated portion of the aquifer must be less than 1.0 mg/L (USEPA, 1998). **Table 2-3** indicates that nitrate and nitrite concentrations were generally below the laboratory reporting limits in LHAAP-50 groundwater. Therefore, nitrate reduction is not a likely mode of microbial respiration at the site, and the lack of nitrate is favorable for achieving the highly reducing conditions ideal for anaerobic reductive dechlorination.

After DO and nitrate have been depleted in the microbiological treatment zone, sulfate may be used as an electron acceptor for anaerobic biodegradation. This process is termed "sulfate reduction" and results in the production of sulfide. Concentrations of sulfate greater than 20 mg/L may cause competitive exclusion of dechlorination. However, in many plumes with high concentrations of sulfate, reductive dechlorination still occurs (USEPA, 1998).

Table 2-3 indicates that the sulfate concentrations were above 20 mg/L in all wells where sulfate was analyzed during the 2-year RA(O) monitoring period (sulfate concentrations at the site ranged between 36.2 J mg/L and 926 mg/L, which is typical of this formation). Relatively high concentrations of sulfate and corresponding sulfide below laboratory reporting limit indicates that the conditions in the aquifer are generally not conducive for reductive dechlorination.

Methanogenesis occurs in highly reducing conditions and generally occurs after oxygen, nitrate, and sulfate have been depleted. Methane levels above 500 µg/L are considered to indicate methanogenic conditions (USEPA, 1998). Methane was measured in select wells for MNA evaluation and was generally found to be below 2 µg/L. The highest methane concentrations (between 31 µg/L and 110 µg/L) were reported for 50WW25, where the source of the contamination is from LHAAP-47. This well also exhibited generally low ORP values ranging between 86 mV and -237 mV during the 2-year RA(O) period. This well has no VOC concentrations but has perchlorate at a concentration ranging between < 0.20 µg/L and 42.2 µg/L. Monitoring well 50WW11 also exhibited relatively high levels of methane ranging between < 2 µg/L and 29.1 µg/L, likely associated with the presence of perchlorate and VOCs in this well.

Regardless of the electron acceptor being used, organic carbon is a required source of reduced carbon and energy to sustain microbial activity. Total organic carbon (TOC) is utilized as a carbon and energy source to support the reductive dechlorination of the chlorinated COCs. TOC concentrations greater than 20 mg/L are considered adequate to support microbial activity (USEPA, 1998). TOC concentrations were measured during this monitoring period in select wells and were found to range between 1.74 J mg/L and 149 mg/L with the majority of values below 20 mg/L. Alkalinity levels in the groundwater monitoring wells have generally remained between 200 and 400 mg/L and there is no significant difference in alkalinity levels in wells within and outside of the plume indicating any increased microbial activity.

The pH of groundwater has an effect on the presence and activity of microbial populations in groundwater. This is especially true for bacteria responsible for reductive dechlorination. Microbes capable of degrading chlorinated aliphatic hydrocarbons and petroleum hydrocarbon compounds generally prefer pH values varying from 6 to 8 standard units (USEPA, 1998). The shallow zone groundwater pH within the plume has been between 4.4 and 10.8 standard units. The highest pH values were reported in 50WW10, an intermediate well with surface casing. It is possible that the grout of the surface casing may contribute to the increase in pH level in groundwater measured in this well.

Ethane and ethene, the two end products of the reductive dechlorination pathways for chlorinated ethanes and ethenes, were also below the laboratory reporting limits during the 2nd year RA(O) monitoring period in wells 50WW01, 50WW06, 50WW08, 50WW11, 50WW12, 50WW13, 50WW14, 50WW18, 50WW22, 50WW23, and 50WW24. These results indicate that complete dechlorination within the plume is not taking place.

The qualitative assessment of geochemical indicators in the shallow groundwater zone at LHAAP-50 indicates current geochemical conditions are not optimal for biodegradation. Although degradation products (cis-1,2-DCE, 1,2-DCA, 1,1-DCE, and VC) have been detected in select plume monitoring wells, adequate conditions within the impacted area currently do not exist to sustain complete reductive dechlorination.

3.3 Third Line of Evidence: Predictive Modeling and Microbial Analysis

If the first two lines of evidence for MNA are deemed inadequate or inconclusive, and/or if the need for a contingency remedy is evaluated, data from field or microcosm studies will be necessary to establish the third line of evidence for MNA.

Dechlorinating bacteria (dehalococcoides ethenogenes and associated functional genes) were not analyzed at LHAAP-50. Therefore, this line of evidence cannot currently be evaluated.

Of the analyzed parameters and wells using Mann-Kendall trend analysis, only one parameter (TCE) showed a significant decrease in concentration over time in one well (50WW14). ProUCL was used to determine the best fit regression curve for the data set from which the first order rate constant was determined (**Appendix H**). For 50WW14, the first order rate constant was estimated at 0.548 yr^{-1} and the time to achieve the MCL of 5 µg/L from the November 2015 concentration of 5.78 µg/L is estimated at 0.26 years. Degradation of COCs in other wells is not occurring to such an extent to allow a determination of time to achieve the MCL (i.e., predictive modeling by assuming some degree of degradation and degradation half-lives is not meaningful for this plume). These determinations assume the rate of concentration decrease will continue at the same rate as calculated from recent data. However, the rate of reduction could diminish over time as the residual concentration decrease and the time frames to achieve the MCL might be longer than estimated.

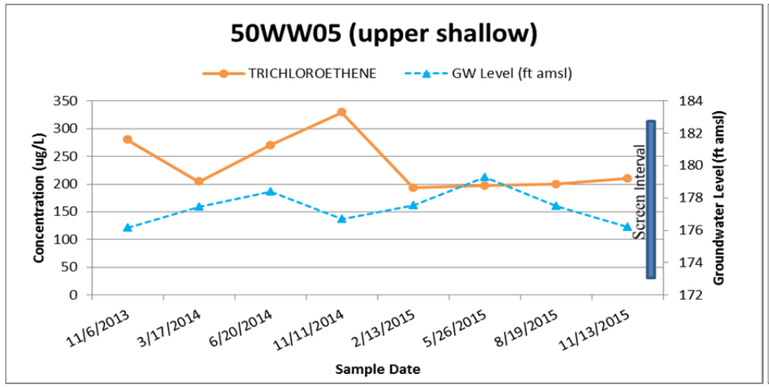

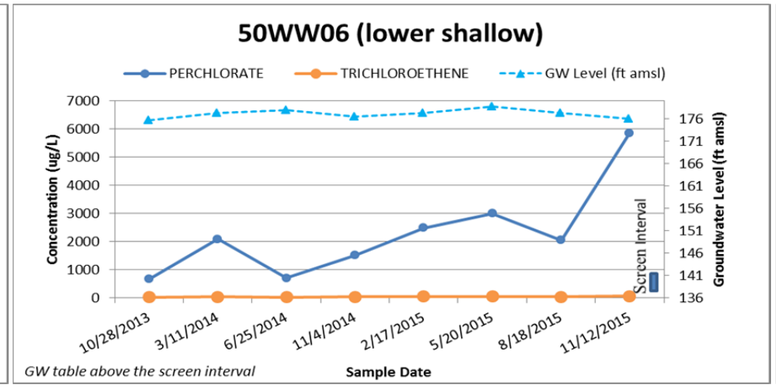

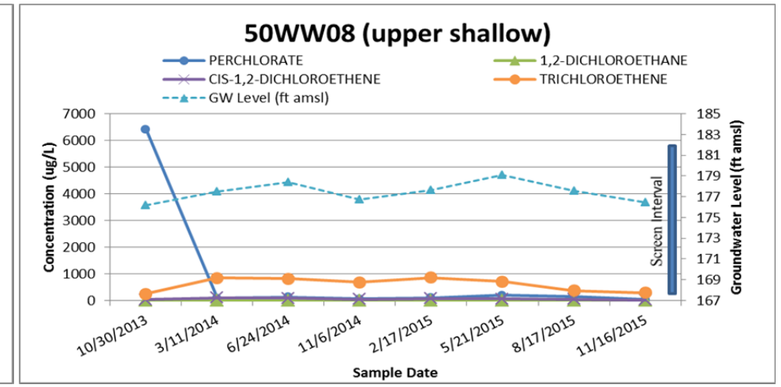

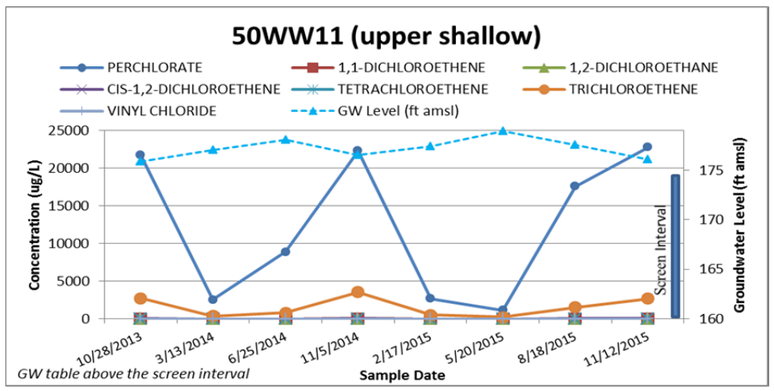

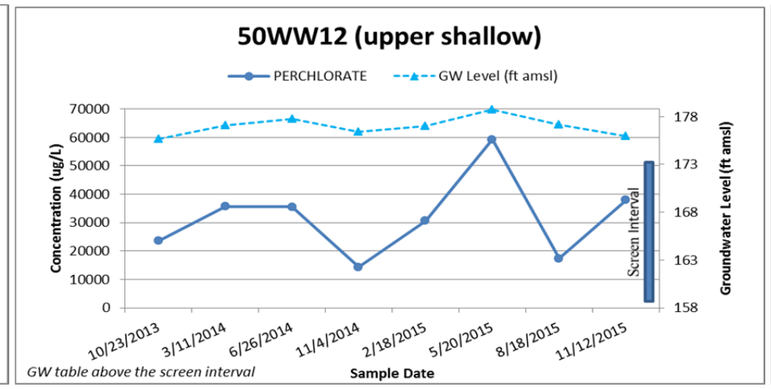

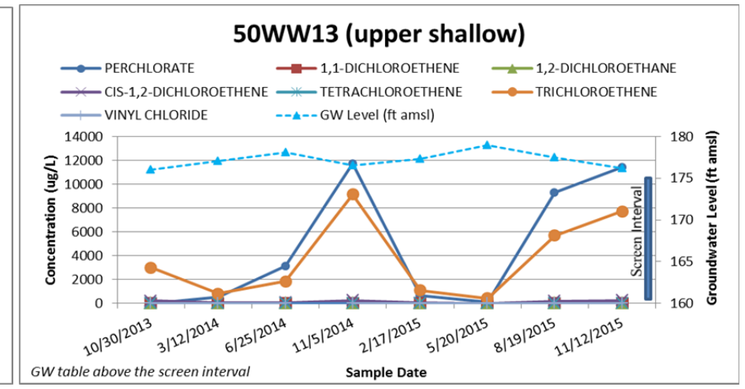

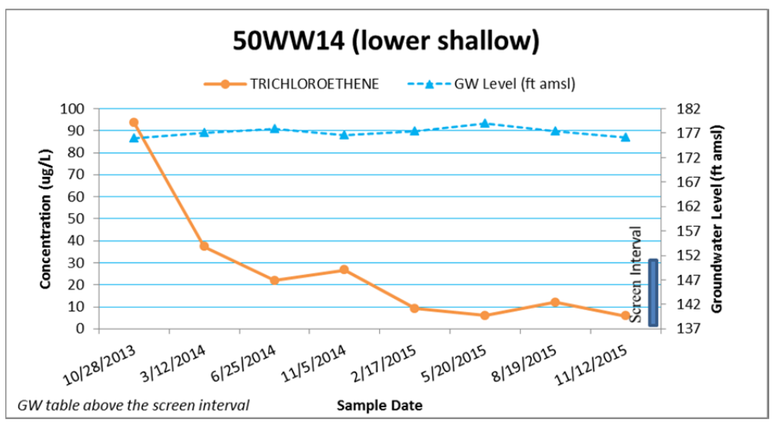

Cleanup Levels

Perchlorate = 17 µg/L

1,1-Dichloroethene = 7 µg/L

1,2-Dichloroethane = 5 µg/L

cis-1,2-Dichloroethene = 70 µg/L

Tetrachloroethene = 5 µg/L

Trichloroethene = 5 µg/L

Vinyl chloride = 2 µg/L

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Figure 3-1
COC Concentrations
Remedial Action Operation Report (Year 2)
LHAAP-50

60256135

Longhorn Army Ammunition Plant
Karnack, Texas

Oct 2016

Table 3-1: LHAAP-50 MNA Monitoring Wells and Analytes

Monitoring Well ID[1]	VOCs	Perchlorate	Field Parameters**	MNA Parameters***
Upper Shallow				
50WW02	X	X	X	X
50WW03	X	X	X	
50WW04	X	X	X	
50WW07	X	X	X	
50WW08	X	X	X	X
50WW11	X	X	X	X
50WW12	X	X	X	X
50WW13	X	X	X	X
50WW15	X	X	X	
50WW16	X	X	X	
50WW18	X	X	X	X
50WW21	X	X	X	
50WW22	X	X	X	X
50WW23	X	X	X	X
50WW24	X	X	X	X
LHSMW54	X	X	X	
Lower Shallow				
47WW38	X	X	X	
50WW05	X	X	X	
50WW06	X	X	X	X
50WW09	X	X	X	
50WW14	X	X	X	X
50WW26	X	X	X	
50WW27	X	X	X	
Fully-Screened Shallow				
50WW17	X	X	X	
50WW19	X	X	X	
50WW20	X	X	X	
Intermediate				
50WW10	X	X	X	

Notes:

[1] The number of monitoring wells included in the network and the sampling frequency may be adjusted based on results of the initial data collection activities.

** - Field parameters to be monitored for all wells: pH, temperature, conductivity, turbidity, oxidation-reduction potential (ORP), dissolved oxygen (DO), and ferric iron.

*** - MNA parameters include alkalinity, sulfate, sulfide, chloride, TOC, dissolved iron and manganese, total phosphorus, carbon dioxide, dissolved gases (methane, ethane, ethene) and total iron.

X - Well will be analyzed for that parameter.

VOCs - volatile organic compounds.

4 SUMMARY AND CONCLUSIONS

VOC data and geochemical indicators were collected over the course of the monitoring period at LHAAP-50 to evaluate effectiveness of MNA as a site remedy. A tiered approach assessing the three lines of evidence was used to evaluate the occurrence of natural attenuation in site groundwater. The first line of evidence evaluated reductions in COC concentrations over time and with distance from source areas, the second line of evidence evaluated geochemical indicators, while the third line of evidence evaluated the projected time necessary to achieve the PCL/MCLs for wells that exhibited a significant decrease in trends in COC concentrations, based on the Mann-Kendall trend analysis. The results of the tiered evaluation and the conclusions are summarized below.

An assessment of the first line of evidence indicates that the plume is showing stable conditions but not decreasing in size. The low groundwater velocity, coupled with partitioning of COCs onto the soil, is the main reason the groundwater plumes are generally stable. The COCs in downgradient well 50WW12 have remained below the MCLs for VOCs with the exception of TCE. Concentrations of TCE increased to above the MCL during the 2nd year RA(O) monitoring period from less than the detection limit in February 2015. The TCE plume is more widespread than the perchlorate plume and generally follows the direction of groundwater flow to the northeast. The perchlorate plume is narrower than the TCE plume and also oriented toward the northeast but has a slightly different flow path. The center of the TCE plume appears to be around well 50WW13 and that of perchlorate is around well 50WW12. In-plume well 50WW13 exhibits the highest levels of TCE which have generally increased during the monitoring period; however, it initially decreased from the elevated levels observed in the 1st year RA(O) monitoring period. Over the two monitoring periods it appears that the increase and decrease in TCE levels is seasonal and correlated inversely with groundwater elevation. A similar trend is observed for the COCs in 50WW11 located cross-gradient or downgradient from 50WW13, depending on groundwater flow direction. TCE expansion to monitoring well 50WW12 was observed during the last three sampling events of the 2nd year RA(O) monitoring period.

The perchlorate plume also appears to be stable. The concentrations of perchlorate in 50WW12 fluctuate widely, continuing a trend observed during the previous 1st year RA(O) monitoring period. The perchlorate concentration in 50WW12 has a 65% correlation coefficient with groundwater elevation, indicating a direct correlation. The general trend of perchlorate concentrations in this well is upward but not statistically significant using the Mann-Kendall test. An increasing trend was observed for perchlorate in 50WW11 and 50WW13 during the 2-year RA(O) monitoring period but wide fluctuations in concentrations from event to event were observed. A review of perchlorate concentrations over the 2-year RA(O) monitoring period possibly reveals a seasonal trend of increasing and decreasing concentrations. Nonetheless, the seasonal concentration changes in these wells are poorly correlated with each other such that an increase in concentration in one well coincides with a decreasing concentration in the other well.

A review of the data in individual wells over the course of the monitoring period does not indicate any definitive correlation between groundwater elevations and COC concentrations. For example, comparing the correlation coefficient for TCE with groundwater level for each of seven monitoring wells (50WW05, 50WW06, 50WW08, 50WW11, 50WW12, 50WW13, and 50WW14) indicates a range of -77% (inverse correlation) to 62% (direct correlation). Similarly,

comparing the correlation coefficients for perchlorate with groundwater level for the same seven monitoring wells indicates a range of -75% (inverse correlation) to 65% (direct correlation).

Concentrations of COCs away from the most impacted wells 50WW11, 50WW12, and 50WW13 are not increasing according to the Mann-Kendall testing. There have been no new detections of COCs at boundary area wells 50WW28, 50WW18, 50WW19, 50WW07, 50WW23, and 50WW24 indicating no substantial plume migration, with the exception of the May 2015 sample from 50WW23, which had a perchlorate concentration of 23.3 µg/L, exceeding the PCL. The VOCs are not showing decreasing trends in the most highly-contaminated wells 50WW08, 50WW11, 50WW12, 50WW13, and 50WW05. The data in general show an increase in TCE/perchlorate concentrations at the center of the plumes in wells 50WW11, 50WW12, and 50WW13. This increase did not have any influence on the size of the plumes or the clean well status of downgradient perimeter wells.

The qualitative assessment of geochemical indicators in the shallow groundwater zone at LHAAP-50 indicates current geochemical conditions are not optimal for biodegradation. Although degradation products (cis-1,2-DCE, 1,2-DCA, 1,1-DCE, and VC) have been detected in select plume monitoring wells, adequate conditions within the impacted area currently do not exist to support complete reductive dechlorination.

Based on the data collected thus far, MNA associated with biodegradation appears to be very limited in the shallow groundwater at LHAAP-50 and the groundwater conditions are not supportive of reductive dechlorination. However, TCE appeared to be reducing in 50WW14 based on concentrations decreasing from 93.8 µg/L in October 2013 to 5.78 µg/L in November 2015. Simultaneously, there is evidence that cis-1,2-DCE concentration is increasing with a -29% correlation observed between TCE and cis-1,2-DCE during the 2-year RA(O) period. The changes in this well provide the best evidence of occurrence of localized reductive dechlorination in the shallow zone. The VOC and perchlorate plumes are currently stable and not showing any signs of downgradient migration.

Groundwater monitoring will continue to be performed at LHAAP-50 in compliance with the Remedial Action Work Plan (AECOM, 2013) until the proposed sampling optimization outlined in section 2.3.3 of this report is approved. No change in land or groundwater use has occurred at the site, and the use of the site is still consistent with that mandated by the ROD.

In October 2015 and December 2015, limited soil cover repair activities were completed in an area of perchlorate-contaminated surface soils at LHAAP-47, where erosion of the soil cover and exposure of the plastic liner were observed. The repair included placement of a new plastic liner and 6 inches of clean topsoil. The topsoil was seeded with rye grass and covered with erosion matting. The repair was conducted to prevent potentially exposed perchlorate-contaminated soil from impacting surface water in a ditch contributing to Goose Prairie Creek.

When surface water was present, water samples were collected from locations GPW-1A, GPW-1, and 50SW06 during this monitoring period as depicted in **Figure 2-11**. GPW-1A, located in a ditch north of LHAAP-50, had the highest detections of perchlorate at 38.2 µg/L (February 2015) and 16 µg/L (May 2015). This ditch empties into Goose Prairie Creek approximately 30 feet upgradient of GPW-1.

Two surface water sampling locations GPW-1 and 50SW06 are located in Goose Prairie Creek of which GPW-1 serves as a performance sampling location associated with the soil removal

action. 50SW06 is located downstream of GPW-1 and serves as the potential groundwater to surface water impact sampling point. The analytical results indicate the presence of low concentrations of perchlorate ranging between 0.737 µg/L and 0.139 J µg/L at GPW-1 and from 0.684 µg/L to 1.44 J µg/L at 50SW06 during the monitoring period. Those concentrations are below the PCL of 17 µg/L. Because the groundwater elevation has consistently been below the bottom of the drainage ditch at the surface water sampling locations, the methodology to sample surface water when the groundwater elevation is higher than surface water, as depicted in Appendix J of the Final RACR (AECOM, 2016), was not applied. In addition to the four quarterly sampling events, four surface water samples were collected from GPW-1 following rainfall events during the RA(O) monitoring period. Because perchlorate concentrations in surface water samples at locations GPW-1 and 50SW06 were below the PCL and VOC concentrations in 50SW06 were nondetect, the criteria specified in the RACR to sample surface water have been met. However, to provide documentation consistent with the RACR criteria, four additional quarters of surface water samples will be collected and during the same period an attempt to sample surface water during rainfall on up to four additional events will be made. Samples from 50SW06 will be analyzed for VOCs and perchlorate and samples from GPW-1 will be analyzed for perchlorate only.

A LUC compliance inspection was conducted in 2015. No change in land use has occurred.

Monitoring wells were inspected during the four 2015 monitoring events, and necessary well repairs and redevelopment were performed throughout the year. No damage to bollards, pads, or protective well casings was observed and minimal encroachment of weeds or brush on the well pads was observed. The LUC inspection and the well maintenance is documented in Appendices A and B, respectively.

5 REFERENCES

AECOM, 2013. *Final Remedial Action Work Plan, LHAAP-50, Former Sump Water Tank, Longhorn Army Ammunition Plant, Karnack, Texas,* June.

AECOM, 2014. *Final Installation Wide Work Plan, Longhorn Army Ammunition Plant, Karnack, Texas,* July.

AECOM, 2016. *Final Remedial Action Completion Report, LHAP-50, Former Sump Water Tank, Longhorn Army Ammunition Plant, Karnack, Texas,* June.

Jacobs, 2002. *Final Remedial Investigation Report for the Group 4 Sites, Sites 35A, 35B, 35C, 46, 47, 48, 50, and 60, and Goose Prairie Creek, Longhorn Army Ammunition Plant, Karnack, Texas,* Jacobs Engineering Group, Inc., January.

Shaw, 2011. *Final Remedial Design, LHAAP-50, Former Sump Water Tank, Group 4, Longhorn Army Ammunition Plant, Karnack, Texas,* September.

USACE, 2010. *Record of Decision, LHAAP-50, Former Sump Water Tank, Group 4, Longhorn Army Ammunition Plant, Karnack, Texas*, September.

USEPA, 1998. *Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Groundwater*, EPA/600/R-98/128, September.

USEPA, 2014, *Transmittal of Final Dispute Decision*, Letter dated October 31, 2014 from Gina McCarthy, EPA Administrator, to John McHugh, Secretary of the Army and Bryan Shaw, Chairman of TCEQ. Longhorn Army Ammunition Plant, Karnack, Texas Administrative Record, Volume 4, 2014, 00192717-00192750.

APPENDIX A: Annual LUC Compliance Certification Documentation

Annual Land Use Control Compliance Certification Documentation

In accordance with the Remedial Design dated September 2011, for LHAAP-50 a certification of site was conducted by AECOM Technical Services, Inc. on July 4, 2015.

A summary of land use control mechanism is as follows:

- Groundwater restriction – restriction of the use of groundwater to environmental monitoring and testing until cleanup levels are met.

A summary of compliance with land use and restriction covenants is as follows:

- No use of groundwater, installation of new groundwater wells, or tampering with existing wells at LHAAP-50.

I, the undersigned, do document that the certification was performed as indicated above, and that the above information is true and correct to the best of my knowledge, information, and belief

Date: 3/23/2016

Name/Title: Marwan Salameh / Deputy Project Manager

Signature:

APPENDIX B: Photolog and Redevelopment Forms

Well ID: 50WW01 Prior to Conducting Maintenance Activities	
Well ID: 50WW01 After Completion of Maintenance Activities on August 28, 2015	

Well ID: 50WW02 Prior to Conducting Maintenance Activities	
Well ID: 50WW02 After Completion of Maintenance Activities on September 2, 2015	

Well ID: 50WW03 Prior to Conducting Maintenance Activities	
Well ID: 50WW03 After Completion of Maintenance Activities on August 28, 2015	

Well ID: 50WW04 Prior to Conducting Maintenance Activities	
Well ID: 50WW04 After Completion of Maintenance Activities on August 28, 2015	

Well ID: 50WW05 Prior to Conducting Maintenance Activities	
Well ID: 50WW05 After Completion of Maintenance Activities on September 2, 2015	

Well ID: 50WW06 Prior to Conducting Maintenance Activities	
Well ID: 50WW06 After Completion of Maintenance Activities on September 2, 2015	

Well ID: 50WW05 Prior to Redevelopment Activities	
Well ID: 50WW05 After Completion of Redevelopment Activities on January 22, 2016	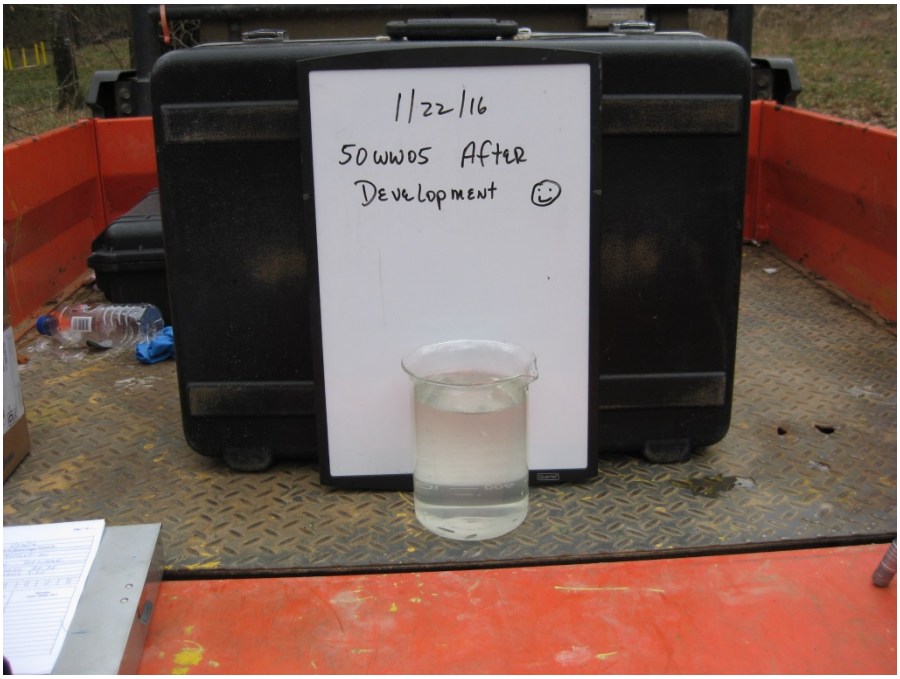

Well ID: 50WW19 Prior to Redevelopment Activities	
Well ID: 50WW19 After Completion of Redevelopment Activities on January 26, 2016	

APPENDIX C: Groundwater Sampling Forms

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW01	Date: 2/18/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 20.35	Weather Conditions: CLEAR/COLD
	Total Well Depth (ft) [d]: 23.28	Screened Interval/Pump placement: 9-19	Condition of Well/Remarks: Needs paint

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
2/18/15	0723	20.35	NA										Bailing well
2/18/15	0727	23.20	NA										Bailed 2 gallons Ran Dry
2/19/15	0705	22.50	NA		well not Recharged to within 80% of original DTW.								

Dry well

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
DUPLICATE (D): YES/NO					
MATRIX SPIKE (MS): YES/NO					
MATRIX DUPLICATE (MD): YES/NO					
CO= LEL= OXY= H2S=					

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW02	Date: 2/18/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4 11	Static Water Level Reading (ft) [c]: Dry	Weather Conditions: Clear/cool
	Total Well Depth (ft) [d]: 22.28	Screened Interval/Pump placement: 9-19	Condition of Well/Remarks: Needs paint

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)

Dry Well

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:

DUPLICATE (D): YES/NO
MATRIX SPIKE (MS): YES/NO
MATRIX DUPLICATE (MD): YES/NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW03	Date: 2/18/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.00026A	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: DRY	Weather Conditions: CLEAR/COOL
	Total Well Depth (ft) [d]: 23.00	Screened Interval/Pump placement: 10-20	Condition of Well/Remarks: Needs paint

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)

Dry Well

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:

DUPLICATE (D): YES/NO
MATRIX SPIKE (MS): YES/NO
MATRIX DUPLICATE (MD): YES/NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)

00634412

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW04	Date: 2/18/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.00026A	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: DRY	Weather Conditions: CLEAR
	Total Well Depth (ft) [d]: 22.47	Screened Interval/Pump placement: 10-20	Condition of Well/Remarks: Needs paint

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)

Dry well

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
DUPLICATE (D): YES/NO					
MATRIX SPIKE (MS): YES/NO					
MATRIX DUPLICATE (MD): YES/NO					
CO= LEL= OXY= H2S=					

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW05	Date: 2/13/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.00026A	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 20.15	Weather Conditions: CLEAR
	Total Well Depth (ft) [d]: 25.40	Screened Interval/Pump placement: 14.9-24.9/22.50	Condition of Well/Remarks: Needs paint

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
2/13/15	1400	20.12	100	20.20	7.85	1.56	0.57	4.4	97				
"	1405	20.16	100	20.46	7.88	1.55	0.35	4.0	88				
"	1410	20.19	100	20.65	7.93	1.53	0.00	3.3	81				
"	1415	20.22	100	20.77	7.96	1.51	0.00	3.5	67				
"	1420	20.25	100	20.83	7.96	1.50	0.00	3.1	66				
"	1425	20.28	100	20.85	7.98	1.49	0.00	3.4	65				
"	1430	20.31	100	20.89	7.97	1.49	0.00	3.8	63	0.11	0.08	0.03	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW05-021315 TIME: 1430

DUPLICATE (D): YES/NO Yes
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
6-40 ml glass	HCL	N	Pump	VOC
2-250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW06	Date: 2/17/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 18.00	Weather Conditions: Cloudy, /COLD
	Total Well Depth (ft) [d]: 58.18	Screened Interval/Pump placement: 48-58/ 53.00	Condition of Well/Remarks: Needs paint

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
2/17/15	1120	17.98	100	11.79	7.93	0.609	5.46	57.3	70				
"	1125	18.04	100	14.21	7.71	0.560	4.87	60.4	80				
"	1130	18.08	100	14.77	7.13	0.560	4.69	61.3	97				
"	1135	18.12	100	15.21	6.94	0.567	4.64	62.1	105				
"	1140	18.14	100	15.60	6.81	0.580	4.35	60.3	118				
"	1145	18.16	100	15.62	6.82	0.581	4.32	60.5	119				
"	1150	18.18	100	15.64	6.83	0.581	4.29	59.2	119				
"	1155	18.20	100	15.67	6.84	0.582	4.27	58.1	119	0.12	0.09	0.03	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW06-021715 TIME: 1155

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40 ml glass	HCL	N	Pump	VOC
3 - 40 ml glass	NA	N	"	Gases / CO2
1 - 500 ml plastic	ZnACETATE/NaOH	N	"	Sulfide
1 - 250 ml plastic	HNO3	Y	"	Dissolved metals
1 - 250 ml plastic	H2SO4	N	"	TOC / TOTAL phosphorous
1 - 250 ml plastic	NA	Y	"	Perchlorate
1 - 250 ml plastic	NA	N	"	Anions
1 - 250 ml plastic	NA	N	"	ALKALINITY

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW07	Date: 2/13/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.00026A	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 25.65	Weather Conditions: CLEAR/COLD
	Total Well Depth (ft) [d]: 31.90	Screened Interval/Pump placement: 21-31 / 27.50	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
2/13/15	0945	25.62	100	12.81	7.07	1.02	1.81	10.4	-74				
"	0950	25.67	100	13.10	7.30	1.03	0.76	7.3	-49				
"	0955	25.70	100	13.71	7.14	1.03	0.45	5.0	-20				
"	1000	25.73	100	13.96	7.00	1.03	0.25	4.1	22				
"	1005	25.76	100	13.93	6.65	1.04	0.00	3.9	45				
"	1010	25.79	100	14.26	6.64	1.03	0.00	3.5	47				
"	1015	25.81	100	14.14	6.65	1.04	0.00	3.2	48				
"	1020	25.83	100	14.21	6.64	1.04	0.00	3.0	50	0.94	0.57	0.37	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW07-021315 TIME: 1020

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40 ml glass	HCL	N	Pump	VOC
1 - 250 ml plastic	N	Y	Pump	Perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW08	Date: 2/17/15
	Project: Longhorn Army Ammunition Plant	Project No. 6025/6135.0002GA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2"	Static Water Level Reading (ft) [c]: 22.05	Weather Conditions: Cloudy/cold
	Total Well Depth (ft) [d]: 32.78	Screened Interval/Pump placement: 14.6-29.25/25.00	Condition of Well/Remarks: Good

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
2/17/15	1335	22.00	100	14.54	7.02	2.27	0.42	293	123				
"	1340	22.04	100	15.55	6.75	2.27	0.09	201	131				
"	1345	22.08	100	15.91	6.67	2.28	0.00	181	134				
"	1350	22.13	100	16.11	6.63	2.28	0.00	172	135				
"	1355	22.17	100	16.12	6.61	2.29	0.00	171	135				
"	1400	22.19	100	16.11	6.61	2.29	0.00	171	134				
"	1405	22.21	100	16.10	6.61	2.29	0.00	170	134	0.79	0.79	0.00	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW08-021715 TIME: 1405

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
3-20 ml glass	NA	N	"	GASES/CO2
1-500 ml plastic	ZnAcetNaOH	N	"	Sulfide
1-250 ml plastic	HNO3	Y	"	Dissolved metals
1-250 ml plastic	H2SO4	N	"	TOC/Total phosphorous
1-250 ml plastic	NA	Y	"	Perchlorate
1-250 ml plastic	NA	N	"	Anions
1-250 ml plastic	NA	N	"	Alkalinity

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW09	Date: 2/13/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2"	Static Water Level Reading (ft) [c]: 21.75	Weather Conditions: CLEAR
	Total Well Depth (ft) [d]: 62.48	Screened Interval/Pump placement: 44.4-58.9/51.50	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
2/13/15	1610	21.69	100	18.52	9.36	2.07	1.84	672	-96				
"	1615	21.74	100	18.47	6.54	2.42	0.32	321	17				
"	1620	21.77	100	18.48	6.25	2.42	0.00	259	41				
"	1625	21.79	100	18.52	6.07	2.43	0.00	232	58				
"	1630	21.82	100	18.50	6.01	2.42	0.00	220	62				
"	1635	21.84	100	18.48	5.96	2.43	0.00	219	69				
"	1640	21.85	100	18.50	5.96	2.43	0.00	218	68				
"	1645	21.85	100	18.52	5.96	2.43	0.00	218	67				
"	1650	21.85	100	18.48	5.97	2.43	0.00	217	66	1.77	1.74	0.03	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW09-021315 TIME: 1650

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO Yes
MATRIX DUPLICATE (MD): YES/NO Yes

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
9-40ml glass	HCL	N	Pump	VOC
3-250ml plastic	NA	Y	Pump	PERCHLORATE

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW10	Date: 2/13/15
	Project: Longhorn Army Ammunition Plant	Project No. 60255135.0022GA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2"	Static Water Level Reading (ft) [c]: 23.30	Weather Conditions: CLEAR
	Total Well Depth (ft) [d]: 111.13	Screened Interval/Pump placement: 98.8-108.4/103.50	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
2/13/15	1510	23.23	100	19.60	10.84	0.984	1.21	40.8	-130				
"	1515	23.27	100	19.26	11.05	0.984	0.22	51.3	-157				
"	1520	23.30	100	19.21	11.06	0.978	0.08	30.3	-164				
"	1525	23.32	100	19.08	11.01	0.975	0.00	16.1	-172				
"	1530	23.33	100	19.10	10.80	0.971	0.00	9.3	-174				
"	1535	23.34	100	19.00	10.78	0.970	0.00	9.0	-176				
"	1540	23.34	100	18.98	10.77	0.970	0.00	6.5	-177				
"	1545	23.34	100	19.01	10.76	0.969	0.00	5.0	-178	0.22	0.22	0.00	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW10-021315 TIME: 1545

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40ml glass	HCL	N	Pump	VOC
1-250ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW11	Date: 2/17/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2"	Static Water Level Reading (ft) [c]: 19.68	Weather Conditions: CLEAR/COLD
	Total Well Depth (ft) [d]: 37.84	Screened Interval/Pump placement: 20.2-34.7/27.50	Condition of Well/Remarks: Good

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
2/17/15	1010	19.63	100	12.42	7.10	1.74	1.26	357	-21				
"	1015	19.69	100	13.88	6.76	1.70	0.37	309	26				
"	1020	19.73	100	14.47	6.52	1.70	0.12	275	56				
"	1025	19.76	100	14.91	6.43	1.70	0.00	261	73				
"	1030	19.79	100	15.31	6.33	1.71	0.00	257	98				
"	1035	19.81	100	15.37	6.33	1.71	0.00	256	100				
"	1040	19.83	100	15.39	6.34	1.71	0.00	255	102				
"	1045	19.84	100	15.45	6.35	1.72	0.00	255	103	0.65	0.65	0.00	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW11-021715 TIME: 1045

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
3-20 ml glass	NA	N	"	GASES/CO2
1-500 ml plastic	ZnAcNaOH	N	"	Sulfide
1-250 ml plastic	HNO3	Y	"	Dissolved metals
1-250 ml plastic	H2SO4	N	"	TOC/TOTAL phosphorous
1-250 ml plastic	NA	Y	"	Perchlorate
1-250 ml plastic	NA	N	"	ANIONS
1-250 ml plastic	NA	N		ALKALINITY

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW12	Date: 2/18/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2"	Static Water Level Reading (ft) [c]: 18.68	Weather Conditions: CLEAR/COLD
	Total Well Depth (ft) [d]: 37.98	Screened Interval/Pump placement: 20.1-34.6/27.25	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
2/18/15	1030	18.62	100	15.66	7.01	4.49	0.73	382	161				
"	1035	18.66	100	16.00	6.90	4.48	0.23	301	150				
"	1040	18.70	100	16.24	6.88	4.46	0.00	255	150				
"	1045	18.74	100	16.24	6.87	4.47	0.00	218	148				
"	1050	18.76	100	16.35	6.87	4.47	0.00	120	146				
"	1055	18.78	100	16.37	6.87	4.46	0.00	119	145				
"	1100	18.79	100	16.40	6.86	4.46	0.00	118	144				
"	1105	18.80	100	16.41	6.86	4.46	0.00	117	143	0.33	0.00	0.33	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW12-021815 TIME: 1105

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
3-20 ml glass	NA	N	"	Gases/CO2
1-500 ml plastic	ZnAcetNAOH	N	"	Sulfide
1-250 ml plastic	HNO3	Y	"	Dissolved metals
1-250 ml plastic	H2SO4	N	"	TOC/TOTAL phosphorous
1-250 ml plastic	NA	Y	"	Perchlorate
1-250 ml plastic	NA	N	"	Anions
1-250 ml plastic	NA	N	"	ALKALINITY

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW13	Date: 2/17/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2 11	Static Water Level Reading (ft) [c]: 20.10	Weather Conditions: Cloudy / Cold
	Total Well Depth (ft) [d]: 37.73	Screened Interval/Pump placement: 20-34.5/27.25	Condition of Well/Remarks: Good

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
2/17/15	0735	20.04	100	13.45	6.32	2.11	7.65	301	141				
"	0740	20.09	100	14.32	6.16	2.09	5.41	277	125				
"	0745	20.13	100	14.65	6.03	2.09	2.16	250	119				
"	0750	20.16	100	15.10	5.99	2.07	0.49	221	115				
"	0755	20.19	100	15.77	5.93	2.11	0.00	211	92				
"	0800	20.21	100	15.86	5.99	2.11	0.00	211	90				
"	0805	20.23	100	15.90	5.97	2.11	0.00	210	89				
"	0810	20.24	100	15.94	5.96	2.11	0.00	210	88	0.25	0.24	0.01	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW13-021715 TIME: 0810

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3- 40 ml glass	HCL	N	Pump	VOC
3 - 20 ml glass	NA	N	"	Gases/CO2
1- 500 ml plastic	2NaOH	N	"	Sulfide
1- 250 ml plastic	HNO3	Y	"	Dissolved metals
1- 250 ml plastic	H2SO4	N	"	TOC/total phosphorous
1- 250 ml plastic	NA	N	"	Anions
1- 250 ml plastic	NA	Y	"	Perchlorate
1- 250 ml plastic	NA	N	"	Alkalinity

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW14	Date: 2/17/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2"	Static Water Level Reading (ft) [c]: 20.18	Weather Conditions: CLEAR / COLD
	Total Well Depth (ft) [d]: 60.76	Screened Interval/Pump placement: 43.4-57.9/50.50	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
2/17/15	0845	20.13	100	13.59	6.81	2.08	0.94	275	-22				
"	0850	20.17	100	14.85	6.91	2.10	0.23	292	-51				
"	0855	20.19	100	15.25	6.83	2.10	0.11	281	-50				
"	0900	20.21	100	15.40	6.74	2.10	0.00	217	-43				
"	0905	20.22	100	15.55	6.55	2.09	0.00	152	-25				
"	0910	20.23	100	15.58	6.54	2.09	0.00	151	-24				
"	0915	20.23	100	15.61	6.53	2.08	0.00	150	-23				
"	0920	20.23	100	15.65	6.53	2.08	0.00	150	-22	4.41	2.59	1.82	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW14-021715 TIME:

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3- 40 ml glass	HCL	N	Pump	VOC
3 -20 ml glass	NA	N	"	GASES/CO2
1-500 ml plastic	2mAq NaOH	N	"	Sulfide
1-250 ml plastic	HNO3	Y	"	Dissolved metals
1-250 ml plastic	H2SO4	N	"	TOC/ TOTAL phosphorous
1-250 ml plastic	NA	Y	"	Perchlorate
1-250 ml plastic	NA	N	"	Anions
1-250 ml plastic	NA	N		ALKALINITY

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: ~~50WW27~~ 50WW15	Date: 2/12/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.00026A	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2"	Static Water Level Reading (ft) [c]: 18.75	Weather Conditions: CLEAR
	Total Well Depth (ft) [d]: 37.96	Screened Interval/Pump placement: 19.9-34.4/27.25	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
2/12/15	1335	18.70	100	18.69	7.63	1.53	1.00	173	-19				
2/12/15	1340	18.74	100	18.91	7.29	1.53	0.72	144	8				
2/12/15	1345	18.79	100	19.01	7.04	1.53	0.46	89.4	34				
2/12/15	1350	18.82	100	19.18	6.88	1.53	0.31	31.7	53				
2/12/15	1355	18.85	100	19.17	6.72	1.54	0.29	9.8	78				
2/12/15	1400	18.87	100	19.22	6.71	1.54	0.29	7.7	79				
2/12/15	1405	18.89	100	19.24	6.70	1.54	0.29	5.4	80				
2/12/15	1410	18.90	100	19.28	6.69	1.54	0.28	5.0	81	0.13	0.11	0.02	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW15-021215 TIME: 1410

DUPLICATE (D): YES/NO Yes
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
6-40 ml glass	HCL	N	Pump	VOC
2-250 ml plastic	NA	Y	Pump	Perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW16	Date: 2/13/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2.11	Static Water Level Reading (ft) [c]: 19.49	Weather Conditions: CLEAR
	Total Well Depth (ft) [d]: 38.10	Screened Interval/Pump placement: 20.1-37.6/27.25	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
2/13/15	1050	19.45	100	15.23	8.26	0.253	0.46	217	-24				
"	1055	19.51	100	16.09	8.51	0.250	0.24	172	-40				
"	1100	19.55	100	16.52	8.60	0.241	0.00	161	-45				
"	1105	19.59	100	16.77	8.64	0.237	0.00	169	-46				
"	1110	19.63	100	16.89	8.64	0.237	0.00	170	-46				
"	1115	19.65	100	16.95	8.64	0.236	0.00	171	-46				
"	1120	19.67	100	17.00	8.64	0.236	0.00	170	-46				
"	1125	19.68	100	17.07	8.64	0.236	0.00	170	-46	0.32	0.32	0.00	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW16-021315 TIME: 1125

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
1-250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW17	Date: 2/13/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2"	Static Water Level Reading (ft) [c]: 18.68	Weather Conditions: CLEAR/COLD
	Total Well Depth (ft) [d]: 67.58	Screened Interval/Pump placement: 19.9 - 64.4 / 42.00	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
2/13/15	0720	18.63	100	13.70	6.49	2.09	1.58	329	-13				
"	0725	18.69	100	14.64	6.56	2.09	0.37	229	-33				
"	0730	18.73	100	15.09	6.57	2.09	0.00	227	-39				
"	0735	18.77	100	15.34	6.58	2.08	0.00	233	-41				
"	0740	18.79	100	15.52	6.57	2.07	0.00	234	-43				
"	0745	18.80	100	15.58	6.57	2.06	0.00	232	-44				
"	0750	18.81	100	15.62	6.56	2.06	0.00	231	-44				
"	0755	18.81	100	15.68	6.56	2.05	0.00	230	-43	4.30	1.43	2.87	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW17-021315 TIME: 0755

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40 ml glass	HCL	N	Pump	VOC
1 - 250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW18	Date: 2/18/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2"	Static Water Level Reading (ft) [c]: 18.31	Weather Conditions: CLEAR
	Total Well Depth (ft) [d]: 37.70	Screened Interval/Pump placement: 20.1-34.6/27.25	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
2/18/15	1410	18.25	100	17.05	7.49	2.84	0.55	289	30				
"	1415	18.32	100	17.56	7.50	2.87	0.19	211	33				
"	1420	18.37	100	17.60	7.48	2.88	0.00	171	36				
"	1425	18.40	100	17.61	7.46	2.88	0.00	153	40				
"	1430	18.43	100	17.62	7.45	2.88	0.00	112	43				
"	1435	18.45	100	17.57	7.45	2.87	0.00	112	44				
"	1440	18.47	100	17.57	7.44	2.88	0.00	111	43				
"	1445	18.48	100	17.56	7.44	2.88	0.00	110	42	0.12	0.12	0.00	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW18-021815 TIME: 1445

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
3-20 ml glass	NA	N	"	GASES/CO2
1-500 ml plastic	2NaOH	N	"	Sulfide
1-250 ml plastic	HNO3	Y	"	Dissolved METALS
1-250 ml plastic	H2SO4	N	"	TOC/TOTAL phosphorous
1-250 ml plastic	NA	Y	"	Perchlorate
1-250 ml plastic	NA	N	"	ANIONS
1-250 ml plastic	NA	N	"	ALKALINITY

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50 WW19	Date: 2/13/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2"	Static Water Level Reading (ft) [c]: 19.35	Weather Conditions: CLEAR/COLD
	Total Well Depth (ft) [d]: 64.88	Screened Interval/Pump placement: 19.1-63.6/41.25	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
2/13/15	0830	19.29	100	14.40	6.69	1.12	0.35	327	-45				
"	0835	19.35	100	15.09	6.57	1.13	0.12	303	-45				
"	0840	19.40	100	15.35	6.41	1.12	0.21	258	-34				
"	0845	19.44	100	15.79	6.25	1.12	0.10	209	-22				
"	0850	19.46	100	15.89	6.08	1.12	0.11	215	-9				
"	0855	19.48	100	15.92	6.06	1.12	0.10	214	-8				
"	0900	19.50	100	15.98	6.05	1.12	0.09	213	-7				
"	0905	19.51	100	16.03	6.05	1.11	0.10	213	-7	5.15	2.04	3.11	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW19-021315 TIME: 0905

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
1-250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW20	Date: 2/12/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2"	Static Water Level Reading (ft) [c]: 25.15	Weather Conditions: CLEAR
	Total Well Depth (ft) [d]: 55.90	Screened Interval/Pump placement: 18.3-52.8/35.50	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
2/12/15	1450	25.08	100	18.68	7.04	5.09	0.76	201	80				
2/12/15	1455	25.15	100	18.46	6.99	5.20	0.00	183	1				
2/12/15	1500	25.19	100	18.56	7.00	5.27	0.00	170	-8				
2/12/15	1505	25.22	100	18.52	7.01	5.26	0.00	164	-12				
2/12/15	1510	25.25	100	18.49	7.01	5.24	0.00	159	-13				
2/12/15	1515	25.27	100	18.55	7.00	5.21	0.00	155	-14				
2/12/15	1520	25.29	100	18.51	6.98	5.20	0.00	155	-12				
2/12/15	1525	25.30	100	18.50	6.97	5.19	0.00	154	-11				
2/12/15	1530	25.30	100	18.56	6.97	5.19	0.00	153	-10	0.60	0.60	0.00	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW20-021215 TIME: 1530

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
1-250 ml plastic	NA	Y	Pump	Perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW21	Date: 2/12/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.00026A	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2"	Static Water Level Reading (ft) [c]: 22.95	Weather Conditions: CLEAR
	Total Well Depth (ft) [d]: 37.73	Screened Interval/Pump placement: 19.9-34.4/27.25	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
2/12/15	1605	22.91	100	18.47	6.72	7.66	0.48	30.4	89				
2/12/15	1610	22.96	100	18.69	6.71	7.67	0.32	17.3	92				
2/12/15	1615	22.99	100	18.74	6.70	7.66	0.24	11.5	97				
2/12/15	1620	23.03	100	18.71	6.70	7.67	0.18	7.7	99				
2/12/15	1625	23.07	100	18.77	6.70	7.68	0.17	5.5	101				
2/12/15	1630	23.10	100	18.76	6.71	7.67	0.19	5.0	103				
2/12/15	1635	23.12	100	18.75	6.71	7.67	0.20	4.5	104	0.15	0.15	0.00	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW21-021215 TIME: 1635

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO Yes
MATRIX DUPLICATE (MD): YES/NO Yes

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
~~[illegible]~~ 9-40ml glass	HCL	N	Pump	VOC
3-250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW22	Date: 2/17/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Beesinger — Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2"	Static Water Level Reading (ft) [c]: 24.69	Weather Conditions: Cloudy / Cold
	Total Well Depth (ft) [d]: 37.83	Screened Interval/Pump placement: 19.9-34.4 / 27.50	Condition of Well/Remarks: Good

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
2/17/15	1440	24.55	100	14.94	7.39	4.54	0.70	19.5	122				
"	1445	24.59	100	15.75	7.46	4.59	0.11	123	119				
"	1450	24.63	100	16.11	7.50	4.60	0.09	69.3	115				
"	1455	24.66	100	16.62	7.52	4.59	0.45	27.5	113				
"	1500	24.69	100	16.69	7.50	4.59	0.47	9.8	110				
"	1505	24.72	100	16.72	7.49	4.58	0.48	6.6	108				
"	1510	24.75	100	16.75	7.49	4.58	0.49	4.3	106				
"	1515	24.77	100	16.80	7.48	4.58	0.49	3.9	105	0.08	0.08	0.00	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW22-021715 TIME: 1515

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
3-20 ml glass	NA	N	"	Gases / CO2
1-500 ml plastic	ZnAc/NaOH	N	"	Sulfide
1-250 ml plastic	HNO3	Y	"	Dissolved metals
1-250 ml plastic	H2SO4	N	"	TOC / TOTAL phosphorous
1-250 ml plastic	NA	Y	"	Perchlorate
1-250 ml plastic	NA	N	"	Anions
1-250 ml plastic	NA	N	"	Alkalinity

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW23	Date: 2/18/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002QA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2"	Static Water Level Reading (ft) [c]: 23.65	Weather Conditions: CLEAR/COLD
	Total Well Depth (ft) [d]: 37.90	Screened Interval/Pump placement: 20-34.5/27.25	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
2/18/15	0910	23.59	100	14.11	6.77	5.77	0.76	63.0	195				
"	0915	23.68	100	15.17	6.79	5.78	0.40	26.7	189				
"	0920	23.73	100	15.31	6.80	5.77	0.22	16.9	186				
"	0925	23.77	100	15.31	6.81	5.77	0.14	8.8	182				
"	0930	23.81	100	15.37	6.82	5.76	0.13	6.0	180				
"	0935	23.83	100	15.41	6.82	5.76	0.12	4.3	179				
"	0940	23.85	100	15.45	6.82	5.75	0.12	3.9	177	0.25	0.25	0.00	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW23-022815 TIME: 0940

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
3-20 ml glass	NA	N	"	GASES/CO2
1-500 ml plastic	ZnAcNaOH	N	"	Sulfide
1-250 ml plastic	HNO3	Y	"	Dissolved metals
1-250 ml plastic	H2SO4	N	"	TOC/Total phosphorous
1-250 ml plastic	NA	Y	"	Perchlorate
1-250 ml plastic	NA	N	"	Anions
1-250 ml plastic	NA	N	"	ALKALinity

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW24	Date: 2/18/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2"	Static Water Level Reading (ft) [c]: 24.55	Weather Conditions: CLEAR / COLD
	Total Well Depth (ft) [d]: 38.10	Screened Interval/Pump placement: 20.4-34.9 / 27.50	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
2/18/15	0750	24.50	100	11.80	6.78	1.83	2.09	238	214				
"	0755	24.57	100	13.05	6.49	1.82	1.02	262	216				
"	0800	24.63	100	13.57	6.35	1.84	0.70	217	215				
"	0805	24.67	100	14.01	6.27	1.84	0.45	195	213				
"	0810	24.70	100	14.25	6.22	1.84	0.13	190	211				
"	0815	24.72	100	14.31	6.18	1.83	0.12	189	210				
"	0820	24.74	100	14.35	6.18	1.83	0.11	189	208				
"	0825	24.76	100	14.40	6.18	1.84	0.11	188	207	0.80	0.77	0.03	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW24-021815 TIME: 0825

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
3-20 ml glass	NA	N	"	GASES / CO2
1-500 ml plastic	NaOH	N	"	Sulfide
1-250 ml plastic	HNO3	Y	"	Dissolved metals
1-250 ml plastic	H2SO4	N	"	TOC / TOTAL phosphorous
1-250 ml plastic	NA	Y	"	Perchlorate
1-250 ml plastic	NA	N	"	ANIONS
1-250 ml plastic	NA	N	"	ALKALINITY

00634433

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW25	Date: 2/18/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2"	Static Water Level Reading (ft) [c]: 18.72	Weather Conditions: CLEAR/COOL
	Total Well Depth (ft) [d]: 57.95	Screened Interval/Pump placement: 45-54.4/49.75	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
2/18/15	1255	18.67	100	15.23	10.89	1.18	1.63	117	24				
"	1300	18.71	100	16.08	9.48	0.813	0.87	156	-1				
"	1305	18.75	100	16.51	7.50	0.677	0.79	102	4				
"	1310	18.78	100	16.91	6.89	0.617	0.69	60.0	19				
"	1315	18.80	100	17.18	6.60	0.590	0.42	29.3	35				
"	1320	18.82	100	17.22	6.57	0.590	0.40	29.0	36				
"	1325	18.83	100	17.28	6.57	0.591	0.40	28.5	34				
"	1330	18.83	100	17.31	6.57	0.592	0.39	28.1	33	0.37	0.37	0.00	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW25-021815 TIME: 1330

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
3-20 ml glass	NA	N	"	Gases/CO2
1-500 ml plastic	ZNACETATE NAOH	N	"	Sulfide
1-250 ml plastic	HNO3	Y	"	Dissolved metals
1-250 ml plastic	H2SO4	N	"	TOC/ TOTAL phosphorous
1-250 ml plastic	NA	Y	"	Perchlorate
1-250 ml plastic	NA	N	"	ANIONS
1-250 ml plastic	NA	N	"	ALKALINITY

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW26	Date: 2/13/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2.11	Static Water Level Reading (ft) [c]: 22.82	Weather Conditions: CLEAR
	Total Well Depth (ft) [d]: 62.98	Screened Interval/Pump placement: 45.1-59.6/52.25	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
2/13/15	1255	22.77	100	18.39	6.94	3.56	1.63	221	120				
"	1300	22.83	100	19.35	6.64	3.80	1.00	169	132				
"	1305	22.88	100	19.72	6.40	4.05	0.62	142	143				
"	1310	22.91	100	19.67	6.22	4.25	0.32	135	151				
"	1315	22.93	100	19.85	6.10	4.50	0.00	103	165				
"	1320	22.95	100	19.91	6.08	4.51	0.00	102	167				
"	1325	22.96	100	19.88	6.07	4.52	0.00	101	168				
"	1330	22.97	100	19.83	6.05	4.52	0.00	101	170	0.63	0.23	0.40	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW26-021315 TIME: 1330

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
1-250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW27	Date: 2/12/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.00026A	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2"	Static Water Level Reading (ft) [c]: 18.75	Weather Conditions: CLEAR
	Total Well Depth (ft) [d]: 60.03	Screened Interval/Pump placement: 42.9-57.4/50.0	Condition of Well/Remarks: Good

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
2/12/15	1225	18.70	100	18.84	6.73	1.59	2.21	291	-65				
2/12/15	1230	18.74	100	18.77	7.40	1.58	0.47	188	-66				
2/12/15	1235	18.78	100	18.56	7.46	1.61	0.26	122	-78				
2/12/15	1240	18.80	100	18.64	7.48	1.59	0.00	120	-85				
2/12/15	1245	18.82	100	18.65	7.49	1.58	0.00	120	-87				
2/12/15	1250	18.83	100	18.64	7.49	1.58	0.00	119	-90				
2/12/15	1255	18.84	100	18.71	7.50	1.58	0.00	118	-92				
2/12/15	1300	18.85	100	18.67	7.50	1.57	0.00	118	-93				
2/12/15	1305	18.85	100	18.69	7.51	1.57	0.00	117	-94	1.06	1.04	0.02	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW27-021215 TIME: 1305

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40 ml glass	HCL	N	Pump	VOC
1-250 ml plastic	NA	Y	Pump	Perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50 WW 28	Date: 2/17/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135, 00026A	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 18.62	Weather Conditions: CLEAR/COLD
	Total Well Depth (ft) [d]: 27.38	Screened Interval/Pump placement: 14.9-24.9/21.00	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
2/17/15	1715	18.60	100	12.31	8.05	0.292	3.89	51.1	110				
"	1720	18.64	100	12.67	6.79	0.170	2.36	69.3	124				
"	1725	18.69	100	12.96	6.62	0.134	2.14	68.1	130				
"	1730	18.72	100	13.15	6.50	0.122	2.06	57.2	136				
"	1735	18.75	100	13.21	6.44	0.119	2.03	57.0	140				
"	1740	18.77	100	13.25	6.43	0.118	2.02	56.3	141				
"	1745	18.79	100	13.30	6.42	0.117	2.01	55.5	142				
"	1750	18.81	100	13.34	6.42	0.117	1.99	55.1	143	1.52	0.92	0.62	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW28-021715 TIME: 1750

DUPLICATE (D): YES/NO Yes
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
6-40ml glass	HCL	N	Pump	VOC
2-250ml plastic	NA	Y	Pump	Perchlorate

00634437

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: CHSMW54	Date: 2/18/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 18.63	Weather Conditions: CLEAR
	Total Well Depth (ft) [d]: 44.50	Screened Interval/Pump placement: 32.2-42.2/37.25	Condition of Well/Remarks: Needs paint

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
2/18/15	1605	18.60	100	17.39	7.89	1.35	0.84	53.1	60				
"	1610	18.64	100	17.34	7.70	1.36	0.35	29.3	43				
"	1615	18.68	100	17.31	7.59	1.36	0.00	20.1	25				
"	1620	18.70	100	17.28	7.48	1.36	0.00	18.2	23				
"	1625	18.71	100	17.24	7.47	1.37	0.00	18.0	24				
"	1630	18.72	100	17.22	7.46	1.37	0.00	17.9	24				
"	1635	18.72	100	17.20	7.46	1.37	0.00	17.5	24	2.00	0.27	1.73	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: CHSmw54-021815 TIME: 1635

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
1-250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 47WW38	Date: 2/18/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2"	Static Water Level Reading (ft) [c]: 21.45	Weather Conditions: CLEAR
	Total Well Depth (ft) [d]: 58.00	Screened Interval/Pump placement: 47-57 / 52.00	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
2/18/15	1715	21.40	100	15.17	6.46	0.991	0.96	79.1	100				
"	1720	21.45	100	15.20	6.10	1.01	0.24	32.3	125				
"	1725	21.50	100	15.28	6.09	1.01	0.00	20.2	129				
"	1730	21.53	100	15.34	6.16	1.00	0.00	14.1	126				
"	1735	21.56	100	15.37	6.19	1.00	0.00	14.0	125				
"	1740	21.58	100	15.37	6.18	1.00	0.00	13.5	124				
"	1745	21.60	100	15.38	6.17	1.00	0.00	13.0	125	1.76	1.06	0.70	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 47WW38-021815 TIME: 1745

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
1-250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 5D	LocID: 50WW01	Date: 5/26/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002.GA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21272	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 18.56	Weather Conditions: Cloudy
	Total Well Depth (ft) [d]: 23.28	Screened Interval/Pump placement: 9-19	Condition of Well/Remarks: Needs paint

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
5/26/15	0815	18.56	NA										Bailing well
5/26/15	0822	23.10	NA										Bailed 4 gal. Cloudy
5/26/15	0740	18.56	NA	19.17	7.26	0.738	NA	5.9	162	0.31	0.15	0.16	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW01-052615 TIME: 0740

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NA
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	~~Pump~~ Bailer	VOC
1-250 ml plastic	NA	Y	Bailer	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 5D	LocID: 50WW02	Date: 5/21/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # $21272	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4 11	Static Water Level Reading (ft) [c]: DRY	Weather Conditions: CLOUDY
	Total Well Depth (ft) [d]: 22.28	Screened Interval/Pump placement: 9-19	Condition of Well/Remarks: Need Paint

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)

Dry Well

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
DUPLICATE (D): YES/NO					
MATRIX SPIKE (MS): YES/NO					
MATRIX DUPLICATE (MD): YES/NO					
CO= LEL= OXY= H2S=					

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 5D	LocID: 50WW03		Date: 5/22/15	
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA		Recorded By: Beesinger	Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe:	Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD	
	Unit #	Sampling Equipment:	Peristaltic/Bladder/Bailer ID#:		
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: DRY		Weather Conditions: CLEAR Sunny	
	Total Well Depth (ft) [d]: 23.03	Screened Interval/Pump placement: 10-20		Condition of Well/Remarks: Needs paint	

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)

DRY WELL

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID:	TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)

DUPLICATE (D): YES/NO
MATRIX SPIKE (MS): YES/NO
MATRIX DUPLICATE (MD): YES/NO

CO= LEL= OXY= H2S=

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 5D	LocID: 50WW04	Date: 5/22/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002.GA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: DRY	Weather Conditions: CLEAR/SUNNY
	Total Well Depth (ft) [d]: 23.18	Screened Interval/Pump placement: 10-20'	Condition of Well/Remarks: Needs paint

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)

Dry Well

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
DUPLICATE (D): YES/NO					
MATRIX SPIKE (MS): YES/NO					
MATRIX DUPLICATE (MD): YES/NO					
CO= LEL= OXY= H2S=					

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 5D	LocID: 50WW05	Date: 5/26/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002.GA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21272	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 18.40	Weather Conditions: CLEAR
	Total Well Depth (ft) [d]: 25.38	Screened Interval/Pump placement: 14.9-24.9/21.50	Condition of Well/Remarks: Needs paint

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
5/26/15	1010	18.37	100	19.20	6.95	1.40	1.58	21.1	49				
"	1015	18.42	100	18.85	7.20	1.40	1.08	7.0	32				
"	1020	18.46	100	18.72	7.23	1.40	0.88	2.1	29				
"	1025	18.48	100	18.76	7.23	1.40	0.70	1.9	27				
"	1030	18.50	100	18.84	7.21	1.40	0.61	1.0	26				
"	1035	18.51	100	18.83	7.19	1.41	0.61	0.9	25				
"	1040	18.51	100	18.82	7.18	1.41	0.62	0.9	24				
"	1045	18.51	100	18.87	7.18	1.41	0.61	1.0	23	0.10	0.10	0.00	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW05-052615 TIME: 1045

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO yes
MATRIX DUPLICATE (MD): YES/NO yes

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
9- 40 ml glass	HCL	N	Pump	VOC
3- 250ml plastic	NA	Y	Pump	perchlorate

00634444

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 5D	LocID: 50MW06	Date: 5/20/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002.GA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21272	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 16.51	Weather Conditions: Cloudy
	Total Well Depth (ft) [d]: 58.48	Screened Interval/Pump placement: 48-58/53.00	Condition of Well/Remarks: Needs paint

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
5/20/15	1240	16.50	100	20.79	7.33	1.03	5.18	17.9	132				
"	1245	16.56	100	20.14	7.14	1.04	4.08	8.3	138				
"	1250	16.60	100	20.08	6.75	0.988	4.15	8.1	147				
"	1255	16.64	100	19.85	6.52	0.983	4.16	7.4	156				
"	1300	16.68	100	19.91	6.32	1.12	3.62	8.2	170				
"	1305	16.70	100	19.80	6.31	1.12	3.60	5.4	172				
"	1310	16.72	100	19.77	6.30	1.13	3.58	4.5	173				
"	1315	16.73	100	19.78	6.30	1.14	3.56	4.4	172	0.16	0.02	0.14	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50MW06-052015 TIME: 1315

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
3-20 ml glass	NA	N	"	Gases/CO2
1-500 ml plastic	2N NaOH	N	"	Sulfide
1-250 ml plastic	H2SO4	N	"	TOC/TOTAL phosphorous
1-250 ml plastic	HNO3	Y	"	Dissolved metals
1-250 ml plastic	NA	Y	"	Perchlorate
1-250 ml plastic	NA	N	"	Anions
1-250 ml plastic	NA	N	"	Alkalinity

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 5D	LocID: 50WW07	Date: 5/26/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002.GA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21272	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 24.55	Weather Conditions: CLEAR
	Total Well Depth (ft) [d]: 31.89	Screened Interval/Pump placement: 21-31 / 27.00	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
5/26/15	1305	24.52	100	23.61	7.62	1.16	3.11	23.8	98				
"	1310	24.58	100	23.96	7.52	1.17	2.57	9.1	85				
"	1315	24.62	100	24.04	7.40	1.16	2.37	7.0	82				
"	1320	24.65	100	23.71	7.29	1.15	2.25	5.1	82				
"	1325	24.66	100	24.86	7.16	1.16	2.00	3.2	79				
"	1330	24.67	100	25.07	7.14	1.16	1.98	2.0	77				
"	1335	24.67	100	25.10	7.13	1.15	1.96	1.8	76				
"	1340	24.68	100	25.13	7.12	1.16	1.94	1.5	75	0.73	0.07	0.66	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW07-052615 TIME: 1340

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3- 40 ml glass	HCl	N	Pump	VOC
1- 250 ml plastic	NA	Y	Pump	Perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 5D	LocID: 50WW08	Date: 5/21/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002.GA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinst 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21272	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2"	Static Water Level Reading (ft) [c]: 20.59	Weather Conditions: RAIN
	Total Well Depth (ft) [d]: 32.74	Screened Interval/Pump placement: 14.6-29.25/23.00	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
5/21/15	1315	20.55	100	17.87	6.30	2.14	2.65	165	66				
"	1320	20.60	100	17.87	6.07	2.12	1.85	178	93				
"	1325	20.65	100	17.84	5.99	2.12	1.65	159	121				
"	1330	20.68	100	17.91	5.92	2.12	1.36	125	140				
"	1335	20.70	100	17.91	5.87	2.11	1.21	102	165				
"	1340	20.72	100	18.06	5.84	2.11	1.21	39.1	178				
"	1345	20.74	100	18.10	5.85	2.11	1.20	40.9	180				
"	1350	20.75	100	18.10	5.84	2.11	1.19	41.5	182				
"	1355	20.76	100	18.16	5.85	2.11	1.20	42.3	184	0.06	0.02	0.04	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW08-052115 TIME: 1355

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
3-20 ml glass	NA	N	"	Gases/CO2
1-500 ml plastic	2 drops NaOH	N	"	Sulfide
1-250 ml plastic	H2SO4	N	"	TOC/Total phosphorous
1-250 ml plastic	HNO3	Y	"	Dissolved metal
1-250 ml plastic	NA	Y	"	Perchlorate
1-250 ml plastic	NA	N	"	Anions
1-250 ml plastic	NA	N	"	Alkalinity

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 5D	LocID: 5DWW09	Date: 5/23/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002.GA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21272	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2"	Static Water Level Reading (ft) [c]: 20.27	Weather Conditions: CLEAR/SUNNY
	Total Well Depth (ft) [d]: 62.48	Screened Interval/Pump placement: 44.4-58.9/51.50	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
5/23/15	0720	20.16	100	19.31	6.42	1.87	1.66	198	54				
"	0725	20.23	100	19.13	6.35	2.01	1.24	157	43				
"	0730	20.28	100	19.09	6.29	2.06	1.08	115	37				
"	0735	20.33	100	19.09	6.24	2.08	0.89	82.5	34				
"	0740	20.35	100	19.13	6.22	2.10	0.86	60.3	27				
"	0745	20.37	100	19.18	6.18	2.11	0.70	55.3	-2				
"	0750	20.39	100	19.24	6.16	2.12	0.70	54.5	-1				
"	0755	20.40	100	19.31	6.15	2.13	0.69	53.9	-1				
"	0800	20.41	100	19.32	6.16	2.13	0.69	52.7	-2	1.71	1.30	0.41	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 5DWW09-052315 TIME: 0800

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO yes
MATRIX DUPLICATE (MD): YES/NO yes

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
9-40 ml glass	HCL	N	Pump	VOC
3-250 ml plastic	NA	Y	Pump	Perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 5D	LocID: 50WW10	Date: 5/23/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002.GA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21272	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2n	Static Water Level Reading (ft) [c]: 22.60	Weather Conditions: CLEAR/SUNNY
	Total Well Depth (ft) [d]: 111.28	Screened Interval/Pump placement: 98.9-108.4/104.0	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
5/23/15	0840	22.63	100	20.29	10.84	1.33	1.62	125	-257				
"	0845	22.69	100	20.39	10.61	1.28	1.79	114	-238				
"	0850	22.72	100	20.76	10.46	1.27	1.77	91.3	-235				
"	0855	22.74	100	21.15	10.45	1.27	1.59	86.5	-234				
"	0900	22.75	100	21.90	10.46	1.28	1.75	85.4	-232				
"	0905	22.75	100	22.03	10.49	1.27	1.76	84.9	-231				
"	0910	22.75	100	22.10	10.47	1.25	1.77	84.0	-231				
"	0915	22.75	100	22.15	10.45	1.24	1.77	83.1	-230	0.13	0.13	0.00	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW10-052315 TIME: 0915

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
1-250 ml plastic	NA	Y	Pump	Perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 5D	LocID: 5DWW11	Date: 5/20/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002.GA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21272	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2"	Static Water Level Reading (ft) [c]: 18.10	Weather Conditions: CLEAR
	Total Well Depth (ft) [d]: 37.84	Screened Interval/Pump placement: 20.2-34.7/27.5	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
5/20/15	1025	18.05	100	20.30	6.31	1.58	1.59	379	96				
"	1030	18.11	100	20.12	6.01	1.57	1.04	370	135				
"	1035	18.16	100	20.00	5.92	1.56	0.82	348	150				
"	1040	18.20	100	19.97	5.86	1.56	0.68	288	153				
"	1045	18.24	100	20.01	5.80	1.55	0.54	201	155				
"	1050	18.27	100	20.00	5.79	1.56	0.52	200	153				
"	1055	18.30	100	20.01	5.79	1.56	0.52	199	151				
"	1100	18.32	100	19.95	5.78	1.56	0.51	198	149	0.00	0.00	0.00	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 5DWW11-052015 TIME: 1100

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
3-20 ml glass	NA	N	"	Gases/CO2
1-500 ml plastic	2ml NaOH	N	"	Sulfide
1-250 ml plastic	H2SO4	N	"	TOC/TOTAL phosphorous
1-250 ml plastic	HNO3	Y	"	Dissolved metals
1-250 ml plastic	NA	Y	"	Perchlorate
1-250 ml plastic	NA	N	"	Anions
1-250 ml plastic	NA	N	"	Alkalinity

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 5D	LocID: 50WW12	Date: 5/20/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002.GA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21272	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2"	Static Water Level Reading (ft) [c]: 16.95	Weather Conditions: CLEAR
	Total Well Depth (ft) [d]: 38.00	Screened Interval/Pump placement: 20.1-34.6 / 27.25	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
5/20/15	1405	16.90	100	21.22	6.46	3.93	1.57	270	160				
"	1410	16.97	100	20.92	6.43	3.99	1.13	167	156				
"	1415	17.03	100	20.77	6.41	4.01	0.97	101	153				
"	1420	17.07	100	20.55	6.40	4.02	0.77	59.3	149				
"	1425	17.10	100	20.60	6.38	4.03	0.76	46.0	146				
"	1430	17.11	100	20.60	6.37	4.03	0.73	45.1	144				
"	1435	17.12	100	20.66	6.36	4.04	0.72	44.5	142				
"	1440	17.13	100	20.60	6.35	4.04	0.72	43.8	140	0.05	0.05	0.00	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW12-052015 TIME: 1440

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
3-20 ml glass	NA	N	"	Gases / CO2
1-500 ml plastic	ZnACETAO H	N	"	Sulfide
1-250 ml plastic	H2SO4	N	"	TOC / TOTAL phosphorus
1-250 ml plastic	HNO3	Y	"	Dissolved metals
1-250 ml plastic	NA	Y	"	Perchlorate
1-250 ml plastic	NA	N	"	Anions
1-250 ml plastic	NA	N	"	ALKALINITY

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 5D	LocID: 5D WW13	Date: 5/20/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002.GA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit #	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2"	Static Water Level Reading (ft) [c]: 18.50	Weather Conditions: Cloudy / Drizzle
	Total Well Depth (ft) [d]: 37.74	Screened Interval/Pump placement: 20-34.5/27.25	Condition of Well/Remarks: Good

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
5/20/15	0750	18.45	100	20.83	6.62	2.02	1.68	262	239				
"	0755	18.51	100	19.87	6.51	2.01	1.16	~~239~~	~~[illegible]~~ 219				
"	0800	18.55	100	19.74	6.45	2.00	1.08	131	205				
"	0805	18.59	100	19.69	6.35	2.00	1.04	79.7	184				
"	0810	18.62	100	19.67	6.28	2.00	0.81	40.5	105				
"	0815	18.64	100	19.68	6.24	1.99	0.80	40.1	82				
"	0820	18.66	100	19.70	6.23	1.99	0.79	39.5	80				
"	0825	18.68	100	19.74	6.23	1.99	0.79	39.0	78				
"	0830	18.70	100	19.75	6.21	1.99	0.78	38.8	76	0.08	0.07	0.01	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 5DWW13-052015 TIME: 0830

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
3-20 ml glass	NA	N	"	Gases/CO2
1-500 ml plast. U	ZnAceNaOH	N	"	Sulfide
1-250 ml plast. U	HNO3	Y	"	Dissolved metals
1-250 ml plast. U	H2SO4	N	"	TOC/Total phosphorous
1-250 ml plastic	NA	N	"	Perchlorate
1-250 ml plastic	NA	N	"	Anions
1-250 ml plastic	NA	N	"	Alkalinity

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 5D	LocID: 50WW14		Date: 5/20/15	
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002.GA		Recorded By: Beesinger	Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe:	Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD	
	Unit # 21272	Sampling Equipment:	Peristaltic/Bladder/Bailer ID#:		
WELL INFO	Casing I.D. (in) [a]: 2"	Static Water Level Reading (ft) [c]: 18.58		Weather Conditions: CLEAR	
	Total Well Depth (ft) [d]: 60.76	Screened Interval/Pump placement: 43.4-57.9/50.5		Condition of Well/Remarks: Good	

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
5/20/15	0905	18.52	100	21.11	6.74	1.96	2.78	191	-78				
"	0910	18.57	100	20.53	6.28	1.98	1.88	299	-35				
"	0915	18.61	100	20.41	5.88	2.00	1.52	311	-5				
"	0920	18.65	100	20.37	5.75	2.01	1.25	301	4				
"	0925	18.68	100	20.21	5.65	2.01	0.92	291	10				
"	0930	18.70	100	20.07	5.64	2.01	0.70	202	9				
"	0935	18.72	100	20.18	5.64	2.00	0.68	204	8				
"	0940	18.73	100	20.15	5.64	2.00	0.67	205	10				
"	0945	18.74	100	20.10	5.65	2.00	0.65	206	8	5.25	1.46	3.79	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW14-052015 TIME: 0945

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
3-40 ml glass	NA	N	"	Gases / CO2
1-500 ml plastic	ZnAcNaOH	N	"	Sulfide
1-250 ml plastic	H2SO4	N	"	TOC/TOTAL phosphorous
1-250 ml plastic	HNO3	Y	"	Dissolved metals
1-250 ml plastic	NA	Y	"	Perchlorate
1-250 ml plastic	NA	N	"	Anions
1-250 ml plastic	NA	N	"	ALKALINITY

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 5D	LocID: 5DWW15	Date: 5/23/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002.GA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinst 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21272	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2.11	Static Water Level Reading (ft) [c]: 17.05	Weather Conditions: CLEAR / SUNNY
	Total Well Depth (ft) [d]: 37.93	Screened Interval/Pump placement: 19.9-34.4 / 27.0	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
5/23/15	1105	17.00	100	22.54	7.30	1.50	1.62	67.5	-9				
"	1110	17.07	100	22.10	7.67	1.51	0.88	40.3	-30				
"	1115	17.12	100	21.87	7.78	1.52	0.69	25.6	-26				
"	1120	17.15	100	21.75	7.78	1.53	0.61	28.4	-20				
"	1125	17.18	100	21.71	7.73	1.53	0.54	16.2	-19				
"	1130	17.21	100	21.79	7.69	1.53	0.53	15.8	-21				
"	1135	17.23	100	21.80	7.69	1.53	0.52	15.0	-20				
"	1140	17.25	100	21.82	7.68	1.52	0.51	14.1	-20	0.39	0.26	0.03	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 5DWW15-052315 TIME: 1140

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
1-250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 5D	LocID: 5DWW16	Date: 5/22/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002.GA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21272	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2"	Static Water Level Reading (ft) [c]: 17.70	Weather Conditions: CLEAR/SUNNY
	Total Well Depth (ft) [d]: 38.08	Screened Interval/Pump placement: 20.1-34.6/27.25	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
5/22/15	1050	17.64	100	17.16	7.69	0.272	3.14	488	44				
"	1055	17.70	100	16.99	6.48	0.256	1.29	626	101				
"	1100	17.77	100	17.00	5.86	0.254	0.94	661	118				
"	1105	17.81	100	17.19	5.62	0.256	0.73	532	131				
"	1110	17.85	100	17.47	5.51	0.257	0.60	486	137				
"	1115	17.88	100	17.79	5.43	0.258	0.51	421	142				
"	1120	17.90	100	17.81	5.43	0.257	0.50	420	143				
"	1125	17.91	100	17.85	5.45	0.256	0.49	419	141				
"	1130	17.91	100	17.89	5.44	0.256	0.49	418	140	0.25	0.17	0.08	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 5DWW16-052215 TIME: 1130

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO
MATRIX DUPLICATE (MD): YES/NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
1-250 ml plastic	NA	Y	Pump	Perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 5D	LocID: 50WW17	Date: 5/22/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002.GA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21272	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 24	Static Water Level Reading (ft) [c]: 17.37	Weather Conditions: CLEAR/SUNNY
	Total Well Depth (ft) [d]: 67.27	Screened Interval/Pump placement: 19.9-64.4 / 42.25	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
5/22/15	0925	17.32	100	16.52	6.17	2.15	3.01	512	2				
"	0930	17.40	100	17.06	5.56	2.21	1.34	488	64				
"	0935	17.45	100	17.19	5.48	2.21	0.90	421	66				
"	0940	17.49	100	17.22	5.47	2.21	0.66	370	63				
"	0945	17.51	100	17.43	5.47	2.19	0.49	289	59				
"	0950	17.52	100	17.45	5.47	2.17	0.48	247	57				
"	0955	17.53	100	17.49	5.47	2.16	0.47	047	55				
"	1000	17.54	100	17.55	5.47	2.15	0.46	246	53				
"	1005	17.54	100	17.58	5.48	2.15	0.45	245	53	3.95	2.37	1.58	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW17-052215 TIME: 1005

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
1-250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 5D	LocID: 50WW18	Date: 5/28/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002.GA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21272	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2"	Static Water Level Reading (ft) [c]: 16.87	Weather Conditions: CLEAR
	Total Well Depth (ft) [d]: 37.70	Screened Interval/Pump placement: 20.1-34.6/27.25	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
5/28/15	1025	16.81	100	21.03	8.49	2.43	2.63	546	117				
"	1030	16.88	100	20.01	7.67	2.60	1.20	313	118				
"	1035	16.95	100	19.77	7.32	2.62	0.96	203	109				
"	1040	16.99	100	19.49	7.11	2.62	0.85	189	99				
"	1045	17.03	100	19.54	6.84	2.62	0.66	199	77				
"	1050	17.05	100	19.47	6.84	2.62	0.65	201	75				
"	1055	17.07	100	19.49	6.84	2.61	0.65	200	73				
"	1100	17.08	100	19.53	6.83	2.61	0.66	200	72	0.00	0.00	0.00	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW18-052815 TIME: 1100

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40 ml glass	HCL	N	Pump	VOC
3 - 20 ml glass	NA	N	"	Gases/CO2
1 - 500 ml plastic	ZnAc NAOH	N	"	Sulfide
1 - 250 ml plastic	H2SO4	N	"	TOC/Total phosphorous
1 - 250 ml plastic	HNO3	Y	"	Dissolved metals
1 - 250 ml plastic	NA	Y	"	Perchlorate
1 - 250 ml plastic	NA	N	"	Anions
1 - 250 ml plastic	NA	N	"	Alkalinity

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 5D	LocID: 50WW19	Date: 5/22/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002.GA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21272	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2"	Static Water Level Reading (ft) [c]: 18.04	Weather Conditions: CLEAR / SUNNY
	Total Well Depth (ft) [d]: 64.68	Screened Interval/Pump placement: 19.1-63.6/41.25	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
5/22/15	0805	18.00	100	16.67	6.45	1.24	1.72	792	-39				
"	0810	18.06	100	16.80	5.86	1.22	1.38	916	2				
"	0815	18.10	100	17.01	5.59	1.22	1.10	843	19				
"	0820	18.13	100	17.15	5.41	1.22	0.85	655	29				
"	0825	18.15	100	17.31	5.32	1.22	0.74	375	33				
"	0830	18.16	100	17.40	5.23	1.22	0.58	286	39				
"	0835	18.17	100	17.42	5.22	1.22	0.57	285	39				
"	0840	18.17	100	17.40	5.22	1.23	0.56	284	38				
"	0845	18.17	100	17.41	5.21	1.23	0.55	283	38	3.12	1.81	1.31	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW19-052215 TIME: 0845

DUPLICATE (D): YES/NO Yes
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
6-40ml glass	HCL	N	Pump	VOC
2-250 ml plastic	NA	Y	Pump	Perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 5D	LocID: 50WW20	Date: 5/26/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002.GA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21272	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2"	Static Water Level Reading (ft) [c]: ~~23.50~~ 23.95	Weather Conditions: Cloudy
	Total Well Depth (ft) [d]: 55.95	Screened Interval/Pump placement: 18.3-52.8/35.50	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
5/26/15	0850	23.90	100	19.48	5.88	1.89	1.94	737	25				
"	0855	23.97	100	18.96	5.66	1.90	1.07	891	45				
"	0900	24.03	100	18.80	5.47	1.91	0.79	850	63				
"	0905	24.06	100	18.81	5.36	1.92	0.71	603	72				
"	0910	24.08	100	18.76	5.30	1.93	0.64	359	78				
"	0915	24.10	100	18.70	5.29	1.94	0.58	331	79				
"	0920	24.10	100	18.70	5.28	1.95	0.55	309	82				
"	0925	24.10	100	18.63	5.30	1.95	0.54	308	80				
"	0930	24.10	100	18.60	5.31	1.96	0.53	307	78				
"	0935	24.10	100	18.61	5.32	1.96	0.52	306	76	5.53	2.78	2.75	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW20-052615 TIME: 0935

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40 ml glass	HCl	N	Pump	VOC
1 - 250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 5D	LocID: 50WW21	Date: 5/23/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002.GA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21272	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2"	Static Water Level Reading (ft) [c]: 21.57	Weather Conditions: Clear/Sunny
	Total Well Depth (ft) [d]: 37.68	Screened Interval/Pump placement: 19.9-34.4/27.00	Condition of Well/Remarks: Good

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
5/23/15	1445	21.52	100	30.28	6.40	6.41	4.81	114	98				
"	1450	21.58	100	30.01	6.35	6.60	1.89	54.1	110				
"	1455	21.64	100	29.83	6.23	6.61	1.48	55.3	121				
"	1500	21.69	100	29.47	6.15	6.63	1.31	35.5	129				
"	1505	21.73	100	30.10	6.09	6.62	1.20	27.7	136				
"	1510	21.75	100	29.95	6.04	6.56	0.90	21.3	143				
"	1515	21.75	100	29.89	5.99	6.54	0.89	17.1	147				
"	1520	21.75	100	29.82	5.96	6.54	0.87	16.9	149				
"	1525	21.75	100	29.80	5.95	6.53	0.87	16.4	151				
"	1530	21.75	100	29.75	5.95	6.53	0.87	16.0	152	0.07	0.04	0.03	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW21-052315 TIME: 1530

DUPLICATE (D): YES/NO yes
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
6-40 ml glass	HCL	N	Pump	VOC
2-250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 5D	LocID: 5DWW22	Date: 5/21/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21272	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2"	Static Water Level Reading (ft) [c]: 23.36	Weather Conditions: Cloudy/Drizzle
	Total Well Depth (ft) [d]: 37.87	Screened Interval/Pump placement: 19.9-34.4/27.00	Condition of Well/Remarks: Good

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
5/21/15	1435	23.31	100	18.38	6.88	3.52	2.33	121	188				
"	1440	23.37	100	18.13	6.91	3.52	1.38	102	185				
"	1445	23.43	100	18.06	6.89	3.58	1.12	82.0	182				
"	1450	23.48	100	18.01	6.84	3.58	1.14	55.1	181				
"	1455	23.51	100	17.98	6.79	3.58	1.05	52.3	180				
"	1500	23.53	100	17.96	6.77	3.58	1.04	50.1	178				
"	1505	23.54	100	17.95	6.75	3.57	1.06	50.5	176				
"	1510	23.55	100	17.93	6.75	3.56	1.07	50.0	175	0.00	0.00	0.00	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 5DWW22-052115 TIME: 1510

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
3-20ml glass	NA	N	"	Gases/CO2
1-500 ml plastic	ZnAc,NaOH	N	"	Sulfide
1-250 ml plastic	H2SO4	N	"	TOC/Total phosphorous
1-250 ml plastic	HNO3	Y	"	Dissolved metals
1-250 ml plastic	NA	Y	"	Perchlorate
1-250 ml plastic	NA	N	"	Anions
1-250 ml plastic	NA	N	"	Alkalinity

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 5D	LocID: 50WW23	Date: 5/20/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinst 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21272	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2"	Static Water Level Reading (ft) [c]: 22.26	Weather Conditions: CLEAR
	Total Well Depth (ft) [d]: 37.89	Screened Interval/Pump placement: 20-34.5 / 27.25	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
5/20/15	1425	22.20	100	21.93	6.23	4.95	2.30	166	167				
"	1430	22.26	100	21.47	6.09	4.94	1.69	110	175				
"	1435	22.31	100	21.39	6.01	4.94	1.47	79.3	181				
"	1440	22.35	100	20.76	5.94	4.94	1.11	50.1	181				
"	1445	22.38	100	20.56	5.91	4.95	1.08	51.3	158				
"	1450	22.40	100	20.50	5.89	4.95	1.07	51.6	156				
"	1455	22.42	100	20.45	5.89	4.95	1.06	50.8	155	0.03	0.01	0.02	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW23-052015 TIME: 1455

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3- 40ml glass	HCL	N	Pump	VOC
3- 20ml glass	NA	N	"	GASES / CO2
1- 500 ml plastic	ZnAcetate	N	"	Sulfide
1- 250 ml plastic	H2SO4	N	"	TOC / TOTAL phosphorous
1- 250 ml plastic	HNO3	Y	"	Dissolved metal
1- 250 ml plastic	NA	Y	"	Perchlorate
1- 250 ml plastic	NA	N	"	Anions
1- 250 ml plastic	NA	N	"	ALKALINITY

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 5D	LocID: 50WW24	Date: 5/28/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002.GA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21272	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 24	Static Water Level Reading (ft) [c]: 23.28	Weather Conditions: CLEAR
	Total Well Depth (ft) [d]: 38.08	Screened Interval/Pump placement: 20.4-34.9 / 27.50	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
5/28/15	0735	23.22	100	19.21	6.31	1.49	1.96	315	179				
"	0740	23.29	100	18.78	5.89	1.48	1.20	324	177				
"	0745	23.35	100	18.68	5.75	1.48	1.01	282	153				
"	0750	23.40	100	18.91	5.70	1.47	0.86	279	145				
"	0755	23.43	100	18.71	5.60	1.48	0.80	201	143				
"	0800	23.45	100	18.99	5.60	1.46	0.78	128	145				
"	0805	23.47	100	18.99	5.59	1.46	0.77	124	147				
"	0810	23.48	100	18.97	5.59	1.46	0.75	122	149				
"	0815	23.49	100	18.95	5.58	1.47	0.75	121	150	0.01	0.00	0.01	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW24-052815 TIME: 0815

DUPLICATE (D): YES/NO No
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40ml glass	HCL	N	Pump	VOC
3-20 ml glass	NA	N	"	Gases / CO2
1-500 ml plastic	ZnAceNaOH	N	"	Sulfide
1-250ml plastic	H2SO4	N	"	TOC/TOTAL phosphorous
1-250 ml plastic	HNO3	Y	"	Dissolved metals
1-250 ml plastic	NA	Y	"	Perchlorate
1-250 ml plastic	NA	N	"	Anions
1-250 ml plastic	NA	N	"	Alkalinity

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 5D	LocID: 50WW25	Date: 5/28/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21272	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2"	Static Water Level Reading (ft) [c]: 16.95	Weather Conditions: CLEAR
	Total Well Depth (ft) [d]: 58.00	Screened Interval/Pump placement: 45-54 ft / 49.75	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
5/28/15	0900	16.90	100	20.59	11.32	0.625	3.66	167	41				
"	0905	16.97	100	19.75	12.39	0.635	2.29	278	-6				
"	0910	17.03	100	19.55	12.11	0.587	1.25	149	-31				
"	0915	17.08	100	19.55	11.49	0.548	1.50	77.1	-44				
"	0920	17.13	100	19.47	10.81	0.537	1.19	45.3	-57				
"	0925	17.17	100	19.46	9.95	0.535	0.90	17.8	-70				
"	0930	17.20	100	19.49	9.93	0.537	0.89	17.2	-72				
"	0935	17.21	100	19.54	9.91	0.537	0.87	16.9	-72				
"	0940	17.21	100	19.55	9.90	0.538	0.86	16.0	-71	0.21	0.13	0.08	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW25-052815 TIME: 0940

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
3-20 ml glass	NA	N	"	Gases/CO2
1-500 ml plastic	2NaOH	N	"	Sulfide
1-250 ml plastic	H2SO4	N	"	TOC/TOTAL phosphorous
1-250 ml plastic	HNO3	Y	"	Dissolved Metals
1-250 ml plastic	NA	Y	"	Perchlorate
1-250 ml plastic	NA	N	"	Anions
1-250 ml plastic	NA	N	"	ALKALINITY

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 5D	LocID: 5DWW26		Date: 5/23/15	
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002.GA		Recorded By: Beesinger	Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe:	Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD	
	Unit # 21272	Sampling Equipment:	Peristaltic/Bladder/Bailer ID#:		
WELL INFO	Casing I.D. (in) [a]: 2"	Static Water Level Reading (ft) [c]: 21.42		Weather Conditions: CLEAR/SUNNY	
	Total Well Depth (ft) [d]: ~~[illegible]~~ 62.96	Screened Interval/Pump placement: 45.1-59.6/52.25		Condition of Well/Remarks: GOOD	

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
5/23/15	1330	21.35	100	32.09	6.33	3.24	1.55	78.1	98				
"	1335	21.41	100	30.16	5.88	3.22	1.28	23.1	129				
"	1340	21.46	100	29.17	5.79	3.22	0.91	21.4	136				
"	1345	21.51	100	28.63	5.81	3.22	0.86	16.9	130				
"	1350	21.55	100	27.73	5.83	3.19	0.80	10.4	121				
"	1355	21.58	100	27.69	5.83	3.25	0.80	24.9	109				
"	1400	21.60	100	27.65	5.82	3.22	0.75	10.0	105				
"	1405	21.61	100	27.61	5.80	3.23	0.73	8.1	107				
"	1410	21.62	100	27.65	5.79	3.24	0.72	7.3	109				
"	1415	21.63	100	27.68	5.78	3.23	0.72	6.9	110	2.62	1.07	1.55	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 5DWW26-052315 TIME: 1415

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40ml glass	HCL	N	Pump	VOC
1-250 ml plastic	NA	Y	Pump	Perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 5D	LocID: 5D WW 27	Date: 5/23/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002.GA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21272	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2"	Static Water Level Reading (ft) [c]: 16.96	Weather Conditions: CLEAR/SUNNY
	Total Well Depth (ft) [d]: 60.00	Screened Interval/Pump placement: 42.9-57.4/50.00	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
5/23/15	1005	16.90	100	21.08	7.21	1.53	6.29	148	30				
"	1010	16.97	100	20.72	6.85	1.50	5.36	63.0	45				
"	1015	17.02	100	20.25	6.81	1.48	4.92	56.7	34				
"	1020	17.07	100	20.76	6.79	1.46	4.62	53.9	28				
"	1025	17.10	100	20.83	6.80	1.44	4.25	39.3	20				
"	1030	17.13	100	20.87	6.83	1.43	4.24	38.1	18				
"	1035	17.16	100	20.91	6.83	1.42	4.20	37.9	19				
"	1040	17.18	100	20.95	6.83	1.41	4.17	37.2	18	1.66	0.88	0.78	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 5DWW27-052315 TIME: 1040

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
1-250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 5D	LocID: 50WW28	Date: 5/26/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002.GA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21272	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 15.68	Weather Conditions: CLEAR
	Total Well Depth (ft) [d]: 27.43	Screened Interval/Pump placement: 13.9-24.9/20.00	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
5/26/15	1425	15.65	100	27.76	6.17	0.101	1.40	35.7	134				
"	1430	15.71	100	26.28	5.70	0.100	1.21	34.4	145				
"	1435	15.74	100	26.66	5.50	0.103	1.10	35.5	151				
"	1440	15.76	100	26.70	5.42	0.101	0.99	34.4	158				
"	1445	15.77	100	26.61	5.32	0.099	0.75	34.0	160				
"	1450	15.78	100	26.68	5.23	0.104	0.74	35.3	174				
"	1455	15.79	100	26.66	5.20	0.104	0.73	34.8	176				
"	1500	15.80	100	26.65	5.19	0.104	0.72	35.0	178				
"	1505	15.80	100	26.60	5.19	0.103	0.72	35.8	180	0.00	0.00	0.00	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW28-052615 TIME: 1505

DUPLICATE (D): YES/NO Yes
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
6-40 ml glass	HCL	N	Pump	VOC
2-250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 5D	LocID: LHSmw54	Date: 5/27/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21272	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 4"	Static Water Level Reading (ft) [c]: 16.92	Weather Conditions: CLOUDY
	Total Well Depth (ft) [d]: 45.54	Screened Interval/Pump placement: 32.2-42.2/37.25	Condition of Well/Remarks: needs paint

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
5/27/15	0940	16.90	100	19.25	7.25	1.25	2.33	98.4	75				
"	0945	16.96	100	18.68	6.81	1.27	1.22	59.7	60				
"	0950	17.01	100	18.59	6.60	1.26	1.11	53.2	67				
"	0955	17.03	100	18.50	6.42	1.27	0.99	37.0	76				
"	1000	17.05	100	18.45	6.32	1.27	0.86	20.1	82				
"	1005	17.07	100	18.46	6.30	1.27	0.70	16.9	84				
"	1010	17.09	100	18.48	6.31	1.27	0.69	16.0	84				
"	1015	17.10	100	18.50	6.30	1.27	0.69	15.8	84				
"	1020	17.11	100	18.49	6.30	1.27	0.71	15.1	83	2.77	0.22	2.55	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: LHSmw54-052715 TIME: 1020

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
1-250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 5D	LocID: 47WW38	Date: 5/27/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002.GA	Recorded By: Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator ID# Solinist 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21272	Sampling Equipment: Peristaltic/Bladder/Bailer ID#:	
WELL INFO	Casing I.D. (in) [a]: 2"	Static Water Level Reading (ft) [c]: 19.62	Weather Conditions: CLOUDY
	Total Well Depth (ft) [d]: 57.84	Screened Interval/Pump placement: 47-57 / 52.00	Condition of Well/Remarks: GOOD

CASING INFO												
Casing I.D. (in) [a]:	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft) [b]:	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
5/27/15	0820	19.57	100	19.32	11.92	1.45	2.24	145	44				
"	0825	19.64	100	18.71	10.30	1.31	1.67	108	16				
"	0830	19.70	100	18.52	7.43	1.25	1.33	65.6	-5				
"	0835	19.73	100	18.43	6.65	1.21	1.14	57.7	53				
"	0840	19.76	100	18.45	6.42	1.17	0.80	55.5	41				
"	0845	19.78	100	18.49	6.41	1.14	0.78	53.9	23				
"	0850	19.80	100	18.51	6.42	1.13	0.77	52.9	21				
"	0855	19.81	100	18.50	6.43	1.12	0.76	52.0	20				
"	0900	19.82	100	18.55	6.43	1.12	0.75	51.8	21	0.55	0.39	0.16	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 47WW38-052715 TIME: 0900

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
1-250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW01	Date: 8/19/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 224717	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 20202	Sampling Equipment: Bailer ID#: NA	
WELL INFO	Casing I.D. (in): 4 11	Static Water Level Reading (ft) from TOC: 20.51	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 23.38	Screen Intverval (ft) from TOC: 13.38 - 23.38	Condition of Well/Remarks: Needs paint
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
8/19/15	1115	20.51	NA										Bailing well
8/19/15	1120	20.29	NA										Bailed 2 gallons RAWDRY
8/20/15	1023	20.51	NA	20.10	6.88	0.660	NA	10.9	229	0.10	0.08	0.02	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW01-082015 TIME: 1023

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40ml glass	HCL	N	Bailer	VOC
1-250 ml plastic	NA	Y	Bailer	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW02	Date: 8/19/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 224717	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 20202	Sampling Equipment: Bailer ID#: NA	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: DRY	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 22.38	Screen Intverval (ft) from TOC: 12.34 - 22.34	Condition of Well/Remarks: Needs paint
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)

DRY WELL

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
DUPLICATE (D): YES/NO					
MATRIX SPIKE (MS): YES/NO					
MATRIX DUPLICATE (MD): YES/NO					
CO= LEL= OXY= H2S=					

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW03	Date: 8/19/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 224717	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 20202	Sampling Equipment: Bailer ID#: NA	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: DRY	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 23.10	Screen Intverval (ft) from TOC: 13.06 - 23.06	Condition of Well/Remarks: Needs paint
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)

DRY WELL

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)

DUPLICATE (D): YES/NO
MATRIX SPIKE (MS): YES/NO
MATRIX DUPLICATE (MD): YES/NO

CO= LEL= OXY= H2S=

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW04	Date: 8/19/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 224717	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 20202	Sampling Equipment: Bailer ID#: NA	
WELL INFO	Casing I.D. (in): 4	Static Water Level Reading (ft) from TOC: DRY	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 22.93	Screen Intverval (ft) from TOC: 12.87 - 22.87	Condition of Well/Remarks: NEEDS paint
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)

DRY WELL

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
DUPLICATE (D): YES/NO					
MATRIX SPIKE (MS): YES/NO					
MATRIX DUPLICATE (MD): YES/NO					
CO= LEL= OXY= H2S=					

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW05	Date: 8/19/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 224717	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 20202	Sampling Equipment: Sample Pro Bladder Pump ID#: NA	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 20.20	Weather Conditions: CLOUDY
	Total Well Depth (ft) from TOC: 25.36	Screen Intverval (ft) from TOC: 17.24 - 27.24	Condition of Well/Remarks: Needs paint
		Pump Placement (ft) from TOC: 23.00	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
8/19/15	1015	20.18	100	26.38	6.56	1.44	2.43	70.0	107				
"	1020	20.25	100	24.54	6.89	1.41	0.44	14.7	5				
"	1025	20.30	100	23.77	6.90	1.40	0.32	7.8	23				
"	1030	20.33	100	23.38	6.80	1.39	0.26	8.1	63				
"	1035	20.35	100	23.30	6.53	1.39	0.20	8.8	75				
"	1040	20.36	100	23.37	6.52	1.39	0.20	9.2	76				
"	1045	20.36	100	23.38	6.51	1.39	0.20	8.7	77				
"	1050	20.37	100	23.40	6.51	1.39	0.21	8.2	77	0.24	0.08	0.16	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: 50WW05-081915 TIME: 1050

DUPLICATE (D): YES/NO Yes
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
6 - 40 ml glass	HCL	N	Pump	VOC
2 - 250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW06	Date: 8/18/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 224717	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 20202	Sampling Equipment: Sample Pro Bladder Pump ID#: NA	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 18.01	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 58.48	Screen Intverval (ft) from TOC: 47.85 - 57.75	Condition of Well/Remarks: NEEDS paint
		Pump Placement (ft) from TOC: 52.75	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
8/18/15	1300	18.00	100	32.81	7.30	0.633	3.15	34.0	148				
"	1305	18.07	100	25.42	7.07	0.589	2.10	36.8	155				
"	1310	18.13	100	24.36	6.78	0.585	2.03	37.7	160				
"	1315	18.18	100	24.10	6.72	0.586	1.96	37.8	160				
"	1320	18.22	100	23.53	6.67	0.582	1.61	37.5	170				
"	1325	18.25	100	23.33	6.65	0.588	1.50	38.1	170				
"	1330	18.27	100	23.37	6.65	0.590	1.49	38.3	171				
"	1335	18.28	100	23.30	6.64	0.591	1.47	39.0	170				
"	1340	18.28	100	23.27	6.63	0.591	1.46	39.1	171	0.00	0.00	0.00	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW06-081815 TIME: 1340

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
3-20 ml glass	NA	N	"	GASES/CO2
1-500 ml plastic	ZnAcetate	N	"	Sulfide
1-250 ml plastic	H2SO4	N	"	TOC/TOTAL PHOSPHOROUS
1-250 ml plastic	HNO3	Y	"	Dissolved METALS
1-250 ml plastic	NA	Y	"	PERCHLORATE
1-250 ml plastic	NA	N	"	ANIONS
1-250 ml plastic	NA	N	"	ALKALINITY

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW07	Date: 8/21/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 224717	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 20202	Sampling Equipment: Sample Pro Bladder Pump ID#: NA	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 25.55	Weather Conditions: Cloudy
	Total Well Depth (ft) from TOC: 31.62	Screen Intverval (ft) from TOC: 21.67 - 31.67	Condition of Well/Remarks: Good
		Pump Placement (ft) from TOC: 26.70	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
8/21/15	1410	25.53	100	30.45	7.64	1.50	2.80	77.1	112				
"	1415	25.60	100	28.51	7.01	1.48	1.23	25.3	104				
"	1420	25.66	100	27.51	6.95	1.46	1.46	14.3	102				
"	1425	25.71	100	26.80	6.91	1.46	0.78	7.6	102				
"	1430	25.74	100	25.85	6.85	1.45	0.73	6.4	104				
"	1435	25.77	100	25.82	6.85	1.45	0.72	8.1	102				
"	1440	25.79	100	25.75	6.83	1.45	0.71	7.7	101				
"	1445	25.81	100	25.73	6.82	1.45	0.71	7.0	100	0.78	0.18	0.60	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: 50WW07-082115 TIME: 1445

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO yes
MATRIX DUPLICATE (MD): YES/NO yes

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
9- 40 ml glass	HCL	N	Pump	VOC
3- 250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW08	Date: 8/17/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 224717	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 20202	Sampling Equipment: Sample Pro Bladder Pump ID#: NA	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 22.08	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 32.80	Screen Intverval (ft) from TOC: 17.11 - 31.71	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 24.50	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
8/17/15	1410	24.46	100	27.78	6.82	1.89	1.07	181	247				
"	1415	24.52	100	24.68	6.32	1.92	0.57	106	246				
"	1420	24.58	100	24.25	6.23	1.92	0.41	76.9	243				
"	1425	24.62	100	23.92	6.23	1.92	0.31	49.3	231				
"	1430	24.66	100	23.50	6.22	1.93	0.25	42.1	230				
"	1435	24.69	100	23.43	6.21	1.93	0.12	38.8	230				
"	1440	24.71	100	23.34	6.21	1.94	0.11	38.2	228				
"	1445	24.72	100	23.38	6.22	1.93	0.10	37.9	227				
"	1450	24.72	100	23.39	6.22	1.93	0.10	37.3	226	0.08	0.00	0.08	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW08-081715 TIME: 1450

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
3-20 ml glass	NA	N	"	Gases/CO2
1-500 ml Plastic	ZnAc NaOH	N	"	Sulfide
1-250 ml plastic	H2SO4	N	"	TOC/TOTAL phosphorous
1-250 ml plastic	HNO3	Y	"	Dissolved metals
1-250 ml plastic	NA	Y	"	Perchlorate
1-250 ml plastic	NA	N	"	Anions
1-250 ml plastic	NA	N	"	Alkalinity

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW09	Date: 8/21/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 224717	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 20202	Sampling Equipment: Sample Pro Bladder Pump ID#: NA	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 21.89	Weather Conditions: Cloudy/overcast
	Total Well Depth (ft) from TOC: 62.49	Screen Intverval (ft) from TOC: 46.75 - 61.25	Condition of Well/Remarks: Good
		Pump Placement (ft) from TOC: 54.00	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
8/21/15	1000	21.85	100	22.06	6.43	1.16	2.29	655	-29				
"	1005	21.90	100	21.65	6.17	2.15	0.55	548	40				
"	1010	21.94	100	21.49	5.95	2.16	0.31	429	68				
"	1015	21.97	100	21.46	5.71	2.11	0.13	312	74				
"	1020	21.99	100	21.47	5.75	2.09	0.00	282	73				
"	1025	22.00	100	21.48	5.74	2.07	0.00	280	72				
"	1030	22.01	100	21.47	5.73	2.07	0.00	280	72				
"	1035	22.01	100	21.51	5.73	2.07	0.00	280	72	1.49	1.46	0.03	

Pump Rate: <=0.5 L/min **Drawdown:** <0.33 ft **Measurements:** 3-5 min **Stabilization:** +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW09-082115 TIME: 1035

DUPLICATE (D): YES/NO Yes

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
6 - 40 ml glass	HCL	N	Pump	VOC
2 - 250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW10	Date: 8/21/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 224717	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 20202	Sampling Equipment: Sample Pro Bladder Pump ID#: NA	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 23.34	Weather Conditions: Cloudy / over Cast
	Total Well Depth (ft) from TOC: 111.23	Screen Intverval (ft) from TOC: 101.43 - 110.93	Condition of Well/Remarks: Good
		Pump Placement (ft) from TOC: 106.20	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
8/21/15	1105	23.30	100	23.04	6.14	0.556	2.99	241	25				
"	1110	23.35	100	23.29	10.38	1.32	1.00	161	-184				
"	1115	23.38	100	23.42	10.64	1.32	0.98	95.1	-197				
"	1120	23.40	100	23.65	10.74	1.32	0.99	73.2	-210				
"	1125	23.42	100	23.78	10.75	1.33	0.98	50.1	-211				
"	1130	23.43	100	23.83	10.74	1.32	0.98	50.5	-211				
"	1135	23.43	100	23.90	10.73	1.31	0.97	50.8	-212				
"	1140	23.43	100	23.92	10.73	1.31	0.96	50.3	-212	0.00	0.00	0.00	

Pump Rate: <=0.5 L/min **Drawdown:** <0.33 ft **Measurements:** 3-5 min **Stabilization:** +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: 50WW10-082115 TIME: 1140

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40 ml glass	HCL	N	Pump	VOC
1 - 250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW11	Date: 8/18/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 224717	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 20202	Sampling Equipment: Sample Pro Bladder Pump ID#: NA	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 19.53	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 37.86	Screen Intverval (ft) from TOC: 22.55 - 37.05	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 29.75	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
8/18/15	1415	19.49	100	28.47	6.45	1.81	1.25	563	172				
"	1420	19.55	100	26.44	6.07	1.81	0.34	549	178				
"	1425	19.60	100	25.93	5.97	1.86	0.18	443	183				
"	1430	19.65	100	25.25	5.95	1.86	0.07	351	187				
"	1435	19.68	100	25.16	5.95	1.86	0.00	232	187				
"	1440	19.71	100	25.20	5.93	1.87	0.00	233	188				
"	1445	19.73	100	25.26	5.92	1.88	0.00	232	188				
"	1450	19.74	100	25.29	5.92	1.88	0.00	231	187	0.00	0.00	0.00	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: 50WW11-081815 TIME: 1450

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
3-20 ml glass	NA	N	"	Gases/CO2
1-500 ml plastic	ZnAc/NaOH	N	"	Sulfide
1-250 ml plastic	H2SO4	N	"	TOC/TOTAL phosphorous
1-250 ml plastic	HNO3	Y	"	Dissolved metals
1-250 ml plastic	NA	Y	"	Perchlorate
1-250 ml plastic	NA	N	"	Anions
1-250 ml plastic	NA	N	"	Alkalinity

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW12	Date: 8/18/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 224717	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 20202	Sampling Equipment: Sample Pro Bladder Pump ID#: NA	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 18.50	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 37.92	Screen Intverval (ft) from TOC: 22.50 - 37.00	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 29.75	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
8/18/15	1025	18.45	100	24.12	6.69	4.04	1.44	383	153				
"	1030	18.53	100	22.96	6.70	4.11	0.58	303	150				
"	1035	18.59	100	22.66	6.54	4.13	0.50	257	153				
"	1040	18.64	100	22.39	6.38	4.13	0.41	195	159				
"	1045	18.67	100	22.17	6.31	4.12	0.25	93.3	163				
"	1050	18.69	100	21.93	6.27	4.11	0.15	100	171				
"	1055	18.70	100	21.91	6.27	4.11	0.14	101	170				
"	1100	18.71	100	21.89	6.28	4.11	0.13	102	168				
"	1105	18.71	100	21.88	6.28	4.11	0.13	103	169				

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: 50WW12-081815 TIME: 1105

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40ml glass	HCL	N	Pump	VOC
3-20ml glass	NA	N	"	GASES/CO2
1-500 ml plastic	ZNACETNAOH	N	"	Sulfide
1-250 ml plastic	H2SO4	N	"	TOC/TOTAL phosphorous
1-250 ml plastic	HNO3	Y	"	Dissolved metals
1-250 ml plastic	NA	Y	"	Perchlorate
1-250ml plastic	NA	N	"	ANIONS
1-250ml plastic	NA	N	"	ALKALINITY

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW13	Date: 8/19/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 224717	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 20202	Sampling Equipment: Sample Pro Bladder Pump ID#: NA	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 20.00	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 37.70	Screen Intverval (ft) from TOC: 22.44 - 36.94	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 29.75	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
8/19/15	0900	19.96	100	25.12	6.40	1.99	2.07	471	97				
"	0905	20.04	100	24.48	6.17	1.98	0.59	292	134				
"	0910	20.10	100	24.02	5.86	1.97	0.30	141	163				
"	0915	20.15	100	23.73	5.79	1.98	0.16	93.2	185				
"	0920	20.18	100	23.43	5.79	1.97	0.00	93.0	185				
"	0925	20.21	100	23.00	5.78	1.97	0.00	92.8	186				
"	0930	20.23	100	22.98	5.78	1.98	0.00	92.5	187				
"	0935	20.24	100	22.96	5.78	1.98	0.00	92.1	187	0.00	0.00	0.00	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW13-081915 TIME: 0935

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
3-20ml glass	NA	N	"	Gases/CO2
1-500ml plastic	ZnAcetNaOH	N	"	Sulfide
1-250 ml plastic	H2SO4	N	"	TOC/TOTAL phosphorous
1-250 ml plastic	HNO3	Y	"	Dissolved metals
1-250 ml plastic	NA	Y	"	Perchlorate
1-250 ml plastic	NA	N	"	Anions
1-250 ml plastic	NA	N	"	ALKALINITY

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW14	Date: 8/19/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 224717	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 20202	Sampling Equipment: Sample Pro Bladder Pump ID#: NA	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 20.17	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 60.73	Screen Intverval (ft) from TOC: 45.78 - 60.28	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 53.00	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
8/19/15	0745	20.14	100	23.93	6.34	2.03	2.33	692	-30				
"	0745	20.20	100	22.53	6.46	2.03	1.25	669	-41				
"	0750	20.25	100	22.17	6.39	2.02	0.96	631	-25				
"	0755	20.28	100	21.99	6.26	2.03	0.70	508	-8				
"	0800	20.31	100	21.90	6.08	2.03	0.31	432	18				
"	0805	20.33	100	21.92	6.00	2.03	0.14	433	19				
"	0810	20.34	100	21.93	5.99	2.03	0.13	434	20				
"	0815	20.35	100	21.94	5.98	2.03	0.13	435	20				
"	0820	20.35	100	21.95	5.97	2.03	0.12	435	20	6.85	4.05	2.80	

Pump Rate: <=0.5 L/min **Drawdown:** <0.33 ft **Measurements:** 3-5 min **Stabilization:** +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW14-081915 TIME: 0820

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
3-20 ml glass	NA	N	"	Gases/CO2
1-500 ml plastic	ZnAcetate/NaOH	N	"	Sulfide
1-250 ml plastic	H2SO4	N	"	TOC/Total phosphorous
1-250 ml plastic	HNO3	Y	"	Dissolved metals
1-250 ml plastic	NA	Y	"	Perchlorate
1-250 ml plastic	NA	N	"	Anions
1-250 ml plastic	NA	N	"	Alkalinity

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW15	Date: 8/20/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 224717	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 20202	Sampling Equipment: Sample Pro Bladder Pump ID#: NA	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 18.83	Weather Conditions: Cloudy / overcast
	Total Well Depth (ft) from TOC: 37.93	Screen Intverval (ft) from TOC: 22.25 - 36.75	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 29.50	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
8/20/15	1405	18.78	100	20.75	6.33	1.29	1.26	333	120				
"	1410	18.85	100	20.55	6.41	1.37	0.57	267	140				
"	1415	18.90	100	20.39	6.02	1.39	0.26	226	179				
"	1420	18.95	100	20.31	5.80	1.40	0.10	152	208				
"	1425	18.98	100	20.17	5.80	1.40	0.00	115	209				
"	1430	19.01	100	20.13	5.79	1.41	0.00	115	210				
"	1435	19.04	100	20.09	5.78	1.42	0.00	114	211				
"	1440	19.06	100	20.05	5.78	1.42	0.00	113	211	0.00	0.00	0.00	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: 50WW15-082015 TIME: 1440

DUPLICATE (D): YES/NO Yes

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
6 - 40ml glass	HCL	N	Pump	VOC
1 - 250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW16	Date: 8/20/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 224717	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 20202	Sampling Equipment: Sample Pro Bladder Pump ID#: NA	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 19.64	Weather Conditions: CLOUDY / OVERCAST
	Total Well Depth (ft) from TOC: 38.10	Screen Intverval (ft) from TOC: 22.66 - 37.16	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 29.90	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
8/20/15	1515	19.60	100	20.45	6.39	0.220	1.48	589	189				
"	1520	19.68	100	19.66	5.43	0.169	0.35	575	208				
"	1525	19.75	100	19.21	5.20	0.168	0.02	568	226				
"	1530	19.79	100	19.07	5.19	0.170	0.00	555	227				
"	1535	19.83	100	19.05	5.20	0.173	0.00	539	224				
"	1540	19.85	100	19.02	5.21	0.173	0.00	538	223				
"	1545	19.87	100	19.00	5.22	0.174	0.00	538	222				
"	1550	19.88	100	18.98	5.22	0.174	0.00	538	222	2.38	1.67	0.71	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: 50WW16-082015 TIME: 1550

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40 ml glass	HCL	N	Pump	VOC
1 - 250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW17	Date: 8/19/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 224717	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 20202	Sampling Equipment: Sample Pro Bladder Pump ID#: NA	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 18.48	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 67.43	Screen Intverval (ft) from TOC: 22.30 - 66.80	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 44.50	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
8/19/15	1325	18.45	100	28.22	5.80	2.10	1.07	800	93				
"	1330	18.51	100	24.12	5.27	2.06	0.17	751	124				
"	1335	18.57	100	23.39	5.25	2.05	0.07	702	121				
"	1340	18.61	100	23.39	5.19	2.03	0.00	677	123				
"	1345	18.64	100	23.00	5.16	2.03	0.00	619	130				
"	1350	18.67	100	22.91	5.13	2.02	0.00	618	128				
"	1355	18.69	100	22.88	5.13	2.01	0.00	618	127				
"	1400	18.70	100	22.83	5.12	2.00	0.00	617	126	3.06	2.02	1.04	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: 50WW17-081915 TIME: 1400

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40ml glass	HCL	N	Pump	VOC
1-250 ml plastic	NA	Y	Pump	Perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW18	Date: 8/17/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 224717	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 20202	Sampling Equipment: Sample Pro Bladder Pump ID#: NA	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 18.25	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 37.70	Screen Intverval (ft) from TOC: 22.37 - 36.87	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 29.60	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
8/17/15	0755	18.22	100	22.73	6.18	2.46	2.10	678	251				
"	0800	18.28	100	21.31	6.28	2.55	1.10	489	194				
"	0805	18.32	100	20.67	6.22	2.60	0.82	392	162				
"	0810	18.35	100	20.52	6.14	2.58	0.38	351	161				
"	0815	18.38	100	20.45	6.10	2.54	0.26	325	159				
"	0820	18.40	100	20.40	6.09	2.54	0.25	324	159				
"	0825	18.41	100	20.38	6.10	2.54	0.24	323	158				
"	0830	18.42	100	20.35	6.11	2.54	0.24	322	157	0.05	0.05	0.00	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: 50WW18-081715 TIME: 0830

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
3-20 ml glass	NA	N	"	Gases/CO2
1-500 ml plastic	2N NaOH	N	"	Sulfide
1-250 ml plastic	H2SO4	N	"	TOC/Total phosphorous
1-250 ml plastic	HNO3	Y	"	Dissolved metals
1-250 ml plastic	NA	Y	"	Perchlorate
1-250 ml plastic	NA	N	"	Anions
1-250 ml plastic	NA	N	"	Alkalinity

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW19	Date: 8/21/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 224717	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 20202	Sampling Equipment: Sample Pro Bladder Pump ID#: NA	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 19.25	Weather Conditions: Cloudy/overcast
	Total Well Depth (ft) from TOC: 65.85	Screen Intverval (ft) from TOC: 21.35 - 65.85	Condition of Well/Remarks: Good
		Pump Placement (ft) from TOC: 43.60	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
8/21/15	0735	19.21	100	22.19	5.68	0.943	2.05	708	91				
"	0740	19.27	100	21.21	5.63	0.948	0.50	549	98				
"	0745	19.33	100	20.68	5.49	0.945	0.22	493	99				
"	0750	19.36	100	20.36	5.53	0.938	0.11	480	90				
"	0755	19.38	100	20.27	5.46	0.928	0.00	472	96				
"	0800	19.39	100	20.08	5.33	1.04	0.00	470	105				
"	0805	19.40	100	19.99	5.24	1.06	0.00	469	107				
"	0810	19.40	100	19.98	5.24	1.07	0.00	468	109				
"	0815	19.40	100	19.94	5.23	1.06	0.00	468	110	4.45	1.58	2.87	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: 50WW19.082115 TIME: 0815

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
1-250ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW20	Date: 8/21/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 224717	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 20202	Sampling Equipment: Sample Pro Bladder Pump ID#: NA	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 25.11	Weather Conditions: Cloudy / overcast
	Total Well Depth (ft) from TOC: 55.88	Screen Intverval (ft) from TOC: 20.54 - 55.04	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 37.80	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
8/21/15	0850	25.07	100	21.28	6.03	1.38	1.23	683	74				
"	0855	25.15	100	20.82	5.76	1.39	0.41	573	112				
"	0900	25.21	100	20.74	5.66	1.39	0.33	530	124				
"	0905	25.25	100	20.63	5.77	1.41	0.21	475	135				
"	0910	25.28	100	20.52	5.50	1.42	0.00	422	142				
"	0915	25.30	100	20.29	5.40	1.42	0.00	310	155				
"	0920	25.31	100	20.30	5.38	1.42	0.00	308	157				
"	0925	25.31	100	20.27	5.38	1.43	0.00	307	156				
"	0930	25.31	100	20.22	5.37	1.43	0.00	308	156	5.04	1.41	3.53	

Pump Rate: <=0.5 L/min **Drawdown:** <0.33 ft **Measurements:** 3-5 min **Stabilization:** +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW20-082115 TIME: 0930

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
1-250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW21	Date: 8/20/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 224717	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 20202	Sampling Equipment: Sample Pro Bladder Pump ID#: NA	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 22.78	Weather Conditions: Cloudy/overcast
	Total Well Depth (ft) from TOC: 37.70	Screen Intverval (ft) from TOC: 22.36 - 36.86	Condition of Well/Remarks: Good
		Pump Placement (ft) from TOC: 29.60	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
8/20/15	0925	22.75	100	21.59	6.23	6.74	2.86	170	239				
"	0930	22.81	100	21.52	6.02	6.82	1.56	143	234				
"	0935	22.85	100	21.40	5.86	6.84	1.24	113	239				
"	0940	22.89	100	21.24	5.78	6.84	0.81	90.3	243				
"	0945	22.93	100	20.95	5.67	6.84	0.42	88.9	257				
"	0950	22.95	100	20.90	5.67	6.83	0.41	88.5	255				
"	0955	22.97	100	20.86	5.68	6.83	0.40	88.1	254				
"	1000	22.98	100	20.83	5.69	6.83	0.40	87.7	253	0.00	0.00	0.00	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: 50WW21-082015 TIME: 1000

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40 ml glass	HCL	N	Pump	VOC
1 - 250 ml plastic	NA	Y	Pump	Perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW22	Date: 8/18/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 224717	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 20202	Sampling Equipment: Sample Pro Bladder Pump ID#: NA	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 24.55	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 37.82	Screen Intverval (ft) from TOC: 21.97 - 36.57	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 29.30	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
8/18/15	0725	24.31	100	23.08	7.28	3.66	1.30	175	176				
"	0730	24.37	100	21.73	7.18	3.70	0.79	114	178				
"	0735	24.43	100	21.17	7.16	3.70	0.73	[illegible]	179				TURBity 83.1
"	0740	24.47	100	20.95	7.17	3.68	0.72	78.2	178				
"	0745	24.50	100	20.79	7.17	3.60	0.80	70.3	180				
"	0750	24.53	100	20.80	7.19	3.61	0.86	60.1	140				
"	0755	24.55	100	20.75	7.19	3.60	0.86	59.7	139				
"	0800	24.57	100	20.72	7.19	3.59	0.87	59.0	138				
"	0805	24.59	100	20.73	7.20	3.59	0.88	58.3	137	0.00	0.00	0.00	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: 50WW22-081815 TIME: 0805

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
3-20 ml glass	NA	N	"	Gases/CO2
1-500 ml plastic	ZnAcetate/NaOH	N	"	Sulfide
1-250 ml plastic	H2SO4	N	"	TOC/TOTAL phosphorous
1-250 ml plastic	HNO3	Y	"	Dissolved metals
1-250 ml plastic	NA	Y	"	Perchlorate
1-250 ml plastic	NA	N	"	Anions
1-250 ml plastic	NA	N	"	ALKALinity

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW23	Date: 8/17/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 224717	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 20202	Sampling Equipment: Sample Pro Bladder Pump ID#: NA	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 23.43	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: ~~37.88~~ 37.88	Screen Intverval (ft) from TOC: 22.42 - 36.92	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 29.75	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
8/17/15	1045	23.40	100	25.65	6.38	4.91	3.01	321	220				
"	1050	23.47	100	24.11	6.48	5.04	1.25	228	218				
"	1055	23.53	100	24.05	6.47	5.07	1.28	186	214				
"	1100	23.57	100	24.11	6.47	5.07	1.01	85.5	210				
"	1105	23.60	100	24.12	6.46	5.07	1.00	52.0	204				
"	1110	23.62	100	24.13	6.45	5.07	0.99	51.5	203				
"	1115	23.64	100	24.15	6.44	5.06	0.98	50.9	202				
"	1120	23.65	100	24.16	6.44	5.06	0.98	50.1	201	0.00	0.00	0.00	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW23-081715 TIME: 1120

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
3-20 ml glass	NA	N	"	GASES/CO2
1-500 ml plastic	2mL NaOH	N	"	Sulfide
1-250 ml plastic	H2SO4	N	"	TOC/TOTAL phosphorous
1-250 ml plastic	HNO3	Y	"	Dissolved metals
1-250 ml plastic	NA	Y	"	Perchlorate
1-250 ml plastic	NA	N	"	Anions
1-250 ml plastic	NA	N	"	ALKALINITY

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW24	Date: 8/17/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 224717	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 20202	Sampling Equipment: Sample Pro Bladder Pump ID#: NA	
WELL INFO	Casing I.D. (in): 2.11	Static Water Level Reading (ft) from TOC: 24.28	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 38.04	Screen Intverval (ft) from TOC: 22.66 - 37.16	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 30.00	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
8/17/15	0920	24.25	100	21.01	6.30	1.53	1.21	207	192				
"	0925	24.31	100	20.75	6.06	1.51	0.82	180	204				
"	0930	24.36	100	20.58	5.97	1.51	0.55	146	211				
"	0935	24.40	100	20.45	5.95	1.51	0.35	125	216				
"	0940	24.43	100	20.43	5.93	1.50	0.29	93.1	221				
"	0945	24.46	100	20.40	5.94	1.50	0.28	92.8	221				
"	0950	24.48	100	20.38	5.95	1.49	0.27	92.0	220				
"	0955	24.49	100	20.36	5.96	1.49	0.27	91.5	220	0.00	0.00	0.00	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW24-081715 TIME: 0955

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
3-20 ml glass	NA	N	"	Gases/CO2
1-500 ml plastic	ZnAcNaOH	N	"	Sulfide
1-250 ml plastic	H2SO4	N	"	TOC/TOTAL phosphorous
1-250 ml plastic	HNO3	Y	"	Dissolved metals
1-250 ml plastic	NA	Y	"	Perchlorate
1-250 ml plastic	NA	N	"	Anions
1-250 ml plastic	NA	N	"	Alkalinity

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW25	Date: 8/18/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 224717	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 20202	Sampling Equipment: Sample Pro Bladder Pump ID#: NA	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 19.15	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 57.84	Screen Intverval (ft) from TOC: 47.5 - 56.9	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 52.25	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
8/18/15	0855	19.11	100	22.57	10.53	0.435	1.21	220	86				
"	0900	19.17	100	22.20	8.27	0.397	0.98	181	148				
"	0905	19.23	100	22.01	6.27	0.405	0.52	171	129				
"	0910	19.25	100	22.02	5.94	0.419	0.29	178	112				
"	0915	19.27	100	21.87	5.85	0.437	0.16	203	106				
"	0920	19.28	100	21.78	5.87	0.453	0.10	173	99				
"	0925	19.29	100	21.72	5.92	0.454	0.00	119	90				
"	0930	19.30	100	21.68	5.94	0.455	0.00	119	88				
"	0935	19.30	100	21.63	5.95	0.456	0.00	118	87				
"	0940	19.30	100	21.60	5.96	0.456	0.00	117	86	0.06	0.03	0.03	

Pump Rate: <=0.5 L/min **Drawdown:** <0.33 ft **Measurements:** 3-5 min **Stabilization:** +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: 50WW25-081815 TIME: 0940

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
3-20 ml glass	NA	N	"	Gases/CO2
1-500 ml plastic	2NaOH	N	"	Sulfide
1-250 ml plastic	H2SO4	N	"	TOC/TOTAL phosphorous
1-250 ml plastic	HNO3	Y	"	Dissolved metals
1-250 ml plastic	NA	Y	"	Perchlorate
1-250 ml plastic	NA	N	"	Anions
1-250 ml plastic	NA	N	"	Alkalinity

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW26	Date: 8/20/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 224717	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 20202	Sampling Equipment: Sample Pro Bladder Pump ID#: NA	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 22.80	Weather Conditions: Cloudy/overcast
	Total Well Depth (ft) from TOC: 63.82	Screen Intverval (ft) from TOC: 47.49 - 61.99	Condition of Well/Remarks: Good
		Pump Placement (ft) from TOC: 54.75	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
8/20/15	0820	22.75	100	23.11	5.82	3.48	2.14	401	217				
"	0825	22.82	100	21.95	5.90	4.07	1.15	387	203				
"	0830	22.87	100	21.40	5.49	4.11	0.62	346	233				
"	0835	22.93	100	21.05	5.34	4.09	0.28	301	243				
"	0840	22.97	100	20.80	5.32	4.09	0.30	258	243				
"	0845	22.99	100	20.78	5.32	4.09	0.31	258	241				
"	0850	23.01	100	20.72	5.33	4.08	0.32	259	239				
"	0855	23.02	100	20.69	5.33	4.08	0.32	259	238	0.12	0.05	0.07	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: 50WW26-082015 TIME: 0855

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO yes

MATRIX DUPLICATE (MD): YES/NO yes

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
9-40ml glass	HCL	N	Pump	VOC
3-250ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW27	Date: 8/20/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 224717	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 20202	Sampling Equipment: Sample Pro Bladder Pump ID#: NA	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 19.85	Weather Conditions: Cloudy/overcast
	Total Well Depth (ft) from TOC: 59.94	Screen Intverval (ft) from TOC: 45.28 - 59.78	Condition of Well/Remarks: Good
		Pump Placement (ft) from TOC: 52.50	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
8/20/15	1300	19.81	100	21.52	6.54	1.06	1.15	761	61				
"	1305	19.88	100	20.46	5.97	1.06	0.58	593	120				
"	1310	19.94	100	20.27	5.70	1.06	0.16	488	138				
"	1315	19.97	100	20.12	5.61	1.04	0.00	297	150				
"	1320	19.99	100	19.94	5.60	1.17	0.00	203	148				
"	1325	20.00	100	19.91	5.59	1.18	0.00	202	147				
"	1330	20.00	100	19.85	5.59	1.19	0.00	200	146				
"	1335	20.00	100	19.80	5.59	1.19	0.00	200	145	1.12	1.11	0.01	

Pump Rate: <=0.5 L/min **Drawdown:** <0.33 ft **Measurements:** 3-5 min **Stabilization:** +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: 50WW27-082015 TIME: 1335

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40 ml glass	HCL	N	Pump	VOC
1-250 ml plastic	NA	Y	Pump	Perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW28	Date: 8/20/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 224717	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 20202	Sampling Equipment: Sample Pro Bladder Pump ID#: NA	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 17.80	Weather Conditions: Cloudy/overcast
	Total Well Depth (ft) from TOC: 27.34	Screen Intverval (ft) from TOC: 17.34 - 27.34	Condition of Well/Remarks: Good
		Pump Placement (ft) from TOC: 22.35	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Total Fe (mg/L)	Ferrous Fe (mg/L)	Ferric Fe (mg/L)	Remarks (odor, clarity, etc.)
8/20/15	1050	17.75	100	21.37	6.14	0.235	1.51	40.1	242				
"	1055	17.82	100	21.05	5.60	0.157	0.69	28.2	255				
"	1100	17.88	100	20.96	5.16	0.112	0.36	27.3	275				
"	1105	17.93	100	20.98	4.94	0.090	0.20	24.5	287				
"	1110	17.97	100	20.94	4.83	0.090	0.00	26.7	300				
"	1115	17.99	100	20.90	4.82	0.090	0.00	26.5	301				
"	1120	18.01	100	20.87	4.82	0.090	0.00	26.3	302				
"	1125	18.03	100	20.85	4.81	0.090	0.00	26.0	303	0.15	0.07	0.08	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW28-082015 TIME: 1125

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
1-250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 47 WW38	Date: 11/13/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21202	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 22.57	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 58.05	Screen Interval (ft) from TOC: 47.85 - 57.85	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 52.85	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
11/13/15	1420	22.57	100	18.86	9.72	1.42	1.34	58.9	78	
"	1425	22.65	100	18.93	7.97	1.39	0.68	47.0	130	
"	1430	22.71	100	18.93	6.12	1.35	0.32	34.2	149	
"	1435	22.76	100	18.97	5.59	1.30	0.12	32.6	160	
"	1440	22.79	100	19.00	5.64	1.21	0.00	25.7	140	
"	1445	22.81	100	19.00	5.65	1.21	0.00	25.0	140	
"	1450	22.82	100	18.99	5.66	1.20	0.00	25.3	138	
"	1455	22.83	100	18.97	5.66	1.20	0.00	24.9	137	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 47WW38-111315 TIME: 1455

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
1-250 ml plastic	N/A	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: LHSmw54	Date: 11/13/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21202	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 19.71	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 43.50	Screen Interval (ft) from TOC: 34.83-44.83	Condition of Well/Remarks: NEEDS paint
		Pump Placement (ft) from TOC: 39.83	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/in ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
11/13/15	1315	19.70	100	19.13	6.32	1.41	0.57	22.6	98	
"	1320	19.76	100	18.84	6.15	1.42	0.33	10.1	105	
"	1325	19.81	100	18.77	6.03	1.43	0.20	6.9	115	
"	1330	19.85	100	18.66	5.90	1.43	0.09	3.6	128	
"	1335	19.87	100	18.63	5.90	1.43	0.08	3.4	130	
"	1340	19.88	100	18.60	5.90	1.43	0.08	2.2	131	
"	1345	19.89	100	18.57	5.89	1.43	0.07	1.1	132	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: LHSmw54-111315 TIME: 1345

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40ml glass	HCL	N	Pump	VOC
1-250ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW01	Date: 11/12/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21202	Sampling Equipment: ~~Bladder Pump~~ Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 21.45	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 23.30	Screen Interval (ft) from TOC: 13.30 - 23.30	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/in ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
11/12/15	1500	21.45	NA							Bailing well
11/12/15	1505	23.25	NA							Bailed 1 gallon RAN DRY
11/13/15	1507	22.91	NA							

well only Recharged .39 ft. in 24 HOUR Period
NOT within 80% of original Depth to water
well is considered DRY
no sample collected

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
DUPLICATE (D): YES/NO					
MATRIX SPIKE (MS): YES/NO					
MATRIX DUPLICATE (MD): YES/NO					
CO= LEL= OXY= H2S=					

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW02	Date: 11/13/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21202	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: DRY	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 22.28	Screen Interval (ft) from TOC: 12.34 - 22.34	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC:	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/in ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)

Dry Well

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID:	TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)

DUPLICATE (D): YES/NO
MATRIX SPIKE (MS): YES/NO
MATRIX DUPLICATE (MD): YES/NO

CO= LEL= OXY= H2S=

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW03	Date: 11/13/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21202	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: DRY	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 23.06	Screen Interval (ft) from TOC: 13.06 - 23.06	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC:	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/in ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)

DRY WELL

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID:	TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
DUPLICATE (D): YES/NO						
MATRIX SPIKE (MS): YES/NO						
MATRIX DUPLICATE (MD): YES/NO						
CO= LEL= OXY= H2S=						

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW04	Date: 11/13/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21202	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: DRY	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: ~~[illegible]~~ 23.23	Screen Interval (ft) from TOC: 12.87 - 22.87	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC:	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)

Dry Well

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
DUPLICATE (D): YES/NO					
MATRIX SPIKE (MS): YES/NO					
MATRIX DUPLICATE (MD): YES/NO					
CO= LEL= OXY= H2S=					

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW05	Date: 11/13/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21202	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 21.46	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 25.39	Screen Interval (ft) from TOC: 15.24 - 25.24	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 23.24	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
11/13/15	0725	21.45	100	13.76	5.48	1.63	2.72	12.9	176	
"	0730	21.51	100	15.25	6.41	1.59	0.93	16.1	75	
"	0735	21.55	100	15.95	6.23	1.58	0.55	10.2	87	
"	0740	21.59	100	16.27	6.11	1.58	0.29	9.0	95	
"	0745	21.62	100	16.53	6.06	1.57	0.15	8.1	103	
"	0750	21.63	100	16.53	6.04	1.58	0.14	6.8	104	
"	0755	21.63	100	16.55	6.03	1.58	0.13	5.9	105	
"	0800	21.63	100	16.58	6.03	1.58	0.13	4.6	104	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW05-111315 TIME: 0800

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO yes
MATRIX DUPLICATE (MD): YES/NO yes

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
9- 40 ml glass	HCL	N	Pump	VOC
3- 250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW06	Date: 11/12/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21202	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 19.26	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 58.52	Screen Interval (ft) from TOC: 47.85-57.75	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 52.80	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/in ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
11/12/15	1245	19.24	100	20.25	6.34	0.941	3.45	40.8	106	
"	1250	19.30	100	19.93	6.06	0.888	2.63	15.6	133	
"	1255	19.35	100	19.68	5.87	0.850	2.42	10.3	155	
"	1300	19.39	100	19.59	5.75	0.826	2.42	8.7	169	
"	1305	19.41	100	19.46	5.64	0.803	2.19	9.1	195	
"	1310	19.42	100	19.46	5.61	0.802	2.18	8.8	196	
"	1315	19.42	100	19.42	5.58	0.801	2.17	8.5	197	
"	1320	19.42	100	19.45	5.57	0.800	2.18	8.4	198	
"	1325	19.43	100	19.48	5.57	0.800	2.18	8.2	199	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: 50WW06-111215 TIME: 1325

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40ml glass	HCL	N	Pump	VOC
3-20ml glass	NA	N	"	Gases/CO2
1-500ml plastic	ZnAc/NaOH	N	"	Sulfide
1-250ml plastic	HNO3	Y	"	Dissolved metals
1-250ml plastic	H2SO4	N	"	TOC/TOTAL phosphorous
1-250ml plastic	NA	Y	"	Perchlorate
1-250ml plastic	NA	N	"	Anions
1-250ml plastic	NA	N	"	Alkalinity

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW07	Date: 11/9/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21202	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 26.55	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 31.90	Screen Interval (ft) from TOC: 21.67 - 31.67	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 28.00	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/in ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
11/9/15	0955	26.51	100	17.48	6.52	1.17	1.89	23.3	33	
"	1000	26.57	100	17.75	6.42	1.17	1.66	20.2	59	
"	1005	26.63	100	17.93	6.26	1.27	1.08	14.5	86	
"	1010	26.68	100	18.05	6.16	1.27	0.90	12.1	100	
"	1015	26.71	100	18.09	6.08	1.27	0.87	9.8	116	
"	1020	26.73	100	18.11	6.06	1.27	0.65	9.5	118	
"	1025	26.75	100	18.20	6.04	1.28	0.67	9.3	120	
"	1030	26.76	100	18.25	6.03	1.28	0.65	9.0	121	
"	1035	26.77	100	18.26	6.03	1.28	0.64	8.9	122	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW07-110915 TIME: 1035

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO yes
MATRIX DUPLICATE (MD): YES/NO yes

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
9 - 40 ml glass	HCl	N	Pump	VOC
3 - 250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW08	Date: 11/16/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21202	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 23.19	Weather Conditions: Cloudy
	Total Well Depth (ft) from TOC: 32.80	Screen Interval (ft) from TOC: 17.11-31.71	Condition of Well/Remarks: Good
		Pump Placement (ft) from TOC: 24.41	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
11/16/15	0745	23.15	100	18.29	6.03	2.34	0.67	215	256	
"	0750	23.22	100	18.56	6.00	2.35	0.27	176	245	
"	0755	23.29	100	18.69	5.95	2.35	0.08	112	239	
"	0800	23.35	100	18.74	5.94	2.36	0.00	63.9	235	
"	0805	23.40	100	18.83	5.94	2.36	0.00	28.3	223	
"	0810	23.43	100	18.86	5.93	2.36	0.02	27.9	222	
"	0815	23.45	100	18.92	5.93	2.36	0.00	27.5	223	
"	0820	23.46	100	18.95	5.93	2.36	0.00	27.1	223	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: 50WW08-111615 TIME: 0820

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40 ml glass	HCL	N	Pump	VOC
3 - 20 ml glass	NA	N	"	Gases/CO2
1-500 ml plastic	2N NaOH	N	"	Sulfide
1-250 ml plastic	HNO3	Y	"	Dissolved metals
1-250 ml plastic	H2SO4	N	"	TOC/TOTAL phosphorous
1-250 ml plastic	NA	Y	"	Perchlorate
1-250 ml plastic	NA	N	"	Anions
1-250 ml plastic	NA	N	"	Alkalinity

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW09	Date: 11/11/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21202	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 2 11	Static Water Level Reading (ft) from TOC: 22.96	Weather Conditions: CLOUDY
	Total Well Depth (ft) from TOC: 62.50	Screen Interval (ft) from TOC: 46.75-61.25	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 54.00	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/in ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
11/11/15	0955	22.90	100	20.34	5.93	2.37	0.76	474	48	
"	1000	22.97	100	20.15	5.86	2.43	0.32	445	68	
"	1005	23.04	100	20.11	5.88	2.44	0.18	410	64	
"	1010	23.10	100	20.12	5.96	2.42	0.09	321	55	
"	1015	23.13	100	20.11	5.98	2.42	0.00	208	50	
"	1020	23.14	100	20.12	6.01	2.44	0.00	193	48	
"	1025	23.15	100	20.12	6.02	2.45	0.00	192	47	
"	1030	23.15	100	20.13	6.03	2.45	0.00	191	46	
"	1035	23.15	100	20.16	6.03	2.45	0.00	191	46	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW09-11115 TIME: 1035

DUPLICATE (D): YES/NO yes
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
6 - 40 ml glass	HCL	N	Pump	VOC
2 - 250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW10	Date: 11/11/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21202	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 23.25	Weather Conditions: Cloudy/Drizzle
	Total Well Depth (ft) from TOC: 111.31	Screen Interval (ft) from TOC: 101.43-110.93	Condition of Well/Remarks: Good
		Pump Placement (ft) from TOC: 106.20	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/in ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
11/11/15	1355	23.19	100	23.39	9.77	1.37	2.22	105	-62	
"	1400	23.25	100	23.20	9.96	1.32	1.99	100	-87	
"	1405	23.28	100	22.07	10.68	1.30	2.04	50.9	-138	
"	1410	23.31	100	21.69	10.72	1.30	1.37	28.3	-156	
"	1415	23.33	100	21.46	10.67	1.29	0.82	17.8	-171	
"	1420	23.35	100	21.27	10.65	1.28	0.30	8.0	-194	
"	1425	23.36	100	21.24	10.63	1.28	0.28	4.8	-195	
"	1430	23.36	100	21.20	10.62	1.27	0.29	3.3	-196	
"	1435	23.36	100	21.21	10.62	1.27	0.28	2.8	-197	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW10-111115 TIME: 1435

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
1-250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW11	Date: 11/12/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21202	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 20.96	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 37.87	Screen Interval (ft) from TOC: 22.95-37.95	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 29.80	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
11/12/15	1025	20.92	100	18.13	5.84	2.34	1.19	162	100	
"	1030	20.99	100	18.46	5.62	2.31	0.42	121	128	
"	1035	21.05	100	18.64	5.56	2.35	0.18	98.6	141	
"	1040	21.10	100	18.67	5.54	2.36	0.00	60.1	150	
"	1045	21.14	100	18.77	5.53	2.36	0.00	39.3	162	
"	1050	21.17	100	18.73	5.51	2.36	0.00	40.4	163	
"	1055	21.19	100	18.71	5.53	2.36	0.00	39.5	161	
"	1100	21.20	100	18.75	5.53	2.36	0.00	39.0	160	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: 50WW11-11/12/15 TIME: 1100

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40 ml glass	HCL	N	Pump	VOC
3 - 20 ml glass	NA	N	"	Gases/CO2
1-500 ml plastic	2NaOH	N	"	Sulfide
1-250 ml plastic	HNO3	Y	"	Dissolved metals
1-250 ml plastic	H2SO4	N	"	TOC/Total phosphorous
1-250 ml plastic	NA	Y	"	Perchlorate
1-250 ml plastic	NA	N	"	Anions
1-250 ml plastic	NA	N	"	Alkalinity

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW12	Date: 11/12/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21202	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 19.67	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 37.98	Screen Interval (ft) from TOC: 22.50-37.00	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 29.75	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
11/12/15	1400	19.63	100	19.41	6.29	4.53	2.10	125	176	
"	1405	19.70	100	19.14	6.36	4.62	0.71	59.6	171	
"	1410	19.77	100	19.04	6.34	4.64	0.33	36.2	168	
"	1415	19.82	100	18.94	6.31	4.65	0.14	18.3	165	
"	1420	19.85	100	18.99	6.29	4.66	0.00	16.2	163	
"	1425	19.87	100	18.96	6.26	4.66	0.00	16.0	162	
"	1430	19.89	100	18.92	6.26	4.66	0.00	15.7	161	
"	1435	19.90	100	18.89	6.25	4.66	0.00	15.3	162	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW12-111215 TIME: 1435

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40ml glass	HCL	N	Pump	VOC
3-20ml glass	NA	N	"	Gases/CO2
1-500 ml plastic	2NaOH	N	"	Sulfide
1-250 ml plastic	HNO3	Y	"	Dissolved metals
1-250 ml plastic	H2SO4	N	"	TKN/TOTAL phosphorous
1-250ml plastic	NA	Y	"	Perchlorate
1-250 ml plastic	NA	N	"	Anions
1-250 ml plastic	NA	N	"	Alkalinity

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW13	Date: ~~20~~-11/12/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21202	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 21.28	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 37.73	Screen Interval (ft) from TOC: 22.44 - 36.94	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 29.70	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/in ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
11/12/15	0805	21.25	100	16.93	6.08	2.26	1.37	164	228	
"	0810	21.31	100	17.73	6.14	2.26	0.66	104	203	
"	0815	21.36	100	18.10	6.04	2.27	0.33	73.8	187	
"	0820	21.40	100	18.39	5.96	2.27	0.16	60.3	173	
"	0825	21.43	100	18.34	5.95	2.27	0.07	41.4	157	
"	0830	21.45	100	18.40	5.96	2.27	0.07	40.9	156	
"	0835	21.47	100	18.43	5.96	2.27	0.06	41.6	155	
"	0840	21.48	100	18.47	5.97	2.27	0.06	41.2	154	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW13-111215 TIME: 0840

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
3-20 ml glass	NA	N	"	GASES / CO2
1-500 ml plastic	ZnAcetate/NaOH	N	"	Sulfide
1-250 ml plastic	HNO3	Y	"	Dissolved metals
1-250 ml plastic	H2SO4	N	"	TOC / TOTAL phosphorous
1-250 ml plastic	NA	Y	"	Perchlorate
1-250 ml plastic	NA	N	"	Anions
1-250 ml plastic	NA	N	"	ALKALINITY

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW14	Date: 11/12/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21202	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 21.43	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 60.73	Screen Interval (ft) from TOC: 45.78-60.28	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 53.00	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/in ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
11/12/15	0910	21.38	100	17.41	6.33	2.24	0.86	400	-27	
"	0915	21.45	100	17.90	6.43	2.24	0.30	341	-45	
"	0920	21.52	100	18.15	6.39	2.24	0.19	275	-42	
"	0925	21.58	100	18.26	6.34	2.24	0.12	229	-38	
"	0930	21.62	100	18.24	6.27	2.23	0.00	235	-30	
"	0935	21.65	100	18.32	6.20	2.22	0.00	163	-23	
"	0940	21.67	100	18.33	6.18	2.22	0.00	161	-22	
"	0945	21.68	100	18.37	6.18	2.22	0.00	161	-21	
"	0950	21.68	100	18.40	6.17	2.21	0.00	160	-20	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW14-111215 TIME: 0950

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
~~2~~ 3-40 ml glass	HCL	N	Pump	VOC
3-20 ml glass	NA	N	"	Gases/CO2
1-500 ml plastic	ZnAcNaOH	N	"	Sulfide
1-250 ml plastic	HNO3	Y	"	Dissolved metals
1-250 ml plastic	H2SO4	N	"	TOC/Total phosphorous
1-250 ml plastic	NA	Y	"	Perchlorate
1-250 ml plastic	NA	N	"	Anions
1-250 ml plastic	NA	N	"	Alkalinity

00634513

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW15	Date: 11/11/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21202	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 19.84	Weather Conditions: CLOUDY
	Total Well Depth (ft) from TOC: 37.90	Screen Interval (ft) from TOC: 22.25-36.75	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 29.50	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
11/11/15	0840	19.80	100	20.35	6.56	1.73	7.51	347	84	
"	0845	19.89	100	20.21	5.95	1.76	4.99	375	125	
"	0850	19.96	100	20.18	5.85	1.78	0.16	229	143	
"	0855	19.99	100	20.16	5.78	1.79	0.06	111	150	
"	0900	20.03	100	20.14	5.76	1.80	0.00	110	160	
"	0905	20.05	100	20.16	5.76	1.81	0.00	110	159	
"	0910	20.06	100	20.16	5.75	1.82	0.00	109	161	
"	0915	20.07	100	20.15	5.74	1.82	0.00	108	162	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW15-111115 TIME: 0915

DUPLICATE (D): YES/NO Yes

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
6-40 ml glass	HCL	N	Pump	VOC
2-250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW16	Date: 11/13/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21202	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 20.75	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 38.12	Screen Interval (ft) from TOC: 22.16-37.16	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 29.80	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
11/13/15	1010	20.71	100	16.54	5.77	0.240	1.35	464	186	
"	1015	20.77	100	17.19	5.31	0.225	0.42	500	210	
"	1020	20.84	100	17.93	5.03	0.223	0.19	472	225	
"	1025	20.90	100	18.25	5.11	0.224	0.11	454	224	
"	1030	20.93	100	18.39	5.16	0.224	0.00	377	223	
"	1035	20.95	100	18.45	5.16	0.225	0.00	376	223	
"	1040	20.96	100	18.50	5.15	0.226	0.00	377	224	
"	1045	20.97	100	18.54	5.14	0.226	0.00	376	224	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW16-1113/5 TIME:

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
1-250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW17	Date: 11/9/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21202	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 19.67	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 67.36	Screen Interval (ft) from TOC: 22.30-66.80	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 65.00	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
11/9/15	0740	19.63	100	16.08	5.48	2.29	2.93	635	101	
"	0745	19.70	100	16.86	5.33	2.20	1.29	744	109	
"	0750	19.77	100	17.34	5.18	2.14	0.40	618	116	
"	0755	19.82	100	17.60	5.13	2.12	0.10	587	115	
"	0800	19.85	100	17.65	5.14	2.11	0.00	473	112	
"	0805	19.87	100	17.69	5.12	2.10	0.00	472	111	
"	0810	19.88	100	17.72	5.11	2.10	0.00	472	111	
"	0815	19.88	100	17.72	5.12	2.10	0.00	471	110	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW17-110915 TIME: 0815

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
1-250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW18	Date: 11/16/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21202	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 19.09	Weather Conditions: Cloudy/Rain
	Total Well Depth (ft) from TOC: 37.67	Screen Interval (ft) from TOC: 22.37-36.87	Condition of Well/Remarks: Good
		Pump Placement (ft) from TOC: 29.60	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
11/16/15	1310	19.05	100	18.94	6.48	3.10	0.74	305	150	
"	1315	19.12	100	18.75	6.22	3.09	0.45	229	140	
"	1320	19.19	100	18.71	6.15	3.09	0.31	196	143	
"	1325	19.25	100	18.65	6.11	3.09	0.17	108	145	
"	1330	19.28	100	18.63	6.00	3.09	0.00	106	153	
"	1335	19.30	100	18.60	5.98	3.09	0.00	105	154	
"	1340	19.32	100	18.59	5.98	3.09	0.00	105	152	
"	1345	19.33	100	18.58	5.97	3.09	0.00	104	151	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW18-111615 TIME: 1345

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
3-20 ml glass	NA	N	"	Gases/CO2
1-500 ml plastic	2N AcetNaOH	N	"	Sulfide
1-250 ml plastic	H2SO4	N	"	TOC/Total phosphorous
1-250 ml plastic	HNO3	Y	"	Dissolved metals
1-250 ml plastic	NA	Y	"	Perchlorate
1-250 ml plastic	NA	N	"	Anions
1-250 ml plastic	NA	N	"	Alkalinity

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW19	Date: 11/9/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21202	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 20.34	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 64.68	Screen Interval (ft) from TOC: 21.35 - 65.85	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 62.50	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/in ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
11/9/15	0845	20.31	100	17.12	5.68	1.13	2.29	396	46	
"	0850	20.39	100	17.90	5.33	1.12	0.70	479	83	
"	0855	20.45	100	18.18	5.24	1.11	0.10	462	86	
"	0900	20.49	100	18.31	5.35	1.11	0.00	407	77	
"	0905	20.50	100	18.36	5.32	1.10	0.00	405	74	
"	0910	20.51	100	18.38	5.34	1.20	0.00	400	74	
"	0915	20.52	100	18.43	5.34	1.19	0.00	400	73	
"	0920	20.52	100	18.47	5.33	1.18	0.00	401	73	
"	0925	20.52	100	18.47	5.34	1.18	0.00	400	72	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW19-110915 TIME: 0925

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3- 40 ml glass	HCL	N	Pump	VOC
1- 250 ml plastic	NA	Y	Pump	Perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW20	Date: 11/10/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21202	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 25.94	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 55.90	Screen Interval (ft) from TOC: ~~20.54~~ 55.84	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 54.00	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
11/10/15	1440	25.91	100	21.38	6.28	1.69	1.16	263	25	
"	1445	25.99	100	20.44	6.19	1.58	0.35	225	22	
"	1450	26.05	100	20.17	6.15	1.54	0.18	198	21	
"	1455	26.10	100	19.99	6.14	1.51	0.12	129	22	
"	1500	26.13	100	19.95	6.11	1.50	0.09	127	24	
"	1505	26.16	100	19.93	6.09	1.50	0.09	126	25	
"	1510	26.18	100	19.88	6.10	1.50	0.10	126	26	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW20-111015 TIME: 1510

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40 ml glass	HCl	N	Pump	VOC
1 - 250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW21	Date: 11/10/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21202	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 23.85	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 37.69	Screen Interval (ft) from TOC: 22.36 - 36.86	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 29.6	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/in ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
11/10/15	1335	23.81	100	21.54	5.85	6.79	0.52	101	176	
"	1340	23.88	100	21.05	5.81	7.53	0.82	98.3	183	
"	1345	23.95	100	20.94	5.78	7.66	0.61	95.5	191	
"	1350	23.98	100	20.92	5.77	7.70	0.31	86.8	195	
"	1355	24.01	100	20.87	5.77	7.72	0.22	57.3	199	
"	1400	24.03	100	20.81	5.77	7.73	0.21	39.1	207	
"	1405	24.05	100	20.77	5.77	7.74	0.21	39.8	207	
"	1410	24.06	100	20.78	5.78	7.75	0.22	34.2	205	
"	1415	24.07	100	20.83	5.78	7.75	0.23	38.7	204	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW21-111015 TIME: 1415

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3- 40 ml glass	HCL	N	Pump	VOC
1- 250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW22	Date: 11/16/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21202	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 25.59	Weather Conditions: Cloudy
	Total Well Depth (ft) from TOC: 37.87	Screen Interval (ft) from TOC: 21.97-36.57	Condition of Well/Remarks: Good
		Pump Placement (ft) from TOC: 29.30	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
11/16/15	0850	25.55	100	18.02	6.65	4.78	1.44	36.1	213	
"	0855	25.64	100	18.54	6.99	4.81	0.67	29.5	207	
"	0900	25.71	100	18.60	7.02	4.80	0.64	28.7	203	
"	0905	25.77	100	18.69	7.04	4.76	0.85	22.6	198	
"	0910	25.80	100	18.69	7.01	4.73	1.05	12.3	185	
"	0915	25.84	100	18.65	7.01	4.72	1.06	12.0	164	
"	0920	25.86	100	18.66	7.01	4.72	1.05	12.2	162	
"	0925	25.87	100	18.68	7.01	4.72	1.03	11.9	161	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW22-111615 TIME: 0925

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40ml glass	HCL	N	Pump	VOC
3-20ml glass	NA	N	"	Gases/CO2
1-500ml plastic	ZnAcNaOH	N	"	Sulfide
1-250ml plastic	H2SO4	N	"	TOC/TOTAL phosphorous
1-250ml plastic	HNO3	Y	"	Dissolved metals
1-250ml plastic	NA	Y	"	Perchlorate
1-250ml plastic	NA	N	"	Anions
1-250ml plastic	NA	N	"	Alkalinity

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW23	Date: 11/16/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21202	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 24.47	Weather Conditions: Cloudy
	Total Well Depth (ft) from TOC: 37.90	Screen Interval (ft) from TOC: 22.42 - 36.92	Condition of Well/Remarks: Good
		Pump Placement (ft) from TOC: 29.65	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
11/16/15	1100	24.43	100	18.06	6.89	5.86	1.99	73.3	208	
"	1105	24.51	100	18.51	6.38	6.09	0.80	37.8	208	
"	1110	24.60	100	18.57	6.35	6.09	0.73	30.6	206	
"	1115	24.66	100	18.63	6.31	6.09	0.65	18.3	204	
"	1120	24.70	100	18.67	6.29	6.09	0.33	14.4	202	
"	1125	24.72	100	18.71	6.27	6.09	0.35	14.0	200	
"	1130	24.73	100	18.74	6.26	6.09	0.36	13.9	198	
"	1135	24.73	100	18.78	6.26	6.08	0.35	13.7	197	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW23-111615 TIME: 1135

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40ml glass	HCL	N	Pump	VOC
3-20ml glass	NA	N	"	Gases / CO2
1-500ml plastic	ZNACETATE NAOH	N	"	Sulfide
1-250ml plastic	H2SO4	N	"	TOC / TOTAL phosphorous
1-250ml plastic	HNO3	Y	"	Dissolved metals
1-250ml plastic	NA	Y	"	Perchlorate
1-250ml plastic	NA	N	"	Anions
1-250ml plastic	NA	N	"	Alkalinity

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50 WW 24	Date: 11/16/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Bessinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21202	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 25.39	Weather Conditions: Cloudy / Drizzle
	Total Well Depth (ft) from TOC: 38.08	Screen Interval (ft) from TOC: 22.66-37.16	Condition of Well/Remarks: Good
		Pump Placement (ft) from TOC: 29.90	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/in ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
11/16/15	1000	25.35	100	18.37	6.08	1.83	1.22	153	182	
"	1005	25.43	100	18.52	5.83	1.82	0.54	225	196	
"	1010	25.50	100	18.54	5.77	1.81	0.29	199	207	
"	1015	25.57	100	18.52	5.74	1.79	0.21	103	215	
"	1020	25.60	100	18.54	5.72	1.78	0.00	100	217	
"	1025	25.62	100	18.56	5.73	1.79	0.01	101	219	
"	1030	25.63	100	18.57	5.72	1.80	0.00	100	220	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW24-111615 TIME: 1030

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
3-20 ml glass	NA	N	"	Gases/CO2
1-500 ml plastic	ZnAcetate	N	"	Sulfide
1-250 ml plastic	H2SO4	N	"	TOC/Total phosphorous
1-250 ml plastic	HNO3	Y	"	Dissolved metals
1-250 ml plastic	NA	Y	"	Perchlorate
1-250 ml plastic	NA	N	"	Anions
1-250 ml plastic	NA	N	"	Alkalinity

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW25	Date: 11/16/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21202	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 20.11	Weather Conditions: CLOUDY/RAIN
	Total Well Depth (ft) from TOC: 57.88	Screen Interval (ft) from TOC: 47.50-56.90	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 52.20	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
11/16/15	1420	20.07	100	18.86	6.17	0.698	1.23	292	39	
"	1425	20.15	100	18.88	5.74	0.711	0.55	149	63	
"	1430	20.22	100	18.89	5.69	0.716	0.37	90.3	63	
"	1435	20.25	100	18.90	5.72	0.717	0.18	73.5	60	
"	1440	20.27	100	18.90	5.77	0.716	0.00	39.7	55	
"	1445	20.28	100	18.87	5.78	0.715	0.00	39.0	53	
"	1450	20.28	100	18.88	5.79	0.714	0.00	38.8	54	
"	1455	20.28	100	18.90	5.79	0.714	0.00	38.5	54	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW25-111615 TIME: 1455

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
3-20 ml glass	NA	N	"	Gases/CO2
1-500 ml plastic	ZnAcNaOH	N	"	Sulfide
1-250 ml plastic	H2SO4	N	"	TOC/TOTAL phosphorous
1-250 ml plastic	HNO3	Y	"	Dissolved metals
1-250 ml plastic	NA	Y	"	Perchlorate
1-250 ml plastic	NA	N	"	Anions
1-250 ml plastic	NA	N	"	Alkalinity

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW26	Date: 11/10/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21202	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 23.82	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 62.91	Screen Interval (ft) from TOC: 47.49 - 61.99	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 54.75	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/in ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
11/10/15	1230	23.78	100	25.74	5.86	4.32	2.31	351	114	
"	1235	23.85	100	24.11	5.53	4.83	1.09	460	152	
"	1240	23.90	100	23.00	5.40	4.96	0.61	420	177	
"	1245	23.93	100	21.86	5.35	4.91	0.63	415	188	
"	1250	23.95	100	22.68	5.28	4.86	0.50	413	205	
"	1255	23.96	100	22.15	5.21	4.87	0.31	411	206	
"	1300	23.97	100	22.11	5.21	4.88	0.30	410	206	
"	1305	23.97	100	22.07	5.22	4.87	0.29	410	205	
"	1310	23.97	100	22.03	5.21	4.86	0.28	409	204	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW26-111015 TIME: 1310

DUPLICATE (D): YES/NO Yes
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
6 - 40 ml glass	HCL	N	Pump	VOC
2 - 250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW27	Date: 11/11/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21202	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 19.79	Weather Conditions: CLOUDY
	Total Well Depth (ft) from TOC: 60.00	Screen Interval (ft) from TOC: 45.28-59.78	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 52.50	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/in ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
11/11/15	0735	19.75	100	20.48	6.59	1.64	1.51	147	31	
"	0740	19.83	100	20.23	6.89	1.64	0.75	386	-36	
"	0745	19.90	100	20.05	7.02	1.63	0.41	377	-53	
"	0750	19.94	100	20.00	7.04	1.61	0.19	208	-59	
"	0755	19.96	100	19.98	7.07	1.61	0.13	90.5	-63	
"	0800	19.98	100	19.96	7.06	1.60	0.12	46.1	-64	
"	0805	19.99	100	19.96	7.06	1.59	0.11	45.7	-65	
"	0810	19.99	100	19.95	7.07	1.58	0.11	45.3	-66	
"	0815	19.99	100	19.94	7.08	1.58	0.10	45.0	-67	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW27-111115 TIME: 0815

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
1-250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 50	LocID: 50WW28	Date: 11/13/15
	Project: Longhorn Army Ammunition Plant	Project No. 60256135.0002GA	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21202	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 19.07	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 27.39	Screen Intverval (ft) from TOC: 17.39-27.39	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 22.39	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/in ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
11/13/15	0910	19.06	100	14.41	5.43	0.156	2.10	34.6	199	
"	0915	19.12	100	15.94	4.70	0.129	1.13	35.0	249	
"	0920	19.18	100	16.47	4.62	0.119	0.73	32.4	262	
"	0925	19.22	100	16.76	4.54	0.116	0.50	30.6	275	
"	0930	19.25	100	17.21	4.39	0.115	0.01	31.6	295	
"	0935	19.27	100	17.23	4.37	0.115	0.02	31.0	296	
"	0940	19.29	100	17.26	4.40	0.116	0.01	30.8	295	
"	0945	19.30	100	17.28	4.40	0.116	0.02	30.3	294	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 50WW28-1113/5 TIME: 0945

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
1-250 ml glass	NA	Y	Pump	perchlorate

APPENDIX D: Data Validation Reports, Chain of Custody Forms and Laboratory Analytical Results

QUALITY CONTROL SUMMARY REPORT
LHAAP-50, FORMER SUMP WATER TANK
FOR
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

Prepared For:

U.S. Army Corps of Engineers

Prepared By:

AECOM Technical Services

January 2016

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1 INTRODUCTION

AECOM reviewed twenty-one (21) data packages from Microbac Laboratory Services, Marietta, OH. Groundwater samples were collected February 12, 2015 through November 13, 2015 at the LHAAP-50 site at the Longhorn Army Ammunition Plant (LHAAP), Karnack, Texas. Data were reviewed for conformance to the requirements of the following guidance documents: Automated Data Review by Laboratory Data Consultants (ADR.net), United States Environmental Protection Agency (EPA) Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, (EPA, August 2014), and EPA Contract Laboratory Program National Functional Guidelines for Low Concentration Organic Data Review, (EPA, August 2014).

1.1 Intended Use of Data

The objective of this sampling event was to collect data for the Remedial Action Completion Report.

Analyses requested included:

- SW8260 – Volatiles by GC/MS
- SW6850 – Perchlorate by LC/MS/MS
- RSK 175 – Dissolved gases (methane, ethane, ethene, CO_2)
- E365.4 – Total Phosphorus
- E415.1 – Total Organic Carbon
- SW6010 – Fe (total and dissolved) by ICP
- SW6020 –Mn (dissolved) by ICP/MS
- SW9056 – Common Anions by ion chromatography (chloride, sulfate, nitrate, nitrite)
- E310.1 - Alkalinity
- E376.1 - Sulfide

Table 2 lists the sample identifications and their associated laboratory identifications. **Table 3** lists qualified results with the associated quality control parameter that was exceeded.

1.2 Preservation and Holding Times

Sample identification data were evaluated for agreement with the chain-of-custody (COC). All samples were received in appropriate containers, within the proper temperature range, in good condition, and with the required signatures excepted as noted below.

Samples L15021053-03, L15021053-07, L15021053-09, L15021053-11, L15021053-01, and L15021053-05 were extracted and/or analyzed outside of the required holding time for one or more of the following; nitrate, nitrite, sulfate, chloride. Sample concentrations are estimated (J/UJ).

1.3 Calibrations

Initial calibration criteria modification includes RSD< or = to 30%, two compounds allowed up to 40%. If the continuing calibration verification (CCV) compound exceeds 30% drift, the compound is checked in the LCS, if both are outside recovery limits, the compound is rejected, R. If only the CCV exceeds recovery criteria and is less than ± 40% drift, then the compound is qualified J or UJ.

1.3.1 Continuing Calibration Verifications (CCV)

1.3.1.1 SW8260

CCV WG512809-02 has recoveries for bromomethane at 79.8% in SDG L15020971. This is outside of the control limits of 80-120%. Associated samples are non-detect and are UJ qualified.

CCV WG512985-02 has recoveries for dichlorodifluromethane at 77.6% in SDG L15021036 and L15021053. This is outside of the control limits of 80-120%. Associated samples are non-detect and are UJ qualified.

CCV WG525816-02 has recoveries for carbon disulfide at 76.6% in SDG L15051620. This is outside of the control limits of 80-120%. Associated samples are non-detect and are UJ qualified.

CCV WG526215-02 has recoveries for carbon disulfide at 76.8% in SDG L15051620. This is outside of the control limits of 80-120%. Associated samples are non-detect and are UJ qualified.

CCV WG525986-02 has recoveries for carbon disulfide at 72% and 4-methyl-2-pentanone at 79.8% in SDG L15051620. This is outside of the control limits of 80-120%. Associated samples are non-detect and are UJ qualified.

CCV WG526424-02 has recoveries for bromomethane 68.8%, carbon disulfide 75% and 4-methyl-2-pentanone at 77.8% in SDG L15051752. This is outside of the control limits of 80-120%. Associated samples are non-detect and are UJ qualified.

CCV WG526670-02 has recoveries for carbon disulfide at 66% in SDG L15051752. This is outside of the control limits of 80-120%. Associated samples are non-detect and are UJ qualified.

CCV WG535450-02 has recoveries for bromomethane 76.6% in SDG L15080904. This is outside of the control limits of 80-120%. Associated samples are non-detect and are UJ qualified.

CCV WG535682-02 has recoveries for bromomethane 70.4% in SDG L15080992. This is outside of the control limits of 80-120%. Associated samples are non-detect and are UJ qualified.

CCV WG536090-02 has recoveries for bromomethane 68.8% in SDG L15081073. This is outside of the control limits of 80-120%. Associated samples are non-detect and are UJ qualified.

CCV WG536331-02 has recoveries for bromomethane 69% in SDG L15081251. This is outside of the control limits of 80-120%. Associated samples are non-detect and are UJ qualified.

CCV WG548398-02 has recoveries for 2-hexanone at 79%, and 4-methyl-2-pentanone at 75.6% at in SDG L151107931. Associated samples are non-detect and are UJ qualified.

CCV WG547460-02 has recoveries for 2-hexanone at 77%, and 4-methyl-2-pentanone at 74.2% at in SDG L15110943. Associated samples are non-detect and are UJ qualified.

CCV WG547466-02 has recoveries for 2-hexanone at 76.8% and 4-methyl-2-pentanone at 74.2% in SDG L15110950. Associate samples are non-detect and are UJ qualified.

Table 3 shows qualified analytical data.

1.3.2 Blanks

Where contamination by a target analyte of one of the various blanks was found, if the sample result for an associated sample was non-detect or less than 5X (10X for common laboratory contaminants) the analyte concentration in the blank, the corresponding sample result for the analyte was qualified J. Where the sample result for the affected analyte was greater than 5X the amount in the blank, no qualifier was applied.

All blanks were within acceptance criteria.

1.3.3 Surrogates

All surrogates are within criteria.

1.3.4 Laboratory Control Sample (LCS)

1.3.4.1 SW8260

LCS WG546844-02 has carbon disulfide at 31.5% recovery in SDG L15110793. Limits are 35-160%. Associated samples are non-detect and are UJ qualified.

LCS WG548399-02 has carbon disulfide at 22.3% recovery in SDG L15110793. Associated samples are non-detect and are UJ qualified.

LCS WG547466-02 has carbon disulfide at 33.2% recovery in SDG L15110943 and SDG L15110950. Associated samples are non-detect and are UJ qualified.

Table 3 shows qualified analytical data.

1.3.5 Matrix Spike/Matrix Spike Duplicate (MS/MSD)

All MS/MSDs were within acceptance criteria.

1.3.6 Field Duplicate Precision

The RPD limit of ≤30% was met for all field duplicates collected with the exception of sample L15020878-02 and the duplicate sample L15020878-03. The RPD for perchlorate was at 34.8% which exceeds the ≤30% criteria.

Table 3 shows qualified analytical data.

2 DATA USABILITY SUMMARY

The data are usable for the intended purposes of the project. The data quality objectives have been met for the project.

Table 1: Completeness by Method

Method	No. of Rejected Results	% Completeness
SW8260	0	100
SW6850	0	100
SW6010	0	100
SW6020	0	100
RSK 175	0	100
SW9056	0	100
E310.2	0	100
E365.4	0	100
E376.1	0	100
E415.1	0	100

Table 2: Field Sample Identification and Laboratory Identification

ClientSampleID	LabSampleID	SW6850	SW8260	SW6010	SW6020	RSK 175	SW9056	E310.2	E365.4 Phos	E376.1 Sulfi	E415.1
50WW27-021215	L15020878-01	X	X								
50WW15-021215	L15020878-02	X	X								
50WW15FD-021215	L15020878-03	X	X								
50WW20-021215	L15020878-04	X	X								
50WW21-021215	L15020878-05	X	X								
50WW21MS-021215	L15020878-06	X	X								
50WW21MSD021215	L15020878-07	X	X								
50WW17-021315	L15020878-08	X	X								
50WW19-021315	L15020878-09	X	X								
50WW07-021315	L15020878-10	X	X								
50WW16-021315	L15020878-11	X	X								
50WW26-021315	L15020878-12	X	X								
50WW05-021315	L15020878-13	X	X								
50WW05FD-021315	L15020878-14	X	X								
50WW10-021315	L15020878-15	X	X								
50WW09-021315	L15020878-16	X	X								
50WW09MS-021315	L15020878-17	X	X								
50WW09MSD-021315	L15020878-18	X	X								
Trip blank	L15020878-19		X								
GPW1A-021715	L15020971-01	X	X								
GPW1-021715	L15020971-02	X	X								
50SW06-021715	L15020971-03	X	X								
50WW28-021715	L15020971-04	X	X								
50WW28FD-021715	L15020971-05	X	X								

ClientSampleID	LabSampleID	SW6850	SW8260	SW6010	SW6020	RSK 175	SW9056	E310.2	E365.4 Phos	E376.1 Sulfi	E415.1
50WW24-021815	L15020971-06	X	X				X	X	X	X	X
50WW24FF-021815	L15020971-07			X	X						
50WW23-021815	L15020971-08	X	X				X	X	X	X	X
50WW23FF-021815	L15020971-09			X	X						
50WW12-021815	L15020971-10	X	X				X	X	X	X	X
50WW12FF-021815	L15020971-11			X	X						
50WW25-021815	L15020971-12	X	X				X	X	X	X	X
50WW25FF-021815	L15020971-13			X	X						
50WW18-021815	L15020971-14	X	X				X	X	X	X	X
50WW18FF-021815	L15020971-15			X	X						
Trip blank	L15020971-16		X								
LHSMW54-021815	L15021036-01	X	X								
47WW38-021815	L15021036-02	X	X								
Trip blank	L15021036-03		X								
50WW13-021715	L15021053-01	X	X			X	X	X	X	X	X
50WW13FF-021715	L15021053-02			X	X						
50WW14-021715	L15021053-03	X	X			X	X	X	X	X	X
50WW14FF-021715	L15021053-04			X	X						
50WW11-021715	L15021053-05	X	X			X	X	X	X	X	X
50WW11FF-021715	L15021053-06			X	X						
50WW06-021715	L15021053-07	X	X			X	X	X	X	X	X
50WW06FF-021715	L15021053-08			X	X						
50WW08-021715	L15021053-09	X	X			X	X	X	X	X	X
50WW08FF-021715	L15021053-10			X	X						
50WW22-021715	L15021053-11	X	X				X	X	X	X	X

ClientSampleID	LabSampleID	SW6850	SW8260	SW6010	SW6020	RSK 175	SW9056	E310.2	E365.4 Phos	E376.1 Sulfi	E415.1
50WW22FF-021715	L15021053-12			X	X						
Trip blank	L15021053-13		X								
GWP1A-050815	L15050604-01	X	X								
GWP1-050815	L15050604-02	X	X			X					
Trip blank	L15050604-03		X								
50WW13-052515	L15051303-01	X	X			X	X	X	X	X	X
50WW13FF-052515	L15051303-02			X	X						
50WW14-052515	L15051303-03	X	X			X	X	X	X	X	X
50WW14FF-052515	L15051303-04			X	X						
50WW11-052515	L15051303-05	X	X			X	X	X	X	X	X
50WW11FF-052515	L15051303-06			X	X						
50WW06-052515	L15051303-07	X	X			X	X	X	X	X	X
50WW06FF-052515	L15051303-08			X	X						
50WW12-052515	L15051303-09	X	X			X	X	X	X	X	X
50WW12FF-052515	L15051303-10			X	X						
50WW23-052515	L15051303-11	X	X				X	X	X	X	X
50WW23FF-052515	L15051303-12			X	X						
Trip blank	L15051303-13		X								
50WW08-052115	L15051435-01	X	X				X	X	X	X	X
50WW08FF-052115	L15051435-02			X	X	X					
50WW22-052115	L15051435-03	X	X				X	X	X	X	X
50WW22FF-052115	L15051435-04			X	X	X					
Trip blank	L15051435-05		X								
50WW19-052215	L15051620-01	X	X			X					
50WW19FD-052215	L15051620-02	X	X								

ClientSampleID	LabSampleID	SW6850	SW8260	SW6010	SW6020	RSK 175	SW9056	E310.2	E365.4 Phos	E376.1 Sulfi	E415.1
50WW17-0052215	L15051620-03	X	X			X					
50WW16-052215	L15051620-04	X	X								
GPW1-052215	L15051620-05	X	X			X					
50SW06-052215	L15051620-06	X	X								
50WW09-052315	L15051620-07	X	X			X					
50WW09MS-052315	L15051620-08	X	X								
50WW09MSD-052315	L15051620-09	X	X								
50WW10-052315	L15051620-10	X	X			X					
50WW27-052315	L15051620-11	X	X								
50WW15-052315	L15051620-12	X	X			X					
50WW26-052315	L15051620-13	X	X								
50WW21-052315	L15051620-14	X	X								
50WW21FD-052315	L15051620-15	X	X								
50WW20-052615	L15051620-16	X	X								
50WW05-052615	L15051620-17	X	X								
50WW05MS-052615	L15051620-18	X	X								
50WW05MSD-052615	L15051620-19	X	X								
50WW07-052615	L15051620-20	X	X								
50WW28-052615	L15051620-21	X	X								
50WW28FD-052615	L15051620-22	X	X								
Trip blank	L15051620-23		X								
50WW01-052715	L15051752-01	X	X								
47WW38-052715	L15051752-02	X	X								
LHSMW54-052715	L15051752-03	X	X								
50WW24-052815	L15051752-04	X	X				X	X	X	X	X

ClientSampleID	LabSampleID	SW6850	SW8260	SW6010	SW6020	RSK 175	SW9056	E310.2	E365.4 Phos	E376.1 Sulfi	E415.1
50WW24FF-052815	L15051752-05			X	X						
50WW25-052815	L15051752-06	X	X				X	X	X	X	X
50WW25FF-052815	L15051752-07			X	X						
50WW18-052815	L15051752-08	X	X				X	X	X	X	X
50WW18FF-052815	L15051752-09			X	X						
Trip blank	L15051752-10		X								
50WW18-081715	L15080904-01	X	X				X	X	X	X	X
50WW18FF-081715	L15080904-02			X	X						
50WW24-081715	L15080904-03	X	X				X	X	X	X	X
50WW24FF-081715	L15080904-04			X	X						
50WW23-081715	L15080904-05	X	X				X	X	X	X	X
50WW23FF-081715	L15080904-06			X	X						
50WW08-081715	L15080904-07	X	X				X	X	X	X	X
50WW08FF-081715	L15080904-08			X	X	X					
Trip blank	L15080904-09		X								
50WW22-081815	L15080992-01	X	X			X	X	X	X	X	X
50WW22FF-081815	L15080992-02			X	X						
50WW25-081815	L15080992-03	X	X			X	X	X	X	X	X
50WW25FF-081815	L15080992-04			X	X						
50WW12-081815	L15080992-05	X	X				X	X	X	X	X
50WW12FF-081815	L15080992-06			X	X	X					
50WW06-081815	L15080992-07	X	X				X	X	X	X	X
50WW06FF-081815	L15080992-08			X	X	X					
50WW11-081815	L15080992-09	X	X				X	X	X	X	X
50WW11FF-081815	L15080992-10			X	X	X					

ClientSampleID	LabSampleID	SW6850	SW8260	SW6010	SW6020	RSK 175	SW9056	E310.2	E365.4 Phos	E376.1 Sulfi	E415.1
Trip blank	L15080992-11		X								
50WW14-081915	L15081073-01	X	X			X	X	X	X	X	X
50WW14FF-081915	L15081073-02			X	X						
50WW13-081915	L15081073-03	X	X				X	X	X	X	X
50WW13FF-081915	L15081073-04			X	X	X					
50WW05-081915	L15081073-05	X	X								
50WW05FD-081915	L15081073-06	X	X			X					
50WW17-081915	L15081073-07	X	X								
Trip blank	L15081073-08		X			X					
50WW26-082015	L15081251-01	X	X								
50WW26MS-082015	L15081251-02	X	X			X					
50WW26MSD-082015	L15081251-03	X	X								
50WW21-082015	L15081251-04	X	X			X					
50WW01-082015	L15081251-05	X	X								
50WW28-082015	L15081251-06	X	X								
50WW27-082015	L15081251-07	X	X			X					
50WW15-082026	L15081251-08	X	X								
50WW15FD-082015	L15081251-09	X	X			X					
50WW16-082015	L15081251-10	X	X								
50WW19-082115	L15081251-11	X	X								
50WW20-0821115	L15081251-12	X	X								
50WW09-0982115	L15081251-13	X	X								
50WW09FD-0821115	L15081251-14	X	X								
50WW10-082115	L15081251-15	X	X								
50WW07-082115	L15081251-16	X	X								

ClientSampleID	LabSampleID	SW6850	SW8260	SW6010	SW6020	RSK 175	SW9056	E310.2	E365.4 Phos	E376.1 Sulfi	E415.1
50WW07MS-082115	L15081251-17	X	X								
50WW07MSD-082115	L15081251-18	X	X								
Trip blank	L15081251-19		X								
50WW17-110915	L15110610-01		X								
50WW19-110915	L15110610-02		X								
50WW07-110915	L15110610-03		X								
50WW07MS-110915	L15110610-04		X								
50WW07MSD	L15110610-05		X								
50WW26-111015	L15110610-06		X								
50WW26FD-111015	L15110610-07		X								
50WW21-111015	L15110610-08		X								
50WW20-111015	L15110610-09		X								
Trip blank	L15110610-10		X								
50WW27-111115	L15110793-01	X	X								
50WW15-111115	L15110793-02	X	X								
50WW15FD-111115	L15110793-03	X	X								
50WW09-111115	L15110793-04	X	X								
50WW09FD-111115	L15110793-05	X	X								
50WW10-111115	L15110793-06	X	X								
50WW13-111215	L15110793-07	X	X				X	X	X	X	X
50WW13FF-111215	L15110793-08			X	X						
50WW14-111215	L15110793-09	X	X				X	X	X	X	X
50WW14FF-111215	L15110793-10			X	X						
50WW11-11215	L15110793-11	X	X				X	X	X	X	X
50WW11FF-111215	L15110793-12			X	X						

ClientSampleID	LabSampleID	SW6850	SW8260	SW6010	SW6020	RSK 175	SW9056	E310.2	E365.4 Phos	E376.1 Sulfi	E415.1
50WW06-111215	L15110793-13	X	X				X	X	X	X	X
50WW06FF-111215	L15110793-14			X	X						
50WW12-111215	L15110793-15	X	X				X	X	X	X	X
50WW12FF-111215	L15110793-16			X	X						
Trip blank	L15110793-17		X								
50WW08-111615	L15110943-01	X	X				X	X	X	X	X
50WW08FF-111615	L15110943-02			X	X						
50WW22-111615	L15110943-03	X	X				X	X	X	X	X
50WW22FF-111615	L15110943-04			X	X	X					
50WW24-111615	L15110943-05	X	X				X	X	X	X	X
50WW24FF-111615	L15110943-06			X	X	X					
50WW23-111615	L15110943-07	X	X				X	X	X	X	X
50WW23FF-111615	L15110943-08			X	X	X					
50WW18-111615	L15110943-09	X	X				X	X	X	X	X
50WW18FF-111615	L15110943-10			X	X	X					
50WW25-111615	L15110943-11	X	X				X	X	X	X	X
50WW25FF-111615	L15110943-12			X	X	X					
Trip blank	L15110943-13		X								
50WW05-111315	L15110950-01		X								
50WW05MS-111315	L15110950-02		X			X					
50WW05MSD-111315	L15110950-03		X								
50SW06-111315	L15110950-04		X			X					
GPW1-111315	L15110950-05		X								
50WW28-111315	L15110950-06		X			X					
50WW16-111315	L15110950-07		X								

ClientSampleID	LabSampleID	SW6850	SW8260	SW6010	SW6020	RSK 175	SW9056	E310.2	E365.4 Phos	E376.1 Sulfi	E415.1
LHSMW54-111315	L15110950-08		X			X					
47WW38-111315	L15110950-09		X								
Trip blank	L15110950-10		X			X					
50WW17-110915	L15110969-01	X									
50WW19-110915	L15110969-02	X				X					
50WW07-110915	L15110969-03	X									
50WW07MS-110915	L15110969-04	X									
50WW07MSD-110915	L15110969-05	X									
50WW26-111015	L15110969-06	X									
50WW26FD-111015	L15110969-07	X									
50WW21-111015	L15110969-08	X									
50WW20-111015	L15110969-09	X									
50WW27-111115	L15111375-01	X									
50WW15-111115	L15111375-02	X									
50WW15FD-111115	L15111375-03	X									
50WW09-111115	L15111375-04	X									
50WW09FD-111115	L15111375-05	X									
50WW10-111115	L15111375-06	X									
50WW13-111115	L15111375-07	X									
50WW14-111115	L15111375-08	X									
50WW11-111115	L15111375-09	X									
50WW06-111115	L15111375-10	X									
50WW12-111115	L15111375-11	X									
50WW08-111615	L15111376-01	X									
50WW22-111615	L15111376-02	X									

ClientSampleID	LabSampleID	SW6850	SW8260	SW6010	SW6020	RSK 175	SW9056	E310.2	E365.4 Phos	E376.1 Sulfi	E415.1
50WW24-111615	L15111376-03	X									
50WW23-111615	L15111376-04	X									
50WW18-111615	L15111376-05	X									
50WW25-111615	L15111376-06	X									
50WW05-111315	L15111377-01	X									
50WW05MS-131315	L15111377-02	X									
50WW05MSD-111315	L15111377-03	X									
50SW06-111315	L15111377-04	X									
GPW1-111315	L15111377-05	X									
50WW28-111315	L15111377-06	X									
50WW16-111315	L15111377-07	X									
LHSMW54-111315	L15111377-08	X									
47WW38-111315	L15111377-09	X	X								

Table 3: Qualified Analytical Data

ClientSampleID	LabSampleID	AnalyteName	DVQualOverall	Reason
50WW15-021215	L15020878-02	perchlorate	J	Field duplicate RPD failure
50WW15FD-021215	L15020878-03	perchlorate	J	Field duplicate RPD failure
GPW1A-021715	L15020971-01	bromomethane	UJ	CCV failure
GPW1-021715	L15020971-02	bromomethane	UJ	CCV failure
50SW06-021715	L15020971-03	bromomethane	UJ	CCV failure
50WW28-021715	L15020971-04	bromomethane	UJ	CCV failure
50WW28FD-021715	L15020971-05	bromomethane	UJ	CCV failure
50WW24-021815	L15020971-06	bromomethane	UJ	CCV failure
50WW23-021815	L15020971-08	bromomethane	UJ	CCV failure
50WW12-021815	L15020971-10	bromomethane	UJ	CCV failure
50WW25-021815	L15020971-12	bromomethane	UJ	CCV failure
50WW18-021815	L15020971-14	bromomethane	UJ	CCV failure
LHSMW54-021815	L15021036-01	dichlorodifluromethane	UJ	CCV failure
47WW38-021815	L15021036-02	dichlorodifluromethane	UJ	CCV failure
50WW14-021715	L15021053-03	dichlorodifluromethane	UJ	CCV failure
		Nitrate	UJ	Outside of hold
		Nitrite	UJ	Outside of hold
		Sulfate	J	Outside of hold
50WW06-021715	L15021053-07	dichlorodifluromethane	UJ	CCV failure
		Nitrate	UJ	Outside of hold
		Nitrite	UJ	Outside of hold
		Sulfate	J	Outside of hold
		Chloride	J	Outside of hold
50WW08-021715	L15021053-09	dichlorodifluromethane	UJ	CCV failure
		Nitrate	UJ	Outside of hold
		Nitrite	UJ	Outside of hold
		Sulfate	J	Outside of hold
		Chloride	J	Outside of hold
50WW22-021715	L15021053-11	dichlorodifluromethane	UJ	CCV failure
		Nitrate	UJ	Outside of hold

ClientSampleID	LabSampleID	AnalyteName	DVQualOverall	Reason
		Nitrite	UJ	Outside of hold
		Sulfate	J	Outside of hold
		Chloride	J	Outside of hold
50WW13-021715	L15021053-01	Nitrate	UJ	Outside of hold
		Nitrite	UJ	Outside of hold
		Sulfate	J	Outside of hold
50WW11-021715	L15021053-05	Nitrate	UJ	Outside of hold
		Nitrite	UJ	Outside of hold
		Sulfate	J	Outside of hold
		Chloride	J	Outside of hold
50WW19-052215	L15051620-01	Carbon disulfide	UJ	CCV failure
50WW19FD-052215	L15051620-02	Carbon disulfide	UJ	CCV failure
50WW17-052215	L15051620-03	Carbon disulfide	UJ	CCV failure
50WW16-052215	L15051620-04	Carbon disulfide	UJ	CCV failure
GWP1-052215	L15051620-05	Carbon disulfide	UJ	CCV failure
50WW06-052215	L15051620-06	Carbon disulfide	UJ	CCV failure
50WW09-052315	L15051620-07	Carbon disulfide	UJ	CCV failure
		4-methyl-2-pentanone	UJ	CCV failure
50WW10-052315	L15051620-10	Carbon disulfide	UJ	CCV failure
50WW27-052315	L15051620-11	Carbon disulfide	UJ	CCV failure
50WW15-052315	L15051620-12	Carbon disulfide	UJ	CCV failure
50WW26-052315	L15051620-13	Carbon disulfide	UJ	CCV failure
50WW21-052315	L15051620-14	Carbon disulfide	UJ	CCV failure
		4-methyl-2-pentanone	UJ	CCV failure
50WW21FD-052315	L15051620-15	Carbon disulfide	UJ	CCV failure
		4-methyl-2-pentanone	UJ	CCV failure
50WW20-052315	L15051620-16	Carbon disulfide	UJ	CCV failure
		4-methyl-2-pentanone	UJ	CCV failure
50WW05-052615	L15051620-17	Carbon disulfide	UJ	CCV failure
		4-methyl-2-pentanone	UJ	CCV failure
50WW07-052615	L15051620-20	Carbon disulfide	UJ	CCV failure

ClientSampleID	LabSampleID	AnalyteName	DVQualOverall	Reason
		4-methyl-2-pentanone	UJ	CCV failure
50WW28-052615	L15051620-21	Carbon disulfide	UJ	CCV failure
		4-methyl-2-pentanone	UJ	CCV failure
50WW28FD-052615	L15051620-22	Carbon disulfide	UJ	CCV failure
		4-methyl-2-pentanone	UJ	CCV failure
50WW01-052715	L15051752-01	Bromomethane	UJ	CCV failure
		Carbon disulfide	UJ	CCV failure
		4-methyl-2-pentanone	UJ	CCV failure
47WW38-052715	L15051752-02	Bromomethane	UJ	CCV failure
		Carbon disulfide	UJ	CCV failure
		4-methyl-2-pentanone	UJ	CCV failure
LHSMW54-052715	L15051752-03	Bromomethane	UJ	CCV failure
		Carbon disulfide	UJ	CCV failure
		4-methyl-2-pentanone	UJ	CCV failure
50WW24-052815	L15051752-04	Bromomethane	UJ	CCV failure
		Carbon disulfide	UJ	CCV failure
		4-methyl-2-pentanone	UJ	CCV failure
50WW25-052815	L15051752-06	Bromomethane	UJ	CCV failure
		Carbon disulfide	UJ	CCV failure
		4-methyl-2-pentanone	UJ	CCV failure
50WW18-052815	L15051752-08	Carbon disulfide	UJ	CCV failure
50WW18-081715	L15080904-01	Bromomethane	UJ	CCV failure
50WW24-081715	L15080904-03	Bromomethane	UJ	CCV failure
50WW23-081715	L15080904-05	Bromomethane	UJ	CCV failure
50WW08-081715	L15080904-07	Bromomethane	UJ	CCV failure
50WW22-081815	L15080992-01	Bromomethane	UJ	CCV failure
50WW25-081815	L15080992-03	Bromomethane	UJ	CCV failure
50WW12-081815	L15080992-05	Bromomethane	UJ	CCV failure
50WW06-081815	L15080992-07	Bromomethane	UJ	CCV failure
50WW11-081815	L15080992-09	Bromomethane	UJ	CCV failure
50WW14-081915	L15081073-01	Bromomethane	UJ	CCV failure

ClientSampleID	LabSampleID	AnalyteName	DVQualOverall	Reason
50WW13-081915	L15081073-03	Bromomethane	UJ	CCV failure
50WW05-081915	L15081073-05	Bromomethane	UJ	CCV failure
50WW05FD-081915	L15081073-06	Bromomethane	UJ	CCV failure
50WW17-081915	L15081073-07	Bromomethane	UJ	CCV failure
50WW26-082015	L15081251-01	Bromomethane	UJ	CCV failure
50WW21-082015	L15081251-04	Bromomethane	UJ	CCV failure
50WW01-082015	L15081251-05	Bromomethane	UJ	CCV failure
50WW28-082015	L15081251-06	Bromomethane	UJ	CCV failure
50WW27-082015	L15081251-07	Bromomethane	UJ	CCV failure
50WW18-082015	L15081251-08	Bromomethane	UJ	CCV failure
50WW15FD-082015	L15081251-09	Bromomethane	UJ	CCV failure
50WW16-082015	L15081251-10	Bromomethane	UJ	CCV failure
50WW19-082115	L15081251-11	Bromomethane	UJ	CCV failure
50WW20-082115	L15081251-12	Bromomethane	UJ	CCV failure
50WW09-082115	L15081251-13	Bromomethane	UJ	CCV failure
50WW09FD-082115	L15081251-14	Bromomethane	UJ	CCV failure
50WW10-082115	L15081251-15	Bromomethane	UJ	CCV failure
50WW07-082115	L15081251-16	Bromomethane	UJ	CCV failure
50WW27-111115	L15110793-01	Carbon disulfide	UJ	LCS failure
50WW15-111115	L15110793-02	Carbon disulfide	UJ	LCS failure
50WW15FD-111115	L15110793-03	Carbon disulfide	UJ	LCS failure
50WW09-111115	L15110793-04	Carbon disulfide	UJ	LCS failure
50WW09FD-111115	L15110793-05	Carbon disulfide	UJ	LCS failure
50WW13-111215	L15110793-07	Carbon disulfide	UJ	LCS failure
		2-Hexanone	UJ	CCV failure
		4-methyl-2-pentanone	UJ	CCV failure
50WW08-111615	L15110943-01	Carbon disulfide	UJ	LCS failure
		2-hexanone	UJ	CCV failure
		4-methyl-2-pentanone	UJ	CCV failure
50WW22-111615	L15110943-03	Carbon disulfide	UJ	LCS failure
		2-hexanone	UJ	CCV failure

ClientSampleID	LabSampleID	AnalyteName	DVQualOverall	Reason
		4-methyl-2-pentanone	UJ	CCV failure
50WW24-111615	L15110943-03	Carbon disulfide	UJ	LCS failure
		2-hexanone	UJ	CCV failure
		4-methyl-2-pentanone	UJ	CCV failure
50WW23-111615	L15110943-03	Carbon disulfide	UJ	LCS failure
		2-hexanone	UJ	CCV failure
		4-methyl-2-pentanone	UJ	CCV failure
50WW18-111615	L15110943-09	Carbon disulfide	UJ	LCS failure
		2-hexanone	UJ	CCV failure
		4-methyl-2-pentanone	UJ	CCV failure
50WW05-111315	L15110950-01	Acetone	UJ	CCV failure
		Carbon disulfide	UJ	LCS failure
		2-hexanone	UJ	CCV failure
		4-methyl-2-pentanone	UJ	CCV failure
50WW06-111315	L15110950-04	Acetone	UJ	CCV failure
		Carbon disulfide	UJ	LCS failure
		2-hexanone	UJ	CCV failure
		4-methyl-2-pentanone	UJ	CCV failure
GPW1-111315	L15110950-05	Acetone	UJ	CCV failure
		Carbon disulfide	UJ	LCS failure
		2-hexanone	UJ	CCV failure
		4-methyl-2-pentanone	UJ	CCV failure
50WW28-111315	L15110950-06	Acetone	UJ	CCV failure
		Carbon disulfide	UJ	LCS failure
		2-hexanone	UJ	CCV failure
		4-methyl-2-pentanone	UJ	CCV failure
50WW16-111315	L15110950-07	Acetone	UJ	CCV failure
		Carbon disulfide	UJ	LCS failure
		2-hexanone	UJ	CCV failure
		4-methyl-2-pentanone	UJ	CCV failure

ClientSampleID	LabSampleID	AnalyteName	DVQualOverall	Reason
LHSMW54-111315	L15110950-08	Acetone	UJ	CCV failure
		Carbon disulfide	UJ	LCS failure
		2-hexanone	UJ	CCV failure
		4-methyl-2-pentanone	UJ	CCV failure
47WW38-111315	L15110950-09	Acetone	UJ	CCV failure
		Carbon disulfide	UJ	LCS failure
		2-hexanone	UJ	CCV failure
		4-methyl-2-pentanone	UJ	CCV failure

00634550

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Kathy Alberison	Project Manager: ~~Dave Wacker~~ Mark Hraston	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): Scott Beasinger	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Scott Beasinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205	pH:	Program:	
Turn Around Time: STANDARD			
Project Name/Location: Longhorn			
Project Number: 60256135.0002.GA		ERPIMS REQUIRED FIELDS	

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate							SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
Site 55	50WW10-021315			2/13/15	1545		✓	W	4	✓	✓											
	50WW09-021315			2/13/15	1650		✓	W	4	✓	✓											
	50WW09MS-021315			2/13/15	1650		✓	W	4	✓	✓											
	50WW09MSD-021315			2/13/15	1650		✓	W	4	✓	✓											
	TRip BLANK			2/13/15			✓	W	2	✓												

Comments: STANDARD TAT

	Date	Time	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
(Signature) Scott Beasinger	2/16/15	1400					
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time		Remarks:

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

00634551

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Kathy Albertson	Project Manager:	~~Dave Wacker~~ Mark Heaston
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071	Signature:	Scott Beesinger
Client:	AECOM		
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD	pH:	
Project Name/Location:	Longhorn		
Project Number:	60256135.00026A		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp	Grab	Matrix	Number of Containers	VOC	Parch Lorotg	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
Site 50	50WW27-021215			2/12/15	1305		✓	W	4	✓	✓					
	50WW15-021215			2/12/15	1410		✓	W	4	✓	✓					
	50WW15FD-021215			2/12/15	1410		✓	W	4	✓	✓					
	50WW20-021215			2/12/15	1530		✓	W	4	✓	✓					
	50WW21-021215			2/12/15	1635		✓	W	4	✓	✓					
	50WW21MS-021215			2/12/15	1635		✓	W	4	✓	✓					
	50WW21MSD-021215			2/12/15	1635		✓	W	4	✓	✓					
	50WW17-021315			2/13/15	0755		✓	W	4	✓	✓					
	50WW19-021315			2/13/15	0905		✓	W	4	✓	✓					
	50WW07-021315			2/13/15	1020		✓	W	4	✓	✓					
	50WW16-021315			2/13/15	1125		✓	W	4	✓	✓					
	50WW26-021315			2/13/15	1330		✓	W	4	✓	✓					
	50WW05-021315			2/13/15	1430		✓	W	4	✓	✓					
	50WW05FD-021315			2/13/15	1430		✓	W	4	✓	✓					

Comments: STANDARD TAT

	Date	Time	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
(Signature) Scott Beesinger	2/16/15	1400					
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time		Remarks:

•Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

00634552

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Kathy Alberison	Project Manager: ~~Dave Wacker~~ MARK HEASTON	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): Scott BEESINGER	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205	pH:	Program:	
Turn Around Time: STANDARD			
Project Name/Location: Longhorn			
Project Number: 60256135.0002GA		ERPIMS REQUIRED FIELDS	

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp	Grab	Matrix	Number of Containers	VOC	PERCHLORATE	DISSOLVED GASES Carbon Dioxide	NITRATE/NITRITE Chloride/Sulfate	ALKALINITY	Sulfide	TOC TOTAL Phosphorous	Dissolved IRON Dissolved MANGANESE	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
Site 50	50WW13-021715			2/17/15	0810		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW13FF-021715			2/17/15	0810		✓	W	1								✓					
	50WW14-021715			2/17/15	0920		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW14FF-021715			2/17/15	0920		✓	W	1								✓					
	50WW11-021715			2/17/15	1045		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW11FF-021715			2/17/15	1045		✓	W	1								✓					
	50WW06-021715			2/17/15	1155		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW06FF-021715			2/17/15	1155		✓	W	1								✓					
	50WW08-021715			2/17/15	1405		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW08FF-021715			2/17/15	1405		✓	W	1								✓					
	50WW22-021715			2/17/15	1515		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW22FF-021715			2/17/15	1515		✓	W	1								✓					
	Trip Blank			2/17/15			✓	W	2	✓												

Comments: STANDARD TAT

(Signature) Scott Beesinger	Date 2/17/15 ~~$5.50~~	Time 1550	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Relinquished by: Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time	Remarks:	

Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

00634553

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Kathy Albertson	Project Manager: ~~Dave Weeker~~ MARK HEASTON	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): Scott Beesinger	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205	pH:	Program:	
Turn Around Time: STANDARD			
Project Name/Location: Longhorn			
Project Number: 60256135.0002GA		ERPIMS REQUIRED FIELDS	

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Dissolved Gases Carbon Dioxide	Nitrate/Nitrite Chloride/Sulfate	Alkalinity	Sulfide	TOC Total Phosphorous	Dissolved Iron Manganese	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
Site 50	GPW1A-021715			2/17/15	1625		✓	W	4	✓	✓											
	GPW1-021715			2/17/15	1635		✓	W	4	✓	✓											
	50SW06-021715			2/17/15	1645		✓	W	4	✓	✓											
	50WW28-021715			2/17/15	1750		✓	W	4	✓	✓											
	50WW28FD-021715			2/17/15	1750		✓	W	4	✓	✓											
	50WW24-021815			2/18/15	0825		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW24FF-021815			2/18/15	0825		✓	W	1								✓					
	50WW23-021815			2/18/15	0940		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW23FF-021815			2/18/15	0940		✓	W	1								✓					
	50WW12-021815			2/18/15	1105		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW12FF-021815			2/18/15	1105		✓	W	1								✓					
	50WW25-021815			2/18/15	1330		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW25FF-021815			2/18/15	1330		✓	W	1								✓					
	50WW18-021815			2/18/15	1445		✓	W	11	✓	✓	✓	✓	✓	✓	✓						

Comments: STANDARD TAT

(Signature) Scott Beesinger	Date 2/18/15	Time 1525	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time		Remarks:

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

00634554

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Kathy Alberson	Project Manager: ~~Dave Wacker~~ MARK HEASTON	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): Scott Beesinger	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205	pH:	Program:	
Turn Around Time: STANDARD			
Project Name/Location: Longhorn			
Project Number: 60256135.0002GA		ERPIMS REQUIRED FIELDS	

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp	Grab	Matrix	Number of Containers	Dissolved Iron	Dissolved Manganese	VOC	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
Site 50	50WW18FF-021815			2/18/15	1445		✓	W	1	✓							
	Trip Blank			2/18/15			✓	W	2			✓					

Comments: STANDARD TAT

Signature) Scott Beesinger	Date 2/18/15	Time 1525	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time		Remarks:

Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

00634555

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Kathy Alberison	Project Manager: ~~Dave Wacker~~ Mark Heaston	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): Scott Beesinger	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205	pH:	Program:	
Turn Around Time: STANDARD			
Project Name/Location: Longhorn		ERPIMS REQUIRED FIELDS	
Project Number: 60256135.0002.GA			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
Site 50	LH3MW54-021815			2/18/15	1635		✓	W	4	✓	✓					
	47WW38-021815			2/18/15	1745		✓	W	4	✓	✓					
	TRip BLANK			2/18/15			✓	W	2	✓						

Comments: STANDARD TAT

(Signature) Scott Beesinger	Date 2/19/15	Time 0900	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time		Remarks:

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

00634556

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Mark Heaston
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD	pH:	
Project Name/Location:	Longhorn		
Project Number:	60256135.0002GA		

Mail to:	Linda Raabe 112 East Pecan STE. 400 San Antonio, TX 78205 210-296-2000
Fed Ex Airbill No:	
Program:	

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Dissolved Carbon Dioxide	Alkalinity	Nitrate/Nitrite Chloride/Sulfate	Sulfide	TOC	Total Phosphorous Dissolved Iron Dissolved Manganese	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
Site 50	50WW13-052015			5/20/15	0930		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW13FF-052015			5/20/15	0930		✓	W	1								✓					
	50WW14-052015			5/20/15	0945		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW14FF-052015			5/20/15	0945		✓	W	1								✓					
	50WW11-052015			5/20/15	1100		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW11FF-052015			5/20/15	1100		✓	W	1								✓					
	50WW06-052015			5/20/15	1315		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW06FF-052015			5/20/15	1315		✓	W	1								✓					
	50WW12-052015			5/20/15	1440		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW12FF-052015			5/20/15	1440		✓	W	1								✓					
	50WW23-052015			5/20/15	1555		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	~~50WW23~~ 53																					
	50WW23FF-052015			5/20/15	1555		✓	W	1								✓					
	TRIP BLANK			5/20/15			✓	W	2	✓												

Comments: STANDARD TAT

Relinquished by: (Signature) Scott Beesinger	Date 5/20/15	Time 1445	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time		Remarks:

Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

00634557

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Mark Heaston	Mail to:	Linda Raabe
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000		112 East Pecan STE. 400
	Marietta, OH 45750	Sampler (print):	Scott Beesinger		San Antonio, TX 78205
Phone:	1-800-373-4071				210-296-2000
Client:	AECOM	Signature:	Scott Beesinger	Fed Ex Airbill No:	
Address:	112 East Pecan Ste. 400				
	San Antonio, TX 78205	pH:		Program:	
Turn Around Time:	STANDARD				
Project Name/Location:	Longhorn				
Project Number:	60256135.00026A				

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Dissolved Gases Carbon Dioxide	Alkalinity	Nitrate/Nitrite Chloride/Sulfate	Sulfide	TOC	Total & Dissolved Phosphorus Iron Manganese	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
Site 50	50WW08-052115			5/21/15	1355		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW08FF-052115			5/21/15	1355		✓	W	1								✓					
	50WW22-052115			5/21/15	1510		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW22FF-052115			5/21/15	1510		✓	W	1								✓					
	TRIP BLANK			5/21/15			✓	W	3	✓												

Comments: STANDARD TAT

Relinquished by: (Signature) Scott Beesinger	Date 5/21/15	Time 1600	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time		Remarks:

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

00634558

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Mark Heaston
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD	pH:	
Project Name/Location:	Longhorn		
Project Number:	60256135.0002GA		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
Site 50	50WW19-052215			5/22/15	0845		✓	W	4	✓	✓					
	50WW19FD-052215			5/22/15	0845		✓	W	4	✓	✓					
	50WW17-052215			5/22/15	1005		✓	W	4	✓	✓					
	50WW16-052215			5/22/15	1130		✓	W	4	✓	✓					
	GPW1-052215			5/22/15	1305		✓	W	4	✓	✓					
	50SW06-052215			5/22/15	1325		✓	W	4	✓	✓					
	50WW09-052315			5/23/15	0800		✓	W	4	✓	✓					
	50WW09MS-052315			5/23/15	0800		✓	W	4	✓	✓					
	50WW09MSD-052315			5/23/15	0800		✓	W	4	✓	✓					
	50WW10-052315			5/23/15	0915		✓	W	4	✓	✓					
	50WW27-052315			5/23/15	1040		✓	W	4	✓	✓					
	50WW15-052315			5/23/15	1140		✓	W	4	✓	✓					
	50WW26-052315			5/23/15	1415		✓	W	4	✓	✓					
	50WW21-052315			5/23/15	1530		✓	W	4	✓	✓					

Comments: STANDARD TAT

	Date	Time	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature) Scott Beesinger	5/26/15	1600					
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time		Remarks:

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

00634559

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Mark Heaston
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD	pH:	
Project Name/Location:	Longhorn		
Project Number:	60256135.0002GA		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Peachlorate	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
Site 50	50WW21FD-052315			5/23/15	1530		✓	W	4	✓	✓					
	50WW20-052615			5/26/15	0935		✓	W	4	✓	✓					
	50WW05-052615			5/26/15	1045		✓	W	4	✓	✓					
	50WW05MS-052615			5/26/15	1045		✓	W	4	✓	✓					
	50WW05MSD-052615			5/26/15	1045		✓	W	4	✓	✓					
	50WW07-052615			5/26/15	1340		✓	W	4	✓	✓					
	50WW28-052615			5/26/15	1505		✓	W	4	✓	✓					
	50WW28FD-052615			5/26/15	1505		✓	W	4	✓	✓					
	TRIP BLANK			5/26/15			✓	W	2	✓						

Comments: STANDARD TAT

	Date	Time			Date	Time	
Relinquished by: (Signature) Scott Beesinger	5/26/15	1600	Received by: (Signature)	Received by: (Signature)			Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time		Remarks:

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

00634560

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Mark Heaston
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD	pH:	
Project Name/Location:	Longhorn		
Project Number:	60256135.00026A		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp-	Grab	Matrix	Number of Containers	VOC	PERCHLORATE	Dissolved Gases Carbon Dioxide	ALKALINITY	Nitrate/Nitrite Chloride/Sulfate	Sulfide	TOC	Total & Hexavalent Dissolved Iron Dissolved Manganese	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
Site 50	50WW01-052715			5/27/15	0740		✓	W	4	✓	✓											
	47WW38-052715			5/27/15	0900		✓	W	4	✓	✓											
	LHSMW54-052715			5/27/15	1020		✓	W	4	✓	✓											
	50WW24-052815			5/28/15	0815		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW24FF-052815			5/28/15	0815		✓	W	1								✓					
	50WW25-052815			5/28/15	0940		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW25FP-052815			5/28/15	0940		✓	W	1								✓					
	50WW18-052815			5/28/15	1100		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW18FF-052815			5/28/15	1100		✓	W	1								✓					
	TRIP BLANK			5/28/15			✓	W	2	✓												

Comments: STANDARD TAT

Relinquished by: (Signature) Scott Beesinger	Date 5/28/15	Time 1400	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time	Remarks:

Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

00634561

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Mark Heaston	Mail to:	Linda Raabe
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000		112 East Pecan STE. 400
	Marietta, OH 45750	Sampler (print):	Scott Beesinger		San Antonio, TX 78205
Phone:	1-800-373-4071				210-296-2000
Client:	AECOM	Signature:	Scott Beesinger	Fed Ex Airbill No:	
Address:	112 East Pecan Ste. 400				
	San Antonio, TX 78205				
Turn Around Time:	STANDARD	pH:		Program:	
Project Name/Location:	Longhorn				
Project Number:	60256135.0002GA				

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate							SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
Site 59	GWP1A-050815			5/8/15	0930		✓	W	4	✓	✓											
	GWP1-050815			5/8/15	0940		✓	W	4	✓	✓											
	TRIP BLANK																					

Comments: STANDARD TAT

Relinquished by: (Signature) Scott Beesinger	Date 5/8/15	Time 1400	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time		Remarks:

Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

00634562

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Stephanie Mossburg	Project Manager: Mark Heaston	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): Scott Beesinger	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205	pH:	Program:	
Turn Around Time: STANDARD			
Project Name/Location: Longhorn			
Project Number: 60256135.0002GA			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Dissolved Gases / Carbon Dioxide	Alkalinity	Sulfide	Chloride / Sulfate Nitrate / Nitrite	TOC / Total Phosphorous	Dissolved Iron / Dissolved Manganese	ERPIMS REQUIRED FIELDS: SA CODE	Cooler ID	LOT CONTROL NUMBERS: ABLOT	EBLOT	TBLOT
SITE 50	50WW18-081715			8/17/15	0830		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW18FF-081715			8/17/15	0830		✓	W	1								✓					
	50WW24-081715			8/17/15	0955		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW24FF-081715			8/17/15	0955		✓	W	1								✓					
	50WW23-081715			8/17/15	1120		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW23FF-081715			8/17/15	1120		✓	W	1								✓					
	50WW08-081715			8/17/15	1450		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW08FF-081715			8/17/15	1450		✓	W	1								✓					
	TRIP BLANK			8/17/15			✓	W	2	✓												

Comments: **STANDARD TAT**

Relinquished by: (Signature) Scott Beesinger	Date 8/17/15	Time 1600	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time	Remarks:	

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

00634563

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Stephanie Mossburg	Project Manager: Mark Heaston	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): Scott Beesinger	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205	pH:	Program:	
Turn Around Time: STANDARD			
Project Name/Location: Longhorn			
Project Number: 60256135.0002GA			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Dissolved Gases / Carbon Dioxide	Alkalinity	Sulfide	Chloride / Sulfate / Nitrate / Nitrite	TOC / Total Phosphorous	Dissolved Iron / Dissolved Manganese	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 50	50WW22-081815			8/18/15	0805		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW22FF-081815			8/18/15	0805		✓	W	1								✓					
	50WW25-081815			8/18/15	0940		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW25FF-081815			8/18/15	0940		✓	W	1								✓					
	50WW12-081815			8/18/15	1105		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW12FF-081815			8/18/15	1105		✓	W	1								✓					
	50WW06-081815			8/18/15	1340		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW06FF-081815			8/18/15	1340		✓	W	1								✓					
	50WW11-081815			8/18/15	1450		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW11FF-081815			8/18/15	1450		✓	W	1								✓					
	TRIP BLANK			8/18/15			✓	W	2	✓												

ERPIMS REQUIRED FIELDS

Comments: **STANDARD TAT**

Relinquished by: (Signature) Scott Beesinger	Date 8/18/15	Time 1600	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time		Remarks:

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

00634564

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Mark Heaston	Mail to:	Linda Raabe
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000		112 East Pecan STE. 400
	Marietta, OH 45750	Sampler (print):	Scott Beesinger		San Antonio, TX 78205
Phone:	1-800-373-4071				210-296-2000
Client:	AECOM	Signature:	Scott Beesinger	Fed Ex Airbill No:	
Address:	112 East Pecan Ste. 400				
	San Antonio, TX 78205	pH:		Program:	
Turn Around Time:	STANDARD				
Project Name/Location:	Longhorn				
Project Number:	60256135.0002GA				

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Dissolved Gases / Carbon Dioxide	Alkalinity	Sulfide	Chloride / Sulfate	Nitrate / Nitrite	TOC / Total Phosphorous	Dissolved Iron / Dissolved Manganese	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 50	50WW14-081915			8/19/15	0820		✓	W	11	✓	✓	✓	✓	✓	✓	✓	✓						
	50WW14FF-081915			8/19/15	0820		✓	W	1									✓					
	50WW13-081915			8/19/15	0935		✓	W	11	✓	✓	✓	✓	✓	✓	✓	✓						
	50WW13FF-081915			8/19/15	0935		✓	W	1									✓					
	50WW05-081915			8/19/15	1050		✓	W	4	✓	✓												
	50WW05FD-081915			8/19/15	1050		✓	W	4	✓	✓												
	50WW17-081915			8/19/15	1400		✓	W	4	✓	✓												
	TRip BLANK			8/19/15			✓	W	2	✓													

ERPIMS REQUIRED FIELDS

Comments: **STANDARD TAT**

Relinquished by: (Signature) Scott Beesinger	Date 8/19/15	Time 1600	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time		Remarks:

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

00634565

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Mark Heaston	Mail to:	Linda Raabe
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000		112 East Pecan STE. 400
	Marietta, OH 45750	Sampler (print):	Scott Beesinger		San Antonio, TX 78205
Phone:	1-800-373-4071				210-296-2000
Client:	AECOM	Signature:	Scott Beesinger	Fed Ex Airbill No:	
Address:	112 East Pecan Ste. 400				
	San Antonio, TX 78205	pH:		Program:	
Turn Around Time:	STANDARD				
Project Name/Location:	Longhorn				
Project Number:	60256135.0002GA				

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 50	50WW26-082015			8/20/15	0855		✓	W	4	✓	✓					
	50WW26MS-082015			8/20/15	0855		✓	W	4	✓	✓					
	50WW26MSD-082015			8/20/15	0855		✓	W	4	✓	✓					
	50WW21-082015			8/20/15	1000		✓	W	4	✓	✓					
	50WW01-082015			8/20/15	1023		✓	W	4	✓	✓					
	50WW28-082015			8/20/15	1125		✓	W	4	✓	✓					
	50WW27-082015			8/20/15	1335		✓	W	4	✓	✓					
	50WW15-082015			8/20/15	1440		✓	W	4	✓	✓					
	50WW15FD-082015			8/20/15	1440		✓	W	4	✓	✓					
	50WW16-082015			8/20/15	1550		✓	W	4	✓	✓					
	50WW19-082115			8/21/15	0815		✓	W	4	✓	✓					
	50WW20-082115			8/21/15	0930		✓	W	4	✓	✓					
	50WW09-082115			8/21/15	1035		✓	W	4	✓	✓					
	50WW09FD-082115			8/21/15	1035		✓	W	4	✓	✓					

ERPIMS REQUIRED FIELDS

Comments: **STANDARD TAT**

Relinquished by: (Signature) Scott Beesinger	Date 8/21/15	Time 1600	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time		Remarks:

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

00634566

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Stephanie Mossburg	Project Manager: Mark Heaston	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): Scott Beesinger	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205			
Turn Around Time: STANDARD	pH:	Program:	
Project Name/Location: Longhorn			
Project Number: 60256135.0002GA			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 50	50WW10-082115			8/21/15	1140		✓	W	4	✓	✓					
	50WW07-082115			8/21/15	1445		✓	W	4	✓	✓					
	50WW07MS-082115			8/21/15	1445		✓	W	4	✓	✓					
	50WW07MSD-082115			8/21/15	1445		✓	W	4	✓	✓					
	TRIP BLANK			8/21/15			✓	W	2	✓						

ERPIMS REQUIRED FIELDS

Comments: **STANDARD TAT**

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Scott Beesinger	8/21/15	1600					
Relinquished by: (Signature)	**Date**	**Time**	**Received for Laboratory by: (Signature)**	**Date**	**Time**	**Remarks:**	

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Mark Heaston
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD	pH:	
Project Name/Location:	Longhorn		
Project Number:	60256135.0002GA		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 50	50WW17-110915			11/9/15	0815		✓	W	4	✓	✓					
	50WW19-110915			11/9/15	0925		✓	W	4	✓	✓					
	50WW07-110915			11/9/15	1035		✓	W	4	✓	✓					
	50WW07MS-110915			11/9/15	1035		✓	W	4	✓	✓					
	50WW07MSD-110915			11/9/15	1035		✓	W	4	✓	✓					
	50WW26-111015			11/10/15	1310		✓	W	4	✓	✓					
	50WW26FD-111015			11/10/15	1310		✓	W	4	✓	✓					
	50WW21-111015			11/10/15	1415		✓	W	4	✓	✓					
	50WW20-111015			11/10/15	1510		✓	W	4	✓	✓					
	Trip Blank			11/10/15			✓	W	2	✓						

Comments: **STANDARD TAT**

	Date	Time			Date	Time	
Relinquished by: (Signature) Scott Beesinger	11/10/15	1600	Received by: (Signature)	Received by: (Signature)			Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time		Remarks:

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Mark Heaston
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD	pH:	
Project Name/Location:	Longhorn		
Project Number:	60256135.0002GA		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Dissolved Gases / Carbon Dioxide	Alkalinity	Sulfide	Chloride / Sulfate Nitrate / Nitrite	TOC / Total Phosphorous	Dissolved Iron / Dissolved Manganese	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 50	50WW27-111115			11/11/15	0815		✓	W	4	✓	✓											
	50WW15-111115			11/11/15	0915		✓	W	4	✓	✓											
	50WW15FD-111115			11/11/15	0915		✓	W	4	✓	✓											
	50WW09-111115			11/11/15	1035		✓	W	4	✓	✓											
	50WW09FD-111115			11/11/15	1035		✓	W	4	✓	✓											
	50WW10-111115			11/11/15	1435		✓	W	4	✓	✓											
	50WW13-111215			11/12/15	0840		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW13FF-111215			11/12/15	0840		✓	W	1								✓					
	50WW14-111215			11/12/15	0950		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW14FF-111215			11/12/15	0950		✓	W	1								✓					
	50WW11-111215			11/12/15	1100		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW11FF-111215			11/12/15	1100		✓	W	1								✓					
	50WW06-111215			11/12/15	1325		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW06FF-111215			11/12/15	1325		✓	W	1								✓					

Comments: **STANDARD TAT**

	Date	Time			Date	Time	
Relinquished by: (Signature) Scott Beesinger	11/12/15	1545	Received by: (Signature)	Received by: (Signature)			Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time		Remarks:

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Mark Heaston
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD	pH:	
Project Name/Location:	Longhorn		
Project Number:	60256135.0002GA		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp	Grab	Matrix	Number of Containers	VOC	Perchlorate	Dissolved Gases / Carbon Dioxide	Alkalinity	Sulfide	Chloride / Sulfate Nitrite	TOC / Total Phosphorous	Dissolved Iron / Dissolved Manganese	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 50	50WW12-111215			11/12/15	1435		✓	W	11	✓	✓	✓	✓	✓	✓	✓	✓					
	50WW12FF-111215			11/12/15	1435		✓	W	1								✓					
	TRIPBLANK			11/12/15			✓	W	2	✓												

Comments: **STANDARD TAT**

	Date	Time					
Relinquished by: (Signature) Scott Beesinger	11/12/15	1545	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time		Remarks:

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Mark Heaston
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD	pH:	
Project Name/Location:	Longhorn		
Project Number:	60256135.0002GA		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Dissolved Gases / Carbon Dioxide	Alkalinity	Sulfide	Chloride / Sulfate / Nitrate / Nitrite	TOC / Total Phosphorous	Dissolved Iron / Dissolved Manganese	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 50	50WW08-111615			11/16/15	0820		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW08FF-111615			11/16/15	0820		✓	W	1								✓					
	50WW22-111615			11/16/15	0925		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW22FF-111615			11/16/15	0925		✓	W	1								✓					
	50WW24-111615			11/16/15	1030		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW24FF-111615			11/16/15	1030		✓	W	1								✓					
	50WW23-111615			11/16/15	1135		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW23FF-111615			11/16/15	1135		✓	W	1								✓					
	50WW18-111615			11/16/15	1345		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW18FF-111615			11/16/15	1345		✓	W	1								✓					
	50WW25-111615			11/16/15	1455		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW25FF-111615			11/16/15	1455		✓	W	1								✓					
	TRIP BLANK			11/16/15			✓	W	2	✓												

Comments: **STANDARD TAT**

Relinquished by: (Signature) Scott Beesinger	Date 11/16/15	Time 1600	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time		Remarks:

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Mark Heaston
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071	Signature:	Scott Beesinger
Client:	AECOM		
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD		
Project Name/Location:	Longhorn		
Project Number:	60256135.0002GA		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

pH:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 50	50WW05-111315			11/13/15	0800		✓	W	4	✓	✓					
	50WW05MS-111315			11/13/15	0800		✓	W	4	✓	✓					
	50WW05MSD-111315			11/13/15	0800		✓	W	4	✓	✓					
	50SW06-111315			11/13/15	0830		✓	W	4	✓	✓					
	BPW1-111315			11/13/15	0845		✓	W	4	✓	✓					
	50WW28-111315			11/13/15	0945		✓	W	4	✓	✓					
	50WW16-111315			11/13/15	1045		✓	W	4	✓	✓					
	LHSMW54-111315			11/13/15	1345		✓	W	4	✓	✓					
	42WW38-111315			11/13/15	1455		✓	W	4	✓	✓					
	TRIP BLANK			11/13/15			✓	W	2	✓						

Comments: **STANDARD TAT**

Relinquished by: (Signature) Scott Beesinger	Date 11/16/15	Time 1600	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time		Remarks:

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac

Laboratory Report Number: L15020878

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on February 23 2015

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00112235	H	2.0		J2317161165	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
50WW27-021215	L15020878-01	02/12/2015 13:05	02/17/2015 10:16
50WW15-021215	L15020878-02	02/12/2015 14:10	02/17/2015 10:16
50WW15FD-021215	L15020878-03	02/12/2015 14:10	02/17/2015 10:16
50WW20-021215	L15020878-04	02/12/2015 15:30	02/17/2015 10:16
50WW21-021215	L15020878-05	02/12/2015 16:35	02/17/2015 10:16
50WW21MS-021215	L15020878-06	02/12/2015 16:35	02/17/2015 10:16
50WW21MSD-021215	L15020878-07	02/12/2015 16:35	02/17/2015 10:16
50WW17-021315	L15020878-08	02/13/2015 07:55	02/17/2015 10:16
50WW19-021315	L15020878-09	02/13/2015 09:05	02/17/2015 10:16
50WW07-021315	L15020878-10	02/13/2015 10:20	02/17/2015 10:16
50WW16-021315	L15020878-11	02/13/2015 11:25	02/17/2015 10:16
50WW26-021315	L15020878-12	02/13/2015 13:30	02/17/2015 10:16
50WW05-021315	L15020878-13	02/13/2015 14:30	02/17/2015 10:16
50WW05FD-021315	L15020878-14	02/13/2015 14:30	02/17/2015 10:16
50WW10-021315	L15020878-15	02/13/2015 15:45	02/17/2015 10:16
50WW09-021315	L15020878-16	02/13/2015 16:50	02/17/2015 10:16
50WW09MS-021315	L15020878-17	02/13/2015 16:50	02/17/2015 10:16
50WW09MSD-021315	L15020878-18	02/13/2015 16:50	02/17/2015 10:16
TRIP BLANK	L15020878-19	02/13/2015 00:01	02/17/2015 10:16

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L15020878
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.0 Summary Data

1.1 Narratives

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020878
Project Name:		**Method:**	8260
Prep Batch Number(s):	512559	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-02-20 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden	Franci Bolden	Analyst I	2015-02-20 18:35:10

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020878
Project Name:		**Method:**	8260
Prep Batch Number(s):	512559	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-02-20 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020878
Project Name:		**Method:**	8260
Prep Batch Number(s):	512559	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-02-20 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?		X			1
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020878
Project Name:		**Method:**	8260
Prep Batch Number(s):	512559	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-02-20 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020878
Project Name:		**Method:**	8260
Prep Batch Number(s):	512559	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-02-20 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020878
Project Name:		**Method:**	8260
Prep Batch Number(s):	512559	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-02-20 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) Trichloroethene was exceeded the control limit for percent recovery in the MSD.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020878
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG512778	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-02-20 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson	Eric C. Lawson	Chemist III	2015-02-20 20:05:53

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020878
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG512778	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-02-20 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020878
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG512778	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-02-20 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020878
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG512778	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-02-20 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020878
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG512778	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-02-20 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020878
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG512778	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-02-20 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW27-021215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512559	**Analyst:**	TMB	**Run Date:**	02/17/2015 19:55
Collect Date:	02/12/2015 13:05	**Dilution:**	1	**File ID:**	8M403051
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.691	J	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.9	85	115	
1,2-Dichloroethane-d4	87.9	70	120	
Toluene-d8	94.9	85	120	
4-Bromofluorobenzene	98.7	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW27-021215	**Prep Method:**	6850	**Prep Date:**	02/18/2015 17:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG512778	**Analyst:**	JWR	**Run Date:**	02/19/2015 00:01
Collect Date:	02/12/2015 13:05	**Dilution:**	1	**File ID:**	1LM.LM28977
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW15-021215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512559	**Analyst:**	TMB	**Run Date:**	02/17/2015 18:00
Collect Date:	02/12/2015 14:10	**Dilution:**	1	**File ID:**	8M403047
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.258	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	14.3		1.00	0.500	0.250

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	3.31		1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	48.3		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	2.20		1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.0	85	115	
1,2-Dichloroethane-d4	84.0	70	120	
Toluene-d8	95.8	85	120	
4-Bromofluorobenzene	96.3	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW15-021215	**Prep Method:**	6850	**Prep Date:**	02/18/2015 17:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG512778	**Analyst:**	JWR	**Run Date:**	02/19/2015 00:20
Collect Date:	02/12/2015 14:10	**Dilution:**	1	**File ID:**	1LM.LM28978
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.942		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15020878-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW15FD-021215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512559	**Analyst:**	TMB	**Run Date:**	02/17/2015 20:24
Collect Date:	02/12/2015 14:10	**Dilution:**	1	**File ID:**	8M403052
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	14.2		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	3.24		1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	46.9		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	2.27		1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.6	85	115	
1,2-Dichloroethane-d4	88.8	70	120	
Toluene-d8	94.9	85	120	
4-Bromofluorobenzene	97.9	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW15FD-021215	**Prep Method:**	6850	**Prep Date:**	02/18/2015 17:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG512778	**Analyst:**	JWR	**Run Date:**	02/19/2015 00:39
Collect Date:	02/12/2015 14:10	**Dilution:**	1	**File ID:**	1LM.LM28979
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1.34		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15020878-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW20-021215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512559	**Analyst:**	TMB	**Run Date:**	02/17/2015 20:54
Collect Date:	02/12/2015 15:30	**Dilution:**	1	**File ID:**	8M403053
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.5	85	115	
1,2-Dichloroethane-d4	88.1	70	120	
Toluene-d8	94.8	85	120	
4-Bromofluorobenzene	97.9	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW20-021215	**Prep Method:**	6850	**Prep Date:**	02/18/2015 17:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG512778	**Analyst:**	JWR	**Run Date:**	02/19/2015 00:57
Collect Date:	02/12/2015 15:30	**Dilution:**	1	**File ID:**	1LM.LM28980
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.168	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW21-021215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512559	**Analyst:**	TMB	**Run Date:**	02/17/2015 18:58
Collect Date:	02/12/2015 16:35	**Dilution:**	1	**File ID:**	8M403049
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.4	85	115	
1,2-Dichloroethane-d4	91.3	70	120	
Toluene-d8	95.2	85	120	
4-Bromofluorobenzene	98.3	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW21-021215	**Prep Method:**	6850	**Prep Date:**	02/18/2015 17:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG512778	**Analyst:**	JWR	**Run Date:**	02/19/2015 01:16
Collect Date:	02/12/2015 16:35	**Dilution:**	1	**File ID:**	1LM.LM28981
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.878		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15020878-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW21MS-021215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512559	**Analyst:**	TMB	**Run Date:**	02/17/2015 16:04
Collect Date:	02/12/2015 16:35	**Dilution:**	1	**File ID:**	8M403043
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	19.8		10.0	5.00	2.50
Benzene	71-43-2	20.7		1.00	0.250	0.125
Bromobenzene	108-86-1	21.5		1.00	0.250	0.125
Bromochloromethane	74-97-5	21.1		1.00	0.400	0.200
Bromodichloromethane	75-27-4	20.0		1.00	0.500	0.250
Bromoform	75-25-2	20.2		2.00	1.00	0.500
Bromomethane	74-83-9	18.2		2.00	1.00	0.500
2-Butanone	78-93-3	18.9		10.0	5.00	2.50
n-Butylbenzene	104-51-8	20.0		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	19.3		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	18.5		1.00	0.500	0.250
Carbon disulfide	75-15-0	17.7		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	19.5		1.00	0.500	0.250
Chlorobenzene	108-90-7	19.4		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	20.9		1.00	0.500	0.250
Chloroethane	75-00-3	21.0		2.00	1.00	0.500
Chloroform	67-66-3	19.4		1.00	0.250	0.125
Chloromethane	74-87-3	20.1		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	18.9		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	19.8		1.00	0.500	0.250

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Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	20.1		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	20.5		1.00	0.500	0.250
Dibromomethane	74-95-3	20.5		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	19.1		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	19.1		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	20.3		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	20.9		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	19.0		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	19.8		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	18.6		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	20.6		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	19.6		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	20.1		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	20.3		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	20.9		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	22.2		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	19.5		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	19.7		1.00	0.500	0.250
Ethylbenzene	100-41-4	19.9		1.00	0.500	0.250
2-Hexanone	591-78-6	20.7		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	18.9		1.00	0.500	0.250
Isopropylbenzene	98-82-8	20.3		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	20.0		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	19.4		10.0	5.00	2.50
Methylene chloride	75-09-2	19.7		1.00	0.500	0.250
Naphthalene	91-20-3	22.2		1.00	0.400	0.200
n-Propylbenzene	103-65-1	19.6		1.00	0.250	0.125
Styrene	100-42-5	21.4		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	20.2		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	21.1		1.00	0.400	0.200
Tetrachloroethene	127-18-4	19.5		1.00	0.500	0.250
Toluene	108-88-3	21.0		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	21.3		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	21.4		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	19.8		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	20.3		1.00	0.500	0.250
Trichloroethene	79-01-6	21.1		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	18.8		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	20.6		2.00	1.00	0.500

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	21.9		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	22.3		1.00	0.500	0.250
Vinyl chloride	75-01-4	22.0		1.00	0.500	0.250
o-Xylene	95-47-6	19.7		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	40.5		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.0	85	115	
1,2-Dichloroethane-d4	88.2	70	120	
Toluene-d8	95.1	85	120	
4-Bromofluorobenzene	98.7	75	120	

Certificate of Analysis

Sample #:	L15020878-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW21MS-021215	**Prep Method:**	6850	**Prep Date:**	02/18/2015 17:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG512778	**Analyst:**	JWR	**Run Date:**	02/19/2015 01:35
Collect Date:	02/12/2015 16:35	**Dilution:**	1	**File ID:**	1LM.LM28982
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1.11		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15020878-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW21MSD-021215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512559	**Analyst:**	TMB	**Run Date:**	02/17/2015 16:33
Collect Date:	02/12/2015 16:35	**Dilution:**	1	**File ID:**	8M403044
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	20.9		10.0	5.00	2.50
Benzene	71-43-2	20.0		1.00	0.250	0.125
Bromobenzene	108-86-1	20.6		1.00	0.250	0.125
Bromochloromethane	74-97-5	21.6		1.00	0.400	0.200
Bromodichloromethane	75-27-4	20.1		1.00	0.500	0.250
Bromoform	75-25-2	20.5		2.00	1.00	0.500
Bromomethane	74-83-9	19.2		2.00	1.00	0.500
2-Butanone	78-93-3	20.3		10.0	5.00	2.50
n-Butylbenzene	104-51-8	19.5		1.00	0.500	0.250

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
sec-Butylbenzene	135-98-8	18.8		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	18.4		1.00	0.500	0.250
Carbon disulfide	75-15-0	17.4		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	19.5		1.00	0.500	0.250
Chlorobenzene	108-90-7	18.7		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	21.3		1.00	0.500	0.250
Chloroethane	75-00-3	19.6		2.00	1.00	0.500
Chloroform	67-66-3	19.2		1.00	0.250	0.125
Chloromethane	74-87-3	19.6		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	19.5		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	18.7		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	20.4		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	21.2		1.00	0.500	0.250
Dibromomethane	74-95-3	20.1		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	19.2		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	18.9		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	19.8		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	20.1		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	18.8		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	19.9		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	18.0		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	20.1		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	19.1		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	19.9		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	21.0		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	20.7		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	22.1		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	20.4		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	19.5		1.00	0.500	0.250
Ethylbenzene	100-41-4	19.1		1.00	0.500	0.250
2-Hexanone	591-78-6	24.1		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	18.2		1.00	0.500	0.250
Isopropylbenzene	98-82-8	20.0		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	19.5		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	20.6		10.0	5.00	2.50
Methylene chloride	75-09-2	19.7		1.00	0.500	0.250
Naphthalene	91-20-3	22.4		1.00	0.400	0.200
n-Propylbenzene	103-65-1	19.1		1.00	0.250	0.125
Styrene	100-42-5	21.4		1.00	0.250	0.125

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,1,1,2-Tetrachloroethane	630-20-6	20.4		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	22.0		1.00	0.400	0.200
Tetrachloroethene	127-18-4	19.8		1.00	0.500	0.250
Toluene	108-88-3	21.2		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	21.2		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	21.1		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	19.5		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	21.1		1.00	0.500	0.250
Trichloroethene	79-01-6	20.7		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	18.3		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	21.9		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	21.6		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	21.6		1.00	0.500	0.250
Vinyl chloride	75-01-4	20.9		1.00	0.500	0.250
o-Xylene	95-47-6	19.2		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	40.1		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.5	85	115	
1,2-Dichloroethane-d4	89.9	70	120	
Toluene-d8	95.0	85	120	
4-Bromofluorobenzene	98.7	75	120	

Certificate of Analysis

Sample #:	L15020878-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW21MSD-021215	**Prep Method:**	6850	**Prep Date:**	02/18/2015 17:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG512778	**Analyst:**	JWR	**Run Date:**	02/19/2015 01:54
Collect Date:	02/12/2015 16:35	**Dilution:**	1	**File ID:**	1LM.LM28983
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1.11		0.400	0.200	0.100

Certificate of Analysis

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15020878-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW17-021315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512559	**Analyst:**	TMB	**Run Date:**	02/17/2015 21:22
Collect Date:	02/13/2015 07:55	**Dilution:**	1	**File ID:**	8M403054
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.0	85	115	
1,2-Dichloroethane-d4	87.0	70	120	
Toluene-d8	94.3	85	120	
4-Bromofluorobenzene	96.9	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW17-021315	**Prep Method:**	6850	**Prep Date:**	02/18/2015 17:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG512778	**Analyst:**	JWR	**Run Date:**	02/19/2015 03:10
Collect Date:	02/13/2015 07:55	**Dilution:**	1	**File ID:**	1LM.LM28987
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW19-021315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512559	**Analyst:**	TMB	**Run Date:**	02/17/2015 21:51
Collect Date:	02/13/2015 09:05	**Dilution:**	1	**File ID:**	8M403055
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.1	85	115	
1,2-Dichloroethane-d4	90.7	70	120	
Toluene-d8	94.6	85	120	
4-Bromofluorobenzene	98.2	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-09	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW19-021315	**Prep Method:**	6850	**Prep Date:**	02/18/2015 17:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG512778	**Analyst:**	JWR	**Run Date:**	02/19/2015 03:29
Collect Date:	02/13/2015 09:05	**Dilution:**	1	**File ID:**	1LM.LM28988
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW07-021315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512559	**Analyst:**	TMB	**Run Date:**	02/17/2015 22:20
Collect Date:	02/13/2015 10:20	**Dilution:**	1	**File ID:**	8M403056
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.7	85	115	
1,2-Dichloroethane-d4	88.8	70	120	
Toluene-d8	94.2	85	120	
4-Bromofluorobenzene	97.3	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-10	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW07-021315	**Prep Method:**	6850	**Prep Date:**	02/18/2015 17:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG512778	**Analyst:**	JWR	**Run Date:**	02/19/2015 03:48
Collect Date:	02/13/2015 10:20	**Dilution:**	1	**File ID:**	1LM.LM28989
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW16-021315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512559	**Analyst:**	TMB	**Run Date:**	02/17/2015 22:50
Collect Date:	02/13/2015 11:25	**Dilution:**	1	**File ID:**	8M403057
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.391	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.7	85	115	
1,2-Dichloroethane-d4	86.1	70	120	
Toluene-d8	94.7	85	120	
4-Bromofluorobenzene	99.4	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-11	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW16-021315	**Prep Method:**	6850	**Prep Date:**	02/18/2015 17:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG512778	**Analyst:**	JWR	**Run Date:**	02/19/2015 04:07
Collect Date:	02/13/2015 11:25	**Dilution:**	1	**File ID:**	1LM.LM28990
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW26-021315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512559	**Analyst:**	TMB	**Run Date:**	02/17/2015 23:19
Collect Date:	02/13/2015 13:30	**Dilution:**	1	**File ID:**	8M403058
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.6	85	115	
1,2-Dichloroethane-d4	89.1	70	120	
Toluene-d8	94.0	85	120	
4-Bromofluorobenzene	96.7	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-12	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW26-021315	**Prep Method:**	6850	**Prep Date:**	02/18/2015 17:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG512778	**Analyst:**	JWR	**Run Date:**	02/19/2015 04:26
Collect Date:	02/13/2015 13:30	**Dilution:**	1	**File ID:**	1LM.LM28991
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-13	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW05-021315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512729	**Analyst:**	FJB	**Run Date:**	02/18/2015 18:47
Collect Date:	02/13/2015 14:30	**Dilution:**	1	**File ID:**	8M403081
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.58		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.76	J	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	11.7		1.00	0.500	0.250

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Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.963	J	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	193		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.9	85	115	
1,2-Dichloroethane-d4	92.2	70	120	
Toluene-d8	95.8	85	120	
4-Bromofluorobenzene	97.3	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-13	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW05-021315	**Prep Method:**	6850	**Prep Date:**	02/18/2015 17:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG512778	**Analyst:**	JWR	**Run Date:**	02/19/2015 04:45
Collect Date:	02/13/2015 14:30	**Dilution:**	1	**File ID:**	1LM.LM28992
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-14	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW05FD-021315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512729	**Analyst:**	FJB	**Run Date:**	02/18/2015 19:16
Collect Date:	02/13/2015 14:30	**Dilution:**	1	**File ID:**	8M403082
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.62		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.91	J	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	12.6		1.00	0.500	0.250

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.888	J	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	196		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	91.9	70	120	
Toluene-d8	94.8	85	120	
4-Bromofluorobenzene	97.2	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-14	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW05FD-021315	**Prep Method:**	6850	**Prep Date:**	02/18/2015 17:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG512778	**Analyst:**	JWR	**Run Date:**	02/19/2015 05:04
Collect Date:	02/13/2015 14:30	**Dilution:**	1	**File ID:**	1LM.LM28993
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-15	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW10-021315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512559	**Analyst:**	TMB	**Run Date:**	02/17/2015 23:47
Collect Date:	02/13/2015 15:45	**Dilution:**	1	**File ID:**	8M403059
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.09	J	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.2	85	115	
1,2-Dichloroethane-d4	85.2	70	120	
Toluene-d8	98.3	85	120	
4-Bromofluorobenzene	94.4	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-15	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW10-021315	**Prep Method:**	6850	**Prep Date:**	02/18/2015 17:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG512778	**Analyst:**	JWR	**Run Date:**	02/19/2015 05:23
Collect Date:	02/13/2015 15:45	**Dilution:**	1	**File ID:**	1LM.LM28994
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-16	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW09-021315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512559	**Analyst:**	TMB	**Run Date:**	02/17/2015 18:29
Collect Date:	02/13/2015 16:50	**Dilution:**	1	**File ID:**	8M403048
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	1.04		1.00	0.500	0.250

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.353	J	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	57.0		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.9	85	115	
1,2-Dichloroethane-d4	89.6	70	120	
Toluene-d8	94.8	85	120	
4-Bromofluorobenzene	97.8	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-16	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW09-021315	**Prep Method:**	6850	**Prep Date:**	02/18/2015 17:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG512778	**Analyst:**	JWR	**Run Date:**	02/19/2015 06:38
Collect Date:	02/13/2015 16:50	**Dilution:**	1	**File ID:**	1LM.LM28998
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-17	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW09MS-021315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512559	**Analyst:**	TMB	**Run Date:**	02/17/2015 17:02
Collect Date:	02/13/2015 16:50	**Dilution:**	1	**File ID:**	8M403045
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	19.5		10.0	5.00	2.50
Benzene	71-43-2	20.4		1.00	0.250	0.125
Bromobenzene	108-86-1	20.3		1.00	0.250	0.125
Bromochloromethane	74-97-5	21.1		1.00	0.400	0.200
Bromodichloromethane	75-27-4	19.9		1.00	0.500	0.250
Bromoform	75-25-2	19.7		2.00	1.00	0.500
Bromomethane	74-83-9	20.3		2.00	1.00	0.500
2-Butanone	78-93-3	18.8		10.0	5.00	2.50
n-Butylbenzene	104-51-8	19.6		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	19.2		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	18.9		1.00	0.500	0.250
Carbon disulfide	75-15-0	17.8		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	19.9		1.00	0.500	0.250
Chlorobenzene	108-90-7	19.2		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	20.2		1.00	0.500	0.250
Chloroethane	75-00-3	20.3		2.00	1.00	0.500
Chloroform	67-66-3	19.3		1.00	0.250	0.125
Chloromethane	74-87-3	19.9		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	19.6		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	18.7		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	19.6		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	19.5		1.00	0.500	0.250
Dibromomethane	74-95-3	19.5		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	18.6		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	18.9		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	19.6		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	20.0		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	19.8		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	19.3		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	18.2		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	21.2		1.00	0.500	0.250

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	19.5		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	20.2		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	19.8		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	21.1		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	21.6		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	18.9		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	19.9		1.00	0.500	0.250
Ethylbenzene	100-41-4	19.7		1.00	0.500	0.250
2-Hexanone	591-78-6	19.7		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	18.6		1.00	0.500	0.250
Isopropylbenzene	98-82-8	20.4		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	20.0		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	18.4		10.0	5.00	2.50
Methylene chloride	75-09-2	19.3		1.00	0.500	0.250
Naphthalene	91-20-3	20.9		1.00	0.400	0.200
n-Propylbenzene	103-65-1	19.4		1.00	0.250	0.125
Styrene	100-42-5	22.0		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	19.6		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	19.8		1.00	0.400	0.200
Tetrachloroethene	127-18-4	20.0		1.00	0.500	0.250
Toluene	108-88-3	20.9		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	20.3		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	20.4		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	19.7		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	19.7		1.00	0.500	0.250
Trichloroethene	79-01-6	58.8		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	19.0		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	19.7		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	21.6		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	21.6		1.00	0.500	0.250
Vinyl chloride	75-01-4	21.6		1.00	0.500	0.250
o-Xylene	95-47-6	19.6		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	40.9		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.6	85	115	
1,2-Dichloroethane-d4	86.9	70	120	
Toluene-d8	96.2	85	120	
4-Bromofluorobenzene	96.8	75	120	

Certificate of Analysis

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15020878-17	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW09MS-021315	**Prep Method:**	6850	**Prep Date:**	02/18/2015 17:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG512778	**Analyst:**	JWR	**Run Date:**	02/19/2015 06:57
Collect Date:	02/13/2015 16:50	**Dilution:**	1	**File ID:**	1LM.LM28999
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.270	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-18	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW09MSD-021315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512559	**Analyst:**	TMB	**Run Date:**	02/17/2015 17:31
Collect Date:	02/13/2015 16:50	**Dilution:**	1	**File ID:**	8M403046
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	21.5		10.0	5.00	2.50
Benzene	71-43-2	20.4		1.00	0.250	0.125
Bromobenzene	108-86-1	20.8		1.00	0.250	0.125
Bromochloromethane	74-97-5	21.4		1.00	0.400	0.200
Bromodichloromethane	75-27-4	19.9		1.00	0.500	0.250
Bromoform	75-25-2	21.0		2.00	1.00	0.500
Bromomethane	74-83-9	18.5		2.00	1.00	0.500
2-Butanone	78-93-3	20.6		10.0	5.00	2.50
n-Butylbenzene	104-51-8	19.2		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	18.6		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	18.0		1.00	0.500	0.250
Carbon disulfide	75-15-0	17.6		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	19.8		1.00	0.500	0.250
Chlorobenzene	108-90-7	19.1		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	21.7		1.00	0.500	0.250
Chloroethane	75-00-3	20.0		2.00	1.00	0.500
Chloroform	67-66-3	19.4		1.00	0.250	0.125
Chloromethane	74-87-3	19.2		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	18.7		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	19.5		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	20.4		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	21.0		1.00	0.500	0.250
Dibromomethane	74-95-3	20.1		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	19.2		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	18.7		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	19.6		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	20.5		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	19.0		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	20.1		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	18.1		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	21.2		1.00	0.500	0.250

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	19.5		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	19.8		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	21.2		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	20.4		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	22.4		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	20.2		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	19.6		1.00	0.500	0.250
Ethylbenzene	100-41-4	19.8		1.00	0.500	0.250
2-Hexanone	591-78-6	21.3		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	17.9		1.00	0.500	0.250
Isopropylbenzene	98-82-8	20.2		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	19.4		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	20.5		10.0	5.00	2.50
Methylene chloride	75-09-2	19.8		1.00	0.500	0.250
Naphthalene	91-20-3	22.0		1.00	0.400	0.200
n-Propylbenzene	103-65-1	18.8		1.00	0.250	0.125
Styrene	100-42-5	21.6		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	20.2		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	20.8		1.00	0.400	0.200
Tetrachloroethene	127-18-4	20.5		1.00	0.500	0.250
Toluene	108-88-3	21.0		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	20.6		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	20.8		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	19.8		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	20.9		1.00	0.500	0.250
Trichloroethene	79-01-6	56.7		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	18.6		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	21.0		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	21.4		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	21.7		1.00	0.500	0.250
Vinyl chloride	75-01-4	20.8		1.00	0.500	0.250
o-Xylene	95-47-6	19.3		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	40.3		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.7	85	115	
1,2-Dichloroethane-d4	89.4	70	120	
Toluene-d8	96.0	85	120	
4-Bromofluorobenzene	97.6	75	120	

Certificate of Analysis

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15020878-18	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW09MSD-021315	**Prep Method:**	6850	**Prep Date:**	02/18/2015 17:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG512778	**Analyst:**	JWR	**Run Date:**	02/19/2015 07:16
Collect Date:	02/13/2015 16:50	**Dilution:**	1	**File ID:**	1LM.LM29000
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.253	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-19	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512559	**Analyst:**	TMB	**Run Date:**	02/17/2015 19:27
Collect Date:	02/13/2015 00:01	**Dilution:**	1	**File ID:**	8M403050
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.8	85	115	
1,2-Dichloroethane-d4	86.1	70	120	
Toluene-d8	95.5	85	120	
4-Bromofluorobenzene	98.1	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW27-021215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512559	**Analyst:**	TMB	**Run Date:**	02/17/2015 19:55
Collect Date:	02/12/2015 13:05	**Dilution:**	1	**File ID:**	8M403051
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.691	J	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.9	85	115	
1,2-Dichloroethane-d4	87.9	70	120	
Toluene-d8	94.9	85	120	
4-Bromofluorobenzene	98.7	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW15-021215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512559	**Analyst:**	TMB	**Run Date:**	02/17/2015 18:00
Collect Date:	02/12/2015 14:10	**Dilution:**	1	**File ID:**	8M403047
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.258	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	14.3		1.00	0.500	0.250

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	3.31		1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	48.3		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	2.20		1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.0	85	115	
1,2-Dichloroethane-d4	84.0	70	120	
Toluene-d8	95.8	85	120	
4-Bromofluorobenzene	96.3	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW15FD-021215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512559	**Analyst:**	TMB	**Run Date:**	02/17/2015 20:24
Collect Date:	02/12/2015 14:10	**Dilution:**	1	**File ID:**	8M403052
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	14.2		1.00	0.500	0.250

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	3.24		1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	46.9		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	2.27		1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.6	85	115	
1,2-Dichloroethane-d4	88.8	70	120	
Toluene-d8	94.9	85	120	
4-Bromofluorobenzene	97.9	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW20-021215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512559	**Analyst:**	TMB	**Run Date:**	02/17/2015 20:54
Collect Date:	02/12/2015 15:30	**Dilution:**	1	**File ID:**	8M403053
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.5	85	115	
1,2-Dichloroethane-d4	88.1	70	120	
Toluene-d8	94.8	85	120	
4-Bromofluorobenzene	97.9	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW21-021215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512559	**Analyst:**	TMB	**Run Date:**	02/17/2015 18:58
Collect Date:	02/12/2015 16:35	**Dilution:**	1	**File ID:**	8M403049
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

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Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.4	85	115	
1,2-Dichloroethane-d4	91.3	70	120	
Toluene-d8	95.2	85	120	
4-Bromofluorobenzene	98.3	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW21MS-021215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512559	**Analyst:**	TMB	**Run Date:**	02/17/2015 16:04
Collect Date:	02/12/2015 16:35	**Dilution:**	1	**File ID:**	8M403043
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	19.8		10.0	5.00	2.50
Benzene	71-43-2	20.7		1.00	0.250	0.125
Bromobenzene	108-86-1	21.5		1.00	0.250	0.125
Bromochloromethane	74-97-5	21.1		1.00	0.400	0.200
Bromodichloromethane	75-27-4	20.0		1.00	0.500	0.250
Bromoform	75-25-2	20.2		2.00	1.00	0.500
Bromomethane	74-83-9	18.2		2.00	1.00	0.500
2-Butanone	78-93-3	18.9		10.0	5.00	2.50
n-Butylbenzene	104-51-8	20.0		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	19.3		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	18.5		1.00	0.500	0.250
Carbon disulfide	75-15-0	17.7		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	19.5		1.00	0.500	0.250
Chlorobenzene	108-90-7	19.4		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	20.9		1.00	0.500	0.250
Chloroethane	75-00-3	21.0		2.00	1.00	0.500
Chloroform	67-66-3	19.4		1.00	0.250	0.125
Chloromethane	74-87-3	20.1		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	18.9		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	19.8		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	20.1		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	20.5		1.00	0.500	0.250
Dibromomethane	74-95-3	20.5		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	19.1		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	19.1		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	20.3		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	20.9		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	19.0		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	19.8		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	18.6		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	20.6		1.00	0.500	0.250

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Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	19.6		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	20.1		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	20.3		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	20.9		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	22.2		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	19.5		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	19.7		1.00	0.500	0.250
Ethylbenzene	100-41-4	19.9		1.00	0.500	0.250
2-Hexanone	591-78-6	20.7		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	18.9		1.00	0.500	0.250
Isopropylbenzene	98-82-8	20.3		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	20.0		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	19.4		10.0	5.00	2.50
Methylene chloride	75-09-2	19.7		1.00	0.500	0.250
Naphthalene	91-20-3	22.2		1.00	0.400	0.200
n-Propylbenzene	103-65-1	19.6		1.00	0.250	0.125
Styrene	100-42-5	21.4		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	20.2		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	21.1		1.00	0.400	0.200
Tetrachloroethene	127-18-4	19.5		1.00	0.500	0.250
Toluene	108-88-3	21.0		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	21.3		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	21.4		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	19.8		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	20.3		1.00	0.500	0.250
Trichloroethene	79-01-6	21.1		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	18.8		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	20.6		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	21.9		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	22.3		1.00	0.500	0.250
Vinyl chloride	75-01-4	22.0		1.00	0.500	0.250
o-Xylene	95-47-6	19.7		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	40.5		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.0	85	115	
1,2-Dichloroethane-d4	88.2	70	120	
Toluene-d8	95.1	85	120	
4-Bromofluorobenzene	98.7	75	120	

Certificate of Analysis

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Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15020878-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW21MSD-021215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512559	**Analyst:**	TMB	**Run Date:**	02/17/2015 16:33
Collect Date:	02/12/2015 16:35	**Dilution:**	1	**File ID:**	8M403044
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	20.9		10.0	5.00	2.50
Benzene	71-43-2	20.0		1.00	0.250	0.125
Bromobenzene	108-86-1	20.6		1.00	0.250	0.125
Bromochloromethane	74-97-5	21.6		1.00	0.400	0.200
Bromodichloromethane	75-27-4	20.1		1.00	0.500	0.250
Bromoform	75-25-2	20.5		2.00	1.00	0.500
Bromomethane	74-83-9	19.2		2.00	1.00	0.500
2-Butanone	78-93-3	20.3		10.0	5.00	2.50
n-Butylbenzene	104-51-8	19.5		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	18.8		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	18.4		1.00	0.500	0.250
Carbon disulfide	75-15-0	17.4		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	19.5		1.00	0.500	0.250
Chlorobenzene	108-90-7	18.7		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	21.3		1.00	0.500	0.250
Chloroethane	75-00-3	19.6		2.00	1.00	0.500
Chloroform	67-66-3	19.2		1.00	0.250	0.125
Chloromethane	74-87-3	19.6		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	19.5		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	18.7		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	20.4		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	21.2		1.00	0.500	0.250
Dibromomethane	74-95-3	20.1		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	19.2		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	18.9		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	19.8		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	20.1		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	18.8		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	19.9		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	18.0		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	20.1		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	19.1		1.00	0.500	0.250

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Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	19.9		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	21.0		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	20.7		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	22.1		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	20.4		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	19.5		1.00	0.500	0.250
Ethylbenzene	100-41-4	19.1		1.00	0.500	0.250
2-Hexanone	591-78-6	24.1		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	18.2		1.00	0.500	0.250
Isopropylbenzene	98-82-8	20.0		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	19.5		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	20.6		10.0	5.00	2.50
Methylene chloride	75-09-2	19.7		1.00	0.500	0.250
Naphthalene	91-20-3	22.4		1.00	0.400	0.200
n-Propylbenzene	103-65-1	19.1		1.00	0.250	0.125
Styrene	100-42-5	21.4		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	20.4		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	22.0		1.00	0.400	0.200
Tetrachloroethene	127-18-4	19.8		1.00	0.500	0.250
Toluene	108-88-3	21.2		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	21.2		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	21.1		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	19.5		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	21.1		1.00	0.500	0.250
Trichloroethene	79-01-6	20.7		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	18.3		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	21.9		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	21.6		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	21.6		1.00	0.500	0.250
Vinyl chloride	75-01-4	20.9		1.00	0.500	0.250
o-Xylene	95-47-6	19.2		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	40.1		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.5	85	115	
1,2-Dichloroethane-d4	89.9	70	120	
Toluene-d8	95.0	85	120	
4-Bromofluorobenzene	98.7	75	120	

Certificate of Analysis

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15020878-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW17-021315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512559	**Analyst:**	TMB	**Run Date:**	02/17/2015 21:22
Collect Date:	02/13/2015 07:55	**Dilution:**	1	**File ID:**	8M403054
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

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Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.0	85	115	
1,2-Dichloroethane-d4	87.0	70	120	
Toluene-d8	94.3	85	120	
4-Bromofluorobenzene	96.9	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW19-021315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512559	**Analyst:**	TMB	**Run Date:**	02/17/2015 21:51
Collect Date:	02/13/2015 09:05	**Dilution:**	1	**File ID:**	8M403055
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.1	85	115	
1,2-Dichloroethane-d4	90.7	70	120	
Toluene-d8	94.6	85	120	
4-Bromofluorobenzene	98.2	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW07-021315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512559	**Analyst:**	TMB	**Run Date:**	02/17/2015 22:20
Collect Date:	02/13/2015 10:20	**Dilution:**	1	**File ID:**	8M403056
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.7	85	115	
1,2-Dichloroethane-d4	88.8	70	120	
Toluene-d8	94.2	85	120	
4-Bromofluorobenzene	97.3	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW16-021315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512559	**Analyst:**	TMB	**Run Date:**	02/17/2015 22:50
Collect Date:	02/13/2015 11:25	**Dilution:**	1	**File ID:**	8M403057
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.391	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.7	85	115	
1,2-Dichloroethane-d4	86.1	70	120	
Toluene-d8	94.7	85	120	
4-Bromofluorobenzene	99.4	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW26-021315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512559	**Analyst:**	TMB	**Run Date:**	02/17/2015 23:19
Collect Date:	02/13/2015 13:30	**Dilution:**	1	**File ID:**	8M403058
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.6	85	115	
1,2-Dichloroethane-d4	89.1	70	120	
Toluene-d8	94.0	85	120	
4-Bromofluorobenzene	96.7	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-13	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW05-021315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512729	**Analyst:**	FJB	**Run Date:**	02/18/2015 18:47
Collect Date:	02/13/2015 14:30	**Dilution:**	1	**File ID:**	8M403081
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.58		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.76	J	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	11.7		1.00	0.500	0.250

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.963	J	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	193		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.9	85	115	
1,2-Dichloroethane-d4	92.2	70	120	
Toluene-d8	95.8	85	120	
4-Bromofluorobenzene	97.3	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-14	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW05FD-021315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512729	**Analyst:**	FJB	**Run Date:**	02/18/2015 19:16
Collect Date:	02/13/2015 14:30	**Dilution:**	1	**File ID:**	8M403082
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.62		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.91	J	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	12.6		1.00	0.500	0.250

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.888	J	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	196		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	91.9	70	120	
Toluene-d8	94.8	85	120	
4-Bromofluorobenzene	97.2	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-15	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW10-021315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512559	**Analyst:**	TMB	**Run Date:**	02/17/2015 23:47
Collect Date:	02/13/2015 15:45	**Dilution:**	1	**File ID:**	8M403059
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.09	J	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.2	85	115	
1,2-Dichloroethane-d4	85.2	70	120	
Toluene-d8	98.3	85	120	
4-Bromofluorobenzene	94.4	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-16	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW09-021315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512559	**Analyst:**	TMB	**Run Date:**	02/17/2015 18:29
Collect Date:	02/13/2015 16:50	**Dilution:**	1	**File ID:**	8M403048
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	1.04		1.00	0.500	0.250

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.353	J	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	57.0		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.9	85	115	
1,2-Dichloroethane-d4	89.6	70	120	
Toluene-d8	94.8	85	120	
4-Bromofluorobenzene	97.8	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-17	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW09MS-021315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512559	**Analyst:**	TMB	**Run Date:**	02/17/2015 17:02
Collect Date:	02/13/2015 16:50	**Dilution:**	1	**File ID:**	8M403045
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	19.5		10.0	5.00	2.50
Benzene	71-43-2	20.4		1.00	0.250	0.125
Bromobenzene	108-86-1	20.3		1.00	0.250	0.125
Bromochloromethane	74-97-5	21.1		1.00	0.400	0.200
Bromodichloromethane	75-27-4	19.9		1.00	0.500	0.250
Bromoform	75-25-2	19.7		2.00	1.00	0.500
Bromomethane	74-83-9	20.3		2.00	1.00	0.500
2-Butanone	78-93-3	18.8		10.0	5.00	2.50
n-Butylbenzene	104-51-8	19.6		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	19.2		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	18.9		1.00	0.500	0.250
Carbon disulfide	75-15-0	17.8		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	19.9		1.00	0.500	0.250
Chlorobenzene	108-90-7	19.2		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	20.2		1.00	0.500	0.250
Chloroethane	75-00-3	20.3		2.00	1.00	0.500
Chloroform	67-66-3	19.3		1.00	0.250	0.125
Chloromethane	74-87-3	19.9		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	19.6		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	18.7		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	19.6		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	19.5		1.00	0.500	0.250
Dibromomethane	74-95-3	19.5		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	18.6		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	18.9		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	19.6		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	20.0		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	19.8		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	19.3		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	18.2		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	21.2		1.00	0.500	0.250

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	19.5		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	20.2		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	19.8		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	21.1		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	21.6		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	18.9		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	19.9		1.00	0.500	0.250
Ethylbenzene	100-41-4	19.7		1.00	0.500	0.250
2-Hexanone	591-78-6	19.7		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	18.6		1.00	0.500	0.250
Isopropylbenzene	98-82-8	20.4		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	20.0		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	18.4		10.0	5.00	2.50
Methylene chloride	75-09-2	19.3		1.00	0.500	0.250
Naphthalene	91-20-3	20.9		1.00	0.400	0.200
n-Propylbenzene	103-65-1	19.4		1.00	0.250	0.125
Styrene	100-42-5	22.0		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	19.6		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	19.8		1.00	0.400	0.200
Tetrachloroethene	127-18-4	20.0		1.00	0.500	0.250
Toluene	108-88-3	20.9		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	20.3		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	20.4		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	19.7		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	19.7		1.00	0.500	0.250
Trichloroethene	79-01-6	58.8		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	19.0		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	19.7		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	21.6		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	21.6		1.00	0.500	0.250
Vinyl chloride	75-01-4	21.6		1.00	0.500	0.250
o-Xylene	95-47-6	19.6		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	40.9		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.6	85	115	
1,2-Dichloroethane-d4	86.9	70	120	
Toluene-d8	96.2	85	120	
4-Bromofluorobenzene	96.8	75	120	

Certificate of Analysis

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15020878-18	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW09MSD-021315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512559	**Analyst:**	TMB	**Run Date:**	02/17/2015 17:31
Collect Date:	02/13/2015 16:50	**Dilution:**	1	**File ID:**	8M403046
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	21.5		10.0	5.00	2.50
Benzene	71-43-2	20.4		1.00	0.250	0.125
Bromobenzene	108-86-1	20.8		1.00	0.250	0.125
Bromochloromethane	74-97-5	21.4		1.00	0.400	0.200
Bromodichloromethane	75-27-4	19.9		1.00	0.500	0.250
Bromoform	75-25-2	21.0		2.00	1.00	0.500
Bromomethane	74-83-9	18.5		2.00	1.00	0.500
2-Butanone	78-93-3	20.6		10.0	5.00	2.50
n-Butylbenzene	104-51-8	19.2		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	18.6		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	18.0		1.00	0.500	0.250
Carbon disulfide	75-15-0	17.6		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	19.8		1.00	0.500	0.250
Chlorobenzene	108-90-7	19.1		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	21.7		1.00	0.500	0.250
Chloroethane	75-00-3	20.0		2.00	1.00	0.500
Chloroform	67-66-3	19.4		1.00	0.250	0.125
Chloromethane	74-87-3	19.2		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	18.7		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	19.5		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	20.4		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	21.0		1.00	0.500	0.250
Dibromomethane	74-95-3	20.1		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	19.2		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	18.7		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	19.6		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	20.5		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	19.0		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	20.1		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	18.1		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	21.2		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	19.5		1.00	0.500	0.250

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	19.8		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	21.2		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	20.4		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	22.4		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	20.2		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	19.6		1.00	0.500	0.250
Ethylbenzene	100-41-4	19.8		1.00	0.500	0.250
2-Hexanone	591-78-6	21.3		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	17.9		1.00	0.500	0.250
Isopropylbenzene	98-82-8	20.2		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	19.4		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	20.5		10.0	5.00	2.50
Methylene chloride	75-09-2	19.8		1.00	0.500	0.250
Naphthalene	91-20-3	22.0		1.00	0.400	0.200
n-Propylbenzene	103-65-1	18.8		1.00	0.250	0.125
Styrene	100-42-5	21.6		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	20.2		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	20.8		1.00	0.400	0.200
Tetrachloroethene	127-18-4	20.5		1.00	0.500	0.250
Toluene	108-88-3	21.0		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	20.6		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	20.8		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	19.8		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	20.9		1.00	0.500	0.250
Trichloroethene	79-01-6	56.7		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	18.6		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	21.0		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	21.4		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	21.7		1.00	0.500	0.250
Vinyl chloride	75-01-4	20.8		1.00	0.500	0.250
o-Xylene	95-47-6	19.3		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	40.3		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.7	85	115	
1,2-Dichloroethane-d4	89.4	70	120	
Toluene-d8	96.0	85	120	
4-Bromofluorobenzene	97.6	75	120	

Certificate of Analysis

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15020878-19	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512559	**Analyst:**	TMB	**Run Date:**	02/17/2015 19:27
Collect Date:	02/13/2015 00:01	**Dilution:**	1	**File ID:**	8M403050
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.8	85	115	
1,2-Dichloroethane-d4	86.1	70	120	
Toluene-d8	95.5	85	120	
4-Bromofluorobenzene	98.1	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 100214
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 19
Method: 624 SOP: MSV10 Rev: 12
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 16
Maintenance Log ID: 51878

Internal Standard: STD66600 Surrogate Standard: STD66600
CCV: STD66818; STD66687 LCS: STD66693; STD66677 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG494714; WG494980

Comments: File # 8m400369 and 70 were skipped and not used.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M400354	RINSE	NA	1	1		10/02/14 10:24
8M400355	WG494714-01 50ng BFB STD 8260	NA	1	1	STD66476	10/02/14 11:16
8M400356	WG494714-01 50ng BFB STD 8260	NA	1	1	STD66476	10/02/14 11:33
8M400357	WG494714-01 50ng BFB STD 8260	NA	1	1	STD66476	10/02/14 11:58
8M400358	WG494714-02 5ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 12:24
8M400359	WG494714-03 20ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 12:53
8M400360	WG494714-04 50ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 13:22
8M400361	WG494714-05 100ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 13:51
8M400362	WG494714-06 200ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 14:19
8M400363	WG494714-07 300ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 14:48
8M400364	WG494714-08 400ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 15:16
8M400365	WG494714-09 500ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 15:45
8M400366	RINSE	NA	1	1		10/02/14 16:14
8M400367	WG494714-10 100ug/L ALT SRC STD A9/F	NA	1	1	STD66677	10/02/14 16:47
8M400368	WG494979-01 50ug/L CCV STD 8260	NA	1	1	STD66687	10/02/14 17:22
8M400371	WG494980-02 20ug/L LCS STD 624	NA	2	1	STD66693	10/02/14 17:51
8M400372	WG494980-03 20ug/L LCSDUP STD 624	NA	2	1	STD66693	10/02/14 18:20
8M400373	RINSE	NA	2	1		10/02/14 18:49
8M400374	WG494980-01 VBLK1002 BLANK STD 624	NA	2	1		10/02/14 19:18
8M400375	L14100004-01 LOD 826-SPE A9/FOO	NA	1	1		10/02/14 19:47
8M400376	L14100006-01 LOQ 826-SPE A9/FOO	NA	1	1		10/02/14 20:16
8M400377	L14100004-01 LOD 826-SPE	NA	1	1		10/02/14 20:45
8M400378	L14100006-01 LOQ 826-SPE	NA	1	1		10/02/14 21:14
8M400379	L14100004-01 LOD 826-SPE	NA	1	1		10/02/14 21:42
8M400380	L14100006-01 LOQ 826-SPE	NA	1	1		10/02/14 22:12
8M400381	L14100098-10 A 624-SPE	5	2	1		10/02/14 22:40
8M400382	L14100089-02 A 624-SPE	5	2	1		10/02/14 23:09
8M400383	L14100098-04 A 624-SPE	<2	2	1		10/02/14 23:38
8M400384	L14100098-05 A 624-SPE	<2	2	1		10/03/14 00:06
8M400385	L14100098-06 A 624-SPE	<2	2	1		10/03/14 00:36
8M400386	L14100098-07 A 624-SPE	<2	2	1		10/03/14 01:06
8M400387	L14100098-08 A 624-SPE	<2	2	1		10/03/14 01:34
8M400388	L14100098-09 A 624-SPE	<2	2	1		10/03/14 02:04
8M400389	L14100110-01 A 624-SPE2	<2	2	1		10/03/14 02:32

Approved: October 03, 2014

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 100214
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 19
Method: 624 SOP: MSV10 Rev: 12
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 16
Maintenance Log ID: 51878

Internal Standard: STD66600 Surrogate Standard: STD66600
CCV: STD66818; STD66687 LCS: STD66693; STD66677 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG494714; WG494980

Comments: File # 8m400369 and 70 were skipped and not used.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M400390	L14100110-02 A 624-SPE1	<2	2	1		10/03/14 03:02
8M400391	RINSE	NA	1	1		10/03/14 03:30
8M400392	RINSE	NA	1	1		10/03/14 03:59

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 8M400355				
	Tune failed, DNR.			
3	X			
File ID: 8M400356				
	Tune failed, DNR.			
4				
File ID: 8M400357				
	Purged BFB.			
30	X	100	Over Calibration Range	TCE
File ID: 8M400385				
31	X	1	Carry-over contamination	
File ID: 8M400386				
	DNR.			
32	X	1	Carry-over contamination	
File ID: 8M400387				
	DNR.			
33	X	50	Over Calibration Range	TCE
File ID: 8M400388				
34	X	1	Carry-over contamination	
File ID: 8M400389				
	DNR.			

Approved: October 03, 2014

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 020615
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV10 Rev: 20
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 17
Maintenance Log ID: 52808

Internal Standard: STD68442 Surrogate Standard: STD68442
CCV: STD68794 LCS: STD68730 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG511287

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M402824	WG511287-01 50ng BFB STD 8260	NA	1	1	STD68443	02/06/15 13:01
8M402825	WG511287-02 50ug/L CCV STD 8260	NA	1	1	STD68794	02/06/15 13:25
8M402826	WG511287-02 50ug/L CCV STD 8260	NA	1	1	STD68794	02/06/15 13:56
8M402827	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD68288	02/06/15 14:28
8M402828	RINSE	NA	1	1		02/06/15 15:02
8M402829	WG511287-01 50ng BFB STD 8260	NA	1	1	STD68443	02/06/15 15:35
8M402830	WG511287-02 0.3ug/L STD 8260	NA	1	1	STD68794	02/06/15 15:59
8M402831	WG511287-03 0.4ug/L STD 8260	NA	1	1	STD68794	02/06/15 16:27
8M402832	WG511287-04 1ug/L STD 8260	NA	1	1	STD68794	02/06/15 16:57
8M402833	WG511287-05 2ug/L STD 8260	NA	1	1	STD68794	02/06/15 17:26
8M402834	WG511287-06 5ug/L STD 8260	NA	1	1	STD68794	02/06/15 17:54
8M402835	WG511287-07 20ug/L STD 8260	NA	1	1	STD68794	02/06/15 18:23
8M402836	WG511287-08 50ug/L STD 8260	NA	1	1	STD68794	02/06/15 18:53
8M402837	WG511287-09 100ug/L STD 8260	NA	1	1	STD68794	02/06/15 19:22
8M402838	WG511287-10 200ug/L STD 8260	NA	1	1	STD68794	02/06/15 19:51
8M402839	WG511287-11 300ug/L STD 8260	NA	1	1	STD68794	02/06/15 20:20
8M402840	RINSE	NA	1	1		02/06/15 20:48
8M402841	RINSE	NA	1	1		02/06/15 21:18
8M402842	WG511287-12 50ug/L ALT SRC STD 8260	NA	1	1	STD68730	02/06/15 21:48
8M402843	RINSE	NA	1	1		02/06/15 22:17
8M402844	RINSE	NA	1	1		02/06/15 22:47
8M402845	RINSE	NA	1	1		02/06/15 23:16

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 8M402825				
	Vc was high, DNR.			
3	X			
File ID: 8M402826				
	Vc was high, DNR. Running a curve. DNR.			
4				
File ID: 8M402827				
	Not needed, DNR.			

Approved: February 10, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 021715
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 20
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 17
Maintenance Log ID: 52846

Internal Standard: STD68442 Surrogate Standard: STD68442
CCV: STD68794; STD68819 LCS: STD68892; STD68937 MS/MSD: STD68892

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG512559

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M403033	RINSE	NA	1	1		02/17/15 11:17
8M403034	RINSE	NA	1	1		02/17/15 12:02
8M403035	RINSE	NA	1	1		02/17/15 12:31
8M403036	RINSE	NA	1	1		02/17/15 13:00
8M403037	WG512558-01 50ng BFB STD 8260	NA	1	1	STD68443	02/17/15 13:29
8M403038	WG512558-01 50ng BFB STD 8260	NA	1	1	STD68443	02/17/15 13:45
8M403039	WG512558-02 50ug/L CCV STD 8260	NA	1	1	STD68794	02/17/15 14:08
8M403040	WG512604-01 100ug/L A9 CCV STD 8260	NA	1	1	STD68819	02/17/15 14:37
8M403041	WG512559-01 VBLK0217 BLANK STD 826	NA	1	1		02/17/15 15:06
8M403042	WG512559-02 20ug/L LCS STD 8260	NA	1	1	STD68939	02/17/15 15:35
8M403043	L15020878-06 A MS 826-LOW	<2	1	1	STD68939	02/17/15 16:04
8M403044	L15020878-07 A MSD 826-LOW	<2	1	1	STD68939	02/17/15 16:33
8M403045	L15020878-17 A MS 826-LOW	<2	1	1	STD68939	02/17/15 17:02
8M403046	L15020878-18 A MSD 826-LOW	<2	1	1	STD68939	02/17/15 17:31
8M403047	L15020878-02 A 826-LOW	<2	1	1		02/17/15 18:00
8M403048	L15020878-16 A REF 826-LOW	<2	1	1		02/17/15 18:29
8M403049	L15020878-05 A REF 826-LOW	<2	1	1		02/17/15 18:58
8M403050	L15020878-19 A TB 826-LOW	<2	1	1		02/17/15 19:27
8M403051	L15020878-01 A 826-LOW	<2	1	1		02/17/15 19:55
8M403052	L15020878-03 A 826-LOW	<2	1	1		02/17/15 20:24
8M403053	L15020878-04 A 826-LOW	<2	1	1		02/17/15 20:54
8M403054	L15020878-08 A 826-LOW	<2	1	1		02/17/15 21:22
8M403055	L15020878-09 A 826-LOW	<2	1	1		02/17/15 21:51
8M403056	L15020878-10 A 826-LOW	<2	1	1		02/17/15 22:20
8M403057	L15020878-11 A 826-LOW	<2	1	1		02/17/15 22:50
8M403058	L15020878-12 A 826-LOW	<2	1	1		02/17/15 23:19
8M403059	L15020878-15 A 826-LOW	<2	1	1		02/17/15 23:47
8M403060	L15020878-13 A 5X 826-LOW	<2	1	5		02/18/15 00:16
8M403061	L15020878-14 A 5X 826-LOW	<2	1	5		02/18/15 00:45
8M403062	RINSE	NA	1	1		02/18/15 01:15
8M403063	WG512559-09 100ug/L A9 LCS STD 624	NA	2	1	STD68937	02/18/15 01:43
8M403064	WG512559-10 VBLK0217 BLANK STD 624	NA	2	1		02/18/15 02:12
8M403065	L15020721-02 B 624-SPE	<2	2	1		02/18/15 02:41
8M403066	CCV	NA	1	1		02/18/15 03:10

Approved: February 19, 2015

Tiffany Bailey

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 021715
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 20
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 17
Maintenance Log ID: 52846

Internal Standard: STD68442 Surrogate Standard: STD68442
CCV: STD68794; STD68819 LCS: STD68892; STD68937 MS/MSD: STD68892

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG512559

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M403067	RINSE	NA	1	1		02/18/15 03:39
8M403068	RINSE	NA	1	1		02/18/15 04:08

Comments

Seq.	Rerun	Dil.	Reason	Analytes
5	X			
File ID: 8M403037				
	Tune failed, DNR.			
28	X		Analyzed too dilute	
File ID: 8M403060				
	L15020878-13			
29	X		Analyzed too dilute	
File ID: 8M403061				
	L15020878-14			

Approved: February 19, 2015

Tiffany Bailey

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 021815
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 20
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 17
Maintenance Log ID:

Internal Standard: STD68442 Surrogate Standard: STD68442
CCV: STD68794 LCS: STD68939 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG512729

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M403069	WG512728-01 BFB 50ng 8260	NA	1	1	STD68443	02/18/15 13:01
8M403070	WG512728-02 50ug/L CCV 8260	NA	1	1	STD68794	02/18/15 13:24
8M403071	WG512XXX-01 100ug/L CCV A9	NA	1	1	STDXXXXX	02/18/15 13:57
8M403072	WG512729-01 VBLK0218 BLANK 8260	NA	1	1		02/18/15 14:27
8M403073	WG512729-02 20ug/L LCS 8260	NA	1	1	STD68939	02/18/15 14:56
8M403074	WG512729-03 20ug/L LCS DUP 8260	NA	1	1	STD68939	02/18/15 15:25
8M403075	L15020898-01 TB A 826-SPE	<2	1	1		02/18/15 15:54
8M403076	L15020882-05 TB A 826-BETX	<2	1	1		02/18/15 16:24
8M403077	L15020877-03 TB B 826-LOW	<2	1	1		02/18/15 16:52
8M403078	L15020805-04 B 826-LOW	<2	1	1		02/18/15 17:21
8M403079	L15020805-05 B 826-LOW	<2	1	1		02/18/15 17:50
8M403080	L15020805-06 B 826-LOW	<2	1	1		02/18/15 18:19
8M403081	L15020878-13 B 826-LOW	<2	1	1		02/18/15 18:47
8M403082	L15020878-14 B 826-LOW	<2	1	1		02/18/15 19:16
8M403083	L15020882-01 A 826-BETX	<2	1	1		02/18/15 19:45
8M403084	L15020882-03 A 826-BETX	<2	1	1		02/18/15 20:14
8M403085	L15020898-03 A 826-SPE	<2	1	1		02/18/15 20:43
8M403086	L15020800-01 10,000X 826-TC-SPE	NA	17	10000		02/18/15 21:11
8M403087	RINSE	NA	1	1		02/18/15 21:40
8M403088	WG512729-04 BLANK 624	NA	2	1		02/18/15 22:08
8M403089	L15020754-02 B 624-SPE	5	2	1		02/18/15 22:37
8M403090	L15020893-01 A 624-SPE	<2	2	1		02/18/15 23:05
8M403091	L15020899-01 A 624-SPE2	<2	2	1		02/18/15 23:34
8M403092	L15020899-02 A 624-SPE1	<2	2	1		02/19/15 00:02
8M403093	L15020900-01 A 624-SPE	<2	2	1		02/19/15 00:30
8M403094	L15020900-02 A 624-SPE	<2	2	1		02/19/15 00:59
8M403095	L15020900-03 A 624-SPE	<2	2	1		02/19/15 01:27
8M403096	L15020897-01 10X A 624-SPE	6	2	10		02/19/15 01:56
8M403097	RINSE	NA	1	1		02/19/15 02:26
8M403098	WG512510-01 10X FBLK	NA	17	10		02/19/15 02:54
8M403099	CCV	NA	1	1		02/19/15 03:23
8M403100	RINSE	NA	1	1		02/19/15 03:51
8M403101	RINSE	NA	1	1		02/19/15 04:19

Approved: February 19, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 021815
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 20
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 17
Maintenance Log ID:

Internal Standard: STD68442 Surrogate Standard: STD68442
CCV: STD68794 LCS: STD68939 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG512729

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
3				
File ID: 8M403071				
	Not needed, DNR.			
18	X	1000	Analyzed too dilute	
File ID: 8M403086				
	DNR.			
26	X	20	Over Calibration Range	TCE
File ID: 8M403094				
27	X	1	Carry-over contamination	
File ID: 8M403095				
	Tce carry over, DNR.			
28	X	10	Carry-over contamination	
File ID: 8M403096				
	Tce carry over, DNR. Foamy.			

Approved: February 19, 2015

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Microbac Laboratories Inc.

Data Checklist

Date: 02-OCT-2014
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 63840
Analytical Workgroups: WG494714; WG494980

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
03-OCT-2014
Tiffany Bailey

Secondary Reviewer:
03-OCT-2014

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-03-2014 13:21:54

Microbac Laboratories Inc.

Data Checklist

Date: 06-FEB-2015
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 66219
Analytical Workgroups: WG511287

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
09-FEB-2015
Tiffany Bailey

Secondary Reviewer:
10-FEB-2015

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-10-2015 10:32:48

Microbac Laboratories Inc.

Data Checklist

Date: 17-FEB-2015
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 66413
Analytical Workgroups: WG512559

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	TMB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
18-FEB-2015

Secondary Reviewer:
19-FEB-2015

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-19-2015 12:39:45

Microbac Laboratories Inc.

Data Checklist

Date: 18-FEB-2015
Analyst: FJB
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 66422
Analytical Workgroups: WG512729

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
19-FEB-2015
Tiffany Bailey

Secondary Reviewer:
19-FEB-2015

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-19-2015 13:24:42

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG512559

Login Number: L15020878

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW27-021215	01	02/12/15					02/17/2015	5.3	14		02/17/15	5.3	14	
50WW15-021215	02	02/12/15					02/17/2015	5.2	14		02/17/15	5.2	14	
50WW15FD-021215	03	02/12/15					02/17/2015	5.3	14		02/17/15	5.3	14	
50WW20-021215	04	02/12/15					02/17/2015	5.2	14		02/17/15	5.2	14	
50WW21-021215	05	02/12/15					02/17/2015	5.1	14		02/17/15	5.1	14	
50WW21MS-021215	06	02/12/15					02/17/2015	5	14		02/17/15	5	14	
50WW21MSD-021215	07	02/12/15					02/17/2015	5	14		02/17/15	5	14	
50WW17-021315	08	02/13/15					02/17/2015	4.6	14		02/17/15	4.6	14	
50WW19-021315	09	02/13/15					02/17/2015	4.5	14		02/17/15	4.5	14	
50WW07-021315	10	02/13/15					02/17/2015	4.5	14		02/17/15	4.5	14	
50WW16-021315	11	02/13/15					02/17/2015	4.5	14		02/17/15	4.5	14	
50WW26-021315	12	02/13/15					02/17/2015	4.4	14		02/17/15	4.4	14	
50WW05-021315	13	02/13/15					02/18/2015	4.4	14		02/18/15	4.4	14	
50WW05FD-021315	14	02/13/15					02/18/2015	4.4	14		02/18/15	4.4	14	
50WW10-021315	15	02/13/15					02/17/2015	4.3	14		02/17/15	4.3	14	
50WW09-021315	16	02/13/15					02/17/2015	4.1	14		02/17/15	4.1	14	
50WW09MS-021315	17	02/13/15					02/17/2015	4	14		02/17/15	4	14	
50WW09MSD-021315	18	02/13/15					02/17/2015	4	14		02/17/15	4	14	
TRIP BLANK	19	02/13/15					02/17/2015	4.8	14		02/17/15	4.8	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4026293
Report generated 02/19/2015 11:49

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG512729

Login Number: L15020878

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW05-021315	13	02/13/15					02/18/2015	5.2	14		02/18/15	5.2	14	
50WW05FD-021315	14	02/13/15					02/18/2015	5.2	14		02/18/15	5.2	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4026293
Report generated 02/19/2015 11:49

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L15020878
Instrument Id: HPMS8
Workgroup (AAB#): WG512729

Method: 8260
CAL ID: HPMS8-06-FEB-15
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L15020878-13	1.00	01	92.2	97.9	97.3	95.8
L15020878-14	1.00	01	91.9	103	97.2	94.8
WG512729-01	1.00	01	82.2	93.7	95.1	94.2
WG512729-02	1.00	01	82.4	90.9	94.3	94.7
WG512729-03	1.00	01	86.9	91.5	95.8	99.9
WG512729-04	1.00	01	86.4	93.6	97.1	92.2

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4026302
Report generated: 02/19/2015 11:51

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L15020878
Instrument Id: HPMS8
Workgroup (AAB#): WG512559

Method: 8260
CAL ID: HPMS8-06-FEB-15
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L15020878-01	1.00	01	87.9	96.9	98.7	94.9
L15020878-02	1.00	01	84.0	98.0	96.3	95.8
L15020878-03	1.00	01	88.8	96.6	97.9	94.9
L15020878-04	1.00	01	88.1	98.5	97.9	94.8
L15020878-05	1.00	01	91.3	99.4	98.3	95.2
L15020878-06	1.00	01	88.2	94.0	98.7	95.1
L15020878-07	1.00	01	89.9	94.5	98.7	95.0
L15020878-08	1.00	01	87.0	97.0	96.9	94.3
L15020878-09	1.00	01	90.7	97.1	98.2	94.6
L15020878-10	1.00	01	88.8	97.7	97.3	94.2
L15020878-11	1.00	01	86.1	96.7	99.4	94.7
L15020878-12	1.00	01	89.1	98.6	96.7	94.0
L15020878-13	5.00	DL01	86.9	94.6	96.4	95.8
L15020878-14	5.00	DL01	87.7	95.7	95.2	96.4
L15020878-15	1.00	01	85.2	94.2	94.4	98.3
L15020878-16	1.00	01	89.6	96.9	97.8	94.8
L15020878-17	1.00	01	86.9	94.6	96.8	96.2
L15020878-18	1.00	01	89.4	94.7	97.6	96.0
L15020878-19	1.00	01	86.1	96.8	98.1	95.5
WG512559-01	1.00	01	86.0	94.3	98.1	97.1
WG512559-02	1.00	01	83.7	91.8	97.1	94.6
WG512559-09	1.00	02	89.6	99.4	98.8	94.4
WG512559-10	1.00	01	88.6	97.0	97.9	89.6

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4026302
Report generated: 02/19/2015 11:51

METHOD BLANK SUMMARY

Login Number: L15020878
Blank File ID: 8M403041
Prep Date: 02/17/15 15:06
Analyzed Date: 02/17/15 15:06
Analyst: TMB

Work Group: WG512559
Blank Sample ID: WG512559-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG512559-02	8M403042	02/17/15 15:35	01
50WW21MS-021215	L15020878-06	8M403043	02/17/15 16:04	01
50WW21MSD-021215	L15020878-07	8M403044	02/17/15 16:33	01
50WW09MS-021315	L15020878-17	8M403045	02/17/15 17:02	01
50WW09MSD-021315	L15020878-18	8M403046	02/17/15 17:31	01
50WW15-021215	L15020878-02	8M403047	02/17/15 18:00	01
50WW09-021315	L15020878-16	8M403048	02/17/15 18:29	01
50WW21-021215	L15020878-05	8M403049	02/17/15 18:58	01
TRIP BLANK	L15020878-19	8M403050	02/17/15 19:27	01
50WW27-021215	L15020878-01	8M403051	02/17/15 19:55	01
50WW15FD-021215	L15020878-03	8M403052	02/17/15 20:24	01
50WW20-021215	L15020878-04	8M403053	02/17/15 20:54	01
50WW17-021315	L15020878-08	8M403054	02/17/15 21:22	01
50WW19-021315	L15020878-09	8M403055	02/17/15 21:51	01
50WW07-021315	L15020878-10	8M403056	02/17/15 22:20	01
50WW16-021315	L15020878-11	8M403057	02/17/15 22:50	01
50WW26-021315	L15020878-12	8M403058	02/17/15 23:19	01
50WW10-021315	L15020878-15	8M403059	02/17/15 23:47	01
50WW05-021315	L15020878-13	8M403060	02/18/15 00:16	DL01
50WW05FD-021315	L15020878-14	8M403061	02/18/15 00:45	DL01
LCS	WG512559-09	8M403063	02/18/15 01:43	01

Report Name: BLANK_SUMMARY
PDF File ID: 4026294
Report generated 02/18/2015 16:27

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L15020878 Prep Date: 02/17/15 15:06 Sample ID: WG512559-01
Instrument ID: HPMS8 Run Date: 02/17/15 15:06 Prep Method: 5030B/5030C/503
File ID: 8M403041 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG512559 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-06-FEB-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 4026295
18-FEB-2015 16:27

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15020878 Prep Date: 02/17/15 15:06 Sample ID: WG512559-01
Instrument ID: HPMS8 Run Date: 02/17/15 15:06 Prep Method: 5030B/5030C/503
File ID: 8M403041 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG512559 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-06-FEB-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	94.3	85 - 115	PASS
1,2-Dichloroethane-d4	86.0	70 - 120	PASS
Toluene-d8	97.1	85 - 120	PASS
4-Bromofluorobenzene	98.1	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4026295
18-FEB-2015 16:27

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15020878 | Run Date: 02/17/2015 | Sample ID: WG512559-02
Instrument ID: HPMS8 | Run Time: 15:35 | Prep Method: 5030B/5030C/503
File ID: 8M403042 | Analyst: TMB | Method: 8260B
Workgroup (AAB#): WG512559 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD68939 | Cal ID: HPMS8-06-FEB-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	18.0	90.2	40 - 140	
Benzene	20.0	21.5	107	80 - 120	
Bromobenzene	20.0	20.7	103	75 - 125	
Bromochloromethane	20.0	20.7	103	65 - 130	
Bromodichloromethane	20.0	19.7	98.7	75 - 120	
Bromoform	20.0	19.6	97.8	70 - 130	
Bromomethane	20.0	15.0	75.1	30 - 145	
2-Butanone	20.0	18.6	93.2	30 - 150	
n-Butylbenzene	20.0	20.8	104	70 - 135	
sec-Butylbenzene	20.0	20.1	101	70 - 125	
tert-Butylbenzene	20.0	19.3	96.4	70 - 130	
Carbon disulfide	20.0	18.5	92.6	35 - 160	
Carbon tetrachloride	20.0	20.2	101	65 - 140	
Chlorobenzene	20.0	19.9	99.4	80 - 120	
Chlorodibromomethane	20.0	20.3	102	60 - 135	
Chloroethane	20.0	18.6	93.0	60 - 135	
Chloroform	20.0	19.9	99.7	65 - 135	
Chloromethane	20.0	20.1	100	40 - 125	
2-Chlorotoluene	20.0	22.3	111	75 - 125	
4-Chlorotoluene	20.0	17.1	85.5	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	18.1	90.5	50 - 130	
1,2-Dibromoethane	20.0	20.3	101	80 - 120	
Dibromomethane	20.0	19.0	94.8	75 - 125	
1,2-Dichlorobenzene	20.0	18.9	94.4	70 - 120	
1,3-Dichlorobenzene	20.0	19.9	99.5	75 - 125	
1,4-Dichlorobenzene	20.0	20.5	102	75 - 125	
Dichlorodifluoromethane	20.0	21.2	106	30 - 155	
1,1-Dichloroethane	20.0	19.3	96.5	70 - 135	
1,2-Dichloroethane	20.0	19.4	97.2	70 - 130	
1,1-Dichloroethene	20.0	19.0	95.1	70 - 130	
cis-1,2-Dichloroethene	20.0	20.7	104	70 - 125	
trans-1,2-Dichloroethene	20.0	19.9	99.3	60 - 140	
1,2-Dichloropropane	20.0	20.2	101	75 - 125	
1,3-Dichloropropane	20.0	20.7	104	75 - 125	
2,2-Dichloropropane	20.0	21.1	105	70 - 135	
cis-1,3-Dichloropropene	20.0	21.8	109	70 - 130	
trans-1,3-Dichloropropene	20.0	19.4	97.2	55 - 140	
1,1-Dichloropropene	20.0	20.3	101	75 - 130	
Ethylbenzene	20.0	20.6	103	75 - 125	
2-Hexanone	20.0	18.9	94.5	55 - 130	
Hexachlorobutadiene	20.0	19.5	97.5	50 - 140	

LCS - Modified 03/06/2008
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Report generated: 02/18/2015 16:31

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15020878 Run Date: 02/17/2015 Sample ID: WG512559-02
Instrument ID: HPMS8 Run Time: 15:35 Prep Method: 5030B/5030C/503
File ID: 8M403042 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG512559 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD68939 Cal ID: HPMS8-06-FEB-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	21.1	106	75 - 125	
p-Isopropyltoluene	20.0	21.0	105	75 - 130	
4-Methyl-2-pentanone	20.0	17.4	87.2	60 - 135	
Methylene chloride	20.0	20.0	100	55 - 140	
Naphthalene	20.0	20.1	100	55 - 140	
n-Propylbenzene	20.0	19.9	99.7	70 - 130	
Styrene	20.0	22.6	113	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	20.7	103	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	19.8	99.2	65 - 130	
Tetrachloroethene	20.0	21.3	107	45 - 150	
Toluene	20.0	22.0	110	75 - 120	
1,2,3-Trichlorobenzene	20.0	20.0	100	55 - 140	
1,2,4-Trichlorobenzene	20.0	20.6	103	65 - 135	
1,1,1-Trichloroethane	20.0	20.1	100	65 - 130	
1,1,2-Trichloroethane	20.0	20.3	101	75 - 125	
Trichloroethene	20.0	21.9	109	70 - 125	
Trichlorofluoromethane	20.0	17.4	87.1	60 - 145	
1,2,3-Trichloropropane	20.0	19.2	96.0	75 - 125	
1,2,4-Trimethylbenzene	20.0	22.4	112	75 - 130	
1,3,5-Trimethylbenzene	20.0	22.5	113	75 - 130	
Vinyl chloride	20.0	22.8	114	50 - 145	
o-Xylene	20.0	20.4	102	80 - 120	
m-,p-Xylene	40.0	42.7	107	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	91.8	85 - 115	PASS
1,2-Dichloroethane-d4	83.7	70 - 120	PASS
Toluene-d8	94.6	85 - 120	PASS
4-Bromofluorobenzene	97.1	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4026296
Report generated: 02/18/2015 16:31

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15020878 Analyst: FJB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG512729 Units: ug/L
QC Key: DOD4 Lot #: STD68939

Sample ID: WG512729-02 LCS File ID: 8M403073 Run Date: 02/18/2015 14:56
Sample ID: WG512729-03 LCS2 File ID: 8M403074 Run Date: 02/18/2015 15:25

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	19.2	95.8	20.0	19.5	97.3	1.47	80 - 130	30	
1,1,1-Trichloroethane	20.0	18.0	90.2	20.0	17.8	88.9	1.47	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	19.0	95.0	20.0	18.7	93.4	1.69	65 - 130	30	
1,1,2-Trichloroethane	20.0	19.4	96.8	20.0	21.2	106	9.17	75 - 125	30	
1,1-Dichloroethane	20.0	18.5	92.6	20.0	18.2	90.9	1.89	70 - 135	30	
1,1-Dichloroethene	20.0	17.5	87.3	20.0	17.2	86.2	1.21	70 - 130	30	
1,1-Dichloropropene	20.0	19.0	94.8	20.0	18.6	92.8	2.15	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	19.2	96.0	20.0	19.0	95.1	0.898	55 - 140	30	
1,2,3-Trichloropropane	20.0	18.3	91.3	20.0	19.1	95.3	4.30	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	19.4	97.0	20.0	19.2	95.9	1.08	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	21.0	105	20.0	20.0	99.8	4.97	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	17.5	87.3	20.0	18.9	94.6	7.98	50 - 130	30	
1,2-Dibromoethane	20.0	19.3	96.3	20.0	20.3	101	5.07	80 - 120	30	
1,2-Dichlorobenzene	20.0	18.3	91.4	20.0	17.8	89.2	2.49	70 - 120	30	
1,2-Dichloroethane	20.0	17.9	89.3	20.0	18.4	92.0	2.98	70 - 130	30	
1,2-Dichloropropane	20.0	19.5	97.3	20.0	19.8	98.8	1.50	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	20.9	104	20.0	20.6	103	1.36	75 - 130	30	
1,3-Dichlorobenzene	20.0	18.1	90.5	20.0	18.2	90.8	0.387	75 - 125	30	
1,3-Dichloropropane	20.0	19.3	96.5	20.0	20.6	103	6.72	75 - 125	30	
1,4-Dichlorobenzene	20.0	19.0	94.9	20.0	19.0	95.0	0.100	75 - 125	30	
2,2-Dichloropropane	20.0	19.0	95.2	20.0	18.6	93.0	2.27	70 - 135	30	
2-Butanone	20.0	18.6	93.2	20.0	19.7	98.7	5.76	30 - 150	30	
2-Chlorotoluene	20.0	18.6	92.8	20.0	17.4	86.9	6.62	75 - 125	30	
2-Hexanone	20.0	18.3	91.3	20.0	20.7	104	12.8	55 - 130	30	
4-Chlorotoluene	20.0	18.9	94.3	20.0	18.0	90.0	4.66	75 - 130	30	
4-Methyl-2-pentanone	20.0	18.1	90.4	20.0	18.9	94.7	4.65	60 - 135	30	
Acetone	20.0	17.5	87.5	20.0	18.9	94.6	7.82	40 - 140	30	
Benzene	20.0	19.9	99.3	20.0	19.8	99.0	0.252	80 - 120	30	
Bromobenzene	20.0	19.3	96.7	20.0	19.2	96.1	0.626	75 - 125	30	
Bromochloromethane	20.0	19.0	94.9	20.0	19.3	96.4	1.58	65 - 130	30	
Bromodichloromethane	20.0	18.6	93.0	20.0	18.7	93.3	0.377	75 - 120	30	
Bromoform	20.0	17.9	89.5	20.0	19.4	97.1	8.14	70 - 130	30	
Bromomethane	20.0	15.7	78.5	20.0	15.7	78.5	0.0374	30 - 145	30	
Carbon disulfide	20.0	17.2	86.0	20.0	16.4	81.8	5.02	35 - 160	30	
Carbon tetrachloride	20.0	18.0	89.9	20.0	17.9	89.4	0.560	65 - 140	30	
Chlorobenzene	20.0	18.4	92.2	20.0	18.1	90.7	1.64	80 - 120	30	
Chloroethane	20.0	19.4	96.8	20.0	19.3	96.5	0.248	60 - 135	30	
Chloroform	20.0	18.0	89.9	20.0	18.0	90.1	0.232	65 - 135	30	
Chloromethane	20.0	17.2	85.9	20.0	16.8	84.0	2.26	40 - 125	30	
cis-1,2-Dichloroethene	20.0	18.8	94.2	20.0	19.3	96.5	2.38	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4028654
Report generated: 02/19/2015 11:49

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15020878 Analyst: FJB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG512729 Units: ug/L
QC Key: DOD4 Lot #: STD68939

Sample ID: WG512729-02 LCS File ID: 8M403073 Run Date: 02/18/2015 14:56
Sample ID: WG512729-03 LCS2 File ID: 8M403074 Run Date: 02/18/2015 15:25

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	20.7	104	20.0	20.6	103	0.460	70 - 130	30	
Chlorodibromomethane	20.0	18.8	94.0	20.0	20.8	104	10.1	60 - 135	30	
Dibromomethane	20.0	18.3	91.5	20.0	18.5	92.4	0.934	75 - 125	30	
Dichlorodifluoromethane	20.0	17.1	85.4	20.0	16.9	84.7	0.779	30 - 155	30	
Ethylbenzene	20.0	19.2	95.8	20.0	19.0	95.2	0.648	75 - 125	30	
Hexachlorobutadiene	20.0	18.5	92.3	20.0	17.5	87.5	5.27	50 - 140	30	
Isopropylbenzene	20.0	19.3	96.4	20.0	19.7	98.7	2.39	75 - 125	30	
m-,p-Xylene	40.0	39.6	99.1	40.0	39.5	98.7	0.355	75 - 130	30	
Methylene chloride	20.0	18.4	92.2	20.0	18.4	92.0	0.294	55 - 140	30	
n-Butylbenzene	20.0	19.8	99.2	20.0	18.3	91.5	8.14	70 - 135	30	
n-Propylbenzene	20.0	18.9	94.6	20.0	18.1	90.6	4.22	70 - 130	30	
Naphthalene	20.0	19.5	97.3	20.0	19.7	98.5	1.28	55 - 140	30	
o-Xylene	20.0	19.0	95.1	20.0	18.2	90.9	4.53	80 - 120	30	
p-Isopropyltoluene	20.0	19.3	96.6	20.0	19.0	95.2	1.47	75 - 130	30	
sec-Butylbenzene	20.0	19.0	94.8	20.0	17.8	89.2	6.12	70 - 125	30	
Styrene	20.0	20.9	104	20.0	20.5	103	1.82	65 - 135	30	
tert-Butylbenzene	20.0	18.3	91.6	20.0	17.3	86.7	5.50	70 - 130	30	
Tetrachloroethene	20.0	18.9	94.7	20.0	19.4	97.2	2.60	45 - 150	30	
Toluene	20.0	20.1	101	20.0	21.3	106	5.44	75 - 120	30	
trans-1,2-Dichloroethene	20.0	18.6	93.2	20.0	18.6	93.1	0.168	60 - 140	30	
trans-1,3-Dichloropropene	20.0	18.2	91.1	20.0	20.1	100	9.62	55 - 140	30	
Trichloroethene	20.0	20.0	99.9	20.0	19.3	96.6	3.31	70 - 125	30	
Trichlorofluoromethane	20.0	16.8	84.2	20.0	16.6	83.0	1.51	60 - 145	30	
Vinyl chloride	20.0	18.7	93.7	20.0	18.0	90.2	3.79	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	82.4	86.9	70 - 120	PASS
Dibromofluoromethane	90.9	91.5	85 - 115	PASS
4-Bromofluorobenzene	94.3	95.8	75 - 120	PASS
Toluene-d8	94.7	99.9	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4028654
Report generated: 02/19/2015 11:49

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L15020878 Cal ID: HPMS8- 06-FEB-15 Worknum: WG512559

Instrument ID: HPMS8 Contract #: Prep Method: 5030B/5030C/

Parent ID: L15020878-16 File ID: 8M403048 Dil: 1 Method: 5035A

Sample ID: L15020878-17 MS File ID: 8M403045 Dil: 1 Matrix: 8260B

Sample ID: L15020878-18 MSD File ID: 8M403046 Dil: 1 Units: Water ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,1,1,2-Tetrachloroethane	U	20.0	19.6	98.2	20.0	20.2	101	2.79	80 - 130	30	
1,1,1-Trichloroethane	U	20.0	19.7	98.7	20.0	19.8	98.8	0.130	65 - 130	30	
1,1,2,2-Tetrachloroethane	U	20.0	19.8	99	20.0	20.8	104	4.73	65 - 130	30	
1,1,2-Trichloroethane	U	20.0	19.7	98.5	20.0	20.9	104	5.71	75 - 125	30	
1,1-Dichloroethane	U	20.0	19.8	99.2	20.0	19.0	95.2	4.15	70 - 135	30	
1,1-Dichloroethene	U	20.0	18.2	91.2	20.0	18.1	90.5	0.805	70 - 130	30	
1,1-Dichloropropene	U	20.0	19.9	99.5	20.0	19.6	98.1	1.41	75 - 130	30	
1,2,3-Trichlorobenzene	U	20.0	20.3	101	20.0	20.6	103	1.30	55 - 140	30	
1,2,3-Trichloropropane	U	20.0	19.7	98.5	20.0	21.0	105	6.50	75 - 125	30	
1,2,4-Trichlorobenzene	U	20.0	20.4	102	20.0	20.8	104	2.05	65 - 135	30	
1,2,4-Trimethylbenzene	U	20.0	21.6	108	20.0	21.4	107	0.791	75 - 130	30	
1,2-Dibromo-3-chloropropane	U	20.0	19.6	97.8	20.0	20.4	102	4.25	50 - 130	30	
1,2-Dibromoethane	U	20.0	19.5	97.4	20.0	21.0	105	7.43	80 - 120	30	
1,2-Dichlorobenzene	U	20.0	18.6	92.8	20.0	19.2	96	3.39	70 - 120	30	
1,2-Dichloroethane	U	20.0	19.3	96.6	20.0	20.1	101	4.12	70 - 130	30	
1,2-Dichloropropane	U	20.0	20.2	101	20.0	19.8	98.9	2.28	75 - 125	30	
1,3,5-Trimethylbenzene	U	20.0	21.6	108	20.0	21.7	108	0.249	75 - 130	30	
1,3-Dichlorobenzene	U	20.0	18.9	94.7	20.0	18.7	93.7	1.04	75 - 125	30	
1,3-Dichloropropane	U	20.0	19.8	99	20.0	21.2	106	6.63	75 - 125	30	
1,4-Dichlorobenzene	U	20.0	19.6	97.9	20.0	19.6	98	0.0598	75 - 125	30	
2,2-Dichloropropane	U	20.0	21.1	106	20.0	20.4	102	3.72	70 - 135	30	
2-Butanone	U	20.0	18.8	93.8	20.0	20.6	103	9.20	30 - 150	30	
2-Chlorotoluene	U	20.0	19.6	98	20.0	18.7	93.7	4.46	75 - 125	30	
2-Hexanone	U	20.0	19.7	98.5	20.0	21.3	107	7.84	55 - 130	30	
4-Chlorotoluene	U	20.0	18.7	93.5	20.0	19.5	97.7	4.43	75 - 130	30	
4-Methyl-2-pentanone	U	20.0	18.4	92	20.0	20.5	103	10.9	60 - 135	30	
Acetone	U	20.0	19.5	97.7	20.0	21.5	107	9.46	40 - 140	30	
Benzene	U	20.0	20.4	102	20.0	20.4	102	0.264	80 - 120	30	
Bromobenzene	U	20.0	20.3	102	20.0	20.8	104	2.11	75 - 125	30	
Bromochloromethane	U	20.0	21.1	105	20.0	21.4	107	1.47	65 - 130	30	
Bromodichloromethane	U	20.0	19.9	99.4	20.0	19.9	99.7	0.298	75 - 120	30	
Bromoform	U	20.0	19.7	98.3	20.0	21.0	105	6.68	70 - 130	30	
Bromomethane	U	20.0	20.3	101	20.0	18.5	92.7	8.86	30 - 145	30	
Carbon disulfide	U	20.0	17.8	89	20.0	17.6	88	1.14	35 - 160	30	
Carbon tetrachloride	U	20.0	19.9	99.4	20.0	19.8	99.2	0.178	65 - 140	30	
Chlorobenzene	U	20.0	19.2	95.8	20.0	19.1	95.4	0.431	80 - 120	30	
Chloroethane	U	20.0	20.3	101	20.0	20.0	99.9	1.36	60 - 135	30	
Chloroform	U	20.0	19.3	96.3	20.0	19.4	97	0.691	65 - 135	30	
Chloromethane	U	20.0	19.9	99.6	20.0	19.2	96.1	3.54	40 - 125	30	
cis-1,2-Dichloroethene	1.04	20.0	21.2	101	20.0	21.2	101	0.0879	70 - 125	30	
cis-1,3-Dichloropropene	U	20.0	21.6	108	20.0	22.4	112	3.63	70 - 130	30	

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Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L15020878 Cal ID: HPMS8 06-FEB-15 Worknum: WG512559

Instrument ID: HPMS8 Contract #: Prep Method: 5030B/5030C/

Parent ID: L15020878-16 File ID: 8M403048 Dil: 1 Method: 5035A

Sample ID: L15020878-17 MS File ID: 8M403045 Dil: 1 Matrix: 8260B

Sample ID: L15020878-18 MSD File ID: 8M403046 Dil: 1 Units: Water

ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chlorodibromomethane	U	20.0	20.2	101	20.0	21.7	108	7.07	60 - 135	30	
Dibromomethane	U	20.0	19.5	97.7	20.0	20.1	101	3.00	75 - 125	30	
Dichlorodifluoromethane	U	20.0	20.0	100	20.0	20.5	103	2.54	30 - 155	30	
Ethylbenzene	U	20.0	19.7	98.5	20.0	19.8	99.1	0.655	75 - 125	30	
Hexachlorobutadiene	U	20.0	18.6	93.1	20.0	17.9	89.7	3.73	50 - 140	30	
Isopropylbenzene	U	20.0	20.4	102	20.0	20.2	101	0.825	75 - 125	30	
m-,p-Xylene	U	40.0	40.9	102	40.0	40.3	101	1.50	75 - 130	30	
Methylene chloride	U	20.0	19.3	96.7	20.0	19.8	98.8	2.20	55 - 140	30	
n-Butylbenzene	U	20.0	19.6	98	20.0	19.2	95.9	2.12	70 - 135	30	
n-Propylbenzene	U	20.0	19.4	96.8	20.0	18.8	94.2	2.70	70 - 130	30	
Naphthalene	U	20.0	20.9	104	20.0	22.0	110	5.44	55 - 140	30	
o-Xylene	U	20.0	19.6	97.8	20.0	19.3	96.4	1.48	80 - 120	30	
p-Isopropyltoluene	U	20.0	20.0	99.8	20.0	19.4	97.2	2.57	75 - 130	30	
sec-Butylbenzene	U	20.0	19.2	96.1	20.0	18.6	92.8	3.49	70 - 125	30	
Styrene	U	20.0	22.0	110	20.0	21.6	108	1.74	65 - 135	30	
tert-Butylbenzene	U	20.0	18.9	94.5	20.0	18.0	90	4.84	70 - 130	30	
Tetrachloroethene	0.353	20.0	20.0	98.4	20.0	20.5	101	2.53	45 - 150	30	
Toluene	U	20.0	20.9	105	20.0	21.0	105	0.647	75 - 120	30	
trans-1,2-Dichloroethene	U	20.0	19.5	97.3	20.0	19.5	97.4	0.103	60 - 140	30	
trans-1,3-Dichloropropene	U	20.0	18.9	94.7	20.0	20.2	101	6.38	55 - 140	30	
Trichloroethene	57.0	20.0	58.8	8.83	20.0	56.7	-1.69	3.64	70 - 125	30	*
Trichlorofluoromethane	U	20.0	19.0	94.8	20.0	18.6	93.1	1.83	60 - 145	30	
Vinyl chloride	U	20.0	21.6	108	20.0	20.8	104	3.71	50 - 145	30	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

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Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L15020878 Cal ID: HPMS8- 06-FEB-15 Worknum: WG512559
Instrument ID: HPMS8 Contract #: Prep Method: 5030B/5030C/
Parent ID: L15020878-05 File ID: 8M403049 Dil: 1 Method: 5035A
Sample ID: L15020878-06 MS File ID: 8M403043 Dil: 1 Matrix: 8260B
Sample ID: L15020878-07 MSD File ID: 8M403044 Dil: 1 Units: Water
ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,1,1,2-Tetrachloroethane	U	20.0	20.2	101	20.0	20.4	102	0.881	80 - 130	30	
1,1,1-Trichloroethane	U	20.0	19.8	99.2	20.0	19.5	97.7	1.48	65 - 130	30	
1,1,2,2-Tetrachloroethane	U	20.0	21.1	105	20.0	22.0	110	4.09	65 - 130	30	
1,1,2-Trichloroethane	U	20.0	20.3	102	20.0	21.1	106	3.83	75 - 125	30	
1,1-Dichloroethane	U	20.0	19.0	95.2	20.0	18.8	94.1	1.17	70 - 135	30	
1,1-Dichloroethene	U	20.0	18.6	93.2	20.0	18.0	90.2	3.34	70 - 130	30	
1,1-Dichloropropene	U	20.0	19.7	98.4	20.0	19.5	97.4	1.05	75 - 130	30	
1,2,3-Trichlorobenzene	U	20.0	21.3	106	20.0	21.2	106	0.325	55 - 140	30	
1,2,3-Trichloropropane	U	20.0	20.6	103	20.0	21.9	109	6.03	75 - 125	30	
1,2,4-Trichlorobenzene	U	20.0	21.4	107	20.0	21.1	106	1.19	65 - 135	30	
1,2,4-Trimethylbenzene	U	20.0	21.9	109	20.0	21.6	108	1.40	75 - 130	30	
1,2-Dibromo-3-chloropropane	U	20.0	20.1	100	20.0	20.4	102	1.53	50 - 130	30	
1,2-Dibromoethane	U	20.0	20.5	102	20.0	21.2	106	3.61	80 - 120	30	
1,2-Dichlorobenzene	U	20.0	19.1	95.4	20.0	19.2	95.9	0.490	70 - 120	30	
1,2-Dichloroethane	U	20.0	19.8	99	20.0	19.9	99.5	0.475	70 - 130	30	
1,2-Dichloropropane	U	20.0	20.1	100	20.0	19.9	99.7	0.636	75 - 125	30	
1,3,5-Trimethylbenzene	U	20.0	22.3	111	20.0	21.6	108	2.99	75 - 130	30	
1,3-Dichlorobenzene	U	20.0	19.1	95.5	20.0	18.9	94.7	0.824	75 - 125	30	
1,3-Dichloropropane	U	20.0	20.3	101	20.0	21.0	105	3.57	75 - 125	30	
1,4-Dichlorobenzene	U	20.0	20.3	101	20.0	19.8	98.9	2.33	75 - 125	30	
2,2-Dichloropropane	U	20.0	20.9	105	20.0	20.7	104	0.864	70 - 135	30	
2-Butanone	U	20.0	18.9	94.5	20.0	20.3	102	7.19	30 - 150	30	
2-Chlorotoluene	U	20.0	18.9	94.6	20.0	19.5	97.6	3.20	75 - 125	30	
2-Hexanone	U	20.0	20.7	104	20.0	24.1	121	15.0	55 - 130	30	
4-Chlorotoluene	U	20.0	19.8	99.1	20.0	18.7	93.6	5.75	75 - 130	30	
4-Methyl-2-pentanone	U	20.0	19.4	96.9	20.0	20.6	103	6.02	60 - 135	30	
Acetone	U	20.0	19.8	98.8	20.0	20.9	105	5.65	40 - 140	30	
Benzene	U	20.0	20.7	104	20.0	20.0	100	3.28	80 - 120	30	
Bromobenzene	U	20.0	21.5	107	20.0	20.6	103	4.01	75 - 125	30	
Bromochloromethane	U	20.0	21.1	105	20.0	21.6	108	2.26	65 - 130	30	
Bromodichloromethane	U	20.0	20.0	100	20.0	20.1	101	0.477	75 - 120	30	
Bromoform	U	20.0	20.2	101	20.0	20.5	102	1.64	70 - 130	30	
Bromomethane	U	20.0	18.2	91.2	20.0	19.2	96.2	5.35	30 - 145	30	
Carbon disulfide	U	20.0	17.7	88.7	20.0	17.4	86.8	2.17	35 - 160	30	
Carbon tetrachloride	U	20.0	19.5	97.6	20.0	19.5	97.3	0.250	65 - 140	30	
Chlorobenzene	U	20.0	19.4	97	20.0	18.7	93.7	3.47	80 - 120	30	
Chloroethane	U	20.0	21.0	105	20.0	19.6	98.2	6.50	60 - 135	30	
Chloroform	U	20.0	19.4	97.1	20.0	19.2	95.8	1.35	65 - 135	30	
Chloromethane	U	20.0	20.1	101	20.0	19.6	97.9	2.71	40 - 125	30	
cis-1,2-Dichloroethene	U	20.0	20.6	103	20.0	20.1	101	2.09	70 - 125	30	
cis-1,3-Dichloropropene	U	20.0	22.2	111	20.0	22.1	111	0.253	70 - 130	30	

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Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L15020878 Cal ID: HPMS8 06-FEB-15 Worknum: WG512559

Instrument ID: HPMS8 Contract #: Prep Method: 5030B/5030C/

Parent ID: L15020878-05 File ID: 8M403049 Dil: 1 Method: 5035A

Sample ID: L15020878-06 MS File ID: 8M403043 Dil: 1 Matrix: 8260B

Sample ID: L15020878-07 MSD File ID: 8M403044 Dil: 1 Units: Water

ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chlorodibromomethane	U	20.0	20.9	105	20.0	21.3	106	1.68	60 - 135	30	
Dibromomethane	U	20.0	20.5	103	20.0	20.1	101	1.97	75 - 125	30	
Dichlorodifluoromethane	U	20.0	20.9	105	20.0	20.1	100	4.15	30 - 155	30	
Ethylbenzene	U	20.0	19.9	99.4	20.0	19.1	95.4	4.05	75 - 125	30	
Hexachlorobutadiene	U	20.0	18.9	94.6	20.0	18.2	91.2	3.69	50 - 140	30	
Isopropylbenzene	U	20.0	20.3	101	20.0	20.0	100	1.15	75 - 125	30	
m-,p-Xylene	U	40.0	40.5	101	40.0	40.1	100	1.10	75 - 130	30	
Methylene chloride	U	20.0	19.7	98.7	20.0	19.7	98.4	0.303	55 - 140	30	
n-Butylbenzene	U	20.0	20.0	99.9	20.0	19.5	97.3	2.70	70 - 135	30	
n-Propylbenzene	U	20.0	19.6	97.8	20.0	19.1	95.5	2.42	70 - 130	30	
Naphthalene	U	20.0	22.2	111	20.0	22.4	112	0.783	55 - 140	30	
o-Xylene	U	20.0	19.7	98.3	20.0	19.2	95.9	2.45	80 - 120	30	
p-Isopropyltoluene	U	20.0	20.0	100	20.0	19.5	97.5	2.67	75 - 130	30	
sec-Butylbenzene	U	20.0	19.3	96.5	20.0	18.8	94	2.60	70 - 125	30	
Styrene	U	20.0	21.4	107	20.0	21.4	107	0.0086	65 - 135	30	
tert-Butylbenzene	U	20.0	18.5	92.4	20.0	18.4	92.1	0.275	70 - 130	30	
Tetrachloroethene	U	20.0	19.5	97.5	20.0	19.8	98.8	1.30	45 - 150	30	
Toluene	U	20.0	21.0	105	20.0	21.2	106	1.24	75 - 120	30	
trans-1,2-Dichloroethene	U	20.0	19.6	97.8	20.0	19.1	95.6	2.36	60 - 140	30	
trans-1,3-Dichloropropene	U	20.0	19.5	97.4	20.0	20.4	102	4.36	55 - 140	30	
Trichloroethene	U	20.0	21.1	105	20.0	20.7	103	1.94	70 - 125	30	
Trichlorofluoromethane	U	20.0	18.8	93.8	20.0	18.3	91.7	2.25	60 - 145	30	
Vinyl chloride	U	20.0	22.0	110	20.0	20.9	104	5.41	50 - 145	30	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4026297
Report generated 02/18/2015 16:28

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15020878
Instrument: HPMS8
Analyst: TMB
Workgroup: WG494714

Tune ID: WG494714-01
Run Date: 10/02/2014
Run Time: 11:58
File ID: 8M400357
Cal ID: HPMS8 - 02-OCT-14

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.7	5158	PASS
75.0	95.0	30.0	60.0	51.7	12312	PASS
95.0	95.0	100	100	100	23818	PASS
96.0	95.0	5.00	9.00	7.56	1800	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	69.7	16590	PASS
175	174	5.00	9.00	7.78	1290	PASS
176	174	95.0	101	97.3	16145	PASS
177	176	5.00	9.00	6.34	1023	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG494714-02	STD	01	10/02/2014 12:24	
WG494714-03	STD	01	10/02/2014 12:53	
WG494714-04	STD	01	10/02/2014 13:22	
WG494714-05	STD	01	10/02/2014 13:51	
WG494714-06	STD	01	10/02/2014 14:19	
WG494714-07	STD	01	10/02/2014 14:48	
WG494714-08	STD	01	10/02/2014 15:16	
WG494714-09	STD	01	10/02/2014 15:45	
WG494714-10	SSCV	01	10/02/2014 16:47	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4026299
Report generated 02/19/2015 11:50

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15020878
Instrument: HPMS8
Analyst: TMB
Workgroup: WG511287

Tune ID: WG511287-01
Run Date: 02/06/2015
Run Time: 15:35
File ID: 8M402829
Cal ID: HPMS8 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.1	6438	PASS
75.0	95.0	30.0	60.0	49.7	15924	PASS
95.0	95.0	100	100	100	32031	PASS
96.0	95.0	5.00	9.00	5.78	1851	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	86.9	27829	PASS
175	174	5.00	9.00	6.67	1855	PASS
176	174	95.0	101	95.9	26698	PASS
177	176	5.00	9.00	7.23	1931	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG511287-02	STD	01	02/06/2015 15:59	
WG511287-03	STD	01	02/06/2015 16:27	
WG511287-04	STD	01	02/06/2015 16:57	
WG511287-05	STD	01	02/06/2015 17:26	
WG511287-06	STD	01	02/06/2015 17:54	
WG511287-07	STD	01	02/06/2015 18:23	
WG511287-08	STD-CCV	01	02/06/2015 18:53	
WG511287-09	STD	01	02/06/2015 19:22	
WG511287-10	STD	01	02/06/2015 19:51	
WG511287-11	STD	01	02/06/2015 20:20	
WG511287-12	SSCV	01	02/06/2015 21:48	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4026299
Report generated 02/19/2015 11:50

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15020878
Instrument: HPMS8
Analyst: TMB
Workgroup: WG512558

Tune ID: WG512558-01
Run Date: 02/17/2015
Run Time: 13:45
File ID: 8M403038
Cal ID: HPMS8 - 06-FEB-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.9	6525	PASS
75.0	95.0	30.0	60.0	53.2	15143	PASS
95.0	95.0	100	100	100	28470	PASS
96.0	95.0	5.00	9.00	7.02	1999	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	71.1	20252	PASS
175	174	5.00	9.00	7.69	1558	PASS
176	174	95.0	101	95.3	19310	PASS
177	176	5.00	9.00	6.88	1328	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG512558-02	CCV	01	02/17/2015 14:08	
WG512604-01	CCV	01	02/17/2015 14:37	
WG512559-01	BLANK	01	02/17/2015 15:06	
WG512559-02	LCS	01	02/17/2015 15:35	
L15020878-06	50WW21MS-021215	01	02/17/2015 16:04	
L15020878-07	50WW21MSD-021215	01	02/17/2015 16:33	
L15020878-17	50WW09MS-021315	01	02/17/2015 17:02	
L15020878-18	50WW09MSD-021315	01	02/17/2015 17:31	
L15020878-02	50WW15-021215	01	02/17/2015 18:00	
L15020878-16	50WW09-021315	01	02/17/2015 18:29	
L15020878-05	50WW21-021215	01	02/17/2015 18:58	
L15020878-19	TRIP BLANK	01	02/17/2015 19:27	
L15020878-01	50WW27-021215	01	02/17/2015 19:55	
L15020878-03	50WW15FD-021215	01	02/17/2015 20:24	
L15020878-04	50WW20-021215	01	02/17/2015 20:54	
L15020878-08	50WW17-021315	01	02/17/2015 21:22	
L15020878-09	50WW19-021315	01	02/17/2015 21:51	
L15020878-10	50WW07-021315	01	02/17/2015 22:20	
L15020878-11	50WW16-021315	01	02/17/2015 22:50	
L15020878-12	50WW26-021315	01	02/17/2015 23:19	
L15020878-15	50WW10-021315	01	02/17/2015 23:47	
L15020878-13	50WW05-021315	DL01	02/18/2015 00:16	
L15020878-14	50WW05FD-021315	DL01	02/18/2015 00:45	
WG512559-09	LCS	02	02/18/2015 01:43	
WG512559-10	BLANK2	01	02/18/2015 02:12	*

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4026299
Report generated 02/19/2015 11:50

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15020878
Instrument: HPMS8
Analyst: FJB
Workgroup: WG512728

Tune ID: WG512728-01
Run Date: 02/18/2015
Run Time: 13:01
File ID: 8M403069
Cal ID: HPMS8 - 06-FEB-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.1	6979	PASS
75.0	95.0	30.0	60.0	52.5	16562	PASS
95.0	95.0	100	100	100	31526	PASS
96.0	95.0	5.00	9.00	7.13	2248	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	85.2	26856	PASS
175	174	5.00	9.00	6.33	1699	PASS
176	174	95.0	101	96.9	26018	PASS
177	176	5.00	9.00	6.22	1619	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG512728-02	CCV	01	02/18/2015 13:24	
WG512729-01	BLANK	01	02/18/2015 14:27	
WG512729-02	LCS	01	02/18/2015 14:56	
WG512729-03	LCS2	01	02/18/2015 15:25	
L15020878-13	50WW05-021315	01	02/18/2015 18:47	
L15020878-14	50WW05FD-021315	01	02/18/2015 19:16	
WG512729-04	BLANK2	01	02/18/2015 22:08	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4026299
Report generated 02/19/2015 11:50

Calibration Table Report
Method: A9FOOWTR.M
Title: A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Calibration: Fri Oct 03 12:32:07 2014
Curve: WG494714
Calibration Files

	Compound	5 8M400358.D	20 8M400359.D	50 8M400360.D	100 8M400361.D	200 8M400362.D	300 8M400363.D	400 8M400364.D	500 8M400365.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD											
T	Acetonitrile	0.015	0.015	0.015	0.016	0.017	0.016	0.015	0.016	0.016	4.015		
T	3-Chloro-1-propene	0.416	0.403	0.416	0.438	0.434	0.423	0.407	0.394	0.416	3.619		
T	2-Chloro-1,3-butadiene	0.467	0.479	0.496	0.520	0.522	0.508	0.485	0.462	0.493	4.640		
T	Ethyl Acetate	0.104	0.115	0.123	0.133	0.135	0.133	0.126	0.130	0.125	8.569		
T	Methacrylonitrile	0.062	0.065	0.072	0.077	0.080	0.080	0.077	0.081	0.074	9.397		
T	Isobutyl Alcohol			0.004	0.005	0.005	0.005	0.005	0.005	0.005	9.693		
T	1-Butanol			0.002	0.002	0.003	0.003	0.003	0.003	0.003	21.690	0.995	
T	Methyl methacrylate	0.115	0.123	0.137	0.147	0.154	0.151	0.145	0.150	0.140	10.193		
T	2-Nitropropane	0.032	0.035	0.039	0.043	0.047	0.046	0.046	0.048	0.042	14.057		
I	Chlorobenzene-d5	ISTD											
I	1,4-Dichlorobenzene-d4	ISTD											
T	Cyclohexanone			0.039	0.043	0.037	0.043	0.036	0.038	0.039	7.787		

Fri Oct 03 12:35:36 2014

Calibration Table Report
Method: 8260WTR.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Calibration: Mon Feb 09 12:21:39 2015
Curve: WG511287
Calibration Files

	Compound	0.3 8M402830.D	0.4 8M402831.D	1 8M402832.D	2 8M402833.D	5 8M402834.D	20 8M402835.D	50 8M402836.D	100 8M402837.D	200 8M402838.D	300 8M402839.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.383	0.374	0.385	0.416	0.446	0.426	0.409	0.365	0.401	7.007		
P	Chloromethane			0.397	0.365	0.350	0.346	0.351	0.335	0.320	0.307	0.346	7.946		
C	Vinyl Chloride		0.385	0.349	0.335	0.350	0.348	0.357	0.337	0.321	0.286	0.341	7.935		
T	1,3-Butadiene				0.267	0.299	0.289	0.290	0.257	0.219	0.185	0.258	16.257		1.000
T	Bromomethane			0.084	0.089	0.099	0.120	0.136	0.157	0.173	0.193	0.131	30.782		1.001
T	Chloroethane			0.207	0.207	0.211	0.214	0.219	0.212	0.212	0.204	0.211	2.293		
T	Trichlorofluoromethane		0.529	0.439	0.456	0.485	0.473	0.487	0.477	0.471	0.439	0.473	5.837		
T	Diethyl ether			0.170	0.177	0.174	0.179	0.174	0.172		0.163	0.173	2.960		
T	Isoprene					0.356	0.369	0.387	0.377	0.370	0.341	0.366	4.426		
T	Acrolein				0.022	0.018	0.020	0.019	0.020		0.020	0.020	6.106		
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.280	0.255	0.273	0.265	0.273	0.267	0.270	0.253	0.267	3.442		
T	Acetone					0.044	0.039	0.040	0.033	0.037	0.034	0.038	10.920		
C	1,1-Dichloroethene		0.466	0.428	0.417	0.432	0.428	0.442	0.432	0.423	0.398	0.430	4.289		
T	Tert-Butyl Alcohol				0.008	0.008	0.008	0.008	0.008		0.008	0.008	2.347		
T	Dimethyl Sulfide				0.268	0.276	0.293	0.298	0.294	0.294	0.282	0.286	3.896		
T	Iodomethane						0.047	0.116	0.154	0.184	0.187	0.138	42.077	0.998	
T	Methyl acetate				0.163	0.160	0.160	0.155	0.156	0.159	0.150	0.158	2.718		
T	Methylene Chloride			0.279	0.286	0.273	0.268	0.268	0.263	0.260	0.252	0.269	3.917		
T	Carbon Disulfide			0.958	0.918	0.921	0.926	0.925	0.886	0.823	0.740	0.887	8.060		
T	Acrylonitrile			0.049	0.056	0.051	0.056	0.058	0.056		0.061	0.055	7.447		
T	Methyl Tert Butyl Ether			0.412	0.423	0.464	0.487	0.492	0.494	0.501	0.464	0.467	7.191		
T	trans-1,2-Dichloroethene		0.466	0.403	0.414	0.407	0.415	0.422	0.414	0.405	0.379	0.414	5.540		
T	n-Hexane					0.367	0.353	0.380	0.379	0.372	0.328	0.363	5.440		
T	Diisopropyl ether			0.839	0.898	0.889	0.903	0.889	0.836		0.748	0.857	6.457		
T	Vinyl Acetate					0.116	0.121	0.121	0.119	0.120	0.113	0.118	2.570		
P	1,1-Dichloroethane		0.534	0.541	0.535	0.537	0.521	0.539	0.513	0.496	0.465	0.520	4.859		
T	Ethyl-Tert-Butyl ether			0.650	0.698	0.697	0.723	0.711	0.691		0.641	0.687	4.450		
T	2-Butanone					0.052	0.057	0.056	0.057	0.060	0.057	0.056	4.364		
T	Propionitrile				0.019	0.018	0.019	0.019	0.018		0.018	0.019	2.425		
T	2,2-Dichloropropane		0.427	0.363	0.392	0.366	0.368	0.390	0.387	0.387	0.374	0.384	5.070		
T	cis-1,2-Dichloroethene		0.307	0.277	0.285	0.291	0.287	0.290	0.284	0.282	0.270	0.286	3.583		
C	Chloroform	0.537	0.535	0.484	0.502	0.496	0.496	0.502	0.486	0.468	0.435	0.494	6.004		
T	1-Bromopropane			0.037	0.047	0.049	0.055	0.057	0.056	0.057	0.055	0.052	13.194		
T	Bromochloromethane		0.118	0.132	0.149	0.149	0.150	0.151	0.149	0.148	0.143	0.143	7.805		
T	Tetrahydrofuran			0.040	0.039	0.039	0.040	0.039	0.040		0.038	0.039	2.502		
S	Dibromofluoromethane			0.255	0.273	0.277	0.267	0.264	0.260	0.257	0.253	0.263	3.274		
T	1,1,1-Trichloroethane		0.430	0.421	0.420	0.421	0.439	0.447	0.443	0.438	0.416	0.430	2.688		
T	Cyclohexane			0.404	0.456	0.470	0.471	0.498	0.488	0.484	0.435	0.463	6.660		
T	1,1-Dichloropropene			0.339	0.342	0.371	0.385	0.397	0.393	0.385	0.359	0.372	6.126		
T	Tert-Amyl-Methyl ether			0.475	0.528	0.518	0.540	0.534	0.526		0.499	0.517	4.418		
T	Carbon Tetrachloride		0.352	0.338	0.354	0.369	0.373	0.389	0.393	0.385	0.37	0.369	5.02675		
S	1,2-Dichloroethane-d4			0.277	0.306	0.293	0.279	0.27	0.265	0.265	0.251	0.2758	6.301		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.349	0.305	0.321	0.321	0.335	0.34	0.332	0.327	0.307	0.3264	4.44766		
T	Benzene	1.133	1.092	1.007	1.037	1.092	1.079	1.077	1.017	0.887	0.744	1.0165	11.5588		
T	Trichloroethene		0.232	0.246	0.242	0.253	0.26	0.273	0.269	0.268	0.257	0.2557	5.33604		
T	Methylcyclohexane					0.403	0.406	0.435	0.438	0.432	0.387	0.4167	5.06962		
C	1,2-Dichloropropane		0.272	0.25	0.269	0.281	0.289	0.292	0.287	0.28	0.268	0.2764	4.79727		
T	Bromodichloromethane		0.33	0.314	0.36	0.352	0.36	0.371	0.363	0.358	0.337	0.3495	5.29056		
T	1,4-Dioxane				0.001	0.001	0.001	0.001	0.001		0.001	0.0011	9.34383		
T	Dibromomethane		0.123	0.132	0.13	0.132	0.131	0.133	0.131	0.134	0.127	0.1304	2.62867		
T	2-Chloroethyl Vinyl Ether				0.096	0.097	0.103	0.11	0.109	0.114	0.106	0.105	6.21087		
T	4-Methyl-2-Pentanone					0.041	0.045	0.049	0.048	0.052	0.048	0.0471	7.70157		
T	cis-1,3-Dichloropropene		0.325	0.325	0.333	0.37	0.386	0.402	0.397	0.389	0.361	0.3654	8.53122		

T	Dimethyl Disulfide					0.327	0.375	0.215	0.412	0.417	0.386	0.3555	21.3736	0.991
I	Chlorobenzene-d5	ISTD												
S	Toluene-d8			1.216	1.222	1.244	1.246	1.217	1.182	1.144	1.032	1.1877	5.99874	
C	Toluene		1.462	1.362	1.418	1.489	1.485	1.46	1.368	1.16	0.925	1.3478	13.9692	
T	Ethyl Methacrylate			0.205	0.225	0.234	0.277	0.278	0.285	0.296	0.26	0.2576	12.6359	
T	Paraldehyde											0	0	
T	trans-1,3-Dichloropropene			0.33	0.392	0.394	0.438	0.449	0.449	0.447	0.401	0.4124	10.1172	
T	1,1,2-Trichloroethane		0.177	0.201	0.22	0.212	0.232	0.227	0.223	0.226	0.208	0.214	7.90044	
T	2-Hexanone					0.046	0.054	0.056	0.058	0.062	0.055	0.0553	9.58298	
T	1,3-Dichloropropane		0.364	0.341	0.389	0.4	0.417	0.41	0.402	0.404	0.364	0.3878	6.56699	
T	Tetrachloroethene		0.277	0.264	0.278	0.293	0.302	0.302	0.304	0.311	0.288	0.291	5.32701	
T	Dibromochloromethane		0.223	0.213	0.266	0.272	0.294	0.297	0.3	0.309	0.286	0.2734	12.4997	
T	1,2-Dibromoethane		0.168	0.189	0.22	0.207	0.223	0.229	0.229	0.234	0.216	0.2127	10.2149	
T	1-Chlorohexane		0.442	0.4	0.423	0.452	0.481	0.491	0.501	0.483	0.429	0.4559	7.65058	
P	Chlorobenzene		0.962	0.959	0.931	0.962	0.945	0.95	0.923	0.849	0.72	0.9113	8.77727	
T	1,1,1,2-Tetrachloroethane		0.261	0.254	0.284	0.301	0.321	0.338	0.348	0.356	0.338	0.3112	12.1749	
C	Ethylbenzene		0.528	0.494	0.508	0.52	0.537	0.551	0.544	0.525	0.486	0.5214	4.25536	
T	m-,p-Xylene		0.628	0.587	0.609	0.644	0.647	0.644	0.617	0.537	0.433	0.5938	11.7598	
T	o-Xylene			0.504	0.542	0.598	0.618	0.641	0.626	0.601	0.547	0.5843	8.23297	
T	Styrene		0.817	0.829	0.936	1.033	1.056	1.063	1.019	0.919	0.763	0.9372	12.1047	
P	Bromoform			0.127	0.154	0.159	0.169	0.179	0.185	0.194	0.183	0.1687	12.9032	
T	Isopropylbenzene		1.506	1.431	1.499	1.601	1.661	1.649	1.532	1.265	0.995	1.4598	14.5172	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.393	0.418	0.48	0.466	0.488	0.457	0.467	0.475	0.446	0.4544	6.80176	
S	p-Bromofluorobenzene			0.876	0.859	0.916	0.922	0.904	0.906	0.906	0.883	0.8966	2.4069	
T	1,2,3-Trichloropropane			0.095	0.124	0.133	0.136	0.129	0.131	0.138	0.131	0.127	10.6025	
T	trans-1,4-Dichloro-2-Butene			0.061	0.106	0.127	0.156	0.151	0.16	0.15	0.159	0.1338	26.0881	0.999
T	n-Propylbenzene		3.61	3.608	3.78	4.023	4.07	3.889	3.568	2.693		3.6553	11.8578	
T	Bromobenzene	0.599	0.709	0.651	0.732	0.743	0.759	0.727	0.737	0.724	0.693	0.7074	6.86685	
T	1,3,5-Trimethylbenzene	2.611	2.417	2.353	2.379	2.652	2.746	2.664	2.601	2.18	1.798	2.4401	11.7205	
T	2-Chlorotoluene		2.628	2.193	2.404	2.374	2.362	2.326	2.162	1.875	1.739	2.229	12.3866	
T	4-Chlorotoluene		2.059	2.197	2.285	2.514	2.501	2.391	2.325	1.892		2.2705	9.45973	
T	a-Methylstyrene					1.362	1.452	1.482	1.492	1.395	1.253	1.406	6.42359	
T	tert-Butylbenzene			0.509	0.469	0.535	0.55	0.546	0.56	0.55	0.536	0.5317	5.55451	
T	1,2,4-Trimethylbenzene			2.411	2.71	2.83	2.828	2.735	2.609	2.167	1.769	2.5074	14.9214	
T	sec-Butylbenzene			3.117	3.305	3.466	3.514	3.397	3.225	2.553		3.2253	10.1298	
T	p-Isopropyltoluene		2.779	2.476	2.67	2.747	2.831	2.737	2.678	2.222	1.806	2.5495	13.169	
T	1,3-Dichlorobenzene		1.666	1.374	1.45	1.491	1.523	1.494	1.481	1.371	1.211	1.4513	8.64488	
T	1,4-Dichlorobenzene	1.843	1.595	1.461	1.452	1.523	1.509	1.488	1.469	1.342	1.181	1.4862	11.3872	
T	n-Butylbenzene		3.078	2.646	2.785	3.012	2.994	2.879	2.751	2.208		2.7941	9.96071	
T	1,2-Dichlorobenzene	1.353	1.353	1.233	1.35	1.351	1.367	1.326	1.326	1.238	1.11	1.3006	6.32887	
T	1,2-Dibromo-3-Chloropropane				0.066	0.078	0.092	0.088	0.088	0.092	0.086	0.0844	11.2808	
T	1,2,4-Trichlorobenzene		1.085	0.951	1.019	1.042	1.073	1.07	1.071	1.044	0.943	1.0329	5.12639	
T	Hexachlorobutadiene		0.583	0.578	0.579	0.62	0.618	0.619	0.629	0.643	0.601	0.6078	3.85144	
T	Naphthalene		1.601	1.434	1.451	1.567	1.699	1.609	1.595	1.493	1.258	1.523	8.54079	
T	1,2,3-Trichlorobenzene	0.996	0.801	0.853	0.92	0.884	0.95	0.931	0.935	0.916	0.833	0.9019	6.53208	

Mon Feb 09 13:05:24 2015

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15020878 Run Date: 02/06/2015 Sample ID: WG511287-12
Instrument ID: HPMS8 Run Time: 21:48 Method: 8260B
File ID: 8M402842 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG511287 Cal ID: HPMS8 - 06-FEB-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	48.2	ug/L	0.476	3.60	20	
1,1-Dichloroethene	CCC	50.0	47.6	ug/L	0.409	4.70	20	
1,2-Dichloropropane	CCC	50.0	51.0	ug/L	0.282	2.10	20	
Ethylbenzene	CCC	50.0	50.9	ug/L	0.531	1.80	20	
Toluene	CCC	50.0	53.1	ug/L	1.43	6.20	20	
Vinyl Chloride	CCC	50.0	48.2	ug/L	0.329	3.50	20	
Bromoform	SPCC	50.0	52.5	ug/L	0.177	5.00	20	
Chlorobenzene	SPCC	50.0	48.2	ug/L	0.879	3.50	20	
Chloromethane	SPCC	50.0	46.4	ug/L	0.322	7.10	20	
1,1-Dichloroethane	SPCC	50.0	49.2	ug/L	0.512	1.50	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.5	ug/L	0.450	0.900	20	
Acetone		50.0	51.3	ug/L	0.0389	2.60	20	
Benzene		50.0	51.3	ug/L	1.04	2.70	20	
Bromobenzene		50.0	51.1	ug/L	0.723	2.20	20	
Bromochloromethane		50.0	51.9	ug/L	0.149	3.80	20	
Bromodichloromethane		50.0	49.9	ug/L	0.349	0.300	20	
Bromomethane		50.0	51.0	ug/L	0.143	2.00	20	
2-Butanone		50.0	50.8	ug/L	0.0573	1.70	20	
n-Butylbenzene		50.0	50.7	ug/L	2.83	1.30	20	
sec-Butylbenzene		50.0	49.4	ug/L	3.19	1.20	20	
tert-Butylbenzene		50.0	48.6	ug/L	0.516	2.90	20	
Carbon Disulfide		50.0	44.9	ug/L	0.796	10.3	20	
Carbon Tetrachloride		50.0	50.1	ug/L	0.370	0.300	20	
Dibromochloromethane		50.0	53.2	ug/L	0.291	6.40	20	
Chloroethane		50.0	53.3	ug/L	0.225	6.60	20	
2-Chlorotoluene		50.0	50.1	ug/L	2.24	0.300	20	
4-Chlorotoluene		50.0	47.3	ug/L	2.15	5.40	20	
1,2-Dibromo-3-Chloropropane		50.0	49.9	ug/L	0.0842	0.200	20	
1,2-Dibromoethane		50.0	52.1	ug/L	0.222	4.20	20	
Dibromomethane		50.0	48.2	ug/L	0.126	3.70	20	
1,2-Dichlorobenzene		50.0	47.9	ug/L	1.25	4.20	20	
1,3-Dichlorobenzene		50.0	47.2	ug/L	1.37	5.60	20	
1,4-Dichlorobenzene		50.0	49.5	ug/L	1.47	1.00	20	
Dichlorodifluoromethane		50.0	50.9	ug/L	0.408	1.80	20	
1,2-Dichloroethane		50.0	49.1	ug/L	0.320	1.90	20	
cis-1,2-Dichloroethene		50.0	50.8	ug/L	0.291	1.70	20	
trans-1,2-Dichloroethene		50.0	50.4	ug/L	0.417	0.900	20	
1,3-Dichloropropane		50.0	52.1	ug/L	0.404	4.10	20	
2,2-Dichloropropane		50.0	47.6	ug/L	0.366	4.70	20	
cis-1,3-Dichloropropene		50.0	55.2	ug/L	0.404	10.4	20	
trans-1,3-Dichloropropene		50.0	49.7	ug/L	0.410	0.500	20	
1,1-Dichloropropene		50.0	50.6	ug/L	0.376	1.10	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4026298
Report generated 02/19/2015 11:50

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15020878 Run Date: 02/06/2015 Sample ID: WG511287-12
Instrument ID: HPMS8 Run Time: 21:48 Method: 8260B
File ID: 8M402842 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG511287 Cal ID: HPMS8 - 06-FEB-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	50.7	ug/L	0.0561	1.40	20	
Hexachlorobutadiene		50.0	52.1	ug/L	0.633	4.10	20	
Isopropylbenzene		50.0	51.6	ug/L	1.51	3.30	20	
p-Isopropyltoluene		50.0	50.8	ug/L	2.59	1.50	20	
4-Methyl-2-Pentanone		50.0	48.4	ug/L	0.0456	3.30	20	
Methylene Chloride		50.0	49.7	ug/L	0.267	0.700	20	
Naphthalene		50.0	51.5	ug/L	1.57	3.00	20	
n-Propylbenzene		50.0	48.7	ug/L	3.56	2.50	20	
Styrene		50.0	55.3	ug/L	1.04	10.6	20	
1,1,1,2-Tetrachloroethane		50.0	52.6	ug/L	0.328	5.20	20	
Tetrachloroethene		50.0	51.0	ug/L	0.297	2.10	20	
1,2,3-Trichlorobenzene		50.0	50.8	ug/L	0.917	1.70	20	
1,2,4-Trichlorobenzene		50.0	51.7	ug/L	1.07	3.50	20	
1,1,1-Trichloroethane		50.0	50.1	ug/L	0.431	0.100	20	
1,1,2-Trichloroethane		50.0	52.0	ug/L	0.223	4.00	20	
Trichloroethene		50.0	54.8	ug/L	0.280	9.60	20	
Trichlorofluoromethane		50.0	46.6	ug/L	0.441	6.80	20	
1,2,3-Trichloropropane		50.0	50.2	ug/L	0.128	0.400	20	
1,2,4-Trimethylbenzene		50.0	54.5	ug/L	2.73	9.00	20	
1,3,5-Trimethylbenzene		50.0	55.2	ug/L	2.70	10.5	20	
o-Xylene		50.0	50.1	ug/L	0.586	0.200	20	
m-,p-Xylene		100	104	ug/L	0.620	4.30	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4026298
Report generated 02/19/2015 11:50

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15020878 Run Date: 02/17/2015 Sample ID: WG512558-02
Instrument ID: HPMS8 Run Time: 14:08 Method: 8260B
File ID: 8M403039 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG512559 Cal ID: HPMS8 - 06-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	46.6	ug/L	0.460	6.87	20	
1,1-Dichloroethene	CCC	50.0	46.3	ug/L	0.398	7.31	20	
1,2-Dichloropropane	CCC	50.0	47.6	ug/L	0.263	4.90	20	
Ethylbenzene	CCC	50.0	49.2	ug/L	0.513	1.61	20	
Toluene	CCC	50.0	51.4	ug/L	1.39	2.82	20	
Vinyl Chloride	CCC	50.0	52.6	ug/L	0.359	5.13	20	
Bromoform	SPCC	50.0	47.6	ug/L	0.161	4.82	20	
Chlorobenzene	SPCC	50.0	49.3	ug/L	0.898	1.44	20	
Chloromethane	SPCC	50.0	48.6	ug/L	0.337	2.90	20	
1,1-Dichloroethane	SPCC	50.0	46.5	ug/L	0.484	7.02	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	46.8	ug/L	0.425	6.39	20	
Xylenes		150	154	ug/L	0.603	2.48	20	
Acetone		50.0	41.2	ug/L	0.0312	17.6	20	
Benzene		50.0	49.6	ug/L	1.01	0.703	20	
Bromobenzene		50.0	49.7	ug/L	0.703	0.670	20	
Bromochloromethane		50.0	49.0	ug/L	0.140	2.02	20	
Bromodichloromethane		50.0	47.9	ug/L	0.335	4.15	20	
Bromomethane		50.0	45.2	ug/L	0.126	9.65	20	
2-Butanone		50.0	43.2	ug/L	0.0487	13.6	20	
n-Butylbenzene		50.0	48.7	ug/L	2.72	2.61	20	
sec-Butylbenzene		50.0	50.0	ug/L	3.23	0.0190	20	
tert-Butylbenzene		50.0	48.8	ug/L	0.519	2.39	20	
Carbon Disulfide		50.0	49.8	ug/L	0.884	0.329	20	
Carbon Tetrachloride		50.0	49.4	ug/L	0.364	1.25	20	
Dibromochloromethane		50.0	49.9	ug/L	0.273	0.132	20	
Chloroethane		50.0	46.3	ug/L	0.195	7.31	20	
2-Chlorotoluene		50.0	50.0	ug/L	2.23	0.0308	20	
4-Chlorotoluene		50.0	49.7	ug/L	2.26	0.625	20	
1,2-Dibromo-3-Chloropropane		50.0	45.2	ug/L	0.0762	9.65	20	
1,2-Dibromoethane		50.0	49.0	ug/L	0.209	1.94	20	
Dibromomethane		50.0	45.3	ug/L	0.118	9.31	20	
1,2-Dichlorobenzene		50.0	48.3	ug/L	1.26	3.43	20	
1,3-Dichlorobenzene		50.0	50.0	ug/L	1.45	0.0864	20	
1,4-Dichlorobenzene		50.0	47.6	ug/L	1.42	4.77	20	
Dichlorodifluoromethane		50.0	43.5	ug/L	0.349	12.9	20	
1,2-Dichloroethane		50.0	46.5	ug/L	0.304	6.96	20	
cis-1,2-Dichloroethene		50.0	47.6	ug/L	0.272	4.87	20	
trans-1,2-Dichloroethene		50.0	47.0	ug/L	0.389	6.04	20	
1,3-Dichloropropane		50.0	48.8	ug/L	0.379	2.34	20	
2,2-Dichloropropane		50.0	51.8	ug/L	0.398	3.60	20	
cis-1,3-Dichloropropene		50.0	51.1	ug/L	0.374	2.26	20	
trans-1,3-Dichloropropene		50.0	50.6	ug/L	0.418	1.29	20	

CCV - Modified 03/05/2008
PDF File ID: 4026300
Report generated 02/19/2015 11:51

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15020878 Run Date: 02/17/2015 Sample ID: WG512558-02
Instrument ID: HPMS8 Run Time: 14:08 Method: 8260B
File ID: 8M403039 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG512559 Cal ID: HPMS8 - 06-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	49.6	ug/L	0.369	0.800	20	
2-Hexanone		50.0	46.3	ug/L	0.0512	7.48	20	
Hexachlorobutadiene		50.0	47.0	ug/L	0.571	6.02	20	
Isopropylbenzene		50.0	52.7	ug/L	1.54	5.37	20	
p-Isopropyltoluene		50.0	51.4	ug/L	2.62	2.78	20	
4-Methyl-2-Pentanone		50.0	44.6	ug/L	0.0420	10.8	20	
Methylene Chloride		50.0	47.1	ug/L	0.253	5.81	20	
Naphthalene		50.0	47.7	ug/L	1.45	4.51	20	
n-Propylbenzene		50.0	51.8	ug/L	3.79	3.63	20	
Styrene		50.0	52.2	ug/L	0.979	4.48	20	
1,1,1,2-Tetrachloroethane		50.0	51.1	ug/L	0.318	2.20	20	
Tetrachloroethene		50.0	50.4	ug/L	0.294	0.861	20	
1,2,3-Trichlorobenzene		50.0	47.7	ug/L	0.861	4.58	20	
1,2,4-Trichlorobenzene		50.0	49.1	ug/L	1.02	1.73	20	
1,1,1-Trichloroethane		50.0	48.0	ug/L	0.413	4.10	20	
1,1,2-Trichloroethane		50.0	49.0	ug/L	0.210	2.07	20	
Trichloroethene		50.0	48.9	ug/L	0.250	2.19	20	
Trichlorofluoromethane		50.0	47.5	ug/L	0.449	4.99	20	
1,2,3-Trichloropropane		50.0	48.2	ug/L	0.123	3.58	20	
1,2,4-Trimethylbenzene		50.0	52.7	ug/L	2.64	5.44	20	
1,3,5-Trimethylbenzene		50.0	52.4	ug/L	2.56	4.77	20	
o-Xylene		50.0	51.0	ug/L	0.597	2.09	20	
m-,p-Xylene		100	103	ug/L	0.610	2.67	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4026300
Report generated 02/19/2015 11:51

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15020878 Run Date: 02/18/2015 Sample ID: WG512728-02
Instrument ID: HPMS8 Run Time: 13:24 Method: 8260B
File ID: 8M403070 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG512729 Cal ID: HPMS8 - 06-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.1	ug/L	0.466	5.77	20	
1,1-Dichloroethene	CCC	50.0	49.3	ug/L	0.424	1.40	20	
1,2-Dichloropropane	CCC	50.0	49.6	ug/L	0.274	0.811	20	
Ethylbenzene	CCC	50.0	50.8	ug/L	0.529	1.53	20	
Toluene	CCC	50.0	50.8	ug/L	1.37	1.66	20	
Vinyl Chloride	CCC	50.0	52.0	ug/L	0.354	3.91	20	
Bromoform	SPCC	50.0	48.2	ug/L	0.163	3.53	20	
Chlorobenzene	SPCC	50.0	49.8	ug/L	0.908	0.400	20	
Chloromethane	SPCC	50.0	47.8	ug/L	0.331	4.48	20	
1,1-Dichloroethane	SPCC	50.0	48.2	ug/L	0.502	3.55	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	48.8	ug/L	0.444	2.30	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4026300
Report generated 02/19/2015 11:51

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15020878
Instrument ID: HPMS8
Workgroup (AAB#): WG512559

ICAL CCV Number: WG511287-08
CAL ID: HPMS8-06-FEB-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG511287-08	NA	NA	298746	559024	749967
Upper Limit	NA	NA	597492	1118048	1499934
Lower Limit	NA	NA	149373	279512	374984
L15020878-01	1.00	01	265712	526046	661520
L15020878-02	1.00	01	290229	554922	716536
L15020878-03	1.00	01	264744	510093	651642
L15020878-04	1.00	01	261310	506353	631892
L15020878-05	1.00	01	284195	543530	690960
L15020878-06	1.00	01	294766	566429	737796
L15020878-07	1.00	01	308808	595784	778123
L15020878-08	1.00	01	260250	501709	623793
L15020878-09	1.00	01	258763	502466	631699
L15020878-10	1.00	01	253853	495075	631121
L15020878-11	1.00	01	244778	482469	604766
L15020878-12	1.00	01	246299	482356	600425
L15020878-13	5.00	DL01	257809	501646	648263
L15020878-14	5.00	DL01	250922	496537	633675
L15020878-15	1.00	01	254773	499956	660037
L15020878-16	1.00	01	281447	545905	694515
L15020878-17	1.00	01	309869	589758	765690
L15020878-18	1.00	01	303680	575974	778653
L15020878-19	1.00	01	270798	527143	672015
WG512559-01	1.00	01	276963	547181	715965
WG512559-02	1.00	01	293911	560570	757191
WG512559-09	1.00	01	242164	496376	621817

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4026301
Report generated 02/18/2015 16:29

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15020878
Instrument ID: HPMS8
Workgroup (AAB#): WG512559

ICAL CCV Number: WG511287-08
CAL ID: HPMS8-06-FEB-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG511287-08	NA	NA	17.72	14.69	10.83
Upper Limit	NA	NA	18.22	15.19	11.33
Lower Limit	NA	NA	17.22	14.19	10.33
L15020878-01	1.00	01	17.72	14.69	10.82
L15020878-02	1.00	01	17.72	14.69	10.82
L15020878-03	1.00	01	17.72	14.69	10.82
L15020878-04	1.00	01	17.72	14.69	10.82
L15020878-05	1.00	01	17.72	14.69	10.82
L15020878-06	1.00	01	17.72	14.69	10.82
L15020878-07	1.00	01	17.71	14.69	10.83
L15020878-08	1.00	01	17.72	14.69	10.83
L15020878-09	1.00	01	17.72	14.69	10.82
L15020878-10	1.00	01	17.72	14.69	10.83
L15020878-11	1.00	01	17.72	14.69	10.83
L15020878-12	1.00	01	17.71	14.69	10.83
L15020878-13	5.00	DL01	17.72	14.69	10.83
L15020878-14	5.00	DL01	17.72	14.69	10.82
L15020878-15	1.00	01	17.72	14.69	10.82
L15020878-16	1.00	01	17.72	14.69	10.82
L15020878-17	1.00	01	17.71	14.69	10.83
L15020878-18	1.00	01	17.72	14.69	10.82
L15020878-19	1.00	01	17.72	14.69	10.82
WG512559-01	1.00	01	17.72	14.69	10.82
WG512559-02	1.00	01	17.72	14.69	10.82
WG512559-09	1.00	01	17.72	14.69	10.82

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4026303
Report generated: 02/18/2015 16:29

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021715\8M403051.D Vial: 14
Acq On : 17 Feb 2015 19:55 Operator: TMB
Sample : L15020878-01 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 13:49:59 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	661520	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	526046	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.72	152	265712	25.00 ug/L	-0.01
System Monitoring Compounds					
37) Dibromofluoromethane	9.78	111	168718	24.2342 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.92%		
43) 1,2-Dichloroethane-d4	10.42	65	160342	21.9685 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 87.88%		
58) Toluene-d8	12.80	98	593162	23.7355 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 94.96%		
80) p-Bromofluorobenzene	16.19	95	235183	24.6789 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.72%		
Target Compounds					Qvalue
4) Vinyl Chloride	3.95	62	1996	0.2212 ug/L #	43
32) cis-1,2-Dichloroethene	9.28	96	5231	0.6911 ug/L	86

(#) = qualifier out of range (m) = manual integration
8M403051.D 8260WTR.M Wed Feb 18 13:49:59 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021715\8M403051.D Vial: 14
Acq On : 17 Feb 2015 19:55 Operator: TMB
Sample : L15020878-01 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 13:49 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration

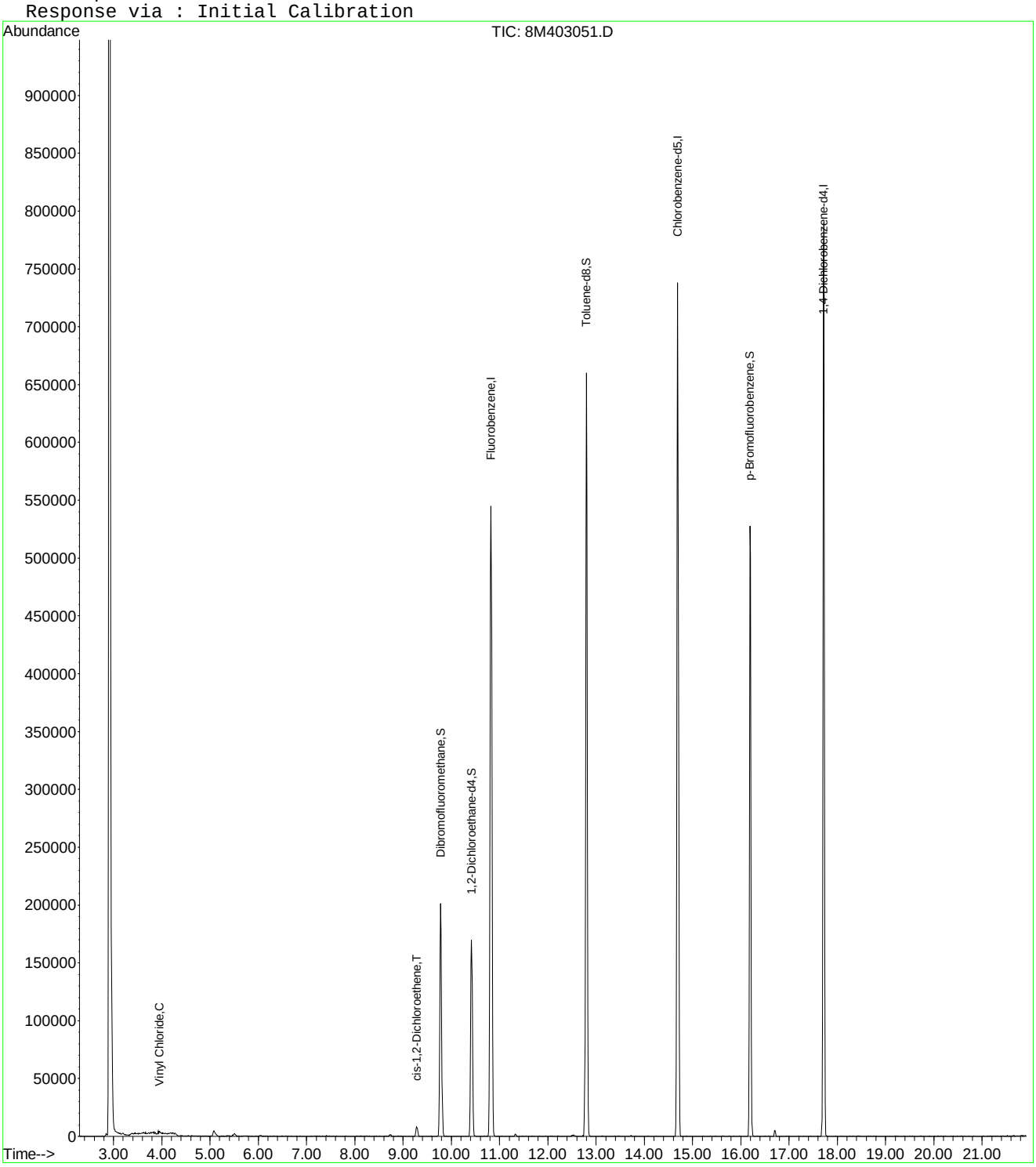

8M403051.D 8260WTR.M Wed Feb 18 13:49:59 2015 Page 2

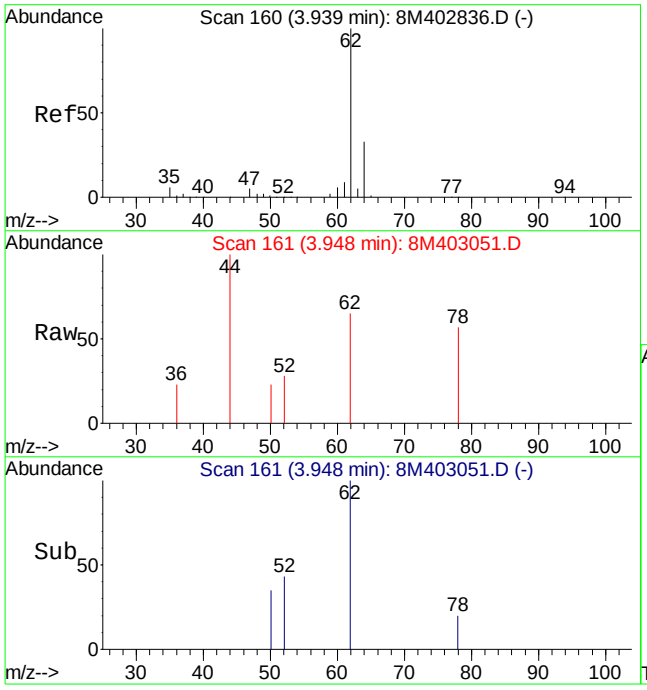

#4
Vinyl Chloride
Concen: 0.22 ug/L
RT: 3.95 min Scan# 161
Delta R.T. 0.01 min
Lab File: 8M403051.D
Acq: 17 Feb 2015 19:55

Tgt Ion: 62 Resp: 1996

Ion	Ratio	Lower	Upper
62	100		
64	0.0	19.1	44.7#

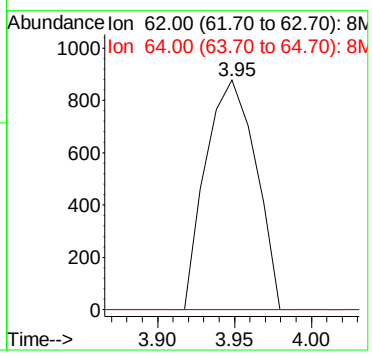

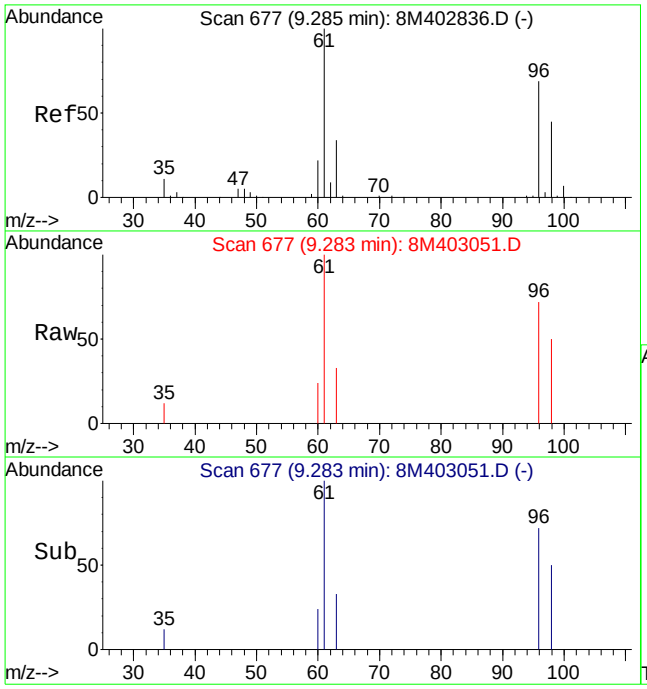

#32
cis-1,2-Dichloroethene
Concen: 0.69 ug/L
RT: 9.28 min Scan# 677
Delta R.T. -0.01 min
Lab File: 8M403051.D
Acq: 17 Feb 2015 19:55

Tgt Ion: 96 Resp: 5231

Ion	Ratio	Lower	Upper
96	100		
61	145.2	98.7	230.3

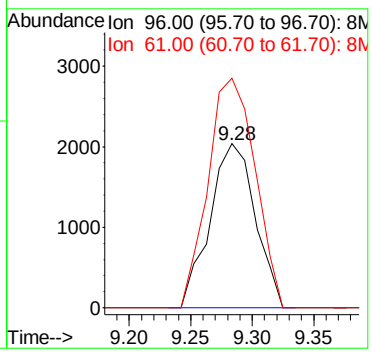

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021715\8M403047.D Vial: 10
Acq On : 17 Feb 2015 18:00 Operator: TMB
Sample : L15020878-02 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 13:49:54 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	716536	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	554922	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.72	152	290229	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	184746	24.4989 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.00%		
43) 1,2-Dichloroethane-d4	10.42	65	166104	21.0106 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 84.04%		
58) Toluene-d8	12.80	98	631575	23.9576 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 95.84%		
80) p-Bromofluorobenzene	16.19	95	250670	24.0820 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.32%		

Target Compounds					Qvalue
4) Vinyl Chloride	3.94	62	21468	2.1965 ug/L	100
13) Acetone	6.36	43	2145	1.9756 ug/L #	48
14) 1,1-Dichloroethene	6.58	61	4489	0.3645 ug/L	96
32) cis-1,2-Dichloroethene	9.28	96	117285	14.3062 ug/L	80
45) 1,2-Dichloroethane	10.53	62	2412	0.2578 ug/L #	72
47) Trichloroethene	11.33	130	353770	48.2731 ug/L	98
48) Methylcyclohexane	11.33	83	3930	0.3291 ug/L #	1
66) Tetrachloroethene	13.72	164	21360	3.3066 ug/L	98
99) Hexachlorobutadiene	20.55	225	1059	0.1501 ug/L #	25

(#) = qualifier out of range (m) = manual integration
8M403047.D 8260WTR.M Wed Feb 18 13:49:54 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021715\8M403047.D Vial: 10
Acq On : 17 Feb 2015 18:00 Operator: TMB
Sample : L15020878-02 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 13:49 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration

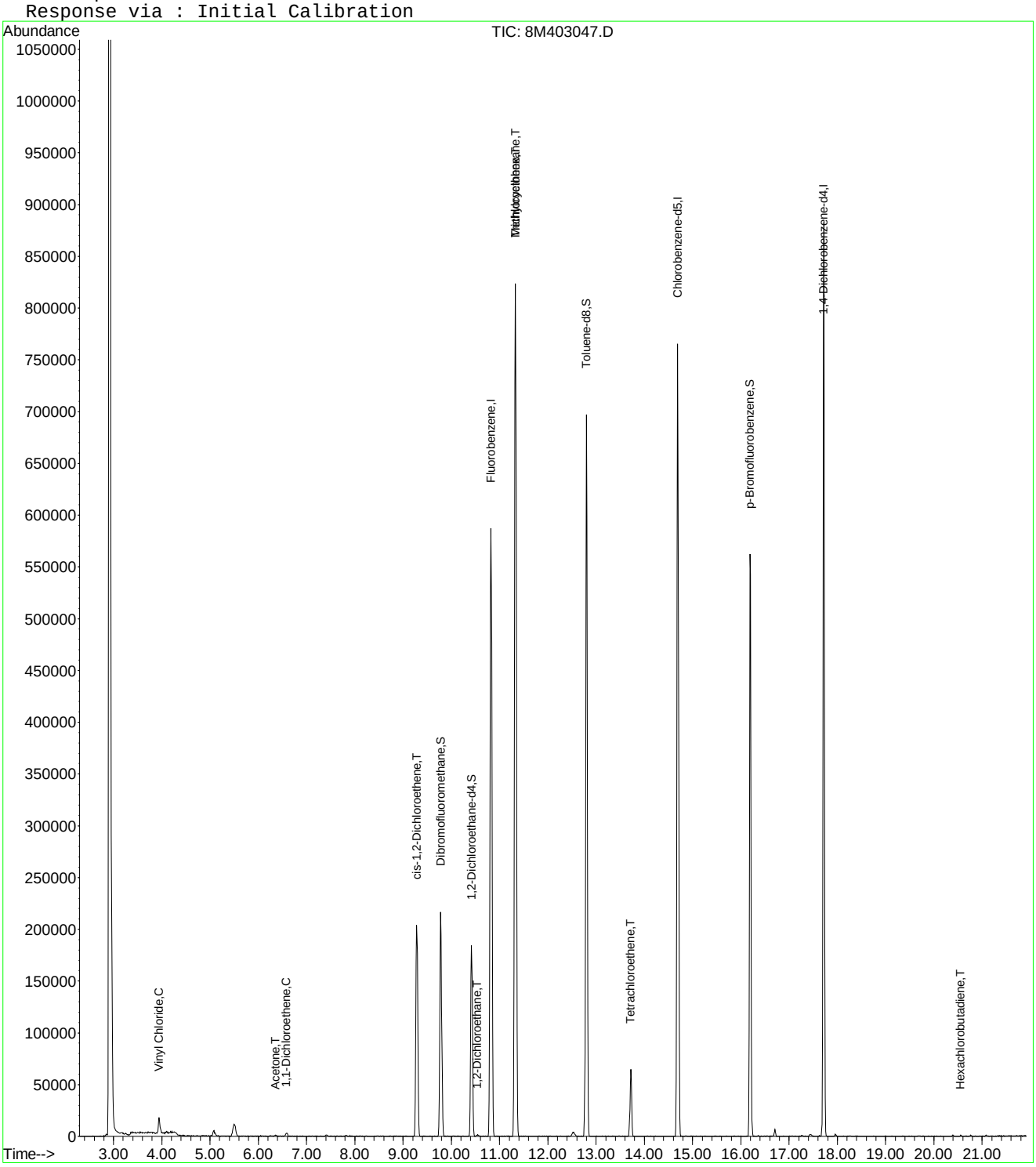

8M403047.D 8260WTR.M Wed Feb 18 13:49:54 2015 Page 2

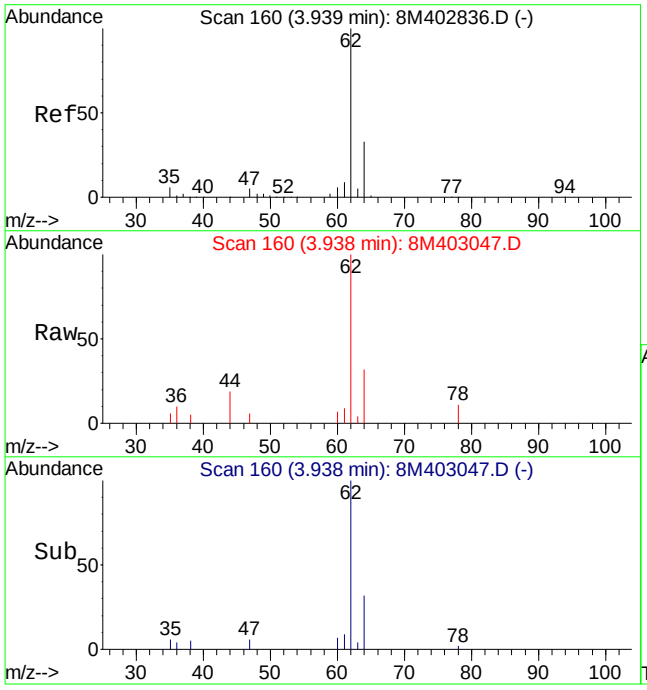

#4
Vinyl Chloride
Concen: 2.20 ug/L
RT: 3.94 min Scan# 160
Delta R.T. -0.00 min
Lab File: 8M403047.D
Acq: 17 Feb 2015 18:00

Tgt Ion: 62 Resp: 21468

Ion	Ratio	Lower	Upper
62	100		
64	31.7	19.1	44.7

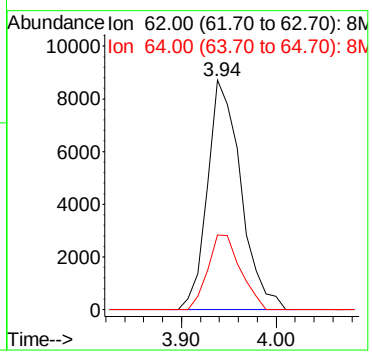

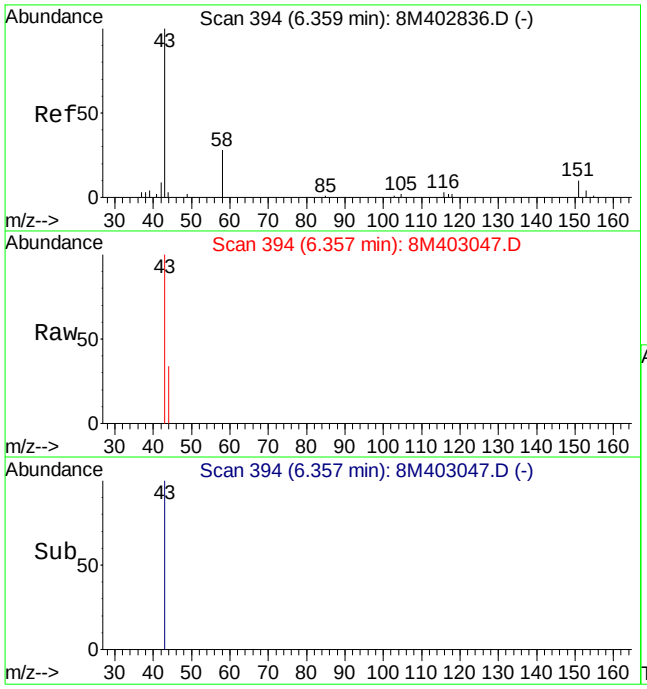

#13
Acetone
Concen: 1.98 ug/L
RT: 6.36 min Scan# 394
Delta R.T. 0.00 min
Lab File: 8M403047.D
Acq: 17 Feb 2015 18:00

Tgt Ion: 43 Resp: 2145

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

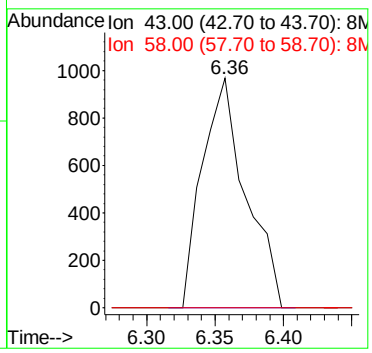

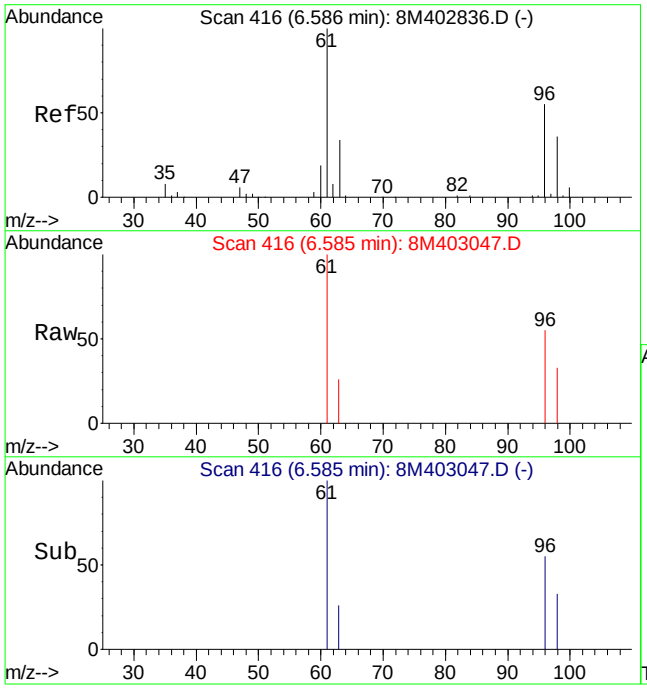

#14
1,1-Dichloroethene
Concen: 0.36 ug/L
RT: 6.58 min Scan# 416
Delta R.T. -0.00 min
Lab File: 8M403047.D
Acq: 17 Feb 2015 18:00

Tgt Ion: 61 Resp: 4489

Ion	Ratio	Lower	Upper
61	100		
96	51.6	32.6	76.0

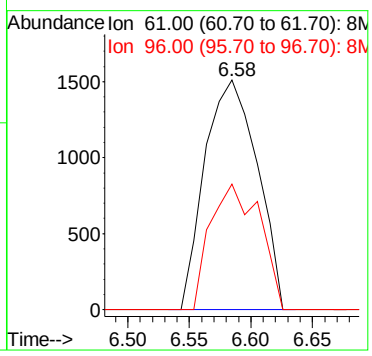

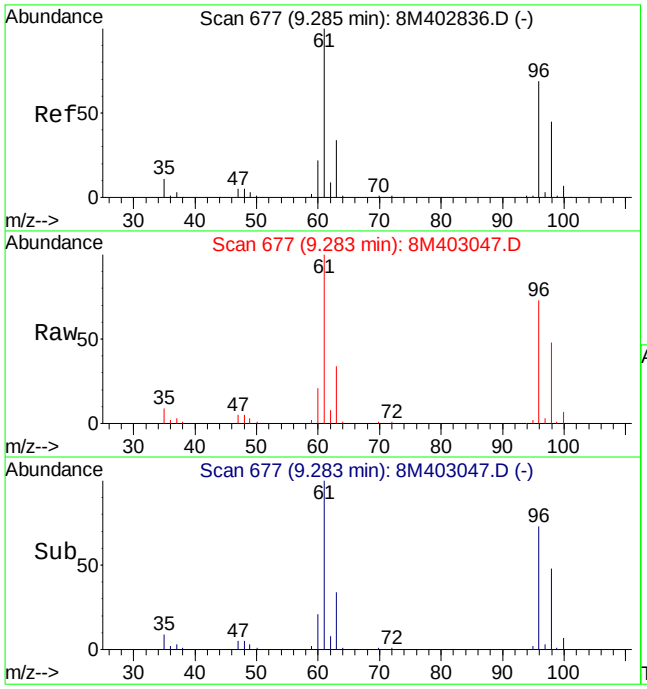

#32
cis-1,2-Dichloroethene
Concen: 14.31 ug/L
RT: 9.28 min Scan# 677
Delta R.T. -0.01 min
Lab File: 8M403047.D
Acq: 17 Feb 2015 18:00

Tgt Ion: 96 Resp: 117285

Ion	Ratio	Lower	Upper
96	100		
61	137.6	98.7	230.3

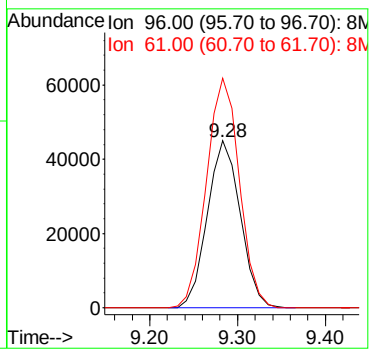

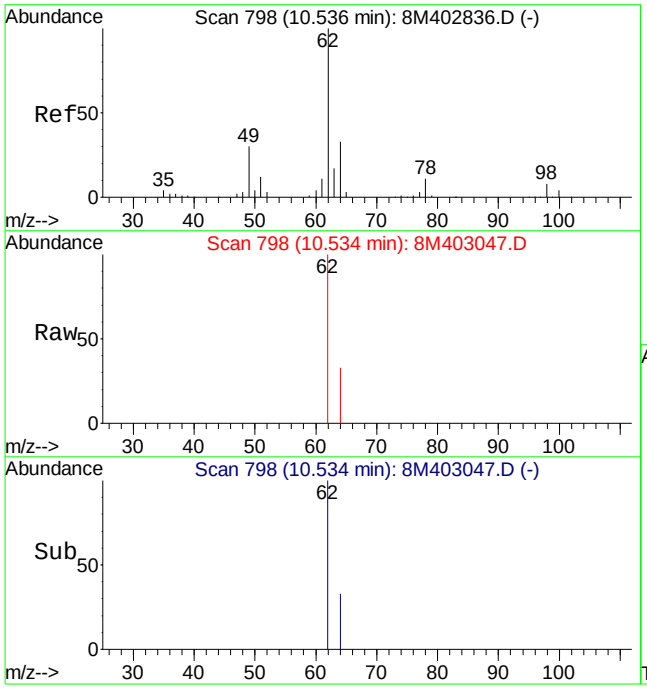

#45
1,2-Dichloroethane
Concen: 0.26 ug/L
RT: 10.53 min Scan# 798
Delta R.T. -0.01 min
Lab File: 8M403047.D
Acq: 17 Feb 2015 18:00

Tgt Ion: 62 Resp: 2412

Ion	Ratio	Lower	Upper
62	100		
64	28.4	19.4	45.2
49	9.2	21.9	51.1#

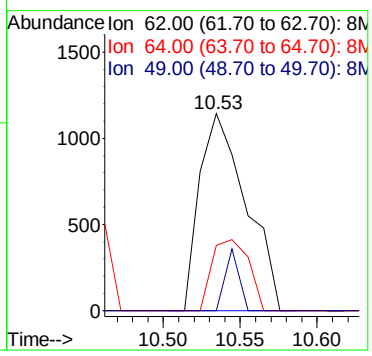

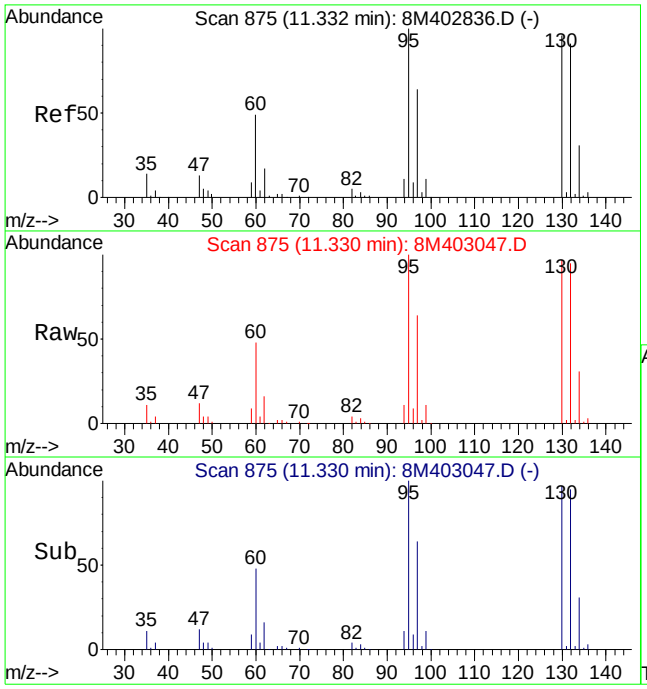

#47
Trichloroethene
Concen: 48.27 ug/L
RT: 11.33 min Scan# 875
Delta R.T. -0.01 min
Lab File: 8M403047.D
Acq: 17 Feb 2015 18:00

Tgt Ion:130 Resp: 353770

Ion	Ratio	Lower	Upper
130	100		
132	96.5	57.4	133.8
95	101.8	63.1	147.1

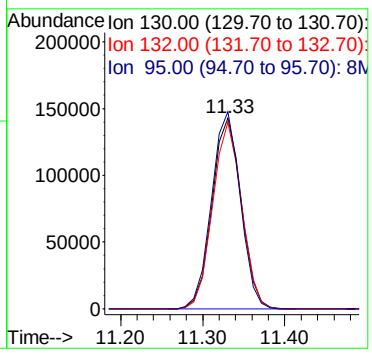

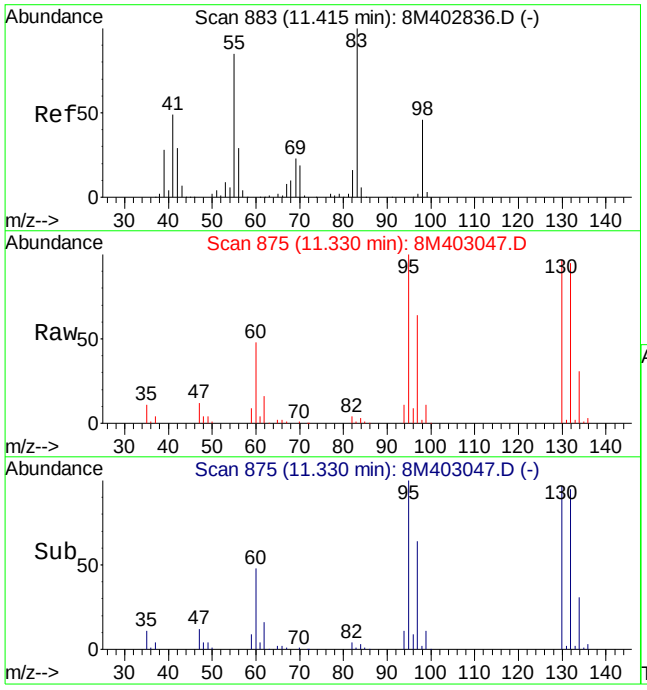

#48
Methylcyclohexane
Concen: 0.33 ug/L
RT: 11.33 min Scan# 875
Delta R.T. -0.09 min
Lab File: 8M403047.D
Acq: 17 Feb 2015 18:00

Tgt Ion: 83 Resp: 3930

Ion	Ratio	Lower	Upper
83	100		
55	0.0	50.9	118.9#
98	229.6	27.5	64.1#

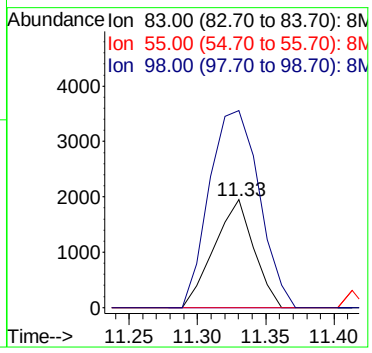

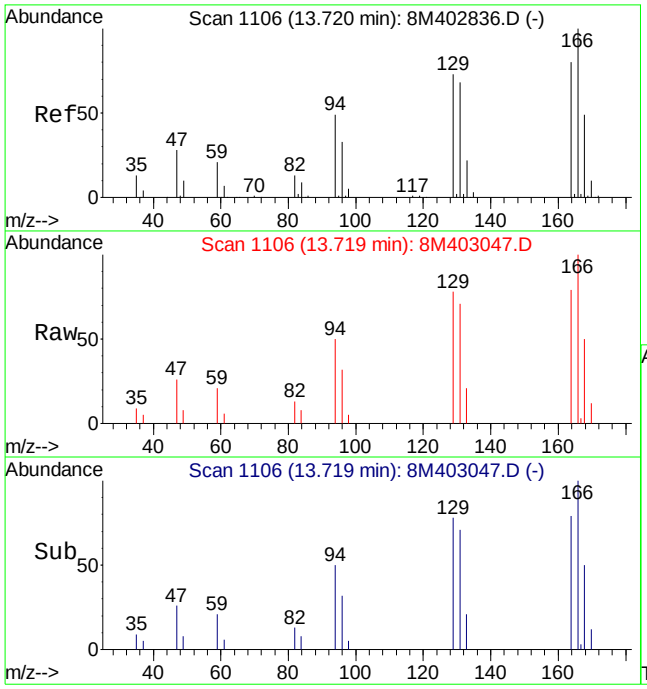

#66
Tetrachloroethene
Concen: 3.31 ug/L
RT: 13.72 min Scan# 1106
Delta R.T. -0.01 min
Lab File: 8M403047.D
Acq: 17 Feb 2015 18:00

Tgt Ion:164 Resp: 21360

Ion	Ratio	Lower	Upper
164	100		
129	90.6	53.9	125.9
94	60.3	37.6	87.8

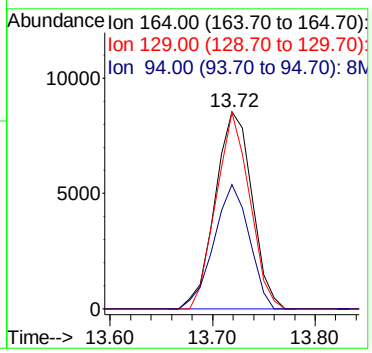

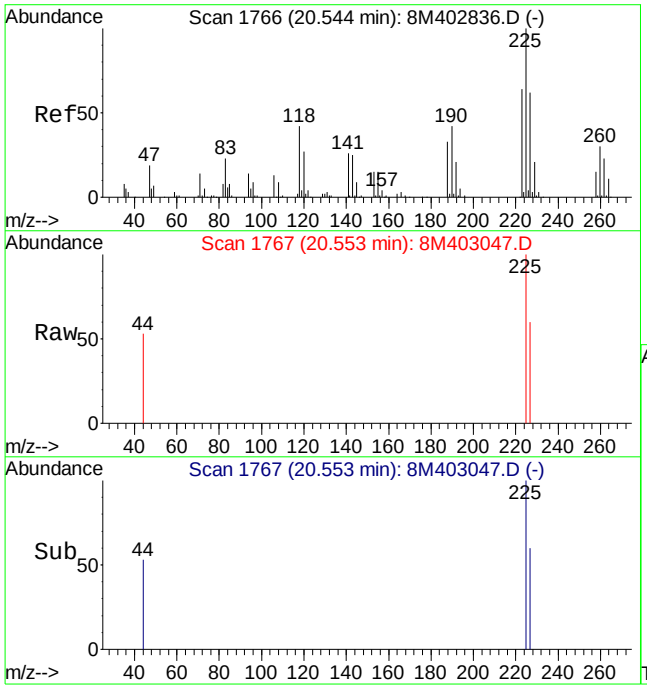

#99
Hexachlorobutadiene
Concen: 0.15 ug/L
RT: 20.55 min Scan# 1767
Delta R.T. -0.00 min
Lab File: 8M403047.D
Acq: 17 Feb 2015 18:00

Tgt Ion:225 Resp: 1059

Ion	Ratio	Lower	Upper
225	100		
223	0.0	38.0	88.6#
190	0.0	24.5	57.1#

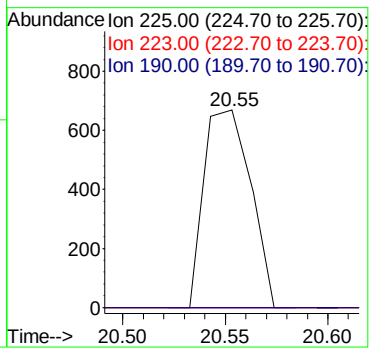

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021715\8M403052.D Vial: 15
Acq On : 17 Feb 2015 20:24 Operator: TMB
Sample : L15020878-03 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 13:50:00 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	651642	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	510093	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.72	152	264744	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	165552	24.1399 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.56%		
43) 1,2-Dichloroethane-d4	10.42	65	159699	22.2121 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 88.84%		
58) Toluene-d8	12.80	98	575199	23.7366 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 94.96%		
80) p-Bromofluorobenzene	16.19	95	232422	24.4783 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.92%		

Target Compounds					Qvalue
4) Vinyl Chloride	3.94	62	20209	2.2736 ug/L	100
13) Acetone	6.36	43	1620	1.6406 ug/L #	48
14) 1,1-Dichloroethene	6.60	61	4017	0.3587 ug/L	96
32) cis-1,2-Dichloroethene	9.28	96	105955	14.2112 ug/L	81
45) 1,2-Dichloroethane	10.54	62	1771	0.2082 ug/L #	40
47) Trichloroethene	11.33	130	312540	46.8942 ug/L	98
48) Methylcyclohexane	11.32	83	3409	0.3139 ug/L #	1
66) Tetrachloroethene	13.72	164	19242	3.2405 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M403052.D 8260WTR.M Wed Feb 18 13:50:00 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021715\8M403052.D Vial: 15
Acq On : 17 Feb 2015 20:24 Operator: TMB
Sample : L15020878-03 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 13:50 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration

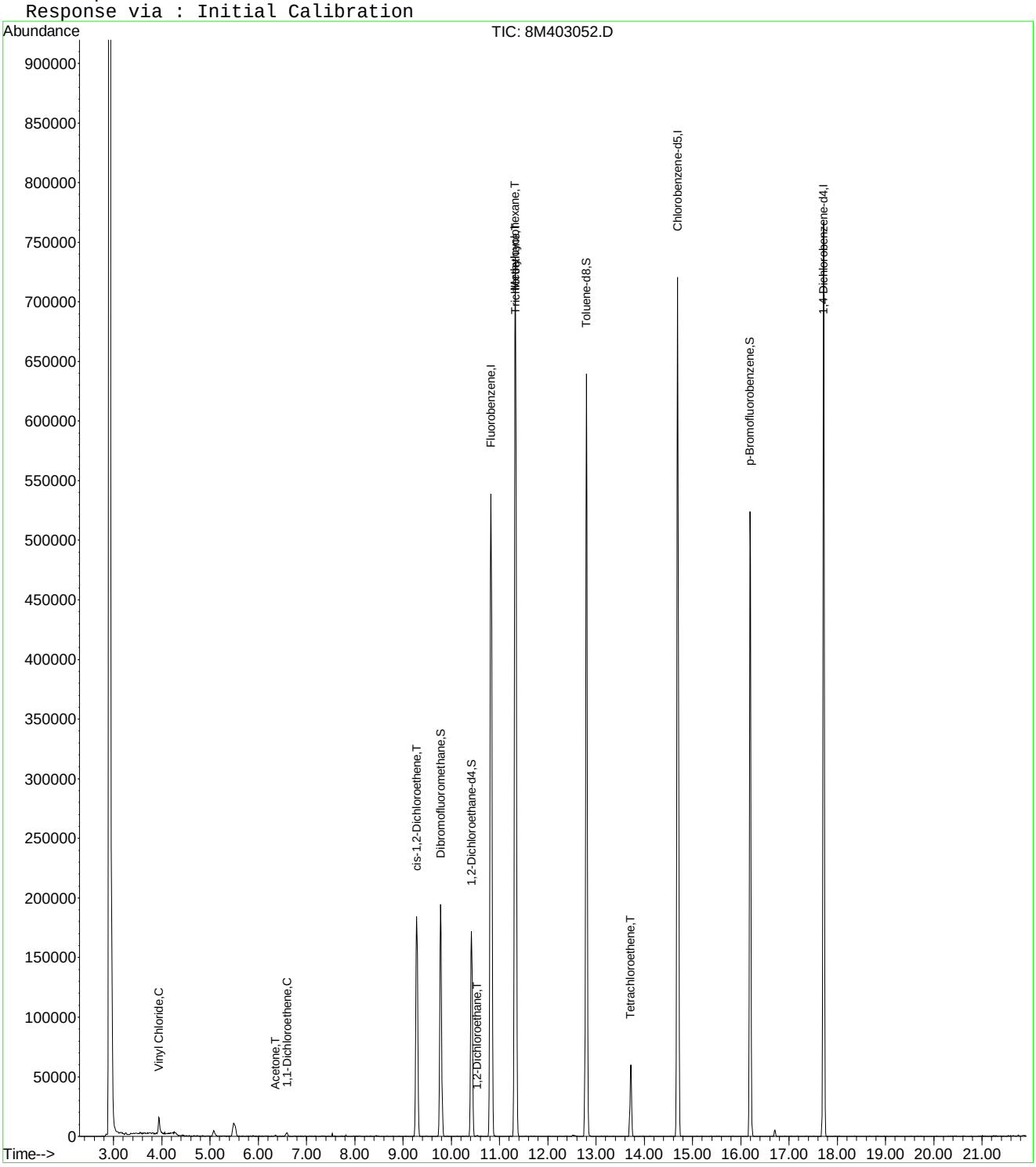

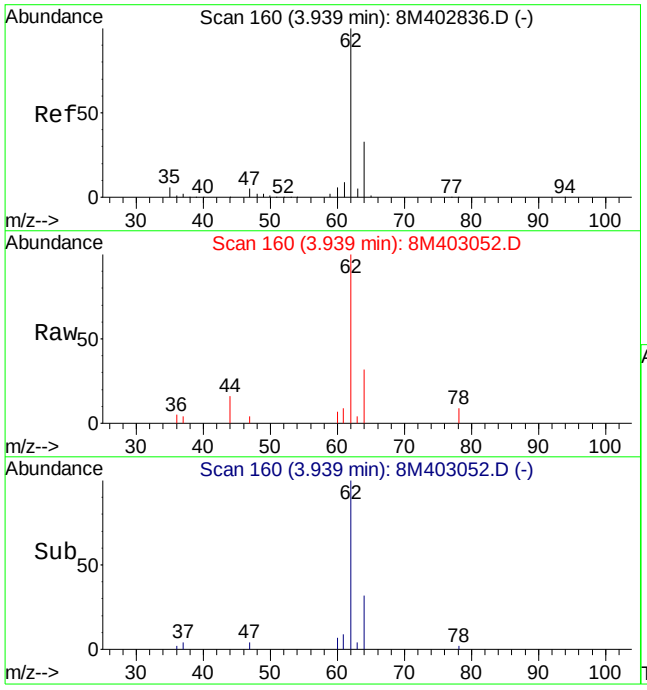

#4
Vinyl Chloride
Concen: 2.27 ug/L
RT: 3.94 min Scan# 160
Delta R.T. 0.00 min
Lab File: 8M403052.D
Acq: 17 Feb 2015 20:24

Tgt Ion: 62 Resp: 20209

Ion	Ratio	Lower	Upper
62	100		
64	31.8	19.1	44.7

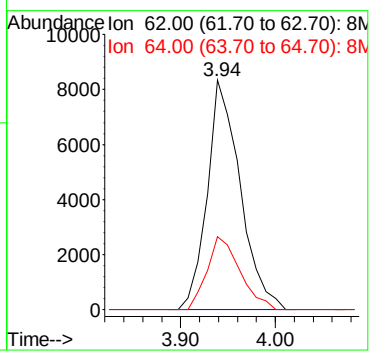

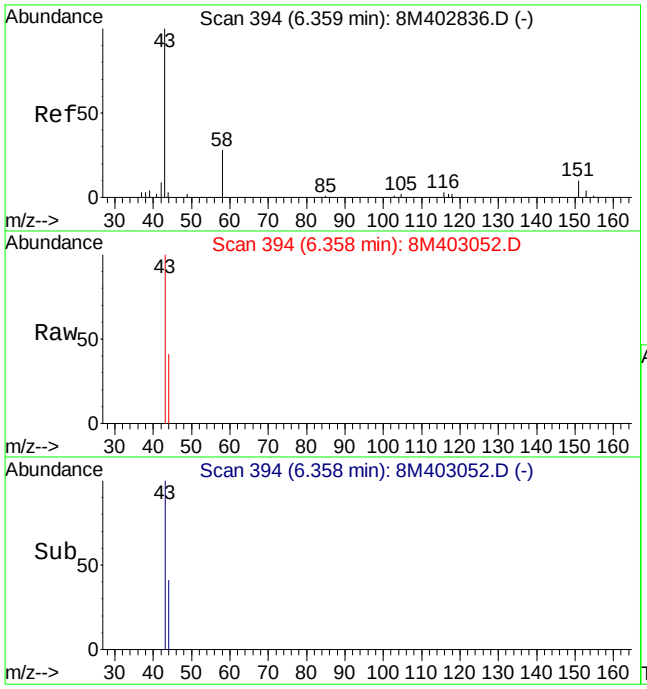

#13
Acetone
Concen: 1.64 ug/L
RT: 6.36 min Scan# 394
Delta R.T. 0.00 min
Lab File: 8M403052.D
Acq: 17 Feb 2015 20:24

Tgt Ion: 43 Resp: 1620

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

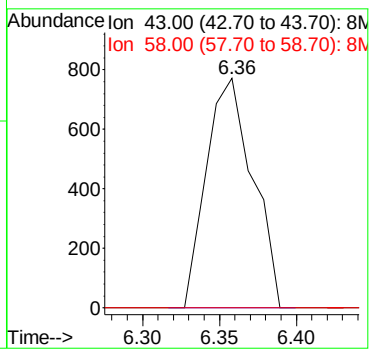

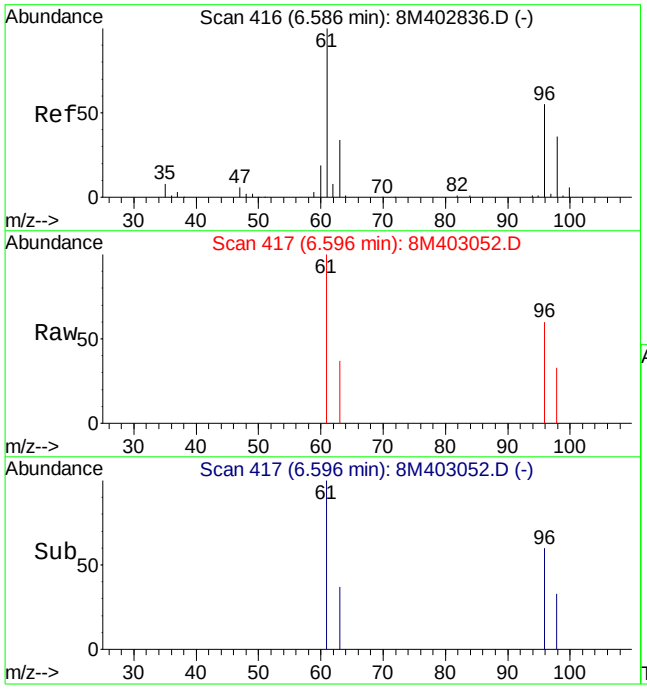

#14
1,1-Dichloroethene
Concen: 0.36 ug/L
RT: 6.60 min Scan# 417
Delta R.T. 0.01 min
Lab File: 8M403052.D
Acq: 17 Feb 2015 20:24

Tgt Ion: 61 Resp: 4017

Ion	Ratio	Lower	Upper
61	100		
96	57.5	32.6	76.0

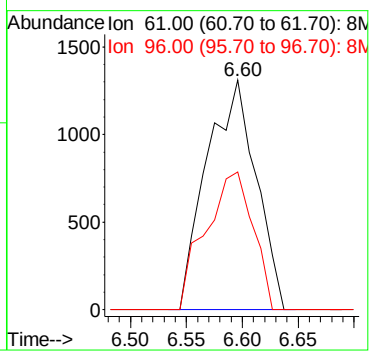

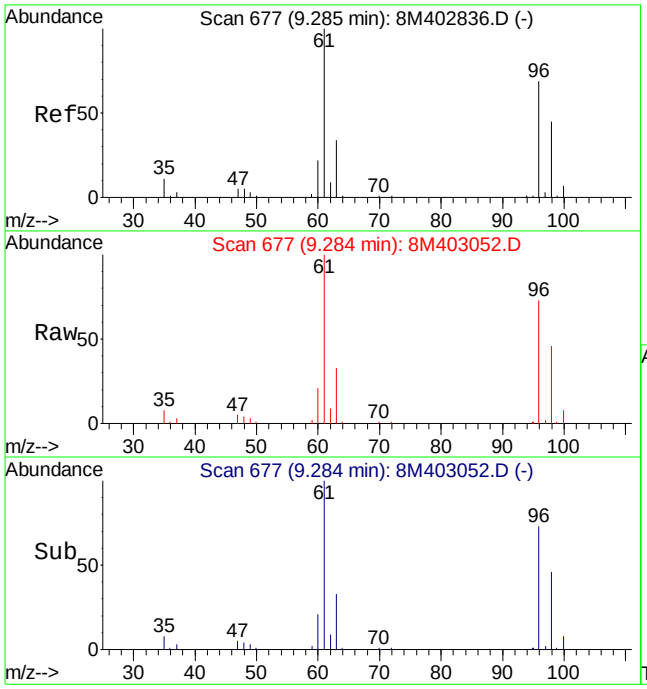

#32
cis-1,2-Dichloroethene
Concen: 14.21 ug/L
RT: 9.28 min Scan# 677
Delta R.T. -0.01 min
Lab File: 8M403052.D
Acq: 17 Feb 2015 20:24

Tgt Ion: 96 Resp: 105955

Ion	Ratio	Lower	Upper
96	100		
61	138.8	98.7	230.3

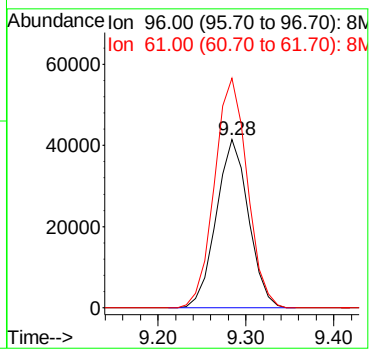

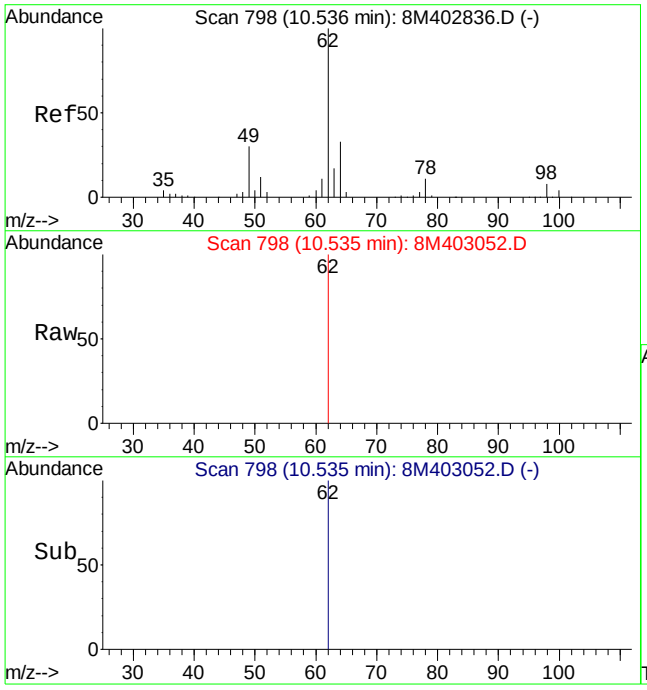

#45
1,2-Dichloroethane
Concen: 0.21 ug/L
RT: 10.54 min Scan# 798
Delta R.T. -0.01 min
Lab File: 8M403052.D
Acq: 17 Feb 2015 20:24

Tgt Ion: 62 Resp: 1771

Ion	Ratio	Lower	Upper
62	100		
64	0.0	19.4	45.2#
49	0.0	21.9	51.1#

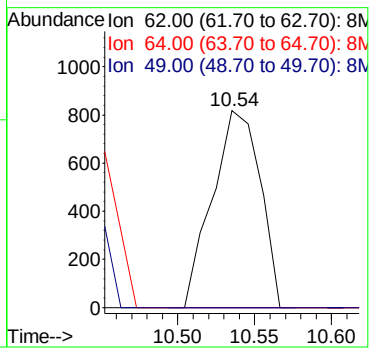

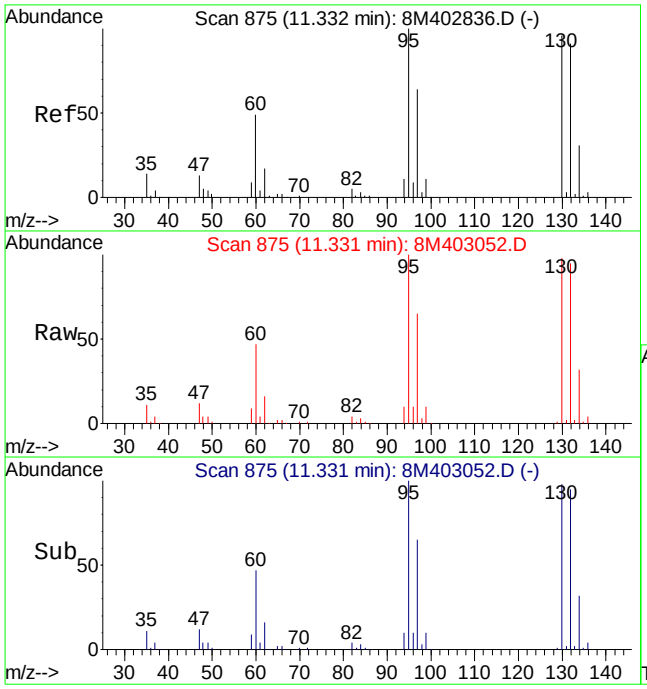

#47
Trichloroethene
Concen: 46.89 ug/L
RT: 11.33 min Scan# 875
Delta R.T. -0.01 min
Lab File: 8M403052.D
Acq: 17 Feb 2015 20:24

Tgt Ion:130 Resp: 312540

Ion	Ratio	Lower	Upper
130	100		
132	96.8	57.4	133.8
95	101.9	63.1	147.1

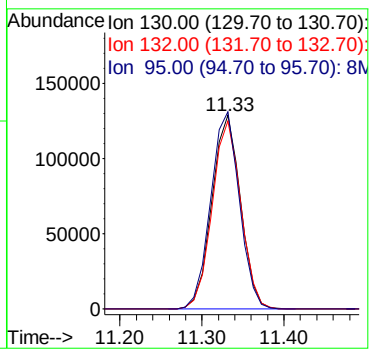

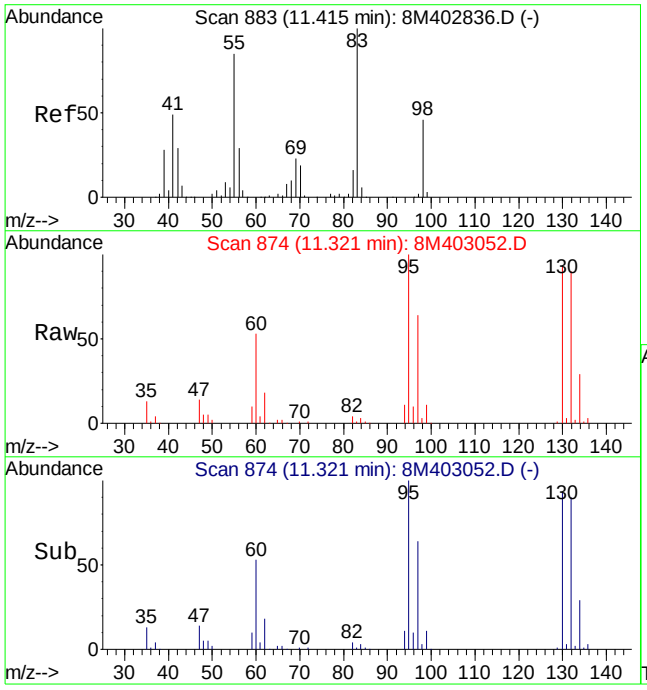

#48
Methylcyclohexane
Concen: 0.31 ug/L
RT: 11.32 min Scan# 874
Delta R.T. -0.10 min
Lab File: 8M403052.D
Acq: 17 Feb 2015 20:24

Tgt Ion: 83 Resp: 3409

Ion	Ratio	Lower	Upper
83	100		
55	0.0	50.9	118.9#
98	227.0	27.5	64.1#

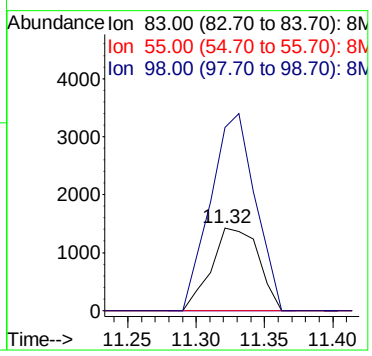

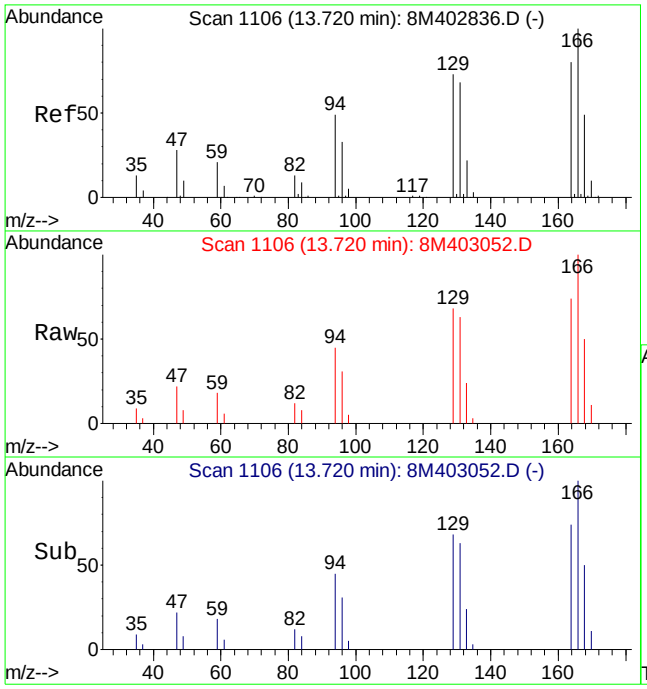

#66
Tetrachloroethene
Concen: 3.24 ug/L
RT: 13.72 min Scan# 1106
Delta R.T. -0.01 min
Lab File: 8M403052.D
Acq: 17 Feb 2015 20:24

Tgt Ion:164 Resp: 19242

Ion	Ratio	Lower	Upper
164	100		
129	90.5	53.9	125.9
94	59.6	37.6	87.8

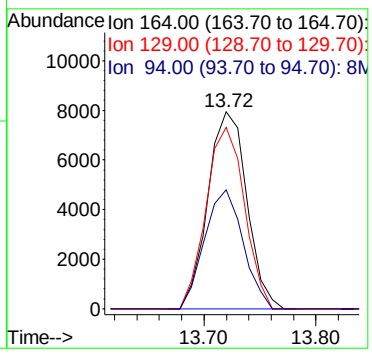

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021715\8M403053.D Vial: 16
Acq On : 17 Feb 2015 20:54 Operator: TMB
Sample : L15020878-04 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 13:50:01 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	631892	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	506353	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.72	152	261310	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	163786	24.6288 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.52%		
43) 1,2-Dichloroethane-d4	10.42	65	153639	22.0371 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 88.16%		
58) Toluene-d8	12.80	98	569948	23.6936 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 94.76%		
80) p-Bromofluorobenzene	16.19	95	229373	24.4747 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.88%		

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
8M403053.D 8260WTR.M Wed Feb 18 13:50:02 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021715\8M403053.D Vial: 16
Acq On : 17 Feb 2015 20:54 Operator: TMB
Sample : L15020878-04 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 13:50 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration

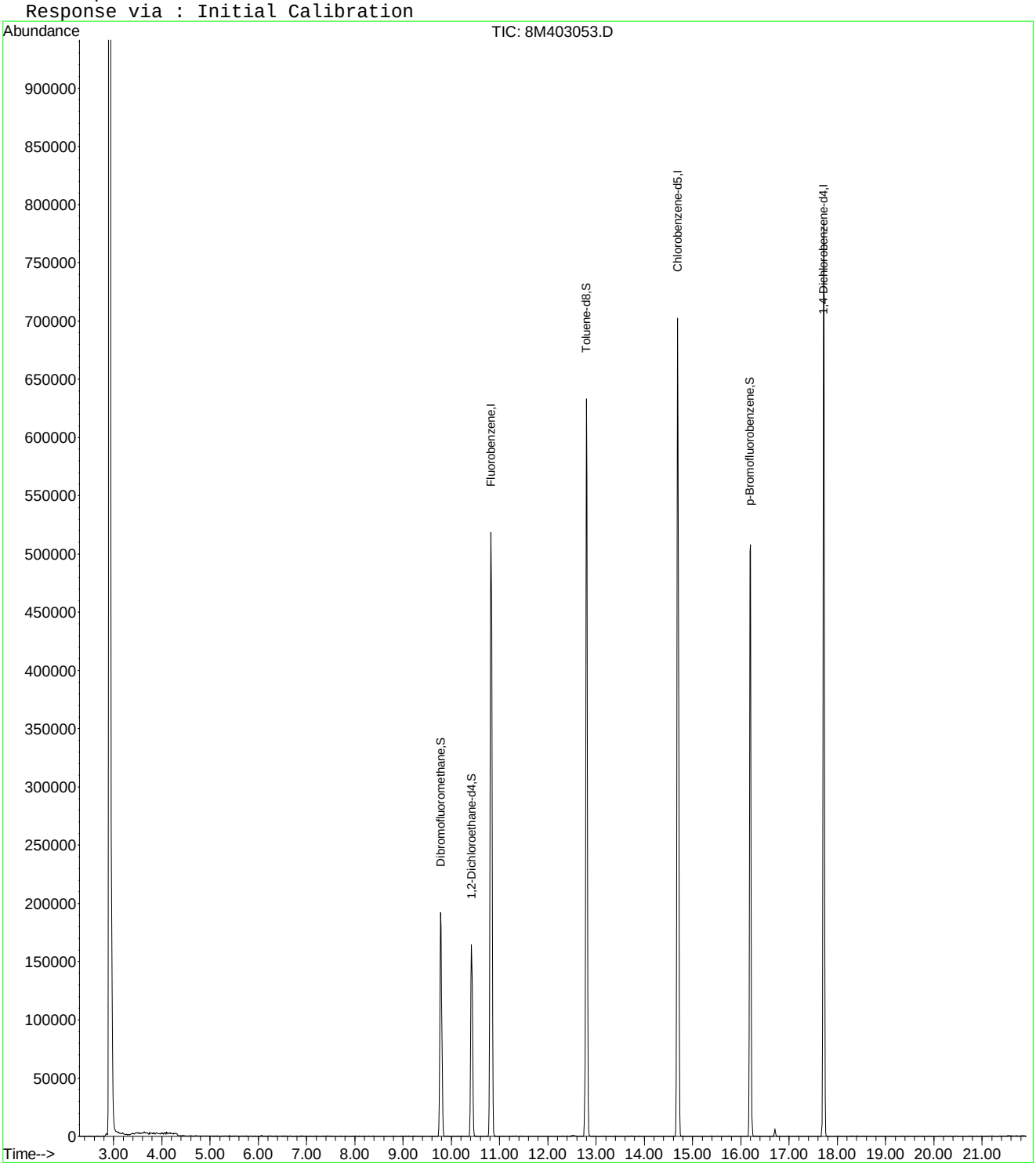

8M403053.D 8260WTR.M Wed Feb 18 13:50:02 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021715\8M403049.D Vial: 12
Acq On : 17 Feb 2015 18:58 Operator: TMB
Sample : L15020878-05 A REF 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 13:49:57 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	690960	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	543530	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.72	152	284195	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	180736	24.8543 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.40%		
43) 1,2-Dichloroethane-d4	10.42	65	174005	22.8247 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 91.28%		
58) Toluene-d8	12.80	98	614324	23.7916 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 95.16%		
80) p-Bromofluorobenzene	16.19	95	250379	24.5647 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.24%		

Target Compounds					Qvalue
13) Acetone	6.35	43	212	0.2025 ug/L #	48

(#) = qualifier out of range (m) = manual integration
8M403049.D 8260WTR.M Wed Feb 18 13:49:57 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021715\8M403049.D Vial: 12
Acq On : 17 Feb 2015 18:58 Operator: TMB
Sample : L15020878-05 A REF 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 13:49 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration

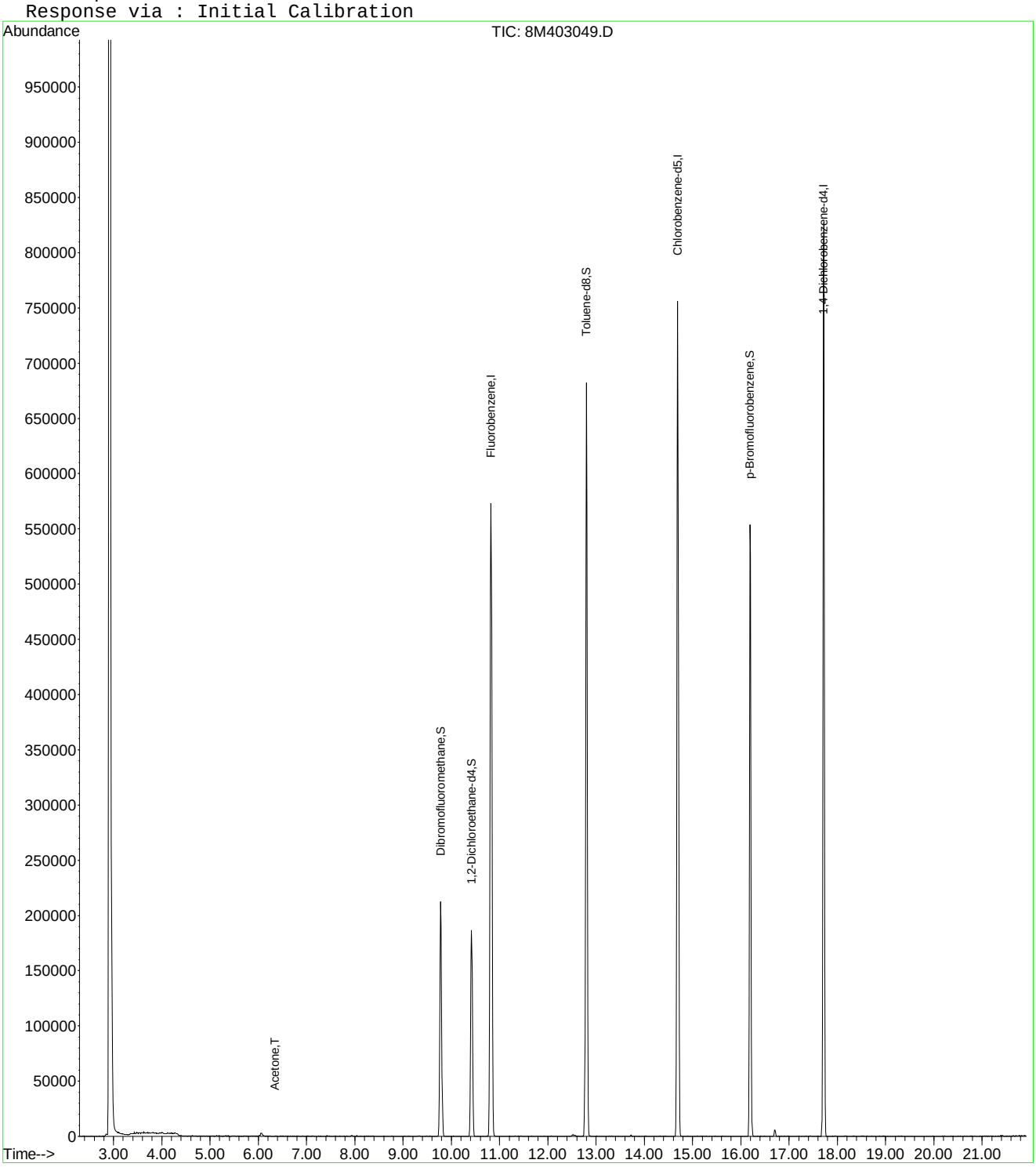

8M403049.D 8260WTR.M Wed Feb 18 13:49:57 2015 Page 2

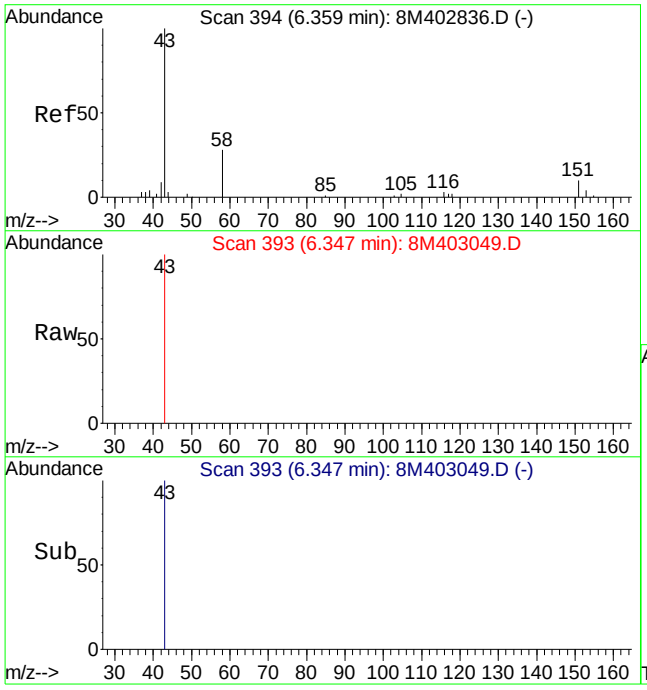

#13
Acetone
Concen: 0.20 ug/L
RT: 6.35 min Scan# 393
Delta R.T. -0.01 min
Lab File: 8M403049.D
Acq: 17 Feb 2015 18:58

Tgt Ion: 43 Resp: 212

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

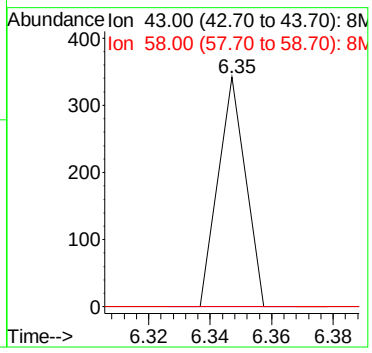

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\021715\8M403043.D Vial: 6
Acq On : 17 Feb 2015 16:04 Operator: TMB
Sample : L15020878-06 A MS 826-LOW Inst : HPMS8
Misc : 1,1 STD68939 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 16:26:22 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	737796	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	566429	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.72	152	294766	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	182484	23.5016 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.00%		
43) 1,2-Dichloroethane-d4	10.42	65	179413	22.0401 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 88.16%		
58) Toluene-d8	12.80	98	639530	23.7665 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 95.08%		
80) p-Bromofluorobenzene	16.19	95	260754	24.6652 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.68%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.25	85	247033	20.9003 ug/L	98
3) Chloromethane	3.71	50	205799	20.1256 ug/L	98
4) Vinyl Chloride	3.94	62	221686	22.0282 ug/L	99
5) 1,3-Butadiene	3.98	54	104344	11.7199 ug/L	92
6) Bromomethane	4.84	94	70414	18.2445 ug/L	99
7) Chloroethane	5.00	64	130366	20.9565 ug/L	99
8) Trichlorofluoromethane	5.49	101	261815	18.7583 ug/L	100
10) Isoprene	6.06	67	233939	21.6389 ug/L	89
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	152557	19.3493 ug/L	92
13) Acetone	6.36	43	22084	19.7534 ug/L #	28
14) 1,1-Dichloroethene	6.59	61	236488	18.6492 ug/L	93
16) Dimethyl Sulfide	6.84	62	186712	22.0916 ug/L	99
17) Iodomethane	7.10	142	29852	22.0912 ug/L	99
18) Methyl acetate	7.11	43	61947	13.3253 ug/L	97
19) Methylene Chloride	7.37	84	156550	19.7417 ug/L	86
20) Carbon Disulfide	7.41	76	464763	17.7479 ug/L	99
21) Acrylonitrile	7.55	53	32574	19.9538 ug/L	100
22) Methyl Tert Butyl Ether	7.59	73	304368	22.0769 ug/L	92
23) trans-1,2-Dichloroethene	7.83	61	238998	19.5678 ug/L	90
24) n-Hexane	7.90	57	203547	18.9894 ug/L	91
26) Vinyl Acetate	8.41	43	205117	58.8063 ug/L	99
27) 1,1-Dichloroethane	8.45	63	292375	19.0490 ug/L	97
29) 2-Butanone	8.99	43	31472	18.9099 ug/L	93
31) 2,2-Dichloropropane	9.22	77	237075	20.9230 ug/L	99
32) cis-1,2-Dichloroethene	9.28	96	173682	20.5749 ug/L	88
33) Chloroform	9.49	83	283102	19.4176 ug/L	100
34) 1-Bromopropane	9.64	122	32359	21.2730 ug/L	98
35) Bromochloromethane	9.73	130	89074	21.0957 ug/L	92
38) 1,1,1-Trichloroethane	10.03	97	251952	19.8379 ug/L	99
39) Cyclohexane	10.06	56	267018	19.5362 ug/L	85
40) 1,1-Dichloropropene	10.22	75	215760	19.6770 ug/L	99
42) Carbon Tetrachloride	10.37	117	212574	19.5178 ug/L	99
45) 1,2-Dichloroethane	10.54	62	190761	19.8041 ug/L	98
46) Benzene	10.58	78	621384	20.7146 ug/L	92
47) Trichloroethene	11.33	130	158962	21.0659 ug/L	100
48) Methylcyclohexane	11.41	83	237461	19.3105 ug/L	89
49) 1,2-Dichloropropane	11.55	63	163765	20.0760 ug/L	93
50) Bromodichloromethane	11.84	83	206526	20.0219 ug/L	100
52) Dibromomethane	11.93	93	79089	20.5438 ug/L	99
54) 4-Methyl-2-Pentanone	12.17	58	26942	19.3816 ug/L	92

(#) = qualifier out of range (m) = manual integration
8M403043.D 8260WTR.M Tue Feb 17 16:26:23 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\021715\8M403043.D Vial: 6
Acq On : 17 Feb 2015 16:04 Operator: TMB
Sample : L15020878-06 A MS 826-LOW Inst : HPMS8
Misc : 1,1 STD68939 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 16:26:22 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
55)	cis-1,3-Dichloropropene	12.48	75	239109	22.1726 ug/L		98
56)	Dimethyl Disulfide	12.74	79	115299	14.4151 ug/L		98
59)	Toluene	12.90	91	640748	20.9832 ug/L		98
60)	Ethyl Methacrylate	12.99	69	134297	23.0105 ug/L		88
62)	trans-1,3-Dichloropropene	13.08	75	182080	19.4878 ug/L		100
63)	1,1,2-Trichloroethane	13.30	97	98563	20.3314 ug/L		98
64)	2-Hexanone	13.22	58	26006	20.7392 ug/L		89
65)	1,3-Dichloropropane	13.60	76	178280	20.2883 ug/L		91
66)	Tetrachloroethene	13.72	164	128552	19.4958 ug/L		98
67)	Dibromochloromethane	13.99	129	129564	20.9173 ug/L		100
68)	1,2-Dibromoethane	14.24	107	98597	20.4599 ug/L		100
69)	1-Chlorohexane	14.32	91	216239	20.9359 ug/L		87
70)	Chlorobenzene	14.74	112	400530	19.3982 ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.77	131	142358	20.1881 ug/L		99
72)	Ethylbenzene	14.77	106	234842	19.8796 ug/L		95
73)	m-,p-Xylene	14.86	106	545107	40.5139 ug/L		98
74)	o-Xylene	15.43	106	260165	19.6523 ug/L		99
75)	Styrene	15.46	104	453518	21.3586 ug/L		100
76)	Bromoform	15.95	173	77024	20.1531 ug/L		99
77)	Isopropylbenzene	15.85	105	669795	20.2516 ug/L		100
79)	1,1,2,2-Tetrachloroethane	16.07	83	113032	21.0975 ug/L		99
81)	1,2,3-Trichloropropane	16.25	110	30857	20.6006 ug/L	#	37
82)	trans-1,4-Dichloro-2-Buten	16.30	53	31895	17.9075 ug/L	#	33
83)	n-Propylbenzene	16.36	91	843307	19.5670 ug/L		98
84)	Bromobenzene	16.49	156	179179	21.4840 ug/L		91
85)	1,3,5-Trimethylbenzene	16.54	105	641199	22.2865 ug/L		99
86)	2-Chlorotoluene	16.63	91	497032	18.9117 ug/L		100
87)	4-Chlorotoluene	16.68	91	530572	19.8191 ug/L		100
88)	a-Methylstyrene	16.95	118	312659	18.8608 ug/L		99
89)	tert-Butylbenzene	17.01	134	115848	18.4777 ug/L		93
90)	1,2,4-Trimethylbenzene	17.06	105	646794	21.8775 ug/L		98
91)	sec-Butylbenzene	17.28	105	733717	19.2938 ug/L		99
92)	p-Isopropyltoluene	17.43	119	602237	20.0342 ug/L		99
93)	1,3-Dichlorobenzene	17.63	146	326720	19.0932 ug/L		97
94)	1,4-Dichlorobenzene	17.76	146	354902	20.2527 ug/L		99
95)	n-Butylbenzene	17.96	91	658506	19.9884 ug/L		98
96)	1,2-Dichlorobenzene	18.26	146	292684	19.0860 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.25	75	19960	20.0665 ug/L		97
98)	1,2,4-Trichlorobenzene	20.40	180	260157	21.3626 ug/L		98
99)	Hexachlorobutadiene	20.54	225	135570	18.9187 ug/L		96
100)	Naphthalene	20.77	128	398381	22.1857 ug/L		99
101)	1,2,3-Trichlorobenzene	21.08	180	226276	21.2776 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M403043.D 8260WTR.M Tue Feb 17 16:26:23 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\021715\8M403043.D Vial: 6
Acq On : 17 Feb 2015 16:04 Operator: TMB
Sample : L15020878-06 A MS 826-LOW Inst : HPMS8
Misc : 1,1 STD68939 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 16:26 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration

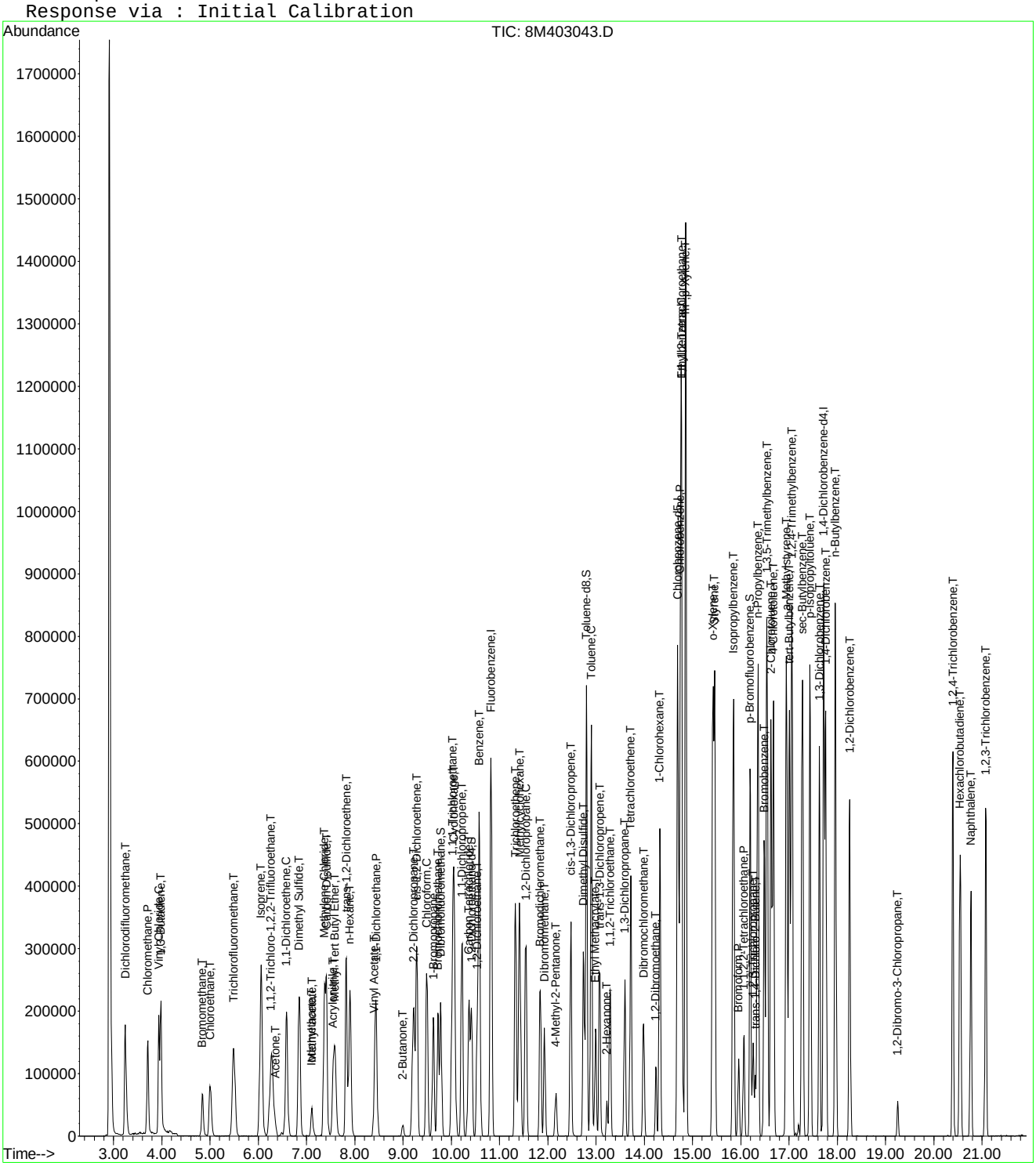

8M403043.D 8260WTR.M Tue Feb 17 16:26:23 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\021715\8M403044.D Vial: 7
Acq On : 17 Feb 2015 16:33 Operator: TMB
Sample : L15020878-07 A MSD 826-LOW Inst : HPMS8
Misc : 1,1 STD68939 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 16:55:38 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	778123	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	595784	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.71	152	308808	25.00 ug/L	-0.02

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	193405	23.6172 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.48%		
43) 1,2-Dichloroethane-d4	10.42	65	193056	22.4870 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 89.96%		
58) Toluene-d8	12.80	98	671859	23.7377 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 94.96%		
80) p-Bromofluorobenzene	16.19	95	273419	24.6871 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.76%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.25	85	249942	20.0505 ug/L	98
3) Chloromethane	3.71	50	211245	19.5876 ug/L	99
4) Vinyl Chloride	3.94	62	221482	20.8674 ug/L	96
5) 1,3-Butadiene	3.98	54	99070	10.4745 ug/L	91
6) Bromomethane	4.84	94	78601	19.2466 ug/L	98
7) Chloroethane	5.01	64	128832	19.6366 ug/L	98
8) Trichlorofluoromethane	5.49	101	269982	18.3410 ug/L	99
10) Isoprene	6.06	67	234773	20.5906 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	161096	19.3734 ug/L	92
13) Acetone	6.36	43	24645	20.9017 ug/L #	28
14) 1,1-Dichloroethene	6.59	61	241222	18.0367 ug/L	92
15) Tert-Butyl Alcohol	6.69	59	413	1.6664 ug/L #	59
16) Dimethyl Sulfide	6.85	62	188614	21.1601 ug/L	100
17) Iodomethane	7.10	142	29664	21.7935 ug/L	96
18) Methyl acetate	7.12	43	66569	13.5774 ug/L	96
19) Methylene Chloride	7.37	84	164608	19.6820 ug/L	84
20) Carbon Disulfide	7.41	76	479641	17.3668 ug/L	100
21) Acrylonitrile	7.55	53	35099	20.3862 ug/L	99
22) Methyl Tert Butyl Ether	7.58	73	331649	22.8090 ug/L	92
23) trans-1,2-Dichloroethene	7.82	61	246181	19.1113 ug/L	90
24) n-Hexane	7.90	57	220006	19.4611 ug/L	95
26) Vinyl Acetate	8.41	43	221380	60.1795 ug/L	100
27) 1,1-Dichloroethane	8.44	63	304754	18.8265 ug/L	98
29) 2-Butanone	9.00	43	35666	20.3192 ug/L	95
31) 2,2-Dichloropropane	9.22	77	247881	20.7429 ug/L	99
32) cis-1,2-Dichloroethene	9.29	96	179382	20.1488 ug/L	88
33) Chloroform	9.49	83	294586	19.1581 ug/L	100
34) 1-Bromopropane	9.63	122	33980	21.1810 ug/L	96
35) Bromochloromethane	9.72	130	96094	21.5788 ug/L	88
38) 1,1,1-Trichloroethane	10.03	97	261812	19.5458 ug/L	99
39) Cyclohexane	10.06	56	276820	19.2037 ug/L	85
40) 1,1-Dichloropropene	10.22	75	225170	19.4710 ug/L	99
42) Carbon Tetrachloride	10.37	117	223633	19.4691 ug/L	100
45) 1,2-Dichloroethane	10.54	62	202145	19.8983 ug/L	97
46) Benzene	10.58	78	634230	20.0471 ug/L	93
47) Trichloroethene	11.33	130	164428	20.6609 ug/L	99
48) Methylcyclohexane	11.42	83	253247	19.5269 ug/L	88
49) 1,2-Dichloropropane	11.54	63	171622	19.9488 ug/L	96
50) Bromodichloromethane	11.84	83	218857	20.1178 ug/L	99
52) Dibromomethane	11.93	93	81781	20.1421 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M403044.D 8260WTR.M Tue Feb 17 16:55:40 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\021715\8M403044.D Vial: 7
Acq On : 17 Feb 2015 16:33 Operator: TMB
Sample : L15020878-07 A MSD 826-LOW Inst : HPMS8
Misc : 1,1 STD68939 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 16:55:38 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
54)	4-Methyl-2-Pentanone	12.17	58	30178	20.5844 ug/L		93
55)	cis-1,3-Dichloropropene	12.48	75	251542	22.1167 ug/L		100
56)	Dimethyl Disulfide	12.74	79	121700	14.4230 ug/L		96
59)	Toluene	12.91	91	682372	21.2453 ug/L		100
60)	Ethyl Methacrylate	12.99	69	151282	24.6436 ug/L		90
62)	trans-1,3-Dichloropropene	13.07	75	200046	20.3558 ug/L		100
63)	1,1,2-Trichloroethane	13.29	97	107720	21.1255 ug/L		96
64)	2-Hexanone	13.23	58	31795	24.1064 ug/L	#	59
65)	1,3-Dichloropropane	13.60	76	194336	21.0258 ug/L		89
66)	Tetrachloroethene	13.72	164	136989	19.7517 ug/L		96
67)	Dibromochloromethane	13.98	129	138586	21.2715 ug/L		98
68)	1,2-Dibromoethane	14.24	107	107515	21.2112 ug/L		98
69)	1-Chlorohexane	14.32	91	227300	20.9225 ug/L		86
70)	Chlorobenzene	14.75	112	406917	18.7365 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.78	131	151060	20.3666 ug/L		98
72)	Ethylbenzene	14.77	106	237196	19.0896 ug/L		94
73)	m-,p-Xylene	14.86	106	567070	40.0696 ug/L		97
74)	o-Xylene	15.42	106	267031	19.1771 ug/L		98
75)	Styrene	15.46	104	476980	21.3567 ug/L		99
76)	Bromoform	15.96	173	82358	20.4870 ug/L		99
77)	Isopropylbenzene	15.84	105	696453	20.0200 ug/L		99
79)	1,1,2,2-Tetrachloroethane	16.06	83	123356	21.9775 ug/L		98
81)	1,2,3-Trichloropropane	16.26	110	34336	21.8809 ug/L	#	36
82)	trans-1,4-Dichloro-2-Buten	16.30	53	31136	16.7311 ug/L	#	40
83)	n-Propylbenzene	16.35	91	862374	19.0996 ug/L		98
84)	Bromobenzene	16.48	156	180327	20.6385 ug/L		97
85)	1,3,5-Trimethylbenzene	16.54	105	651962	21.6302 ug/L		99
86)	2-Chlorotoluene	16.63	91	537652	19.5270 ug/L		91
87)	4-Chlorotoluene	16.67	91	524776	18.7113 ug/L		89
88)	a-Methylstyrene	16.95	118	303901	17.4989 ug/L		99
89)	tert-Butylbenzene	17.01	134	121034	18.4270 ug/L		97
90)	1,2,4-Trimethylbenzene	17.06	105	668165	21.5727 ug/L		98
91)	sec-Butylbenzene	17.28	105	748904	18.7977 ug/L		99
92)	p-Isopropyltoluene	17.43	119	614291	19.5059 ug/L		99
93)	1,3-Dichlorobenzene	17.63	146	339475	18.9365 ug/L		98
94)	1,4-Dichlorobenzene	17.75	146	363241	19.7860 ug/L		100
95)	n-Butylbenzene	17.96	91	671495	19.4558 ug/L		99
96)	1,2-Dichlorobenzene	18.26	146	308134	19.1798 ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.25	75	21233	20.3756 ug/L		97
98)	1,2,4-Trichlorobenzene	20.39	180	269329	21.1101 ug/L		99
99)	Hexachlorobutadiene	20.55	225	136879	18.2328 ug/L		97
100)	Naphthalene	20.76	128	420639	22.3600 ug/L		100
101)	1,2,3-Trichlorobenzene	21.07	180	236287	21.2086 ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\021715\8M403044.D Vial: 7
Acq On : 17 Feb 2015 16:33 Operator: TMB
Sample : L15020878-07 A MSD 826-LOW Inst : HPMS8
Misc : 1,1 STD68939 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 16:55 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration

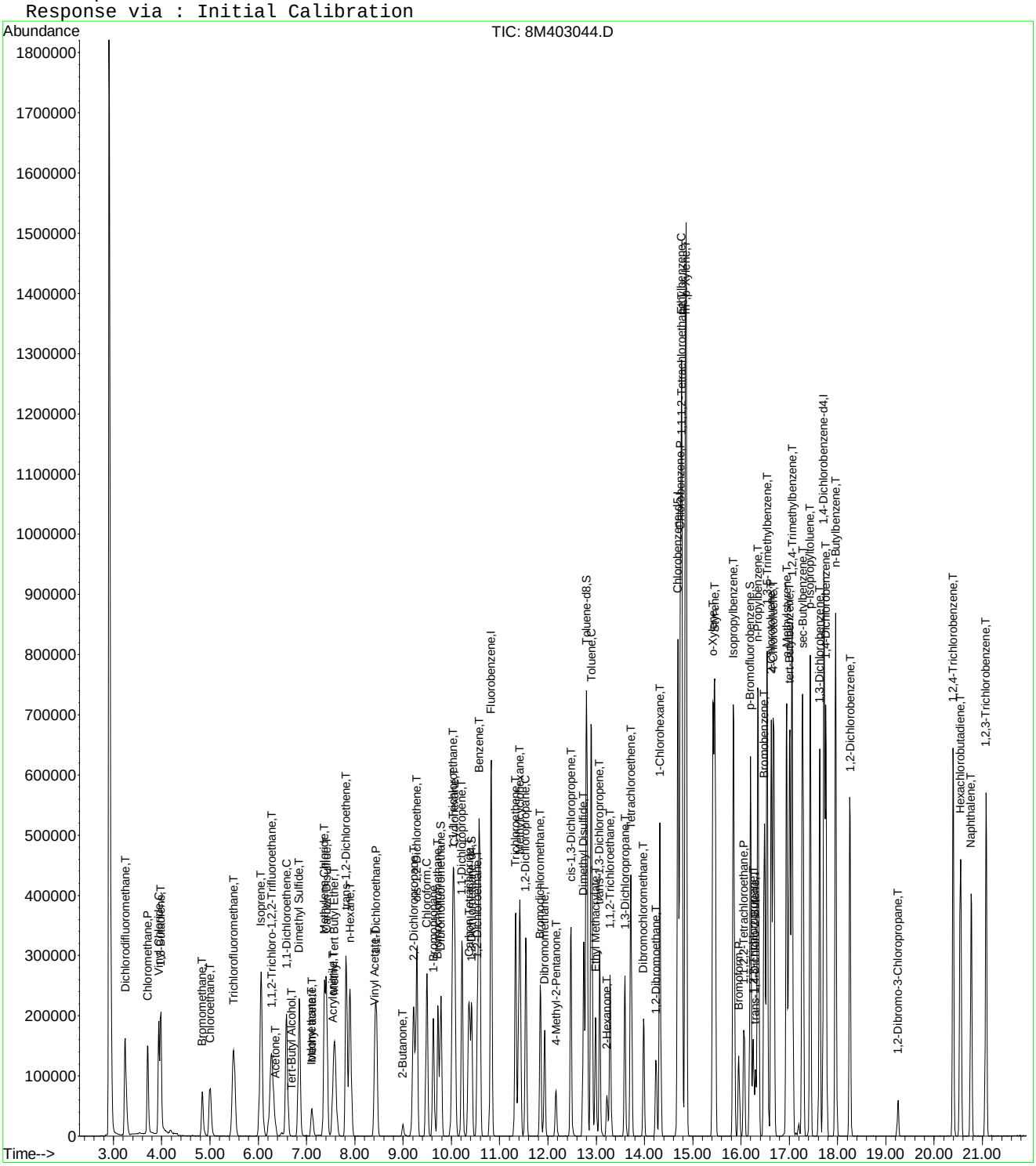

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021715\8M403054.D Vial: 17
Acq On : 17 Feb 2015 21:22 Operator: TMB
Sample : L15020878-08 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 13:50:02 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	623793	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	501709	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.72	152	260250	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	159183	24.2474 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.00%		
43) 1,2-Dichloroethane-d4	10.42	65	149719	21.7537 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 87.00%		
58) Toluene-d8	12.80	98	561640	23.5644 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 94.24%		
80) p-Bromofluorobenzene	16.19	95	226153	24.2294 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.92%		

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
8M403054.D 8260WTR.M Wed Feb 18 13:50:03 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021715\8M403054.D Vial: 17
Acq On : 17 Feb 2015 21:22 Operator: TMB
Sample : L15020878-08 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 13:50 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration

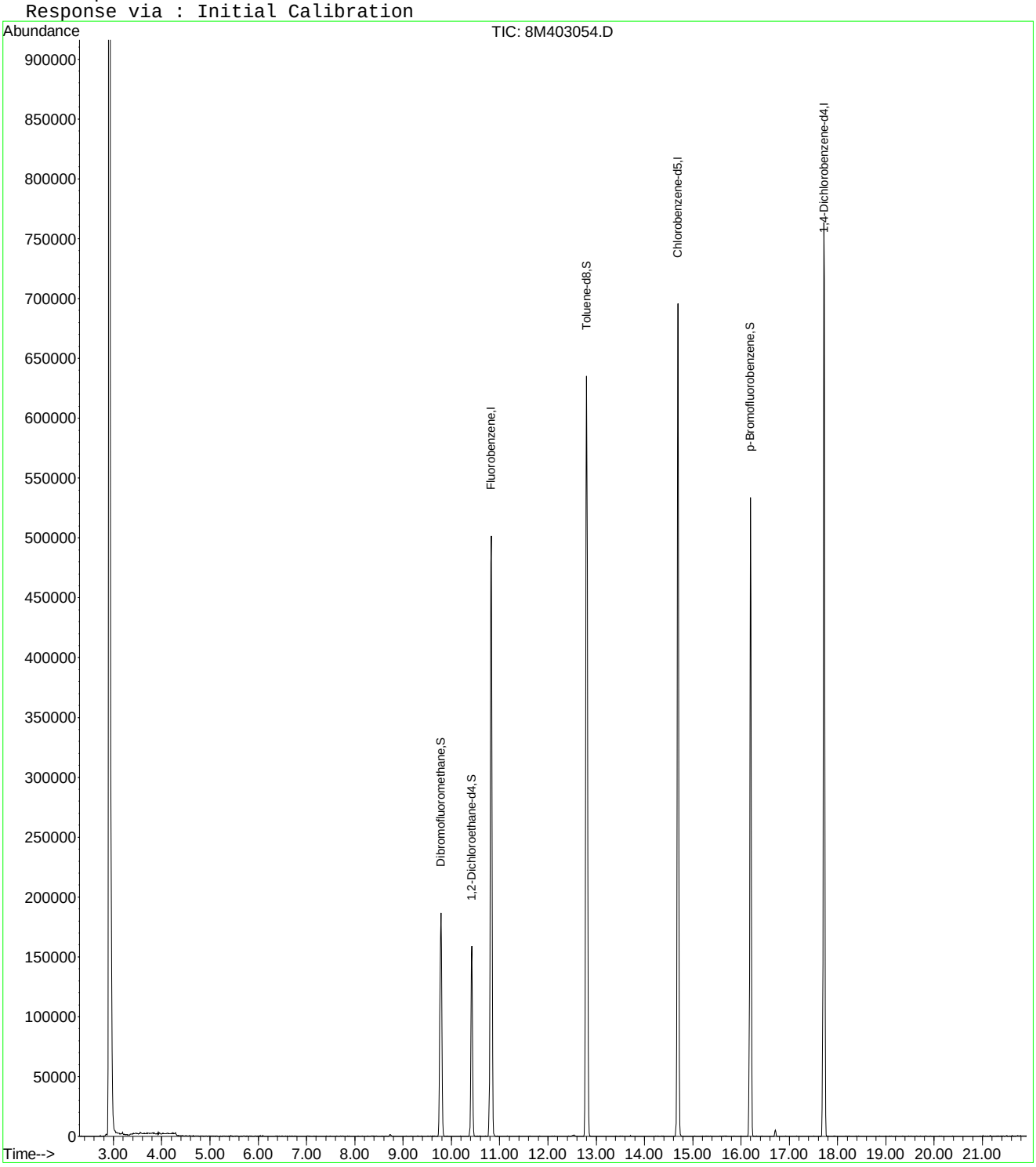

8M403054.D 8260WTR.M Wed Feb 18 13:50:03 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021715\8M403055.D Vial: 18
Acq On : 17 Feb 2015 21:51 Operator: TMB
Sample : L15020878-09 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 13:50:03 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	631699	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	502466	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.72	152	258763	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	161327	24.2665 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.08%		
43) 1,2-Dichloroethane-d4	10.42	65	157993	22.6686 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 90.68%		
58) Toluene-d8	12.80	98	564279	23.6394 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 94.56%		
80) p-Bromofluorobenzene	16.19	95	227804	24.5465 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.20%		

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
8M403055.D 8260WTR.M Wed Feb 18 13:50:04 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021715\8M403055.D Vial: 18
Acq On : 17 Feb 2015 21:51 Operator: TMB
Sample : L15020878-09 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 13:50 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration

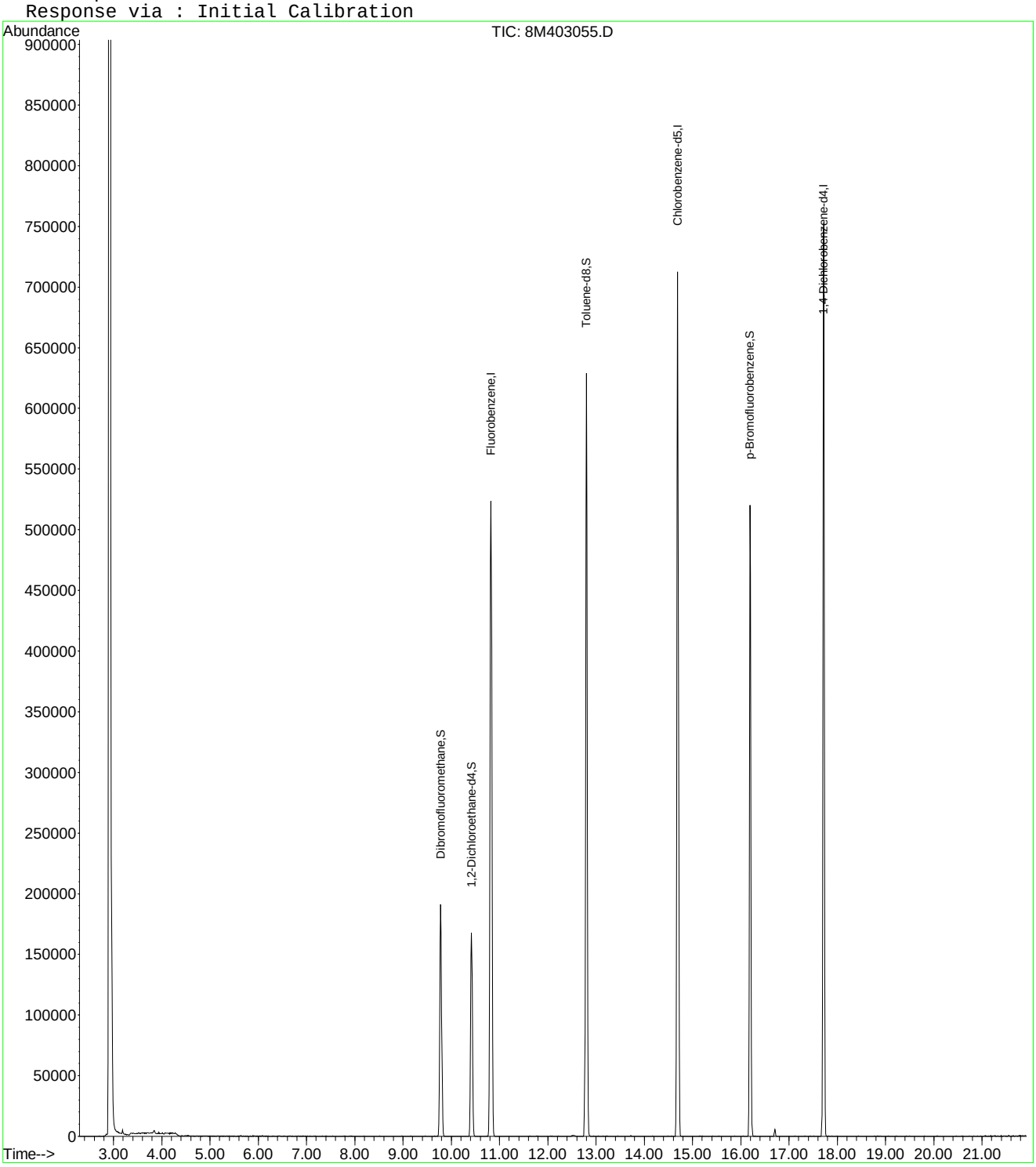

8M403055.D 8260WTR.M Wed Feb 18 13:50:04 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021715\8M403056.D Vial: 19
Acq On : 17 Feb 2015 22:20 Operator: TMB
Sample : L15020878-10 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 13:50:04 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	631121	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	495075	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.72	152	253853	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	162208	24.4213 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.68%		
43) 1,2-Dichloroethane-d4	10.42	65	154501	22.1878 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 88.76%		
58) Toluene-d8	12.80	98	553915	23.5517 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 94.20%		
80) p-Bromofluorobenzene	16.19	95	221514	24.3304 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.32%		

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
8M403056.D 8260WTR.M Wed Feb 18 13:50:05 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021715\8M403056.D Vial: 19
Acq On : 17 Feb 2015 22:20 Operator: TMB
Sample : L15020878-10 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 13:50 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration

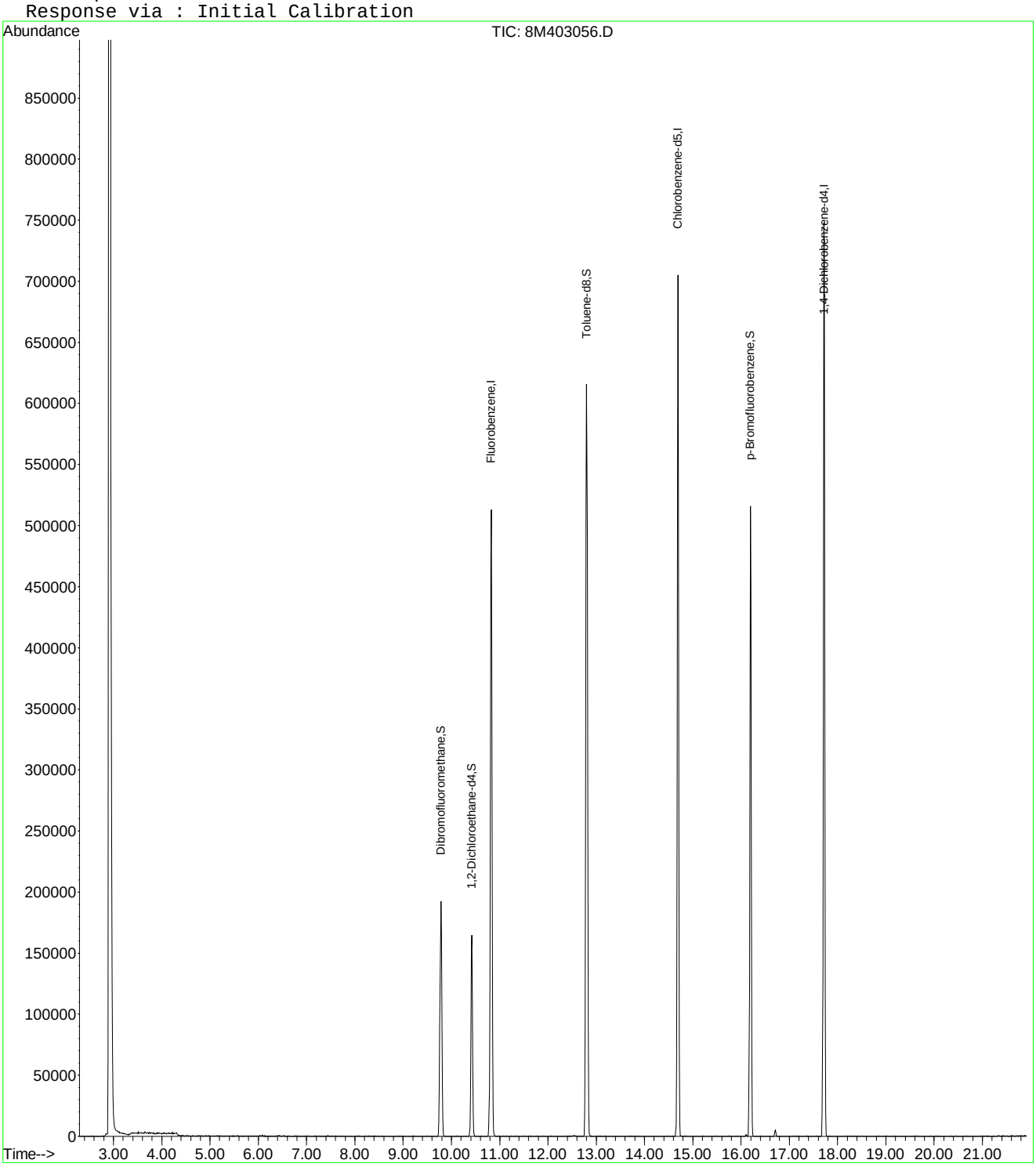

8M403056.D 8260WTR.M Wed Feb 18 13:50:05 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021715\8M403057.D Vial: 20
Acq On : 17 Feb 2015 22:50 Operator: TMB
Sample : L15020878-11 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 13:50:05 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	604766	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	482469	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.72	152	244778	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.78	111	153804	24.1652 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.68%		
43) 1,2-Dichloroethane-d4	10.42	65	143646	21.5279 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 86.12%		
58) Toluene-d8	12.80	98	542579	23.6724 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 94.68%		
80) p-Bromofluorobenzene	16.19	95	218096	24.8431 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.36%		
Target Compounds					Qvalue
47) Trichloroethene	11.32	130	2420	0.3912 ug/L	83

(#) = qualifier out of range (m) = manual integration
8M403057.D 8260WTR.M Wed Feb 18 13:50:06 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021715\8M403057.D Vial: 20
Acq On : 17 Feb 2015 22:50 Operator: TMB
Sample : L15020878-11 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 13:50 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration

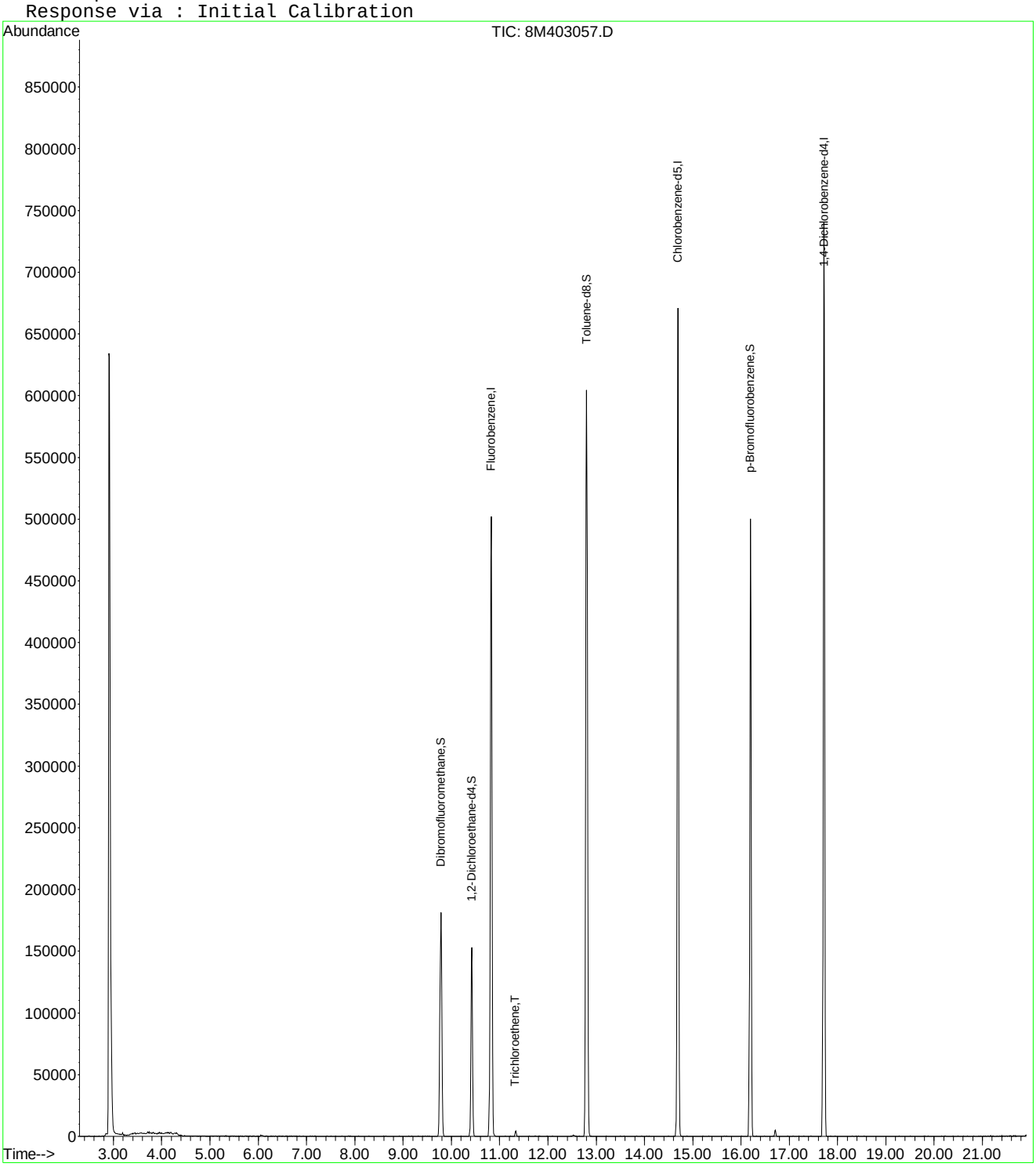

8M403057.D 8260WTR.M Wed Feb 18 13:50:06 2015 Page 2

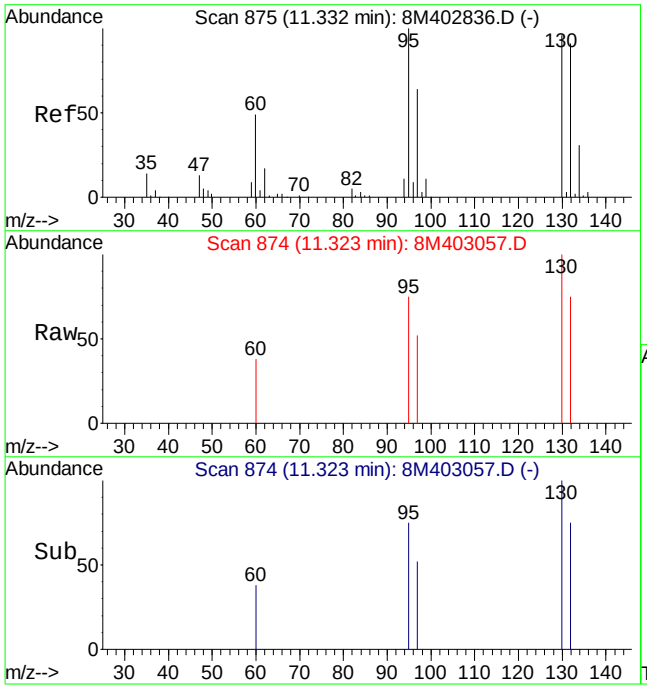

#47
Trichloroethene
Concen: 0.39 ug/L
RT: 11.32 min Scan# 874
Delta R.T. -0.02 min
Lab File: 8M403057.D
Acq: 17 Feb 2015 22:50

Tgt Ion:130 Resp: 2420

Ion	Ratio	Lower	Upper
130	100		
132	81.1	57.4	133.8
95	86.5	63.1	147.1

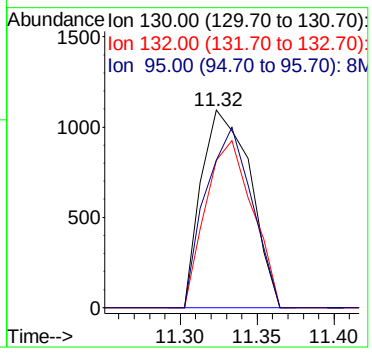

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021715\8M403058.D Vial: 21
Acq On : 17 Feb 2015 23:19 Operator: TMB
Sample : L15020878-12 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 13:50:06 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	600425	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	482356	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.71	152	246299	25.00 ug/L	-0.02

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	155701	24.6401 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.56%		
43) 1,2-Dichloroethane-d4	10.42	65	147590	22.2789 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 89.12%		
58) Toluene-d8	12.80	98	538651	23.5066 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 94.04%		
80) p-Bromofluorobenzene	16.19	95	213636	24.1848 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.72%		

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
8M403058.D 8260WTR.M Wed Feb 18 13:50:07 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021715\8M403058.D Vial: 21
Acq On : 17 Feb 2015 23:19 Operator: TMB
Sample : L15020878-12 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 13:50 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration

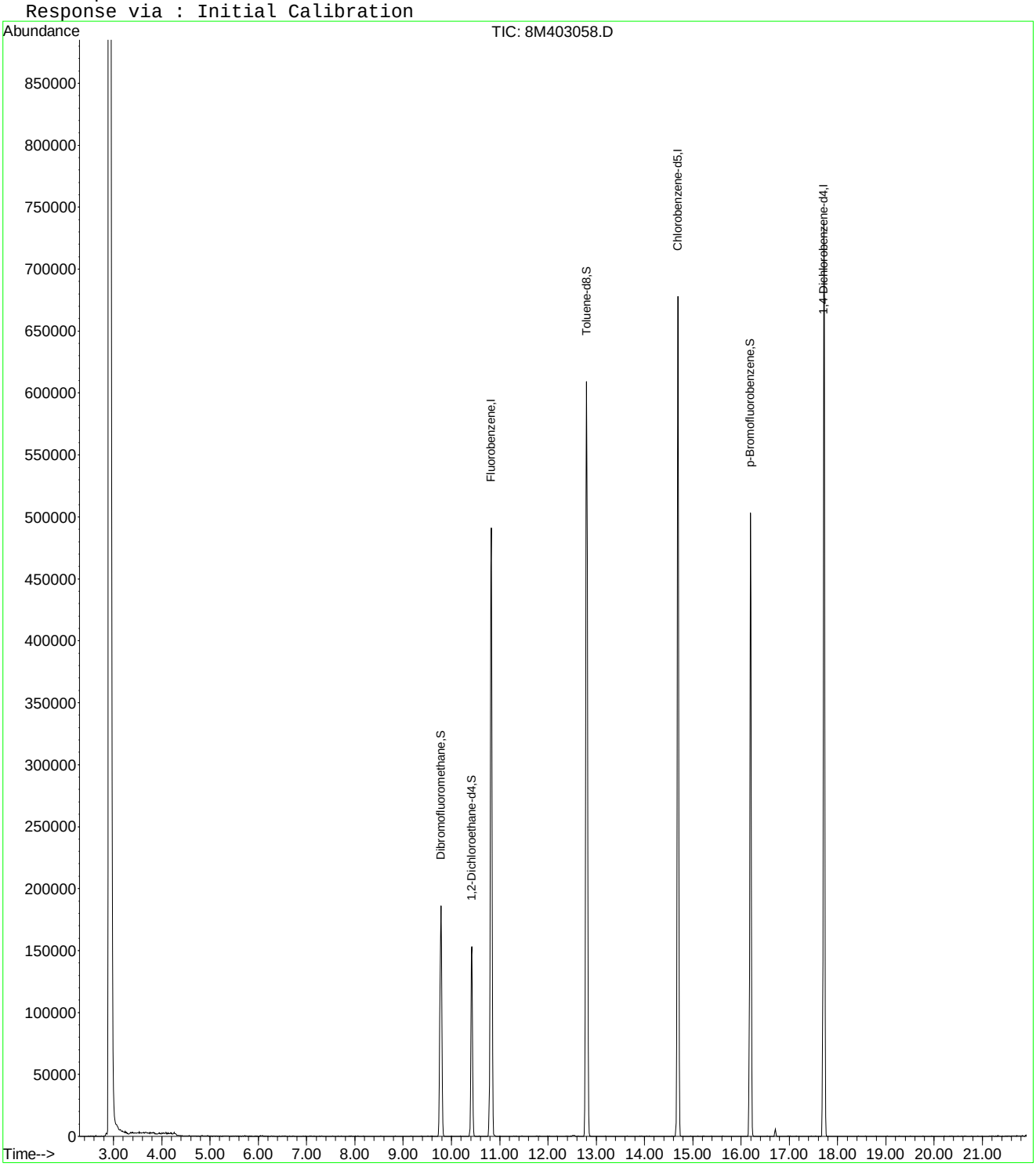

8M403058.D 8260WTR.M Wed Feb 18 13:50:07 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021815\8M403081.D Vial: 13
Acq On : 18 Feb 2015 18:47 Operator: FJB
Sample : L15020878-13 B 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 19 08:30:27 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	636661	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	494853	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.71	152	260546	25.00 ug/L	-0.02
System Monitoring Compounds					
37) Dibromofluoromethane	9.78	111	163987	24.4743 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.88%		
43) 1,2-Dichloroethane-d4	10.42	65	161888	23.0464 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 92.20%		
58) Toluene-d8	12.80	98	563164	23.9557 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 95.84%		
80) p-Bromofluorobenzene	16.19	95	227188	24.3126 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.24%		
Target Compounds					Qvalue
14) 1,1-Dichloroethene	6.59	61	19279	1.7618 ug/L	99
32) cis-1,2-Dichloroethene	9.29	96	85394	11.7230 ug/L	82
45) 1,2-Dichloroethane	10.54	62	13131	1.5798 ug/L	89
47) Trichloroethene	11.33	130	1254480	192.6540 ug/L	99
66) Tetrachloroethene	13.72	164	5548	0.9631 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M403081.D 8260WTR.M Thu Feb 19 08:30:27 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021815\8M403081.D Vial: 13
Acq On : 18 Feb 2015 18:47 Operator: FJB
Sample : L15020878-13 B 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 19 8:30 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration

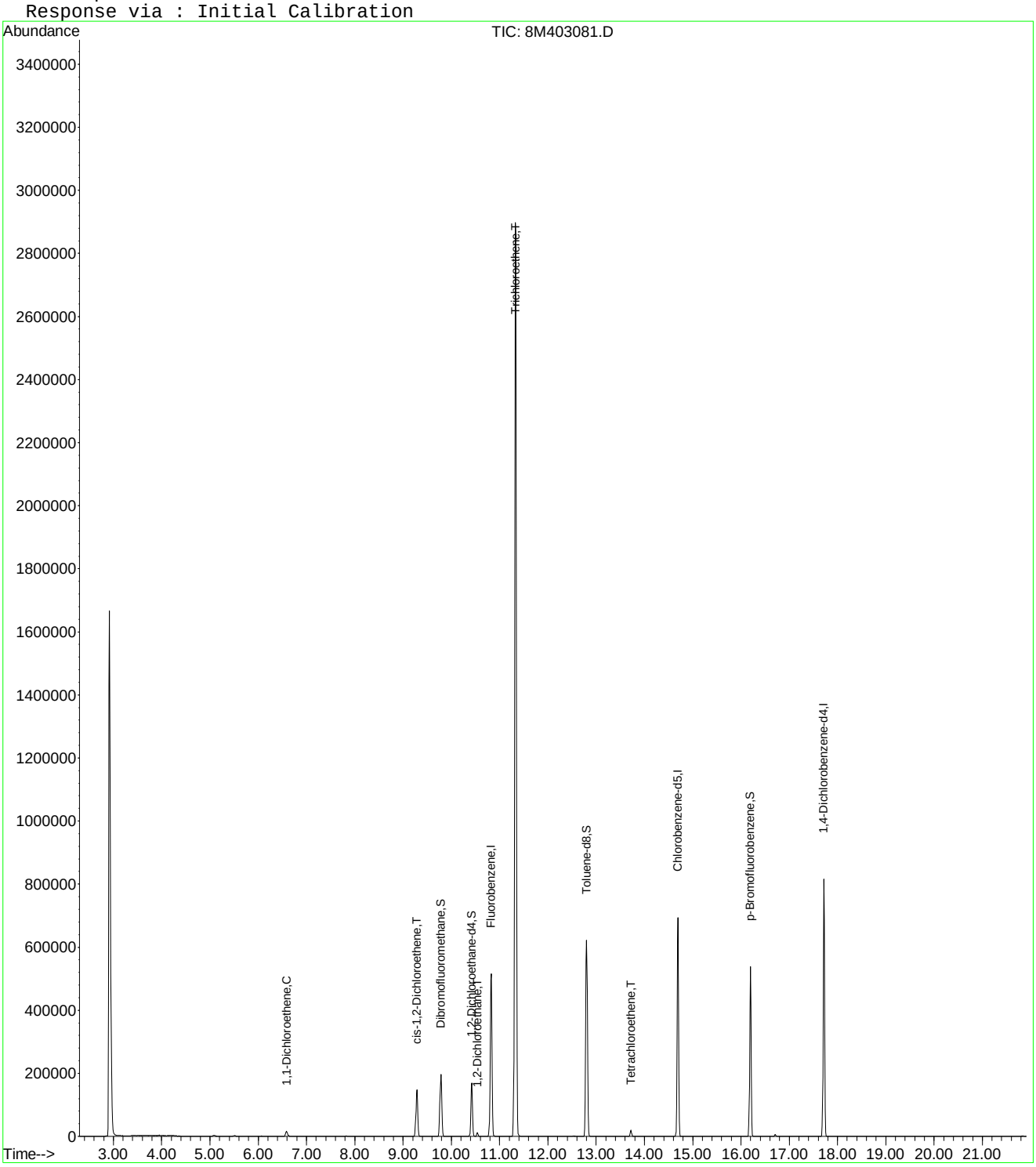

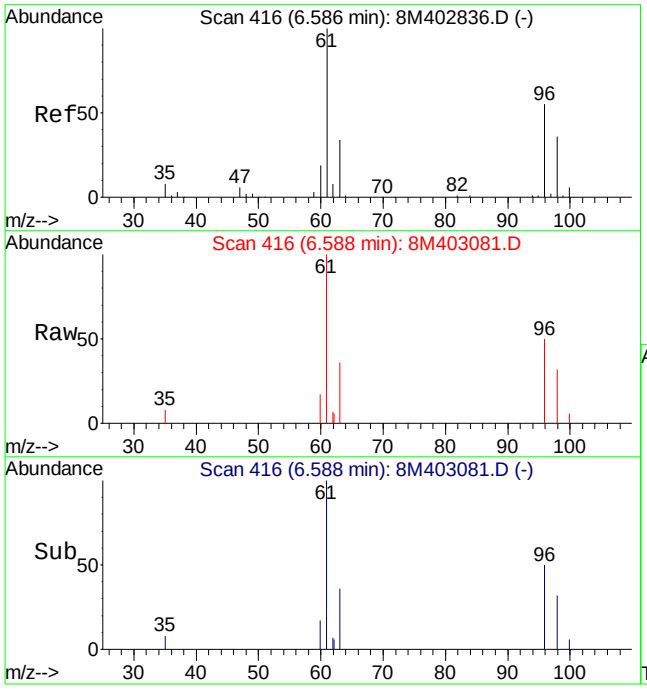

#14
1,1-Dichloroethene
Concen: 1.76 ug/L
RT: 6.59 min Scan# 416
Delta R.T. 0.00 min
Lab File: 8M403081.D
Acq: 18 Feb 2015 18:47

Tgt Ion: 61 Resp: 19279

Ion	Ratio	Lower	Upper
61	100		
96	55.0	32.6	76.0

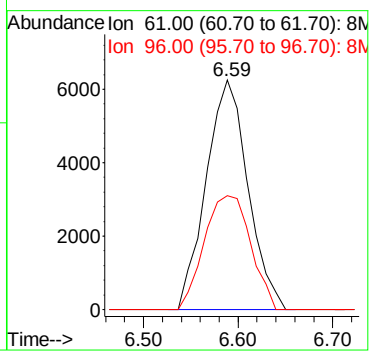

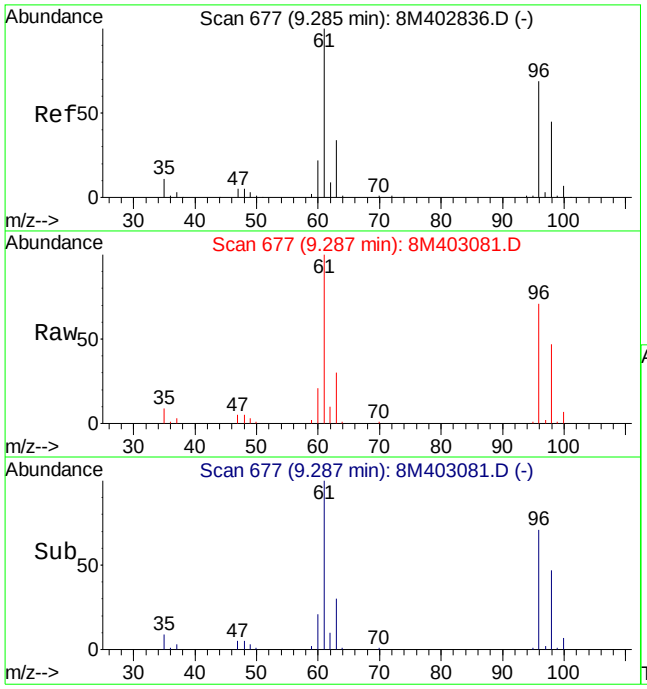

#32
cis-1,2-Dichloroethene
Concen: 11.72 ug/L
RT: 9.29 min Scan# 677
Delta R.T. -0.01 min
Lab File: 8M403081.D
Acq: 18 Feb 2015 18:47

Tgt Ion: 96 Resp: 85394

Ion	Ratio	Lower	Upper
96	100		
61	139.8	98.7	230.3

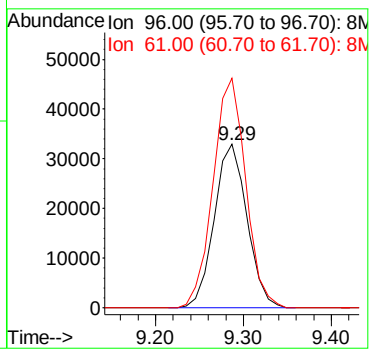

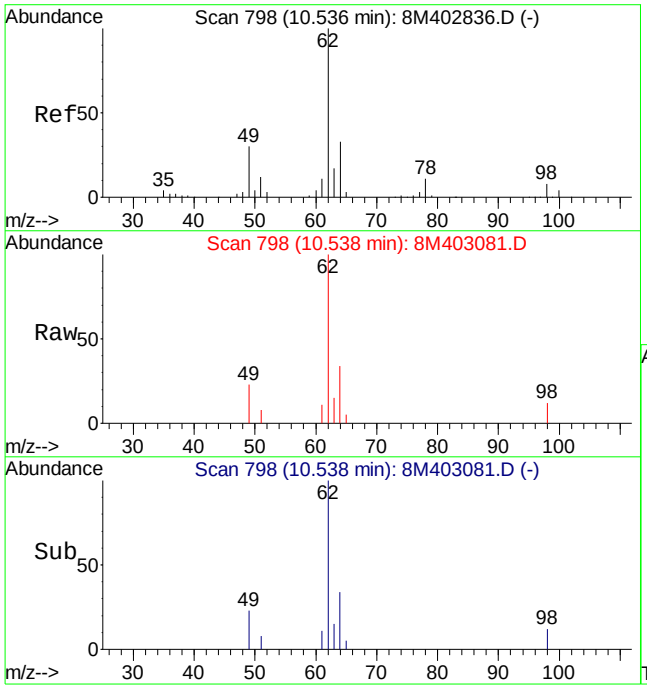

#45
1,2-Dichloroethane
Concen: 1.58 ug/L
RT: 10.54 min Scan# 798
Delta R.T. -0.01 min
Lab File: 8M403081.D
Acq: 18 Feb 2015 18:47

Tgt Ion: 62 Resp: 13131

Ion	Ratio	Lower	Upper
62	100		
64	33.5	19.4	45.2
49	25.2	21.9	51.1

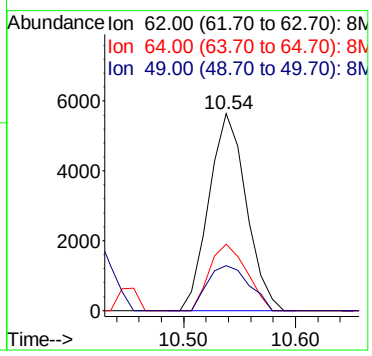

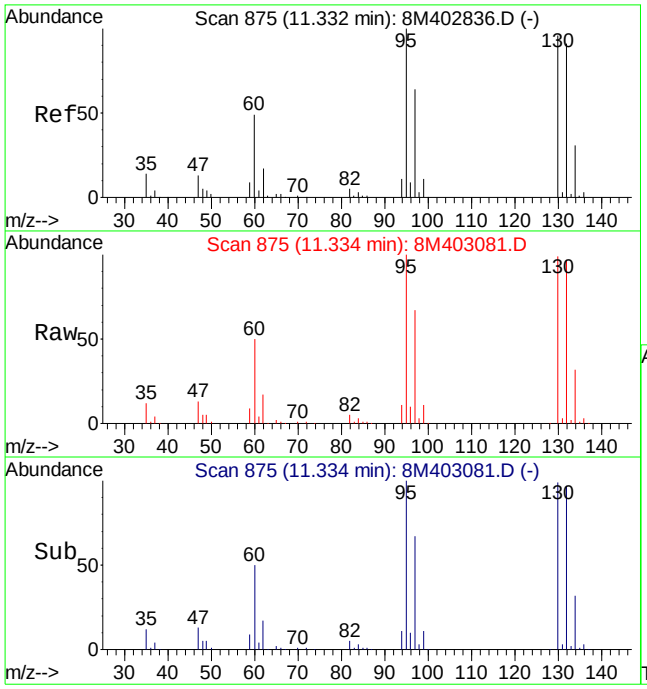

#47
Trichloroethene
Concen: 192.65 ug/L
RT: 11.33 min Scan# 875
Delta R.T. -0.01 min
Lab File: 8M403081.D
Acq: 18 Feb 2015 18:47

Tgt Ion:130 Resp: 1254480

Ion	Ratio	Lower	Upper
130	100		
132	97.1	57.4	133.8
95	103.7	63.1	147.1

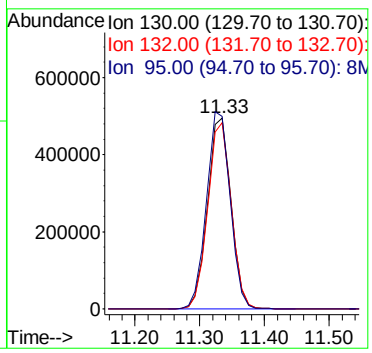

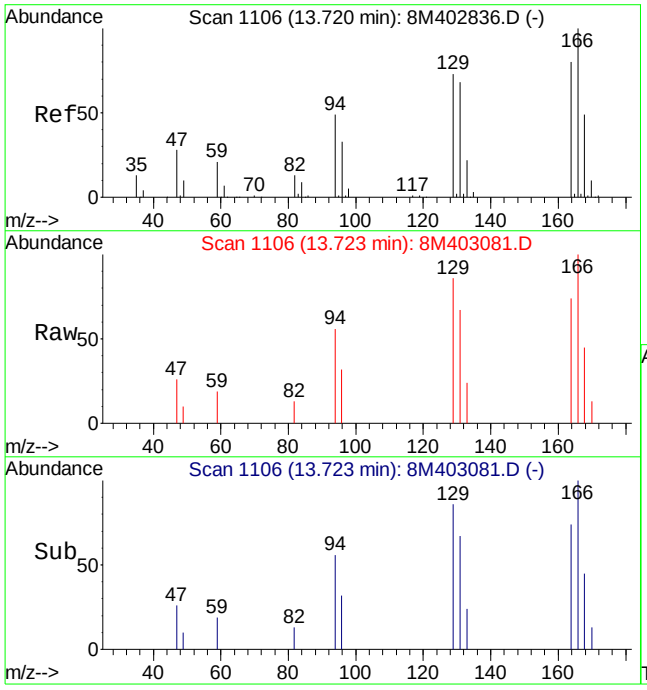

#66
Tetrachloroethene
Concen: 0.96 ug/L
RT: 13.72 min Scan# 1106
Delta R.T. -0.01 min
Lab File: 8M403081.D
Acq: 18 Feb 2015 18:47

Tgt Ion:164 Resp: 5548

Ion	Ratio	Lower	Upper
164	100		
129	90.0	53.9	125.9
94	62.5	37.6	87.8

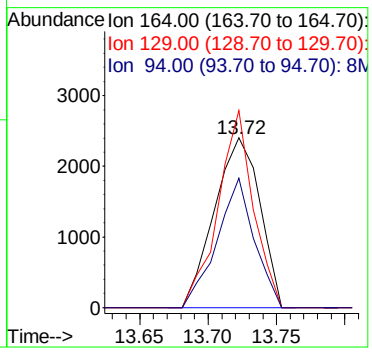

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021815\8M403082.D Vial: 14
Acq On : 18 Feb 2015 19:16 Operator: FJB
Sample : L15020878-14 B 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 19 08:30:28 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	658018	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	510218	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.72	152	264446	25.00 ug/L	-0.01
System Monitoring Compounds					
37) Dibromofluoromethane	9.78	111	177469	25.6268 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.52%		
43) 1,2-Dichloroethane-d4	10.42	65	166763	22.9699 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 91.88%		
58) Toluene-d8	12.80	98	574227	23.6907 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 94.76%		
80) p-Bromofluorobenzene	16.19	95	230490	24.3022 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.20%		

Target Compounds					Qvalue
4) Vinyl Chloride	3.95	62	1408	0.1569 ug/L #	43
14) 1,1-Dichloroethene	6.58	61	21623	1.9119 ug/L	97
32) cis-1,2-Dichloroethene	9.28	96	94700	12.5785 ug/L	84
45) 1,2-Dichloroethane	10.53	62	13932	1.6217 ug/L	91
47) Trichloroethene	11.33	130	1321243	196.3214 ug/L	99
48) Methylcyclohexane	11.33	83	17049	1.5545 ug/L #	1
66) Tetrachloroethene	13.72	164	5273	0.8878 ug/L	94

(#) = qualifier out of range (m) = manual integration
8M403082.D 8260WTR.M Thu Feb 19 08:30:28 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021815\8M403082.D Vial: 14
Acq On : 18 Feb 2015 19:16 Operator: FJB
Sample : L15020878-14 B 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 19 8:30 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration

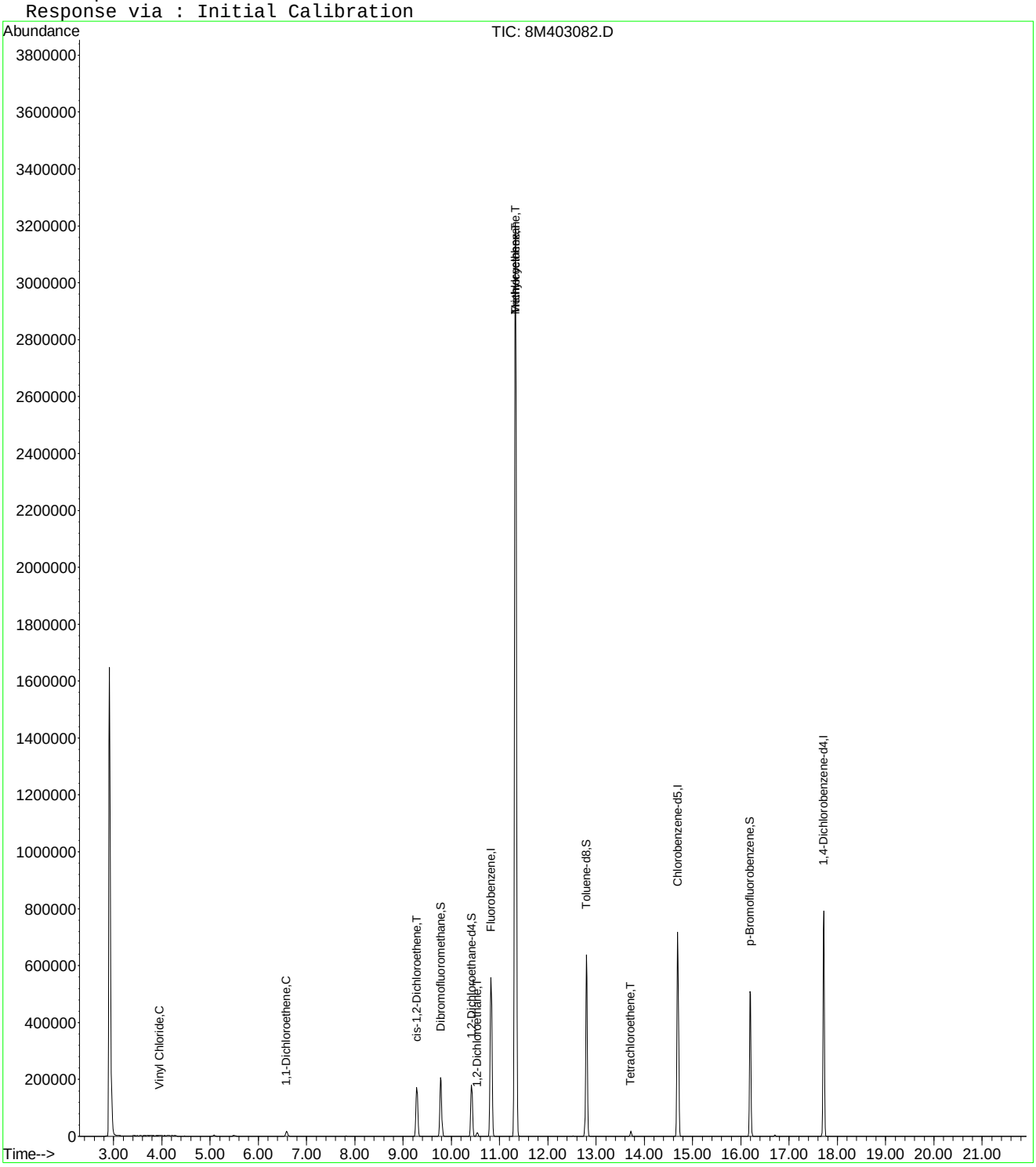

8M403082.D 8260WTR.M Thu Feb 19 08:30:29 2015 Page 2

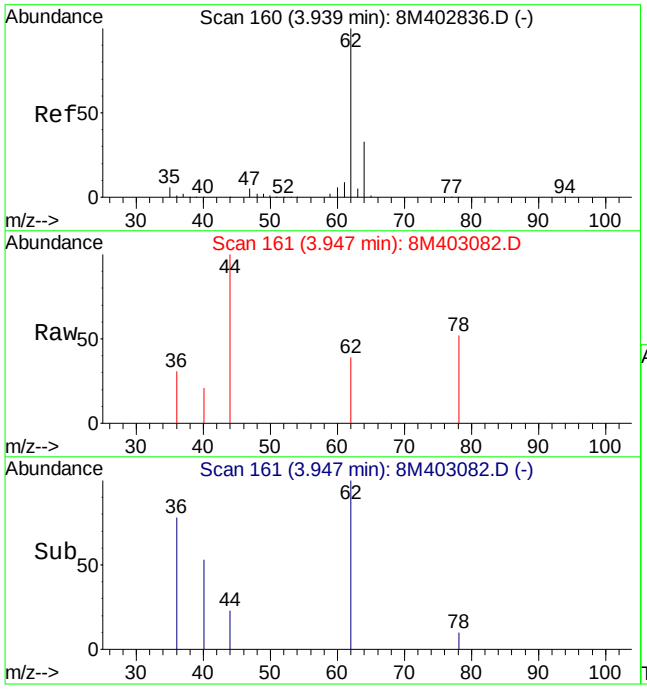

#4
Vinyl Chloride
Concen: 0.16 ug/L
RT: 3.95 min Scan# 161
Delta R.T. 0.01 min
Lab File: 8M403082.D
Acq: 18 Feb 2015 19:16

Tgt Ion: 62 Resp: 1408

Ion	Ratio	Lower	Upper
62	100		
64	0.0	19.1	44.7#

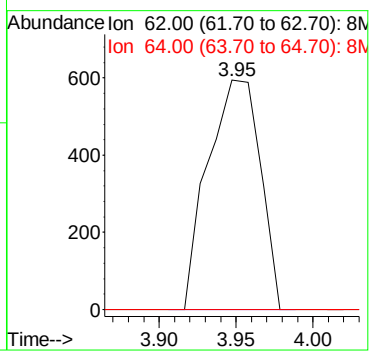

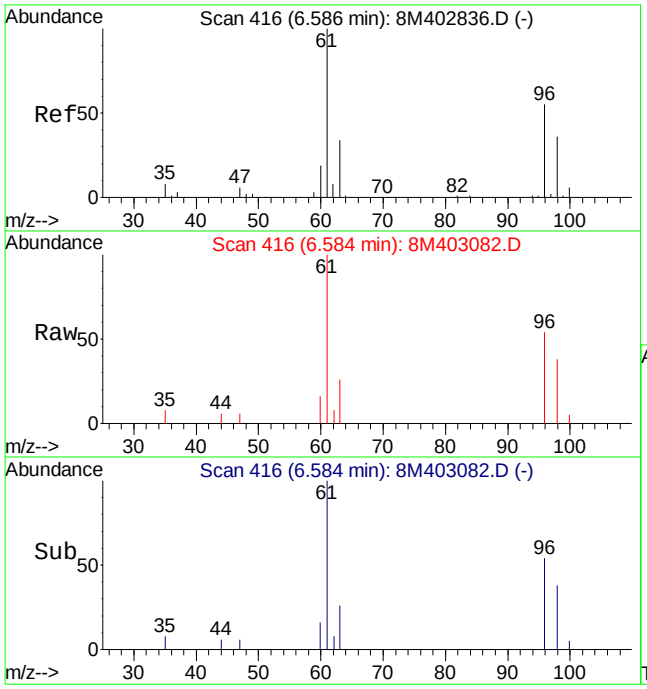

#14
1,1-Dichloroethene
Concen: 1.91 ug/L
RT: 6.58 min Scan# 416
Delta R.T. -0.00 min
Lab File: 8M403082.D
Acq: 18 Feb 2015 19:16

Tgt Ion: 61 Resp: 21623

Ion	Ratio	Lower	Upper
61	100		
96	56.6	32.6	76.0

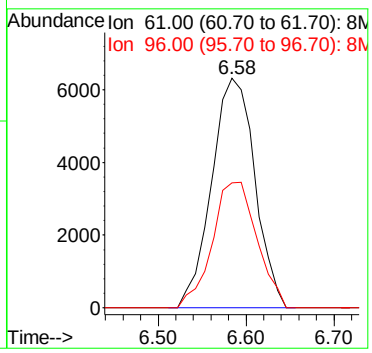

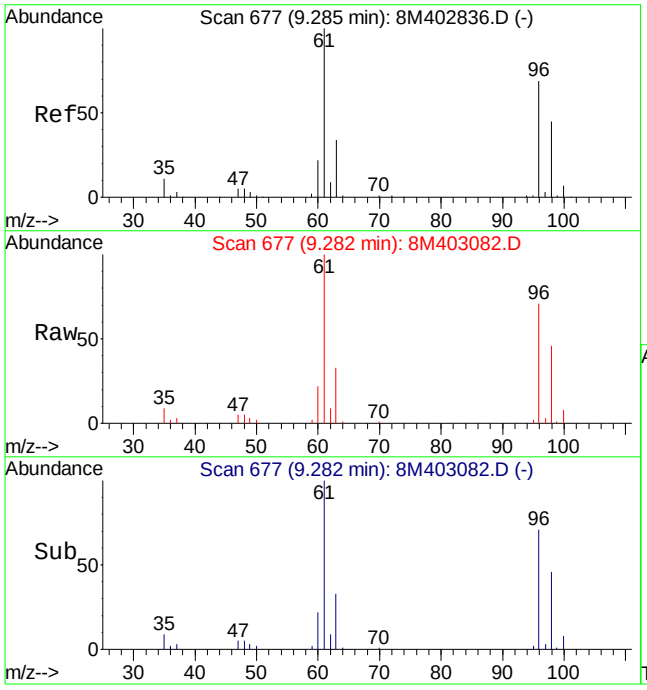

#32
cis-1,2-Dichloroethene
Concen: 12.58 ug/L
RT: 9.28 min Scan# 677
Delta R.T. -0.01 min
Lab File: 8M403082.D
Acq: 18 Feb 2015 19:16

Tgt Ion: 96 Resp: 94700

Ion	Ratio	Lower	Upper
96	100		
61	142.7	98.7	230.3

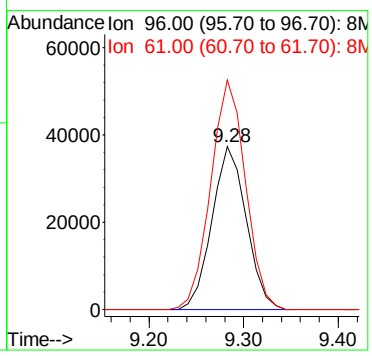

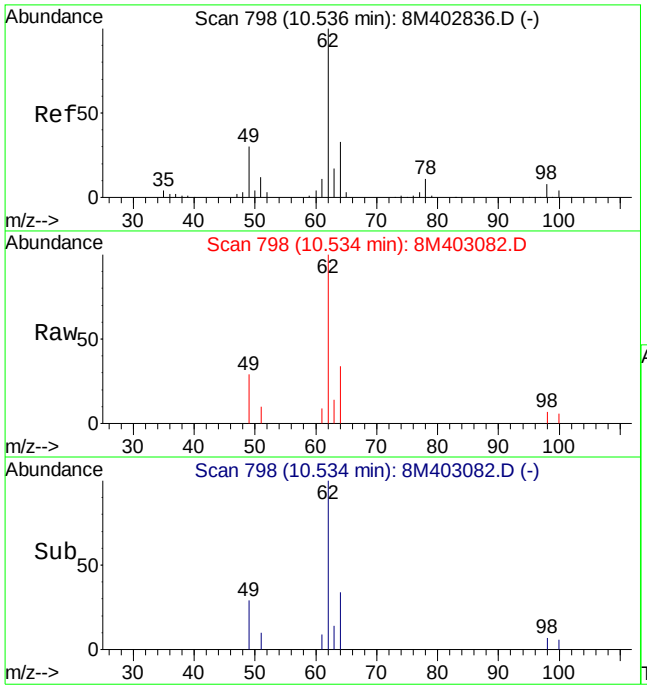

#45
1,2-Dichloroethane
Concen: 1.62 ug/L
RT: 10.53 min Scan# 798
Delta R.T. -0.01 min
Lab File: 8M403082.D
Acq: 18 Feb 2015 19:16

Tgt Ion: 62 Resp: 13932

Ion	Ratio	Lower	Upper
62	100		
64	30.9	19.4	45.2
49	27.8	21.9	51.1

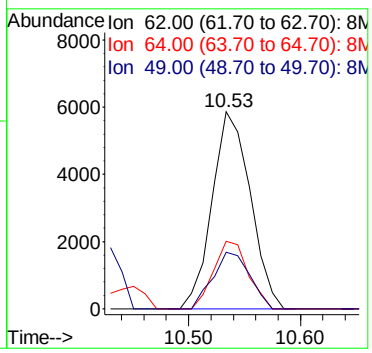

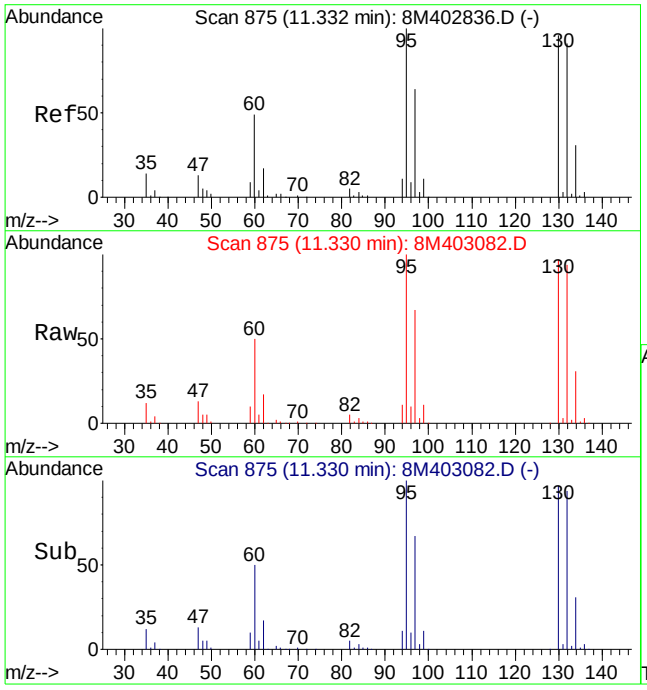

#47
Trichloroethene
Concen: 196.32 ug/L
RT: 11.33 min Scan# 875
Delta R.T. -0.01 min
Lab File: 8M403082.D
Acq: 18 Feb 2015 19:16

Tgt Ion:130 Resp: 1321243

Ion	Ratio	Lower	Upper
130	100		
132	96.8	57.4	133.8
95	103.4	63.1	147.1

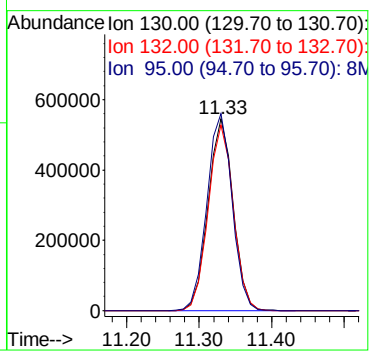

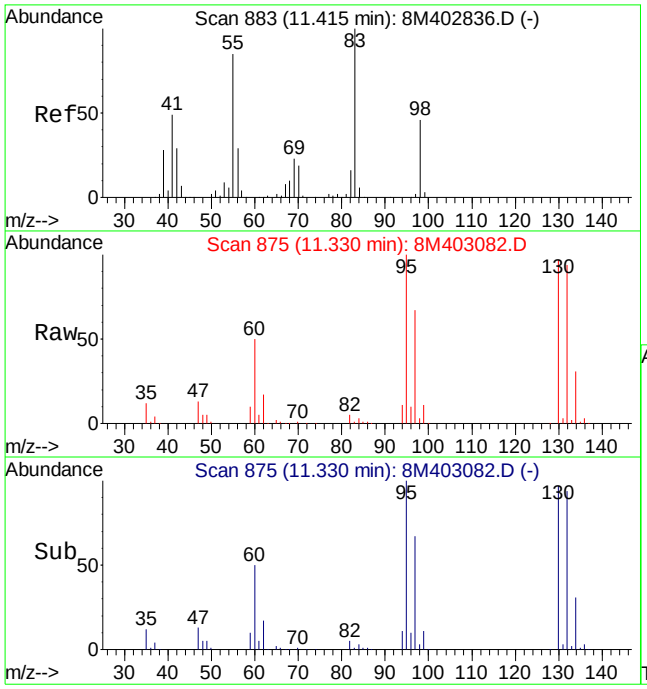

#48
Methylcyclohexane
Concen: 1.55 ug/L
RT: 11.33 min Scan# 875
Delta R.T. -0.09 min
Lab File: 8M403082.D
Acq: 18 Feb 2015 19:16

Tgt Ion: 83 Resp: 17049

Ion	Ratio	Lower	Upper
83	100		
55	0.0	50.9	118.9#
98	213.8	27.5	64.1#

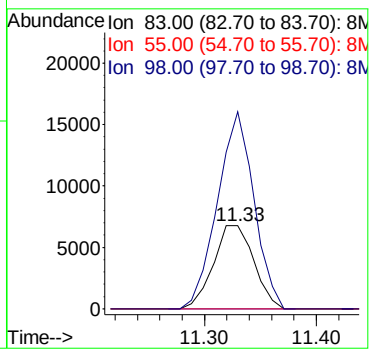

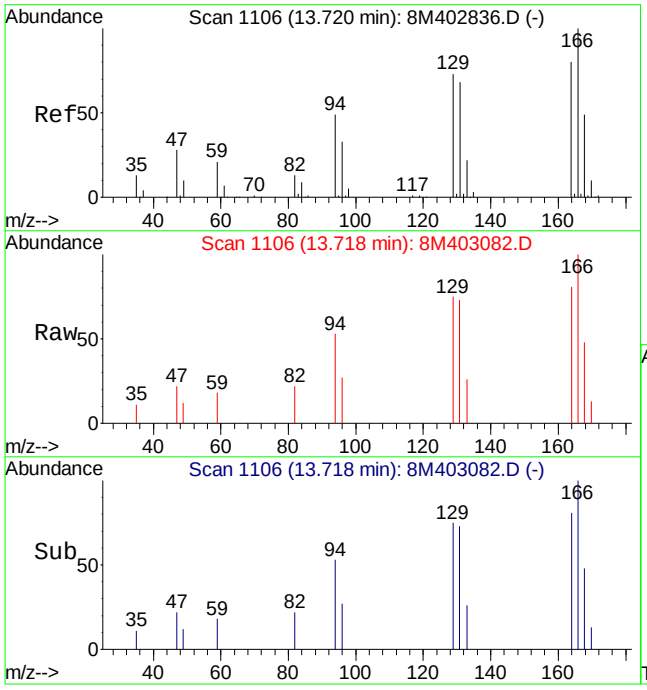

#66
Tetrachloroethene
Concen: 0.89 ug/L
RT: 13.72 min Scan# 1106
Delta R.T. -0.01 min
Lab File: 8M403082.D
Acq: 18 Feb 2015 19:16

Tgt Ion:164 Resp: 5273

Ion	Ratio	Lower	Upper
164	100		
129	96.7	53.9	125.9
94	66.6	37.6	87.8

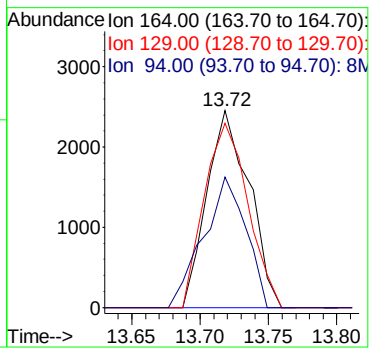

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021715\8M403059.D Vial: 22
Acq On : 17 Feb 2015 23:47 Operator: TMB
Sample : L15020878-15 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 13:50:07 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	660037	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	499956	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.72	152	254773	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	163666	23.5613 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.24%		
43) 1,2-Dichloroethane-d4	10.42	65	155133	21.3026 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 85.20%		
58) Toluene-d8	12.80	98	583696	24.5756 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.32%		
80) p-Bromofluorobenzene	16.19	95	215674	23.6034 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.40%		

Target Compounds					Qvalue
13) Acetone	6.36	43	417	0.4169 ug/L #	48
16) Dimethyl Sulfide	6.84	62	1536	0.2031 ug/L	68
20) Carbon Disulfide	7.41	76	25539	1.0902 ug/L	94
28) Ethyl-Tert-Butyl ether	8.74	59	4806	0.2649 ug/L #	40

(#) = qualifier out of range (m) = manual integration
8M403059.D 8260WTR.M Wed Feb 18 13:50:08 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021715\8M403059.D Vial: 22
Acq On : 17 Feb 2015 23:47 Operator: TMB
Sample : L15020878-15 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 13:50 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration

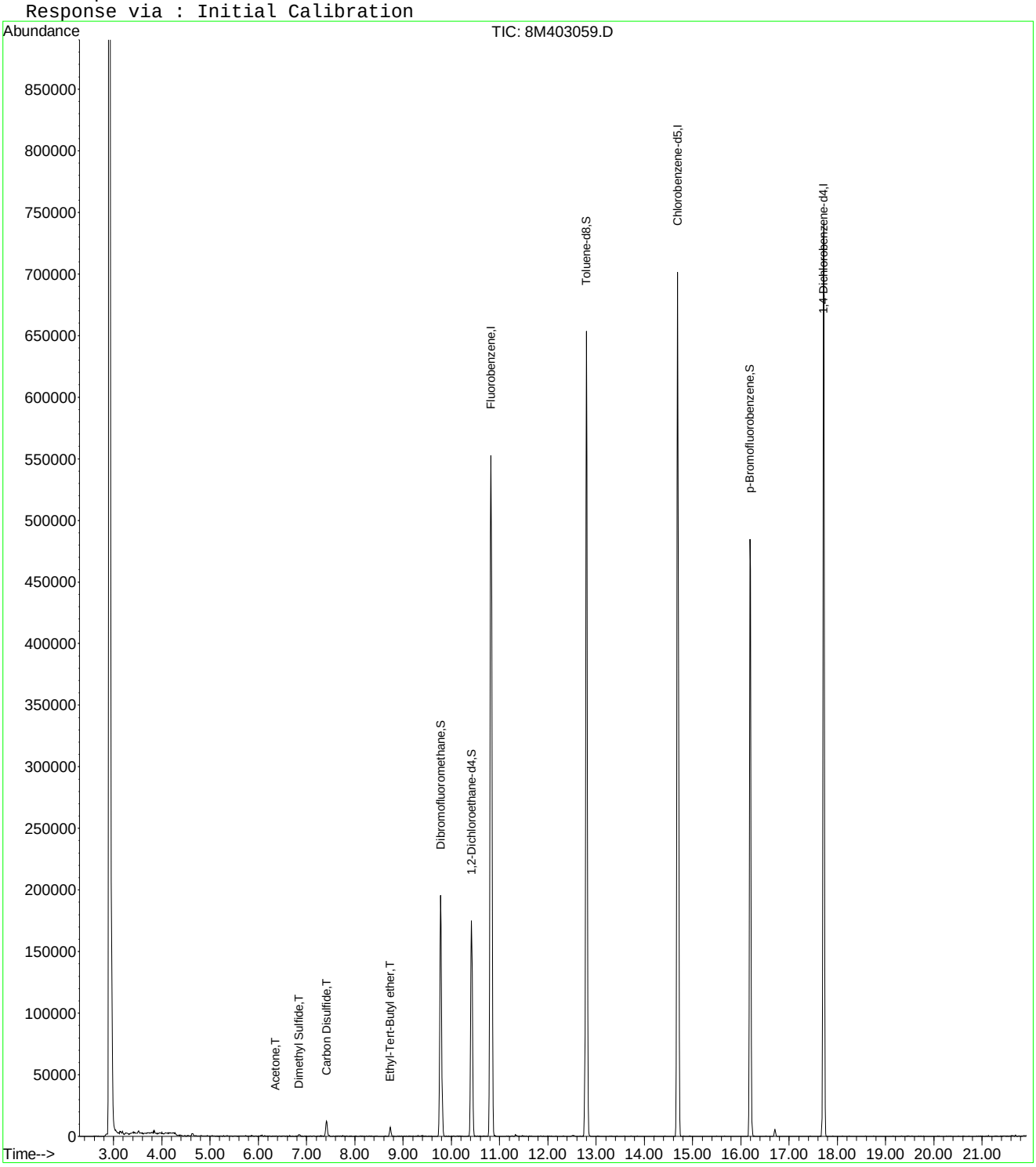

8M403059.D 8260WTR.M Wed Feb 18 13:50:08 2015 Page 2

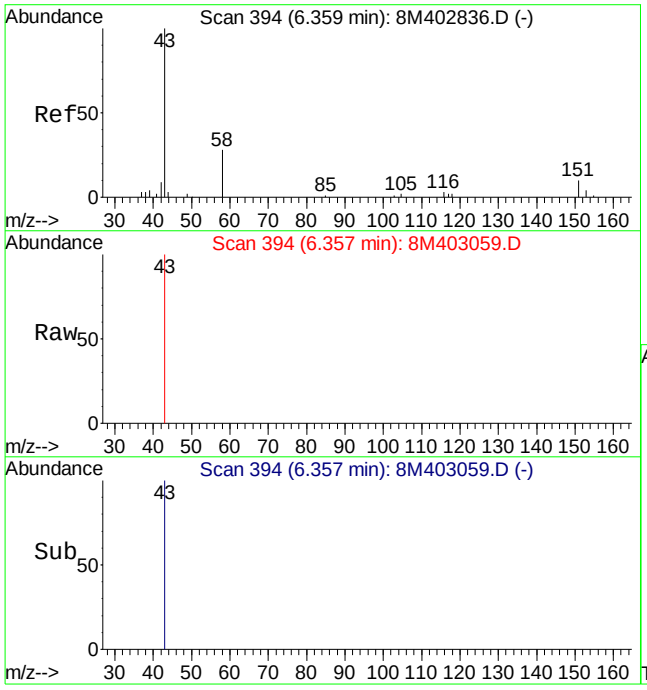

#13
Acetone
Concen: 0.42 ug/L
RT: 6.36 min Scan# 394
Delta R.T. 0.00 min
Lab File: 8M403059.D
Acq: 17 Feb 2015 23:47

Tgt Ion: 43 Resp: 417

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

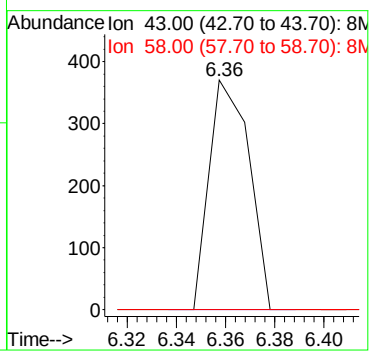

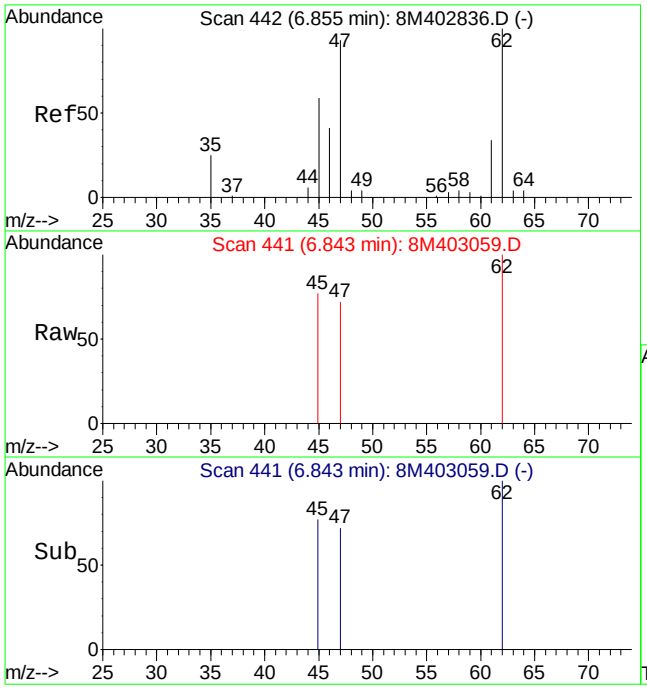

#16
Dimethyl Sulfide
Concen: 0.20 ug/L
RT: 6.84 min Scan# 441
Delta R.T. -0.01 min
Lab File: 8M403059.D
Acq: 17 Feb 2015 23:47

Tgt Ion: 62 Resp: 1536

Ion	Ratio	Lower	Upper
62	100		
47	65.2	58.0	135.2

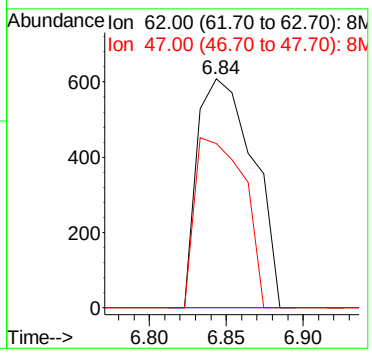

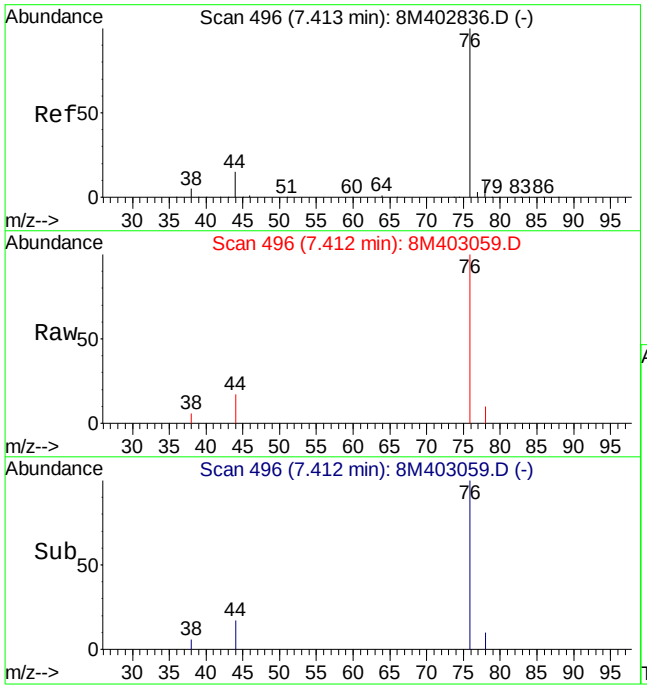

#20
Carbon Disulfide
Concen: 1.09 ug/L
RT: 7.41 min Scan# 496
Delta R.T. -0.01 min
Lab File: 8M403059.D
Acq: 17 Feb 2015 23:47

Tgt Ion: 76 Resp: 25539

Ion	Ratio	Lower	Upper
76	100		
78	7.2	5.6	13.0

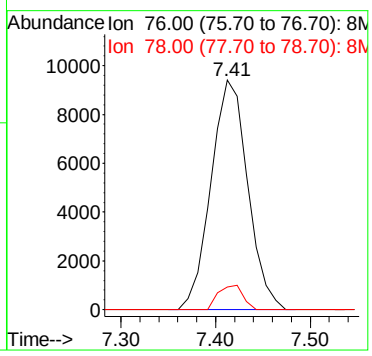

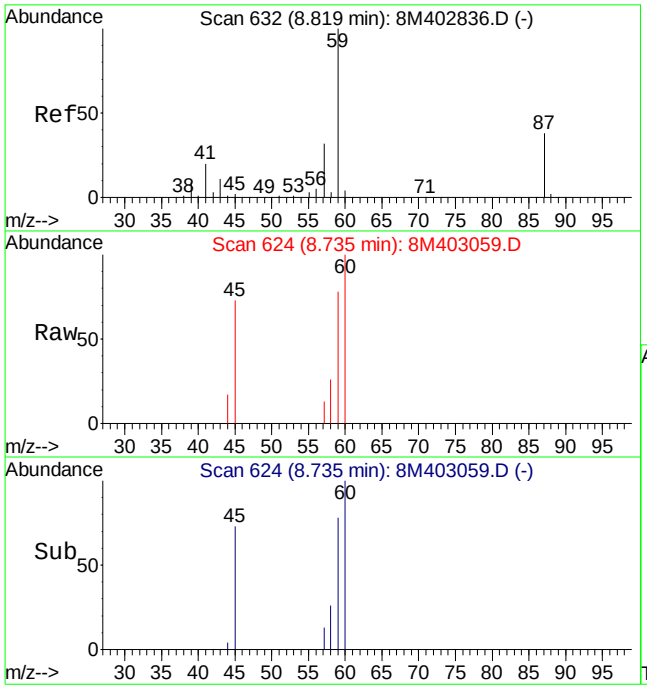

#28
Ethyl-Tert-Butyl ether
Concen: 0.26 ug/L
RT: 8.74 min Scan# 624
Delta R.T. -0.08 min
Lab File: 8M403059.D
Acq: 17 Feb 2015 23:47

Tgt Ion: 59 Resp: 4806

Ion	Ratio	Lower	Upper
59	100		
87	0.0	22.4	52.2#
57	0.0	19.0	44.2#

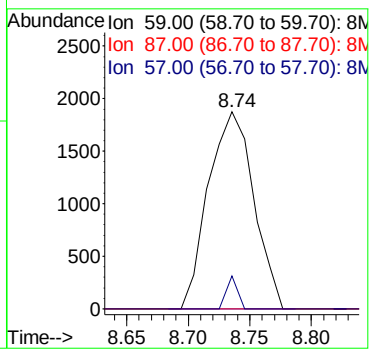

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021715\8M403048.D Vial: 11
Acq On : 17 Feb 2015 18:29 Operator: TMB
Sample : L15020878-16 A REF 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 13:49:55 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	694515	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	545905	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.72	152	281447	25.00 ug/L	-0.01
System Monitoring Compounds					
37) Dibromofluoromethane	9.78	111	176987	24.2141 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.84%		
43) 1,2-Dichloroethane-d4	10.42	65	171692	22.4060 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 89.64%		
58) Toluene-d8	12.80	98	614819	23.7072 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 94.84%		
80) p-Bromofluorobenzene	16.19	95	246886	24.4585 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.84%		
Target Compounds					Qvalue
32) cis-1,2-Dichloroethene	9.28	96	8279	1.0419 ug/L	88
47) Trichloroethene	11.33	130	404934	57.0066 ug/L	98
66) Tetrachloroethene	13.72	164	2243	0.3530 ug/L	92

(#) = qualifier out of range (m) = manual integration
8M403048.D 8260WTR.M Wed Feb 18 13:49:56 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021715\8M403048.D Vial: 11
Acq On : 17 Feb 2015 18:29 Operator: TMB
Sample : L15020878-16 A REF 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 13:49 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration

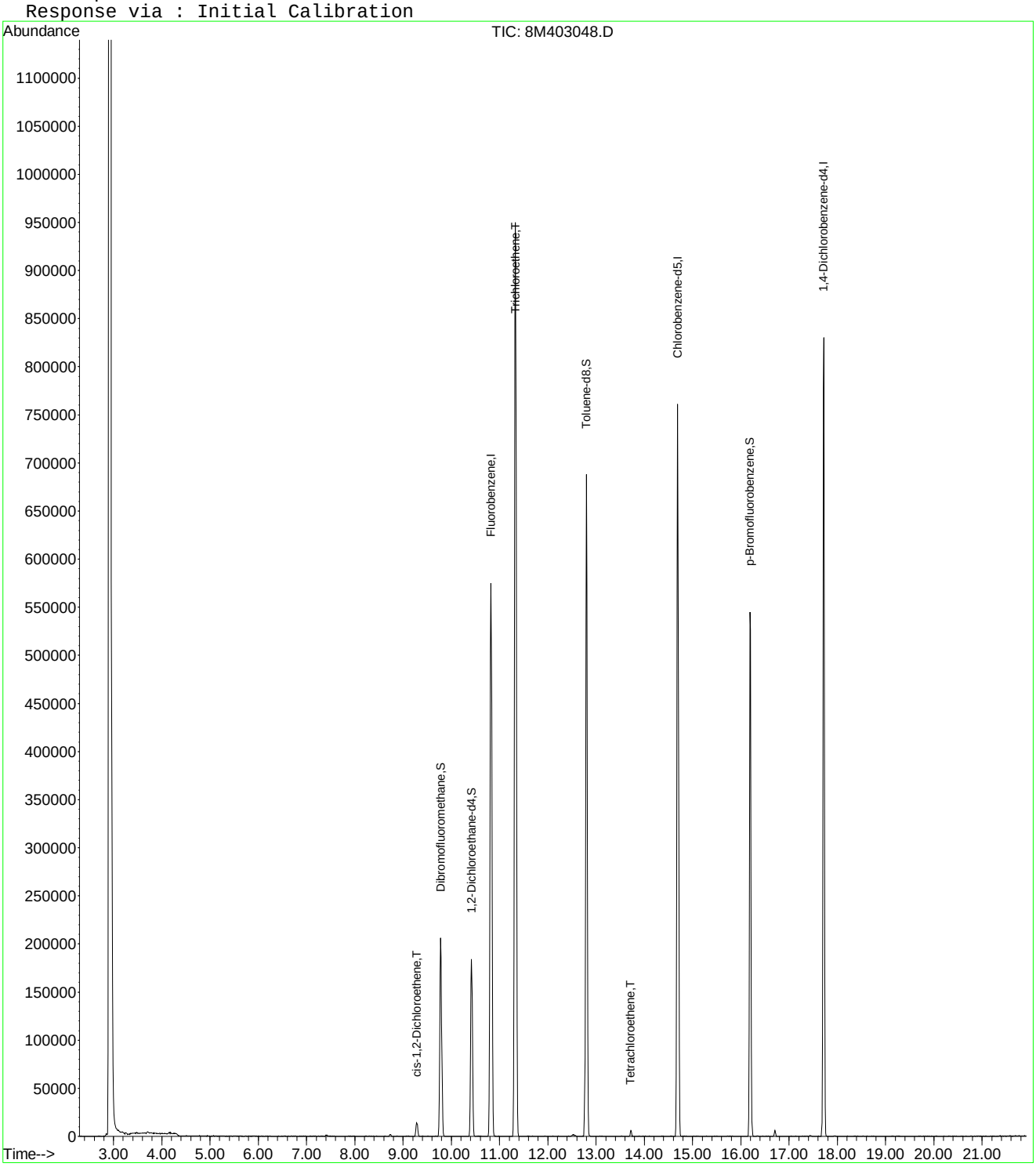

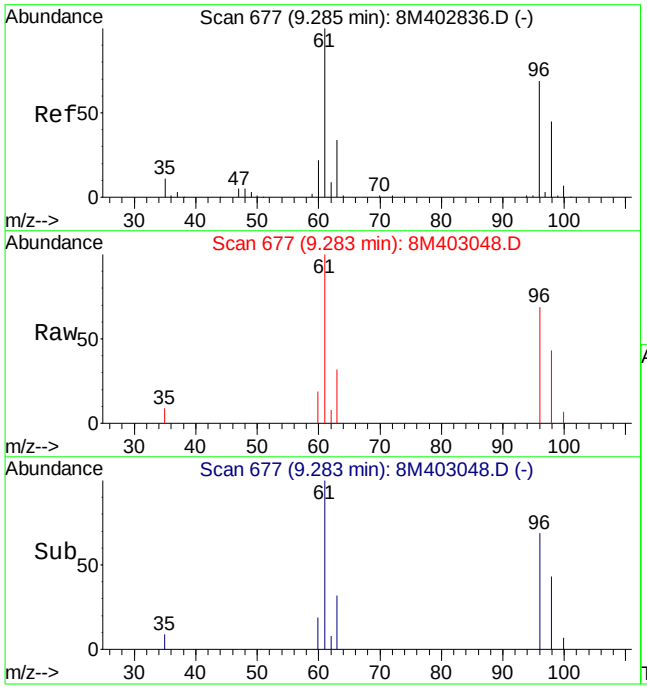

#32
cis-1,2-Dichloroethene
Concen: 1.04 ug/L
RT: 9.28 min Scan# 677
Delta R.T. -0.01 min
Lab File: 8M403048.D
Acq: 17 Feb 2015 18:29

Tgt Ion: 96 Resp: 8279

Ion	Ratio	Lower	Upper
96	100		
61	148.0	98.7	230.3

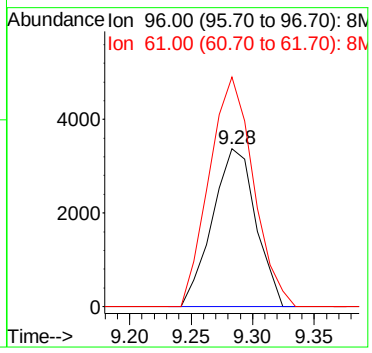

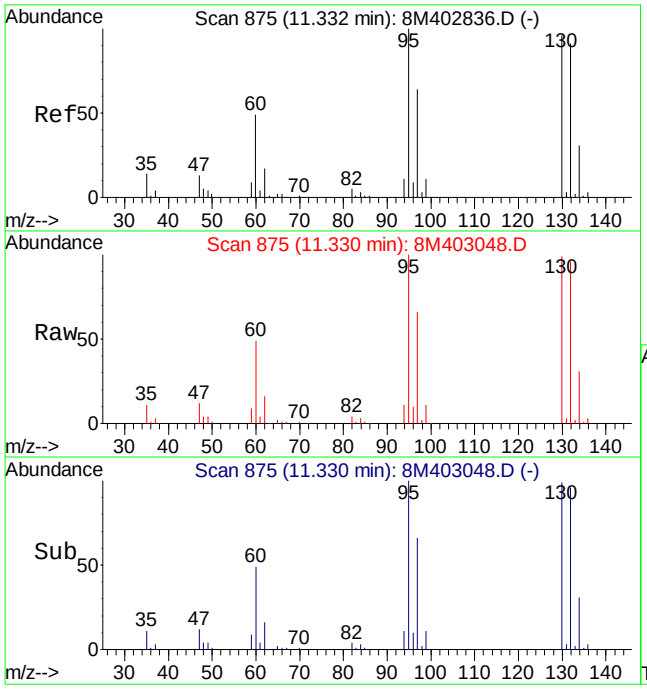

#47
Trichloroethene
Concen: 57.01 ug/L
RT: 11.33 min Scan# 875
Delta R.T. -0.01 min
Lab File: 8M403048.D
Acq: 17 Feb 2015 18:29

Tgt Ion:130 Resp: 404934

Ion	Ratio	Lower	Upper
130	100		
132	96.2	57.4	133.8
95	102.3	63.1	147.1

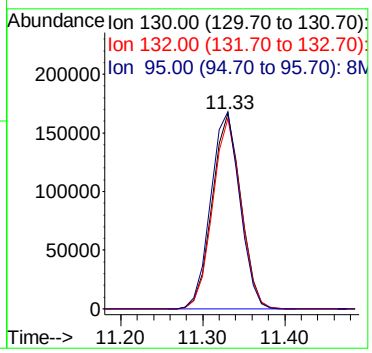

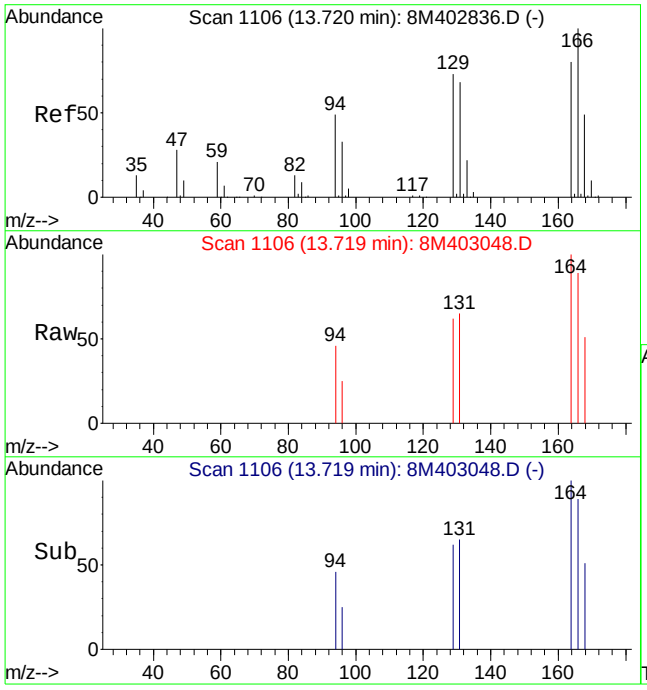

#66
Tetrachloroethene
Concen: 0.35 ug/L
RT: 13.72 min Scan# 1106
Delta R.T. -0.01 min
Lab File: 8M403048.D
Acq: 17 Feb 2015 18:29

Tgt Ion:164 Resp: 2243

Ion	Ratio	Lower	Upper
164	100		
129	86.5	53.9	125.9
94	52.2	37.6	87.8

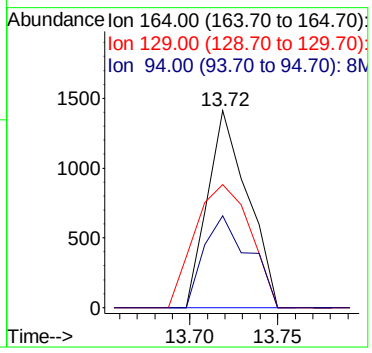

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\021715\8M403045.D Vial: 8
Acq On : 17 Feb 2015 17:02 Operator: TMB
Sample : L15020878-17 A MS 826-LOW Inst : HPMS8
Misc : 1,1 STD68939 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 17:24:29 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	765690	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	589758	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.71	152	309869	25.00 ug/L	-0.02

System Monitoring Compounds					
37) Dibromofluoromethane	9.78	111	190491	23.6391 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.56%		
43) 1,2-Dichloroethane-d4	10.42	65	183593	21.7320 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 86.92%		
58) Toluene-d8	12.80	98	673569	24.0413 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.16%		
80) p-Bromofluorobenzene	16.19	95	268825	24.1892 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.76%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.24	85	245669	20.0277 ug/L	100
3) Chloromethane	3.70	50	211414	19.9216 ug/L	99
4) Vinyl Chloride	3.94	62	225430	21.5842 ug/L	97
5) 1,3-Butadiene	3.98	54	103041	11.1143 ug/L	92
6) Bromomethane	4.84	94	81706	20.2672 ug/L	99
7) Chloroethane	5.01	64	130736	20.2504 ug/L	97
8) Trichlorofluoromethane	5.49	101	274706	18.9649 ug/L	99
10) Isoprene	6.06	67	241276	21.5045 ug/L	89
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	158366	19.3543 ug/L	94
13) Acetone	6.35	43	22676	19.5440 ug/L #	30
14) 1,1-Dichloroethene	6.59	61	240085	18.2431 ug/L	92
15) Tert-Butyl Alcohol	6.70	59	796	3.2639 ug/L #	59
16) Dimethyl Sulfide	6.85	62	185291	21.1248 ug/L	100
17) Iodomethane	7.10	142	29187	21.7930 ug/L	98
18) Methyl acetate	7.12	43	59873	12.4099 ug/L	97
19) Methylene Chloride	7.37	84	159139	19.3371 ug/L	89
20) Carbon Disulfide	7.41	76	483948	17.8073 ug/L	99
21) Acrylonitrile	7.55	53	32097	18.9453 ug/L	99
22) Methyl Tert Butyl Ether	7.58	73	299539	20.9351 ug/L	93
23) trans-1,2-Dichloroethene	7.82	61	246631	19.4571 ug/L	89
24) n-Hexane	7.90	57	211108	18.9773 ug/L	92
26) Vinyl Acetate	8.41	43	210555	58.1662 ug/L	99
27) 1,1-Dichloroethane	8.44	63	316115	19.8454 ug/L	98
29) 2-Butanone	9.00	43	32398	18.7571 ug/L	98
31) 2,2-Dichloropropane	9.21	77	248519	21.1340 ug/L	99
32) cis-1,2-Dichloroethene	9.29	96	185987	21.2299 ug/L	85
33) Chloroform	9.49	83	291571	19.2699 ug/L	100
34) 1-Bromopropane	9.63	122	33156	21.0029 ug/L	98
35) Bromochloromethane	9.72	130	92261	21.0545 ug/L	90
38) 1,1,1-Trichloroethane	10.02	97	260146	19.7368 ug/L	100
39) Cyclohexane	10.06	56	274785	19.3721 ug/L	84
40) 1,1-Dichloropropene	10.22	75	226472	19.9015 ug/L	99
42) Carbon Tetrachloride	10.36	117	224720	19.8814 ug/L	100
45) 1,2-Dichloroethane	10.54	62	193151	19.3217 ug/L	97
46) Benzene	10.58	78	635629	20.4175 ug/L	93
47) Trichloroethene	11.33	130	460264	58.7728 ug/L	99
48) Methylcyclohexane	11.42	83	246395	19.3071 ug/L	89
49) 1,2-Dichloropropane	11.54	63	171287	20.2332 ug/L	97
50) Bromodichloromethane	11.84	83	212888	19.8868 ug/L	98
52) Dibromomethane	11.93	93	78095	19.5466 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M403045.D 8260WTR.M Tue Feb 17 17:24:33 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\021715\8M403045.D Vial: 8
Acq On : 17 Feb 2015 17:02 Operator: TMB
Sample : L15020878-17 A MS 826-LOW Inst : HPMS8
Misc : 1,1 STD68939 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 17:24:29 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
54)	4-Methyl-2-Pentanone	12.17	58	26535	18.3934 ug/L		90
55)	cis-1,3-Dichloropropene	12.48	75	241707	21.5970 ug/L		100
56)	Dimethyl Disulfide	12.74	79	116365	14.1482 ug/L		96
59)	Toluene	12.91	91	664863	20.9117 ug/L		98
60)	Ethyl Methacrylate	12.99	69	134195	22.0835 ug/L		88
62)	trans-1,3-Dichloropropene	13.07	75	184201	18.9350 ug/L		99
63)	1,1,2-Trichloroethane	13.29	97	99440	19.7009 ug/L		100
64)	2-Hexanone	13.23	58	25715	19.6959 ug/L		89
65)	1,3-Dichloropropane	13.60	76	181198	19.8047 ug/L		90
66)	Tetrachloroethene	13.72	164	137525	20.0316 ug/L		96
67)	Dibromochloromethane	13.98	129	130202	20.1888 ug/L		100
68)	1,2-Dibromoethane	14.24	107	97703	19.4724 ug/L		97
69)	1-Chlorohexane	14.32	91	224430	20.8694 ug/L		87
70)	Chlorobenzene	14.75	112	411864	19.1581 ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.78	131	144145	19.6329 ug/L		100
72)	Ethylbenzene	14.77	106	242187	19.6904 ug/L		97
73)	m-,p-Xylene	14.86	106	573121	40.9110 ug/L		98
74)	o-Xylene	15.42	106	269592	19.5589 ug/L		99
75)	Styrene	15.46	104	485496	21.9601 ug/L		98
76)	Bromoform	15.96	173	78244	19.6625 ug/L		99
77)	Isopropylbenzene	15.85	105	701199	20.3624 ug/L		99
79)	1,1,2,2-Tetrachloroethane	16.06	83	111518	19.8004 ug/L		99
81)	1,2,3-Trichloropropane	16.26	110	31006	19.6912 ug/L	#	37
82)	trans-1,4-Dichloro-2-Buten	16.30	53	32196	17.2214 ug/L	#	33
83)	n-Propylbenzene	16.36	91	877209	19.3616 ug/L		98
84)	Bromobenzene	16.48	156	178381	20.3459 ug/L		95
85)	1,3,5-Trimethylbenzene	16.54	105	654658	21.6453 ug/L		99
86)	2-Chlorotoluene	16.63	91	541241	19.5900 ug/L		91
87)	4-Chlorotoluene	16.68	91	526148	18.6960 ug/L		90
88)	a-Methylstyrene	16.95	118	340000	19.5104 ug/L		97
89)	tert-Butylbenzene	17.01	134	124552	18.8977 ug/L		99
90)	1,2,4-Trimethylbenzene	17.06	105	669963	21.5567 ug/L		98
91)	sec-Butylbenzene	17.28	105	768280	19.2180 ug/L		99
92)	p-Isopropyltoluene	17.43	119	630598	19.9552 ug/L		99
93)	1,3-Dichlorobenzene	17.63	146	340687	18.9391 ug/L		98
94)	1,4-Dichlorobenzene	17.76	146	360873	19.5898 ug/L		99
95)	n-Butylbenzene	17.96	91	678479	19.5909 ug/L		97
96)	1,2-Dichlorobenzene	18.26	146	299211	18.5607 ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.25	75	20459	19.5657 ug/L		99
98)	1,2,4-Trichlorobenzene	20.40	180	261462	20.4234 ug/L		98
99)	Hexachlorobutadiene	20.55	225	140296	18.6240 ug/L		96
100)	Naphthalene	20.77	128	394092	20.8771 ug/L		100
101)	1,2,3-Trichlorobenzene	21.07	180	226826	20.2897 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M403045.D 8260WTR.M Tue Feb 17 17:24:33 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\021715\8M403045.D Vial: 8
Acq On : 17 Feb 2015 17:02 Operator: TMB
Sample : L15020878-17 A MS 826-LOW Inst : HPMS8
Misc : 1,1 STD68939 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 17:24 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration

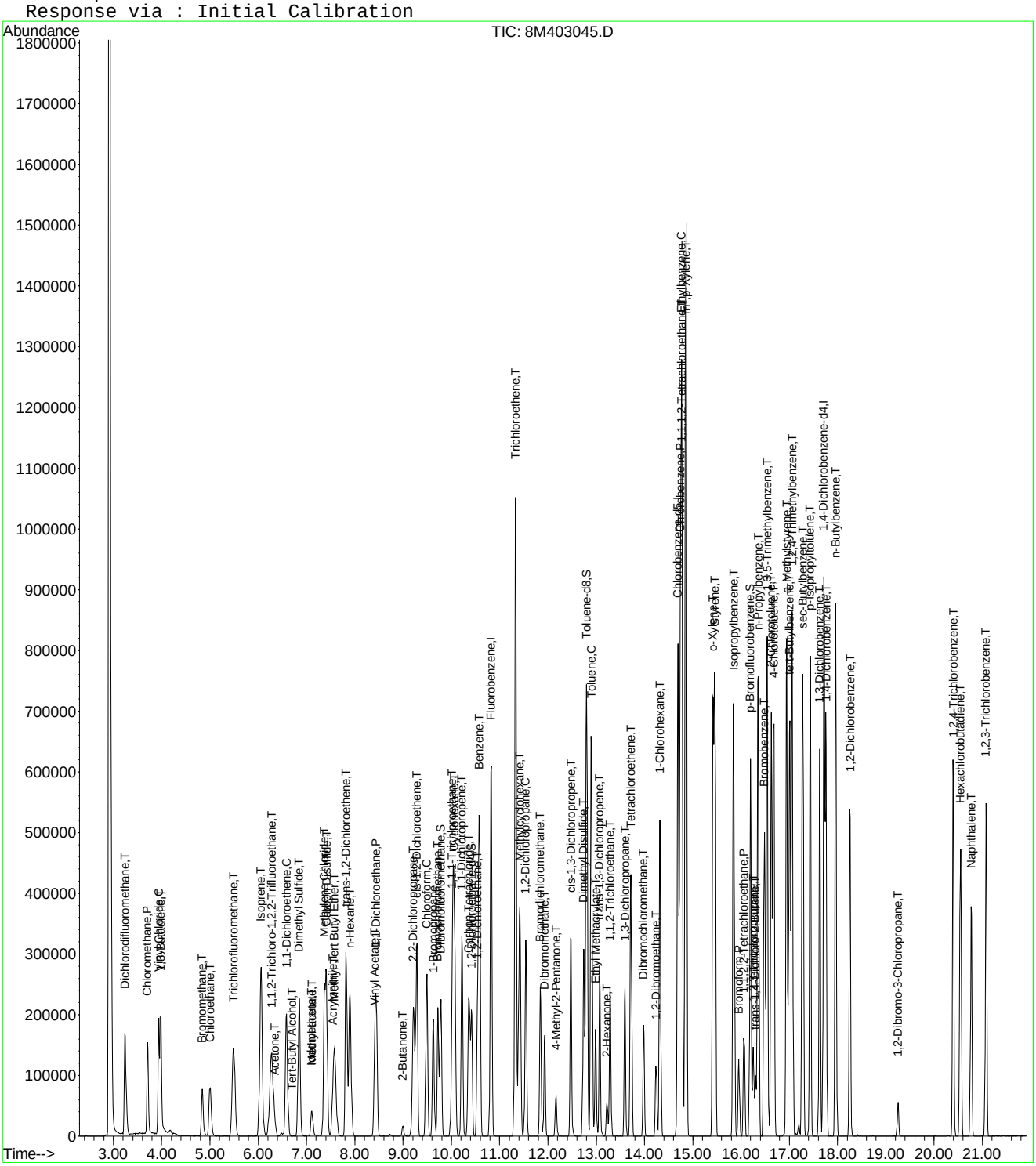

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\021715\8M403046.D Vial: 9
Acq On : 17 Feb 2015 17:31 Operator: TMB
Sample : L15020878-18 A MSD 826-LOW Inst : HPMS8
Misc : 1,1 STD68939 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 17:53:32 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	778653	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	575974	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.72	152	303680	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	193976	23.6708 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.68%		
43) 1,2-Dichloroethane-d4	10.42	65	191935	22.3412 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 89.36%		
58) Toluene-d8	12.80	98	656833	24.0050 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.00%		
80) p-Bromofluorobenzene	16.19	95	265832	24.4074 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.64%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.25	85	256265	20.5437 ug/L	98
3) Chloromethane	3.71	50	207513	19.2284 ug/L	99
4) Vinyl Chloride	3.94	62	220907	20.7990 ug/L	97
5) 1,3-Butadiene	3.98	54	97852	10.3290 ug/L	91
6) Bromomethane	4.84	94	75622	18.5469 ug/L	97
7) Chloroethane	5.00	64	131157	19.9774 ug/L	98
8) Trichlorofluoromethane	5.49	101	274302	18.6218 ug/L	100
10) Isoprene	6.06	67	239197	20.9643 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	161946	19.4623 ug/L	92
13) Acetone	6.36	43	25350	21.4850 ug/L #	28
14) 1,1-Dichloroethene	6.59	61	242192	18.0969 ug/L	92
15) Tert-Butyl Alcohol	6.70	59	962	3.8789 ug/L #	59
16) Dimethyl Sulfide	6.84	62	191605	21.4810 ug/L	99
17) Iodomethane	7.11	142	26374	21.2523 ug/L	98
18) Methyl acetate	7.11	43	64837	13.2151 ug/L	97
19) Methylene Chloride	7.37	84	165435	19.7674 ug/L	85
20) Carbon Disulfide	7.41	76	486586	17.6063 ug/L	100
21) Acrylonitrile	7.55	53	34513	20.0322 ug/L	99
22) Methyl Tert Butyl Ether	7.58	73	332339	22.8409 ug/L	92
23) trans-1,2-Dichloroethene	7.82	61	251065	19.4771 ug/L	89
24) n-Hexane	7.90	57	211252	18.6741 ug/L	92
26) Vinyl Acetate	8.42	43	217794	59.1644 ug/L	98
27) 1,1-Dichloroethane	8.45	63	308383	19.0377 ug/L	97
29) 2-Butanone	8.99	43	36125	20.5667 ug/L	98
31) 2,2-Dichloropropane	9.22	77	243503	20.3627 ug/L	100
32) cis-1,2-Dichloroethene	9.28	96	189302	21.2486 ug/L	85
33) Chloroform	9.49	83	298562	19.4035 ug/L	100
34) 1-Bromopropane	9.64	122	34567	21.5322 ug/L	94
35) Bromochloromethane	9.73	130	95216	21.3671 ug/L	89
38) 1,1,1-Trichloroethane	10.03	97	264895	19.7626 ug/L	99
39) Cyclohexane	10.06	56	271661	18.8330 ug/L	83
40) 1,1-Dichloropropene	10.23	75	227085	19.6232 ug/L	99
42) Carbon Tetrachloride	10.37	117	228117	19.8459 ug/L	98
45) 1,2-Dichloroethane	10.54	62	204685	20.1346 ug/L	98
46) Benzene	10.58	78	644689	20.3638 ug/L	93
47) Trichloroethene	11.33	130	451306	56.6695 ug/L	98
48) Methylcyclohexane	11.41	83	249510	19.2257 ug/L	88
49) 1,2-Dichloropropane	11.55	63	170266	19.7777 ug/L	94
50) Bromodichloromethane	11.85	83	217139	19.9462 ug/L	100
52) Dibromomethane	11.93	93	81833	20.1412 ug/L	95

(#) = qualifier out of range (m) = manual integration
8M403046.D 8260WTR.M Tue Feb 17 17:53:33 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\021715\8M403046.D Vial: 9
Acq On : 17 Feb 2015 17:31 Operator: TMB
Sample : L15020878-18 A MSD 826-LOW Inst : HPMS8
Misc : 1,1 STD68939 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 17:53:32 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
54)	4-Methyl-2-Pentanone	12.17	58	30083	20.5056 ug/L		94
55)	cis-1,3-Dichloropropene	12.48	75	254897	22.3964 ug/L		98
56)	Dimethyl Disulfide	12.74	79	120249	14.3007 ug/L		99
59)	Toluene	12.90	91	653536	21.0473 ug/L		100
60)	Ethyl Methacrylate	12.99	69	139548	23.5140 ug/L		88
62)	trans-1,3-Dichloropropene	13.08	75	191759	20.1837 ug/L		100
63)	1,1,2-Trichloroethane	13.30	97	102821	20.8582 ug/L		99
64)	2-Hexanone	13.22	58	27164	21.3036 ug/L		88
65)	1,3-Dichloropropane	13.60	76	189107	21.1638 ug/L		92
66)	Tetrachloroethene	13.72	164	137750	20.5445 ug/L		96
67)	Dibromochloromethane	13.99	129	136476	21.6681 ug/L		99
68)	1,2-Dibromoethane	14.24	107	102782	20.9749 ug/L		99
69)	1-Chlorohexane	14.32	91	215485	20.5171 ug/L		86
70)	Chlorobenzene	14.74	112	400506	19.0756 ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.77	131	144754	20.1877 ug/L		99
72)	Ethylbenzene	14.77	106	238080	19.8198 ug/L		98
73)	m-,p-Xylene	14.86	106	551368	40.3001 ug/L		97
74)	o-Xylene	15.43	106	259435	19.2724 ug/L		98
75)	Styrene	15.46	104	465966	21.5812 ug/L		99
76)	Bromoform	15.95	173	81694	21.0207 ug/L		99
77)	Isopropylbenzene	15.85	105	679182	20.1951 ug/L		99
79)	1,1,2,2-Tetrachloroethane	16.07	83	114589	20.7603 ug/L		99
81)	1,2,3-Trichloropropane	16.25	110	32429	21.0146 ug/L	#	36
82)	trans-1,4-Dichloro-2-Buten	16.29	53	32386	17.6588 ug/L	#	34
83)	n-Propylbenzene	16.36	91	836777	18.8456 ug/L		98
84)	Bromobenzene	16.49	156	178546	20.7797 ug/L		94
85)	1,3,5-Trimethylbenzene	16.54	105	643179	21.6991 ug/L		98
86)	2-Chlorotoluene	16.63	91	507315	18.7363 ug/L		100
87)	4-Chlorotoluene	16.68	91	539006	19.5432 ug/L		100
88)	a-Methylstyrene	16.95	118	326007	19.0887 ug/L		97
89)	tert-Butylbenzene	17.01	134	116299	18.0051 ug/L		93
90)	1,2,4-Trimethylbenzene	17.06	105	651407	21.3868 ug/L		97
91)	sec-Butylbenzene	17.28	105	727133	18.5594 ug/L		98
92)	p-Isopropyltoluene	17.43	119	602292	19.4479 ug/L		99
93)	1,3-Dichlorobenzene	17.63	146	330425	18.7429 ug/L		98
94)	1,4-Dichlorobenzene	17.76	146	353877	19.6015 ug/L		99
95)	n-Butylbenzene	17.96	91	650952	19.1791 ug/L		98
96)	1,2-Dichlorobenzene	18.26	146	303344	19.2005 ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.25	75	20921	20.4153 ug/L		99
98)	1,2,4-Trichlorobenzene	20.40	180	261543	20.8460 ug/L		98
99)	Hexachlorobutadiene	20.54	225	132460	17.9421 ug/L		96
100)	Naphthalene	20.77	128	407823	22.0448 ug/L		100
101)	1,2,3-Trichlorobenzene	21.08	180	225210	20.5557 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M403046.D 8260WTR.M Tue Feb 17 17:53:33 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\021715\8M403046.D Vial: 9
Acq On : 17 Feb 2015 17:31 Operator: TMB
Sample : L15020878-18 A MSD 826-LOW Inst : HPMS8
Misc : 1,1 STD68939 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 17:53 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration

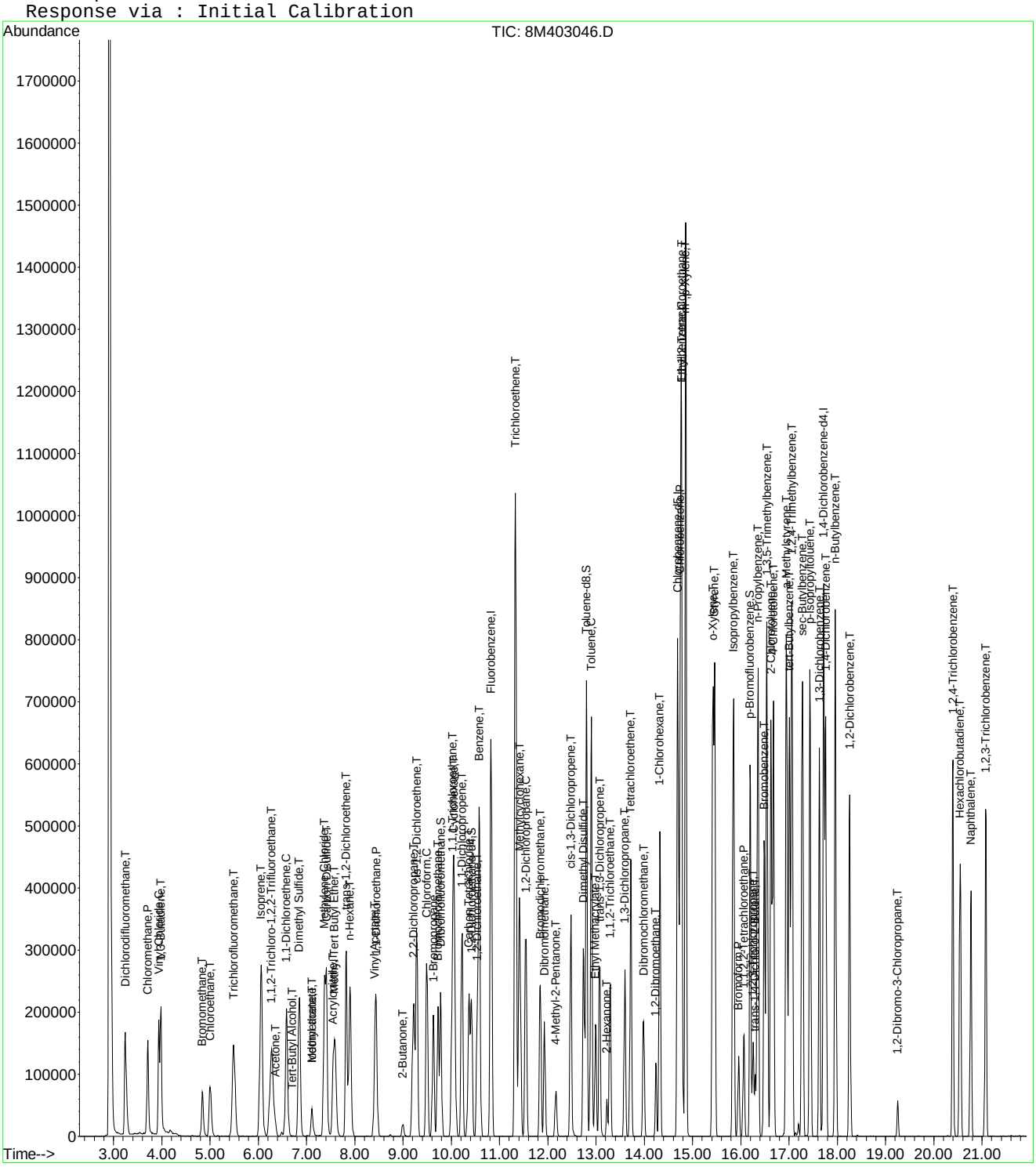

8M403046.D 8260WTR.M Tue Feb 17 17:53:33 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021715\8M403050.D Vial: 13
Acq On : 17 Feb 2015 19:27 Operator: TMB
Sample : L15020878-19 A TB 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 13:49:58 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	672015	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	527143	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.72	152	270798	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	171236	24.2117 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.84%		
43) 1,2-Dichloroethane-d4	10.42	65	159521	21.5147 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 86.04%		
58) Toluene-d8	12.80	98	597775	23.8703 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 95.48%		
80) p-Bromofluorobenzene	16.19	95	238163	24.5222 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.08%		

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
8M403050.D 8260WTR.M Wed Feb 18 13:49:58 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021715\8M403050.D Vial: 13
Acq On : 17 Feb 2015 19:27 Operator: TMB
Sample : L15020878-19 A TB 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 13:49 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration

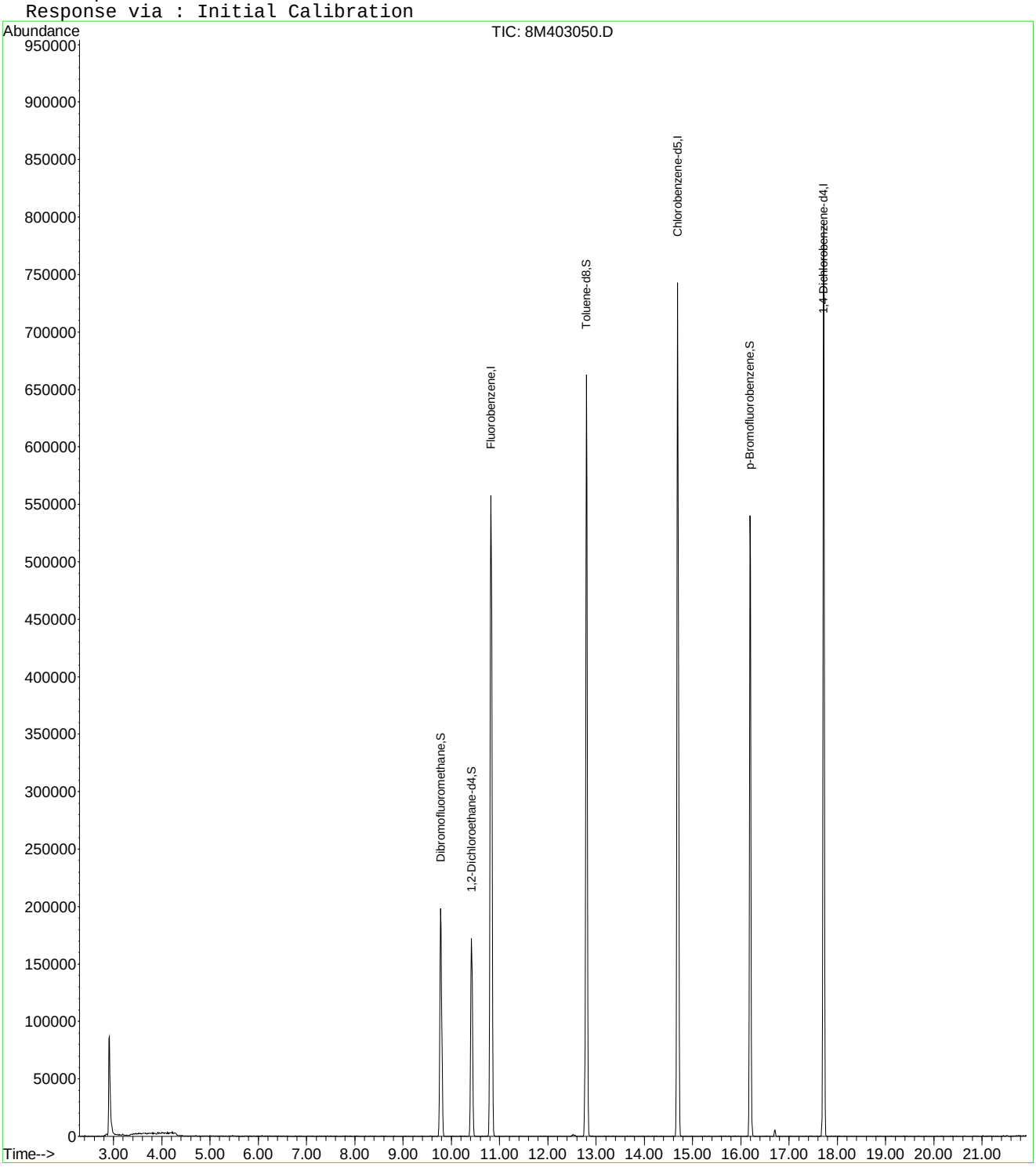

8M403050.D 8260WTR.M Wed Feb 18 13:49:58 2015 Page 2

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400358.D Vial: 2
Acq On : 2 Oct 2014 12:24 Operator: TMB
Sample : WG494714-02 5ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:40 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	619208	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	544510	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	254129	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	1884	4.8234 ug/L #	23
3) 3-Chloro-1-propene	7.26	41	51461	4.9911 ug/L	88
4) 2-Chloro-1,3-butadiene	8.64	53	57885	4.7445 ug/L	89
5) Ethyl Acetate	9.28	43	12831	4.1474 ug/L	98
6) Methacrylonitrile	9.44	67	7738	4.2085 ug/L #	61
7) Isobutyl Alcohol	9.28	43	12831	104.0280 ug/L #	12
9) Methyl methacrylate	11.60	41	14247	4.0960 ug/L	83
10) 2-Nitropropane	11.94	43	3986	3.8294 ug/L	98
13) Cyclohexanone	16.03	55	1559	3.8882 ug/L #	43

(#) = qualifier out of range (m) = manual integration
8M400358.D A9FOOWTR.M Fri Oct 03 12:32:40 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400358.D Vial: 2
Acq On : 2 Oct 2014 12:24 Operator: TMB
Sample : WG494714-02 5ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

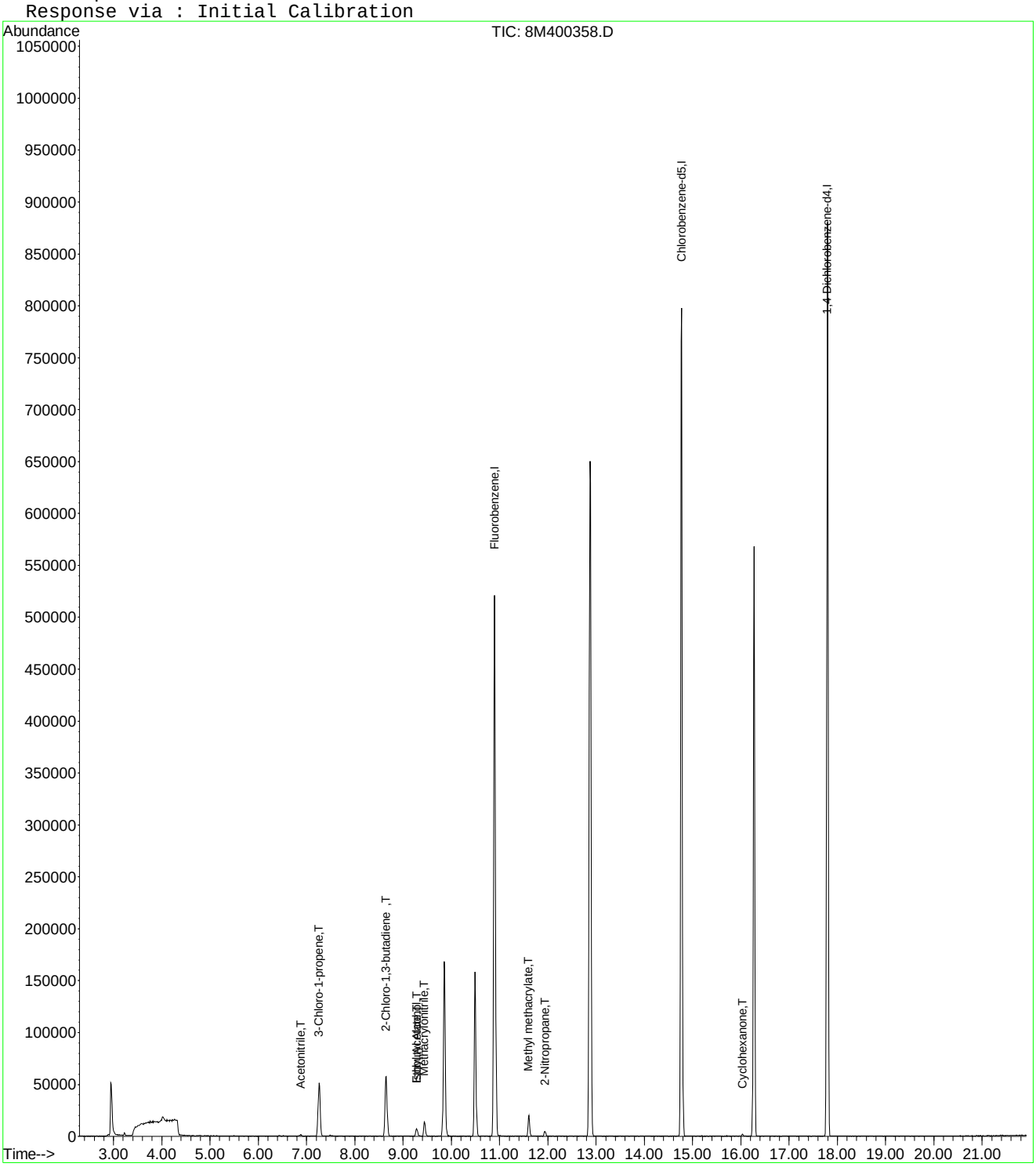

8M400358.D A9FOOWTR.M Fri Oct 03 12:32:41 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400359.D Vial: 3
Acq On : 2 Oct 2014 12:53 Operator: TMB
Sample : WG494714-03 20ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:41 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	590707	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	530005	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	246254	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	7263	19.4920 ug/L	97
3) 3-Chloro-1-propene	7.26	41	190581	19.3757 ug/L	90
4) 2-Chloro-1,3-butadiene	8.65	53	226534	19.4636 ug/L	90
5) Ethyl Acetate	9.28	43	54503	18.4670 ug/L	94
6) Methacrylonitrile	9.44	67	30898	17.6155 ug/L #	65
7) Isobutyl Alcohol	9.45	43	3143	26.7115 ug/L #	95
9) Methyl methacrylate	11.61	41	58234	17.5500 ug/L	72
10) 2-Nitropropane	11.94	43	16687	16.8050 ug/L	98
13) Cyclohexanone	16.03	55	7124	18.3357 ug/L	88

(#) = qualifier out of range (m) = manual integration
8M400359.D A9FOOWTR.M Fri Oct 03 12:32:41 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400359.D Vial: 3
Acq On : 2 Oct 2014 12:53 Operator: TMB
Sample : WG494714-03 20ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

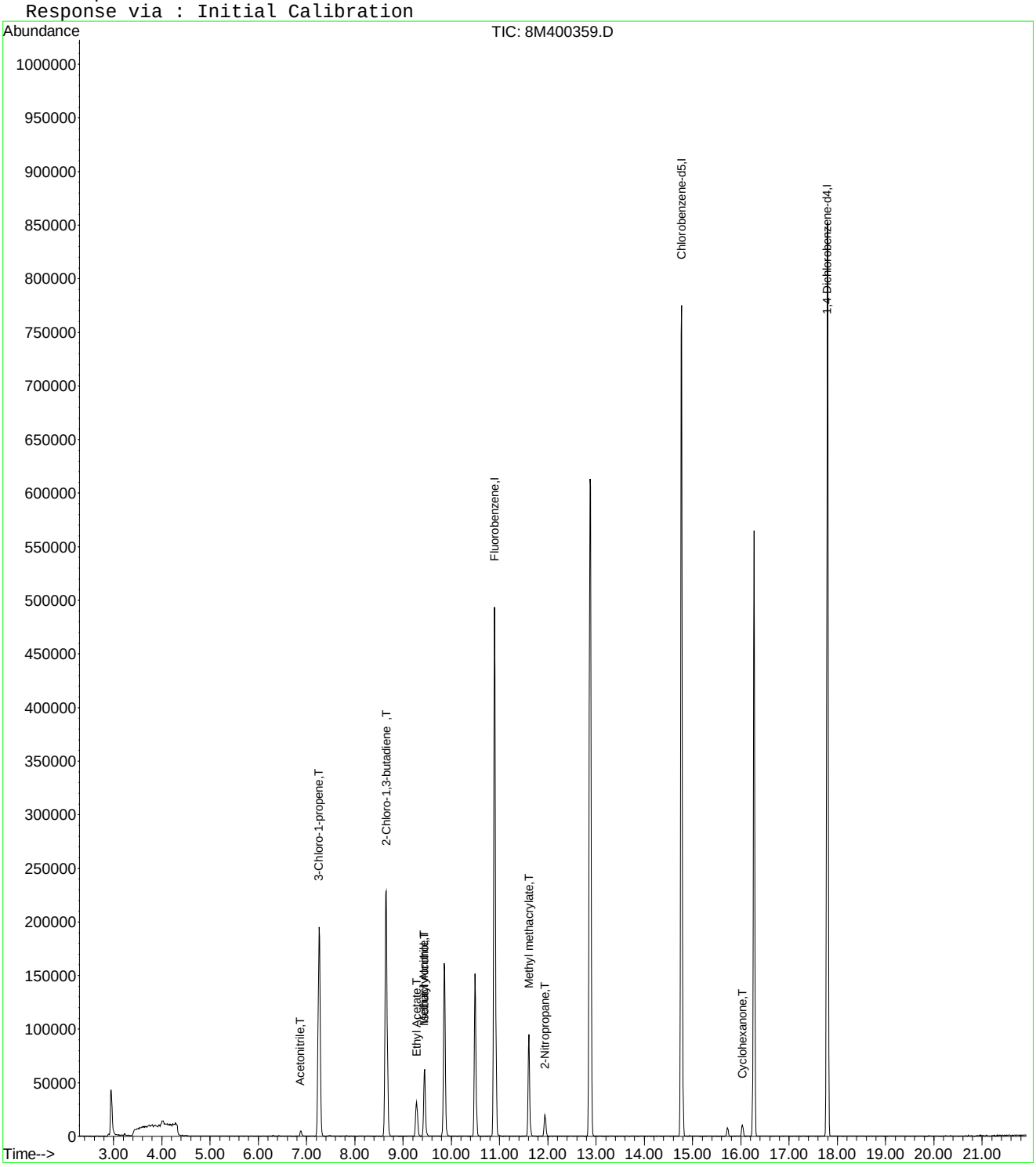

8M400359.D A9FOOWTR.M Fri Oct 03 12:32:42 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400360.D Vial: 4
Acq On : 2 Oct 2014 13:22 Operator: TMB
Sample : WG494714-04 50ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:42 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	590667	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	524443	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	249595	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	17698	47.5001 ug/L	100
3) 3-Chloro-1-propene	7.26	41	491365	49.9588 ug/L	90
4) 2-Chloro-1,3-butadiene	8.65	53	586258	50.3743 ug/L	90
5) Ethyl Acetate	9.27	43	145862	49.4250 ug/L	93
6) Methacrylonitrile	9.44	67	84924	48.4200 ug/L #	62
7) Isobutyl Alcohol	9.46	43	9563	81.2789 ug/L #	95
8) 1-Butanol	10.38	56	1895	48.4971 ug/L	87
9) Methyl methacrylate	11.61	41	161451	48.6599 ug/L	75
10) 2-Nitropropane	11.94	43	45766	46.0929 ug/L	98
13) Cyclohexanone	16.04	55	19698	50.0200 ug/L	89

(#) = qualifier out of range (m) = manual integration
8M400360.D A9FOOWTR.M Fri Oct 03 12:32:42 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400360.D Vial: 4
Acq On : 2 Oct 2014 13:22 Operator: TMB
Sample : WG494714-04 50ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

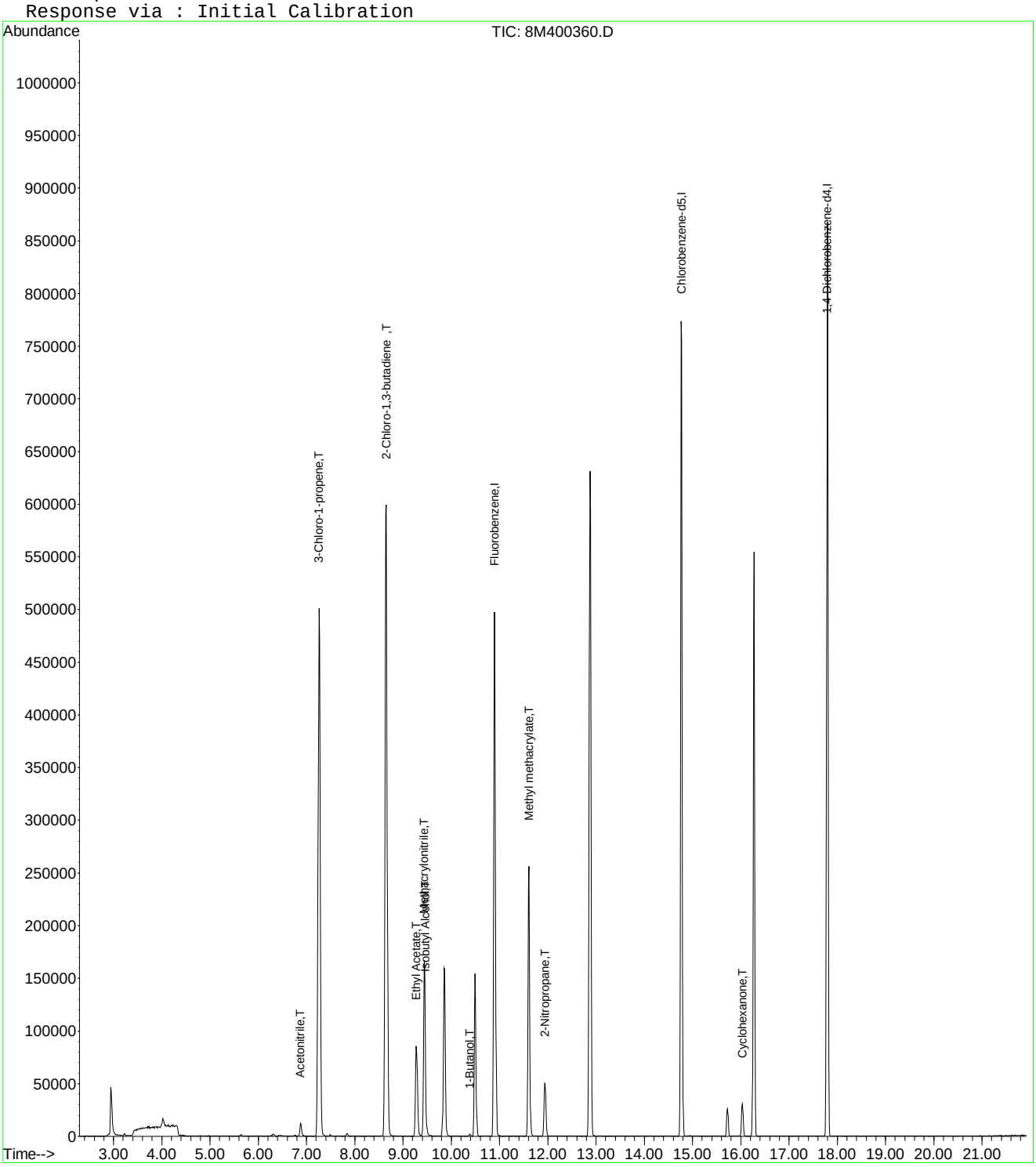

8M400360.D A9FOOWTR.M Fri Oct 03 12:32:42 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400361.D Vial: 5
Acq On : 2 Oct 2014 13:51 Operator: TMB
Sample : WG494714-05 100ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:43 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	595542	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	525736	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	251203	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	38265	101.8596 ug/L	98
3) 3-Chloro-1-propene	7.26	41	1042545	105.1315 ug/L	90
4) 2-Chloro-1,3-butadiene	8.65	53	1239135	105.6013 ug/L	88
5) Ethyl Acetate	9.27	43	315872	106.1564 ug/L	93
6) Methacrylonitrile	9.44	67	182857	103.4038 ug/L #	63
7) Isobutyl Alcohol	9.45	43	23247	195.9661 ug/L #	92
8) 1-Butanol	10.38	56	5482	96.3312 ug/L	88
9) Methyl methacrylate	11.61	41	351287	105.0082 ug/L	73
10) 2-Nitropropane	11.94	43	103249	103.1352 ug/L	99
13) Cyclohexanone	16.04	55	43523	109.8125 ug/L	88

(#) = qualifier out of range (m) = manual integration
8M400361.D A9FOOWTR.M Fri Oct 03 12:32:43 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400361.D Vial: 5
Acq On : 2 Oct 2014 13:51 Operator: TMB
Sample : WG494714-05 100ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

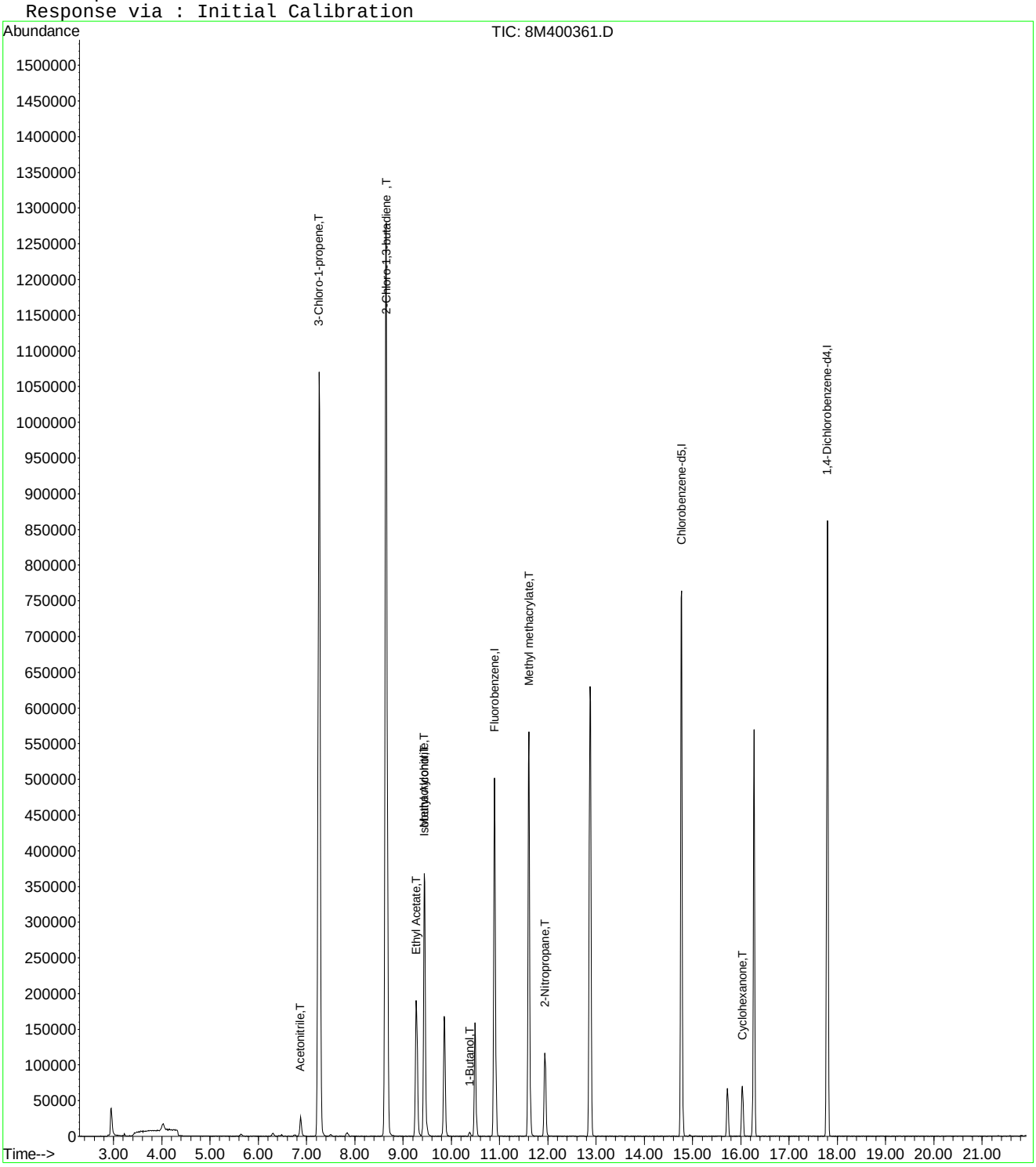

8M400361.D A9FOOWTR.M Fri Oct 03 12:32:43 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400362.D Vial: 6
Acq On : 2 Oct 2014 14:19 Operator: TMB
Sample : WG494714-06 200ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:43 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	605985	25.00 ug/L	-0.02
11) Chlorobenzene-d5	14.77	117	543073	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.80	152	256990	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	81322	212.7447 ug/L	93
3) 3-Chloro-1-propene	7.26	41	2105378	208.6501 ug/L	89
4) 2-Chloro-1,3-butadiene	8.65	53	2530154	211.9083 ug/L	84
5) Ethyl Acetate	9.28	43	654842	216.2828 ug/L	92
6) Methacrylonitrile	9.44	67	386897	215.0159 ug/L #	62
7) Isobutyl Alcohol	9.44	43	51188	424.0654 ug/L	97
8) 1-Butanol	10.37	56	13189	196.5131 ug/L	88
9) Methyl methacrylate	11.60	41	747593	219.6225 ug/L	71
10) 2-Nitropropane	11.94	43	227212	223.0503 ug/L	99
13) Cyclohexanone	16.03	55	76140	187.7821 ug/L	85

(#) = qualifier out of range (m) = manual integration
8M400362.D A9FOOWTR.M Fri Oct 03 12:32:44 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400362.D Vial: 6
Acq On : 2 Oct 2014 14:19 Operator: TMB
Sample : WG494714-06 200ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

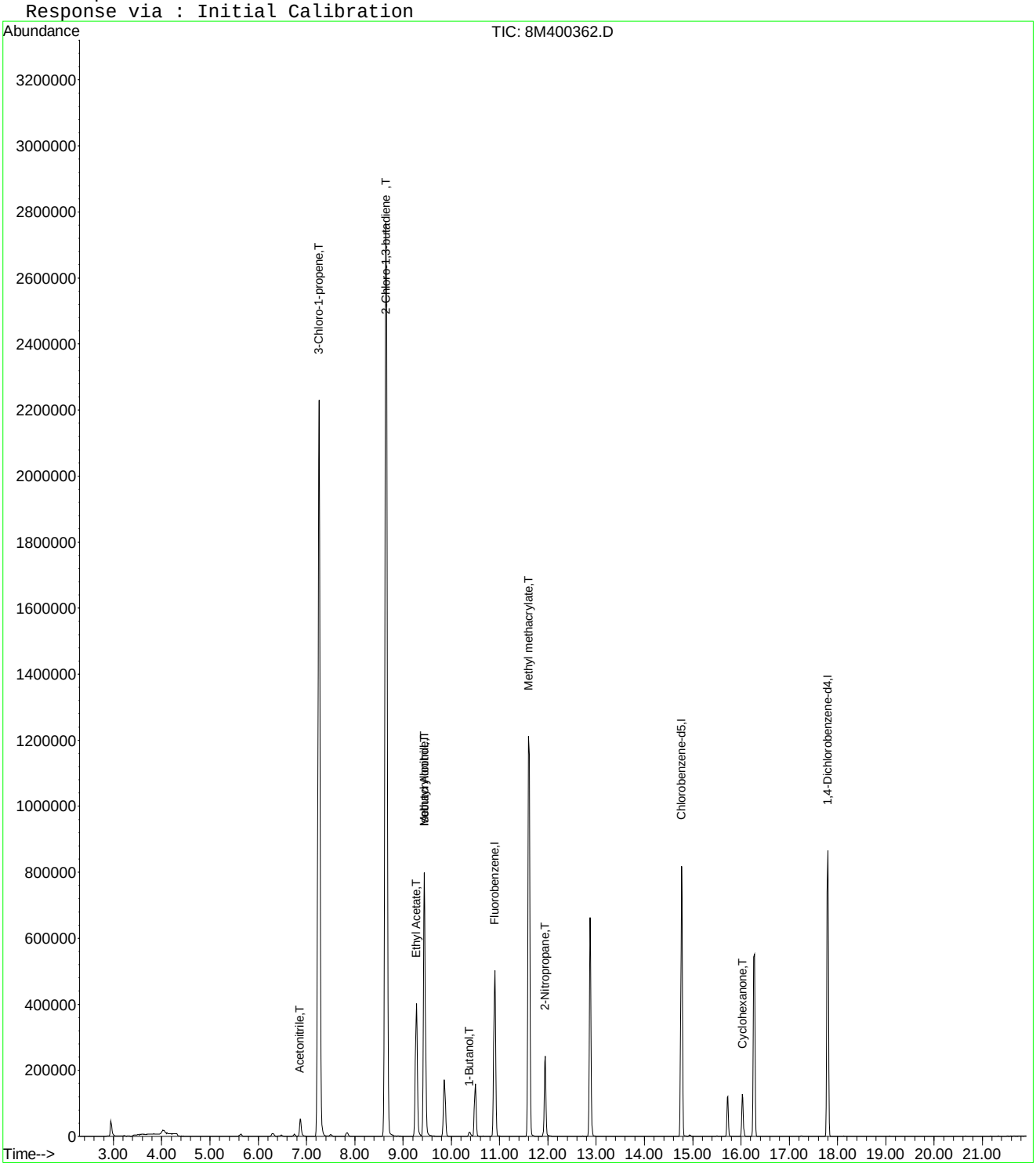

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400363.D Vial: 7
Acq On : 2 Oct 2014 14:48 Operator: TMB
Sample : WG494714-07 300ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:45 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	617316	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	555877	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	259867	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	120718	310.0110 ug/L	94
3) 3-Chloro-1-propene	7.26	41	3133181	304.8093 ug/L	86
4) 2-Chloro-1,3-butadiene	8.64	53	3764580	309.5080 ug/L	79
5) Ethyl Acetate	9.27	43	984728	319.2685 ug/L	92
6) Methacrylonitrile	9.44	67	589378	321.5315 ug/L #	62
7) Isobutyl Alcohol	9.45	43	76604	622.9747 ug/L	98
8) 1-Butanol	10.37	56	23186	322.5015 ug/L	89
9) Methyl methacrylate	11.61	41	1120843	323.2293 ug/L	70
10) 2-Nitropropane	11.94	43	340074	327.7172 ug/L	99
13) Cyclohexanone	16.03	55	133635	325.9318 ug/L	85

(#) = qualifier out of range (m) = manual integration
8M400363.D A9FOOWTR.M Fri Oct 03 12:32:45 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400363.D Vial: 7
Acq On : 2 Oct 2014 14:48 Operator: TMB
Sample : WG494714-07 300ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

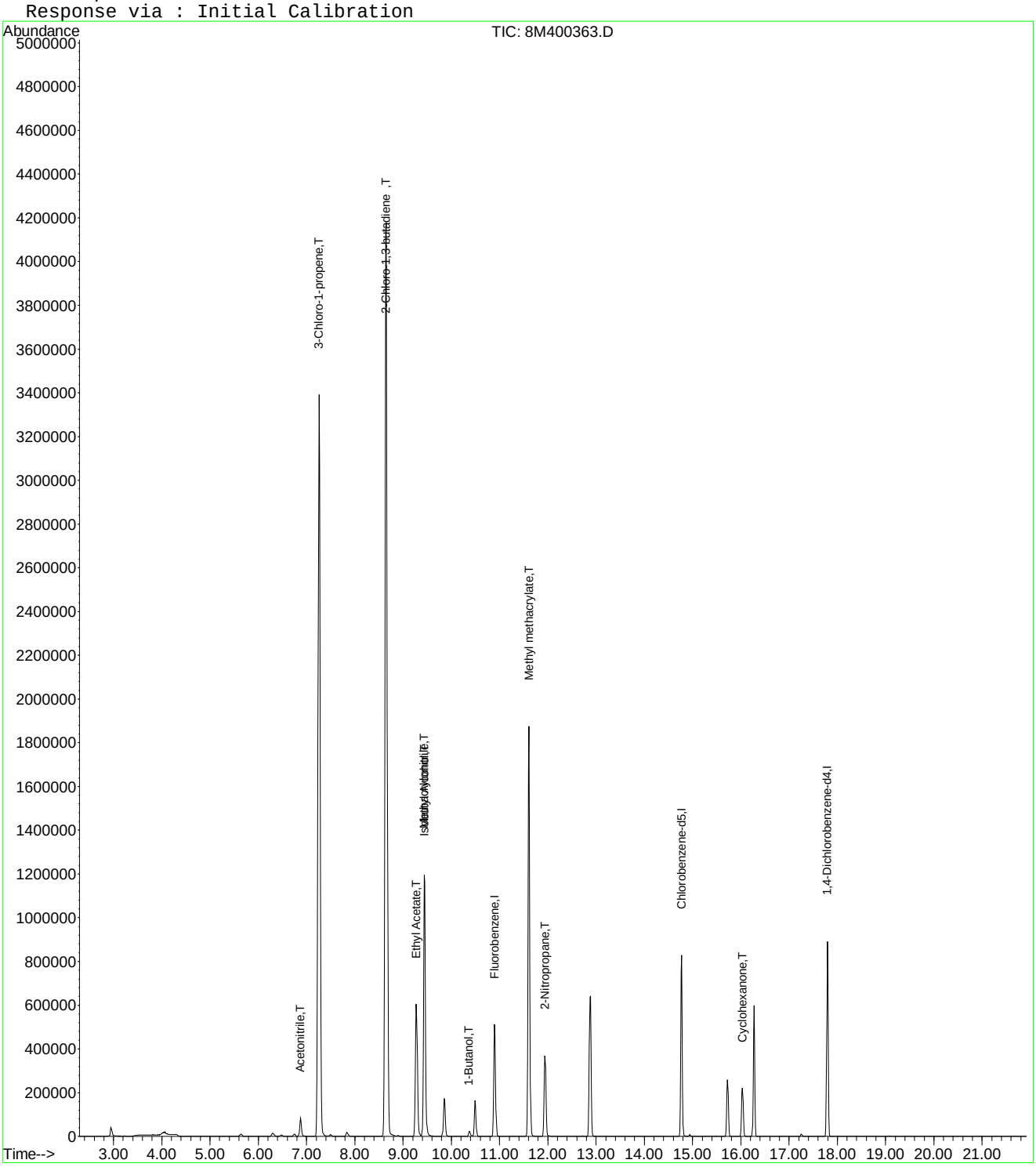

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400364.D Vial: 8
Acq On : 2 Oct 2014 15:16 Operator: TMB
Sample : WG494714-08 400ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:46 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	618926	25.00 ug/L	-0.02
11) Chlorobenzene-d5	14.77	117	559909	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.80	152	262346	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	151708	388.5818 ug/L	95
3) 3-Chloro-1-propene	7.26	41	4028272	390.8682 ug/L	83
4) 2-Chloro-1,3-butadiene	8.65	53	4802050	393.7774 ug/L	74
5) Ethyl Acetate	9.28	43	1250397	404.3491 ug/L	91
6) Methacrylonitrile	9.44	67	762998	415.1660 ug/L #	61
7) Isobutyl Alcohol	9.45	43	102436	830.8840 ug/L #	97
8) 1-Butanol	10.37	56	28243	386.8957 ug/L	89
9) Methyl methacrylate	11.60	41	1436773	413.2595 ug/L	68
10) 2-Nitropropane	11.94	43	451706	434.1607 ug/L	98
13) Cyclohexanone	16.03	55	150327	363.1785 ug/L	84

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400364.D Vial: 8
Acq On : 2 Oct 2014 15:16 Operator: TMB
Sample : WG494714-08 400ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

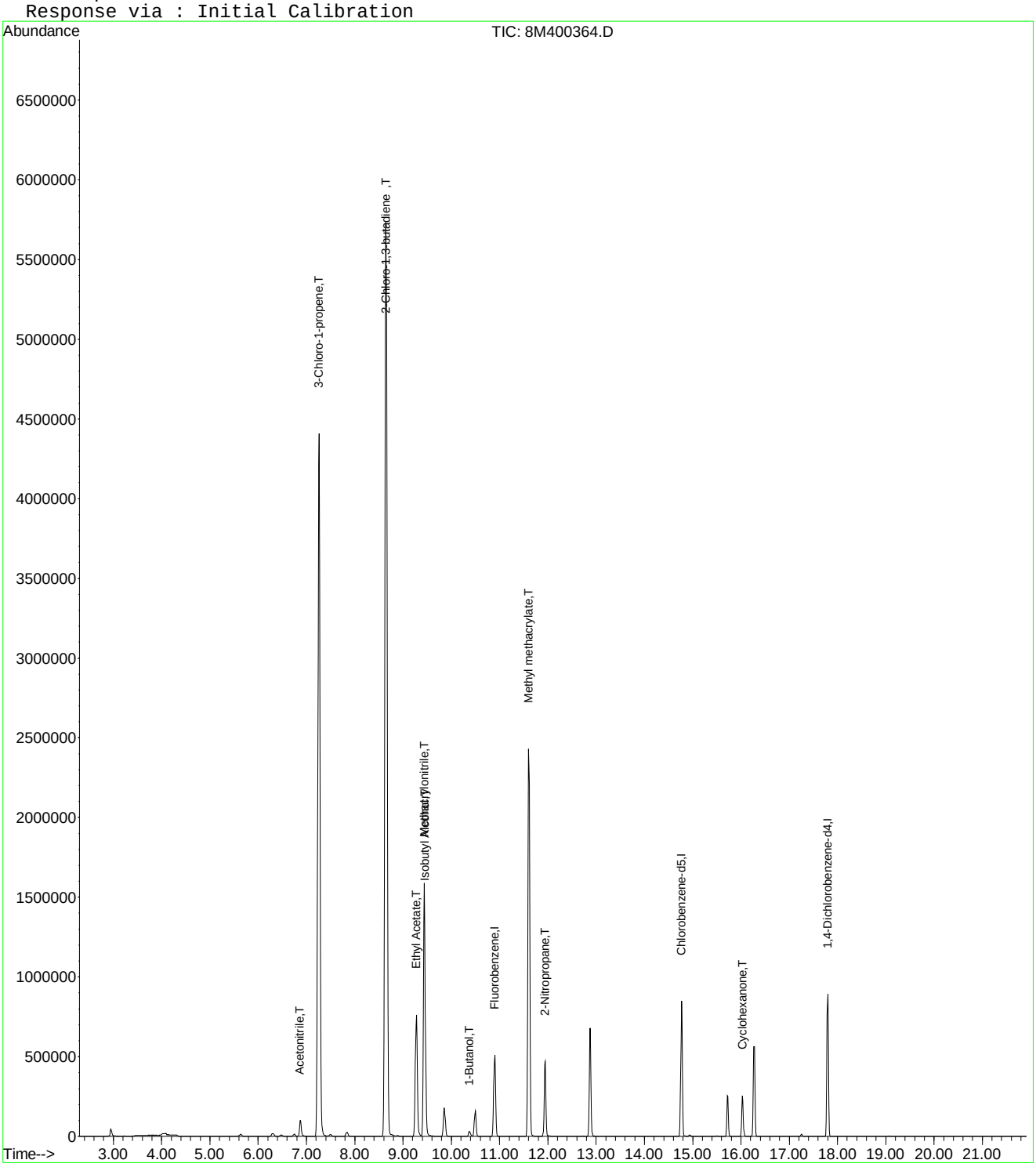

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400365.D Vial: 9
Acq On : 2 Oct 2014 15:45 Operator: TMB
Sample : WG494714-09 500ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:47 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	611679	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	574048	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	266141	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	197468	511.7830 ug/L	95
3) 3-Chloro-1-propene	7.26	41	4817953	473.0307 ug/L	79
4) 2-Chloro-1,3-butadiene	8.64	53	5656851	469.3686 ug/L	68
5) Ethyl Acetate	9.27	43	1590123	520.3008 ug/L	90
6) Methacrylonitrile	9.44	67	990168	545.1581 ug/L #	61
7) Isobutyl Alcohol	9.45	43	130410	1070.3205 ug/L	98
8) 1-Butanol	10.38	56	36529	499.2614 ug/L	87
9) Methyl methacrylate	11.61	41	1840524	535.6626 ug/L	68
10) 2-Nitropropane	11.94	43	590003	573.8046 ug/L	98
13) Cyclohexanone	16.04	55	203273	484.0894 ug/L	84

(#) = qualifier out of range (m) = manual integration
8M400365.D A9FOOWTR.M Fri Oct 03 12:32:47 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400365.D Vial: 9
Acq On : 2 Oct 2014 15:45 Operator: TMB
Sample : WG494714-09 500ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

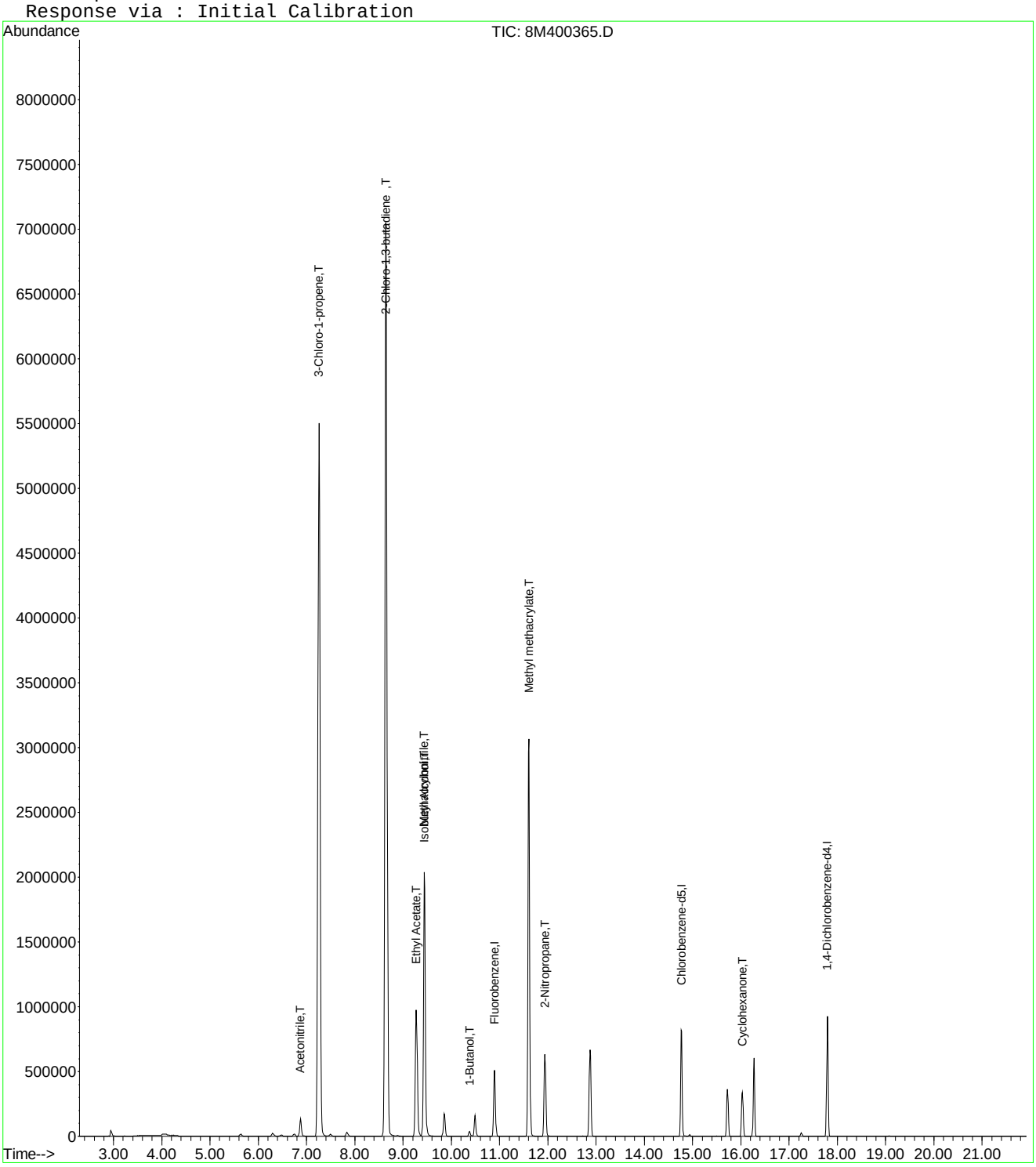

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400367.D Vial: 11
Acq On : 2 Oct 2014 16:47 Operator: TMB
Sample : WG494714-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66677 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:48 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	548066	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	508831	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	240116	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	36847	106.5815 ug/L	98
3) 3-Chloro-1-propene	7.26	41	1001386	109.7284 ug/L	90
4) 2-Chloro-1,3-butadiene	8.64	53	982184	90.9542 ug/L	89
5) Ethyl Acetate	9.27	43	328991	120.1430 ug/L	94
6) Methacrylonitrile	9.44	67	174278	107.0895 ug/L #	64
7) Isobutyl Alcohol	9.45	43	21185	194.0538 ug/L	99
8) 1-Butanol	10.39	56	5303	100.0865 ug/L	77
9) Methyl methacrylate	11.61	41	317777	103.2198 ug/L	73
10) 2-Nitropropane	11.94	43	95761	103.9416 ug/L	99
13) Cyclohexanone	16.03	55	11614	30.6562 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M400367.D A9FOOWTR.M Fri Oct 03 12:32:49 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400367.D Vial: 11
Acq On : 2 Oct 2014 16:47 Operator: TMB
Sample : WG494714-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66677 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

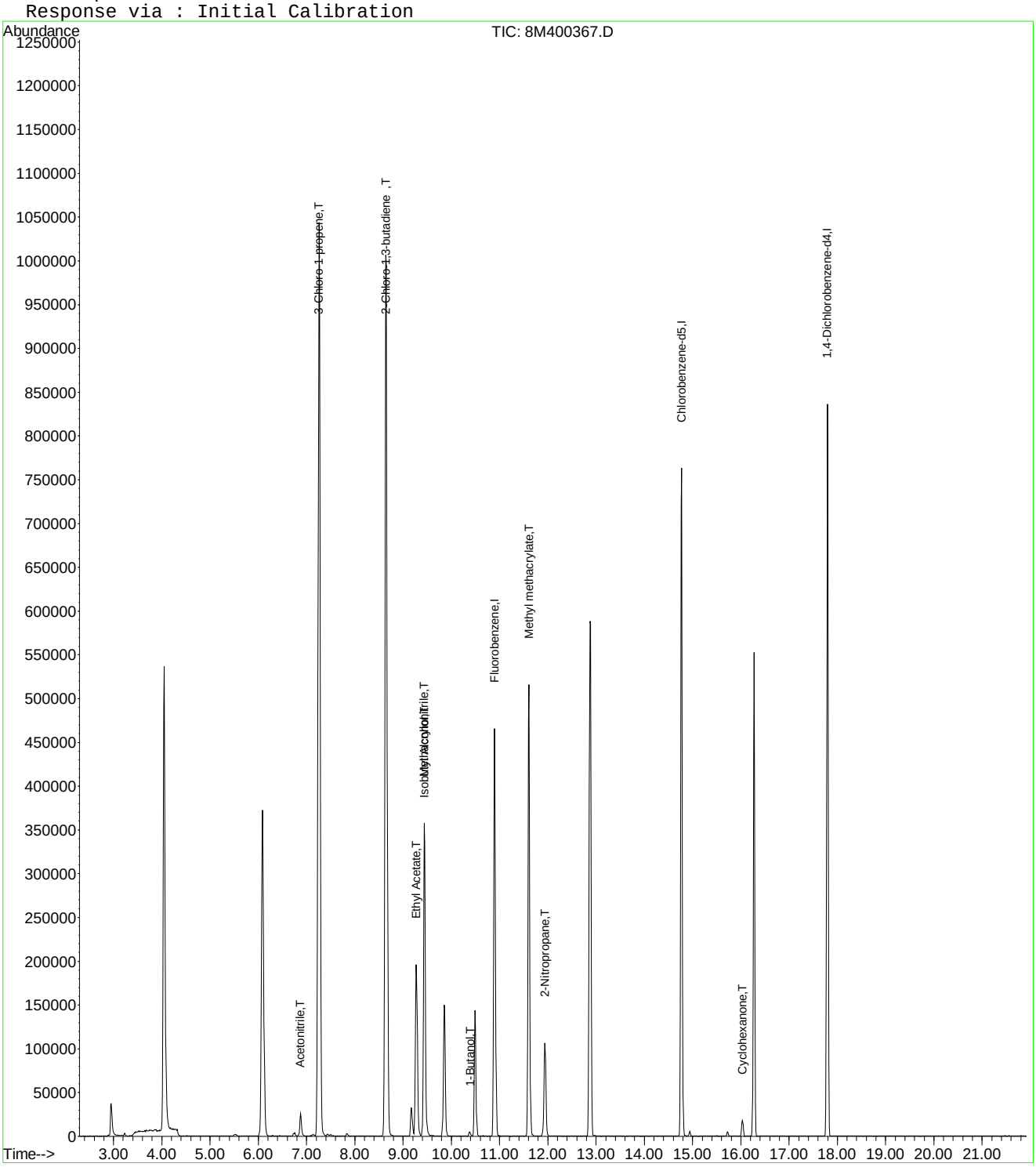

8M400367.D A9FOOWTR.M Fri Oct 03 12:32:49 2014 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\100214\8M400367.D Vial: 11
Acq On : 2 Oct 2014 16:47 Operator: TMB
Sample : WG494714-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66677 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	92	-0.03
2	T	Acetonitrile	100.0000	106.5815	-6.6	96	-0.02
3	T	3-Chloro-1-propene	100.0000	109.7284	-9.7	96	-0.03
4	T	2-Chloro-1,3-butadiene	100.0000	90.9542	9.0	79	-0.03
5	T	Ethyl Acetate	100.0000	120.1430	-20.1	104	-0.02
6	T	Methacrylonitrile	100.0000	107.0895	-7.1	95	-0.03
7	T	Isobutyl Alcohol	200.0000	194.0538	3.0	91	-0.02
8	T	1-Butanol	100.0000	100.0865	-0.1	97	0.00
9	T	Methyl methacrylate	100.0000	103.2198	-3.2	90	-0.02
10	T	2-Nitropropane	100.0000	103.9416	-3.9	93	-0.03
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	97	-0.03
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	96	-0.04
13	T	Cyclohexanone	100.0000	30.6562	69.3	27	-0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M400367.D A9FOOWTR.M Fri Oct 03 12:33:23 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402830.D Vial: 2
Acq On : 6 Feb 2015 15:59 Operator: TMB
Sample : WG511287-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:12 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	677676	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	517186	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.72	152	259482	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.80	98	285	0.0116 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.04%#	
80) p-Bromofluorobenzene	0.00	95	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.24	85	3534	0.3255 ug/L	87
3) Chloromethane	3.70	50	3788	0.4033 ug/L	93
4) Vinyl Chloride	3.94	62	3105	0.3359 ug/L #	63
5) 1,3-Butadiene	3.99	54	2460	Below Cal #	13
6) Bromomethane	4.85	94	760	0.8109 ug/L #	55
7) Chloroethane	4.99	64	1783	0.3120 ug/L #	45
8) Trichlorofluoromethane	5.49	101	4678	0.3649 ug/L #	82
10) Isoprene	6.05	67	2406	0.2423 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	1698	0.2345 ug/L	80
13) Acetone	6.36	43	3064	2.9838 ug/L #	1
14) 1,1-Dichloroethene	6.57	61	3490	0.2996 ug/L	95
16) Dimethyl Sulfide	6.84	62	2118	0.2728 ug/L	84
18) Methyl acetate	7.11	43	538	0.1260 ug/L #	64
19) Methylene Chloride	7.37	84	2731	0.3749 ug/L	88
20) Carbon Disulfide	7.41	76	9675	0.4022 ug/L #	82
22) Methyl Tert Butyl Ether	7.59	73	3208	0.2533 ug/L #	48
23) trans-1,2-Dichloroethene	7.83	61	3525	0.3142 ug/L	92
24) n-Hexane	7.90	57	3525	0.3580 ug/L	88
27) 1,1-Dichloroethane	8.44	63	4535	0.3217 ug/L #	85
31) 2,2-Dichloropropane	9.22	77	3265	0.3137 ug/L #	58
32) cis-1,2-Dichloroethene	9.28	96	2413	0.3112 ug/L	72
33) Chloroform	9.48	83	4365	0.3259 ug/L	94
35) Bromochloromethane	9.72	130	1272	0.3280 ug/L	84
36) Tetrahydrofuran	9.76	42	1302	1.2211 ug/L #	38
38) 1,1,1-Trichloroethane	10.01	97	3598	0.3084 ug/L	90
39) Cyclohexane	10.05	56	3685	0.2935 ug/L #	82
40) 1,1-Dichloropropene	10.21	75	2775	0.2755 ug/L #	70
42) Carbon Tetrachloride	10.37	117	3031	0.3030 ug/L #	85
45) 1,2-Dichloroethane	10.53	62	2824	0.3192 ug/L #	71
46) Benzene	10.58	78	9211	0.3343 ug/L	88
47) Trichloroethene	11.33	130	1942	0.2802 ug/L	98
48) Methylcyclohexane	11.42	83	3549	0.3142 ug/L	84
49) 1,2-Dichloropropane	11.55	63	1881	0.2510 ug/L	95
50) Bromodichloromethane	11.84	83	2819	0.2975 ug/L #	85
52) Dibromomethane	11.92	93	948	0.2681 ug/L #	51
55) cis-1,3-Dichloropropene	12.48	75	3166	0.3196 ug/L	85
56) Dimethyl Disulfide	12.75	79	837	4.7918 ug/L #	35
59) Toluene	12.90	91	8628	0.3095 ug/L	95
60) Ethyl Methacrylate	13.00	69	948	0.1779 ug/L	91
62) trans-1,3-Dichloropropene	13.08	75	1801	0.2111 ug/L	82

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402830.D Vial: 2
Acq On : 6 Feb 2015 15:59 Operator: TMB
Sample : WG511287-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:12 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
63)	1,1,2-Trichloroethane	13.29	97	932	0.2106 ug/L		73
65)	1,3-Dichloropropane	13.60	76	2102	0.2620 ug/L		80
66)	Tetrachloroethene	13.72	164	2034	0.3378 ug/L		89
67)	Dibromochloromethane	13.99	129	1483	0.2622 ug/L		85
68)	1,2-Dibromoethane	14.25	107	1151	0.2616 ug/L		87
69)	1-Chlorohexane	14.32	91	2908	0.3084 ug/L		79
70)	Chlorobenzene	14.74	112	6589	0.3495 ug/L		86
71)	1,1,1,2-Tetrachloroethane	14.78	131	1539	0.2390 ug/L		81
72)	Ethylbenzene	14.76	106	3527	0.3270 ug/L		98
73)	m-,p-Xylene	14.86	106	8641	0.7034 ug/L		97
74)	o-Xylene	15.42	106	3653	0.3022 ug/L		96
75)	Styrene	15.46	104	4801	0.2476 ug/L		87
76)	Bromoform	15.95	173	809	0.2318 ug/L	#	27
77)	Isopropylbenzene	15.85	105	9493	0.3144 ug/L		93
79)	1,1,2,2-Tetrachloroethane	16.07	83	1379	0.2924 ug/L	#	91
83)	n-Propylbenzene	16.36	91	13025	0.3433 ug/L		93
84)	Bromobenzene	16.49	156	1864	0.2539 ug/L		76
85)	1,3,5-Trimethylbenzene	16.54	105	8131	0.3210 ug/L		89
86)	2-Chlorotoluene	16.64	91	6967	0.3011 ug/L		98
87)	4-Chlorotoluene	16.68	91	7557	0.3207 ug/L		98
88)	a-Methylstyrene	16.95	118	3398	0.2329 ug/L		100
89)	tert-Butylbenzene	17.01	134	1383	0.2506 ug/L		80
90)	1,2,4-Trimethylbenzene	17.06	105	8919	0.3427 ug/L		85
91)	sec-Butylbenzene	17.28	105	10858	0.3243 ug/L		94
92)	p-Isopropyltoluene	17.43	119	8474	0.3202 ug/L		93
93)	1,3-Dichlorobenzene	17.63	146	5020	0.3333 ug/L		99
94)	1,4-Dichlorobenzene	17.76	146	5740	0.3721 ug/L	#	11
95)	n-Butylbenzene	17.96	91	10346	0.3567 ug/L	#	84
96)	1,2-Dichlorobenzene	18.26	146	4213	0.3121 ug/L		95
98)	1,2,4-Trichlorobenzene	20.40	180	3165	0.2952 ug/L		84
99)	Hexachlorobutadiene	20.54	225	2332	0.3697 ug/L		90
100)	Naphthalene	20.76	128	4212	0.2665 ug/L	#	68
101)	1,2,3-Trichlorobenzene	21.08	180	3100	0.3311 ug/L		92

(#) = qualifier out of range (m) = manual integration
8M402830.D 8260WTR.M Mon Feb 09 12:25:12 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402830.D Vial: 2
Acq On : 6 Feb 2015 15:59 Operator: TMB
Sample : WG511287-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 9 12:25 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration

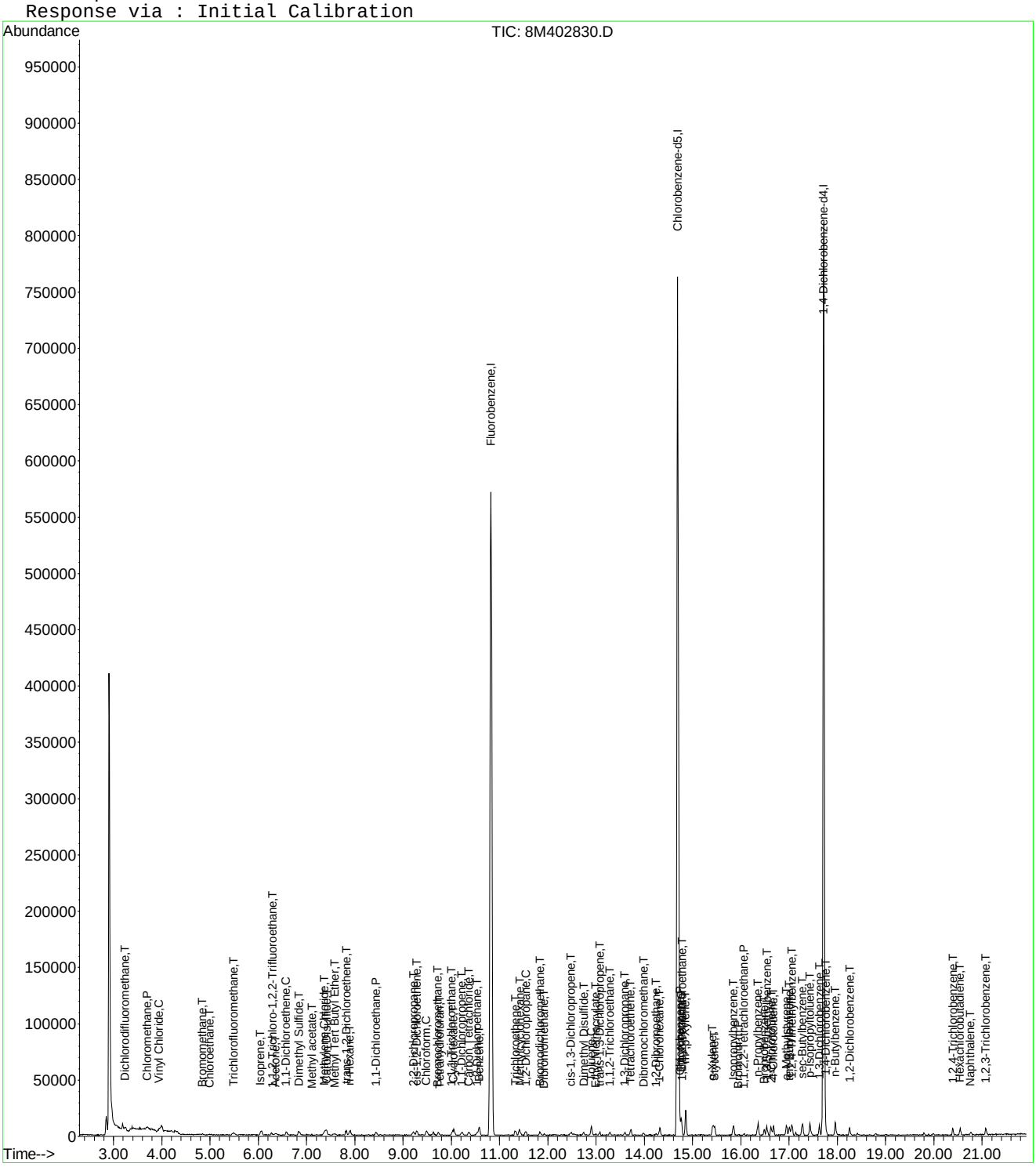

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402831.D Vial: 3
Acq On : 6 Feb 2015 16:27 Operator: TMB
Sample : WG511287-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:13 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	669605	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	519790	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.72	152	260996	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.79	98	420	0.0170 ug/L	-0.02
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.08%#	
80) p-Bromofluorobenzene	0.00	95	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.23	85	4476	0.4173 ug/L	79
3) Chloromethane	3.71	50	4971	0.5356 ug/L #	71
4) Vinyl Chloride	3.94	62	4128	0.4520 ug/L	96
5) 1,3-Butadiene	4.00	54	3492	Below Cal #	58
6) Bromomethane	4.85	94	782	0.8197 ug/L	92
7) Chloroethane	5.01	64	2166	0.3836 ug/L #	56
8) Trichlorofluoromethane	5.48	101	5667	0.4474 ug/L #	93
10) Isoprene	6.07	67	3425	0.3491 ug/L	83
12) 1,1,2-Trichloro-1,2,2-Trif	6.27	101	2789	0.3898 ug/L	79
13) Acetone	6.37	43	2081	2.0509 ug/L #	1
14) 1,1-Dichloroethene	6.58	61	4994	0.4339 ug/L	92
16) Dimethyl Sulfide	6.84	62	2867	0.3738 ug/L	97
18) Methyl acetate	7.11	43	1151	0.2728 ug/L #	64
19) Methylene Chloride	7.36	84	3447	0.4789 ug/L	81
20) Carbon Disulfide	7.41	76	10450	0.4397 ug/L	100
22) Methyl Tert Butyl Ether	7.59	73	4612	0.3686 ug/L #	58
23) trans-1,2-Dichloroethene	7.83	61	4989	0.4501 ug/L	97
24) n-Hexane	7.90	57	3804	0.3910 ug/L	98
26) Vinyl Acetate	8.41	43	811	0.2562 ug/L #	76
27) 1,1-Dichloroethane	8.45	63	5717	0.4104 ug/L #	87
31) 2,2-Dichloropropane	9.22	77	4570	0.4444 ug/L #	58
32) cis-1,2-Dichloroethene	9.28	96	3293	0.4298 ug/L	77
33) Chloroform	9.49	83	5730	0.4330 ug/L	98
35) Bromochloromethane	9.72	130	1259	0.3285 ug/L	82
38) 1,1,1-Trichloroethane	10.03	97	4607	0.3997 ug/L	98
39) Cyclohexane	10.06	56	5367	0.4327 ug/L	95
40) 1,1-Dichloropropene	10.22	75	3807	0.3826 ug/L	90
42) Carbon Tetrachloride	10.36	117	3770	0.3814 ug/L	95
45) 1,2-Dichloroethane	10.53	62	3737	0.4275 ug/L #	70
46) Benzene	10.58	78	11704	0.4299 ug/L	91
47) Trichloroethene	11.33	130	2490	0.3636 ug/L	93
48) Methylcyclohexane	11.41	83	4494	0.4027 ug/L	88
49) 1,2-Dichloropropane	11.54	63	2912	0.3933 ug/L #	73
50) Bromodichloromethane	11.85	83	3539	0.3780 ug/L #	92
52) Dibromomethane	11.92	93	1317	0.3769 ug/L	94
53) 2-Chloroethyl Vinyl Ether	12.14	63	582	0.2070 ug/L #	52
55) cis-1,3-Dichloropropene	12.48	75	3482	0.3558 ug/L #	68
56) Dimethyl Disulfide	12.75	79	941	4.8024 ug/L #	20
59) Toluene	12.90	91	12159	0.4339 ug/L	95
60) Ethyl Methacrylate	13.00	69	1427	0.2664 ug/L	94

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402831.D Vial: 3
Acq On : 6 Feb 2015 16:27 Operator: TMB
Sample : WG511287-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:13 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
62)	trans-1,3-Dichloropropene	13.08	75	2603	0.3036 ug/L	#	75
63)	1,1,2-Trichloroethane	13.28	97	1475	0.3316 ug/L		96
65)	1,3-Dichloropropane	13.59	76	3031	0.3759 ug/L		88
66)	Tetrachloroethene	13.72	164	2304	0.3808 ug/L		82
67)	Dibromochloromethane	13.98	129	1855	0.3263 ug/L		78
68)	1,2-Dibromoethane	14.25	107	1394	0.3152 ug/L		95
69)	1-Chlorohexane	14.32	91	3675	0.3877 ug/L		94
70)	Chlorobenzene	14.74	112	8004	0.4224 ug/L		93
71)	1,1,1,2-Tetrachloroethane	14.77	131	2173	0.3358 ug/L		90
72)	Ethylbenzene	14.77	106	4389	0.4049 ug/L		86
73)	m-,p-Xylene	14.86	106	10439	0.8455 ug/L		94
74)	o-Xylene	15.42	106	4821	0.3968 ug/L		98
75)	Styrene	15.46	104	6791	0.3485 ug/L		92
76)	Bromoform	15.95	173	953	0.2717 ug/L	#	27
77)	Isopropylbenzene	15.85	105	12521	0.4125 ug/L		95
79)	1,1,2,2-Tetrachloroethane	16.06	83	1641	0.3459 ug/L	#	77
83)	n-Propylbenzene	16.36	91	15075	0.3950 ug/L		98
84)	Bromobenzene	16.49	156	2959	0.4007 ug/L		93
85)	1,3,5-Trimethylbenzene	16.54	105	10092	0.3962 ug/L		99
86)	2-Chlorotoluene	16.62	91	10974	0.4716 ug/L		81
87)	4-Chlorotoluene	16.68	91	8600	0.3628 ug/L	#	77
88)	a-Methylstyrene	16.94	118	4721	0.3216 ug/L		86
89)	tert-Butylbenzene	17.02	134	1933	0.3482 ug/L		66
90)	1,2,4-Trimethylbenzene	17.06	105	11257	0.4300 ug/L		93
91)	sec-Butylbenzene	17.28	105	14453	0.4292 ug/L		99
92)	p-Isopropyltoluene	17.43	119	11603	0.4359 ug/L		90
93)	1,3-Dichlorobenzene	17.63	146	6958	0.4592 ug/L		85
94)	1,4-Dichlorobenzene	17.75	146	6661	0.4293 ug/L	#	66
95)	n-Butylbenzene	17.96	91	12852	0.4406 ug/L		90
96)	1,2-Dichlorobenzene	18.26	146	5649	0.4160 ug/L		91
98)	1,2,4-Trichlorobenzene	20.40	180	4530	0.4201 ug/L		96
99)	Hexachlorobutadiene	20.54	225	2435	0.3838 ug/L		81
100)	Naphthalene	20.77	128	6685	0.4205 ug/L	#	78
101)	1,2,3-Trichlorobenzene	21.07	180	3345	0.3552 ug/L		86

(#) = qualifier out of range (m) = manual integration
8M402831.D 8260WTR.M Mon Feb 09 12:25:13 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402831.D Vial: 3
Acq On : 6 Feb 2015 16:27 Operator: TMB
Sample : WG511287-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 9 12:25 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration

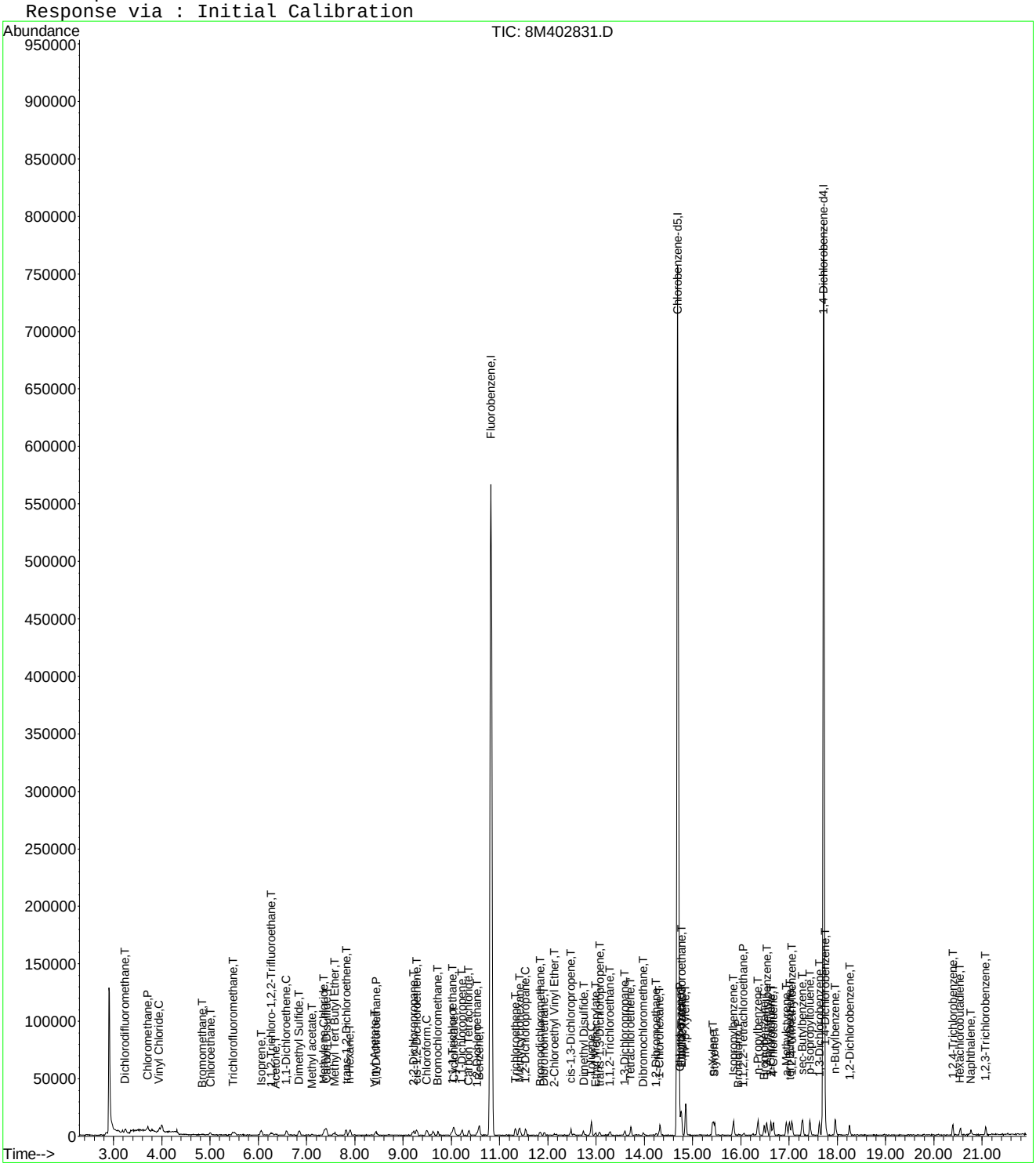

8M402831.D 8260WTR.M Mon Feb 09 12:25:14 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402832.D Vial: 4
Acq On : 6 Feb 2015 16:57 Operator: TMB
Sample : WG511287-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:14 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	680652	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	518318	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.71	152	261331	25.00 ug/L	-0.02

System Monitoring Compounds					
37) Dibromofluoromethane	9.78	111	3473	0.4848 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.92%#	
43) 1,2-Dichloroethane-d4	10.42	65	3775	0.5027 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	2.00%#	
58) Toluene-d8	12.79	98	12605	0.5119 ug/L	-0.02
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.04%#	
80) p-Bromofluorobenzene	16.19	95	4581	0.4888 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	1.96%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.24	85	10429	0.9564 ug/L	92
3) Chloromethane	3.70	50	10808	1.1457 ug/L	87
4) Vinyl Chloride	3.94	62	9513	1.0246 ug/L	97
5) 1,3-Butadiene	3.99	54	7889	0.4011 ug/L #	54
6) Bromomethane	4.86	94	2276	1.2327 ug/L	67
7) Chloroethane	5.01	64	5623	0.9798 ug/L	87
8) Trichlorofluoromethane	5.48	101	11946	0.9278 ug/L	96
9) Diethyl ether	6.03	59	23190	4.9278 ug/L	93
10) Isoprene	6.06	67	8558	0.8581 ug/L	94
11) Acrolein	6.26	56	1236	2.2750 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	7630	1.0490 ug/L	95
13) Acetone	6.36	43	2205	2.1379 ug/L #	8
14) 1,1-Dichloroethene	6.59	61	11643	0.9952 ug/L	98
15) Tert-Butyl Alcohol	6.69	59	1494	6.8913 ug/L #	59
16) Dimethyl Sulfide	6.85	62	7069	0.9066 ug/L	100
18) Methyl acetate	7.11	43	3952	0.9215 ug/L #	79
19) Methylene Chloride	7.37	84	7588	1.0372 ug/L	91
20) Carbon Disulfide	7.41	76	26089	1.0799 ug/L	98
21) Acrylonitrile	7.55	53	3354	2.2270 ug/L	97
22) Methyl Tert Butyl Ether	7.59	73	11218	0.8820 ug/L #	75
23) trans-1,2-Dichloroethene	7.82	61	10975	0.9740 ug/L	89
24) n-Hexane	7.90	57	9364	0.9469 ug/L	97
25) Diisopropyl ether	8.24	45	114147	4.8902 ug/L	98
26) Vinyl Acetate	8.42	43	2291	0.7120 ug/L #	76
27) 1,1-Dichloroethane	8.44	63	14740	1.0410 ug/L	98
28) Ethyl-Tert-Butyl ether	8.82	59	88489	4.7290 ug/L	95
29) 2-Butanone	9.01	43	954	0.6213 ug/L #	55
30) Propionitrile	9.11	54	2224	4.3798 ug/L #	56
31) 2,2-Dichloropropane	9.21	77	9893	0.9464 ug/L	95
32) cis-1,2-Dichloroethene	9.30	96	7553	0.9699 ug/L	92
33) Chloroform	9.49	83	13178	0.9797 ug/L	94
34) 1-Bromopropane	9.63	122	1017	0.7247 ug/L	88
35) Bromochloromethane	9.73	130	3602	0.9247 ug/L	90
36) Tetrahydrofuran	9.75	42	5513	5.1479 ug/L	92
38) 1,1,1-Trichloroethane	10.02	97	11460	0.9781 ug/L	96
39) Cyclohexane	10.06	56	11006	0.8729 ug/L	79
40) 1,1-Dichloropropene	10.22	75	9225	0.9119 ug/L	94
41) Tert-Amyl-Methyl ether	10.33	73	64606	4.5896 ug/L	93
42) Carbon Tetrachloride	10.37	117	9189	0.9145 ug/L	97
45) 1,2-Dichloroethane	10.54	62	8304	0.9345 ug/L	94

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402832.D Vial: 4
Acq On : 6 Feb 2015 16:57 Operator: TMB
Sample : WG511287-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:14 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	10.58	78	27406	0.9903 ug/L		92
47)	Trichloroethene	11.32	130	6694	0.9616 ug/L		94
48)	Methylcyclohexane	11.42	83	9364	0.8254 ug/L		94
49)	1,2-Dichloropropane	11.54	63	6798	0.9033 ug/L		86
50)	Bromodichloromethane	11.84	83	8550	0.8985 ug/L		98
52)	Dibromomethane	11.93	93	3606	1.0153 ug/L		91
53)	2-Chloroethyl Vinyl Ether	12.14	63	2475	0.8659 ug/L	#	52
54)	4-Methyl-2-Pentanone	12.17	58	762	0.5942 ug/L	#	42
55)	cis-1,3-Dichloropropene	12.48	75	8836	0.8882 ug/L		95
56)	Dimethyl Disulfide	12.74	79	3497	5.0341 ug/L		100
59)	Toluene	12.89	91	28238	1.0106 ug/L		100
60)	Ethyl Methacrylate	12.99	69	4257	0.7971 ug/L		88
62)	trans-1,3-Dichloropropene	13.07	75	6842	0.8003 ug/L		97
63)	1,1,2-Trichloroethane	13.29	97	4173	0.9407 ug/L		99
64)	2-Hexanone	13.25	58	236	0.2057 ug/L	#	1
65)	1,3-Dichloropropane	13.60	76	7076	0.8800 ug/L		93
66)	Tetrachloroethene	13.72	164	5469	0.9064 ug/L		97
67)	Dibromochloromethane	13.98	129	4423	0.7803 ug/L		85
68)	1,2-Dibromoethane	14.25	107	3915	0.8878 ug/L		95
69)	1-Chlorohexane	14.32	91	8295	0.8777 ug/L		85
70)	Chlorobenzene	14.75	112	19891	1.0528 ug/L		93
71)	1,1,1,2-Tetrachloroethane	14.77	131	5260	0.8152 ug/L		96
72)	Ethylbenzene	14.77	106	10234	0.9467 ug/L		88
73)	m-,p-Xylene	14.86	106	24326	1.9758 ug/L		94
74)	o-Xylene	15.42	106	10442	0.8620 ug/L		90
75)	Styrene	15.46	104	17184	0.8844 ug/L		94
76)	Bromoform	15.96	173	2628	0.7514 ug/L		95
77)	Isopropylbenzene	15.84	105	29668	0.9803 ug/L		94
79)	1,1,2,2-Tetrachloroethane	16.06	83	4368	0.9196 ug/L	#	85
81)	1,2,3-Trichloropropane	16.25	110	998	0.7515 ug/L	#	43
82)	trans-1,4-Dichloro-2-Buten	16.30	53	637	1.0436 ug/L	#	1
83)	n-Propylbenzene	16.35	91	37716	0.9871 ug/L		95
84)	Bromobenzene	16.48	156	6808	0.9207 ug/L		97
85)	1,3,5-Trimethylbenzene	16.53	105	24594	0.9642 ug/L		92
86)	2-Chlorotoluene	16.63	91	22921	0.9837 ug/L		85
87)	4-Chlorotoluene	16.68	91	22964	0.9676 ug/L		95
88)	a-Methylstyrene	16.95	118	10986	0.7475 ug/L		95
89)	tert-Butylbenzene	17.01	134	5320	0.9571 ug/L		81
90)	1,2,4-Trimethylbenzene	17.06	105	25207	0.9617 ug/L		95
91)	sec-Butylbenzene	17.28	105	32585	0.9665 ug/L		99
92)	p-Isopropyltoluene	17.43	119	25877	0.9710 ug/L		93
93)	1,3-Dichlorobenzene	17.63	146	14367	0.9470 ug/L		98
94)	1,4-Dichlorobenzene	17.75	146	15270	0.9829 ug/L	#	63
95)	n-Butylbenzene	17.96	91	27659	0.9470 ug/L		96
96)	1,2-Dichlorobenzene	18.26	146	12888	0.9480 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.25	75	411	0.4661 ug/L	#	44
98)	1,2,4-Trichlorobenzene	20.39	180	9937	0.9204 ug/L		99
99)	Hexachlorobutadiene	20.55	225	6043	0.9512 ug/L		97
100)	Naphthalene	20.76	128	14995	0.9419 ug/L		96
101)	1,2,3-Trichlorobenzene	21.07	180	8916	0.9457 ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402832.D Vial: 4
Acq On : 6 Feb 2015 16:57 Operator: TMB
Sample : WG511287-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 9 12:25 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration

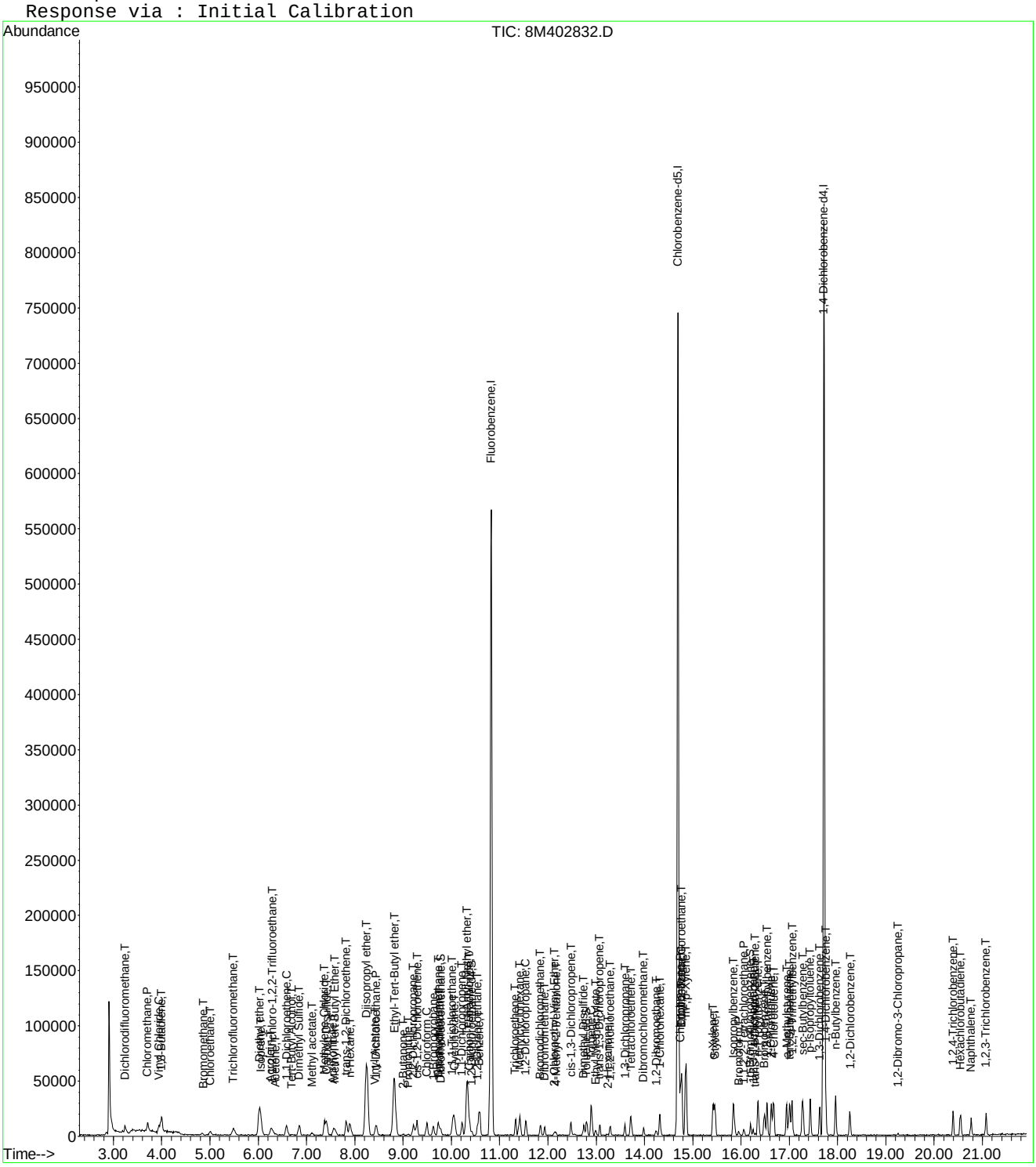

8M402832.D 8260WTR.M Mon Feb 09 12:25:15 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402833.D Vial: 5
Acq On : 6 Feb 2015 17:26 Operator: TMB
Sample : WG511287-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:15 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	684209	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	512100	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.71	152	259877	25.00 ug/L	-0.02

System Monitoring Compounds					
37) Dibromofluoromethane	9.78	111	7460	1.0360 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	4.16%#	
43) 1,2-Dichloroethane-d4	10.42	65	8372	1.1090 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	4.44%#	
58) Toluene-d8	12.80	98	25029	1.0288 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.12%#	
80) p-Bromofluorobenzene	16.19	95	8934	0.9585 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	3.84%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.24	85	20472	1.8677 ug/L	100
3) Chloromethane	3.70	50	19974	2.1063 ug/L	94
4) Vinyl Chloride	3.94	62	18345	1.9657 ug/L	97
5) 1,3-Butadiene	3.99	54	14633	1.2441 ug/L #	64
6) Bromomethane	4.84	94	4890	1.9533 ug/L	96
7) Chloroethane	5.01	64	11310	1.9605 ug/L	94
8) Trichlorofluoromethane	5.49	101	24971	1.9292 ug/L	98
9) Diethyl ether	6.02	59	121007	25.5797 ug/L	90
10) Isoprene	6.06	67	18886	1.8837 ug/L	88
11) Acrolein	6.26	56	7529	13.7860 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	13985	1.9127 ug/L	97
13) Acetone	6.37	43	3124	3.0132 ug/L #	5
14) 1,1-Dichloroethene	6.59	61	22809	1.9396 ug/L	94
15) Tert-Butyl Alcohol	6.70	59	10841	49.7454 ug/L #	88
16) Dimethyl Sulfide	6.85	62	14670	1.8717 ug/L	95
18) Methyl acetate	7.12	43	8916	2.0681 ug/L #	90
19) Methylene Chloride	7.37	84	15632	2.1257 ug/L	92
20) Carbon Disulfide	7.42	76	50256	2.0694 ug/L	99
21) Acrylonitrile	7.55	53	19250	12.7155 ug/L	97
22) Methyl Tert Butyl Ether	7.58	73	23150	1.8107 ug/L	92
23) trans-1,2-Dichloroethene	7.82	61	22661	2.0007 ug/L	95
24) n-Hexane	7.91	57	18875	1.8988 ug/L	91
25) Diisopropyl ether	8.24	45	614110	26.1727 ug/L	98
26) Vinyl Acetate	8.42	43	7611	2.3529 ug/L #	76
27) 1,1-Dichloroethane	8.44	63	29275	2.0567 ug/L	97
28) Ethyl-Tert-Butyl ether	8.81	59	477463	25.3836 ug/L	97
29) 2-Butanone	9.00	43	3235	2.0960 ug/L #	55
30) Propionitrile	9.10	54	13019	25.5056 ug/L	98
31) 2,2-Dichloropropane	9.22	77	21477	2.0439 ug/L	100
32) cis-1,2-Dichloroethene	9.29	96	15599	1.9926 ug/L	95
33) Chloroform	9.49	83	27455	2.0306 ug/L	98
34) 1-Bromopropane	9.62	122	2581	1.8297 ug/L	94
35) Bromochloromethane	9.72	130	8164	2.0849 ug/L	95
36) Tetrahydrofuran	9.75	42	26690	24.7928 ug/L	95
38) 1,1,1-Trichloroethane	10.03	97	22970	1.9502 ug/L	97
39) Cyclohexane	10.06	56	24983	1.9710 ug/L	91
40) 1,1-Dichloropropene	10.22	75	18702	1.8392 ug/L	99
41) Tert-Amyl-Methyl ether	10.32	73	360978	25.5105 ug/L	99
42) Carbon Tetrachloride	10.36	117	19375	1.9183 ug/L	100
45) 1,2-Dichloroethane	10.54	62	17547	1.9643 ug/L	96

(#) = qualifier out of range (m) = manual integration
8M402833.D 8260WTR.M Mon Feb 09 12:25:16 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402833.D Vial: 5
Acq On : 6 Feb 2015 17:26 Operator: TMB
Sample : WG511287-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:15 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	10.58	78	56783	2.0412 ug/L		94
47)	Trichloroethene	11.33	130	13237	1.8916 ug/L		94
48)	Methylcyclohexane	11.41	83	20025	1.7560 ug/L		91
49)	1,2-Dichloropropane	11.54	63	14715	1.9452 ug/L		98
50)	Bromodichloromethane	11.84	83	19679	2.0572 ug/L		98
51)	1,4-Dioxane	11.84	88	1488	50.6455 ug/L	#	55
52)	Dibromomethane	11.93	93	7126	1.9960 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.14	63	5258	1.8299 ug/L		89
54)	4-Methyl-2-Pentanone	12.17	58	2374	1.8416 ug/L	#	69
55)	cis-1,3-Dichloropropene	12.47	75	18245	1.8244 ug/L		96
56)	Dimethyl Disulfide	12.74	79	8238	5.4625 ug/L		94
59)	Toluene	12.90	91	58092	2.1042 ug/L		96
60)	Ethyl Methacrylate	13.00	69	9206	1.7447 ug/L		96
62)	trans-1,3-Dichloropropene	13.07	75	16051	1.9002 ug/L		94
63)	1,1,2-Trichloroethane	13.30	97	9010	2.0557 ug/L		99
64)	2-Hexanone	13.23	58	1834	1.6177 ug/L	#	30
65)	1,3-Dichloropropane	13.60	76	15954	2.0082 ug/L		91
66)	Tetrachloroethene	13.72	164	11407	1.9135 ug/L		96
67)	Dibromochloromethane	13.98	129	10891	1.9448 ug/L		97
68)	1,2-Dibromoethane	14.24	107	9032	2.0731 ug/L		92
69)	1-Chlorohexane	14.32	91	17339	1.8568 ug/L		96
70)	Chlorobenzene	14.74	112	38160	2.0442 ug/L		79
71)	1,1,1,2-Tetrachloroethane	14.78	131	11640	1.8258 ug/L		99
72)	Ethylbenzene	14.77	106	20794	1.9470 ug/L		91
73)	m-,p-Xylene	14.86	106	49918	4.1036 ug/L		94
74)	o-Xylene	15.42	106	22192	1.8542 ug/L		87
75)	Styrene	15.46	104	38336	1.9970 ug/L		98
76)	Bromoform	15.96	173	6299	1.8230 ug/L		84
77)	Isopropylbenzene	15.84	105	61420	2.0541 ug/L		100
79)	1,1,2,2-Tetrachloroethane	16.06	83	9970	2.1107 ug/L		96
81)	1,2,3-Trichloropropane	16.26	110	2570	1.9461 ug/L		82
82)	trans-1,4-Dichloro-2-Buten	16.30	53	2207	2.0091 ug/L		60
83)	n-Propylbenzene	16.35	91	78597	2.0685 ug/L		97
84)	Bromobenzene	16.48	156	15210	2.0686 ug/L		98
85)	1,3,5-Trimethylbenzene	16.55	105	49457	1.9498 ug/L		100
86)	2-Chlorotoluene	16.63	91	49976	2.1568 ug/L		87
87)	4-Chlorotoluene	16.67	91	47500	2.0125 ug/L		92
88)	a-Methylstyrene	16.95	118	26221	1.7941 ug/L		99
89)	tert-Butylbenzene	17.00	134	9753	1.7644 ug/L		81
90)	1,2,4-Trimethylbenzene	17.06	105	56340	2.1615 ug/L		96
91)	sec-Butylbenzene	17.28	105	68712	2.0494 ug/L		100
92)	p-Isopropyltoluene	17.43	119	55519	2.0949 ug/L		92
93)	1,3-Dichlorobenzene	17.63	146	30149	1.9984 ug/L		96
94)	1,4-Dichlorobenzene	17.75	146	30189	1.9540 ug/L		77
95)	n-Butylbenzene	17.96	91	57908	1.9937 ug/L		98
96)	1,2-Dichlorobenzene	18.25	146	28070	2.0762 ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.25	75	1368	1.5599 ug/L		72
98)	1,2,4-Trichlorobenzene	20.40	180	21185	1.9731 ug/L		93
99)	Hexachlorobutadiene	20.55	225	12046	1.9067 ug/L		90
100)	Naphthalene	20.76	128	30158	1.9050 ug/L		97
101)	1,2,3-Trichlorobenzene	21.07	180	19124	2.0397 ug/L		94

(#) = qualifier out of range (m) = manual integration
8M402833.D 8260WTR.M Mon Feb 09 12:25:16 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402833.D Vial: 5
Acq On : 6 Feb 2015 17:26 Operator: TMB
Sample : WG511287-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 9 12:25 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration

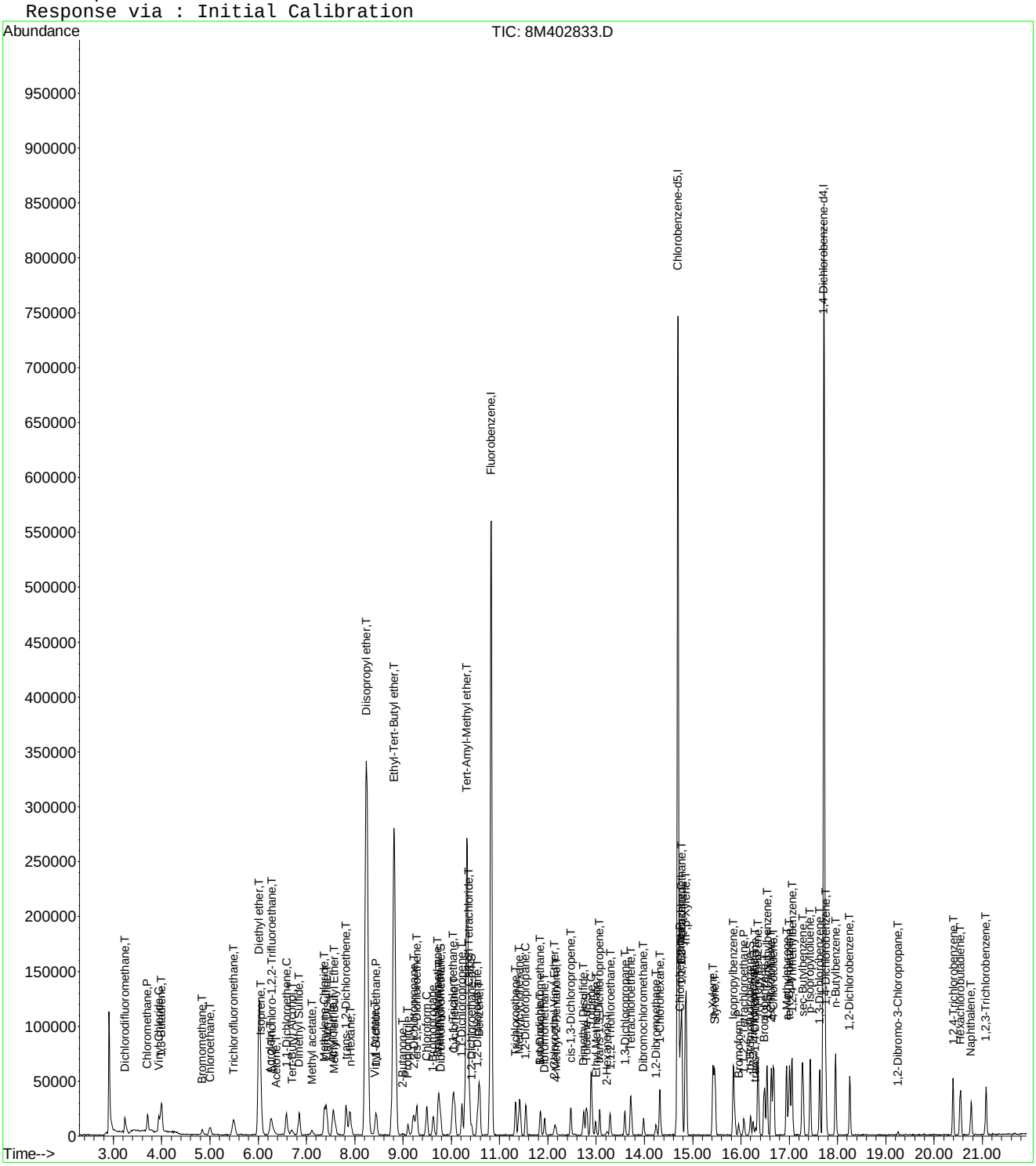

8M402833.D 8260WTR.M Mon Feb 09 12:25:16 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402834.D Vial: 6
Acq On : 6 Feb 2015 17:54 Operator: TMB
Sample : WG511287-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:16 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	701000	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	517318	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.72	152	264517	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	19430	2.6337 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 10.52%#		
43) 1,2-Dichloroethane-d4	10.42	65	20557	2.6579 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 10.64%#		
58) Toluene-d8	12.80	98	64338	2.6179 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 10.48%#		
80) p-Bromofluorobenzene	16.20	95	24229	2.5540 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 10.20%#		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.24	85	53946	4.8037 ug/L	95
3) Chloromethane	3.70	50	49077	5.0513 ug/L	99
4) Vinyl Chloride	3.94	62	49043	5.1290 ug/L	97
5) 1,3-Butadiene	3.99	54	41912	4.5658 ug/L #	79
6) Bromomethane	4.84	94	13843	4.3290 ug/L	91
7) Chloroethane	5.00	64	29596	5.0073 ug/L	97
8) Trichlorofluoromethane	5.49	101	67946	5.1237 ug/L	100
9) Diethyl ether	6.02	59	244432	50.4329 ug/L	92
10) Isoprene	6.06	67	49866	4.8546 ug/L	91
11) Acrolein	6.25	56	12812	22.8976 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	38315	5.1147 ug/L	93
13) Acetone	6.35	43	6167	5.8057 ug/L #	26
14) 1,1-Dichloroethene	6.58	61	60623	5.0316 ug/L	97
15) Tert-Butyl Alcohol	6.69	59	21974	98.4156 ug/L	93
16) Dimethyl Sulfide	6.85	62	38750	4.8255 ug/L	96
17) Iodomethane	7.10	142	1335	17.1832 ug/L #	32
18) Methyl acetate	7.11	43	22452	5.0831 ug/L	98
19) Methylene Chloride	7.37	84	38342	5.0889 ug/L	96
20) Carbon Disulfide	7.41	76	129184	5.1921 ug/L	99
21) Acrylonitrile	7.55	53	35517	22.8986 ug/L	95
22) Methyl Tert Butyl Ether	7.59	73	65059	4.9667 ug/L	92
23) trans-1,2-Dichloroethene	7.81	61	57105	4.9208 ug/L	93
24) n-Hexane	7.90	57	51504	5.0571 ug/L	92
25) Diisopropyl ether	8.24	45	1246526	51.8531 ug/L	98
26) Vinyl Acetate	8.41	43	16287	4.9145 ug/L	96
27) 1,1-Dichloroethane	8.45	63	75270	5.1614 ug/L	99
28) Ethyl-Tert-Butyl ether	8.81	59	977865	50.7414 ug/L	96
29) 2-Butanone	9.00	43	7302	4.6177 ug/L	93
30) Propionitrile	9.10	54	25675	49.0953 ug/L	99
31) 2,2-Dichloropropane	9.22	77	51352	4.7700 ug/L	99
32) cis-1,2-Dichloroethene	9.28	96	40797	5.0866 ug/L	89
33) Chloroform	9.49	83	69512	5.0180 ug/L	100
34) 1-Bromopropane	9.62	122	6848	4.7382 ug/L	96
35) Bromochloromethane	9.73	130	20831	5.1924 ug/L	94
36) Tetrahydrofuran	9.75	42	54903	49.7788 ug/L	97
38) 1,1,1-Trichloroethane	10.02	97	58972	4.8870 ug/L	98
39) Cyclohexane	10.06	56	65876	5.0728 ug/L	89
40) 1,1-Dichloropropene	10.22	75	52084	4.9993 ug/L	95
41) Tert-Amyl-Methyl ether	10.33	73	726207	50.0921 ug/L	99
42) Carbon Tetrachloride	10.37	117	51723	4.9983 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M402834.D 8260WTR.M Mon Feb 09 12:25:17 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402834.D Vial: 6
Acq On : 6 Feb 2015 17:54 Operator: TMB
Sample : WG511287-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:16 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.53	62	45071	4.9247	ug/L	99
46)	Benzene	10.58	78	153041	5.3696	ug/L	93
47)	Trichloroethene	11.33	130	35521	4.9544	ug/L	99
48)	Methylcyclohexane	11.41	83	56528	4.8382	ug/L	92
49)	1,2-Dichloropropane	11.55	63	39432	5.0877	ug/L	99
50)	Bromodichloromethane	11.85	83	49339	5.0343	ug/L	99
51)	1,4-Dioxane	11.83	88	2693	89.4633	ug/L	67
52)	Dibromomethane	11.93	93	18541	5.0689	ug/L	93
53)	2-Chloroethyl Vinyl Ether	12.14	63	13638	4.6327	ug/L	96
54)	4-Methyl-2-Pentanone	12.17	58	5811	4.3998	ug/L	93
55)	cis-1,3-Dichloropropene	12.48	75	51835	5.0590	ug/L	95
56)	Dimethyl Disulfide	12.75	79	23468	6.7931	ug/L	97
59)	Toluene	12.90	91	154018	5.5226	ug/L	96
60)	Ethyl Methacrylate	12.98	69	24235	4.5466	ug/L	97
62)	trans-1,3-Dichloropropene	13.07	75	40777	4.7786	ug/L	98
63)	1,1,2-Trichloroethane	13.29	97	21942	4.9558	ug/L	96
64)	2-Hexanone	13.23	58	4784	4.1773	ug/L	75
65)	1,3-Dichloropropane	13.59	76	41347	5.1520	ug/L	94
66)	Tetrachloroethene	13.72	164	30321	5.0349	ug/L	94
67)	Dibromochloromethane	13.99	129	28092	4.9658	ug/L	99
68)	1,2-Dibromoethane	14.25	107	21416	4.8659	ug/L	98
69)	1-Chlorohexane	14.32	91	46767	4.9577	ug/L	94
70)	Chlorobenzene	14.74	112	99494	5.2761	ug/L	94
71)	1,1,1,2-Tetrachloroethane	14.77	131	31159	4.8382	ug/L	99
72)	Ethylbenzene	14.77	106	53750	4.9819	ug/L	89
73)	m-,p-Xylene	14.86	106	133314	10.8489	ug/L	97
74)	o-Xylene	15.42	106	61832	5.1141	ug/L	94
75)	Styrene	15.46	104	106910	5.5130	ug/L	99
76)	Bromoform	15.96	173	16402	4.6989	ug/L	97
77)	Isopropylbenzene	15.85	105	165605	5.4825	ug/L	96
79)	1,1,2,2-Tetrachloroethane	16.07	83	24669	5.1310	ug/L	97
81)	1,2,3-Trichloropropane	16.25	110	7054	5.2479	ug/L	93
82)	trans-1,4-Dichloro-2-Buten	16.30	53	6707	4.6978	ug/L	90
83)	n-Propylbenzene	16.36	91	212816	5.5026	ug/L	97
84)	Bromobenzene	16.49	156	39314	5.2529	ug/L	97
85)	1,3,5-Trimethylbenzene	16.54	105	140321	5.4350	ug/L	98
86)	2-Chlorotoluene	16.62	91	125596	5.3253	ug/L	96
87)	4-Chlorotoluene	16.68	91	132986	5.5357	ug/L	98
88)	a-Methylstyrene	16.94	118	72043	4.8429	ug/L	96
89)	tert-Butylbenzene	17.01	134	28280	5.0265	ug/L	93
90)	1,2,4-Trimethylbenzene	17.06	105	149715	5.6432	ug/L	97
91)	sec-Butylbenzene	17.28	105	183357	5.3729	ug/L	96
92)	p-Isopropyltoluene	17.43	119	145342	5.3879	ug/L	100
93)	1,3-Dichlorobenzene	17.63	146	78874	5.1364	ug/L	98
94)	1,4-Dichlorobenzene	17.76	146	80578	5.1241	ug/L	93
95)	n-Butylbenzene	17.96	91	159334	5.3895	ug/L	96
96)	1,2-Dichlorobenzene	18.26	146	71466	5.1933	ug/L	100
97)	1,2-Dibromo-3-Chloropropan	19.24	75	4130	4.6268	ug/L	94
98)	1,2,4-Trichlorobenzene	20.40	180	55102	5.0421	ug/L	98
99)	Hexachlorobutadiene	20.54	225	32814	5.1028	ug/L	95
100)	Naphthalene	20.77	128	82876	5.1431	ug/L	98
101)	1,2,3-Trichlorobenzene	21.08	180	46793	4.9033	ug/L	95

(#) = qualifier out of range (m) = manual integration
8M402834.D 8260WTR.M Mon Feb 09 12:25:17 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402834.D Vial: 6
Acq On : 6 Feb 2015 17:54 Operator: TMB
Sample : WG511287-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 9 12:25 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration

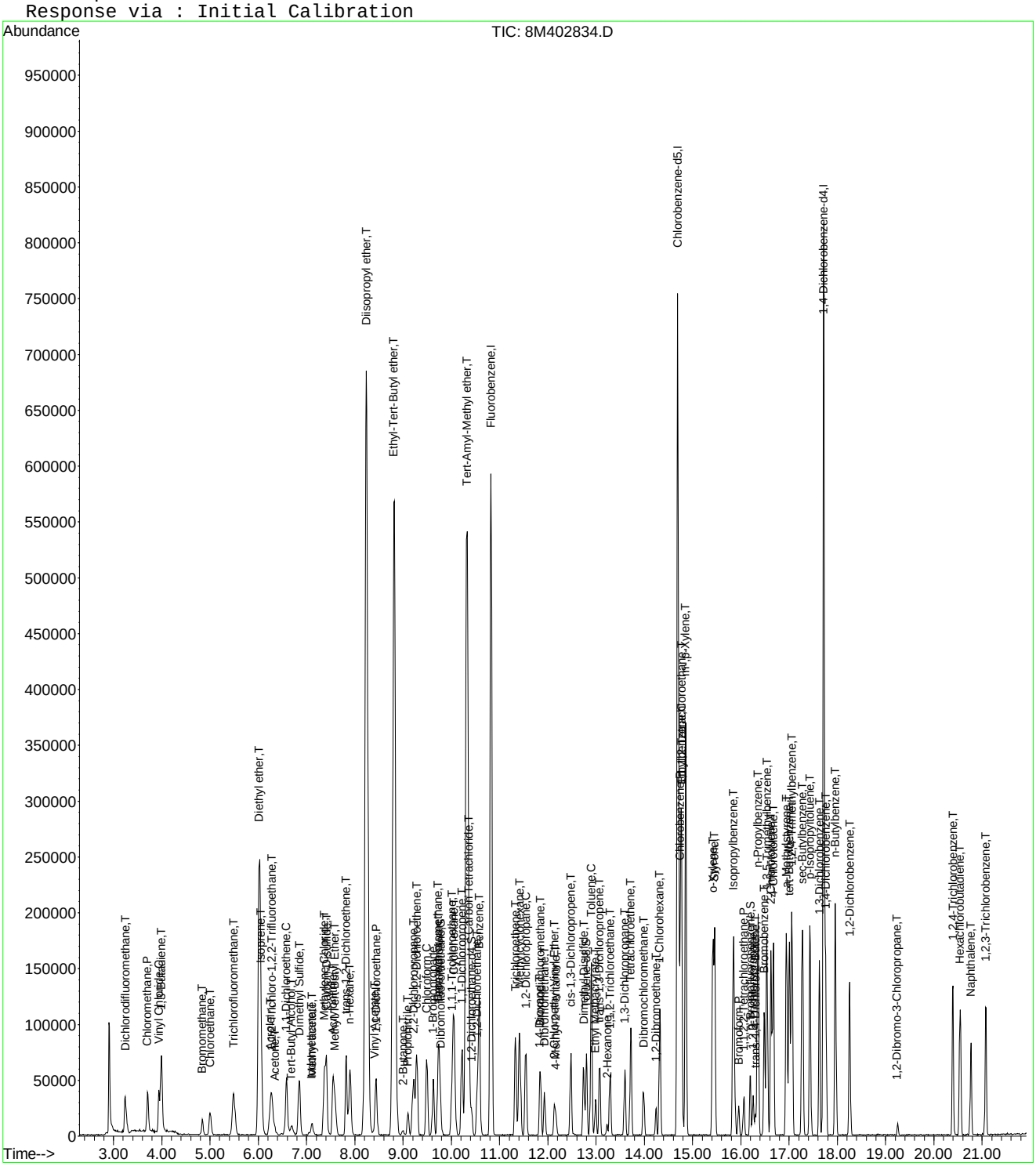

8M402834.D 8260WTR.M Mon Feb 09 12:25:17 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402835.D Vial: 7
Acq On : 6 Feb 2015 18:23 Operator: TMB
Sample : WG511287-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:17 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	723508	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	530120	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.72	152	273581	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	77163	10.1339 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 40.52%#		
43) 1,2-Dichloroethane-d4	10.42	65	80882	10.1322 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 40.52%#		
58) Toluene-d8	12.80	98	264106	10.4871 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 41.96%#		
80) p-Bromofluorobenzene	16.19	95	100946	10.2881 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 41.16%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.25	85	240807	20.7759 ug/L	99
3) Chloromethane	3.71	50	200541	19.9987 ug/L	99
4) Vinyl Chloride	3.94	62	201316	20.3992 ug/L	97
5) 1,3-Butadiene	3.99	54	166991	19.7037 ug/L #	77
6) Bromomethane	4.84	94	69373	18.3247 ug/L	97
7) Chloroethane	5.00	64	124147	20.3509 ug/L	100
8) Trichlorofluoromethane	5.49	101	273696	19.9968 ug/L	100
9) Diethyl ether	6.02	59	414362	82.8343 ug/L	92
10) Isoprene	6.06	67	213419	20.1307 ug/L	93
11) Acrolein	6.26	56	23441	40.5904 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	153405	19.8411 ug/L	88
13) Acetone	6.36	43	22510	20.5321 ug/L #	27
14) 1,1-Dichloroethene	6.59	61	247819	19.9287 ug/L	95
15) Tert-Butyl Alcohol	6.69	59	37293	161.8291 ug/L	96
16) Dimethyl Sulfide	6.85	62	169308	20.4280 ug/L	95
17) Iodomethane	7.10	142	27436	21.7678 ug/L	93
18) Methyl acetate	7.11	43	92700	20.3342 ug/L	99
19) Methylene Chloride	7.37	84	154971	19.9285 ug/L	92
20) Carbon Disulfide	7.41	76	535775	20.8637 ug/L	100
21) Acrylonitrile	7.55	53	64465	40.2690 ug/L	95
22) Methyl Tert Butyl Ether	7.59	73	282067	20.8634 ug/L	95
23) trans-1,2-Dichloroethene	7.82	61	240030	20.0404 ug/L	94
24) n-Hexane	7.90	57	204275	19.4336 ug/L	91
25) Diisopropyl ether	8.24	45	2090125	84.2403 ug/L	98
26) Vinyl Acetate	8.40	43	69804	20.4078 ug/L	98
27) 1,1-Dichloroethane	8.45	63	301526	20.0331 ug/L	97
28) Ethyl-Tert-Butyl ether	8.81	59	1673546	84.1387 ug/L	97
29) 2-Butanone	8.99	43	32769	20.0780 ug/L	98
30) Propionitrile	9.10	54	44612	82.6525 ug/L	98
31) 2,2-Dichloropropane	9.22	77	213017	19.1710 ug/L	100
32) cis-1,2-Dichloroethene	9.28	96	165979	20.0506 ug/L	91
33) Chloroform	9.49	83	287225	20.0894 ug/L	99
34) 1-Bromopropane	9.64	122	31569	21.1635 ug/L	94
35) Bromochloromethane	9.73	130	86620	20.9197 ug/L	96
36) Tetrahydrofuran	9.75	42	93194	81.8673 ug/L	98
38) 1,1,1-Trichloroethane	10.03	97	253973	20.3919 ug/L	99
39) Cyclohexane	10.06	56	272449	20.3272 ug/L	87
40) 1,1-Dichloropropene	10.22	75	222924	20.7319 ug/L	97
41) Tert-Amyl-Methyl ether	10.33	73	1250827	83.5951 ug/L	100
42) Carbon Tetrachloride	10.37	117	215678	20.1939 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M402835.D 8260WTR.M Mon Feb 09 12:25:18 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402835.D Vial: 7
Acq On : 6 Feb 2015 18:23 Operator: TMB
Sample : WG511287-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:17 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.53	62	194079	20.5464 ug/L		99
46)	Benzene	10.58	78	624813	21.2402 ug/L		95
47)	Trichloroethene	11.33	130	150656	20.3594 ug/L		99
48)	Methylcyclohexane	11.41	83	234780	19.4695 ug/L		91
49)	1,2-Dichloropropane	11.54	63	167083	20.8873 ug/L		97
50)	Bromodichloromethane	11.85	83	208601	20.6225 ug/L		99
51)	1,4-Dioxane	11.84	88	4630	149.0267 ug/L		90
52)	Dibromomethane	11.93	93	75951	20.1183 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.14	63	59789	19.6777 ug/L		100
54)	4-Methyl-2-Pentanone	12.17	58	25980	19.0586 ug/L		97
55)	cis-1,3-Dichloropropene	12.48	75	223588	21.1428 ug/L		100
56)	Dimethyl Disulfide	12.74	79	112646	14.3791 ug/L		95
59)	Toluene	12.90	91	629702	22.0339 ug/L		100
60)	Ethyl Methacrylate	12.99	69	117632	21.5356 ug/L		93
62)	trans-1,3-Dichloropropene	13.08	75	185618	21.2272 ug/L		99
63)	1,1,2-Trichloroethane	13.29	97	98242	21.6532 ug/L		100
64)	2-Hexanone	13.22	58	22977	19.5786 ug/L	#	78
65)	1,3-Dichloropropane	13.60	76	176762	21.4933 ug/L		96
66)	Tetrachloroethene	13.72	164	128193	20.7729 ug/L		95
67)	Dibromochloromethane	13.99	129	124859	21.5383 ug/L		98
68)	1,2-Dibromoethane	14.24	107	94365	20.9229 ug/L		98
69)	1-Chlorohexane	14.32	91	203918	21.0952 ug/L		92
70)	Chlorobenzene	14.74	112	400587	20.7298 ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.77	131	136307	20.6539 ug/L		99
72)	Ethylbenzene	14.77	106	227873	20.6109 ug/L		93
73)	m-,p-Xylene	14.86	106	548631	43.5686 ug/L		97
74)	o-Xylene	15.43	106	261971	21.1441 ug/L		95
75)	Styrene	15.46	104	447823	22.5349 ug/L		99
76)	Bromoform	15.95	173	71884	20.0964 ug/L		99
77)	Isopropylbenzene	15.85	105	704265	22.7522 ug/L		99
79)	1,1,2,2-Tetrachloroethane	16.07	83	106769	21.4717 ug/L		100
81)	1,2,3-Trichloropropane	16.25	110	29722	21.3794 ug/L		88
82)	trans-1,4-Dichloro-2-Buten	16.30	53	34101	20.5291 ug/L		87
83)	n-Propylbenzene	16.36	91	890795	22.2694 ug/L		97
84)	Bromobenzene	16.49	156	166061	21.4530 ug/L		97
85)	1,3,5-Trimethylbenzene	16.54	105	600947	22.5049 ug/L		96
86)	2-Chlorotoluene	16.62	91	516971	21.1935 ug/L		99
87)	4-Chlorotoluene	16.68	91	547408	22.0315 ug/L		99
88)	a-Methylstyrene	16.95	118	317871	20.6600 ug/L		96
89)	tert-Butylbenzene	17.01	134	120327	20.6782 ug/L		94
90)	1,2,4-Trimethylbenzene	17.06	105	618928	22.5561 ug/L		98
91)	sec-Butylbenzene	17.28	105	769120	21.7909 ug/L		98
92)	p-Isopropyltoluene	17.43	119	619554	22.2062 ug/L		99
93)	1,3-Dichlorobenzene	17.63	146	333290	20.9854 ug/L		99
94)	1,4-Dichlorobenzene	17.76	146	330243	20.3049 ug/L		100
95)	n-Butylbenzene	17.96	91	655292	21.4311 ug/L		97
96)	1,2-Dichlorobenzene	18.26	146	299166	21.0194 ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.25	75	20244	21.9280 ug/L		92
98)	1,2,4-Trichlorobenzene	20.40	180	234939	20.7858 ug/L		98
99)	Hexachlorobutadiene	20.54	225	135161	20.3222 ug/L		97
100)	Naphthalene	20.77	128	371805	22.3090 ug/L		100
101)	1,2,3-Trichlorobenzene	21.08	180	207913	21.0648 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M402835.D 8260WTR.M Mon Feb 09 12:25:18 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402835.D Vial: 7
Acq On : 6 Feb 2015 18:23 Operator: TMB
Sample : WG511287-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 9 12:25 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration

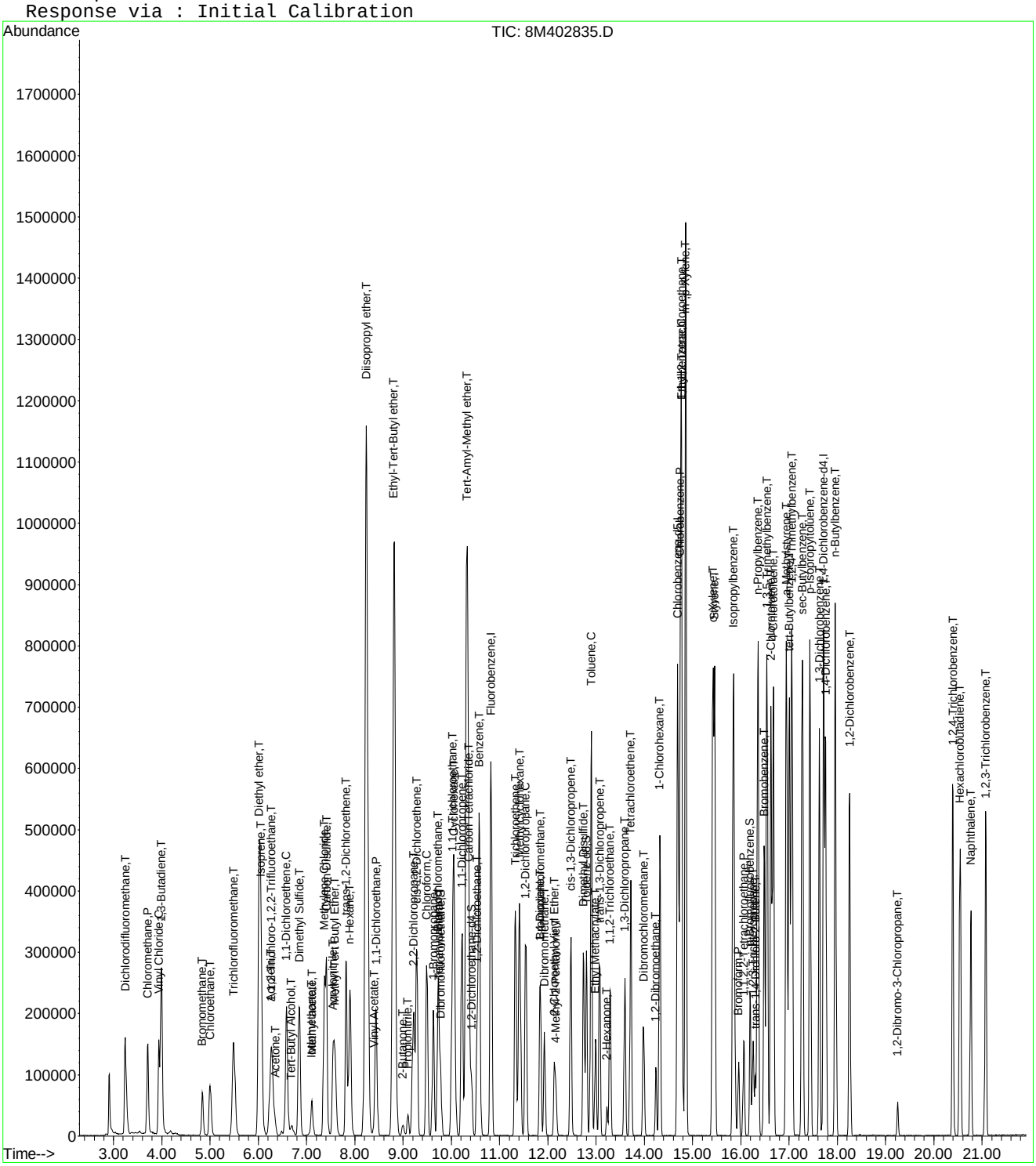

8M402835.D 8260WTR.M Mon Feb 09 12:25:18 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402836.D Vial: 8
Acq On : 6 Feb 2015 18:53 Operator: TMB
Sample : WG511287-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:18 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	749967	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	559024	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.72	152	298746	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.78	111	197651	25.0418 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.16%		
43) 1,2-Dichloroethane-d4	10.42	65	202135	24.4284 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.72%		
58) Toluene-d8	12.80	98	680220	25.6135 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.44%		
80) p-Bromofluorobenzene	16.19	95	269996	25.1991 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.80%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.25	85	668948	55.6781 ug/L	99
3) Chloromethane	3.70	50	527166	50.7163 ug/L	99
4) Vinyl Chloride	3.94	62	535788	52.3755 ug/L	97
5) 1,3-Butadiene	3.98	54	434610	52.5608 ug/L	80
6) Bromomethane	4.84	94	204341	48.7204 ug/L	99
7) Chloroethane	5.00	64	328744	51.9884 ug/L	100
8) Trichlorofluoromethane	5.49	101	731212	51.5392 ug/L	99
9) Diethyl ether	6.02	59	522889	100.8419 ug/L	90
10) Isoprene	6.06	67	579894	52.7685 ug/L	91
11) Acrolein	6.26	56	29167	48.7236 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	409007	51.0338 ug/L	92
13) Acetone	6.36	43	60434	53.1790 ug/L #	25
14) 1,1-Dichloroethene	6.59	61	663486	51.4727 ug/L	96
15) Tert-Butyl Alcohol	6.69	59	46377	194.1481 ug/L	93
16) Dimethyl Sulfide	6.85	62	446327	51.9520 ug/L	97
17) Iodomethane	7.10	142	174342	46.5321 ug/L	96
18) Methyl acetate	7.11	43	232528	49.2068 ug/L	97
19) Methylene Chloride	7.37	84	402285	49.9067 ug/L	93
20) Carbon Disulfide	7.41	76	1388043	52.1450 ug/L	100
21) Acrylonitrile	7.55	53	86556	52.1610 ug/L	100
22) Methyl Tert Butyl Ether	7.58	73	737231	52.6062 ug/L	95
23) trans-1,2-Dichloroethene	7.82	61	633510	51.0263 ug/L	93
24) n-Hexane	7.90	57	569519	52.2695 ug/L	91
25) Diisopropyl ether	8.24	45	2666140	103.6650 ug/L	97
26) Vinyl Acetate	8.41	43	181262	51.1238 ug/L	99
27) 1,1-Dichloroethane	8.45	63	807937	51.7848 ug/L	98
28) Ethyl-Tert-Butyl ether	8.82	59	2132420	103.4266 ug/L	97
29) 2-Butanone	9.00	43	84296	49.8272 ug/L	100
30) Propionitrile	9.10	54	56488	100.9628 ug/L	98
31) 2,2-Dichloropropane	9.22	77	585159	50.8050 ug/L	100
32) cis-1,2-Dichloroethene	9.28	96	435219	50.7206 ug/L	93
33) Chloroform	9.49	83	753305	50.8297 ug/L	100
34) 1-Bromopropane	9.63	122	85577	55.3459 ug/L	96
35) Bromochloromethane	9.73	130	226053	52.6682 ug/L	97
36) Tetrahydrofuran	9.75	42	117159	99.2886 ug/L	99
38) 1,1,1-Trichloroethane	10.03	97	670293	51.9201 ug/L	100
39) Cyclohexane	10.06	56	746335	53.7189 ug/L	87
40) 1,1-Dichloropropene	10.22	75	595750	53.4499 ug/L	99
41) Tert-Amyl-Methyl ether	10.32	73	1600676	103.2020 ug/L	98
42) Carbon Tetrachloride	10.37	117	582809	52.6431 ug/L	98

(#) = qualifier out of range (m) = manual integration

Data File : C:\MSDCHEM\2\DATA\020615\8M402836.D Vial: 8
Acq On : 6 Feb 2015 18:53 Operator: TMB
Sample : WG511287-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:18 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.54	62	510056	52.0927 ug/L		99
46)	Benzene	10.58	78	1614922	52.9617 ug/L		96
47)	Trichloroethene	11.33	130	409083	53.3325 ug/L		99
48)	Methylcyclohexane	11.41	83	652403	52.1929 ug/L		90
49)	1,2-Dichloropropane	11.54	63	438636	52.8999 ug/L		97
50)	Bromodichloromethane	11.84	83	556255	53.0517 ug/L		100
51)	1,4-Dioxane	11.83	88	6135	190.5017 ug/L		90
52)	Dibromomethane	11.93	93	200168	51.1510 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.14	63	165026	52.3971 ug/L		100
54)	4-Methyl-2-Pentanone	12.17	58	72781	51.5076 ug/L		97
55)	cis-1,3-Dichloropropene	12.48	75	603636	55.0669 ug/L		99
56)	Dimethyl Disulfide	12.74	79	322600	31.4146 ug/L		92
59)	Toluene	12.90	91	1632851	54.1809 ug/L		100
60)	Ethyl Methacrylate	12.99	69	311031	53.9981 ug/L		94
62)	trans-1,3-Dichloropropene	13.07	75	501878	54.4270 ug/L		99
63)	1,1,2-Trichloroethane	13.29	97	253504	52.9850 ug/L		99
64)	2-Hexanone	13.22	58	62675	50.6439 ug/L		82
65)	1,3-Dichloropropane	13.60	76	458035	52.8149 ug/L		95
66)	Tetrachloroethene	13.72	164	337654	51.8858 ug/L		96
67)	Dibromochloromethane	13.98	129	332555	54.4001 ug/L		100
68)	1,2-Dibromoethane	14.24	107	256030	53.8326 ug/L		100
69)	1-Chlorohexane	14.32	91	548777	53.8354 ug/L		91
70)	Chlorobenzene	14.74	112	1062642	52.1469 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.77	131	378327	54.3620 ug/L		100
72)	Ethylbenzene	14.77	106	616387	52.8690 ug/L		98
73)	m-,p-Xylene	14.86	106	1439778	108.4258 ug/L		99
74)	o-Xylene	15.43	106	716501	54.8399 ug/L		99
75)	Styrene	15.46	104	1188549	56.7166 ug/L		97
76)	Bromoform	15.95	173	199721	52.9485 ug/L		99
77)	Isopropylbenzene	15.85	105	1843492	56.4772 ug/L		100
79)	1,1,2,2-Tetrachloroethane	16.06	83	273239	50.3208 ug/L		100
81)	1,2,3-Trichloropropane	16.25	110	76841	50.6168 ug/L		50
82)	trans-1,4-Dichloro-2-Buten	16.29	53	90183	48.7864 ug/L	#	36
83)	n-Propylbenzene	16.36	91	2323945	53.2035 ug/L		99
84)	Bromobenzene	16.48	156	434524	51.4064 ug/L		99
85)	1,3,5-Trimethylbenzene	16.54	105	1591921	54.5942 ug/L		99
86)	2-Chlorotoluene	16.63	91	1389731	52.1737 ug/L		90
87)	4-Chlorotoluene	16.68	91	1428553	52.6517 ug/L		90
88)	a-Methylstyrene	16.95	118	885565	52.7090 ug/L		98
89)	tert-Butylbenzene	17.01	134	325970	51.2994 ug/L		96
90)	1,2,4-Trimethylbenzene	17.06	105	1634263	54.5418 ug/L		99
91)	sec-Butylbenzene	17.28	105	2029634	52.6602 ug/L		100
92)	p-Isopropyltoluene	17.43	119	1635037	53.6669 ug/L		100
93)	1,3-Dichlorobenzene	17.63	146	892891	51.4846 ug/L		100
94)	1,4-Dichlorobenzene	17.76	146	889032	50.0574 ug/L		100
95)	n-Butylbenzene	17.96	91	1720306	51.5228 ug/L		98
96)	1,2-Dichlorobenzene	18.26	146	792394	50.9839 ug/L		100
97)	1,2-Dibromo-3-Chloropropan	19.25	75	52790	52.3646 ug/L		94
98)	1,2,4-Trichlorobenzene	20.40	180	639152	51.7844 ug/L		98
99)	Hexachlorobutadiene	20.54	225	369594	50.8895 ug/L		97
100)	Naphthalene	20.77	128	961232	52.8174 ug/L		100
101)	1,2,3-Trichlorobenzene	21.07	180	556451	51.6281 ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402836.D Vial: 8
Acq On : 6 Feb 2015 18:53 Operator: TMB
Sample : WG511287-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 9 12:25 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration

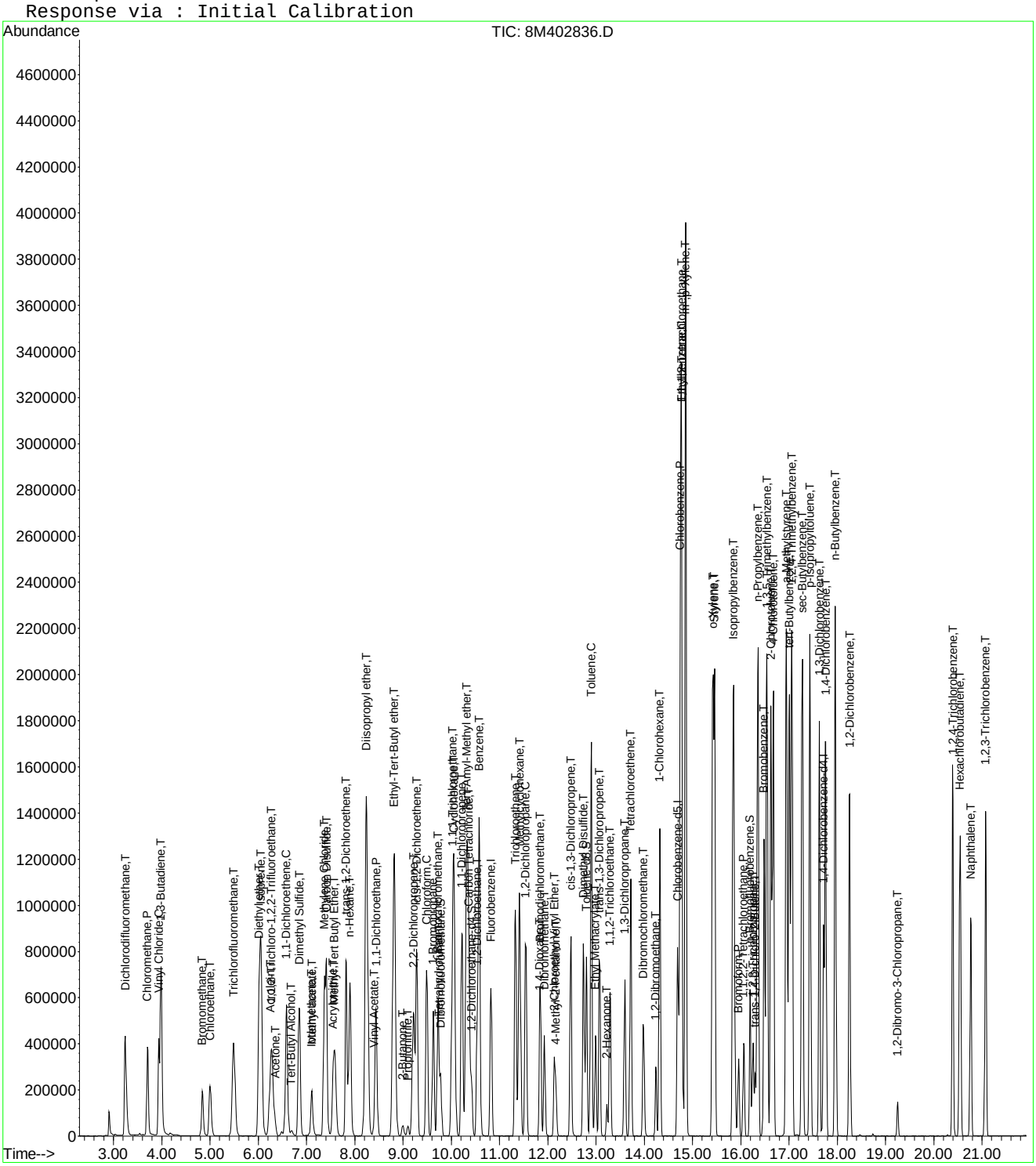

8M402836.D 8260WTR.M Mon Feb 09 12:25:19 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402837.D Vial: 9
Acq On : 6 Feb 2015 19:22 Operator: TMB
Sample : WG511287-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:19 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	815180	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	604018	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.72	152	318263	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	423859	49.4057 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 197.64%#		
43) 1,2-Dichloroethane-d4	10.42	65	432708	48.1103 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 192.44%#		
58) Toluene-d8	12.80	98	1427730	49.7560 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 199.04%#		
80) p-Bromofluorobenzene	16.19	95	576985	50.5486 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 202.20%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.25	85	1388100	106.2921 ug/L	100
3) Chloromethane	3.70	50	1091798	96.6343 ug/L	99
4) Vinyl Chloride	3.94	62	1098992	98.8368 ug/L	96
5) 1,3-Butadiene	3.98	54	838191	99.9573 ug/L	92
6) Bromomethane	4.84	94	512923	103.4536 ug/L	99
7) Chloroethane	5.00	64	692663	100.7765 ug/L	99
8) Trichlorofluoromethane	5.49	101	1556241	100.9159 ug/L	99
9) Diethyl ether	6.02	59	1120720	198.8462 ug/L	92
10) Isoprene	6.06	67	1228258	102.8263 ug/L	92
11) Acrolein	6.25	56	64380	98.9436 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	872133	100.1148 ug/L	93
13) Acetone	6.36	43	107813	87.2808 ug/L #	31
14) 1,1-Dichloroethene	6.59	61	1409929	100.6309 ug/L	95
15) Tert-Butyl Alcohol	6.69	59	103873	400.0570 ug/L	96
16) Dimethyl Sulfide	6.84	62	959323	102.7313 ug/L	97
17) Iodomethane	7.10	142	501675	95.2790 ug/L	99
18) Methyl acetate	7.11	43	507647	98.8325 ug/L	98
19) Methylene Chloride	7.37	84	858667	98.0027 ug/L	91
20) Carbon Disulfide	7.41	76	2889975	99.8833 ug/L	99
21) Acrylonitrile	7.55	53	183542	101.7589 ug/L	99
22) Methyl Tert Butyl Ether	7.58	73	1612164	105.8355 ug/L	95
23) trans-1,2-Dichloroethene	7.82	61	1349765	100.0202 ug/L	93
24) n-Hexane	7.90	57	1235596	104.3290 ug/L	90
25) Diisopropyl ether	8.24	45	5454993	195.1335 ug/L	95
26) Vinyl Acetate	8.41	43	387905	100.6538 ug/L	99
27) 1,1-Dichloroethane	8.44	63	1672935	98.6490 ug/L	97
28) Ethyl-Tert-Butyl ether	8.81	59	4508376	201.1724 ug/L	94
29) 2-Butanone	8.99	43	186462	101.4001 ug/L	99
30) Propionitrile	9.10	54	118765	195.2911 ug/L	99
31) 2,2-Dichloropropane	9.21	77	1263381	100.9150 ug/L	99
32) cis-1,2-Dichloroethene	9.28	96	927623	99.4572 ug/L	92
33) Chloroform	9.49	83	1583842	98.3211 ug/L	100
34) 1-Bromopropane	9.63	122	181166	107.7939 ug/L	100
35) Bromochloromethane	9.73	130	486821	104.3509 ug/L	95
36) Tetrahydrofuran	9.75	42	259639	202.4335 ug/L	100
38) 1,1,1-Trichloroethane	10.03	97	1443938	102.8983 ug/L	99
39) Cyclohexane	10.06	56	1591281	105.3729 ug/L	87
40) 1,1-Dichloropropene	10.21	75	1282749	105.8799 ug/L	99
41) Tert-Amyl-Methyl ether	10.33	73	3430853	203.5052 ug/L	98
42) Carbon Tetrachloride	10.37	117	1282120	106.5449 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402837.D Vial: 9
Acq On : 6 Feb 2015 19:22 Operator: TMB
Sample : WG511287-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:19 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.54	62	1082141	101.6791 ug/L		99
46)	Benzene	10.58	78	3316966	100.0783 ug/L		98
47)	Trichloroethene	11.33	130	878171	105.3291 ug/L		99
48)	Methylcyclohexane	11.41	83	1428264	105.1217 ug/L		90
49)	1,2-Dichloropropane	11.54	63	934601	103.6968 ug/L		96
50)	Bromodichloromethane	11.85	83	1185022	103.9777 ug/L		99
51)	1,4-Dioxane	11.84	88	14861	424.5423 ug/L		84
52)	Dibromomethane	11.93	93	426089	100.1724 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.14	63	354137	103.4463 ug/L		99
54)	4-Methyl-2-Pentanone	12.17	58	156627	101.9785 ug/L		95
55)	cis-1,3-Dichloropropene	12.48	75	1295440	108.7231 ug/L		100
56)	Dimethyl Disulfide	12.74	79	729029	60.2252 ug/L		90
59)	Toluene	12.90	91	3306160	101.5323 ug/L		97
60)	Ethyl Methacrylate	12.99	69	687483	110.4631 ug/L		94
62)	trans-1,3-Dichloropropene	13.07	75	1084719	108.8716 ug/L		99
63)	1,1,2-Trichloroethane	13.30	97	538554	104.1785 ug/L		98
64)	2-Hexanone	13.22	58	139552	104.3637 ug/L		85
65)	1,3-Dichloropropane	13.60	76	970528	103.5731 ug/L		95
66)	Tetrachloroethene	13.72	164	735083	104.5427 ug/L		97
67)	Dibromochloromethane	13.98	129	724779	109.7293 ug/L		100
68)	1,2-Dibromoethane	14.24	107	553643	107.7370 ug/L		99
69)	1-Chlorohexane	14.32	91	1210846	109.9364 ug/L		90
70)	Chlorobenzene	14.74	112	2230091	101.2850 ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.77	131	839765	111.6778 ug/L		100
72)	Ethylbenzene	14.77	106	1314757	104.3696 ug/L		92
73)	m-,p-Xylene	14.86	106	2979118	207.6374 ug/L		85
74)	o-Xylene	15.43	106	1511516	107.0714 ug/L		97
75)	Styrene	15.46	104	2462150	108.7397 ug/L		94
76)	Bromoform	15.95	173	447717	109.8536 ug/L		100
77)	Isopropylbenzene	15.85	105	3701043	104.9388 ug/L		97
79)	1,1,2,2-Tetrachloroethane	16.06	83	594374	102.7497 ug/L		100
81)	1,2,3-Trichloropropane	16.25	110	166544	102.9786 ug/L		48
82)	trans-1,4-Dichloro-2-Buten	16.29	53	204164	102.9369 ug/L	#	31
83)	n-Propylbenzene	16.36	91	4542815	97.6237 ug/L		96
84)	Bromobenzene	16.49	156	937963	104.1610 ug/L		97
85)	1,3,5-Trimethylbenzene	16.54	105	3311538	106.6033 ug/L		97
86)	2-Chlorotoluene	16.63	91	2751978	96.9798 ug/L		96
87)	4-Chlorotoluene	16.68	91	2959606	102.3919 ug/L		97
88)	a-Methylstyrene	16.95	118	1898822	106.0875 ug/L		95
89)	tert-Butylbenzene	17.01	134	712509	105.2545 ug/L		96
90)	1,2,4-Trimethylbenzene	17.06	105	3321281	104.0470 ug/L		96
91)	sec-Butylbenzene	17.28	105	4105408	99.9855 ug/L		98
92)	p-Isopropyltoluene	17.43	119	3409611	105.0509 ug/L		98
93)	1,3-Dichlorobenzene	17.63	146	1885872	102.0721 ug/L		98
94)	1,4-Dichlorobenzene	17.76	146	1869896	98.8289 ug/L		99
95)	n-Butylbenzene	17.96	91	3501826	98.4474 ug/L		99
96)	1,2-Dichlorobenzene	18.26	146	1687435	101.9143 ug/L		100
97)	1,2-Dibromo-3-Chloropropan	19.25	75	111649	103.9578 ug/L		99
98)	1,2,4-Trichlorobenzene	20.40	180	1362814	103.6447 ug/L		98
99)	Hexachlorobutadiene	20.54	225	801125	103.5427 ug/L		98
100)	Naphthalene	20.77	128	2030559	104.7323 ug/L		99
101)	1,2,3-Trichlorobenzene	21.08	180	1190643	103.6947 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M402837.D 8260WTR.M Mon Feb 09 12:25:20 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402837.D Vial: 9
Acq On : 6 Feb 2015 19:22 Operator: TMB
Sample : WG511287-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 9 12:25 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration

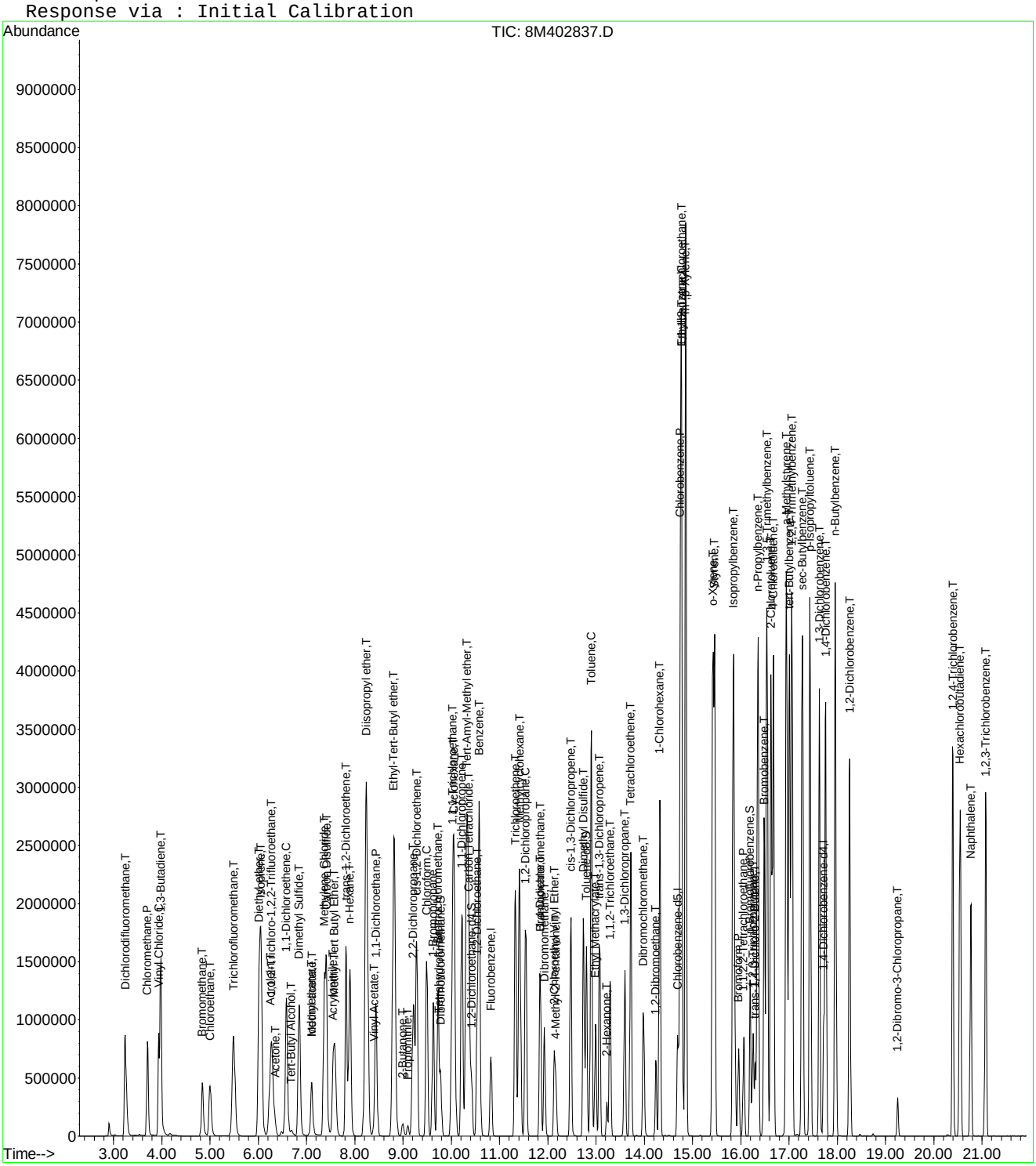

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402838.D Vial: 10
Acq On : 6 Feb 2015 19:51 Operator: TMB
Sample : WG511287-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:21 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	860361	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	638607	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.71	152	337778	25.00 ug/L	-0.02
System Monitoring Compounds					
37) Dibromofluoromethane	9.78	111	885400	97.7841 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 391.12%#		
43) 1,2-Dichloroethane-d4	10.42	65	911736	96.0472 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 384.20%#		
58) Toluene-d8	12.80	98	2921364	96.2945 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 385.16%#		
80) p-Bromofluorobenzene	16.19	95	1223901	101.0289 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 404.12%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.24	85	2816154	204.3194 ug/L	99
3) Chloromethane	3.70	50	2203682	184.8037 ug/L	99
4) Vinyl Chloride	3.94	62	2209286	188.2560 ug/L	95
5) 1,3-Butadiene	3.98	54	1506086	197.5932 ug/L	94
6) Bromomethane	4.84	94	1191822	200.6064 ug/L	100
7) Chloroethane	5.00	64	1456195	200.7380 ug/L	99
8) Trichlorofluoromethane	5.49	101	3242524	199.2227 ug/L	99
10) Isoprene	6.06	67	2544866	201.8610 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	1859443	202.2419 ug/L	93
13) Acetone	6.36	43	257620	197.6058 ug/L #	27
14) 1,1-Dichloroethene	6.58	61	2913532	197.0274 ug/L	93
16) Dimethyl Sulfide	6.85	62	2025921	205.5575 ug/L	98
17) Iodomethane	7.10	142	1264753	204.0649 ug/L	99
18) Methyl acetate	7.12	43	1092654	201.5550 ug/L	97
19) Methylene Chloride	7.36	84	1790347	193.6081 ug/L	89
20) Carbon Disulfide	7.42	76	5667088	185.5801 ug/L	96
21) Acrylonitrile	7.58	53	36749	19.3044 ug/L #	33
22) Methyl Tert Butyl Ether	7.58	73	3448006	214.4682 ug/L	95
23) trans-1,2-Dichloroethene	7.82	61	2784226	195.4821 ug/L	92
24) n-Hexane	7.90	57	2561760	204.9461 ug/L	90
26) Vinyl Acetate	8.41	43	822817	202.2930 ug/L	98
27) 1,1-Dichloroethane	8.44	63	3414401	190.7661 ug/L	95
29) 2-Butanone	9.00	43	410926	211.7309 ug/L	97
31) 2,2-Dichloropropane	9.21	77	2664401	201.6479 ug/L	99
32) cis-1,2-Dichloroethene	9.29	96	1940263	197.1053 ug/L	90
33) Chloroform	9.49	83	3218476	189.3033 ug/L	97
34) 1-Bromopropane	9.63	122	391900	220.9355 ug/L	98
35) Bromochloromethane	9.72	130	1015883	206.3209 ug/L	93
36) Tetrahydrofuran	9.75	42	1000	0.7387 ug/L #	38
38) 1,1,1-Trichloroethane	10.02	97	3013671	203.4831 ug/L	97
39) Cyclohexane	10.06	56	3329052	208.8698 ug/L	86
40) 1,1-Dichloropropene	10.22	75	2652828	207.4692 ug/L	99
42) Carbon Tetrachloride	10.37	117	2650945	208.7264 ug/L	99
45) 1,2-Dichloroethane	10.54	62	2252771	200.5570 ug/L	97
46) Benzene	10.58	78	6102505	174.4535 ug/L	96
47) Trichloroethene	11.33	130	1845107	209.6831 ug/L	99
48) Methylcyclohexane	11.42	83	2971812	207.2422 ug/L	90
49) 1,2-Dichloropropane	11.54	63	1927503	202.6316 ug/L	94
50) Bromodichloromethane	11.84	83	2466038	205.0153 ug/L	98
51) 1,4-Dioxane	11.83	88	3938	106.5912 ug/L #	17

(#) = qualifier out of range (m) = manual integration
8M402838.D 8260WTR.M Mon Feb 09 12:25:21 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402838.D Vial: 10
Acq On : 6 Feb 2015 19:51 Operator: TMB
Sample : WG511287-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:21 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
52)	Dibromomethane	11.93	93	919872	204.9029	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.14	63	781577	216.3158	ug/L		99
54)	4-Methyl-2-Pentanone	12.16	58	359184	221.5806	ug/L		95
55)	cis-1,3-Dichloropropene	12.48	75	2680475	213.1518	ug/L		98
56)	Dimethyl Disulfide	12.74	79	1579386	118.6582	ug/L		88
59)	Toluene	12.91	91	5926888	172.1565	ug/L		89
60)	Ethyl Methacrylate	12.99	69	1514564	230.1756	ug/L		94
62)	trans-1,3-Dichloropropene	13.07	75	2283279	216.7566	ug/L		97
63)	1,1,2-Trichloroethane	13.29	97	1155476	211.4101	ug/L		98
64)	2-Hexanone	13.23	58	318879	225.5565	ug/L		88
65)	1,3-Dichloropropane	13.60	76	2062564	208.1912	ug/L		95
66)	Tetrachloroethene	13.72	164	1587589	213.5560	ug/L		97
67)	Dibromochloromethane	13.98	129	1577360	225.8728	ug/L		100
68)	1,2-Dibromoethane	14.24	107	1193493	219.6703	ug/L		100
69)	1-Chlorohexane	14.32	91	2468939	212.0212	ug/L		92
70)	Chlorobenzene	14.75	112	4337847	186.3429	ug/L		91
71)	1,1,1,2-Tetrachloroethane	14.78	131	1817884	228.6606	ug/L		100
72)	Ethylbenzene	14.77	106	2683363	201.4763	ug/L		68
73)	m-,p-Xylene	14.86	106	5486910	361.7111	ug/L		64
74)	o-Xylene	15.42	106	3068021	205.5584	ug/L		82
75)	Styrene	15.46	104	4696352	196.1780	ug/L		87
76)	Bromoform	15.96	173	993399	230.5422	ug/L		99
77)	Isopropylbenzene	15.84	105	6460651	173.2625	ug/L		86
79)	1,1,2,2-Tetrachloroethane	16.06	83	1282544	208.9046	ug/L		100
81)	1,2,3-Trichloropropane	16.26	110	372019	216.7394	ug/L		46
82)	trans-1,4-Dichloro-2-Buten	16.30	53	406314	192.4496	ug/L	#	37
83)	n-Propylbenzene	16.36	91	7277550	147.3568	ug/L		81
84)	Bromobenzene	16.48	156	1957667	204.8391	ug/L		95
85)	1,3,5-Trimethylbenzene	16.54	105	5891317	178.6932	ug/L		88
86)	2-Chlorotoluene	16.63	91	5065452	168.1936	ug/L		97
87)	4-Chlorotoluene	16.68	91	5113794	166.6978	ug/L	#	76
88)	a-Methylstyrene	16.95	118	3769742	198.4479	ug/L		92
89)	tert-Butylbenzene	17.01	134	1486695	206.9317	ug/L		88
90)	1,2,4-Trimethylbenzene	17.06	105	5855124	172.8282	ug/L		84
91)	sec-Butylbenzene	17.28	105	6899397	158.3239	ug/L		86
92)	p-Isopropyltoluene	17.43	119	6004148	174.3015	ug/L		88
93)	1,3-Dichlorobenzene	17.63	146	3704237	188.9072	ug/L		94
94)	1,4-Dichlorobenzene	17.76	146	3625483	180.5457	ug/L		94
95)	n-Butylbenzene	17.96	91	5966987	158.0590	ug/L		89
96)	1,2-Dichlorobenzene	18.26	146	3344633	190.3317	ug/L		95
97)	1,2-Dibromo-3-Chloropropan	19.25	75	249595	218.9742	ug/L		98
98)	1,2,4-Trichlorobenzene	20.39	180	2820114	202.0840	ug/L		99
99)	Hexachlorobutadiene	20.55	225	1736414	211.4595	ug/L		97
100)	Naphthalene	20.76	128	4034735	196.0807	ug/L		96
101)	1,2,3-Trichlorobenzene	21.07	180	2475726	203.1574	ug/L		99

(#) = qualifier out of range (m) = manual integration
8M402838.D 8260WTR.M Mon Feb 09 12:25:21 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402838.D Vial: 10
Acq On : 6 Feb 2015 19:51 Operator: TMB
Sample : WG511287-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 9 12:25 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration

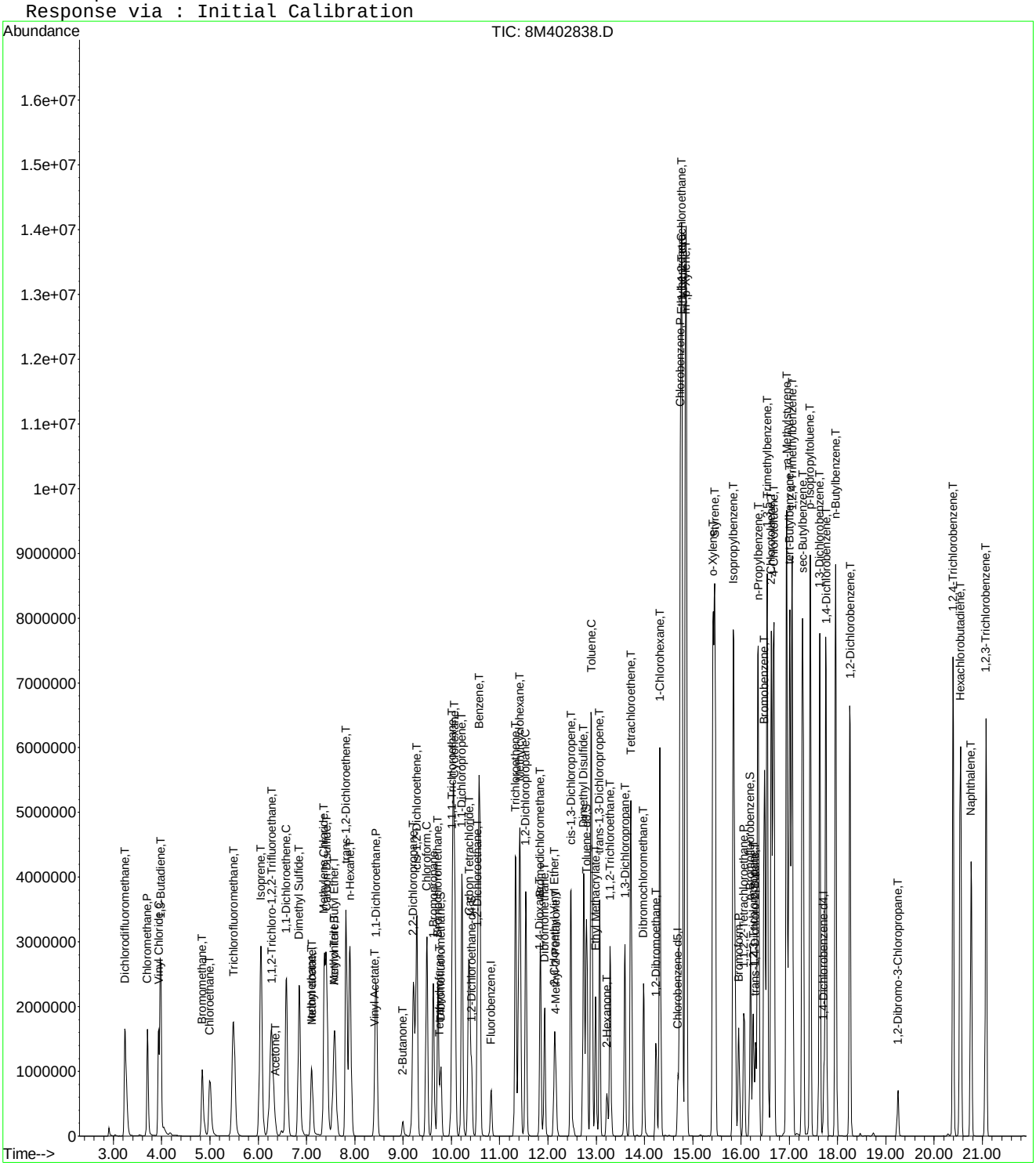

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402839.D Vial: 11
Acq On : 6 Feb 2015 20:20 Operator: TMB
Sample : WG511287-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:22 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	901523	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	691046	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.72	152	352262	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.78	111	1366035	143.9775 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 575.92%#		
43) 1,2-Dichloroethane-d4	10.42	65	1356888	136.4155 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 545.68%#		
58) Toluene-d8	12.80	98	4278628	130.3308 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 521.32%#		
80) p-Bromofluorobenzene	16.19	95	1865361	147.6480 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 590.60%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.24	85	3951974	273.6347 ug/L	96
3) Chloromethane	3.70	50	3322248	265.8874 ug/L	97
4) Vinyl Chloride	3.94	62	3097789	251.9142 ug/L	92
5) 1,3-Butadiene	3.98	54	2002756	301.8722 ug/L	95
6) Bromomethane	4.84	94	2084169	299.0729 ug/L	99
7) Chloroethane	4.99	64	2211352	290.9189 ug/L	99
8) Trichlorofluoromethane	5.49	101	4750855	278.5680 ug/L	98
9) Diethyl ether	6.02	59	1766187	283.3568 ug/L	91
10) Isoprene	6.06	67	3684082	278.8821 ug/L	94
11) Acrolein	6.25	56	108214	150.3823 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.27	101	2736018	283.9953 ug/L	94
13) Acetone	6.36	43	363855	266.3499 ug/L #	29
14) 1,1-Dichloroethene	6.58	61	4306812	277.9500 ug/L	92
15) Tert-Butyl Alcohol	6.70	59	178942	623.1723 ug/L	96
16) Dimethyl Sulfide	6.85	62	3047092	295.0531 ug/L	98
17) Iodomethane	7.10	142	2021387	302.3562 ug/L	97
18) Methyl acetate	7.11	43	1622991	285.7136 ug/L	97
19) Methylene Chloride	7.37	84	2731192	281.8658 ug/L	87
20) Carbon Disulfide	7.41	76	8007309	250.2430 ug/L	94
21) Acrylonitrile	7.55	53	331665	166.2698 ug/L	94
22) Methyl Tert Butyl Ether	7.58	73	5020254	298.0056 ug/L	96
23) trans-1,2-Dichloroethene	7.81	61	4101940	274.8500 ug/L	90
24) n-Hexane	7.90	57	3550055	271.0443 ug/L	90
25) Diisopropyl ether	8.24	45	8093785	261.7979 ug/L	91
26) Vinyl Acetate	8.40	43	1222650	286.8690 ug/L	98
27) 1,1-Dichloroethane	8.44	63	5033833	268.4042 ug/L	92
28) Ethyl-Tert-Butyl ether	8.82	59	6930958	279.6522 ug/L	91
29) 2-Butanone	8.99	43	612144	301.0081 ug/L	97
30) Propionitrile	9.11	54	197455	293.5884 ug/L	100
31) 2,2-Dichloropropane	9.22	77	4048150	292.3847 ug/L	97
32) cis-1,2-Dichloroethene	9.28	96	2923895	283.4675 ug/L	89
33) Chloroform	9.49	83	4711098	264.4441 ug/L	94
34) 1-Bromopropane	9.62	122	593904	319.5291 ug/L	100
35) Bromochloromethane	9.73	130	1545541	299.5601 ug/L	92
36) Tetrahydrofuran	9.75	42	406272	286.4218 ug/L	96
38) 1,1,1-Trichloroethane	10.03	97	4496547	289.7447 ug/L	96
39) Cyclohexane	10.06	56	4700986	281.4802 ug/L	84
40) 1,1-Dichloropropene	10.22	75	3886329	290.0601 ug/L	97
41) Tert-Amyl-Methyl ether	10.33	73	5399436	289.6000 ug/L	98
42) Carbon Tetrachloride	10.37	117	3998573	300.4593 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M402839.D 8260WTR.M Mon Feb 09 12:25:22 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402839.D Vial: 11
Acq On : 6 Feb 2015 20:20 Operator: TMB
Sample : WG511287-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:22 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.53	62	3322645	282.2985 ug/L		96
46)	Benzene	10.58	78	8047028	219.5386 ug/L		88
47)	Trichloroethene	11.33	130	2784062	301.9428 ug/L		99
48)	Methylcyclohexane	11.41	83	4181394	278.2799 ug/L		90
49)	1,2-Dichloropropane	11.55	63	2902586	291.2065 ug/L		92
50)	Bromodichloromethane	11.85	83	3644923	289.1870 ug/L		96
51)	1,4-Dioxane	11.84	88	26646	688.3061 ug/L		87
52)	Dibromomethane	11.93	93	1376488	292.6153 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.14	63	1147889	303.1937 ug/L		97
54)	4-Methyl-2-Pentanone	12.17	58	514297	302.7838 ug/L		94
55)	cis-1,3-Dichloropropene	12.48	75	3901617	296.0914 ug/L		95
56)	Dimethyl Disulfide	12.74	79	2357589	167.0349 ug/L		85
59)	Toluene	12.90	91	7673615	205.9792 ug/L		81
60)	Ethyl Methacrylate	13.00	69	2155268	302.6911 ug/L		94
62)	trans-1,3-Dichloropropene	13.08	75	3322242	291.4549 ug/L		95
63)	1,1,2-Trichloroethane	13.29	97	1721378	291.0502 ug/L		98
64)	2-Hexanone	13.22	58	459551	300.3930 ug/L		89
65)	1,3-Dichloropropane	13.59	76	3017318	281.4510 ug/L		96
66)	Tetrachloroethene	13.72	164	2385319	296.5151 ug/L		98
67)	Dibromochloromethane	13.99	129	2372759	313.9883 ug/L		98
68)	1,2-Dibromoethane	14.24	107	1791795	304.7660 ug/L		100
69)	1-Chlorohexane	14.33	91	3561465	282.6339 ug/L		93
70)	Chlorobenzene	14.74	112	5968974	236.9546 ug/L		85
71)	1,1,1,2-Tetrachloroethane	14.77	131	2799595	325.4222 ug/L		100
72)	Ethylbenzene	14.77	106	4030538	279.6626 ug/L		47
73)	m-,p-Xylene	14.86	106	7175198	437.1139 ug/L		57
74)	o-Xylene	15.42	106	4533258	280.6816 ug/L		68
75)	Styrene	15.46	104	6324791	244.1533 ug/L		77
76)	Bromoform	15.95	173	1513912	324.6789 ug/L		99
77)	Isopropylbenzene	15.85	105	8255060	204.5857 ug/L	#	74
79)	1,1,2,2-Tetrachloroethane	16.07	83	1886198	294.5972 ug/L		99
81)	1,2,3-Trichloropropane	16.25	110	553680	309.3123 ug/L	#	44
82)	trans-1,4-Dichloro-2-Buten	16.30	53	673607	305.5475 ug/L	#	28
83)	n-Propylbenzene	16.36	91	8923406	173.2532 ug/L	#	67
84)	Bromobenzene	16.49	156	2929634	293.9362 ug/L		90
85)	1,3,5-Trimethylbenzene	16.54	105	7599401	221.0246 ug/L		78
86)	2-Chlorotoluene	16.63	91	7349101	233.9866 ug/L		90
87)	4-Chlorotoluene	16.68	91	5830696	182.2521 ug/L	#	60
88)	a-Methylstyrene	16.94	118	5296153	267.3381 ug/L		89
89)	tert-Butylbenzene	17.01	134	2266389	302.4859 ug/L		75
90)	1,2,4-Trimethylbenzene	17.06	105	7479458	211.6968 ug/L		71
91)	sec-Butylbenzene	17.28	105	8565701	188.4794 ug/L	#	75
92)	p-Isopropyltoluene	17.44	119	7636038	212.5609 ug/L	#	77
93)	1,3-Dichlorobenzene	17.64	146	5117667	250.2577 ug/L		87
94)	1,4-Dichlorobenzene	17.76	146	4990248	238.2917 ug/L		87
95)	n-Butylbenzene	17.96	91	7420061	188.4679 ug/L	#	78
96)	1,2-Dichlorobenzene	18.26	146	4692167	256.0364 ug/L		90
97)	1,2-Dibromo-3-Chloropropan	19.25	75	362506	304.9565 ug/L		100
98)	1,2,4-Trichlorobenzene	20.40	180	3984191	273.7606 ug/L		97
99)	Hexachlorobutadiene	20.55	225	2540466	296.6558 ug/L		97
100)	Naphthalene	20.77	128	5319732	247.8992 ug/L		91
101)	1,2,3-Trichlorobenzene	21.08	180	3520415	277.0062 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M402839.D 8260WTR.M Mon Feb 09 12:25:22 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402839.D Vial: 11
Acq On : 6 Feb 2015 20:20 Operator: TMB
Sample : WG511287-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 9 12:25 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration

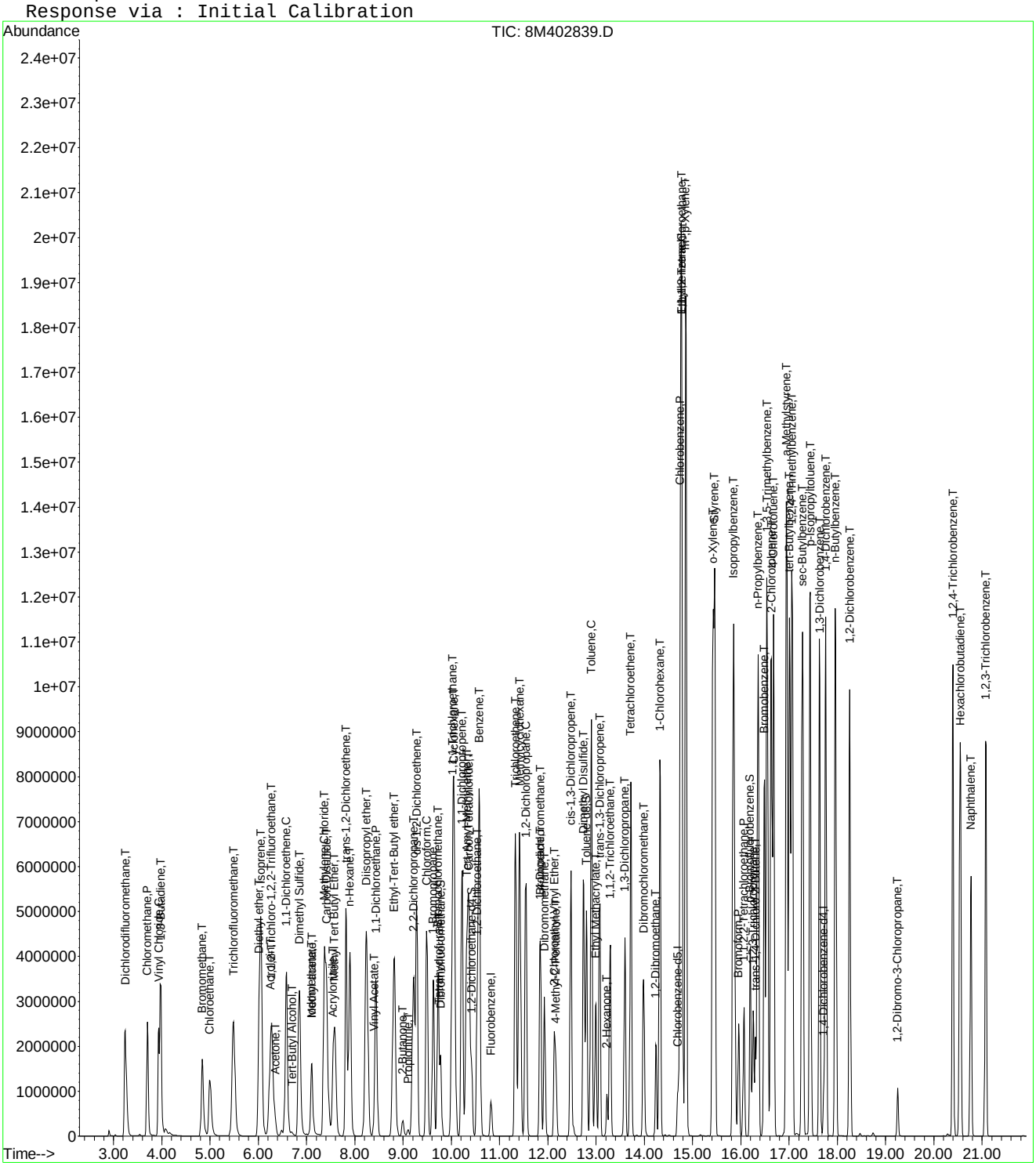

8M402839.D 8260WTR.M Mon Feb 09 12:25:22 2015 Page 3

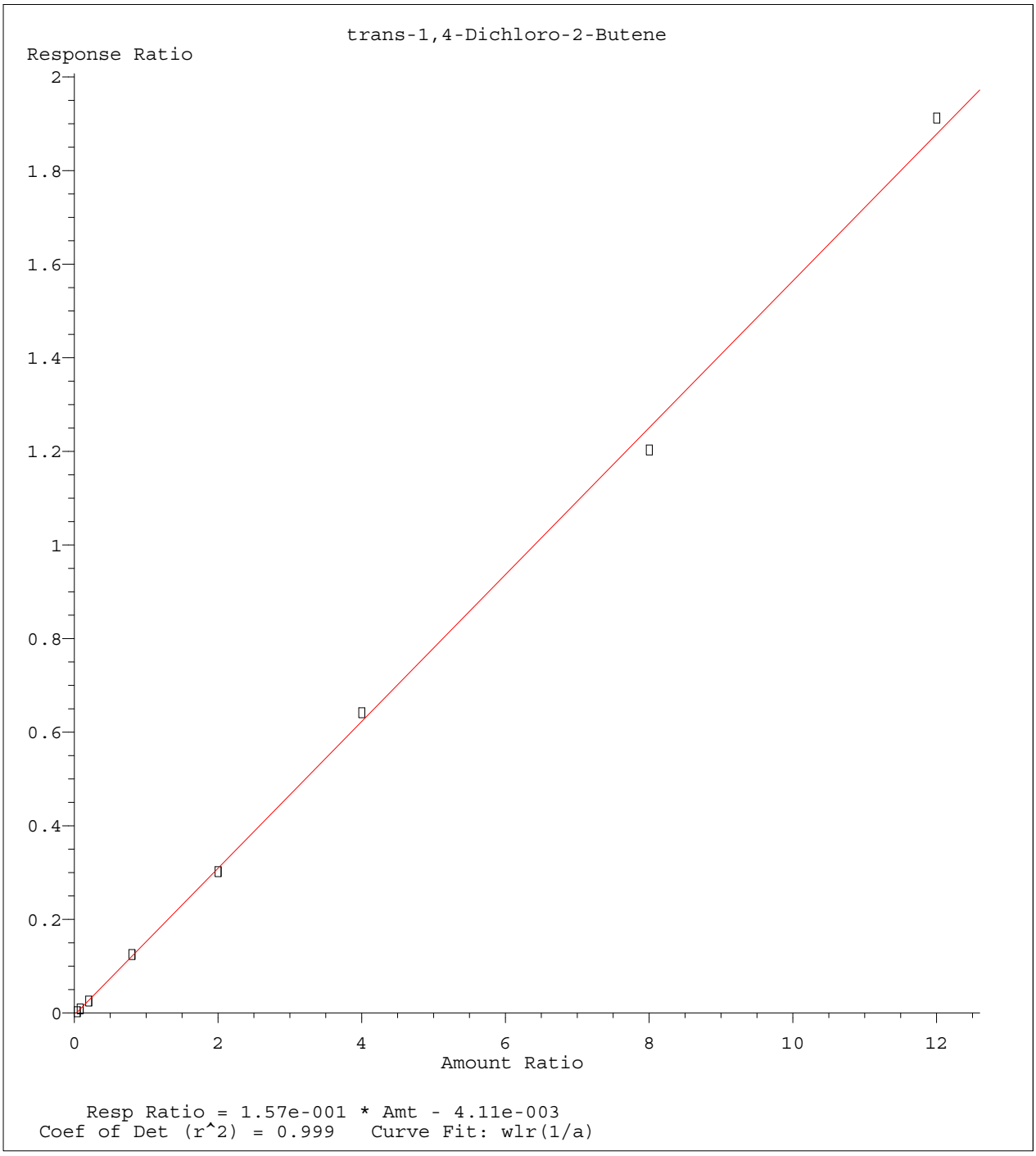

Method Name: C:\MSDCHEM\2\METHODS\8260WTR.M
Calibration Table Last Updated: Mon Feb 09 12:21:39 2015

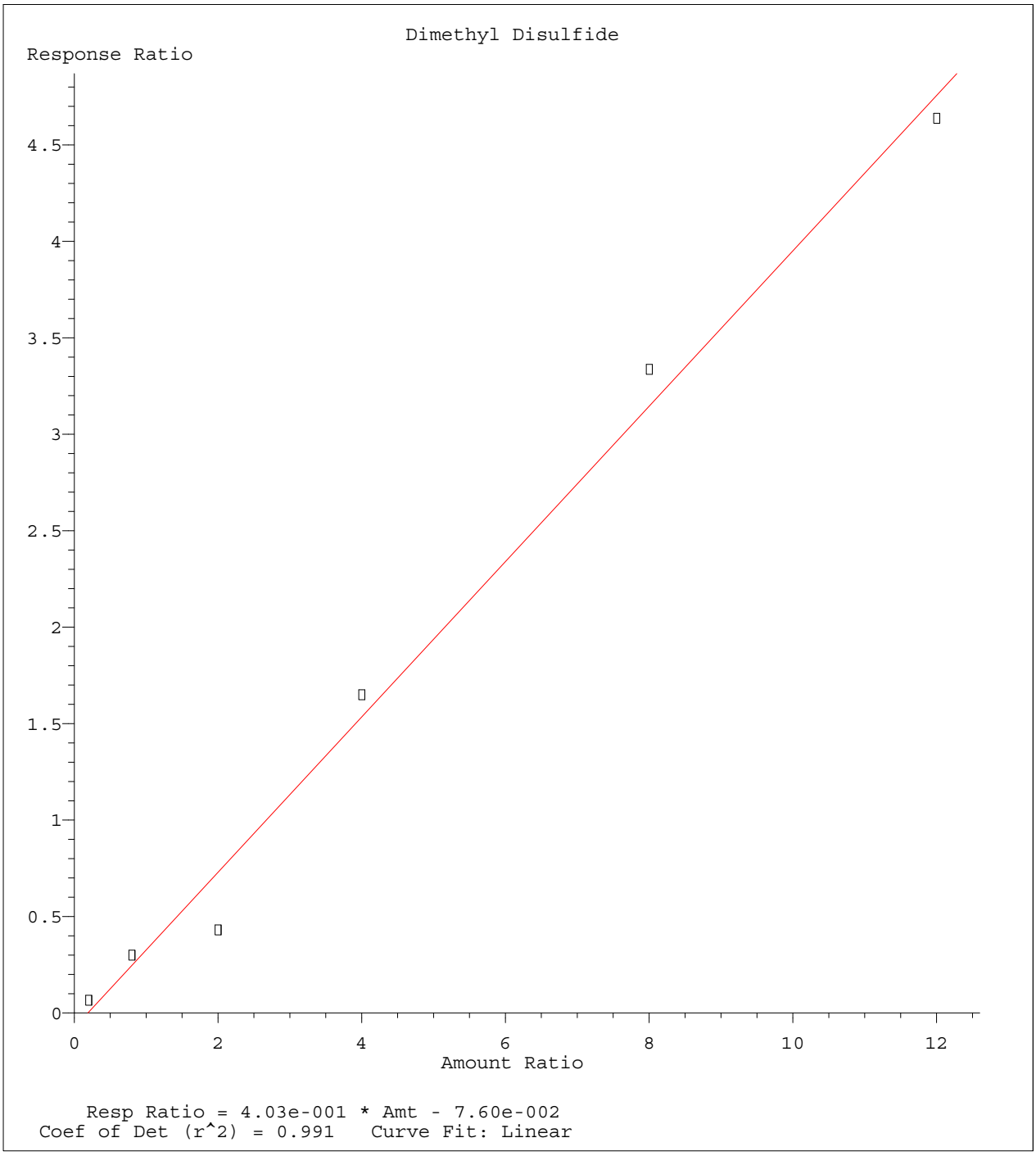

Method Name: C:\MSDCHEM\2\METHODS\8260WTR.M
Calibration Table Last Updated: Mon Feb 09 12:21:39 2015

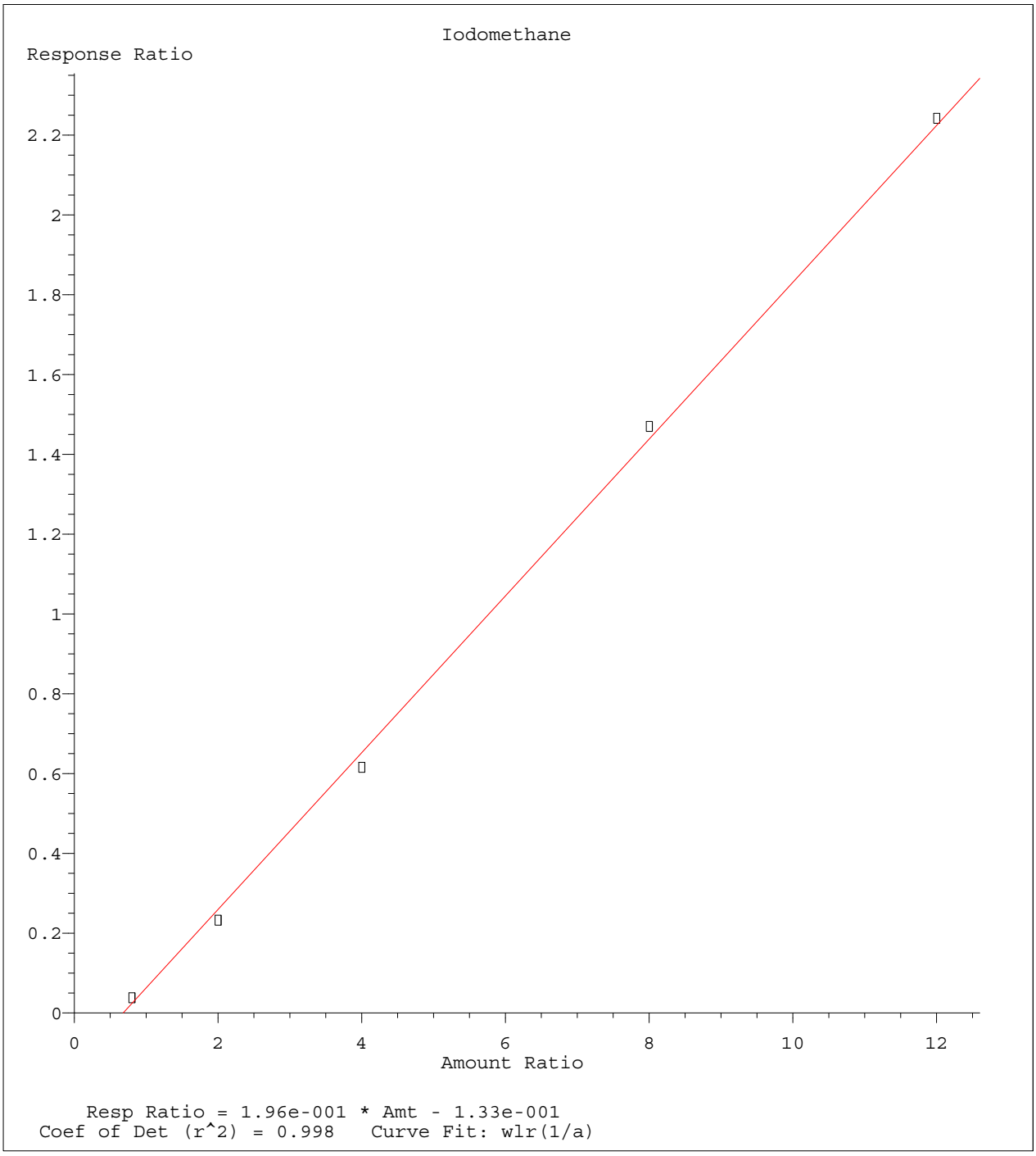

Method Name: C:\MSDCHEM\2\METHODS\8260WTR.M
Calibration Table Last Updated: Mon Feb 09 12:21:39 2015

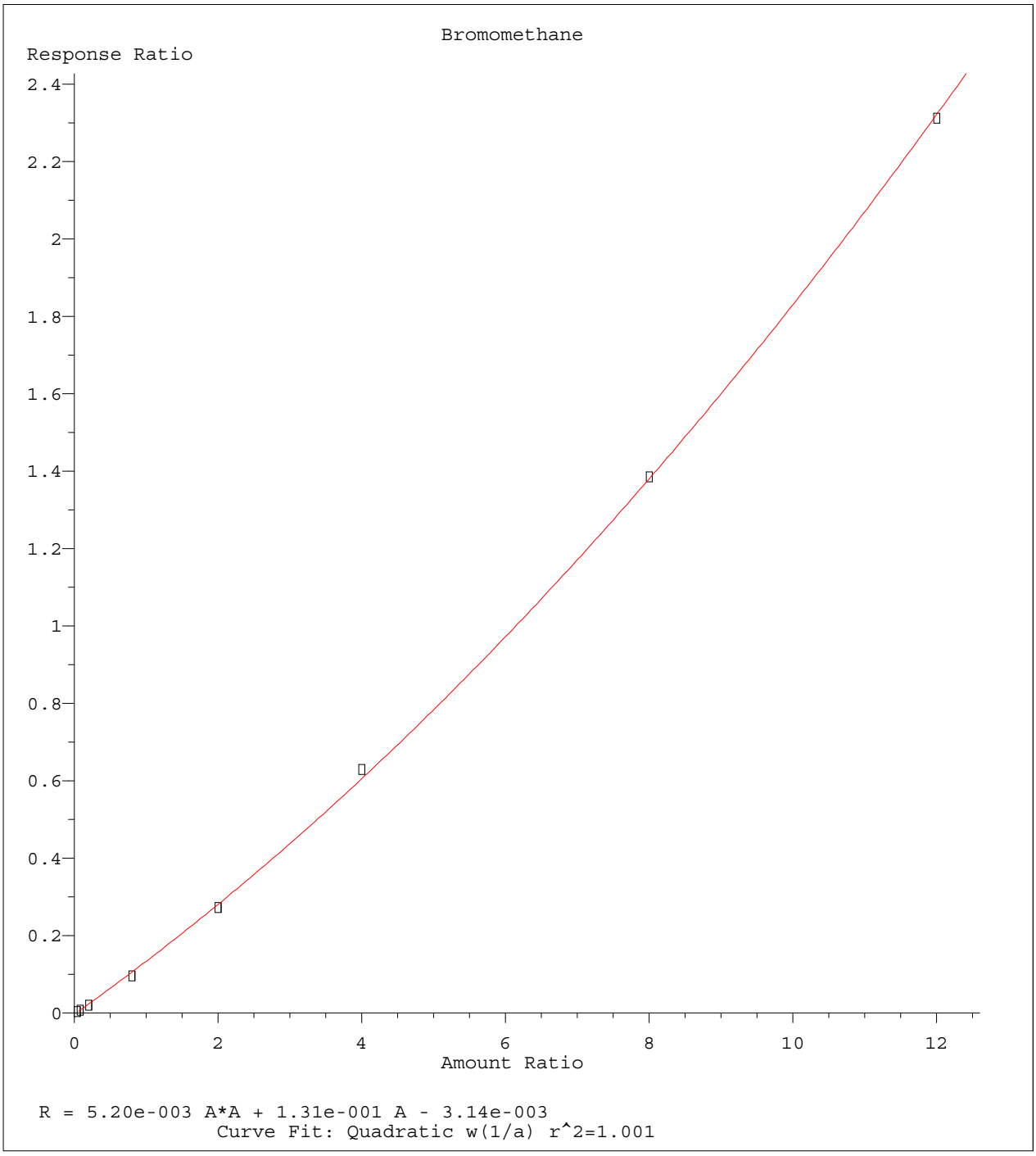

Method Name: C:\MSDCHEM\2\METHODS\8260WTR.M
Calibration Table Last Updated: Mon Feb 09 12:21:39 2015

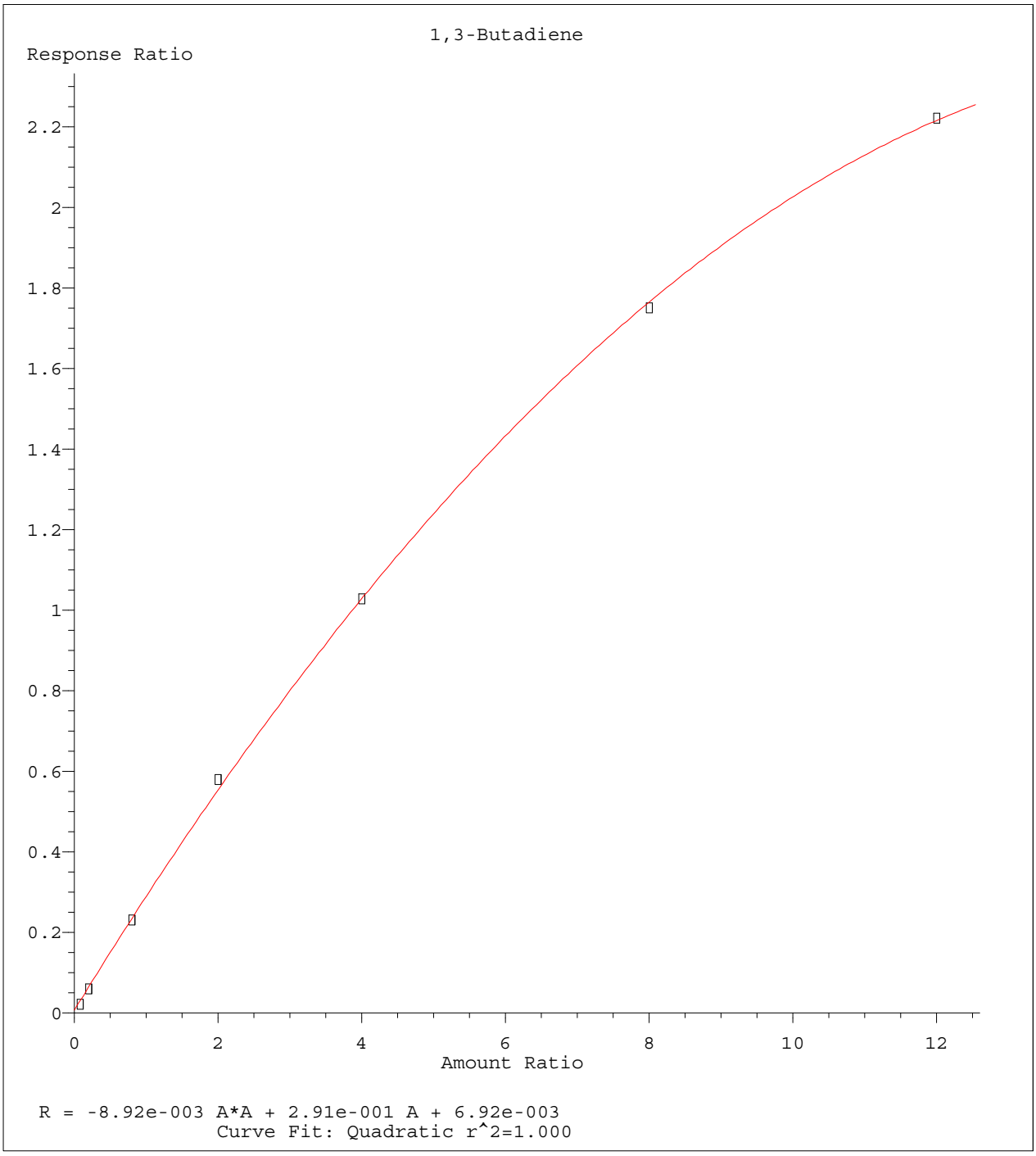

Method Name: C:\MSDCHEM\2\METHODS\8260WTR.M
Calibration Table Last Updated: Mon Feb 09 12:21:39 2015

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402842.D Vial: 14
Acq On : 6 Feb 2015 21:48 Operator: TMB
Sample : WG511287-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD68730 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:23 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	855532	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	630488	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.71	152	331609	25.00 ug/L	-0.02
System Monitoring Compounds					
37) Dibromofluoromethane	9.78	111	218364	24.2524 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.00%		
43) 1,2-Dichloroethane-d4	10.41	65	218547	23.1529 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 92.60%		
58) Toluene-d8	12.80	98	752913	25.1372 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.56%		
80) p-Bromofluorobenzene	16.19	95	299900	25.2163 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.88%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.24	85	697424	50.8856 ug/L	100
3) Chloromethane	3.70	50	550557	46.4311 ug/L	99
4) Vinyl Chloride	3.93	62	562990	48.2439 ug/L	97
5) 1,3-Butadiene	3.97	54	297404	30.3925 ug/L	93
6) Bromomethane	4.84	94	244889	50.9856 ug/L	100
7) Chloroethane	5.00	64	384533	53.3075 ug/L	99
8) Trichlorofluoromethane	5.48	101	754351	46.6094 ug/L	100
9) Diethyl ether	6.02	59	579930	98.0422 ug/L	91
10) Isoprene	6.05	67	712297	56.8189 ug/L	90
11) Acrolein	6.25	56	64407	94.3164 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.27	101	430157	47.0500 ug/L	94
13) Acetone	6.36	43	66535	51.3233 ug/L #	27
14) 1,1-Dichloroethene	6.58	61	700548	47.6419 ug/L	94
15) Tert-Butyl Alcohol	6.69	59	56163	206.1041 ug/L	96
16) Dimethyl Sulfide	6.85	62	548230	55.9394 ug/L	99
17) Iodomethane	7.11	142	65634	26.7063 ug/L	93
18) Methyl acetate	7.11	43	188523	34.9719 ug/L	97
19) Methylene Chloride	7.36	84	456615	49.6570 ug/L	88
20) Carbon Disulfide	7.40	76	1362504	44.8698 ug/L	100
21) Acrylonitrile	7.55	53	95648	50.5278 ug/L	98
22) Methyl Tert Butyl Ether	7.58	73	856561	53.5794 ug/L	93
23) trans-1,2-Dichloroethene	7.82	61	714277	50.4329 ug/L	92
24) n-Hexane	7.90	57	609026	48.9984 ug/L	93
25) Diisopropyl ether	8.24	45	2905564	99.0342 ug/L	97
26) Vinyl Acetate	8.41	43	471143	116.4863 ug/L	98
27) 1,1-Dichloroethane	8.44	63	876334	49.2380 ug/L	97
28) Ethyl-Tert-Butyl ether	8.81	59	2350768	99.9483 ug/L	96
29) 2-Butanone	9.00	43	98114	50.8389 ug/L	97
30) Propionitrile	9.10	54	62361	97.7067 ug/L	98
31) 2,2-Dichloropropane	9.21	77	626022	47.6462 ug/L	99
32) cis-1,2-Dichloroethene	9.29	96	497542	50.8290 ug/L	89
33) Chloroform	9.49	83	814463	48.1752 ug/L	99
34) 1-Bromopropane	9.63	122	99927	56.6523 ug/L	98
35) Bromochloromethane	9.72	130	254046	51.8867 ug/L	93
36) Tetrahydrofuran	9.75	42	134189	99.6889 ug/L	98
38) 1,1,1-Trichloroethane	10.02	97	737177	50.0551 ug/L	99
39) Cyclohexane	10.05	56	813171	51.3076 ug/L	86
40) 1,1-Dichloropropene	10.22	75	642786	50.5540 ug/L	99
41) Tert-Amyl-Methyl ether	10.32	73	1771098	100.0998 ug/L	97
42) Carbon Tetrachloride	10.37	117	633075	50.1275 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M402842.D 8260WTR.M Mon Feb 09 12:25:23 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402842.D Vial: 14
Acq On : 6 Feb 2015 21:48 Operator: TMB
Sample : WG511287-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD68730 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:23 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.54	62	548103	49.0713 ug/L		99
46)	Benzene	10.58	78	1785435	51.3287 ug/L		95
47)	Trichloroethene	11.33	130	479699	54.8220 ug/L		100
48)	Methylcyclohexane	11.42	83	733175	51.4173 ug/L		89
49)	1,2-Dichloropropane	11.54	63	482689	51.0298 ug/L		95
50)	Bromodichloromethane	11.84	83	596284	49.8522 ug/L		100
51)	1,4-Dioxane	11.83	88	7338	199.7413 ug/L		79
52)	Dibromomethane	11.92	93	215030	48.1686 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.14	63	185184	51.5424 ug/L		99
54)	4-Methyl-2-Pentanone	12.17	58	77968	48.3699 ug/L		94
55)	cis-1,3-Dichloropropene	12.48	75	690516	55.2199 ug/L		100
56)	Dimethyl Disulfide	12.74	79	362318	31.0017 ug/L		93
59)	Toluene	12.89	91	1804687	53.0952 ug/L		100
60)	Ethyl Methacrylate	12.99	69	363517	55.9568 ug/L		91
62)	trans-1,3-Dichloropropene	13.07	75	517158	49.7271 ug/L		99
63)	1,1,2-Trichloroethane	13.29	97	280655	52.0109 ug/L		99
64)	2-Hexanone	13.23	58	70765	50.6996 ug/L	#	47
65)	1,3-Dichloropropane	13.60	76	509174	52.0569 ug/L		92
66)	Tetrachloroethene	13.72	164	374590	51.0372 ug/L		98
67)	Dibromochloromethane	13.98	129	366960	53.2241 ug/L		99
68)	1,2-Dibromoethane	14.24	107	279439	52.0949 ug/L		99
69)	1-Chlorohexane	14.32	91	631195	54.9021 ug/L		89
70)	Chlorobenzene	14.75	112	1108566	48.2344 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.78	131	413036	52.6223 ug/L		99
72)	Ethylbenzene	14.77	106	669189	50.8921 ug/L		98
73)	m-,p-Xylene	14.86	106	1562317	104.3182 ug/L		97
74)	o-Xylene	15.42	106	738446	50.1132 ug/L		99
75)	Styrene	15.46	104	1307371	55.3153 ug/L		99
76)	Bromoform	15.96	173	223365	52.5048 ug/L		99
77)	Isopropylbenzene	15.84	105	1900600	51.6269 ug/L		99
79)	1,1,2,2-Tetrachloroethane	16.06	83	298623	49.5455 ug/L		99
81)	1,2,3-Trichloropropane	16.25	110	84563	50.1832 ug/L	#	46
82)	trans-1,4-Dichloro-2-Buten	16.30	53	80281	39.2554 ug/L		47
83)	n-Propylbenzene	16.35	91	2363376	48.7442 ug/L		99
84)	Bromobenzene	16.48	156	479352	51.0897 ug/L		94
85)	1,3,5-Trimethylbenzene	16.54	105	1788045	55.2432 ug/L		99
86)	2-Chlorotoluene	16.63	91	1482440	50.1387 ug/L		91
87)	4-Chlorotoluene	16.68	91	1425040	47.3172 ug/L		89
88)	a-Methylstyrene	16.95	118	997655	53.4959 ug/L		97
89)	tert-Butylbenzene	17.01	134	342459	48.5533 ug/L		96
90)	1,2,4-Trimethylbenzene	17.06	105	1812453	54.4942 ug/L		99
91)	sec-Butylbenzene	17.28	105	2114294	49.4204 ug/L		99
92)	p-Isopropyltoluene	17.43	119	1716865	50.7681 ug/L		100
93)	1,3-Dichlorobenzene	17.63	146	908402	47.1881 ug/L		99
94)	1,4-Dichlorobenzene	17.75	146	975480	49.4817 ug/L		100
95)	n-Butylbenzene	17.96	91	1877671	50.6628 ug/L		99
96)	1,2-Dichlorobenzene	18.26	146	826012	47.8800 ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.25	75	55836	49.8972 ug/L		98
98)	1,2,4-Trichlorobenzene	20.39	180	708749	51.7324 ug/L		98
99)	Hexachlorobutadiene	20.55	225	419806	52.0748 ug/L		96
100)	Naphthalene	20.76	128	1039998	51.4822 ug/L		99
101)	1,2,3-Trichlorobenzene	21.07	180	608129	50.8312 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M402842.D 8260WTR.M Mon Feb 09 12:25:23 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402842.D Vial: 14
Acq On : 6 Feb 2015 21:48 Operator: TMB
Sample : WG511287-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD68730 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 9 12:25 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration

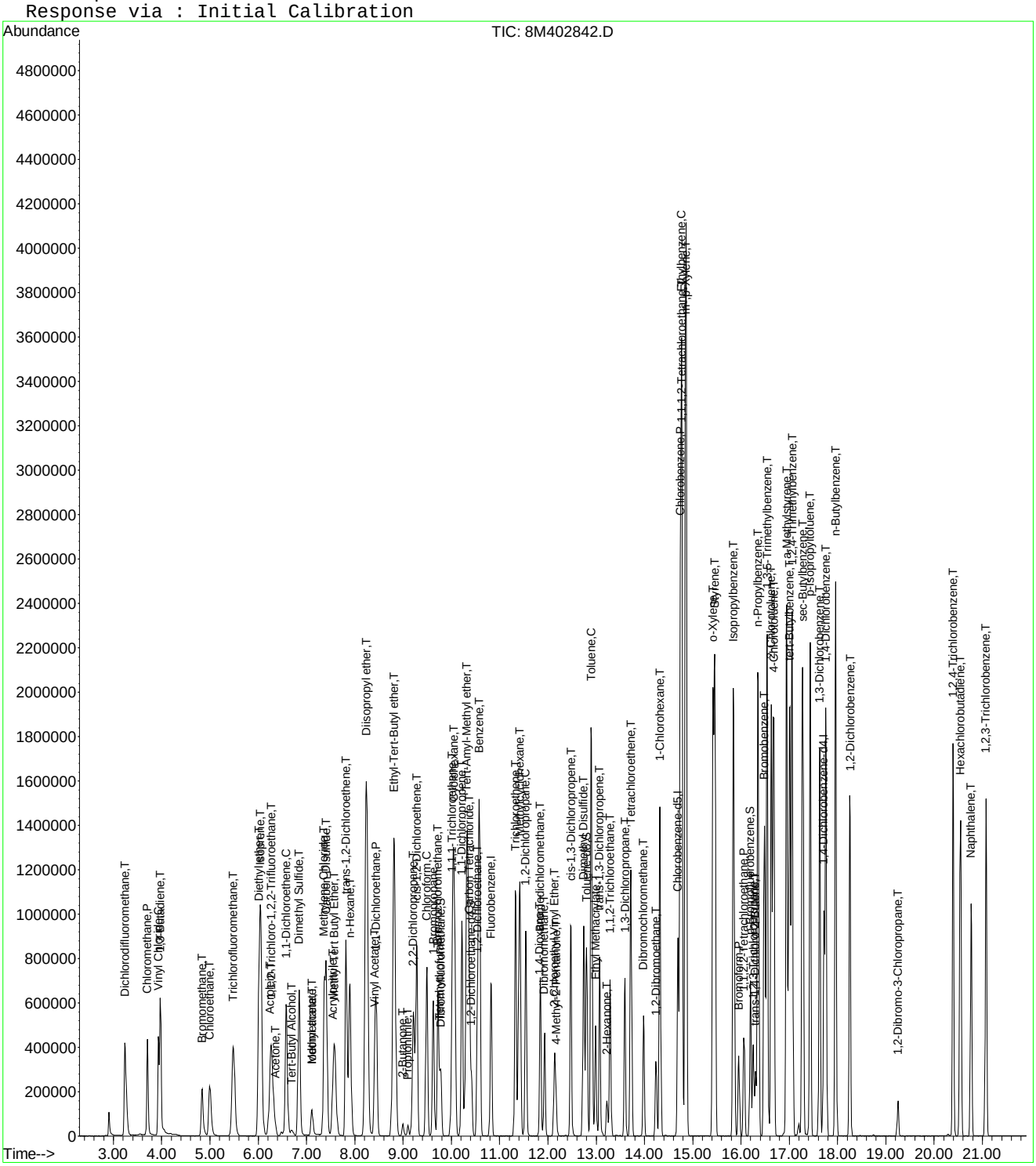

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\020615\8M402842.D Vial: 14
Acq On : 6 Feb 2015 21:48 Operator: TMB
Sample : WG511287-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD68730 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	114	0.00
2	T	Dichlorodifluoromethane	50.0000	50.8856	-1.8	104	0.00
3	P	Chloromethane	50.0000	46.4311	7.1	104	0.00
4	C	Vinyl Chloride	50.0000	48.2439	3.5	105	0.00
5	T	1,3-Butadiene	50.0000	30.3925	39.2#	68	0.00
6	T	Bromomethane	50.0000	50.9856	-2.0	120	0.00
7	T	Chloroethane	50.0000	53.3075	-6.6	117	0.00
8	T	Trichlorofluoromethane	50.0000	46.6094	6.8	103	0.00
9	T	Diethyl ether	100.0000	98.0422	2.0	111	0.00
10	T	Isoprene	50.0000	56.8189	-13.6	123	0.00
11	T	Acrolein	50.0000	94.3164	-88.6#	221	-0.02
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	47.0500	5.9	105	0.00
13	T	Acetone	50.0000	51.3233	-2.6	110	0.00
14	C	1,1-Dichloroethene	50.0000	47.6419	4.7	106	0.00
15	T	Tert-Butyl Alcohol	200.0000	206.1042	-3.1	121	-0.02
16	T	Dimethyl Sulfide	50.0000	55.9394	-11.9	123	0.00
17	T	Iodomethane	50.0000	26.7063	46.6#	38	0.00
18	T	Methyl acetate	50.0000	34.9719	30.1#	81	0.00
19	T	Methylene Chloride	50.0000	49.6570	0.7	114	0.00
20	T	Carbon Disulfide	50.0000	44.8698	10.3	98	-0.02
21	T	Acrylonitrile	50.0000	50.5278	-1.1	111	0.00
22	T	Methyl Tert Butyl Ether	50.0000	53.5794	-7.2	116	0.00
23	T	trans-1,2-Dichloroethene	50.0000	50.4329	-0.9	113	0.00
24	T	n-Hexane	50.0000	48.9984	2.0	107	0.00
25	T	Diisopropyl ether	100.0000	99.0343	1.0	109	0.00
26	T	Vinyl Acetate	50.0000	116.4863	-133.0#	260	0.00
27	P	1,1-Dichloroethane	50.0000	49.2380	1.5	108	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	99.9483	0.1	110	0.00
29	T	2-Butanone	50.0000	50.8389	-1.7	116	0.00
30	T	Propionitrile	100.0000	97.7067	2.3	110	0.00
31	T	2,2-Dichloropropane	50.0000	47.6462	4.7	107	0.00
32	T	cis-1,2-Dichloroethene	50.0000	50.8290	-1.7	114	0.00
33	C	Chloroform	50.0000	48.1752	3.6	108	0.00
34		1-Bromopropane	50.0000	56.6523	-13.3	117	0.00
35	T	Bromochloromethane	50.0000	51.8867	-3.8	112	-0.02
36	T	Tetrahydrofuran	100.0000	99.6889	0.3	115	0.00
37	S	Dibromofluoromethane	25.0000	24.2524	3.0	110	0.00
38	T	1,1,1-Trichloroethane	50.0000	50.0551	-0.1	110	-0.02
39	T	Cyclohexane	50.0000	51.3076	-2.6	109	-0.02
40	T	1,1-Dichloropropene	50.0000	50.5540	-1.1	108	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	100.0998	-0.1	111	0.00
42	T	Carbon Tetrachloride	50.0000	50.1275	-0.3	109	0.00
43	S	1,2-Dichloroethane-d4	25.0000	23.1529	7.4	108	-0.02
44		Heptane	-1.0000	0.0000	0.0	0	-2.67#
45	T	1,2-Dichloroethane	50.0000	49.0713	1.9	107	0.00
46	T	Benzene	50.0000	51.3287	-2.7	111	0.00
47	T	Trichloroethene	50.0000	54.8220	-9.6	117	0.00
48	T	Methylcyclohexane	50.0000	51.4173	-2.8	112	0.00
49	C	1,2-Dichloropropane	50.0000	51.0298	-2.1	110	0.00
50	T	Bromodichloromethane	50.0000	49.8522	0.3	107	0.00
51	T	1,4-Dioxane	200.0000	199.7413	0.1	120	0.00
52	T	Dibromomethane	50.0000	48.1686	3.7	107	-0.02
53	T	2-Chloroethyl Vinyl Ether	50.0000	51.5424	-3.1	112	0.00
54	T	4-Methyl-2-Pentanone	50.0000	48.3699	3.3	107	0.00

(#) = Out of Range
8M402842.D 8260WTR.M Mon Feb 09 12:27:08 2015 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\020615\8M402842.D Vial: 14
Acq On : 6 Feb 2015 21:48 Operator: TMB
Sample : WG511287-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD68730 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	55.2199	-10.4	114	0.00
56	T	Dimethyl Disulfide	50.0000	31.0017	38.0#	112	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	113	0.00
58	S	Toluene-d8	25.0000	25.1372	-0.5	111	0.00
59	C	Toluene	50.0000	53.0952	-6.2	111	-0.02
60	T	Ethyl Methacrylate	50.0000	55.9568	-11.9	117	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.27#
62	T	trans-1,3-Dichloropropene	50.0000	49.7271	0.5	103	0.00
63	T	1,1,2-Trichloroethane	50.0000	52.0109	-4.0	111	-0.02
64	T	2-Hexanone	50.0000	50.6996	-1.4	113	0.00
65	T	1,3-Dichloropropane	50.0000	52.0569	-4.1	111	0.00
66	T	Tetrachloroethene	50.0000	51.0372	-2.1	111	0.00
67	T	Dibromochloromethane	50.0000	53.2241	-6.4	110	-0.02
68	T	1,2-Dibromoethane	50.0000	52.0949	-4.2	109	0.00
69	T	1-Chlorohexane	50.0000	54.9021	-9.8	115	0.00
70	P	Chlorobenzene	50.0000	48.2344	3.5	104	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	52.6223	-5.2	109	0.00
72	C	Ethylbenzene	50.0000	50.8921	-1.8	109	-0.02
73	T	m-,p-Xylene	100.0000	104.3182	-4.3	109	-0.02
74	T	o-Xylene	50.0000	50.1132	-0.2	103	-0.02
75	T	Styrene	50.0000	55.3153	-10.6	110	0.00
76	P	Bromoform	50.0000	52.5048	-5.0	112	0.00
77	T	Isopropylbenzene	50.0000	51.6269	-3.3	103	-0.02
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	111	-0.02
79	P	1,1,2,2-Tetrachloroethane	50.0000	49.5455	0.9	109	-0.02
80	S	p-Bromofluorobenzene	25.0000	25.2163	-0.9	111	0.00
81	T	1,2,3-Trichloropropane	50.0000	50.1832	-0.4	110	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	39.2554	21.5	89	-0.02
83	T	n-Propylbenzene	50.0000	48.7442	2.5	102	-0.02
84	T	Bromobenzene	50.0000	51.0897	-2.2	110	-0.02
85	T	1,3,5-Trimethylbenzene	50.0000	55.2432	-10.5	112	0.00
86	T	2-Chlorotoluene	50.0000	50.1388	-0.3	107	0.00
87	T	4-Chlorotoluene	50.0000	47.3172	5.4	100	0.00
88	T	a-Methylstyrene	50.0000	53.4959	-7.0	113	0.00
89	T	tert-Butylbenzene	50.0000	48.5533	2.9	105	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	54.4942	-9.0	111	0.00
91	T	sec-Butylbenzene	50.0000	49.4203	1.2	104	0.00
92	T	p-Isopropyltoluene	50.0000	50.7681	-1.5	105	0.00
93	T	1,3-Dichlorobenzene	50.0000	47.1882	5.6	102	0.00
94	T	1,4-Dichlorobenzene	50.0000	49.4817	1.0	110	-0.02
95	T	n-Butylbenzene	50.0000	50.6628	-1.3	109	0.00
96	T	1,2-Dichlorobenzene	50.0000	47.8800	4.2	104	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	49.8972	0.2	106	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	51.7324	-3.5	111	-0.02
99	T	Hexachlorobutadiene	50.0000	52.0748	-4.1	114	0.00
100	T	Naphthalene	50.0000	51.4822	-3.0	108	-0.02
101	T	1,2,3-Trichlorobenzene	50.0000	50.8312	-1.7	109	-0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M402842.D 8260WTR.M Mon Feb 09 12:27:08 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\021715\8M403039.D Vial: 2
Acq On : 17 Feb 2015 14:08 Operator: TMB
Sample : WG512558-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 14:31:19 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	754524	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	568563	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.72	152	295040	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	184009	23.1726 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 92.68%		
43) 1,2-Dichloroethane-d4	10.42	65	175490	21.0803 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 84.32%		
58) Toluene-d8	12.80	98	644388	23.8571 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 95.44%		
80) p-Bromofluorobenzene	16.19	95	256109	24.2033 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.80%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.25	85	526191	43.5316 ug/L	100
3) Chloromethane	3.71	50	507740	48.5524 ug/L	99
4) Vinyl Chloride	3.94	62	540987	52.5644 ug/L	97
5) 1,3-Butadiene	3.98	54	465461	56.2659 ug/L	83
6) Bromomethane	4.84	94	189434	45.1728 ug/L	100
7) Chloroethane	5.01	64	294827	46.3431 ug/L	99
8) Trichlorofluoromethane	5.49	101	678069	47.5048 ug/L	99
9) Diethyl ether	6.02	59	478570	91.7374 ug/L	91
10) Isoprene	6.06	67	552157	49.9411 ug/L	90
11) Acrolein	6.26	56	25224	41.8824 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	395084	48.9988 ug/L	94
13) Acetone	6.36	43	47129	41.2208 ug/L #	27
14) 1,1-Dichloroethene	6.59	61	601018	46.3449 ug/L	92
15) Tert-Butyl Alcohol	6.69	59	51635	214.8542 ug/L	96
16) Dimethyl Sulfide	6.85	62	416282	48.1622 ug/L	100
17) Iodomethane	7.10	142	117568	36.7752 ug/L	98
18) Methyl acetate	7.11	43	223334	46.9757 ug/L	98
19) Methylene Chloride	7.37	84	381943	47.0969 ug/L	87
20) Carbon Disulfide	7.41	76	1334626	49.8355 ug/L	100
21) Acrylonitrile	7.55	53	78807	47.2044 ug/L	96
22) Methyl Tert Butyl Ether	7.58	73	684001	48.5131 ug/L	94
23) trans-1,2-Dichloroethene	7.82	61	586846	46.9823 ug/L	90
24) n-Hexane	7.90	57	577254	52.6594 ug/L	93
25) Diisopropyl ether	8.24	45	2473500	95.5939 ug/L	97
26) Vinyl Acetate	8.41	43	132360	37.1058 ug/L	98
27) 1,1-Dichloroethane	8.44	63	729709	46.4883 ug/L	97
28) Ethyl-Tert-Butyl ether	8.81	59	2048470	98.7548 ug/L	96
29) 2-Butanone	9.00	43	73514	43.1915 ug/L	95
30) Propionitrile	9.10	54	51075	90.7367 ug/L	99
31) 2,2-Dichloropropane	9.21	77	600220	51.7979 ug/L	99
32) cis-1,2-Dichloroethene	9.29	96	410630	47.5659 ug/L	90
33) Chloroform	9.49	83	694281	46.5641 ug/L	99
34) 1-Bromopropane	9.63	122	81621	52.4686 ug/L	98
35) Bromochloromethane	9.72	130	211547	48.9907 ug/L	93
36) Tetrahydrofuran	9.74	42	105107	88.5370 ug/L	96
38) 1,1,1-Trichloroethane	10.02	97	622818	47.9514 ug/L	98
39) Cyclohexane	10.06	56	696339	49.8177 ug/L	86
40) 1,1-Dichloropropene	10.22	75	556196	49.5998 ug/L	99
41) Tert-Amyl-Methyl ether	10.32	73	1537593	98.5361 ug/L	95
42) Carbon Tetrachloride	10.37	117	549939	49.3741 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\021715\8M403039.D Vial: 2
Acq On : 17 Feb 2015 14:08 Operator: TMB
Sample : WG512558-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 14:31:19 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.54	62	458239	46.5179	ug/L		98
46)	Benzene	10.58	78	1523088	49.6483	ug/L		94
47)	Trichloroethene	11.33	130	377410	48.9061	ug/L		99
48)	Methylcyclohexane	11.42	83	640783	50.9537	ug/L		89
49)	1,2-Dichloropropane	11.54	63	396674	47.5503	ug/L		93
50)	Bromodichloromethane	11.84	83	505534	47.9231	ug/L		99
51)	1,4-Dioxane	11.83	88	7317	225.8325	ug/L		89
52)	Dibromomethane	11.93	93	178523	45.3443	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.14	63	144401	45.5716	ug/L		96
54)	4-Methyl-2-Pentanone	12.17	58	63428	44.6173	ug/L		94
55)	cis-1,3-Dichloropropene	12.48	75	563862	51.1279	ug/L		99
56)	Dimethyl Disulfide	12.74	79	302051	29.5629	ug/L		94
59)	Toluene	12.90	91	1575835	51.4118	ug/L		100
60)	Ethyl Methacrylate	12.99	69	300546	51.3024	ug/L		91
62)	trans-1,3-Dichloropropene	13.07	75	474976	50.6454	ug/L		100
63)	1,1,2-Trichloroethane	13.29	97	238258	48.9629	ug/L		100
64)	2-Hexanone	13.23	58	58227	46.2603	ug/L		86
65)	1,3-Dichloropropane	13.60	76	430692	48.8289	ug/L		92
66)	Tetrachloroethene	13.72	164	333783	50.4305	ug/L		98
67)	Dibromochloromethane	13.98	129	310462	49.9340	ug/L		100
68)	1,2-Dibromoethane	14.24	107	237156	49.0276	ug/L		100
69)	1-Chlorohexane	14.32	91	549814	53.0322	ug/L		88
70)	Chlorobenzene	14.75	112	1021356	49.2800	ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.78	131	361690	51.0995	ug/L		99
72)	Ethylbenzene	14.77	106	583322	49.1935	ug/L		100
73)	m-,p-Xylene	14.86	106	1386635	102.6718	ug/L		99
74)	o-Xylene	15.42	106	678284	51.0439	ug/L		99
75)	Styrene	15.46	104	1113448	52.2414	ug/L		99
76)	Bromoform	15.96	173	182581	47.5924	ug/L		99
77)	Isopropylbenzene	15.84	105	1749099	52.6863	ug/L		99
79)	1,1,2,2-Tetrachloroethane	16.06	83	250986	46.8032	ug/L		100
81)	1,2,3-Trichloropropane	16.25	110	72283	48.2125	ug/L		49
82)	trans-1,4-Dichloro-2-Buten	16.30	53	75534	41.4745	ug/L	#	43
83)	n-Propylbenzene	16.36	91	2235184	51.8142	ug/L		100
84)	Bromobenzene	16.48	156	414598	49.6652	ug/L		95
85)	1,3,5-Trimethylbenzene	16.54	105	1508501	52.3832	ug/L		100
86)	2-Chlorotoluene	16.63	91	1315715	50.0154	ug/L		91
87)	4-Chlorotoluene	16.68	91	1331411	49.6877	ug/L		90
88)	a-Methylstyrene	16.95	118	844618	50.9033	ug/L		98
89)	tert-Butylbenzene	17.01	134	306270	48.8045	ug/L		98
90)	1,2,4-Trimethylbenzene	17.06	105	1560117	52.7213	ug/L		100
91)	sec-Butylbenzene	17.28	105	1903562	50.0095	ug/L		100
92)	p-Isopropyltoluene	17.43	119	1546302	51.3919	ug/L		100
93)	1,3-Dichlorobenzene	17.63	146	855646	49.9568	ug/L		99
94)	1,4-Dichlorobenzene	17.76	146	835174	47.6155	ug/L		99
95)	n-Butylbenzene	17.96	91	1605658	48.6931	ug/L		99
96)	1,2-Dichlorobenzene	18.26	146	741160	48.2864	ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.25	75	44975	45.1730	ug/L		99
98)	1,2,4-Trichlorobenzene	20.39	180	598953	49.1370	ug/L		98
99)	Hexachlorobutadiene	20.55	225	337029	46.9885	ug/L		96
100)	Naphthalene	20.77	128	858097	47.7427	ug/L		100
101)	1,2,3-Trichlorobenzene	21.07	180	507866	47.7122	ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\021715\8M403039.D Vial: 2
Acq On : 17 Feb 2015 14:08 Operator: TMB
Sample : WG512558-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 14:31 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration

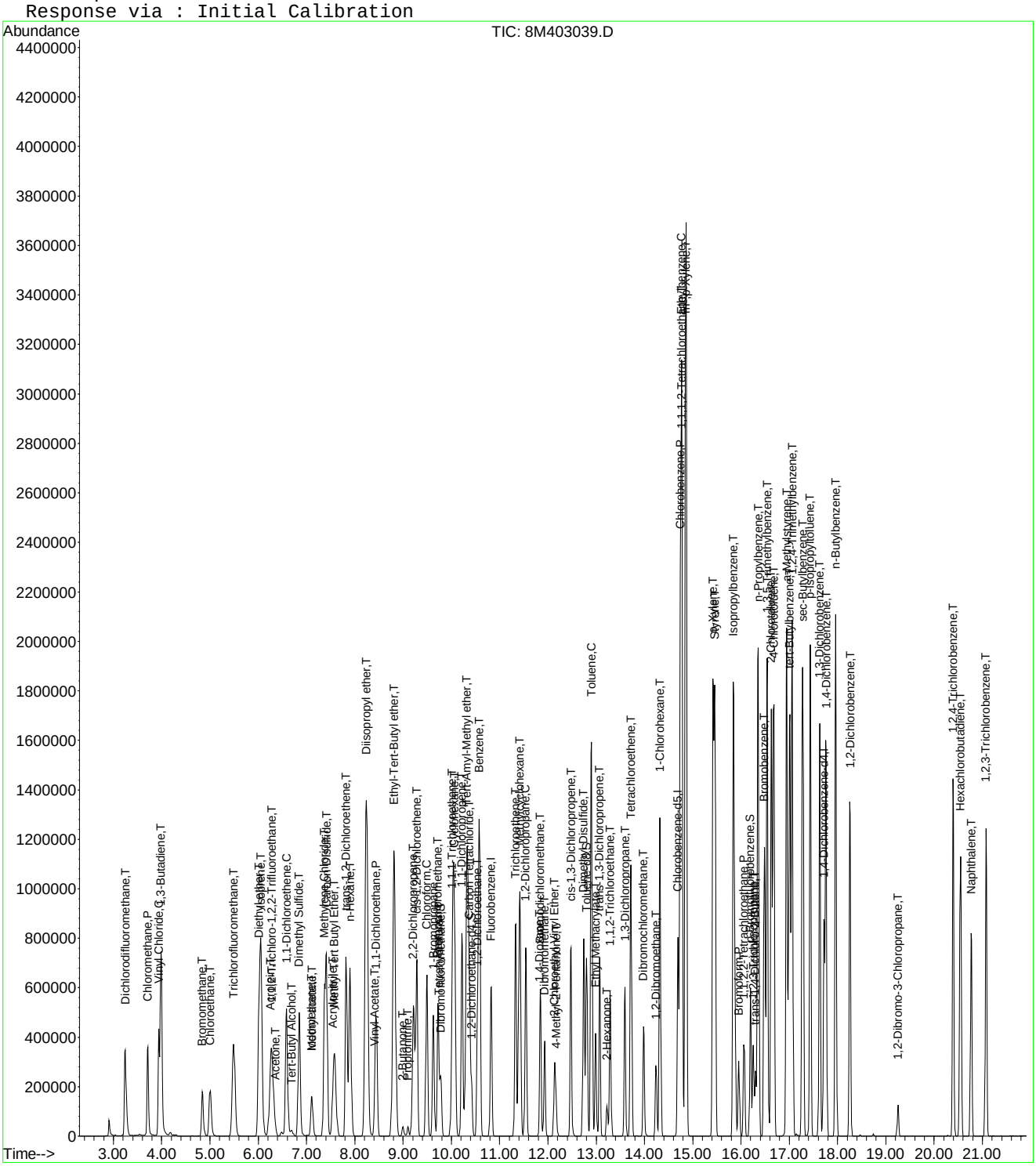

Continuing Calibration Area and RT check

Instrument: HPMS8
Initial cal date: 6 Feb 2015 18:53
CCV date: 17 Feb 2015 14:08
CCV Filename: 8M403039.D

	Fluorobenzene		**Chlorobenzene-d5**		**1,4-Dichlorobenzene-d4**	
	Amount	RT	Amount	RT	Amount	RT
InitCal	749967	10.83	559024	14.69	298746	17.72
CCV	754524	10.83	568563	14.69	295040	17.72

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\021715\8M403039.D Vial: 2
Acq On : 17 Feb 2015 14:08 Operator: TMB
Sample : WG512558-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	101	0.00
2	T	Dichlorodifluoromethane	0.4005	0.3487	12.9	79	0.00
3	P	Chloromethane	0.3465	0.3365	2.9	96	0.01
4	C	Vinyl Chloride	0.3410	0.3585	-5.1	101	0.00
5	T	1,3-Butadiene	0.2579	0.3085	-19.6	107	0.00
6	T	Bromomethane	0.1314	0.1255	4.4	93	0.00
7	T	Chloroethane	0.2108	0.1954	7.3	90	0.00
8	T	Trichlorofluoromethane	0.4729	0.4493	5.0	93	0.00
9	T	Diethyl ether	0.1729	0.1586	8.3	92	0.00
10	T	Isoprene	0.3663	0.3659	0.1	95	0.00
11	T	Acrolein	0.0199	0.0167	16.2	86	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2672	0.2618	2.0	97	0.00
13	T	Acetone	0.0379	0.0312	17.6	78	0.00
14	C	1,1-Dichloroethene	0.4297	0.3983	7.3	91	0.00
15	T	Tert-Butyl Alcohol	0.0080	0.0086	-7.4	111	-0.02
16	T	Dimethyl Sulfide	0.2864	0.2759	3.7	93	0.00
17	T	Iodomethane	0.1376	0.0779	43.4#	67	0.00
18	T	Methyl acetate	0.1575	0.1480	6.0	96	0.00
19	T	Methylene Chloride	0.2687	0.2531	5.8	95	0.00
20	T	Carbon Disulfide	0.8873	0.8844	0.3	96	0.00
21	T	Acrylonitrile	0.0553	0.0522	5.6	91	0.00
22	T	Methyl Tert Butyl Ether	0.4672	0.4533	3.0	93	0.00
23	T	trans-1,2-Dichloroethene	0.4139	0.3889	6.0	93	0.00
24	T	n-Hexane	0.3632	0.3825	-5.3	101	0.00
25	T	Diisopropyl ether	0.8573	0.8196	4.4	93	0.00
26	T	Vinyl Acetate	0.1182	0.0877	25.8#	73	0.00
27	P	1,1-Dichloroethane	0.5201	0.4836	7.0	90	0.00
28	T	Ethyl-Tert-Butyl ether	0.6873	0.6787	1.2	96	0.00
29	T	2-Butanone	0.0564	0.0487	13.6	87	0.00
30	T	Propionitrile	0.0187	0.0169	9.3	90	0.00
31	T	2,2-Dichloropropane	0.3839	0.3977	-3.6	103	0.00
32	T	cis-1,2-Dichloroethene	0.2860	0.2721	4.9	94	0.00
33	C	Chloroform	0.4940	0.4601	6.9	92	0.00
34		1-Bromopropane	0.0515	0.0541	-4.9	95	0.00
35	T	Bromochloromethane	0.1431	0.1402	2.0	94	-0.02
36	T	Tetrahydrofuran	0.0393	0.0348	11.4	90	0.00
37	S	Dibromofluoromethane	0.2631	0.2439	7.3	93	0.00
38	T	1,1,1-Trichloroethane	0.4304	0.4127	4.1	93	-0.02
39	T	Cyclohexane	0.4631	0.4614	0.4	93	0.00
40	T	1,1-Dichloropropene	0.3715	0.3686	0.8	93	0.00
41	T	Tert-Amyl-Methyl ether	0.5170	0.5095	1.5	96	0.00
42	T	Carbon Tetrachloride	0.3690	0.3644	1.3	94	0.00
43	S	1,2-Dichloroethane-d4	0.2758	0.2326	15.7	87	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.67#
45	T	1,2-Dichloroethane	0.3264	0.3037	7.0	90	0.00
46	T	Benzene	1.0165	1.0093	0.7	94	0.00
47	T	Trichloroethene	0.2557	0.2501	2.2	92	0.00
48	T	Methylcyclohexane	0.4167	0.4246	-1.9	98	0.00
49	C	1,2-Dichloropropane	0.2764	0.2629	4.9	90	0.00
50	T	Bromodichloromethane	0.3495	0.3350	4.2	91	0.00
51	T	1,4-Dioxane	0.0011	0.0012	-13.1	119	0.00
52	T	Dibromomethane	0.1305	0.1183	9.3	89	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1050	0.0957	8.9	88	0.00
54	T	4-Methyl-2-Pentanone	0.0471	0.0420	10.8	87	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\021715\8M403039.D Vial: 2
Acq On : 17 Feb 2015 14:08 Operator: TMB
Sample : WG512558-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.3654	0.3736	-2.3	93	0.00
56	T	Dimethyl Disulfide	0.3555	0.2002	43.7#	94	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	102	0.00
58	S	Toluene-d8	1.1877	1.1334	4.6	95	0.00
59	C	Toluene	1.3478	1.3858	-2.8	97	0.00
60	T	Ethyl Methacrylate	0.2576	0.2643	-2.6	97	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.27#
62	T	trans-1,3-Dichloropropene	0.4124	0.4177	-1.3	95	0.00
63	T	1,1,2-Trichloroethane	0.2140	0.2095	2.1	94	-0.02
64	T	2-Hexanone	0.0553	0.0512	7.5	93	0.00
65	T	1,3-Dichloropropane	0.3878	0.3787	2.3	94	0.00
66	T	Tetrachloroethene	0.2910	0.2935	-0.9	99	0.00
67	T	Dibromochloromethane	0.2734	0.2730	0.1	93	-0.02
68	T	1,2-Dibromoethane	0.2127	0.2086	1.9	93	0.00
69	T	1-Chlorohexane	0.4559	0.4835	-6.1	100	0.00
70	P	Chlorobenzene	0.9113	0.8982	1.4	96	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3112	0.3181	-2.2	96	0.00
72	C	Ethylbenzene	0.5214	0.5130	1.6	95	-0.02
73	T	m-,p-Xylene	0.5938	0.6097	-2.7	96	-0.02
74	T	o-Xylene	0.5843	0.5965	-2.1	95	-0.02
75	T	Styrene	0.9372	0.9792	-4.5	94	0.00
76	P	Bromoform	0.1687	0.1606	4.8	91	0.00
77	T	Isopropylbenzene	1.4598	1.5382	-5.4	95	-0.02
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	99	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4544	0.4253	6.4	92	-0.02
80	S	p-Bromofluorobenzene	0.8966	0.8680	3.2	95	0.00
81	T	1,2,3-Trichloropropane	0.1270	0.1225	3.6	94	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1338	0.1280	4.4	84	-0.02
83	T	n-Propylbenzene	3.6553	3.7879	-3.6	96	0.00
84	T	Bromobenzene	0.7074	0.7026	0.7	95	-0.02
85	T	1,3,5-Trimethylbenzene	2.4401	2.5564	-4.8	95	0.00
86	T	2-Chlorotoluene	2.2290	2.2297	-0.0	95	0.00
87	T	4-Chlorotoluene	2.2705	2.2563	0.6	93	0.00
88	T	a-Methylstyrene	1.4060	1.4314	-1.8	95	0.00
89	T	tert-Butylbenzene	0.5317	0.5190	2.4	94	0.00
90	T	1,2,4-Trimethylbenzene	2.5074	2.6439	-5.4	95	0.00
91	T	sec-Butylbenzene	3.2253	3.2259	-0.0	94	0.00
92	T	p-Isopropyltoluene	2.5495	2.6205	-2.8	95	0.00
93	T	1,3-Dichlorobenzene	1.4513	1.4501	0.1	96	0.00
94	T	1,4-Dichlorobenzene	1.4862	1.4154	4.8	94	0.00
95	T	n-Butylbenzene	2.7941	2.7211	2.6	93	0.00
96	T	1,2-Dichlorobenzene	1.3006	1.2560	3.4	94	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.0844	0.0762	9.6	85	0.00
98	T	1,2,4-Trichlorobenzene	1.0329	1.0150	1.7	94	-0.02
99	T	Hexachlorobutadiene	0.6078	0.5712	6.0	91	0.00
100	T	Naphthalene	1.5230	1.4542	4.5	89	0.00
101	T	1,2,3-Trichlorobenzene	0.9019	0.8607	4.6	91	-0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M403039.D 8260WTR.M Tue Feb 17 14:31:33 2015 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\021715\8M403039.D Vial: 2
Acq On : 17 Feb 2015 14:08 Operator: TMB
Sample : WG512558-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	101	0.00
2	T	Dichlorodifluoromethane	50.0000	43.5316	12.9	79	0.00
3	P	Chloromethane	50.0000	48.5524	2.9	96	0.01
4	C	Vinyl Chloride	50.0000	52.5644	-5.1	101	0.00
5	T	1,3-Butadiene	50.0000	56.2659	-12.5	107	0.00
6	T	Bromomethane	50.0000	45.1728	9.7	93	0.00
7	T	Chloroethane	50.0000	46.3431	7.3	90	0.00
8	T	Trichlorofluoromethane	50.0000	47.5048	5.0	93	0.00
9	T	Diethyl ether	100.0000	91.7374	8.3	92	0.00
10	T	Isoprene	50.0000	49.9410	0.1	95	0.00
11	T	Acrolein	50.0000	41.8824	16.2	86	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	48.9988	2.0	97	0.00
13	T	Acetone	50.0000	41.2208	17.6	78	0.00
14	C	1,1-Dichloroethene	50.0000	46.3449	7.3	91	0.00
15	T	Tert-Butyl Alcohol	200.0000	214.8542	-7.4	111	-0.02
16	T	Dimethyl Sulfide	50.0000	48.1622	3.7	93	0.00
17	T	Iodomethane	50.0000	36.7752	26.4#	67	0.00
18	T	Methyl acetate	50.0000	46.9757	6.0	96	0.00
19	T	Methylene Chloride	50.0000	47.0969	5.8	95	0.00
20	T	Carbon Disulfide	50.0000	49.8355	0.3	96	0.00
21	T	Acrylonitrile	50.0000	47.2044	5.6	91	0.00
22	T	Methyl Tert Butyl Ether	50.0000	48.5131	3.0	93	0.00
23	T	trans-1,2-Dichloroethene	50.0000	46.9823	6.0	93	0.00
24	T	n-Hexane	50.0000	52.6594	-5.3	101	0.00
25	T	Diisopropyl ether	100.0000	95.5939	4.4	93	0.00
26	T	Vinyl Acetate	50.0000	37.1058	25.8#	73	0.00
27	P	1,1-Dichloroethane	50.0000	46.4883	7.0	90	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.7548	1.2	96	0.00
29	T	2-Butanone	50.0000	43.1915	13.6	87	0.00
30	T	Propionitrile	100.0000	90.7367	9.3	90	0.00
31	T	2,2-Dichloropropane	50.0000	51.7979	-3.6	103	0.00
32	T	cis-1,2-Dichloroethene	50.0000	47.5659	4.9	94	0.00
33	C	Chloroform	50.0000	46.5641	6.9	92	0.00
34		1-Bromopropane	50.0000	52.4686	-4.9	95	0.00
35	T	Bromochloromethane	50.0000	48.9907	2.0	94	-0.02
36	T	Tetrahydrofuran	100.0000	88.5370	11.5	90	0.00
37	S	Dibromofluoromethane	25.0000	23.1726	7.3	93	0.00
38	T	1,1,1-Trichloroethane	50.0000	47.9514	4.1	93	-0.02
39	T	Cyclohexane	50.0000	49.8177	0.4	93	0.00
40	T	1,1-Dichloropropene	50.0000	49.5998	0.8	93	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	98.5361	1.5	96	0.00
42	T	Carbon Tetrachloride	50.0000	49.3741	1.3	94	0.00
43	S	1,2-Dichloroethane-d4	25.0000	21.0802	15.7	87	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.67#
45	T	1,2-Dichloroethane	50.0000	46.5179	7.0	90	0.00
46	T	Benzene	50.0000	49.6483	0.7	94	0.00
47	T	Trichloroethene	50.0000	48.9061	2.2	92	0.00
48	T	Methylcyclohexane	50.0000	50.9537	-1.9	98	0.00
49	C	1,2-Dichloropropane	50.0000	47.5503	4.9	90	0.00
50	T	Bromodichloromethane	50.0000	47.9231	4.2	91	0.00
51	T	1,4-Dioxane	200.0000	225.8325	-12.9	119	0.00
52	T	Dibromomethane	50.0000	45.3443	9.3	89	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	45.5716	8.9	88	0.00
54	T	4-Methyl-2-Pentanone	50.0000	44.6173	10.8	87	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\021715\8M403039.D Vial: 2
Acq On : 17 Feb 2015 14:08 Operator: TMB
Sample : WG512558-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	51.1279	-2.3	93	0.00
56	T	Dimethyl Disulfide	50.0000	29.5630	40.9#	94	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	102	0.00
58	S	Toluene-d8	25.0000	23.8571	4.6	95	0.00
59	C	Toluene	50.0000	51.4118	-2.8	97	0.00
60	T	Ethyl Methacrylate	50.0000	51.3024	-2.6	97	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.27#
62	T	trans-1,3-Dichloropropene	50.0000	50.6454	-1.3	95	0.00
63	T	1,1,2-Trichloroethane	50.0000	48.9629	2.1	94	-0.02
64	T	2-Hexanone	50.0000	46.2604	7.5	93	0.00
65	T	1,3-Dichloropropane	50.0000	48.8289	2.3	94	0.00
66	T	Tetrachloroethene	50.0000	50.4305	-0.9	99	0.00
67	T	Dibromochloromethane	50.0000	49.9340	0.1	93	-0.02
68	T	1,2-Dibromoethane	50.0000	49.0276	1.9	93	0.00
69	T	1-Chlorohexane	50.0000	53.0322	-6.1	100	0.00
70	P	Chlorobenzene	50.0000	49.2800	1.4	96	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	51.0995	-2.2	96	0.00
72	C	Ethylbenzene	50.0000	49.1935	1.6	95	-0.02
73	T	m-,p-Xylene	100.0000	102.6718	-2.7	96	-0.02
74	T	o-Xylene	50.0000	51.0439	-2.1	95	-0.02
75	T	Styrene	50.0000	52.2414	-4.5	94	0.00
76	P	Bromoform	50.0000	47.5924	4.8	91	0.00
77	T	Isopropylbenzene	50.0000	52.6863	-5.4	95	-0.02
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	99	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	46.8032	6.4	92	-0.02
80	S	p-Bromofluorobenzene	25.0000	24.2033	3.2	95	0.00
81	T	1,2,3-Trichloropropane	50.0000	48.2125	3.6	94	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	41.4745	17.1	84	-0.02
83	T	n-Propylbenzene	50.0000	51.8142	-3.6	96	0.00
84	T	Bromobenzene	50.0000	49.6651	0.7	95	-0.02
85	T	1,3,5-Trimethylbenzene	50.0000	52.3832	-4.8	95	0.00
86	T	2-Chlorotoluene	50.0000	50.0154	-0.0	95	0.00
87	T	4-Chlorotoluene	50.0000	49.6877	0.6	93	0.00
88	T	a-Methylstyrene	50.0000	50.9033	-1.8	95	0.00
89	T	tert-Butylbenzene	50.0000	48.8045	2.4	94	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	52.7213	-5.4	95	0.00
91	T	sec-Butylbenzene	50.0000	50.0095	-0.0	94	0.00
92	T	p-Isopropyltoluene	50.0000	51.3919	-2.8	95	0.00
93	T	1,3-Dichlorobenzene	50.0000	49.9568	0.1	96	0.00
94	T	1,4-Dichlorobenzene	50.0000	47.6155	4.8	94	0.00
95	T	n-Butylbenzene	50.0000	48.6931	2.6	93	0.00
96	T	1,2-Dichlorobenzene	50.0000	48.2864	3.4	94	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	45.1730	9.7	85	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	49.1370	1.7	94	-0.02
99	T	Hexachlorobutadiene	50.0000	46.9885	6.0	91	0.00
100	T	Naphthalene	50.0000	47.7427	4.5	89	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	47.7122	4.6	91	-0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M403039.D 8260WTR.M Tue Feb 17 14:31:35 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\021715\8M403040.D Vial: 3
Acq On : 17 Feb 2015 14:37 Operator: TMB
Sample : WG512604-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD68819 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 14:59:39 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	738551	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	565894	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.71	152	287576	25.00 ug/L	-0.02

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	180979	23.2840 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.12%		
43) 1,2-Dichloroethane-d4	10.42	65	174121	21.3682 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 85.48%		
58) Toluene-d8	12.80	98	630599	23.4567 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 93.84%		
80) p-Bromofluorobenzene	16.19	95	253554	24.5838 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.32%		

Target Compounds

					Qvalue
13) Acetone	6.36	43	1049	0.9373 ug/L #	1
20) Carbon Disulfide	7.41	76	3690	0.1408 ug/L #	74
36) Tetrahydrofuran	9.76	42	429	0.3692 ug/L #	38
51) 1,4-Dioxane	11.84	88	293	9.2388 ug/L	93
66) Tetrachloroethene	13.72	164	1565	0.2376 ug/L	77
72) Ethylbenzene	14.87	106	2049	0.1736 ug/L	44
73) m-,p-Xylene	14.87	106	2049	0.1524 ug/L	99
99) Hexachlorobutadiene	20.55	225	1321	0.1890 ug/L #	79
100) Naphthalene	20.77	128	2469	0.1409 ug/L #	68

(#) = qualifier out of range (m) = manual integration
8M403040.D 8260WTR.M Tue Feb 17 14:59:40 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\021715\8M403040.D Vial: 3
Acq On : 17 Feb 2015 14:37 Operator: TMB
Sample : WG512604-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD68819 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 14:59 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration

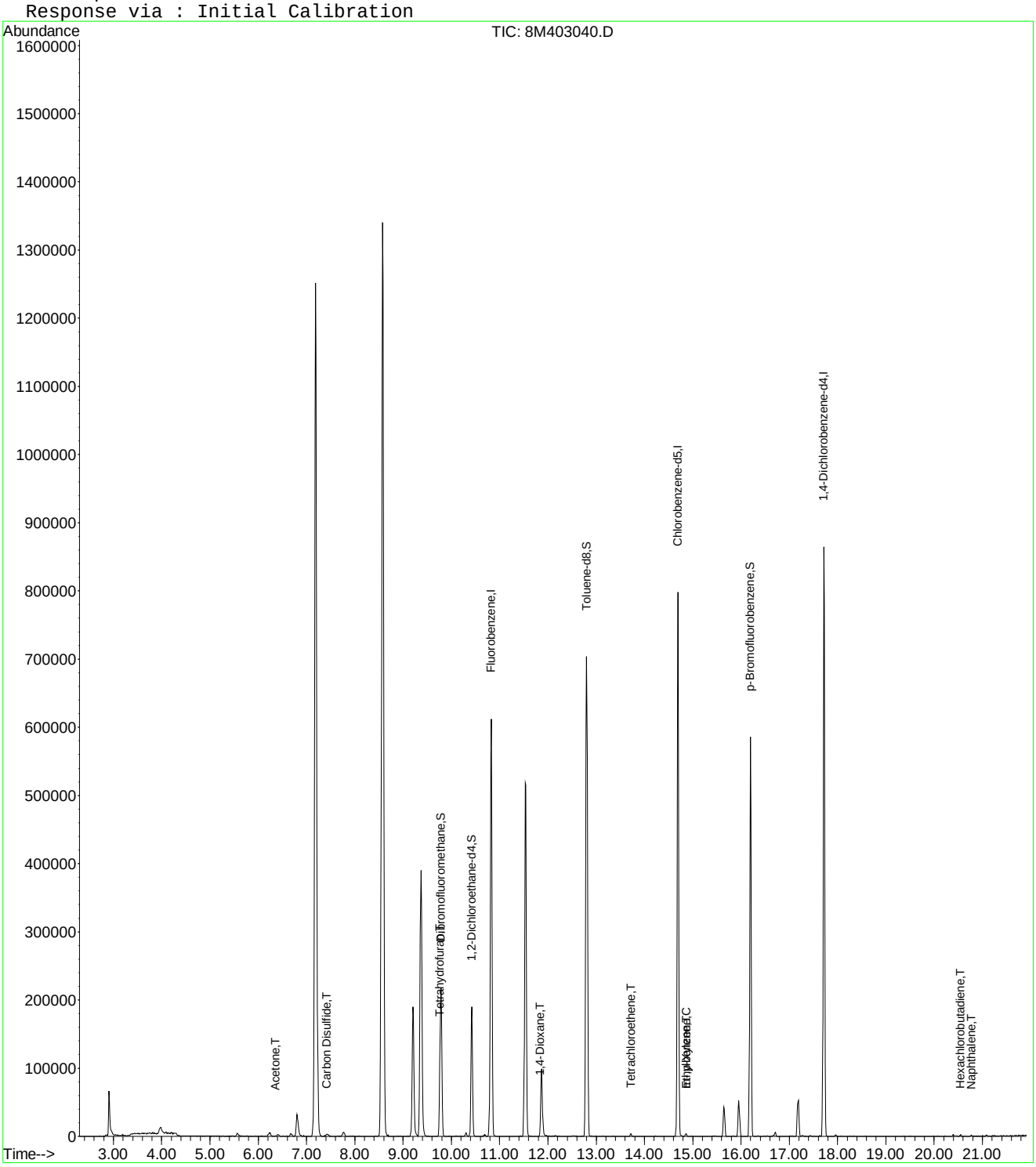

8M403040.D 8260WTR.M Tue Feb 17 14:59:40 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021715\8M403040.D Vial: 3
Acq On : 17 Feb 2015 14:37 Operator: TMB
Sample : WG512604-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD68819 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 17 15:11:15 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Mon Dec 15 15:21:00 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	738551	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.69	117	565894	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.71	152	287576	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	6.80	41	47149	101.2056 ug/L	99
3) 3-Chloro-1-propene	7.19	41	1336219	108.6544 ug/L	96
4) 2-Chloro-1,3-butadiene	8.57	53	1324575	91.0246 ug/L	89
5) Ethyl Acetate	9.20	43	326415	88.4580 ug/L	97
6) Methacrylonitrile	9.37	67	169586	77.3298 ug/L	79
7) Isobutyl Alcohol	9.38	43	17746	120.6275 ug/L	84
8) 1-Butanol	10.30	56	3961	65.6864 ug/L	97
9) Methyl methacrylate	11.53	41	355655	85.7278 ug/L	84
10) 2-Nitropropane	11.87	43	90241	72.6870 ug/L	97
13) Cyclohexanone	15.96	55	31136	68.6227 ug/L	84

(#) = qualifier out of range (m) = manual integration
8M403040.D A9FOOWTR.M Tue Feb 17 15:11:15 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021715\8M403040.D Vial: 3
Acq On : 17 Feb 2015 14:37 Operator: TMB
Sample : WG512604-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD68819 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 17 15:11 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Mon Dec 15 15:21:00 2014
Response via : Initial Calibration

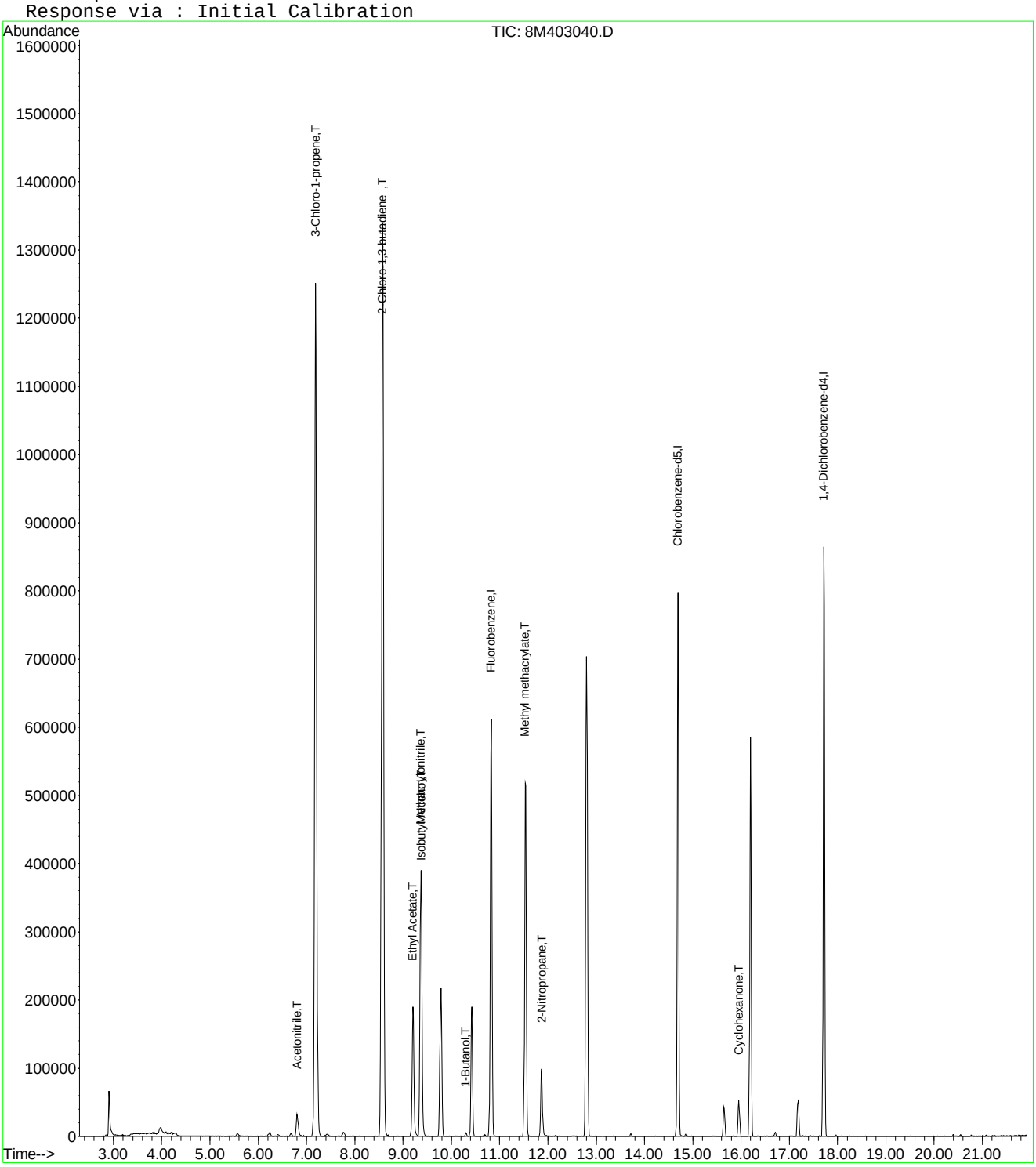

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\021715\8M403040.D Vial: 3
Acq On : 17 Feb 2015 14:37 Operator: TMB
Sample : WG512604-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD68819 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Mon Dec 15 15:21:00 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	124	0.00
2	T	Acetonitrile	100.0000	101.2056	-1.2	123	0.01
3	T	3-Chloro-1-propene	100.0000	108.6544	-8.7	128	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	91.0246	9.0	107	0.00
5	T	Ethyl Acetate	100.0000	88.4580	11.5	103	0.01
6	T	Methacrylonitrile	100.0000	77.3298	22.7	93	0.00
7	T	Isobutyl Alcohol	200.0000	120.6276	39.7	76	0.02
8	T	1-Butanol	100.0000	65.6864	34.3	72	0.01
9	T	Methyl methacrylate	100.0000	85.7278	14.3	101	0.00
10	T	2-Nitropropane	100.0000	72.6870	27.3	87	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	108	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	114	-0.02
13	T	Cyclohexanone	100.0000	68.6227	31.4	72	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M403040.D A9FOOWTR.M Tue Feb 17 15:11:19 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\021815\8M403070.D Vial: 2
Acq On : 18 Feb 2015 13:24 Operator: FJB
Sample : WG512728-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 13:46:14 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	753824	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	558300	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.72	152	299132	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	182542	23.0092 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 92.04%		
43) 1,2-Dichloroethane-d4	10.42	65	175830	21.1407 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 84.56%		
58) Toluene-d8	12.80	98	644982	24.3181 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.28%		
80) p-Bromofluorobenzene	16.19	95	263712	24.5809 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.32%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.25	85	521439	43.1785 ug/L	99
3) Chloromethane	3.71	50	498965	47.7576 ug/L	100
4) Vinyl Chloride	3.94	62	534244	51.9574 ug/L	100
5) 1,3-Butadiene	3.99	54	466151	56.4142 ug/L	97
6) Bromomethane	4.85	94	185851	44.4191 ug/L	99
7) Chloroethane	5.00	64	314794	49.5276 ug/L	99
8) Trichlorofluoromethane	5.49	101	681493	47.7890 ug/L	100
9) Diethyl ether	6.02	59	475426	91.2193 ug/L	100
10) Isoprene	6.06	67	582729	52.7551 ug/L	99
11) Acrolein	6.25	56	25054	41.6387 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.27	101	405392	50.3239 ug/L	98
13) Acetone	6.36	43	56184	49.1862 ug/L	98
14) 1,1-Dichloroethene	6.58	61	638774	49.3020 ug/L	100
15) Tert-Butyl Alcohol	6.70	59	49006	204.1042 ug/L	96
16) Dimethyl Sulfide	6.84	62	434596	50.3277 ug/L	99
17) Iodomethane	7.10	142	155642	43.2229 ug/L	97
18) Methyl acetate	7.11	43	246307	51.8559 ug/L	98
19) Methylene Chloride	7.37	84	390831	48.2376 ug/L	98
20) Carbon Disulfide	7.41	76	1380499	51.5963 ug/L	100
21) Acrylonitrile	7.55	53	81689	48.9761 ug/L	98
22) Methyl Tert Butyl Ether	7.58	73	696095	49.4167 ug/L	100
23) trans-1,2-Dichloroethene	7.83	61	615712	49.3391 ug/L	99
24) n-Hexane	7.90	57	622713	56.8591 ug/L	99
25) Diisopropyl ether	8.24	45	2569856	99.4100 ug/L	99
26) Vinyl Acetate	8.42	43	138942	38.9872 ug/L	99
27) 1,1-Dichloroethane	8.45	63	756301	48.2272 ug/L	100
28) Ethyl-Tert-Butyl ether	8.82	59	2059477	99.3776 ug/L	99
29) 2-Butanone	8.99	43	88276	51.9128 ug/L	99
30) Propionitrile	9.10	54	52116	92.6720 ug/L	96
31) 2,2-Dichloropropane	9.22	77	617266	53.3184 ug/L	100
32) cis-1,2-Dichloroethene	9.28	96	421891	48.9157 ug/L	99
33) Chloroform	9.49	83	701836	47.1145 ug/L	100
34) 1-Bromopropane	9.62	122	82070	52.8063 ug/L	96
35) Bromochloromethane	9.73	130	207662	48.1357 ug/L	98
36) Tetrahydrofuran	9.75	42	127807	107.7583 ug/L	99
38) 1,1,1-Trichloroethane	10.03	97	614241	47.3350 ug/L	99
39) Cyclohexane	10.06	56	753759	53.9757 ug/L	98
40) 1,1-Dichloropropene	10.22	75	538740	48.0877 ug/L	100
41) Tert-Amyl-Methyl ether	10.33	73	1469508	94.2603 ug/L	99
42) Carbon Tetrachloride	10.37	117	528487	47.4921 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\021815\8M403070.D Vial: 2
Acq On : 18 Feb 2015 13:24 Operator: FJB
Sample : WG512728-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 13:46:14 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.53	62	452310	45.9587 ug/L		99
46)	Benzene	10.58	78	1539780	50.2390 ug/L		100
47)	Trichloroethene	11.33	130	364817	47.3181 ug/L		99
48)	Methylcyclohexane	11.41	83	637966	50.7768 ug/L		99
49)	1,2-Dichloropropane	11.55	63	413343	49.5945 ug/L		97
50)	Bromodichloromethane	11.85	83	501635	47.5976 ug/L		100
51)	1,4-Dioxane	11.84	88	6525	201.5751 ug/L		100
52)	Dibromomethane	11.93	93	177572	45.1446 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.14	63	155510	49.1231 ug/L		100
54)	4-Methyl-2-Pentanone	12.17	58	72812	51.2659 ug/L		99
55)	cis-1,3-Dichloropropene	12.48	75	561889	50.9963 ug/L		99
56)	Dimethyl Disulfide	12.74	79	304918	29.8221 ug/L		99
59)	Toluene	12.90	91	1529833	50.8284 ug/L		100
60)	Ethyl Methacrylate	12.99	69	286831	49.8613 ug/L		97
62)	trans-1,3-Dichloropropene	13.08	75	444068	48.2202 ug/L		99
63)	1,1,2-Trichloroethane	13.30	97	223271	46.7265 ug/L		98
64)	2-Hexanone	13.22	58	64420	52.1214 ug/L	#	97
65)	1,3-Dichloropropane	13.60	76	419048	48.3821 ug/L		99
66)	Tetrachloroethene	13.72	164	319375	49.1406 ug/L		99
67)	Dibromochloromethane	13.99	129	292856	47.9682 ug/L		99
68)	1,2-Dibromoethane	14.24	107	229030	48.2181 ug/L		99
69)	1-Chlorohexane	14.32	91	550610	54.0853 ug/L		99
70)	Chlorobenzene	14.74	112	1013503	49.8001 ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.77	131	351053	50.5084 ug/L		100
72)	Ethylbenzene	14.77	106	591116	50.7672 ug/L		100
73)	m-,p-Xylene	14.86	106	1386042	104.5145 ug/L		99
74)	o-Xylene	15.43	106	647910	49.6544 ug/L		99
75)	Styrene	15.46	104	1091027	52.1304 ug/L		99
76)	Bromoform	15.95	173	181707	48.2352 ug/L		99
77)	Isopropylbenzene	15.85	105	1759882	53.9856 ug/L		100
79)	1,1,2,2-Tetrachloroethane	16.07	83	265585	48.8481 ug/L		99
81)	1,2,3-Trichloropropane	16.25	110	67978	44.7208 ug/L		95
82)	trans-1,4-Dichloro-2-Buten	16.30	53	89393	48.3032 ug/L		93
83)	n-Propylbenzene	16.36	91	2255195	51.5629 ug/L		100
84)	Bromobenzene	16.49	156	408787	48.2992 ug/L		99
85)	1,3,5-Trimethylbenzene	16.54	105	1536729	52.6334 ug/L		99
86)	2-Chlorotoluene	16.62	91	1492378	55.9550 ug/L		99
87)	4-Chlorotoluene	16.68	91	1206058	44.3939 ug/L		99
88)	a-Methylstyrene	16.95	118	863888	51.3524 ug/L		98
89)	tert-Butylbenzene	17.01	134	311478	48.9554 ug/L		98
90)	1,2,4-Trimethylbenzene	17.06	105	1577498	52.5794 ug/L		100
91)	sec-Butylbenzene	17.28	105	1931452	50.0481 ug/L		99
92)	p-Isopropyltoluene	17.43	119	1542879	50.5766 ug/L		100
93)	1,3-Dichlorobenzene	17.63	146	851538	49.0368 ug/L		100
94)	1,4-Dichlorobenzene	17.76	146	821354	46.1870 ug/L		98
95)	n-Butylbenzene	17.96	91	1667965	49.8907 ug/L		100
96)	1,2-Dichlorobenzene	18.26	146	750606	48.2329 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.25	75	45407	44.9830 ug/L		96
98)	1,2,4-Trichlorobenzene	20.40	180	589224	47.6776 ug/L		99
99)	Hexachlorobutadiene	20.55	225	318144	43.7488 ug/L		99
100)	Naphthalene	20.77	128	830745	45.5886 ug/L		100
101)	1,2,3-Trichlorobenzene	21.08	180	486340	45.0649 ug/L		100

(#) = qualifier out of range (m) = manual integration
8M403070.D 8260WTR.M Wed Feb 18 13:46:16 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\021815\8M403070.D Vial: 2
Acq On : 18 Feb 2015 13:24 Operator: FJB
Sample : WG512728-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 13:46 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration

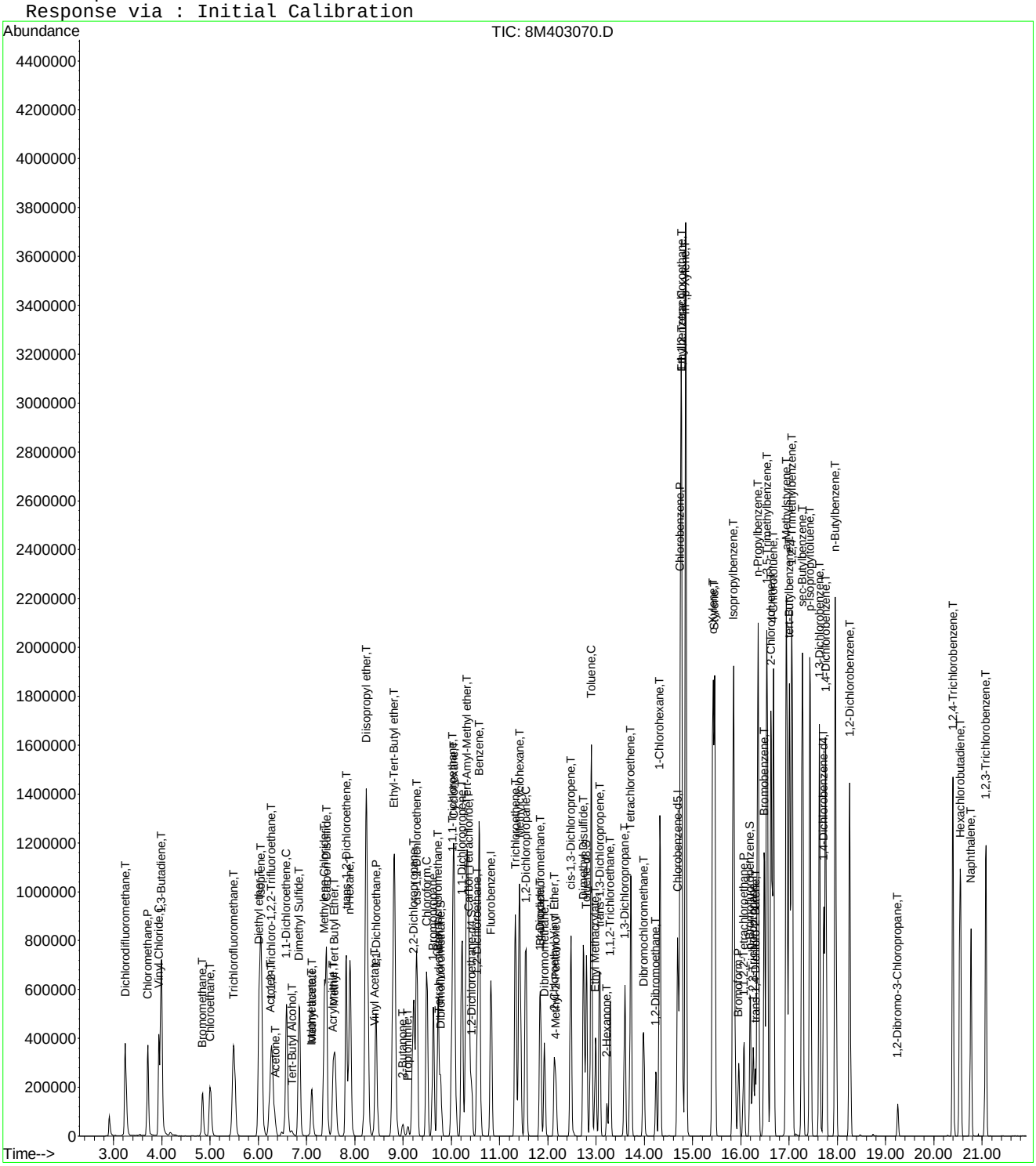

Continuing Calibration Area and RT check

Instrument: HPMS8
Initial cal date: 6 Feb 2015 18:53
CCV date: 18 Feb 2015 13:24
CCV Filename: 8M403070.D

	Fluorobenzene		**Chlorobenzene-d5**		**1,4-Dichlorobenzene-d4**	
	Amount	RT	Amount	RT	Amount	RT
InitCal	749967	10.83	559024	14.69	298746	17.72
CCV	753824	10.82	558300	14.69	299132	17.72

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\021815\8M403070.D Vial: 2
Acq On : 18 Feb 2015 13:24 Operator: FJB
Sample : WG512728-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	101	-0.01
2	T	Dichlorodifluoromethane	0.4005	0.3459	13.6	78	0.00
3	P	Chloromethane	0.3465	0.3310	4.5	95	0.00
4	C	Vinyl Chloride	0.3410	0.3544	-3.9	100	0.00
5	T	1,3-Butadiene	0.2579	0.3092	-19.9	107	0.01
6	T	Bromomethane	0.1314	0.1233	6.2	91	0.00
7	T	Chloroethane	0.2108	0.2088	0.9	96	0.00
8	T	Trichlorofluoromethane	0.4729	0.4520	4.4	93	0.00
9	T	Diethyl ether	0.1729	0.1577	8.8	91	-0.01
10	T	Isoprene	0.3663	0.3865	-5.5	100	0.00
11	T	Acrolein	0.0199	0.0166	16.7	86	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2672	0.2689	-0.6	99	0.00
13	T	Acetone	0.0379	0.0373	1.6	93	0.00
14	C	1,1-Dichloroethene	0.4297	0.4237	1.4	96	0.00
15	T	Tert-Butyl Alcohol	0.0080	0.0081	-2.1	106	-0.01
16	T	Dimethyl Sulfide	0.2864	0.2883	-0.7	97	-0.01
17	T	Iodomethane	0.1376	0.1032	25.0	89	-0.01
18	T	Methyl acetate	0.1575	0.1634	-3.7	106	0.00
19	T	Methylene Chloride	0.2687	0.2592	3.5	97	0.00
20	T	Carbon Disulfide	0.8873	0.9157	-3.2	99	-0.01
21	T	Acrylonitrile	0.0553	0.0542	2.1	94	-0.01
22	T	Methyl Tert Butyl Ether	0.4672	0.4617	1.2	94	-0.01
23	T	trans-1,2-Dichloroethene	0.4139	0.4084	1.3	97	0.00
24	T	n-Hexane	0.3632	0.4130	-13.7	109	-0.01
25	T	Diisopropyl ether	0.8573	0.8523	0.6	96	-0.01
26	T	Vinyl Acetate	0.1182	0.0922	22.0	77	0.00
27	P	1,1-Dichloroethane	0.5201	0.5016	3.5	94	0.00
28	T	Ethyl-Tert-Butyl ether	0.6873	0.6830	0.6	97	0.00
29	T	2-Butanone	0.0564	0.0585	-3.8	105	-0.01
30	T	Propionitrile	0.0187	0.0173	7.3	92	-0.01
31	T	2,2-Dichloropropane	0.3839	0.4094	-6.6	105	0.00
32	T	cis-1,2-Dichloroethene	0.2860	0.2798	2.2	97	-0.01
33	C	Chloroform	0.4940	0.4655	5.8	93	-0.01
34		1-Bromopropane	0.0515	0.0544	-5.6	96	-0.01
35	T	Bromochloromethane	0.1431	0.1377	3.7	92	-0.01
36	T	Tetrahydrofuran	0.0393	0.0424	-7.8	109	0.00
37	S	Dibromofluoromethane	0.2631	0.2422	8.0	92	-0.01
38	T	1,1,1-Trichloroethane	0.4304	0.4074	5.3	92	-0.01
39	T	Cyclohexane	0.4631	0.5000	-8.0	101	-0.01
40	T	1,1-Dichloropropene	0.3715	0.3573	3.8	90	0.00
41	T	Tert-Amyl-Methyl ether	0.5170	0.4874	5.7	92	0.00
42	T	Carbon Tetrachloride	0.3690	0.3505	5.0	91	-0.01
43	S	1,2-Dichloroethane-d4	0.2758	0.2333	15.4	87	-0.01
44		Heptane	0.0000	0.0000	0.0	0#	-2.67#
45	T	1,2-Dichloroethane	0.3264	0.3000	8.1	89	-0.01
46	T	Benzene	1.0165	1.0213	-0.5	95	-0.01
47	T	Trichloroethene	0.2557	0.2420	5.4	89	-0.01
48	T	Methylcyclohexane	0.4167	0.4232	-1.6	98	-0.01
49	C	1,2-Dichloropropane	0.2764	0.2742	0.8	94	0.00
50	T	Bromodichloromethane	0.3495	0.3327	4.8	90	0.00
51	T	1,4-Dioxane	0.0011	0.0011	-0.9	106	0.00
52	T	Dibromomethane	0.1305	0.1178	9.7	89	-0.01
53	T	2-Chloroethyl Vinyl Ether	0.1050	0.1032	1.8	94	-0.01
54	T	4-Methyl-2-Pentanone	0.0471	0.0483	-2.5	100	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\021815\8M403070.D Vial: 2
Acq On : 18 Feb 2015 13:24 Operator: FJB
Sample : WG512728-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.3654	0.3727	-2.0	93	-0.01
56	T	Dimethyl Disulfide	0.3555	0.2023	43.1#	95	-0.01
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	100	-0.01
58	S	Toluene-d8	1.1877	1.1553	2.7	95	-0.01
59	C	Toluene	1.3478	1.3701	-1.7	94	-0.01
60	T	Ethyl Methacrylate	0.2576	0.2569	0.3	92	-0.01
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.27#
62	T	trans-1,3-Dichloropropene	0.4124	0.3977	3.6	88	0.00
63	T	1,1,2-Trichloroethane	0.2140	0.2000	6.5	88	-0.01
64	T	2-Hexanone	0.0553	0.0577	-4.2	103	-0.01
65	T	1,3-Dichloropropane	0.3878	0.3753	3.2	91	-0.01
66	T	Tetrachloroethene	0.2910	0.2860	1.7	95	-0.01
67	T	Dibromochloromethane	0.2734	0.2623	4.1	88	0.00
68	T	1,2-Dibromoethane	0.2127	0.2051	3.6	89	-0.01
69	T	1-Chlorohexane	0.4559	0.4931	-8.2	100	-0.01
70	P	Chlorobenzene	0.9113	0.9077	0.4	95	-0.01
71	T	1,1,1,2-Tetrachloroethane	0.3112	0.3144	-1.0	93	-0.01
72	C	Ethylbenzene	0.5214	0.5294	-1.5	96	-0.01
73	T	m-,p-Xylene	0.5938	0.6207	-4.5	96	-0.02
74	T	o-Xylene	0.5843	0.5803	0.7	90	-0.01
75	T	Styrene	0.9372	0.9771	-4.3	92	-0.01
76	P	Bromoform	0.1687	0.1627	3.5	91	-0.01
77	T	Isopropylbenzene	1.4598	1.5761	-8.0	95	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	100	-0.01
79	P	1,1,2,2-Tetrachloroethane	0.4544	0.4439	2.3	97	-0.01
80	S	p-Bromofluorobenzene	0.8966	0.8816	1.7	98	-0.01
81	T	1,2,3-Trichloropropane	0.1270	0.1136	10.6	88	-0.01
82	T	trans-1,4-Dichloro-2-Butene	0.1338	0.1494	-11.6	99	0.00
83	T	n-Propylbenzene	3.6553	3.7696	-3.1	97	-0.01
84	T	Bromobenzene	0.7074	0.6833	3.4	94	-0.01
85	T	1,3,5-Trimethylbenzene	2.4401	2.5686	-5.3	97	-0.01
86	T	2-Chlorotoluene	2.2290	2.4945	-11.9	107	-0.01
87	T	4-Chlorotoluene	2.2705	2.0159	11.2	84	-0.01
88	T	a-Methylstyrene	1.4060	1.4440	-2.7	98	-0.01
89	T	tert-Butylbenzene	0.5317	0.5206	2.1	96	-0.01
90	T	1,2,4-Trimethylbenzene	2.5074	2.6368	-5.2	97	-0.01
91	T	sec-Butylbenzene	3.2253	3.2284	-0.1	95	-0.01
92	T	p-Isopropyltoluene	2.5495	2.5789	-1.2	94	0.00
93	T	1,3-Dichlorobenzene	1.4513	1.4233	1.9	95	-0.01
94	T	1,4-Dichlorobenzene	1.4862	1.3729	7.6	92	-0.01
95	T	n-Butylbenzene	2.7941	2.7880	0.2	97	-0.01
96	T	1,2-Dichlorobenzene	1.3006	1.2546	3.5	95	-0.01
97	T	1,2-Dibromo-3-Chloropropane	0.0844	0.0759	10.0	86	-0.01
98	T	1,2,4-Trichlorobenzene	1.0329	0.9849	4.6	92	-0.01
99	T	Hexachlorobutadiene	0.6078	0.5318	12.5	86	0.00
100	T	Naphthalene	1.5230	1.3886	8.8	86	-0.01
101	T	1,2,3-Trichlorobenzene	0.9019	0.8129	9.9	87	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M403070.D 8260WTR.M Wed Feb 18 14:20:39 2015 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\021815\8M403070.D Vial: 2
Acq On : 18 Feb 2015 13:24 Operator: FJB
Sample : WG512728-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	101	-0.01
2	T	Dichlorodifluoromethane	50.0000	43.1785	13.6	78	0.00
3	P	Chloromethane	50.0000	47.7576	4.5	95	0.00
4	C	Vinyl Chloride	50.0000	51.9574	-3.9	100	0.00
5	T	1,3-Butadiene	50.0000	56.4142	-12.8	107	0.01
6	T	Bromomethane	50.0000	44.4191	11.2	91	0.00
7	T	Chloroethane	50.0000	49.5276	0.9	96	0.00
8	T	Trichlorofluoromethane	50.0000	47.7890	4.4	93	0.00
9	T	Diethyl ether	100.0000	91.2193	8.8	91	-0.01
10	T	Isoprene	50.0000	52.7552	-5.5	100	0.00
11	T	Acrolein	50.0000	41.6387	16.7	86	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	50.3239	-0.6	99	0.00
13	T	Acetone	50.0000	49.1862	1.6	93	0.00
14	C	1,1-Dichloroethene	50.0000	49.3020	1.4	96	0.00
15	T	Tert-Butyl Alcohol	200.0000	204.1042	-2.1	106	-0.01
16	T	Dimethyl Sulfide	50.0000	50.3277	-0.7	97	-0.01
17	T	Iodomethane	50.0000	43.2229	13.6	89	-0.01
18	T	Methyl acetate	50.0000	51.8559	-3.7	106	0.00
19	T	Methylene Chloride	50.0000	48.2376	3.5	97	0.00
20	T	Carbon Disulfide	50.0000	51.5963	-3.2	99	-0.01
21	T	Acrylonitrile	50.0000	48.9761	2.0	94	-0.01
22	T	Methyl Tert Butyl Ether	50.0000	49.4167	1.2	94	-0.01
23	T	trans-1,2-Dichloroethene	50.0000	49.3391	1.3	97	0.00
24	T	n-Hexane	50.0000	56.8591	-13.7	109	-0.01
25	T	Diisopropyl ether	100.0000	99.4100	0.6	96	-0.01
26	T	Vinyl Acetate	50.0000	38.9872	22.0	77	0.00
27	P	1,1-Dichloroethane	50.0000	48.2272	3.5	94	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	99.3777	0.6	97	0.00
29	T	2-Butanone	50.0000	51.9128	-3.8	105	-0.01
30	T	Propionitrile	100.0000	92.6720	7.3	92	-0.01
31	T	2,2-Dichloropropane	50.0000	53.3184	-6.6	105	0.00
32	T	cis-1,2-Dichloroethene	50.0000	48.9157	2.2	97	-0.01
33	C	Chloroform	50.0000	47.1145	5.8	93	-0.01
34		1-Bromopropane	50.0000	52.8063	-5.6	96	-0.01
35	T	Bromochloromethane	50.0000	48.1357	3.7	92	-0.01
36	T	Tetrahydrofuran	100.0000	107.7583	-7.8	109	0.00
37	S	Dibromofluoromethane	25.0000	23.0092	8.0	92	-0.01
38	T	1,1,1-Trichloroethane	50.0000	47.3350	5.3	92	-0.01
39	T	Cyclohexane	50.0000	53.9757	-8.0	101	-0.01
40	T	1,1-Dichloropropene	50.0000	48.0878	3.8	90	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	94.2603	5.7	92	0.00
42	T	Carbon Tetrachloride	50.0000	47.4921	5.0	91	-0.01
43	S	1,2-Dichloroethane-d4	25.0000	21.1407	15.4	87	-0.01
44		Heptane	-1.0000	0.0000	0.0	0	-2.67#
45	T	1,2-Dichloroethane	50.0000	45.9587	8.1	89	-0.01
46	T	Benzene	50.0000	50.2390	-0.5	95	-0.01
47	T	Trichloroethene	50.0000	47.3182	5.4	89	-0.01
48	T	Methylcyclohexane	50.0000	50.7768	-1.6	98	-0.01
49	C	1,2-Dichloropropane	50.0000	49.5945	0.8	94	0.00
50	T	Bromodichloromethane	50.0000	47.5976	4.8	90	0.00
51	T	1,4-Dioxane	200.0000	201.5752	-0.8	106	0.00
52	T	Dibromomethane	50.0000	45.1446	9.7	89	-0.01
53	T	2-Chloroethyl Vinyl Ether	50.0000	49.1231	1.8	94	-0.01
54	T	4-Methyl-2-Pentanone	50.0000	51.2659	-2.5	100	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\021815\8M403070.D Vial: 2
Acq On : 18 Feb 2015 13:24 Operator: FJB
Sample : WG512728-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	50.9963	-2.0	93	-0.01
56	T	Dimethyl Disulfide	50.0000	29.8221	40.4#	95	-0.01
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	-0.01
58	S	Toluene-d8	25.0000	24.3181	2.7	95	-0.01
59	C	Toluene	50.0000	50.8284	-1.7	94	-0.01
60	T	Ethyl Methacrylate	50.0000	49.8613	0.3	92	-0.01
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.27#
62	T	trans-1,3-Dichloropropene	50.0000	48.2202	3.6	88	0.00
63	T	1,1,2-Trichloroethane	50.0000	46.7265	6.5	88	-0.01
64	T	2-Hexanone	50.0000	52.1214	-4.2	103	-0.01
65	T	1,3-Dichloropropane	50.0000	48.3821	3.2	91	-0.01
66	T	Tetrachloroethene	50.0000	49.1406	1.7	95	-0.01
67	T	Dibromochloromethane	50.0000	47.9682	4.1	88	0.00
68	T	1,2-Dibromoethane	50.0000	48.2181	3.6	89	-0.01
69	T	1-Chlorohexane	50.0000	54.0853	-8.2	100	-0.01
70	P	Chlorobenzene	50.0000	49.8000	0.4	95	-0.01
71	T	1,1,1,2-Tetrachloroethane	50.0000	50.5084	-1.0	93	-0.01
72	C	Ethylbenzene	50.0000	50.7672	-1.5	96	-0.01
73	T	m-,p-Xylene	100.0000	104.5145	-4.5	96	-0.02
74	T	o-Xylene	50.0000	49.6544	0.7	90	-0.01
75	T	Styrene	50.0000	52.1304	-4.3	92	-0.01
76	P	Bromoform	50.0000	48.2352	3.5	91	-0.01
77	T	Isopropylbenzene	50.0000	53.9856	-8.0	95	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	-0.01
79	P	1,1,2,2-Tetrachloroethane	50.0000	48.8481	2.3	97	-0.01
80	S	p-Bromofluorobenzene	25.0000	24.5809	1.7	98	-0.01
81	T	1,2,3-Trichloropropane	50.0000	44.7208	10.6	88	-0.01
82	T	trans-1,4-Dichloro-2-Butene	50.0000	48.3032	3.4	99	0.00
83	T	n-Propylbenzene	50.0000	51.5629	-3.1	97	-0.01
84	T	Bromobenzene	50.0000	48.2992	3.4	94	-0.01
85	T	1,3,5-Trimethylbenzene	50.0000	52.6334	-5.3	97	-0.01
86	T	2-Chlorotoluene	50.0000	55.9550	-11.9	107	-0.01
87	T	4-Chlorotoluene	50.0000	44.3939	11.2	84	-0.01
88	T	a-Methylstyrene	50.0000	51.3524	-2.7	98	-0.01
89	T	tert-Butylbenzene	50.0000	48.9554	2.1	96	-0.01
90	T	1,2,4-Trimethylbenzene	50.0000	52.5794	-5.2	97	-0.01
91	T	sec-Butylbenzene	50.0000	50.0481	-0.1	95	-0.01
92	T	p-Isopropyltoluene	50.0000	50.5766	-1.2	94	0.00
93	T	1,3-Dichlorobenzene	50.0000	49.0368	1.9	95	-0.01
94	T	1,4-Dichlorobenzene	50.0000	46.1870	7.6	92	-0.01
95	T	n-Butylbenzene	50.0000	49.8907	0.2	97	-0.01
96	T	1,2-Dichlorobenzene	50.0000	48.2329	3.5	95	-0.01
97	T	1,2-Dibromo-3-Chloropropane	50.0000	44.9830	10.0	86	-0.01
98	T	1,2,4-Trichlorobenzene	50.0000	47.6776	4.6	92	-0.01
99	T	Hexachlorobutadiene	50.0000	43.7488	12.5	86	0.00
100	T	Naphthalene	50.0000	45.5886	8.8	86	-0.01
101	T	1,2,3-Trichlorobenzene	50.0000	45.0649	9.9	87	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M403070.D 8260WTR.M Wed Feb 18 14:20:40 2015 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\2\DATA\100214\8M400357.D          Vial: 3
Acq On    :  2 Oct 2014  11:58                       Operator: TMB
Sample    : WG494714-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD66476                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

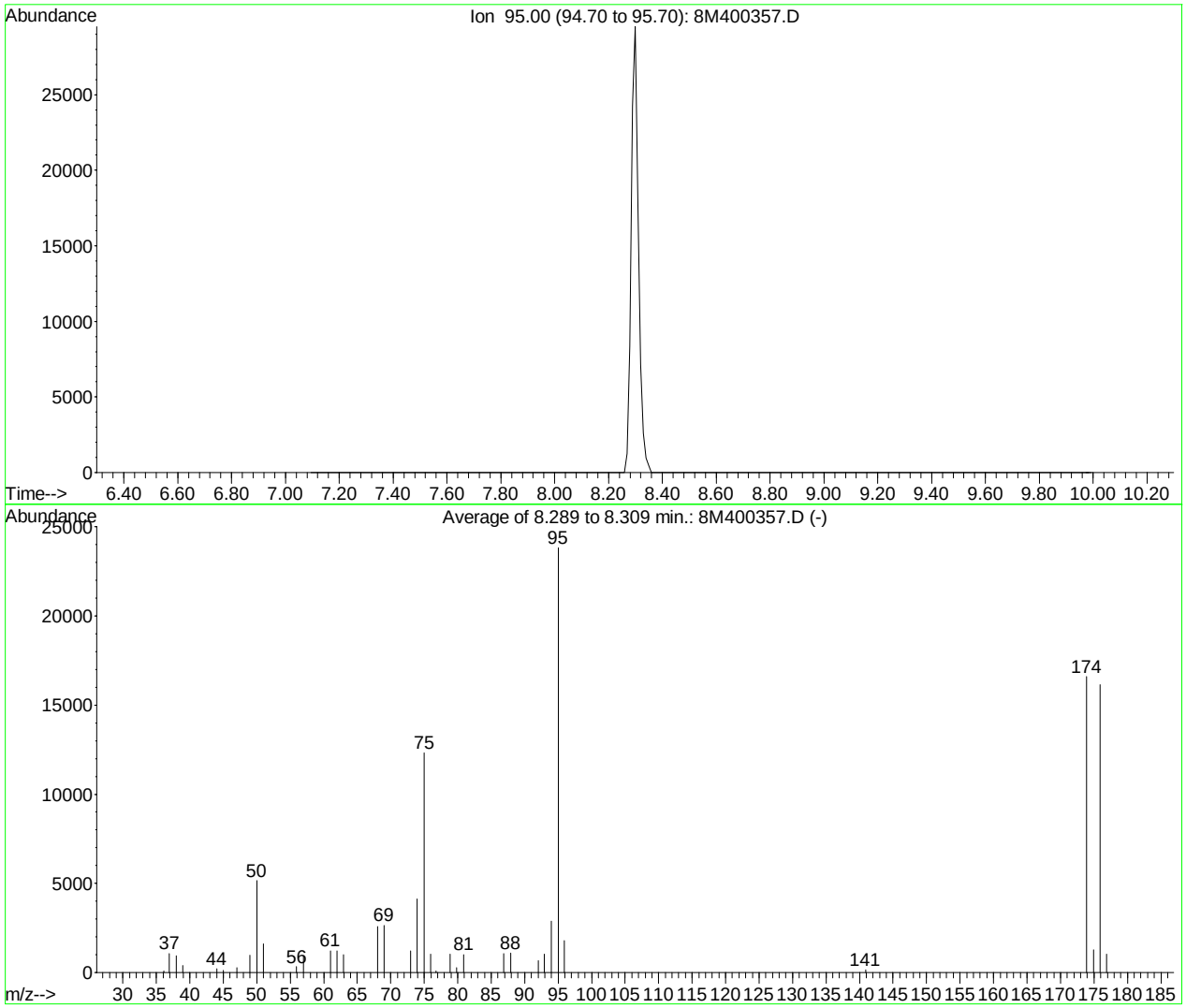

AutoFind: Scans 118, 119, 120; Background Corrected with Scan 113

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.7	5158	PASS
75	95	30	60	51.7	12312	PASS
95	95	100	100	100.0	23818	PASS
96	95	5	9	7.6	1800	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	69.7	16590	PASS
175	174	5	9	7.8	1290	PASS
176	174	95	101	97.3	16145	PASS
177	176	5	9	6.3	1023	PASS

8M400357.D BFB.M Thu Oct 02 12:09:27 2014

BFB

```
Data File : C:\MSDCHEM\2\DATA\020615\8M402829.D          Vial: 1
Acq On    :  6 Feb 2015  15:35                       Operator: TMB
Sample    : WG511287-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD68443                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

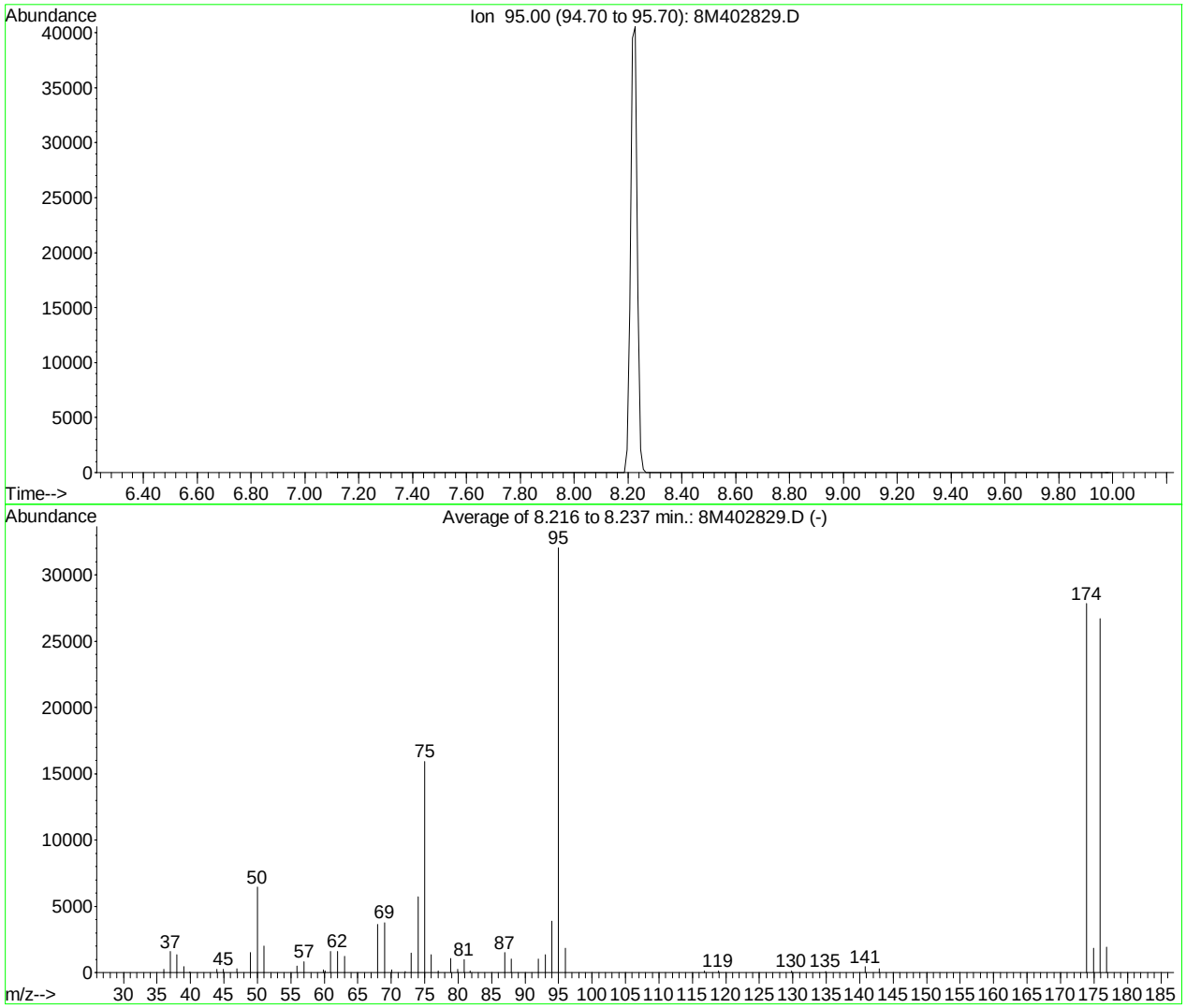

AutoFind: Scans 111, 112, 113; Background Corrected with Scan 106

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.1	6438	PASS
75	95	30	60	49.7	15924	PASS
95	95	100	100	100.0	32031	PASS
96	95	5	9	5.8	1851	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	86.9	27829	PASS
175	174	5	9	6.7	1855	PASS
176	174	95	101	95.9	26698	PASS
177	176	5	9	7.2	1931	PASS

8M402829.D BFB.M Fri Feb 06 15:56:08 2015

BFB

```
Data File : C:\MSDCHEM\2\DATA\021715\8M403038.D          Vial: 2
Acq On    : 17 Feb 2015  13:45                       Operator: TMB
Sample    : WG512558-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD68443                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

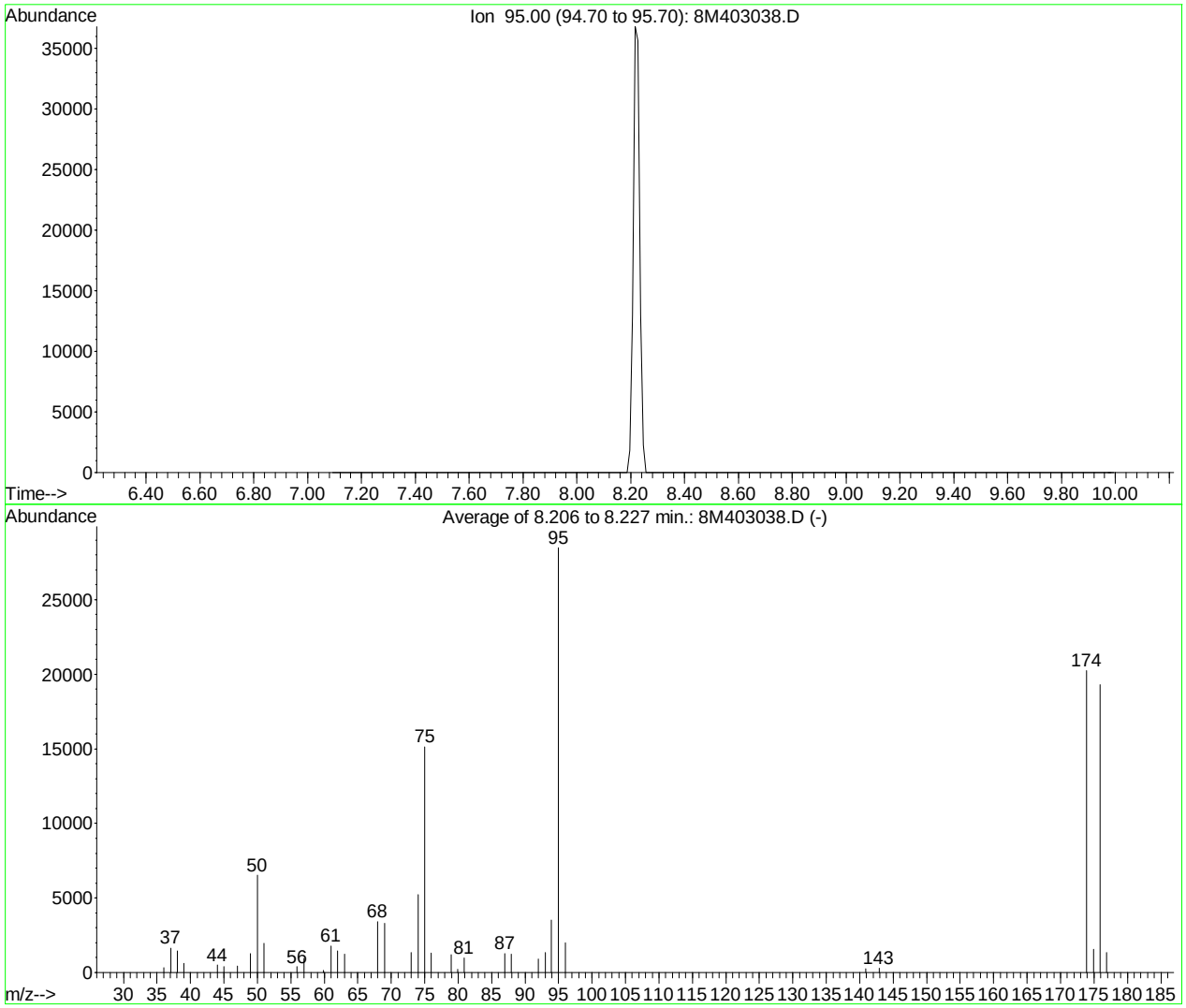

AutoFind: Scans 110, 111, 112; Background Corrected with Scan 106

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.9	6525	PASS
75	95	30	60	53.2	15143	PASS
95	95	100	100	100.0	28470	PASS
96	95	5	9	7.0	1999	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	71.1	20252	PASS
175	174	5	9	7.7	1558	PASS
176	174	95	101	95.3	19310	PASS
177	176	5	9	6.9	1328	PASS

8M403038.D BFB.M Tue Feb 17 13:55:39 2015

BFB

```
Data File : C:\MSDCHEM\2\DATA\021815\8M403069.D          Vial: 1
Acq On    : 18 Feb 2015  13:01                        Operator: FJB
Sample    : WG512728-01 BFB 50ng 8260                 Inst    : HPMS8
Misc      : 1,1 STD68443                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title     : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
```

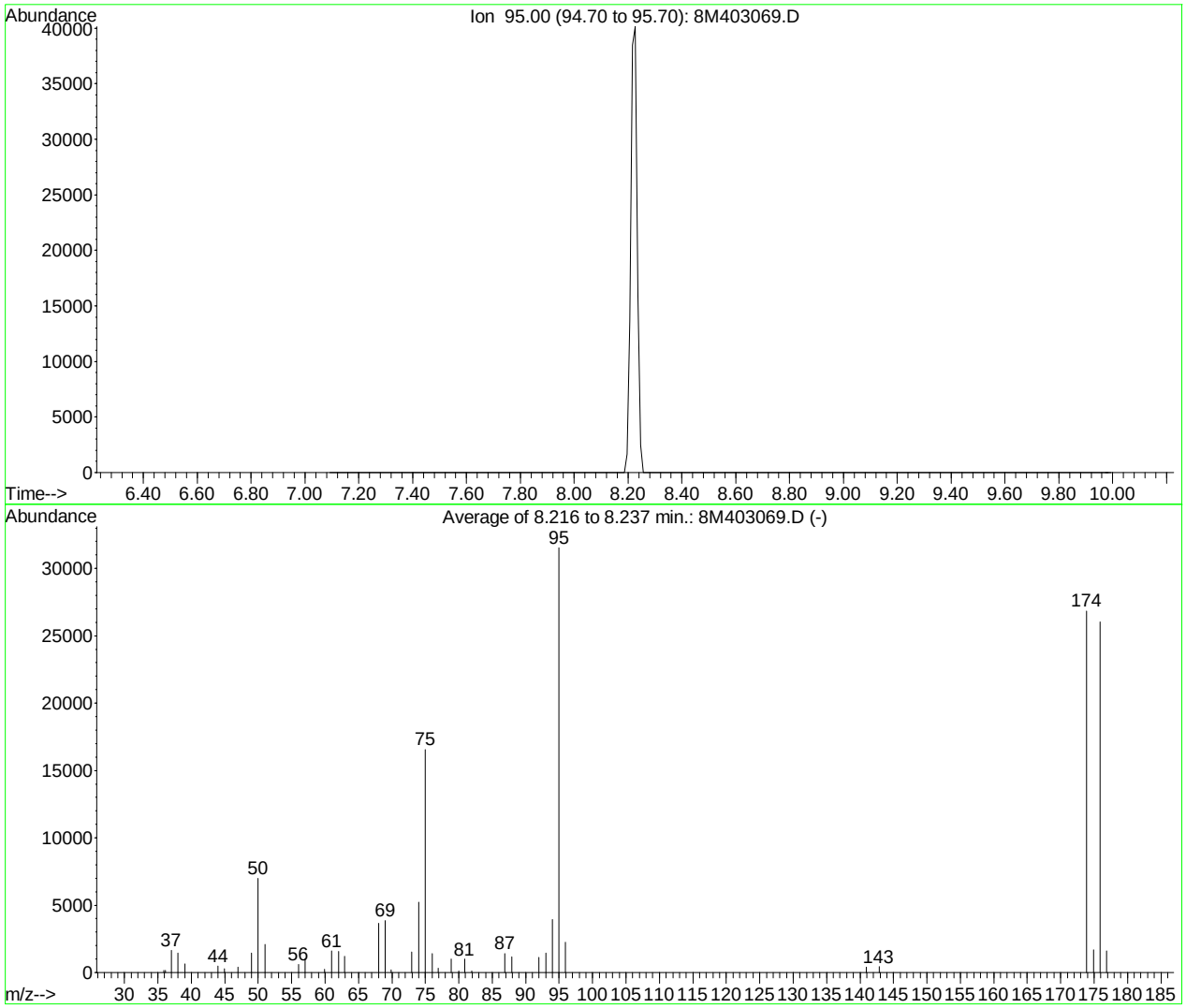

AutoFind: Scans 111, 112, 113; Background Corrected with Scan 106

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.1	6979	PASS
75	95	30	60	52.5	16562	PASS
95	95	100	100	100.0	31526	PASS
96	95	5	9	7.1	2248	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	85.2	26856	PASS
175	174	5	9	6.3	1699	PASS
176	174	95	101	96.9	26018	PASS
177	176	5	9	6.2	1619	PASS

8M403069.D 8260WTR.M Wed Feb 18 14:20:30 2015

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021715\8M403041.D Vial: 4
Acq On : 17 Feb 2015 15:06 Operator: TMB
Sample : WG512559-01 VBLK0217 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 13:49:53 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	715965	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	547181	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.72	152	276963	25.00 ug/L	-0.01
System Monitoring Compounds					
37) Dibromofluoromethane	9.78	111	177690	23.5820 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.32%		
43) 1,2-Dichloroethane-d4	10.42	65	169876	21.5049 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 86.00%		
58) Toluene-d8	12.80	98	630694	24.2626 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.04%		
80) p-Bromofluorobenzene	16.19	95	243554	24.5191 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.08%		
Target Compounds					Qvalue
66) Tetrachloroethene	13.72	164	857	0.1345 ug/L #	53

(#) = qualifier out of range (m) = manual integration
8M403041.D 8260WTR.M Wed Feb 18 13:49:53 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021715\8M403041.D Vial: 4
Acq On : 17 Feb 2015 15:06 Operator: TMB
Sample : WG512559-01 VBLK0217 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 13:49 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration

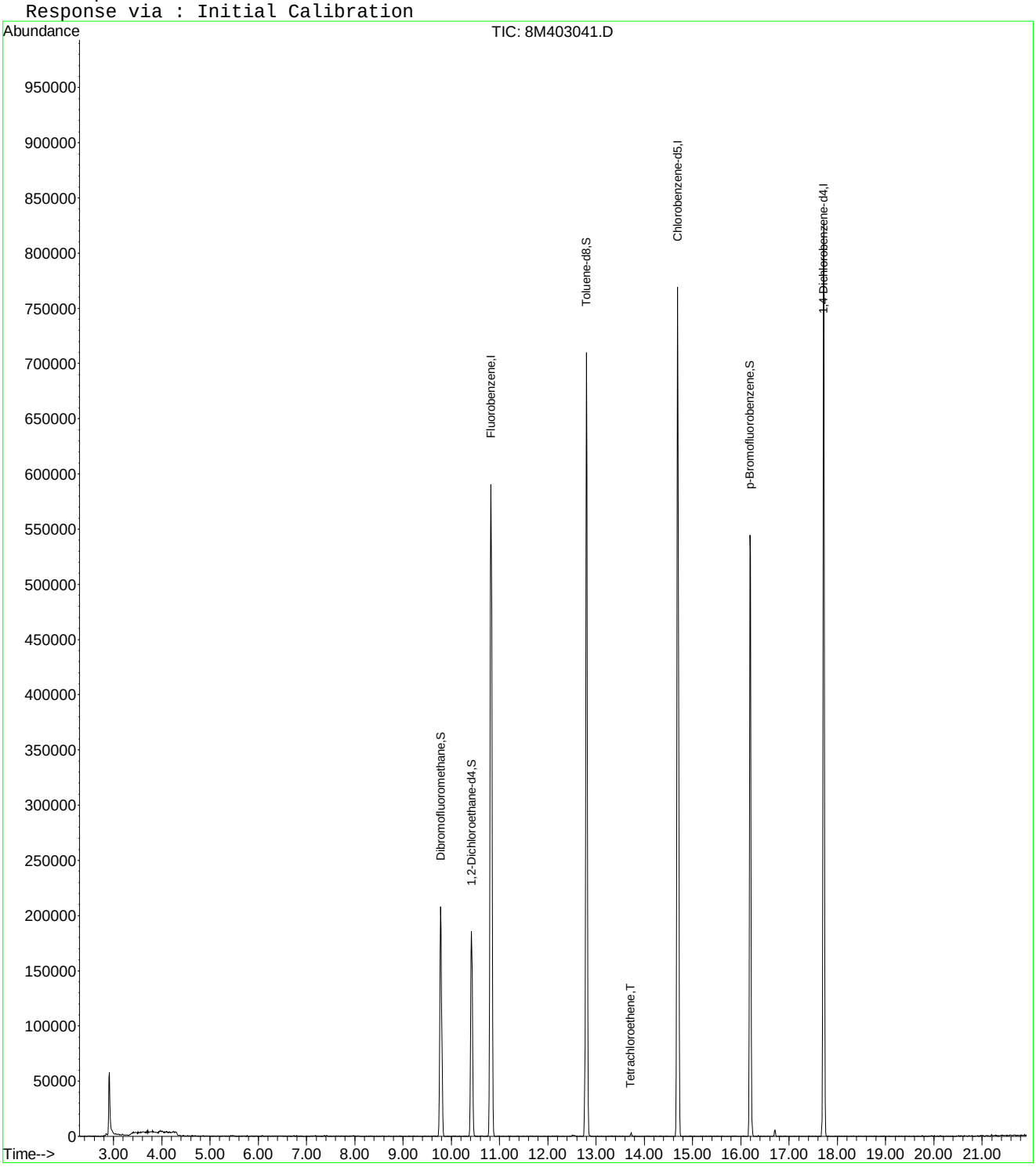

8M403041.D 8260WTR.M Wed Feb 18 13:49:53 2015 Page 2

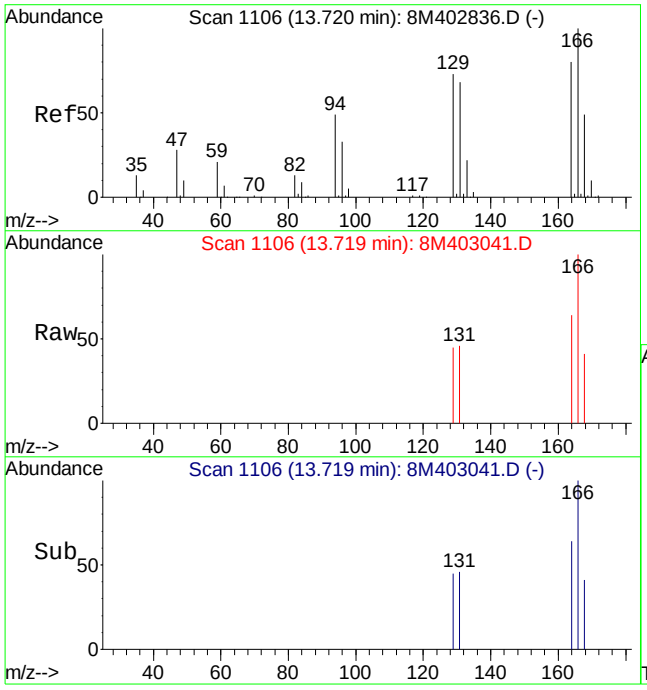

#66
Tetrachloroethene
Concen: 0.13 ug/L
RT: 13.72 min Scan# 1106
Delta R.T. -0.01 min
Lab File: 8M403041.D
Acq: 17 Feb 2015 15:06

Tgt Ion:164 Resp: 857

Ion	Ratio	Lower	Upper
164	100		
129	139.2	53.9	125.9#
94	32.2	37.6	87.8#

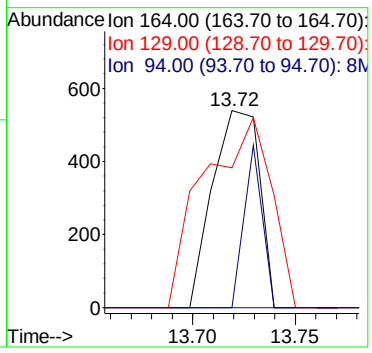

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021815\8M403072.D Vial: 4
Acq On : 18 Feb 2015 14:27 Operator: FJB
Sample : WG512729-01 VBLK0218 BLANK 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 19 08:30:17 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	726433	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	568509	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.72	152	287247	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	179064	23.4219 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.68%		
43) 1,2-Dichloroethane-d4	10.42	65	164681	20.5468 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 82.20%		
58) Toluene-d8	12.80	98	635699	23.5377 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 94.16%		
80) p-Bromofluorobenzene	16.19	95	244887	23.7706 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.08%		

Target Compounds					Qvalue
19) Methylene Chloride	7.37	84	3984	0.5103 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M403072.D 8260WTR.M Thu Feb 19 08:30:17 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021815\8M403072.D Vial: 4
Acq On : 18 Feb 2015 14:27 Operator: FJB
Sample : WG512729-01 VBLK0218 BLANK 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 19 8:30 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration

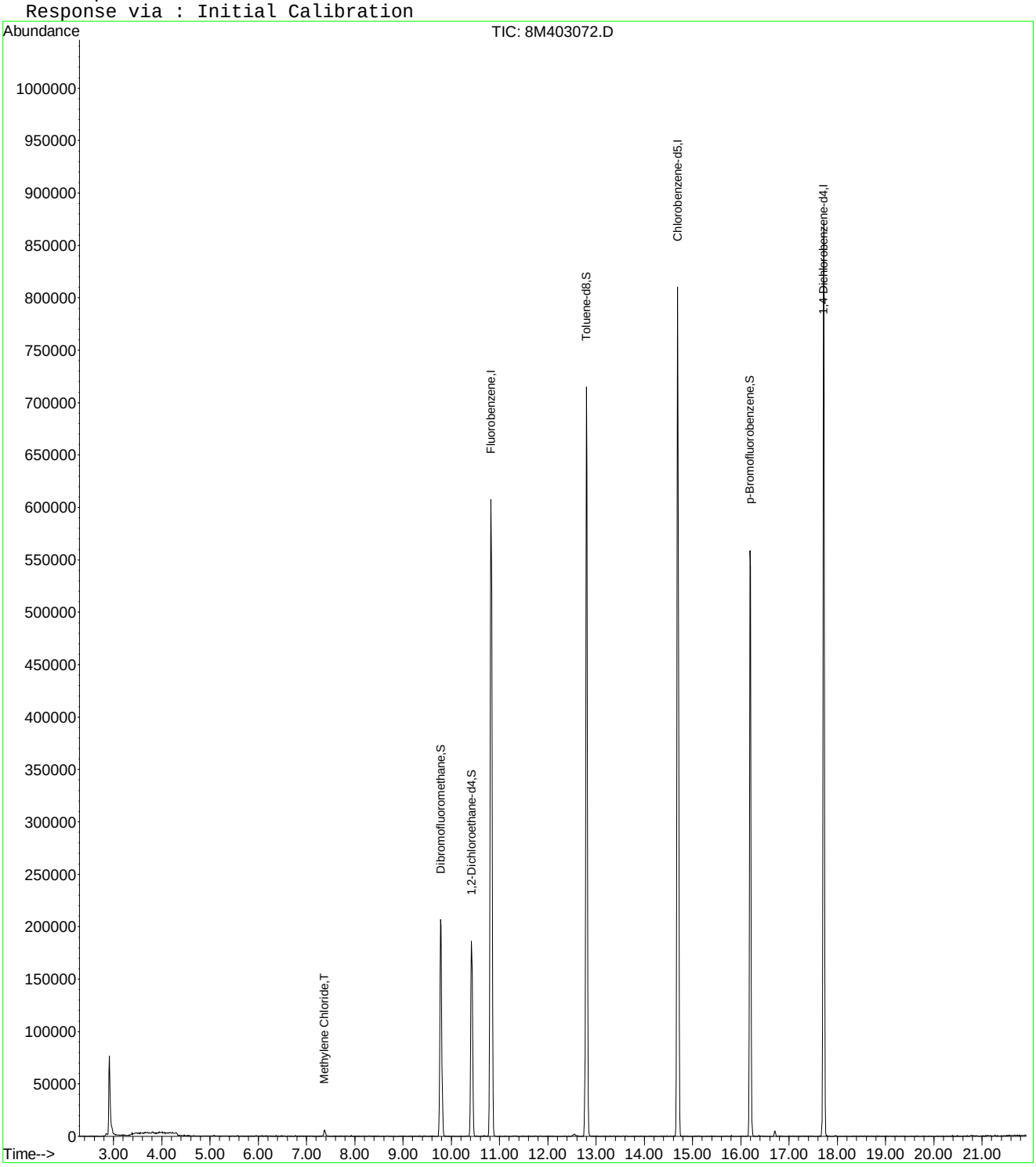

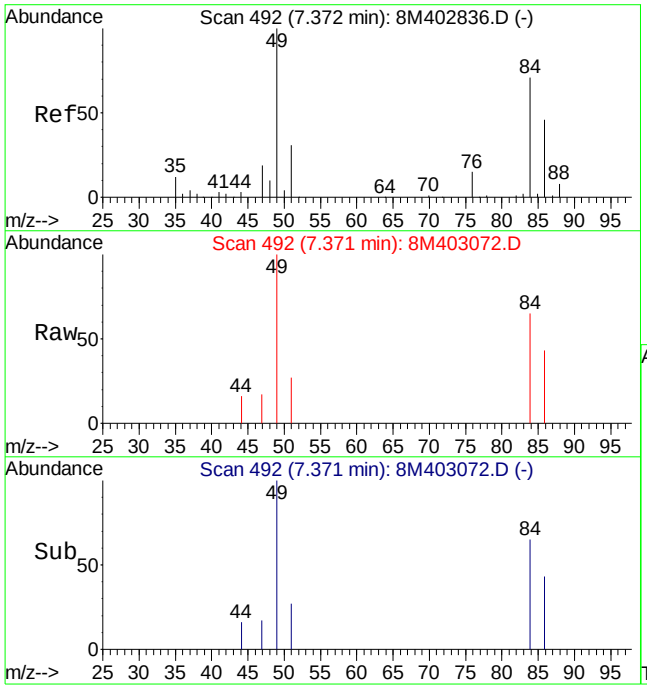

#19
Methylene Chloride
Concen: 0.51 ug/L
RT: 7.37 min Scan# 492
Delta R.T. -0.00 min
Lab File: 8M403072.D
Acq: 18 Feb 2015 14:27

Tgt Ion: 84 Resp: 3984

Ion	Ratio	Lower	Upper
84	100		
49	142.1	86.3	201.5

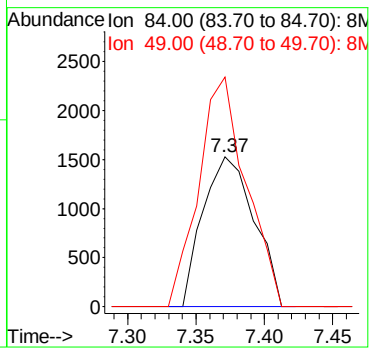

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021715\8M403064.D Vial: 27
Acq On : 18 Feb 2015 2:12 Operator: TMB
Sample : WG512559-10 VBLK0217 BLANK STD 624 Inst : HPMS8
Misc : 2,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 13:50:12 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	599314	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	496432	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.72	152	241523	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	153022	24.2610 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.04%		
43) 1,2-Dichloroethane-d4	10.42	65	146500	22.1554 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 88.64%		
58) Toluene-d8	12.80	98	528414	22.4060 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 89.64%		
80) p-Bromofluorobenzene	16.19	95	211933	24.4664 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.88%		

Target Compounds					Qvalue
5) 1,3-Butadiene	3.99	54	208	Below Cal	# 1

(#) = qualifier out of range (m) = manual integration
8M403064.D 8260WTR.M Wed Feb 18 13:50:13 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021715\8M403064.D Vial: 27
Acq On : 18 Feb 2015 2:12 Operator: TMB
Sample : WG512559-10 VBLK0217 BLANK STD 624 Inst : HPMS8
Misc : 2,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 13:50 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration

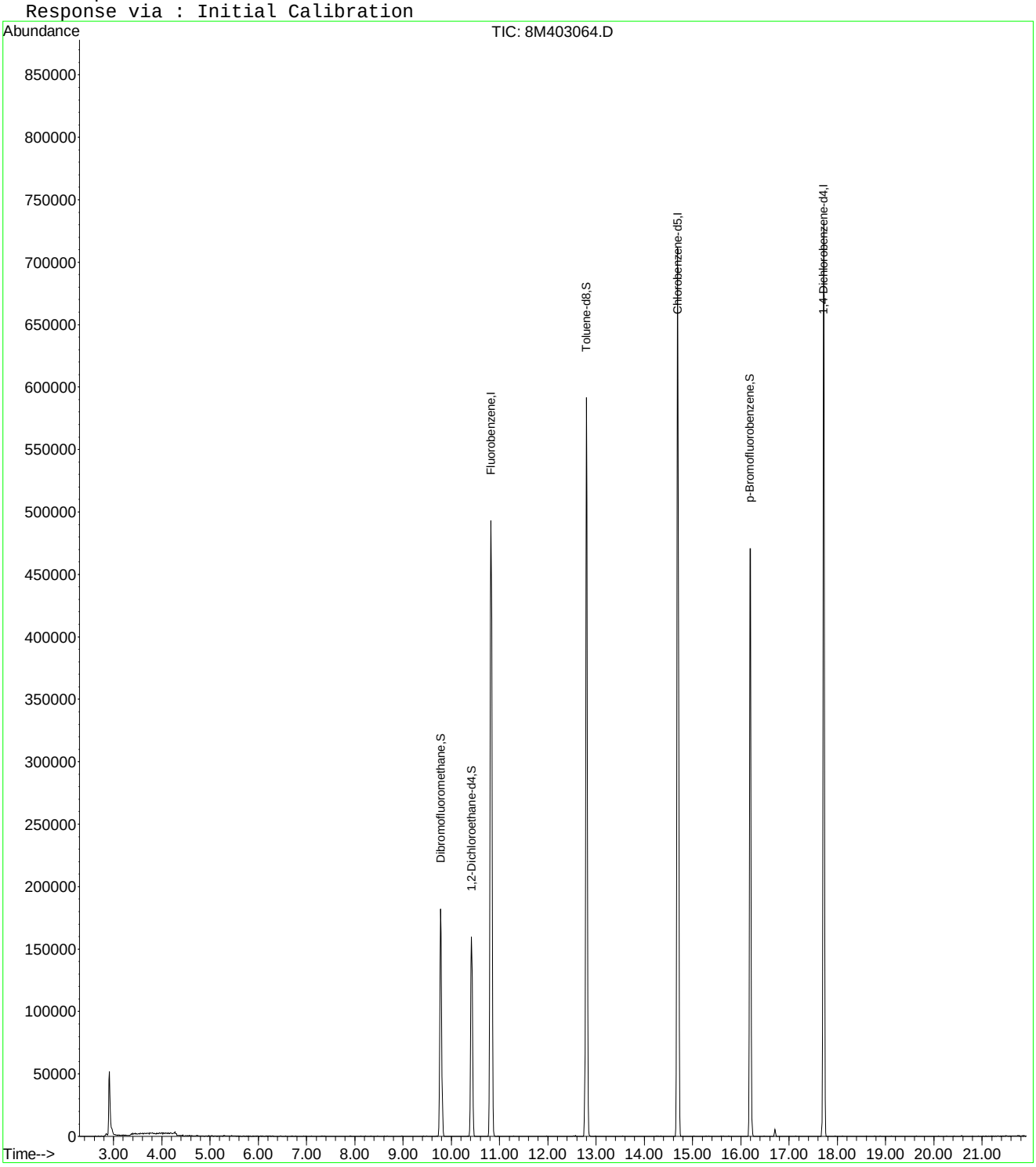

8M403064.D 8260WTR.M Wed Feb 18 13:50:13 2015 Page 2

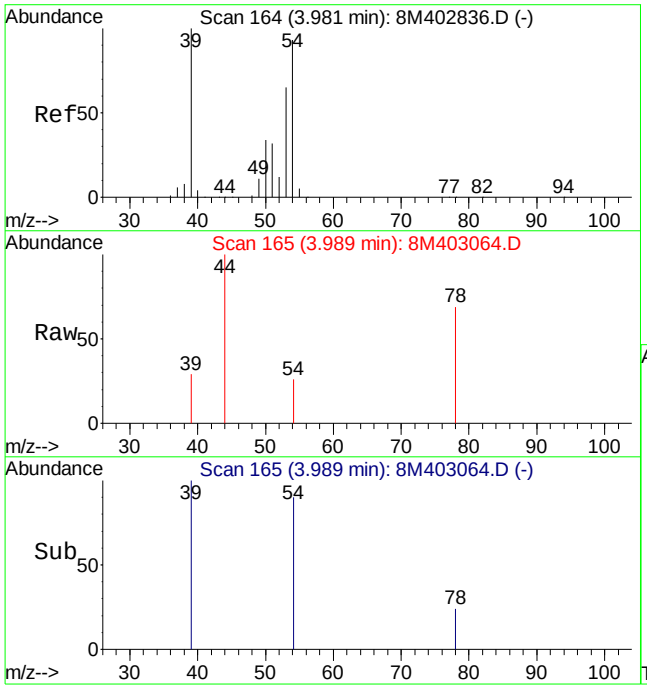

#5
1,3-Butadiene
Concen: Below Cal
RT: 3.99 min Scan# 165
Delta R.T. 0.01 min
Lab File: 8M403064.D
Acq: 18 Feb 2015 2:12

Tgt Ion: 54 Resp: 208

Ion	Ratio	Lower	Upper
54	100		
39	426.9	67.3	156.9#
53	0.0	42.2	98.4#

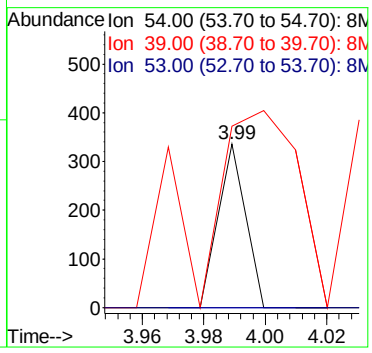

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021715\8M403064.D Vial: 27
Acq On : 18 Feb 2015 2:12 Operator: TMB
Sample : WG512559-10 VBLK0217 BLANK STD 624 Inst : HPMS8
Misc : 2,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 18 13:54:06 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Mon Dec 15 15:21:00 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	599314	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.69	117	496432	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.72	152	241523	25.00 ug/L	0.00

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
8M403064.D A9FOOWTR.M Wed Feb 18 13:54:06 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021715\8M403064.D Vial: 27
Acq On : 18 Feb 2015 2:12 Operator: TMB
Sample : WG512559-10 VBLK0217 BLANK STD 624 Inst : HPMS8
Misc : 2,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 18 13:54 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Mon Dec 15 15:21:00 2014
Response via : Initial Calibration

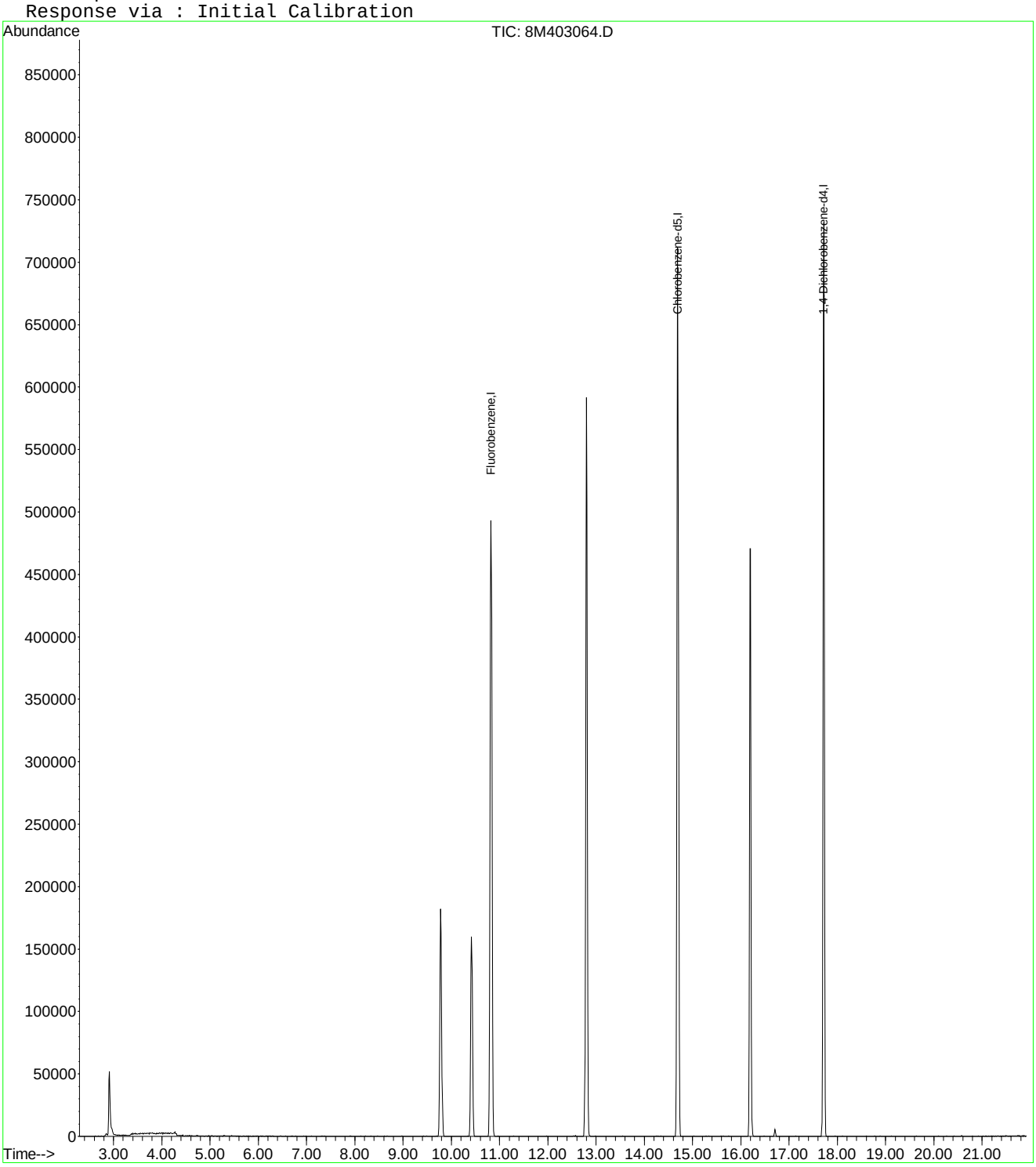

8M403064.D A9FOOWTR.M Wed Feb 18 13:54:06 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021815\8M403088.D Vial: 20
Acq On : 18 Feb 2015 22:08 Operator: FJB
Sample : WG512729-04 BLANK 624 Inst : HPMS8
Misc : 2,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 19 08:30:35 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	655559	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	525526	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.72	152	263915	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	161412	23.3956 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.60%		
43) 1,2-Dichloroethane-d4	10.42	65	156224	21.5989 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 86.40%		
58) Toluene-d8	12.80	98	575266	23.0422 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 92.16%		
80) p-Bromofluorobenzene	16.19	95	229728	24.2706 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.08%		

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
8M403088.D 8260WTR.M Thu Feb 19 08:30:35 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021815\8M403088.D Vial: 20
Acq On : 18 Feb 2015 22:08 Operator: FJB
Sample : WG512729-04 BLANK 624 Inst : HPMS8
Misc : 2,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 19 8:30 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration

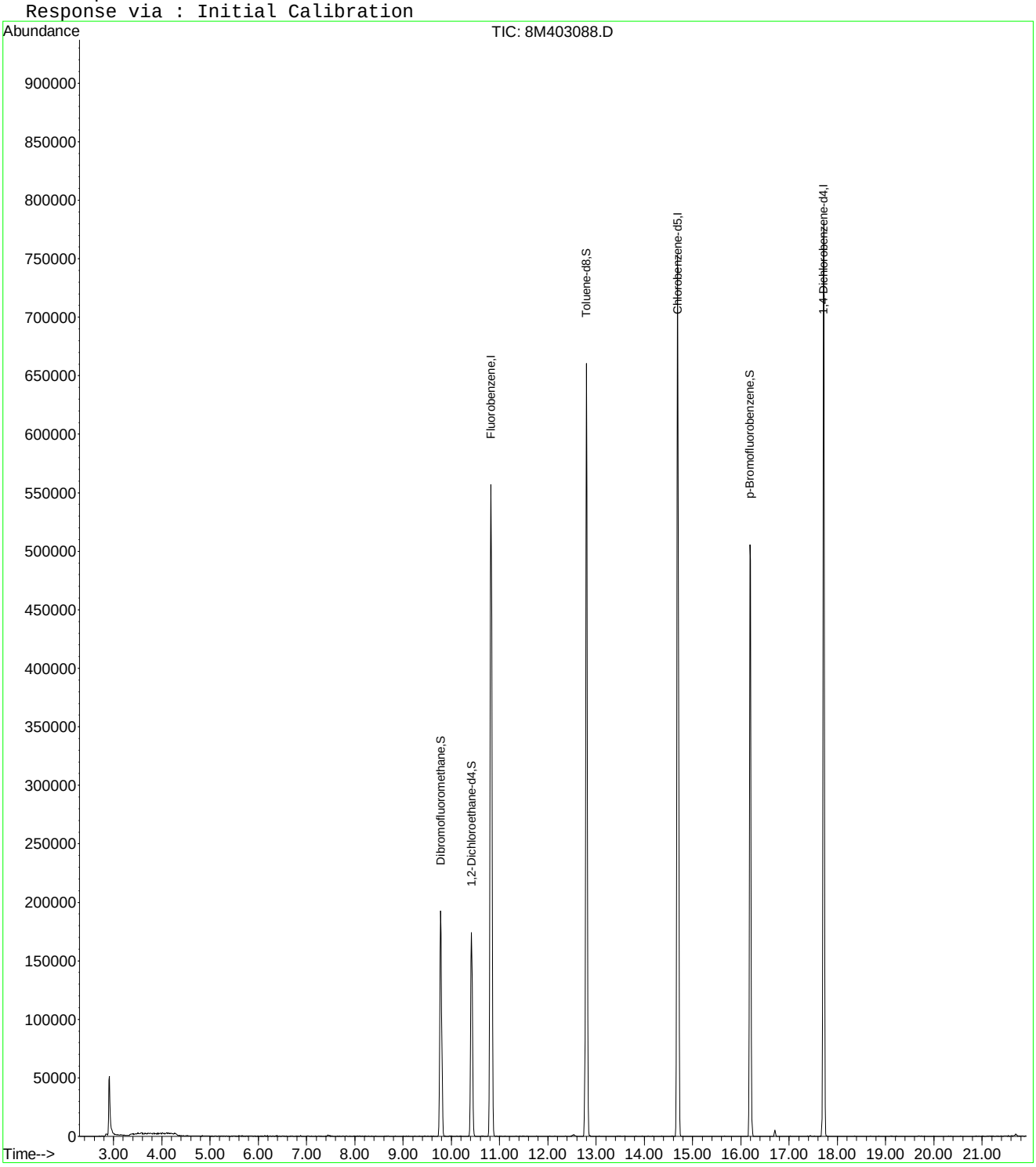

8M403088.D 8260WTR.M Thu Feb 19 08:30:35 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\021715\8M403042.D Vial: 5
Acq On : 17 Feb 2015 15:35 Operator: TMB
Sample : WG512559-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD68939 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 15:57:20 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	757191	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	560570	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.72	152	293911	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	182913	22.9535 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 91.80%		
43) 1,2-Dichloroethane-d4	10.42	65	174795	20.9228 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 83.68%		
58) Toluene-d8	12.80	98	629544	23.6399 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 94.56%		
80) p-Bromofluorobenzene	16.19	95	255961	24.2822 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.12%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.24	85	256926	21.1805 ug/L	100
3) Chloromethane	3.71	50	210613	20.0688 ug/L	99
4) Vinyl Chloride	3.94	62	235446	22.7963 ug/L	97
5) 1,3-Butadiene	3.98	54	87839	9.4785 ug/L	91
6) Bromomethane	4.84	94	58787	15.0247 ug/L	99
7) Chloroethane	5.00	64	118722	18.5959 ug/L	100
8) Trichlorofluoromethane	5.49	101	249486	17.4171 ug/L	99
9) Diethyl ether	6.03	59	488743	93.3574 ug/L	92
10) Isoprene	6.06	67	258823	23.3274 ug/L	88
11) Acrolein	6.25	56	48819	80.7744 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.27	101	160815	19.8742 ug/L	94
13) Acetone	6.36	43	20699	18.0403 ug/L #	28
14) 1,1-Dichloroethene	6.58	61	247600	19.0254 ug/L	91
15) Tert-Butyl Alcohol	6.70	59	40713	168.8108 ug/L	97
16) Dimethyl Sulfide	6.85	62	188960	21.7849 ug/L	100
17) Iodomethane	7.10	142	26538	21.4021 ug/L	94
18) Methyl acetate	7.11	43	59990	12.5738 ug/L	98
19) Methylene Chloride	7.37	84	162741	19.9967 ug/L	89
20) Carbon Disulfide	7.41	76	497555	18.5135 ug/L	100
21) Acrylonitrile	7.55	53	31811	18.9873 ug/L	96
22) Methyl Tert Butyl Ether	7.59	73	296036	20.9226 ug/L	92
23) trans-1,2-Dichloroethene	7.83	61	248985	19.8633 ug/L	89
24) n-Hexane	7.90	57	225192	20.4705 ug/L	92
25) Diisopropyl ether	8.24	45	2452750	94.4581 ug/L	98
26) Vinyl Acetate	8.41	43	190056	53.0926 ug/L	99
27) 1,1-Dichloroethane	8.45	63	304046	19.3019 ug/L	98
28) Ethyl-Tert-Butyl ether	8.82	59	1973301	94.7959 ug/L	96
29) 2-Butanone	8.99	43	31827	18.6334 ug/L	98
30) Propionitrile	9.11	54	49043	86.8199 ug/L	99
31) 2,2-Dichloropropane	9.22	77	244826	21.0536 ug/L	99
32) cis-1,2-Dichloroethene	9.28	96	179612	20.7323 ug/L	86
33) Chloroform	9.49	83	298296	19.9357 ug/L	100
34) 1-Bromopropane	9.63	122	33448	21.4257 ug/L	100
35) Bromochloromethane	9.73	130	89668	20.6925 ug/L	93
36) Tetrahydrofuran	9.75	42	103635	86.9895 ug/L	98
38) 1,1,1-Trichloroethane	10.03	97	261503	20.0625 ug/L	98
39) Cyclohexane	10.06	56	281545	20.0714 ug/L	85
40) 1,1-Dichloropropene	10.22	75	228048	20.2650 ug/L	99
41) Tert-Amyl-Methyl ether	10.33	73	1483064	94.7068 ug/L	95
42) Carbon Tetrachloride	10.37	117	225416	20.1668 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M403042.D 8260WTR.M Tue Feb 17 15:57:21 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\021715\8M403042.D Vial: 5
Acq On : 17 Feb 2015 15:35 Operator: TMB
Sample : WG512559-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD68939 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 15:57:20 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.54	62	192203	19.4427 ug/L	98
46)	Benzene	10.59	78	660620	21.4585 ug/L	93
47)	Trichloroethene	11.33	130	169453	21.8810 ug/L	99
48)	Methylcyclohexane	11.41	83	258603	20.4911 ug/L	89
49)	1,2-Dichloropropane	11.55	63	168842	20.1682 ug/L	95
50)	Bromodichloromethane	11.85	83	208875	19.7310 ug/L	100
51)	1,4-Dioxane	11.84	88	5281	162.4191 ug/L	82
52)	Dibromomethane	11.93	93	74889	18.9546 ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.14	63	62534	19.6656 ug/L	96
54)	4-Methyl-2-Pentanone	12.17	58	24875	17.4362 ug/L	91
55)	cis-1,3-Dichloropropene	12.48	75	241640	21.8334 ug/L	98
56)	Dimethyl Disulfide	12.75	79	117712	14.3645 ug/L	100
59)	Toluene	12.90	91	664937	22.0030 ug/L	100
60)	Ethyl Methacrylate	12.99	69	122222	21.1604 ug/L	91
62)	trans-1,3-Dichloropropene	13.08	75	179720	19.4363 ug/L	99
63)	1,1,2-Trichloroethane	13.29	97	97320	20.2848 ug/L	99
64)	2-Hexanone	13.22	58	23455	18.9003 ug/L #	48
65)	1,3-Dichloropropane	13.59	76	180366	20.7402 ug/L	90
66)	Tetrachloroethene	13.72	164	139283	21.3440 ug/L	95
67)	Dibromochloromethane	13.99	129	124696	20.3418 ug/L	100
68)	1,2-Dibromoethane	14.25	107	96670	20.2697 ug/L	97
69)	1-Chlorohexane	14.33	91	221806	21.6993 ug/L	88
70)	Chlorobenzene	14.74	112	406377	19.8871 ug/L	100
71)	1,1,1,2-Tetrachloroethane	14.77	131	144455	20.6996 ug/L	100
72)	Ethylbenzene	14.77	106	240537	20.5745 ug/L	96
73)	m-,p-Xylene	14.86	106	568601	42.7017 ug/L	99
74)	o-Xylene	15.42	106	267639	20.4282 ug/L	99
75)	Styrene	15.46	104	475505	22.6281 ug/L	99
76)	Bromoform	15.95	173	73977	19.5581 ug/L	99
77)	Isopropylbenzene	15.85	105	692230	21.1486 ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.07	83	106016	19.8455 ug/L	99
81)	1,2,3-Trichloropropane	16.25	110	28675	19.1996 ug/L	91
82)	trans-1,4-Dichloro-2-Buten	16.30	53	25496	14.4863 ug/L	77
83)	n-Propylbenzene	16.36	91	857180	19.9468 ug/L	99
84)	Bromobenzene	16.49	156	171774	20.6560 ug/L	95
85)	1,3,5-Trimethylbenzene	16.54	105	646525	22.5370 ug/L	99
86)	2-Chlorotoluene	16.62	91	583635	22.2714 ug/L	91
87)	4-Chlorotoluene	16.68	91	456309	17.0947 ug/L	89
88)	a-Methylstyrene	16.94	118	341233	20.6444 ug/L	97
89)	tert-Butylbenzene	17.01	134	120566	19.2861 ug/L	95
90)	1,2,4-Trimethylbenzene	17.06	105	659270	22.3644 ug/L	98
91)	sec-Butylbenzene	17.28	105	763987	20.1482 ug/L	99
92)	p-Isopropyltoluene	17.43	119	627991	20.9517 ug/L	98
93)	1,3-Dichlorobenzene	17.63	146	339479	19.8966 ug/L	97
94)	1,4-Dichlorobenzene	17.76	146	357476	20.4590 ug/L	99
95)	n-Butylbenzene	17.96	91	682088	20.7644 ug/L	98
96)	1,2-Dichlorobenzene	18.26	146	288607	18.8749 ug/L	98
97)	1,2-Dibromo-3-Chloropropan	19.25	75	17952	18.1003 ug/L	95
98)	1,2,4-Trichlorobenzene	20.40	180	250310	20.6138 ug/L	99
99)	Hexachlorobutadiene	20.55	225	139337	19.5010 ug/L	96
100)	Naphthalene	20.77	128	359715	20.0906 ug/L	100
101)	1,2,3-Trichlorobenzene	21.08	180	212197	20.0117 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M403042.D 8260WTR.M Tue Feb 17 15:57:21 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\021715\8M403042.D Vial: 5
Acq On : 17 Feb 2015 15:35 Operator: TMB
Sample : WG512559-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD68939 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 17 15:57 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration

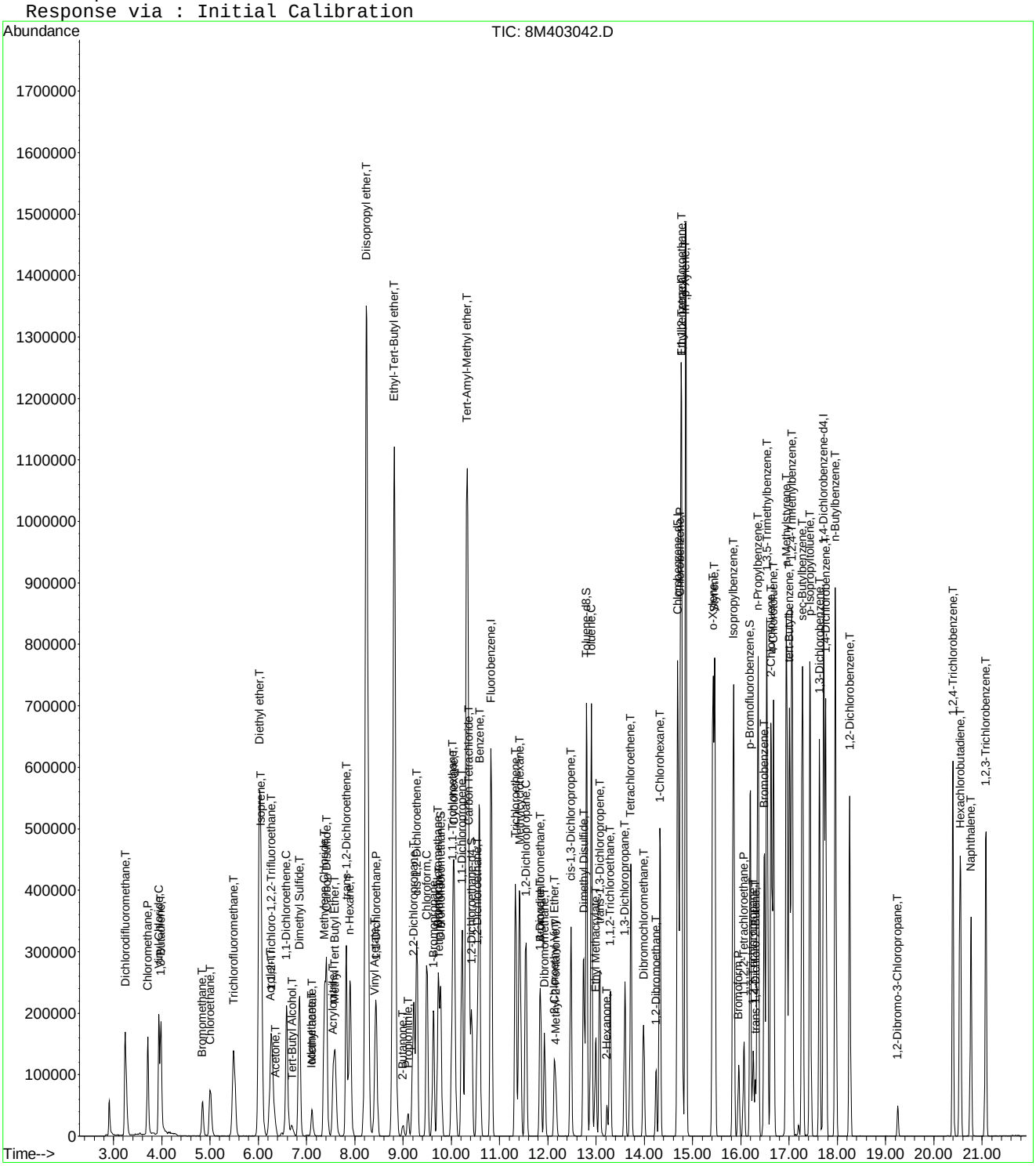

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021715\8M403063.D Vial: 26
Acq On : 18 Feb 2015 1:43 Operator: TMB
Sample : WG512559-09 100ug/L A9 LCS STD 624 Inst : HPMS8
Misc : 2,1 STD68937 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 02:05:55 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	621817	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	496376	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.72	152	242164	25.00 ug/L	-0.01
System Monitoring Compounds					
37) Dibromofluoromethane	9.78	111	162652	24.8546 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.40%		
43) 1,2-Dichloroethane-d4	10.42	65	153725	22.4067 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 89.64%		
58) Toluene-d8	12.80	98	556435	23.5968 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 94.40%		
80) p-Bromofluorobenzene	16.19	95	214558	24.7039 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.80%		
Target Compounds					Qvalue
5) 1,3-Butadiene	3.99	54	345369	50.1941 ug/L	81
9) Diethyl ether	6.02	59	440722	102.5123 ug/L	93
29) 2-Butanone	9.00	43	1683	1.1998 ug/L #	55
30) Propionitrile	9.10	54	43437	93.6364 ug/L	96
51) 1,4-Dioxane	11.83	88	4095	153.3620 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M403063.D A9FOOWTR.M Wed Feb 18 13:53:31 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021715\8M403063.D Vial: 26
Acq On : 18 Feb 2015 1:43 Operator: TMB
Sample : WG512559-09 100ug/L A9 LCS STD 624 Inst : HPMS8
Misc : 2,1 STD68937 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 2:05 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Mon Dec 15 15:21:00 2014
Response via : Initial Calibration

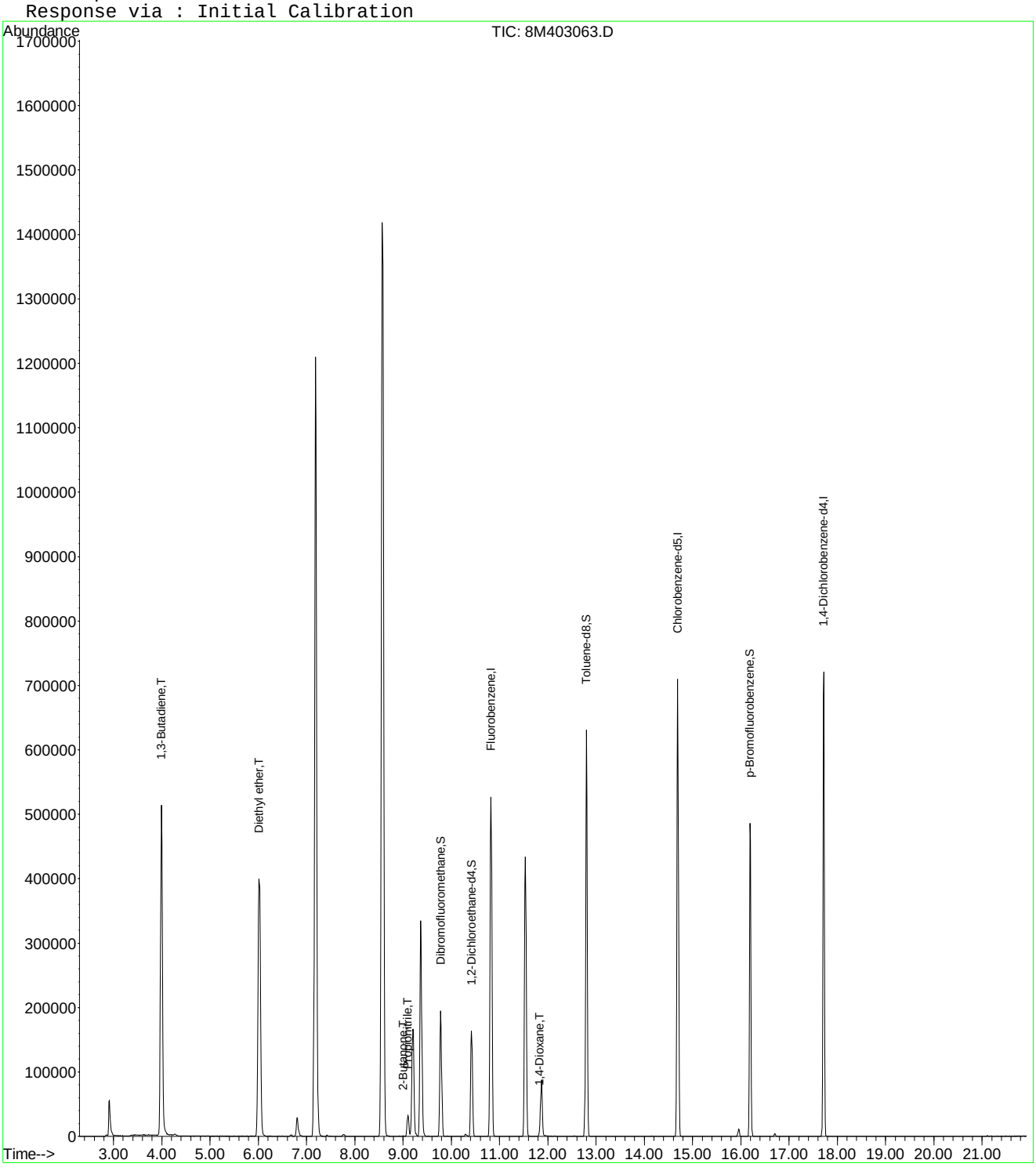

8M403063.D A9FOOWTR.M Wed Feb 18 13:53:31 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021715\8M403063.D Vial: 26
Acq On : 18 Feb 2015 1:43 Operator: TMB
Sample : WG512559-09 100ug/L A9 LCS STD 624 Inst : HPMS8
Misc : 2,1 STD68937 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 18 13:56:01 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Mon Dec 15 15:21:00 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	621817	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.69	117	496376	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.72	152	242164	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.80	41	45691	116.4879 ug/L	98
3) 3-Chloro-1-propene	7.18	41	1275589	123.1965 ug/L	96
4) 2-Chloro-1,3-butadiene	8.57	53	1404552	114.6405 ug/L	90
5) Ethyl Acetate	9.20	43	292315	94.0883 ug/L	97
6) Methacrylonitrile	9.37	67	148520	80.4377 ug/L	77
7) Isobutyl Alcohol	9.39	43	17155	138.5016 ug/L #	8
8) 1-Butanol	10.30	56	2880	59.8506 ug/L	87
9) Methyl methacrylate	11.54	41	295306	84.5441 ug/L	86
10) 2-Nitropropane	11.87	43	78367	74.9728 ug/L	97
13) Cyclohexanone	15.95	55	7466	19.5405 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M403063.D A9FOOWTR.M Wed Feb 18 13:56:02 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021715\8M403063.D Vial: 26
Acq On : 18 Feb 2015 1:43 Operator: TMB
Sample : WG512559-09 100ug/L A9 LCS STD 624 Inst : HPMS8
Misc : 2,1 STD68937 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 18 13:56 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Mon Dec 15 15:21:00 2014
Response via : Initial Calibration

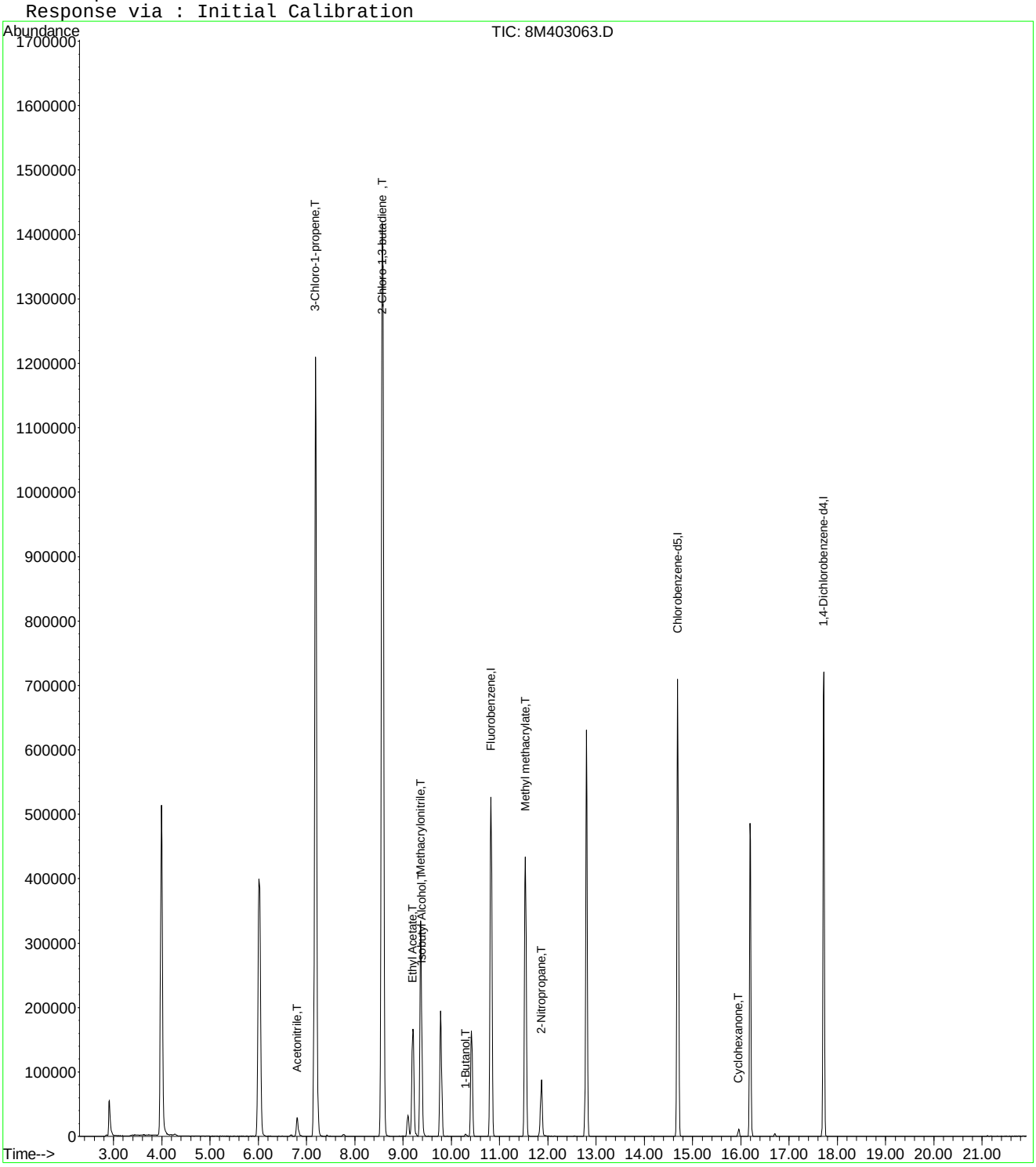

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021715\8M403063.D Vial: 26
Acq On : 18 Feb 2015 1:43 Operator: TMB
Sample : WG512559-09 100ug/L A9 LCS STD 624 Inst : HPMS8
Misc : 2,1 STD68937 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 19 12:37:05 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Mon Dec 15 15:21:00 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	621817	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.69	117	496376	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.72	152	242164	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.80	41	45691	116.4879 ug/L	98
3) 3-Chloro-1-propene	7.18	41	1275589	123.1965 ug/L	96
4) 2-Chloro-1,3-butadiene	8.57	53	1404552	114.6405 ug/L	90
5) Ethyl Acetate	9.20	43	292315	94.0883 ug/L	97
6) Methacrylonitrile	9.37	67	148520	80.4377 ug/L	77
7) Isobutyl Alcohol	9.39	43	17155	138.5016 ug/L #	8
8) 1-Butanol	10.30	56	2880	59.8506 ug/L	87
9) Methyl methacrylate	11.54	41	295306	84.5441 ug/L	86
10) 2-Nitropropane	11.87	43	78367	74.9728 ug/L	97
13) Cyclohexanone	15.95	55	7466	19.5405 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M403063.D A9FOOWTR.M Thu Feb 19 12:37:05 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\021715\8M403063.D Vial: 26
Acq On : 18 Feb 2015 1:43 Operator: TMB
Sample : WG512559-09 100ug/L A9 LCS STD 624 Inst : HPMS8
Misc : 2,1 STD68937 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Feb 19 12:37 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Mon Dec 15 15:21:00 2014
Response via : Initial Calibration

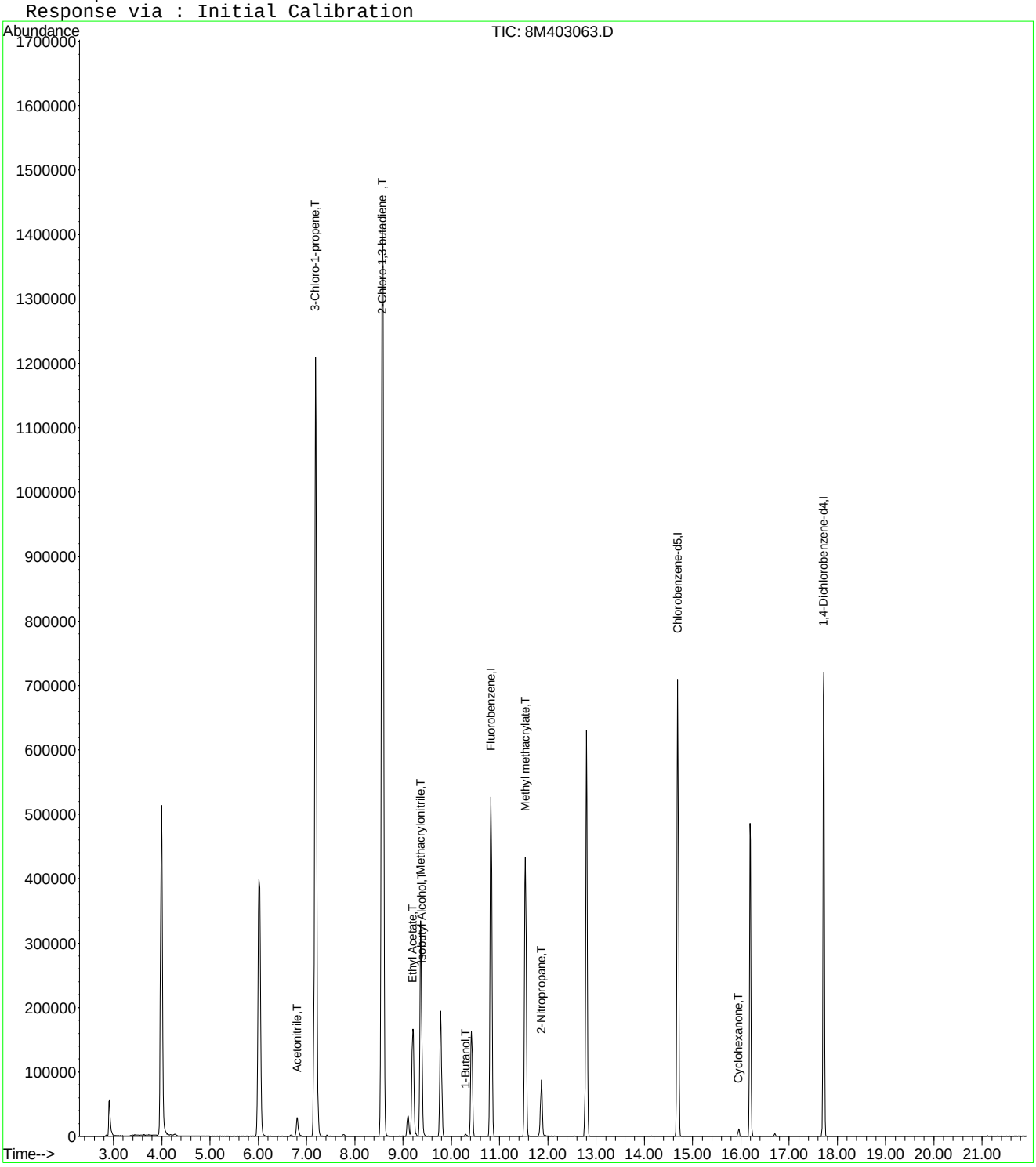

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\021815\8M403073.D Vial: 5
Acq On : 18 Feb 2015 14:56 Operator: FJB
Sample : WG512729-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD68939 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 15:18:07 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	783712	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	585340	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.72	152	303174	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.78	111	187350	22.7147 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 90.84%		
43) 1,2-Dichloroethane-d4	10.42	65	178187	20.6071 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 82.44%		
58) Toluene-d8	12.80	98	658458	23.6793 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 94.72%		
80) p-Bromofluorobenzene	16.19	95	256396	23.5803 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.32%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.25	85	214417	17.0780 ug/L	100
3) Chloromethane	3.71	50	186565	17.1758 ug/L	100
4) Vinyl Chloride	3.94	62	200323	18.7392 ug/L	99
5) 1,3-Butadiene	3.98	54	72343	7.4003 ug/L	92
6) Bromomethane	4.84	94	63734	15.6938 ug/L	100
7) Chloroethane	5.00	64	127888	19.3537 ug/L	99
8) Trichlorofluoromethane	5.49	101	249791	16.8483 ug/L	100
9) Diethyl ether	6.02	59	481242	88.8139 ug/L	99
10) Isoprene	6.06	67	242919	21.1531 ug/L	100
11) Acrolein	6.25	56	51055	81.6154 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	151983	18.1471 ug/L	98
13) Acetone	6.36	43	20774	17.4930 ug/L	98
14) 1,1-Dichloroethene	6.59	61	235079	17.4520 ug/L	98
15) Tert-Butyl Alcohol	6.69	59	45060	180.5125 ug/L #	89
16) Dimethyl Sulfide	6.84	62	186197	20.7399 ug/L	96
17) Iodomethane	7.10	142	29192	21.6822 ug/L	93
18) Methyl acetate	7.11	43	59444	12.0377 ug/L	99
19) Methylene Chloride	7.37	84	155385	18.4467 ug/L	98
20) Carbon Disulfide	7.41	76	478521	17.2027 ug/L	99
21) Acrylonitrile	7.55	53	31893	18.3920 ug/L	95
22) Methyl Tert Butyl Ether	7.58	73	281368	19.2129 ug/L	99
23) trans-1,2-Dichloroethene	7.82	61	241865	18.6423 ug/L	99
24) n-Hexane	7.90	57	224958	19.7573 ug/L	100
25) Diisopropyl ether	8.24	45	2527651	94.0485 ug/L	99
26) Vinyl Acetate	8.41	43	198719	53.6341 ug/L	99
27) 1,1-Dichloroethane	8.45	63	302078	18.5281 ug/L	99
28) Ethyl-Tert-Butyl ether	8.82	59	2016302	93.5838 ug/L	100
29) 2-Butanone	8.99	43	32955	18.6409 ug/L	97
30) Propionitrile	9.10	54	50826	86.9315 ug/L	99
31) 2,2-Dichloropropane	9.22	77	229067	19.0318 ug/L	99
32) cis-1,2-Dichloroethene	9.28	96	169006	18.8479 ug/L	97
33) Chloroform	9.49	83	278554	17.9863 ug/L	99
34) 1-Bromopropane	9.63	122	30294	18.7487 ug/L	92
35) Bromochloromethane	9.73	130	85096	18.9729 ug/L	98
36) Tetrahydrofuran	9.75	42	109418	88.7357 ug/L	100
38) 1,1,1-Trichloroethane	10.03	97	243377	18.0400 ug/L	100
39) Cyclohexane	10.06	56	284426	19.5906 ug/L	99
40) 1,1-Dichloropropene	10.21	75	220897	18.9652 ug/L	100
41) Tert-Amyl-Methyl ether	10.33	73	1497642	92.4014 ug/L	98
42) Carbon Tetrachloride	10.37	117	208005	17.9794 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M403073.D 8260WTR.M Wed Feb 18 15:18:08 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\021815\8M403073.D Vial: 5
Acq On : 18 Feb 2015 14:56 Operator: FJB
Sample : WG512729-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD68939 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 15:18:07 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.54	62	182754	17.8613 ug/L	99
46)	Benzene	10.58	78	632770	19.8583 ug/L	98
47)	Trichloroethene	11.33	130	160143	19.9790 ug/L	99
48)	Methylcyclohexane	11.41	83	259889	19.8961 ug/L	98
49)	1,2-Dichloropropane	11.54	63	168598	19.4576 ug/L	98
50)	Bromodichloromethane	11.85	83	203778	18.5981 ug/L	98
51)	1,4-Dioxane	11.84	88	4535	134.7557 ug/L	91
52)	Dibromomethane	11.93	93	74852	18.3041 ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.14	63	63588	19.3204 ug/L	99
54)	4-Methyl-2-Pentanone	12.17	58	26709	18.0883 ug/L	97
55)	cis-1,3-Dichloropropene	12.48	75	237207	20.7076 ug/L	99
56)	Dimethyl Disulfide	12.74	79	115164	13.8361 ug/L	91
59)	Toluene	12.90	91	635730	20.1463 ug/L	99
60)	Ethyl Methacrylate	12.99	69	124524	20.6467 ug/L	96
62)	trans-1,3-Dichloropropene	13.07	75	176002	18.2287 ug/L	100
63)	1,1,2-Trichloroethane	13.30	97	96960	19.3545 ug/L	100
64)	2-Hexanone	13.22	58	23650	18.2510 ug/L #	60
65)	1,3-Dichloropropane	13.60	76	175281	19.3026 ug/L	98
66)	Tetrachloroethene	13.72	164	129048	18.9387 ug/L	97
67)	Dibromochloromethane	13.99	129	120332	18.7992 ug/L	99
68)	1,2-Dibromoethane	14.24	107	95952	19.2677 ug/L	97
69)	1-Chlorohexane	14.32	91	218660	20.4863 ug/L	99
70)	Chlorobenzene	14.74	112	393508	18.4424 ug/L	99
71)	1,1,1,2-Tetrachloroethane	14.77	131	139686	19.1692 ug/L	99
72)	Ethylbenzene	14.77	106	233852	19.1563 ug/L	96
73)	m-,p-Xylene	14.86	106	551133	39.6384 ug/L	97
74)	o-Xylene	15.43	106	260232	19.0223 ug/L	98
75)	Styrene	15.46	104	458420	20.8919 ug/L	96
76)	Bromoform	15.95	173	70734	17.9094 ug/L	99
77)	Isopropylbenzene	15.85	105	658762	19.2745 ug/L	100
79)	1,1,2,2-Tetrachloroethane	16.07	83	104647	18.9907 ug/L	99
81)	1,2,3-Trichloropropane	16.25	110	28122	18.2540 ug/L	86
82)	trans-1,4-Dichloro-2-Buten	16.30	53	29616	16.2304 ug/L	98
83)	n-Propylbenzene	16.36	91	838300	18.9114 ug/L	99
84)	Bromobenzene	16.49	156	165829	19.3319 ug/L	99
85)	1,3,5-Trimethylbenzene	16.54	105	618262	20.8933 ug/L	99
86)	2-Chlorotoluene	16.63	91	501704	18.5600 ug/L	91
87)	4-Chlorotoluene	16.68	91	519385	18.8632 ug/L	90
88)	a-Methylstyrene	16.95	118	338573	19.8576 ug/L	98
89)	tert-Butylbenzene	17.01	134	118114	18.3166 ug/L	99
90)	1,2,4-Trimethylbenzene	17.06	105	637687	20.9713 ug/L	99
91)	sec-Butylbenzene	17.28	105	741482	18.9573 ug/L	99
92)	p-Isopropyltoluene	17.43	119	597182	19.3150 ug/L	100
93)	1,3-Dichlorobenzene	17.63	146	318433	18.0929 ug/L	99
94)	1,4-Dichlorobenzene	17.76	146	342201	18.9864 ug/L	99
95)	n-Butylbenzene	17.96	91	672497	19.8470 ug/L	99
96)	1,2-Dichlorobenzene	18.26	146	288397	18.2849 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	19.25	75	17872	17.4691 ug/L	92
98)	1,2,4-Trichlorobenzene	20.40	180	242915	19.3936 ug/L	100
99)	Hexachlorobutadiene	20.55	225	136031	18.4566 ug/L	99
100)	Naphthalene	20.77	128	359308	19.4548 ug/L	99
101)	1,2,3-Trichlorobenzene	21.08	180	209946	19.1945 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M403073.D 8260WTR.M Wed Feb 18 15:18:08 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\021815\8M403073.D Vial: 5
Acq On : 18 Feb 2015 14:56 Operator: FJB
Sample : WG512729-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD68939 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 15:18 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration

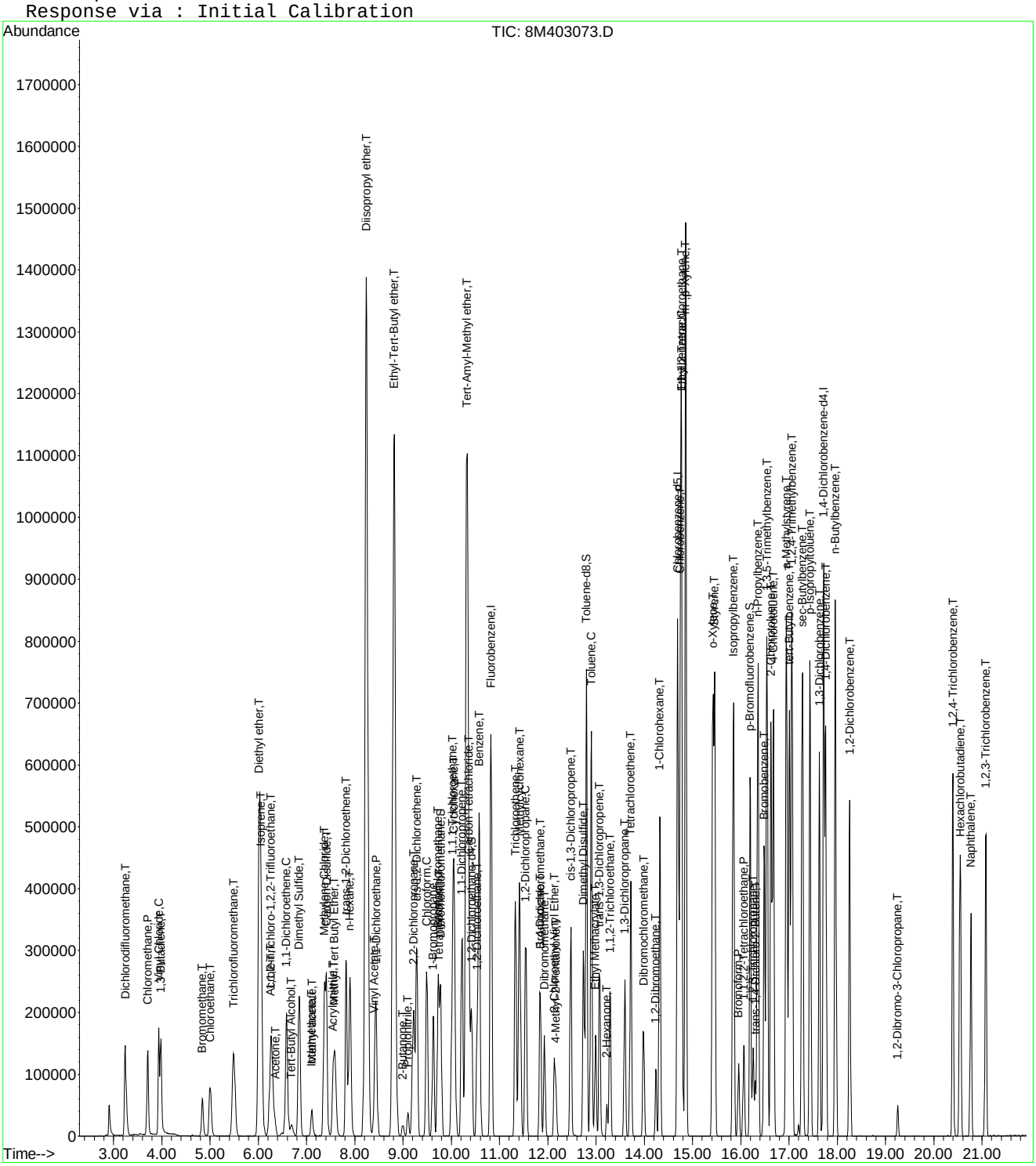

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\021815\8M403074.D Vial: 6
Acq On : 18 Feb 2015 15:25 Operator: FJB
Sample : WG512729-03 20ug/L LCS DUP 8260 Inst : HPMS8
Misc : 1,1 STD68939 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 15:47:11 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	801961	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	572151	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.72	152	307465	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	193037	22.8716 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 91.48%		
43) 1,2-Dichloroethane-d4	10.42	65	192268	21.7295 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 86.92%		
58) Toluene-d8	12.80	98	678863	24.9759 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.92%		
80) p-Bromofluorobenzene	16.19	95	263986	23.9395 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.76%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.25	85	217708	16.9455 ug/L	99
3) Chloromethane	3.71	50	186639	16.7916 ug/L	100
4) Vinyl Chloride	3.94	62	197369	18.0428 ug/L	99
5) 1,3-Butadiene	3.98	54	70343	6.9986 ug/L	89
6) Bromomethane	4.85	94	65244	15.6997 ug/L	99
7) Chloroethane	5.00	64	130542	19.3058 ug/L	99
8) Trichlorofluoromethane	5.49	101	251785	16.5964 ug/L	99
9) Diethyl ether	6.02	59	509397	91.8707 ug/L	100
10) Isoprene	6.06	67	246549	20.9806 ug/L	100
11) Acrolein	6.25	56	50702	79.2067 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.27	101	152009	17.7372 ug/L	98
13) Acetone	6.36	43	22987	18.9160 ug/L	97
14) 1,1-Dichloroethene	6.59	61	237659	17.2420 ug/L	98
15) Tert-Butyl Alcohol	6.69	59	54199	212.1831 ug/L	93
16) Dimethyl Sulfide	6.85	62	191429	20.8375 ug/L	96
17) Iodomethane	7.11	142	31572	21.9521 ug/L	87
18) Methyl acetate	7.11	43	63554	12.5771 ug/L	99
19) Methylene Chloride	7.37	84	158537	18.3927 ug/L	98
20) Carbon Disulfide	7.41	76	465688	16.3604 ug/L	100
21) Acrylonitrile	7.55	53	33707	18.9958 ug/L	97
22) Methyl Tert Butyl Ether	7.58	73	307770	20.5375 ug/L	97
23) trans-1,2-Dichloroethene	7.83	61	247082	18.6111 ug/L	99
24) n-Hexane	7.90	57	221407	19.0029 ug/L	100
25) Diisopropyl ether	8.24	45	2633173	95.7453 ug/L	99
26) Vinyl Acetate	8.42	43	215143	56.7456 ug/L	99
27) 1,1-Dichloroethane	8.45	63	303318	18.1808 ug/L	99
28) Ethyl-Tert-Butyl ether	8.82	59	2133306	96.7613 ug/L	99
29) 2-Butanone	8.99	43	35724	19.7473 ug/L	99
30) Propionitrile	9.10	54	54830	91.6458 ug/L	99
31) 2,2-Dichloropropane	9.22	77	229136	18.6044 ug/L	100
32) cis-1,2-Dichloroethene	9.28	96	177109	19.3022 ug/L	96
33) Chloroform	9.49	83	285701	18.0280 ug/L	100
34) 1-Bromopropane	9.62	122	32455	19.6291 ug/L	96
35) Bromochloromethane	9.73	130	88462	19.2745 ug/L	98
36) Tetrahydrofuran	9.75	42	120843	95.7711 ug/L	99
38) 1,1,1-Trichloroethane	10.03	97	245399	17.7759 ug/L	100
39) Cyclohexane	10.06	56	290613	19.5613 ug/L	99
40) 1,1-Dichloropropene	10.22	75	221224	18.5611 ug/L	100
41) Tert-Amyl-Methyl ether	10.33	73	1614413	97.3393 ug/L	98
42) Carbon Tetrachloride	10.37	117	211659	17.8789 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\021815\8M403074.D Vial: 6
Acq On : 18 Feb 2015 15:25 Operator: FJB
Sample : WG512729-03 20ug/L LCS DUP 8260 Inst : HPMS8
Misc : 1,1 STD68939 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 15:47:11 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.53	62	192669	18.4018 ug/L	100
46)	Benzene	10.58	78	645873	19.8082 ug/L	97
47)	Trichloroethene	11.33	130	158540	19.3289 ug/L	99
48)	Methylcyclohexane	11.41	83	256012	19.1533 ug/L	99
49)	1,2-Dichloropropane	11.55	63	175136	19.7522 ug/L	98
50)	Bromodichloromethane	11.85	83	209310	18.6683 ug/L	100
51)	1,4-Dioxane	11.83	88	6688	194.2090 ug/L	92
52)	Dibromomethane	11.93	93	77314	18.4759 ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.14	63	68918	20.4633 ug/L	98
54)	4-Methyl-2-Pentanone	12.17	58	28631	18.9487 ug/L	99
55)	cis-1,3-Dichloropropene	12.48	75	241617	20.6126 ug/L	98
56)	Dimethyl Disulfide	12.74	79	116967	13.7681 ug/L	87
59)	Toluene	12.90	91	656128	21.2720 ug/L	98
60)	Ethyl Methacrylate	13.00	69	135002	22.9000 ug/L	96
62)	trans-1,3-Dichloropropene	13.08	75	189421	20.0708 ug/L	99
63)	1,1,2-Trichloroethane	13.30	97	103887	21.2153 ug/L	98
64)	2-Hexanone	13.22	58	26281	20.7489 ug/L	95
65)	1,3-Dichloropropane	13.60	76	183243	20.6445 ug/L	98
66)	Tetrachloroethene	13.72	164	129460	19.4371 ug/L	97
67)	Dibromochloromethane	13.99	129	130180	20.8066 ug/L	98
68)	1,2-Dibromoethane	14.24	107	98664	20.2690 ug/L	100
69)	1-Chlorohexane	14.32	91	216660	20.7669 ug/L	96
70)	Chlorobenzene	14.74	112	378392	18.1428 ug/L	100
71)	1,1,1,2-Tetrachloroethane	14.77	131	138567	19.4540 ug/L	99
72)	Ethylbenzene	14.77	106	227106	19.0325 ug/L	97
73)	m-,p-Xylene	14.86	106	536806	39.4979 ug/L	95
74)	o-Xylene	15.43	106	243095	18.1792 ug/L	97
75)	Styrene	15.46	104	439988	20.5142 ug/L	97
76)	Bromoform	15.95	173	75010	19.4298 ug/L	98
77)	Isopropylbenzene	15.85	105	659471	19.7400 ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.06	83	104352	18.6729 ug/L	97
81)	1,2,3-Trichloropropane	16.25	110	29772	19.0553 ug/L	83
82)	trans-1,4-Dichloro-2-Buten	16.29	53	27651	14.9941 ug/L	90
83)	n-Propylbenzene	16.36	91	815022	18.1297 ug/L	99
84)	Bromobenzene	16.49	156	167126	19.2112 ug/L	94
85)	1,3,5-Trimethylbenzene	16.54	105	618529	20.6106 ug/L	100
86)	2-Chlorotoluene	16.62	91	476214	17.3712 ug/L	91
87)	4-Chlorotoluene	16.68	91	502756	18.0044 ug/L	91
88)	a-Methylstyrene	16.95	118	324412	18.7615 ug/L	98
89)	tert-Butylbenzene	17.01	134	113373	17.3361 ug/L	99
90)	1,2,4-Trimethylbenzene	17.06	105	615334	19.9538 ug/L	98
91)	sec-Butylbenzene	17.28	105	707298	17.8309 ug/L	99
92)	p-Isopropyltoluene	17.43	119	596825	19.0341 ug/L	100
93)	1,3-Dichlorobenzene	17.63	146	324193	18.1631 ug/L	98
94)	1,4-Dichlorobenzene	17.76	146	347392	19.0054 ug/L	100
95)	n-Butylbenzene	17.96	91	628659	18.2943 ug/L	99
96)	1,2-Dichlorobenzene	18.26	146	285283	17.8350 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	19.25	75	19632	18.9216 ug/L	99
98)	1,2,4-Trichlorobenzene	20.40	180	243710	19.1856 ug/L	99
99)	Hexachlorobutadiene	20.54	225	130867	17.5081 ug/L	99
100)	Naphthalene	20.77	128	369093	19.7057 ug/L	100
101)	1,2,3-Trichlorobenzene	21.08	180	211015	19.0230 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\021815\8M403074.D Vial: 6
Acq On : 18 Feb 2015 15:25 Operator: FJB
Sample : WG512729-03 20ug/L LCS DUP 8260 Inst : HPMS8
Misc : 1,1 STD68939 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 18 15:47 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration

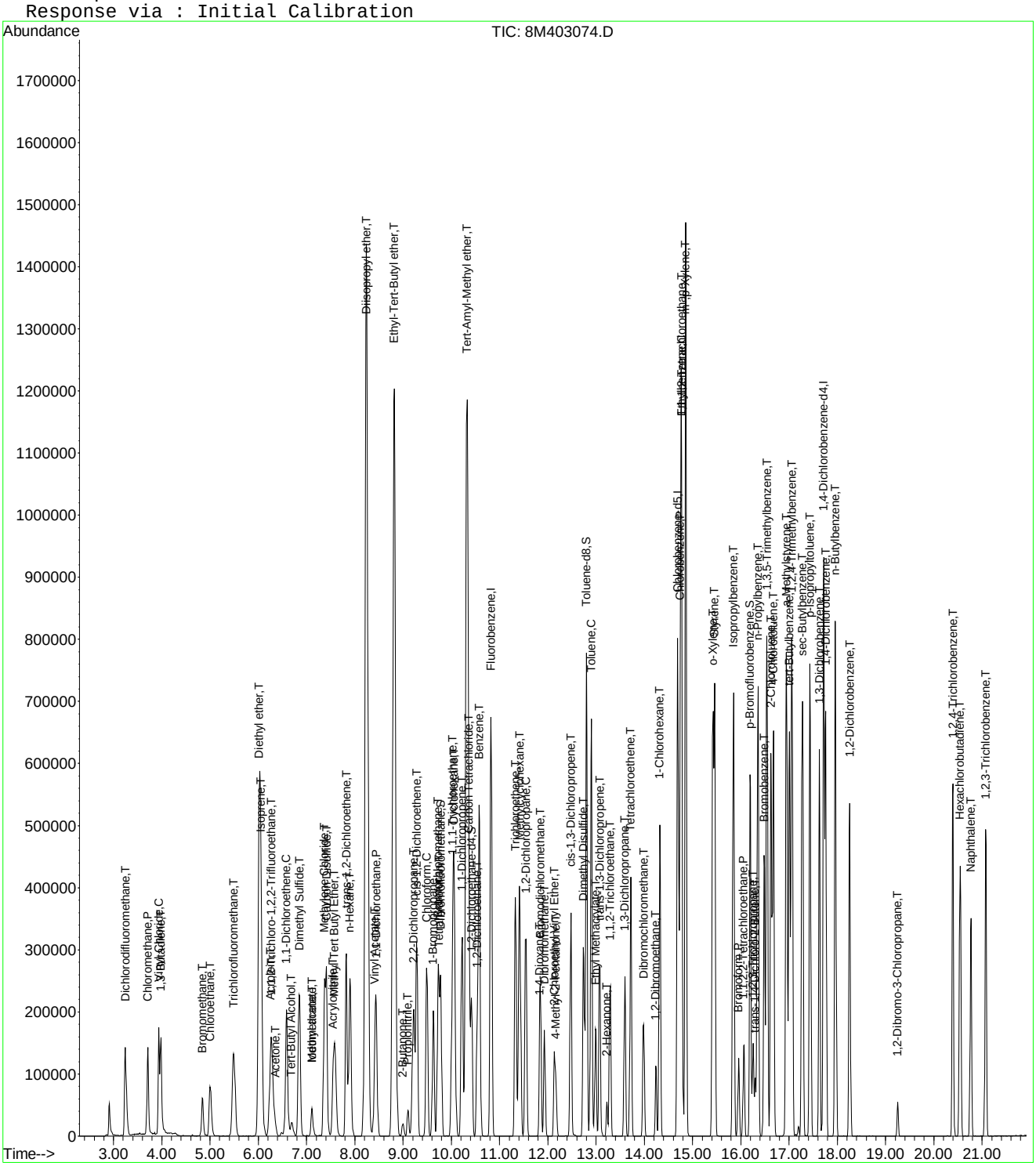

2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW27-021215	**Prep Method:**	6850	**Prep Date:**	02/18/2015 17:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG512778	**Analyst:**	JWR	**Run Date:**	02/19/2015 00:01
Collect Date:	02/12/2015 13:05	**Dilution:**	1	**File ID:**	1LM.LM28977
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW15-021215	**Prep Method:**	6850	**Prep Date:**	02/18/2015 17:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG512778	**Analyst:**	JWR	**Run Date:**	02/19/2015 00:20
Collect Date:	02/12/2015 14:10	**Dilution:**	1	**File ID:**	1LM.LM28978
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.942		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15020878-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW15FD-021215	**Prep Method:**	6850	**Prep Date:**	02/18/2015 17:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG512778	**Analyst:**	JWR	**Run Date:**	02/19/2015 00:39
Collect Date:	02/12/2015 14:10	**Dilution:**	1	**File ID:**	1LM.LM28979
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1.34		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15020878-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW20-021215	**Prep Method:**	6850	**Prep Date:**	02/18/2015 17:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG512778	**Analyst:**	JWR	**Run Date:**	02/19/2015 00:57
Collect Date:	02/12/2015 15:30	**Dilution:**	1	**File ID:**	1LM.LM28980
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.168	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW21-021215	**Prep Method:**	6850	**Prep Date:**	02/18/2015 17:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG512778	**Analyst:**	JWR	**Run Date:**	02/19/2015 01:16
Collect Date:	02/12/2015 16:35	**Dilution:**	1	**File ID:**	1LM.LM28981
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.878		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15020878-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW21MS-021215	**Prep Method:**	6850	**Prep Date:**	02/18/2015 17:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG512778	**Analyst:**	JWR	**Run Date:**	02/19/2015 01:35
Collect Date:	02/12/2015 16:35	**Dilution:**	1	**File ID:**	1LM.LM28982
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1.11		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15020878-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW21MSD-021215	**Prep Method:**	6850	**Prep Date:**	02/18/2015 17:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG512778	**Analyst:**	JWR	**Run Date:**	02/19/2015 01:54
Collect Date:	02/12/2015 16:35	**Dilution:**	1	**File ID:**	1LM.LM28983
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1.11		0.400	0.200	0.100

Certificate of Analysis

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15020878-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW17-021315	**Prep Method:**	6850	**Prep Date:**	02/18/2015 17:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG512778	**Analyst:**	JWR	**Run Date:**	02/19/2015 03:10
Collect Date:	02/13/2015 07:55	**Dilution:**	1	**File ID:**	1LM.LM28987
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-09	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW19-021315	**Prep Method:**	6850	**Prep Date:**	02/18/2015 17:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG512778	**Analyst:**	JWR	**Run Date:**	02/19/2015 03:29
Collect Date:	02/13/2015 09:05	**Dilution:**	1	**File ID:**	1LM.LM28988
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-10	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW07-021315	**Prep Method:**	6850	**Prep Date:**	02/18/2015 17:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG512778	**Analyst:**	JWR	**Run Date:**	02/19/2015 03:48
Collect Date:	02/13/2015 10:20	**Dilution:**	1	**File ID:**	1LM.LM28989
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-11	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW16-021315	**Prep Method:**	6850	**Prep Date:**	02/18/2015 17:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG512778	**Analyst:**	JWR	**Run Date:**	02/19/2015 04:07
Collect Date:	02/13/2015 11:25	**Dilution:**	1	**File ID:**	1LM.LM28990
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-12	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW26-021315	**Prep Method:**	6850	**Prep Date:**	02/18/2015 17:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG512778	**Analyst:**	JWR	**Run Date:**	02/19/2015 04:26
Collect Date:	02/13/2015 13:30	**Dilution:**	1	**File ID:**	1LM.LM28991
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-13	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW05-021315	**Prep Method:**	6850	**Prep Date:**	02/18/2015 17:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG512778	**Analyst:**	JWR	**Run Date:**	02/19/2015 04:45
Collect Date:	02/13/2015 14:30	**Dilution:**	1	**File ID:**	1LM.LM28992
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-14	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW05FD-021315	**Prep Method:**	6850	**Prep Date:**	02/18/2015 17:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG512778	**Analyst:**	JWR	**Run Date:**	02/19/2015 05:04
Collect Date:	02/13/2015 14:30	**Dilution:**	1	**File ID:**	1LM.LM28993
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-15	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW10-021315	**Prep Method:**	6850	**Prep Date:**	02/18/2015 17:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG512778	**Analyst:**	JWR	**Run Date:**	02/19/2015 05:23
Collect Date:	02/13/2015 15:45	**Dilution:**	1	**File ID:**	1LM.LM28994
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-16	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW09-021315	**Prep Method:**	6850	**Prep Date:**	02/18/2015 17:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG512778	**Analyst:**	JWR	**Run Date:**	02/19/2015 06:38
Collect Date:	02/13/2015 16:50	**Dilution:**	1	**File ID:**	1LM.LM28998
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-17	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW09MS-021315	**Prep Method:**	6850	**Prep Date:**	02/18/2015 17:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG512778	**Analyst:**	JWR	**Run Date:**	02/19/2015 06:57
Collect Date:	02/13/2015 16:50	**Dilution:**	1	**File ID:**	1LM.LM28999
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.270	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020878-18	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW09MSD-021315	**Prep Method:**	6850	**Prep Date:**	02/18/2015 17:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG512778	**Analyst:**	JWR	**Run Date:**	02/19/2015 07:16
Collect Date:	02/13/2015 16:50	**Dilution:**	1	**File ID:**	1LM.LM29000
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.253	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15020878
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1419 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG512778-01 MCT	9,980.	
WG512778-02 Blank	0.23	
WG512778-03 LCS	0.30	
L15020878-01	1,511.	
-02	1,475.	
-03	1,468.	
-04	5,410.	
-05 RS	8,120.	
-06 MS	8,150.	
-07 MSD	8,160.	
-08	1,883.	
-09	~~1,830.~~ ~~1,830~~ 1,183. JWR 02/19/15	
-10	1,120.	
-11	249.	
-12	5,080.	
-13	1,405.	
-14	1,402.	
-15	1,013.	
-16 RS	2,560.	
-17 MS	2,540.	
-18 MSD	2,540.	

Analyst: John Richards

Date/Time: 02/19/15 / 14:00

DCN#108754

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 111714_ADC.TXT
Analyst1: ADC Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 6

Maintenance Log ID: Syringe Filter Lot#: 130818254-1
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG501261

Internal STD: COA17578 Surrogate STD: NA Calibration STD STD67080 (11/17/2014)

CCV STD: STD67080 LCS STD: STD67080 MS/MSD STD: STD67080

Comments: ICAL WG501146 : Alternate Source :STD67082

Diluted samples in this analytical workgroup were ran according to sample's historical data.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM27603	WG501146-01 CCB	1	1		11/17/14 12:41
2	1LM.LM27604	WG501146-02 STD (0.1 ug/L)	1	1	STD67080	11/17/14 13:00
3	1LM.LM27605	WG501146-03 STD (0.2 ug/L)	1	1	STD67080	11/17/14 13:19
4	1LM.LM27606	WG501146-04 STD (0.5 ug/L)	1	1	STD67080	11/17/14 13:38
5	1LM.LM27607	WG501146-05 STD (1.0 ug/L)	1	1	STD67080	11/17/14 13:56
6	1LM.LM27608	WG501146-06 STD (2.0 ug/L)	1	1	STD67080	11/17/14 14:15
7	1LM.LM27609	WG501146-07 STD (5.0 ug/L)	1	1	STD67080	11/17/14 14:34
8	1LM.LM27610	WG501146-08 STD (10 ug/L)	1	1	STD67080	11/17/14 14:53
9	1LM.LM27611	WG501146-09 SSCV (1.0 ug/L)	1	1	STD67082	11/17/14 15:12
10	1LM.LM27612	WG501260-01 CCB	1	1		11/17/14 15:31
11	1LM.LM27613	WG501260-02 CCV (1.0ug/L)	1	1	STD67080	11/17/14 15:50
12	1LM.LM27614	WG501261-07 MRL (0.2ug/L)	1	1	STD67080	11/17/14 16:09
13	1LM.LM27615	WG501261-01 MCT (0.2ug/L)	1	1	STD67080	11/17/14 16:28
14	1LM.LM27616	WG501261-02 BLANK	1	1		11/17/14 16:47
15	1LM.LM27617	WG501261-03 LCS (0.2ug/L)	1	1	STD67080	11/17/14 17:06
16	1LM.LM27618	L14110479-26	1	1		11/17/14 17:25
17	1LM.LM27619	L14110648-01	1	1		11/17/14 17:44
18	1LM.LM27620	L14110438-01 100X	1	100		11/17/14 18:03
19	1LM.LM27621	L14110438-03	1	1		11/17/14 18:22
20	1LM.LM27622	L14110438-05 10X	1	10		11/17/14 18:40
21	1LM.LM27623	L14110618-01	1	1		11/17/14 18:59
22	1LM.LM27624	L14110635-01 10,000X	1	10000		11/17/14 19:18
23	1LM.LM27625	WG501260-03 CCV (1.0ug/L)	1	1	STD67080	11/17/14 19:37
24	1LM.LM27626	WG501261-08 MRL (0.2ug/L)	1	1	STD67080	11/17/14 19:56
25	1LM.LM27627	WG501260-04 CCB	1	1		11/17/14 20:15
26	1LM.LM27628	L14110626-03 RS	1	1		11/17/14 20:34
27	1LM.LM27629	L14110626-04 MS	1	1	STD67080	11/17/14 20:53
28	1LM.LM27630	L14110626-05 MSD	1	1	STD67080	11/17/14 21:12
29	1LM.LM27631	L14110626-01	1	1	STD67080	11/17/14 21:31
30	1LM.LM27632	L14110626-02	1	1	STD67080	11/17/14 21:50
31	1LM.LM27633	L14110626-06	1	1	STD67080	11/17/14 22:09
32	1LM.LM27634	WG501260-05 CCV (1.0ug/L)	1	1	STD67080	11/17/14 22:28
33	1LM.LM27635	WG501261-09 MRL (0.2ug/L)	1	1	STD67080	11/17/14 22:47

Page: 1 Approved: 19-NOV-14

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 111714_ADC.TXT

Analyst1: ADC Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 6

Maintenance Log ID: Syringe Filter Lot#: 130818254-1

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG501261

Internal STD: COA17578 Surrogate STD: NA STD67080 (11/17/2014)

CCV STD: STD67080 LCS STD: STD67080 STD67080

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM27636	WG501260-06 CCB	1	1		11/17/14 23:06

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 2 Approved: 19-NOV-14

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 021815_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 6

Maintenance Log ID: Syringe Filter Lot#: 140425254-1
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG512777 (soils) Analytical WG512778 (waters)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD67080 (11/17/2014)

CCV STD: STD67080 LCS STD: STD67080 MS/MSD STD: STD67080

Comments: The extracts for soil sample L15020223-02 (PT) and its duplicate were analyzed at a 10x dilution based on the concentration range provided within the sample preparation instructions.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM28960	WG512779-01 CCB	1	1		02/18/15 18:39
2	1LM.LM28961	WG512779-02 CCV (1.0ug/L)	1	1	STD67080	02/18/15 18:58
3	1LM.LM28962	WG512777-07 MRL (2.0ug/kg)	7	1	STD67080	02/18/15 19:17
4	1LM.LM28963	WG512777-01 MCT (2.0ug/kg)	7	1	STD67080	02/18/15 19:36
5	1LM.LM28964	WG512777-02 BLANK	7	1		02/18/15 19:55
6	1LM.LM28965	WG512777-03 LCS (2.0ug/kg)	7	1	STD67080	02/18/15 20:13
7	1LM.LM28966	WG512777-04 LCS2 (2.0ug/kg)	7	1	STD67080	02/18/15 20:32
8	1LM.LM28967	Diluent Test (NR)	7	1		02/18/15 20:51
9	1LM.LM28968	L15020223-02 REF (PT) 10x	7	10		02/18/15 21:10
10	1LM.LM28969	L15020223-02 DUP (PT) 10x	7	10		02/18/15 21:29
11	1LM.LM28970	WG512779-03 CCV (1.0ug/L)	1	1	STD67080	02/18/15 21:48
12	1LM.LM28971	WG512777-08 MRL (2.0ug/kg)	7	1	STD67080	02/18/15 22:07
13	1LM.LM28972	WG512778-10 MRL (0.2ug/L)	1	1	STD67080	02/18/15 22:26
14	1LM.LM28973	WG512779-04 CCB	1	1		02/18/15 22:45
15	1LM.LM28974	WG512778-01 MCT (0.2ug/L)	1	1	STD67080	02/18/15 23:04
16	1LM.LM28975	WG512778-02 BLANK	1	1		02/18/15 23:23
17	1LM.LM28976	WG512778-03 LCS (0.2ug/L)	1	1	STD67080	02/18/15 23:42
18	1LM.LM28977	L15020878-01	1	1		02/19/15 00:01
19	1LM.LM28978	L15020878-02	1	1		02/19/15 00:20
20	1LM.LM28979	L15020878-03	1	1		02/19/15 00:39
21	1LM.LM28980	L15020878-04	1	1		02/19/15 00:57
22	1LM.LM28981	L15020878-05 RS	1	1		02/19/15 01:16
23	1LM.LM28982	L15020878-06 MS	1	1	STD67080	02/19/15 01:35
24	1LM.LM28983	L15020878-07 MSD	1	1	STD67080	02/19/15 01:54
25	1LM.LM28984	WG512779-05 CCV (1.0ug/L)	1	1	STD67080	02/19/15 02:13
26	1LM.LM28985	WG512778-11 MRL (0.2ug/L)	1	1	STD67080	02/19/15 02:32
27	1LM.LM28986	WG512779-06 CCB	1	1		02/19/15 02:51
28	1LM.LM28987	L15020878-08	1	1		02/19/15 03:10
29	1LM.LM28988	L15020878-09	1	1		02/19/15 03:29
30	1LM.LM28989	L15020878-10	1	1		02/19/15 03:48
31	1LM.LM28990	L15020878-11	1	1		02/19/15 04:07
32	1LM.LM28991	L15020878-12	1	1		02/19/15 04:26
33	1LM.LM28992	L15020878-13	1	1		02/19/15 04:45

Page: 1 Approved: 20-FEB-15

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 021815_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 6

Maintenance Log ID: Syringe Filter Lot#: 140425254-1

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG512777 (soils) Analytical WG512778 (waters)

Internal STD: COA18071 Surrogate STD: NA STD67080 (11/17/2014)

CCV STD: STD67080 LCS STD: STD67080 STD67080

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM28993	L15020878-14	1	1		02/19/15 05:04
35	1LM.LM28994	L15020878-15	1	1		02/19/15 05:23
36	1LM.LM28995	WG512779-07 CCV (1.0ug/L)	1	1	STD67080	02/19/15 05:41
37	1LM.LM28996	WG512778-12 MRL (0.2ug/L)	1	1	STD67080	02/19/15 06:00
38	1LM.LM28997	WG512779-08 CCB	1	1		02/19/15 06:19
39	1LM.LM28998	L15020878-16 RS	1	1		02/19/15 06:38
40	1LM.LM28999	L15020878-17 MS	1	1	STD67080	02/19/15 06:57
41	1LM.LM29000	L15020878-18 MSD	1	1	STD67080	02/19/15 07:16
42	1LM.LM29001	WG512779-09 CCV (1.0ug/L)	1	1	STD67080	02/19/15 07:35
43	1LM.LM29002	WG512778-13 MRL (0.2ug/L)	1	1	STD67080	02/19/15 07:54
44	1LM.LM29003	WG512779-10 CCB	1	1		02/19/15 08:13

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 2 Approved: 20-FEB-15

Microbac Laboratories Inc.

Data Checklist

Date: 17-NOV-2014
Analyst: ADC
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG501146
Runlog ID: 64764
Analytical Workgroups: L14110438, 0479, 0618, 0626, 0635, 0648

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	ADC
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 19-NOV-2014

Secondary Reviewer: 19-NOV-2014

CHECKLIST1 - Modified 03/05/2008

Generated: NOV-19-2014 16:22:21

Microbac Laboratories Inc.

Data Checklist

Date: 18-FEB-2015
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 66423
Analytical Workgroups: L15020223-02 (PT-SOIL) L15020878 (WATERS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer:
19-FEB-2015
John Richards

Secondary Reviewer:
20-FEB-2015
Eric C. Zum

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-20-2015 11:45:10

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG512778

Login Number: L15020878

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW27-021215	01	02/12/15					02/18/2015	6.2	28		02/19/15	.3	28	
50WW15-021215	02	02/12/15					02/18/2015	6.1	28		02/19/15	.3	28	
50WW15FD-021215	03	02/12/15					02/18/2015	6.1	28		02/19/15	.3	28	
50WW20-021215	04	02/12/15					02/18/2015	6.1	28		02/19/15	.3	28	
50WW21-021215	05	02/12/15					02/18/2015	6	28		02/19/15	.3	28	
50WW21MS-021215	06	02/12/15					02/18/2015	6	28		02/19/15	.3	28	
50WW21MSD-021215	07	02/12/15					02/18/2015	6	28		02/19/15	.4	28	
50WW17-021315	08	02/13/15					02/18/2015	5.4	28		02/19/15	.4	28	
50WW19-021315	09	02/13/15					02/18/2015	5.4	28		02/19/15	.4	28	
50WW07-021315	10	02/13/15					02/18/2015	5.3	28		02/19/15	.4	28	
50WW16-021315	11	02/13/15					02/18/2015	5.3	28		02/19/15	.4	28	
50WW26-021315	12	02/13/15					02/18/2015	5.2	28		02/19/15	.5	28	
50WW05-021315	13	02/13/15					02/18/2015	5.1	28		02/19/15	.5	28	
50WW05FD-021315	14	02/13/15					02/18/2015	5.1	28		02/19/15	.5	28	
50WW10-021315	15	02/13/15					02/18/2015	5.1	28		02/19/15	.5	28	
50WW09-021315	16	02/13/15					02/18/2015	5	28		02/19/15	.5	28	
50WW09MS-021315	17	02/13/15					02/18/2015	5	28		02/19/15	.6	28	
50WW09MSD-021315	18	02/13/15					02/18/2015	5	28		02/19/15	.6	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4028930
Report generated 02/20/2015 14:25

METHOD BLANK SUMMARY

Login Number: L15020878
Blank File ID: 1LM.LM28975
Prep Date: 02/18/15 17:30
Analyzed Date: 02/18/15 23:23
Analyst: JWR

Work Group: WG512778
Blank Sample ID: WG512778-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG512778-10	1LM.LM28972	02/18/15 22:26	01
MCT	WG512778-01	1LM.LM28974	02/18/15 23:04	01
LCS	WG512778-03	1LM.LM28976	02/18/15 23:42	01
50WW27-021215	L15020878-01	1LM.LM28977	02/19/15 00:01	01
50WW15-021215	L15020878-02	1LM.LM28978	02/19/15 00:20	01
50WW15FD-021215	L15020878-03	1LM.LM28979	02/19/15 00:39	01
50WW20-021215	L15020878-04	1LM.LM28980	02/19/15 00:57	01
50WW21-021215	L15020878-05	1LM.LM28981	02/19/15 01:16	01
50WW21MS-021215	L15020878-06	1LM.LM28982	02/19/15 01:35	01
50WW21MSD-021215	L15020878-07	1LM.LM28983	02/19/15 01:54	01
QCMRL	WG512778-11	1LM.LM28985	02/19/15 02:32	01
50WW17-021315	L15020878-08	1LM.LM28987	02/19/15 03:10	01
50WW19-021315	L15020878-09	1LM.LM28988	02/19/15 03:29	01
50WW07-021315	L15020878-10	1LM.LM28989	02/19/15 03:48	01
50WW16-021315	L15020878-11	1LM.LM28990	02/19/15 04:07	01
50WW26-021315	L15020878-12	1LM.LM28991	02/19/15 04:26	01
50WW05-021315	L15020878-13	1LM.LM28992	02/19/15 04:45	01
50WW05FD-021315	L15020878-14	1LM.LM28993	02/19/15 05:04	01
50WW10-021315	L15020878-15	1LM.LM28994	02/19/15 05:23	01
QCMRL	WG512778-12	1LM.LM28996	02/19/15 06:00	01
50WW09-021315	L15020878-16	1LM.LM28998	02/19/15 06:38	01
50WW09MS-021315	L15020878-17	1LM.LM28999	02/19/15 06:57	01
50WW09MSD-021315	L15020878-18	1LM.LM29000	02/19/15 07:16	01
QCMRL	WG512778-13	1LM.LM29002	02/19/15 07:54	01

Report Name: BLANK_SUMMARY
PDF File ID: 4028931
Report generated 02/20/2015 14:25

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15020878 Prep Date: 02/18/15 17:30 Sample ID: WG512778-02
Instrument ID: LCMS1 Run Date: 02/18/15 23:23 Prep Method: 6850
File ID: 1LM.LM28975 Analyst: JWR Method: 6850
Workgroup (AAB#): WG512778 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-17-NOV-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4028932
20-FEB-2015 14:25

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15020878 Run Date: 02/18/2015 Sample ID: WG512778-03
Instrument ID: LCMS1 Run Time: 23:42 Prep Method: 6850
File ID: 1LM.LM28976 Analyst: JWR Method: 6850
Workgroup (AAB#): WG512778 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD67080 Cal ID: LCMS1-17-NOV-14

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	0.200	0.187	93.5	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4028933
Report generated: 02/20/2015 14:25

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L15020878 Cal ID: LCMS1- 17-NOV-14 Worknum: WG512778
Instrument ID: LCMS1 Contract #: Prep Method: 6850
Parent ID: L15020878-05 File ID: 1LM.LM28981 Dil: 1 Method: 6850
Sample ID: L15020878-06 MS File ID: 1LM.LM28982 Dil: 1 Matrix: Water
Sample ID: L15020878-07 MSD File ID: 1LM.LM28983 Dil: 1 Units: ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Perchlorate	0.878	0.200	1.11	116	0.200	1.11	116	0	80 - 120	15	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4028934
Report generated 02/20/2015 14:25

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L15020878 Cal ID: LCMS1- 17-NOV-14 Worknum: WG512778
Instrument ID: LCMS1 Contract #: Prep Method: 6850
Parent ID: L15020878-16 File ID: 1LM.LM28998 Dil: 1 Method: 6850
Sample ID: L15020878-17 MS File ID: 1LM.LM28999 Dil: 1 Matrix: Water
Sample ID: L15020878-18 MSD File ID: 1LM.LM29000 Dil: 1 Units: ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Perchlorate	0.0476	0.200	0.270	111	0.200	0.253	103	6.50	80 - 120	15	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4028934
Report generated 02/20/2015 14:25

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L15020878
Analytical Method: 6850
ICAL Workgroup: WG501146

Instrument ID: LCMS1
Initial Calibration Date: 17-NOV-14 14:53
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.387	10.9	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4032054
Report generated 02/20/2015 14:26

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15020878

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 17-NOV-14 14:53

Column ID: F

Analyte	WG501146-02			WG501146-03			WG501146-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	11100.0000	1.719	0.200	17300.0000	1.339	0.500	44100.0000	1.338

INT_CAL - Modified 03/06/2008
PDF File ID: 4032054
Report generated 02/20/2015 14:26

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15020878

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 17-NOV-14 14:53

Column ID: F

Analyte	WG501146-05			WG501146-06			WG501146-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	84400.0000	1.290	2.00	173000.000	1.337	5.00	420000.000	1.337

INT_CAL - Modified 03/06/2008
PDF File ID: 4032054
Report generated 02/20/2015 14:26

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15020878

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 17-NOV-14 14:53

Column ID: F

Analyte	WG501146-08		
	CONC	RESP	RF
Perchlorate	10.0	841000.000	1.347

INT_CAL - Modified 03/06/2008

PDF File ID: 4032054

Report generated 02/20/2015 14:26

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15020878 Run Date: 11/17/2014 Sample ID: WG501146-09
Instrument ID: LCMS1 Run Time: 15:12 Method: 6850
File ID: 1LM.LM27611 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG501146 Cal ID: LCMS1 - 17-NOV-14

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.36	1.00	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4032055
Report generated 02/20/2015 14:26

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15020878
Run Date: 02/18/2015
Sample ID: WG512779-04
Instrument ID: LCMS1
Run Time: 22:45
Method: 6850
File ID: 1LM.LM28973
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG512778
Cal ID: LCMS1 - 17-NOV-14
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4028937
Report generated 02/20/2015 14:26

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15020878
Run Date: 02/19/2015
Sample ID: WG512779-06
Instrument ID: LCMS1
Run Time: 02:51
Method: 6850
File ID: 1LM.LM28986
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG512778
Cal ID: LCMS1 - 17-NOV-14
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4028937
Report generated 02/20/2015 14:26

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15020878
Run Date: 02/19/2015
Sample ID: WG512779-08
Instrument ID: LCMS1
Run Time: 06:19
Method: 6850
File ID: 1LM.LM28997
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG512778
Cal ID: LCMS1 - 17-NOV-14
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4028937
Report generated 02/20/2015 14:26

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15020878
Run Date: 02/19/2015
Sample ID: WG512779-10
Instrument ID: LCMS1
Run Time: 08:13
Method: 6850
File ID: 1LM.LM29003
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG512778
Cal ID: LCMS1 - 17-NOV-14
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4028937
Report generated 02/20/2015 14:26

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15020878 Run Date: 02/18/2015 Sample ID: WG512779-03
Instrument ID: LCMS1 Run Time: 21:48 Method: 6850
File ID: 1LM.LM28970 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG512778 Cal ID: LCMS1 - 17-NOV-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.41	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4028936
Report generated 02/20/2015 14:26

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15020878 Run Date: 02/19/2015 Sample ID: WG512779-05
Instrument ID: LCMS1 Run Time: 02:13 Method: 6850
File ID: 1LM.LM28984 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG512778 Cal ID: LCMS1 - 17-NOV-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.37	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4028936
Report generated 02/20/2015 14:26

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15020878 Run Date: 02/19/2015 Sample ID: WG512779-07
Instrument ID: LCMS1 Run Time: 05:41 Method: 6850
File ID: 1LM.LM28995 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG512778 Cal ID: LCMS1 - 17-NOV-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.978	ug/L	1.32	2.20	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4028936
Report generated 02/20/2015 14:26

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15020878 Run Date: 02/19/2015 Sample ID: WG512779-09
Instrument ID: LCMS1 Run Time: 07:35 Method: 6850
File ID: 1LM.LM29001 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG512778 Cal ID: LCMS1 - 17-NOV-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.37	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4028936
Report generated 02/20/2015 14:26

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15020878 Run Date: 02/18/2015 Sample ID: WG512778-10

Instrument ID: LCMS1 Run Time: 22:26 Prep Method: 6850

File ID: 1LM.LM28972 Analyst: JWR Method: 6850

Workgroup (AAB#): WG512778 Matrix: Water Units: ug/L

Contract #: Cal ID: LCMS1-17-NOV-14

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.205	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4028935
Report generated 02/20/2015 14:26

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15020878 Run Date: 02/19/2015 Sample ID: WG512778-11
Instrument ID: LCMS1 Run Time: 02:32 Prep Method: 6850
File ID: 1LM.LM28985 Analyst: JWR Method: 6850
Workgroup (AAB#): WG512778 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-17-NOV-14

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.191	95.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4028935
Report generated 02/20/2015 14:26

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15020878 Run Date: 02/19/2015 Sample ID: WG512778-12
Instrument ID: LCMS1 Run Time: 06:00 Prep Method: 6850
File ID: 1LM.LM28996 Analyst: JWR Method: 6850
Workgroup (AAB#): WG512778 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-17-NOV-14

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.192	96.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4028935
Report generated 02/20/2015 14:26

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15020878 Run Date: 02/19/2015 Sample ID: WG512778-13
Instrument ID: LCMS1 Run Time: 07:54 Prep Method: 6850
File ID: 1LM.LM29002 Analyst: JWR Method: 6850
Workgroup (AAB#): WG512778 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-17-NOV-14

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.196	98.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4028935
Report generated 02/20/2015 14:26

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L15020878
Instrument ID: LCMS1
Workgroup (AAB#): WG512778

ICAL CCV Number: WG501146-05
CAL ID: LCMS1-17-NOV-14
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG501146	NA	NA	321000
Upper Limit	NA	NA	481500
Lower Limit	NA	NA	160500
L15020878-01	1.00	01	309000
L15020878-02	1.00	01	311000
L15020878-03	1.00	01	302000
L15020878-04	1.00	01	313000
L15020878-05	1.00	01	307000
L15020878-06	1.00	01	306000
L15020878-07	1.00	01	308000
L15020878-08	1.00	01	310000
L15020878-09	1.00	01	309000
L15020878-10	1.00	01	309000
L15020878-11	1.00	01	295000
L15020878-12	1.00	01	317000
L15020878-13	1.00	01	310000
L15020878-14	1.00	01	312000
L15020878-15	1.00	01	301000
L15020878-16	1.00	01	314000
L15020878-17	1.00	01	312000
L15020878-18	1.00	01	307000
WG512778-02	1.00	01	313000
WG512778-03	1.00	01	308000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4028938
Report generated 02/20/2015 14:26

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020878	**Prep Method:**	6850	**Samplenum:**	L15020878-01
Instrument:	LCMS1	**Prep Date:**	02/18/2015 17:30	**File ID:**	1LM.LM28977
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG512778	**Analysis Date:**	02/19/2015 00:01	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	5840	2130	2.74	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020878	**Prep Method:**	6850	**Samplenum:**	L15020878-02
Instrument:	LCMS1	**Prep Date:**	02/18/2015 17:30	**File ID:**	1LM.LM28978
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG512778	**Analysis Date:**	02/19/2015 00:20	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	79500	27300	2.91	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020878	**Prep Method:**	6850	**Samplenum:**	L15020878-03
Instrument:	LCMS1	**Prep Date:**	02/18/2015 17:30	**File ID:**	1LM.LM28979
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG512778	**Analysis Date:**	02/19/2015 00:39	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	109000	36500	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020878	**Prep Method:**	6850	**Samplenum:**	L15020878-04
Instrument:	LCMS1	**Prep Date:**	02/18/2015 17:30	**File ID:**	1LM.LM28980
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG512778	**Analysis Date:**	02/19/2015 00:57	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	15200	4940	3.08	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020878	**Prep Method:**	6850	**Samplenum:**	L15020878-05
Instrument:	LCMS1	**Prep Date:**	02/18/2015 17:30	**File ID:**	1LM.LM28981
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG512778	**Analysis Date:**	02/19/2015 01:16	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	73100	24800	2.95	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020878	**Prep Method:**	6850	**Samplenum:**	L15020878-06
Instrument:	LCMS1	**Prep Date:**	02/18/2015 17:30	**File ID:**	1LM.LM28982
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG512778	**Analysis Date:**	02/19/2015 01:35	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	91700	29600	3.10	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020878	**Prep Method:**	6850	**Samplenum:**	L15020878-07
Instrument:	LCMS1	**Prep Date:**	02/18/2015 17:30	**File ID:**	1LM.LM28983
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG512778	**Analysis Date:**	02/19/2015 01:54	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	92400	30600	3.02	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020878	**Prep Method:**	6850	**Samplenum:**	L15020878-08
Instrument:	LCMS1	**Prep Date:**	02/18/2015 17:30	**File ID:**	1LM.LM28987
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG512778	**Analysis Date:**	02/19/2015 03:10	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	2170	573	3.79	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020878	**Prep Method:**	6850	**Samplenum:**	L15020878-09
Instrument:	LCMS1	**Prep Date:**	02/18/2015 17:30	**File ID:**	1LM.LM28988
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG512778	**Analysis Date:**	02/19/2015 03:29	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1500	724	2.07	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020878	**Prep Method:**	6850	**Samplenum:**	L15020878-10
Instrument:	LCMS1	**Prep Date:**	02/18/2015 17:30	**File ID:**	1LM.LM28989
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG512778	**Analysis Date:**	02/19/2015 03:48	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1230	504	2.44	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020878	**Prep Method:**	6850	**Samplenum:**	L15020878-11
Instrument:	LCMS1	**Prep Date:**	02/18/2015 17:30	**File ID:**	1LM.LM28990
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG512778	**Analysis Date:**	02/19/2015 04:07	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	955	680	1.40	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020878	**Prep Method:**	6850	**Samplenum:**	L15020878-12
Instrument:	LCMS1	**Prep Date:**	02/18/2015 17:30	**File ID:**	1LM.LM28991
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG512778	**Analysis Date:**	02/19/2015 04:26	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	3870	1450	2.67	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020878	**Prep Method:**	6850	**Samplenum:**	L15020878-13
Instrument:	LCMS1	**Prep Date:**	02/18/2015 17:30	**File ID:**	1LM.LM28992
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG512778	**Analysis Date:**	02/19/2015 04:45	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	873	547	1.60	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020878	**Prep Method:**	6850	**Samplenum:**	L15020878-14
Instrument:	LCMS1	**Prep Date:**	02/18/2015 17:30	**File ID:**	1LM.LM28993
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG512778	**Analysis Date:**	02/19/2015 05:04	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	911	522	1.75	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020878	**Prep Method:**	6850	**Samplenum:**	L15020878-15
Instrument:	LCMS1	**Prep Date:**	02/18/2015 17:30	**File ID:**	1LM.LM28994
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG512778	**Analysis Date:**	02/19/2015 05:23	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	3530	1320	2.67	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020878	**Prep Method:**	6850	**Samplenum:**	L15020878-16
Instrument:	LCMS1	**Prep Date:**	02/18/2015 17:30	**File ID:**	1LM.LM28998
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG512778	**Analysis Date:**	02/19/2015 06:38	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	5210	1410	3.70	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020878	**Prep Method:**	6850	**Samplenum:**	L15020878-17
Instrument:	LCMS1	**Prep Date:**	02/18/2015 17:30	**File ID:**	1LM.LM28999
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG512778	**Analysis Date:**	02/19/2015 06:57	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	23700	7470	3.17	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020878	**Prep Method:**	6850	**Samplenum:**	L15020878-18
Instrument:	LCMS1	**Prep Date:**	02/18/2015 17:30	**File ID:**	1LM.LM29000
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG512778	**Analysis Date:**	02/19/2015 07:16	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	21900	7510	2.92	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020878	**Prep Method:**		**Samplenum:**	WG501146-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM27604
Analyst:	ADC	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG512778	**Analysis Date:**	11/17/2014 13:00	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	11100	3370	3.29	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020878	**Prep Method:**		**Samplenum:**	WG501146-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM27605
Analyst:	ADC	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG512778	**Analysis Date:**	11/17/2014 13:19	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17300	5740	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020878	**Prep Method:**		**Samplenum:**	WG501146-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM27606
Analyst:	ADC	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG512778	**Analysis Date:**	11/17/2014 13:38	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	44100	14600	3.02	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020878	**Prep Method:**		**Samplenum:**	WG501146-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM27607
Analyst:	ADC	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG512778	**Analysis Date:**	11/17/2014 13:56	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	84400	29400	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020878	**Prep Method:**		**Samplenum:**	WG501146-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM27608
Analyst:	ADC	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG512778	**Analysis Date:**	11/17/2014 14:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	173000	54700	3.16	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020878	**Prep Method:**		**Samplenum:**	WG501146-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM27609
Analyst:	ADC	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG512778	**Analysis Date:**	11/17/2014 14:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	420000	140000	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020878	**Prep Method:**		**Samplenum:**	WG501146-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM27610
Analyst:	ADC	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG512778	**Analysis Date:**	11/17/2014 14:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	841000	276000	3.05	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020878	**Prep Method:**		**Samplenum:**	WG501146-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM27611
Analyst:	ADC	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG512778	**Analysis Date:**	11/17/2014 15:12	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	88800	29400	3.02	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020878	**Prep Method:**	6850	**Samplenum:**	WG512778-01
Instrument:	LCMS1	**Prep Date:**	02/18/2015 17:30	**File ID:**	1LM.LM28974
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG512778	**Analysis Date:**	02/18/2015 23:04	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	16100	5630	2.86	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020878	**Prep Method:**	6850	**Samplenum:**	WG512778-02
Instrument:	LCMS1	**Prep Date:**	02/18/2015 17:30	**File ID:**	1LM.LM28975
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG512778	**Analysis Date:**	02/18/2015 23:23	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020878	**Prep Method:**	6850	**Samplenum:**	WG512778-03
Instrument:	LCMS1	**Prep Date:**	02/18/2015 17:30	**File ID:**	1LM.LM28976
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG512778	**Analysis Date:**	02/18/2015 23:42	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	16600	6060	2.74	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020878	**Prep Method:**	6850	**Samplenum:**	WG512778-10
Instrument:	LCMS1	**Prep Date:**	02/18/2015 17:30	**File ID:**	1LM.LM28972
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG512778	**Analysis Date:**	02/18/2015 22:26	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	18300	5870	3.12	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020878	**Prep Method:**	6850	**Samplenum:**	WG512778-11
Instrument:	LCMS1	**Prep Date:**	02/18/2015 17:30	**File ID:**	1LM.LM28985
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG512778	**Analysis Date:**	02/19/2015 02:32	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17300	5690	3.04	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020878	**Prep Method:**	6850	**Samplenum:**	WG512778-12
Instrument:	LCMS1	**Prep Date:**	02/18/2015 17:30	**File ID:**	1LM.LM28996
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG512778	**Analysis Date:**	02/19/2015 06:00	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17300	6030	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020878	**Prep Method:**	6850	**Samplenum:**	WG512778-13
Instrument:	LCMS1	**Prep Date:**	02/18/2015 17:30	**File ID:**	1LM.LM29002
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG512778	**Analysis Date:**	02/19/2015 07:54	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17300	5410	3.20	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020878	**Prep Method:**		**Samplenum:**	WG512779-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM28970
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG512778	**Analysis Date:**	02/18/2015 21:48	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	88600	29600	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020878	**Prep Method:**		**Samplenum:**	WG512779-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM28973
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG512778	**Analysis Date:**	02/18/2015 22:45	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020878	**Prep Method:**		**Samplenum:**	WG512779-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM28984
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG512778	**Analysis Date:**	02/19/2015 02:13	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	88400	29900	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020878	**Prep Method:**		**Samplenum:**	WG512779-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM28986
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG512778	**Analysis Date:**	02/19/2015 02:51	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	524	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020878	**Prep Method:**		**Samplenum:**	WG512779-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM28995
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG512778	**Analysis Date:**	02/19/2015 05:41	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	86300	30900	2.79	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020878	**Prep Method:**		**Samplenum:**	WG512779-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM28997
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG512778	**Analysis Date:**	02/19/2015 06:19	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	569	348	1.64	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020878	**Prep Method:**		**Samplenum:**	WG512779-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29001
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG512778	**Analysis Date:**	02/19/2015 07:35	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	89000	30400	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020878	**Prep Method:**		**Samplenum:**	WG512779-10
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29003
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG512778	**Analysis Date:**	02/19/2015 08:13	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	305	0.000	0.000	2.3	3.8	*

2.2.1.3 Sample Data

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Data File	LM28977.wiff	**Result Table**	021815_JWR.rdb
Acquisition Date	2/19/2015 12:01:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15020878-01	**Injection Vial**	14.00
Data File	LM28977.wiff	**Injection Volume**	10.00
Acquisition Date	2/19/2015 12:01:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	021815_JWR.rdb
Sample ID	L15020878-01	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.090e+05	9.42	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.840e+03	9.43	N/A	0.0563
Perchlorate conf	2.130e+03	9.40	N/A	0.0674

O18LP (Internal Standard)

RT (Exp. RT): 9.42(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

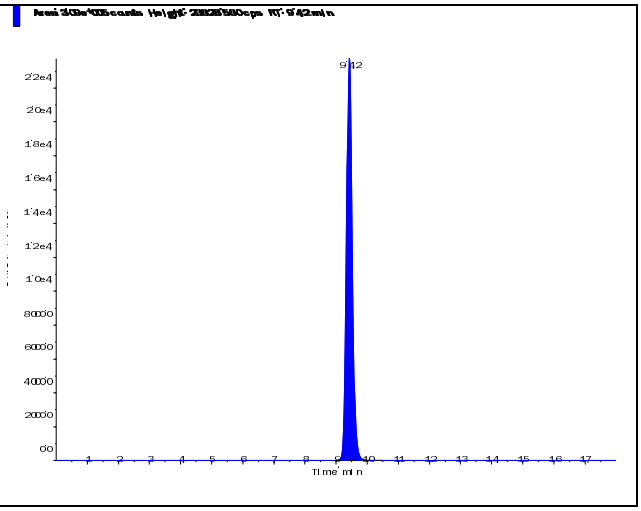

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.43 (10.30) min
Calculated conc:	0.0563 ng/ml
Area Ratio:	0.019
Sample Type:	(Unknown)

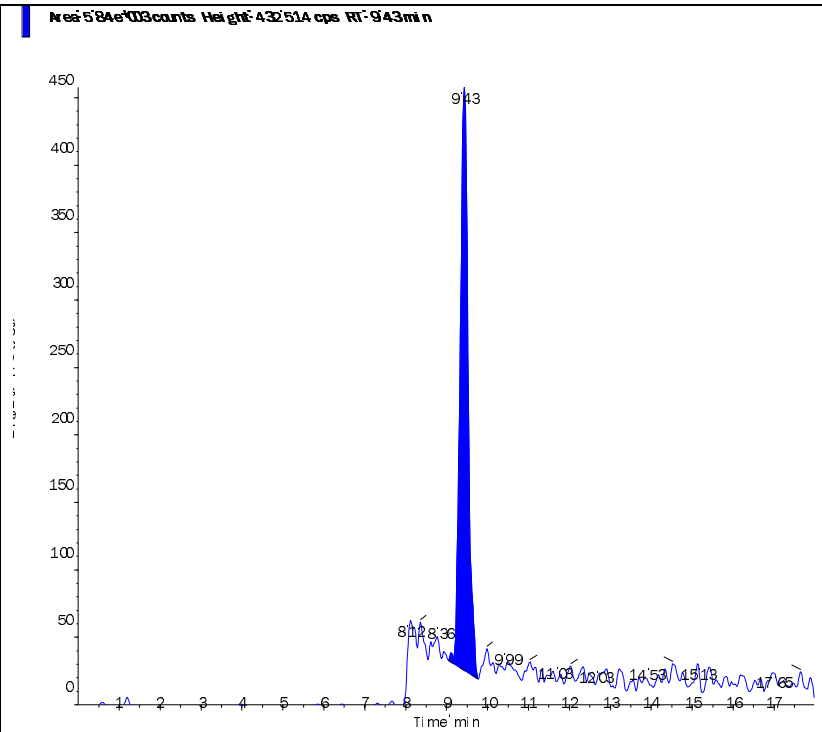

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.40 (10.30) min
Calculated conc:	0.0674 ng/ml
Area Ratio:	0.007
Sample Type:	(Unknown)

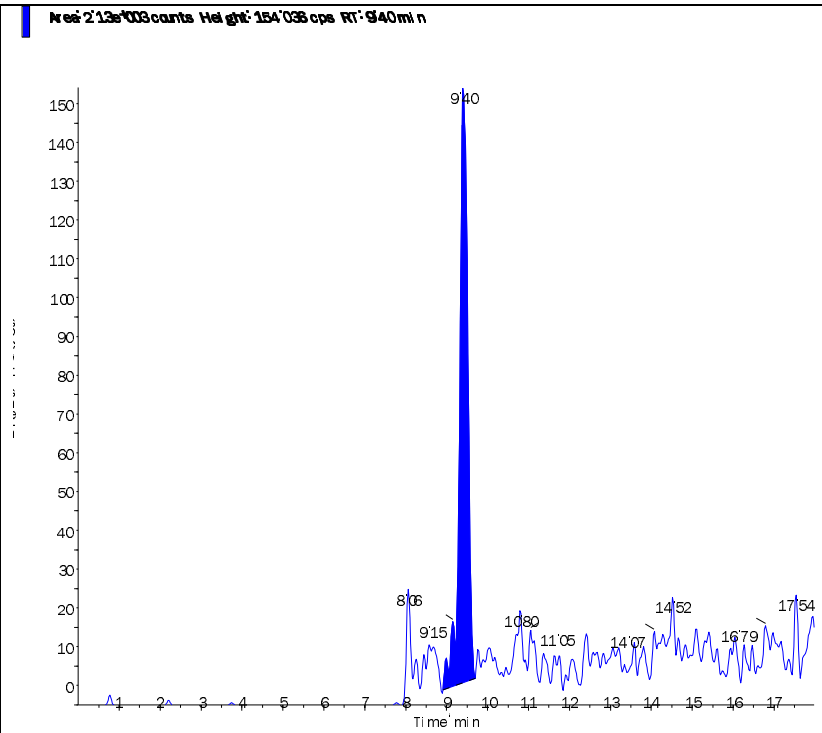

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Data File	LM28978.wiff	**Result Table**	021815_JWR.rdb
Acquisition Date	2/19/2015 12:20:04 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15020878-02	**Injection Vial**	15.00
Data File	LM28978.wiff	**Injection Volume**	10.00
Acquisition Date	2/19/2015 12:20:04 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	021815_JWR.rdb
Sample ID	L15020878-02	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.110e+05	9.44	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.950e+04	9.45	N/A	0.942
Perchlorate conf	2.730e+04	9.44	N/A	0.986

O18LP (Internal Standard)

RT (Exp. RT): 9.44(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

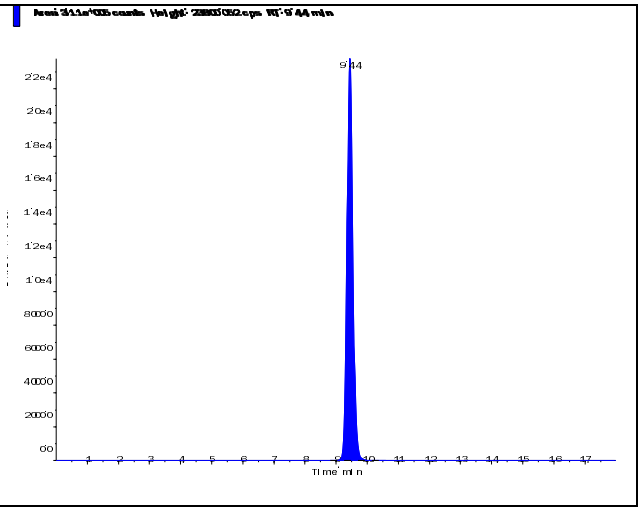

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.45 (10.30) min
Calculated conc:	0.942 ng/ml
Area Ratio:	0.255
Sample Type:	(Unknown)

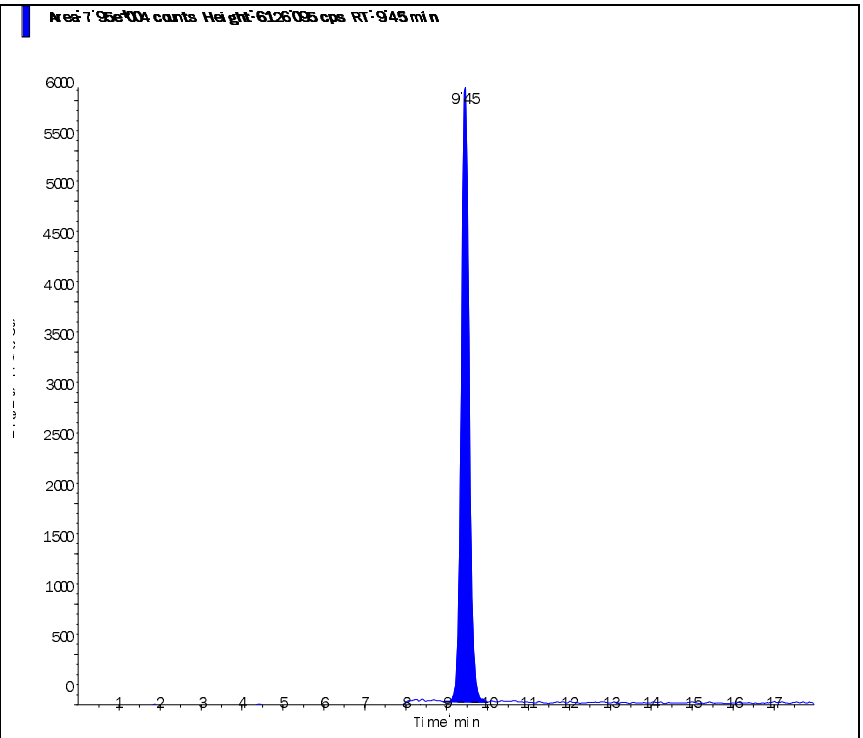

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.44 (10.30) min
Calculated conc:	0.986 ng/ml
Area Ratio:	0.088
Sample Type:	(Unknown)

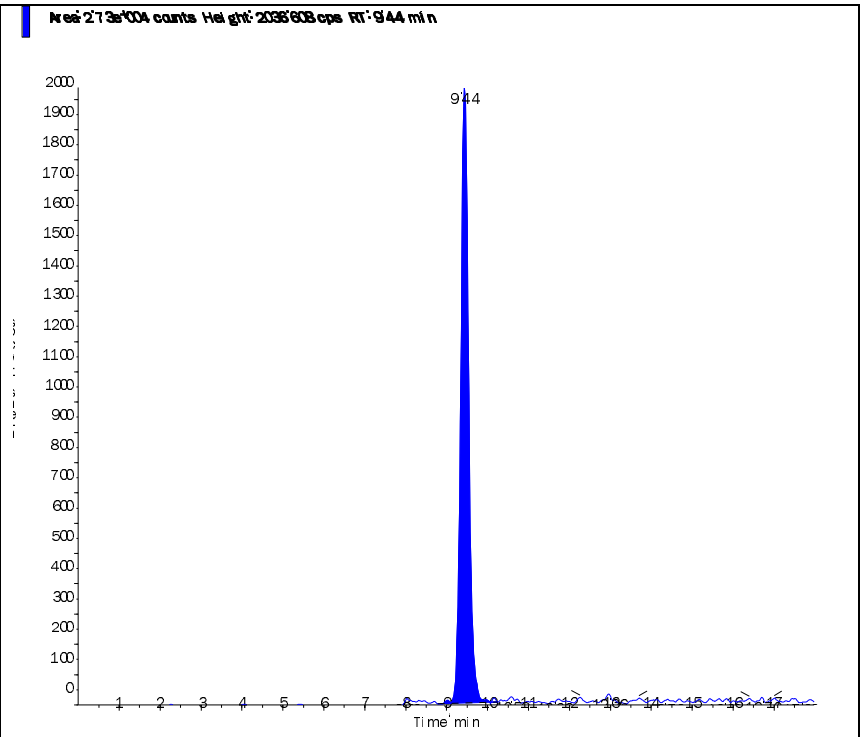

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Data File	LM28979.wiff	**Result Table**	021815_JWR.rdb
Acquisition Date	2/19/2015 12:39:01 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15020878-03	**Injection Vial**	16.00
Data File	LM28979.wiff	**Injection Volume**	10.00
Acquisition Date	2/19/2015 12:39:01 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	021815_JWR.rdb
Sample ID	L15020878-03	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.020e+05	9.43	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.090e+05	9.45	N/A	1.34
Perchlorate conf	3.650e+04	9.44	N/A	1.36

O18LP (Internal Standard)

RT (Exp. RT): 9.43(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

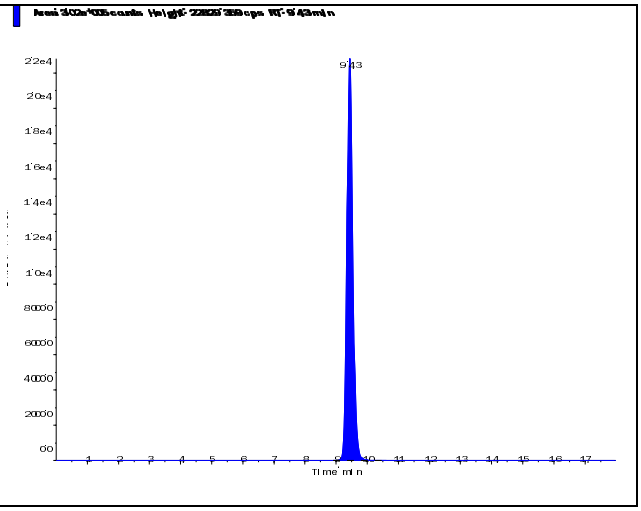

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.45 (10.30) min
Calculated conc:	1.34 ng/ml
Area Ratio:	0.362
Sample Type:	(Unknown)

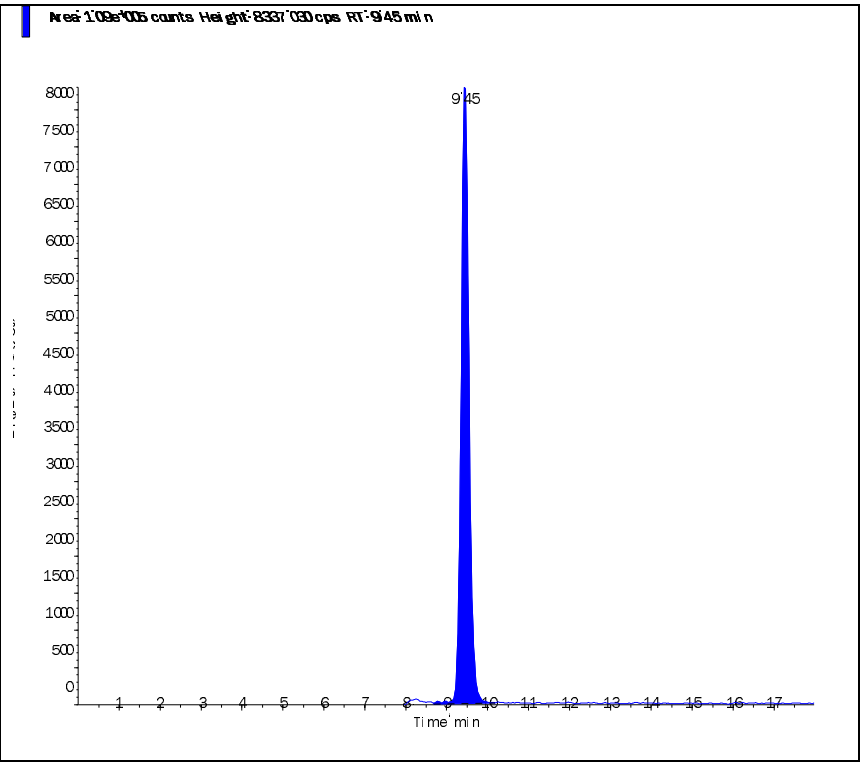

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.44 (10.30) min
Calculated conc:	1.36 ng/ml
Area Ratio:	0.121
Sample Type:	(Unknown)

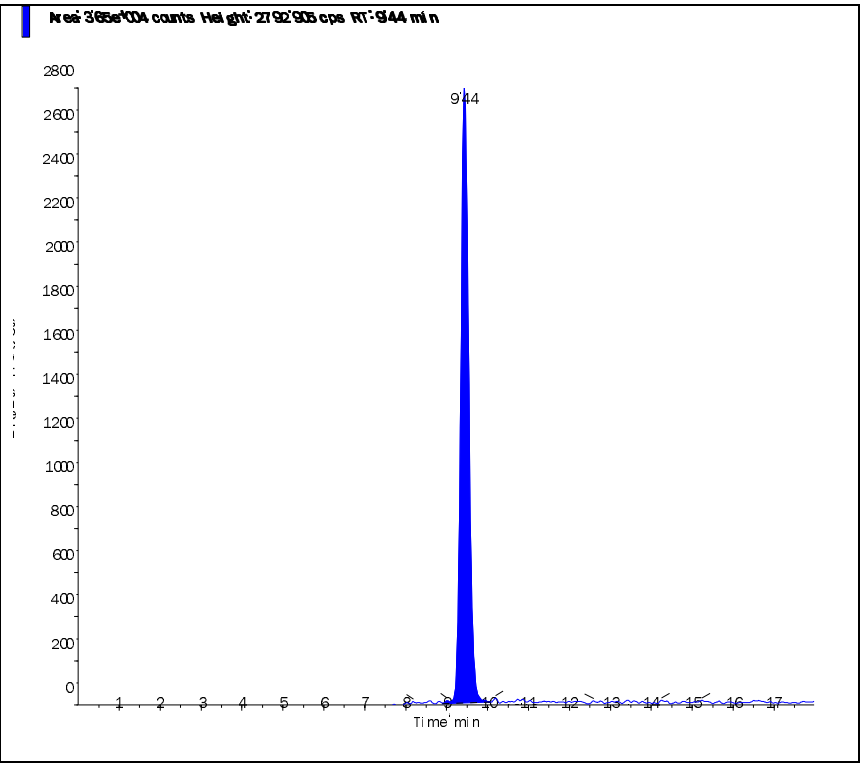

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Data File	LM28980.wiff	**Result Table**	021815_JWR.rdb
Acquisition Date	2/19/2015 12:57:57 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15020878-04	**Injection Vial**	17.00
Data File	LM28980.wiff	**Injection Volume**	10.00
Acquisition Date	2/19/2015 12:57:57 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	021815_JWR.rdb
Sample ID	L15020878-04	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.130e+05	9.37	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.520e+04	9.38	N/A	0.168
Perchlorate conf	4.940e+03	9.38	N/A	0.168

O18LP (Internal Standard)

RT (Exp. RT): 9.37(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

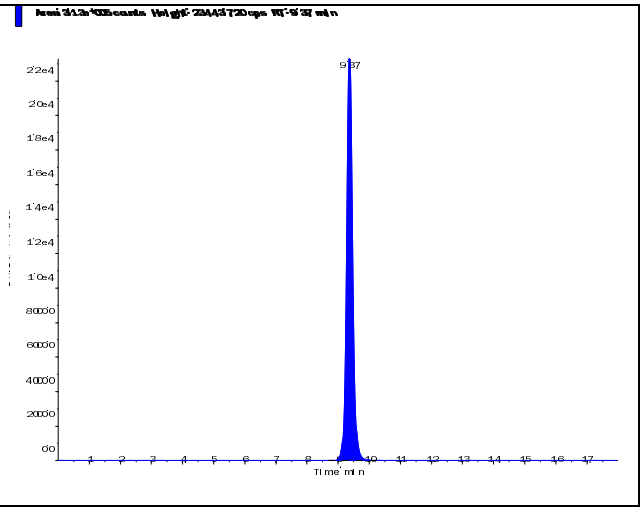

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Printed: 2/19/2015 11:08 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.38 (10.30) min Calculated conc: 0.168 ng/ml Area Ratio: 0.049 Sample Type: (Unknown)	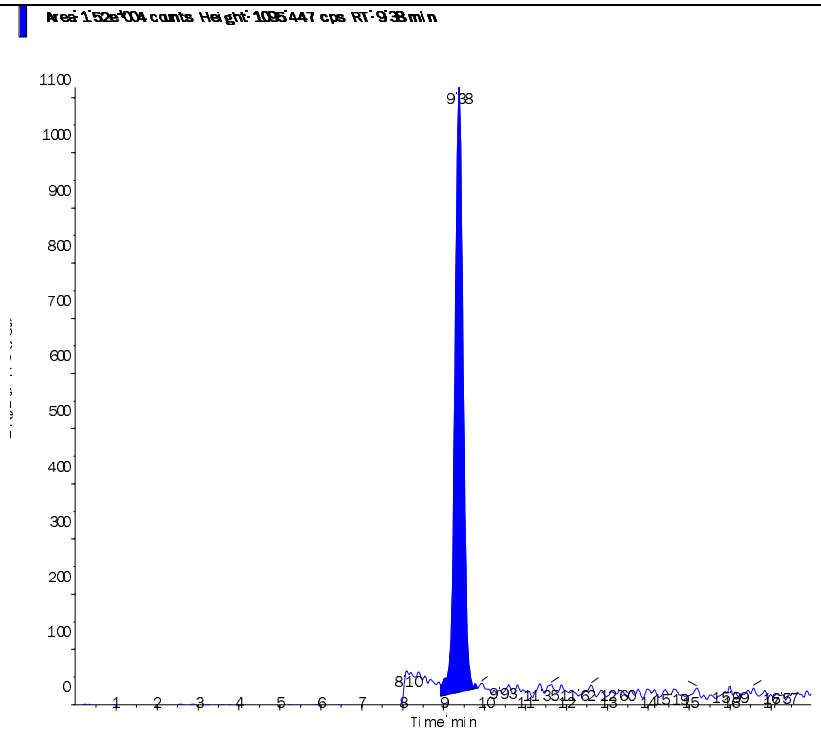
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.38 (10.30) min Calculated conc: 0.168 ng/ml Area Ratio: 0.016 Sample Type: (Unknown)	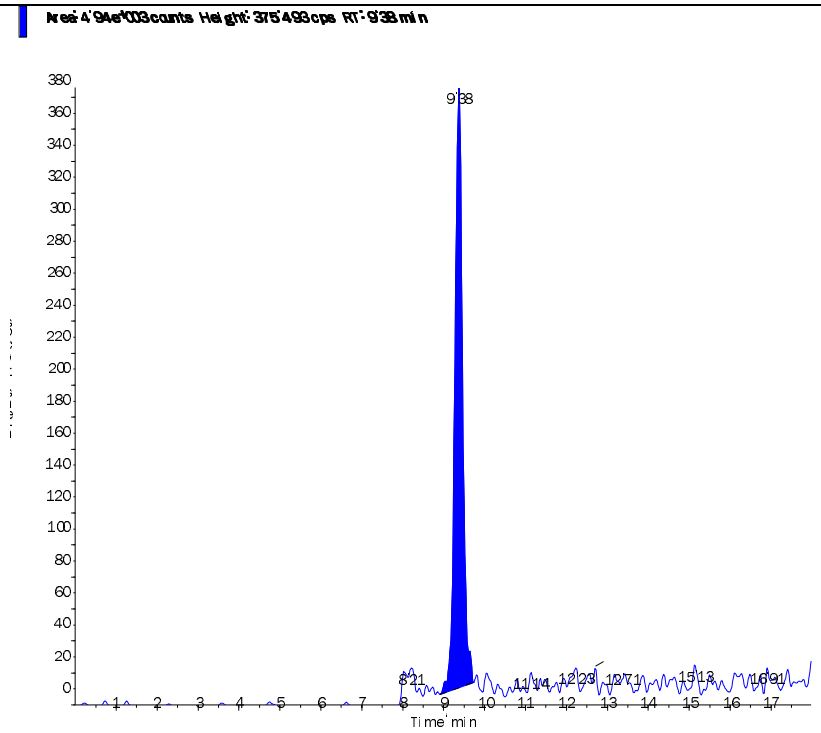

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Printed: 2/19/2015 11:08 AM

Data File	LM28981.wiff	**Result Table**	021815_JWR.rdb
Acquisition Date	2/19/2015 1:16:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15020878-05 RS	**Injection Vial**	18.00
Data File	LM28981.wiff	**Injection Volume**	10.00
Acquisition Date	2/19/2015 1:16:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	021815_JWR.rdb
Sample ID	WG512778-04	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.070e+05	9.34	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.310e+04	9.35	N/A	0.878
Perchlorate conf	2.480e+04	9.34	N/A	0.906

O18LP (Internal Standard)

RT (Exp. RT): 9.34(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

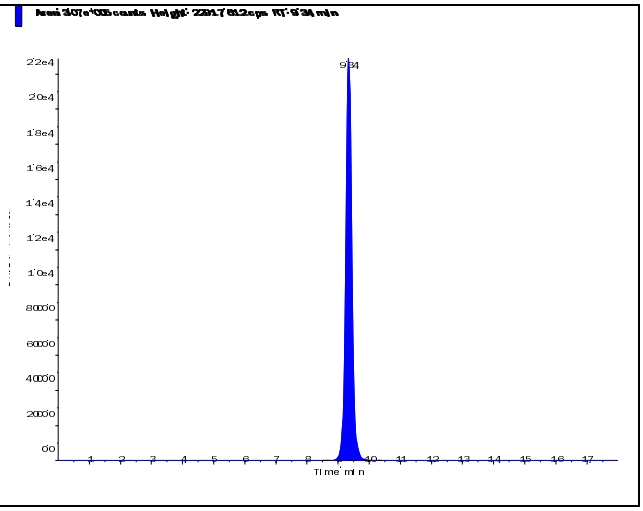

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.35 (10.30) min
Calculated conc:	0.878 ng/ml
Area Ratio:	0.238
Sample Type:	(Unknown)

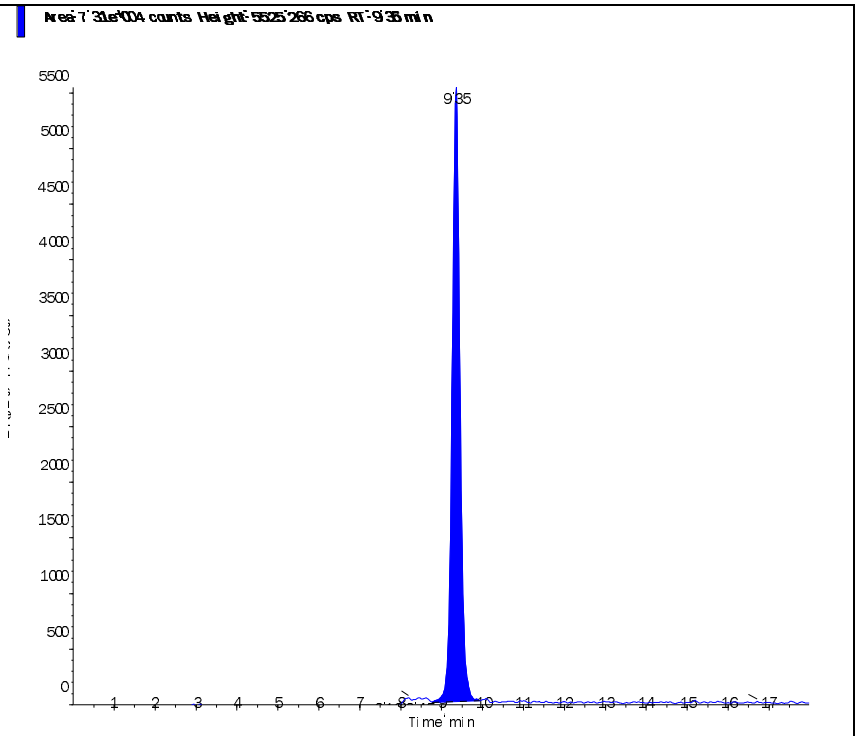

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.34 (10.30) min
Calculated conc:	0.906 ng/ml
Area Ratio:	0.081
Sample Type:	(Unknown)

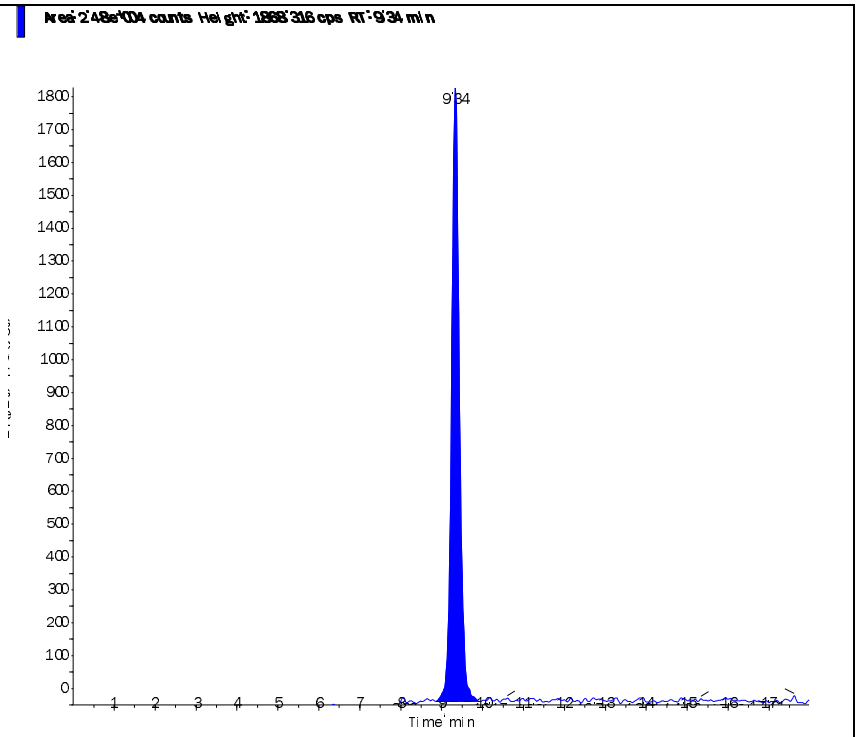

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Data File	LM28982.wiff	**Result Table**	021815_JWR.rdb
Acquisition Date	2/19/2015 1:35:51 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15020878-06 MS	**Injection Vial**	19.00
Data File	LM28982.wiff	**Injection Volume**	10.00
Acquisition Date	2/19/2015 1:35:51 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	021815_JWR.rdb
Sample ID	WG512778-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.060e+05	9.37	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	9.170e+04	9.38	N/A	1.11
Perchlorate conf	2.960e+04	9.36	N/A	1.09

O18LP (Internal Standard)

RT (Exp. RT): 9.37(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

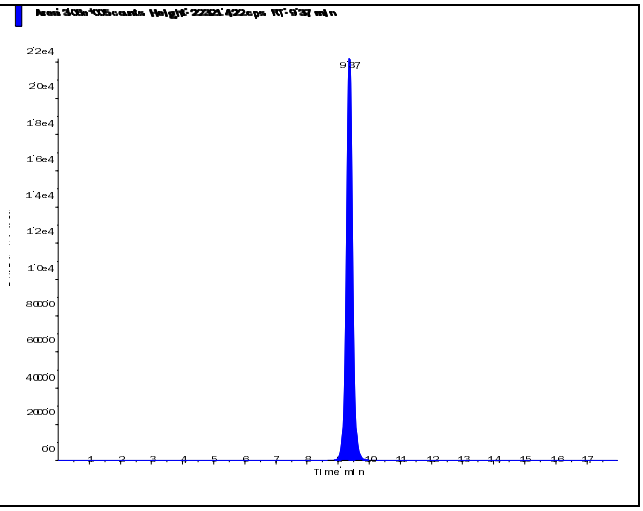

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.38 (10.30) min Calculated conc: 1.11 ng/ml Area Ratio: 0.30 Sample Type: (Unknown)	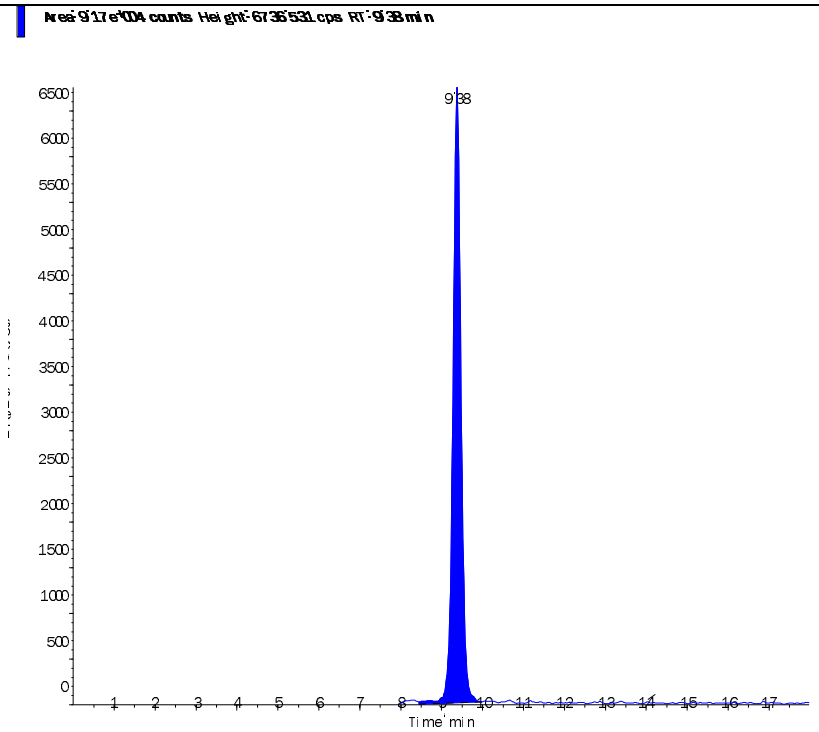
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.36 (10.30) min Calculated conc: 1.09 ng/ml Area Ratio: 0.097 Sample Type: (Unknown)	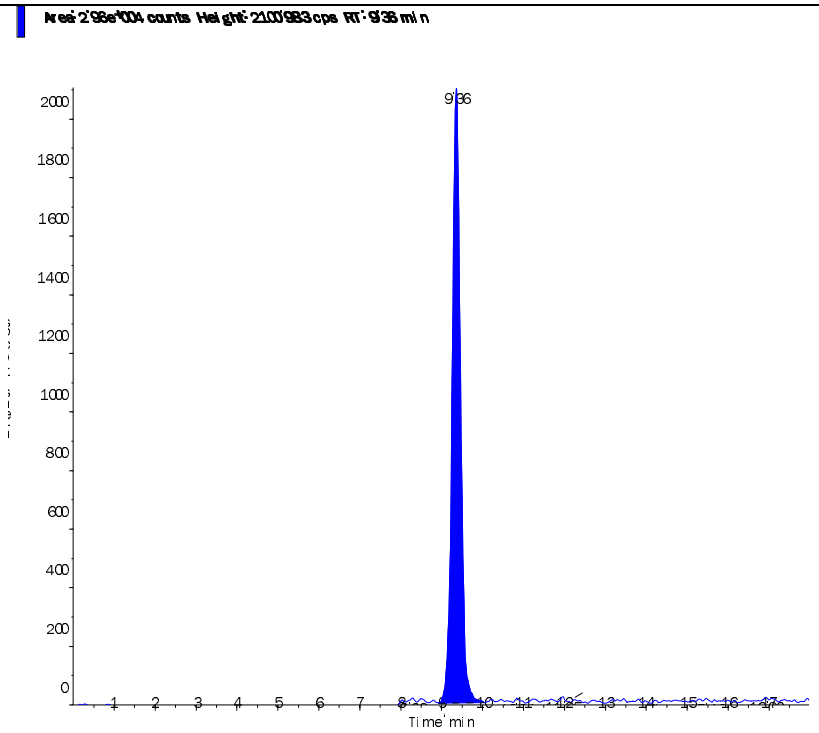

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Data File	LM28983.wiff	**Result Table**	021815_JWR.rdb
Acquisition Date	2/19/2015 1:54:46 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15020878-07 MSD	**Injection Vial**	20.00
Data File	LM28983.wiff	**Injection Volume**	10.00
Acquisition Date	2/19/2015 1:54:46 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	021815_JWR.rdb
Sample ID	WG512778-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.080e+05	9.38	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	9.240e+04	9.38	N/A	1.11
Perchlorate conf	3.060e+04	9.38	N/A	1.12

O18LP (Internal Standard)

RT (Exp. RT): 9.38(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

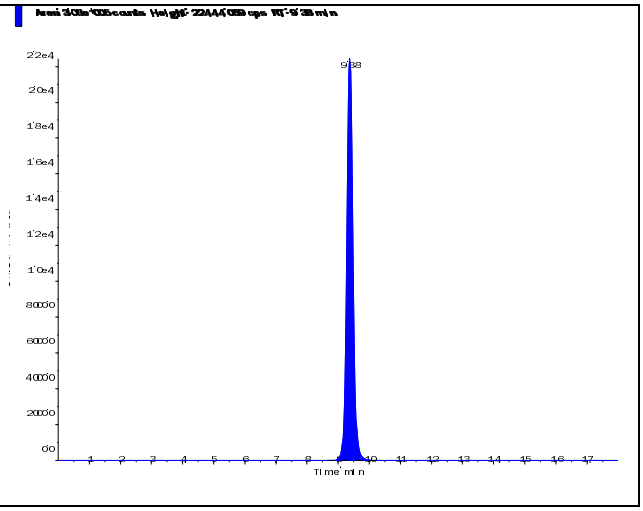

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.38 (10.30) min Calculated conc: 1.11 ng/ml Area Ratio: 0.30 Sample Type: (Unknown)	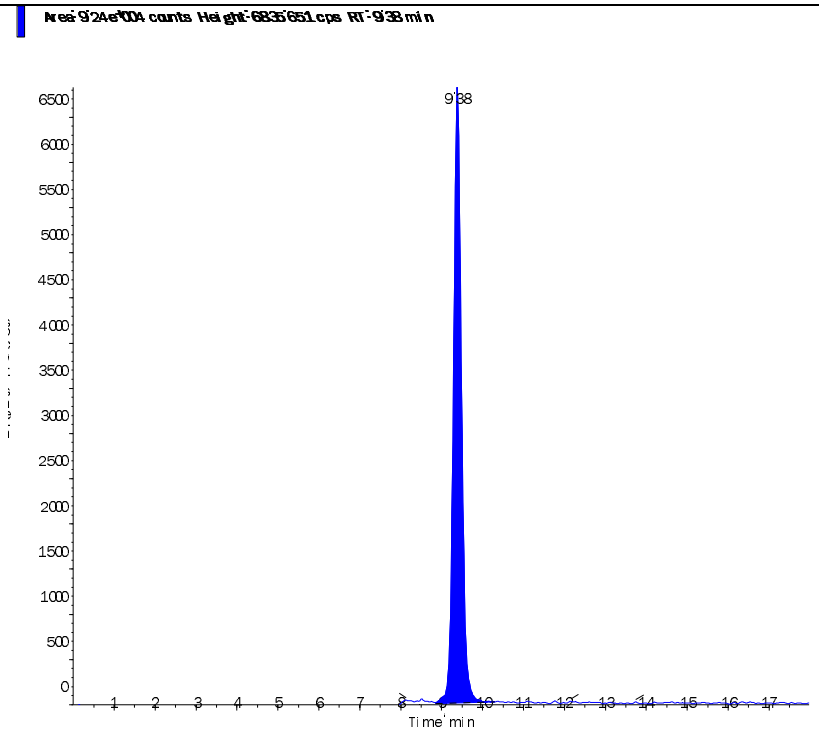
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.38 (10.30) min Calculated conc: 1.12 ng/ml Area Ratio: 0.099 Sample Type: (Unknown)	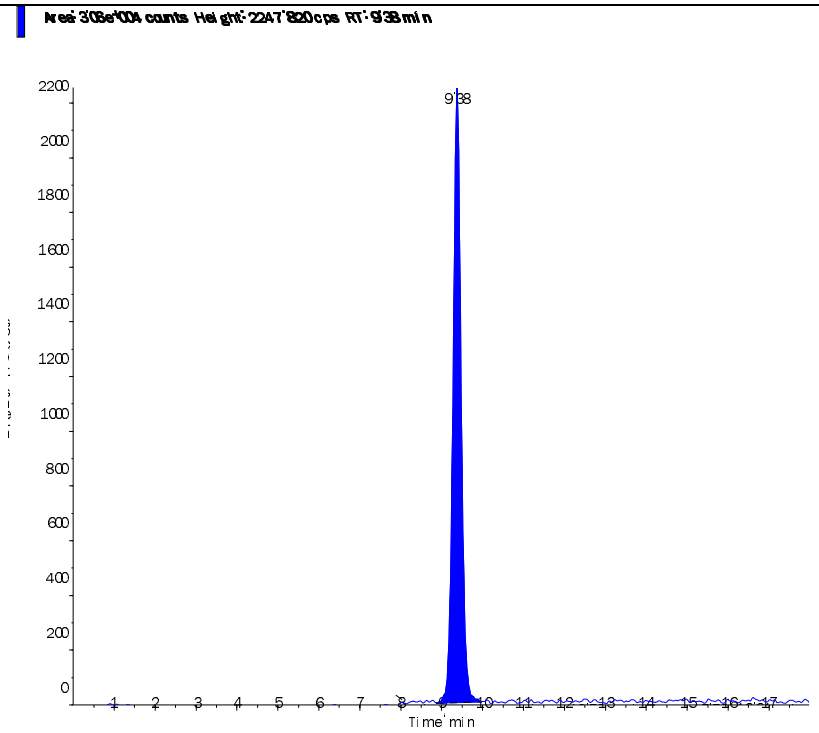

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Data File	LM28987.wiff	**Result Table**	021815_JWR.rdb
Acquisition Date	2/19/2015 3:10:31 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15020878-08	**Injection Vial**	21.00
Data File	LM28987.wiff	**Injection Volume**	10.00
Acquisition Date	2/19/2015 3:10:31 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	021815_JWR.rdb
Sample ID	L15020878-08	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.100e+05	9.52	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.170e+03	9.51	N/A	0.0118
Perchlorate conf	5.730e+02	9.54	N/A	0.0101

O18LP (Internal Standard)

RT (Exp. RT): 9.52(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

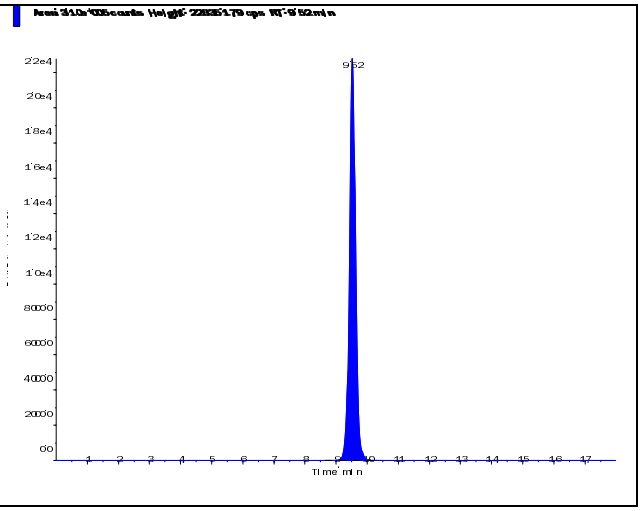

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.51 (10.30) min
Calculated conc:	0.0118 ng/ml
Area Ratio:	0.007
Sample Type:	(Unknown)

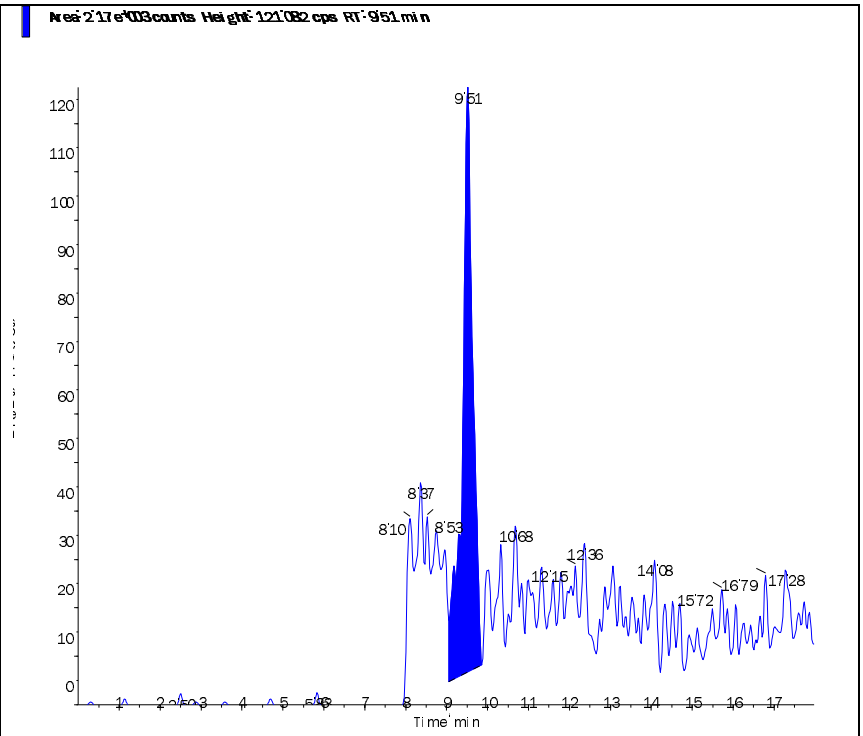

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.54 (10.30) min
Calculated conc:	0.0101 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

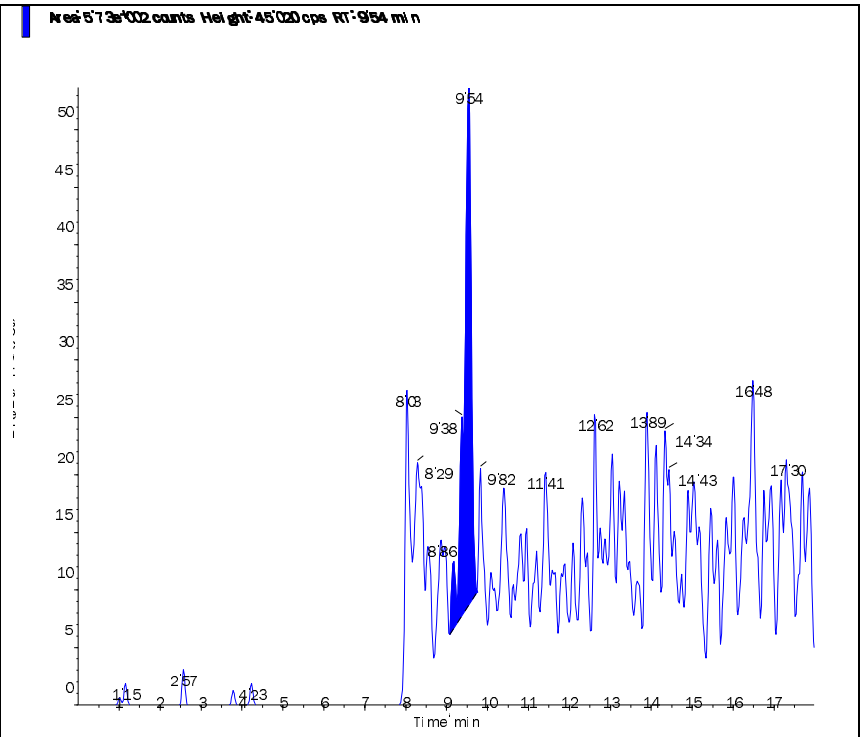

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Data File	LM28988.wiff	**Result Table**	021815_JWR.rdb
Acquisition Date	2/19/2015 3:29:28 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15020878-09	**Injection Vial**	22.00
Data File	LM28988.wiff	**Injection Volume**	10.00
Acquisition Date	2/19/2015 3:29:28 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	021815_JWR.rdb
Sample ID	L15020878-09	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.090e+05	9.56	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.500e+03	9.59	N/A	0.0037
Perchlorate conf	7.240e+02	9.58	N/A	0.0157

O18LP (Internal Standard)

RT (Exp. RT): 9.56(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

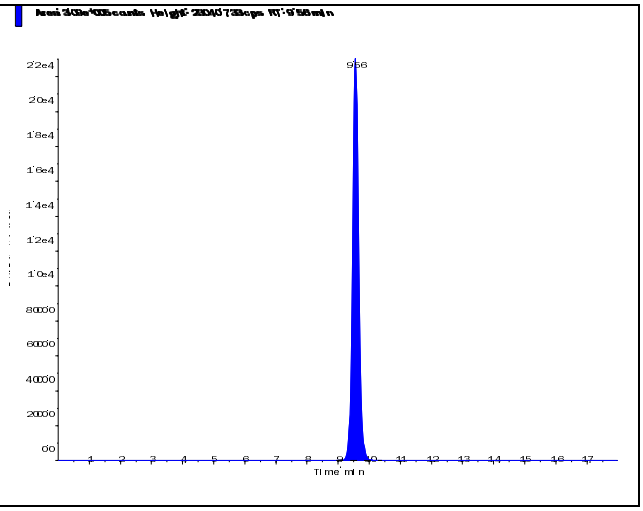

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.59 (10.30) min
Calculated conc:	0.0037 ng/ml
Area Ratio:	0.005
Sample Type:	(Unknown)

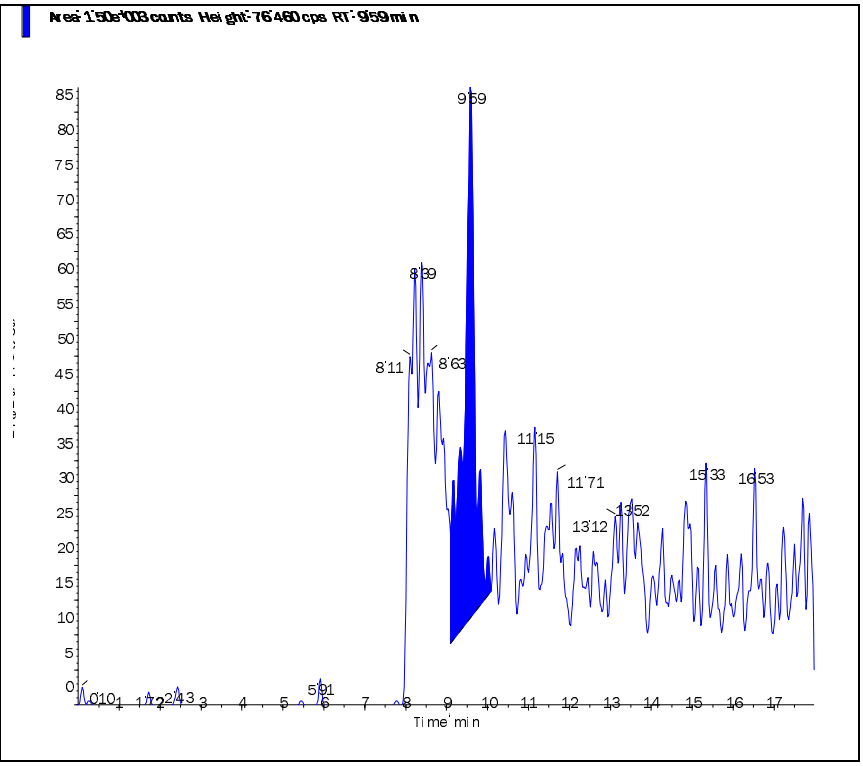

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.58 (10.30) min
Calculated conc:	0.0157 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

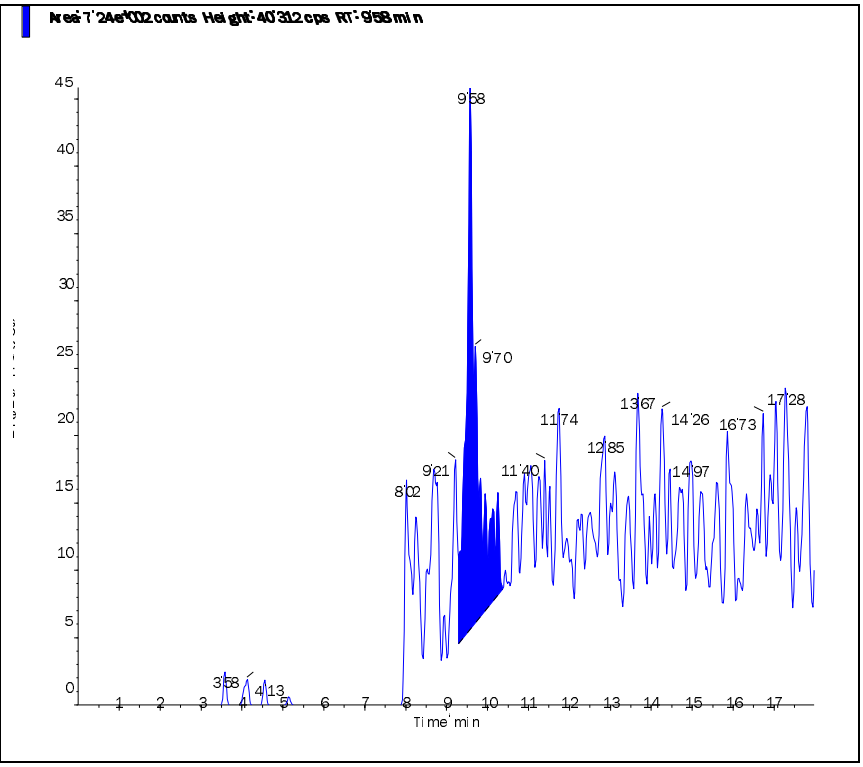

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Data File	LM28989.wiff	**Result Table**	021815_JWR.rdb
Acquisition Date	2/19/2015 3:48:24 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15020878-10	**Injection Vial**	23.00
Data File	LM28989.wiff	**Injection Volume**	10.00
Acquisition Date	2/19/2015 3:48:24 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	021815_JWR.rdb
Sample ID	L15020878-10	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.090e+05	9.57	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.230e+03	9.59	N/A	0.0004
Perchlorate conf	5.040e+02	9.55	N/A	0.0076

O18LP (Internal Standard)

RT (Exp. RT): 9.57(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

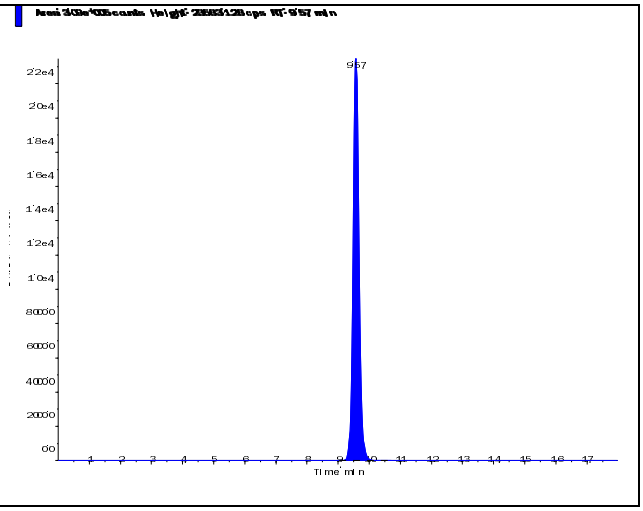

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.59 (10.30) min Calculated conc: 0.0004 ng/ml Area Ratio: 0.004 Sample Type: (Unknown)	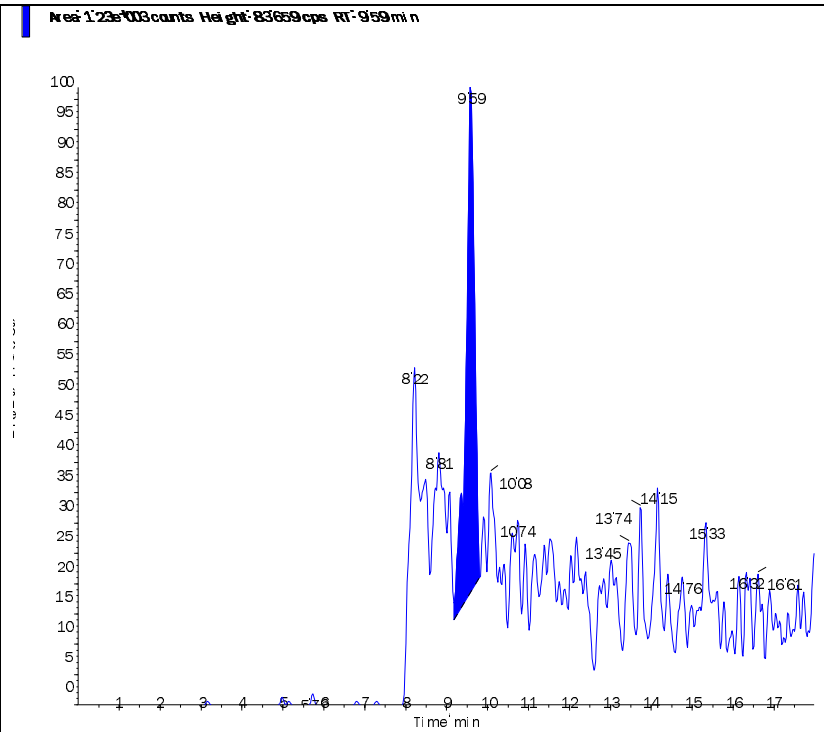
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.55 (10.30) min Calculated conc: 0.0076 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	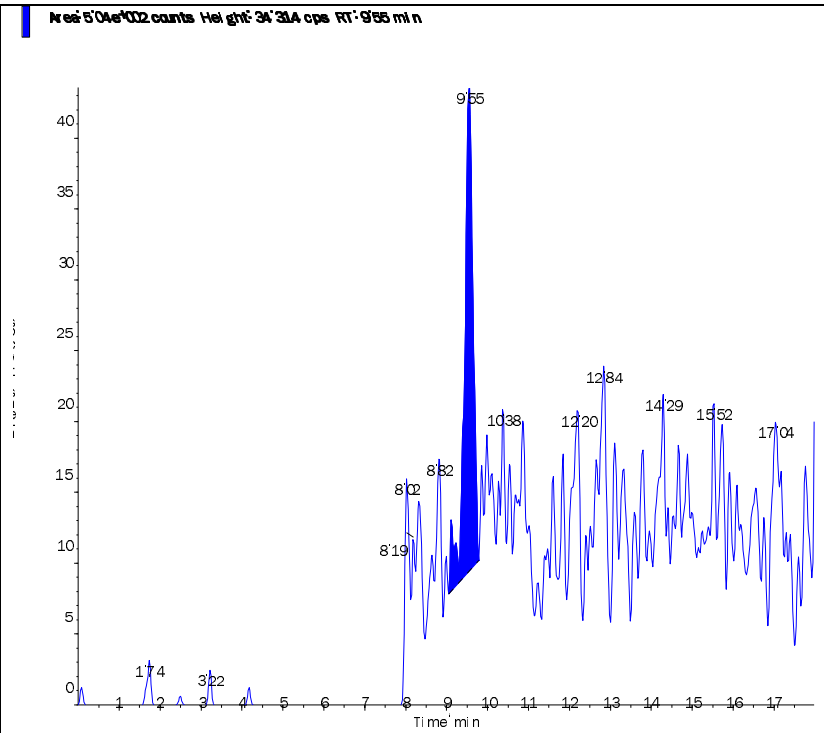

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Data File	LM28990.wiff	**Result Table**	021815_JWR.rdb
Acquisition Date	2/19/2015 4:07:19 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15020878-11	**Injection Vial**	24.00
Data File	LM28990.wiff	**Injection Volume**	10.00
Acquisition Date	2/19/2015 4:07:19 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	021815_JWR.rdb
Sample ID	L15020878-11	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.950e+05	9.77	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	9.550e+02	9.79	N/A	< 0
Perchlorate conf	6.800e+02	9.79	N/A	0.0153

O18LP (Internal Standard)

RT (Exp. RT): 9.77(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

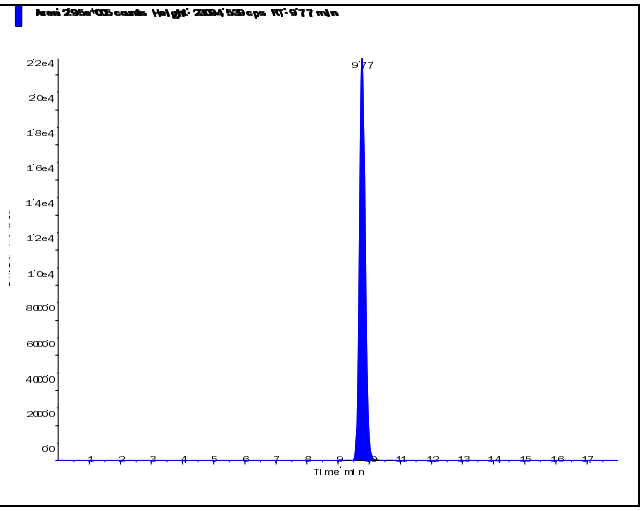

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.79 (10.30) min Calculated conc: < 0 ng/ml Area Ratio: 0.003 Sample Type: (Unknown)	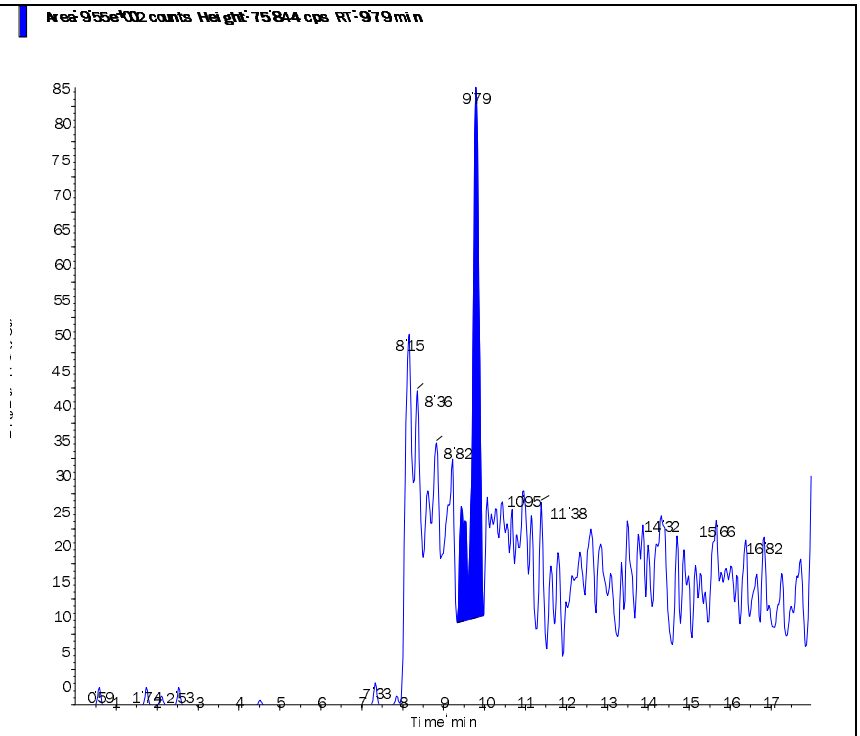
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.79 (10.30) min Calculated conc: 0.0153 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	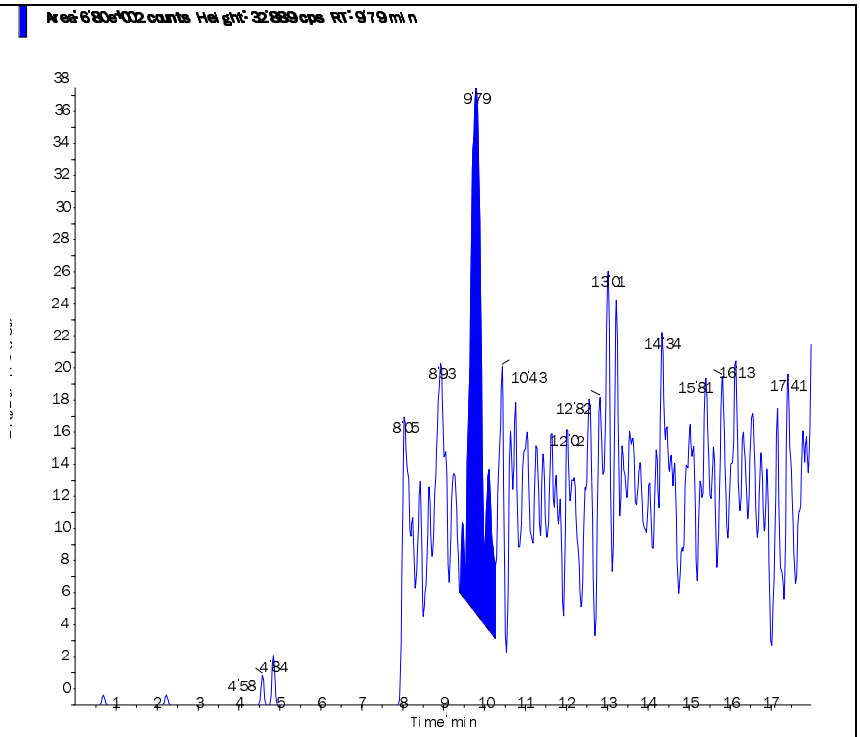

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Data File	LM28991.wiff	**Result Table**	021815_JWR.rdb
Acquisition Date	2/19/2015 4:26:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15020878-12	**Injection Vial**	25.00
Data File	LM28991.wiff	**Injection Volume**	10.00
Acquisition Date	2/19/2015 4:26:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	021815_JWR.rdb
Sample ID	L15020878-12	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.170e+05	9.43	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.870e+03	9.43	N/A	0.0311
Perchlorate conf	1.450e+03	9.41	N/A	0.0408

O18LP (Internal Standard)

RT (Exp. RT): 9.43(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

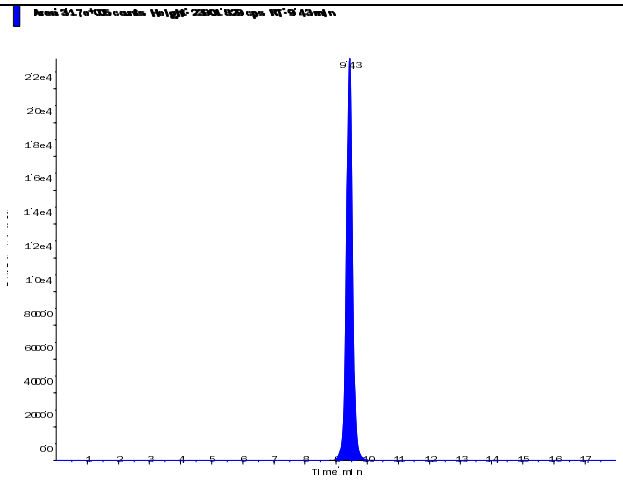

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.43 (10.30) min
Calculated conc:	0.0311 ng/ml
Area Ratio:	0.012
Sample Type:	(Unknown)

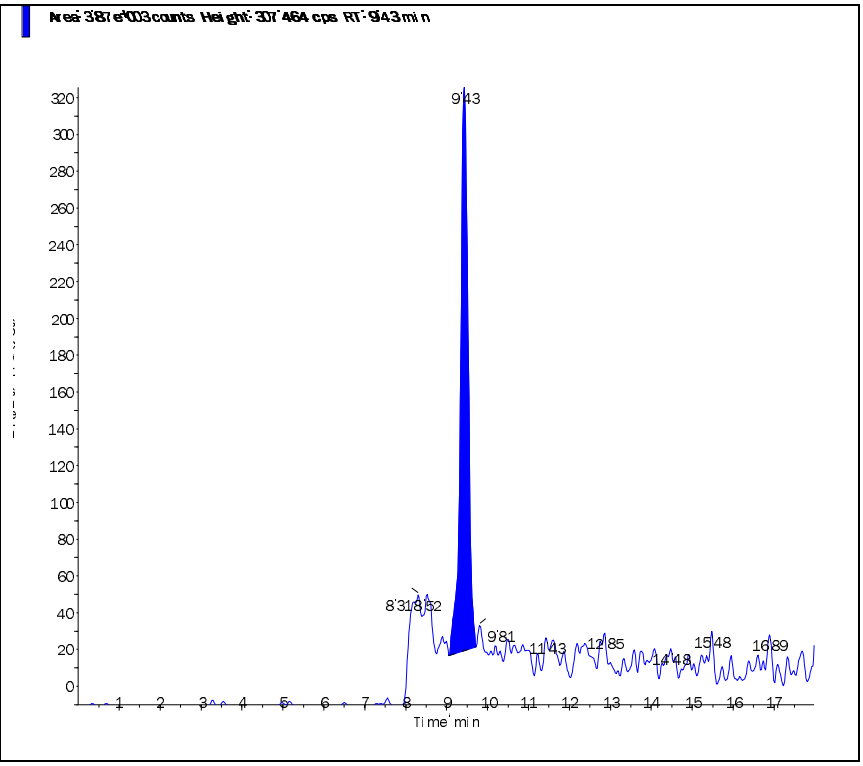

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.41 (10.30) min
Calculated conc:	0.0408 ng/ml
Area Ratio:	0.005
Sample Type:	(Unknown)

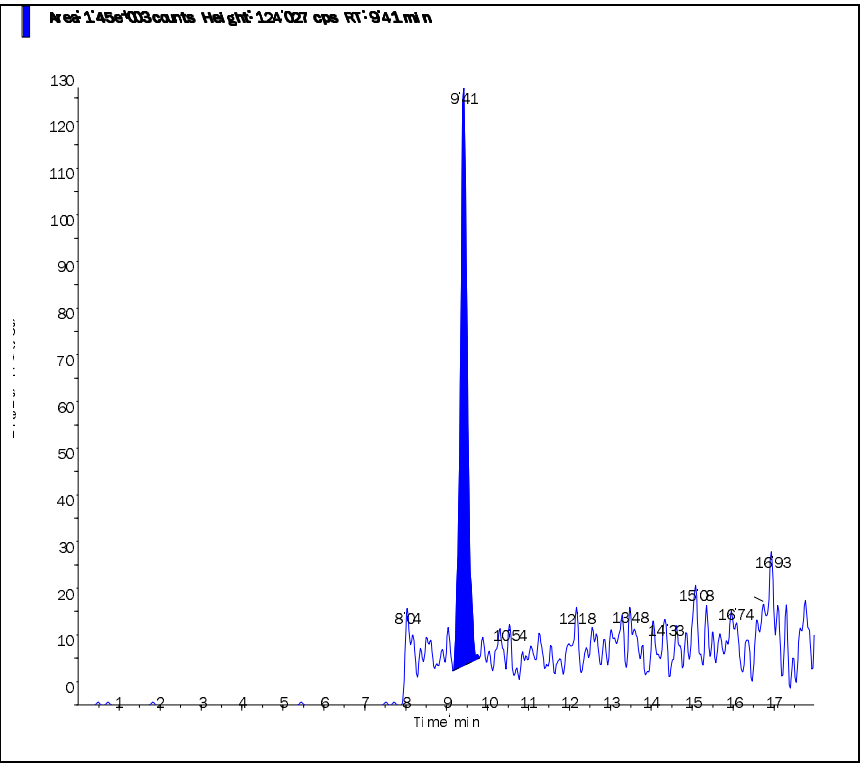

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Data File	LM28992.wiff	**Result Table**	021815_JWR.rdb
Acquisition Date	2/19/2015 4:45:10 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15020878-13	**Injection Vial**	26.00
Data File	LM28992.wiff	**Injection Volume**	10.00
Acquisition Date	2/19/2015 4:45:10 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	021815_JWR.rdb
Sample ID	L15020878-13	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.100e+05	9.54	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.730e+02	9.54	N/A	< 0
Perchlorate conf	5.470e+02	9.49	N/A	0.0091

O18LP (Internal Standard)

RT (Exp. RT): 9.54(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

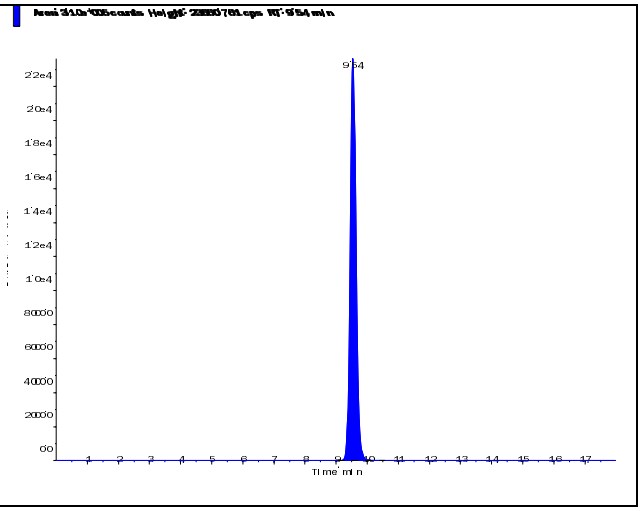

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.54 (10.30) min Calculated conc: < 0 ng/ml Area Ratio: 0.003 Sample Type: (Unknown)	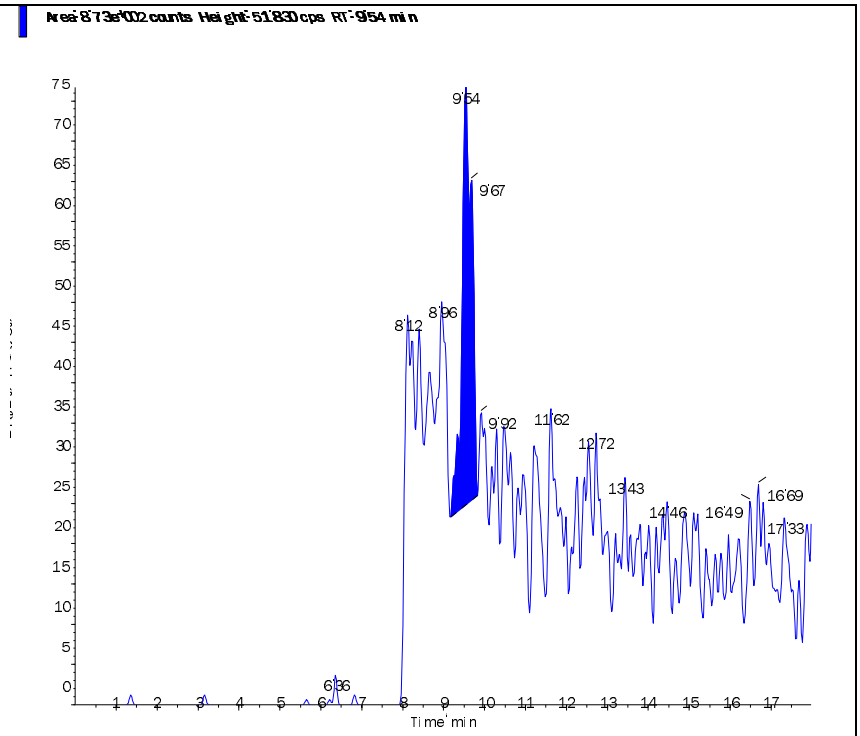
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.49 (10.30) min Calculated conc: 0.0091 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	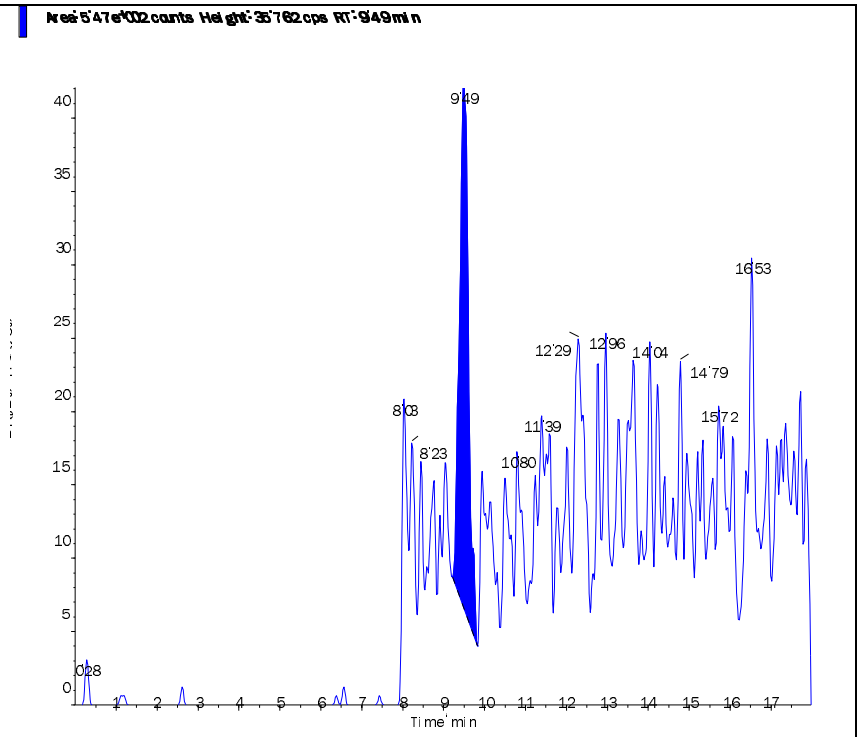

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Data File	LM28993.wiff	**Result Table**	021815_JWR.rdb
Acquisition Date	2/19/2015 5:04:05 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15020878-14	**Injection Vial**	27.00
Data File	LM28993.wiff	**Injection Volume**	10.00
Acquisition Date	2/19/2015 5:04:05 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	021815_JWR.rdb
Sample ID	L15020878-14	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.120e+05	9.53	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	9.110e+02	9.57	N/A	< 0
Perchlorate conf	5.220e+02	9.55	N/A	0.008

O18LP (Internal Standard)

RT (Exp. RT): 9.53(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

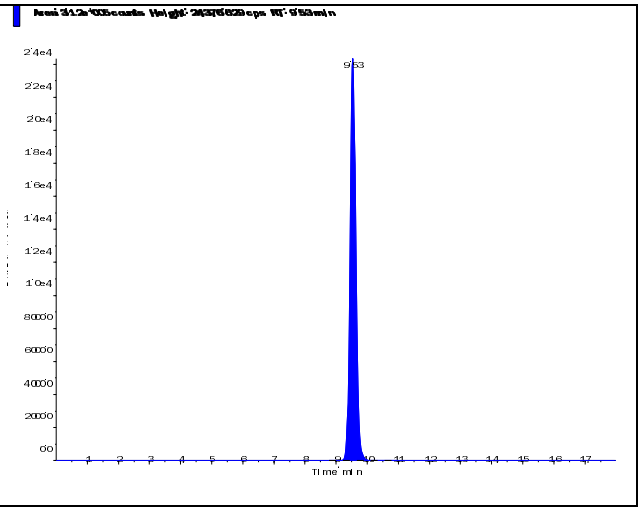

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.57 (10.30) min Calculated conc: < 0 ng/ml Area Ratio: 0.003 Sample Type: (Unknown)	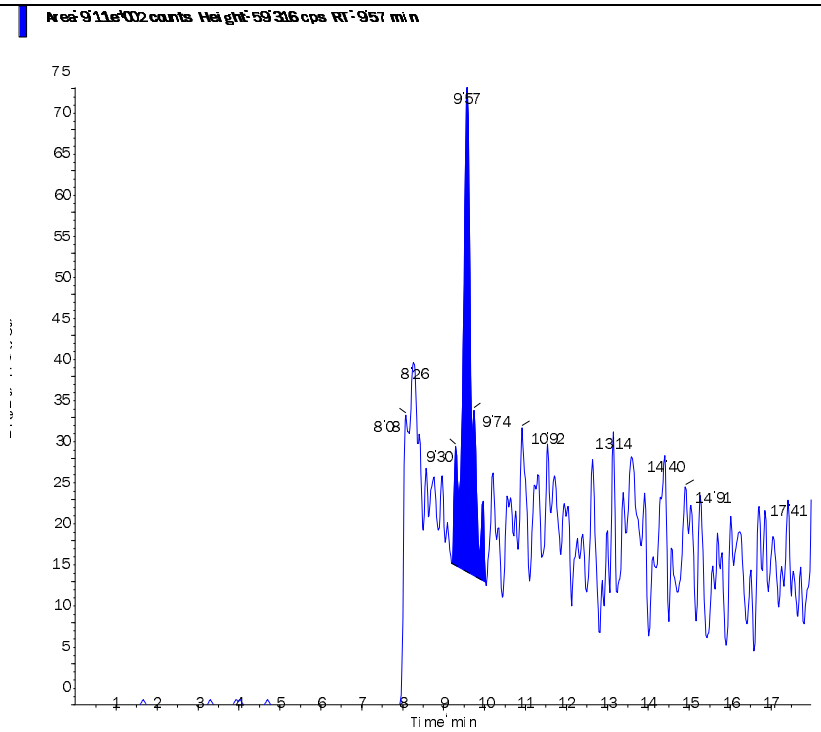
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.55 (10.30) min Calculated conc: 0.008 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	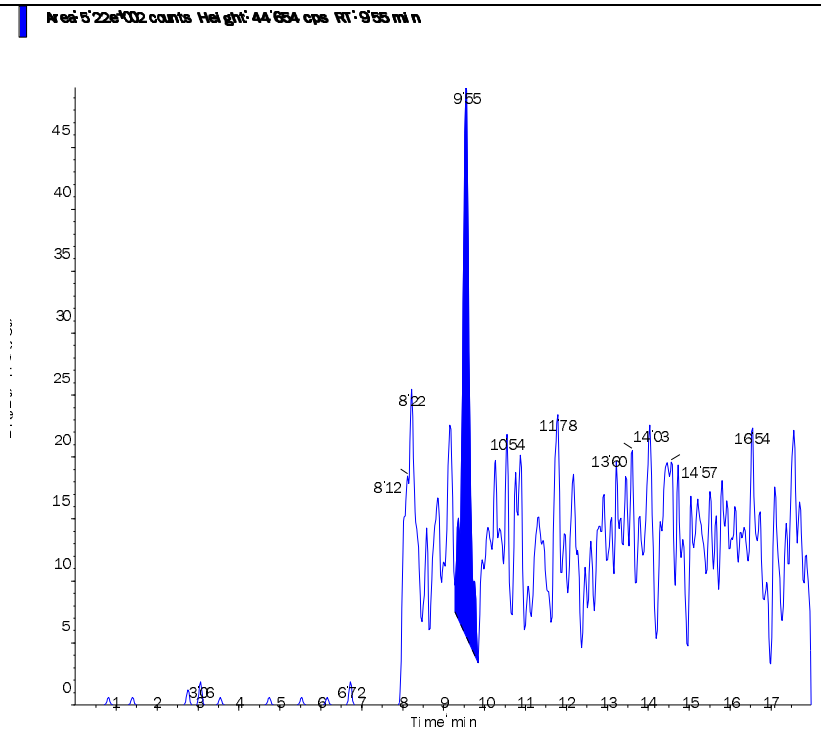

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Data File	LM28994.wiff	**Result Table**	021815_JWR.rdb
Acquisition Date	2/19/2015 5:23:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15020878-15	**Injection Vial**	28.00
Data File	LM28994.wiff	**Injection Volume**	10.00
Acquisition Date	2/19/2015 5:23:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	021815_JWR.rdb
Sample ID	L15020878-15	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.010e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.530e+03	9.64	N/A	0.0293
Perchlorate conf	1.320e+03	9.64	N/A	0.0387

O18LP (Internal Standard)

RT (Exp. RT): 9.63(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

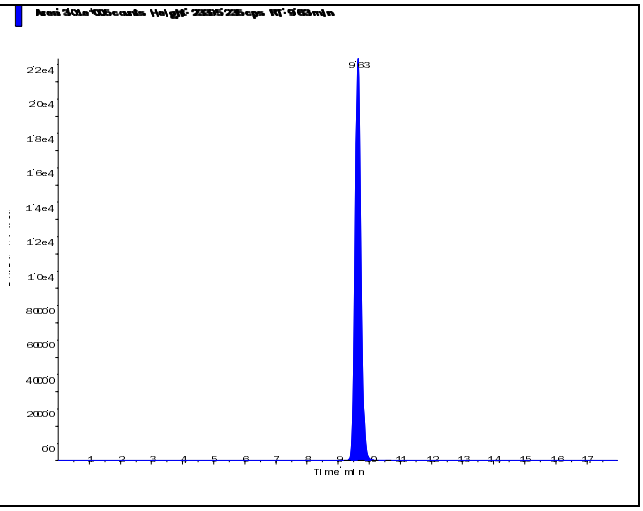

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (10.30) min
Calculated conc:	0.0293 ng/ml
Area Ratio:	0.012
Sample Type:	(Unknown)

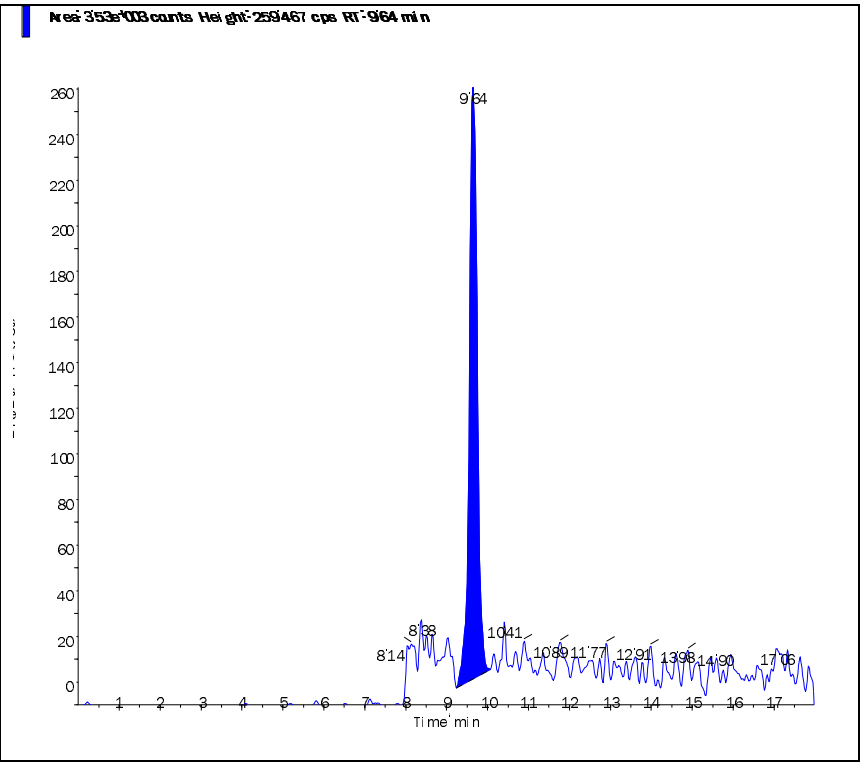

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.64 (10.30) min
Calculated conc:	0.0387 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)

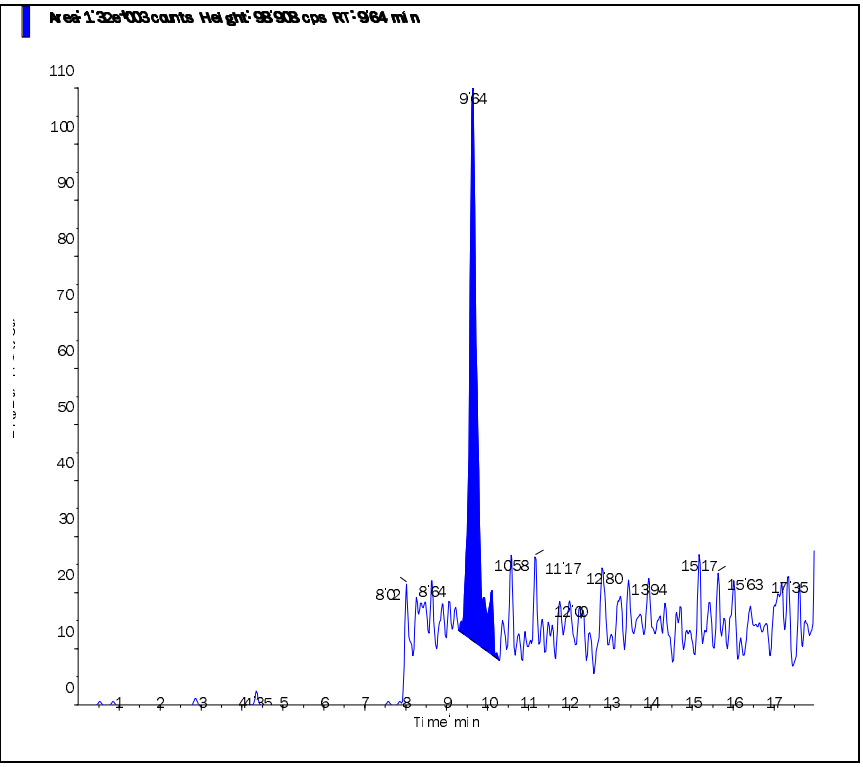

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Data File	LM28998.wiff	**Result Table**	021815_JWR.rdb
Acquisition Date	2/19/2015 6:38:44 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15020878-16 RS	**Injection Vial**	29.00
Data File	LM28998.wiff	**Injection Volume**	10.00
Acquisition Date	2/19/2015 6:38:44 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	021815_JWR.rdb
Sample ID	WG512778-07	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.140e+05	9.50	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.210e+03	9.52	N/A	0.0476
Perchlorate conf	1.410e+03	9.47	N/A	0.0402

O18LP (Internal Standard)

RT (Exp. RT): 9.50(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

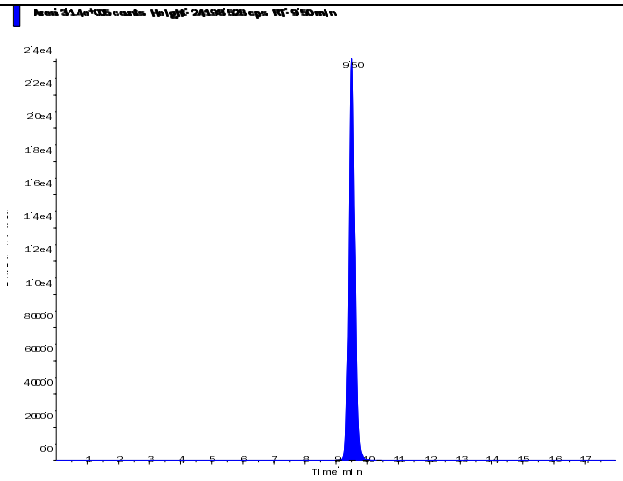

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.52 (10.30) min
Calculated conc:	0.0476 ng/ml
Area Ratio:	0.017
Sample Type:	(Unknown)

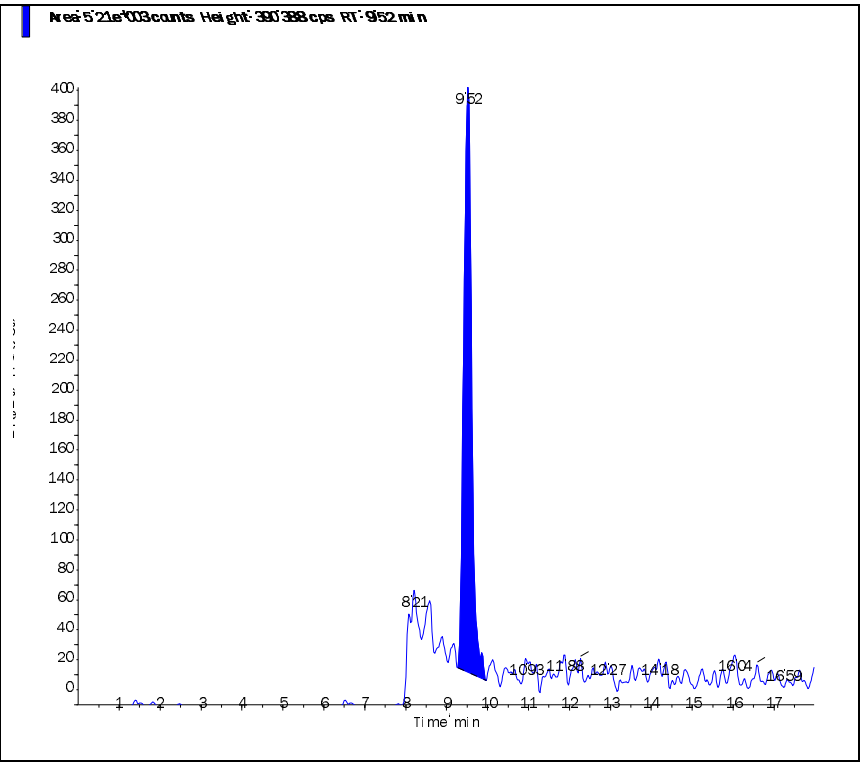

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.47 (10.30) min
Calculated conc:	0.0402 ng/ml
Area Ratio:	0.005
Sample Type:	(Unknown)

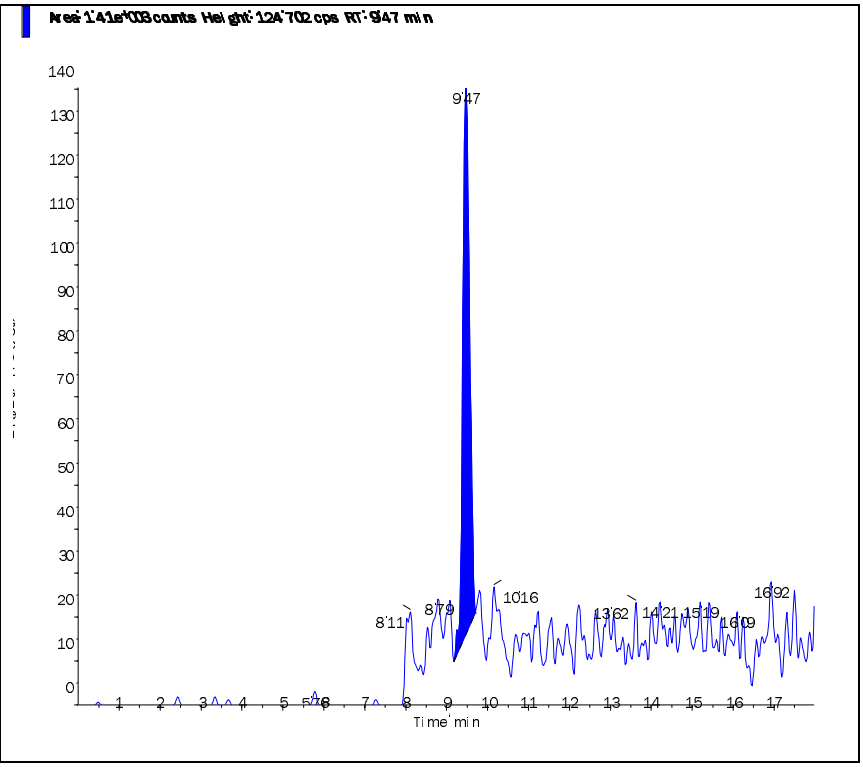

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Data File	LM28999.wiff	**Result Table**	021815_JWR.rdb
Acquisition Date	2/19/2015 6:57:39 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15020878-17 MS	**Injection Vial**	30.00
Data File	LM28999.wiff	**Injection Volume**	10.00
Acquisition Date	2/19/2015 6:57:39 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	021815_JWR.rdb
Sample ID	WG512778-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.120e+05	9.50	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.370e+04	9.52	N/A	0.27
Perchlorate conf	7.470e+03	9.50	N/A	0.261

O18LP (Internal Standard)

RT (Exp. RT): 9.50(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

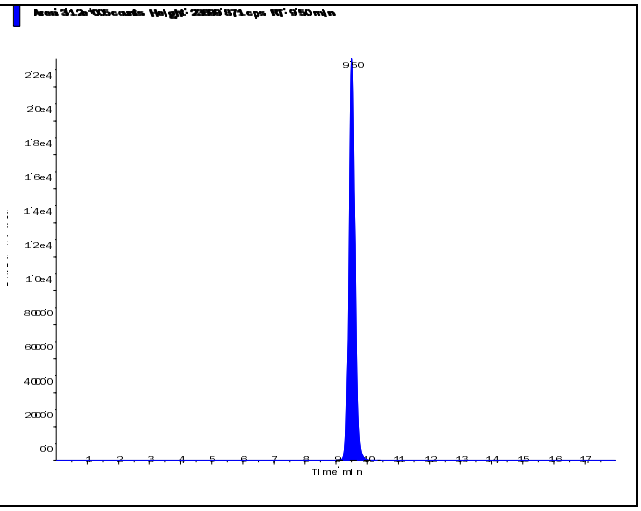

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.52 (10.30) min Calculated conc: 0.27 ng/ml Area Ratio: 0.076 Sample Type: (Unknown)	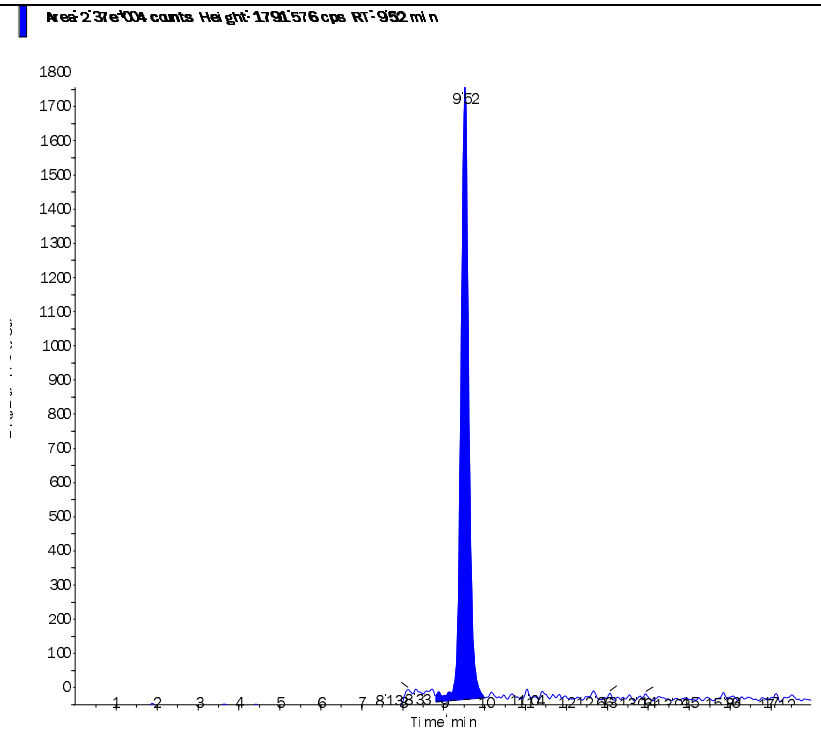
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.50 (10.30) min Calculated conc: 0.261 ng/ml Area Ratio: 0.024 Sample Type: (Unknown)	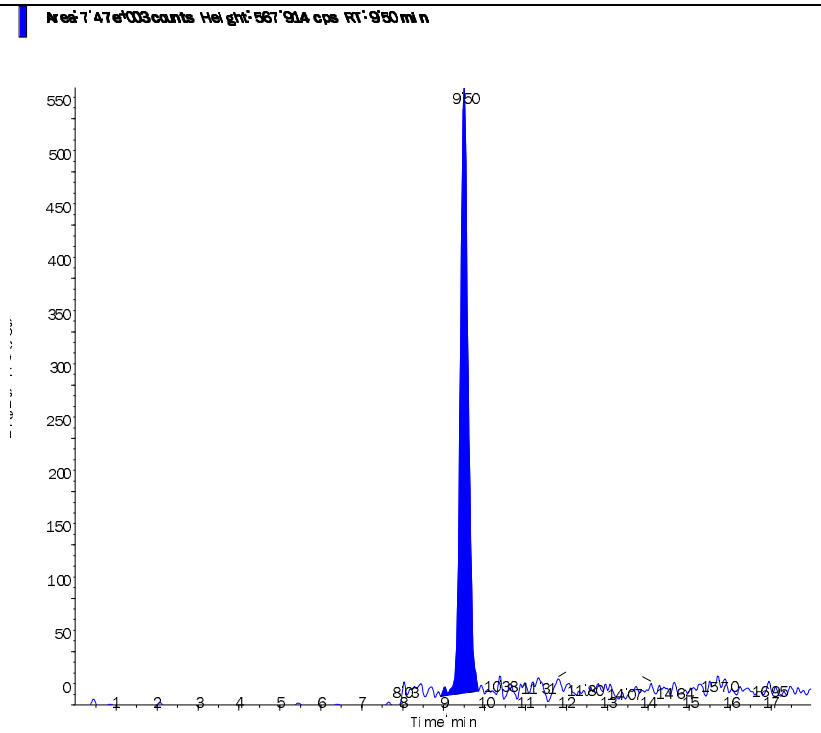

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Data File	LM29000.wiff	**Result Table**	021815_JWR.rdb
Acquisition Date	2/19/2015 7:16:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15020878-18 MSD	**Injection Vial**	31.00
Data File	LM29000.wiff	**Injection Volume**	10.00
Acquisition Date	2/19/2015 7:16:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	021815_JWR.rdb
Sample ID	WG512778-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.070e+05	9.52	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.190e+04	9.54	N/A	0.253
Perchlorate conf	7.510e+03	9.52	N/A	0.267

O18LP (Internal Standard)

RT (Exp. RT): 9.52(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

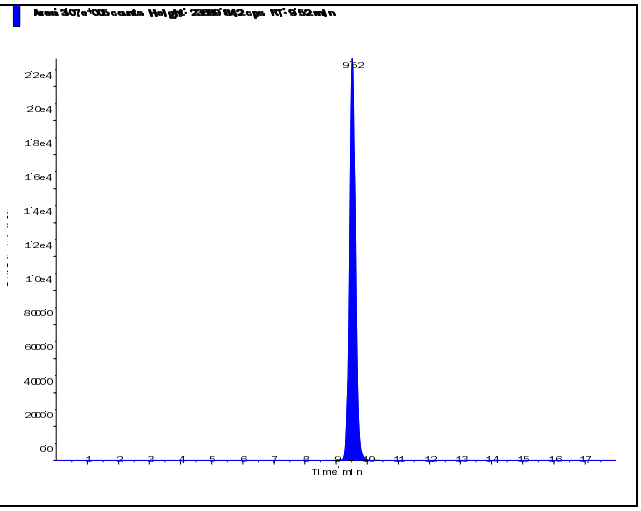

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.54 (10.30) min Calculated conc: 0.253 ng/ml Area Ratio: 0.071 Sample Type: (Unknown)	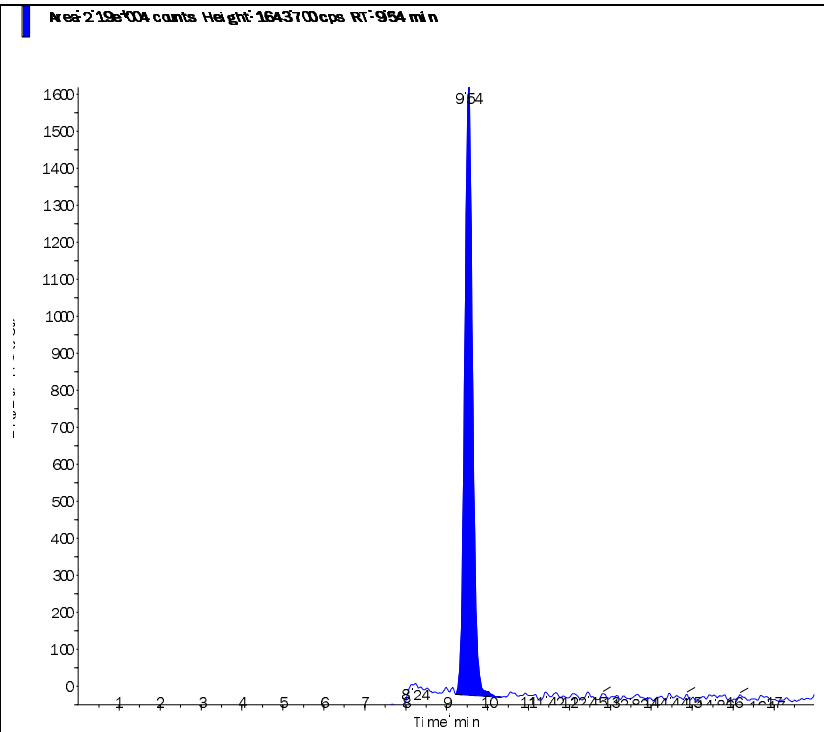
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.52 (10.30) min Calculated conc: 0.267 ng/ml Area Ratio: 0.024 Sample Type: (Unknown)	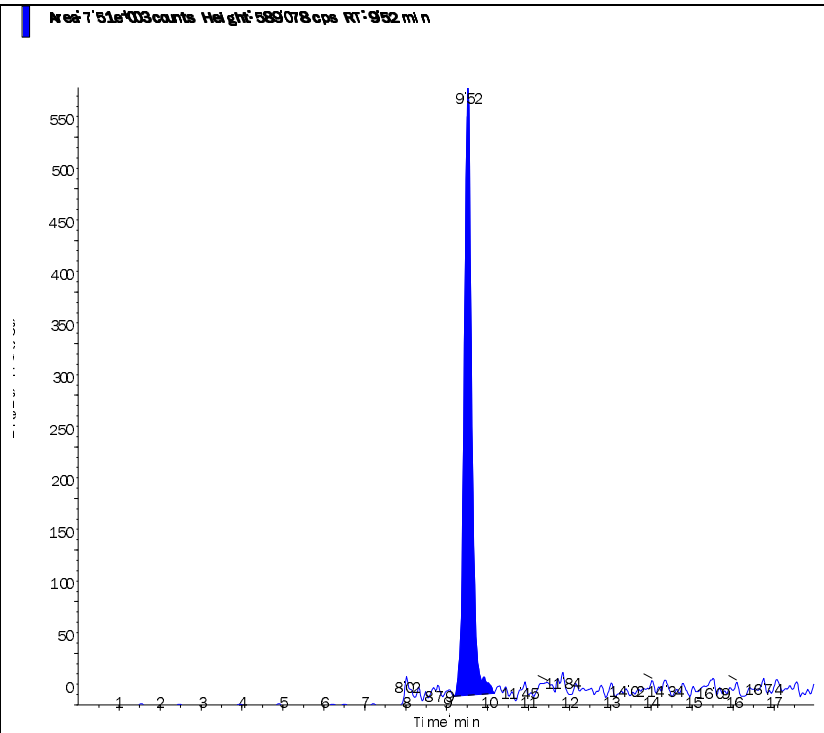

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2.2.1.4 Standards Data

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Data File	LM27603.wiff	**Result Table**	021815_JWR.rdb
Acquisition Date	11/17/2014 12:41:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG501146-01 CCB	**Injection Vial**	1.00
Data File	LM27603.wiff	**Injection Volume**	10.00
Acquisition Date	11/17/2014 12:41:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	021815_JWR.rdb
Sample ID	WG501146-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.170e+05	10.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.340e+02	10.30	N/A	< 0
Perchlorate conf	2.010e+02	10.30	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 10.30(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

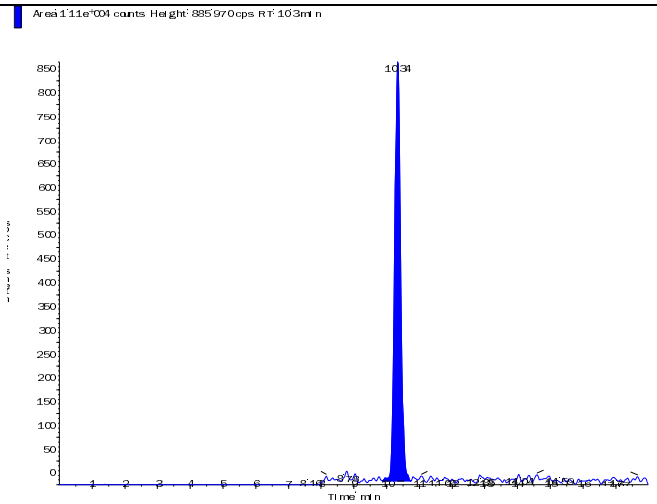

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.30 (10.30) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	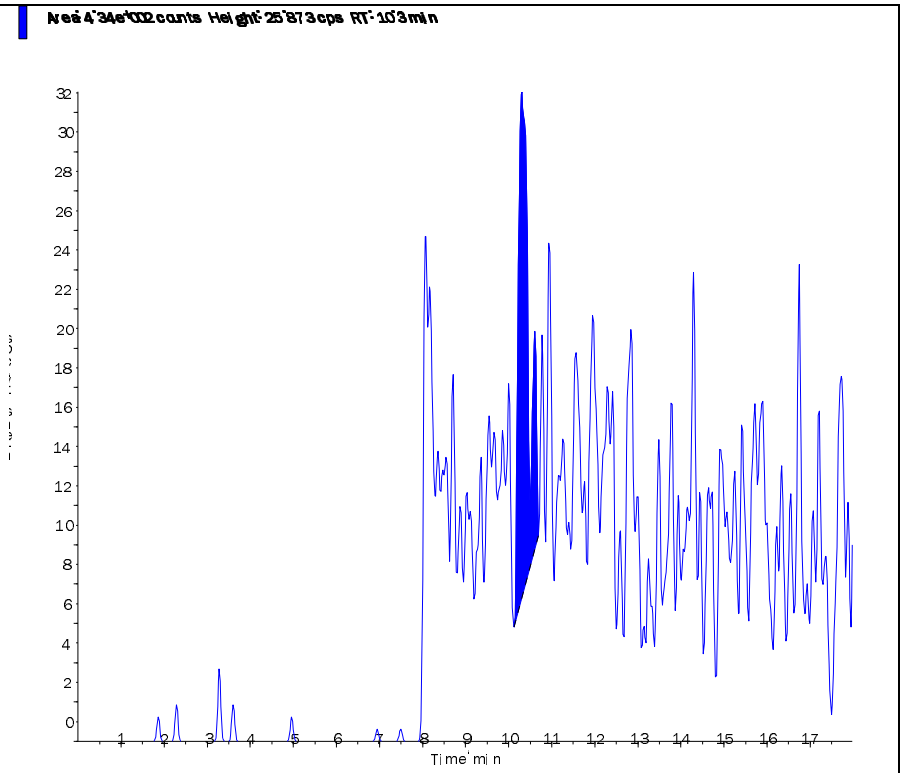
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 10.30 (10.30) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	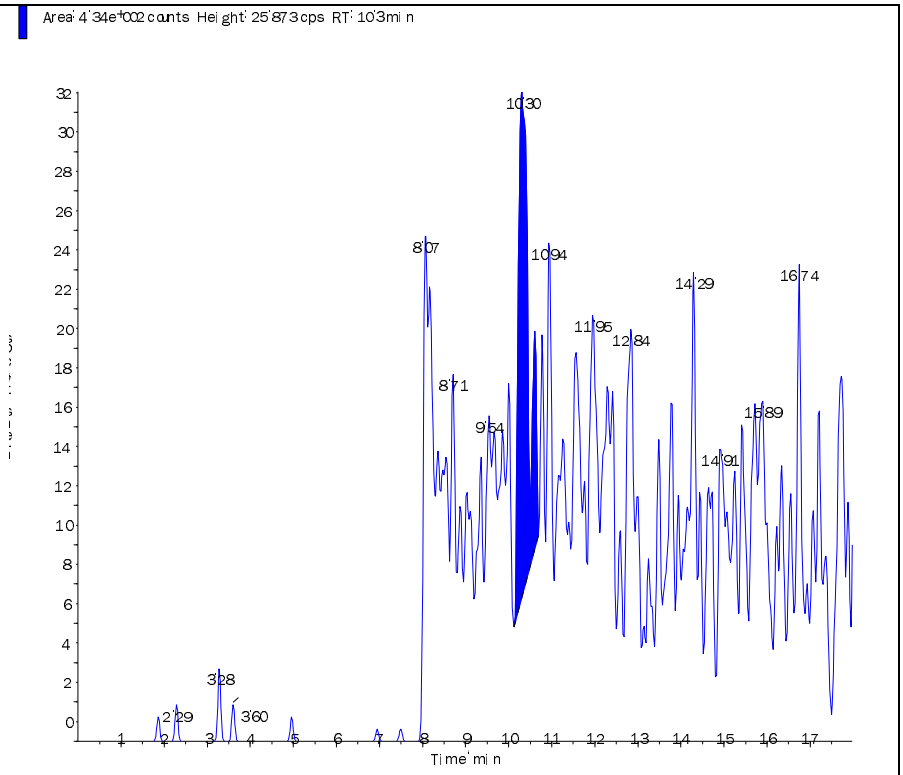

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Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM27603.wiff	**Result Table**	111714_ADC.rdb
Acquisition Date	11/17/2014 12:41:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.33 x + 0.00387 (r = 0.9998)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.11	114.3	N/A	N/A
0.20	1	0.19	93.0	N/A	N/A
0.50	1	0.49	97.3	N/A	N/A
1.00	1	0.95	95.2	N/A	N/A
2.00	1	1.99	99.5	N/A	N/A
5.00	1	4.99	99.9	N/A	N/A
10.00	1	10.08	100.8	N/A	N/A

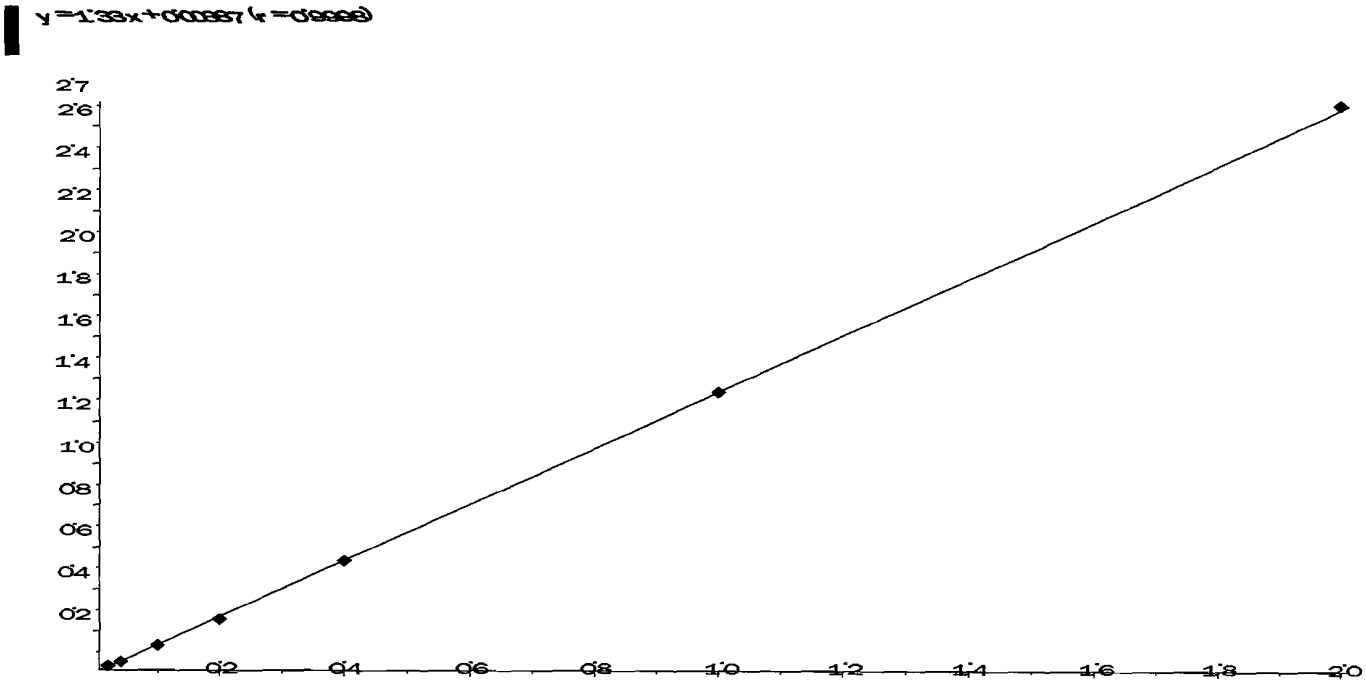

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Created with Analyst Reporter
Printed: 11/19/2014 2:12 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM27603.wiff	**Result Table**	111714_ADC.rdb
Acquisition Date	11/17/2014 12:41:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.44 x + 0.000963 (r = 0.9998)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.11	108.0	N/A	N/A
0.20	1	0.19	95.6	N/A	N/A
0.50	1	0.49	98.3	N/A	N/A
1.00	1	1.01	101.2	N/A	N/A
2.00	1	1.91	95.6	N/A	N/A
5.00	1	5.04	100.8	N/A	N/A
10.00	1	10.05	100.5	N/A	N/A

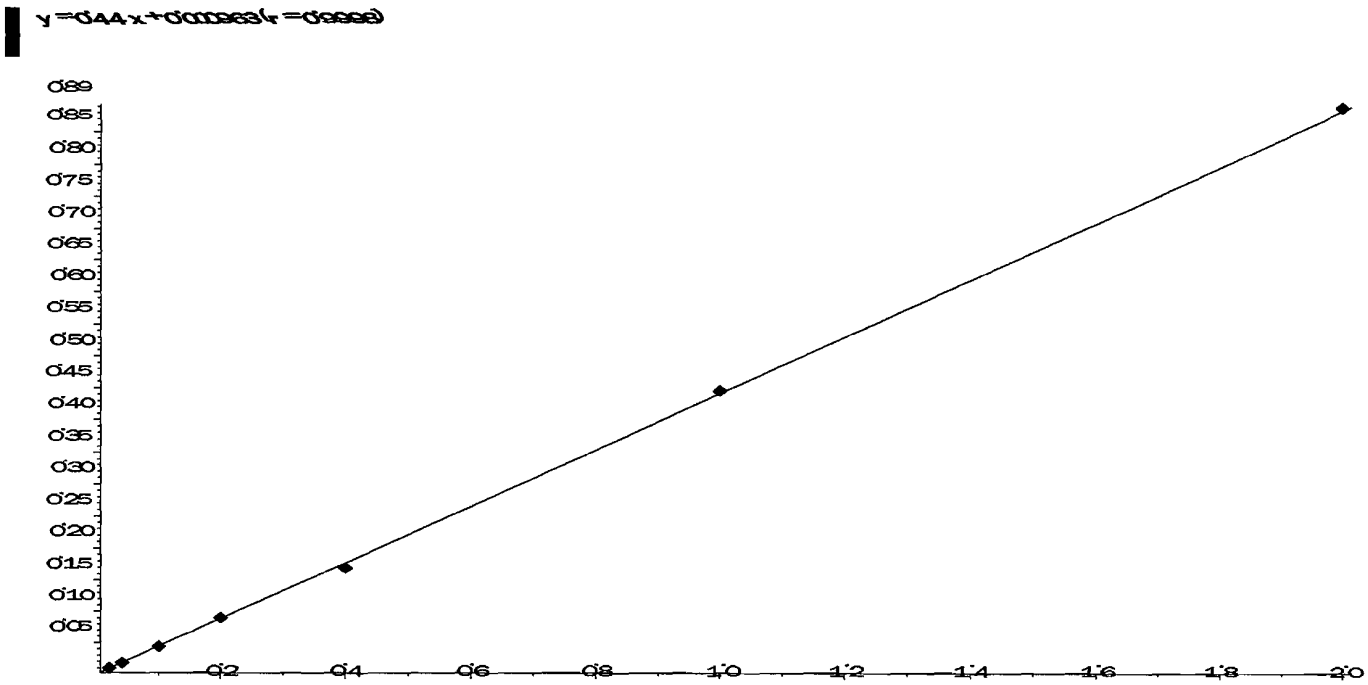

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Printed: 2/19/2015 11:02 AM

Data File	LM27604.wiff	**Result Table**	021815_JWR.rdb
Acquisition Date	11/17/2014 1:00:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG501146-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM27604.wiff	**Injection Volume**	10.00
Acquisition Date	11/17/2014 1:00:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	021815_JWR.rdb
Sample ID	WG501146-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.220e+05	10.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.110e+04	10.30	0.10	0.114
Perchlorate conf	3.370e+03	10.30	0.10	0.108

O18LP (Internal Standard)

RT (Exp. RT): 10.30(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

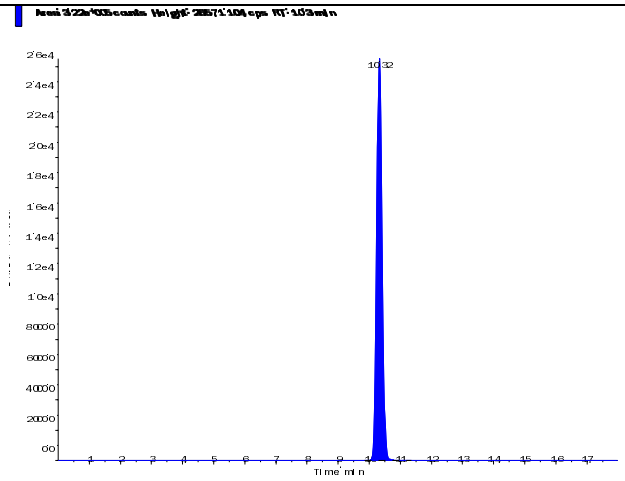

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.30 (10.30) min Calculated conc: 0.114 ng/ml Area Ratio: 0.034 Sample Type: (Standard)	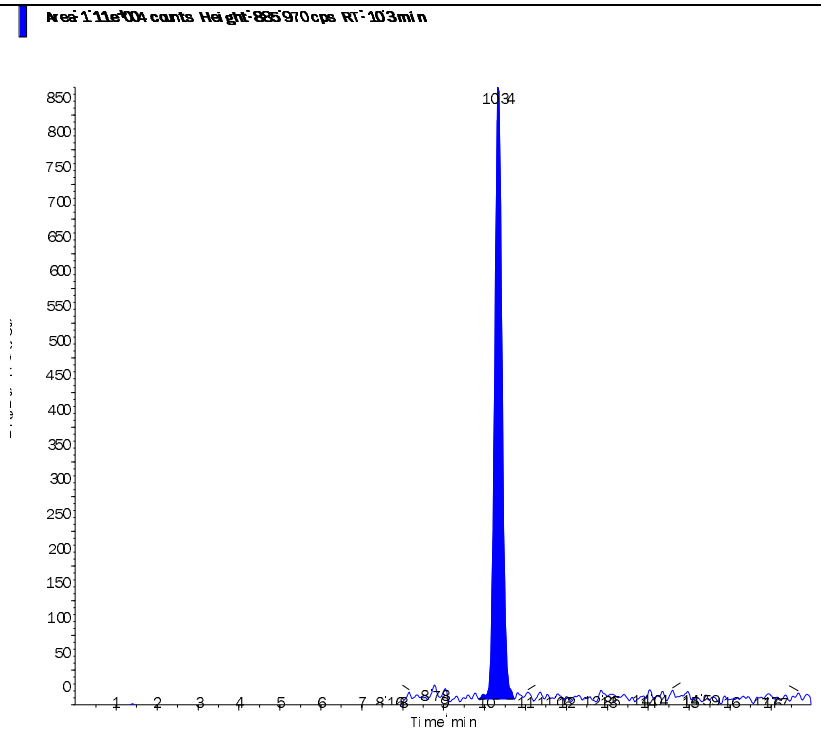
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 10.30 (10.30) min Calculated conc: 0.108 ng/ml Area Ratio: 0.01 Sample Type: (Standard)	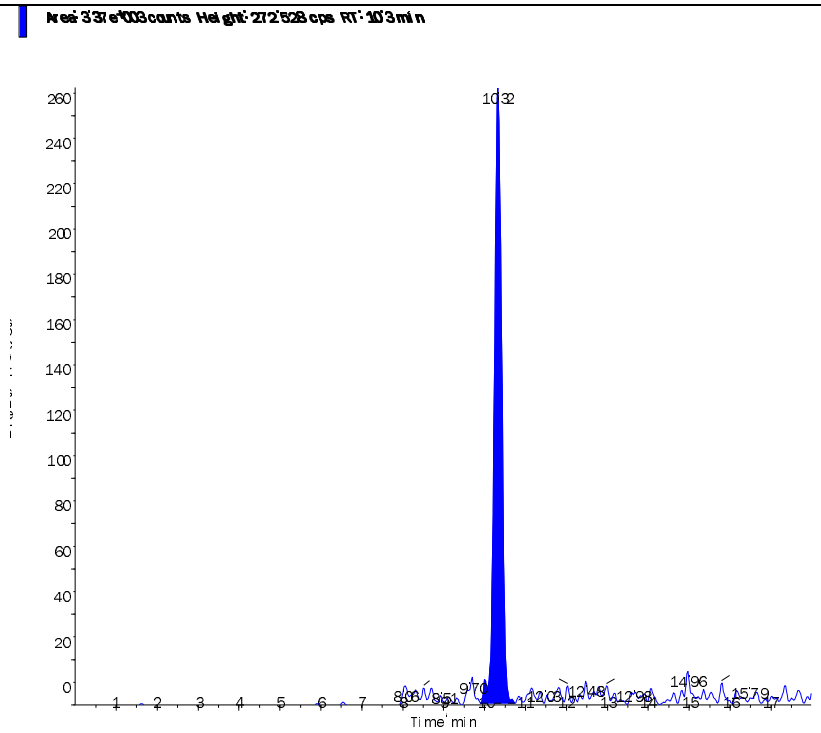

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Data File	LM27605.wiff	**Result Table**	021815_JWR.rdb
Acquisition Date	11/17/2014 1:19:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG501146-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM27605.wiff	**Injection Volume**	10.00
Acquisition Date	11/17/2014 1:19:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	021815_JWR.rdb
Sample ID	WG501146-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.220e+05	10.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.730e+04	10.30	0.20	0.186
Perchlorate conf	5.740e+03	10.30	0.20	0.191

O18LP (Internal Standard)

RT (Exp. RT): 10.30(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

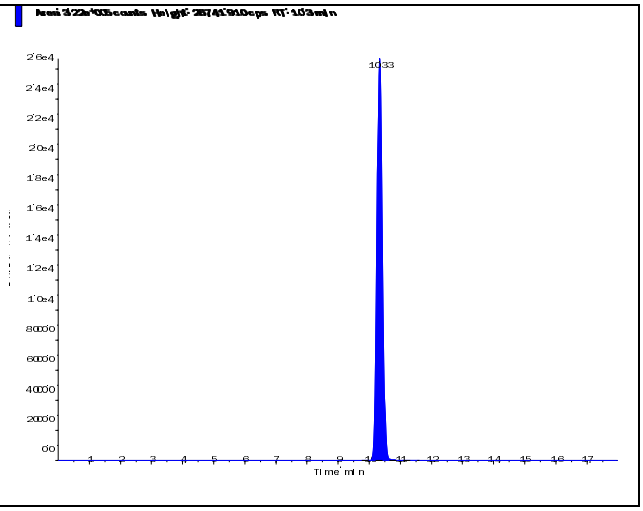

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.30 (10.30) min
Calculated conc:	0.186 ng/ml
Area Ratio:	0.054
Sample Type:	(Standard)

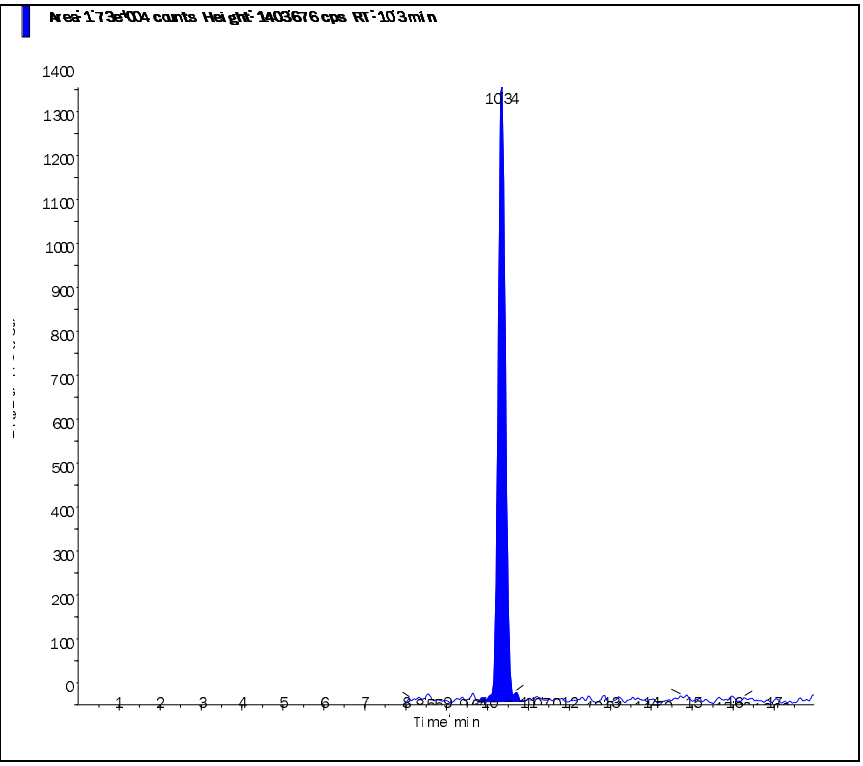

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.30 (10.30) min
Calculated conc:	0.191 ng/ml
Area Ratio:	0.018
Sample Type:	(Standard)

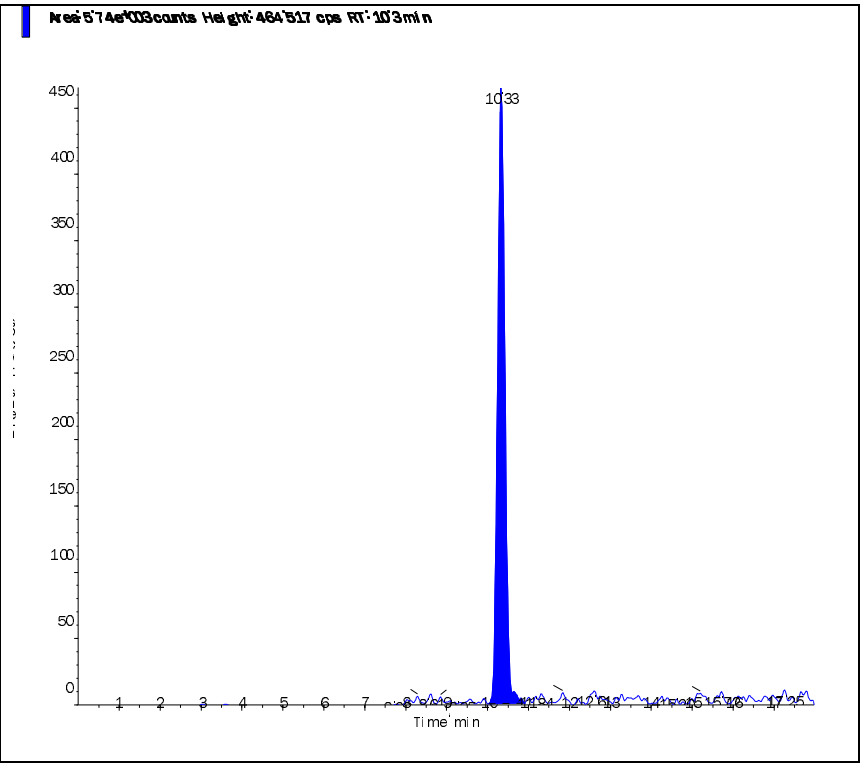

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Data File	LM27606.wiff	**Result Table**	021815_JWR.rdb
Acquisition Date	11/17/2014 1:38:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG501146-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM27606.wiff	**Injection Volume**	10.00
Acquisition Date	11/17/2014 1:38:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	021815_JWR.rdb
Sample ID	WG501146-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.290e+05	10.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.410e+04	10.30	0.50	0.487
Perchlorate conf	1.460e+04	10.30	0.50	0.492

O18LP (Internal Standard)

RT (Exp. RT): 10.30(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

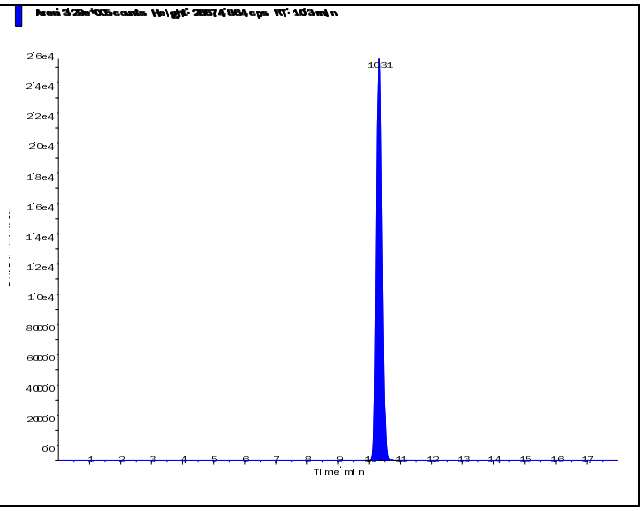

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.30 (10.30) min
Calculated conc:	0.487 ng/ml
Area Ratio:	0.134
Sample Type:	(Standard)

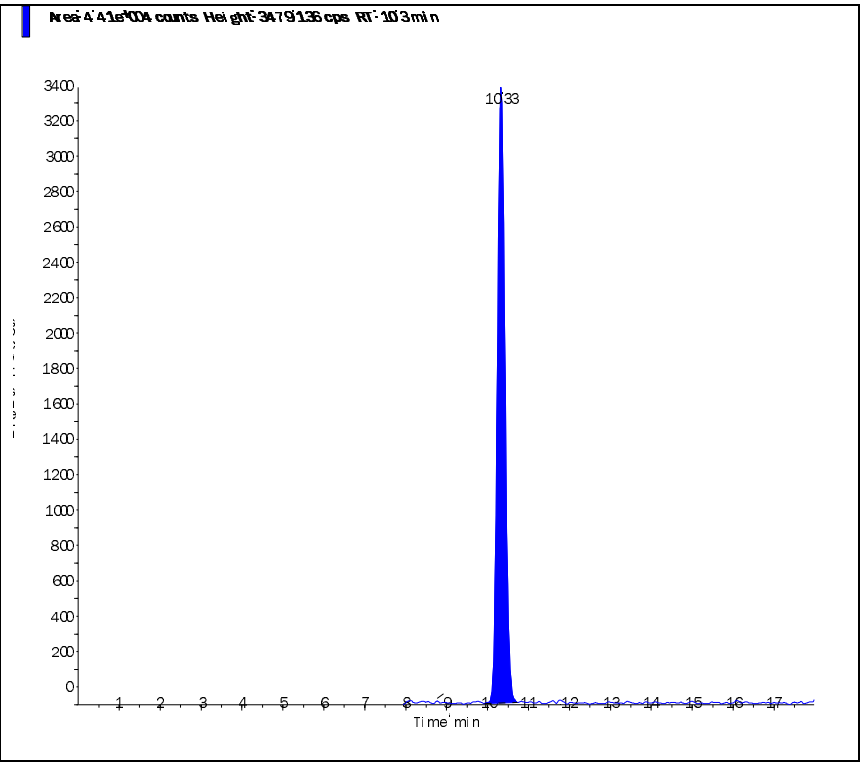

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.30 (10.30) min
Calculated conc:	0.492 ng/ml
Area Ratio:	0.044
Sample Type:	(Standard)

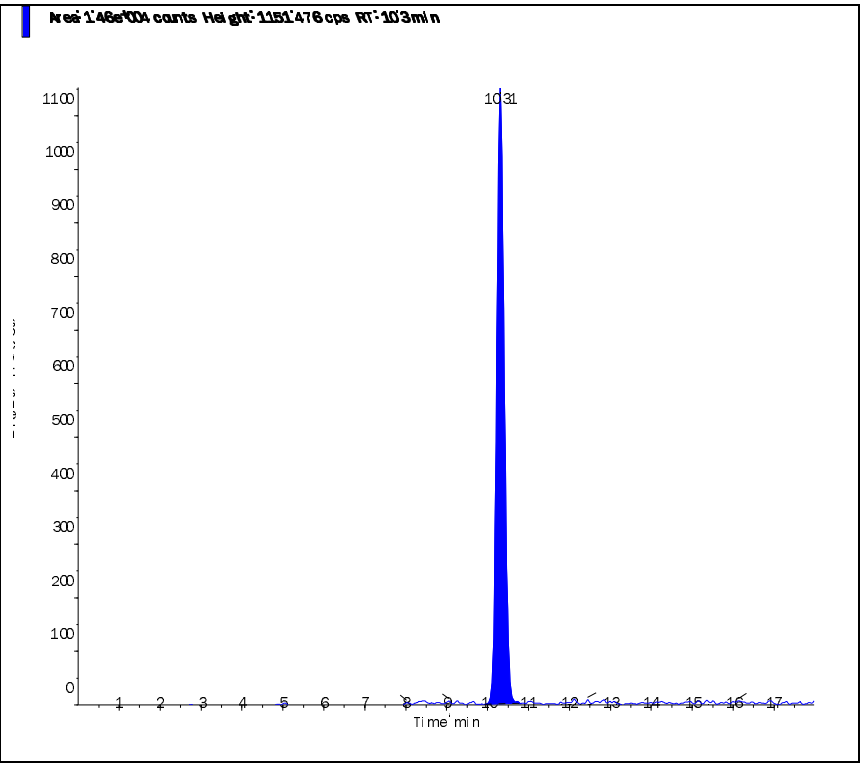

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Data File	LM27607.wiff	**Result Table**	021815_JWR.rdb
Acquisition Date	11/17/2014 1:56:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG501146-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM27607.wiff	**Injection Volume**	10.00
Acquisition Date	11/17/2014 1:56:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	021815_JWR.rdb
Sample ID	WG501146-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.270e+05	10.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.440e+04	10.30	1.00	0.952
Perchlorate conf	2.940e+04	10.30	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 10.30(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

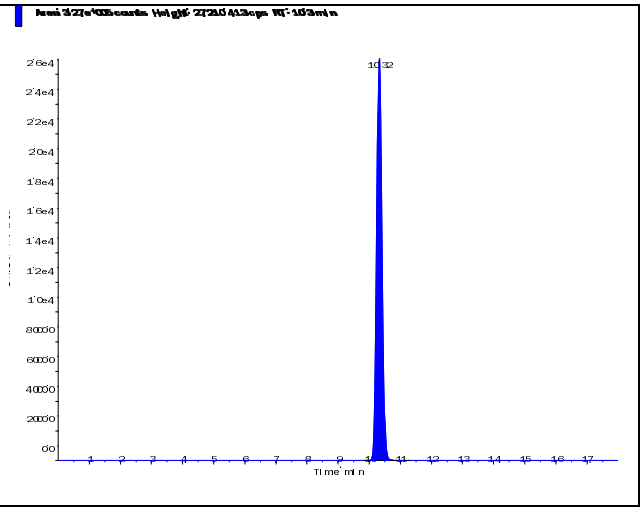

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.30 (10.30) min
Calculated conc:	0.952 ng/ml
Area Ratio:	0.258
Sample Type:	(Standard)

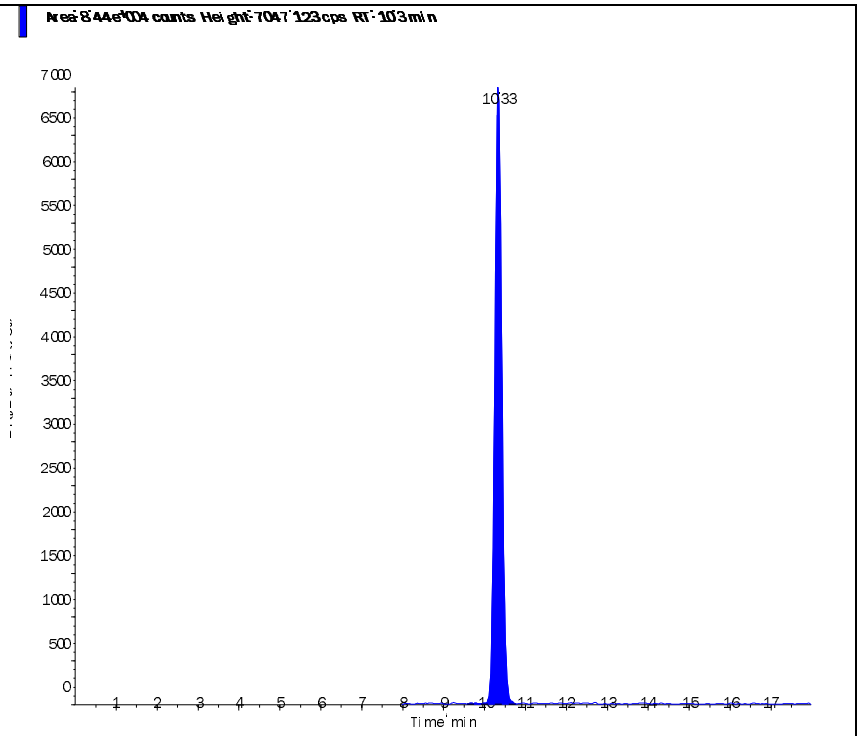

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.30 (10.30) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.09
Sample Type:	(Standard)

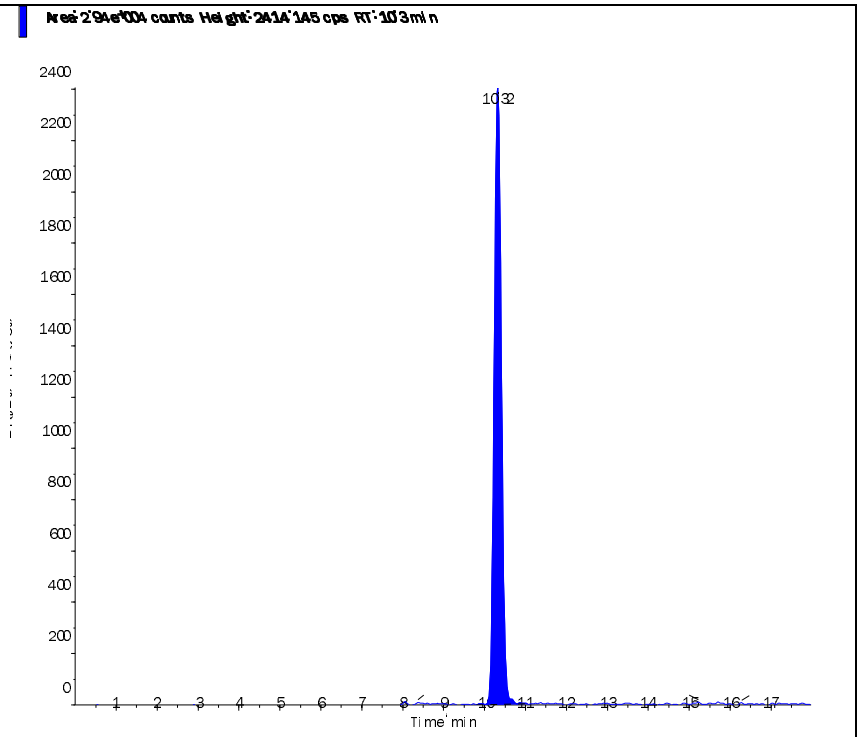

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Data File	LM27608.wiff	**Result Table**	021815_JWR.rdb
Acquisition Date	11/17/2014 2:15:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG501146-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM27608.wiff	**Injection Volume**	10.00
Acquisition Date	11/17/2014 2:15:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	021815_JWR.rdb
Sample ID	WG501146-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.230e+05	10.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.730e+05	10.30	2.00	1.99
Perchlorate conf	5.470e+04	10.30	2.00	1.91

O18LP (Internal Standard)

RT (Exp. RT): 10.30(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

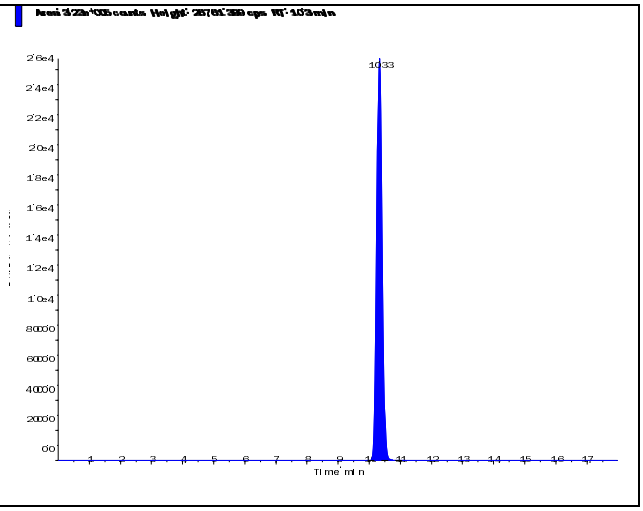

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.30 (10.30) min Calculated conc: 1.99 ng/ml Area Ratio: 0.535 Sample Type: (Standard)	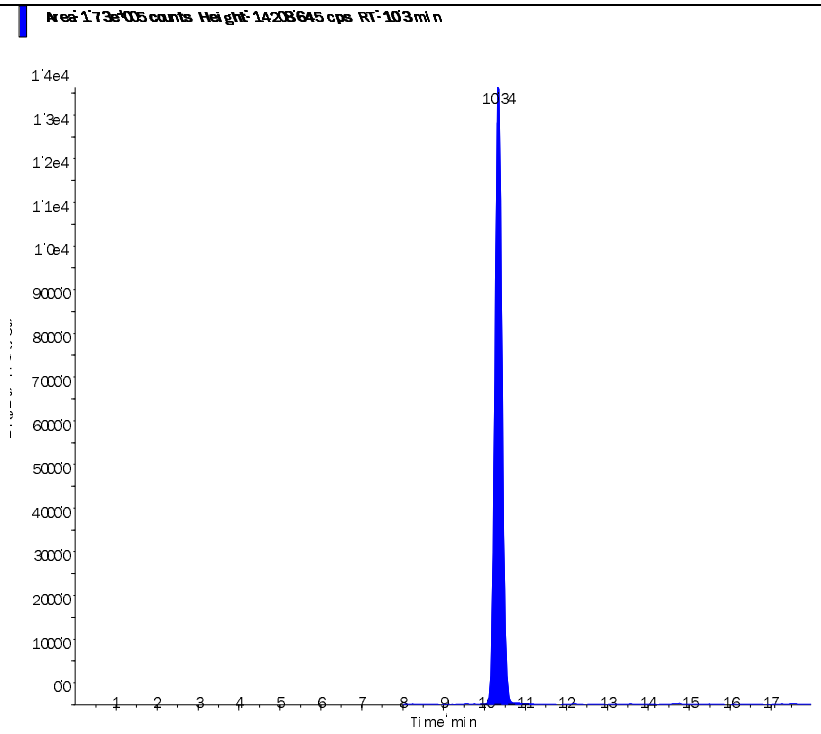
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 10.30 (10.30) min Calculated conc: 1.91 ng/ml Area Ratio: 0.169 Sample Type: (Standard)	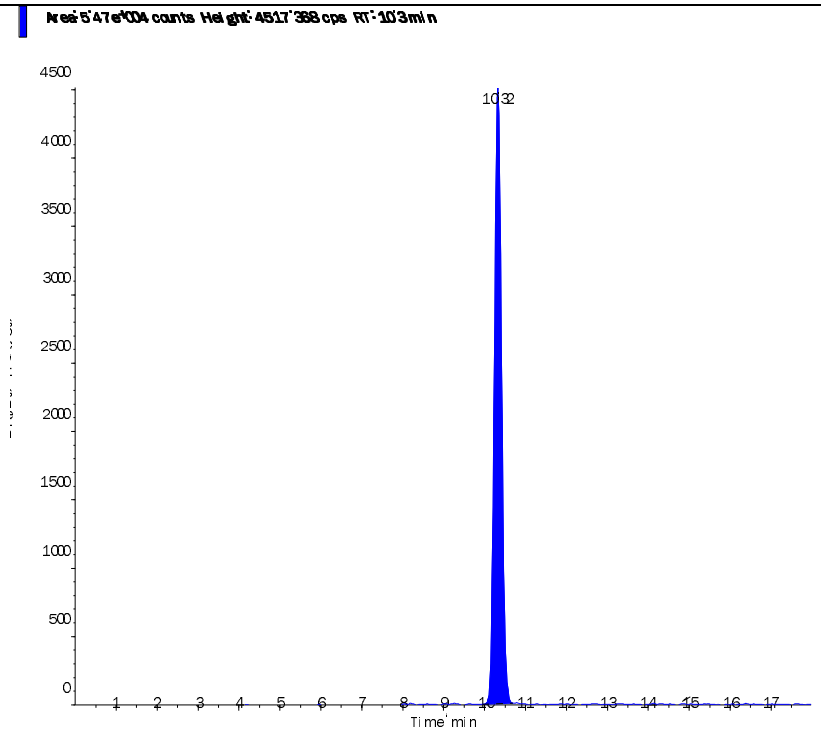

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Data File	LM27609.wiff	**Result Table**	021815_JWR.rdb
Acquisition Date	11/17/2014 2:34:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG501146-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM27609.wiff	**Injection Volume**	10.00
Acquisition Date	11/17/2014 2:34:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	021815_JWR.rdb
Sample ID	WG501146-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.140e+05	10.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.200e+05	10.30	5.00	4.99
Perchlorate conf	1.400e+05	10.30	5.00	5.04

O18LP (Internal Standard)

RT (Exp. RT): 10.30(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

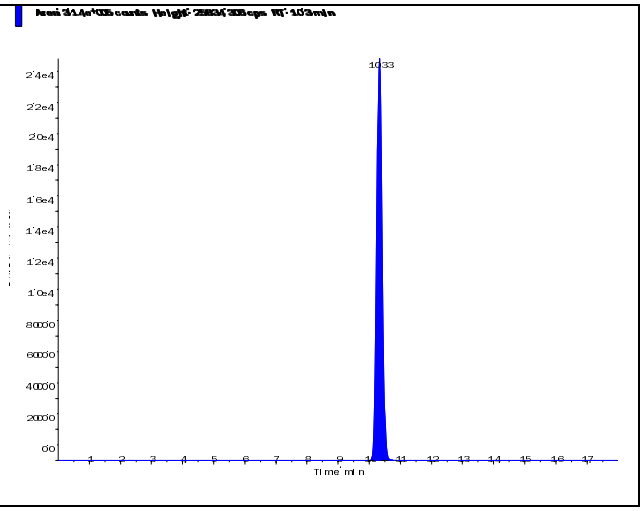

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.30 (10.30) min Calculated conc: 4.99 ng/ml Area Ratio: 1.337 Sample Type: (Standard)	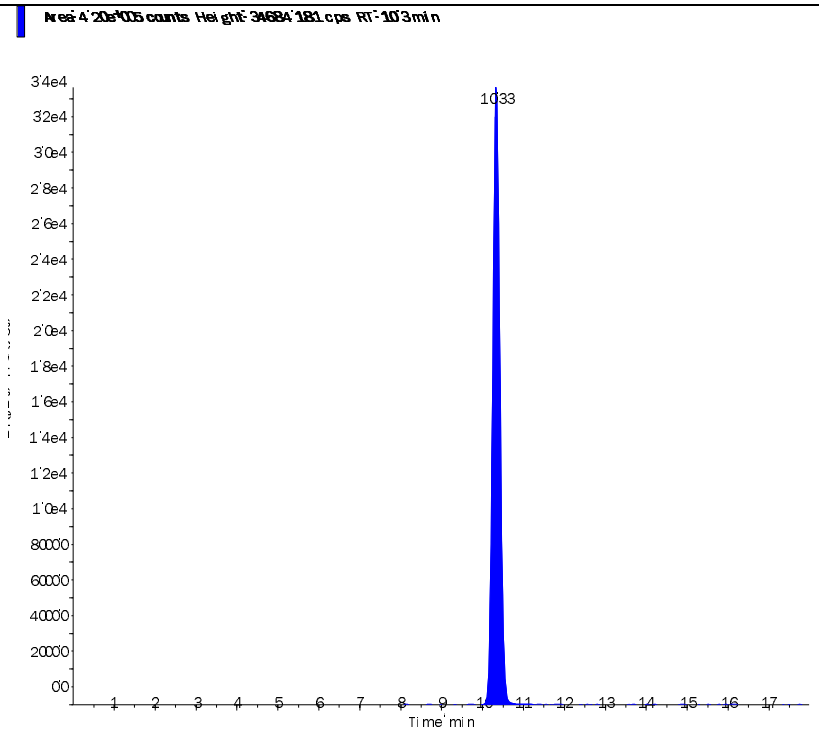
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 10.30 (10.30) min Calculated conc: 5.04 ng/ml Area Ratio: 0.445 Sample Type: (Standard)	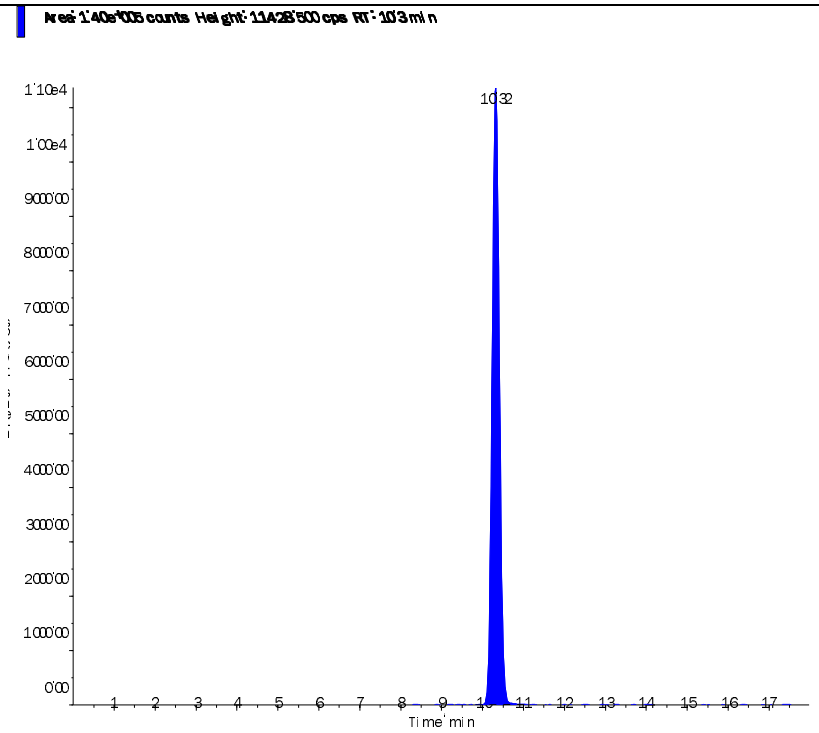

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Data File	LM27610.wiff	**Result Table**	021815_JWR.rdb
Acquisition Date	11/17/2014 2:53:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG501146-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM27610.wiff	**Injection Volume**	10.00
Acquisition Date	11/17/2014 2:53:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	021815_JWR.rdb
Sample ID	WG501146-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.120e+05	10.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.410e+05	10.30	10.00	10.10
Perchlorate conf	2.760e+05	10.30	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 10.30(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

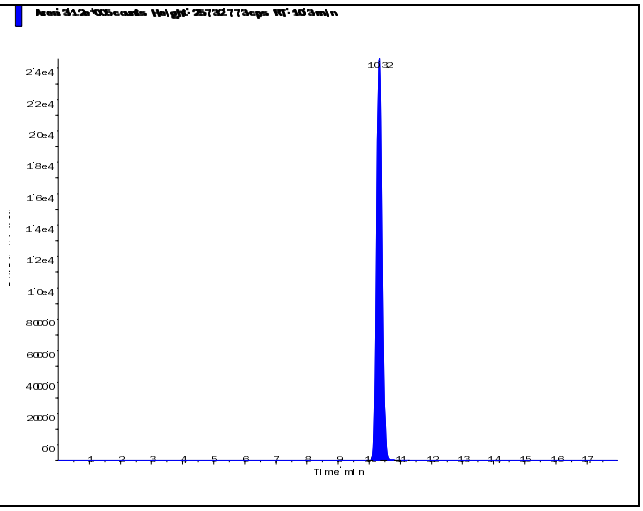

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.30 (10.30) min Calculated conc: 10.10 ng/ml Area Ratio: 2.694 Sample Type: (Standard)	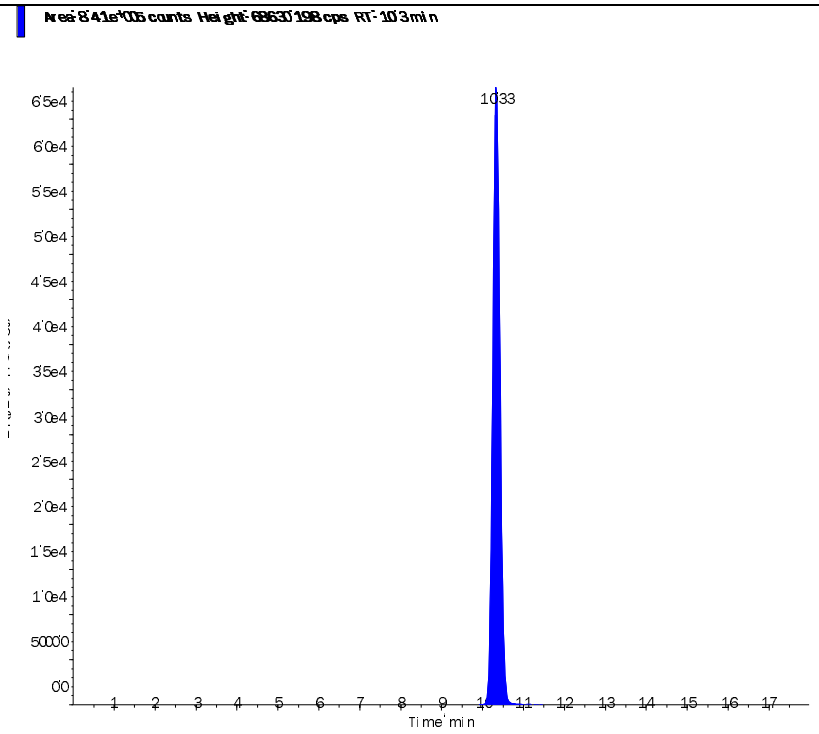
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 10.30 (10.30) min Calculated conc: 10.00 ng/ml Area Ratio: 0.886 Sample Type: (Standard)	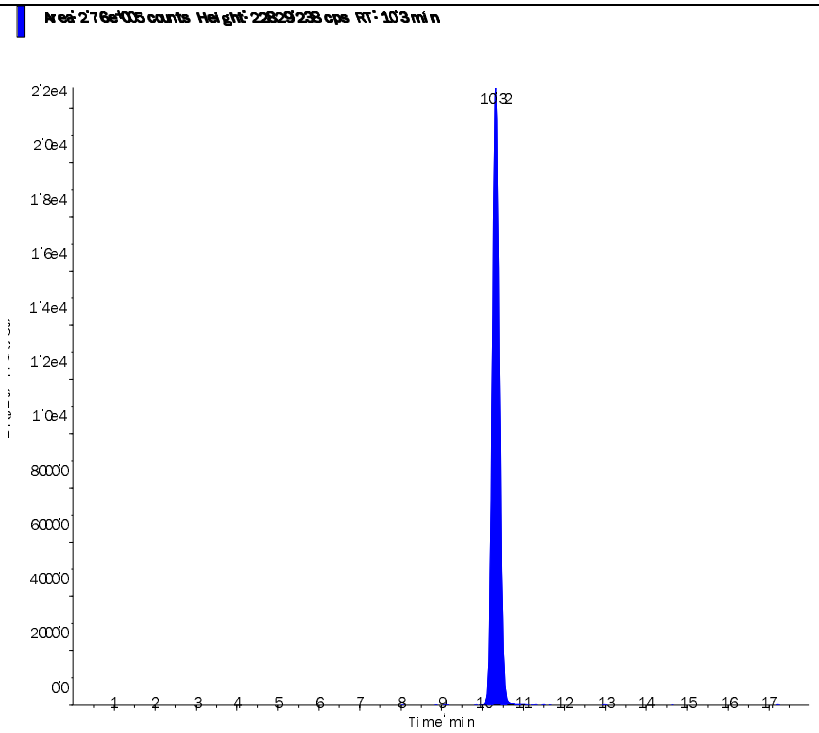

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Data File	LM27611.wiff	**Result Table**	111714_ADC.rdb
Acquisition Date	11/17/2014 3:12:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG501146-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM27611.wiff	**Injection Volume**	10.00
Acquisition Date	11/17/2014 3:12:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	111714_ADC.rdb
Sample ID	WG501146-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD67082	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.260e+05	10.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.880e+04	10.30	1.00	1.01
Perchlorate conf	2.940e+04	10.30	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 10.30(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

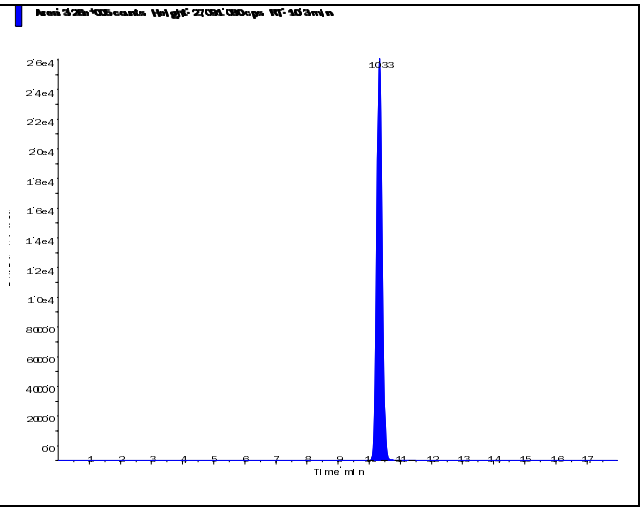

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.30 (10.30) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.272
Sample Type:	(Quality Control)

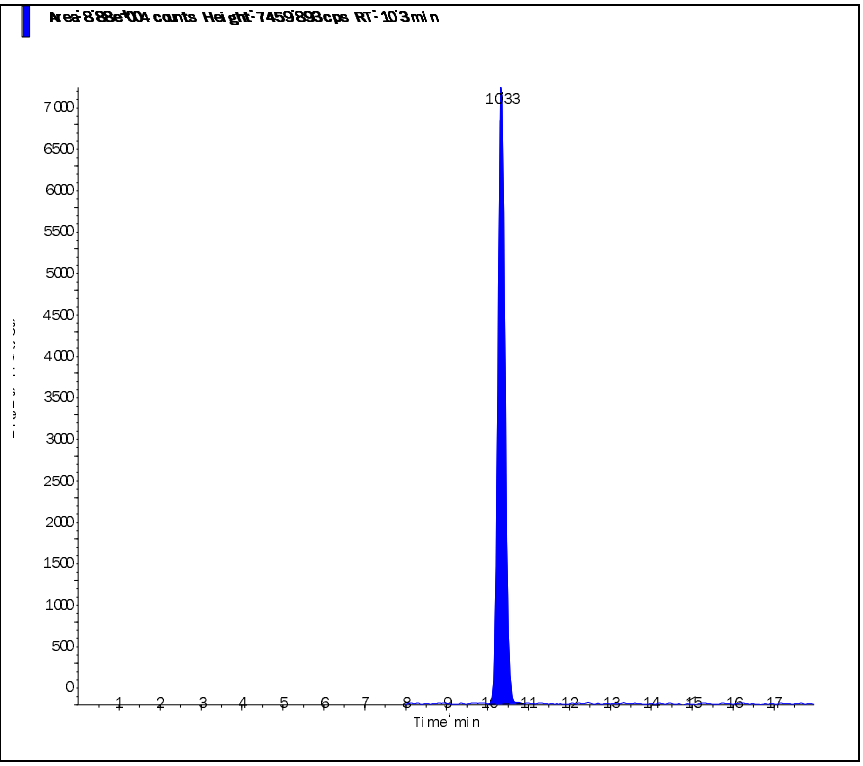

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.30 (10.30) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.09
Sample Type:	(Quality Control)

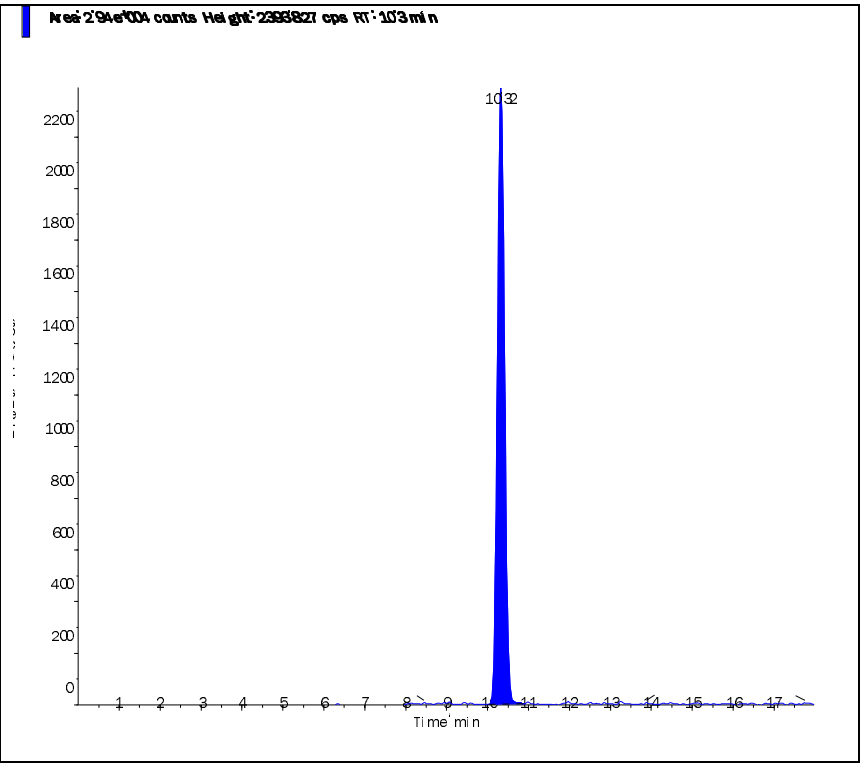

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Printed: 2/19/2015 11:06 AM

Data File	LM28970.wiff	**Result Table**	021815_JWR.rdb
Acquisition Date	2/18/2015 9:48:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG512779-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM28970.wiff	**Injection Volume**	10.00
Acquisition Date	2/18/2015 9:48:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	021815_JWR.rdb
Sample ID	WG512779-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.140e+05	9.85	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.860e+04	9.87	1.00	1.04
Perchlorate conf	2.960e+04	9.85	1.00	1.06

O18LP (Internal Standard)

RT (Exp. RT): 9.85(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

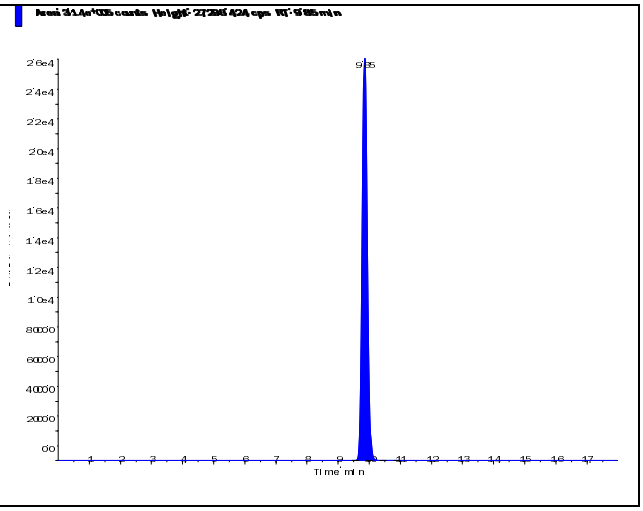

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.87 (10.30) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.282
Sample Type:	(Quality Control)

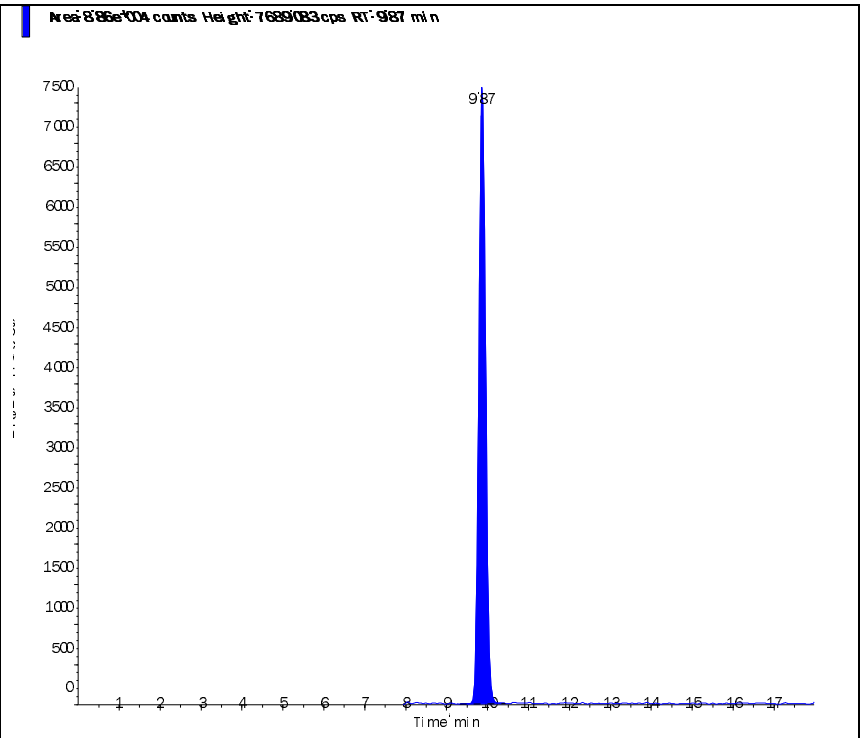

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.85 (10.30) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.094
Sample Type:	(Quality Control)

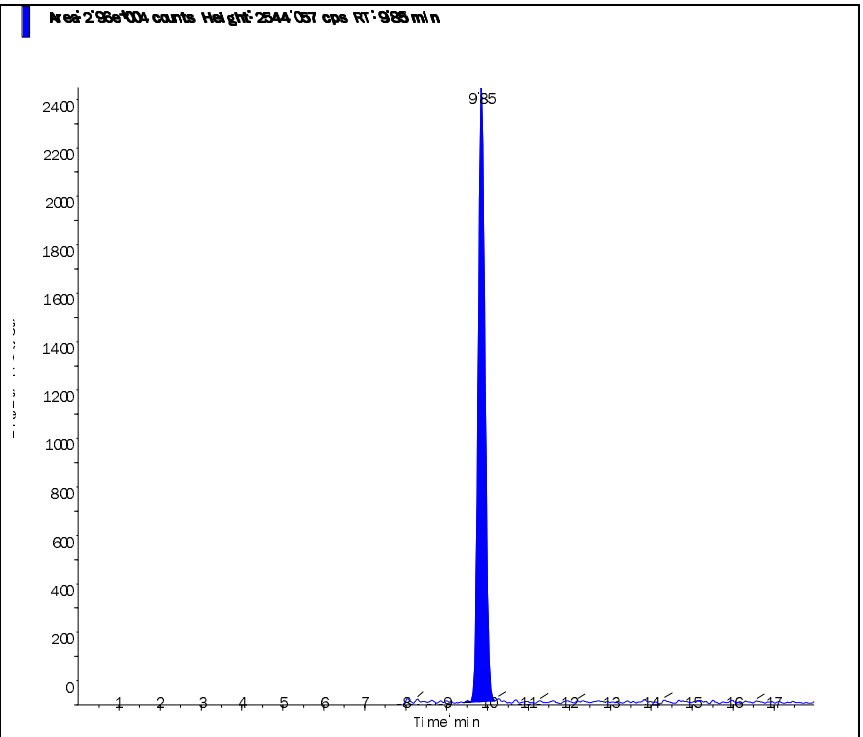

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Created with Analyst Reporter
Printed: 2/19/2015 11:09 AM

Data File	LM28984.wiff	**Result Table**	021815_JWR.rdb
Acquisition Date	2/19/2015 2:13:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG512779-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM28984.wiff	**Injection Volume**	10.00
Acquisition Date	2/19/2015 2:13:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	021815_JWR.rdb
Sample ID	WG512779-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.230e+05	9.86	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.840e+04	9.87	1.00	1.01
Perchlorate conf	2.990e+04	9.86	1.00	1.04

O18LP (Internal Standard)

RT (Exp. RT): 9.86(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

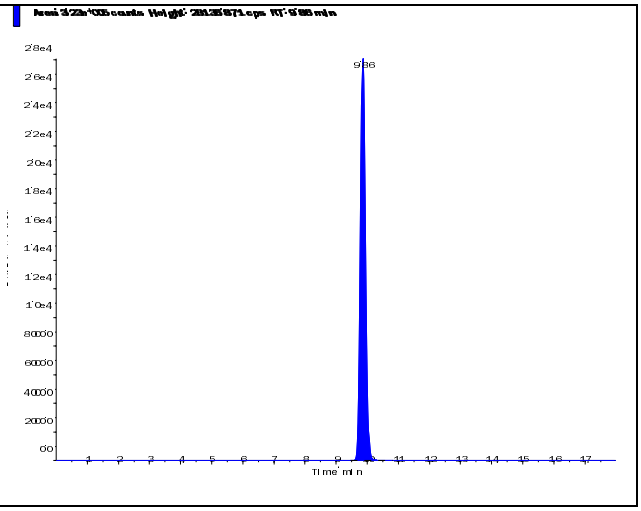

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.87 (10.30) min Calculated conc: 1.01 ng/ml Area Ratio: 0.274 Sample Type: (Quality Control)	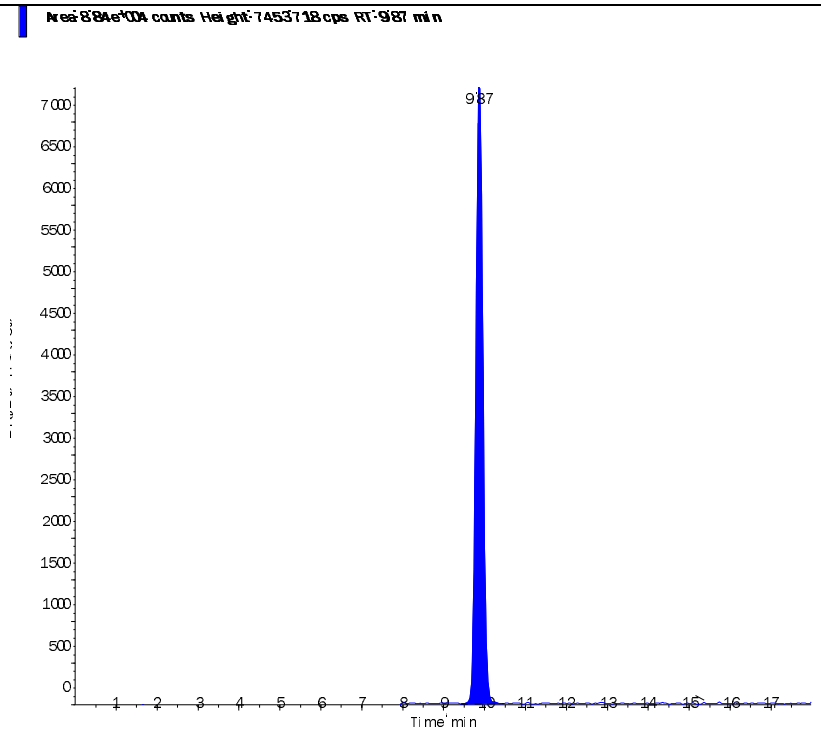
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.86 (10.30) min Calculated conc: 1.04 ng/ml Area Ratio: 0.093 Sample Type: (Quality Control)	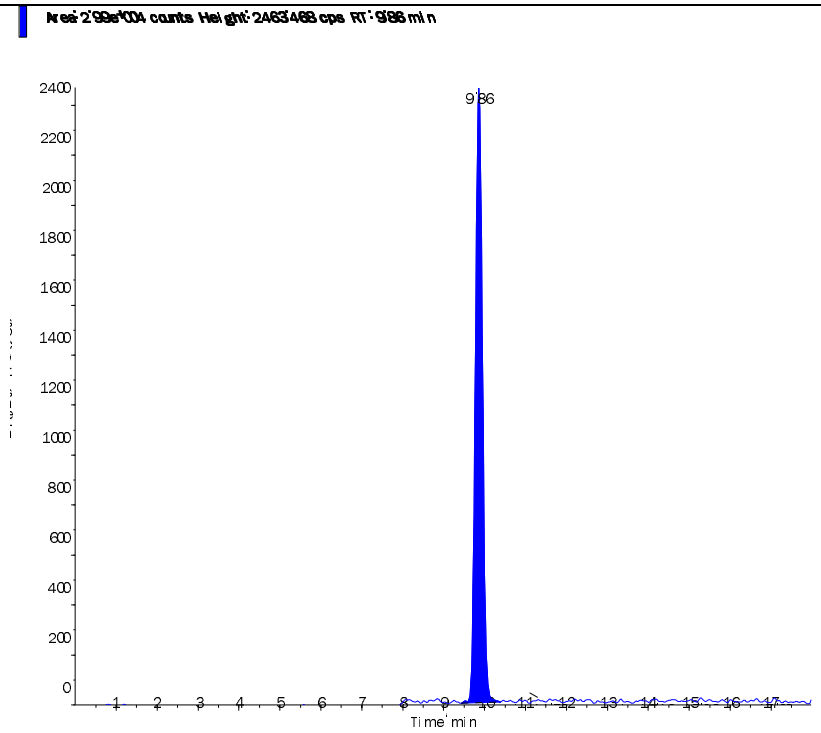

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Printed: 2/19/2015 11:11 AM

Data File	LM28995.wiff	**Result Table**	021815_JWR.rdb
Acquisition Date	2/19/2015 5:41:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG512779-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM28995.wiff	**Injection Volume**	10.00
Acquisition Date	2/19/2015 5:41:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	021815_JWR.rdb
Sample ID	WG512779-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.260e+05	9.89	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.630e+04	9.90	1.00	0.978
Perchlorate conf	3.090e+04	9.88	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 9.89(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

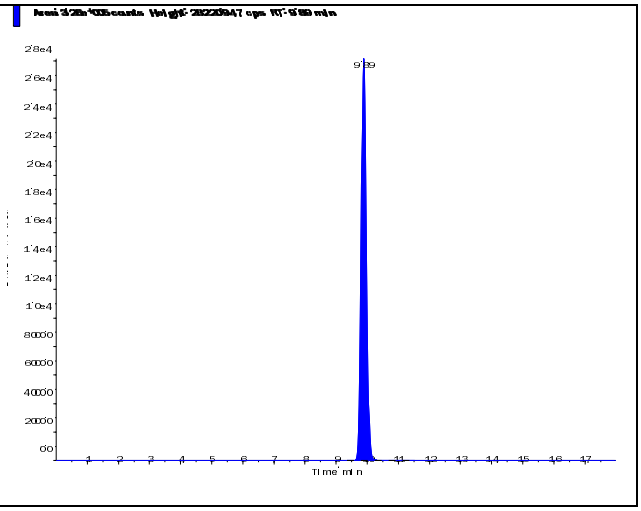

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.90 (10.30) min
Calculated conc:	0.978 ng/ml
Area Ratio:	0.265
Sample Type:	(Quality Control)

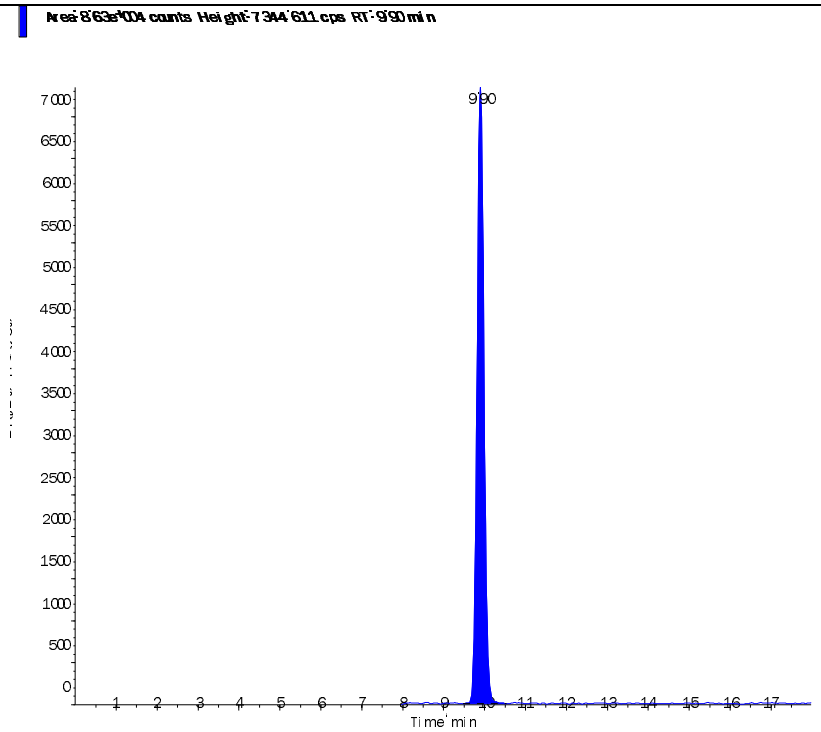

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.88 (10.30) min
Calculated conc:	1.07 ng/ml
Area Ratio:	0.095
Sample Type:	(Quality Control)

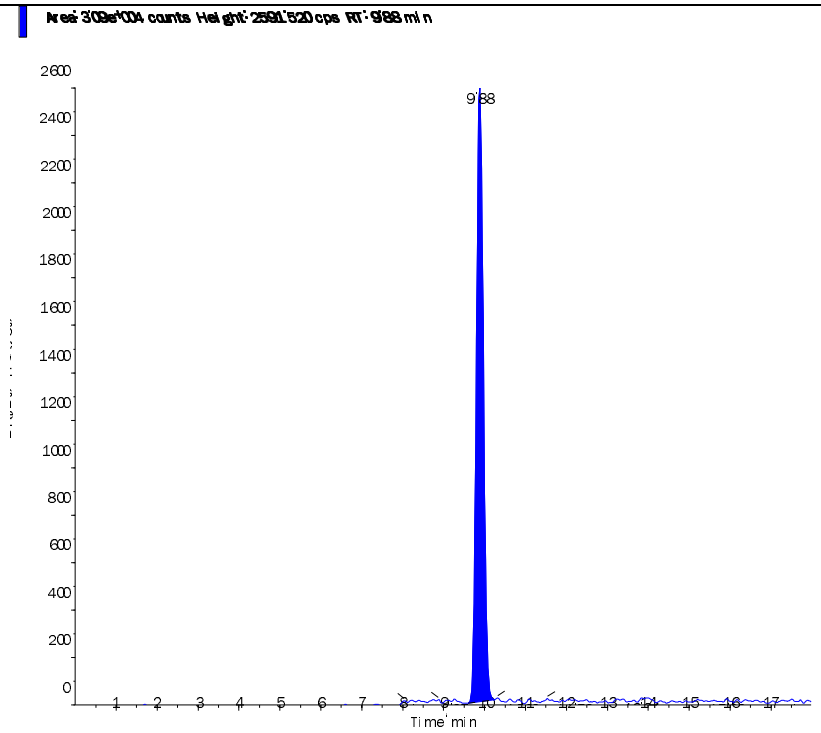

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Printed: 2/19/2015 11:12 AM

Data File	LM29001.wiff	**Result Table**	021815_JWR.rdb
Acquisition Date	2/19/2015 7:35:32 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG512779-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM29001.wiff	**Injection Volume**	10.00
Acquisition Date	2/19/2015 7:35:32 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	021815_JWR.rdb
Sample ID	WG512779-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.250e+05	9.89	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.900e+04	9.90	1.00	1.01
Perchlorate conf	3.040e+04	9.88	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.89(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

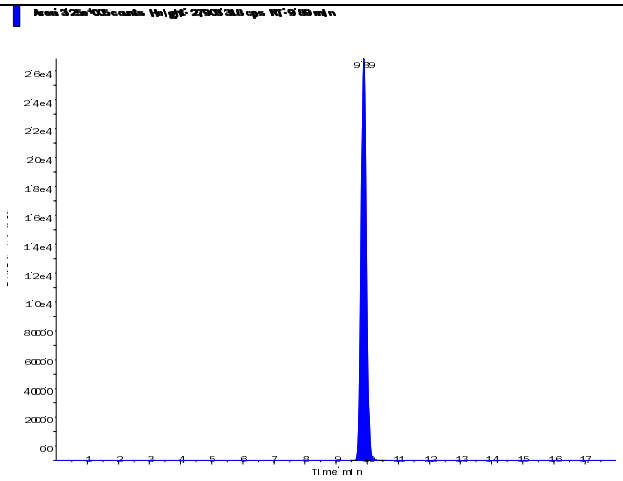

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.90 (10.30) min Calculated conc: 1.01 ng/ml Area Ratio: 0.274 Sample Type: (Quality Control)	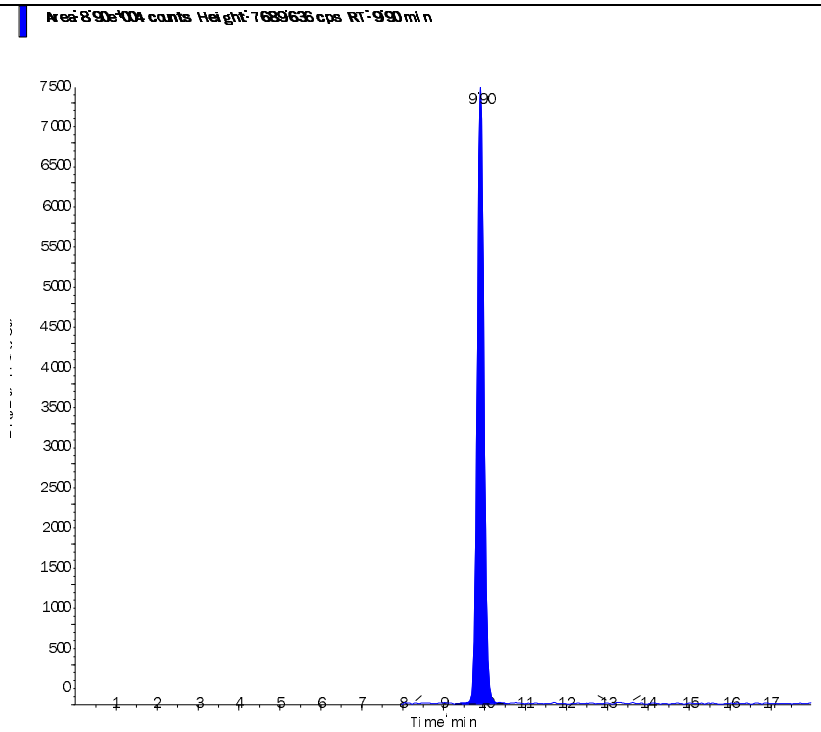
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.88 (10.30) min Calculated conc: 1.05 ng/ml Area Ratio: 0.094 Sample Type: (Quality Control)	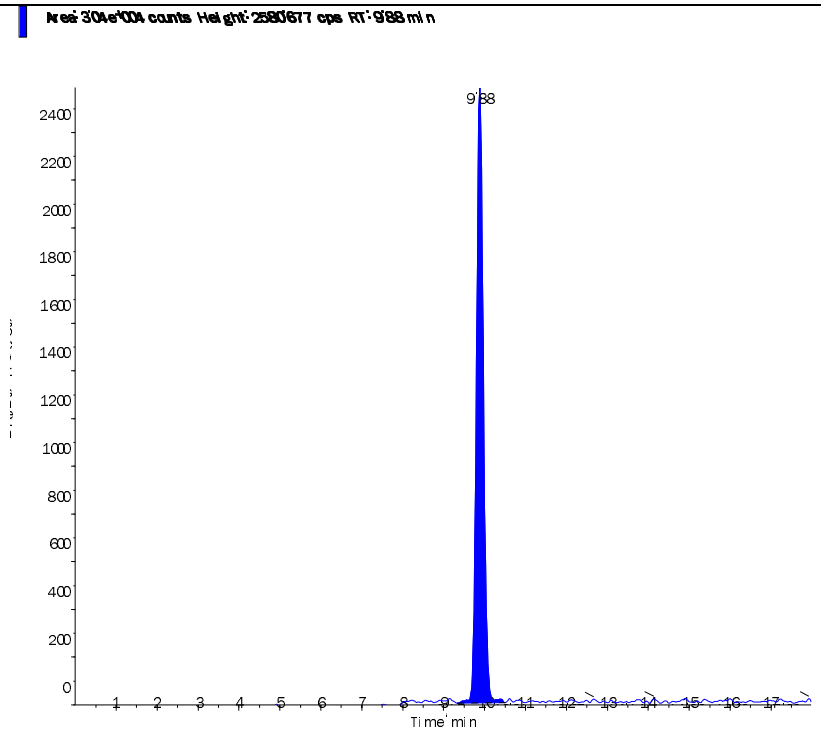

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Printed: 2/19/2015 11:06 AM

Data File	LM28972.wiff	**Result Table**	021815_JWR.rdb
Acquisition Date	2/18/2015 10:26:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG512778-10 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM28972.wiff	**Injection Volume**	10.00
Acquisition Date	2/18/2015 10:26:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	021815_JWR.rdb
Sample ID	WG512778-10	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.130e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.830e+04	9.84	N/A	0.205
Perchlorate conf	5.870e+03	9.83	N/A	0.202

O18LP (Internal Standard)

RT (Exp. RT): 9.84(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

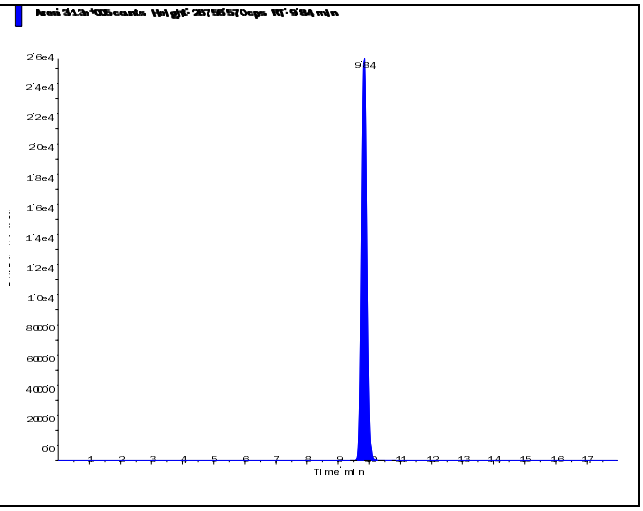

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (10.30) min
Calculated conc:	0.205 ng/ml
Area Ratio:	0.058
Sample Type:	(Unknown)

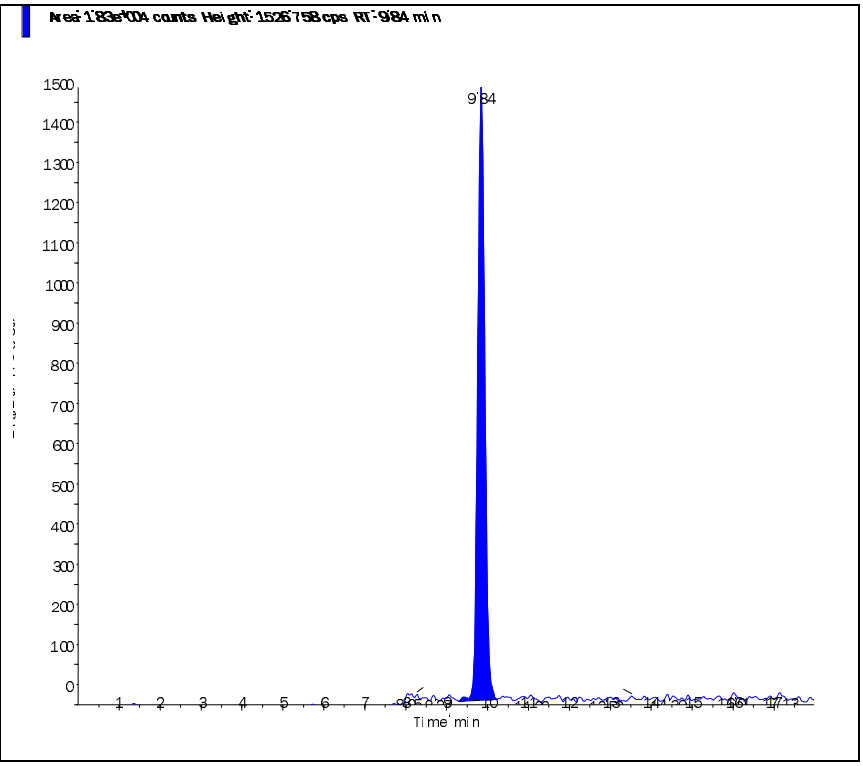

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (10.30) min
Calculated conc:	0.202 ng/ml
Area Ratio:	0.019
Sample Type:	(Unknown)

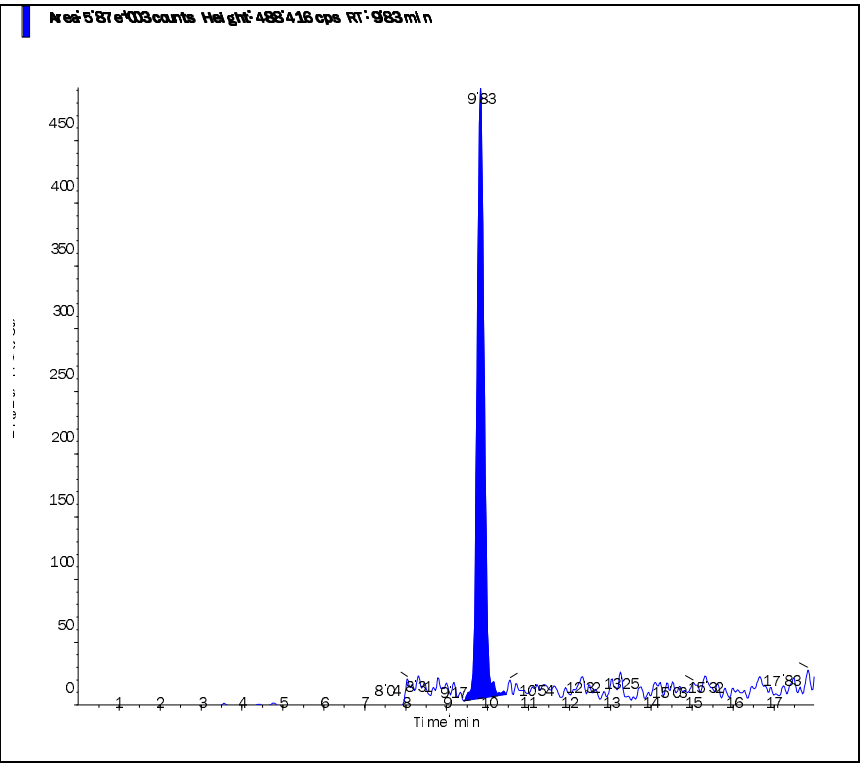

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Data File	LM28985.wiff	**Result Table**	021815_JWR.rdb
Acquisition Date	2/19/2015 2:32:41 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG512778-11 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM28985.wiff	**Injection Volume**	10.00
Acquisition Date	2/19/2015 2:32:41 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	021815_JWR.rdb
Sample ID	WG512778-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.140e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.730e+04	9.85	N/A	0.191
Perchlorate conf	5.690e+03	9.83	N/A	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

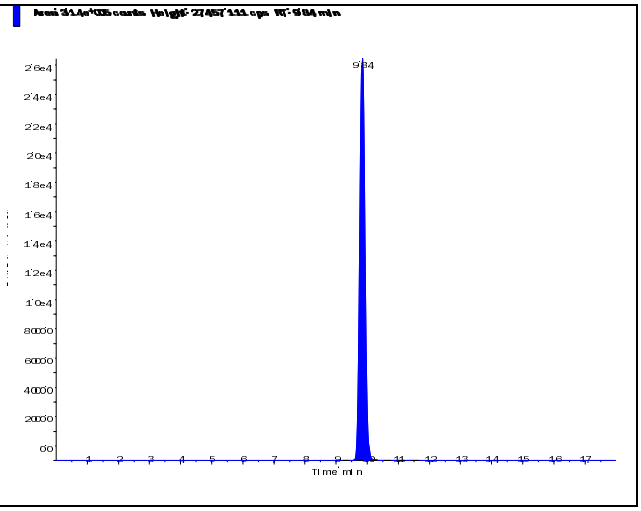

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Printed: 2/19/2015 11:09 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (10.30) min Calculated conc: 0.191 ng/ml Area Ratio: 0.055 Sample Type: (Unknown)	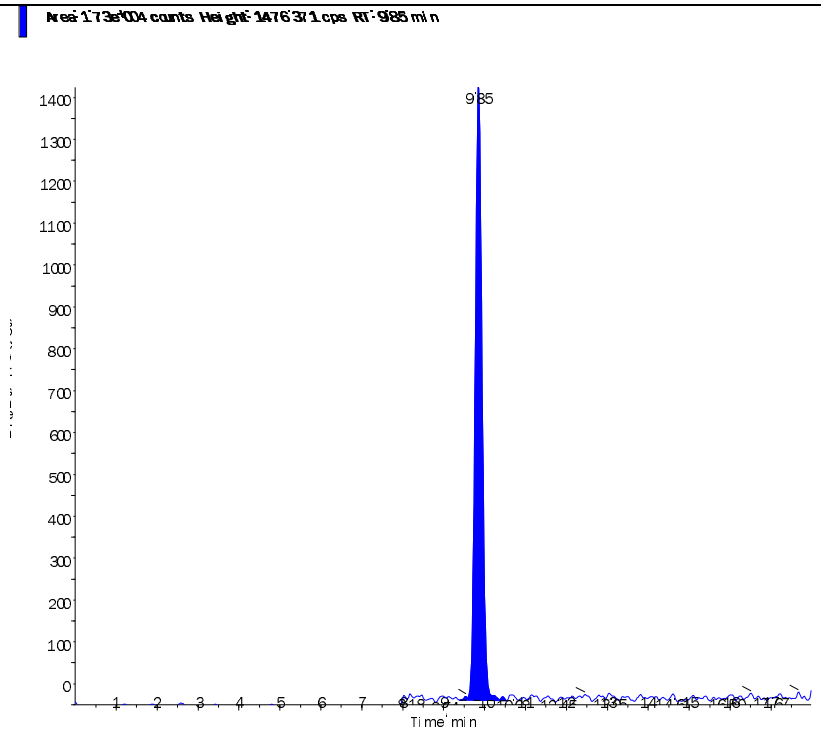
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (10.30) min Calculated conc: 0.194 ng/ml Area Ratio: 0.018 Sample Type: (Unknown)	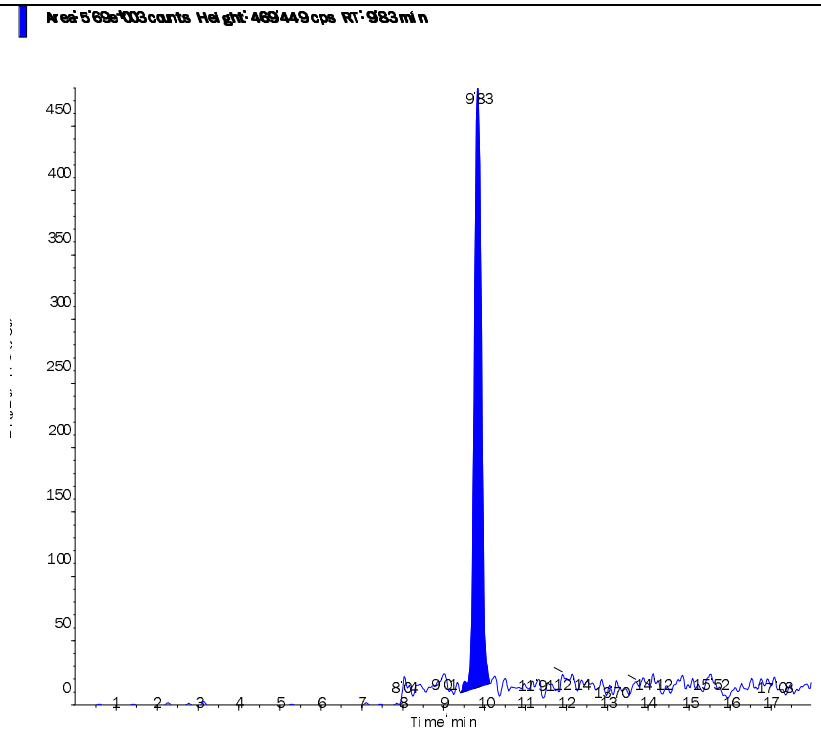

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Data File	LM28996.wiff	**Result Table**	021815_JWR.rdb
Acquisition Date	2/19/2015 6:00:53 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG512778-12 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM28996.wiff	**Injection Volume**	10.00
Acquisition Date	2/19/2015 6:00:53 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	021815_JWR.rdb
Sample ID	WG512778-12	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.140e+05	9.86	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.730e+04	9.87	N/A	0.192
Perchlorate conf	6.030e+03	9.85	N/A	0.207

O18LP (Internal Standard)

RT (Exp. RT): 9.86(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

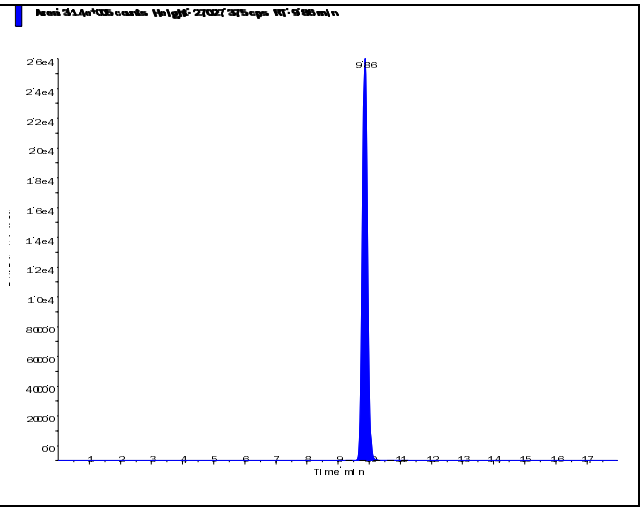

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.87 (10.30) min Calculated conc: 0.192 ng/ml Area Ratio: 0.055 Sample Type: (Unknown)	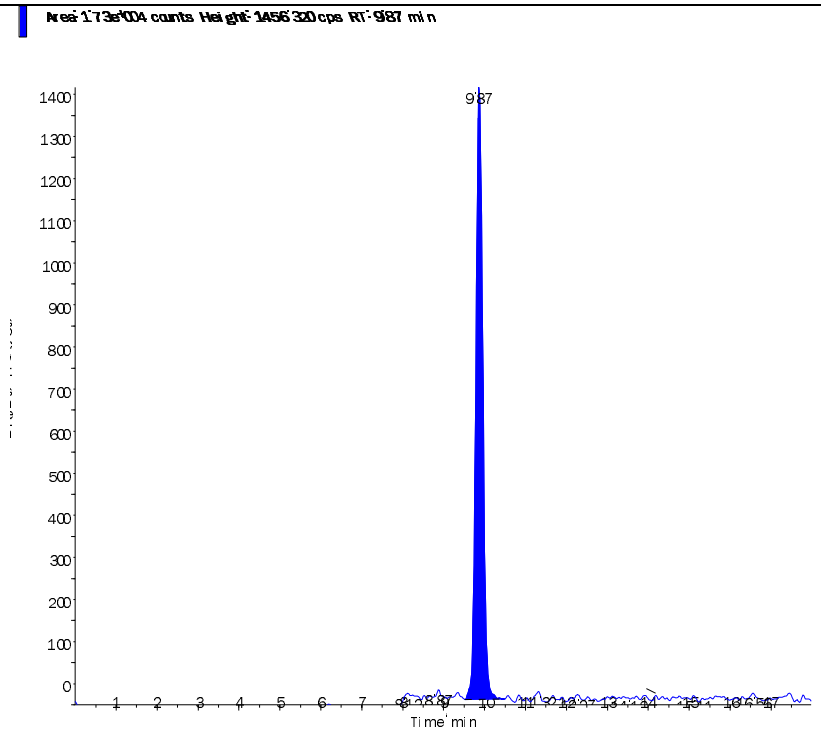
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.85 (10.30) min Calculated conc: 0.207 ng/ml Area Ratio: 0.019 Sample Type: (Unknown)	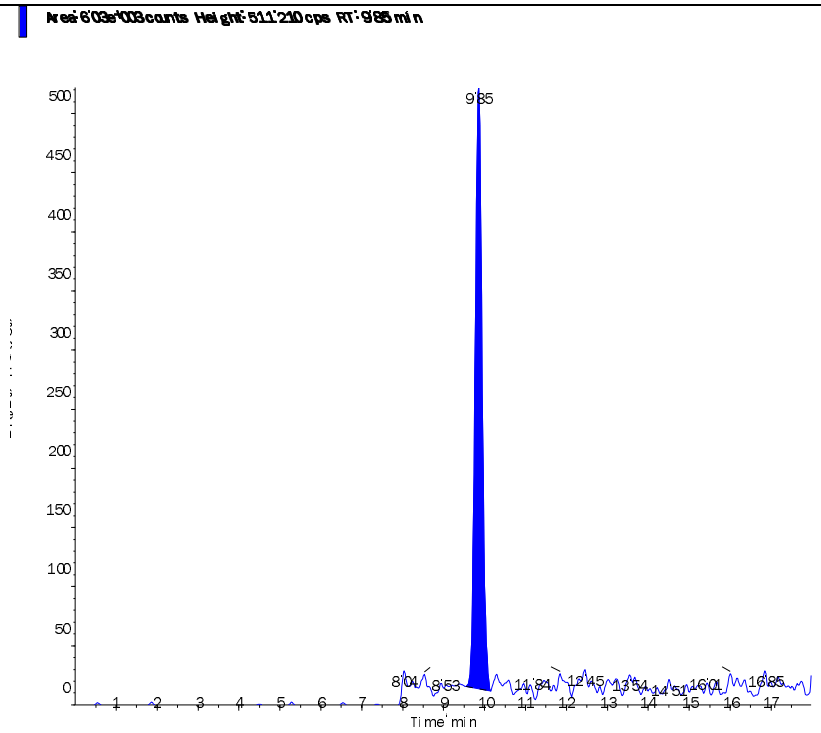

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Created with Analyst Reporter
Printed: 2/19/2015 11:13 AM

Data File	LM29002.wiff	**Result Table**	021815_JWR.rdb
Acquisition Date	2/19/2015 7:54:28 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG512778-13 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM29002.wiff	**Injection Volume**	10.00
Acquisition Date	2/19/2015 7:54:28 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	021815_JWR.rdb
Sample ID	WG512778-13	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.090e+05	9.86	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.730e+04	9.88	N/A	0.196
Perchlorate conf	5.410e+03	9.86	N/A	0.188

O18LP (Internal Standard)

RT (Exp. RT): 9.86(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

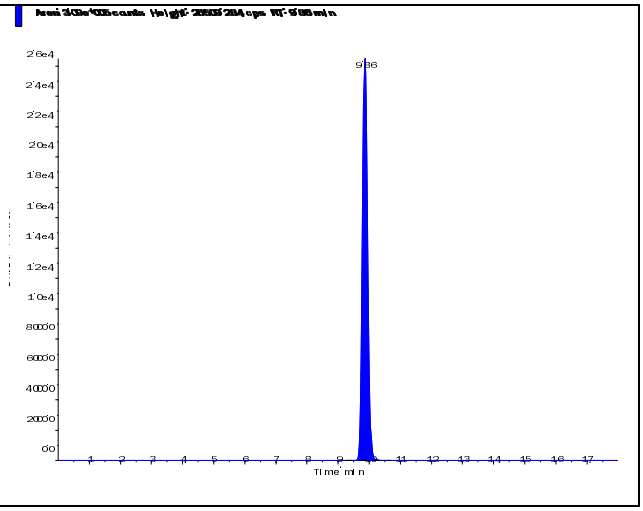

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.88 (10.30) min
Calculated conc:	0.196 ng/ml
Area Ratio:	0.056
Sample Type:	(Unknown)

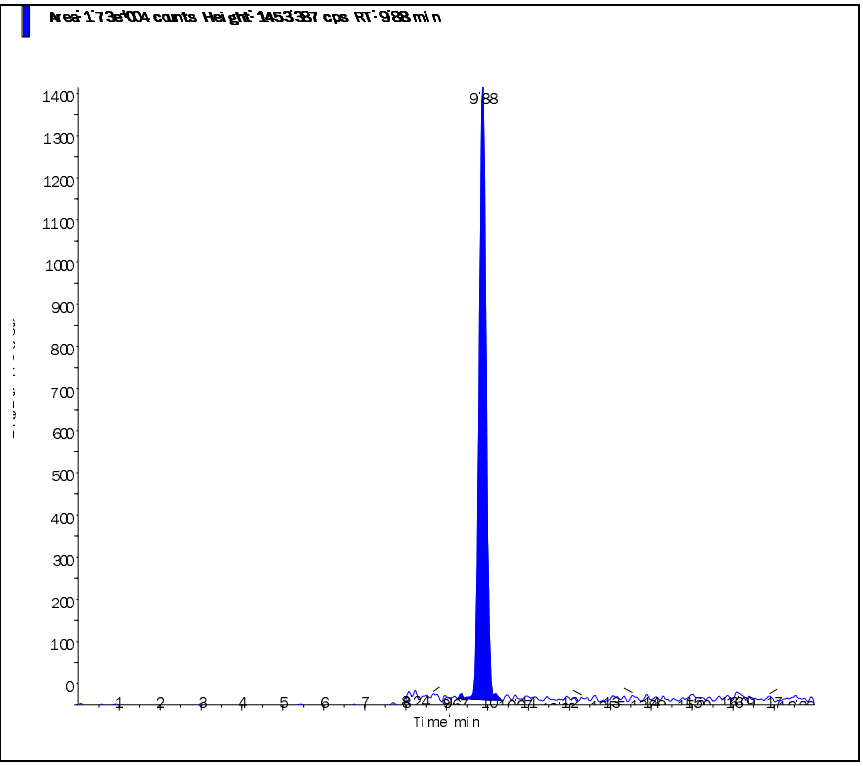

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.86 (10.30) min
Calculated conc:	0.188 ng/ml
Area Ratio:	0.018
Sample Type:	(Unknown)

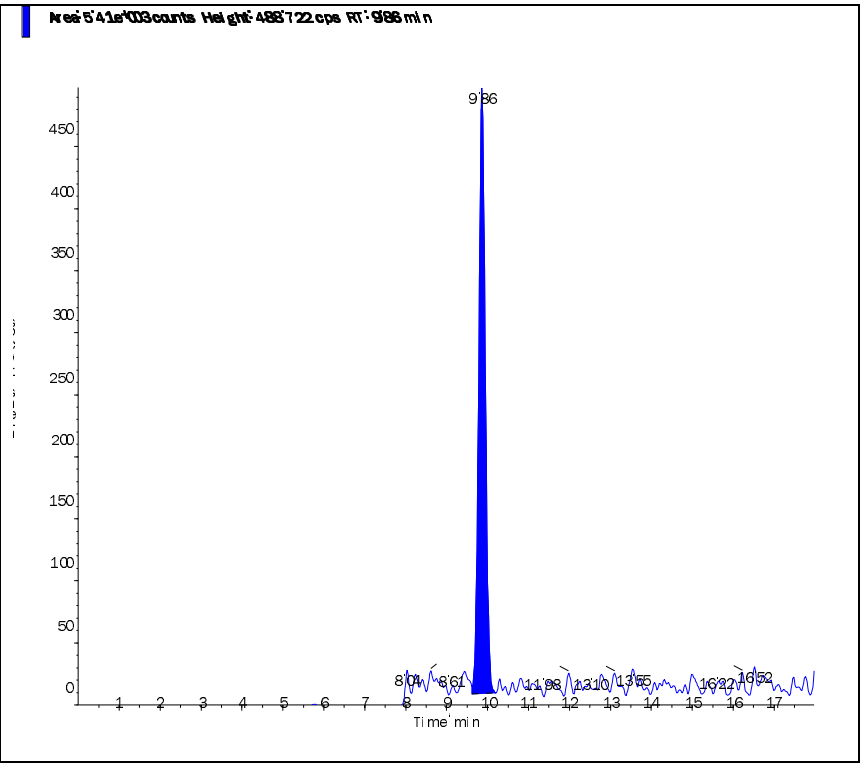

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Printed: 2/19/2015 11:06 AM

Data File	LM28973.wiff	**Result Table**	021815_JWR.rdb
Acquisition Date	2/18/2015 10:45:26 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG512779-04 CCB	**Injection Vial**	1.00
Data File	LM28973.wiff	**Injection Volume**	10.00
Acquisition Date	2/18/2015 10:45:26 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	021815_JWR.rdb
Sample ID	WG512779-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.100e+05	9.89	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.89(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

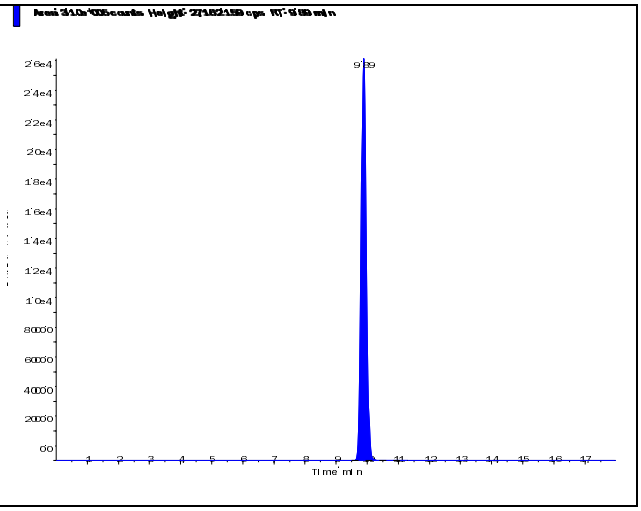

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Printed: 2/19/2015 11:06 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (10.30) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	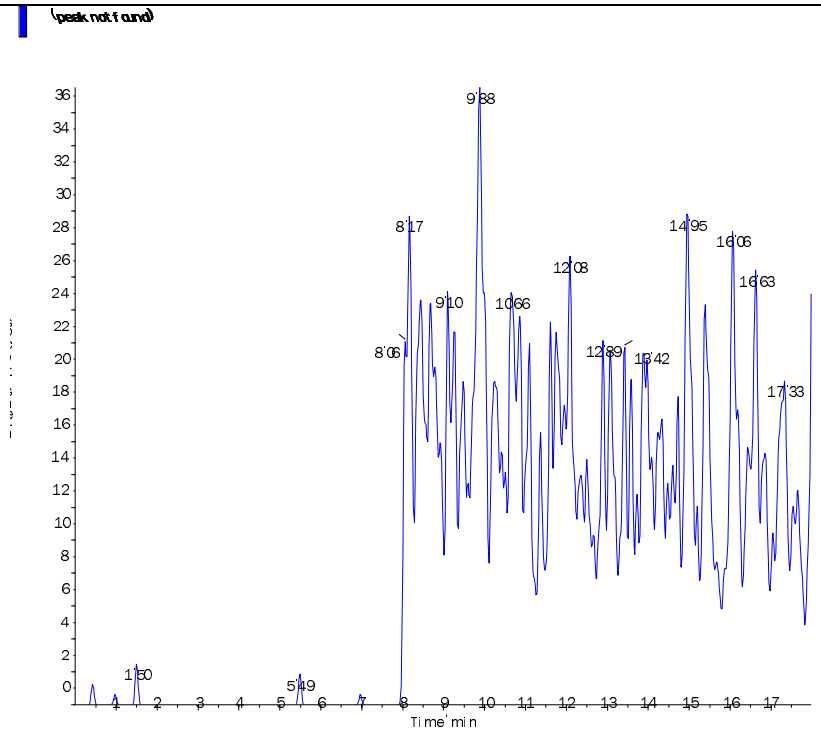
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (10.30) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	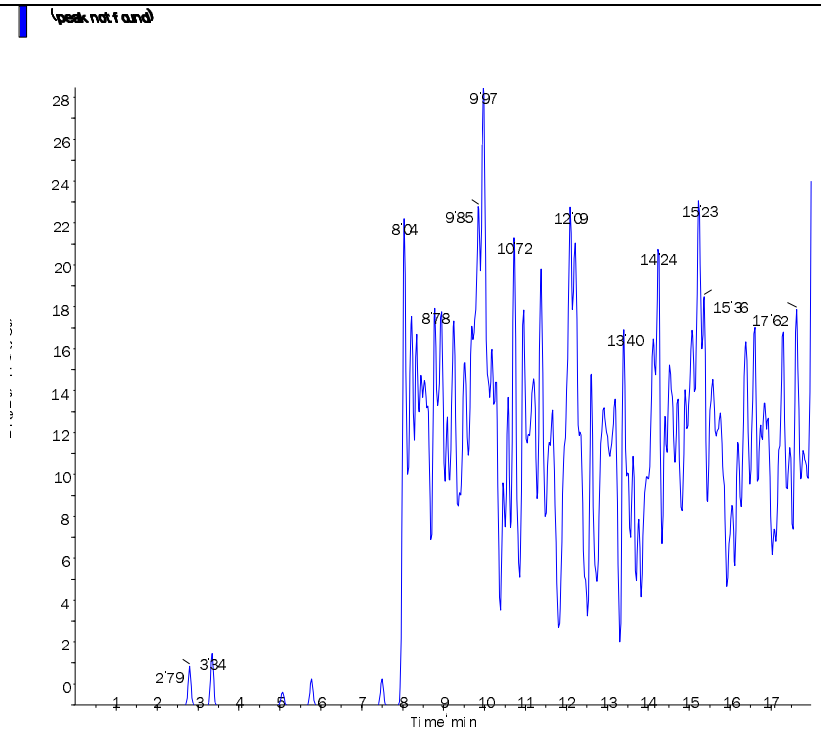

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Created with Analyst Reporter
Printed: 2/19/2015 11:09 AM

Data File	LM28986.wiff	**Result Table**	021815_JWR.rdb
Acquisition Date	2/19/2015 2:51:35 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG512779-06 CCB	**Injection Vial**	1.00
Data File	LM28986.wiff	**Injection Volume**	10.00
Acquisition Date	2/19/2015 2:51:35 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	021815_JWR.rdb
Sample ID	WG512779-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.130e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.240e+02	9.93	N/A	< 0
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.91(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

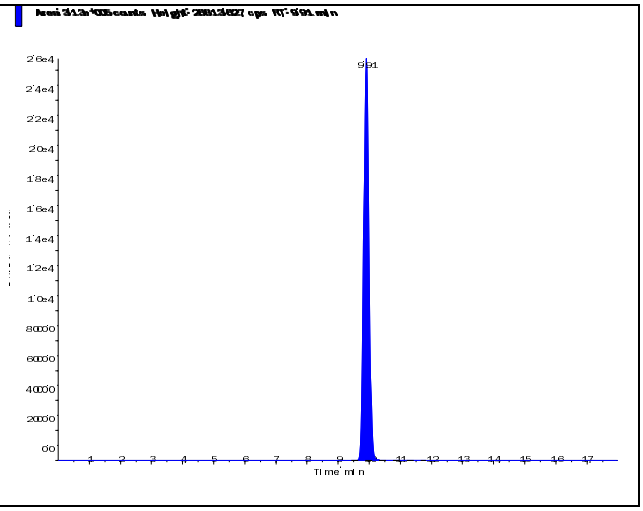

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Printed: 2/19/2015 11:09 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.93 (10.30) min Calculated conc: < 0 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	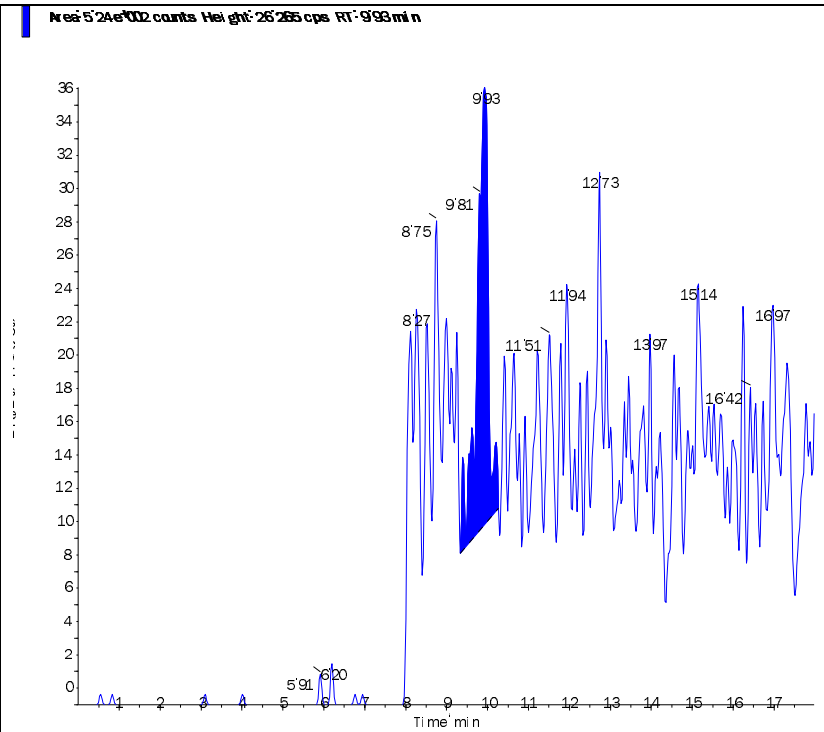
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (10.30) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	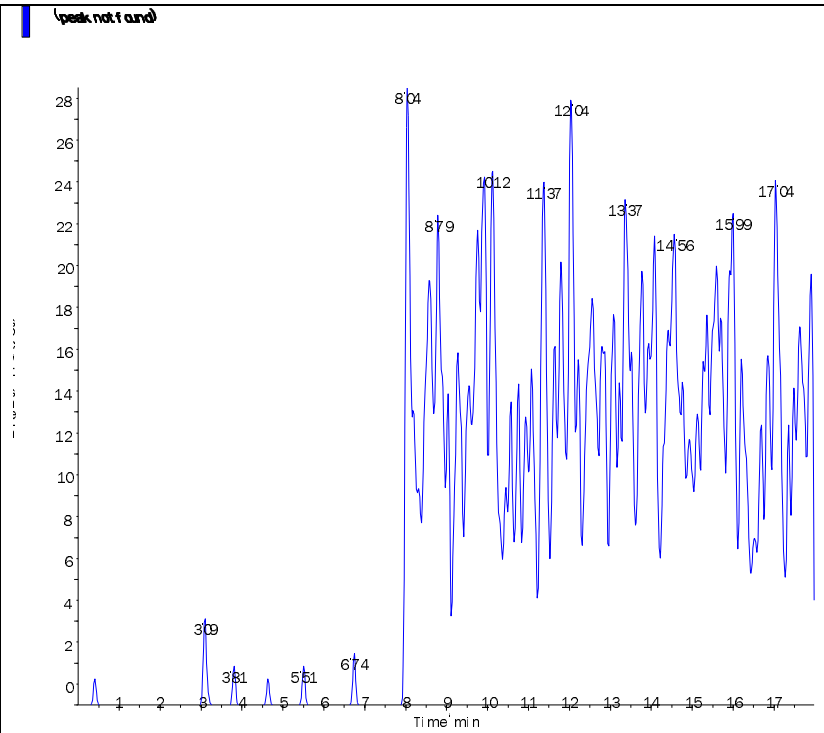

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Created with Analyst Reporter
Printed: 2/19/2015 11:12 AM

Data File	LM28997.wiff	**Result Table**	021815_JWR.rdb
Acquisition Date	2/19/2015 6:19:49 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG512779-08 CCB	**Injection Vial**	1.00
Data File	LM28997.wiff	**Injection Volume**	10.00
Acquisition Date	2/19/2015 6:19:49 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	021815_JWR.rdb
Sample ID	WG512779-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.960e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.690e+02	9.88	N/A	< 0
Perchlorate conf	3.480e+02	9.88	N/A	0.0024

O18LP (Internal Standard)

RT (Exp. RT): 9.91(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

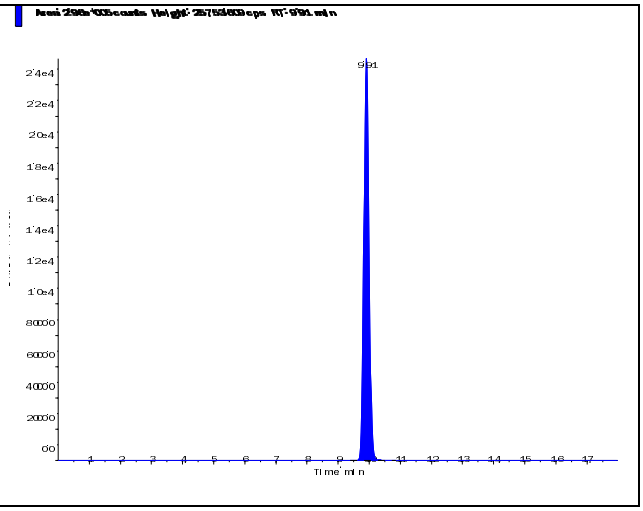

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.88 (10.30) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

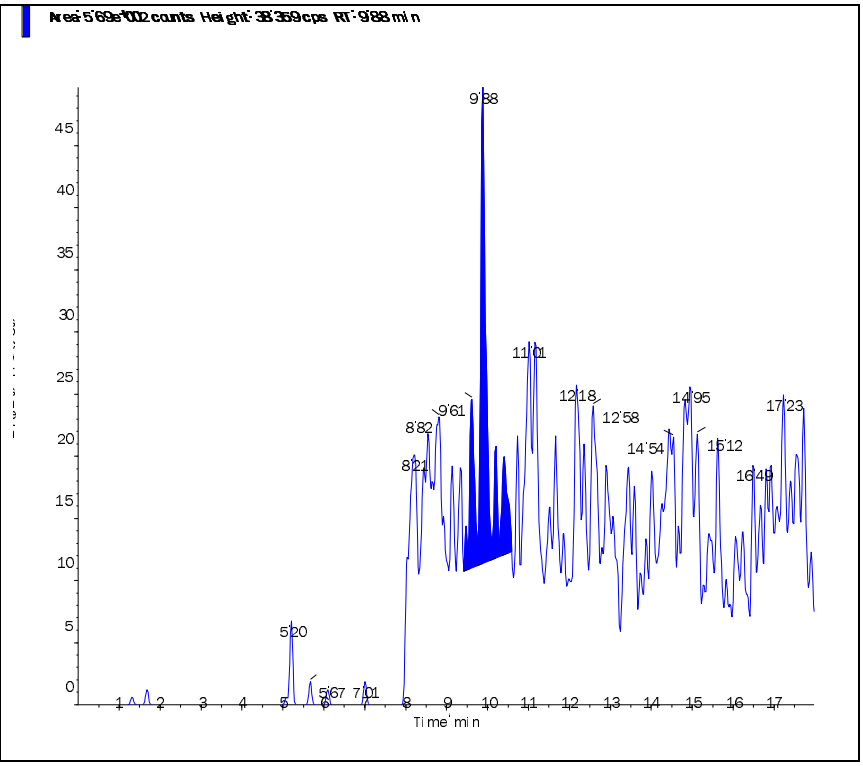

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.88 (10.30) min
Calculated conc:	0.0024 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

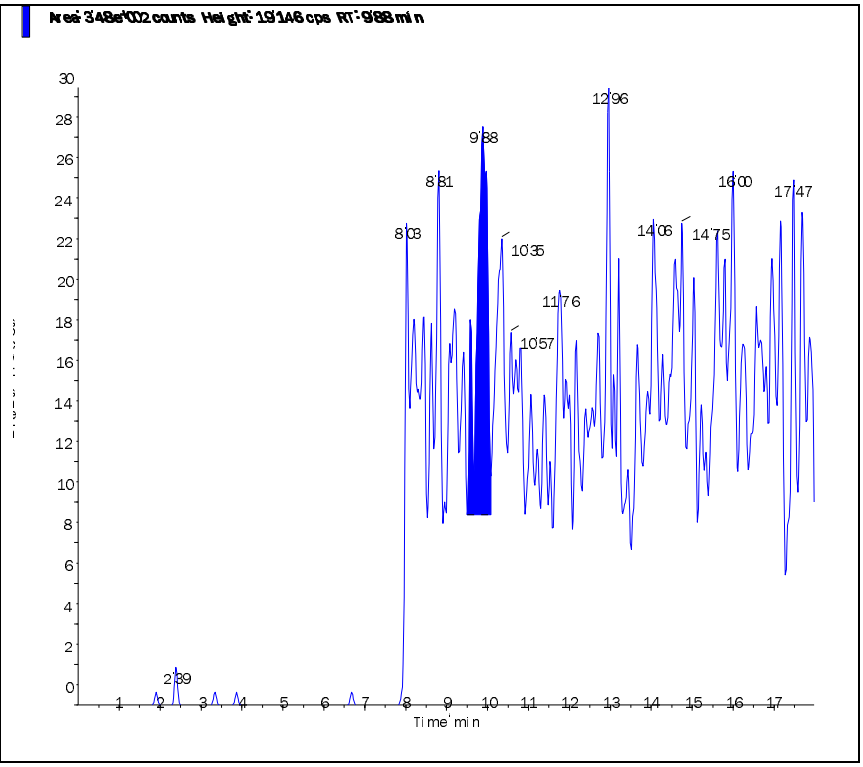

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Created with Analyst Reporter
Printed: 2/19/2015 11:13 AM

Data File	LM29003.wiff	**Result Table**	021815_JWR.rdb
Acquisition Date	2/19/2015 8:13:23 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG512779-10 CCB	**Injection Vial**	1.00
Data File	LM29003.wiff	**Injection Volume**	10.00
Acquisition Date	2/19/2015 8:13:23 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	021815_JWR.rdb
Sample ID	WG512779-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.100e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.050e+02	9.93	N/A	< 0
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.92(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

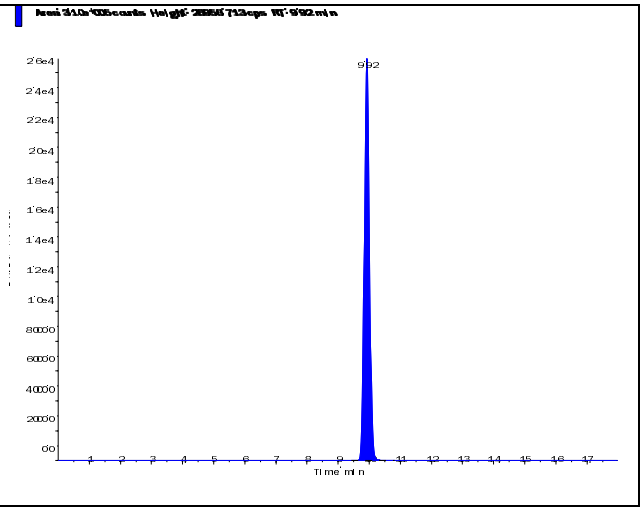

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (10.30) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

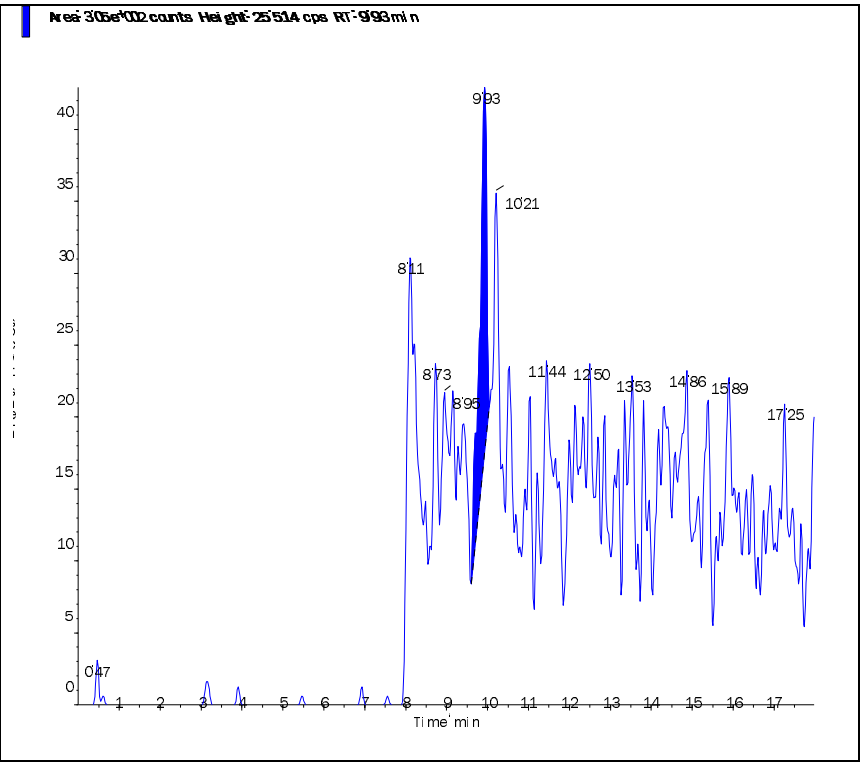

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (10.30) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

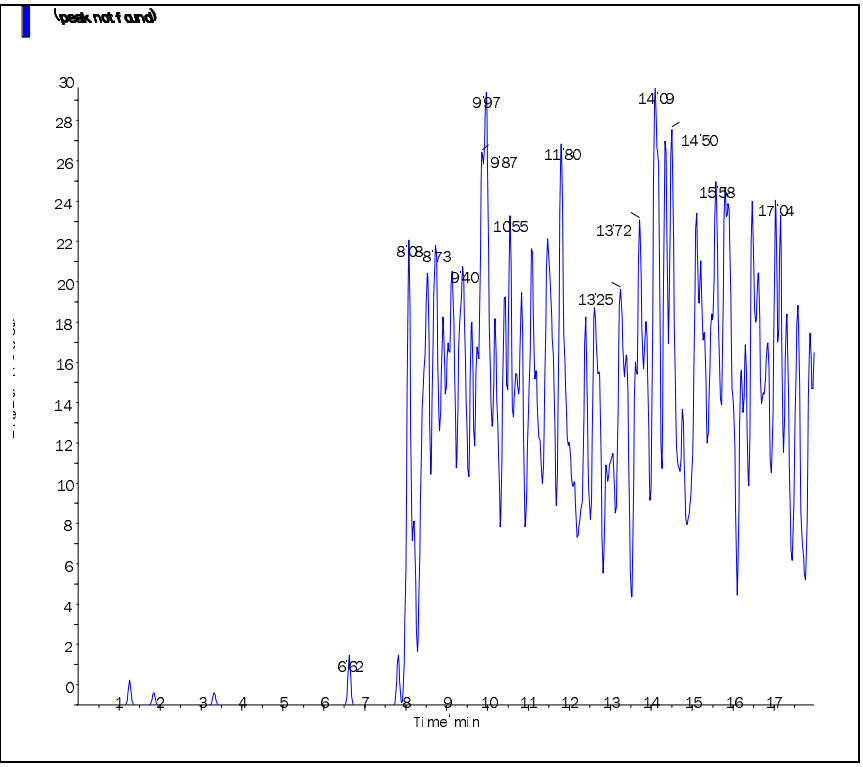

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Printed: 2/19/2015 11:06 AM

Data File	LM28974.wiff	**Result Table**	021815_JWR.rdb
Acquisition Date	2/18/2015 11:04:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG512778-01 MCT (0.2ug/L)	**Injection Vial**	11.00
Data File	LM28974.wiff	**Injection Volume**	10.00
Acquisition Date	2/18/2015 11:04:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	021815_JWR.rdb
Sample ID	WG512778-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.980e+05	9.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.610e+04	9.31	N/A	0.188
Perchlorate conf	5.630e+03	9.28	N/A	0.204

O18LP (Internal Standard)

RT (Exp. RT): 9.30(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

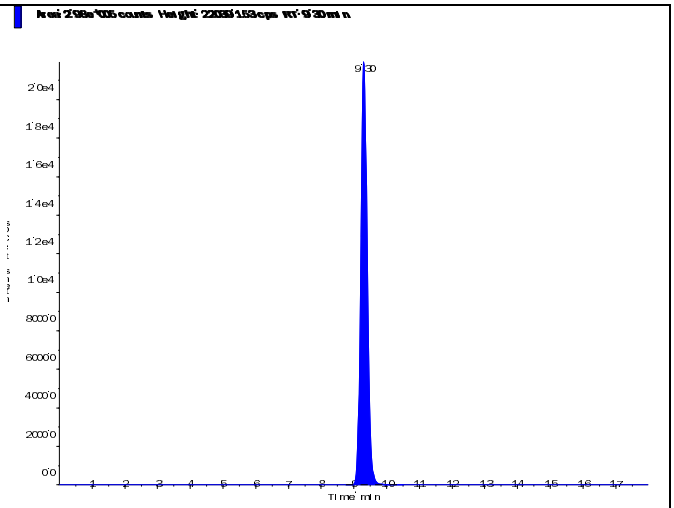

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Printed: 2/19/2015 11:06 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.31 (10.30) min
Calculated conc:	0.188 ng/ml
Area Ratio:	0.054
Sample Type:	(Unknown)

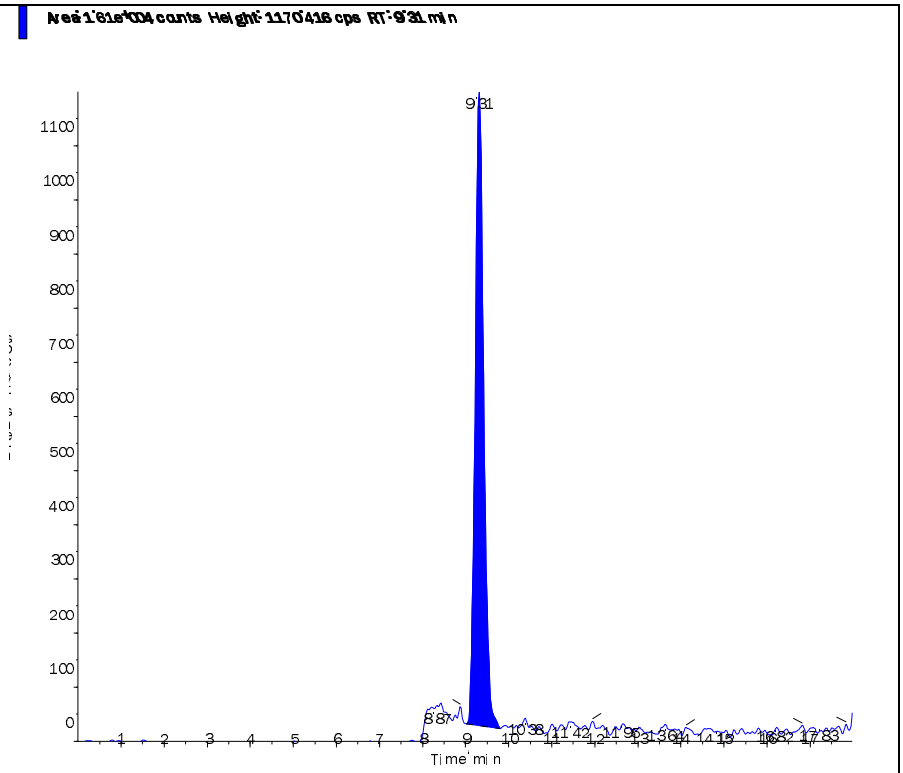

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.28 (10.30) min
Calculated conc:	0.204 ng/ml
Area Ratio:	0.019
Sample Type:	(Unknown)

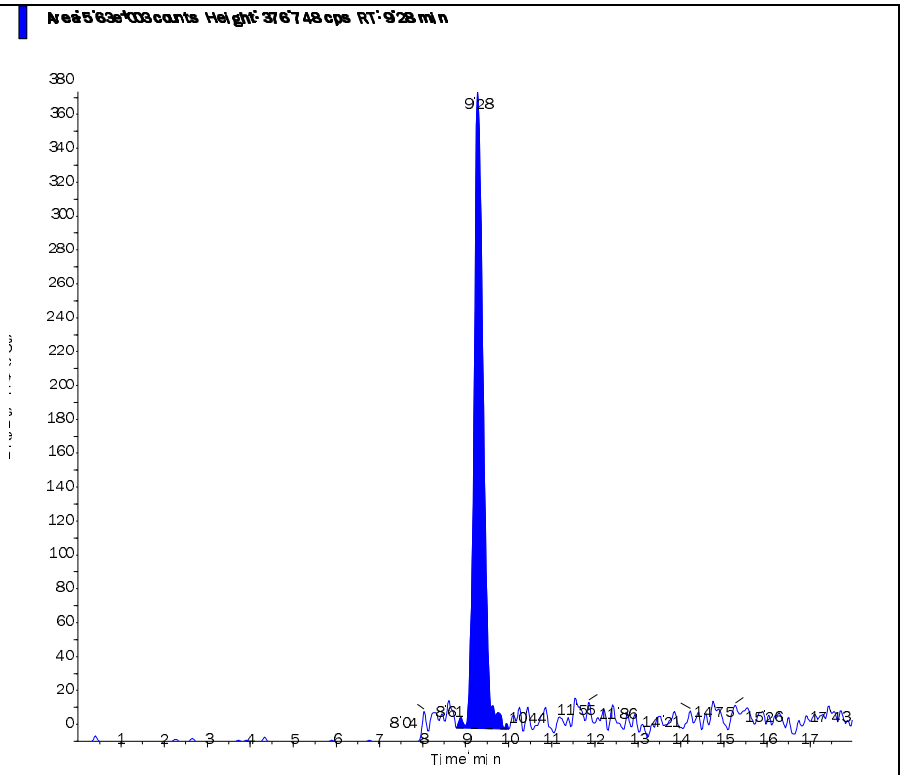

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2.2.1.5 Raw QC Data

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Data File	LM28975.wiff	**Result Table**	021815_JWR.rdb
Acquisition Date	2/18/2015 11:23:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG512778-02 BLANK	**Injection Vial**	12.00
Data File	LM28975.wiff	**Injection Volume**	10.00
Acquisition Date	2/18/2015 11:23:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	021815_JWR.rdb
Sample ID	WG512778-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.130e+05	9.89	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.89(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

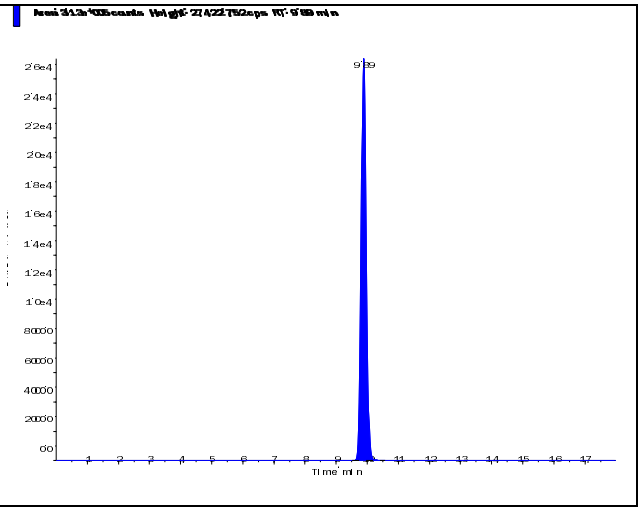

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (10.30) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

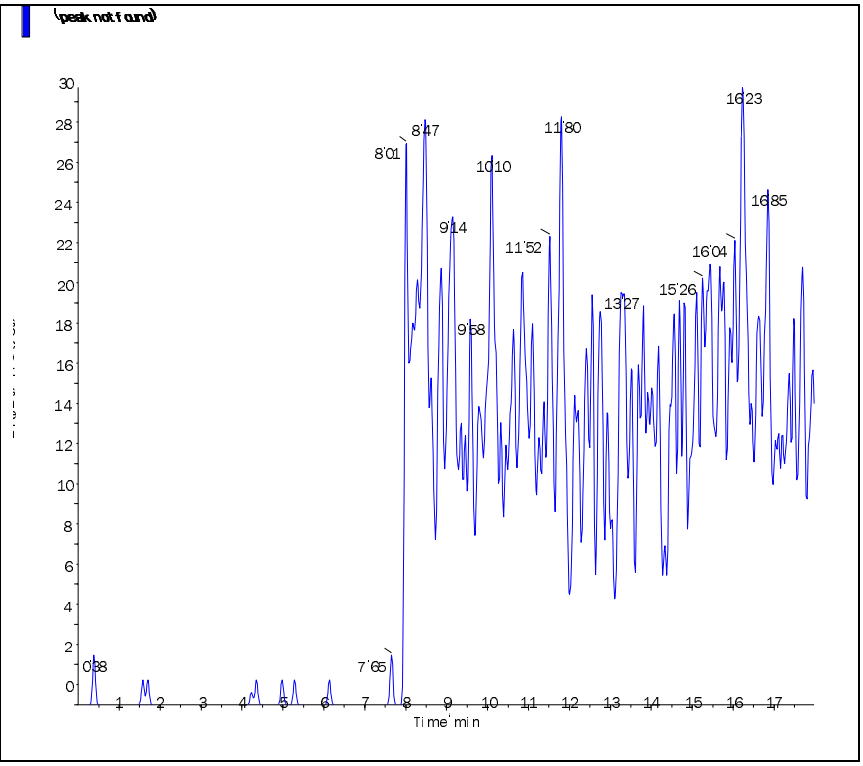

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (10.30) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

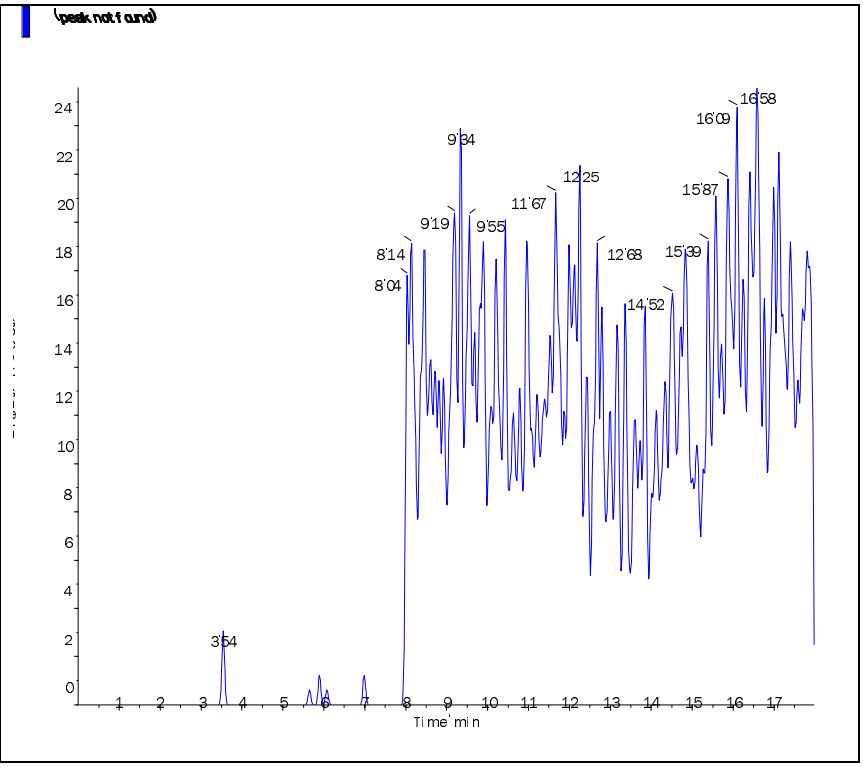

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Data File	LM28976.wiff	**Result Table**	021815_JWR.rdb
Acquisition Date	2/18/2015 11:42:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG512778-03 LCS (0.2ug/L)	**Injection Vial**	13.00
Data File	LM28976.wiff	**Injection Volume**	10.00
Acquisition Date	2/18/2015 11:42:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	021815_JWR.rdb
Sample ID	WG512778-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.080e+05	9.89	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.660e+04	9.90	N/A	0.187
Perchlorate conf	6.060e+03	9.90	N/A	0.212

O18LP (Internal Standard)

RT (Exp. RT): 9.89(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

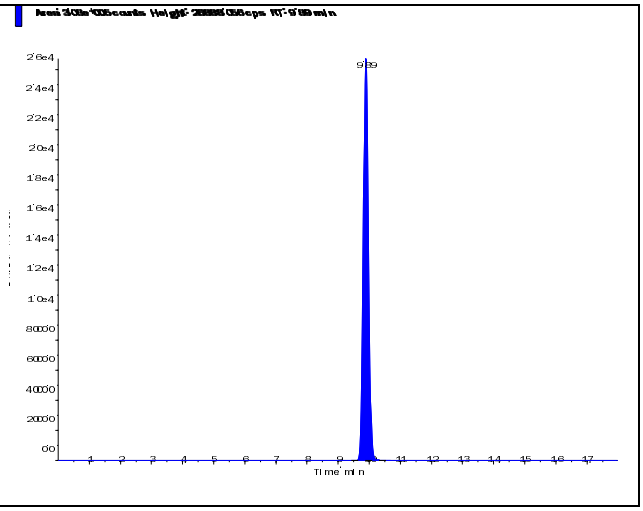

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Printed: 2/19/2015 11:07 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.90 (10.30) min Calculated conc: 0.187 ng/ml Area Ratio: 0.054 Sample Type: (Unknown)	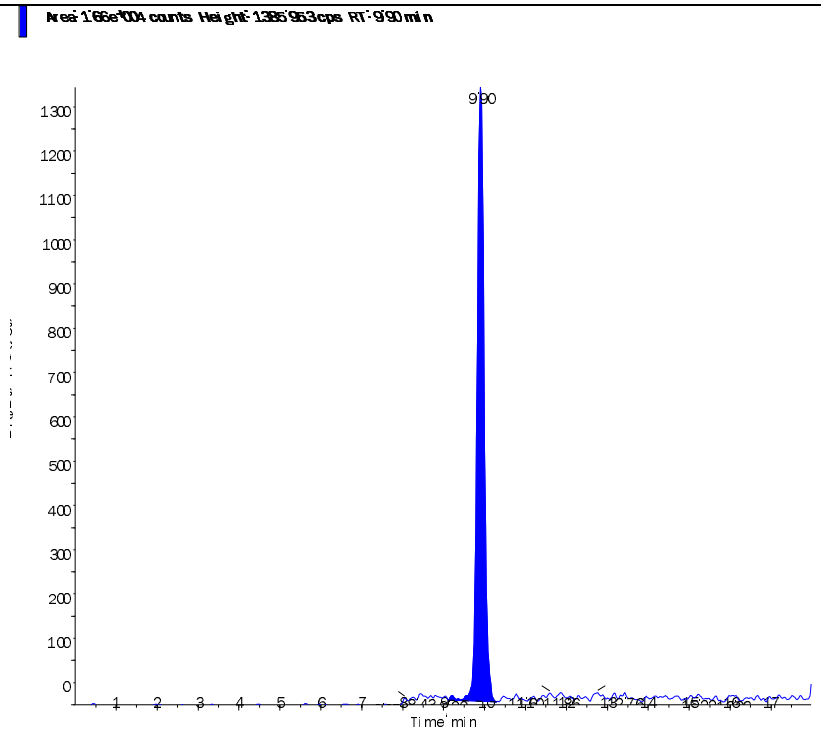
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.90 (10.30) min Calculated conc: 0.212 ng/ml Area Ratio: 0.02 Sample Type: (Unknown)	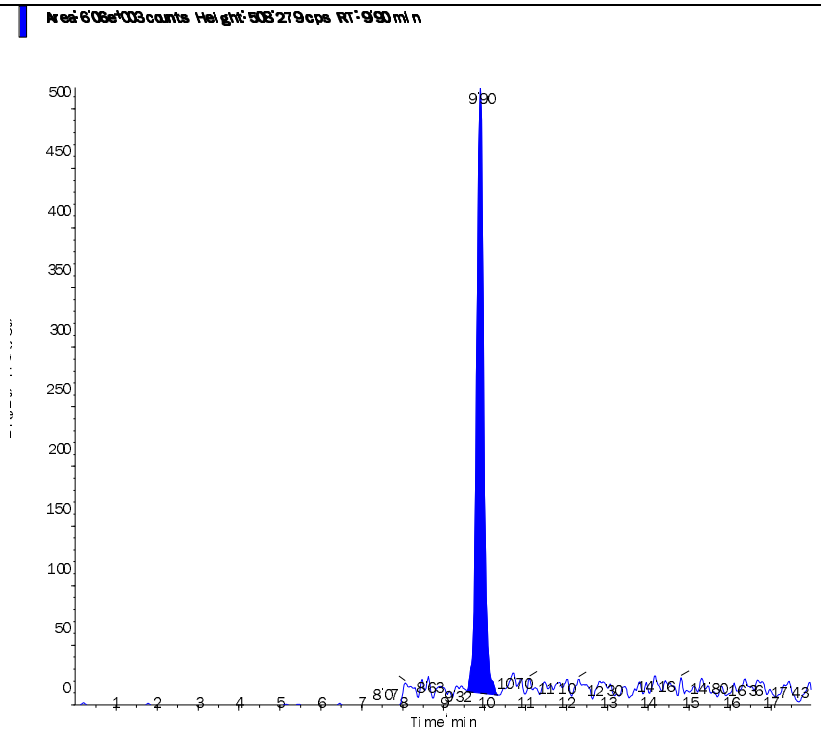

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3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
February 23, 2015

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001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK
EPT - ETHAN P. TIDD
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
February 23, 2015

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value; the analyte concentration was less than the RL/LOQ.
J,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL/MDL).
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
TIC	Library Search Compound
TNTC	Too numerous to count
TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.

Microbac Laboratories Inc.
List of Valid Qualifiers
February 23, 2015

Qualkey: DOD

TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Kathy Albertson	Project Manager: ~~Dave Wacker~~ Mark Heaston	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): Scott Beesinger	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205	pH:	Program:	
Turn Around Time: STANDARD			
Project Name/Location: Longhorn			
Project Number: 60256135.00026A			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	PARCH LOROTY	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
Site 50	50WW27-021215			2/12/15	1305		✓	W	4	✓	✓					
	50WW15-021215			2/12/15	1410		✓	W	4	✓	✓					
	50WW15FD-021215			2/12/15	1410		✓	W	4	✓	✓					
	50WW20-021215			2/12/15	1530		✓	W	4	✓	✓					
	50WW21-021215			2/12/15	1635		✓	W	4	✓	✓					
	50WW21MS-021215			2/12/15	1635		✓	W	4	✓	✓					
	50WW21MSD-021215			2/12/15	1635		✓	W	4	✓	✓					
	50WW17-021315			2/13/15	0755		✓	W	4	✓	✓					
	50WW19-021315			2/13/15	0905		✓	W	4	✓	✓					
	50WW07-021315			2/13/15	1020		✓	W	4	✓	✓					
	50WW16-021315			2/13/15	1125		✓	W	4	✓	✓					
	50WW26-021315			2/13/15	1330		✓	W	4	✓	✓					
	50WW05-021315			2/13/15	1430		✓	W	4	✓	✓					
	50WW05FD-021315			2/13/15	1430		✓	W	4	✓	✓					

ERPIMS REQUIRED FIELDS

Comments: STANDARD TAT

	Date	Time		
Relinquished by: (Signature) Scott Beesinger	2/16/15	1400	Received by: (Signature)	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory by (Signature)	Remarks:

Microbac OVD
Received: 02/17/2015 10:16
By: CARA STRICKLER 221000065751
Cara Strickler

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Kathy Albertson
Address:	158 Starlite Drive
	Marietta, OH 45750
Phone:	1-800-373-4071
Client:	AECOM
Address:	112 East Pecan Ste. 400
	San Antonio, TX 78205
Turn Around Time:	STANDARD
Project Name/Location:	Longhorn
Project Number:	60256135.0002GA

Project Manager:	~~Dave Wacker~~ Mark Hazston
Phone/Fax Number:	210-296-2000
Sampler (print):	Scott Beasinger
Signature:	Scott Beasinger
pH:	

Mail to:	Linda Raabe 112 East Pecan STE. 400 San Antonio, TX 78205 210-296-2000
Fed Ex Airbill No:	
Program:	

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp-	Grab	Matrix	Number of Containers	VOC	Perchlorate	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
Site 50	50WW10-021315			2/13/15	1545		✓	W	4	✓	✓					
	50WW09-021315			2/13/15	1650		✓	W	4	✓	✓					
	50WW09MS-021315			2/13/15	1650		✓	W	4	✓	✓					
	50WW09MSD-021315			2/13/15	1650		✓	W	4	✓	✓					
	TRIP BLANK			2/13/15			✓	W	2	✓						

ERPIMS REQUIRED FIELDS

Comments: STANDARD TAT

Relinquished by: (Signature) Scott Beasinger	Date 2/16/15	Time 1400	Received by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory (Signature)

Microbac OVD
Received: 02/17/2015 10:16
By: CARA STRICKLER 221000065751
Cara Strickler

Relinquished by: (Signature)

Remarks:

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15020878
Account: 2551
Project: 2551.096
Samples: 19
Due Date: 27-FEB-2015

Samplenum	Container ID	Products
L15020878-01	524026	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:00	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:00	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:00	TMB	BRG	

Samplenum	Container ID	Products
L15020878-01	524027	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-FEB-2015 11:57	CLS		
2	ANALYZ	W1	SEM	18-FEB-2015 18:13	JWR	AZH	
3	STORE	SEM	A1	19-FEB-2015 14:28	CLS	JWR	

Samplenum	Container ID	Products
L15020878-02	524028	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:00	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:00	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:00	TMB	BRG	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15020878
Account: 2551
Project: 2551.096
Samples: 19
Due Date: 27-FEB-2015

Samplenum	Container ID	Products
L15020878-02	524029	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-FEB-2015 11:57	CLS		
2	ANALYZ	W1	SEM	18-FEB-2015 18:13	JWR	AZH	
3	STORE	SEM	A1	19-FEB-2015 14:28	CLS	JWR	

Samplenum	Container ID	Products
L15020878-03	524030	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:00	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:00	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:01	TMB	BRG	

Samplenum	Container ID	Products
L15020878-03	524031	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-FEB-2015 11:57	CLS		
2	ANALYZ	W1	SEM	18-FEB-2015 18:13	JWR	AZH	
3	STORE	SEM	A1	19-FEB-2015 14:28	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15020878
Account: 2551
Project: 2551.096
Samples: 19
Due Date: 27-FEB-2015

Samplenum	Container ID	Products
L15020878-04	524032	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:01	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:01	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:01	TMB	BRG	

Samplenum	Container ID	Products
L15020878-04	524033	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-FEB-2015 11:57	CLS		
2	ANALYZ	W1	SEM	18-FEB-2015 18:13	JWR	AZH	
3	STORE	SEM	A1	19-FEB-2015 14:28	CLS	JWR	

Samplenum	Container ID	Products
L15020878-05	524034	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:01	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:01	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:01	TMB	BRG	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15020878
Account: 2551
Project: 2551.096
Samples: 19
Due Date: 27-FEB-2015

Samplenum	Container ID	Products
L15020878-05	524035	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-FEB-2015 11:57	CLS		
2	ANALYZ	W1	SEM	18-FEB-2015 18:13	JWR	AZH	
3	STORE	SEM	A1	19-FEB-2015 14:28	CLS	JWR	

Samplenum	Container ID	Products
L15020878-06	524036	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:01	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:01	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:01	TMB	BRG	

Samplenum	Container ID	Products
L15020878-06	524037	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-FEB-2015 11:57	CLS		
2	ANALYZ	W1	SEM	18-FEB-2015 18:13	JWR	AZH	
3	STORE	SEM	A1	19-FEB-2015 14:28	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15020878
Account: 2551
Project: 2551.096
Samples: 19
Due Date: 27-FEB-2015

Samplenum	Container ID	Products
L15020878-07	524038	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:01	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:01	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:01	TMB	BRG	

Samplenum	Container ID	Products
L15020878-07	524039	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-FEB-2015 11:57	CLS		
2	ANALYZ	W1	SEM	18-FEB-2015 18:13	JWR	AZH	
3	STORE	SEM	A1	19-FEB-2015 14:28	CLS	JWR	

Samplenum	Container ID	Products
L15020878-08	524040	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:01	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:01	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:01	TMB	BRG	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15020878
Account: 2551
Project: 2551.096
Samples: 19
Due Date: 27-FEB-2015

Samplenum	Container ID	Products
L15020878-08	524041	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-FEB-2015 11:57	CLS		
2	ANALYZ	W1	SEM	18-FEB-2015 18:13	JWR	AZH	
3	STORE	SEM	A1	19-FEB-2015 14:28	CLS	JWR	

Samplenum	Container ID	Products
L15020878-09	524042	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:01	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:01	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:01	TMB	BRG	

Samplenum	Container ID	Products
L15020878-09	524043	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-FEB-2015 11:57	CLS		
2	ANALYZ	W1	SEM	18-FEB-2015 18:13	JWR	AZH	
3	STORE	SEM	A1	19-FEB-2015 14:28	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15020878
Account: 2551
Project: 2551.096
Samples: 19
Due Date: 27-FEB-2015

Samplenum	Container ID	Products
L15020878-10	524044	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:01	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:01	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:01	TMB	BRG	

Samplenum	Container ID	Products
L15020878-10	524045	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-FEB-2015 11:57	CLS		
2	ANALYZ	W1	SEM	18-FEB-2015 18:13	JWR	AZH	
3	STORE	SEM	A1	19-FEB-2015 14:28	CLS	JWR	

Samplenum	Container ID	Products
L15020878-11	524046	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:01	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:01	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:01	TMB	BRG	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15020878
Account: 2551
Project: 2551.096
Samples: 19
Due Date: 27-FEB-2015

Samplenum	Container ID	Products
L15020878-11	524047	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-FEB-2015 11:57	CLS		
2	ANALYZ	W1	SEM	18-FEB-2015 18:13	JWR	AZH	
3	STORE	SEM	A1	19-FEB-2015 14:28	CLS	JWR	

Samplenum	Container ID	Products
L15020878-12	524048	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:01	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:01	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:01	TMB	BRG	

Samplenum	Container ID	Products
L15020878-12	524049	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-FEB-2015 11:57	CLS		
2	ANALYZ	W1	SEM	18-FEB-2015 18:13	JWR	AZH	
3	STORE	SEM	A1	19-FEB-2015 14:28	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15020878
Account: 2551
Project: 2551.096
Samples: 19
Due Date: 27-FEB-2015

Samplenum	Container ID	Products
L15020878-13	524050	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:02	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:02	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:02	TMB	BRG	

Samplenum	Container ID	Products
L15020878-13	524051	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-FEB-2015 11:57	CLS		
2	ANALYZ	W1	SEM	18-FEB-2015 18:13	JWR	AZH	
3	STORE	SEM	A1	19-FEB-2015 14:28	CLS	JWR	

Samplenum	Container ID	Products
L15020878-14	524052	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:02	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:02	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:02	TMB	BRG	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15020878
Account: 2551
Project: 2551.096
Samples: 19
Due Date: 27-FEB-2015

Samplenum	Container ID	Products
L15020878-14	524053	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-FEB-2015 11:57	CLS		
2	ANALYZ	W1	SEM	18-FEB-2015 18:13	JWR	AZH	
3	STORE	SEM	A1	19-FEB-2015 14:29	CLS	JWR	

Samplenum	Container ID	Products
L15020878-15	524054	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:02	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:02	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:02	TMB	BRG	

Samplenum	Container ID	Products
L15020878-15	524055	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-FEB-2015 11:57	CLS		
2	ANALYZ	W1	SEM	18-FEB-2015 18:13	JWR	AZH	
3	STORE	SEM	A1	19-FEB-2015 14:29	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15020878
Account: 2551
Project: 2551.096
Samples: 19
Due Date: 27-FEB-2015

Samplenum	Container ID	Products
L15020878-16	524056	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:02	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:02	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:02	TMB	BRG	

Samplenum	Container ID	Products
L15020878-16	524057	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-FEB-2015 11:57	CLS		
2	ANALYZ	W1	SEM	18-FEB-2015 18:13	JWR	AZH	
3	STORE	SEM	A1	19-FEB-2015 14:29	CLS	JWR	

Samplenum	Container ID	Products
L15020878-17	524058	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:02	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:02	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:02	TMB	BRG	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15020878
Account: 2551
Project: 2551.096
Samples: 19
Due Date: 27-FEB-2015

Samplenum	Container ID	Products
L15020878-17	524059	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-FEB-2015 11:57	CLS		
2	ANALYZ	W1	SEM	18-FEB-2015 18:13	JWR	AZH	
3	STORE	SEM	A1	19-FEB-2015 14:29	CLS	JWR	

Samplenum	Container ID	Products
L15020878-18	524060	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:02	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:02	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:02	TMB	BRG	

Samplenum	Container ID	Products
L15020878-18	524061	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-FEB-2015 11:57	CLS		
2	ANALYZ	W1	SEM	18-FEB-2015 18:13	JWR	AZH	
3	STORE	SEM	A1	19-FEB-2015 14:29	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15020878
Account: 2551
Project: 2551.096
Samples: 19
Due Date: 27-FEB-2015

Samplenum	Container ID	Products
L15020878-19	524062	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:02	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-FEB-2015 11:57	CLS		
2	ANALYZ	V1	ORG4	17-FEB-2015 14:02	TMB	BRG	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - May 22, 2014

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVL NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Thiodiglycol (TDG-LCMS)
Acetate (HPLC-UV)
Formate (HPLC-UV)
Acetaldehyde (HPLC-UV)
Propionaldehyde (HPLC-UV)
Fluoroborate (ISE)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVL MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam

Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL MSV0I/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVL RSKOI/GC-FID

Isobutane
n-Butane
Propane
Propylene
Propyne

OVL HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

SOLID AND HAZARDOUS CHEMICALS

OVL MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVL MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L15020971

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on March 02 2015

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00112086	I	2.0		J2317161192	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
GPW1A-021715	L15020971-01	02/17/2015 16:25	02/19/2015 09:50
GPW1-021715	L15020971-02	02/17/2015 16:35	02/19/2015 09:50
50SW06-021715	L15020971-03	02/17/2015 16:45	02/19/2015 09:50
50WW28-021715	L15020971-04	02/17/2015 17:50	02/19/2015 09:50
50WW28FD-021715	L15020971-05	02/17/2015 17:50	02/19/2015 09:50
50WW24-021815	L15020971-06	02/18/2015 08:25	02/19/2015 09:50
50WW24FF-021815	L15020971-07	02/18/2015 08:25	02/19/2015 09:50
50WW23-021815	L15020971-08	02/18/2015 09:40	02/19/2015 09:50
50WW23FF-021815	L15020971-09	02/18/2015 09:40	02/19/2015 09:50
50WW12-021815	L15020971-10	02/18/2015 11:05	02/19/2015 09:50
50WW12FF-021815	L15020971-11	02/18/2015 11:05	02/19/2015 09:50
50WWW25-021815	L15020971-12	02/18/2015 13:30	02/19/2015 09:50
50WWW25FF-021815	L15020971-13	02/18/2015 13:30	02/19/2015 09:50
50WW18-021815	L15020971-14	02/18/2015 14:45	02/19/2015 09:50
50WW18FF-021815	L15020971-15	02/18/2015 14:45	02/19/2015 09:50
TRIP BLANK	L15020971-16	02/18/2015 00:01	02/19/2015 09:50

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L15020971
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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2.4.2 Alkalinity Data 1371
2.4.2.1 Summary Data 1372
2.4.2.2 QC Summary Data 1375
2.4.2.3 Raw Data 1386
2.4.3 Phosphorus Data 1395
2.4.3.1 Summary Data 1396
2.4.3.2 QC Summary Data 1402
2.4.3.3 Raw Data 1413
2.4.4 Sulfide Data 1423
2.4.4.1 Summary Data 1424
2.4.4.2 QC Summary Data 1430
2.4.4.3 Raw Data 1437

2.4.5 Total Organic Carbon Data 1440
2.4.5.1 Summary Data 1441
2.4.5.2 QC Summary Data 1447
2.4.5.3 Raw Data 1454
3.0 Attachments 1506

1.0 Summary Data

1.1 Narratives

Microbac Laboratories
Case Narrative

Login Number: L15020971
Department: Metals
Analyst: Brendan Torrence

METHOD

Preparation: SW-846 3015

Analysis: SW-846 6020

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Interference Check Standards: All acceptance criteria were met.

Continuing Calibration: All acceptance criteria were met.

Continuing Calibration Blank: All acceptance criteria were met.

Low Level Check: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Serial Dilution/Post Digestion Spikes: WG513055 - All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

Narrative ID: 95770
Approved By: Brendan Torrence

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	8260
Prep Batch Number(s):	512811	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-02-20 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden	Franci Bolden	Analyst I	2015-02-20 19:13:51

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	8260
Prep Batch Number(s):	512811	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-02-20 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	8260
Prep Batch Number(s):	512811	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-02-20 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	8260
Prep Batch Number(s):	512811	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-02-20 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	8260
Prep Batch Number(s):	512811	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-02-20 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	8260
Prep Batch Number(s):	512811	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-02-20 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) Bromomethane, 2-2-dichloropropane, and hexachlorobutadiene exceeded the UCL in the CCV.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	512975,513247	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-02-27 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden	Franci Bolden	Analyst I	2015-02-27 17:58:50

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	512975,513247	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-02-27 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	512975,513247	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-02-27 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	512975,513247	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-02-27 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	512975,513247	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-02-27 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	512975,513247	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-02-27 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There were no exceptions.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG513051	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-02-24 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2015-02-24 15:58:00

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG513051	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-02-24 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG513051	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-02-24 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG513051	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-02-24 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG513051	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-02-24 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG513051	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-02-24 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG512948	**Reviewer Name:**	Brendan Torrence
LRC Date:	2015-02-24 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2015-02-24 21:45:20

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG512948	**Reviewer Name:**	Brendan Torrence
LRC Date:	2015-02-24 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?			X		
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG512948	**Reviewer Name:**	Brendan Torrence
LRC Date:	2015-02-24 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG512948	**Reviewer Name:**	Brendan Torrence
LRC Date:	2015-02-24 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG512948	**Reviewer Name:**	Brendan Torrence
LRC Date:	2015-02-24 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG512948	**Reviewer Name:**	Brendan Torrence
LRC Date:	2015-02-24 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG512947	**Reviewer Name:**	Brendan Torrence
LRC Date:	2015-02-24 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2015-02-24 21:40:12

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG512947	**Reviewer Name:**	Brendan Torrence
LRC Date:	2015-02-24 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG512947	**Reviewer Name:**	Brendan Torrence
LRC Date:	2015-02-24 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG512947	**Reviewer Name:**	Brendan Torrence
LRC Date:	2015-02-24 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG512947	**Reviewer Name:**	Brendan Torrence
LRC Date:	2015-02-24 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG512947	**Reviewer Name:**	Brendan Torrence
LRC Date:	2015-02-24 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG512917	**Reviewer Name:**	Allen Davis
LRC Date:	2015-02-19 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Allen Davis		Analyst I	2015-02-20 15:01:16

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG512917	**Reviewer Name:**	Allen Davis
LRC Date:	2015-02-19 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?	X				
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

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Project Name:		**Method:**	9056
Prep Batch Number(s):	WG512917	**Reviewer Name:**	Allen Davis
LRC Date:	2015-02-19 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					1
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

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Prep Batch Number(s):	WG512917	**Reviewer Name:**	Allen Davis
LRC Date:	2015-02-19 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG512917	**Reviewer Name:**	Allen Davis
LRC Date:	2015-02-19 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG512917	**Reviewer Name:**	Allen Davis
LRC Date:	2015-02-19 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. Fractions -06,08,10, and 14 were analyzed at dilutions only due to their high analyte concentrations (Cl and/or SO4) which were over 200 ppm. Any sample that has a single anion load greater than 200 ppm (or a total anion load greater than 400 ppm) will be diluted in order to prevent damage to the IC from repeated overloading of the analytical column and oversaturation of the suppressor membranes.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG512978, WG513096	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-03-02 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-03-02 15:54:19

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG512978, WG513096	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-03-02 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG512978, WG513096	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-03-02 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

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Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG512978, WG513096	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-03-02 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG512978, WG513096	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-03-02 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG512978, WG513096	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-03-02 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG513212, WG513272	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-03-02 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-03-02 16:02:35

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG513212, WG513272	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-03-02 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

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Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG513212, WG513272	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-03-02 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

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Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG513212, WG513272	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-03-02 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG513212, WG513272	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-03-02 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG513212, WG513272	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-03-02 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	S
Prep Batch Number(s):	WG513077	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-03-02 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-03-02 15:58:36

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	S
Prep Batch Number(s):	WG513077	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-03-02 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	S
Prep Batch Number(s):	WG513077	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-03-02 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	S
Prep Batch Number(s):	WG513077	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-03-02 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	S
Prep Batch Number(s):	WG513077	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-03-02 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

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2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

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5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

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Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	S
Prep Batch Number(s):	WG513077	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-03-02 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG513146	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-03-02 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-03-02 16:03:24

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG513146	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-03-02 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG513146	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-03-02 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG513146	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-03-02 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG513146	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-03-02 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

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Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15020971
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG513146	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-03-02 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	GPW1A-021715	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512811	**Analyst:**	TMB	**Run Date:**	02/19/2015 20:59
Collect Date:	02/17/2015 16:25	**Dilution:**	1	**File ID:**	6M131191
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.1	85	115	
1,2-Dichloroethane-d4	100	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	110	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	GPW1A-021715	**Prep Method:**	6850	**Prep Date:**	02/20/2015 17:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG513051	**Analyst:**	JWR	**Run Date:**	02/20/2015 21:09
Collect Date:	02/17/2015 16:25	**Dilution:**	10	**File ID:**	1LM.LM29037
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	38.2		4.00	2.00	1.00

Certificate of Analysis

Sample #:	L15020971-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	GPW1-021715	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512811	**Analyst:**	TMB	**Run Date:**	02/19/2015 20:28
Collect Date:	02/17/2015 16:35	**Dilution:**	1	**File ID:**	6M131190
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.5	85	115	
1,2-Dichloroethane-d4	98.7	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	107	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	GPW1-021715	**Prep Method:**	6850	**Prep Date:**	02/20/2015 17:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG513051	**Analyst:**	JWR	**Run Date:**	02/20/2015 21:27
Collect Date:	02/17/2015 16:35	**Dilution:**	1	**File ID:**	1LM.LM29038
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.737		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15020971-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	50SW06-021715	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512811	**Analyst:**	TMB	**Run Date:**	02/19/2015 19:57
Collect Date:	02/17/2015 16:45	**Dilution:**	1	**File ID:**	6M131189
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

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Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.7	85	115	
1,2-Dichloroethane-d4	101	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	107	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50SW06-021715	**Prep Method:**	6850	**Prep Date:**	02/20/2015 17:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG513051	**Analyst:**	JWR	**Run Date:**	02/20/2015 21:46
Collect Date:	02/17/2015 16:45	**Dilution:**	1	**File ID:**	1LM.LM29039
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.684		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15020971-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	50WW28-021715	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512811	**Analyst:**	TMB	**Run Date:**	02/19/2015 19:27
Collect Date:	02/17/2015 17:50	**Dilution:**	1	**File ID:**	6M131188
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

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Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.0	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	105	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW28-021715	**Prep Method:**	6850	**Prep Date:**	02/20/2015 17:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG513051	**Analyst:**	JWR	**Run Date:**	02/20/2015 23:02
Collect Date:	02/17/2015 17:50	**Dilution:**	1	**File ID:**	1LM.LM29043
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1.44		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15020971-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	50WW28FD-021715	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512811	**Analyst:**	TMB	**Run Date:**	02/19/2015 18:57
Collect Date:	02/17/2015 17:50	**Dilution:**	1	**File ID:**	6M131187
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.3	85	115	
1,2-Dichloroethane-d4	99.8	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	106	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW28FD-021715	**Prep Method:**	6850	**Prep Date:**	02/20/2015 17:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG513051	**Analyst:**	JWR	**Run Date:**	02/20/2015 23:21
Collect Date:	02/17/2015 17:50	**Dilution:**	1	**File ID:**	1LM.LM29044
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1.44		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15020971-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	50WW24-021815	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512811	**Analyst:**	TMB	**Run Date:**	02/19/2015 18:26
Collect Date:	02/18/2015 08:25	**Dilution:**	1	**File ID:**	6M131186
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.2	85	115	
1,2-Dichloroethane-d4	99.9	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	108	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-06	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW24-021815	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	02/19/2015 16:08
Workgroup #:	WG512975	**Analyst:**	JDS	**Run Date:**	02/20/2015 16:20
Collect Date:	02/18/2015 08:25	**Dilution:**	1	**File ID:**	16G46743
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-06	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW24-021815	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	02/19/2015 16:08
Workgroup #:	WG513247	**Analyst:**	JDS	**Run Date:**	02/24/2015 13:40
Collect Date:	02/18/2015 08:25	**Dilution:**	10	**File ID:**	16G46792
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	494000		100000	50000	25000

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW24-021815	**Prep Method:**	6850	**Prep Date:**	02/20/2015 17:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG513051	**Analyst:**	JWR	**Run Date:**	02/20/2015 23:40
Collect Date:	02/18/2015 08:25	**Dilution:**	1	**File ID:**	1LM.LM29045
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-06	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	50WW24-021815	**Prep Method:**	9056	**Prep Date:**	02/19/2015 17:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/01/2014 14:10
Workgroup #:	WG512917	**Analyst:**	ALS	**Run Date:**	02/19/2015 18:25
Collect Date:	02/18/2015 08:25	**Dilution:**	2	**File ID:**	I3_021915-07
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	0.400	U	0.800	0.400	0.200
Nitrite	14797-65-0	0.400	U	0.800	0.400	0.200
Sulfate	14808-79-8	109		4.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-06	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	50WW24-021815	**Prep Method:**	9056	**Prep Date:**	02/19/2015 17:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/01/2014 14:10
Workgroup #:	WG512917	**Analyst:**	ALS	**Run Date:**	02/19/2015 18:46
Collect Date:	02/18/2015 08:25	**Dilution:**	20	**File ID:**	I3_021915-08
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	390		8.00	4.00	2.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-06	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW24-021815	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/20/2015 13:55
Workgroup #:	WG512978	**Analyst:**	TB	**Run Date:**	02/20/2015 14:02
Collect Date:	02/18/2015 08:25	**Dilution:**	2	**File ID:**	S2150220002.019
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	303		80.0	40.0	20.0

Certificate of Analysis

Sample #:	L15020971-06	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW24-021815	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	02/24/2015 09:14
Workgroup #:	WG513212	**Analyst:**	DCM	**Run Date:**	02/24/2015 09:26
Collect Date:	02/18/2015 08:25	**Dilution:**	1	**File ID:**	S2150224002.026
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	1.21		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15020971-06	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW24-021815	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG513077	**Analyst:**	EPT	**Run Date:**	02/23/2015 11:15
Collect Date:	02/18/2015 08:25	**Dilution:**	1	**File ID:**	ET.1502231115-04
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	6.96		2.00	1.00	0.500

Certificate of Analysis

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15020971-06	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW24-021815	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG513146	**Analyst:**	DCM	**Run Date:**	02/24/2015 02:25
Collect Date:	02/18/2015 08:25	**Dilution:**	1	**File ID:**	TC02232015.035
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	1.74	J	2.00	1.00	0.500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO2
Client ID:	50WW24FF-021815	**Prep Method:**	3015	**Prep Date:**	02/20/2015 08:28
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	02/23/2015 09:40
Workgroup #:	WG513093	**Analyst:**	KHR	**Run Date:**	02/23/2015 11:57
Collect Date:	02/18/2015 08:25	**Dilution:**	1	**File ID:**	T2.022315.115721
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.100	U	0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW24FF-021815	**Prep Method:**	3015	**Prep Date:**	02/20/2015 08:28
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	02/23/2015 12:32
Workgroup #:	WG513055	**Analyst:**	BKT	**Run Date:**	02/23/2015 20:25
Collect Date:	02/18/2015 08:25	**Dilution:**	1	**File ID:**	NI.022315.202553
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0115		0.00400	0.00200	0.00100

Certificate of Analysis

Sample #:	L15020971-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	50WW23-021815	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512811	**Analyst:**	TMB	**Run Date:**	02/19/2015 17:55
Collect Date:	02/18/2015 09:40	**Dilution:**	1	**File ID:**	6M131185
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.7	85	115	
1,2-Dichloroethane-d4	102	70	120	
Toluene-d8	99.3	85	120	
4-Bromofluorobenzene	108	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-08	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW23-021815	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	02/19/2015 16:08
Workgroup #:	WG513247	**Analyst:**	JDS	**Run Date:**	02/24/2015 14:59
Collect Date:	02/18/2015 09:40	**Dilution:**	1	**File ID:**	16G46798
Sample Tag:	02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	155000		10000	5000	2500
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW23-021815	**Prep Method:**	6850	**Prep Date:**	02/20/2015 17:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG513051	**Analyst:**	JWR	**Run Date:**	02/20/2015 23:59
Collect Date:	02/18/2015 09:40	**Dilution:**	1	**File ID:**	1LM.LM29046
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-08	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	50WW23-021815	**Prep Method:**	9056	**Prep Date:**	02/19/2015 17:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/01/2014 14:10
Workgroup #:	WG512917	**Analyst:**	ALS	**Run Date:**	02/19/2015 19:06
Collect Date:	02/18/2015 09:40	**Dilution:**	10	**File ID:**	I3_021915-09
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	2.00	U	4.00	2.00	1.00
Nitrite	14797-65-0	2.00	U	4.00	2.00	1.00
Sulfate	14808-79-8	67.6		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-08	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	50WW23-021815	**Prep Method:**	9056	**Prep Date:**	02/19/2015 17:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/01/2014 14:10
Workgroup #:	WG512917	**Analyst:**	ALS	**Run Date:**	02/19/2015 19:26
Collect Date:	02/18/2015 09:40	**Dilution:**	100	**File ID:**	I3_021915-10
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1900		40.0	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-08	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW23-021815	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/20/2015 13:55
Workgroup #:	WG512978	**Analyst:**	TB	**Run Date:**	02/20/2015 14:02
Collect Date:	02/18/2015 09:40	**Dilution:**	1	**File ID:**	S2150220002.020
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	249		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L15020971-08	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW23-021815	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	02/24/2015 11:12
Workgroup #:	WG513272	**Analyst:**	DCM	**Run Date:**	02/24/2015 11:19
Collect Date:	02/18/2015 09:40	**Dilution:**	1	**File ID:**	S2150224003.018
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-08	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW23-021815	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG513077	**Analyst:**	EPT	**Run Date:**	02/23/2015 11:15
Collect Date:	02/18/2015 09:40	**Dilution:**	1	**File ID:**	ET.1502231115-05
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-08	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW23-021815	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG513146	**Analyst:**	DCM	**Run Date:**	02/24/2015 02:39
Collect Date:	02/18/2015 09:40	**Dilution:**	1	**File ID:**	TC02232015.036
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	1.25	J	2.00	1.00	0.500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-09	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO2
Client ID:	50WW23FF-021815	**Prep Method:**	3015	**Prep Date:**	02/20/2015 08:28
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	02/23/2015 09:40
Workgroup #:	WG513093	**Analyst:**	KHR	**Run Date:**	02/23/2015 12:00
Collect Date:	02/18/2015 09:40	**Dilution:**	1	**File ID:**	T2.022315.120055
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.0666	J	0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-09	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW23FF-021815	**Prep Method:**	3015	**Prep Date:**	02/20/2015 08:28
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	02/23/2015 12:32
Workgroup #:	WG513055	**Analyst:**	BKT	**Run Date:**	02/23/2015 20:32
Collect Date:	02/18/2015 09:40	**Dilution:**	1	**File ID:**	NI.022315.203215
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0939		0.00400	0.00200	0.00100

Certificate of Analysis

Sample #:	L15020971-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	50WW12-021815	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512811	**Analyst:**	TMB	**Run Date:**	02/19/2015 17:24
Collect Date:	02/18/2015 11:05	**Dilution:**	1	**File ID:**	6M131184
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.6	85	115	
1,2-Dichloroethane-d4	102	70	120	
Toluene-d8	99.5	85	120	
4-Bromofluorobenzene	107	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-10	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW12-021815	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	02/19/2015 16:08
Workgroup #:	WG512975	**Analyst:**	JDS	**Run Date:**	02/20/2015 16:43
Collect Date:	02/18/2015 11:05	**Dilution:**	1	**File ID:**	16G46745
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	156000		10000	5000	2500
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-10	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW12-021815	**Prep Method:**	6850	**Prep Date:**	02/20/2015 17:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG513051	**Analyst:**	JWR	**Run Date:**	02/21/2015 00:18
Collect Date:	02/18/2015 11:05	**Dilution:**	10000	**File ID:**	1LM.LM29047
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	30600		4000	2000	1000

Certificate of Analysis

Sample #:	L15020971-10	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	50WW12-021815	**Prep Method:**	9056	**Prep Date:**	02/19/2015 17:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/01/2014 14:10
Workgroup #:	WG512917	**Analyst:**	ALS	**Run Date:**	02/19/2015 19:47
Collect Date:	02/18/2015 11:05	**Dilution:**	10	**File ID:**	I3_021915-11
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	2.00	U	4.00	2.00	1.00
Nitrite	14797-65-0	2.00	U	4.00	2.00	1.00
Sulfate	14808-79-8	546		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-10	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	50WW12-021815	**Prep Method:**	9056	**Prep Date:**	02/19/2015 17:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/01/2014 14:10
Workgroup #:	WG512917	**Analyst:**	ALS	**Run Date:**	02/19/2015 20:07
Collect Date:	02/18/2015 11:05	**Dilution:**	100	**File ID:**	I3_021915-12
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1170		40.0	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-10	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW12-021815	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/20/2015 15:07
Workgroup #:	WG513096	**Analyst:**	TB	**Run Date:**	02/20/2015 15:11
Collect Date:	02/18/2015 11:05	**Dilution:**	1	**File ID:**	S2150220003.015
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	218		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L15020971-10	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW12-021815	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	02/24/2015 09:14
Workgroup #:	WG513212	**Analyst:**	DCM	**Run Date:**	02/24/2015 09:27
Collect Date:	02/18/2015 11:05	**Dilution:**	1	**File ID:**	S2150224002.028
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.300	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-10	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW12-021815	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG513077	**Analyst:**	EPT	**Run Date:**	02/23/2015 11:15
Collect Date:	02/18/2015 11:05	**Dilution:**	1	**File ID:**	ET.1502231115-06
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-10	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW12-021815	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG513146	**Analyst:**	DCM	**Run Date:**	02/24/2015 02:52
Collect Date:	02/18/2015 11:05	**Dilution:**	1	**File ID:**	TC02232015.037
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	1.09	J	2.00	1.00	0.500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-11	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO2
Client ID:	50WW12FF-021815	**Prep Method:**	3015	**Prep Date:**	02/20/2015 08:28
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	02/23/2015 09:40
Workgroup #:	WG513093	**Analyst:**	KHR	**Run Date:**	02/23/2015 12:04
Collect Date:	02/18/2015 11:05	**Dilution:**	1	**File ID:**	T2.022315.120436
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.0632	J	0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-11	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW12FF-021815	**Prep Method:**	3015	**Prep Date:**	02/20/2015 08:28
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	02/23/2015 12:32
Workgroup #:	WG513055	**Analyst:**	BKT	**Run Date:**	02/23/2015 20:45
Collect Date:	02/18/2015 11:05	**Dilution:**	1	**File ID:**	NI.022315.204504
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.108		0.00400	0.00200	0.00100

Certificate of Analysis

Sample #:	L15020971-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	50WWW25-021815	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512811	**Analyst:**	TMB	**Run Date:**	02/19/2015 16:54
Collect Date:	02/18/2015 13:30	**Dilution:**	1	**File ID:**	6M131183
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.08	J	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.9	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	98.4	85	120	
4-Bromofluorobenzene	106	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-12	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WWW25-021815	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	02/19/2015 16:08
Workgroup #:	WG512975	**Analyst:**	JDS	**Run Date:**	02/20/2015 16:56
Collect Date:	02/18/2015 13:30	**Dilution:**	1	**File ID:**	16G46746
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	44.3		5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-12	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WWW25-021815	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	02/19/2015 16:08
Workgroup #:	WG513247	**Analyst:**	JDS	**Run Date:**	02/24/2015 13:52
Collect Date:	02/18/2015 13:30	**Dilution:**	5	**File ID:**	16G46793
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	419000		50000	25000	12500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-12	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WWW25-021815	**Prep Method:**	6850	**Prep Date:**	02/20/2015 17:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG513051	**Analyst:**	JWR	**Run Date:**	02/21/2015 00:37
Collect Date:	02/18/2015 13:30	**Dilution:**	10	**File ID:**	1LM.LM29048
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	42.2		4.00	2.00	1.00

Certificate of Analysis

Sample #:	L15020971-12	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	50WWW25-021815	**Prep Method:**	9056	**Prep Date:**	02/19/2015 17:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/01/2014 14:10
Workgroup #:	WG512917	**Analyst:**	ALS	**Run Date:**	02/19/2015 20:27
Collect Date:	02/18/2015 13:30	**Dilution:**	1	**File ID:**	I3_021915-13
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	0.200	U	0.400	0.200	0.100
Nitrite	14797-65-0	0.200	U	0.400	0.200	0.100
Sulfate	14808-79-8	65.9		2.00	1.00	0.500

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-12	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	50WWW25-021815	**Prep Method:**	9056	**Prep Date:**	02/19/2015 17:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/01/2014 14:10
Workgroup #:	WG512917	**Analyst:**	ALS	**Run Date:**	02/19/2015 20:48
Collect Date:	02/18/2015 13:30	**Dilution:**	3	**File ID:**	I3_021915-14
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	30.3		1.20	0.600	0.300

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-12	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WWW25-021815	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/20/2015 15:07
Workgroup #:	WG513096	**Analyst:**	TB	**Run Date:**	02/20/2015 15:12
Collect Date:	02/18/2015 13:30	**Dilution:**	2	**File ID:**	S2150220003.016
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	340		80.0	40.0	20.0

Certificate of Analysis

Sample #:	L15020971-12	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WWW25-021815	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	02/24/2015 09:14
Workgroup #:	WG513212	**Analyst:**	DCM	**Run Date:**	02/24/2015 09:27
Collect Date:	02/18/2015 13:30	**Dilution:**	1	**File ID:**	S2150224002.029
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-12	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WWW25-021815	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG513077	**Analyst:**	EPT	**Run Date:**	02/23/2015 11:15
Collect Date:	02/18/2015 13:30	**Dilution:**	1	**File ID:**	ET.1502231115-07
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-12	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WWW25-021815	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG513146	**Analyst:**	DCM	**Run Date:**	02/24/2015 08:30
Collect Date:	02/18/2015 13:30	**Dilution:**	3	**File ID:**	TC02232015.055
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	17.2		6.00	3.00	1.50

Certificate of Analysis

Sample #:	L15020971-13	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO2
Client ID:	50WWW25FF-021815	**Prep Method:**	3015	**Prep Date:**	02/20/2015 08:28
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	02/23/2015 09:40
Workgroup #:	WG513093	**Analyst:**	KHR	**Run Date:**	02/23/2015 12:08
Collect Date:	02/18/2015 13:30	**Dilution:**	1	**File ID:**	T2.022315.120817
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.308		0.200	0.100	0.0500

Certificate of Analysis

Sample #:	L15020971-13	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WWW25FF-021815	**Prep Method:**	3015	**Prep Date:**	02/20/2015 08:28
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	02/23/2015 12:32
Workgroup #:	WG513055	**Analyst:**	BKT	**Run Date:**	02/23/2015 20:51
Collect Date:	02/18/2015 13:30	**Dilution:**	1	**File ID:**	NI.022315.205127
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0262		0.00400	0.00200	0.00100

Certificate of Analysis

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15020971-14	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	50WW18-021815	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512811	**Analyst:**	TMB	**Run Date:**	02/19/2015 16:23
Collect Date:	02/18/2015 14:45	**Dilution:**	1	**File ID:**	6M131182
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.1	85	115	
1,2-Dichloroethane-d4	101	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	107	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-14	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW18-021815	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	02/19/2015 16:08
Workgroup #:	WG513247	**Analyst:**	JDS	**Run Date:**	02/24/2015 15:24
Collect Date:	02/18/2015 14:45	**Dilution:**	1	**File ID:**	16G46800
Sample Tag:	02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	117000		10000	5000	2500
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-14	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW18-021815	**Prep Method:**	6850	**Prep Date:**	02/20/2015 17:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG513051	**Analyst:**	JWR	**Run Date:**	02/21/2015 00:56
Collect Date:	02/18/2015 14:45	**Dilution:**	1	**File ID:**	1LM.LM29049
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.258	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-14	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	50WW18-021815	**Prep Method:**	9056	**Prep Date:**	02/19/2015 17:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/01/2014 14:10
Workgroup #:	WG512917	**Analyst:**	ALS	**Run Date:**	02/19/2015 21:49
Collect Date:	02/18/2015 14:45	**Dilution:**	5	**File ID:**	I3_021915-17
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	1.00	U	2.00	1.00	0.500
Nitrite	14797-65-0	1.00	U	2.00	1.00	0.500
Sulfate	14808-79-8	154		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-14	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	50WW18-021815	**Prep Method:**	9056	**Prep Date:**	02/19/2015 17:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/01/2014 14:10
Workgroup #:	WG512917	**Analyst:**	ALS	**Run Date:**	02/19/2015 22:09
Collect Date:	02/18/2015 14:45	**Dilution:**	50	**File ID:**	I3_021915-18
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	775		20.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-14	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW18-021815	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/20/2015 15:07
Workgroup #:	WG513096	**Analyst:**	TB	**Run Date:**	02/20/2015 15:12
Collect Date:	02/18/2015 14:45	**Dilution:**	2	**File ID:**	S2150220003.017
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	346		80.0	40.0	20.0

Certificate of Analysis

Sample #:	L15020971-14	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW18-021815	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	02/24/2015 09:14
Workgroup #:	WG513212	**Analyst:**	DCM	**Run Date:**	02/24/2015 09:28
Collect Date:	02/18/2015 14:45	**Dilution:**	1	**File ID:**	S2150224002.030
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-14	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW18-021815	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG513077	**Analyst:**	EPT	**Run Date:**	02/23/2015 11:15
Collect Date:	02/18/2015 14:45	**Dilution:**	1	**File ID:**	ET.1502231115-08
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-14	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW18-021815	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG513146	**Analyst:**	DCM	**Run Date:**	02/24/2015 08:43
Collect Date:	02/18/2015 14:45	**Dilution:**	3	**File ID:**	TC02232015.056
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	5.10	J	6.00	3.00	1.50

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-15	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO2
Client ID:	50WW18FF-021815	**Prep Method:**	3015	**Prep Date:**	02/20/2015 08:28
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	02/23/2015 09:40
Workgroup #:	WG513093	**Analyst:**	KHR	**Run Date:**	02/23/2015 12:11
Collect Date:	02/18/2015 14:45	**Dilution:**	1	**File ID:**	T2.022315.121150
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.516		0.200	0.100	0.0500

Certificate of Analysis

Sample #:	L15020971-15	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW18FF-021815	**Prep Method:**	3015	**Prep Date:**	02/20/2015 08:28
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	02/23/2015 12:32
Workgroup #:	WG513055	**Analyst:**	BKT	**Run Date:**	02/23/2015 20:57
Collect Date:	02/18/2015 14:45	**Dilution:**	1	**File ID:**	NI.022315.205750
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0557		0.00400	0.00200	0.00100

Certificate of Analysis

Sample #:	L15020971-16	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512811	**Analyst:**	TMB	**Run Date:**	02/19/2015 15:53
Collect Date:	02/18/2015 00:01	**Dilution:**	1	**File ID:**	6M131181
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250

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Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125

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Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.0	85	115	
1,2-Dichloroethane-d4	97.5	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	105	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	GPW1A-021715	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512811	**Analyst:**	TMB	**Run Date:**	02/19/2015 20:59
Collect Date:	02/17/2015 16:25	**Dilution:**	1	**File ID:**	6M131191
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

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Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.1	85	115	
1,2-Dichloroethane-d4	100	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	110	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	GPW1-021715	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512811	**Analyst:**	TMB	**Run Date:**	02/19/2015 20:28
Collect Date:	02/17/2015 16:35	**Dilution:**	1	**File ID:**	6M131190
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

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Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.5	85	115	
1,2-Dichloroethane-d4	98.7	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	107	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	50SW06-021715	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512811	**Analyst:**	TMB	**Run Date:**	02/19/2015 19:57
Collect Date:	02/17/2015 16:45	**Dilution:**	1	**File ID:**	6M131189
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.7	85	115	
1,2-Dichloroethane-d4	101	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	107	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	50WW28-021715	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512811	**Analyst:**	TMB	**Run Date:**	02/19/2015 19:27
Collect Date:	02/17/2015 17:50	**Dilution:**	1	**File ID:**	6M131188
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.0	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	105	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	50WW28FD-021715	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512811	**Analyst:**	TMB	**Run Date:**	02/19/2015 18:57
Collect Date:	02/17/2015 17:50	**Dilution:**	1	**File ID:**	6M131187
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.3	85	115	
1,2-Dichloroethane-d4	99.8	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	106	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	50WW24-021815	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512811	**Analyst:**	TMB	**Run Date:**	02/19/2015 18:26
Collect Date:	02/18/2015 08:25	**Dilution:**	1	**File ID:**	6M131186
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.2	85	115	
1,2-Dichloroethane-d4	99.9	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	108	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	50WW23-021815	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512811	**Analyst:**	TMB	**Run Date:**	02/19/2015 17:55
Collect Date:	02/18/2015 09:40	**Dilution:**	1	**File ID:**	6M131185
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.7	85	115	
1,2-Dichloroethane-d4	102	70	120	
Toluene-d8	99.3	85	120	
4-Bromofluorobenzene	108	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	50WW12-021815	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512811	**Analyst:**	TMB	**Run Date:**	02/19/2015 17:24
Collect Date:	02/18/2015 11:05	**Dilution:**	1	**File ID:**	6M131184
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.6	85	115	
1,2-Dichloroethane-d4	102	70	120	
Toluene-d8	99.5	85	120	
4-Bromofluorobenzene	107	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	50WWW25-021815	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512811	**Analyst:**	TMB	**Run Date:**	02/19/2015 16:54
Collect Date:	02/18/2015 13:30	**Dilution:**	1	**File ID:**	6M131183
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.08	J	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.9	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	98.4	85	120	
4-Bromofluorobenzene	106	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-14	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	50WW18-021815	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512811	**Analyst:**	TMB	**Run Date:**	02/19/2015 16:23
Collect Date:	02/18/2015 14:45	**Dilution:**	1	**File ID:**	6M131182
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.1	85	115	
1,2-Dichloroethane-d4	101	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	107	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-16	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/05/2015 15:42
Workgroup #:	WG512811	**Analyst:**	TMB	**Run Date:**	02/19/2015 15:53
Collect Date:	02/18/2015 00:01	**Dilution:**	1	**File ID:**	6M131181
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.0	85	115	
1,2-Dichloroethane-d4	97.5	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	105	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 093014
Analyst1: TMB Analyst2: NA
Method: 8260B/OVAP SOP: MSV01 Rev: 19/0
Method: 624 SOP: MSV10 Rev: 12
Method: 5030B/5030C/5035A/OVAP SOP: PAT01 Rev: 16/0
Maintenance Log ID: 51858

Internal Standard: STD66600 Surrogate Standard: STD66600
CCV: STD66544 LCS: STD66677 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG494605

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M128662	WG494605-01 50ng BFB STD 8260	NA	1	1	STD66476	09/30/14 14:48
6M128663	WG494630-02 50ug/L CCV STD 8260	NA	1	1	STD66737	09/30/14 15:13
6M128664	RINSE	NA	1	1		09/30/14 15:46
6M128665	WG494605-02 5ug/L STD A9/FOO	NA	1	1	STD66544	09/30/14 16:17
6M128666	WG494605-03 20ug/L STD A9/FOO	NA	1	1	STD66544	09/30/14 16:49
6M128667	WG494605-04 50ug/L STD A9/FOO	NA	1	1	STD66544	09/30/14 17:21
6M128668	WG494605-05 100ug/L STD A9/FOO	NA	1	1	STD66544	09/30/14 17:52
6M128669	WG494605-06 200ug/L STD A9/FOO	NA	1	1	STD66544	09/30/14 18:24
6M128670	WG494605-07 300ug/L STD A9/FOO	NA	1	1	STD66544	09/30/14 18:55
6M128671	WG494605-08 400ug/L STD A9/FOO	NA	1	1	STD66544	09/30/14 19:27
6M128672	WG494605-09 500ug/L STD A9/FOO	NA	1	1	STD66544	09/30/14 19:59
6M128673	RINSE	NA	1	1		09/30/14 20:31
6M128674	WG494605-10 100ug/L ALT SRC STD A9/F	NA	1	1	STD66677	09/30/14 21:02
6M128675	RINSE	NA	1	1		09/30/14 21:34

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
File ID: 6M128663				
Not needed. DNR.				

Approved: October 02, 2014

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 020515
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 / OVAP MSV01 Rev: 20 / 0
Method: 5030B/5030C/5035A SOP: PAT01 / OVAP PAT01 Rev: 17 / 0
Method: 624 SOP: MSV10 Rev: 13
Maintenance Log ID:

Internal Standard: STD68728 Surrogate Standard: STD68728
CCV: NA LCS: STD68730 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG511026

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M130907	WG511026-01 50ng BFB STD 8260	NA	1	1	STD68443	02/05/15 09:01
6M130908	RINSE	NA	1	1	STD68443	02/05/15 09:24
6M130909	WG511026-01 50ng BFB STD 8260	NA	1	1	STD68443	02/05/15 10:06
6M130910	RINSE	NA	1	1	STD68794	02/05/15 10:31
6M130911	WG511026-02 0.3ug/L STD 8260	NA	1	1	STD68794	02/05/15 11:02
6M130912	WG511026-03 0.4ug/L STD 8260	NA	1	1	STD68794	02/05/15 11:33
6M130913	WG511026-04 1ug/L STD 8260	NA	1	1	STD68794	02/05/15 12:05
6M130914	WG511026-05 2ug/L STD 8260	NA	1	1	STD68794	02/05/15 12:36
6M130915	WG511026-06 5ug/L STD 8260	NA	1	1	STD68794	02/05/15 13:07
6M130916	WG511026-07 20ug/L STD 8260	NA	1	1	STD68794	02/05/15 13:38
6M130917	WG511026-08 50ug/L STD 8260	NA	1	1	STD68794	02/05/15 14:09
6M130918	WG511026-09 100ug/L STD 8260	NA	1	1	STD68794	02/05/15 14:40
6M130919	WG511026-10 200ug/L STD 8260	NA	1	1	STD68794	02/05/15 15:11
6M130920	WG511026-11 300ug/L STD 8260	NA	1	1	STD68794	02/05/15 15:42
6M130921	RINSE	NA	1	1		02/05/15 16:14
6M130922	RINSE	NA	1	1		02/05/15 16:45
6M130923	WG511026-12 50ug/L ALT SRC STD 8260	NA	1	1	STD68730	02/05/15 17:16
6M130924	L15010001-01 LOD 826-SPE	NA	1	1	STD68000	02/05/15 17:48
6M130925	L15010006-01 MDL-A 826-SPE	NA	1	1	STD68807	02/05/15 18:18
6M130926	L15010006-02 MDL-A 826-SPE	NA	1	1	STD68807	02/05/15 18:49
6M130927	L15010006-03 MDL-A 826-SPE	NA	1	1	STD68807	02/05/15 19:19
6M130928	L15010006-04 MDL-A 826-SPE	NA	1	1	STD68807	02/05/15 19:50
6M130929	L15010006-05 MDL-A 826-SPE	NA	1	1	STD68807	02/05/15 20:21
6M130930	L15010006-06 MDL-A 826-SPE	NA	1	1	STD68807	02/05/15 20:52
6M130931	L15010006-07 MDL-A 826-SPE	NA	1	1	STD68807	02/05/15 21:23
6M130932	RINSE	NA	1	1		02/05/15 21:54
6M130933	RINSE	NA	1	1		02/05/15 22:25
6M130934	RINSE	NA	1	1		02/05/15 22:56

Approved: February 10, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 021915
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 20
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 17
Maintenance Log ID: 52854

Internal Standard: STD68728 Surrogate Standard: STD68728
CCV: STD68957 LCS: STD68939 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG512811

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M131169	WG512809-01 50ng BFB STD 8260	NA	1	1	STD68443	02/19/15 09:42
6M131170	WG512809-01 50ng BFB STD 8260	NA	1	1	STD68443	02/19/15 10:34
6M131171	WG512809-01 50ng BFB STD 8260	NA	1	1	STD68443	02/19/15 10:48
6M131172	WG512809-02 50ug/L CCV STD 8260	NA	1	1	STD68957	02/19/15 11:17
6M131173	WG512809-02 50ug/L CCV STD 8260	NA	1	1	STD68957	02/19/15 11:47
6M131174	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD68819	02/19/15 12:18
6M131175	WG512811-01 VBLK0219 BLANK STD 826	NA	1	1		02/19/15 12:48
6M131176	WG512811-02 20ug/L LCS STD 8260	NA	1	1	STD68939	02/19/15 13:19
6M131177	WG512811-03 20ug/L LCSDUP STD 8260	NA	1	1	STD68939	02/19/15 13:50
6M131178	L15020800-01 A 1000X 826-TC-SPE	NA	17	1000		02/19/15 14:20
6M131179	L15020955-02 TB A 826-BETX	<2	1	1		02/19/15 14:51
6M131180	L15020955-01 A 826-BETX	<2	1	1		02/19/15 15:23
6M131181	L15020971-16 TB A 826-LOW	<2	1	1		02/19/15 15:53
6M131182	L15020971-14 A 826-LOW	<2	1	1		02/19/15 16:23
6M131183	L15020971-12 A 826-LOW	<2	1	1		02/19/15 16:54
6M131184	L15020971-10 A 826-LOW	<2	1	1		02/19/15 17:24
6M131185	L15020971-08 A 826-LOW	<2	1	1		02/19/15 17:55
6M131186	L15020971-06 A 826-LOW	<2	1	1		02/19/15 18:26
6M131187	L15020971-05 A 826-LOW	<2	1	1		02/19/15 18:57
6M131188	L15020971-04 A 826-LOW	<2	1	1		02/19/15 19:27
6M131189	L15020971-03 A 826-LOW	<2	1	1		02/19/15 19:57
6M131190	L15020971-02 A 826-LOW	<2	1	1		02/19/15 20:28
6M131191	L15020971-01 A 826-LOW	<2	1	1		02/19/15 20:59
6M131192	L15020954-01 A 826-BETX	<2	1	1		02/19/15 21:29
6M131193	RINSE	NA	1	1		02/19/15 22:00
6M131194	WG512811-04 VBLK0219 BLANK STD 624	NA	2	1		02/19/15 22:31
6M131195	L15020900-03 B 624-SPE	<2	2	1		02/19/15 23:01
6M131196	L15020897-01 B 10X 624-SPE	6	2	10		02/19/15 23:33
6M131197	L15020900-02 B 20X 624-SPE D1	<2	2	20		02/20/15 00:03
6M131198	CCV	NA	1	1		02/20/15 00:34
6M131199	RINSE	NA	1	1		02/20/15 01:05
6M131200	ANTIFOAM BLANK	NA	2	1		02/20/15 01:35

Approved: February 20, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS6	Dataset:	021915		
Analyst1:	TMB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	20
Method:	624	SOP:	MSV10	Rev:	13
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	17
Maintenance Log ID:	52854				

Internal Standard: STD68728 Surrogate Standard: STD68728

CCV: STD68957 LCS: STD68939 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG512811

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1				
File ID: 6M131169				
			BFB passed, but archon errored and had to change the gripper assembly. Lost tune time. DNR.	
2	X			
File ID: 6M131170				
			Tune failed, DNR.	
4	X			
File ID: 6M131172				
			Gases were low. DNR.	
6				
File ID: 6M131174				
			Not needed, DNR.	

Approved: February 20, 2015

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 30-SEP-2014
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 63807
Analytical Workgroups: WG494605

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	NA
TCL Hits	NA
Spectra of TCL Hits	TMB
Surrogates	NA
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	NA
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	NA
Results Reporting/Data Qualifiers	NA
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
01-OCT-2014
Tiffany Bailey

Secondary Reviewer:
02-OCT-2014

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-02-2014 08:52:20

Microbac Laboratories Inc.

Data Checklist

Date: 05-FEB-2015
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 66168
Analytical Workgroups: WG511026

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
06-FEB-2015
Tiffany Bailey

Secondary Reviewer:
10-FEB-2015

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-10-2015 16:22:59

Microbac Laboratories Inc.

Data Checklist

Date: 19-FEB-2015
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 66436
Analytical Workgroups: WG512811

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
20-FEB-2015
Tiffany Bailey

Secondary Reviewer:
20-FEB-2015

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-20-2015 11:42:36

Microbac Laboratories Inc.

00635313

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG512811

Login Number: L15020971

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
GPW1A-021715	01	02/17/15					02/19/2015	2.2	14		02/19/15	2.2	14	
GPW1-021715	02	02/17/15					02/19/2015	2.2	14		02/19/15	2.2	14	
50SW06-021715	03	02/17/15					02/19/2015	2.1	14		02/19/15	2.1	14	
50WW28-021715	04	02/17/15					02/19/2015	2.1	14		02/19/15	2.1	14	
50WW28FD-021715	05	02/17/15					02/19/2015	2	14		02/19/15	2	14	
50WW24-021815	06	02/18/15					02/19/2015	1.4	14		02/19/15	1.4	14	
50WW23-021815	08	02/18/15					02/19/2015	1.3	14		02/19/15	1.3	14	
50WW12-021815	10	02/18/15					02/19/2015	1.3	14		02/19/15	1.3	14	
50WWW25-021815	12	02/18/15					02/19/2015	1.1	14		02/19/15	1.1	14	
50WW18-021815	14	02/18/15					02/19/2015	1.1	14		02/19/15	1.1	14	
TRIP BLANK	16	02/18/15					02/19/2015	1.7	14		02/19/15	1.7	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4030839
Report generated 02/20/2015 13:54

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L15020971
Instrument Id: HPMS6
Workgroup (AAB#): WG512811

Method: 8260
CAL ID: HPMS6-05-FEB-15
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L15020971-01	1.00	01	100	99.1	110	101
L15020971-02	1.00	01	98.7	97.5	107	100
L15020971-03	1.00	01	101	97.7	107	100
L15020971-04	1.00	01	103	97.0	105	101
L15020971-05	1.00	01	99.8	97.3	106	100
L15020971-06	1.00	01	99.9	96.2	108	101
L15020971-08	1.00	01	102	97.7	108	99.3
L15020971-10	1.00	01	102	98.6	107	99.5
L15020971-12	1.00	01	103	97.9	106	98.4
L15020971-14	1.00	01	101	96.1	107	100
L15020971-16	1.00	01	97.5	94.0	105	100
WG512811-01	1.00	01	96.4	94.5	107	99.9
WG512811-02	1.00	01	96.8	97.9	105	99.3
WG512811-03	1.00	01	101	96.7	105	100
WG512811-04	1.00	01	104	99.6	109	99.9

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4030844
Report generated: 02/20/2015 13:54

METHOD BLANK SUMMARY

Login Number: L15020971
Blank File ID: 6M131175
Prep Date: 02/19/15 12:48
Analyzed Date: 02/19/15 12:48
Analyst: TMB

Work Group: WG512811
Blank Sample ID: WG512811-01
Instrument ID: HPMS6
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG512811-02	6M131176	02/19/15 13:19	01
LCS2	WG512811-03	6M131177	02/19/15 13:50	01
TRIP BLANK	L15020971-16	6M131181	02/19/15 15:53	01
50WW18-021815	L15020971-14	6M131182	02/19/15 16:23	01
50WWW25-021815	L15020971-12	6M131183	02/19/15 16:54	01
50WW12-021815	L15020971-10	6M131184	02/19/15 17:24	01
50WW23-021815	L15020971-08	6M131185	02/19/15 17:55	01
50WW24-021815	L15020971-06	6M131186	02/19/15 18:26	01
50WW28FD-021715	L15020971-05	6M131187	02/19/15 18:57	01
50WW28-021715	L15020971-04	6M131188	02/19/15 19:27	01
50SW06-021715	L15020971-03	6M131189	02/19/15 19:57	01
GPW1-021715	L15020971-02	6M131190	02/19/15 20:28	01
GPW1A-021715	L15020971-01	6M131191	02/19/15 20:59	01

Report Name: BLANK_SUMMARY
PDF File ID: 4031985
Report generated 02/20/2015 13:54

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L15020971 Prep Date: 02/19/15 12:48 Sample ID: WG512811-01
Instrument ID: HPMS6 Run Date: 02/19/15 12:48 Prep Method: 5030B/5030C/503
File ID: 6M131175 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG512811 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS6-05-FEB-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.596	1	*
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 4031986
20-FEB-2015 13:54

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L15020971 Prep Date: 02/19/15 12:48 Sample ID: WG512811-01
Instrument ID: HPMS6 Run Date: 02/19/15 12:48 Prep Method: 5030B/5030C/503
File ID: 6M131175 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG512811 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS6-05-FEB-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	94.5	85 - 115	PASS
1,2-Dichloroethane-d4	96.4	70 - 120	PASS
Toluene-d8	99.9	85 - 120	PASS
4-Bromofluorobenzene	107	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4031986
20-FEB-2015 13:54

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15020971 | Run Date: 02/19/2015 | Sample ID: WG512811-02
Instrument ID: HPMS6 | Run Time: 13:19 | Prep Method: 5030B/5030C/503
File ID: 6M131176 | Analyst: TMB | Method: 8260B
Workgroup (AAB#): WG512811 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD68939 | Cal ID: HPMS6-05-FEB-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	18.4	91.9	40 - 140	
Benzene	20.0	21.3	106	80 - 120	
Bromobenzene	20.0	21.6	108	75 - 125	
Bromochloromethane	20.0	20.5	102	65 - 130	
Bromodichloromethane	20.0	21.3	106	75 - 120	
Bromoform	20.0	21.1	105	70 - 130	
Bromomethane	20.0	14.1	70.5	30 - 145	
2-Butanone	20.0	16.8	83.8	30 - 150	
n-Butylbenzene	20.0	22.9	114	70 - 135	
sec-Butylbenzene	20.0	21.1	106	70 - 125	
tert-Butylbenzene	20.0	18.7	93.4	70 - 130	
Carbon disulfide	20.0	17.6	88.1	35 - 160	
Carbon tetrachloride	20.0	22.2	111	65 - 140	
Chlorobenzene	20.0	20.1	100	80 - 120	
Chlorodibromomethane	20.0	22.2	111	60 - 135	
Chloroethane	20.0	21.6	108	60 - 135	
Chloroform	20.0	22.2	111	65 - 135	
Chloromethane	20.0	15.0	75.1	40 - 125	
2-Chlorotoluene	20.0	22.8	114	75 - 125	
4-Chlorotoluene	20.0	20.3	102	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	21.0	105	50 - 130	
1,2-Dibromoethane	20.0	21.4	107	80 - 120	
Dibromomethane	20.0	20.9	105	75 - 125	
1,2-Dichlorobenzene	20.0	17.9	89.7	70 - 120	
1,3-Dichlorobenzene	20.0	18.3	91.5	75 - 125	
1,4-Dichlorobenzene	20.0	19.3	96.3	75 - 125	
Dichlorodifluoromethane	20.0	16.1	80.4	30 - 155	
1,1-Dichloroethane	20.0	20.1	100	70 - 135	
1,2-Dichloroethane	20.0	20.8	104	70 - 130	
1,1-Dichloroethene	20.0	19.0	94.8	70 - 130	
cis-1,2-Dichloroethene	20.0	21.8	109	70 - 125	
trans-1,2-Dichloroethene	20.0	21.4	107	60 - 140	
1,2-Dichloropropane	20.0	19.9	99.3	75 - 125	
1,3-Dichloropropane	20.0	21.2	106	75 - 125	
2,2-Dichloropropane	20.0	22.5	112	70 - 135	
cis-1,3-Dichloropropene	20.0	22.6	113	70 - 130	
trans-1,3-Dichloropropene	20.0	21.7	109	55 - 140	
1,1-Dichloropropene	20.0	20.8	104	75 - 130	
Ethylbenzene	20.0	21.5	107	75 - 125	
2-Hexanone	20.0	16.8	83.8	55 - 130	
Hexachlorobutadiene	20.0	27.3	136	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4031987
Report generated: 02/20/2015 13:54

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15020971 Run Date: 02/19/2015 Sample ID: WG512811-02
Instrument ID: HPMS6 Run Time: 13:19 Prep Method: 5030B/5030C/503
File ID: 6M131176 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG512811 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD68939 Cal ID: HPMS6-05-FEB-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	20.7	103	75 - 125	
p-Isopropyltoluene	20.0	22.1	110	75 - 130	
4-Methyl-2-pentanone	20.0	16.4	81.9	60 - 135	
Methylene chloride	20.0	20.5	103	55 - 140	
Naphthalene	20.0	20.9	104	55 - 140	
n-Propylbenzene	20.0	21.4	107	70 - 130	
Styrene	20.0	22.2	111	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	21.4	107	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	20.8	104	65 - 130	
Tetrachloroethene	20.0	19.5	97.3	45 - 150	
Toluene	20.0	22.6	113	75 - 120	
1,2,3-Trichlorobenzene	20.0	21.5	107	55 - 140	
1,2,4-Trichlorobenzene	20.0	21.8	109	65 - 135	
1,1,1-Trichloroethane	20.0	21.8	109	65 - 130	
1,1,2-Trichloroethane	20.0	21.4	107	75 - 125	
Trichloroethene	20.0	22.4	112	70 - 125	
Trichlorofluoromethane	20.0	19.6	98.2	60 - 145	
1,2,3-Trichloropropane	20.0	20.0	99.9	75 - 125	
1,2,4-Trimethylbenzene	20.0	24.0	120	75 - 130	
1,3,5-Trimethylbenzene	20.0	24.2	121	75 - 130	
Vinyl chloride	20.0	19.8	99.1	50 - 145	
o-Xylene	20.0	20.3	101	80 - 120	
m-,p-Xylene	40.0	42.9	107	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	97.9	85 - 115	PASS
1,2-Dichloroethane-d4	96.8	70 - 120	PASS
Toluene-d8	99.3	85 - 120	PASS
4-Bromofluorobenzene	105	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4031987
Report generated: 02/20/2015 13:54

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15020971 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS6 Matrix: Water Method: 8260B
Workgroup (AAB#): WG512811 Units: ug/L
QC Key: DOD4 Lot #: STD68939

Sample ID: WG512811-02 LCS File ID: 6M131176 Run Date: 02/19/2015 13:19
Sample ID: WG512811-03 LCS2 File ID: 6M131177 Run Date: 02/19/2015 13:50

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	21.4	107	20.0	21.7	108	1.25	80 - 130	30	
1,1,1-Trichloroethane	20.0	21.8	109	20.0	20.9	105	3.98	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	20.8	104	20.0	22.0	110	5.98	65 - 130	30	
1,1,2-Trichloroethane	20.0	21.4	107	20.0	21.1	106	1.25	75 - 125	30	
1,1-Dichloroethane	20.0	20.1	100	20.0	19.3	96.5	3.84	70 - 135	30	
1,1-Dichloroethene	20.0	19.0	94.8	20.0	18.1	90.6	4.50	70 - 130	30	
1,1-Dichloropropene	20.0	20.8	104	20.0	20.1	101	3.42	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	21.5	107	20.0	22.2	111	3.55	55 - 140	30	
1,2,3-Trichloropropane	20.0	20.0	99.9	20.0	21.2	106	5.84	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	21.8	109	20.0	21.8	109	0.0978	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	24.0	120	20.0	23.0	115	4.20	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	21.0	105	20.0	22.3	111	5.73	50 - 130	30	
1,2-Dibromoethane	20.0	21.4	107	20.0	22.4	112	4.39	80 - 120	30	
1,2-Dichlorobenzene	20.0	17.9	89.7	20.0	17.6	88.1	1.74	70 - 120	30	
1,2-Dichloroethane	20.0	20.8	104	20.0	20.2	101	2.72	70 - 130	30	
1,2-Dichloropropane	20.0	19.9	99.3	20.0	19.1	95.7	3.66	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	24.2	121	20.0	23.2	116	4.39	75 - 130	30	
1,3-Dichlorobenzene	20.0	18.3	91.5	20.0	17.9	89.4	2.41	75 - 125	30	
1,3-Dichloropropane	20.0	21.2	106	20.0	21.5	108	1.52	75 - 125	30	
1,4-Dichlorobenzene	20.0	19.3	96.3	20.0	18.8	93.8	2.57	75 - 125	30	
2,2-Dichloropropane	20.0	22.5	112	20.0	22.6	113	0.468	70 - 135	30	
2-Butanone	20.0	16.8	83.8	20.0	18.3	91.4	8.67	30 - 150	30	
2-Chlorotoluene	20.0	22.8	114	20.0	21.6	108	5.74	75 - 125	30	
2-Hexanone	20.0	16.8	83.8	20.0	18.3	91.5	8.81	55 - 130	30	
4-Chlorotoluene	20.0	20.3	102	20.0	19.9	99.3	2.29	75 - 130	30	
4-Methyl-2-pentanone	20.0	16.4	81.9	20.0	17.8	89.0	8.24	60 - 135	30	
Acetone	20.0	18.4	91.9	20.0	19.2	96.2	4.56	40 - 140	30	
Benzene	20.0	21.3	106	20.0	20.4	102	4.28	80 - 120	30	
Bromobenzene	20.0	21.6	108	20.0	21.5	108	0.0405	75 - 125	30	
Bromochloromethane	20.0	20.5	102	20.0	20.1	101	1.79	65 - 130	30	
Bromodichloromethane	20.0	21.3	106	20.0	20.7	104	2.61	75 - 120	30	
Bromoform	20.0	21.1	105	20.0	21.3	107	1.26	70 - 130	30	
Bromomethane	20.0	14.1	70.5	20.0	14.0	70.2	0.489	30 - 145	30	
Carbon disulfide	20.0	17.6	88.1	20.0	17.5	87.7	0.494	35 - 160	30	
Carbon tetrachloride	20.0	22.2	111	20.0	21.6	108	2.87	65 - 140	30	
Chlorobenzene	20.0	20.1	100	20.0	19.5	97.4	2.94	80 - 120	30	
Chloroethane	20.0	21.6	108	20.0	20.6	103	4.82	60 - 135	30	
Chloroform	20.0	22.2	111	20.0	21.2	106	4.58	65 - 135	30	
Chloromethane	20.0	15.0	75.1	20.0	14.2	70.8	5.96	40 - 125	30	
cis-1,2-Dichloroethene	20.0	21.8	109	20.0	21.4	107	1.79	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4030840
Report generated: 02/20/2015 13:54

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15020971 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS6 Matrix: Water Method: 8260B
Workgroup (AAB#): WG512811 Units: ug/L
QC Key: DOD4 Lot #: STD68939

Sample ID: WG512811-02 LCS File ID: 6M131176 Run Date: 02/19/2015 13:19
Sample ID: WG512811-03 LCS2 File ID: 6M131177 Run Date: 02/19/2015 13:50

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	22.6	113	20.0	22.3	112	1.02	70 - 130	30	
Chlorodibromomethane	20.0	22.2	111	20.0	22.4	112	0.908	60 - 135	30	
Dibromomethane	20.0	20.9	105	20.0	20.8	104	0.675	75 - 125	30	
Dichlorodifluoromethane	20.0	16.1	80.4	20.0	14.7	73.4	9.09	30 - 155	30	
Ethylbenzene	20.0	21.5	107	20.0	20.9	104	2.84	75 - 125	30	
Hexachlorobutadiene	20.0	27.3	136	20.0	26.9	134	1.34	50 - 140	30	
Isopropylbenzene	20.0	20.7	103	20.0	19.8	99.1	4.12	75 - 125	30	
m-,p-Xylene	40.0	42.9	107	40.0	41.8	104	2.51	75 - 130	30	
Methylene chloride	20.0	20.5	103	20.0	20.0	100	2.40	55 - 140	30	
n-Butylbenzene	20.0	22.9	114	20.0	22.2	111	3.05	70 - 135	30	
n-Propylbenzene	20.0	21.4	107	20.0	20.9	104	2.39	70 - 130	30	
Naphthalene	20.0	20.9	104	20.0	21.7	108	3.83	55 - 140	30	
o-Xylene	20.0	20.3	101	20.0	19.5	97.3	4.17	80 - 120	30	
p-Isopropyltoluene	20.0	22.1	110	20.0	21.2	106	4.06	75 - 130	30	
sec-Butylbenzene	20.0	21.1	106	20.0	20.5	102	3.04	70 - 125	30	
Styrene	20.0	22.2	111	20.0	21.6	108	2.83	65 - 135	30	
tert-Butylbenzene	20.0	18.7	93.4	20.0	18.4	91.9	1.62	70 - 130	30	
Tetrachloroethene	20.0	19.5	97.3	20.0	18.9	94.4	3.01	45 - 150	30	
Toluene	20.0	22.6	113	20.0	21.9	110	2.89	75 - 120	30	
trans-1,2-Dichloroethene	20.0	21.4	107	20.0	20.3	102	5.19	60 - 140	30	
trans-1,3-Dichloropropene	20.0	21.7	109	20.0	22.3	111	2.33	55 - 140	30	
Trichloroethene	20.0	22.4	112	20.0	21.1	106	5.91	70 - 125	30	
Trichlorofluoromethane	20.0	19.6	98.2	20.0	18.6	93.2	5.21	60 - 145	30	
Vinyl chloride	20.0	19.8	99.1	20.0	18.8	93.8	5.48	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	96.8	101	70 - 120	PASS
Dibromofluoromethane	97.9	96.7	85 - 115	PASS
4-Bromofluorobenzene	105	105	75 - 120	PASS
Toluene-d8	99.3	100	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4030840
Report generated: 02/20/2015 13:54

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15020971
Instrument: HPMS6
Analyst: TMB
Workgroup: WG494605

Tune ID: WG494605-01
Run Date: 09/30/2014
Run Time: 14:48
File ID: 6M128662
Cal ID: HPMS6 - 30-SEP-14

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.9	8960	PASS
75.0	95.0	30.0	60.0	48.1	19671	PASS
95.0	95.0	100	100	100	40893	PASS
96.0	95.0	5.00	9.00	6.35	2597	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	88.1	36010	PASS
175	174	5.00	9.00	6.84	2462	PASS
176	174	95.0	101	97.8	35205	PASS
177	176	5.00	9.00	6.45	2269	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG494605-02	STD	01	09/30/2014 16:17	
WG494605-03	STD	01	09/30/2014 16:49	
WG494605-04	STD	01	09/30/2014 17:21	
WG494605-05	STD-CCV	01	09/30/2014 17:52	
WG494605-06	STD	01	09/30/2014 18:24	
WG494605-07	STD	01	09/30/2014 18:55	
WG494605-08	STD	01	09/30/2014 19:27	
WG494605-09	STD	01	09/30/2014 19:59	
WG494605-10	SSCV	01	09/30/2014 21:02	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4030842
Report generated 02/20/2015 13:54

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15020971
Instrument: HPMS6
Analyst: TMB
Workgroup: WG511026

Tune ID: WG511026-01
Run Date: 02/05/2015
Run Time: 10:06
File ID: 6M130909
Cal ID: HPMS6 - 05-FEB-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	25.6	12033	PASS
75.0	95.0	30.0	60.0	54.4	25630	PASS
95.0	95.0	100	100	100	47085	PASS
96.0	95.0	5.00	9.00	6.72	3164	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	80.0	37658	PASS
175	174	5.00	9.00	6.99	2634	PASS
176	174	95.0	101	95.2	35842	PASS
177	176	5.00	9.00	6.31	2263	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG511026-02	STD	01	02/05/2015 11:02	
WG511026-03	STD	01	02/05/2015 11:33	
WG511026-04	STD	01	02/05/2015 12:05	
WG511026-05	STD	01	02/05/2015 12:36	
WG511026-06	STD	01	02/05/2015 13:07	
WG511026-07	STD	01	02/05/2015 13:38	
WG511026-08	STD-CCV	01	02/05/2015 14:09	
WG511026-09	STD	01	02/05/2015 14:40	
WG511026-10	STD	01	02/05/2015 15:11	
WG511026-11	STD	01	02/05/2015 15:42	
WG511026-12	SSCV	01	02/05/2015 17:16	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4030842
Report generated 02/20/2015 13:54

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15020971
Instrument: HPMS6
Analyst: TMB
Workgroup: WG512809

Tune ID: WG512809-01
Run Date: 02/19/2015
Run Time: 10:48
File ID: 6M131171
Cal ID: HPMS6 - 05-FEB-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	26.5	5441	PASS
75.0	95.0	30.0	60.0	58.7	12074	PASS
95.0	95.0	100	100	100	20555	PASS
96.0	95.0	5.00	9.00	7.06	1452	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	71.4	14666	PASS
175	174	5.00	9.00	6.07	890	PASS
176	174	95.0	101	97.6	14316	PASS
177	176	5.00	9.00	7.14	1022	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG512809-02	CCV	01	02/19/2015 11:47	
WG512811-01	BLANK	01	02/19/2015 12:48	
WG512811-02	LCS	01	02/19/2015 13:19	
WG512811-03	LCS2	01	02/19/2015 13:50	
L15020971-16	TRIP BLANK	01	02/19/2015 15:53	
L15020971-14	50WW18-021815	01	02/19/2015 16:23	
L15020971-12	50WWW25-021815	01	02/19/2015 16:54	
L15020971-10	50WW12-021815	01	02/19/2015 17:24	
L15020971-08	50WW23-021815	01	02/19/2015 17:55	
L15020971-06	50WW24-021815	01	02/19/2015 18:26	
L15020971-05	50WW28FD-021715	01	02/19/2015 18:57	
L15020971-04	50WW28-021715	01	02/19/2015 19:27	
L15020971-03	50SW06-021715	01	02/19/2015 19:57	
L15020971-02	GPW1-021715	01	02/19/2015 20:28	
L15020971-01	GPW1A-021715	01	02/19/2015 20:59	
WG512811-04	BLANK2	01	02/19/2015 22:31	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4030842
Report generated 02/20/2015 13:54

Calibration Table Report
Method: A9FOOWT.M
Title: A9-FOO Water - IC: 09/30/14 - HPMS6
Last Calibration: Wed Oct 01 15:17:54 2014
Curve: WG494605
Calibration Files

	Compound	5 6M128665.D	20 6M128666.D	50 6M128667.D	100 6M128668.D	200 6M128669.D	300 6M128670.D	400 6M128671.D	500 6M128672.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD											
T	Acetonitrile		0.020	0.018	0.018	0.019	0.019	0.018	0.019	0.019	4.266		
T	3-Chloro-1-propene	0.458	0.462	0.456	0.483	0.490	0.490	0.487	0.499	0.478	3.529		
T	2-Chloro-1,3-butadiene	0.400	0.403	0.411	0.452	0.489	0.510	0.512	0.524	0.463	11.401		
T	Ethyl Acetate	0.113	0.112	0.114	0.122	0.122	0.123	0.121	0.131	0.120	5.395		
T	Methacrylonitrile	0.041	0.045	0.047	0.050	0.051	0.052	0.051	0.056	0.049	9.778		
T	Isobutyl Alcohol		0.005	0.005	0.005	0.005	0.005	0.005	0.006	0.005	6.271		
T	1-Butanol			0.001	0.002	0.002	0.002	0.002	0.002	0.002	14.956		
T	Methyl methacrylate	0.139	0.146	0.148	0.151	0.157	0.157	0.154	0.164	0.152	5.044		
T	2-Nitropropane		0.028	0.029	0.032	0.035	0.037	0.036	0.040	0.034	12.418		
I	Chlorobenzene-d5	ISTD											
I	1,4-Dichlorobenzene-d4	ISTD											
T	Cyclohexanone		0.028	0.030	0.034	0.033	0.037	0.036	0.036	0.033	9.780		

Wed Oct 01 15:18:47 2014

Calibration Table Report
Method: 8260WT.M
Title: 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Calibration: Fri Feb 06 08:51:16 2015
Curve: WG511026
Calibration Files

	Compound	0.3 6M130911.D	0.4 6M130912.D	1 6M130913.D	2 6M130914.D	5 6M130915.D	20 6M130916.D	50 6M130917.D	100 6M130918.D	200 6M130919.D	300 6M130920.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.419	0.425	0.443	0.493	0.497	0.474	0.434	0.369	0.444	9.659		
P	Chloromethane			0.363	0.358	0.361	0.352	0.367	0.358	0.343	0.303	0.351	5.855		
C	Vinyl Chloride		0.271	0.298	0.291	0.309	0.314	0.330	0.327	0.303	0.259	0.300	7.880		
T	1,3-Butadiene				0.280	0.275	0.310	0.304	0.276	0.231	0.189	0.266	15.980		1.000
T	Bromomethane			0.096	0.118	0.111	0.123	0.144	0.160	0.175	0.171	0.137	21.584	0.996	
T	Chloroethane			0.176	0.158	0.175	0.170	0.174	0.182	0.184	0.174	0.174	4.455		
T	Trichlorofluoromethane		0.539	0.588	0.610	0.594	0.583	0.578	0.564	0.526	0.459	0.560	8.277		
T	Diethyl ether				0.166	0.158	0.166	0.160	0.162		0.156	0.161	2.488		
T	Isoprene			0.307	0.295	0.281	0.308	0.299	0.302	0.306	0.287	0.298	3.345		
T	Acrolein					0.002	0.002	0.003	0.004		0.006	0.003	52.547		
T	1,1,2-Trichloro-1,2,2-Trifluoroet			0.261	0.262	0.270	0.271	0.272	0.275	0.270	0.249	0.266	3.278		
T	Acetone					0.036	0.039	0.041	0.039	0.038	0.037	0.039	4.297		
C	1,1-Dichloroethene		0.463	0.467	0.449	0.464	0.457	0.468	0.460	0.439	0.390	0.451	5.484		
T	Tert-Butyl Alcohol				0.007	0.007	0.008	0.009	0.009		0.009	0.008	10.081		
T	Dimethyl Sulfide			0.228	0.226	0.250	0.253	0.254	0.253	0.257	0.245	0.246	4.927		
T	Iodomethane				0.052	0.102	0.189	0.220	0.235	0.246	0.219	0.180	41.181	0.997	
T	Methyl acetate					0.150	0.149	0.153	0.151	0.149	0.149	0.150	1.107		
T	Methylene Chloride			0.221	0.237	0.233	0.216	0.224	0.224	0.223	0.207	0.223	4.121		
T	Carbon Disulfide			0.868	0.846	0.795	0.796	0.752	0.747	0.711	0.617	0.767	10.372		
T	Acrylonitrile			0.051	0.051	0.050	0.052	0.055	0.055		0.062	0.054	7.282		
T	Methyl Tert Butyl Ether		0.408	0.463	0.464	0.480	0.469	0.510	0.509	0.495	0.461	0.473	6.568		
T	trans-1,2-Dichloroethene		0.225	0.222	0.232	0.233	0.236	0.240	0.245	0.240	0.219	0.232	3.843		
T	n-Hexane			0.378	0.375	0.383	0.401	0.378	0.385	0.385	0.367	0.382	2.597		
T	Diisopropyl ether				1.024	0.994	0.983	0.925	0.892		0.779	0.933	9.601		
T	Vinyl Acetate					0.154	0.151	0.164	0.170	0.168	0.168	0.163	5.048		
P	1,1-Dichloroethane		0.528	0.486	0.515	0.522	0.506	0.512	0.507	0.481	0.430	0.499	5.987		
T	Ethyl-Tert-Butyl ether				0.768	0.762	0.769	0.745	0.735		0.663	0.740	5.413		
T	2-Butanone					0.057	0.057	0.062	0.061	0.061	0.061	0.060	3.481		
T	Propionitrile				0.017	0.018	0.018	0.018	0.018		0.019	0.018	2.906		
T	2,2-Dichloropropane		0.360	0.397	0.387	0.421	0.436	0.474	0.481	0.461	0.419	0.426	9.645		
T	cis-1,2-Dichloroethene		0.230	0.232	0.253	0.254	0.254	0.262	0.262	0.254	0.233	0.248	5.311		
C	Chloroform	0.482	0.480	0.469	0.491	0.502	0.505	0.516	0.500	0.470	0.410	0.483	6.166		
T	1-Bromopropane			0.029	0.048	0.050	0.056	0.055	0.055	0.056	0.052	0.050	18.257	0.999	
T	Bromochloromethane		0.110	0.128	0.130	0.138	0.131	0.137	0.136	0.134	0.123	0.130	6.782		
T	Tetrahydrofuran				0.039	0.037	0.038	0.038	0.037		0.037	0.038	2.373		
S	Dibromofluoromethane			0.232	0.236	0.278	0.260	0.262	0.256	0.255	0.239	0.253	6.126		
T	1,1,1-Trichloroethane		0.495	0.459	0.463	0.485	0.492	0.514	0.515	0.481	0.421	0.481	6.161		
T	Cyclohexane			0.460	0.465	0.493	0.507	0.485	0.491	0.484	0.447	0.479	4.142		
T	1,1-Dichloropropene		0.329	0.385	0.372	0.371	0.380	0.393	0.391	0.373	0.336	0.370	6.151		
T	Tert-Amyl-Methyl ether				0.523	0.516	0.525	0.514	0.510		0.480	0.511	3.155		
T	Carbon Tetrachloride		0.358	0.378	0.38	0.402	0.419	0.448	0.46	0.438	0.387	0.4079	8.6477		
S	1,2-Dichloroethane-d4			0.327	0.313	0.312	0.313	0.306	0.293	0.283	0.259	0.3009	7.2009		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.4	0.395	0.402	0.397	0.384	0.406	0.383	0.355	0.314	0.3818	7.7951		
T	Benzene	1.084	0.962	0.962	0.942	0.951	0.915	0.944	0.921	0.817	0.674	0.9171	11.688		
T	Trichloroethene		0.233	0.232	0.239	0.245	0.244	0.252	0.249	0.241	0.218	0.2393	4.2529		
T	Methylcyclohexane			0.367	0.377	0.384	0.39	0.376	0.379	0.378	0.353	0.3755	2.9654		
T	1,2-Dichloropropane		0.246	0.246	0.234	0.244	0.247	0.26	0.256	0.252	0.236	0.2469	3.4358		
T	1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.0009	3.9268		
T	Bromodichloromethane		0.342	0.355	0.358	0.352	0.356	0.383	0.377	0.356	0.319	0.3553	5.2203		
T	Dibromomethane		0.101	0.105	0.118	0.123	0.122	0.127	0.124	0.12	0.113	0.1169	7.6541		
T	2-Chloroethyl Vinyl Ether					0.092	0.096	0.105	0.103	0.105	0.103	0.1006	5.3228		
T	4-Methyl-2-Pentanone					0.044	0.051	0.054	0.053	0.054	0.054	0.0517	7.5613		
T	cis-1,3-Dichloropropene		0.312	0.321	0.338	0.352	0.357	0.386	0.38	0.366	0.333	0.3494	7.3149		
T	Dimethyl Disulfide					0.134	0.162	0.174	0.186	0.198	0.19	0.174	13.371		
I	Chlorobenzene-d5	ISTD													
S	Toluene-d8			1.215	1.248	1.231	1.142	1.117	1.117	1.074	0.983	1.1408	7.8205		
C	Toluene		1.303	1.384	1.385	1.401	1.312	1.315	1.282	1.089	0.875	1.2607	13.636		
T	Ethyl Methacrylate			0.167	0.172	0.215	0.241	0.253	0.253	0.255	0.247	0.2252	16.385	1.000	
T	Paraldehyde											0	0		
T	trans-1,3-Dichloropropene			0.329	0.354	0.381	0.411	0.454	0.458	0.434	0.399	0.4024	11.547		
T	1,1,2-Trichloroethane		0.192	0.19	0.188	0.203	0.19	0.202	0.202	0.193	0.185	0.194	3.3342		
T	2-Hexanone					0.113	0.121	0.131	0.126	0.126	0.122	0.1233	4.9514		
T	1,3-Dichloropropane		0.353	0.365	0.38	0.359	0.351	0.374	0.377	0.356	0.332	0.3608	4.1556		
T	Tetrachloroethene		0.37	0.372	0.368	0.379	0.36	0.369	0.369	0.352	0.322	0.3625	4.6906		
T	Dibromochloromethane		0.207	0.226	0.247	0.251	0.261	0.297	0.303	0.294	0.275	0.2624	12.645		
T	1,2-Dibromoethane		0.14	0.169	0.185	0.179	0.193	0.21	0.213	0.207	0.194	0.1878	12.28		
T	1-Chlorohexane		0.364	0.416	0.422	0.446	0.47	0.449	0.449	0.437	0.4	0.4282	7.4183		
P	Chlorobenzene		0.987	0.925	0.932	0.939	0.864	0.895	0.868	0.776	0.656	0.8713	11.524		
T	1,1,1,2-Tetrachloroethane		0.252	0.311	0.295	0.309	0.316	0.351	0.355	0.341	0.313	0.316	9.976		
C	Ethylbenzene		0.398	0.478	0.518	0.539	0.484	0.505	0.5	0.47	0.425	0.4797	9.2631		
T	m-,p-Xylene		0.589	0.639	0.61	0.632	0.59	0.606	0.586	0.506	0.407	0.5738	12.779		
T	o-Xylene		0.565	0.586	0.599	0.614	0.6	0.606	0.595	0.552	0.491	0.5785	6.6292		
T	Styrene		0.872	0.992	0.918	1.027	0.989	1.002	0.97	0.85	0.709	0.9256	10.951		
P	Bromoform			0.108	0.135	0.137	0.152	0.172	0.174	0.171	0.16	0.1512	15.3	0.998	
T	Isopropylbenzene		1.452	1.592	1.578	1.642	1.599	1.607	1.504	1.209		1.5229	9.2356		
I	1,4-Dichlorobenzene-d4	ISTD													
P	1,1,2,2-Tetrachloroethane		0.342	0.351	0.362	0.372	0.358	0.38	0.374	0.37	0.364	0.3637	3.2633		
S	p-Bromofluorobenzene			0.843	0.913	0.86	0.854	0.824	0.82	0.816	0.795	0.8406	4.3296		

T	1,2,3-Trichloropropane			0.123	0.111	0.126	0.121	0.129	0.122	0.124	0.119	0.1217	4.2183	
T	trans-1,4-Dichloro-2-Butene			0.108	0.116	0.149	0.164	0.171	0.173	0.175	0.172	0.1534	17.494	1.000
T	n-Propylbenzene		3.21	3.312	3.376	3.525	3.255	3.25	2.986	2.343		3.1572	11.485	
T	Bromobenzene	0.587	0.596	0.67	0.665	0.72	0.651	0.677	0.664	0.638	0.598	0.6466	6.5366	
T	1,3,5-Trimethylbenzene		2.12	2.416	2.459	2.613	2.359	2.398	2.273	1.94	1.563	2.2379	14.314	
T	2-Chlorotoluene		2.068	2.221	2.209	2.432	2.031	2.079	2.128	1.878	1.547	2.0659	11.958	
T	4-Chlorotoluene		2.188	2.184	2.247	2.137	2.11	2.164	1.878	1.566		2.0592	11.061	
T	a-Methylstyrene			1.148	1.221	1.284	1.33	1.27	1.239	1.176	1.059	1.2159	7.084	
T	tert-Butylbenzene			0.485	0.504	0.532	0.505	0.511	0.501	0.491	0.461	0.4989	4.1297	
T	1,2,4-Trimethylbenzene		2.347	2.518	2.511	2.61	2.407	2.462	2.321	1.947	1.561	2.2983	14.586	
T	sec-Butylbenzene		2.636	2.932	2.885	2.938	2.772	2.79	2.612	2.157		2.7152	9.4745	
T	p-Isopropyltoluene		2.124	2.403	2.423	2.529	2.381	2.417	2.294	1.934	1.545	2.2278	14.069	
T	1,3-Dichlorobenzene		1.293	1.395	1.473	1.457	1.353	1.384	1.334	1.223	1.06	1.3304	9.5799	
T	1,4-Dichlorobenzene	1.503	1.548	1.36	1.405	1.44	1.338	1.379	1.312	1.201	1.043	1.3529	10.804	
T	n-Butylbenzene		2.175	2.018	2.244	2.279	2.168	2.191	2.075	1.766	1.423	2.0376	13.591	
T	1,2-Dichlorobenzene	1.239	1.265	1.257	1.195	1.255	1.175	1.21	1.168	1.08	0.955	1.18	8.1852	
T	1,2-Dibromo-3-Chloropropane				0.057	0.056	0.065	0.08	0.079	0.079	0.075	0.0701	15.31	0.998
T	1,2,4-Trichlorobenzene		0.764	0.795	0.784	0.768	0.748	0.794	0.783	0.744	0.674	0.7615	4.9277	
T	Hexachlorobutadiene		0.216	0.347	0.344	0.354	0.348	0.357	0.357	0.348	0.321	0.3323	13.522	
T	Naphthalene		1.008	1.179	1.085	1.125	1.114	1.194	1.161	1.11	0.992	1.1075	6.3409	
T	1,2,3-Trichlorobenzene	0.715	0.55	0.646	0.647	0.668	0.631	0.686	0.667	0.638	0.585	0.6433	7.4188	

Fri Feb 06 08:59:35 2015

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15020971 Run Date: 02/05/2015 Sample ID: WG511026-12
Instrument ID: HPMS6 Run Time: 17:16 Method: 8260B
File ID: 6M130923 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG511026 Cal ID: HPMS6 - 05-FEB-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	46.6	ug/L	0.450	6.70	20	
1,1-Dichloroethene	CCC	50.0	44.5	ug/L	0.401	11.0	20	
1,2-Dichloropropane	CCC	50.0	50.9	ug/L	0.251	1.80	20	
Ethylbenzene	CCC	50.0	49.2	ug/L	0.472	1.60	20	
Toluene	CCC	50.0	50.2	ug/L	1.26	0.300	20	
Vinyl Chloride	CCC	50.0	47.8	ug/L	0.287	4.30	20	
Bromoform	SPCC	50.0	47.7	ug/L	0.158	4.70	20	
Chlorobenzene	SPCC	50.0	45.8	ug/L	0.798	8.40	20	
Chloromethane	SPCC	50.0	46.7	ug/L	0.328	6.50	20	
1,1-Dichloroethane	SPCC	50.0	47.6	ug/L	0.475	4.80	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	55.2	ug/L	0.401	10.3	20	
Acetone		50.0	52.5	ug/L	0.0405	5.00	20	
Benzene		50.0	48.5	ug/L	0.890	3.00	20	
Bromobenzene		50.0	51.3	ug/L	0.663	2.60	20	
Bromochloromethane		50.0	49.4	ug/L	0.128	1.20	20	
Bromodichloromethane		50.0	46.6	ug/L	0.331	6.90	20	
Bromomethane		50.0	40.8	ug/L	0.134	18.4	20	
2-Butanone		50.0	54.7	ug/L	0.0655	9.40	20	
n-Butylbenzene		50.0	50.2	ug/L	2.05	0.400	20	
sec-Butylbenzene		50.0	46.3	ug/L	2.52	7.40	20	
tert-Butylbenzene		50.0	47.2	ug/L	0.471	5.70	20	
Carbon Disulfide		50.0	42.8	ug/L	0.657	14.4	20	
Carbon Tetrachloride		50.0	46.7	ug/L	0.381	6.60	20	
Dibromochloromethane		50.0	52.6	ug/L	0.276	5.20	20	
Chloroethane		50.0	54.8	ug/L	0.191	9.60	20	
2-Chlorotoluene		50.0	45.6	ug/L	1.88	8.90	20	
4-Chlorotoluene		50.0	47.5	ug/L	1.96	5.00	20	
1,2-Dibromo-3-Chloropropane		50.0	50.4	ug/L	0.0767	0.800	20	
1,2-Dibromoethane		50.0	53.4	ug/L	0.200	6.70	20	
Dibromomethane		50.0	48.8	ug/L	0.114	2.40	20	
1,2-Dichlorobenzene		50.0	46.2	ug/L	1.09	7.70	20	
1,3-Dichlorobenzene		50.0	46.1	ug/L	1.23	7.80	20	
1,4-Dichlorobenzene		50.0	48.7	ug/L	1.32	2.70	20	
Dichlorodifluoromethane		50.0	44.8	ug/L	0.398	10.4	20	
1,2-Dichloroethane		50.0	43.8	ug/L	0.334	12.5	20	
cis-1,2-Dichloroethene		50.0	51.0	ug/L	0.253	2.10	20	
trans-1,2-Dichloroethene		50.0	50.7	ug/L	0.236	1.40	20	
1,3-Dichloropropane		50.0	51.1	ug/L	0.369	2.20	20	
2,2-Dichloropropane		50.0	49.3	ug/L	0.420	1.30	20	
cis-1,3-Dichloropropene		50.0	53.2	ug/L	0.372	6.40	20	
trans-1,3-Dichloropropene		50.0	51.4	ug/L	0.413	2.70	20	
1,1-Dichloropropene		50.0	45.9	ug/L	0.340	8.20	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4030841
Report generated 02/20/2015 13:54

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15020971 Run Date: 02/05/2015 Sample ID: WG511026-12
Instrument ID: HPMS6 Run Time: 17:16 Method: 8260B
File ID: 6M130923 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG511026 Cal ID: HPMS6 - 05-FEB-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	53.9	ug/L	0.133	7.80	20	
Hexachlorobutadiene		50.0	49.7	ug/L	0.330	0.700	20	
Isopropylbenzene		50.0	44.7	ug/L	1.36	10.5	20	
p-Isopropyltoluene		50.0	48.4	ug/L	2.16	3.10	20	
4-Methyl-2-Pentanone		50.0	53.0	ug/L	0.0549	6.10	20	
Methylene Chloride		50.0	49.6	ug/L	0.221	0.800	20	
Naphthalene		50.0	52.1	ug/L	1.15	4.10	20	
n-Propylbenzene		50.0	46.5	ug/L	2.94	7.00	20	
Styrene		50.0	50.9	ug/L	0.943	1.90	20	
1,1,1,2-Tetrachloroethane		50.0	50.4	ug/L	0.319	0.900	20	
Tetrachloroethene		50.0	46.4	ug/L	0.336	7.20	20	
1,2,3-Trichlorobenzene		50.0	49.4	ug/L	0.635	1.30	20	
1,2,4-Trichlorobenzene		50.0	49.6	ug/L	0.756	0.800	20	
1,1,1-Trichloroethane		50.0	44.8	ug/L	0.431	10.4	20	
1,1,2-Trichloroethane		50.0	51.8	ug/L	0.201	3.70	20	
Trichloroethene		50.0	50.1	ug/L	0.240	0.300	20	
Trichlorofluoromethane		50.0	40.9	ug/L	0.458	18.3	20	
1,2,3-Trichloropropane		50.0	51.9	ug/L	0.126	3.90	20	
1,2,4-Trimethylbenzene		50.0	51.8	ug/L	2.38	3.60	20	
1,3,5-Trimethylbenzene		50.0	52.7	ug/L	2.36	5.30	20	
o-Xylene		50.0	46.5	ug/L	0.538	7.00	20	
m-,p-Xylene		100	96.4	ug/L	0.553	3.60	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4030841
Report generated 02/20/2015 13:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15020971 Run Date: 02/19/2015 Sample ID: WG512809-02
Instrument ID: HPMS6 Run Time: 11:47 Method: 8260B
File ID: 6M131173 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG512811 Cal ID: HPMS6 - 05-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	53.7	ug/L	0.519	7.47	20	
1,1-Dichloroethene	CCC	50.0	47.6	ug/L	0.429	4.85	20	
1,2-Dichloropropane	CCC	50.0	48.2	ug/L	0.238	3.57	20	
Ethylbenzene	CCC	50.0	50.6	ug/L	0.485	1.14	20	
Toluene	CCC	50.0	51.7	ug/L	1.30	3.46	20	
Vinyl Chloride	CCC	50.0	50.0	ug/L	0.300	0.0670	20	
Bromoform	SPCC	50.0	54.8	ug/L	0.181	9.58	20	
Chlorobenzene	SPCC	50.0	49.9	ug/L	0.870	0.135	20	
Chloromethane	SPCC	50.0	41.9	ug/L	0.294	16.2	20	
1,1-Dichloroethane	SPCC	50.0	48.8	ug/L	0.486	2.48	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	53.8	ug/L	0.391	7.51	20	
Xylenes		150	152	ug/L	0.582	1.50	20	
Acetone		50.0	45.0	ug/L	0.0347	9.95	20	
Benzene		50.0	50.8	ug/L	0.932	1.62	20	
Bromobenzene		50.0	50.7	ug/L	0.655	1.32	20	
Bromochloromethane		50.0	50.5	ug/L	0.131	1.02	20	
Bromodichloromethane		50.0	54.5	ug/L	0.387	8.96	20	
Bromomethane		50.0	39.9	ug/L	0.131	20.2	20	*
2-Butanone		50.0	45.8	ug/L	0.0547	8.49	20	
n-Butylbenzene		50.0	53.7	ug/L	2.19	7.31	20	
sec-Butylbenzene		50.0	50.7	ug/L	2.75	1.37	20	
tert-Butylbenzene		50.0	45.9	ug/L	0.458	8.21	20	
Carbon Disulfide		50.0	47.8	ug/L	0.733	4.44	20	
Carbon Tetrachloride		50.0	57.1	ug/L	0.466	14.3	20	
Dibromochloromethane		50.0	56.5	ug/L	0.296	12.9	20	
Chloroethane		50.0	51.7	ug/L	0.180	3.39	20	
2-Chlorotoluene		50.0	53.0	ug/L	2.19	5.92	20	
4-Chlorotoluene		50.0	51.6	ug/L	2.13	3.27	20	
1,2-Dibromo-3-Chloropropane		50.0	56.3	ug/L	0.0858	12.6	20	
1,2-Dibromoethane		50.0	55.3	ug/L	0.208	10.6	20	
Dibromomethane		50.0	54.9	ug/L	0.128	9.74	20	
1,2-Dichlorobenzene		50.0	45.2	ug/L	1.07	9.55	20	
1,3-Dichlorobenzene		50.0	46.5	ug/L	1.24	7.05	20	
1,4-Dichlorobenzene		50.0	45.1	ug/L	1.22	9.72	20	
Dichlorodifluoromethane		50.0	46.3	ug/L	0.411	7.47	20	
1,2-Dichloroethane		50.0	51.2	ug/L	0.391	2.30	20	
cis-1,2-Dichloroethene		50.0	52.6	ug/L	0.261	5.14	20	
trans-1,2-Dichloroethene		50.0	51.3	ug/L	0.239	2.69	20	
1,3-Dichloropropane		50.0	51.8	ug/L	0.374	3.57	20	
2,2-Dichloropropane		50.0	60.1	ug/L	0.512	20.2	20	*
cis-1,3-Dichloropropene		50.0	55.2	ug/L	0.386	10.4	20	
trans-1,3-Dichloropropene		50.0	58.2	ug/L	0.468	16.3	20	

CCV - Modified 03/05/2008
PDF File ID: 4030843
Report generated 02/20/2015 13:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15020971 Run Date: 02/19/2015 Sample ID: WG512809-02
Instrument ID: HPMS6 Run Time: 11:47 Method: 8260B
File ID: 6M131173 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG512811 Cal ID: HPMS6 - 05-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	52.8	ug/L	0.391	5.58	20	
2-Hexanone		50.0	46.2	ug/L	0.114	7.59	20	
Hexachlorobutadiene		50.0	65.6	ug/L	0.436	31.2	20	*
Isopropylbenzene		50.0	50.9	ug/L	1.55	1.71	20	
p-Isopropyltoluene		50.0	53.4	ug/L	2.38	6.89	20	
4-Methyl-2-Pentanone		50.0	46.6	ug/L	0.0482	6.90	20	
Methylene Chloride		50.0	49.8	ug/L	0.222	0.437	20	
Naphthalene		50.0	52.7	ug/L	1.17	5.35	20	
n-Propylbenzene		50.0	52.5	ug/L	3.32	5.07	20	
Styrene		50.0	52.6	ug/L	0.973	5.11	20	
1,1,1,2-Tetrachloroethane		50.0	54.0	ug/L	0.341	7.96	20	
Tetrachloroethene		50.0	47.4	ug/L	0.344	5.24	20	
1,2,3-Trichlorobenzene		50.0	55.0	ug/L	0.707	9.91	20	
1,2,4-Trichlorobenzene		50.0	54.6	ug/L	0.832	9.28	20	
1,1,1-Trichloroethane		50.0	54.3	ug/L	0.522	8.69	20	
1,1,2-Trichloroethane		50.0	51.4	ug/L	0.200	2.87	20	
Trichloroethene		50.0	49.9	ug/L	0.239	0.254	20	
Trichlorofluoromethane		50.0	51.3	ug/L	0.575	2.61	20	
1,2,3-Trichloropropane		50.0	51.3	ug/L	0.125	2.68	20	
1,2,4-Trimethylbenzene		50.0	53.7	ug/L	2.47	7.38	20	
1,3,5-Trimethylbenzene		50.0	53.8	ug/L	2.41	7.60	20	
o-Xylene		50.0	49.9	ug/L	0.578	0.105	20	
m-,p-Xylene		100	102	ug/L	0.587	2.31	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4030843
Report generated 02/20/2015 13:54

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15020971
Instrument ID: HPMS6
Workgroup (AAB#): WG512811

ICAL CCV Number: WG511026-08
CAL ID: HPMS6 - 05-FEB-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG511026-08	NA	NA	327681	554647	715746
Upper Limit	NA	NA	655362	1109294	1431492
Lower Limit	NA	NA	163841	277324	357873
L15020971-01	1.00	01	201971	383385	508626
L15020971-02	1.00	01	202734	381158	504460
L15020971-03	1.00	01	204740	386921	508276
L15020971-04	1.00	01	210757	387832	519811
L15020971-05	1.00	01	206465	388216	521655
L15020971-06	1.00	01	208127	397388	526064
L15020971-08	1.00	01	212743	401732	524458
L15020971-10	1.00	01	215588	403732	528158
L15020971-12	1.00	01	218678	410846	544167
L15020971-14	1.00	01	220146	409130	550892
L15020971-16	1.00	01	227715	424411	568092
WG512811-01	1.00	01	244378	463389	619767
WG512811-02	1.00	01	256354	463767	620024
WG512811-03	1.00	01	267388	483880	656339

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4031988
Report generated 02/20/2015 13:54

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15020971
Instrument ID: HPMS6
Workgroup (AAB#): WG512811

ICAL CCV Number: WG511026-08
CAL ID: HPMS6-05-FEB-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG511026-08	NA	NA	19.75	16.14	11.58
Upper Limit	NA	NA	20.25	16.64	12.08
Lower Limit	NA	NA	19.25	15.64	11.08
L15020971-01	1.00	01	19.76	16.14	11.58
L15020971-02	1.00	01	19.76	16.14	11.58
L15020971-03	1.00	01	19.76	16.15	11.58
L15020971-04	1.00	01	19.76	16.14	11.58
L15020971-05	1.00	01	19.76	16.14	11.58
L15020971-06	1.00	01	19.76	16.14	11.59
L15020971-08	1.00	01	19.76	16.14	11.58
L15020971-10	1.00	01	19.76	16.14	11.58
L15020971-12	1.00	01	19.76	16.14	11.58
L15020971-14	1.00	01	19.76	16.14	11.58
L15020971-16	1.00	01	19.76	16.15	11.58
WG512811-01	1.00	01	19.76	16.14	11.58
WG512811-02	1.00	01	19.76	16.14	11.58
WG512811-03	1.00	01	19.76	16.15	11.58

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4031989
Report generated: 02/20/2015 13:54

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021915\6M131191.D Vial: 21
Acq On : 19 Feb 2015 20:59 Operator: TMB
Sample : L15020971-01 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 20 08:23:18 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	508626	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.14	117	383385	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.76	152	201971	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.37	111	127223	24.7653 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.08%		
43) 1,2-Dichloroethane-d4	11.12	65	153086	25.0066 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.04%		
58) Toluene-d8	13.90	98	440459	25.1759 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.72%		
80) p-Bromofluorobenzene	17.94	95	185947	27.3810 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 109.52%		

Target Compounds

					Qvalue
60) Ethyl Methacrylate	13.90	69	790	0.6700 ug/L #	1
92) p-Isopropyltoluene	19.44	119	2551	0.1417 ug/L #	48

(#) = qualifier out of range (m) = manual integration
6M131191.D 8260WT.M Fri Feb 20 08:23:18 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021915\6M131191.D Vial: 21
Acq On : 19 Feb 2015 20:59 Operator: TMB
Sample : L15020971-01 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 20 8:23 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration

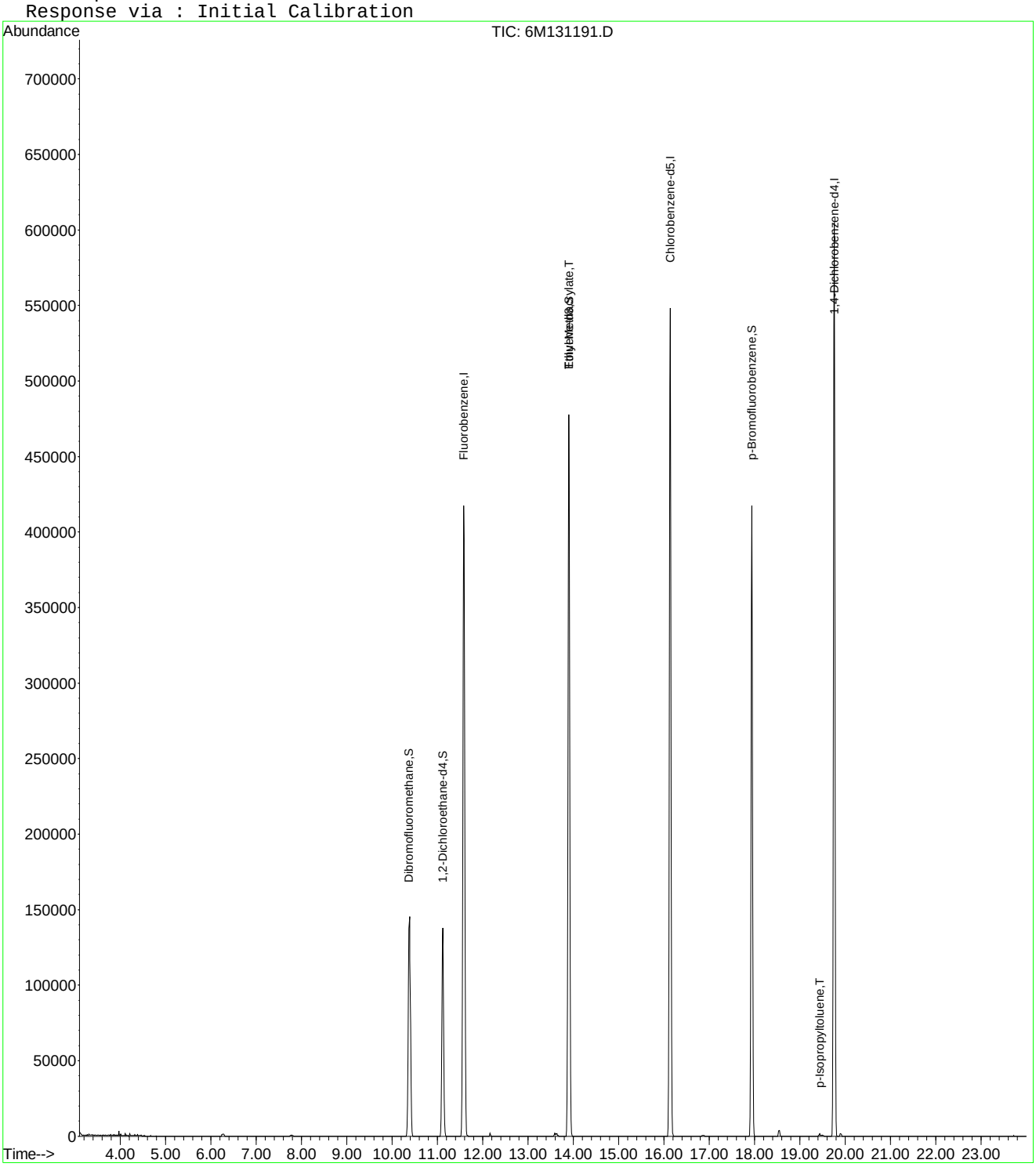

6M131191.D 8260WT.M Fri Feb 20 08:23:18 2015 Page 2

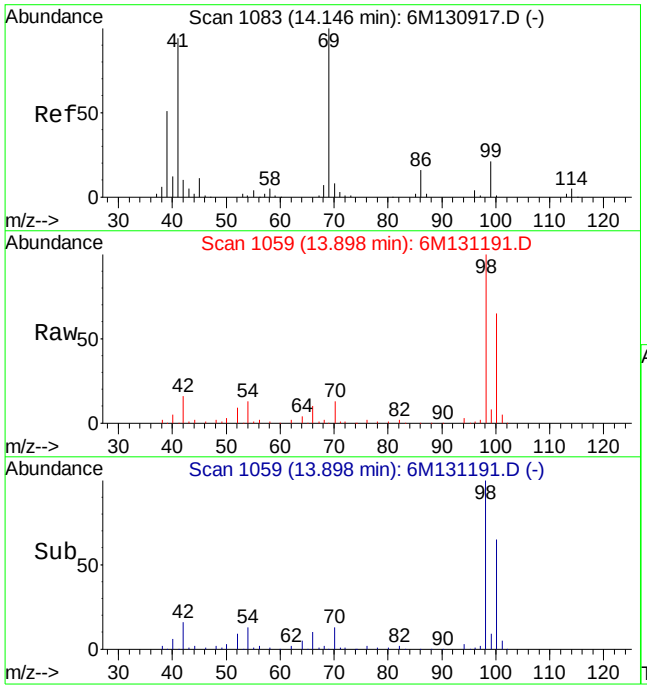

#60
Ethyl Methacrylate
Concen: 0.67 ug/L
RT: 13.90 min Scan# 1059
Delta R.T. -0.24 min
Lab File: 6M131191.D
Acq: 19 Feb 2015 20:59

Tgt Ion: 69 Resp: 790

Ion	Ratio	Lower	Upper
69	100		
41	202.8	46.5	108.5#

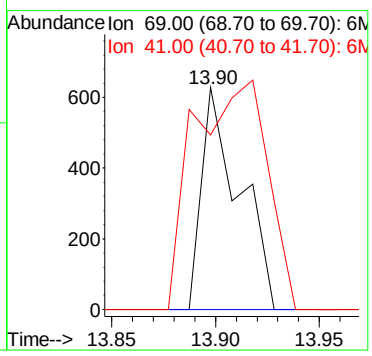

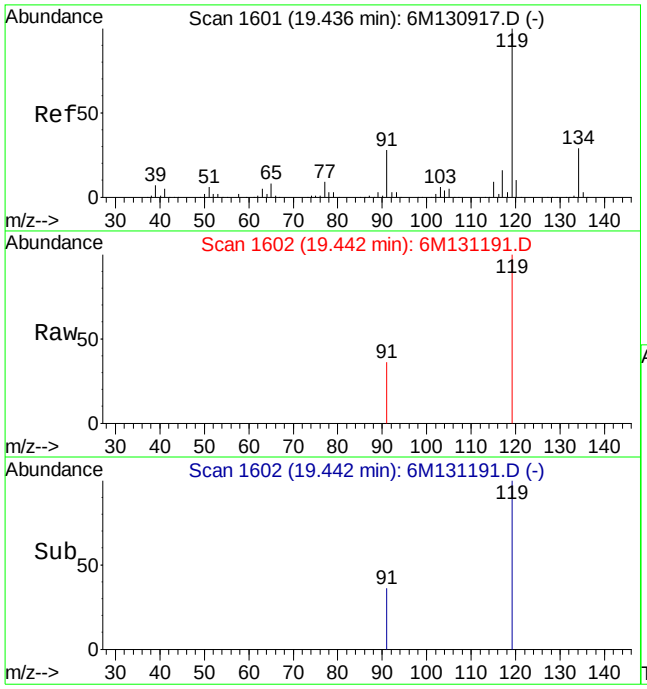

#92
p-Isopropyltoluene
Concen: 0.14 ug/L
RT: 19.44 min Scan# 1602
Delta R.T. 0.01 min
Lab File: 6M131191.D
Acq: 19 Feb 2015 20:59

Tgt Ion:119 Resp: 2551

Ion	Ratio	Lower	Upper
119	100		
134	0.0	16.0	37.4#

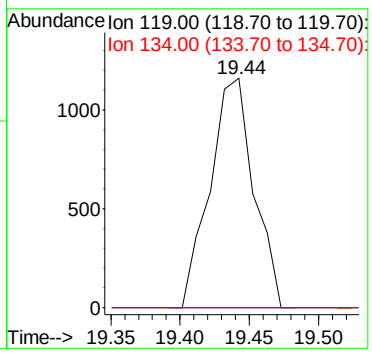

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021915\6M131190.D Vial: 20
Acq On : 19 Feb 2015 20:28 Operator: TMB
Sample : L15020971-02 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 20 08:23:17 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	504460	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.14	117	381158	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.76	152	202734	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.38	111	124200	24.3765 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.52%		
43) 1,2-Dichloroethane-d4	11.12	65	149850	24.6801 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.72%		
58) Toluene-d8	13.90	98	436679	25.1057 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.44%		
80) p-Bromofluorobenzene	17.94	95	182422	26.7608 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 107.04%		

Target Compounds					Qvalue
13) Acetone	6.61	43	1015	1.3040 ug/L #	49
60) Ethyl Methacrylate	13.91	69	927	0.7069 ug/L #	31

(#) = qualifier out of range (m) = manual integration
6M131190.D 8260WT.M Fri Feb 20 08:23:17 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021915\6M131190.D Vial: 20
Acq On : 19 Feb 2015 20:28 Operator: TMB
Sample : L15020971-02 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 20 8:23 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration

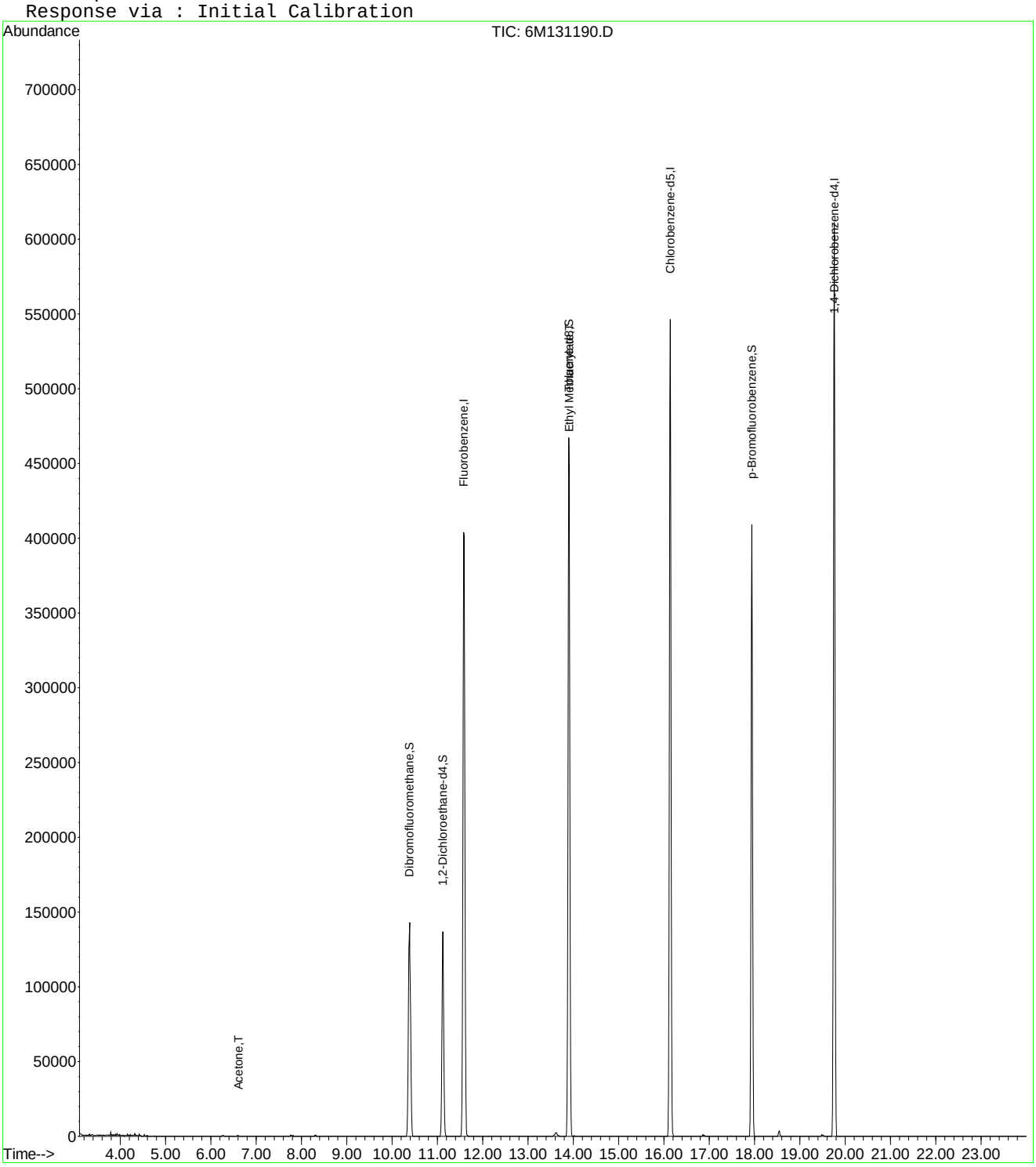

6M131190.D 8260WT.M Fri Feb 20 08:23:17 2015 Page 2

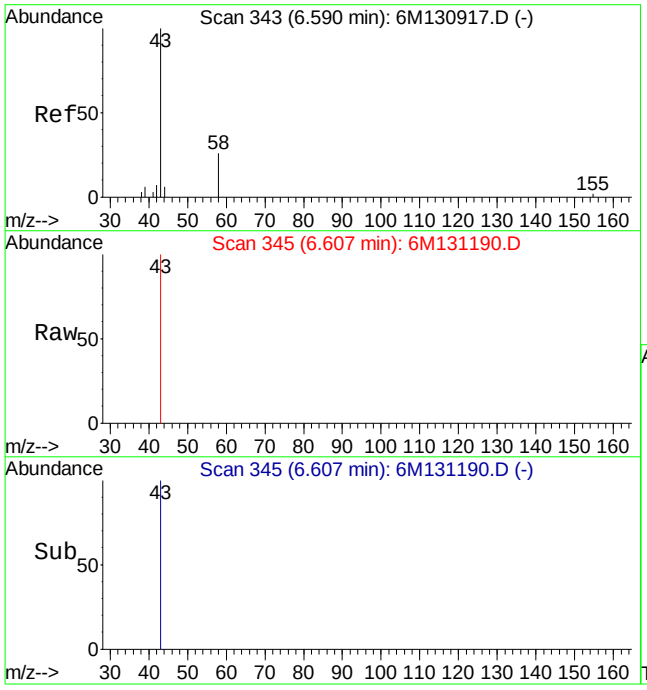

#13
Acetone
Concen: 1.30 ug/L
RT: 6.61 min Scan# 345
Delta R.T. 0.02 min
Lab File: 6M131190.D
Acq: 19 Feb 2015 20:28

Tgt Ion: 43 Resp: 1015

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.7	36.5#

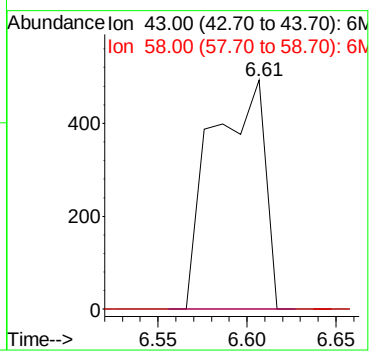

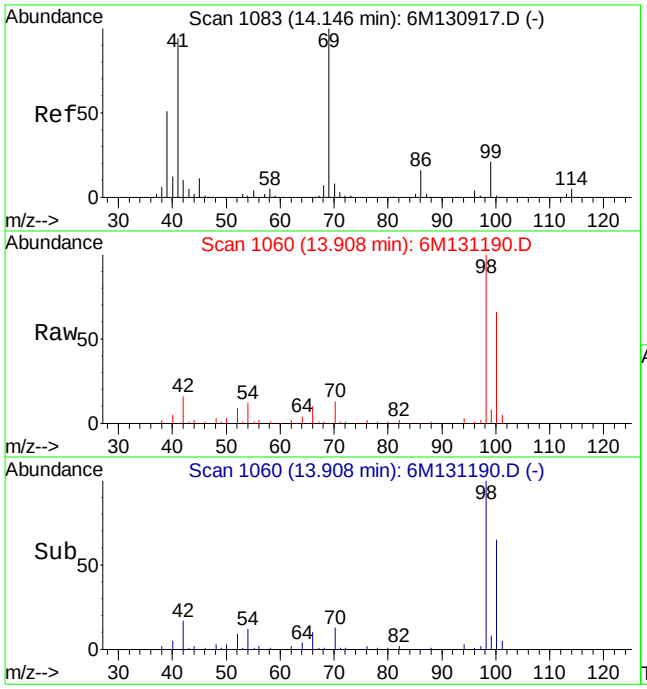

#60
Ethyl Methacrylate
Concen: 0.71 ug/L
RT: 13.91 min Scan# 1060
Delta R.T. -0.23 min
Lab File: 6M131190.D
Acq: 19 Feb 2015 20:28

Tgt Ion: 69 Resp: 927

Ion	Ratio	Lower	Upper
69	100		
41	137.3	46.5	108.5#

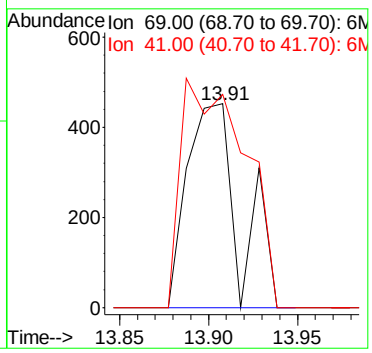

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021915\6M131189.D Vial: 19
Acq On : 19 Feb 2015 19:57 Operator: TMB
Sample : L15020971-03 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 20 08:23:16 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	508276	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.15	117	386921	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.76	152	204740	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	125360	24.4194 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.68%		
43) 1,2-Dichloroethane-d4	11.12	65	154464	25.2491 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.00%		
58) Toluene-d8	13.90	98	443322	25.1080 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.44%		
80) p-Bromofluorobenzene	17.94	95	184474	26.7967 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 107.20%		

Target Compounds					Qvalue
13) Acetone	6.59	43	402	0.5126 ug/L #	49
60) Ethyl Methacrylate	13.90	69	989	0.7192 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M131189.D 8260WT.M Fri Feb 20 08:23:16 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021915\6M131189.D Vial: 19
Acq On : 19 Feb 2015 19:57 Operator: TMB
Sample : L15020971-03 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 20 8:23 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration

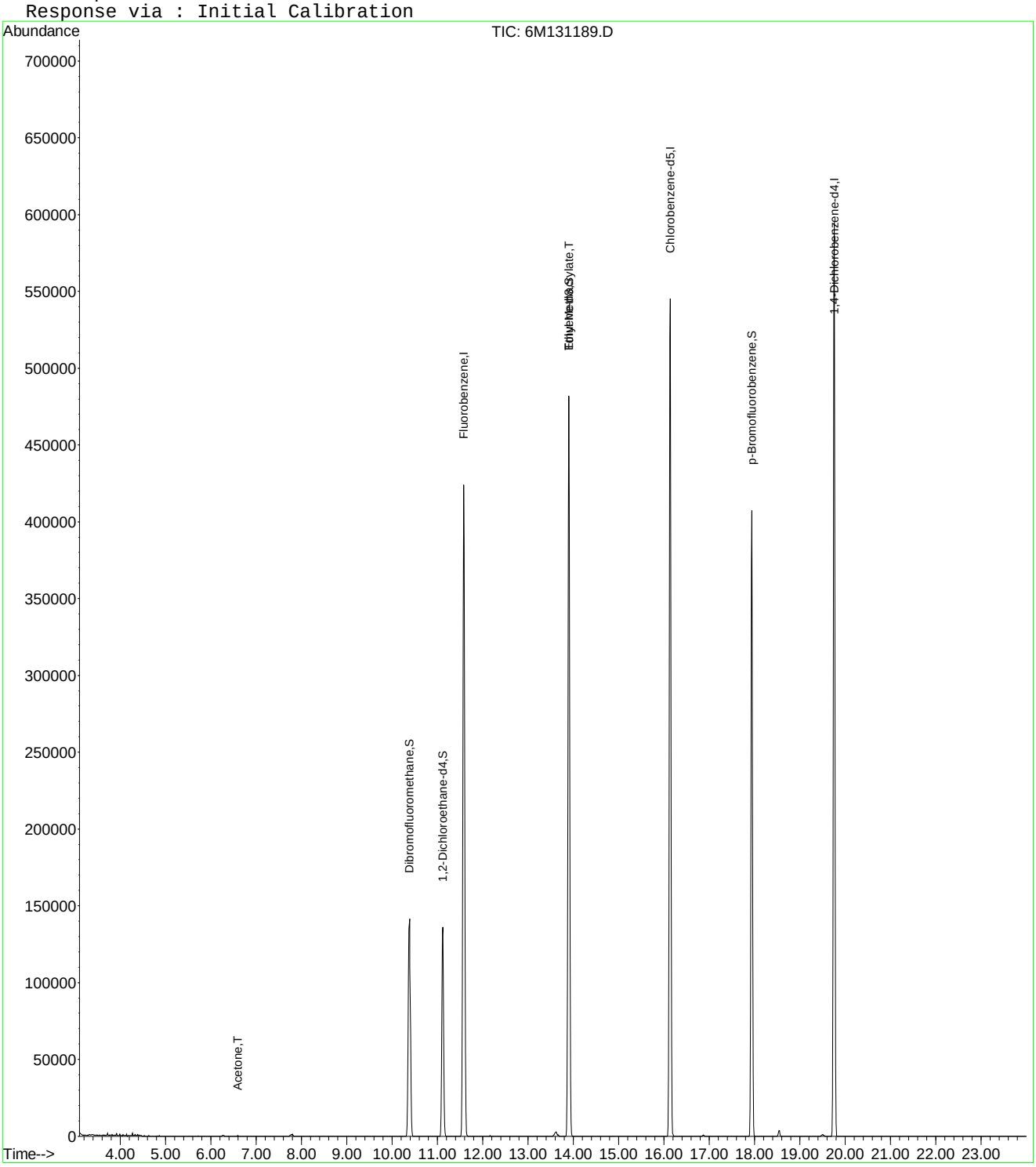

6M131189.D 8260WT.M Fri Feb 20 08:23:16 2015 Page 2

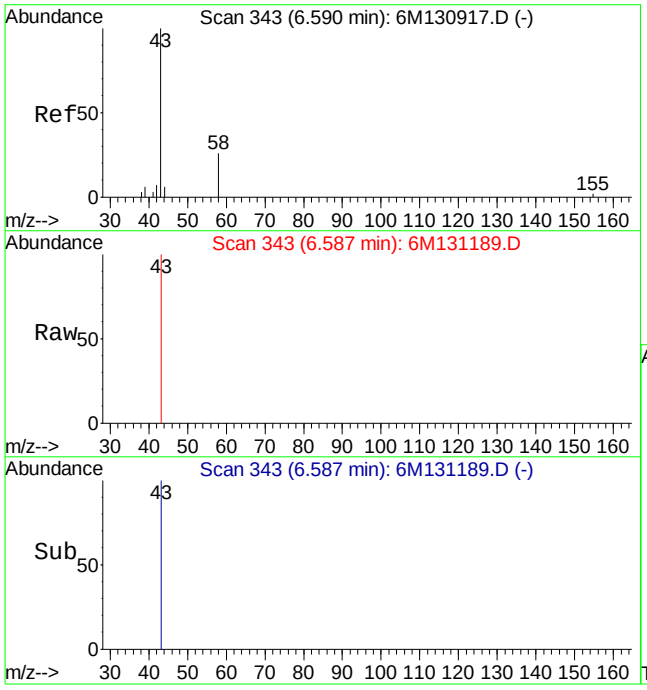

#13
Acetone
Concen: 0.51 ug/L
RT: 6.59 min Scan# 343
Delta R.T. 0.00 min
Lab File: 6M131189.D
Acq: 19 Feb 2015 19:57

Tgt Ion: 43 Resp: 402

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.7	36.5#

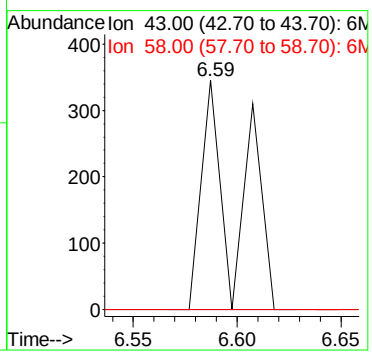

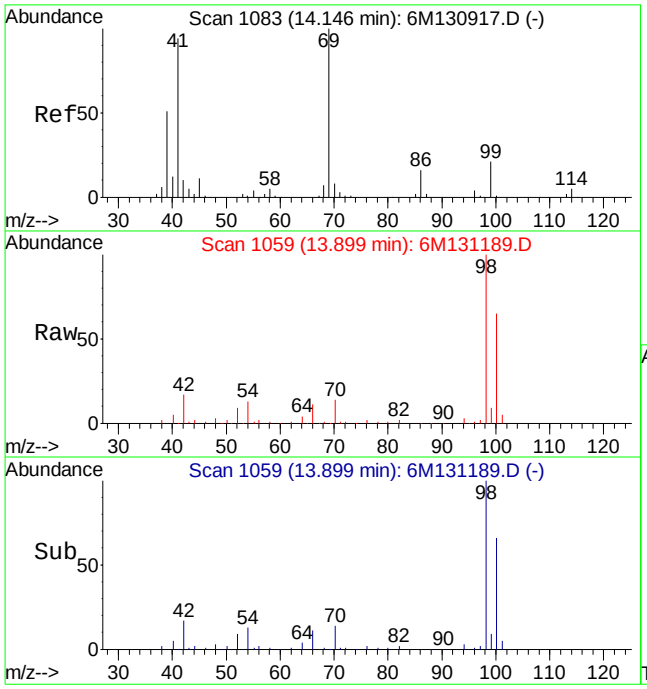

#60
Ethyl Methacrylate
Concen: 0.72 ug/L
RT: 13.90 min Scan# 1059
Delta R.T. -0.24 min
Lab File: 6M131189.D
Acq: 19 Feb 2015 19:57

Tgt Ion: 69 Resp: 989

Ion	Ratio	Lower	Upper
69	100		
41	76.2	46.5	108.5

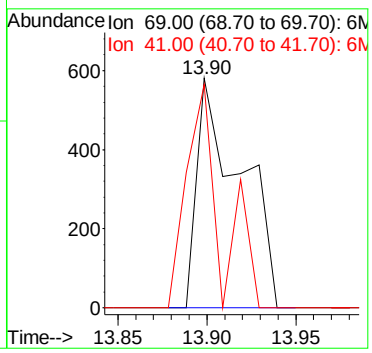

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021915\6M131188.D Vial: 18
Acq On : 19 Feb 2015 19:27 Operator: TMB
Sample : L15020971-04 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 20 08:23:15 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	519811	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.14	117	387832	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.76	152	210757	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.38	111	127268	24.2409 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.96%		
43) 1,2-Dichloroethane-d4	11.12	65	161210	25.7670 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.08%		
58) Toluene-d8	13.90	98	448048	25.3160 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.28%		
80) p-Bromofluorobenzene	17.94	95	185909	26.2342 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.92%		
Target Compounds					Qvalue
60) Ethyl Methacrylate	13.92	69	942	0.7066 ug/L #	29

(#) = qualifier out of range (m) = manual integration
6M131188.D 8260WT.M Fri Feb 20 08:23:15 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021915\6M131188.D Vial: 18
Acq On : 19 Feb 2015 19:27 Operator: TMB
Sample : L15020971-04 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 20 8:23 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration

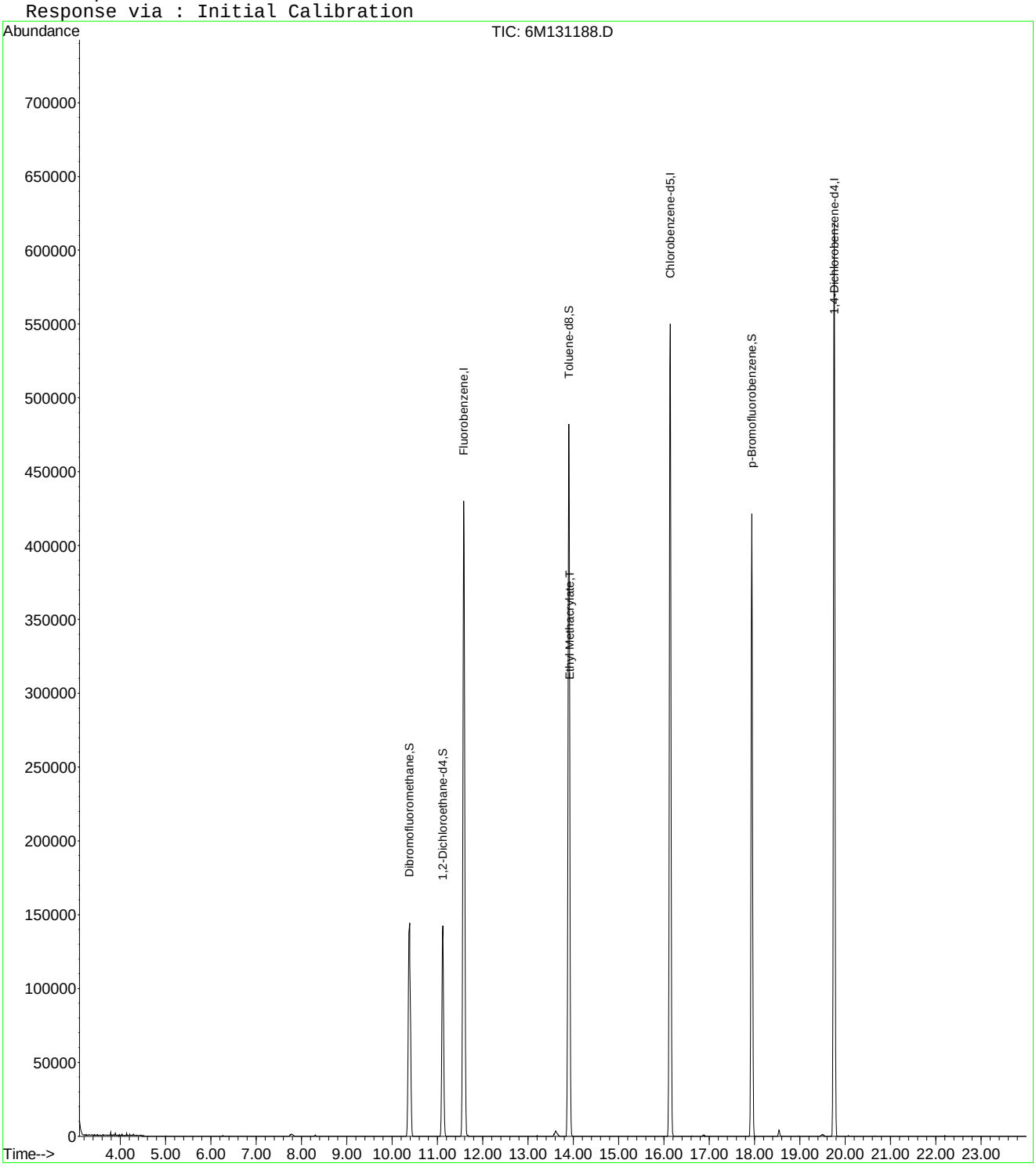

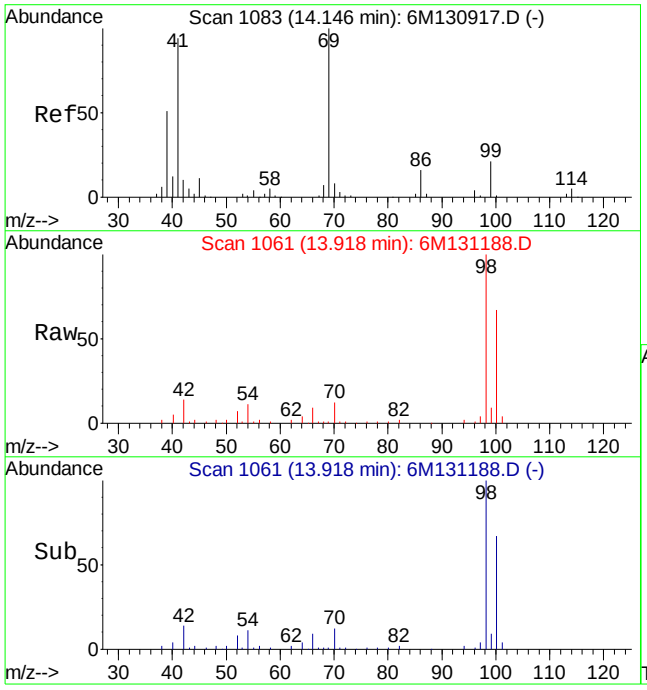

#60
Ethyl Methacrylate
Concen: 0.71 ug/L
RT: 13.92 min Scan# 1061
Delta R.T. -0.22 min
Lab File: 6M131188.D
Acq: 19 Feb 2015 19:27

Tgt Ion: 69 Resp: 942

Ion	Ratio	Lower	Upper
69	100		
41	139.4	46.5	108.5#

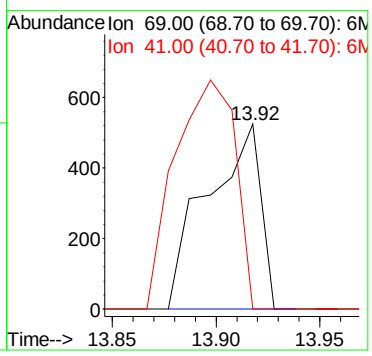

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021915\6M131187.D Vial: 17
Acq On : 19 Feb 2015 18:57 Operator: TMB
Sample : L15020971-05 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 20 08:23:14 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	521655	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.14	117	388216	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.76	152	206465	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.38	111	128183	24.3289 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.32%		
43) 1,2-Dichloroethane-d4	11.12	65	156600	24.9417 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.76%		
58) Toluene-d8	13.90	98	444435	25.0870 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.36%		
80) p-Bromofluorobenzene	17.94	95	183647	26.4537 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.80%		

Target Compounds					Qvalue
60) Ethyl Methacrylate	13.92	69	754	0.6582 ug/L #	1

(#) = qualifier out of range (m) = manual integration
6M131187.D 8260WT.M Fri Feb 20 08:23:15 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021915\6M131187.D Vial: 17
Acq On : 19 Feb 2015 18:57 Operator: TMB
Sample : L15020971-05 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 20 8:23 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration

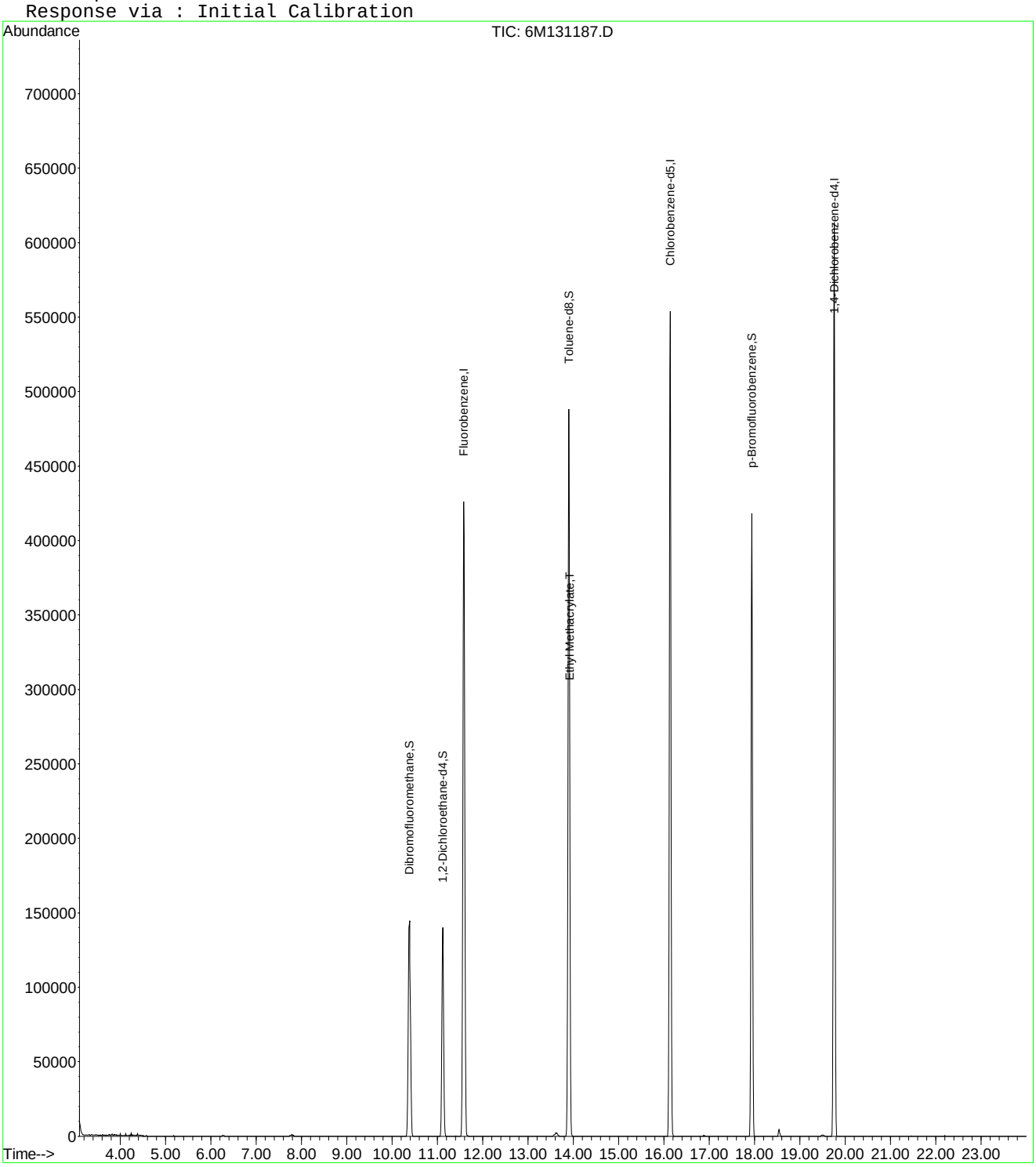

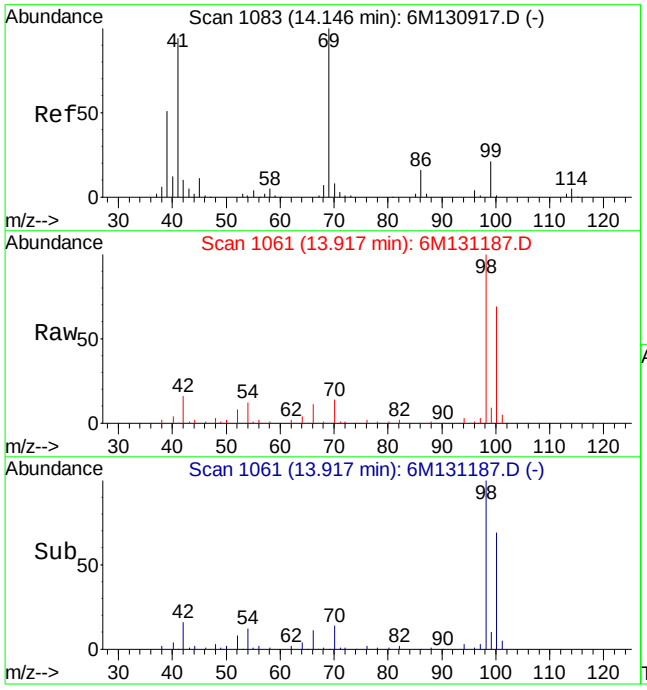

#60
Ethyl Methacrylate
Concen: 0.66 ug/L
RT: 13.92 min Scan# 1061
Delta R.T. -0.22 min
Lab File: 6M131187.D
Acq: 19 Feb 2015 18:57

Tgt Ion: 69 Resp: 754

Ion	Ratio	Lower	Upper
69	100		
41	175.7	46.5	108.5#

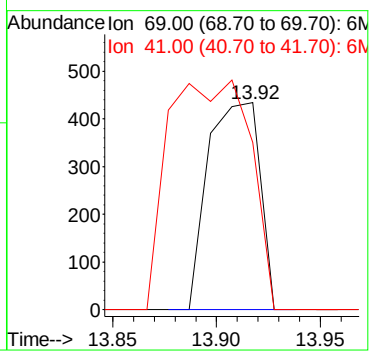

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021915\6M131186.D Vial: 16
Acq On : 19 Feb 2015 18:26 Operator: TMB
Sample : L15020971-06 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 20 08:23:14 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.59	96	526064	25.00 ug/L	0.01
57) Chlorobenzene-d5	16.14	117	397388	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.76	152	208127	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	127842	24.0608 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.24%		
43) 1,2-Dichloroethane-d4	11.12	65	158190	24.9838 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.92%		
58) Toluene-d8	13.90	98	459134	25.3186 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.28%		
80) p-Bromofluorobenzene	17.94	95	188532	26.9405 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 107.76%		

Target Compounds					Qvalue
60) Ethyl Methacrylate	13.91	69	996	0.7143 ug/L #	22

(#) = qualifier out of range (m) = manual integration
6M131186.D 8260WT.M Fri Feb 20 08:23:14 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021915\6M131186.D Vial: 16
Acq On : 19 Feb 2015 18:26 Operator: TMB
Sample : L15020971-06 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 20 8:23 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration

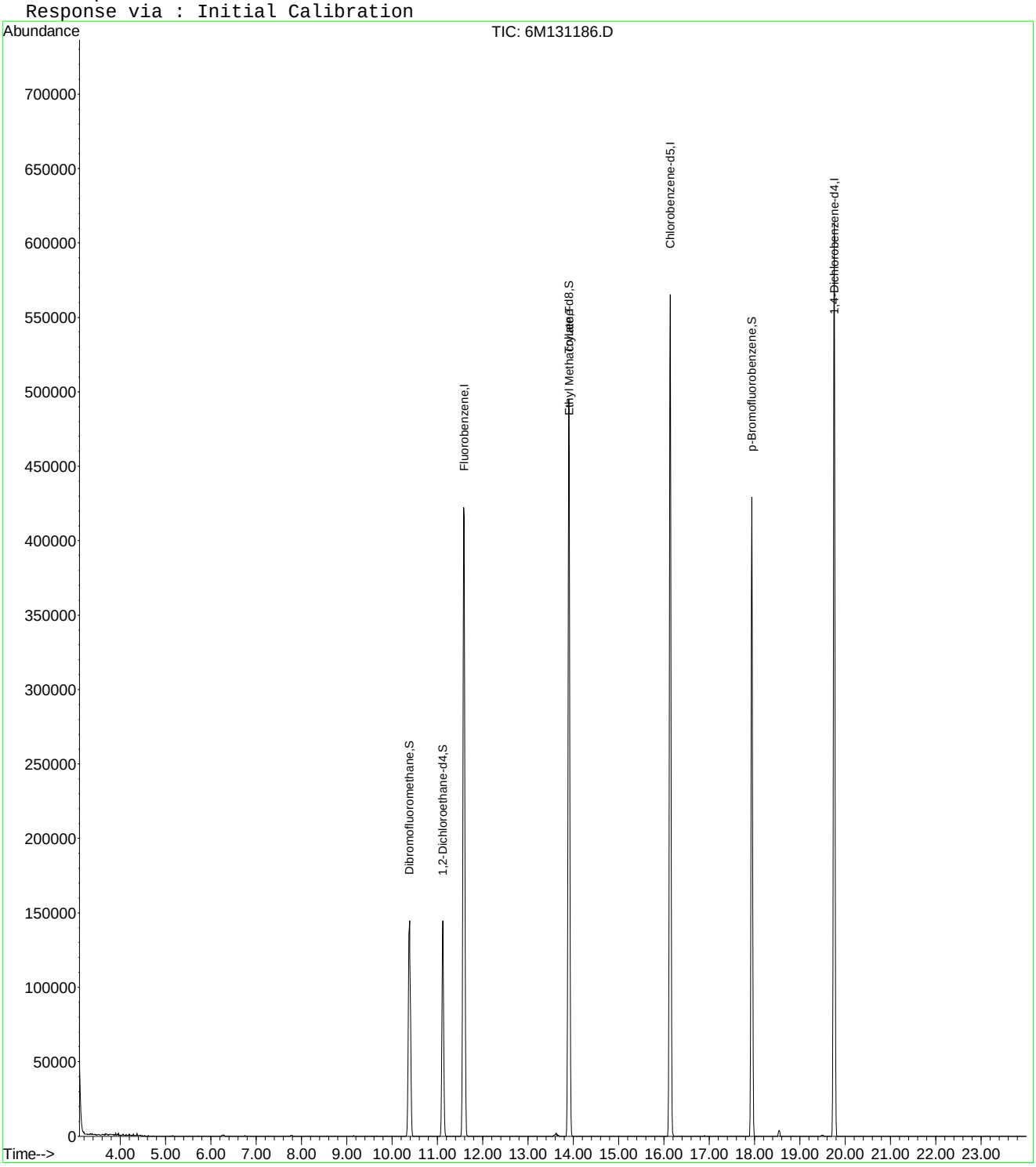

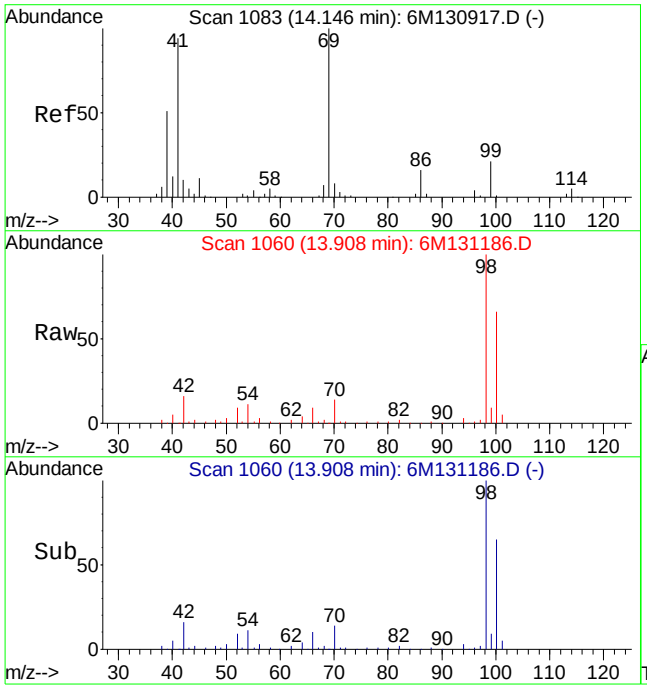

#60
Ethyl Methacrylate
Concen: 0.71 ug/L
RT: 13.91 min Scan# 1060
Delta R.T. -0.23 min
Lab File: 6M131186.D
Acq: 19 Feb 2015 18:26

Tgt Ion: 69 Resp: 996

Ion	Ratio	Lower	Upper
69	100		
41	145.4	46.5	108.5#

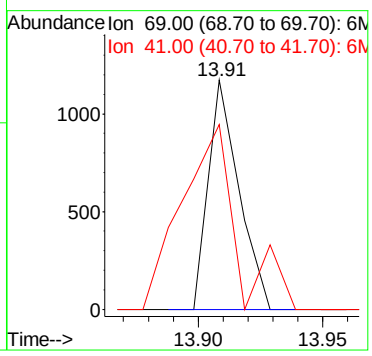

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021915\6M131185.D Vial: 15
Acq On : 19 Feb 2015 17:55 Operator: TMB
Sample : L15020971-08 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 20 08:23:13 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	524458	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.14	117	401732	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.76	152	212743	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.38	111	129354	24.4200 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.68%		
43) 1,2-Dichloroethane-d4	11.12	65	160197	25.3782 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.52%		
58) Toluene-d8	13.90	98	455212	24.8309 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.32%		
80) p-Bromofluorobenzene	17.94	95	192541	26.9164 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 107.68%		
Target Compounds					Qvalue
13) Acetone	6.59	43	244	0.3015 ug/L #	49
60) Ethyl Methacrylate	13.93	69	1087	0.7341 ug/L #	23

(#) = qualifier out of range (m) = manual integration
6M131185.D 8260WT.M Fri Feb 20 08:23:13 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021915\6M131185.D Vial: 15
Acq On : 19 Feb 2015 17:55 Operator: TMB
Sample : L15020971-08 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 20 8:23 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration

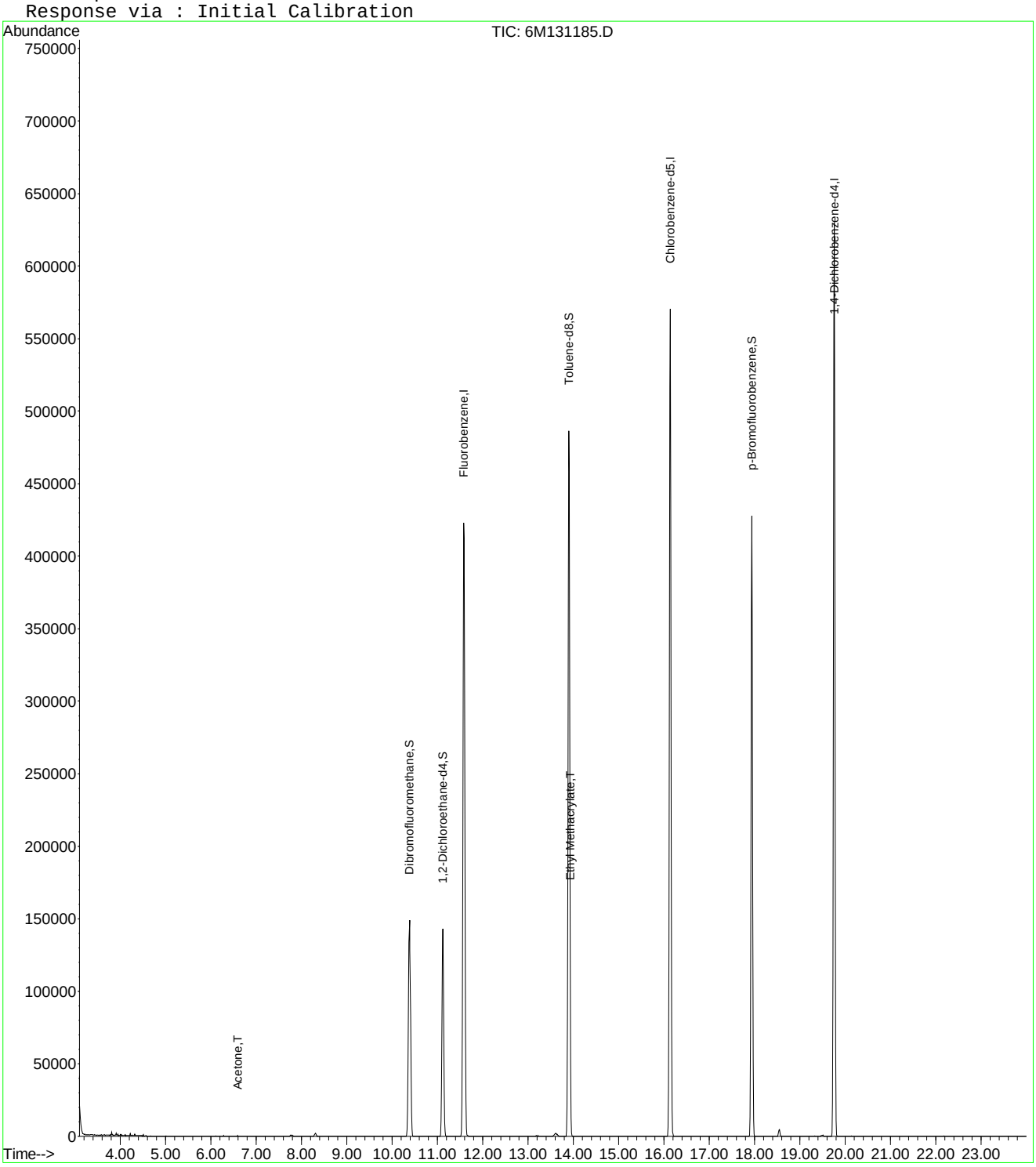

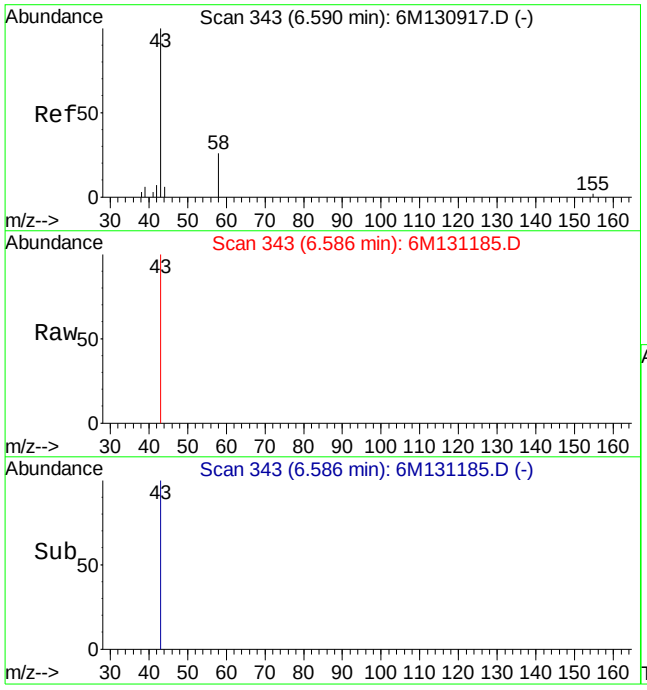

#13
Acetone
Concen: 0.30 ug/L
RT: 6.59 min Scan# 343
Delta R.T. 0.00 min
Lab File: 6M131185.D
Acq: 19 Feb 2015 17:55

Tgt Ion: 43 Resp: 244

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.7	36.5#

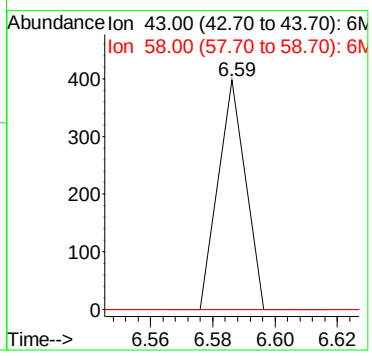

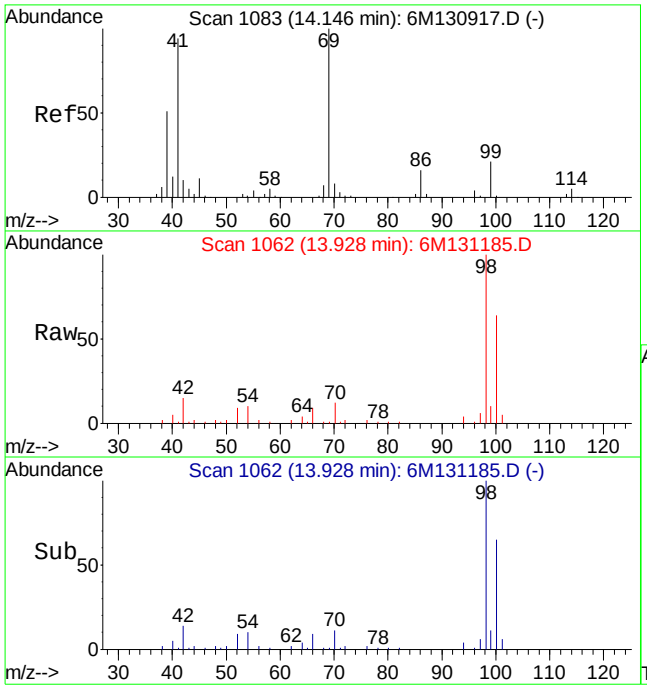

#60
Ethyl Methacrylate
Concen: 0.73 ug/L
RT: 13.93 min Scan# 1062
Delta R.T. -0.21 min
Lab File: 6M131185.D
Acq: 19 Feb 2015 17:55

Tgt Ion: 69 Resp: 1087

Ion	Ratio	Lower	Upper
69	100		
41	144.2	46.5	108.5#

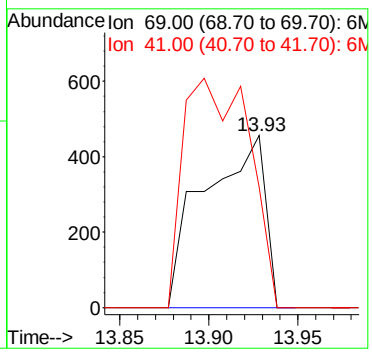

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021915\6M131184.D Vial: 14
Acq On : 19 Feb 2015 17:24 Operator: TMB
Sample : L15020971-10 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 20 08:23:12 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	528158	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.14	117	403732	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.76	152	215588	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.39	111	131458	24.6433 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.56%		
43) 1,2-Dichloroethane-d4	11.12	65	162707	25.5953 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.40%		
58) Toluene-d8	13.90	98	458267	24.8737 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.48%		
80) p-Bromofluorobenzene	17.94	95	193692	26.7200 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 106.88%		
Target Compounds					Qvalue
60) Ethyl Methacrylate	13.92	69	1048	0.7232 ug/L #	55

(#) = qualifier out of range (m) = manual integration
6M131184.D 8260WT.M Fri Feb 20 08:23:12 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021915\6M131184.D Vial: 14
Acq On : 19 Feb 2015 17:24 Operator: TMB
Sample : L15020971-10 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 20 8:23 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration

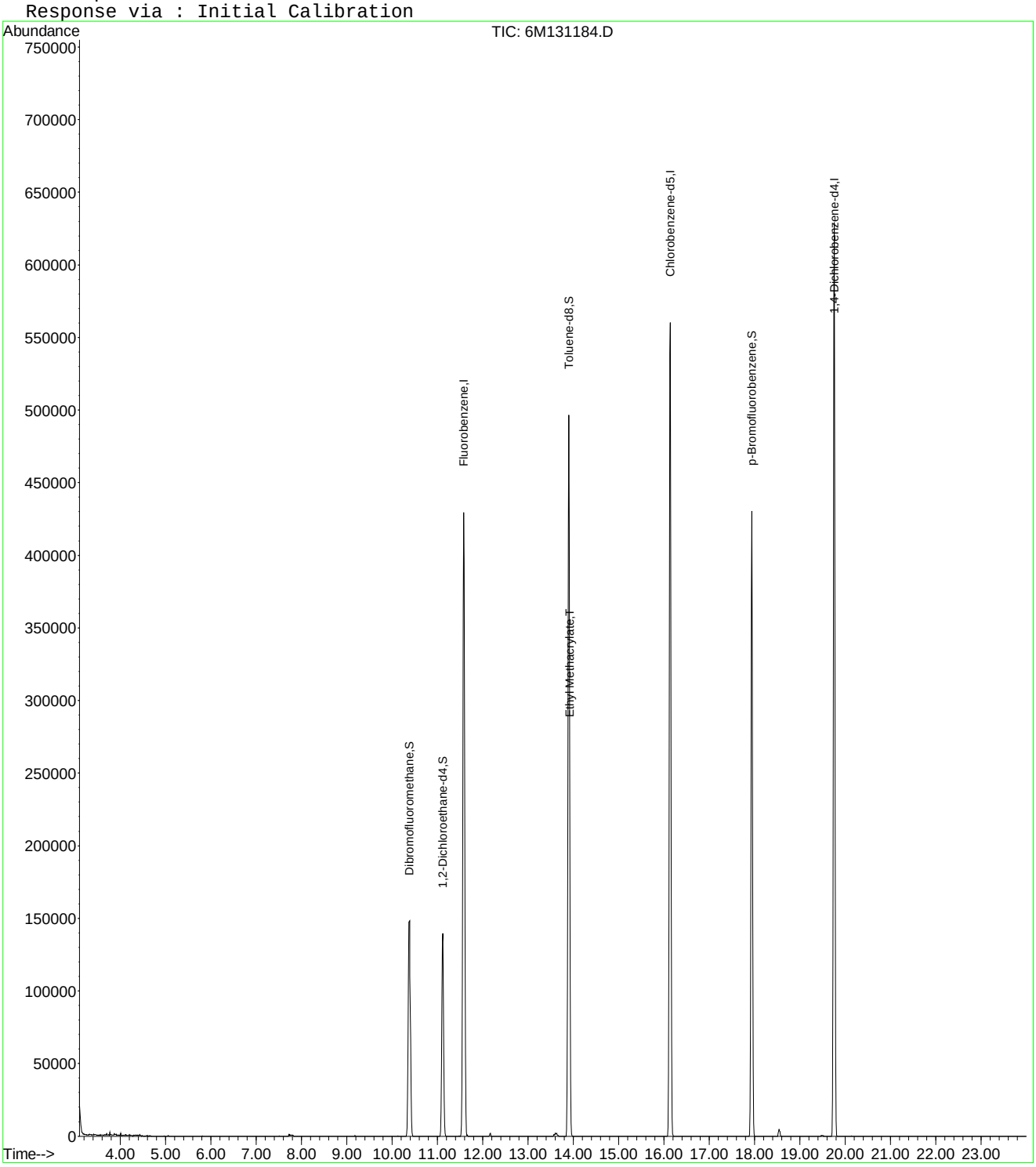

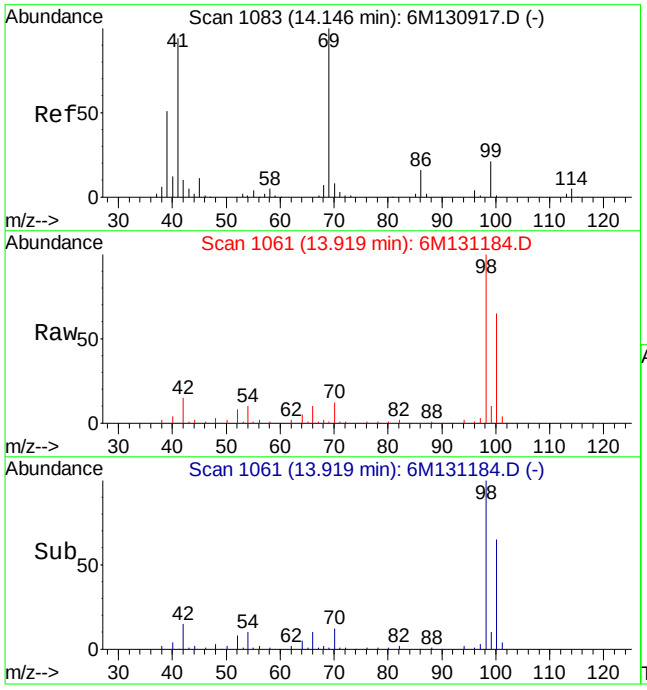

#60
Ethyl Methacrylate
Concen: 0.72 ug/L
RT: 13.92 min Scan# 1061
Delta R.T. -0.22 min
Lab File: 6M131184.D
Acq: 19 Feb 2015 17:24

Tgt Ion: 69 Resp: 1048

Ion	Ratio	Lower	Upper
69	100		
41	116.5	46.5	108.5#

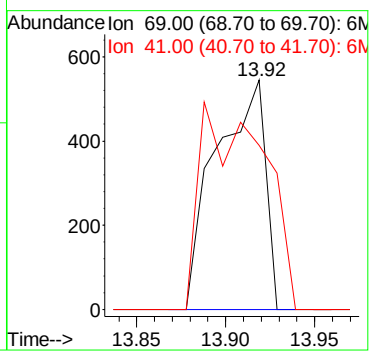

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021915\6M131183.D Vial: 13
Acq On : 19 Feb 2015 16:54 Operator: TMB
Sample : L15020971-12 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 20 08:23:11 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	544167	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.14	117	410846	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.76	152	218678	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.38	111	134486	24.4692 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.88%		
43) 1,2-Dichloroethane-d4	11.11	65	169148	25.8257 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.32%		
58) Toluene-d8	13.90	98	461067	24.5923 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.36%		
80) p-Bromofluorobenzene	17.93	95	194511	26.4538 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.80%		
Target Compounds					Qvalue
13) Acetone	6.58	43	785	0.9349 ug/L #	49
20) Carbon Disulfide	7.72	76	17991	1.0781 ug/L	99
28) Ethyl-Tert-Butyl ether	9.19	59	2296	0.1425 ug/L #	40
60) Ethyl Methacrylate	13.91	69	973	0.7006 ug/L #	39

(#) = qualifier out of range (m) = manual integration
6M131183.D 8260WT.M Fri Feb 20 08:23:11 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021915\6M131183.D Vial: 13
Acq On : 19 Feb 2015 16:54 Operator: TMB
Sample : L15020971-12 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 20 8:23 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration

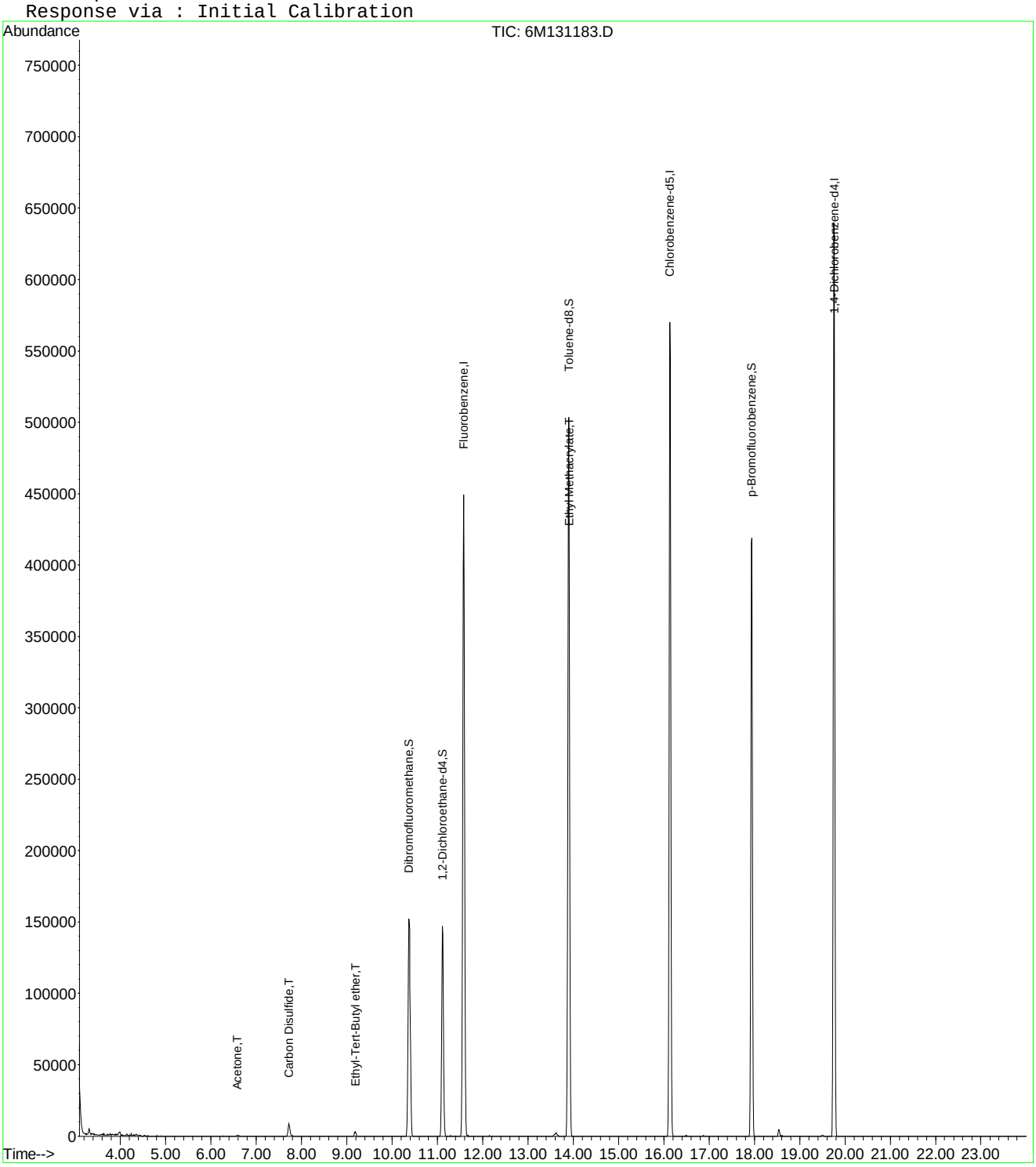

6M131183.D 8260WT.M Fri Feb 20 08:23:12 2015 Page 2

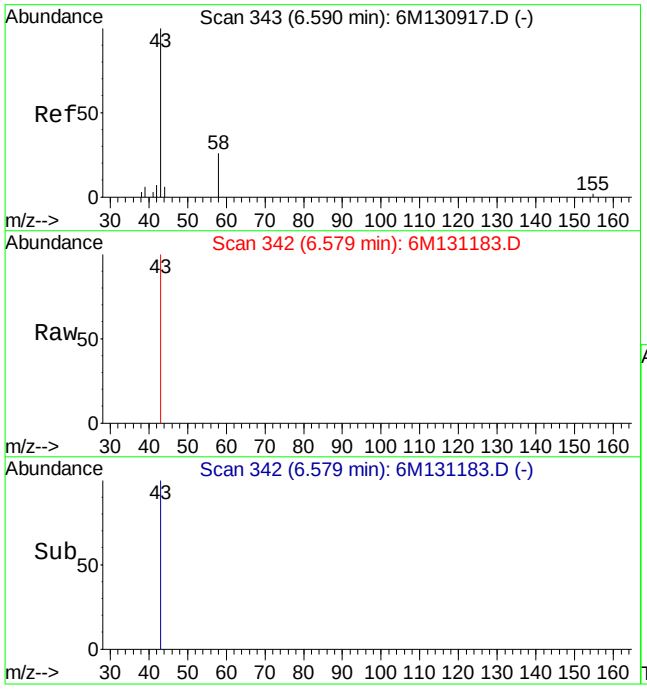

#13
Acetone
Concen: 0.93 ug/L
RT: 6.58 min Scan# 342
Delta R.T. -0.01 min
Lab File: 6M131183.D
Acq: 19 Feb 2015 16:54

Tgt Ion: 43 Resp: 785

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.7	36.5#

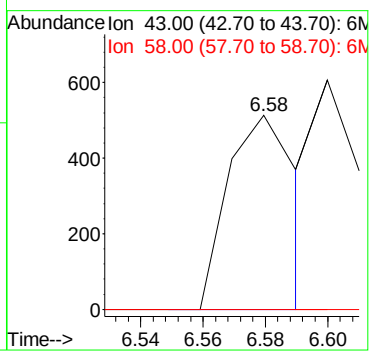

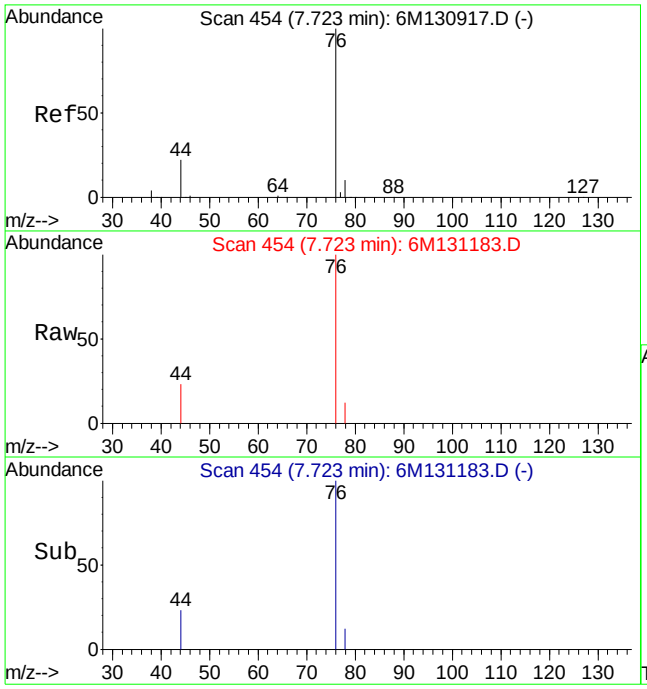

#20
Carbon Disulfide
Concen: 1.08 ug/L
RT: 7.72 min Scan# 454
Delta R.T. -0.01 min
Lab File: 6M131183.D
Acq: 19 Feb 2015 16:54

Tgt Ion: 76 Resp: 17991

Ion	Ratio	Lower	Upper
76	100		
78	8.9	5.5	12.9

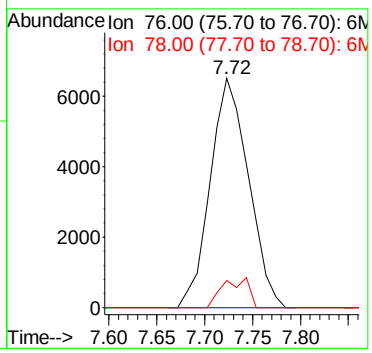

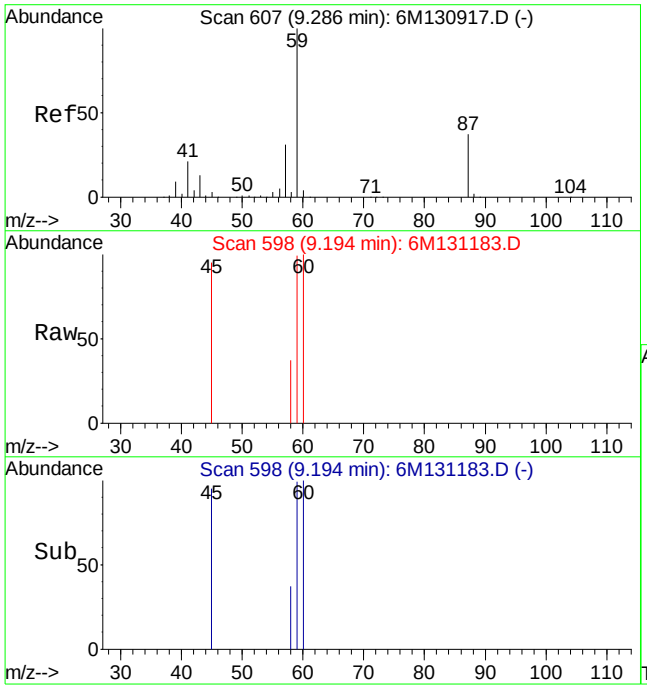

#28
Ethyl-Tert-Butyl ether
Concen: 0.14 ug/L
RT: 9.19 min Scan# 598
Delta R.T. -0.09 min
Lab File: 6M131183.D
Acq: 19 Feb 2015 16:54

Tgt Ion: 59 Resp: 2296

Ion	Ratio	Lower	Upper
59	100		
87	0.0	22.8	53.2#
57	0.0	18.7	43.5#

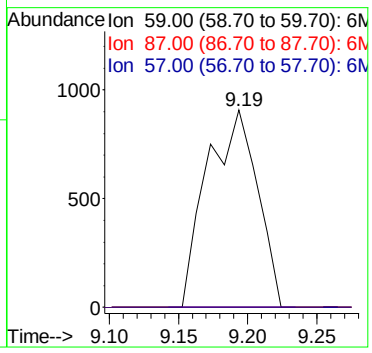

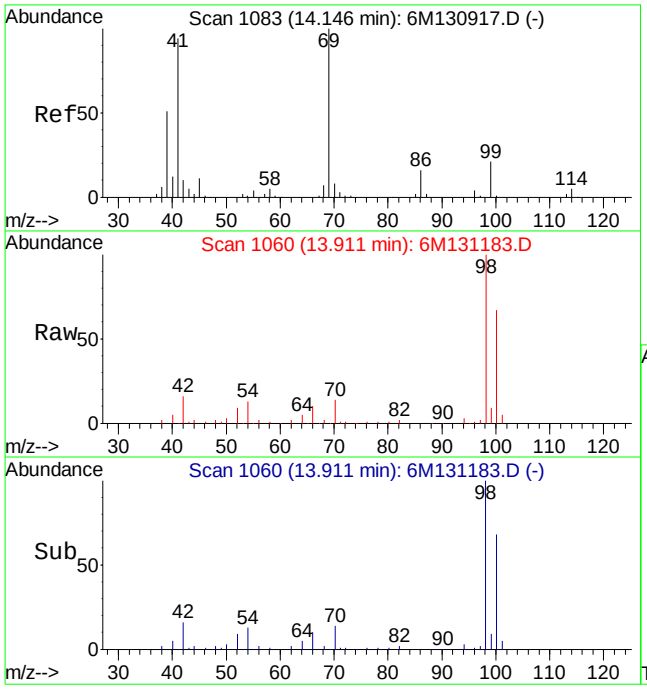

#60
Ethyl Methacrylate
Concen: 0.70 ug/L
RT: 13.91 min Scan# 1060
Delta R.T. -0.23 min
Lab File: 6M131183.D
Acq: 19 Feb 2015 16:54

Tgt Ion: 69 Resp: 973

Ion	Ratio	Lower	Upper
69	100		
41	130.2	46.5	108.5#

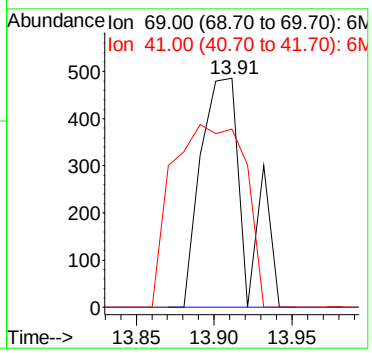

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021915\6M131182.D Vial: 12
Acq On : 19 Feb 2015 16:23 Operator: TMB
Sample : L15020971-14 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 20 08:23:10 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	550892	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.14	117	409130	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.76	152	220146	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.38	111	133707	24.0305 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.12%		
43) 1,2-Dichloroethane-d4	11.12	65	167108	25.2028 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.80%		
58) Toluene-d8	13.90	98	467348	25.0319 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.12%		
80) p-Bromofluorobenzene	17.94	95	197656	26.7023 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 106.80%		

Target Compounds					Qvalue
60) Ethyl Methacrylate	13.91	69	892	0.6819 ug/L #	21

(#) = qualifier out of range (m) = manual integration
6M131182.D 8260WT.M Fri Feb 20 08:23:11 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021915\6M131182.D Vial: 12
Acq On : 19 Feb 2015 16:23 Operator: TMB
Sample : L15020971-14 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 20 8:23 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration

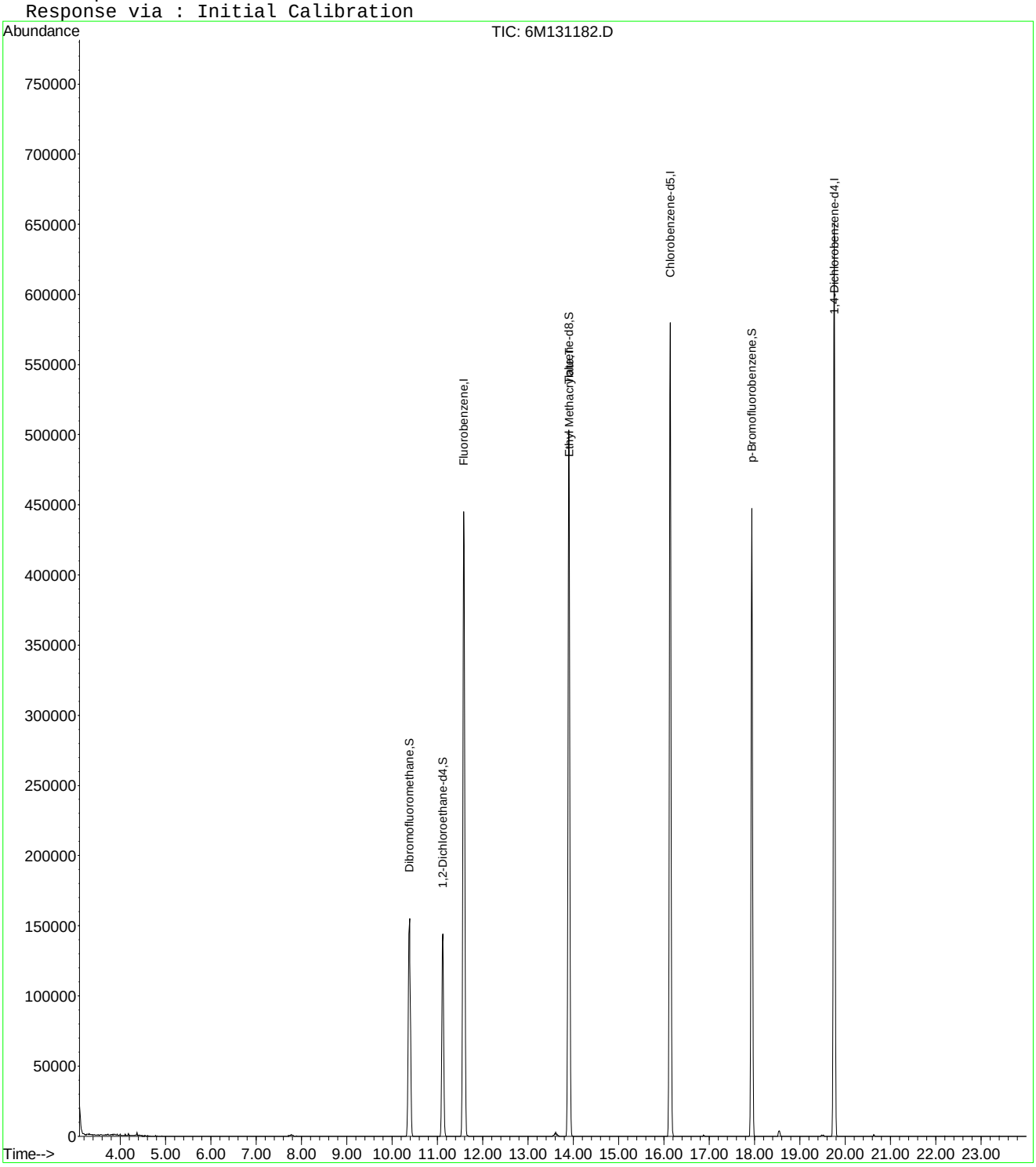

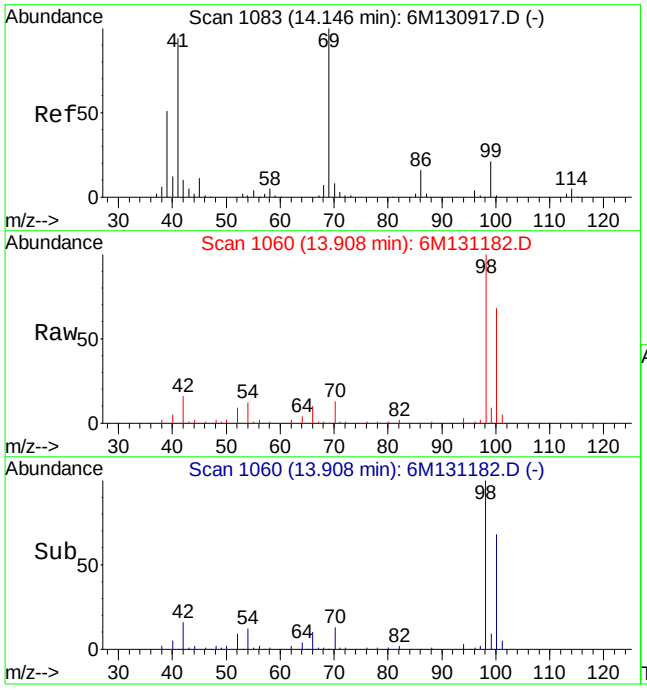

#60
Ethyl Methacrylate
Concen: 0.68 ug/L
RT: 13.91 min Scan# 1060
Delta R.T. -0.23 min
Lab File: 6M131182.D
Acq: 19 Feb 2015 16:23

Tgt Ion: 69 Resp: 892

Ion	Ratio	Lower	Upper
69	100		
41	146.3	46.5	108.5#

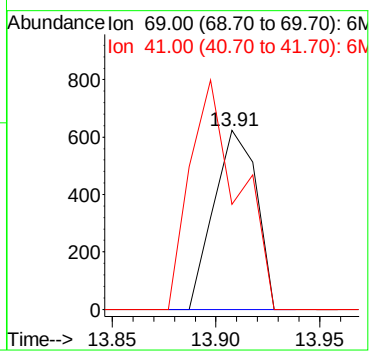

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021915\6M131181.D Vial: 11
Acq On : 19 Feb 2015 15:53 Operator: TMB
Sample : L15020971-16 TB A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 20 08:23:10 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	568092	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.15	117	424411	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.76	152	227715	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.38	111	134793	23.4922 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.96%		
43) 1,2-Dichloroethane-d4	11.12	65	166623	24.3688 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.48%		
58) Toluene-d8	13.90	98	484155	24.9984 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.00%		
80) p-Bromofluorobenzene	17.94	95	201675	26.3396 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.36%		
Target Compounds					Qvalue
60) Ethyl Methacrylate	13.90	69	1188	0.7434 ug/L	92

(#) = qualifier out of range (m) = manual integration
6M131181.D 8260WT.M Fri Feb 20 08:23:10 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021915\6M131181.D Vial: 11
Acq On : 19 Feb 2015 15:53 Operator: TMB
Sample : L15020971-16 TB A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 20 8:23 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration

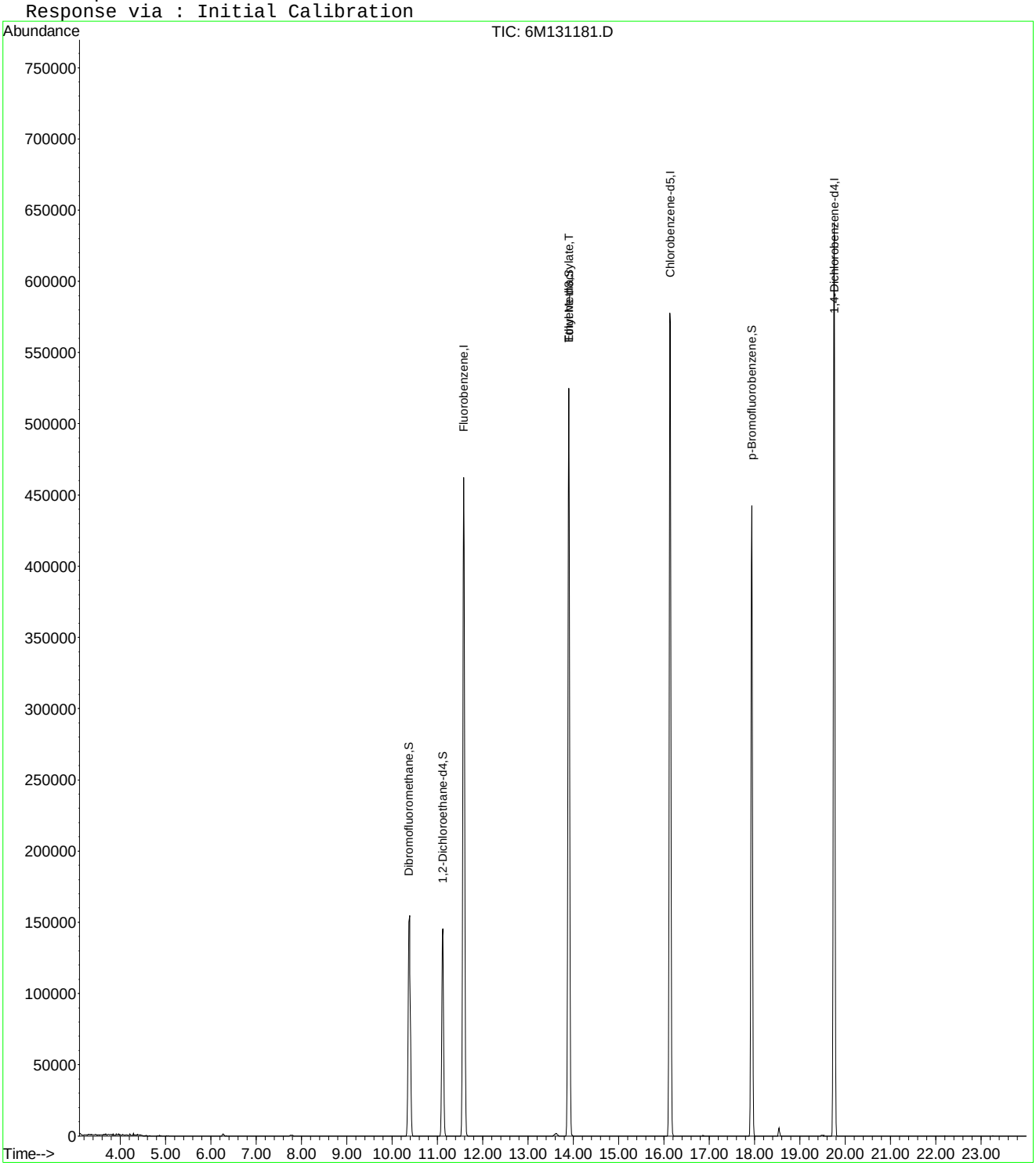

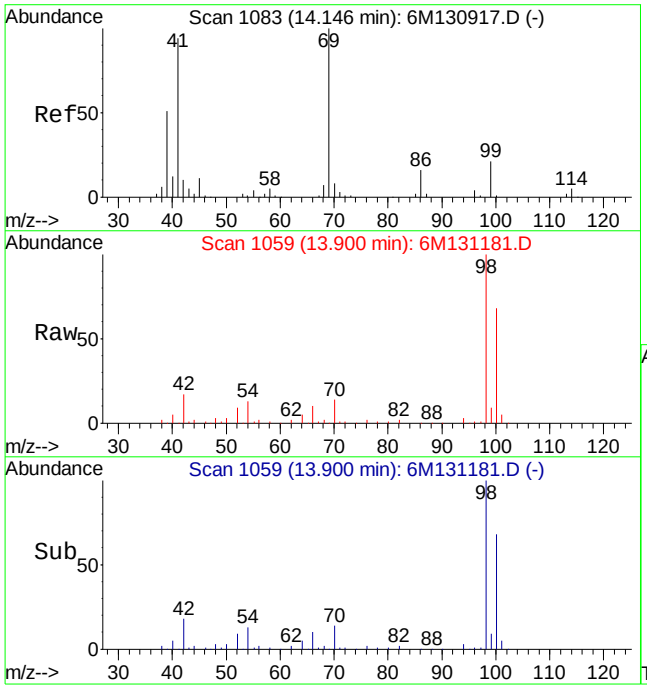

#60
Ethyl Methacrylate
Concen: 0.74 ug/L
RT: 13.90 min Scan# 1059
Delta R.T. -0.24 min
Lab File: 6M131181.D
Acq: 19 Feb 2015 15:53

Tgt Ion: 69 Resp: 1188

Ion	Ratio	Lower	Upper
69	100		
41	84.3	46.5	108.5

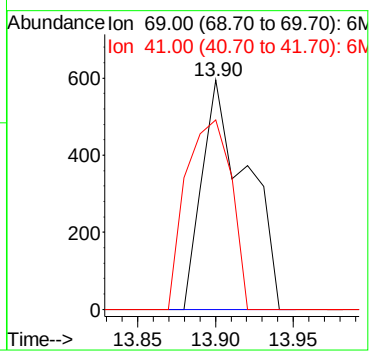

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\093014\6M128665.D Vial: 4
Acq On : 30 Sep 2014 16:17 Operator: TMB
Sample : WG494605-02 5ug/L STD A9/FOO Inst : HPMS6
Misc : 1,1 STD66544 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 01 15:22:18 2014 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/30/14 - HPMS6
Last Update : Wed Oct 01 15:17:54 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.64	96	678586	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.20	117	583421	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.80	152	292039	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.13	41	3217	6.3256 ug/L #	83
3) 3-Chloro-1-propene	7.54	41	62098	4.7857 ug/L	94
4) 2-Chloro-1,3-butadiene	9.07	53	54224	4.3186 ug/L	86
5) Ethyl Acetate	9.79	43	15306	4.7126 ug/L #	87
6) Methacrylonitrile	9.98	67	5527	4.1382 ug/L #	46
7) Isobutyl Alcohol	9.99	43	629	4.4434 ug/L #	85
9) Methyl methacrylate	12.48	41	18911	4.5858 ug/L	79
10) 2-Nitropropane	12.86	43	3598	3.9092 ug/L	90
13) Cyclohexanone	17.71	55	1371	3.5168 ug/L #	73

(#) = qualifier out of range (m) = manual integration
6M128665.D A9FOOWT.M Wed Oct 01 15:22:18 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\093014\6M128665.D Vial: 4
Acq On : 30 Sep 2014 16:17 Operator: TMB
Sample : WG494605-02 5ug/L STD A9/FOO Inst : HPMS6
Misc : 1,1 STD66544 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 1 15:22 2014 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/30/14 - HPMS6
Last Update : Wed Oct 01 15:18:32 2014
Response via : Initial Calibration

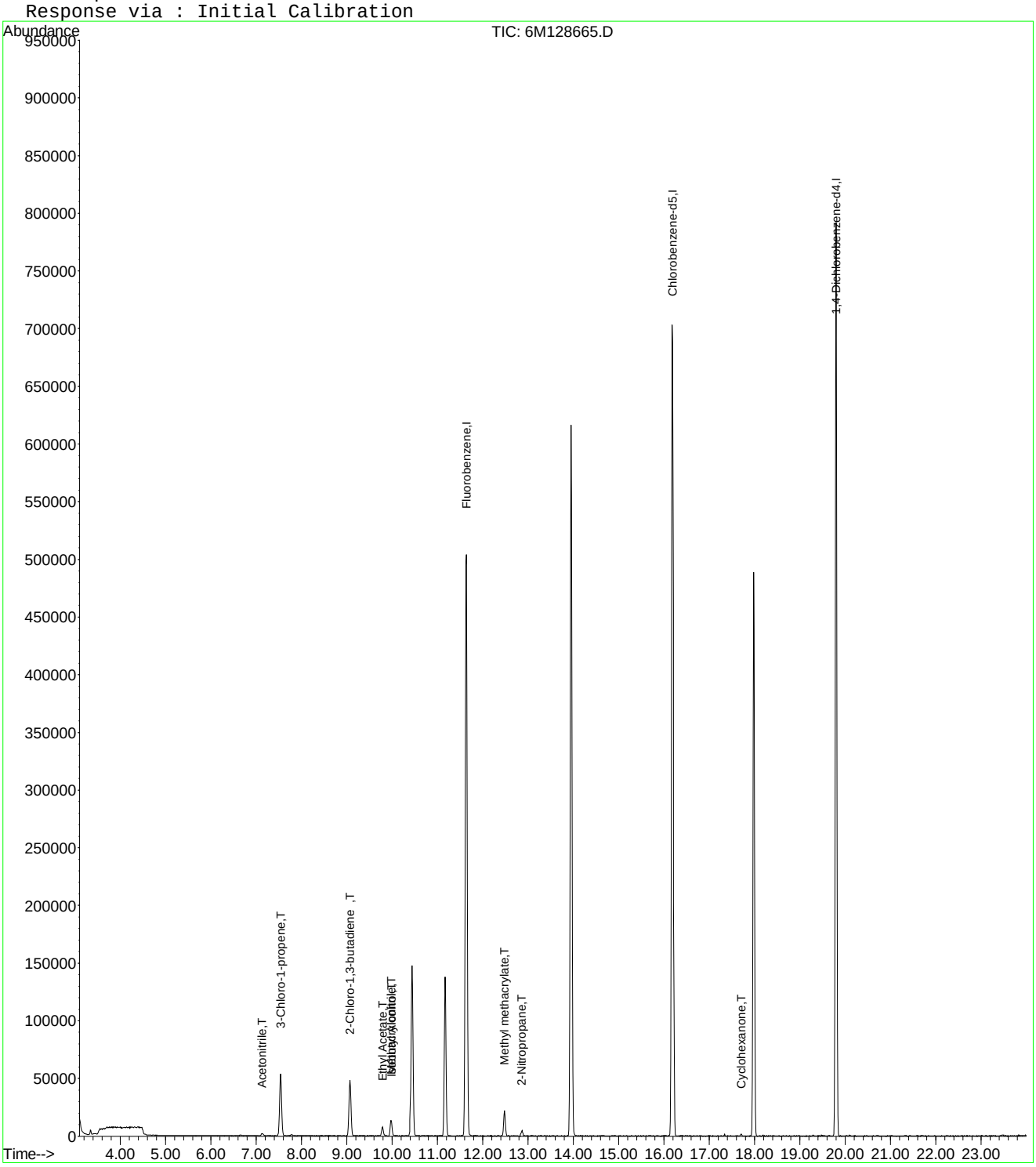

6M128665.D A9FOOWT.M Wed Oct 01 15:22:18 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\093014\6M128666.D Vial: 5
Acq On : 30 Sep 2014 16:49 Operator: TMB
Sample : WG494605-03 20ug/L STD A9/FOO Inst : HPMS6
Misc : 1,1 STD66544 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 01 15:22:20 2014 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/30/14 - HPMS6
Last Update : Wed Oct 01 15:18:32 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.64	96	630765	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.20	117	559267	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.80	152	282045	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.13	41	10274	21.7333 ug/L	99
3) 3-Chloro-1-propene	7.54	41	233050	19.3219 ug/L	93
4) 2-Chloro-1,3-butadiene	9.07	53	203124	17.4041 ug/L	87
5) Ethyl Acetate	9.78	43	56554	18.7328 ug/L	92
6) Methacrylonitrile	9.98	67	22631	18.2288 ug/L #	58
7) Isobutyl Alcohol	9.98	43	4768	36.2354 ug/L #	85
9) Methyl methacrylate	12.48	41	73690	19.2241 ug/L	79
10) 2-Nitropropane	12.86	43	14071	16.4472 ug/L	90
13) Cyclohexanone	17.71	55	6408	17.0197 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M128666.D A9FOOWT.M Wed Oct 01 15:22:20 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\093014\6M128666.D Vial: 5
Acq On : 30 Sep 2014 16:49 Operator: TMB
Sample : WG494605-03 20ug/L STD A9/FOO Inst : HPMS6
Misc : 1,1 STD66544 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 1 15:22 2014 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/30/14 - HPMS6
Last Update : Wed Oct 01 15:18:32 2014
Response via : Initial Calibration

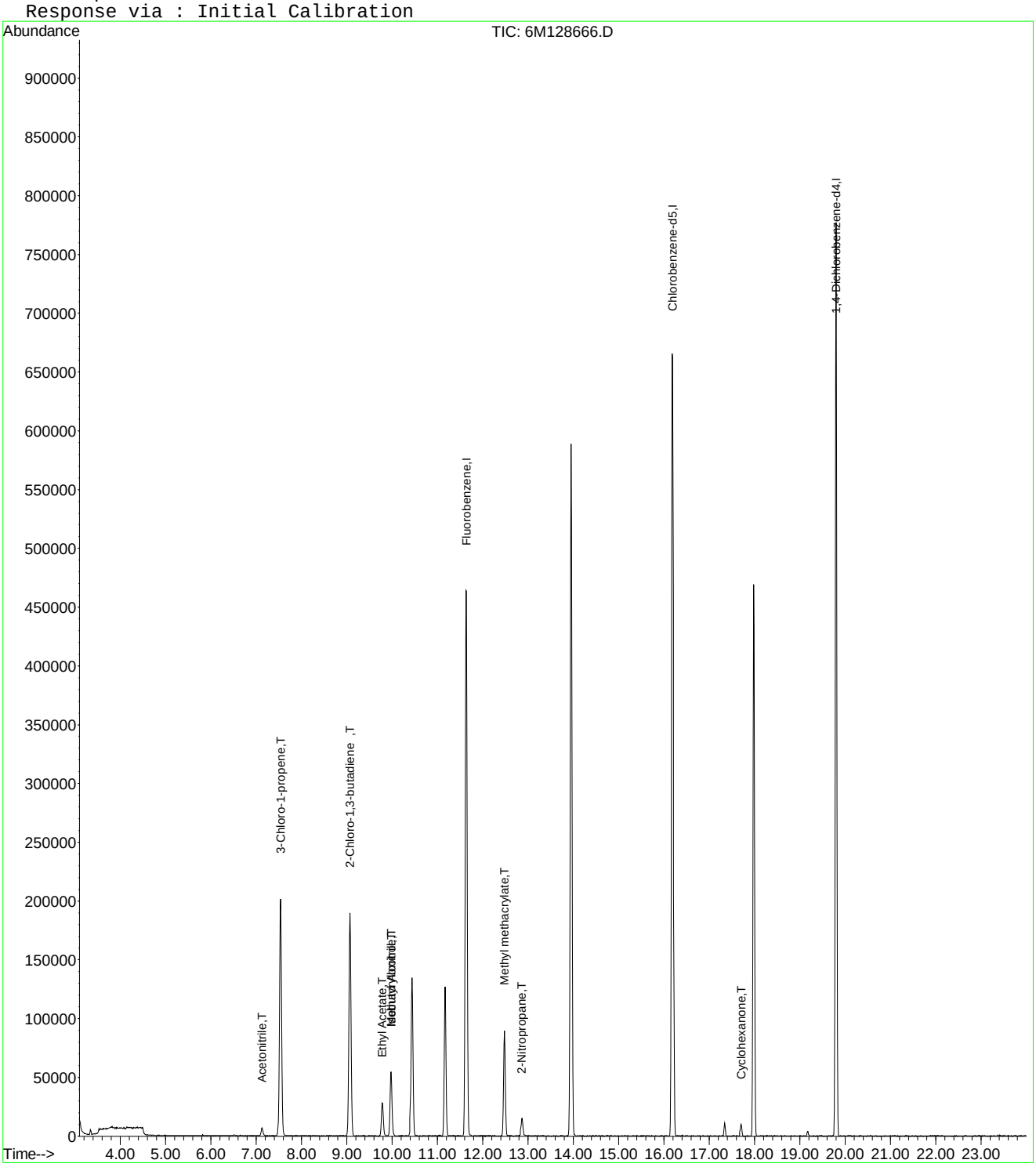

6M128666.D A9FOOWT.M Wed Oct 01 15:22:20 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\093014\6M128667.D Vial: 6
Acq On : 30 Sep 2014 17:21 Operator: TMB
Sample : WG494605-04 50ug/L STD A9/FOO Inst : HPMS6
Misc : 1,1 STD66544 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 01 15:22:21 2014 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/30/14 - HPMS6
Last Update : Wed Oct 01 15:18:32 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.64	96	657406	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.19	117	562923	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.80	152	284402	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.13	41	23808	48.3219 ug/L	97
3) 3-Chloro-1-propene	7.54	41	599918	47.7230 ug/L	93
4) 2-Chloro-1,3-butadiene	9.07	53	540752	44.4551 ug/L	88
5) Ethyl Acetate	9.78	43	149438	47.4935 ug/L	92
6) Methacrylonitrile	9.97	67	61581	47.5922 ug/L #	57
7) Isobutyl Alcohol	9.98	43	12706	92.6489 ug/L #	91
8) 1-Butanol	11.04	41	1957	36.7259 ug/L	84
9) Methyl methacrylate	12.48	41	194238	48.6190 ug/L	80
10) 2-Nitropropane	12.87	43	38700	43.4023 ug/L	90
13) Cyclohexanone	17.70	55	16825	44.3170 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M128667.D A9FOOWT.M Wed Oct 01 15:22:21 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\093014\6M128667.D Vial: 6
Acq On : 30 Sep 2014 17:21 Operator: TMB
Sample : WG494605-04 50ug/L STD A9/FOO Inst : HPMS6
Misc : 1,1 STD66544 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 1 15:22 2014 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/30/14 - HPMS6
Last Update : Wed Oct 01 15:18:32 2014
Response via : Initial Calibration

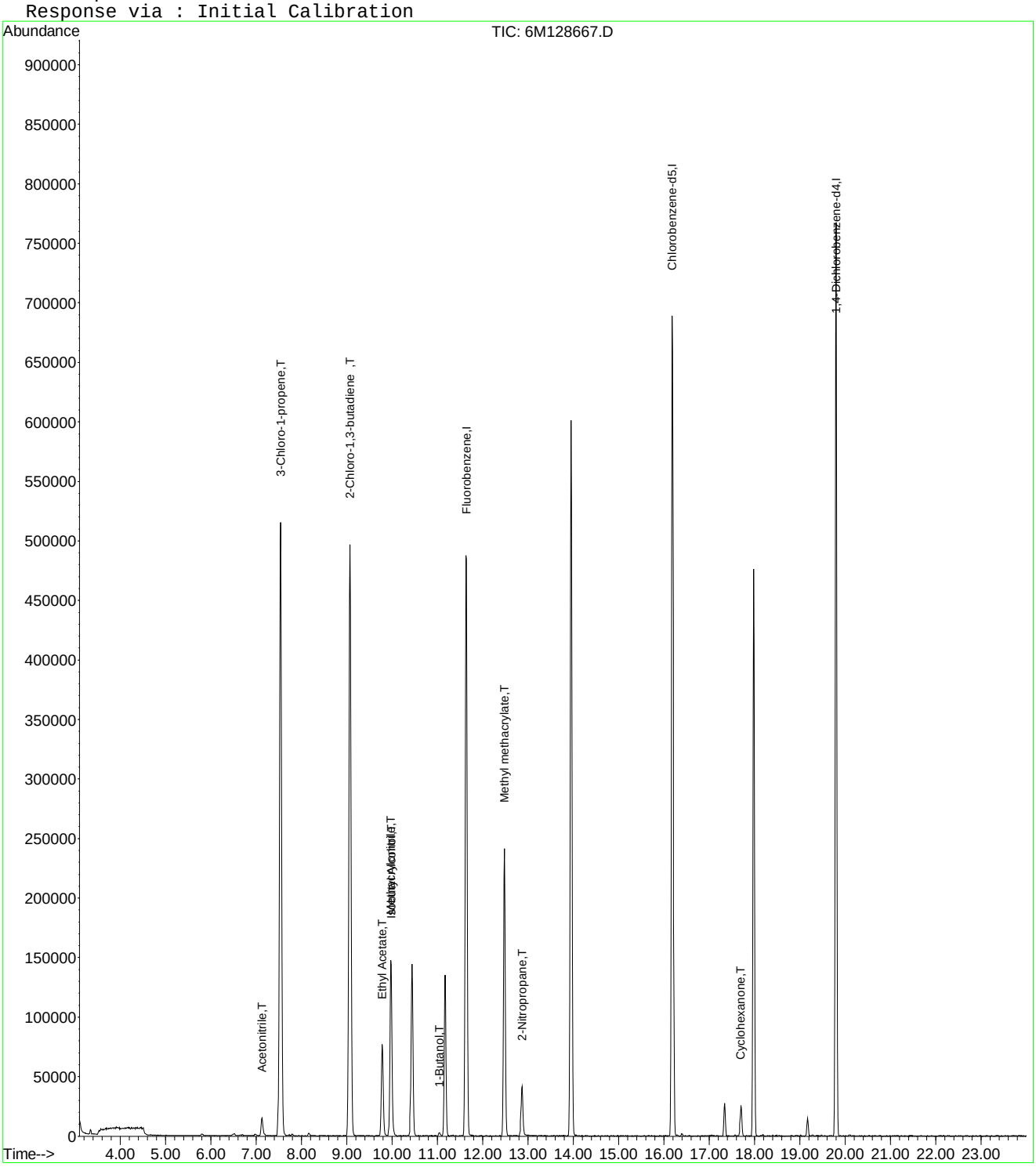

6M128667.D A9FOOWT.M Wed Oct 01 15:22:21 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\093014\6M128668.D Vial: 7
Acq On : 30 Sep 2014 17:52 Operator: TMB
Sample : WG494605-05 100ug/L STD A9/FOO Inst : HPMS6
Misc : 1,1 STD66544 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 01 15:22:21 2014 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/30/14 - HPMS6
Last Update : Wed Oct 01 15:18:32 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.64	96	692615	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.20	117	568243	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.80	152	283885	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.13	41	50582	97.4448 ug/L	95
3) 3-Chloro-1-propene	7.54	41	1337210	100.9664 ug/L	93
4) 2-Chloro-1,3-butadiene	9.07	53	1253282	97.7944 ug/L	88
5) Ethyl Acetate	9.78	43	336894	101.6268 ug/L	92
6) Methacrylonitrile	9.97	67	138695	101.7400 ug/L #	60
7) Isobutyl Alcohol	9.97	43	29523	204.3307 ug/L #	94
8) 1-Butanol	11.04	41	5183	92.3219 ug/L	77
9) Methyl methacrylate	12.48	41	417798	99.2613 ug/L	80
10) 2-Nitropropane	12.87	43	89777	95.5671 ug/L	91
13) Cyclohexanone	17.70	55	38303	101.0738 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M128668.D A9FOOWT.M Wed Oct 01 15:22:21 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\093014\6M128668.D Vial: 7
Acq On : 30 Sep 2014 17:52 Operator: TMB
Sample : WG494605-05 100ug/L STD A9/FOO Inst : HPMS6
Misc : 1,1 STD66544 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 1 15:22 2014 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/30/14 - HPMS6
Last Update : Wed Oct 01 15:18:32 2014
Response via : Initial Calibration

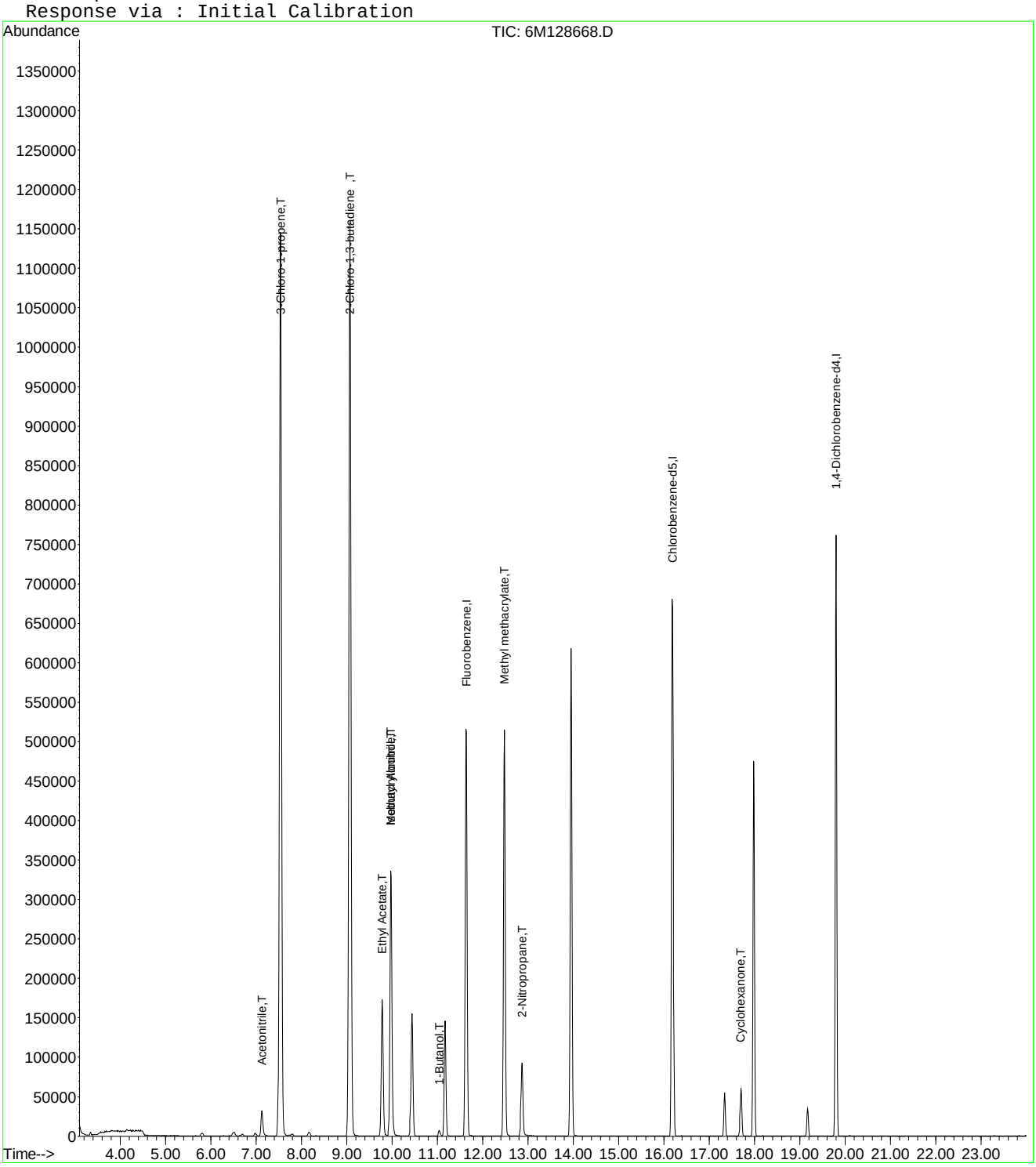

6M128668.D A9FOOWT.M Wed Oct 01 15:22:21 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\093014\6M128669.D Vial: 8
Acq On : 30 Sep 2014 18:24 Operator: TMB
Sample : WG494605-06 200ug/L STD A9/FOO Inst : HPMS6
Misc : 1,1 STD66544 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 01 15:22:22 2014 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/30/14 - HPMS6
Last Update : Wed Oct 01 15:18:32 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.64	96	660630	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.20	117	563534	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.80	152	285177	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.13	41	98132	198.2015 ug/L	94
3) 3-Chloro-1-propene	7.54	41	2589548	204.9910 ug/L	93
4) 2-Chloro-1,3-butadiene	9.07	53	2583138	211.3228 ug/L	88
5) Ethyl Acetate	9.78	43	647377	204.7415 ug/L	93
6) Methacrylonitrile	9.97	67	271891	209.1026 ug/L #	60
7) Isobutyl Alcohol	9.98	43	57640	418.2449 ug/L #	93
8) 1-Butanol	11.04	41	11167	208.5421 ug/L	80
9) Methyl methacrylate	12.48	41	829368	206.5829 ug/L	80
10) 2-Nitropropane	12.87	43	185425	206.9404 ug/L	92
13) Cyclohexanone	17.70	55	75985	199.6005 ug/L	85

(#) = qualifier out of range (m) = manual integration
6M128669.D A9FOOWT.M Wed Oct 01 15:22:22 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\093014\6M128669.D Vial: 8
Acq On : 30 Sep 2014 18:24 Operator: TMB
Sample : WG494605-06 200ug/L STD A9/FOO Inst : HPMS6
Misc : 1,1 STD66544 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 1 15:22 2014 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/30/14 - HPMS6
Last Update : Wed Oct 01 15:18:32 2014
Response via : Initial Calibration

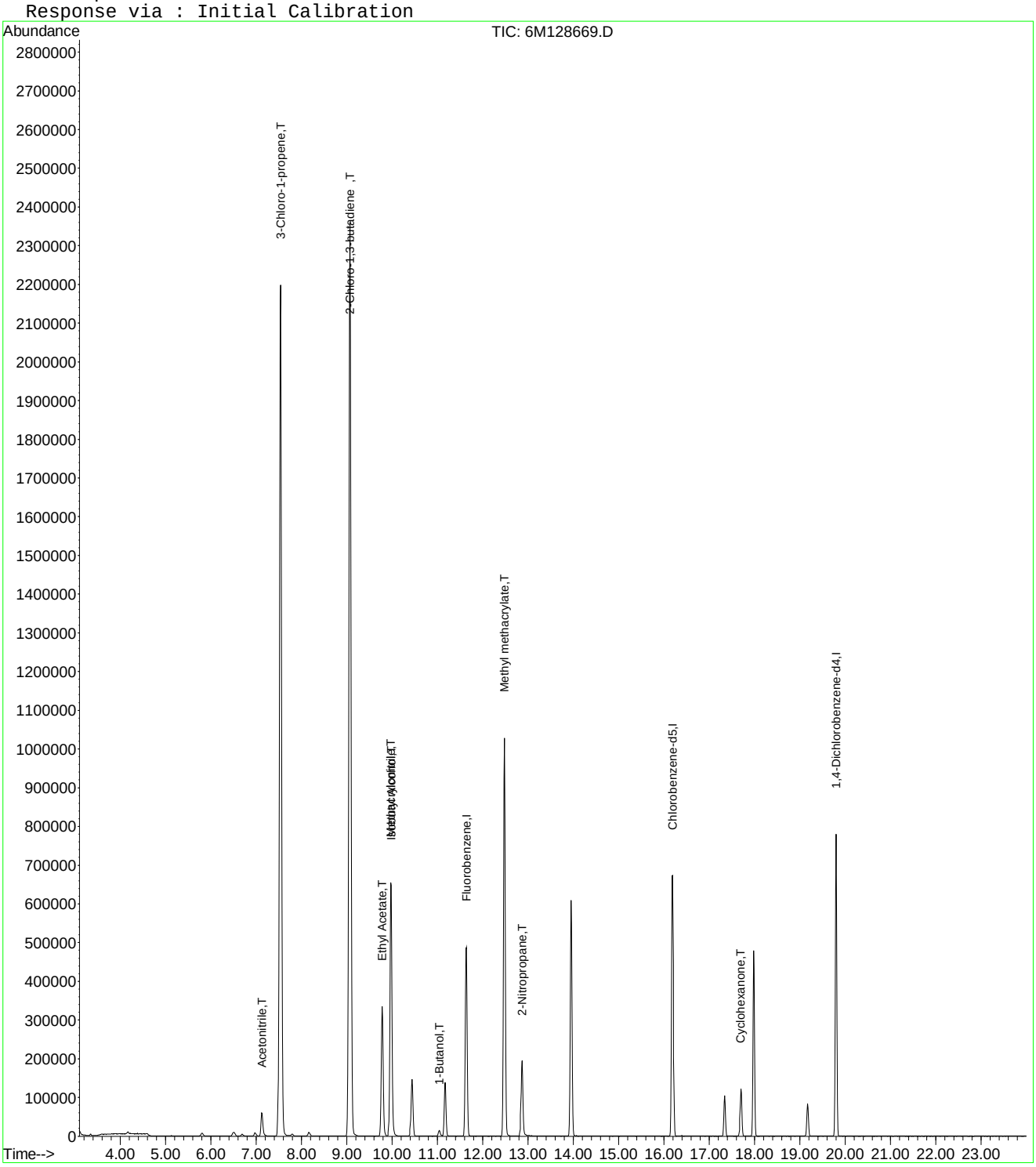

6M128669.D A9FOOWT.M Wed Oct 01 15:22:22 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\093014\6M128670.D Vial: 9
Acq On : 30 Sep 2014 18:55 Operator: TMB
Sample : WG494605-07 300ug/L STD A9/FOO Inst : HPMS6
Misc : 1,1 STD66544 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 01 15:22:22 2014 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/30/14 - HPMS6
Last Update : Wed Oct 01 15:18:32 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.64	96	655036	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.19	117	562422	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.80	152	285432	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.13	41	150371	306.3046 ug/L	93
3) 3-Chloro-1-propene	7.54	41	3852245	307.5515 ug/L	92
4) 2-Chloro-1,3-butadiene	9.07	53	4008887	330.7620 ug/L	88
5) Ethyl Acetate	9.78	43	967848	308.7087 ug/L	93
6) Methacrylonitrile	9.98	67	412286	319.7836 ug/L #	60
7) Isobutyl Alcohol	9.98	43	85742	627.4707 ug/L #	91
8) 1-Butanol	11.04	41	17577	331.0512 ug/L	82
9) Methyl methacrylate	12.48	41	1232683	309.6647 ug/L	80
10) 2-Nitropropane	12.87	43	287788	323.9238 ug/L	93
13) Cyclohexanone	17.70	55	125953	330.5630 ug/L	85

(#) = qualifier out of range (m) = manual integration
6M128670.D A9FOOWT.M Wed Oct 01 15:22:22 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\093014\6M128670.D Vial: 9
Acq On : 30 Sep 2014 18:55 Operator: TMB
Sample : WG494605-07 300ug/L STD A9/FOO Inst : HPMS6
Misc : 1,1 STD66544 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 1 15:22 2014 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/30/14 - HPMS6
Last Update : Wed Oct 01 15:18:32 2014
Response via : Initial Calibration

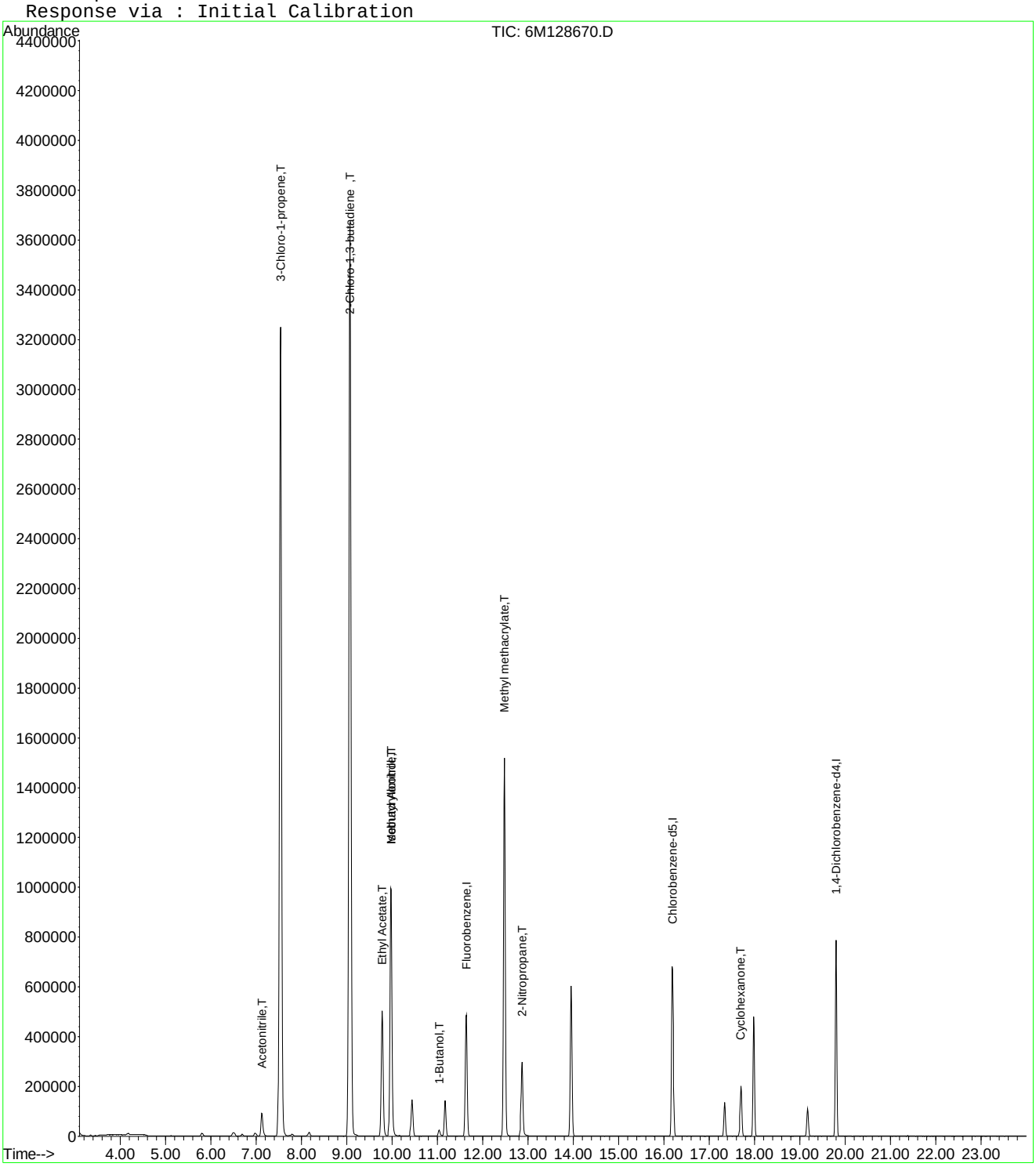

6M128670.D A9FOOWT.M Wed Oct 01 15:22:22 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\093014\6M128671.D Vial: 10
Acq On : 30 Sep 2014 19:27 Operator: TMB
Sample : WG494605-08 400ug/L STD A9/FOO Inst : HPMS6
Misc : 1,1 STD66544 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 01 15:22:22 2014 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/30/14 - HPMS6
Last Update : Wed Oct 01 15:18:32 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.63	96	673445	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.19	117	570557	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.80	152	284231	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.12	41	195323	386.9955 ug/L	93
3) 3-Chloro-1-propene	7.53	41	5243573	407.1873 ug/L	92
4) 2-Chloro-1,3-butadiene	9.07	53	5521379	443.1007 ug/L	88
5) Ethyl Acetate	9.79	43	1299773	403.2480 ug/L	93
6) Methacrylonitrile	9.97	67	554011	417.9642 ug/L #	59
7) Isobutyl Alcohol	9.98	43	110962	789.8364 ug/L #	90
8) 1-Butanol	11.04	41	23034	421.9712 ug/L	81
9) Methyl methacrylate	12.48	41	1656213	404.6872 ug/L	80
10) 2-Nitropropane	12.86	43	390197	427.1862 ug/L	94
13) Cyclohexanone	17.70	55	164849	434.4734 ug/L	86

(#) = qualifier out of range (m) = manual integration
6M128671.D A9FOOWT.M Wed Oct 01 15:22:23 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\093014\6M128671.D Vial: 10
Acq On : 30 Sep 2014 19:27 Operator: TMB
Sample : WG494605-08 400ug/L STD A9/FOO Inst : HPMS6
Misc : 1,1 STD66544 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 1 15:22 2014 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/30/14 - HPMS6
Last Update : Wed Oct 01 15:18:32 2014
Response via : Initial Calibration

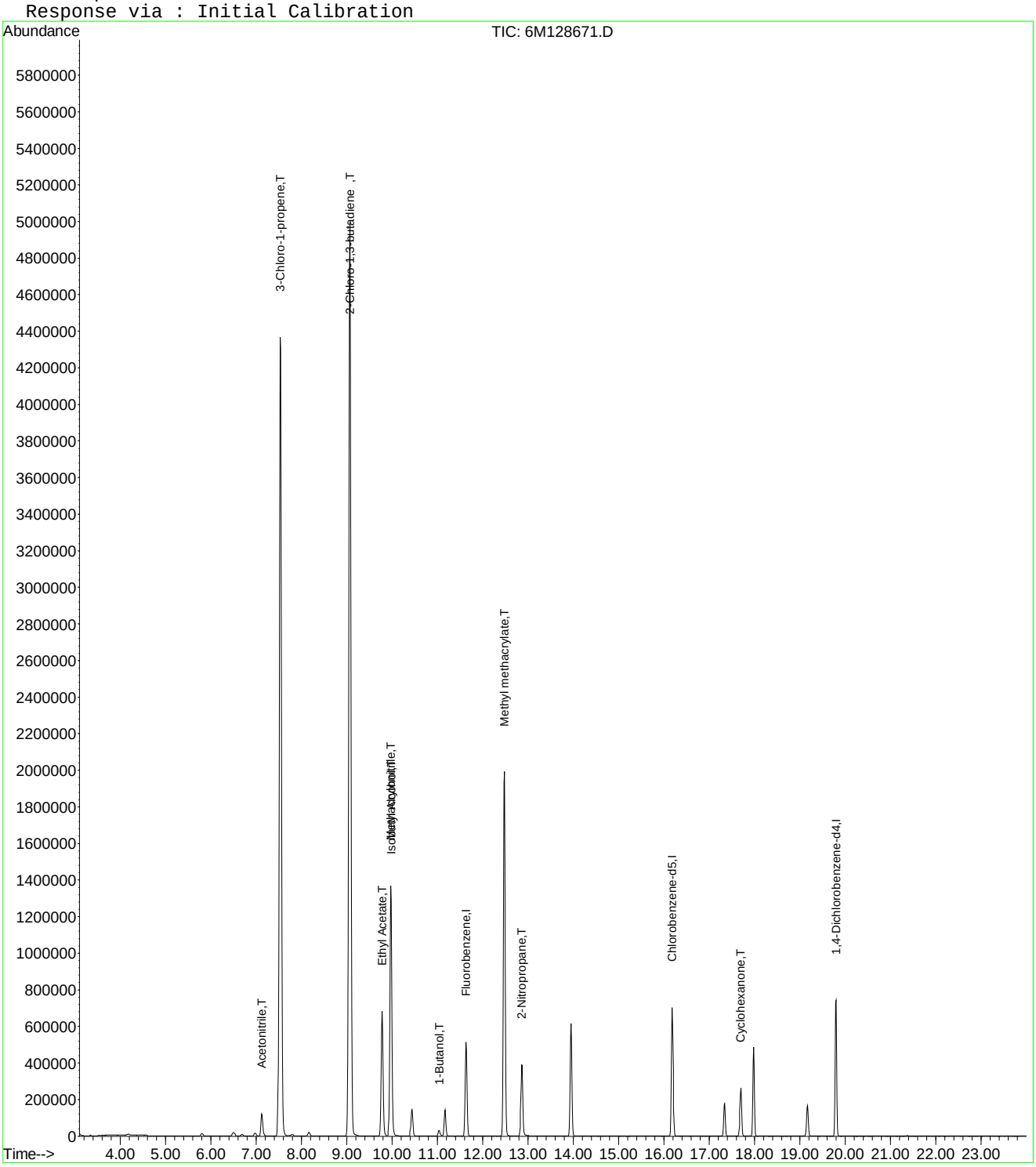

6M128671.D A9FOOWT.M Wed Oct 01 15:22:23 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\093014\6M128672.D Vial: 11
Acq On : 30 Sep 2014 19:59 Operator: TMB
Sample : WG494605-09 500ug/L STD A9/FOO Inst : HPMS6
Misc : 1,1 STD66544 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 01 15:22:23 2014 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/30/14 - HPMS6
Last Update : Wed Oct 01 15:18:32 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.63	96	701556	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.19	117	576116	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.80	152	287048	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.12	41	261035	496.4677 ug/L	93
3) 3-Chloro-1-propene	7.53	41	7006386	522.2769 ug/L	93
4) 2-Chloro-1,3-butadiene	9.07	53	7348002	566.0619 ug/L	90
5) Ethyl Acetate	9.78	43	1836448	546.9192 ug/L	93
6) Methacrylonitrile	9.97	67	783836	567.6566 ug/L #	61
7) Isobutyl Alcohol	9.98	43	156198	1067.2794 ug/L #	91
8) 1-Butanol	11.04	41	32445	570.5596 ug/L	79
9) Methyl methacrylate	12.48	41	2301801	539.8969 ug/L	80
10) 2-Nitropropane	12.87	43	557368	585.7537 ug/L	94
13) Cyclohexanone	17.70	55	204212	532.9360 ug/L	86

(#) = qualifier out of range (m) = manual integration
6M128672.D A9FOOWT.M Wed Oct 01 15:22:23 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\093014\6M128672.D Vial: 11
Acq On : 30 Sep 2014 19:59 Operator: TMB
Sample : WG494605-09 500ug/L STD A9/FOO Inst : HPMS6
Misc : 1,1 STD66544 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 1 15:22 2014 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/30/14 - HPMS6
Last Update : Wed Oct 01 15:18:32 2014
Response via : Initial Calibration

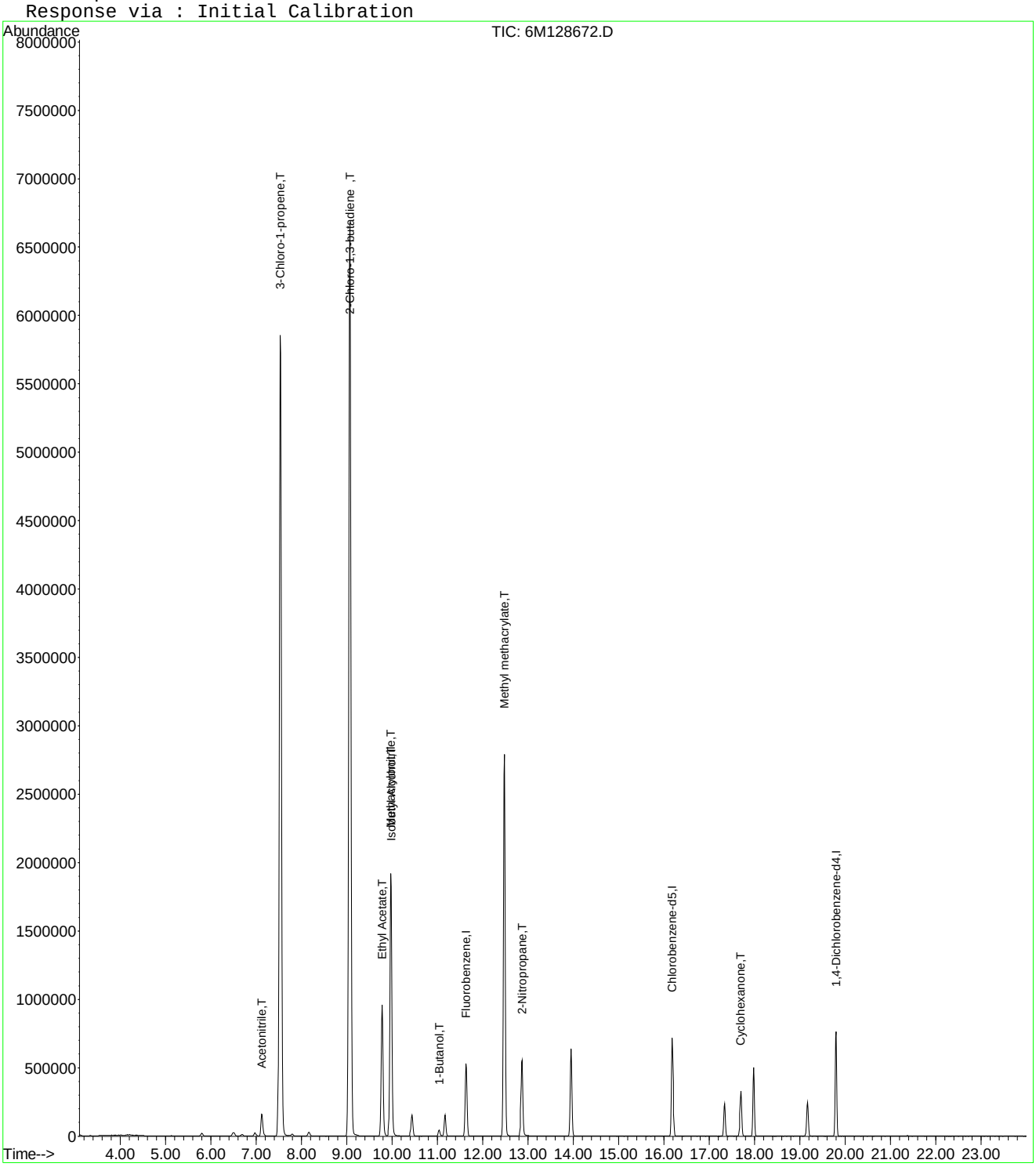

6M128672.D A9FOOWT.M Wed Oct 01 15:22:23 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\093014\6M128674.D Vial: 13
Acq On : 30 Sep 2014 21:02 Operator: TMB
Sample : WG494605-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS6
Misc : 1,1 STD66677 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 01 15:22:24 2014 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/30/14 - HPMS6
Last Update : Wed Oct 01 15:18:32 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.63	96	655508	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.19	117	557283	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.80	152	275753	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.12	41	49534	100.8277 ug/L	93
3) 3-Chloro-1-propene	7.53	41	1290992	102.9946 ug/L	92
4) 2-Chloro-1,3-butadiene	9.07	53	969088	79.8992 ug/L	87
5) Ethyl Acetate	9.78	43	355992	113.4669 ug/L	92
6) Methacrylonitrile	9.97	67	138156	107.0815 ug/L #	60
7) Isobutyl Alcohol	9.98	43	27016	197.5641 ug/L #	95
8) 1-Butanol	11.04	41	3972	74.7561 ug/L	85
9) Methyl methacrylate	12.47	41	405703	101.8440 ug/L	79
10) 2-Nitropropane	12.86	43	84030	94.5130 ug/L	93
13) Cyclohexanone	17.70	55	11940	32.4364 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M128674.D A9FOOWT.M Wed Oct 01 15:22:24 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\093014\6M128674.D Vial: 13
Acq On : 30 Sep 2014 21:02 Operator: TMB
Sample : WG494605-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS6
Misc : 1,1 STD66677 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 1 15:22 2014 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/30/14 - HPMS6
Last Update : Wed Oct 01 15:18:32 2014
Response via : Initial Calibration

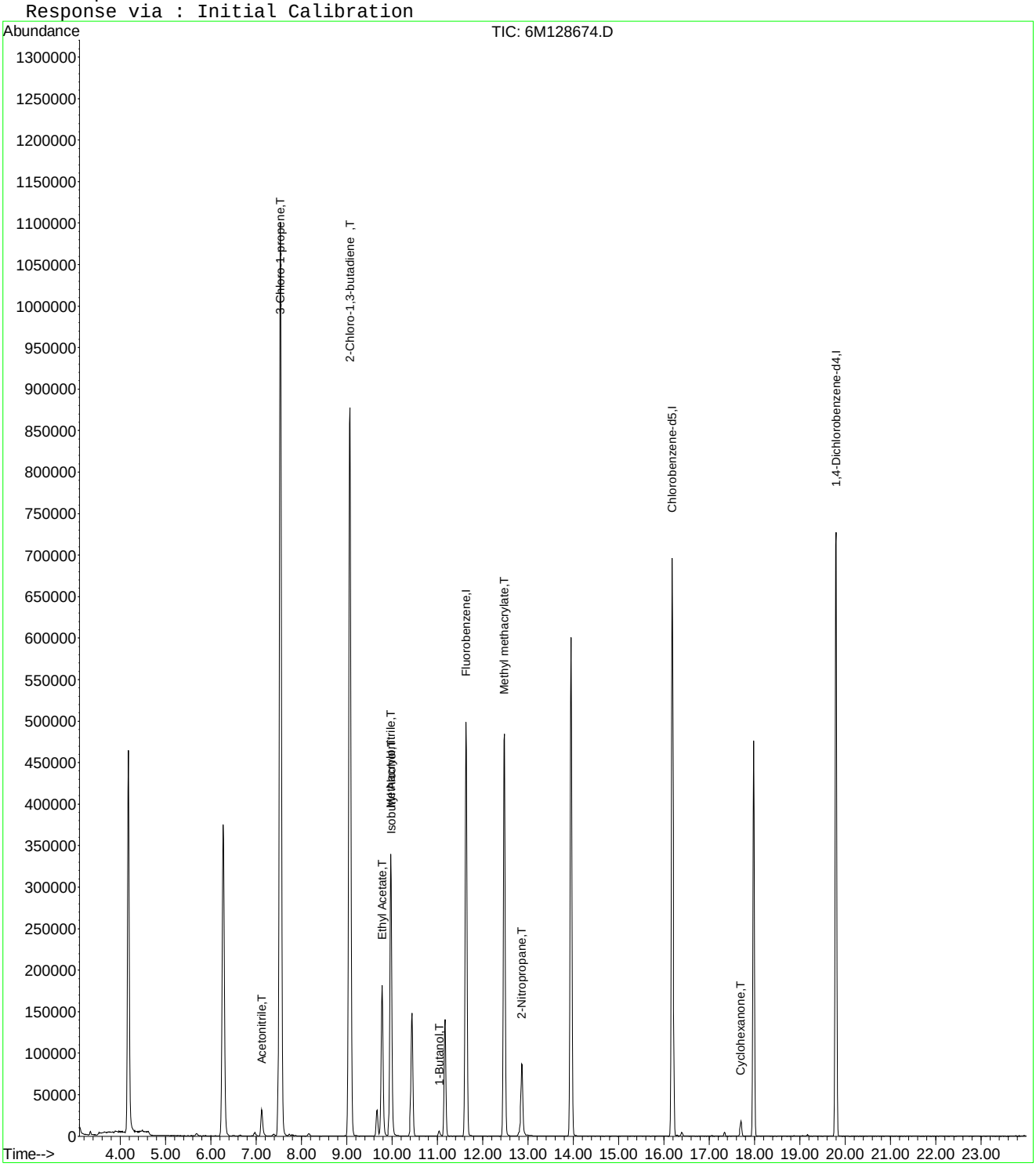

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\093014\6M128674.D Vial: 13
Acq On : 30 Sep 2014 21:02 Operator: TMB
Sample : WG494605-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS6
Misc : 1,1 STD66677 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 09/30/14 - HPMS6
Last Update : Wed Oct 01 15:18:32 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	95	0.00
2	T	Acetonitrile	100.0000	100.8277	-0.8	98	0.00
3	T	3-Chloro-1-propene	100.0000	102.9946	-3.0	97	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	79.8992	20.1	77	0.00
5	T	Ethyl Acetate	100.0000	113.4669	-13.5	106	0.00
6	T	Methacrylonitrile	100.0000	107.0815	-7.1	100	0.00
7	T	Isobutyl Alcohol	200.0000	197.5641	1.2	92	0.00
8	T	1-Butanol	100.0000	74.7561	25.2	77	0.00
9	T	Methyl methacrylate	100.0000	101.8440	-1.8	97	-0.01
10	T	2-Nitropropane	100.0000	94.5130	5.5	94	-0.01
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	98	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	97	0.00
13	T	Cyclohexanone	100.0000	32.4364	67.6	31	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M128674.D A9FOOWT.M Wed Oct 01 15:23:18 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130911.D Vial: 3
Acq On : 5 Feb 2015 11:02 Operator: TMB
Sample : WG511026-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 06 08:53:29 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	702318	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.14	117	528760	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.75	152	283046	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	13.90	98	241	0.0100 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.04%#	
80) p-Bromofluorobenzene	0.00	95	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.37	85	3500	0.2804 ug/L #	66
3) Chloromethane	3.85	50	3414	0.3465 ug/L	85
4) Vinyl Chloride	4.07	62	2487	0.2947 ug/L #	56
5) 1,3-Butadiene	4.15	54	1786	0.2173 ug/L #	11
6) Bromomethane	5.00	94	428	0.9114 ug/L	100
7) Chloroethane	5.17	64	1527	0.3120 ug/L #	46
8) Trichlorofluoromethane	5.68	101	4599	0.2923 ug/L #	95
10) Isoprene	6.28	67	2106	0.2513 ug/L	82
14) 1,1-Dichloroethene	6.83	61	4061	0.3208 ug/L	80
16) Dimethyl Sulfide	7.13	62	1734	0.2512 ug/L	69
18) Methyl acetate	7.41	43	729	0.1729 ug/L #	64
19) Methylene Chloride	7.69	84	2059	0.3285 ug/L	78
20) Carbon Disulfide	7.73	76	7151	0.3320 ug/L #	83
22) Methyl Tert Butyl Ether	7.92	73	4131	0.3106 ug/L #	52
23) trans-1,2-Dichloroethene	8.18	96	2027	0.3104 ug/L	84
24) n-Hexane	8.28	57	3123	0.2914 ug/L	96
26) Vinyl Acetate	8.82	43	753	0.1648 ug/L #	77
27) 1,1-Dichloroethane	8.86	63	4499	0.3211 ug/L	89
31) 2,2-Dichloropropane	9.75	77	2973	0.2483 ug/L	69
32) cis-1,2-Dichloroethene	9.81	96	2408	0.3454 ug/L	81
33) Chloroform	10.06	83	4066	0.2999 ug/L	90
34) 1-Bromopropane	10.20	122	193	0.4744 ug/L #	1
35) Bromochloromethane	10.31	130	1077	0.2960 ug/L #	61
36) Tetrahydrofuran	10.69	42	186	0.1754 ug/L #	38
38) 1,1,1-Trichloroethane	10.66	97	3489	0.2584 ug/L	84
39) Cyclohexane	10.70	56	3688	0.2741 ug/L #	67
40) 1,1-Dichloropropene	10.89	75	2818	0.2710 ug/L #	54
42) Carbon Tetrachloride	11.05	117	2554	0.2229 ug/L #	84
45) 1,2-Dichloroethane	11.25	62	3406	0.3175 ug/L #	79
46) Benzene	11.30	78	9132	0.3545 ug/L	98
47) Trichloroethene	12.17	130	2041	0.3036 ug/L	94
48) Methylcyclohexane	12.24	83	3098	0.2937 ug/L	85
49) 1,2-Dichloropropane	12.42	63	2241	0.3231 ug/L	98
51) Bromodichloromethane	12.76	83	2635	0.2640 ug/L	96
52) Dibromomethane	12.87	93	502	0.1528 ug/L	65
53) 2-Chloroethyl Vinyl Ether	13.13	63	348	0.1231 ug/L #	44
55) cis-1,3-Dichloropropene	13.52	75	2894	0.2949 ug/L #	78
56) Dimethyl Disulfide	13.84	79	816	0.1670 ug/L #	51
59) Toluene	14.02	91	9134	0.3426 ug/L	95
60) Ethyl Methacrylate	14.14	69	620	0.5816 ug/L #	1

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130911.D Vial: 3
Acq On : 5 Feb 2015 11:02 Operator: TMB
Sample : WG511026-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 06 08:53:29 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
62)	trans-1,3-Dichloropropene	14.23	75	1929	0.2267 ug/L #	75
63)	1,1,2-Trichloroethane	14.49	97	1163	0.2834 ug/L #	48
65)	1,3-Dichloropropane	14.86	76	2338	0.3064 ug/L	87
66)	Tetrachloroethene	14.99	166	1952	0.2546 ug/L	84
67)	Dibromochloromethane	15.30	129	1504	0.2710 ug/L	80
68)	1,2-Dibromoethane	15.60	107	926	0.2332 ug/L #	60
69)	1-Chlorohexane	15.73	91	2606	0.2878 ug/L #	63
70)	Chlorobenzene	16.20	112	6736	0.3655 ug/L	83
71)	1,1,1,2-Tetrachloroethane	16.23	131	1668	0.2496 ug/L	89
72)	Ethylbenzene	16.24	106	3120	0.3075 ug/L	72
73)	m-,p-Xylene	16.34	106	8759	0.7217 ug/L	96
74)	o-Xylene	17.00	106	3498	0.2859 ug/L	82
75)	Styrene	17.06	104	5971	0.3050 ug/L	90
76)	Bromoform	17.64	173	455	0.5444 ug/L #	77
77)	Isopropylbenzene	17.53	105	10204	0.3168 ug/L	95
79)	1,1,2,2-Tetrachloroethane	17.78	83	886	0.2152 ug/L #	61
83)	n-Propylbenzene	18.14	91	12621	0.3531 ug/L #	87
84)	Bromobenzene	18.28	156	1994	0.2724 ug/L #	49
85)	1,3,5-Trimethylbenzene	18.36	105	8561	0.3379 ug/L	94
86)	2-Chlorotoluene	18.45	91	8739	0.3736 ug/L	93
87)	4-Chlorotoluene	18.50	91	7623	0.3270 ug/L	88
88)	a-Methylstyrene	18.84	118	3871	0.2812 ug/L	96
89)	tert-Butylbenzene	18.91	134	1132	0.2004 ug/L	33
90)	1,2,4-Trimethylbenzene	18.97	105	8355	0.3211 ug/L	84
91)	sec-Butylbenzene	19.24	105	10035	0.3264 ug/L	88
92)	p-Isopropyltoluene	19.43	119	8062	0.3196 ug/L	97
93)	1,3-Dichlorobenzene	19.65	146	5032	0.3341 ug/L	87
94)	1,4-Dichlorobenzene	19.81	146	5104	0.3332 ug/L #	37
95)	n-Butylbenzene	20.07	91	8294	0.3595 ug/L	89
96)	1,2-Dichlorobenzene	20.40	146	4208	0.3150 ug/L	89
98)	1,2,4-Trichlorobenzene	22.97	180	2861	0.3319 ug/L	94
99)	Hexachlorobutadiene	23.17	225	963	0.2559 ug/L #	39
100)	Naphthalene	23.43	128	3721	0.2968 ug/L #	68
101)	1,2,3-Trichlorobenzene	23.85	180	2430	0.3336 ug/L #	86

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130911.D Vial: 3
Acq On : 5 Feb 2015 11:02 Operator: TMB
Sample : WG511026-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 6 8:53 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration

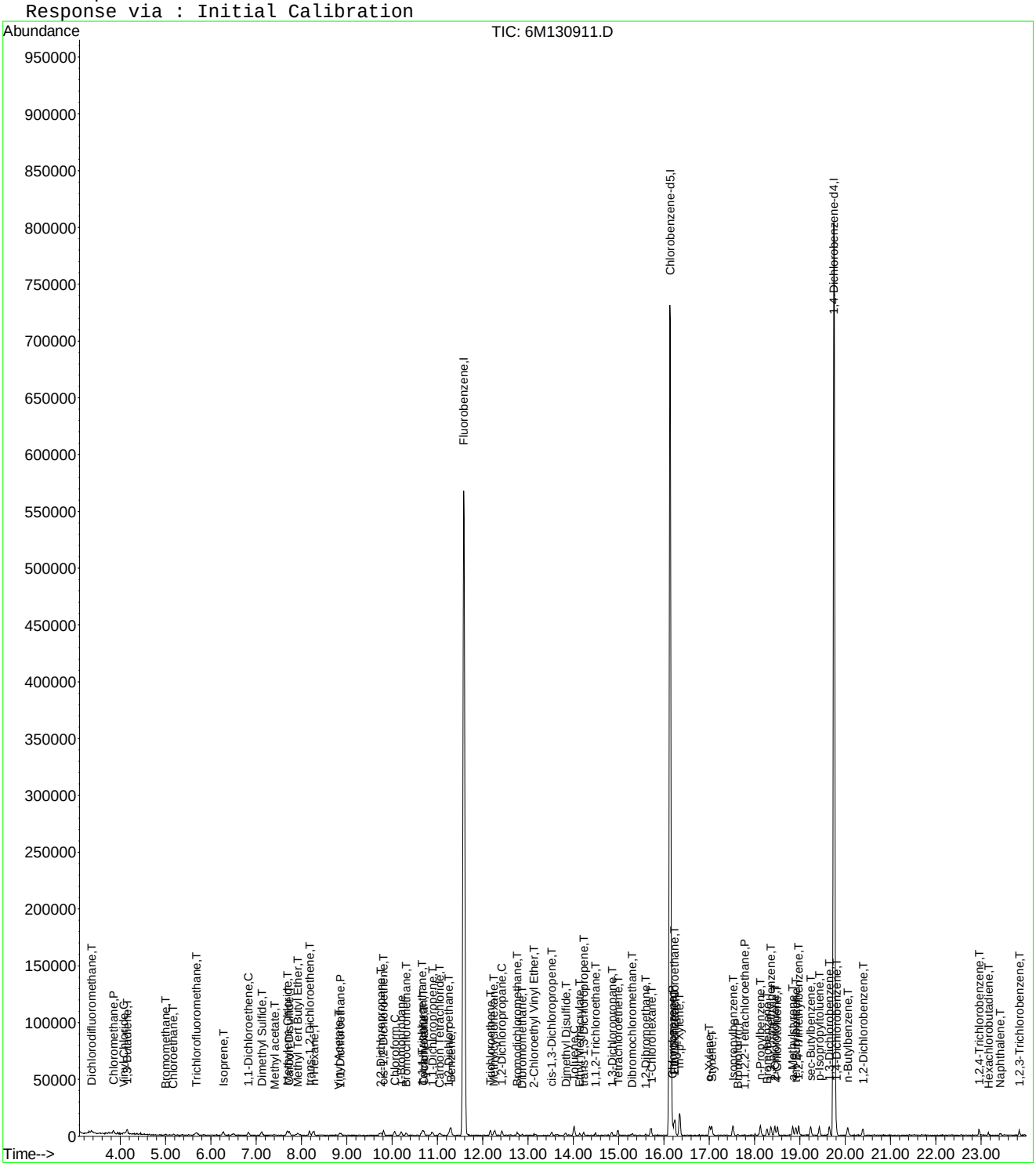

6M130911.D 8260WT.M Fri Feb 06 08:53:29 2015 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\020515\6M130911.D Vial: 3
Acq On : 5 Feb 2015 11:02 Operator: TMB
Sample : WG511026-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2804	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.3465	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.2947	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	0.2173	0.0	0	0.02
6	T	Bromomethane	-1.0000	0.9114	0.0	100	0.00
7	T	Chloroethane	-1.0000	0.3120	0.0	100	0.00
8	T	Trichlorofluoromethane	-1.0000	0.2923	0.0	100	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.23#
10	T	Isoprene	-1.0000	0.2513	0.0	100	0.01
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.48#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.0965	0.0	100	0.00
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.59#
14	C	1,1-Dichloroethene	-1.0000	0.3208	0.0	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.94#
16	T	Dimethyl Sulfide	-1.0000	0.2512	0.0	100	0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.39#
18	T	Methyl acetate	-1.0000	0.1729	0.0	100	0.01
19	T	Methylene Chloride	-1.0000	0.3285	0.0	100	0.01
20	T	Carbon Disulfide	-1.0000	0.3320	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.88#
22	T	Methyl Tert Butyl Ether	-1.0000	0.3106	0.0	100	0.01
23	T	trans-1,2-Dichloroethene	-1.0000	0.3104	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.2914	0.0	100	0.02
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.64#
26	T	Vinyl Acetate	-1.0000	0.1648	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.3211	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-9.28#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-9.49#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.62#
31	T	2,2-Dichloropropane	-1.0000	0.2483	0.0	100	0.01
32	T	cis-1,2-Dichloroethene	-1.0000	0.3454	0.0	100	0.00
33	C	Chloroform	0.3000	0.2999	0.0	100	0.01
34		1-Bromopropane	-1.0000	0.4744	0.0	100	0.00
35	T	Bromochloromethane	-1.0000	0.2960	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.1754	0.0	100	0.35
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-10.38#
38	T	1,1,1-Trichloroethane	-1.0000	0.2584	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.2741	0.0	100	0.01
40	T	1,1-Dichloropropene	-1.0000	0.2710	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-11.01#
42	T	Carbon Tetrachloride	-1.0000	0.2229	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-11.12#
44		Heptane	-1.0000	0.0000	0.0	0	-11.01#
45	T	1,2-Dichloroethane	-1.0000	0.3175	0.0	100	0.00
46	T	Benzene	0.3000	0.3545	-18.2	100	0.00
47	T	Trichloroethene	-1.0000	0.3036	0.0	100	0.00
48	T	Methylcyclohexane	-1.0000	0.2937	0.0	100	-0.02
49	C	1,2-Dichloropropane	-1.0000	0.3231	0.0	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-12.77#
51	T	Bromodichloromethane	-1.0000	0.2640	0.0	100	0.00
52	T	Dibromomethane	-1.0000	0.1528	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1231	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-13.16#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\020515\6M130911.D Vial: 3
Acq On : 5 Feb 2015 11:02 Operator: TMB
Sample : WG511026-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.2949	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.1670	0.0	100	0.01
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0100	0.0	100	0.00
59	C	Toluene	-1.0000	0.3426	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.5816	0.0	0	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-14.02#
62	T	trans-1,3-Dichloropropene	-1.0000	0.2267	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.2834	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-14.42#
65	T	1,3-Dichloropropane	-1.0000	0.3064	0.0	100	0.01
66	T	Tetrachloroethene	-1.0000	0.2546	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.2710	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.2332	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.2878	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.3655	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.2496	0.0	100	-0.02
72	C	Ethylbenzene	-1.0000	0.3075	0.0	100	0.00
73	T	m-,p-Xylene	-1.0000	0.7217	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.2859	0.0	100	0.00
75	T	Styrene	-1.0000	0.3050	0.0	100	0.00
76	P	Bromoform	-1.0000	0.5444	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.3168	0.0	0	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2152	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0000	0.0	0	-17.94#
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-18.01#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-18.08#
83	T	n-Propylbenzene	-1.0000	0.3531	0.0	0	0.00
84	T	Bromobenzene	0.3000	0.2724	9.2	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.3379	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.3736	0.0	100	0.00
87	T	4-Chlorotoluene	-1.0000	0.3270	0.0	0	0.00
88	T	a-Methylstyrene	-1.0000	0.2812	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.2004	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.3211	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3264	0.0	0	0.00
92	T	p-Isopropyltoluene	-1.0000	0.3196	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.3341	0.0	100	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.3332	-11.1	100	0.00
95	T	n-Butylbenzene	-1.0000	0.3595	0.0	100	0.01
96	T	1,2-Dichlorobenzene	0.3000	0.3150	-5.0	100	0.01
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-21.59#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.3319	0.0	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.2559	0.0	100	0.01
100	T	Naphthalene	-1.0000	0.2968	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.3336	-11.2	100	0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M130911.D 8260WT.M Fri Feb 06 08:54:33 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130912.D Vial: 4
Acq On : 5 Feb 2015 11:33 Operator: TMB
Sample : WG511026-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 06 08:53:31 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	674509	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.14	117	519699	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.75	152	286193	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	13.89	98	197	0.0083 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.04%#	
80) p-Bromofluorobenzene	0.00	95	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.37	85	4443	0.3706 ug/L	89
3) Chloromethane	3.84	50	4313	0.4558 ug/L	95
4) Vinyl Chloride	4.09	62	2930	0.3615 ug/L	88
5) 1,3-Butadiene	4.15	54	2752	0.3380 ug/L #	39
6) Bromomethane	5.01	94	761	0.9886 ug/L	90
7) Chloroethane	5.17	64	1894	0.4030 ug/L	93
8) Trichlorofluoromethane	5.67	101	5821	0.3852 ug/L #	91
10) Isoprene	6.26	67	2465	0.3063 ug/L #	60
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	1852	0.2578 ug/L #	66
14) 1,1-Dichloroethene	6.83	61	4995	0.4108 ug/L	81
16) Dimethyl Sulfide	7.10	62	2632	0.3970 ug/L	96
18) Methyl acetate	7.41	43	1404	0.3467 ug/L #	64
19) Methylene Chloride	7.68	84	3073	0.5105 ug/L	83
20) Carbon Disulfide	7.73	76	12683	0.6131 ug/L #	89
22) Methyl Tert Butyl Ether	7.91	73	4407	0.3450 ug/L #	52
23) trans-1,2-Dichloroethene	8.17	96	2426	0.3869 ug/L	77
24) n-Hexane	8.26	57	4035	0.3920 ug/L	93
26) Vinyl Acetate	8.85	43	1356	0.3089 ug/L #	77
27) 1,1-Dichloroethane	8.87	63	5703	0.4239 ug/L	91
31) 2,2-Dichloropropane	9.75	77	3882	0.3376 ug/L	70
32) cis-1,2-Dichloroethene	9.81	96	2479	0.3702 ug/L	94
33) Chloroform	10.05	83	5176	0.3975 ug/L	91
34) 1-Bromopropane	10.21	122	208	0.4899 ug/L #	1
35) Bromochloromethane	10.32	130	1185	0.3391 ug/L	98
36) Tetrahydrofuran	10.69	42	676	0.6636 ug/L #	38
38) 1,1,1-Trichloroethane	10.66	97	5343	0.4120 ug/L	87
39) Cyclohexane	10.69	56	4840	0.3746 ug/L	82
40) 1,1-Dichloropropene	10.89	75	3554	0.3559 ug/L #	73
42) Carbon Tetrachloride	11.05	117	3863	0.3510 ug/L #	90
45) 1,2-Dichloroethane	11.26	62	4316	0.4190 ug/L #	85
46) Benzene	11.30	78	10378	0.4194 ug/L	93
47) Trichloroethene	12.17	130	2518	0.3900 ug/L	84
48) Methylcyclohexane	12.27	83	3446	0.3401 ug/L	76
49) 1,2-Dichloropropane	12.42	63	2660	0.3993 ug/L	99
51) Bromodichloromethane	12.77	83	3696	0.3856 ug/L	87
52) Dibromomethane	12.87	93	1086	0.3442 ug/L	74
53) 2-Chloroethyl Vinyl Ether	13.14	63	522	0.1923 ug/L #	44
55) cis-1,3-Dichloropropene	13.51	75	3364	0.3569 ug/L	87
56) Dimethyl Disulfide	13.83	79	819	0.1745 ug/L #	51
59) Toluene	14.01	91	10834	0.4134 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130912.D Vial: 4
Acq On : 5 Feb 2015 11:33 Operator: TMB
Sample : WG511026-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 06 08:53:31 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
60)	Ethyl Methacrylate	14.15	69	834	0.6246 ug/L #	38
62)	trans-1,3-Dichloropropene	14.23	75	2992	0.3577 ug/L #	51
63)	1,1,2-Trichloroethane	14.48	97	1596	0.3957 ug/L	74
65)	1,3-Dichloropropane	14.84	76	2937	0.3916 ug/L	91
66)	Tetrachloroethene	14.97	166	3079	0.4086 ug/L	93
67)	Dibromochloromethane	15.29	129	1718	0.3149 ug/L	96
68)	1,2-Dibromoethane	15.61	107	1166	0.2987 ug/L	87
69)	1-Chlorohexane	15.72	91	3028	0.3402 ug/L #	52
70)	Chlorobenzene	16.19	112	8211	0.4533 ug/L	84
71)	1,1,1,2-Tetrachloroethane	16.24	131	2099	0.3195 ug/L #	45
72)	Ethylbenzene	16.24	106	3310	0.3320 ug/L	49
73)	m-,p-Xylene	16.34	106	9789	0.8207 ug/L	78
74)	o-Xylene	17.02	106	4697	0.3906 ug/L	90
75)	Styrene	17.06	104	7251	0.3769 ug/L	75
76)	Bromoform	17.64	173	939	0.6863 ug/L #	34
77)	Isopropylbenzene	17.53	105	12073	0.3814 ug/L	100
79)	1,1,2,2-Tetrachloroethane	17.79	83	1568	0.3766 ug/L	79
83)	n-Propylbenzene	18.13	91	14698	0.4067 ug/L #	89
84)	Bromobenzene	18.27	156	2730	0.3688 ug/L	90
85)	1,3,5-Trimethylbenzene	18.36	105	9707	0.3789 ug/L	100
86)	2-Chlorotoluene	18.45	91	9470	0.4004 ug/L	92
87)	4-Chlorotoluene	18.51	91	10020	0.4251 ug/L	86
88)	a-Methylstyrene	18.84	118	5237	0.3763 ug/L	88
89)	tert-Butylbenzene	18.92	134	2068	0.3621 ug/L	76
90)	1,2,4-Trimethylbenzene	18.99	105	10746	0.4084 ug/L	82
91)	sec-Butylbenzene	19.24	105	12069	0.3883 ug/L	97
92)	p-Isopropyltoluene	19.44	119	9727	0.3814 ug/L	96
93)	1,3-Dichlorobenzene	19.65	146	5919	0.3887 ug/L	95
94)	1,4-Dichlorobenzene	19.81	146	7090	0.4578 ug/L #	37
95)	n-Butylbenzene	20.06	91	9960	0.4270 ug/L	99
96)	1,2-Dichlorobenzene	20.40	146	5794	0.4289 ug/L	86
98)	1,2,4-Trichlorobenzene	22.97	180	3499	0.4014 ug/L	93
99)	Hexachlorobutadiene	23.16	225	989	0.2600 ug/L #	53
100)	Naphthalene	23.43	128	4615	0.3640 ug/L #	81
101)	1,2,3-Trichlorobenzene	23.84	180	2518	0.3419 ug/L	91

(#) = qualifier out of range (m) = manual integration
6M130912.D 8260WT.M Fri Feb 06 08:53:31 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130912.D Vial: 4
Acq On : 5 Feb 2015 11:33 Operator: TMB
Sample : WG511026-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 6 8:53 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration

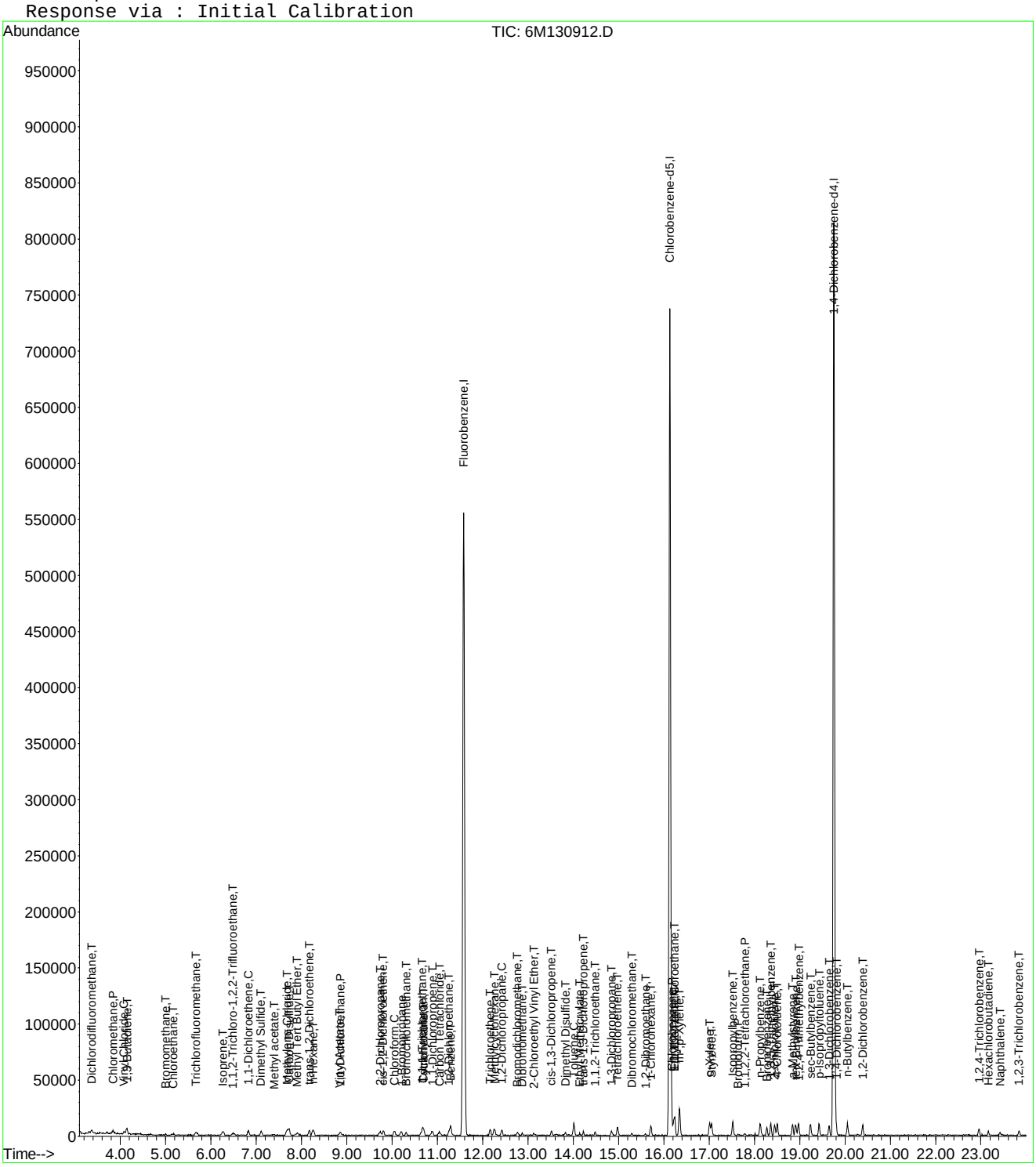

6M130912.D 8260WT.M Fri Feb 06 08:53:31 2015 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\020515\6M130912.D Vial: 4
Acq On : 5 Feb 2015 11:33 Operator: TMB
Sample : WG511026-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.3706	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.4558	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.3615	9.6	100	0.00
5	T	1,3-Butadiene	-1.0000	0.3380	0.0	0	0.02
6	T	Bromomethane	-1.0000	0.9886	0.0	100	0.00
7	T	Chloroethane	-1.0000	0.4030	0.0	100	0.00
8	T	Trichlorofluoromethane	0.4000	0.3852	3.7	100	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.23#
10	T	Isoprene	-1.0000	0.3063	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.48#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2578	0.0	100	0.00
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.59#
14	C	1,1-Dichloroethene	0.4000	0.4108	-2.7	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.94#
16	T	Dimethyl Sulfide	-1.0000	0.3970	0.0	100	-0.02
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.39#
18	T	Methyl acetate	-1.0000	0.3467	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.5105	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.6131	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.88#
22	T	Methyl Tert Butyl Ether	0.4000	0.3450	13.7	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.3869	3.3	100	0.00
24	T	n-Hexane	-1.0000	0.3920	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.64#
26	T	Vinyl Acetate	-1.0000	0.3089	0.0	100	0.01
27	P	1,1-Dichloroethane	0.4000	0.4239	-6.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-9.28#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-9.49#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.62#
31	T	2,2-Dichloropropane	0.4000	0.3377	15.6	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.3702	7.4	100	0.00
33	C	Chloroform	0.4000	0.3976	0.6	100	0.00
34		1-Bromopropane	-1.0000	0.4899	0.0	100	0.00
35	T	Bromochloromethane	0.4000	0.3391	15.2	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.6636	0.0	100	0.35
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-10.38#
38	T	1,1,1-Trichloroethane	0.4000	0.4120	-3.0	100	0.00
39	T	Cyclohexane	-1.0000	0.3746	0.0	100	0.00
40	T	1,1-Dichloropropene	0.4000	0.3559	11.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-11.01#
42	T	Carbon Tetrachloride	0.4000	0.3510	12.2	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-11.12#
44		Heptane	-1.0000	0.0000	0.0	0	-11.01#
45	T	1,2-Dichloroethane	0.4000	0.4190	-4.7	100	0.00
46	T	Benzene	0.4000	0.4194	-4.9	100	0.00
47	T	Trichloroethene	0.4000	0.3900	2.5	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3401	0.0	100	0.00
49	C	1,2-Dichloropropane	0.4000	0.3993	0.2	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-12.77#
51	T	Bromodichloromethane	0.4000	0.3856	3.6	100	0.00
52	T	Dibromomethane	0.4000	0.3442	13.9	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1923	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-13.16#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\020515\6M130912.D Vial: 4
Acq On : 5 Feb 2015 11:33 Operator: TMB
Sample : WG511026-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3569	10.8	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.1745	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0083	0.0	100	0.00
59	C	Toluene	0.4000	0.4134	-3.3	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.6246	0.0	0	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-14.02#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3577	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.3957	1.1	100	0.00
64	T	2-Hexanone	-1.0000	0.1155	0.0	100	0.00
65	T	1,3-Dichloropropane	0.4000	0.3916	2.1	100	0.00
66	T	Tetrachloroethene	0.4000	0.4086	-2.1	100	-0.02
67	T	Dibromochloromethane	0.4000	0.3149	21.3#	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.2987	25.3#	100	0.00
69	T	1-Chlorohexane	0.4000	0.3402	15.0	100	0.00
70	P	Chlorobenzene	0.4000	0.4533	-13.3	100	-0.02
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3195	20.1#	100	0.00
72	C	Ethylbenzene	0.4000	0.3320	17.0	100	0.00
73	T	m-,p-Xylene	0.8000	0.8207	-2.6	100	0.00
74	T	o-Xylene	0.4000	0.3906	2.4	100	0.00
75	T	Styrene	0.4000	0.3769	5.8	100	0.00
76	P	Bromoform	-1.0000	0.6863	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.3814	4.7	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.3766	5.8	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0000	0.0	0	-17.94#
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-18.01#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-18.08#
83	T	n-Propylbenzene	0.4000	0.4067	-1.7	100	0.00
84	T	Bromobenzene	0.4000	0.3688	7.8	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.3789	5.3	100	0.00
86	T	2-Chlorotoluene	0.4000	0.4004	-0.1	100	0.00
87	T	4-Chlorotoluene	0.4000	0.4251	-6.3	100	0.00
88	T	a-Methylstyrene	-1.0000	0.3763	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3621	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	0.4000	0.4084	-2.1	100	0.00
91	T	sec-Butylbenzene	0.4000	0.3883	2.9	100	0.00
92	T	p-Isopropyltoluene	0.4000	0.3814	4.6	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.3887	2.8	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.4578	-14.4	100	0.00
95	T	n-Butylbenzene	0.4000	0.4270	-6.7	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.4289	-7.2	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-21.59#
98	T	1,2,4-Trichlorobenzene	0.4000	0.4014	-0.3	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.2600	35.0#	100	0.00
100	T	Naphthalene	0.4000	0.3640	9.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.3419	14.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M130912.D 8260WT.M Fri Feb 06 08:54:45 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130913.D Vial: 5
Acq On : 5 Feb 2015 12:05 Operator: TMB
Sample : WG511026-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 06 08:53:31 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	656797	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.14	117	495123	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.75	152	275191	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.38	111	3052	0.4601 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.84%#	
43) 1,2-Dichloroethane-d4	11.11	65	4300	0.5439 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	2.16%#	
58) Toluene-d8	13.90	98	12028	0.5323 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.12%#	
80) p-Bromofluorobenzene	17.93	95	4639	0.5013 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.37	85	11005	0.9427 ug/L	99
3) Chloromethane	3.84	50	9546	1.0360 ug/L	98
4) Vinyl Chloride	4.09	62	7840	0.9934 ug/L	91
5) 1,3-Butadiene	4.15	54	7485	0.9135 ug/L	81
6) Bromomethane	5.02	94	2513	1.3899 ug/L	91
7) Chloroethane	5.16	64	4616	1.0086 ug/L	100
8) Trichlorofluoromethane	5.67	101	15457	1.0503 ug/L	98
9) Diethyl ether	6.23	59	20826	4.9194 ug/L	92
10) Isoprene	6.26	67	8076	1.0306 ug/L	77
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	6852	0.9795 ug/L #	84
13) Acetone	6.59	43	1059	1.0450 ug/L #	49
14) 1,1-Dichloroethene	6.83	61	12265	1.0359 ug/L	84
15) Tert-Butyl Alcohol	6.95	59	755	3.5918 ug/L #	62
16) Dimethyl Sulfide	7.11	62	5983	0.9267 ug/L	62
17) Iodomethane	7.41	142	386	2.0362 ug/L #	31
18) Methyl acetate	7.42	43	3876	0.9829 ug/L #	64
19) Methylene Chloride	7.68	84	5803	0.9899 ug/L	53
20) Carbon Disulfide	7.73	76	22813	1.1326 ug/L	100
21) Acrylonitrile	7.89	53	3381	2.3933 ug/L	80
22) Methyl Tert Butyl Ether	7.92	73	12176	0.9790 ug/L	92
23) trans-1,2-Dichloroethene	8.17	96	5821	0.9533 ug/L	64
24) n-Hexane	8.26	57	9929	0.9906 ug/L	98
25) Diisopropyl ether	8.64	45	133938	5.4645 ug/L	94
26) Vinyl Acetate	8.83	43	3696	0.8648 ug/L #	77
27) 1,1-Dichloroethane	8.88	63	12781	0.9756 ug/L	98
28) Ethyl-Tert-Butyl ether	9.29	59	100846	5.1855 ug/L	97
29) 2-Butanone	9.49	43	901	0.5732 ug/L #	55
30) Propionitrile	9.62	54	2246	4.6926 ug/L #	75
31) 2,2-Dichloropropane	9.76	77	10425	0.9312 ug/L	76
32) cis-1,2-Dichloroethene	9.83	96	6083	0.9330 ug/L	79
33) Chloroform	10.04	83	12330	0.9726 ug/L	94
34) 1-Bromopropane	10.21	122	755	0.8771 ug/L	38
35) Bromochloromethane	10.32	130	3358	0.9867 ug/L	98
36) Tetrahydrofuran	10.35	42	5718	5.7646 ug/L #	74
38) 1,1,1-Trichloroethane	10.65	97	12055	0.9546 ug/L	91
39) Cyclohexane	10.68	56	12094	0.9612 ug/L	88
40) 1,1-Dichloropropene	10.89	75	10118	1.0404 ug/L	80
41) Tert-Amyl-Methyl ether	11.00	73	66960	4.9864 ug/L #	84
42) Carbon Tetrachloride	11.06	117	9936	0.9272 ug/L	95
45) 1,2-Dichloroethane	11.26	62	10372	1.0340 ug/L #	79

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130913.D Vial: 5
Acq On : 5 Feb 2015 12:05 Operator: TMB
Sample : WG511026-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 06 08:53:31 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	11.30	78	25270	1.0489 ug/L		91
47)	Trichloroethene	12.18	130	6105	0.9712 ug/L	#	56
48)	Methylcyclohexane	12.27	83	9647	0.9779 ug/L	#	74
49)	1,2-Dichloropropane	12.42	63	6473	0.9980 ug/L		80
51)	Bromodichloromethane	12.78	83	9328	0.9994 ug/L		95
52)	Dibromomethane	12.87	93	2754	0.8965 ug/L		89
53)	2-Chloroethyl Vinyl Ether	13.13	63	2042	0.7724 ug/L		78
54)	4-Methyl-2-Pentanone	13.16	58	750	0.5517 ug/L	#	35
55)	cis-1,3-Dichloropropene	13.52	75	8443	0.9199 ug/L		92
56)	Dimethyl Disulfide	13.82	79	3281	0.7178 ug/L	#	75
59)	Toluene	14.01	91	27413	1.0979 ug/L		99
60)	Ethyl Methacrylate	14.15	69	3302	1.1283 ug/L		73
62)	trans-1,3-Dichloropropene	14.23	75	6510	0.8169 ug/L		93
63)	1,1,2-Trichloroethane	14.48	97	3769	0.9809 ug/L		84
64)	2-Hexanone	14.43	43	1958	0.8018 ug/L	#	41
65)	1,3-Dichloropropane	14.85	76	7236	1.0128 ug/L		83
66)	Tetrachloroethene	14.97	166	7364	1.0257 ug/L		91
67)	Dibromochloromethane	15.30	129	4483	0.8626 ug/L		99
68)	1,2-Dibromoethane	15.60	107	3341	0.8984 ug/L		96
69)	1-Chlorohexane	15.72	91	8242	0.9719 ug/L	#	57
70)	Chlorobenzene	16.20	112	18315	1.0613 ug/L		69
71)	1,1,1,2-Tetrachloroethane	16.24	131	6150	0.9827 ug/L		88
72)	Ethylbenzene	16.24	106	9471	0.9970 ug/L		81
73)	m-,p-Xylene	16.34	106	25306	2.2268 ug/L		86
74)	o-Xylene	17.02	106	11599	1.0124 ug/L		89
75)	Styrene	17.06	104	19646	1.0718 ug/L		93
76)	Bromoform	17.64	173	2141	1.0639 ug/L	#	59
77)	Isopropylbenzene	17.53	105	31520	1.0451 ug/L		94
79)	1,1,2,2-Tetrachloroethane	17.78	83	3859	0.9639 ug/L		89
81)	1,2,3-Trichloropropane	18.02	110	1353	1.0100 ug/L	#	87
82)	trans-1,4-Dichloro-2-Buten	18.08	53	1192	1.1344 ug/L	#	32
83)	n-Propylbenzene	18.14	91	36461	1.0491 ug/L		96
84)	Bromobenzene	18.28	156	7370	1.0355 ug/L		88
85)	1,3,5-Trimethylbenzene	18.36	105	26592	1.0795 ug/L		89
86)	2-Chlorotoluene	18.45	91	24443	1.0749 ug/L		98
87)	4-Chlorotoluene	18.51	91	24042	1.0607 ug/L		92
88)	a-Methylstyrene	18.84	118	12638	0.9443 ug/L		97
89)	tert-Butylbenzene	18.92	134	5344	0.9731 ug/L		97
90)	1,2,4-Trimethylbenzene	18.98	105	27722	1.0958 ug/L		95
91)	sec-Butylbenzene	19.24	105	32274	1.0798 ug/L		97
92)	p-Isopropyltoluene	19.44	119	26448	1.0785 ug/L		98
93)	1,3-Dichlorobenzene	19.65	146	15355	1.0485 ug/L		98
94)	1,4-Dichlorobenzene	19.80	146	14973	1.0054 ug/L		98
95)	n-Butylbenzene	20.07	91	22217	0.9905 ug/L		98
96)	1,2-Dichlorobenzene	20.39	146	13833	1.0650 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	21.59	75	397	1.3000 ug/L	#	38
98)	1,2,4-Trichlorobenzene	22.97	180	8748	1.0437 ug/L		97
99)	Hexachlorobutadiene	23.16	225	3818	1.0437 ug/L	#	54
100)	Naphthalene	23.44	128	12974	1.0642 ug/L		94
101)	1,2,3-Trichlorobenzene	23.85	180	7112	1.0043 ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130913.D Vial: 5
Acq On : 5 Feb 2015 12:05 Operator: TMB
Sample : WG511026-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 6 8:53 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration

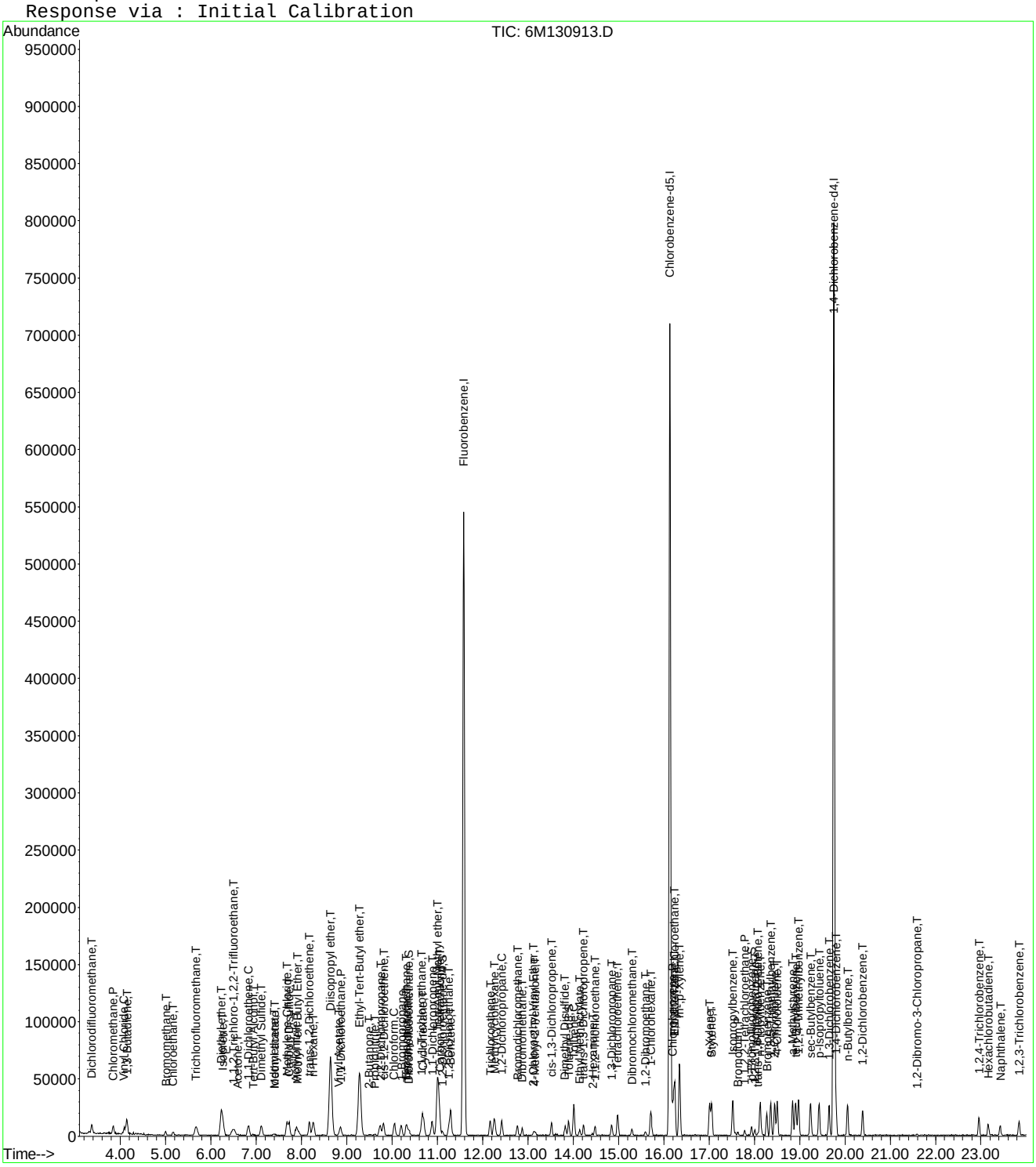

6M130913.D 8260WT.M Fri Feb 06 08:53:32 2015 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\020515\6M130913.D Vial: 5
Acq On : 5 Feb 2015 12:05 Operator: TMB
Sample : WG511026-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9427	5.7	100	0.00
3	P	Chloromethane	1.0000	1.0360	-3.6	100	0.00
4	C	Vinyl Chloride	1.0000	0.9934	0.7	100	0.00
5	T	1,3-Butadiene	-1.0000	0.9135	0.0	0	0.02
6	T	Bromomethane	1.0000	1.3899	-39.0#	100	0.01
7	T	Chloroethane	1.0000	1.0086	-0.9	100	0.00
8	T	Trichlorofluoromethane	1.0000	1.0503	-5.0	100	0.00
9	T	Diethyl ether	-1.0000	4.9194	0.0	100	0.00
10	T	Isoprene	1.0000	1.0306	-3.1	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.48#
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	0.9796	2.0	100	0.01
13	T	Acetone	-1.0000	1.0450	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	1.0359	-3.6	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	3.5918	0.0	100	0.00
16	T	Dimethyl Sulfide	1.0000	0.9267	7.3	100	0.00
17	T	Iodomethane	-1.0000	2.0362	0.0	0	0.01
18	T	Methyl acetate	-1.0000	0.9829	0.0	100	0.01
19	T	Methylene Chloride	1.0000	0.9899	1.0	100	0.00
20	T	Carbon Disulfide	1.0000	1.1326	-13.3	100	0.00
21	T	Acrylonitrile	2.5000	2.3933	4.3	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9790	2.1	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	0.9533	4.7	100	0.00
24	T	n-Hexane	1.0000	0.9907	0.9	100	0.00
25	T	Diisopropyl ether	-1.0000	5.4645	0.0	100	0.00
26	T	Vinyl Acetate	-1.0000	0.8648	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	0.9756	2.4	100	0.01
28	T	Ethyl-Tert-Butyl ether	-1.0000	5.1855	0.0	100	0.00
29	T	2-Butanone	-1.0000	0.5732	0.0	100	0.00
30	T	Propionitrile	-1.0000	4.6926	0.0	100	0.00
31	T	2,2-Dichloropropane	1.0000	0.9312	6.9	100	0.01
32	T	cis-1,2-Dichloroethene	1.0000	0.9330	6.7	100	0.01
33	C	Chloroform	1.0000	0.9726	2.7	100	0.00
34		1-Bromopropane	1.0000	0.8771	12.3	100	0.00
35	T	Bromochloromethane	1.0000	0.9867	1.3	100	0.00
36	T	Tetrahydrofuran	-1.0000	5.7646	0.0	100	0.00
37	S	Dibromofluoromethane	0.5000	0.4601	8.0	100	0.00
38	T	1,1,1-Trichloroethane	1.0000	0.9546	4.5	100	0.00
39	T	Cyclohexane	1.0000	0.9611	3.9	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0404	-4.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	4.9864	0.0	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.9272	7.3	100	0.01
43	S	1,2-Dichloroethane-d4	0.5000	0.5439	-8.8	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	T	1,2-Dichloroethane	1.0000	1.0340	-3.4	100	0.00
46	T	Benzene	1.0000	1.0489	-4.9	100	0.00
47	T	Trichloroethene	1.0000	0.9711	2.9	100	0.00
48	T	Methylcyclohexane	1.0000	0.9779	2.2	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.9980	0.2	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-12.77#
51	T	Bromodichloromethane	1.0000	0.9994	0.1	100	0.00
52	T	Dibromomethane	1.0000	0.8965	10.4	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.7724	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.5517	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\020515\6M130913.D Vial: 5
Acq On : 5 Feb 2015 12:05 Operator: TMB
Sample : WG511026-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9199	8.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.7178	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	0.5000	0.5323	-6.5	100	0.00
59	C	Toluene	1.0000	1.0979	-9.8	100	0.00
60	T	Ethyl Methacrylate	1.0000	1.1283	-12.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	1.0000	0.8169	18.3	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.9809	1.9	100	0.00
64	T	2-Hexanone	-1.0000	0.8018	0.0	100	0.01
65	T	1,3-Dichloropropane	1.0000	1.0128	-1.3	100	0.00
66	T	Tetrachloroethene	1.0000	1.0257	-2.6	100	-0.02
67	T	Dibromochloromethane	1.0000	0.8626	13.7	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.8984	10.2	100	0.00
69	T	1-Chlorohexane	1.0000	0.9719	2.8	100	0.00
70	P	Chlorobenzene	1.0000	1.0613	-6.1	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.9827	1.7	100	0.00
72	C	Ethylbenzene	1.0000	0.9970	0.3	100	0.00
73	T	m-,p-Xylene	2.0000	2.2268	-11.3	100	0.00
74	T	o-Xylene	1.0000	1.0125	-1.2	100	0.00
75	T	Styrene	1.0000	1.0718	-7.2	100	0.00
76	P	Bromoform	1.0000	1.0639	-6.4	100	0.00
77	T	Isopropylbenzene	1.0000	1.0451	-4.5	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	0.9639	3.6	100	0.00
80	S	p-Bromofluorobenzene	0.5000	0.5013	-0.3	100	0.00
81	T	1,2,3-Trichloropropane	1.0000	1.0100	-1.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	1.0000	1.1344	-13.4	100	0.00
83	T	n-Propylbenzene	1.0000	1.0491	-4.9	100	0.00
84	T	Bromobenzene	1.0000	1.0355	-3.6	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	1.0795	-7.9	100	0.00
86	T	2-Chlorotoluene	1.0000	1.0749	-7.5	100	0.00
87	T	4-Chlorotoluene	1.0000	1.0607	-6.1	100	0.00
88	T	a-Methylstyrene	1.0000	0.9443	5.6	100	0.00
89	T	tert-Butylbenzene	1.0000	0.9731	2.7	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	1.0958	-9.6	100	0.00
91	T	sec-Butylbenzene	1.0000	1.0799	-8.0	100	0.00
92	T	p-Isopropyltoluene	1.0000	1.0785	-7.9	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0485	-4.9	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	1.0054	-0.5	100	0.00
95	T	n-Butylbenzene	1.0000	0.9905	0.9	100	0.01
96	T	1,2-Dichlorobenzene	1.0000	1.0650	-6.5	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.3000	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	1.0000	1.0437	-4.4	100	0.00
99	T	Hexachlorobutadiene	1.0000	1.0437	-4.4	100	0.00
100	T	Naphthalene	1.0000	1.0642	-6.4	100	0.01
101	T	1,2,3-Trichlorobenzene	1.0000	1.0043	-0.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M130913.D 8260WT.M Fri Feb 06 08:54:57 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130914.D Vial: 6
Acq On : 5 Feb 2015 12:36 Operator: TMB
Sample : WG511026-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 06 08:53:32 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	651742	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.14	117	496751	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.75	152	278613	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.39	111	6160	0.9358 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.76%#	
43) 1,2-Dichloroethane-d4	11.12	65	8166	1.0410 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	4.16%#	
58) Toluene-d8	13.90	98	24798	1.0939 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.36%#	
80) p-Bromofluorobenzene	17.93	95	10178	1.0865 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.36%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.37	85	22172	1.9140 ug/L	98
3) Chloromethane	3.84	50	18650	2.0397 ug/L	97
4) Vinyl Chloride	4.09	62	15157	1.9354 ug/L	98
5) 1,3-Butadiene	4.14	54	14610	1.7821 ug/L	88
6) Bromomethane	5.01	94	6164	2.2275 ug/L	99
7) Chloroethane	5.17	64	8261	1.8191 ug/L #	72
8) Trichlorofluoromethane	5.67	101	31802	2.1778 ug/L	97
9) Diethyl ether	6.23	59	107959	25.6991 ug/L	93
10) Isoprene	6.26	67	15387	1.9788 ug/L	67
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	13641	1.9652 ug/L #	75
13) Acetone	6.61	43	2183	2.1708 ug/L #	65
14) 1,1-Dichloroethene	6.83	61	23409	1.9924 ug/L	83
15) Tert-Butyl Alcohol	6.95	59	8794	42.1611 ug/L #	79
16) Dimethyl Sulfide	7.12	62	11787	1.8398 ug/L	71
17) Iodomethane	7.41	142	2706	2.4206 ug/L	81
18) Methyl acetate	7.40	43	7676	1.9616 ug/L #	81
19) Methylene Chloride	7.68	84	12342	2.1217 ug/L	66
20) Carbon Disulfide	7.73	76	44134	2.2081 ug/L	99
21) Acrylonitrile	7.89	53	16717	11.9254 ug/L	89
22) Methyl Tert Butyl Ether	7.92	73	24192	1.9602 ug/L	97
23) trans-1,2-Dichloroethene	8.17	96	12117	1.9998 ug/L	78
24) n-Hexane	8.26	57	19570	1.9677 ug/L	95
25) Diisopropyl ether	8.64	45	667687	27.4521 ug/L	96
26) Vinyl Acetate	8.84	43	7705	1.8168 ug/L #	85
27) 1,1-Dichloroethane	8.87	63	26842	2.0647 ug/L	98
28) Ethyl-Tert-Butyl ether	9.28	59	500310	25.9254 ug/L	98
29) 2-Butanone	9.50	43	2958	1.8966 ug/L #	55
30) Propionitrile	9.61	54	11250	23.6872 ug/L	93
31) 2,2-Dichloropropane	9.75	77	20168	1.8154 ug/L	72
32) cis-1,2-Dichloroethene	9.82	96	13176	2.0366 ug/L	88
33) Chloroform	10.05	83	25609	2.0356 ug/L	97
34) 1-Bromopropane	10.21	122	2481	2.1001 ug/L	81
35) Bromochloromethane	10.32	130	6756	2.0006 ug/L	95
36) Tetrahydrofuran	10.35	42	25619	26.0282 ug/L	89
38) 1,1,1-Trichloroethane	10.66	97	24149	1.9272 ug/L	91
39) Cyclohexane	10.69	56	24246	1.9419 ug/L	90
40) 1,1-Dichloropropene	10.89	75	19389	2.0092 ug/L	80
41) Tert-Amyl-Methyl ether	11.01	73	340815	25.5769 ug/L #	84
42) Carbon Tetrachloride	11.05	117	19827	1.8645 ug/L	97
45) 1,2-Dichloroethane	11.26	62	20985	2.1082 ug/L	92

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130914.D Vial: 6
Acq On : 5 Feb 2015 12:36 Operator: TMB
Sample : WG511026-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 06 08:53:32 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
46)	Benzene	11.30	78	49108	2.0541 ug/L #	83
47)	Trichloroethene	12.17	130	12450	1.9958 ug/L #	61
48)	Methylcyclohexane	12.27	83	19638	2.0061 ug/L	84
49)	1,2-Dichloropropane	12.43	63	12212	1.8974 ug/L #	72
50)	1,4-Dioxane	12.75	88	879	37.0440 ug/L #	27
51)	Bromodichloromethane	12.78	83	18663	2.0152 ug/L	95
52)	Dibromomethane	12.87	93	6174	2.0254 ug/L	89
53)	2-Chloroethyl Vinyl Ether	13.13	63	4420	1.6849 ug/L	100
54)	4-Methyl-2-Pentanone	13.19	58	2482	1.8399 ug/L #	49
55)	cis-1,3-Dichloropropene	13.52	75	17610	1.9335 ug/L	95
56)	Dimethyl Disulfide	13.83	79	6879	1.5167 ug/L	89
59)	Toluene	14.02	91	55047	2.1975 ug/L	97
60)	Ethyl Methacrylate	14.15	69	6822	1.8309 ug/L	75
62)	trans-1,3-Dichloropropene	14.24	75	14055	1.7580 ug/L	94
63)	1,1,2-Trichloroethane	14.49	97	7488	1.9424 ug/L	97
64)	2-Hexanone	14.42	43	4029	1.6444 ug/L	93
65)	1,3-Dichloropropane	14.85	76	15098	2.1062 ug/L	87
66)	Tetrachloroethene	14.98	166	14643	2.0329 ug/L	89
67)	Dibromochloromethane	15.30	129	9808	1.8810 ug/L	95
68)	1,2-Dibromoethane	15.61	107	7354	1.9711 ug/L	91
69)	1-Chlorohexane	15.72	91	16774	1.9716 ug/L #	58
70)	Chlorobenzene	16.20	112	37023	2.1384 ug/L #	53
71)	1,1,1,2-Tetrachloroethane	16.24	131	11736	1.8691 ug/L	89
72)	Ethylbenzene	16.24	106	20583	2.1596 ug/L	99
73)	m-,p-Xylene	16.34	106	48453	4.2497 ug/L	81
74)	o-Xylene	17.01	106	23789	2.0697 ug/L	86
75)	Styrene	17.07	104	36496	1.9845 ug/L	73
76)	Bromoform	17.63	173	5382	2.0403 ug/L	98
77)	Isopropylbenzene	17.53	105	62693	2.0718 ug/L	96
79)	1,1,2,2-Tetrachloroethane	17.79	83	8062	1.9891 ug/L	100
81)	1,2,3-Trichloropropane	18.01	110	2484	1.8315 ug/L	77
82)	trans-1,4-Dichloro-2-Buten	18.08	53	2580	1.8462 ug/L #	41
83)	n-Propylbenzene	18.14	91	75258	2.1389 ug/L	96
84)	Bromobenzene	18.27	156	14818	2.0565 ug/L	82
85)	1,3,5-Trimethylbenzene	18.36	105	54800	2.1973 ug/L	91
86)	2-Chlorotoluene	18.44	91	49230	2.1383 ug/L	99
87)	4-Chlorotoluene	18.51	91	50073	2.1820 ug/L	91
88)	a-Methylstyrene	18.84	118	27212	2.0082 ug/L	95
89)	tert-Butylbenzene	18.91	134	11239	2.0214 ug/L	87
90)	1,2,4-Trimethylbenzene	18.98	105	55961	2.1848 ug/L	81
91)	sec-Butylbenzene	19.24	105	64312	2.1254 ug/L	97
92)	p-Isopropyltoluene	19.43	119	54008	2.1753 ug/L	98
93)	1,3-Dichlorobenzene	19.65	146	32840	2.2150 ug/L	97
94)	1,4-Dichlorobenzene	19.80	146	31321	2.0773 ug/L #	69
95)	n-Butylbenzene	20.06	91	50009	2.2023 ug/L	99
96)	1,2-Dichlorobenzene	20.39	146	26626	2.0247 ug/L	93
97)	1,2-Dibromo-3-Chloropropan	21.59	75	1269	2.3058 ug/L	98
98)	1,2,4-Trichlorobenzene	22.96	180	17480	2.0598 ug/L	97
99)	Hexachlorobutadiene	23.16	225	7678	2.0730 ug/L	99
100)	Naphthalene	23.43	128	24176	1.9587 ug/L	96
101)	1,2,3-Trichlorobenzene	23.85	180	14420	2.0112 ug/L	94

(#) = qualifier out of range (m) = manual integration
6M130914.D 8260WT.M Fri Feb 06 08:53:33 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130914.D Vial: 6
Acq On : 5 Feb 2015 12:36 Operator: TMB
Sample : WG511026-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 6 8:53 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration

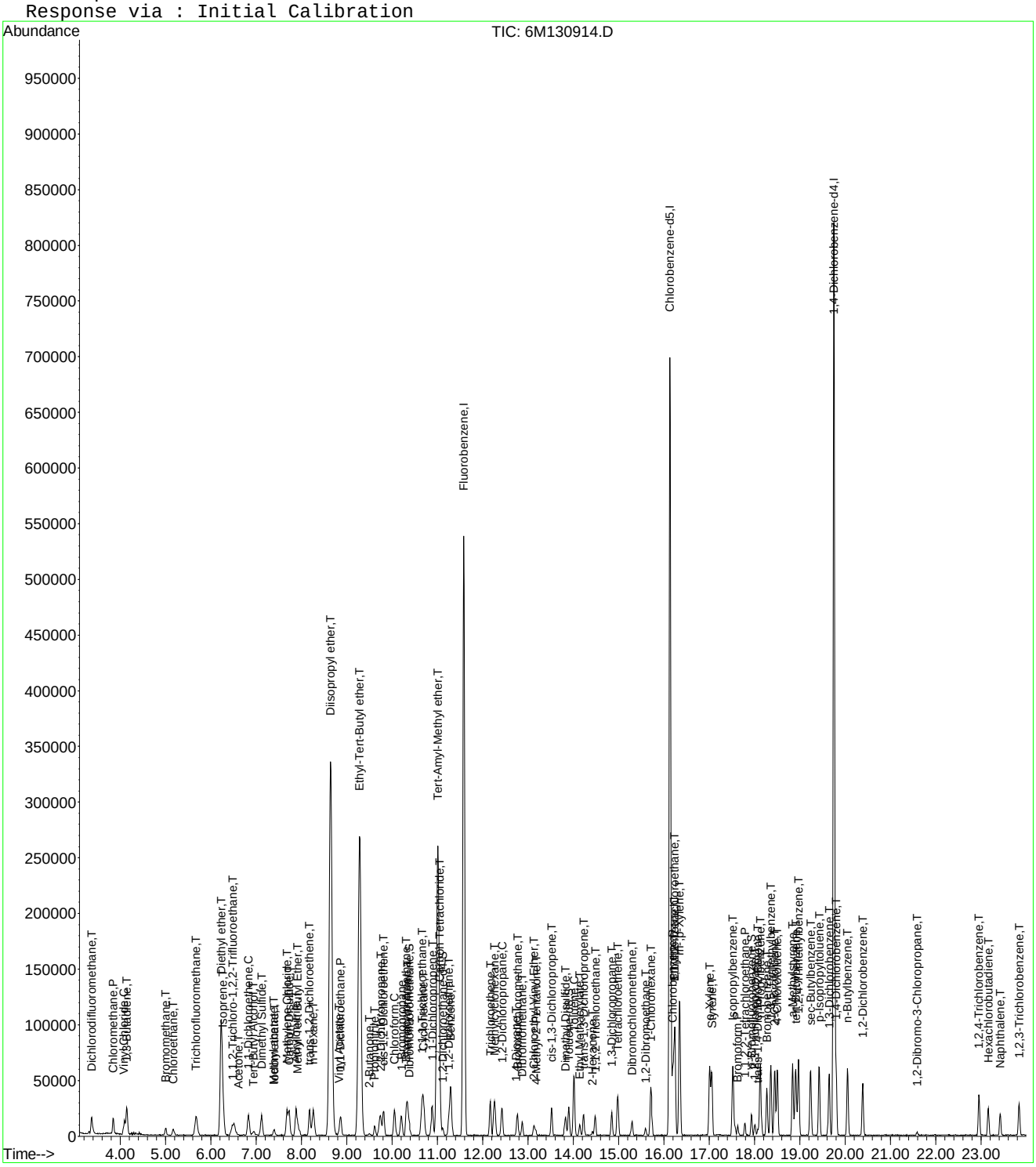

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\020515\6M130914.D Vial: 6
Acq On : 5 Feb 2015 12:36 Operator: TMB
Sample : WG511026-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.9141	4.3	100	0.00
3	P	Chloromethane	2.0000	2.0397	-2.0	100	0.00
4	C	Vinyl Chloride	2.0000	1.9354	3.2	100	0.00
5	T	1,3-Butadiene	2.0000	1.7821	10.9	100	0.01
6	T	Bromomethane	2.0000	2.2275	-11.4	100	0.00
7	T	Chloroethane	2.0000	1.8191	9.0	100	0.00
8	T	Trichlorofluoromethane	2.0000	2.1778	-8.9	100	0.00
9	T	Diethyl ether	25.0000	25.6991	-2.8	100	0.00
10	T	Isoprene	2.0000	1.9788	1.1	100	0.00
11	T	Acrolein	12.5000	0.0000	100.0#	0	-6.48#
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.9652	1.7	100	0.00
13	T	Acetone	-1.0000	2.1708	0.0	100	0.02
14	C	1,1-Dichloroethene	2.0000	1.9924	0.4	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	42.1611	15.7	100	0.00
16	T	Dimethyl Sulfide	2.0000	1.8398	8.0	100	0.00
17	T	Iodomethane	2.0000	2.4206	-21.0#	100	0.01
18	T	Methyl acetate	-1.0000	1.9616	0.0	100	0.00
19	T	Methylene Chloride	2.0000	2.1217	-6.1	100	0.00
20	T	Carbon Disulfide	2.0000	2.2081	-10.4	100	0.00
21	T	Acrylonitrile	12.5000	11.9254	4.6	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.9602	2.0	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.9998	0.0	100	0.00
24	T	n-Hexane	2.0000	1.9677	1.6	100	0.00
25	T	Diisopropyl ether	25.0000	27.4521	-9.8	100	0.00
26	T	Vinyl Acetate	-1.0000	1.8168	0.0	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.0647	-3.2	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	25.9254	-3.7	100	0.00
29	T	2-Butanone	-1.0000	1.8966	0.0	100	0.01
30	T	Propionitrile	25.0000	23.6872	5.3	100	0.00
31	T	2,2-Dichloropropane	2.0000	1.8154	9.2	100	0.01
32	T	cis-1,2-Dichloroethene	2.0000	2.0366	-1.8	100	0.00
33	C	Chloroform	2.0000	2.0356	-1.8	100	0.00
34		1-Bromopropane	2.0000	2.1001	-5.0	100	0.00
35	T	Bromochloromethane	2.0000	2.0006	-0.0	100	0.00
36	T	Tetrahydrofuran	25.0000	26.0282	-4.1	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9358	6.4	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.9272	3.6	100	0.00
39	T	Cyclohexane	2.0000	1.9419	2.9	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0092	-0.5	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	25.5769	-2.3	100	0.00
42	T	Carbon Tetrachloride	2.0000	1.8645	6.8	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0410	-4.1	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.01
45	T	1,2-Dichloroethane	2.0000	2.1082	-5.4	100	0.00
46	T	Benzene	2.0000	2.0541	-2.7	100	0.00
47	T	Trichloroethene	2.0000	1.9958	0.2	100	0.00
48	T	Methylcyclohexane	2.0000	2.0061	-0.3	100	0.00
49	C	1,2-Dichloropropane	2.0000	1.8974	5.1	100	0.00
50	T	1,4-Dioxane	-1.0000	37.0440	0.0	100	-0.03
51	T	Bromodichloromethane	2.0000	2.0152	-0.8	100	0.00
52	T	Dibromomethane	2.0000	2.0254	-1.3	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	1.6849	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.8399	0.0	100	0.02

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\020515\6M130914.D Vial: 6
Acq On : 5 Feb 2015 12:36 Operator: TMB
Sample : WG511026-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.9335	3.3	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.5167	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	1.0939	-9.4	100	0.00
59	C	Toluene	2.0000	2.1975	-9.9	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.8309	8.5	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	2.0000	1.7580	12.1	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.9424	2.9	100	0.00
64	T	2-Hexanone	-1.0000	1.6444	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.1063	-5.3	100	0.00
66	T	Tetrachloroethene	2.0000	2.0330	-1.6	100	0.00
67	T	Dibromochloromethane	2.0000	1.8810	5.9	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.9711	1.4	100	0.00
69	T	1-Chlorohexane	2.0000	1.9716	1.4	100	0.00
70	P	Chlorobenzene	2.0000	2.1384	-6.9	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.8691	6.5	100	0.00
72	C	Ethylbenzene	2.0000	2.1596	-8.0	100	0.00
73	T	m-,p-Xylene	4.0000	4.2497	-6.2	100	0.00
74	T	o-Xylene	2.0000	2.0697	-3.5	100	0.00
75	T	Styrene	2.0000	1.9845	0.8	100	0.00
76	P	Bromoform	2.0000	2.0403	-2.0	100	0.00
77	T	Isopropylbenzene	2.0000	2.0718	-3.6	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	1.9891	0.5	100	0.00
80	S	p-Bromofluorobenzene	1.0000	1.0864	-8.6	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	1.8316	8.4	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	1.8462	7.7	100	0.00
83	T	n-Propylbenzene	2.0000	2.1389	-6.9	100	0.00
84	T	Bromobenzene	2.0000	2.0565	-2.8	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.1973	-9.9	100	0.00
86	T	2-Chlorotoluene	2.0000	2.1383	-6.9	100	0.00
87	T	4-Chlorotoluene	2.0000	2.1820	-9.1	100	0.00
88	T	a-Methylstyrene	2.0000	2.0082	-0.4	100	0.00
89	T	tert-Butylbenzene	2.0000	2.0214	-1.1	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.1848	-9.2	100	0.00
91	T	sec-Butylbenzene	2.0000	2.1254	-6.3	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.1753	-8.8	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.2150	-10.7	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.0773	-3.9	100	0.00
95	T	n-Butylbenzene	2.0000	2.2023	-10.1	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0247	-1.2	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	2.3058	-15.3	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	2.0598	-3.0	100	0.00
99	T	Hexachlorobutadiene	2.0000	2.0730	-3.7	100	0.00
100	T	Naphthalene	2.0000	1.9587	2.1	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	2.0112	-0.6	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M130914.D 8260WT.M Fri Feb 06 08:55:10 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130915.D Vial: 7
Acq On : 5 Feb 2015 13:07 Operator: TMB
Sample : WG511026-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 06 08:53:33 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	657983	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.14	117	496922	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.75	152	282946	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	10.37	111	18307	2.7547 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 11.00%#		
43) 1,2-Dichloroethane-d4	11.12	65	20549	2.5947 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 10.36%#		
58) Toluene-d8	13.90	98	61180	2.6980 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 10.80%#		
80) p-Bromofluorobenzene	17.93	95	24330	2.5573 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 10.24%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.37	85	58330	4.9877 ug/L	95
3) Chloromethane	3.85	50	47475	5.1429 ug/L	98
4) Vinyl Chloride	4.08	62	40706	5.1484 ug/L	97
5) 1,3-Butadiene	4.14	54	36199	4.3634 ug/L	85
6) Bromomethane	5.00	94	14552	4.1102 ug/L	89
7) Chloroethane	5.17	64	22979	5.0121 ug/L	82
8) Trichlorofluoromethane	5.68	101	78146	5.3006 ug/L	99
9) Diethyl ether	6.23	59	208061	49.0581 ug/L	91
10) Isoprene	6.27	67	36995	4.7126 ug/L #	61
11) Acrolein	6.48	56	1158	14.0268 ug/L	82
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	35577	5.0768 ug/L	95
13) Acetone	6.59	43	4795	4.7230 ug/L	81
14) 1,1-Dichloroethene	6.83	61	61009	5.1435 ug/L	85
15) Tert-Butyl Alcohol	6.94	59	19418	92.2126 ug/L	96
16) Dimethyl Sulfide	7.12	62	32892	5.0853 ug/L	82
17) Iodomethane	7.39	142	13359	4.1625 ug/L	80
18) Methyl acetate	7.39	43	19717	4.9909 ug/L	93
19) Methylene Chloride	7.68	84	30637	5.2169 ug/L	73
20) Carbon Disulfide	7.73	76	104620	5.1847 ug/L	99
21) Acrylonitrile	7.87	53	33053	23.3553 ug/L	94
22) Methyl Tert Butyl Ether	7.90	73	63175	5.0702 ug/L	95
23) trans-1,2-Dichloroethene	8.18	96	30605	5.0032 ug/L	77
24) n-Hexane	8.26	57	50447	5.0242 ug/L	97
25) Diisopropyl ether	8.64	45	1307878	53.2637 ug/L	96
26) Vinyl Acetate	8.83	43	20270	4.7343 ug/L	92
27) 1,1-Dichloroethane	8.86	63	68717	5.2357 ug/L	97
28) Ethyl-Tert-Butyl ether	9.28	59	1002786	51.4701 ug/L	98
29) 2-Butanone	9.49	43	7513	4.7714 ug/L	87
30) Propionitrile	9.62	54	23723	49.4756 ug/L	95
31) 2,2-Dichloropropane	9.73	77	55407	4.9402 ug/L	80
32) cis-1,2-Dichloroethene	9.81	96	33463	5.1232 ug/L	91
33) Chloroform	10.06	83	66014	5.1976 ug/L	96
34) 1-Bromopropane	10.21	122	6583	4.9530 ug/L	96
35) Bromochloromethane	10.31	130	18102	5.3095 ug/L	96
36) Tetrahydrofuran	10.34	42	48920	49.2299 ug/L	90
38) 1,1,1-Trichloroethane	10.66	97	63805	5.0437 ug/L	94
39) Cyclohexane	10.70	56	64812	5.1416 ug/L	91
40) 1,1-Dichloropropene	10.89	75	48791	5.0081 ug/L	82
41) Tert-Amyl-Methyl ether	11.01	73	679010	50.4738 ug/L #	85
42) Carbon Tetrachloride	11.05	117	52952	4.9323 ug/L	97

(#) = qualifier out of range (m) = manual integration

Data File : C:\MSDCHEM\1\DATA\020515\6M130915.D Vial: 7
Acq On : 5 Feb 2015 13:07 Operator: TMB
Sample : WG511026-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 06 08:53:33 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	11.25	62	52218	5.1962 ug/L		94
46)	Benzene	11.29	78	125154	5.1853 ug/L		88
47)	Trichloroethene	12.17	130	32275	5.1249 ug/L	#	66
48)	Methylcyclohexane	12.26	83	50591	5.1190 ug/L		84
49)	1,2-Dichloropropane	12.42	63	32102	4.9404 ug/L		76
50)	1,4-Dioxane	12.76	88	2313	96.5531 ug/L		89
51)	Bromodichloromethane	12.77	83	46267	4.9483 ug/L		98
52)	Dibromomethane	12.87	93	16180	5.2576 ug/L		100
53)	2-Chloroethyl Vinyl Ether	13.13	63	12068	4.5566 ug/L		99
54)	4-Methyl-2-Pentanone	13.16	58	5804	4.2616 ug/L		96
55)	cis-1,3-Dichloropropene	13.52	75	46355	5.0413 ug/L		94
56)	Dimethyl Disulfide	13.83	79	17657	3.8561 ug/L		93
59)	Toluene	14.02	91	139268	5.5577 ug/L		99
60)	Ethyl Methacrylate	14.14	69	21358	4.7399 ug/L		83
62)	trans-1,3-Dichloropropene	14.23	75	37829	4.7300 ug/L		95
63)	1,1,2-Trichloroethane	14.48	97	20145	5.2239 ug/L		94
64)	2-Hexanone	14.42	43	11249	4.5895 ug/L		93
65)	1,3-Dichloropropane	14.85	76	35659	4.9729 ug/L		78
66)	Tetrachloroethene	14.98	166	37692	5.2311 ug/L		88
67)	Dibromochloromethane	15.30	129	24956	4.7845 ug/L		95
68)	1,2-Dibromoethane	15.60	107	17837	4.7792 ug/L		92
69)	1-Chlorohexane	15.72	91	44341	5.2100 ug/L		68
70)	Chlorobenzene	16.20	112	93339	5.3892 ug/L	#	60
71)	1,1,1,2-Tetrachloroethane	16.24	131	30712	4.8897 ug/L		92
72)	Ethylbenzene	16.24	106	53576	5.6194 ug/L		98
73)	m-,p-Xylene	16.35	106	125641	11.0159 ug/L		85
74)	o-Xylene	17.01	106	60996	5.3049 ug/L		86
75)	Styrene	17.06	104	102114	5.5506 ug/L		82
76)	Bromoform	17.63	173	13589	4.5168 ug/L		93
77)	Isopropylbenzene	17.52	105	163227	5.3922 ug/L		97
79)	1,1,2,2-Tetrachloroethane	17.79	83	21056	5.1154 ug/L		99
81)	1,2,3-Trichloropropane	18.01	110	7110	5.1622 ug/L		98
82)	trans-1,4-Dichloro-2-Buten	18.07	53	8452	4.8232 ug/L		65
83)	n-Propylbenzene	18.14	91	199473	5.5823 ug/L		96
84)	Bromobenzene	18.27	156	40764	5.5707 ug/L		91
85)	1,3,5-Trimethylbenzene	18.36	105	147891	5.8391 ug/L		90
86)	2-Chlorotoluene	18.45	91	137618	5.8859 ug/L		98
87)	4-Chlorotoluene	18.50	91	120937	5.1892 ug/L		93
88)	a-Methylstyrene	18.84	118	72674	5.2812 ug/L		100
89)	tert-Butylbenzene	18.91	134	30099	5.3307 ug/L		95
90)	1,2,4-Trimethylbenzene	18.97	105	147717	5.6788 ug/L		83
91)	sec-Butylbenzene	19.24	105	166245	5.4099 ug/L		99
92)	p-Isopropyltoluene	19.43	119	143127	5.6766 ug/L		99
93)	1,3-Dichlorobenzene	19.65	146	82464	5.4769 ug/L		98
94)	1,4-Dichlorobenzene	19.80	146	81461	5.3200 ug/L		88
95)	n-Butylbenzene	20.05	91	128988	5.5933 ug/L		97
96)	1,2-Dichlorobenzene	20.39	146	71037	5.3191 ug/L		97
97)	1,2-Dibromo-3-Chloropropan	21.59	75	3162	4.4455 ug/L		93
98)	1,2,4-Trichlorobenzene	22.97	180	43443	5.0408 ug/L		97
99)	Hexachlorobutadiene	23.17	225	20011	5.3201 ug/L		97
100)	Naphthalene	23.42	128	63676	5.0800 ug/L		99
101)	1,2,3-Trichlorobenzene	23.84	180	37791	5.1901 ug/L		97

(#) = qualifier out of range (m) = manual integration
6M130915.D 8260WT.M Fri Feb 06 08:53:33 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130915.D Vial: 7
Acq On : 5 Feb 2015 13:07 Operator: TMB
Sample : WG511026-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 6 8:53 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration

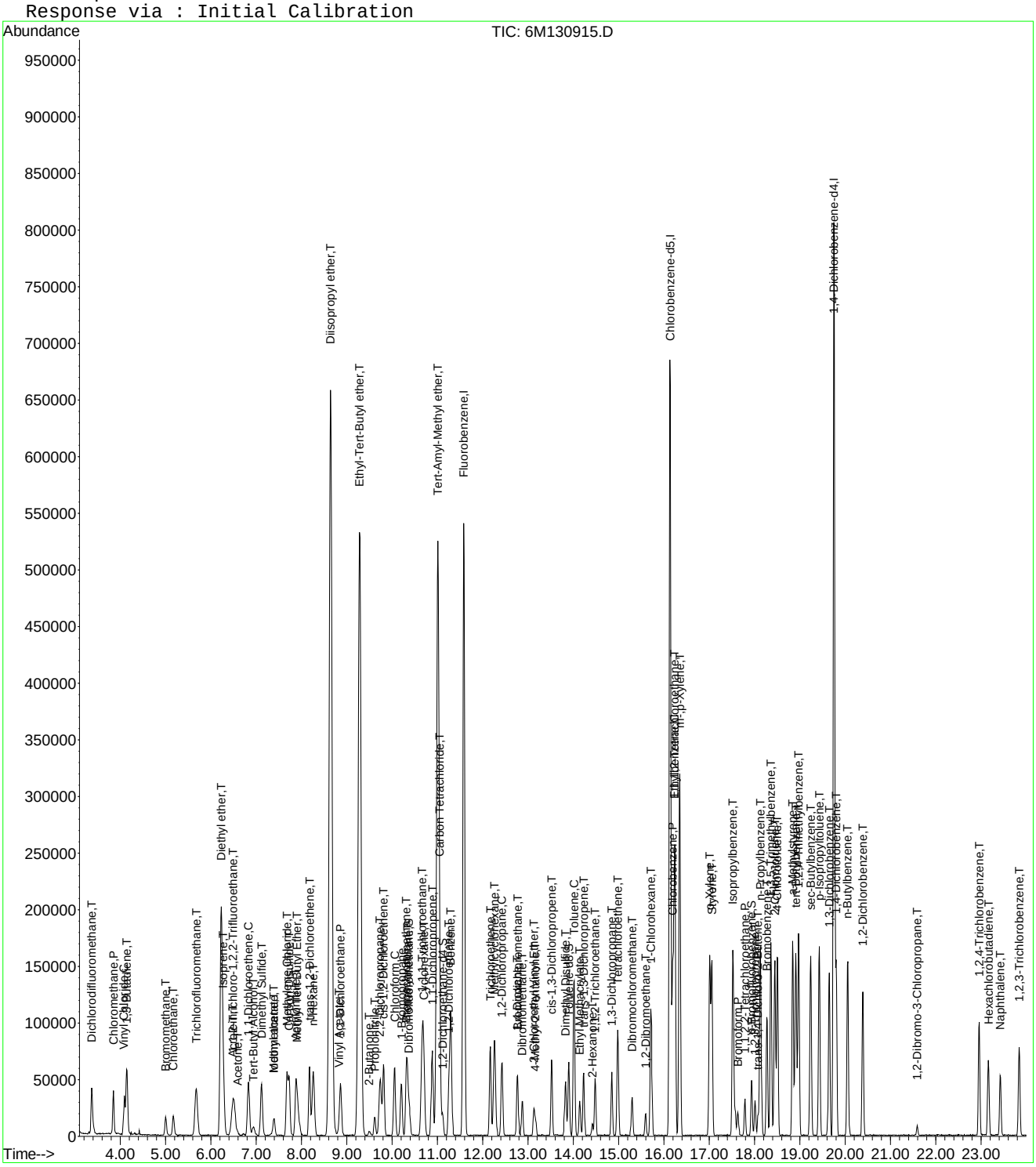

6M130915.D 8260WT.M Fri Feb 06 08:53:33 2015 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\020515\6M130915.D Vial: 7
Acq On : 5 Feb 2015 13:07 Operator: TMB
Sample : WG511026-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.9877	0.2	100	0.00
3	P	Chloromethane	5.0000	5.1429	-2.9	100	0.00
4	C	Vinyl Chloride	5.0000	5.1483	-3.0	100	0.00
5	T	1,3-Butadiene	5.0000	4.3634	12.7	100	0.01
6	T	Bromomethane	5.0000	4.1102	17.8	100	0.00
7	T	Chloroethane	5.0000	5.0121	-0.2	100	0.00
8	T	Trichlorofluoromethane	5.0000	5.3006	-6.0	100	0.00
9	T	Diethyl ether	50.0000	49.0581	1.9	100	0.00
10	T	Isoprene	5.0000	4.7126	5.7	100	0.00
11	T	Acrolein	25.0000	14.0268	43.9#	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	5.0768	-1.5	100	0.00
13	T	Acetone	5.0000	4.7230	5.5	100	0.00
14	C	1,1-Dichloroethene	5.0000	5.1435	-2.9	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	92.2126	7.8	100	0.00
16	T	Dimethyl Sulfide	5.0000	5.0853	-1.7	100	0.00
17	T	Iodomethane	5.0000	4.1625	16.8	100	0.00
18	T	Methyl acetate	5.0000	4.9909	0.2	100	-0.01
19	T	Methylene Chloride	5.0000	5.2169	-4.3	100	0.00
20	T	Carbon Disulfide	5.0000	5.1847	-3.7	100	0.00
21	T	Acrylonitrile	25.0000	23.3553	6.6	100	-0.01
22	T	Methyl Tert Butyl Ether	5.0000	5.0702	-1.4	100	-0.01
23	T	trans-1,2-Dichloroethene	5.0000	5.0032	-0.1	100	0.00
24	T	n-Hexane	5.0000	5.0242	-0.5	100	0.00
25	T	Diisopropyl ether	50.0000	53.2637	-6.5	100	0.00
26	T	Vinyl Acetate	5.0000	4.7343	5.3	100	0.00
27	P	1,1-Dichloroethane	5.0000	5.2357	-4.7	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	51.4701	-2.9	100	0.00
29	T	2-Butanone	5.0000	4.7714	4.6	100	0.00
30	T	Propionitrile	50.0000	49.4757	1.0	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.9402	1.2	100	-0.01
32	T	cis-1,2-Dichloroethene	5.0000	5.1232	-2.5	100	0.00
33	C	Chloroform	5.0000	5.1976	-4.0	100	0.01
34		1-Bromopropane	5.0000	4.9530	0.9	100	0.00
35	T	Bromochloromethane	5.0000	5.3095	-6.2	100	-0.01
36	T	Tetrahydrofuran	50.0000	49.2299	1.5	100	0.00
37	S	Dibromofluoromethane	2.5000	2.7547	-10.2	100	-0.01
38	T	1,1,1-Trichloroethane	5.0000	5.0437	-0.9	100	0.00
39	T	Cyclohexane	5.0000	5.1415	-2.8	100	0.01
40	T	1,1-Dichloropropene	5.0000	5.0081	-0.2	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	50.4738	-0.9	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.9323	1.4	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.5947	-3.8	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.01
45	T	1,2-Dichloroethane	5.0000	5.1962	-3.9	100	0.00
46	T	Benzene	5.0000	5.1852	-3.7	100	-0.01
47	T	Trichloroethene	5.0000	5.1249	-2.5	100	0.00
48	T	Methylcyclohexane	5.0000	5.1190	-2.4	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.9404	1.2	100	-0.01
50	T	1,4-Dioxane	100.0000	96.5531	3.4	100	-0.01
51	T	Bromodichloromethane	5.0000	4.9483	1.0	100	0.00
52	T	Dibromomethane	5.0000	5.2576	-5.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.5566	8.9	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.2616	14.8	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\020515\6M130915.D Vial: 7
Acq On : 5 Feb 2015 13:07 Operator: TMB
Sample : WG511026-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	5.0413	-0.8	100	0.00
56	T	Dimethyl Disulfide	5.0000	3.8561	22.9#	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.6980	-7.9	100	0.00
59	C	Toluene	5.0000	5.5577	-11.2	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.7399	5.2	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	5.0000	4.7300	5.4	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	5.2239	-4.5	100	-0.01
64	T	2-Hexanone	5.0000	4.5895	8.2	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.9729	0.5	100	0.00
66	T	Tetrachloroethene	5.0000	5.2311	-4.6	100	-0.01
67	T	Dibromochloromethane	5.0000	4.7845	4.3	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.7792	4.4	100	0.00
69	T	1-Chlorohexane	5.0000	5.2100	-4.2	100	-0.01
70	P	Chlorobenzene	5.0000	5.3892	-7.8	100	-0.01
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.8897	2.2	100	-0.01
72	C	Ethylbenzene	5.0000	5.6194	-12.4	100	-0.01
73	T	m-,p-Xylene	10.0000	11.0159	-10.2	100	0.00
74	T	o-Xylene	5.0000	5.3049	-6.1	100	0.00
75	T	Styrene	5.0000	5.5506	-11.0	100	0.00
76	P	Bromoform	5.0000	4.5168	9.7	100	0.00
77	T	Isopropylbenzene	5.0000	5.3922	-7.8	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	-0.01
79	P	1,1,2,2-Tetrachloroethane	5.0000	5.1154	-2.3	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.5573	-2.3	100	-0.01
81	T	1,2,3-Trichloropropane	5.0000	5.1622	-3.2	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.8232	3.5	100	-0.01
83	T	n-Propylbenzene	5.0000	5.5823	-11.6	100	0.00
84	T	Bromobenzene	5.0000	5.5707	-11.4	100	-0.01
85	T	1,3,5-Trimethylbenzene	5.0000	5.8391	-16.8	100	0.00
86	T	2-Chlorotoluene	5.0000	5.8859	-17.7	100	0.00
87	T	4-Chlorotoluene	5.0000	5.1892	-3.8	100	0.00
88	T	a-Methylstyrene	5.0000	5.2812	-5.6	100	-0.01
89	T	tert-Butylbenzene	5.0000	5.3307	-6.6	100	-0.01
90	T	1,2,4-Trimethylbenzene	5.0000	5.6788	-13.6	100	-0.01
91	T	sec-Butylbenzene	5.0000	5.4099	-8.2	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.6766	-13.5	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	5.4768	-9.5	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	5.3200	-6.4	100	-0.01
95	T	n-Butylbenzene	5.0000	5.5933	-11.9	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	5.3191	-6.4	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	4.4455	11.1	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	5.0408	-0.8	100	0.00
99	T	Hexachlorobutadiene	5.0000	5.3201	-6.4	100	0.01
100	T	Naphthalene	5.0000	5.0800	-1.6	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	5.1901	-3.8	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M130915.D 8260WT.M Fri Feb 06 08:55:25 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130916.D Vial: 8
Acq On : 5 Feb 2015 13:38 Operator: TMB
Sample : WG511026-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 06 08:53:34 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	668530	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.14	117	515077	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.75	152	305481	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.38	111	69499	10.2928 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 41.16%#		
43) 1,2-Dichloroethane-d4	11.11	65	83739	10.4070 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 41.64%#		
58) Toluene-d8	13.90	98	235276	10.0097 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 40.04%#		
80) p-Bromofluorobenzene	17.93	95	104391	10.1631 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 40.64%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.37	85	263893	22.2091 ug/L	93
3) Chloromethane	3.84	50	188383	20.0853 ug/L	98
4) Vinyl Chloride	4.09	62	168057	20.9199 ug/L	96
5) 1,3-Butadiene	4.14	54	165794	20.0357 ug/L	93
6) Bromomethane	5.01	94	65901	15.4826 ug/L	99
7) Chloroethane	5.17	64	91186	19.5754 ug/L	84
8) Trichlorofluoromethane	5.68	101	311931	20.8243 ug/L	99
9) Diethyl ether	6.22	59	354421	82.2495 ug/L	92
10) Isoprene	6.27	67	164893	20.6735 ug/L #	63
11) Acrolein	6.48	56	1896	22.6039 ug/L	67
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	144847	20.3436 ug/L	94
13) Acetone	6.59	43	20744	20.1102 ug/L	98
14) 1,1-Dichloroethene	6.83	61	244553	20.2923 ug/L	86
15) Tert-Butyl Alcohol	6.96	59	33886	158.3799 ug/L	93
16) Dimethyl Sulfide	7.11	62	135385	20.6010 ug/L	74
17) Iodomethane	7.40	142	101280	18.3118 ug/L	85
18) Methyl acetate	7.40	43	79457	19.7953 ug/L	94
19) Methylene Chloride	7.68	84	115567	19.3683 ug/L	69
20) Carbon Disulfide	7.73	76	425620	20.7599 ug/L	100
21) Acrylonitrile	7.88	53	55391	38.5218 ug/L	91
22) Methyl Tert Butyl Ether	7.92	73	250960	19.8235 ug/L	94
23) trans-1,2-Dichloroethene	8.17	96	126217	20.3079 ug/L	81
24) n-Hexane	8.25	57	214651	21.0406 ug/L	98
25) Diisopropyl ether	8.64	45	2103880	84.3294 ug/L	96
26) Vinyl Acetate	8.84	43	80694	18.5496 ug/L	96
27) 1,1-Dichloroethane	8.87	63	270658	20.2966 ug/L	98
28) Ethyl-Tert-Butyl ether	9.29	59	1645555	83.1291 ug/L	98
29) 2-Butanone	9.49	43	30628	19.1446 ug/L	93
30) Propionitrile	9.61	54	39355	80.7822 ug/L	95
31) 2,2-Dichloropropane	9.74	77	233079	20.4539 ug/L	80
32) cis-1,2-Dichloroethene	9.82	96	135903	20.4784 ug/L	73
33) Chloroform	10.05	83	270317	20.9477 ug/L	96
34) 1-Bromopropane	10.20	122	29808	20.8707 ug/L	98
35) Bromochloromethane	10.32	130	69930	20.1877 ug/L	98
36) Tetrahydrofuran	10.34	42	81579	80.8006 ug/L	90
38) 1,1,1-Trichloroethane	10.66	97	263288	20.4840 ug/L	95
39) Cyclohexane	10.69	56	271077	21.1653 ug/L	93
40) 1,1-Dichloropropene	10.89	75	203429	20.5515 ug/L	86
41) Tert-Amyl-Methyl ether	11.01	73	1122148	82.0982 ug/L #	86
42) Carbon Tetrachloride	11.05	117	224148	20.5491 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M130916.D 8260WT.M Fri Feb 06 08:53:34 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130916.D Vial: 8
Acq On : 5 Feb 2015 13:38 Operator: TMB
Sample : WG511026-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 06 08:53:34 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	11.26	62	205269	20.1040 ug/L		94
46)	Benzene	11.30	78	489311	19.9528 ug/L		85
47)	Trichloroethene	12.18	130	130350	20.3715 ug/L	#	71
48)	Methylcyclohexane	12.27	83	208498	20.7637 ug/L		84
49)	1,2-Dichloropropane	12.42	63	132361	20.0487 ug/L		80
50)	1,4-Dioxane	12.76	88	3769	154.8497 ug/L	#	67
51)	Bromodichloromethane	12.77	83	190546	20.0577 ug/L		99
52)	Dibromomethane	12.87	93	64991	20.7851 ug/L		98
53)	2-Chloroethyl Vinyl Ether	13.14	63	51575	19.1664 ug/L		97
54)	4-Methyl-2-Pentanone	13.17	58	27320	19.7432 ug/L		88
55)	cis-1,3-Dichloropropene	13.52	75	190921	20.4357 ug/L		94
56)	Dimethyl Disulfide	13.83	79	86508	18.5943 ug/L		92
59)	Toluene	14.01	91	540503	20.8093 ug/L		99
60)	Ethyl Methacrylate	14.15	69	99143	19.6095 ug/L		83
62)	trans-1,3-Dichloropropene	14.23	75	169540	20.4513 ug/L		94
63)	1,1,2-Trichloroethane	14.48	97	78437	19.6228 ug/L		98
64)	2-Hexanone	14.42	43	49943	19.6582 ug/L		96
65)	1,3-Dichloropropane	14.85	76	144462	19.4362 ug/L		79
66)	Tetrachloroethene	14.98	166	148391	19.8687 ug/L		88
67)	Dibromochloromethane	15.29	129	107689	19.9181 ug/L		99
68)	1,2-Dibromoethane	15.60	107	79434	20.5333 ug/L		98
69)	1-Chlorohexane	15.72	91	193658	21.9524 ug/L		71
70)	Chlorobenzene	16.20	112	356089	19.8353 ug/L	#	68
71)	1,1,1,2-Tetrachloroethane	16.24	131	130353	20.0221 ug/L		89
72)	Ethylbenzene	16.24	106	199551	20.1926 ug/L		90
73)	m-,p-Xylene	16.34	106	485827	41.0949 ug/L		86
74)	o-Xylene	17.02	106	247114	20.7343 ug/L		91
75)	Styrene	17.06	104	407650	21.3774 ug/L		83
76)	Bromoform	17.64	173	62600	18.6436 ug/L		98
77)	Isopropylbenzene	17.53	105	658908	20.9999 ug/L		97
79)	1,1,2,2-Tetrachloroethane	17.78	83	87588	19.7093 ug/L		99
81)	1,2,3-Trichloropropane	18.02	110	29460	19.8114 ug/L		93
82)	trans-1,4-Dichloro-2-Buten	18.08	53	40091	19.4641 ug/L		60
83)	n-Propylbenzene	18.13	91	795577	20.6220 ug/L		97
84)	Bromobenzene	18.27	156	159096	20.1377 ug/L		92
85)	1,3,5-Trimethylbenzene	18.36	105	576456	21.0809 ug/L		93
86)	2-Chlorotoluene	18.45	91	496348	19.6627 ug/L		98
87)	4-Chlorotoluene	18.51	91	515568	20.4903 ug/L		94
88)	a-Methylstyrene	18.84	118	325060	21.8793 ug/L		95
89)	tert-Butylbenzene	18.91	134	123370	20.2376 ug/L		91
90)	1,2,4-Trimethylbenzene	18.98	105	588271	20.9470 ug/L		84
91)	sec-Butylbenzene	19.24	105	677535	20.4217 ug/L		98
92)	p-Isopropyltoluene	19.44	119	581905	21.3764 ug/L		97
93)	1,3-Dichlorobenzene	19.65	146	330766	20.3473 ug/L		94
94)	1,4-Dichlorobenzene	19.80	146	326899	19.7741 ug/L		93
95)	n-Butylbenzene	20.06	91	529806	21.2792 ug/L		99
96)	1,2-Dichlorobenzene	20.40	146	287089	19.9108 ug/L		96
97)	1,2-Dibromo-3-Chloropropan	21.59	75	15775	17.5235 ug/L		81
98)	1,2,4-Trichlorobenzene	22.96	180	182851	19.6516 ug/L		97
99)	Hexachlorobutadiene	23.16	225	85012	20.9341 ug/L		98
100)	Naphthalene	23.43	128	272266	20.1187 ug/L		100
101)	1,2,3-Trichlorobenzene	23.85	180	154147	19.6085 ug/L		97

(#) = qualifier out of range (m) = manual integration
6M130916.D 8260WT.M Fri Feb 06 08:53:34 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130916.D Vial: 8
Acq On : 5 Feb 2015 13:38 Operator: TMB
Sample : WG511026-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 6 8:53 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration

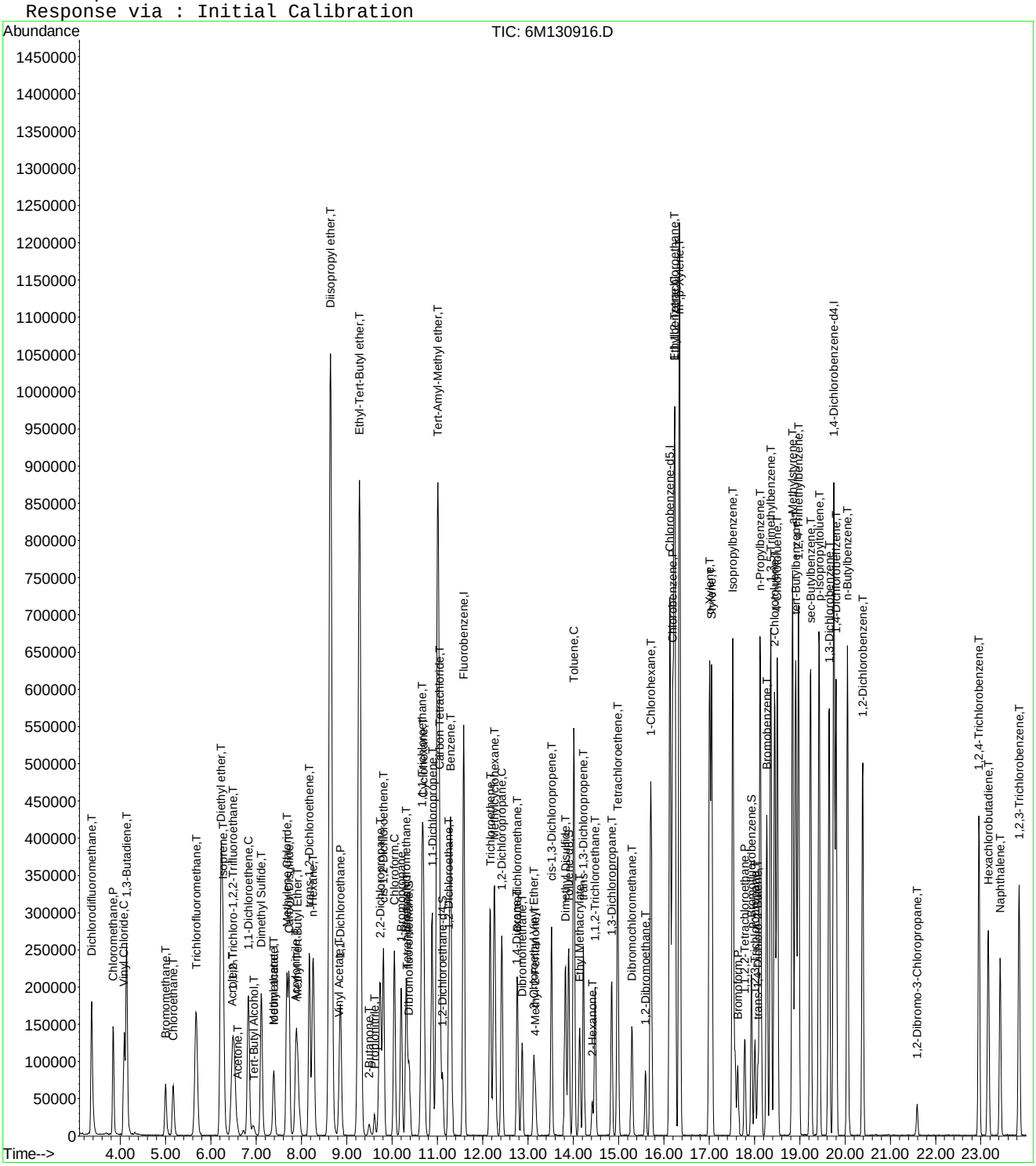

6M130916.D 8260WT.M Fri Feb 06 08:53:34 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130917.D Vial: 9
Acq On : 5 Feb 2015 14:09 Operator: TMB
Sample : WG511026-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 06 08:53:34 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	715746	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.14	117	554647	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.75	152	327681	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.38	111	187784	25.9762 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.92%		
43) 1,2-Dichloroethane-d4	11.11	65	219180	25.4425 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.76%		
58) Toluene-d8	13.90	98	619741	24.4855 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.96%		
80) p-Bromofluorobenzene	17.93	95	269935	24.4995 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.00%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.37	85	711541	55.9325 ug/L	95
3) Chloromethane	3.84	50	525673	52.3497 ug/L	99
4) Vinyl Chloride	4.09	62	472378	54.9231 ug/L	98
5) 1,3-Butadiene	4.13	54	434506	51.2468 ug/L	99
6) Bromomethane	5.01	94	206225	43.6754 ug/L	97
7) Chloroethane	5.17	64	249721	50.0725 ug/L	79
8) Trichlorofluoromethane	5.67	101	827063	51.5718 ug/L	99
9) Diethyl ether	6.22	59	457698	99.2099 ug/L	94
10) Isoprene	6.27	67	428683	50.2008 ug/L	66
11) Acrolein	6.49	56	4016	44.7199 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	389865	51.1439 ug/L	97
13) Acetone	6.59	43	59036	53.4566 ug/L	97
14) 1,1-Dichloroethene	6.84	61	669768	51.9091 ug/L	85
15) Tert-Butyl Alcohol	6.94	59	49253	215.0178 ug/L	93
16) Dimethyl Sulfide	7.11	62	363196	51.6203 ug/L	78
17) Iodomethane	7.39	142	314817	49.4102 ug/L	86
18) Methyl acetate	7.40	43	218746	50.9016 ug/L	96
19) Methylene Chloride	7.68	84	321247	50.2874 ug/L	73
20) Carbon Disulfide	7.72	76	1076534	49.0447 ug/L	99
21) Acrylonitrile	7.88	53	78388	50.9190 ug/L	97
22) Methyl Tert Butyl Ether	7.91	73	730170	53.8718 ug/L	96
23) trans-1,2-Dichloroethene	8.17	96	343190	51.5756 ug/L	78
24) n-Hexane	8.26	57	540730	49.5070 ug/L	97
25) Diisopropyl ether	8.64	45	2648160	99.1435 ug/L	97
26) Vinyl Acetate	8.84	43	235087	50.4759 ug/L	97
27) 1,1-Dichloroethane	8.87	63	732770	51.3255 ug/L	100
28) Ethyl-Tert-Butyl ether	9.29	59	2131878	100.5924 ug/L	98
29) 2-Butanone	9.49	43	88372	51.5947 ug/L	95
30) Propionitrile	9.61	54	52804	101.2382 ug/L	96
31) 2,2-Dichloropropane	9.75	77	678048	55.5771 ug/L	88
32) cis-1,2-Dichloroethene	9.82	96	375666	52.8727 ug/L	75
33) Chloroform	10.05	83	738337	53.4416 ug/L	97
34) 1-Bromopropane	10.20	122	78799	51.0220 ug/L	100
35) Bromochloromethane	10.32	130	195988	52.8464 ug/L	100
36) Tetrahydrofuran	10.34	42	108362	100.2479 ug/L	90
38) 1,1,1-Trichloroethane	10.65	97	735798	53.4694 ug/L	93
39) Cyclohexane	10.69	56	694243	50.6298 ug/L	94
40) 1,1-Dichloropropene	10.89	75	562891	53.1150 ug/L	88
41) Tert-Amyl-Methyl ether	11.01	73	1470218	100.4678 ug/L #	87
42) Carbon Tetrachloride	11.05	117	641580	54.9377 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M130917.D 8260WT.M Fri Feb 06 08:53:35 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130917.D Vial: 9
Acq On : 5 Feb 2015 14:09 Operator: TMB
Sample : WG511026-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 06 08:53:34 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.26	62	581731	53.2161 ug/L	95
46)	Benzene	11.30	78	1350903	51.4523 ug/L	86
47)	Trichloroethene	12.17	130	360611	52.6397 ug/L #	69
48)	Methylcyclohexane	12.27	83	538313	50.0725 ug/L	85
49)	1,2-Dichloropropane	12.42	63	372123	52.6471 ug/L	78
50)	1,4-Dioxane	12.76	88	5181	198.8199 ug/L	71
51)	Bromodichloromethane	12.77	83	547842	53.8640 ug/L	100
52)	Dibromomethane	12.87	93	181594	54.2453 ug/L	100
53)	2-Chloroethyl Vinyl Ether	13.14	63	150075	52.0921 ug/L	99
54)	4-Methyl-2-Pentanone	13.17	58	77389	52.2369 ug/L	96
55)	cis-1,3-Dichloropropene	13.52	75	552224	55.2095 ug/L	95
56)	Dimethyl Disulfide	13.83	79	249648	50.1203 ug/L	91
59)	Toluene	14.01	91	1459043	52.1654 ug/L	99
60)	Ethyl Methacrylate	14.15	69	280367	50.7413 ug/L	83
62)	trans-1,3-Dichloropropene	14.23	75	503475	56.4004 ug/L	93
63)	1,1,2-Trichloroethane	14.48	97	224156	52.0771 ug/L	100
64)	2-Hexanone	14.42	43	145522	53.1927 ug/L	96
65)	1,3-Dichloropropane	14.85	76	414370	51.7727 ug/L	84
66)	Tetrachloroethene	14.98	166	409864	50.9633 ug/L	89
67)	Dibromochloromethane	15.29	129	329223	56.5486 ug/L	100
68)	1,2-Dibromoethane	15.60	107	233005	55.9337 ug/L	100
69)	1-Chlorohexane	15.72	91	497860	52.4093 ug/L	73
70)	Chlorobenzene	16.20	112	992910	51.3625 ug/L	69
71)	1,1,1,2-Tetrachloroethane	16.24	131	389329	55.5342 ug/L	90
72)	Ethylbenzene	16.24	106	559838	52.6086 ug/L	94
73)	m-,p-Xylene	16.34	106	1345096	105.6610 ug/L	92
74)	o-Xylene	17.02	106	672241	52.3809 ug/L	90
75)	Styrene	17.06	104	1111582	54.1333 ug/L	82
76)	Bromoform	17.64	173	190860	52.0262 ug/L	98
77)	Isopropylbenzene	17.53	105	1782598	52.7597 ug/L	99
79)	1,1,2,2-Tetrachloroethane	17.78	83	248743	52.1808 ug/L	98
81)	1,2,3-Trichloropropane	18.02	110	84284	52.8398 ug/L	94
82)	trans-1,4-Dichloro-2-Buten	18.08	53	111832	49.8015 ug/L	66
83)	n-Propylbenzene	18.13	91	2129925	51.4689 ug/L	99
84)	Bromobenzene	18.27	156	443465	52.3291 ug/L	91
85)	1,3,5-Trimethylbenzene	18.36	105	1571503	53.5761 ug/L	95
86)	2-Chlorotoluene	18.45	91	1362807	50.3297 ug/L	99
87)	4-Chlorotoluene	18.51	91	1418197	52.5451 ug/L	93
88)	a-Methylstyrene	18.84	118	832102	52.2131 ug/L	97
89)	tert-Butylbenzene	18.92	134	335180	51.2578 ug/L	83
90)	1,2,4-Trimethylbenzene	18.98	105	1613321	53.5548 ug/L	84
91)	sec-Butylbenzene	19.24	105	1828194	51.3706 ug/L	97
92)	p-Isopropyltoluene	19.44	119	1583697	54.2361 ug/L	97
93)	1,3-Dichlorobenzene	19.65	146	906890	52.0084 ug/L	92
94)	1,4-Dichlorobenzene	19.80	146	903506	50.9503 ug/L	94
95)	n-Butylbenzene	20.06	91	1435580	53.7524 ug/L	99
96)	1,2-Dichlorobenzene	20.40	146	793182	51.2835 ug/L	94
97)	1,2-Dibromo-3-Chloropropan	21.59	75	52578	52.6920 ug/L	81
98)	1,2,4-Trichlorobenzene	22.96	180	520035	52.1033 ug/L	97
99)	Hexachlorobutadiene	23.16	225	233866	53.6875 ug/L	100
100)	Naphthalene	23.43	128	782545	53.9074 ug/L	100
101)	1,2,3-Trichlorobenzene	23.85	180	449780	53.3387 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M130917.D 8260WT.M Fri Feb 06 08:53:35 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130917.D Vial: 9
Acq On : 5 Feb 2015 14:09 Operator: TMB
Sample : WG511026-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 6 8:53 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration

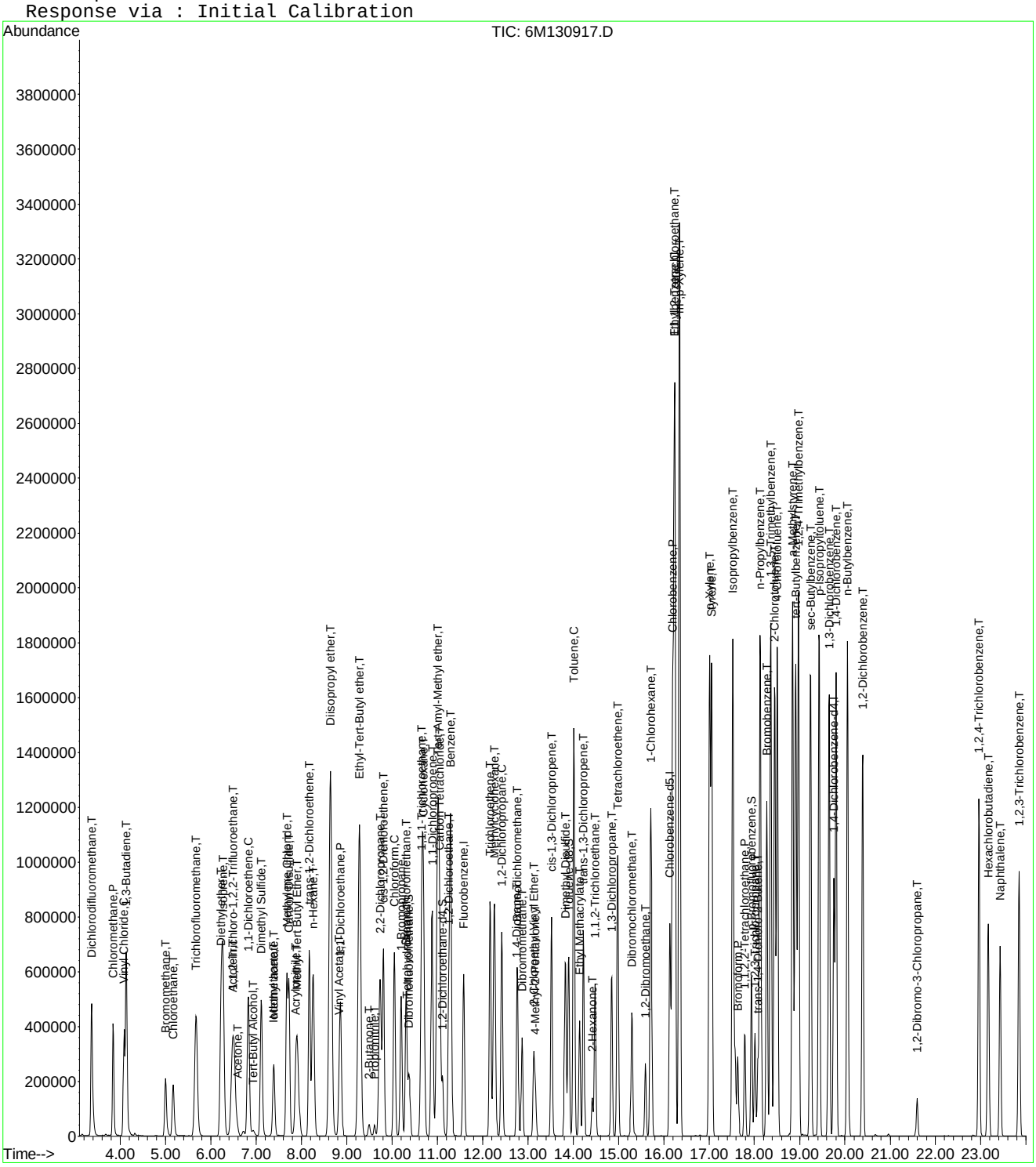

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130918.D Vial: 10
Acq On : 5 Feb 2015 14:40 Operator: TMB
Sample : WG511026-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 06 08:53:35 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	804219	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.15	117	608558	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.76	152	357067	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	412314	50.7609 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 203.04%#		
43) 1,2-Dichloroethane-d4	11.12	65	471322	48.6924 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 194.76%#		
58) Toluene-d8	13.90	98	1359721	48.9624 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 195.84%#		
80) p-Bromofluorobenzene	17.93	95	585589	48.7744 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 195.08%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.37	85	1525426	106.7186 ug/L	94
3) Chloromethane	3.84	50	1153125	102.2019 ug/L	98
4) Vinyl Chloride	4.09	62	1052944	108.9570 ug/L	99
5) 1,3-Butadiene	4.13	54	888717	100.4740 ug/L	93
6) Bromomethane	5.00	94	515134	96.0918 ug/L	96
7) Chloroethane	5.17	64	584057	104.2279 ug/L	84
8) Trichlorofluoromethane	5.67	101	1815653	100.7606 ug/L	99
9) Diethyl ether	6.23	59	1040577	200.7404 ug/L	93
10) Isoprene	6.27	67	970157	101.1115 ug/L	67
11) Acrolein	6.48	56	11596	114.9211 ug/L	89
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	885307	103.3614 ug/L	96
13) Acetone	6.59	43	126321	101.7993 ug/L	99
14) 1,1-Dichloroethene	6.83	61	1480476	102.1187 ug/L	87
15) Tert-Butyl Alcohol	6.94	59	112100	435.5439 ug/L	93
16) Dimethyl Sulfide	7.12	62	815449	103.1481 ug/L	80
17) Iodomethane	7.39	142	754602	103.1692 ug/L	88
18) Methyl acetate	7.40	43	486946	100.8455 ug/L	96
19) Methylene Chloride	7.68	84	721375	100.4999 ug/L	76
20) Carbon Disulfide	7.73	76	2402663	97.4185 ug/L	98
21) Acrylonitrile	7.88	53	177787	102.7814 ug/L	96
22) Methyl Tert Butyl Ether	7.90	73	1638115	107.5638 ug/L	96
23) trans-1,2-Dichloroethene	8.18	96	788057	105.4027 ug/L	82
24) n-Hexane	8.26	57	1237037	100.7984 ug/L	98
25) Diisopropyl ether	8.64	45	5740190	191.2629 ug/L	96
26) Vinyl Acetate	8.83	43	547149	104.5553 ug/L	98
27) 1,1-Dichloroethane	8.86	63	1630834	101.6622 ug/L	100
28) Ethyl-Tert-Butyl ether	9.28	59	4726560	198.4872 ug/L	99
29) 2-Butanone	9.49	43	196731	102.2227 ug/L	93
30) Propionitrile	9.62	54	118235	201.7475 ug/L	94
31) 2,2-Dichloropropane	9.74	77	1547908	112.9185 ug/L	92
32) cis-1,2-Dichloroethene	9.81	96	843481	105.6549 ug/L	97
33) Chloroform	10.05	83	1609365	103.6725 ug/L	97
34) 1-Bromopropane	10.21	122	177524	101.9510 ug/L	99
35) Bromochloromethane	10.31	130	438844	105.3127 ug/L	99
36) Tetrahydrofuran	10.35	42	237046	195.1711 ug/L	94
38) 1,1,1-Trichloroethane	10.66	97	1657948	107.2265 ug/L	95
39) Cyclohexane	10.69	56	1579632	102.5262 ug/L	94
40) 1,1-Dichloropropene	10.89	75	1258967	105.7285 ug/L	89
41) Tert-Amyl-Methyl ether	11.01	73	3278143	199.3691 ug/L	88
42) Carbon Tetrachloride	11.05	117	1480392	112.8186 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130918.D Vial: 10
Acq On : 5 Feb 2015 14:40 Operator: TMB
Sample : WG511026-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 06 08:53:35 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	11.25	62	1232565	100.3496 ug/L		95
46)	Benzene	11.30	78	2963774	100.4640 ug/L		85
47)	Trichloroethene	12.17	130	799464	103.8623 ug/L	#	72
48)	Methylcyclohexane	12.27	83	1218233	100.8508 ug/L		86
49)	1,2-Dichloropropane	12.42	63	822107	103.5145 ug/L		80
50)	1,4-Dioxane	12.77	88	11841	404.4074 ug/L	#	59
51)	Bromodichloromethane	12.78	83	1212730	106.1188 ug/L		100
52)	Dibromomethane	12.87	93	397852	105.7711 ug/L		100
53)	2-Chloroethyl Vinyl Ether	13.13	63	330806	102.1931 ug/L		100
54)	4-Methyl-2-Pentanone	13.16	58	171278	102.8927 ug/L		94
55)	cis-1,3-Dichloropropene	13.52	75	1222275	108.7557 ug/L		93
56)	Dimethyl Disulfide	13.83	79	596928	106.6577 ug/L		91
59)	Toluene	14.02	91	3119788	101.6610 ug/L		97
60)	Ethyl Methacrylate	14.14	69	615621	101.0804 ug/L		83
62)	trans-1,3-Dichloropropene	14.24	75	1115511	113.8919 ug/L		95
63)	1,1,2-Trichloroethane	14.48	97	490597	103.8809 ug/L		100
64)	2-Hexanone	14.42	43	307481	102.4369 ug/L		98
65)	1,3-Dichloropropane	14.85	76	916800	104.4003 ug/L		88
66)	Tetrachloroethene	14.98	166	898125	101.7817 ug/L		89
67)	Dibromochloromethane	15.30	129	737547	115.4611 ug/L		99
68)	1,2-Dibromoethane	15.59	107	518535	113.4490 ug/L		99
69)	1-Chlorohexane	15.72	91	1093604	104.9243 ug/L		75
70)	Chlorobenzene	16.20	112	2112941	99.6181 ug/L	#	67
71)	1,1,1,2-Tetrachloroethane	16.24	131	864855	112.4351 ug/L		91
72)	Ethylbenzene	16.24	106	1216626	104.1996 ug/L		97
73)	m-,p-Xylene	16.35	106	2853391	204.2854 ug/L		96
74)	o-Xylene	17.01	106	1448162	102.8442 ug/L		95
75)	Styrene	17.06	104	2360850	104.7867 ug/L		80
76)	Bromoform	17.64	173	423067	104.6832 ug/L		98
77)	Isopropylbenzene	17.52	105	3662141	98.7867 ug/L		99
79)	1,1,2,2-Tetrachloroethane	17.79	83	534331	102.8659 ug/L		99
81)	1,2,3-Trichloropropane	18.01	110	174391	100.3326 ug/L		97
82)	trans-1,4-Dichloro-2-Buten	18.08	53	246642	100.2754 ug/L		68
83)	n-Propylbenzene	18.14	91	4264473	94.5687 ug/L		98
84)	Bromobenzene	18.28	156	948168	102.6765 ug/L		91
85)	1,3,5-Trimethylbenzene	18.36	105	3246665	101.5770 ug/L		98
86)	2-Chlorotoluene	18.45	91	3038961	102.9952 ug/L		97
87)	4-Chlorotoluene	18.50	91	2682023	91.1926 ug/L		95
88)	a-Methylstyrene	18.84	118	1768996	101.8665 ug/L		97
89)	tert-Butylbenzene	18.91	134	715569	100.4234 ug/L		89
90)	1,2,4-Trimethylbenzene	18.97	105	3315484	101.0011 ug/L		87
91)	sec-Butylbenzene	19.24	105	3730462	96.1960 ug/L		94
92)	p-Isopropyltoluene	19.43	119	3276085	102.9611 ug/L		95
93)	1,3-Dichlorobenzene	19.65	146	1905922	100.3057 ug/L		91
94)	1,4-Dichlorobenzene	19.80	146	1874356	96.9995 ug/L		92
95)	n-Butylbenzene	20.06	91	2963092	101.8163 ug/L		96
96)	1,2-Dichlorobenzene	20.39	146	1668898	99.0229 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	21.59	75	112903	103.0267 ug/L		85
98)	1,2,4-Trichlorobenzene	22.97	180	1117748	102.7728 ug/L		97
99)	Hexachlorobutadiene	23.16	225	509297	107.2948 ug/L		99
100)	Naphthalene	23.43	128	1657908	104.8095 ug/L		100
101)	1,2,3-Trichlorobenzene	23.84	180	952262	103.6336 ug/L		97

(#) = qualifier out of range (m) = manual integration
6M130918.D 8260WT.M Fri Feb 06 08:53:35 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130918.D Vial: 10
Acq On : 5 Feb 2015 14:40 Operator: TMB
Sample : WG511026-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 6 8:53 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration

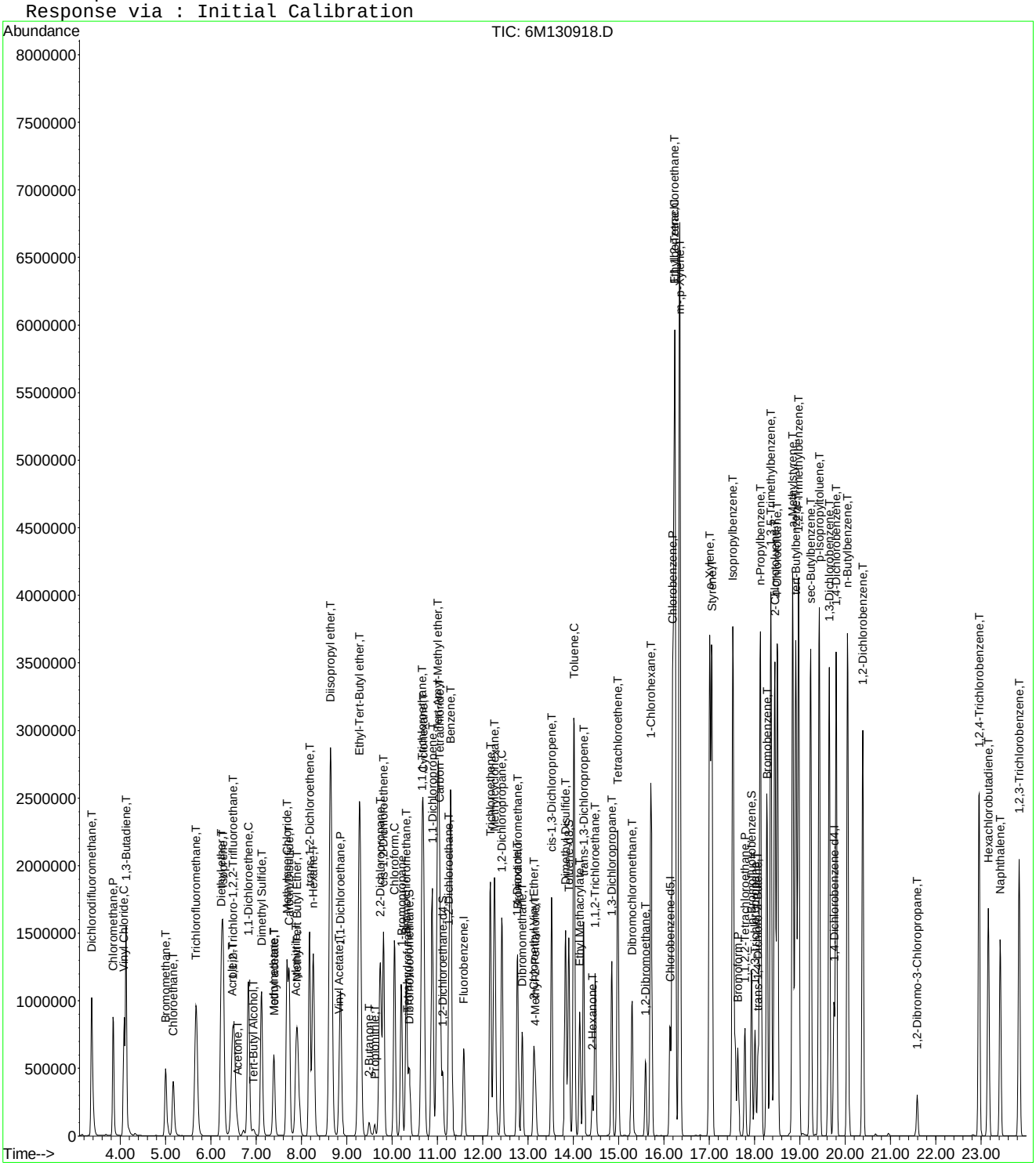

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130919.D Vial: 11
Acq On : 5 Feb 2015 15:11 Operator: TMB
Sample : WG511026-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 06 08:53:36 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	881708	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.14	117	674483	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.75	152	381337	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	899697	101.0293 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 404.12%#		
43) 1,2-Dichloroethane-d4	11.12	65	996687	93.9186 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 375.68%#		
58) Toluene-d8	13.90	98	2896844	94.1172 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 376.48%#		
80) p-Bromofluorobenzene	17.93	95	1244943	97.0933 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 388.36%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.37	85	3059610	195.2381 ug/L	94
3) Chloromethane	3.84	50	2418432	195.5088 ug/L	96
4) Vinyl Chloride	4.08	62	2135320	201.5406 ug/L	99
5) 1,3-Butadiene	4.12	54	1625881	197.8858 ug/L	94
6) Bromomethane	5.01	94	1236575	209.4191 ug/L	97
7) Chloroethane	5.17	64	1300239	211.6418 ug/L	86
8) Trichlorofluoromethane	5.67	101	3709860	187.7868 ug/L	97
9) Diethyl ether	6.49	59	23063	4.0581 ug/L #	15
10) Isoprene	6.27	67	2160743	205.4051 ug/L	71
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	1906355	203.0101 ug/L	96
13) Acetone	6.59	43	270560	198.8761 ug/L	99
14) 1,1-Dichloroethene	6.83	61	3095781	194.7708 ug/L	89
15) Tert-Butyl Alcohol	6.94	59	3476	12.3184 ug/L #	72
16) Dimethyl Sulfide	7.12	62	1810207	208.8537 ug/L	82
17) Iodomethane	7.40	142	1733215	213.9793 ug/L	92
18) Methyl acetate	7.40	43	1052660	198.8445 ug/L	98
19) Methylene Chloride	7.68	84	1571336	199.6747 ug/L	82
20) Carbon Disulfide	7.73	76	5018212	185.5869 ug/L	96
21) Acrylonitrile	7.91	53	43190	22.7744 ug/L #	36
22) Methyl Tert Butyl Ether	7.91	73	3493004	209.2042 ug/L	94
23) trans-1,2-Dichloroethene	8.18	96	1696219	206.9310 ug/L	86
24) n-Hexane	8.26	57	2712868	201.6271 ug/L	99
26) Vinyl Acetate	8.84	43	1188532	207.1576 ug/L	99
27) 1,1-Dichloroethane	8.87	63	3391836	192.8565 ug/L	98
28) Ethyl-Tert-Butyl ether	9.29	59	4871	0.1866 ug/L #	23
29) 2-Butanone	9.49	43	431046	204.2903 ug/L	94
30) Propionitrile	9.55	54	429	0.6677 ug/L #	56
31) 2,2-Dichloropropane	9.75	77	3253541	216.4841 ug/L	95
32) cis-1,2-Dichloroethene	9.82	96	1791840	204.7214 ug/L	80
33) Chloroform	10.05	83	3313895	194.7141 ug/L	96
34) 1-Bromopropane	10.21	122	395519	206.8224 ug/L	99
35) Bromochloromethane	10.32	130	943494	206.5187 ug/L	99
36) Tetrahydrofuran	10.34	42	916	0.6879 ug/L #	38
38) 1,1,1-Trichloroethane	10.66	97	3394354	200.2340 ug/L	93
39) Cyclohexane	10.69	56	3415084	202.1762 ug/L	95
40) 1,1-Dichloropropene	10.89	75	2632767	201.6692 ug/L	91
41) Tert-Amyl-Methyl ether	10.89	73	459785	25.5055 ug/L #	57
42) Carbon Tetrachloride	11.05	117	3086122	214.5194 ug/L	98
45) 1,2-Dichloroethane	11.26	62	2505627	186.0680 ug/L	97
46) Benzene	11.30	78	5762656	178.1713 ug/L #	80

(#) = qualifier out of range (m) = manual integration
6M130919.D 8260WT.M Fri Feb 06 08:53:36 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130919.D Vial: 11
Acq On : 5 Feb 2015 15:11 Operator: TMB
Sample : WG511026-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 06 08:53:36 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
47)	Trichloroethene	12.18	130	1702257	201.7130 ug/L		73
48)	Methylcyclohexane	12.27	83	2665791	201.2912 ug/L		88
49)	1,2-Dichloropropane	12.42	63	1780426	204.4778 ug/L		82
50)	1,4-Dioxane	12.77	88	5084	158.3747 ug/L	#	63
51)	Bromodichloromethane	12.77	83	2508268	200.1943 ug/L		98
52)	Dibromomethane	12.87	93	848370	205.7218 ug/L		99
53)	2-Chloroethyl Vinyl Ether	13.14	63	738861	208.1903 ug/L		99
54)	4-Methyl-2-Pentanone	13.17	58	380803	208.6570 ug/L		95
55)	cis-1,3-Dichloropropene	13.52	75	2581688	209.5254 ug/L		92
56)	Dimethyl Disulfide	13.83	79	1398529	227.9246 ug/L		91
59)	Toluene	14.01	91	5874633	172.7193 ug/L		89
60)	Ethyl Methacrylate	14.15	69	1377060	203.5298 ug/L		86
62)	trans-1,3-Dichloropropene	14.23	75	2339125	215.4782 ug/L		97
63)	1,1,2-Trichloroethane	14.48	97	1043558	199.3694 ug/L		98
64)	2-Hexanone	14.42	43	679478	204.2418 ug/L		99
65)	1,3-Dichloropropane	14.85	76	1923461	197.6247 ug/L		88
66)	Tetrachloroethene	14.98	166	1900170	194.2926 ug/L		89
67)	Dibromochloromethane	15.30	129	1589000	224.4404 ug/L		100
68)	1,2-Dibromoethane	15.60	107	1114858	220.0763 ug/L		99
69)	1-Chlorohexane	15.72	91	2356330	203.9779 ug/L		77
70)	Chlorobenzene	16.20	112	4184678	178.0097 ug/L	#	62
71)	1,1,1,2-Tetrachloroethane	16.24	131	1840183	215.8493 ug/L		91
72)	Ethylbenzene	16.24	106	2535243	195.9113 ug/L		73
73)	m-,p-Xylene	16.35	106	5462873	352.8809 ug/L		72
74)	o-Xylene	17.02	106	2977906	190.8115 ug/L		91
75)	Styrene	17.07	104	4585513	183.6356 ug/L		75
76)	Bromoform	17.64	173	923656	205.8069 ug/L		98
77)	Isopropylbenzene	17.53	105	6525978	158.8327 ug/L		90
79)	1,1,2,2-Tetrachloroethane	17.79	83	1128735	203.4670 ug/L		97
81)	1,2,3-Trichloropropane	18.02	110	377222	203.2149 ug/L		95
82)	trans-1,4-Dichloro-2-Buten	18.08	53	532575	202.2246 ug/L		73
83)	n-Propylbenzene	18.14	91	7148500	148.4355 ug/L	#	87
84)	Bromobenzene	18.27	156	1947867	197.5085 ug/L		93
85)	1,3,5-Trimethylbenzene	18.36	105	5918886	173.3958 ug/L		95
86)	2-Chlorotoluene	18.46	91	5730720	181.8619 ug/L		93
87)	4-Chlorotoluene	18.51	91	4777291	152.0967 ug/L	#	90
88)	a-Methylstyrene	18.84	118	3588799	193.5060 ug/L		98
89)	tert-Butylbenzene	18.92	134	1497849	196.8305 ug/L		63
90)	1,2,4-Trimethylbenzene	18.98	105	5940973	169.4640 ug/L		95
91)	sec-Butylbenzene	19.24	105	6579337	158.8610 ug/L		87
92)	p-Isopropyltoluene	19.44	119	5900538	173.6402 ug/L		87
93)	1,3-Dichlorobenzene	19.65	146	3730842	183.8519 ug/L		87
94)	1,4-Dichlorobenzene	19.80	146	3664554	177.5739 ug/L		88
95)	n-Butylbenzene	20.06	91	5386994	173.3244 ug/L		89
96)	1,2-Dichlorobenzene	20.40	146	3295839	183.1103 ug/L		89
97)	1,2-Dibromo-3-Chloropropan	21.59	75	240449	204.6221 ug/L		86
98)	1,2,4-Trichlorobenzene	22.97	180	2270211	195.4526 ug/L		96
99)	Hexachlorobutadiene	23.16	225	1061590	209.4138 ug/L		99
100)	Naphthalene	23.43	128	3386041	200.4349 ug/L		99
101)	1,2,3-Trichlorobenzene	23.85	180	1947169	198.4214 ug/L		96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130919.D Vial: 11
Acq On : 5 Feb 2015 15:11 Operator: TMB
Sample : WG511026-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 6 8:53 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration

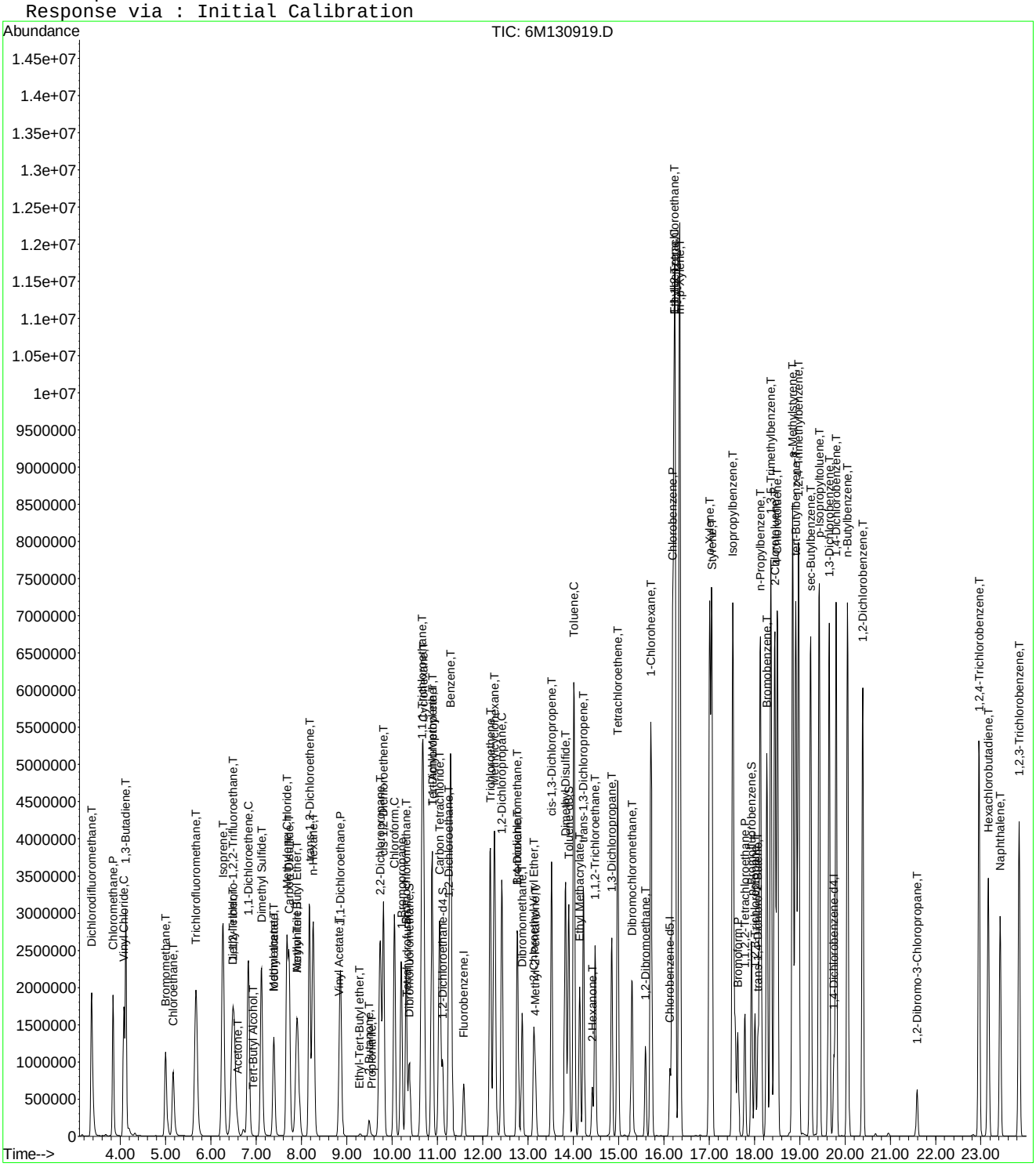

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130920.D Vial: 12
Acq On : 5 Feb 2015 15:42 Operator: TMB
Sample : WG511026-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 06 08:53:37 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	989950	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.14	117	742719	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.75	152	406385	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.38	111	1422285	142.2489 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 569.00%#		
43) 1,2-Dichloroethane-d4	11.11	65	1540229	129.2676 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 517.08%#		
58) Toluene-d8	13.90	98	4379197	129.2066 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 516.84%#		
80) p-Bromofluorobenzene	17.93	95	1937343	141.7809 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 567.12%#		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.37	85	4382408	249.0709 ug/L	93
3) Chloromethane	3.84	50	3603218	259.4385 ug/L	93
4) Vinyl Chloride	4.08	62	3082681	259.1431 ug/L	97
5) 1,3-Butadiene	4.12	54	2248835	301.9800 ug/L	92
6) Bromomethane	5.01	94	2028563	305.6035 ug/L	96
7) Chloroethane	5.16	64	2066594	299.6021 ug/L	87
8) Trichlorofluoromethane	5.67	101	5447052	245.5730 ug/L	96
9) Diethyl ether	6.22	59	1850996	290.0862 ug/L	95
10) Isoprene	6.26	67	3407210	288.4819 ug/L	72
11) Acrolein	6.49	56	34099	274.5329 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	2953458	280.1278 ug/L	96
13) Acetone	6.59	43	443751	290.5158 ug/L	96
14) 1,1-Dichloroethene	6.82	61	4627558	259.3086 ug/L	92
15) Tert-Butyl Alcohol	6.95	59	205457	648.4976 ug/L	92
16) Dimethyl Sulfide	7.11	62	2914092	299.4530 ug/L	86
17) Iodomethane	7.39	142	2602901	285.5465 ug/L	93
18) Methyl acetate	7.40	43	1767717	297.4059 ug/L	98
19) Methylene Chloride	7.67	84	2460637	278.4923 ug/L	86
20) Carbon Disulfide	7.72	76	7335436	241.6216 ug/L	93
21) Acrylonitrile	7.88	53	365757	171.7783 ug/L	98
22) Methyl Tert Butyl Ether	7.91	73	5478101	292.2220 ug/L	93
23) trans-1,2-Dichloroethene	8.17	96	2604643	283.0111 ug/L	89
24) n-Hexane	8.25	57	4361477	288.7124 ug/L	98
25) Diisopropyl ether	8.64	45	9251760	250.4321 ug/L	95
26) Vinyl Acetate	8.84	43	1999759	310.4410 ug/L	99
27) 1,1-Dichloroethane	8.87	63	5112291	258.8967 ug/L	96
28) Ethyl-Tert-Butyl ether	9.29	59	7880131	268.8325 ug/L	95
29) 2-Butanone	9.49	43	719876	303.8739 ug/L	95
30) Propionitrile	9.61	54	223368	309.6309 ug/L	96
31) 2,2-Dichloropropane	9.73	77	4976599	294.9265 ug/L	96
32) cis-1,2-Dichloroethene	9.82	96	2762328	281.0935 ug/L	99
33) Chloroform	10.05	83	4872468	254.9876 ug/L	94
34) 1-Bromopropane	10.20	122	621686	289.4037 ug/L	98
35) Bromochloromethane	10.32	130	1464022	285.4167 ug/L	100
36) Tetrahydrofuran	10.35	42	442206	295.7798 ug/L	94
38) 1,1,1-Trichloroethane	10.65	97	5001779	262.7947 ug/L	92
39) Cyclohexane	10.69	56	5306135	279.7811 ug/L	96
40) 1,1-Dichloropropene	10.89	75	3993393	272.4462 ug/L	93
41) Tert-Amyl-Methyl ether	11.01	73	5705835	281.9098 ug/L	88
42) Carbon Tetrachloride	11.05	117	4601618	284.8889 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M130920.D 8260WT.M Fri Feb 06 08:53:37 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130920.D Vial: 12
Acq On : 5 Feb 2015 15:42 Operator: TMB
Sample : WG511026-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 06 08:53:37 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	11.26	62	3728065	246.5756	ug/L		99
46)	Benzene	11.30	78	8004401	220.4222	ug/L	#	72
47)	Trichloroethene	12.17	130	2593222	273.6906	ug/L		74
48)	Methylcyclohexane	12.27	83	4196248	282.2093	ug/L		88
49)	1,2-Dichloropropane	12.42	63	2797869	286.1944	ug/L		84
50)	1,4-Dioxane	12.77	88	22956	636.9246	ug/L		77
51)	Bromodichloromethane	12.77	83	3785347	269.0884	ug/L		97
52)	Dibromomethane	12.87	93	1344872	290.4608	ug/L		99
53)	2-Chloroethyl Vinyl Ether	13.14	63	1226034	307.6889	ug/L		98
54)	4-Methyl-2-Pentanone	13.17	58	641507	313.0729	ug/L		95
55)	cis-1,3-Dichloropropene	13.52	75	3950112	285.5313	ug/L	#	88
56)	Dimethyl Disulfide	13.83	79	2253723	327.1386	ug/L		90
59)	Toluene	14.01	91	7801371	208.2944	ug/L		81
60)	Ethyl Methacrylate	14.15	69	2201961	295.3399	ug/L		87
62)	trans-1,3-Dichloropropene	14.23	75	3554560	297.3598	ug/L		99
63)	1,1,2-Trichloroethane	14.48	97	1652147	286.6402	ug/L		99
64)	2-Hexanone	14.42	43	1087763	296.9273	ug/L		99
65)	1,3-Dichloropropane	14.85	76	2961400	276.3131	ug/L		88
66)	Tetrachloroethene	14.98	166	2869265	266.4286	ug/L		88
67)	Dibromochloromethane	15.29	129	2453402	314.6968	ug/L		100
68)	1,2-Dibromoethane	15.60	107	1728942	309.9421	ug/L		98
69)	1-Chlorohexane	15.72	91	3567606	280.4596	ug/L		77
70)	Chlorobenzene	16.20	112	5848644	225.9349	ug/L	#	55
71)	1,1,1,2-Tetrachloroethane	16.24	131	2789759	297.1685	ug/L		92
72)	Ethylbenzene	16.24	106	3787818	265.8125	ug/L		54
73)	m-,p-Xylene	16.35	106	7253007	425.4726	ug/L		62
74)	o-Xylene	17.02	106	4374030	254.5199	ug/L		77
75)	Styrene	17.07	104	6319905	229.8402	ug/L	#	67
76)	Bromoform	17.64	173	1430158	289.2191	ug/L		98
77)	Isopropylbenzene	17.53	105	8312831	183.7340	ug/L		80
79)	1,1,2,2-Tetrachloroethane	17.79	83	1776788	300.5445	ug/L		97
81)	1,2,3-Trichloropropane	18.02	110	578623	292.4998	ug/L		97
82)	trans-1,4-Dichloro-2-Buten	18.08	53	838247	298.4307	ug/L		76
83)	n-Propylbenzene	18.14	91	8866389	172.7591	ug/L	#	76
84)	Bromobenzene	18.27	156	2914034	277.2632	ug/L		94
85)	1,3,5-Trimethylbenzene	18.36	105	7622267	209.5338	ug/L		85
86)	2-Chlorotoluene	18.46	91	7542663	224.6098	ug/L		84
87)	4-Chlorotoluene	18.52	91	6130290	183.1430	ug/L	#	82
88)	a-Methylstyrene	18.84	118	5164164	261.2863	ug/L		100
89)	tert-Butylbenzene	18.92	134	2249488	277.3826	ug/L	#	22
90)	1,2,4-Trimethylbenzene	18.98	105	7612748	203.7664	ug/L		96
91)	sec-Butylbenzene	19.24	105	8348321	189.1496	ug/L	#	77
92)	p-Isopropyltoluene	19.44	119	7535703	208.0912	ug/L	#	77
93)	1,3-Dichlorobenzene	19.65	146	5171404	239.1339	ug/L		81
94)	1,4-Dichlorobenzene	19.80	146	5088207	231.3631	ug/L		82
95)	n-Butylbenzene	20.06	91	6939593	209.5166	ug/L		80
96)	1,2-Dichlorobenzene	20.40	146	4659164	242.8992	ug/L		84
97)	1,2-Dibromo-3-Chloropropan	21.59	75	366595	292.3845	ug/L		88
98)	1,2,4-Trichlorobenzene	22.97	180	3286984	265.5487	ug/L		96
99)	Hexachlorobutadiene	23.16	225	1564700	289.6348	ug/L		99
100)	Naphthalene	23.43	128	4839636	268.8221	ug/L		96
101)	1,2,3-Trichlorobenzene	23.85	180	2853984	272.9026	ug/L		95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130920.D Vial: 12
Acq On : 5 Feb 2015 15:42 Operator: TMB
Sample : WG511026-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 6 8:53 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration

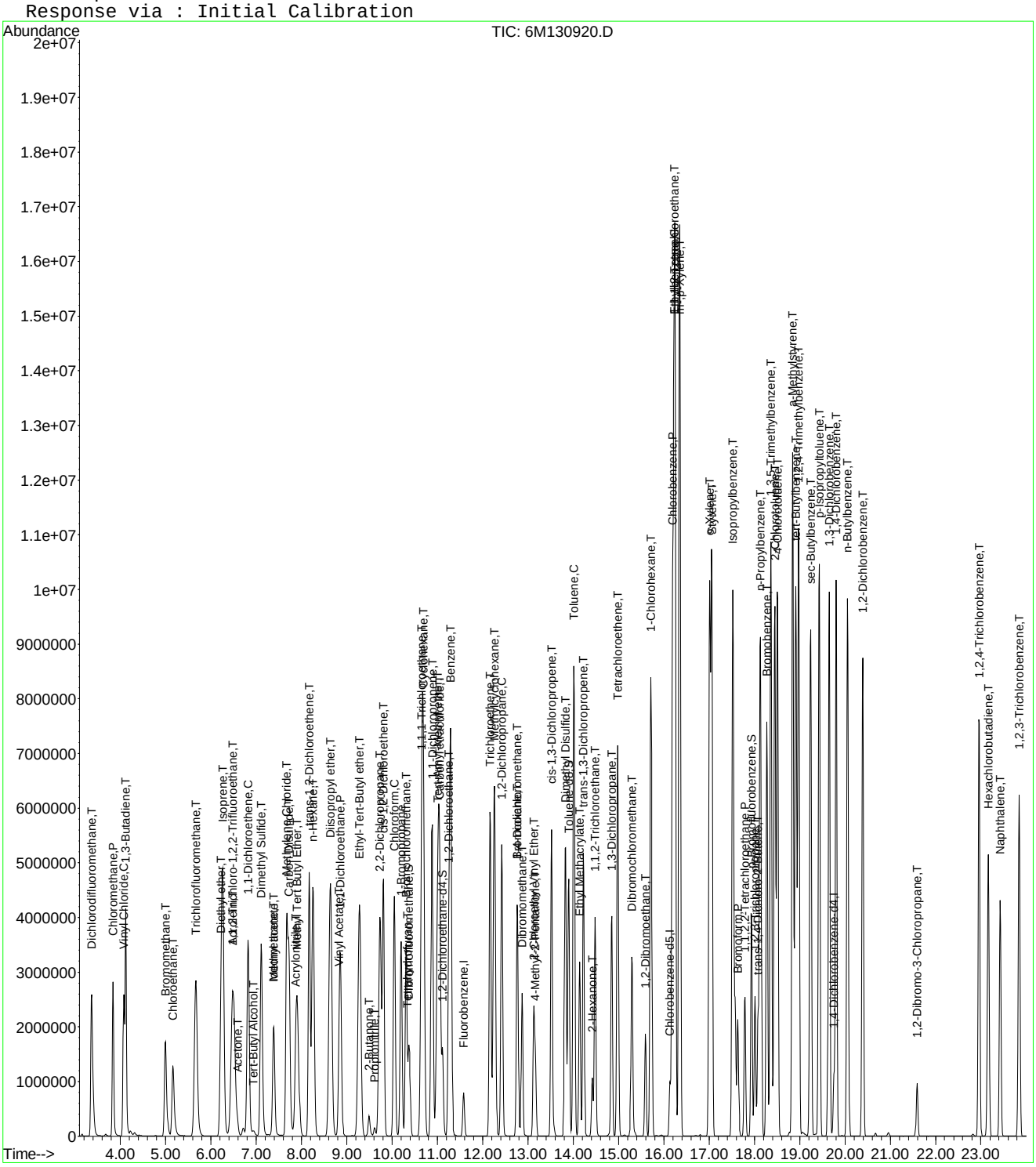

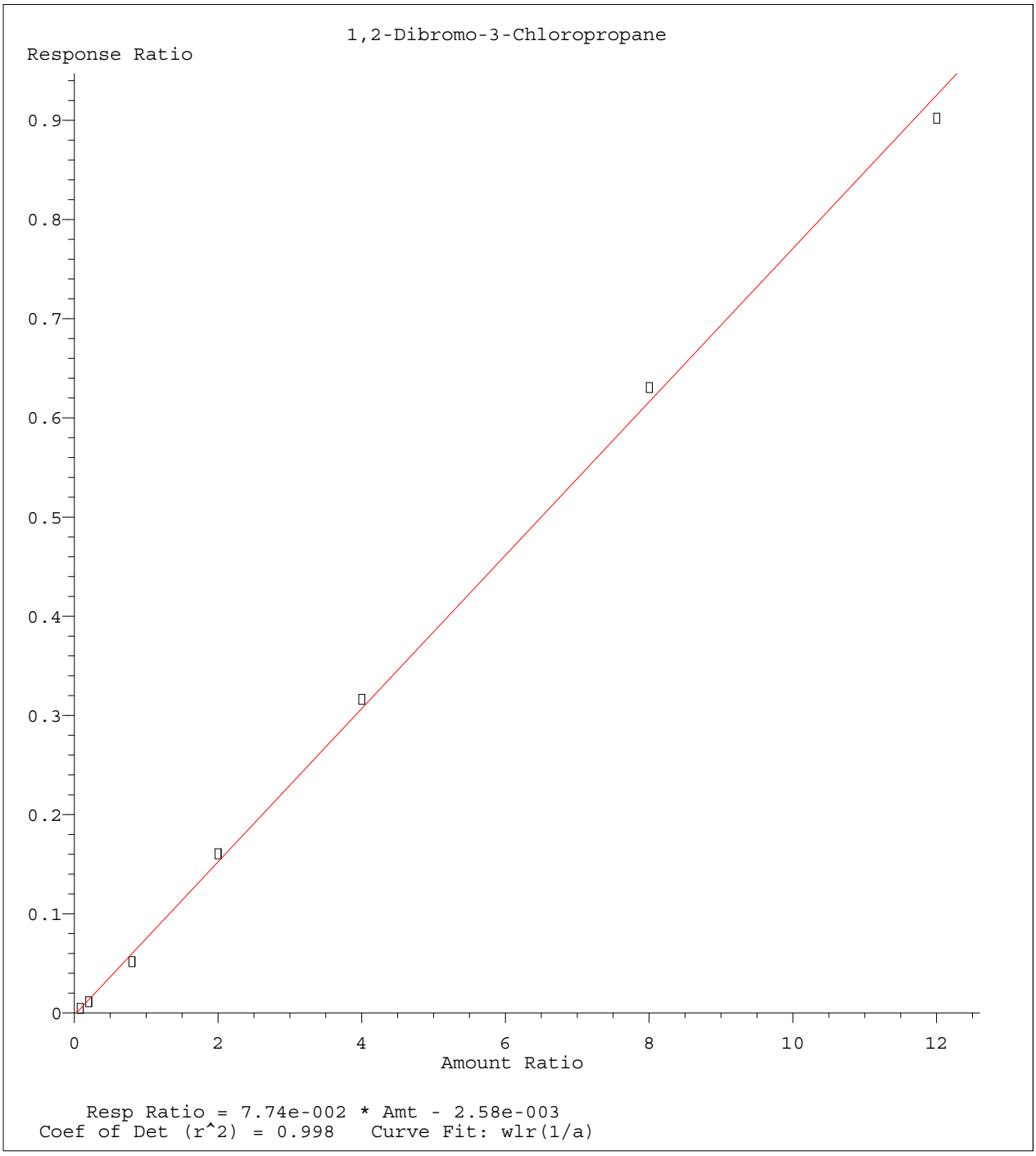

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Fri Feb 06 08:55:49 2015

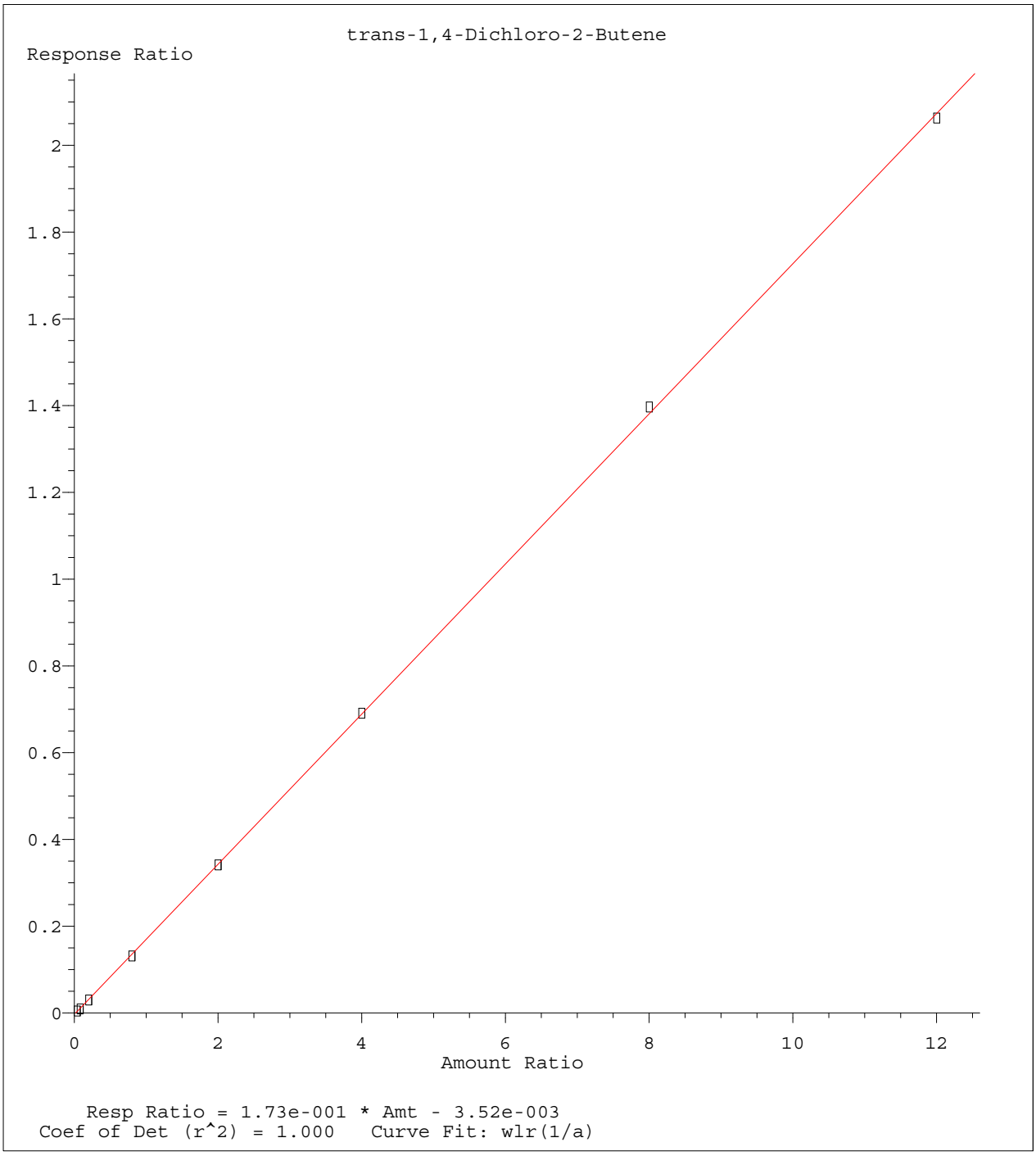

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Fri Feb 06 08:55:49 2015

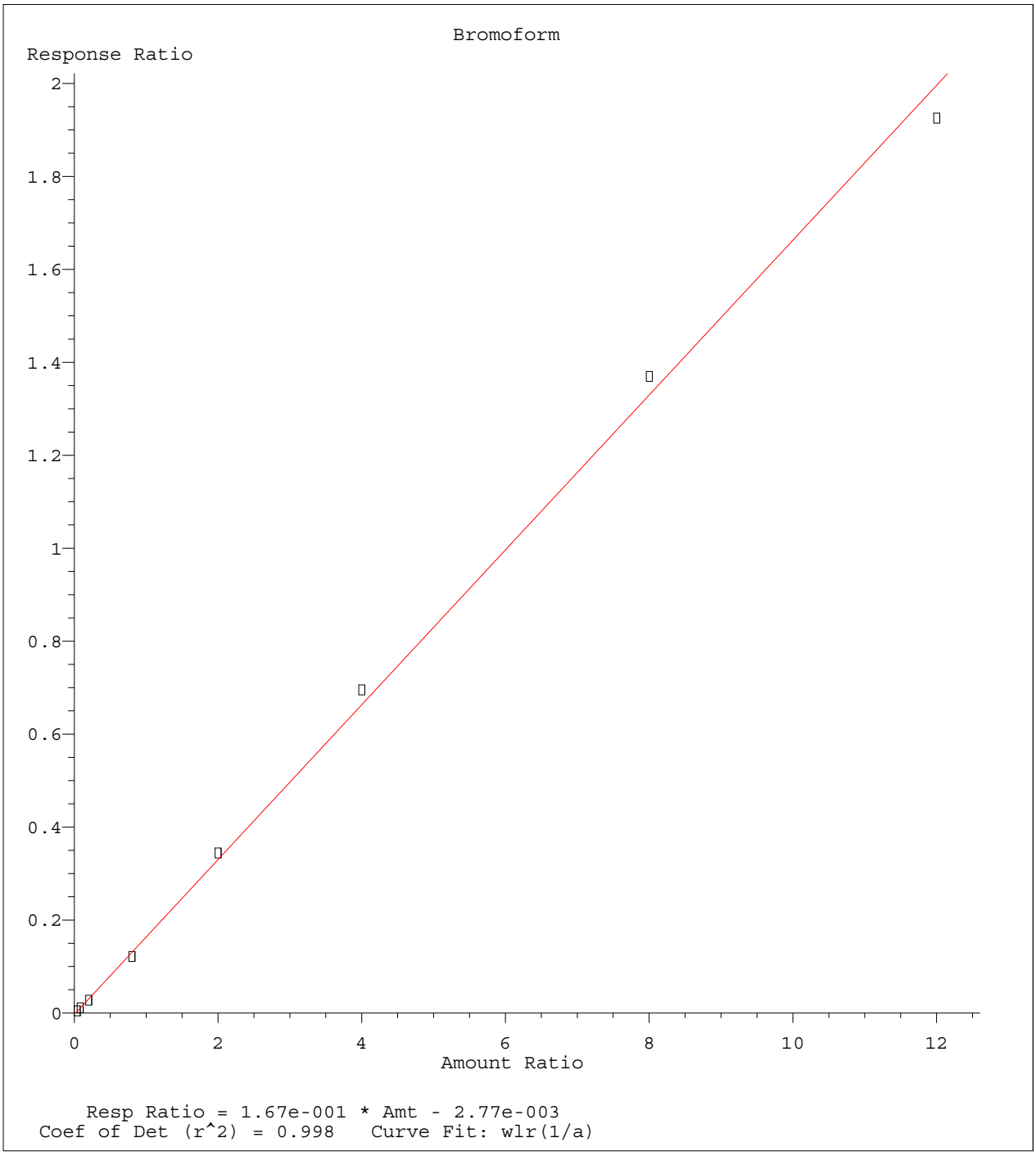

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Fri Feb 06 08:55:49 2015

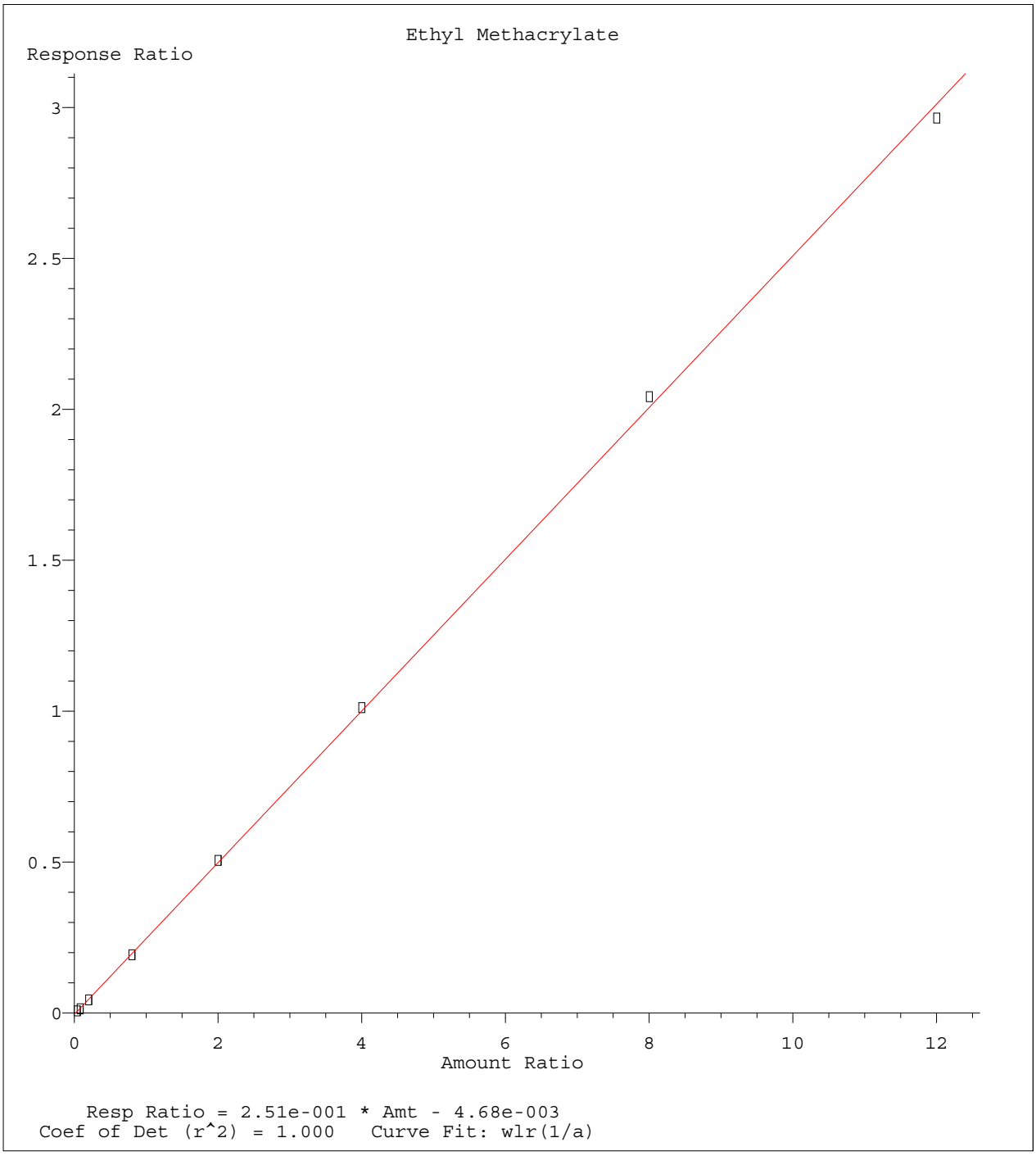

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Fri Feb 06 08:55:49 2015

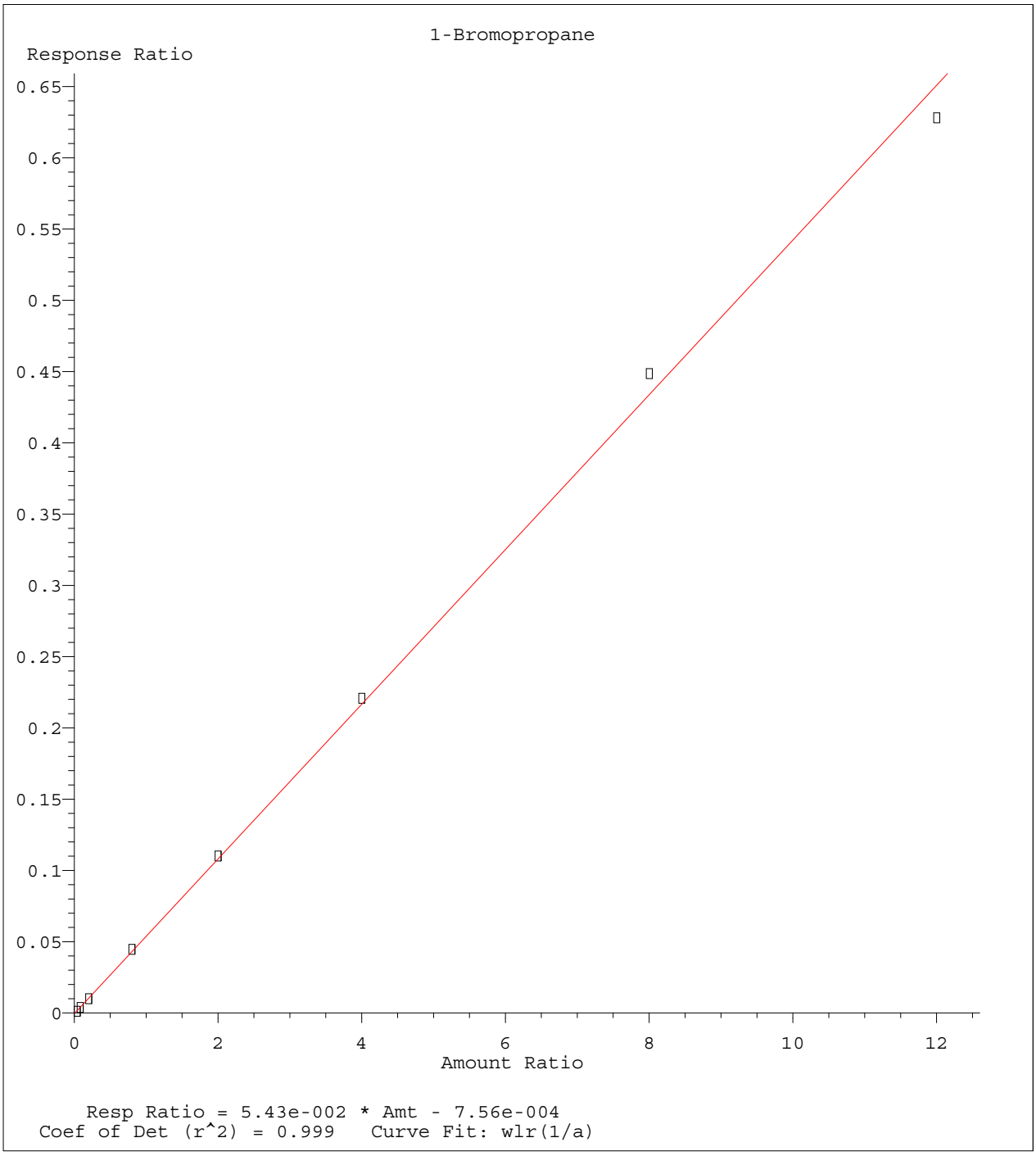

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Fri Feb 06 08:55:49 2015

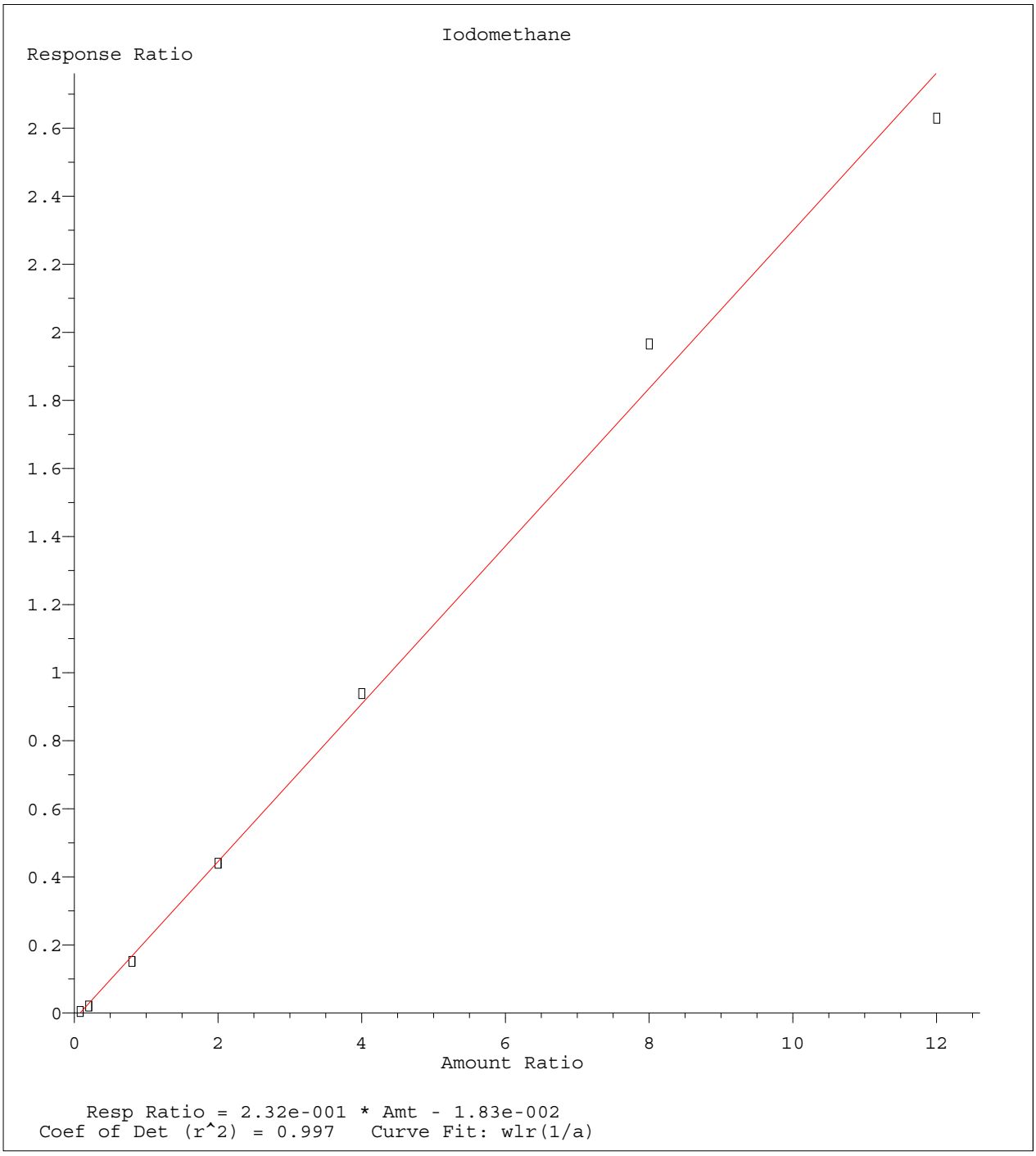

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Fri Feb 06 08:55:49 2015

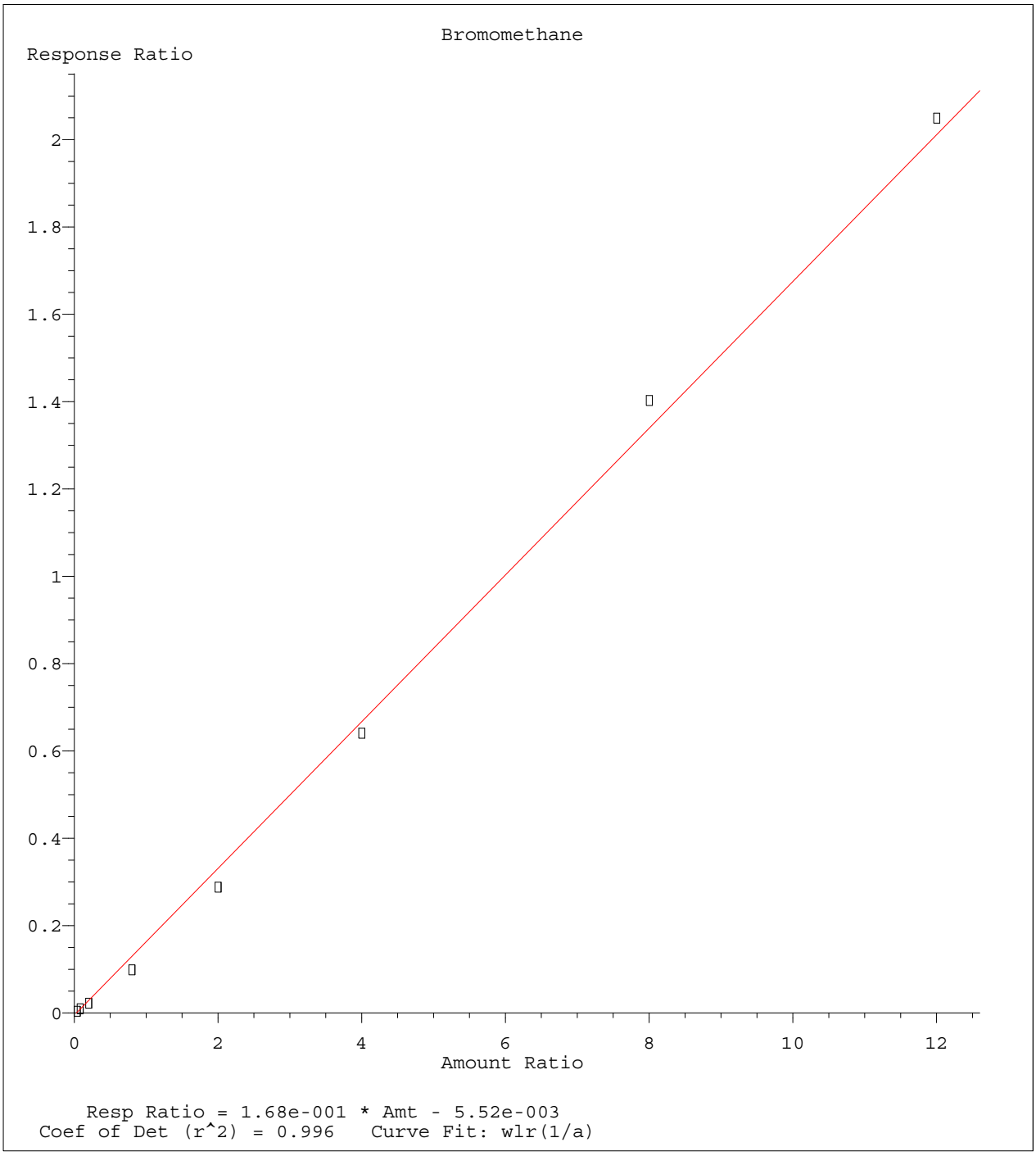

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Fri Feb 06 08:55:49 2015

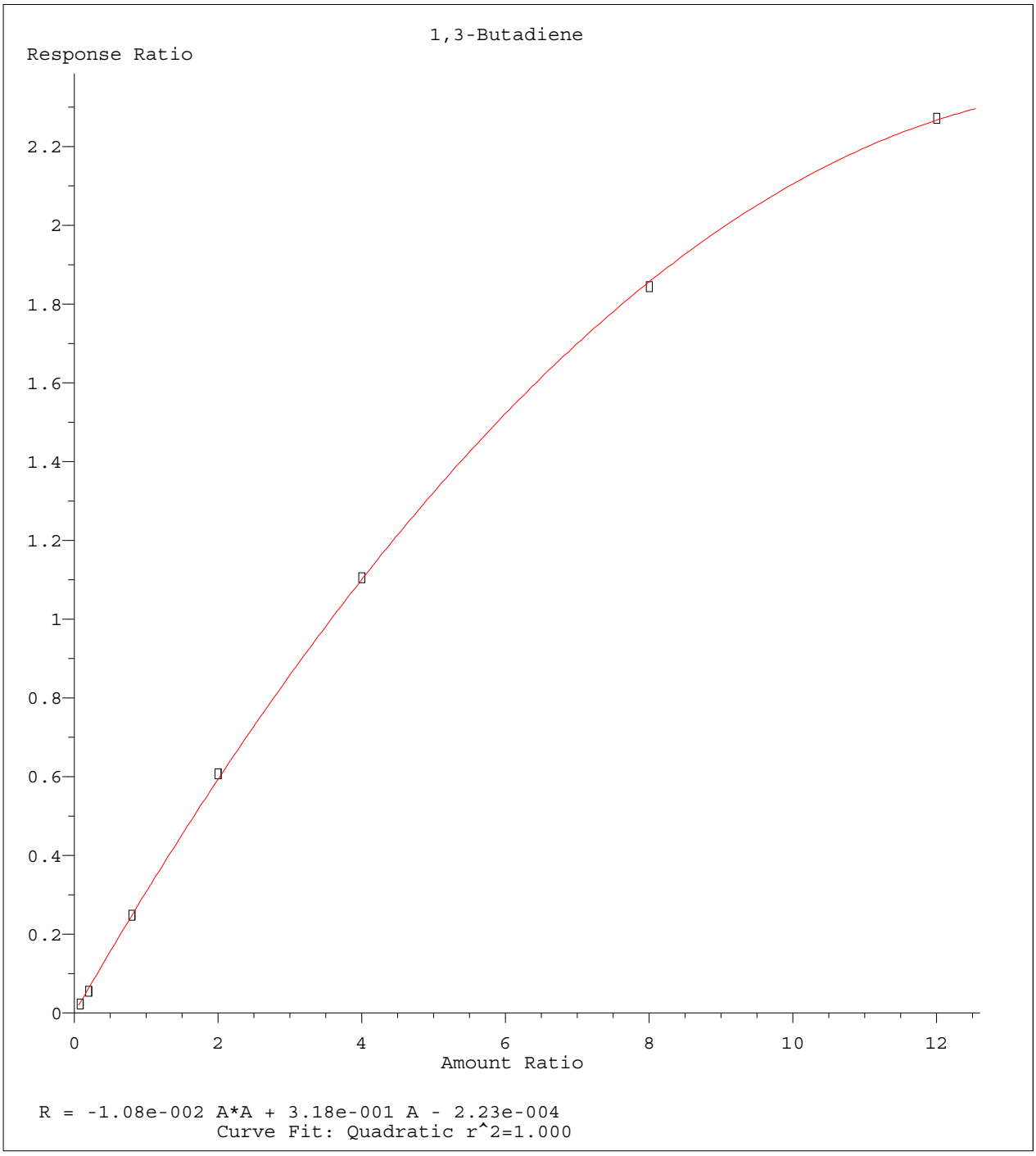

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Fri Feb 06 08:55:49 2015

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130923.D Vial: 15
Acq On : 5 Feb 2015 17:16 Operator: TMB
Sample : WG511026-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD68730 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 06 08:53:39 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	988491	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.14	117	726310	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.75	152	396814	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.38	111	232989	23.3366 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.36%		
43) 1,2-Dichloroethane-d4	11.12	65	254948	21.4287 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 85.72%		
58) Toluene-d8	13.90	98	817228	24.6568 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.64%		
80) p-Bromofluorobenzene	17.93	95	335438	25.1405 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.56%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.37	85	787410	44.8179 ug/L	96
3) Chloromethane	3.84	50	648123	46.7350 ug/L	98
4) Vinyl Chloride	4.08	62	568267	47.8414 ug/L	99
5) 1,3-Butadiene	4.12	54	315132	25.9652 ug/L	91
6) Bromomethane	5.01	94	265603	40.7854 ug/L	98
7) Chloroethane	5.17	64	377302	54.7797 ug/L	90
8) Trichlorofluoromethane	5.67	101	904966	40.8594 ug/L	99
9) Diethyl ether	6.23	59	665872	104.5088 ug/L	93
10) Isoprene	6.26	67	659036	55.8817 ug/L	74
11) Acrolein	6.49	56	15180	122.3954 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	465701	44.2357 ug/L	97
13) Acetone	6.59	43	80041	52.4788 ug/L	95
14) 1,1-Dichloroethene	6.82	61	792942	44.4987 ug/L	90
15) Tert-Butyl Alcohol	6.96	59	76274	241.1040 ug/L	95
16) Dimethyl Sulfide	7.12	62	556146	57.2341 ug/L	85
17) Iodomethane	7.40	142	315964	36.4464 ug/L	97
18) Methyl acetate	7.41	43	219586	36.9983 ug/L	95
19) Methylene Chloride	7.68	84	437739	49.6160 ug/L	81
20) Carbon Disulfide	7.72	76	1297932	42.8156 ug/L	99
21) Acrylonitrile	7.89	53	114304	53.7623 ug/L	98
22) Methyl Tert Butyl Ether	7.92	73	997690	53.2990 ug/L	95
23) trans-1,2-Dichloroethene	8.18	96	465938	50.7019 ug/L	85
24) n-Hexane	8.26	57	720152	47.7416 ug/L	99
25) Diisopropyl ether	8.64	45	3661751	99.2647 ug/L	98
26) Vinyl Acetate	8.84	43	795425	123.6634 ug/L	98
27) 1,1-Dichloroethane	8.87	63	938919	47.6189 ug/L	99
28) Ethyl-Tert-Butyl ether	9.29	59	2936265	100.3192 ug/L	98
29) 2-Butanone	9.49	43	129440	54.7198 ug/L	94
30) Propionitrile	9.62	54	77885	108.1229 ug/L	97
31) 2,2-Dichloropropane	9.74	77	831155	49.3292 ug/L	95
32) cis-1,2-Dichloroethene	9.82	96	500917	51.0484 ug/L	83
33) Chloroform	10.05	83	889774	46.6327 ug/L	99
34) 1-Bromopropane	10.21	122	106626	49.9974 ug/L	99
35) Bromochloromethane	10.32	130	253029	49.4018 ug/L	99
36) Tetrahydrofuran	10.35	42	154972	103.8096 ug/L	95
38) 1,1,1-Trichloroethane	10.66	97	851093	44.7826 ug/L	95
39) Cyclohexane	10.69	56	922413	48.7086 ug/L	95
40) 1,1-Dichloropropene	10.89	75	671721	45.8953 ug/L	92
41) Tert-Amyl-Methyl ether	11.01	73	2020683	99.9838 ug/L	91
42) Carbon Tetrachloride	11.05	117	753244	46.7026 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M130923.D 8260WT.M Fri Feb 06 08:53:39 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130923.D Vial: 15
Acq On : 5 Feb 2015 17:16 Operator: TMB
Sample : WG511026-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD68730 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 06 08:53:39 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.26	62	660581	43.7556 ug/L	98
46)	Benzene	11.30	78	1759311	48.5188 ug/L	87
47)	Trichloroethene	12.18	130	474455	50.1483 ug/L	80
48)	Methylcyclohexane	12.27	83	712809	48.0091 ug/L	88
49)	1,2-Dichloropropane	12.42	63	496756	50.8882 ug/L	89
50)	1,4-Dioxane	12.77	88	6355	176.5826 ug/L	71
51)	Bromodichloromethane	12.77	83	653890	46.5516 ug/L	99
52)	Dibromomethane	12.87	93	225641	48.8051 ug/L	100
53)	2-Chloroethyl Vinyl Ether	13.14	63	210448	52.8926 ug/L	99
54)	4-Methyl-2-Pentanone	13.17	58	108528	53.0428 ug/L	91
55)	cis-1,3-Dichloropropene	13.52	75	734763	53.1903 ug/L	94
56)	Dimethyl Disulfide	13.83	79	332632	48.3544 ug/L	91
59)	Toluene	14.01	91	1837209	50.1612 ug/L	98
60)	Ethyl Methacrylate	14.15	69	401897	55.5008 ug/L	90
62)	trans-1,3-Dichloropropene	14.23	75	600271	51.3507 ug/L	97
63)	1,1,2-Trichloroethane	14.48	97	292133	51.8288 ug/L	100
64)	2-Hexanone	14.42	43	193023	53.8800 ug/L	99
65)	1,3-Dichloropropane	14.85	76	535794	51.1216 ug/L	90
66)	Tetrachloroethene	14.98	166	488664	46.4005 ug/L	93
67)	Dibromochloromethane	15.30	129	401111	52.6127 ug/L	100
68)	1,2-Dibromoethane	15.60	107	291040	53.3526 ug/L	99
69)	1-Chlorohexane	15.72	91	649804	52.2370 ug/L	79
70)	Chlorobenzene	16.20	112	1159243	45.7936 ug/L	70
71)	1,1,1,2-Tetrachloroethane	16.24	131	463070	50.4412 ug/L	94
72)	Ethylbenzene	16.24	106	685956	49.2249 ug/L	98
73)	m-,p-Xylene	16.35	106	1606410	96.3635 ug/L	96
74)	o-Xylene	17.02	106	781088	46.4775 ug/L	94
75)	Styrene	17.07	104	1369938	50.9470 ug/L	87
76)	Bromoform	17.64	173	228757	47.6538 ug/L	99
77)	Isopropylbenzene	17.53	105	1979004	44.7291 ug/L	100
79)	1,1,2,2-Tetrachloroethane	17.79	83	318406	55.1576 ug/L	99
81)	1,2,3-Trichloropropane	18.02	110	100347	51.9499 ug/L	98
82)	trans-1,4-Dichloro-2-Buten	18.08	53	125229	46.0900 ug/L	73
83)	n-Propylbenzene	18.14	91	2330259	46.4996 ug/L	99
84)	Bromobenzene	18.27	156	526392	51.2929 ug/L	91
85)	1,3,5-Trimethylbenzene	18.36	105	1870441	52.6580 ug/L	96
86)	2-Chlorotoluene	18.46	91	1493885	45.5587 ug/L	95
87)	4-Chlorotoluene	18.51	91	1552539	47.5010 ug/L	92
88)	a-Methylstyrene	18.84	118	1027306	53.2313 ug/L	97
89)	tert-Butylbenzene	18.91	134	373413	47.1559 ug/L	93
90)	1,2,4-Trimethylbenzene	18.98	105	1889296	51.7895 ug/L	85
91)	sec-Butylbenzene	19.24	105	1996448	46.3250 ug/L	97
92)	p-Isopropyltoluene	19.44	119	1712936	48.4420 ug/L	96
93)	1,3-Dichlorobenzene	19.65	146	973086	46.0823 ug/L	93
94)	1,4-Dichlorobenzene	19.80	146	1044757	48.6514 ug/L	93
95)	n-Butylbenzene	20.06	91	1624194	50.2196 ug/L	98
96)	1,2-Dichlorobenzene	20.40	146	864573	46.1605 ug/L	94
97)	1,2-Dibromo-3-Chloropropan	21.59	75	60870	50.4109 ug/L	90
98)	1,2,4-Trichlorobenzene	22.97	180	599619	49.6104 ug/L	98
99)	Hexachlorobutadiene	23.16	225	261961	49.6600 ug/L	100
100)	Naphthalene	23.43	128	915288	52.0668 ug/L	100
101)	1,2,3-Trichlorobenzene	23.85	180	504041	49.3597 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M130923.D 8260WT.M Fri Feb 06 08:53:39 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\020515\6M130923.D Vial: 15
Acq On : 5 Feb 2015 17:16 Operator: TMB
Sample : WG511026-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD68730 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 6 8:53 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Initial Calibration

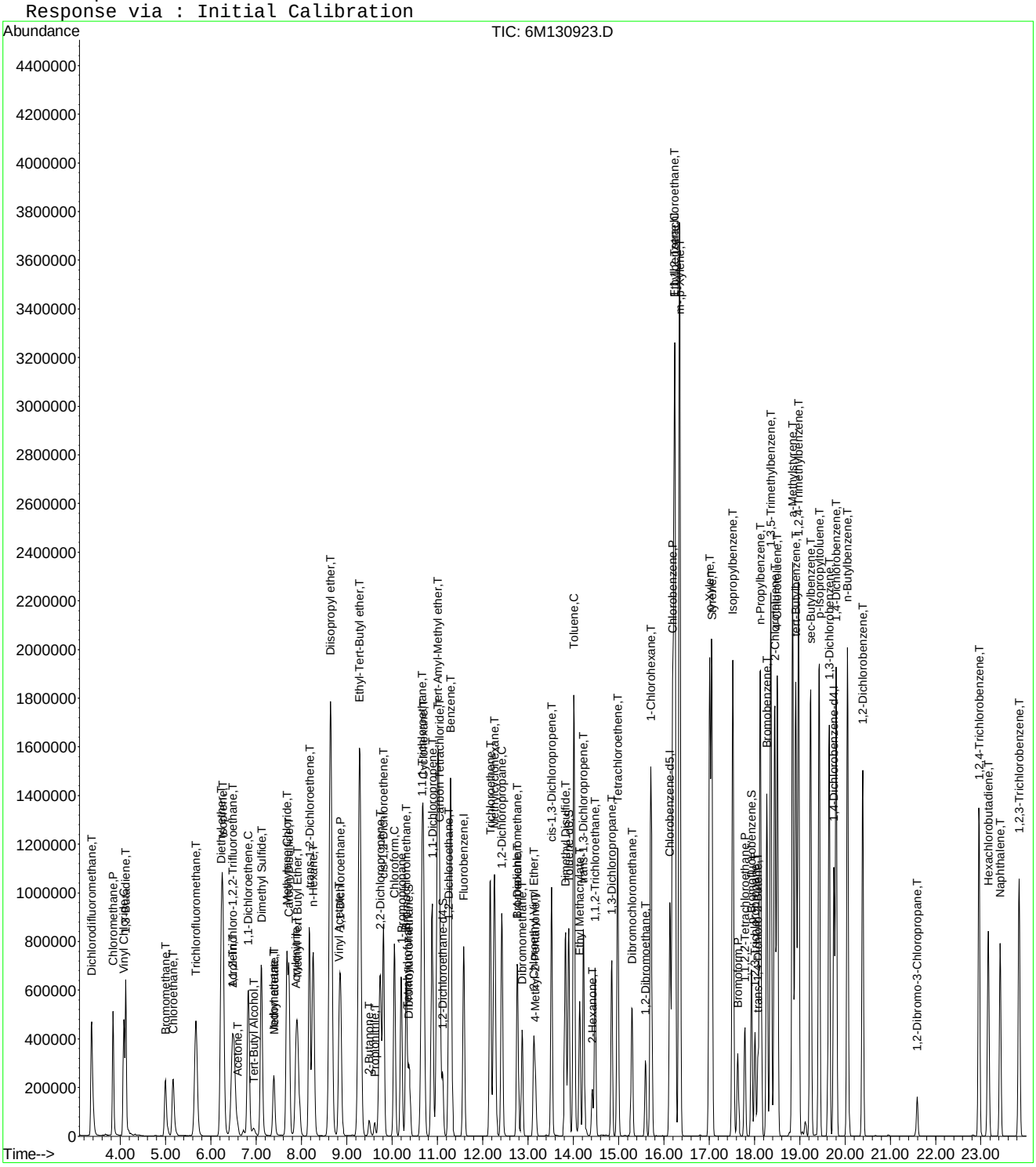

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\020515\6M130923.D Vial: 15
Acq On : 5 Feb 2015 17:16 Operator: TMB
Sample : WG511026-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD68730 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	138	0.00
2	T	Dichlorodifluoromethane	50.0000	44.8179	10.4	111	0.00
3	P	Chloromethane	50.0000	46.7349	6.5	123	0.00
4	C	Vinyl Chloride	50.0000	47.8414	4.3	120	0.00
5	T	1,3-Butadiene	50.0000	25.9652	48.1#	73	0.00
6	T	Bromomethane	50.0000	40.7854	18.4	129	0.00
7	T	Chloroethane	50.0000	54.7797	-9.6	151	0.00
8	T	Trichlorofluoromethane	50.0000	40.8594	18.3	109	0.00
9	T	Diethyl ether	100.0000	104.5088	-4.5	145	0.00
10	T	Isoprene	50.0000	55.8817	-11.8	154	0.00
11	T	Acrolein	50.0000	122.3954	-144.8#	378	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	44.2357	11.5	119	0.00
13	T	Acetone	50.0000	52.4788	-5.0	136	0.00
14	C	1,1-Dichloroethene	50.0000	44.4987	11.0	118	0.00
15	T	Tert-Butyl Alcohol	200.0000	241.1040	-20.6#	155	0.01
16	T	Dimethyl Sulfide	50.0000	57.2341	-14.5	153	0.00
17	T	Iodomethane	50.0000	36.4464	27.1#	100	0.00
18	T	Methyl acetate	50.0000	36.9983	26.0#	100	0.00
19	T	Methylene Chloride	50.0000	49.6160	0.8	136	0.00
20	T	Carbon Disulfide	50.0000	42.8156	14.4	121	0.00
21	T	Acrylonitrile	50.0000	53.7623	-7.5	146	0.00
22	T	Methyl Tert Butyl Ether	50.0000	53.2990	-6.6	137	0.00
23	T	trans-1,2-Dichloroethene	50.0000	50.7019	-1.4	136	0.00
24	T	n-Hexane	50.0000	47.7415	4.5	133	0.00
25	T	Diisopropyl ether	100.0000	99.2647	0.7	138	0.00
26	T	Vinyl Acetate	50.0000	123.6634	-147.3#	338	0.00
27	P	1,1-Dichloroethane	50.0000	47.6189	4.8	128	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	100.3192	-0.3	138	0.00
29	T	2-Butanone	50.0000	54.7198	-9.4	146	0.00
30	T	Propionitrile	100.0000	108.1229	-8.1	147	0.00
31	T	2,2-Dichloropropane	50.0000	49.3292	1.3	123	0.00
32	T	cis-1,2-Dichloroethene	50.0000	51.0484	-2.1	133	0.00
33	C	Chloroform	50.0000	46.6327	6.7	121	0.00
34		1-Bromopropane	50.0000	49.9974	0.0	135	0.00
35	T	Bromochloromethane	50.0000	49.4018	1.2	129	0.00
36	T	Tetrahydrofuran	100.0000	103.8097	-3.8	143	0.00
37	S	Dibromofluoromethane	25.0000	23.3366	6.7	124	0.00
38	T	1,1,1-Trichloroethane	50.0000	44.7826	10.4	116	0.00
39	T	Cyclohexane	50.0000	48.7086	2.6	133	0.00
40	T	1,1-Dichloropropene	50.0000	45.8953	8.2	119	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	99.9838	0.0	137	0.00
42	T	Carbon Tetrachloride	50.0000	46.7026	6.6	117	0.00
43	S	1,2-Dichloroethane-d4	25.0000	21.4287	14.3	116	0.00
44		Heptane	-1.0000	0.0000	0.0	127	0.00
45	T	1,2-Dichloroethane	50.0000	43.7556	12.5	114	0.00
46	T	Benzene	50.0000	48.5188	3.0	130	0.00
47	T	Trichloroethene	50.0000	50.1482	-0.3	132	0.00
48	T	Methylcyclohexane	50.0000	48.0091	4.0	132	0.00
49	C	1,2-Dichloropropane	50.0000	50.8882	-1.8	133	0.00
50	T	1,4-Dioxane	200.0000	176.5826	11.7	123	0.00
51	T	Bromodichloromethane	50.0000	46.5516	6.9	119	0.00
52	T	Dibromomethane	50.0000	48.8051	2.4	124	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	52.8926	-5.8	140	0.00
54	T	4-Methyl-2-Pentanone	50.0000	53.0428	-6.1	140	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\020515\6M130923.D Vial: 15
Acq On : 5 Feb 2015 17:16 Operator: TMB
Sample : WG511026-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD68730 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:51:16 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.1903	-6.4	133	0.00
56	T	Dimethyl Disulfide	50.0000	48.3544	3.3	133	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	131	0.00
58	S	Toluene-d8	25.0000	24.6567	1.4	132	0.00
59	C	Toluene	50.0000	50.1612	-0.3	126	0.00
60	T	Ethyl Methacrylate	50.0000	55.5008	-11.0	143	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	127	0.00
62	T	trans-1,3-Dichloropropene	50.0000	51.3507	-2.7	119	0.00
63	T	1,1,2-Trichloroethane	50.0000	51.8289	-3.7	130	0.00
64	T	2-Hexanone	50.0000	53.8800	-7.8	133	0.00
65	T	1,3-Dichloropropane	50.0000	51.1216	-2.2	129	0.00
66	T	Tetrachloroethene	50.0000	46.4005	7.2	119	0.00
67	T	Dibromochloromethane	50.0000	52.6127	-5.2	122	0.00
68	T	1,2-Dibromoethane	50.0000	53.3526	-6.7	125	0.00
69	T	1-Chlorohexane	50.0000	52.2370	-4.5	131	0.00
70	P	Chlorobenzene	50.0000	45.7936	8.4	117	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	50.4412	-0.9	119	0.00
72	C	Ethylbenzene	50.0000	49.2249	1.6	123	0.00
73	T	m-,p-Xylene	100.0000	96.3635	3.6	119	0.00
74	T	o-Xylene	50.0000	46.4775	7.0	116	0.00
75	T	Styrene	50.0000	50.9470	-1.9	123	0.00
76	P	Bromoform	50.0000	47.6538	4.7	120	0.00
77	T	Isopropylbenzene	50.0000	44.7291	10.5	111	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	121	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	55.1576	-10.3	128	0.00
80	S	p-Bromofluorobenzene	25.0000	25.1405	-0.6	124	0.00
81	T	1,2,3-Trichloropropane	50.0000	51.9499	-3.9	119	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	46.0900	7.8	112	0.00
83	T	n-Propylbenzene	50.0000	46.4996	7.0	109	0.00
84	T	Bromobenzene	50.0000	51.2929	-2.6	119	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	52.6580	-5.3	119	0.00
86	T	2-Chlorotoluene	50.0000	45.5588	8.9	110	0.00
87	T	4-Chlorotoluene	50.0000	47.5010	5.0	109	0.00
88	T	a-Methylstyrene	50.0000	53.2313	-6.5	123	0.00
89	T	tert-Butylbenzene	50.0000	47.1559	5.7	111	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	51.7895	-3.6	117	0.00
91	T	sec-Butylbenzene	50.0000	46.3250	7.4	109	0.00
92	T	p-Isopropyltoluene	50.0000	48.4420	3.1	108	0.00
93	T	1,3-Dichlorobenzene	50.0000	46.0823	7.8	107	0.00
94	T	1,4-Dichlorobenzene	50.0000	48.6514	2.7	116	0.00
95	T	n-Butylbenzene	50.0000	50.2196	-0.4	113	0.00
96	T	1,2-Dichlorobenzene	50.0000	46.1605	7.7	109	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	50.4109	-0.8	116	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	49.6104	0.8	115	0.00
99	T	Hexachlorobutadiene	50.0000	49.6600	0.7	112	0.00
100	T	Naphthalene	50.0000	52.0668	-4.1	117	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	49.3597	1.3	112	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M130923.D 8260WT.M Fri Feb 06 08:56:18 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\021915\6M131173.D Vial: 3
Acq On : 19 Feb 2015 11:47 Operator: TMB
Sample : WG512809-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD68957 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 19 12:11:49 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	633446	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.15	117	483656	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.76	152	274917	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.38	111	159883	24.9901 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.96%		
43) 1,2-Dichloroethane-d4	11.11	65	194896	25.5629 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.24%		
58) Toluene-d8	13.90	98	541439	24.5317 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.12%		
80) p-Bromofluorobenzene	17.94	95	241387	26.1133 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.44%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.37	85	520859	46.2630 ug/L	97
3) Chloromethane	3.84	50	372263	41.8887 ug/L	98
4) Vinyl Chloride	4.09	62	380333	49.9665 ug/L	98
5) 1,3-Butadiene	4.13	54	334753	44.1579 ug/L	92
6) Bromomethane	5.01	94	166378	39.8870 ug/L	99
7) Chloroethane	5.17	64	228166	51.6945 ug/L	93
8) Trichlorofluoromethane	5.67	101	728168	51.3044 ug/L	99
9) Diethyl ether	6.22	59	393012	96.2567 ug/L	96
10) Isoprene	6.27	67	402046	53.1985 ug/L	92
11) Acrolein	6.48	56	6537	82.2498 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	344453	51.0574 ug/L	94
13) Acetone	6.59	43	44007	45.0252 ug/L	97
14) 1,1-Dichloroethene	6.83	61	543253	47.5741 ug/L	89
15) Tert-Butyl Alcohol	6.94	59	55033	271.4653 ug/L	98
16) Dimethyl Sulfide	7.11	62	289738	46.5302 ug/L	89
17) Iodomethane	7.40	142	215607	38.6820 ug/L	75
18) Methyl acetate	7.40	43	132541	34.8490 ug/L	98
19) Methylene Chloride	7.68	84	281449	49.7816 ug/L	93
20) Carbon Disulfide	7.72	76	928166	47.7792 ug/L	99
21) Acrylonitrile	7.88	53	57639	42.3054 ug/L	99
22) Methyl Tert Butyl Ether	7.91	73	653984	54.5197 ug/L	99
23) trans-1,2-Dichloroethene	8.17	96	302359	51.3431 ug/L	91
24) n-Hexane	8.26	57	417342	43.1745 ug/L	98
25) Diisopropyl ether	8.64	45	2047935	86.6334 ug/L	95
26) Vinyl Acetate	8.84	43	359964	87.3302 ug/L	99
27) 1,1-Dichloroethane	8.87	63	616109	48.7610 ug/L	97
28) Ethyl-Tert-Butyl ether	9.28	59	1937153	103.2799 ug/L	97
29) 2-Butanone	9.49	43	69357	45.7541 ug/L	99
30) Propionitrile	9.61	54	40842	88.4777 ug/L	98
31) 2,2-Dichloropropane	9.73	77	648897	60.0981 ug/L	96
32) cis-1,2-Dichloroethene	9.82	96	330570	52.5706 ug/L	95
33) Chloroform	10.05	83	657005	53.7332 ug/L	99
34) 1-Bromopropane	10.21	122	66041	48.3354 ug/L	98
35) Bromochloromethane	10.32	130	165781	50.5092 ug/L	99
36) Tetrahydrofuran	10.34	42	82607	86.3504 ug/L	99
38) 1,1,1-Trichloroethane	10.65	97	661884	54.3473 ug/L	97
39) Cyclohexane	10.69	56	537347	44.2791 ug/L	95
40) 1,1-Dichloropropene	10.89	75	495140	52.7923 ug/L	88
41) Tert-Amyl-Methyl ether	11.01	73	1361647	105.1379 ug/L	94
42) Carbon Tetrachloride	11.05	117	590460	57.1293 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M131173.D 8260WT.M Thu Feb 19 12:11:50 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\021915\6M131173.D Vial: 3
Acq On : 19 Feb 2015 11:47 Operator: TMB
Sample : WG512809-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD68957 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 19 12:11:49 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	11.26	62	494860	51.1508	ug/L		90
46)	Benzene	11.30	78	1180697	50.8123	ug/L		96
47)	Trichloroethene	12.17	130	302372	49.8730	ug/L		73
48)	Methylcyclohexane	12.27	83	463949	48.7623	ug/L		97
49)	1,2-Dichloropropane	12.42	63	301597	48.2130	ug/L	#	70
50)	1,4-Dioxane	12.77	88	5379	233.2368	ug/L		83
51)	Bromodichloromethane	12.78	83	490409	54.4818	ug/L		100
52)	Dibromomethane	12.87	93	162566	54.8706	ug/L		97
53)	2-Chloroethyl Vinyl Ether	13.13	63	126209	49.4998	ug/L		95
54)	4-Methyl-2-Pentanone	13.16	58	61035	46.5507	ug/L		98
55)	cis-1,3-Dichloropropene	13.52	75	488469	55.1804	ug/L		97
56)	Dimethyl Disulfide	13.83	79	231698	52.5602	ug/L		97
59)	Toluene	14.02	91	1261714	51.7316	ug/L		99
60)	Ethyl Methacrylate	14.15	69	259560	53.8420	ug/L		97
62)	trans-1,3-Dichloropropene	14.24	75	452726	58.1594	ug/L		92
63)	1,1,2-Trichloroethane	14.48	97	193057	51.4354	ug/L		99
64)	2-Hexanone	14.42	43	110229	46.2061	ug/L		97
65)	1,3-Dichloropropane	14.85	76	361404	51.7828	ug/L		93
66)	Tetrachloroethene	14.99	166	332271	47.3795	ug/L	#	84
67)	Dibromochloromethane	15.30	129	286625	56.4580	ug/L		100
68)	1,2-Dibromoethane	15.61	107	200861	55.2947	ug/L		99
69)	1-Chlorohexane	15.72	91	423575	51.1342	ug/L		87
70)	Chlorobenzene	16.20	112	841721	49.9326	ug/L	#	66
71)	1,1,1,2-Tetrachloroethane	16.24	131	330009	53.9821	ug/L		89
72)	Ethylbenzene	16.25	106	469282	50.5718	ug/L		91
73)	m-,p-Xylene	16.35	106	1135689	102.3059	ug/L		88
74)	o-Xylene	17.01	106	558965	49.9474	ug/L		85
75)	Styrene	17.07	104	941010	52.5530	ug/L		79
76)	Bromoform	17.64	173	175351	54.7923	ug/L		98
77)	Isopropylbenzene	17.54	105	1498335	50.8555	ug/L		98
79)	1,1,2,2-Tetrachloroethane	17.79	83	214979	53.7533	ug/L		100
81)	1,2,3-Trichloropropane	18.03	110	68708	51.3421	ug/L		97
82)	trans-1,4-Dichloro-2-Buten	18.09	53	88736	47.1281	ug/L		82
83)	n-Propylbenzene	18.14	91	1823921	52.5335	ug/L		98
84)	Bromobenzene	18.28	156	360204	50.6620	ug/L		87
85)	1,3,5-Trimethylbenzene	18.36	105	1323910	53.7978	ug/L		94
86)	2-Chlorotoluene	18.45	91	1203166	52.9621	ug/L		98
87)	4-Chlorotoluene	18.52	91	1169261	51.6365	ug/L		93
88)	a-Methylstyrene	18.85	118	689588	51.5754	ug/L		97
89)	tert-Butylbenzene	18.92	134	251801	45.8975	ug/L		93
90)	1,2,4-Trimethylbenzene	18.99	105	1356959	53.6901	ug/L		82
91)	sec-Butylbenzene	19.24	105	1513347	50.6852	ug/L		98
92)	p-Isopropyltoluene	19.43	119	1309290	53.4444	ug/L		97
93)	1,3-Dichlorobenzene	19.65	146	679877	46.4728	ug/L		84
94)	1,4-Dichlorobenzene	19.81	146	671574	45.1398	ug/L		84
95)	n-Butylbenzene	20.07	91	1202266	53.6563	ug/L		95
96)	1,2-Dichlorobenzene	20.39	146	586817	45.2227	ug/L		84
97)	1,2-Dibromo-3-Chloropropan	21.59	75	47170	56.2873	ug/L		75
98)	1,2,4-Trichlorobenzene	22.97	180	457522	54.6380	ug/L		99
99)	Hexachlorobutadiene	23.17	225	239686	65.5841	ug/L		99
100)	Naphthalene	23.44	128	641523	52.6745	ug/L		100
101)	1,2,3-Trichlorobenzene	23.86	180	388801	54.9566	ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\021915\6M131173.D Vial: 3
Acq On : 19 Feb 2015 11:47 Operator: TMB
Sample : WG512809-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD68957 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 19 12:11 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration

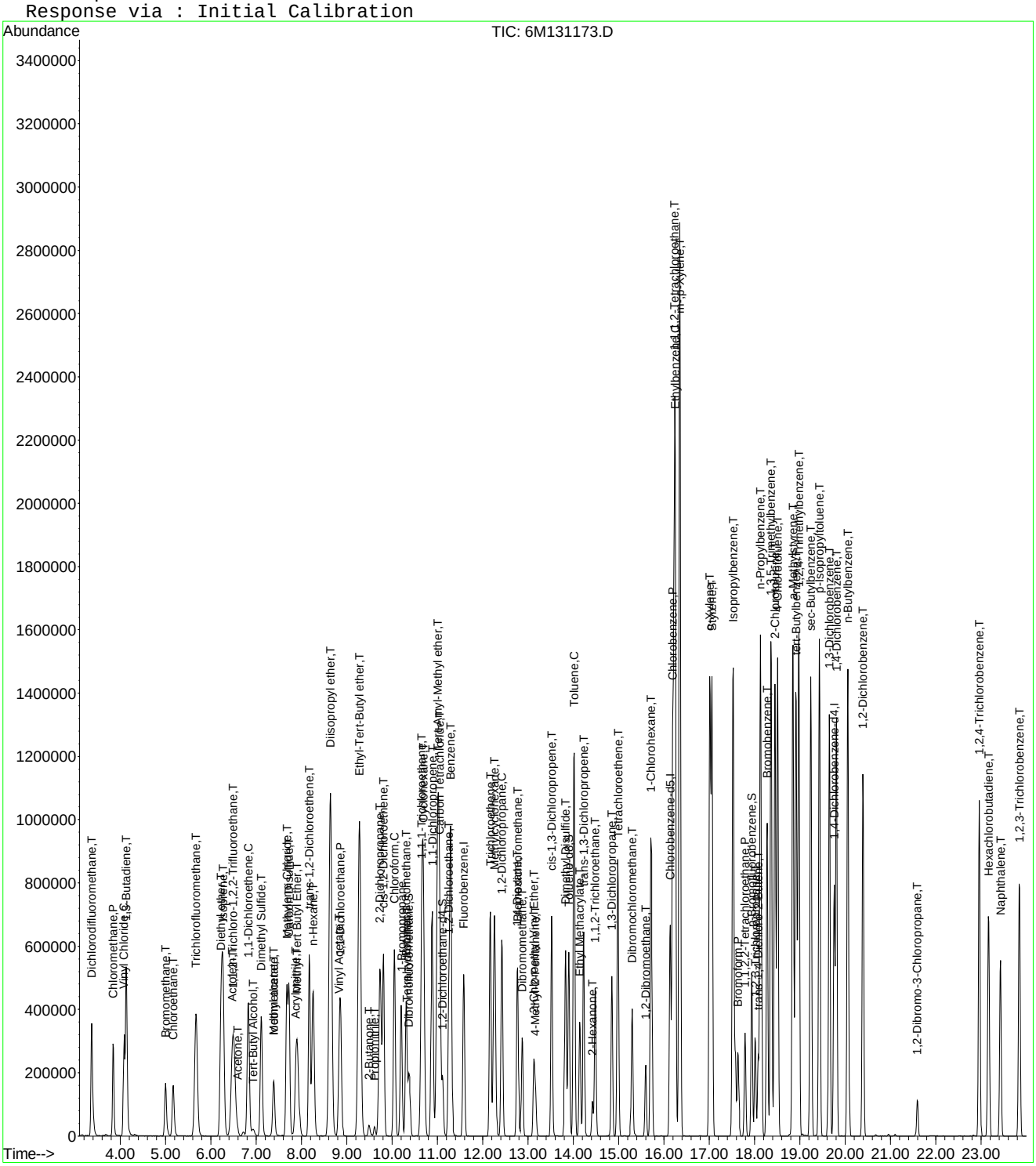

Continuing Calibration Area and RT check

Instrument: HPMS6
Initial cal date: 5 Feb 2015 14:09
CCV date: 19 Feb 2015 11:47
CCV Filename: 6M131173.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	715746	11.58	554647	16.14	327681	19.75
CCV	633446	11.58	483656	16.15	274917	19.76

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\021915\6M131173.D Vial: 3
Acq On : 19 Feb 2015 11:47 Operator: TMB
Sample : WG512809-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD68957 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	89	0.00
2	T	Dichlorodifluoromethane	0.4443	0.4111	7.5	73	0.00
3	P	Chloromethane	0.3507	0.2938	16.2	71	0.00
4	C	Vinyl Chloride	0.3004	0.3002	0.1	81	0.00
5	T	1,3-Butadiene	0.2664	0.2642	0.8	77	0.00
6	T	Bromomethane	0.1372	0.1313	4.3	81	0.00
7	T	Chloroethane	0.1742	0.1801	-3.4	91	0.00
8	T	Trichlorofluoromethane	0.5602	0.5748	-2.6	88	0.00
9	T	Diethyl ether	0.1611	0.1551	3.7	86	0.00
10	T	Isoprene	0.2983	0.3174	-6.4	94	0.00
11	T	Acrolein	0.0031	0.0052	-64.3#	163	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2663	0.2719	-2.1	88	0.00
13	T	Acetone	0.0386	0.0347	9.9	75	0.00
14	C	1,1-Dichloroethene	0.4507	0.4288	4.9	81	0.00
15	T	Tert-Butyl Alcohol	0.0080	0.0109	-35.7#	112	0.00
16	T	Dimethyl Sulfide	0.2458	0.2287	6.9	80	0.00
17	T	Iodomethane	0.1803	0.1702	5.6	68	0.00
18	T	Methyl acetate	0.1501	0.1046	30.3#	61	0.00
19	T	Methylene Chloride	0.2231	0.2222	0.4	88	0.00
20	T	Carbon Disulfide	0.7667	0.7326	4.4	86	0.00
21	T	Acrylonitrile	0.0538	0.0455	15.4	74	0.00
22	T	Methyl Tert Butyl Ether	0.4734	0.5162	-9.0	90	0.00
23	T	trans-1,2-Dichloroethene	0.2324	0.2387	-2.7	88	0.00
24	T	n-Hexane	0.3815	0.3294	13.7	77	0.00
25	T	Diisopropyl ether	0.9330	0.8083	13.4	77	0.00
26	T	Vinyl Acetate	0.1627	0.2841	-74.7#	153	0.00
27	P	1,1-Dichloroethane	0.4987	0.4863	2.5	84	0.00
28	T	Ethyl-Tert-Butyl ether	0.7402	0.7645	-3.3	91	0.00
29	T	2-Butanone	0.0598	0.0548	8.5	78	0.00
30	T	Propionitrile	0.0182	0.0161	11.5	77	0.00
31	T	2,2-Dichloropropane	0.4261	0.5122	-20.2#	96	0.00
32	T	cis-1,2-Dichloroethene	0.2482	0.2609	-5.1	88	0.00
33	C	Chloroform	0.4826	0.5186	-7.5	89	0.00
34		1-Bromopropane	0.0501	0.0521	-4.1	84	0.00
35	T	Bromochloromethane	0.1295	0.1309	-1.0	85	0.00
36	T	Tetrahydrofuran	0.0378	0.0326	13.7	76	0.00
37	S	Dibromofluoromethane	0.2525	0.2524	0.0	85	0.00
38	T	1,1,1-Trichloroethane	0.4807	0.5224	-8.7	90	0.00
39	T	Cyclohexane	0.4789	0.4242	11.4	77	0.00
40	T	1,1-Dichloropropene	0.3702	0.3908	-5.6	88	0.00
41	T	Tert-Amyl-Methyl ether	0.5111	0.5374	-5.1	93	0.00
42	T	Carbon Tetrachloride	0.4079	0.4661	-14.3	92	0.00
43	S	1,2-Dichloroethane-d4	0.3009	0.3077	-2.3	89	0.00
44		Heptane	0.0000	0.0000	0.0	87	0.00
45	T	1,2-Dichloroethane	0.3818	0.3906	-2.3	85	0.00
46	T	Benzene	0.9171	0.9320	-1.6	87	0.00
47	T	Trichloroethene	0.2393	0.2387	0.3	84	0.00
48	T	Methylcyclohexane	0.3755	0.3662	2.5	86	0.00
49	C	1,2-Dichloropropane	0.2469	0.2381	3.6	81	0.00
50	T	1,4-Dioxane	0.0009	0.0011	-16.5	104	0.00
51	T	Bromodichloromethane	0.3553	0.3871	-9.0	90	0.00
52	T	Dibromomethane	0.1169	0.1283	-9.7	90	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1006	0.0996	1.0	84	0.00
54	T	4-Methyl-2-Pentanone	0.0517	0.0482	6.9	79	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\021915\6M131173.D Vial: 3
Acq On : 19 Feb 2015 11:47 Operator: TMB
Sample : WG512809-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD68957 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.3494	0.3856	-10.4	88	0.00
56	T	Dimethyl Disulfide	0.1740	0.1829	-5.1	93	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	87	0.00
58	S	Toluene-d8	1.1408	1.1195	1.9	87	0.00
59	C	Toluene	1.2607	1.3043	-3.5	86	0.00
60	T	Ethyl Methacrylate	0.2252	0.2683	-19.1	93	0.00
61		Paraldehyde	0.0000	0.0000	0.0	86	0.00
62	T	trans-1,3-Dichloropropene	0.4024	0.4680	-16.3	90	0.00
63	T	1,1,2-Trichloroethane	0.1940	0.1996	-2.9	86	0.00
64	T	2-Hexanone	0.1233	0.1140	7.6	76	0.00
65	T	1,3-Dichloropropane	0.3608	0.3736	-3.6	87	0.00
66	T	Tetrachloroethene	0.3625	0.3435	5.2	81	0.00
67	T	Dibromochloromethane	0.2624	0.2963	-12.9	87	0.00
68	T	1,2-Dibromoethane	0.1878	0.2077	-10.6	86	0.00
69	T	1-Chlorohexane	0.4282	0.4379	-2.3	85	0.00
70	P	Chlorobenzene	0.8713	0.8702	0.1	85	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3160	0.3412	-8.0	85	0.00
72	C	Ethylbenzene	0.4797	0.4851	-1.1	84	0.00
73	T	m-,p-Xylene	0.5738	0.5870	-2.3	84	0.00
74	T	o-Xylene	0.5785	0.5778	0.1	83	0.00
75	T	Styrene	0.9255	0.9728	-5.1	85	0.00
76	P	Bromoform	0.1512	0.1813	-19.9	92	0.00
77	T	Isopropylbenzene	1.5229	1.5490	-1.7	84	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	84	0.00
79	P	1,1,2,2-Tetrachloroethane	0.3637	0.3910	-7.5	86	0.00
80	S	p-Bromofluorobenzene	0.8406	0.8780	-4.5	89	0.00
81	T	1,2,3-Trichloropropane	0.1217	0.1250	-2.7	82	0.01
82	T	trans-1,4-Dichloro-2-Butene	0.1534	0.1614	-5.2	79	0.00
83	T	n-Propylbenzene	3.1572	3.3172	-5.1	86	0.00
84	T	Bromobenzene	0.6465	0.6551	-1.3	81	0.00
85	T	1,3,5-Trimethylbenzene	2.2379	2.4078	-7.6	84	0.00
86	T	2-Chlorotoluene	2.0659	2.1882	-5.9	88	0.00
87	T	4-Chlorotoluene	2.0592	2.1266	-3.3	82	0.00
88	T	a-Methylstyrene	1.2159	1.2542	-3.2	83	0.00
89	T	tert-Butylbenzene	0.4989	0.4580	8.2	75	0.00
90	T	1,2,4-Trimethylbenzene	2.2983	2.4679	-7.4	84	0.00
91	T	sec-Butylbenzene	2.7152	2.7524	-1.4	83	0.00
92	T	p-Isopropyltoluene	2.2278	2.3813	-6.9	83	0.00
93	T	1,3-Dichlorobenzene	1.3304	1.2365	7.1	75	0.00
94	T	1,4-Dichlorobenzene	1.3529	1.2214	9.7	74	0.00
95	T	n-Butylbenzene	2.0376	2.1866	-7.3	84	0.01
96	T	1,2-Dichlorobenzene	1.1800	1.0673	9.6	74	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.0701	0.0858	-22.4#	90	0.00
98	T	1,2,4-Trichlorobenzene	0.7615	0.8321	-9.3	88	0.00
99	T	Hexachlorobutadiene	0.3323	0.4359	-31.2#	102	0.01
100	T	Naphthalene	1.1075	1.1668	-5.3	82	0.01
101	T	1,2,3-Trichlorobenzene	0.6433	0.7071	-9.9	86	0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M131173.D 8260WT.M Thu Feb 19 12:27:08 2015 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\021915\6M131173.D Vial: 3
Acq On : 19 Feb 2015 11:47 Operator: TMB
Sample : WG512809-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD68957 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	89	0.00
2	T	Dichlorodifluoromethane	50.0000	46.2630	7.5	73	0.00
3	P	Chloromethane	50.0000	41.8888	16.2	71	0.00
4	C	Vinyl Chloride	50.0000	49.9665	0.1	81	0.00
5	T	1,3-Butadiene	50.0000	44.1579	11.7	77	0.00
6	T	Bromomethane	50.0000	39.8870	20.2#	81	0.00
7	T	Chloroethane	50.0000	51.6945	-3.4	91	0.00
8	T	Trichlorofluoromethane	50.0000	51.3044	-2.6	88	0.00
9	T	Diethyl ether	100.0000	96.2567	3.7	86	0.00
10	T	Isoprene	50.0000	53.1985	-6.4	94	0.00
11	T	Acrolein	50.0000	82.2498	-64.5#	163	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	51.0574	-2.1	88	0.00
13	T	Acetone	50.0000	45.0252	9.9	75	0.00
14	C	1,1-Dichloroethene	50.0000	47.5741	4.9	81	0.00
15	T	Tert-Butyl Alcohol	200.0000	271.4653	-35.7#	112	0.00
16	T	Dimethyl Sulfide	50.0000	46.5301	6.9	80	0.00
17	T	Iodomethane	50.0000	38.6820	22.6#	68	0.00
18	T	Methyl acetate	50.0000	34.8490	30.3#	61	0.00
19	T	Methylene Chloride	50.0000	49.7816	0.4	88	0.00
20	T	Carbon Disulfide	50.0000	47.7792	4.4	86	0.00
21	T	Acrylonitrile	50.0000	42.3054	15.4	74	0.00
22	T	Methyl Tert Butyl Ether	50.0000	54.5197	-9.0	90	0.00
23	T	trans-1,2-Dichloroethene	50.0000	51.3431	-2.7	88	0.00
24	T	n-Hexane	50.0000	43.1745	13.7	77	0.00
25	T	Diisopropyl ether	100.0000	86.6334	13.4	77	0.00
26	T	Vinyl Acetate	50.0000	87.3302	-74.7#	153	0.00
27	P	1,1-Dichloroethane	50.0000	48.7610	2.5	84	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	103.2799	-3.3	91	0.00
29	T	2-Butanone	50.0000	45.7541	8.5	78	0.00
30	T	Propionitrile	100.0000	88.4777	11.5	77	0.00
31	T	2,2-Dichloropropane	50.0000	60.0981	-20.2#	96	0.00
32	T	cis-1,2-Dichloroethene	50.0000	52.5706	-5.1	88	0.00
33	C	Chloroform	50.0000	53.7332	-7.5	89	0.00
34		1-Bromopropane	50.0000	48.3354	3.3	84	0.00
35	T	Bromochloromethane	50.0000	50.5092	-1.0	85	0.00
36	T	Tetrahydrofuran	100.0000	86.3504	13.6	76	0.00
37	S	Dibromofluoromethane	25.0000	24.9901	0.0	85	0.00
38	T	1,1,1-Trichloroethane	50.0000	54.3473	-8.7	90	0.00
39	T	Cyclohexane	50.0000	44.2791	11.4	77	0.00
40	T	1,1-Dichloropropene	50.0000	52.7923	-5.6	88	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	105.1379	-5.1	93	0.00
42	T	Carbon Tetrachloride	50.0000	57.1293	-14.3	92	0.00
43	S	1,2-Dichloroethane-d4	25.0000	25.5629	-2.3	89	0.00
44		Heptane	-1.0000	0.0000	0.0	87	0.00
45	T	1,2-Dichloroethane	50.0000	51.1508	-2.3	85	0.00
46	T	Benzene	50.0000	50.8123	-1.6	87	0.00
47	T	Trichloroethene	50.0000	49.8730	0.3	84	0.00
48	T	Methylcyclohexane	50.0000	48.7623	2.5	86	0.00
49	C	1,2-Dichloropropane	50.0000	48.2130	3.6	81	0.00
50	T	1,4-Dioxane	200.0000	233.2368	-16.6	104	0.00
51	T	Bromodichloromethane	50.0000	54.4818	-9.0	90	0.00
52	T	Dibromomethane	50.0000	54.8706	-9.7	90	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	49.4998	1.0	84	0.00
54	T	4-Methyl-2-Pentanone	50.0000	46.5507	6.9	79	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\021915\6M131173.D Vial: 3
Acq On : 19 Feb 2015 11:47 Operator: TMB
Sample : WG512809-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD68957 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	55.1804	-10.4	88	0.00
56	T	Dimethyl Disulfide	50.0000	52.5602	-5.1	93	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	87	0.00
58	S	Toluene-d8	25.0000	24.5317	1.9	87	0.00
59	C	Toluene	50.0000	51.7316	-3.5	86	0.00
60	T	Ethyl Methacrylate	50.0000	53.8420	-7.7	93	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	86	0.00
62	T	trans-1,3-Dichloropropene	50.0000	58.1594	-16.3	90	0.00
63	T	1,1,2-Trichloroethane	50.0000	51.4354	-2.9	86	0.00
64	T	2-Hexanone	50.0000	46.2061	7.6	76	0.00
65	T	1,3-Dichloropropane	50.0000	51.7828	-3.6	87	0.00
66	T	Tetrachloroethene	50.0000	47.3795	5.2	81	0.00
67	T	Dibromochloromethane	50.0000	56.4580	-12.9	87	0.00
68	T	1,2-Dibromoethane	50.0000	55.2947	-10.6	86	0.00
69	T	1-Chlorohexane	50.0000	51.1342	-2.3	85	0.00
70	P	Chlorobenzene	50.0000	49.9326	0.1	85	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	53.9821	-8.0	85	0.00
72	C	Ethylbenzene	50.0000	50.5718	-1.1	84	0.00
73	T	m-,p-Xylene	100.0000	102.3059	-2.3	84	0.00
74	T	o-Xylene	50.0000	49.9474	0.1	83	0.00
75	T	Styrene	50.0000	52.5530	-5.1	85	0.00
76	P	Bromoform	50.0000	54.7923	-9.6	92	0.00
77	T	Isopropylbenzene	50.0000	50.8555	-1.7	84	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	84	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	53.7533	-7.5	86	0.00
80	S	p-Bromofluorobenzene	25.0000	26.1133	-4.5	89	0.00
81	T	1,2,3-Trichloropropane	50.0000	51.3421	-2.7	82	0.01
82	T	trans-1,4-Dichloro-2-Butene	50.0000	47.1281	5.7	79	0.00
83	T	n-Propylbenzene	50.0000	52.5335	-5.1	86	0.00
84	T	Bromobenzene	50.0000	50.6620	-1.3	81	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	53.7978	-7.6	84	0.00
86	T	2-Chlorotoluene	50.0000	52.9621	-5.9	88	0.00
87	T	4-Chlorotoluene	50.0000	51.6365	-3.3	82	0.00
88	T	a-Methylstyrene	50.0000	51.5754	-3.2	83	0.00
89	T	tert-Butylbenzene	50.0000	45.8975	8.2	75	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	53.6901	-7.4	84	0.00
91	T	sec-Butylbenzene	50.0000	50.6852	-1.4	83	0.00
92	T	p-Isopropyltoluene	50.0000	53.4444	-6.9	83	0.00
93	T	1,3-Dichlorobenzene	50.0000	46.4728	7.1	75	0.00
94	T	1,4-Dichlorobenzene	50.0000	45.1398	9.7	74	0.00
95	T	n-Butylbenzene	50.0000	53.6563	-7.3	84	0.01
96	T	1,2-Dichlorobenzene	50.0000	45.2227	9.6	74	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	56.2873	-12.6	90	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	54.6380	-9.3	88	0.00
99	T	Hexachlorobutadiene	50.0000	65.5841	-31.2#	102	0.01
100	T	Naphthalene	50.0000	52.6745	-5.3	82	0.01
101	T	1,2,3-Trichlorobenzene	50.0000	54.9566	-9.9	86	0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\1\DATA\093014\6M128662.D          Vial: 1
Acq On    : 30 Sep 2014  14:48                       Operator: TMB
Sample    : WG494605-01 50ng BFB STD 8260            Inst    : HPMS6
Misc      : 1,1 STD66476                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP: OVL MSV01
```

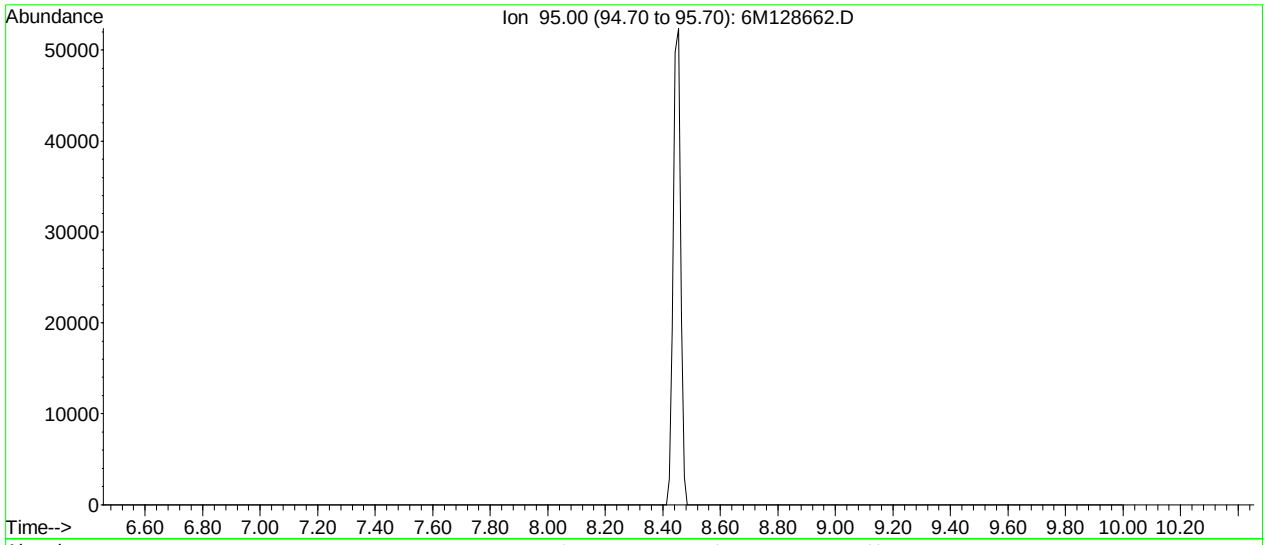

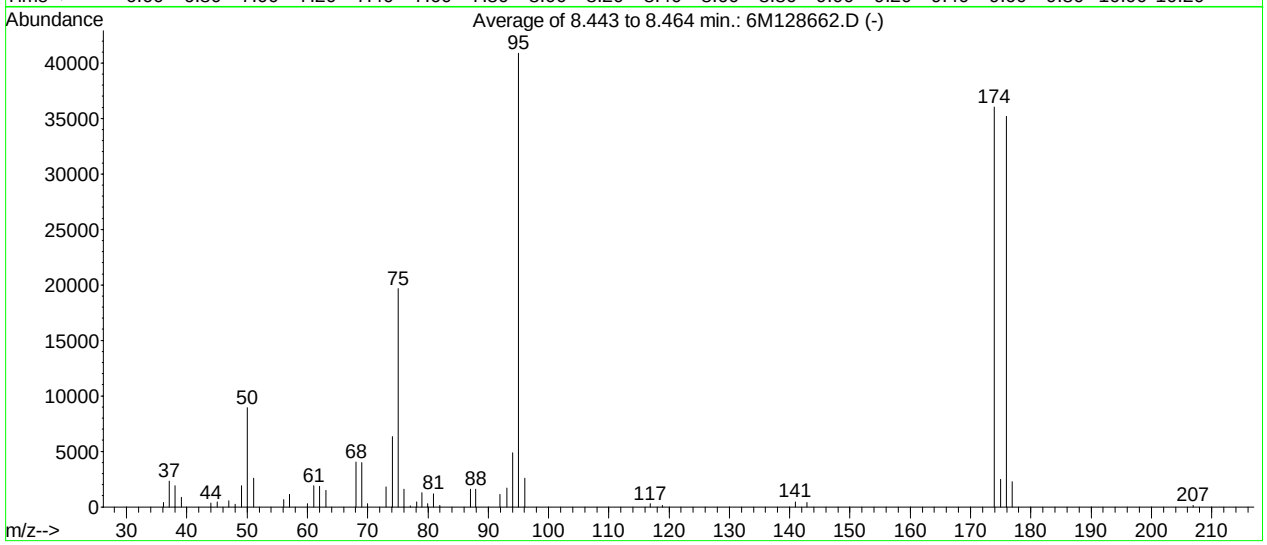

AutoFind: Scans 329, 330, 331; Background Corrected with Scan 324

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.9	8960	PASS
75	95	30	60	48.1	19671	PASS
95	95	100	100	100.0	40893	PASS
96	95	5	9	6.4	2597	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	88.1	36010	PASS
175	174	5	9	6.8	2462	PASS
176	174	95	101	97.8	35205	PASS
177	176	5	9	6.4	2269	PASS

6M128662.D BFB.M Wed Oct 01 15:27:00 2014

BFB

```
Data File : C:\MSDCHEM\1\DATA\020515\6M130909.D          Vial: 1
Acq On    :  5 Feb 2015  10:06                       Operator: TMB
Sample    : WG511026-01 50ng BFB STD 8260            Inst    : HPMS6
Misc      : 1,1 STD68443                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP: OVL MSV01
```

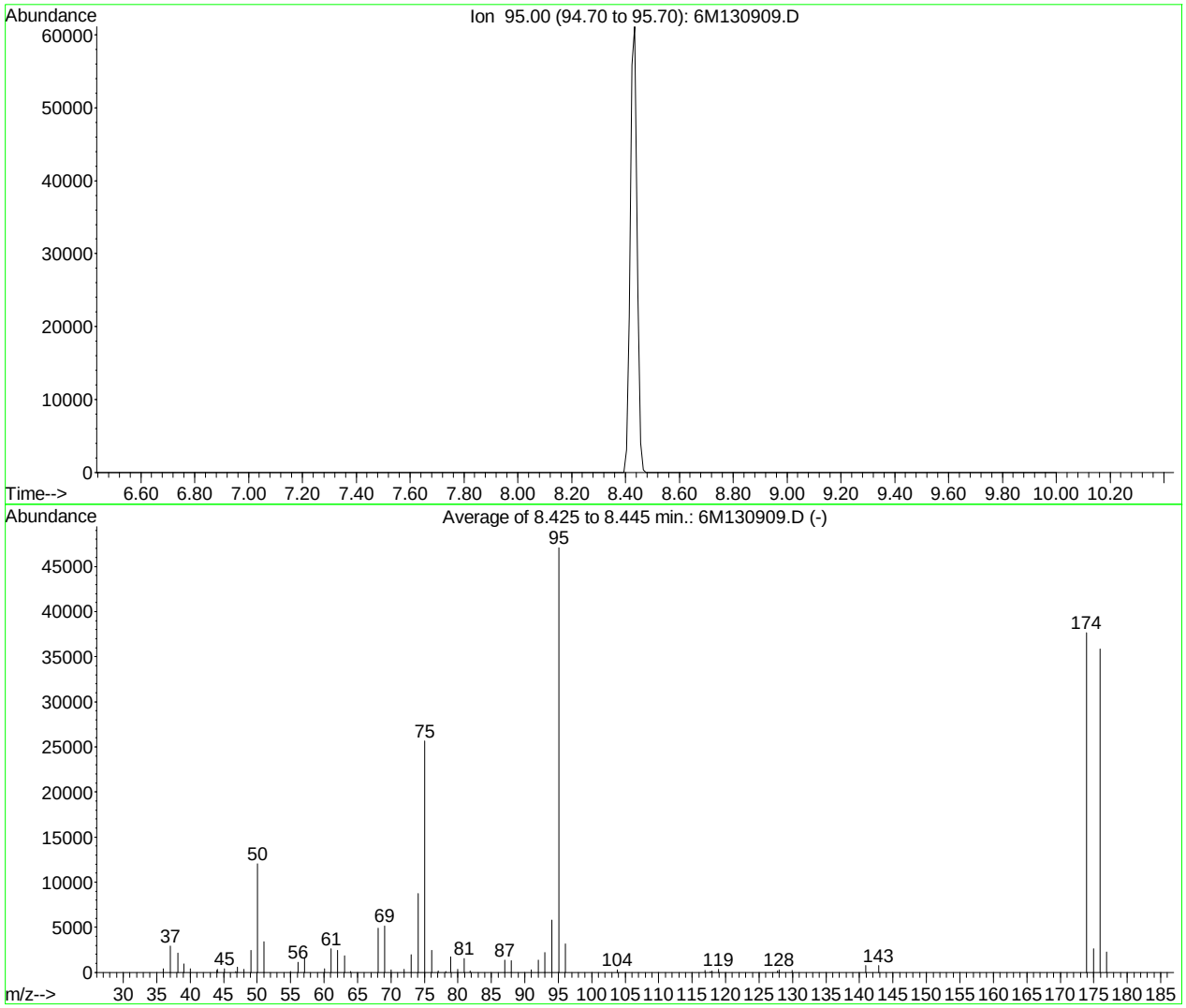

AutoFind: Scans 327, 328, 329; Background Corrected with Scan 322

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	25.6	12033	PASS
75	95	30	60	54.4	25630	PASS
95	95	100	100	100.0	47085	PASS
96	95	5	9	6.7	3164	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	80.0	37658	PASS
175	174	5	9	7.0	2634	PASS
176	174	95	101	95.2	35842	PASS
177	176	5	9	6.3	2263	PASS

6M130909.D BFB.M Thu Feb 05 10:18:06 2015

BFB

```
Data File : C:\MSDCHEM\1\DATA\021915\6M131171.D          Vial: 3
Acq On    : 19 Feb 2015  10:48                       Operator: TMB
Sample    : WG512809-01 50ng BFB STD 8260            Inst    : HPMS6
Misc      : 1,1 STD68443                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP: OVL MSV01
```

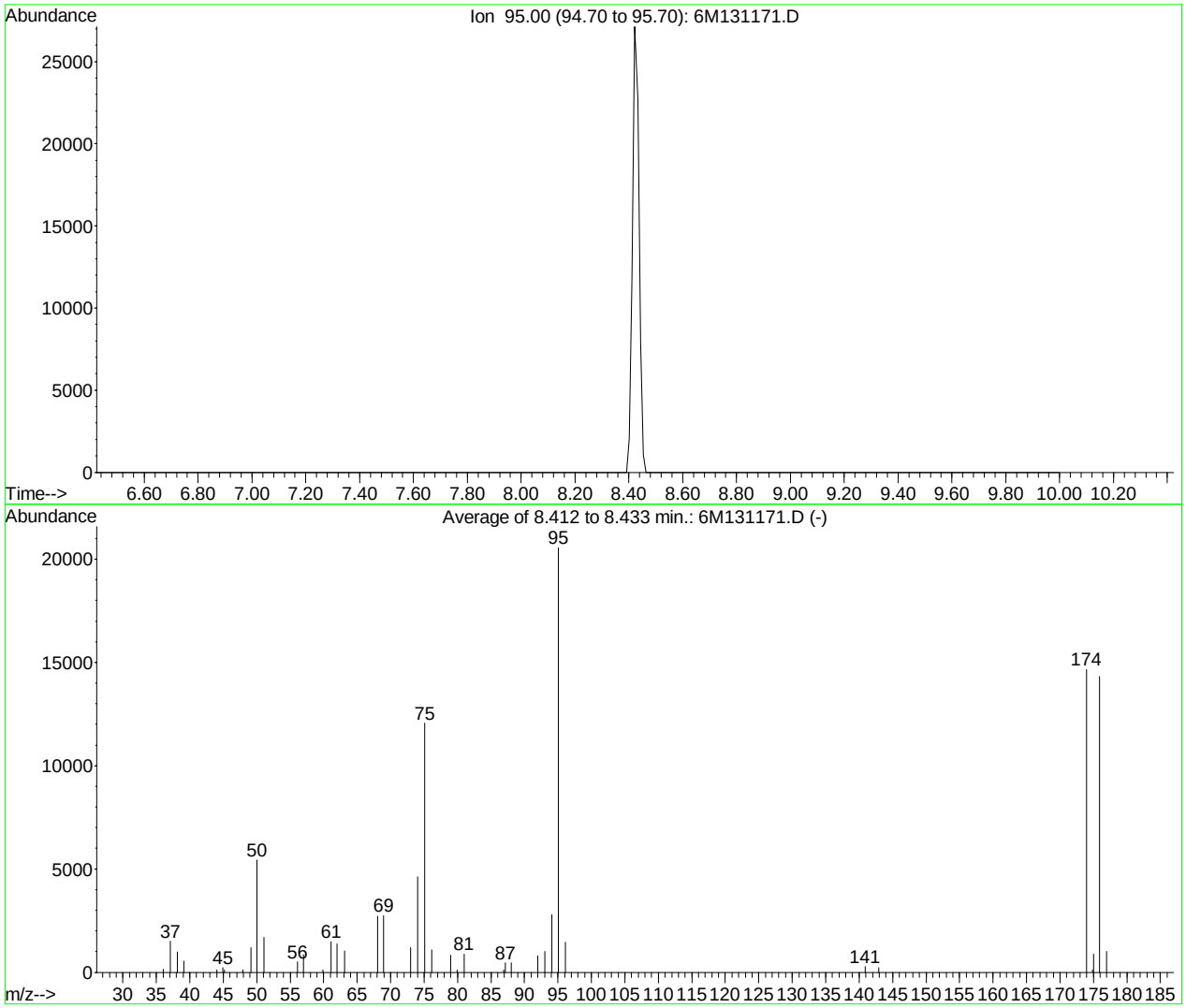

AutoFind: Scans 326, 327, 328; Background Corrected with Scan 322

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	26.5	5441	PASS
75	95	30	60	58.7	12074	PASS
95	95	100	100	100.0	20555	PASS
96	95	5	9	7.1	1452	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	71.4	14666	PASS
175	174	5	9	6.1	890	PASS
176	174	95	101	97.6	14316	PASS
177	176	5	9	7.1	1022	PASS

6M131171.D BFB.M Thu Feb 19 11:00:48 2015

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021915\6M131175.D Vial: 5
Acq On : 19 Feb 2015 12:48 Operator: TMB
Sample : WG512811-01 VBLK0219 BLANK STD 8260 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 20 08:23:04 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	619767	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.14	117	463389	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.76	152	244378	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.39	111	147845	23.6186 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.48%		
43) 1,2-Dichloroethane-d4	11.12	65	179854	24.1107 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.44%		
58) Toluene-d8	13.90	98	528293	24.9830 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.92%		
80) p-Bromofluorobenzene	17.94	95	220631	26.8506 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 107.40%		
Target Compounds					Qvalue
60) Ethyl Methacrylate	13.92	69	1409	0.7674 ug/L #	29
99) Hexachlorobutadiene	23.17	225	1937	0.5962 ug/L	81

(#) = qualifier out of range (m) = manual integration
6M131175.D 8260WT.M Fri Feb 20 08:23:05 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021915\6M131175.D Vial: 5
Acq On : 19 Feb 2015 12:48 Operator: TMB
Sample : WG512811-01 VBLK0219 BLANK STD 8260 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 20 8:23 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration

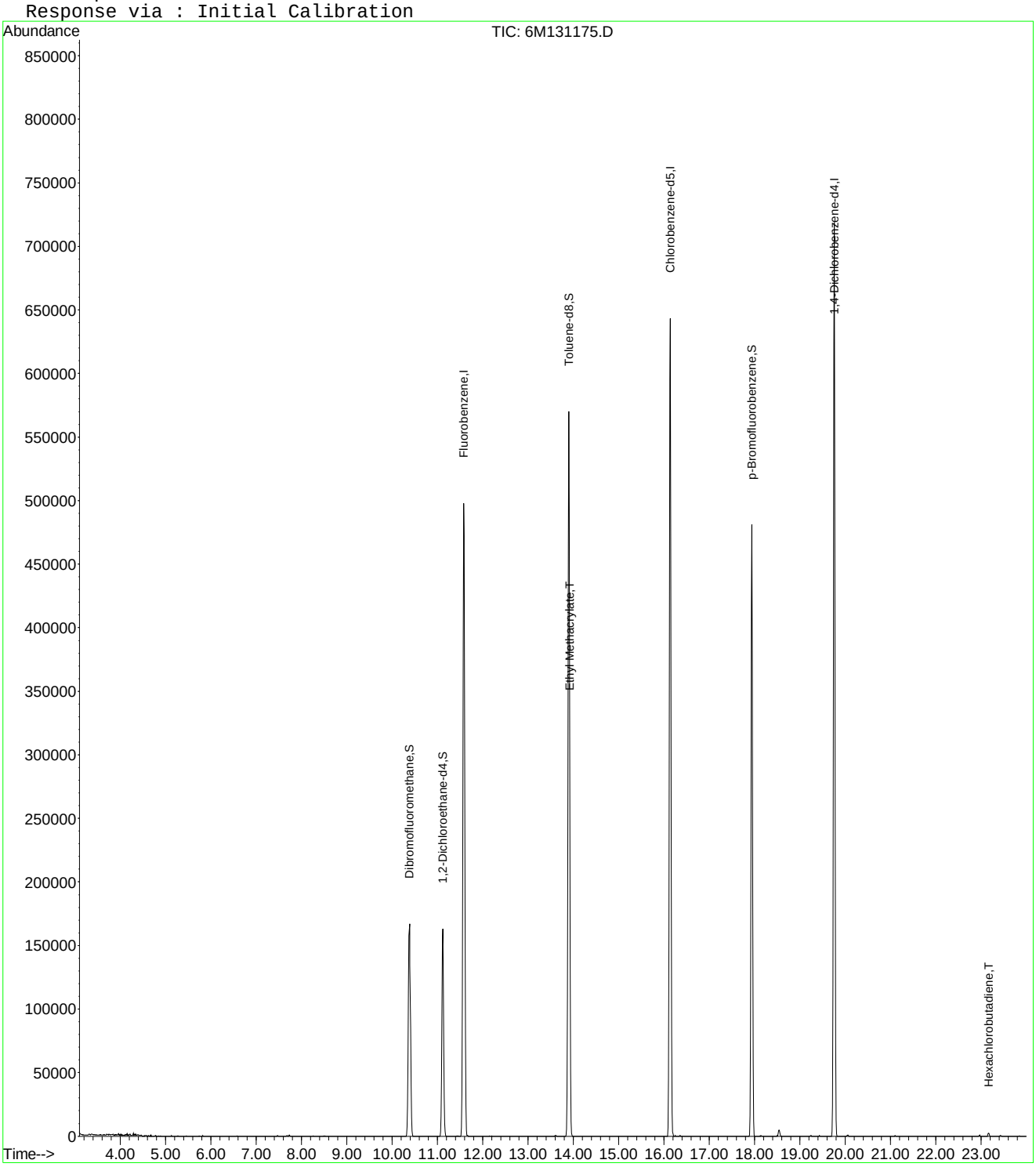

6M131175.D 8260WT.M Fri Feb 20 08:23:05 2015 Page 2

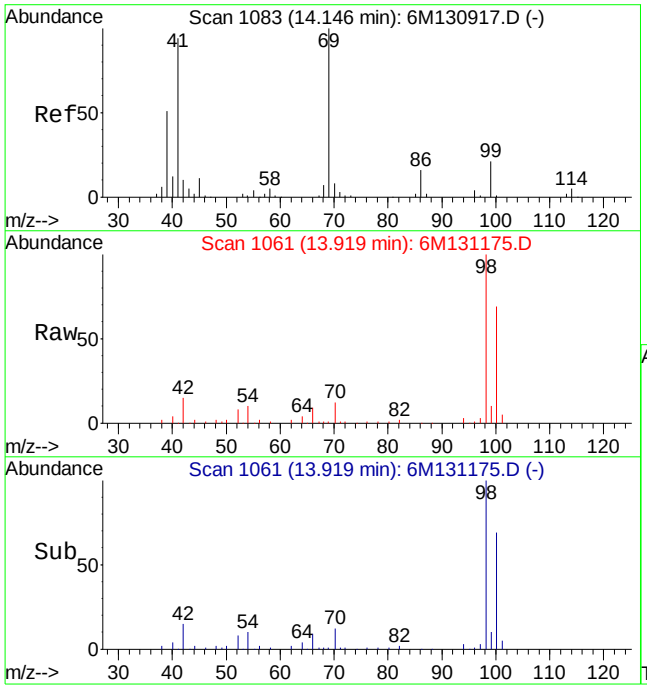

#60
Ethyl Methacrylate
Concen: 0.77 ug/L
RT: 13.92 min Scan# 1061
Delta R.T. -0.22 min
Lab File: 6M131175.D
Acq: 19 Feb 2015 12:48

Tgt Ion: 69 Resp: 1409

Ion	Ratio	Lower	Upper
69	100		
41	139.1	46.5	108.5#

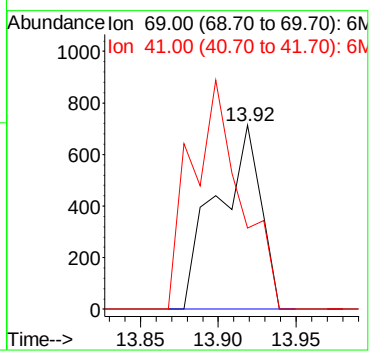

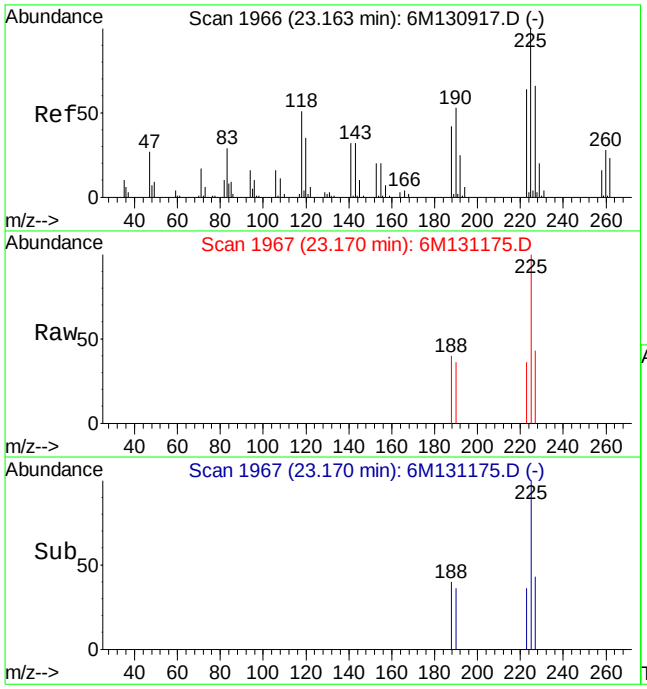

#99
Hexachlorobutadiene
Concen: 0.60 ug/L
RT: 23.17 min Scan# 1967
Delta R.T. 0.01 min
Lab File: 6M131175.D
Acq: 19 Feb 2015 12:48

Tgt Ion:225 Resp: 1937

Ion	Ratio	Lower	Upper
225	100		
223	55.7	38.4	89.6
227	42.8	38.5	89.9

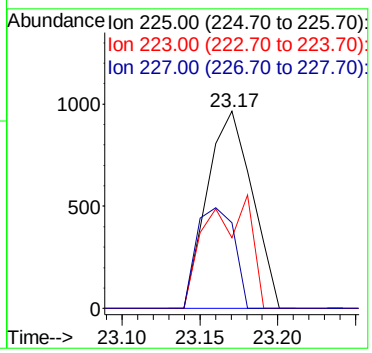

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021915\6M131194.D Vial: 24
Acq On : 19 Feb 2015 22:31 Operator: TMB
Sample : WG512811-04 VBLK0219 BLANK STD 624 Inst : HPMS6
Misc : 2,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 20 08:23:20 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	492162	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.14	117	369340	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.76	152	197231	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.38	111	123811	24.9073 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.64%		
43) 1,2-Dichloroethane-d4	11.12	65	153705	25.9476 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.80%		
58) Toluene-d8	13.90	98	420936	24.9749 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.88%		
80) p-Bromofluorobenzene	17.94	95	181112	27.3100 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 109.24%		
Target Compounds					Qvalue
60) Ethyl Methacrylate	13.91	69	1021	0.7400 ug/L	65

(#) = qualifier out of range (m) = manual integration
6M131194.D 8260WT.M Fri Feb 20 08:23:20 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\021915\6M131194.D Vial: 24
Acq On : 19 Feb 2015 22:31 Operator: TMB
Sample : WG512811-04 VBLK0219 BLANK STD 624 Inst : HPMS6
Misc : 2,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 20 8:23 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration

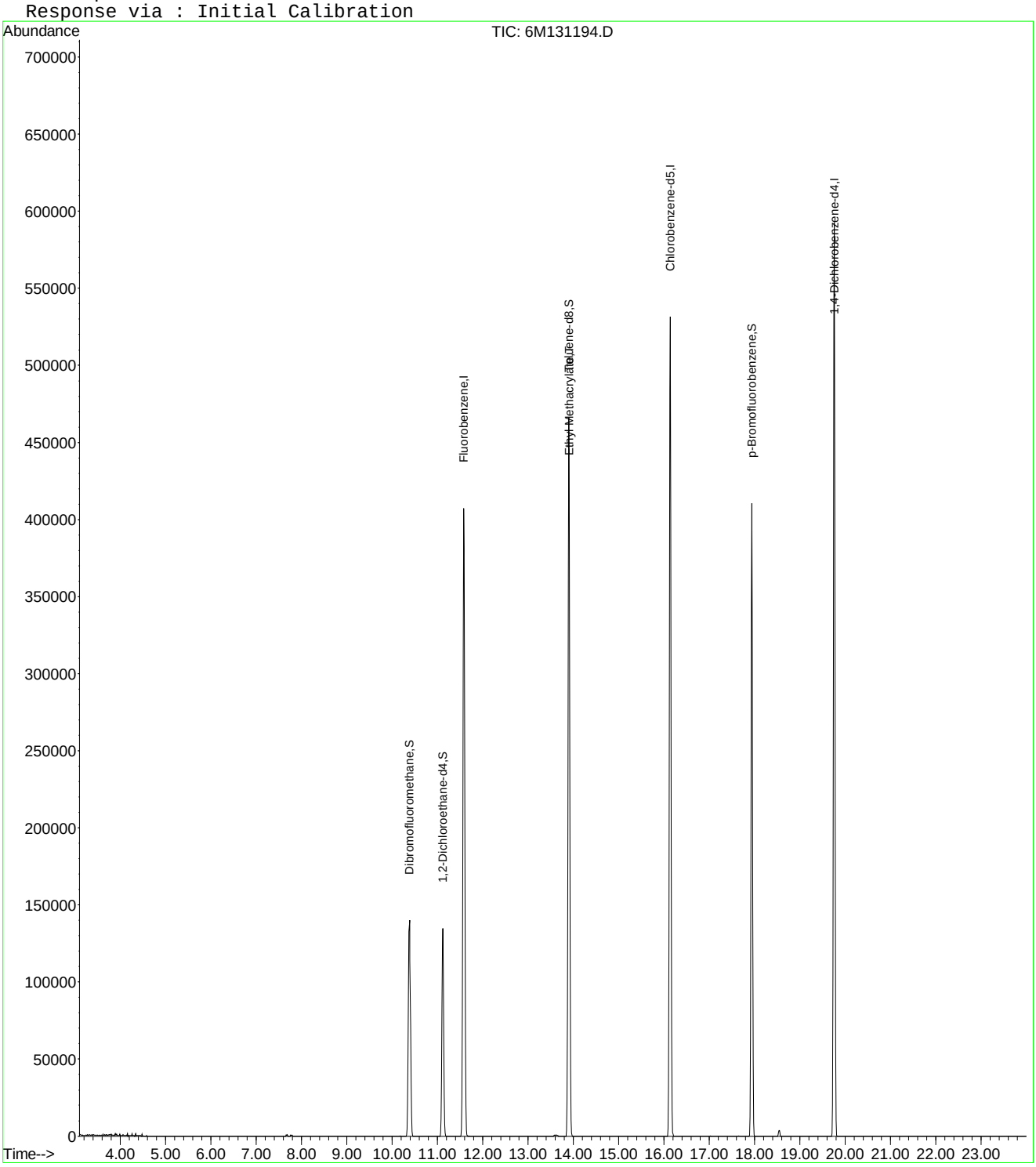

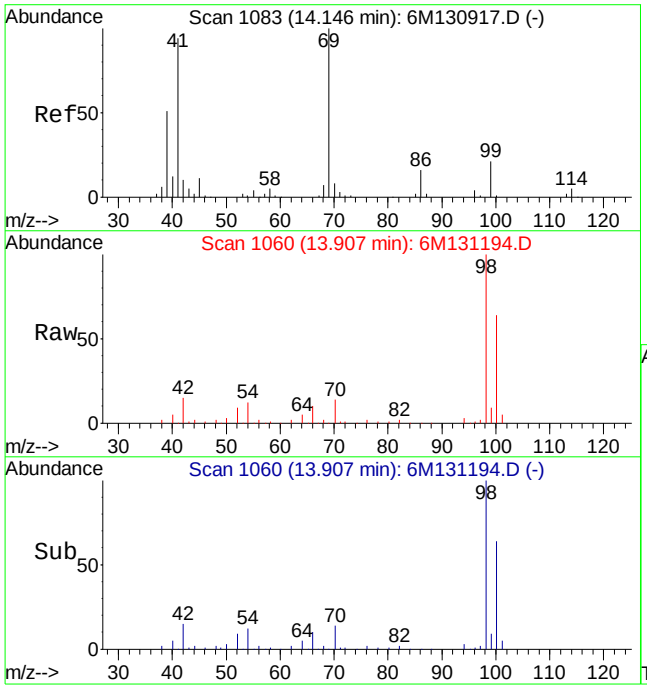

#60
Ethyl Methacrylate
Concen: 0.74 ug/L
RT: 13.91 min Scan# 1060
Delta R.T. -0.24 min
Lab File: 6M131194.D
Acq: 19 Feb 2015 22:31

Tgt Ion: 69 Resp: 1021

Ion	Ratio	Lower	Upper
69	100		
41	108.0	46.5	108.5

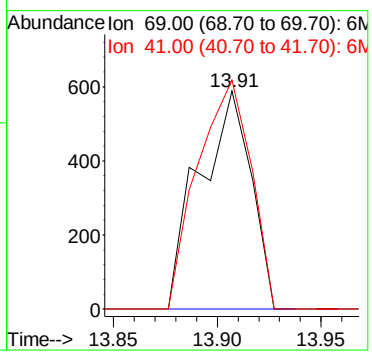

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\021915\6M131176.D Vial: 6
Acq On : 19 Feb 2015 13:19 Operator: TMB
Sample : WG512811-02 20ug/L LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD68939 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 19 13:43:52 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	620024	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.14	117	463767	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.76	152	256354	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.39	111	153327	24.4842 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.92%		
43) 1,2-Dichloroethane-d4	11.11	65	180665	24.2093 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.84%		
58) Toluene-d8	13.90	98	525423	24.8270 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.32%		
80) p-Bromofluorobenzene	17.93	95	226590	26.2875 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.16%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.37	85	177116	16.0721 ug/L	99
3) Chloromethane	3.84	50	130676	15.0226 ug/L	98
4) Vinyl Chloride	4.09	62	147653	19.8179 ug/L	97
5) 1,3-Butadiene	4.13	54	67454	8.6622 ug/L	97
6) Bromomethane	5.01	94	55356	14.1000 ug/L	99
7) Chloroethane	5.17	64	93215	21.5765 ug/L	93
8) Trichlorofluoromethane	5.67	101	272724	19.6312 ug/L	99
9) Diethyl ether	6.23	59	362579	90.7254 ug/L	96
10) Isoprene	6.27	67	182476	24.6678 ug/L	94
11) Acrolein	6.48	56	11695	150.3342 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	129383	19.5933 ug/L	94
13) Acetone	6.58	43	17593	18.3897 ug/L	95
14) 1,1-Dichloroethene	6.82	61	211892	18.9576 ug/L	89
15) Tert-Butyl Alcohol	6.95	59	41868	210.9961 ug/L	95
16) Dimethyl Sulfide	7.11	62	127810	20.9698 ug/L	90
17) Iodomethane	7.39	142	52882	11.1714 ug/L	77
18) Methyl acetate	7.41	43	43963	11.8094 ug/L	97
19) Methylene Chloride	7.68	84	113525	20.5145 ug/L	96
20) Carbon Disulfide	7.72	76	335014	17.6189 ug/L	99
21) Acrylonitrile	7.88	53	21065	15.7958 ug/L	93
22) Methyl Tert Butyl Ether	7.91	73	248189	21.1383 ug/L	98
23) trans-1,2-Dichloroethene	8.17	96	123439	21.4147 ug/L	89
24) n-Hexane	8.26	57	154369	16.3154 ug/L	98
25) Diisopropyl ether	8.64	45	1927283	83.2944 ug/L	94
26) Vinyl Acetate	8.84	43	141358	35.0370 ug/L	98
27) 1,1-Dichloroethane	8.87	63	248028	20.0547 ug/L	98
28) Ethyl-Tert-Butyl ether	9.29	59	1763560	96.0602 ug/L	98
29) 2-Butanone	9.49	43	24878	16.7670 ug/L	96
30) Propionitrile	9.61	54	36546	80.8850 ug/L	94
31) 2,2-Dichloropropane	9.74	77	237698	22.4911 ug/L	96
32) cis-1,2-Dichloroethene	9.82	96	134292	21.8188 ug/L	85
33) Chloroform	10.05	83	266123	22.2360 ug/L	99
34) 1-Bromopropane	10.20	122	26575	20.0762 ug/L	100
35) Bromochloromethane	10.32	130	65809	20.4843 ug/L	99
36) Tetrahydrofuran	10.35	42	73746	78.7566 ug/L	98
38) 1,1,1-Trichloroethane	10.65	97	259860	21.7990 ug/L	97
39) Cyclohexane	10.68	56	210790	17.7458 ug/L	97
40) 1,1-Dichloropropene	10.89	75	190983	20.8036 ug/L	89
41) Tert-Amyl-Methyl ether	11.01	73	1235975	97.5002 ug/L	93
42) Carbon Tetrachloride	11.05	117	224794	22.2205 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M131176.D 8260WT.M Thu Feb 19 13:43:52 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\021915\6M131176.D Vial: 6
Acq On : 19 Feb 2015 13:19 Operator: TMB
Sample : WG512811-02 20ug/L LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD68939 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 19 13:43:52 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	11.26	62	196574	20.7586 ug/L		89
46)	Benzene	11.30	78	483329	21.2507 ug/L		96
47)	Trichloroethene	12.18	130	132911	22.3968 ug/L		74
48)	Methylcyclohexane	12.27	83	180368	19.3675 ug/L		98
49)	1,2-Dichloropropane	12.42	63	121567	19.8543 ug/L	#	69
50)	1,4-Dioxane	12.76	88	3552	157.3510 ug/L	#	57
51)	Bromodichloromethane	12.78	83	187244	21.2521 ug/L		100
52)	Dibromomethane	12.87	93	60720	20.9384 ug/L		96
53)	2-Chloroethyl Vinyl Ether	13.14	63	47252	18.9336 ug/L		99
54)	4-Methyl-2-Pentanone	13.17	58	21032	16.3881 ug/L		100
55)	cis-1,3-Dichloropropene	13.52	75	195541	22.5677 ug/L		97
56)	Dimethyl Disulfide	13.83	79	79165	18.3472 ug/L		95
59)	Toluene	14.02	91	527939	22.5743 ug/L		100
60)	Ethyl Methacrylate	14.15	69	96040	21.0621 ug/L		98
62)	trans-1,3-Dichloropropene	14.24	75	162292	21.7429 ug/L		95
63)	1,1,2-Trichloroethane	14.48	97	77066	21.4129 ug/L		98
64)	2-Hexanone	14.42	43	38336	16.7590 ug/L		97
65)	1,3-Dichloropropane	14.85	76	141773	21.1847 ug/L		93
66)	Tetrachloroethene	14.98	166	130825	19.4547 ug/L	#	84
67)	Dibromochloromethane	15.30	129	108158	22.2181 ug/L		98
68)	1,2-Dibromoethane	15.60	107	74607	21.4193 ug/L		96
69)	1-Chlorohexane	15.72	91	168187	21.1744 ug/L		84
70)	Chlorobenzene	16.20	112	324372	20.0676 ug/L	#	64
71)	1,1,1,2-Tetrachloroethane	16.24	131	125532	21.4149 ug/L		90
72)	Ethylbenzene	16.24	106	190936	21.4585 ug/L		88
73)	m-,p-Xylene	16.35	106	456149	42.8534 ug/L		86
74)	o-Xylene	17.02	106	217714	20.2886 ug/L		87
75)	Styrene	17.07	104	381789	22.2364 ug/L		81
76)	Bromoform	17.64	173	63844	21.0626 ug/L		97
77)	Isopropylbenzene	17.53	105	583435	20.6518 ug/L		97
79)	1,1,2,2-Tetrachloroethane	17.79	83	77420	20.7598 ug/L		99
81)	1,2,3-Trichloropropane	18.02	110	24923	19.9723 ug/L		98
82)	trans-1,4-Dichloro-2-Buten	18.09	53	29211	16.9667 ug/L		70
83)	n-Propylbenzene	18.14	91	692701	21.3962 ug/L		97
84)	Bromobenzene	18.28	156	142893	21.5529 ug/L		85
85)	1,3,5-Trimethylbenzene	18.36	105	556433	24.2482 ug/L		93
86)	2-Chlorotoluene	18.46	91	483740	22.8357 ug/L		98
87)	4-Chlorotoluene	18.52	91	428963	20.3155 ug/L		92
88)	a-Methylstyrene	18.84	118	281360	22.5671 ug/L		95
89)	tert-Butylbenzene	18.93	134	95591	18.6857 ug/L		97
90)	1,2,4-Trimethylbenzene	18.98	105	564820	23.9662 ug/L		83
91)	sec-Butylbenzene	19.24	105	587697	21.1085 ug/L		96
92)	p-Isopropyltoluene	19.44	119	504484	22.0839 ug/L		96
93)	1,3-Dichlorobenzene	19.65	146	249764	18.3088 ug/L		85
94)	1,4-Dichlorobenzene	19.81	146	267134	19.2556 ug/L		82
95)	n-Butylbenzene	20.07	91	477691	22.8628 ug/L		94
96)	1,2-Dichlorobenzene	20.40	146	217049	17.9380 ug/L		84
97)	1,2-Dibromo-3-Chloropropan	21.59	75	16019	21.0295 ug/L		79
98)	1,2,4-Trichlorobenzene	22.97	180	170601	21.8487 ug/L		100
99)	Hexachlorobutadiene	23.17	225	92909	27.2631 ug/L		98
100)	Naphthalene	23.44	128	237058	20.8739 ug/L		99
101)	1,2,3-Trichlorobenzene	23.86	180	141577	21.4608 ug/L		99

(#) = qualifier out of range (m) = manual integration
6M131176.D 8260WT.M Thu Feb 19 13:43:52 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\021915\6M131176.D Vial: 6
Acq On : 19 Feb 2015 13:19 Operator: TMB
Sample : WG512811-02 20ug/L LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD68939 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 19 13:43 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration

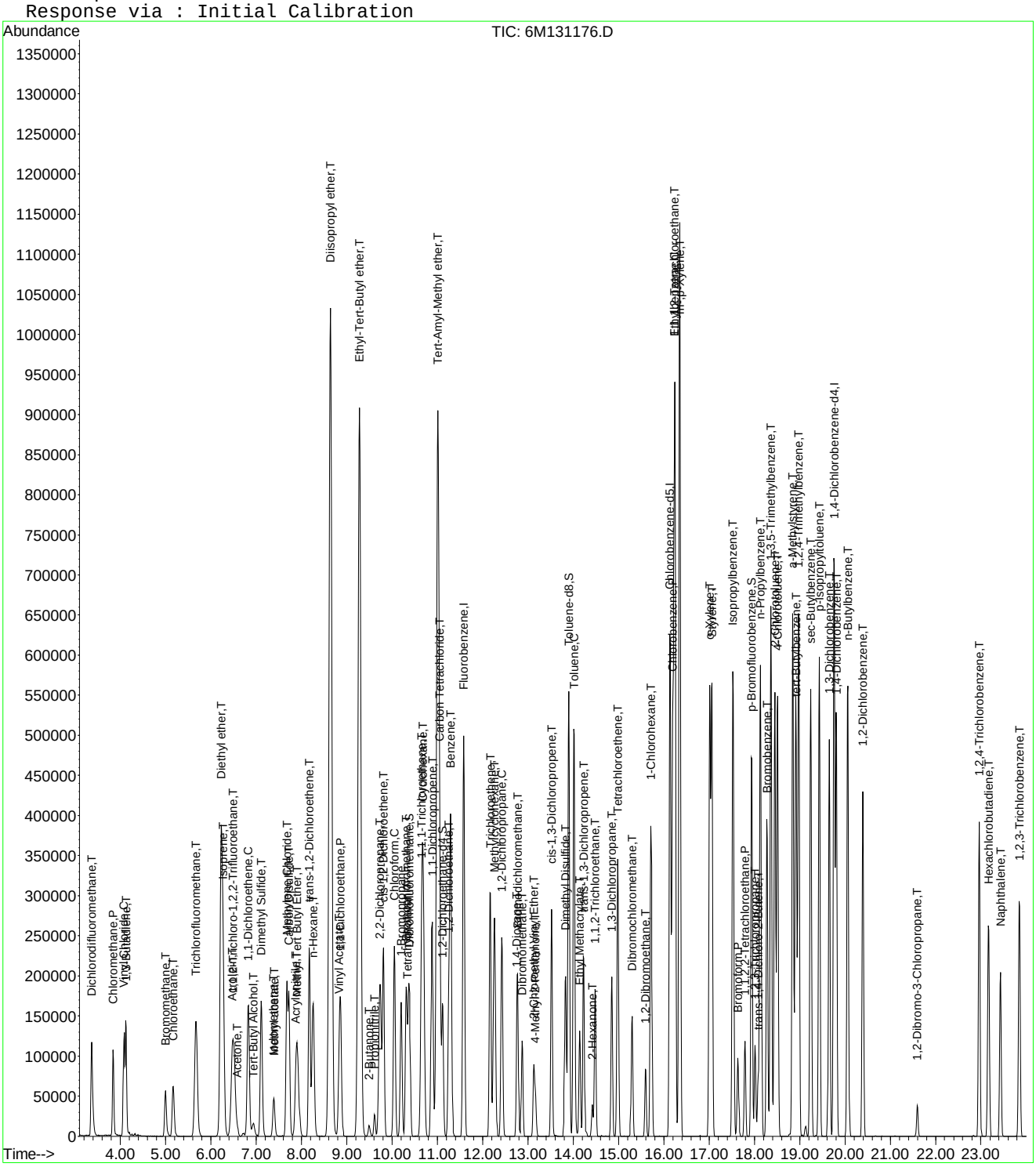

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\021915\6M131177.D Vial: 7
Acq On : 19 Feb 2015 13:50 Operator: TMB
Sample : WG512811-03 20ug/L LCSDUP STD 8260 Inst : HPMS6
Misc : 1,1 STD68939 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 19 14:14:30 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	656339	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.15	117	483880	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.76	152	267388	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.38	111	160267	24.1764 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.72%		
43) 1,2-Dichloroethane-d4	11.11	65	199458	25.2488 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.00%		
58) Toluene-d8	13.90	98	552421	25.0177 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.08%		
80) p-Bromofluorobenzene	17.94	95	236751	26.3329 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.32%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.37	85	171182	14.6742 ug/L	99
3) Chloromethane	3.84	50	130328	14.1536 ug/L	97
4) Vinyl Chloride	4.09	62	147965	18.7610 ug/L	99
5) 1,3-Butadiene	4.13	54	63604	7.7077 ug/L	96
6) Bromomethane	5.01	94	58295	14.0313 ug/L	98
7) Chloroethane	5.17	64	94032	20.5613 ug/L	93
8) Trichlorofluoromethane	5.67	101	274046	18.6349 ug/L	98
9) Diethyl ether	6.22	59	395346	93.4510 ug/L	97
10) Isoprene	6.26	67	185128	23.6416 ug/L	93
11) Acrolein	6.48	56	14584	177.0983 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	132601	18.9696 ug/L	94
13) Acetone	6.59	43	19492	19.2474 ug/L	100
14) 1,1-Dichloroethene	6.82	61	214427	18.1230 ug/L	89
15) Tert-Butyl Alcohol	6.95	59	51907	247.1146 ug/L	97
16) Dimethyl Sulfide	7.11	62	132907	20.5996 ug/L	88
17) Iodomethane	7.38	142	57513	11.4234 ug/L	79
18) Methyl acetate	7.40	43	49381	12.5309 ug/L	98
19) Methylene Chloride	7.68	84	117325	20.0282 ug/L	96
20) Carbon Disulfide	7.72	76	352887	17.5320 ug/L	100
21) Acrylonitrile	7.88	53	23370	16.5546 ug/L	97
22) Methyl Tert Butyl Ether	7.91	73	276505	22.2470 ug/L	97
23) trans-1,2-Dichloroethene	8.17	96	124064	20.3323 ug/L	88
24) n-Hexane	8.25	57	169277	16.9011 ug/L	98
25) Diisopropyl ether	8.64	45	2078322	84.8523 ug/L	95
26) Vinyl Acetate	8.83	43	174262	40.8027 ug/L	99
27) 1,1-Dichloroethane	8.87	63	252669	19.2996 ug/L	97
28) Ethyl-Tert-Butyl ether	9.28	59	1922446	98.9208 ug/L	98
29) 2-Butanone	9.49	43	28721	18.2861 ug/L	96
30) Propionitrile	9.61	54	39841	83.2988 ug/L	94
31) 2,2-Dichloropropane	9.74	77	252800	22.5966 ug/L	97
32) cis-1,2-Dichloroethene	9.82	96	139641	21.4325 ug/L	86
33) Chloroform	10.05	83	269091	21.2400 ug/L	99
34) 1-Bromopropane	10.20	122	27250	19.4580 ug/L	100
35) Bromochloromethane	10.32	130	68429	20.1213 ug/L	100
36) Tetrahydrofuran	10.34	42	84818	85.5691 ug/L	99
38) 1,1,1-Trichloroethane	10.66	97	264343	20.9481 ug/L	97
39) Cyclohexane	10.68	56	219845	17.4840 ug/L	96
40) 1,1-Dichloropropene	10.89	75	195367	20.1036 ug/L	89
41) Tert-Amyl-Methyl ether	11.01	73	1366492	101.8317 ug/L	94
42) Carbon Tetrachloride	11.05	117	231220	21.5911 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M131177.D 8260WT.M Thu Feb 19 14:14:30 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\021915\6M131177.D Vial: 7
Acq On : 19 Feb 2015 13:50 Operator: TMB
Sample : WG512811-03 20ug/L LCSDUP STD 8260 Inst : HPMS6
Misc : 1,1 STD68939 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 19 14:14:30 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	11.26	62	202496	20.2008 ug/L		88
46)	Benzene	11.30	78	490215	20.3610 ug/L		97
47)	Trichloroethene	12.17	130	132623	21.1117 ug/L		74
48)	Methylcyclohexane	12.27	83	194438	19.7232 ug/L		97
49)	1,2-Dichloropropane	12.42	63	124063	19.1408 ug/L	#	68
50)	1,4-Dioxane	12.77	88	4506	188.5680 ug/L	#	52
51)	Bromodichloromethane	12.77	83	193109	20.7051 ug/L		99
52)	Dibromomethane	12.87	93	63844	20.7975 ug/L		100
53)	2-Chloroethyl Vinyl Ether	13.13	63	50696	19.1897 ug/L		97
54)	4-Methyl-2-Pentanone	13.16	58	24177	17.7964 ug/L		96
55)	cis-1,3-Dichloropropene	13.52	75	204884	22.3376 ug/L		96
56)	Dimethyl Disulfide	13.83	79	87164	19.0833 ug/L		94
59)	Toluene	14.02	91	535149	21.9315 ug/L		100
60)	Ethyl Methacrylate	14.14	69	110785	23.2367 ug/L		99
62)	trans-1,3-Dichloropropene	14.24	75	173315	22.2546 ug/L		93
63)	1,1,2-Trichloroethane	14.48	97	79411	21.1473 ug/L		99
64)	2-Hexanone	14.42	43	43685	18.3035 ug/L		97
65)	1,3-Dichloropropane	14.85	76	150191	21.5097 ug/L		95
66)	Tetrachloroethene	14.98	166	132457	18.8787 ug/L	#	83
67)	Dibromochloromethane	15.30	129	113878	22.4208 ug/L		100
68)	1,2-Dibromoethane	15.61	107	81340	22.3816 ug/L		99
69)	1-Chlorohexane	15.72	91	179208	21.6241 ug/L		86
70)	Chlorobenzene	16.20	112	328640	19.4866 ug/L	#	63
71)	1,1,1,2-Tetrachloroethane	16.24	131	132620	21.6836 ug/L		91
72)	Ethylbenzene	16.24	106	193635	20.8572 ug/L		89
73)	m-,p-Xylene	16.35	106	464148	41.7924 ug/L		88
74)	o-Xylene	17.01	106	217870	19.4592 ug/L		85
75)	Styrene	17.07	104	387216	21.6150 ug/L		82
76)	Bromoform	17.65	173	67472	21.3289 ug/L		99
77)	Isopropylbenzene	17.52	105	584139	19.8173 ug/L		98
79)	1,1,2,2-Tetrachloroethane	17.79	83	85733	22.0403 ug/L		100
81)	1,2,3-Trichloropropane	18.02	110	27559	21.1733 ug/L		99
82)	trans-1,4-Dichloro-2-Buten	18.09	53	31566	17.5596 ug/L		76
83)	n-Propylbenzene	18.14	91	705466	20.8913 ug/L		97
84)	Bromobenzene	18.28	156	148983	21.5442 ug/L		88
85)	1,3,5-Trimethylbenzene	18.36	105	555437	23.2060 ug/L		93
86)	2-Chlorotoluene	18.45	91	476419	21.5620 ug/L		99
87)	4-Chlorotoluene	18.52	91	437298	19.8556 ug/L		93
88)	a-Methylstyrene	18.85	118	288962	22.2205 ug/L		97
89)	tert-Butylbenzene	18.92	134	98099	18.3847 ug/L		93
90)	1,2,4-Trimethylbenzene	18.99	105	564903	22.9806 ug/L		94
91)	sec-Butylbenzene	19.24	105	594623	20.4759 ug/L		96
92)	p-Isopropyltoluene	19.43	119	505262	21.2052 ug/L		97
93)	1,3-Dichlorobenzene	19.65	146	254317	17.8733 ug/L		85
94)	1,4-Dichlorobenzene	19.81	146	271557	18.7666 ug/L		83
95)	n-Butylbenzene	20.07	91	483288	22.1761 ug/L		93
96)	1,2-Dichlorobenzene	20.39	146	222475	17.6277 ug/L		83
97)	1,2-Dibromo-3-Chloropropan	21.59	75	17734	22.2690 ug/L		74
98)	1,2,4-Trichlorobenzene	22.97	180	177770	21.8273 ug/L		98
99)	Hexachlorobutadiene	23.17	225	95614	26.8990 ug/L		98
100)	Naphthalene	23.44	128	256906	21.6881 ug/L		99
101)	1,2,3-Trichlorobenzene	23.86	180	153001	22.2355 ug/L		98

(#) = qualifier out of range (m) = manual integration
6M131177.D 8260WT.M Thu Feb 19 14:14:30 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\021915\6M131177.D Vial: 7
Acq On : 19 Feb 2015 13:50 Operator: TMB
Sample : WG512811-03 20ug/L LCSDUP STD 8260 Inst : HPMS6
Misc : 1,1 STD68939 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 19 14:14 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 02-05-15 - HPMS6
Last Update : Fri Feb 06 08:55:49 2015
Response via : Initial Calibration

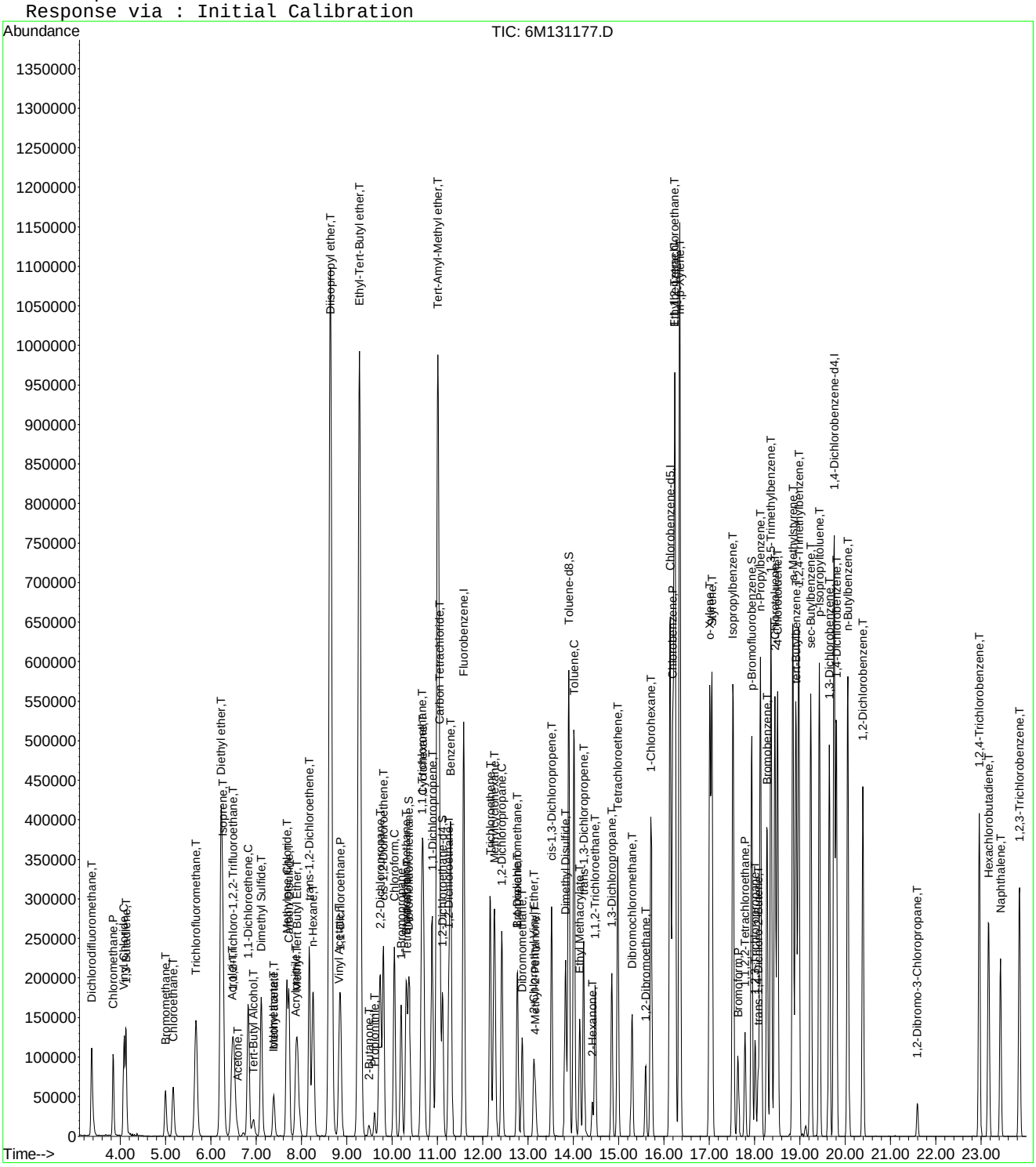

6M131177.D 8260WT.M Thu Feb 19 14:14:30 2015 Page 3

2.1.2 RSK 175

2.1.2.1 Summary Data

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-06	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW24-021815	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	02/19/2015 16:08
Workgroup #:	WG512975	**Analyst:**	JDS	**Run Date:**	02/20/2015 16:20
Collect Date:	02/18/2015 08:25	**Dilution:**	1	**File ID:**	16G46743
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	647000	J	10000	5000	2500
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-06	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW24-021815	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	02/19/2015 16:08
Workgroup #:	WG513247	**Analyst:**	JDS	**Run Date:**	02/24/2015 13:40
Collect Date:	02/18/2015 08:25	**Dilution:**	10	**File ID:**	16G46792
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	494000		100000	50000	25000
Methane	74-82-8	20.0	U	50.0	20.0	10.0
ethene	74-85-1	20.0	U	50.0	20.0	10.0
ethane	74-84-0	20.0	U	50.0	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-08	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW23-021815	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	02/19/2015 16:08
Workgroup #:	WG513247	**Analyst:**	JDS	**Run Date:**	02/24/2015 14:59
Collect Date:	02/18/2015 09:40	**Dilution:**	1	**File ID:**	16G46798
Sample Tag:	02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	155000		10000	5000	2500
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-10	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW12-021815	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	02/19/2015 16:08
Workgroup #:	WG512975	**Analyst:**	JDS	**Run Date:**	02/20/2015 16:43
Collect Date:	02/18/2015 11:05	**Dilution:**	1	**File ID:**	16G46745
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	156000		10000	5000	2500
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-12	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WWW25-021815	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	02/19/2015 16:08
Workgroup #:	WG512975	**Analyst:**	JDS	**Run Date:**	02/20/2015 16:56
Collect Date:	02/18/2015 13:30	**Dilution:**	1	**File ID:**	16G46746
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	326000	J	10000	5000	2500
Methane	74-82-8	44.3		5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-12	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WWW25-021815	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	02/19/2015 16:08
Workgroup #:	WG513247	**Analyst:**	JDS	**Run Date:**	02/24/2015 13:52
Collect Date:	02/18/2015 13:30	**Dilution:**	5	**File ID:**	16G46793
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	419000		50000	25000	12500
Methane	74-82-8	46.2		25.0	10.0	5.00
ethene	74-85-1	10.0	U	25.0	10.0	5.00
ethane	74-84-0	10.0	U	25.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-14	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW18-021815	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	02/19/2015 16:08
Workgroup #:	WG513247	**Analyst:**	JDS	**Run Date:**	02/24/2015 15:24
Collect Date:	02/18/2015 14:45	**Dilution:**	1	**File ID:**	16G46800
Sample Tag:	02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	117000		10000	5000	2500
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.2.2 QC Summary Data

RSK-175 - Example Calculation for Methane

1.0 Linear Calibration Models

Option A - Average RF Method

ICAL_x	ICAL_r		RF
1.67	19901		11917
6.67	69174		10371
16.7	176923		10594
66.7	685135		10272
133	1324853		9961
300	2845104		9484
		Average RF:	**10433**

Where:
ICAL_x = the ICAL concentration
ICAL_r = the ICAL response (area)
RF = calibration factor = ICAL_r / ICAL_x

Option B - Agilent Linear Regression Constant

ICAL_x	ICAL_r	[ICAL_r}^2	[ICAL-x][ICAL-r]
1.67	19901	396049801	33235
6.67	69174	4785042276	461391
16.7	176923	31301747929	2954614
66.7	685135	4.6941E+11	45698505
133	1324853	1.75524E+12	176205449
300	2845104	8.09462E+12	853531200
Summation:		**1.03557E+13**	**1078884393**

Agilent Linear Regression Constant : **9598.567853**
(1.03557E+13)/1078884393)

2.0 Calculate the concentration in extract, Cx

Where:

y = area response of methane from quant report	**1157414**
a = average RF (or Agilent regression constant)	**10433.00**
Cx = y/a	**110.9377935**

3.0 Calculate the concentration in sample

Cs = Cx (MW/Tf) (HS/S) (DF)

Where:

Cx = Concentration in extract	**110.9377935**	umol/mol
MW = molecular weight of analyte	**16.04**	ug/umol
TF = temperature factor = (22.4)(313/273)	**25.68**	L/mol
HS = headspace volume	**0.015**	L
S = sample volume remaining after headspace removal	**0.00547**	L
DF = dilution factor	**2**	
Cs = calculated sample concentration	**380.034301**	ug/L

RSK-175 - Example Calculation for Carbon Dioxide

ICAL Plot - Quadratic Regression (y = Ax^2 + Bx +C)

Ax^2 + Bx + (C - y) = 0

Step 1 - Calculate the concentration in extract, Cx

Data from quadratic regression plot:		
Value of A from plot:	**0.916**	
Value of B from plot:	**1540**	
Value of C from plot:	**0**	
Response for methane from quantitation report (y):	**8763828**	
Value of C - y	**-8763828**	
Solving for Cx using the quadratic formula:		
Root 1 - Computed Cx1:	**2364.716284**	umol/mol
Root 2 - Computed Cx2:	**-4045.938991**	

Step 2 - Calculate the concentration in sample

Cs = Cx (MW/Tf) (HS/S) (DF)

Where:

Cx = Concentration in extract :	**2364.716284**	umol/mol
MW = molecular weight of analyte:	**44.0**	ug/umol
TF = temperature factor = (22.4)(313/273):	**25.68**	L/mol
HS = initial headspace volume (extraction log):	**0.015**	L
S = final volume (extraction log):	**0.00547**	L
DF = dilution factor:	**10**	
Cs = calculated sample concentration:	**111106.798**	ug/L

Other Notes:

Temperature of headspace = 40 C = 313 K

Analyte	**MW (g/mol)**
Methane	16.04
Ethane	30.07
Ethene	28.05
Propane	44.1
Carbon Dioxide	44.0

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 021915
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG512843

Comments: all samples ran on 2/19/15. Date chaanged from 2/19/15 to 2/18/15 between 16G46722 and 16G46725.

PDFs and uploaded data fixed to reflect actual run date.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G46714	WG512843-01 133umol/mol CCV STD RSK1	NA	1	1	STD67274	02/19/15 10:51
16G46716	WG512843-01 0.67 umol/mol STD RSK175	NA	1	1	STD67276	02/19/15 13:00
16G46717	WG512843-02 1.67 umol/mol STD RSK175	NA	1	1	STD67276	02/19/15 13:13
16G46718	WG512843-03 33.3 umol/mol STD RSK175	NA	1	1	STD67276	02/19/15 13:24
16G46719	WG512843-04 66.7 umol/mol STD RSK175	NA	1	1	STD67274	02/19/15 13:39
16G46720	WG512843-05 133 umol/mol STD RSK175	NA	1	1	STD67274	02/19/15 13:50
16G46721	WG512843-06 333 umol/mol STD RSK175	NA	1	1	STD67274	02/19/15 14:05
16G46722	WG512843-07 533 umol/mol STD RSK175	NA	1	1	STD67274	02/19/15 14:16
16G46725	WG512843-02 1.67 umol/mol STD RSK175	NA	1	1	STD67276	02/19/15 16:08
16G46726	WG512843-08 133 umol/mol ALT SRC STD	NA	1	1	STD68250	02/19/15 17:27
16G46727	WG512843-08 133 umol/mol ALT SRC STD	NA	1	1	STD68250	02/19/15 18:16

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1				
File ID: 16G46714				
			Failing. Recalibrate.	
3	X			
File ID: 16G46717				
10	X			
File ID: 16G46726				
			failed	

Approved: February 25, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 022015
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG512975

Comments: 16G46728 thru 16G46741were measured on the 20th, not the 19th.
Samples listed as being measured the 19th due to wrong date being entered into HP16s computer.

Dates one PDFs and in Kobra have been fixed to reflect correct analyzed date.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G46728	WG512963-01 133 CCV STD RSK175	NA	1	1	STD67274	02/20/15 10:27
16G46729	WG512975-01 BLANK STD RSK175	NA	1	1		02/20/15 11:04
16G46730	WG512975-02 67umol/mol LCS STD RSK17	NA	1	1	STD68250	02/20/15 11:17
16G46731	WG512975-03 67umol/mol LCS2 STD RSK1	NA	1	1	STD68250	02/20/15 11:27
16G46732	L15020875-01 B D1 5X RSK175	6	1	5		02/20/15 14:07
16G46733	L15020694-01 B A1 RSK175	<2	1	1		02/20/15 14:18
16G46734	L15020984-01 A RSK175	5	1	1		02/20/15 14:30
16G46735	L15020813-03 A RSK175	<2	2	1		02/20/15 14:43
16G46736	L15020980-01 A RSK175	5	1	1		02/20/15 14:54
16G46737	L15020981-01 A RSK175	5	1	1		02/20/15 15:06
16G46738	L15020982-01 A RSK175	5	1	1		02/20/15 15:20
16G46739	WG512963-02 133 CCV STD RSK175	NA	1	1	STD67274	02/20/15 15:32
16G46740	L15020983-01 A RSK175	5	1	1		02/20/15 15:44
16G46741	L15020983-02 A RSK175	5	1	1		02/20/15 15:55
16G46742	L15020983-03 A RSK175	5	1	1		02/20/15 16:07
16G46743	L15020971-06 A RSK175	6	1	1		02/20/15 16:20
16G46744	L15020971-08 A RSK175	6	1	1		02/20/15 16:31
16G46745	L15020971-10 A RSK175	6	1	1		02/20/15 16:43
16G46746	L15020971-12 A RSK175	6	1	1		02/20/15 16:56
16G46747	L15020971-14 A RSK175	6	1	1		02/20/15 17:07
16G46748	L15020954-01 A RSK175	<2	1	1		02/20/15 17:19
16G46749	L15020955-01 A RSK175	<2	1	1		02/20/15 17:31
16G46750	WG512963-03 133 CCV STD RSK175	NA	1	1	STD67274	02/20/15 17:43
16G46751	L15020977-01 A RSK175	6	1	1		02/20/15 17:54
16G46752	L15020987-01 A RSK175	5	1	1		02/20/15 18:08
16G46753	L15020992-01 A RSK175	6	1	1		02/20/15 18:19
16G46754	WG512963-04 133 CCV STD RSK175	NA	1	1	STD67274	02/20/15 18:30

Comments

Seq.	Rerun	Dil.	Reason	Analytes
5				

Approved: February 25, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 022015
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG512975

Comments: 16G46728 thru 16G46741were measured on the 20th, not the 19th.
Samples listed as being measured the 19th due to wrong date being entered into HP16s computer.

Dates one PDFs and in Kobra have been fixed to reflect correct analyzed date.

Comments

Seq.	Rerun	Dil.	Reason	Analytes
File ID: 16G46732				
	L15020875-01 Out of hold due to pH greater than 2 which gives a 7 day hold time.			
7				
File ID: 16G46734				
	L15020984-01 Out of hold due to pH greater than 2 which gives a 7 day hold time.			
9				
File ID: 16G46736				
	L15020980-01 Out of hold due to pH greater than 2 which gives a 7 day hold time.			
10				
File ID: 16G46737				
	L15020981-01 Out of hold due to pH greater than 2 which gives a 7 day hold time.			
11				
File ID: 16G46738				
	L15020982-01 Out of hold due to pH greater than 2 which gives a 7 day hold time.			
13				
File ID: 16G46740				
	L15020983-01 Out of hold due to pH greater than 2 which gives a 7 day hold time.			
14				
File ID: 16G46741				
	L15020983-02 Out of hold due to pH greater than 2 which gives a 7 day hold time.			
15				
File ID: 16G46742				
	L15020983-03 Out of hold due to pH greater than 2 which gives a 7 day hold time.			
16	X	10	Over Calibration Range	CO2
File ID: 16G46743				
17	X	1	Carry-over contamination	
File ID: 16G46744				
19	X	5	Over Calibration Range	CO2
File ID: 16G46746				
20	X	1	Carry-over contamination	

Approved: February 25, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 022015
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG512975

Comments: 16G46728 thru 16G46741were measured on the 20th, not the 19th.
Samples listed as being measured the 19th due to wrong date being entered into HP16s computer.

Dates one PDFs and in Kobra have been fixed to reflect correct analyzed date.

Comments

Seq.	Rerun	Dil.	Reason	Analytes
File ID: 16G46747				

Approved: February 25, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 022415
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG513247

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G46788	WG513245-01 133umol/mol CCV RSK175	NA	1	1	STD67274	02/24/15 09:47
16G46789	WG513247-01 BLANK STD RSK175	NA	1	1		02/24/15 10:04
16G46790	WG513247-02 67umol/mol LCS STD RSK17	NA	1	1	STD68250	02/24/15 10:16
16G46791	WG513247-03 67umol/mol LCS2 STD RSK1	NA	1	1	STD68250	02/24/15 10:29
16G46792	L15020971-06 B D1 10X RSK175	5	1	10		02/24/15 13:40
16G46793	L15020971-12 B D1 5X RSK175	5	1	5		02/24/15 13:52
16G46794	L15020813-06 B D1 5X RSK175	<2	2	5		02/24/15 14:08
16G46795	L15020813-09 B D1 5X RSK175	<2	2	5		02/24/15 14:20
16G46796	L15020813-13 B D1 5X RSK175	<2	2	5		02/24/15 14:32
16G46797	L15021053-03 C D1 5X RSK175	5	1	5		02/24/15 14:44
16G46798	L15020971-08 B A1 RSK175	5	1	1		02/24/15 14:59
16G46799	WG513245-02 133umol/mol CCV RSK175	NA	1	1	STD67274	02/24/15 15:12
16G46800	L15020971-14 B A1 RSK175	5	1	1		02/24/15 15:24
16G46801	L15020813-10 B A1 RSK175	<2	2	1		02/24/15 15:36
16G46802	L15020813-14 B A1 RSK175	<2	2	1		02/24/15 15:52
16G46803	L15020882-01 A RSK175	<2	1	1		02/24/15 16:05
16G46804	L15020882-03 A RSK175	<2	1	1		02/24/15 16:17
16G46805	L15020978-01 A RSK175	5	1	1		02/24/15 16:30
16G46806	L15021027-01 A RSK175	5	1	1		02/24/15 16:42
16G46807	L15021158-01 A RSK175	<2	1	1		02/24/15 16:55
16G46808	L15021062-01 A RSK175	<2	1	1		02/24/15 17:07
16G46809	L15020930-03 A RSK175	<2	1	1		02/24/15 17:21
16G46810	WG513245-03 133umol/mol CCV RSK175	NA	1	1	STD67274	02/24/15 17:34
16G46811	L15020930-05 A RSK175	<2	1	1		02/24/15 17:47
16G46812	L15020930-07 A RSK175	<2	1	1		02/24/15 17:59
16G46813	L15020930-09 A RSK175	<2	1	1		02/24/15 18:11
16G46814	WG513245-04 133umol/mol CCV RSK175	NA	1	1	STD67274	02/24/15 18:28

Comments

Seq.	Rerun	Dil.	Reason	Analytes
10				
File ID: 16G46797				
ran out of hold				

Approved: February 26, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 022415
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG513247

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
21	X	10	Over Calibration Range	m, ethane, p, n-but.
File ID: 16G46808				
22	X			p
File ID: 16G46809				
	matrix effect possibly masking propane			
24	X			p
File ID: 16G46811				
	matrix effect possibly masking propane			
25	X			p
File ID: 16G46812				
	matrix effect possibly masking propane			
26	X			P
File ID: 16G46813				
	matrix effect possibly masking propane			

Approved: February 26, 2015

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Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B202076

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG512843-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG512843-08	15	mL	15	mL					5.47	mL	5.47	mL	40
WG512843-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG512843-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG512843-04	15	mL	15	mL					5.47	mL	5.47	mL	40
WG512843-05	15	mL	15	mL					5.47	mL	5.47	mL	40
WG512843-06	15	mL	15	mL					5.47	mL	5.47	mL	40
WG512843-07	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B202119

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG512963-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG512963-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG512963-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG512963-04	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020980-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020955-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020987-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020813-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020954-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020971-06	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020971-12	15	mL	15	mL					5.47	mL	5.47	mL	40
WG512975-02	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
WG512975-03	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L15020982-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020983-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020977-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020992-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020981-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020983-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020983-02	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020971-08	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020971-10	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020984-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020694-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020971-14	15	mL	15	mL					5.47	mL	5.47	mL	40
WG512975-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020875-01	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B202245

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG513245-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG513245-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG513245-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG513245-04	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020971-06	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020978-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15021062-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020930-07	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020813-09	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020971-08	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020882-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG513247-02	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
WG513247-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020813-06	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020882-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG513247-03	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L15021053-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020813-10	15	mL	15	mL					5.47	mL	5.47	mL	40
L15021027-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020930-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020971-12	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020971-14	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020930-09	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020930-05	15	mL	15	mL					5.47	mL	5.47	mL	40
L15021158-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020813-13	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020813-14	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.

Data Checklist

Date: 20-FEB-2015
Analyst: JDS
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 66456
Analytical Workgroups: WG512975

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	NA
Special Standards	NA
Blanks	X
TCL's	NA
Surrogates	NA
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	X
Surrogates	NA
Calculations & Correct Factors	NA
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
23-FEB-2015

Secondary Reviewer:
25-FEB-2015

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-25-2015 15:59:58

Microbac Laboratories Inc.

Data Checklist

Date: 24-FEB-2015
Analyst: JDS
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 66526
Analytical Workgroups: WG513247

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	NA
Special Standards	NA
Blanks	X
TCL's	NA
Surrogates	NA
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	X
Surrogates	NA
Calculations & Correct Factors	NA
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
25-FEB-2015

Secondary Reviewer:
26-FEB-2015

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-26-2015 16:11:57

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: RSK175 AAB#: WG512975

Login Number: L15020971

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW24-021815	06	02/18/15					02/20/2015	2.3	7		02/20/15	2.3	7	
50WW12-021815	10	02/18/15					02/20/2015	2.2	7		02/20/15	2.2	7	
50WWW25-021815	12	02/18/15					02/20/2015	2.1	7		02/20/15	2.1	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4033865
Report generated 02/27/2015 12:53

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: RSK175 AAB#: WG513247

Login Number: L15020971

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW24-021815	06	02/18/15					02/24/2015	6.2	7		02/24/15	6.2	7	
50WW23-021815	08	02/18/15					02/24/2015	6.2	7		02/24/15	6.2	7	
50WWW25-021815	12	02/18/15					02/24/2015	6	7		02/24/15	6	7	
50WW18-021815	14	02/18/15					02/24/2015	6	7		02/24/15	6	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4033865
Report generated 02/27/2015 12:53

METHOD BLANK SUMMARY

Login Number: L15020971
Blank File ID: 16G46729
Prep Date: 02/20/15 11:04
Analyzed Date: 02/20/15 11:04
Analyst: JDS

Work Group: WG512975
Blank Sample ID: WG512975-01
Instrument ID: HP16
Method: RSK175

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG512975-02	16G46730	02/20/15 11:17	01
LCS2	WG512975-03	16G46731	02/20/15 11:27	01
50WW24-021815	L15020971-06	16G46743	02/20/15 16:20	01
50WW12-021815	L15020971-10	16G46745	02/20/15 16:43	01
50WWW25-021815	L15020971-12	16G46746	02/20/15 16:56	01

Report Name: BLANK_SUMMARY
PDF File ID: 4034876
Report generated 02/27/2015 12:53

METHOD BLANK SUMMARY

Login Number: L15020971
Blank File ID: 16G46789
Prep Date: 02/24/15 10:04
Analyzed Date: 02/24/15 10:04
Analyst: JDS

Work Group: WG513247
Blank Sample ID: WG513247-01
Instrument ID: HP16
Method: RSK175

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG513247-02	16G46790	02/24/15 10:16	01
LCS2	WG513247-03	16G46791	02/24/15 10:29	01
50WW24-021815	L15020971-06	16G46792	02/24/15 13:40	DL01
50WWW25-021815	L15020971-12	16G46793	02/24/15 13:52	DL01
50WW23-021815	L15020971-08	16G46798	02/24/15 14:59	02
50WW18-021815	L15020971-14	16G46800	02/24/15 15:24	02

Report Name: BLANK_SUMMARY
PDF File ID: 4034876
Report generated 02/27/2015 12:53

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15020971 Prep Date: 02/20/15 11:04 Sample ID: WG512975-01
Instrument ID: HP16 Run Date: 02/20/15 11:04 Prep Method: 5021
File ID: 16G46729 Analyst: JDS Method: RSK175
Workgroup (AAB#): WG512975 Matrix: Water Units: ug/L
Contract #: Cal ID: HP16 - 19-FEB-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Carbon Dioxide	2500	10000	2500	1	U
Methane	1.00	5.00	1.00	1	U
ethene	1.00	5.00	1.00	1	U
ethane	1.00	5.00	1.00	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4034877
27-FEB-2015 12:53

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15020971 Prep Date: 02/24/15 10:04 Sample ID: WG513247-01
Instrument ID: HP16 Run Date: 02/24/15 10:04 Prep Method: 5021
File ID: 16G46789 Analyst: JDS Method: RSK175
Workgroup (AAB#): WG513247 Matrix: Water Units: ug/L
Contract #: Cal ID: HP16-19-FEB-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Carbon Dioxide	2500	10000	2500	1	U
Methane	1.00	5.00	1.00	1	U
ethene	1.00	5.00	1.00	1	U
ethane	1.00	5.00	1.00	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4034877
27-FEB-2015 12:53

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15020971 Run Date: 02/20/2015 Sample ID: WG512975-02
Instrument ID: HP16 Run Time: 11:17 Prep Method: 5021
File ID: 16G46730 Analyst: JDS Method: RSK175
Workgroup (AAB#): WG512975 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD68250 Cal ID: HP16 - 19-FEB-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Carbon Dioxide	31300	29600	94.6	10 - 200	
Methane	114	119	104	85 - 115	
ethene	200	202	101	85 - 115	
ethane	214	225	105	85 - 115	

LCS - Modified 03/06/2008
PDF File ID: 4041193
Report generated: 02/27/2015 12:53

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15020971 Run Date: 02/24/2015 Sample ID: WG513247-02
Instrument ID: HP16 Run Time: 10:16 Prep Method: 5021
File ID: 16G46790 Analyst: JDS Method: RSK175
Workgroup (AAB#): WG513247 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD68250 Cal ID: HP16-19-FEB-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Carbon Dioxide	31300	22500	71.9	10 - 200	
Methane	114	116	101	85 - 115	
ethene	200	199	99.8	85 - 115	
ethane	214	221	103	85 - 115	

LCS - Modified 03/06/2008
PDF File ID: 4041193
Report generated: 02/27/2015 12:53

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15020971 Analyst: JDS Prep Method: 5021
Instrument ID: HP16 Matrix: Water Method: RSK175
Workgroup (AAB#): WG512975 Units: ug/L
QC Key: DOD4 Lot #: STD68250

Sample ID: WG512975-02 LCS File ID: 16G46730 Run Date: 02/20/2015 11:17
Sample ID: WG512975-03 LCS2 File ID: 16G46731 Run Date: 02/20/2015 11:27

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Methane	114	119	104	114	115	101	2.98	85 - 115	20	
ethene	200	202	101	200	196	97.9	3.05	85 - 115	20	
ethane	214	225	105	214	219	102	3.04	85 - 115	20	
Carbon Dioxide	31300	29600	94.6	31300	23800	75.9	22.0	10 - 200	40	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4034878
Report generated: 02/27/2015 12:53

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15020971 Analyst: JDS Prep Method: 5021
Instrument ID: HP16 Matrix: Water Method: RSK175
Workgroup (AAB#): WG513247 Units: ug/L
QC Key: DOD4 Lot #: STD68250

Sample ID: WG513247-02 LCS File ID: 16G46790 Run Date: 02/24/2015 10:16
Sample ID: WG513247-03 LCS2 File ID: 16G46791 Run Date: 02/24/2015 10:29

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Methane	114	116	101	114	118	103	1.79	85 - 115	20	
ethene	200	199	99.8	200	200	100	0.285	85 - 115	20	
ethane	214	221	103	214	223	104	0.607	85 - 115	20	
Carbon Dioxide	31300	22500	71.9	31300	25000	79.7	10.3	10 - 200	40	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4034878
Report generated: 02/27/2015 12:53

Calibration Table Report
Method: RSKEXT.M
Title: RSK175 HP16 (SOP: OVL RSK01) 021915
Last Calibration: Wed Feb 18 16:20:53 2015
Curve: WG512843
Calibration Files

	Compound	0.67 16G46716.D	1.67 16G46725.D	33.3 16G46718.D	66.7 16G46719.D	133 16G46720.D	333 16G46721.D	533 16G46722.D	Avg	%RSD	Linear
T	methane		469991	216913	201174	205164	205675	189314	248039	43.983	0.999
T	ethene		362081	354680	329998	343165	349674	317458	342842	4.822	
T	acetylene		354975	361682	332643	368520	367143	326668	351939	5.116	
T	ethane	250100	370704	365461	348342	360148	368915	334980	342664	12.473	
T	propane	348508	546226	538360	511241	531019	544577	490547	501497	14.031	
T	n-butane	435718	687121	696500	655852	692618	713209	636035	645293	14.883	
	Signal #2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
T	carbon dioxide		6835	5856	5442	6197	6408	5536	6046	8.870	

Wed Feb 18 16:21:35 2015

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15020971 Run Date: 02/19/2015 Sample ID: WG512843-08
Instrument ID: HP16 Run Time: 18:16 Method: RSK175
File ID: 16G46727 Analyst: JDS QC Key: DOD4
ICal Workgroup: WG512843 Cal ID: HP16 - 19-FEB-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
carbon dioxide		62700	65900	ug/L	6360	5.20	15	
methane		228	243	ug/L	212000	6.50	15	
ethene		398	414	ug/L	356000	3.80	15	
ethane		427	459	ug/L	369000	7.60	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4034879
Report generated 02/27/2015 12:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15020971
Run Date: 02/20/2015
Sample ID: WG512963-01
Instrument ID: HP16
Run Time: 10:27
Method: RSK175
File ID: 16G46728
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG512975
Cal ID: HP16 - 19-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62700	65400	ug/L	6310	4.33	15	
methane		228	238	ug/L	208000	4.30	15	
ethene		398	407	ug/L	350000	2.10	15	
ethane		427	458	ug/L	368000	7.37	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4034880
Report generated 02/27/2015 12:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15020971 Run Date: 02/20/2015 Sample ID: WG512963-02
Instrument ID: HP16 Run Time: 15:32 Method: RSK175
File ID: 16G46739 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG512975 Cal ID: HP16 - 19-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62700	63500	ug/L	6130	1.34	15	
methane		228	231	ug/L	202000	1.44	15	
ethene		398	397	ug/L	342000	0.366	15	
ethane		427	450	ug/L	361000	5.33	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4034880
Report generated 02/27/2015 12:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15020971
Run Date: 02/24/2015
Sample ID: WG513245-01
Instrument ID: HP16
Run Time: 09:47
Method: RSK175
File ID: 16G46788
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG513247
Cal ID: HP16 - 19-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62700	64700	ug/L	6240	3.27	15	
methane		228	222	ug/L	194000	2.44	15	
ethene		398	382	ug/L	329000	4.06	15	
ethane		427	431	ug/L	346000	1.06	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4034880
Report generated 02/27/2015 12:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15020971
Run Date: 02/24/2015
Sample ID: WG513245-02
Instrument ID: HP16
Run Time: 15:12
Method: RSK175
File ID: 16G46799
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG513247
Cal ID: HP16 - 19-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62700	61000	ug/L	5880	2.68	15	
methane		228	224	ug/L	196000	1.66	15	
ethene		398	379	ug/L	326000	4.88	15	
ethane		427	427	ug/L	343000	0.0361	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4034880
Report generated 02/27/2015 12:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15020971
Run Date: 02/24/2015
Sample ID: WG513245-03
Instrument ID: HP16
Run Time: 17:34
Method: RSK175
File ID: 16G46810
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG513247
Cal ID: HP16 - 19-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62700	60800	ug/L	5870	2.99	15	
methane		228	228	ug/L	199000	0.158	15	
ethene		398	388	ug/L	334000	2.62	15	
ethane		427	439	ug/L	352000	2.77	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4034880
Report generated 02/27/2015 12:53

2.1.2.3 Sample Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022015\16G46743.D\FID1A.CH Vial: 16
Signal #2 : C:\MSDCHEM\1\DATA\022015\16G46743.D\TCD2B.CH
Acq On : 20 Feb 2015 16:20 Operator: JDS
Sample : L15020971-06 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 20 16:59:46 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	394941	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.39	19255	0.056	umol/
5) T	propane	3.83	12025	0.024	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.19	831956700	137611.766	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46743.D RSKEXT.M Fri Feb 20 16:59:46 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022015\16G46743.D\FID1A.CH Vial: 16
Signal #2 : C:\MSDCHEM\1\DATA\022015\16G46743.D\TCD2B.CH
Acq On : 20 Feb 2015 16:20 Operator: JDS
Sample : L15020971-06 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 20 16:59 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

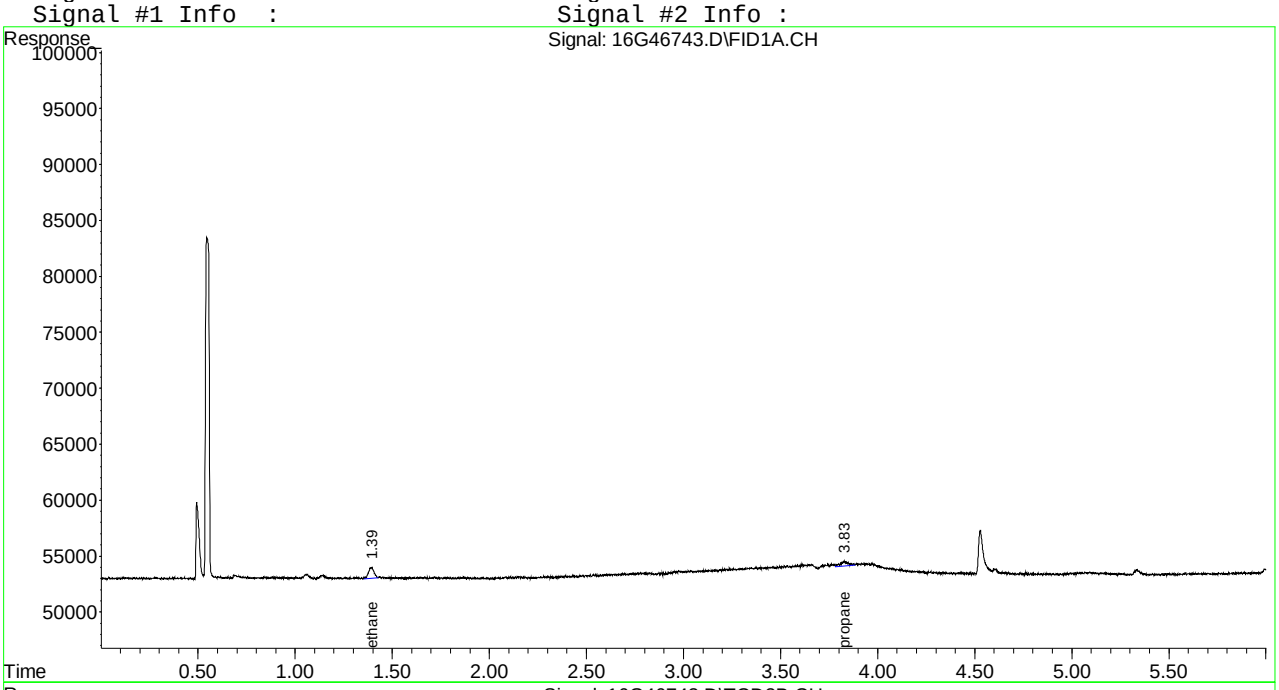

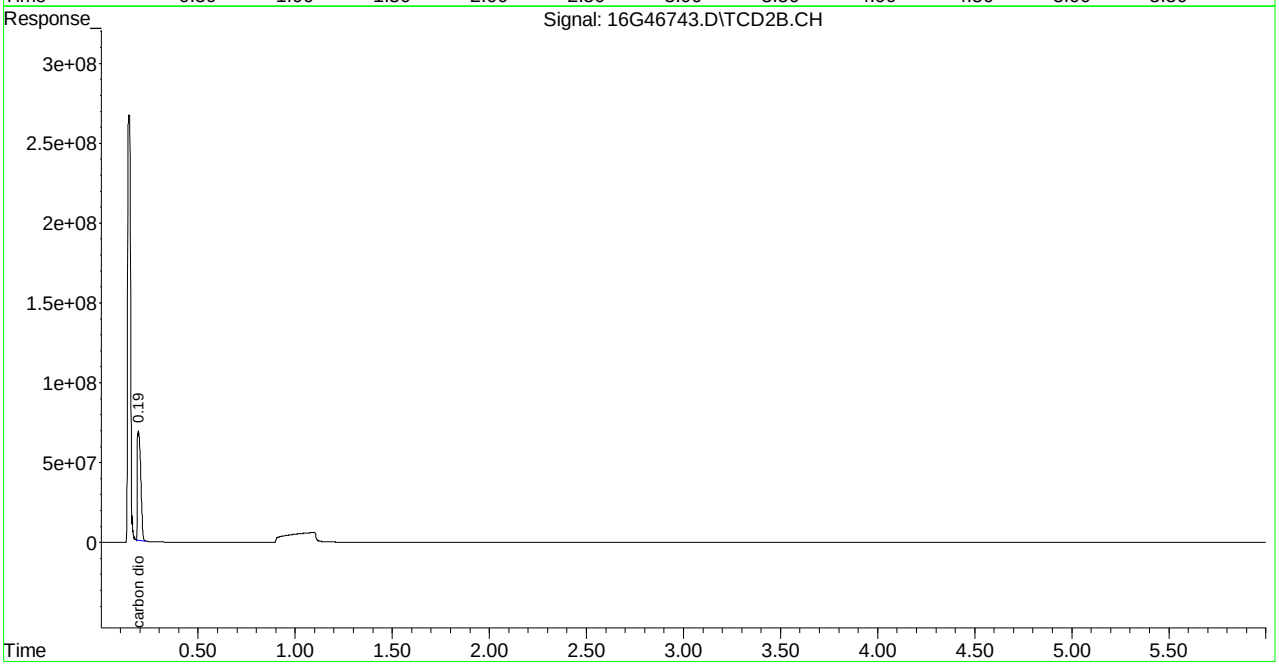

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022415\16G46792.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\022415\16G46792.D\TCD2B.CH
Acq On : 24 Feb 2015 13:40 Operator: JDS
Sample : L15020971-06 B D1 10X RSK175 Inst : HP16
Misc : 1,10 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 25 08:52:06 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	385674	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.39	12947	0.038	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	63560625	10513.396	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46792.D RSKEXT.M Wed Feb 25 08:52:06 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022415\16G46792.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\022415\16G46792.D\TCD2B.CH
Acq On : 24 Feb 2015 13:40 Operator: JDS
Sample : L15020971-06 B D1 10X RSK175 Inst : HP16
Misc : 1,10 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 25 8:52 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

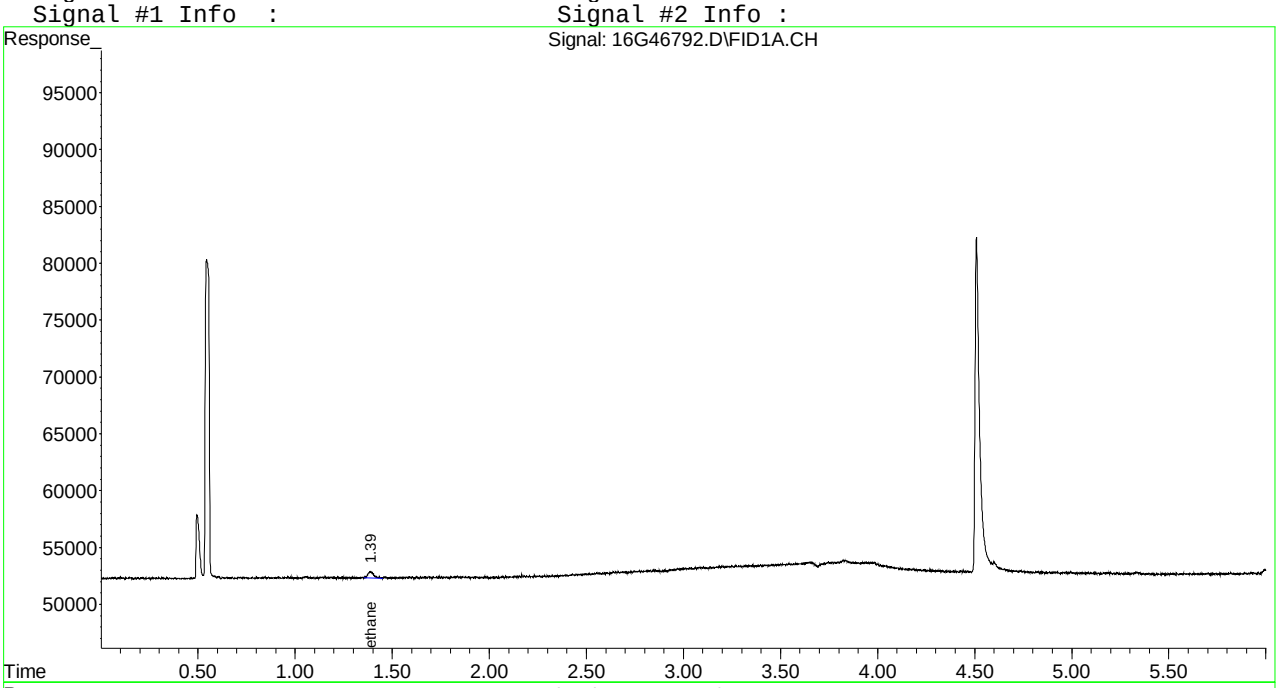

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022415\16G46798.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\022415\16G46798.D\TCD2B.CH
Acq On : 24 Feb 2015 14:59 Operator: JDS
Sample : L15020971-08 B A1 RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 25 08:52:11 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.54	343579	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	199794738	33047.521	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46798.D RSKEXT.M Wed Feb 25 08:52:20 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\022415\16G46798.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\022415\16G46798.D\TCD2B.CH
Acq On : 24 Feb 2015 14:59 Operator: JDS
Sample : L15020971-08 B A1 RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 25 8:52 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

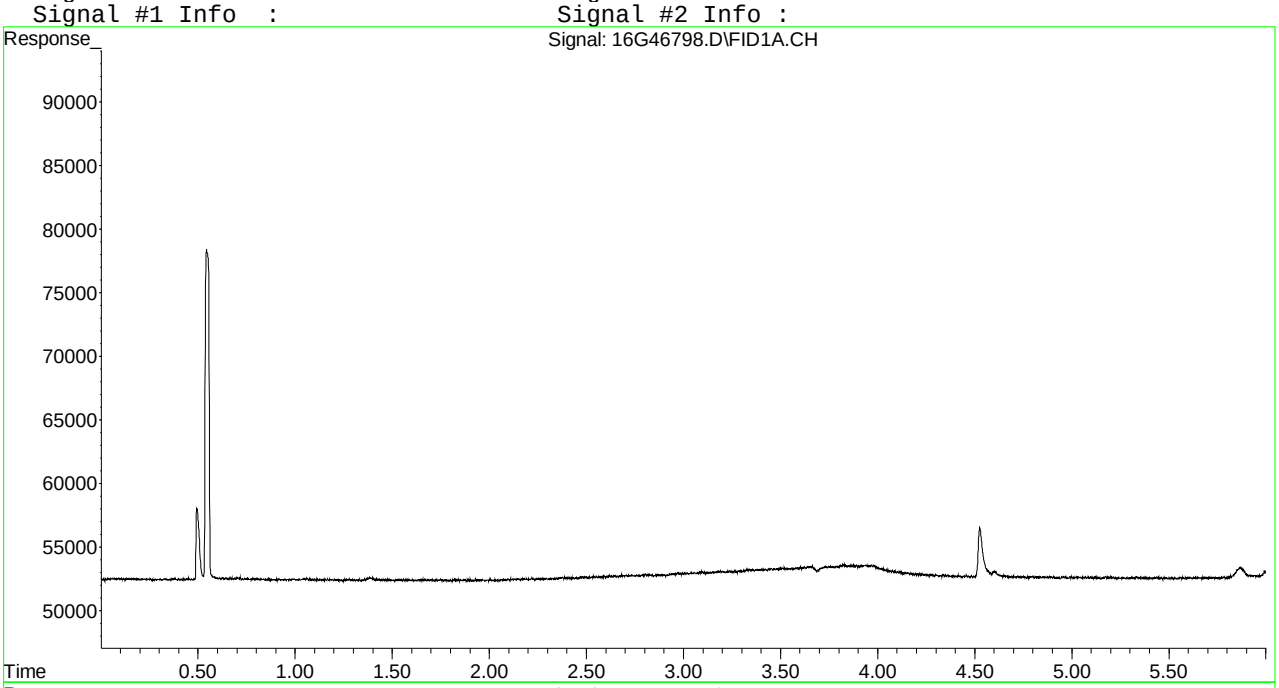

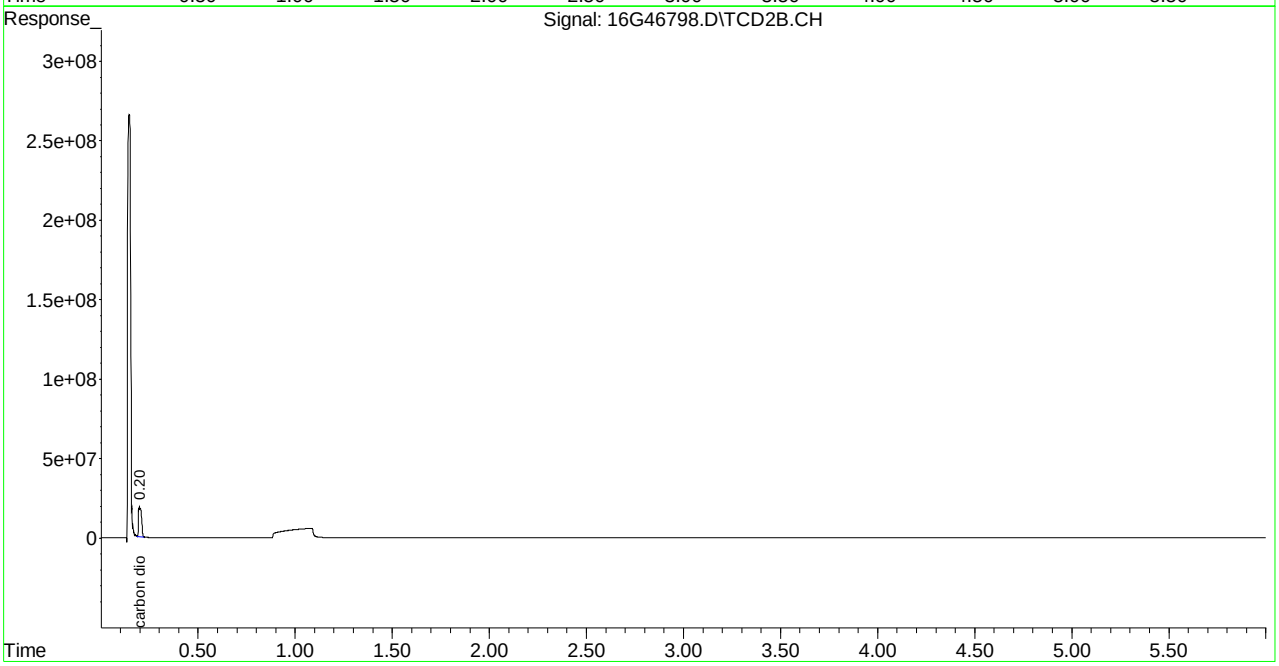

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\022015\16G46745.D\FID1A.CH Vial: 18
Signal #2 : C:\MSDCHEM\1\DATA\022015\16G46745.D\TCD2B.CH
Acq On    : 20 Feb 2015  16:43                      Operator: JDS
Sample    : L15020971-10 A RSK175                   Inst    : HP16
Misc      : 1,1                                     Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Feb 20 17:00:01 2015  Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update  : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj.     :
Signal #1 Phase :                   Signal #2 Phase:
Signal #1 Info  :                   Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	442257	N.D.	umol/
2) T	ethene	1.06	28848	0.084	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	200627086	33185.198	umol/

Signal #1 : C:\MSDCHEM\1\DATA\022015\16G46745.D\FID1A.CH Vial: 18
Signal #2 : C:\MSDCHEM\1\DATA\022015\16G46745.D\TCD2B.CH
Acq On : 20 Feb 2015 16:43 Operator: JDS
Sample : L15020971-10 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 20 17:00 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

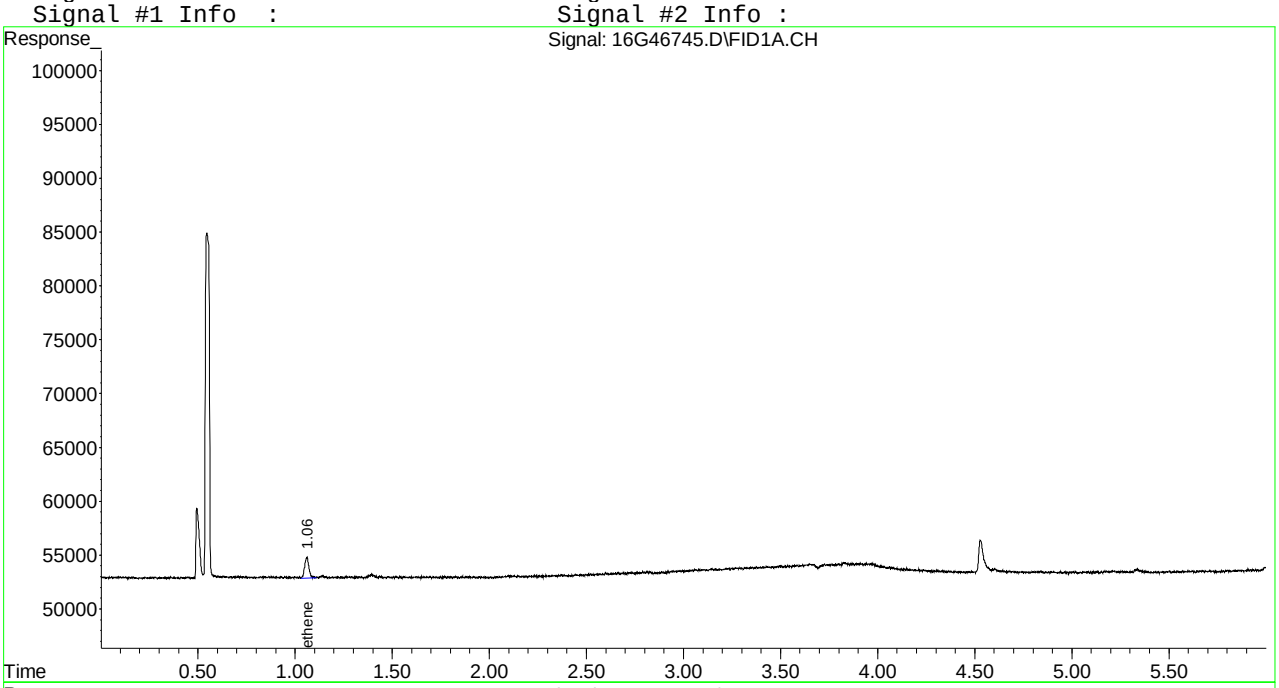

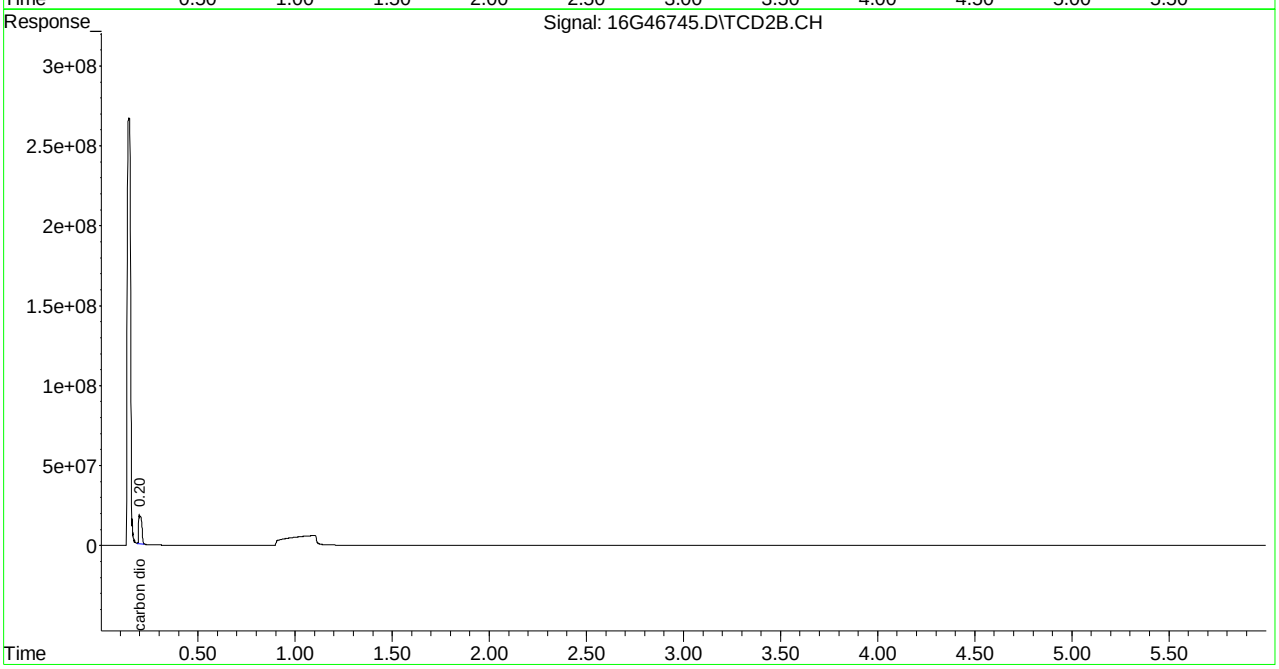

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\022015\16G46746.D\FID1A.CH Vial: 19
Signal #2 : C:\MSDCHEM\1\DATA\022015\16G46746.D\TCD2B.CH
Acq On    : 20 Feb 2015  16:56                      Operator: JDS
Sample    : L15020971-12 A RSK175                   Inst    : HP16
Misc      : 1,1                                     Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Feb 20 17:29:23 2015  Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update  : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj.     :
Signal #1 Phase :                   Signal #2 Phase:
Signal #1 Info  :                   Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	5542453	25.889	umol/
2) T	ethene	1.06	109905	0.321	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.39	41869	0.122	umol/
5) T	propane	3.83	15273	0.030	umol/
6) T	n-butane	5.34	12755	0.020	umol/
8) T	carbon dioxide	0.20	419345898	69362.901	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

16G46746.D RSKEXT.M Fri Feb 20 17:29:23 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022015\16G46746.D\FID1A.CH Vial: 19
Signal #2 : C:\MSDCHEM\1\DATA\022015\16G46746.D\TCD2B.CH
Acq On : 20 Feb 2015 16:56 Operator: JDS
Sample : L15020971-12 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 20 17:29 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

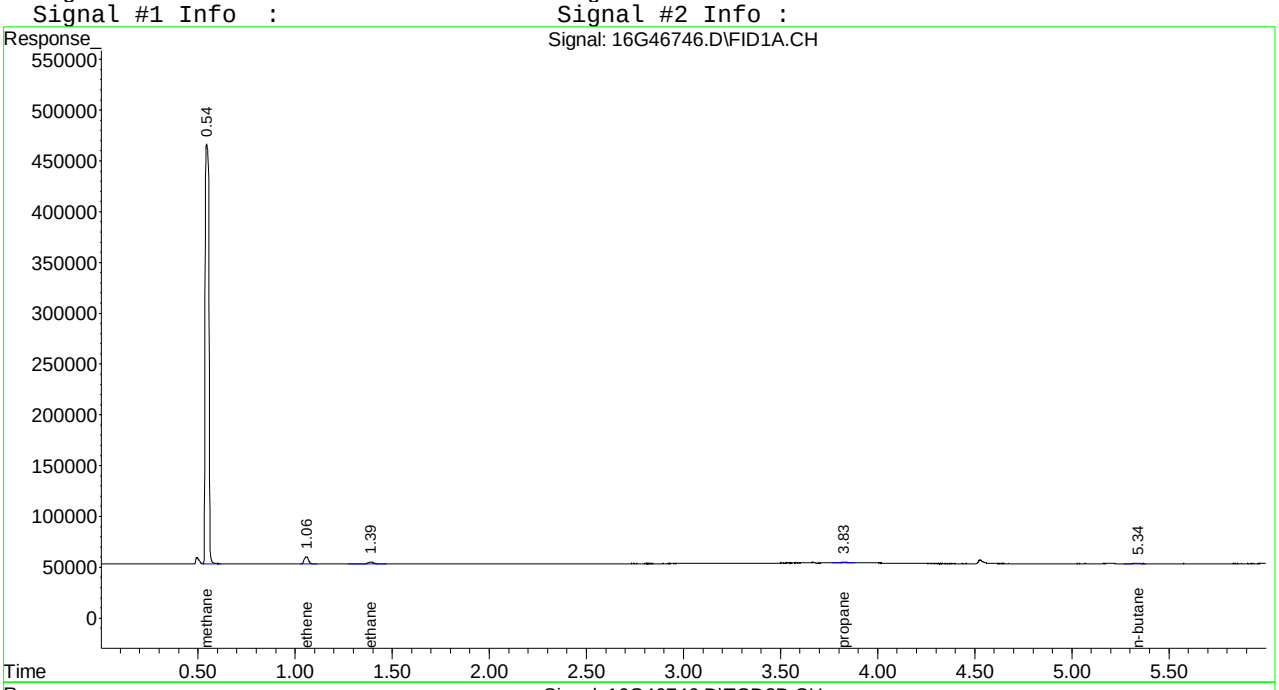

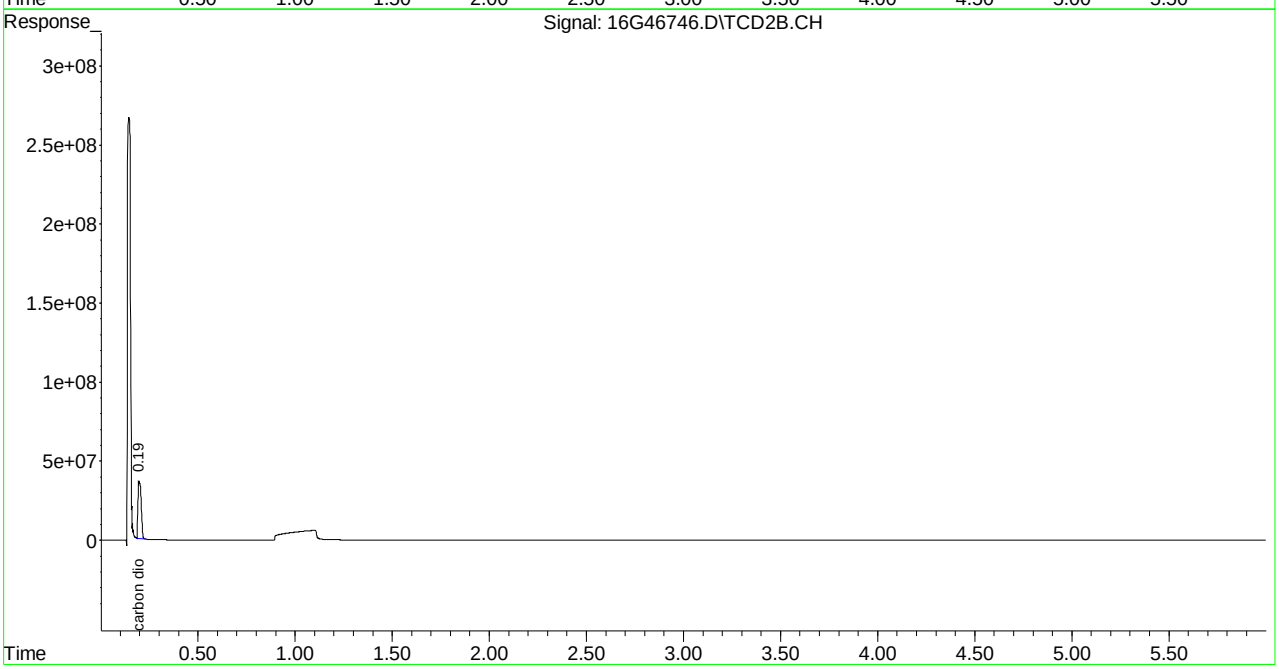

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022415\16G46793.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\022415\16G46793.D\TCD2B.CH
Acq On : 24 Feb 2015 13:52 Operator: JDS
Sample : L15020971-12 B D1 5X RSK175 Inst : HP16
Misc : 1,5 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 25 08:52:08 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	1534406	5.392	umol/
2) T	ethene	1.06	27452	0.080	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.39	18980	0.055	umol/
5) T	propane	3.83	8014	0.016	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	107779948	17827.597	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46793.D RSKEXT.M Wed Feb 25 08:52:08 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\022415\16G46793.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\022415\16G46793.D\TCD2B.CH
Acq On    : 24 Feb 2015  13:52                        Operator: JDS
Sample    : L15020971-12 B D1 5X RSK175               Inst    : HP16
Misc      : 1,5                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Feb 25  8:52 2015  Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update  : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

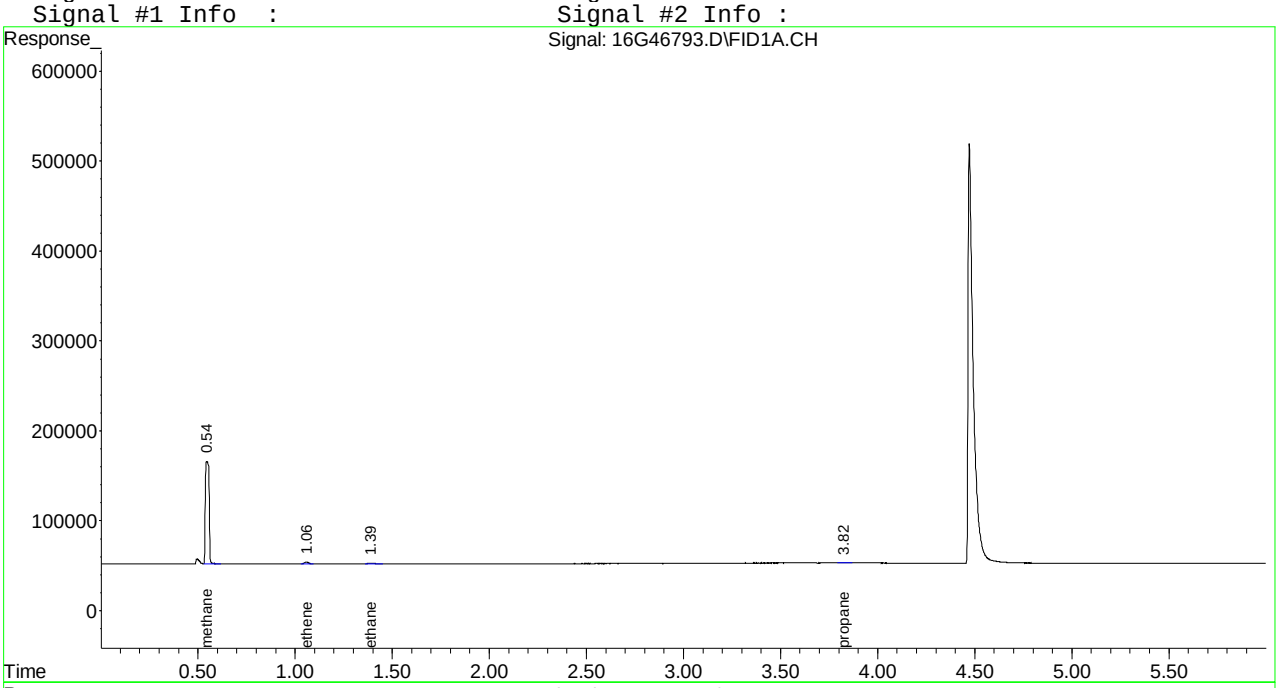

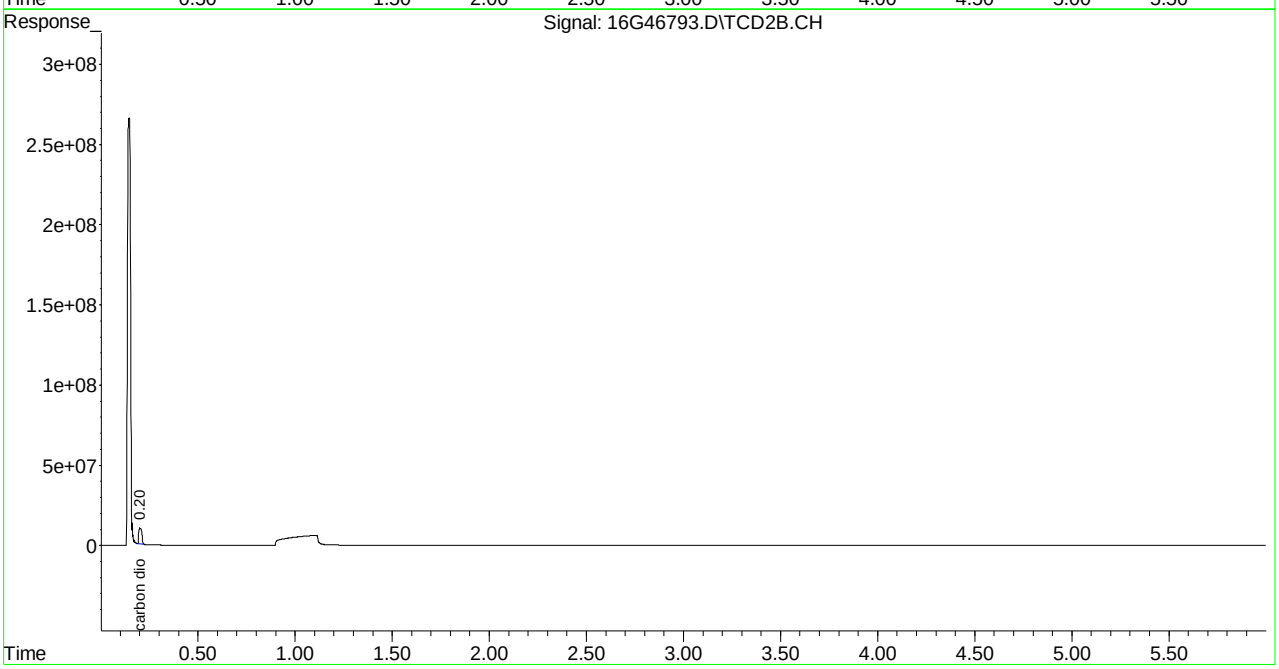

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022415\16G46800.D\FID1A.CH Vial: 13
Signal #2 : C:\MSDCHEM\1\DATA\022415\16G46800.D\TCD2B.CH
Acq On : 24 Feb 2015 15:24 Operator: JDS
Sample : L15020971-14 B A1 RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 25 08:52:38 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	398400	N.D.	umol/
2) T	ethene	1.06	14722	0.043	umol/
3) T	acetylene	1.14	9062	0.026	umol/
4) T	ethane	1.39	13109	0.038	umol/
5) T	propane	3.83	25869	0.052	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	150286842	24858.551	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46800.D RSKEXT.M Wed Feb 25 08:52:38 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022415\16G46800.D\FID1A.CH Vial: 13
Signal #2 : C:\MSDCHEM\1\DATA\022415\16G46800.D\TCD2B.CH
Acq On : 24 Feb 2015 15:24 Operator: JDS
Sample : L15020971-14 B A1 RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 25 8:52 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

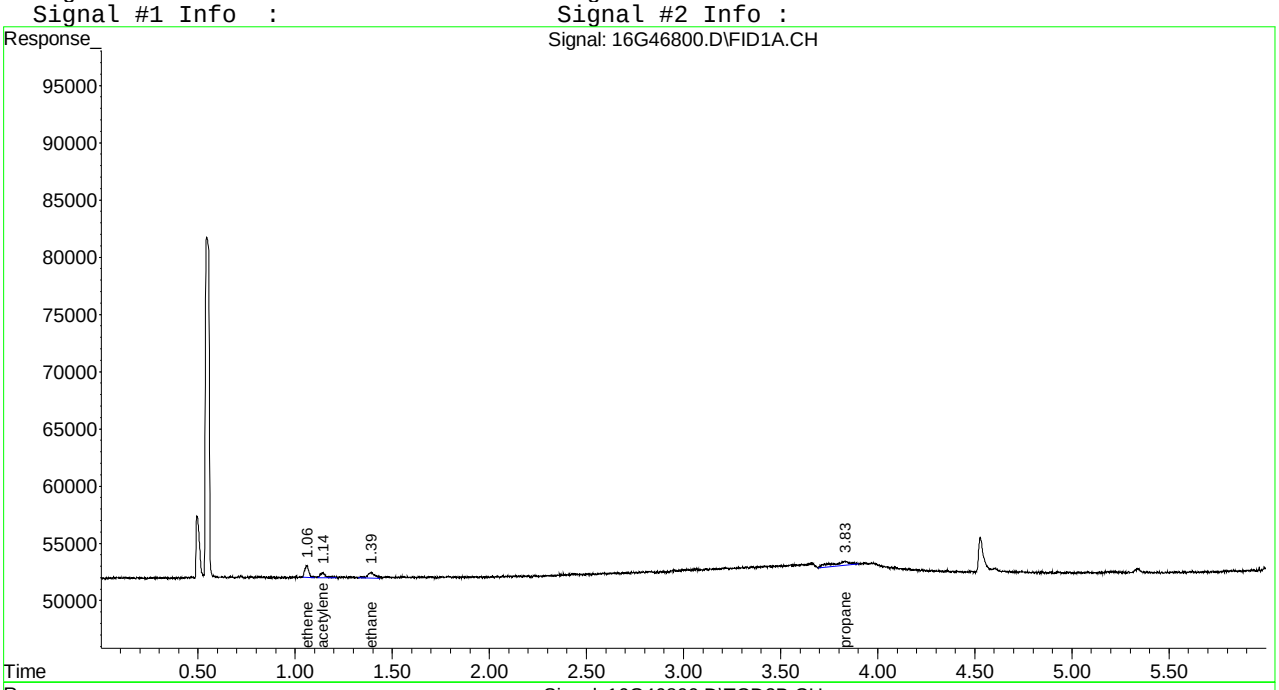

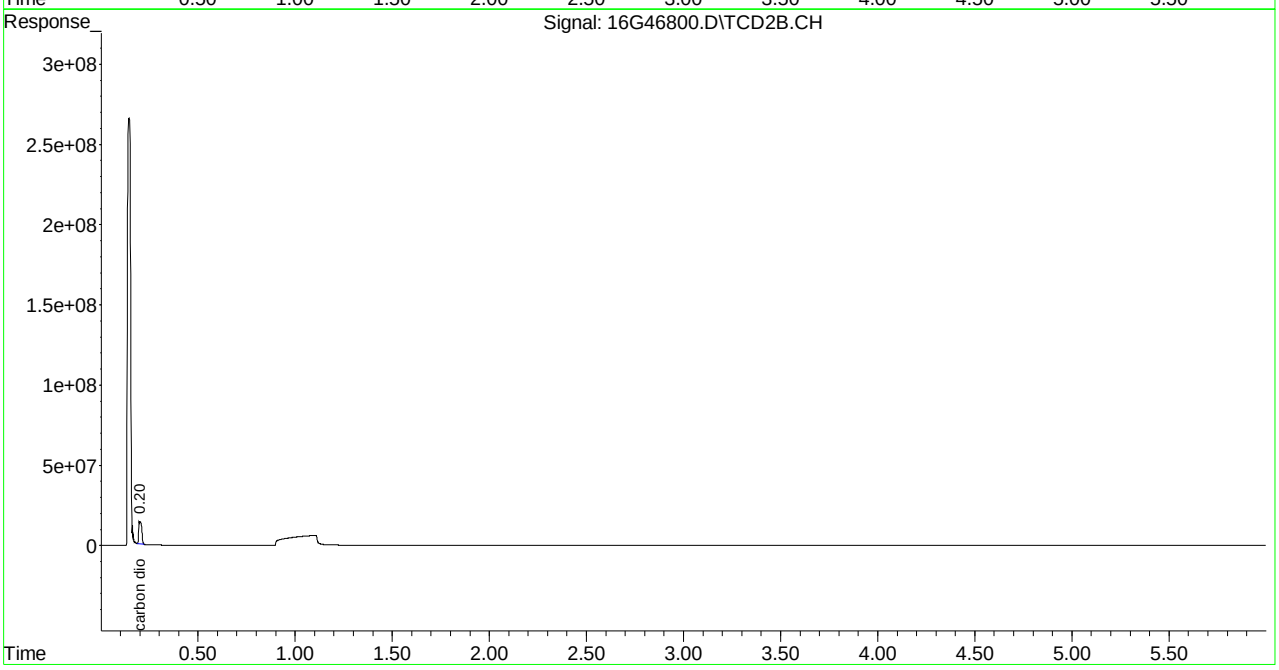

2.1.2.4 Standards Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\021915\16G46716.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\021915\16G46716.D\TCD2B.CH
Acq On : 19 Feb 2015 13:00 Operator: JDS
Sample : WG512843-01 0.67 umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 18 17:11:32 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	520694	0.208	umol/
2) T	ethene	1.06	160683	0.469	umol/
3) T	acetylene	1.14	141615	0.402	umol/
4) T	ethane	1.39	166817	0.487	umol/
5) T	propane	3.83	232455	0.464	umol/
6) T	n-butane	5.34	290624	0.450	umol/
8) T	carbon dioxide	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46716.D RSKEXT.M Wed Feb 18 17:11:39 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\021915\16G46716.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\021915\16G46716.D\TCD2B.CH
Acq On : 19 Feb 2015 13:00 Operator: JDS
Sample : WG512843-01 0.67 umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 18 17:11 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

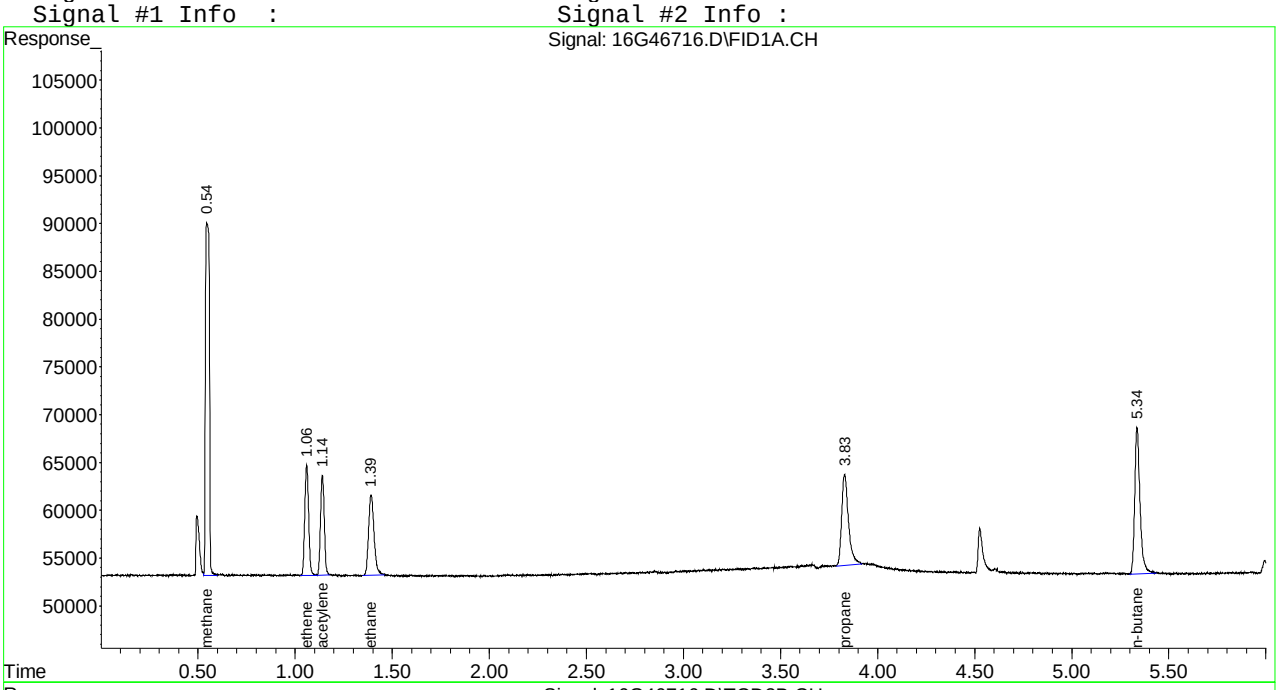

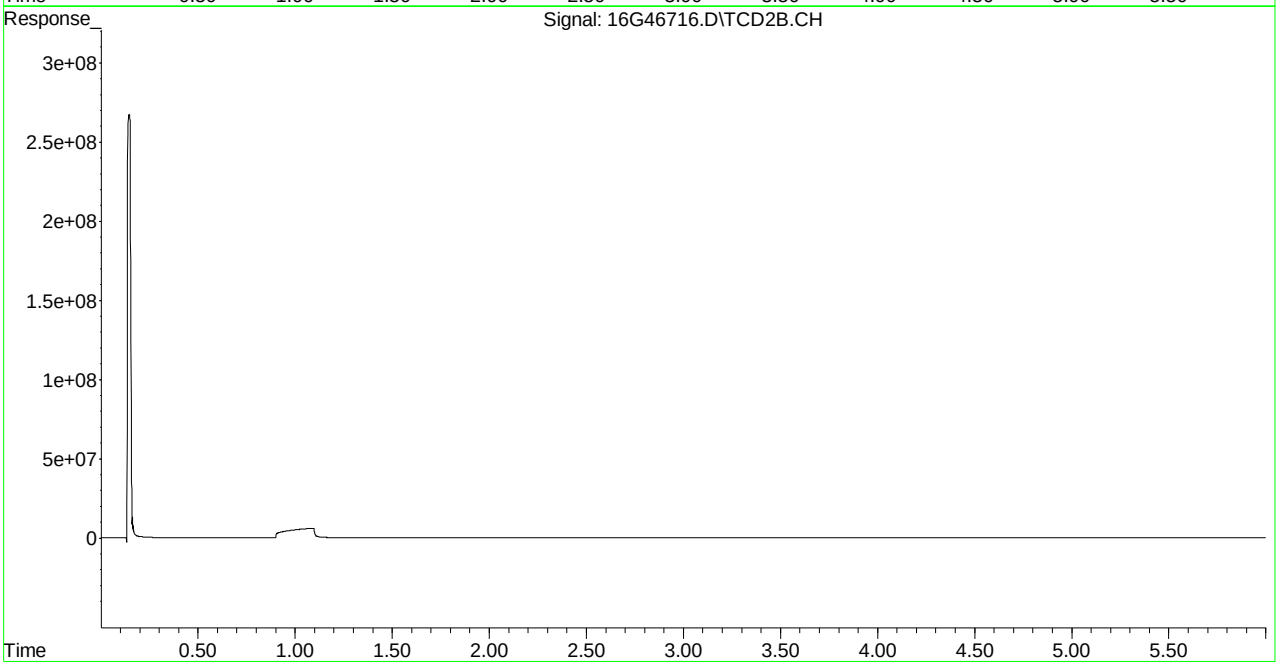

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\021915\16G46716.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\021915\16G46716.D\TCD2B.CH
Acq On : 19 Feb 2015 13:00 Operator: JDS
Sample : WG512843-01 0.67 umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	-1.000	0.208	0.0	0	0.00
2	T	ethene	-1.000	0.469	0.0	100	0.00
3	T	acetylene	-1.000	0.402	0.0	100	0.00
4	T	ethane	0.667	0.487	27.0#	100	0.00
5	T	propane	0.667	0.464	30.4#	100	0.00
6	T	n-butane	0.667	0.450	32.5#	100	0.00

Signal #2

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46716.D RSKEXT.M Wed Feb 18 16:33:52 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\021915\16G46716.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\021915\16G46716.D\TCD2B.CH
Acq On    : 19 Feb 2015  13:00                        Operator: JDS
Sample    : WG512843-01 0.67 umol/mol STD RSK175      Inst    : HP16
Misc      : 1,1 STD67276                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update  : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
 ---------------------------------------------------------------------------


  Signal #2
8 T   carbon dioxide               -1.000   0.000       0.0     0  -0.21
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\021915\16G46718.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\021915\16G46718.D\TCD2B.CH
Acq On : 19 Feb 2015 13:24 Operator: JDS
Sample : WG512843-03 33.3 umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 18 17:11:54 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	7223199	34.485	umol/
2) T	ethene	1.06	11810846	34.450	umol/
3) T	acetylene	1.14	12044005	34.222	umol/
4) T	ethane	1.39	12169854	35.515	umol/
5) T	propane	3.83	17927393	35.748	umol/
6) T	n-butane	5.34	23193440	35.942	umol/
8) T	carbon dioxide	0.20	19519477	3228.665	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46718.D RSKEXT.M Wed Feb 18 17:11:54 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\021915\16G46718.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\021915\16G46718.D\TCD2B.CH
Acq On : 19 Feb 2015 13:24 Operator: JDS
Sample : WG512843-03 33.3 umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 18 17:11 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

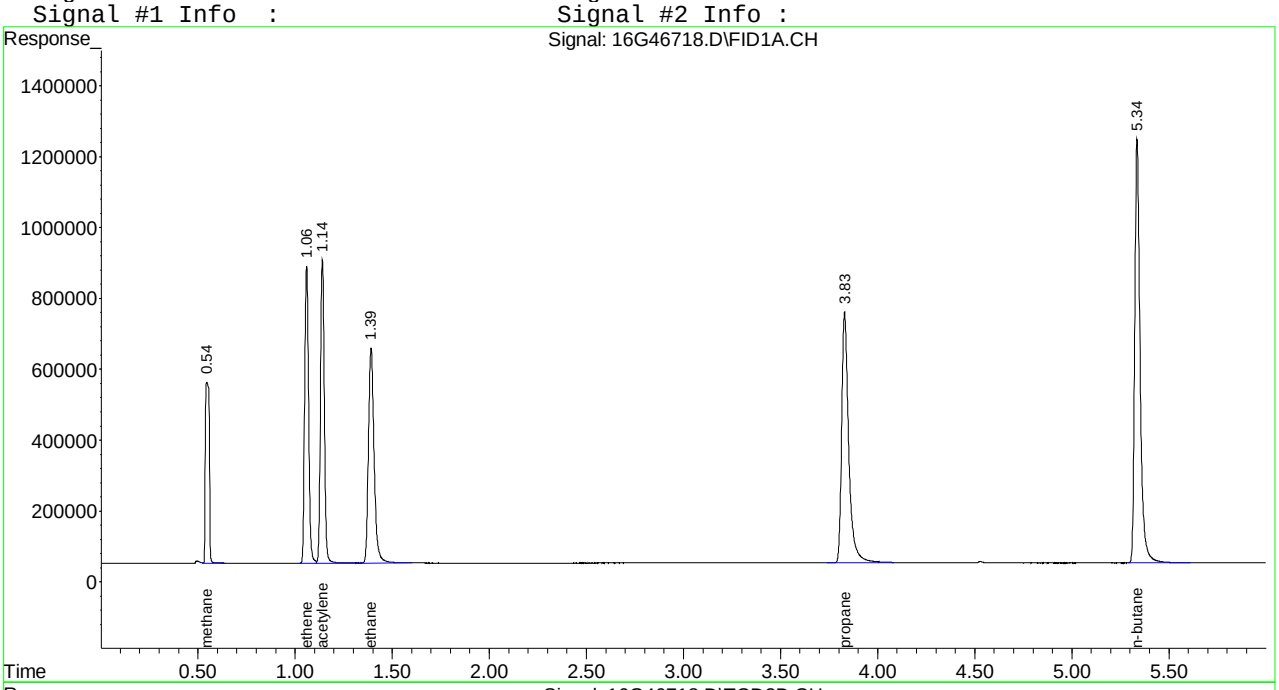

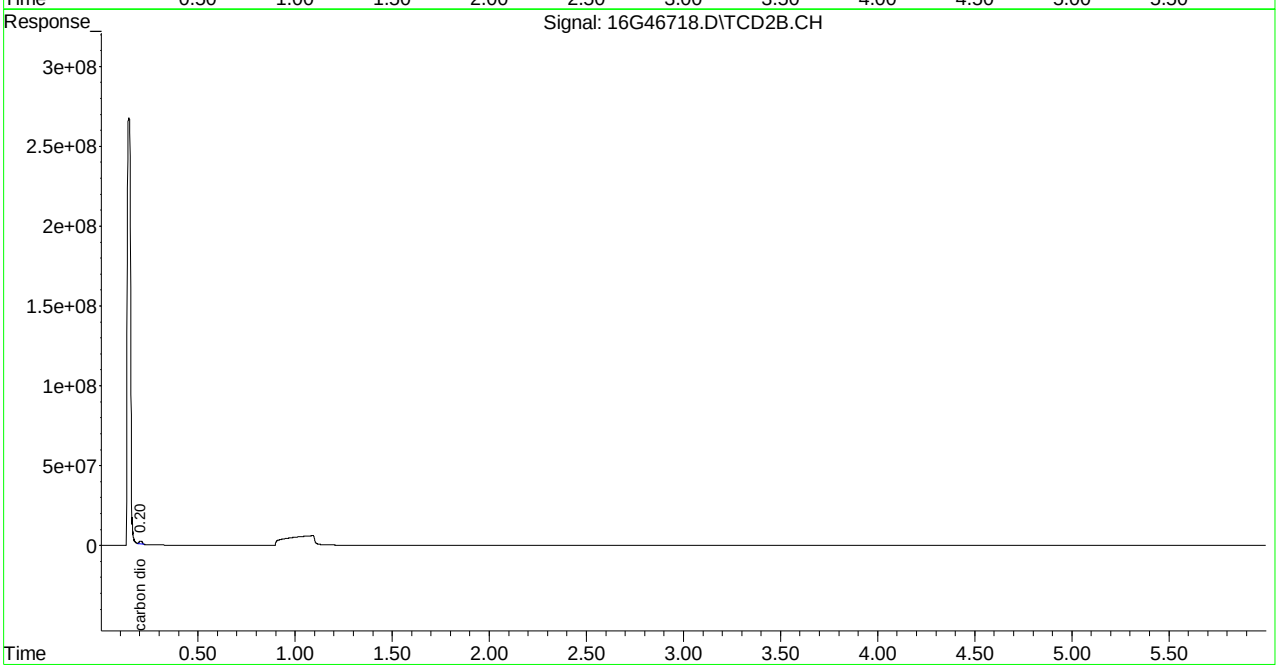

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\021915\16G46719.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\021915\16G46719.D\TCD2B.CH
Acq On : 19 Feb 2015 13:39 Operator: JDS
Sample : WG512843-04 66.7 umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 18 17:11:56 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	13418328	66.166	umol/
2) T	ethene	1.06	22010842	64.201	umol/
3) T	acetylene	1.14	22187281	63.043	umol/
4) T	ethane	1.39	23234404	67.805	umol/
5) T	propane	3.83	34099797	67.996	umol/
6) T	n-butane	5.33	43745307	67.791	umol/
8) T	carbon dioxide	0.20	36280138	6001.002	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46719.D RSKEXT.M Wed Feb 18 17:11:56 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\021915\16G46719.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\021915\16G46719.D\TCD2B.CH
Acq On : 19 Feb 2015 13:39 Operator: JDS
Sample : WG512843-04 66.7 umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 18 17:11 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

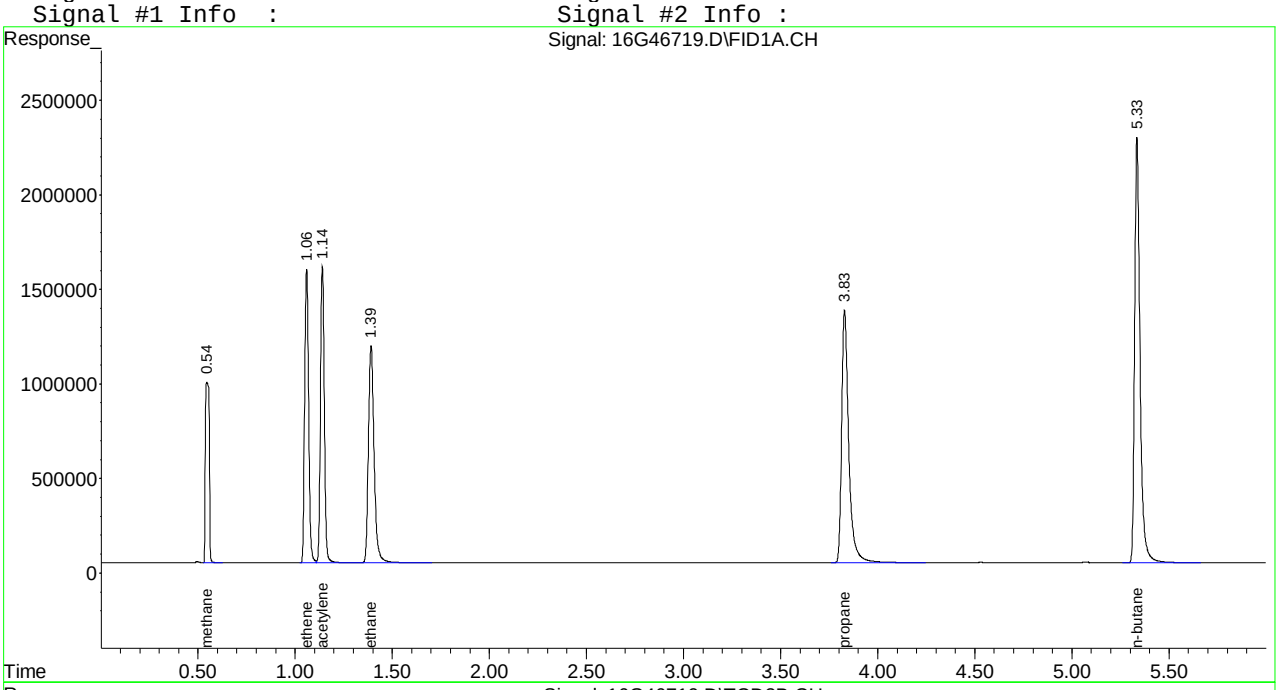

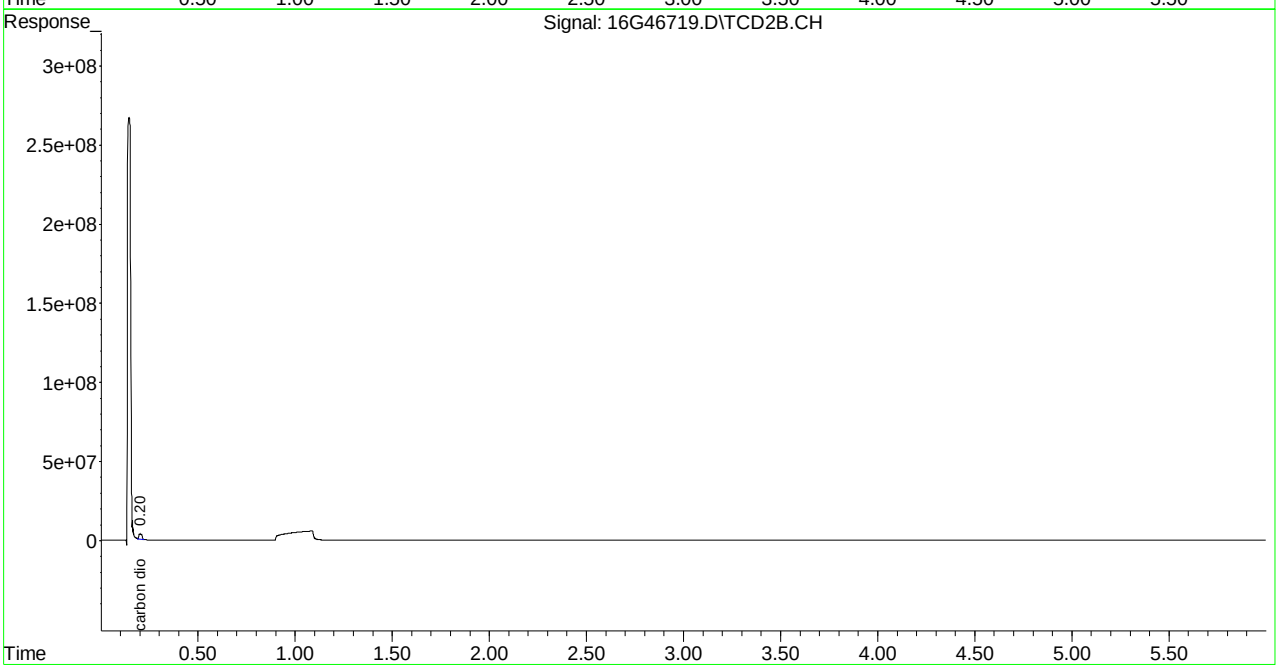

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\021915\16G46720.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\021915\16G46720.D\TCD2B.CH
Acq On : 19 Feb 2015 13:50 Operator: JDS
Sample : WG512843-05 133 umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 18 17:11:57 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	27286784	137.090	umol/
2) T	ethene	1.06	45640883	133.125	umol/
3) T	acetylene	1.14	49013193	139.266	umol/
4) T	ethane	1.39	47899711	139.786	umol/
5) T	propane	3.83	70625509	140.829	umol/
6) T	n-butane	5.33	92118251	142.754	umol/
8) T	carbon dioxide	0.20	82629458	13667.521	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46720.D RSKEXT.M Wed Feb 18 17:11:57 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\021915\16G46720.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\021915\16G46720.D\TCD2B.CH
Acq On : 19 Feb 2015 13:50 Operator: JDS
Sample : WG512843-05 133 umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 18 17:11 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

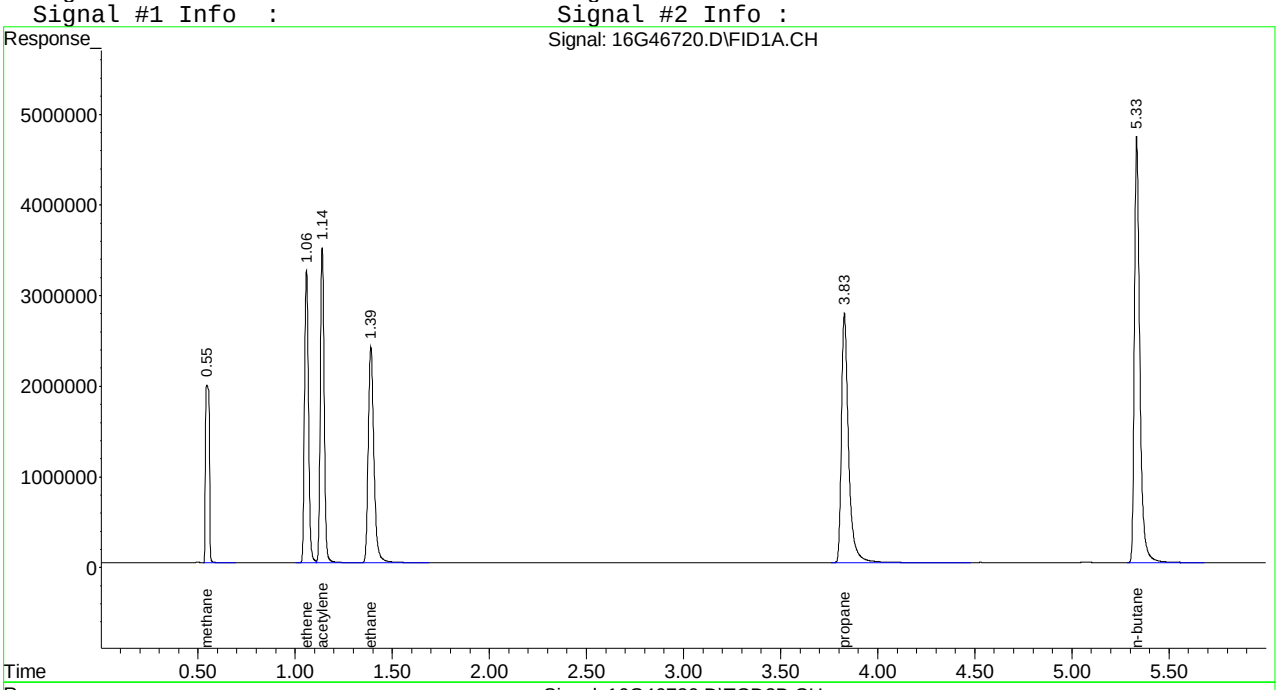

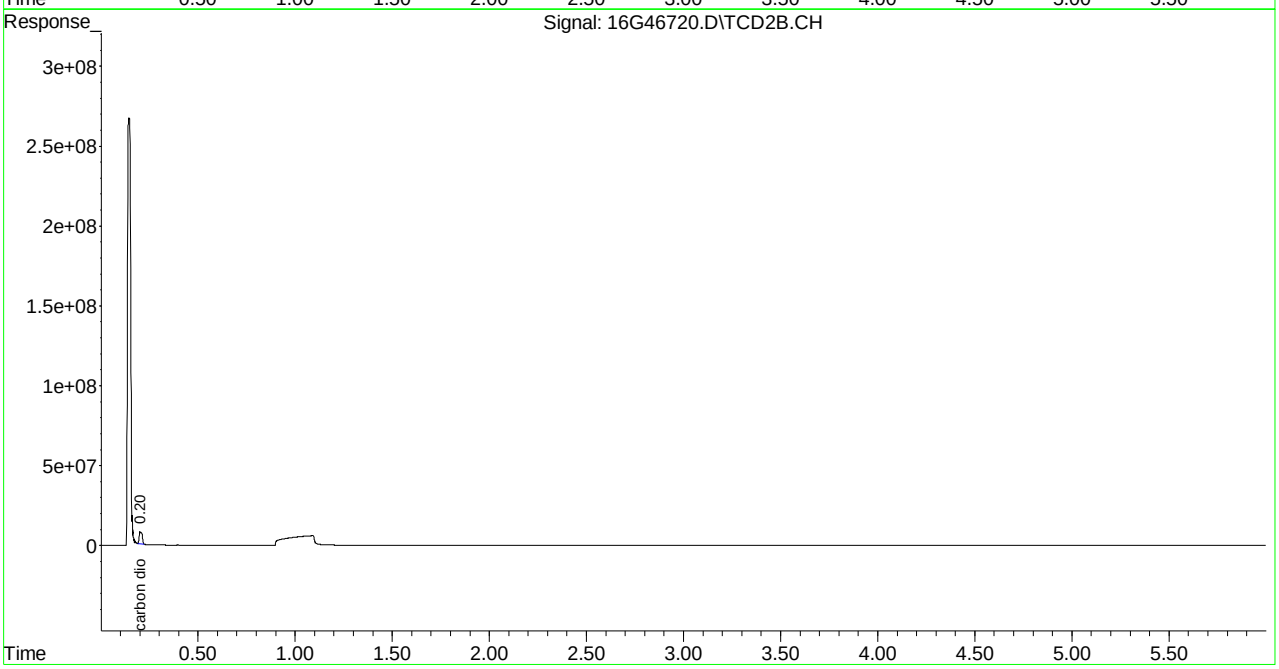

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\021915\16G46721.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\021915\16G46721.D\TCD2B.CH
Acq On    : 19 Feb 2015  14:05                        Operator: JDS
Sample    : WG512843-06 333 umol/mol STD RSK175       Inst    : HP16
Misc      : 1,1 STD67274                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Feb 18 17:11:57 2015  Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update  : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	68489813	347.801	umol/
2) T	ethene	1.06	116441461	339.635	umol/
3) T	acetylene	1.14	122258562	347.386	umol/
4) T	ethane	1.39	122848670	358.510	umol/
5) T	propane	3.82	181344139	361.606	umol/
6) T	n-butane	5.33	237498673	368.048	umol/
8) T	carbon dioxide	0.20	213586073	35328.710	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

16G46721.D RSKEXT.M Wed Feb 18 17:11:57 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\021915\16G46721.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\021915\16G46721.D\TCD2B.CH
Acq On : 19 Feb 2015 14:05 Operator: JDS
Sample : WG512843-06 333 umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 18 17:11 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

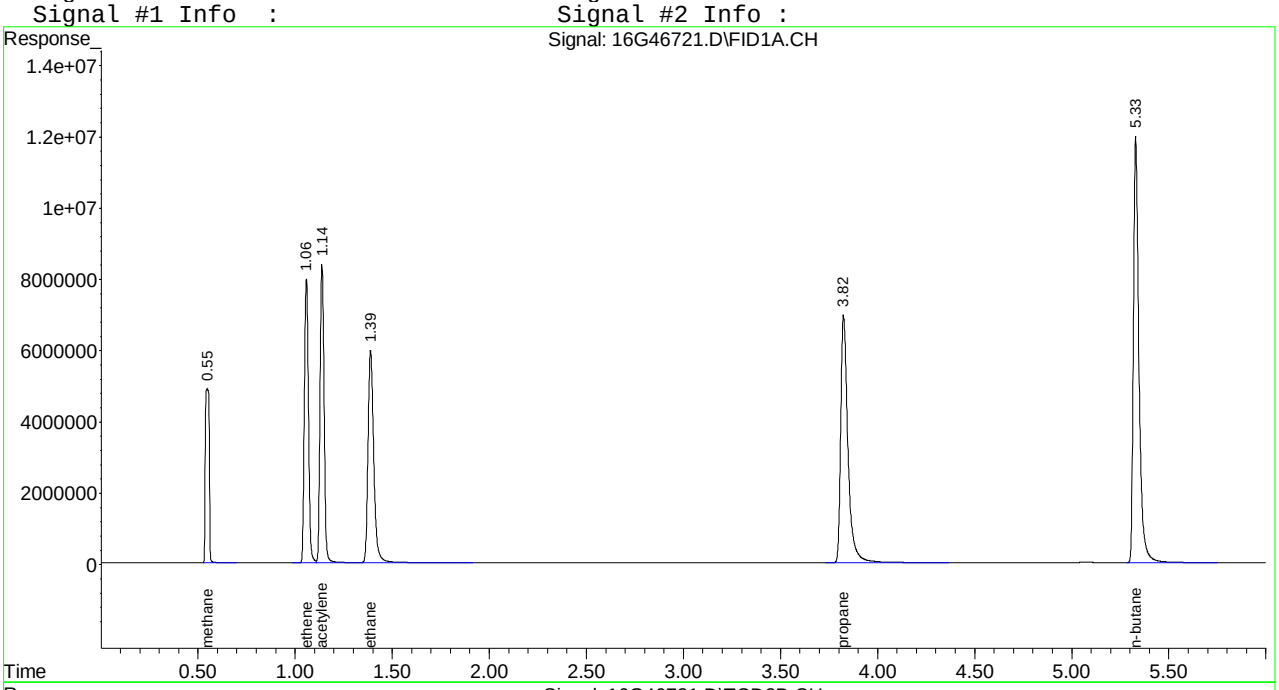

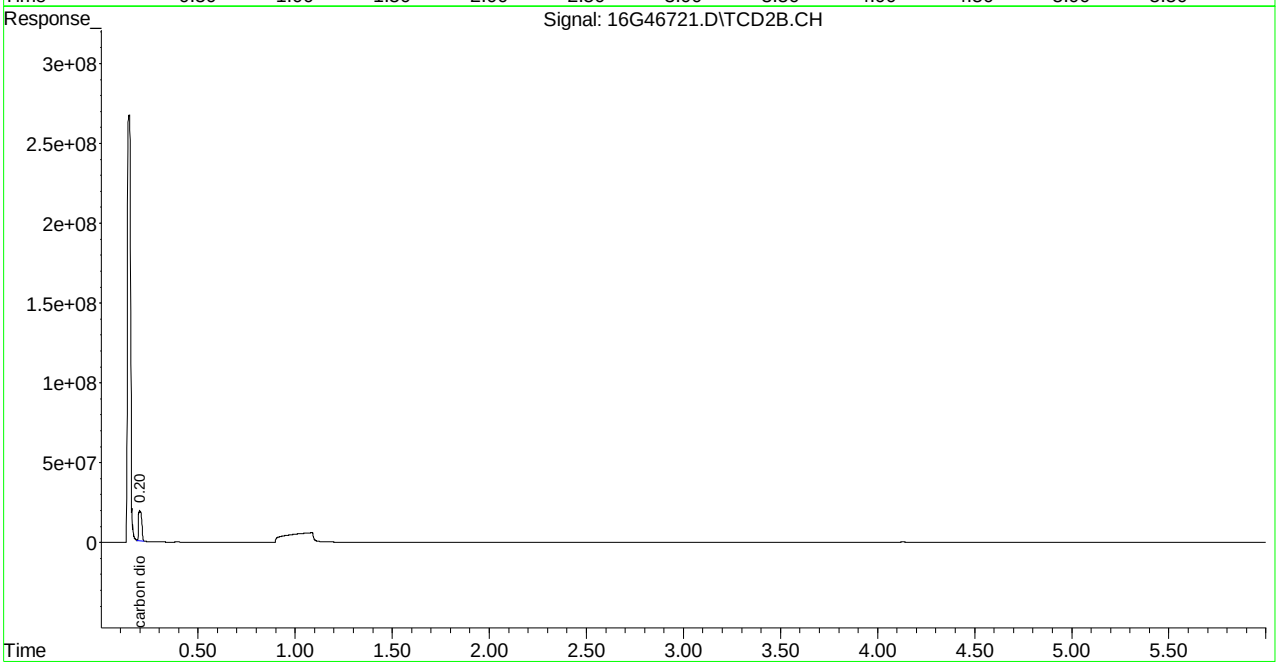

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\021915\16G46722.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\021915\16G46722.D\TCD2B.CH
Acq On : 19 Feb 2015 14:16 Operator: JDS
Sample : WG512843-07 533 umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 18 17:11:58 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	100904420	513.569	umol/
2) T	ethene	1.06	169204973	493.536	umol/
3) T	acetylene	1.14	174114291	494.729	umol/
4) T	ethane	1.39	178544480	521.048	umol/
5) T	propane	3.82	261461418	521.362	umol/
6) T	n-butane	5.33	339006433	525.353	umol/
8) T	carbon dioxide	0.20	295240413	48834.939	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46722.D RSKEXT.M Wed Feb 18 17:11:58 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\021915\16G46722.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\021915\16G46722.D\TCD2B.CH
Acq On : 19 Feb 2015 14:16 Operator: JDS
Sample : WG512843-07 533 umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 18 17:11 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

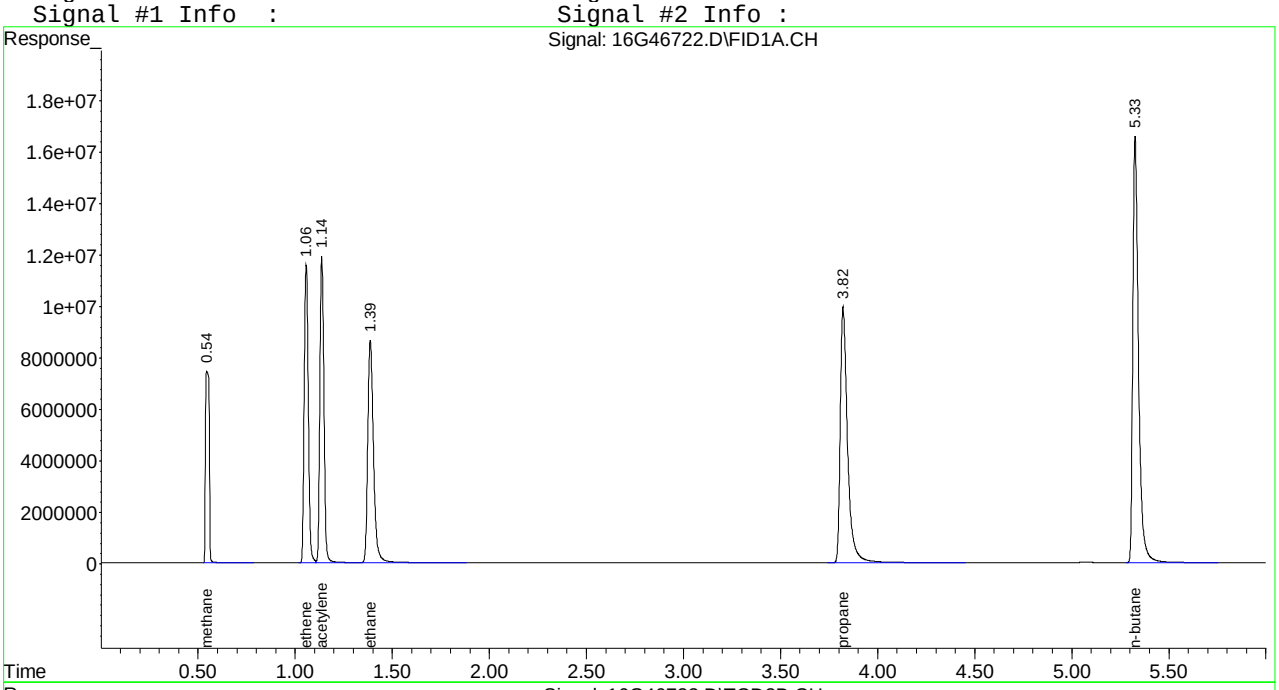

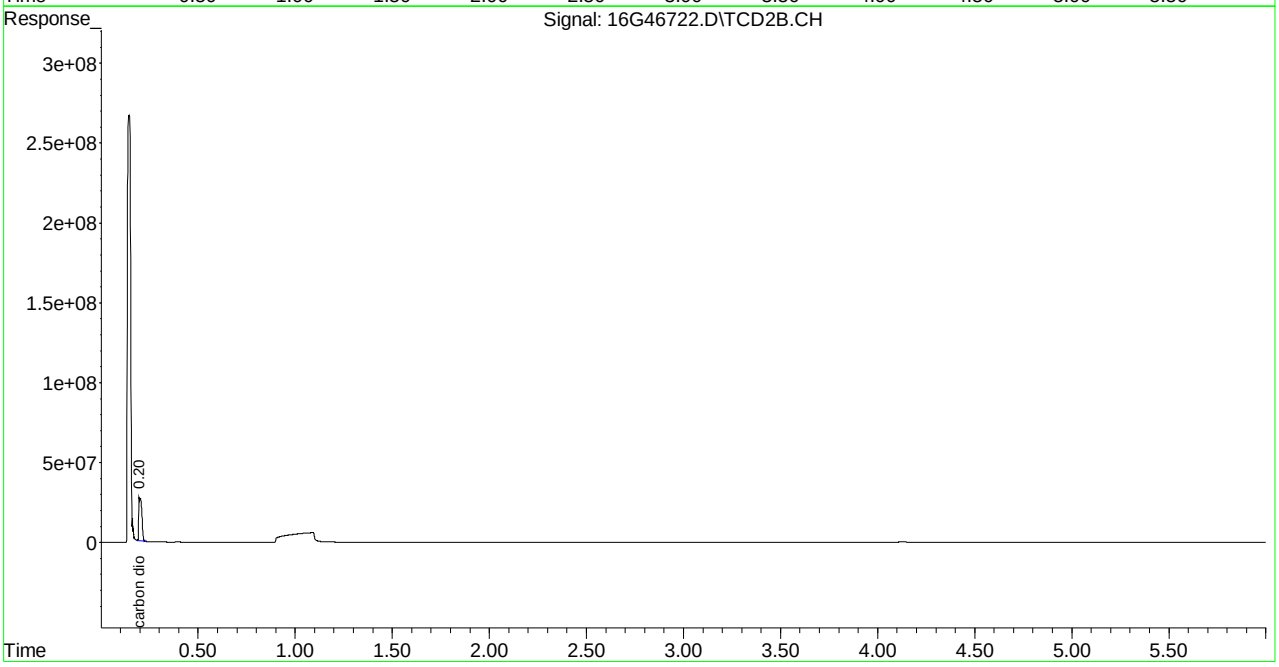

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\021915\16G46725.D\FID1A.CH Vial: 10
Signal #2 : C:\MSDCHEM\1\DATA\021915\16G46725.D\TCD2B.CH
Acq On : 19 Feb 2015 16:08 Operator: JDS
Sample : WG512843-02 1.67 umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 18 17:11:59 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	784885	1.559	umol/
2) T	ethene	1.06	604675	1.764	umol/
3) T	acetylene	1.14	592809	1.684	umol/
4) T	ethane	1.39	619076	1.807	umol/
5) T	propane	3.83	912198	1.819	umol/
6) T	n-butane	5.34	1147492	1.778	umol/
8) T	carbon dioxide	0.20	13670199	2261.152	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46725.D RSKEXT.M Wed Feb 18 17:11:59 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\021915\16G46725.D\FID1A.CH Vial: 10
Signal #2 : C:\MSDCHEM\1\DATA\021915\16G46725.D\TCD2B.CH
Acq On : 19 Feb 2015 16:08 Operator: JDS
Sample : WG512843-02 1.67 umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 18 17:11 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

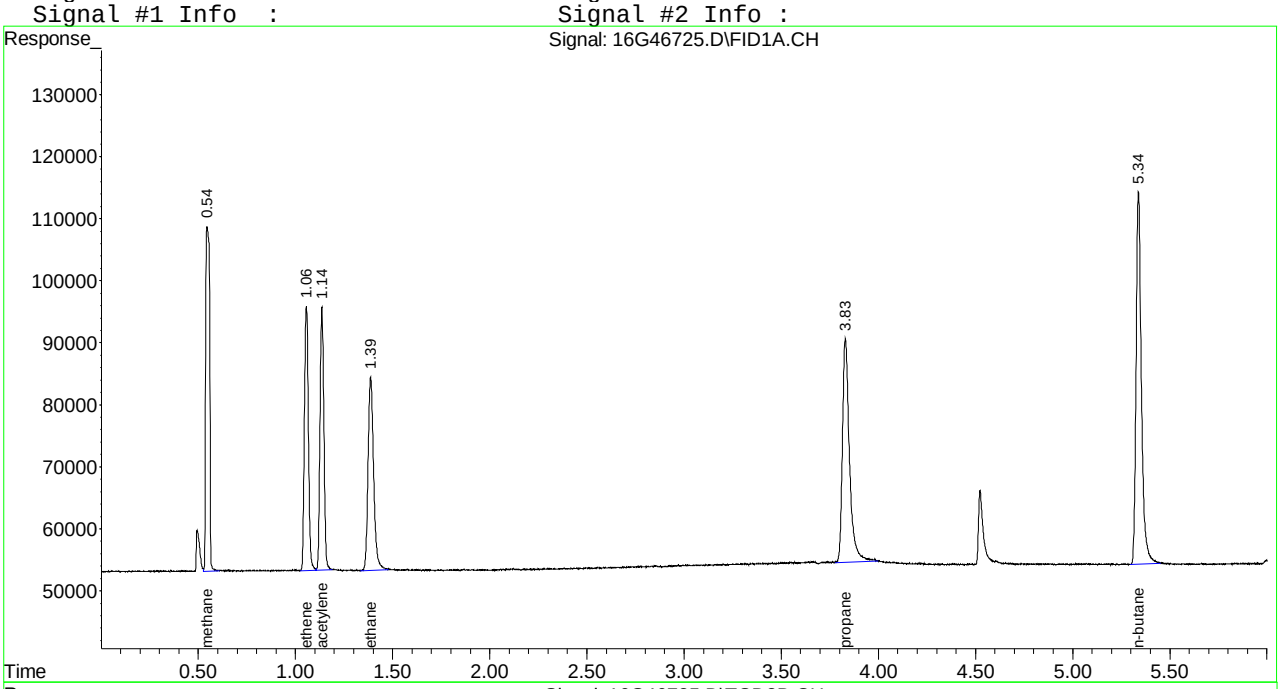

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\021915\16G46725.D\FID1A.CH Vial: 10
Signal #2 : C:\MSDCHEM\1\DATA\021915\16G46725.D\TCD2B.CH
Acq On : 19 Feb 2015 16:08 Operator: JDS
Sample : WG512843-02 1.67 umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	1.670	1.559	6.6	100	0.00
2	T	ethene	1.670	1.764	-5.6	100	0.00
3	T	acetylene	1.670	1.684	-0.8	100	0.00
4	T	ethane	1.670	1.807	-8.2	100	0.00
5	T	propane	1.670	1.819	-8.9	100	0.00
6	T	n-butane	1.670	1.778	-6.5	100	0.00
		Signal #2					
8	T	carbon dioxide	2000.000	2261.152	-13.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46725.D RSKEXT.M Wed Feb 18 16:34:52 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\021915\16G46725.D\FID1A.CH Vial: 10
Signal #2 : C:\MSDCHEM\1\DATA\021915\16G46725.D\TCD2B.CH
Acq On    : 18 Feb 2015  16:08                        Operator: JDS
Sample    : WG512843-02 1.67 umol/mol STD RSK175      Inst    : HP16
Misc      : 1,1 STD67276                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update  : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

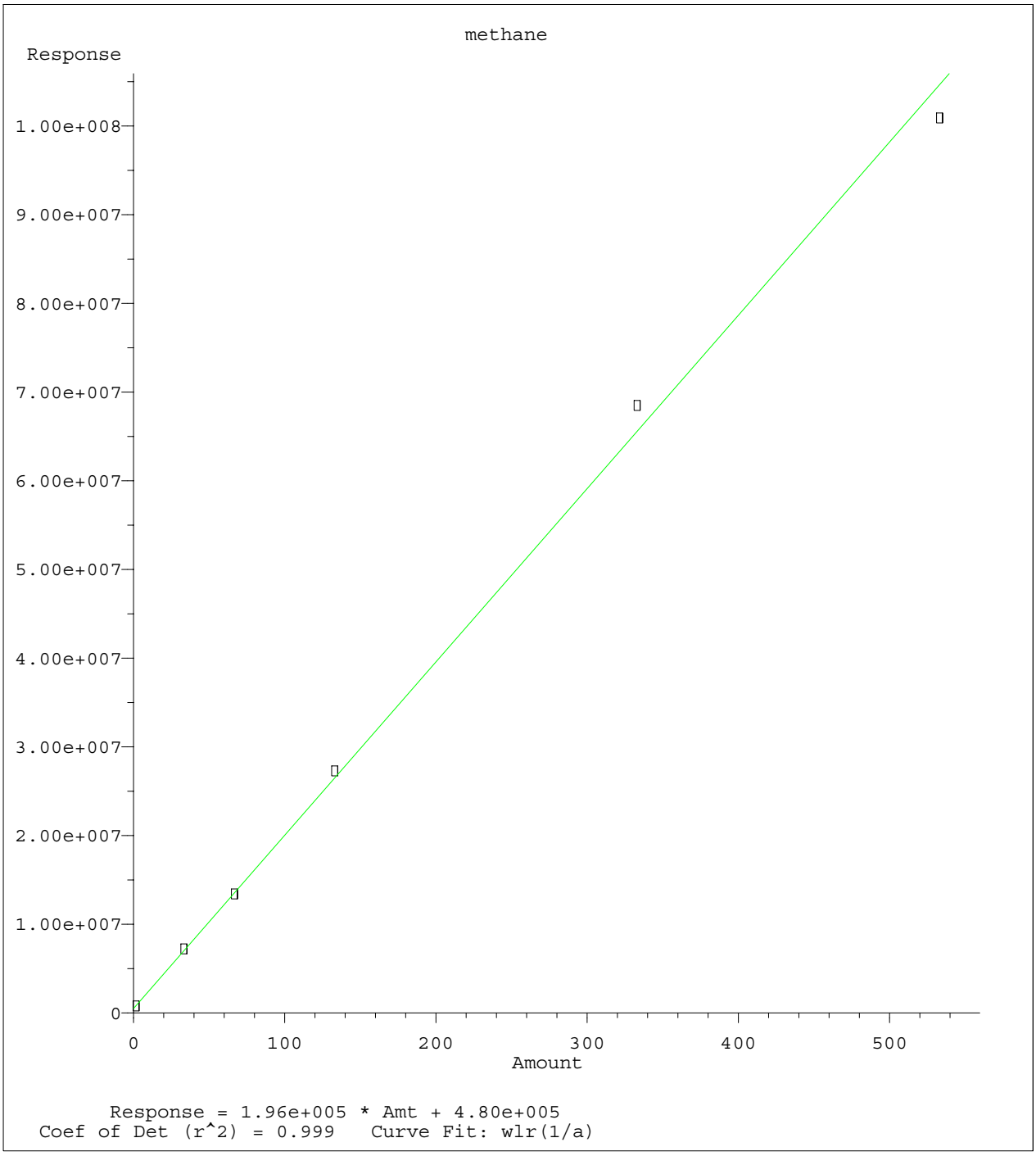

Method Name: C:\MSDCHEM\1\METHODS\RSK.M
Calibration Table Last Updated: Wed Feb 18 16:33:00 2015

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\021915\16G46727.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\021915\16G46727.D\TCD2B.CH
Acq On : 19 Feb 2015 18:16 Operator: JDS
Sample : WG512843-08 133 umol/mol ALT SRC STD RSK Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 18 18:22:53 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc Units
	Target Compounds			
1) T	methane	0.55	28172408	141.619 umol/
2) T	ethene	1.06	47347175	138.102 umol/
3) T	acetylene	1.14	51744535	147.027 umol/
4) T	ethane	1.39	49019407	143.054 umol/
5) T	propane	3.83	71497191	142.568 umol/
6) T	n-butane	5.33	92231156	142.929 umol/
8) T	carbon dioxide	0.20	84767309	14021.137 umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46727.D RSKEXT.M Wed Feb 18 18:22:53 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\021915\16G46727.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\021915\16G46727.D\TCD2B.CH
Acq On : 19 Feb 2015 18:16 Operator: JDS
Sample : WG512843-08 133 umol/mol ALT SRC STD RSK Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 18 18:22 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

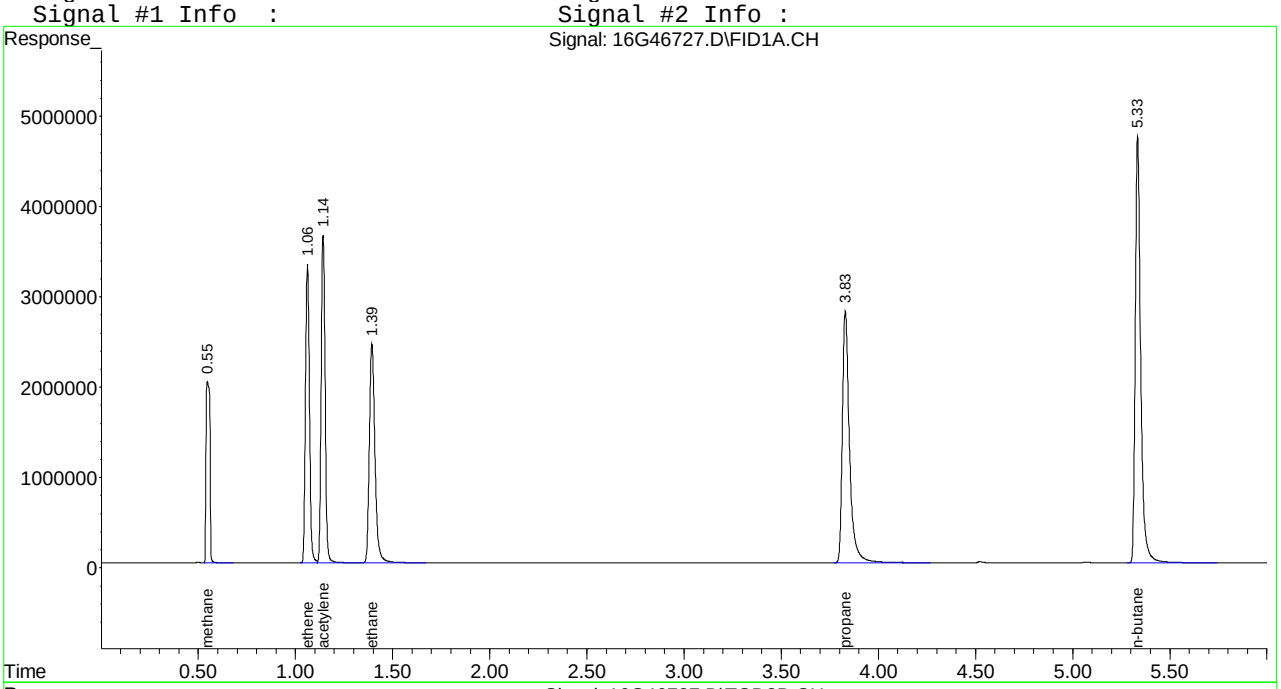

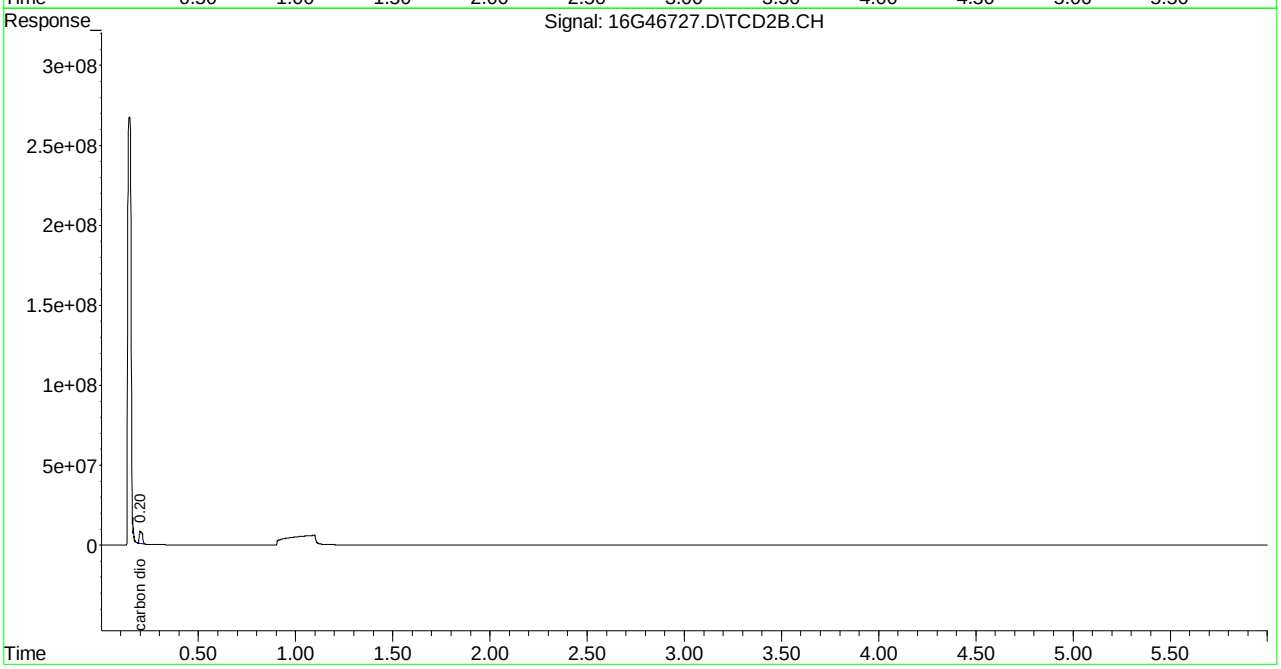

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\021915\16G46727.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\021915\16G46727.D\TCD2B.CH
Acq On : 19 Feb 2015 18:16 Operator: JDS
Sample : WG512843-08 133 umol/mol ALT SRC STD RSK Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	141.619	-6.5	103	0.00
2	T	ethene	133.000	138.102	-3.8	104	0.00
3	T	acetylene	133.000	147.027	-10.5	106	0.00
4	T	ethane	133.000	143.054	-7.6	102	0.00
5	T	propane	133.000	142.568	-7.2	101	0.00
6	T	n-butane	133.000	142.929	-7.5	100	0.00
		Signal #2					
8	T	carbon dioxide	13333.000	14021.137	-5.2	103	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46727.D RSKEXT.M Thu Feb 19 09:59:10 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\021915\16G46727.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\021915\16G46727.D\TCD2B.CH
Acq On    : 18 Feb 2015  18:16                        Operator: JDS
Sample    : WG512843-08 133 umol/mol ALT SRC STD RSK Inst    : HP16
Misc      : 1,1 STD68250                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update  : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022015\16G46728.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\022015\16G46728.D\TCD2B.CH
Acq On : 20 Feb 2015 10:27 Operator: JDS
Sample : WG512963-01 133 CCV STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 20 16:05:12 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.54	27605277	138.718	umol/
2) T	ethene	1.06	46556580	135.796	umol/
3) T	acetylene	1.14	49602937	140.942	umol/
4) T	ethane	1.39	48934434	142.806	umol/
5) T	propane	3.83	72372224	144.312	umol/
6) T	n-butane	5.33	94492363	146.433	umol/
8) T	carbon dioxide	0.20	84099220	13910.630	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46728.D RSKEXT.M Fri Feb 20 16:05:12 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\022015\16G46728.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\022015\16G46728.D\TCD2B.CH
Acq On : 20 Feb 2015 10:27 Operator: JDS
Sample : WG512963-01 133 CCV STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 20 16:05 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

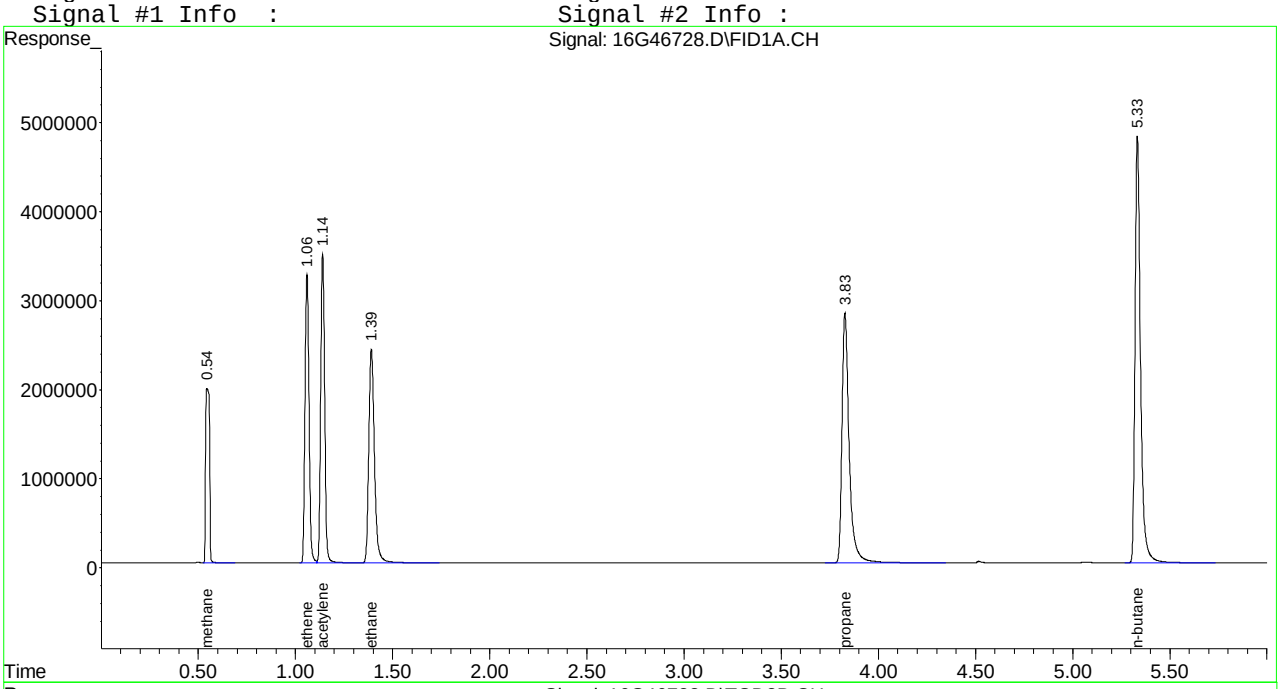

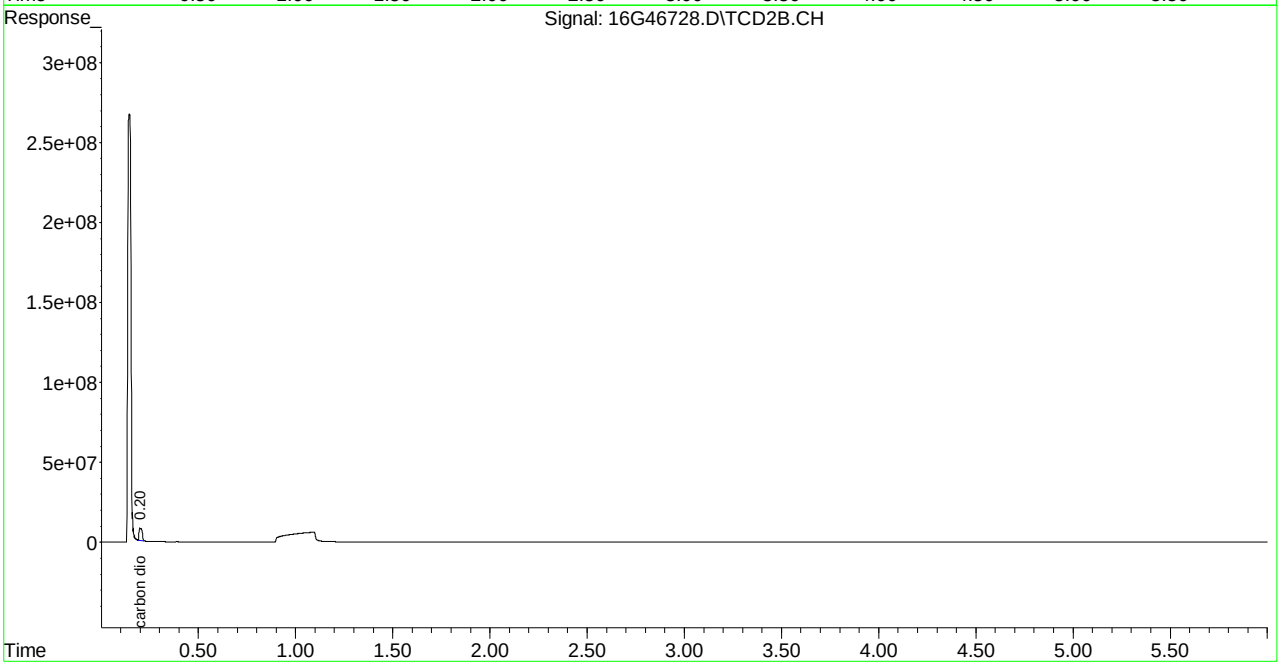

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\022015\16G46728.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\022015\16G46728.D\TCD2B.CH
Acq On : 20 Feb 2015 10:27 Operator: JDS
Sample : WG512963-01 133 CCV STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	138.718	-4.3	101	0.00
2	T	ethene	133.000	135.796	-2.1	102	0.00
3	T	acetylene	133.000	140.942	-6.0	101	0.00
4	T	ethane	133.000	142.806	-7.4	102	0.00
5	T	propane	133.000	144.312	-8.5	102	0.00
6	T	n-butane	133.000	146.433	-10.1	103	0.00

Signal #2

8	T	carbon dioxide	13333.000	13910.630	-4.3	102	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46728.D RSKEXT.M Mon Feb 23 08:36:40 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\022015\16G46728.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\022015\16G46728.D\TCD2B.CH
Acq On    : 19 Feb 2015  10:27                        Operator: JDS
Sample    : WG512963-01 133 CCV STD RSK175            Inst    : HP16
Misc      : 1,1 STD67274                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update  : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

```
---------------------------------------------------------------------------
 (#) = Out of Range            SPCC's out = 0  CCC's out = 0
 16G46728.D  RSKEXT.M      Mon Feb 23 08:36:40 2015                    Page 2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022015\16G46739.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\022015\16G46739.D\TCD2B.CH
Acq On : 20 Feb 2015 15:32 Operator: JDS
Sample : WG512963-02 133 CCV STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 19 15:43:56 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	26862379	134.919	umol/
2) T	ethene	1.06	45431058	132.513	umol/
3) T	acetylene	1.14	46438081	131.949	umol/
4) T	ethane	1.39	48003818	140.090	umol/
5) T	propane	3.83	71423433	142.420	umol/
6) T	n-butane	5.33	93666886	145.154	umol/
8) T	carbon dioxide	0.20	81686350	13511.524	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46739.D RSKEXT.M Thu Feb 19 15:43:56 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022015\16G46739.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\022015\16G46739.D\TCD2B.CH
Acq On : 20 Feb 2015 15:32 Operator: JDS
Sample : WG512963-02 133 CCV STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 19 15:43 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

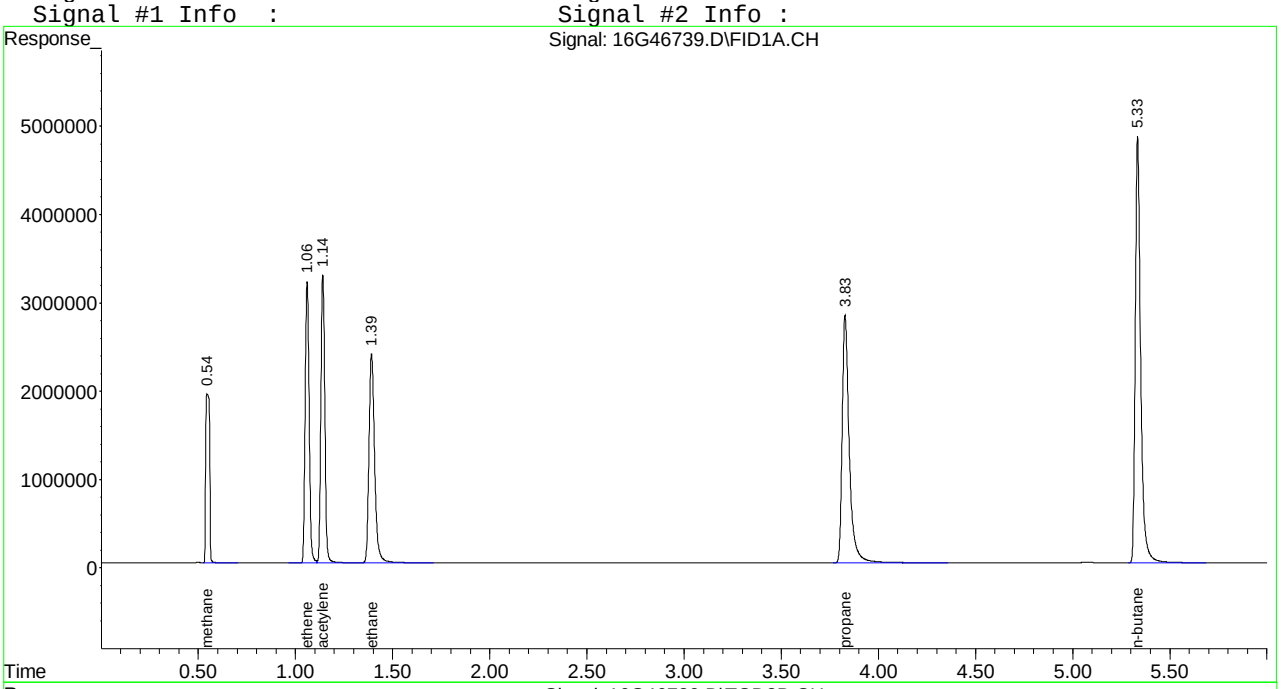

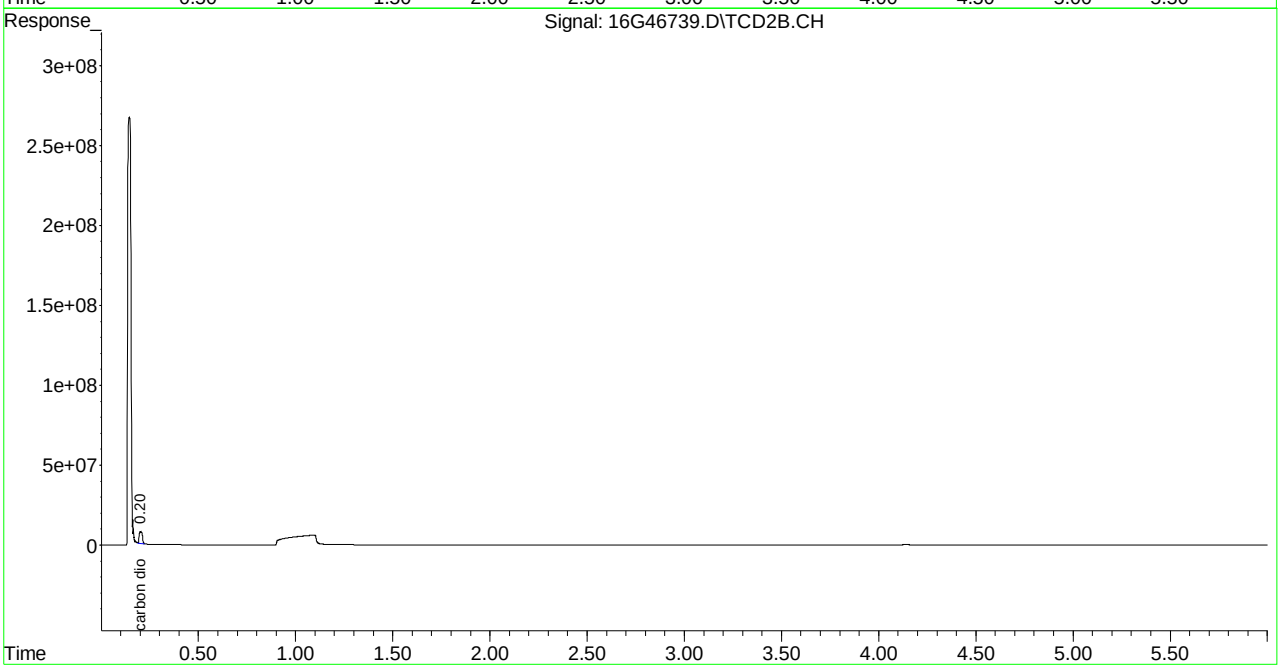

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\022015\16G46739.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\022015\16G46739.D\TCD2B.CH
Acq On : 20 Feb 2015 15:32 Operator: JDS
Sample : WG512963-02 133 CCV STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	134.919	-1.4	98	0.00
2	T	ethene	133.000	132.513	0.4	100	0.00
3	T	acetylene	133.000	131.949	0.8	95	0.00
4	T	ethane	133.000	140.090	-5.3	100	0.00
5	T	propane	133.000	142.420	-7.1	101	0.00
6	T	n-butane	133.000	145.154	-9.1	102	0.00

Signal #2

8	T	carbon dioxide	13333.000	13511.524	-1.3	99	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46739.D RSKEXT.M Mon Feb 23 08:36:49 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\022015\16G46739.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\022015\16G46739.D\TCD2B.CH
Acq On    : 19 Feb 2015  15:32                        Operator: JDS
Sample    : WG512963-02 133 CCV STD RSK175            Inst    : HP16
Misc      : 1,1 STD67274                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update  : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022415\16G46788.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\022415\16G46788.D\TCD2B.CH
Acq On : 24 Feb 2015 9:47 Operator: JDS
Sample : WG513245-01 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 24 09:54:13 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	25852213	129.753	umol/
2) T	ethene	1.06	43744971	127.595	umol/
3) T	acetylene	1.14	47710197	135.564	umol/
4) T	ethane	1.39	46057230	134.409	umol/
5) T	propane	3.83	68280016	136.152	umol/
6) T	n-butane	5.33	89850098	139.239	umol/
8) T	carbon dioxide	0.20	83243115	13769.024	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46788.D RSKEXT.M Tue Feb 24 09:54:13 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\022415\16G46788.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\022415\16G46788.D\TCD2B.CH
Acq On : 24 Feb 2015 9:47 Operator: JDS
Sample : WG513245-01 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 24 9:54 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

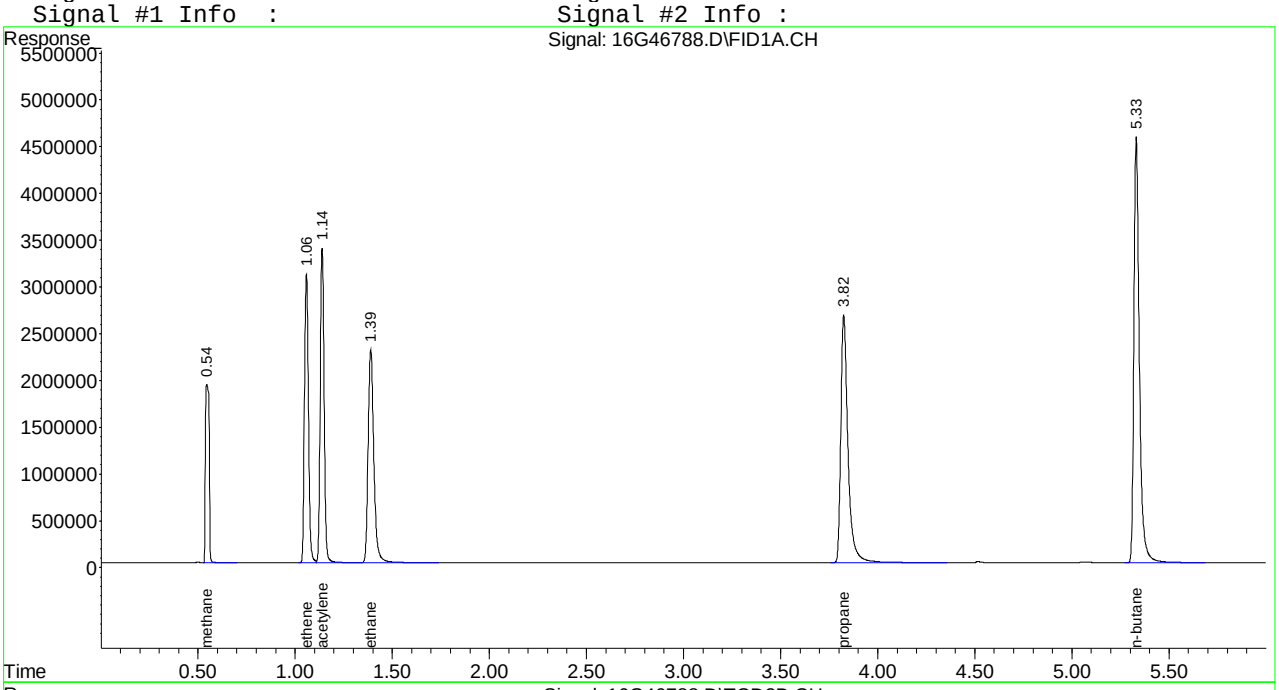

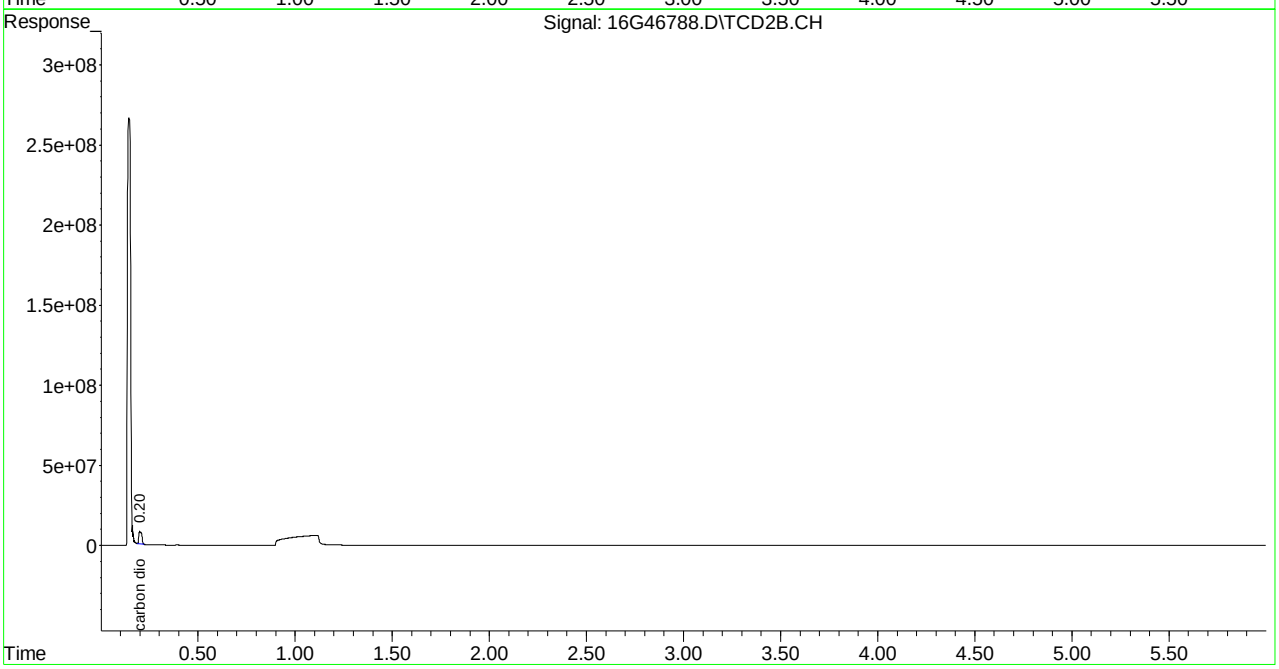

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\022415\16G46788.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\022415\16G46788.D\TCD2B.CH
Acq On : 24 Feb 2015 9:47 Operator: JDS
Sample : WG513245-01 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	129.753	2.4	95	0.00
2	T	ethene	133.000	127.595	4.1	96	0.00
3	T	acetylene	133.000	135.564	-1.9	97	0.00
4	T	ethane	133.000	134.409	-1.1	96	0.00
5	T	propane	133.000	136.152	-2.4	97	0.00
6	T	n-butane	133.000	139.239	-4.7	98	0.00

Signal #2

8	T	carbon dioxide	13333.000	13769.024	-3.3	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46788.D RSKEXT.M Wed Feb 25 08:55:07 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\022415\16G46788.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\022415\16G46788.D\TCD2B.CH
Acq On    : 24 Feb 2015   9:47                      Operator: JDS
Sample    : WG513245-01 133umol/mol CCV RSK175      Inst    : HP16
Misc      : 1,1 STD67274                            Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update  : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022415\16G46799.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\022415\16G46799.D\TCD2B.CH
Acq On : 24 Feb 2015 15:12 Operator: JDS
Sample : WG513245-02 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 25 08:52:36 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.54	26055282	130.792	umol/
2) T	ethene	1.06	43373316	126.511	umol/
3) T	acetylene	1.14	46501436	132.129	umol/
4) T	ethane	1.39	45590824	133.048	umol/
5) T	propane	3.83	67108363	133.816	umol/
6) T	n-butane	5.33	87362938	135.385	umol/
8) T	carbon dioxide	0.20	78446937	12975.701	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46799.D RSKEXT.M Wed Feb 25 08:52:36 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\022415\16G46799.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\022415\16G46799.D\TCD2B.CH
Acq On : 24 Feb 2015 15:12 Operator: JDS
Sample : WG513245-02 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 25 8:52 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

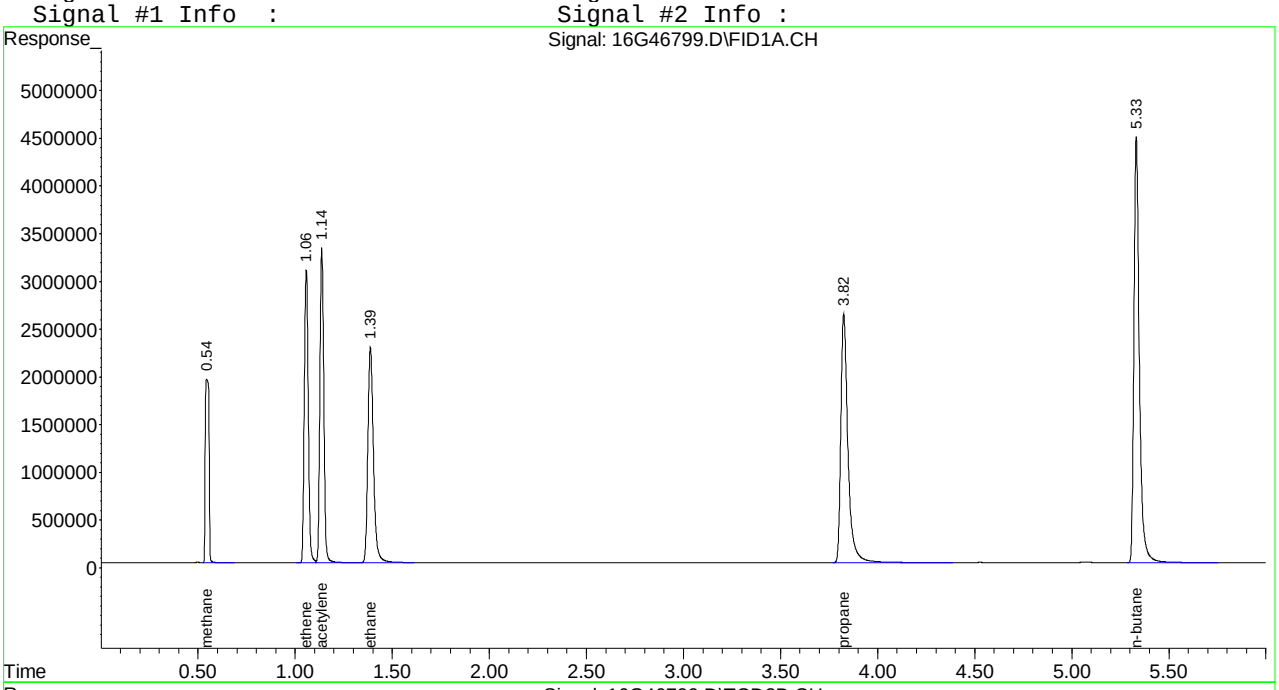

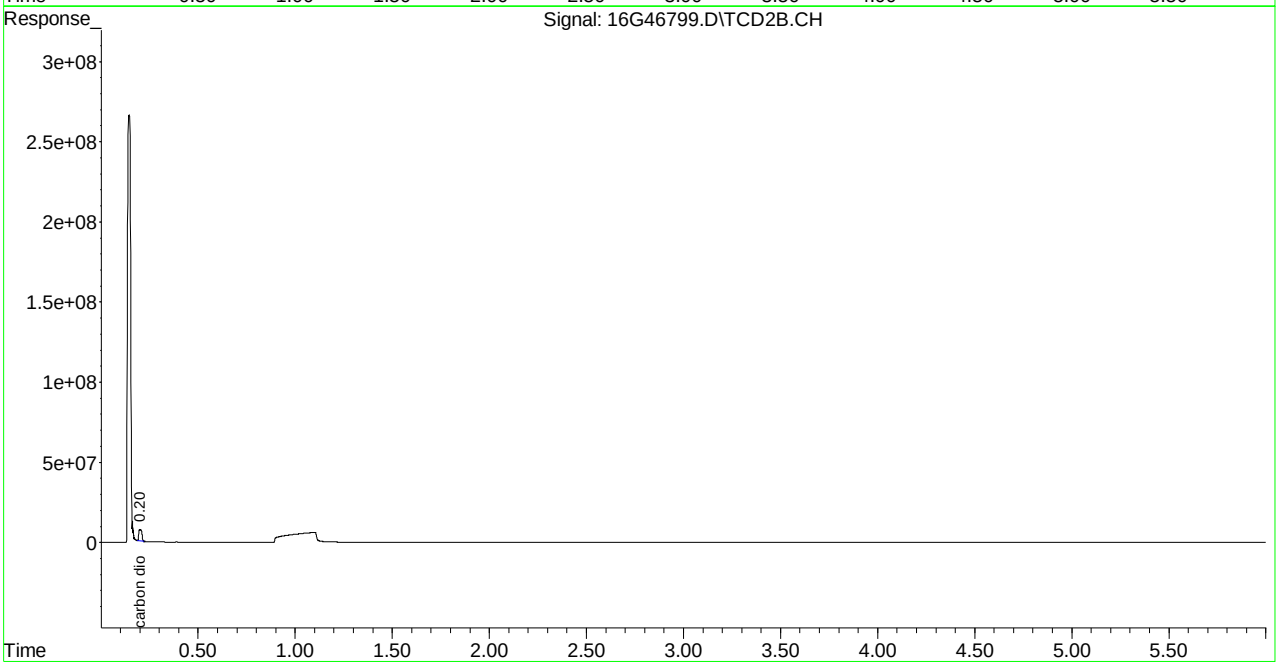

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\022415\16G46799.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\022415\16G46799.D\TCD2B.CH
Acq On : 24 Feb 2015 15:12 Operator: JDS
Sample : WG513245-02 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	130.792	1.7	95	0.00
2	T	ethene	133.000	126.511	4.9	95	0.00
3	T	acetylene	133.000	132.129	0.7	95	0.00
4	T	ethane	133.000	133.048	-0.0	95	0.00
5	T	propane	133.000	133.816	-0.6	95	0.00
6	T	n-butane	133.000	135.385	-1.8	95	0.00

Signal #2

8	T	carbon dioxide	13333.000	12975.701	2.7	95	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46799.D RSKEXT.M Wed Feb 25 08:55:13 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\022415\16G46799.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\022415\16G46799.D\TCD2B.CH
Acq On    : 24 Feb 2015  15:12                      Operator: JDS
Sample    : WG513245-02 133umol/mol CCV RSK175      Inst    : HP16
Misc      : 1,1 STD67274                            Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update  : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\022415\16G46810.D\FID1A.CH Vial: 23
Signal #2 : C:\MSDchem\1\DATA\022415\16G46810.D\TCD2B.CH
Acq On : 24 Feb 2015 17:34 Operator: JDS
Sample : WG513245-03 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 24 17:40:44 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.54	26528089	133.210	umol/
2) T	ethene	1.05	44401467	129.510	umol/
3) T	acetylene	1.13	46613686	132.448	umol/
4) T	ethane	1.38	46834730	136.678	umol/
5) T	propane	3.82	68658406	136.907	umol/
6) T	n-butane	5.32	102718177	159.181	umol/
8) T	carbon dioxide	0.20	78200425	12934.926	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46810.D RSKEXT.M Tue Feb 24 17:40:44 2015 Page 1

Signal #1 : C:\MSDchem\1\DATA\022415\16G46810.D\FID1A.CH Vial: 23
Signal #2 : C:\MSDchem\1\DATA\022415\16G46810.D\TCD2B.CH
Acq On : 24 Feb 2015 17:34 Operator: JDS
Sample : WG513245-03 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 24 17:40 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

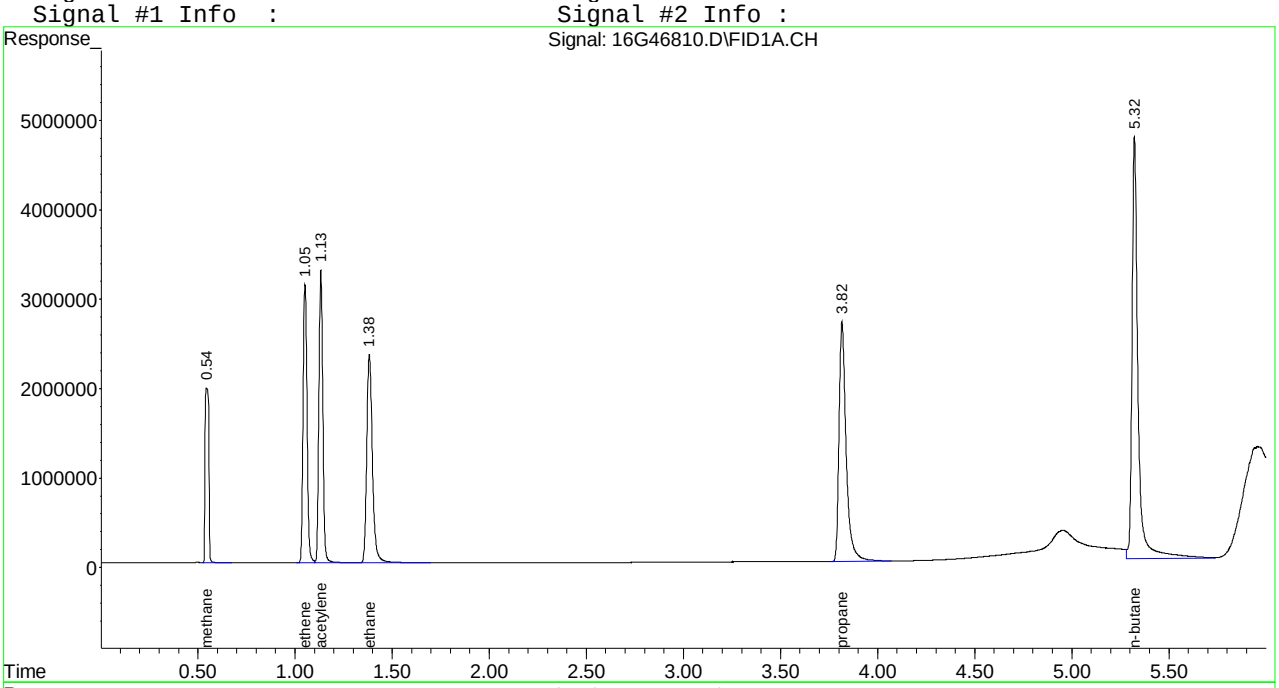

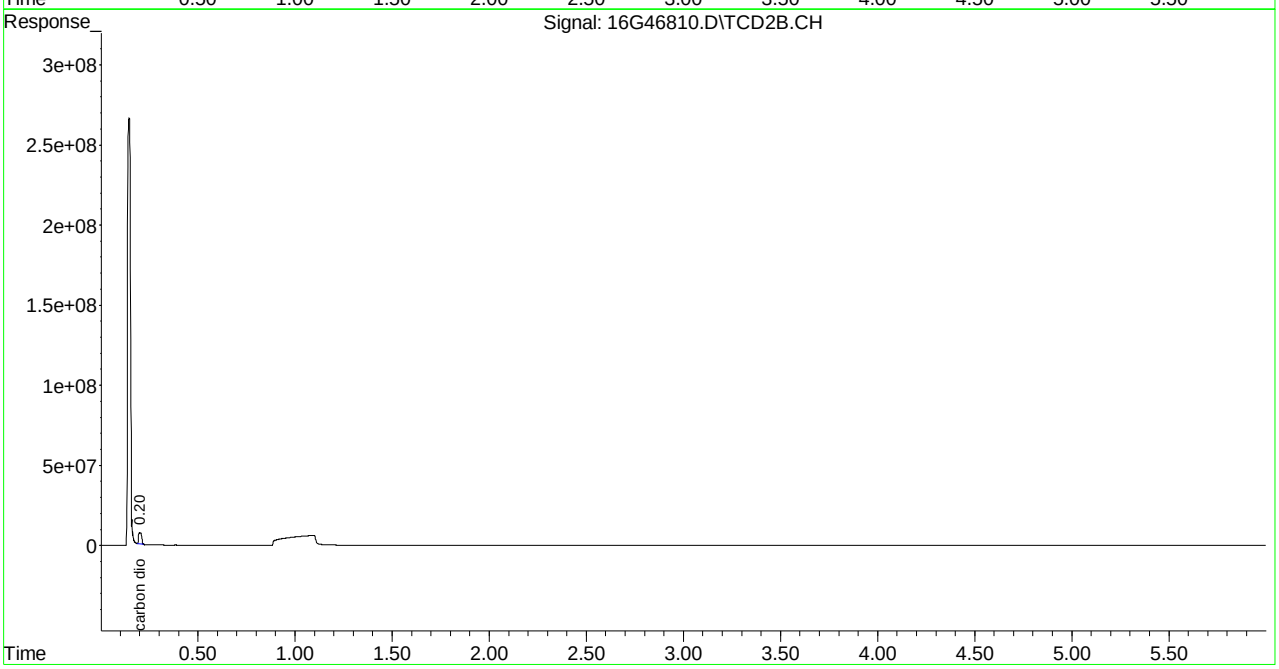

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\022415\16G46810.D\FID1A.CH Vial: 23
Signal #2 : C:\MSDCHEM\1\DATA\022415\16G46810.D\TCD2B.CH
Acq On : 24 Feb 2015 17:34 Operator: JDS
Sample : WG513245-03 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	133.210	-0.2	97	0.00
2	T	ethene	133.000	129.510	2.6	97	0.00
3	T	acetylene	133.000	132.448	0.4	95	0.00
4	T	ethane	133.000	136.678	-2.8	98	0.00
5	T	propane	133.000	136.907	-2.9	97	-0.01
6	T	n-butane	133.000	159.181	-19.7#	112	-0.02

Signal #2

8	T	carbon dioxide	13333.000	12934.926	3.0	95	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46810.D RSKEXT.M Wed Feb 25 08:55:19 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\022415\16G46810.D\FID1A.CH Vial: 23
Signal #2 : C:\MSDCHEM\1\DATA\022415\16G46810.D\TCD2B.CH
Acq On    : 24 Feb 2015  17:34                      Operator: JDS
Sample    : WG513245-03 133umol/mol CCV RSK175      Inst    : HP16
Misc      : 1,1 STD67274                            Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update  : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Microbac Laboratories Inc.
Daily Retention Time Window Determination

Login #: L15020971 **Run Date:** 02/20/2015 **Sample ID:** WG512963-01
Instrument: HP16 **Run Time:** 10:27 **Method:** RSK175
Workgroup (AAB#): WG512975 **File ID:** 16G46728

RT Standard	Analysis Date	File ID	Analyst
WG507817-01	01/13/2015	16G46159	JDS
WG507448-01	01/09/2015	16G46148	JDS
WG507013-01	01/06/2015	16G46125	JDS

Analyte	RT #1	RT #2	RT #3	STD	Lower	Upper
METHANE	.54	.55	.55	.54	0.510	0.570
ETHENE	1.06	1.06	1.06	1.06	1.030	1.090
ETHANE	1.39	1.39	1.39	1.39	1.360	1.420
PROPANE	3.82	3.83	3.83	3.83	3.800	3.860
N-BUTANE	5.33	5.34	5.34	5.33	5.300	5.360
CARBON DIOXIDE	.2	.2	.2	.2	0.170	0.230
ACETYLENE	1.14	1.14	1.14	1.14	1.110	1.170

RT_WIN - Modified 01/06/2010
PDF File ID: 4034881
Report generated 02/27/2015 12:53

Microbac Laboratories Inc.
Daily Retention Time Window Determination

Login #: L15020971 **Run Date:** 02/24/2015 **Sample ID:** WG513245-01
Instrument: HP16 **Run Time:** 09:47 **Method:** RSK175
Workgroup (AAB#): WG513247 **File ID:** 16G46788

RT Standard	Analysis Date	File ID	Analyst
WG507817-01	01/13/2015	16G46159	JDS
WG507448-01	01/09/2015	16G46148	JDS
WG507013-01	01/06/2015	16G46125	JDS

Analyte	RT #1	RT #2	RT #3	STD	Lower	Upper
METHANE	.54	.55	.55	.55	0.520	0.580
ETHENE	1.06	1.06	1.06	1.06	1.030	1.090
ETHANE	1.39	1.39	1.39	1.39	1.360	1.420
PROPANE	3.82	3.83	3.83	3.83	3.800	3.860
N-BUTANE	5.33	5.34	5.34	5.33	5.300	5.360
CARBON DIOXIDE	.2	.2	.2	.2	0.170	0.230
ACETYLENE	1.14	1.14	1.14	1.14	1.110	1.170

RT_WIN - Modified 01/06/2010
PDF File ID: 4034881
Report generated 02/27/2015 12:53

2.1.2.5 Raw QC Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022015\16G46729.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\022015\16G46729.D\TCD2B.CH
Acq On : 20 Feb 2015 11:04 Operator: JDS
Sample : WG512975-01 BLANK STD RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 19 11:10:57 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	435782	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46729.D RSKEXT.M Fri Feb 20 16:05:24 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022015\16G46729.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\022015\16G46729.D\TCD2B.CH
Acq On : 20 Feb 2015 11:04 Operator: JDS
Sample : WG512975-01 BLANK STD RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 19 11:10 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

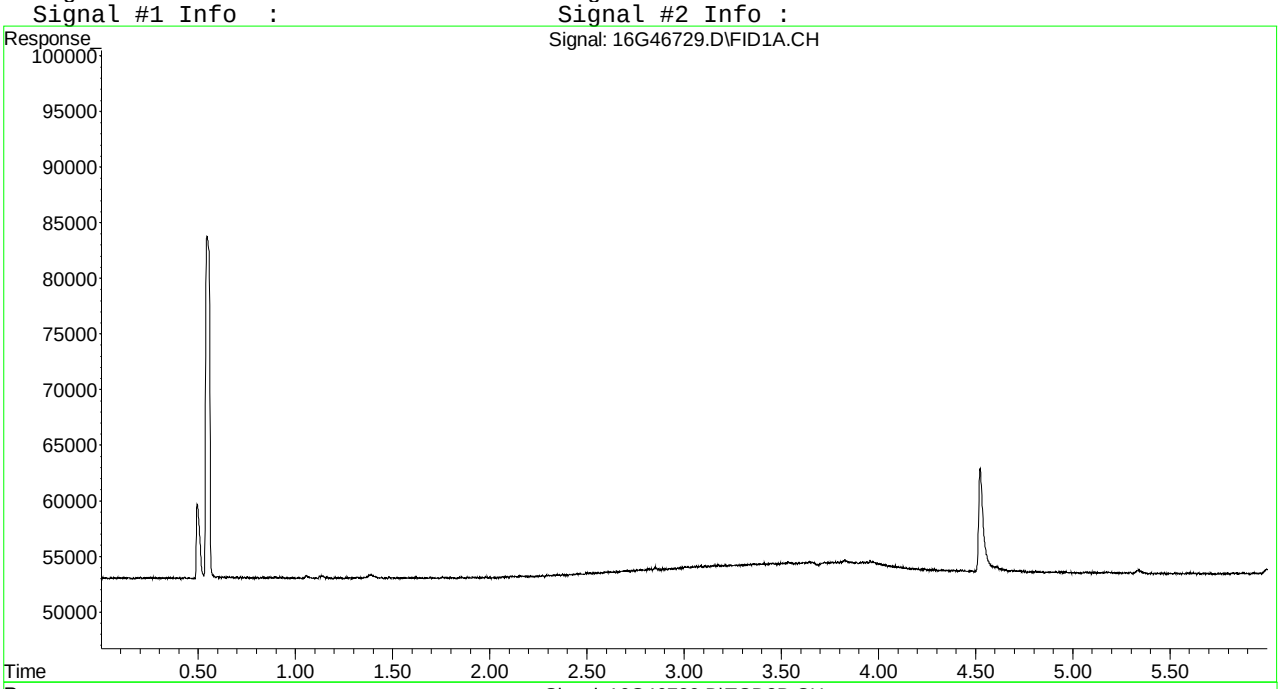

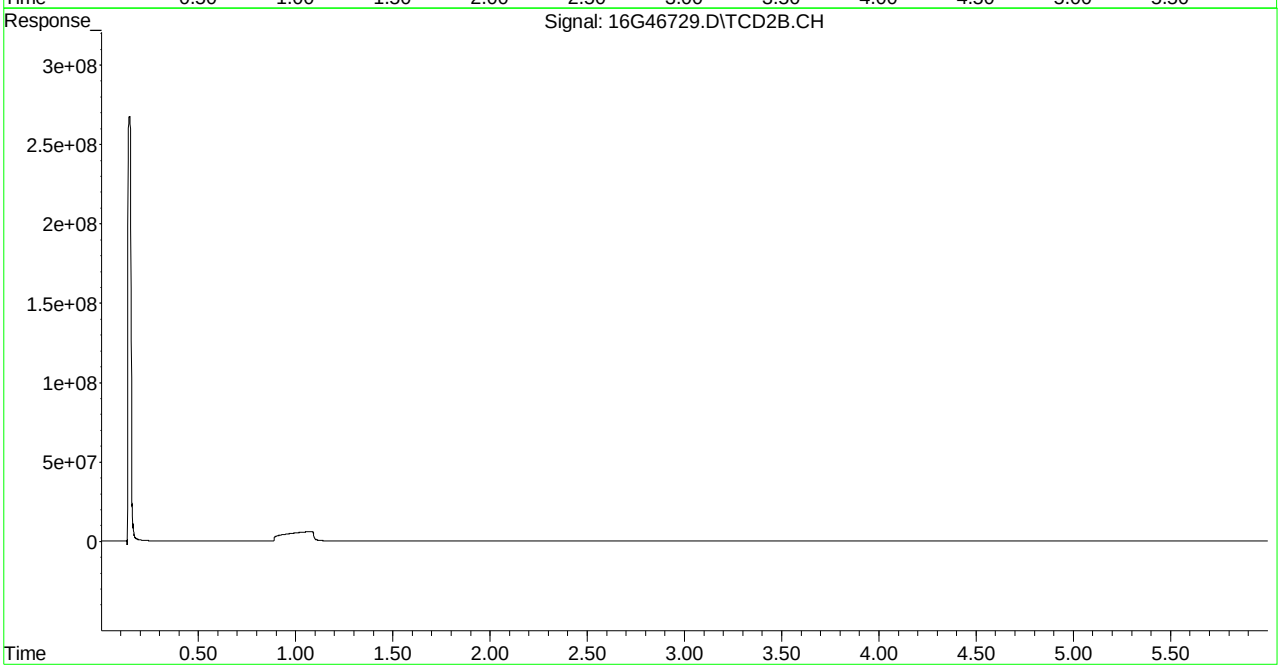

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022415\16G46789.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\022415\16G46789.D\TCD2B.CH
Acq On : 24 Feb 2015 10:04 Operator: JDS
Sample : WG513247-01 BLANK STD RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 24 10:10:54 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	406480	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.39	14245	0.042	umol/
5) T	propane	3.83	9741	0.019	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46789.D RSKEXT.M Tue Feb 24 10:35:51 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\022415\16G46789.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\022415\16G46789.D\TCD2B.CH
Acq On    : 24 Feb 2015  10:04                        Operator: JDS
Sample    : WG513247-01 BLANK STD RSK175              Inst    : HP16
Misc      : 1,1                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Feb 24 10:10 2015  Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update  : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

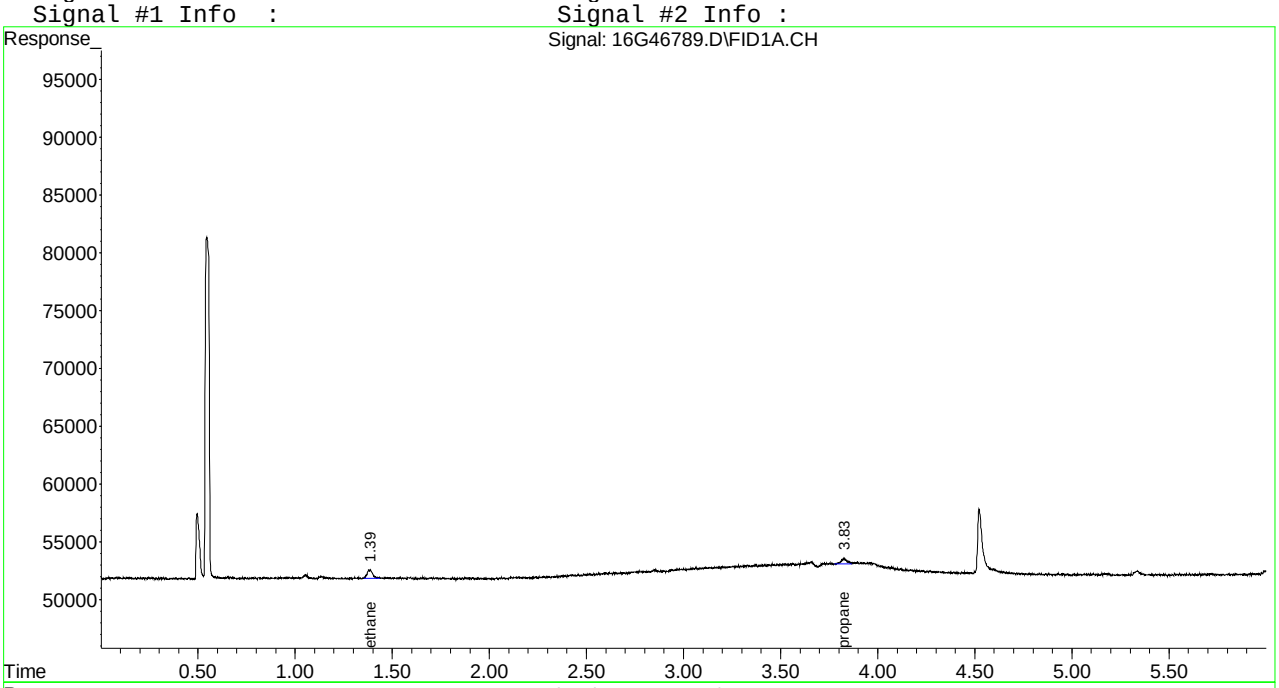

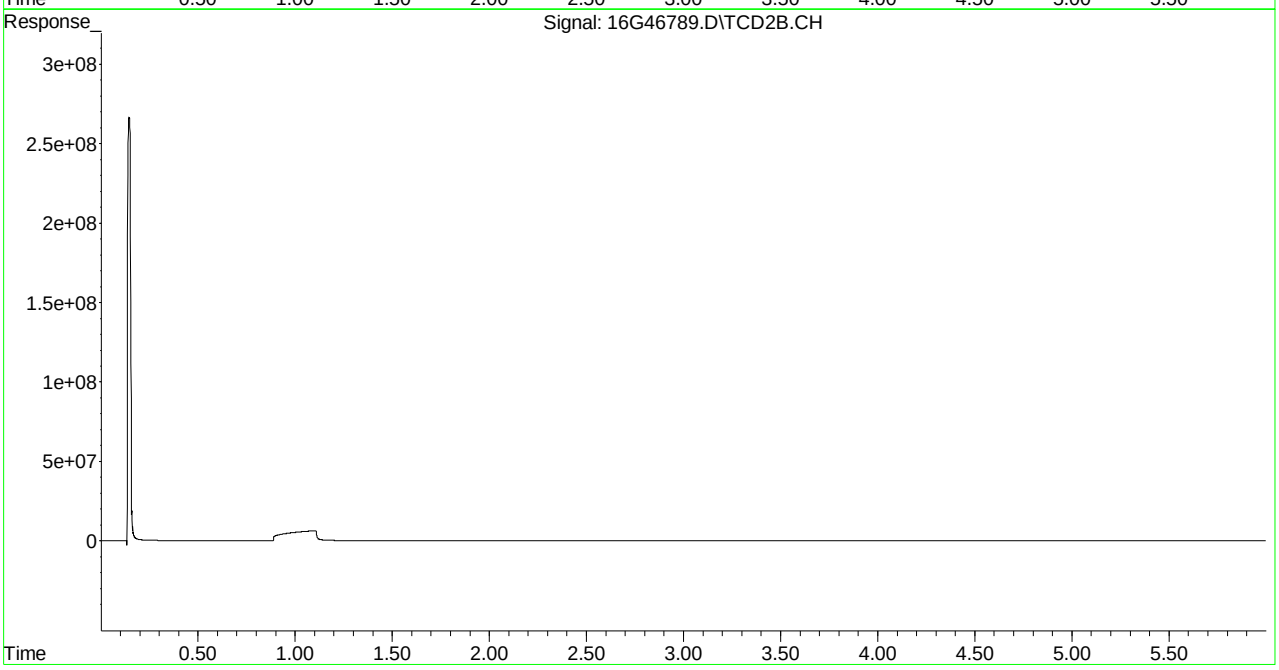

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022015\16G46730.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\022015\16G46730.D\TCD2B.CH
Acq On : 20 Feb 2015 11:17 Operator: JDS
Sample : WG512975-02 67umol/mol LCS STD RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 19 12:53:43 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	14044406	69.368	umol/
2) T	ethene	1.06	23080596	67.321	umol/
3) T	acetylene	1.14	23072949	65.560	umol/
4) T	ethane	1.39	24065442	70.230	umol/
5) T	propane	3.83	34879342	69.550	umol/
6) T	n-butane	5.33	44179244	68.464	umol/
8) T	carbon dioxide	0.20	38143948	6309.290	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46730.D RSKEXT.M Thu Feb 19 12:53:43 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\022015\16G46730.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\022015\16G46730.D\TCD2B.CH
Acq On : 20 Feb 2015 11:17 Operator: JDS
Sample : WG512975-02 67umol/mol LCS STD RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 19 12:53 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

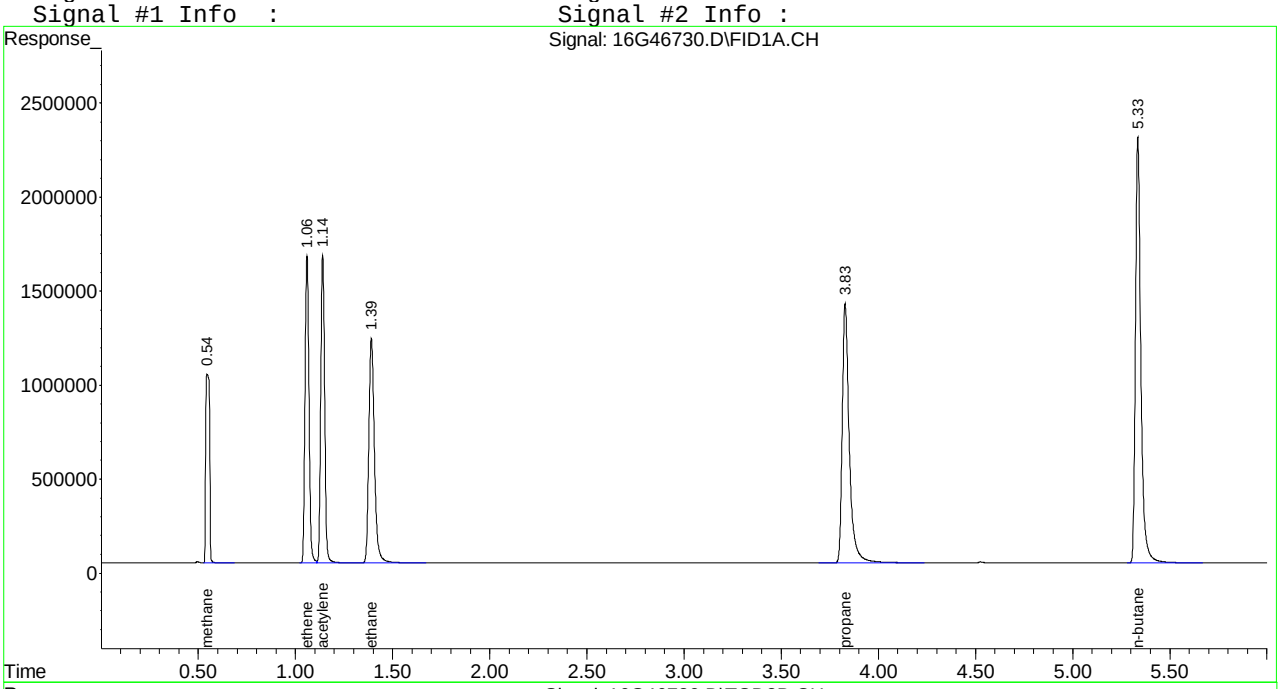

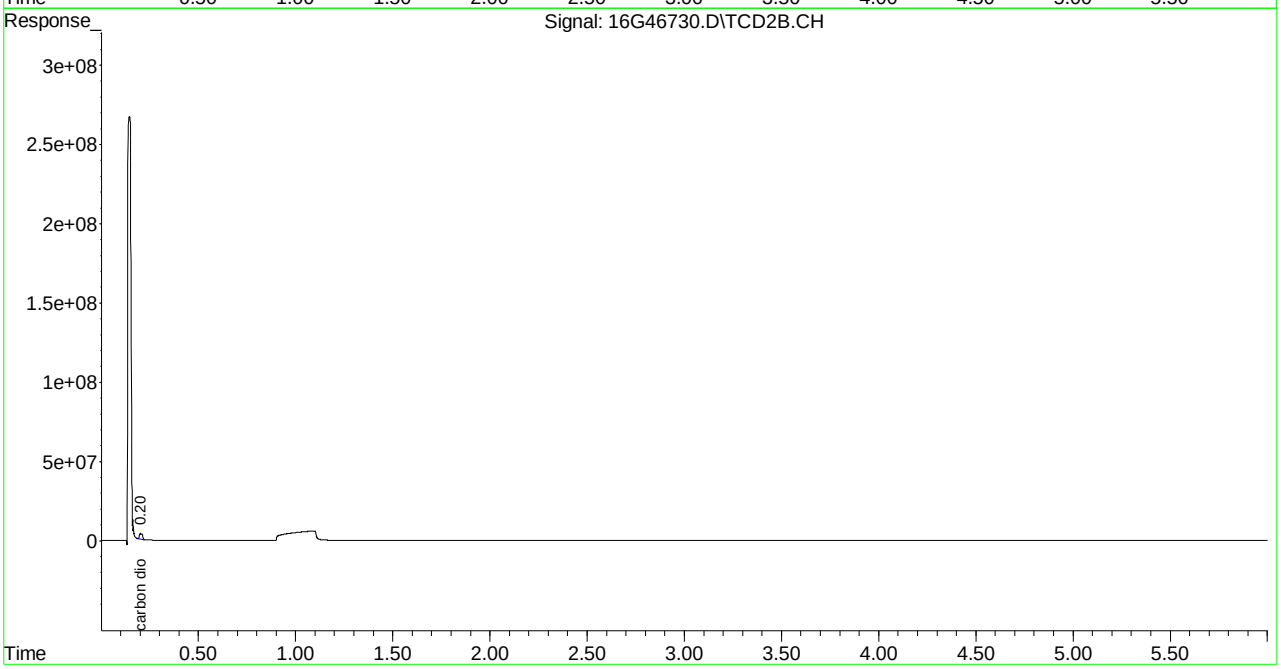

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022415\16G46790.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\022415\16G46790.D\TCD2B.CH
Acq On : 24 Feb 2015 10:16 Operator: JDS
Sample : WG513247-02 67umol/mol LCS STD RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 24 10:35:56 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.54	13686867	67.540	umol/
2) T	ethene	1.04	22807565	66.525	umol/
3) T	acetylene	1.12	24649753	70.040	umol/
4) T	ethane	1.36	23622321	68.937	umol/
5) T	propane	3.82	34344012	68.483	umol/
6) T	n-butane	5.33	42865800	66.428	umol/
8) T	carbon dioxide	0.20	28989816	4795.129	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46790.D RSKEXT.M Tue Feb 24 10:35:56 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\022415\16G46790.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\022415\16G46790.D\TCD2B.CH
Acq On : 24 Feb 2015 10:16 Operator: JDS
Sample : WG513247-02 67umol/mol LCS STD RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 24 10:35 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

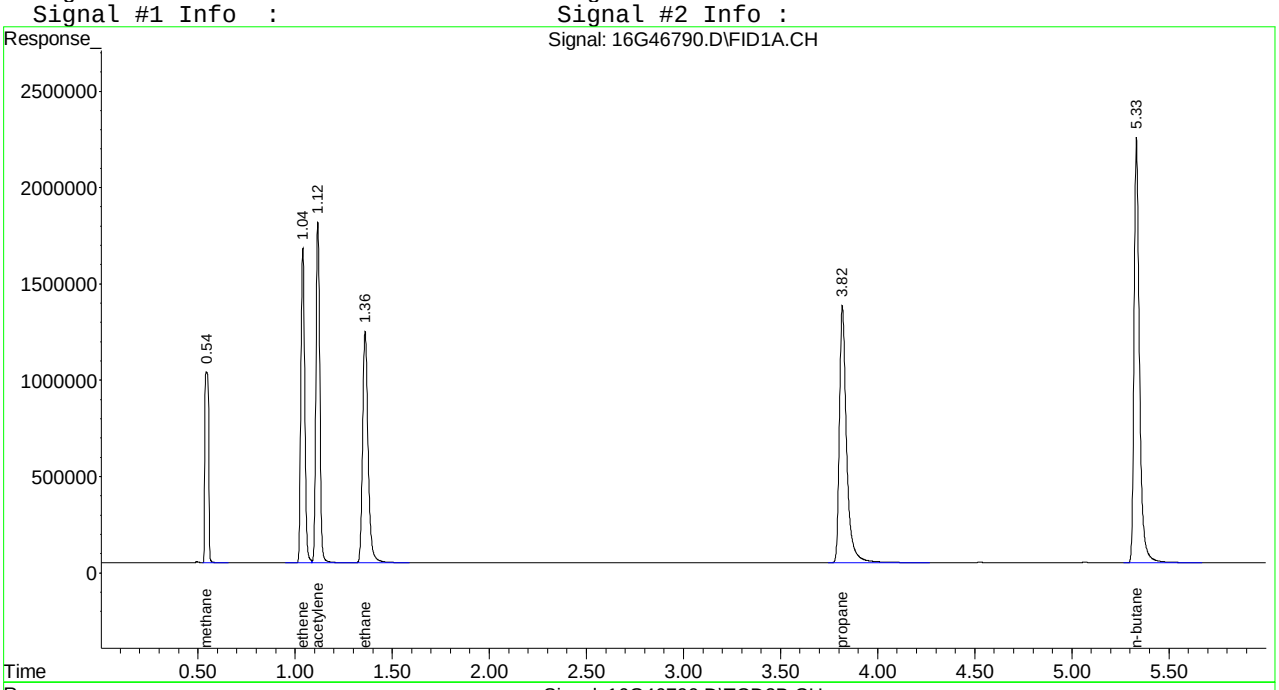

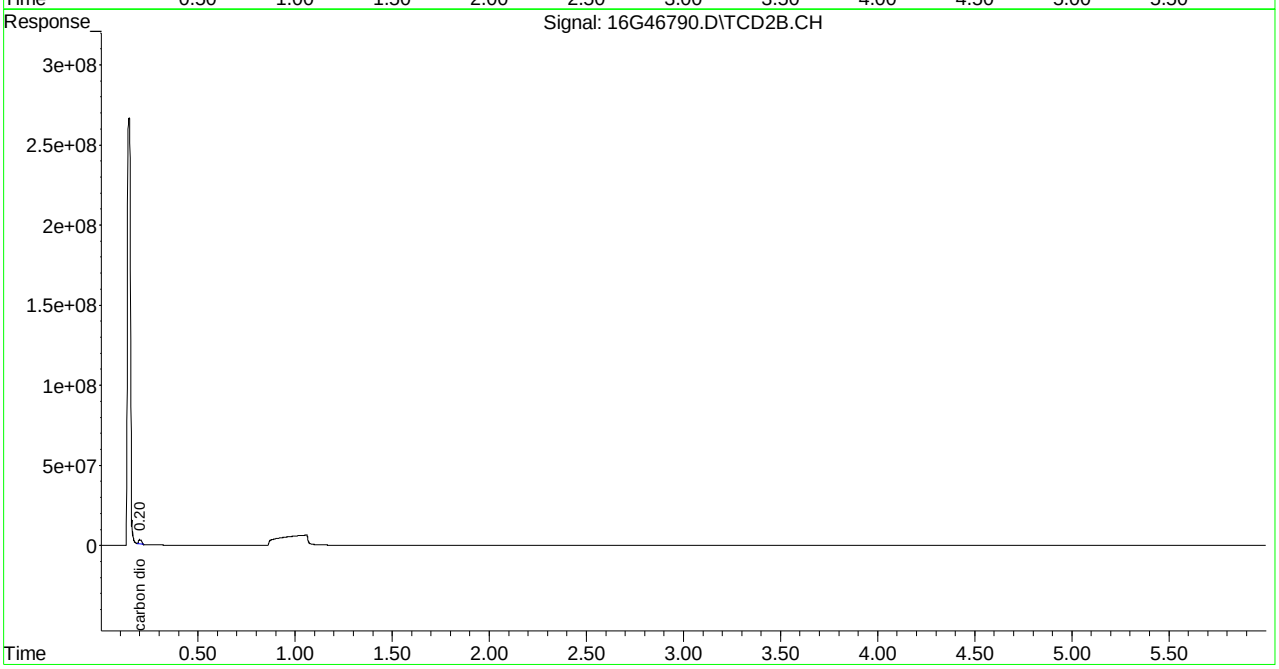

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022015\16G46731.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\022015\16G46731.D\TCD2B.CH
Acq On : 20 Feb 2015 11:27 Operator: JDS
Sample : WG512975-03 67umol/mol LCS2 STD RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 19 12:53:48 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	13646429	67.333	umol/
2) T	ethene	1.06	22389296	65.305	umol/
3) T	acetylene	1.14	22381119	63.594	umol/
4) T	ethane	1.39	23344402	68.126	umol/
5) T	propane	3.83	33647969	67.095	umol/
6) T	n-butane	5.33	42198564	65.394	umol/
8) T	carbon dioxide	0.20	30593183	5060.338	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46731.D RSKEXT.M Thu Feb 19 12:53:48 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022015\16G46731.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\022015\16G46731.D\TCD2B.CH
Acq On : 20 Feb 2015 11:27 Operator: JDS
Sample : WG512975-03 67umol/mol LCS2 STD RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 19 12:53 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

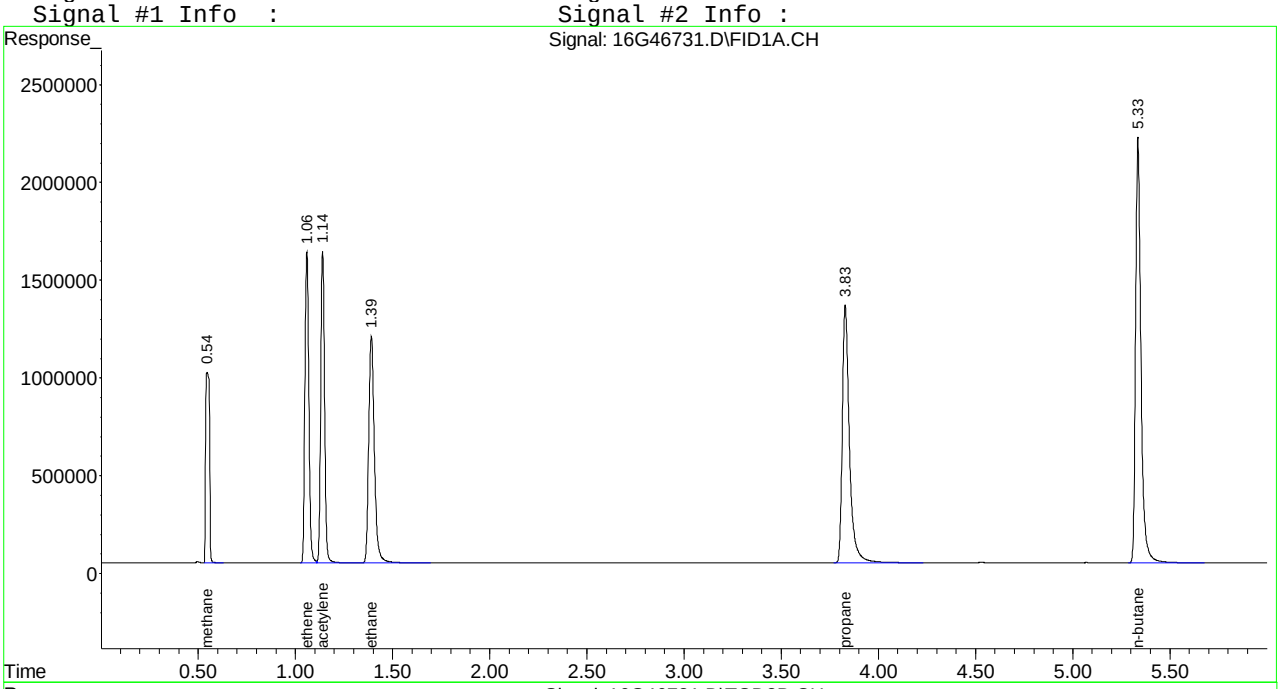

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022415\16G46791.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\022415\16G46791.D\TCD2B.CH
Acq On : 24 Feb 2015 10:29 Operator: JDS
Sample : WG513247-03 67umol/mol LCS2 STD RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 24 10:36:01 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	13925282	68.759	umol/
2) T	ethene	1.06	22871154	66.710	umol/
3) T	acetylene	1.14	23795086	67.611	umol/
4) T	ethane	1.39	23765627	69.355	umol/
5) T	propane	3.83	34367005	68.529	umol/
6) T	n-butane	5.33	43313856	67.123	umol/
8) T	carbon dioxide	0.20	32128775	5314.336	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46791.D RSKEXT.M Tue Feb 24 10:36:01 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\022415\16G46791.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\022415\16G46791.D\TCD2B.CH
Acq On : 24 Feb 2015 10:29 Operator: JDS
Sample : WG513247-03 67umol/mol LCS2 STD RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 24 10:36 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

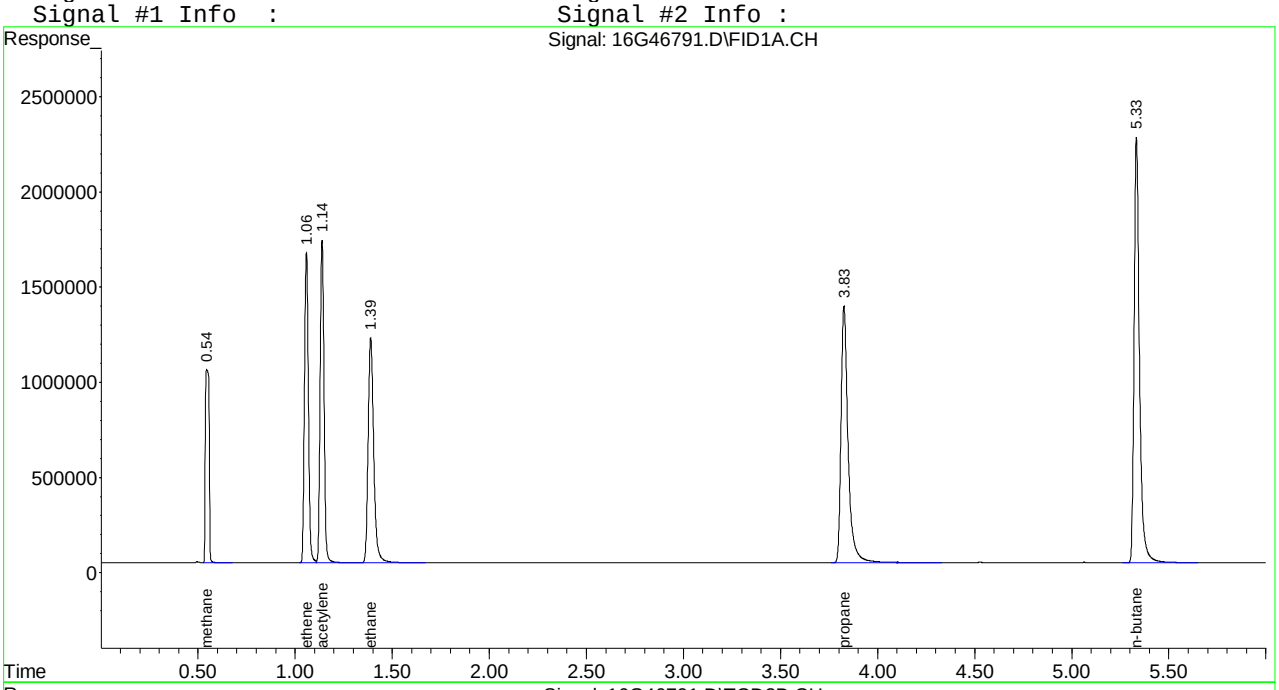

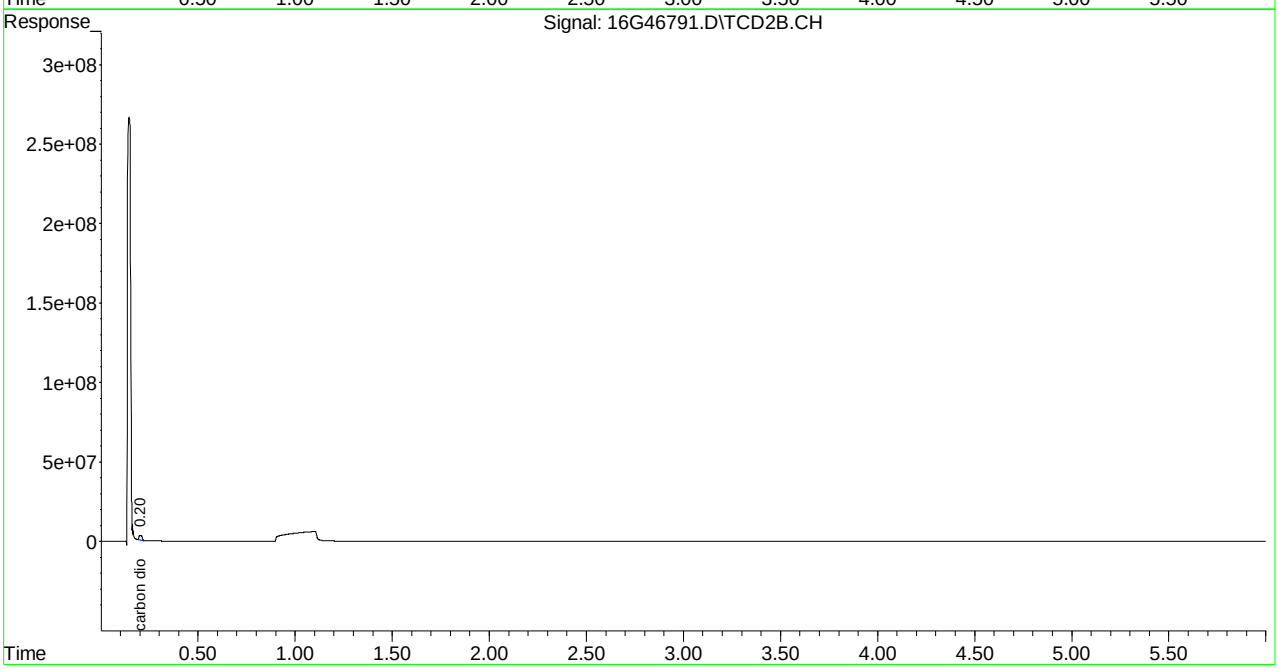

2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	GPW1A-021715	**Prep Method:**	6850	**Prep Date:**	02/20/2015 17:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG513051	**Analyst:**	JWR	**Run Date:**	02/20/2015 21:09
Collect Date:	02/17/2015 16:25	**Dilution:**	10	**File ID:**	1LM.LM29037
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	38.2		4.00	2.00	1.00

Certificate of Analysis

Sample #:	L15020971-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	GPW1-021715	**Prep Method:**	6850	**Prep Date:**	02/20/2015 17:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG513051	**Analyst:**	JWR	**Run Date:**	02/20/2015 21:27
Collect Date:	02/17/2015 16:35	**Dilution:**	1	**File ID:**	1LM.LM29038
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.737		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15020971-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50SW06-021715	**Prep Method:**	6850	**Prep Date:**	02/20/2015 17:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG513051	**Analyst:**	JWR	**Run Date:**	02/20/2015 21:46
Collect Date:	02/17/2015 16:45	**Dilution:**	1	**File ID:**	1LM.LM29039
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.684		0.400	0.200	0.100

Certificate of Analysis

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15020971-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW28-021715	**Prep Method:**	6850	**Prep Date:**	02/20/2015 17:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG513051	**Analyst:**	JWR	**Run Date:**	02/20/2015 23:02
Collect Date:	02/17/2015 17:50	**Dilution:**	1	**File ID:**	1LM.LM29043
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1.44		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15020971-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW28FD-021715	**Prep Method:**	6850	**Prep Date:**	02/20/2015 17:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG513051	**Analyst:**	JWR	**Run Date:**	02/20/2015 23:21
Collect Date:	02/17/2015 17:50	**Dilution:**	1	**File ID:**	1LM.LM29044
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1.44		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15020971-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW24-021815	**Prep Method:**	6850	**Prep Date:**	02/20/2015 17:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG513051	**Analyst:**	JWR	**Run Date:**	02/20/2015 23:40
Collect Date:	02/18/2015 08:25	**Dilution:**	1	**File ID:**	1LM.LM29045
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW23-021815	**Prep Method:**	6850	**Prep Date:**	02/20/2015 17:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG513051	**Analyst:**	JWR	**Run Date:**	02/20/2015 23:59
Collect Date:	02/18/2015 09:40	**Dilution:**	1	**File ID:**	1LM.LM29046
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-10	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW12-021815	**Prep Method:**	6850	**Prep Date:**	02/20/2015 17:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG513051	**Analyst:**	JWR	**Run Date:**	02/21/2015 00:18
Collect Date:	02/18/2015 11:05	**Dilution:**	10000	**File ID:**	1LM.LM29047
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	30600		4000	2000	1000

Certificate of Analysis

Sample #:	L15020971-12	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WWW25-021815	**Prep Method:**	6850	**Prep Date:**	02/20/2015 17:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG513051	**Analyst:**	JWR	**Run Date:**	02/21/2015 00:37
Collect Date:	02/18/2015 13:30	**Dilution:**	10	**File ID:**	1LM.LM29048
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	42.2		4.00	2.00	1.00

Certificate of Analysis

Sample #:	L15020971-14	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW18-021815	**Prep Method:**	6850	**Prep Date:**	02/20/2015 17:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG513051	**Analyst:**	JWR	**Run Date:**	02/21/2015 00:56
Collect Date:	02/18/2015 14:45	**Dilution:**	1	**File ID:**	1LM.LM29049
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.258	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe
Calibration Check: 1405 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG513051-01 MCT	9,940.	
-02 Blank	0.54	
-03 LCS	0.59	
-04 LCS2	0.61	
L15020876-01	2,570.	
L15020877-01	2,570.	
-02	2,590.	
L15020971-01	53.8	
-02	56.1	
-03	55.6	
-04	108.3	
-05	107.8	
-06	1,652.	
-08	5,970.	
-10	4,630.	
-12	651.	
-14	3,070.	

Analyst: John Richards

Date/Time: 10/23/15 / 11:30

DCN#108799

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 111714_ADC.TXT
Analyst1: ADC Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 6

Maintenance Log ID: Syringe Filter Lot#: 130818254-1
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG501261

Internal STD: COA17578 Surrogate STD: NA Calibration STD STD67080 (11/17/2014)

CCV STD: STD67080 LCS STD: STD67080 MS/MSD STD: STD67080

Comments: ICAL WG501146 : Alternate Source :STD67082

Diluted samples in this analytical workgroup were ran according to sample's historical data.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM27603	WG501146-01 CCB	1	1		11/17/14 12:41
2	1LM.LM27604	WG501146-02 STD (0.1 ug/L)	1	1	STD67080	11/17/14 13:00
3	1LM.LM27605	WG501146-03 STD (0.2 ug/L)	1	1	STD67080	11/17/14 13:19
4	1LM.LM27606	WG501146-04 STD (0.5 ug/L)	1	1	STD67080	11/17/14 13:38
5	1LM.LM27607	WG501146-05 STD (1.0 ug/L)	1	1	STD67080	11/17/14 13:56
6	1LM.LM27608	WG501146-06 STD (2.0 ug/L)	1	1	STD67080	11/17/14 14:15
7	1LM.LM27609	WG501146-07 STD (5.0 ug/L)	1	1	STD67080	11/17/14 14:34
8	1LM.LM27610	WG501146-08 STD (10 ug/L)	1	1	STD67080	11/17/14 14:53
9	1LM.LM27611	WG501146-09 SSCV (1.0 ug/L)	1	1	STD67082	11/17/14 15:12
10	1LM.LM27612	WG501260-01 CCB	1	1		11/17/14 15:31
11	1LM.LM27613	WG501260-02 CCV (1.0ug/L)	1	1	STD67080	11/17/14 15:50
12	1LM.LM27614	WG501261-07 MRL (0.2ug/L)	1	1	STD67080	11/17/14 16:09
13	1LM.LM27615	WG501261-01 MCT (0.2ug/L)	1	1	STD67080	11/17/14 16:28
14	1LM.LM27616	WG501261-02 BLANK	1	1		11/17/14 16:47
15	1LM.LM27617	WG501261-03 LCS (0.2ug/L)	1	1	STD67080	11/17/14 17:06
16	1LM.LM27618	L14110479-26	1	1		11/17/14 17:25
17	1LM.LM27619	L14110648-01	1	1		11/17/14 17:44
18	1LM.LM27620	L14110438-01 100X	1	100		11/17/14 18:03
19	1LM.LM27621	L14110438-03	1	1		11/17/14 18:22
20	1LM.LM27622	L14110438-05 10X	1	10		11/17/14 18:40
21	1LM.LM27623	L14110618-01	1	1		11/17/14 18:59
22	1LM.LM27624	L14110635-01 10,000X	1	10000		11/17/14 19:18
23	1LM.LM27625	WG501260-03 CCV (1.0ug/L)	1	1	STD67080	11/17/14 19:37
24	1LM.LM27626	WG501261-08 MRL (0.2ug/L)	1	1	STD67080	11/17/14 19:56
25	1LM.LM27627	WG501260-04 CCB	1	1		11/17/14 20:15
26	1LM.LM27628	L14110626-03 RS	1	1		11/17/14 20:34
27	1LM.LM27629	L14110626-04 MS	1	1	STD67080	11/17/14 20:53
28	1LM.LM27630	L14110626-05 MSD	1	1	STD67080	11/17/14 21:12
29	1LM.LM27631	L14110626-01	1	1	STD67080	11/17/14 21:31
30	1LM.LM27632	L14110626-02	1	1	STD67080	11/17/14 21:50
31	1LM.LM27633	L14110626-06	1	1	STD67080	11/17/14 22:09
32	1LM.LM27634	WG501260-05 CCV (1.0ug/L)	1	1	STD67080	11/17/14 22:28
33	1LM.LM27635	WG501261-09 MRL (0.2ug/L)	1	1	STD67080	11/17/14 22:47

Page: 1 Approved: 19-NOV-14

Wadei D

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 111714_ADC.TXT

Analyst1: ADC Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 6

Maintenance Log ID: Syringe Filter Lot#: 130818254-1

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG501261

Internal STD: COA17578 Surrogate STD: NA STD67080 (11/17/2014)

CCV STD: STD67080 LCS STD: STD67080 STD67080

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM27636	WG501260-06 CCB	1	1		11/17/14 23:06

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 2 Approved: 19-NOV-14

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 022015_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 6

Maintenance Log ID: Syringe Filter Lot#: 140701254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG513051 (waters)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD67080 (11/17/2014)

CCV STD: STD67080 LCS STD: STD67080 MS/MSD STD: NA

Comments: Samples L15020971(-10 and -12) were analyzed at dilutions based on their historical results. Samples L15020971(-01 and -03) had no historical results. These samples were screened at a 100x dilution prior to the analysis of this sequence. Sample L15020971-01 was analyzed at a dilution based on its pre-run screen result.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM29027	WG513052-01 CCB	1	1		02/20/15 17:59
2	1LM.LM29028	WG513052-02 CCV (1.0ug/L)	1	1	STD67080	02/20/15 18:18
3	1LM.LM29029	WG513051-05 MRL (0.2ug/L)	1	1	STD67080	02/20/15 18:37
4	1LM.LM29030	WG513051-01 MCT (0.2ug/L)	1	1	STD67080	02/20/15 18:56
5	1LM.LM29031	WG513051-02 BLANK	1	1		02/20/15 19:15
6	1LM.LM29032	WG513051-03 LCS (0.2ug/L)	1	1	STD67080	02/20/15 19:34
7	1LM.LM29033	WG513051-04 LCS2 (0.2ug/L)	1	1	STD67080	02/20/15 19:53
8	1LM.LM29034	L15020876-01	1	1		02/20/15 20:12
9	1LM.LM29035	L15020877-01	1	1		02/20/15 20:31
10	1LM.LM29036	L15020877-02	1	1		02/20/15 20:50
11	1LM.LM29037	L15020971-01 (10x)	1	10		02/20/15 21:09
12	1LM.LM29038	L15020971-02	1	1		02/20/15 21:27
13	1LM.LM29039	L15020971-03	1	1		02/20/15 21:46
14	1LM.LM29040	WG513052-03 CCV (1.0ug/L)	1	1	STD67080	02/20/15 22:05
15	1LM.LM29041	WG513051-06 MRL (0.2ug/L)	1	1	STD67080	02/20/15 22:24
16	1LM.LM29042	WG513052-04 CCB	1	1		02/20/15 22:43
17	1LM.LM29043	L15020971-04	1	1		02/20/15 23:02
18	1LM.LM29044	L15020971-05	1	1		02/20/15 23:21
19	1LM.LM29045	L15020971-06	1	1		02/20/15 23:40
20	1LM.LM29046	L15020971-08	1	1		02/20/15 23:59
21	1LM.LM29047	L15020971-10 (10,000x)	1	10000		02/21/15 00:18
22	1LM.LM29048	L15020971-12 (10x)	1	10		02/21/15 00:37
23	1LM.LM29049	L15020971-14	1	1		02/21/15 00:56
24	1LM.LM29050	WG513052-05 CCV (1.0ug/L)	1	1	STD67080	02/21/15 01:15
25	1LM.LM29051	WG513051-07 MRL (0.2ug/L)	1	1	STD67080	02/21/15 01:34
26	1LM.LM29052	WG513052-06 CCB	1	1		02/21/15 01:53

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 23-FEB-15

Microbac Laboratories Inc.

Data Checklist

Date: 17-NOV-2014
Analyst: ADC
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG501146
Runlog ID: 64764
Analytical Workgroups: L14110438, 0479, 0618, 0626, 0635, 0648

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	ADC
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 19-NOV-2014

Secondary Reviewer: 19-NOV-2014

CHECKLIST1 - Modified 03/05/2008

Generated: NOV-19-2014 16:22:21

Microbac Laboratories Inc.

Data Checklist

Date: 20-FEB-2015
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 66463
Analytical Workgroups: L15020876, 0877 L15020971 (WATERS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA (PER CLIENT REQUEST)
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 23-FEB-2015 John Richards

Secondary Reviewer: 23-FEB-2015 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-23-2015 15:53:32

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG513051

Login Number: L15020971

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
GPW1A-021715	01	02/17/15					02/20/2015	3	28		02/20/15	.2	28	
GPW1-021715	02	02/17/15					02/20/2015	3	28		02/20/15	.2	28	
50SW06-021715	03	02/17/15					02/20/2015	3	28		02/20/15	.2	28	
50WW28-021715	04	02/17/15					02/20/2015	3	28		02/20/15	.3	28	
50WW28FD-021715	05	02/17/15					02/20/2015	3	28		02/20/15	.3	28	
50WW24-021815	06	02/18/15					02/20/2015	2.4	28		02/20/15	.3	28	
50WW23-021815	08	02/18/15					02/20/2015	2.3	28		02/20/15	.3	28	
50WW12-021815	10	02/18/15					02/20/2015	2.2	28		02/21/15	.3	28	
50WWW25-021815	12	02/18/15					02/20/2015	2.1	28		02/21/15	.3	28	
50WW18-021815	14	02/18/15					02/20/2015	2.1	28		02/21/15	.3	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4033670
Report generated 02/24/2015 10:21

METHOD BLANK SUMMARY

Login Number: L15020971
Blank File ID: 1LM.LM29031
Prep Date: 02/20/15 17:00
Analyzed Date: 02/20/15 19:15
Analyst: JWR

Work Group: WG513051
Blank Sample ID: WG513051-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG513051-05	1LM.LM29029	02/20/15 18:37	01
MCT	WG513051-01	1LM.LM29030	02/20/15 18:56	01
LCS	WG513051-03	1LM.LM29032	02/20/15 19:34	01
LCS2	WG513051-04	1LM.LM29033	02/20/15 19:53	01
GPW1A-021715	L15020971-01	1LM.LM29037	02/20/15 21:09	DL01
GPW1-021715	L15020971-02	1LM.LM29038	02/20/15 21:27	01
50SW06-021715	L15020971-03	1LM.LM29039	02/20/15 21:46	01
QCMRL	WG513051-06	1LM.LM29041	02/20/15 22:24	01
50WW28-021715	L15020971-04	1LM.LM29043	02/20/15 23:02	01
50WW28FD-021715	L15020971-05	1LM.LM29044	02/20/15 23:21	01
50WW24-021815	L15020971-06	1LM.LM29045	02/20/15 23:40	01
50WW23-021815	L15020971-08	1LM.LM29046	02/20/15 23:59	01
50WW12-021815	L15020971-10	1LM.LM29047	02/21/15 00:18	DL01
50WWW25-021815	L15020971-12	1LM.LM29048	02/21/15 00:37	DL01
50WW18-021815	L15020971-14	1LM.LM29049	02/21/15 00:56	01
QCMRL	WG513051-07	1LM.LM29051	02/21/15 01:34	01

Report Name: BLANK_SUMMARY
PDF File ID: 4033671
Report generated 02/24/2015 10:21

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15020971 Prep Date: 02/20/15 17:00 Sample ID: WG513051-02
Instrument ID: LCMS1 Run Date: 02/20/15 19:15 Prep Method: 6850
File ID: 1LM.LM29031 Analyst: JWR Method: 6850
Workgroup (AAB#): WG513051 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-17-NOV-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4033672
24-FEB-2015 10:21

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15020971 Analyst: JWR Prep Method: 6850
Instrument ID: LCMS1 Matrix: Water Method: 6850
Workgroup (AAB#): WG513051 Units: ug/L
QC Key: DOD4 Lot #: STD67080

Sample ID: WG513051-03 LCS File ID: 1LM.LM29032 Run Date: 02/20/2015 19:34
Sample ID: WG513051-04 LCS2 File ID: 1LM.LM29033 Run Date: 02/20/2015 19:53

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Perchlorate	0.200	0.193	96.5	0.200	0.195	97.5	1.03	80 - 120	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4033673
Report generated: 02/24/2015 10:21

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L15020971
Analytical Method: 6850
ICAL Workgroup: WG501146

Instrument ID: LCMS1
Initial Calibration Date: 17-NOV-14 14:53
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.387	10.9	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4034762
Report generated 02/24/2015 10:21

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15020971

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 17-NOV-14 14:53

Column ID: F

Analyte	WG501146-02			WG501146-03			WG501146-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	11100.0000	1.719	0.200	17300.0000	1.339	0.500	44100.0000	1.338

INT_CAL - Modified 03/06/2008
PDF File ID: 4034762
Report generated 02/24/2015 10:21

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15020971

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 17-NOV-14 14:53

Column ID: F

Analyte	WG501146-05			WG501146-06			WG501146-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	84400.0000	1.290	2.00	173000.000	1.337	5.00	420000.000	1.337

INT_CAL - Modified 03/06/2008
PDF File ID: 4034762
Report generated 02/24/2015 10:21

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15020971

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 17-NOV-14 14:53

Column ID: F

Analyte	WG501146-08		
	CONC	RESP	RF
Perchlorate	10.0	841000.000	1.347

INT_CAL - Modified 03/06/2008

PDF File ID: 4034762

Report generated 02/24/2015 10:21

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15020971 Run Date: 11/17/2014 Sample ID: WG501146-09
Instrument ID: LCMS1 Run Time: 15:12 Method: 6850
File ID: 1LM.LM27611 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG501146 Cal ID: LCMS1 - 17-NOV-14

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.36	1.00	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4034763
Report generated 02/24/2015 10:21

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15020971
Run Date: 02/20/2015
Sample ID: WG513052-01
Instrument ID: LCMS1
Run Time: 17:59
Method: 6850
File ID: 1LM.LM29027
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG513051
Cal ID: LCMS1 - 17-NOV-14
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4033676
Report generated 02/24/2015 10:22

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15020971
Run Date: 02/20/2015
Sample ID: WG513052-04
Instrument ID: LCMS1
Run Time: 22:43
Method: 6850
File ID: 1LM.LM29042
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG513051
Cal ID: LCMS1 - 17-NOV-14
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4033676
Report generated 02/24/2015 10:22

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15020971
Run Date: 02/21/2015
Sample ID: WG513052-06
Instrument ID: LCMS1
Run Time: 01:53
Method: 6850
File ID: 1LM.LM29052
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG513051
Cal ID: LCMS1 - 17-NOV-14
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4033676
Report generated 02/24/2015 10:22

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15020971 Run Date: 02/20/2015 Sample ID: WG513052-02
Instrument ID: LCMS1 Run Time: 18:18 Method: 6850
File ID: 1LM.LM29028 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG513051 Cal ID: LCMS1 - 17-NOV-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.37	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4033675
Report generated 02/24/2015 10:21

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15020971 Run Date: 02/20/2015 Sample ID: WG513052-03
Instrument ID: LCMS1 Run Time: 22:05 Method: 6850
File ID: 1LM.LM29040 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG513051 Cal ID: LCMS1 - 17-NOV-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.992	ug/L	1.34	0.800	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4033675
Report generated 02/24/2015 10:21

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15020971 Run Date: 02/21/2015 Sample ID: WG513052-05
Instrument ID: LCMS1 Run Time: 01:15 Method: 6850
File ID: 1LM.LM29050 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG513051 Cal ID: LCMS1 - 17-NOV-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.39	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4033675
Report generated 02/24/2015 10:21

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15020971 Run Date: 02/20/2015 Sample ID: WG513051-05
Instrument ID: LCMS1 Run Time: 18:37 Prep Method: 6850
File ID: 1LM.LM29029 Analyst: JWR Method: 6850
Workgroup (AAB#): WG513051 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-17-NOV-14

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.200	100	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4033674
Report generated 02/24/2015 10:21

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15020971 Run Date: 02/20/2015 Sample ID: WG513051-06
Instrument ID: LCMS1 Run Time: 22:24 Prep Method: 6850
File ID: 1LM.LM29041 Analyst: JWR Method: 6850
Workgroup (AAB#): WG513051 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-17-NOV-14

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.210	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4033674
Report generated 02/24/2015 10:21

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15020971 Run Date: 02/21/2015 Sample ID: WG513051-07
Instrument ID: LCMS1 Run Time: 01:34 Prep Method: 6850
File ID: 1LM.LM29051 Analyst: JWR Method: 6850
Workgroup (AAB#): WG513051 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-17-NOV-14

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.197	98.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4033674
Report generated 02/24/2015 10:21

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L15020971
Instrument ID: LCMS1
Workgroup (AAB#): WG513051

ICAL CCV Number: WG501146-05
CAL ID: LCMS1-17-NOV-14
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG501146	NA	NA	321000
Upper Limit	NA	NA	481500
Lower Limit	NA	NA	160500
L15020971-01	10.0	DL01	303000
L15020971-02	1.00	01	309000
L15020971-03	1.00	01	305000
L15020971-04	1.00	01	309000
L15020971-05	1.00	01	298000
L15020971-06	1.00	01	307000
L15020971-08	1.00	01	321000
L15020971-10	10000	DL01	318000
L15020971-12	10.0	DL01	295000
L15020971-14	1.00	01	314000
WG513051-02	1.00	01	297000
WG513051-03	1.00	01	307000
WG513051-04	1.00	01	304000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4033677
Report generated 02/24/2015 10:22

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020971	**Prep Method:**	6850	**Samplenum:**	L15020971-01
Instrument:	LCMS1	**Prep Date:**	02/20/2015 17:00	**File ID:**	1LM.LM29037
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513051	**Analysis Date:**	02/20/2015 21:09	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	310000	104000	2.98	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020971	**Prep Method:**	6850	**Samplenum:**	L15020971-02
Instrument:	LCMS1	**Prep Date:**	02/20/2015 17:00	**File ID:**	1LM.LM29038
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513051	**Analysis Date:**	02/20/2015 21:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	62000	21200	2.92	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020971	**Prep Method:**	6850	**Samplenum:**	L15020971-03
Instrument:	LCMS1	**Prep Date:**	02/20/2015 17:00	**File ID:**	1LM.LM29039
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513051	**Analysis Date:**	02/20/2015 21:46	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	56900	18500	3.08	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020971	**Prep Method:**	6850	**Samplenum:**	L15020971-04
Instrument:	LCMS1	**Prep Date:**	02/20/2015 17:00	**File ID:**	1LM.LM29043
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513051	**Analysis Date:**	02/20/2015 23:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	120000	40900	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020971	**Prep Method:**	6850	**Samplenum:**	L15020971-05
Instrument:	LCMS1	**Prep Date:**	02/20/2015 17:00	**File ID:**	1LM.LM29044
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513051	**Analysis Date:**	02/20/2015 23:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	116000	39000	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020971	**Prep Method:**	6850	**Samplenum:**	L15020971-06
Instrument:	LCMS1	**Prep Date:**	02/20/2015 17:00	**File ID:**	1LM.LM29045
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513051	**Analysis Date:**	02/20/2015 23:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	6640	2480	2.68	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020971	**Prep Method:**	6850	**Samplenum:**	L15020971-08
Instrument:	LCMS1	**Prep Date:**	02/20/2015 17:00	**File ID:**	1LM.LM29046
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513051	**Analysis Date:**	02/20/2015 23:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	7870	2590	3.04	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020971	**Prep Method:**	6850	**Samplenum:**	L15020971-10
Instrument:	LCMS1	**Prep Date:**	02/20/2015 17:00	**File ID:**	1LM.LM29047
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513051	**Analysis Date:**	02/21/2015 00:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	261000	85100	3.07	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020971	**Prep Method:**	6850	**Samplenum:**	L15020971-12
Instrument:	LCMS1	**Prep Date:**	02/20/2015 17:00	**File ID:**	1LM.LM29048
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513051	**Analysis Date:**	02/21/2015 00:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	334000	113000	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020971	**Prep Method:**	6850	**Samplenum:**	L15020971-14
Instrument:	LCMS1	**Prep Date:**	02/20/2015 17:00	**File ID:**	1LM.LM29049
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513051	**Analysis Date:**	02/21/2015 00:56	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	22800	8140	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020971	**Prep Method:**		**Samplenum:**	WG501146-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM27604
Analyst:	ADC	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513051	**Analysis Date:**	11/17/2014 13:00	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	11100	3370	3.29	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020971	**Prep Method:**		**Samplenum:**	WG501146-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM27605
Analyst:	ADC	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513051	**Analysis Date:**	11/17/2014 13:19	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17300	5740	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020971	**Prep Method:**		**Samplenum:**	WG501146-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM27606
Analyst:	ADC	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513051	**Analysis Date:**	11/17/2014 13:38	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	44100	14600	3.02	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020971	**Prep Method:**		**Samplenum:**	WG501146-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM27607
Analyst:	ADC	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513051	**Analysis Date:**	11/17/2014 13:56	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	84400	29400	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020971	**Prep Method:**		**Samplenum:**	WG501146-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM27608
Analyst:	ADC	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513051	**Analysis Date:**	11/17/2014 14:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	173000	54700	3.16	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020971	**Prep Method:**		**Samplenum:**	WG501146-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM27609
Analyst:	ADC	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513051	**Analysis Date:**	11/17/2014 14:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	420000	140000	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020971	**Prep Method:**		**Samplenum:**	WG501146-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM27610
Analyst:	ADC	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513051	**Analysis Date:**	11/17/2014 14:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	841000	276000	3.05	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020971	**Prep Method:**		**Samplenum:**	WG501146-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM27611
Analyst:	ADC	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513051	**Analysis Date:**	11/17/2014 15:12	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	88800	29400	3.02	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020971	**Prep Method:**	6850	**Samplenum:**	WG513051-01
Instrument:	LCMS1	**Prep Date:**	02/20/2015 17:00	**File ID:**	1LM.LM29030
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513051	**Analysis Date:**	02/20/2015 18:56	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17000	5490	3.10	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020971	**Prep Method:**	6850	**Samplenum:**	WG513051-02
Instrument:	LCMS1	**Prep Date:**	02/20/2015 17:00	**File ID:**	1LM.LM29031
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513051	**Analysis Date:**	02/20/2015 19:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	124	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020971	**Prep Method:**	6850	**Samplenum:**	WG513051-03
Instrument:	LCMS1	**Prep Date:**	02/20/2015 17:00	**File ID:**	1LM.LM29032
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513051	**Analysis Date:**	02/20/2015 19:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17000	5930	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020971	**Prep Method:**	6850	**Samplenum:**	WG513051-04
Instrument:	LCMS1	**Prep Date:**	02/20/2015 17:00	**File ID:**	1LM.LM29033
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513051	**Analysis Date:**	02/20/2015 19:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17000	6240	2.72	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020971	**Prep Method:**	6850	**Samplenum:**	WG513051-05
Instrument:	LCMS1	**Prep Date:**	02/20/2015 17:00	**File ID:**	1LM.LM29029
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513051	**Analysis Date:**	02/20/2015 18:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	18000	5970	3.02	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020971	**Prep Method:**	6850	**Samplenum:**	WG513051-06
Instrument:	LCMS1	**Prep Date:**	02/20/2015 17:00	**File ID:**	1LM.LM29041
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513051	**Analysis Date:**	02/20/2015 22:24	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	19000	5680	3.35	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020971	**Prep Method:**	6850	**Samplenum:**	WG513051-07
Instrument:	LCMS1	**Prep Date:**	02/20/2015 17:00	**File ID:**	1LM.LM29051
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513051	**Analysis Date:**	02/21/2015 01:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17200	5710	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020971	**Prep Method:**		**Samplenum:**	WG513052-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29027
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513051	**Analysis Date:**	02/20/2015 17:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	329	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020971	**Prep Method:**		**Samplenum:**	WG513052-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29028
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513051	**Analysis Date:**	02/20/2015 18:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	87700	29000	3.02	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020971	**Prep Method:**		**Samplenum:**	WG513052-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29040
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513051	**Analysis Date:**	02/20/2015 22:05	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	86400	28200	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020971	**Prep Method:**		**Samplenum:**	WG513052-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29042
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513051	**Analysis Date:**	02/20/2015 22:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	306	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020971	**Prep Method:**		**Samplenum:**	WG513052-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29050
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513051	**Analysis Date:**	02/21/2015 01:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	91600	28700	3.19	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15020971	**Prep Method:**		**Samplenum:**	WG513052-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29052
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513051	**Analysis Date:**	02/21/2015 01:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	800	0.000	0.000	2.3	3.8	*

2.2.1.3 Sample Data

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Data File	LM29037.wiff	**Result Table**	022015_JWR.rdb
Acquisition Date	2/20/2015 9:09:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15020971-01 (10x)	**Injection Vial**	11.00
Data File	LM29037.wiff	**Injection Volume**	10.00
Acquisition Date	2/20/2015 9:09:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022015_JWR.rdb
Sample ID	L15020971-01	**Dilution Factor**	1.00
Sample Comment	1,10 (Screened)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.030e+05	9.99	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.100e+05	10.00	N/A	3.82
Perchlorate conf	1.040e+05	9.99	N/A	3.87

O18LP (Internal Standard)

RT (Exp. RT): 9.99(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

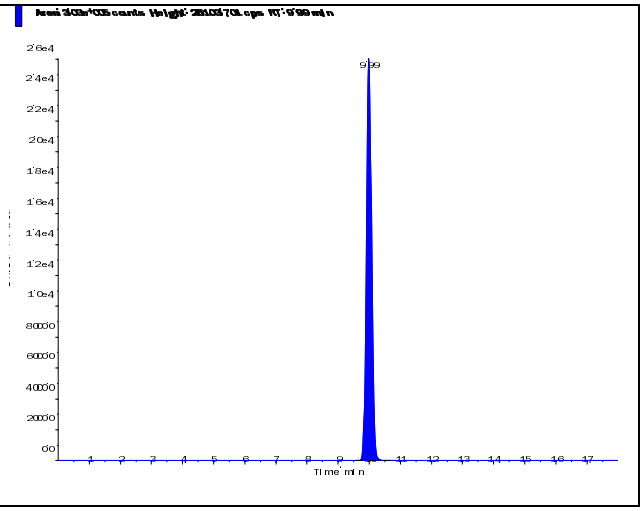

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Printed: 2/23/2015 9:48 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.00 (10.30) min Calculated conc: 3.82 ng/ml Area Ratio: 1.023 Sample Type: (Unknown)	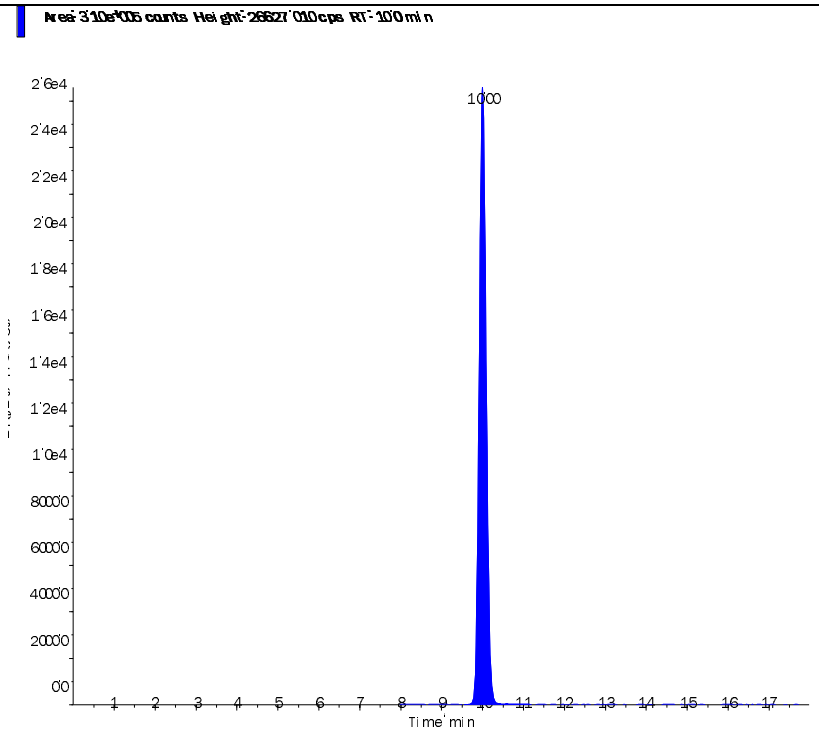
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.99 (10.30) min Calculated conc: 3.87 ng/ml Area Ratio: 0.342 Sample Type: (Unknown)	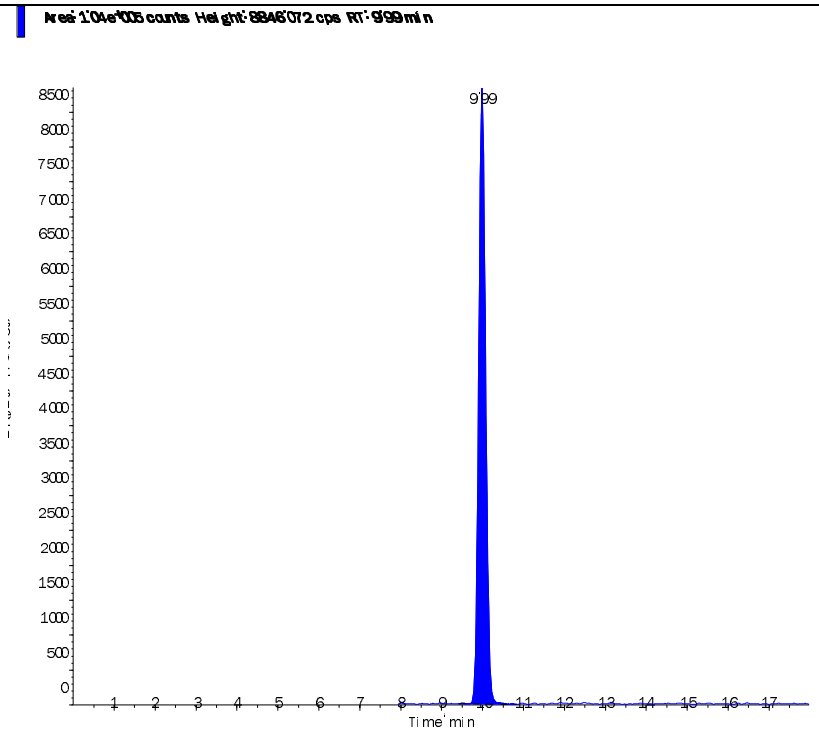

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Data File	LM29038.wiff	**Result Table**	022015_JWR.rdb
Acquisition Date	2/20/2015 9:27:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15020971-02	**Injection Vial**	12.00
Data File	LM29038.wiff	**Injection Volume**	10.00
Acquisition Date	2/20/2015 9:27:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022015_JWR.rdb
Sample ID	L15020971-02	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.090e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	6.200e+04	9.95	N/A	0.737
Perchlorate conf	2.120e+04	9.93	N/A	0.767

O18LP (Internal Standard)

RT (Exp. RT): 9.93(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

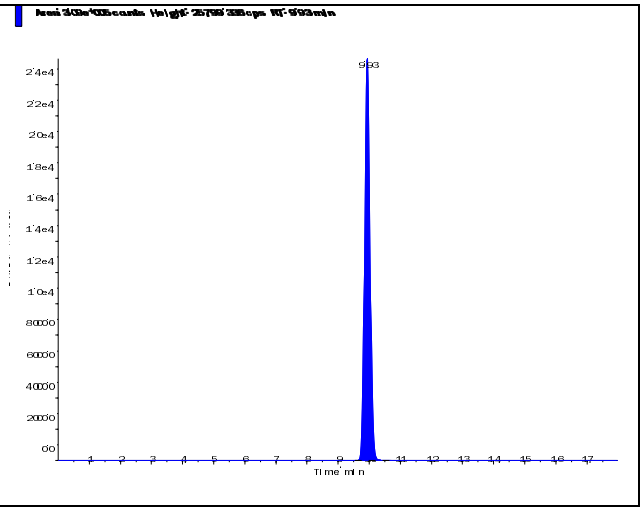

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.95 (10.30) min Calculated conc: 0.737 ng/ml Area Ratio: 0.201 Sample Type: (Unknown)	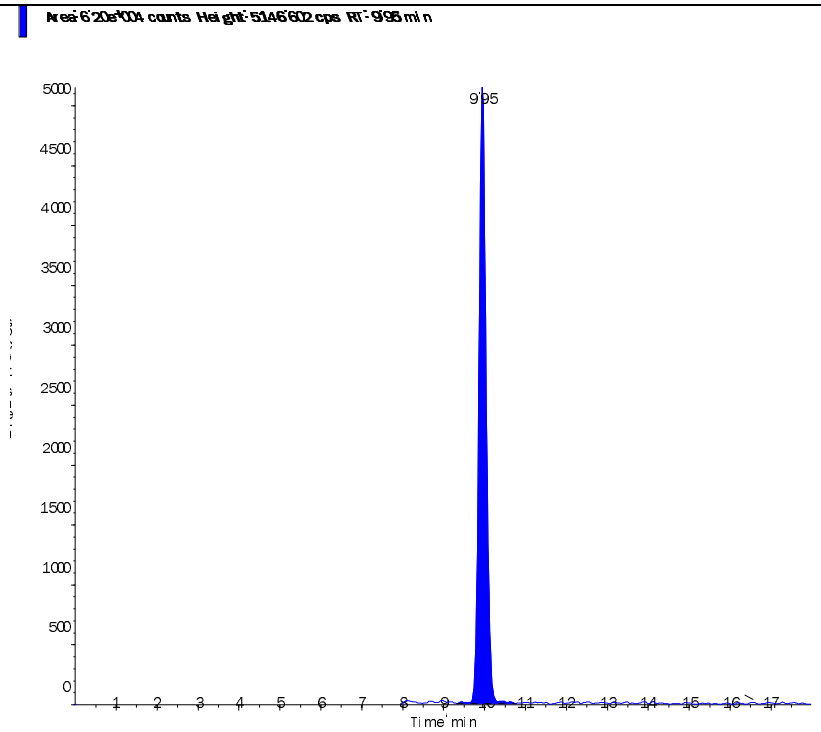
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.93 (10.30) min Calculated conc: 0.767 ng/ml Area Ratio: 0.069 Sample Type: (Unknown)	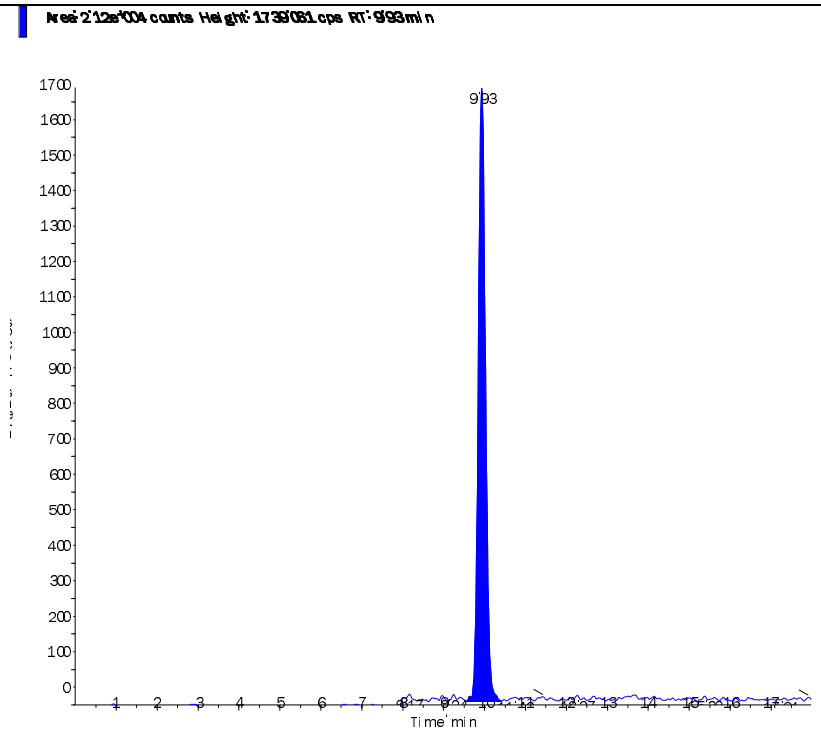

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Data File	LM29039.wiff	**Result Table**	022015_JWR.rdb
Acquisition Date	2/20/2015 9:46:55 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15020971-03	**Injection Vial**	13.00
Data File	LM29039.wiff	**Injection Volume**	10.00
Acquisition Date	2/20/2015 9:46:55 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022015_JWR.rdb
Sample ID	L15020971-03	**Dilution Factor**	1.00
Sample Comment	1,1 (Screened)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.050e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.690e+04	9.95	N/A	0.684
Perchlorate conf	1.850e+04	9.93	N/A	0.677

O18LP (Internal Standard)

RT (Exp. RT): 9.94(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

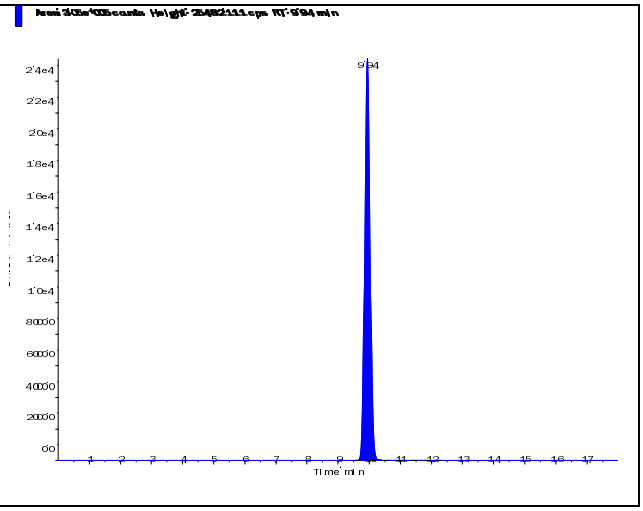

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.95 (10.30) min Calculated conc: 0.684 ng/ml Area Ratio: 0.186 Sample Type: (Unknown)	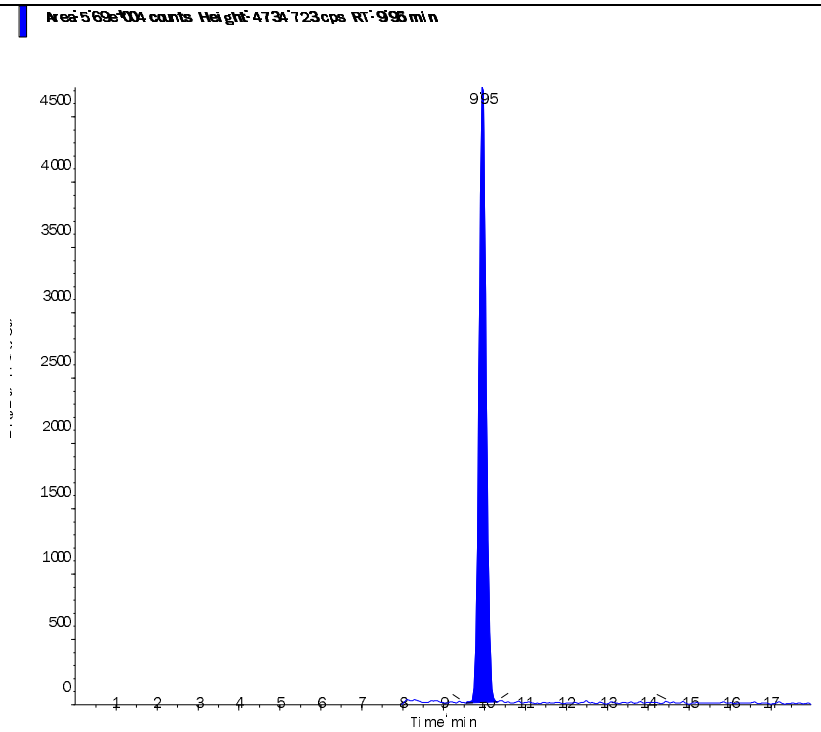
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.93 (10.30) min Calculated conc: 0.677 ng/ml Area Ratio: 0.061 Sample Type: (Unknown)	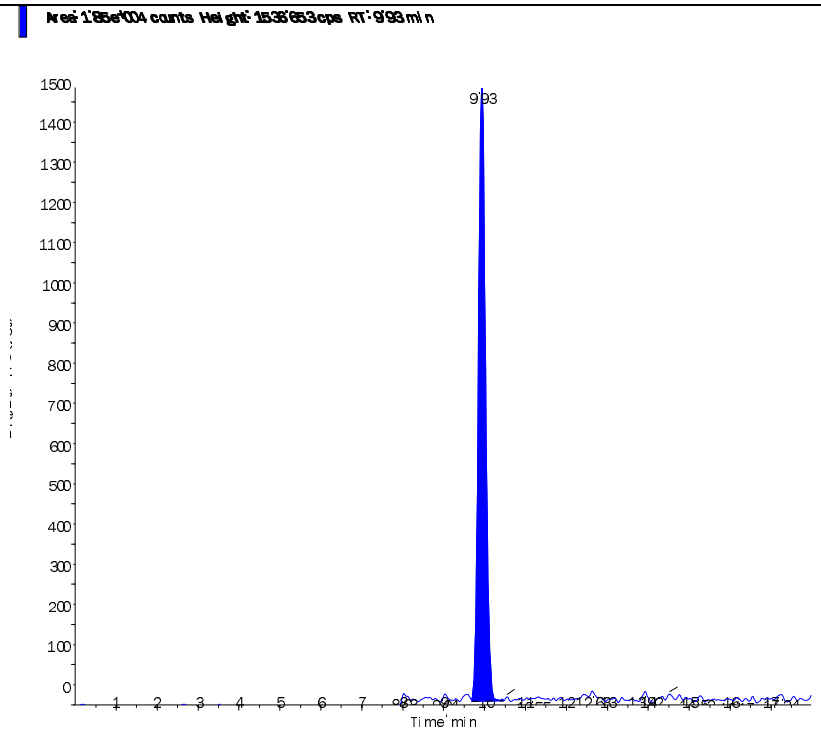

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Data File	LM29043.wiff	**Result Table**	022015_JWR.rdb
Acquisition Date	2/20/2015 11:02:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15020971-04	**Injection Vial**	14.00
Data File	LM29043.wiff	**Injection Volume**	10.00
Acquisition Date	2/20/2015 11:02:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022015_JWR.rdb
Sample ID	L15020971-04	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.090e+05	9.89	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.200e+05	9.90	N/A	1.44
Perchlorate conf	4.090e+04	9.89	N/A	1.49

O18LP (Internal Standard)

RT (Exp. RT): 9.89(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

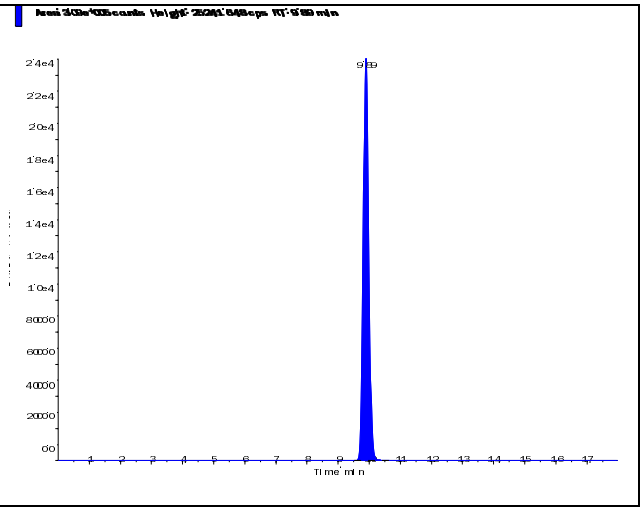

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Printed: 2/23/2015 9:50 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.90 (10.30) min
Calculated conc:	1.44 ng/ml
Area Ratio:	0.388
Sample Type:	(Unknown)

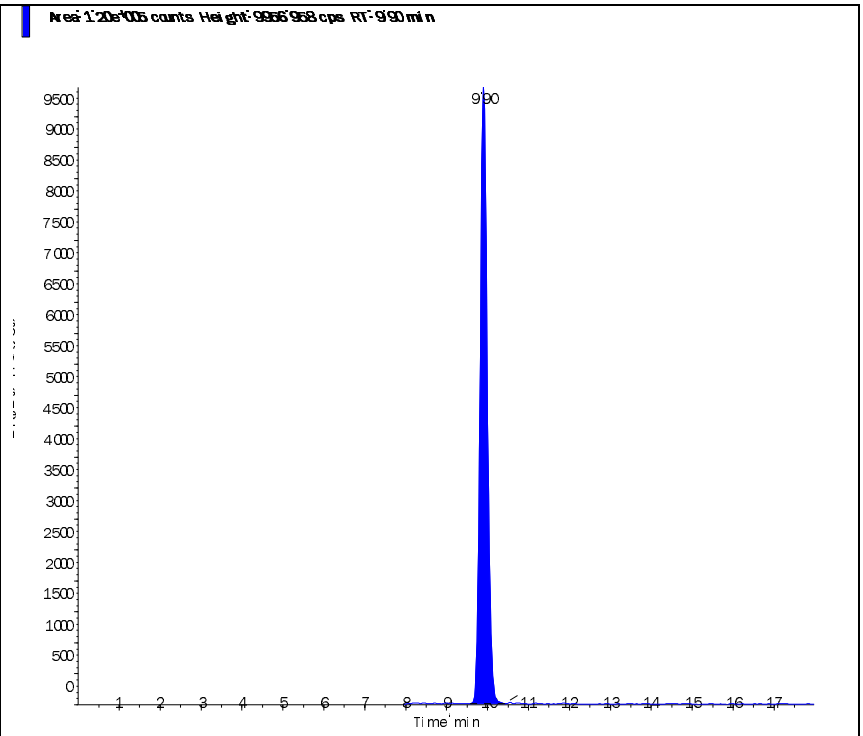

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.89 (10.30) min
Calculated conc:	1.49 ng/ml
Area Ratio:	0.132
Sample Type:	(Unknown)

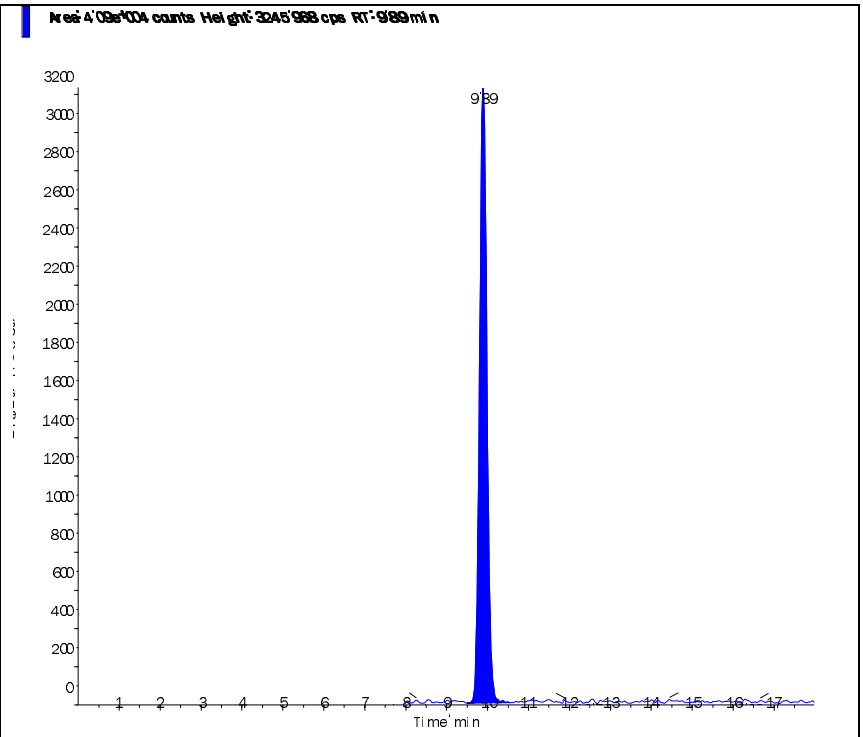

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Data File	LM29044.wiff	**Result Table**	022015_JWR.rdb
Acquisition Date	2/20/2015 11:21:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15020971-05	**Injection Vial**	15.00
Data File	LM29044.wiff	**Injection Volume**	10.00
Acquisition Date	2/20/2015 11:21:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022015_JWR.rdb
Sample ID	L15020971-05	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.980e+05	9.89	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.160e+05	9.90	N/A	1.44
Perchlorate conf	3.900e+04	9.89	N/A	1.48

O18LP (Internal Standard)

RT (Exp. RT): 9.89(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

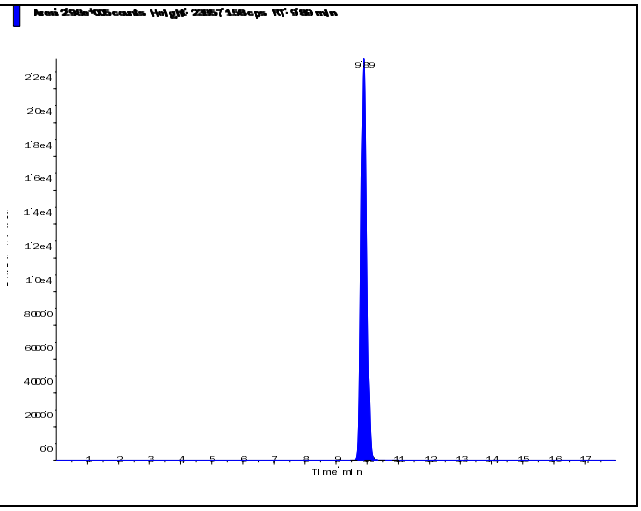

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.90 (10.30) min
Calculated conc:	1.44 ng/ml
Area Ratio:	0.389
Sample Type:	(Unknown)

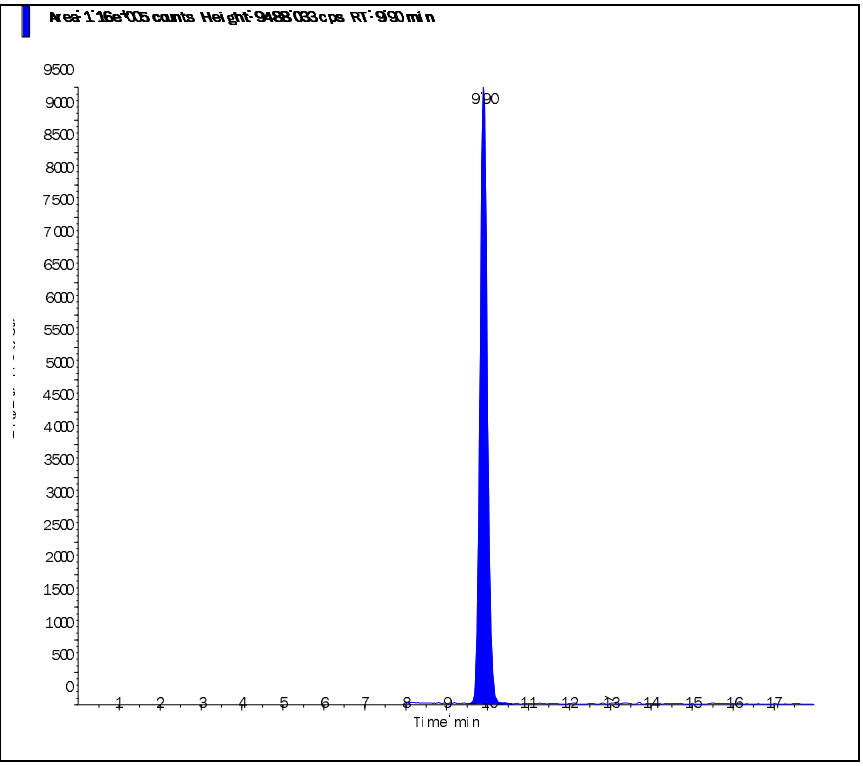

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.89 (10.30) min
Calculated conc:	1.48 ng/ml
Area Ratio:	0.131
Sample Type:	(Unknown)

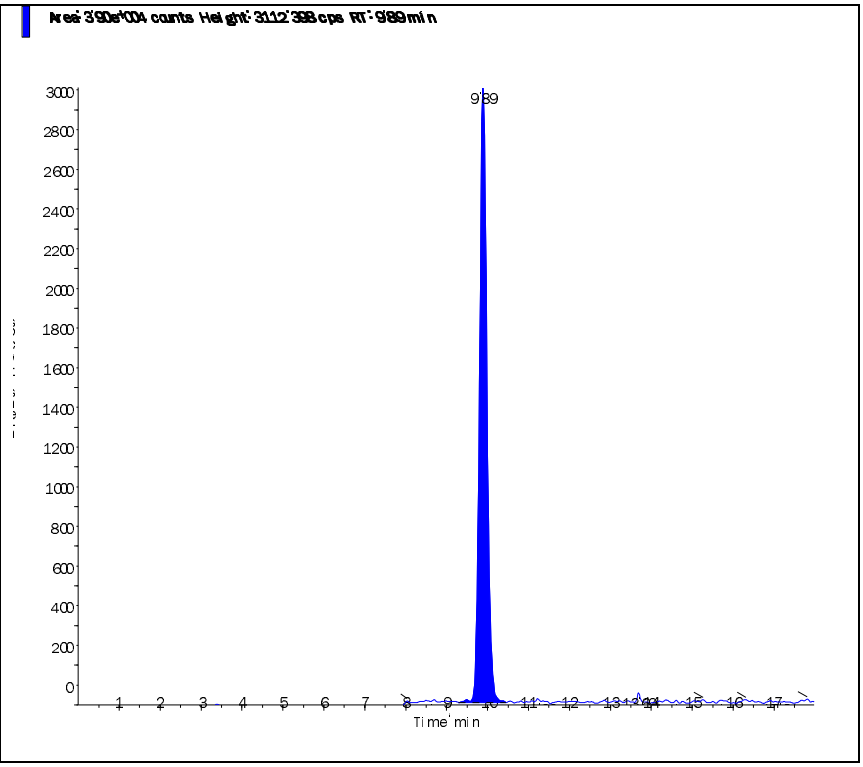

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Data File	LM29045.wiff	**Result Table**	022015_JWR.rdb
Acquisition Date	2/20/2015 11:40:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15020971-06	**Injection Vial**	16.00
Data File	LM29045.wiff	**Injection Volume**	10.00
Acquisition Date	2/20/2015 11:40:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022015_JWR.rdb
Sample ID	L15020971-06	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.070e+05	9.60	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	6.640e+03	9.61	N/A	0.0665
Perchlorate conf	2.480e+03	9.60	N/A	0.0809

O18LP (Internal Standard)

RT (Exp. RT): 9.60(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

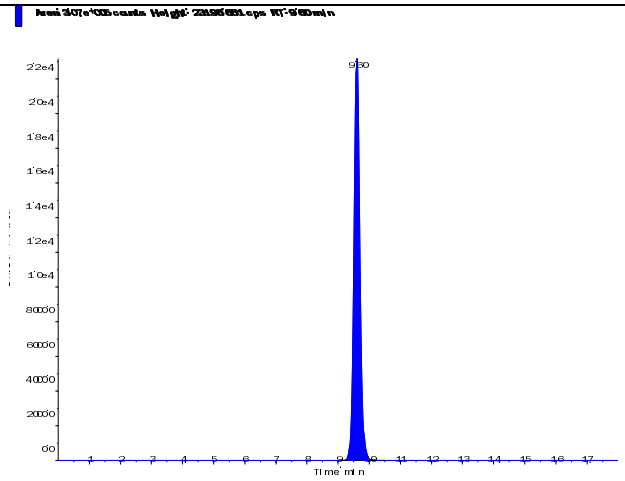

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.61 (10.30) min Calculated conc: 0.0665 ng/ml Area Ratio: 0.022 Sample Type: (Unknown)	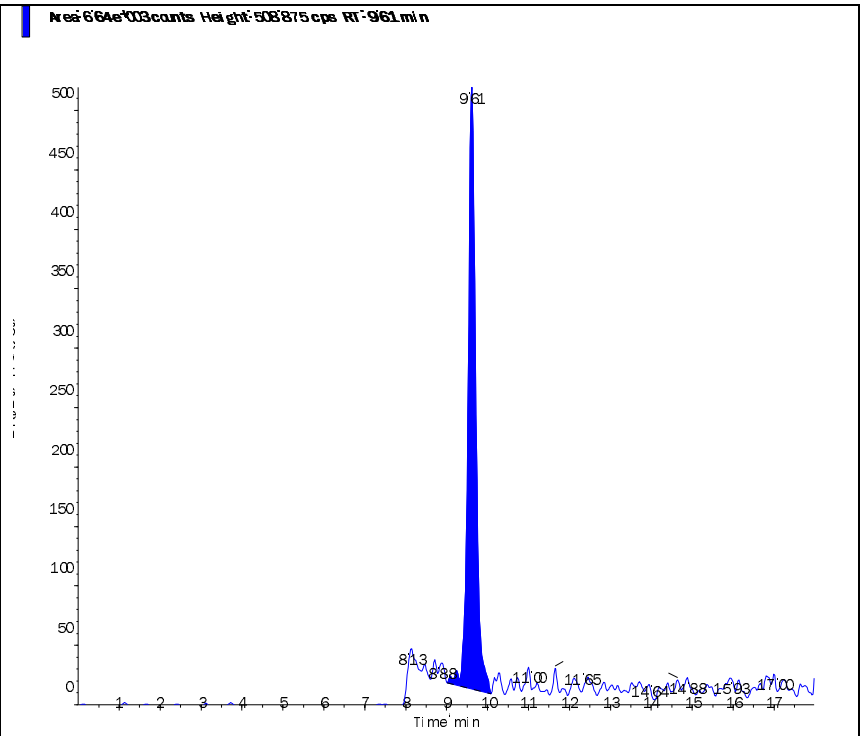
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.60 (10.30) min Calculated conc: 0.0809 ng/ml Area Ratio: 0.008 Sample Type: (Unknown)	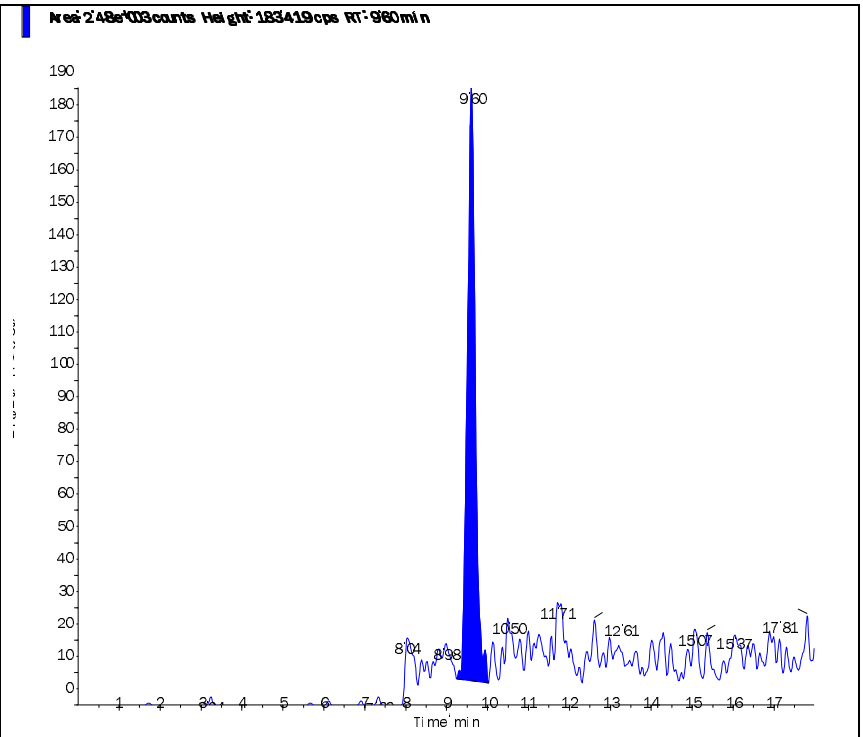

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Data File	LM29046.wiff	**Result Table**	022015_JWR.rdb
Acquisition Date	2/20/2015 11:59:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15020971-08	**Injection Vial**	17.00
Data File	LM29046.wiff	**Injection Volume**	10.00
Acquisition Date	2/20/2015 11:59:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022015_JWR.rdb
Sample ID	L15020971-08	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.210e+05	9.51	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.870e+03	9.54	N/A	0.0773
Perchlorate conf	2.590e+03	9.51	N/A	0.0806

O18LP (Internal Standard)

RT (Exp. RT): 9.51(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

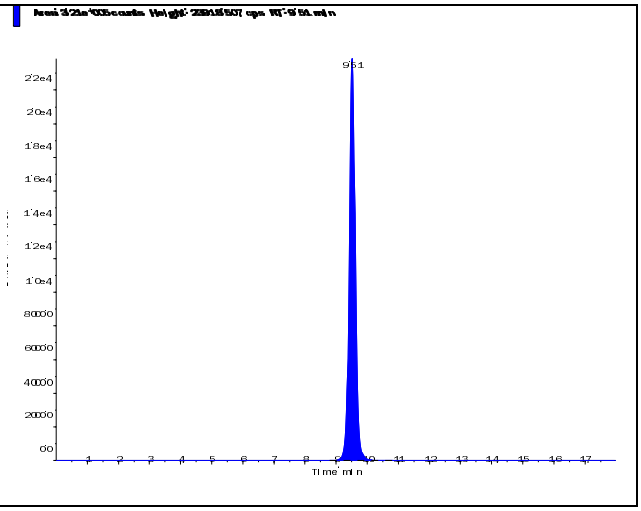

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.54 (10.30) min Calculated conc: 0.0773 ng/ml Area Ratio: 0.024 Sample Type: (Unknown)	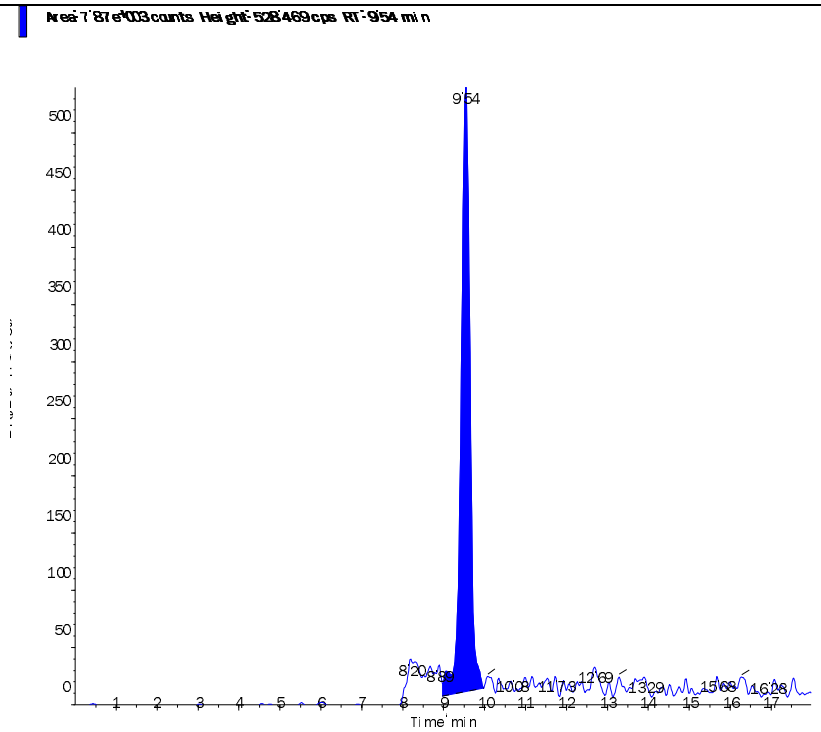
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.51 (10.30) min Calculated conc: 0.0806 ng/ml Area Ratio: 0.008 Sample Type: (Unknown)	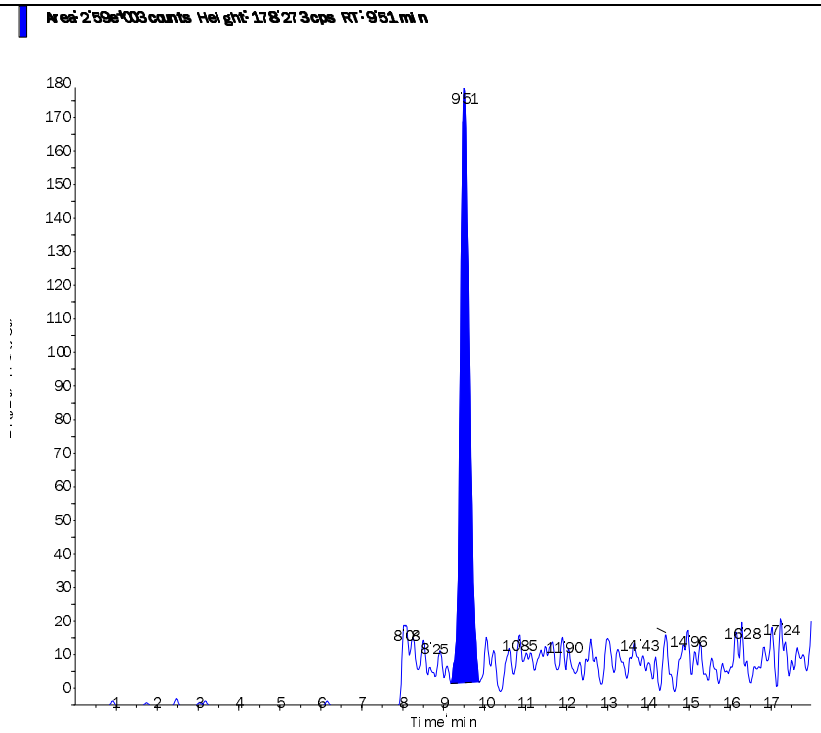

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Created with Analyst Reporter
Printed: 2/23/2015 9:52 AM

Data File	LM29047.wiff	**Result Table**	022015_JWR.rdb
Acquisition Date	2/21/2015 12:18:24 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15020971-10 (10,000x)	**Injection Vial**	18.00
Data File	LM29047.wiff	**Injection Volume**	10.00
Acquisition Date	2/21/2015 12:18:24 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022015_JWR.rdb
Sample ID	L15020971-10	**Dilution Factor**	1.00
Sample Comment	1,10000 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.180e+05	9.99	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.610e+05	10.00	N/A	3.06
Perchlorate conf	8.510e+04	9.99	N/A	3.03

O18LP (Internal Standard)

RT (Exp. RT): 9.99(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

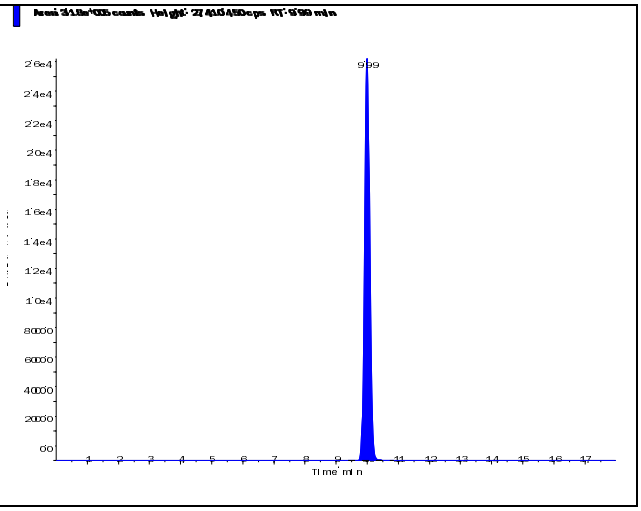

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.00 (10.30) min Calculated conc: 3.06 ng/ml Area Ratio: 0.822 Sample Type: (Unknown)	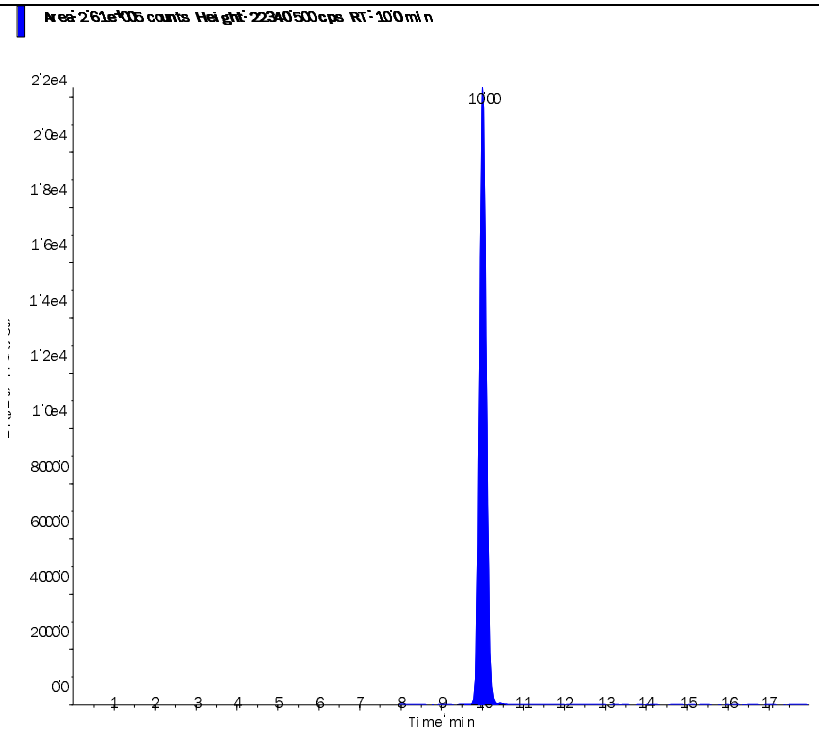
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.99 (10.30) min Calculated conc: 3.03 ng/ml Area Ratio: 0.268 Sample Type: (Unknown)	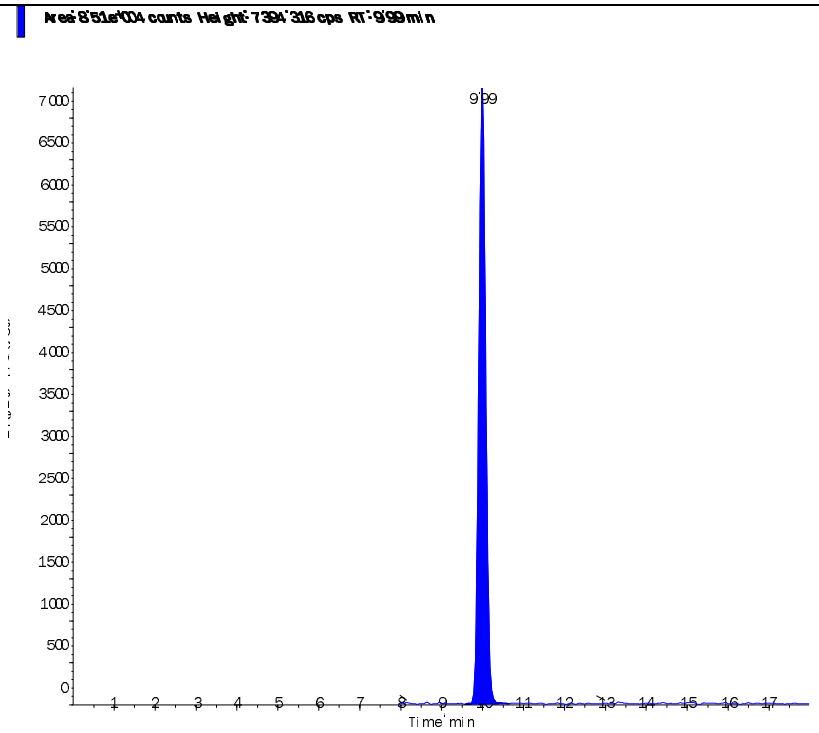

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Data File	LM29048.wiff	**Result Table**	022015_JWR.rdb
Acquisition Date	2/21/2015 12:37:19 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15020971-12 (10x)	**Injection Vial**	19.00
Data File	LM29048.wiff	**Injection Volume**	10.00
Acquisition Date	2/21/2015 12:37:19 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022015_JWR.rdb
Sample ID	L15020971-12	**Dilution Factor**	1.00
Sample Comment	1,10 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.950e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.340e+05	9.96	N/A	4.22
Perchlorate conf	1.130e+05	9.94	N/A	4.34

O18LP (Internal Standard)

RT (Exp. RT): 9.95(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

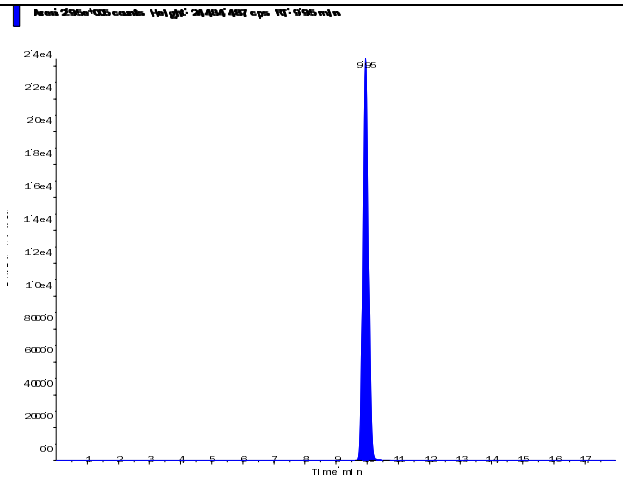

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (10.30) min
Calculated conc:	4.22 ng/ml
Area Ratio:	1.132
Sample Type:	(Unknown)

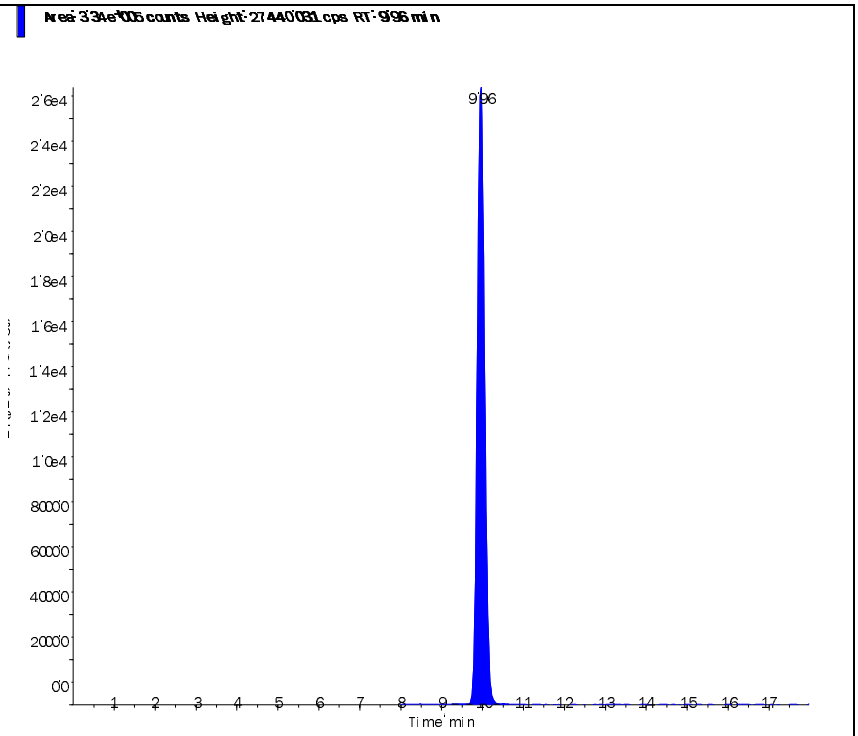

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (10.30) min
Calculated conc:	4.34 ng/ml
Area Ratio:	0.383
Sample Type:	(Unknown)

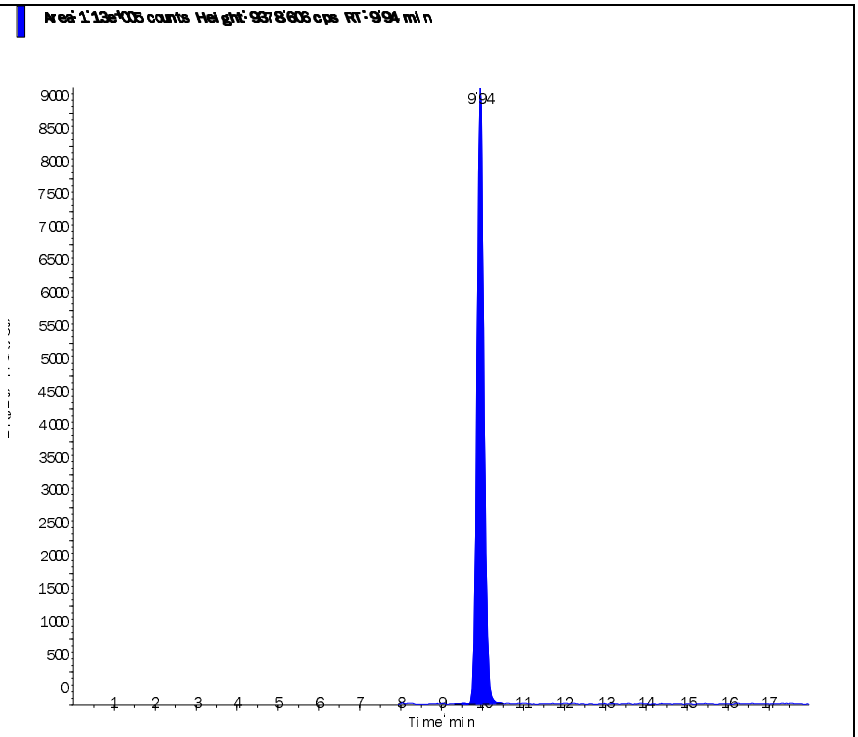

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Data File	LM29049.wiff	**Result Table**	022015_JWR.rdb
Acquisition Date	2/21/2015 12:56:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15020971-14	**Injection Vial**	20.00
Data File	LM29049.wiff	**Injection Volume**	10.00
Acquisition Date	2/21/2015 12:56:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022015_JWR.rdb
Sample ID	L15020971-14	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.140e+05	9.57	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.280e+04	9.58	N/A	0.258
Perchlorate conf	8.140e+03	9.58	N/A	0.283

O18LP (Internal Standard)

RT (Exp. RT): 9.57(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

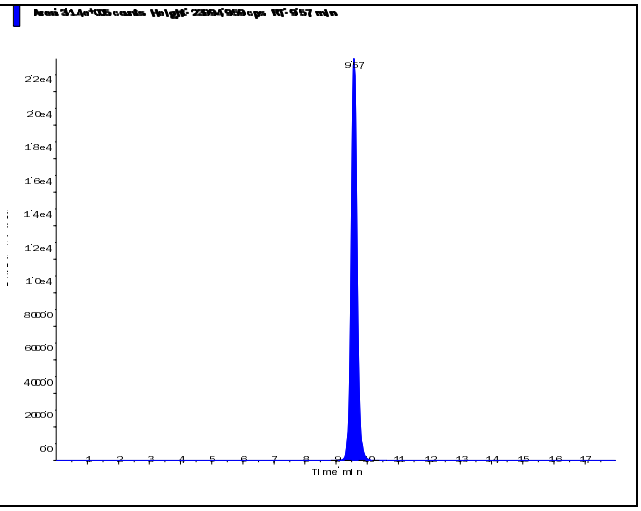

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Printed: 2/23/2015 9:52 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.58 (10.30) min
Calculated conc:	0.258 ng/ml
Area Ratio:	0.073
Sample Type:	(Unknown)

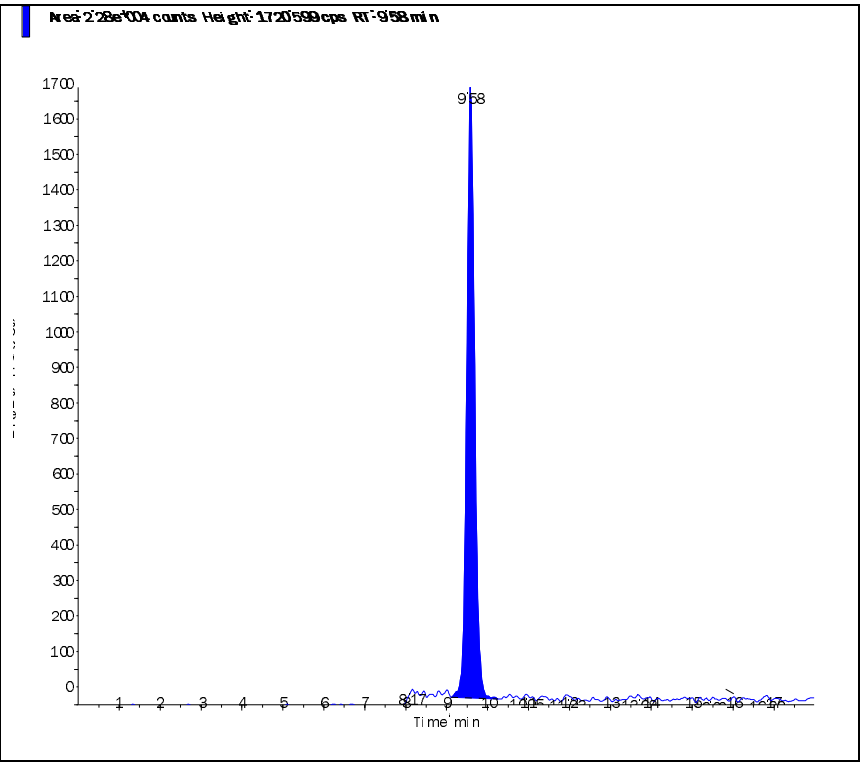

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.58 (10.30) min
Calculated conc:	0.283 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

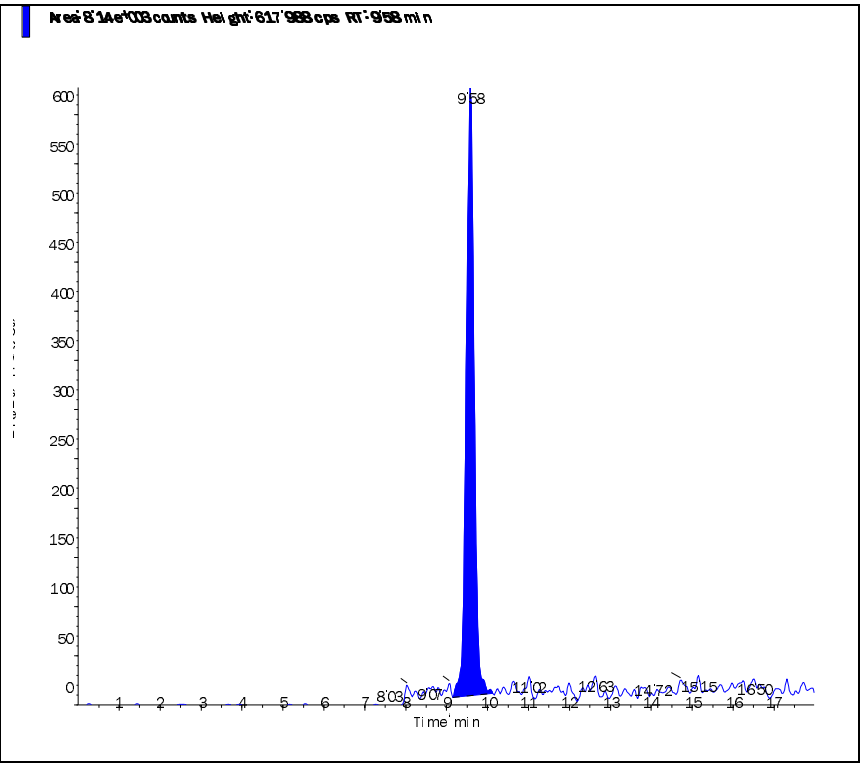

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2.2.1.4 Standards Data

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Data File	LM27603.wiff	**Result Table**	022015_JWR.rdb
Acquisition Date	11/17/2014 12:41:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG501146-01 CCB	**Injection Vial**	1.00
Data File	LM27603.wiff	**Injection Volume**	10.00
Acquisition Date	11/17/2014 12:41:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022015_JWR.rdb
Sample ID	WG501146-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.170e+05	10.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.340e+02	10.30	N/A	< 0
Perchlorate conf	2.010e+02	10.30	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 10.30(10.30) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

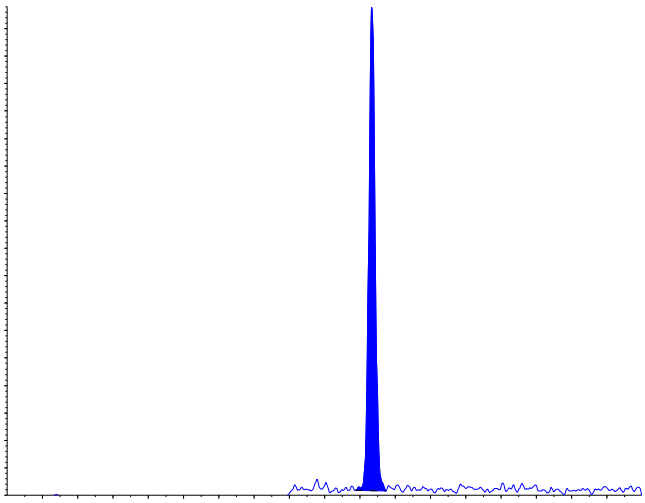

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.30 (10.30) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	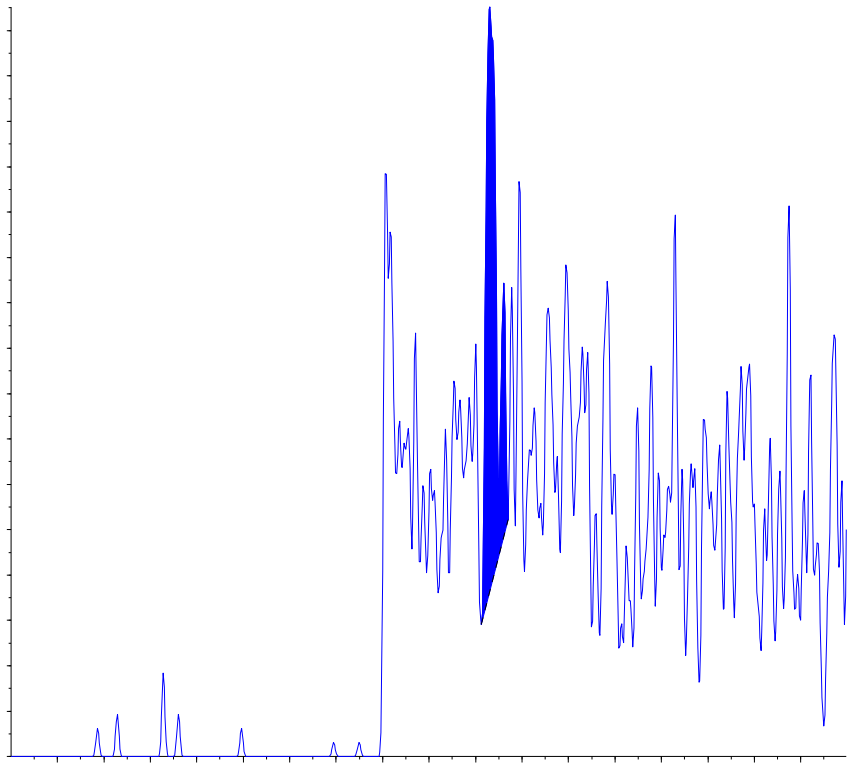
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 10.30 (10.30) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	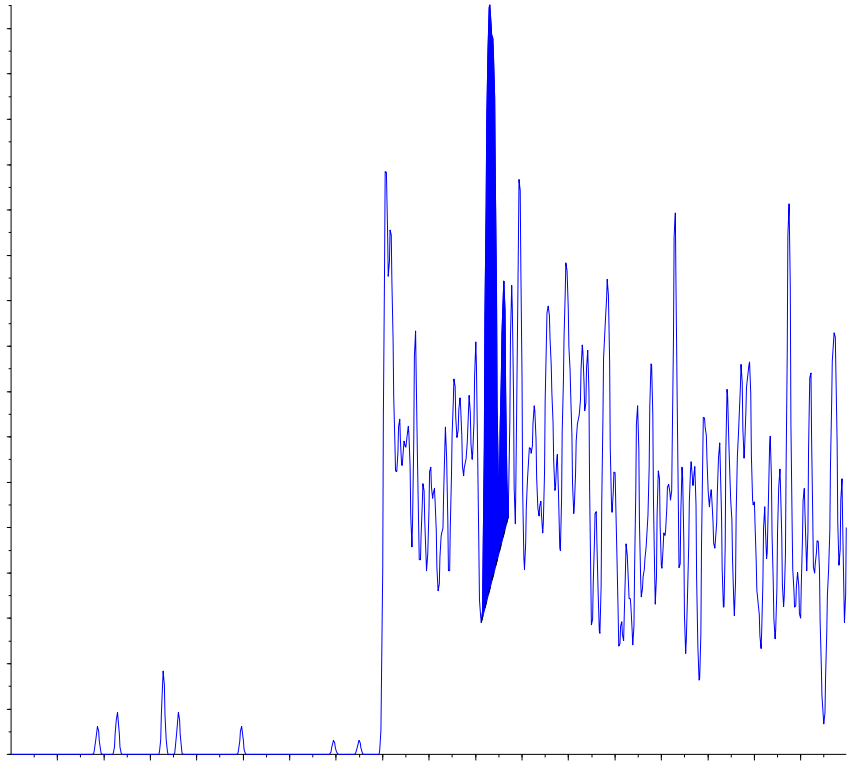

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Printed: 11/19/2014 2:12 PM

Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM27603.wiff	**Result Table**	111714_ADC.rdb
Acquisition Date	11/17/2014 12:41:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.33 x + 0.00387 (r = 0.9998)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.11	114.3	N/A	N/A
0.20	1	0.19	93.0	N/A	N/A
0.50	1	0.49	97.3	N/A	N/A
1.00	1	0.95	95.2	N/A	N/A
2.00	1	1.99	99.5	N/A	N/A
5.00	1	4.99	99.9	N/A	N/A
10.00	1	10.08	100.8	N/A	N/A

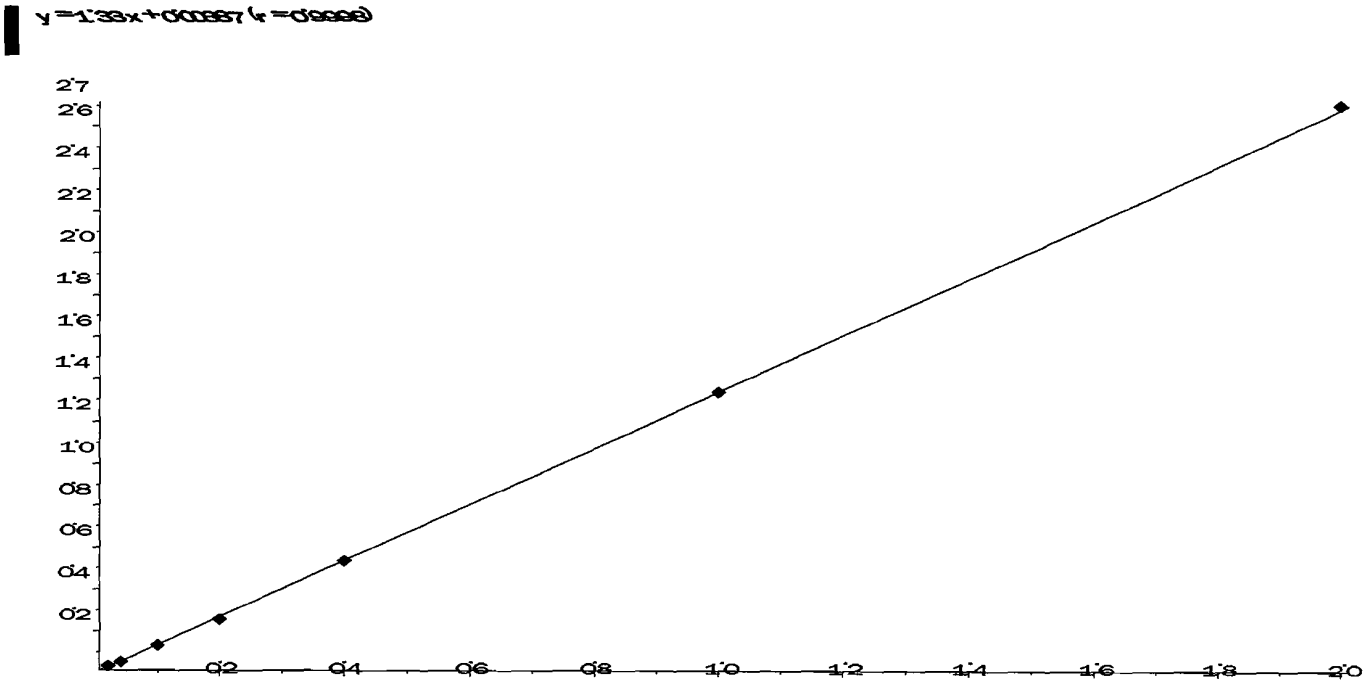

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Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM27603.wiff	**Result Table**	111714_ADC.rdb
Acquisition Date	11/17/2014 12:41:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.44 x + 0.000963 (r = 0.9998)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.11	108.0	N/A	N/A
0.20	1	0.19	95.6	N/A	N/A
0.50	1	0.49	98.3	N/A	N/A
1.00	1	1.01	101.2	N/A	N/A
2.00	1	1.91	95.6	N/A	N/A
5.00	1	5.04	100.8	N/A	N/A
10.00	1	10.05	100.5	N/A	N/A

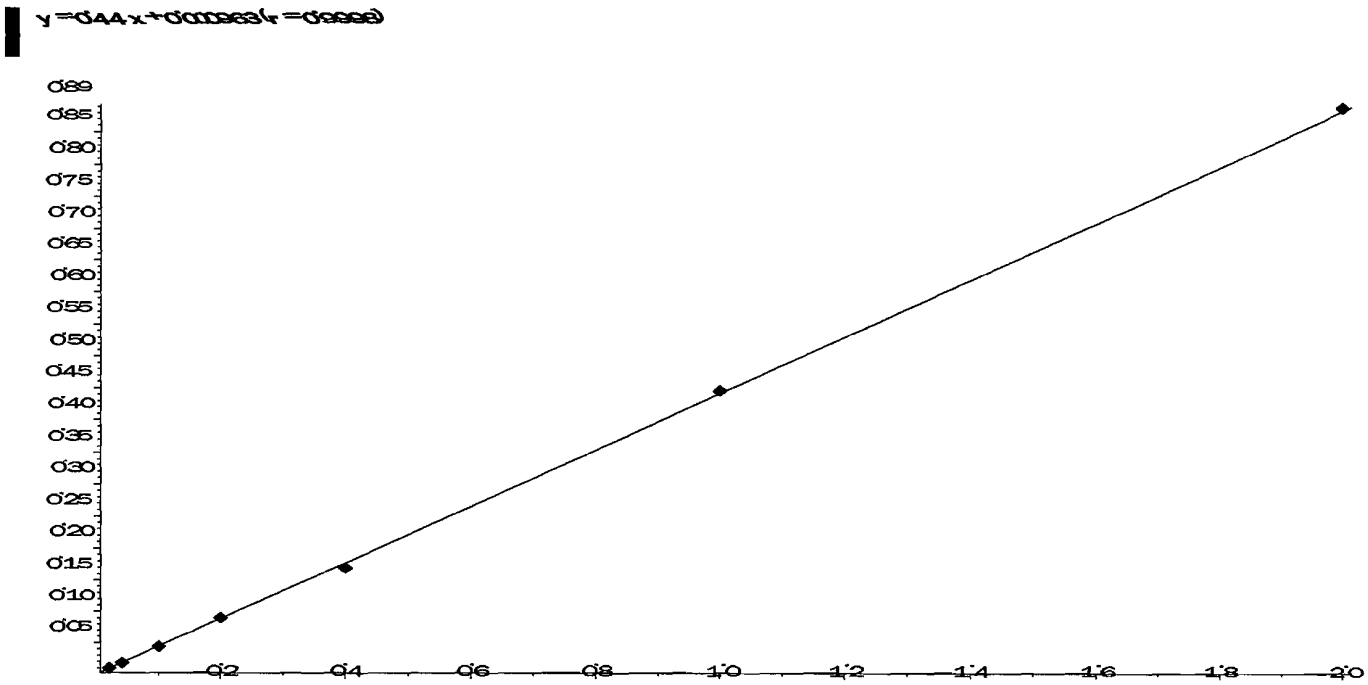

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Data File	LM27604.wiff	**Result Table**	022015_JWR.rdb
Acquisition Date	11/17/2014 1:00:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG501146-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM27604.wiff	**Injection Volume**	10.00
Acquisition Date	11/17/2014 1:00:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022015_JWR.rdb
Sample ID	WG501146-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.220e+05	10.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.110e+04	10.30	0.10	0.114
Perchlorate conf	3.370e+03	10.30	0.10	0.108

O18LP (Internal Standard)

RT (Exp. RT): 10.30(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

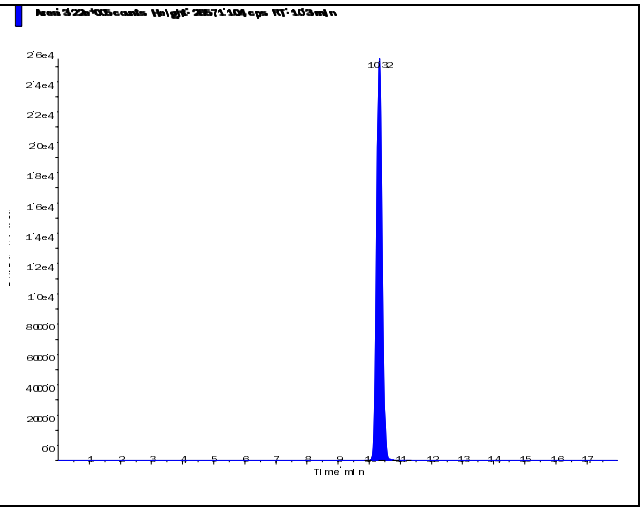

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.30 (10.30) min Calculated conc: 0.114 ng/ml Area Ratio: 0.034 Sample Type: (Standard)	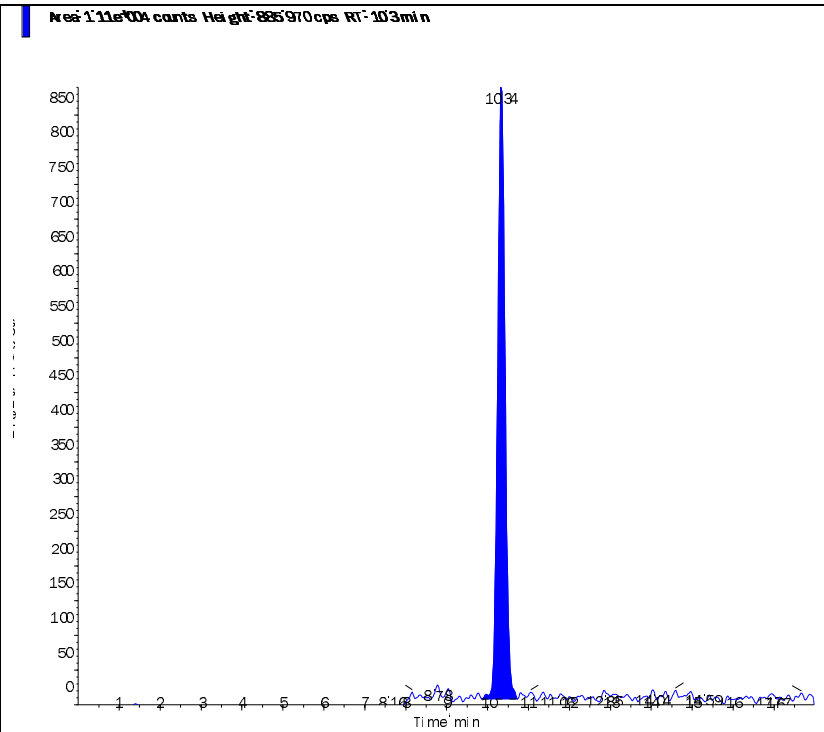
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 10.30 (10.30) min Calculated conc: 0.108 ng/ml Area Ratio: 0.01 Sample Type: (Standard)	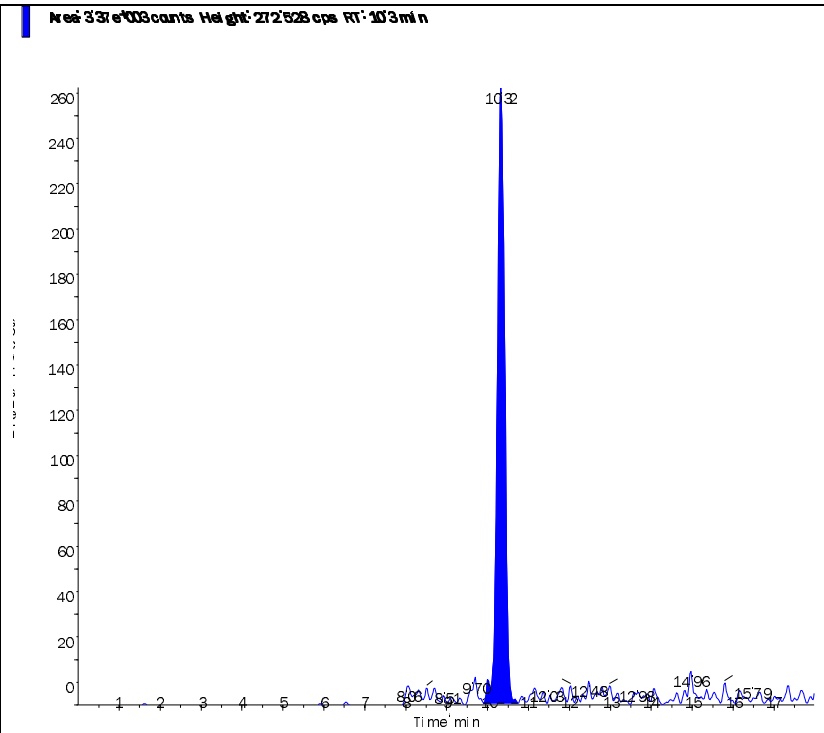

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Data File	LM27605.wiff	**Result Table**	022015_JWR.rdb
Acquisition Date	11/17/2014 1:19:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG501146-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM27605.wiff	**Injection Volume**	10.00
Acquisition Date	11/17/2014 1:19:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022015_JWR.rdb
Sample ID	WG501146-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.220e+05	10.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.730e+04	10.30	0.20	0.186
Perchlorate conf	5.740e+03	10.30	0.20	0.191

O18LP (Internal Standard)

RT (Exp. RT): 10.30(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

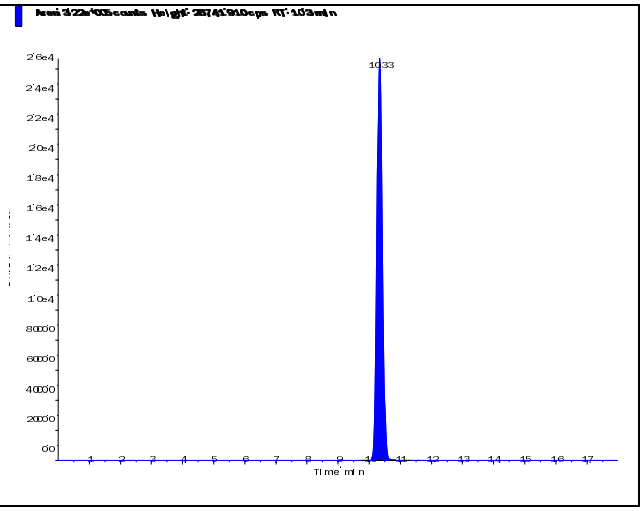

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.30 (10.30) min
Calculated conc:	0.186 ng/ml
Area Ratio:	0.054
Sample Type:	(Standard)

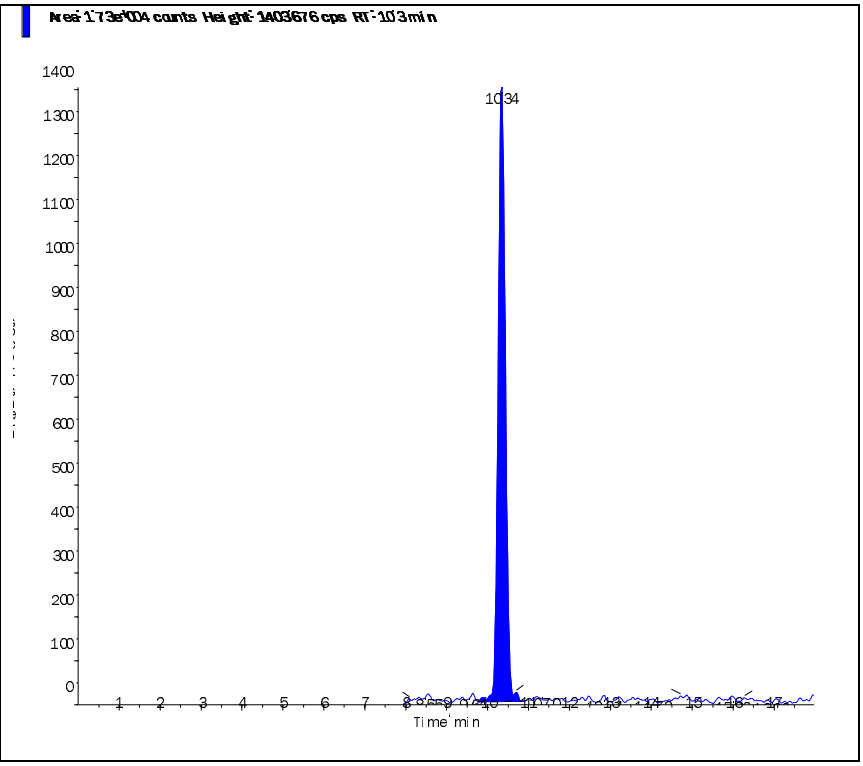

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.30 (10.30) min
Calculated conc:	0.191 ng/ml
Area Ratio:	0.018
Sample Type:	(Standard)

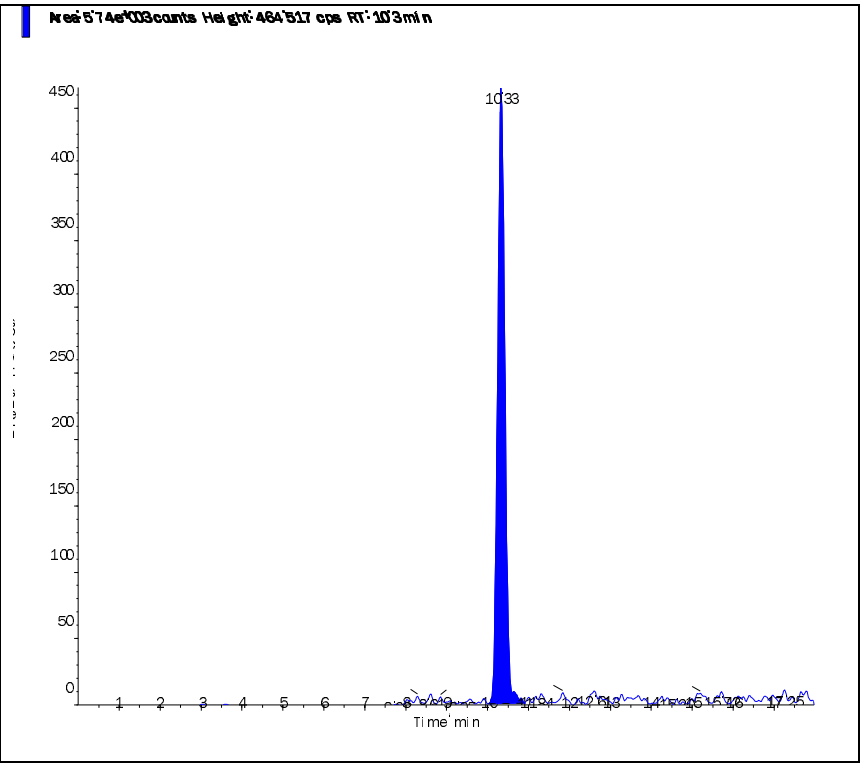

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Data File	LM27606.wiff	**Result Table**	022015_JWR.rdb
Acquisition Date	11/17/2014 1:38:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG501146-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM27606.wiff	**Injection Volume**	10.00
Acquisition Date	11/17/2014 1:38:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022015_JWR.rdb
Sample ID	WG501146-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.290e+05	10.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.410e+04	10.30	0.50	0.487
Perchlorate conf	1.460e+04	10.30	0.50	0.492

O18LP (Internal Standard)

RT (Exp. RT): 10.30(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

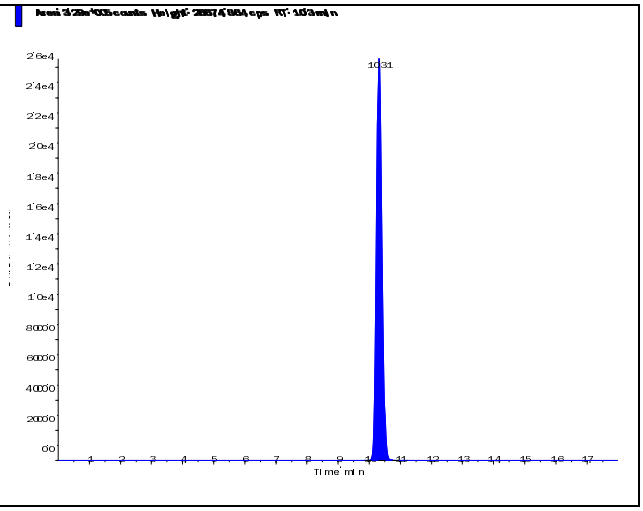

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.30 (10.30) min
Calculated conc:	0.487 ng/ml
Area Ratio:	0.134
Sample Type:	(Standard)

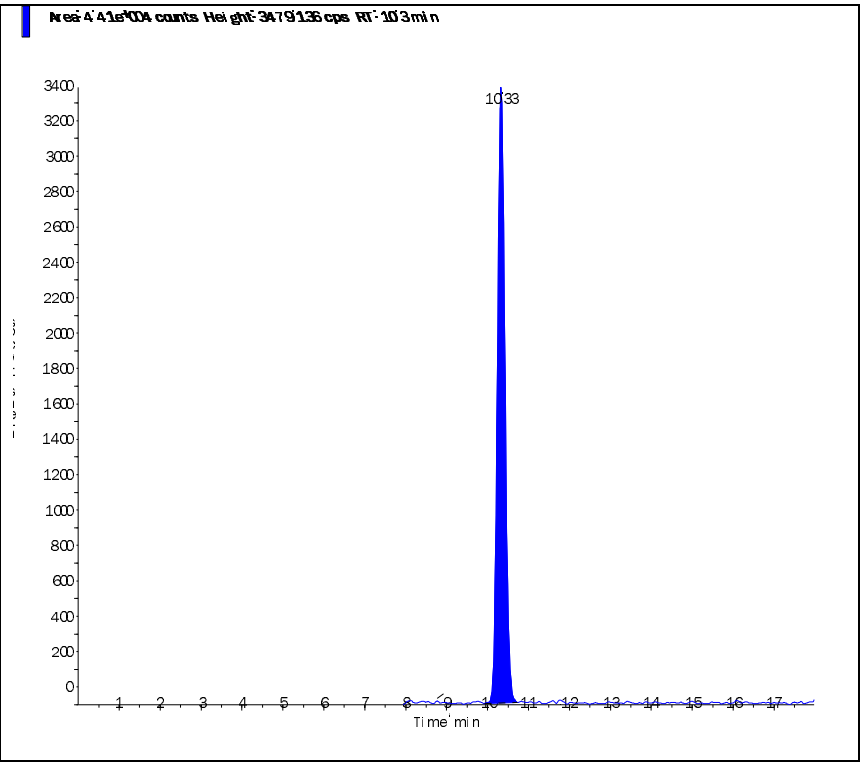

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.30 (10.30) min
Calculated conc:	0.492 ng/ml
Area Ratio:	0.044
Sample Type:	(Standard)

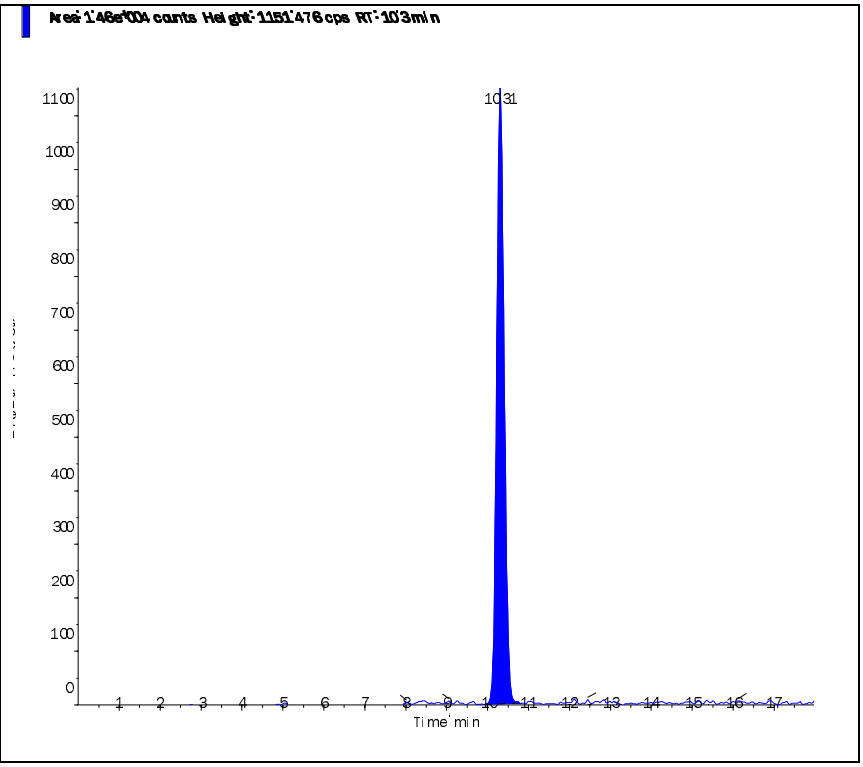

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Data File	LM27607.wiff	**Result Table**	022015_JWR.rdb
Acquisition Date	11/17/2014 1:56:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG501146-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM27607.wiff	**Injection Volume**	10.00
Acquisition Date	11/17/2014 1:56:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022015_JWR.rdb
Sample ID	WG501146-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.270e+05	10.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.440e+04	10.30	1.00	0.952
Perchlorate conf	2.940e+04	10.30	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 10.30(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

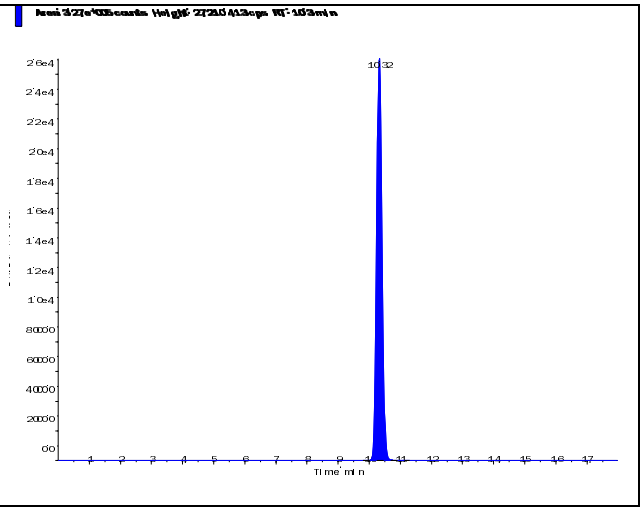

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.30 (10.30) min
Calculated conc:	0.952 ng/ml
Area Ratio:	0.258
Sample Type:	(Standard)

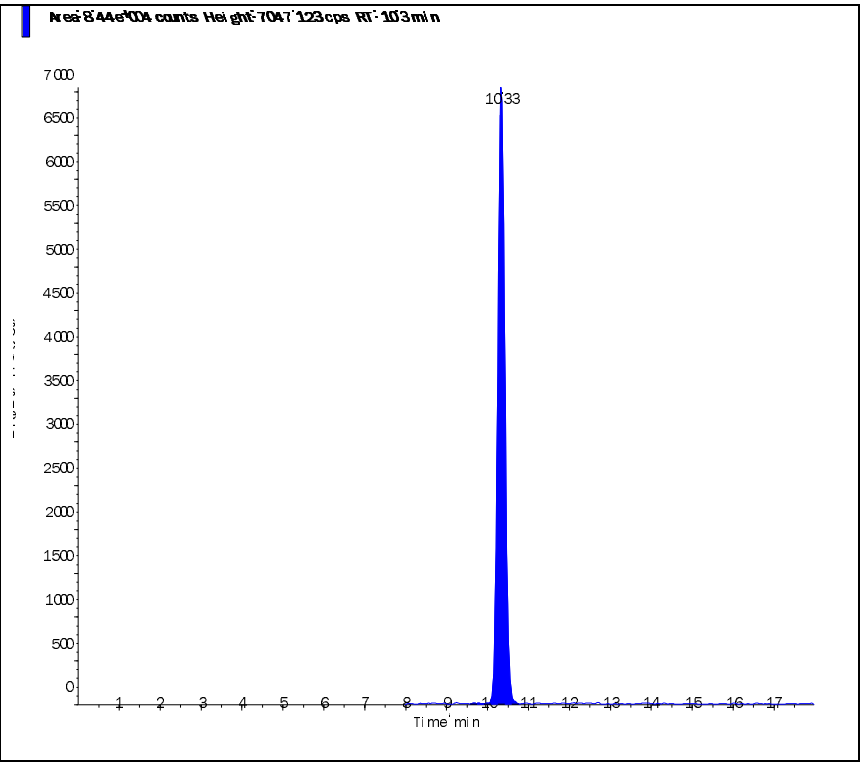

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.30 (10.30) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.09
Sample Type:	(Standard)

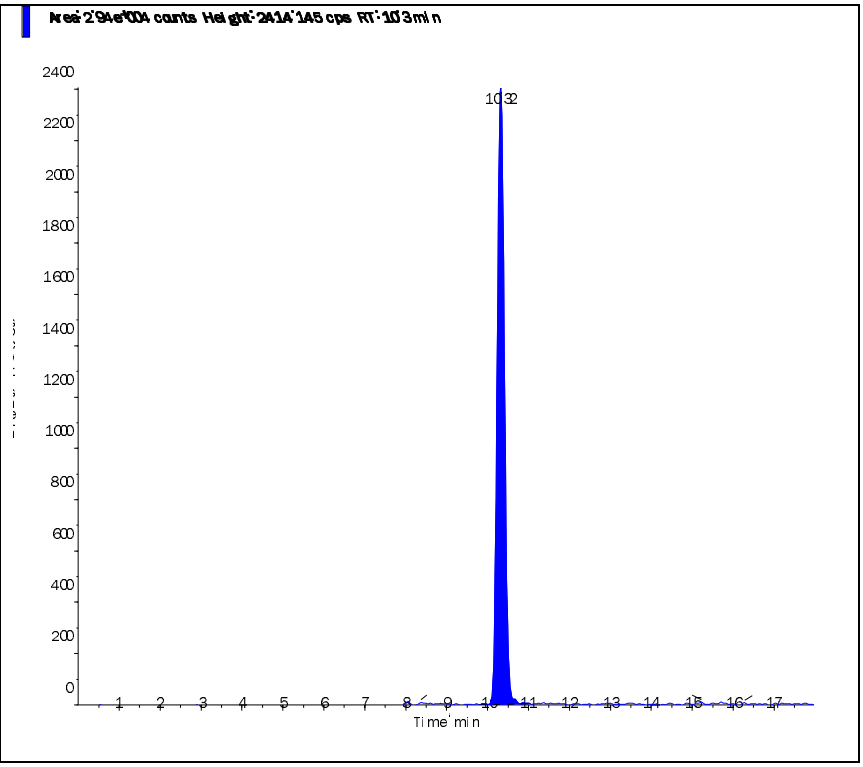

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Data File	LM27608.wiff	**Result Table**	022015_JWR.rdb
Acquisition Date	11/17/2014 2:15:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG501146-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM27608.wiff	**Injection Volume**	10.00
Acquisition Date	11/17/2014 2:15:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022015_JWR.rdb
Sample ID	WG501146-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.230e+05	10.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.730e+05	10.30	2.00	1.99
Perchlorate conf	5.470e+04	10.30	2.00	1.91

O18LP (Internal Standard)

RT (Exp. RT): 10.30(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

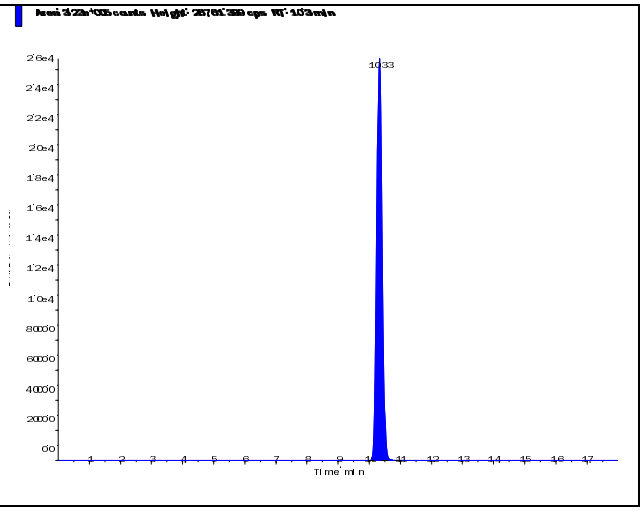

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.30 (10.30) min
Calculated conc:	1.99 ng/ml
Area Ratio:	0.535
Sample Type:	(Standard)

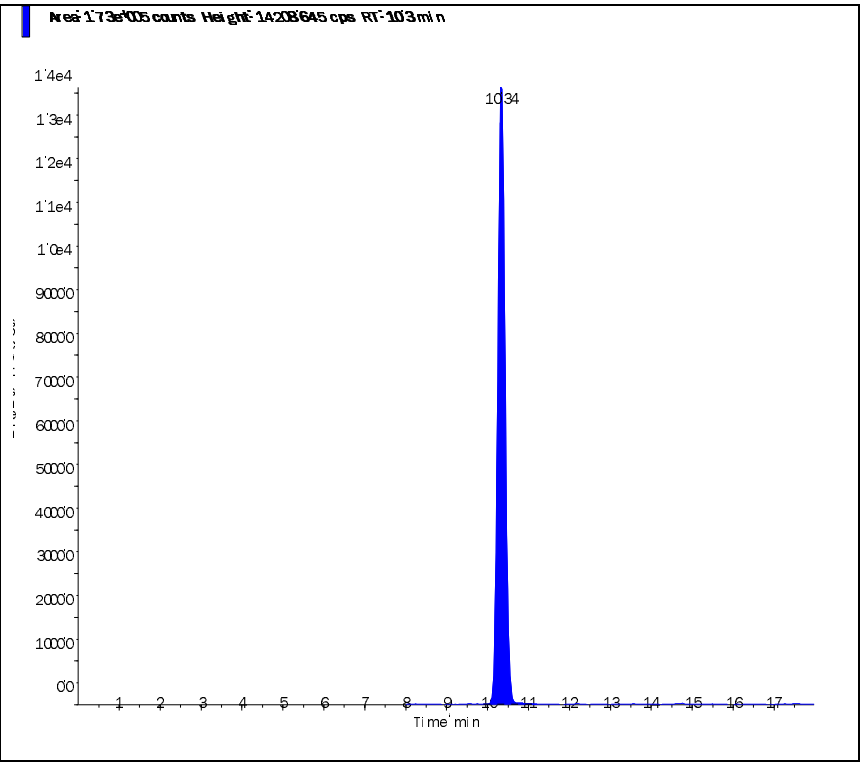

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.30 (10.30) min
Calculated conc:	1.91 ng/ml
Area Ratio:	0.169
Sample Type:	(Standard)

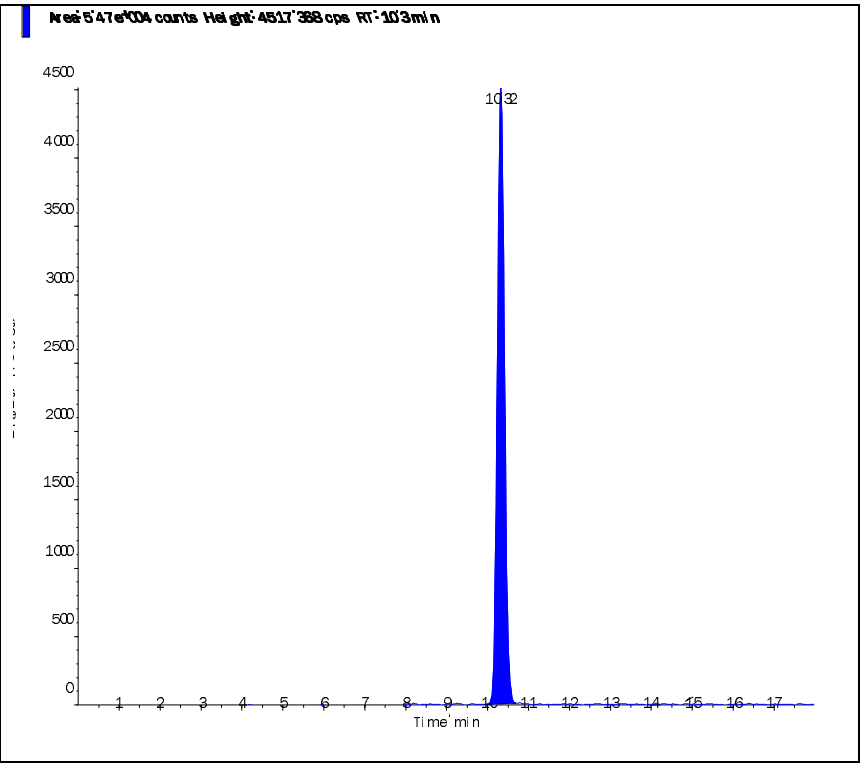

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Data File	LM27609.wiff	**Result Table**	022015_JWR.rdb
Acquisition Date	11/17/2014 2:34:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG501146-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM27609.wiff	**Injection Volume**	10.00
Acquisition Date	11/17/2014 2:34:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022015_JWR.rdb
Sample ID	WG501146-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.140e+05	10.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.200e+05	10.30	5.00	4.99
Perchlorate conf	1.400e+05	10.30	5.00	5.04

O18LP (Internal Standard)

RT (Exp. RT): 10.30(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

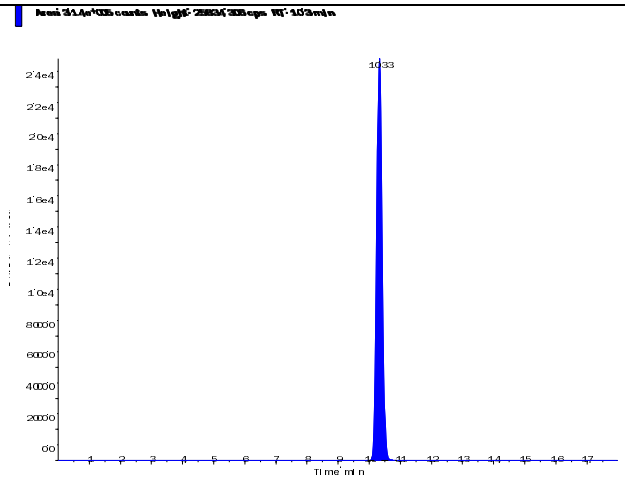

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.30 (10.30) min
Calculated conc:	4.99 ng/ml
Area Ratio:	1.337
Sample Type:	(Standard)

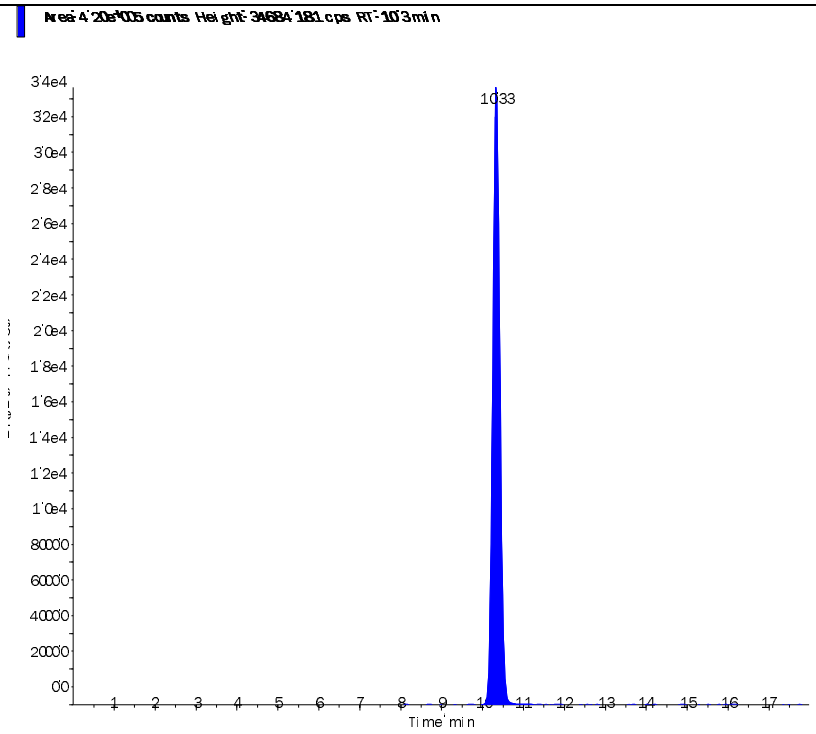

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.30 (10.30) min
Calculated conc:	5.04 ng/ml
Area Ratio:	0.445
Sample Type:	(Standard)

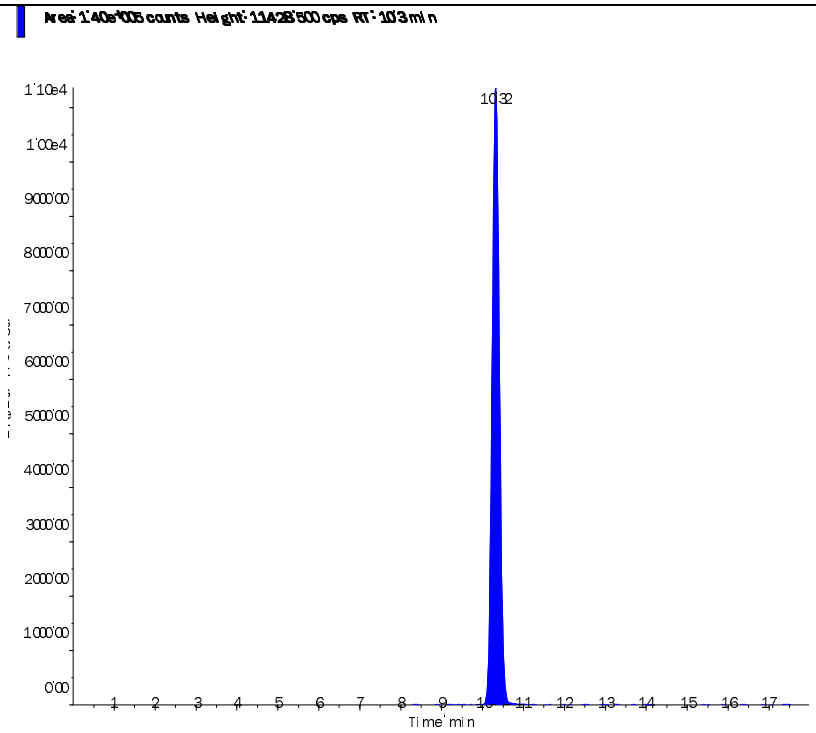

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Data File	LM27610.wiff	**Result Table**	022015_JWR.rdb
Acquisition Date	11/17/2014 2:53:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG501146-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM27610.wiff	**Injection Volume**	10.00
Acquisition Date	11/17/2014 2:53:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022015_JWR.rdb
Sample ID	WG501146-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.120e+05	10.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.410e+05	10.30	10.00	10.10
Perchlorate conf	2.760e+05	10.30	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 10.30(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

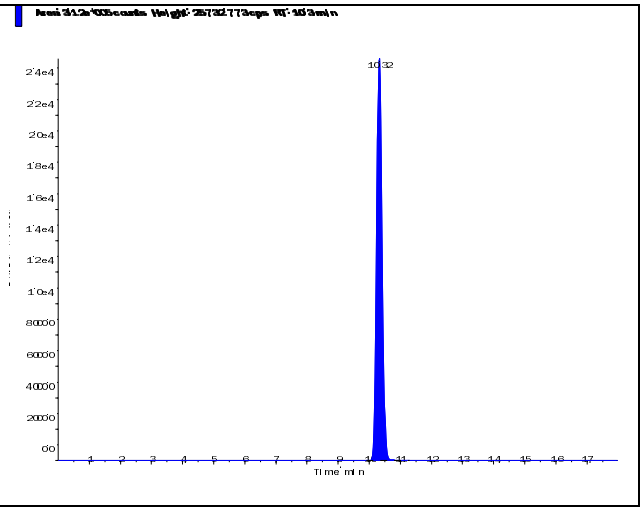

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.30 (10.30) min Calculated conc: 10.10 ng/ml Area Ratio: 2.694 Sample Type: (Standard)	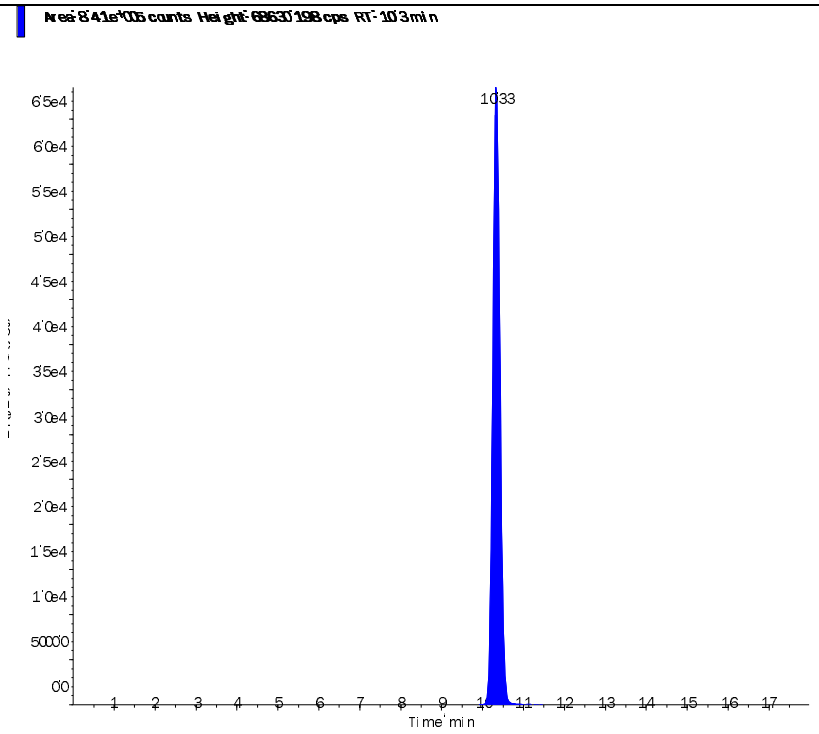
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 10.30 (10.30) min Calculated conc: 10.00 ng/ml Area Ratio: 0.886 Sample Type: (Standard)	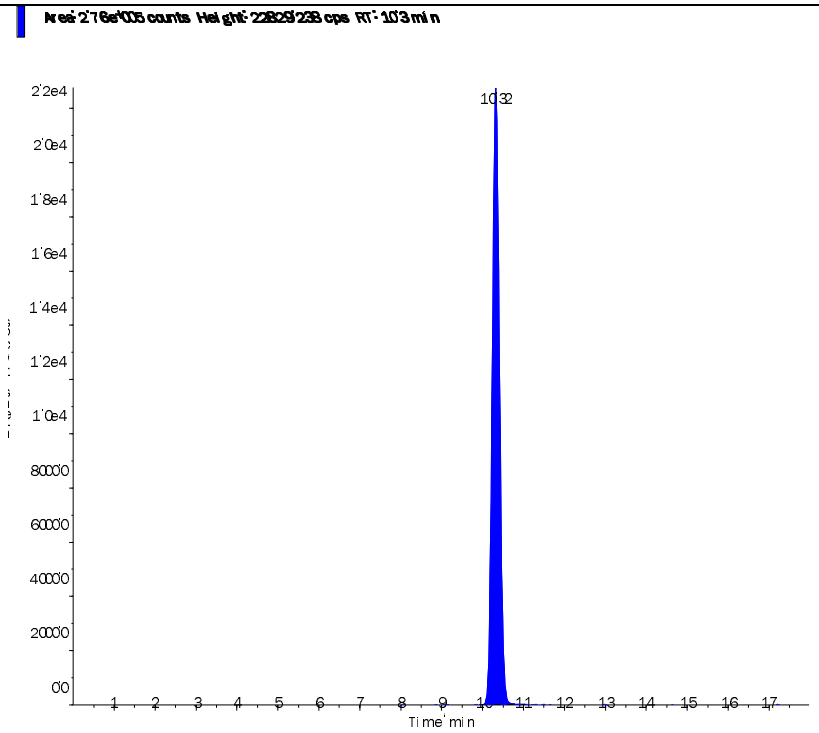

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Data File	LM27611.wiff	**Result Table**	111714_ADC.rdb
Acquisition Date	11/17/2014 3:12:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG501146-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM27611.wiff	**Injection Volume**	10.00
Acquisition Date	11/17/2014 3:12:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	111714_ADC.rdb
Sample ID	WG501146-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD67082	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.260e+05	10.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.880e+04	10.30	1.00	1.01
Perchlorate conf	2.940e+04	10.30	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 10.30(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

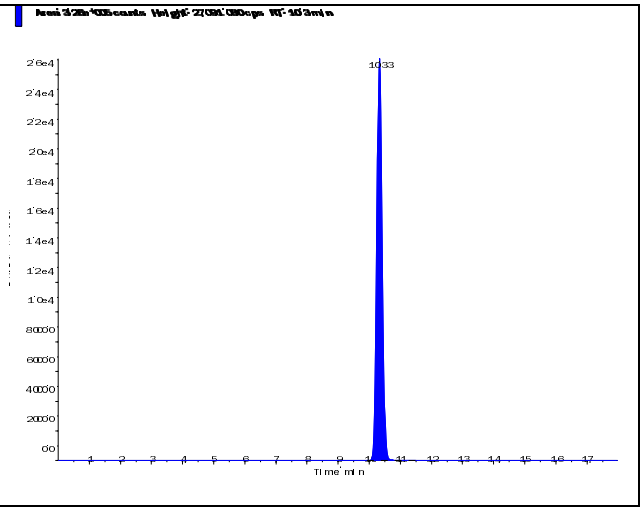

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.30 (10.30) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.272
Sample Type:	(Quality Control)

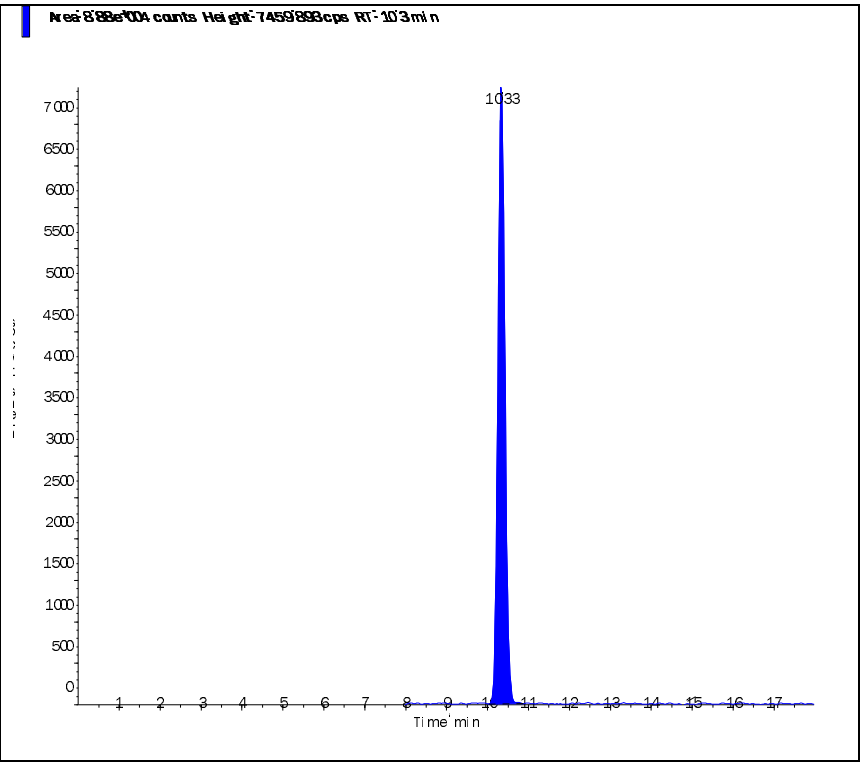

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.30 (10.30) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.09
Sample Type:	(Quality Control)

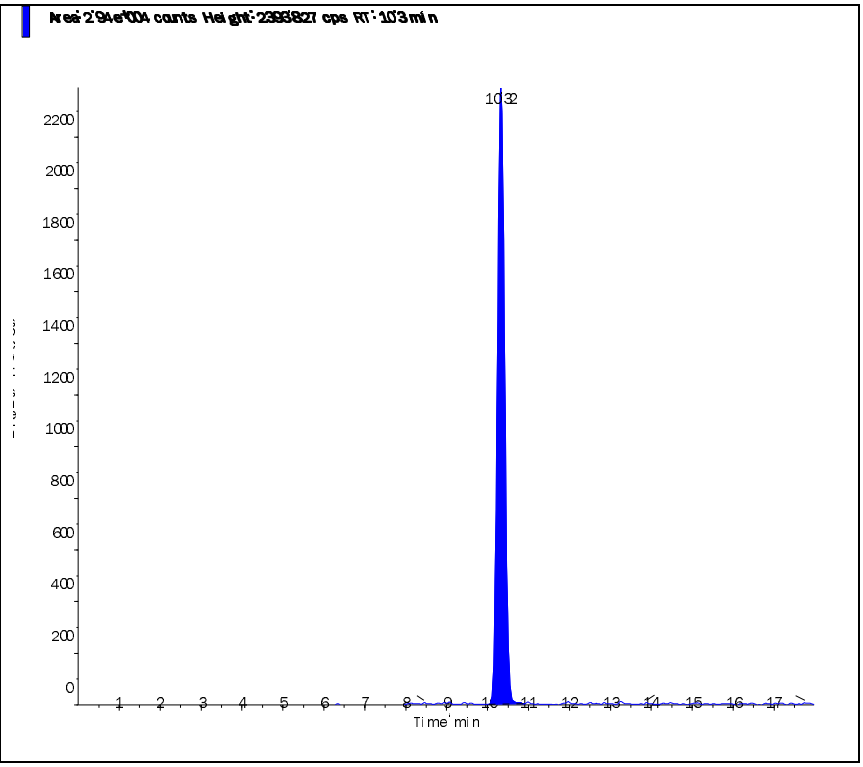

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Data File	LM29028.wiff	**Result Table**	022015_JWR.rdb
Acquisition Date	2/20/2015 6:18:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513052-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM29028.wiff	**Injection Volume**	10.00
Acquisition Date	2/20/2015 6:18:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022015_JWR.rdb
Sample ID	WG513052-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.190e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.770e+04	9.98	1.00	1.01
Perchlorate conf	2.900e+04	9.96	1.00	1.02

O18LP (Internal Standard)

RT (Exp. RT): 9.96(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

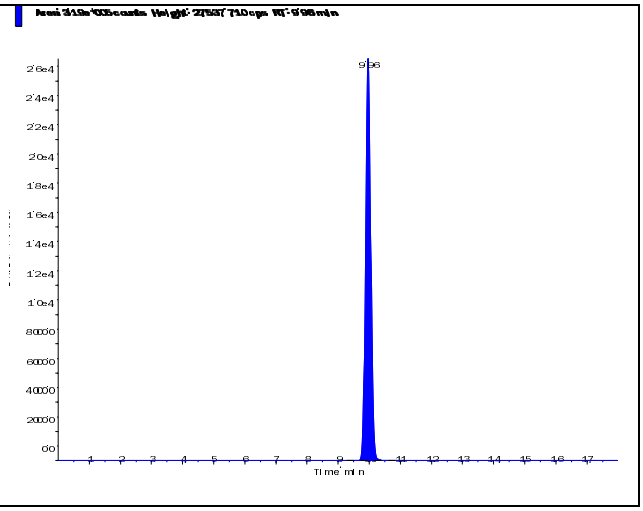

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.98 (10.30) min Calculated conc: 1.01 ng/ml Area Ratio: 0.275 Sample Type: (Quality Control)	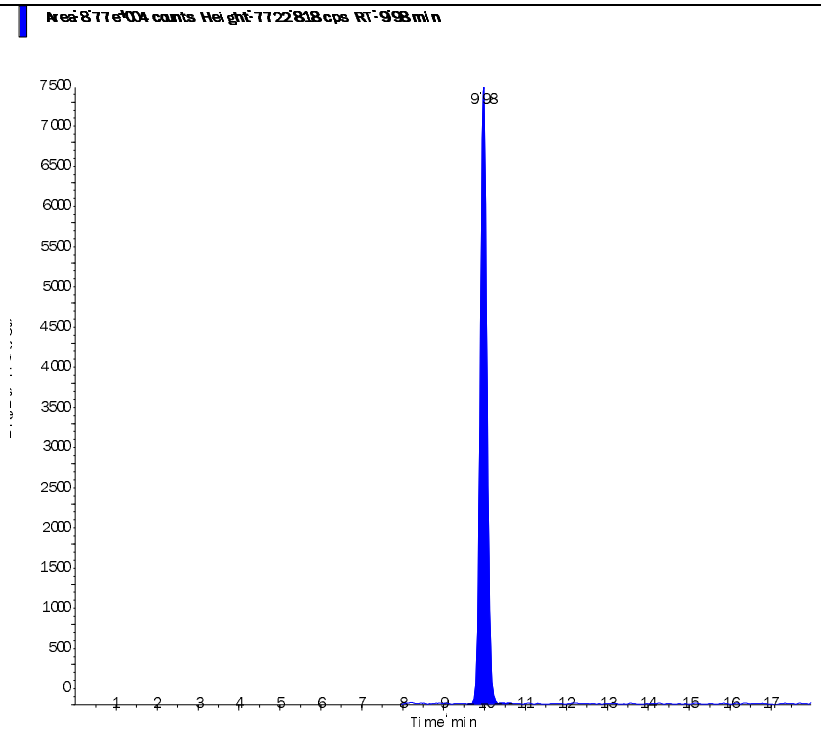
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.96 (10.30) min Calculated conc: 1.02 ng/ml Area Ratio: 0.091 Sample Type: (Quality Control)	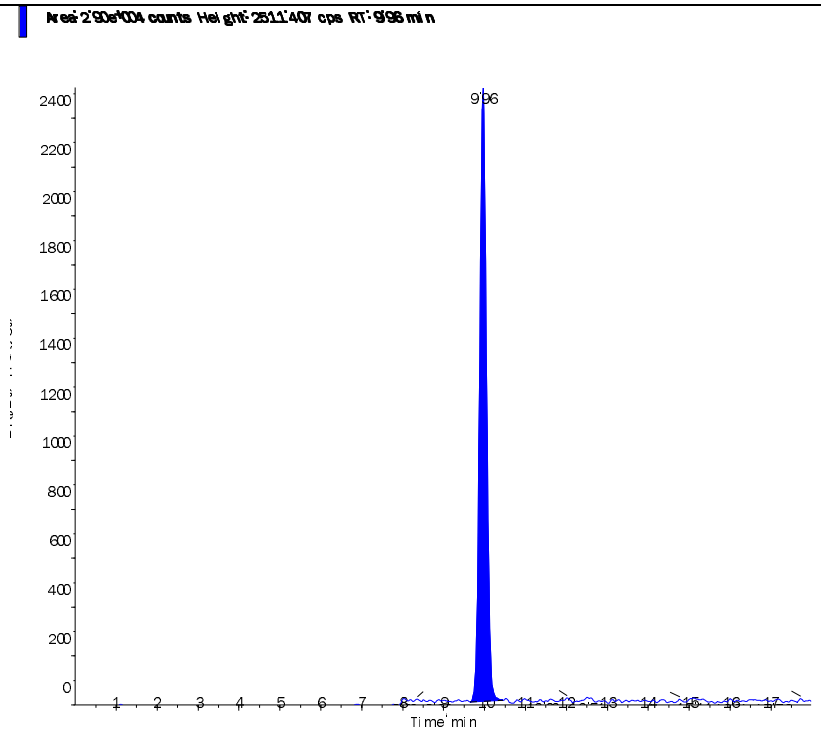

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Data File	LM29040.wiff	**Result Table**	022015_JWR.rdb
Acquisition Date	2/20/2015 10:05:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513052-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM29040.wiff	**Injection Volume**	10.00
Acquisition Date	2/20/2015 10:05:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022015_JWR.rdb
Sample ID	WG513052-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.210e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.640e+04	9.97	1.00	0.992
Perchlorate conf	2.820e+04	9.95	1.00	0.985

O18LP (Internal Standard)

RT (Exp. RT): 9.95(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

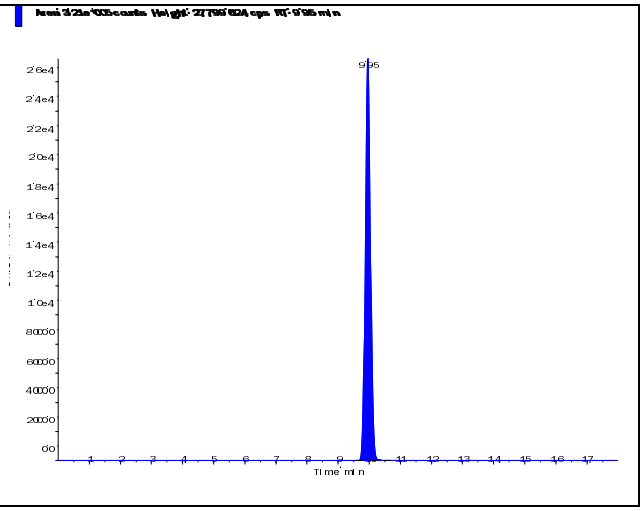

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.97 (10.30) min
Calculated conc:	0.992 ng/ml
Area Ratio:	0.269
Sample Type:	(Quality Control)

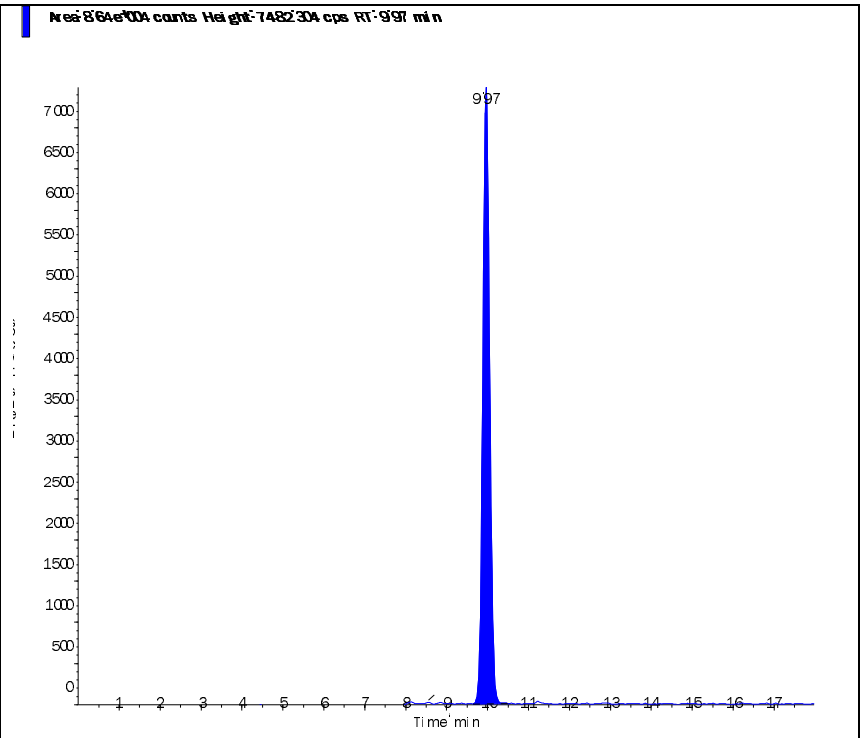

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.95 (10.30) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.088
Sample Type:	(Quality Control)

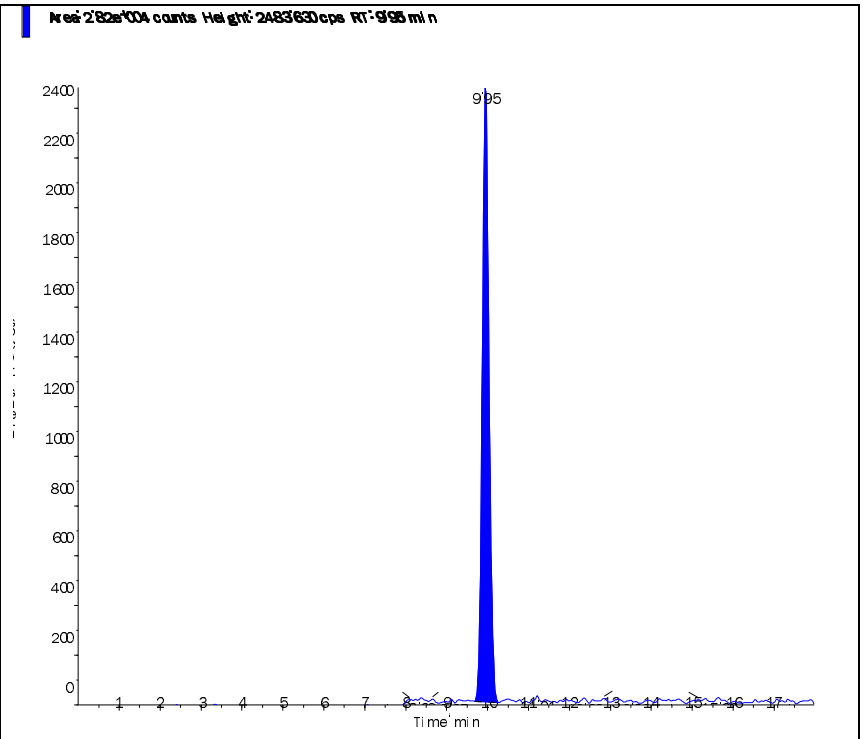

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Data File	LM29050.wiff	**Result Table**	022015_JWR.rdb
Acquisition Date	2/21/2015 1:15:10 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513052-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM29050.wiff	**Injection Volume**	10.00
Acquisition Date	2/21/2015 1:15:10 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022015_JWR.rdb
Sample ID	WG513052-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.310e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	9.160e+04	9.98	1.00	1.02
Perchlorate conf	2.870e+04	9.96	1.00	0.974

O18LP (Internal Standard)

RT (Exp. RT): 9.96(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

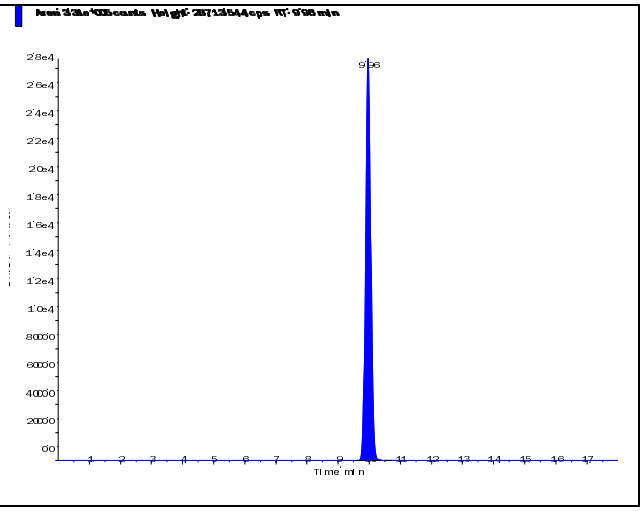

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.98 (10.30) min Calculated conc: 1.02 ng/ml Area Ratio: 0.277 Sample Type: (Quality Control)	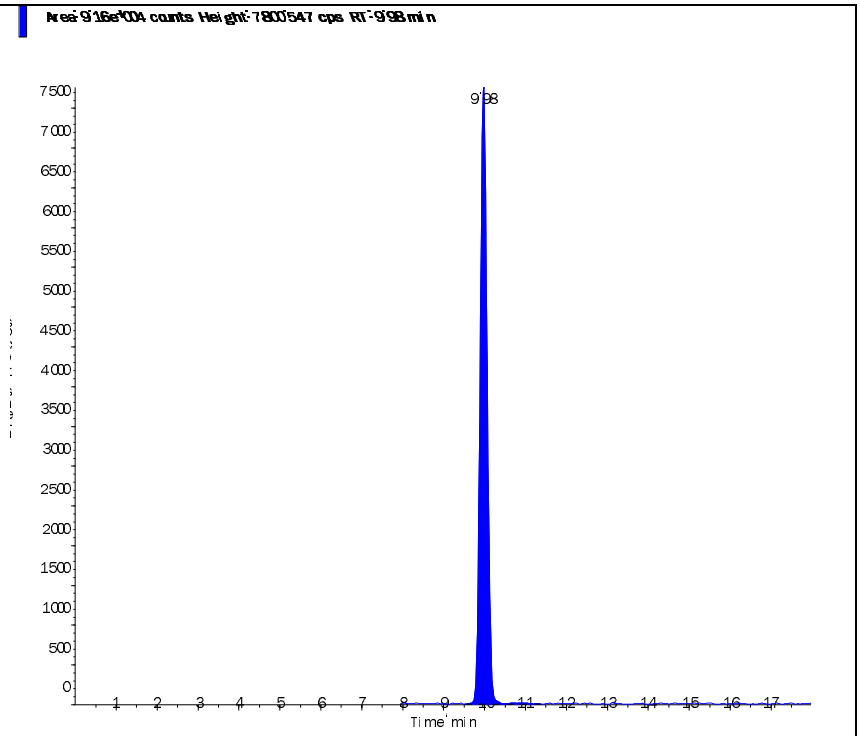
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.96 (10.30) min Calculated conc: 0.974 ng/ml Area Ratio: 0.087 Sample Type: (Quality Control)	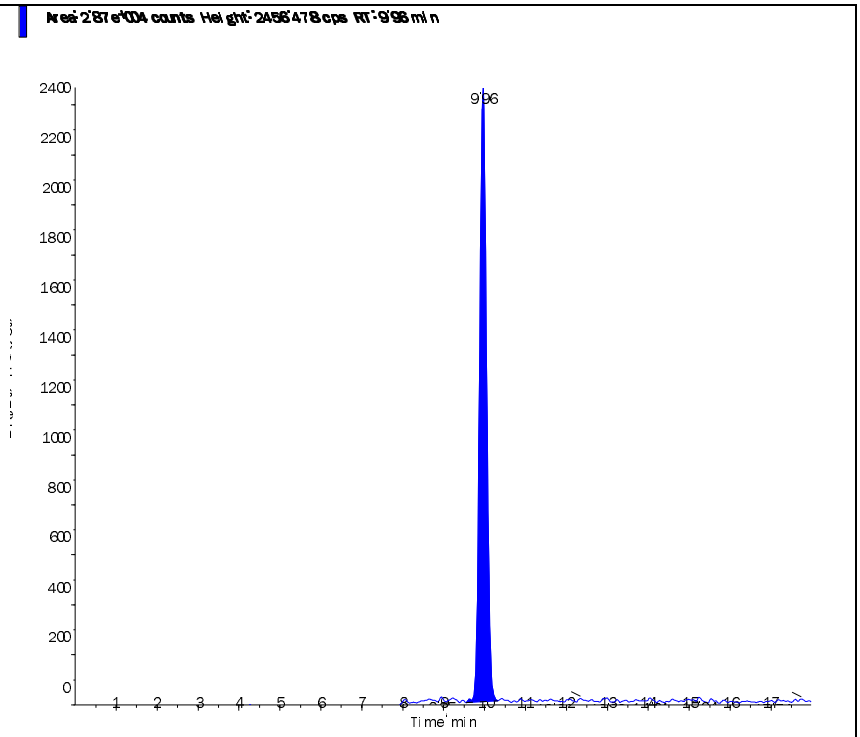

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Data File	LM29029.wiff	**Result Table**	022015_JWR.rdb
Acquisition Date	2/20/2015 6:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513051-05 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM29029.wiff	**Injection Volume**	10.00
Acquisition Date	2/20/2015 6:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022015_JWR.rdb
Sample ID	WG513051-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.150e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.800e+04	9.96	N/A	0.20
Perchlorate conf	5.970e+03	9.94	N/A	0.205

O18LP (Internal Standard)

RT (Exp. RT): 9.93(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

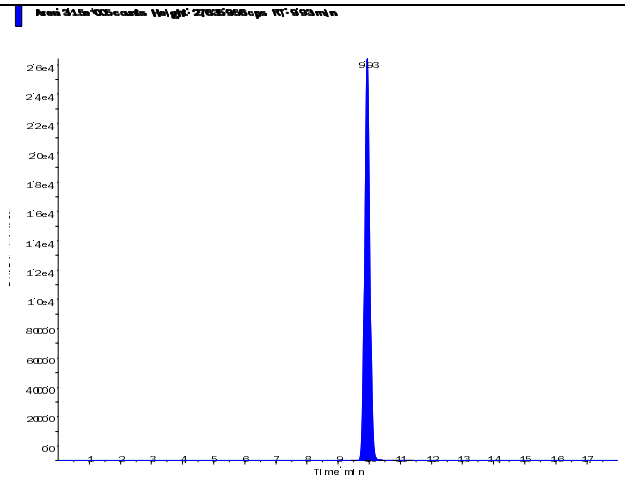

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (10.30) min
Calculated conc:	0.20 ng/ml
Area Ratio:	0.057
Sample Type:	(Unknown)

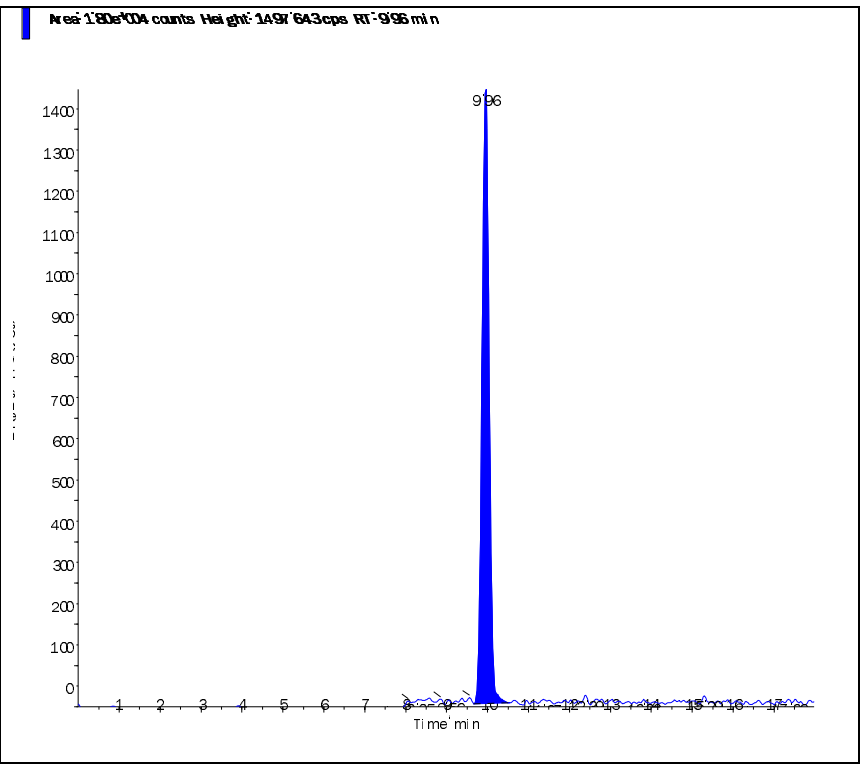

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (10.30) min
Calculated conc:	0.205 ng/ml
Area Ratio:	0.019
Sample Type:	(Unknown)

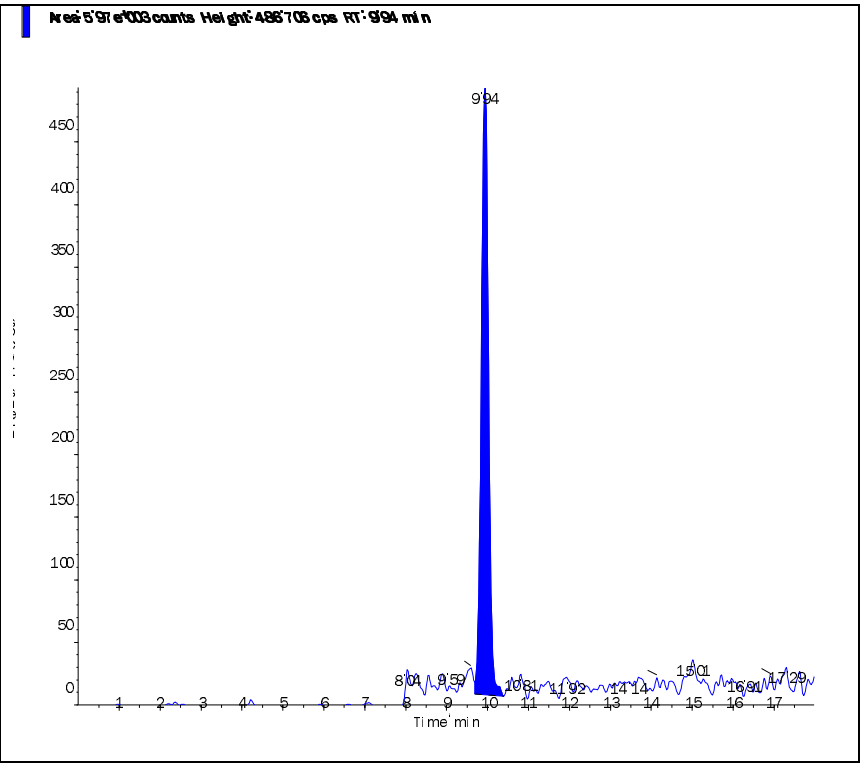

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Data File	LM29041.wiff	**Result Table**	022015_JWR.rdb
Acquisition Date	2/20/2015 10:24:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513051-06 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM29041.wiff	**Injection Volume**	10.00
Acquisition Date	2/20/2015 10:24:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022015_JWR.rdb
Sample ID	WG513051-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.160e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.900e+04	9.96	N/A	0.21
Perchlorate conf	5.680e+03	9.94	N/A	0.193

O18LP (Internal Standard)

RT (Exp. RT): 9.95(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

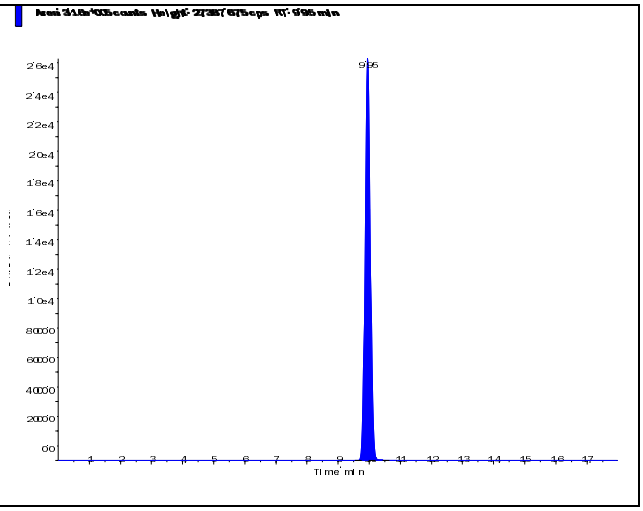

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (10.30) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.06
Sample Type:	(Unknown)

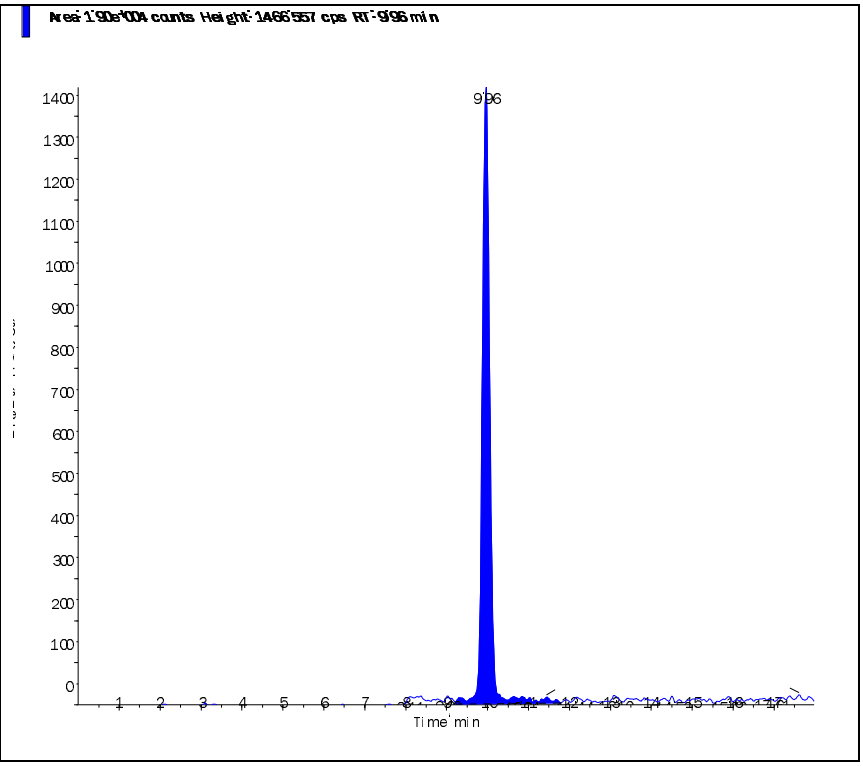

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (10.30) min
Calculated conc:	0.193 ng/ml
Area Ratio:	0.018
Sample Type:	(Unknown)

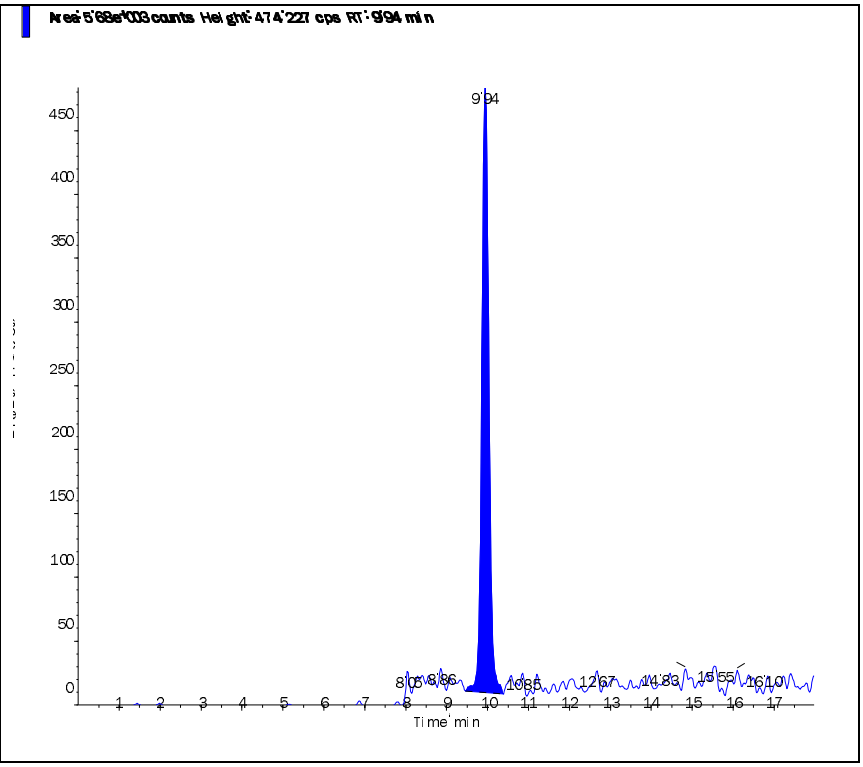

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Data File	LM29051.wiff	**Result Table**	022015_JWR.rdb
Acquisition Date	2/21/2015 1:34:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513051-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM29051.wiff	**Injection Volume**	10.00
Acquisition Date	2/21/2015 1:34:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022015_JWR.rdb
Sample ID	WG513051-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.050e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.720e+04	9.95	N/A	0.197
Perchlorate conf	5.710e+03	9.94	N/A	0.202

O18LP (Internal Standard)

RT (Exp. RT): 9.95(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

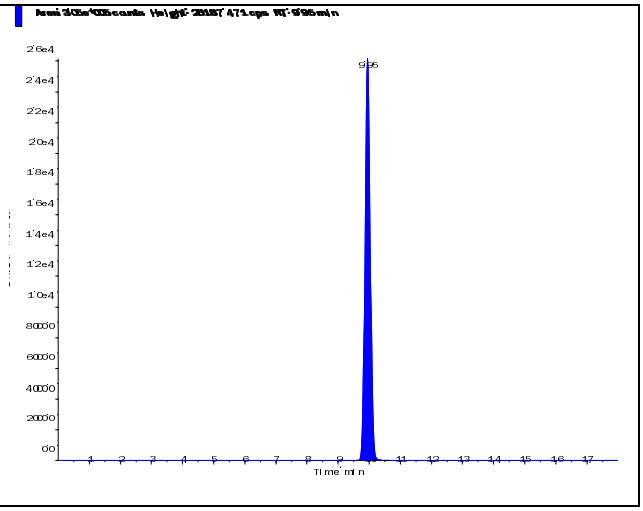

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (10.30) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.057
Sample Type:	(Unknown)

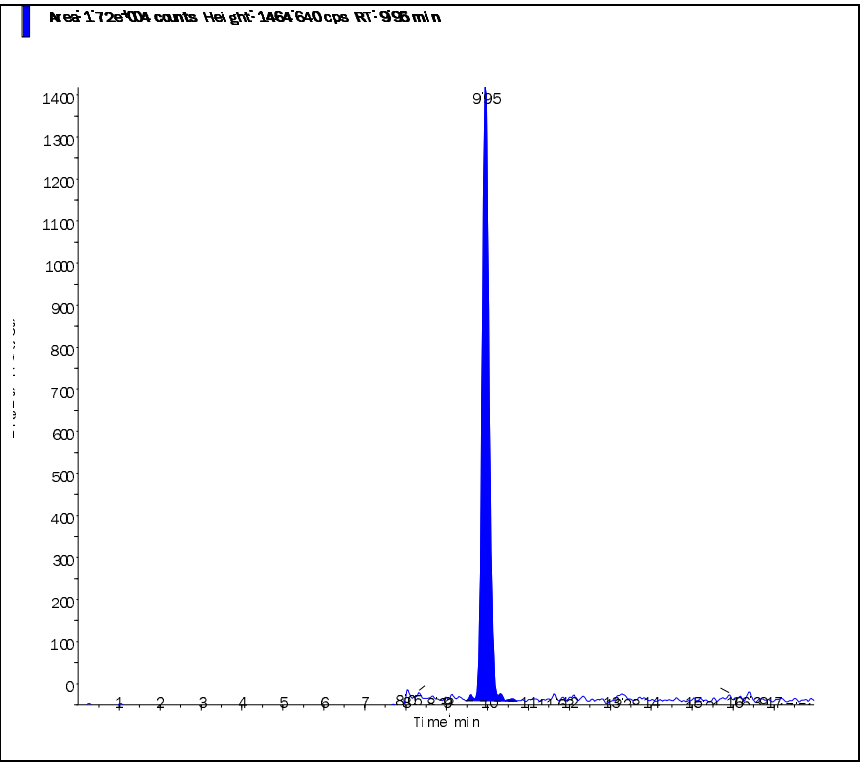

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (10.30) min
Calculated conc:	0.202 ng/ml
Area Ratio:	0.019
Sample Type:	(Unknown)

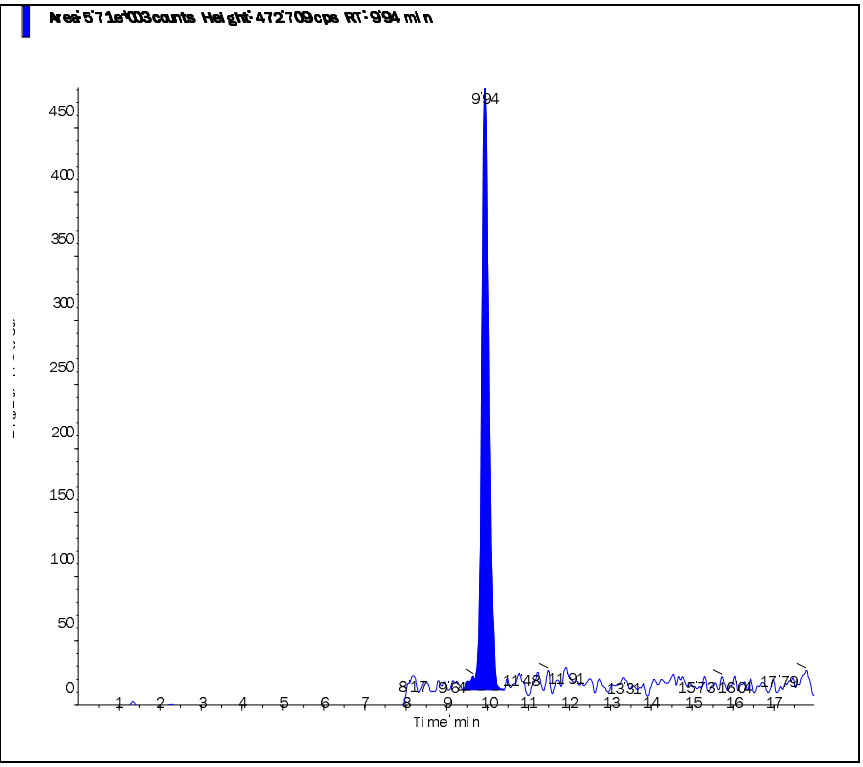

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Data File	LM29027.wiff	**Result Table**	022015_JWR.rdb
Acquisition Date	2/20/2015 5:59:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513052-01 CCB	**Injection Vial**	1.00
Data File	LM29027.wiff	**Injection Volume**	10.00
Acquisition Date	2/20/2015 5:59:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022015_JWR.rdb
Sample ID	WG513052-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.060e+05	10.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	3.290e+02	10.10	N/A	0.0013

O18LP (Internal Standard)

RT (Exp. RT): 10.00(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

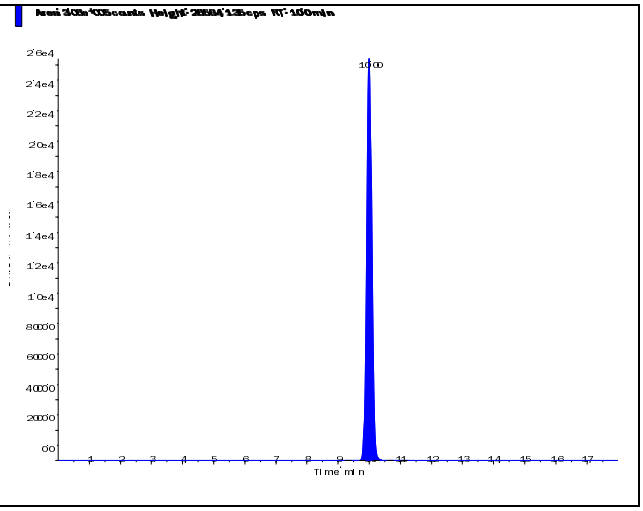

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Printed: 2/23/2015 9:45 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (10.30) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	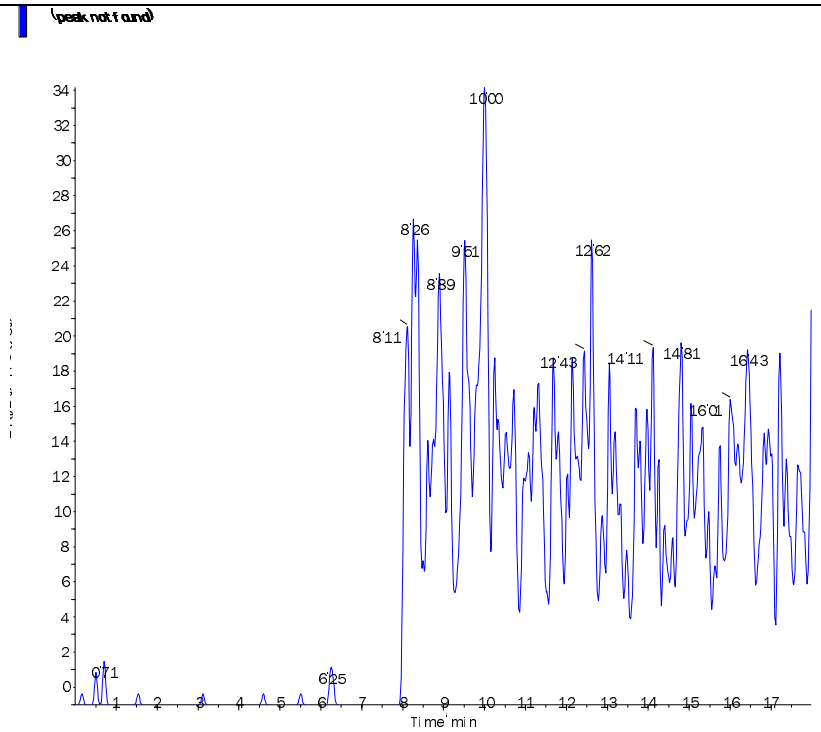
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 10.10 (10.30) min Calculated conc: 0.0013 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	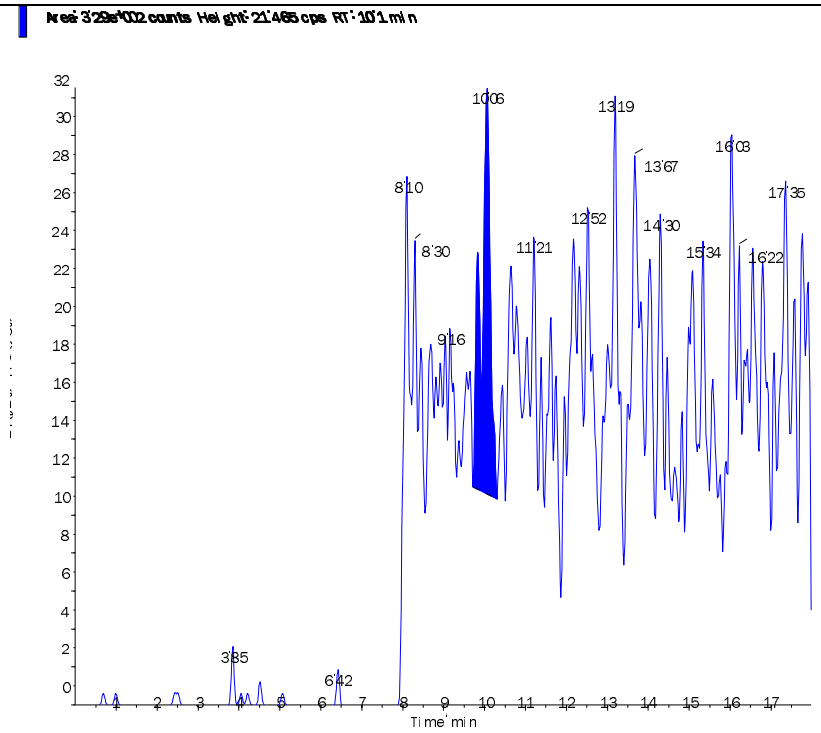

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Created with Analyst Reporter
Printed: 2/23/2015 9:50 AM

Data File	LM29042.wiff	**Result Table**	022015_JWR.rdb
Acquisition Date	2/20/2015 10:43:41 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513052-04 CCB	**Injection Vial**	1.00
Data File	LM29042.wiff	**Injection Volume**	10.00
Acquisition Date	2/20/2015 10:43:41 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022015_JWR.rdb
Sample ID	WG513052-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.050e+05	10.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	3.060e+02	10.10	N/A	0.0005

O18LP (Internal Standard)

RT (Exp. RT): 10.00(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

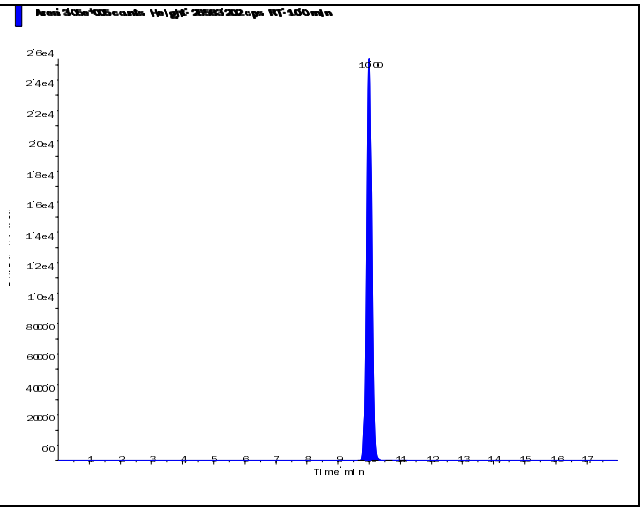

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (10.30) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	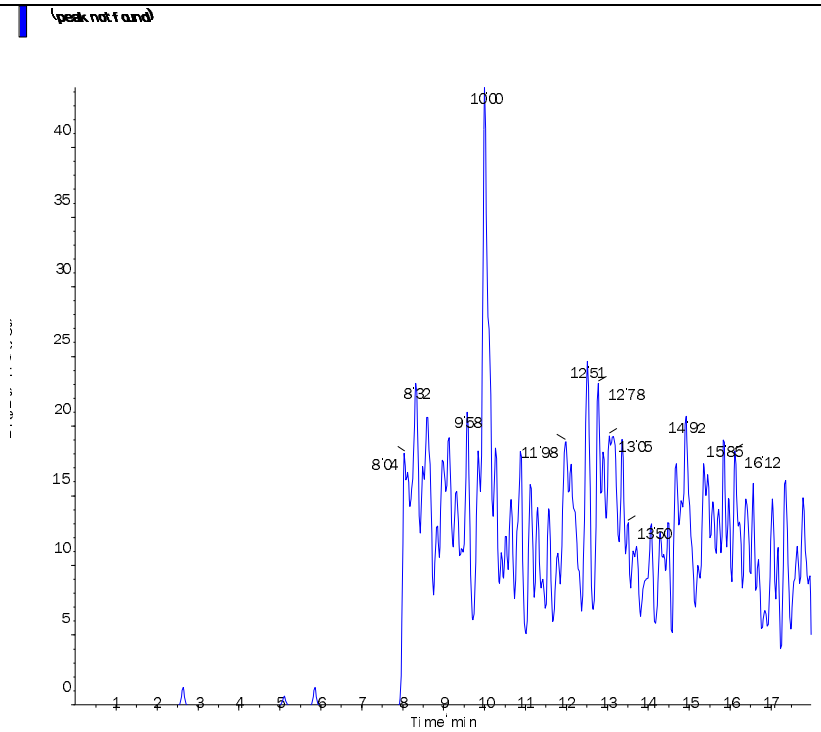
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 10.10 (10.30) min Calculated conc: 0.0005 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	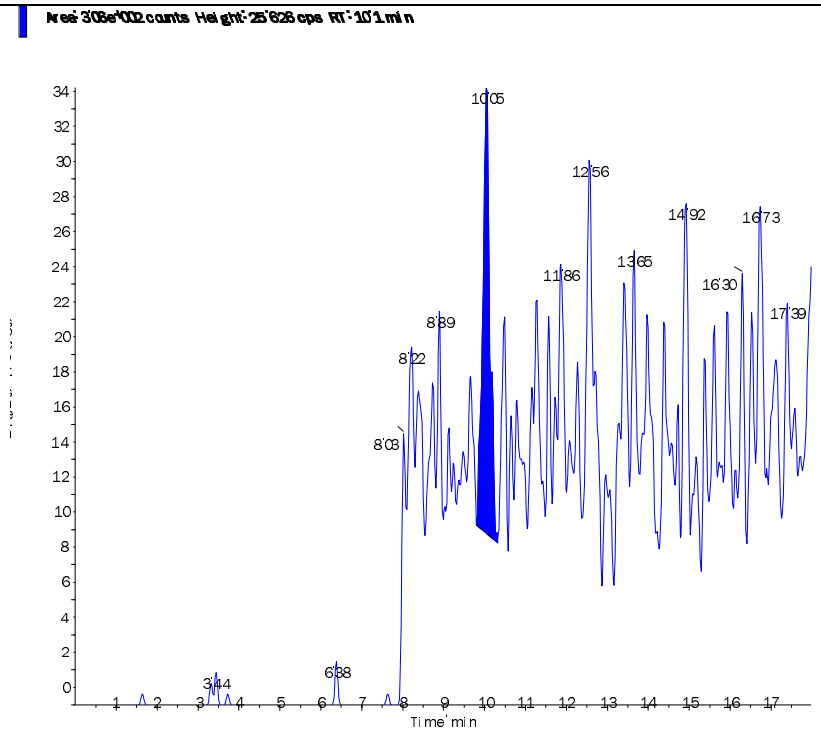

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Printed: 2/23/2015 9:53 AM

Data File	LM29052.wiff	**Result Table**	022015_JWR.rdb
Acquisition Date	2/21/2015 1:53:02 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513052-06 CCB	**Injection Vial**	1.00
Data File	LM29052.wiff	**Injection Volume**	10.00
Acquisition Date	2/21/2015 1:53:02 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022015_JWR.rdb
Sample ID	WG513052-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.070e+05	10.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.000e+02	9.99	N/A	< 0
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 10.00(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

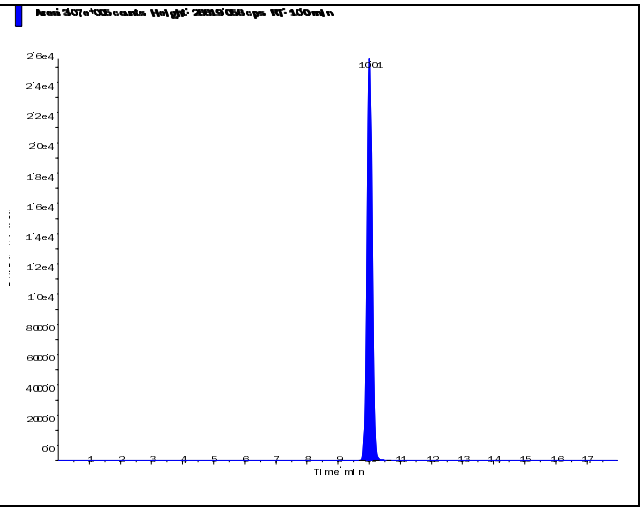

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Printed: 2/23/2015 9:53 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.99 (10.30) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.003
Sample Type:	(Unknown)

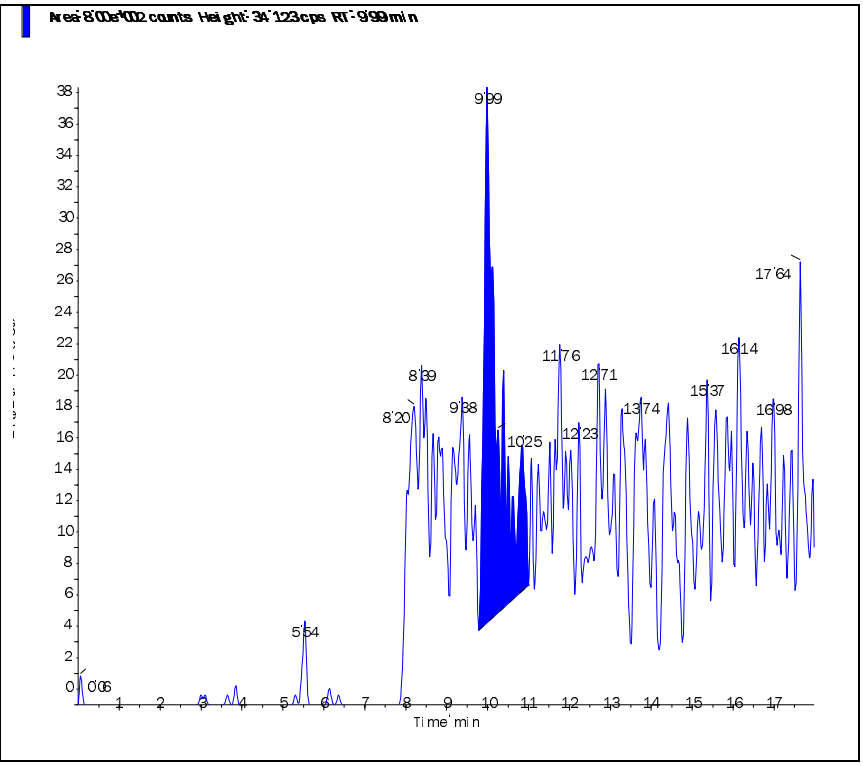

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (10.30) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

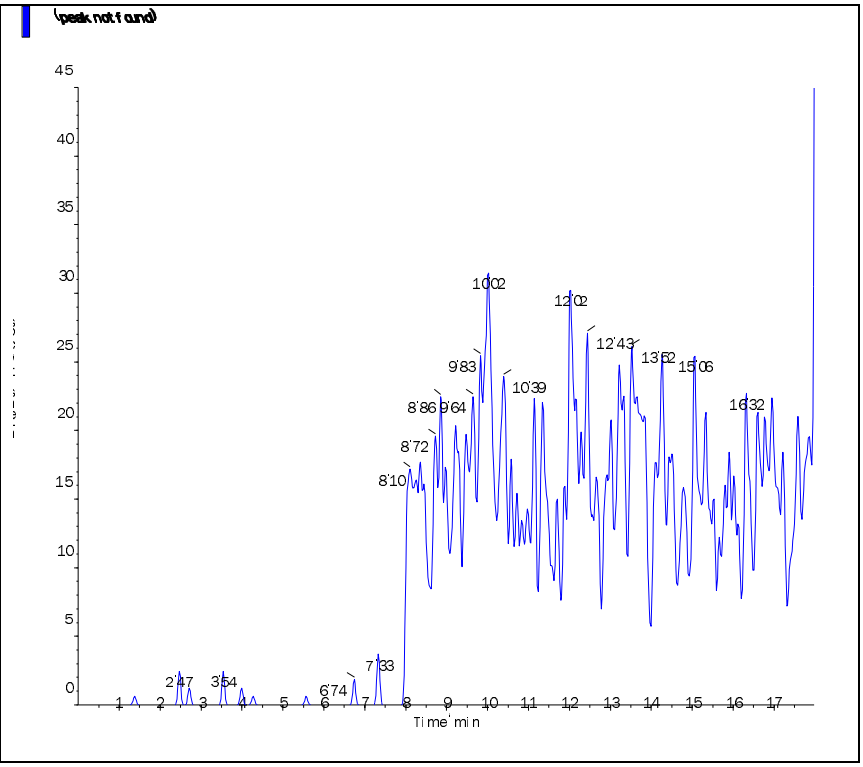

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Created with Analyst Reporter
Printed: 2/23/2015 9:46 AM

Data File	LM29030.wiff	**Result Table**	022015_JWR.rdb
Acquisition Date	2/20/2015 6:56:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513051-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM29030.wiff	**Injection Volume**	10.00
Acquisition Date	2/20/2015 6:56:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022015_JWR.rdb
Sample ID	WG513051-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.040e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.700e+04	9.40	N/A	0.194
Perchlorate conf	5.490e+03	9.39	N/A	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.39(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

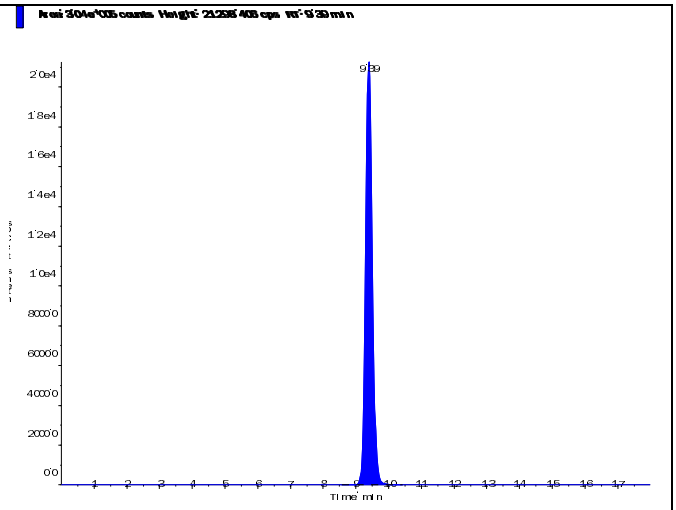

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Printed: 2/23/2015 9:46 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (10.30) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.056
Sample Type:	(Unknown)

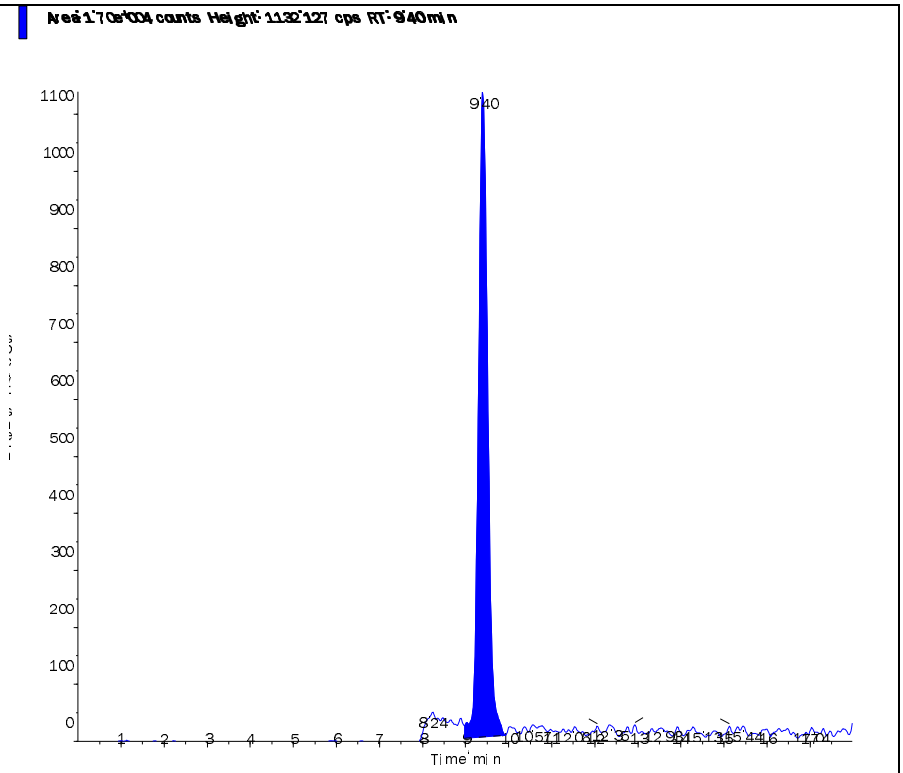

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.39 (10.30) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.018
Sample Type:	(Unknown)

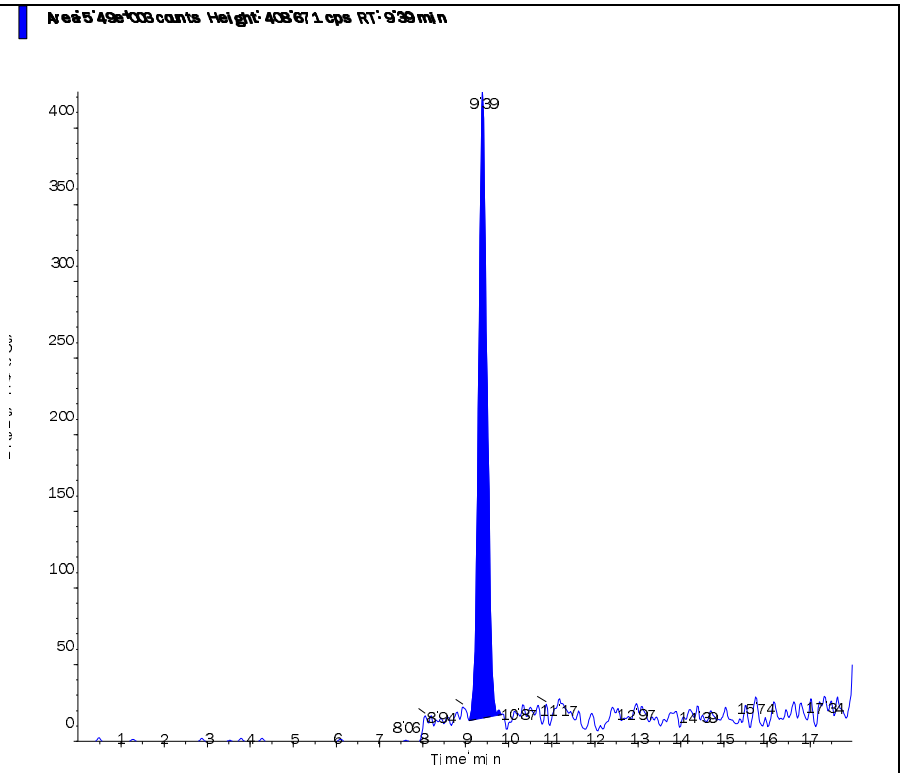

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2.2.1.5 Raw QC Data

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Created with Analyst Reporter
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Data File	LM29031.wiff	**Result Table**	022015_JWR.rdb
Acquisition Date	2/20/2015 7:15:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513051-02 BLANK	**Injection Vial**	5.00
Data File	LM29031.wiff	**Injection Volume**	10.00
Acquisition Date	2/20/2015 7:15:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022015_JWR.rdb
Sample ID	WG513051-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.970e+05	10.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	1.240e+02	9.87	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 10.00(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

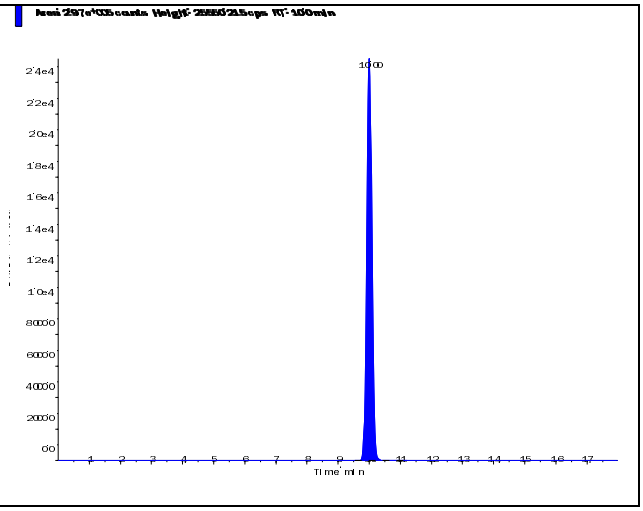

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (10.30) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

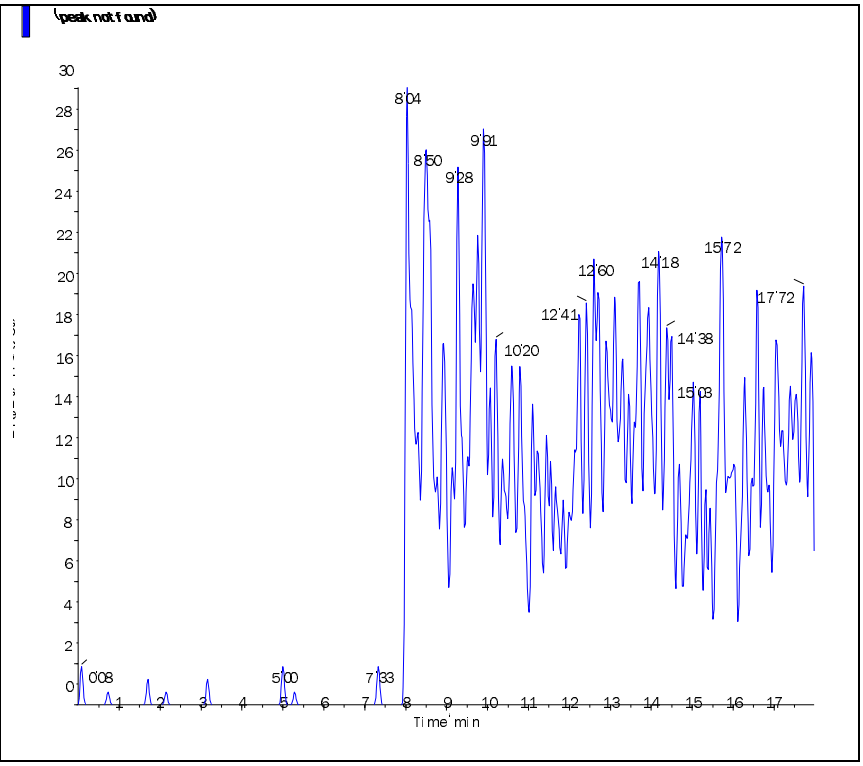

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.87 (10.30) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

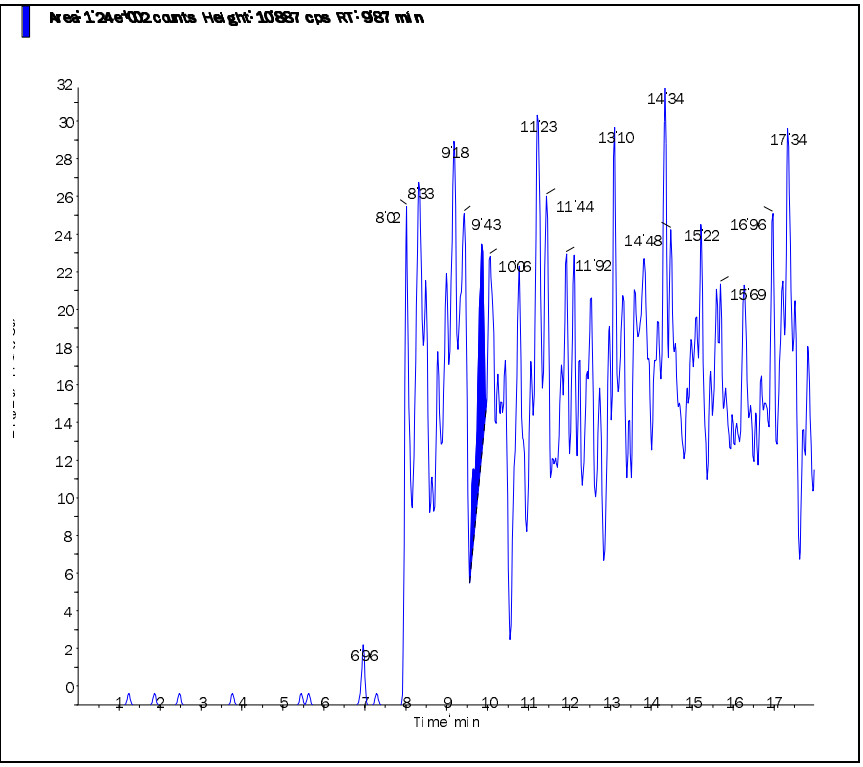

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Data File	LM29032.wiff	**Result Table**	022015_JWR.rdb
Acquisition Date	2/20/2015 7:34:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513051-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM29032.wiff	**Injection Volume**	10.00
Acquisition Date	2/20/2015 7:34:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022015_JWR.rdb
Sample ID	WG513051-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.070e+05	10.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.700e+04	10.00	N/A	0.193
Perchlorate conf	5.930e+03	9.99	N/A	0.209

O18LP (Internal Standard)

RT (Exp. RT): 10.00(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

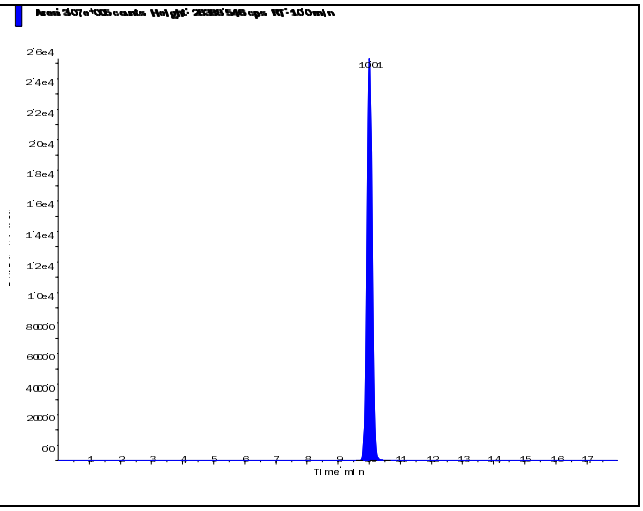

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.00 (10.30) min Calculated conc: 0.193 ng/ml Area Ratio: 0.055 Sample Type: (Unknown)	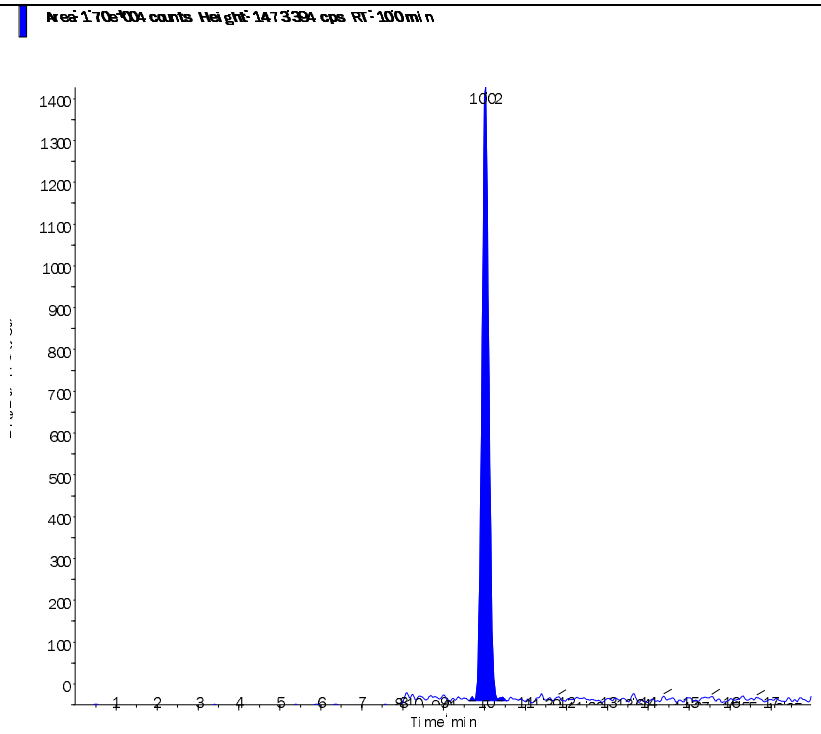
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.99 (10.30) min Calculated conc: 0.209 ng/ml Area Ratio: 0.019 Sample Type: (Unknown)	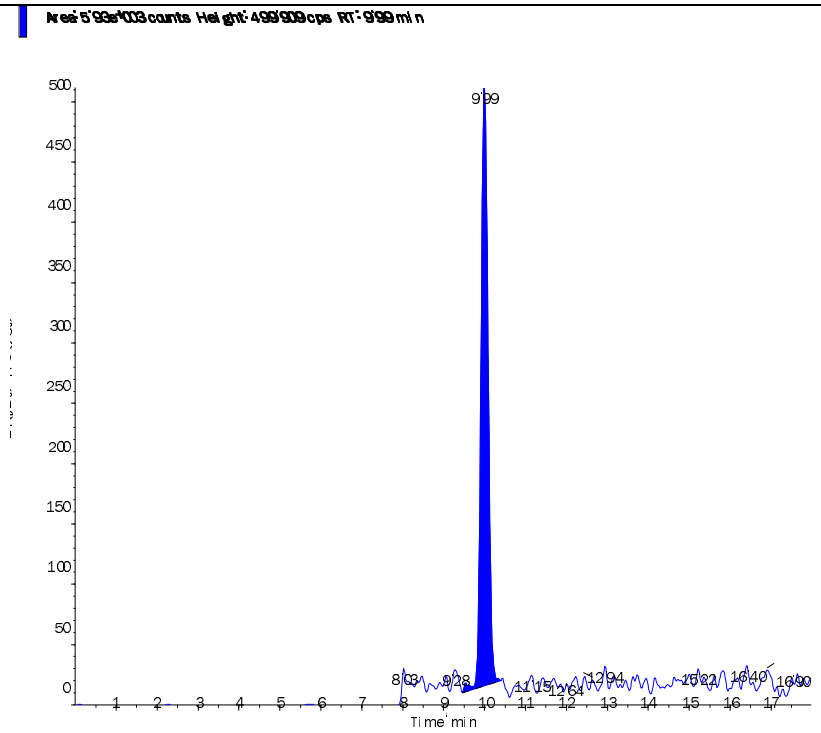

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Data File	LM29033.wiff	**Result Table**	022015_JWR.rdb
Acquisition Date	2/20/2015 7:53:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513051-04 LCS2 (0.2ug/L)	**Injection Vial**	7.00
Data File	LM29033.wiff	**Injection Volume**	10.00
Acquisition Date	2/20/2015 7:53:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022015_JWR.rdb
Sample ID	WG513051-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.040e+05	10.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.700e+04	10.00	N/A	0.195
Perchlorate conf	6.240e+03	9.99	N/A	0.222

O18LP (Internal Standard)

RT (Exp. RT): 10.00(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

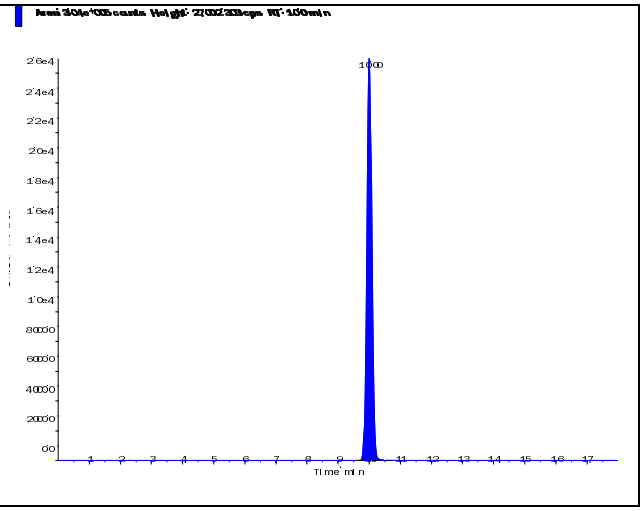

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Printed: 2/23/2015 9:47 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.00 (10.30) min Calculated conc: 0.195 ng/ml Area Ratio: 0.056 Sample Type: (Unknown)	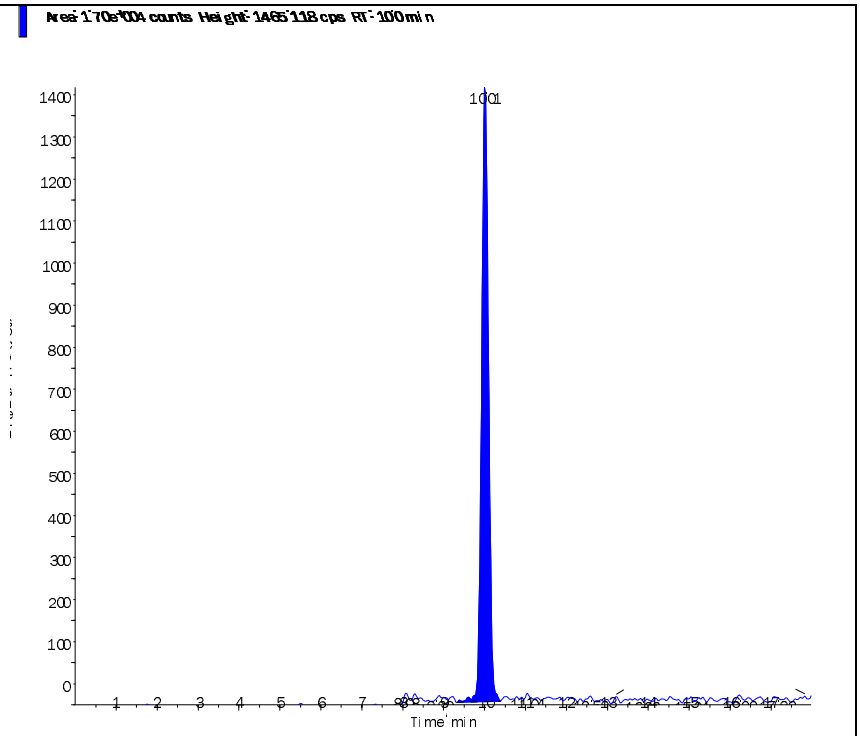
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.99 (10.30) min Calculated conc: 0.222 ng/ml Area Ratio: 0.021 Sample Type: (Unknown)	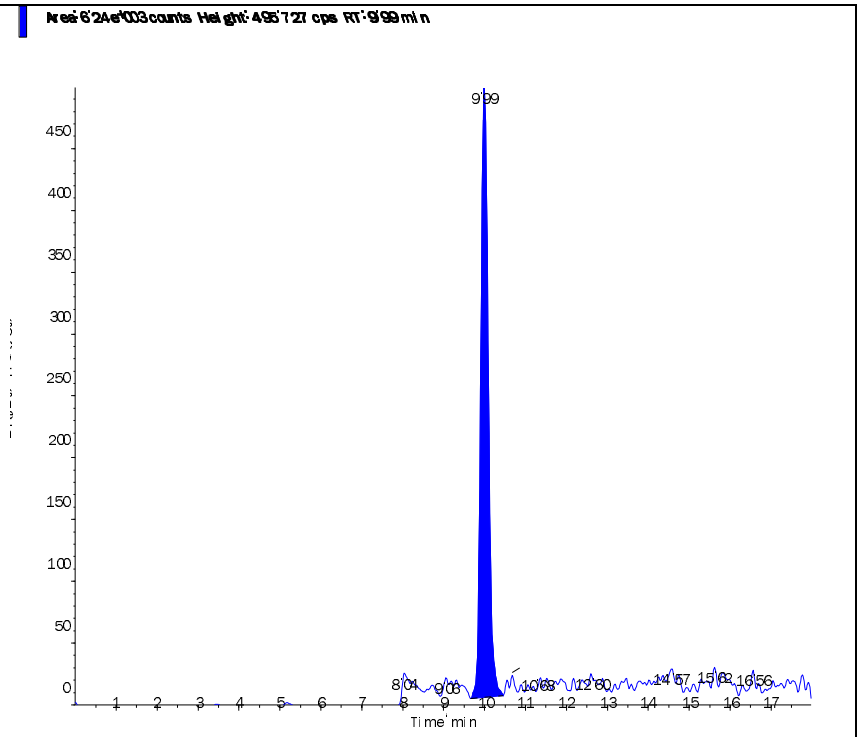

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2.3 Metals Data

2.3.1 Metals I C P Data

2.3.1.1 Summary Data

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO2
Client ID:	50WW24FF-021815	**Prep Method:**	3015	**Prep Date:**	02/20/2015 08:28
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	02/23/2015 09:40
Workgroup #:	WG513093	**Analyst:**	KHR	**Run Date:**	02/23/2015 11:57
Collect Date:	02/18/2015 08:25	**Dilution:**	1	**File ID:**	T2.022315.115721
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.100	U	0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-09	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO2
Client ID:	50WW23FF-021815	**Prep Method:**	3015	**Prep Date:**	02/20/2015 08:28
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	02/23/2015 09:40
Workgroup #:	WG513093	**Analyst:**	KHR	**Run Date:**	02/23/2015 12:00
Collect Date:	02/18/2015 09:40	**Dilution:**	1	**File ID:**	T2.022315.120055
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.0666	J	0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-11	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO2
Client ID:	50WW12FF-021815	**Prep Method:**	3015	**Prep Date:**	02/20/2015 08:28
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	02/23/2015 09:40
Workgroup #:	WG513093	**Analyst:**	KHR	**Run Date:**	02/23/2015 12:04
Collect Date:	02/18/2015 11:05	**Dilution:**	1	**File ID:**	T2.022315.120436
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.0632	J	0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-13	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO2
Client ID:	50WWW25FF-021815	**Prep Method:**	3015	**Prep Date:**	02/20/2015 08:28
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	02/23/2015 09:40
Workgroup #:	WG513093	**Analyst:**	KHR	**Run Date:**	02/23/2015 12:08
Collect Date:	02/18/2015 13:30	**Dilution:**	1	**File ID:**	T2.022315.120817
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.308		0.200	0.100	0.0500

Certificate of Analysis

Sample #:	L15020971-15	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO2
Client ID:	50WW18FF-021815	**Prep Method:**	3015	**Prep Date:**	02/20/2015 08:28
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	02/23/2015 09:40
Workgroup #:	WG513093	**Analyst:**	KHR	**Run Date:**	02/23/2015 12:11
Collect Date:	02/18/2015 14:45	**Dilution:**	1	**File ID:**	T2.022315.121150
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.516		0.200	0.100	0.0500

2.3.1.2 QC Summary Data

Example 6010 Calculations
Thermo Scientific iCAP 6500

1.0 Initial Calibration (ICAL) Parameters
For a multi-point calibration, the system performs linear regression from data consisting of a blank and four standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG512948
Analyst: ERP
Spike Analyst: ERP
Run Date: 02/20/2015 08:28
Method: 3015
Balance: BAL019
Instrument: MW-4
Instrument Start: 02/20/2015 08:42

SOP: ME407 Revison 16
Spike Solution: STD68767
Spike Witness: VC
HNO3 Lot #: COA18078
HCL Lot #: COA17871
40 & 50 ML. DIGESTION TU COA17948
ICP Filters- fisher-Lot# RGT28961

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG512948-02	BLANK	1	40 mL	50 mL	205.495 g	205.518 g		
2	WG512948-03	LCS	1	40 mL	50 mL	212.861 g	212.879 g	5 mL	
3	L15020944-01	SAMP	1	40 mL	50 mL	204.874 g	204.884 g		02/26/15
4	L15020946-01	SAMP	1	40 mL	50 mL	204.39 g	204.401 g		02/26/15
5	L15020950-01	SAMP	1	40 mL	50 mL	205.72 g	205.736 g		02/26/15
6	L15020950-02	SAMP	1	40 mL	50 mL	206.343 g	206.358 g		02/26/15
7	L15020951-01	SAMP	1	40 mL	50 mL	205.894 g	205.902 g		02/26/15
8	L15020971-07	SAMP	1	40 mL	50 mL	205.193 g	205.199 g		03/02/15
9	L15020971-09	SAMP	1	40 mL	50 mL	206.904 g	206.886 g		03/02/15
10	L15020971-11	SAMP	1	40 mL	50 mL	206.628 g	206.647 g		03/02/15
11	L15020971-13	SAMP	1	40 mL	50 mL	206.795 g	206.806 g		03/02/15
12	WG512948-01	REF	1	40 mL	50 mL	206.406 g	206.392 g		
13	L15020971-15	SAMP	1	40 mL	50 mL	206.406 g	206.392 g		03/02/15
14	L15021007-01	SAMP	1	40 mL	50 mL	206.321 g	206.321 g		02/26/15
15	L15021014-01	SAMP	1	40 mL	50 mL	205.391 g	205.365 g		02/26/15
16	L15021014-02	SAMP	1	40 mL	50 mL	207.866 g	207.83 g		02/26/15
17	L15021014-03	SAMP	1	40 mL	50 mL	204.916 g	204.901 g		02/26/15
18	WG512948-04	MS	1	40 mL	50 mL	210.237 g	210.216 g	5 mL	
19	WG512948-05	MSD	1	40 mL	50 mL	213.505 g	213.497 g	5 mL	

L15020951-01	filtered digestate
L15021014-03	filtered digestate
L15021014-02	filtered digestate
L15021014-01	filtered digestate

Analyst: Erin Potter

Reviewer: Vicki Collins

MW_DIG - Modified 09/30/2009
PDF ID: 4030890
Report generated: 02/20/2015 09:24

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO2 Dataset: 022315T2.1R.TXT.TXT

Analyst1: KHR Analyst2: N/A

Method: 6010B SOP: ME600G Rev: 13

Maintenance Log ID:

Calibration Std: STD68913 ICV Std: STD68699 Post Spike: STD68437

ICSA: STD68771 ICSAB: STD68772 Int. Std: RGT28137

CCV: STD68823 LLCCV: STD68913 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 512992, 513093, 513108, 512989, 513109

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T2.022315.092636	WG513161-01	Calibration Point		1		02/23/15 09:26
2	T2.022315.093012	WG513161-02	Calibration Point		1		02/23/15 09:30
3	T2.022315.093347	WG513161-03	Calibration Point		1		02/23/15 09:33
4	T2.022315.093722	WG513161-04	Calibration Point		1		02/23/15 09:37
5	T2.022315.094038	WG513161-05	Calibration Point		1		02/23/15 09:40
6	T2.022315.094357	WG513161-06	Initial Calibration Verification		1		02/23/15 09:43
7	T2.022315.094712	WG513161-07	Initial Calib Blank		1		02/23/15 09:47
8	T2.022315.095049	WG513161-08	Low Level Initial Calibration V		1		02/23/15 09:50
9	T2.022315.095422	WG513161-09	Low Level Initial Calibration V		1		02/23/15 09:54
10	T2.022315.095820	WG513161-10	Interference Check		1		02/23/15 09:58
11	T2.022315.100202	WG513161-11	Interference Check		1		02/23/15 10:02
12	T2.022315.100536	WG513161-12	CCV		1		02/23/15 10:05
13	T2.022315.100851	WG513161-13	CCB		1		02/23/15 10:08
14	T2.022315.102253	WG512983-02	Method/Prep Blank	5/50	1		02/23/15 10:22
15	T2.022315.102629	WG512983-03	Laboratory Control S	5/50	1		02/23/15 10:26
16	T2.022315.102949	WG512825-01	Fluid Blank 1		1		02/23/15 10:29
17	T2.022315.103325	WG512825-02	Fluid Blank 2		1		02/23/15 10:33
18	T2.022315.103704	WG512983-01	Reference Sample		1	L15020910-01	02/23/15 10:37
19	T2.022315.104039	WG512983-04	Matrix Spike	5/50	1	L15020910-01	02/23/15 10:40
20	T2.022315.104358	WG512983-05	Matrix Spike Duplica	5/50	1	L15020910-01	02/23/15 10:43
21	T2.022315.104717	L15020929-01	J5B0206-01	5/50	1		02/23/15 10:47
22	T2.022315.105051	WG512992-03	Post Digestion Spike		1	L15020929-01	02/23/15 10:50
23	T2.022315.105411	WG512992-04	Serial Dilution		5	L15020929-01	02/23/15 10:54
24	T2.022315.105749	WG513161-14	CCV		1		02/23/15 10:57
25	T2.022315.110104	WG513161-15	CCB		1		02/23/15 11:01
26	T2.022315.110444	WG513161-16	Low Level Continuing Calibra		1		02/23/15 11:04
27	T2.022315.110821	WG512948-02	Method/Prep Blank	40/50	1		02/23/15 11:08
28	T2.022315.111157	WG512948-03	Laboratory Control S	40/50	1		02/23/15 11:11
29	T2.022315.111516	L15020944-01	1801-123-A W1	40/50	1		02/23/15 11:15
30	T2.022315.111849	L15020946-01	40547-R3-01	40/50	1		02/23/15 11:18
31	T2.022315.112222	L15020950-01	1807-135 S1	40/50	1		02/23/15 11:22
32	T2.022315.112556	L15020950-02	1807-135 S2	40/50	1		02/23/15 11:25
33	T2.022315.112929	L15021014-01	FQC-WW01-W0040	40/50	1		02/23/15 11:29
34	T2.022315.113258	L15020951-01	1806-120A W1	40/50	1		02/23/15 11:32

Page: 1 Approved: February 24, 2015

Maren Berry

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO2 Dataset: 022315T2.1R.TXT.TXT

Analyst1: KHR Analyst2: N/A

Method: 6010B SOP: ME600G Rev: 13

Maintenance Log ID:

Calibration Std: STD68913 ICV Std: STD68699 Post Spike: STD68437

ICSA: STD68771 ICSAB: STD68772 Int. Std: RGT28137

CCV: STD68823 LLCCV: STD68913 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 512992, 513093, 513108, 512989, 513109

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T2.022315.113631	WG513093-01	Post Digestion Spike		1	L15020951-01	02/23/15 11:36
36	T2.022315.113951	WG513093-02	Serial Dilution		5	L15020951-01	02/23/15 11:39
37	T2.022315.114327	WG513161-17	CCV		1		02/23/15 11:43
38	T2.022315.114642	WG513161-18	CCB		1		02/23/15 11:46
39	T2.022315.115023	L15021014-02	FQC-WW02-W0041	40/50	1		02/23/15 11:50
40	T2.022315.115351	L15021014-03	FQC-WW08-W0042	40/50	1		02/23/15 11:53
41	T2.022315.115721	L15020971-07	50WW24FF-021815	40/50	1		02/23/15 11:57
42	T2.022315.120055	L15020971-09	50WW23FF-021815	40/50	1		02/23/15 12:00
43	T2.022315.120436	L15020971-11	50WW12FF-021815	40/50	1		02/23/15 12:04
44	T2.022315.120817	L15020971-13	50WWW25FF-021815	40/50	1		02/23/15 12:08
45	T2.022315.121150	WG512948-01	Reference Sample		1	L15020971-15	02/23/15 12:11
46	T2.022315.121531	WG512948-04	Matrix Spike	40/50	1	L15020971-15	02/23/15 12:15
47	T2.022315.121900	WG512948-05	Matrix Spike Duplica	40/50	1	L15020971-15	02/23/15 12:19
48	T2.022315.122228	L15021007-01	12356-B01-WQ-W0003	40/50	1		02/23/15 12:22
49	T2.022315.122607	WG513161-19	CCV		1		02/23/15 12:26
50	T2.022315.122922	WG513161-20	CCB		1		02/23/15 12:29
51	T2.022315.123302	WG513161-21	Low Level Continuing Calibra		1		02/23/15 12:33
52	T2.022315.123639	WG513161-22	Low Level Continuing Calibra		1		02/23/15 12:36
53	T2.022315.124015	WG513072-03	Method/Prep Blank	40/50	1		02/23/15 12:40
54	T2.022315.124352	WG513072-04	Laboratory Control S	40/50	1		02/23/15 12:43
55	T2.022315.124725	WG513072-01	Reference Sample		1	L15021018-02	02/23/15 12:47
56	T2.022315.125059	WG513072-05	Duplicate	40/50	1	L15021018-02	02/23/15 12:50
57	T2.022315.125431	WG513072-06	Matrix Spike	40/50	1	L15021018-02	02/23/15 12:54
58	T2.022315.125802	L15021018-03	BMX09	40/50	1		02/23/15 12:58
59	T2.022315.130135	L15021018-04	BMS02	40/50	1		02/23/15 13:01
60	T2.022315.130509	L15021018-05	BMR01/BMD03	40/50	1		02/23/15 13:05
61	T2.022315.130842	WG513108-01	Post Digestion Spike		1	L15021018-05	02/23/15 13:08
62	T2.022315.131202	WG513108-02	Serial Dilution		5	L15021018-05	02/23/15 13:12
63	T2.022315.131540	WG513161-23	CCV		1		02/23/15 13:15
64	T2.022315.131855	WG513161-24	CCB		1		02/23/15 13:18
65	T2.022315.132233	L15021018-06	BMD04/BMR04	40/50	1		02/23/15 13:22
66	T2.022315.132606	L15021018-07	BMD06/BMR06	40/50	1		02/23/15 13:26
67	T2.022315.132939	L15021018-10	BMR03	40/50	1		02/23/15 13:29
68	T2.022315.133311	L15021018-11	BMR07	40/50	1		02/23/15 13:33

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Maren Berry

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO2 Dataset: 022315T2.1R.TXT.TXT

Analyst1: KHR Analyst2: N/A

Method: 6010B SOP: ME600G Rev: 13

Maintenance Log ID:

Calibration Std: STD68913 ICV Std: STD68699 Post Spike: STD68437

ICSA: STD68771 ICSAB: STD68772 Int. Std: RGT28137

CCV: STD68823 LLCCV: STD68913 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 512992, 513093, 513108, 512989, 513109

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T2.022315.133645	L15021018-13	BMR09	40/50	1		02/23/15 13:36
70	T2.022315.134018	L15021018-14	BMR10	40/50	1		02/23/15 13:40
71	T2.022315.134352	WG513072-02	Reference Sample		1	L15021024-01	02/23/15 13:43
72	T2.022315.134726	WG513072-07	Matrix Spike	40/50	1	L15021024-01	02/23/15 13:47
73	T2.022315.135058	L15021026-01	PC-1	40/50	1		02/23/15 13:50
74	T2.022315.135430	L15021026-03	PC-21	40/50	1		02/23/15 13:54
75	T2.022315.135808	WG513161-25	CCV		1		02/23/15 13:58
76	T2.022315.140123	WG513161-26	CCB		1		02/23/15 14:01
77	T2.022315.140503	L15021026-05	PC-24	40/50	1		02/23/15 14:05
78	T2.022315.140836	L15021026-07	PC-27	40/50	1		02/23/15 14:08
79	T2.022315.141208	L15021042-01	PC-69	40/50	1		02/23/15 14:12
80	T2.022315.141541	L15021042-03	PC-70	40/50	1		02/23/15 14:15
81	T2.022315.141913	L15021042-05	PC-71	40/50	1		02/23/15 14:19
82	T2.022315.142254	L15021042-07	PC-72	40/50	1		02/23/15 14:22
83	T2.022315.142630	WG513161-27	CCV		1		02/23/15 14:26
84	T2.022315.142945	WG513161-28	CCB		1		02/23/15 14:29
85	T2.022315.143325	WG512945-03	Method/Prep Blank	40/50	1		02/23/15 14:33
86	T2.022315.143702	WG512945-04	Laboratory Control S	40/50	1		02/23/15 14:37
87	T2.022315.144020	WG512945-01	Reference Sample		1	L15020952-03	02/23/15 14:40
88	T2.022315.144402	WG512945-05	Duplicate	40/50	1	L15020952-03	02/23/15 14:44
89	T2.022315.144743	WG512945-06	Matrix Spike	40/50	1	L15020952-03	02/23/15 14:47
90	T2.022315.145109	L15020952-06	BPD05	40/50	1		02/23/15 14:51
91	T2.022315.145456	L15020952-09	BPD01	40/50	1		02/23/15 14:54
92	T2.022315.145830	L15020952-11	BPD21	40/50	1		02/23/15 14:58
93	T2.022315.150216	WG512989-01	Post Digestion Spike		1	L15020952-11	02/23/15 15:02
94	T2.022315.150546	WG512989-02	Serial Dilution		5	L15020952-11	02/23/15 15:05
95	T2.022315.150933	WG513161-29	CCV		1		02/23/15 15:09
96	T2.022315.151249	WG513161-30	CCB		1		02/23/15 15:12
97	T2.022315.151629	L15020956-01	BMI03	40/50	1		02/23/15 15:16
98	T2.022315.152002	L15020965-01	1402103-033	40/50	1		02/23/15 15:20
99	T2.022315.152351	L15020965-04	1402103-LFR-1	40/50	1		02/23/15 15:23
100	T2.022315.152724	L15020965-05	1402103-LFR-2	40/50	1		02/23/15 15:27
101	T2.022315.153056	L15020986-01	EFF02	40/50	1		02/23/15 15:30
102	T2.022315.153429	L15020991-01	001/COMP	40/50	1		02/23/15 15:34

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Maren Berry

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO2 Dataset: 022315T2.1R.TXT.TXT

Analyst1: KHR Analyst2: N/A

Method: 6010B SOP: ME600G Rev: 13

Maintenance Log ID:

Calibration Std: STD68913 ICV Std: STD68699 Post Spike: STD68437

ICSA: STD68771 ICSAB: STD68772 Int. Std: RGT28137

CCV: STD68823 LLCCV: STD68913 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 512992, 513093, 513108, 512989, 513109

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T2.022315.153808	WG512945-02	Reference Sample		1	L15020997-01	02/23/15 15:38
104	T2.022315.154150	WG512945-07	Matrix Spike	40/50	1	L15020997-01	02/23/15 15:41
105	T2.022315.154517	L15020997-02	SI-2A	40/50	1		02/23/15 15:45
106	T2.022315.154857	L15021017-01	BMT01	40/50	1		02/23/15 15:48
107	T2.022315.155236	WG513161-31	CCV		1		02/23/15 15:52
108	T2.022315.155551	WG513161-32	CCB		1		02/23/15 15:55
109	T2.022315.155933	L15021017-02	BMT02	40/50	1		02/23/15 15:59
110	T2.022315.160306	L15021017-03	BMT03	40/50	1		02/23/15 16:03
111	T2.022315.160639	L15021017-04	BMT04	40/50	1		02/23/15 16:06
112	T2.022315.161012	L15021017-07	BMT07	40/50	1		02/23/15 16:10
113	T2.022315.161348	WG513161-33	CCV		1		02/23/15 16:13
114	T2.022315.161703	WG513161-34	CCB		1		02/23/15 16:17
115	T2.022315.162042	WG513079-03	Method/Prep Blank	40/50	1		02/23/15 16:20
116	T2.022315.162419	WG513079-04	Laboratory Control S	40/50	1		02/23/15 16:24
117	T2.022315.162752	WG513079-01	Reference Sample		1	L15021031-01	02/23/15 16:27
118	T2.022315.163125	WG513079-05	Duplicate	40/50	1	L15021031-01	02/23/15 16:31
119	T2.022315.163457	WG513079-06	Matrix Spike	40/50	1	L15021031-01	02/23/15 16:34
120	T2.022315.163828	L15021031-03	FC-198RW	40/50	1		02/23/15 16:38
121	T2.022315.164200	L15021031-05	FC-202RW	40/50	1		02/23/15 16:42
122	T2.022315.164532	L15021031-07	FC-50RW	40/50	1		02/23/15 16:45
123	T2.022315.164904	WG513109-01	Post Digestion Spike		1	L15021031-07	02/23/15 16:49
124	T2.022315.165222	WG513109-02	Serial Dilution		5	L15021031-07	02/23/15 16:52
125	T2.022315.165559	WG513161-35	CCV		1		02/23/15 16:55
126	T2.022315.165914	WG513161-36	CCB		1		02/23/15 16:59
127	T2.022315.170252	L15021031-09	FC-56RW	40/50	1		02/23/15 17:02
128	T2.022315.170624	L15021031-11	FC-56RWB	40/50	1		02/23/15 17:06
129	T2.022315.171002	L15021031-13	FC-56RWC	40/50	1		02/23/15 17:10
130	T2.022315.171338	L15021031-15	FC-197RWC	40/50	1		02/23/15 17:13
131	T2.022315.171714	L15021031-17	FC-198RWB	40/50	1		02/23/15 17:17
132	T2.022315.172046	L15021031-19	FC-198RWD	40/50	1		02/23/15 17:20
133	T2.022315.172422	WG513079-02	Reference Sample		1	L15021031-22	02/23/15 17:24
134	T2.022315.172753	WG513079-07	Matrix Spike	40/50	1	L15021031-22	02/23/15 17:27
135	T2.022315.173122	L15021031-25	FC-198RWE	40/50	1		02/23/15 17:31
136	T2.022315.173456	L15021031-27	FC-197RWD	40/50	1		02/23/15 17:34

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Maren Berry

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO2 Dataset: 022315T2.1R.TXT.TXT

Analyst1: KHR Analyst2: N/A

Method: 6010B SOP: ME600G Rev: 13

Maintenance Log ID:

Calibration Std: STD68913 ICV Std: STD68699 Post Spike: STD68437

ICSA: STD68771 ICSAB: STD68772 Int. Std: RGT28137

CCV: STD68823 LLCCV: STD68913 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 512992, 513093, 513108, 512989, 513109

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	T2.022315.173836	WG513161-37	CCV		1		02/23/15 17:38
138	T2.022315.174151	WG513161-38	CCB		1		02/23/15 17:41
139	T2.022315.174532	L15021031-29	FC-197RWE	40/50	1		02/23/15 17:45
140	T2.022315.174907	L15021031-31	FC-197RWF	40/50	1		02/23/15 17:49
141	T2.022315.175244	L15021040-01	PC-69RW	40/50	1		02/23/15 17:52
142	T2.022315.175616	L15021040-03	PC-70RW	40/50	1		02/23/15 17:56
143	T2.022315.175949	L15021040-05	PC-71RW	40/50	1		02/23/15 17:59
144	T2.022315.180321	L15021040-07	PC-72RW	40/50	1		02/23/15 18:03
145	T2.022315.180658	WG513161-39	CCV		1		02/23/15 18:06
146	T2.022315.181013	WG513161-40	CCB		1		02/23/15 18:10

Page: 5 Approved: February 24, 2015

Maren Berry

Microbac Laboratories Inc.

Data Checklist

Date: 23-FEB-2015
Analyst: KHR
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO2
Curve Workgroup: 513161
Runlog ID: 66471
Analytical Workgroups: 512992, 513093, 513108, 512989, 513109

Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	
Level 4	0971, 1007, 1014
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	KHR
Secondary Reviewer	MMB
Comments	

Primary Reviewer: 24-FEB-2015 Kim H. Rhoden

Secondary Reviewer: 24-FEB-2015 Maren Berry

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-24-2015 13:38:41

Microbac Laboratories Inc.

00635732

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010C

AAB#: WG513093

Login Number: L15020971

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW24FF-021815	07	02/18/15					02/20/2015	2	180		02/23/15	5.1	180	
50WW23FF-021815	09	02/18/15					02/20/2015	2	180		02/23/15	5.1	180	
50WW12FF-021815	11	02/18/15					02/20/2015	1.9	180		02/23/15	5	180	
50WWW25FF-021815	13	02/18/15					02/20/2015	1.8	180		02/23/15	4.9	180	
50WW18FF-021815	15	02/18/15					02/20/2015	1.7	180		02/23/15	4.9	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4034135
Report generated 02/23/2015 12:49

METHOD BLANK SUMMARY

Login Number: L15020971
Blank File ID: T2.022315.110821
Prep Date: 02/20/15 08:28
Analyzed Date: 02/23/15 11:08
Analyst: KHR

Work Group: WG513093
Blank Sample ID: WG512948-02
Instrument ID: ICP-THERMO2
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG512948-03	T2.022315.111157	02/23/15 11:11	01
50WW24FF-021815	L15020971-07	T2.022315.115721	02/23/15 11:57	01
50WW23FF-021815	L15020971-09	T2.022315.120055	02/23/15 12:00	01
50WW12FF-021815	L15020971-11	T2.022315.120436	02/23/15 12:04	01
50WWW25FF-021815	L15020971-13	T2.022315.120817	02/23/15 12:08	01
50WW18FF-021815	L15020971-15	T2.022315.121150	02/23/15 12:11	01

Report Name: BLANK_SUMMARY
PDF File ID: 4034136
Report generated 02/23/2015 12:53

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15020971 Prep Date: 02/20/15 08:28 Sample ID: WG512948-02
Instrument ID: ICP-THERMO2 Run Date: 02/23/15 11:08 Prep Method: 3015
File ID: T2.022315.110821 Analyst: KHR Method: 6010C
Workgroup (AAB#): WG513093 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-23-FEB-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Iron, Dissolved	0.0500	0.200	0.0500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4034137
23-FEB-2015 12:53

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15020971 Run Date: 02/23/2015 Sample ID: WG512948-03
Instrument ID: ICP-THERMO2 Run Time: 11:11 Prep Method: 3015
File ID: T2.022315.111157 Analyst: KHR Method: 6010C
Workgroup (AAB#): WG513093 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD68767 Cal ID: ICP-TH-23-FEB-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Iron, Dissolved	2.50	2.56	102	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4034138
Report generated: 02/23/2015 12:53

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L15020971 Cal ID: ICP-THERMO2 - Worknum: WG513093
Instrument ID: ICP-THERMO2 Contract #: Method: 6010C
Parent ID: WG512948-01 File ID: T2.022315.121150 Dil: 1 Matrix: WATER
Sample ID: WG512948-04 MS File ID: T2.022315.121531 Dil: 1 Units: mg/L
Sample ID: WG512948-05 MSD File ID: T2.022315.121900 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Iron, Dissolved	0.516	2.50	3.08	103	2.50	3.08	102	0.276	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4034139
Report generated 02/23/2015 12:53

Microbac Laboratories Inc.
Serial Dilution Report

Login: L15020971 **Worknum:** WG513093
Instrument: ICP-THERMO2 **Method:** 6010C
Serial Dil: WG513093-02 **File ID:** T2.022315.113951 **Dil:** 5 **Units:** mg/L
Sample: L15020951-01 **File ID:** T2.022315.113258 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Iron	0.822	X	0.841	X	2.35	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 50 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 50 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4034133
02/23/2015 12:53

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L15020971 **Worknum:** WG513093
Instrument ID: ICP-THERMO2 **Method:** 6010C
Post Spike ID: WG513093-01 **File ID:** T2.022315.113631 **Dil:** 1 **Units:** mg/L
Sample ID: L15020951-01 **File ID:** T2.022315.113258 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
IRON	2.81		0.822		2	103.7	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4034134
Report generated: 02/23/2015 12:53

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L15020971	Workgroup (AAB#):	WG513093
Analytical Method:	6010C	Instrument ID:	ICP-THERMO2
ICAL Worknum:	WG513161	Initial Calibration Date:	23-FEB-2015 09:40

	WG513161-01		WG513161-02		WG513161-03		WG513161-04		WG513161-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
IRON	0	-0.0000200	.04	0.000470	.08	0.000840	4	0.0521	8	0.104	.999948	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4034142
Report generated: 23-FEB-2015 12:53

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L15020971
Instrument ID: ICP-THERMO2
File ID: T2.022315.094712
Workgroup (AAB#): WG513093
Matrix: WATER

Run Date: 02/23/2015
Run Time: 09:47
Analyst: KHR
Cal ID: ICP-THERI - 23-FEB-15

Sample ID: WG513161-07
Method: 6010C
Units: mg/L

Analytes	MDL	RDL	Concentration	Qualifier
IRON	.04	.16	.04	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4034144
Report generated 02/23/2015 12:53

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15020971
Run Date: 02/23/2015
Sample ID: WG513161-13
Instrument ID: ICP-THERMO2
Run Time: 10:08
Method: 6010C
File ID: T2.022315.100851
Analyst: KHR
Units: mg/L
Workgroup (AAB#): WG513093
Cal ID: ICP-TH - 23-FEB-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4034147
Report generated 02/23/2015 12:53

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15020971
Run Date: 02/23/2015
Sample ID: WG513161-15
Instrument ID: ICP-THERMO2
Run Time: 11:01
Method: 6010C
File ID: T2.022315.110104
Analyst: KHR
Units: mg/L
Workgroup (AAB#): WG513093
Cal ID: ICP-TH - 23-FEB-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4034147
Report generated 02/23/2015 12:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15020971
Run Date: 02/23/2015
Sample ID: WG513161-18
Instrument ID: ICP-THERMO2
Run Time: 11:46
Method: 6010C
File ID: T2.022315.114642
Analyst: KHR
Units: mg/L
Workgroup (AAB#): WG513093
Cal ID: ICP-TH - 23-FEB-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4034147
Report generated 02/23/2015 12:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15020971
Run Date: 02/23/2015
Sample ID: WG513161-20
Instrument ID: ICP-THERMO2
Run Time: 12:29
Method: 6010C
File ID: T2.022315.122922
Analyst: KHR
Units: mg/L
Workgroup (AAB#): WG513093
Cal ID: ICP-TH - 23-FEB-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4034147
Report generated 02/23/2015 12:53

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L15020971 Run Date: 02/23/2015 Sample ID: WG513161-06
Instrument ID: ICP-THERMO2 Run Time: 09:43 Method: 6010C
File ID: T2.022315.094357 Analyst: KHR Units: mg/L
Workgroup (AAB#): WG513093 Cal ID: ICP-TH - 23-FEB-15
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Iron		4	4.04	101	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4034143
Report generated 02/23/2015 12:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15020971
Run Date: 02/23/2015
Sample ID: WG513161-12
Instrument ID: ICP-THERMO2
Run Time: 10:05
Method: 6010C
File ID: T2.022315.100536
Analyst: KHR
QC Key: DOD4
Workgroup (AAB#): WG513093
Cal ID: ICP-TH - 23-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.27	mg/L	107	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4034146
Report generated 02/23/2015 12:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15020971
Run Date: 02/23/2015
Sample ID: WG513161-14
Instrument ID: ICP-THERMO2
Run Time: 10:57
Method: 6010C
File ID: T2.022315.105749
Analyst: KHR
QC Key: DOD4
Workgroup (AAB#): WG513093
Cal ID: ICP-TH - 23-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.11	mg/L	103	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4034146
Report generated 02/23/2015 12:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15020971
Run Date: 02/23/2015
Sample ID: WG513161-17
Instrument ID: ICP-THERMO2
Run Time: 11:43
Method: 6010C
File ID: T2.022315.114327
Analyst: KHR
QC Key: DOD4
Workgroup (AAB#): WG513093
Cal ID: ICP-TH - 23-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.11	mg/L	103	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4034146
Report generated 02/23/2015 12:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15020971
Run Date: 02/23/2015
Sample ID: WG513161-19
Instrument ID: ICP-THERMO2
Run Time: 12:26
Method: 6010C
File ID: T2.022315.122607
Analyst: KHR
QC Key: DOD4
Workgroup (AAB#): WG513093
Cal ID: ICP-TH - 23-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.09	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4034146
Report generated 02/23/2015 12:53

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15020971
Run Date: 02/23/2015
Sample ID: WG513161-08
Instrument ID: ICP-THERMO2
Run Time: 09:50
Method: 6010C
File ID: T2.022315.095049
Analyst: KHR
QC Key: DOD4
Workgroup (AAB#): WG513093
Cal ID: ICP-TH - 23-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		0.160	0.169	mg/L	106	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4034148
Report generated 02/23/2015 12:54

Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15020971
Run Date: 02/23/2015
Sample ID: WG513161-21
Instrument ID: ICP-THERMO2
Run Time: 12:33
Method: 6010C
File ID: T2.022315.123302
Analyst: KHR
QC Key: DOD4
Workgroup (AAB#): WG513093
Cal ID: ICP-TH - 23-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		0.160	0.177	mg/L	111	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4034148
Report generated 02/23/2015 12:54

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L15020971
Instrument ID: ICP-THERMO2
Sol. A : WG513161-10 **File ID:** T2.022315.095820
Sol. AB : WG513161-11 **File ID:** T2.022315.100202

Workgroup (AAB#): WG513093
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Iron	100	98.5	98.5	100	97.3	97.3	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4034145
Report generated 02/23/2015 12:53

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15020971 **Date:** 01/02/2015
Insturment ID: ICP-THERMO2 **Method:** 6010C

Analyte	Wave Length	AL	AS	B	BA	BE
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	-0.0000160	0	0	0	0
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0.00000100	0	0	0	0
BERYLLIUM	313.00	0	0	0	0	0
BORON	249.70	0	0	0	0	0
CADMIUM	228.80	0	0.00756	0	-0.0000140	0
CALCIUM	422.70	0	0	0	0	0
CHROMIUM	267.70	0	-0.000660	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0	0	0	0
IRON	261.20	0	0	0	0	0
LEAD	220.30	0.000240	0	0	0	0
LITHIUM	670.80	0	0	0	0	0
MAGNESIUM	279.10	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.03	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	-0.000522	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	-0.0000220	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.80	0	0	0	0	0
THALLIUM	190.80	-0.0000120	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.30	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0.00000200	0	0	0	0
ZIRCONIUM	339.20	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4034141
Report generated: 02/23/2015 12:49

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15020971 **Date:** 01/02/2015
Insturment ID: ICP-THERMO2 **Method:** 6010C

Analyte	Wave Length	CA	CD	CO	CR	CU
ALUMINUM	308.20	0	0	-0.000820	0	0
ANTIMONY	206.80	0	0	0	0.00950	0
ARSENIC	189.00	0	0	0	-0.00220	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.00	0	0	0	0	0
BORON	249.70	0	0	0.00343	0	0
CADMIUM	228.80	0	0	-0.00247	0	0
CALCIUM	422.70	0	0	0	0	0
CHROMIUM	267.70	0	0	-0.000160	0	0
COBALT	228.60	0	0	0	-0.000108	0
COPPER	224.70	0	0	0.0000770	0	0
IRON	261.20	-0.000120	-0.00000600	0	-0.0000460	-0.0000290
LEAD	220.30	0	0	-0.0000930	-0.000172	0.000809
LITHIUM	670.80	0	0	0	0	0
MAGNESIUM	279.10	0	0	0	0	0
MANGANESE	257.60	0	0	0	-0.0000150	0
MOLYBDENUM	202.03	0	0	0	0	0
NICKEL	231.60	0	0	0.000100	0	0
PHOSPHORUS	214.90	0	0	0	0	0.00200
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.80	0.00000600	0	0	0	0
THALLIUM	190.80	0	0	0.00194	0.000276	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.30	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.20	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4034141
Report generated: 02/23/2015 12:49

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15020971 **Date:** 01/02/2015
Insturment ID: ICP-THERMO2 **Method:** 6010C

Analyte	Wave Length	FE	LI	MG	MN	MO
ALUMINUM	308.20	0	0	0	0	0.0153
ANTIMONY	206.80	0.000140	0	0	0	0.000670
ARSENIC	189.00	-0.0000190	0	0	0	0.0000100
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.00	0	0	0	0	0
BORON	249.70	-0.000259	0	0	0	-0.00169
CADMIUM	228.80	0.00000100	0	0	0	0.0000220
CALCIUM	422.70	0	0	0	0	0
CHROMIUM	267.70	0.0000220	0	0	0.000160	0
COBALT	228.60	0	0	0	0	-0.00105
COPPER	224.70	0.000110	0	0	0	0.00160
IRON	261.20	0	0	0	0	0
LEAD	220.30	0	0	0	0	-0.00110
LITHIUM	670.80	0	0	0	0	0
MAGNESIUM	279.10	0	0	0	-0.00190	-0.0110
MANGANESE	257.60	0	0	-0.00000500	0	-0.0000720
MOLYBDENUM	202.03	0	0	0	0	0
NICKEL	231.60	0.00000300	0	0	0	0
PHOSPHORUS	214.90	0.00120	0	0	0	0.00800
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0.000156
SILICON	212.40	0	0	0	0	0.0187
SILVER	328.00	0	0	0	0	-0.0000440
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.80	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.30	0	0	0	0	-0.000153
VANADIUM	292.40	0.0000110	0	0	0	-0.00960
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.20	-0.0000300	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4034141
Report generated: 02/23/2015 12:49

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15020971 **Date:** 01/02/2015
Insturment ID: ICP-THERMO2 **Method:** 6010C

Analyte	Wave Length	NA	NI	PB	SB	SN
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0	0	0	-0.00840
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.00	0	0	0	0	0
BORON	249.70	0	0	0	0	0
CADMIUM	228.80	0	-0.000180	0	0	0
CALCIUM	422.70	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0.000420	0	0	0
COPPER	224.70	0	-0.00402	0.00173	0	0
IRON	261.20	0	0	0	0	0
LEAD	220.30	0	0.000110	0	0	0
LITHIUM	670.80	0	0	0	0	0
MAGNESIUM	279.10	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.03	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.80	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.30	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.20	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4034141
Report generated: 02/23/2015 12:49

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15020971 **Date:** 01/02/2015
Insturment ID: ICP-THERMO2 **Method:** 6010C

Analyte	Wave Length	SR	TI	TL	V	ZN
ALUMINUM	308.20	0	0	0	0.00300	0
ANTIMONY	206.80	0	-0.000990	0	-0.00312	0
ARSENIC	189.00	0	0	0	0.000107	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.00	0	-0.00160	0	0.000170	0
BORON	249.70	0	0	0	0	0
CADMIUM	228.80	0	0	0	0.0000820	0
CALCIUM	422.70	0	0	0	0	0
CHROMIUM	267.70	0	0.0000550	0	-0.000120	-0.000740
COBALT	228.60	0	0.00200	-0.00120	0.0000200	0
COPPER	224.70	0	0.000460	0	0	0
IRON	261.20	0	0	0	0	0
LEAD	220.30	0	0	0	-0.000126	0
LITHIUM	670.80	0	0	0	0	0
MAGNESIUM	279.10	0	-0.00290	0	0	0
MANGANESE	257.60	0	0	0	-0.00000600	0
MOLYBDENUM	202.03	0	0	0	-0.000110	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	-0.00500	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	-0.0000400	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.00620	0	-0.00617	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.80	0	0	0	0	0
THALLIUM	190.80	0	-0.00120	0	-0.00540	0
TIN	189.90	0	-0.00220	0	0	0
TITANIUM	337.30	0	0	0	0.000200	0
VANADIUM	292.40	0	0.00104	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.20	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4034141
Report generated: 02/23/2015 12:49

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15020971 **Date:** 01/02/2015
Insturment ID: ICP-THERMO2 **Method:** 6010C

Analyte	Wave Length	ZR
ALUMINUM	308.20	0
ANTIMONY	206.80	0
ARSENIC	189.00	0
BARIUM	455.40	0
BERYLLIUM	313.00	0
BORON	249.70	0
CADMIUM	228.80	0
CALCIUM	422.70	0
CHROMIUM	267.70	0
COBALT	228.60	0
COPPER	224.70	0
IRON	261.20	0
LEAD	220.30	0
LITHIUM	670.80	0
MAGNESIUM	279.10	0
MANGANESE	257.60	0
MOLYBDENUM	202.03	0
NICKEL	231.60	0
PHOSPHORUS	214.90	0.00200
POTASSIUM	766.40	0
SELENIUM	196.00	0
SILICON	212.40	0
SILVER	328.00	0
SODIUM	589.50	0
STRONTIUM	407.80	0
THALLIUM	190.80	0
TIN	189.90	0
TITANIUM	337.30	0
VANADIUM	292.40	
ZINC	206.20	0
ZIRCONIUM	339.20	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4034141
Report generated: 02/23/2015 12:49

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L15020971 **Date:** 01/12/2015
Insturment ID: ICP-THERMO2 **Method:** 6010C

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	450.0
Antimony	10.00	90.0
Arsenic	10.00	90.0
Barium	10.00	81.0
Beryllium	15.00	4.5
Boron	10.00	90.0
Cadmium	10.00	4.5
Calcium	10.00	900.0
Chromium	10.00	45.0
Cobalt	10.00	9.0
Copper	10.00	180.0
Iron	5.00	630.0
Lead	10.00	225.0
Lithium	10.00	90.0
Magnesium	15.00	900.0
Manganese	15.00	27.0
Molybdenum	10.00	9.0
Nickel	10.00	90.0
Phosphorus	10.00	900.0
Potassium	10.00	360.0
Selenium	10.00	90.0
Silicon	10.00	81.0
Silver	5.00	4.5
Sodium	10.00	360.0
Strontium	10.00	4.5
Thallium	10.00	9.0
Tin	10.00	90.0
Titanium	15.00	90.0
Vanadium	10.00	18.0
Zinc	10.00	45.0
Zirconium	10.00	18.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4034140
Report generated: 02/23/2015 12:49

2.3.1.3 Raw Data

Sample Name: S0 Acquired: 2/23/2015 9:26:36 Type: Cal
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: IR Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00186**	**.02020**	**-.00004**	**.00117**	**.00410**	**-.00653**	**-.00201**
Stddev	.00017	.00015	.00004	.00018	.00023	.00010	.00021
%RSD	9.3658	.75766	99.067	15.558	5.7058	1.5243	10.350
#1	-.00183	.02003	.00000	.00135	.00397	-.00641	-.00222
#2	-.00205	.02026	-.00007	.00099	.00437	-.00659	-.00200
#3	-.00171	.02032	-.00005	.00118	.00397	-.00657	-.00180

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00006**	**-.00009**	**.00016**	**-.00002**	**-.00002**	**.00209**	**.00116**
Stddev	.00003	.00001	.00011	.00009	.00003	.00069	.00047
%RSD	54.243	16.601	68.830	413.66	135.30	32.962	40.333
#1	-.00005	-.00007	.00028	.00005	.00001	.00200	.00100
#2	-.00004	-.00010	.00012	.00001	-.00005	.00145	.00079
#3	-.00010	-.00009	.00007	-.00012	-.00003	.00282	.00169

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00002**	**.00015**	**.00004**	**-.00339**	**-.00032**	**.00013**	**-.00054**
Stddev	.00002	.00009	.00002	.00027	.00003	.00004	.00008
%RSD	140.71	58.223	47.119	7.9396	10.162	27.798	15.245
#1	-.00003	.00025	.00004	-.00340	-.00030	.00016	-.00054
#2	-.00003	.00011	.00005	-.00311	-.00030	.00009	-.00063
#3	.00001	.00009	.00002	-.00365	-.00036	.00013	-.00046

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00002**	**.00002**	**.00054**	**.00030**	**.00084**	**-.00058**	**-.00011**
Stddev	.00002	.00003	.00001	.00001	.00006	.00011	.00006
%RSD	87.856	166.69	2.5896	1.8990	6.7371	19.171	55.776
#1	.00003	-.00002	.00053	.00031	.00078	-.00047	-.00005
#2	.00000	.00004	.00056	.00030	.00088	-.00069	-.00017
#3	.00003	.00004	.00054	.00029	.00087	-.00059	-.00009

Approved: February 24, 2015

Sample Name: S0 Acquired: 2/23/2015 9:26:36 Type: Cal
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: IR Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00014	-.00024	-.00207
Stddev	.00017	.00004	.00053
%RSD	120.23	15.079	25.623
#1	.00010	-.00028	-.00268
#2	.00000	-.00022	-.00172
#3	.00033	-.00022	-.00180

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10895.	13758.
Stddev	49.	41.
%RSD	.44713	.29560
#1	10840.	13799.
#2	10930.	13718.
#3	10916.	13758.

Approved: February 24, 2015

Sample Name: S1 Acquired: 2/23/2015 9:30:12 Type: Cal
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: IR Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00010**	**.03282**	**.01620**	**-.00333**	**.00016**	**.00031**	**.00058**
Stddev	.00009	.00009	.00033	.00021	.00013	.00007	.00005
%RSD	93.882	.25978	2.0625	6.3114	79.548	21.245	7.7965
#1	.00000	.03281	.01655	-.00324	.00003	.00035	.00054
#2	.00012	.03291	.01619	-.00319	.00029	.00035	.00057
#3	.00018	.03274	.01588	-.00358	.00017	.00024	.00063

Elem	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00239**	**.00060**	**.00047**	**.00856**	**.00407**	**.00023**	**.00764**
Stddev	.00020	.00006	.00001	.00010	.00032	.00004	.00013
%RSD	8.3680	9.7479	1.8696	1.1776	7.7588	18.378	1.7211
#1	.00244	.00064	.00048	.00867	.00371	.00023	.00777
#2	.00217	.00062	.00047	.00847	.00430	.00019	.00764
#3	.00256	.00053	.00046	.00853	.00420	.00027	.00751

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00119**	**.02221**	**-.00003**	**.00091**	**-.00043**	**.00028**	**.00170**
Stddev	.00001	.00031	.00002	.00004	.00006	.00003	.00004
%RSD	.50579	1.4137	60.475	4.6184	14.430	10.450	2.3332
#1	.00120	.02229	-.00004	.00088	-.00039	.00031	.00173
#2	.00120	.02248	-.00004	.00096	-.00050	.00027	.00172
#3	.00119	.02186	-.00001	.00090	-.00039	.00026	.00166

Elem	Sn1899	Sr4077	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00078**	**.01893**	**.00027**	**.00723**	**.00215**	**-.00229**
Stddev	.00001	.00028	.00016	.00026	.00005	.00030
%RSD	1.4466	1.4913	59.155	3.5669	2.2066	12.947
#1	.00078	.01926	.00009	.00752	.00210	-.00260
#2	.00079	.01876	.00034	.00705	.00220	-.00201
#3	.00077	.01878	.00039	.00711	.00216	-.00227

Approved: February 24, 2015

Sample Name: S1 Acquired: 2/23/2015 9:30:12 Type: Cal
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: IR Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10973.	13761.
Stddev	28.	186.
%RSD	.25278	1.3548
#1	10967.	13581.
#2	10948.	13748.
#3	11003.	13953.

Approved: February 24, 2015

Sample Name: S2 Acquired: 2/23/2015 9:33:47 Type: Cal
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: IR Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00286**	**.04481**	**.00009**	**.00272**	**.02792**	**-.00022**	**.00244**
Stddev	.00054	.00032	.00003	.00017	.00041	.00017	.00023
%RSD	18.973	.71425	32.838	6.2844	1.4527	77.141	9.5171
#1	.00240	.04476	.00009	.00260	.02764	-.00025	.00219
#2	.00345	.04452	.00006	.00292	.02774	-.00004	.00248
#3	.00272	.04516	.00012	.00265	.02839	-.00037	.00265

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00049**	**.00121**	**.00431**	**.00111**	**.00084**	**.01517**	**.00741**
Stddev	.00005	.00007	.00009	.00004	.00001	.00071	.00034
%RSD	10.335	5.6812	2.1270	3.2469	1.7825	4.6860	4.5467
#1	.00049	.00123	.00421	.00108	.00084	.01435	.00714
#2	.00044	.00127	.00439	.00115	.00082	.01550	.00779
#3	.00054	.00114	.00432	.00111	.00085	.01565	.00729

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00046**	**.01472**	**.00236**	**.04730**	**.00028**	**.00173**	**-.00011**
Stddev	.00007	.00016	.00004	.00013	.00009	.00005	.00012
%RSD	14.524	1.1065	1.6742	.28349	31.466	2.7621	112.75
#1	.00043	.01486	.00232	.04730	.00038	.00168	-.00012
#2	.00041	.01455	.00239	.04717	.00021	.00177	.00002
#3	.00054	.01476	.00238	.04744	.00024	.00174	-.00023

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00053**	**.00006**	**.00287**	**.00126**	**.03696**	**.00149**	**.00008**
Stddev	.00007	.00004	.00006	.00006	.00042	.00007	.00001
%RSD	12.575	63.167	2.2556	5.0854	1.1235	4.8992	16.601
#1	.00052	.00006	.00289	.00121	.03674	.00157	.00007
#2	.00061	.00010	.00280	.00124	.03669	.00143	.00009
#3	.00047	.00002	.00293	.00133	.03744	.00145	.00009

Approved: February 24, 2015

Sample Name: S2 Acquired: 2/23/2015 9:33:47 Type: Cal
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: IR Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**.01425**	**.00454**	**-.00202**
Stddev	.00042	.00004	.00022
%RSD	2.9460	.84670	10.692
#1	.01427	.00451	-.00217
#2	.01383	.00454	-.00178
#3	.01467	.00458	-.00213

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**11015.**	**13880.**
Stddev	34.	38.
%RSD	.30588	.27152
#1	11051.	13924.
#2	11007.	13858.
#3	10985.	13859.

Approved: February 24, 2015

Sample Name: S3 Acquired: 2/23/2015 9:37:22 Type: Cal
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: IR Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.25929	1.4753	.00960	.10568	1.4671	.37297	.25697
Stddev	.00231	.0144	.00003	.00103	.0116	.00182	.00041
%RSD	.89030	.97369	.30852	.97035	.79159	.48894	.16025
#1	.25662	1.4592	.00958	.10464	1.4537	.37108	.25664
#2	.26049	1.4797	.00964	.10570	1.4742	.37310	.25743
#3	.26074	1.4869	.00959	.10669	1.4735	.37472	.25682

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.03172	.07560	.24506	.06470	.05213	.82477	.38446
Stddev	.00014	.00024	.00205	.00031	.00051	.00044	.00078
%RSD	.43500	.31297	.83609	.48176	.98316	.05360	.20368
#1	.03161	.07532	.24272	.06435	.05154	.82495	.38385
#2	.03168	.07573	.24594	.06480	.05243	.82426	.38535
#3	.03187	.07574	.24652	.06495	.05242	.82509	.38419

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.02786	.83732	.14260	2.9907	.03815	.09683	.02378
Stddev	.00016	.00652	.00075	.0179	.00010	.00043	.00010
%RSD	.55689	.77884	.52379	.59902	.26300	.44026	.43136
#1	.02784	.83071	.14177	2.9701	.03804	.09635	.02367
#2	.02802	.83749	.14279	3.0025	.03819	.09715	.02379
#3	.02771	.84375	.14323	2.9995	.03823	.09700	.02387

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.03054	.00536	.14186	.06078	2.1758	.11481	.01012
Stddev	.00019	.00003	.00080	.00030	.0104	.00048	.00007
%RSD	.63847	.48861	.56566	.48575	.47634	.41942	.65736
#1	.03032	.00535	.14095	.06044	2.1638	.11429	.01009
#2	.03070	.00539	.14217	.06099	2.1826	.11488	.01020
#3	.03059	.00534	.14247	.06090	2.1808	.11525	.01008

Approved: February 24, 2015

Sample Name: S3 Acquired: 2/23/2015 9:37:22 Type: Cal
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: IR Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.85215	.28369	-.00181
Stddev	.00699	.00162	.00007
%RSD	.82014	.57049	3.9911
#1	.84516	.28183	-.00174
#2	.85216	.28474	-.00179
#3	.85914	.28451	-.00188

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	11002.	13967.
Stddev	53.	67.
%RSD	.48437	.48044
#1	11063.	14042.
#2	10976.	13946.
#3	10966.	13912.

Approved: February 24, 2015

Sample Name: S4 Acquired: 2/23/2015 9:40:38 Type: Cal
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: IR Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.51680**	**2.9467**	**.01936**	**.21052**	**2.9372**	**.73830**	**.51630**
Stddev	.00265	.0458	.00001	.00129	.0105	.00358	.00066
%RSD	.51210	1.5546	.07269	.61244	.35670	.48482	.12863
#1	.51555	2.9181	.01938	.21000	2.9251	.73947	.51564
#2	.51500	2.9224	.01935	.20957	2.9423	.73429	.51628
#3	.51984	2.9996	.01935	.21199	2.9441	.74116	.51697

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.06334**	**.14866**	**.48169**	**.12714**	**.10387**	**1.6565**	**.76650**
Stddev	.00009	.00004	.00399	.00021	.00086	.0046	.00274
%RSD	.13787	.02527	.82817	.16132	.83148	.28044	.35750
#1	.06333	.14864	.48527	.12732	.10288	1.6566	.76783
#2	.06344	.14871	.47739	.12719	.10429	1.6518	.76335
#3	.06327	.14864	.48241	.12692	.10445	1.6611	.76832

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.05593**	**1.6621**	**.27988**	**6.0181**	**.07537**	**.19300**	**.04727**
Stddev	.00022	.0266	.00062	.0244	.00021	.00023	.00006
%RSD	.39670	1.5973	.22327	.40562	.27698	.11985	.13498
#1	.05576	1.6429	.28057	5.9944	.07549	.19275	.04734
#2	.05587	1.6509	.27973	6.0167	.07550	.19303	.04721
#3	.05618	1.6924	.27935	6.0431	.07513	.19321	.04728

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.06099**	**.01081**	**.27864**	**.11977**	**4.3506**	**.22764**	**.01965**
Stddev	.00015	.00005	.00034	.00018	.0087	.00047	.00012
%RSD	.24591	.44719	.12215	.14996	.20053	.20557	.59645
#1	.06086	.01077	.27853	.11976	4.3437	.22711	.01963
#2	.06116	.01086	.27903	.11995	4.3477	.22781	.01978
#3	.06096	.01079	.27837	.11959	4.3604	.22800	.01955

Approved: February 24, 2015

Sample Name: S4 Acquired: 2/23/2015 9:40:38 Type: Cal
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: IR Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	1.6849	.56174	-.00207
Stddev	.0094	.00150	.00062
%RSD	.55869	.26695	30.108
#1	1.6853	.56311	-.00135
#2	1.6754	.56014	-.00244
#3	1.6942	.56197	-.00241

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	11018.	13899.
Stddev	12.	168.
%RSD	.11048	1.2072
#1	11012.	14055.
#2	11032.	13921.
#3	11011.	13722.

Approved: February 24, 2015

Sample Name: ICV Acquired: 2/23/2015 9:43:57 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39430	10.166	.41900	.50855	1.0031	.05123	10.008
Stddev	.00074	.045	.00064	.00052	.0058	.00014	.018
%RSD	.18837	.44558	.15225	.10221	.57649	.26680	.18306
#1	.39387	10.181	.41960	.50815	.99797	.05110	10.001
#2	.39516	10.116	.41833	.50837	1.0018	.05122	9.9935
#3	.39387	10.203	.41906	.50914	1.0093	.05138	10.028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05105	.20523	.50711	.50577	4.0439	50.177	1.0021
Stddev	.00015	.00015	.00211	.00186	.0425	.212	.0039
%RSD	.29934	.07292	.41687	.36841	1.0497	.42289	.39361
#1	.05109	.20511	.50614	.50425	4.0153	50.293	1.0066
#2	.05088	.20540	.50565	.50521	4.0236	49.932	1.0004
#3	.05117	.20517	.50953	.50785	4.0926	50.306	.99933
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.9724	.49398	1.0080	49.942	.49735	10.407	.49780
Stddev	.0378	.00222	.0034	.271	.00184	.045	.00163
%RSD	.37890	.44953	.33652	.54254	.36991	.42935	.32666
#1	9.9751	.49339	1.0054	49.760	.49841	10.374	.49661
#2	9.9334	.49212	1.0066	49.814	.49522	10.389	.49713
#3	10.009	.49644	1.0118	50.254	.49840	10.458	.49965
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 24, 2015

Sample Name: ICV Acquired: 2/23/2015 9:43:57 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2179**	F **.42242**	F **5.2743**	**1.0283**	**.98981**	**1.0072**	**.51297**
Stddev	.0048	.00106	.0243	.0038	.00428	.0061	.00227
%RSD	.39417	.25184	.46037	.36591	.43231	.60602	.44210
#1	1.2137	.42274	5.2554	1.0252	.98718	1.0011	.51234
#2	1.2168	.42123	5.2659	1.0271	.98751	1.0072	.51109
#3	1.2231	.42329	5.3017	1.0325	.99475	1.0134	.51549
Check ?	Chk Pass	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.40000	5.0000				
Range		5.0000%	5.0000%				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0188**	**1.0189**	F **7.3492**
Stddev	.0025	.0011	22.636
%RSD	.24922	.10875	308.01
#1	1.0166	1.0187	-6.0355
#2	1.0182	1.0180	-5.4018
#3	1.0215	1.0202	33.485
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			5.0000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**11025.**	**13989.**
Stddev	30.	67.
%RSD	.27380	.48114
#1	11045.	13975.
#2	11041.	14062.
#3	10991.	13929.

Approved: February 24, 2015

Sample Name: ICB Acquired: 2/23/2015 9:47:12 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.00380	.00037	.00197	.00024	-.00001	.00297
Stddev	.00062	.00251	.00147	.00084	.00016	.00003	.00880
%RSD	207.93	66.245	399.03	42.817	64.165	377.41	296.53
#1	.00032	.00633	.00201	.00176	.00008	-.00004	-.00367
#2	-.00033	.00375	-.00085	.00290	.00027	-.00001	.01295
#3	.00091	.00130	-.00005	.00125	.00039	.00002	-.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00000	.00033	.00041	.00327	.01565	.00082
Stddev	.00011	.00007	.00033	.00033	.00890	.00466	.00122
%RSD	42.588	2740.6	99.121	79.871	272.07	29.796	147.85
#1	.00034	.00004	.00061	.00059	.00726	.01935	-.00034
#2	.00033	-.00008	.00042	.00062	.00948	.01719	.00072
#3	.00014	.00005	-.00003	.00003	-.00693	.01041	.00209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03515	.00004	.00524	.01106	-.00108	.00013	-.00179
Stddev	.03508	.00002	.00057	.01598	.00069	.00277	.00364
%RSD	99.797	61.985	10.828	144.44	63.866	2132.1	203.37
#1	-.00450	.00002	.00476	.00301	-.00029	.00230	.00066
#2	.04781	.00003	.00508	.00071	-.00142	-.00298	-.00597
#3	.06213	.00006	.00586	.02946	-.00154	.00108	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: ICB Acquired: 2/23/2015 9:47:12 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00058	.00296	.00070	.00023	.00009	.00106	.00206
Stddev	.00249	.00182	.00083	.00031	.00003	.00234	.00232
%RSD	428.64	61.323	117.78	132.71	30.314	220.49	112.53
#1	-.00164	.00271	-.00023	.00047	.00007	-.00163	.00117
#2	.00011	.00129	.00098	.00035	.00012	.00264	.00032
#3	.00328	.00489	.00136	-.00012	.00008	.00217	.00470
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00002	.00067	F -4.1546
Stddev	.00003	.00002	17.063
%RSD	149.71	2.7096	410.70
#1	.00001	.00069	2.6488
#2	-.00005	.00065	-23.570
#3	-.00003	.00066	8.4572
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10909.	13745.
Stddev	15.	94.
%RSD	.13824	.68294
#1	10896.	13701.
#2	10925.	13852.
#3	10905.	13681.

Approved: February 24, 2015

Sample Name: LLICV Acquired: 2/23/2015 9:50:49 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01687	.42191	.01634	.02069	.04110	.00214	.41539
Stddev	.00111	.00170	.00064	.00047	.00007	.00003	.00339
%RSD	6.5994	.40307	3.8995	2.2928	.16897	1.4103	.81495
#1	.01641	.42361	.01707	.02100	.04104	.00211	.41539
#2	.01606	.42191	.01599	.02014	.04109	.00214	.41878
#3	.01814	.42021	.01596	.02093	.04118	.00217	.41201
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00216	.00858	.02136	.02117	.16902	2.0413	.04107
Stddev	.00006	.00008	.00051	.00051	.00128	.0443	.00053
%RSD	2.9774	.90341	2.3820	2.4167	.75447	2.1705	1.2941
#1	.00220	.00851	.02194	.02144	.16756	2.0054	.04054
#2	.00220	.00855	.02113	.02149	.16959	2.0909	.04107
#3	.00209	.00866	.02100	.02058	.16991	2.0278	.04160
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.44117	.02217	.04297	2.0861	.02134	.40647	.02078
Stddev	.02867	.00030	.00026	.0184	.00079	.00274	.00245
%RSD	6.4986	1.3306	.61177	.88357	3.7241	.67491	11.773
#1	.40826	.02219	.04276	2.0741	.02042	.40815	.01796
#2	.46070	.02187	.04288	2.0768	.02183	.40331	.02234
#3	.45456	.02246	.04327	2.1073	.02178	.40796	.02204
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: LLICV Acquired: 2/23/2015 9:50:49 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05256	.01588	.20828	.04109	.04170	.04076	.02335
Stddev	.00143	.00210	.00279	.00062	.00041	.00174	.00239
%RSD	2.7277	13.256	1.3414	1.5181	.97875	4.2759	10.229
#1	.05408	.01794	.20635	.04075	.04140	.04039	.02364
#2	.05238	.01597	.20700	.04070	.04154	.03923	.02083
#3	.05123	.01373	.21148	.04181	.04217	.04266	.02558
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.04250	.04385	F -13.036
Stddev	.00061	.00046	9.691
%RSD	1.4317	1.0505	74.336
#1	.04251	.04354	-4.5678
#2	.04188	.04364	-23.605
#3	.04310	.04438	-10.937
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	11035.	13841.
Stddev	15.	36.
%RSD	.13350	.25769
#1	11048.	13808.
#2	11039.	13838.
#3	11019.	13879.

Approved: February 24, 2015

Sample Name: LLICV Acquired: 2/23/2015 9:54:22 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01153	.00828	.10636	-.00082	.01164	.00001	.02099
Stddev	.00049	.00386	.00195	.00080	.00006	.00003	.00291
%RSD	4.2379	46.561	1.8372	97.326	.48824	427.63	13.856
#1	.01199	.01271	.10790	-.00090	.01165	.00001	.01824
#2	.01157	.00648	.10702	-.00157	.01169	.00003	.02070
#3	.01102	.00565	.10416	.00002	.01158	-.00002	.02403
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01207	-.00014	.02356	.00108	.00229	-.04784	-.00055
Stddev	.00004	.00016	.00017	.00043	.00585	.02751	.00167
%RSD	.35249	118.47	.74275	40.022	255.44	57.492	303.60
#1	.01204	-.00021	.02369	.00145	.00897	-.05778	.00138
#2	.01212	.00005	.02362	.00118	-.00021	-.01675	-.00151
#3	.01205	-.00025	.02336	.00061	-.00189	-.06899	-.00152
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02017	.00063	.00033	.02210	-.00021	F -.00378	.11191
Stddev	.02653	.00010	.00020	.01096	.00025	.00171	.00047
%RSD	131.51	15.712	62.603	49.577	119.61	45.190	.42109
#1	.04372	.00053	.00009	.02125	-.00046	-.00574	.11198
#2	-.00857	.00073	.00041	.01159	.00005	-.00304	.11235
#3	.02536	.00064	.00048	.03345	-.00022	-.00257	.11141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 24, 2015

Sample Name: LLICV Acquired: 2/23/2015 9:54:22 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00030	.08461	.00008	-.00111	.00001	.00032	.00073
Stddev	.00321	.00308	.00224	.00058	.00010	.00053	.00249
%RSD	1066.0	3.6420	2953.9	52.571	980.82	164.93	341.76
#1	-.00083	.08737	-.00027	-.00065	-.00010	-.00011	.00343
#2	-.00322	.08128	-.00197	-.00177	.00010	.00016	.00023
#3	.00314	.08518	.00246	-.00091	.00003	.00091	-.00147
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00000	.00208	3.1967
Stddev	.0004	.00024	11.975
%RSD	8696.7	11.660	374.59
#1	.00029	.00231	13.575
#2	.00011	.00183	-9.9048
#3	-.00041	.00208	5.9197
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	11025.	13903.
Stddev	41.	78.
%RSD	.36747	.55788
#1	11059.	13899.
#2	10980.	13828.
#3	11037.	13983.

Approved: February 24, 2015

Sample Name: ICSA Acquired: 2/23/2015 9:58:20 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00057	247.48	-.00002	.03639	-.00026	-.00006	255.69
Stddev	.00015	3.58	.00168	.00028	.00018	.00003	.83
%RSD	26.644	1.4451	9533.2	.76233	68.217	54.616	.32349
#1	-.00042	245.01	.00102	.03616	-.00007	-.00002	254.92
#2	-.00073	245.86	-.00196	.03670	-.00041	-.00008	256.56
#3	-.00058	251.58	.00089	.03631	-.00029	-.00008	255.59
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00031	.00021	.00025	.00032	98.539	-.02139	.01206
Stddev	.00009	.00028	.00023	.00105	.356	.02124	.00033
%RSD	28.591	137.14	94.413	325.29	.36128	99.273	2.7627
#1	-.00041	.00032	.00000	.00153	98.130	-.02644	.01233
#2	-.00024	.00041	.00029	-.00020	98.712	-.03966	.01169
#3	-.00028	-.00012	.00046	-.00036	98.776	.00191	.01216
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	258.88	.00001	-.00138	.04430	-.00148	-.07838	.00260
Stddev	.75	.00021	.00023	.00454	.00113	.01343	.00409
%RSD	.28918	3011.5	16.783	10.243	76.373	17.142	157.05
#1	258.42	.00014	-.00131	.04126	-.00277	-.06825	.00534
#2	259.75	.00012	-.00164	.04952	-.00106	-.09362	.00456
#3	258.49	-.00024	-.00119	.04212	-.00062	-.07326	-.00210
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: ICSA Acquired: 2/23/2015 9:58:20 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00293**	**.00001**	**.24945**	**-.00238**	**.00063**	**-.01294**	**.00085**
Stddev	.00150	.00353	.00139	.00042	.00003	.00078	.00243
%RSD	51.315	47609.	.55735	17.741	5.4375	6.0352	284.90
#1	-.00274	-.00406	.24791	-.00279	.00063	-.01226	-.00146
#2	-.00451	.00228	.25062	-.00240	.00059	-.01379	.00064
#3	-.00153	.00180	.24981	-.00195	.00066	-.01277	.00338
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00231**	**-.00009**	F **-450.66**
Stddev	.00020	.00023	23.61
%RSD	8.8749	241.74	5.2396
#1	-.00208	-.00028	-473.38
#2	-.00246	.00016	-452.36
#3	-.00238	-.00016	-426.25
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.08000
Low Limit			-.08000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10734.**	**13911.**
Stddev	29.	79.
%RSD	.27107	.56968
#1	10718.	13936.
#2	10717.	13975.
#3	10768.	13822.

Approved: February 24, 2015

Sample Name: ICSAB Acquired: 2/23/2015 10:02:02 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48695	245.28	.25618	.00382	.24331	.24305	252.63
Stddev	.00284	2.88	.00111	.00140	.00060	.00104	.43
%RSD	.58421	1.1743	.43194	36.696	.24463	.42847	.16947
#1	.48929	246.24	.25696	.00252	.24375	.24416	252.99
#2	.48379	247.55	.25491	.00530	.24354	.24209	252.16
#3	.48778	242.04	.25668	.00364	.24263	.24291	252.75
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.46942	.22993	.23932	.23257	97.275	5.1814	.01252
Stddev	.00201	.00073	.00089	.00145	.403	.0156	.00095
%RSD	.42766	.31954	.37317	.62452	.41411	.30047	7.6197
#1	.47114	.23060	.23992	.23395	97.611	5.1690	.01230
#2	.46992	.23004	.23829	.23269	97.386	5.1764	.01356
#3	.46721	.22915	.23974	.23106	96.828	5.1989	.01169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	255.79	.22448	-.00103	5.2328	.44998	-.07753	.45359
Stddev	.92	.00044	.00026	.0167	.00280	.00213	.00254
%RSD	.36090	.19805	25.133	.31859	.62116	2.7495	.55985
#1	256.71	.22493	-.00132	5.2446	.45319	-.07948	.45180
#2	254.86	.22447	-.00084	5.2401	.44866	-.07786	.45650
#3	255.80	.22404	-.00092	5.2137	.44809	-.07525	.45247
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: ICSAB Acquired: 2/23/2015 10:02:02 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51838**	**.24698**	**.00075**	**-.00379**	**.00052**	**-.01228**	**.46406**
Stddev	.00417	.00546	.00284	.00066	.00012	.00011	.00357
%RSD	.80444	2.2104	377.39	17.467	23.714	.91512	.77036
#1	.51637	.25261	.00254	-.00411	.00038	-.01240	.46817
#2	.52317	.24663	.00224	-.00303	.00058	-.01218	.46164
#3	.51559	.24171	-.00252	-.00424	.00060	-.01225	.46238
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.24003**	**.46244**	F **-452.03**
Stddev	.00049	.00144	15.61
%RSD	.20317	.31043	3.4525
#1	.24038	.46408	-462.39
#2	.23947	.46145	-434.08
#3	.24023	.46177	-459.61
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10713.**	**13880.**
Stddev	23.	71.
%RSD	.21473	.51238
#1	10689.	13811.
#2	10717.	13877.
#3	10734.	13953.

Approved: February 24, 2015

Sample Name: CCV Acquired: 2/23/2015 10:05:36 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.42001	10.564	.42692	.52749	1.0615	.05307	10.516
Stddev	.00208	.054	.00177	.00064	.0051	.00006	.046
%RSD	.49500	.50737	.41421	.12060	.47955	.11591	.43537
#1	.41965	10.618	.42521	.52740	1.0673	.05305	10.544
#2	.41814	10.510	.42874	.52817	1.0580	.05302	10.541
#3	.42225	10.563	.42681	.52690	1.0591	.05314	10.463
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05271	.21372	.53215	.53180	4.2685	52.624	1.0456
Stddev	.00005	.00043	.00131	.00152	.0265	.074	.0069
%RSD	.09448	.20224	.24582	.28498	.62014	.14007	.66189
#1	.05273	.21400	.53111	.53179	4.2965	52.558	1.0377
#2	.05265	.21323	.53173	.53028	4.2651	52.704	1.0507
#3	.05274	.21394	.53362	.53332	4.2438	52.610	1.0483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.526	.52858	1.0701	52.889	.53531	10.701	.53660
Stddev	.082	.00373	.0009	.203	.00184	.007	.00216
%RSD	.77617	.70525	.08136	.38428	.34329	.06438	.40173
#1	10.453	.53251	1.0707	53.123	.53529	10.707	.53883
#2	10.615	.52813	1.0705	52.779	.53348	10.694	.53644
#3	10.511	.52510	1.0691	52.764	.53716	10.701	.53453
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 24, 2015

Sample Name: CCV Acquired: 2/23/2015 10:05:36 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2822**	**.43375**	**5.3870**	**1.0670**	**1.0586**	**1.0590**	**.53868**
Stddev	.0021	.00153	.0021	.0015	.0017	.0077	.00187
%RSD	.16013	.35270	.03848	.14277	.16467	.72871	.34673
#1	1.2799	.43481	5.3894	1.0683	1.0605	1.0503	.53846
#2	1.2829	.43444	5.3855	1.0674	1.0582	1.0650	.53693
#3	1.2839	.43199	5.3862	1.0653	1.0570	1.0617	.54065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0535**	**1.0664**	F **-12.326**
Stddev	.0027	.0010	14.587
%RSD	.25666	.09624	118.35
#1	1.0566	1.0675	-.7250
#2	1.0516	1.0662	-28.702
#3	1.0523	1.0655	-7.5497
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**11119.**	**14010.**
Stddev	8.	72.
%RSD	.06948	.51091
#1	11128.	13944.
#2	11113.	14000.
#3	11117.	14086.

Approved: February 24, 2015

Sample Name: CCB Acquired: 2/23/2015 10:08:51 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.00001	.00156	.00080	-.00015	.00002	.00694
Stddev	.00064	.00423	.00159	.00047	.00010	.00002	.00150
%RSD	3407.7	70245.	101.72	59.000	63.552	100.59	21.654
#1	.00060	.00478	.00339	.00026	-.00021	.00005	.00526
#2	-.00066	-.00327	.00065	.00097	-.00021	.00001	.00738
#3	.00012	-.00149	.00064	.00116	-.00004	.00001	.00817
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.00010	-.00028	.00019	.00614	-.02820	.00027
Stddev	.00016	.00015	.00046	.00029	.00258	.01870	.00055
%RSD	95.710	148.42	166.28	153.08	42.108	66.329	200.61
#1	.00012	-.00002	-.00078	.00012	.00912	-.03728	.00040
#2	.00003	.00026	.00013	.00050	.00454	-.04062	.00075
#3	.00034	.00005	-.00018	-.00006	.00475	-.00669	-.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03177	.00000	.00372	.01799	-.00085	.00262	-.00234
Stddev	.00544	.00002	.00021	.00436	.00084	.00289	.00075
%RSD	17.132	623.04	5.5528	24.203	99.322	110.17	32.073
#1	.03599	.00000	.00382	.01811	-.00138	.00431	-.00148
#2	.02563	-.00002	.00349	.02229	.00012	.00426	-.00288
#3	.03368	.00003	.00387	.01358	-.00128	-.00071	-.00265
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: CCB Acquired: 2/23/2015 10:08:51 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	.00240	.00087	-.00097	.00006	.00030	.00027
Stddev	.00180	.00318	.00103	.00019	.00015	.00086	.00110
%RSD	616.23	132.51	118.14	19.313	237.57	283.89	405.68
#1	.00199	-.00121	.00186	-.00105	.00019	-.00041	.00002
#2	-.00160	.00477	-.00020	-.00110	.00010	.00005	-.00068
#3	.00048	.00365	.00096	-.00075	-.00010	.00127	.00147
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00001	.00004	F -2.2774
Stddev	.00036	.00007	11.965
%RSD	2512.0	164.51	525.39
#1	.00015	.00006	7.1293
#2	-.00043	.00010	-15.744
#3	.00023	-.00003	1.7829
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10963.	14020.
Stddev	17.	39.
%RSD	.15325	.27932
#1	10950.	14011.
#2	10957.	13986.
#3	10982.	14063.

Approved: February 24, 2015

Sample Name: PBW 58 Acquired: 2/23/2015 10:22:53 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG512983-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	.00377	-.00155	-.00035	-.00020	-.00002	.00735
Stddev	.00013	.00266	.00181	.00084	.00021	.00004	.00307
%RSD	46.971	70.664	117.18	240.92	105.80	215.68	41.813
#1	.00025	.00316	.00042	-.00108	-.00042	.00002	.00933
#2	.00017	.00146	-.00191	-.00052	-.00016	-.00007	.00381
#3	.00043	.00669	-.00315	.00056	-.00001	-.00001	.00891
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	-.00019	.00006	.00064	.00674	-.04814	.00013
Stddev	.00003	.00017	.00049	.00050	.00454	.01155	.00089
%RSD	9.9109	86.980	882.62	78.209	67.328	23.984	709.22
#1	.00033	-.00036	-.00051	.00112	.00589	-.03819	-.00019
#2	.00028	-.00003	.00025	.00066	.00269	-.06080	-.00056
#3	.00034	-.00018	.00043	.00013	.01165	-.04544	.00114
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00284	.00011	.00017	.01354	.00092	F -.00684	-.00001
Stddev	.02285	.00009	.00029	.00336	.00038	.00178	.00123
%RSD	805.62	77.246	172.24	24.775	41.696	26.057	10836.
#1	.02300	.00016	-.00017	.01224	.00055	-.00527	-.00140
#2	-.01111	.00001	.00031	.01735	.00090	-.00647	.00044
#3	-.02040	.00017	.00037	.01103	.00131	-.00878	.00092
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 24, 2015

Sample Name: PBW 58 Acquired: 2/23/2015 10:22:53 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG512983-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00346**	**-.00127**	**.00244**	**-.00327**	**-.00002**	**-.00047**	**.00086**
Stddev	.00291	.00282	.00066	.00036	.00004	.00079	.00086
%RSD	83.977	222.86	26.958	11.055	172.77	165.94	99.977
#1	-.00577	-.00162	.00208	-.00315	-.00006	.00043	.00047
#2	-.00020	-.00390	.00320	-.00298	.00002	-.00094	.00184
#3	-.00441	.00172	.00204	-.00367	-.00004	-.00092	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00013**	**.00127**	**7.3594**
Stddev	.00043	.00006	19.958
%RSD	338.21	5.1068	271.19
#1	.00004	.00130	-1.4322
#2	.00019	.00120	30.204
#3	-.00061	.00132	-6.6933
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**11028.**	**13927.**
Stddev	16.	121.
%RSD	.14176	.86633
#1	11045.	14012.
#2	11026.	13979.
#3	11014.	13789.

Approved: February 24, 2015

Sample Name: LCSW 58 Acquired: 2/23/2015 10:26:29 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG512983-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20343	4.9647	.19856	.95607	.51159	.02511	5.0744
Stddev	.00120	.0229	.00079	.00238	.00139	.00002	.0122
%RSD	.59024	.46182	.39992	.24872	.27185	.08102	.24105
#1	.20285	4.9650	.19789	.95340	.51000	.02509	5.0640
#2	.20262	4.9875	.19944	.95797	.51259	.02513	5.0879
#3	.20481	4.9416	.19836	.95683	.51217	.02511	5.0712
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02506	.10471	.26303	.25650	2.0520	25.267	.50239
Stddev	.00008	.00016	.00061	.00055	.0262	.031	.00096
%RSD	.33106	.15397	.23008	.21450	1.2765	.12275	.19015
#1	.02501	.10480	.26371	.25588	2.0271	25.232	.50130
#2	.02501	.10481	.26256	.25672	2.0793	25.284	.50309
#3	.02515	.10453	.26283	.25691	2.0495	25.287	.50277
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.9939	.25212	.52475	25.110	.25567	4.8683	.25372
Stddev	.0361	.00082	.00022	.042	.00089	.0061	.00219
%RSD	.72263	.32354	.04245	.16679	.34866	.12541	.86174
#1	4.9528	.25256	.52455	25.063	.25470	4.8626	.25316
#2	5.0086	.25263	.52472	25.143	.25645	4.8674	.25613
#3	5.0203	.25118	.52499	25.124	.25585	4.8747	.25186
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: LCSW 58 Acquired: 2/23/2015 10:26:29 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG512983-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.60234	.19329	2.5710	.51256	.50913	.51612	.26039
Stddev	.00184	.00293	.0009	.00119	.00113	.00540	.00199
%RSD	.30578	1.5172	.03453	.23259	.22221	1.0469	.76590
#1	.60425	.18991	2.5705	.51123	.50787	.50993	.25900
#2	.60221	.19482	2.5721	.51290	.51006	.51855	.25949
#3	.60058	.19515	2.5706	.51354	.50945	.51988	.26267
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.51433	.51477	F -5.8494
Stddev	.00061	.00095	5.6853
%RSD	.11851	.18507	97.196
#1	.51478	.51372	-10.453
#2	.51364	.51556	.5056
#3	.51458	.51505	-7.6006
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10950.	13941.
Stddev	17.	65.
%RSD	.15693	.46974
#1	10934.	13902.
#2	10948.	13903.
#3	10968.	14016.

Approved: February 24, 2015

Sample Name: FBLK1 Acquired: 2/23/2015 10:29:49 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG512825-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.00191	.00008	.00292	-.00008	-.00001	.01063
Stddev	.00070	.00115	.00033	.00075	.00013	.00004	.00698
%RSD	85.986	60.009	439.69	25.626	169.58	348.26	65.708
#1	.00115	.00271	.00045	.00329	.00007	-.00003	.01238
#2	.00128	.00060	-.00018	.00341	-.00011	.00003	.00294
#3	.00001	.00244	-.00004	.00206	-.00019	-.00004	.01657
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	-.00016	.00034	.00055	.00686	.00462	-.00092
Stddev	.00010	.00013	.00022	.00015	.00561	.02595	.00173
%RSD	42.136	80.536	63.159	27.911	81.859	561.21	188.44
#1	.00012	-.00030	.00013	.00056	.00641	.01677	-.00197
#2	.00031	-.00013	.00056	.00039	.01268	.02228	-.00187
#3	.00025	-.00005	.00034	.00069	.00148	-.02517	.00108
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01110	.00038	.00112	6.9856	-.00052	F -.00694	-.00048
Stddev	.04989	.00012	.00038	.0144	.00062	.00501	.00168
%RSD	449.41	30.138	33.598	.20664	119.61	72.139	352.39
#1	.04468	.00036	.00118	6.9862	.00010	-.00128	.00035
#2	.03485	.00028	.00072	6.9709	-.00051	-.01081	-.00241
#3	-.04623	.00051	.00146	6.9998	-.00113	-.00873	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 24, 2015

Sample Name: FBLK1 Acquired: 2/23/2015 10:29:49 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG512825-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00162**	**.00160**	**.00039**	**-.00354**	**.00002**	**.00066**	**.00024**
Stddev	.00108	.00053	.00150	.00014	.00006	.00089	.00143
%RSD	66.953	32.899	389.43	4.0907	260.15	134.93	584.20
#1	-.00191	.00100	-.00087	-.00339	.00008	.00026	.00159
#2	-.00252	.00179	-.00003	-.00368	-.00001	.00004	.00040
#3	-.00042	.00200	.00206	-.00356	-.00001	.00168	-.00126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00033**	**.00397**	F **-6.3757**
Stddev	.00025	.00011	6.4898
%RSD	76.035	2.6502	101.79
#1	-.00062	.00405	-13.511
#2	-.00015	.00400	-4.7908
#3	-.00023	.00385	-.8252
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**11063.**	**13922.**
Stddev	14.	32.
%RSD	.12304	.22710
#1	11075.	13914.
#2	11065.	13895.
#3	11048.	13956.

Approved: February 24, 2015

Sample Name: FBLK2 Acquired: 2/23/2015 10:33:25 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG512825-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00690	.01266	-.00090	.00427	.00006	.00003	.03616
Stddev	.00022	.00302	.00151	.00068	.00006	.00002	.00521
%RSD	3.1962	23.841	166.84	15.943	115.43	77.135	14.415
#1	.00666	.01577	-.00156	.00435	.00010	.00005	.04178
#2	.00710	.00975	.00082	.00492	-.00002	.00002	.03148
#3	.00692	.01244	-.00197	.00356	.00008	.00001	.03522
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	-.00015	.00001	.00090	.01677	.00714	-.00138
Stddev	.00010	.00014	.00017	.00039	.00268	.03177	.00213
%RSD	28.192	89.878	1816.4	43.254	15.995	445.01	154.11
#1	.00045	-.00027	.00014	.00129	.01985	-.02091	.00058
#2	.00025	-.00020	.00006	.00051	.01545	.00069	-.00108
#3	.00041	.00000	-.00018	.00091	.01500	.04164	-.00364
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02487	.00076	.00028	3.9203	-.00041	F -.00453	-.00072
Stddev	.00148	.00016	.00030	.0162	.00069	.00326	.00035
%RSD	5.9546	21.292	106.71	.41436	169.42	71.896	48.385
#1	.02524	.00062	.00028	3.9249	-.00050	-.00156	-.00112
#2	.02324	.00072	-.00002	3.9338	.00033	-.00801	-.00054
#3	.02614	.00093	.00059	3.9023	-.00105	-.00402	-.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 24, 2015

Sample Name: FBLK2 Acquired: 2/23/2015 10:33:25 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG512825-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.00106**	**.01135**	**-.00304**	**.00021**	**.00164**	**-.00206**
Stddev	.00015	.00135	.00098	.00011	.00006	.00160	.00212
%RSD	395.93	127.46	8.6223	3.5543	29.295	97.676	102.65
#1	-.00020	-.00050	.01238	-.00313	.00018	.00342	-.00445
#2	-.00001	.00177	.01043	-.00292	.00017	.00029	-.00134
#3	.00010	.00191	.01124	-.00307	.00029	.00122	-.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00020**	**.00306**	F **-3.5662**
Stddev	.00025	.00015	13.642
%RSD	125.50	4.7706	382.54
#1	-.00025	.00290	7.4781
#2	-.00043	.00317	-18.816
#3	.00007	.00312	.6395
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**11057.**	**14234.**
Stddev	4.	51.
%RSD	.04021	.35523
#1	11060.	14256.
#2	11059.	14271.
#3	11052.	14177.

Approved: February 24, 2015

Sample Name: L1502091001 Acquired: 2/23/2015 10:37:04 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG512983-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	.04742	.00128	.00795	.02382	-.00004	12.026	.00041
Stddev	.00012	.00238	.00268	.00104	.00006	.00002	.006	.00012
%RSD	20.231	5.0270	208.70	13.061	.25157	47.243	.04810	29.240
#1	.00073	.04751	-.00151	.00784	.02389	-.00005	12.019	.00048
#2	.00049	.04976	.00382	.00698	.02377	-.00005	12.030	.00027
#3	.00058	.04499	.00154	.00905	.02381	-.00002	12.028	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	-.00022	.00047	.03241	.52979	-.00066	.97552	.00077
Stddev	.00006	.00017	.00081	.00350	.03508	.00093	.01599	.00005
%RSD	35.587	77.874	172.68	10.786	6.6219	139.77	1.6393	5.8971
#1	-.00020	-.00006	.00115	.03223	.56905	-.00111	.95843	.00080
#2	-.00009	-.00020	.00068	.03599	.51884	-.00128	.99013	.00080
#3	-.00018	-.00040	-.00042	.02901	.50150	.00040	.97800	.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	8.6196	.00060	.01366	-.00106	-.00092	-.00092	.37768
Stddev	.00008	.0070	.00074	.00581	.00078	.00186	.00403	.00272
%RSD	150.66	.08131	124.15	42.549	74.172	202.38	438.99	.72086
#1	-.00004	8.6258	.00119	.01113	-.00055	-.00004	.00200	.37461
#2	.00009	8.6120	.00084	.00954	-.00196	.00034	-.00552	.37981
#3	.00011	8.6211	-.00024	.02030	-.00066	-.00305	.00076	.37861
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 24, 2015

Sample Name: L1502091001 Acquired: 2/23/2015 10:37:04 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG512983-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00341**	**.04543**	**.00155**	**-.00125**	**.00033**	**.00699**	**21.470**
Stddev	.00017	.00027	.00038	.00173	.00022	.00006	5.841
%RSD	5.0033	.58356	24.489	138.46	66.285	.80661	27.203
#1	-.00343	.04513	.00189	.00073	.00026	.00692	16.296
#2	-.00323	.04558	.00114	-.00245	.00016	.00702	20.312
#3	-.00357	.04559	.00162	-.00203	.00058	.00703	27.803
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10965.**	**14023.**
Stddev	19.	77.
%RSD	.17623	.55036
#1	10982.	14062.
#2	10967.	13934.
#3	10944.	14073.

Approved: February 24, 2015

Sample Name: L1502091001MS Acquired: 2/23/2015 10:40:39 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG512983-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20572	4.9576	.20053	.97493	.53503	.02491	17.197	.02554
Stddev	.00008	.0343	.00145	.00299	.00555	.00004	.081	.00008
%RSD	.03720	.69259	.72203	.30716	1.0366	.17905	.46985	.30661
#1	.20581	4.9181	.20186	.97165	.52905	.02486	17.105	.02546
#2	.20567	4.9803	.19899	.97563	.54000	.02495	17.256	.02555
#3	.20568	4.9745	.20073	.97752	.53604	.02492	17.229	.02562
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10438	.26250	.25641	2.0614	25.708	.50340	5.8253	.24724
Stddev	.00014	.00126	.00106	.0270	.071	.00165	.0433	.00175
%RSD	.13170	.48185	.41172	1.3088	.27761	.32799	.74296	.70830
#1	.10453	.26134	.25611	2.0305	25.654	.50385	5.7755	.24523
#2	.10437	.26385	.25758	2.0802	25.789	.50157	5.8535	.24845
#3	.10425	.26231	.25554	2.0736	25.681	.50478	5.8469	.24804
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52035	33.710	.25473	4.9185	.25319	.60496	.18991	2.9395
Stddev	.00036	.238	.00136	.0112	.00093	.00231	.00182	.0038
%RSD	.06955	.70486	.53476	.22820	.36733	.38120	.95706	.12972
#1	.52020	33.467	.25318	4.9057	.25321	.60320	.18807	2.9391
#2	.52077	33.941	.25531	4.9235	.25412	.60757	.19170	2.9435
#3	.52009	33.722	.25571	4.9264	.25226	.60410	.18995	2.9359
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 24, 2015

Sample Name: L1502091001MS Acquired: 2/23/2015 10:40:39 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG512983-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51070	.55226	.51783	.26039	.51624	.51793	15.804
Stddev	.00207	.00293	.00388	.00077	.00122	.00133	10.928
%RSD	.40615	.53097	.74891	.29513	.23600	.25697	69.148
#1	.51032	.54929	.51337	.26038	.51484	.51639	16.404
#2	.51294	.55515	.52040	.26116	.51711	.51865	26.419
#3	.50884	.55234	.51972	.25963	.51675	.51874	4.5880
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10863.	14178.
Stddev	27.	65.
%RSD	.24853	.45551
#1	10862.	14236.
#2	10836.	14109.
#3	10890.	14190.

Approved: February 24, 2015

Sample Name: L1502091001MSD Acquired: 2/23/2015 10:43:58 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG512983-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20790**	**5.0538**	**.20393**	**.98934**	**.54353**	**.02523**	**17.464**	**.02594**
Stddev	.00114	.0226	.00143	.00414	.00196	.00004	.022	.00004
%RSD	.54836	.44648	.70224	.41851	.36030	.14161	.12635	.16938
#1	.20916	5.0789	.20539	.99355	.54127	.02519	17.467	.02599
#2	.20760	5.0471	.20387	.98919	.54473	.02526	17.485	.02592
#3	.20694	5.0353	.20253	.98527	.54458	.02524	17.441	.02592
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10578**	**.26546**	**.26021**	**2.0957**	**26.006**	**.50833**	**5.8915**	**.25330**
Stddev	.00029	.00130	.00130	.0131	.041	.00182	.0066	.00090
%RSD	.27610	.48847	.50055	.62646	.15817	.35858	.11280	.35562
#1	.10573	.26407	.26062	2.0813	26.026	.50969	5.8860	.25430
#2	.10610	.26664	.26125	2.0991	26.034	.50904	5.8989	.25303
#3	.10552	.26565	.25875	2.1069	25.959	.50626	5.8897	.25256
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52933**	**34.226**	**.25893**	**5.0023**	**.25580**	**.61422**	**.19638**	**2.9812**
Stddev	.00260	.078	.00105	.0047	.00229	.00286	.00091	.0047
%RSD	.49150	.22663	.40441	.09314	.89365	.46561	.46518	.15932
#1	.53205	34.138	.25939	5.0020	.25679	.61477	.19692	2.9849
#2	.52907	34.285	.25967	5.0071	.25319	.61677	.19532	2.9829
#3	.52686	34.254	.25773	4.9978	.25743	.61113	.19689	2.9759
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 24, 2015

Sample Name: L1502091001MSD Acquired: 2/23/2015 10:43:58 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG512983-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51917	.55951	.52258	.26116	.52348	.52926	21.715
Stddev	.00056	.00132	.00375	.00149	.00144	.00215	20.156
%RSD	.10841	.23627	.71740	.57099	.27564	.40598	92.820
#1	.51949	.55799	.52330	.26272	.52513	.52723	44.899
#2	.51951	.56039	.52592	.26101	.52284	.53151	11.883
#3	.51852	.56016	.51853	.25974	.52247	.52904	8.3621
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10836.	13966.
Stddev	31.	69.
%RSD	.28316	.49234
#1	10809.	13888.
#2	10829.	14017.
#3	10869.	13994.

Approved: February 24, 2015

Sample Name: L1502092901 Acquired: 2/23/2015 10:47:17 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	.00330	-.00052	.01389	.00239	-.00004	19.955
Stddev	.00079	.00157	.00101	.00087	.00025	.00001	.052
%RSD	347.10	47.516	193.72	6.2936	10.576	26.434	.26280
#1	.00055	.00270	-.00165	.01368	.00262	-.00003	19.903
#2	-.00103	.00508	-.00017	.01485	.00212	-.00005	19.954
#3	-.00020	.00212	.00026	.01314	.00243	-.00004	20.008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	-.00019	.00208	.00044	.00554	1.3457	.00315
Stddev	.00002	.00014	.00024	.00022	.00266	.0147	.00073
%RSD	11.154	71.402	11.596	51.060	47.979	1.0945	23.232
#1	.00017	-.00034	.00221	.00069	.00279	1.3468	.00241
#2	.00017	-.00006	.00180	.00029	.00810	1.3305	.00388
#3	.00021	-.00018	.00222	.00033	.00574	1.3599	.00316
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.80624	.00160	.00174	8.3032	.00050	F -.00852	.00186
Stddev	.02438	.00003	.00016	.0419	.00075	.00276	.00138
%RSD	3.0243	2.0994	9.2938	.50452	148.57	32.381	74.461
#1	.78303	.00157	.00159	8.2985	.00055	-.01171	.00146
#2	.83165	.00161	.00191	8.2638	.00122	-.00689	.00339
#3	.80403	.00163	.00173	8.3472	-.00027	-.00697	.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 24, 2015

Sample Name: L1502092901 Acquired: 2/23/2015 10:47:17 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00050	-.00048	.87293	.00181	.12028	-.00076	.00062
Stddev	.00172	.00152	.00290	.00029	.00139	.00145	.00200
%RSD	345.78	316.42	.33228	16.058	1.1519	189.72	322.15
#1	-.00101	-.00208	.87599	.00209	.11917	-.00241	.00145
#2	.00142	-.00030	.87022	.00181	.11983	-.00020	.00206
#3	-.00190	.00094	.87258	.00151	.12183	.00032	-.00166
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00023	.00310	8.8662
Stddev	.00030	.00005	3.8223
%RSD	129.77	1.6308	43.111
#1	-.00010	.00309	11.378
#2	.00047	.00316	4.4674
#3	.00032	.00306	10.753
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10913.	13999.
Stddev	32.	35.
%RSD	.29283	.24943
#1	10876.	13960.
#2	10930.	14011.
#3	10932.	14027.

Approved: February 24, 2015

Sample Name: L1502092901PS Acquired: 2/23/2015 10:50:51 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG512992-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20860	5.0214	.20445	.99367	.52234	.02533	23.119
Stddev	.00108	.0102	.00167	.00453	.00184	.00001	.034
%RSD	.51957	.20397	.81928	.45594	.35211	.03603	.14836
#1	.20781	5.0269	.20274	.98845	.52411	.02534	23.083
#2	.20984	5.0096	.20452	.99651	.52044	.02532	23.123
#3	.20817	5.0278	.20608	.99606	.52246	.02534	23.151
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02573	.10597	.26773	.26134	2.0629	26.765	.51555
Stddev	.00016	.00048	.00140	.00041	.0020	.090	.00185
%RSD	.61814	.45167	.52330	.15503	.09650	.33795	.35813
#1	.02560	.10572	.26910	.26097	2.0649	26.781	.51369
#2	.02568	.10567	.26630	.26177	2.0609	26.667	.51739
#3	.02591	.10652	.26780	.26128	2.0629	26.846	.51556
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.6539	.25181	.52737	33.014	.25906	5.0192	.25546
Stddev	.0575	.00066	.00037	.102	.00086	.0110	.00180
%RSD	1.0175	.26374	.07051	.30775	.33224	.21945	.70528
#1	5.5875	.25242	.52694	33.114	.25851	5.0235	.25347
#2	5.6860	.25189	.52762	32.911	.25863	5.0274	.25596
#3	5.6883	.25110	.52755	33.018	.26006	5.0067	.25697
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: L1502092901PS Acquired: 2/23/2015 10:50:51 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG512992-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.61718**	**.19446**	**3.4102**	**.52240**	**.62222**	**.52041**	**.26175**
Stddev	.00141	.00310	.0053	.00184	.00088	.00390	.00065
%RSD	.22880	1.5965	.15620	.35219	.14203	.74869	.24647
#1	.61625	.19369	3.4042	.52396	.62259	.51593	.26248
#2	.61881	.19182	3.4121	.52287	.62121	.52300	.26127
#3	.61649	.19788	3.4143	.52037	.62285	.52231	.26149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.52397**	**.51990**	F **-12.277**
Stddev	.00095	.00079	21.208
%RSD	.18218	.15196	172.74
#1	.52301	.52068	11.677
#2	.52492	.51993	-28.661
#3	.52398	.51910	-19.847
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10872.**	**14133.**
Stddev	5.	53.
%RSD	.04574	.37346
#1	10869.	14072.
#2	10878.	14164.
#3	10870.	14162.

Approved: February 24, 2015

Sample Name: L1502092901SDL Acquired: 2/23/2015 10:54:11 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG512992-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00058	.00064	.00062	.00637	.00038	-.00004	4.0373
Stddev	.00030	.00179	.00113	.00020	.00008	.00001	.0039
%RSD	50.589	278.79	183.48	3.1338	21.417	38.457	.09604
#1	.00050	.00056	.00099	.00659	.00029	-.00003	4.0343
#2	.00034	.00247	.00152	.00632	.00045	-.00005	4.0417
#3	.00091	-.00110	-.00065	.00621	.00039	-.00003	4.0360
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	-.00010	.00017	-.00007	.00879	.25944	.00148
Stddev	.00009	.00016	.00059	.00032	.00331	.00989	.00081
%RSD	145.47	162.42	354.36	446.82	37.700	3.8123	54.313
#1	.00001	.00003	.00014	.00022	.00511	.25881	.00055
#2	.00001	-.00028	.00078	-.00042	.00972	.26962	.00193
#3	.00017	-.00005	-.00041	-.00002	.01154	.24987	.00197
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.17596	.00041	.00138	1.7138	-.00063	-.00267	-.00042
Stddev	.01562	.00007	.00038	.0122	.00090	.00270	.00109
%RSD	8.8795	17.648	27.469	.71421	144.26	101.39	260.89
#1	.16642	.00040	.00100	1.7028	.00039	-.00572	-.00035
#2	.19399	.00034	.00176	1.7117	-.00133	-.00059	-.00154
#3	.16747	.00049	.00137	1.7270	-.00094	-.00169	.00064
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: L1502092901SDL Acquired: 2/23/2015 10:54:11 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG512992-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00114	.00288	.17727	-.00018	.02435	.00081	.00162
Stddev	.00124	.00485	.00122	.00071	.00021	.00118	.00240
%RSD	108.71	168.06	.69085	395.42	.87946	145.31	147.51
#1	.00052	.00771	.17866	.00050	.02415	-.00008	-.00008
#2	.00257	-.00199	.17636	-.00091	.02431	.00214	.00437
#3	.00034	.00293	.17678	-.00013	.02458	.00036	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00012	.00144	F -7.7875
Stddev	.00020	.00031	12.679
%RSD	164.08	21.704	162.81
#1	.00010	.00109	-22.427
#2	-.00018	.00154	-.3682
#3	-.00029	.00170	-.5670
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10930.	13708.
Stddev	15.	60.
%RSD	.13678	.43898
#1	10940.	13688.
#2	10937.	13776.
#3	10913.	13661.

Approved: February 24, 2015

Sample Name: CCV Acquired: 2/23/2015 10:57:49 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41200	10.206	.41881	.51456	1.0226	.05124	10.255
Stddev	.00097	.023	.00269	.00315	.0029	.00007	.024
%RSD	.23550	.22433	.64122	.61177	.28093	.13651	.23647
#1	.41216	10.209	.42076	.51803	1.0259	.05121	10.281
#2	.41289	10.182	.41574	.51189	1.0212	.05120	10.252
#3	.41097	10.227	.41992	.51374	1.0207	.05132	10.233
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05203	.20945	.52297	.51977	4.1094	50.958	1.0071
Stddev	.00008	.00033	.00172	.00079	.0057	.092	.0006
%RSD	.15270	.15938	.32969	.15239	.13943	.17987	.06241
#1	.05203	.20975	.52116	.52020	4.1036	51.036	1.0066
#2	.05195	.20952	.52315	.51885	4.1094	50.857	1.0069
#3	.05211	.20909	.52460	.52025	4.1151	50.981	1.0078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.200	.51370	1.0174	50.813	.51545	10.264	.51616
Stddev	.029	.00228	.0020	.152	.00127	.005	.00234
%RSD	.28238	.44446	.19238	.29932	.24708	.05243	.45388
#1	10.168	.51580	1.0192	50.988	.51679	10.264	.51349
#2	10.211	.51127	1.0153	50.714	.51425	10.259	.51786
#3	10.222	.51404	1.0177	50.736	.51532	10.269	.51714
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 24, 2015

Sample Name: CCV Acquired: 2/23/2015 10:57:49 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2357**	**.42152**	**5.2142**	**1.0356**	**1.0198**	**1.0246**	**.52864**
Stddev	.0033	.00498	.0147	.0021	.0028	.0020	.00116
%RSD	.27063	1.1805	.28230	.20303	.27555	.19638	.21930
#1	1.2371	.41879	5.2119	1.0344	1.0230	1.0258	.52858
#2	1.2319	.41850	5.2008	1.0343	1.0178	1.0223	.52751
#3	1.2382	.42726	5.2300	1.0380	1.0184	1.0257	.52982
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0173**	**1.0345**	F **-6.2389**
Stddev	.0018	.0017	7.1599
%RSD	.17282	.16140	114.76
#1	1.0193	1.0346	-12.228
#2	1.0166	1.0327	1.6916
#3	1.0160	1.0361	-8.1805
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**11006.**	**13970.**
Stddev	8.	43.
%RSD	.07605	.30668
#1	11012.	13965.
#2	11008.	14015.
#3	10996.	13930.

Approved: February 24, 2015

Sample Name: CCB Acquired: 2/23/2015 11:01:04 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00044	-.00630	.00070	.00311	.00005	-.00005	.01892
Stddev	.00045	.00183	.00228	.00037	.00008	.00001	.01087
%RSD	101.82	28.990	325.25	11.744	174.44	18.556	57.460
#1	-.00004	-.00541	-.00046	.00272	.00004	-.00005	.01414
#2	.00051	-.00840	-.00077	.00345	.00014	-.00005	.01126
#3	.00085	-.00509	.00333	.00318	-.00003	-.00004	.03137
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.00030	.00052	.00037	.00405	-.00800	-.00112
Stddev	.00019	.00015	.00037	.00018	.00294	.02201	.00055
%RSD	88.228	47.925	71.355	49.643	72.610	275.06	49.499
#1	.00024	.00021	.00023	.00055	.00456	-.03250	-.00089
#2	.00039	.00047	.00039	.00019	.00671	-.00159	-.00072
#3	.00001	.00023	.00094	.00037	.00089	.01009	-.00175
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.01228	.00005	.00394	.01151	-.00034	-.00047	.00057
Stddev	.00645	.00001	.00024	.00193	.00056	.00601	.00133
%RSD	52.493	26.218	6.0227	16.745	166.60	1269.3	234.76
#1	-.00767	.00005	.00375	.01364	-.00079	.00482	-.00050
#2	-.01965	.00004	.00386	.01103	.00029	-.00700	.00205
#3	-.00953	.00006	.00421	.00987	-.00051	.00076	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: CCB Acquired: 2/23/2015 11:01:04 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00128**	**.00164**	**.00124**	**-.00087**	**.00008**	**.00004**	**.00047**
Stddev	.00071	.00222	.00301	.00057	.00003	.00146	.00354
%RSD	55.611	135.31	242.94	65.921	45.101	3457.3	753.25
#1	.00099	-.00089	.00471	-.00021	.00012	.00164	-.00333
#2	.00209	.00257	-.00041	-.00117	.00007	-.00028	.00368
#3	.00076	.00324	-.00058	-.00123	.00005	-.00123	.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00003**	**.00007**	F **-.53481**
Stddev	.00024	.00002	10.756
%RSD	899.99	25.961	2011.1
#1	.00020	.00008	-8.4987
#2	-.00027	.00008	-4.8061
#3	.00000	.00005	11.700
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10878.**	**14107.**
Stddev	13.	172.
%RSD	.12401	1.2199
#1	10869.	13943.
#2	10894.	14286.
#3	10873.	14094.

Approved: February 24, 2015

Sample Name: LLCCV Acquired: 2/23/2015 11:04:44 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01253	-.00588	.10845	.00054	.01181	-.00004	.01064
Stddev	.00048	.00210	.00215	.00033	.00023	.00004	.00538
%RSD	3.8465	35.656	1.9817	60.120	1.9324	91.941	50.540
#1	.01300	-.00506	.11033	.00088	.01156	-.00001	.01039
#2	.01204	-.00827	.10611	.00023	.01188	-.00003	.00539
#3	.01255	-.00432	.10891	.00053	.01200	-.00008	.01614
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01240	.00009	.02449	.00047	.00106	-.02572	-.00197
Stddev	.00008	.00005	.00061	.00037	.00228	.03982	.00138
%RSD	.63193	53.718	2.4894	79.754	213.89	154.85	70.283
#1	.01232	.00003	.02388	.00007	.00275	-.06111	-.00105
#2	.01239	.00012	.02451	.00053	-.00153	.01740	-.00129
#3	.01248	.00012	.02510	.00081	.00197	-.03345	-.00356
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03398	.00016	.00044	.01779	-.00033	.00090	.11354
Stddev	.04221	.00008	.00008	.00969	.00054	.00240	.00084
%RSD	124.24	48.403	17.415	54.462	164.22	268.04	.74382
#1	.07691	.00020	.00043	.02090	-.00096	.00088	.11347
#2	.03249	.00007	.00038	.00693	-.00001	-.00150	.11441
#3	-.00747	.00020	.00053	.02555	-.00002	.00331	.11273
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: LLCCV Acquired: 2/23/2015 11:04:44 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00035**	**.08506**	**-.00005**	**-.00107**	**.00000**	**.00103**	**.00014**
Stddev	.00143	.00248	.00094	.00018	.00004	.00050	.00277
%RSD	405.72	2.9157	1824.1	16.915	986.22	48.868	1954.2
#1	.00065	.08429	.00098	-.00086	-.00004	.00132	.00047
#2	.00029	.08305	-.00087	-.00116	.00002	.00133	.00273
#3	-.00199	.08783	-.00026	-.00118	.00003	.00045	-.00277
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00024**	**.00169**	F **-.07756**
Stddev	.00017	.00011	10.772
%RSD	71.911	6.7594	13889.
#1	.00035	.00180	8.8369
#2	.00004	.00171	2.9775
#3	.00031	.00157	-12.047
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10910.**	**14044.**
Stddev	12.	33.
%RSD	.11051	.23805
#1	10902.	14027.
#2	10924.	14083.
#3	10904.	14024.

Approved: February 24, 2015

Sample Name: PBW 66 Acquired: 2/23/2015 11:08:21 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG512948-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	-.00376	-.00178	.00038	-.00037	-.00006	.01319
Stddev	.00054	.00277	.00138	.00034	.00021	.00003	.00516
%RSD	1998.0	73.658	77.691	88.595	56.639	46.327	39.149
#1	.00055	-.00684	-.00296	.00003	-.00020	-.00003	.00784
#2	-.00053	-.00148	-.00212	.00071	-.00060	-.00008	.01814
#3	.00006	-.00296	-.00026	.00040	-.00030	-.00008	.01358
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	-.00003	.00053	.00066	.00136	-.02087	-.00104
Stddev	.00004	.00007	.00049	.00052	.00430	.03558	.00088
%RSD	11.339	242.26	93.142	78.226	317.08	170.45	84.641
#1	.00030	.00005	.00025	.00116	-.00035	-.05647	-.00019
#2	.00038	-.00006	.00023	.00070	.00625	-.02084	-.00099
#3	.00034	-.00008	.00109	.00013	-.00183	.01469	-.00195
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00687	.00045	.00008	.01598	.00536	F -.01238	.00100
Stddev	.02015	.00004	.00018	.01178	.00963	.00570	.00236
%RSD	293.33	9.2375	227.15	73.670	179.78	46.026	236.34
#1	.00278	.00048	.00004	.02342	-.00040	-.00754	-.00043
#2	-.01092	.00040	-.00007	.02213	.00000	-.01866	.00373
#3	.02875	.00046	.00027	.00241	.01648	-.01094	-.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 24, 2015

Sample Name: PBW 66 Acquired: 2/23/2015 11:08:21 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG512948-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00103**	**.00331**	**.00835**	**-.00161**	**.00003**	**.00082**	**.00030**
Stddev	.00144	.00475	.01614	.00032	.00008	.00032	.00252
%RSD	139.16	143.31	193.39	19.594	248.75	39.642	832.63
#1	-.00097	.00719	-.00045	-.00127	.00013	.00058	-.00254
#2	-.00250	-.00198	-.00149	-.00189	-.00001	.00119	.00224
#3	.00037	.00473	.02697	-.00169	-.00002	.00069	.00121
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00006**	**.00230**	**.91460**
Stddev	.00027	.00145	2.3660
%RSD	471.74	62.894	258.69
#1	.00035	.00145	3.4972
#2	.00002	.00148	.39516
#3	-.00019	.00397	-1.1485
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10896.**	**14304.**
Stddev	169.	37.
%RSD	1.5466	.26182
#1	10985.	14332.
#2	11002.	14318.
#3	10702.	14261.

Approved: February 24, 2015

Sample Name: LCSW 66 Acquired: 2/23/2015 11:11:57 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG512948-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20794	4.8809	.20383	.97963	.52023	.02507	5.1149	.02550
Stddev	.00162	.0177	.00126	.00313	.00097	.00006	.0146	.00005
%RSD	.77889	.36217	.62035	.31910	.18553	.22446	.28611	.19049
#1	.20924	4.8924	.20242	.97877	.51928	.02500	5.0987	.02548
#2	.20612	4.8606	.20421	.97702	.52121	.02510	5.1273	.02556
#3	.20845	4.8899	.20487	.98310	.52020	.02510	5.1186	.02546
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10553	.26456	.26068	2.0459	25.200	.50736	4.8355	.24450
Stddev	.00059	.00116	.00182	.0028	.058	.00087	.0334	.00070
%RSD	.55999	.43804	.69828	.13678	.23055	.17228	.69099	.28502
#1	.10621	.26342	.26261	2.0485	25.133	.50688	4.7979	.24463
#2	.10524	.26452	.26042	2.0430	25.237	.50682	4.8466	.24375
#3	.10515	.26574	.25900	2.0462	25.229	.50837	4.8618	.24512
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52418	25.342	.25908	4.9055	.25439	.61574	.19954	2.6188
Stddev	.00050	.020	.00018	.0125	.00075	.00240	.00155	.0023
%RSD	.09501	.08058	.07090	.25502	.29621	.38922	.77719	.08744
#1	.52443	25.331	.25921	4.9180	.25413	.61837	.19937	2.6175
#2	.52451	25.330	.25887	4.9056	.25524	.61514	.19808	2.6174
#3	.52361	25.366	.25916	4.8929	.25381	.61369	.20116	2.6214
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 24, 2015

Sample Name: LCSW 66 Acquired: 2/23/2015 11:11:57 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG512948-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51460	.51418	.51364	.26326	.51959	.50890	5.4423
Stddev	.00051	.00114	.00386	.00125	.00132	.00267	15.529
%RSD	.09840	.22206	.75071	.47594	.25402	.52523	285.34
#1	.51497	.51288	.51366	.26412	.51994	.51196	4.7101
#2	.51481	.51503	.51749	.26384	.51814	.50700	21.324
#3	.51403	.51463	.50977	.26182	.52071	.50774	-9.7076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10893.	14489.
Stddev	24.	10.
%RSD	.22348	.06822
#1	10866.	14479.
#2	10898.	14499.
#3	10913.	14490.

Approved: February 24, 2015

Sample Name: L1502094401 Acquired: 2/23/2015 11:15:16 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	.56963	.00046	.01151	.03748	-.00006	48.739	.00045
Stddev	.00071	.00744	.00083	.00085	.00020	.00002	.246	.00002
%RSD	94.986	1.3062	181.71	7.3793	.54288	29.468	.50497	4.0164
#1	.00108	.56105	-.00029	.01236	.03725	-.00005	48.455	.00045
#2	.00124	.57343	.00135	.01067	.03761	-.00006	48.892	.00047
#3	-.00007	.57439	.00030	.01149	.03759	-.00008	48.869	.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.00167	.00236	1.1867	.82461	.00332	7.3245	.03266
Stddev	.00023	.00025	.00058	.0163	.02597	.00034	.0703	.00018
%RSD	24.854	14.678	24.727	1.3740	3.1494	10.364	.96005	.54111
#1	.00103	.00172	.00261	1.1692	.79842	.00337	7.2850	.03247
#2	.00067	.00189	.00279	1.1893	.82506	.00295	7.4057	.03282
#3	.00110	.00141	.00170	1.2016	.85036	.00363	7.2828	.03268
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00203	3.1699	.00120	.00863	.00150	-.00176	-.00043	4.5896
Stddev	.00068	.0092	.00036	.00279	.00220	.00139	.00460	.0121
%RSD	33.310	.28916	30.490	32.360	146.16	78.998	1076.3	.26351
#1	.00125	3.1620	.00160	.00582	-.00086	-.00312	-.00562	4.5758
#2	.00239	3.1799	.00109	.01140	.00349	-.00034	.00311	4.5982
#3	.00245	3.1677	.00090	.00866	.00189	-.00181	.00123	4.5949
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 24, 2015

Sample Name: L1502094401 Acquired: 2/23/2015 11:15:16 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00309**	**.10098**	**.00908**	**-.00056**	**.00091**	**.00510**	**22.217**
Stddev	.00034	.00079	.00051	.00106	.00015	.00025	10.436
%RSD	11.125	.77879	5.6681	190.35	16.254	4.9929	46.974
#1	-.00276	.10036	.00965	-.00084	.00078	.00538	26.215
#2	-.00345	.10186	.00896	.00061	.00088	.00506	30.063
#3	-.00307	.10071	.00864	-.00144	.00107	.00487	10.373
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10894.**	**14493.**
Stddev	20.	85.
%RSD	.18678	.58499
#1	10916.	14586.
#2	10876.	14419.
#3	10890.	14473.

Approved: February 24, 2015

Sample Name: L1502094601 Acquired: 2/23/2015 11:18:49 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.29468	-.00023	.00767	.03544	-.00002	19.689	.00033
Stddev	.00018	.00135	.00116	.00031	.00028	.00003	.122	.00006
%RSD	127.22	.45777	506.54	4.0572	.79039	146.12	.62160	18.889
#1	.00018	.29485	.00021	.00763	.03512	.00001	19.550	.00032
#2	.00030	.29593	-.00154	.00738	.03554	-.00006	19.779	.00040
#3	-.00006	.29325	.00064	.00800	.03565	-.00002	19.738	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.00140	.00092	.63079	.52651	.00146	2.3339	.05296
Stddev	.00015	.00018	.00048	.00808	.03273	.00049	.0116	.00027
%RSD	42.130	12.623	52.168	1.2806	6.2157	33.299	.49501	.50078
#1	.00047	.00121	.00079	.62147	.50477	.00183	2.3208	.05276
#2	.00019	.00156	.00145	.63568	.51062	.00091	2.3428	.05326
#3	.00040	.00144	.00052	.63523	.56415	.00164	2.3381	.05285
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	2.0023	.00142	.03073	.00152	-.00365	.00015	3.7457
Stddev	.00029	.0116	.00076	.00526	.00120	.00164	.00209	.0066
%RSD	95.259	.57844	53.237	17.107	78.867	44.916	1406.2	.17765
#1	.00028	1.9889	.00077	.03169	.00201	-.00188	-.00127	3.7381
#2	.00003	2.0089	.00124	.02506	.00241	-.00395	-.00084	3.7487
#3	.00061	2.0091	.00225	.03545	.00016	-.00511	.00255	3.7504
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 24, 2015

Sample Name: L1502094601 Acquired: 2/23/2015 11:18:49 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00368	.05852	.00528	-.00096	.00037	.00598	12.659
Stddev	.00012	.00051	.00090	.00010	.00024	.00018	14.628
%RSD	3.1847	.87427	17.067	10.629	65.439	2.9484	115.55
#1	-.00375	.05799	.00631	-.00100	.00036	.00594	-4.0208
#2	-.00354	.05901	.00489	-.00084	.00013	.00618	23.302
#3	-.00374	.05857	.00463	-.00104	.00061	.00584	18.696
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10970.	14552.
Stddev	7.	49.
%RSD	.06363	.33522
#1	10964.	14583.
#2	10969.	14496.
#3	10978.	14577.

Approved: February 24, 2015

Sample Name: L1502095001 Acquired: 2/23/2015 11:22:22 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	.01576	-.00336	.00982	.06479	-.00007	62.004
Stddev	.00094	.00158	.00195	.00064	.00032	.00001	.177
%RSD	514.89	10.026	57.905	6.5366	.49091	11.655	.28587
#1	.00067	.01395	-.00146	.01023	.06490	-.00007	62.031
#2	-.00119	.01683	-.00327	.00908	.06443	-.00008	61.815
#3	-.00003	.01651	-.00536	.01016	.06503	-.00007	62.167
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	-.00037	.00105	.00046	.02677	.62369	.00468
Stddev	.00004	.00015	.00042	.00064	.00879	.01972	.00108
%RSD	8.9930	38.945	40.454	137.49	32.830	3.1626	23.130
#1	.00043	-.00054	.00153	.00111	.03006	.62745	.00583
#2	.00044	-.00026	.00084	.00045	.01681	.60236	.00451
#3	.00050	-.00033	.00077	-.00017	.03344	.64127	.00369
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.0654	.00116	.00031	4.4725	.00031	.00271	.00179
Stddev	.0089	.00007	.00014	.0059	.00079	.00313	.00415
%RSD	.14605	6.0032	44.619	.13199	257.13	115.49	231.89
#1	6.0688	.00123	.00016	4.4673	.00010	.00284	-.00289
#2	6.0720	.00109	.00043	4.4713	.00118	-.00048	.00505
#3	6.0553	.00116	.00034	4.4789	-.00036	.00577	.00321
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: L1502095001 Acquired: 2/23/2015 11:22:22 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00139**	**-.00225**	**4.2002**	**-.00347**	**.24727**	**-.00262**	**-.00022**
Stddev	.00080	.00075	.0088	.00065	.00077	.00105	.00069
%RSD	57.217	33.237	.20833	18.606	.31081	40.023	317.35
#1	-.00067	-.00211	4.2020	-.00274	.24785	-.00141	-.00100
#2	-.00225	-.00158	4.2078	-.00397	.24639	-.00328	.00030
#3	-.00126	-.00305	4.1906	-.00371	.24756	-.00318	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00019**	**.01221**	F **-8.3140**
Stddev	.00021	.00013	17.340
%RSD	106.72	1.0598	208.56
#1	-.00043	.01207	4.3180
#2	-.00005	.01224	-1.1770
#3	-.00010	.01233	-28.083
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10759.**	**14454.**
Stddev	22.	55.
%RSD	.20464	.37896
#1	10752.	14516.
#2	10741.	14429.
#3	10784.	14415.

Approved: February 24, 2015

Sample Name: L1502095002 Acquired: 2/23/2015 11:25:56 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.04532	-.00104	.01251	.04008	-.00007	53.077	.00050
Stddev	.00005	.00287	.00217	.00079	.00015	.00002	.094	.00011
%RSD	18.432	6.3286	209.14	6.2817	.37089	25.849	.17764	21.763
#1	.00036	.04859	-.00010	.01240	.03990	-.00006	52.975	.00062
#2	.00025	.04410	.00050	.01334	.04015	-.00009	53.160	.00045
#3	.00027	.04326	-.00352	.01178	.04017	-.00006	53.095	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	.00140	.00020	.08381	.76658	.00283	9.4705	.00298
Stddev	.00017	.00047	.00040	.00511	.01802	.00050	.0500	.00008
%RSD	87.917	33.366	202.79	6.0922	2.3507	17.532	.52759	2.5922
#1	-.00017	.00148	-.00026	.08615	.77242	.00228	9.4400	.00305
#2	-.00036	.00183	.00042	.07795	.74637	.00323	9.4434	.00299
#3	-.00003	.00090	.00043	.08732	.78096	.00300	9.5282	.00290
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	5.1795	-.00006	.00922	.00105	-.00103	-.00091	3.8629
Stddev	.00009	.0199	.00053	.00182	.00103	.00077	.00253	.0065
%RSD	300.79	.38508	904.91	19.715	98.545	74.645	277.32	.16687
#1	.00000	5.1576	.00010	.01079	-.00001	-.00042	-.00266	3.8614
#2	-.00013	5.1842	.00037	.00723	.00206	-.00189	.00199	3.8574
#3	.00004	5.1967	-.00065	.00964	.00109	-.00077	-.00206	3.8700
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 24, 2015

Sample Name: L1502095002 Acquired: 2/23/2015 11:25:56 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00348**	**.20792**	**-.00104**	**-.00015**	**-.00019**	**.00235**	**10.174**
Stddev	.00077	.00044	.00210	.00247	.00038	.00003	15.175
%RSD	22.102	.20975	202.06	1641.6	192.60	1.2396	149.16
#1	-.00267	.20747	-.00319	-.00297	-.00059	.00231	.47873
#2	-.00420	.20834	-.00091	.00161	-.00014	.00237	2.3807
#3	-.00357	.20794	.00099	.00091	.00015	.00236	27.662
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10734.**	**14270.**
Stddev	8.	37.
%RSD	.07321	.25684
#1	10733.	14240.
#2	10727.	14258.
#3	10742.	14311.

Approved: February 24, 2015

Sample Name: L1502101401 Acquired: 2/23/2015 11:29:29 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00149	18.609	.02284	.04014	.34432	.00158	81.823
Stddev	.00073	.186	.00103	.00110	.00039	.00005	.069
%RSD	48.567	.99889	4.5266	2.7317	.11385	3.1697	.08411
#1	.00124	18.605	.02346	.03927	.34473	.00152	81.778
#2	.00231	18.424	.02164	.03978	.34395	.00161	81.788
#3	.00093	18.796	.02340	.04137	.34429	.00161	81.902
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00696	.01492	.01693	1.6381	12.028	24.682	.02153
Stddev	.00011	.00033	.00031	.0136	.047	.054	.00124
%RSD	1.6139	2.1824	1.8335	.82890	.39149	.21995	5.7470
#1	.00687	.01507	.01680	1.6280	12.023	24.669	.02040
#2	.00709	.01514	.01671	1.6535	11.983	24.635	.02285
#3	.00693	.01455	.01729	1.6327	12.077	24.741	.02133
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.6014	1.0388	.00220	42.310	.01638	1.1128	.24275
Stddev	.0480	.0058	.00029	.049	.00066	.0099	.00309
%RSD	.72670	.55855	13.371	.11611	4.0092	.88720	1.2720
#1	6.5884	1.0388	.00195	42.365	.01572	1.1036	.24280
#2	6.5613	1.0330	.00212	42.272	.01703	1.1232	.24580
#3	6.6545	1.0446	.00252	42.292	.01640	1.1117	.23963
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: L1502101401 Acquired: 2/23/2015 11:29:29 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00158	.00069	26.381	.00746	.30238	.08899	-.00178
Stddev	.00290	.00309	.234	.00005	.00060	.00157	.00186
%RSD	183.34	446.36	.88882	.69896	.19927	1.7605	104.57
#1	-.00492	-.00092	26.219	.00751	.30169	.08724	-.00005
#2	.00039	.00425	26.650	.00741	.30277	.08946	-.00375
#3	-.00023	-.00125	26.274	.00748	.30269	.09027	-.00155
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.04310	.80497	F 3592.4
Stddev	.00069	.00866	48.6
%RSD	1.5958	1.0753	1.3522
#1	.04242	.79836	3559.4
#2	.04380	.81477	3648.2
#3	.04307	.80179	3569.5
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10864.	14837.
Stddev	76.	82.
%RSD	.69733	.55150
#1	10900.	14828.
#2	10776.	14923.
#3	10914.	14760.

Approved: February 24, 2015

Sample Name: L1502095101 Acquired: 2/23/2015 11:32:58 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	.16850	.00111	.00717	.15245	-.00006	54.014
Stddev	.00017	.00107	.00030	.00150	.00069	.00002	.235
%RSD	22.540	.63213	27.295	20.844	.45206	35.063	.43517
#1	.00062	.16803	.00079	.00738	.15182	-.00003	53.765
#2	.00072	.16971	.00113	.00856	.15318	-.00007	54.232
#3	.00095	.16775	.00139	.00559	.15233	-.00007	54.045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	.00279	.00126	.00641	.82210	.75764	.00564
Stddev	.00007	.00007	.00033	.00024	.00413	.01321	.00113
%RSD	12.230	2.5614	26.086	3.8152	.50192	1.7433	20.034
#1	.00065	.00276	.00129	.00667	.82161	.76146	.00513
#2	.00052	.00287	.00091	.00619	.81824	.76852	.00485
#3	.00065	.00273	.00157	.00636	.82645	.74295	.00693
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.6455	2.9029	.00126	2.9388	.00720	.03784	.00375
Stddev	.0477	.0147	.00028	.0094	.00062	.00164	.00280
%RSD	.84467	.50627	21.931	.31854	8.5911	4.3295	74.611
#1	5.5943	2.8909	.00109	2.9319	.00746	.03853	.00396
#2	5.6887	2.9193	.00158	2.9495	.00765	.03597	.00645
#3	5.6535	2.8984	.00112	2.9351	.00649	.03902	.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: L1502095101 Acquired: 2/23/2015 11:32:58 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00173**	**.00039**	**4.9390**	**-.00351**	**.12689**	**.00101**	**-.00022**
Stddev	.00151	.00265	.0108	.00051	.00157	.00127	.00173
%RSD	87.252	688.35	.21911	14.444	1.2358	124.88	801.70
#1	-.00119	-.00196	4.9266	-.00398	.12508	.00243	.00089
#2	-.00057	.00326	4.9441	-.00297	.12775	.00062	-.00220
#3	-.00344	-.00014	4.9463	-.00358	.12783	-.00001	.00067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00036**	**.04093**	F **-1.0264**
Stddev	.00036	.00012	5.5986
%RSD	101.18	.29568	545.49
#1	-.00005	.04103	-3.9981
#2	.00065	.04080	-4.5126
#3	.00048	.04097	5.4316
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10783.**	**14008.**
Stddev	18.	68.
%RSD	.16934	.48624
#1	10764.	14045.
#2	10800.	13929.
#3	10786.	14048.

Approved: February 24, 2015

Sample Name: L1502095101PS Acquired: 2/23/2015 11:36:31 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513093-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20993	5.2255	.20456	.99479	.65604	.02518	53.618
Stddev	.00060	.0007	.00047	.00310	.00132	.00009	.037
%RSD	.28539	.01349	.23013	.31125	.20165	.36218	.06876
#1	.20941	5.2248	.20414	.99133	.65457	.02509	53.575
#2	.20979	5.2262	.20447	.99573	.65714	.02527	53.640
#3	.21058	5.2256	.20507	.99731	.65641	.02520	53.639
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02583	.10707	.26414	.26447	2.8129	26.198	.51317
Stddev	.00010	.00017	.00082	.00050	.0142	.033	.00157
%RSD	.38890	.15668	.30871	.18907	.50581	.12752	.30556
#1	.02593	.10715	.26361	.26408	2.8254	26.236	.51141
#2	.02573	.10718	.26374	.26504	2.8160	26.176	.51365
#3	.02581	.10688	.26508	.26430	2.7974	26.182	.51443
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.9210	2.8126	.52093	28.130	.26009	5.0745	.25398
Stddev	.0564	.0116	.00107	.017	.00155	.0177	.00172
%RSD	.56873	.41348	.20523	.06044	.59560	.34856	.67912
#1	9.9620	2.8251	.52143	28.110	.25935	5.0551	.25571
#2	9.9444	2.8106	.52165	28.136	.25904	5.0786	.25226
#3	9.8567	2.8021	.51970	28.142	.26187	5.0897	.25397
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: L1502095101PS Acquired: 2/23/2015 11:36:31 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513093-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.61833**	**.19784**	**6.9180**	**.51407**	**.62567**	**.51401**	**.25945**
Stddev	.00148	.00444	.0098	.00041	.00104	.00430	.00261
%RSD	.23946	2.2461	.14088	.07888	.16564	.83701	1.0064
#1	.61718	.19923	6.9146	.51365	.62450	.51763	.25691
#2	.62000	.20142	6.9289	.51411	.62647	.51514	.25931
#3	.61781	.19287	6.9103	.51445	.62605	.50926	.26213
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.51982**	**.54158**	F **-7.8242**
Stddev	.00172	.00161	10.764
%RSD	.33090	.29639	137.57
#1	.51870	.54011	-14.518
#2	.51896	.54132	4.5925
#3	.52180	.54329	-13.547
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10835.**	**14023.**
Stddev	5.	65.
%RSD	.04365	.46068
#1	10830.	13962.
#2	10840.	14015.
#3	10835.	14091.

Approved: February 24, 2015

Sample Name: L1502095101SDL Acquired: 2/23/2015 11:39:51 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG513093-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	.02890	.00071	.00573	.03071	-.00006	10.915
Stddev	.00071	.00235	.00289	.00061	.00009	.00002	.036
%RSD	5917.7	8.1236	408.95	10.740	.29542	32.159	.33248
#1	-.00082	.02951	.00041	.00523	.03075	-.00008	10.923
#2	.00047	.02630	.00373	.00641	.03061	-.00004	10.875
#3	.00032	.03087	-.00202	.00554	.03078	-.00005	10.946
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	.00061	-.00025	.00099	.16829	.16138	-.00013
Stddev	.00009	.00022	.00018	.00008	.00204	.00338	.00089
%RSD	82.077	35.523	72.346	7.9590	1.2109	2.0942	669.77
#1	.00007	.00055	-.00004	.00107	.17050	.16520	.00025
#2	.00005	.00085	-.00039	.00092	.16787	.15876	-.00115
#3	.00022	.00043	-.00033	.00099	.16648	.16019	.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.1374	.58591	.00157	.61973	.00101	.00962	.00027
Stddev	.0444	.00374	.00020	.00406	.00048	.00383	.00275
%RSD	3.9049	.63766	12.920	.65538	48.062	39.834	1034.5
#1	1.0873	.58302	.00141	.61656	.00105	.01323	.00110
#2	1.1531	.58458	.00150	.61831	.00147	.01004	.00250
#3	1.1719	.59013	.00180	.62431	.00050	.00559	-.00280
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: L1502095101SDL Acquired: 2/23/2015 11:39:51 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG513093-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00075	-.00052	1.0011	-.00153	.02556	.00123	.00119
Stddev	.00104	.00441	.0044	.00014	.00018	.00024	.00088
%RSD	139.14	844.15	.44227	9.1914	.72096	19.448	73.725
#1	-.00160	-.00533	.99681	-.00165	.02565	.00103	.00140
#2	-.00107	.00045	1.0009	-.00155	.02535	.00149	.00194
#3	.00041	.00332	1.0057	-.00137	.02568	.00117	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00013	.00923	F -3.8365
Stddev	.00014	.00016	4.0676
%RSD	105.99	1.6839	106.02
#1	.00002	.00930	-3.0002
#2	.00029	.00905	-.25214
#3	.00009	.00934	-8.2572
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10911.	14235.
Stddev	5.	95.
%RSD	.04473	.66564
#1	10908.	14333.
#2	10908.	14228.
#3	10917.	14144.

Approved: February 24, 2015

Sample Name: CCV Acquired: 2/23/2015 11:43:27 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41584	10.045	.41999	.51806	1.0349	.05164	10.305
Stddev	.00203	.042	.00276	.00268	.0058	.00012	.066
%RSD	.48819	.42100	.65815	.51637	.55720	.23552	.64367
#1	.41817	10.094	.42061	.52098	1.0282	.05153	10.229
#2	.41453	10.017	.41698	.51573	1.0379	.05163	10.339
#3	.41480	10.024	.42240	.51746	1.0385	.05177	10.349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05220	.21049	.52488	.52434	4.1056	51.093	1.0137
Stddev	.00015	.00028	.00060	.00087	.0336	.195	.0037
%RSD	.29380	.13334	.11446	.16629	.81753	.38146	.36933
#1	.05225	.21079	.52434	.52339	4.0714	50.868	1.0094
#2	.05203	.21023	.52553	.52509	4.1385	51.199	1.0161
#3	.05233	.21046	.52477	.52455	4.1067	51.211	1.0156
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.115	.50557	1.0203	51.180	.51813	10.301	.51990
Stddev	.051	.00084	.0041	.246	.00145	.020	.00233
%RSD	.50702	.16685	.40011	.48020	.28062	.19265	.44733
#1	10.075	.50638	1.0249	50.897	.51963	10.301	.51736
#2	10.098	.50563	1.0171	51.304	.51673	10.281	.52193
#3	10.173	.50469	1.0188	51.339	.51802	10.320	.52040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 24, 2015

Sample Name: CCV Acquired: 2/23/2015 11:43:27 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2403**	**.42527**	**5.2544**	**1.0381**	**1.0295**	**1.0264**	**.52697**
Stddev	.0026	.00490	.0158	.0043	.0065	.0034	.00219
%RSD	.21011	1.1522	.30015	.41634	.62777	.32809	.41474
#1	1.2433	.42034	5.2454	1.0341	1.0220	1.0233	.52585
#2	1.2384	.42535	5.2452	1.0376	1.0328	1.0300	.52557
#3	1.2394	.43013	5.2726	1.0427	1.0336	1.0259	.52949
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0248**	**1.0320**	F **-6.9906**
Stddev	.0035	.0006	8.3341
%RSD	.34404	.06305	119.22
#1	1.0268	1.0318	-16.603
#2	1.0207	1.0327	-2.5882
#3	1.0268	1.0315	-1.7808
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10943.**	**14227.**
Stddev	12.	38.
%RSD	.10966	.26429
#1	10949.	14248.
#2	10951.	14184.
#3	10929.	14250.

Approved: February 24, 2015

Sample Name: CCB Acquired: 2/23/2015 11:46:42 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	-.00763	.00258	.00276	-.00013	-.00004	.01088
Stddev	.00102	.00338	.00074	.00091	.00007	.00001	.00559
%RSD	274.58	44.342	28.524	33.098	52.952	37.377	51.353
#1	-.00072	-.00377	.00246	.00178	-.00021	-.00004	.00467
#2	.00052	-.01007	.00336	.00358	-.00008	-.00005	.01249
#3	.00130	-.00906	.00191	.00293	-.00010	-.00002	.01549
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.00003	.00066	.00029	.00301	-.02186	-.00156
Stddev	.00008	.00017	.00020	.00029	.00424	.05088	.00155
%RSD	58.418	519.87	30.157	102.11	140.81	232.79	99.454
#1	.00010	-.00014	.00088	.00022	-.00180	.00555	.00005
#2	.00008	.00003	.00061	.00061	.00461	-.08057	-.00168
#3	.00022	.00021	.00049	.00003	.00623	.00945	-.00304
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03182	.00003	.00394	.01341	-.00098	.00229	-.00159
Stddev	.05018	.00003	.00009	.00532	.00075	.00431	.00107
%RSD	157.72	90.896	2.2808	39.653	76.253	188.69	67.651
#1	-.01824	.00001	.00390	.00902	-.00118	.00487	-.00097
#2	.03157	.00002	.00389	.01932	-.00162	-.00269	-.00283
#3	.08212	.00006	.00405	.01189	-.00016	.00468	-.00096
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: CCB Acquired: 2/23/2015 11:46:42 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00131	.00196	.00133	-.00108	.00014	.00137	-.00075
Stddev	.00176	.00323	.00113	.00006	.00014	.00043	.00130
%RSD	133.79	164.78	84.531	5.8307	97.427	31.499	172.80
#1	.00113	.00559	.00005	-.00103	.00029	.00118	.00049
#2	-.00035	-.00062	.00214	-.00107	.00002	.00106	-.00065
#3	.00316	.00091	.00181	-.00115	.00011	.00186	-.00209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00043	.00014	F -11.235
Stddev	.00019	.00018	9.114
%RSD	44.731	125.19	81.121
#1	-.00026	-.00006	-16.845
#2	-.00039	.00022	-.7190
#3	-.00063	.00027	-16.141
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10854.	13936.
Stddev	11.	31.
%RSD	.10055	.22427
#1	10852.	13967.
#2	10844.	13905.
#3	10866.	13936.

Approved: February 24, 2015

Sample Name: L1502101402 Acquired: 2/23/2015 11:50:23 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00182	11.579	.01679	.02506	.25219	.00096	71.704
Stddev	.00033	.105	.00198	.00054	.00083	.00000	.099
%RSD	18.283	.90663	11.774	2.1491	.32760	.13120	.13828
#1	.00219	11.659	.01534	.02558	.25223	.00096	71.810
#2	.00155	11.618	.01904	.02508	.25299	.00096	71.613
#3	.00172	11.460	.01598	.02451	.25134	.00096	71.689
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00524	.01127	.01469	1.1819	8.1931	22.033	.02550
Stddev	.00011	.00008	.00039	.0122	.0415	.053	.00156
%RSD	2.0525	.74001	2.6856	1.0331	.50681	.24190	6.1325
#1	.00514	.01118	.01442	1.1757	8.2125	22.090	.02449
#2	.00521	.01130	.01514	1.1960	8.2213	22.024	.02730
#3	.00535	.01134	.01450	1.1740	8.1454	21.984	.02471
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.2062	.75897	.00225	42.113	.01384	.87832	.19464
Stddev	.0558	.00472	.00022	.092	.00031	.00595	.00087
%RSD	1.0711	.62148	9.6182	.21887	2.2148	.67715	.44628
#1	5.2595	.76264	.00209	42.171	.01358	.87850	.19462
#2	5.2108	.76062	.00217	42.162	.01418	.88418	.19553
#3	5.1483	.75365	.00250	42.007	.01377	.87229	.19379
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: L1502101402 Acquired: 2/23/2015 11:50:23 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00150**	**.00221**	**19.723**	**.00876**	**.30415**	**.08105**	**.00133**
Stddev	.00053	.00216	.058	.00054	.00017	.00112	.00166
%RSD	35.273	97.458	.29299	6.1176	.05609	1.3799	125.40
#1	-.00090	-.00027	19.699	.00835	.30401	.08148	-.00057
#2	-.00187	.00332	19.789	.00856	.30434	.07978	.00203
#3	-.00174	.00359	19.681	.00936	.30410	.08189	.00252
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.03544**	**.54963**	F **2555.1**
Stddev	.00013	.00412	7.3
%RSD	.36356	.74884	.28641
#1	.03545	.54823	2559.0
#2	.03556	.55427	2546.7
#3	.03530	.54640	2559.7
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10909.**	**14920.**
Stddev	2.	70.
%RSD	.01977	.47228
#1	10910.	14876.
#2	10910.	14884.
#3	10906.	15001.

Approved: February 24, 2015

Sample Name: L1502101403 Acquired: 2/23/2015 11:53:51 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00338	24.098	.02921	.03326	.37225	.00182	85.483
Stddev	.00012	.110	.00169	.00079	.00190	.00005	.283
%RSD	3.4882	.45738	5.7805	2.3731	.50923	2.9708	.33155
#1	.00348	24.098	.02726	.03294	.37068	.00189	85.192
#2	.00341	24.208	.03026	.03268	.37435	.00179	85.758
#3	.00325	23.988	.03011	.03416	.37171	.00180	85.498
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00904	.01522	.01820	2.1733	15.243	25.279	.02709
Stddev	.00027	.00013	.00050	.0062	.104	.120	.00186
%RSD	2.9713	.84392	2.7733	.28606	.68244	.47386	6.8625
#1	.00928	.01525	.01773	2.1785	15.178	25.143	.02690
#2	.00875	.01508	.01874	2.1664	15.363	25.325	.02533
#3	.00911	.01533	.01812	2.1751	15.188	25.369	.02904
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.1600	.97081	.00204	40.548	.01823	1.2079	.28069
Stddev	.0278	.00431	.00022	.212	.00035	.0053	.00394
%RSD	.34119	.44371	10.611	.52264	1.9008	.44077	1.4027
#1	8.1297	.97437	.00181	40.380	.01787	1.2060	.28017
#2	8.1659	.97204	.00224	40.786	.01856	1.2038	.27704
#3	8.1845	.96602	.00207	40.477	.01826	1.2139	.28486
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: L1502101403 Acquired: 2/23/2015 11:53:51 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00154**	**-.00052**	**30.120**	**.00464**	**.30379**	**.09405**	**.00003**
Stddev	.00319	.00466	.087	.00095	.00099	.00050	.00175
%RSD	206.63	900.90	.28766	20.423	.32553	.53229	6612.9
#1	-.00477	-.00557	30.172	.00486	.30267	.09348	.00178
#2	-.00148	.00043	30.020	.00545	.30457	.09424	.00000
#3	.00161	.00360	30.168	.00360	.30412	.09443	-.00171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.05807**	**.75791**	F **3877.8**
Stddev	.00038	.00315	45.2
%RSD	.65594	.41575	1.1661
#1	.05847	.76154	3903.3
#2	.05771	.75596	3825.6
#3	.05801	.75622	3904.5
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**11030.**	**15165.**
Stddev	14.	61.
%RSD	.12809	.40256
#1	11017.	15152.
#2	11045.	15112.
#3	11027.	15232.

Approved: February 24, 2015

Sample Name: L1502097107 Acquired: 2/23/2015 11:57:21 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00067	.00335	-.00092	.01482	.04257	-.00013	77.587	.00088
Stddev	.00036	.00226	.00212	.00122	.00010	.00002	.311	.00005
%RSD	54.487	67.389	232.07	8.2068	.22464	19.105	.40073	5.7343
#1	.00090	.00587	.00122	.01499	.04260	-.00015	77.545	.00085
#2	.00025	.00152	-.00095	.01595	.04264	-.00010	77.917	.00086
#3	.00085	.00266	-.00302	.01353	.04246	-.00013	77.300	.00094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00054	.00417	.00060	.01222	1.2726	.03285	29.235	.00943
Stddev	.00012	.00042	.00040	.00217	.0173	.00045	.234	.00004
%RSD	22.178	9.9641	67.976	17.756	1.3603	1.3589	.80086	.41724
#1	-.00067	.00373	.00087	.01466	1.2808	.03290	28.964	.00948
#2	-.00044	.00456	.00013	.01148	1.2843	.03327	29.365	.00942
#3	-.00050	.00422	.00079	.01051	1.2527	.03238	29.374	.00940
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	184.65	.00067	.16621	.00060	-.00223	-.00054	15.756
Stddev	.00052	1.05	.00098	.00161	.00122	.00404	.00141	.053
%RSD	206.46	.57060	145.87	.97005	203.37	181.27	261.39	.33639
#1	.00026	184.84	.00012	.16677	-.00023	.00243	.00097	15.740
#2	-.00027	185.60	.00180	.16439	.00200	-.00446	-.00182	15.815
#3	.00076	183.51	.00009	.16747	.00003	-.00466	-.00077	15.713
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 24, 2015

Sample Name: L1502097107 Acquired: 2/23/2015 11:57:21 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00314**	**.70206**	**-.00302**	**-.00086**	**.00056**	**.00306**	**.52003**
Stddev	.00047	.00402	.00087	.00256	.00032	.00013	10.214
%RSD	14.871	.57273	28.726	296.97	56.879	4.2279	1964.1
#1	-.00278	.70201	-.00391	.00086	.00043	.00294	-3.7169
#2	-.00297	.70611	-.00298	.00036	.00092	.00305	-6.8933
#3	-.00366	.69807	-.00217	-.00380	.00033	.00320	12.170
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10405.**	**14282.**
Stddev	14.	47.
%RSD	.13145	.32576
#1	10412.	14274.
#2	10390.	14240.
#3	10415.	14332.

Approved: February 24, 2015

Sample Name: L1502097109 Acquired: 2/23/2015 12:00:55 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.00089	-.00202	.02241	.49264	-.00012	369.27
Stddev	.00047	.00083	.00163	.00113	.00130	.00004	.66
%RSD	274.62	93.502	80.414	5.0512	.26468	29.804	.17739
#1	.00037	.00137	-.00035	.02282	.49291	-.00011	369.31
#2	-.00049	.00136	-.00360	.02328	.49122	-.00016	368.59
#3	-.00039	-.00007	-.00212	.02113	.49379	-.00009	369.90
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00182	-.00025	.00267	.00099	.05330	3.5977	.09742
Stddev	.00013	.00021	.00028	.00013	.00598	.0176	.00113
%RSD	7.3620	84.516	10.576	12.760	11.222	.48941	1.1608
#1	.00197	-.00001	.00236	.00114	.06021	3.5852	.09613
#2	.00170	-.00036	.00274	.00091	.04989	3.6179	.09824
#3	.00181	-.00038	.00292	.00093	.04982	3.5902	.09789
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	140.41	.08085	-.00025	F 406.88	.00972	.06980	-.00206
Stddev	.46	.00066	.00027	1.63	.00036	.00336	.00237
%RSD	.32957	.81187	108.61	.40048	3.7451	4.8109	114.92
#1	140.26	.08074	-.00028	406.85	.00930	.06651	-.00218
#2	140.04	.08026	.00003	405.27	.00998	.07322	.00037
#3	140.93	.08156	-.00050	408.53	.00987	.06966	-.00437
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				360.00			
Low Limit				-.40000			

Approved: February 24, 2015

Sample Name: L1502097109 Acquired: 2/23/2015 12:00:55 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00159**	**.00053**	**18.912**	**-.00367**	**3.6799**	**-.01912**	**-.00150**
Stddev	.00174	.00332	.088	.00091	.0086	.00137	.00060
%RSD	109.72	628.85	.46647	24.793	.23295	7.1603	39.905
#1	.00009	.00345	18.959	-.00451	3.6783	-.01806	-.00203
#2	-.00339	.00121	18.967	-.00270	3.6723	-.01862	-.00163
#3	-.00146	-.00308	18.810	-.00380	3.6892	-.02066	-.00085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00062**	**.00391**	F **-11.380**
Stddev	.00047	.00012	6.264
%RSD	75.020	3.1173	55.040
#1	.00116	.00378	-11.116
#2	.00031	.00402	-5.2526
#3	.00039	.00392	-17.771
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**9806.1**	**13859.**
Stddev	16.1	47.
%RSD	.16384	.33677
#1	9813.0	13843.
#2	9787.8	13911.
#3	9817.7	13822.

Approved: February 24, 2015

Sample Name: L1502097111 Acquired: 2/23/2015 12:04:36 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00051	.00099	-.00247	.04988	.03280	-.00013	297.97
Stddev	.00065	.00163	.00144	.00022	.00052	.00003	.98
%RSD	127.13	165.11	58.206	.44168	1.5843	25.657	.33024
#1	-.00116	.00115	-.00157	.05014	.03281	-.00017	298.18
#2	-.00050	.00253	-.00412	.04973	.03227	-.00011	296.90
#3	.00013	-.00072	-.00171	.04979	.03331	-.00012	298.83
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00192	.00108	.00100	.00033	.05059	2.4983	.09209
Stddev	.00007	.00010	.00041	.00017	.00631	.0413	.00198
%RSD	3.8014	8.9762	40.505	49.787	12.472	1.6526	2.1476
#1	.00200	.00097	.00063	.00025	.05351	2.4791	.09307
#2	.00187	.00110	.00144	.00023	.05490	2.5457	.08981
#3	.00188	.00116	.00094	.00053	.04335	2.4700	.09338
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	124.88	.08939	-.00007	333.99	.00799	.05992	.00036
Stddev	.35	.00060	.00050	4.06	.00063	.00129	.00252
%RSD	.27681	.66808	691.79	1.2151	7.9045	2.1560	695.95
#1	124.70	.08919	.00018	337.90	.00779	.06056	.00312
#2	124.66	.08892	-.00064	334.29	.00870	.06078	-.00023
#3	125.28	.09006	.00025	329.80	.00748	.05844	-.00181
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: L1502097111 Acquired: 2/23/2015 12:04:36 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00046	-.00073	20.700	-.00424	3.0217	-.01627	-.00135
Stddev	.00353	.00067	.052	.00125	.0127	.00114	.00288
%RSD	767.49	92.430	.25220	29.559	.41948	7.0105	212.76
#1	.00362	-.00093	20.761	-.00436	3.0312	-.01528	.00115
#2	-.00237	-.00128	20.670	-.00543	3.0073	-.01602	-.00071
#3	-.00262	.00002	20.670	-.00293	3.0266	-.01752	-.00450
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00001	.00321	F -12.968
Stddev	.00032	.00012	7.138
%RSD	3016.3	3.8888	55.046
#1	-.00009	.00309	-7.0895
#2	-.00024	.00334	-10.903
#3	.00037	.00320	-20.911
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	9879.9	13886.
Stddev	23.7	40.
%RSD	.23983	.28895
#1	9852.6	13875.
#2	9895.4	13930.
#3	9891.8	13852.

Approved: February 24, 2015

Sample Name: L1502097113 Acquired: 2/23/2015 12:08:17 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.00041	.00475	.04329	.08345	-.00012	18.511
Stddev	.00046	.00419	.00149	.00086	.00063	.00002	.186
%RSD	93.064	1018.2	31.294	1.9850	.76005	18.534	1.0069
#1	.00055	-.00124	.00396	.04424	.08410	-.00010	18.724
#2	.00091	.00518	.00382	.04307	.08284	-.00011	18.428
#3	.00001	-.00270	.00646	.04256	.08340	-.00014	18.380
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	-.00029	.00234	.00131	.24679	9.4399	.08165
Stddev	.00012	.00026	.00039	.00082	.00667	.0748	.00087
%RSD	21.856	91.660	16.765	62.817	2.7008	.79200	1.0650
#1	.00058	-.00030	.00259	.00220	.25265	9.5224	.08102
#2	.00042	-.00002	.00189	.00115	.24818	9.4207	.08129
#3	.00066	-.00055	.00255	.00058	.23954	9.3766	.08264
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.9597	.02231	.00254	101.77	.00164	.01811	-.00007
Stddev	.0608	.00016	.00024	.92	.00146	.00074	.00162
%RSD	.67833	.70484	9.2708	.90460	89.169	4.1090	2335.9
#1	9.0283	.02234	.00236	102.84	.00066	.01888	.00044
#2	8.9383	.02246	.00246	101.19	.00332	.01804	-.00189
#3	8.9125	.02215	.00281	101.29	.00093	.01740	.00124
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: L1502097113 Acquired: 2/23/2015 12:08:17 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**-.00098**	**13.151**	**-.00361**	**1.5007**	**.00077**	**.00072**
Stddev	.00094	.00398	.016	.00067	.0144	.00059	.00270
%RSD	254.35	407.15	.12080	18.595	.96029	76.444	373.92
#1	-.00146	-.00360	13.155	-.00438	1.5173	.00017	.00382
#2	.00011	-.00294	13.165	-.00323	1.4913	.00080	-.00062
#3	.00024	.00360	13.134	-.00321	1.4935	.00134	-.00104
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00044**	**.00901**	F **-1.3720**
Stddev	.00024	.00019	12.640
%RSD	54.316	2.1090	921.32
#1	-.00017	.00916	8.9768
#2	-.00062	.00908	-15.460
#3	-.00053	.00880	2.3675
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10598.**	**14190.**
Stddev	7.	74.
%RSD	.06467	.51860
#1	10603.	14191.
#2	10601.	14115.
#3	10590.	14263.

Approved: February 24, 2015

Sample Name: L1502097115 Acquired: 2/23/2015 12:11:50 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG512948-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.09905	.00076	.01175	.07225	-.00016	127.96	.00138
Stddev	.00031	.00271	.00085	.00054	.00122	.00002	1.71	.00007
%RSD	332.15	2.7411	111.32	4.5944	1.6927	9.5889	1.3333	4.8745
#1	-.00026	.10123	.00151	.01171	.07351	-.00016	129.91	.00135
#2	.00022	.09601	.00093	.01123	.07107	-.00015	126.76	.00146
#3	.00033	.09991	-.00016	.01230	.07218	-.00018	127.20	.00134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.00196	.00181	.41310	1.5950	.05809	60.585	.04741
Stddev	.00014	.00025	.00006	.00534	.0356	.00035	.865	.00072
%RSD	92.109	12.751	3.0731	1.2924	2.2330	.59671	1.4281	1.5279
#1	.00001	.00189	.00178	.41567	1.5945	.05848	61.581	.04820
#2	.00015	.00224	.00177	.40697	1.5596	.05795	60.019	.04678
#3	.00029	.00176	.00187	.41667	1.6308	.05784	60.155	.04724
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	303.00	.00232	.10925	.00080	-.00084	-.00258	18.676
Stddev	.00004	4.17	.00064	.00274	.00222	.00111	.00428	.050
%RSD	10.186	1.3765	27.721	2.5046	278.54	132.40	165.94	.26769
#1	.00031	307.80	.00294	.10611	.00227	-.00152	-.00160	18.691
#2	.00037	300.93	.00165	.11054	.00187	-.00144	-.00726	18.717
#3	.00038	300.27	.00237	.11110	-.00175	.00044	.00113	18.620
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 24, 2015

Sample Name: L1502097115 Acquired: 2/23/2015 12:11:50 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG512948-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00358**	**1.4483**	**-.00385**	**-.00026**	**.00086**	**.00451**	**17.135**
Stddev	.00075	.0169	.00055	.00039	.00035	.00007	18.448
%RSD	20.991	1.1670	14.382	145.79	41.083	1.5562	107.66
#1	-.00271	1.4671	-.00330	-.00058	.00052	.00456	36.066
#2	-.00399	1.4344	-.00385	-.00037	.00123	.00443	16.128
#3	-.00403	1.4432	-.00441	.00016	.00084	.00454	-.78873
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10187.**	**13986.**
Stddev	12.	150.
%RSD	.11338	1.0702
#1	10197.	13817.
#2	10174.	14101.
#3	10188.	14042.

Approved: February 24, 2015

Sample Name: L1502097115MS Acquired: 2/23/2015 12:15:31 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG512948-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20926	4.9338	.20713	.99748	.58040	.02486	130.89
Stddev	.00103	.0391	.00133	.00054	.00382	.00004	.97
%RSD	.49388	.79239	.63994	.05388	.65814	.16842	.73747
#1	.20958	4.8887	.20673	.99757	.57788	.02485	130.07
#2	.20810	4.9555	.20605	.99690	.57852	.02482	130.66
#3	.21009	4.9573	.20861	.99797	.58479	.02490	131.96
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02638	.09986	.25724	.24796	2.4671	26.983	.56506
Stddev	.00008	.00026	.00132	.00058	.0187	.172	.00329
%RSD	.28527	.26162	.51287	.23572	.75908	.63746	.58299
#1	.02632	.10008	.25817	.24748	2.4532	26.851	.56170
#2	.02635	.09957	.25573	.24861	2.4598	26.920	.56521
#3	.02647	.09993	.25782	.24779	2.4884	27.177	.56828
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	64.023	.27225	.50503	321.13	.24226	5.1909	.23792
Stddev	.553	.00228	.00248	2.00	.00066	.0147	.00183
%RSD	.86410	.83713	.49067	.62284	.27423	.28359	.76913
#1	63.391	.26963	.50660	319.07	.24149	5.1779	.23613
#2	64.255	.27337	.50218	321.24	.24269	5.1879	.23785
#3	64.422	.27376	.50632	323.07	.24259	5.2069	.23979
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: L1502097115MS Acquired: 2/23/2015 12:15:31 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG512948-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.61101**	**.19804**	**20.917**	**.49278**	**1.9319**	**.50196**	**.23353**
Stddev	.00753	.00186	.017	.00145	.0144	.00625	.00356
%RSD	1.2330	.93681	.08051	.29423	.74430	1.2453	1.5246
#1	.60735	.19714	20.928	.49110	1.9222	.49508	.22942
#2	.60600	.19681	20.898	.49355	1.9251	.50351	.23550
#3	.61967	.20018	20.926	.49368	1.9484	.50729	.23566
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.50952**	**.49319**	F **49.897**
Stddev	.00031	.00319	11.040
%RSD	.06164	.64598	22.126
#1	.50942	.49014	57.177
#2	.50988	.49292	55.320
#3	.50927	.49649	37.194
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10240.**	**14016.**
Stddev	18.	73.
%RSD	.17342	.51998
#1	10220.	14100.
#2	10254.	13970.
#3	10247.	13978.

Approved: February 24, 2015

Sample Name: L1502097115MSD Acquired: 2/23/2015 12:19:00 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG512948-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21115	4.9381	.20715	1.0145	.58497	.02517	131.08
Stddev	.00237	.0586	.00239	.0093	.00228	.00009	.30
%RSD	1.1223	1.1861	1.1557	.92109	.38898	.35716	.23060
#1	.21264	4.9618	.20654	1.0209	.58262	.02527	130.74
#2	.20842	4.8714	.20511	1.0038	.58717	.02509	131.28
#3	.21240	4.9811	.20979	1.0190	.58513	.02516	131.24
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02679	.10135	.25995	.25165	2.4603	27.206	.57068
Stddev	.00007	.00040	.00086	.00070	.0043	.014	.00199
%RSD	.24368	.39733	.33261	.27632	.17484	.05245	.34785
#1	.02687	.10105	.26094	.25238	2.4558	27.193	.56845
#2	.02674	.10120	.25960	.25158	2.4607	27.221	.57225
#3	.02678	.10181	.25932	.25100	2.4644	27.205	.57133
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	63.947	.27249	.51464	317.09	.24678	5.2431	.24000
Stddev	.133	.00288	.00079	5.31	.00068	.0219	.00076
%RSD	.20828	1.0558	.15432	1.6732	.27626	.41698	.31465
#1	63.926	.27414	.51387	314.31	.24619	5.2234	.23924
#2	63.825	.26917	.51546	313.75	.24661	5.2394	.24001
#3	64.089	.27417	.51460	323.21	.24753	5.2666	.24075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: L1502097115MSD Acquired: 2/23/2015 12:19:00 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG512948-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.61918	.20190	21.084	.49778	1.9366	.50517	.23621
Stddev	.00422	.00625	.023	.00272	.0053	.00168	.00169
%RSD	.68145	3.0950	.10920	.54663	.27134	.33352	.71730
#1	.61492	.19957	21.085	.49533	1.9320	.50596	.23795
#2	.61926	.19715	21.106	.49728	1.9423	.50632	.23456
#3	.62336	.20898	21.060	.50071	1.9356	.50324	.23612
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.51659	.49861	F 36.614
Stddev	.00378	.00337	8.165
%RSD	.73215	.67622	22.301
#1	.51920	.49572	43.812
#2	.51225	.49779	27.741
#3	.51832	.50231	38.288
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10253.	14197.
Stddev	4.	69.
%RSD	.03726	.48844
#1	10250.	14192.
#2	10253.	14268.
#3	10258.	14130.

Approved: February 24, 2015

Sample Name: L1502100701 Acquired: 2/23/2015 12:22:28 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.03927	-.00100	.00506	.00048	-.00008	.36814
Stddev	.00002	.00252	.00166	.00041	.00012	.00002	.00521
%RSD	5.0533	6.4241	166.74	8.1387	24.935	25.697	1.4147
#1	.00030	.04078	.00002	.00510	.00035	-.00006	.37415
#2	.00030	.03636	-.00291	.00463	.00057	-.00007	.36500
#3	.00033	.04068	-.00010	.00546	.00053	-.00010	.36527
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	-.00012	.00126	.00970	.15549	.13215	-.00196
Stddev	.00006	.00032	.00049	.00018	.00229	.01957	.00213
%RSD	16.682	258.38	38.877	1.8179	1.4710	14.806	108.69
#1	.00034	-.00042	.00089	.00964	.15347	.14787	-.00289
#2	.00029	-.00017	.00181	.00990	.15503	.13834	.00048
#3	.00041	.00021	.00106	.00956	.15798	.11024	-.00347
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04343	.00232	.00167	.16037	.00104	F -.00364	.00182
Stddev	.01893	.00006	.00018	.01058	.00037	.00309	.00302
%RSD	43.601	2.6840	10.848	6.5995	35.343	84.929	166.02
#1	.04827	.00235	.00147	.17256	.00104	-.00661	.00490
#2	.05947	.00237	.00171	.15354	.00140	-.00044	-.00114
#3	.02254	.00225	.00183	.15500	.00067	-.00387	.00170
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 24, 2015

Sample Name: L1502100701 Acquired: 2/23/2015 12:22:28 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	-.00052	.09752	-.00329	.00155	.00232	.00007
Stddev	.00239	.00466	.00144	.00010	.00007	.00103	.00151
%RSD	1252.6	893.49	1.4765	2.9064	4.7625	44.486	2281.7
#1	.00065	.00131	.09830	-.00338	.00163	.00259	-.00117
#2	-.00240	.00294	.09586	-.00319	.00151	.00320	-.00039
#3	.00232	-.00582	.09841	-.00329	.00150	.00118	.00175
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00031	.00482	F 120.82
Stddev	.00027	.00010	10.65
%RSD	84.661	2.1562	8.8148
#1	-.00060	.00492	127.75
#2	-.00008	.00482	126.15
#3	-.00025	.00472	108.56
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10942.	14473.
Stddev	12.	45.
%RSD	.11380	.31121
#1	10929.	14422.
#2	10943.	14504.
#3	10954.	14494.

Approved: February 24, 2015

Sample Name: CCV Acquired: 2/23/2015 12:26:07 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41954	10.107	.42294	.52516	1.0426	.05172	10.363
Stddev	.00024	.042	.00119	.00167	.0047	.00014	.019
%RSD	.05604	.41099	.28231	.31732	.44722	.26399	.18136
#1	.41981	10.130	.42430	.52586	1.0456	.05188	10.376
#2	.41936	10.059	.42206	.52636	1.0372	.05163	10.342
#3	.41945	10.131	.42247	.52326	1.0450	.05165	10.373
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05263	.21146	.52798	.52839	4.0932	51.293	1.0155
Stddev	.00011	.00016	.00061	.00051	.0259	.130	.0023
%RSD	.20328	.07607	.11614	.09600	.63288	.25407	.22266
#1	.05252	.21129	.52813	.52792	4.0987	51.229	1.0143
#2	.05263	.21161	.52730	.52893	4.0650	51.206	1.0181
#3	.05273	.21149	.52850	.52833	4.1159	51.443	1.0141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.8913	.50641	1.0233	51.417	.52052	10.353	.52102
Stddev	.0408	.00290	.0044	.229	.00217	.018	.00174
%RSD	.41275	.57274	.42714	.44610	.41758	.17862	.33459
#1	9.8468	.50536	1.0208	51.556	.51991	10.339	.51961
#2	9.8999	.50417	1.0284	51.152	.52293	10.374	.52048
#3	9.9271	.50968	1.0208	51.542	.51871	10.347	.52297
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 24, 2015

Sample Name: CCV Acquired: 2/23/2015 12:26:07 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2471**	**.43163**	**5.3149**	**1.0463**	**1.0334**	**1.0175**	**.53187**
Stddev	.0048	.00360	.0142	.0033	.0037	.0035	.00155
%RSD	.38526	.83321	.26798	.31755	.35687	.34588	.29130
#1	1.2487	.42782	5.3108	1.0427	1.0364	1.0161	.53186
#2	1.2508	.43209	5.3307	1.0492	1.0293	1.0215	.53342
#3	1.2417	.43497	5.3031	1.0470	1.0346	1.0150	.53032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0343**	**1.0299**	F **-1.6231**
Stddev	.0025	.0024	11.250
%RSD	.24538	.23159	693.09
#1	1.0336	1.0272	10.374
#2	1.0371	1.0307	-11.935
#3	1.0322	1.0317	-3.3085
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10878.**	**14240.**
Stddev	24.	103.
%RSD	.22228	.72260
#1	10904.	14282.
#2	10872.	14315.
#3	10857.	14123.

Approved: February 24, 2015

Sample Name: CCB Acquired: 2/23/2015 12:29:22 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00030**	**-.00877**	**.00029**	**.00227**	**-.00033**	**-.00006**	**.00746**
Stddev	.00054	.00091	.00061	.00005	.00006	.00001	.00616
%RSD	179.09	10.345	209.10	2.0476	17.770	24.629	82.560
#1	.00017	-.00963	.00099	.00227	-.00026	-.00006	.00273
#2	.00089	-.00887	-.00014	.00223	-.00036	-.00004	.00522
#3	-.00016	-.00782	.00002	.00232	-.00036	-.00006	.01442
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00017**	**.00010**	**.00035**	**.00056**	**.00496**	**.02520**	**-.00124**
Stddev	.00004	.00033	.00027	.00031	.00410	.01328	.00015
%RSD	22.625	339.65	75.908	55.313	82.539	52.716	11.811
#1	.00020	-.00004	.00004	.00085	.00741	.03811	-.00135
#2	.00018	-.00015	.00052	.00058	.00023	.01157	-.00107
#3	.00013	.00048	.00049	.00024	.00725	.02590	-.00130
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05186**	**.00003**	**.00382**	**.03613**	**-.00117**	**-.00137**	**-.00067**
Stddev	.02416	.00005	.00034	.00471	.00084	.00447	.00134
%RSD	46.595	168.55	8.9540	13.046	72.150	325.47	199.66
#1	.07845	.00006	.00352	.04122	-.00146	.00334	-.00222
#2	.04588	-.00003	.00375	.03191	-.00182	-.00554	.00018
#3	.03125	.00006	.00419	.03526	-.00022	-.00192	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: CCB Acquired: 2/23/2015 12:29:22 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	.00081	.00222	-.00099	.00010	.00125	-.00021
Stddev	.00253	.00069	.00131	.00037	.00008	.00155	.00116
%RSD	384.50	84.267	58.877	36.883	78.556	124.65	552.16
#1	.00348	.00070	.00360	-.00093	.00017	.00114	-.00105
#2	-.00009	.00019	.00100	-.00066	.00013	-.00025	-.00069
#3	-.00142	.00155	.00206	-.00138	.00001	.00285	.00111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00011	.00004	F 8.6254
Stddev	.00009	.00015	16.194
%RSD	76.930	415.10	187.75
#1	-.00001	.00013	-7.7689
#2	-.00016	-.00013	9.0330
#3	-.00016	.00011	24.612
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10797.	14163.
Stddev	20.	87.
%RSD	.18857	.61132
#1	10775.	14063.
#2	10815.	14221.
#3	10800.	14204.

Approved: February 24, 2015

Sample Name: LLCCV Acquired: 2/23/2015 12:33:02 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01708	.40990	.01712	.02230	.04231	.00210	.42776
Stddev	.00059	.00573	.00180	.00136	.00036	.00001	.01768
%RSD	3.4426	1.3969	10.496	6.1085	.84137	.47715	4.1340
#1	.01736	.40557	.01580	.02370	.04202	.00211	.41008
#2	.01748	.41639	.01916	.02098	.04221	.00209	.42776
#3	.01641	.40773	.01639	.02220	.04271	.00209	.44545
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00233	.00889	.02227	.02179	.17708	2.0641	.04094
Stddev	.00008	.00021	.00039	.00072	.00293	.0406	.00145
%RSD	3.5766	2.4048	1.7299	3.2958	1.6535	1.9666	3.5378
#1	.00242	.00910	.02271	.02244	.17597	2.0210	.03945
#2	.00229	.00890	.02200	.02190	.17487	2.0698	.04102
#3	.00227	.00868	.02210	.02102	.18040	2.1016	.04234
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.43478	.02235	.04214	2.1346	.02105	.40781	.02114
Stddev	.02266	.00031	.00049	.0362	.00087	.00305	.00135
%RSD	5.2124	1.3916	1.1596	1.6984	4.1291	.74703	6.3768
#1	.41681	.02205	.04261	2.0989	.02021	.40944	.02064
#2	.42729	.02267	.04163	2.1334	.02099	.40970	.02266
#3	.46024	.02233	.04217	2.1714	.02194	.40430	.02011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: LLCCV Acquired: 2/23/2015 12:33:02 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04950	.01571	.21258	.04170	.04296	.04254	.02321
Stddev	.00202	.00197	.00058	.00048	.00069	.00094	.00207
%RSD	4.0761	12.517	.27346	1.1436	1.6171	2.2153	8.9013
#1	.04935	.01662	.21274	.04153	.04221	.04146	.02422
#2	.05159	.01345	.21194	.04223	.04310	.04319	.02084
#3	.04756	.01706	.21307	.04132	.04358	.04297	.02458
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.04352	.04372	F -13.773
Stddev	.00030	.00020	8.278
%RSD	.69310	.46551	60.104
#1	.04321	.04381	-13.797
#2	.04355	.04349	-5.4828
#3	.04381	.04387	-22.039
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10810.	13819.
Stddev	7.	71.
%RSD	.06906	.51134
#1	10810.	13895.
#2	10817.	13756.
#3	10802.	13805.

Approved: February 24, 2015

Sample Name: LLCCV Acquired: 2/23/2015 12:36:39 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00311	.06047	.00210	.00412	.00613	.00027	.08300
Stddev	.00015	.00041	.00308	.00134	.00009	.00003	.00754
%RSD	4.9146	.67518	146.69	32.655	1.4192	12.344	9.0782
#1	.00328	.06000	-.00119	.00328	.00623	.00024	.09018
#2	.00304	.06074	.00493	.00567	.00610	.00026	.07516
#3	.00300	.06066	.00256	.00340	.00607	.00030	.08367
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	.00146	.00365	.00371	.03052	.34427	.00608
Stddev	.00001	.00008	.00041	.00020	.00609	.03852	.00206
%RSD	2.4891	5.6981	11.188	5.4329	19.937	11.188	33.900
#1	.00045	.00138	.00393	.00394	.02350	.32228	.00658
#2	.00046	.00146	.00384	.00358	.03400	.32179	.00784
#3	.00047	.00154	.00318	.00360	.03407	.38875	.00381
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09741	.00363	.00694	.36182	.00332	.06597	.00596
Stddev	.04098	.00006	.00042	.00334	.00030	.00357	.00118
%RSD	42.068	1.5303	6.0079	.92233	8.9541	5.4192	19.893
#1	.14427	.00368	.00653	.36106	.00307	.06986	.00633
#2	.07969	.00364	.00694	.36547	.00365	.06520	.00691
#3	.06827	.00357	.00736	.35893	.00323	.06284	.00463
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: LLCCV Acquired: 2/23/2015 12:36:39 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00655	.00315	.03566	.00620	.00676	.00664	.00595
Stddev	.00105	.00499	.00140	.00047	.00007	.00140	.00184
%RSD	15.977	158.43	3.9153	7.5459	1.0029	21.158	30.917
#1	.00569	-.00148	.03412	.00641	.00673	.00826	.00803
#2	.00771	.00844	.03685	.00652	.00671	.00581	.00451
#3	.00624	.00250	.03600	.00566	.00684	.00584	.00533
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00675	.00868	F -4.7373
Stddev	.00015	.00009	19.129
%RSD	2.2189	1.0762	403.79
#1	.00674	.00858	-26.049
#2	.00661	.00877	.8911
#3	.00691	.00869	10.946
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10788.	13894.
Stddev	24.	40.
%RSD	.22686	.28775
#1	10815.	13877.
#2	10767.	13866.
#3	10783.	13940.

Approved: February 24, 2015

Sample Name: PBW WM Acquired: 2/23/2015 12:40:15 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513072-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	-.00304	-.00099	.00114	-.00041	-.00007	.01988
Stddev	.00041	.00259	.00067	.00107	.00010	.00003	.00197
%RSD	110.44	85.426	67.334	93.630	24.262	39.719	9.9139
#1	.00079	-.00423	-.00034	.00042	-.00031	-.00007	.02083
#2	.00036	-.00006	-.00096	.00237	-.00051	-.00004	.01761
#3	-.00003	-.00482	-.00168	.00064	-.00041	-.00010	.02120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	-.00013	.00010	.00095	.00431	-.02792	-.00170
Stddev	.00022	.00005	.00033	.00023	.00386	.02161	.00068
%RSD	78.125	36.147	324.26	23.709	89.587	77.389	40.305
#1	.00004	-.00012	-.00015	.00072	.00115	-.02917	-.00245
#2	.00046	-.00019	.00047	.00096	.00316	-.00572	-.00112
#3	.00033	-.00010	-.00002	.00118	.00861	-.04889	-.00151
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01503	.00018	.00021	.03248	.00005	F -.01003	-.00159
Stddev	.00463	.00007	.00026	.00344	.00047	.00553	.00195
%RSD	30.816	36.933	124.06	10.579	970.03	55.169	122.12
#1	.01150	.00015	.00027	.03644	-.00018	-.01445	-.00381
#2	.02027	.00014	-.00008	.03044	.00059	-.01181	-.00080
#3	.01331	.00026	.00043	.03055	-.00027	-.00382	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 24, 2015

Sample Name: PBW WM Acquired: 2/23/2015 12:40:15 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513072-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00189**	**-.00120**	**.00297**	**-.00393**	**-.00001**	**.00149**	**-.00018**
Stddev	.00052	.00050	.00128	.00081	.00009	.00157	.00139
%RSD	27.208	41.348	42.936	20.685	794.59	105.24	790.78
#1	-.00223	-.00142	.00444	-.00306	.00000	.00101	.00069
#2	-.00215	-.00063	.00232	-.00406	.00007	.00022	.00056
#3	-.00130	-.00156	.00215	-.00466	-.00010	.00324	-.00177
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00005**	**.00134**	F **-5.7311**
Stddev	.00025	.00004	20.891
%RSD	455.19	3.0126	364.51
#1	-.00030	.00133	-28.149
#2	.00019	.00138	13.191
#3	-.00006	.00131	-2.2351
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10844.**	**14252.**
Stddev	57.	89.
%RSD	.52171	.62593
#1	10894.	14323.
#2	10782.	14152.
#3	10856.	14282.

Approved: February 24, 2015

Sample Name: LCSW WM Acquired: 2/23/2015 12:43:52 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513072-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.16486	5.0750	-.00245	.00002	-.00033	.02662	5.2907
Stddev	.00125	.0316	.00115	.00087	.00007	.00010	.0040
%RSD	.75565	.62224	47.084	3566.3	21.941	.35951	.07651
#1	.16557	5.1098	-.00375	.00023	-.00037	.02672	5.2868
#2	.16342	5.0671	-.00154	.00078	-.00038	.02659	5.2948
#3	.16559	5.0481	-.00207	-.00093	-.00025	.02654	5.2904
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	-.00021	.00007	-.00018	2.1042	26.110	-.00062
Stddev	.00004	.00014	.00063	.00044	.0039	.022	.00026
%RSD	11.048	66.562	949.25	240.73	.18289	.08612	42.269
#1	.00038	-.00017	.00061	.00023	2.1075	26.112	-.00069
#2	.00031	-.00036	.00020	-.00065	2.1000	26.132	-.00033
#3	.00038	-.00009	-.00062	-.00012	2.1052	26.087	-.00083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.0896	.25659	-.00009	26.276	.00023	F -.01191	.00195
Stddev	.0596	.00050	.00029	.069	.00010	.00369	.00098
%RSD	1.1716	.19666	320.18	.26338	43.414	30.964	50.205
#1	5.1102	.25691	-.00022	26.219	.00030	-.00910	.00098
#2	5.0224	.25684	-.00029	26.353	.00011	-.01609	.00294
#3	5.1362	.25601	.00024	26.256	.00027	-.01055	.00193
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 24, 2015

Sample Name: LCSW WM Acquired: 2/23/2015 12:43:52 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513072-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00239**	**-.00033**	**.00036**	**-.00397**	**.00003**	**.00123**	**-.00177**
Stddev	.00084	.00422	.00057	.00001	.00003	.00069	.00086
%RSD	35.109	1262.4	161.90	.21733	118.43	55.767	48.526
#1	-.00146	.00420	-.00030	-.00396	.00002	.00184	-.00122
#2	-.00308	-.00414	.00076	-.00398	.00006	.00138	-.00134
#3	-.00264	-.00106	.00061	-.00397	.00000	.00049	-.00277
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00004**	**.00108**	F **-27.774**
Stddev	.00037	.00003	4.752
%RSD	891.96	2.7077	17.109
#1	-.00010	.00107	-29.759
#2	.00046	.00106	-22.352
#3	-.00024	.00111	-31.211
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10802.**	**14192.**
Stddev	7.	21.
%RSD	.06484	.15104
#1	10808.	14192.
#2	10802.	14171.
#3	10794.	14214.

Approved: February 24, 2015

Sample Name: L1502101802 Acquired: 2/23/2015 12:47:25 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513072-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00095	.26383	.00002	.01273	.04539	-.00009	32.323	.00034
Stddev	.00068	.00562	.00329	.00042	.00040	.00001	.194	.00005
%RSD	72.260	2.1313	19163.	3.2665	.87848	5.6262	.60126	14.645
#1	.00126	.26192	-.00336	.01237	.04515	-.00009	32.223	.00029
#2	.00141	.25940	.00320	.01262	.04585	-.00009	32.547	.00039
#3	.00016	.27015	.00022	.01318	.04517	-.00009	32.199	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	.00139	.00090	.42903	.99979	.00120	5.8019	.06627
Stddev	.00003	.00024	.00036	.00387	.03043	.00090	.0646	.00078
%RSD	10.725	17.530	40.004	.90218	3.0436	75.389	1.1134	1.1844
#1	.00022	.00158	.00076	.42950	.96757	.00090	5.7592	.06652
#2	.00026	.00111	.00131	.43265	1.0038	.00048	5.8762	.06539
#3	.00027	.00146	.00063	.42495	1.0280	.00221	5.7702	.06690
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00065	7.7232	.00060	.01988	.00083	-.00082	-.00390	3.3452
Stddev	.00023	.0489	.00100	.00346	.00230	.00162	.00446	.0033
%RSD	36.379	.63297	166.42	17.425	277.38	197.94	114.32	.09788
#1	.00078	7.6998	.00148	.01896	.00283	.00083	-.00700	3.3450
#2	.00037	7.7794	-.00048	.01697	-.00168	-.00241	.00121	3.3420
#3	.00078	7.6905	.00080	.02372	.00134	-.00087	-.00592	3.3486
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 24, 2015

Sample Name: L1502101802 Acquired: 2/23/2015 12:47:25 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513072-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00259**	**.14197**	**.00705**	**.00037**	**.00000**	**.00283**	**14.319**
Stddev	.00080	.00079	.00374	.00174	.0004	.00005	5.574
%RSD	30.949	.55362	53.110	473.48	13243.	1.8332	38.926
#1	-.00169	.14186	.01087	.00143	.00026	.00287	19.020
#2	-.00323	.14281	.00689	-.00164	.00021	.00277	8.1615
#3	-.00284	.14125	.00339	.00131	-.00048	.00284	15.775
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10736.**	**14194.**
Stddev	11.	69.
%RSD	.10166	.48393
#1	10748.	14221.
#2	10734.	14116.
#3	10726.	14245.

Approved: February 24, 2015

Sample Name: L1502101802DUP Acquired: 2/23/2015 12:50:59 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513072-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00115	.40796	.00064	.01326	.04593	-.00007	32.404
Stddev	.00036	.00624	.00133	.00035	.00028	.00002	.024
%RSD	31.493	1.5306	207.33	2.6168	.61803	29.822	.07378
#1	.00090	.40720	-.00089	.01320	.04623	-.00005	32.428
#2	.00099	.41455	.00140	.01363	.04566	-.00009	32.404
#3	.00157	.40213	.00142	.01295	.04589	-.00008	32.380
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.00011	.00125	.00097	.47806	1.0307	.00123
Stddev	.00010	.00012	.00030	.00032	.00503	.0240	.00160
%RSD	19.395	116.42	24.187	33.152	1.0522	2.3304	129.98
#1	.00057	.00024	.00158	.00077	.47371	1.0271	.00183
#2	.00039	.00000	.00119	.00134	.47690	1.0087	-.00058
#3	.00052	.00008	.00098	.00080	.48356	1.0563	.00244
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.8339	.06687	.00051	7.8086	.00109	.02185	.00019
Stddev	.0708	.00059	.00039	.0091	.00041	.00107	.00056
%RSD	1.2133	.88641	76.778	.11693	37.209	4.8904	292.68
#1	5.8106	.06633	.00037	7.8148	.00128	.02308	-.00045
#2	5.9134	.06750	.00021	7.8129	.00136	.02109	.00050
#3	5.7777	.06677	.00096	7.7981	.00062	.02139	.00052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: L1502101802DUP Acquired: 2/23/2015 12:50:59 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513072-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00169**	**-.00166**	**3.5868**	**-.00317**	**.14234**	**.00866**	**.00170**
Stddev	.00264	.00357	.0629	.00041	.00032	.00140	.00118
%RSD	155.82	215.48	1.7544	12.999	.22297	16.208	69.131
#1	-.00108	-.00122	3.5156	-.00360	.14270	.00933	.00219
#2	-.00458	-.00543	3.6352	-.00279	.14210	.00705	.00036
#3	.00058	.00168	3.6094	-.00311	.14223	.00961	.00255
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00039**	**.00327**	F **43.434**
Stddev	.00037	.00006	10.108
%RSD	93.793	1.8318	23.272
#1	.00081	.00320	34.461
#2	.00027	.00331	41.455
#3	.00010	.00331	54.385
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10844.**	**14256.**
Stddev	142.	96.
%RSD	1.3125	.67418
#1	11008.	14321.
#2	10772.	14146.
#3	10753.	14302.

Approved: February 24, 2015

Sample Name: L1502101802MS Acquired: 2/23/2015 12:54:31 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513072-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.16302	5.2504	-.00141	.01326	.04586	.02642	38.418	.00044
Stddev	.00047	.0286	.00133	.00065	.00019	.00002	.123	.00011
%RSD	.29013	.54544	94.410	4.8699	.41611	.07128	.32093	24.352
#1	.16251	5.2705	-.00008	.01400	.04566	.02644	38.284	.00032
#2	.16310	5.2632	-.00140	.01300	.04604	.02640	38.442	.00052
#3	.16344	5.2177	-.00274	.01278	.04589	.02642	38.527	.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00114	.00069	2.4829	26.952	.00180	10.872	.31593
Stddev	.00007	.00044	.00025	.0101	.118	.00023	.027	.00095
%RSD	56.552	38.109	35.853	.40880	.43739	12.895	.25140	.29923
#1	.00005	.00083	.00068	2.4831	26.850	.00180	10.902	.31639
#2	.00014	.00096	.00094	2.4726	26.924	.00156	10.867	.31656
#3	.00018	.00164	.00044	2.4929	27.081	.00203	10.848	.31485
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00044	33.503	.00094	.01267	.00017	-.00252	-.00182	3.4356
Stddev	.00020	.024	.00092	.00175	.00037	.00125	.00400	.0114
%RSD	46.810	.07172	97.855	13.818	218.71	49.760	219.51	.33181
#1	.00033	33.479	-.00012	.01269	.00000	-.00393	-.00191	3.4487
#2	.00067	33.502	.00140	.01441	.00059	-.00210	.00222	3.4309
#3	.00031	33.527	.00153	.01091	-.00008	-.00153	-.00578	3.4274
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 24, 2015

Sample Name: L1502101802MS Acquired: 2/23/2015 12:54:31 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513072-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00362**	**.14507**	**.00457**	**-.00069**	**-.00006**	**.00305**	**19.045**
Stddev	.00044	.00021	.00031	.00079	.00008	.00019	11.583
%RSD	12.202	.14213	6.7009	114.13	136.51	6.3751	60.820
#1	-.00394	.14509	.00446	-.00084	-.00013	.00328	13.816
#2	-.00311	.14485	.00492	-.00140	-.00006	.00295	32.320
#3	-.00380	.14527	.00434	.00016	.00002	.00294	10.998
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10755.**	**14225.**
Stddev	39.	54.
%RSD	.36015	.37929
#1	10711.	14176.
#2	10778.	14215.
#3	10777.	14283.

Approved: February 24, 2015

Sample Name: L1502101803 Acquired: 2/23/2015 12:58:02 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.51950	.00064	.01380	.04444	-.00012	35.068	.00044
Stddev	.00044	.00204	.00255	.00091	.00022	.00004	.052	.00010
%RSD	75.243	.39206	400.30	6.6099	.49749	32.958	.14698	22.149
#1	.00103	.52182	-.00077	.01291	.04464	-.00007	35.022	.00054
#2	.00015	.51804	-.00090	.01375	.04448	-.00014	35.124	.00040
#3	.00058	.51863	.00358	.01473	.04420	-.00013	35.058	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.00147	.00154	.88219	1.1104	.00026	5.9938	.02159
Stddev	.00018	.00012	.00058	.00556	.0341	.00059	.0277	.00011
%RSD	50.451	7.8858	37.378	.63044	3.0727	227.43	.46137	.52387
#1	.00028	.00145	.00221	.88480	1.1475	.00026	5.9853	.02172
#2	.00057	.00159	.00121	.88597	1.1033	-.00033	6.0247	.02150
#3	.00023	.00136	.00121	.87581	1.0803	.00085	5.9714	.02157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	9.9062	.00189	.02331	.00042	-.00092	.00335	3.3053
Stddev	.00010	.0174	.00019	.00418	.00203	.00118	.00217	.0197
%RSD	21.988	.17518	10.265	17.945	479.79	128.96	64.938	.59581
#1	.00033	9.8958	.00211	.02303	-.00167	-.00103	.00166	3.2887
#2	.00047	9.9263	.00174	.02762	.00239	.00032	.00580	3.3000
#3	.00051	9.8967	.00181	.01927	.00054	-.00204	.00258	3.3270
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 24, 2015

Sample Name: L1502101803 Acquired: 2/23/2015 12:58:02 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00347**	**.15388**	**.00664**	**.00000**	**.00087**	**.01653**	**15.847**
Stddev	.00041	.00040	.00172	.0009	.00015	.00020	11.915
%RSD	11.756	.26016	25.886	313110.	17.189	1.2017	75.184
#1	-.00319	.15397	.00862	-.00098	.00072	.01640	14.110
#2	-.00329	.15423	.00563	.00085	.00102	.01676	4.8965
#3	-.00394	.15344	.00566	.00012	.00088	.01644	28.535
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10751.**	**14370.**
Stddev	6.	44.
%RSD	.05358	.30594
#1	10755.	14405.
#2	10744.	14321.
#3	10753.	14386.

Approved: February 24, 2015

Sample Name: L1502101804 Acquired: 2/23/2015 13:01:35 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.01884	-.00091	.04511	.07212	-.00012	38.368	.00038
Stddev	.00037	.00307	.00115	.00081	.00022	.00002	.032	.00003
%RSD	106.46	16.300	125.88	1.7854	.30828	16.403	.08380	7.1022
#1	.00035	.01951	-.00062	.04427	.07231	-.00014	38.331	.00038
#2	-.00003	.01549	-.00218	.04518	.07217	-.00011	38.387	.00041
#3	.00071	.02153	.00006	.04588	.07188	-.00010	38.387	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00028	.00121	.00028	.03648	1.1352	.00239	7.6992	.00155
Stddev	.00016	.00018	.00022	.00462	.0306	.00135	.0078	.00004
%RSD	59.607	15.116	78.806	12.670	2.6929	56.439	.10125	2.2947
#1	-.00011	.00116	.00032	.04083	1.1705	.00357	7.7046	.00158
#2	-.00027	.00106	.00047	.03163	1.1168	.00269	7.6902	.00151
#3	-.00044	.00142	.00004	.03698	1.1184	.00092	7.7026	.00154
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00266	65.202	-.00037	.00236	.00242	-.00352	.00073	2.5991
Stddev	.00015	.098	.00080	.00493	.00132	.00183	.00193	.0098
%RSD	5.7397	.15076	215.02	209.13	54.455	52.027	264.84	.37714
#1	.00272	65.232	-.00124	-.00310	.00178	-.00563	-.00036	2.5880
#2	.00249	65.092	-.00022	.00648	.00394	-.00252	-.00041	2.6066
#3	.00277	65.281	.00034	.00369	.00155	-.00240	.00296	2.6027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 24, 2015

Sample Name: L1502101804 Acquired: 2/23/2015 13:01:35 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02082	.33774	-.00230	.00131	.00000	.00167	1.1855
Stddev	.00056	.00018	.00063	.00051	.00036	.00009	5.5801
%RSD	2.7070	.05438	27.602	39.111	14284.	5.4639	470.70
#1	.02017	.33790	-.00166	.00190	-.00007	.00157	4.8906
#2	.02119	.33754	-.00293	.00104	.00040	.00175	-5.2323
#3	.02110	.33779	-.00229	.00099	-.00032	.00168	3.8983
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10618.	14216.
Stddev	4.	145.
%RSD	.03563	1.0166
#1	10622.	14070.
#2	10615.	14359.
#3	10618.	14221.

Approved: February 24, 2015

Sample Name: L1502101805 Acquired: 2/23/2015 13:05:09 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.03120	-.00167	.02668	.04274	-.00013	25.940	.00030
Stddev	.00038	.00099	.00120	.00068	.00015	.00004	.077	.00012
%RSD	271.37	3.1598	71.884	2.5514	.34783	28.837	.29818	41.175
#1	.00042	.03086	-.00188	.02592	.04270	-.00009	25.971	.00017
#2	-.00029	.03231	-.00038	.02724	.04291	-.00015	25.997	.00031
#3	.00029	.03043	-.00276	.02688	.04262	-.00016	25.852	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	.00084	.00069	.08981	.98945	.00118	4.2160	.03806
Stddev	.00012	.00064	.00062	.00212	.02385	.00236	.0235	.00032
%RSD	96.839	75.831	90.150	2.3566	2.4104	200.62	.55675	.84123
#1	-.00017	.00081	.00003	.09203	.98409	.00281	4.2423	.03797
#2	-.00022	.00150	.00127	.08959	1.0155	-.00153	4.1973	.03841
#3	.00001	.00022	.00078	.08781	.96874	.00225	4.2082	.03779
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00136	35.661	.00062	-.00181	.00048	-.00116	-.00014	1.7496
Stddev	.00020	.109	.00120	.00708	.00099	.00131	.00253	.0089
%RSD	14.531	.30471	193.47	390.26	208.00	113.60	1761.2	.51004
#1	.00135	35.664	.00195	.00606	-.00057	-.00179	-.00144	1.7597
#2	.00157	35.769	-.00036	-.00386	.00059	.00035	-.00176	1.7465
#3	.00117	35.551	.00027	-.00764	.00141	-.00204	.00277	1.7426
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 24, 2015

Sample Name: L1502101805 Acquired: 2/23/2015 13:05:09 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00343**	**.16424**	**-.00027**	**-.00036**	**-.00006**	**.00322**	**13.711**
Stddev	.00092	.00050	.00105	.00135	.00039	.00017	21.604
%RSD	26.840	.30151	382.71	378.43	644.08	5.1839	157.57
#1	-.00240	.16448	-.00099	.00067	.00009	.00337	7.6099
#2	-.00416	.16458	-.00076	-.00188	.00023	.00326	-4.1865
#3	-.00372	.16368	.00093	.00014	-.00050	.00304	37.709
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10676.**	**14552.**
Stddev	17.	103.
%RSD	.15490	.70575
#1	10693.	14488.
#2	10660.	14498.
#3	10676.	14671.

Approved: February 24, 2015

Sample Name: L1502101805PS Acquired: 2/23/2015 13:08:42 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513108-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21006	4.8029	.20390	1.0159	.55386	.02505	28.490	.02587
Stddev	.00125	.0254	.00209	.0024	.00246	.00011	.031	.00004
%RSD	.59295	.52832	1.0245	.23539	.44446	.45576	.10990	.16993
#1	.20869	4.8171	.20482	1.0165	.55237	.02495	28.471	.02588
#2	.21113	4.7736	.20151	1.0180	.55251	.02518	28.473	.02582
#3	.21034	4.8180	.20537	1.0133	.55670	.02503	28.526	.02590
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10541	.26423	.26108	2.0761	26.154	.50797	8.5599	.26963
Stddev	.00024	.00017	.00035	.0078	.084	.00038	.0568	.00247
%RSD	.22409	.06520	.13565	.37729	.31956	.07405	.66335	.91688
#1	.10560	.26407	.26070	2.0727	26.058	.50786	8.4962	.26914
#2	.10548	.26421	.26114	2.0704	26.208	.50839	8.6051	.26743
#3	.10514	.26441	.26140	2.0850	26.196	.50766	8.5783	.27230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51749	57.326	.25545	4.9820	.25068	.61728	.19690	4.1843
Stddev	.00160	.235	.00131	.0143	.00214	.00340	.00259	.0197
%RSD	.30826	.40923	.51190	.28717	.85209	.55046	1.3151	.46983
#1	.51771	57.207	.25432	4.9682	.24876	.61787	.19391	4.1792
#2	.51896	57.175	.25688	4.9968	.25298	.62035	.19839	4.2059
#3	.51579	57.596	.25515	4.9810	.25029	.61363	.19840	4.1676
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 24, 2015

Sample Name: L1502101805PS Acquired: 2/23/2015 13:08:42 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513108-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50731	.65645	.51144	.25929	.51983	.50559	15.542
Stddev	.00116	.00122	.00469	.00135	.00060	.00092	20.964
%RSD	.22804	.18590	.91765	.52108	.11497	.18221	134.88
#1	.50609	.65554	.50628	.25814	.51925	.50472	-7.0224
#2	.50839	.65597	.51258	.26078	.52044	.50656	19.234
#3	.50746	.65784	.51546	.25895	.51979	.50550	34.415
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10696.	14630.
Stddev	5.	88.
%RSD	.04619	.60331
#1	10697.	14624.
#2	10691.	14721.
#3	10700.	14545.

Approved: February 24, 2015

Sample Name: L1502101805SDL Acquired: 2/23/2015 13:12:02 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG513108-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	-.00191	-.00004	.00881	.00808	-.00008	5.2437
Stddev	.00032	.00111	.00157	.00099	.00040	.00002	.0229
%RSD	59.293	57.796	3622.8	11.287	4.9844	29.479	.43661
#1	.00021	-.00101	-.00074	.00896	.00817	-.00006	5.2175
#2	.00085	-.00315	.00175	.00972	.00764	-.00007	5.2601
#3	.00058	-.00158	-.00115	.00775	.00843	-.00011	5.2533
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	-.00011	-.00011	.00043	.01582	.18006	-.00038
Stddev	.00015	.00021	.00068	.00030	.00267	.01203	.00221
%RSD	89.983	190.65	618.90	69.884	16.849	6.6787	581.12
#1	.00033	-.00017	.00059	.00009	.01283	.19022	.00038
#2	.00003	-.00028	-.00016	.00057	.01793	.18318	-.00287
#3	.00015	.00012	-.00076	.00065	.01671	.16678	.00135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.88259	.00796	.00156	7.1683	-.00042	-.00110	.00043
Stddev	.00964	.00017	.00027	.0149	.00067	.00562	.00244
%RSD	1.0920	2.1037	17.527	.20742	160.47	512.91	569.06
#1	.87146	.00806	.00136	7.1588	-.00099	-.00002	.00055
#2	.88835	.00805	.00187	7.1606	-.00058	.00391	.00281
#3	.88795	.00776	.00144	7.1854	.00032	-.00718	-.00207
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: L1502101805SDL Acquired: 2/23/2015 13:12:02 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG513108-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.00218**	**.35536**	**-.00085**	**.03373**	**.00057**	**-.00027**
Stddev	.00100	.00328	.00154	.00058	.00013	.00062	.00049
%RSD	1033.2	150.12	.43270	67.481	.37280	108.43	179.15
#1	.00099	.00355	.35511	-.00150	.03359	.00128	-.00057
#2	-.00096	-.00156	.35396	-.00040	.03378	.00013	.00029
#3	-.00033	.00456	.35701	-.00066	.03382	.00031	-.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00020**	**.00144**	F **-14.305**
Stddev	.00013	.00011	13.115
%RSD	63.689	7.7244	91.681
#1	.00015	.00137	-.0859
#2	.00010	.00157	-25.927
#3	.00034	.00138	-16.902
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10809.**	**14501.**
Stddev	4.	79.
%RSD	.03808	.54421
#1	10813.	14424.
#2	10805.	14582.
#3	10807.	14497.

Approved: February 24, 2015

Sample Name: CCV Acquired: 2/23/2015 13:15:40 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.42006	9.8453	.42307	.52370	1.0394	.05155	10.343
Stddev	.00076	.0273	.00389	.00113	.0038	.00000	.038
%RSD	.18164	.27703	.92054	.21636	.36166	.00327	.37143
#1	.42069	9.8683	.42545	.52473	1.0359	.05155	10.314
#2	.41921	9.8523	.41857	.52249	1.0434	.05155	10.386
#3	.42028	9.8152	.42518	.52389	1.0389	.05155	10.328
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05259	.21159	.52615	.52958	4.0488	51.042	1.0158
Stddev	.00016	.00017	.00022	.00104	.0165	.194	.0050
%RSD	.30989	.07949	.04197	.19606	.40652	.37955	.49006
#1	.05265	.21179	.52638	.52919	4.0502	50.950	1.0143
#2	.05271	.21150	.52594	.53076	4.0645	51.265	1.0213
#3	.05240	.21149	.52612	.52880	4.0317	50.912	1.0117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.7946	.49266	1.0208	51.081	.51929	10.330	.52131
Stddev	.0751	.00265	.0005	.151	.00059	.011	.00717
%RSD	.76711	.53712	.05106	.29535	.11327	.10712	1.3763
#1	9.7871	.49421	1.0213	50.999	.51992	10.328	.51614
#2	9.8732	.49416	1.0202	51.255	.51876	10.342	.51830
#3	9.7235	.48961	1.0208	50.988	.51919	10.321	.52950
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 24, 2015

Sample Name: CCV Acquired: 2/23/2015 13:15:40 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2586	.43122	5.3388	1.0406	1.0301	1.0171	.53030
Stddev	.0035	.00378	.0296	.0026	.0037	.0078	.00228
%RSD	.28016	.87546	.55451	.25223	.36147	.76957	.43043
#1	1.2592	.42825	5.3085	1.0377	1.0273	1.0186	.52799
#2	1.2548	.42995	5.3676	1.0426	1.0343	1.0240	.53255
#3	1.2618	.43547	5.3405	1.0416	1.0287	1.0086	.53036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0333	1.0157	F -11.200
Stddev	.0022	.0021	10.168
%RSD	.20890	.20159	90.790
#1	1.0332	1.0179	-5.3019
#2	1.0313	1.0138	-5.3563
#3	1.0356	1.0153	-22.941
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10871.	14590.
Stddev	19.	47.
%RSD	.17394	.32306
#1	10886.	14583.
#2	10878.	14548.
#3	10850.	14641.

Approved: February 24, 2015

Sample Name: CCB Acquired: 2/23/2015 13:18:55 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	-.01163	-.00014	.00194	-.00031	-.00008	.01378
Stddev	.00017	.00289	.00100	.00025	.00012	.00003	.00724
%RSD	45.231	24.808	732.36	12.750	38.718	41.847	52.540
#1	.00037	-.01084	.00091	.00167	-.00017	-.00005	.02194
#2	.00022	-.01483	-.00109	.00215	-.00040	-.00006	.00812
#3	.00056	-.00923	-.00023	.00200	-.00036	-.00011	.01129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.00020	.00015	.00016	.00517	-.01706	-.00069
Stddev	.00010	.00025	.00079	.00023	.00615	.01068	.00016
%RSD	58.890	122.95	523.55	143.32	118.82	62.603	23.093
#1	.00028	.00011	.00001	.00021	.01227	-.00474	-.00053
#2	.00014	.00048	.00100	.00036	.00189	-.02285	-.00085
#3	.00009	.00001	-.00056	-.00009	.00136	-.02360	-.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00934	.00008	.00408	.02919	-.00121	-.00338	-.00046
Stddev	.00847	.00009	.00050	.01151	.00031	.00101	.00035
%RSD	90.708	109.97	12.330	39.422	25.841	29.948	77.144
#1	.01774	.00009	.00358	.01891	-.00097	-.00223	-.00033
#2	.00947	-.00001	.00409	.04162	-.00157	-.00376	-.00085
#3	.00080	.00016	.00458	.02703	-.00111	-.00414	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: CCB Acquired: 2/23/2015 13:18:55 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	.00203	-.00087	-.00072	.00007	.00156	.00056
Stddev	.00044	.00385	.00081	.00049	.00011	.00088	.00037
%RSD	49.679	189.70	93.604	68.177	155.78	56.637	66.162
#1	.00070	.00437	-.00130	-.00040	.00017	.00097	.00092
#2	.00058	.00412	-.00138	-.00128	.00008	.00113	.00059
#3	.00140	-.00241	.00007	-.00047	-.00004	.00257	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00008	.00008	F 2.8392
Stddev	.00026	.00010	5.2907
%RSD	327.38	121.77	186.34
#1	-.00036	.00011	6.7518
#2	-.00003	-.00003	-3.1804
#3	.00015	.00015	4.9463
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10746.	14414.
Stddev	18.	130.
%RSD	.17021	.90274
#1	10725.	14424.
#2	10757.	14539.
#3	10756.	14280.

Approved: February 24, 2015

Sample Name: L1502101806 Acquired: 2/23/2015 13:22:33 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.04510	-.00168	.03335	.05792	-.00012	30.365
Stddev	.00028	.00244	.00101	.00215	.00033	.00003	.060
%RSD	206.87	5.4027	60.140	6.4535	.57251	23.697	.19901
#1	.00012	.04748	-.00235	.03583	.05829	-.00015	30.420
#2	.00042	.04519	-.00052	.03204	.05766	-.00009	30.376
#3	-.00014	.04261	-.00217	.03218	.05781	-.00012	30.300
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	-.00004	.00054	.00034	.07711	1.0754	.00163
Stddev	.00009	.00017	.00027	.00041	.00857	.0106	.00080
%RSD	23.192	391.24	49.555	120.10	11.117	.98670	49.200
#1	.00050	-.00021	.00079	.00004	.07571	1.0876	.00255
#2	.00039	-.00006	.00059	.00017	.06933	1.0690	.00124
#3	.00032	.00014	.00026	.00080	.08630	1.0695	.00109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.5018	.01964	.00196	46.379	.00033	F -.00444	.00056
Stddev	.0610	.00029	.00010	.112	.00031	.00201	.00189
%RSD	1.1091	1.4960	4.8441	.24194	95.821	45.184	338.78
#1	5.4450	.01994	.00199	46.486	.00064	-.00607	.00270
#2	5.4940	.01936	.00204	46.262	.00033	-.00220	-.00089
#3	5.5663	.01963	.00186	46.390	.00001	-.00504	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 24, 2015

Sample Name: L1502101806 Acquired: 2/23/2015 13:22:33 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00089**	**.00142**	**2.0774**	**-.00408**	**.25449**	**.00104**	**-.00052**
Stddev	.00226	.00111	.0191	.00015	.00023	.00089	.00187
%RSD	254.49	78.070	.91854	3.6846	.09178	85.715	356.11
#1	-.00094	.00020	2.0856	-.00394	.25423	.00002	.00079
#2	.00140	.00237	2.0910	-.00424	.25468	.00166	-.00266
#3	-.00312	.00169	2.0556	-.00408	.25457	.00143	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00018**	**.00164**	F **-3.6214**
Stddev	.00029	.00016	9.8863
%RSD	165.93	9.5215	272.99
#1	.00050	.00148	3.2096
#2	.00011	.00179	.88394
#3	-.00008	.00164	-14.958
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10624.**	**14478.**
Stddev	13.	100.
%RSD	.12477	.69374
#1	10609.	14367.
#2	10634.	14561.
#3	10630.	14507.

Approved: February 24, 2015

Sample Name: L1502101807 Acquired: 2/23/2015 13:26:06 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.05910	-.00061	.05321	.06206	-.00011	36.387	.00033
Stddev	.00050	.00210	.00034	.00118	.00024	.00001	.049	.00010
%RSD	71.936	3.5468	55.943	2.2184	.38958	10.993	.13600	30.594
#1	.00089	.05840	-.00067	.05225	.06180	-.00011	36.422	.00044
#2	.00106	.06146	-.00091	.05453	.06210	-.00012	36.408	.00027
#3	.00012	.05745	-.00024	.05284	.06228	-.00010	36.330	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.00103	.00049	.15928	1.1566	.00345	7.5753	.02743
Stddev	.00020	.00050	.00037	.00391	.0348	.00105	.0203	.00023
%RSD	220.66	48.341	74.163	2.4577	3.0056	30.384	.26779	.84547
#1	-.00017	.00154	.00034	.15506	1.1936	.00247	7.5551	.02728
#2	-.00025	.00054	.00023	.16279	1.1246	.00455	7.5957	.02770
#3	.00014	.00101	.00091	.15999	1.1517	.00332	7.5751	.02731
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00205	71.380	.00025	.01600	.00183	-.00066	.00018	2.2625
Stddev	.00036	.047	.00061	.00302	.00150	.00259	.00269	.0147
%RSD	17.450	.06625	247.26	18.889	81.737	395.55	1528.3	.64771
#1	.00214	71.433	.00041	.01376	.00238	.00164	-.00188	2.2488
#2	.00165	71.341	.00076	.01480	.00297	-.00014	-.00080	2.2608
#3	.00235	71.367	-.00043	.01944	.00014	-.00347	.00321	2.2780
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 24, 2015

Sample Name: L1502101807 Acquired: 2/23/2015 13:26:06 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00348**	**.46124**	**-.00059**	**-.00075**	**.00012**	**.00164**	**.30527**
Stddev	.00060	.00019	.00016	.00080	.00021	.00012	16.552
%RSD	17.218	.04124	26.518	107.20	170.17	7.4830	5422.2
#1	-.00315	.46133	-.00052	-.00054	.00006	.00176	-8.0361
#2	-.00417	.46102	-.00048	-.00164	.00035	.00165	19.369
#3	-.00312	.46137	-.00077	-.00007	-.00005	.00151	-10.417
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10587.**	**14159.**
Stddev	13.	100.
%RSD	.12676	.70968
#1	10580.	14181.
#2	10602.	14050.
#3	10578.	14248.

Approved: February 24, 2015

Sample Name: L1502101810 Acquired: 2/23/2015 13:29:39 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	.45878	-.00218	.05321	.10469	-.00011	36.705
Stddev	.00027	.00158	.00270	.00143	.00016	.00001	.050
%RSD	58.239	.34367	123.82	2.6784	.15550	8.8300	.13606
#1	.00062	.45928	.00094	.05198	.10461	-.00010	36.751
#2	.00015	.45701	-.00377	.05287	.10457	-.00012	36.652
#3	.00064	.46005	-.00371	.05477	.10487	-.00012	36.713
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	.00013	.00131	.00089	.43752	1.3921	.00438
Stddev	.00014	.00005	.00039	.00035	.01046	.0255	.00131
%RSD	30.702	42.715	30.195	38.967	2.3904	1.8333	29.812
#1	.00038	.00016	.00155	.00066	.42669	1.3835	.00589
#2	.00038	.00006	.00085	.00072	.43829	1.4208	.00362
#3	.00062	.00016	.00152	.00129	.44757	1.3719	.00363
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.4674	.03829	.00182	66.109	.00035	.01534	-.00022
Stddev	.0438	.00037	.00023	.142	.00041	.00501	.00170
%RSD	.58676	.97078	12.794	.21545	117.97	32.639	779.53
#1	7.4604	.03792	.00156	66.145	.00059	.02045	-.00149
#2	7.5143	.03830	.00191	65.952	-.00013	.01045	-.00088
#3	7.4276	.03866	.00199	66.231	.00058	.01512	.00171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: L1502101810 Acquired: 2/23/2015 13:29:39 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00047**	**.00135**	**3.5197**	**-.00363**	**.46199**	**.01021**	**.00186**
Stddev	.00430	.00193	.0240	.00055	.00123	.00153	.00028
%RSD	910.45	143.46	.68094	15.235	.26585	14.941	15.212
#1	-.00160	.00029	3.5029	-.00302	.46283	.00964	.00154
#2	-.00409	.00017	3.5472	-.00409	.46058	.01194	.00207
#3	.00428	.00357	3.5090	-.00380	.46255	.00905	.00199
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00054**	**.00312**	F **42.513**
Stddev	.00042	.00004	11.841
%RSD	77.330	1.1352	27.851
#1	.00006	.00308	51.736
#2	.00074	.00316	46.642
#3	.00082	.00312	29.161
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10616.**	**14135.**
Stddev	14.	24.
%RSD	.12749	.16704
#1	10609.	14162.
#2	10631.	14119.
#3	10607.	14123.

Approved: February 24, 2015

Sample Name: L1502101811 Acquired: 2/23/2015 13:33:11 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	.00409	-.00131	.04734	.08284	-.00014	37.978
Stddev	.00061	.00244	.00013	.00127	.00013	.00004	.048
%RSD	128.52	59.592	9.9720	2.6919	.16294	26.928	.12530
#1	.00064	.00690	-.00132	.04714	.08276	-.00013	38.033
#2	.00097	.00264	-.00118	.04870	.08300	-.00019	37.944
#3	-.00020	.00272	-.00144	.04618	.08277	-.00012	37.958
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	-.00026	.00044	.00015	.01813	1.2215	.00363
Stddev	.00002	.00010	.00069	.00008	.00313	.0246	.00103
%RSD	4.1775	39.754	158.12	53.147	17.281	2.0126	28.280
#1	.00053	-.00022	.00030	.00023	.02016	1.1936	.00248
#2	.00055	-.00038	-.00017	.00007	.01971	1.2397	.00446
#3	.00051	-.00018	.00119	.00017	.01452	1.2313	.00394
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.8830	.00160	.00159	65.925	.00113	F -.00648	.00043
Stddev	.0532	.00001	.00021	.074	.00051	.00081	.00237
%RSD	.67482	.86506	13.016	.11224	44.755	12.433	546.74
#1	7.9395	.00162	.00159	65.997	.00166	-.00715	.00142
#2	7.8758	.00160	.00179	65.849	.00109	-.00559	-.00227
#3	7.8339	.00159	.00138	65.929	.00065	-.00671	.00215
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 24, 2015

Sample Name: L1502101811 Acquired: 2/23/2015 13:33:11 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00123**	**-.00283**	**2.2851**	**-.00395**	**.41978**	**-.00094**	**-.00077**
Stddev	.00109	.00283	.0081	.00038	.00031	.00028	.00133
%RSD	88.943	99.822	.35420	9.6669	.07426	30.266	172.12
#1	-.00004	-.00174	2.2771	-.00421	.41951	-.00111	-.00157
#2	-.00147	-.00071	2.2933	-.00351	.41971	-.00061	-.00151
#3	-.00219	-.00604	2.2848	-.00413	.42012	-.00109	.00076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00007**	**.00119**	**10.343**
Stddev	.00032	.00014	4.215
%RSD	438.26	11.327	40.747
#1	.00023	.00110	13.662
#2	-.00041	.00135	5.6014
#3	-.00003	.00113	11.766
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10582.**	**14415.**
Stddev	12.	64.
%RSD	.11690	.44459
#1	10593.	14346.
#2	10585.	14426.
#3	10569.	14473.

Approved: February 24, 2015

Sample Name: L1502101813 Acquired: 2/23/2015 13:36:45 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.27112	.00049	.02264	.04834	-.00013	37.887	.00050
Stddev	.00067	.00303	.00119	.00056	.00057	.00004	.349	.00004
%RSD	136.78	1.1189	243.81	2.4550	1.1783	30.997	.92142	7.1223
#1	.00015	.26977	-.00055	.02328	.04884	-.00014	38.131	.00051
#2	.00006	.27459	.00179	.02240	.04847	-.00008	38.044	.00053
#3	.00126	.26899	.00023	.02224	.04772	-.00016	37.487	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	.00109	.00062	.30585	1.1670	.00223	6.3309	.01444
Stddev	.00017	.00051	.00015	.00231	.0381	.00045	.0144	.00012
%RSD	87.613	46.983	23.953	.75491	3.2616	20.115	.22690	.84085
#1	-.00033	.00161	.00076	.30321	1.1990	.00262	6.3406	.01443
#2	.00000	.00059	.00046	.30680	1.1772	.00234	6.3144	.01456
#3	-.00026	.00106	.00062	.30753	1.1249	.00174	6.3376	.01432
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00092	24.678	-.00026	.02268	-.00040	-.00055	.00251	2.8385
Stddev	.00020	.235	.00078	.00351	.00371	.00126	.00177	.0284
%RSD	21.456	.95352	302.05	15.452	921.16	230.97	70.796	1.0002
#1	.00070	24.830	.00041	.02184	-.00267	-.00194	.00177	2.8673
#2	.00107	24.797	-.00112	.02653	.00388	.00052	.00122	2.8106
#3	.00099	24.407	-.00007	.01968	-.00241	-.00022	.00453	2.8376
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 24, 2015

Sample Name: L1502101813 Acquired: 2/23/2015 13:36:45 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00345**	**.25692**	**.00624**	**-.00082**	**.00055**	**.00219**	**26.050**
Stddev	.00030	.00248	.00143	.00143	.00020	.00006	8.918
%RSD	8.7180	.96721	22.880	174.17	36.140	2.7281	34.236
#1	-.00349	.25856	.00462	-.00247	.00033	.00213	15.752
#2	-.00313	.25815	.00733	.00001	.00060	.00225	31.276
#3	-.00372	.25406	.00676	.00000	.00073	.00219	31.122
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10632.**	**14603.**
Stddev	7.	96.
%RSD	.06249	.66051
#1	10638.	14568.
#2	10625.	14529.
#3	10632.	14712.

Approved: February 24, 2015

Sample Name: L1502101814 Acquired: 2/23/2015 13:40:18 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	.09220	-.00049	.02453	.04750	-.00014	28.501	.00042
Stddev	.00092	.00515	.00232	.00060	.00013	.00003	.046	.00008
%RSD	369.73	5.5861	474.38	2.4552	.27192	21.185	.15976	19.675
#1	.00103	.09811	-.00310	.02521	.04761	-.00011	28.500	.00049
#2	-.00076	.08984	.00133	.02432	.04753	-.00015	28.456	.00044
#3	.00047	.08866	.00030	.02407	.04736	-.00017	28.547	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	.00059	.00019	.10800	.65711	.00120	5.1291	.00769
Stddev	.00009	.00056	.00027	.00338	.01870	.00084	.0558	.00019
%RSD	66.527	94.930	140.95	3.1339	2.8459	70.488	1.0889	2.4950
#1	-.00015	.00094	-.00010	.10488	.66728	.00055	5.0646	.00789
#2	-.00022	.00088	.00025	.11160	.63553	.00215	5.1592	.00751
#3	-.00004	-.00006	.00043	.10754	.66854	.00089	5.1634	.00767
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	35.323	.00008	.00028	.00139	-.00159	.00138	2.1918
Stddev	.00027	.103	.00080	.00132	.00203	.00187	.00305	.0090
%RSD	136.21	.29294	987.09	471.60	146.39	117.36	220.22	.41114
#1	.00003	35.343	.00012	.00178	.00357	.00000	.00440	2.1987
#2	.00006	35.211	-.00074	-.00069	.00103	-.00364	.00144	2.1816
#3	.00052	35.415	.00086	-.00025	-.00044	-.00113	-.00169	2.1951
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 24, 2015

Sample Name: L1502101814 Acquired: 2/23/2015 13:40:18 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00371	.11647	.00105	-.00216	-.00003	.00221	5.9109
Stddev	.00030	.00106	.00076	.00293	.00013	.00012	4.8071
%RSD	8.0844	.91241	72.071	135.44	462.31	5.3372	81.326
#1	-.00404	.11525	.00151	-.00128	-.00012	.00220	11.240
#2	-.00345	.11693	.00018	.00023	.00012	.00233	4.5903
#3	-.00363	.11722	.00147	-.00543	-.00009	.00210	1.9022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10626.	14455.
Stddev	58.	134.
%RSD	.54327	.92398
#1	10688.	14301.
#2	10614.	14531.
#3	10575.	14534.

Approved: February 24, 2015

Sample Name: L1502102401 Acquired: 2/23/2015 13:43:52 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513072-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00039	.00409	-.00131	.00447	.04175	-.00006	2.0692
Stddev	.00045	.00197	.00089	.00088	.00012	.00003	.0039
%RSD	115.93	48.290	68.275	19.773	.27655	44.997	.18961
#1	.00064	.00228	-.00217	.00541	.04162	-.00009	2.0735
#2	.00065	.00619	-.00138	.00365	.04178	-.00007	2.0660
#3	-.00013	.00379	-.00038	.00434	.04184	-.00003	2.0680
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	-.00007	-.00002	.00028	.04669	.88747	-.00048
Stddev	.00001	.00022	.00058	.00060	.00223	.02798	.00023
%RSD	5.6437	300.48	3319.9	212.31	4.7789	3.1528	47.567
#1	.00028	.00008	.00037	.00044	.04510	.90911	-.00026
#2	.00025	.00002	-.00069	.00079	.04924	.85588	-.00072
#3	.00026	-.00032	.00027	-.00038	.04573	.89743	-.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.3865	.00825	-.00007	.58094	.04556	F -.00998	.00029
Stddev	.0412	.00010	.00012	.00564	.07722	.00534	.00210
%RSD	2.9714	1.2597	171.31	.97015	169.47	53.482	721.23
#1	1.4340	.00813	.00006	.58007	.00131	-.01615	.00243
#2	1.3647	.00834	-.00008	.58696	.13473	-.00698	-.00177
#3	1.3608	.00826	-.00019	.57578	.00066	-.00682	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 24, 2015

Sample Name: L1502102401 Acquired: 2/23/2015 13:43:52 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513072-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.00149	2.2345	-.00367	.01927	.00185	-.00056
Stddev	.00119	.00145	.0584	.00025	.00013	.00103	.00107
%RSD	1779.9	97.542	2.6121	6.6752	.68162	55.878	189.59
#1	.00129	.00051	2.2170	-.00385	.01916	.00303	-.00157
#2	-.00051	.00079	2.2997	-.00339	.01924	.00109	.00056
#3	-.00098	.00315	2.1870	-.00377	.01942	.00143	-.00068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00003	.00613	10.022
Stddev	.00010	.00592	20.255
%RSD	355.88	96.539	202.11
#1	-.00015	.00267	20.242
#2	.00001	.01297	23.130
#3	.00005	.00276	-13.307
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10859.	14415.
Stddev	75.	24.
%RSD	.68614	.16324
#1	10929.	14442.
#2	10781.	14403.
#3	10869.	14399.

Approved: February 24, 2015

Sample Name: L1502102401MS Acquired: 2/23/2015 13:47:26 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513072-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.16148	4.8929	-.00088	.00404	.04095	.02585	7.2361
Stddev	.00154	.0902	.00333	.00014	.00025	.00052	.0323
%RSD	.95086	1.8436	376.31	3.4642	.61581	2.0196	.44627
#1	.16240	4.9328	-.00407	.00395	.04085	.02621	7.2729
#2	.15971	4.7896	.00257	.00420	.04076	.02525	7.2228
#3	.16233	4.9563	-.00116	.00397	.04124	.02608	7.2125
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	-.00024	.00032	.00021	2.0880	26.611	.00024
Stddev	.00006	.00018	.00041	.00058	.0090	.026	.00081
%RSD	13.291	76.227	129.36	277.92	.43020	.09611	329.77
#1	.00054	-.00042	.00046	.00084	2.0785	26.624	.00058
#2	.00042	-.00023	.00064	-.00029	2.0889	26.582	-.00068
#3	.00048	-.00006	-.00015	.00007	2.0964	26.628	.00083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.3395	.25690	-.00009	25.767	.00080	F -.01115	.00016
Stddev	.0215	.00392	.00033	.034	.00019	.00596	.00106
%RSD	.33869	1.5277	360.68	.13349	23.036	53.391	651.11
#1	6.3153	.25754	-.00010	25.765	.00102	-.00457	-.00044
#2	6.3563	.25269	.00025	25.733	.00070	-.01273	.00139
#3	6.3469	.26046	-.00042	25.802	.00070	-.01616	-.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 24, 2015

Sample Name: L1502102401MS Acquired: 2/23/2015 13:47:26 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513072-07

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00069**	**-.00056**	**2.1994**	**-.00358**	**.01910**	**.00025**	**-.00178**
Stddev	.00061	.00329	.0095	.00018	.00005	.00059	.00139
%RSD	88.263	591.84	.43319	5.0898	.24674	237.01	77.949
#1	-.00077	.00152	2.1976	-.00338	.01915	-.00004	-.00102
#2	-.00004	-.00435	2.2097	-.00374	.01906	.00092	-.00339
#3	-.00126	.00117	2.1909	-.00361	.01908	-.00014	-.00094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00024**	**.00567**	F **-.89156**
Stddev	.00022	.00014	6.1412
%RSD	91.595	2.4320	688.81
#1	-.00014	.00562	5.2405
#2	-.00049	.00556	-7.0418
#3	-.00009	.00582	-.87339
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10768.**	**14398.**
Stddev	20.	64.
%RSD	.18171	.44485
#1	10756.	14464.
#2	10757.	14393.
#3	10790.	14337.

Approved: February 24, 2015

Sample Name: L1502102601 Acquired: 2/23/2015 13:50:58 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00067	-.00057	-.00281	.01083	.02564	-.00010	60.755	.00092
Stddev	.00015	.00152	.00045	.00096	.00014	.00002	.143	.00010
%RSD	21.969	265.73	15.929	8.8817	.54049	16.663	.23467	11.330
#1	.00082	.00106	-.00285	.01132	.02562	-.00008	60.679	.00100
#2	.00066	-.00195	-.00234	.00972	.02579	-.00011	60.920	.00096
#3	.00052	-.00083	-.00324	.01145	.02552	-.00011	60.667	.00080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.00096	.00054	.03195	3.8035	.01920	37.969	.01681
Stddev	.00008	.00037	.00040	.00343	.0040	.00128	.160	.00029
%RSD	239.67	38.231	74.537	10.721	.10610	6.6746	.42058	1.7413
#1	-.00012	.00056	.00008	.03124	3.8057	.02062	38.031	.01689
#2	-.00002	.00128	.00073	.03568	3.8060	.01813	38.088	.01705
#3	.00004	.00105	.00080	.02894	3.7988	.01886	37.788	.01648
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	5.4497	.00135	-.00250	.00033	-.00211	.00473	2.4913
Stddev	.00020	.0264	.00040	.00359	.00071	.00267	.00321	.0129
%RSD	251.93	.48439	29.525	143.41	216.44	127.00	67.834	.51675
#1	-.00030	5.4534	.00091	-.00507	-.00002	.00057	.00843	2.5051
#2	.00001	5.4741	.00169	.00160	-.00014	-.00211	.00267	2.4892
#3	.00006	5.4217	.00144	-.00404	.00114	-.00477	.00310	2.4796
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 24, 2015

Sample Name: L1502102601 Acquired: 2/23/2015 13:50:58 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00370**	**1.0657**	**-.00293**	**.00062**	**-.00041**	**.00309**	**16.823**
Stddev	.00026	.0032	.00106	.00106	.00005	.00014	18.242
%RSD	7.1459	.30429	36.202	171.97	12.811	4.6225	108.43
#1	-.00390	1.0647	-.00414	-.00002	-.00035	.00325	36.361
#2	-.00379	1.0693	-.00249	.00184	-.00045	.00300	13.871
#3	-.00340	1.0630	-.00216	.00003	-.00043	.00301	.23752
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10580.**	**13913.**
Stddev	18.	108.
%RSD	.16621	.77790
#1	10594.	13824.
#2	10585.	13883.
#3	10560.	14033.

Approved: February 24, 2015

Sample Name: L1502102603 Acquired: 2/23/2015 13:54:30 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	-.00085	-.00138	.01102	.02362	-.00013	44.391
Stddev	.00013	.00205	.00042	.00040	.00029	.00001	.064
%RSD	74.768	239.76	30.607	3.6270	1.2243	10.073	.14457
#1	.00022	-.00093	-.00145	.01099	.02333	-.00014	44.330
#2	.00003	.00123	-.00176	.01063	.02391	-.00013	44.458
#3	.00027	-.00287	-.00093	.01143	.02362	-.00012	44.384
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00078	.00006	.00114	.00052	.15830	3.1848	.01320
Stddev	.00009	.00012	.00013	.00061	.00575	.0062	.00125
%RSD	11.498	218.18	11.308	118.70	3.6333	.19513	9.4533
#1	.00084	-.00008	.00109	.00105	.16459	3.1835	.01182
#2	.00068	.00015	.00104	-.00015	.15700	3.1793	.01351
#3	.00082	.00010	.00129	.00066	.15331	3.1916	.01426
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	29.705	.13061	-.00017	5.0042	.00101	F -.00568	.00041
Stddev	.097	.00115	.00020	.0265	.00066	.00518	.00245
%RSD	.32768	.88003	120.51	.52941	65.316	91.253	597.32
#1	29.637	.13011	-.00023	5.0247	.00142	-.00197	-.00233
#2	29.660	.13193	-.00033	5.0135	.00025	-.01161	.00240
#3	29.816	.12980	.00006	4.9743	.00138	-.00347	.00116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 24, 2015

Sample Name: L1502102603 Acquired: 2/23/2015 13:54:30 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00280**	**-.00135**	**2.9603**	**-.00399**	**.49025**	**-.00266**	**.00016**
Stddev	.00143	.00257	.0082	.00051	.00070	.00079	.00122
%RSD	51.047	190.44	.27718	12.710	.14213	29.583	781.39
#1	-.00117	-.00050	2.9571	-.00394	.48982	-.00347	.00106
#2	-.00385	.00069	2.9697	-.00351	.49106	-.00190	.00064
#3	-.00337	-.00424	2.9543	-.00451	.48988	-.00261	-.00123
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00018**	**.00395**	**14.789**
Stddev	.00043	.00010	26.797
%RSD	237.23	2.5090	181.19
#1	-.00062	.00384	40.253
#2	.00023	.00398	17.280
#3	-.00015	.00403	-13.166
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10625.**	**14122.**
Stddev	15.	86.
%RSD	.14209	.60593
#1	10617.	14154.
#2	10615.	14025.
#3	10642.	14187.

Approved: February 24, 2015

Sample Name: CCV Acquired: 2/23/2015 13:58:08 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41731	10.009	.41999	.51863	1.0312	.05133	10.288
Stddev	.00280	.050	.00130	.00221	.0054	.00011	.020
%RSD	.67059	.50292	.30979	.42568	.52590	.20670	.19629
#1	.41801	10.063	.42090	.51976	1.0250	.05126	10.277
#2	.41423	9.9639	.42056	.51608	1.0342	.05127	10.276
#3	.41970	10.000	.41850	.52003	1.0345	.05145	10.311
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05244	.21169	.52667	.52704	4.0392	50.931	1.0064
Stddev	.00006	.00019	.00033	.00043	.0328	.117	.0019
%RSD	.11595	.09184	.06196	.08200	.81220	.22913	.19236
#1	.05250	.21147	.52687	.52722	4.0014	50.801	1.0041
#2	.05243	.21185	.52629	.52736	4.0566	50.967	1.0076
#3	.05238	.21175	.52684	.52655	4.0597	51.026	1.0074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.9353	.50507	1.0091	50.798	.51774	10.289	.51769
Stddev	.0122	.00086	.0025	.237	.00123	.003	.00158
%RSD	.12241	.16939	.24699	.46656	.23728	.03056	.30454
#1	9.9318	.50560	1.0119	50.525	.51893	10.293	.51588
#2	9.9489	.50408	1.0071	50.937	.51648	10.286	.51875
#3	9.9254	.50552	1.0085	50.934	.51781	10.289	.51844
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 24, 2015

Sample Name: CCV Acquired: 2/23/2015 13:58:08 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2415**	**.42812**	**5.2686**	**1.0388**	**1.0224**	**1.0147**	**.52878**
Stddev	.0027	.00649	.0204	.0051	.0050	.0076	.00338
%RSD	.21793	1.5163	.38820	.48999	.48797	.74864	.63930
#1	1.2397	.43218	5.2689	1.0361	1.0167	1.0065	.52552
#2	1.2446	.42063	5.2480	1.0356	1.0242	1.0162	.52856
#3	1.2401	.43154	5.2889	1.0446	1.0262	1.0214	.53227
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0271**	**1.0327**	F **-2.6107**
Stddev	.0012	.0021	10.455
%RSD	.11753	.20514	400.46
#1	1.0269	1.0303	9.2957
#2	1.0260	1.0332	-6.8378
#3	1.0284	1.0344	-10.290
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10845.**	**14230.**
Stddev	12.	10.
%RSD	.10841	.07297
#1	10858.	14224.
#2	10843.	14242.
#3	10834.	14225.

Approved: February 24, 2015

Sample Name: CCB Acquired: 2/23/2015 14:01:23 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	-.00968	-.00052	.00329	-.00023	-.00008	.01136
Stddev	.00048	.00062	.00161	.00016	.00017	.00002	.00642
%RSD	192.42	6.4109	308.77	4.9776	72.568	24.624	56.478
#1	-.00028	-.00964	-.00051	.00348	-.00037	-.00006	.01699
#2	.00065	-.00908	-.00213	.00317	-.00029	-.00010	.01272
#3	.00038	-.01032	.00108	.00323	-.00004	-.00008	.00437
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00011	.00026	-.00030	.00527	-.01626	-.00068
Stddev	.00019	.00002	.00064	.00009	.01045	.04179	.00206
%RSD	157.65	20.688	247.17	31.287	198.25	256.96	304.78
#1	.00028	.00013	-.00024	-.00028	-.00536	.00974	-.00201
#2	.00018	.00009	.00004	-.00022	.01553	-.06447	-.00172
#3	-.00009	.00009	.00098	-.00040	.00564	.00594	.00170
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01515	.00002	.00402	.02357	-.00082	.00064	-.00020
Stddev	.02735	.00007	.00035	.01091	.00067	.00650	.00174
%RSD	180.53	300.05	8.7390	46.267	81.780	1010.6	861.22
#1	.03676	.00010	.00365	.03015	-.00138	-.00367	.00037
#2	.02429	-.00004	.00406	.02958	-.00008	-.00252	-.00216
#3	-.01560	.00001	.00435	.01098	-.00101	.00812	.00119
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: CCB Acquired: 2/23/2015 14:01:23 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00357	.00013	.00077	-.00087	.00010	.00005	.00114
Stddev	.00179	.00257	.00105	.00116	.00001	.00109	.00061
%RSD	50.047	1967.5	136.78	133.59	11.573	2209.8	53.084
#1	.00156	-.00174	.00191	-.00084	.00010	.00071	.00172
#2	.00498	.00307	-.00016	.00028	.00009	.00064	.00121
#3	.00417	-.00093	.00056	-.00205	.00011	-.00121	.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00016	.00007	F -2.9598
Stddev	.00037	.00005	12.392
%RSD	229.65	68.377	418.69
#1	-.00037	.00009	-10.048
#2	.00027	.00002	11.349
#3	-.00038	.00011	-10.180
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10730.	14010.
Stddev	24.	73.
%RSD	.22114	.51773
#1	10703.	13926.
#2	10745.	14049.
#3	10743.	14055.

Approved: February 24, 2015

Sample Name: L1502102605 Acquired: 2/23/2015 14:05:03 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	.02956	-.00280	.00820	.05502	-.00013	50.860	.00079
Stddev	.00032	.00465	.00258	.00098	.00011	.00004	.115	.00003
%RSD	42.476	15.736	92.308	11.974	.20028	27.612	.22526	3.8786
#1	.00074	.03274	-.00119	.00830	.05500	-.00016	50.913	.00078
#2	.00109	.03171	-.00142	.00912	.05514	-.00014	50.939	.00076
#3	.00044	.02422	-.00577	.00717	.05492	-.00009	50.729	.00082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.00128	.00132	.14045	3.2580	.00471	32.598	.12990
Stddev	.00009	.00071	.00028	.00422	.0281	.00066	.268	.00100
%RSD	26.157	55.611	21.492	3.0078	.86166	13.961	.82141	.76924
#1	.00025	.00141	.00161	.13610	3.2702	.00543	32.867	.13078
#2	.00043	.00052	.00104	.14072	3.2259	.00454	32.597	.13011
#3	.00033	.00193	.00133	.14454	3.2780	.00415	32.331	.12881
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	7.8114	.00130	.00411	.00036	-.00265	.00219	2.0794
Stddev	.00028	.0195	.00040	.00398	.00146	.00165	.00344	.0069
%RSD	40.833	.24991	30.892	97.015	401.18	62.189	157.07	.33403
#1	.00044	7.8171	.00085	.00350	-.00050	-.00412	.00613	2.0786
#2	.00100	7.8275	.00142	.00836	-.00046	-.00295	.00063	2.0868
#3	.00064	7.7897	.00163	.00046	.00206	-.00087	-.00019	2.0730
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 24, 2015

Sample Name: L1502102605 Acquired: 2/23/2015 14:05:03 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00414**	**.81886**	**-.00080**	**-.00183**	**-.00038**	**.01202**	**8.0409**
Stddev	.00031	.00209	.00125	.00186	.00017	.00005	3.8422
%RSD	7.3765	.25515	157.27	101.94	46.123	.39573	47.783
#1	-.00379	.81897	-.00209	-.00328	-.00032	.01197	12.075
#2	-.00429	.82089	-.00071	.00027	-.00057	.01207	4.4251
#3	-.00434	.81672	.00041	-.00248	-.00024	.01203	7.6224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10569.**	**14213.**
Stddev	10.	115.
%RSD	.09583	.80909
#1	10558.	14108.
#2	10579.	14196.
#3	10570.	14336.

Approved: February 24, 2015

Sample Name: L1502102607 Acquired: 2/23/2015 14:08:36 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	.01063	-.00011	.01100	.03600	-.00012	82.846
Stddev	.00028	.00300	.00057	.00091	.00015	.00003	.170
%RSD	65.717	28.255	533.75	8.2741	.41153	25.129	.20554
#1	.00030	.00756	.00019	.01122	.03602	-.00014	83.024
#2	.00075	.01078	-.00076	.01000	.03585	-.00009	82.685
#3	.00023	.01356	.00025	.01179	.03614	-.00014	82.829
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00102	-.00009	.00068	.00032	.10925	4.9514	.02067
Stddev	.00010	.00024	.00038	.00023	.00957	.0347	.00093
%RSD	10.122	265.01	55.246	69.931	8.7561	.70144	4.5035
#1	.00096	-.00028	.00053	.00044	.10799	4.9915	.02174
#2	.00114	-.00017	.00040	.00006	.10038	4.9302	.02014
#3	.00096	.00018	.00111	.00047	.11938	4.9325	.02012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	52.162	.11134	.00049	11.162	.00076	.00058	.00103
Stddev	.728	.00270	.00030	.047	.00084	.00292	.00325
%RSD	1.3959	2.4243	61.125	.42316	110.39	500.73	314.47
#1	51.506	.10836	.00020	11.216	.00117	.00043	-.00256
#2	52.036	.11204	.00048	11.144	.00131	.00357	.00189
#3	52.945	.11363	.00079	11.127	-.00020	-.00226	.00377
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: L1502102607 Acquired: 2/23/2015 14:08:36 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	-.00024	2.2038	-.00344	1.3844	-.00464	-.00098
Stddev	.00209	.00504	.0146	.00034	.0075	.00118	.00105
%RSD	1023.1	2065.8	.66350	9.9089	.54078	25.510	107.19
#1	-.00167	.00544	2.1872	-.00376	1.3927	-.00531	-.00043
#2	-.00114	-.00199	2.2149	-.00308	1.3822	-.00328	-.00219
#3	.00219	-.00419	2.2092	-.00349	1.3782	-.00535	-.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00025	.00171	F -8.2389
Stddev	.00047	.00015	12.063
%RSD	189.36	9.0703	146.42
#1	-.00054	.00169	-9.1826
#2	.00029	.00186	4.2682
#3	-.00051	.00156	-19.802
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10404.	13812.
Stddev	17.	319.
%RSD	.15986	2.3125
#1	10403.	14154.
#2	10420.	13763.
#3	10387.	13521.

Approved: February 24, 2015

Sample Name: L1502104201 Acquired: 2/23/2015 14:12:08 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	.01215	-.00152	.00882	.04418	-.00012	63.736	.00075
Stddev	.00045	.00050	.00274	.00040	.00043	.00003	.142	.00005
%RSD	178.62	4.0984	180.67	4.5917	.97386	22.288	.22205	6.1823
#1	.00059	.01170	-.00109	.00918	.04418	-.00014	63.667	.00073
#2	.00044	.01206	.00099	.00838	.04461	-.00009	63.899	.00080
#3	-.00026	.01268	-.00445	.00888	.04375	-.00012	63.643	.00071
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.00094	.00077	.12845	3.7451	.01263	43.920	.51747
Stddev	.00014	.00031	.00049	.00609	.0033	.00038	.225	.00452
%RSD	63.703	33.082	63.799	4.7436	.08750	3.0418	.51249	.87335
#1	.00023	.00106	.00124	.12850	3.7450	.01254	43.674	.51225
#2	.00007	.00118	.00026	.12234	3.7484	.01305	44.117	.52015
#3	.00035	.00059	.00080	.13452	3.7418	.01230	43.968	.52001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	9.0774	.00060	-.00122	.00029	.00068	.00023	2.2741
Stddev	.00020	.0398	.00098	.00815	.00067	.00103	.00509	.0114
%RSD	516.01	.43905	163.66	669.09	233.24	152.02	2196.2	.50265
#1	.00027	9.0890	.00173	-.00062	.00017	-.00009	.00386	2.2707
#2	-.00007	9.1102	.00016	.00662	.00101	.00185	-.00559	2.2868
#3	-.00008	9.0331	-.00009	-.00965	-.00032	.00028	.00242	2.2647
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 24, 2015

Sample Name: L1502104201 Acquired: 2/23/2015 14:12:08 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00366**	**.88572**	**-.00336**	**.00047**	**-.00020**	**.00330**	**2.4675**
Stddev	.00055	.00378	.00173	.00232	.00005	.00005	6.6017
%RSD	14.952	.42644	51.615	491.76	26.177	1.6326	267.55
#1	-.00417	.88712	-.00388	.00157	-.00014	.00324	6.1380
#2	-.00308	.88860	-.00142	-.00220	-.00023	.00332	6.4182
#3	-.00371	.88145	-.00476	.00204	-.00023	.00335	-5.1539
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10491.**	**13260.**
Stddev	12.	47.
%RSD	.11046	.35641
#1	10499.	13310.
#2	10478.	13216.
#3	10496.	13254.

Approved: February 24, 2015

Sample Name: L1502104203 Acquired: 2/23/2015 14:15:41 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00106	.00568	-.00063	.01042	.03353	-.00009	34.220
Stddev	.00029	.00424	.00164	.00055	.00032	.00004	.189
%RSD	27.496	74.670	257.84	5.2445	.95336	42.302	.55265
#1	.00073	.00180	-.00228	.01077	.03316	-.00005	34.060
#2	.00129	.01020	.00100	.01070	.03369	-.00009	34.429
#3	.00115	.00504	-.00062	.00979	.03374	-.00013	34.171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.00007	.00059	.00084	.10047	3.0630	.01532
Stddev	.00015	.00019	.00011	.00008	.00180	.0177	.00218
%RSD	27.191	269.32	18.402	9.5209	1.7916	.57833	14.227
#1	.00041	-.00004	.00066	.00091	.10084	3.0770	.01302
#2	.00055	-.00004	.00065	.00076	.10206	3.0688	.01736
#3	.00071	.00029	.00047	.00086	.09851	3.0431	.01559
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	20.434	.20787	.00003	11.911	.00059	F -.00333	-.00108
Stddev	.137	.00223	.00031	.082	.00021	.00505	.00115
%RSD	.67039	1.0711	949.41	.68588	35.385	151.49	106.06
#1	20.358	.20672	.00038	11.840	.00044	-.00773	-.00172
#2	20.592	.21043	-.00006	12.001	.00082	-.00445	-.00177
#3	20.352	.20645	-.00022	11.892	.00049	.00218	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 24, 2015

Sample Name: L1502104203 Acquired: 2/23/2015 14:15:41 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	.00136	2.3021	-.00382	.97980	-.00159	-.00012
Stddev	.00140	.00102	.0041	.00073	.00597	.00047	.00113
%RSD	509.12	74.917	.17885	19.118	.60949	29.775	910.61
#1	.00180	.00240	2.2973	-.00410	.97434	-.00214	.00057
#2	-.00001	.00036	2.3042	-.00299	.98617	-.00129	.00048
#3	-.00096	.00132	2.3047	-.00437	.97888	-.00134	-.00142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00059	.00174	2.6197
Stddev	.00033	.00008	3.0286
%RSD	55.765	4.6102	115.61
#1	-.00024	.00183	3.2964
#2	-.00089	.00169	5.2528
#3	-.00064	.00170	-.68998
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10625.	13706.
Stddev	4.	152.
%RSD	.03499	1.1126
#1	10625.	13797.
#2	10621.	13530.
#3	10628.	13791.

Approved: February 24, 2015

Sample Name: L1502104205 Acquired: 2/23/2015 14:19:13 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.01871	-.00086	.00776	.05133	-.00009	22.250	.00049
Stddev	.00053	.00310	.00339	.00059	.00008	.00003	.063	.00003
%RSD	109.80	16.554	394.55	7.6038	.15618	38.290	.28148	6.9189
#1	.00039	.01980	-.00186	.00826	.05123	-.00005	22.221	.00049
#2	.00105	.02111	-.00364	.00791	.05135	-.00011	22.208	.00053
#3	.00000	.01521	.00292	.00711	.05139	-.00009	22.322	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	.00057	-.00007	.18812	2.3098	.00540	13.002	.25458
Stddev	.00026	.00021	.00057	.00294	.0298	.00323	.073	.00210
%RSD	1723.2	37.216	783.63	1.5654	1.2883	59.796	.56460	.82501
#1	.00006	.00075	.00013	.18473	2.3330	.00529	12.936	.25235
#2	.00020	.00034	.00037	.18956	2.2763	.00869	12.988	.25485
#3	-.00031	.00063	-.00071	.19007	2.3203	.00223	13.081	.25653
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	5.2474	.00049	-.00116	-.00011	-.00051	.00379	2.5685
Stddev	.00031	.0097	.00103	.00181	.00250	.00411	.00366	.0203
%RSD	3552.2	.18501	208.15	156.87	2262.2	810.85	96.504	.78852
#1	.00001	5.2406	.00166	-.00291	-.00174	.00420	-.00002	2.5902
#2	-.00030	5.2432	-.00028	.00071	-.00135	-.00233	.00727	2.5501
#3	.00032	5.2586	.00010	-.00127	.00276	-.00338	.00412	2.5653
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 24, 2015

Sample Name: L1502104205 Acquired: 2/23/2015 14:19:13 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00368**	**.34965**	**.00080**	**.00044**	**-.00031**	**.00165**	**9.8410**
Stddev	.00048	.00080	.00126	.00267	.00026	.00011	11.271
%RSD	12.980	.22900	157.33	612.62	85.451	6.4666	114.53
#1	-.00319	.34963	.00204	.00351	-.00038	.00158	1.2362
#2	-.00414	.34886	.00085	-.00124	-.00052	.00161	5.6882
#3	-.00370	.35046	-.00048	-.00097	-.00002	.00178	22.599
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10687.**	**13794.**
Stddev	6.	59.
%RSD	.05704	.42474
#1	10687.	13860.
#2	10693.	13772.
#3	10681.	13750.

Approved: February 24, 2015

Sample Name: L1502104207 Acquired: 2/23/2015 14:22:54 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	.01229	.00093	.00769	.03792	-.00010	33.360
Stddev	.00019	.00211	.00181	.00060	.00036	.00001	.143
%RSD	29.248	17.193	194.72	7.7452	.95040	11.358	.42793
#1	.00052	.01257	-.00016	.00715	.03771	-.00010	33.196
#2	.00085	.01425	-.00007	.00832	.03770	-.00012	33.429
#3	.00054	.01005	.00301	.00759	.03833	-.00010	33.454
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	-.00002	.00052	-.00003	.05952	2.6514	.00896
Stddev	.00008	.00012	.00071	.00049	.00328	.0580	.00043
%RSD	16.104	624.08	137.34	1469.9	5.5176	2.1874	4.8387
#1	.00063	.00008	-.00017	-.00054	.05854	2.5845	.00933
#2	.00048	.00001	.00125	.00000	.05683	2.6874	.00906
#3	.00048	-.00014	.00047	.00044	.06318	2.6822	.00848
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	18.309	.16979	.00008	4.3041	-.00022	F -.00578	-.00118
Stddev	.168	.00133	.00011	.0165	.00094	.00290	.00246
%RSD	.91650	.78077	134.33	.38327	435.39	50.103	207.40
#1	18.132	.16958	.00021	4.2859	.00014	-.00798	.00109
#2	18.466	.17121	.00002	4.3180	.00050	-.00250	-.00379
#3	18.329	.16858	.00002	4.3085	-.00128	-.00686	-.00085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 24, 2015

Sample Name: L1502104207 Acquired: 2/23/2015 14:22:54 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00069	-.00209	2.3983	-.00365	.57551	-.00114	-.00218
Stddev	.00292	.00347	.0288	.00021	.00117	.00071	.00038
%RSD	424.54	166.37	1.1989	5.6719	.20400	62.002	17.429
#1	.00265	-.00170	2.4115	-.00385	.57416	-.00045	-.00262
#2	-.00277	.00117	2.4180	-.00343	.57631	-.00110	-.00196
#3	-.00194	-.00574	2.3653	-.00367	.57606	-.00186	-.00196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00007	.00150	20.633
Stddev	.00044	.00001	8.059
%RSD	665.67	.54130	39.060
#1	.00053	.00149	16.424
#2	-.00034	.00151	29.925
#3	.00000	.00150	15.549
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10632.	13830.
Stddev	15.	103.
%RSD	.14485	.74401
#1	10630.	13844.
#2	10649.	13721.
#3	10618.	13925.

Approved: February 24, 2015

Sample Name: CCV Acquired: 2/23/2015 14:26:30 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41686	10.218	.42471	.51537	1.0383	.05121	10.408
Stddev	.00225	.106	.00205	.00341	.0029	.00009	.023
%RSD	.54015	1.0385	.48301	.66122	.27812	.17812	.22315
#1	.41765	10.286	.42518	.51591	1.0404	.05130	10.428
#2	.41861	10.272	.42247	.51847	1.0395	.05112	10.413
#3	.41432	10.095	.42649	.51172	1.0350	.05121	10.383
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05264	.21294	.52864	.52860	4.0999	51.454	1.0095
Stddev	.00016	.00084	.00216	.00203	.0241	.111	.0041
%RSD	.30827	.39617	.40804	.38397	.58769	.21616	.40378
#1	.05255	.21390	.53075	.52982	4.1277	51.581	1.0135
#2	.05254	.21231	.52644	.52626	4.0867	51.400	1.0054
#3	.05282	.21263	.52873	.52973	4.0853	51.379	1.0096
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.060	.51904	1.0080	51.231	.51945	10.280	.51874
Stddev	.065	.00568	.0036	.171	.00093	.029	.00308
%RSD	.64507	1.0939	.35594	.33412	.17994	.28043	.59443
#1	10.135	.52357	1.0104	51.408	.51916	10.293	.51629
#2	10.033	.52088	1.0039	51.219	.51869	10.247	.51772
#3	10.014	.51267	1.0098	51.066	.52050	10.300	.52220
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 24, 2015

Sample Name: CCV Acquired: 2/23/2015 14:26:30 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2400**	**.42537**	**5.2881**	**1.0483**	**1.0286**	**1.0176**	**.53676**
Stddev	.0036	.00345	.0219	.0034	.0020	.0052	.00108
%RSD	.28992	.80991	.41477	.32225	.19438	.50962	.20088
#1	1.2439	.42859	5.3023	1.0489	1.0309	1.0190	.53559
#2	1.2368	.42578	5.2628	1.0447	1.0277	1.0219	.53695
#3	1.2393	.42174	5.2991	1.0514	1.0273	1.0118	.53772
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0235**	**1.0407**	F **-8.9028**
Stddev	.0016	.0019	5.8438
%RSD	.15294	.18328	65.640
#1	1.0238	1.0386	-8.2370
#2	1.0248	1.0412	-15.051
#3	1.0218	1.0423	-3.4204
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10781.**	**13792.**
Stddev	11.	116.
%RSD	.10614	.84030
#1	10776.	13676.
#2	10794.	13792.
#3	10773.	13907.

Approved: February 24, 2015

Sample Name: CCB Acquired: 2/23/2015 14:29:45 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	-.00855	.00032	.00108	-.00006	-.00007	.00936
Stddev	.00032	.00038	.00145	.00118	.00023	.00003	.00985
%RSD	94.523	4.4363	452.91	108.99	379.10	47.034	105.25
#1	.00043	-.00814	.00195	.00064	.00021	-.00004	.01837
#2	.00059	-.00863	-.00083	.00242	-.00021	-.00010	.01086
#3	-.00002	-.00889	-.00016	.00019	-.00018	-.00007	-.00115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.00004	.00085	-.00011	.00041	-.04865	-.00002
Stddev	.00010	.00013	.00029	.00058	.00775	.00971	.00089
%RSD	67.106	344.56	33.610	549.43	1912.4	19.959	5767.0
#1	.00004	.00019	.00099	-.00018	-.00271	-.04668	-.00103
#2	.00023	.00000	.00104	-.00065	-.00530	-.05919	.00062
#3	.00015	-.00007	.00052	.00051	.00923	-.04008	.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02593	.00001	.00389	.01720	-.00109	.00316	-.00157
Stddev	.02298	.00005	.00016	.00621	.00075	.00622	.00246
%RSD	88.639	815.22	4.2215	36.103	68.370	196.95	156.77
#1	.04632	-.00001	.00382	.02182	-.00030	.00839	.00091
#2	.03044	.00007	.00377	.01014	-.00179	.00481	-.00162
#3	.00102	-.00004	.00408	.01964	-.00118	-.00372	-.00401
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: CCB Acquired: 2/23/2015 14:29:45 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00050	.00070	.00058	-.00041	.00015	-.00064	.00110
Stddev	.00137	.00168	.00126	.00017	.00006	.00152	.00127
%RSD	276.19	240.00	216.41	41.056	41.870	237.14	115.37
#1	-.00197	-.00037	.00162	-.00022	.00019	-.00006	.00197
#2	.00075	.00263	.00096	-.00053	.00019	-.00237	.00170
#3	-.00027	-.00016	-.00082	-.00048	.00008	.00050	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00017	.00006	F 3.4935
Stddev	.00029	.00010	10.928
%RSD	173.31	162.36	312.81
#1	-.00022	.00012	-8.7784
#2	-.00042	-.00005	12.173
#3	.00015	.00011	7.0856
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10690.	13583.
Stddev	9.	22.
%RSD	.08003	.16529
#1	10688.	13559.
#2	10683.	13604.
#3	10699.	13585.

Approved: February 24, 2015

Sample Name: PBW A4 Acquired: 2/23/2015 14:33:25 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG512945-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	-.00314	-.00130	-.00050	-.00048	-.00011	.02569
Stddev	.00058	.00239	.00028	.00047	.00008	.00003	.00540
%RSD	187.59	75.951	21.720	93.207	17.468	30.346	21.020
#1	.00063	-.00586	-.00099	-.00103	-.00057	-.00008	.02461
#2	-.00036	-.00138	-.00134	-.00017	-.00043	-.00009	.02092
#3	.00067	-.00219	-.00155	-.00030	-.00043	-.00014	.03155
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	-.00016	.00015	.00089	.00732	.02756	-.00114
Stddev	.00007	.00013	.00048	.00046	.00388	.02839	.00133
%RSD	37.689	82.153	323.11	51.478	52.963	102.98	116.34
#1	.00022	-.00031	-.00014	.00036	.00592	.00905	-.00045
#2	.00023	-.00005	.00070	.00112	.01171	.06025	-.00031
#3	.00011	-.00012	-.00011	.00118	.00434	.01340	-.00268
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03093	.00030	.00066	.02394	-.00058	F -.00857	-.00107
Stddev	.05839	.00008	.00033	.00019	.00069	.00331	.00112
%RSD	188.76	28.434	50.346	.79894	119.09	38.653	105.11
#1	.06544	.00022	.00028	.02392	-.00102	-.00818	-.00237
#2	-.03649	.00029	.00088	.02414	-.00093	-.00547	-.00042
#3	.06385	.00038	.00083	.02376	.00021	-.01206	-.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 24, 2015

Sample Name: PBW A4 Acquired: 2/23/2015 14:33:25 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG512945-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00183**	**-.00097**	**.00367**	**-.00341**	**.00010**	**.00111**	**.00089**
Stddev	.00066	.00199	.00244	.00012	.00008	.00154	.00015
%RSD	35.825	204.09	66.513	3.5934	82.692	138.67	16.635
#1	-.00237	-.00299	.00648	-.00334	.00016	.00253	.00103
#2	-.00110	-.00091	.00214	-.00355	.00013	.00132	.00074
#3	-.00202	.00098	.00239	-.00334	.00001	-.00052	.00091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00015**	**.00149**	F **-.57909**
Stddev	.00013	.00005	9.6779
%RSD	90.522	3.4723	1671.2
#1	-.00006	.00145	-3.8898
#2	-.00008	.00155	10.320
#3	-.00030	.00146	-8.1672
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10872.**	**13752.**
Stddev	160.	11.
%RSD	1.4762	.08262
#1	11057.	13763.
#2	10782.	13754.
#3	10777.	13740.

Approved: February 24, 2015

Sample Name: LCSW A4 Acquired: 2/23/2015 14:37:02 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG512945-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20724	5.0045	.20284	.99170	.51715	.02476	5.1358	.02556
Stddev	.00140	.0372	.00184	.00127	.00281	.00002	.0117	.00023
%RSD	.67572	.74317	.90750	.12786	.54247	.09390	.22835	.90540
#1	.20797	5.0270	.20492	.99293	.51395	.02475	5.1229	.02573
#2	.20562	4.9615	.20143	.99179	.51918	.02478	5.1387	.02566
#3	.20812	5.0248	.20216	.99039	.51832	.02474	5.1458	.02530
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10629	.26661	.26115	2.0461	25.396	.50176	4.9602	.25471
Stddev	.00053	.00052	.00069	.0184	.049	.00239	.0021	.00133
%RSD	.49951	.19619	.26269	.89978	.19184	.47701	.04302	.52276
#1	.10687	.26718	.26140	2.0275	25.343	.49941	4.9591	.25553
#2	.10617	.26615	.26167	2.0466	25.439	.50420	4.9588	.25318
#3	.10583	.26650	.26037	2.0643	25.406	.50167	4.9627	.25543
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51282	25.252	.25704	4.8595	.25640	.61123	.19493	2.6037
Stddev	.00311	.096	.00091	.0153	.00224	.00329	.00195	.0130
%RSD	.60706	.38019	.35538	.31492	.87525	.53876	1.0020	.49908
#1	.51352	25.147	.25679	4.8473	.25422	.61057	.19485	2.6122
#2	.51552	25.336	.25805	4.8767	.25871	.61480	.19301	2.6101
#3	.50942	25.274	.25628	4.8546	.25627	.60831	.19692	2.5887
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 24, 2015

Sample Name: LCSW A4 Acquired: 2/23/2015 14:37:02 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG512945-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52068	.51103	.51494	.26159	.51530	.52320	25.944
Stddev	.00202	.00220	.00185	.00127	.00179	.00154	5.907
%RSD	.38822	.43012	.35950	.48451	.34811	.29356	22.767
#1	.52169	.50852	.51314	.26025	.51737	.52244	19.684
#2	.52200	.51261	.51684	.26276	.51439	.52497	31.419
#3	.51836	.51196	.51485	.26177	.51415	.52218	26.727
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10675.	13726.
Stddev	31.	42.
%RSD	.29415	.30494
#1	10667.	13724.
#2	10649.	13768.
#3	10710.	13685.

Approved: February 24, 2015

Sample Name: L1502095203 Acquired: 2/23/2015 14:40:20 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG512945-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.11929	-.00281	.17217	.04102	-.00021	268.11
Stddev	.00107	.00246	.00272	.00200	.00011	.00000	.61
%RSD	612.65	2.0625	96.864	1.1625	.26779	.52756	.22631
#1	.00087	.11916	-.00202	.17443	.04112	-.00021	267.41
#2	-.00013	.11690	-.00583	.17147	.04104	-.00021	268.42
#3	-.00126	.12181	-.00057	.17061	.04090	-.00021	268.49
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00126	.01852	.00176	.00121	.20675	5.6258	.05954
Stddev	.00006	.00023	.00060	.00106	.00374	.0534	.00082
%RSD	4.8045	1.2592	34.290	87.676	1.8081	.94952	1.3768
#1	.00120	.01851	.00107	.00238	.20331	5.6013	.05990
#2	.00132	.01829	.00218	.00092	.20622	5.6871	.06011
#3	.00127	.01876	.00202	.00032	.21073	5.5891	.05860
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	45.546	1.2024	.00568	F 1099.8	.04106	.01489	-.00235
Stddev	.216	.0124	.00041	8.4	.00145	.01188	.00187
%RSD	.47332	1.0329	7.2990	.76232	3.5304	79.755	79.474
#1	45.480	1.1956	.00536	1096.2	.04043	.02508	-.00389
#2	45.371	1.1948	.00553	1093.9	.04002	.00184	-.00289
#3	45.787	1.2167	.00615	1109.4	.04271	.01776	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				360.00			
Low Limit				-.40000			

Approved: February 24, 2015

Sample Name: L1502095203 Acquired: 2/23/2015 14:40:20 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG512945-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00099**	**.00270**	**2.8725**	**-.00378**	**3.8031**	**-.01320**	**-.00282**
Stddev	.00103	.00254	.0158	.00024	.0077	.00074	.00209
%RSD	103.66	94.022	.54951	6.2756	.20242	5.6367	73.912
#1	-.00192	.00267	2.8559	-.00405	3.7942	-.01290	-.00075
#2	.00011	.00525	2.8742	-.00359	3.8078	-.01405	-.00279
#3	-.00116	.00017	2.8873	-.00372	3.8073	-.01266	-.00492
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00046**	**.03423**	**1.7103**
Stddev	.00048	.00051	21.841
%RSD	102.47	1.4884	1277.0
#1	.00002	.03382	6.1077
#2	.00041	.03406	21.019
#3	.00097	.03480	-21.995
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**9646.7**	**12965.**
Stddev	102.7	108.
%RSD	1.0644	.83106
#1	9571.3	13040.
#2	9605.2	13013.
#3	9763.7	12841.

Approved: February 24, 2015

Sample Name: L1502095203DUP Acquired: 2/23/2015 14:44:02 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG512945-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00059	.12834	-.00148	.17225	.04107	-.00018	269.09
Stddev	.00060	.00251	.00123	.00157	.00020	.00001	.48
%RSD	101.43	1.9590	82.729	.91158	.49648	7.3936	.17826
#1	-.00083	.13079	-.00009	.17328	.04107	-.00017	268.91
#2	-.00103	.12846	-.00240	.17303	.04087	-.00017	268.73
#3	.00009	.12577	-.00195	.17044	.04127	-.00019	269.64
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	.01880	.00135	.00069	.21288	5.7101	.05859
Stddev	.00012	.00023	.00048	.00039	.00816	.0101	.00116
%RSD	10.676	1.2283	35.442	56.816	3.8327	.17696	1.9849
#1	.00103	.01862	.00160	.00113	.22207	5.7210	.05939
#2	.00119	.01872	.00080	.00058	.21008	5.7011	.05726
#3	.00128	.01906	.00166	.00037	.20649	5.7081	.05912
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	46.394	1.2254	.00506	F 1098.3	.04270	.01411	.00157
Stddev	.258	.0069	.00037	28.8	.00049	.00324	.00223
%RSD	.55553	.56703	7.3318	2.6207	1.1433	22.948	142.45
#1	46.686	1.2334	.00465	1110.1	.04218	.01287	.00247
#2	46.300	1.2223	.00537	1065.5	.04279	.01778	-.00097
#3	46.197	1.2206	.00517	1119.4	.04314	.01167	.00321
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				360.00			
Low Limit				-.40000			

Approved: February 24, 2015

Sample Name: L1502095203DUP Acquired: 2/23/2015 14:44:02 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG512945-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00211	.00557	2.8906	-.00365	3.8257	-.01261	-.00222
Stddev	.00072	.00139	.0124	.00042	.0132	.00066	.00308
%RSD	34.159	25.028	.42905	11.570	.34527	5.2124	138.34
#1	.00204	.00401	2.8854	-.00413	3.8179	-.01324	.00132
#2	.00143	.00670	2.9047	-.00344	3.8182	-.01193	-.00387
#3	.00287	.00599	2.8816	-.00336	3.8409	-.01266	-.00413
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00029	.03467	25.342
Stddev	.00047	.00019	2.746
%RSD	162.89	.56215	10.834
#1	-.00010	.03448	23.804
#2	.00081	.03487	23.709
#3	.00015	.03467	28.511
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	9671.3	12904.
Stddev	15.2	69.
%RSD	.15677	.53236
#1	9678.6	12825.
#2	9653.8	12947.
#3	9681.4	12940.

Approved: February 24, 2015

Sample Name: L1502095203MS Acquired: 2/23/2015 14:47:43 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG512945-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21484	5.3474	.21308	1.1448	.55578	.02511	268.33
Stddev	.00093	.0327	.00165	.0019	.00113	.00006	.05
%RSD	.43312	.61153	.77632	.16891	.20420	.23594	.01823
#1	.21388	5.3609	.21374	1.1447	.55709	.02505	268.35
#2	.21490	5.3101	.21120	1.1429	.55505	.02512	268.37
#3	.21574	5.3711	.21431	1.1468	.55520	.02517	268.28
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02745	.11752	.25767	.24489	2.2532	31.967	.57635
Stddev	.00005	.00026	.00090	.00099	.0234	.088	.00239
%RSD	.17310	.22274	.34936	.40311	1.0393	.27403	.41489
#1	.02743	.11744	.25715	.24380	2.2802	31.902	.57566
#2	.02751	.11731	.25871	.24572	2.2411	31.933	.57901
#3	.02742	.11781	.25715	.24514	2.2383	32.067	.57438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	49.725	1.4316	.50942	F 1123.2	.28019	5.3685	.23291
Stddev	.146	.0115	.00029	4.7	.00165	.0317	.00263
%RSD	.29328	.80450	.05722	.41936	.59050	.59059	1.1308
#1	49.597	1.4417	.50910	1128.4	.27841	5.3431	.23089
#2	49.695	1.4190	.50967	1119.2	.28047	5.3583	.23194
#3	49.883	1.4339	.50948	1122.0	.28168	5.4040	.23589
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				360.00			
Low Limit				-.40000			

Approved: February 24, 2015

Sample Name: L1502095203MS Acquired: 2/23/2015 14:47:43 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG512945-06

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.62073**	**.20934**	**5.7996**	**.49122**	**4.2508**	**.50173**	**.21761**
Stddev	.00195	.00932	.0530	.00280	.0053	.00175	.00129
%RSD	.31365	4.4503	.91446	.57084	.12579	.34887	.59316
#1	.62209	.21941	5.8232	.49266	4.2559	.50109	.21625
#2	.61850	.20758	5.7388	.48799	4.2514	.50371	.21775
#3	.62159	.20103	5.8366	.49301	4.2452	.50039	.21882
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.50942**	**.54054**	**35.554**
Stddev	.00129	.00137	3.159
%RSD	.25246	.25341	8.8842
#1	.50793	.54114	32.038
#2	.51014	.53898	38.153
#3	.51018	.54151	36.471
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**9716.4**	**12814.**
Stddev	12.9	88.
%RSD	.13262	.68969
#1	9731.1	12743.
#2	9710.8	12913.
#3	9707.2	12786.

Approved: February 24, 2015

Sample Name: L1502095206 Acquired: 2/23/2015 14:51:09 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00040	.01599	.01063	.68065	.01475	-.00016	506.07
Stddev	.00092	.00103	.00373	.00301	.00035	.00001	.94
%RSD	228.54	6.4579	35.123	.44185	2.4065	8.2849	.18546
#1	.00039	.01577	.01405	.68188	.01504	-.00016	506.98
#2	-.00142	.01711	.01118	.67722	.01485	-.00017	506.12
#3	-.00018	.01508	.00665	.68285	.01435	-.00014	505.11
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	.00860	.00296	F -.00622	115.61	25.439	.26211
Stddev	.00027	.00007	.00045	.00116	.18	.055	.00151
%RSD	148.63	.79013	15.031	18.622	.15669	.21685	.57554
#1	-.00021	.00864	.00247	-.00643	115.64	25.501	.26135
#2	.00010	.00852	.00308	-.00497	115.78	25.394	.26385
#3	-.00045	.00863	.00333	-.00726	115.42	25.424	.26113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				180.00			
Low Limit				-.00400			

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	251.08	4.1613	.01143	F 4792.4	.04962	.07297	-.00133
Stddev	.81	.0166	.00044	57.0	.00111	.00548	.00052
%RSD	.32373	.39931	3.8450	1.1894	2.2419	7.5140	39.507
#1	251.54	4.1563	.01158	4847.5	.04911	.07561	-.00173
#2	250.14	4.1478	.01178	4795.9	.04885	.07663	-.00152
#3	251.55	4.1798	.01094	4733.7	.05089	.06667	-.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				360.00			
Low Limit				-.40000			

Approved: February 24, 2015

Sample Name: L1502095206 Acquired: 2/23/2015 14:51:09 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.01129	-.00130	5.6560	-.00376	F 19.390	F -.02698	.00127
Stddev	.00118	.00086	.0272	.00111	.101	.00061	.00164
%RSD	10.408	66.331	.48097	29.556	.52132	2.2481	128.63
#1	-.00994	-.00046	5.6493	-.00323	19.392	-.02767	-.00059
#2	-.01182	-.00125	5.6859	-.00503	19.288	-.02658	.00247
#3	-.01211	-.00218	5.6327	-.00301	19.490	-.02668	.00195
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Pass
High Limit					4.5000	90.000	
Low Limit					-.00800	-.02400	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00315	.01460	F -617.00
Stddev	.00022	.00038	14.80
%RSD	6.9717	2.5739	2.3982
#1	-.00333	.01502	-623.74
#2	-.00322	.01431	-627.22
#3	-.00291	.01446	-600.03
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8520.6	12215.
Stddev	8.5	38.
%RSD	.09973	.30905
#1	8528.8	12222.
#2	8521.0	12250.
#3	8511.9	12175.

Approved: February 24, 2015

Sample Name: L1502095209 Acquired: 2/23/2015 14:54:56 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	.04040	.00269	.07361	.03867	-.00013	55.189
Stddev	.00024	.00091	.00182	.00045	.00037	.00002	.252
%RSD	318.44	2.2437	67.537	.61132	.95139	16.372	.45686
#1	-.00035	.03952	.00221	.07345	.03842	-.00015	54.986
#2	.00012	.04133	.00117	.07327	.03909	-.00012	55.471
#3	-.00001	.04034	.00471	.07412	.03850	-.00011	55.110
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	.00019	.00098	.00067	.05197	1.6156	.00930
Stddev	.00004	.00014	.00033	.00098	.00624	.0604	.00186
%RSD	9.3256	74.113	33.939	146.80	12.006	3.7412	20.005
#1	.00046	.00022	.00098	.00132	.05915	1.6799	.00723
#2	.00043	.00004	.00132	-.00046	.04896	1.6070	.01083
#3	.00052	.00031	.00065	.00114	.04781	1.5600	.00984
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.6908	.03932	.00150	105.32	.00332	.00461	-.00169
Stddev	.0717	.00021	.00021	.31	.00055	.00468	.00113
%RSD	.82463	.52815	13.821	.29038	16.481	101.45	66.672
#1	8.6631	.03914	.00147	105.05	.00392	.00192	-.00112
#2	8.6372	.03955	.00131	105.65	.00318	.01001	-.00299
#3	8.7722	.03926	.00172	105.27	.00286	.00190	-.00096
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: L1502095209 Acquired: 2/23/2015 14:54:56 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**-.00032**	**1.7571**	**-.00351**	**.41973**	**-.00268**	**-.00116**
Stddev	.00034	.00167	.0119	.00070	.00135	.00099	.00252
%RSD	597.68	518.59	.67652	19.827	.32230	37.050	216.31
#1	.00033	.00016	1.7558	-.00358	.41852	-.00202	-.00370
#2	-.00029	-.00217	1.7458	-.00417	.42119	-.00382	.00134
#3	-.00021	.00105	1.7695	-.00278	.41949	-.00219	-.00113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00021**	**.00456**	F **-2.1336**
Stddev	.00010	.00016	19.663
%RSD	50.169	3.4144	921.57
#1	-.00024	.00465	-13.457
#2	-.00009	.00465	20.571
#3	-.00029	.00438	-13.515
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10448.**	**13300.**
Stddev	33.	48.
%RSD	.31888	.36385
#1	10424.	13346.
#2	10434.	13304.
#3	10486.	13249.

Approved: February 24, 2015

Sample Name: L1502095211 Acquired: 2/23/2015 14:58:30 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.07738	.00426	.43632	.06713	-.00022	197.95
Stddev	.00040	.00064	.00245	.00233	.00025	.00003	.10
%RSD	2950.3	.83254	57.389	.53293	.37610	12.831	.05170
#1	-.00040	.07684	.00692	.43363	.06687	-.00025	197.85
#2	.00040	.07721	.00211	.43776	.06737	-.00020	198.05
#3	.00004	.07809	.00375	.43756	.06714	-.00021	197.95
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00102	.00648	.00152	.00104	.22466	12.908	.12989
Stddev	.00001	.00028	.00017	.00064	.00257	.039	.00178
%RSD	1.3713	4.3001	10.984	61.128	1.1452	.29888	1.3690
#1	.00101	.00678	.00172	.00037	.22647	12.865	.12784
#2	.00103	.00641	.00142	.00163	.22578	12.938	.13091
#3	.00100	.00623	.00144	.00113	.22171	12.923	.13092
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	57.572	.46028	.04155	F 2214.3	.03482	.00893	-.00385
Stddev	.112	.00308	.00013	19.6	.00107	.00520	.00304
%RSD	.19402	.66826	.31817	.88724	3.0806	58.227	78.968
#1	57.445	.46113	.04140	2234.1	.03430	.01396	-.00723
#2	57.654	.45687	.04157	2194.8	.03605	.00358	-.00136
#3	57.618	.46285	.04167	2214.1	.03410	.00925	-.00295
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				360.00			
Low Limit				-.40000			

Approved: February 24, 2015

Sample Name: L1502095211 Acquired: 2/23/2015 14:58:30 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00409	.00421	2.3248	-.00417	F 8.2694	-.01042	-.00357
Stddev	.00125	.00129	.0150	.00051	.1034	.00070	.00203
%RSD	30.504	30.546	.64644	12.171	1.2508	6.7049	57.002
#1	.00551	.00483	2.3097	-.00476	8.2872	-.00962	-.00583
#2	.00360	.00273	2.3398	-.00388	8.1583	-.01072	-.00297
#3	.00316	.00507	2.3249	-.00388	8.3628	-.01092	-.00190
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					4.5000		
Low Limit					-.00800		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00026	.00533	12.617
Stddev	.00021	.00030	.538
%RSD	78.390	5.6681	4.2603
#1	-.00032	.00527	13.236
#2	-.00044	.00506	12.340
#3	-.00004	.00565	12.274
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	9258.0	13094.
Stddev	24.4	69.
%RSD	.26354	.52998
#1	9286.1	13061.
#2	9245.6	13174.
#3	9242.3	13047.

Approved: February 24, 2015

Sample Name: L1502095211PS Acquired: 2/23/2015 15:02:16 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG512989-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.22887	4.9873	.22738	1.4064	.57809	.02501	182.56
Stddev	.00165	.0170	.00077	.0052	.00135	.00011	.53
%RSD	.71982	.34121	.34045	.37034	.23429	.45852	.28932
#1	.22708	4.9997	.22655	1.4033	.57848	.02489	182.86
#2	.22921	4.9941	.22751	1.4124	.57658	.02512	181.95
#3	.23032	4.9679	.22808	1.4034	.57920	.02502	182.88
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02831	.10591	.25981	.24979	2.1887	38.691	.64826
Stddev	.00015	.00011	.00011	.00019	.0085	.121	.00300
%RSD	.51299	.10810	.04213	.07782	.39021	.31207	.46324
#1	.02846	.10578	.25968	.24976	2.1908	38.771	.64975
#2	.02832	.10598	.25985	.25000	2.1793	38.552	.64481
#3	.02817	.10597	.25988	.24961	2.1960	38.749	.65023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	56.562	.64833	.54628	F 2018.8	.27197	5.5593	.23389
Stddev	.185	.00063	.00018	6.4	.00084	.0093	.00146
%RSD	.32729	.09696	.03238	.31895	.30817	.16671	.62277
#1	56.537	.64884	.54626	2025.8	.27164	5.5491	.23496
#2	56.392	.64763	.54647	2013.2	.27292	5.5617	.23447
#3	56.759	.64852	.54612	2017.4	.27134	5.5671	.23223
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				360.00			
Low Limit				-.40000			

Approved: February 24, 2015

Sample Name: L1502095211PS Acquired: 2/23/2015 15:02:16 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG512989-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.65155	.22000	4.8507	.49453	F 7.9848	.50343	.21618
Stddev	.00585	.00222	.0116	.00079	.0832	.00241	.00230
%RSD	.89829	1.0081	.23820	.15998	1.0418	.47867	1.0646
#1	.64988	.21884	4.8415	.49468	7.9580	.50611	.21645
#2	.64672	.22255	4.8468	.49368	7.9183	.50143	.21834
#3	.65806	.21859	4.8636	.49524	8.0781	.50275	.21376
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					4.5000		
Low Limit					-.00800		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.51685	.52391	19.417
Stddev	.00145	.00120	3.294
%RSD	.27985	.22955	16.965
#1	.51537	.52272	22.970
#2	.51826	.52389	18.817
#3	.51690	.52512	16.464
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	9388.5	13007.
Stddev	10.0	33.
%RSD	.10616	.25689
#1	9399.9	12983.
#2	9384.0	13045.
#3	9381.5	12993.

Approved: February 24, 2015

Sample Name: L1502095211SDL Acquired: 2/23/2015 15:05:46 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG512989-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**.01518**	**.00130**	**.09305**	**.01322**	**-.00016**	**39.025**
Stddev	.00051	.00134	.00194	.00047	.00029	.00005	.120
%RSD	660.41	8.7966	149.10	.50316	2.2168	27.841	.30753
#1	-.00041	.01551	.00216	.09294	.01289	-.00017	38.923
#2	.00051	.01371	-.00092	.09265	.01341	-.00021	38.994
#3	-.00034	.01632	.00266	.09357	.01338	-.00012	39.157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00034**	**.00134**	**.00132**	**.00012**	**.04983**	**2.5392**	**.02569**
Stddev	.00011	.00018	.00014	.00020	.00442	.0068	.00075
%RSD	33.991	13.792	10.604	162.93	8.8701	.26745	2.9271
#1	.00021	.00115	.00143	.00033	.04843	2.5437	.02654
#2	.00036	.00152	.00138	.00009	.05477	2.5314	.02540
#3	.00044	.00133	.00116	-.00006	.04627	2.5426	.02512
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**11.515**	**.10021**	**.00970**	F **471.50**	**.00566**	**.01010**	**-.00068**
Stddev	.107	.00239	.00045	2.80	.00044	.00614	.00317
%RSD	.92557	2.3818	4.6143	.59458	7.7200	60.783	465.75
#1	11.432	.09924	.00946	468.27	.00517	.00717	.00222
#2	11.479	.09847	.00941	473.29	.00602	.00597	-.00407
#3	11.635	.10293	.01021	472.95	.00578	.01715	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				360.00			
Low Limit				-.40000			

Approved: February 24, 2015

Sample Name: L1502095211SDL Acquired: 2/23/2015 15:05:46 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG512989-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00030**	**.00185**	**.45606**	**-.00205**	**1.6705**	**-.00201**	**.00071**
Stddev	.00187	.00099	.00460	.00042	.0059	.00018	.00123
%RSD	632.50	53.733	1.0087	20.578	.35437	8.9104	173.38
#1	.00092	.00073	.45794	-.00250	1.6664	-.00217	-.00039
#2	.00064	.00221	.45081	-.00166	1.6679	-.00203	.00204
#3	-.00245	.00261	.45942	-.00200	1.6773	-.00182	.00049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00009**	**.00190**	**7.1086**
Stddev	.00018	.00024	16.236
%RSD	199.98	12.631	228.40
#1	-.00026	.00211	3.4868
#2	.00010	.00196	-7.0104
#3	-.00012	.00164	24.849
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10089.**	**13520.**
Stddev	23.	28.
%RSD	.22693	.20368
#1	10108.	13530.
#2	10096.	13542.
#3	10064.	13489.

Approved: February 24, 2015

Sample Name: CCV Acquired: 2/23/2015 15:09:33 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.42015	10.319	.42344	.52219	1.0444	.05163	10.428
Stddev	.00248	.099	.00158	.00267	.0050	.00016	.039
%RSD	.59088	.96318	.37213	.51206	.48318	.30826	.37073
#1	.41902	10.216	.42493	.52048	1.0395	.05145	10.408
#2	.42299	10.414	.42360	.52527	1.0496	.05175	10.472
#3	.41843	10.327	.42179	.52081	1.0442	.05168	10.403
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05284	.21241	.52890	.52961	4.0402	52.236	1.0328
Stddev	.00002	.00035	.00087	.00026	.0143	.195	.0050
%RSD	.03842	.16654	.16425	.04953	.35376	.37278	.48382
#1	.05283	.21272	.52793	.52976	4.0243	52.169	1.0302
#2	.05282	.21249	.52960	.52977	4.0443	52.455	1.0386
#3	.05286	.21202	.52918	.52931	4.0520	52.084	1.0297
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.9248	.52215	1.0177	51.940	.52016	10.332	.52073
Stddev	.1058	.00258	.0022	.191	.00172	.015	.00382
%RSD	1.0660	.49430	.21687	.36781	.33074	.14180	.73410
#1	9.9011	.52048	1.0200	51.745	.51888	10.348	.52514
#2	9.8329	.52513	1.0176	52.126	.51948	10.328	.51851
#3	10.040	.52086	1.0156	51.951	.52211	10.319	.51854
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 24, 2015

Sample Name: CCV Acquired: 2/23/2015 15:09:33 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2502**	**.43241**	**5.3172**	**1.0500**	**1.0315**	**1.0144**	**.53543**
Stddev	.0039	.00296	.0037	.0008	.0041	.0019	.00201
%RSD	.30916	.68361	.07037	.07794	.40035	.18449	.37595
#1	1.2495	.43137	5.3156	1.0504	1.0277	1.0148	.53584
#2	1.2544	.43574	5.3215	1.0491	1.0359	1.0160	.53324
#3	1.2468	.43011	5.3145	1.0506	1.0310	1.0123	.53720
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0321**	**1.0377**	F **1.3456**
Stddev	.0028	.0024	15.383
%RSD	.27516	.22847	1143.3
#1	1.0312	1.0393	-16.415
#2	1.0353	1.0350	10.465
#3	1.0298	1.0389	9.9869
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10790.**	**13731.**
Stddev	6.	47.
%RSD	.05748	.34095
#1	10788.	13785.
#2	10796.	13711.
#3	10784.	13698.

Approved: February 24, 2015

Sample Name: CCB Acquired: 2/23/2015 15:12:49 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	-.00582	-.00044	.00395	-.00015	-.00006	.01531
Stddev	.00044	.00170	.00183	.00042	.00013	.00001	.00597
%RSD	205.50	29.171	417.31	10.619	88.753	18.999	39.004
#1	.00039	-.00386	.00161	.00361	-.00030	-.00006	.02212
#2	-.00029	-.00686	-.00191	.00442	-.00010	-.00004	.01095
#3	.00054	-.00674	-.00102	.00381	-.00004	-.00006	.01287
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.00006	.00002	.00046	.00285	-.02010	-.00013
Stddev	.00014	.00037	.00029	.00064	.00343	.05050	.00118
%RSD	82.919	623.33	1376.7	140.78	120.25	251.26	920.03
#1	.00014	-.00016	.00006	.00004	.00257	.03283	.00104
#2	.00031	.00049	-.00029	.00014	-.00043	-.06775	-.00133
#3	.00004	-.00015	.00029	.00120	.00642	-.02537	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01855	.00000	.00404	.12359	-.00025	-.00150	-.00001
Stddev	.03764	.00008	.00029	.01196	.00051	.00459	.00203
%RSD	202.95	3614.2	7.0936	9.6753	205.89	306.47	20061.
#1	-.01032	.00008	.00373	.13463	-.00074	-.00573	-.00206
#2	.06113	.00001	.00409	.12526	.00028	.00337	.00003
#3	.00484	-.00008	.00430	.11089	-.00028	-.00213	.00200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: CCB Acquired: 2/23/2015 15:12:49 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00185	-.00154	.00064	-.00065	.00008	.00038	.00140
Stddev	.00233	.00026	.00062	.00025	.00003	.00126	.00153
%RSD	126.28	16.673	95.746	38.838	34.036	335.31	109.09
#1	.00285	-.00181	.00132	-.00044	.00011	.00183	.00314
#2	.00351	-.00151	.00050	-.00093	.00007	-.00042	.00033
#3	-.00082	-.00130	.00011	-.00059	.00006	-.00028	.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00008	.00004	F -5.6630
Stddev	.00006	.00012	8.0158
%RSD	76.011	288.18	141.55
#1	-.00007	-.00009	3.0325
#2	-.00003	.00013	-7.2641
#3	-.00015	.00009	-12.757
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10690.	13579.
Stddev	9.	27.
%RSD	.08314	.19702
#1	10681.	13606.
#2	10690.	13578.
#3	10698.	13553.

Approved: February 24, 2015

Sample Name: L1502095601 Acquired: 2/23/2015 15:16:29 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.02111	-.00011	.07051	.03724	-.00012	53.781
Stddev	.00095	.00260	.00149	.00092	.00021	.00005	.018
%RSD	1970.2	12.294	1308.0	1.2983	.55125	43.677	.03293
#1	-.00085	.01857	.00141	.06957	.03740	-.00008	53.796
#2	-.00003	.02376	-.00157	.07058	.03700	-.00009	53.786
#3	.00103	.02102	-.00017	.07140	.03730	-.00017	53.761
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	-.00009	.00099	.00067	.09669	1.5583	.00799
Stddev	.00002	.00002	.00051	.00048	.00816	.0262	.00146
%RSD	5.7607	22.135	51.928	71.586	8.4438	1.6833	18.331
#1	.00044	-.00007	.00148	.00123	.08868	1.5701	.00799
#2	.00040	-.00010	.00045	.00041	.10500	1.5283	.00946
#3	.00044	-.00010	.00104	.00038	.09639	1.5767	.00653
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.2837	.01680	.00197	102.76	.00269	.00128	-.00178
Stddev	.0401	.00021	.00012	.20	.00055	.00514	.00142
%RSD	.48452	1.2498	5.8698	.19698	20.488	403.02	80.241
#1	8.2394	.01676	.00184	102.97	.00212	-.00299	-.00148
#2	8.2942	.01661	.00206	102.57	.00322	-.00017	-.00052
#3	8.3176	.01702	.00201	102.73	.00273	.00698	-.00333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: L1502095601 Acquired: 2/23/2015 15:16:29 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00134	-.00166	1.7018	-.00260	.40756	-.00211	-.00085
Stddev	.00271	.00236	.0045	.00019	.00092	.00113	.00138
%RSD	202.68	142.27	.26306	7.1842	.22605	53.325	163.19
#1	.00071	.00003	1.6966	-.00239	.40853	-.00138	-.00040
#2	.00430	-.00436	1.7039	-.00275	.40746	-.00341	-.00239
#3	-.00100	-.00065	1.7048	-.00267	.40670	-.00155	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00024	.00210	F -.68656
Stddev	.00025	.00012	18.460
%RSD	103.17	5.8167	2688.8
#1	-.00053	.00224	-9.0266
#2	-.00011	.00203	-13.505
#3	-.00009	.00203	20.472
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10466.	13508.
Stddev	24.	17.
%RSD	.23144	.12808
#1	10487.	13527.
#2	10471.	13502.
#3	10439.	13495.

Approved: February 24, 2015

Sample Name: L1502096501 Acquired: 2/23/2015 15:20:02 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	.02204	-.00021	.09908	7.2477	-.00024	141.14
Stddev	.00071	.00555	.00290	.00060	.0156	.00000	.33
%RSD	151.15	25.205	1363.0	.60623	.21463	1.5891	.23507
#1	.00031	.02843	-.00355	.09862	7.2648	-.00024	141.51
#2	.00125	.01932	.00120	.09886	7.2345	-.00024	140.86
#3	-.00015	.01837	.00171	.09976	7.2438	-.00023	141.05
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	-.00043	.00113	.00012	.31792	7.9734	1.2414
Stddev	.00006	.00016	.00036	.00082	.00466	.0503	.0041
%RSD	6.3182	37.568	31.713	668.81	1.4650	.63027	.32781
#1	.00095	-.00024	.00147	-.00067	.31289	8.0314	1.2461
#2	.00085	-.00051	.00076	.00007	.32208	7.9458	1.2391
#3	.00086	-.00053	.00117	.00096	.31880	7.9430	1.2389
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	39.663	.15144	.00084	F 1950.2	.02209	.00817	-.00141
Stddev	.048	.00581	.00036	80.4	.00053	.00418	.00220
%RSD	.11998	3.8362	43.335	4.1205	2.3916	51.200	156.30
#1	39.718	.15814	.00048	2035.7	.02252	.01175	-.00394
#2	39.641	.14830	.00084	1938.7	.02224	.00357	-.00005
#3	39.631	.14787	.00121	1876.2	.02150	.00919	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				360.00			
Low Limit				-.40000			

Approved: February 24, 2015

Sample Name: L1502096501 Acquired: 2/23/2015 15:20:02 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00062	-.00085	4.4172	-.00391	F 13.853	-.00839	-.00249
Stddev	.00063	.00381	.0068	.00045	1.025	.00108	.00121
%RSD	101.75	449.20	.15485	11.503	7.4000	12.826	48.582
#1	.00011	.00183	4.4131	-.00340	12.670	-.00963	-.00327
#2	-.00094	-.00521	4.4251	-.00426	14.464	-.00766	-.00310
#3	-.00104	.00084	4.4135	-.00407	14.426	-.00789	-.00110
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					4.5000		
Low Limit					-.00800		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00000	.00870	21.853
Stddev	.00046	.00018	6.199
%RSD	11727.	2.1112	28.368
#1	.00049	.00888	26.929
#2	-.00043	.00852	23.686
#3	-.00005	.00869	14.944
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	9405.9	12835.
Stddev	14.2	535.
%RSD	.15124	4.1720
#1	9393.3	12217.
#2	9403.1	13118.
#3	9421.3	13169.

Approved: February 24, 2015

Sample Name: L1502096504 Acquired: 2/23/2015 15:23:51 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.02351	-.00008	.00809	.06054	-.00013	26.780
Stddev	.00017	.00584	.00041	.00076	.00037	.00003	.107
%RSD	30.406	24.843	514.97	9.3899	.61490	25.260	.39871
#1	.00053	.02063	-.00054	.00884	.06022	-.00014	26.704
#2	.00040	.01966	.00003	.00732	.06095	-.00014	26.902
#3	.00074	.03023	.00026	.00810	.06045	-.00009	26.735
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	-.00001	.00087	.00115	.12199	1.4531	.02084
Stddev	.00002	.00012	.00060	.00047	.00273	.0159	.00146
%RSD	5.0833	1102.0	68.762	41.108	2.2401	1.0977	6.9840
#1	.00046	.00011	.00073	.00123	.12513	1.4683	.01973
#2	.00044	-.00012	.00152	.00158	.12067	1.4365	.02248
#3	.00049	-.00002	.00035	.00065	.12016	1.4545	.02030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.7838	.02328	.00028	36.592	.00037	F -.00479	-.00004
Stddev	.0319	.00019	.00052	.188	.00045	.00112	.00200
%RSD	.32585	.82636	185.31	.51316	120.24	23.290	5156.0
#1	9.7681	.02306	.00065	36.400	.00061	-.00442	-.00220
#2	9.8205	.02342	.00051	36.775	.00064	-.00604	.00176
#3	9.7629	.02335	-.00031	36.603	-.00014	-.00390	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 24, 2015

Sample Name: L1502096504 Acquired: 2/23/2015 15:23:51 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00012**	**-.00192**	**2.8833**	**-.00442**	**.41730**	**-.00173**	**.00075**
Stddev	.00302	.00150	.0040	.00033	.00165	.00131	.00118
%RSD	2546.6	77.984	.13798	7.5093	.39472	75.421	157.32
#1	.00062	-.00174	2.8799	-.00437	.41629	-.00195	-.00014
#2	-.00344	-.00350	2.8822	-.00477	.41921	-.00291	.00209
#3	.00247	-.00052	2.8877	-.00411	.41642	-.00033	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00001**	**.00450**	**5.4581**
Stddev	.00006	.00010	9.2863
%RSD	902.67	2.1462	170.14
#1	.00000	.00456	-5.2646
#2	-.00005	.00454	10.767
#3	.00007	.00439	10.872
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10583.**	**13561.**
Stddev	3.	103.
%RSD	.03175	.75938
#1	10586.	13678.
#2	10583.	13521.
#3	10579.	13484.

Approved: February 24, 2015

Sample Name: L1502096505 Acquired: 2/23/2015 15:27:24 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	.28928	.00088	.01036	.27486	-.00006	29.532	.00049
Stddev	.00037	.00408	.00130	.00041	.00175	.00002	.120	.00014
%RSD	58.407	1.4115	147.95	3.9545	.63621	28.920	.40742	28.769
#1	.00026	.29395	.00019	.01055	.27673	-.00004	29.669	.00062
#2	.00066	.28640	.00007	.01064	.27459	-.00007	29.485	.00052
#3	.00100	.28749	.00237	.00989	.27326	-.00007	29.442	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	.00152	.00130	.78476	1.7109	.05333	10.889	.07039
Stddev	.00009	.00056	.00067	.00688	.0227	.00103	.108	.00154
%RSD	32.016	37.131	51.791	.87645	1.3297	1.9322	.98831	2.1882
#1	.00034	.00178	.00075	.79104	1.6870	.05389	11.005	.07201
#2	.00019	.00191	.00110	.77741	1.7322	.05214	10.871	.06895
#3	.00036	.00087	.00204	.78582	1.7135	.05396	10.792	.07020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	93.857	.00154	.01749	.00028	-.00237	-.00064	3.0319
Stddev	.00018	.536	.00013	.00445	.00054	.00316	.00181	.0160
%RSD	98.706	.57147	8.7764	25.458	192.88	133.46	285.14	.52749
#1	-.00002	94.474	.00139	.02173	.00034	-.00141	.00144	3.0275
#2	.00023	93.495	.00155	.01788	.00079	-.00589	-.00140	3.0186
#3	.00033	93.604	.00166	.01285	-.00029	.00020	-.00194	3.0497
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 24, 2015

Sample Name: L1502096505 Acquired: 2/23/2015 15:27:24 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00380**	**.80667**	**.00301**	**.00114**	**.00018**	**.00778**	**31.127**
Stddev	.00045	.00364	.00159	.00261	.00009	.00009	8.085
%RSD	11.864	.45084	52.730	228.77	48.736	1.2118	25.974
#1	-.00415	.81084	.00123	.00128	.00019	.00782	21.905
#2	-.00329	.80418	.00429	.00368	.00009	.00767	36.993
#3	-.00397	.80498	.00352	-.00154	.00027	.00785	34.484
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10521.**	**13523.**
Stddev	13.	112.
%RSD	.11910	.82623
#1	10507.	13400.
#2	10529.	13618.
#3	10529.	13551.

Approved: February 24, 2015

Sample Name: L1502098601 Acquired: 2/23/2015 15:30:56 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	.02732	-.00090	.03153	.07457	-.00013	55.347	.00037
Stddev	.00068	.00286	.00243	.00113	.00066	.00004	.450	.00013
%RSD	169.61	10.474	269.11	3.5694	.88605	28.307	.81380	34.825
#1	.00016	.02952	-.00345	.03099	.07423	-.00009	55.313	.00040
#2	.00117	.02836	-.00065	.03078	.07533	-.00016	55.813	.00022
#3	-.00012	.02409	.00139	.03282	.07415	-.00013	54.914	.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00035	.00085	.00028	.13493	1.1935	.00586	9.4473	.08945
Stddev	.00011	.00040	.00022	.00783	.0130	.00111	.0657	.00020
%RSD	31.765	46.760	79.814	5.8063	1.0848	18.898	.69590	.22559
#1	-.00023	.00039	.00053	.13272	1.1888	.00458	9.4466	.08968
#2	-.00045	.00104	.00022	.14364	1.1835	.00652	9.5134	.08934
#3	-.00038	.00112	.00009	.12845	1.2081	.00647	9.3819	.08932
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	33.661	-.00014	.00200	-.00053	-.00084	-.00137	2.9174
Stddev	.00036	.276	.00055	.00667	.00033	.00104	.00214	.0068
%RSD	47.579	.82123	404.50	333.13	61.438	123.92	156.12	.23413
#1	.00034	33.636	-.00042	-.00235	-.00065	-.00143	-.00362	2.9134
#2	.00090	33.949	-.00049	-.00132	-.00016	.00036	-.00115	2.9135
#3	.00100	33.398	.00050	.00968	-.00078	-.00146	.00065	2.9253
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 24, 2015

Sample Name: L1502098601 Acquired: 2/23/2015 15:30:56 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00372**	**.45745**	**-.00293**	**-.00084**	**-.00018**	**.00184**	**7.9913**
Stddev	.00012	.00355	.00068	.00083	.00013	.00026	12.052
%RSD	3.3114	.77514	23.220	99.440	70.190	13.935	150.81
#1	-.00362	.45673	-.00243	-.00050	-.00006	.00170	10.425
#2	-.00368	.46131	-.00266	-.00022	-.00018	.00214	18.640
#3	-.00386	.45433	-.00370	-.00178	-.00032	.00169	-5.0913
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10471.**	**13552.**
Stddev	5.	122.
%RSD	.05016	.89691
#1	10476.	13542.
#2	10465.	13435.
#3	10471.	13678.

Approved: February 24, 2015

Sample Name: L1502099101 Acquired: 2/23/2015 15:34:29 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.03196	-.00075	.36536	.16269	-.00020	371.83
Stddev	.00046	.00238	.00293	.00047	.00016	.00003	1.33
%RSD	629.41	7.4494	392.10	.12930	.09697	14.238	.35834
#1	-.00053	.03376	-.00153	.36591	.16258	-.00017	371.73
#2	-.00009	.03285	-.00320	.36510	.16287	-.00020	373.21
#3	.00040	.02926	.00250	.36508	.16261	-.00022	370.55
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00153	-.00005	.00211	.01705	.24159	24.592	.04815
Stddev	.00019	.00010	.00038	.00071	.00384	.101	.00128
%RSD	12.603	200.09	18.034	4.1769	1.5911	.41212	2.6607
#1	.00168	.00006	.00199	.01703	.24370	24.515	.04695
#2	.00161	-.00007	.00180	.01777	.24391	24.707	.04799
#3	.00131	-.00014	.00253	.01635	.23715	24.556	.04950
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	122.63	.02498	.01560	F 361.03	.00777	2.7132	-.00180
Stddev	.69	.00009	.00015	3.21	.00024	.0270	.00233
%RSD	.56158	.34113	.95780	.89014	3.1144	.99642	129.51
#1	122.03	.02491	.01544	359.34	.00803	2.7277	-.00054
#2	123.38	.02507	.01572	364.74	.00775	2.7300	-.00448
#3	122.48	.02497	.01565	359.03	.00754	2.6821	-.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				360.00			
Low Limit				-.40000			

Approved: February 24, 2015

Sample Name: L1502099101 Acquired: 2/23/2015 15:34:29 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	.00097	21.589	-.00394	1.7698	-.01866	-.00179
Stddev	.00361	.00083	.097	.00054	.0056	.00164	.00320
%RSD	1550.7	85.181	.44912	13.821	.31747	8.7658	178.13
#1	-.00358	.00078	21.545	-.00402	1.7683	-.01823	.00174
#2	.00068	.00188	21.700	-.00444	1.7760	-.02047	-.00264
#3	.00360	.00026	21.521	-.00336	1.7651	-.01728	-.00448
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00377	.00546	F -17.295
Stddev	.00029	.00011	15.241
%RSD	7.5704	1.9543	88.120
#1	.00409	.00539	-33.974
#2	.00357	.00540	-13.819
#3	.00364	.00558	-4.0933
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	9791.6	13172.
Stddev	40.9	78.
%RSD	.41797	.59365
#1	9774.1	13181.
#2	9762.3	13089.
#3	9838.4	13245.

Approved: February 24, 2015

Sample Name: L1502099701 Acquired: 2/23/2015 15:38:08 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG512945-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00030	.39984	-.00111	.32920	.01363	-.00013	276.34
Stddev	.00079	.00353	.00245	.00123	.00011	.00002	.93
%RSD	262.81	.88269	219.78	.37248	.77266	16.438	.33789
#1	.00023	.40348	-.00048	.33055	.01352	-.00014	275.51
#2	-.00121	.39644	.00096	.32890	.01367	-.00015	277.35
#3	.00007	.39959	-.00382	.32815	.01372	-.00011	276.17
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00118	.00139	.00157	.00122	2.6780	17.076	.05398
Stddev	.00003	.00002	.00008	.00029	.0193	.086	.00201
%RSD	2.6189	1.4409	4.9909	23.777	.72254	.50186	3.7152
#1	.00119	.00140	.00157	.00091	2.6665	16.985	.05584
#2	.00114	.00139	.00165	.00128	2.7003	17.155	.05426
#3	.00120	.00137	.00149	.00148	2.6671	17.089	.05185
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	101.44	.17139	-.00029	F 731.90	.01106	.01154	.00129
Stddev	.24	.00152	.00013	16.33	.00048	.00487	.00011
%RSD	.23675	.88630	44.265	2.2313	4.3773	42.238	8.6123
#1	101.47	.17311	-.00045	748.36	.01101	.01716	.00137
#2	101.66	.17022	-.00023	715.70	.01060	.00866	.00134
#3	101.18	.17084	-.00021	731.64	.01157	.00878	.00116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				360.00			
Low Limit				-.40000			

Approved: February 24, 2015

Sample Name: L1502099701 Acquired: 2/23/2015 15:38:08 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG512945-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00067	.00030	.34383	-.00472	2.4566	-.01483	-.00317
Stddev	.00162	.00251	.00085	.00025	.0066	.00057	.00263
%RSD	241.13	826.44	.24671	5.4003	.27006	3.8196	83.100
#1	-.00036	-.00184	.34290	-.00449	2.4506	-.01497	-.00488
#2	.00077	.00306	.34456	-.00467	2.4637	-.01531	-.00449
#3	-.00243	-.00030	.34403	-.00499	2.4554	-.01421	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00014	.00842	F -26.019
Stddev	.00079	.00006	18.849
%RSD	583.66	.77195	72.446
#1	.00076	.00842	-7.0016
#2	-.00074	.00835	-26.359
#3	-.00042	.00848	-44.696
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	9807.0	13276.
Stddev	27.1	40.
%RSD	.27675	.29953
#1	9806.4	13231.
#2	9780.1	13306.
#3	9834.4	13291.

Approved: February 24, 2015

Sample Name: L1502099701MS Acquired: 2/23/2015 15:41:50 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG512945-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21968	5.4514	.21439	1.3280	.53355	.02521	269.83
Stddev	.00054	.0453	.00054	.0037	.00081	.00003	.64
%RSD	.24426	.83176	.25368	.27751	.15148	.12155	.23717
#1	.22026	5.4728	.21380	1.3314	.53446	.02518	270.47
#2	.21958	5.4822	.21487	1.3241	.53327	.02522	269.83
#3	.21921	5.3993	.21448	1.3284	.53292	.02524	269.19
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02756	.10220	.25978	.25083	4.5319	43.108	.58557
Stddev	.00007	.00002	.00037	.00075	.0187	.124	.00124
%RSD	.25301	.01544	.14214	.30064	.41301	.28692	.21163
#1	.02751	.10219	.25998	.25125	4.5508	43.189	.58587
#2	.02752	.10219	.25935	.24996	4.5314	43.170	.58664
#3	.02764	.10222	.26001	.25128	4.5134	42.966	.58421
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	100.98	.39574	.51155	F 727.29	.25390	5.4686	.23617
Stddev	.16	.00227	.00157	17.82	.00159	.0282	.00239
%RSD	.15741	.57425	.30652	2.4507	.62720	.51594	1.0122
#1	101.03	.39561	.51196	717.88	.25328	5.4931	.23688
#2	101.10	.39807	.50982	747.85	.25272	5.4377	.23350
#3	100.80	.39353	.51288	716.14	.25571	5.4751	.23812
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				360.00			
Low Limit				-.40000			

Approved: February 24, 2015

Sample Name: L1502099701MS Acquired: 2/23/2015 15:41:50 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG512945-07

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.63192	.21469	3.1137	.49490	2.8713	.49088	.22770
Stddev	.00275	.00530	.0292	.00481	.0082	.00418	.00348
%RSD	.43524	2.4704	.93800	.97217	.28433	.85214	1.5293
#1	.63342	.20923	3.1339	.49644	2.8793	.49422	.22615
#2	.62875	.21501	3.0802	.48951	2.8717	.49224	.22527
#3	.63360	.21982	3.1270	.49875	2.8630	.48619	.23169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.52187	.51033	F -18.609
Stddev	.00072	.00677	17.799
%RSD	.13824	1.3260	95.642
#1	.52132	.50990	-37.216
#2	.52159	.50378	-16.865
#3	.52268	.51730	-1.7473
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	9825.2	13377.
Stddev	17.3	75.
%RSD	.17557	.55813
#1	9818.8	13352.
#2	9844.8	13319.
#3	9812.1	13461.

Approved: February 24, 2015

Sample Name: L1502099702 Acquired: 2/23/2015 15:45:17 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00065**	**.77678**	**.00174**	**.39327**	**.01836**	**-.00017**	**344.20**
Stddev	.00016	.00277	.00321	.00254	.00021	.00003	2.03
%RSD	25.065	.35717	184.51	.64531	1.1477	16.611	.58952
#1	-.00047	.77911	-.00185	.39470	.01853	-.00020	343.43
#2	-.00079	.77752	.00433	.39477	.01813	-.00015	346.50
#3	-.00068	.77371	.00274	.39034	.01842	-.00017	342.66
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00136**	**.00231**	**.00232**	**.00327**	**4.5644**	**19.444**	**.04335**
Stddev	.00011	.00025	.00042	.00044	.0041	.127	.00021
%RSD	8.4473	10.809	18.193	13.471	.08945	.65330	.49102
#1	.00146	.00229	.00191	.00276	4.5684	19.351	.04316
#2	.00137	.00207	.00275	.00356	4.5646	19.589	.04330
#3	.00124	.00257	.00229	.00350	4.5603	19.393	.04358
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**100.58**	**.73292**	**.00155**	F **904.62**	**.01426**	**.04183**	**.00150**
Stddev	.70	.00122	.00027	10.00	.00093	.00183	.00234
%RSD	.69590	.16658	17.397	1.1056	6.5322	4.3800	156.36
#1	99.983	.73264	.00145	905.00	.01487	.04113	.00127
#2	101.35	.73425	.00134	894.43	.01319	.04391	.00394
#3	100.40	.73186	.00185	914.42	.01472	.04045	-.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				360.00			
Low Limit				-.40000			

Approved: February 24, 2015

Sample Name: L1502099702 Acquired: 2/23/2015 15:45:17 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00427**	**-.00133**	**.63768**	**-.00313**	**3.2478**	**-.01556**	**-.00037**
Stddev	.00099	.00142	.00141	.00025	.0160	.00053	.00290
%RSD	23.241	107.04	.22187	7.8452	.49247	3.3920	781.81
#1	-.00540	-.00242	.63928	-.00319	3.2439	-.01600	.00209
#2	-.00383	-.00186	.63660	-.00334	3.2654	-.01497	.00037
#3	-.00357	.00028	.63716	-.00286	3.2341	-.01571	-.00357
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00093**	**.02238**	**29.258**
Stddev	.00013	.00020	11.590
%RSD	14.032	.87611	39.612
#1	.00085	.02260	27.631
#2	.00086	.02228	41.575
#3	.00108	.02225	18.567
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**9736.5**	**13053.**
Stddev	26.2	6.
%RSD	.26951	.04409
#1	9728.7	13059.
#2	9715.0	13050.
#3	9765.7	13049.

Approved: February 24, 2015

Sample Name: L1502101701 Acquired: 2/23/2015 15:48:57 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.03812	-.00184	.06006	.07522	-.00010	48.044
Stddev	.00025	.00065	.00057	.00074	.00023	.00005	.286
%RSD	160.13	1.6960	31.264	1.2339	.31007	47.234	.59462
#1	.00006	.03738	-.00250	.05962	.07503	-.00008	47.715
#2	-.00003	.03857	-.00147	.06091	.07548	-.00016	48.234
#3	.00044	.03842	-.00155	.05965	.07514	-.00007	48.182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	-.00011	.00064	.00075	.12831	1.2852	.00520
Stddev	.00005	.00011	.00010	.00025	.00665	.0231	.00045
%RSD	13.035	101.91	16.400	34.005	5.1812	1.7980	8.5777
#1	.00041	-.00023	.00071	.00050	.13399	1.2590	.00475
#2	.00032	-.00006	.00068	.00074	.12994	1.2941	.00522
#3	.00040	-.00003	.00052	.00101	.12100	1.3025	.00564
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.146	.09883	.00223	69.772	.00030	.00454	.00102
Stddev	.133	.00118	.00008	.299	.00041	.00113	.00329
%RSD	1.3065	1.1932	3.5249	.42813	137.14	24.893	321.31
#1	10.007	.10017	.00226	69.435	.00044	.00548	.00170
#2	10.162	.09837	.00214	69.877	.00063	.00329	-.00255
#3	10.270	.09795	.00229	70.004	-.00016	.00485	.00392
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: L1502101701 Acquired: 2/23/2015 15:48:57 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00101	-.00347	2.7603	-.00388	.60597	-.00070	.00140
Stddev	.00207	.00337	.0066	.00051	.00267	.00221	.00266
%RSD	204.18	97.200	.23821	13.106	.44070	317.08	189.58
#1	-.00081	-.00058	2.7536	-.00447	.60289	-.00059	.00369
#2	.00095	-.00265	2.7668	-.00355	.60756	.00146	-.00151
#3	-.00318	-.00717	2.7604	-.00362	.60747	-.00296	.00203
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00006	.00322	F -1.5422
Stddev	.00015	.00016	10.593
%RSD	237.78	4.8280	686.89
#1	.00003	.00306	.99722
#2	.00001	.00337	-13.174
#3	-.00023	.00322	7.5504
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10493.	13364.
Stddev	24.	68.
%RSD	.22690	.51193
#1	10487.	13433.
#2	10473.	13362.
#3	10519.	13297.

Approved: February 24, 2015

Sample Name: CCV Acquired: 2/23/2015 15:52:36 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41521	10.677	.42346	.51669	1.0552	.05159	10.554
Stddev	.00275	.097	.00540	.00415	.0145	.00030	.154
%RSD	.66128	.90542	1.2751	.80350	1.3773	.57290	1.4567
#1	.41242	10.678	.41938	.51291	1.0536	.05133	10.534
#2	.41791	10.772	.42959	.52113	1.0705	.05191	10.716
#3	.41529	10.579	.42143	.51601	1.0416	.05154	10.411
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05266	.21218	.52897	.52899	4.1162	53.106	1.0423
Stddev	.00016	.00078	.00207	.00052	.0377	.781	.0146
%RSD	.31203	.36696	.39145	.09799	.91546	1.4700	1.3974
#1	.05284	.21129	.52723	.52895	4.1105	53.076	1.0407
#2	.05254	.21259	.53126	.52849	4.1565	53.901	1.0576
#3	.05258	.21267	.52842	.52952	4.0818	52.341	1.0287
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.071	.54014	1.0160	52.724	.52076	10.316	.52133
Stddev	.132	.00460	.0022	.715	.00120	.022	.00157
%RSD	1.3089	.85146	.21692	1.3564	.23069	.21578	.30167
#1	10.047	.54037	1.0144	52.704	.51939	10.302	.52057
#2	10.214	.54462	1.0185	53.449	.52165	10.304	.52028
#3	9.9533	.53543	1.0150	52.020	.52123	10.342	.52314
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 24, 2015

Sample Name: CCV Acquired: 2/23/2015 15:52:36 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2395**	**.42746**	**5.1600**	**1.0515**	**1.0409**	**1.0168**	**.53441**
Stddev	.0030	.00289	.0093	.0035	.0142	.0182	.00248
%RSD	.24484	.67554	.18067	.33624	1.3605	1.7893	.46353
#1	1.2368	.42445	5.1494	1.0479	1.0399	1.0142	.53598
#2	1.2388	.43021	5.1636	1.0550	1.0555	1.0362	.53155
#3	1.2428	.42772	5.1670	1.0516	1.0272	1.0001	.53569
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0259**	**1.0427**	F **-3.6737**
Stddev	.0050	.0008	12.739
%RSD	.48967	.07393	346.77
#1	1.0211	1.0423	-13.776
#2	1.0311	1.0436	-7.8830
#3	1.0255	1.0422	10.638
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10800.**	**13255.**
Stddev	5.	116.
%RSD	.04400	.87160
#1	10802.	13163.
#2	10804.	13218.
#3	10795.	13385.

Approved: February 24, 2015

Sample Name: CCB Acquired: 2/23/2015 15:55:51 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00028**	**-.00334**	**.00207**	**.00396**	**-.00006**	**-.00003**	**.00400**
Stddev	.00021	.00098	.00027	.00078	.00008	.00002	.00393
%RSD	74.110	29.339	12.834	19.720	123.80	48.437	98.311
#1	.00022	-.00293	.00177	.00308	-.00010	-.00005	.00755
#2	.00051	-.00446	.00216	.00458	.00003	-.00002	.00468
#3	.00010	-.00263	.00227	.00421	-.00012	-.00003	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**.00007**	**.00013**	**-.00016**	**.00455**	**.03399**	**-.00103**
Stddev	.00019	.00010	.00057	.00035	.00604	.02642	.00081
%RSD	279.26	138.60	433.31	211.80	132.57	77.735	78.740
#1	-.00010	.00003	-.00048	-.00032	.00928	.05274	-.00091
#2	.00004	.00000	.00064	.00023	-.00225	.04544	-.00189
#3	.00027	.00019	.00023	-.00040	.00663	.00377	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.01018**	**.00005**	**.00409**	**.08791**	**-.00090**	**.00802**	**.00047**
Stddev	.02138	.00005	.00005	.01157	.00154	.00617	.00280
%RSD	210.14	99.797	1.1158	13.166	170.41	76.995	593.11
#1	-.01719	.00000	.00412	.09557	-.00083	.00876	-.00221
#2	-.02717	.00005	.00404	.09358	.00060	.00151	.00338
#3	.01384	.00011	.00411	.07460	-.00248	.01379	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: CCB Acquired: 2/23/2015 15:55:51 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00200	.00004	.00335	-.00046	.00016	-.00021	.00169
Stddev	.00105	.00348	.00199	.00049	.00011	.00086	.00131
%RSD	52.389	8769.7	59.481	104.74	68.411	409.61	77.685
#1	.00318	.00249	.00457	-.00087	.00027	-.00080	.00055
#2	.00119	.00157	.00105	-.00060	.00012	-.00060	.00139
#3	.00163	-.00394	.00443	.00008	.00007	.00077	.00313
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00016	-.00017	F 1.3282
Stddev	.00021	.00005	14.702
%RSD	130.90	27.921	1106.8
#1	-.00020	-.00016	18.132
#2	.00007	-.00013	-9.1619
#3	-.00034	-.00022	-4.9854
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10630.	13126.
Stddev	9.	54.
%RSD	.08904	.40985
#1	10624.	13119.
#2	10641.	13183.
#3	10625.	13076.

Approved: February 24, 2015

Sample Name: L1502101702 Acquired: 2/23/2015 15:59:33 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.33490	.00099	.04753	.08094	-.00009	45.557
Stddev	.00072	.00350	.00181	.00148	.00037	.00004	.238
%RSD	366.76	1.0460	183.65	3.1225	.45582	49.126	.52349
#1	.00103	.33884	.00201	.04873	.08080	-.00011	45.371
#2	-.00021	.33215	-.00111	.04798	.08136	-.00011	45.826
#3	-.00023	.33372	.00206	.04587	.08067	-.00004	45.474
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00039	.00029	.00119	.00155	.83776	1.2783	.00432
Stddev	.00002	.00018	.00050	.00059	.00126	.0290	.00131
%RSD	4.2988	60.866	42.232	37.818	.15077	2.2695	30.295
#1	.00037	.00024	.00118	.00168	.83920	1.2826	.00583
#2	.00039	.00014	.00169	.00091	.83719	1.3048	.00362
#3	.00040	.00048	.00069	.00207	.83688	1.2473	.00351
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.5410	.36360	.00255	56.837	.00048	.03163	.00066
Stddev	.0698	.00166	.00012	.343	.00049	.00252	.00291
%RSD	.73195	.45686	4.6090	.60347	102.31	7.9577	442.41
#1	9.4760	.36543	.00260	56.744	.00103	.03303	.00378
#2	9.6148	.36219	.00241	57.217	.00033	.02873	.00016
#3	9.5322	.36318	.00262	56.550	.00008	.03314	-.00197
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: L1502101702 Acquired: 2/23/2015 15:59:33 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00094**	**-.00061**	**2.9367**	**-.00333**	**.49304**	**.00380**	**-.00028**
Stddev	.00165	.00225	.0075	.00011	.00346	.00203	.00294
%RSD	175.53	366.96	.25529	3.2822	.70194	53.464	1033.2
#1	.00068	-.00320	2.9382	-.00329	.49133	.00555	-.00079
#2	-.00088	.00059	2.9433	-.00324	.49702	.00157	.00288
#3	-.00262	.00078	2.9286	-.00345	.49076	.00430	-.00294
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00076**	**.00511**	F **-7.0837**
Stddev	.00042	.00014	8.8240
%RSD	55.169	2.6587	124.57
#1	.00117	.00512	-7.9130
#2	.00078	.00524	-15.464
#3	.00033	.00497	2.1257
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10488.**	**13399.**
Stddev	18.	71.
%RSD	.16808	.53043
#1	10472.	13320.
#2	10486.	13422.
#3	10507.	13456.

Approved: February 24, 2015

Sample Name: L1502101703 Acquired: 2/23/2015 16:03:06 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.05714	-.00112	.04023	.05894	-.00012	37.985
Stddev	.00010	.00077	.00055	.00043	.00040	.00002	.087
%RSD	18.982	1.3429	49.470	1.0697	.67536	14.684	.22812
#1	.00052	.05655	-.00098	.04021	.05856	-.00012	37.905
#2	.00062	.05801	-.00173	.04067	.05890	-.00014	38.077
#3	.00042	.05687	-.00065	.03981	.05935	-.00010	37.973
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	-.00019	.00070	.00054	.08473	1.2346	.00176
Stddev	.00010	.00009	.00025	.00051	.00530	.0112	.00116
%RSD	24.570	47.971	35.933	94.507	6.2606	.90409	65.993
#1	.00051	-.00016	.00098	.00090	.08053	1.2258	.00243
#2	.00043	-.00029	.00060	-.00004	.08297	1.2472	.00243
#3	.00031	-.00012	.00051	.00076	.09069	1.2309	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.0928	.11612	.00111	43.184	.00035	.00808	-.00099
Stddev	.0336	.00031	.00011	.112	.00069	.00388	.00162
%RSD	.47443	.26665	10.055	.26046	195.88	48.023	164.03
#1	7.1273	.11577	.00112	43.060	.00104	.01194	-.00072
#2	7.0600	.11631	.00121	43.279	.00035	.00418	-.00272
#3	7.0911	.11629	.00099	43.213	-.00033	.00812	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: L1502101703 Acquired: 2/23/2015 16:03:06 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00290**	**-.00039**	**2.6239**	**-.00336**	**.25756**	**.00045**	**-.00010**
Stddev	.00211	.00216	.0206	.00036	.00063	.00138	.00087
%RSD	72.782	559.67	.78400	10.580	.24501	309.12	906.17
#1	-.00123	-.00158	2.6403	-.00343	.25716	.00098	-.00054
#2	-.00221	.00211	2.6009	-.00298	.25828	-.00112	.00090
#3	-.00528	-.00169	2.6306	-.00368	.25722	.00148	-.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00014**	**.00373**	F **68.458**
Stddev	.00039	.00006	12.265
%RSD	279.57	1.6428	17.916
#1	-.00055	.00369	82.357
#2	-.00011	.00380	63.864
#3	.00024	.00370	59.154
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10560.**	**13430.**
Stddev	18.	34.
%RSD	.17383	.25295
#1	10539.	13467.
#2	10571.	13422.
#3	10570.	13401.

Approved: February 24, 2015

Sample Name: L1502101704 Acquired: 2/23/2015 16:06:39 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.71838	-.00116	.03541	.06343	-.00007	34.144	.00051
Stddev	.00074	.00146	.00047	.00028	.00026	.00001	.134	.00001
%RSD	198.73	.20298	40.576	.78822	.41181	10.552	.39158	2.6617
#1	.00059	.71867	-.00161	.03545	.06372	-.00007	33.993	.00050
#2	.00097	.71680	-.00122	.03512	.06321	-.00007	34.190	.00051
#3	-.00045	.71968	-.00067	.03567	.06337	-.00006	34.248	.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	.00164	.00183	1.2880	1.0618	.00146	5.5495	.32981
Stddev	.00017	.00076	.00022	.0006	.0124	.00164	.0403	.00065
%RSD	21.630	46.074	11.837	.04363	1.1631	112.40	.72562	.19586
#1	.00062	.00216	.00203	1.2880	1.0510	-.00044	5.5205	.33023
#2	.00072	.00077	.00186	1.2874	1.0593	.00243	5.5326	.32906
#3	.00095	.00200	.00160	1.2885	1.0753	.00239	5.5955	.33013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00156	55.512	.00155	.05907	.00174	-.00248	.00016	3.1041
Stddev	.00004	.063	.00044	.00486	.00009	.00074	.00152	.0073
%RSD	2.7110	.11431	28.402	8.2276	4.9045	29.677	959.51	.23590
#1	.00155	55.454	.00186	.06437	.00167	-.00313	.00026	3.1039
#2	.00153	55.580	.00104	.05482	.00173	-.00168	.00162	3.0969
#3	.00161	55.502	.00174	.05803	.00184	-.00262	-.00141	3.1115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 24, 2015

Sample Name: L1502101704 Acquired: 2/23/2015 16:06:39 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00329**	**.13972**	**.01260**	**.00021**	**.00114**	**.03217**	**2.0906**
Stddev	.00021	.00026	.00141	.00018	.00027	.00018	3.7771
%RSD	6.5080	.18533	11.148	88.106	23.235	.54665	180.67
#1	-.00306	.13942	.01196	.00036	.00084	.03205	.50644
#2	-.00333	.13985	.01422	.00024	.00129	.03208	6.4019
#3	-.00349	.13989	.01164	.00001	.00131	.03237	-.63641
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10595.**	**13271.**
Stddev	11.	35.
%RSD	.10521	.26341
#1	10607.	13230.
#2	10584.	13293.
#3	10594.	13288.

Approved: February 24, 2015

Sample Name: L1502101707 Acquired: 2/23/2015 16:10:12 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.49828	-.00008	.03020	.06589	-.00014	33.747	.00046
Stddev	.00012	.00542	.00260	.00059	.00059	.00005	.109	.00021
%RSD	32.907	1.0868	3269.8	1.9568	.90241	37.142	.32438	45.451
#1	.00049	.49214	-.00123	.02961	.06536	-.00012	33.649	.00023
#2	.00026	.50236	-.00190	.03079	.06653	-.00019	33.865	.00064
#3	.00034	.50034	.00289	.03020	.06577	-.00010	33.726	.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	.00152	.00183	.88220	1.0926	.00208	6.1644	.07271
Stddev	.00025	.00053	.00041	.00299	.0164	.00009	.0168	.00047
%RSD	54.723	34.845	22.500	.33912	1.5060	4.1102	.27302	.64142
#1	.00017	.00190	.00161	.87885	1.1036	.00216	6.1511	.07227
#2	.00060	.00175	.00157	.88314	1.1005	.00211	6.1588	.07265
#3	.00060	.00092	.00230	.88461	1.0737	.00199	6.1833	.07320
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00096	39.249	.00183	.04375	-.00001	-.00123	.00060	2.7265
Stddev	.00012	.204	.00028	.00213	.00258	.00064	.00235	.0122
%RSD	12.059	.52055	15.576	4.8789	22478.	52.204	392.18	.44846
#1	.00091	39.111	.00152	.04144	.00002	-.00058	.00124	2.7340
#2	.00088	39.484	.00189	.04416	-.00261	-.00124	.00255	2.7124
#3	.00110	39.152	.00208	.04566	.00255	-.00187	-.00200	2.7331
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 24, 2015

Sample Name: L1502101707 Acquired: 2/23/2015 16:10:12 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00371**	**.23144**	**.00601**	**-.00029**	**.00062**	**.01214**	**21.060**
Stddev	.00042	.00128	.00116	.00188	.00013	.00011	14.217
%RSD	11.362	.55283	19.381	652.11	21.342	.90074	67.509
#1	-.00418	.23060	.00466	-.00203	.00048	.01201	8.9739
#2	-.00338	.23292	.00668	-.00055	.00065	.01222	17.481
#3	-.00356	.23082	.00668	.00171	.00074	.01217	36.724
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10527.**	**13454.**
Stddev	64.	64.
%RSD	.60387	.47401
#1	10455.	13517.
#2	10577.	13455.
#3	10549.	13390.

Approved: February 24, 2015

Sample Name: CCV Acquired: 2/23/2015 16:13:48 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41791	10.717	.42499	.52085	1.0546	.05160	10.537
Stddev	.00215	.038	.00077	.00294	.0035	.00006	.003
%RSD	.51510	.35681	.18094	.56432	.33559	.11430	.03157
#1	.42025	10.712	.42553	.52423	1.0510	.05165	10.536
#2	.41748	10.757	.42411	.51944	1.0581	.05160	10.541
#3	.41601	10.681	.42534	.51888	1.0547	.05154	10.535
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05280	.21253	.52911	.52994	4.1093	53.081	1.0399
Stddev	.00007	.00069	.00129	.00083	.0172	.070	.0039
%RSD	.13125	.32508	.24319	.15641	.41905	.13109	.37363
#1	.05275	.21300	.53040	.53086	4.1158	53.102	1.0391
#2	.05279	.21174	.52910	.52973	4.1223	53.004	1.0365
#3	.05288	.21286	.52782	.52924	4.0897	53.138	1.0441
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.105	.54194	1.0109	52.741	.52230	10.341	.52261
Stddev	.039	.00223	.0063	.105	.00290	.012	.00318
%RSD	.39003	.41204	.61807	.19963	.55508	.11483	.60879
#1	10.147	.54160	1.0092	52.646	.52543	10.347	.52628
#2	10.069	.54433	1.0179	52.854	.51971	10.327	.52084
#3	10.100	.53990	1.0057	52.722	.52177	10.348	.52071
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 24, 2015

Sample Name: CCV Acquired: 2/23/2015 16:13:48 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2405**	**.42976**	**5.2233**	**1.0537**	**1.0396**	**1.0202**	**.53781**
Stddev	.0039	.00419	.0664	.0006	.0018	.0016	.00218
%RSD	.31437	.97546	1.2723	.06151	.17288	.15623	.40533
#1	1.2450	.43166	5.1909	1.0544	1.0375	1.0216	.53946
#2	1.2379	.43266	5.2997	1.0531	1.0404	1.0185	.53534
#3	1.2385	.42495	5.1792	1.0536	1.0408	1.0207	.53863
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0295**	**1.0419**	F **-15.806**
Stddev	.0056	.0035	12.679
%RSD	.54762	.33836	80.218
#1	1.0354	1.0456	-24.059
#2	1.0290	1.0386	-22.153
#3	1.0242	1.0415	-1.2066
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10793.**	**13241.**
Stddev	22.	21.
%RSD	.20566	.15932
#1	10767.	13245.
#2	10807.	13218.
#3	10804.	13260.

Approved: February 24, 2015

Sample Name: CCB Acquired: 2/23/2015 16:17:03 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00058	-.00157	-.00017	.00192	-.00004	-.00008	.00696
Stddev	.00057	.00302	.00183	.00025	.00013	.00002	.00579
%RSD	98.396	192.72	1084.1	12.997	316.71	23.730	83.276
#1	.00031	.00085	-.00214	.00177	.00001	-.00009	.00067
#2	.00123	-.00059	.00015	.00179	-.00019	-.00006	.00811
#3	.00019	-.00495	.00148	.00221	.00006	-.00010	.01209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.00016	-.00005	-.00013	.00534	-.02363	-.00130
Stddev	.00005	.00011	.00045	.00029	.00174	.02651	.00243
%RSD	40.646	69.317	831.76	231.90	32.560	112.20	186.50
#1	.00017	.00003	.00005	.00021	.00484	.00312	-.00352
#2	.00007	.00022	.00033	-.00025	.00727	-.04989	.00129
#3	.00015	.00023	-.00054	-.00034	.00390	-.02411	-.00168
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01747	.00007	.00427	.04706	-.00059	.00210	.00102
Stddev	.02154	.00008	.00041	.00113	.00029	.00603	.00321
%RSD	123.31	111.75	9.5029	2.4019	48.113	287.11	316.28
#1	.04134	.00011	.00395	.04644	-.00064	-.00051	.00330
#2	-.00052	-.00002	.00413	.04638	-.00085	.00900	.00240
#3	.01158	.00013	.00473	.04837	-.00029	-.00218	-.00266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: CCB Acquired: 2/23/2015 16:17:03 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00139**	**.00248**	**.00169**	**-.00102**	**.00010**	**.00020**	**.00230**
Stddev	.00172	.00511	.00089	.00082	.00008	.00113	.00157
%RSD	123.21	206.50	52.374	80.965	82.814	569.27	68.051
#1	.00272	-.00286	.00126	-.00183	.00019	-.00077	.00374
#2	-.00054	.00295	.00271	-.00018	.00003	.00144	.00064
#3	.00200	.00734	.00111	-.00105	.00008	-.00007	.00252
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00019**	**-.00004**	F **2.7042**
Stddev	.00031	.00003	7.5119
%RSD	167.35	78.840	277.79
#1	-.00017	-.00005	-5.6873
#2	.00031	-.00005	8.8017
#3	.00041	.00000	4.9981
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10698.**	**13119.**
Stddev	5.	47.
%RSD	.04467	.35605
#1	10692.	13092.
#2	10702.	13092.
#3	10699.	13173.

Approved: February 24, 2015

Sample Name: PBW AD Acquired: 2/23/2015 16:20:42 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513079-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	-.00050	-.00290	.00000	-.00033	-.00009	.02870
Stddev	.00023	.00233	.00066	.00074	.00020	.00003	.00645
%RSD	53.706	466.25	22.582	28298.	60.357	26.376	22.479
#1	.00045	.00071	-.00363	.00013	-.00027	-.00007	.02272
#2	.00019	-.00319	-.00236	-.00079	-.00016	-.00010	.02784
#3	.00064	.00098	-.00272	.00067	-.00055	-.00011	.03554
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	-.00015	.00051	-.00040	-.00194	-.00582	-.00176
Stddev	.00018	.00026	.00026	.00070	.00296	.03573	.00167
%RSD	52.410	175.44	50.734	175.37	152.52	614.24	95.223
#1	.00030	-.00001	.00038	.00039	-.00337	-.04466	-.00219
#2	.00018	-.00046	.00081	-.00094	.00146	.02565	.00009
#3	.00053	.00001	.00035	-.00064	-.00392	.00156	-.00317
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01540	.00028	.00063	.04727	-.00018	F -.01279	.00037
Stddev	.01602	.00004	.00016	.00618	.00034	.00569	.00123
%RSD	103.99	14.202	25.339	13.083	193.33	44.463	334.40
#1	.03161	.00027	.00053	.04264	-.00024	-.01649	-.00100
#2	.01502	.00033	.00054	.05429	-.00048	-.01563	.00072
#3	-.00042	.00025	.00081	.04487	.00019	-.00624	.00138
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 24, 2015

Sample Name: PBW AD Acquired: 2/23/2015 16:20:42 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513079-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00062**	**.00037**	**.00288**	**-.00318**	**.00000**	**.00043**	**.00041**
Stddev	.00222	.00099	.00102	.00017	.00004	.00111	.00035
%RSD	356.22	268.73	35.471	5.3683	850.71	257.41	84.262
#1	-.00105	-.00031	.00401	-.00337	.00000	.00168	.00016
#2	-.00260	-.00008	.00261	-.00303	.00004	-.00046	.00027
#3	.00178	.00151	.00202	-.00315	-.00003	.00008	.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00015**	**.00387**	F **-14.877**
Stddev	.00024	.00011	10.081
%RSD	154.92	2.8705	67.763
#1	.00012	.00384	-8.2995
#2	-.00028	.00399	-26.484
#3	-.00030	.00377	-9.8485
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10804.**	**13486.**
Stddev	9.	77.
%RSD	.08631	.57065
#1	10809.	13401.
#2	10809.	13552.
#3	10793.	13505.

Approved: February 24, 2015

Sample Name: LCSW AD Acquired: 2/23/2015 16:24:19 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513079-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.16831	5.4650	-.00137	.00040	-.00024	.02723	5.5192
Stddev	.00071	.0617	.00078	.00093	.00005	.00005	.0335
%RSD	.42317	1.1298	56.924	230.27	20.698	.18849	.60655
#1	.16904	5.5111	-.00206	-.00067	-.00028	.02728	5.5319
#2	.16761	5.4891	-.00052	.00091	-.00018	.02718	5.5445
#3	.16828	5.3948	-.00154	.00096	-.00025	.02723	5.4813
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00044	-.00010	.00028	.00054	2.1524	27.613	.00004
Stddev	.00010	.00005	.00040	.00067	.0145	.114	.00122
%RSD	22.473	51.519	140.37	122.68	.67205	.41347	3110.6
#1	.00032	-.00005	-.00017	.00018	2.1534	27.712	.00119
#2	.00049	-.00015	.00053	.00131	2.1663	27.640	-.00123
#3	.00050	-.00010	.00049	.00014	2.1374	27.488	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.2384	.27634	.00038	27.178	.00005	F -.01149	.00064
Stddev	.0169	.00224	.00014	.069	.00089	.00383	.00159
%RSD	.32220	.81038	36.816	.25346	1742.2	33.356	249.25
#1	5.2314	.27850	.00051	27.235	-.00084	-.00963	-.00108
#2	5.2576	.27648	.00023	27.196	.00005	-.01590	.00092
#3	5.2261	.27403	.00041	27.101	.00095	-.00894	.00207
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 24, 2015

Sample Name: LCSW AD Acquired: 2/23/2015 16:24:19 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513079-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00087	-.00080	.00155	-.00408	.00013	.00061	-.00135
Stddev	.00162	.00423	.00164	.00070	.00016	.00127	.00174
%RSD	186.30	526.62	106.03	17.207	117.04	209.15	128.48
#1	-.00006	.00329	.00025	-.00329	.00010	.00207	.00016
#2	-.00274	-.00516	.00100	-.00429	-.00001	-.00024	-.00324
#3	.00019	-.00054	.00339	-.00464	.00030	-.00001	-.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00007	.00171	F -18.533
Stddev	.00014	.00020	8.478
%RSD	196.17	11.916	45.745
#1	-.00020	.00162	-19.446
#2	.00007	.00157	-26.518
#3	-.00008	.00195	-9.6360
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10727.	13491.
Stddev	5.	97.
%RSD	.04656	.71651
#1	10729.	13419.
#2	10731.	13452.
#3	10721.	13600.

Approved: February 24, 2015

Sample Name: L1502103101 Acquired: 2/23/2015 16:27:52 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513079-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.05389	-.00128	.01420	.00753	-.00012	95.659
Stddev	.00034	.00349	.00158	.00080	.00013	.00003	.498
%RSD	362.25	6.4741	123.29	5.6312	1.7309	28.837	.52095
#1	-.00015	.05459	.00050	.01513	.00740	-.00008	95.379
#2	.00048	.05010	-.00183	.01369	.00752	-.00013	95.364
#3	-.00005	.05697	-.00252	.01380	.00766	-.00014	96.234
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00113	.00790	.00106	.00111	.49671	7.8745	.01023
Stddev	.00014	.00013	.00011	.00010	.00375	.0780	.00058
%RSD	12.462	1.6021	10.419	8.8879	.75554	.99016	5.6514
#1	.00110	.00776	.00099	.00103	.49857	7.8298	.00990
#2	.00100	.00792	.00119	.00122	.49916	7.8291	.00990
#3	.00128	.00801	.00102	.00107	.49239	7.9645	.01090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	63.097	1.5216	.00037	2.6961	.01312	.05527	.00040
Stddev	.590	.0085	.00025	.0129	.00045	.00471	.00203
%RSD	.93516	.55576	67.647	.47695	3.4445	8.5269	510.37
#1	62.561	1.5130	.00027	2.6823	.01303	.05826	.00063
#2	62.999	1.5220	.00018	2.6982	.01272	.04983	-.00173
#3	63.729	1.5299	.00065	2.7077	.01361	.05770	.00230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: L1502103101 Acquired: 2/23/2015 16:27:52 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513079-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00122**	**.00287**	**.83810**	**-.00379**	**.77042**	**-.00515**	**-.00054**
Stddev	.00194	.00225	.00470	.00027	.00346	.00124	.00078
%RSD	158.68	78.434	.56033	7.1001	.44958	24.147	144.75
#1	-.00314	.00475	.83612	-.00348	.76837	-.00375	.00036
#2	.00075	.00038	.83472	-.00399	.76846	-.00612	-.00096
#3	-.00129	.00348	.84347	-.00389	.77441	-.00559	-.00103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00062**	**.01099**	F **-3.0841**
Stddev	.00011	.00008	15.255
%RSD	17.553	.68546	494.62
#1	-.00071	.01096	12.611
#2	-.00065	.01093	-17.856
#3	-.00050	.01107	-4.0077
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10416.**	**13310.**
Stddev	11.	97.
%RSD	.10285	.72681
#1	10404.	13408.
#2	10424.	13306.
#3	10420.	13214.

Approved: February 24, 2015

Sample Name: L1502103101DUP Acquired: 2/23/2015 16:31:25 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513079-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.06962	-.00176	.01495	.00749	-.00011	96.089
Stddev	.00057	.00122	.00028	.00082	.00006	.00005	.121
%RSD	101.96	1.7547	15.933	5.5151	.85730	47.995	.12551
#1	.00116	.06857	-.00207	.01551	.00743	-.00007	96.131
#2	.00048	.07096	-.00152	.01400	.00756	-.00009	95.953
#3	.00003	.06933	-.00169	.01534	.00747	-.00017	96.183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00116	.00800	.00149	.00083	.50566	7.9309	.00959
Stddev	.00013	.00016	.00072	.00033	.00392	.0269	.00069
%RSD	10.817	2.0490	48.292	39.547	.77592	.33924	7.2201
#1	.00125	.00799	.00207	.00118	.50383	7.9017	.01029
#2	.00121	.00817	.00069	.00053	.50298	7.9546	.00956
#3	.00102	.00784	.00171	.00078	.51016	7.9365	.00891
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	63.479	1.5210	-.00023	2.7172	.01343	.05088	.00005
Stddev	.068	.0110	.00030	.0065	.00083	.00637	.00170
%RSD	.10729	.72268	134.13	.24019	6.1979	12.526	3424.8
#1	63.548	1.5326	-.00054	2.7211	.01257	.05033	-.00148
#2	63.411	1.5107	-.00021	2.7096	.01423	.05751	-.00025
#3	63.479	1.5198	.00007	2.7208	.01349	.04480	.00188
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: L1502103101DUP Acquired: 2/23/2015 16:31:25 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513079-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00021**	**-.00448**	**.88637**	**-.00444**	**.77447**	**-.00367**	**-.00135**
Stddev	.00268	.00221	.00536	.00043	.00113	.00028	.00364
%RSD	1266.7	49.399	.60482	9.6150	.14578	7.5331	269.09
#1	.00236	-.00222	.88196	-.00470	.77482	-.00398	-.00323
#2	-.00299	-.00457	.89234	-.00394	.77320	-.00344	.00285
#3	-.00001	-.00664	.88483	-.00466	.77538	-.00359	-.00367
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00041**	**.01015**	F **-.50112**
Stddev	.00024	.00012	18.318
%RSD	58.915	1.2270	3655.5
#1	-.00069	.01027	-18.014
#2	-.00024	.01015	18.528
#3	-.00030	.01002	-2.0179
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10392.**	**13442.**
Stddev	22.	54.
%RSD	.21348	.39927
#1	10414.	13381.
#2	10369.	13483.
#3	10392.	13461.

Approved: February 24, 2015

Sample Name: L1502103101MS Acquired: 2/23/2015 16:34:57 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513079-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.17258	5.5158	.00056	.01464	.00713	.02731	98.580
Stddev	.00043	.0239	.00035	.00055	.00014	.00006	.302
%RSD	.24860	.43420	61.964	3.7882	1.9157	.21910	.30592
#1	.17233	5.5397	.00031	.01497	.00716	.02738	98.721
#2	.17308	5.4918	.00042	.01400	.00697	.02727	98.233
#3	.17234	5.5160	.00096	.01494	.00724	.02728	98.785
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00108	.00761	.00076	.00065	2.6206	35.649	.01066
Stddev	.00011	.00007	.00071	.00058	.0083	.114	.00150
%RSD	10.204	.97064	93.961	89.940	.31506	.32074	14.041
#1	.00112	.00765	.00157	.00099	2.6157	35.726	.01176
#2	.00116	.00752	.00030	-.00002	2.6159	35.517	.01126
#3	.00095	.00765	.00039	.00098	2.6301	35.702	.00896
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	66.447	1.7241	-.00009	30.212	.01279	.04238	.00175
Stddev	.335	.0070	.00008	.121	.00056	.00400	.00117
%RSD	.50469	.40539	90.884	.40053	4.4077	9.4477	67.024
#1	66.810	1.7299	-.00012	30.175	.01214	.03833	.00207
#2	66.149	1.7163	-.00015	30.114	.01317	.04246	.00273
#3	66.382	1.7259	.00000	30.347	.01304	.04634	.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: L1502103101MS Acquired: 2/23/2015 16:34:57 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513079-06

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00279**	**.00028**	**.81101**	**-.00398**	**.74911**	**-.00457**	**.00022**
Stddev	.00262	.00250	.00541	.00041	.00263	.00027	.00232
%RSD	93.993	902.13	.66653	10.271	.35111	5.8698	1069.4
#1	-.00119	.00259	.81720	-.00436	.74886	-.00440	-.00111
#2	-.00136	-.00237	.80719	-.00355	.74661	-.00444	-.00113
#3	-.00581	.00062	.80866	-.00404	.75185	-.00488	.00289
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00039**	**.00998**	F **-11.767**
Stddev	.00017	.00006	9.255
%RSD	43.068	.61033	78.655
#1	-.00023	.01001	-11.462
#2	-.00036	.00991	-21.171
#3	-.00057	.01002	-2.6679
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10378.**	**13484.**
Stddev	12.	49.
%RSD	.11833	.36666
#1	10366.	13440.
#2	10375.	13537.
#3	10391.	13474.

Approved: February 24, 2015

Sample Name: L1502103103 Acquired: 2/23/2015 16:38:28 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.02743	-.00098	.02141	.00631	-.00015	224.35
Stddev	.00062	.00364	.00222	.00090	.00008	.00001	.66
%RSD	119.50	13.259	226.93	4.2163	1.2400	9.0324	.29491
#1	-.00018	.02677	-.00205	.02052	.00623	-.00016	223.75
#2	.00071	.02416	-.00246	.02140	.00638	-.00016	224.25
#3	.00103	.03135	.00157	.02232	.00632	-.00014	225.06
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00143	.02111	.00139	.00012	.84362	10.837	.02398
Stddev	.00008	.00032	.00055	.00034	.00718	.015	.00171
%RSD	5.8754	1.5138	39.828	281.23	.85055	.13917	7.1172
#1	.00151	.02076	.00103	.00043	.83711	10.843	.02500
#2	.00142	.02138	.00203	-.00024	.84244	10.819	.02494
#3	.00135	.02120	.00112	.00017	.85131	10.847	.02201
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	94.275	3.6506	-.00013	12.572	.03317	.00172	-.00004
Stddev	.676	.0473	.00053	.072	.00094	.00134	.00176
%RSD	.71733	1.2964	423.70	.57625	2.8318	77.600	3966.9
#1	93.562	3.5966	-.00074	12.503	.03229	.00324	.00184
#2	94.356	3.6845	.00012	12.566	.03308	.00070	-.00031
#3	94.907	3.6709	.00024	12.647	.03416	.00123	-.00166
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: L1502103103 Acquired: 2/23/2015 16:38:28 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00101	.00532	.93110	-.00407	1.9059	-.01320	-.00014
Stddev	.00158	.00287	.00144	.00073	.0095	.00032	.00123
%RSD	156.90	53.916	.15497	17.861	.49893	2.4603	861.99
#1	.00055	.00309	.92972	-.00326	1.8967	-.01354	.00014
#2	-.00030	.00856	.93260	-.00431	1.9053	-.01290	-.00149
#3	.00276	.00432	.93099	-.00466	1.9157	-.01316	.00093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00078	.01106	F -1.8877
Stddev	.00037	.00006	18.958
%RSD	47.872	.50845	1004.3
#1	-.00041	.01100	17.616
#2	-.00116	.01110	-20.247
#3	-.00078	.01109	-3.0320
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10162.	13314.
Stddev	36.	170.
%RSD	.35074	1.2762
#1	10166.	13510.
#2	10124.	13224.
#3	10195.	13208.

Approved: February 24, 2015

Sample Name: L1502103105 Acquired: 2/23/2015 16:42:00 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	.07158	-.00249	.01063	.00619	-.00010	156.50	.00124
Stddev	.00015	.00232	.00316	.00022	.00024	.00002	.49	.00001
%RSD	22.995	3.2404	126.85	2.0964	3.8271	21.271	.31446	.41805
#1	.00074	.07418	-.00212	.01087	.00593	-.00008	156.69	.00124
#2	.00047	.06971	-.00582	.01043	.00624	-.00009	155.93	.00124
#3	.00070	.07086	.00047	.01059	.00640	-.00012	156.86	.00123
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01155	.00113	.00034	.69894	5.3835	.02456	67.782	1.7226
Stddev	.00016	.00039	.00021	.00596	.0239	.00139	.293	.0084
%RSD	1.4098	34.352	60.485	.85203	.44431	5.6762	.43217	.48544
#1	.01136	.00124	.00033	.70255	5.3937	.02299	67.867	1.7244
#2	.01167	.00070	.00014	.69206	5.3562	.02566	67.456	1.7135
#3	.01161	.00146	.00056	.70220	5.4007	.02504	68.023	1.7300
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00048	5.1170	.03645	.00281	.00155	-.00260	.00323	1.0442
Stddev	.00020	.0217	.00094	.00267	.00207	.00018	.00432	.0043
%RSD	40.438	.42495	2.5735	95.045	133.92	7.0925	133.75	.41686
#1	-.00035	5.1273	.03704	-.00027	.00013	-.00266	-.00138	1.0467
#2	-.00071	5.0920	.03537	.00436	.00392	-.00274	.00717	1.0392
#3	-.00040	5.1316	.03694	.00433	.00059	-.00239	.00390	1.0467
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 24, 2015

Sample Name: L1502103105 Acquired: 2/23/2015 16:42:00 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00387**	**1.0833**	**-.00757**	**-.00098**	**-.00060**	**.01483**	**5.5939**
Stddev	.00051	.0031	.00138	.00320	.00028	.00009	12.297
%RSD	13.078	.28193	18.207	326.83	46.494	.60838	219.82
#1	-.00362	1.0849	-.00618	-.00357	-.00091	.01493	18.257
#2	-.00354	1.0798	-.00894	-.00197	-.00048	.01481	4.8251
#3	-.00445	1.0852	-.00760	.00260	-.00040	.01476	-6.3002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10293.**	**13453.**
Stddev	16.	73.
%RSD	.15079	.54534
#1	10277.	13421.
#2	10307.	13536.
#3	10297.	13400.

Approved: February 24, 2015

Sample Name: L1502103107 Acquired: 2/23/2015 16:45:32 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	.02952	-.00108	.00534	.00344	-.00011	27.909
Stddev	.00094	.00387	.00168	.00074	.00028	.00004	.125
%RSD	109.16	13.095	156.10	13.792	8.2580	35.799	.44647
#1	.00195	.02547	.00036	.00567	.00377	-.00006	28.047
#2	.00039	.03317	-.00067	.00450	.00327	-.00013	27.804
#3	.00026	.02992	-.00293	.00586	.00328	-.00013	27.877
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00058	-.00008	.00096	.00021	.03692	1.5496	.00507
Stddev	.00010	.00028	.00027	.00019	.00362	.0414	.00018
%RSD	17.975	365.96	28.190	90.404	9.8099	2.6743	3.5796
#1	.00069	-.00030	.00095	.00041	.03310	1.5927	.00491
#2	.00049	.00024	.00123	.00020	.03735	1.5461	.00502
#3	.00055	-.00016	.00069	.00002	.04030	1.5100	.00527
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	13.593	.04357	-.00014	.80890	.00112	F -.00650	.00013
Stddev	.026	.00061	.00016	.00864	.00085	.00173	.00114
%RSD	.19251	1.3895	115.58	1.0681	75.712	26.638	877.00
#1	13.563	.04309	-.00026	.81695	.00076	-.00556	-.00077
#2	13.604	.04338	-.00019	.79977	.00210	-.00544	.00142
#3	13.612	.04425	.00004	.80997	.00052	-.00850	-.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 24, 2015

Sample Name: L1502103107 Acquired: 2/23/2015 16:45:32 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00084**	**-.00111**	**.94034**	**-.00351**	**.26553**	**-.00040**	**.00109**
Stddev	.00109	.00090	.00425	.00019	.00112	.00065	.00187
%RSD	129.08	80.565	.45181	5.4229	.42330	162.96	171.87
#1	-.00103	-.00186	.94016	-.00369	.26674	-.00040	.00014
#2	.00033	-.00012	.93618	-.00331	.26451	-.00104	.00324
#3	-.00182	-.00137	.94467	-.00354	.26534	.00025	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00020**	**.00184**	**3.0737**
Stddev	.00029	.00015	9.4138
%RSD	142.91	8.0279	306.27
#1	-.00036	.00172	13.905
#2	.00013	.00180	-3.1385
#3	-.00038	.00201	-1.5453
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10722.**	**13752.**
Stddev	10.	46.
%RSD	.09075	.33163
#1	10731.	13804.
#2	10712.	13718.
#3	10724.	13735.

Approved: February 24, 2015

Sample Name: L1502103107PS Acquired: 2/23/2015 16:49:04 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513109-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21336	5.2746	.20922	1.0100	.53350	.02541	30.289	.02631
Stddev	.00078	.0796	.00321	.0039	.00066	.00003	.098	.00007
%RSD	.36372	1.5087	1.5339	.39016	.12329	.12419	.32238	.25042
#1	.21387	5.3207	.21218	1.0107	.53276	.02541	30.358	.02633
#2	.21247	5.3204	.20967	1.0135	.53402	.02545	30.331	.02624
#3	.21374	5.1827	.20581	1.0057	.53372	.02538	30.177	.02637
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10667	.26930	.26274	2.0853	27.849	.53242	17.161	.29707
Stddev	.00026	.00095	.00084	.0109	.167	.00134	.135	.00334
%RSD	.24609	.35426	.31879	.52227	.59789	.25165	.78687	1.1229
#1	.10694	.27029	.26261	2.0811	27.953	.53255	17.267	.29886
#2	.10667	.26922	.26363	2.0977	27.937	.53102	17.208	.29913
#3	.10641	.26838	.26197	2.0772	27.657	.53370	17.009	.29322
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52831	26.989	.25934	5.0594	.25774	.62931	.20243	3.5032
Stddev	.00097	.045	.00050	.0045	.00108	.00835	.00251	.0121
%RSD	.18399	.16658	.19280	.08897	.41958	1.3267	1.2396	.34586
#1	.52883	27.011	.25990	5.0628	.25899	.63224	.19999	3.5022
#2	.52892	27.020	.25915	5.0543	.25716	.63580	.20500	3.5158
#3	.52719	26.938	.25896	5.0612	.25708	.61989	.20231	3.4916
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 24, 2015

Sample Name: L1502103107PS Acquired: 2/23/2015 16:49:04 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513109-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52458	.75666	.51364	.26504	.53000	.51882	2.1339
Stddev	.00173	.00146	.00497	.00223	.00088	.00304	14.354
%RSD	.32936	.19320	.96700	.84176	.16531	.58611	672.67
#1	.52304	.75744	.51647	.26590	.53056	.51535	7.9969
#2	.52645	.75755	.51655	.26671	.53046	.52010	-14.223
#3	.52425	.75497	.50790	.26250	.52899	.52101	12.628
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10647.	13587.
Stddev	7.	172.
%RSD	.06824	1.2675
#1	10640.	13494.
#2	10647.	13481.
#3	10655.	13785.

Approved: February 24, 2015

Sample Name: L1502103107SDL Acquired: 2/23/2015 16:52:22 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG513109-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	.00430	-.00090	.00528	.00050	-.00003	5.6461
Stddev	.00038	.00231	.00030	.00030	.00017	.00002	.0137
%RSD	85.081	53.743	33.064	5.7672	34.246	56.199	.24192
#1	.00028	.00413	-.00069	.00558	.00062	-.00005	5.6438
#2	.00018	.00208	-.00124	.00530	.00057	-.00003	5.6607
#3	.00089	.00670	-.00078	.00497	.00030	-.00001	5.6337
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.00007	.00010	-.00038	.00274	.27840	.00038
Stddev	.00015	.00010	.00007	.00034	.01134	.01773	.00078
%RSD	81.216	147.27	66.936	90.149	414.47	6.3699	204.17
#1	.00019	.00014	.00011	-.00063	.00291	.26430	.00096
#2	.00034	-.00005	.00016	-.00051	.01399	.27258	.00070
#3	.00003	.00011	.00003	.00001	-.00869	.29831	-.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.7786	.00908	.00123	.19519	.00035	-.00126	.00062
Stddev	.0452	.00011	.00022	.00496	.00042	.00317	.00231
%RSD	1.6250	1.2055	17.729	2.5400	118.97	250.78	370.07
#1	2.7579	.00905	.00104	.20085	.00080	-.00470	.00260
#2	2.8304	.00899	.00147	.19312	-.00003	.00154	-.00192
#3	2.7476	.00920	.00118	.19161	.00029	-.00062	.00119
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: L1502103107SDL Acquired: 2/23/2015 16:52:22 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG513109-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	-.00102	.18889	-.00124	.05471	.00097	-.00009
Stddev	.00084	.00420	.00186	.00027	.00024	.00087	.00044
%RSD	286.39	413.82	.98448	21.687	.44530	89.707	480.59
#1	-.00056	-.00236	.19102	-.00098	.05458	.00107	-.00053
#2	.00111	-.00438	.18760	-.00151	.05499	.00005	.00036
#3	.00033	.00369	.18805	-.00122	.05455	.00179	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00052	.00173	F -7.2293
Stddev	.00029	.00008	11.265
%RSD	55.748	4.7491	155.82
#1	-.00019	.00172	2.1372
#2	-.00073	.00166	-19.729
#3	-.00064	.00182	-4.0959
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10803.	13455.
Stddev	13.	37.
%RSD	.11711	.27717
#1	10808.	13488.
#2	10813.	13463.
#3	10789.	13414.

Approved: February 24, 2015

Sample Name: CCV Acquired: 2/23/2015 16:55:59 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41714	10.671	.42264	.52233	1.0534	.05151	10.446
Stddev	.00229	.060	.00383	.00150	.0078	.00001	.049
%RSD	.54893	.56318	.90605	.28785	.74017	.01659	.46784
#1	.41741	10.702	.42458	.52061	1.0469	.05152	10.391
#2	.41928	10.601	.42512	.52341	1.0511	.05151	10.461
#3	.41472	10.708	.41823	.52297	1.0620	.05150	10.485
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05252	.21183	.52681	.52781	4.0879	52.843	1.0411
Stddev	.00020	.00028	.00205	.00108	.0384	.147	.0075
%RSD	.38256	.13256	.38861	.20507	.94061	.27743	.71606
#1	.05273	.21166	.52469	.52905	4.0639	52.674	1.0327
#2	.05250	.21215	.52697	.52719	4.0674	52.936	1.0435
#3	.05233	.21168	.52878	.52717	4.1322	52.920	1.0470
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.9488	.53319	1.0232	52.590	.52000	10.351	.51992
Stddev	.0575	.00217	.0043	.322	.00065	.015	.00085
%RSD	.57849	.40627	.41734	.61177	.12583	.14241	.16389
#1	9.8899	.53473	1.0276	52.322	.52068	10.341	.52074
#2	10.005	.53072	1.0191	52.502	.51995	10.344	.51904
#3	9.9515	.53413	1.0229	52.947	.51937	10.368	.51999
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 24, 2015

Sample Name: CCV Acquired: 2/23/2015 16:55:59 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2426**	**.43371**	**5.3129**	**1.0513**	**1.0377**	**1.0178**	**.53566**
Stddev	.0037	.00480	.0108	.0010	.0056	.0056	.00553
%RSD	.30014	1.1057	.20277	.09580	.54166	.55323	1.0315
#1	1.2426	.43839	5.3237	1.0502	1.0322	1.0175	.54045
#2	1.2389	.43392	5.3022	1.0515	1.0376	1.0235	.53691
#3	1.2463	.42881	5.3128	1.0522	1.0435	1.0123	.52962
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0319**	**1.0345**	F **-15.374**
Stddev	.0008	.0014	4.677
%RSD	.08073	.13488	30.422
#1	1.0312	1.0333	-19.569
#2	1.0328	1.0360	-16.222
#3	1.0316	1.0342	-10.331
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10891.**	**13529.**
Stddev	8.	73.
%RSD	.07500	.53688
#1	10899.	13495.
#2	10890.	13613.
#3	10883.	13480.

Approved: February 24, 2015

Sample Name: CCB Acquired: 2/23/2015 16:59:14 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00028	-.00324	.00072	.00218	-.00020	-.00007	.00618
Stddev	.00094	.00228	.00130	.00039	.00011	.00003	.00795
%RSD	336.64	70.473	181.40	18.031	55.436	42.127	128.72
#1	-.00029	-.00565	.00214	.00173	-.00027	-.00005	-.00291
#2	-.00122	-.00112	-.00042	.00235	-.00007	-.00010	.00957
#3	.00067	-.00293	.00044	.00246	-.00026	-.00005	.01188
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	-.00003	.00044	.00008	-.00027	-.01698	-.00208
Stddev	.00008	.00009	.00034	.00026	.00419	.01876	.00020
%RSD	48.140	299.65	76.707	324.34	1541.7	110.51	9.6273
#1	.00018	.00006	.00066	.00016	-.00259	-.03440	-.00197
#2	.00008	-.00003	.00005	.00030	.00456	.00289	-.00231
#3	.00023	-.00012	.00060	-.00021	-.00279	-.01942	-.00196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00068	-.00006	.00409	.03515	-.00071	-.00557	.00038
Stddev	.03783	.00011	.00017	.00663	.00018	.00380	.00103
%RSD	5535.6	180.58	4.0821	18.854	26.212	68.274	269.43
#1	.01314	.00006	.00394	.02988	-.00050	-.00291	-.00061
#2	-.04348	-.00008	.00406	.03297	-.00076	-.00992	.00031
#3	.02829	-.00016	.00427	.04259	-.00086	-.00387	.00144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: CCB Acquired: 2/23/2015 16:59:14 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00109	.00214	.00040	-.00078	.00008	.00048	-.00007
Stddev	.00035	.00331	.00078	.00037	.00011	.00010	.00212
%RSD	32.129	154.99	191.43	47.482	138.88	21.374	2836.6
#1	-.00098	.00077	-.00049	-.00050	.00020	.00059	-.00239
#2	-.00081	.00591	.00077	-.00120	-.00003	.00045	.00038
#3	-.00148	-.00027	.00093	-.00065	.00007	.00039	.00178
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00020	.00007	F -1.5558
Stddev	.00045	.00019	8.6545
%RSD	227.47	279.32	556.26
#1	-.00070	.00015	5.6458
#2	-.00002	-.00015	-11.157
#3	.00014	.00021	.8436
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10812.	13439.
Stddev	21.	98.
%RSD	.19581	.72944
#1	10791.	13499.
#2	10810.	13492.
#3	10834.	13326.

Approved: February 24, 2015

Sample Name: L1502103109 Acquired: 2/23/2015 17:02:52 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00039	.05808	.00044	.01297	.00657	-.00012	138.38	.00100
Stddev	.00052	.00282	.00246	.00040	.00020	.00003	.33	.00005
%RSD	134.80	4.8602	557.34	3.0659	2.9992	22.300	.24064	4.7782
#1	-.00004	.05824	.00199	.01251	.00653	-.00010	138.31	.00105
#2	.00023	.06082	.00173	.01326	.00679	-.00015	138.09	.00099
#3	.00097	.05518	-.00240	.01312	.00640	-.00012	138.75	.00096
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00626	.00144	.00042	.41242	6.8096	.01108	53.254	1.2659
Stddev	.00048	.00027	.00057	.00953	.0427	.00032	.219	.0211
%RSD	7.6344	18.853	136.16	2.3100	.62659	2.8504	.41169	1.6675
#1	.00647	.00122	-.00003	.41840	6.7621	.01135	53.501	1.2490
#2	.00571	.00136	.00022	.41743	6.8447	.01115	53.082	1.2896
#3	.00659	.00175	.00106	.40144	6.8221	.01073	53.180	1.2592
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00058	2.4624	.04902	.05491	.00088	.00029	.00094	.83150
Stddev	.00007	.0118	.06738	.00333	.00191	.00270	.00575	.05033
%RSD	12.424	.47749	137.45	6.0676	218.40	947.87	612.24	6.0535
#1	.00064	2.4596	.01068	.05720	.00293	-.00028	.00650	.81136
#2	.00050	2.4523	.12683	.05644	-.00085	.00322	-.00498	.88878
#3	.00061	2.4754	.00956	.05109	.00055	-.00209	.00130	.79435
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 24, 2015

Sample Name: L1502103109 Acquired: 2/23/2015 17:02:52 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00388**	**.94963**	**-.00642**	**-.00216**	**-.00051**	**.01166**	**.51249**
Stddev	.00073	.00227	.00156	.00244	.00011	.00951	16.405
%RSD	18.936	.23900	24.295	113.08	22.387	81.589	3201.1
#1	-.00415	.94842	-.00463	-.00494	-.00057	.00621	19.428
#2	-.00305	.94823	-.00713	-.00038	-.00038	.02265	-8.0510
#3	-.00445	.95225	-.00751	-.00116	-.00058	.00612	-9.8392
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10324.**	**13597.**
Stddev	91.	138.
%RSD	.88448	1.0132
#1	10386.	13637.
#2	10219.	13444.
#3	10367.	13711.

Approved: February 24, 2015

Sample Name: L1502103111 Acquired: 2/23/2015 17:06:24 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00126	.15838	.00007	.02721	.00472	.00049	173.14	.00127
Stddev	.00018	.00458	.00204	.00122	.00027	.00001	.40	.00006
%RSD	13.959	2.8909	3126.5	4.4991	5.7252	2.6458	.22835	4.9092
#1	.00145	.16313	.00090	.02856	.00490	.00050	172.72	.00130
#2	.00123	.15803	.00156	.02618	.00441	.00050	173.18	.00120
#3	.00110	.15399	-.00226	.02688	.00485	.00048	173.51	.00131
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10763	.00139	.00103	2.0560	4.5388	.03088	58.123	5.7583
Stddev	.00035	.00043	.00037	.0049	.0373	.00055	.047	.0066
%RSD	.32329	30.693	36.244	.23747	.82171	1.7675	.08164	.11523
#1	.10746	.00126	.00067	2.0513	4.4958	.03083	58.068	5.7533
#2	.10803	.00104	.00101	2.0610	4.5579	.03145	58.147	5.7557
#3	.10740	.00187	.00142	2.0558	4.5627	.03036	58.153	5.7658
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	4.9035	.14757	-.00103	-.00070	-.00254	-.00114	2.3674
Stddev	.00015	.0205	.00047	.00598	.00119	.00047	.00559	.0049
%RSD	138.59	.41830	.31831	578.76	169.14	18.429	488.19	.20474
#1	.00005	4.8952	.14739	.00548	-.00074	-.00210	.00429	2.3636
#2	-.00001	4.8884	.14722	-.00232	.00050	-.00303	-.00687	2.3657
#3	.00028	4.9269	.14811	-.00626	-.00187	-.00248	-.00085	2.3729
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 24, 2015

Sample Name: L1502103111 Acquired: 2/23/2015 17:06:24 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00353**	**2.3828**	**-.01049**	**.00016**	**-.00088**	**.13769**	**15.546**
Stddev	.00021	.0070	.00125	.00090	.00033	.00087	12.392
%RSD	6.0496	.29247	11.932	567.37	37.923	.63512	79.711
#1	-.00372	2.3772	-.00905	.00020	-.00122	.13679	19.999
#2	-.00357	2.3806	-.01127	-.00076	-.00087	.13775	1.5431
#3	-.00330	2.3906	-.01116	.00104	-.00055	.13854	25.097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10365.**	**13734.**
Stddev	12.	94.
%RSD	.11447	.68728
#1	10378.	13645.
#2	10364.	13722.
#3	10354.	13833.

Approved: February 24, 2015

Sample Name: L1502103113 Acquired: 2/23/2015 17:10:02 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00232	3.1754	.00030	.02767	.00748	.00682	315.50
Stddev	.00049	.0084	.00148	.00133	.00007	.00002	.18
%RSD	21.232	.26496	489.27	4.7940	.94717	.26088	.05625
#1	.00183	3.1663	.00185	.02740	.00742	.00681	315.30
#2	.00281	3.1830	-.00110	.02912	.00756	.00682	315.56
#3	.00230	3.1769	.00015	.02651	.00747	.00684	315.64
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00189	.41618	.00294	.00460	23.086	7.1374	.06417
Stddev	.00011	.00049	.00043	.00023	.114	.0282	.00131
%RSD	5.6519	.11720	14.708	4.8907	.49413	.39507	2.0447
#1	.00202	.41563	.00344	.00469	22.983	7.1131	.06271
#2	.00181	.41655	.00272	.00477	23.208	7.1683	.06526
#3	.00185	.41635	.00266	.00435	23.068	7.1308	.06453
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	95.182	12.126	-.00086	7.5932	.55217	F -.00334	.00742
Stddev	.163	.045	.00016	.0202	.00621	.00079	.00221
%RSD	.17128	.36856	18.582	.26609	1.1248	23.473	29.731
#1	95.087	12.149	-.00090	7.5850	.55913	-.00322	.00736
#2	95.370	12.154	-.00099	7.6162	.55021	-.00419	.00966
#3	95.088	12.074	-.00068	7.5784	.54718	-.00263	.00525
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 24, 2015

Sample Name: L1502103113 Acquired: 2/23/2015 17:10:02 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00648**	**.00426**	**5.1376**	**-.00354**	**2.6035**	**-.01534**	**.00219**
Stddev	.00068	.00118	.0444	.00052	.0018	.00121	.00303
%RSD	10.516	27.660	.86392	14.633	.07049	7.8747	138.24
#1	-.00722	.00561	5.1791	-.00298	2.6014	-.01575	.00492
#2	-.00635	.00374	5.1428	-.00364	2.6046	-.01399	-.00107
#3	-.00587	.00344	5.0908	-.00401	2.6046	-.01630	.00272
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00246**	**.86218**	F **-1.4792**
Stddev	.00036	.00177	10.332
%RSD	14.520	.20564	698.48
#1	-.00281	.86419	-13.105
#2	-.00210	.86086	6.6538
#3	-.00247	.86147	2.0136
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10299.**	**13723.**
Stddev	8.	30.
%RSD	.07971	.21885
#1	10298.	13742.
#2	10291.	13689.
#3	10307.	13739.

Approved: February 24, 2015

Sample Name: L1502103115 Acquired: 2/23/2015 17:13:38 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00185	2.4163	-.00041	.03030	.00535	.00586	324.64
Stddev	.00077	.0101	.00155	.00063	.00010	.00002	.18
%RSD	41.731	.41690	377.11	2.0860	1.8003	.40795	.05689
#1	.00233	2.4277	-.00180	.03079	.00535	.00584	324.53
#2	.00096	2.4127	-.00069	.03053	.00525	.00586	324.86
#3	.00225	2.4085	.00126	.02959	.00545	.00589	324.54
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00171	.40134	.00316	.00510	21.300	6.6981	.06843
Stddev	.00010	.00060	.00017	.00043	.017	.0292	.00053
%RSD	5.7643	.14854	5.3391	8.3348	.07872	.43610	.77353
#1	.00182	.40185	.00298	.00461	21.303	6.7082	.06904
#2	.00170	.40147	.00320	.00531	21.315	6.7209	.06819
#3	.00162	.40069	.00331	.00538	21.282	6.6652	.06807
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	95.899	11.436	-.00085	7.2681	.54105	F -.00950	.00281
Stddev	.175	.081	.00031	.0079	.00087	.00593	.00249
%RSD	.18275	.70956	36.489	.10819	.16056	62.431	88.446
#1	95.734	11.529	-.00107	7.2627	.54045	-.01629	.00337
#2	95.881	11.385	-.00049	7.2771	.54065	-.00689	.00498
#3	96.083	11.393	-.00097	7.2643	.54204	-.00532	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 24, 2015

Sample Name: L1502103115 Acquired: 2/23/2015 17:13:38 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00649**	**.00102**	**5.4585**	**-.00352**	**2.7244**	**-.01684**	**.00078**
Stddev	.00214	.00184	.1104	.00007	.0037	.00204	.00237
%RSD	32.911	179.90	2.0224	1.9395	.13734	12.130	302.63
#1	-.00884	.00306	5.3311	-.00360	2.7228	-.01918	-.00195
#2	-.00597	.00054	5.5172	-.00349	2.7287	-.01590	.00233
#3	-.00466	-.00053	5.5271	-.00347	2.7218	-.01543	.00197
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00205**	**.82556**	F **-49.897**
Stddev	.00030	.00160	21.707
%RSD	14.567	.19366	43.502
#1	-.00171	.82741	-71.761
#2	-.00214	.82459	-49.579
#3	-.00229	.82468	-28.352
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10281.**	**13749.**
Stddev	11.	21.
%RSD	.10925	.15616
#1	10269.	13739.
#2	10282.	13774.
#3	10291.	13734.

Approved: February 24, 2015

Sample Name: L1502103117 Acquired: 2/23/2015 17:17:14 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	.01666	-.00088	.04822	.00649	-.00013	356.24
Stddev	.00010	.00136	.00184	.00138	.00012	.00004	1.77
%RSD	17.530	8.1383	208.71	2.8641	1.8634	26.389	.49814
#1	.00049	.01749	-.00049	.04756	.00647	-.00010	354.86
#2	.00053	.01510	.00073	.04730	.00638	-.00013	358.24
#3	.00068	.01740	-.00289	.04981	.00662	-.00017	355.61
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00151	.00710	.00084	.00024	.07268	10.185	.04569
Stddev	.00002	.00028	.00079	.00043	.00276	.067	.00103
%RSD	1.2115	4.0052	93.894	180.69	3.7920	.65997	2.2524
#1	.00153	.00680	.00115	.00027	.07053	10.123	.04682
#2	.00150	.00736	-.00006	-.00021	.07171	10.257	.04547
#3	.00149	.00715	.00142	.00065	.07578	10.175	.04479
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	129.26	1.7566	-.00018	23.073	.02237	.01072	-.00154
Stddev	.86	.0062	.00018	.101	.00018	.00408	.00162
%RSD	.66488	.35472	96.087	.43942	.78812	38.008	105.20
#1	128.48	1.7494	-.00036	22.967	.02239	.01452	-.00104
#2	130.18	1.7604	-.00019	23.168	.02218	.00642	-.00335
#3	129.12	1.7600	.00000	23.085	.02253	.01123	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: L1502103117 Acquired: 2/23/2015 17:17:14 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	.00693	.81576	-.00398	F 4.6980	-.01933	-.00221
Stddev	.00057	.00506	.00700	.00099	.0235	.00057	.00201
%RSD	125.06	72.951	.85760	24.824	.50013	2.9567	90.636
#1	.00079	.00701	.82091	-.00314	4.6762	-.01967	.00010
#2	.00078	.00184	.81857	-.00507	4.7229	-.01867	-.00345
#3	-.00020	.01195	.80779	-.00374	4.6948	-.01966	-.00328
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					4.5000		
Low Limit					-.00800		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00041	.03129	10.148
Stddev	.00029	.00009	5.314
%RSD	71.579	.29317	52.367
#1	-.00046	.03136	4.0297
#2	-.00067	.03131	12.798
#3	-.00009	.03118	13.615
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10016.	13590.
Stddev	14.	62.
%RSD	.13645	.45407
#1	10001.	13653.
#2	10029.	13529.
#3	10018.	13588.

Approved: February 24, 2015

Sample Name: L1502103119 Acquired: 2/23/2015 17:20:46 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00612	22.747	.00093	.02976	.00825	.03071	318.02
Stddev	.00014	.150	.00221	.00232	.00015	.00030	1.14
%RSD	2.2091	.65887	238.31	7.7844	1.7885	.97006	.35993
#1	.00626	22.899	-.00147	.03201	.00830	.03104	319.16
#2	.00612	22.742	.00288	.02989	.00836	.03063	316.88
#3	.00598	22.599	.00136	.02738	.00808	.03046	318.01
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00504	.68728	.00933	.05006	.95430	8.9897	.13051
Stddev	.00007	.00254	.00132	.00060	.00448	.0845	.00075
%RSD	1.4199	.36908	14.201	1.2054	.46986	.93968	.57463
#1	.00496	.68669	.01078	.04957	.95948	9.0416	.13105
#2	.00504	.69006	.00902	.05073	.95172	8.8922	.12965
#3	.00511	.68509	.00818	.04987	.95171	9.0352	.13083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	216.49	F 28.366	-.00138	9.3397	.89366	F -.03682	.01394
Stddev	.67	.112	.00007	.0396	.00527	.00387	.00051
%RSD	.30995	.39639	4.7148	.42431	.58966	10.505	3.6269
#1	216.71	28.391	-.00145	9.3836	.89799	-.04039	.01400
#2	215.74	28.463	-.00137	9.3065	.89520	-.03736	.01341
#3	217.03	28.243	-.00133	9.3290	.88779	-.03271	.01441
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit		27.000				450.00	
Low Limit		-.00240				-.00320	

Approved: February 24, 2015

Sample Name: L1502103119 Acquired: 2/23/2015 17:20:46 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00529**	**.02476**	**8.6158**	**-.00343**	**2.1003**	**-.01286**	**.00399**
Stddev	.00152	.00351	.0389	.00085	.0070	.00062	.00164
%RSD	28.718	14.159	.45095	24.918	.33206	4.8105	41.169
#1	-.00560	.02144	8.6309	-.00290	2.1068	-.01240	.00564
#2	-.00364	.02443	8.6448	-.00441	2.0930	-.01262	.00235
#3	-.00663	.02843	8.5717	-.00297	2.1012	-.01356	.00399
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00401**	**1.6121**	F **317.42**
Stddev	.00034	.0082	19.94
%RSD	8.5723	.51049	6.2818
#1	-.00435	1.6051	317.49
#2	-.00402	1.6212	337.33
#3	-.00366	1.6099	297.45
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10493.**	**14079.**
Stddev	90.	29.
%RSD	.85863	.20315
#1	10400.	14074.
#2	10497.	14054.
#3	10580.	14110.

Approved: February 24, 2015

Sample Name: L1502103122 Acquired: 2/23/2015 17:24:22 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513079-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00104	.03579	.00126	.01677	.01334	.00028	91.961
Stddev	.00015	.00241	.00157	.00068	.00010	.00003	.266
%RSD	14.172	6.7219	125.09	4.0471	.73834	9.5418	.28896
#1	.00091	.03514	.00040	.01638	.01332	.00031	91.655
#2	.00101	.03846	.00030	.01638	.01325	.00026	92.137
#3	.00120	.03378	.00308	.01756	.01345	.00028	92.089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	.05160	.00080	-.00041	41.065	3.9598	.02200
Stddev	.00013	.00007	.00051	.00013	.091	.0062	.00150
%RSD	54.186	.14376	63.414	32.143	.22209	.15758	6.8344
#1	.00030	.05165	.00023	-.00053	40.962	3.9586	.02068
#2	.00031	.05163	.00122	-.00027	41.098	3.9543	.02170
#3	.00009	.05151	.00096	-.00043	41.135	3.9666	.02364
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	49.059	4.3452	-.00096	4.0443	.07066	.00508	.00033
Stddev	.263	.0275	.00044	.0136	.00050	.00527	.00119
%RSD	.53566	.63238	45.801	.33716	.70374	103.78	355.96
#1	48.807	4.3274	-.00068	4.0289	.07118	.01046	-.00042
#2	49.039	4.3312	-.00073	4.0494	.07060	-.00008	-.00029
#3	49.332	4.3768	-.00146	4.0547	.07019	.00486	.00171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: L1502103122 Acquired: 2/23/2015 17:24:22 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513079-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00567	-.00468	1.9686	-.00297	.94082	-.00596	-.00049
Stddev	.00203	.00361	.0099	.00045	.00238	.00119	.00194
%RSD	35.722	77.194	.50500	15.069	.25271	20.035	396.42
#1	-.00427	-.00426	1.9786	-.00259	.93808	-.00675	.00026
#2	-.00799	-.00848	1.9684	-.00285	.94211	-.00655	-.00269
#3	-.00475	-.00129	1.9587	-.00346	.94227	-.00459	.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00169	.02967	F -221.21
Stddev	.00027	.00009	19.10
%RSD	15.926	.31138	8.6344
#1	-.00138	.02963	-233.84
#2	-.00180	.02977	-230.56
#3	-.00189	.02960	-199.24
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10490.	13594.
Stddev	20.	43.
%RSD	.19183	.31731
#1	10472.	13634.
#2	10511.	13599.
#3	10485.	13549.

Approved: February 24, 2015

Sample Name: L1502103122MS Acquired: 2/23/2015 17:27:53 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513079-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.16873	5.4254	.00145	.01710	.01388	.02696	100.50
Stddev	.00089	.0190	.00034	.00117	.00010	.00004	.19
%RSD	.52872	.34983	23.698	6.8661	.74451	.15192	.19012
#1	.16772	5.4179	.00108	.01746	.01378	.02694	100.61
#2	.16906	5.4113	.00150	.01579	.01399	.02694	100.62
#3	.16941	5.4470	.00176	.01805	.01387	.02701	100.28
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.05300	.00024	-.00039	45.101	31.401	.02253
Stddev	.00008	.00012	.00011	.00063	.083	.087	.00056
%RSD	31.308	.22481	44.439	160.19	.18453	.27840	2.4994
#1	.00030	.05306	.00031	-.00050	45.133	31.397	.02210
#2	.00016	.05307	.00028	.00028	45.007	31.490	.02233
#3	.00026	.05286	.00012	-.00096	45.164	31.315	.02317
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	55.978	4.7605	-.00107	31.304	.07285	.00170	.00300
Stddev	.134	.0270	.00030	.076	.00062	.00449	.00111
%RSD	.23900	.56721	27.906	.24439	.84434	263.64	36.980
#1	55.825	4.7470	-.00141	31.390	.07237	.00018	.00427
#2	56.074	4.7429	-.00083	31.244	.07265	-.00183	.00245
#3	56.035	4.7916	-.00098	31.277	.07355	.00675	.00227
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: L1502103122MS Acquired: 2/23/2015 17:27:53 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513079-07

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00389	.00055	2.0566	-.00358	.97259	-.00648	.00000
Stddev	.00113	.00401	.0043	.00042	.00285	.00065	.00108
%RSD	29.062	734.19	.21053	11.622	.29288	10.003	31540.
#1	-.00393	.00438	2.0597	-.00335	.97479	-.00704	.00086
#2	-.00501	.00088	2.0585	-.00406	.97360	-.00663	-.00120
#3	-.00274	-.00362	2.0517	-.00332	.96937	-.00577	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00175	.03075	F -221.96
Stddev	.00013	.00006	27.27
%RSD	7.6465	.20500	12.284
#1	-.00190	.03080	-238.60
#2	-.00164	.03068	-190.49
#3	-.00170	.03079	-236.79
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10493.	13488.
Stddev	3.	48.
%RSD	.03150	.35526
#1	10492.	13499.
#2	10496.	13529.
#3	10490.	13435.

Approved: February 24, 2015

Sample Name: L1502103125 Acquired: 2/23/2015 17:31:22 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	.00918	.00017	.02138	.01222	-.00014	291.85
Stddev	.00036	.00216	.00278	.00034	.00015	.00001	1.15
%RSD	91.129	23.541	1647.0	1.6004	1.2275	7.1725	.39498
#1	.00012	.01050	.00066	.02163	.01219	-.00015	292.35
#2	.00081	.00669	-.00282	.02153	.01209	-.00013	290.53
#3	.00026	.01036	.00267	.02099	.01239	-.00014	292.67
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00125	.00054	.00121	-.00022	.09774	5.8418	.01428
Stddev	.00013	.00010	.00044	.00021	.00744	.0036	.00158
%RSD	10.513	19.457	36.850	97.569	7.6157	.06222	11.068
#1	.00115	.00050	.00069	-.00028	.10319	5.8380	.01499
#2	.00119	.00066	.00147	.00002	.08926	5.8452	.01247
#3	.00140	.00046	.00146	-.00039	.10076	5.8421	.01538
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	97.468	.24284	-.00017	16.469	.00160	.00565	-.00110
Stddev	.708	.00168	.00024	.085	.00042	.00514	.00107
%RSD	.72603	.69242	138.98	.51819	26.357	90.941	97.090
#1	98.238	.24440	-.00036	16.500	.00200	.00680	-.00161
#2	96.846	.24106	-.00025	16.372	.00163	.01013	-.00182
#3	97.320	.24306	.00010	16.534	.00116	.00004	.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: L1502103125 Acquired: 2/23/2015 17:31:22 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00168	-.00020	.46048	-.00419	3.3077	-.01598	-.00166
Stddev	.00260	.00456	.00285	.00078	.0152	.00136	.00065
%RSD	154.89	2222.5	.61929	18.673	.45850	8.5232	39.151
#1	.00035	.00307	.46239	-.00341	3.3102	-.01665	-.00182
#2	.00001	-.00541	.45720	-.00497	3.2914	-.01441	-.00094
#3	.00468	.00172	.46185	-.00418	3.3214	-.01688	-.00221
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00041	.02124	F -33.714
Stddev	.00057	.00009	13.175
%RSD	137.82	.41031	39.079
#1	-.00105	.02132	-20.461
#2	-.00026	.02124	-46.809
#3	.00007	.02115	-33.872
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10182.	13171.
Stddev	27.	95.
%RSD	.26089	.72120
#1	10195.	13076.
#2	10199.	13266.
#3	10151.	13171.

Approved: February 24, 2015

Sample Name: L1502103127 Acquired: 2/23/2015 17:34:56 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	.18173	.00020	.02985	.00535	.00056	180.69
Stddev	.00028	.00154	.00234	.00141	.00009	.00001	.05
%RSD	31.813	.84918	1166.6	4.7193	1.7066	2.6371	.02562
#1	.00120	.18077	.00272	.02865	.00535	.00056	180.64
#2	.00080	.18351	-.00191	.02951	.00525	.00054	180.70
#3	.00066	.18090	-.00021	.03140	.00544	.00057	180.73
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00124	.11693	.00163	.00052	2.2517	5.0933	.03398
Stddev	.00017	.00007	.00060	.00070	.0163	.0371	.00048
%RSD	13.933	.05930	36.962	136.38	.72447	.72878	1.4256
#1	.00140	.11700	.00229	.00103	2.2399	5.0602	.03420
#2	.00127	.11686	.00149	-.00029	2.2703	5.1334	.03343
#3	.00106	.11691	.00111	.00081	2.2449	5.0863	.03432
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	64.609	6.4541	-.00056	5.4171	.15876	F -.00515	.00191
Stddev	.171	.0078	.00015	.0065	.00164	.00680	.00093
%RSD	.26405	.12063	27.412	.12037	1.0309	131.98	48.787
#1	64.578	6.4467	-.00070	5.4101	.16033	-.01225	.00286
#2	64.794	6.4622	-.00039	5.4184	.15889	-.00451	.00189
#3	64.457	6.4534	-.00057	5.4230	.15707	.00130	.00099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 24, 2015

Sample Name: L1502103127 Acquired: 2/23/2015 17:34:56 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00272	.00328	2.5577	-.00363	2.4567	-.01178	-.00113
Stddev	.00070	.00127	.0175	.00039	.0040	.00112	.00162
%RSD	25.696	38.801	.68299	10.746	.16282	9.4802	142.91
#1	-.00312	.00422	2.5565	-.00407	2.4522	-.01062	-.00252
#2	-.00313	.00379	2.5757	-.00349	2.4583	-.01187	-.00152
#3	-.00191	.00183	2.5408	-.00333	2.4597	-.01285	.00064
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00141	.14998	F -5.0087
Stddev	.00050	.00085	12.413
%RSD	35.608	.56969	247.82
#1	-.00157	.14909	9.0818
#2	-.00181	.15079	-14.327
#3	-.00085	.15005	-9.7808
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10356.	13258.
Stddev	25.	77.
%RSD	.23984	.58038
#1	10329.	13252.
#2	10378.	13184.
#3	10361.	13338.

Approved: February 24, 2015

Sample Name: CCV Acquired: 2/23/2015 17:38:36 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41669	10.720	.42130	.52013	1.0398	.05148	10.415
Stddev	.00279	.094	.00146	.00060	.0045	.00026	.051
%RSD	.66954	.87467	.34594	.11557	.43621	.49813	.49394
#1	.41598	10.664	.42293	.51943	1.0346	.05119	10.365
#2	.41976	10.828	.42012	.52051	1.0428	.05164	10.411
#3	.41432	10.668	.42085	.52044	1.0420	.05162	10.468
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05248	.21108	.52570	.52689	4.0375	52.718	1.0413
Stddev	.00028	.00056	.00048	.00185	.0169	.230	.0055
%RSD	.52818	.26767	.09142	.35129	.41822	.43651	.52863
#1	.05278	.21164	.52589	.52868	4.0215	52.475	1.0365
#2	.05245	.21051	.52606	.52498	4.0552	52.746	1.0403
#3	.05222	.21110	.52515	.52700	4.0357	52.932	1.0473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.067	.53676	1.0239	52.238	.52063	10.365	.52032
Stddev	.051	.00353	.0048	.207	.00193	.049	.00269
%RSD	.50551	.65758	.46728	.39700	.37150	.47473	.51621
#1	10.061	.53394	1.0293	52.013	.52248	10.422	.52336
#2	10.019	.54072	1.0218	52.421	.52077	10.340	.51935
#3	10.120	.53563	1.0204	52.280	.51862	10.334	.51825
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 24, 2015

Sample Name: CCV Acquired: 2/23/2015 17:38:36 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2433	.42462	5.2470	1.0408	1.0289	1.0157	.52829
Stddev	.0024	.00288	.0201	.0047	.0048	.0086	.00272
%RSD	.19672	.67712	.38247	.45162	.46739	.85110	.51497
#1	1.2451	.42690	5.2676	1.0428	1.0234	1.0067	.53009
#2	1.2442	.42558	5.2459	1.0442	1.0318	1.0167	.52963
#3	1.2405	.42139	5.2275	1.0354	1.0316	1.0239	.52516
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0298	1.0372	F -12.707
Stddev	.0044	.0038	5.456
%RSD	.42372	.36323	42.938
#1	1.0251	1.0415	-18.586
#2	1.0337	1.0356	-7.8059
#3	1.0307	1.0346	-11.729
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10895.	13407.
Stddev	8.	34.
%RSD	.07267	.25164
#1	10889.	13423.
#2	10904.	13368.
#3	10892.	13430.

Approved: February 24, 2015

Sample Name: CCB Acquired: 2/23/2015 17:41:51 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00034	.00211	-.00113	.00136	.00007	-.00003	.00907
Stddev	.00028	.00191	.00213	.00079	.00009	.00002	.01132
%RSD	83.783	90.628	188.15	58.080	126.09	86.277	124.81
#1	-.00011	.00335	-.00188	.00167	.00010	-.00003	.01783
#2	-.00066	-.00009	.00127	.00194	.00014	-.00005	.01308
#3	-.00026	.00307	-.00280	.00046	-.00003	.00000	-.00371
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00004	-.00006	-.00007	.00492	-.00500	-.00060
Stddev	.00012	.00014	.00015	.00013	.00245	.02241	.00133
%RSD	104.15	339.20	240.45	177.34	49.725	448.67	220.87
#1	.00010	.00020	-.00020	-.00016	.00541	.01448	-.00161
#2	.00000	-.00005	.00009	-.00014	.00708	-.02950	-.00110
#3	.00025	-.00002	-.00008	.00008	.00226	.00003	.00090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02141	.00002	.00413	.02914	-.00107	-.00094	.00044
Stddev	.01316	.00003	.00008	.00322	.00066	.00252	.00197
%RSD	61.491	227.32	1.9601	11.059	61.456	267.86	448.10
#1	.00866	.00000	.00408	.02605	-.00138	-.00316	.00142
#2	.03495	-.00001	.00409	.02890	-.00152	.00180	-.00183
#3	.02060	.00006	.00423	.03248	-.00032	-.00145	.00173
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: CCB Acquired: 2/23/2015 17:41:51 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00054	.00052	.00060	-.00031	.00011	.00055	.00035
Stddev	.00153	.00306	.00085	.00038	.00006	.00165	.00178
%RSD	285.23	583.95	140.37	121.89	56.457	297.36	501.71
#1	.00039	.00363	.00027	-.00075	.00015	.00167	-.00147
#2	-.00230	.00044	-.00003	-.00011	.00004	.00133	.00208
#3	.00030	-.00250	.00156	-.00007	.00014	-.00134	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00023	-.00005	F -2.2947
Stddev	.00030	.00015	2.2040
%RSD	131.87	318.40	96.049
#1	-.00014	-.00006	-4.8124
#2	.00002	-.00020	-1.3570
#3	-.00057	.00011	-.71457
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10833.	13208.
Stddev	10.	43.
%RSD	.09441	.32594
#1	10833.	13257.
#2	10822.	13185.
#3	10843.	13181.

Approved: February 24, 2015

Sample Name: L1502103129 Acquired: 2/23/2015 17:45:32 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00203	5.8727	.00145	.03337	.00472	.01186	269.33
Stddev	.00007	.0112	.00192	.00036	.00017	.00005	.60
%RSD	3.2567	.18993	132.68	1.0686	3.6992	.44011	.22246
#1	.00197	5.8599	.00363	.03309	.00460	.01180	268.64
#2	.00203	5.8804	.00003	.03377	.00492	.01188	269.60
#3	.00210	5.8777	.00068	.03324	.00463	.01189	269.74
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00188	.45854	.00349	.00959	25.877	6.9167	.08677
Stddev	.00013	.00021	.00017	.00048	.088	.0461	.00244
%RSD	6.7385	.04670	4.8318	5.0042	.34119	.66571	2.8145
#1	.00183	.45877	.00342	.00938	25.783	6.9284	.08954
#2	.00179	.45835	.00337	.00925	25.959	6.8659	.08583
#3	.00203	.45851	.00368	.01014	25.888	6.9558	.08493
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	102.62	12.068	-.00046	7.3727	.64255	F -.01028	.00426
Stddev	.07	.063	.00015	.0371	.00487	.00203	.00234
%RSD	.06736	.52190	33.539	.50337	.75806	19.718	54.977
#1	102.67	12.136	-.00056	7.3376	.64075	-.00990	.00693
#2	102.54	12.058	-.00054	7.4115	.64806	-.00848	.00256
#3	102.66	12.011	-.00028	7.3689	.63883	-.01248	.00328
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 24, 2015

Sample Name: L1502103129 Acquired: 2/23/2015 17:45:32 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00574**	**.00795**	**7.0904**	**-.00348**	**2.4082**	**-.01376**	**.00192**
Stddev	.00183	.00156	.0133	.00059	.0062	.00188	.00331
%RSD	31.975	19.634	.18789	16.993	.25734	13.649	172.00
#1	-.00434	.00641	7.1048	-.00296	2.4012	-.01183	.00197
#2	-.00506	.00953	7.0879	-.00413	2.4129	-.01558	.00521
#3	-.00781	.00792	7.0785	-.00336	2.4105	-.01387	-.00141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00243**	**1.0801**	F **-27.285**
Stddev	.00039	.0031	24.785
%RSD	16.082	.28566	90.840
#1	-.00272	1.0767	-16.688
#2	-.00198	1.0828	-9.5593
#3	-.00257	1.0806	-55.607
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10366.**	**13690.**
Stddev	6.	46.
%RSD	.05383	.33683
#1	10364.	13684.
#2	10362.	13647.
#3	10373.	13739.

Approved: February 24, 2015

Sample Name: L1502103131 Acquired: 2/23/2015 17:49:07 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00230	2.9805	.00128	.02942	.00456	.00672	233.04
Stddev	.00031	.0034	.00014	.00146	.00014	.00003	.90
%RSD	13.360	.11334	10.964	4.9531	3.0699	.50751	.38671
#1	.00250	2.9838	.00134	.02880	.00459	.00676	233.91
#2	.00245	2.9806	.00112	.02838	.00469	.00669	233.09
#3	.00195	2.9770	.00139	.03109	.00441	.00671	232.11
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00200	.41511	.00313	.00254	18.691	7.3273	.06085
Stddev	.00012	.00831	.00068	.00066	.126	.0389	.00086
%RSD	6.1365	2.0015	21.771	26.069	.67193	.53156	1.4114
#1	.00188	.41437	.00345	.00279	18.754	7.3687	.06086
#2	.00199	.40720	.00235	.00179	18.773	7.3217	.05998
#3	.00213	.42377	.00360	.00304	18.547	7.2914	.06169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	97.206	12.443	-.00031	7.1826	.56400	F -.00886	.00306
Stddev	.390	.051	.00014	.0313	.00511	.00460	.00169
%RSD	.40114	.40880	44.601	.43529	.90663	51.905	55.220
#1	97.602	12.497	-.00046	7.2074	.56461	-.00787	.00496
#2	97.194	12.436	-.00020	7.1929	.55862	-.00483	.00173
#3	96.823	12.395	-.00027	7.1475	.56879	-.01387	.00248
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 24, 2015

Sample Name: L1502103131 Acquired: 2/23/2015 17:49:07 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00657	.00814	5.1588	-.00343	2.0204	-.01159	.00287
Stddev	.00088	.00467	.0453	.00074	.0073	.00141	.00045
%RSD	13.437	57.404	.87744	21.545	.36317	12.131	15.722
#1	-.00757	.00295	5.1805	-.00258	2.0278	-.01199	.00326
#2	-.00626	.00946	5.1068	-.00388	2.0203	-.01003	.00238
#3	-.00589	.01201	5.1892	-.00383	2.0131	-.01276	.00298
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00240	.84653	F -19.407
Stddev	.00001	.00762	4.248
%RSD	.22568	.90010	21.892
#1	-.00240	.85021	-18.656
#2	-.00240	.83777	-15.584
#3	-.00240	.85162	-23.981
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10416.	13756.
Stddev	78.	61.
%RSD	.74500	.44210
#1	10362.	13709.
#2	10505.	13734.
#3	10382.	13825.

Approved: February 24, 2015

Sample Name: L1502104001 Acquired: 2/23/2015 17:52:44 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.02654	-.00120	.00995	.04010	-.00008	79.078	.00108
Stddev	.00039	.00268	.00110	.00201	.00023	.00002	.357	.00009
%RSD	665.56	10.101	91.750	20.193	.56145	20.870	.45144	7.8419
#1	.00046	.02746	-.00130	.01177	.04018	-.00006	78.738	.00106
#2	.00005	.02865	-.00224	.00779	.04028	-.00009	79.046	.00101
#3	-.00033	.02353	-.00005	.01028	.03985	-.00009	79.450	.00118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00075	.00003	.26594	4.4061	.01985	50.959	.12912
Stddev	.00009	.00018	.00059	.00492	.0501	.00094	.412	.00043
%RSD	75.402	24.575	1892.8	1.8496	1.1377	4.7425	.80906	.33596
#1	.00002	.00096	-.00039	.26147	4.3731	.01892	50.486	.12871
#2	.00013	.00066	-.00023	.26515	4.4638	.02081	51.148	.12958
#3	.00020	.00063	.00071	.27121	4.3813	.01982	51.243	.12907
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	10.069	.00157	-.00241	.00016	-.00049	.00260	2.4538
Stddev	.00018	.035	.00044	.00547	.00104	.00049	.00254	.0156
%RSD	346.28	.35228	27.880	227.04	636.24	100.41	97.536	.63629
#1	-.00014	10.046	.00204	-.00494	.00130	-.00006	.00045	2.4367
#2	.00016	10.051	.00117	.00387	-.00075	-.00103	.00540	2.4673
#3	-.00017	10.110	.00150	-.00616	-.00005	-.00038	.00196	2.4574
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 24, 2015

Sample Name: L1502104001 Acquired: 2/23/2015 17:52:44 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00392**	**1.2947**	**-.00513**	**-.00021**	**-.00056**	**.00180**	**4.8561**
Stddev	.00026	.0035	.00276	.00052	.00020	.00018	8.6447
%RSD	6.5198	.27244	53.811	246.10	36.266	10.171	178.01
#1	-.00395	1.2913	-.00325	-.00001	-.00036	.00160	14.347
#2	-.00365	1.2945	-.00830	.00017	-.00054	.00194	2.7883
#3	-.00415	1.2984	-.00384	-.00080	-.00077	.00188	-2.5670
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10538.**	**13653.**
Stddev	2.	86.
%RSD	.02363	.62734
#1	10540.	13736.
#2	10535.	13565.
#3	10539.	13659.

Approved: February 24, 2015

Sample Name: L1502104003 Acquired: 2/23/2015 17:56:16 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.03806	-.00101	.01068	.03345	-.00009	36.122
Stddev	.00020	.00129	.00148	.00093	.00020	.00004	.036
%RSD	66.280	3.3878	146.55	8.7192	.58407	43.409	.09922
#1	.00054	.03754	-.00205	.00978	.03349	-.00008	36.106
#2	.00026	.03953	-.00165	.01062	.03363	-.00006	36.163
#3	.00014	.03711	.00068	.01163	.03324	-.00014	36.097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	.00008	.00061	-.00023	.18773	3.2661	.01683
Stddev	.00007	.00006	.00038	.00033	.00528	.0248	.00065
%RSD	12.711	74.693	63.059	146.32	2.8099	.75962	3.8329
#1	.00048	.00003	.00017	.00013	.19382	3.2376	.01719
#2	.00061	.00006	.00085	-.00029	.18463	3.2834	.01608
#3	.00049	.00015	.00082	-.00052	.18474	3.2771	.01721
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	20.689	.12213	.00015	12.683	-.00023	F -.00790	-.00015
Stddev	.076	.00068	.00015	.064	.00108	.00429	.00100
%RSD	.36715	.55593	102.04	.50778	469.68	54.307	679.68
#1	20.602	.12139	-.00002	12.711	-.00002	-.00296	.00046
#2	20.739	.12272	.00022	12.730	-.00140	-.01002	.00040
#3	20.727	.12227	.00026	12.610	.00073	-.01072	-.00130
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 24, 2015

Sample Name: L1502104003 Acquired: 2/23/2015 17:56:16 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00107**	**.00046**	**2.4511**	**-.00419**	**1.0701**	**-.00109**	**-.00151**
Stddev	.00047	.00028	.0195	.00085	.0029	.00075	.00039
%RSD	43.471	60.755	.79540	20.279	.27273	68.488	25.935
#1	-.00054	.00065	2.4702	-.00486	1.0711	-.00191	-.00110
#2	-.00130	.00014	2.4520	-.00324	1.0725	-.00093	-.00155
#3	-.00139	.00058	2.4312	-.00447	1.0669	-.00044	-.00187
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00018**	**.00224**	F **-.64326**
Stddev	.00023	.00019	14.653
%RSD	130.95	8.3359	2277.9
#1	-.00023	.00202	1.5962
#2	-.00038	.00235	12.761
#3	.00008	.00234	-16.287
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10710.**	**13767.**
Stddev	1.	68.
%RSD	.01106	.49398
#1	10711.	13832.
#2	10709.	13696.
#3	10711.	13773.

Approved: February 24, 2015

Sample Name: L1502104005 Acquired: 2/23/2015 17:59:49 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	.11799	-.00124	.00738	.05128	-.00010	23.814
Stddev	.00040	.00408	.00211	.00038	.00007	.00003	.023
%RSD	87.849	3.4554	169.55	5.1574	.13074	28.122	.09601
#1	.00048	.11780	-.00049	.00757	.05136	-.00007	23.789
#2	.00086	.12216	.00038	.00764	.05125	-.00009	23.821
#3	.00005	.11401	-.00362	.00695	.05123	-.00012	23.833
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	-.00010	.00072	.00045	.19626	2.4360	.00450
Stddev	.00018	.00022	.00063	.00036	.00187	.0369	.00185
%RSD	37.697	216.35	87.217	79.231	.95289	1.5132	41.097
#1	.00029	-.00024	.00142	.00085	.19824	2.4055	.00366
#2	.00064	-.00021	.00018	.00014	.19452	2.4770	.00322
#3	.00048	.00015	.00057	.00037	.19601	2.4256	.00662
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	13.519	.02689	-.00013	4.8592	.00041	F -.00433	.00134
Stddev	.069	.00021	.00025	.0145	.00040	.00372	.00185
%RSD	.50845	.76833	184.84	.29858	95.463	85.851	138.49
#1	13.482	.02676	-.00012	4.8446	-.00004	-.00574	.00275
#2	13.477	.02713	.00010	4.8736	.00057	-.00714	-.00076
#3	13.598	.02679	-.00039	4.8595	.00071	-.00011	.00202
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 24, 2015

Sample Name: L1502104005 Acquired: 2/23/2015 17:59:49 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00389	2.5923	-.00388	.40325	.00308	.00013
Stddev	.00334	.00320	.0046	.00061	.00047	.00199	.00191
%RSD	1805.8	82.363	.17869	15.637	.11574	64.630	1443.3
#1	-.00162	.00757	2.5967	-.00450	.40327	.00448	.00210
#2	.00404	.00229	2.5928	-.00329	.40371	.00396	-.00171
#3	-.00187	.00180	2.5875	-.00385	.40277	.00080	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00005	.00223	7.5665
Stddev	.00024	.00011	11.756
%RSD	473.57	5.0540	155.37
#1	.00015	.00236	-5.5794
#2	.00022	.00215	17.071
#3	-.00022	.00218	11.208
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10814.	13744.
Stddev	14.	39.
%RSD	.12800	.28656
#1	10803.	13781.
#2	10809.	13703.
#3	10829.	13749.

Approved: February 24, 2015

Sample Name: L1502104007 Acquired: 2/23/2015 18:03:21 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	.05627	-.00120	.00655	.04229	-.00007	34.059
Stddev	.00019	.00356	.00057	.00055	.00004	.00003	.034
%RSD	30.896	6.3320	47.431	8.3744	.09721	38.896	.10121
#1	.00084	.05886	-.00145	.00713	.04230	-.00005	34.021
#2	.00058	.05775	-.00160	.00649	.04224	-.00005	34.088
#3	.00047	.05221	-.00055	.00604	.04232	-.00010	34.069
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	-.00012	.00110	.00049	.18505	2.7076	.00819
Stddev	.00013	.00004	.00024	.00064	.00151	.0090	.00054
%RSD	24.399	33.359	21.899	130.13	.81606	.33348	6.5819
#1	.00041	-.00014	.00125	.00104	.18676	2.7166	.00867
#2	.00052	-.00015	.00124	.00066	.18391	2.7075	.00761
#3	.00067	-.00008	.00082	-.00021	.18447	2.6986	.00829
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	18.179	.07790	.00001	3.4298	.00058	F -.00413	.00157
Stddev	.127	.00062	.00021	.0124	.00055	.00351	.00182
%RSD	.69853	.80060	1603.6	.35998	93.268	85.009	116.10
#1	18.134	.07767	-.00015	3.4439	.00006	-.00679	-.00039
#2	18.322	.07860	-.00006	3.4208	.00115	-.00544	.00322
#3	18.080	.07742	.00025	3.4246	.00054	-.00015	.00187
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 24, 2015

Sample Name: L1502104007 Acquired: 2/23/2015 18:03:21 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00085	.00017	2.6093	-.00375	.51586	-.00002	-.00225
Stddev	.00124	.00079	.0151	.00016	.00091	.00065	.00021
%RSD	145.36	474.51	.57817	4.2843	.17623	3790.5	9.1945
#1	.00058	-.00075	2.6153	-.00359	.51678	.00067	-.00213
#2	-.00150	.00063	2.6206	-.00375	.51496	-.00010	-.00213
#3	-.00163	.00061	2.5922	-.00392	.51585	-.00063	-.00249
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00020	.02118	2.0674
Stddev	.00030	.00015	17.769
%RSD	154.18	.70970	859.53
#1	-.00030	.02102	-10.282
#2	-.00043	.02132	-5.9486
#3	.00015	.02119	22.433
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10785.	13637.
Stddev	17.	57.
%RSD	.15827	.41959
#1	10774.	13671.
#2	10804.	13571.
#3	10776.	13669.

Approved: February 24, 2015

Sample Name: CCV Acquired: 2/23/2015 18:06:58 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.42140	10.704	.41736	.52254	1.0430	.05166	10.439
Stddev	.00388	.034	.00223	.00370	.0002	.00011	.014
%RSD	.92188	.32024	.53520	.70829	.01579	.20759	.13476
#1	.42125	10.703	.41993	.52541	1.0428	.05155	10.432
#2	.41759	10.670	.41625	.51836	1.0431	.05167	10.430
#3	.42535	10.739	.41590	.52384	1.0430	.05176	10.456
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05210	.21038	.52468	.52635	4.0227	52.928	1.0531
Stddev	.00010	.00015	.00032	.00187	.0126	.085	.0020
%RSD	.19060	.07072	.06011	.35527	.31256	.16140	.18911
#1	.05210	.21053	.52467	.52717	4.0331	52.949	1.0532
#2	.05200	.21038	.52438	.52768	4.0087	52.834	1.0510
#3	.05220	.21023	.52501	.52421	4.0262	53.001	1.0550
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.011	.53222	1.0259	52.417	.51814	10.375	.51974
Stddev	.086	.00166	.0060	.051	.00118	.017	.00035
%RSD	.85859	.31119	.58388	.09710	.22805	.16524	.06759
#1	10.024	.53346	1.0190	52.457	.51942	10.388	.51958
#2	9.9197	.53034	1.0292	52.433	.51792	10.355	.51950
#3	10.090	.53286	1.0295	52.360	.51709	10.380	.52014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 24, 2015

Sample Name: CCV Acquired: 2/23/2015 18:06:58 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2497**	**.42484**	**5.2616**	**1.0489**	**1.0342**	**1.0191**	**.53682**
Stddev	.0033	.00359	.0715	.0011	.0005	.0012	.00477
%RSD	.26655	.84396	1.3581	.10860	.04942	.11515	.88884
#1	1.2489	.42435	5.1823	1.0502	1.0337	1.0178	.53890
#2	1.2534	.42153	5.3210	1.0481	1.0340	1.0198	.54020
#3	1.2469	.42865	5.2817	1.0484	1.0347	1.0198	.53136
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0375**	**1.0324**	F **-4.7438**
Stddev	.0048	.0039	7.6700
%RSD	.46414	.37790	161.68
#1	1.0399	1.0316	3.4284
#2	1.0320	1.0290	-5.8735
#3	1.0407	1.0367	-11.786
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10950.**	**13625.**
Stddev	20.	40.
%RSD	.18706	.29446
#1	10967.	13670.
#2	10957.	13611.
#3	10927.	13593.

Approved: February 24, 2015

Sample Name: CCB Acquired: 2/23/2015 18:10:13 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.00377	.00114	.00151	-.00002	-.00003	.00456
Stddev	.00014	.00081	.00144	.00050	.00013	.00002	.00721
%RSD	158.07	21.533	125.75	32.844	677.78	58.591	158.07
#1	.00007	.00419	.00146	.00098	.00003	-.00002	.00051
#2	-.00020	.00284	.00240	.00158	.00007	-.00004	.00029
#3	-.00014	.00429	-.00043	.00197	-.00016	-.00001	.01289
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	-.00008	.00008	.00036	.00149	.01342	-.00224
Stddev	.00008	.00009	.00055	.00015	.00238	.02807	.00063
%RSD	89.344	106.69	666.31	42.246	159.13	209.18	28.200
#1	.00018	.00001	.00061	.00053	.00317	.02767	-.00190
#2	.00009	-.00016	.00012	.00023	-.00123	.03151	-.00186
#3	.00001	-.00010	-.00049	.00032	.00254	-.01892	-.00297
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02337	.00007	.00421	.02075	-.00107	-.00220	-.00119
Stddev	.03338	.00008	.00047	.00996	.00030	.00391	.00112
%RSD	142.82	110.97	11.098	47.976	28.127	177.87	94.021
#1	.05717	.00013	.00367	.02991	-.00075	-.00667	-.00244
#2	-.00958	-.00002	.00451	.02219	-.00135	.00062	-.00030
#3	.02254	.00012	.00445	.01015	-.00111	-.00055	-.00082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 24, 2015

Sample Name: CCB Acquired: 2/23/2015 18:10:13 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v285) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00116**	**.00243**	**.00097**	**-.00033**	**.00013**	**.00161**	**.00267**
Stddev	.00274	.00349	.00302	.00032	.00008	.00028	.00217
%RSD	236.61	143.88	310.53	96.218	57.414	17.706	81.471
#1	-.00142	.00497	-.00009	-.00070	.00005	.00129	.00339
#2	.00404	.00387	-.00137	-.00014	.00014	.00185	.00022
#3	.00086	-.00156	.00439	-.00016	.00020	.00168	.00438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00015**	**-.00002**	F **-14.430**
Stddev	.00026	.00016	12.169
%RSD	170.74	795.09	84.330
#1	-.00044	-.00020	-14.774
#2	.00002	.00011	-2.0928
#3	-.00002	.00004	-26.423
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10838.**	**13350.**
Stddev	26.	38.
%RSD	.24351	.28328
#1	10808.	13390.
#2	10858.	13315.
#3	10848.	13343.

Approved: February 24, 2015

2.3.2 Metals ICP-MS Data

2.3.2.1 Summary Data

Microbac Laboratories
Case Narrative

Login Number: L15020971
Department: Metals
Analyst: Brendan Torrence

METHOD

Preparation: SW-846 3015

Analysis: SW-846 6020

HOLDING TIMES

Sample Preparation: All holding times were met.

Sample Analysis: All holding times were met.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Interference Check Standards: All acceptance criteria were met.

Continuing Calibration: All acceptance criteria were met.

Continuing Calibration Blank: All acceptance criteria were met.

Low Level Check: All acceptance criteria were met.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: All acceptance criteria were met.

Serial Dilution/Post Digestion Spikes: WG513055 - All acceptance criteria were met.

Matrix Spikes: All acceptance criteria were met.

SAMPLES

Samples: All acceptance criteria were met.

Narrative ID: 95770
Approved By: Brendan Torrence

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW24FF-021815	**Prep Method:**	3015	**Prep Date:**	02/20/2015 08:28
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	02/23/2015 12:32
Workgroup #:	WG513055	**Analyst:**	BKT	**Run Date:**	02/23/2015 20:25
Collect Date:	02/18/2015 08:25	**Dilution:**	1	**File ID:**	NI.022315.202553
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0115		0.00400	0.00200	0.00100

Certificate of Analysis

Sample #:	L15020971-09	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW23FF-021815	**Prep Method:**	3015	**Prep Date:**	02/20/2015 08:28
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	02/23/2015 12:32
Workgroup #:	WG513055	**Analyst:**	BKT	**Run Date:**	02/23/2015 20:32
Collect Date:	02/18/2015 09:40	**Dilution:**	1	**File ID:**	NI.022315.203215
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0939		0.00400	0.00200	0.00100

Certificate of Analysis

Sample #:	L15020971-11	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW12FF-021815	**Prep Method:**	3015	**Prep Date:**	02/20/2015 08:28
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	02/23/2015 12:32
Workgroup #:	WG513055	**Analyst:**	BKT	**Run Date:**	02/23/2015 20:45
Collect Date:	02/18/2015 11:05	**Dilution:**	1	**File ID:**	NI.022315.204504
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.108		0.00400	0.00200	0.00100

Certificate of Analysis

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15020971-13	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WWW25FF-021815	**Prep Method:**	3015	**Prep Date:**	02/20/2015 08:28
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	02/23/2015 12:32
Workgroup #:	WG513055	**Analyst:**	BKT	**Run Date:**	02/23/2015 20:51
Collect Date:	02/18/2015 13:30	**Dilution:**	1	**File ID:**	NI.022315.205127
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0262		0.00400	0.00200	0.00100

Certificate of Analysis

Sample #:	L15020971-15	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW18FF-021815	**Prep Method:**	3015	**Prep Date:**	02/20/2015 08:28
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	02/23/2015 12:32
Workgroup #:	WG513055	**Analyst:**	BKT	**Run Date:**	02/23/2015 20:57
Collect Date:	02/18/2015 14:45	**Dilution:**	1	**File ID:**	NI.022315.205750
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0557		0.00400	0.00200	0.00100

2.3.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer NexION 300X

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	100
Vi = Initial volume	40
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/L)	0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	200
Vi = Initial volume	0.5
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/kg)	40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	40
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	50

50 ug/kg = 0.050 mg/kg

Perkin Elmer NexION ICP/MS

STANDARDS KEY

QC Std 1 - ICV
QC Std 2 - ICB
QC Std 3 - LLICV
QC Std 4 - ICSA
QC Std 5 - ICSAB
QC Std 6 - CCV
QC Std 7 - CCB
QC Std 8 - LLCCV

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.00005	0.05	0.1
Sb	10	0	0.00005	0.05	0.1
As	10	0	0.00005	0.05	0.1
Ba	10	0	0.00005	0.05	0.1
Be	10	0	0.00005	0.05	0.1
Ca	1000	0	0.005	5	10
Cd	10	0	0.0005	0.05	0.1
Cr	10	0	0.0005	0.05	0.1
Co	10	0	0.0005	0.05	0.1
Cu	10	0	0.0005	0.05	0.1
Fe	1000	0	0.005	5	10
Pb	10	0	0.00005	0.05	0.1
Mg	1000	0	0.005	5	10
Mn	10	0	0.00005	0.05	0.1
Ni	10	0	0.00005	0.05	0.1
K	1000	0	0.005	5	10
Se	10	0	0.00005	0.05	0.1
Ag	10	0	0.00005	0.05	0.1
Na	1000	0	0.005	5	10
Tl	10	0	0.00005	0.05	0.1
V	10	0	0.00005	0.05	0.1
U	1000	0	0.00005	0.05	0.1
Zn	10	0	0.00005	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG512947
Analyst: VC
Spike Analyst: VC
Run Date: 02/20/2015 08:28
Method: 3015
Balance: BAL016
Instrument: MW-3
Instrument Start: 02/20/2015 08:33

SOP: ME407 Revison 16
Spike Solution: STD68313
Spike Witness: ERP
HNO3 Lot #: COA18078
40 & 50 ML. DIGESTION TU COA17948
MS Filters- fisher-Lot# RRGT28963

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG512947-02	BLANK	1	20 mL	50 mL	183.969 g	183.966 g		
2	WG512947-03	LCS	1	20 mL	50 mL	183.171 g	183.171 g	.25 mL	
3	L15020923-01	SAMP	2	20 mL	50 mL	183.732 g	183.734 g		02/25/15
4	L15020923-02	SAMP	2	20 mL	50 mL	183.101 g	183.098 g		02/25/15
5	L15020923-05	SAMP	2	20 mL	50 mL	181.342 g	181.344 g		02/25/15
6	L15020923-06	SAMP	2	20 mL	50 mL	182.351 g	182.355 g		02/25/15
7	WG512947-01	REF	2	20 mL	50 mL	180.658 g	180.659 g		
8	L15020923-07	SAMP	2	20 mL	50 mL	180.658 g	180.659 g		02/25/15
9	L15020923-08	SAMP	2	20 mL	50 mL	182.617 g	182.608 g		02/25/15
10	L15020923-09	SAMP	2	20 mL	50 mL	181.906 g	181.915 g		02/25/15
11	L15020923-10	SAMP	2	20 mL	50 mL	182.172 g	182.19 g		02/25/15
12	L15020971-07	SAMP	1	20 mL	50 mL	182.729 g	182.725 g		03/02/15
13	L15020971-09	SAMP	1	20 mL	50 mL	182.114 g	182.124 g		03/02/15
14	L15020971-11	SAMP	1	20 mL	50 mL	183.623 g	183.612 g		03/02/15
15	L15020971-13	SAMP	1	20 mL	50 mL	182.773 g	182.79 g		03/02/15
16	L15020971-15	SAMP	1	20 mL	50 mL	182.29 g	182.325 g		03/02/15
17	WG512947-04	DUP	1	20 mL	50 mL	184.4 g	184.411 g		
18	WG512947-05	MS	1	20 mL	50 mL	182.968 g	182.949 g	.25 mL	
19	WG512947-06	MSD	1	20 mL	50 mL	184.17 g	184.149 g	.25 mL	

L15020923-01	ph adj

Analyst: Vicki Collins

Reviewer: Erin Potter

MW_DIG - Modified 09/30/2009
PDF ID: 4030966
Report generated: 02/20/2015 09:40

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 022315B.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 1
Maintenance Log ID:

Calibration Std: STD68814 ICV Std: STD68816 Post Spike: STD66295
ICSA: STD68812 ICSAB: STD67979 Int. Std: RGT31676
CCV: STD68682 LLCCV: STD68182 Tuning Sol : STD68643
Stannous : Hydroxylamine :

Workgroups: 512868,512376,512869,513054,513055

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.022315.121940	Blank	Blank		1		02/23/15 12:19
2	NI.022315.122252	WG513172-01	Calibration Point		1		02/23/15 12:22
3	NI.022315.122603	WG513172-02	Calibration Point		1		02/23/15 12:26
4	NI.022315.122915	WG513172-03	Calibration Point		1		02/23/15 12:29
5	NI.022315.123226	WG513172-04	Calibration Point		1		02/23/15 12:32
6	NI.022315.123540	WG513172-05	Initial Calibration Verification		1		02/23/15 12:35
7	NI.022315.123853	WG513172-06	Initial Calib Blank		1		02/23/15 12:38
8	NI.022315.124205	WG513172-07	Low Level Initial Calibration V		1		02/23/15 12:42
9	NI.022315.124517	WG513172-08	Interference Check		1		02/23/15 12:45
10	NI.022315.124828	WG513172-09	Interference Check		1		02/23/15 12:48
11	NI.022315.125141	WG513172-10	CCV		1		02/23/15 12:51
12	NI.022315.125453	WG513172-11	CCB		1		02/23/15 12:54
13	NI.022315.125805	L15020792-01	AWV 44 BAGS 2-TRAILERS	5/50	50		02/23/15 12:58
14	NI.022315.130116	+10	+10		50		02/23/15 13:01
15	NI.022315.130427	+20	+20		50		02/23/15 13:04
16	NI.022315.130739	+30	+30		50		02/23/15 13:07
17	NI.022315.131052	WG513172-12	CCV		1		02/23/15 13:10
18	NI.022315.131404	WG513172-13	CCB		1		02/23/15 13:14
19	NI.022315.135953	WG512325-02	Method/Prep Blank	20/50	1		02/23/15 13:59
20	NI.022315.140304	WG512325-03	Laboratory Control S	20/50	1		02/23/15 14:03
21	NI.022315.140616	L15020743-01	A05-MW09D-BLINE	20/50	1		02/23/15 14:06
22	NI.022315.140928	L15020743-02	A05-MW09S-BLINE	20/50	1		02/23/15 14:09
23	NI.022315.141239	L15020663-02	A05-MW08D-BLINE	20/50	1		02/23/15 14:12
24	NI.022315.141552	L15020663-03	A05-MW10D-BLINE	20/50	1		02/23/15 14:15
25	NI.022315.141903	L15020663-04	A05-MW10S-BLINE	20/50	1		02/23/15 14:19
26	NI.022315.142215	L15020663-05	A05TM01-BLINE	20/50	1		02/23/15 14:22
27	NI.022315.142526	WG512376-05	Post Digestion Spike		1	L15020663-05	02/23/15 14:25
28	NI.022315.142838	WG512376-06	Serial Dilution		5	L15020663-05	02/23/15 14:28
29	NI.022315.143151	WG513172-14	CCV		1		02/23/15 14:31
30	NI.022315.143502	WG513172-15	CCB		1		02/23/15 14:35
31	NI.022315.143814	WG512325-01	Reference Sample		1	L15020719-06	02/23/15 14:38
32	NI.022315.144125	WG512325-05	Matrix Spike	20/50	1	L15020719-06	02/23/15 14:41
33	NI.022315.144437	WG512325-06	Matrix Spike Duplica	20/50	1	L15020719-06	02/23/15 14:44
34	NI.022315.144750	WG513172-16	CCV		1		02/23/15 14:47

Page: 1 Approved: February 24, 2015

Maren Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 022315B.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 1
Maintenance Log ID:

Calibration Std: STD68814 ICV Std: STD68816 Post Spike: STD66295
ICSA: STD68812 ICSAB: STD67979 Int. Std: RGT31676
CCV: STD68682 LLCCV: STD68182 Tuning Sol : STD68643
Stannous : Hydroxylamine :

Workgroups: 512868,512376,512869,513054,513055

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.022315.145101	WG513172-17	CCB		1		02/23/15 14:51
36	NI.022315.145842	WG512792-02	Method/Prep Blank	20/50	1		02/23/15 14:58
37	NI.022315.150153	WG512792-03	Laboratory Control S	20/50	1		02/23/15 15:01
38	NI.022315.150505	WG512792-01	Reference Sample		1	L15020718-10	02/23/15 15:05
39	NI.022315.150817	WG512792-06	Matrix Spike	20/50	1	L15020718-10	02/23/15 15:08
40	NI.022315.151128	WG512792-07	Matrix Spike Duplica	20/50	1	L15020718-10	02/23/15 15:11
41	NI.022315.151440	L15011662-06	QC-500	20/50	25		02/23/15 15:14
42	NI.022315.151752	WG512869-04	Serial Dilution		125	L15011662-06	02/23/15 15:17
43	NI.022315.152104	WG513172-18	CCV		1		02/23/15 15:21
44	NI.022315.152415	WG513172-19	CCB		1		02/23/15 15:24
45	NI.022315.152728	L15020718-04	NP0115-MW-17B-Z	20/50	1		02/23/15 15:27
46	NI.022315.153039	L15020718-06	NP0115-MW-18B-Z	20/50	1		02/23/15 15:30
47	NI.022315.153350	L15020718-08	NP0115-MW-19B-Z	20/50	1		02/23/15 15:33
48	NI.022315.153702	L15020718-12	EB-021115-Z	20/50	1		02/23/15 15:37
49	NI.022315.154013	L15020873-01	5020833-01	20/50	50		02/23/15 15:40
50	NI.022315.154325	L15020879-02	5020843-02	20/50	50		02/23/15 15:43
51	NI.022315.154636	L15020879-03	5020843-03	20/50	50		02/23/15 15:46
52	NI.022315.154949	WG513172-20	CCV		1		02/23/15 15:49
53	NI.022315.155301	WG513172-21	CCB		1		02/23/15 15:53
54	NI.022315.175137	WG513172-22	CCV		1		02/23/15 17:51
55	NI.022315.180949	WG513172-23	CCB		1		02/23/15 18:09
56	NI.022315.183008	WG512983-02	Method/Prep Blank	5/50	50		02/23/15 18:30
57	NI.022315.183319	WG512983-03	Laboratory Control S	5/50	50		02/23/15 18:33
58	NI.022315.183630	WG512825-01	Fluid Blank 1		50		02/23/15 18:36
59	NI.022315.183942	WG512983-01	Reference Sample		50	L15020910-01	02/23/15 18:39
60	NI.022315.184254	WG512983-04	Matrix Spike	5/50	50	L15020910-01	02/23/15 18:42
61	NI.022315.184605	WG512983-05	Matrix Spike Duplica	5/50	50	L15020910-01	02/23/15 18:46
62	NI.022315.184916	L15020938-01	ALAN 8 BAGS	5/50	50		02/23/15 18:49
63	NI.022315.185229	L15020939-01	RAVENSWOOD 11 BAGS	5/50	50		02/23/15 18:52
64	NI.022315.185540	WG513054-01	Post Digestion Spike		50	L15020939-01	02/23/15 18:55
65	NI.022315.190913	WG513054-02	Serial Dilution		250	L15020939-01	02/23/15 19:09
66	NI.022315.191226	WG513172-24	CCV		1		02/23/15 19:12
67	NI.022315.191538	WG513172-25	CCB		1		02/23/15 19:15
68	NI.022315.191850	L15020940-01	AWV 13 BAGS	5/50	50		02/23/15 19:18

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Maren Berry

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 022315B.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 1
Maintenance Log ID:

Calibration Std: STD68814 ICV Std: STD68816 Post Spike: STD66295
ICSA: STD68812 ICSAB: STD67979 Int. Std: RGT31676
CCV: STD68682 LLCCV: STD68182 Tuning Sol : STD68643
Stannous : Hydroxylamine :

Workgroups: 512868,512376,512869,513054,513055

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.022315.192203	WG513172-26	CCV		1		02/23/15 19:22
70	NI.022315.192514	WG513172-27	CCB		1		02/23/15 19:25
71	NI.022315.192827	WG512947-02	Method/Prep Blank	20/50	1		02/23/15 19:28
72	NI.022315.193138	WG512947-03	Laboratory Control S	20/50	1		02/23/15 19:31
73	NI.022315.193449	L15020923-07	ALD01		1	WG512947-01	02/23/15 19:34
74	NI.022315.193801	WG512947-04	Duplicate	20/50	1	L15020923-07	02/23/15 19:38
75	NI.022315.194112	WG512947-05	Matrix Spike	20/50	1	L15020923-07	02/23/15 19:41
76	NI.022315.194423	WG512947-06	Matrix Spike Duplica	20/50	1	L15020923-07	02/23/15 19:44
77	NI.022315.194734	L15020923-01	NBD01	20/50	1		02/23/15 19:47
78	NI.022315.195045	L15020923-02	NBD01	20/50	1		02/23/15 19:50
79	NI.022315.195357	WG513055-01	Post Digestion Spike		1	L15020923-02	02/23/15 19:53
80	NI.022315.195708	WG513055-02	Serial Dilution		5	L15020923-02	02/23/15 19:57
81	NI.022315.200021	WG513172-28	CCV		1		02/23/15 20:00
82	NI.022315.200332	WG513172-29	CCB		1		02/23/15 20:03
83	NI.022315.200645	WG513055-02	Serial Dilution		25	L15020923-02	02/23/15 20:06
84	NI.022315.200957	L15020923-05	ALD02	20/50	1		02/23/15 20:09
85	NI.022315.201308	L15020923-06	ALD02	20/50	1		02/23/15 20:13
86	NI.022315.201619	L15020923-08	ALD01	20/50	1		02/23/15 20:16
87	NI.022315.201930	L15020923-09	NBD05	20/50	1		02/23/15 20:19
88	NI.022315.202242	L15020923-10	NBD05	20/50	1		02/23/15 20:22
89	NI.022315.202553	L15020971-07	50WW24FF-021815	20/50	1		02/23/15 20:25
90	NI.022315.202905	L15020971-07	50WW24FF-021815	20/50	50		02/23/15 20:29
91	NI.022315.203215	L15020971-09	50WW23FF-021815	20/50	1		02/23/15 20:32
92	NI.022315.203527	L15020971-09	50WW23FF-021815	20/50	50		02/23/15 20:35
93	NI.022315.203840	WG513172-30	CCV		1		02/23/15 20:38
94	NI.022315.204152	WG513172-31	CCB		1		02/23/15 20:41
95	NI.022315.204504	L15020971-11	50WW12FF-021815	20/50	1		02/23/15 20:45
96	NI.022315.204815	L15020971-11	50WW12FF-021815	20/50	50		02/23/15 20:48
97	NI.022315.205127	L15020971-13	50WWW25FF-021815	20/50	1		02/23/15 20:51
98	NI.022315.205438	L15020971-13	50WWW25FF-021815	20/50	50		02/23/15 20:54
99	NI.022315.205750	L15020971-15	50WW18FF-021815	20/50	1		02/23/15 20:57
100	NI.022315.210102	L15020971-15	50WW18FF-021815	20/50	50		02/23/15 21:01
101	NI.022315.210414	WG513172-32	CCV		1		02/23/15 21:04
102	NI.022315.210726	WG513172-33	CCB		1		02/23/15 21:07

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Maren Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 022315B.REP

Analyst1: BKT Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 1

Maintenance Log ID:

Calibration Std: STD68814 ICV Std: STD68816 Post Spike: STD66295

ICSA: STD68812 ICSAB: STD67979 Int. Std: RGT31676

CCV: STD68682 LLCCV: STD68182 Tuning Sol : STD68643

Stannous : Hydroxylamine :

Workgroups: 512868,512376,512869,513054,513055

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.022315.211039	WG513172-34	Low Level Continuing Calibra		1		02/23/15 21:10

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Maren Berry

Microbac Laboratories Inc.

Data Checklist

Date: 23-FEB-2015
Analyst: BKT
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 513172
Runlog ID: 66476
Analytical Workgroups: 512868,512376,512869,513054,513055

Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	1662,663,718,743,792,938,939,971
Client Forms	X
Level X	
Level 3	
Level 4	1662,663,743,971
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BKT
Secondary Reviewer	MMB
Comments	

Primary Reviewer:
24-FEB-2015

Secondary Reviewer:
24-FEB-2015

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-24-2015 11:09:36

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG513055

Login Number: L15020971

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW24FF-021815	07	02/18/15					02/20/2015	2	180		02/23/15	5.5	180	
50WW23FF-021815	09	02/18/15					02/20/2015	2	180		02/23/15	5.5	180	
50WW12FF-021815	11	02/18/15					02/20/2015	1.9	180		02/23/15	5.4	180	
50WWW25FF-021815	13	02/18/15					02/20/2015	1.8	180		02/23/15	5.3	180	
50WW18FF-021815	15	02/18/15					02/20/2015	1.7	180		02/23/15	5.3	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4035536
Report generated 02/24/2015 10:33

METHOD BLANK SUMMARY

Login Number: L15020971
Blank File ID: NI.022315.192827
Prep Date: 02/20/15 08:28
Analyzed Date: 02/23/15 19:28
Analyst: BKT

Work Group: WG513055
Blank Sample ID: WG512947-02
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG512947-03	NI.022315.193138	02/23/15 19:31	01
DUP	WG512947-04	NI.022315.193801	02/23/15 19:38	01
50WW24FF-021815	L15020971-07	NI.022315.202553	02/23/15 20:25	01
50WW23FF-021815	L15020971-09	NI.022315.203215	02/23/15 20:32	01
50WW12FF-021815	L15020971-11	NI.022315.204504	02/23/15 20:45	01
50WWW25FF-021815	L15020971-13	NI.022315.205127	02/23/15 20:51	01
50WW18FF-021815	L15020971-15	NI.022315.205750	02/23/15 20:57	01

Report Name: BLANK_SUMMARY
PDF File ID: 4035537
Report generated 02/24/2015 10:33

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15020971 Prep Date: 02/20/15 08:28 Sample ID: WG512947-02
Instrument ID: ICP-MS2 Run Date: 02/23/15 19:28 Prep Method: 3015
File ID: NI.022315.192827 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG513055 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-23-FEB-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Manganese, Dissolved	0.00100	0.00400	0.00100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4035538
24-FEB-2015 10:33

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15020971 Run Date: 02/23/2015 Sample ID: WG512947-03
Instrument ID: ICP-MS2 Run Time: 19:31 Prep Method: 3015
File ID: NI.022315.193138 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG513055 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD68313 Cal ID: ICP-MS-23-FEB-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Manganese, Dissolved	0.125	0.125	99.9	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4035539
Report generated: 02/24/2015 10:33

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L15020971 Cal ID: ICP-MS2- Worknum: WG513055
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG512947-01 File ID: NI.022315.193449 Dil: 1 Matrix: WATER
Sample ID: WG512947-05 MS File ID: NI.022315.194112 Dil: 1 Units: mg/L
Sample ID: WG512947-06 MSD File ID: NI.022315.194423 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Manganese	3.23	0.125	3.29	45.9	0.125	3.34	86.9	1.54	80 - 120	20	*

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4035540
Report generated 02/24/2015 10:36

Microbac Laboratories Inc.
Serial Dilution Report

Login: L15020971 **Worknum:** WG513055
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG513055-02 **File ID:** NI.022315.195708 **Dil:** 5 **Units:** ug/L
Sample: L15020923-02 **File ID:** NI.022315.195045 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Manganese	105		108		2.78	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4035534
02/24/2015 10:33

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L15020971 **Worknum:** WG513055
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG513055-01 **File ID:** NI.022315.195357 **Dil:** 1 **Units:** ug/L
Sample ID: L15020923-02 **File ID:** NI.022315.195045 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MANGANESE	150		105		50	90.9	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4035535
Report generated: 02/24/2015 10:33

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L15020971	Workgroup (AAB#):	WG513055
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG513172	Initial Calibration Date:	23-FEB-2015 12:32

	WG513172-01		WG513172-02		WG513172-03		WG513172-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
MANGANESE	0	922	.4	1800	50	667000	100	1360000	.999991	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4035543
Report generated: 24-FEB-2015 10:33

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L15020971
Run Date: 02/23/2015
Sample ID: WG513172-06
Instrument ID: ICP-MS2
Run Time: 12:38
Method: 6020A
File ID: NI.022315.123853
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG513055
Cal ID: ICP-MS2 - 23-FEB-15
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
MANGANESE	.4	1.6	.4	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4035545
Report generated 02/24/2015 10:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15020971
Run Date: 02/23/2015
Sample ID: WG513172-11
Instrument ID: ICP-MS2
Run Time: 12:54
Method: 6020A
File ID: NI.022315.125453
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG513055
Cal ID: ICP-MS - 23-FEB-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4035548
Report generated 02/24/2015 10:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15020971
Run Date: 02/23/2015
Sample ID: WG513172-27
Instrument ID: ICP-MS2
Run Time: 19:25
Method: 6020A
File ID: NI.022315.192514
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG513055
Cal ID: ICP-MS - 23-FEB-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4035548
Report generated 02/24/2015 10:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15020971
Run Date: 02/23/2015
Sample ID: WG513172-29
Instrument ID: ICP-MS2
Run Time: 20:03
Method: 6020A
File ID: NI.022315.200332
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG513055
Cal ID: ICP-MS - 23-FEB-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4035548
Report generated 02/24/2015 10:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15020971
Run Date: 02/23/2015
Sample ID: WG513172-31
Instrument ID: ICP-MS2
Run Time: 20:41
Method: 6020A
File ID: NI.022315.204152
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG513055
Cal ID: ICP-MS - 23-FEB-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4035548
Report generated 02/24/2015 10:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15020971
Run Date: 02/23/2015
Sample ID: WG513172-33
Instrument ID: ICP-MS2
Run Time: 21:07
Method: 6020A
File ID: NI.022315.210726
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG513055
Cal ID: ICP-MS - 23-FEB-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4035548
Report generated 02/24/2015 10:33

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L15020971
Run Date: 02/23/2015
Sample ID: WG513172-05
Instrument ID: ICP-MS2
Run Time: 12:35
Method: 6020A
File ID: NI.022315.123540
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG513055
Cal ID: ICP-MS - 23-FEB-15
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Manganese		50	49.3	98.6	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4035544
Report generated 02/24/2015 10:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15020971
Run Date: 02/23/2015
Sample ID: WG513172-10
Instrument ID: ICP-MS2
Run Time: 12:51
Method: 6020A
File ID: NI.022315.125141
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG513055
Cal ID: ICP-MS - 23-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0503	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4035547
Report generated 02/24/2015 10:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15020971
Run Date: 02/23/2015
Sample ID: WG513172-26
Instrument ID: ICP-MS2
Run Time: 19:22
Method: 6020A
File ID: NI.022315.192203
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG513055
Cal ID: ICP-MS - 23-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0522	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4035547
Report generated 02/24/2015 10:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15020971
Run Date: 02/23/2015
Sample ID: WG513172-28
Instrument ID: ICP-MS2
Run Time: 20:00
Method: 6020A
File ID: NI.022315.200021
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG513055
Cal ID: ICP-MS - 23-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0485	mg/L	96.9	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4035547
Report generated 02/24/2015 10:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15020971
Run Date: 02/23/2015
Sample ID: WG513172-30
Instrument ID: ICP-MS2
Run Time: 20:38
Method: 6020A
File ID: NI.022315.203840
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG513055
Cal ID: ICP-MS - 23-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0503	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4035547
Report generated 02/24/2015 10:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15020971
Run Date: 02/23/2015
Sample ID: WG513172-32
Instrument ID: ICP-MS2
Run Time: 21:04
Method: 6020A
File ID: NI.022315.210414
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG513055
Cal ID: ICP-MS - 23-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0503	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4035547
Report generated 02/24/2015 10:33

Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15020971
Run Date: 02/23/2015
Sample ID: WG513172-07
Instrument ID: ICP-MS2
Run Time: 12:42
Method: 6020A
File ID: NI.022315.124205
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG513055
Cal ID: ICP-MS - 23-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.500	0.479	ug/L	95.7	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4035549
Report generated 02/24/2015 10:36

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15020971
Run Date: 02/23/2015
Sample ID: WG513172-34
Instrument ID: ICP-MS2
Run Time: 21:10
Method: 6020A
File ID: NI.022315.211039
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG513055
Cal ID: ICP-MS - 23-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.500	0.462	ug/L	92.3	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4035549
Report generated 02/24/2015 10:36

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L15020971
Instrument ID: ICP-MS2
Sol. A : WG513172-08 **File ID:** NI.022315.124517
Sol. AB : WG513172-09 **File ID:** NI.022315.124828

Workgroup (AAB#): WG513055
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Manganese	NS	0.310	NS	100	100	100	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4035546
Report generated 02/24/2015 10:33

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L15020971 **Analytical Method:** 6020
Analytical Workgroup: WG513055 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 23-FEB-2015 12:22

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L15020971-07	SAMP	23-FEB-2015 20:25	87.719	89.267	101.263
L15020971-09	SAMP	23-FEB-2015 20:32	76.241	80.948	91.712
L15020971-11	SAMP	23-FEB-2015 20:45	78.706	82.511	94.665
L15020971-13	SAMP	23-FEB-2015 20:51	89.836	92.424	103.584
L15020971-15	SAMP	23-FEB-2015 20:57	83.113	86.54	98.159
WG512947-02	BLANK	23-FEB-2015 19:28	99.99	99.147	103.921
WG512947-03	LCS	23-FEB-2015 19:31	97.727	97.643	104.062
WG513055-01	PSPK	23-FEB-2015 19:53	94.438	95.72	108.32
WG513055-02	SERIAL	23-FEB-2015 19:57	97.277	97.408	109.573
WG513172-05	ICV	23-FEB-2015 12:35	96.895	98.105	99.003
WG513172-06	ICB	23-FEB-2015 12:38	99.027	98.788	100.956
WG513172-07	LLICV	23-FEB-2015 12:42	98.968	98.312	99.059
WG513172-08	ICS	23-FEB-2015 12:45	88.468	87.364	85.294
WG513172-09	ICS	23-FEB-2015 12:48	98.491	98.497	104.166
WG513172-10	CCV	23-FEB-2015 12:51	101.116	100.527	103.19
WG513172-11	CCB	23-FEB-2015 12:54	102.095	101.385	103.651
WG513172-26	CCV	23-FEB-2015 19:22	98.329	97.727	105.561
WG513172-27	CCB	23-FEB-2015 19:25	98.301	96.232	103.702
WG513172-28	CCV	23-FEB-2015 20:00	97.129	94.776	109.591
WG513172-29	CCB	23-FEB-2015 20:03	97.797	93.355	108.25
WG513172-30	CCV	23-FEB-2015 20:38	93.579	92.112	105.091
WG513172-31	CCB	23-FEB-2015 20:41	95.474	90.174	104.269
WG513172-32	CCV	23-FEB-2015 21:04	95.272	91.871	104.61
WG513172-33	CCB	23-FEB-2015 21:07	94.967	91.925	104.616
WG513172-34	LLCCV	23-FEB-2015 21:10	94.65	89.738	103.55

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4035542
Report generated: 02/24/2015 10:33

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L15020971 **Analytical Method:** 6020
Analytical Workgroup: WG513055 **Matrix:** 2
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 23-FEB-2015 12:22

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L15020923-02	SAMP	23-FEB-2015 19:50	93.652	94.401	109.139

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4035542
Report generated: 02/24/2015 10:33

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L15020971 **Date:** 01/07/2015
Insturment ID: ICP-MS2 **Method:** 6020A

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Uranium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4035541
Report generated: 02/24/2015 10:33

2.3.2.3 Raw Data

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Monday, February 23, 2015 10:52:32

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1343	2025	0.697	
Mg	23.985	24.025	4509	2019	0.697	
Co	58.933	58.925	11682	2022	0.688	
In	114.904	114.875	22859	2028	0.699	
U	238.050	238.075	47454	2043	0.708	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	3.086
5.575	3.481
5.625	3.050
5.675	3.714
5.725	1.339
5.775	1.943
5.825	2.552
5.875	1.749
5.925	3.318
5.975	2.284
6.025	3.303
6.075	3.710
6.125	2.240
6.175	8.143
6.225	61.237
6.275	136.931
6.325	122.475
6.375	43.853
6.425	28.085
6.475	8.749
6.525	1.327
6.575	2.562
6.625	1.414
6.675	2.847
6.725	0.988
6.775	3.937
6.825	3.761

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6.875	4.326
6.925	2.257
6.975	1.328
7.025	2.074
7.075	2.471
7.125	0.863
7.175	4.601
7.225	6.545
7.275	45.913
7.325	55.902
7.375	108.653
7.425	72.436
7.475	100.000
7.525	34.401
7.575	63.888
7.625	136.931
7.675	37.268
7.725	108.521
7.775	82.402
7.825	100.000
7.875	82.402
7.925	100.000
7.975	81.441
8.025	149.071
8.075	95.831
8.125	39.123
8.175	81.441
8.225	46.481
8.275	79.057
8.325	61.237
8.375	81.441
8.425	122.475
8.475	83.853
22.525	136.931
22.575	69.722
22.625	106.863
22.675	74.608
22.725	46.351
22.775	23.570
22.825	48.922
22.875	51.875
22.925	41.286
22.975	39.123
23.025	30.492
23.075	38.401
23.125	21.812
23.175	33.378

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23.225	30.201
23.275	13.074
23.325	37.268
23.375	46.018
23.425	10.022
23.475	27.775
23.525	7.593
23.575	2.029
23.625	2.784
23.675	2.410
23.725	2.466
23.775	2.148
23.825	2.029
23.875	3.082
23.925	2.474
23.975	2.364
24.025	2.282
24.075	3.004
24.125	2.461
24.175	2.600
24.225	3.232
24.275	3.290
24.325	31.040
24.375	41.286
24.425	37.982
24.475	10.965
24.525	6.025
24.575	1.766
24.625	3.108
24.675	1.709
24.725	1.963
24.775	1.964
24.825	1.111
24.875	2.422
24.925	2.840
24.975	2.504
25.025	1.760
25.075	1.920
25.125	1.531
25.175	3.320
25.225	3.738
25.275	6.343
25.325	82.402
25.375	38.401
25.425	29.116
25.475	2.689
57.525	15.528

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57.575	7.613
57.625	6.743
57.675	2.664
57.725	1.861
57.775	3.322
57.825	2.127
57.875	1.777
57.925	1.508
57.975	2.671
58.025	2.400
58.075	2.009
58.125	3.208
58.175	1.930
58.225	3.042
58.275	5.284
58.325	2.619
58.375	44.605
58.425	44.628
58.475	14.685
58.525	5.661
58.575	5.470
58.625	1.925
58.675	1.741
58.725	2.090
58.775	1.881
58.825	2.746
58.875	1.922
58.925	1.458
58.975	1.944
59.025	3.211
59.075	1.081
59.125	1.594
59.175	3.764
59.225	2.080
59.275	4.922
59.325	23.697
59.375	86.402
59.425	46.481
59.475	28.331
59.525	17.328
59.575	9.674
59.625	6.437
59.675	4.923
59.725	4.352
59.775	2.364
59.825	4.605
59.875	3.597

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59.925	2.953
59.975	4.747
60.025	3.959
60.075	3.896
60.125	4.805
60.175	3.625
60.225	5.272
60.275	18.900
60.325	100.000
60.375	55.902
60.425	104.583
60.475	35.355
113.525	9.252
113.575	8.200
113.625	2.975
113.675	2.287
113.725	3.574
113.775	2.381
113.825	1.638
113.875	4.681
113.925	2.583
113.975	3.170
114.025	3.577
114.075	0.951
114.125	3.672
114.175	2.197
114.225	9.799
114.275	17.025
114.325	31.672
114.375	13.808
114.425	6.233
114.475	4.566
114.525	2.278
114.575	1.046
114.625	1.730
114.675	1.511
114.725	0.456
114.775	0.379
114.825	0.917
114.875	1.018
114.925	0.651
114.975	1.412
115.025	1.853
115.075	2.301
115.125	1.629
115.175	1.645
115.225	4.519

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115.275	3.188
115.325	31.419
115.375	42.377
115.425	42.216
115.475	23.299
115.525	1.199
115.575	7.824
115.625	5.354
115.675	6.026
115.725	3.983
115.775	5.637
115.825	5.761
115.875	4.481
115.925	6.417
115.975	2.113
116.025	4.073
116.075	7.034
116.125	3.413
116.175	3.893
116.225	10.348
116.275	29.414
116.325	53.429
116.375	63.738
116.425	52.973
116.475	47.075
236.525	223.607
236.575	55.902
236.625	20.738
236.675	40.781
236.725	16.667
236.775	45.018
236.825	19.457
236.875	17.496
236.925	15.002
236.975	49.793
237.025	23.697
237.075	17.275
237.125	60.345
237.175	36.617
237.225	65.617
237.275	27.524
237.325	53.429
237.375	25.353
237.425	36.512
237.475	62.594
237.525	24.594
237.575	15.149

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237.625	6.375
237.675	5.566
237.725	2.708
237.775	2.231
237.825	2.253
237.875	1.025
237.925	0.898
237.975	3.421
238.025	0.357
238.075	1.459
238.125	1.529
238.175	1.284
238.225	1.438
238.275	1.578
238.325	2.543
238.375	1.844
238.425	4.000
238.475	4.325
238.525	10.892
238.575	5.439
238.625	46.566
238.675	32.439
238.725	24.164
238.775	23.458
238.825	19.016
238.875	49.283
238.925	34.922
238.975	23.697
239.025	15.408
239.075	15.408
239.125	26.146
239.175	36.444
239.225	27.741
239.275	23.570
239.325	41.937
239.375	45.799
239.425	31.427
239.475	43.853

Approved: February 24, 2015

SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 2/23/2015 11:01:40 AM
End Time: 2/23/2015 11:04:03 AM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 3426.72
        Obtained Intensity (Mg 23.985): 157472.24
        Obtained Intensity (In 114.904): 112609.48
        Obtained Intensity (U 238.05): 66591.76
        Obtained Intensity (Bkgd 220): 0.53
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.019 (=5684.47 / 292321.48)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.004 (=1308.79 / 292321.48)
```

Report Date/Time: Monday, February 23, 2015 11:04:03
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SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 2/23/2015 11:01:40 AM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 3426.72
                Obtained Intensity (Mg 23.985): 157472.24
                Obtained Intensity (In 114.904): 112609.48
                Obtained Intensity (U 238.05): 66591.76
                Obtained Intensity (Bkgd 220): 0.53
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.019 (=5684.47 / 292321.48)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.004 (=1308.79 / 292321.48)
[Passed]  Optimum value(s): N/A

End Time: 2/23/2015 11:04:03 AM
```


Approved: February 24, 2015

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Monday, February 23, 2015 12:19:40
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	102148.3	2.6				ug/L		Standard
	Be	9	8.3	34.6				ug/L		Standard
	Al	27	1058.4	1.2				ug/L		Standard
	Sc	45	49932.3	5.3				ug/L		Standard
	Ti	47	24.7	24.4				ug/L		Standard
	V	51	2342.9	0.2				ug/L		Standard
	Cr	52	9255.5	0.7				ug/L		Standard
	Cr	53	355.0	6.1				ug/L		Standard
	Mn	55	920.4	3.2				ug/L		Standard
	Co	59	117.0	11.8				ug/L		Standard
	Ni	60	48.3	6.0				ug/L		Standard
	Cu	65	211.0	4.5				ug/L		Standard
	Zn	66	477.0	2.7				ug/L		Standard
>	Ge	72	543406.1	2.7				ug/L		Standard
	As	75	-90.2	32.9				ug/L		Standard
	Se	82	30.7	2.2				ug/L		Standard
	Se-1	77	117.0	2.3				ug/L		Standard
>	Ga	71	21.7	35.3				mg/L		Standard
	Rb	85	53.3	21.7				ug/L		Standard
	Y	89	557275.6	2.5				ug/L		Standard
>	Rh	103	11.7	49.5				ug/L		Standard
	Mo	98	159.0	43.1				ug/L		Standard
	Ag	107	101.7	7.1				ug/L		Standard
	Cd	111	4.1	25.9				mg/L		Standard
	Cd	114	33.9	30.2				ug/L		Standard
>	In	115	828244.8	1.6				ug/L		Standard
	Sn	118	850.0	20.9				ug/L		Standard
	Sb	123	498.8	37.5				ug/L		Standard
	Ba	135	23.0	17.4				ug/L		Standard
	Ce	140	45.0	29.4				ug/L		Standard
>	Tb	159	1408642.4	0.9				ug/L		Standard
	Ho	165	15.0	0.0				ug/L		Standard
	Tl	203	5.3	47.2				ug/L		Standard
	Tl	205	8.3	124.9				ug/L		Standard
	Pb	206	348.3	7.6				ug/L		Standard
	Pb	207	284.3	4.0				ug/L		Standard
	Pb	208	937.7	1.3				ug/L		Standard
	U	238	3.0	33.3				ug/L		Standard
>	Bi	209	615841.0	0.3				ug/L		Standard

Sample ID: Blank
Report Date/Time: Monday, February 23, 2015 12:21:56
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Na	23	3.3	86.6	mg/L	Standard
Mg	24	68.3	16.9	mg/L	Standard
K	39	23.3	12.4	mg/L	Standard
Ca	43	51.7	20.1	mg/L	Standard
Fe	54	214.1	10.3	mg/L	Standard
Fe	57	213.3	18.9	mg/L	Standard
Sc-1	45	49932.3	5.3	mg/L	Standard
Cl	35	23536.9	1.5	ug/L	Standard
Kr	83	3.0	66.7	ug/L	Standard
Br	81	1553.4	14.3	ug/L	Standard
P	31	15523.0	3.2	ug/L	Standard
S	34	1051.7	9.7	ug/L	Standard
Sr	88	146.7	31.7	ug/L	Standard
C	12	396.7	26.5	mg/L	Standard
N	14	3.3	173.2	mg/L	Standard
Hg	202	0.0		mg/L	Standard
Dy	164	28.9	65.1	mg/L	Standard
Ho-1	165	15.0	0.0	mg/L	Standard
Er	166	23.3	107.9	mg/L	Standard
I	127	1075.0	16.2	mg/L	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Monday, February 23, 2015 12:22:52
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	105270.1	5.1				ug/L	102148	Standard
	Be	9	8.3	69.3				ug/L	8	Standard
	Al	27	1101.7	6.9				ug/L	1058	Standard
	Sc	45	47193.4	2.8				ug/L	49932	Standard
	Ti	47	26.0	24.0				ug/L	25	Standard
	V	51	2328.9	4.2				ug/L	2343	Standard
	Cr	52	9216.8	1.8				ug/L	9255	Standard
	Cr	53	358.3	17.2				ug/L	355	Standard
	Mn	55	922.4	1.6				ug/L	920	Standard
	Co	59	145.3	9.6				ug/L	117	Standard
	Ni	60	54.0	33.5				ug/L	48	Standard
	Cu	65	217.3	9.9				ug/L	211	Standard
	Zn	66	381.0	6.1				ug/L	477	Standard
>	Ge	72	530692.3	0.8				ug/L	543406	Standard
	As	75	-124.7	12.5				ug/L	-90	Standard
	Se	82	23.3	12.9				ug/L	31	Standard
	Se-1	77	102.7	9.5				ug/L	117	Standard
>	Ga	71	18.3	103.3				mg/L	22	Standard
	Rb	85	48.3	31.6				ug/L	53	Standard
	Y	89	554956.9	2.2				ug/L	557276	Standard
>	Rh	103	11.7	24.7				ug/L	12	Standard
	Mo	98	38.7	44.8				ug/L	159	Standard
	Ag	107	109.3	14.6				ug/L	102	Standard
	Cd	111	5.3	47.7				mg/L	4	Standard
	Cd	114	11.6	60.6				ug/L	34	Standard
>	In	115	815946.2	0.9				ug/L	828245	Standard
	Sn	118	685.0	11.6				ug/L	850	Standard
	Sb	123	106.0	31.7				ug/L	499	Standard
	Ba	135	23.7	17.1				ug/L	23	Standard
	Ce	140	43.3	17.6				ug/L	45	Standard
>	Tb	159	1420163.3	0.9				ug/L	1408642	Standard
	Ho	165	10.0	50.0				ug/L	15	Standard
	Tl	203	10.7	14.3				ug/L	5	Standard
	Tl	205	1.7	173.2				ug/L	8	Standard
	Pb	206	341.0	8.9				ug/L	348	Standard
	Pb	207	295.3	8.5				ug/L	284	Standard
	Pb	208	949.3	2.8				ug/L	938	Standard
	U	238	2.3	65.5				ug/L	3	Standard
>	Bi	209	612068.0	0.9				ug/L	615841	Standard

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Na	23	1.7	173.2	mg/L	3	Standard
Mg	24	86.7	14.5	mg/L	68	Standard
K	39	23.3	68.9	mg/L	23	Standard
Ca	43	71.7	45.4	mg/L	52	Standard
Fe	54	213.7	10.6	mg/L	214	Standard
Fe	57	200.0	9.0	mg/L	213	Standard
Sc-1	45	47193.4	2.8	mg/L	49932	Standard
Cl	35	22607.5	1.7	ug/L	23537	Standard
Kr	83	4.0	66.1	ug/L	3	Standard
Br	81	1383.4	5.6	ug/L	1553	Standard
P	31	15286.1	6.1	ug/L	15523	Standard
S	34	961.7	0.8	ug/L	1052	Standard
Sr	88	135.0	16.1	ug/L	147	Standard
C	12	376.7	9.3	mg/L	397	Standard
N	14	3.3	173.2	mg/L	3	Standard
Hg	202	3.3	173.2	mg/L	0	Standard
Dy	164	22.5	55.5	mg/L	29	Standard
Ho-1	165	10.0	50.0	mg/L	15	Standard
Er	166	16.7	124.9	mg/L	23	Standard
I	127	836.7	13.0	mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 1
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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Monday, February 23, 2015 12:26:03
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	106729.9	3.7				ug/L	102148	Standard
	Be	9	88.3	33.2				ug/L	8	Standard
	Al	27	11030.7	2.4				ug/L	1058	Standard
	Sc	45	49706.4	1.6				ug/L	49932	Standard
	Ti	47	48.0	21.7				ug/L	25	Standard
	V	51	2931.8	1.3				ug/L	2343	Standard
	Cr	52	9795.2	1.7				ug/L	9255	Standard
	Cr	53	465.0	10.4				ug/L	355	Standard
	Mn	55	1804.8	1.0				ug/L	920	Standard
	Co	59	771.7	5.1				ug/L	117	Standard
	Ni	60	218.0	6.8				ug/L	48	Standard
	Cu	65	390.7	6.2				ug/L	211	Standard
	Zn	66	514.3	2.8				ug/L	477	Standard
>	**Ge**	72	542628.7	2.0				ug/L	543406	Standard
	As	75	-67.4	11.2				ug/L	-90	Standard
	Se	82	34.0	11.8				ug/L	31	Standard
	Se-1	77	124.3	5.7				ug/L	117	Standard
>	**Ga**	71	13.3	78.1				mg/L	22	Standard
	Rb	85	48.3	57.0				ug/L	53	Standard
	Y	89	549915.3	2.9				ug/L	557276	Standard
>	**Rh**	103	11.7	89.2				ug/L	12	Standard
	Mo	98	360.9	6.1				ug/L	159	Standard
	Ag	107	675.0	5.0				ug/L	102	Standard
	Cd	111	160.0	3.1				mg/L	4	Standard
	Cd	114	437.1	15.4				ug/L	34	Standard
>	**In**	115	816970.7	0.6				ug/L	828245	Standard
	Sn	118	1103.4	15.1				ug/L	850	Standard
	Sb	123	403.9	1.8				ug/L	499	Standard
	Ba	135	211.0	5.3				ug/L	23	Standard
	Ce	140	30.0	16.7				ug/L	45	Standard
>	**Tb**	159	1439791.2	1.1				ug/L	1408642	Standard
	Ho	165	6.7	86.6				ug/L	15	Standard
	Tl	203	615.3	3.7				ug/L	5	Standard
	Tl	205	508.3	12.5				ug/L	8	Standard
	Pb	206	751.7	6.3				ug/L	348	Standard
	Pb	207	703.0	4.1				ug/L	284	Standard
	Pb	208	2192.7	1.5				ug/L	938	Standard
	U	238	379.7	3.7				ug/L	3	Standard
>	**Bi**	209	614961.3	0.2				ug/L	615841	Standard

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	Na	23	0.0		mg/L	3	Standard
	Mg	24	95.0	9.1	mg/L	68	Standard
	K	39	21.7	13.3	mg/L	23	Standard
	Ca	43	46.7	24.7	mg/L	52	Standard
	Fe	54	198.8	11.5	mg/L	214	Standard
	Fe	57	223.3	2.6	mg/L	213	Standard
>	**Sc-1**	45	49706.4	1.6	mg/L	49932	Standard
	Cl	35	22918.7	1.8	ug/L	23537	Standard
	Kr	83	3.3	17.3	ug/L	3	Standard
	Br	81	1566.7	11.1	ug/L	1553	Standard
	P	31	14924.0	3.6	ug/L	15523	Standard
	S	34	985.0	13.9	ug/L	1052	Standard
	Sr	88	121.7	15.6	ug/L	147	Standard
	C	12	336.7	6.9	mg/L	397	Standard
	N	14	0.0		mg/L	3	Standard
	Hg	202	3.3	173.2	mg/L	0	Standard
	Dy	164	22.7	89.4	mg/L	29	Standard
	Ho-1	165	6.7	86.6	mg/L	15	Standard
	Er	166	13.3	86.6	mg/L	23	Standard
	I	127	763.4	9.3	mg/L	1075	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Monday, February 23, 2015 12:29:15
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	107302.1	2.4				ug/L	102148	Standard
	Be	9	71126.6	1.3	**50.0000**	1.820	3.6	ug/L	8	Standard
	Al	27	8117835.9	1.1	**50.0000**	1.738	3.5	ug/L	1058	Standard
	Sc	45	49353.6	1.0				ug/L	49932	Standard
	Ti	47	26092.5	3.3	**100.0000**	1.426	1.4	ug/L	25	Standard
	V	51	436181.1	1.7	**50.0000**	0.604	1.2	ug/L	2343	Standard
	Cr	52	436956.9	2.3	**50.0000**	0.356	0.7	ug/L	9255	Standard
	Cr	53	55523.4	5.9	**50.0000**	2.040	4.1	ug/L	355	Standard
	Mn	55	666865.3	2.5	**50.0000**	0.542	1.1	ug/L	920	Standard
	Co	59	539030.0	1.5	**50.0000**	0.288	0.6	ug/L	117	Standard
	Ni	60	133188.7	3.7	**50.0000**	0.814	1.6	ug/L	48	Standard
	Cu	65	131466.8	3.7	**50.0000**	1.097	2.2	ug/L	211	Standard
	Zn	66	62735.0	1.7	**50.0000**	0.754	1.5	ug/L	477	Standard
>	**Ge**	72	529314.5	2.1				ug/L	543406	Standard
	As	75	66229.2	1.7	**50.0000**	0.399	0.8	ug/L	-90	Standard
	Se	82	6669.7	1.2	**50.0000**	0.980	2.0	ug/L	31	Standard
	Se-1	77	4536.3	2.5	**50.0000**	1.952	3.9	ug/L	117	Standard
>	**Ga**	71	86.7	14.5				mg/L	22	Standard
	Rb	85	1096.7	2.3				ug/L	53	Standard
	Y	89	559939.5	1.0				ug/L	557276	Standard
>	**Rh**	103	58.3	35.7				ug/L	12	Standard
	Mo	98	307512.2	0.5	**100.0000**	0.441	0.4	ug/L	159	Standard
	Ag	107	502556.8	2.8	**50.0000**	1.680	3.4	ug/L	102	Standard
	Cd	111	137936.7	2.7	**50.0000**	1.453	2.9	mg/L	4	Standard
	Cd	114	339765.6	2.1	**50.0000**	1.451	2.9	ug/L	34	Standard
>	**In**	115	834017.2	0.8				ug/L	828245	Standard
	Sn	118	411163.5	1.7	**50.0000**	0.621	1.2	ug/L	850	Standard
	Sb	123	292199.3	3.6	**50.0000**	2.152	4.3	ug/L	499	Standard
	Ba	135	163687.2	2.6	**50.0000**	1.604	3.2	ug/L	23	Standard
	Ce	140	263.3	18.6				ug/L	45	Standard
>	**Tb**	159	1476078.7	2.7				ug/L	1408642	Standard
	Ho	165	25.0	34.6				ug/L	15	Standard
	Tl	203	536547.4	2.8	**50.0000**	1.017	2.0	ug/L	5	Standard
	Tl	205	448932.4	2.2	**50.0000**	0.802	1.6	ug/L	8	Standard
	Pb	206	376899.8	2.0	**50.0000**	0.640	1.3	ug/L	348	Standard
	Pb	207	338436.8	3.4	**50.0000**	1.353	2.7	ug/L	284	Standard
	Pb	208	1044760.1	1.9	**50.0000**	0.717	1.4	ug/L	938	Standard
	U	238	356252.8	1.9	**50.0000**	0.526	1.1	ug/L	3	Standard
>	**Bi**	209	611160.3	1.1				ug/L	615841	Standard

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Na	23	0.0					mg/L	3	Standard
Mg	24	5389.3	3.9	**5.0000**	0.183	3.7	mg/L	68	Standard
K	39	1906.8	1.7	**5.0000**	0.101	2.0	mg/L	23	Standard
Ca	43	120.0	4.2	**5.0000**	0.275	5.5	mg/L	52	Standard
Fe	54	7999.8	1.6	**5.0000**	0.130	2.6	mg/L	214	Standard
Fe	57	2341.8	4.5	**5.0000**	0.195	3.9	mg/L	213	Standard
> **Sc-1**	45	49353.6	1.0				mg/L	49932	Standard
Cl	35	24136.6	2.8				ug/L	23537	Standard
Kr	83	4.0	43.3				ug/L	3	Standard
Br	81	1693.4	7.6				ug/L	1553	Standard
P	31	17850.5	0.5				ug/L	15523	Standard
S	34	1185.0	2.1				ug/L	1052	Standard
Sr	88	150.0	25.2				ug/L	147	Standard
C	12	383.3	15.9				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	8.9	123.4				mg/L	29	Standard
Ho-1	165	25.0	34.6				mg/L	15	Standard
Er	166	23.3	89.2				mg/L	23	Standard
I	127	863.4	3.9				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 3
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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Monday, February 23, 2015 12:32:26
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	102655.3	4.1				ug/L	102148	Standard
	Be	9	142781.3	0.1	**102.4325**	4.327	4.2	ug/L	8	Standard
	Al	27	15566093.6	4.0	**100.1812**	7.297	7.3	ug/L	1058	Standard
	Sc	45	48561.1	2.5				ug/L	49932	Standard
	Ti	47	51912.8	0.6	**198.5389**	3.253	1.6	ug/L	25	Standard
	V	51	886760.1	0.9	**100.4522**	0.287	0.3	ug/L	2343	Standard
	Cr	52	862262.9	0.9	**99.3509**	1.757	1.8	ug/L	9255	Standard
	Cr	53	112137.0	3.2	**100.2040**	4.196	4.2	ug/L	355	Standard
	Mn	55	1357299.8	2.5	**100.4209**	2.828	2.8	ug/L	920	Standard
	Co	59	1093478.2	2.8	**100.2148**	2.744	2.7	ug/L	117	Standard
	Ni	60	265735.2	1.8	**99.4076**	2.240	2.3	ug/L	48	Standard
	Cu	65	257547.6	0.9	**98.5209**	1.180	1.2	ug/L	211	Standard
	Zn	66	124177.5	1.4	**99.1486**	1.368	1.4	ug/L	477	Standard
>	Ge	72	534660.9	1.0				ug/L	543406	Standard
	As	75	135503.2	1.4	**100.5791**	0.659	0.7	ug/L	-90	Standard
	Se	82	13433.2	2.8	**99.9374**	2.762	2.8	ug/L	31	Standard
	Se-1	77	8911.3	1.3	**99.2200**	1.524	1.5	ug/L	117	Standard
>	Ga	71	135.0	23.1				mg/L	22	Standard
	Rb	85	2131.8	4.2				ug/L	53	Standard
	Y	89	559228.6	0.7				ug/L	557276	Standard
>	Rh	103	85.0	11.8				ug/L	12	Standard
	Mo	98	630342.0	2.9	**205.2263**	7.548	3.7	ug/L	159	Standard
	Ag	107	982634.7	2.6	**100.2528**	3.496	3.5	ug/L	102	Standard
	Cd	111	271152.8	2.1	**100.5170**	2.945	2.9	mg/L	4	Standard
	Cd	114	672992.0	2.3	**100.8963**	3.185	3.2	ug/L	34	Standard
>	In	115	811488.6	1.3				ug/L	828245	Standard
	Sn	118	819664.1	3.2	**101.2655**	4.092	4.0	ug/L	850	Standard
	Sb	123	600051.8	1.6	**102.6996**	2.713	2.6	ug/L	499	Standard
	Ba	135	319881.8	1.8	**100.2220**	2.637	2.6	ug/L	23	Standard
	Ce	140	421.7	9.1				ug/L	45	Standard
>	Tb	159	1449505.1	1.6				ug/L	1408642	Standard
	Ho	165	18.3	41.7				ug/L	15	Standard
	Tl	203	1051387.1	1.2	**100.1903**	1.292	1.3	ug/L	5	Standard
	Tl	205	877535.3	1.0	**100.0647**	1.436	1.4	ug/L	8	Standard
	Pb	206	749025.7	0.1	**100.9129**	0.457	0.5	ug/L	348	Standard
	Pb	207	675328.7	1.4	**101.1207**	1.393	1.4	ug/L	284	Standard
	Pb	208	2069783.0	2.0	**100.7572**	2.064	2.0	ug/L	938	Standard
	U	238	712474.1	1.6	**101.2041**	1.693	1.7	ug/L	3	Standard
>	Bi	209	596630.6	0.4				ug/L	615841	Standard

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Na	23	10.0	86.6	**19.9850**	17.306	86.6	mg/L	3	Standard
Mg	24	11232.5	0.8	**10.3330**	0.219	2.1	mg/L	68	Standard
K	39	3548.7	5.5	**9.7430**	0.303	3.1	mg/L	23	Standard
Ca	43	195.0	17.9	**10.1561**	2.384	23.5	mg/L	52	Standard
Fe	54	15435.3	3.0	**9.9630**	0.467	4.7	mg/L	214	Standard
Fe	57	4337.3	2.0	**9.9361**	0.241	2.4	mg/L	213	Standard
Sc-1	45	48561.1	2.5				mg/L	49932	Standard
Cl	35	23584.4	3.7				ug/L	23537	Standard
Kr	83	3.7	41.7				ug/L	3	Standard
Br	81	1570.1	6.9				ug/L	1553	Standard
P	31	18683.2	7.7				ug/L	15523	Standard
S	34	1165.0	10.1				ug/L	1052	Standard
Sr	88	160.0	19.0				ug/L	147	Standard
C	12	356.7	18.7				mg/L	397	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	13.3	86.6				mg/L	0	Standard
Dy	164	9.2	8.0				mg/L	29	Standard
Ho-1	165	18.3	41.7				mg/L	15	Standard
Er	166	16.7	91.7				mg/L	23	Standard
I	127	980.0	7.6				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Monday, February 23, 2015 12:35:40
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	103666.8	1.1				ug/L	102148	Standard
	Be	9	72690.8	4.0	**51.5648**	1.535	3.0	ug/L	8	Standard
	Al	27	7799591.3	3.1	**49.6009**	1.091	2.2	ug/L	1058	Standard
	Sc	45	48260.1	0.8				ug/L	49932	Standard
	Ti	47	26865.2	4.0	**102.9828**	3.595	3.5	ug/L	25	Standard
	V	51	433630.0	2.8	**49.1170**	1.001	2.0	ug/L	2343	Standard
	Cr	52	431852.8	3.0	**49.3585**	1.191	2.4	ug/L	9255	Standard
	Cr	53	56473.6	5.8	**50.4074**	2.581	5.1	ug/L	355	Standard
	Mn	55	665305.4	2.2	**49.3180**	0.824	1.7	ug/L	920	Standard
	Co	59	538698.0	2.7	**49.4997**	1.100	2.2	ug/L	117	Standard
	Ni	60	134729.1	3.2	**50.5213**	1.238	2.4	ug/L	48	Standard
	Cu	65	129176.6	2.8	**49.5022**	0.991	2.0	ug/L	211	Standard
	Zn	66	63226.5	4.0	**50.4451**	1.634	3.2	ug/L	477	Standard
>	**Ge**	72	533109.3	0.8				ug/L	543406	Standard
	As	75	66032.3	2.5	**49.2038**	0.921	1.9	ug/L	-90	Standard
	Se	82	6837.6	1.8	**50.9150**	0.581	1.1	ug/L	31	Standard
	Se-1	77	4584.7	1.5	**50.5494**	0.869	1.7	ug/L	117	Standard
>	**Ga**	71	55.0	9.1				mg/L	22	Standard
	Rb	85	1105.0	6.1				ug/L	53	Standard
	Y	89	566891.1	1.1				ug/L	557276	Standard
>	**Rh**	103	30.0	33.3				ug/L	12	Standard
	Mo	98	325569.8	2.3	**104.8744**	1.680	1.6	ug/L	159	Standard
	Ag	107	488905.1	2.0	**49.3520**	1.122	2.3	ug/L	102	Standard
	Cd	111	135940.5	3.3	**49.8494**	0.541	1.1	mg/L	4	Standard
	Cd	114	336338.3	2.2	**49.8839**	0.105	0.2	ug/L	34	Standard
>	**In**	115	819984.3	2.2				ug/L	828245	Standard
	Sn	118	438810.8	5.1	**53.5754**	1.630	3.0	ug/L	850	Standard
	Sb	123	320143.6	3.2	**54.1972**	0.571	1.1	ug/L	499	Standard
	Ba	135	159176.5	2.6	**49.3355**	0.401	0.8	ug/L	23	Standard
	Ce	140	258.3	14.0				ug/L	45	Standard
>	**Tb**	159	1417474.5	3.5				ug/L	1408642	Standard
	Ho	165	10.0	50.0				ug/L	15	Standard
	Tl	203	529023.7	1.4	**50.4062**	0.588	1.2	ug/L	5	Standard
	Tl	205	440985.0	2.7	**50.2946**	2.048	4.1	ug/L	8	Standard
	Pb	206	375896.8	1.9	**50.6146**	0.686	1.4	ug/L	348	Standard
	Pb	207	339574.6	2.5	**50.8246**	1.561	3.1	ug/L	284	Standard
	Pb	208	1037500.3	3.1	**50.4810**	1.753	3.5	ug/L	938	Standard
	U	238	393277.9	2.4	**55.8664**	1.654	3.0	ug/L	3	Standard
>	**Bi**	209	596720.6	2.0				ug/L	615841	Standard

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Na	23	1.7	173.2	**3.3719**	5.832	172.9	mg/L	3	Standard
Mg	24	5656.1	2.2	**5.1937**	0.099	1.9	mg/L	68	Standard
K	39	1758.4	6.5	**4.8321**	0.284	5.9	mg/L	23	Standard
Ca	43	141.7	30.0	**6.5955**	2.963	44.9	mg/L	52	Standard
Fe	54	7992.3	2.8	**5.1289**	0.114	2.2	mg/L	214	Standard
Fe	57	2326.8	5.8	**5.1241**	0.359	7.0	mg/L	213	Standard
> **Sc-1**	45	48260.1	0.8				mg/L	49932	Standard
Cl	35	23816.7	2.9				ug/L	23537	Standard
Kr	83	3.0	88.2				ug/L	3	Standard
Br	81	1706.8	13.2				ug/L	1553	Standard
P	31	15751.5	1.7				ug/L	15523	Standard
S	34	1041.7	5.3				ug/L	1052	Standard
Sr	88	128.3	19.6				ug/L	147	Standard
C	12	526.7	8.6				mg/L	397	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	19.2	105.5				mg/L	29	Standard
Ho-1	165	10.0	50.0				mg/L	15	Standard
Er	166	16.7	91.7				mg/L	23	Standard
I	127	1088.4	1.7				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	103.130		
Al	27	99.202		
Sc	45			
Ti	47	102.983		
V	51	98.234		
Cr	52	98.717		
Cr	53			
Mn	55	98.636		
Co	59	98.999		
Ni	60	101.043		
Cu	65	99.004		
Zn	66	100.890		
> Ge	72		98.105	
As	75	98.408		
Se	82	101.830		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	104.874		
Ag	107	98.704		
Cd	111	99.699		
Cd	114			
> In	115		99.003	
Sn	118	107.151		
Sb	123	108.394		
Ba	135	98.671		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.812		
Tl	205			
Pb	206	101.229		
Pb	207	101.649		
Pb	208	100.962		
U	238	111.733		
> Bi	209		96.895	
Na	23	67.438		
Mg	24	103.874		
K	39	96.643		
Ca	43	131.910		
Fe	54	102.578		
Fe	57	102.481		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	U	238	
QC Std 1	Na	23	
QC Std 1	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Monday, February 23, 2015 12:38:53
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	103064.4	1.5				ug/L	102148	Standard
	Be	9	13.3	21.7	**-0.0010**	0.002	225.9	ug/L	8	Standard
	Al	27	2163.5	37.0	**-0.0044**	0.005	113.7	ug/L	1058	Standard
	Sc	45	49915.5	4.7				ug/L	49932	Standard
	Ti	47	29.0	6.0	**0.0300**	0.006	19.6	ug/L	25	Standard
	V	51	2347.4	2.3	**-0.0126**	0.005	36.0	ug/L	2343	Standard
	Cr	52	8906.0	1.6	**-0.0410**	0.013	32.9	ug/L	9255	Standard
	Cr	53	358.3	11.7	**-0.0403**	0.037	92.7	ug/L	355	Standard
	Mn	55	1014.0	12.3	**-0.0069**	0.009	130.1	ug/L	920	Standard
	Co	59	249.3	39.3	**0.0031**	0.009	286.7	ug/L	117	Standard
	Ni	60	71.0	38.9	**-0.0040**	0.010	255.0	ug/L	48	Standard
	Cu	65	282.0	11.9	**0.0103**	0.013	131.5	ug/L	211	Standard
	Zn	66	1648.1	93.3	**0.9646**	1.241	128.6	ug/L	477	Standard
>	**Ge**	72	536821.0	0.7				ug/L	543406	Standard
	As	75	-78.9	40.3	**0.0410**	0.023	56.7	ug/L	-90	Standard
	Se	82	40.7	9.2	**0.1028**	0.026	24.9	ug/L	31	Standard
	Se-1	77	103.3	5.9	**-0.1715**	0.077	45.0	ug/L	117	Standard
>	**Ga**	71	15.0	33.3				mg/L	22	Standard
	Rb	85	60.0	33.3				ug/L	53	Standard
	Y	89	564997.5	3.0				ug/L	557276	Standard
>	**Rh**	103	3.3	86.6				ug/L	12	Standard
	Mo	98	223.4	32.2	**0.0539**	0.023	42.1	ug/L	159	Standard
	Ag	107	255.3	67.2	**0.0069**	0.017	247.6	ug/L	102	Standard
	Cd	111	84.8	109.0	**0.0215**	0.033	154.8	mg/L	4	Standard
	Cd	114	192.8	68.5	**0.0129**	0.019	148.9	ug/L	34	Standard
>	**In**	115	836162.1	1.3				ug/L	828245	Standard
	Sn	118	1263.4	24.4	**0.0660**	0.037	55.7	ug/L	850	Standard
	Sb	123	978.4	15.9	**0.1440**	0.027	19.0	ug/L	499	Standard
	Ba	135	97.3	85.6	**0.0139**	0.025	182.6	ug/L	23	Standard
	Ce	140	26.7	21.7				ug/L	45	Standard
>	**Tb**	159	1417938.4	2.1				ug/L	1408642	Standard
	Ho	165	10.0	50.0				ug/L	15	Standard
	Tl	203	235.0	103.5	**0.0151**	0.023	151.4	ug/L	5	Standard
	Tl	205	70.0	63.5	**0.0016**	0.005	314.4	ug/L	8	Standard
	Pb	206	489.7	25.4	**0.0163**	0.017	101.6	ug/L	348	Standard
	Pb	207	373.7	30.9	**0.0026**	0.017	655.1	ug/L	284	Standard
	Pb	208	1066.3	13.6	**-0.0028**	0.007	251.6	ug/L	938	Standard
	U	238	46.7	62.2	**0.0042**	0.004	97.1	ug/L	3	Standard
>	**Bi**	209	609846.8	0.4				ug/L	615841	Standard

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Na	23	1.7	173.2	**3.4482**	5.964	173.0	mg/L	3	Standard
Mg	24	83.3	40.0	**-0.0066**	0.028	424.5	mg/L	68	Standard
K	39	30.0	28.9	**0.0266**	0.021	77.5	mg/L	23	Standard
Ca	43	50.0	0.0	**0.2092**	0.156	74.5	mg/L	52	Standard
Fe	54	205.5	7.2	**0.0091**	0.015	168.6	mg/L	214	Standard
Fe	57	238.3	14.0	**0.0405**	0.100	247.6	mg/L	213	Standard
> **Sc-1**	45	49915.5	4.7				mg/L	49932	Standard
Cl	35	23304.6	3.3				ug/L	23537	Standard
Kr	83	4.7	44.6				ug/L	3	Standard
Br	81	1633.4	8.9				ug/L	1553	Standard
P	31	16901.1	9.0				ug/L	15523	Standard
S	34	1073.4	5.4				ug/L	1052	Standard
Sr	88	158.3	34.9				ug/L	147	Standard
C	12	380.0	16.0				mg/L	397	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	15.9	92.7				mg/L	29	Standard
Ho-1	165	10.0	50.0				mg/L	15	Standard
Er	166	16.7	91.7				mg/L	23	Standard
I	127	726.7	6.2				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.788	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.956
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.027
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Na	23	
QC Std 2	Ca	43	

Sample ID: QC Std 2
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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Monday, February 23, 2015 12:42:05
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	101045.9	1.9				ug/L	102148	Standard
	Be	9	335.0	18.7	**0.2337**	0.048	20.6	ug/L	8	Standard
	Al	27	3665.8	117.2	**0.0060**	0.029	475.2	ug/L	1058	Standard
	Sc	45	49519.2	3.5				ug/L	49932	Standard
	Ti	47	31.3	37.8	**0.0397**	0.047	117.1	ug/L	25	Standard
	V	51	5713.7	1.3	**0.3714**	0.009	2.3	ug/L	2343	Standard
	Cr	52	15642.4	0.9	**0.7491**	0.002	0.3	ug/L	9255	Standard
	Cr	53	1171.7	3.5	**0.6911**	0.041	5.9	ug/L	355	Standard
	Mn	55	7561.6	4.9	**0.4785**	0.024	5.0	ug/L	920	Standard
	Co	59	4520.0	1.2	**0.3950**	0.001	0.4	ug/L	117	Standard
	Ni	60	4337.0	4.5	**1.5934**	0.064	4.0	ug/L	48	Standard
	Cu	65	2489.5	4.0	**0.8567**	0.037	4.4	ug/L	211	Standard
	Zn	66	8738.2	3.0	**6.6505**	0.165	2.5	ug/L	477	Standard
>	**Ge**	72	534230.9	0.8				ug/L	543406	Standard
	As	75	415.5	16.4	**0.4073**	0.048	11.9	ug/L	-90	Standard
	Se	82	84.8	12.0	**0.4331**	0.071	16.5	ug/L	31	Standard
	Se-1	77	161.3	2.8	**0.4890**	0.063	12.9	ug/L	117	Standard
>	**Ga**	71	20.0	66.1				mg/L	22	Standard
	Rb	85	28.3	20.4				ug/L	53	Standard
	Y	89	565578.4	2.5				ug/L	557276	Standard
>	**Rh**	103	8.3	91.7				ug/L	12	Standard
	Mo	98	230.8	72.4	**0.0580**	0.055	94.8	ug/L	159	Standard
	Ag	107	4101.6	6.6	**0.3953**	0.022	5.6	ug/L	102	Standard
	Cd	111	719.6	9.9	**0.2547**	0.023	8.9	mg/L	4	Standard
	Cd	114	1837.5	16.7	**0.2570**	0.042	16.5	ug/L	34	Standard
>	**In**	115	820452.9	1.3				ug/L	828245	Standard
	Sn	118	1090.0	13.4	**0.0476**	0.016	33.9	ug/L	850	Standard
	Sb	123	2906.2	1.2	**0.4733**	0.003	0.7	ug/L	499	Standard
	Ba	135	2435.2	6.3	**0.7386**	0.038	5.2	ug/L	23	Standard
	Ce	140	8.3	34.6				ug/L	45	Standard
>	**Tb**	159	1428642.1	2.5				ug/L	1408642	Standard
	Ho	165	20.0	66.1				ug/L	15	Standard
	Tl	203	1107.0	18.7	**0.0962**	0.018	18.6	ug/L	5	Standard
	Tl	205	983.4	22.4	**0.1037**	0.026	24.7	ug/L	8	Standard
	Pb	206	2101.5	8.2	**0.2288**	0.018	8.1	ug/L	348	Standard
	Pb	207	1755.4	7.5	**0.2051**	0.015	7.1	ug/L	284	Standard
	Pb	208	5868.8	11.8	**0.2264**	0.036	15.8	ug/L	938	Standard
	U	238	2951.6	6.0	**0.4083**	0.029	7.0	ug/L	3	Standard
>	**Bi**	209	609487.2	1.8				ug/L	615841	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	3	Standard
Mg	24	101.7	15.8	**0.0118**	0.018	152.7	mg/L	68	Standard
K	39	15.0	66.7	**-0.0122**	0.029	235.0	mg/L	23	Standard
Ca	43	50.0	17.3	**0.2329**	0.581	249.5	mg/L	52	Standard
Fe	54	208.6	8.2	**0.0116**	0.007	63.8	mg/L	214	Standard
Fe	57	220.0	2.3	**-0.0006**	0.017	2983.3	mg/L	213	Standard
> **Sc-1**	45	49519.2	3.5				mg/L	49932	Standard
Cl	35	23574.3	3.4				ug/L	23537	Standard
Kr	83	4.3	35.3				ug/L	3	Standard
Br	81	1623.4	12.6				ug/L	1553	Standard
P	31	15953.4	7.0				ug/L	15523	Standard
S	34	1005.0	3.9				ug/L	1052	Standard
Sr	88	158.3	24.5				ug/L	147	Standard
C	12	486.7	18.5				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	5.4	102.4				mg/L	29	Standard
Ho-1	165	20.0	66.1				mg/L	15	Standard
Er	166	26.7	43.3				mg/L	23	Standard
I	127	878.4	11.1				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	116.849		
Al	27	0.604		
Sc	45			
Ti	47			
V	51	92.850		
Cr	52	93.636		
Cr	53			
Mn	55	95.701		
Co	59	98.744		
Ni	60	99.586		
Cu	65	107.082		
Zn	66	106.408		
> Ge	72		98.312	
As	75	101.830		
Se	82	108.263		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	98.821		
Cd	111	106.124		
Cd	114			
> In	115			99.059
Sn	118			
Sb	123	118.326		
Ba	135	98.482		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	120.259		
Tl	205			
Pb	206			
Pb	207			
Pb	208	113.209		
U	238	102.079		
> Bi	209			98.968
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Monday, February 23, 2015 12:45:17
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89447.3	6.5				ug/L	102148	Standard
	Be	9	10.0	86.6	**-0.0024**	0.007	282.4	ug/L	8	Standard
	Al	27	5825813.5	1.1	**43.0468**	2.442	5.7	ug/L	1058	Standard
	Sc	45	42426.0	3.1				ug/L	49932	Standard
	Ti	47	20532.2	1.6	**88.3967**	1.988	2.2	ug/L	25	Standard
	V	51	1287.0	10.6	**-0.1135**	0.017	15.0	ug/L	2343	Standard
	Cr	52	8240.9	1.5	**0.0068**	0.003	47.9	ug/L	9255	Standard
	Cr	53	2366.9	6.5	**2.0289**	0.132	6.5	ug/L	355	Standard
	Mn	55	4692.7	1.5	**0.3096**	0.005	1.6	ug/L	920	Standard
	Co	59	296.7	13.3	**0.0110**	0.004	36.2	ug/L	117	Standard
	Ni	60	639.7	4.0	**0.2391**	0.007	2.8	ug/L	48	Standard
	Cu	65	545.0	4.4	**0.1376**	0.007	5.0	ug/L	211	Standard
	Zn	66	1997.5	2.8	**1.4460**	0.024	1.7	ug/L	477	Standard
>	**Ge**	72	474742.5	1.7				ug/L	543406	Standard
	As	75	-60.4	105.8	**0.0486**	0.053	109.0	ug/L	-90	Standard
	Se	82	29.1	31.3	**0.0441**	0.073	165.8	ug/L	31	Standard
	Se-1	77	279.7	3.5	**2.2206**	0.105	4.7	ug/L	117	Standard
>	**Ga**	71	148.3	18.6				mg/L	22	Standard
	Rb	85	888.4	3.1				ug/L	53	Standard
	Y	89	467721.1	2.7				ug/L	557276	Standard
>	**Rh**	103	6.7	43.3				ug/L	12	Standard
	Mo	98	222418.0	1.2	**83.2142**	3.282	3.9	ug/L	159	Standard
	Ag	107	181.3	64.8	**0.0027**	0.013	489.5	ug/L	102	Standard
	Cd	111	39.0	222.0	**0.0072**	0.036	498.7	mg/L	4	Standard
	Cd	114	908.3	28.1	**0.1407**	0.040	28.3	ug/L	34	Standard
>	**In**	115	706442.6	2.8				ug/L	828245	Standard
	Sn	118	33742.6	4.1	**4.7099**	0.279	5.9	ug/L	850	Standard
	Sb	123	189.5	35.6	**0.0184**	0.012	66.5	ug/L	499	Standard
	Ba	135	319.0	21.4	**0.0988**	0.022	22.1	ug/L	23	Standard
	Ce	140	126.7	50.0				ug/L	45	Standard
>	**Tb**	159	1265757.0	1.0				ug/L	1408642	Standard
	Ho	165	16.7	17.3				ug/L	15	Standard
	Tl	203	281.7	59.2	**0.0223**	0.017	75.0	ug/L	5	Standard
	Tl	205	141.7	32.0	**0.0115**	0.006	51.5	ug/L	8	Standard
	Pb	206	860.0	3.0	**0.0786**	0.001	1.8	ug/L	348	Standard
	Pb	207	709.7	8.3	**0.0642**	0.009	14.6	ug/L	284	Standard
	Pb	208	2173.4	4.8	**0.0624**	0.007	10.8	ug/L	938	Standard
	U	238	15.7	107.1	**0.0001**	0.003	2951.2	ug/L	3	Standard
>	**Bi**	209	544820.4	2.0				ug/L	615841	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	3	Standard
Mg	24	10210.1	2.4	**10.7531**	0.209	1.9	mg/L	68	Standard
K	39	1280.1	8.5	**3.9936**	0.330	8.3	mg/L	23	Standard
Ca	43	238.3	6.7	**15.4767**	1.802	11.6	mg/L	52	Standard
Fe	54	14616.1	2.6	**10.8142**	0.604	5.6	mg/L	214	Standard
Fe	57	4000.5	1.2	**10.5213**	0.256	2.4	mg/L	213	Standard
> **Sc-1**	45	42426.0	3.1				mg/L	49932	Standard
Cl	35	19805.6	3.4				ug/L	23537	Standard
Kr	83	2.7	21.7				ug/L	3	Standard
Br	81	1283.4	9.9				ug/L	1553	Standard
P	31	5587.7	2.4				ug/L	15523	Standard
S	34	968.4	4.3				ug/L	1052	Standard
Sr	88	155.0	8.5				ug/L	147	Standard
C	12	610.0	9.1				mg/L	397	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	19.4	3.8				mg/L	29	Standard
Ho-1	165	16.7	17.3				mg/L	15	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	966.7	8.5				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27	0.861		
Sc	45			
Ti	47	88.397		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		87.364	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	83.214		
Ag	107			
Cd	111			
Cd	114			
In	115			85.294
Sn	118			
Sb	123			
Ba	135			
Ce	140			
Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
Bi	209			88.468
Na	23	0.040		
Mg	24	215.062		
K	39	79.872		
Ca	43	103.178		
Fe	54	86.514		
Fe	57	84.170		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Mn	55	
QC Std 4	Na	23	

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QC Std 4	Mg	24
QC Std 4	K	39

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Monday, February 23, 2015 12:48:28
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	113890.1	3.4				ug/L	102148	Standard
	Be	9	156332.8	2.8	**100.9881**	0.902	0.9	ug/L	8	Standard
	Al	27	8551614.4	3.2	**49.5344**	1.954	3.9	ug/L	1058	Standard
	Sc	45	48086.3	3.7				ug/L	49932	Standard
	Ti	47	28901.5	2.3	**110.3612**	2.199	2.0	ug/L	25	Standard
	V	51	885642.3	3.6	**100.2107**	3.400	3.4	ug/L	2343	Standard
	Cr	52	888823.5	2.9	**102.3184**	2.797	2.7	ug/L	9255	Standard
	Cr	53	117389.1	6.1	**104.7611**	6.121	5.8	ug/L	355	Standard
	Mn	55	1354653.3	3.6	**100.1021**	3.358	3.4	ug/L	920	Standard
	Co	59	1109202.9	2.9	**101.5390**	2.725	2.7	ug/L	117	Standard
	Ni	60	276587.0	3.2	**103.3442**	3.183	3.1	ug/L	48	Standard
	Cu	65	264384.8	2.3	**101.0243**	2.309	2.3	ug/L	211	Standard
	Zn	66	130135.0	2.6	**103.8029**	2.457	2.4	ug/L	477	Standard
>	Ge	72	535240.6	0.4				ug/L	543406	Standard
	As	75	142236.4	3.5	**105.4536**	3.379	3.2	ug/L	-90	Standard
	Se	82	14232.6	1.9	**105.7764**	1.810	1.7	ug/L	31	Standard
	Se-1	77	9756.5	2.0	**108.6338**	2.298	2.1	ug/L	117	Standard
>	Ga	71	231.7	18.0				mg/L	22	Standard
	Rb	85	1651.8	7.0				ug/L	53	Standard
	Y	89	565205.2	1.3				ug/L	557276	Standard
>	Rh	103	91.7	3.1				ug/L	12	Standard
	Mo	98	341653.3	2.9	**104.6128**	3.686	3.5	ug/L	159	Standard
	Ag	107	918366.7	3.7	**88.1370**	4.197	4.8	ug/L	102	Standard
	Cd	111	292808.1	1.4	**102.0958**	2.622	2.6	mg/L	4	Standard
	Cd	114	723548.1	4.0	**102.0444**	5.154	5.1	ug/L	34	Standard
>	In	115	862751.3	1.2				ug/L	828245	Standard
	Sn	118	1600.1	21.3	**0.1003**	0.038	37.6	ug/L	850	Standard
	Sb	123	633893.8	3.2	**102.0532**	4.236	4.2	ug/L	499	Standard
	Ba	135	330886.1	0.6	**97.5045**	1.712	1.8	ug/L	23	Standard
	Ce	140	343.3	10.7				ug/L	45	Standard
>	Tb	159	1426714.1	3.0				ug/L	1408642	Standard
	Ho	165	20.0	66.1				ug/L	15	Standard
	Tl	203	1106325.0	1.5	**103.6963**	0.973	0.9	ug/L	5	Standard
	Tl	205	928068.1	1.9	**104.0966**	2.150	2.1	ug/L	8	Standard
	Pb	206	772170.7	2.4	**102.3227**	1.826	1.8	ug/L	348	Standard
	Pb	207	698559.5	0.9	**102.8888**	0.536	0.5	ug/L	284	Standard
	Pb	208	2118868.0	1.8	**101.4546**	1.261	1.2	ug/L	938	Standard
	U	238	752461.7	2.4	**105.1292**	1.936	1.8	ug/L	3	Standard
>	Bi	209	606547.1	0.6				ug/L	615841	Standard

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Na	23	3.3	86.6	**6.7330**	5.834	86.6	mg/L	3	Standard
Mg	24	14517.0	2.1	**13.5178**	0.543	4.0	mg/L	68	Standard
K	39	1571.7	9.8	**4.3437**	0.568	13.1	mg/L	23	Standard
Ca	43	246.7	17.7	**13.8730**	3.350	24.2	mg/L	52	Standard
Fe	54	20500.6	3.2	**13.4188**	0.916	6.8	mg/L	214	Standard
Fe	57	5892.8	2.7	**13.8441**	0.869	6.3	mg/L	213	Standard
> **Sc-1**	45	48086.3	3.7				mg/L	49932	Standard
Cl	35	23815.4	0.9				ug/L	23537	Standard
Kr	83	3.3	45.8				ug/L	3	Standard
Br	81	1740.1	9.5				ug/L	1553	Standard
P	31	16342.1	2.3				ug/L	15523	Standard
S	34	858.4	3.0				ug/L	1052	Standard
Sr	88	165.0	24.1				ug/L	147	Standard
C	12	813.4	8.4				mg/L	397	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	8.9	6.2				mg/L	29	Standard
Ho-1	165	20.0	66.1				mg/L	15	Standard
Er	166	23.3	49.5				mg/L	23	Standard
I	127	1285.1	4.9				mg/L	1075	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	100.988		
	Al	27	0.991		
	Sc	45			
	Ti	47	110.361		
	V	51	100.211		
	Cr	52	102.318		
	Cr	53			
	Mn	55	100.102		
	Co	59	101.539		
	Ni	60	103.344		
	Cu	65	101.024		
	Zn	66	103.803		
>	Ge	72		98.497	
	As	75	105.454		
	Se	82	105.776		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	104.613		
Ag	107	88.137		
Cd	111	102.096		
Cd	114			
> In	115		104.166	
Sn	118			
Sb	123	102.053		
Ba	135	97.505		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	103.696		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.455		
U	238	105.129		
> Bi	209		98.491	
Na	23	53.864		
Mg	24	270.356		
K	39	86.875		
Ca	43	92.486		
Fe	54	107.351		
Fe	57	110.753		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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QC Std 5	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, February 23, 2015 12:51:41
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	114371.9	2.9				ug/L	102148	Standard
	Be	9	78573.2	1.1	**50.5567**	1.510	3.0	ug/L	8	Standard
	Al	27	8528883.5	5.1	**49.1552**	1.575	3.2	ug/L	1058	Standard
	Sc	45	49323.6	3.7				ug/L	49932	Standard
	Ti	47	26110.5	1.1	**97.6863**	0.817	0.8	ug/L	25	Standard
	V	51	460740.2	2.4	**50.9472**	1.181	2.3	ug/L	2343	Standard
	Cr	52	455503.6	0.9	**50.8445**	0.257	0.5	ug/L	9255	Standard
	Cr	53	58648.5	4.8	**51.0966**	2.170	4.2	ug/L	355	Standard
	Mn	55	695602.7	1.6	**50.3301**	1.039	2.1	ug/L	920	Standard
	Co	59	560590.4	1.5	**50.2756**	0.781	1.6	ug/L	117	Standard
	Ni	60	142586.9	1.9	**52.1885**	1.002	1.9	ug/L	48	Standard
	Cu	65	136901.4	1.1	**51.2095**	0.680	1.3	ug/L	211	Standard
	Zn	66	66090.9	1.7	**51.4760**	0.758	1.5	ug/L	477	Standard
>	**Ge**	72	546269.7	0.9				ug/L	543406	Standard
	As	75	71340.3	1.4	**51.8789**	0.787	1.5	ug/L	-90	Standard
	Se	82	7218.4	0.6	**52.4672**	0.493	0.9	ug/L	31	Standard
	Se-1	77	4894.1	2.8	**52.7117**	1.243	2.4	ug/L	117	Standard
>	**Ga**	71	61.7	20.4				mg/L	22	Standard
	Rb	85	1176.7	5.2				ug/L	53	Standard
	Y	89	547125.7	2.0				ug/L	557276	Standard
>	**Rh**	103	31.7	9.1				ug/L	12	Standard
	Mo	98	321913.7	2.8	**99.5153**	3.978	4.0	ug/L	159	Standard
	Ag	107	529541.3	1.0	**51.2858**	1.180	2.3	ug/L	102	Standard
	Cd	111	146692.0	1.7	**51.6307**	1.507	2.9	mg/L	4	Standard
	Cd	114	357888.2	2.0	**50.9233**	0.327	0.6	ug/L	34	Standard
>	**In**	115	854668.7	1.4				ug/L	828245	Standard
	Sn	118	433391.0	0.5	**50.7861**	0.506	1.0	ug/L	850	Standard
	Sb	123	339247.8	2.6	**55.1285**	2.154	3.9	ug/L	499	Standard
	Ba	135	165382.1	1.1	**49.1904**	1.122	2.3	ug/L	23	Standard
	Ce	140	266.7	9.4				ug/L	45	Standard
>	**Tb**	159	1461067.6	2.8				ug/L	1408642	Standard
	Ho	165	16.7	62.4				ug/L	15	Standard
	Tl	203	562613.1	0.9	**51.3669**	0.801	1.6	ug/L	5	Standard
	Tl	205	470375.2	1.0	**51.3880**	0.809	1.6	ug/L	8	Standard
	Pb	206	398111.5	1.0	**51.3684**	0.857	1.7	ug/L	348	Standard
	Pb	207	360325.0	1.3	**51.6708**	0.886	1.7	ug/L	284	Standard
	Pb	208	1086238.1	1.5	**50.6405**	1.085	2.1	ug/L	938	Standard
	U	238	374648.3	1.0	**50.9902**	0.836	1.6	ug/L	3	Standard
>	**Bi**	209	622714.5	0.7				ug/L	615841	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	3	Standard
Mg	24	6027.9	4.6	**5.4302**	0.456	8.4	mg/L	68	Standard
K	39	1741.8	6.1	**4.6798**	0.117	2.5	mg/L	23	Standard
Ca	43	108.3	14.8	**4.1272**	0.825	20.0	mg/L	52	Standard
Fe	54	8192.4	4.1	**5.1505**	0.315	6.1	mg/L	214	Standard
Fe	57	2428.5	0.8	**5.2468**	0.187	3.6	mg/L	213	Standard
> **Sc-1**	45	49323.6	3.7				mg/L	49932	Standard
Cl	35	24142.6	2.4				ug/L	23537	Standard
Kr	83	4.7	24.7				ug/L	3	Standard
Br	81	1613.4	8.1				ug/L	1553	Standard
P	31	16757.6	5.6				ug/L	15523	Standard
S	34	1051.7	3.6				ug/L	1052	Standard
Sr	88	166.7	25.5				ug/L	147	Standard
C	12	463.3	14.4				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	22.2	69.0				mg/L	29	Standard
Ho-1	165	16.7	62.4				mg/L	15	Standard
Er	166	23.3	24.7				mg/L	23	Standard
I	127	1121.7	3.9				mg/L	1075	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	101.113		
	Al	27	98.310		
	Sc	45			
	Ti	47	97.686		
	V	51	101.894		
	Cr	52	101.689		
	Cr	53			
	Mn	55	100.660		
	Co	59	100.551		
	Ni	60	104.377		
	Cu	65	102.419		
	Zn	66	102.952		
>	Ge	72		100.527	
	As	75	103.758		
	Se	82	104.934		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	99.515		
Ag	107	102.572		
Cd	111	103.261		
Cd	114			
In	115		103.190	
Sn	118	101.572		
Sb	123	110.257		
Ba	135	98.381		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.734		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.281		
U	238	101.980		
Bi	209		101.116	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Sb	123	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, February 23, 2015 12:54:53
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	117307.0	6.5				ug/L	102148	Standard
	Be	9	28.3	66.8	**0.0070**	0.011	155.0	ug/L	8	Standard
	Al	27	2688.7	73.4	**-0.0034**	0.010	297.7	ug/L	1058	Standard
	Sc	45	49992.3	1.2				ug/L	49932	Standard
	Ti	47	23.7	12.2	**0.0074**	0.011	150.2	ug/L	25	Standard
	V	51	2339.8	4.1	**-0.0202**	0.012	58.4	ug/L	2343	Standard
	Cr	52	9198.1	1.5	**-0.0344**	0.020	59.5	ug/L	9255	Standard
	Cr	53	411.7	17.4	**-0.0019**	0.064	3313.1	ug/L	355	Standard
	Mn	55	991.7	7.8	**-0.0104**	0.006	56.0	ug/L	920	Standard
	Co	59	218.7	13.4	**-0.0002**	0.003	1297.4	ug/L	117	Standard
	Ni	60	73.7	50.0	**-0.0036**	0.014	371.8	ug/L	48	Standard
	Cu	65	306.0	10.9	**0.0164**	0.013	79.3	ug/L	211	Standard
	Zn	66	354.3	11.3	**-0.0807**	0.032	39.6	ug/L	477	Standard
>	**Ge**	72	550934.4	0.5				ug/L	543406	Standard
	As	75	-117.4	52.1	**0.0146**	0.044	304.7	ug/L	-90	Standard
	Se	82	22.7	50.7	**-0.0357**	0.082	230.8	ug/L	31	Standard
	Se-1	77	121.7	8.1	**-0.0008**	0.109	12804.2	ug/L	117	Standard
>	**Ga**	71	28.3	27.0				mg/L	22	Standard
	Rb	85	66.7	11.5				ug/L	53	Standard
	Y	89	568704.0	3.7				ug/L	557276	Standard
>	**Rh**	103	8.3	124.9				ug/L	12	Standard
	Mo	98	214.3	24.5	**0.0493**	0.016	33.3	ug/L	159	Standard
	Ag	107	189.7	15.0	**-0.0001**	0.003	2449.7	ug/L	102	Standard
	Cd	111	24.0	95.8	**-0.0005**	0.008	1592.2	mg/L	4	Standard
	Cd	114	62.8	65.3	**-0.0062**	0.006	94.7	ug/L	34	Standard
>	**In**	115	858485.1	1.2				ug/L	828245	Standard
	Sn	118	888.4	21.7	**0.0184**	0.023	124.9	ug/L	850	Standard
	Sb	123	847.8	22.6	**0.1186**	0.032	26.9	ug/L	499	Standard
	Ba	135	52.7	31.8	**-0.0001**	0.005	7949.8	ug/L	23	Standard
	Ce	140	33.3	67.6				ug/L	45	Standard
>	**Tb**	159	1441921.8	0.1				ug/L	1408642	Standard
	Ho	165	16.7	62.4				ug/L	15	Standard
	Tl	203	130.3	34.2	**0.0049**	0.004	82.3	ug/L	5	Standard
	Tl	205	58.3	55.8	**0.0001**	0.003	5456.8	ug/L	8	Standard
	Pb	206	409.3	10.3	**0.0041**	0.005	134.2	ug/L	348	Standard
	Pb	207	349.3	10.6	**-0.0025**	0.005	204.1	ug/L	284	Standard
	Pb	208	1053.7	4.1	**-0.0049**	0.002	39.0	ug/L	938	Standard
	U	238	38.7	30.9	**0.0029**	0.002	54.8	ug/L	3	Standard
>	**Bi**	209	628742.7	1.0				ug/L	615841	Standard

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Na	23	1.7	173.2	**3.3059**	5.717	172.9	mg/L	3	Standard
Mg	24	106.7	10.8	**0.0150**	0.011	73.6	mg/L	68	Standard
K	39	18.3	41.7	**-0.0041**	0.021	509.3	mg/L	23	Standard
Ca	43	41.7	13.9	**-0.3521**	0.368	104.4	mg/L	52	Standard
Fe	54	214.2	24.3	**0.0138**	0.032	234.1	mg/L	214	Standard
Fe	57	235.0	17.0	**0.0294**	0.094	321.6	mg/L	213	Standard
> **Sc-1**	45	49992.3	1.2				mg/L	49932	Standard
Cl	35	24955.2	4.0				ug/L	23537	Standard
Kr	83	3.7	41.7				ug/L	3	Standard
Br	81	1646.8	14.6				ug/L	1553	Standard
P	31	18139.3	10.0				ug/L	15523	Standard
S	34	1125.0	8.5				ug/L	1052	Standard
Sr	88	148.3	10.3				ug/L	147	Standard
C	12	430.0	12.1				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	22.7	110.6				mg/L	29	Standard
Ho-1	165	16.7	62.4				mg/L	15	Standard
Er	166	13.3	86.6				mg/L	23	Standard
I	127	806.7	8.3				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.385	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.651
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.095
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1502079201
Sample Date/Time: Monday, February 23, 2015 12:58:05
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	119518.4	4.0				ug/L	102148	Standard
	Be	9	301.7	4.2	**0.1753**	0.009	5.2	ug/L	8	Standard
	Al	27	1911787.7	0.7	**10.5442**	0.449	4.3	ug/L	1058	Standard
	Sc	45	49377.0	2.9				ug/L	49932	Standard
	Ti	47	836.0	0.7	**3.0125**	0.020	0.7	ug/L	25	Standard
	V	51	13022.3	6.3	**1.1525**	0.092	8.0	ug/L	2343	Standard
	Cr	52	50706.1	1.9	**4.6369**	0.127	2.7	ug/L	9255	Standard
	Cr	53	12103.2	6.0	**10.1309**	0.552	5.4	ug/L	355	Standard
	Mn	55	489251.4	1.7	**34.9534**	0.856	2.5	ug/L	920	Standard
	Co	59	1930.5	29.6	**0.1515**	0.051	33.4	ug/L	117	Standard
	Ni	60	6103.6	1.8	**2.1782**	0.047	2.1	ug/L	48	Standard
	Cu	65	122508.6	3.3	**45.2745**	1.822	4.0	ug/L	211	Standard
	Zn	66	695237.6	3.1	**538.4798**	20.210	3.8	ug/L	477	Standard
>	Ge	72	552878.3	1.1				ug/L	543406	Standard
	As	75	373.8	9.2	**0.3672**	0.024	6.4	ug/L	-90	Standard
	Se	82	345.8	7.2	**2.2930**	0.177	7.7	ug/L	31	Standard
	Se-1	77	868.7	3.7	**8.1481**	0.428	5.2	ug/L	117	Standard
>	Ga	71	2308.5	4.8				mg/L	22	Standard
	Rb	85	23192.7	2.2				ug/L	53	Standard
	Y	89	579995.6	3.7				ug/L	557276	Standard
>	Rh	103	36.7	15.7				ug/L	12	Standard
	Mo	98	909.3	27.4	**0.2616**	0.075	28.5	ug/L	159	Standard
	Ag	107	206.0	43.5	**0.0014**	0.008	622.6	ug/L	102	Standard
	Cd	111	3578.2	2.9	**1.2393**	0.027	2.2	mg/L	4	Standard
	Cd	114	9035.3	3.0	**1.2596**	0.030	2.4	ug/L	34	Standard
>	In	115	862183.0	0.7				ug/L	828245	Standard
	Sn	118	18986.9	1.6	**2.1235**	0.022	1.0	ug/L	850	Standard
	Sb	123	9802.3	5.7	**1.5601**	0.081	5.2	ug/L	499	Standard
	Ba	135	7714.6	2.8	**2.2591**	0.053	2.3	ug/L	23	Standard
	Ce	140	5367.6	4.4				ug/L	45	Standard
>	Tb	159	1446347.1	1.3				ug/L	1408642	Standard
	Ho	165	125.0	13.9				ug/L	15	Standard
	Tl	203	564.3	4.2	**0.0176**	0.001	4.3	ug/L	5	Standard
	Tl	205	585.0	31.2	**0.0241**	0.009	37.6	ug/L	8	Standard
	Pb	206	153068.3	2.5	**9.3451**	0.163	1.7	ug/L	348	Standard
	Pb	207	126202.0	2.8	**8.5548**	0.102	1.2	ug/L	284	Standard
	Pb	208	400430.5	2.7	**8.8249**	0.083	0.9	ug/L	938	Standard
	U	238	592.7	28.1	**0.0359**	0.010	27.9	ug/L	3	Standard
>	Bi	209	1310446.7	1.8				ug/L	615841	Standard

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Na	23	1.7	173.2	**3.2198**	5.568	172.9	mg/L	3	Standard
Mg	24	8567.4	1.4	**7.7310**	0.168	2.2	mg/L	68	Standard
K	39	1435.1	8.6	**3.8523**	0.432	11.2	mg/L	23	Standard
Ca	43	156.7	30.2	**7.4255**	3.426	46.1	mg/L	52	Standard
Fe	54	360.6	7.5	**0.1096**	0.016	14.2	mg/L	214	Standard
Fe	57	303.3	13.8	**0.1973**	0.089	45.1	mg/L	213	Standard
> **Sc-1**	45	49377.0	2.9				mg/L	49932	Standard
Cl	35	24571.2	1.6				ug/L	23537	Standard
Kr	83	3.7	31.5				ug/L	3	Standard
Br	81	2626.9	11.1				ug/L	1553	Standard
P	31	16343.8	6.2				ug/L	15523	Standard
S	34	983.4	7.1				ug/L	1052	Standard
Sr	88	178.3	1.6				ug/L	147	Standard
C	12	2583.6	4.3				mg/L	397	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	200.3	32.8				mg/L	29	Standard
Ho-1	165	125.0	13.9				mg/L	15	Standard
Er	166	133.3	42.6				mg/L	23	Standard
I	127	3700.5	6.2				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.005	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.743	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.098
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		212.790
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Zn 66 Upper, S, EEE	Zn	66	
Bi 209 Int Std for sample	Bi	209	Rerun sample

Sample ID: L1502079201
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Method 6020 - Summary Report

Sample ID: +10
Sample Date/Time: Monday, February 23, 2015 13:01:16
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	121004.8	2.5				ug/L	102148	Standard
	Be	9	18366.1	2.1	**11.1575**	0.194	1.7	ug/L	8	Standard
	Al	27	1958740.9	0.2	**10.6634**	0.285	2.7	ug/L	1058	Standard
	Sc	45	50729.8	0.7				ug/L	49932	Standard
	Ti	47	875.7	3.5	**3.1970**	0.127	4.0	ug/L	25	Standard
	V	51	115008.3	0.7	**12.5029**	0.241	1.9	ug/L	2343	Standard
	Cr	52	152963.9	2.5	**16.3483**	0.150	0.9	ug/L	9255	Standard
	Cr	53	28488.4	2.2	**24.6301**	0.810	3.3	ug/L	355	Standard
	Mn	55	644202.0	1.8	**46.5747**	0.683	1.5	ug/L	920	Standard
	Co	59	130263.2	0.3	**11.6628**	0.267	2.3	ug/L	117	Standard
	Ni	60	38159.7	1.4	**13.9368**	0.196	1.4	ug/L	48	Standard
	Cu	65	157408.9	1.6	**58.8588**	0.660	1.1	ug/L	211	Standard
	Zn	66	721116.6	1.3	**564.9604**	13.376	2.4	ug/L	477	Standard
>	**Ge**	72	546662.2	2.4				ug/L	543406	Standard
	As	75	16701.1	0.8	**12.2158**	0.259	2.1	ug/L	-90	Standard
	Se	82	2015.7	2.3	**14.4989**	0.312	2.1	ug/L	31	Standard
	Se-1	77	2148.2	2.1	**22.3900**	1.080	4.8	ug/L	117	Standard
>	**Ga**	71	2425.2	5.8				mg/L	22	Standard
	Rb	85	23777.0	0.8				ug/L	53	Standard
	Y	89	577440.0	3.6				ug/L	557276	Standard
>	**Rh**	103	50.0	20.0				ug/L	12	Standard
	Mo	98	737.0	5.9	**0.2038**	0.010	5.0	ug/L	159	Standard
	Ag	107	115372.3	0.6	**10.8055**	0.116	1.1	ug/L	102	Standard
	Cd	111	37604.8	1.9	**12.8120**	0.420	3.3	mg/L	4	Standard
	Cd	114	91989.0	1.5	**12.6675**	0.283	2.2	ug/L	34	Standard
>	**In**	115	882508.9	1.4				ug/L	828245	Standard
	Sn	118	19167.1	3.7	**2.0941**	0.110	5.2	ug/L	850	Standard
	Sb	123	80970.5	2.1	**12.7272**	0.397	3.1	ug/L	499	Standard
	Ba	135	45675.4	0.5	**13.1448**	0.220	1.7	ug/L	23	Standard
	Ce	140	5744.4	3.2				ug/L	45	Standard
>	**Tb**	159	1498372.2	0.4				ug/L	1408642	Standard
	Ho	165	120.0	20.8				ug/L	15	Standard
	Tl	203	127356.1	1.6	**5.4254**	0.091	1.7	ug/L	5	Standard
	Tl	205	106268.1	1.0	**5.4174**	0.032	0.6	ug/L	8	Standard
	Pb	206	244827.7	1.2	**14.7221**	0.212	1.4	ug/L	348	Standard
	Pb	207	208762.5	2.2	**13.9462**	0.324	2.3	ug/L	284	Standard
	Pb	208	644878.0	1.2	**14.0045**	0.192	1.4	ug/L	938	Standard
	U	238	85629.0	1.9	**5.4420**	0.119	2.2	ug/L	3	Standard
>	**Bi**	209	1333025.5	0.5				ug/L	615841	Standard

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Na	23	1.7	173.2	**3.2271**	5.581	172.9	mg/L	3	Standard
Mg	24	8899.3	3.0	**7.8154**	0.278	3.6	mg/L	68	Standard
K	39	1571.7	0.2	**4.1020**	0.024	0.6	mg/L	23	Standard
Ca	43	141.7	19.4	**6.1234**	1.855	30.3	mg/L	52	Standard
Fe	54	402.0	3.6	**0.1293**	0.008	6.1	mg/L	214	Standard
Fe	57	323.3	9.3	**0.2250**	0.066	29.5	mg/L	213	Standard
> **Sc-1**	45	50729.8	0.7				mg/L	49932	Standard
Cl	35	26077.8	2.5				ug/L	23537	Standard
Kr	83	4.0	25.0				ug/L	3	Standard
Br	81	2633.6	11.5				ug/L	1553	Standard
P	31	18014.0	3.1				ug/L	15523	Standard
S	34	940.0	9.3				ug/L	1052	Standard
Sr	88	198.3	26.7				ug/L	147	Standard
C	12	2840.3	9.7				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	130.3	38.9				mg/L	29	Standard
Ho-1	165	120.0	20.8				mg/L	15	Standard
Er	166	133.3	11.5				mg/L	23	Standard
I	127	3950.5	1.7				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.460	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.599	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	106.552
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	216.456
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Zn 66 Upper, S, EEE	Zn	66	
Bi 209 Int Std for sample	Bi	209	Rerun sample

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Method 6020 - Summary Report

Sample ID: +20
Sample Date/Time: Monday, February 23, 2015 13:04:27
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	126825.6	2.9				ug/L	102148	Standard
	Be	9	34749.8	1.5	**20.1635**	0.864	4.3	ug/L	8	Standard
	Al	27	1977826.8	2.5	**10.2744**	0.427	4.2	ug/L	1058	Standard
	Sc	45	50542.5	1.2				ug/L	49932	Standard
	Ti	47	887.4	1.8	**3.2392**	0.083	2.5	ug/L	25	Standard
	V	51	209020.0	3.2	**22.9391**	0.799	3.5	ug/L	2343	Standard
	Cr	52	244867.4	3.1	**26.8113**	0.968	3.6	ug/L	9255	Standard
	Cr	53	42050.0	4.5	**36.4965**	1.411	3.9	ug/L	355	Standard
	Mn	55	779181.9	1.1	**56.3298**	0.827	1.5	ug/L	920	Standard
	Co	59	240912.5	1.5	**21.5736**	0.382	1.8	ug/L	117	Standard
	Ni	60	67170.6	2.0	**24.5456**	0.553	2.3	ug/L	48	Standard
	Cu	65	184541.1	1.3	**68.9944**	0.947	1.4	ug/L	211	Standard
	Zn	66	732945.4	2.3	**573.8893**	12.066	2.1	ug/L	477	Standard
>	**Ge**	72	546806.0	0.7				ug/L	543406	Standard
	As	75	31127.4	1.4	**22.6692**	0.327	1.4	ug/L	-90	Standard
	Se	82	3480.5	1.7	**25.1703**	0.544	2.2	ug/L	31	Standard
	Se-1	77	3120.3	3.7	**33.0896**	1.127	3.4	ug/L	117	Standard
>	**Ga**	71	2368.5	13.0				mg/L	22	Standard
	Rb	85	24024.0	1.1				ug/L	53	Standard
	Y	89	571536.7	0.1				ug/L	557276	Standard
>	**Rh**	103	41.7	25.0				ug/L	12	Standard
	Mo	98	732.3	1.6	**0.2004**	0.006	2.9	ug/L	159	Standard
	Ag	107	219023.6	1.5	**20.3292**	0.438	2.2	ug/L	102	Standard
	Cd	111	67092.3	0.8	**22.6359**	0.231	1.0	mg/L	4	Standard
	Cd	114	164459.5	1.4	**22.4369**	0.514	2.3	ug/L	34	Standard
>	**In**	115	891250.5	1.4				ug/L	828245	Standard
	Sn	118	19405.8	0.6	**2.0989**	0.032	1.5	ug/L	850	Standard
	Sb	123	146089.5	3.2	**22.7446**	0.540	2.4	ug/L	499	Standard
	Ba	135	80770.7	1.4	**23.0256**	0.210	0.9	ug/L	23	Standard
	Ce	140	5684.4	4.5				ug/L	45	Standard
>	**Tb**	159	1495871.6	2.2				ug/L	1408642	Standard
	Ho	165	145.0	17.9				ug/L	15	Standard
	Tl	203	240702.0	0.9	**10.1823**	0.077	0.8	ug/L	5	Standard
	Tl	205	200627.4	3.6	**10.1546**	0.301	3.0	ug/L	8	Standard
	Pb	206	324030.4	1.9	**19.3501**	0.133	0.7	ug/L	348	Standard
	Pb	207	279606.2	2.2	**18.5529**	0.291	1.6	ug/L	284	Standard
	Pb	208	859931.8	0.8	**18.5512**	0.207	1.1	ug/L	938	Standard
	U	238	160793.5	1.3	**10.1430**	0.086	0.9	ug/L	3	Standard
>	**Bi**	209	1343234.5	1.3				ug/L	615841	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	3	Standard
Mg	24	9002.7	1.7	**7.9375**	0.227	2.9	mg/L	68	Standard
K	39	1583.4	6.7	**4.1503**	0.320	7.7	mg/L	23	Standard
Ca	43	145.0	28.2	**6.3847**	2.781	43.6	mg/L	52	Standard
Fe	54	405.6	26.2	**0.1320**	0.064	48.2	mg/L	214	Standard
Fe	57	300.0	11.7	**0.1746**	0.090	51.5	mg/L	213	Standard
> **Sc-1**	45	50542.5	1.2				mg/L	49932	Standard
Cl	35	26692.8	1.5				ug/L	23537	Standard
Kr	83	3.3	45.8				ug/L	3	Standard
Br	81	2576.9	10.1				ug/L	1553	Standard
P	31	17246.5	0.8				ug/L	15523	Standard
S	34	1013.4	9.0				ug/L	1052	Standard
Sr	88	170.0	20.4				ug/L	147	Standard
C	12	2873.6	13.1				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	13.3	86.6				mg/L	0	Standard
Dy	164	173.0	9.9				mg/L	29	Standard
Ho-1	165	145.0	17.9				mg/L	15	Standard
Er	166	146.7	7.9				mg/L	23	Standard
I	127	3913.8	9.1				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.158	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.626	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	107.607	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	218.114	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Zn 66 Upper, S, EEE	Zn	66	
Bi 209 Int Std for sample	Bi	209	Rerun sample

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Method 6020 - Summary Report

Sample ID: +30
Sample Date/Time: Monday, February 23, 2015 13:07:39
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	121932.2	2.4				ug/L	102148	Standard
	Be	9	50865.2	0.4	**30.6887**	0.625	2.0	ug/L	8	Standard
	Al	27	1952038.4	1.0	**10.5436**	0.166	1.6	ug/L	1058	Standard
	Sc	45	49326.9	3.9				ug/L	49932	Standard
	Ti	47	875.0	2.8	**3.2115**	0.103	3.2	ug/L	25	Standard
	V	51	297359.5	1.7	**32.9355**	0.393	1.2	ug/L	2343	Standard
	Cr	52	331311.7	1.5	**36.8672**	0.677	1.8	ug/L	9255	Standard
	Cr	53	53668.2	0.9	**46.9542**	0.248	0.5	ug/L	355	Standard
	Mn	55	922572.8	2.0	**67.0815**	0.745	1.1	ug/L	920	Standard
	Co	59	360199.4	3.0	**32.4428**	0.696	2.1	ug/L	117	Standard
	Ni	60	92350.8	2.9	**33.9441**	0.732	2.2	ug/L	48	Standard
	Cu	65	208333.5	2.7	**78.3349**	1.603	2.0	ug/L	211	Standard
	Zn	66	729865.6	3.0	**574.6580**	12.509	2.2	ug/L	477	Standard
>	Ge	72	543728.0	0.9				ug/L	543406	Standard
	As	75	45263.0	0.6	**33.1044**	0.095	0.3	ug/L	-90	Standard
	Se	82	4938.0	0.9	**35.9961**	0.256	0.7	ug/L	31	Standard
	Se-1	77	4064.5	1.6	**43.7683**	1.015	2.3	ug/L	117	Standard
>	Ga	71	2390.2	1.8				mg/L	22	Standard
	Rb	85	23406.4	3.8				ug/L	53	Standard
	Y	89	593085.0	0.4				ug/L	557276	Standard
>	Rh	103	78.3	16.1				ug/L	12	Standard
	Mo	98	710.9	0.8	**0.1943**	0.006	2.9	ug/L	159	Standard
	Ag	107	314400.0	2.7	**29.2086**	0.217	0.7	ug/L	102	Standard
	Cd	111	98142.5	2.5	**33.1399**	0.038	0.1	mg/L	4	Standard
	Cd	114	243409.2	5.4	**33.2206**	0.995	3.0	ug/L	34	Standard
>	In	115	890535.4	2.4				ug/L	828245	Standard
	Sn	118	18528.0	3.1	**2.0034**	0.113	5.7	ug/L	850	Standard
	Sb	123	210094.0	2.1	**32.7502**	0.422	1.3	ug/L	499	Standard
	Ba	135	113755.3	2.7	**32.4625**	0.593	1.8	ug/L	23	Standard
	Ce	140	5859.5	1.9				ug/L	45	Standard
>	Tb	159	1464668.7	2.4				ug/L	1408642	Standard
	Ho	165	138.3	11.6				ug/L	15	Standard
	Tl	203	350970.7	2.2	**15.0838**	0.245	1.6	ug/L	5	Standard
	Tl	205	294944.8	0.6	**15.1714**	0.296	1.9	ug/L	8	Standard
	Pb	206	395573.1	0.8	**24.0120**	0.423	1.8	ug/L	348	Standard
	Pb	207	342695.7	1.8	**23.1115**	0.201	0.9	ug/L	284	Standard
	Pb	208	1083272.0	1.6	**23.7519**	0.219	0.9	ug/L	938	Standard
	U	238	238901.7	1.6	**15.3092**	0.157	1.0	ug/L	3	Standard
>	Bi	209	1322533.6	2.5				ug/L	615841	Standard

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Na	23	3.3	86.6	**6.5259**	5.651	86.6	mg/L	3	Standard
Mg	24	9079.4	1.3	**8.2092**	0.232	2.8	mg/L	68	Standard
K	39	1536.7	5.8	**4.1241**	0.150	3.6	mg/L	23	Standard
Ca	43	128.3	25.9	**5.5505**	2.577	46.4	mg/L	52	Standard
Fe	54	405.4	8.9	**0.1391**	0.029	20.8	mg/L	214	Standard
Fe	57	293.3	6.9	**0.1764**	0.063	35.6	mg/L	213	Standard
> **Sc-1**	45	49326.9	3.9				mg/L	49932	Standard
Cl	35	27351.3	2.9				ug/L	23537	Standard
Kr	83	3.3	45.8				ug/L	3	Standard
Br	81	2600.2	11.3				ug/L	1553	Standard
P	31	18115.9	7.6				ug/L	15523	Standard
S	34	1038.4	8.8				ug/L	1052	Standard
Sr	88	201.7	3.8				ug/L	147	Standard
C	12	2970.3	8.5				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	13.3	86.6				mg/L	0	Standard
Dy	164	163.1	15.6				mg/L	29	Standard
Ho-1	165	138.3	11.6				mg/L	15	Standard
Er	166	143.3	16.1				mg/L	23	Standard
I	127	3750.5	0.3				mg/L	1075	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		119.368	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.059	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.521
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		214.752
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Zn 66 Upper, S, EEE	Zn	66	
Bi 209 Int Std for sample	Bi	209	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, February 23, 2015 13:10:52
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	120305.9	1.9				ug/L	102148	Standard
	Be	9	77571.5	3.2	**47.4222**	1.060	2.2	ug/L	8	Standard
	Al	27	8731865.9	7.3	**47.8282**	2.759	5.8	ug/L	1058	Standard
	Sc	45	50888.7	3.3				ug/L	49932	Standard
	Ti	47	26896.2	1.7	**99.7580**	2.109	2.1	ug/L	25	Standard
	V	51	467264.0	2.3	**51.2222**	1.260	2.5	ug/L	2343	Standard
	Cr	52	469452.7	1.4	**51.9682**	0.550	1.1	ug/L	9255	Standard
	Cr	53	60741.5	1.2	**52.4795**	0.785	1.5	ug/L	355	Standard
	Mn	55	712861.1	2.4	**51.1276**	1.205	2.4	ug/L	920	Standard
	Co	59	565179.8	2.9	**50.2455**	1.456	2.9	ug/L	117	Standard
	Ni	60	145198.3	2.4	**52.6804**	1.169	2.2	ug/L	48	Standard
	Cu	65	140213.6	1.5	**51.9927**	0.795	1.5	ug/L	211	Standard
	Zn	66	66559.6	1.9	**51.3862**	0.564	1.1	ug/L	477	Standard
>	Ge	72	551063.0	0.9				ug/L	543406	Standard
	As	75	72262.9	2.8	**52.0876**	1.206	2.3	ug/L	-90	Standard
	Se	82	7291.0	1.9	**52.5298**	0.711	1.4	ug/L	31	Standard
	Se-1	77	4861.1	1.9	**51.8902**	1.413	2.7	ug/L	117	Standard
>	Ga	71	68.3	16.9				mg/L	22	Standard
	Rb	85	1145.0	7.6				ug/L	53	Standard
	Y	89	554715.4	1.7				ug/L	557276	Standard
>	Rh	103	41.7	18.3				ug/L	12	Standard
	Mo	98	327771.4	0.8	**99.5515**	1.674	1.7	ug/L	159	Standard
	Ag	107	530865.2	0.2	**50.5186**	0.584	1.2	ug/L	102	Standard
	Cd	111	147246.5	1.6	**50.9249**	1.269	2.5	mg/L	4	Standard
	Cd	114	362989.1	6.1	**50.7805**	3.550	7.0	ug/L	34	Standard
>	In	115	869694.1	0.9				ug/L	828245	Standard
	Sn	118	431670.9	2.8	**49.7101**	1.597	3.2	ug/L	850	Standard
	Sb	123	342132.9	1.1	**54.6242**	1.091	2.0	ug/L	499	Standard
	Ba	135	170192.9	0.6	**49.7416**	0.740	1.5	ug/L	23	Standard
	Ce	140	275.0	10.1				ug/L	45	Standard
>	Tb	159	1473172.2	0.6				ug/L	1408642	Standard
	Ho	165	20.0	66.1				ug/L	15	Standard
	Tl	203	560990.8	0.4	**50.9495**	0.092	0.2	ug/L	5	Standard
	Tl	205	472232.6	1.7	**51.3200**	0.872	1.7	ug/L	8	Standard
	Pb	206	397168.3	1.2	**50.9770**	0.593	1.2	ug/L	348	Standard
	Pb	207	358301.7	1.6	**51.1107**	0.814	1.6	ug/L	284	Standard
	Pb	208	1099259.0	2.1	**50.9784**	1.126	2.2	ug/L	938	Standard
	U	238	379747.9	1.3	**51.4127**	0.698	1.4	ug/L	3	Standard
>	Bi	209	625960.6	0.3				ug/L	615841	Standard

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Na	23	10.0	50.0	**19.3037**	9.767	50.6	mg/L	3	Standard
Mg	24	5872.8	2.4	**5.1165**	0.206	4.0	mg/L	68	Standard
K	39	1786.8	8.6	**4.6665**	0.541	11.6	mg/L	23	Standard
Ca	43	121.7	10.3	**4.7942**	0.859	17.9	mg/L	52	Standard
Fe	54	8502.1	2.4	**5.1820**	0.293	5.6	mg/L	214	Standard
Fe	57	2473.5	6.1	**5.1791**	0.515	9.9	mg/L	213	Standard
Sc-1	45	50888.7	3.3				mg/L	49932	Standard
Cl	35	27074.2	1.8				ug/L	23537	Standard
Kr	83	3.3	86.6				ug/L	3	Standard
Br	81	1730.1	5.3				ug/L	1553	Standard
P	31	19314.0	3.9				ug/L	15523	Standard
S	34	1226.7	5.1				ug/L	1052	Standard
Sr	88	163.3	9.8				ug/L	147	Standard
C	12	460.0	11.3				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	8.9	115.3				mg/L	29	Standard
Ho-1	165	20.0	66.1				mg/L	15	Standard
Er	166	23.3	24.7				mg/L	23	Standard
I	127	1155.0	12.5				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	94.844		
Al	27	95.656		
Sc	45			
Ti	47	99.758		
V	51	102.444		
Cr	52	103.936		
Cr	53			
Mn	55	102.255		
Co	59	100.491		
Ni	60	105.361		
Cu	65	103.985		
Zn	66	102.772		
Ge	72		101.409	
As	75	104.175		
Se	82	105.060		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	99.551		
Ag	107	101.037		
Cd	111	101.850		
Cd	114			
In	115			105.004
Sn	118	99.420		
Sb	123	109.248		
Ba	135	99.483		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.899		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.957		
U	238	102.825		
Bi	209			101.643
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, February 23, 2015 13:14:04
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	112738.0	2.5				ug/L	102148	Standard
	Be	9	36.7	51.6	**0.0134**	0.012	92.6	ug/L	8	Standard
	Al	27	1820.1	26.1	**-0.0076**	0.003	33.5	ug/L	1058	Standard
	Sc	45	50086.1	4.3				ug/L	49932	Standard
	Ti	47	29.0	21.5	**0.0311**	0.024	76.6	ug/L	25	Standard
	V	51	2279.2	2.0	**-0.0178**	0.005	28.6	ug/L	2343	Standard
	Cr	52	9034.4	1.0	**-0.0158**	0.013	79.4	ug/L	9255	Standard
	Cr	53	565.0	14.6	**0.1491**	0.073	49.1	ug/L	355	Standard
	Mn	55	997.0	6.4	**-0.0074**	0.005	64.6	ug/L	920	Standard
	Co	59	188.7	13.9	**-0.0023**	0.002	107.0	ug/L	117	Standard
	Ni	60	53.7	17.6	**-0.0102**	0.004	35.0	ug/L	48	Standard
	Cu	65	260.0	4.3	**0.0028**	0.004	157.2	ug/L	211	Standard
	Zn	66	357.7	5.4	**-0.0680**	0.016	24.2	ug/L	477	Standard
>	**Ge**	72	531585.9	0.3				ug/L	543406	Standard
	As	75	-110.0	29.5	**0.0171**	0.024	142.7	ug/L	-90	Standard
	Se	82	25.3	24.1	**-0.0095**	0.045	475.9	ug/L	31	Standard
	Se-1	77	116.3	12.5	**-0.0132**	0.162	1227.7	ug/L	117	Standard
>	**Ga**	71	20.0	75.0				mg/L	22	Standard
	Rb	85	83.3	27.7				ug/L	53	Standard
	Y	89	566551.1	2.2				ug/L	557276	Standard
>	**Rh**	103	8.3	69.3				ug/L	12	Standard
	Mo	98	151.8	4.2	**0.0295**	0.003	9.8	ug/L	159	Standard
	Ag	107	134.7	12.4	**-0.0056**	0.002	32.1	ug/L	102	Standard
	Cd	111	11.4	39.6	**-0.0050**	0.001	29.5	mg/L	4	Standard
	Cd	114	26.7	49.0	**-0.0114**	0.002	16.7	ug/L	34	Standard
>	**In**	115	869872.9	2.6				ug/L	828245	Standard
	Sn	118	870.0	1.5	**0.0149**	0.004	27.4	ug/L	850	Standard
	Sb	123	501.1	26.7	**0.0617**	0.023	37.2	ug/L	499	Standard
	Ba	135	39.3	19.7	**-0.0042**	0.002	46.5	ug/L	23	Standard
	Ce	140	38.3	41.9				ug/L	45	Standard
>	**Tb**	159	1457278.4	1.3				ug/L	1408642	Standard
	Ho	165	8.3	124.9				ug/L	15	Standard
	Tl	203	87.0	32.0	**0.0011**	0.003	235.3	ug/L	5	Standard
	Tl	205	68.3	37.5	**0.0013**	0.003	223.9	ug/L	8	Standard
	Pb	206	369.0	2.3	**-0.0005**	0.001	267.2	ug/L	348	Standard
	Pb	207	319.0	8.8	**-0.0063**	0.004	62.7	ug/L	284	Standard
	Pb	208	1019.7	2.6	**-0.0059**	0.001	25.1	ug/L	938	Standard
	U	238	36.0	36.7	**0.0026**	0.002	70.3	ug/L	3	Standard
>	**Bi**	209	620711.7	0.5				ug/L	615841	Standard

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Na	23	1.7	173.2	**3.3213**	5.744	172.9	mg/L	3	Standard
Mg	24	106.7	33.3	**0.0148**	0.032	218.2	mg/L	68	Standard
K	39	21.7	53.3	**0.0052**	0.033	634.0	mg/L	23	Standard
Ca	43	41.7	36.7	**-0.3294**	1.082	328.7	mg/L	52	Standard
Fe	54	215.8	22.7	**0.0142**	0.028	196.7	mg/L	214	Standard
Fe	57	245.0	5.4	**0.0516**	0.018	35.3	mg/L	213	Standard
> **Sc-1**	45	50086.1	4.3				mg/L	49932	Standard
Cl	35	25691.8	1.5				ug/L	23537	Standard
Kr	83	3.7	41.7				ug/L	3	Standard
Br	81	1723.4	11.1				ug/L	1553	Standard
P	31	18503.0	2.0				ug/L	15523	Standard
S	34	1165.0	4.9				ug/L	1052	Standard
Sr	88	171.7	16.0				ug/L	147	Standard
C	12	433.3	8.1				mg/L	397	Standard
N	14	6.7	86.6				mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	8.1	132.7				mg/L	29	Standard
Ho-1	165	8.3	124.9				mg/L	15	Standard
Er	166	40.0	43.3				mg/L	23	Standard
I	127	758.4	2.5				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.825	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.026
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.791
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW 56 WG512325-02
Sample Date/Time: Monday, February 23, 2015 13:59:53
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	120005.5	3.8				ug/L	102148	Standard
	Be	9	13.3	21.7	**-0.0024**	0.002	66.5	ug/L	8	Standard
	Al	27	10773.8	2.2	**0.0411**	0.003	7.8	ug/L	1058	Standard
	Sc	45	50224.8	3.6				ug/L	49932	Standard
	Ti	47	37.0	23.6	**0.0538**	0.033	60.8	ug/L	25	Standard
	V	51	2759.0	1.9	**0.0190**	0.010	54.5	ug/L	2343	Standard
	Cr	52	10609.7	0.1	**0.0972**	0.019	19.1	ug/L	9255	Standard
	Cr	53	553.3	6.4	**0.1103**	0.037	33.6	ug/L	355	Standard
	Mn	55	3353.7	1.1	**0.1537**	0.003	1.9	ug/L	920	Standard
	Co	59	176.7	1.2	**-0.0043**	0.000	7.9	ug/L	117	Standard
	Ni	60	150.0	5.5	**0.0227**	0.002	9.2	ug/L	48	Standard
	Cu	65	611.7	6.8	**0.1246**	0.013	10.1	ug/L	211	Standard
	Zn	66	2388.2	3.8	**1.4584**	0.096	6.6	ug/L	477	Standard
>	**Ge**	72	564112.1	1.6				ug/L	543406	Standard
	As	75	-111.4	29.5	**0.0210**	0.022	105.9	ug/L	-90	Standard
	Se	82	34.8	5.7	**0.0466**	0.017	35.6	ug/L	31	Standard
	Se-1	77	135.7	8.5	**0.1191**	0.143	120.2	ug/L	117	Standard
>	**Ga**	71	31.7	48.2				mg/L	22	Standard
	Rb	85	2952.0	1.9				ug/L	53	Standard
	Y	89	598226.5	3.7				ug/L	557276	Standard
>	**Rh**	103	10.0	86.6				ug/L	12	Standard
	Mo	98	157.7	39.2	**0.0293**	0.019	63.6	ug/L	159	Standard
	Ag	107	109.0	8.3	**-0.0084**	0.001	11.9	ug/L	102	Standard
	Cd	111	10.8	49.9	**-0.0053**	0.002	33.6	mg/L	4	Standard
	Cd	114	42.1	45.9	**-0.0094**	0.003	28.2	ug/L	34	Standard
>	**In**	115	907453.0	1.9				ug/L	828245	Standard
	Sn	118	1163.4	12.7	**0.0433**	0.018	41.9	ug/L	850	Standard
	Sb	123	690.1	32.8	**0.0871**	0.035	40.7	ug/L	499	Standard
	Ba	135	471.7	3.5	**0.1166**	0.007	6.1	ug/L	23	Standard
	Ce	140	381.7	2.0				ug/L	45	Standard
>	**Tb**	159	1511014.3	0.9				ug/L	1408642	Standard
	Ho	165	15.0	66.7				ug/L	15	Standard
	Tl	203	70.7	8.2	**-0.0007**	0.000	65.3	ug/L	5	Standard
	Tl	205	63.3	31.9	**0.0004**	0.002	552.3	ug/L	8	Standard
	Pb	206	538.0	2.1	**0.0181**	0.001	7.7	ug/L	348	Standard
	Pb	207	462.3	4.1	**0.0112**	0.002	22.1	ug/L	284	Standard
	Pb	208	1473.4	2.5	**0.0121**	0.002	16.1	ug/L	938	Standard
	U	238	12.3	4.7	**-0.0007**	0.000	11.5	ug/L	3	Standard
>	**Bi**	209	651815.2	0.6				ug/L	615841	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	3	Standard
Mg	24	125.0	6.9	**0.0312**	0.012	37.9	mg/L	68	Standard
K	39	33.3	22.9	**0.0355**	0.020	55.7	mg/L	23	Standard
Ca	43	45.0	11.1	**-0.1340**	0.438	326.8	mg/L	52	Standard
Fe	54	222.3	13.7	**0.0188**	0.022	119.1	mg/L	214	Standard
Fe	57	228.3	14.6	**0.0106**	0.067	628.6	mg/L	213	Standard
> **Sc-1**	45	50224.8	3.6				mg/L	49932	Standard
Cl	35	29681.1	3.7				ug/L	23537	Standard
Kr	83	5.7	83.4				ug/L	3	Standard
Br	81	2023.5	8.7				ug/L	1553	Standard
P	31	20285.3	7.5				ug/L	15523	Standard
S	34	1106.7	5.0				ug/L	1052	Standard
Sr	88	121.7	16.6				ug/L	147	Standard
C	12	696.7	9.6				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	35.1	114.0				mg/L	29	Standard
Ho-1	165	15.0	66.7				mg/L	15	Standard
Er	166	33.3	34.6				mg/L	23	Standard
I	127	1655.1	19.1				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.482	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.810	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.563
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.841
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 56 WG512325-02
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Method 6020 - Summary Report

Sample ID: LCSW 56 WG512325-03
Sample Date/Time: Monday, February 23, 2015 14:03:04
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	118638.1	3.7				ug/L	102148	Standard
	Be	9	82373.6	4.0	**51.0833**	1.675	3.3	ug/L	8	Standard
	Al	27	11245.8	2.7	**0.0444**	0.002	3.7	ug/L	1058	Standard
	Sc	45	51915.5	2.3				ug/L	49932	Standard
	Ti	47	33.7	21.5	**0.0417**	0.028	66.0	ug/L	25	Standard
	V	51	477811.9	2.1	**51.1542**	1.731	3.4	ug/L	2343	Standard
	Cr	52	486325.3	2.2	**52.5936**	1.833	3.5	ug/L	9255	Standard
	Cr	53	63019.2	2.9	**53.1746**	1.906	3.6	ug/L	355	Standard
	Mn	55	746084.8	1.4	**52.2609**	1.417	2.7	ug/L	920	Standard
	Co	59	587637.0	2.6	**51.0240**	1.903	3.7	ug/L	117	Standard
	Ni	60	150219.7	4.5	**53.2418**	3.030	5.7	ug/L	48	Standard
	Cu	65	146641.2	0.7	**53.1019**	1.006	1.9	ug/L	211	Standard
	Zn	66	70323.9	1.9	**53.0360**	1.471	2.8	ug/L	477	Standard
>	**Ge**	72	564382.3	1.3				ug/L	543406	Standard
	As	75	72268.9	1.5	**50.8794**	1.403	2.8	ug/L	-90	Standard
	Se	82	7353.8	0.5	**51.7359**	0.729	1.4	ug/L	31	Standard
	Se-1	77	4945.5	1.4	**51.5411**	1.429	2.8	ug/L	117	Standard
>	**Ga**	71	56.7	22.2				mg/L	22	Standard
	Rb	85	2868.6	3.3				ug/L	53	Standard
	Y	89	591148.7	2.3				ug/L	557276	Standard
>	**Rh**	103	58.3	26.2				ug/L	12	Standard
	Mo	98	100.3	16.4	**0.0132**	0.005	39.0	ug/L	159	Standard
	Ag	107	551549.4	3.5	**51.4225**	2.079	4.0	ug/L	102	Standard
	Cd	111	153556.6	2.3	**52.0200**	1.257	2.4	mg/L	4	Standard
	Cd	114	367402.3	2.3	**50.3361**	1.479	2.9	ug/L	34	Standard
>	**In**	115	887908.9	2.2				ug/L	828245	Standard
	Sn	118	840.0	21.2	**0.0094**	0.020	211.9	ug/L	850	Standard
	Sb	123	355131.6	2.3	**55.5480**	1.789	3.2	ug/L	499	Standard
	Ba	135	174186.3	2.6	**49.8643**	1.081	2.2	ug/L	23	Standard
	Ce	140	308.3	6.8				ug/L	45	Standard
>	**Tb**	159	1472422.2	4.2				ug/L	1408642	Standard
	Ho	165	10.0	50.0				ug/L	15	Standard
	Tl	203	577058.8	2.5	**51.2679**	1.483	2.9	ug/L	5	Standard
	Tl	205	491438.9	4.3	**52.2276**	1.733	3.3	ug/L	8	Standard
	Pb	206	423131.3	2.7	**53.1303**	1.704	3.2	ug/L	348	Standard
	Pb	207	367131.3	2.4	**51.2244**	1.103	2.2	ug/L	284	Standard
	Pb	208	1144589.2	2.3	**51.9261**	1.486	2.9	ug/L	938	Standard
	U	238	388368.9	3.3	**51.4322**	1.734	3.4	ug/L	3	Standard
>	**Bi**	209	640020.9	1.9				ug/L	615841	Standard

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Na	23	1.7	173.2	**3.1981**	5.531	172.9	mg/L	3	Standard
Mg	24	108.3	30.0	**0.0129**	0.028	221.0	mg/L	68	Standard
K	39	33.3	8.7	**0.0326**	0.007	20.3	mg/L	23	Standard
Ca	43	51.7	27.9	**0.1762**	0.885	502.4	mg/L	52	Standard
Fe	54	228.5	8.0	**0.0178**	0.013	73.1	mg/L	214	Standard
Fe	57	226.7	23.2	**-0.0080**	0.128	1596.3	mg/L	213	Standard
Sc-1	45	51915.5	2.3				mg/L	49932	Standard
Cl	35	29411.9	0.9				ug/L	23537	Standard
Kr	83	3.0	33.3				ug/L	3	Standard
Br	81	1963.5	10.5				ug/L	1553	Standard
P	31	19869.8	13.2				ug/L	15523	Standard
S	34	1090.0	7.4				ug/L	1052	Standard
Sr	88	160.0	14.3				ug/L	147	Standard
C	12	493.3	24.4				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	22.1	94.7				mg/L	29	Standard
Ho-1	165	10.0	50.0				mg/L	15	Standard
Er	166	26.7	21.7				mg/L	23	Standard
I	127	986.7	1.1				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		116.143	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.860	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.204
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.926
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1502074301
Sample Date/Time: Monday, February 23, 2015 14:06:16
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	122396.2	3.8				ug/L	102148	Standard
	Be	9	440.0	10.8	**0.2536**	0.022	8.6	ug/L	8	Standard
	Al	27	7490617.9	2.4	**40.3788**	1.535	3.8	ug/L	1058	Standard
	Sc	45	52507.5	0.9				ug/L	49932	Standard
	Ti	47	1026.0	12.4	**3.6236**	0.440	12.1	ug/L	25	Standard
	V	51	12900.4	2.9	**1.1053**	0.045	4.0	ug/L	2343	Standard
	Cr	52	15484.2	1.9	**0.6283**	0.030	4.8	ug/L	9255	Standard
	Cr	53	4419.0	5.2	**3.3798**	0.193	5.7	ug/L	355	Standard
	Mn	55	1477780.9	3.5	**103.2130**	3.764	3.6	ug/L	920	Standard
	Co	59	116913.0	3.3	**10.0977**	0.350	3.5	ug/L	117	Standard
	Ni	60	17928.9	1.3	**6.3027**	0.095	1.5	ug/L	48	Standard
	Cu	65	4642.4	1.6	**1.5808**	0.029	1.8	ug/L	211	Standard
	Zn	66	16126.6	2.3	**11.8435**	0.331	2.8	ug/L	477	Standard
>	**Ge**	72	566353.6	0.5				ug/L	543406	Standard
	As	75	136.8	55.2	**0.1950**	0.053	27.2	ug/L	-90	Standard
	Se	82	126.6	3.0	**0.6914**	0.029	4.2	ug/L	31	Standard
	Se-1	77	380.0	1.6	**2.7147**	0.070	2.6	ug/L	117	Standard
>	**Ga**	71	903.4	6.8				mg/L	22	Standard
	Rb	85	58375.6	2.8				ug/L	53	Standard
	Y	89	673760.8	2.2				ug/L	557276	Standard
>	**Rh**	103	50.0	26.5				ug/L	12	Standard
	Mo	98	78.1	11.0	**0.0066**	0.002	37.7	ug/L	159	Standard
	Ag	107	304.3	22.4	**0.0100**	0.006	57.4	ug/L	102	Standard
	Cd	111	352.8	4.4	**0.1110**	0.003	2.9	mg/L	4	Standard
	Cd	114	852.4	11.3	**0.1021**	0.014	13.7	ug/L	34	Standard
>	**In**	115	885067.6	2.0				ug/L	828245	Standard
	Sn	118	1030.0	9.0	**0.0311**	0.008	27.0	ug/L	850	Standard
	Sb	123	224.2	22.1	**0.0164**	0.007	42.6	ug/L	499	Standard
	Ba	135	125231.2	1.8	**35.9757**	1.349	3.7	ug/L	23	Standard
	Ce	140	147174.9	2.3				ug/L	45	Standard
>	**Tb**	159	1523975.9	1.5				ug/L	1408642	Standard
	Ho	165	8038.8	4.0				ug/L	15	Standard
	Tl	203	911.4	11.9	**0.0756**	0.008	10.2	ug/L	5	Standard
	Tl	205	740.0	1.8	**0.0740**	0.001	1.0	ug/L	8	Standard
	Pb	206	2163.8	2.9	**0.2290**	0.002	0.9	ug/L	348	Standard
	Pb	207	1866.8	3.5	**0.2138**	0.010	4.7	ug/L	284	Standard
	Pb	208	5860.1	2.2	**0.2180**	0.012	5.4	ug/L	938	Standard
	U	238	389.7	4.1	**0.0503**	0.003	5.5	ug/L	3	Standard
>	**Bi**	209	627486.7	2.5				ug/L	615841	Standard

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Na	23	3.3	86.6	**6.2263**	5.388	86.5	mg/L	3	Standard
Mg	24	33978.1	2.1	**29.0427**	0.454	1.6	mg/L	68	Standard
K	39	758.4	3.1	**1.8833**	0.044	2.3	mg/L	23	Standard
Ca	43	180.0	21.0	**8.2008**	2.275	27.7	mg/L	52	Standard
Fe	54	805.4	1.6	**0.3645**	0.010	2.7	mg/L	214	Standard
Fe	57	453.3	3.4	**0.4899**	0.042	8.5	mg/L	213	Standard
> **Sc-1**	45	52507.5	0.9				mg/L	49932	Standard
Cl	35	30467.3	3.3				ug/L	23537	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	8849.3	2.4				ug/L	1553	Standard
P	31	21280.0	6.5				ug/L	15523	Standard
S	34	1136.7	2.2				ug/L	1052	Standard
Sr	88	195.0	17.9				ug/L	147	Standard
C	12	736.7	15.0				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	563.3	19.0				mg/L	0	Standard
Dy	164	12648.2	3.4				mg/L	29	Standard
Ho-1	165	8038.8	4.0				mg/L	15	Standard
Er	166	7321.8	3.9				mg/L	23	Standard
I	127	455945.9	4.5				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.822	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.223	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.861
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.891
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1502074302
Sample Date/Time: Monday, February 23, 2015 14:09:28
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	126356.7	3.3				ug/L	102148	Standard
	Be	9	423.3	8.0	**0.2360**	0.018	7.5	ug/L	8	Standard
	Al	27	6892255.0	3.4	**35.9654**	0.912	2.5	ug/L	1058	Standard
	Sc	45	52522.6	4.1				ug/L	49932	Standard
	Ti	47	579.0	13.3	**2.0549**	0.282	13.7	ug/L	25	Standard
	V	51	8269.3	6.3	**0.6274**	0.056	8.9	ug/L	2343	Standard
	Cr	52	15220.0	2.1	**0.6349**	0.035	5.5	ug/L	9255	Standard
	Cr	53	4789.1	3.1	**3.7794**	0.127	3.4	ug/L	355	Standard
	Mn	55	1705783.5	2.3	**121.6819**	2.669	2.2	ug/L	920	Standard
	Co	59	139670.5	3.0	**12.3236**	0.357	2.9	ug/L	117	Standard
	Ni	60	14469.6	3.4	**5.1893**	0.169	3.3	ug/L	48	Standard
	Cu	65	3696.5	1.9	**1.2672**	0.024	1.9	ug/L	211	Standard
	Zn	66	13819.6	3.0	**10.3198**	0.312	3.0	ug/L	477	Standard
>	**Ge**	72	554547.6	0.1				ug/L	543406	Standard
	As	75	29.2	171.4	**0.1201**	0.036	29.8	ug/L	-90	Standard
	Se	82	99.3	7.7	**0.5139**	0.054	10.6	ug/L	31	Standard
	Se-1	77	332.0	1.5	**2.2786**	0.057	2.5	ug/L	117	Standard
>	**Ga**	71	643.3	2.4				mg/L	22	Standard
	Rb	85	56299.4	1.8				ug/L	53	Standard
	Y	89	671310.8	2.3				ug/L	557276	Standard
>	**Rh**	103	51.7	29.6				ug/L	12	Standard
	Mo	98	70.7	7.5	**0.0037**	0.001	40.2	ug/L	159	Standard
	Ag	107	329.7	60.8	**0.0115**	0.019	162.1	ug/L	102	Standard
	Cd	111	260.5	5.3	**0.0764**	0.004	5.0	mg/L	4	Standard
	Cd	114	568.1	8.9	**0.0603**	0.008	12.8	ug/L	34	Standard
>	**In**	115	917835.6	1.5				ug/L	828245	Standard
	Sn	118	1066.7	9.6	**0.0310**	0.010	31.7	ug/L	850	Standard
	Sb	123	182.3	47.4	**0.0091**	0.014	150.2	ug/L	499	Standard
	Ba	135	126805.0	2.9	**35.1219**	1.446	4.1	ug/L	23	Standard
	Ce	140	171544.6	3.0				ug/L	45	Standard
>	**Tb**	159	1533225.3	0.9				ug/L	1408642	Standard
	Ho	165	7977.1	2.1				ug/L	15	Standard
	Tl	203	800.0	16.6	**0.0654**	0.013	19.3	ug/L	5	Standard
	Tl	205	690.0	9.4	**0.0682**	0.006	9.3	ug/L	8	Standard
	Pb	206	1893.5	10.5	**0.1934**	0.027	14.0	ug/L	348	Standard
	Pb	207	1563.4	10.9	**0.1697**	0.026	15.3	ug/L	284	Standard
	Pb	208	4961.3	5.0	**0.1752**	0.013	7.5	ug/L	938	Standard
	U	238	413.3	17.0	**0.0533**	0.010	18.7	ug/L	3	Standard
>	**Bi**	209	630188.2	0.9				ug/L	615841	Standard

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Na	23	6.7	43.3	**12.6009**	5.871	46.6	mg/L	3	Standard
Mg	24	30013.0	2.4	**25.6529**	0.689	2.7	mg/L	68	Standard
K	39	728.4	10.3	**1.8122**	0.254	14.0	mg/L	23	Standard
Ca	43	163.3	11.6	**7.1767**	1.305	18.2	mg/L	52	Standard
Fe	54	582.0	7.9	**0.2304**	0.040	17.5	mg/L	214	Standard
Fe	57	363.3	7.6	**0.2900**	0.074	25.4	mg/L	213	Standard
> **Sc-1**	45	52522.6	4.1				mg/L	49932	Standard
Cl	35	32343.2	2.1				ug/L	23537	Standard
Kr	83	2.7	57.3				ug/L	3	Standard
Br	81	8472.4	5.5				ug/L	1553	Standard
P	31	23665.3	13.1				ug/L	15523	Standard
S	34	1110.0	7.0				ug/L	1052	Standard
Sr	88	208.3	12.1				ug/L	147	Standard
C	12	676.7	24.0				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	396.7	19.6				mg/L	0	Standard
Dy	164	12352.6	8.1				mg/L	29	Standard
Ho-1	165	7977.1	2.1				mg/L	15	Standard
Er	166	7295.1	0.8				mg/L	23	Standard
I	127	491049.0	3.7				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.699	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.050	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.817
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.330
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1502066302
Sample Date/Time: Monday, February 23, 2015 14:12:39
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	123697.2	5.4				ug/L	102148	Standard
	Be	9	310.0	9.8	**0.1737**	0.013	7.7	ug/L	8	Standard
	Al	27	5258275.6	2.9	**28.0523**	1.039	3.7	ug/L	1058	Standard
	Sc	45	50211.5	3.3				ug/L	49932	Standard
	Ti	47	67.7	12.6	**0.1645**	0.034	20.6	ug/L	25	Standard
	V	51	2085.1	20.1	**-0.0545**	0.044	80.0	ug/L	2343	Standard
	Cr	52	11552.1	1.7	**0.1980**	0.034	17.3	ug/L	9255	Standard
	Cr	53	4385.6	3.2	**3.3570**	0.124	3.7	ug/L	355	Standard
	Mn	55	961742.8	1.5	**67.2377**	1.081	1.6	ug/L	920	Standard
	Co	59	76697.7	2.0	**6.6263**	0.088	1.3	ug/L	117	Standard
	Ni	60	7843.0	0.6	**2.7440**	0.034	1.3	ug/L	48	Standard
	Cu	65	2443.5	2.7	**0.7871**	0.019	2.4	ug/L	211	Standard
	Zn	66	7839.4	4.0	**5.5807**	0.165	2.9	ug/L	477	Standard
>	**Ge**	72	565570.1	1.3				ug/L	543406	Standard
	As	75	21.7	175.0	**0.1142**	0.026	23.0	ug/L	-90	Standard
	Se	82	121.0	4.0	**0.6531**	0.026	4.0	ug/L	31	Standard
	Se-1	77	335.0	1.8	**2.2401**	0.029	1.3	ug/L	117	Standard
>	**Ga**	71	161.7	17.0				mg/L	22	Standard
	Rb	85	47519.4	1.7				ug/L	53	Standard
	Y	89	637867.5	0.9				ug/L	557276	Standard
>	**Rh**	103	46.7	22.3				ug/L	12	Standard
	Mo	98	37.0	34.6	**-0.0058**	0.004	68.9	ug/L	159	Standard
	Ag	107	147.0	13.8	**-0.0048**	0.002	34.1	ug/L	102	Standard
	Cd	111	143.3	8.8	**0.0391**	0.004	9.9	mg/L	4	Standard
	Cd	114	387.7	2.3	**0.0374**	0.001	3.2	ug/L	34	Standard
>	**In**	115	897690.0	1.8				ug/L	828245	Standard
	Sn	118	645.0	17.1	**-0.0133**	0.014	102.8	ug/L	850	Standard
	Sb	123	115.6	14.3	**-0.0007**	0.003	385.5	ug/L	499	Standard
	Ba	135	192009.7	3.1	**54.3565**	0.711	1.3	ug/L	23	Standard
	Ce	140	42900.7	0.8				ug/L	45	Standard
>	**Tb**	159	1499430.8	0.9				ug/L	1408642	Standard
	Ho	165	5035.8	3.1				ug/L	15	Standard
	Tl	203	678.3	3.7	**0.0547**	0.003	6.0	ug/L	5	Standard
	Tl	205	545.0	3.3	**0.0530**	0.003	5.3	ug/L	8	Standard
	Pb	206	629.7	1.6	**0.0326**	0.002	6.5	ug/L	348	Standard
	Pb	207	554.7	3.6	**0.0270**	0.002	7.9	ug/L	284	Standard
	Pb	208	1653.4	5.3	**0.0231**	0.003	11.8	ug/L	938	Standard
	U	238	143.3	4.9	**0.0171**	0.001	3.7	ug/L	3	Standard
>	**Bi**	209	626228.0	1.7				ug/L	615841	Standard

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Na	23	3.3	173.2	**6.5736**	11.377	173.1	mg/L	3	Standard
Mg	24	27473.2	1.2	**24.5562**	0.519	2.1	mg/L	68	Standard
K	39	701.7	12.5	**1.8241**	0.268	14.7	mg/L	23	Standard
Ca	43	123.3	22.3	**5.0137**	1.855	37.0	mg/L	52	Standard
Fe	54	242.4	18.6	**0.0317**	0.033	102.8	mg/L	214	Standard
Fe	57	251.7	26.4	**0.0694**	0.170	245.5	mg/L	213	Standard
> **Sc-1**	45	50211.5	3.3				mg/L	49932	Standard
Cl	35	31250.2	0.6				ug/L	23537	Standard
Kr	83	3.7	31.5				ug/L	3	Standard
Br	81	9139.4	3.6				ug/L	1553	Standard
P	31	22121.2	8.0				ug/L	15523	Standard
S	34	1026.7	14.2				ug/L	1052	Standard
Sr	88	221.7	12.4				ug/L	147	Standard
C	12	686.7	7.5				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	130.0	33.5				mg/L	0	Standard
Dy	164	7853.8	5.4				mg/L	29	Standard
Ho-1	165	5035.8	3.1				mg/L	15	Standard
Er	166	4210.6	3.3				mg/L	23	Standard
I	127	251679.1	2.8				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		121.096	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.079	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.385
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.687
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1502066303
Sample Date/Time: Monday, February 23, 2015 14:15:52
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	126748.1	7.2				ug/L	102148	Standard
	Be	9	58.3	27.6	**0.0237**	0.011	45.8	ug/L	8	Standard
	Al	27	517617.6	4.8	**2.6788**	0.076	2.8	ug/L	1058	Standard
	Sc	45	51385.3	1.4				ug/L	49932	Standard
	Ti	47	675.0	8.0	**2.4274**	0.252	10.4	ug/L	25	Standard
	V	51	8173.2	3.1	**0.6229**	0.048	7.7	ug/L	2343	Standard
	Cr	52	14459.9	2.6	**0.5591**	0.016	2.9	ug/L	9255	Standard
	Cr	53	3237.0	5.0	**2.4573**	0.202	8.2	ug/L	355	Standard
	Mn	55	72360.7	0.6	**5.1158**	0.103	2.0	ug/L	920	Standard
	Co	59	5119.2	0.8	**0.4356**	0.011	2.4	ug/L	117	Standard
	Ni	60	846.7	4.3	**0.2771**	0.019	7.0	ug/L	48	Standard
	Cu	65	1576.1	3.3	**0.4879**	0.013	2.8	ug/L	211	Standard
	Zn	66	4332.0	2.8	**3.0104**	0.077	2.6	ug/L	477	Standard
>	**Ge**	72	551281.9	2.2				ug/L	543406	Standard
	As	75	69.0	62.9	**0.1489**	0.031	21.1	ug/L	-90	Standard
	Se	82	84.7	5.1	**0.4131**	0.022	5.3	ug/L	31	Standard
	Se-1	77	229.7	7.7	**1.1802**	0.190	16.1	ug/L	117	Standard
>	**Ga**	71	341.7	3.0				mg/L	22	Standard
	Rb	85	23795.3	0.2				ug/L	53	Standard
	Y	89	581933.2	3.8				ug/L	557276	Standard
>	**Rh**	103	13.3	21.7				ug/L	12	Standard
	Mo	98	84.0	8.5	**0.0079**	0.002	25.6	ug/L	159	Standard
	Ag	107	131.3	6.2	**-0.0063**	0.001	14.0	ug/L	102	Standard
	Cd	111	20.9	8.3	**-0.0020**	0.001	28.6	mg/L	4	Standard
	Cd	114	74.0	11.3	**-0.0051**	0.001	22.2	ug/L	34	Standard
>	**In**	115	901179.4	1.2				ug/L	828245	Standard
	Sn	118	906.7	11.7	**0.0153**	0.011	69.7	ug/L	850	Standard
	Sb	123	99.5	17.2	**-0.0033**	0.003	80.8	ug/L	499	Standard
	Ba	135	25966.9	1.8	**7.3106**	0.149	2.0	ug/L	23	Standard
	Ce	140	36462.2	3.0				ug/L	45	Standard
>	**Tb**	159	1473498.6	3.4				ug/L	1408642	Standard
	Ho	165	621.7	6.0				ug/L	15	Standard
	Tl	203	542.0	7.7	**0.0420**	0.003	6.3	ug/L	5	Standard
	Tl	205	435.0	10.2	**0.0408**	0.006	14.0	ug/L	8	Standard
	Pb	206	1363.7	1.8	**0.1257**	0.001	0.8	ug/L	348	Standard
	Pb	207	1135.0	3.7	**0.1088**	0.007	6.7	ug/L	284	Standard
	Pb	208	3660.2	1.7	**0.1151**	0.003	2.7	ug/L	938	Standard
	U	238	259.0	6.6	**0.0325**	0.003	8.1	ug/L	3	Standard
>	**Bi**	209	630419.5	2.4				ug/L	615841	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	3	Standard
Mg	24	25397.9	1.8	**22.1683**	0.561	2.5	mg/L	68	Standard
K	39	325.0	14.7	**0.7953**	0.129	16.3	mg/L	23	Standard
Ca	43	48.3	33.3	**-0.0013**	1.020	80894.4	mg/L	52	Standard
Fe	54	785.2	6.9	**0.3629**	0.038	10.4	mg/L	214	Standard
Fe	57	373.3	8.9	**0.3301**	0.084	25.3	mg/L	213	Standard
> **Sc-1**	45	51385.3	1.4				mg/L	49932	Standard
Cl	35	31252.2	3.1				ug/L	23537	Standard
Kr	83	3.3	62.4				ug/L	3	Standard
Br	81	7378.5	8.3				ug/L	1553	Standard
P	31	23438.2	7.2				ug/L	15523	Standard
S	34	1011.7	6.4				ug/L	1052	Standard
Sr	88	143.3	10.7				ug/L	147	Standard
C	12	723.4	4.9				mg/L	397	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	1097.5	12.1				mg/L	29	Standard
Ho-1	165	621.7	6.0				mg/L	15	Standard
Er	166	610.0	11.5				mg/L	23	Standard
I	127	150526.6	7.2				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.082	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.449	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.806
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.367
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1502066304
Sample Date/Time: Monday, February 23, 2015 14:19:03
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	124469.3	2.0				ug/L	102148	Standard
	Be	9	403.3	9.9	**0.2282**	0.028	12.2	ug/L	8	Standard
	Al	27	1819003.6	2.7	**9.6262**	0.426	4.4	ug/L	1058	Standard
	Sc	45	54402.5	2.8				ug/L	49932	Standard
	Ti	47	9204.1	1.2	**34.1516**	0.242	0.7	ug/L	25	Standard
	V	51	76380.8	2.9	**8.1579**	0.283	3.5	ug/L	2343	Standard
	Cr	52	41064.9	1.2	**3.5753**	0.049	1.4	ug/L	9255	Standard
	Cr	53	6483.1	2.6	**5.2913**	0.182	3.4	ug/L	355	Standard
	Mn	55	292450.4	1.8	**20.9702**	0.419	2.0	ug/L	920	Standard
	Co	59	16884.1	2.0	**1.4850**	0.033	2.2	ug/L	117	Standard
	Ni	60	5389.0	2.0	**1.9299**	0.041	2.1	ug/L	48	Standard
	Cu	65	11950.4	1.8	**4.3510**	0.056	1.3	ug/L	211	Standard
	Zn	66	125141.4	1.8	**97.1277**	1.285	1.3	ug/L	477	Standard
>	**Ge**	72	549943.1	0.7				ug/L	543406	Standard
	As	75	954.9	7.0	**0.7874**	0.043	5.5	ug/L	-90	Standard
	Se	82	100.6	9.6	**0.5300**	0.071	13.5	ug/L	31	Standard
	Se-1	77	297.3	6.3	**1.9292**	0.222	11.5	ug/L	117	Standard
>	**Ga**	71	9674.8	1.9				mg/L	22	Standard
	Rb	85	127173.1	0.2				ug/L	53	Standard
	Y	89	863490.8	1.9				ug/L	557276	Standard
>	**Rh**	103	26.7	47.2				ug/L	12	Standard
	Mo	98	687.4	0.7	**0.1886**	0.001	0.5	ug/L	159	Standard
	Ag	107	634.3	5.3	**0.0410**	0.004	8.7	ug/L	102	Standard
	Cd	111	68.6	1.7	**0.0144**	0.001	4.3	mg/L	4	Standard
	Cd	114	200.9	26.5	**0.0125**	0.007	57.8	ug/L	34	Standard
>	**In**	115	884649.6	1.0				ug/L	828245	Standard
	Sn	118	2328.5	2.8	**0.1785**	0.007	4.0	ug/L	850	Standard
	Sb	123	314.7	6.9	**0.0307**	0.003	10.2	ug/L	499	Standard
	Ba	135	206129.5	1.1	**59.2263**	0.726	1.2	ug/L	23	Standard
	Ce	140	952479.6	1.7				ug/L	45	Standard
>	**Tb**	159	1495929.9	1.2				ug/L	1408642	Standard
	Ho	165	27747.1	4.3				ug/L	15	Standard
	Tl	203	1033.0	4.3	**0.0866**	0.003	3.9	ug/L	5	Standard
	Tl	205	808.4	8.4	**0.0813**	0.007	8.4	ug/L	8	Standard
	Pb	206	19510.6	1.0	**2.4505**	0.041	1.7	ug/L	348	Standard
	Pb	207	16132.3	2.0	**2.2444**	0.062	2.7	ug/L	284	Standard
	Pb	208	51619.3	0.7	**2.3353**	0.032	1.4	ug/L	938	Standard
	U	238	4899.8	1.5	**0.6590**	0.014	2.1	ug/L	3	Standard
>	**Bi**	209	627939.3	0.6				ug/L	615841	Standard

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Na	23	3.3	86.6	**5.9404**	5.141	86.5	mg/L	3	Standard
Mg	24	23494.9	0.8	**19.3681**	0.634	3.3	mg/L	68	Standard
K	39	396.7	8.9	**0.9254**	0.097	10.5	mg/L	23	Standard
Ca	43	71.7	24.5	**1.2287**	0.944	76.8	mg/L	52	Standard
Fe	54	5998.5	3.4	**3.3783**	0.215	6.4	mg/L	214	Standard
Fe	57	1843.4	3.1	**3.4483**	0.196	5.7	mg/L	213	Standard
> **Sc-1**	45	54402.5	2.8				mg/L	49932	Standard
Cl	35	29055.8	0.9				ug/L	23537	Standard
Kr	83	2.7	57.3				ug/L	3	Standard
Br	81	5511.0	4.7				ug/L	1553	Standard
P	31	26663.5	4.1				ug/L	15523	Standard
S	34	921.7	5.3				ug/L	1052	Standard
Sr	88	181.7	8.4				ug/L	147	Standard
C	12	773.4	2.7				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	110.0	48.1				mg/L	0	Standard
Dy	164	43261.8	4.3				mg/L	29	Standard
Ho-1	165	27747.1	4.3				mg/L	15	Standard
Er	166	24286.1	4.5				mg/L	23	Standard
I	127	305082.0	5.6				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		121.852	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.203	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.810
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.965
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: February 24, 2015

Method 6020 - Summary Report

Sample ID: L1502066305
Sample Date/Time: Monday, February 23, 2015 14:22:15
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	129902.9	1.3				ug/L	102148	Standard
	Be	9	341.7	11.4	**0.1829**	0.021	11.5	ug/L	8	Standard
	Al	27	5050187.7	3.1	**25.6219**	0.592	2.3	ug/L	1058	Standard
	Sc	45	50575.9	0.4				ug/L	49932	Standard
	Ti	47	77.0	11.9	**0.1984**	0.034	17.0	ug/L	25	Standard
	V	51	2318.6	5.1	**-0.0289**	0.012	43.0	ug/L	2343	Standard
	Cr	52	11914.7	3.0	**0.2392**	0.038	15.7	ug/L	9255	Standard
	Cr	53	4700.7	2.5	**3.6284**	0.086	2.4	ug/L	355	Standard
	Mn	55	928869.8	1.1	**65.0124**	0.906	1.4	ug/L	920	Standard
	Co	59	74775.8	1.5	**6.4680**	0.118	1.8	ug/L	117	Standard
	Ni	60	8909.3	3.1	**3.1249**	0.107	3.4	ug/L	48	Standard
	Cu	65	2734.2	2.9	**0.8936**	0.032	3.5	ug/L	211	Standard
	Zn	66	10238.8	0.9	**7.4090**	0.094	1.3	ug/L	477	Standard
>	**Ge**	72	564890.7	0.3				ug/L	543406	Standard
	As	75	35.1	138.3	**0.1239**	0.034	27.5	ug/L	-90	Standard
	Se	82	101.4	4.5	**0.5164**	0.035	6.7	ug/L	31	Standard
	Se-1	77	326.7	8.3	**2.1549**	0.278	12.9	ug/L	117	Standard
>	**Ga**	71	173.3	19.6				mg/L	22	Standard
	Rb	85	48096.3	4.3				ug/L	53	Standard
	Y	89	653089.1	2.6				ug/L	557276	Standard
>	**Rh**	103	26.7	39.0				ug/L	12	Standard
	Mo	98	52.4	18.5	**-0.0017**	0.003	159.5	ug/L	159	Standard
	Ag	107	191.0	15.5	**-0.0013**	0.002	197.2	ug/L	102	Standard
	Cd	111	217.3	0.7	**0.0619**	0.001	2.1	mg/L	4	Standard
	Cd	114	541.1	16.0	**0.0562**	0.011	19.4	ug/L	34	Standard
>	**In**	115	922500.4	2.5				ug/L	828245	Standard
	Sn	118	2568.6	5.5	**0.1937**	0.009	4.5	ug/L	850	Standard
	Sb	123	109.3	14.6	**-0.0022**	0.002	99.5	ug/L	499	Standard
	Ba	135	189142.1	1.6	**52.1218**	0.791	1.5	ug/L	23	Standard
	Ce	140	42880.6	1.9				ug/L	45	Standard
>	**Tb**	159	1504257.4	2.2				ug/L	1408642	Standard
	Ho	165	4879.1	1.9				ug/L	15	Standard
	Tl	203	719.0	5.5	**0.0584**	0.004	6.6	ug/L	5	Standard
	Tl	205	565.0	3.9	**0.0552**	0.002	4.0	ug/L	8	Standard
	Pb	206	931.0	2.6	**0.0713**	0.004	5.0	ug/L	348	Standard
	Pb	207	796.4	2.7	**0.0615**	0.003	5.5	ug/L	284	Standard
	Pb	208	2439.4	4.8	**0.0596**	0.005	9.0	ug/L	938	Standard
	U	238	243.3	9.0	**0.0306**	0.003	9.8	ug/L	3	Standard
>	**Bi**	209	625898.2	0.4				ug/L	615841	Standard

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Na	23	1.7	173.2	**3.2543**	5.628	172.9	mg/L	3	Standard
Mg	24	26105.8	2.0	**23.1507**	0.463	2.0	mg/L	68	Standard
K	39	605.0	10.1	**1.5514**	0.168	10.8	mg/L	23	Standard
Ca	43	103.3	14.0	**3.6428**	0.954	26.2	mg/L	52	Standard
Fe	54	304.0	6.7	**0.0687**	0.013	18.9	mg/L	214	Standard
Fe	57	231.7	18.6	**0.0155**	0.102	654.3	mg/L	213	Standard
> **Sc-1**	45	50575.9	0.4				mg/L	49932	Standard
Cl	35	30938.3	4.9				ug/L	23537	Standard
Kr	83	2.7	78.1				ug/L	3	Standard
Br	81	7385.1	4.6				ug/L	1553	Standard
P	31	20218.5	8.3				ug/L	15523	Standard
S	34	973.4	11.0				ug/L	1052	Standard
Sr	88	203.3	7.5				ug/L	147	Standard
C	12	720.0	26.5				mg/L	397	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	230.0	15.7				mg/L	0	Standard
Dy	164	7604.2	6.0				mg/L	29	Standard
Ho-1	165	4879.1	1.9				mg/L	15	Standard
Er	166	4547.3	3.2				mg/L	23	Standard
I	127	212540.8	2.1				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		127.171	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.954	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.380
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.633
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1502066305PS WG512376-05
Sample Date/Time: Monday, February 23, 2015 14:25:26
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	128261.3	4.6				ug/L	102148	Standard
	Be	9	88504.5	1.9	**50.8066**	1.921	3.8	ug/L	8	Standard
	Al	27	4983964.6	3.7	**25.6253**	0.766	3.0	ug/L	1058	Standard
	Sc	45	49877.0	3.3				ug/L	49932	Standard
	Ti	47	78.7	9.5	**0.2063**	0.029	14.2	ug/L	25	Standard
	V	51	490151.0	1.6	**52.7470**	0.863	1.6	ug/L	2343	Standard
	Cr	52	495991.7	1.7	**53.9309**	0.497	0.9	ug/L	9255	Standard
	Cr	53	69738.8	5.7	**59.1766**	3.178	5.4	ug/L	355	Standard
	Mn	55	1652825.1	2.8	**116.4440**	2.021	1.7	ug/L	920	Standard
	Co	59	688357.0	2.3	**60.0698**	1.246	2.1	ug/L	117	Standard
	Ni	60	162706.2	2.0	**57.9454**	0.914	1.6	ug/L	48	Standard
	Cu	65	152709.6	2.1	**55.5863**	1.008	1.8	ug/L	211	Standard
	Zn	66	80105.2	1.1	**60.7743**	0.797	1.3	ug/L	477	Standard
>	**Ge**	72	561435.2	1.3				ug/L	543406	Standard
	As	75	78112.8	1.5	**55.2604**	0.340	0.6	ug/L	-90	Standard
	Se	82	7919.3	1.9	**56.0247**	1.363	2.4	ug/L	31	Standard
	Se-1	77	5504.3	2.1	**57.8204**	1.580	2.7	ug/L	117	Standard
>	**Ga**	71	181.7	17.7				mg/L	22	Standard
	Rb	85	46212.1	3.0				ug/L	53	Standard
	Y	89	628327.2	1.5				ug/L	557276	Standard
>	**Rh**	103	90.0	24.2				ug/L	12	Standard
	Mo	98	128.2	7.7	**0.0203**	0.003	15.6	ug/L	159	Standard
	Ag	107	559410.3	0.5	**50.5740**	0.316	0.6	ug/L	102	Standard
	Cd	111	164708.3	1.4	**54.1100**	0.365	0.7	mg/L	4	Standard
	Cd	114	403269.7	2.6	**53.5723**	1.039	1.9	ug/L	34	Standard
>	**In**	115	915416.4	0.8				ug/L	828245	Standard
	Sn	118	1293.4	2.9	**0.0562**	0.003	5.8	ug/L	850	Standard
	Sb	123	344753.2	1.9	**52.2852**	0.763	1.5	ug/L	499	Standard
	Ba	135	371510.4	2.1	**103.1577**	1.365	1.3	ug/L	23	Standard
	Ce	140	42120.2	2.7				ug/L	45	Standard
>	**Tb**	159	1494535.6	1.4				ug/L	1408642	Standard
	Ho	165	4882.5	2.4				ug/L	15	Standard
	Tl	203	603885.0	1.0	**54.1718**	0.333	0.6	ug/L	5	Standard
	Tl	205	516823.5	2.5	**55.4917**	2.072	3.7	ug/L	8	Standard
	Pb	206	428391.8	1.1	**54.3199**	1.191	2.2	ug/L	348	Standard
	Pb	207	384899.7	1.9	**54.2449**	1.662	3.1	ug/L	284	Standard
	Pb	208	1170457.8	1.8	**53.6257**	1.572	2.9	ug/L	938	Standard
	U	238	418087.5	1.3	**55.9161**	1.316	2.4	ug/L	3	Standard
>	**Bi**	209	633765.4	1.2				ug/L	615841	Standard

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Na	23	3.3	173.2	**6.5479**	11.333	173.1	mg/L	3	Standard
Mg	24	25603.3	2.2	**23.0305**	0.483	2.1	mg/L	68	Standard
K	39	655.0	10.8	**1.7071**	0.165	9.7	mg/L	23	Standard
Ca	43	100.0	8.7	**3.5322**	0.791	22.4	mg/L	52	Standard
Fe	54	275.5	16.6	**0.0533**	0.029	54.6	mg/L	214	Standard
Fe	57	281.7	18.6	**0.1379**	0.102	73.8	mg/L	213	Standard
> **Sc-1**	45	49877.0	3.3				mg/L	49932	Standard
Cl	35	30671.7	2.1				ug/L	23537	Standard
Kr	83	2.3	89.2				ug/L	3	Standard
Br	81	7398.5	5.7				ug/L	1553	Standard
P	31	23042.5	5.6				ug/L	15523	Standard
S	34	990.0	2.0				ug/L	1052	Standard
Sr	88	165.0	10.9				ug/L	147	Standard
C	12	723.4	15.4				mg/L	397	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	186.7	17.2				mg/L	0	Standard
Dy	164	7830.6	3.9				mg/L	29	Standard
Ho-1	165	4882.5	2.4				mg/L	15	Standard
Er	166	4347.3	5.1				mg/L	23	Standard
I	127	207306.5	3.7				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		125.564	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.318	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	110.525
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.911
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1502066305SDL WG512376-06
Sample Date/Time: Monday, February 23, 2015 14:28:38
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	122294.9	0.9				ug/L	102148	Standard
	Be	9	73.3	20.8	**0.0337**	0.009	28.2	ug/L	8	Standard
	Al	27	1099953.6	4.9	**5.9162**	0.339	5.7	ug/L	1058	Standard
	Sc	45	48614.6	3.3				ug/L	49932	Standard
	Ti	47	35.7	11.7	**0.0512**	0.013	26.3	ug/L	25	Standard
	V	51	2651.4	5.2	**0.0128**	0.012	91.8	ug/L	2343	Standard
	Cr	52	10931.3	3.1	**0.1560**	0.019	12.4	ug/L	9255	Standard
	Cr	53	1478.4	5.9	**0.9212**	0.089	9.6	ug/L	355	Standard
	Mn	55	195254.7	1.9	**13.8895**	0.280	2.0	ug/L	920	Standard
	Co	59	15508.9	0.7	**1.3542**	0.011	0.8	ug/L	117	Standard
	Ni	60	1675.4	0.8	**0.5755**	0.012	2.0	ug/L	48	Standard
	Cu	65	763.4	1.1	**0.1852**	0.007	4.0	ug/L	211	Standard
	Zn	66	3885.8	2.3	**2.6531**	0.091	3.4	ug/L	477	Standard
>	**Ge**	72	553285.8	1.5				ug/L	543406	Standard
	As	75	-85.2	32.0	**0.0381**	0.019	50.9	ug/L	-90	Standard
	Se	82	49.0	13.4	**0.1534**	0.043	28.4	ug/L	31	Standard
	Se-1	77	153.3	0.4	**0.3390**	0.024	7.0	ug/L	117	Standard
>	**Ga**	71	60.0	25.0				mg/L	22	Standard
	Rb	85	9993.3	2.9				ug/L	53	Standard
	Y	89	600693.2	1.7				ug/L	557276	Standard
>	**Rh**	103	18.3	41.7				ug/L	12	Standard
	Mo	98	23.0	17.4	**-0.0100**	0.001	10.9	ug/L	159	Standard
	Ag	107	181.7	27.6	**-0.0019**	0.004	240.8	ug/L	102	Standard
	Cd	111	80.0	36.9	**0.0175**	0.010	54.8	mg/L	4	Standard
	Cd	114	175.0	26.2	**0.0083**	0.006	72.4	ug/L	34	Standard
>	**In**	115	908223.2	1.4				ug/L	828245	Standard
	Sn	118	2111.8	5.0	**0.1477**	0.010	6.5	ug/L	850	Standard
	Sb	123	1565.1	10.8	**0.2206**	0.025	11.4	ug/L	499	Standard
	Ba	135	38574.0	1.0	**10.7833**	0.140	1.3	ug/L	23	Standard
	Ce	140	8670.8	3.9				ug/L	45	Standard
>	**Tb**	159	1491384.5	0.8				ug/L	1408642	Standard
	Ho	165	1035.0	7.5				ug/L	15	Standard
	Tl	203	510.3	11.6	**0.0389**	0.005	13.8	ug/L	5	Standard
	Tl	205	435.0	0.0	**0.0405**	0.000	0.7	ug/L	8	Standard
	Pb	206	603.7	6.2	**0.0284**	0.005	17.7	ug/L	348	Standard
	Pb	207	498.0	7.2	**0.0181**	0.005	28.9	ug/L	284	Standard
	Pb	208	1532.0	2.7	**0.0167**	0.002	12.0	ug/L	938	Standard
	U	238	78.3	35.0	**0.0082**	0.004	45.1	ug/L	3	Standard
>	**Bi**	209	633176.6	0.6				ug/L	615841	Standard

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Na	23	1.7	173.2	**3.4742**	6.009	173.0	mg/L	3	Standard
Mg	24	5446.0	4.1	**4.9689**	0.369	7.4	mg/L	68	Standard
K	39	131.7	26.9	**0.3121**	0.109	35.1	mg/L	23	Standard
Ca	43	55.0	24.1	**0.6545**	1.008	154.0	mg/L	52	Standard
Fe	54	234.3	7.7	**0.0310**	0.013	43.4	mg/L	214	Standard
Fe	57	255.0	7.1	**0.0940**	0.055	58.6	mg/L	213	Standard
> **Sc-1**	45	48614.6	3.3				mg/L	49932	Standard
Cl	35	30589.5	3.1				ug/L	23537	Standard
Kr	83	4.0	43.3				ug/L	3	Standard
Br	81	3177.0	0.2				ug/L	1553	Standard
P	31	18881.8	5.8				ug/L	15523	Standard
S	34	1011.7	8.6				ug/L	1052	Standard
Sr	88	188.3	26.2				ug/L	147	Standard
C	12	546.7	19.6				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	126.7	31.9				mg/L	0	Standard
Dy	164	1629.2	9.0				mg/L	29	Standard
Ho-1	165	1035.0	7.5				mg/L	15	Standard
Er	166	853.4	7.4				mg/L	23	Standard
I	127	44232.8	1.9				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.723	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.818	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.656
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.815
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: February 24, 2015

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, February 23, 2015 14:31:51
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	123667.7	0.9				ug/L	102148	Standard
	Be	9	83090.8	4.1	**49.4153**	1.826	3.7	ug/L	8	Standard
	Al	27	8773377.0	2.1	**46.7710**	0.547	1.2	ug/L	1058	Standard
	Sc	45	49126.2	0.7				ug/L	49932	Standard
	Ti	47	27067.8	2.1	**98.6943**	1.265	1.3	ug/L	25	Standard
	V	51	482543.0	2.9	**52.0073**	1.213	2.3	ug/L	2343	Standard
	Cr	52	479839.2	2.4	**52.2254**	0.662	1.3	ug/L	9255	Standard
	Cr	53	61340.7	4.2	**52.1028**	2.140	4.1	ug/L	355	Standard
	Mn	55	734769.7	3.5	**51.8046**	1.205	2.3	ug/L	920	Standard
	Co	59	589665.0	1.9	**51.5375**	0.376	0.7	ug/L	117	Standard
	Ni	60	148080.8	1.2	**52.8239**	0.325	0.6	ug/L	48	Standard
	Cu	65	140939.2	0.6	**51.3840**	0.470	0.9	ug/L	211	Standard
	Zn	66	68417.8	1.5	**51.9388**	0.279	0.5	ug/L	477	Standard
>	Ge	72	560496.2	1.4				ug/L	543406	Standard
	As	75	74288.1	1.3	**52.6520**	0.743	1.4	ug/L	-90	Standard
	Se	82	7631.4	0.8	**54.0717**	0.834	1.5	ug/L	31	Standard
	Se-1	77	5034.8	2.3	**52.8538**	0.651	1.2	ug/L	117	Standard
>	Ga	71	66.7	55.3				mg/L	22	Standard
	Rb	85	1253.4	5.3				ug/L	53	Standard
	Y	89	585720.8	2.4				ug/L	557276	Standard
>	Rh	103	46.7	43.3				ug/L	12	Standard
	Mo	98	346454.9	2.1	**102.4261**	1.375	1.3	ug/L	159	Standard
	Ag	107	558609.9	4.0	**51.7451**	1.888	3.6	ug/L	102	Standard
	Cd	111	156406.7	2.6	**52.6468**	0.735	1.4	mg/L	4	Standard
	Cd	114	387442.6	2.4	**52.7400**	0.655	1.2	ug/L	34	Standard
>	In	115	893361.0	1.3				ug/L	828245	Standard
	Sn	118	461650.9	0.5	**51.7555**	0.427	0.8	ug/L	850	Standard
	Sb	123	352911.5	1.6	**54.8449**	0.385	0.7	ug/L	499	Standard
	Ba	135	173822.6	1.7	**49.4516**	0.483	1.0	ug/L	23	Standard
	Ce	140	268.3	27.2				ug/L	45	Standard
>	Tb	159	1464002.5	0.9				ug/L	1408642	Standard
	Ho	165	21.7	70.5				ug/L	15	Standard
	Tl	203	585650.0	2.2	**52.1513**	0.980	1.9	ug/L	5	Standard
	Tl	205	488598.3	0.7	**52.0639**	0.101	0.2	ug/L	8	Standard
	Pb	206	413976.0	1.2	**52.0988**	0.325	0.6	ug/L	348	Standard
	Pb	207	375894.1	1.7	**52.5750**	0.608	1.2	ug/L	284	Standard
	Pb	208	1144022.8	1.7	**52.0186**	0.603	1.2	ug/L	938	Standard
	U	238	396811.0	1.4	**52.6746**	0.482	0.9	ug/L	3	Standard
>	Bi	209	638399.4	0.6				ug/L	615841	Standard

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Na	23	1.7	173.2	**3.3116**	5.727	172.9	mg/L	3	Standard
Mg	24	6036.2	1.9	**5.4491**	0.101	1.9	mg/L	68	Standard
K	39	1720.1	5.9	**4.6424**	0.271	5.8	mg/L	23	Standard
Ca	43	116.7	47.8	**4.7183**	3.674	77.9	mg/L	52	Standard
Fe	54	8755.3	4.5	**5.5304**	0.291	5.3	mg/L	214	Standard
Fe	57	2633.6	2.2	**5.7548**	0.181	3.1	mg/L	213	Standard
Sc-1	45	49126.2	0.7				mg/L	49932	Standard
Cl	35	31245.5	2.0				ug/L	23537	Standard
Kr	83	2.3	24.7				ug/L	3	Standard
Br	81	2096.8	6.4				ug/L	1553	Standard
P	31	22380.2	18.2				ug/L	15523	Standard
S	34	1335.1	7.6				ug/L	1052	Standard
Sr	88	153.3	5.0				ug/L	147	Standard
C	12	513.3	24.4				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	32.5	45.3				mg/L	29	Standard
Ho-1	165	21.7	70.5				mg/L	15	Standard
Er	166	16.7	69.3				mg/L	23	Standard
I	127	2533.5	8.4				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	98.831		
Al	27	93.542		
Sc	45			
Ti	47	98.694		
V	51	104.015		
Cr	52	104.451		
Cr	53			
Mn	55	103.609		
Co	59	103.075		
Ni	60	105.648		
Cu	65	102.768		
Zn	66	103.878		
Ge	72		103.145	
As	75	105.304		
Se	82	108.143		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	102.426		
Ag	107	103.490		
Cd	111	105.294		
Cd	114			
> In	115			107.862
Sn	118	103.511		
Sb	123	109.690		
Ba	135	98.903		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	104.303		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.037		
U	238	105.349		
> Bi	209			103.663
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, February 23, 2015 14:35:02
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	119968.5	3.8				ug/L	102148	Standard
	Be	9	11.7	24.7	**-0.0034**	0.002	47.9	ug/L	8	Standard
	Al	27	1868.5	15.7	**-0.0079**	0.001	16.4	ug/L	1058	Standard
	Sc	45	46910.9	1.8				ug/L	49932	Standard
	Ti	47	19.7	11.7	**-0.0063**	0.010	152.8	ug/L	25	Standard
	V	51	2450.4	3.4	**-0.0037**	0.013	351.4	ug/L	2343	Standard
	Cr	52	9309.2	1.1	**-0.0056**	0.009	166.2	ug/L	9255	Standard
	Cr	53	426.7	14.8	**0.0170**	0.059	344.7	ug/L	355	Standard
	Mn	55	1081.4	7.1	**-0.0028**	0.006	215.3	ug/L	920	Standard
	Co	59	240.0	25.0	**0.0020**	0.005	269.1	ug/L	117	Standard
	Ni	60	55.0	15.9	**-0.0101**	0.003	33.5	ug/L	48	Standard
	Cu	65	255.0	9.0	**-0.0011**	0.009	884.8	ug/L	211	Standard
	Zn	66	342.0	3.1	**-0.0861**	0.014	16.0	ug/L	477	Standard
>	**Ge**	72	542560.5	2.0				ug/L	543406	Standard
	As	75	-118.0	33.8	**0.0132**	0.028	211.4	ug/L	-90	Standard
	Se	82	31.7	12.3	**0.0332**	0.024	73.4	ug/L	31	Standard
	Se-1	77	107.7	10.7	**-0.1372**	0.107	78.3	ug/L	117	Standard
>	**Ga**	71	25.0	20.0				mg/L	22	Standard
	Rb	85	50.0	26.5				ug/L	53	Standard
	Y	89	582773.4	1.8				ug/L	557276	Standard
>	**Rh**	103	8.3	34.6				ug/L	12	Standard
	Mo	98	175.1	18.2	**0.0352**	0.010	27.6	ug/L	159	Standard
	Ag	107	262.0	43.3	**0.0059**	0.011	178.7	ug/L	102	Standard
	Cd	111	20.8	54.4	**-0.0020**	0.004	186.8	mg/L	4	Standard
	Cd	114	62.6	55.8	**-0.0066**	0.005	69.4	ug/L	34	Standard
>	**In**	115	892350.5	1.7				ug/L	828245	Standard
	Sn	118	1020.0	5.5	**0.0291**	0.005	18.8	ug/L	850	Standard
	Sb	123	386.4	22.9	**0.0416**	0.014	34.5	ug/L	499	Standard
	Ba	135	84.3	24.2	**0.0083**	0.006	68.5	ug/L	23	Standard
	Ce	140	33.3	37.7				ug/L	45	Standard
>	**Tb**	159	1464480.0	2.9				ug/L	1408642	Standard
	Ho	165	18.3	15.7				ug/L	15	Standard
	Tl	203	201.0	52.8	**0.0114**	0.010	86.2	ug/L	5	Standard
	Tl	205	80.0	16.5	**0.0024**	0.001	56.5	ug/L	8	Standard
	Pb	206	456.7	18.9	**0.0103**	0.011	111.5	ug/L	348	Standard
	Pb	207	375.0	18.8	**0.0013**	0.011	805.8	ug/L	284	Standard
	Pb	208	1074.0	5.4	**-0.0038**	0.003	82.6	ug/L	938	Standard
	U	238	47.7	38.2	**0.0041**	0.003	61.1	ug/L	3	Standard
>	**Bi**	209	627332.6	1.2				ug/L	615841	Standard

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Na	23	1.7	173.2	**3.4871**	6.031	173.0	mg/L	3	Standard
Mg	24	68.3	4.2	**-0.0155**	0.002	11.3	mg/L	68	Standard
K	39	25.0	20.0	**0.0181**	0.015	81.1	mg/L	23	Standard
Ca	43	60.0	25.0	**1.1160**	1.020	91.4	mg/L	52	Standard
Fe	54	202.4	12.5	**0.0150**	0.018	118.3	mg/L	214	Standard
Fe	57	268.3	20.5	**0.1489**	0.138	92.9	mg/L	213	Standard
Sc-1	45	46910.9	1.8				mg/L	49932	Standard
Cl	35	29242.9	2.3				ug/L	23537	Standard
Kr	83	3.0	115.5				ug/L	3	Standard
Br	81	1783.4	10.4				ug/L	1553	Standard
P	31	18568.0	2.7				ug/L	15523	Standard
S	34	1168.4	5.2				ug/L	1052	Standard
Sr	88	160.0	11.3				ug/L	147	Standard
C	12	443.3	18.2				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	35.9	42.3				mg/L	29	Standard
Ho-1	165	18.3	15.7				mg/L	15	Standard
Er	166	16.7	91.7				mg/L	23	Standard
I	127	1638.4	5.7				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.844	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.740
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.866
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1502071906 WG512325-01
Sample Date/Time: Monday, February 23, 2015 14:38:14
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	119712.9	7.7				ug/L	102148	Standard
	Be	9	21.7	53.3	**0.0028**	0.007	245.5	ug/L	8	Standard
	Al	27	867859.4	3.1	**4.7812**	0.376	7.9	ug/L	1058	Standard
	Sc	45	47559.6	3.8				ug/L	49932	Standard
	Ti	47	69.0	3.8	**0.1839**	0.008	4.2	ug/L	25	Standard
	V	51	4162.2	0.6	**0.1954**	0.007	3.4	ug/L	2343	Standard
	Cr	52	10662.8	2.6	**0.1696**	0.022	12.9	ug/L	9255	Standard
	Cr	53	878.4	12.0	**0.4279**	0.087	20.2	ug/L	355	Standard
	Mn	55	10067.7	1.8	**0.6651**	0.022	3.3	ug/L	920	Standard
	Co	59	294.0	17.6	**0.0073**	0.004	61.0	ug/L	117	Standard
	Ni	60	353.3	21.5	**0.1018**	0.027	26.5	ug/L	48	Standard
	Cu	65	1863.8	4.0	**0.6173**	0.022	3.6	ug/L	211	Standard
	Zn	66	2568.2	0.9	**1.7051**	0.037	2.2	ug/L	477	Standard
>	**Ge**	72	533812.1	1.1				ug/L	543406	Standard
	As	75	1681.2	2.6	**1.3478**	0.022	1.6	ug/L	-90	Standard
	Se	82	110.3	24.9	**0.6242**	0.209	33.4	ug/L	31	Standard
	Se-1	77	141.7	3.6	**0.2680**	0.063	23.5	ug/L	117	Standard
>	**Ga**	71	153.3	28.1				mg/L	22	Standard
	Rb	85	4902.5	1.6				ug/L	53	Standard
	Y	89	576912.0	1.8				ug/L	557276	Standard
>	**Rh**	103	126.7	6.0				ug/L	12	Standard
	Mo	98	18810.8	1.8	**5.7898**	0.121	2.1	ug/L	159	Standard
	Ag	107	141.7	38.2	**-0.0047**	0.005	115.8	ug/L	102	Standard
	Cd	111	160.4	21.6	**0.0475**	0.013	26.7	mg/L	4	Standard
	Cd	114	440.4	10.8	**0.0475**	0.007	15.3	ug/L	34	Standard
>	**In**	115	855842.8	0.9				ug/L	828245	Standard
	Sn	118	918.4	10.4	**0.0222**	0.012	54.3	ug/L	850	Standard
	Sb	123	1266.3	3.6	**0.1869**	0.009	5.0	ug/L	499	Standard
	Ba	135	86152.0	1.8	**25.5759**	0.264	1.0	ug/L	23	Standard
	Ce	140	255.0	14.1				ug/L	45	Standard
>	**Tb**	159	1433501.9	1.2				ug/L	1408642	Standard
	Ho	165	25.0	20.0				ug/L	15	Standard
	Tl	203	237.3	26.3	**0.0163**	0.006	37.5	ug/L	5	Standard
	Tl	205	153.3	6.8	**0.0117**	0.001	10.6	ug/L	8	Standard
	Pb	206	552.3	12.8	**0.0281**	0.010	35.6	ug/L	348	Standard
	Pb	207	480.7	5.1	**0.0217**	0.004	19.4	ug/L	284	Standard
	Pb	208	1514.4	1.1	**0.0221**	0.001	4.6	ug/L	938	Standard
	U	238	17921.3	2.9	**2.6101**	0.064	2.4	ug/L	3	Standard
>	**Bi**	209	581355.4	0.9				ug/L	615841	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	3	Standard
Mg	24	87927.8	1.7	**83.2287**	4.102	4.9	mg/L	68	Standard
K	39	121.7	31.1	**0.2905**	0.111	38.3	mg/L	23	Standard
Ca	43	48.3	53.1	**0.2951**	1.859	629.9	mg/L	52	Standard
Fe	54	222.0	6.5	**0.0260**	0.004	15.7	mg/L	214	Standard
Fe	57	261.7	5.8	**0.1237**	0.046	36.8	mg/L	213	Standard
> **Sc-1**	45	47559.6	3.8				mg/L	49932	Standard
Cl	35	30164.7	2.3				ug/L	23537	Standard
Kr	83	3.7	41.7				ug/L	3	Standard
Br	81	9039.4	6.4				ug/L	1553	Standard
P	31	20530.6	5.5				ug/L	15523	Standard
S	34	1080.0	10.8				ug/L	1052	Standard
Sr	88	268.3	16.1				ug/L	147	Standard
C	12	643.3	17.1				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	34.4	59.6				mg/L	29	Standard
Ho-1	165	25.0	20.0				mg/L	15	Standard
Er	166	46.7	32.7				mg/L	23	Standard
I	127	399512.3	2.5				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.195	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.234	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.332
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.400
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: February 24, 2015

Method 6020 - Summary Report

Sample ID: L1502071906S WG512325-05
Sample Date/Time: Monday, February 23, 2015 14:41:25
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	129136.4	1.2				ug/L	102148	Standard
	Be	9	77179.5	2.1	**43.9688**	1.444	3.3	ug/L	8	Standard
	Al	27	851630.0	2.2	**4.3317**	0.087	2.0	ug/L	1058	Standard
	Sc	45	48439.0	1.1				ug/L	49932	Standard
	Ti	47	71.3	5.8	**0.1861**	0.013	6.9	ug/L	25	Standard
	V	51	470887.6	1.5	**52.0055**	1.267	2.4	ug/L	2343	Standard
	Cr	52	460224.5	0.4	**51.3113**	0.900	1.8	ug/L	9255	Standard
	Cr	53	58136.4	3.7	**50.5669**	1.232	2.4	ug/L	355	Standard
	Mn	55	713238.1	1.7	**51.5394**	1.540	3.0	ug/L	920	Standard
	Co	59	563041.4	0.7	**50.4235**	0.723	1.4	ug/L	117	Standard
	Ni	60	137268.0	0.5	**50.1686**	0.618	1.2	ug/L	48	Standard
	Cu	65	136759.2	1.3	**51.0899**	1.395	2.7	ug/L	211	Standard
	Zn	66	67280.7	1.5	**52.3440**	1.542	2.9	ug/L	477	Standard
>	**Ge**	72	547107.3	1.6				ug/L	543406	Standard
	As	75	73947.1	0.6	**53.6974**	1.039	1.9	ug/L	-90	Standard
	Se	82	7400.9	0.6	**53.7238**	1.008	1.9	ug/L	31	Standard
	Se-1	77	4879.5	2.6	**52.4839**	1.843	3.5	ug/L	117	Standard
>	**Ga**	71	125.0	4.0				mg/L	22	Standard
	Rb	85	4997.5	4.3				ug/L	53	Standard
	Y	89	572017.8	1.6				ug/L	557276	Standard
>	**Rh**	103	165.0	23.7				ug/L	12	Standard
	Mo	98	19300.1	0.4	**5.8340**	0.089	1.5	ug/L	159	Standard
	Ag	107	511445.4	0.1	**48.5725**	0.937	1.9	ug/L	102	Standard
	Cd	111	151292.0	0.4	**52.2156**	1.044	2.0	mg/L	4	Standard
	Cd	114	369064.7	2.1	**51.5236**	2.055	4.0	ug/L	34	Standard
>	**In**	115	871596.9	2.0				ug/L	828245	Standard
	Sn	118	1298.4	3.7	**0.0639**	0.003	4.1	ug/L	850	Standard
	Sb	123	342479.0	1.3	**54.5741**	1.638	3.0	ug/L	499	Standard
	Ba	135	253031.4	0.8	**73.8050**	1.054	1.4	ug/L	23	Standard
	Ce	140	315.0	14.1				ug/L	45	Standard
>	**Tb**	159	1434486.9	1.9				ug/L	1408642	Standard
	Ho	165	20.0	43.3				ug/L	15	Standard
	Tl	203	543201.4	1.0	**51.8512**	0.618	1.2	ug/L	5	Standard
	Tl	205	465331.6	1.3	**53.1584**	1.358	2.6	ug/L	8	Standard
	Pb	206	391696.6	0.7	**52.8476**	1.111	2.1	ug/L	348	Standard
	Pb	207	342562.6	0.5	**51.3617**	0.776	1.5	ug/L	284	Standard
	Pb	208	1066527.4	0.8	**51.9881**	0.954	1.8	ug/L	938	Standard
	U	238	401704.2	0.6	**57.1642**	0.963	1.7	ug/L	3	Standard
>	**Bi**	209	595619.9	1.4				ug/L	615841	Standard

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Na	23	1.7	173.2	**3.3522**	5.798	172.9	mg/L	3	Standard
Mg	24	88685.5	2.1	**82.3164**	1.008	1.2	mg/L	68	Standard
K	39	118.3	21.7	**0.2745**	0.073	26.6	mg/L	23	Standard
Ca	43	85.0	5.9	**2.6928**	0.402	14.9	mg/L	52	Standard
Fe	54	247.1	5.2	**0.0398**	0.007	17.0	mg/L	214	Standard
Fe	57	261.7	20.4	**0.1107**	0.124	112.2	mg/L	213	Standard
> **Sc-1**	45	48439.0	1.1				mg/L	49932	Standard
Cl	35	30938.2	2.3				ug/L	23537	Standard
Kr	83	6.0	33.3				ug/L	3	Standard
Br	81	10096.7	7.3				ug/L	1553	Standard
P	31	20544.0	7.8				ug/L	15523	Standard
S	34	930.0	3.0				ug/L	1052	Standard
Sr	88	293.3	19.2				ug/L	147	Standard
C	12	806.7	10.3				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	11.1	140.4				mg/L	29	Standard
Ho-1	165	20.0	43.3				mg/L	15	Standard
Er	166	46.7	53.9				mg/L	23	Standard
I	127	444374.1	3.5				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		126.420	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.681	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	105.234	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.717	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1502071906SD WG512325-06
Sample Date/Time: Monday, February 23, 2015 14:44:37
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	121782.9	3.5				ug/L	102148	Standard
	Be	9	78357.2	3.2	**47.3981**	3.135	6.6	ug/L	8	Standard
	Al	27	850056.0	5.3	**4.5948**	0.399	8.7	ug/L	1058	Standard
	Sc	45	47885.6	2.4				ug/L	49932	Standard
	Ti	47	67.7	13.7	**0.1804**	0.034	18.9	ug/L	25	Standard
	V	51	458045.2	2.6	**52.1933**	0.958	1.8	ug/L	2343	Standard
	Cr	52	454916.2	3.4	**52.3456**	1.091	2.1	ug/L	9255	Standard
	Cr	53	58117.9	0.8	**52.1965**	0.837	1.6	ug/L	355	Standard
	Mn	55	696493.3	2.6	**51.9216**	0.819	1.6	ug/L	920	Standard
	Co	59	552593.5	2.4	**51.0631**	0.875	1.7	ug/L	117	Standard
	Ni	60	137997.8	3.5	**52.0484**	1.898	3.6	ug/L	48	Standard
	Cu	65	134924.9	3.3	**52.0046**	1.584	3.0	ug/L	211	Standard
	Zn	66	66721.9	1.6	**53.5706**	1.199	2.2	ug/L	477	Standard
>	**Ge**	72	530184.6	2.1				ug/L	543406	Standard
	As	75	71584.2	1.6	**53.6437**	1.300	2.4	ug/L	-90	Standard
	Se	82	7182.4	2.5	**53.8128**	1.996	3.7	ug/L	31	Standard
	Se-1	77	4688.7	2.1	**52.0337**	1.619	3.1	ug/L	117	Standard
>	**Ga**	71	146.7	19.7				mg/L	22	Standard
	Rb	85	5190.9	4.2				ug/L	53	Standard
	Y	89	588729.2	2.4				ug/L	557276	Standard
>	**Rh**	103	130.0	23.1				ug/L	12	Standard
	Mo	98	18621.1	3.0	**5.4915**	0.128	2.3	ug/L	159	Standard
	Ag	107	507179.3	1.6	**47.0045**	0.813	1.7	ug/L	102	Standard
	Cd	111	151470.7	3.0	**51.0106**	1.310	2.6	mg/L	4	Standard
	Cd	114	380538.1	1.3	**51.8283**	0.576	1.1	ug/L	34	Standard
>	**In**	115	893003.9	1.6				ug/L	828245	Standard
	Sn	118	835.0	2.4	**0.0083**	0.001	11.8	ug/L	850	Standard
	Sb	123	335138.9	2.1	**52.1089**	1.187	2.3	ug/L	499	Standard
	Ba	135	253790.6	2.3	**72.2368**	1.036	1.4	ug/L	23	Standard
	Ce	140	395.0	16.6				ug/L	45	Standard
>	**Tb**	159	1457378.3	0.8				ug/L	1408642	Standard
	Ho	165	28.3	20.4				ug/L	15	Standard
	Tl	203	541674.7	2.3	**51.4492**	0.745	1.4	ug/L	5	Standard
	Tl	205	459290.9	0.7	**52.2130**	1.118	2.1	ug/L	8	Standard
	Pb	206	390292.9	2.7	**52.3901**	1.032	2.0	ug/L	348	Standard
	Pb	207	338852.3	2.1	**50.5498**	0.559	1.1	ug/L	284	Standard
	Pb	208	1053899.1	2.2	**51.1145**	0.844	1.7	ug/L	938	Standard
	U	238	400341.0	3.4	**56.6815**	1.542	2.7	ug/L	3	Standard
>	**Bi**	209	598540.3	1.8				ug/L	615841	Standard

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Na	23	1.7	173.2	**3.4063**	5.891	173.0	mg/L	3	Standard
Mg	24	88241.2	0.9	**82.8798**	1.579	1.9	mg/L	68	Standard
K	39	88.3	14.2	**0.1936**	0.031	16.2	mg/L	23	Standard
Ca	43	75.0	24.0	**2.0595**	1.168	56.7	mg/L	52	Standard
Fe	54	223.1	9.5	**0.0256**	0.011	41.8	mg/L	214	Standard
Fe	57	285.0	18.3	**0.1767**	0.134	75.9	mg/L	213	Standard
Sc-1	45	47885.6	2.4				mg/L	49932	Standard
Cl	35	30095.9	1.4				ug/L	23537	Standard
Kr	83	3.0	33.3				ug/L	3	Standard
Br	81	9970.0	8.5				ug/L	1553	Standard
P	31	19287.3	3.8				ug/L	15523	Standard
S	34	916.7	5.4				ug/L	1052	Standard
Sr	88	301.7	14.1				ug/L	147	Standard
C	12	833.4	4.5				mg/L	397	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	41.9	27.6				mg/L	29	Standard
Ho-1	165	28.3	20.4				mg/L	15	Standard
Er	166	30.0	0.0				mg/L	23	Standard
I	127	490623.0	3.0				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.222	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.567	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.819
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.191
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, February 23, 2015 14:47:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	120927.7	3.4				ug/L	102148	Standard
	Be	9	79935.4	2.4	**48.6732**	2.555	5.2	ug/L	8	Standard
	Al	27	8573122.8	2.4	**46.7796**	2.004	4.3	ug/L	1058	Standard
	Sc	45	47780.2	1.2				ug/L	49932	Standard
	Ti	47	25808.0	1.1	**96.5182**	1.392	1.4	ug/L	25	Standard
	V	51	462461.2	1.5	**51.1188**	0.831	1.6	ug/L	2343	Standard
	Cr	52	459817.8	1.3	**51.3176**	0.885	1.7	ug/L	9255	Standard
	Cr	53	58690.3	4.7	**51.1248**	2.557	5.0	ug/L	355	Standard
	Mn	55	710220.2	3.5	**51.3693**	1.972	3.8	ug/L	920	Standard
	Co	59	565377.6	1.4	**50.6862**	0.926	1.8	ug/L	117	Standard
	Ni	60	142109.0	0.8	**51.9923**	0.456	0.9	ug/L	48	Standard
	Cu	65	138309.1	0.2	**51.7151**	0.202	0.4	ug/L	211	Standard
	Zn	66	65720.2	0.7	**51.1654**	0.330	0.6	ug/L	477	Standard
>	Ge	72	546481.4	0.4				ug/L	543406	Standard
	As	75	72611.1	0.8	**52.7789**	0.416	0.8	ug/L	-90	Standard
	Se	82	7339.6	2.0	**53.3277**	1.028	1.9	ug/L	31	Standard
	Se-1	77	4910.5	0.5	**52.8741**	0.090	0.2	ug/L	117	Standard
>	Ga	71	76.7	46.3				mg/L	22	Standard
	Rb	85	1163.4	9.3				ug/L	53	Standard
	Y	89	553255.6	4.7				ug/L	557276	Standard
>	Rh	103	61.7	16.9				ug/L	12	Standard
	Mo	98	335650.8	2.3	**101.2624**	4.257	4.2	ug/L	159	Standard
	Ag	107	542222.3	1.0	**51.2438**	1.332	2.6	ug/L	102	Standard
	Cd	111	154338.8	0.4	**53.0066**	1.321	2.5	mg/L	4	Standard
	Cd	114	375939.7	0.9	**52.2037**	0.661	1.3	ug/L	34	Standard
>	In	115	875965.8	2.1				ug/L	828245	Standard
	Sn	118	446338.7	3.4	**51.0530**	2.421	4.7	ug/L	850	Standard
	Sb	123	338239.3	0.6	**53.6298**	1.466	2.7	ug/L	499	Standard
	Ba	135	168798.5	1.4	**48.9978**	1.606	3.3	ug/L	23	Standard
	Ce	140	271.7	20.7				ug/L	45	Standard
>	Tb	159	1438950.5	3.3				ug/L	1408642	Standard
	Ho	165	13.3	43.3				ug/L	15	Standard
	Tl	203	569455.9	1.2	**51.0665**	1.189	2.3	ug/L	5	Standard
	Tl	205	491309.3	1.2	**52.7158**	0.850	1.6	ug/L	8	Standard
	Pb	206	409451.6	1.6	**51.8909**	1.250	2.4	ug/L	348	Standard
	Pb	207	363792.3	0.4	**51.2353**	0.596	1.2	ug/L	284	Standard
	Pb	208	1108108.8	1.5	**50.7355**	0.940	1.9	ug/L	938	Standard
	U	238	387610.4	1.5	**51.8073**	0.602	1.2	ug/L	3	Standard
>	Bi	209	634066.7	1.3				ug/L	615841	Standard

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Na	23	3.3	86.6	**6.8571**	5.935	86.6	mg/L	3	Standard
Mg	24	5902.8	1.8	**5.4796**	0.112	2.0	mg/L	68	Standard
K	39	1491.7	3.3	**4.1334**	0.102	2.5	mg/L	23	Standard
Ca	43	115.0	34.0	**4.8388**	2.682	55.4	mg/L	52	Standard
Fe	54	8077.6	2.8	**5.2404**	0.217	4.1	mg/L	214	Standard
Fe	57	2521.9	4.4	**5.6577**	0.286	5.1	mg/L	213	Standard
Sc-1	45	47780.2	1.2				mg/L	49932	Standard
Cl	35	28741.9	0.2				ug/L	23537	Standard
Kr	83	5.0	34.6				ug/L	3	Standard
Br	81	1896.8	11.9				ug/L	1553	Standard
P	31	17401.7	1.0				ug/L	15523	Standard
S	34	1121.7	2.5				ug/L	1052	Standard
Sr	88	146.7	2.0				ug/L	147	Standard
C	12	470.0	24.2				mg/L	397	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	22.2	91.8				mg/L	29	Standard
Ho-1	165	13.3	43.3				mg/L	15	Standard
Er	166	23.3	65.5				mg/L	23	Standard
I	127	5181.0	46.7				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	97.346		
Al	27	93.559		
Sc	45			
Ti	47	96.518		
V	51	102.238		
Cr	52	102.635		
Cr	53			
Mn	55	102.739		
Co	59	101.372		
Ni	60	103.985		
Cu	65	103.430		
Zn	66	102.331		
Ge	72		100.566	
As	75	105.558		
Se	82	106.655		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.262		
Ag	107	102.488		
Cd	111	106.013		
Cd	114			
In	115			105.762
Sn	118	102.106		
Sb	123	107.260		
Ba	135	97.996		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.133		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.471		
U	238	103.615		
Bi	209			102.959
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, February 23, 2015 14:51:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	116151.0	5.4				ug/L	102148	Standard
	Be	9	28.3	36.7	**0.0074**	0.007	88.6	ug/L	8	Standard
	Al	27	1818.4	29.0	**-0.0078**	0.003	40.8	ug/L	1058	Standard
	Sc	45	46882.5	3.4				ug/L	49932	Standard
	Ti	47	19.3	51.8	**-0.0071**	0.037	525.1	ug/L	25	Standard
	V	51	2325.6	8.0	**-0.0153**	0.019	122.4	ug/L	2343	Standard
	Cr	52	9039.0	1.2	**-0.0259**	0.016	60.2	ug/L	9255	Standard
	Cr	53	388.3	12.0	**-0.0140**	0.037	268.7	ug/L	355	Standard
	Mn	55	1026.0	10.1	**-0.0061**	0.007	110.8	ug/L	920	Standard
	Co	59	218.3	29.8	**0.0002**	0.006	2682.7	ug/L	117	Standard
	Ni	60	61.0	12.4	**-0.0077**	0.003	33.4	ug/L	48	Standard
	Cu	65	274.0	13.9	**0.0071**	0.014	193.4	ug/L	211	Standard
	Zn	66	335.3	2.0	**-0.0887**	0.008	8.6	ug/L	477	Standard
>	**Ge**	72	537014.2	1.2				ug/L	543406	Standard
	As	75	-128.2	19.9	**0.0044**	0.020	453.4	ug/L	-90	Standard
	Se	82	26.0	43.0	**-0.0067**	0.081	1208.6	ug/L	31	Standard
	Se-1	77	114.0	6.6	**-0.0524**	0.086	164.8	ug/L	117	Standard
>	**Ga**	71	18.3	56.8				mg/L	22	Standard
	Rb	85	48.3	36.3				ug/L	53	Standard
	Y	89	574149.2	2.7				ug/L	557276	Standard
>	**Rh**	103	25.0	40.0				ug/L	12	Standard
	Mo	98	173.2	14.7	**0.0353**	0.008	21.3	ug/L	159	Standard
	Ag	107	243.7	79.8	**0.0044**	0.018	406.5	ug/L	102	Standard
	Cd	111	66.0	136.0	**0.0134**	0.030	225.7	mg/L	4	Standard
	Cd	114	159.6	145.1	**0.0068**	0.032	467.8	ug/L	34	Standard
>	**In**	115	879908.5	1.4				ug/L	828245	Standard
	Sn	118	1071.7	14.5	**0.0366**	0.017	47.2	ug/L	850	Standard
	Sb	123	235.2	24.5	**0.0184**	0.009	47.8	ug/L	499	Standard
	Ba	135	92.3	100.1	**0.0108**	0.026	242.8	ug/L	23	Standard
	Ce	140	33.3	17.3				ug/L	45	Standard
>	**Tb**	159	1460242.5	2.5				ug/L	1408642	Standard
	Ho	165	23.3	32.7				ug/L	15	Standard
	Tl	203	202.7	126.8	**0.0114**	0.023	202.7	ug/L	5	Standard
	Tl	205	83.3	75.5	**0.0028**	0.007	241.4	ug/L	8	Standard
	Pb	206	445.7	23.6	**0.0089**	0.013	147.8	ug/L	348	Standard
	Pb	207	376.0	27.9	**0.0014**	0.015	1012.1	ug/L	284	Standard
	Pb	208	1053.0	13.7	**-0.0048**	0.006	134.1	ug/L	938	Standard
	U	238	40.0	85.5	**0.0031**	0.005	149.1	ug/L	3	Standard
>	**Bi**	209	626071.7	0.6				ug/L	615841	Standard

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Na	23	1.7	173.2	**3.3858**	5.856	172.9	mg/L	3	Standard
Mg	24	101.7	22.7	**0.0167**	0.023	136.2	mg/L	68	Standard
K	39	15.0	88.2	**-0.0104**	0.038	362.9	mg/L	23	Standard
Ca	43	30.0	16.7	**-0.9917**	0.321	32.4	mg/L	52	Standard
Fe	54	197.3	16.3	**0.0118**	0.024	202.0	mg/L	214	Standard
Fe	57	221.7	7.9	**0.0336**	0.059	174.4	mg/L	213	Standard
> **Sc-1**	45	46882.5	3.4				mg/L	49932	Standard
Cl	35	28546.9	2.7				ug/L	23537	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	1750.1	17.2				ug/L	1553	Standard
P	31	17697.0	2.3				ug/L	15523	Standard
S	34	1163.4	14.1				ug/L	1052	Standard
Sr	88	163.3	12.7				ug/L	147	Standard
C	12	426.7	1.4				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.5	127.3				mg/L	29	Standard
Ho-1	165	23.3	32.7				mg/L	15	Standard
Er	166	3.3	173.2				mg/L	23	Standard
I	127	1806.8	5.7				mg/L	1075	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.824	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.238
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.661
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBS 60 WG512792-02
Sample Date/Time: Monday, February 23, 2015 14:58:42
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	125431.3	5.2				ug/L	102148	Standard
	Be	9	46.7	109.4	**0.0163**	0.028	174.0	ug/L	8	Standard
	Al	27	14123.6	29.8	**0.0556**	0.019	34.0	ug/L	1058	Standard
	Sc	45	50890.4	2.4				ug/L	49932	Standard
	Ti	47	49.7	41.3	**0.1028**	0.074	72.1	ug/L	25	Standard
	V	51	2723.3	9.5	**0.0210**	0.026	121.5	ug/L	2343	Standard
	Cr	52	9893.9	3.3	**0.0410**	0.032	77.4	ug/L	9255	Standard
	Cr	53	345.0	10.0	**-0.0611**	0.028	45.9	ug/L	355	Standard
	Mn	55	9222.1	3.3	**0.5790**	0.013	2.3	ug/L	920	Standard
	Co	59	373.3	65.6	**0.0134**	0.021	160.3	ug/L	117	Standard
	Ni	60	5764.8	2.3	**2.0570**	0.040	2.0	ug/L	48	Standard
	Cu	65	1258.1	5.0	**0.3688**	0.021	5.6	ug/L	211	Standard
	Zn	66	3057.0	1.5	**2.0142**	0.005	0.3	ug/L	477	Standard
>	**Ge**	72	552473.2	1.3				ug/L	543406	Standard
	As	75	-124.6	21.4	**0.0096**	0.020	208.6	ug/L	-90	Standard
	Se	82	22.2	34.3	**-0.0399**	0.053	133.4	ug/L	31	Standard
	Se-1	77	112.7	12.7	**-0.1037**	0.146	141.0	ug/L	117	Standard
>	**Ga**	71	36.7	55.1				mg/L	22	Standard
	Rb	85	575.0	12.0				ug/L	53	Standard
	Y	89	582173.2	1.3				ug/L	557276	Standard
>	**Rh**	103	15.0	33.3				ug/L	12	Standard
	Mo	98	125.3	69.5	**0.0201**	0.026	129.4	ug/L	159	Standard
	Ag	107	311.7	101.5	**0.0103**	0.029	285.1	ug/L	102	Standard
	Cd	111	24.9	58.2	**-0.0006**	0.005	795.8	mg/L	4	Standard
	Cd	114	72.8	63.5	**-0.0053**	0.006	120.5	ug/L	34	Standard
>	**In**	115	905323.8	1.2				ug/L	828245	Standard
	Sn	118	1261.7	3.0	**0.0543**	0.006	10.6	ug/L	850	Standard
	Sb	123	310.4	54.1	**0.0292**	0.026	90.7	ug/L	499	Standard
	Ba	135	348.7	9.3	**0.0823**	0.010	12.3	ug/L	23	Standard
	Ce	140	510.0	10.2				ug/L	45	Standard
>	**Tb**	159	1521118.2	2.3				ug/L	1408642	Standard
	Ho	165	23.3	101.3				ug/L	15	Standard
	Tl	203	86.3	91.0	**0.0006**	0.007	1155.6	ug/L	5	Standard
	Tl	205	236.7	136.6	**0.0182**	0.033	182.4	ug/L	8	Standard
	Pb	206	943.4	24.3	**0.0678**	0.027	39.3	ug/L	348	Standard
	Pb	207	806.0	24.4	**0.0581**	0.025	43.7	ug/L	284	Standard
	Pb	208	2656.1	34.4	**0.0645**	0.039	60.9	ug/L	938	Standard
	U	238	175.0	154.4	**0.0202**	0.035	171.8	ug/L	3	Standard
>	**Bi**	209	652165.4	2.4				ug/L	615841	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	3	Standard
Mg	24	133.3	24.4	**0.0368**	0.028	77.3	mg/L	68	Standard
K	39	40.0	25.0	**0.0524**	0.029	54.8	mg/L	23	Standard
Ca	43	65.0	33.5	**1.0930**	1.296	118.6	mg/L	52	Standard
Fe	54	292.4	7.0	**0.0605**	0.017	27.3	mg/L	214	Standard
Fe	57	263.3	22.3	**0.0859**	0.141	164.4	mg/L	213	Standard
> **Sc-1**	45	50890.4	2.4				mg/L	49932	Standard
Cl	35	29430.6	2.4				ug/L	23537	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	1880.1	8.7				ug/L	1553	Standard
P	31	20904.5	7.5				ug/L	15523	Standard
S	34	1106.7	5.7				ug/L	1052	Standard
Sr	88	136.7	5.6				ug/L	147	Standard
C	12	520.0	8.8				mg/L	397	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.1	43.5				mg/L	29	Standard
Ho-1	165	23.3	101.3				mg/L	15	Standard
Er	166	26.7	57.3				mg/L	23	Standard
I	127	1428.4	6.3				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		122.793	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.669	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	109.306
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	105.898
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: LCSW 60 WG512792-03
Sample Date/Time: Monday, February 23, 2015 15:01:53
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	121436.6	2.9				ug/L	102148	Standard
	Be	9	82114.0	5.3	**49.7398**	2.289	4.6	ug/L	8	Standard
	Al	27	9991.7	12.2	**0.0360**	0.006	15.8	ug/L	1058	Standard
	Sc	45	48768.4	1.9				ug/L	49932	Standard
	Ti	47	28.7	35.1	**0.0269**	0.038	142.6	ug/L	25	Standard
	V	51	468226.1	2.2	**51.7349**	1.722	3.3	ug/L	2343	Standard
	Cr	52	476576.9	1.6	**53.1958**	1.322	2.5	ug/L	9255	Standard
	Cr	53	59747.6	2.3	**52.0237**	1.731	3.3	ug/L	355	Standard
	Mn	55	733081.9	2.0	**52.9963**	1.649	3.1	ug/L	920	Standard
	Co	59	579743.7	1.5	**51.9453**	1.302	2.5	ug/L	117	Standard
	Ni	60	145562.3	1.0	**53.2271**	1.115	2.1	ug/L	48	Standard
	Cu	65	144028.1	1.5	**53.8302**	1.416	2.6	ug/L	211	Standard
	Zn	66	68319.4	1.2	**53.1748**	1.248	2.3	ug/L	477	Standard
>	**Ge**	72	546859.7	1.1				ug/L	543406	Standard
	As	75	70968.1	1.3	**51.5559**	0.949	1.8	ug/L	-90	Standard
	Se	82	7177.0	0.8	**52.1112**	0.836	1.6	ug/L	31	Standard
	Se-1	77	4831.1	0.5	**51.9673**	0.844	1.6	ug/L	117	Standard
>	**Ga**	71	23.3	65.5				mg/L	22	Standard
	Rb	85	511.7	12.4				ug/L	53	Standard
	Y	89	588021.6	1.6				ug/L	557276	Standard
>	**Rh**	103	68.3	15.2				ug/L	12	Standard
	Mo	98	98.5	8.8	**0.0123**	0.002	19.7	ug/L	159	Standard
	Ag	107	549204.4	1.6	**50.6259**	1.296	2.6	ug/L	102	Standard
	Cd	111	157985.3	1.2	**52.9215**	1.159	2.2	mg/L	4	Standard
	Cd	114	387729.6	2.2	**52.5265**	1.659	3.2	ug/L	34	Standard
>	**In**	115	897921.2	1.0				ug/L	828245	Standard
	Sn	118	1091.7	8.7	**0.0364**	0.010	26.3	ug/L	850	Standard
	Sb	123	343945.4	2.2	**53.1906**	1.637	3.1	ug/L	499	Standard
	Ba	135	176186.1	2.2	**49.8803**	1.555	3.1	ug/L	23	Standard
	Ce	140	385.0	4.7				ug/L	45	Standard
>	**Tb**	159	1492551.0	1.2				ug/L	1408642	Standard
	Ho	165	13.3	43.3				ug/L	15	Standard
	Tl	203	577109.3	1.1	**50.7060**	0.177	0.3	ug/L	5	Standard
	Tl	205	495061.1	1.8	**52.0532**	1.130	2.2	ug/L	8	Standard
	Pb	206	417122.9	0.5	**51.7991**	0.658	1.3	ug/L	348	Standard
	Pb	207	363737.0	1.6	**50.1982**	0.952	1.9	ug/L	284	Standard
	Pb	208	1142752.8	0.7	**51.2734**	0.788	1.5	ug/L	938	Standard
	U	238	393195.7	2.6	**51.5026**	1.412	2.7	ug/L	3	Standard
>	**Bi**	209	647043.6	1.2				ug/L	615841	Standard

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Na	23	1.7	173.2	**3.3653**	5.820	172.9	mg/L	3	Standard
Mg	24	128.3	23.5	**0.0372**	0.026	70.7	mg/L	68	Standard
K	39	30.0	16.7	**0.0292**	0.014	49.6	mg/L	23	Standard
Ca	43	40.0	12.5	**-0.3919**	0.363	92.7	mg/L	52	Standard
Fe	54	254.9	20.9	**0.0441**	0.036	82.7	mg/L	214	Standard
Fe	57	255.0	6.8	**0.0913**	0.043	47.4	mg/L	213	Standard
> **Sc-1**	45	48768.4	1.9				mg/L	49932	Standard
Cl	35	29715.8	0.8				ug/L	23537	Standard
Kr	83	4.7	12.4				ug/L	3	Standard
Br	81	1810.1	11.8				ug/L	1553	Standard
P	31	19424.1	4.8				ug/L	15523	Standard
S	34	1076.7	3.8				ug/L	1052	Standard
Sr	88	136.7	17.3				ug/L	147	Standard
C	12	523.3	15.9				mg/L	397	Standard
N	14	6.7	173.2				mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	39.0	0.0				mg/L	29	Standard
Ho-1	165	13.3	43.3				mg/L	15	Standard
Er	166	20.0	0.0				mg/L	23	Standard
I	127	1326.7	4.6				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.883	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.636	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.413
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.067
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 60 WG512792-03
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Method 6020 - Summary Report

Sample ID: L1502071810 WG512792-01
Sample Date/Time: Monday, February 23, 2015 15:05:05
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	122446.9	5.0				ug/L	102148	Standard
	Be	9	21.7	81.0	**0.0023**	0.010	451.6	ug/L	8	Standard
	Al	27	662608.3	3.5	**3.5569**	0.216	6.1	ug/L	1058	Standard
	Sc	45	45787.4	2.5				ug/L	49932	Standard
	Ti	47	93.3	3.4	**0.3007**	0.014	4.7	ug/L	25	Standard
	V	51	1093.1	50.2	**-0.1457**	0.067	45.7	ug/L	2343	Standard
	Cr	52	11177.5	1.5	**0.3154**	0.029	9.2	ug/L	9255	Standard
	Cr	53	11299.2	3.5	**10.4514**	0.329	3.2	ug/L	355	Standard
	Mn	55	86413.1	1.5	**6.7477**	0.138	2.0	ug/L	920	Standard
	Co	59	538.7	3.4	**0.0330**	0.002	6.3	ug/L	117	Standard
	Ni	60	488.0	8.8	**0.1645**	0.018	10.8	ug/L	48	Standard
	Cu	65	950.7	6.4	**0.2912**	0.025	8.6	ug/L	211	Standard
	Zn	66	2603.2	1.6	**1.8703**	0.046	2.5	ug/L	477	Standard
>	**Ge**	72	500919.9	0.6				ug/L	543406	Standard
	As	75	8251.4	2.4	**6.6301**	0.155	2.3	ug/L	-90	Standard
	Se	82	471.1	2.7	**3.5488**	0.096	2.7	ug/L	31	Standard
	Se-1	77	887.7	2.0	**9.3581**	0.250	2.7	ug/L	117	Standard
>	**Ga**	71	100.0	25.0				mg/L	22	Standard
	Rb	85	6084.6	3.8				ug/L	53	Standard
	Y	89	533465.7	0.6				ug/L	557276	Standard
>	**Rh**	103	355.0	25.9				ug/L	12	Standard
	Mo	98	113362.3	3.0	**37.2978**	1.090	2.9	ug/L	159	Standard
	Ag	107	129.3	19.9	**-0.0051**	0.003	51.9	ug/L	102	Standard
	Cd	111	17.0	154.1	**-0.0026**	0.010	382.0	mg/L	4	Standard
	Cd	114	339.1	1.0	**0.0363**	0.000	1.1	ug/L	34	Standard
>	**In**	115	802531.1	0.2				ug/L	828245	Standard
	Sn	118	1340.1	6.6	**0.0820**	0.011	13.1	ug/L	850	Standard
	Sb	123	684.7	6.2	**0.0998**	0.007	7.2	ug/L	499	Standard
	Ba	135	120146.9	1.9	**38.0462**	0.708	1.9	ug/L	23	Standard
	Ce	140	163.3	7.1				ug/L	45	Standard
>	**Tb**	159	1312301.0	2.2				ug/L	1408642	Standard
	Ho	165	31.7	36.5				ug/L	15	Standard
	Tl	203	343.7	9.0	**0.0296**	0.003	11.6	ug/L	5	Standard
	Tl	205	281.7	17.4	**0.0296**	0.006	20.8	ug/L	8	Standard
	Pb	206	597.7	1.3	**0.0415**	0.001	2.3	ug/L	348	Standard
	Pb	207	529.3	4.2	**0.0362**	0.003	8.9	ug/L	284	Standard
	Pb	208	1646.4	4.3	**0.0358**	0.004	11.9	ug/L	938	Standard
	U	238	10159.4	1.7	**1.6062**	0.018	1.1	ug/L	3	Standard
>	**Bi**	209	535263.8	0.6				ug/L	615841	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	3	Standard
Mg	24	261798.8	3.1	**257.2318**	1.863	0.7	mg/L	68	Standard
K	39	116.7	17.8	**0.2885**	0.063	21.8	mg/L	23	Standard
Ca	43	60.0	22.0	**1.2095**	0.838	69.2	mg/L	52	Standard
Fe	54	263.7	8.6	**0.0607**	0.015	24.5	mg/L	214	Standard
Fe	57	306.7	6.2	**0.2630**	0.043	16.5	mg/L	213	Standard
> **Sc-1**	45	45787.4	2.5				mg/L	49932	Standard
Cl	35	28052.6	0.3				ug/L	23537	Standard
Kr	83	4.0	43.3				ug/L	3	Standard
Br	81	52069.5	5.1				ug/L	1553	Standard
P	31	19375.8	7.0				ug/L	15523	Standard
S	34	928.4	2.0				ug/L	1052	Standard
Sr	88	346.7	5.5				ug/L	147	Standard
C	12	753.4	10.0				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	26.7	94.4				mg/L	0	Standard
Dy	164	18.6	93.3				mg/L	29	Standard
Ho-1	165	31.7	36.5				mg/L	15	Standard
Er	166	30.0	0.0				mg/L	23	Standard
I	127	608241.1	6.5				mg/L	1075	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		119.872	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		92.181	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.895
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		86.916
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: February 24, 2015

Method 6020 - Summary Report

Sample ID: L1502071810S WG512792-06
Sample Date/Time: Monday, February 23, 2015 15:08:17
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	118337.2	2.5				ug/L	102148	Standard
	Be	9	78285.3	3.9	**48.6623**	1.671	3.4	ug/L	8	Standard
	Al	27	670257.0	2.6	**3.7176**	0.018	0.5	ug/L	1058	Standard
	Sc	45	44996.7	1.0				ug/L	49932	Standard
	Ti	47	87.0	11.7	**0.2826**	0.039	13.9	ug/L	25	Standard
	V	51	435769.5	2.3	**53.7690**	1.586	2.9	ug/L	2343	Standard
	Cr	52	433789.7	1.8	**54.0802**	1.242	2.3	ug/L	9255	Standard
	Cr	53	65280.4	2.1	**63.5332**	1.139	1.8	ug/L	355	Standard
	Mn	55	735441.6	2.3	**59.3646**	1.374	2.3	ug/L	920	Standard
	Co	59	524626.7	2.2	**52.4804**	1.160	2.2	ug/L	117	Standard
	Ni	60	127048.9	2.0	**51.8714**	1.294	2.5	ug/L	48	Standard
	Cu	65	122332.7	2.2	**51.0379**	1.017	2.0	ug/L	211	Standard
	Zn	66	62020.4	1.2	**53.9017**	0.976	1.8	ug/L	477	Standard
>	**Ge**	72	489748.3	0.9				ug/L	543406	Standard
	As	75	75637.4	0.7	**61.3360**	0.914	1.5	ug/L	-90	Standard
	Se	82	7216.9	1.7	**58.5322**	1.028	1.8	ug/L	31	Standard
	Se-1	77	5270.6	2.6	**63.5921**	1.724	2.7	ug/L	117	Standard
>	**Ga**	71	96.7	28.5				mg/L	22	Standard
	Rb	85	5991.2	4.7				ug/L	53	Standard
	Y	89	526938.5	1.0				ug/L	557276	Standard
>	**Rh**	103	456.7	10.6				ug/L	12	Standard
	Mo	98	115113.1	1.6	**38.1056**	0.642	1.7	ug/L	159	Standard
	Ag	107	427548.0	1.3	**44.3536**	0.374	0.8	ug/L	102	Standard
	Cd	111	138862.3	1.7	**52.3548**	0.944	1.8	mg/L	4	Standard
	Cd	114	336787.7	0.6	**51.3598**	1.377	2.7	ug/L	34	Standard
>	**In**	115	797788.7	2.1				ug/L	828245	Standard
	Sn	118	1370.1	14.0	**0.0870**	0.026	30.4	ug/L	850	Standard
	Sb	123	315662.9	1.5	**54.9431**	0.932	1.7	ug/L	499	Standard
	Ba	135	279259.4	1.5	**88.9939**	1.508	1.7	ug/L	23	Standard
	Ce	140	248.3	26.6				ug/L	45	Standard
>	**Tb**	159	1357192.0	1.8				ug/L	1408642	Standard
	Ho	165	18.3	56.8				ug/L	15	Standard
	Tl	203	498107.7	1.9	**53.4667**	0.794	1.5	ug/L	5	Standard
	Tl	205	427064.4	1.6	**54.8575**	1.065	1.9	ug/L	8	Standard
	Pb	206	361731.0	1.0	**54.8777**	0.312	0.6	ug/L	348	Standard
	Pb	207	312358.5	1.7	**52.6626**	0.658	1.3	ug/L	284	Standard
	Pb	208	980944.3	1.8	**53.7675**	0.809	1.5	ug/L	938	Standard
	U	238	367040.4	2.6	**58.7302**	1.370	2.3	ug/L	3	Standard
>	**Bi**	209	529613.3	0.4				ug/L	615841	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	3	Standard
Mg	24	260666.2	3.1	**260.7038**	10.190	3.9	mg/L	68	Standard
K	39	111.7	33.9	**0.2789**	0.110	39.4	mg/L	23	Standard
Ca	43	66.7	22.9	**1.7955**	1.164	64.8	mg/L	52	Standard
Fe	54	219.6	4.8	**0.0328**	0.008	23.1	mg/L	214	Standard
Fe	57	295.0	8.5	**0.2470**	0.072	29.4	mg/L	213	Standard
> **Sc-1**	45	44996.7	1.0				mg/L	49932	Standard
Cl	35	28538.9	4.9				ug/L	23537	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	62535.5	0.7				ug/L	1553	Standard
P	31	19661.1	5.2				ug/L	15523	Standard
S	34	833.4	3.7				ug/L	1052	Standard
Sr	88	341.7	8.1				ug/L	147	Standard
C	12	846.7	14.1				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	26.7	57.3				mg/L	0	Standard
Dy	164	5.4	109.8				mg/L	29	Standard
Ho-1	165	18.3	56.8				mg/L	15	Standard
Er	166	26.7	21.7				mg/L	23	Standard
I	127	546645.1	3.7				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.848	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.126	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.323
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		85.998
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: February 24, 2015

Method 6020 - Summary Report

Sample ID: L1502071810SD WG512792-07
Sample Date/Time: Monday, February 23, 2015 15:11:28
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	124320.1	3.7				ug/L	102148	Standard
	Be	9	78425.8	1.1	**46.4275**	1.181	2.5	ug/L	8	Standard
	Al	27	637299.2	5.2	**3.3679**	0.253	7.5	ug/L	1058	Standard
	Sc	45	44423.4	3.7				ug/L	49932	Standard
	Ti	47	100.0	7.2	**0.3256**	0.030	9.1	ug/L	25	Standard
	V	51	450799.7	1.1	**54.0809**	0.411	0.8	ug/L	2343	Standard
	Cr	52	438651.0	0.8	**53.1536**	0.386	0.7	ug/L	9255	Standard
	Cr	53	65973.3	0.9	**62.4343**	1.055	1.7	ug/L	355	Standard
	Mn	55	744816.6	3.1	**58.4545**	1.548	2.6	ug/L	920	Standard
	Co	59	527835.6	1.8	**51.3413**	0.806	1.6	ug/L	117	Standard
	Ni	60	128865.4	1.1	**51.1636**	1.252	2.4	ug/L	48	Standard
	Cu	65	125517.8	1.4	**50.9306**	1.366	2.7	ug/L	211	Standard
	Zn	66	63366.3	2.1	**53.5410**	0.867	1.6	ug/L	477	Standard
>	**Ge**	72	503682.8	1.4				ug/L	543406	Standard
	As	75	75109.1	1.5	**59.2217**	0.490	0.8	ug/L	-90	Standard
	Se	82	7212.2	2.1	**56.8701**	1.076	1.9	ug/L	31	Standard
	Se-1	77	5293.6	1.7	**62.0686**	0.538	0.9	ug/L	117	Standard
>	**Ga**	71	128.3	25.9				mg/L	22	Standard
	Rb	85	6049.5	7.6				ug/L	53	Standard
	Y	89	530160.3	2.2				ug/L	557276	Standard
>	**Rh**	103	430.0	11.1				ug/L	12	Standard
	Mo	98	109726.0	2.0	**35.9779**	1.129	3.1	ug/L	159	Standard
	Ag	107	373059.9	1.6	**38.3325**	0.998	2.6	ug/L	102	Standard
	Cd	111	138520.7	1.4	**51.7231**	0.824	1.6	mg/L	4	Standard
	Cd	114	337930.0	2.0	**51.0327**	1.434	2.8	ug/L	34	Standard
>	**In**	115	805470.4	1.2				ug/L	828245	Standard
	Sn	118	1886.8	4.7	**0.1495**	0.011	7.4	ug/L	850	Standard
	Sb	123	320074.6	1.1	**55.1801**	1.206	2.2	ug/L	499	Standard
	Ba	135	271752.3	1.2	**85.7753**	1.943	2.3	ug/L	23	Standard
	Ce	140	245.0	9.4				ug/L	45	Standard
>	**Tb**	159	1354201.3	1.9				ug/L	1408642	Standard
	Ho	165	21.7	26.6				ug/L	15	Standard
	Tl	203	503753.2	1.7	**53.4220**	1.235	2.3	ug/L	5	Standard
	Tl	205	418661.0	1.4	**53.1278**	1.223	2.3	ug/L	8	Standard
	Pb	206	367540.4	1.8	**55.0900**	1.517	2.8	ug/L	348	Standard
	Pb	207	314911.0	0.7	**52.4512**	0.653	1.2	ug/L	284	Standard
	Pb	208	978722.1	0.7	**52.9984**	0.882	1.7	ug/L	938	Standard
	U	238	364515.4	1.9	**57.6278**	1.643	2.9	ug/L	3	Standard
>	**Bi**	209	536144.1	0.9				ug/L	615841	Standard

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Na	23	1.7	173.2	**3.6910**	6.384	173.0	mg/L	3	Standard
Mg	24	242238.0	1.6	**245.4729**	5.308	2.2	mg/L	68	Standard
K	39	130.0	13.9	**0.3407**	0.069	20.4	mg/L	23	Standard
Ca	43	61.7	28.5	**1.5165**	1.482	97.7	mg/L	52	Standard
Fe	54	213.9	2.4	**0.0308**	0.003	10.3	mg/L	214	Standard
Fe	57	278.3	16.2	**0.2149**	0.139	64.7	mg/L	213	Standard
> **Sc-1**	45	44423.4	3.7				mg/L	49932	Standard
Cl	35	28370.6	4.2				ug/L	23537	Standard
Kr	83	5.7	10.2				ug/L	3	Standard
Br	81	57478.8	1.8				ug/L	1553	Standard
P	31	20091.7	2.8				ug/L	15523	Standard
S	34	896.7	9.4				ug/L	1052	Standard
Sr	88	298.3	10.2				ug/L	147	Standard
C	12	776.7	4.5				mg/L	397	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	16.7	34.6				mg/L	0	Standard
Dy	164	25.2	21.3				mg/L	29	Standard
Ho-1	165	21.7	26.6				mg/L	15	Standard
Er	166	30.0	33.3				mg/L	23	Standard
I	127	513000.8	5.9				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		121.705	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.690	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.250
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.059
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: L1502071810SD WG512792-07
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Method 6020 - Summary Report

Sample ID: L1501166206
Sample Date/Time: Monday, February 23, 2015 15:14:40
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	125293.0	3.3				ug/L	102148	Standard
	Be	9	9314.5	1.5	**5.4617**	0.158	2.9	ug/L	8	Standard
	Al	27	2303.5	15.0	**-0.0060**	0.002	33.8	ug/L	1058	Standard
	Sc	45	47231.9	2.2				ug/L	49932	Standard
	Ti	47	29.3	10.4	**0.0318**	0.011	35.0	ug/L	25	Standard
	V	51	88808.1	2.8	**9.8177**	0.319	3.3	ug/L	2343	Standard
	Cr	52	80987.3	2.3	**8.3631**	0.136	1.6	ug/L	9255	Standard
	Cr	53	10145.1	3.4	**8.7400**	0.219	2.5	ug/L	355	Standard
	Mn	55	322535.9	0.7	**23.8169**	0.331	1.4	ug/L	920	Standard
	Co	59	48239.7	3.2	**4.4047**	0.113	2.6	ug/L	117	Standard
	Ni	60	61600.3	1.4	**23.0343**	0.271	1.2	ug/L	48	Standard
	Cu	65	32586.7	1.3	**12.3892**	0.206	1.7	ug/L	211	Standard
	Zn	66	32412.0	1.4	**25.6318**	0.081	0.3	ug/L	477	Standard
>	**Ge**	72	534299.9	1.1				ug/L	543406	Standard
	As	75	13263.3	2.1	**9.9406**	0.118	1.2	ug/L	-90	Standard
	Se	82	1948.8	2.7	**14.3368**	0.350	2.4	ug/L	31	Standard
	Se-1	77	1371.4	2.0	**14.1545**	0.481	3.4	ug/L	117	Standard
>	**Ga**	71	46.7	16.4				mg/L	22	Standard
	Rb	85	88.3	37.7				ug/L	53	Standard
	Y	89	583592.2	0.8				ug/L	557276	Standard
>	**Rh**	103	90.0	20.0				ug/L	12	Standard
	Mo	98	24802.4	0.2	**7.3091**	0.087	1.2	ug/L	159	Standard
	Ag	107	109679.3	2.0	**10.1356**	0.319	3.1	ug/L	102	Standard
	Cd	111	8589.9	2.2	**2.8805**	0.096	3.3	mg/L	4	Standard
	Cd	114	21437.4	5.4	**2.9012**	0.168	5.8	ug/L	34	Standard
>	**In**	115	894440.4	1.1				ug/L	828245	Standard
	Sn	118	2031.8	4.8	**0.1424**	0.013	8.8	ug/L	850	Standard
	Sb	123	46661.7	2.6	**7.2288**	0.274	3.8	ug/L	499	Standard
	Ba	135	109361.3	0.7	**31.0725**	0.440	1.4	ug/L	23	Standard
	Ce	140	38.3	32.8				ug/L	45	Standard
>	**Tb**	159	1450146.2	1.4				ug/L	1408642	Standard
	Ho	165	16.7	45.8				ug/L	15	Standard
	Tl	203	136685.8	0.5	**12.0513**	0.182	1.5	ug/L	5	Standard
	Tl	205	112135.2	2.3	**11.8291**	0.215	1.8	ug/L	8	Standard
	Pb	206	86036.0	1.5	**10.6854**	0.073	0.7	ug/L	348	Standard
	Pb	207	69954.9	2.5	**9.6471**	0.126	1.3	ug/L	284	Standard
	Pb	208	220866.6	1.1	**9.9036**	0.073	0.7	ug/L	938	Standard
	U	238	200.7	93.8	**0.0239**	0.024	101.8	ug/L	3	Standard
>	**Bi**	209	644606.0	1.5				ug/L	615841	Standard

Sample ID: L1501166206
Report Date/Time: Monday, February 23, 2015 15:16:57
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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	3	Standard
Mg	24	263.3	42.7	**0.1687**	0.102	60.5	mg/L	68	Standard
K	39	15.0	88.2	**-0.0114**	0.036	318.0	mg/L	23	Standard
Ca	43	36.7	28.4	**-0.5464**	0.689	126.1	mg/L	52	Standard
Fe	54	298.0	16.6	**0.0786**	0.037	46.5	mg/L	214	Standard
Fe	57	296.7	4.2	**0.2149**	0.045	20.8	mg/L	213	Standard
Sc-1	45	47231.9	2.2				mg/L	49932	Standard
Cl	35	29433.9	1.9				ug/L	23537	Standard
Kr	83	3.0	33.3				ug/L	3	Standard
Br	81	2416.9	20.5				ug/L	1553	Standard
P	31	17566.9	5.9				ug/L	15523	Standard
S	34	958.4	8.3				ug/L	1052	Standard
Sr	88	151.7	37.9				ug/L	147	Standard
C	12	446.7	26.9				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	14.9	39.9				mg/L	29	Standard
Ho-1	165	16.7	45.8				mg/L	15	Standard
Er	166	36.7	41.7				mg/L	23	Standard
I	127	8901.4	51.8				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		122.658	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.324	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.992
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.671
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: February 24, 2015

Method 6020 - Summary Report

Sample ID: L1501166206SDL WG512869-04
Sample Date/Time: Monday, February 23, 2015 15:17:52
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 125
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	121334.1	2.4				ug/L	102148	Standard
	Be	9	1901.8	8.8	**1.1429**	0.103	9.0	ug/L	8	Standard
	Al	27	2636.9	7.8	**-0.0038**	0.001	35.0	ug/L	1058	Standard
	Sc	45	46976.1	3.2				ug/L	49932	Standard
	Ti	47	26.7	38.5	**0.0212**	0.039	183.8	ug/L	25	Standard
	V	51	20753.4	0.9	**2.0713**	0.017	0.8	ug/L	2343	Standard
	Cr	52	24561.9	0.8	**1.7766**	0.021	1.2	ug/L	9255	Standard
	Cr	53	2361.9	4.6	**1.7503**	0.107	6.1	ug/L	355	Standard
	Mn	55	70056.3	1.4	**5.0879**	0.093	1.8	ug/L	920	Standard
	Co	59	10055.0	2.0	**0.8989**	0.019	2.1	ug/L	117	Standard
	Ni	60	12800.7	3.2	**4.7433**	0.168	3.6	ug/L	48	Standard
	Cu	65	7171.7	2.0	**2.6394**	0.061	2.3	ug/L	211	Standard
	Zn	66	8811.6	3.4	**6.6810**	0.270	4.0	ug/L	477	Standard
>	**Ge**	72	536481.4	0.4				ug/L	543406	Standard
	As	75	2725.0	2.5	**2.1132**	0.056	2.7	ug/L	-90	Standard
	Se	82	440.6	7.0	**3.0741**	0.244	7.9	ug/L	31	Standard
	Se-1	77	415.7	6.5	**3.3417**	0.320	9.6	ug/L	117	Standard
>	**Ga**	71	33.3	60.6				mg/L	22	Standard
	Rb	85	83.3	40.0				ug/L	53	Standard
	Y	89	567936.5	2.7				ug/L	557276	Standard
>	**Rh**	103	55.0	63.0				ug/L	12	Standard
	Mo	98	5654.4	2.0	**1.7000**	0.065	3.8	ug/L	159	Standard
	Ag	107	22890.9	1.6	**2.1597**	0.082	3.8	ug/L	102	Standard
	Cd	111	1801.4	2.7	**0.6139**	0.029	4.6	mg/L	4	Standard
	Cd	114	4535.9	3.7	**0.6192**	0.035	5.6	ug/L	34	Standard
>	**In**	115	870531.5	2.1				ug/L	828245	Standard
	Sn	118	2041.8	1.8	**0.1498**	0.006	3.9	ug/L	850	Standard
	Sb	123	9776.6	0.4	**1.5416**	0.037	2.4	ug/L	499	Standard
	Ba	135	22535.1	1.6	**6.5686**	0.222	3.4	ug/L	23	Standard
	Ce	140	55.0	18.2				ug/L	45	Standard
>	**Tb**	159	1393973.5	1.9				ug/L	1408642	Standard
	Ho	165	11.7	49.5				ug/L	15	Standard
	Tl	203	28456.7	1.5	**2.5979**	0.079	3.1	ug/L	5	Standard
	Tl	205	23768.6	2.1	**2.5962**	0.031	1.2	ug/L	8	Standard
	Pb	206	17889.2	2.1	**2.2678**	0.083	3.7	ug/L	348	Standard
	Pb	207	14908.7	1.0	**2.0927**	0.034	1.6	ug/L	284	Standard
	Pb	208	47188.9	1.7	**2.1540**	0.073	3.4	ug/L	938	Standard
	U	238	25.3	53.6	**0.0012**	0.002	166.8	ug/L	3	Standard
>	**Bi**	209	621361.3	1.6				ug/L	615841	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	3	Standard
Mg	24	156.7	15.1	**0.0687**	0.018	26.4	mg/L	68	Standard
K	39	23.3	44.6	**0.0132**	0.029	222.3	mg/L	23	Standard
Ca	43	38.3	52.7	**-0.4344**	1.342	309.0	mg/L	52	Standard
Fe	54	222.9	12.1	**0.0282**	0.014	48.3	mg/L	214	Standard
Fe	57	238.3	9.9	**0.0733**	0.059	81.2	mg/L	213	Standard
> **Sc-1**	45	46976.1	3.2				mg/L	49932	Standard
Cl	35	29395.8	1.9				ug/L	23537	Standard
Kr	83	3.3	62.4				ug/L	3	Standard
Br	81	1870.1	7.2				ug/L	1553	Standard
P	31	18291.0	4.0				ug/L	15523	Standard
S	34	965.0	7.3				ug/L	1052	Standard
Sr	88	160.0	6.3				ug/L	147	Standard
C	12	470.0	16.1				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	19.0	51.3				mg/L	29	Standard
Ho-1	165	11.7	49.5				mg/L	15	Standard
Er	166	20.0	50.0				mg/L	23	Standard
I	127	3413.7	11.1				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.782	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.726	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.106
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.896
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: February 24, 2015

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, February 23, 2015 15:21:04
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	121376.6	4.6				ug/L	102148	Standard
	Be	9	82358.3	1.3	**49.9759**	2.322	4.6	ug/L	8	Standard
	Al	27	9068234.1	4.1	**49.3734**	4.006	8.1	ug/L	1058	Standard
	Sc	45	46638.4	2.6				ug/L	49932	Standard
	Ti	47	26391.0	2.3	**99.9575**	2.638	2.6	ug/L	25	Standard
	V	51	462088.8	2.9	**51.7280**	1.495	2.9	ug/L	2343	Standard
	Cr	52	458287.2	1.1	**51.8044**	0.615	1.2	ug/L	9255	Standard
	Cr	53	60885.4	1.1	**53.7223**	0.141	0.3	ug/L	355	Standard
	Mn	55	709049.2	1.8	**51.9365**	1.225	2.4	ug/L	920	Standard
	Co	59	567802.6	0.8	**51.5517**	0.865	1.7	ug/L	117	Standard
	Ni	60	142249.0	0.9	**52.7057**	0.672	1.3	ug/L	48	Standard
	Cu	65	137510.2	0.3	**52.0718**	0.600	1.2	ug/L	211	Standard
	Zn	66	65430.0	1.4	**51.5860**	0.241	0.5	ug/L	477	Standard
>	Ge	72	539643.5	1.0				ug/L	543406	Standard
	As	75	71912.0	0.6	**52.9338**	0.250	0.5	ug/L	-90	Standard
	Se	82	7262.1	1.7	**53.4374**	1.064	2.0	ug/L	31	Standard
	Se-1	77	4918.1	2.7	**53.6524**	1.714	3.2	ug/L	117	Standard
>	Ga	71	70.0	25.8				mg/L	22	Standard
	Rb	85	1135.0	7.1				ug/L	53	Standard
	Y	89	562466.5	1.5				ug/L	557276	Standard
>	Rh	103	85.0	25.6				ug/L	12	Standard
	Mo	98	330911.0	1.5	**100.3932**	2.088	2.1	ug/L	159	Standard
	Ag	107	539691.2	1.6	**51.2957**	0.197	0.4	ug/L	102	Standard
	Cd	111	153667.4	1.5	**53.0821**	0.943	1.8	mg/L	4	Standard
	Cd	114	378062.4	1.4	**52.8125**	0.910	1.7	ug/L	34	Standard
>	In	115	870690.2	1.4				ug/L	828245	Standard
	Sn	118	456074.8	1.4	**52.4621**	0.646	1.2	ug/L	850	Standard
	Sb	123	337557.1	1.2	**53.8267**	0.217	0.4	ug/L	499	Standard
	Ba	135	170210.5	1.0	**49.6922**	0.893	1.8	ug/L	23	Standard
	Ce	140	248.3	22.2				ug/L	45	Standard
>	Tb	159	1434219.2	1.8				ug/L	1408642	Standard
	Ho	165	21.7	26.6				ug/L	15	Standard
	Tl	203	565207.5	0.3	**51.6549**	0.676	1.3	ug/L	5	Standard
	Tl	205	476325.7	3.0	**52.1005**	2.121	4.1	ug/L	8	Standard
	Pb	206	406763.2	1.5	**52.5430**	1.393	2.7	ug/L	348	Standard
	Pb	207	361493.2	1.2	**51.8935**	1.140	2.2	ug/L	284	Standard
	Pb	208	1105454.4	0.8	**51.5903**	1.039	2.0	ug/L	938	Standard
	U	238	387271.4	0.7	**52.7612**	0.860	1.6	ug/L	3	Standard
>	Bi	209	622123.3	1.3				ug/L	615841	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	3	Standard
Mg	24	6291.3	4.4	**5.9976**	0.424	7.1	mg/L	68	Standard
K	39	1458.4	8.8	**4.1487**	0.475	11.4	mg/L	23	Standard
Ca	43	123.3	16.4	**5.6056**	1.195	21.3	mg/L	52	Standard
Fe	54	8028.7	2.5	**5.3375**	0.118	2.2	mg/L	214	Standard
Fe	57	2356.9	3.1	**5.3995**	0.325	6.0	mg/L	213	Standard
Sc-1	45	46638.4	2.6				mg/L	49932	Standard
Cl	35	29806.0	1.9				ug/L	23537	Standard
Kr	83	2.7	43.3				ug/L	3	Standard
Br	81	2086.8	11.8				ug/L	1553	Standard
P	31	20595.7	3.9				ug/L	15523	Standard
S	34	1180.0	7.4				ug/L	1052	Standard
Sr	88	173.3	26.8				ug/L	147	Standard
C	12	583.3	23.3				mg/L	397	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	28.9	33.0				mg/L	29	Standard
Ho-1	165	21.7	26.6				mg/L	15	Standard
Er	166	23.3	65.5				mg/L	23	Standard
I	127	2740.2	1.9				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	99.952		
Al	27	98.747		
Sc	45			
Ti	47	99.958		
V	51	103.456		
Cr	52	103.609		
Cr	53			
Mn	55	103.873		
Co	59	103.103		
Ni	60	105.411		
Cu	65	104.144		
Zn	66	103.172		
Ge	72		99.308	
As	75	105.868		
Se	82	106.875		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	100.393		
Ag	107	102.591		
Cd	111	106.164		
Cd	114			
> In	115			105.125
Sn	118	104.924		
Sb	123	107.653		
Ba	135	99.384		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	103.310		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.181		
U	238	105.522		
> Bi	209			101.020
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Monday, February 23, 2015 15:23:21
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, February 23, 2015 15:24:15
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	125458.0	4.7				ug/L	102148	Standard
	Be	9	40.0	37.5	**0.0132**	0.009	70.9	ug/L	8	Standard
	Al	27	1940.1	36.8	**-0.0079**	0.004	52.3	ug/L	1058	Standard
	Sc	45	47489.3	1.5				ug/L	49932	Standard
	Ti	47	26.0	6.7	**0.0195**	0.008	42.0	ug/L	25	Standard
	V	51	2342.1	3.4	**-0.0110**	0.013	115.8	ug/L	2343	Standard
	Cr	52	9260.8	0.6	**0.0089**	0.025	283.9	ug/L	9255	Standard
	Cr	53	450.0	17.5	**0.0456**	0.078	171.6	ug/L	355	Standard
	Mn	55	1046.7	16.9	**-0.0038**	0.014	372.3	ug/L	920	Standard
	Co	59	249.7	34.7	**0.0034**	0.008	246.1	ug/L	117	Standard
	Ni	60	105.7	52.2	**0.0095**	0.022	227.4	ug/L	48	Standard
	Cu	65	336.0	22.2	**0.0321**	0.031	96.4	ug/L	211	Standard
	Zn	66	356.7	15.5	**-0.0689**	0.049	71.1	ug/L	477	Standard
>	**Ge**	72	532601.5	1.8				ug/L	543406	Standard
	As	75	-69.4	58.2	**0.0476**	0.030	63.1	ug/L	-90	Standard
	Se	82	29.0	29.2	**0.0171**	0.060	351.3	ug/L	31	Standard
	Se-1	77	108.7	8.6	**-0.1031**	0.089	85.9	ug/L	117	Standard
>	**Ga**	71	20.0	66.1				mg/L	22	Standard
	Rb	85	78.3	7.4				ug/L	53	Standard
	Y	89	562998.0	1.8				ug/L	557276	Standard
>	**Rh**	103	41.7	36.7				ug/L	12	Standard
	Mo	98	199.6	17.9	**0.0429**	0.011	26.1	ug/L	159	Standard
	Ag	107	277.3	77.3	**0.0076**	0.020	266.6	ug/L	102	Standard
	Cd	111	35.0	124.9	**0.0030**	0.015	494.3	mg/L	4	Standard
	Cd	114	115.3	114.5	**0.0008**	0.018	2202.7	ug/L	34	Standard
>	**In**	115	885314.1	1.0				ug/L	828245	Standard
	Sn	118	981.7	6.6	**0.0257**	0.008	30.4	ug/L	850	Standard
	Sb	123	244.1	37.1	**0.0197**	0.015	73.8	ug/L	499	Standard
	Ba	135	91.3	67.1	**0.0106**	0.018	168.0	ug/L	23	Standard
	Ce	140	25.0	40.0				ug/L	45	Standard
>	**Tb**	159	1438668.3	0.7				ug/L	1408642	Standard
	Ho	165	11.7	49.5				ug/L	15	Standard
	Tl	203	231.3	89.8	**0.0141**	0.019	134.5	ug/L	5	Standard
	Tl	205	91.7	49.5	**0.0037**	0.005	133.2	ug/L	8	Standard
	Pb	206	484.3	31.5	**0.0138**	0.020	144.2	ug/L	348	Standard
	Pb	207	387.7	25.3	**0.0030**	0.014	470.6	ug/L	284	Standard
	Pb	208	1075.7	13.4	**-0.0038**	0.007	179.7	ug/L	938	Standard
	U	238	53.0	59.9	**0.0048**	0.004	89.0	ug/L	3	Standard
>	**Bi**	209	628012.1	0.8				ug/L	615841	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	3	Standard
Mg	24	98.3	29.4	**0.0121**	0.027	224.6	mg/L	68	Standard
K	39	30.0	16.7	**0.0314**	0.015	47.4	mg/L	23	Standard
Ca	43	40.0	33.1	**-0.3214**	0.924	287.5	mg/L	52	Standard
Fe	54	190.8	27.9	**0.0052**	0.034	660.2	mg/L	214	Standard
Fe	57	241.7	28.1	**0.0762**	0.176	230.4	mg/L	213	Standard
Sc-1	45	47489.3	1.5				mg/L	49932	Standard
Cl	35	29212.8	1.5				ug/L	23537	Standard
Kr	83	3.0	57.7				ug/L	3	Standard
Br	81	1786.8	12.3				ug/L	1553	Standard
P	31	19227.2	5.6				ug/L	15523	Standard
S	34	1113.4	8.8				ug/L	1052	Standard
Sr	88	180.0	4.8				ug/L	147	Standard
C	12	490.0	7.4				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	22.9	48.8				mg/L	29	Standard
Ho-1	165	11.7	49.5				mg/L	15	Standard
Er	166	10.0	173.2				mg/L	23	Standard
I	127	2036.8	7.5				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.012	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.890
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.976
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1502071804
Sample Date/Time: Monday, February 23, 2015 15:27:28
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	110253.4	3.6				ug/L	102148	Standard
	Be	9	38.3	71.8	**0.0155**	0.020	125.9	ug/L	8	Standard
	Al	27	4724335.9	1.4	**28.2595**	0.635	2.2	ug/L	1058	Standard
	Sc	45	42486.2	0.7				ug/L	49932	Standard
	Ti	47	137.7	13.1	**0.5756**	0.085	14.7	ug/L	25	Standard
	V	51	-3999.3	8.5	**-0.8442**	0.049	5.8	ug/L	2343	Standard
	Cr	52	13784.9	3.0	**0.9261**	0.061	6.6	ug/L	9255	Standard
	Cr	53	33821.1	3.6	**37.4210**	1.419	3.8	ug/L	355	Standard
	Mn	55	328486.1	1.5	**30.2206**	0.495	1.6	ug/L	920	Standard
	Co	59	1394.1	13.4	**0.1396**	0.022	15.5	ug/L	117	Standard
	Ni	60	1575.4	6.5	**0.7041**	0.049	6.9	ug/L	48	Standard
	Cu	65	1965.1	2.4	**0.8401**	0.021	2.4	ug/L	211	Standard
	Zn	66	2254.5	1.3	**1.8945**	0.034	1.8	ug/L	477	Standard
>	**Ge**	72	429128.5	0.2				ug/L	543406	Standard
	As	75	4359.9	12.9	**4.1280**	0.526	12.7	ug/L	-90	Standard
	Se	82	1223.1	15.6	**11.1621**	1.799	16.1	ug/L	31	Standard
	Se-1	77	3217.3	2.7	**43.8947**	1.114	2.5	ug/L	117	Standard
>	**Ga**	71	100.0	13.2				mg/L	22	Standard
	Rb	85	67300.9	2.5				ug/L	53	Standard
	Y	89	478804.7	2.0				ug/L	557276	Standard
>	**Rh**	103	2143.5	7.4				ug/L	12	Standard
	Mo	98	43309.7	2.2	**16.3703**	0.368	2.2	ug/L	159	Standard
	Ag	107	343.3	121.8	**0.0225**	0.050	222.0	ug/L	102	Standard
	Cd	111	35.5	66.9	**0.0064**	0.010	161.5	mg/L	4	Standard
	Cd	114	212.3	42.4	**0.0219**	0.016	72.6	ug/L	34	Standard
>	**In**	115	698195.7	1.0				ug/L	828245	Standard
	Sn	118	971.7	8.3	**0.0540**	0.010	18.9	ug/L	850	Standard
	Sb	123	473.9	53.1	**0.0758**	0.051	66.9	ug/L	499	Standard
	Ba	135	1481660.0	0.7	**539.5578**	7.605	1.4	ug/L	23	Standard
	Ce	140	425.0	6.6				ug/L	45	Standard
>	**Tb**	159	1186971.4	2.2				ug/L	1408642	Standard
	Ho	165	46.7	12.4				ug/L	15	Standard
	Tl	203	393.0	83.5	**0.0435**	0.041	94.7	ug/L	5	Standard
	Tl	205	218.3	50.4	**0.0274**	0.016	59.9	ug/L	8	Standard
	Pb	206	673.0	51.7	**0.0741**	0.061	82.3	ug/L	348	Standard
	Pb	207	575.0	50.6	**0.0641**	0.057	88.4	ug/L	284	Standard
	Pb	208	1425.4	17.7	**0.0405**	0.015	36.9	ug/L	938	Standard
	U	238	8172.2	2.7	**1.5734**	0.015	0.9	ug/L	3	Standard
>	**Bi**	209	439488.4	1.7				ug/L	615841	Standard

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Na	23	3.3	86.6	**7.7058**	6.669	86.6	mg/L	3	Standard
Mg	24	750402.0	1.8	**794.8343**	11.288	1.4	mg/L	68	Standard
K	39	405.0	12.2	**1.2245**	0.149	12.2	mg/L	23	Standard
Ca	43	126.7	33.6	**6.7466**	3.340	49.5	mg/L	52	Standard
Fe	54	230.4	4.8	**0.0500**	0.008	15.2	mg/L	214	Standard
Fe	57	451.7	19.9	**0.7245**	0.255	35.2	mg/L	213	Standard
> **Sc-1**	45	42486.2	0.7				mg/L	49932	Standard
Cl	35	26648.8	1.4				ug/L	23537	Standard
Kr	83	4.3	58.1				ug/L	3	Standard
Br	81	229912.7	3.6				ug/L	1553	Standard
P	31	21288.4	10.7				ug/L	15523	Standard
S	34	861.7	8.4				ug/L	1052	Standard
Sr	88	1563.4	3.9				ug/L	147	Standard
C	12	616.7	15.8				mg/L	397	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	20.0	100.0				mg/L	0	Standard
Dy	164	37.9	77.8				mg/L	29	Standard
Ho-1	165	46.7	12.4				mg/L	15	Standard
Er	166	43.3	26.6				mg/L	23	Standard
I	127	4054898.2	5.3				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.935	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		78.970	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	84.298
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	71.364
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Lower	V	51	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1502071806
Sample Date/Time: Monday, February 23, 2015 15:30:39
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	110542.5	5.0				ug/L	102148	Standard
	Be	9	10.0	50.0	**-0.0039**	0.003	78.0	ug/L	8	Standard
	Al	27	5278006.7	4.6	**31.5178**	1.963	6.2	ug/L	1058	Standard
	Sc	45	41899.5	2.3				ug/L	49932	Standard
	Ti	47	140.0	6.5	**0.5798**	0.047	8.1	ug/L	25	Standard
	V	51	-6289.4	11.5	**-1.1590**	0.103	8.9	ug/L	2343	Standard
	Cr	52	13319.9	1.2	**0.8381**	0.034	4.1	ug/L	9255	Standard
	Cr	53	31118.6	2.1	**34.0266**	0.569	1.7	ug/L	355	Standard
	Mn	55	834067.3	2.5	**76.0387**	2.024	2.7	ug/L	920	Standard
	Co	59	1485.7	3.6	**0.1482**	0.007	4.6	ug/L	117	Standard
	Ni	60	1317.7	5.6	**0.5774**	0.036	6.3	ug/L	48	Standard
	Cu	65	3164.0	1.3	**1.3960**	0.028	2.0	ug/L	211	Standard
	Zn	66	1828.1	3.5	**1.4495**	0.072	5.0	ug/L	477	Standard
>	**Ge**	72	433770.7	0.6				ug/L	543406	Standard
	As	75	3280.1	20.8	**3.0973**	0.623	20.1	ug/L	-90	Standard
	Se	82	841.2	19.8	**7.5297**	1.529	20.3	ug/L	31	Standard
	Se-1	77	3267.0	2.6	**44.1019**	1.063	2.4	ug/L	117	Standard
>	**Ga**	71	108.3	16.2				mg/L	22	Standard
	Rb	85	14772.2	3.2				ug/L	53	Standard
	Y	89	466460.4	2.2				ug/L	557276	Standard
>	**Rh**	103	2283.5	6.5				ug/L	12	Standard
	Mo	98	65532.6	2.6	**25.9209**	0.553	2.1	ug/L	159	Standard
	Ag	107	126.3	7.7	**-0.0027**	0.001	48.3	ug/L	102	Standard
	Cd	111	15.3	55.2	**-0.0021**	0.004	177.3	mg/L	4	Standard
	Cd	114	208.5	30.4	**0.0229**	0.011	49.8	ug/L	34	Standard
>	**In**	115	667472.7	2.1				ug/L	828245	Standard
	Sn	118	800.0	5.0	**0.0347**	0.006	16.8	ug/L	850	Standard
	Sb	123	169.3	1.2	**0.0166**	0.001	4.6	ug/L	499	Standard
	Ba	135	1101154.0	2.0	**419.5349**	12.204	2.9	ug/L	23	Standard
	Ce	140	206.7	10.9				ug/L	45	Standard
>	**Tb**	159	1165901.0	0.8				ug/L	1408642	Standard
	Ho	165	20.0	66.1				ug/L	15	Standard
	Tl	203	183.0	10.0	**0.0171**	0.003	14.7	ug/L	5	Standard
	Tl	205	118.3	9.8	**0.0124**	0.002	16.5	ug/L	8	Standard
	Pb	206	478.3	1.5	**0.0405**	0.001	2.2	ug/L	348	Standard
	Pb	207	401.0	6.9	**0.0306**	0.006	19.9	ug/L	284	Standard
	Pb	208	1284.7	4.4	**0.0326**	0.005	14.0	ug/L	938	Standard
	U	238	2969.0	2.0	**0.5789**	0.014	2.5	ug/L	3	Standard
>	**Bi**	209	432943.4	1.3				ug/L	615841	Standard

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Na	23	5.0	100.0	**11.9135**	11.958	100.4	mg/L	3	Standard
Mg	24	735130.9	3.2	**789.5170**	12.515	1.6	mg/L	68	Standard
K	39	270.0	21.4	**0.8129**	0.196	24.1	mg/L	23	Standard
Ca	43	133.3	25.5	**7.4040**	2.712	36.6	mg/L	52	Standard
Fe	54	335.2	3.4	**0.1319**	0.013	10.2	mg/L	214	Standard
Fe	57	490.0	5.7	**0.8494**	0.104	12.2	mg/L	213	Standard
> **Sc-1**	45	41899.5	2.3				mg/L	49932	Standard
Cl	35	25839.4	2.5				ug/L	23537	Standard
Kr	83	2.3	107.9				ug/L	3	Standard
Br	81	204788.6	2.5				ug/L	1553	Standard
P	31	18172.6	10.1				ug/L	15523	Standard
S	34	893.4	6.7				ug/L	1052	Standard
Sr	88	1486.7	5.6				ug/L	147	Standard
C	12	490.0	11.4				mg/L	397	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	19.4	139.5				mg/L	29	Standard
Ho-1	165	20.0	66.1				mg/L	15	Standard
Er	166	13.3	86.6				mg/L	23	Standard
I	127	4400210.2	6.5				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.218	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		79.824	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		80.589
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		70.301
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Lower	V	51	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1502071808
Sample Date/Time: Monday, February 23, 2015 15:33:50
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	116224.5	4.0				ug/L	102148	Standard
	Be	9	13.3	57.3	**-0.0019**	0.005	265.8	ug/L	8	Standard
	Al	27	2545357.0	1.5	**14.4450**	0.710	4.9	ug/L	1058	Standard
	Sc	45	44160.9	1.4				ug/L	49932	Standard
	Ti	47	130.0	2.7	**0.5003**	0.015	3.1	ug/L	25	Standard
	V	51	-2642.4	1.5	**-0.6287**	0.008	1.3	ug/L	2343	Standard
	Cr	52	12735.7	1.7	**0.6579**	0.020	3.1	ug/L	9255	Standard
	Cr	53	25698.5	4.3	**26.5519**	1.350	5.1	ug/L	355	Standard
	Mn	55	350021.0	1.8	**30.1802**	0.307	1.0	ug/L	920	Standard
	Co	59	879.0	9.8	**0.0744**	0.008	11.2	ug/L	117	Standard
	Ni	60	990.7	1.9	**0.4025**	0.011	2.6	ug/L	48	Standard
	Cu	65	1485.1	2.5	**0.5668**	0.023	4.1	ug/L	211	Standard
	Zn	66	3033.0	3.4	**2.4813**	0.068	2.7	ug/L	477	Standard
>	**Ge**	72	457845.7	1.0				ug/L	543406	Standard
	As	75	4436.2	3.9	**3.9400**	0.115	2.9	ug/L	-90	Standard
	Se	82	817.1	6.3	**6.9109**	0.381	5.5	ug/L	31	Standard
	Se-1	77	2420.2	1.7	**30.5598**	0.752	2.5	ug/L	117	Standard
>	**Ga**	71	81.7	28.3				mg/L	22	Standard
	Rb	85	36652.7	5.2				ug/L	53	Standard
	Y	89	499253.6	2.5				ug/L	557276	Standard
>	**Rh**	103	1466.7	9.9				ug/L	12	Standard
	Mo	98	53874.3	2.0	**19.6632**	0.248	1.3	ug/L	159	Standard
	Ag	107	169.0	17.3	**0.0009**	0.003	339.2	ug/L	102	Standard
	Cd	111	14.3	108.6	**-0.0030**	0.006	216.1	mg/L	4	Standard
	Cd	114	179.6	31.3	**0.0151**	0.009	61.3	ug/L	34	Standard
>	**In**	115	723111.4	0.9				ug/L	828245	Standard
	Sn	118	823.4	14.4	**0.0287**	0.016	57.4	ug/L	850	Standard
	Sb	123	131.2	8.1	**0.0066**	0.002	31.9	ug/L	499	Standard
	Ba	135	546591.9	2.0	**192.1496**	2.207	1.1	ug/L	23	Standard
	Ce	140	211.7	19.8				ug/L	45	Standard
>	**Tb**	159	1254822.9	1.4				ug/L	1408642	Standard
	Ho	165	21.7	13.3				ug/L	15	Standard
	Tl	203	155.0	34.7	**0.0119**	0.006	52.9	ug/L	5	Standard
	Tl	205	116.7	9.9	**0.0107**	0.002	17.1	ug/L	8	Standard
	Pb	206	412.7	5.0	**0.0225**	0.003	13.8	ug/L	348	Standard
	Pb	207	362.7	4.7	**0.0170**	0.004	22.4	ug/L	284	Standard
	Pb	208	1207.7	7.6	**0.0213**	0.006	28.1	ug/L	938	Standard
	U	238	2875.6	3.0	**0.5177**	0.018	3.5	ug/L	3	Standard
>	**Bi**	209	468684.0	1.3				ug/L	615841	Standard

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Na	23	1.7	173.2	**3.7107**	6.418	173.0	mg/L	3	Standard
Mg	24	510244.2	1.7	**520.0072**	11.163	2.1	mg/L	68	Standard
K	39	385.0	16.9	**1.1145**	0.183	16.4	mg/L	23	Standard
Ca	43	93.3	15.5	**3.8663**	0.991	25.6	mg/L	52	Standard
Fe	54	282.0	2.0	**0.0805**	0.003	3.2	mg/L	214	Standard
Fe	57	413.3	5.5	**0.5745**	0.052	9.1	mg/L	213	Standard
> **Sc-1**	45	44160.9	1.4				mg/L	49932	Standard
Cl	35	28023.9	0.9				ug/L	23537	Standard
Kr	83	2.7	21.7				ug/L	3	Standard
Br	81	148898.3	2.2				ug/L	1553	Standard
P	31	21785.9	14.5				ug/L	15523	Standard
S	34	950.0	3.6				ug/L	1052	Standard
Sr	88	810.0	12.8				ug/L	147	Standard
C	12	753.4	18.8				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	16.7	34.6				mg/L	0	Standard
Dy	164	25.7	60.7				mg/L	29	Standard
Ho-1	165	21.7	13.3				mg/L	15	Standard
Er	166	20.0	100.0				mg/L	23	Standard
I	127	2627362.6	4.0				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.780	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		84.255	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	87.306
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	76.105
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Lower	V	51	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1502071812
Sample Date/Time: Monday, February 23, 2015 15:37:02
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	132410.2	4.5				ug/L	102148	Standard
	Be	9	15.0	33.3	**-0.0022**	0.003	118.7	ug/L	8	Standard
	Al	27	10753.8	8.8	**0.0355**	0.007	18.7	ug/L	1058	Standard
	Sc	45	47989.3	3.9				ug/L	49932	Standard
	Ti	47	81.3	3.8	**0.2260**	0.013	5.8	ug/L	25	Standard
	V	51	1958.6	7.0	**-0.0591**	0.015	24.6	ug/L	2343	Standard
	Cr	52	10467.3	1.1	**0.1266**	0.025	19.8	ug/L	9255	Standard
	Cr	53	2892.0	22.6	**2.1910**	0.559	25.5	ug/L	355	Standard
	Mn	55	4134.9	1.8	**0.2198**	0.004	1.9	ug/L	920	Standard
	Co	59	206.3	3.2	**-0.0010**	0.000	40.1	ug/L	117	Standard
	Ni	60	185.3	1.9	**0.0379**	0.001	1.4	ug/L	48	Standard
	Cu	65	2041.8	2.8	**0.6727**	0.025	3.7	ug/L	211	Standard
	Zn	66	3115.3	1.4	**2.1021**	0.031	1.5	ug/L	477	Standard
>	**Ge**	72	542909.0	1.1				ug/L	543406	Standard
	As	75	4.3	3202.1	**0.1028**	0.099	96.2	ug/L	-90	Standard
	Se	82	93.2	40.7	**0.4862**	0.281	57.9	ug/L	31	Standard
	Se-1	77	299.0	22.9	**1.9858**	0.731	36.8	ug/L	117	Standard
>	**Ga**	71	15.0	33.3				mg/L	22	Standard
	Rb	85	478.3	15.7				ug/L	53	Standard
	Y	89	572664.4	3.4				ug/L	557276	Standard
>	**Rh**	103	293.3	19.8				ug/L	12	Standard
	Mo	98	68.0	14.7	**0.0035**	0.003	88.3	ug/L	159	Standard
	Ag	107	115.3	16.9	**-0.0077**	0.002	22.7	ug/L	102	Standard
	Cd	111	13.6	4.2	**-0.0043**	0.000	5.6	mg/L	4	Standard
	Cd	114	53.4	9.0	**-0.0078**	0.001	9.4	ug/L	34	Standard
>	**In**	115	888318.1	1.3				ug/L	828245	Standard
	Sn	118	991.7	15.1	**0.0266**	0.018	68.4	ug/L	850	Standard
	Sb	123	104.2	4.2	**-0.0024**	0.001	31.7	ug/L	499	Standard
	Ba	135	520.7	2.4	**0.1333**	0.002	1.6	ug/L	23	Standard
	Ce	140	181.7	9.7				ug/L	45	Standard
>	**Tb**	159	1456063.7	0.8				ug/L	1408642	Standard
	Ho	165	11.7	49.5				ug/L	15	Standard
	Tl	203	214.0	29.3	**0.0121**	0.005	45.3	ug/L	5	Standard
	Tl	205	158.3	55.2	**0.0106**	0.009	87.2	ug/L	8	Standard
	Pb	206	467.0	4.9	**0.0104**	0.003	29.7	ug/L	348	Standard
	Pb	207	414.0	3.1	**0.0057**	0.002	27.5	ug/L	284	Standard
	Pb	208	1272.0	4.8	**0.0042**	0.003	64.2	ug/L	938	Standard
	U	238	10.3	45.7	**-0.0010**	0.001	65.9	ug/L	3	Standard
>	**Bi**	209	639346.4	0.5				ug/L	615841	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	3	Standard
Mg	24	410.0	23.8	**0.3043**	0.094	30.7	mg/L	68	Standard
K	39	10.0	50.0	**-0.0258**	0.013	50.3	mg/L	23	Standard
Ca	43	41.7	25.0	**-0.2237**	0.764	341.7	mg/L	52	Standard
Fe	54	247.3	7.6	**0.0420**	0.019	45.4	mg/L	214	Standard
Fe	57	235.0	9.3	**0.0535**	0.066	123.8	mg/L	213	Standard
> **Sc-1**	45	47989.3	3.9				mg/L	49932	Standard
Cl	35	30469.3	1.6				ug/L	23537	Standard
Kr	83	3.7	68.6				ug/L	3	Standard
Br	81	2523.5	6.3				ug/L	1553	Standard
P	31	22214.9	16.6				ug/L	15523	Standard
S	34	1016.7	2.4				ug/L	1052	Standard
Sr	88	178.3	9.8				ug/L	147	Standard
C	12	693.3	10.4				mg/L	397	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	12.4	127.2				mg/L	29	Standard
Ho-1	165	11.7	49.5				mg/L	15	Standard
Er	166	20.0	50.0				mg/L	23	Standard
I	127	69321.6	41.9				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.625	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.909	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.253
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.817
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1502087301
Sample Date/Time: Monday, February 23, 2015 15:40:13
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	138994.9	6.7				ug/L	102148	Standard
	Be	9	125.0	6.9	**0.0559**	0.008	13.6	ug/L	8	Standard
	Al	27	40286647.3	2.6	**191.8422**	15.840	8.3	ug/L	1058	Standard
	Sc	45	48241.7	2.6				ug/L	49932	Standard
	Ti	47	2284.5	5.9	**8.4773**	0.512	6.0	ug/L	25	Standard
	V	51	203527.3	1.5	**22.3596**	0.357	1.6	ug/L	2343	Standard
	Cr	52	164620.1	2.5	**17.6976**	0.476	2.7	ug/L	9255	Standard
	Cr	53	24050.7	0.8	**20.7533**	0.178	0.9	ug/L	355	Standard
	Mn	55	2928175.2	2.3	**212.2051**	5.013	2.4	ug/L	920	Standard
	Co	59	18685.9	2.9	**1.6575**	0.050	3.0	ug/L	117	Standard
	Ni	60	74290.7	1.9	**27.1876**	0.523	1.9	ug/L	48	Standard
	Cu	65	12261.6	1.6	**4.4998**	0.079	1.7	ug/L	211	Standard
	Zn	66	82470.3	2.3	**64.3502**	1.574	2.4	ug/L	477	Standard
>	**Ge**	72	546034.6	0.1				ug/L	543406	Standard
	As	75	3768.2	3.9	**2.8353**	0.108	3.8	ug/L	-90	Standard
	Se	82	2176.3	3.3	**15.6859**	0.530	3.4	ug/L	31	Standard
	Se-1	77	1642.8	0.6	**16.8163**	0.119	0.7	ug/L	117	Standard
>	**Ga**	71	3128.7	5.5				mg/L	22	Standard
	Rb	85	57463.9	4.4				ug/L	53	Standard
	Y	89	681010.5	0.8				ug/L	557276	Standard
>	**Rh**	103	498.3	13.9				ug/L	12	Standard
	Mo	98	18973.7	2.4	**5.5984**	0.197	3.5	ug/L	159	Standard
	Ag	107	337.0	6.9	**0.0129**	0.002	19.3	ug/L	102	Standard
	Cd	111	3933.4	0.9	**1.3163**	0.024	1.8	mg/L	4	Standard
	Cd	114	9617.2	1.2	**1.2952**	0.004	0.3	ug/L	34	Standard
>	**In**	115	892895.1	1.5				ug/L	828245	Standard
	Sn	118	2456.9	5.2	**0.1907**	0.018	9.6	ug/L	850	Standard
	Sb	123	2515.1	1.4	**0.3727**	0.011	3.0	ug/L	499	Standard
	Ba	135	56196.4	2.5	**15.9910**	0.610	3.8	ug/L	23	Standard
	Ce	140	110792.0	1.3				ug/L	45	Standard
>	**Tb**	159	1461161.2	0.8				ug/L	1408642	Standard
	Ho	165	6456.4	1.7				ug/L	15	Standard
	Tl	203	1854.1	2.1	**0.1631**	0.006	4.0	ug/L	5	Standard
	Tl	205	1536.7	5.0	**0.1625**	0.012	7.3	ug/L	8	Standard
	Pb	206	25462.0	2.0	**3.2543**	0.126	3.9	ug/L	348	Standard
	Pb	207	11417.3	1.8	**1.5938**	0.061	3.9	ug/L	284	Standard
	Pb	208	42664.1	1.4	**1.9458**	0.063	3.2	ug/L	938	Standard
	U	238	103081.5	1.8	**14.0847**	0.364	2.6	ug/L	3	Standard
>	**Bi**	209	620312.5	2.0				ug/L	615841	Standard

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Na	23	5.0	100.0	**10.3444**	10.330	99.9	mg/L	3	Standard
Mg	24	3495.4	2.0	**3.1804**	0.023	0.7	mg/L	68	Standard
K	39	270.0	12.1	**0.6989**	0.108	15.4	mg/L	23	Standard
Ca	43	225.0	10.2	**12.3204**	1.894	15.4	mg/L	52	Standard
Fe	54	3061.6	3.9	**1.8902**	0.053	2.8	mg/L	214	Standard
Fe	57	1098.4	5.7	**2.1475**	0.213	9.9	mg/L	213	Standard
> **Sc-1**	45	48241.7	2.6				mg/L	49932	Standard
Cl	35	36890.9	2.5				ug/L	23537	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	10026.7	1.4				ug/L	1553	Standard
P	31	20428.8	5.0				ug/L	15523	Standard
S	34	1011.7	9.9				ug/L	1052	Standard
Sr	88	786.7	11.8				ug/L	147	Standard
C	12	560.0	9.9				mg/L	397	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	1710.1	9.0				mg/L	0	Standard
Dy	164	8355.9	5.3				mg/L	29	Standard
Ho-1	165	6456.4	1.7				mg/L	15	Standard
Er	166	6888.2	1.9				mg/L	23	Standard
I	127	501282.6	4.7				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		136.072	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.484	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.806
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.726
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1502087902
Sample Date/Time: Monday, February 23, 2015 15:43:25
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	143109.8	3.2				ug/L	102148	Standard
	Be	9	118.3	29.7	**0.0504**	0.019	37.2	ug/L	8	Standard
	Al	27	43325598.7	5.2	**199.5802**	4.030	2.0	ug/L	1058	Standard
	Sc	45	47984.2	2.4				ug/L	49932	Standard
	Ti	47	2351.8	2.1	**8.7986**	0.121	1.4	ug/L	25	Standard
	V	51	215868.0	3.0	**23.9199**	0.574	2.4	ug/L	2343	Standard
	Cr	52	173367.5	3.8	**18.8513**	0.739	3.9	ug/L	9255	Standard
	Cr	53	25029.0	2.8	**21.7858**	0.580	2.7	ug/L	355	Standard
	Mn	55	3131325.6	3.9	**228.7121**	8.173	3.6	ug/L	920	Standard
	Co	59	20304.9	4.1	**1.8171**	0.070	3.8	ug/L	117	Standard
	Ni	60	78647.3	2.1	**29.0111**	0.485	1.7	ug/L	48	Standard
	Cu	65	12795.4	4.1	**4.7371**	0.160	3.4	ug/L	211	Standard
	Zn	66	90498.6	3.2	**71.2063**	1.949	2.7	ug/L	477	Standard
>	Ge	72	541742.3	0.8				ug/L	543406	Standard
	As	75	4184.2	1.1	**3.1617**	0.057	1.8	ug/L	-90	Standard
	Se	82	2351.1	1.6	**17.0976**	0.279	1.6	ug/L	31	Standard
	Se-1	77	1690.8	0.5	**17.4959**	0.237	1.4	ug/L	117	Standard
>	Ga	71	3458.7	7.9				mg/L	22	Standard
	Rb	85	58906.0	3.5				ug/L	53	Standard
	Y	89	742796.7	2.0				ug/L	557276	Standard
>	Rh	103	425.0	5.1				ug/L	12	Standard
	Mo	98	20678.9	3.2	**5.8589**	0.150	2.6	ug/L	159	Standard
	Ag	107	370.7	2.8	**0.0146**	0.001	8.1	ug/L	102	Standard
	Cd	111	4307.3	1.8	**1.3848**	0.022	1.6	mg/L	4	Standard
	Cd	114	10614.5	4.9	**1.3737**	0.060	4.4	ug/L	34	Standard
>	In	115	929620.0	0.8				ug/L	828245	Standard
	Sn	118	2396.9	10.9	**0.1732**	0.029	17.0	ug/L	850	Standard
	Sb	123	2636.0	2.7	**0.3751**	0.008	2.1	ug/L	499	Standard
	Ba	135	58916.8	4.0	**16.0962**	0.586	3.6	ug/L	23	Standard
	Ce	140	119875.9	2.6				ug/L	45	Standard
>	Tb	159	1449945.7	0.6				ug/L	1408642	Standard
	Ho	165	7013.3	5.1				ug/L	15	Standard
	Tl	203	2023.5	3.1	**0.1772**	0.002	1.0	ug/L	5	Standard
	Tl	205	1735.1	5.7	**0.1829**	0.014	7.9	ug/L	8	Standard
	Pb	206	27116.9	2.6	**3.4421**	0.037	1.1	ug/L	348	Standard
	Pb	207	12357.0	2.1	**1.7158**	0.006	0.3	ug/L	284	Standard
	Pb	208	46422.0	2.5	**2.1055**	0.010	0.5	ug/L	938	Standard
	U	238	112636.6	2.5	**15.2769**	0.110	0.7	ug/L	3	Standard
>	Bi	209	624747.5	2.2				ug/L	615841	Standard

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Na	23	1.7	173.2	**3.3291**	5.757	172.9	mg/L	3	Standard
Mg	24	2575.2	5.0	**2.3359**	0.150	6.4	mg/L	68	Standard
K	39	235.0	11.3	**0.6028**	0.064	10.6	mg/L	23	Standard
Ca	43	213.3	13.7	**11.5707**	1.992	17.2	mg/L	52	Standard
Fe	54	3243.6	3.9	**2.0214**	0.063	3.1	mg/L	214	Standard
Fe	57	1003.4	1.8	**1.9281**	0.096	5.0	mg/L	213	Standard
> **Sc-1**	45	47984.2	2.4				mg/L	49932	Standard
Cl	35	37852.6	0.9				ug/L	23537	Standard
Kr	83	3.0	33.3				ug/L	3	Standard
Br	81	9736.5	3.2				ug/L	1553	Standard
P	31	21139.8	8.1				ug/L	15523	Standard
S	34	883.4	9.6				ug/L	1052	Standard
Sr	88	963.4	6.9				ug/L	147	Standard
C	12	566.7	10.6				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	1853.4	2.6				mg/L	0	Standard
Dy	164	8788.6	3.6				mg/L	29	Standard
Ho-1	165	7013.3	5.1				mg/L	15	Standard
Er	166	6974.9	5.9				mg/L	23	Standard
I	127	559452.7	4.2				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		140.100	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.694	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.240
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.446
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1502087903
Sample Date/Time: Monday, February 23, 2015 15:46:36
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	145006.1	3.5				ug/L	102148	Standard
	Be	9	25.0	52.9	**0.0023**	0.007	311.8	ug/L	8	Standard
	Al	27	41294891.7	3.6	**188.0656**	11.864	6.3	ug/L	1058	Standard
	Sc	45	44674.2	4.3				ug/L	49932	Standard
	Ti	47	55.0	37.8	**0.1206**	0.080	66.1	ug/L	25	Standard
	V	51	3020.2	3.3	**0.0482**	0.004	7.7	ug/L	2343	Standard
	Cr	52	12868.1	3.7	**0.3518**	0.029	8.1	ug/L	9255	Standard
	Cr	53	3598.8	2.4	**2.7105**	0.081	3.0	ug/L	355	Standard
	Mn	55	2589618.8	1.9	**182.4752**	7.406	4.1	ug/L	920	Standard
	Co	59	12505.8	2.5	**1.0719**	0.050	4.7	ug/L	117	Standard
	Ni	60	47995.6	2.5	**17.0694**	0.782	4.6	ug/L	48	Standard
	Cu	65	1682.4	4.6	**0.5158**	0.030	5.9	ug/L	211	Standard
	Zn	66	16216.7	3.1	**12.0169**	0.612	5.1	ug/L	477	Standard
>	**Ge**	72	561865.3	2.2				ug/L	543406	Standard
	As	75	372.7	32.2	**0.3623**	0.086	23.7	ug/L	-90	Standard
	Se	82	932.4	2.0	**6.4179**	0.265	4.1	ug/L	31	Standard
	Se-1	77	873.4	1.1	**8.0459**	0.153	1.9	ug/L	117	Standard
>	**Ga**	71	81.7	21.5				mg/L	22	Standard
	Rb	85	4048.9	2.8				ug/L	53	Standard
	Y	89	580538.2	1.7				ug/L	557276	Standard
>	**Rh**	103	133.3	15.2				ug/L	12	Standard
	Mo	98	4623.4	2.5	**1.3148**	0.027	2.0	ug/L	159	Standard
	Ag	107	162.7	50.8	**-0.0037**	0.007	197.5	ug/L	102	Standard
	Cd	111	2708.8	3.9	**0.8793**	0.032	3.6	mg/L	4	Standard
	Cd	114	6703.1	2.8	**0.8739**	0.022	2.5	ug/L	34	Standard
>	**In**	115	917213.5	0.6				ug/L	828245	Standard
	Sn	118	1368.4	11.9	**0.0642**	0.019	29.1	ug/L	850	Standard
	Sb	123	468.1	14.2	**0.0522**	0.010	18.9	ug/L	499	Standard
	Ba	135	2025.1	31.5	**0.5452**	0.174	31.9	ug/L	23	Standard
	Ce	140	290.0	10.3				ug/L	45	Standard
>	**Tb**	159	1469206.1	0.4				ug/L	1408642	Standard
	Ho	165	30.0	28.9				ug/L	15	Standard
	Tl	203	1021.7	14.5	**0.0855**	0.013	15.0	ug/L	5	Standard
	Tl	205	778.4	7.2	**0.0781**	0.007	8.9	ug/L	8	Standard
	Pb	206	672.0	9.4	**0.0377**	0.007	19.4	ug/L	348	Standard
	Pb	207	544.3	8.3	**0.0252**	0.006	24.2	ug/L	284	Standard
	Pb	208	1639.0	1.8	**0.0222**	0.001	3.5	ug/L	938	Standard
	U	238	19106.4	1.8	**2.5750**	0.068	2.6	ug/L	3	Standard
>	**Bi**	209	628369.7	1.0				ug/L	615841	Standard

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Na	23	10.0		**22.0355**	0.965	4.4	mg/L	3	Standard
Mg	24	3502.1	1.7	**3.4499**	0.095	2.8	mg/L	68	Standard
K	39	95.0	45.6	**0.2294**	0.119	51.9	mg/L	23	Standard
Ca	43	93.3	35.7	**3.7687**	2.274	60.3	mg/L	52	Standard
Fe	54	240.6	16.1	**0.0484**	0.021	43.6	mg/L	214	Standard
Fe	57	261.7	15.6	**0.1680**	0.131	77.9	mg/L	213	Standard
> **Sc-1**	45	44674.2	4.3				mg/L	49932	Standard
Cl	35	42204.7	0.9				ug/L	23537	Standard
Kr	83	2.7	57.3				ug/L	3	Standard
Br	81	9689.8	2.4				ug/L	1553	Standard
P	31	19709.5	4.3				ug/L	15523	Standard
S	34	1060.0	10.2				ug/L	1052	Standard
Sr	88	266.7	10.7				ug/L	147	Standard
C	12	633.3	6.0				mg/L	397	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	26.7	114.6				mg/L	0	Standard
Dy	164	35.7	43.7				mg/L	29	Standard
Ho-1	165	30.0	28.9				mg/L	15	Standard
Er	166	20.0	50.0				mg/L	23	Standard
I	127	501423.8	4.0				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		141.956	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.397	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.742
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.034
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, February 23, 2015 15:49:49
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	139350.1	3.7				ug/L	102148	Standard
	Be	9	88185.9	1.8	**46.5750**	1.322	2.8	ug/L	8	Standard
	Al	27	9272869.3	2.0	**43.9195**	2.070	4.7	ug/L	1058	Standard
	Sc	45	45240.8	3.1				ug/L	49932	Standard
	Ti	47	26004.6	2.6	**97.6847**	1.702	1.7	ug/L	25	Standard
	V	51	460706.4	1.5	**51.1620**	1.146	2.2	ug/L	2343	Standard
	Cr	52	465748.9	2.9	**52.2312**	1.337	2.6	ug/L	9255	Standard
	Cr	53	59245.7	3.5	**51.8393**	1.483	2.9	ug/L	355	Standard
	Mn	55	711278.0	1.0	**51.6800**	0.730	1.4	ug/L	920	Standard
	Co	59	572046.2	1.3	**51.5186**	0.821	1.6	ug/L	117	Standard
	Ni	60	144966.1	2.5	**53.2793**	1.194	2.2	ug/L	48	Standard
	Cu	65	139596.8	2.7	**52.4376**	1.452	2.8	ug/L	211	Standard
	Zn	66	66810.4	2.4	**52.2571**	1.023	2.0	ug/L	477	Standard
>	**Ge**	72	543999.1	0.9				ug/L	543406	Standard
	As	75	73756.2	1.5	**53.8573**	1.014	1.9	ug/L	-90	Standard
	Se	82	7602.9	2.1	**55.5059**	1.362	2.5	ug/L	31	Standard
	Se-1	77	4929.5	0.7	**53.3333**	0.313	0.6	ug/L	117	Standard
>	**Ga**	71	78.3	20.5				mg/L	22	Standard
	Rb	85	1136.7	7.0				ug/L	53	Standard
	Y	89	598215.5	3.9				ug/L	557276	Standard
>	**Rh**	103	101.7	15.8				ug/L	12	Standard
	Mo	98	348208.1	0.7	**98.3347**	1.906	1.9	ug/L	159	Standard
	Ag	107	561762.2	0.2	**49.7128**	1.268	2.5	ug/L	102	Standard
	Cd	111	163885.1	3.0	**52.6892**	1.425	2.7	mg/L	4	Standard
	Cd	114	403172.7	3.8	**52.4320**	2.382	4.5	ug/L	34	Standard
>	**In**	115	935540.9	2.4				ug/L	828245	Standard
	Sn	118	464455.1	2.2	**49.7416**	1.901	3.8	ug/L	850	Standard
	Sb	123	333016.8	0.7	**49.4359**	1.108	2.2	ug/L	499	Standard
	Ba	135	171674.0	1.9	**46.6449**	0.735	1.6	ug/L	23	Standard
	Ce	140	331.7	13.9				ug/L	45	Standard
>	**Tb**	159	1428911.8	2.3				ug/L	1408642	Standard
	Ho	165	15.0	88.2				ug/L	15	Standard
	Tl	203	588137.5	1.8	**52.8325**	0.414	0.8	ug/L	5	Standard
	Tl	205	497145.6	3.0	**53.4340**	1.042	1.9	ug/L	8	Standard
	Pb	206	417270.7	1.3	**52.9765**	0.133	0.3	ug/L	348	Standard
	Pb	207	372395.4	1.3	**52.5481**	0.777	1.5	ug/L	284	Standard
	Pb	208	1127137.1	0.9	**51.7037**	0.076	0.1	ug/L	938	Standard
	U	238	408073.4	3.3	**54.6402**	1.294	2.4	ug/L	3	Standard
>	**Bi**	209	632833.3	1.0				ug/L	615841	Standard

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Na	23	5.0	0.0	**10.8757**	0.337	3.1	mg/L	3	Standard
Mg	24	5732.8	1.9	**5.6245**	0.142	2.5	mg/L	68	Standard
K	39	1296.7	10.7	**3.7857**	0.304	8.0	mg/L	23	Standard
Ca	43	103.3	14.0	**4.4492**	1.157	26.0	mg/L	52	Standard
Fe	54	8026.4	5.5	**5.5009**	0.133	2.4	mg/L	214	Standard
Fe	57	2331.8	10.4	**5.5042**	0.463	8.4	mg/L	213	Standard
Sc-1	45	45240.8	3.1				mg/L	49932	Standard
Cl	35	31128.0	3.6				ug/L	23537	Standard
Kr	83	2.3	24.7				ug/L	3	Standard
Br	81	2156.8	6.5				ug/L	1553	Standard
P	31	19320.7	4.2				ug/L	15523	Standard
S	34	1211.7	1.7				ug/L	1052	Standard
Sr	88	158.3	18.0				ug/L	147	Standard
C	12	630.0	18.0				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.1	51.6				mg/L	29	Standard
Ho-1	165	15.0	88.2				mg/L	15	Standard
Er	166	26.7	114.6				mg/L	23	Standard
I	127	22802.4	14.8				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	93.150		
Al	27	87.839		
Sc	45			
Ti	47	97.685		
V	51	102.324		
Cr	52	104.462		
Cr	53			
Mn	55	103.360		
Co	59	103.037		
Ni	60	106.559		
Cu	65	104.875		
Zn	66	104.514		
Ge	72		100.109	
As	75	107.715		
Se	82	111.012		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.335		
Ag	107	99.426		
Cd	111	105.378		
Cd	114			
> In	115		112.955	
Sn	118	99.483		
Sb	123	98.872		
Ba	135	93.290		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	105.665		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.407		
U	238	109.280		
> Bi	209		102.759	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	
QC Std 6	Se	82	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, February 23, 2015 15:53:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	144877.9	2.1				ug/L	102148	Standard
	Be	9	18.3	41.7	**-0.0012**	0.004	324.5	ug/L	8	Standard
	Al	27	7858.0	138.6	**0.0172**	0.049	284.2	ug/L	1058	Standard
	Sc	45	45006.8	2.8				ug/L	49932	Standard
	Ti	47	27.0	28.0	**0.0201**	0.029	145.4	ug/L	25	Standard
	V	51	2334.7	12.6	**-0.0204**	0.035	170.4	ug/L	2343	Standard
	Cr	52	9393.9	2.5	**-0.0112**	0.038	336.7	ug/L	9255	Standard
	Cr	53	668.3	4.4	**0.2218**	0.027	12.2	ug/L	355	Standard
	Mn	55	2191.6	95.9	**0.0768**	0.153	199.7	ug/L	920	Standard
	Co	59	318.7	78.9	**0.0088**	0.023	257.5	ug/L	117	Standard
	Ni	60	103.0	31.6	**0.0071**	0.012	172.5	ug/L	48	Standard
	Cu	65	356.3	7.5	**0.0353**	0.011	32.1	ug/L	211	Standard
	Zn	66	366.7	6.8	**-0.0708**	0.022	31.2	ug/L	477	Standard
>	**Ge**	72	550458.5	1.1				ug/L	543406	Standard
	As	75	-102.4	25.9	**0.0255**	0.018	71.6	ug/L	-90	Standard
	Se	82	34.0	9.7	**0.0465**	0.022	47.5	ug/L	31	Standard
	Se-1	77	128.3	7.1	**0.0733**	0.097	132.2	ug/L	117	Standard
>	**Ga**	71	21.7	74.2				mg/L	22	Standard
	Rb	85	65.0	33.5				ug/L	53	Standard
	Y	89	581737.5	0.3				ug/L	557276	Standard
>	**Rh**	103	58.3	17.8				ug/L	12	Standard
	Mo	98	230.1	60.5	**0.0473**	0.038	80.2	ug/L	159	Standard
	Ag	107	166.7	35.0	**-0.0038**	0.005	128.2	ug/L	102	Standard
	Cd	111	26.4	109.6	**-0.0006**	0.009	1520.4	mg/L	4	Standard
	Cd	114	94.0	79.0	**-0.0031**	0.009	304.3	ug/L	34	Standard
>	**In**	115	945859.2	1.2				ug/L	828245	Standard
	Sn	118	1218.4	20.2	**0.0439**	0.028	62.8	ug/L	850	Standard
	Sb	123	220.4	50.0	**0.0136**	0.016	115.7	ug/L	499	Standard
	Ba	135	58.7	51.9	**0.0000**	0.008	21001.3	ug/L	23	Standard
	Ce	140	31.7	50.8				ug/L	45	Standard
>	**Tb**	159	1470810.7	1.6				ug/L	1408642	Standard
	Ho	165	26.7	21.7				ug/L	15	Standard
	Tl	203	123.3	48.4	**0.0037**	0.005	139.9	ug/L	5	Standard
	Tl	205	131.7	71.3	**0.0072**	0.010	132.7	ug/L	8	Standard
	Pb	206	406.3	20.9	**0.0009**	0.010	1220.2	ug/L	348	Standard
	Pb	207	330.7	13.5	**-0.0077**	0.006	79.3	ug/L	284	Standard
	Pb	208	1190.0	33.3	**-0.0016**	0.017	1081.2	ug/L	938	Standard
	U	238	91.0	149.5	**0.0093**	0.017	186.7	ug/L	3	Standard
>	**Bi**	209	665220.8	1.9				ug/L	615841	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	3	Standard
Mg	24	163.3	7.7	**0.0821**	0.008	9.9	mg/L	68	Standard
K	39	13.3	21.7	**-0.0137**	0.009	65.3	mg/L	23	Standard
Ca	43	25.0	87.2	**-1.2778**	1.581	123.8	mg/L	52	Standard
Fe	54	210.7	23.5	**0.0271**	0.038	141.1	mg/L	214	Standard
Fe	57	250.0	17.1	**0.1317**	0.130	98.9	mg/L	213	Standard
> **Sc-1**	45	45006.8	2.8				mg/L	49932	Standard
Cl	35	30346.4	1.8				ug/L	23537	Standard
Kr	83	2.7	21.7				ug/L	3	Standard
Br	81	1993.5	7.0				ug/L	1553	Standard
P	31	19352.4	6.0				ug/L	15523	Standard
S	34	1045.0	5.8				ug/L	1052	Standard
Sr	88	160.0	5.4				ug/L	147	Standard
C	12	553.3	13.3				mg/L	397	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	19.2	86.6				mg/L	29	Standard
Ho-1	165	26.7	21.7				mg/L	15	Standard
Er	166	16.7	91.7				mg/L	23	Standard
I	127	16071.9	5.6				mg/L	1075	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.298	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.200
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.018
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, February 23, 2015 17:51:37
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	136037.9	6.4				ug/L	102148	Standard
	Be	9	85629.7	1.4	**46.4298**	3.191	6.9	ug/L	8	Standard
	Al	27	9421831.7	2.7	**45.7705**	2.817	6.2	ug/L	1058	Standard
	Sc	45	44876.4	2.0				ug/L	49932	Standard
	Ti	47	26368.3	0.8	**97.8398**	0.791	0.8	ug/L	25	Standard
	V	51	468465.8	0.5	**51.3795**	0.577	1.1	ug/L	2343	Standard
	Cr	52	468084.5	0.3	**51.8452**	0.919	1.8	ug/L	9255	Standard
	Cr	53	61141.5	1.1	**52.8506**	0.499	0.9	ug/L	355	Standard
	Mn	55	725238.4	1.4	**52.0399**	0.444	0.9	ug/L	920	Standard
	Co	59	593948.1	1.7	**52.8253**	0.368	0.7	ug/L	117	Standard
	Ni	60	148350.5	1.8	**53.8464**	0.288	0.5	ug/L	48	Standard
	Cu	65	144257.9	1.1	**53.5248**	1.032	1.9	ug/L	211	Standard
	Zn	66	66894.7	1.7	**51.6816**	1.307	2.5	ug/L	477	Standard
>	**Ge**	72	550826.7	1.4				ug/L	543406	Standard
	As	75	73539.3	0.3	**53.0394**	0.874	1.6	ug/L	-90	Standard
	Se	82	7391.2	0.4	**53.2851**	0.649	1.2	ug/L	31	Standard
	Se-1	77	4969.5	1.1	**53.0970**	0.663	1.2	ug/L	117	Standard
>	**Ga**	71	66.7	18.9				mg/L	22	Standard
	Rb	85	1118.4	6.7				ug/L	53	Standard
	Y	89	575464.2	2.6				ug/L	557276	Standard
>	**Rh**	103	43.3	17.6				ug/L	12	Standard
	Mo	98	351284.7	0.9	**103.9305**	2.132	2.1	ug/L	159	Standard
	Ag	107	569148.4	0.9	**52.7569**	0.688	1.3	ug/L	102	Standard
	Cd	111	157829.2	0.4	**53.1648**	0.609	1.1	mg/L	4	Standard
	Cd	114	389540.4	2.4	**53.0759**	1.981	3.7	ug/L	34	Standard
>	**In**	115	892884.7	1.3				ug/L	828245	Standard
	Sn	118	466371.3	3.0	**52.3084**	1.345	2.6	ug/L	850	Standard
	Sb	123	338455.9	0.8	**52.6337**	0.885	1.7	ug/L	499	Standard
	Ba	135	174230.7	0.3	**49.6008**	0.715	1.4	ug/L	23	Standard
	Ce	140	258.3	6.8				ug/L	45	Standard
>	**Tb**	159	1485188.8	1.8				ug/L	1408642	Standard
	Ho	165	21.7	66.6				ug/L	15	Standard
	Tl	203	577292.3	1.4	**51.6899**	0.570	1.1	ug/L	5	Standard
	Tl	205	493212.4	1.9	**52.8428**	0.794	1.5	ug/L	8	Standard
	Pb	206	411746.7	1.0	**52.1033**	0.330	0.6	ug/L	348	Standard
	Pb	207	369026.6	0.3	**51.8996**	0.187	0.4	ug/L	284	Standard
	Pb	208	1134215.9	0.5	**51.8579**	0.162	0.3	ug/L	938	Standard
	U	238	403713.0	1.3	**53.8865**	0.653	1.2	ug/L	3	Standard
>	**Bi**	209	634911.5	0.4				ug/L	615841	Standard

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Na	23	1.7	173.2	**3.6923**	6.387	173.0	mg/L	3	Standard
Mg	24	6204.6	3.1	**6.1427**	0.205	3.3	mg/L	68	Standard
K	39	1455.1	9.0	**4.2998**	0.453	10.5	mg/L	23	Standard
Ca	43	96.7	13.0	**3.9981**	0.788	19.7	mg/L	52	Standard
Fe	54	7669.1	0.8	**5.2988**	0.149	2.8	mg/L	214	Standard
Fe	57	2331.8	1.3	**5.5636**	0.190	3.4	mg/L	213	Standard
Sc-1	45	44876.4	2.0				mg/L	49932	Standard
Cl	35	29866.7	0.2				ug/L	23537	Standard
Kr	83	5.0	72.1				ug/L	3	Standard
Br	81	1826.8	8.4				ug/L	1553	Standard
P	31	20210.2	9.0				ug/L	15523	Standard
S	34	1211.7	9.5				ug/L	1052	Standard
Sr	88	151.7	10.1				ug/L	147	Standard
C	12	490.0	13.4				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	18.6	2.6				mg/L	29	Standard
Ho-1	165	21.7	66.6				mg/L	15	Standard
Er	166	30.0	33.3				mg/L	23	Standard
I	127	9536.4	19.8				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	92.860		
Al	27	91.541		
Sc	45			
Ti	47	97.840		
V	51	102.759		
Cr	52	103.690		
Cr	53			
Mn	55	104.080		
Co	59	105.651		
Ni	60	107.693		
Cu	65	107.050		
Zn	66	103.363		
Ge	72		101.366	
As	75	106.079		
Se	82	106.570		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	103.930		
Ag	107	105.514		
Cd	111	106.330		
Cd	114			
In	115			107.804
Sn	118	104.617		
Sb	123	105.267		
Ba	135	99.202		
Ce	140			
Tb	159			
Ho	165			
Tl	203	103.380		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.716		
U	238	107.773		
Bi	209			103.097
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, February 23, 2015 18:09:49
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	128381.2	5.9				ug/L	102148	Standard
	Be	9	6.7	86.6	**-0.0066**	0.003	52.2	ug/L	8	Standard
	Al	27	1476.7	28.5	**-0.0106**	0.002	21.2	ug/L	1058	Standard
	Sc	45	46793.8	2.4				ug/L	49932	Standard
	Ti	47	23.3	27.6	**0.0082**	0.024	293.1	ug/L	25	Standard
	V	51	2497.6	0.7	**0.0039**	0.006	149.2	ug/L	2343	Standard
	Cr	52	9878.2	2.0	**0.0698**	0.038	54.3	ug/L	9255	Standard
	Cr	53	331.7	2.3	**-0.0647**	0.008	12.4	ug/L	355	Standard
	Mn	55	975.4	9.8	**-0.0099**	0.007	73.2	ug/L	920	Standard
	Co	59	171.0	44.6	**-0.0041**	0.007	173.2	ug/L	117	Standard
	Ni	60	56.3	4.5	**-0.0095**	0.001	10.3	ug/L	48	Standard
	Cu	65	225.3	5.0	**-0.0116**	0.003	29.2	ug/L	211	Standard
	Zn	66	295.3	0.5	**-0.1211**	0.002	1.8	ug/L	477	Standard
>	**Ge**	72	537891.4	1.3				ug/L	543406	Standard
	As	75	-143.7	28.2	**-0.0066**	0.030	446.0	ug/L	-90	Standard
	Se	82	23.8	27.2	**-0.0227**	0.050	219.1	ug/L	31	Standard
	Se-1	77	117.3	2.1	**-0.0170**	0.033	193.5	ug/L	117	Standard
>	**Ga**	71	10.0	100.0				mg/L	22	Standard
	Rb	85	65.0	15.4				ug/L	53	Standard
	Y	89	581661.3	3.1				ug/L	557276	Standard
>	**Rh**	103	10.0	50.0				ug/L	12	Standard
	Mo	98	142.2	47.4	**0.0251**	0.020	79.3	ug/L	159	Standard
	Ag	107	108.3	4.2	**-0.0084**	0.000	5.2	ug/L	102	Standard
	Cd	111	4.8	35.5	**-0.0073**	0.001	7.6	mg/L	4	Standard
	Cd	114	20.2	91.4	**-0.0124**	0.003	20.4	ug/L	34	Standard
>	**In**	115	899567.9	1.6				ug/L	828245	Standard
	Sn	118	986.7	2.0	**0.0245**	0.003	12.1	ug/L	850	Standard
	Sb	123	171.2	35.9	**0.0078**	0.009	121.6	ug/L	499	Standard
	Ba	135	33.0	5.2	**-0.0063**	0.000	6.6	ug/L	23	Standard
	Ce	140	33.3	8.7				ug/L	45	Standard
>	**Tb**	159	1461284.7	1.3				ug/L	1408642	Standard
	Ho	165	10.0	50.0				ug/L	15	Standard
	Tl	203	10.7	60.3	**-0.0059**	0.001	9.5	ug/L	5	Standard
	Tl	205	20.0	132.3	**-0.0041**	0.003	69.3	ug/L	8	Standard
	Pb	206	365.3	2.6	**-0.0024**	0.001	48.6	ug/L	348	Standard
	Pb	207	309.7	7.8	**-0.0089**	0.004	39.7	ug/L	284	Standard
	Pb	208	976.3	10.7	**-0.0093**	0.005	54.8	ug/L	938	Standard
	U	238	15.0	138.7	**-0.0003**	0.003	858.0	ug/L	3	Standard
>	**Bi**	209	639823.8	0.7				ug/L	615841	Standard

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Na	23	1.7	173.2	**3.5193**	6.087	173.0	mg/L	3	Standard
Mg	24	118.3	4.9	**0.0328**	0.006	19.7	mg/L	68	Standard
K	39	35.0	24.7	**0.0469**	0.025	53.8	mg/L	23	Standard
Ca	43	30.0	28.9	**-0.9928**	0.578	58.2	mg/L	52	Standard
Fe	54	202.2	16.2	**0.0150**	0.021	141.7	mg/L	214	Standard
Fe	57	208.3	7.3	**0.0008**	0.047	5983.9	mg/L	213	Standard
Sc-1	45	46793.8	2.4				mg/L	49932	Standard
Cl	35	29052.5	0.9				ug/L	23537	Standard
Kr	83	3.7	56.8				ug/L	3	Standard
Br	81	1846.8	19.5				ug/L	1553	Standard
P	31	19337.3	3.9				ug/L	15523	Standard
S	34	941.7	8.2				ug/L	1052	Standard
Sr	88	138.3	25.6				ug/L	147	Standard
C	12	566.7	29.7				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	35.9	15.6				mg/L	29	Standard
Ho-1	165	10.0	50.0				mg/L	15	Standard
Er	166	16.7	124.9				mg/L	23	Standard
I	127	2746.9	14.3				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.985	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.611
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.894
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW 58 WG512983-02
Sample Date/Time: Monday, February 23, 2015 18:30:08
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	128196.8	1.4				ug/L	102148	Standard
	Be	9	11.7	89.2	**-0.0038**	0.006	159.8	ug/L	8	Standard
	Al	27	1703.4	18.8	**-0.0094**	0.002	18.9	ug/L	1058	Standard
	Sc	45	46579.9	3.7				ug/L	49932	Standard
	Ti	47	19.0	45.0	**-0.0094**	0.032	335.4	ug/L	25	Standard
	V	51	-908.2	46.9	**-0.3790**	0.047	12.3	ug/L	2343	Standard
	Cr	52	10596.4	2.1	**0.1329**	0.017	12.9	ug/L	9255	Standard
	Cr	53	14740.5	3.3	**12.5640**	0.306	2.4	ug/L	355	Standard
	Mn	55	1315.4	1.5	**0.0136**	0.002	14.2	ug/L	920	Standard
	Co	59	142.0	8.1	**-0.0069**	0.001	15.2	ug/L	117	Standard
	Ni	60	59.7	3.5	**-0.0086**	0.001	7.0	ug/L	48	Standard
	Cu	65	262.7	3.2	**0.0011**	0.004	380.6	ug/L	211	Standard
	Zn	66	1687.1	1.5	**0.9660**	0.019	2.0	ug/L	477	Standard
>	**Ge**	72	546632.2	1.0				ug/L	543406	Standard
	As	75	-215.5	4.8	**-0.0572**	0.009	15.7	ug/L	-90	Standard
	Se	82	22.8	59.2	**-0.0331**	0.099	298.8	ug/L	31	Standard
	Se-1	77	766.0	5.5	**7.1238**	0.535	7.5	ug/L	117	Standard
>	**Ga**	71	26.7	78.1				mg/L	22	Standard
	Rb	85	56.7	28.4				ug/L	53	Standard
	Y	89	582570.9	1.8				ug/L	557276	Standard
>	**Rh**	103	5.0	0.0				ug/L	12	Standard
	Mo	98	79.7	29.4	**0.0068**	0.007	101.2	ug/L	159	Standard
	Ag	107	101.0	15.0	**-0.0090**	0.001	15.7	ug/L	102	Standard
	Cd	111	4.6	45.0	**-0.0074**	0.001	9.3	mg/L	4	Standard
	Cd	114	12.8	61.6	**-0.0134**	0.001	8.0	ug/L	34	Standard
>	**In**	115	894790.6	0.4				ug/L	828245	Standard
	Sn	118	1261.7	11.3	**0.0560**	0.016	29.0	ug/L	850	Standard
	Sb	123	79.8	33.7	**-0.0063**	0.004	67.3	ug/L	499	Standard
	Ba	135	49.0	20.7	**-0.0018**	0.003	162.5	ug/L	23	Standard
	Ce	140	28.3	20.4				ug/L	45	Standard
>	**Tb**	159	1462025.4	3.0				ug/L	1408642	Standard
	Ho	165	13.3	21.7				ug/L	15	Standard
	Tl	203	169.0	3.6	**0.0085**	0.001	7.6	ug/L	5	Standard
	Tl	205	158.3	18.5	**0.0111**	0.003	29.6	ug/L	8	Standard
	Pb	206	508.3	3.4	**0.0173**	0.002	11.0	ug/L	348	Standard
	Pb	207	447.7	1.3	**0.0121**	0.001	10.3	ug/L	284	Standard
	Pb	208	1385.7	3.0	**0.0110**	0.002	20.8	ug/L	938	Standard
	U	238	10.0	155.9	**-0.0010**	0.002	223.3	ug/L	3	Standard
>	**Bi**	209	622946.4	0.6				ug/L	615841	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	3	Standard
Mg	24	121.7	6.3	**0.0366**	0.007	20.0	mg/L	68	Standard
K	39	18.3	41.7	**-0.0005**	0.022	4742.6	mg/L	23	Standard
Ca	43	50.0	36.1	**0.4740**	1.428	301.2	mg/L	52	Standard
Fe	54	192.4	17.2	**0.0091**	0.022	241.6	mg/L	214	Standard
Fe	57	201.7	6.2	**-0.0130**	0.050	383.2	mg/L	213	Standard
Sc-1	45	46579.9	3.7				mg/L	49932	Standard
Cl	35	28669.8	4.6				ug/L	23537	Standard
Kr	83	2.7	21.7				ug/L	3	Standard
Br	81	1750.1	8.4				ug/L	1553	Standard
P	31	19526.0	10.9				ug/L	15523	Standard
S	34	950.0	6.4				ug/L	1052	Standard
Sr	88	173.3	9.3				ug/L	147	Standard
C	12	536.7	14.5				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	32.4	70.1				mg/L	29	Standard
Ho-1	165	13.3	21.7				mg/L	15	Standard
Er	166	20.0	50.0				mg/L	23	Standard
I	127	2952.0	6.4				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		125.501	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.594	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.035
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.154
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: PBW 58 WG512983-02
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Method 6020 - Summary Report

Sample ID: LCSW 58 WG512983-03
Sample Date/Time: Monday, February 23, 2015 18:33:19
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	142203.0	3.4				ug/L	102148	Standard
	Be	9	908.4	10.3	**0.4593**	0.045	9.7	ug/L	8	Standard
	Al	27	204696.9	1.3	**0.9318**	0.025	2.7	ug/L	1058	Standard
	Sc	45	48296.9	2.9				ug/L	49932	Standard
	Ti	47	2636.9	1.7	**9.8563**	0.029	0.3	ug/L	25	Standard
	V	51	87688.6	2.8	**9.5329**	0.163	1.7	ug/L	2343	Standard
	Cr	52	56788.9	2.4	**5.4400**	0.066	1.2	ug/L	9255	Standard
	Cr	53	35498.2	1.7	**30.9993**	0.964	3.1	ug/L	355	Standard
	Mn	55	73548.1	2.3	**5.2821**	0.069	1.3	ug/L	920	Standard
	Co	59	23644.1	2.5	**2.1153**	0.043	2.0	ug/L	117	Standard
	Ni	60	14745.8	1.7	**5.4046**	0.063	1.2	ug/L	48	Standard
	Cu	65	14605.7	3.4	**5.4106**	0.112	2.1	ug/L	211	Standard
	Zn	66	15041.5	2.9	**11.5148**	0.206	1.8	ug/L	477	Standard
>	**Ge**	72	542764.4	1.4				ug/L	543406	Standard
	As	75	5521.9	5.8	**4.1313**	0.184	4.5	ug/L	-90	Standard
	Se	82	600.4	7.8	**4.2068**	0.288	6.9	ug/L	31	Standard
	Se-1	77	1887.8	5.4	**19.6561**	1.272	6.5	ug/L	117	Standard
>	**Ga**	71	43.3	58.1				mg/L	22	Standard
	Rb	85	190.0	20.6				ug/L	53	Standard
	Y	89	565932.9	1.0				ug/L	557276	Standard
>	**Rh**	103	18.3	31.5				ug/L	12	Standard
	Mo	98	34732.0	2.5	**10.2167**	0.156	1.5	ug/L	159	Standard
	Ag	107	44403.7	2.5	**4.0821**	0.097	2.4	ug/L	102	Standard
	Cd	111	1509.1	3.9	**0.4973**	0.014	2.8	mg/L	4	Standard
	Cd	114	4361.6	8.6	**0.5767**	0.049	8.5	ug/L	34	Standard
>	**In**	115	896493.3	1.2				ug/L	828245	Standard
	Sn	118	90085.4	2.3	**9.9937**	0.117	1.2	ug/L	850	Standard
	Sb	123	81198.6	2.9	**12.5606**	0.332	2.6	ug/L	499	Standard
	Ba	135	33996.8	3.9	**9.6243**	0.303	3.2	ug/L	23	Standard
	Ce	140	51.7	47.7				ug/L	45	Standard
>	**Tb**	159	1455084.9	3.2				ug/L	1408642	Standard
	Ho	165	15.0	88.2				ug/L	15	Standard
	Tl	203	56681.5	2.2	**5.0911**	0.081	1.6	ug/L	5	Standard
	Tl	205	48800.1	1.9	**5.2460**	0.094	1.8	ug/L	8	Standard
	Pb	206	41564.7	4.5	**5.2363**	0.062	1.2	ug/L	348	Standard
	Pb	207	36733.8	2.1	**5.1419**	0.106	2.1	ug/L	284	Standard
	Pb	208	113302.0	1.5	**5.1553**	0.115	2.2	ug/L	938	Standard
	U	238	1.7	91.7	**-0.0021**	0.000	9.6	ug/L	3	Standard
>	**Bi**	209	632415.9	3.7				ug/L	615841	Standard

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Na	23	1.7	173.2	**3.2883**	5.687	172.9	mg/L	3	Standard
Mg	24	696.7	4.1	**0.5680**	0.008	1.4	mg/L	68	Standard
K	39	140.0	16.4	**0.3364**	0.072	21.4	mg/L	23	Standard
Ca	43	38.3	41.9	**-0.4603**	1.155	250.8	mg/L	52	Standard
Fe	54	281.8	16.5	**0.0631**	0.031	49.2	mg/L	214	Standard
Fe	57	286.7	16.2	**0.1763**	0.130	73.7	mg/L	213	Standard
> **Sc-1**	45	48296.9	2.9				mg/L	49932	Standard
Cl	35	28919.6	2.1				ug/L	23537	Standard
Kr	83	3.7	56.8				ug/L	3	Standard
Br	81	1883.5	5.4				ug/L	1553	Standard
P	31	17655.3	1.8				ug/L	15523	Standard
S	34	911.7	6.8				ug/L	1052	Standard
Sr	88	151.7	16.9				ug/L	147	Standard
C	12	503.3	5.0				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	25.1	82.0				mg/L	29	Standard
Ho-1	165	15.0	88.2				mg/L	15	Standard
Er	166	33.3	17.3				mg/L	23	Standard
I	127	2836.9	17.1				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		139.212	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.882	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.240
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.691
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: FBLANK 58 WG512825-01
Sample Date/Time: Monday, February 23, 2015 18:36:30
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	135417.6	2.0				ug/L	102148	Standard
	Be	9	6.7	86.6	**-0.0069**	0.003	45.6	ug/L	8	Standard
	Al	27	1630.1	7.2	**-0.0102**	0.001	5.8	ug/L	1058	Standard
	Sc	45	44364.9	2.1				ug/L	49932	Standard
	Ti	47	18.7	13.5	**-0.0098**	0.009	94.8	ug/L	25	Standard
	V	51	-1087.6	21.8	**-0.4005**	0.027	6.6	ug/L	2343	Standard
	Cr	52	10745.5	0.8	**0.1651**	0.010	5.8	ug/L	9255	Standard
	Cr	53	15746.5	1.4	**13.6189**	0.227	1.7	ug/L	355	Standard
	Mn	55	1470.4	1.3	**0.0261**	0.001	5.1	ug/L	920	Standard
	Co	59	134.0	2.7	**-0.0075**	0.000	4.2	ug/L	117	Standard
	Ni	60	118.3	17.6	**0.0134**	0.008	56.5	ug/L	48	Standard
	Cu	65	278.7	4.8	**0.0083**	0.005	57.2	ug/L	211	Standard
	Zn	66	1776.4	1.2	**1.0531**	0.013	1.2	ug/L	477	Standard
>	**Ge**	72	539966.2	0.4				ug/L	543406	Standard
	As	75	-168.9	14.3	**-0.0248**	0.018	71.1	ug/L	-90	Standard
	Se	82	19.1	36.7	**-0.0582**	0.052	89.8	ug/L	31	Standard
	Se-1	77	780.4	3.1	**7.3847**	0.237	3.2	ug/L	117	Standard
>	**Ga**	71	33.3	45.8				mg/L	22	Standard
	Rb	85	58.3	35.7				ug/L	53	Standard
	Y	89	564815.6	1.9				ug/L	557276	Standard
>	**Rh**	103	8.3	69.3				ug/L	12	Standard
	Mo	98	47.2	26.1	**-0.0025**	0.004	150.3	ug/L	159	Standard
	Ag	107	110.3	14.7	**-0.0080**	0.002	19.5	ug/L	102	Standard
	Cd	111	5.9	44.6	**-0.0069**	0.001	13.1	mg/L	4	Standard
	Cd	114	40.6	72.7	**-0.0095**	0.004	43.5	ug/L	34	Standard
>	**In**	115	877219.6	0.5				ug/L	828245	Standard
	Sn	118	1035.0	7.8	**0.0329**	0.010	29.6	ug/L	850	Standard
	Sb	123	44.7	34.2	**-0.0116**	0.002	20.8	ug/L	499	Standard
	Ba	135	55.7	16.2	**0.0005**	0.003	560.6	ug/L	23	Standard
	Ce	140	31.7	45.6				ug/L	45	Standard
>	**Tb**	159	1425583.0	2.6				ug/L	1408642	Standard
	Ho	165	15.0	66.7				ug/L	15	Standard
	Tl	203	155.3	3.7	**0.0072**	0.001	8.8	ug/L	5	Standard
	Tl	205	140.0	17.9	**0.0090**	0.003	30.7	ug/L	8	Standard
	Pb	206	533.0	1.7	**0.0203**	0.002	10.1	ug/L	348	Standard
	Pb	207	469.7	3.8	**0.0150**	0.002	10.9	ug/L	284	Standard
	Pb	208	1473.4	1.3	**0.0149**	0.001	9.3	ug/L	938	Standard
	U	238	2.0	50.0	**-0.0021**	0.000	6.5	ug/L	3	Standard
>	**Bi**	209	625133.8	1.4				ug/L	615841	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	3	Standard
Mg	24	251.7	5.0	**0.1742**	0.007	4.2	mg/L	68	Standard
K	39	21.7	13.3	**0.0121**	0.009	73.8	mg/L	23	Standard
Ca	43	43.3	26.6	**0.1222**	0.859	703.1	mg/L	52	Standard
Fe	54	212.6	14.3	**0.0302**	0.023	76.3	mg/L	214	Standard
Fe	57	198.3	10.2	**0.0030**	0.061	2056.7	mg/L	213	Standard
> **Sc-1**	45	44364.9	2.1				mg/L	49932	Standard
Cl	35	27621.2	2.2				ug/L	23537	Standard
Kr	83	3.0	33.3				ug/L	3	Standard
Br	81	1756.8	10.8				ug/L	1553	Standard
P	31	17575.3	10.9				ug/L	15523	Standard
S	34	848.4	10.7				ug/L	1052	Standard
Sr	88	158.3	6.6				ug/L	147	Standard
C	12	563.3	8.0				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	29.4	34.1				mg/L	29	Standard
Ho-1	165	15.0	66.7				mg/L	15	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	2170.2	9.8				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.570	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.367	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.913
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.509
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
V 51 Lower	V	51	

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Method 6020 - Summary Report

Sample ID: L1502091001 WG512983-01
Sample Date/Time: Monday, February 23, 2015 18:39:42
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	138702.6	3.9				ug/L	102148	Standard
	Be	9	8.3	34.6	**-0.0061**	0.002	24.7	ug/L	8	Standard
	Al	27	38455.4	2.5	**0.1649**	0.010	5.8	ug/L	1058	Standard
	Sc	45	47211.8	2.2				ug/L	49932	Standard
	Ti	47	31.0	8.5	**0.0371**	0.010	25.9	ug/L	25	Standard
	V	51	-634.7	80.0	**-0.3499**	0.057	16.4	ug/L	2343	Standard
	Cr	52	10651.1	2.4	**0.1561**	0.024	15.2	ug/L	9255	Standard
	Cr	53	14563.7	1.0	**12.5897**	0.165	1.3	ug/L	355	Standard
	Mn	55	1705.4	1.8	**0.0435**	0.003	6.5	ug/L	920	Standard
	Co	59	138.0	7.1	**-0.0071**	0.001	11.7	ug/L	117	Standard
	Ni	60	103.0	11.8	**0.0078**	0.004	56.9	ug/L	48	Standard
	Cu	65	287.0	8.9	**0.0116**	0.009	81.5	ug/L	211	Standard
	Zn	66	1963.1	1.5	**1.2037**	0.015	1.2	ug/L	477	Standard
>	**Ge**	72	539097.2	0.5				ug/L	543406	Standard
	As	75	-172.8	44.8	**-0.0278**	0.057	204.0	ug/L	-90	Standard
	Se	82	22.7	12.7	**-0.0316**	0.021	66.2	ug/L	31	Standard
	Se-1	77	739.4	3.7	**6.9408**	0.315	4.5	ug/L	117	Standard
>	**Ga**	71	28.3	10.2				mg/L	22	Standard
	Rb	85	123.3	26.4				ug/L	53	Standard
	Y	89	594244.1	3.0				ug/L	557276	Standard
>	**Rh**	103	11.7	24.7				ug/L	12	Standard
	Mo	98	47.4	25.8	**-0.0028**	0.004	130.3	ug/L	159	Standard
	Ag	107	102.0	4.5	**-0.0090**	0.000	4.2	ug/L	102	Standard
	Cd	111	16.3	3.4	**-0.0035**	0.000	6.1	mg/L	4	Standard
	Cd	114	57.2	23.3	**-0.0074**	0.002	24.4	ug/L	34	Standard
>	**In**	115	898468.5	0.5				ug/L	828245	Standard
	Sn	118	1096.7	15.4	**0.0370**	0.019	52.6	ug/L	850	Standard
	Sb	123	39.9	26.8	**-0.0125**	0.002	13.5	ug/L	499	Standard
	Ba	135	1627.8	2.9	**0.4449**	0.011	2.5	ug/L	23	Standard
	Ce	140	61.7	16.9				ug/L	45	Standard
>	**Tb**	159	1476705.1	1.7				ug/L	1408642	Standard
	Ho	165	10.0					ug/L	15	Standard
	Tl	203	132.0	9.9	**0.0049**	0.001	22.6	ug/L	5	Standard
	Tl	205	131.7	14.4	**0.0079**	0.002	23.6	ug/L	8	Standard
	Pb	206	552.0	3.0	**0.0217**	0.003	12.7	ug/L	348	Standard
	Pb	207	459.7	8.7	**0.0127**	0.007	51.9	ug/L	284	Standard
	Pb	208	1457.4	1.5	**0.0132**	0.002	14.5	ug/L	938	Standard
	U	238	13.0	23.1	**-0.0006**	0.000	73.4	ug/L	3	Standard
>	**Bi**	209	633835.7	1.4				ug/L	615841	Standard

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Na	23	1.7	173.2	**3.4102**	5.898	173.0	mg/L	3	Standard
Mg	24	293.3	14.5	**0.1981**	0.035	17.5	mg/L	68	Standard
K	39	25.0	20.0	**0.0176**	0.015	82.7	mg/L	23	Standard
Ca	43	38.3	32.8	**-0.4308**	0.846	196.4	mg/L	52	Standard
Fe	54	215.7	13.9	**0.0233**	0.023	100.0	mg/L	214	Standard
Fe	57	213.3	7.2	**0.0079**	0.033	421.0	mg/L	213	Standard
> **Sc-1**	45	47211.8	2.2				mg/L	49932	Standard
Cl	35	28351.8	1.0				ug/L	23537	Standard
Kr	83	2.3	89.2				ug/L	3	Standard
Br	81	1763.4	3.7				ug/L	1553	Standard
P	31	17236.5	2.0				ug/L	15523	Standard
S	34	888.4	10.5				ug/L	1052	Standard
Sr	88	170.0	8.8				ug/L	147	Standard
C	12	566.7	29.4				mg/L	397	Standard
N	14	6.7	173.2				mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	32.4	34.4				mg/L	29	Standard
Ho-1	165	10.0					mg/L	15	Standard
Er	166	20.0	50.0				mg/L	23	Standard
I	127	2225.2	8.6				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		135.786	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.207	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	108.479
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.922
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: February 24, 2015

Method 6020 - Summary Report

Sample ID: L1502091001S WG512983-04
Sample Date/Time: Monday, February 23, 2015 18:42:54
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	139124.6	3.1				ug/L	102148	Standard
	Be	9	891.7	12.1	**0.4625**	0.071	15.3	ug/L	8	Standard
	Al	27	240336.9	2.5	**1.1221**	0.049	4.4	ug/L	1058	Standard
	Sc	45	46242.1	2.2				ug/L	49932	Standard
	Ti	47	2652.6	3.1	**9.8422**	0.273	2.8	ug/L	25	Standard
	V	51	87718.5	5.0	**9.4653**	0.473	5.0	ug/L	2343	Standard
	Cr	52	56694.6	2.5	**5.3828**	0.188	3.5	ug/L	9255	Standard
	Cr	53	34956.9	0.8	**30.2877**	0.236	0.8	ug/L	355	Standard
	Mn	55	72620.1	3.1	**5.1772**	0.210	4.1	ug/L	920	Standard
	Co	59	23440.5	4.6	**2.0817**	0.106	5.1	ug/L	117	Standard
	Ni	60	14381.2	1.8	**5.2324**	0.146	2.8	ug/L	48	Standard
	Cu	65	14357.5	1.1	**5.2785**	0.055	1.0	ug/L	211	Standard
	Zn	66	15087.5	2.4	**11.4658**	0.280	2.4	ug/L	477	Standard
>	**Ge**	72	546767.0	1.1				ug/L	543406	Standard
	As	75	5361.4	2.6	**3.9871**	0.110	2.8	ug/L	-90	Standard
	Se	82	595.4	4.5	**4.1417**	0.228	5.5	ug/L	31	Standard
	Se-1	77	1788.1	1.2	**18.3990**	0.453	2.5	ug/L	117	Standard
>	**Ga**	71	46.7	34.4				mg/L	22	Standard
	Rb	85	298.3	7.7				ug/L	53	Standard
	Y	89	574135.4	3.1				ug/L	557276	Standard
>	**Rh**	103	20.0	66.1				ug/L	12	Standard
	Mo	98	34855.4	2.0	**10.3414**	0.325	3.1	ug/L	159	Standard
	Ag	107	44167.0	1.0	**4.0944**	0.065	1.6	ug/L	102	Standard
	Cd	111	1523.3	1.9	**0.5065**	0.014	2.7	mg/L	4	Standard
	Cd	114	4457.7	9.8	**0.5951**	0.065	10.9	ug/L	34	Standard
>	**In**	115	889123.9	1.1				ug/L	828245	Standard
	Sn	118	88055.3	3.5	**9.8505**	0.391	4.0	ug/L	850	Standard
	Sb	123	80392.5	1.4	**12.5410**	0.301	2.4	ug/L	499	Standard
	Ba	135	35342.2	1.8	**10.0919**	0.267	2.6	ug/L	23	Standard
	Ce	140	73.3	33.6				ug/L	45	Standard
>	**Tb**	159	1460907.3	3.6				ug/L	1408642	Standard
	Ho	165	15.0	0.0				ug/L	15	Standard
	Tl	203	56369.7	1.5	**5.0873**	0.084	1.6	ug/L	5	Standard
	Tl	205	47628.1	1.9	**5.1436**	0.065	1.3	ug/L	8	Standard
	Pb	206	41371.1	2.2	**5.2393**	0.090	1.7	ug/L	348	Standard
	Pb	207	36654.6	1.7	**5.1550**	0.082	1.6	ug/L	284	Standard
	Pb	208	111241.5	2.3	**5.0843**	0.120	2.4	ug/L	938	Standard
	U	238	14.3	10.7	**-0.0004**	0.000	53.1	ug/L	3	Standard
>	**Bi**	209	629182.9	0.8				ug/L	615841	Standard

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Na	23	5.0	100.0	**10.6510**	10.522	98.8	mg/L	3	Standard
Mg	24	875.0	4.9	**0.7703**	0.024	3.1	mg/L	68	Standard
K	39	183.3	5.7	**0.4783**	0.028	5.8	mg/L	23	Standard
Ca	43	50.0	34.6	**0.4577**	1.184	258.6	mg/L	52	Standard
Fe	54	318.9	26.4	**0.0961**	0.054	56.1	mg/L	214	Standard
Fe	57	238.3	9.5	**0.0827**	0.060	72.4	mg/L	213	Standard
Sc-1	45	46242.1	2.2				mg/L	49932	Standard
Cl	35	27830.9	0.8				ug/L	23537	Standard
Kr	83	3.0	57.7				ug/L	3	Standard
Br	81	1720.1	6.9				ug/L	1553	Standard
P	31	17802.2	7.3				ug/L	15523	Standard
S	34	881.7	9.5				ug/L	1052	Standard
Sr	88	165.0	12.1				ug/L	147	Standard
C	12	610.0	10.2				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.2	48.4				mg/L	29	Standard
Ho-1	165	15.0	0.0				mg/L	15	Standard
Er	166	23.3	24.7				mg/L	23	Standard
I	127	2256.8	6.2				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		136.199	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.618	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.350
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.166
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: L1502091001S WG512983-04
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Approved: February 24, 2015

Method 6020 - Summary Report

Sample ID: L1502091001SD WG512983-05
Sample Date/Time: Monday, February 23, 2015 18:46:05
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	138014.6	3.6				ug/L	102148	Standard
	Be	9	943.4	5.0	**0.4924**	0.020	4.0	ug/L	8	Standard
	Al	27	239361.5	2.2	**1.1262**	0.024	2.2	ug/L	1058	Standard
	Sc	45	46409.3	3.2				ug/L	49932	Standard
	Ti	47	2683.2	3.5	**10.0623**	0.552	5.5	ug/L	25	Standard
	V	51	86157.5	1.3	**9.3902**	0.347	3.7	ug/L	2343	Standard
	Cr	52	57114.5	1.4	**5.4949**	0.146	2.6	ug/L	9255	Standard
	Cr	53	36417.1	2.5	**31.8840**	0.884	2.8	ug/L	355	Standard
	Mn	55	73410.4	1.4	**5.2863**	0.121	2.3	ug/L	920	Standard
	Co	59	23513.2	0.8	**2.1090**	0.045	2.1	ug/L	117	Standard
	Ni	60	14437.5	2.5	**5.3031**	0.016	0.3	ug/L	48	Standard
	Cu	65	14153.6	1.6	**5.2544**	0.083	1.6	ug/L	211	Standard
	Zn	66	14985.7	3.5	**11.4976**	0.159	1.4	ug/L	477	Standard
>	**Ge**	72	541522.2	2.4				ug/L	543406	Standard
	As	75	5320.7	2.1	**3.9951**	0.044	1.1	ug/L	-90	Standard
	Se	82	573.8	3.9	**4.0240**	0.149	3.7	ug/L	31	Standard
	Se-1	77	1858.4	3.2	**19.3773**	0.781	4.0	ug/L	117	Standard
>	**Ga**	71	53.3	10.8				mg/L	22	Standard
	Rb	85	288.3	1.0				ug/L	53	Standard
	Y	89	589955.3	1.8				ug/L	557276	Standard
>	**Rh**	103	23.3	53.9				ug/L	12	Standard
	Mo	98	35206.5	0.4	**10.3077**	0.260	2.5	ug/L	159	Standard
	Ag	107	44739.6	1.3	**4.0933**	0.113	2.8	ug/L	102	Standard
	Cd	111	1567.9	3.2	**0.5148**	0.027	5.3	mg/L	4	Standard
	Cd	114	3946.8	6.0	**0.5183**	0.043	8.3	ug/L	34	Standard
>	**In**	115	901125.5	2.1				ug/L	828245	Standard
	Sn	118	92491.9	5.1	**10.2067**	0.310	3.0	ug/L	850	Standard
	Sb	123	80735.4	1.2	**12.4283**	0.304	2.4	ug/L	499	Standard
	Ba	135	35987.0	0.6	**10.1403**	0.202	2.0	ug/L	23	Standard
	Ce	140	75.0	17.6				ug/L	45	Standard
>	**Tb**	159	1463783.5	1.3				ug/L	1408642	Standard
	Ho	165	15.0	33.3				ug/L	15	Standard
	Tl	203	57540.4	1.2	**5.1574**	0.045	0.9	ug/L	5	Standard
	Tl	205	47865.5	2.5	**5.1338**	0.090	1.7	ug/L	8	Standard
	Pb	206	41452.6	2.1	**5.2132**	0.033	0.6	ug/L	348	Standard
	Pb	207	37471.3	1.3	**5.2350**	0.086	1.6	ug/L	284	Standard
	Pb	208	112590.9	1.3	**5.1109**	0.045	0.9	ug/L	938	Standard
	U	238	14.0	14.3	**-0.0005**	0.000	50.8	ug/L	3	Standard
>	**Bi**	209	633579.5	2.0				ug/L	615841	Standard

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	Na	23	0.0		**0.0050**	0.000	0.0	mg/L	3	Standard
	Mg	24	926.7	5.4	**0.8181**	0.052	6.3	mg/L	68	Standard
	K	39	170.0	5.9	**0.4388**	0.045	10.2	mg/L	23	Standard
	Ca	43	28.3	36.7	**-1.0967**	0.682	62.2	mg/L	52	Standard
	Fe	54	249.6	8.8	**0.0489**	0.019	38.2	mg/L	214	Standard
	Fe	57	238.3	22.6	**0.0810**	0.139	171.5	mg/L	213	Standard
>	**Sc-1**	45	46409.3	3.2				mg/L	49932	Standard
	Cl	35	27761.4	2.1				ug/L	23537	Standard
	Kr	83	3.7	41.7				ug/L	3	Standard
	Br	81	1856.8	3.0				ug/L	1553	Standard
	P	31	18314.4	2.9				ug/L	15523	Standard
	S	34	851.7	13.0				ug/L	1052	Standard
	Sr	88	175.0	2.9				ug/L	147	Standard
	C	12	463.3	12.6				mg/L	397	Standard
	N	14	3.3	173.2				mg/L	3	Standard
	Hg	202	3.3	173.2				mg/L	0	Standard
	Dy	164	15.9	74.8				mg/L	29	Standard
	Ho-1	165	15.0	33.3				mg/L	15	Standard
	Er	166	16.7	124.9				mg/L	23	Standard
	I	127	2331.8	7.9				mg/L	1075	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		135.112	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.653	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.799
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.880
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: L1502091001SD WG512983-05
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Approved: February 24, 2015

Method 6020 - Summary Report

Sample ID: L1502093801
Sample Date/Time: Monday, February 23, 2015 18:49:16
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	141975.6	6.5				ug/L	102148	Standard
	Be	9	6.7	114.6	**-0.0070**	0.004	60.0	ug/L	8	Standard
	Al	27	3842107.9	2.8	**17.8587**	0.646	3.6	ug/L	1058	Standard
	Sc	45	46183.6	1.5				ug/L	49932	Standard
	Ti	47	32.3	9.9	**0.0411**	0.011	26.9	ug/L	25	Standard
	V	51	7165.4	7.5	**0.5229**	0.066	12.6	ug/L	2343	Standard
	Cr	52	12883.8	5.1	**0.4018**	0.071	17.6	ug/L	9255	Standard
	Cr	53	7413.5	5.4	**6.1765**	0.304	4.9	ug/L	355	Standard
	Mn	55	526035.6	2.6	**38.2326**	0.999	2.6	ug/L	920	Standard
	Co	59	790.7	4.4	**0.0516**	0.004	7.1	ug/L	117	Standard
	Ni	60	2508.2	4.1	**0.8929**	0.040	4.5	ug/L	48	Standard
	Cu	65	1904.8	6.2	**0.6203**	0.049	7.8	ug/L	211	Standard
	Zn	66	49318.2	4.4	**38.5250**	1.894	4.9	ug/L	477	Standard
>	Ge	72	543508.6	0.9				ug/L	543406	Standard
	As	75	88.6	67.3	**0.1637**	0.043	26.3	ug/L	-90	Standard
	Se	82	829.8	6.0	**5.8853**	0.354	6.0	ug/L	31	Standard
	Se-1	77	1173.0	5.3	**11.6838**	0.579	5.0	ug/L	117	Standard
>	Ga	71	53.3	62.4				mg/L	22	Standard
	Rb	85	15259.3	2.1				ug/L	53	Standard
	Y	89	574203.7	3.6				ug/L	557276	Standard
>	Rh	103	15.0	33.3				ug/L	12	Standard
	Mo	98	408.3	5.2	**0.1041**	0.006	6.1	ug/L	159	Standard
	Ag	107	109.3	5.9	**-0.0083**	0.001	7.3	ug/L	102	Standard
	Cd	111	933.7	6.9	**0.3056**	0.021	7.0	mg/L	4	Standard
	Cd	114	2386.4	4.7	**0.3100**	0.015	4.8	ug/L	34	Standard
>	In	115	892957.1	0.2				ug/L	828245	Standard
	Sn	118	1383.4	8.4	**0.0699**	0.013	19.1	ug/L	850	Standard
	Sb	123	831.5	0.5	**0.1107**	0.001	0.6	ug/L	499	Standard
	Ba	135	4972.5	1.9	**1.4001**	0.029	2.1	ug/L	23	Standard
	Ce	140	465.0	4.9				ug/L	45	Standard
>	Tb	159	1463403.2	1.0				ug/L	1408642	Standard
	Ho	165	20.0	25.0				ug/L	15	Standard
	Tl	203	301.7	8.5	**0.0210**	0.003	12.1	ug/L	5	Standard
	Tl	205	241.7	10.4	**0.0205**	0.003	14.6	ug/L	8	Standard
	Pb	206	2029.1	2.5	**0.2171**	0.004	1.8	ug/L	348	Standard
	Pb	207	1705.4	4.4	**0.1958**	0.012	6.1	ug/L	284	Standard
	Pb	208	5306.7	0.8	**0.1973**	0.002	1.2	ug/L	938	Standard
	U	238	298.7	1.7	**0.0389**	0.001	2.3	ug/L	3	Standard
>	Bi	209	614713.1	1.1				ug/L	615841	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	3	Standard
Mg	24	6751.5	4.8	**6.4994**	0.329	5.1	mg/L	68	Standard
K	39	890.0	8.8	**2.5316**	0.230	9.1	mg/L	23	Standard
Ca	43	241.7	16.7	**14.1463**	2.687	19.0	mg/L	52	Standard
Fe	54	235.6	8.6	**0.0398**	0.012	30.1	mg/L	214	Standard
Fe	57	305.0	10.8	**0.2525**	0.087	34.4	mg/L	213	Standard
> **Sc-1**	45	46183.6	1.5				mg/L	49932	Standard
Cl	35	31389.2	4.3				ug/L	23537	Standard
Kr	83	3.7	68.6				ug/L	3	Standard
Br	81	2256.8	4.5				ug/L	1553	Standard
P	31	19440.8	7.3				ug/L	15523	Standard
S	34	1076.7	3.1				ug/L	1052	Standard
Sr	88	151.7	30.6				ug/L	147	Standard
C	12	1573.4	3.8				mg/L	397	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	25.2	62.4				mg/L	29	Standard
Ho-1	165	20.0	25.0				mg/L	15	Standard
Er	166	30.0	33.3				mg/L	23	Standard
I	127	4212.3	6.2				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		138.990	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.019	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.813
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.817
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: February 24, 2015

Method 6020 - Summary Report

Sample ID: L1502093901
Sample Date/Time: Monday, February 23, 2015 18:52:29
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	143373.7	2.4				ug/L	102148	Standard
	Be	9	185.0	7.2	**0.0844**	0.006	7.6	ug/L	8	Standard
	Al	27	2468968.3	1.8	**11.3428**	0.248	2.2	ug/L	1058	Standard
	Sc	45	47220.2	1.9				ug/L	49932	Standard
	Ti	47	704.7	8.8	**2.5410**	0.210	8.3	ug/L	25	Standard
	V	51	8240.3	3.8	**0.6327**	0.044	7.0	ug/L	2343	Standard
	Cr	52	30144.3	1.7	**2.3415**	0.090	3.8	ug/L	9255	Standard
	Cr	53	11254.2	4.3	**9.4525**	0.303	3.2	ug/L	355	Standard
	Mn	55	292598.0	1.6	**20.9916**	0.069	0.3	ug/L	920	Standard
	Co	59	1870.8	3.7	**0.1471**	0.004	2.8	ug/L	117	Standard
	Ni	60	4421.6	5.0	**1.5784**	0.061	3.8	ug/L	48	Standard
	Cu	65	2446.2	1.9	**0.8138**	0.012	1.4	ug/L	211	Standard
	Zn	66	325633.5	2.2	**253.4451**	2.789	1.1	ug/L	477	Standard
>	**Ge**	72	549626.7	1.3				ug/L	543406	Standard
	As	75	195.3	23.3	**0.2401**	0.033	13.7	ug/L	-90	Standard
	Se	82	350.8	1.2	**2.3445**	0.058	2.5	ug/L	31	Standard
	Se-1	77	961.4	1.1	**9.2205**	0.226	2.4	ug/L	117	Standard
>	**Ga**	71	1325.1	7.0				mg/L	22	Standard
	Rb	85	20001.6	7.1				ug/L	53	Standard
	Y	89	603035.4	1.0				ug/L	557276	Standard
>	**Rh**	103	13.3	57.3				ug/L	12	Standard
	Mo	98	223.8	4.8	**0.0486**	0.003	6.7	ug/L	159	Standard
	Ag	107	143.0	14.0	**-0.0053**	0.002	36.3	ug/L	102	Standard
	Cd	111	1753.7	3.5	**0.5738**	0.024	4.2	mg/L	4	Standard
	Cd	114	4205.4	5.0	**0.5497**	0.021	3.9	ug/L	34	Standard
>	**In**	115	905495.8	1.3				ug/L	828245	Standard
	Sn	118	12311.7	4.5	**1.2780**	0.045	3.5	ug/L	850	Standard
	Sb	123	5113.2	0.9	**0.7656**	0.007	0.9	ug/L	499	Standard
	Ba	135	28093.7	1.4	**7.8722**	0.021	0.3	ug/L	23	Standard
	Ce	140	5874.5	1.8				ug/L	45	Standard
>	**Tb**	159	1483180.7	1.7				ug/L	1408642	Standard
	Ho	165	176.7	26.9				ug/L	15	Standard
	Tl	203	243.0	8.6	**0.0147**	0.002	12.5	ug/L	5	Standard
	Tl	205	186.7	4.1	**0.0137**	0.001	4.8	ug/L	8	Standard
	Pb	206	35359.6	1.9	**4.4056**	0.055	1.2	ug/L	348	Standard
	Pb	207	29292.3	2.1	**4.0488**	0.063	1.6	ug/L	284	Standard
	Pb	208	91993.3	1.4	**4.1336**	0.034	0.8	ug/L	938	Standard
	U	238	807.7	5.3	**0.1049**	0.005	4.9	ug/L	3	Standard
>	**Bi**	209	638408.1	0.8				ug/L	615841	Standard

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Na	23	10.0	50.0	**20.7788**	10.380	50.0	mg/L	3	Standard
Mg	24	8230.6	2.0	**7.7639**	0.058	0.8	mg/L	68	Standard
K	39	1166.7	1.9	**3.2609**	0.076	2.3	mg/L	23	Standard
Ca	43	228.3	12.1	**12.8864**	2.224	17.3	mg/L	52	Standard
Fe	54	347.5	4.4	**0.1114**	0.010	8.7	mg/L	214	Standard
Fe	57	291.7	20.5	**0.2036**	0.159	78.2	mg/L	213	Standard
> **Sc-1**	45	47220.2	1.9				mg/L	49932	Standard
Cl	35	30004.4	2.6				ug/L	23537	Standard
Kr	83	2.0	100.0				ug/L	3	Standard
Br	81	2266.8	9.3				ug/L	1553	Standard
P	31	18971.9	1.9				ug/L	15523	Standard
S	34	1098.4	8.6				ug/L	1052	Standard
Sr	88	188.3	10.1				ug/L	147	Standard
C	12	3040.3	2.5				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	257.4	4.7				mg/L	29	Standard
Ho-1	165	176.7	26.9				mg/L	15	Standard
Er	166	193.3	11.9				mg/L	23	Standard
I	127	9157.8	7.5				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		140.358	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.145	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.327
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.664
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1502093901PS WG513054-01
Sample Date/Time: Monday, February 23, 2015 18:55:40
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	137962.3	2.8				ug/L	102148	Standard
	Be	9	84748.1	2.6	**45.2191**	2.229	4.9	ug/L	8	Standard
	Al	27	2391730.7	0.9	**11.4242**	0.421	3.7	ug/L	1058	Standard
	Sc	45	46269.0	4.9				ug/L	49932	Standard
	Ti	47	670.3	2.1	**2.3960**	0.065	2.7	ug/L	25	Standard
	V	51	474146.6	1.5	**51.7322**	1.082	2.1	ug/L	2343	Standard
	Cr	52	491055.4	1.9	**54.1472**	1.274	2.4	ug/L	9255	Standard
	Cr	53	69994.6	1.1	**60.2352**	0.726	1.2	ug/L	355	Standard
	Mn	55	1003274.7	0.9	**71.6479**	1.089	1.5	ug/L	920	Standard
	Co	59	593748.3	1.8	**52.5368**	1.244	2.4	ug/L	117	Standard
	Ni	60	150027.6	1.6	**54.1775**	1.205	2.2	ug/L	48	Standard
	Cu	65	142947.9	0.7	**52.7554**	0.711	1.3	ug/L	211	Standard
	Zn	66	375080.1	2.3	**289.8836**	8.595	3.0	ug/L	477	Standard
>	**Ge**	72	553718.7	0.7				ug/L	543406	Standard
	As	75	74496.8	1.5	**53.4453**	1.137	2.1	ug/L	-90	Standard
	Se	82	7860.1	1.2	**56.3795**	1.053	1.9	ug/L	31	Standard
	Se-1	77	5906.2	2.1	**63.0102**	0.973	1.5	ug/L	117	Standard
>	**Ga**	71	1361.7	5.1				mg/L	22	Standard
	Rb	85	20286.9	3.2				ug/L	53	Standard
	Y	89	590991.8	3.3				ug/L	557276	Standard
>	**Rh**	103	53.3	39.0				ug/L	12	Standard
	Mo	98	316.5	5.5	**0.0747**	0.005	6.4	ug/L	159	Standard
	Ag	107	521402.0	1.9	**47.1786**	0.631	1.3	ug/L	102	Standard
	Cd	111	160999.9	1.8	**52.9419**	0.682	1.3	mg/L	4	Standard
	Cd	114	398437.4	2.9	**52.9903**	1.743	3.3	ug/L	34	Standard
>	**In**	115	914537.4	0.7				ug/L	828245	Standard
	Sn	118	11337.6	2.2	**1.1580**	0.020	1.8	ug/L	850	Standard
	Sb	123	323111.5	2.6	**49.0473**	1.066	2.2	ug/L	499	Standard
	Ba	135	201439.7	1.4	**55.9827**	0.465	0.8	ug/L	23	Standard
	Ce	140	5736.1	2.0				ug/L	45	Standard
>	**Tb**	159	1464881.7	3.0				ug/L	1408642	Standard
	Ho	165	175.0	17.8				ug/L	15	Standard
	Tl	203	577550.9	1.8	**51.8471**	0.953	1.8	ug/L	5	Standard
	Tl	205	491181.5	0.7	**52.7628**	0.557	1.1	ug/L	8	Standard
	Pb	206	438818.0	1.5	**55.6747**	0.749	1.3	ug/L	348	Standard
	Pb	207	394840.8	1.7	**55.6745**	0.839	1.5	ug/L	284	Standard
	Pb	208	1191460.3	1.5	**54.6164**	0.689	1.3	ug/L	938	Standard
	U	238	397795.3	2.4	**53.2319**	1.235	2.3	ug/L	3	Standard
>	**Bi**	209	633292.8	0.4				ug/L	615841	Standard

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Na	23	6.7	43.3	**14.3908**	7.008	48.7	mg/L	3	Standard
Mg	24	8243.9	0.9	**7.9536**	0.473	6.0	mg/L	68	Standard
K	39	925.0	5.8	**2.6277**	0.073	2.8	mg/L	23	Standard
Ca	43	226.7	1.3	**13.1007**	1.021	7.8	mg/L	52	Standard
Fe	54	365.8	5.0	**0.1296**	0.025	19.4	mg/L	214	Standard
Fe	57	305.0	8.7	**0.2532**	0.093	36.7	mg/L	213	Standard
> **Sc-1**	45	46269.0	4.9				mg/L	49932	Standard
Cl	35	29013.8	2.6				ug/L	23537	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	2140.2	4.9				ug/L	1553	Standard
P	31	19062.1	9.6				ug/L	15523	Standard
S	34	973.4	6.2				ug/L	1052	Standard
Sr	88	178.3	12.9				ug/L	147	Standard
C	12	3240.3	7.5				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	226.9	29.1				mg/L	29	Standard
Ho-1	165	175.0	17.8				mg/L	15	Standard
Er	166	133.3	15.6				mg/L	23	Standard
I	127	7293.4	7.2				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		135.061	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.898	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	110.419
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.834
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1502093901SDL WG513054-02
Sample Date/Time: Monday, February 23, 2015 19:09:13
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 250
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	134686.6	3.8				ug/L	102148	Standard
	Be	9	65.0	61.5	**0.0245**	0.021	83.8	ug/L	8	Standard
	Al	27	508657.6	4.0	**2.4768**	0.178	7.2	ug/L	1058	Standard
	Sc	45	47029.7	5.8				ug/L	49932	Standard
	Ti	47	156.0	13.4	**0.5107**	0.070	13.8	ug/L	25	Standard
	V	51	3131.2	4.3	**0.0749**	0.022	29.0	ug/L	2343	Standard
	Cr	52	13327.5	0.6	**0.4659**	0.034	7.2	ug/L	9255	Standard
	Cr	53	3685.4	2.9	**2.9169**	0.054	1.8	ug/L	355	Standard
	Mn	55	59041.8	1.9	**4.2547**	0.064	1.5	ug/L	920	Standard
	Co	59	355.7	7.5	**0.0126**	0.002	14.0	ug/L	117	Standard
	Ni	60	932.4	3.9	**0.3156**	0.011	3.6	ug/L	48	Standard
	Cu	65	659.3	5.4	**0.1530**	0.008	5.4	ug/L	211	Standard
	Zn	66	65108.6	1.1	**51.4029**	1.001	1.9	ug/L	477	Standard
>	**Ge**	72	539036.3	2.1				ug/L	543406	Standard
	As	75	-73.6	42.2	**0.0448**	0.024	53.7	ug/L	-90	Standard
	Se	82	89.8	9.7	**0.4657**	0.074	15.9	ug/L	31	Standard
	Se-1	77	282.7	0.7	**1.8310**	0.045	2.4	ug/L	117	Standard
>	**Ga**	71	285.0	10.5				mg/L	22	Standard
	Rb	85	4095.6	3.0				ug/L	53	Standard
	Y	89	547462.0	0.7				ug/L	557276	Standard
>	**Rh**	103	5.0	0.0				ug/L	12	Standard
	Mo	98	64.7	9.3	**0.0028**	0.002	61.2	ug/L	159	Standard
	Ag	107	111.3	1.0	**-0.0079**	0.000	4.6	ug/L	102	Standard
	Cd	111	321.6	5.4	**0.1015**	0.003	2.9	mg/L	4	Standard
	Cd	114	822.2	4.9	**0.0992**	0.007	7.4	ug/L	34	Standard
>	**In**	115	875496.4	2.7				ug/L	828245	Standard
	Sn	118	2651.9	2.0	**0.2184**	0.005	2.3	ug/L	850	Standard
	Sb	123	1946.6	15.1	**0.2910**	0.054	18.5	ug/L	499	Standard
	Ba	135	5603.4	2.8	**1.6115**	0.014	0.9	ug/L	23	Standard
	Ce	140	1105.0	4.1				ug/L	45	Standard
>	**Tb**	159	1437960.8	1.2				ug/L	1408642	Standard
	Ho	165	50.0	30.0				ug/L	15	Standard
	Tl	203	267.0	5.5	**0.0175**	0.002	8.7	ug/L	5	Standard
	Tl	205	331.7	38.9	**0.0300**	0.014	45.9	ug/L	8	Standard
	Pb	206	7451.8	0.5	**0.9157**	0.016	1.8	ug/L	348	Standard
	Pb	207	6256.3	1.1	**0.8473**	0.009	1.1	ug/L	284	Standard
	Pb	208	19526.2	3.0	**0.8589**	0.017	1.9	ug/L	938	Standard
	U	238	219.0	42.4	**0.0275**	0.012	45.0	ug/L	3	Standard
>	**Bi**	209	621742.1	1.6				ug/L	615841	Standard

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Na	23	5.0	100.0	**10.3084**	9.920	96.2	mg/L	3	Standard
Mg	24	1651.8	10.9	**1.4992**	0.132	8.8	mg/L	68	Standard
K	39	255.0	6.8	**0.6738**	0.027	4.0	mg/L	23	Standard
Ca	43	96.7	7.9	**3.6856**	0.435	11.8	mg/L	52	Standard
Fe	54	245.4	11.5	**0.0446**	0.028	63.3	mg/L	214	Standard
Fe	57	245.0	21.3	**0.0951**	0.168	176.7	mg/L	213	Standard
> **Sc-1**	45	47029.7	5.8				mg/L	49932	Standard
Cl	35	29038.5	2.3				ug/L	23537	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	1756.8	10.1				ug/L	1553	Standard
P	31	17850.5	2.1				ug/L	15523	Standard
S	34	953.4	9.8				ug/L	1052	Standard
Sr	88	183.3	13.5				ug/L	147	Standard
C	12	1010.0	12.4				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	56.8	36.1				mg/L	29	Standard
Ho-1	165	50.0	30.0				mg/L	15	Standard
Er	166	66.7	37.7				mg/L	23	Standard
I	127	2591.9	11.0				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		131.854	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.196	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1502093901SDL WG513054-02
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.705
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.958
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: February 24, 2015

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, February 23, 2015 19:12:26
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	126363.2	9.9				ug/L	102148	Standard
	Be	9	82707.0	4.2	**48.3208**	2.763	5.7	ug/L	8	Standard
	Al	27	8654582.9	4.8	**45.3068**	2.309	5.1	ug/L	1058	Standard
	Sc	45	45964.7	3.3				ug/L	49932	Standard
	Ti	47	24835.7	2.9	**95.3862**	1.192	1.2	ug/L	25	Standard
	V	51	451932.1	3.5	**51.2981**	0.773	1.5	ug/L	2343	Standard
	Cr	52	452887.4	3.0	**51.9161**	0.185	0.4	ug/L	9255	Standard
	Cr	53	58772.1	2.2	**52.6008**	1.411	2.7	ug/L	355	Standard
	Mn	55	700520.1	2.6	**52.0342**	0.276	0.5	ug/L	920	Standard
	Co	59	568017.7	3.3	**52.2919**	0.659	1.3	ug/L	117	Standard
	Ni	60	141423.4	1.5	**53.1499**	0.660	1.2	ug/L	48	Standard
	Cu	65	135564.7	2.8	**52.0596**	0.645	1.2	ug/L	211	Standard
	Zn	66	63848.7	3.5	**51.0425**	0.396	0.8	ug/L	477	Standard
>	**Ge**	72	532114.9	2.7				ug/L	543406	Standard
	As	75	70316.6	3.1	**52.4876**	0.356	0.7	ug/L	-90	Standard
	Se	82	7049.8	2.6	**52.6168**	1.479	2.8	ug/L	31	Standard
	Se-1	77	4693.4	2.4	**51.8841**	0.894	1.7	ug/L	117	Standard
>	**Ga**	71	46.7	16.4				mg/L	22	Standard
	Rb	85	1086.7	7.8				ug/L	53	Standard
	Y	89	577500.5	1.8				ug/L	557276	Standard
>	**Rh**	103	38.3	27.2				ug/L	12	Standard
	Mo	98	337434.3	2.9	**100.3447**	1.687	1.7	ug/L	159	Standard
	Ag	107	525417.4	3.0	**48.9539**	0.657	1.3	ug/L	102	Standard
	Cd	111	149668.5	3.0	**50.6742**	0.465	0.9	mg/L	4	Standard
	Cd	114	365518.0	0.7	**50.0646**	0.928	1.9	ug/L	34	Standard
>	**In**	115	888125.6	2.1				ug/L	828245	Standard
	Sn	118	446529.5	6.0	**50.3264**	2.111	4.2	ug/L	850	Standard
	Sb	123	327148.6	1.6	**51.1444**	0.348	0.7	ug/L	499	Standard
	Ba	135	167643.1	2.7	**47.9713**	0.376	0.8	ug/L	23	Standard
	Ce	140	315.0	11.0				ug/L	45	Standard
>	**Tb**	159	1440078.5	2.0				ug/L	1408642	Standard
	Ho	165	11.7	24.7				ug/L	15	Standard
	Tl	203	559508.2	2.1	**52.2960**	0.197	0.4	ug/L	5	Standard
	Tl	205	470231.0	2.9	**52.5994**	1.528	2.9	ug/L	8	Standard
	Pb	206	394884.1	3.2	**52.1525**	0.506	1.0	ug/L	348	Standard
	Pb	207	355281.4	3.5	**52.1466**	0.594	1.1	ug/L	284	Standard
	Pb	208	1080726.0	2.5	**51.5766**	0.361	0.7	ug/L	938	Standard
	U	238	384357.3	3.4	**53.5431**	0.713	1.3	ug/L	3	Standard
>	**Bi**	209	608261.7	2.3				ug/L	615841	Standard

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Na	23	1.7	173.2	**3.5614**	6.160	173.0	mg/L	3	Standard
Mg	24	6037.9	2.7	**5.8360**	0.273	4.7	mg/L	68	Standard
K	39	1448.4	10.4	**4.1698**	0.364	8.7	mg/L	23	Standard
Ca	43	110.0	25.3	**4.8151**	2.059	42.8	mg/L	52	Standard
Fe	54	7675.1	3.3	**5.1737**	0.131	2.5	mg/L	214	Standard
Fe	57	2376.9	2.5	**5.5383**	0.317	5.7	mg/L	213	Standard
> **Sc-1**	45	45964.7	3.3				mg/L	49932	Standard
Cl	35	27559.1	3.1				ug/L	23537	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	1703.4	7.4				ug/L	1553	Standard
P	31	20617.4	9.2				ug/L	15523	Standard
S	34	1136.7	2.2				ug/L	1052	Standard
Sr	88	141.7	10.8				ug/L	147	Standard
C	12	460.0	34.2				mg/L	397	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	25.5	44.2				mg/L	29	Standard
Ho-1	165	11.7	24.7				mg/L	15	Standard
Er	166	23.3	49.5				mg/L	23	Standard
I	127	1386.7	3.4				mg/L	1075	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	96.642		
	Al	27	90.614		
	Sc	45			
	Ti	47	95.386		
	V	51	102.596		
	Cr	52	103.832		
	Cr	53			
	Mn	55	104.068		
	Co	59	104.584		
	Ni	60	106.300		
	Cu	65	104.119		
	Zn	66	102.085		
>	Ge	72		97.922	
	As	75	104.975		
	Se	82	105.234		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	100.345		
Ag	107	97.908		
Cd	111	101.348		
Cd	114			
In	115		107.230	
Sn	118	100.653		
Sb	123	102.289		
Ba	135	95.943		
Ce	140			
Tb	159			
Ho	165			
Tl	203	104.592		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.153		
U	238	107.086		
Bi	209		98.769	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, February 23, 2015 19:15:38
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	124612.1	1.4				ug/L	102148	Standard
	Be	9	13.3	78.1	**-0.0026**	0.006	239.9	ug/L	8	Standard
	Al	27	1556.7	22.6	**-0.0100**	0.002	17.4	ug/L	1058	Standard
	Sc	45	46416.0	2.6				ug/L	49932	Standard
	Ti	47	14.7	31.5	**-0.0245**	0.019	77.4	ug/L	25	Standard
	V	51	2236.5	4.1	**-0.0256**	0.013	51.8	ug/L	2343	Standard
	Cr	52	8965.7	1.5	**-0.0363**	0.018	48.3	ug/L	9255	Standard
	Cr	53	471.7	5.4	**0.0598**	0.018	30.3	ug/L	355	Standard
	Mn	55	925.4	3.1	**-0.0136**	0.003	25.4	ug/L	920	Standard
	Co	59	150.3	7.9	**-0.0060**	0.001	23.2	ug/L	117	Standard
	Ni	60	43.0	12.1	**-0.0144**	0.002	14.5	ug/L	48	Standard
	Cu	65	228.7	11.4	**-0.0104**	0.008	79.0	ug/L	211	Standard
	Zn	66	277.3	9.9	**-0.1352**	0.026	19.1	ug/L	477	Standard
>	**Ge**	72	538022.0	2.0				ug/L	543406	Standard
	As	75	-142.6	16.9	**-0.0058**	0.017	288.3	ug/L	-90	Standard
	Se	82	22.6	23.8	**-0.0316**	0.044	137.7	ug/L	31	Standard
	Se-1	77	123.0	4.9	**0.0459**	0.059	128.1	ug/L	117	Standard
>	**Ga**	71	20.0	25.0				mg/L	22	Standard
	Rb	85	71.7	10.7				ug/L	53	Standard
	Y	89	558621.3	2.7				ug/L	557276	Standard
>	**Rh**	103	6.7	43.3				ug/L	12	Standard
	Mo	98	133.6	19.8	**0.0237**	0.008	34.4	ug/L	159	Standard
	Ag	107	130.0	26.3	**-0.0061**	0.003	53.8	ug/L	102	Standard
	Cd	111	14.4	99.0	**-0.0039**	0.005	125.6	mg/L	4	Standard
	Cd	114	48.3	62.0	**-0.0084**	0.004	49.9	ug/L	34	Standard
>	**In**	115	873819.8	0.4				ug/L	828245	Standard
	Sn	118	935.0	16.7	**0.0219**	0.018	83.6	ug/L	850	Standard
	Sb	123	216.7	22.0	**0.0158**	0.008	49.0	ug/L	499	Standard
	Ba	135	45.0	34.9	**-0.0026**	0.005	179.8	ug/L	23	Standard
	Ce	140	31.7	63.8				ug/L	45	Standard
>	**Tb**	159	1437389.4	1.1				ug/L	1408642	Standard
	Ho	165	28.3	27.0				ug/L	15	Standard
	Tl	203	63.3	57.0	**-0.0010**	0.003	322.6	ug/L	5	Standard
	Tl	205	36.7	28.4	**-0.0022**	0.001	53.9	ug/L	8	Standard
	Pb	206	380.3	13.2	**0.0015**	0.006	431.8	ug/L	348	Standard
	Pb	207	301.7	5.9	**-0.0083**	0.002	27.8	ug/L	284	Standard
	Pb	208	919.0	3.0	**-0.0101**	0.001	13.2	ug/L	938	Standard
	U	238	15.7	57.2	**-0.0002**	0.001	815.5	ug/L	3	Standard
>	**Bi**	209	614090.1	0.8				ug/L	615841	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	3	Standard
Mg	24	116.7	29.2	**0.0327**	0.036	111.4	mg/L	68	Standard
K	39	16.7	45.8	**-0.0049**	0.024	482.2	mg/L	23	Standard
Ca	43	25.0	20.0	**-1.3185**	0.396	30.1	mg/L	52	Standard
Fe	54	239.2	15.9	**0.0417**	0.027	65.2	mg/L	214	Standard
Fe	57	195.0	14.3	**-0.0279**	0.083	296.4	mg/L	213	Standard
Sc-1	45	46416.0	2.6				mg/L	49932	Standard
Cl	35	26669.5	1.4				ug/L	23537	Standard
Kr	83	4.0	86.6				ug/L	3	Standard
Br	81	1516.7	8.3				ug/L	1553	Standard
P	31	17189.8	3.7				ug/L	15523	Standard
S	34	1056.7	8.5				ug/L	1052	Standard
Sr	88	181.7	21.4				ug/L	147	Standard
C	12	393.3	15.3				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.0	118.6				mg/L	29	Standard
Ho-1	165	28.3	27.0				mg/L	15	Standard
Er	166	20.0	86.6				mg/L	23	Standard
I	127	1181.7	3.5				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.009	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.503
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.716
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1502094001
Sample Date/Time: Monday, February 23, 2015 19:18:50
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	137006.8	1.9				ug/L	102148	Standard
	Be	9	331.7	15.1	**0.1679**	0.030	17.8	ug/L	8	Standard
	Al	27	2284392.6	3.3	**10.9866**	0.573	5.2	ug/L	1058	Standard
	Sc	45	45733.9	1.4				ug/L	49932	Standard
	Ti	47	549.0	3.9	**2.0219**	0.106	5.2	ug/L	25	Standard
	V	51	10203.2	7.1	**0.8823**	0.096	10.9	ug/L	2343	Standard
	Cr	52	39605.4	0.2	**3.5415**	0.067	1.9	ug/L	9255	Standard
	Cr	53	9926.6	9.2	**8.5390**	0.719	8.4	ug/L	355	Standard
	Mn	55	322719.7	1.8	**23.8314**	0.682	2.9	ug/L	920	Standard
	Co	59	1624.4	10.7	**0.1295**	0.018	13.7	ug/L	117	Standard
	Ni	60	5576.0	3.0	**2.0579**	0.089	4.3	ug/L	48	Standard
	Cu	65	14175.0	2.9	**5.3353**	0.228	4.3	ug/L	211	Standard
	Zn	66	436252.0	3.1	**349.5380**	15.111	4.3	ug/L	477	Standard
>	**Ge**	72	534353.0	1.3				ug/L	543406	Standard
	As	75	42.5	71.9	**0.1306**	0.022	17.1	ug/L	-90	Standard
	Se	82	88.9	2.3	**0.4639**	0.006	1.4	ug/L	31	Standard
	Se-1	77	682.7	11.1	**6.3689**	0.775	12.2	ug/L	117	Standard
>	**Ga**	71	1365.1	1.5				mg/L	22	Standard
	Rb	85	18237.6	2.0				ug/L	53	Standard
	Y	89	566247.3	0.8				ug/L	557276	Standard
>	**Rh**	103	18.3	68.6				ug/L	12	Standard
	Mo	98	466.7	6.4	**0.1236**	0.009	7.4	ug/L	159	Standard
	Ag	107	251.0	77.7	**0.0052**	0.018	350.8	ug/L	102	Standard
	Cd	111	2014.4	0.6	**0.6805**	0.009	1.4	mg/L	4	Standard
	Cd	114	5027.2	2.9	**0.6806**	0.012	1.8	ug/L	34	Standard
>	**In**	115	878929.7	1.1				ug/L	828245	Standard
	Sn	118	5792.8	2.3	**0.5757**	0.019	3.3	ug/L	850	Standard
	Sb	123	5897.1	4.1	**0.9133**	0.039	4.3	ug/L	499	Standard
	Ba	135	11420.3	2.0	**3.2882**	0.088	2.7	ug/L	23	Standard
	Ce	140	7181.7	4.7				ug/L	45	Standard
>	**Tb**	159	1431519.9	4.1				ug/L	1408642	Standard
	Ho	165	195.0	7.7				ug/L	15	Standard
	Tl	203	360.0	57.0	**0.0257**	0.018	69.6	ug/L	5	Standard
	Tl	205	258.3	37.7	**0.0218**	0.010	45.7	ug/L	8	Standard
	Pb	206	48629.6	1.4	**6.2219**	0.038	0.6	ug/L	348	Standard
	Pb	207	40830.3	2.9	**5.7981**	0.049	0.8	ug/L	284	Standard
	Pb	208	127614.1	1.4	**5.8922**	0.052	0.9	ug/L	938	Standard
	U	238	895.4	9.2	**0.1192**	0.009	7.5	ug/L	3	Standard
>	**Bi**	209	623745.2	2.0				ug/L	615841	Standard

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Na	23	5.0	0.0	**10.7529**	0.151	1.4	mg/L	3	Standard
Mg	24	6298.0	0.7	**6.1174**	0.065	1.1	mg/L	68	Standard
K	39	970.0	8.0	**2.7895**	0.187	6.7	mg/L	23	Standard
Ca	43	253.3	10.9	**15.1647**	1.716	11.3	mg/L	52	Standard
Fe	54	448.4	14.8	**0.1893**	0.049	25.8	mg/L	214	Standard
Fe	57	371.7	10.3	**0.4297**	0.087	20.3	mg/L	213	Standard
> **Sc-1**	45	45733.9	1.4				mg/L	49932	Standard
Cl	35	27757.4	3.7				ug/L	23537	Standard
Kr	83	3.3	17.3				ug/L	3	Standard
Br	81	2293.5	6.8				ug/L	1553	Standard
P	31	20854.4	8.8				ug/L	15523	Standard
S	34	1051.7	7.7				ug/L	1052	Standard
Sr	88	168.3	6.9				ug/L	147	Standard
C	12	2860.3	17.8				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	318.2	14.1				mg/L	29	Standard
Ho-1	165	195.0	7.7				mg/L	15	Standard
Er	166	176.7	42.9				mg/L	23	Standard
I	127	6278.0	6.5				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		134.125	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.334	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.120
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.283
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, February 23, 2015 19:22:03
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	123200.7	2.0				ug/L	102148	Standard
	Be	9	81009.5	3.6	**48.3618**	1.383	2.9	ug/L	8	Standard
	Al	27	9111647.1	1.5	**48.7661**	0.253	0.5	ug/L	1058	Standard
	Sc	45	45269.2	2.1				ug/L	49932	Standard
	Ti	47	25250.4	0.8	**97.1719**	0.296	0.3	ug/L	25	Standard
	V	51	457678.7	1.0	**52.0660**	0.732	1.4	ug/L	2343	Standard
	Cr	52	450132.0	1.1	**51.7008**	0.328	0.6	ug/L	9255	Standard
	Cr	53	58201.6	2.8	**52.1705**	1.200	2.3	ug/L	355	Standard
	Mn	55	701951.5	1.0	**52.2461**	0.802	1.5	ug/L	920	Standard
	Co	59	569231.5	0.9	**52.5144**	0.685	1.3	ug/L	117	Standard
	Ni	60	141428.7	0.5	**53.2476**	0.407	0.8	ug/L	48	Standard
	Cu	65	135473.0	0.8	**52.1288**	0.692	1.3	ug/L	211	Standard
	Zn	66	63945.7	1.1	**51.2296**	0.369	0.7	ug/L	477	Standard
>	**Ge**	72	531055.2	0.6				ug/L	543406	Standard
	As	75	69327.6	0.9	**51.8593**	0.658	1.3	ug/L	-90	Standard
	Se	82	7027.3	1.6	**52.5402**	0.891	1.7	ug/L	31	Standard
	Se-1	77	4692.1	1.1	**51.9709**	0.858	1.7	ug/L	117	Standard
>	**Ga**	71	88.3	41.7				mg/L	22	Standard
	Rb	85	1086.7	3.0				ug/L	53	Standard
	Y	89	564282.9	1.9				ug/L	557276	Standard
>	**Rh**	103	40.0	21.7				ug/L	12	Standard
	Mo	98	334397.1	1.5	**101.0148**	0.938	0.9	ug/L	159	Standard
	Ag	107	535548.8	2.1	**50.6902**	0.902	1.8	ug/L	102	Standard
	Cd	111	149681.9	1.0	**51.4875**	0.581	1.1	mg/L	4	Standard
	Cd	114	365442.2	3.3	**50.8278**	1.383	2.7	ug/L	34	Standard
>	**In**	115	874306.6	0.6				ug/L	828245	Standard
	Sn	118	437363.4	1.4	**50.0988**	0.982	2.0	ug/L	850	Standard
	Sb	123	322845.5	0.5	**51.2661**	0.262	0.5	ug/L	499	Standard
	Ba	135	165991.7	1.0	**48.2524**	0.242	0.5	ug/L	23	Standard
	Ce	140	293.3	34.6				ug/L	45	Standard
>	**Tb**	159	1425981.0	0.7				ug/L	1408642	Standard
	Ho	165	21.7	48.0				ug/L	15	Standard
	Tl	203	554926.6	0.6	**52.1020**	0.749	1.4	ug/L	5	Standard
	Tl	205	469237.2	0.8	**52.7172**	0.728	1.4	ug/L	8	Standard
	Pb	206	393754.7	0.9	**52.2484**	0.873	1.7	ug/L	348	Standard
	Pb	207	350288.0	0.6	**51.6566**	0.741	1.4	ug/L	284	Standard
	Pb	208	1074274.7	0.5	**51.5026**	0.713	1.4	ug/L	938	Standard
	U	238	384222.1	1.1	**53.7780**	1.056	2.0	ug/L	3	Standard
>	**Bi**	209	605550.4	0.9				ug/L	615841	Standard

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Na	23	1.7	173.2	**3.7082**	6.414	173.0	mg/L	3	Standard
Mg	24	6056.2	5.7	**5.9468**	0.472	7.9	mg/L	68	Standard
K	39	1400.1	5.2	**4.0982**	0.292	7.1	mg/L	23	Standard
Ca	43	133.3	10.8	**6.6106**	0.887	13.4	mg/L	52	Standard
Fe	54	7633.0	2.1	**5.2249**	0.079	1.5	mg/L	214	Standard
Fe	57	2235.2	2.5	**5.2621**	0.265	5.0	mg/L	213	Standard
> **Sc-1**	45	45269.2	2.1				mg/L	49932	Standard
Cl	35	26369.6	5.2				ug/L	23537	Standard
Kr	83	3.3	34.6				ug/L	3	Standard
Br	81	1816.8	13.6				ug/L	1553	Standard
P	31	19974.8	2.8				ug/L	15523	Standard
S	34	1046.7	6.4				ug/L	1052	Standard
Sr	88	153.3	15.1				ug/L	147	Standard
C	12	513.3	9.6				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	12.2	53.1				mg/L	29	Standard
Ho-1	165	21.7	48.0				mg/L	15	Standard
Er	166	23.3	137.8				mg/L	23	Standard
I	127	1280.1	0.4				mg/L	1075	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	96.724		
	Al	27	97.532		
	Sc	45			
	Ti	47	97.172		
	V	51	104.132		
	Cr	52	103.402		
	Cr	53			
	Mn	55	104.492		
	Co	59	105.029		
	Ni	60	106.495		
	Cu	65	104.258		
	Zn	66	102.459		
>	Ge	72		97.727	
	As	75	103.719		
	Se	82	105.080		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	101.015		
Ag	107	101.380		
Cd	111	102.975		
Cd	114			
> In	115		105.561	
Sn	118	100.198		
Sb	123	102.532		
Ba	135	96.505		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	104.204		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.005		
U	238	107.556		
> Bi	209		98.329	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, February 23, 2015 19:25:14
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	125385.7	4.6				ug/L	102148	Standard
	Be	9	11.7	65.5	**-0.0036**	0.005	132.8	ug/L	8	Standard
	Al	27	1621.8	17.3	**-0.0097**	0.001	14.7	ug/L	1058	Standard
	Sc	45	44560.5	2.3				ug/L	49932	Standard
	Ti	47	16.3	23.2	**-0.0165**	0.015	91.4	ug/L	25	Standard
	V	51	2145.5	2.9	**-0.0290**	0.008	29.0	ug/L	2343	Standard
	Cr	52	8779.9	0.3	**-0.0286**	0.007	25.9	ug/L	9255	Standard
	Cr	53	438.3	6.5	**0.0414**	0.024	57.9	ug/L	355	Standard
	Mn	55	961.4	2.1	**-0.0089**	0.001	11.5	ug/L	920	Standard
	Co	59	163.7	1.3	**-0.0043**	0.000	2.6	ug/L	117	Standard
	Ni	60	55.3	8.5	**-0.0093**	0.002	17.2	ug/L	48	Standard
	Cu	65	234.7	6.4	**-0.0055**	0.005	97.6	ug/L	211	Standard
	Zn	66	284.7	1.7	**-0.1231**	0.002	2.0	ug/L	477	Standard
>	**Ge**	72	522929.2	1.0				ug/L	543406	Standard
	As	75	-117.0	10.0	**0.0104**	0.010	92.6	ug/L	-90	Standard
	Se	82	31.5	32.5	**0.0411**	0.080	195.1	ug/L	31	Standard
	Se-1	77	115.0	1.7	**-0.0063**	0.029	453.4	ug/L	117	Standard
>	**Ga**	71	23.3	53.9				mg/L	22	Standard
	Rb	85	63.3	46.3				ug/L	53	Standard
	Y	89	541310.8	3.9				ug/L	557276	Standard
>	**Rh**	103	11.7	24.7				ug/L	12	Standard
	Mo	98	156.4	11.8	**0.0315**	0.007	21.4	ug/L	159	Standard
	Ag	107	158.3	20.8	**-0.0031**	0.003	112.2	ug/L	102	Standard
	Cd	111	17.1	28.7	**-0.0029**	0.002	64.2	mg/L	4	Standard
	Cd	114	79.6	49.0	**-0.0037**	0.006	155.6	ug/L	34	Standard
>	**In**	115	858907.4	2.2				ug/L	828245	Standard
	Sn	118	885.0	5.4	**0.0179**	0.005	28.5	ug/L	850	Standard
	Sb	123	170.6	8.1	**0.0090**	0.003	31.6	ug/L	499	Standard
	Ba	135	53.3	17.0	**0.0001**	0.003	2050.3	ug/L	23	Standard
	Ce	140	31.7	39.7				ug/L	45	Standard
>	**Tb**	159	1408995.8	0.5				ug/L	1408642	Standard
	Ho	165	16.7	69.3				ug/L	15	Standard
	Tl	203	78.0	35.3	**0.0004**	0.003	587.7	ug/L	5	Standard
	Tl	205	41.7	18.3	**-0.0015**	0.001	61.1	ug/L	8	Standard
	Pb	206	361.7	4.8	**-0.0002**	0.003	1413.5	ug/L	348	Standard
	Pb	207	323.3	11.9	**-0.0044**	0.006	136.1	ug/L	284	Standard
	Pb	208	976.0	4.2	**-0.0068**	0.001	20.4	ug/L	938	Standard
	U	238	27.3	34.0	**0.0015**	0.001	84.0	ug/L	3	Standard
>	**Bi**	209	605380.5	1.8				ug/L	615841	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	3	Standard
Mg	24	103.3	7.4	**0.0233**	0.006	26.0	mg/L	68	Standard
K	39	18.3	56.8	**0.0021**	0.032	1560.1	mg/L	23	Standard
Ca	43	40.0	33.1	**-0.1326**	1.017	766.8	mg/L	52	Standard
Fe	54	214.0	14.2	**0.0307**	0.025	80.8	mg/L	214	Standard
Fe	57	253.3	14.9	**0.1463**	0.113	77.5	mg/L	213	Standard
> **Sc-1**	45	44560.5	2.3				mg/L	49932	Standard
Cl	35	26026.3	1.9				ug/L	23537	Standard
Kr	83	3.0	88.2				ug/L	3	Standard
Br	81	1763.4	12.7				ug/L	1553	Standard
P	31	17036.3	8.3				ug/L	15523	Standard
S	34	1043.4	8.4				ug/L	1052	Standard
Sr	88	130.0	26.9				ug/L	147	Standard
C	12	456.7	31.1				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.7	52.0				mg/L	29	Standard
Ho-1	165	16.7	69.3				mg/L	15	Standard
Er	166	6.7	86.6				mg/L	23	Standard
I	127	978.4	6.9				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.232	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.702
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.301
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW C7 WG512947-02
Sample Date/Time: Monday, February 23, 2015 19:28:27
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	131875.7	4.9				ug/L	102148	Standard
	Be	9	11.7	65.5	**-0.0039**	0.005	117.7	ug/L	8	Standard
	Al	27	4972.5	2.6	**0.0067**	0.002	25.4	ug/L	1058	Standard
	Sc	45	45757.4	2.7				ug/L	49932	Standard
	Ti	47	33.3	6.9	**0.0462**	0.011	23.0	ug/L	25	Standard
	V	51	2247.4	0.2	**-0.0247**	0.006	25.9	ug/L	2343	Standard
	Cr	52	9538.7	1.1	**0.0288**	0.025	87.6	ug/L	9255	Standard
	Cr	53	478.3	3.2	**0.0652**	0.004	6.2	ug/L	355	Standard
	Mn	55	3082.0	2.7	**0.1448**	0.005	3.3	ug/L	920	Standard
	Co	59	176.3	16.5	**-0.0036**	0.003	76.3	ug/L	117	Standard
	Ni	60	167.0	11.9	**0.0315**	0.006	18.1	ug/L	48	Standard
	Cu	65	497.3	4.5	**0.0916**	0.006	6.8	ug/L	211	Standard
	Zn	66	2318.5	3.6	**1.4871**	0.027	1.8	ug/L	477	Standard
>	**Ge**	72	538768.5	2.6				ug/L	543406	Standard
	As	75	-91.2	29.8	**0.0323**	0.019	59.1	ug/L	-90	Standard
	Se	82	41.0	16.4	**0.1035**	0.042	40.3	ug/L	31	Standard
	Se-1	77	126.0	4.4	**0.0793**	0.096	120.9	ug/L	117	Standard
>	**Ga**	71	28.3	40.8				mg/L	22	Standard
	Rb	85	246.7	9.6				ug/L	53	Standard
	Y	89	554446.0	0.8				ug/L	557276	Standard
>	**Rh**	103	6.7	114.6				ug/L	12	Standard
	Mo	98	79.1	24.5	**0.0076**	0.006	79.7	ug/L	159	Standard
	Ag	107	139.7	17.3	**-0.0050**	0.002	48.0	ug/L	102	Standard
	Cd	111	8.5	37.4	**-0.0059**	0.001	19.0	mg/L	4	Standard
	Cd	114	43.2	22.1	**-0.0090**	0.001	14.7	ug/L	34	Standard
>	**In**	115	860719.0	0.6				ug/L	828245	Standard
	Sn	118	4912.5	1.6	**0.4870**	0.007	1.4	ug/L	850	Standard
	Sb	123	123.1	10.7	**0.0012**	0.002	184.6	ug/L	499	Standard
	Ba	135	260.7	3.9	**0.0613**	0.003	5.2	ug/L	23	Standard
	Ce	140	360.0	13.2				ug/L	45	Standard
>	**Tb**	159	1434424.6	1.1				ug/L	1408642	Standard
	Ho	165	26.7	43.3				ug/L	15	Standard
	Tl	203	52.0	34.7	**-0.0021**	0.002	78.2	ug/L	5	Standard
	Tl	205	26.7	92.5	**-0.0033**	0.003	83.1	ug/L	8	Standard
	Pb	206	559.0	2.9	**0.0247**	0.003	11.7	ug/L	348	Standard
	Pb	207	466.7	8.7	**0.0155**	0.006	36.6	ug/L	284	Standard
	Pb	208	1356.7	0.7	**0.0104**	0.001	7.1	ug/L	938	Standard
	U	238	14.0	55.8	**-0.0004**	0.001	272.3	ug/L	3	Standard
>	**Bi**	209	615778.4	1.1				ug/L	615841	Standard

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Na	23	3.3	86.6	**7.2186**	6.253	86.6	mg/L	3	Standard
Mg	24	118.3	23.3	**0.0352**	0.026	73.4	mg/L	68	Standard
K	39	15.0	33.3	**-0.0097**	0.014	142.5	mg/L	23	Standard
Ca	43	33.3	45.8	**-0.6778**	1.177	173.7	mg/L	52	Standard
Fe	54	210.9	25.4	**0.0247**	0.039	159.5	mg/L	214	Standard
Fe	57	196.7	15.5	**-0.0186**	0.069	373.0	mg/L	213	Standard
> **Sc-1**	45	45757.4	2.7				mg/L	49932	Standard
Cl	35	25812.6	1.3				ug/L	23537	Standard
Kr	83	4.3	58.1				ug/L	3	Standard
Br	81	2143.5	4.4				ug/L	1553	Standard
P	31	18966.9	4.6				ug/L	15523	Standard
S	34	938.4	1.3				ug/L	1052	Standard
Sr	88	153.3	33.5				ug/L	147	Standard
C	12	616.7	8.2				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	25.4	57.9				mg/L	29	Standard
Ho-1	165	26.7	43.3				mg/L	15	Standard
Er	166	26.7	57.3				mg/L	23	Standard
I	127	1023.4	5.4				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.102	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.147	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.921
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.990
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: PBW C7 WG512947-02
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Method 6020 - Summary Report

Sample ID: LCSW C7 WG512947-03
Sample Date/Time: Monday, February 23, 2015 19:31:38
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	125562.2	4.6				ug/L	102148	Standard
	Be	9	76953.3	1.8	**45.1336**	2.006	4.4	ug/L	8	Standard
	Al	27	5789.6	46.5	**0.0119**	0.012	105.2	ug/L	1058	Standard
	Sc	45	45337.8	2.6				ug/L	49932	Standard
	Ti	47	29.7	20.6	**0.0338**	0.023	69.0	ug/L	25	Standard
	V	51	424563.6	2.7	**48.3158**	1.060	2.2	ug/L	2343	Standard
	Cr	52	431245.0	3.1	**49.5264**	1.201	2.4	ug/L	9255	Standard
	Cr	53	55049.8	0.9	**49.3750**	0.537	1.1	ug/L	355	Standard
	Mn	55	670497.4	3.1	**49.9395**	1.386	2.8	ug/L	920	Standard
	Co	59	538337.5	4.0	**49.6977**	1.683	3.4	ug/L	117	Standard
	Ni	60	132565.4	2.8	**49.9473**	1.070	2.1	ug/L	48	Standard
	Cu	65	130808.8	3.9	**50.3637**	1.512	3.0	ug/L	211	Standard
	Zn	66	61525.8	4.5	**49.3194**	2.153	4.4	ug/L	477	Standard
>	**Ge**	72	530598.7	1.0				ug/L	543406	Standard
	As	75	63988.1	2.4	**47.9125**	1.041	2.2	ug/L	-90	Standard
	Se	82	6552.1	2.7	**49.0113**	1.006	2.1	ug/L	31	Standard
	Se-1	77	4376.6	2.1	**48.4270**	0.895	1.8	ug/L	117	Standard
>	**Ga**	71	48.3	15.8				mg/L	22	Standard
	Rb	85	185.0	18.7				ug/L	53	Standard
	Y	89	551100.3	1.7				ug/L	557276	Standard
>	**Rh**	103	46.7	16.4				ug/L	12	Standard
	Mo	98	110.3	7.6	**0.0171**	0.002	12.9	ug/L	159	Standard
	Ag	107	499987.5	1.5	**48.0092**	0.751	1.6	ug/L	102	Standard
	Cd	111	141818.3	3.6	**49.4867**	1.814	3.7	mg/L	4	Standard
	Cd	114	341917.8	5.3	**48.2419**	2.377	4.9	ug/L	34	Standard
>	**In**	115	861889.0	1.1				ug/L	828245	Standard
	Sn	118	980.0	10.2	**0.0285**	0.011	36.9	ug/L	850	Standard
	Sb	123	307338.8	2.1	**49.5059**	0.919	1.9	ug/L	499	Standard
	Ba	135	160457.9	2.8	**47.3190**	1.374	2.9	ug/L	23	Standard
	Ce	140	26324.5	1.3				ug/L	45	Standard
>	**Tb**	159	1414531.9	1.3				ug/L	1408642	Standard
	Ho	165	11.7	24.7				ug/L	15	Standard
	Tl	203	524177.2	1.7	**49.5211**	1.141	2.3	ug/L	5	Standard
	Tl	205	445310.8	2.8	**50.3523**	2.083	4.1	ug/L	8	Standard
	Pb	206	380502.3	2.2	**50.8059**	1.545	3.0	ug/L	348	Standard
	Pb	207	327938.9	2.6	**48.6664**	1.827	3.8	ug/L	284	Standard
	Pb	208	1014631.8	2.4	**48.9507**	1.742	3.6	ug/L	938	Standard
	U	238	355654.0	2.7	**50.0927**	1.789	3.6	ug/L	3	Standard
>	**Bi**	209	601840.6	1.3				ug/L	615841	Standard

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Na	23	1.7	173.2	**3.6848**	6.374	173.0	mg/L	3	Standard
Mg	24	110.0	12.0	**0.0280**	0.010	36.4	mg/L	68	Standard
K	39	3.3	173.2	**-0.0439**	0.017	37.8	mg/L	23	Standard
Ca	43	60.0	36.3	**1.2411**	1.454	117.2	mg/L	52	Standard
Fe	54	206.3	17.4	**0.0223**	0.025	110.1	mg/L	214	Standard
Fe	57	235.0	11.8	**0.0849**	0.056	66.4	mg/L	213	Standard
> **Sc-1**	45	45337.8	2.6				mg/L	49932	Standard
Cl	35	25159.5	1.8				ug/L	23537	Standard
Kr	83	3.3	45.8				ug/L	3	Standard
Br	81	1713.4	5.5				ug/L	1553	Standard
P	31	18044.1	2.4				ug/L	15523	Standard
S	34	1001.7	6.8				ug/L	1052	Standard
Sr	88	145.0	15.0				ug/L	147	Standard
C	12	546.7	15.6				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	19.2	102.9				mg/L	29	Standard
Ho-1	165	11.7	24.7				mg/L	15	Standard
Er	166	16.7	34.6				mg/L	23	Standard
I	127	1070.0	7.3				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		122.921	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.643	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.062
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.727
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1502092307 WG512947-01
Sample Date/Time: Monday, February 23, 2015 19:34:49
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	136878.9	1.0				ug/L	102148	Standard
	Be	9	2351.8	1.7	**1.2537**	0.032	2.6	ug/L	8	Standard
	Al	27	19918300.8	1.2	**95.9689**	1.534	1.6	ug/L	1058	Standard
	Sc	45	44216.2	4.9				ug/L	49932	Standard
	Ti	47	94.3	37.5	**0.2888**	0.136	47.0	ug/L	25	Standard
	V	51	13286.6	4.6	**1.2684**	0.065	5.1	ug/L	2343	Standard
	Cr	52	12606.9	4.6	**0.4306**	0.070	16.3	ug/L	9255	Standard
	Cr	53	950.0	7.9	**0.5123**	0.064	12.5	ug/L	355	Standard
	Mn	55	17048412.0	3.9	**1293.3466**	42.988	3.3	ug/L	920	Standard
	Co	59	453105.5	1.9	**42.5439**	0.724	1.7	ug/L	117	Standard
	Ni	60	193869.9	3.1	**74.3021**	1.785	2.4	ug/L	48	Standard
	Cu	65	11434.3	2.2	**4.3892**	0.073	1.7	ug/L	211	Standard
	Zn	66	268064.2	2.9	**219.7634**	5.775	2.6	ug/L	477	Standard
>	**Ge**	72	521710.6	0.7				ug/L	543406	Standard
	As	75	13556.0	2.7	**10.4006**	0.233	2.2	ug/L	-90	Standard
	Se	82	123.0	7.0	**0.7404**	0.061	8.2	ug/L	31	Standard
	Se-1	77	163.0	5.6	**0.5513**	0.094	17.0	ug/L	117	Standard
>	**Ga**	71	571.7	18.4				mg/L	22	Standard
	Rb	85	55576.8	2.9				ug/L	53	Standard
	Y	89	918960.5	2.3				ug/L	557276	Standard
>	**Rh**	103	125.0	35.6				ug/L	12	Standard
	Mo	98	163.6	6.4	**0.0356**	0.003	9.5	ug/L	159	Standard
	Ag	107	267.7	50.7	**0.0084**	0.014	161.7	ug/L	102	Standard
	Cd	111	324.4	7.4	**0.1091**	0.008	7.7	mg/L	4	Standard
	Cd	114	726.7	25.9	**0.0917**	0.027	29.2	ug/L	34	Standard
>	**In**	115	826975.0	0.8				ug/L	828245	Standard
	Sn	118	746.7	3.0	**0.0051**	0.003	57.7	ug/L	850	Standard
	Sb	123	500.1	14.7	**0.0653**	0.012	17.8	ug/L	499	Standard
	Ba	135	13716.5	4.0	**4.2013**	0.167	4.0	ug/L	23	Standard
	Ce	140	335387.1	3.2				ug/L	45	Standard
>	**Tb**	159	1270851.3	1.2				ug/L	1408642	Standard
	Ho	165	29707.5	3.5				ug/L	15	Standard
	Tl	203	488.0	33.6	**0.0433**	0.017	39.4	ug/L	5	Standard
	Tl	205	435.0	56.9	**0.0472**	0.030	64.3	ug/L	8	Standard
	Pb	206	885.4	15.4	**0.0803**	0.020	25.4	ug/L	348	Standard
	Pb	207	691.0	13.7	**0.0594**	0.016	26.7	ug/L	284	Standard
	Pb	208	2254.4	16.8	**0.0646**	0.020	30.6	ug/L	938	Standard
	U	238	1676.8	13.9	**0.2542**	0.036	14.1	ug/L	3	Standard
>	**Bi**	209	553972.3	0.6				ug/L	615841	Standard

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Na	23	26.7	39.0	**59.5140**	24.264	40.8	mg/L	3	Standard
Mg	24	1118.4	6.0	**1.0608**	0.117	11.0	mg/L	68	Standard
K	39	425.0	10.6	**1.2333**	0.074	6.0	mg/L	23	Standard
Ca	43	1008.4	10.5	**72.0558**	4.601	6.4	mg/L	52	Standard
Fe	54	143444.3	1.8	**102.8633**	3.837	3.7	mg/L	214	Standard
Fe	57	40584.3	2.6	**106.9954**	2.530	2.4	mg/L	213	Standard
Sc-1	45	44216.2	4.9				mg/L	49932	Standard
Cl	35	65064.3	4.7				ug/L	23537	Standard
Kr	83	3.3	91.7				ug/L	3	Standard
Br	81	2220.2	2.7				ug/L	1553	Standard
P	31	20493.9	7.0				ug/L	15523	Standard
S	34	825.0	15.4				ug/L	1052	Standard
Sr	88	550.0	11.6				ug/L	147	Standard
C	12	716.7	6.4				mg/L	397	Standard
N	14	6.7	173.2				mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	41754.8	3.0				mg/L	29	Standard
Ho-1	165	29707.5	3.5				mg/L	15	Standard
Er	166	25177.6	4.6				mg/L	23	Standard
I	127	10492.0	2.5				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		134.000	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.007	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.847
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	89.954
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1502092307DP WG512947-04
Sample Date/Time: Monday, February 23, 2015 19:38:01
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	143164.0	4.4				ug/L	102148	Standard
	Be	9	2496.9	3.4	**1.2754**	0.098	7.7	ug/L	8	Standard
	Al	27	20474280.8	5.3	**94.3013**	2.338	2.5	ug/L	1058	Standard
	Sc	45	40604.3	1.6				ug/L	49932	Standard
	Ti	47	79.7	10.1	**0.2351**	0.035	14.7	ug/L	25	Standard
	V	51	13912.1	3.5	**1.3580**	0.076	5.6	ug/L	2343	Standard
	Cr	52	12424.4	1.1	**0.4237**	0.032	7.6	ug/L	9255	Standard
	Cr	53	906.7	7.2	**0.4806**	0.052	10.7	ug/L	355	Standard
	Mn	55	18504119.6	2.7	**1418.1098**	47.821	3.4	ug/L	920	Standard
	Co	59	488394.8	3.8	**46.3305**	2.275	4.9	ug/L	117	Standard
	Ni	60	200320.7	1.2	**77.5567**	1.817	2.3	ug/L	48	Standard
	Cu	65	11766.2	1.6	**4.5660**	0.110	2.4	ug/L	211	Standard
	Zn	66	286472.6	1.6	**237.2650**	6.500	2.7	ug/L	477	Standard
>	**Ge**	72	516601.1	1.2				ug/L	543406	Standard
	As	75	14589.7	1.7	**11.2975**	0.250	2.2	ug/L	-90	Standard
	Se	82	139.5	8.7	**0.8764**	0.081	9.3	ug/L	31	Standard
	Se-1	77	161.0	6.0	**0.5472**	0.115	21.0	ug/L	117	Standard
>	**Ga**	71	685.0	6.2				mg/L	22	Standard
	Rb	85	59496.6	2.4				ug/L	53	Standard
	Y	89	991264.2	1.7				ug/L	557276	Standard
>	**Rh**	103	130.0	10.2				ug/L	12	Standard
	Mo	98	158.1	1.8	**0.0328**	0.001	4.3	ug/L	159	Standard
	Ag	107	110.3	11.8	**-0.0076**	0.001	14.7	ug/L	102	Standard
	Cd	111	310.1	3.5	**0.1015**	0.003	2.9	mg/L	4	Standard
	Cd	114	815.3	4.9	**0.1024**	0.007	7.2	ug/L	34	Standard
>	**In**	115	844810.9	1.6				ug/L	828245	Standard
	Sn	118	1106.7	2.6	**0.0459**	0.004	8.5	ug/L	850	Standard
	Sb	123	172.0	23.8	**0.0096**	0.006	65.7	ug/L	499	Standard
	Ba	135	14273.4	3.8	**4.2821**	0.225	5.3	ug/L	23	Standard
	Ce	140	353862.9	2.5				ug/L	45	Standard
>	**Tb**	159	1233937.6	1.6				ug/L	1408642	Standard
	Ho	165	30163.3	2.1				ug/L	15	Standard
	Tl	203	310.3	2.1	**0.0248**	0.001	4.8	ug/L	5	Standard
	Tl	205	281.7	13.8	**0.0282**	0.005	17.8	ug/L	8	Standard
	Pb	206	790.7	2.8	**0.0657**	0.004	6.5	ug/L	348	Standard
	Pb	207	645.3	4.9	**0.0513**	0.007	13.3	ug/L	284	Standard
	Pb	208	2066.4	7.3	**0.0541**	0.009	15.8	ug/L	938	Standard
	U	238	1618.8	6.6	**0.2437**	0.017	7.0	ug/L	3	Standard
>	**Bi**	209	557773.0	1.9				ug/L	615841	Standard

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Na	23	23.3	65.5	**56.7733**	37.950	66.8	mg/L	3	Standard
Mg	24	1118.4	6.3	**1.1594**	0.091	7.9	mg/L	68	Standard
K	39	410.0	6.5	**1.3008**	0.085	6.5	mg/L	23	Standard
Ca	43	950.0	2.9	**74.1181**	1.717	2.3	mg/L	52	Standard
Fe	54	154206.9	3.8	**120.3194**	4.948	4.1	mg/L	214	Standard
Fe	57	43378.7	1.3	**124.5618**	3.491	2.8	mg/L	213	Standard
> **Sc-1**	45	40604.3	1.6				mg/L	49932	Standard
Cl	35	62526.3	4.7				ug/L	23537	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	3610.4	8.5				ug/L	1553	Standard
P	31	20412.2	10.6				ug/L	15523	Standard
S	34	771.7	6.7				ug/L	1052	Standard
Sr	88	670.0	5.8				ug/L	147	Standard
C	12	993.4	15.2				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	47440.5	2.3				mg/L	29	Standard
Ho-1	165	30163.3	2.1				mg/L	15	Standard
Er	166	26673.5	4.3				mg/L	23	Standard
I	127	7887.1	6.0				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		140.153	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.067	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.000	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	90.571	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1502092307DP WG512947-04
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Method 6020 - Summary Report

Sample ID: L1502092307S WG512947-05
Sample Date/Time: Monday, February 23, 2015 19:41:12
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	150729.5	1.7				ug/L	102148	Standard
	Be	9	81842.1	1.3	**39.9415**	0.795	2.0	ug/L	8	Standard
	Al	27	18564858.4	5.1	**81.2376**	4.391	5.4	ug/L	1058	Standard
	Sc	45	39118.8	4.7				ug/L	49932	Standard
	Ti	47	97.3	4.9	**0.3036**	0.016	5.1	ug/L	25	Standard
	V	51	424002.5	3.8	**49.4172**	2.185	4.4	ug/L	2343	Standard
	Cr	52	420373.7	3.1	**49.4351**	1.822	3.7	ug/L	9255	Standard
	Cr	53	53701.7	2.7	**49.3175**	1.744	3.5	ug/L	355	Standard
	Mn	55	17230662.9	3.3	**1316.2995**	54.911	4.2	ug/L	920	Standard
	Co	59	965817.7	3.4	**91.3233**	3.579	3.9	ug/L	117	Standard
	Ni	60	314897.4	2.6	**121.5259**	3.409	2.8	ug/L	48	Standard
	Cu	65	135549.4	3.2	**53.4471**	1.780	3.3	ug/L	211	Standard
	Zn	66	330706.4	2.0	**273.0538**	7.659	2.8	ug/L	477	Standard
>	**Ge**	72	518275.8	0.9				ug/L	543406	Standard
	As	75	83171.2	1.6	**63.7315**	1.466	2.3	ug/L	-90	Standard
	Se	82	7609.1	2.3	**58.3216**	1.723	3.0	ug/L	31	Standard
	Se-1	77	4798.8	3.4	**54.5373**	2.371	4.3	ug/L	117	Standard
>	**Ga**	71	688.3	10.8				mg/L	22	Standard
	Rb	85	55924.7	1.1				ug/L	53	Standard
	Y	89	983009.1	2.6				ug/L	557276	Standard
>	**Rh**	103	175.0	29.8				ug/L	12	Standard
	Mo	98	200.0	2.6	**0.0439**	0.001	3.1	ug/L	159	Standard
	Ag	107	478595.2	1.4	**45.4122**	1.027	2.3	ug/L	102	Standard
	Cd	111	142155.5	1.3	**49.0173**	0.926	1.9	mg/L	4	Standard
	Cd	114	358034.2	1.0	**49.9256**	0.943	1.9	ug/L	34	Standard
>	**In**	115	872242.5	0.9				ug/L	828245	Standard
	Sn	118	1216.7	52.3	**0.0540**	0.072	132.6	ug/L	850	Standard
	Sb	123	287819.2	4.1	**45.8228**	2.255	4.9	ug/L	499	Standard
	Ba	135	156203.0	2.2	**45.5219**	1.368	3.0	ug/L	23	Standard
	Ce	140	330424.1	2.7				ug/L	45	Standard
>	**Tb**	159	1247494.5	1.6				ug/L	1408642	Standard
	Ho	165	29219.8	2.2				ug/L	15	Standard
	Tl	203	529533.6	1.6	**52.6424**	0.765	1.5	ug/L	5	Standard
	Tl	205	473741.8	1.6	**56.3547**	0.800	1.4	ug/L	8	Standard
	Pb	206	384161.0	2.9	**53.9737**	1.453	2.7	ug/L	348	Standard
	Pb	207	333221.6	2.9	**52.0297**	1.418	2.7	ug/L	284	Standard
	Pb	208	995623.8	2.0	**50.5388**	0.976	1.9	ug/L	938	Standard
	U	238	394873.0	1.0	**58.5180**	0.492	0.8	ug/L	3	Standard
>	**Bi**	209	571856.5	0.2				ug/L	615841	Standard

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Na	23	30.0	28.9	**75.3841**	21.300	28.3	mg/L	3	Standard
Mg	24	1140.0	8.3	**1.2294**	0.055	4.5	mg/L	68	Standard
K	39	320.0	7.2	**1.0457**	0.099	9.5	mg/L	23	Standard
Ca	43	891.7	17.4	**72.0327**	11.343	15.7	mg/L	52	Standard
Fe	54	146977.0	0.4	**119.2027**	6.117	5.1	mg/L	214	Standard
Fe	57	40397.2	4.3	**120.3687**	0.778	0.6	mg/L	213	Standard
Sc-1	45	39118.8	4.7				mg/L	49932	Standard
Cl	35	54821.0	2.5				ug/L	23537	Standard
Kr	83	1.0	0.0				ug/L	3	Standard
Br	81	3100.3	10.7				ug/L	1553	Standard
P	31	19360.7	4.2				ug/L	15523	Standard
S	34	711.7	6.8				ug/L	1052	Standard
Sr	88	645.0	6.3				ug/L	147	Standard
C	12	986.7	19.7				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	43723.3	3.7				mg/L	29	Standard
Ho-1	165	29219.8	2.2				mg/L	15	Standard
Er	166	25398.0	5.0				mg/L	23	Standard
I	127	8684.2	3.9				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		147.559	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.375	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	105.312	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	92.858	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	

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Zn 66 Upper, S, EEE	Zn	66

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Method 6020 - Summary Report

Sample ID: L1502092307SD WG512947-06
Sample Date/Time: Monday, February 23, 2015 19:44:23
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	153546.0	2.3				ug/L	102148	Standard
	Be	9	80319.1	2.4	**38.4917**	1.504	3.9	ug/L	8	Standard
	Al	27	18877703.3	4.6	**81.0477**	2.005	2.5	ug/L	1058	Standard
	Sc	45	37417.8	1.7				ug/L	49932	Standard
	Ti	47	73.7	13.6	**0.2080**	0.042	20.2	ug/L	25	Standard
	V	51	420694.1	2.1	**48.5961**	0.443	0.9	ug/L	2343	Standard
	Cr	52	414176.3	2.4	**48.2541**	0.596	1.2	ug/L	9255	Standard
	Cr	53	51422.2	3.7	**46.7846**	1.210	2.6	ug/L	355	Standard
	Mn	55	17655120.0	2.5	**1336.7774**	19.122	1.4	ug/L	920	Standard
	Co	59	975916.7	0.8	**91.4791**	0.387	0.4	ug/L	117	Standard
	Ni	60	313920.4	2.8	**120.0920**	2.129	1.8	ug/L	48	Standard
	Cu	65	133887.4	1.8	**52.3339**	0.301	0.6	ug/L	211	Standard
	Zn	66	340444.1	1.4	**278.6527**	0.733	0.3	ug/L	477	Standard
>	**Ge**	72	522738.0	1.2				ug/L	543406	Standard
	As	75	82956.4	2.1	**63.0137**	0.651	1.0	ug/L	-90	Standard
	Se	82	7660.5	2.3	**58.2009**	0.630	1.1	ug/L	31	Standard
	Se-1	77	4722.1	5.2	**53.1484**	2.353	4.4	ug/L	117	Standard
>	**Ga**	71	638.3	7.8				mg/L	22	Standard
	Rb	85	58715.3	2.6				ug/L	53	Standard
	Y	89	992034.2	1.9				ug/L	557276	Standard
>	**Rh**	103	151.7	34.3				ug/L	12	Standard
	Mo	98	221.7	9.8	**0.0514**	0.007	13.5	ug/L	159	Standard
	Ag	107	471831.3	1.4	**45.3619**	0.553	1.2	ug/L	102	Standard
	Cd	111	139640.1	2.1	**48.7904**	1.138	2.3	mg/L	4	Standard
	Cd	114	343140.2	2.3	**48.4841**	1.238	2.6	ug/L	34	Standard
>	**In**	115	860749.6	0.6				ug/L	828245	Standard
	Sn	118	948.4	10.0	**0.0250**	0.011	43.3	ug/L	850	Standard
	Sb	123	283741.0	2.2	**45.7657**	1.108	2.4	ug/L	499	Standard
	Ba	135	154419.8	1.9	**45.5967**	0.936	2.1	ug/L	23	Standard
	Ce	140	331448.7	2.0				ug/L	45	Standard
>	**Tb**	159	1227420.8	1.3				ug/L	1408642	Standard
	Ho	165	29340.1	1.7				ug/L	15	Standard
	Tl	203	520949.8	1.3	**51.4805**	0.467	0.9	ug/L	5	Standard
	Tl	205	461994.0	3.7	**54.6259**	1.800	3.3	ug/L	8	Standard
	Pb	206	381768.5	1.1	**53.3192**	0.445	0.8	ug/L	348	Standard
	Pb	207	330983.7	2.6	**51.3710**	1.145	2.2	ug/L	284	Standard
	Pb	208	984774.3	2.5	**49.6875**	1.055	2.1	ug/L	938	Standard
	U	238	389470.1	2.3	**57.3716**	1.044	1.8	ug/L	3	Standard
>	**Bi**	209	575276.1	0.5				ug/L	615841	Standard

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Na	23	20.0	50.0	**52.5424**	26.505	50.4	mg/L	3	Standard
Mg	24	975.0	6.5	**1.0922**	0.084	7.7	mg/L	68	Standard
K	39	253.3	5.0	**0.8547**	0.047	5.5	mg/L	23	Standard
Ca	43	801.7	8.5	**67.5597**	4.760	7.0	mg/L	52	Standard
Fe	54	148163.2	3.8	**125.4362**	4.519	3.6	mg/L	214	Standard
Fe	57	39331.0	4.0	**122.4824**	2.832	2.3	mg/L	213	Standard
Sc-1	45	37417.8	1.7				mg/L	49932	Standard
Cl	35	51140.9	4.5				ug/L	23537	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	4447.3	7.8				ug/L	1553	Standard
P	31	20592.4	6.6				ug/L	15523	Standard
S	34	691.7	12.0				ug/L	1052	Standard
Sr	88	795.0	9.1				ug/L	147	Standard
C	12	1060.0	17.2				mg/L	397	Standard
N	14	10.0	100.0				mg/L	3	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	44321.2	2.0				mg/L	29	Standard
Ho-1	165	29340.1	1.7				mg/L	15	Standard
Er	166	26526.5	0.4				mg/L	23	Standard
I	127	8865.9	2.8				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		150.317	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.197	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.925
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.413
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	

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Zn 66 Upper, S, EEE	Zn	66

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Method 6020 - Summary Report

Sample ID: L1502092301
Sample Date/Time: Monday, February 23, 2015 19:47:34
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	153847.4	2.1				ug/L	102148	Standard
	Be	9	1186.7	2.9	**0.5569**	0.004	0.8	ug/L	8	Standard
	Al	27	35656823.6	6.0	**152.7687**	5.909	3.9	ug/L	1058	Standard
	Sc	45	37467.9	0.5				ug/L	49932	Standard
	Ti	47	1511.1	7.5	**6.0165**	0.365	6.1	ug/L	25	Standard
	V	51	7969.1	2.2	**0.6771**	0.007	1.0	ug/L	2343	Standard
	Cr	52	18689.2	2.0	**1.2230**	0.040	3.3	ug/L	9255	Standard
	Cr	53	1643.4	5.7	**1.1956**	0.109	9.1	ug/L	355	Standard
	Mn	55	8606173.1	3.4	**672.2480**	13.088	1.9	ug/L	920	Standard
	Co	59	161795.7	3.5	**15.6289**	0.341	2.2	ug/L	117	Standard
	Ni	60	83955.0	2.4	**33.1185**	0.369	1.1	ug/L	48	Standard
	Cu	65	21766.3	4.0	**8.6959**	0.218	2.5	ug/L	211	Standard
	Zn	66	71956.6	3.4	**60.4823**	1.310	2.2	ug/L	477	Standard
>	**Ge**	72	506627.2	1.6				ug/L	543406	Standard
	As	75	875.4	7.4	**0.7846**	0.056	7.1	ug/L	-90	Standard
	Se	82	122.8	14.6	**0.7677**	0.153	19.9	ug/L	31	Standard
	Se-1	77	127.0	7.5	**0.1799**	0.125	69.6	ug/L	117	Standard
>	**Ga**	71	681.7	6.2				mg/L	22	Standard
	Rb	85	83829.7	2.5				ug/L	53	Standard
	Y	89	693246.6	4.1				ug/L	557276	Standard
>	**Rh**	103	236.7	31.7				ug/L	12	Standard
	Mo	98	210.8	6.7	**0.0469**	0.004	8.4	ug/L	159	Standard
	Ag	107	213.3	43.6	**0.0018**	0.009	491.8	ug/L	102	Standard
	Cd	111	440.4	13.4	**0.1425**	0.021	14.6	mg/L	4	Standard
	Cd	114	986.6	17.0	**0.1221**	0.024	19.4	ug/L	34	Standard
>	**In**	115	875018.5	1.0				ug/L	828245	Standard
	Sn	118	810.0	13.5	**0.0074**	0.013	171.8	ug/L	850	Standard
	Sb	123	539.5	13.6	**0.0670**	0.012	18.0	ug/L	499	Standard
	Ba	135	21752.9	2.3	**6.3049**	0.143	2.3	ug/L	23	Standard
	Ce	140	89311.0	3.2				ug/L	45	Standard
>	**Tb**	159	1288382.6	1.3				ug/L	1408642	Standard
	Ho	165	9733.1	1.6				ug/L	15	Standard
	Tl	203	513.7	23.9	**0.0453**	0.012	26.4	ug/L	5	Standard
	Tl	205	410.0	7.6	**0.0437**	0.004	9.4	ug/L	8	Standard
	Pb	206	1012.7	11.2	**0.0974**	0.015	15.9	ug/L	348	Standard
	Pb	207	785.7	12.0	**0.0734**	0.014	19.1	ug/L	284	Standard
	Pb	208	2449.4	0.1	**0.0738**	0.001	1.5	ug/L	938	Standard
	U	238	3040.0	1.7	**0.4589**	0.012	2.5	ug/L	3	Standard
>	**Bi**	209	558662.5	0.9				ug/L	615841	Standard

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Na	23	35.0	37.8	**91.8646**	34.932	38.0	mg/L	3	Standard
Mg	24	5892.8	2.2	**6.9972**	0.124	1.8	mg/L	68	Standard
K	39	425.0	17.6	**1.4673**	0.263	17.9	mg/L	23	Standard
Ca	43	1058.4	9.3	**90.1498**	8.977	10.0	mg/L	52	Standard
Fe	54	11951.4	4.7	**9.9929**	0.493	4.9	mg/L	214	Standard
Fe	57	3598.8	4.4	**10.7209**	0.469	4.4	mg/L	213	Standard
> **Sc-1**	45	37467.9	0.5				mg/L	49932	Standard
Cl	35	35092.6	0.8				ug/L	23537	Standard
Kr	83	5.0	34.6				ug/L	3	Standard
Br	81	4497.3	4.4				ug/L	1553	Standard
P	31	19634.4	4.7				ug/L	15523	Standard
S	34	650.0	9.2				ug/L	1052	Standard
Sr	88	1055.0	1.4				ug/L	147	Standard
C	12	1330.1	7.2				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	14644.2	10.6				mg/L	29	Standard
Ho-1	165	9733.1	1.6				mg/L	15	Standard
Er	166	8072.2	6.5				mg/L	23	Standard
I	127	7598.6	3.0				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		150.612	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.232	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	105.647	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	90.715	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1502092301
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Method 6020 - Summary Report

Sample ID: L1502092302
Sample Date/Time: Monday, February 23, 2015 19:50:45
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	157519.6	0.8				ug/L	102148	Standard
	Be	9	106.7	5.4	**0.0393**	0.003	6.9	ug/L	8	Standard
	Al	27	29983108.2	3.0	**125.5276**	3.563	2.8	ug/L	1058	Standard
	Sc	45	36908.2	1.7				ug/L	49932	Standard
	Ti	47	151.3	7.8	**0.5231**	0.049	9.3	ug/L	25	Standard
	V	51	2822.0	2.8	**0.0559**	0.005	9.3	ug/L	2343	Standard
	Cr	52	11085.1	2.7	**0.2714**	0.026	9.6	ug/L	9255	Standard
	Cr	53	675.0	6.6	**0.2702**	0.034	12.5	ug/L	355	Standard
	Mn	55	1356936.9	2.3	**104.6480**	2.993	2.9	ug/L	920	Standard
	Co	59	17426.4	3.1	**1.6458**	0.070	4.3	ug/L	117	Standard
	Ni	60	18938.2	3.0	**7.3569**	0.283	3.8	ug/L	48	Standard
	Cu	65	16678.9	4.6	**6.5618**	0.383	5.8	ug/L	211	Standard
	Zn	66	17412.0	4.4	**14.1919**	0.802	5.6	ug/L	477	Standard
>	**Ge**	72	512980.8	1.4				ug/L	543406	Standard
	As	75	91.6	14.0	**0.1701**	0.010	6.1	ug/L	-90	Standard
	Se	82	88.4	14.3	**0.4886**	0.106	21.7	ug/L	31	Standard
	Se-1	77	106.7	11.9	**-0.0798**	0.136	170.2	ug/L	117	Standard
>	**Ga**	71	143.3	10.1				mg/L	22	Standard
	Rb	85	86369.0	3.5				ug/L	53	Standard
	Y	89	595010.5	0.9				ug/L	557276	Standard
>	**Rh**	103	166.7	17.6				ug/L	12	Standard
	Mo	98	250.5	2.5	**0.0565**	0.003	5.0	ug/L	159	Standard
	Ag	107	224.3	11.9	**0.0021**	0.002	102.0	ug/L	102	Standard
	Cd	111	669.3	8.3	**0.2137**	0.016	7.4	mg/L	4	Standard
	Cd	114	1513.3	6.8	**0.1885**	0.012	6.6	ug/L	34	Standard
>	**In**	115	903937.8	1.3				ug/L	828245	Standard
	Sn	118	1246.7	6.0	**0.0529**	0.010	18.8	ug/L	850	Standard
	Sb	123	393.0	6.4	**0.0418**	0.005	11.1	ug/L	499	Standard
	Ba	135	8837.6	4.0	**2.4694**	0.067	2.7	ug/L	23	Standard
	Ce	140	6646.5	2.9				ug/L	45	Standard
>	**Tb**	159	1345879.1	1.7				ug/L	1408642	Standard
	Ho	165	636.7	2.3				ug/L	15	Standard
	Tl	203	307.7	7.5	**0.0234**	0.002	9.9	ug/L	5	Standard
	Tl	205	460.0	84.7	**0.0479**	0.046	95.2	ug/L	8	Standard
	Pb	206	4524.0	3.8	**0.5825**	0.022	3.8	ug/L	348	Standard
	Pb	207	3659.4	3.1	**0.5149**	0.017	3.3	ug/L	284	Standard
	Pb	208	11591.1	6.9	**0.5303**	0.037	7.1	ug/L	938	Standard
	U	238	1301.7	23.8	**0.1888**	0.044	23.5	ug/L	3	Standard
>	**Bi**	209	576744.8	0.5				ug/L	615841	Standard

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Na	23	25.0	69.3	**66.1200**	44.687	67.6	mg/L	3	Standard
Mg	24	6748.2	4.2	**8.1514**	0.433	5.3	mg/L	68	Standard
K	39	468.3	4.9	**1.6479**	0.058	3.5	mg/L	23	Standard
Ca	43	658.3	3.4	**55.7600**	1.080	1.9	mg/L	52	Standard
Fe	54	1050.9	9.3	**0.7816**	0.094	12.0	mg/L	214	Standard
Fe	57	613.3	22.0	**1.4262**	0.444	31.1	mg/L	213	Standard
> **Sc-1**	45	36908.2	1.7				mg/L	49932	Standard
Cl	35	37590.6	1.9				ug/L	23537	Standard
Kr	83	3.7	63.0				ug/L	3	Standard
Br	81	4260.6	3.6				ug/L	1553	Standard
P	31	20253.6	6.7				ug/L	15523	Standard
S	34	655.0	2.8				ug/L	1052	Standard
Sr	88	650.0	4.8				ug/L	147	Standard
C	12	953.4	25.2				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	982.6	3.8				mg/L	29	Standard
Ho-1	165	636.7	2.3				mg/L	15	Standard
Er	166	503.3	13.2				mg/L	23	Standard
I	127	8320.6	9.4				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		154.207	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.401	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.139
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.652
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1502092302PS WG513055-01
Sample Date/Time: Monday, February 23, 2015 19:53:57
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	154862.2	5.3				ug/L	102148	Standard
	Be	9	81512.5	6.0	**38.8595**	4.348	11.2	ug/L	8	Standard
	Al	27	29438720.1	2.6	**125.4871**	3.490	2.8	ug/L	1058	Standard
	Sc	45	35835.7	1.1				ug/L	49932	Standard
	Ti	47	133.3	7.0	**0.4439**	0.037	8.3	ug/L	25	Standard
	V	51	415795.7	3.1	**48.2793**	1.748	3.6	ug/L	2343	Standard
	Cr	52	419650.5	2.7	**49.1613**	1.255	2.6	ug/L	9255	Standard
	Cr	53	53037.9	5.6	**48.5405**	3.256	6.7	ug/L	355	Standard
	Mn	55	1972373.0	3.9	**150.0729**	7.196	4.8	ug/L	920	Standard
	Co	59	547653.5	4.0	**51.5916**	2.342	4.5	ug/L	117	Standard
	Ni	60	147752.7	1.8	**56.8055**	1.434	2.5	ug/L	48	Standard
	Cu	65	144311.4	3.0	**56.7098**	2.017	3.6	ug/L	211	Standard
	Zn	66	79489.7	2.3	**65.1210**	1.647	2.5	ug/L	477	Standard
>	**Ge**	72	520150.9	1.4				ug/L	543406	Standard
	As	75	71725.3	2.4	**54.7741**	1.311	2.4	ug/L	-90	Standard
	Se	82	7816.0	1.8	**59.6932**	1.163	1.9	ug/L	31	Standard
	Se-1	77	4691.4	1.4	**53.0794**	0.572	1.1	ug/L	117	Standard
>	**Ga**	71	168.3	17.4				mg/L	22	Standard
	Rb	85	84639.2	2.5				ug/L	53	Standard
	Y	89	591665.1	1.0				ug/L	557276	Standard
>	**Rh**	103	165.0	13.2				ug/L	12	Standard
	Mo	98	327.9	5.2	**0.0798**	0.005	5.9	ug/L	159	Standard
	Ag	107	490945.9	1.7	**45.2922**	1.197	2.6	ug/L	102	Standard
	Cd	111	152981.1	1.8	**51.2899**	1.420	2.8	mg/L	4	Standard
	Cd	114	370639.3	3.2	**50.2477**	1.753	3.5	ug/L	34	Standard
>	**In**	115	897156.5	1.0				ug/L	828245	Standard
	Sn	118	1358.4	10.3	**0.0663**	0.014	21.6	ug/L	850	Standard
	Sb	123	275530.4	3.8	**42.6441**	1.928	4.5	ug/L	499	Standard
	Ba	135	161489.5	2.8	**45.7576**	1.689	3.7	ug/L	23	Standard
	Ce	140	6526.4	4.8				ug/L	45	Standard
>	**Tb**	159	1325642.0	0.5				ug/L	1408642	Standard
	Ho	165	571.7	11.0				ug/L	15	Standard
	Tl	203	543404.1	3.1	**53.1146**	1.442	2.7	ug/L	5	Standard
	Tl	205	472926.7	1.5	**55.3160**	0.601	1.1	ug/L	8	Standard
	Pb	206	384509.7	2.0	**53.1175**	0.836	1.6	ug/L	348	Standard
	Pb	207	348783.0	1.8	**53.5493**	0.758	1.4	ug/L	284	Standard
	Pb	208	1020258.8	2.3	**50.9215**	1.002	2.0	ug/L	938	Standard
	U	238	400912.1	2.2	**58.4174**	1.069	1.8	ug/L	3	Standard
>	**Bi**	209	581585.6	0.4				ug/L	615841	Standard

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Na	23	18.3	31.5	**50.2142**	15.378	30.6	mg/L	3	Standard
Mg	24	6943.3	3.6	**8.6383**	0.258	3.0	mg/L	68	Standard
K	39	430.0	12.1	**1.5550**	0.181	11.7	mg/L	23	Standard
Ca	43	583.3	4.1	**50.6289**	2.232	4.4	mg/L	52	Standard
Fe	54	975.1	1.5	**0.7409**	0.014	1.9	mg/L	214	Standard
Fe	57	531.7	4.7	**1.2161**	0.091	7.5	mg/L	213	Standard
> **Sc-1**	45	35835.7	1.1				mg/L	49932	Standard
Cl	35	37664.1	1.2				ug/L	23537	Standard
Kr	83	4.3	48.0				ug/L	3	Standard
Br	81	4140.6	5.0				ug/L	1553	Standard
P	31	17461.7	5.1				ug/L	15523	Standard
S	34	735.0	10.7				ug/L	1052	Standard
Sr	88	728.4	13.0				ug/L	147	Standard
C	12	1006.7	15.9				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	986.4	11.7				mg/L	29	Standard
Ho-1	165	571.7	11.0				mg/L	15	Standard
Er	166	493.3	1.2				mg/L	23	Standard
I	127	8422.3	6.7				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		151.605	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.720	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	108.320
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.438
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1502092302SDL WG512055-02
Sample Date/Time: Monday, February 23, 2015 19:57:08
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	149611.9	2.1				ug/L	102148	Standard
	Be	9	50.0	26.5	**0.0140**	0.006	42.6	ug/L	8	Standard
	Al	27	6247071.9	4.0	**27.5393**	1.505	5.5	ug/L	1058	Standard
	Sc	45	37028.5	2.5				ug/L	49932	Standard
	Ti	47	45.0	23.2	**0.0933**	0.039	42.3	ug/L	25	Standard
	V	51	2582.3	7.8	**0.0182**	0.024	134.6	ug/L	2343	Standard
	Cr	52	10283.2	3.5	**0.1357**	0.046	33.9	ug/L	9255	Standard
	Cr	53	396.7	4.4	**-0.0010**	0.018	1696.5	ug/L	355	Standard
	Mn	55	288726.8	3.2	**21.5117**	0.711	3.3	ug/L	920	Standard
	Co	59	3853.8	9.8	**0.3372**	0.036	10.7	ug/L	117	Standard
	Ni	60	4164.2	3.2	**1.5434**	0.052	3.4	ug/L	48	Standard
	Cu	65	3772.8	3.7	**1.3617**	0.048	3.5	ug/L	211	Standard
	Zn	66	5328.3	3.8	**3.9561**	0.159	4.0	ug/L	477	Standard
>	**Ge**	72	529323.5	0.5				ug/L	543406	Standard
	As	75	-36.6	144.7	**0.0717**	0.040	55.5	ug/L	-90	Standard
	Se	82	50.9	22.1	**0.1835**	0.084	45.8	ug/L	31	Standard
	Se-1	77	110.7	11.5	**-0.0722**	0.141	195.1	ug/L	117	Standard
>	**Ga**	71	26.7	47.2				mg/L	22	Standard
	Rb	85	18207.6	4.9				ug/L	53	Standard
	Y	89	570680.9	1.8				ug/L	557276	Standard
>	**Rh**	103	31.7	24.1				ug/L	12	Standard
	Mo	98	64.0	22.9	**0.0020**	0.005	226.5	ug/L	159	Standard
	Ag	107	457.7	117.2	**0.0231**	0.048	209.6	ug/L	102	Standard
	Cd	111	138.2	13.2	**0.0369**	0.006	16.1	mg/L	4	Standard
	Cd	114	349.3	16.1	**0.0317**	0.007	22.0	ug/L	34	Standard
>	**In**	115	907532.1	1.4				ug/L	828245	Standard
	Sn	118	895.0	5.7	**0.0134**	0.006	41.1	ug/L	850	Standard
	Sb	123	1543.5	17.0	**0.2176**	0.040	18.5	ug/L	499	Standard
	Ba	135	1982.8	8.0	**0.5395**	0.037	6.9	ug/L	23	Standard
	Ce	140	1488.4	4.6				ug/L	45	Standard
>	**Tb**	159	1327789.0	2.2				ug/L	1408642	Standard
	Ho	165	145.0	9.1				ug/L	15	Standard
	Tl	203	380.0	131.0	**0.0292**	0.047	162.0	ug/L	5	Standard
	Tl	205	165.0	86.6	**0.0125**	0.016	129.7	ug/L	8	Standard
	Pb	206	1473.7	28.9	**0.1495**	0.057	38.0	ug/L	348	Standard
	Pb	207	1246.4	24.6	**0.1337**	0.045	33.8	ug/L	284	Standard
	Pb	208	3325.1	6.4	**0.1077**	0.009	8.8	ug/L	938	Standard
	U	238	292.0	27.8	**0.0390**	0.011	29.2	ug/L	3	Standard
>	**Bi**	209	599071.1	1.4				ug/L	615841	Standard

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Na	23	6.7	114.6	**17.9440**	20.878	116.4	mg/L	3	Standard
Mg	24	1426.7	2.0	**1.6533**	0.012	0.7	mg/L	68	Standard
K	39	126.7	12.1	**0.4046**	0.044	11.0	mg/L	23	Standard
Ca	43	121.7	30.3	**7.6948**	3.058	39.7	mg/L	52	Standard
Fe	54	356.9	7.3	**0.1841**	0.028	14.9	mg/L	214	Standard
Fe	57	270.0	3.2	**0.3333**	0.046	13.9	mg/L	213	Standard
> **Sc-1**	45	37028.5	2.5				mg/L	49932	Standard
Cl	35	27031.4	0.5				ug/L	23537	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	2166.8	8.7				ug/L	1553	Standard
P	31	16742.6	1.5				ug/L	15523	Standard
S	34	750.0	4.0				ug/L	1052	Standard
Sr	88	280.0	13.9				ug/L	147	Standard
C	12	756.7	21.1				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	237.3	10.3				mg/L	29	Standard
Ho-1	165	145.0	9.1				mg/L	15	Standard
Er	166	126.7	16.4				mg/L	23	Standard
I	127	2680.2	2.1				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		146.465	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.408	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.573
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.277
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, February 23, 2015 20:00:21
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	142297.3	3.7				ug/L	102148	Standard
	Be	9	81689.8	3.4	**42.2936**	2.913	6.9	ug/L	8	Standard
	Al	27	8014844.8	1.5	**37.1746**	1.784	4.8	ug/L	1058	Standard
	Sc	45	36936.6	0.9				ug/L	49932	Standard
	Ti	47	21614.4	1.3	**85.7751**	1.207	1.4	ug/L	25	Standard
	V	51	407195.3	1.7	**47.7530**	1.196	2.5	ug/L	2343	Standard
	Cr	52	412560.6	1.8	**48.8252**	1.760	3.6	ug/L	9255	Standard
	Cr	53	51958.9	1.3	**48.0116**	0.991	2.1	ug/L	355	Standard
	Mn	55	631402.3	4.1	**48.4710**	2.439	5.0	ug/L	920	Standard
	Co	59	520829.0	3.1	**49.5549**	1.790	3.6	ug/L	117	Standard
	Ni	60	130893.2	2.3	**50.8326**	1.790	3.5	ug/L	48	Standard
	Cu	65	126193.4	1.3	**50.0760**	1.037	2.1	ug/L	211	Standard
	Zn	66	60823.2	1.8	**50.2506**	1.180	2.3	ug/L	477	Standard
>	**Ge**	72	515020.8	2.2				ug/L	543406	Standard
	As	75	68727.5	2.3	**53.0178**	1.375	2.6	ug/L	-90	Standard
	Se	82	7418.1	1.9	**57.2167**	1.272	2.2	ug/L	31	Standard
	Se-1	77	4605.4	3.8	**52.6183**	1.955	3.7	ug/L	117	Standard
>	**Ga**	71	61.7	16.9				mg/L	22	Standard
	Rb	85	1193.4	8.7				ug/L	53	Standard
	Y	89	576749.2	1.7				ug/L	557276	Standard
>	**Rh**	103	51.7	11.2				ug/L	12	Standard
	Mo	98	342225.1	2.9	**99.5898**	3.297	3.3	ug/L	159	Standard
	Ag	107	518271.5	2.7	**47.2552**	1.473	3.1	ug/L	102	Standard
	Cd	111	154298.0	1.3	**51.1250**	0.874	1.7	mg/L	4	Standard
	Cd	114	377149.9	1.3	**50.5336**	0.751	1.5	ug/L	34	Standard
>	**In**	115	907682.2	0.4				ug/L	828245	Standard
	Sn	118	456365.7	1.8	**50.3532**	1.134	2.3	ug/L	850	Standard
	Sb	123	294994.8	1.3	**45.1207**	0.800	1.8	ug/L	499	Standard
	Ba	135	153251.7	2.2	**42.9118**	1.052	2.5	ug/L	23	Standard
	Ce	140	350.0	49.4				ug/L	45	Standard
>	**Tb**	159	1356162.1	1.1				ug/L	1408642	Standard
	Ho	165	26.7	108.3				ug/L	15	Standard
	Tl	203	540725.5	2.1	**51.3915**	0.782	1.5	ug/L	5	Standard
	Tl	205	469703.3	2.2	**53.4175**	0.878	1.6	ug/L	8	Standard
	Pb	206	387993.3	1.4	**52.1188**	0.774	1.5	ug/L	348	Standard
	Pb	207	347318.5	1.7	**51.8464**	0.365	0.7	ug/L	284	Standard
	Pb	208	1030286.3	1.5	**49.9994**	0.501	1.0	ug/L	938	Standard
	U	238	390158.4	2.6	**55.2759**	1.137	2.1	ug/L	3	Standard
>	**Bi**	209	598159.5	1.4				ug/L	615841	Standard

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Na	23	3.3	86.6	**8.8306**	7.643	86.6	mg/L	3	Standard
Mg	24	4705.7	1.5	**5.6536**	0.128	2.3	mg/L	68	Standard
K	39	720.0	15.3	**2.5588**	0.377	14.7	mg/L	23	Standard
Ca	43	61.7	4.7	**2.4078**	0.225	9.3	mg/L	52	Standard
Fe	54	7127.6	4.3	**5.9955**	0.206	3.4	mg/L	214	Standard
Fe	57	2085.1	9.9	**6.0873**	0.654	10.7	mg/L	213	Standard
> **Sc-1**	45	36936.6	0.9				mg/L	49932	Standard
Cl	35	22245.0	4.8				ug/L	23537	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	2053.5	8.6				ug/L	1553	Standard
P	31	19757.9	9.4				ug/L	15523	Standard
S	34	788.4	3.0				ug/L	1052	Standard
Sr	88	130.0	17.6				ug/L	147	Standard
C	12	736.7	9.0				mg/L	397	Standard
N	14	6.7	86.6				mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	15.5	69.8				mg/L	29	Standard
Ho-1	165	26.7	108.3				mg/L	15	Standard
Er	166	23.3	65.5				mg/L	23	Standard
I	127	1206.7	8.2				mg/L	1075	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	84.587		
	Al	27	74.349		
	Sc	45			
	Ti	47	85.775		
	V	51	95.506		
	Cr	52	97.650		
	Cr	53			
	Mn	55	96.942		
	Co	59	99.110		
	Ni	60	101.665		
	Cu	65	100.152		
	Zn	66	100.501		
>	Ge	72		94.776	
	As	75	106.036		
	Se	82	114.433		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	99.590		
Ag	107	94.510		
Cd	111	102.250		
Cd	114			
In	115		109.591	
Sn	118	100.706		
Sb	123	90.241		
Ba	135	85.824		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.783		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.999		
U	238	110.552		
Bi	209		97.129	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	
QC Std 6	Ti	47	

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QC Std 6	Se	82
QC Std 6	Ba	135
QC Std 6	U	238

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, February 23, 2015 20:03:32
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	138634.3	5.5				ug/L	102148	Standard
	Be	9	21.7	70.5	**0.0008**	0.008	972.5	ug/L	8	Standard
	Al	27	2011.8	51.2	**-0.0088**	0.004	48.9	ug/L	1058	Standard
	Sc	45	37745.3	1.6				ug/L	49932	Standard
	Ti	47	13.3	30.3	**-0.0268**	0.016	58.2	ug/L	25	Standard
	V	51	2062.3	3.1	**-0.0313**	0.005	15.7	ug/L	2343	Standard
	Cr	52	8186.9	2.4	**-0.0692**	0.021	30.5	ug/L	9255	Standard
	Cr	53	290.0	14.1	**-0.0866**	0.035	41.0	ug/L	355	Standard
	Mn	55	942.4	32.1	**-0.0083**	0.023	272.8	ug/L	920	Standard
	Co	59	184.0	56.9	**-0.0020**	0.010	501.6	ug/L	117	Standard
	Ni	60	36.3	39.7	**-0.0161**	0.006	34.1	ug/L	48	Standard
	Cu	65	230.7	8.0	**-0.0042**	0.008	187.8	ug/L	211	Standard
	Zn	66	276.7	7.3	**-0.1227**	0.016	13.3	ug/L	477	Standard
>	**Ge**	72	507297.4	1.1				ug/L	543406	Standard
	As	75	-119.2	10.2	**0.0060**	0.010	162.6	ug/L	-90	Standard
	Se	82	23.3	59.2	**-0.0171**	0.106	621.1	ug/L	31	Standard
	Se-1	77	97.3	9.9	**-0.1759**	0.111	62.9	ug/L	117	Standard
>	**Ga**	71	21.7	74.2				mg/L	22	Standard
	Rb	85	61.7	58.7				ug/L	53	Standard
	Y	89	566149.6	3.4				ug/L	557276	Standard
>	**Rh**	103	6.7	173.2				ug/L	12	Standard
	Mo	98	159.4	23.2	**0.0302**	0.010	33.0	ug/L	159	Standard
	Ag	107	165.3	75.0	**-0.0033**	0.011	340.1	ug/L	102	Standard
	Cd	111	7.8	78.1	**-0.0063**	0.002	31.3	mg/L	4	Standard
	Cd	114	30.9	107.0	**-0.0110**	0.004	40.0	ug/L	34	Standard
>	**In**	115	896571.0	2.0				ug/L	828245	Standard
	Sn	118	835.0	1.2	**0.0079**	0.001	18.8	ug/L	850	Standard
	Sb	123	310.4	27.5	**0.0293**	0.012	42.0	ug/L	499	Standard
	Ba	135	29.7	25.3	**-0.0073**	0.002	27.0	ug/L	23	Standard
	Ce	140	21.7	13.3				ug/L	45	Standard
>	**Tb**	159	1331063.8	1.7				ug/L	1408642	Standard
	Ho	165	18.3	56.8				ug/L	15	Standard
	Tl	203	44.7	111.3	**-0.0027**	0.005	169.1	ug/L	5	Standard
	Tl	205	65.0	81.4	**0.0011**	0.006	555.0	ug/L	8	Standard
	Pb	206	370.0	27.7	**0.0010**	0.013	1304.8	ug/L	348	Standard
	Pb	207	348.3	39.2	**-0.0007**	0.019	2905.5	ug/L	284	Standard
	Pb	208	943.3	16.8	**-0.0082**	0.007	84.8	ug/L	938	Standard
	U	238	34.7	111.5	**0.0025**	0.005	213.2	ug/L	3	Standard
>	**Bi**	209	602273.8	1.8				ug/L	615841	Standard

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Na	23	1.7	173.2	**4.3911**	7.597	173.0	mg/L	3	Standard
Mg	24	101.7	10.2	**0.0401**	0.011	27.6	mg/L	68	Standard
K	39	20.0	25.0	**0.0175**	0.017	96.1	mg/L	23	Standard
Ca	43	30.0	50.0	**-0.4905**	1.270	258.9	mg/L	52	Standard
Fe	54	170.9	14.3	**0.0215**	0.018	84.5	mg/L	214	Standard
Fe	57	231.7	15.3	**0.1985**	0.118	59.5	mg/L	213	Standard
Sc-1	45	37745.3	1.6				mg/L	49932	Standard
Cl	35	21928.5	2.3				ug/L	23537	Standard
Kr	83	1.0	173.2				ug/L	3	Standard
Br	81	1976.8	5.9				ug/L	1553	Standard
P	31	16689.2	4.0				ug/L	15523	Standard
S	34	700.0	6.3				ug/L	1052	Standard
Sr	88	116.7	21.6				ug/L	147	Standard
C	12	820.0	16.9				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	5.4	102.4				mg/L	29	Standard
Ho-1	165	18.3	56.8				mg/L	15	Standard
Er	166	26.7	43.3				mg/L	23	Standard
I	127	1020.0	5.8				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		93.355	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	108.250	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.797	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1502092302SDL WG512055-02
Sample Date/Time: Monday, February 23, 2015 20:06:45
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	146160.2	2.4				ug/L	102148	Standard
	Be	9	28.3	53.9	**0.0039**	0.008	208.5	ug/L	8	Standard
	Al	27	1306110.1	3.2	**5.8758**	0.120	2.0	ug/L	1058	Standard
	Sc	45	37899.1	4.5				ug/L	49932	Standard
	Ti	47	21.7	7.1	**0.0063**	0.007	106.2	ug/L	25	Standard
	V	51	2227.1	4.3	**-0.0134**	0.012	92.4	ug/L	2343	Standard
	Cr	52	8813.9	3.8	**0.0002**	0.044	27756.7	ug/L	9255	Standard
	Cr	53	270.0	11.3	**-0.1070**	0.029	26.7	ug/L	355	Standard
	Mn	55	58318.7	2.3	**4.4361**	0.065	1.5	ug/L	920	Standard
	Co	59	897.0	9.3	**0.0664**	0.008	12.3	ug/L	117	Standard
	Ni	60	867.0	1.4	**0.3090**	0.005	1.6	ug/L	48	Standard
	Cu	65	951.0	2.0	**0.2837**	0.004	1.4	ug/L	211	Standard
	Zn	66	4293.3	0.6	**3.2437**	0.051	1.6	ug/L	477	Standard
>	**Ge**	72	510964.9	1.1				ug/L	543406	Standard
	As	75	-82.5	46.0	**0.0350**	0.030	86.0	ug/L	-90	Standard
	Se	82	28.4	74.3	**0.0212**	0.164	772.6	ug/L	31	Standard
	Se-1	77	105.3	8.6	**-0.0898**	0.100	111.1	ug/L	117	Standard
>	**Ga**	71	21.7	35.3				mg/L	22	Standard
	Rb	85	3460.4	3.8				ug/L	53	Standard
	Y	89	565078.8	1.2				ug/L	557276	Standard
>	**Rh**	103	18.3	15.7				ug/L	12	Standard
	Mo	98	99.8	44.0	**0.0128**	0.013	101.5	ug/L	159	Standard
	Ag	107	190.3	42.1	**-0.0007**	0.007	1013.2	ug/L	102	Standard
	Cd	111	47.2	55.1	**0.0070**	0.009	126.1	mg/L	4	Standard
	Cd	114	124.3	30.7	**0.0018**	0.005	285.5	ug/L	34	Standard
>	**In**	115	893275.2	0.3				ug/L	828245	Standard
	Sn	118	833.4	33.7	**0.0081**	0.032	391.1	ug/L	850	Standard
	Sb	123	222.5	52.2	**0.0160**	0.018	113.5	ug/L	499	Standard
	Ba	135	403.7	2.4	**0.0992**	0.003	3.1	ug/L	23	Standard
	Ce	140	301.7	5.8				ug/L	45	Standard
>	**Tb**	159	1320345.8	2.0				ug/L	1408642	Standard
	Ho	165	31.7	18.2				ug/L	15	Standard
	Tl	203	93.0	112.8	**0.0019**	0.010	516.7	ug/L	5	Standard
	Tl	205	65.0	67.1	**0.0011**	0.005	439.4	ug/L	8	Standard
	Pb	206	603.3	7.1	**0.0324**	0.006	18.3	ug/L	348	Standard
	Pb	207	539.0	19.0	**0.0279**	0.015	54.2	ug/L	284	Standard
	Pb	208	1419.7	12.1	**0.0150**	0.008	55.1	ug/L	938	Standard
	U	238	72.3	44.3	**0.0079**	0.004	57.1	ug/L	3	Standard
>	**Bi**	209	601396.3	0.5				ug/L	615841	Standard

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Na	23	1.7	173.2	**4.1890**	7.247	173.0	mg/L	3	Standard
Mg	24	398.3	12.9	**0.3925**	0.062	15.7	mg/L	68	Standard
K	39	40.0	12.5	**0.0882**	0.018	19.9	mg/L	23	Standard
Ca	43	53.3	19.5	**1.5332**	0.800	52.2	mg/L	52	Standard
Fe	54	250.4	15.3	**0.0886**	0.040	44.8	mg/L	214	Standard
Fe	57	261.7	23.6	**0.2836**	0.160	56.6	mg/L	213	Standard
> **Sc-1**	45	37899.1	4.5				mg/L	49932	Standard
Cl	35	21985.3	2.3				ug/L	23537	Standard
Kr	83	3.0	33.3				ug/L	3	Standard
Br	81	1820.1	7.3				ug/L	1553	Standard
P	31	15447.9	7.4				ug/L	15523	Standard
S	34	720.0	1.8				ug/L	1052	Standard
Sr	88	173.3	10.9				ug/L	147	Standard
C	12	636.7	11.9				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	34.9	16.9				mg/L	29	Standard
Ho-1	165	31.7	18.2				mg/L	15	Standard
Er	166	36.7	15.7				mg/L	23	Standard
I	127	1266.7	7.5				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		143.086	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.030	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	107.852	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.654	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: February 24, 2015

Method 6020 - Summary Report

Sample ID: L1502092305
Sample Date/Time: Monday, February 23, 2015 20:09:57
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	148681.4	3.2				ug/L	102148	Standard
	Be	9	9244.5	0.7	**4.5660**	0.109	2.4	ug/L	8	Standard
	Al	27	20041577.7	1.6	**88.9648**	3.761	4.2	ug/L	1058	Standard
	Sc	45	40990.4	2.0				ug/L	49932	Standard
	Ti	47	196.7	6.1	**0.7081**	0.047	6.7	ug/L	25	Standard
	V	51	77824.3	1.8	**8.9883**	0.156	1.7	ug/L	2343	Standard
	Cr	52	89424.2	1.6	**9.8419**	0.158	1.6	ug/L	9255	Standard
	Cr	53	10498.6	3.6	**9.5061**	0.353	3.7	ug/L	355	Standard
	Mn	55	13547002.1	2.3	**1051.2804**	22.120	2.1	ug/L	920	Standard
	Co	59	583281.6	2.3	**56.0235**	1.242	2.2	ug/L	117	Standard
	Ni	60	314135.9	1.5	**123.1751**	1.648	1.3	ug/L	48	Standard
	Cu	65	82123.3	0.9	**32.8633**	0.253	0.8	ug/L	211	Standard
	Zn	66	458764.9	1.0	**384.9701**	3.158	0.8	ug/L	477	Standard
>	**Ge**	72	510060.9	0.2				ug/L	543406	Standard
	As	75	6904.9	3.9	**5.4662**	0.204	3.7	ug/L	-90	Standard
	Se	82	171.8	10.2	**1.1432**	0.135	11.8	ug/L	31	Standard
	Se-1	77	192.0	6.5	**0.9376**	0.145	15.4	ug/L	117	Standard
>	**Ga**	71	3937.2	3.0				mg/L	22	Standard
	Rb	85	53089.5	0.9				ug/L	53	Standard
	Y	89	1091865.3	1.9				ug/L	557276	Standard
>	**Rh**	103	80.0	22.5				ug/L	12	Standard
	Mo	98	215.6	12.4	**0.0514**	0.009	17.6	ug/L	159	Standard
	Ag	107	110.3	7.8	**-0.0075**	0.001	11.0	ug/L	102	Standard
	Cd	111	1847.1	6.4	**0.6540**	0.035	5.4	mg/L	4	Standard
	Cd	114	4586.2	4.0	**0.6508**	0.020	3.1	ug/L	34	Standard
>	**In**	115	837739.2	1.2				ug/L	828245	Standard
	Sn	118	1223.4	7.4	**0.0610**	0.011	17.8	ug/L	850	Standard
	Sb	123	203.0	13.2	**0.0150**	0.005	31.4	ug/L	499	Standard
	Ba	135	15353.8	3.4	**4.6434**	0.121	2.6	ug/L	23	Standard
	Ce	140	469592.0	3.6				ug/L	45	Standard
>	**Tb**	159	1205785.5	0.5				ug/L	1408642	Standard
	Ho	165	48591.2	4.5				ug/L	15	Standard
	Tl	203	1114.0	2.4	**0.1077**	0.003	3.1	ug/L	5	Standard
	Tl	205	1061.7	2.6	**0.1244**	0.004	3.3	ug/L	8	Standard
	Pb	206	1523.7	0.7	**0.1733**	0.002	1.1	ug/L	348	Standard
	Pb	207	1270.4	3.6	**0.1531**	0.006	4.1	ug/L	284	Standard
	Pb	208	3845.2	1.4	**0.1485**	0.004	2.6	ug/L	938	Standard
	U	238	10392.2	1.2	**1.5907**	0.032	2.0	ug/L	3	Standard
>	**Bi**	209	552946.7	0.8				ug/L	615841	Standard

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Na	23	23.3	53.9	**56.3702**	31.088	55.1	mg/L	3	Standard
Mg	24	823.4	8.3	**0.8237**	0.085	10.4	mg/L	68	Standard
K	39	136.7	15.2	**0.3930**	0.059	15.1	mg/L	23	Standard
Ca	43	411.7	13.8	**30.0607**	4.727	15.7	mg/L	52	Standard
Fe	54	135506.3	0.6	**104.7311**	2.415	2.3	mg/L	214	Standard
Fe	57	37760.4	2.9	**107.3674**	4.978	4.6	mg/L	213	Standard
> **Sc-1**	45	40990.4	2.0				mg/L	49932	Standard
Cl	35	49152.5	7.0				ug/L	23537	Standard
Kr	83	2.7	57.3				ug/L	3	Standard
Br	81	2360.2	3.1				ug/L	1553	Standard
P	31	24217.7	4.6				ug/L	15523	Standard
S	34	723.4	10.3				ug/L	1052	Standard
Sr	88	468.3	22.0				ug/L	147	Standard
C	12	973.4	18.1				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	76396.1	1.4				mg/L	29	Standard
Ho-1	165	48591.2	4.5				mg/L	15	Standard
Er	166	43352.0	3.1				mg/L	23	Standard
I	127	5566.0	1.0				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		145.554	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.864	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.146	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	89.787	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	

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Zn 66 Upper, S, EEE	Zn	66

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Method 6020 - Summary Report

Sample ID: L1502092306
Sample Date/Time: Monday, February 23, 2015 20:13:08
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	152723.3	4.0				ug/L	102148	Standard
	Be	9	8986.0	0.5	**4.3229**	0.184	4.3	ug/L	8	Standard
	Al	27	20071825.3	2.1	**86.7481**	3.458	4.0	ug/L	1058	Standard
	Sc	45	41896.2	2.2				ug/L	49932	Standard
	Ti	47	183.0	10.0	**0.6493**	0.076	11.7	ug/L	25	Standard
	V	51	73240.9	2.0	**8.3907**	0.055	0.7	ug/L	2343	Standard
	Cr	52	89563.3	2.1	**9.7936**	0.062	0.6	ug/L	9255	Standard
	Cr	53	10163.4	4.0	**9.1344**	0.337	3.7	ug/L	355	Standard
	Mn	55	13148874.0	2.7	**1014.2320**	12.343	1.2	ug/L	920	Standard
	Co	59	567885.6	3.3	**54.2123**	1.019	1.9	ug/L	117	Standard
	Ni	60	310936.6	1.0	**121.2078**	1.003	0.8	ug/L	48	Standard
	Cu	65	88495.1	1.5	**35.2109**	0.182	0.5	ug/L	211	Standard
	Zn	66	504598.8	1.6	**420.9629**	2.719	0.6	ug/L	477	Standard
>	**Ge**	72	513101.6	1.5				ug/L	543406	Standard
	As	75	6299.8	3.6	**4.9660**	0.103	2.1	ug/L	-90	Standard
	Se	82	176.3	16.5	**1.1690**	0.219	18.7	ug/L	31	Standard
	Se-1	77	189.3	7.9	**0.8923**	0.160	17.9	ug/L	117	Standard
>	**Ga**	71	3683.8	2.2				mg/L	22	Standard
	Rb	85	53740.1	0.4				ug/L	53	Standard
	Y	89	1103694.7	3.5				ug/L	557276	Standard
>	**Rh**	103	95.0	21.1				ug/L	12	Standard
	Mo	98	324.2	7.5	**0.0839**	0.006	7.4	ug/L	159	Standard
	Ag	107	496.0	29.6	**0.0297**	0.014	46.1	ug/L	102	Standard
	Cd	111	2321.6	5.1	**0.8114**	0.035	4.4	mg/L	4	Standard
	Cd	114	5887.7	2.4	**0.8265**	0.023	2.8	ug/L	34	Standard
>	**In**	115	851137.6	1.3				ug/L	828245	Standard
	Sn	118	1993.5	21.4	**0.1496**	0.051	34.3	ug/L	850	Standard
	Sb	123	532.4	18.6	**0.0681**	0.016	22.8	ug/L	499	Standard
	Ba	135	16027.5	3.3	**4.7717**	0.134	2.8	ug/L	23	Standard
	Ce	140	463150.6	2.7				ug/L	45	Standard
>	**Tb**	159	1217005.9	3.0				ug/L	1408642	Standard
	Ho	165	48903.8	3.1				ug/L	15	Standard
	Tl	203	1494.7	14.2	**0.1417**	0.019	13.3	ug/L	5	Standard
	Tl	205	1025.0	3.4	**0.1159**	0.006	5.1	ug/L	8	Standard
	Pb	206	7290.1	3.6	**0.9777**	0.025	2.6	ug/L	348	Standard
	Pb	207	5882.8	2.1	**0.8681**	0.006	0.7	ug/L	284	Standard
	Pb	208	17577.0	1.5	**0.8405**	0.014	1.7	ug/L	938	Standard
	U	238	10455.6	0.6	**1.5488**	0.017	1.1	ug/L	3	Standard
>	**Bi**	209	571337.3	1.5				ug/L	615841	Standard

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Na	23	11.7	49.5	**27.5137**	13.840	50.3	mg/L	3	Standard
Mg	24	968.4	7.9	**0.9599**	0.092	9.6	mg/L	68	Standard
K	39	128.3	25.9	**0.3562**	0.099	27.8	mg/L	23	Standard
Ca	43	386.7	2.0	**27.3670**	0.749	2.7	mg/L	52	Standard
Fe	54	131044.9	1.4	**99.0714**	1.119	1.1	mg/L	214	Standard
Fe	57	37025.2	4.7	**102.9102**	3.846	3.7	mg/L	213	Standard
> **Sc-1**	45	41896.2	2.2				mg/L	49932	Standard
Cl	35	44734.0	1.8				ug/L	23537	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	2970.3	6.9				ug/L	1553	Standard
P	31	24201.0	3.8				ug/L	15523	Standard
S	34	575.0	12.9				ug/L	1052	Standard
Sr	88	501.7	10.4				ug/L	147	Standard
C	12	1086.7	8.4				mg/L	397	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	75297.5	0.3				mg/L	29	Standard
Ho-1	165	48903.8	3.1				mg/L	15	Standard
Er	166	41804.4	5.2				mg/L	23	Standard
I	127	5946.2	7.1				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		149.511	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.423	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.764	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	92.774	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	

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Zn 66 Upper, S, EEE	Zn	66

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Method 6020 - Summary Report

Sample ID: L1502092308
Sample Date/Time: Monday, February 23, 2015 20:16:19
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	151497.1	1.4				ug/L	102148	Standard
	Be	9	2440.2	5.7	**1.1741**	0.055	4.7	ug/L	8	Standard
	Al	27	18172692.9	5.1	**79.0743**	3.037	3.8	ug/L	1058	Standard
	Sc	45	37072.0	3.4				ug/L	49932	Standard
	Ti	47	88.7	6.5	**0.2796**	0.023	8.4	ug/L	25	Standard
	V	51	4269.9	6.6	**0.2367**	0.035	14.6	ug/L	2343	Standard
	Cr	52	12794.1	3.8	**0.5076**	0.062	12.2	ug/L	9255	Standard
	Cr	53	1226.7	0.6	**0.8071**	0.009	1.1	ug/L	355	Standard
	Mn	55	16967516.0	4.0	**1333.4530**	54.781	4.1	ug/L	920	Standard
	Co	59	446097.4	4.2	**43.3862**	1.900	4.4	ug/L	117	Standard
	Ni	60	190228.0	2.1	**75.5229**	1.659	2.2	ug/L	48	Standard
	Cu	65	12459.1	1.4	**4.9665**	0.080	1.6	ug/L	211	Standard
	Zn	66	284269.5	1.9	**241.4298**	4.823	2.0	ug/L	477	Standard
>	**Ge**	72	503699.0	0.1				ug/L	543406	Standard
	As	75	13803.2	3.4	**10.9644**	0.384	3.5	ug/L	-90	Standard
	Se	82	236.2	9.4	**1.6700**	0.177	10.6	ug/L	31	Standard
	Se-1	77	167.7	4.5	**0.6751**	0.093	13.7	ug/L	117	Standard
>	**Ga**	71	591.7	5.5				mg/L	22	Standard
	Rb	85	59161.9	0.7				ug/L	53	Standard
	Y	89	987858.1	1.2				ug/L	557276	Standard
>	**Rh**	103	108.3	19.2				ug/L	12	Standard
	Mo	98	229.3	6.6	**0.0564**	0.005	8.4	ug/L	159	Standard
	Ag	107	158.3	27.8	**-0.0026**	0.004	170.0	ug/L	102	Standard
	Cd	111	459.7	2.4	**0.1579**	0.004	2.6	mg/L	4	Standard
	Cd	114	1146.0	17.3	**0.1531**	0.029	18.9	ug/L	34	Standard
>	**In**	115	828701.3	0.1				ug/L	828245	Standard
	Sn	118	958.4	3.2	**0.0305**	0.004	11.6	ug/L	850	Standard
	Sb	123	203.5	12.9	**0.0154**	0.004	28.3	ug/L	499	Standard
	Ba	135	14386.5	1.5	**4.3980**	0.060	1.4	ug/L	23	Standard
	Ce	140	319058.2	3.2				ug/L	45	Standard
>	**Tb**	159	1156213.7	0.7				ug/L	1408642	Standard
	Ho	165	28381.6	3.6				ug/L	15	Standard
	Tl	203	577.7	12.2	**0.0533**	0.007	13.7	ug/L	5	Standard
	Tl	205	548.3	18.8	**0.0621**	0.013	20.2	ug/L	8	Standard
	Pb	206	1272.7	6.3	**0.1392**	0.011	8.1	ug/L	348	Standard
	Pb	207	1061.7	7.8	**0.1217**	0.013	10.6	ug/L	284	Standard
	Pb	208	3284.8	5.0	**0.1213**	0.008	6.6	ug/L	938	Standard
	U	238	1662.4	2.0	**0.2559**	0.004	1.6	ug/L	3	Standard
>	**Bi**	209	545693.8	0.5				ug/L	615841	Standard

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Na	23	38.3	39.8	**102.2545**	43.420	42.5	mg/L	3	Standard
Mg	24	1965.1	6.4	**2.3043**	0.120	5.2	mg/L	68	Standard
K	39	268.3	17.6	**0.9155**	0.154	16.9	mg/L	23	Standard
Ca	43	830.0	9.4	**70.7304**	5.395	7.6	mg/L	52	Standard
Fe	54	141828.9	4.9	**121.1569**	2.769	2.3	mg/L	214	Standard
Fe	57	38031.0	2.5	**119.5837**	1.307	1.1	mg/L	213	Standard
> **Sc-1**	45	37072.0	3.4				mg/L	49932	Standard
Cl	35	47047.0	3.0				ug/L	23537	Standard
Kr	83	2.7	43.3				ug/L	3	Standard
Br	81	18327.8	3.5				ug/L	1553	Standard
P	31	19924.8	6.5				ug/L	15523	Standard
S	34	578.3	9.9				ug/L	1052	Standard
Sr	88	793.4	12.1				ug/L	147	Standard
C	12	996.7	14.6				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	42900.4	3.5				mg/L	29	Standard
Ho-1	165	28381.6	3.6				mg/L	15	Standard
Er	166	24710.2	3.8				mg/L	23	Standard
I	127	10867.2	4.8				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		148.311	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.693	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.055	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	88.610	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1502092309
Sample Date/Time: Monday, February 23, 2015 20:19:30
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	291886.4	3.1				ug/L	102148	Standard
	Be	9	6524.7	1.9	**1.6349**	0.051	3.1	ug/L	8	Standard
	Al	27	35539976.6	0.8	**80.3445**	2.651	3.3	ug/L	1058	Standard
	Sc	45	39329.3	0.5				ug/L	49932	Standard
	Ti	47	3113.7	1.1	**13.1875**	0.186	1.4	ug/L	25	Standard
	V	51	6747.1	2.0	**0.5755**	0.018	3.1	ug/L	2343	Standard
	Cr	52	36868.1	1.5	**3.7086**	0.097	2.6	ug/L	9255	Standard
	Cr	53	3897.2	1.6	**3.5317**	0.079	2.2	ug/L	355	Standard
	Mn	55	24188707.5	3.1	**1994.9248**	70.534	3.5	ug/L	920	Standard
	Co	59	755795.5	3.0	**77.1495**	2.506	3.2	ug/L	117	Standard
	Ni	60	398033.0	1.3	**165.8541**	2.140	1.3	ug/L	48	Standard
	Cu	65	26515.5	1.1	**11.2114**	0.159	1.4	ug/L	211	Standard
	Zn	66	460235.4	2.5	**410.3993**	9.661	2.4	ug/L	477	Standard
>	**Ge**	72	480017.7	0.6				ug/L	543406	Standard
	As	75	1135.3	6.2	**1.0367**	0.053	5.2	ug/L	-90	Standard
	Se	82	453.4	4.3	**3.5649**	0.141	3.9	ug/L	31	Standard
	Se-1	77	240.7	5.5	**1.6913**	0.162	9.6	ug/L	117	Standard
>	**Ga**	71	1748.4	2.6				mg/L	22	Standard
	Rb	85	106862.5	3.3				ug/L	53	Standard
	Y	89	1308511.1	0.4				ug/L	557276	Standard
>	**Rh**	103	238.3	28.6				ug/L	12	Standard
	Mo	98	5678.4	4.3	**1.7791**	0.058	3.3	ug/L	159	Standard
	Ag	107	145.3	4.6	**-0.0040**	0.001	20.6	ug/L	102	Standard
	Cd	111	2059.5	2.3	**0.7330**	0.024	3.3	mg/L	4	Standard
	Cd	114	5063.5	2.7	**0.7225**	0.019	2.6	ug/L	34	Standard
>	**In**	115	835149.6	1.2				ug/L	828245	Standard
	Sn	118	1080.0	10.0	**0.0443**	0.014	32.6	ug/L	850	Standard
	Sb	123	145.6	14.1	**0.0056**	0.004	66.2	ug/L	499	Standard
	Ba	135	41868.1	2.3	**12.7289**	0.149	1.2	ug/L	23	Standard
	Ce	140	614444.3	3.2				ug/L	45	Standard
>	**Tb**	159	1313350.0	0.7				ug/L	1408642	Standard
	Ho	165	59461.5	3.2				ug/L	15	Standard
	Tl	203	1091.0	2.0	**0.1093**	0.003	2.5	ug/L	5	Standard
	Tl	205	933.4	7.3	**0.1127**	0.009	8.0	ug/L	8	Standard
	Pb	206	6383.3	2.5	**0.9128**	0.023	2.5	ug/L	348	Standard
	Pb	207	5281.3	1.8	**0.8316**	0.016	1.9	ug/L	284	Standard
	Pb	208	15968.6	1.2	**0.8152**	0.009	1.0	ug/L	938	Standard
	U	238	7445.2	2.0	**1.1790**	0.020	1.7	ug/L	3	Standard
>	**Bi**	209	534102.1	0.4				ug/L	615841	Standard

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Na	23	50.0	30.0	**125.0752**	37.965	30.4	mg/L	3	Standard
Mg	24	4655.7	4.4	**5.2469**	0.236	4.5	mg/L	68	Standard
K	39	538.3	7.5	**1.7828**	0.146	8.2	mg/L	23	Standard
Ca	43	1518.4	3.1	**124.3172**	3.550	2.9	mg/L	52	Standard
Fe	54	10452.3	3.5	**8.3051**	0.299	3.6	mg/L	214	Standard
Fe	57	3520.4	6.0	**9.9582**	0.676	6.8	mg/L	213	Standard
> **Sc-1**	45	39329.3	0.5				mg/L	49932	Standard
Cl	35	39155.9	2.3				ug/L	23537	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	26105.8	5.2				ug/L	1553	Standard
P	31	23611.7	3.4				ug/L	15523	Standard
S	34	700.0	8.8				ug/L	1052	Standard
Sr	88	1210.0	3.9				ug/L	147	Standard
C	12	1390.1	11.6				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	91023.7	3.8				mg/L	29	Standard
Ho-1	165	59461.5	3.2				mg/L	15	Standard
Er	166	49410.5	4.0				mg/L	23	Standard
I	127	16667.5	2.8				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		285.748	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		88.335	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.834
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		86.727
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	

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Zn 66 Upper, S, EEE	Zn	66

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Method 6020 - Summary Report

Sample ID: L1502092310
Sample Date/Time: Monday, February 23, 2015 20:22:42
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	261602.9	1.8				ug/L	102148	Standard
	Be	9	20063.3	4.8	**5.6330**	0.292	5.2	ug/L	8	Standard
	Al	27	53484477.0	4.5	**134.8675**	6.770	5.0	ug/L	1058	Standard
	Sc	45	47651.6	4.9				ug/L	49932	Standard
	Ti	47	10265.1	1.4	**47.9400**	0.697	1.5	ug/L	25	Standard
	V	51	15963.4	0.6	**1.9394**	0.036	1.9	ug/L	2343	Standard
	Cr	52	99431.0	3.0	**13.0855**	0.432	3.3	ug/L	9255	Standard
	Cr	53	11299.2	1.5	**12.0272**	0.184	1.5	ug/L	355	Standard
	Mn	55	74003557.3	3.0	**6699.9487**	201.805	3.0	ug/L	920	Standard
	Co	59	2401210.3	2.1	**269.1224**	5.363	2.0	ug/L	117	Standard
	Ni	60	1150321.9	3.5	**526.3133**	19.733	3.7	ug/L	48	Standard
	Cu	65	86639.5	2.8	**40.4672**	1.098	2.7	ug/L	211	Standard
	Zn	66	1361993.1	2.8	**1334.1613**	38.043	2.9	ug/L	477	Standard
>	**Ge**	72	437252.3	1.1				ug/L	543406	Standard
	As	75	3098.9	6.1	**2.9100**	0.192	6.6	ug/L	-90	Standard
	Se	82	951.7	4.9	**8.4766**	0.472	5.6	ug/L	31	Standard
	Se-1	77	416.0	4.3	**4.4051**	0.189	4.3	ug/L	117	Standard
>	**Ga**	71	5025.8	6.7				mg/L	22	Standard
	Rb	85	97214.4	2.7				ug/L	53	Standard
	Y	89	2956738.6	2.6				ug/L	557276	Standard
>	**Rh**	103	420.0	9.3				ug/L	12	Standard
	Mo	98	17581.9	2.4	**6.0089**	0.163	2.7	ug/L	159	Standard
	Ag	107	539.3	8.8	**0.0395**	0.005	11.8	ug/L	102	Standard
	Cd	111	6740.7	2.5	**2.6213**	0.058	2.2	mg/L	4	Standard
	Cd	114	16270.8	5.4	**2.5529**	0.142	5.6	ug/L	34	Standard
>	**In**	115	770840.4	0.7				ug/L	828245	Standard
	Sn	118	1416.7	8.5	**0.0988**	0.014	14.5	ug/L	850	Standard
	Sb	123	628.1	7.5	**0.0945**	0.008	8.3	ug/L	499	Standard
	Ba	135	107981.8	1.9	**35.6012**	0.782	2.2	ug/L	23	Standard
	Ce	140	1935853.5	4.4				ug/L	45	Standard
>	**Tb**	159	1283537.6	0.3				ug/L	1408642	Standard
	Ho	165	180931.9	4.4				ug/L	15	Standard
	Tl	203	1640.1	2.8	**0.1853**	0.005	2.6	ug/L	5	Standard
	Tl	205	1446.7	8.3	**0.1966**	0.017	8.5	ug/L	8	Standard
	Pb	206	23038.9	3.8	**3.7697**	0.133	3.5	ug/L	348	Standard
	Pb	207	18908.5	2.9	**3.4307**	0.092	2.7	ug/L	284	Standard
	Pb	208	58084.0	2.6	**3.4247**	0.078	2.3	ug/L	938	Standard
	U	238	16250.7	3.4	**2.8358**	0.087	3.1	ug/L	3	Standard
>	**Bi**	209	485228.3	0.3				ug/L	615841	Standard

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Na	23	96.7	10.8	**199.1560**	15.152	7.6	mg/L	3	Standard
Mg	24	4747.4	3.3	**4.4065**	0.142	3.2	mg/L	68	Standard
K	39	495.0	2.0	**1.3411**	0.042	3.1	mg/L	23	Standard
Ca	43	3003.6	4.3	**205.0858**	8.106	4.0	mg/L	52	Standard
Fe	54	34957.3	4.1	**23.1460**	0.246	1.1	mg/L	214	Standard
Fe	57	10273.5	4.0	**24.7337**	0.941	3.8	mg/L	213	Standard
> **Sc-1**	45	47651.6	4.9				mg/L	49932	Standard
Cl	35	37941.5	2.5				ug/L	23537	Standard
Kr	83	3.7	68.6				ug/L	3	Standard
Br	81	63683.6	0.6				ug/L	1553	Standard
P	31	38164.7	1.3				ug/L	15523	Standard
S	34	661.7	3.1				ug/L	1052	Standard
Sr	88	1835.1	2.3				ug/L	147	Standard
C	12	1050.0	10.7				mg/L	397	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	287925.9	3.2				mg/L	29	Standard
Ho-1	165	180931.9	4.4				mg/L	15	Standard
Er	166	156605.7	3.1				mg/L	23	Standard
I	127	26750.3	3.8				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		256.101	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		80.465	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.069
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		78.791
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Co 59 Upper, S, EEE	Co	59
Ni 60 Upper, S, EEE	Ni	60
Zn 66 Upper, S, EEE	Zn	66

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Method 6020 - Summary Report

Sample ID: L1502097107
Sample Date/Time: Monday, February 23, 2015 20:25:53
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	142169.2	2.6				ug/L	102148	Standard
	Be	9	18.3	41.7	**-0.0010**	0.004	409.0	ug/L	8	Standard
	Al	27	22448217.1	1.3	**104.1561**	1.760	1.7	ug/L	1058	Standard
	Sc	45	37249.1	2.0				ug/L	49932	Standard
	Ti	47	158.7	4.9	**0.5884**	0.028	4.8	ug/L	25	Standard
	V	51	3191.4	3.9	**0.1214**	0.015	12.3	ug/L	2343	Standard
	Cr	52	17653.3	2.0	**1.1919**	0.037	3.1	ug/L	9255	Standard
	Cr	53	7286.8	15.1	**6.8454**	1.130	16.5	ug/L	355	Standard
	Mn	55	57460.0	5.8	**4.6063**	0.240	5.2	ug/L	920	Standard
	Co	59	933.4	13.6	**0.0746**	0.012	16.4	ug/L	117	Standard
	Ni	60	5059.5	1.1	**2.0561**	0.008	0.4	ug/L	48	Standard
	Cu	65	1198.7	0.9	**0.4086**	0.008	2.0	ug/L	211	Standard
	Zn	66	3153.7	3.7	**2.4285**	0.084	3.4	ug/L	477	Standard
>	**Ge**	72	485083.7	0.7				ug/L	543406	Standard
	As	75	1268.3	9.8	**1.1354**	0.094	8.3	ug/L	-90	Standard
	Se	82	556.2	4.3	**4.3698**	0.172	3.9	ug/L	31	Standard
	Se-1	77	524.7	10.2	**5.1948**	0.702	13.5	ug/L	117	Standard
>	**Ga**	71	36.7	41.7				mg/L	22	Standard
	Rb	85	2303.5	7.7				ug/L	53	Standard
	Y	89	553062.1	1.1				ug/L	557276	Standard
>	**Rh**	103	176.7	4.3				ug/L	12	Standard
	Mo	98	296.5	4.5	**0.0767**	0.002	2.7	ug/L	159	Standard
	Ag	107	96.3	4.7	**-0.0089**	0.000	3.6	ug/L	102	Standard
	Cd	111	95.5	15.4	**0.0254**	0.006	22.7	mg/L	4	Standard
	Cd	114	233.9	14.9	**0.0188**	0.004	22.8	ug/L	34	Standard
>	**In**	115	838702.6	2.3				ug/L	828245	Standard
	Sn	118	785.0	1.9	**0.0084**	0.002	19.3	ug/L	850	Standard
	Sb	123	201.0	3.3	**0.0146**	0.001	8.5	ug/L	499	Standard
	Ba	135	60755.3	3.0	**18.4019**	0.392	2.1	ug/L	23	Standard
	Ce	140	496.7	21.9				ug/L	45	Standard
>	**Tb**	159	1272965.4	1.0				ug/L	1408642	Standard
	Ho	165	35.0	37.8				ug/L	15	Standard
	Tl	203	181.3	8.4	**0.0122**	0.002	13.2	ug/L	5	Standard
	Tl	205	150.0	8.8	**0.0127**	0.002	12.4	ug/L	8	Standard
	Pb	206	572.3	1.0	**0.0369**	0.000	0.9	ug/L	348	Standard
	Pb	207	483.0	4.9	**0.0277**	0.004	13.4	ug/L	284	Standard
	Pb	208	1518.4	0.8	**0.0281**	0.001	3.6	ug/L	938	Standard
	U	238	11429.3	3.7	**1.7905**	0.052	2.9	ug/L	3	Standard
>	**Bi**	209	540208.3	0.8				ug/L	615841	Standard

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Na	23	11.7	24.7	**30.9046**	8.341	27.0	mg/L	3	Standard
Mg	24	75258.2	3.2	**90.8397**	1.329	1.5	mg/L	68	Standard
K	39	80.0	12.5	**0.2342**	0.031	13.1	mg/L	23	Standard
Ca	43	303.3	11.0	**23.8019**	3.239	13.6	mg/L	52	Standard
Fe	54	211.5	27.6	**0.0587**	0.053	90.2	mg/L	214	Standard
Fe	57	296.7	8.3	**0.4113**	0.074	17.9	mg/L	213	Standard
> **Sc-1**	45	37249.1	2.0				mg/L	49932	Standard
Cl	35	23335.3	2.1				ug/L	23537	Standard
Kr	83	1.0	173.2				ug/L	3	Standard
Br	81	54190.1	2.1				ug/L	1553	Standard
P	31	25314.6	10.1				ug/L	15523	Standard
S	34	648.3	10.2				ug/L	1052	Standard
Sr	88	753.4	11.6				ug/L	147	Standard
C	12	2030.1	8.9				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	52.1	39.5				mg/L	29	Standard
Ho-1	165	35.0	37.8				mg/L	15	Standard
Er	166	26.7	21.7				mg/L	23	Standard
I	127	98576.3	1.3				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		139.179	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		89.267	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.263
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.719
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1502097107
Sample Date/Time: Monday, February 23, 2015 20:29:05
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	144577.3	4.3				ug/L	102148	Standard
	Be	9	11.7	24.7	**-0.0045**	0.002	37.4	ug/L	8	Standard
	Al	27	523190.5	3.2	**2.3712**	0.117	4.9	ug/L	1058	Standard
	Sc	45	37055.3	1.3				ug/L	49932	Standard
	Ti	47	35.0	10.3	**0.0603**	0.014	23.6	ug/L	25	Standard
	V	51	2299.3	2.4	**-0.0035**	0.005	139.5	ug/L	2343	Standard
	Cr	52	9378.2	1.2	**0.0745**	0.020	26.6	ug/L	9255	Standard
	Cr	53	661.7	14.0	**0.2632**	0.084	32.0	ug/L	355	Standard
	Mn	55	5518.5	44.0	**0.3477**	0.189	54.3	ug/L	920	Standard
	Co	59	342.3	51.8	**0.0133**	0.017	128.7	ug/L	117	Standard
	Ni	60	376.7	56.7	**0.1174**	0.083	70.7	ug/L	48	Standard
	Cu	65	282.0	0.6	**0.0162**	0.000	0.8	ug/L	211	Standard
	Zn	66	1770.8	18.1	**1.1346**	0.259	22.8	ug/L	477	Standard
>	**Ge**	72	508457.6	0.7				ug/L	543406	Standard
	As	75	-27.4	37.6	**0.0778**	0.008	10.1	ug/L	-90	Standard
	Se	82	52.2	16.6	**0.2093**	0.065	31.0	ug/L	31	Standard
	Se-1	77	118.7	9.3	**0.0744**	0.124	167.0	ug/L	117	Standard
>	**Ga**	71	25.0	40.0				mg/L	22	Standard
	Rb	85	120.0	7.2				ug/L	53	Standard
	Y	89	547198.0	3.8				ug/L	557276	Standard
>	**Rh**	103	13.3	21.7				ug/L	12	Standard
	Mo	98	34.1	20.2	**-0.0065**	0.002	32.6	ug/L	159	Standard
	Ag	107	99.0	4.4	**-0.0091**	0.000	4.6	ug/L	102	Standard
	Cd	111	6.3	24.3	**-0.0068**	0.001	7.7	mg/L	4	Standard
	Cd	114	16.4	270.6	**-0.0128**	0.006	47.9	ug/L	34	Standard
>	**In**	115	880729.2	0.4				ug/L	828245	Standard
	Sn	118	3115.3	3.4	**0.2693**	0.011	4.2	ug/L	850	Standard
	Sb	123	37.9	2.6	**-0.0127**	0.000	1.3	ug/L	499	Standard
	Ba	135	1398.4	4.0	**0.3880**	0.015	3.8	ug/L	23	Standard
	Ce	140	156.7	61.3				ug/L	45	Standard
>	**Tb**	159	1305207.9	1.9				ug/L	1408642	Standard
	Ho	165	25.0	80.0				ug/L	15	Standard
	Tl	203	143.0	8.8	**0.0068**	0.001	15.4	ug/L	5	Standard
	Tl	205	138.3	23.2	**0.0096**	0.003	35.3	ug/L	8	Standard
	Pb	206	375.0	7.3	**0.0026**	0.003	114.6	ug/L	348	Standard
	Pb	207	325.0	0.6	**-0.0031**	0.001	37.7	ug/L	284	Standard
	Pb	208	988.3	2.6	**-0.0051**	0.002	40.4	ug/L	938	Standard
	U	238	248.3	9.2	**0.0332**	0.004	11.6	ug/L	3	Standard
>	**Bi**	209	592520.9	1.8				ug/L	615841	Standard

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Na	23	3.3	173.2	**8.7655**	15.174	173.1	mg/L	3	Standard
Mg	24	1645.1	7.1	**1.9165**	0.127	6.6	mg/L	68	Standard
K	39	15.0	57.7	**0.0010**	0.032	3314.9	mg/L	23	Standard
Ca	43	26.7	28.6	**-0.7207**	0.714	99.1	mg/L	52	Standard
Fe	54	229.6	25.2	**0.0744**	0.048	64.8	mg/L	214	Standard
Fe	57	218.3	7.4	**0.1690**	0.054	31.7	mg/L	213	Standard
Sc-1	45	37055.3	1.3				mg/L	49932	Standard
Cl	35	23476.2	0.6				ug/L	23537	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	3183.7	4.0				ug/L	1553	Standard
P	31	17046.3	9.9				ug/L	15523	Standard
S	34	815.0	7.7				ug/L	1052	Standard
Sr	88	166.7	9.2				ug/L	147	Standard
C	12	683.3	27.7				mg/L	397	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	41.7	113.7				mg/L	29	Standard
Ho-1	165	25.0	80.0				mg/L	15	Standard
Er	166	33.3	124.9				mg/L	23	Standard
I	127	3885.5	12.9				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		141.537	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		93.569	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.337
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.213
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1502097109
Sample Date/Time: Monday, February 23, 2015 20:32:15
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	142851.6	5.6				ug/L	102148	Standard
	Be	9	53.3	48.1	**0.0165**	0.012	73.2	ug/L	8	Standard
	Al	27	93311060.2	0.4	**431.8104**	26.734	6.2	ug/L	1058	Standard
	Sc	45	37653.4	1.3				ug/L	49932	Standard
	Ti	47	173.0	11.5	**0.7240**	0.094	13.0	ug/L	25	Standard
	V	51	1485.5	21.1	**-0.0732**	0.042	57.2	ug/L	2343	Standard
	Cr	52	13524.0	0.8	**0.8404**	0.023	2.8	ug/L	9255	Standard
	Cr	53	15661.4	2.1	**16.7079**	0.431	2.6	ug/L	355	Standard
	Mn	55	418224.0	2.0	**37.5536**	0.528	1.4	ug/L	920	Standard
	Co	59	3418.4	4.1	**0.3612**	0.014	4.0	ug/L	117	Standard
	Ni	60	19874.7	3.6	**9.0080**	0.306	3.4	ug/L	48	Standard
	Cu	65	2431.9	4.0	**1.0344**	0.042	4.0	ug/L	211	Standard
	Zn	66	4157.2	16.4	**3.6933**	0.670	18.1	ug/L	477	Standard
>	**Ge**	72	439875.7	0.6				ug/L	543406	Standard
	As	75	3610.1	6.6	**3.3527**	0.207	6.2	ug/L	-90	Standard
	Se	82	1617.7	5.7	**14.4553**	0.764	5.3	ug/L	31	Standard
	Se-1	77	2591.9	6.9	**34.2135**	2.439	7.1	ug/L	117	Standard
>	**Ga**	71	131.7	20.9				mg/L	22	Standard
	Rb	85	10463.6	6.6				ug/L	53	Standard
	Y	89	504960.8	1.3				ug/L	557276	Standard
>	**Rh**	103	758.4	3.0				ug/L	12	Standard
	Mo	98	245.9	2.7	**0.0688**	0.002	3.1	ug/L	159	Standard
	Ag	107	89.3	13.0	**-0.0087**	0.001	15.1	ug/L	102	Standard
	Cd	111	322.9	8.6	**0.1189**	0.010	8.7	mg/L	4	Standard
	Cd	114	759.9	10.4	**0.1065**	0.012	11.1	ug/L	34	Standard
>	**In**	115	759596.6	0.7				ug/L	828245	Standard
	Sn	118	1246.7	2.9	**0.0791**	0.005	6.5	ug/L	850	Standard
	Sb	123	158.3	5.0	**0.0103**	0.001	12.4	ug/L	499	Standard
	Ba	135	564126.5	2.0	**188.7978**	3.331	1.8	ug/L	23	Standard
	Ce	140	763.4	19.7				ug/L	45	Standard
>	**Tb**	159	1170789.5	1.5				ug/L	1408642	Standard
	Ho	165	71.7	49.5				ug/L	15	Standard
	Tl	203	143.0	12.1	**0.0104**	0.002	20.1	ug/L	5	Standard
	Tl	205	151.7	28.0	**0.0157**	0.006	38.5	ug/L	8	Standard
	Pb	206	582.7	5.8	**0.0515**	0.005	10.2	ug/L	348	Standard
	Pb	207	535.7	2.6	**0.0498**	0.002	4.4	ug/L	284	Standard
	Pb	208	1658.0	3.1	**0.0490**	0.003	6.4	ug/L	938	Standard
	U	238	11375.3	3.3	**2.0507**	0.051	2.5	ug/L	3	Standard
>	**Bi**	209	469524.4	0.9				ug/L	615841	Standard

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Na	23	53.3	35.5	**139.4667**	50.402	36.1	mg/L	3	Standard
Mg	24	161808.1	2.5	**193.3828**	6.925	3.6	mg/L	68	Standard
K	39	223.3	12.7	**0.7422**	0.104	14.0	mg/L	23	Standard
Ca	43	1321.7	7.5	**112.8185**	9.760	8.7	mg/L	52	Standard
Fe	54	226.8	43.4	**0.0685**	0.080	117.2	mg/L	214	Standard
Fe	57	666.7	12.9	**1.5519**	0.272	17.5	mg/L	213	Standard
> **Sc-1**	45	37653.4	1.3				mg/L	49932	Standard
Cl	35	26048.4	1.5				ug/L	23537	Standard
Kr	83	2.3	24.7				ug/L	3	Standard
Br	81	188445.1	7.0				ug/L	1553	Standard
P	31	26276.5	15.9				ug/L	15523	Standard
S	34	751.7	8.4				ug/L	1052	Standard
Sr	88	2421.9	7.6				ug/L	147	Standard
C	12	1183.4	9.3				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	53.3	54.2				mg/L	29	Standard
Ho-1	165	71.7	49.5				mg/L	15	Standard
Er	166	70.0	28.6				mg/L	23	Standard
I	127	287665.7	6.4				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		139.847	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		80.948	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.712
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		76.241
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1502097109
Sample Date/Time: Monday, February 23, 2015 20:35:27
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	147486.0	0.8				ug/L	102148	Standard
	Be	9	8.3	69.3	**-0.0063**	0.003	45.8	ug/L	8	Standard
	Al	27	2185420.1	5.7	**9.7528**	0.483	4.9	ug/L	1058	Standard
	Sc	45	38452.1	3.2				ug/L	49932	Standard
	Ti	47	18.3	35.5	**-0.0063**	0.025	393.3	ug/L	25	Standard
	V	51	2165.1	2.6	**-0.0167**	0.013	75.2	ug/L	2343	Standard
	Cr	52	9981.6	1.8	**0.1617**	0.049	30.5	ug/L	9255	Standard
	Cr	53	1611.8	10.8	**1.1750**	0.166	14.1	ug/L	355	Standard
	Mn	55	12117.3	18.5	**0.8690**	0.152	17.5	ug/L	920	Standard
	Co	59	269.7	33.0	**0.0065**	0.008	123.2	ug/L	117	Standard
	Ni	60	709.4	35.2	**0.2501**	0.091	36.5	ug/L	48	Standard
	Cu	65	293.3	15.6	**0.0218**	0.016	73.5	ug/L	211	Standard
	Zn	66	2084.1	23.1	**1.4122**	0.363	25.7	ug/L	477	Standard
>	**Ge**	72	503263.5	2.4				ug/L	543406	Standard
	As	75	-14.7	16.2	**0.0876**	0.002	2.4	ug/L	-90	Standard
	Se	82	66.9	4.2	**0.3307**	0.030	9.1	ug/L	31	Standard
	Se-1	77	177.7	9.2	**0.8003**	0.241	30.1	ug/L	117	Standard
>	**Ga**	71	20.0	25.0				mg/L	22	Standard
	Rb	85	325.0	8.1				ug/L	53	Standard
	Y	89	535173.0	2.5				ug/L	557276	Standard
>	**Rh**	103	38.3	15.1				ug/L	12	Standard
	Mo	98	21.9	7.0	**-0.0100**	0.000	4.2	ug/L	159	Standard
	Ag	107	102.3	8.2	**-0.0086**	0.001	10.3	ug/L	102	Standard
	Cd	111	11.0	59.8	**-0.0051**	0.002	45.2	mg/L	4	Standard
	Cd	114	51.0	54.9	**-0.0079**	0.004	49.8	ug/L	34	Standard
>	**In**	115	865887.8	0.8				ug/L	828245	Standard
	Sn	118	4372.3	1.1	**0.4211**	0.009	2.1	ug/L	850	Standard
	Sb	123	37.5	26.1	**-0.0126**	0.002	12.7	ug/L	499	Standard
	Ba	135	13368.2	2.5	**3.9099**	0.119	3.1	ug/L	23	Standard
	Ce	140	175.0	113.8				ug/L	45	Standard
>	**Tb**	159	1318538.1	0.7				ug/L	1408642	Standard
	Ho	165	26.7	28.6				ug/L	15	Standard
	Tl	203	272.3	4.6	**0.0196**	0.001	7.4	ug/L	5	Standard
	Tl	205	221.7	10.7	**0.0196**	0.003	13.0	ug/L	8	Standard
	Pb	206	438.0	1.1	**0.0120**	0.001	8.6	ug/L	348	Standard
	Pb	207	352.7	5.7	**0.0018**	0.003	192.7	ug/L	284	Standard
	Pb	208	1033.3	3.5	**-0.0022**	0.002	76.8	ug/L	938	Standard
	U	238	267.0	8.1	**0.0364**	0.003	9.0	ug/L	3	Standard
>	**Bi**	209	583928.2	0.9				ug/L	615841	Standard

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Na	23	1.7	173.2	**4.4285**	7.662	173.0	mg/L	3	Standard
Mg	24	3653.8	4.6	**4.2020**	0.318	7.6	mg/L	68	Standard
K	39	18.3	41.7	**0.0110**	0.028	258.4	mg/L	23	Standard
Ca	43	56.7	33.4	**1.7894**	1.729	96.6	mg/L	52	Standard
Fe	54	194.2	8.9	**0.0385**	0.017	44.6	mg/L	214	Standard
Fe	57	226.7	12.9	**0.1715**	0.113	66.0	mg/L	213	Standard
> **Sc-1**	45	38452.1	3.2				mg/L	49932	Standard
Cl	35	26771.0	2.3				ug/L	23537	Standard
Kr	83	3.0	57.7				ug/L	3	Standard
Br	81	6087.9	5.0				ug/L	1553	Standard
P	31	17151.4	2.2				ug/L	15523	Standard
S	34	845.0	3.1				ug/L	1052	Standard
Sr	88	213.3	10.6				ug/L	147	Standard
C	12	646.7	14.0				mg/L	397	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	45.9	139.0				mg/L	29	Standard
Ho-1	165	26.7	28.6				mg/L	15	Standard
Er	166	16.7	69.3				mg/L	23	Standard
I	127	11664.7	25.9				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		144.384	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.613	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.545
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.818
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: L1502097109
Report Date/Time: Monday, February 23, 2015 20:37:44
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, February 23, 2015 20:38:40
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	139423.7	1.9				ug/L	102148	Standard
	Be	9	81740.3	5.5	**43.1472**	2.877	6.7	ug/L	8	Standard
	Al	27	8243942.9	4.2	**39.0063**	2.252	5.8	ug/L	1058	Standard
	Sc	45	38116.2	3.1				ug/L	49932	Standard
	Ti	47	22329.1	1.6	**91.1634**	0.237	0.3	ug/L	25	Standard
	V	51	405682.6	2.7	**48.9409**	0.761	1.6	ug/L	2343	Standard
	Cr	52	414197.3	2.8	**50.4423**	0.744	1.5	ug/L	9255	Standard
	Cr	53	53860.6	0.8	**51.2263**	0.765	1.5	ug/L	355	Standard
	Mn	55	637028.1	1.0	**50.3002**	0.206	0.4	ug/L	920	Standard
	Co	59	515792.8	2.4	**50.4777**	0.552	1.1	ug/L	117	Standard
	Ni	60	128417.9	3.1	**51.2863**	0.859	1.7	ug/L	48	Standard
	Cu	65	125532.0	2.2	**51.2403**	0.420	0.8	ug/L	211	Standard
	Zn	66	60171.6	1.5	**51.1446**	0.275	0.5	ug/L	477	Standard
>	Ge	72	500540.9	1.4				ug/L	543406	Standard
	As	75	67031.2	2.6	**53.1882**	0.617	1.2	ug/L	-90	Standard
	Se	82	7170.6	2.6	**56.8901**	0.861	1.5	ug/L	31	Standard
	Se-1	77	4534.7	0.3	**53.3266**	0.693	1.3	ug/L	117	Standard
>	Ga	71	58.3	17.8				mg/L	22	Standard
	Rb	85	1040.0	9.9				ug/L	53	Standard
	Y	89	546458.2	0.4				ug/L	557276	Standard
>	Rh	103	46.7	16.4				ug/L	12	Standard
	Mo	98	330271.5	2.2	**100.2120**	1.511	1.5	ug/L	159	Standard
	Ag	107	508876.8	1.4	**48.3814**	0.454	0.9	ug/L	102	Standard
	Cd	111	150573.5	2.1	**52.0216**	0.668	1.3	mg/L	4	Standard
	Cd	114	365261.0	4.2	**51.0265**	1.739	3.4	ug/L	34	Standard
>	In	115	870410.5	0.8				ug/L	828245	Standard
	Sn	118	439991.9	1.9	**50.6203**	0.634	1.3	ug/L	850	Standard
	Sb	123	294880.1	0.9	**47.0338**	0.414	0.9	ug/L	499	Standard
	Ba	135	153279.1	2.8	**44.7514**	0.913	2.0	ug/L	23	Standard
	Ce	140	340.0	39.7				ug/L	45	Standard
>	Tb	159	1306172.0	0.9				ug/L	1408642	Standard
	Ho	165	16.7	124.9				ug/L	15	Standard
	Tl	203	535554.6	1.9	**52.8309**	0.914	1.7	ug/L	5	Standard
	Tl	205	464236.9	2.9	**54.7939**	1.240	2.3	ug/L	8	Standard
	Pb	206	380253.3	0.9	**53.0141**	0.364	0.7	ug/L	348	Standard
	Pb	207	346298.8	0.6	**53.6606**	0.591	1.1	ug/L	284	Standard
	Pb	208	1024295.8	2.1	**51.5921**	0.784	1.5	ug/L	938	Standard
	U	238	379805.9	2.0	**55.8493**	0.785	1.4	ug/L	3	Standard
>	Bi	209	576296.3	0.7				ug/L	615841	Standard

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Na	23	3.3	86.6	**8.7366**	7.564	86.6	mg/L	3	Standard
Mg	24	5017.5	3.5	**5.8433**	0.082	1.4	mg/L	68	Standard
K	39	798.4	10.0	**2.7541**	0.247	9.0	mg/L	23	Standard
Ca	43	83.3	6.9	**4.1099**	0.322	7.8	mg/L	52	Standard
Fe	54	7017.1	3.9	**5.7146**	0.075	1.3	mg/L	214	Standard
Fe	57	2113.5	11.2	**5.9882**	0.928	15.5	mg/L	213	Standard
> **Sc-1**	45	38116.2	3.1				mg/L	49932	Standard
Cl	35	24437.0	3.4				ug/L	23537	Standard
Kr	83	4.3	58.1				ug/L	3	Standard
Br	81	2040.1	4.8				ug/L	1553	Standard
P	31	16856.0	1.6				ug/L	15523	Standard
S	34	883.4	5.6				ug/L	1052	Standard
Sr	88	151.7	38.2				ug/L	147	Standard
C	12	620.0	31.8				mg/L	397	Standard
N	14	10.0	173.2				mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	39.0	44.4				mg/L	29	Standard
Ho-1	165	16.7	124.9				mg/L	15	Standard
Er	166	20.0	50.0				mg/L	23	Standard
I	127	2066.8	9.9				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	86.294		
Al	27	78.013		
Sc	45			
Ti	47	91.163		
V	51	97.882		
Cr	52	100.885		
Cr	53			
Mn	55	100.600		
Co	59	100.955		
Ni	60	102.573		
Cu	65	102.481		
Zn	66	102.289		
> Ge	72		92.112	
As	75	106.376		
Se	82	113.780		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	100.212		
Ag	107	96.763		
Cd	111	104.043		
Cd	114			
> In	115		105.091	
Sn	118	101.241		
Sb	123	94.068		
Ba	135	89.503		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	105.662		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.184		
U	238	111.699		
> Bi	209		93.579	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	
QC Std 6	Se	82	

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QC Std 6	Ba	135
QC Std 6	U	238

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, February 23, 2015 20:41:52
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	136384.3	6.1				ug/L	102148	Standard
	Be	9	20.0	43.3	**0.0003**	0.005	1624.0	ug/L	8	Standard
	Al	27	5242.9	77.2	**0.0074**	0.019	264.1	ug/L	1058	Standard
	Sc	45	37721.9	3.3				ug/L	49932	Standard
	Ti	47	18.3	36.3	**-0.0037**	0.029	772.7	ug/L	25	Standard
	V	51	1991.3	1.9	**-0.0313**	0.006	19.5	ug/L	2343	Standard
	Cr	52	8306.6	3.6	**-0.0183**	0.046	250.3	ug/L	9255	Standard
	Cr	53	545.0	12.1	**0.1725**	0.061	35.3	ug/L	355	Standard
	Mn	55	5167.1	124.4	**0.3367**	0.520	154.5	ug/L	920	Standard
	Co	59	311.3	77.8	**0.0115**	0.024	210.7	ug/L	117	Standard
	Ni	60	75.7	47.3	**0.0005**	0.015	3057.9	ug/L	48	Standard
	Cu	65	208.3	12.8	**-0.0103**	0.011	106.8	ug/L	211	Standard
	Zn	66	287.0	15.9	**-0.1052**	0.041	39.0	ug/L	477	Standard
>	**Ge**	72	490011.7	1.3				ug/L	543406	Standard
	As	75	-125.3	24.8	**-0.0024**	0.026	1091.4	ug/L	-90	Standard
	Se	82	24.6	42.8	**0.0000**	0.08	208468.9	ug/L	31	Standard
	Se-1	77	116.0	14.2	**0.0955**	0.208	217.6	ug/L	117	Standard
>	**Ga**	71	11.7	65.5				mg/L	22	Standard
	Rb	85	63.3	56.0				ug/L	53	Standard
	Y	89	524852.5	0.3				ug/L	557276	Standard
>	**Rh**	103	10.0	50.0				ug/L	12	Standard
	Mo	98	136.5	12.6	**0.0250**	0.005	19.8	ug/L	159	Standard
	Ag	107	224.7	55.9	**0.0031**	0.012	386.8	ug/L	102	Standard
	Cd	111	8.8	98.6	**-0.0059**	0.003	51.6	mg/L	4	Standard
	Cd	114	25.7	42.0	**-0.0115**	0.002	13.4	ug/L	34	Standard
>	**In**	115	863598.8	1.5				ug/L	828245	Standard
	Sn	118	905.0	3.3	**0.0196**	0.003	15.3	ug/L	850	Standard
	Sb	123	161.6	24.4	**0.0073**	0.006	84.1	ug/L	499	Standard
	Ba	135	113.7	91.1	**0.0177**	0.031	172.3	ug/L	23	Standard
	Ce	140	275.0	151.2				ug/L	45	Standard
>	**Tb**	159	1308255.0	1.6				ug/L	1408642	Standard
	Ho	165	48.3	57.0				ug/L	15	Standard
	Tl	203	156.7	81.5	**0.0082**	0.012	149.8	ug/L	5	Standard
	Tl	205	81.7	83.6	**0.0032**	0.008	246.0	ug/L	8	Standard
	Pb	206	390.0	26.4	**0.0050**	0.014	280.2	ug/L	348	Standard
	Pb	207	350.7	23.9	**0.0011**	0.013	1137.7	ug/L	284	Standard
	Pb	208	929.7	12.9	**-0.0077**	0.006	77.0	ug/L	938	Standard
	U	238	33.3	66.6	**0.0025**	0.003	129.0	ug/L	3	Standard
>	**Bi**	209	587967.4	0.5				ug/L	615841	Standard

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Na	23	1.7	173.2	**4.2003**	7.266	173.0	mg/L	3	Standard
Mg	24	108.3	23.2	**0.0486**	0.032	65.5	mg/L	68	Standard
K	39	11.7	107.9	**-0.0114**	0.046	405.9	mg/L	23	Standard
Ca	43	21.7	26.6	**-1.2055**	0.506	42.0	mg/L	52	Standard
Fe	54	194.3	8.8	**0.0418**	0.019	46.1	mg/L	214	Standard
Fe	57	205.0	10.6	**0.1143**	0.047	41.1	mg/L	213	Standard
> **Sc-1**	45	37721.9	3.3				mg/L	49932	Standard
Cl	35	23275.2	1.8				ug/L	23537	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	1816.8	9.2				ug/L	1553	Standard
P	31	17169.7	5.1				ug/L	15523	Standard
S	34	873.4	3.2				ug/L	1052	Standard
Sr	88	195.0	19.4				ug/L	147	Standard
C	12	656.7	24.3				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	31.6	125.1				mg/L	29	Standard
Ho-1	165	48.3	57.0				mg/L	15	Standard
Er	166	36.7	126.0				mg/L	23	Standard
I	127	1496.7	7.0				mg/L	1075	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		90.174	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.269
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.474
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1502097111
Sample Date/Time: Monday, February 23, 2015 20:45:04
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	142630.2	2.8				ug/L	102148	Standard
	Be	9	41.7	38.6	**0.0111**	0.009	79.3	ug/L	8	Standard
	Al	27	84653386.9	2.4	**391.8353**	20.325	5.2	ug/L	1058	Standard
	Sc	45	38789.6	1.2				ug/L	49932	Standard
	Ti	47	173.3	12.4	**0.7110**	0.107	15.0	ug/L	25	Standard
	V	51	307.0	271.7	**-0.2359**	0.114	48.2	ug/L	2343	Standard
	Cr	52	13855.7	2.2	**0.8505**	0.062	7.3	ug/L	9255	Standard
	Cr	53	14448.6	3.2	**15.0852**	0.394	2.6	ug/L	355	Standard
	Mn	55	488634.5	1.7	**43.0679**	1.188	2.8	ug/L	920	Standard
	Co	59	8965.7	1.1	**0.9604**	0.019	2.0	ug/L	117	Standard
	Ni	60	20297.3	1.3	**9.0269**	0.196	2.2	ug/L	48	Standard
	Cu	65	2284.5	0.9	**0.9457**	0.002	0.2	ug/L	211	Standard
	Zn	66	4220.9	2.4	**3.6771**	0.110	3.0	ug/L	477	Standard
>	**Ge**	72	448370.3	1.1				ug/L	543406	Standard
	As	75	2725.3	4.6	**2.5089**	0.104	4.1	ug/L	-90	Standard
	Se	82	1158.5	2.0	**10.0983**	0.144	1.4	ug/L	31	Standard
	Se-1	77	1572.1	4.9	**19.8139**	0.839	4.2	ug/L	117	Standard
>	**Ga**	71	46.7	12.4				mg/L	22	Standard
	Rb	85	5606.0	1.6				ug/L	53	Standard
	Y	89	520291.7	1.3				ug/L	557276	Standard
>	**Rh**	103	733.4	6.1				ug/L	12	Standard
	Mo	98	244.4	5.5	**0.0656**	0.004	6.5	ug/L	159	Standard
	Ag	107	138.0	70.3	**-0.0039**	0.010	257.0	ug/L	102	Standard
	Cd	111	306.0	6.9	**0.1085**	0.008	7.5	mg/L	4	Standard
	Cd	114	785.6	7.6	**0.1067**	0.008	7.4	ug/L	34	Standard
>	**In**	115	784058.6	1.2				ug/L	828245	Standard
	Sn	118	1098.4	7.8	**0.0550**	0.011	19.8	ug/L	850	Standard
	Sb	123	180.2	13.4	**0.0132**	0.004	29.3	ug/L	499	Standard
	Ba	135	40453.6	1.9	**13.1021**	0.220	1.7	ug/L	23	Standard
	Ce	140	1291.7	6.5				ug/L	45	Standard
>	**Tb**	159	1220389.8	1.6				ug/L	1408642	Standard
	Ho	165	55.0	36.4				ug/L	15	Standard
	Tl	203	199.7	48.5	**0.0165**	0.011	67.0	ug/L	5	Standard
	Tl	205	130.0	33.5	**0.0121**	0.006	52.2	ug/L	8	Standard
	Pb	206	527.0	11.3	**0.0391**	0.010	25.0	ug/L	348	Standard
	Pb	207	440.0	14.2	**0.0289**	0.011	36.7	ug/L	284	Standard
	Pb	208	1260.4	4.7	**0.0220**	0.004	16.5	ug/L	938	Standard
	U	238	6757.5	2.2	**1.1793**	0.019	1.6	ug/L	3	Standard
>	**Bi**	209	484701.2	1.9				ug/L	615841	Standard

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Na	23	46.7	43.3	**118.1326**	51.091	43.2	mg/L	3	Standard
Mg	24	130706.5	2.0	**151.5686**	1.437	0.9	mg/L	68	Standard
K	39	158.3	20.3	**0.4932**	0.104	21.2	mg/L	23	Standard
Ca	43	1088.4	5.5	**89.5074**	5.081	5.7	mg/L	52	Standard
Fe	54	210.2	21.4	**0.0497**	0.035	71.3	mg/L	214	Standard
Fe	57	620.0	2.9	**1.3500**	0.046	3.4	mg/L	213	Standard
> **Sc-1**	45	38789.6	1.2				mg/L	49932	Standard
Cl	35	38504.2	1.9				ug/L	23537	Standard
Kr	83	2.7	21.7				ug/L	3	Standard
Br	81	145061.1	0.6				ug/L	1553	Standard
P	31	28182.9	2.5				ug/L	15523	Standard
S	34	771.7	6.5				ug/L	1052	Standard
Sr	88	1905.1	4.2				ug/L	147	Standard
C	12	1083.4	20.4				mg/L	397	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	47.1	41.4				mg/L	29	Standard
Ho-1	165	55.0	36.4				mg/L	15	Standard
Er	166	60.0	16.7				mg/L	23	Standard
I	127	198237.1	4.9				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		139.630	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		82.511	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.665
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	78.706
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1502097111
Sample Date/Time: Monday, February 23, 2015 20:48:15
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	152511.0	6.7				ug/L	102148	Standard
	Be	9	10.0	50.0	**-0.0056**	0.003	44.8	ug/L	8	Standard
	Al	27	2060581.0	2.1	**8.9282**	0.777	8.7	ug/L	1058	Standard
	Sc	45	39566.7	6.0				ug/L	49932	Standard
	Ti	47	24.0	26.0	**0.0165**	0.025	151.5	ug/L	25	Standard
	V	51	2288.5	2.1	**-0.0034**	0.006	163.5	ug/L	2343	Standard
	Cr	52	9947.3	0.9	**0.1503**	0.021	14.2	ug/L	9255	Standard
	Cr	53	1318.4	8.1	**0.8887**	0.098	11.0	ug/L	355	Standard
	Mn	55	11992.4	2.3	**0.8566**	0.015	1.8	ug/L	920	Standard
	Co	59	350.0	4.6	**0.0142**	0.002	12.7	ug/L	117	Standard
	Ni	60	497.3	7.8	**0.1662**	0.014	8.7	ug/L	48	Standard
	Cu	65	304.7	4.0	**0.0260**	0.005	19.9	ug/L	211	Standard
	Zn	66	2111.5	2.9	**1.4316**	0.045	3.2	ug/L	477	Standard
>	**Ge**	72	505924.7	0.8				ug/L	543406	Standard
	As	75	-17.0	232.7	**0.0860**	0.031	35.8	ug/L	-90	Standard
	Se	82	58.1	2.5	**0.2586**	0.009	3.3	ug/L	31	Standard
	Se-1	77	167.3	10.3	**0.6624**	0.208	31.4	ug/L	117	Standard
>	**Ga**	71	15.0	33.3				mg/L	22	Standard
	Rb	85	191.7	17.4				ug/L	53	Standard
	Y	89	557820.2	5.7				ug/L	557276	Standard
>	**Rh**	103	28.3	10.2				ug/L	12	Standard
	Mo	98	44.2	19.4	**-0.0035**	0.003	72.3	ug/L	159	Standard
	Ag	107	111.7	18.2	**-0.0080**	0.002	22.5	ug/L	102	Standard
	Cd	111	12.6	24.2	**-0.0046**	0.001	21.3	mg/L	4	Standard
	Cd	114	96.1	23.8	**-0.0019**	0.003	160.0	ug/L	34	Standard
>	**In**	115	885871.7	1.0				ug/L	828245	Standard
	Sn	118	19033.6	1.7	**2.0697**	0.015	0.7	ug/L	850	Standard
	Sb	123	52.4	22.6	**-0.0104**	0.002	17.4	ug/L	499	Standard
	Ba	135	1003.7	1.2	**0.2724**	0.006	2.0	ug/L	23	Standard
	Ce	140	56.7	5.1				ug/L	45	Standard
>	**Tb**	159	1343253.2	1.3				ug/L	1408642	Standard
	Ho	165	20.0	43.3				ug/L	15	Standard
	Tl	203	273.0	6.4	**0.0192**	0.002	11.6	ug/L	5	Standard
	Tl	205	235.0	12.9	**0.0206**	0.003	16.2	ug/L	8	Standard
	Pb	206	421.3	7.5	**0.0085**	0.003	35.2	ug/L	348	Standard
	Pb	207	384.0	3.1	**0.0055**	0.003	55.6	ug/L	284	Standard
	Pb	208	1122.0	3.5	**0.0011**	0.001	84.9	ug/L	938	Standard
	U	238	170.0	5.4	**0.0219**	0.002	7.6	ug/L	3	Standard
>	**Bi**	209	595856.8	2.4				ug/L	615841	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	3	Standard
Mg	24	2928.6	3.9	**3.2552**	0.158	4.9	mg/L	68	Standard
K	39	13.3	21.7	**-0.0086**	0.007	85.9	mg/L	23	Standard
Ca	43	73.3	50.3	**3.1548**	3.558	112.8	mg/L	52	Standard
Fe	54	200.6	22.6	**0.0406**	0.047	115.7	mg/L	214	Standard
Fe	57	268.3	4.7	**0.2762**	0.084	30.3	mg/L	213	Standard
> **Sc-1**	45	39566.7	6.0				mg/L	49932	Standard
Cl	35	28098.0	1.9				ug/L	23537	Standard
Kr	83	3.7	31.5				ug/L	3	Standard
Br	81	4957.5	11.5				ug/L	1553	Standard
P	31	17169.7	3.9				ug/L	15523	Standard
S	34	851.7	4.2				ug/L	1052	Standard
Sr	88	176.7	29.7				ug/L	147	Standard
C	12	640.0	9.5				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	26.2	59.5				mg/L	29	Standard
Ho-1	165	20.0	43.3				mg/L	15	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	7957.2	22.9				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		149.303	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.102	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.958
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.755
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1502097113
Sample Date/Time: Monday, February 23, 2015 20:51:27
Number of Replicates: 3
Autosampler Position: 227
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	158010.1	3.0				ug/L	102148	Standard
	Be	9	13.3	57.3	**-0.0043**	0.004	84.0	ug/L	8	Standard
	Al	27	6948663.6	5.0	**28.9763**	0.596	2.1	ug/L	1058	Standard
	Sc	45	39832.3	0.9				ug/L	49932	Standard
	Ti	47	133.7	11.4	**0.4636**	0.057	12.2	ug/L	25	Standard
	V	51	2181.7	11.9	**-0.0142**	0.032	228.1	ug/L	2343	Standard
	Cr	52	18230.0	1.1	**1.1864**	0.034	2.9	ug/L	9255	Standard
	Cr	53	2923.6	6.2	**2.4320**	0.208	8.5	ug/L	355	Standard
	Mn	55	133799.1	4.0	**10.4672**	0.482	4.6	ug/L	920	Standard
	Co	59	1177.4	13.5	**0.0953**	0.016	16.6	ug/L	117	Standard
	Ni	60	3205.7	2.4	**1.2464**	0.012	1.0	ug/L	48	Standard
	Cu	65	933.4	4.0	**0.2834**	0.022	7.9	ug/L	211	Standard
	Zn	66	5987.2	1.1	**4.7516**	0.074	1.6	ug/L	477	Standard
>	**Ge**	72	502236.0	1.8				ug/L	543406	Standard
	As	75	3159.8	0.7	**2.5940**	0.030	1.1	ug/L	-90	Standard
	Se	82	146.0	2.8	**0.9588**	0.020	2.1	ug/L	31	Standard
	Se-1	77	170.3	7.4	**0.7150**	0.187	26.1	ug/L	117	Standard
>	**Ga**	71	63.3	25.4				mg/L	22	Standard
	Rb	85	165049.3	1.8				ug/L	53	Standard
	Y	89	546037.9	2.7				ug/L	557276	Standard
>	**Rh**	103	328.3	10.7				ug/L	12	Standard
	Mo	98	4478.7	0.6	**1.3627**	0.032	2.4	ug/L	159	Standard
	Ag	107	340.0	40.0	**0.0143**	0.012	87.2	ug/L	102	Standard
	Cd	111	48.1	59.1	**0.0078**	0.010	122.4	mg/L	4	Standard
	Cd	114	138.0	49.9	**0.0044**	0.009	215.8	ug/L	34	Standard
>	**In**	115	857930.4	1.7				ug/L	828245	Standard
	Sn	118	1256.7	10.1	**0.0613**	0.013	21.6	ug/L	850	Standard
	Sb	123	519.8	13.6	**0.0654**	0.010	15.3	ug/L	499	Standard
	Ba	135	113036.9	2.4	**33.4807**	0.448	1.3	ug/L	23	Standard
	Ce	140	801.7	23.0				ug/L	45	Standard
>	**Tb**	159	1295622.7	1.5				ug/L	1408642	Standard
	Ho	165	26.7	96.2				ug/L	15	Standard
	Tl	203	328.3	52.7	**0.0268**	0.017	65.2	ug/L	5	Standard
	Tl	205	231.7	11.1	**0.0222**	0.003	12.9	ug/L	8	Standard
	Pb	206	616.0	10.8	**0.0412**	0.009	21.8	ug/L	348	Standard
	Pb	207	519.7	21.1	**0.0317**	0.017	53.9	ug/L	284	Standard
	Pb	208	1532.4	9.7	**0.0268**	0.007	26.7	ug/L	938	Standard
	U	238	2265.8	3.2	**0.3447**	0.008	2.2	ug/L	3	Standard
>	**Bi**	209	553246.7	1.1				ug/L	615841	Standard

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Na	23	3.3	86.6	**8.2205**	7.116	86.6	mg/L	3	Standard
Mg	24	44308.0	1.6	**49.9817**	0.361	0.7	mg/L	68	Standard
K	39	706.7	11.4	**2.3246**	0.251	10.8	mg/L	23	Standard
Ca	43	96.7	16.6	**4.9116**	1.361	27.7	mg/L	52	Standard
Fe	54	371.6	6.9	**0.1739**	0.021	11.9	mg/L	214	Standard
Fe	57	373.3	10.7	**0.5767**	0.124	21.5	mg/L	213	Standard
> **Sc-1**	45	39832.3	0.9				mg/L	49932	Standard
Cl	35	24943.9	3.3				ug/L	23537	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	13662.8	5.0				ug/L	1553	Standard
P	31	24134.3	8.7				ug/L	15523	Standard
S	34	696.7	4.0				ug/L	1052	Standard
Sr	88	1263.4	1.2				ug/L	147	Standard
C	12	1600.1	21.3				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	70.5	140.6				mg/L	29	Standard
Ho-1	165	26.7	96.2				mg/L	15	Standard
Er	166	60.0	72.6				mg/L	23	Standard
I	127	499085.1	1.9				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		154.687	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.424	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.584	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	89.836	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1502097113
Sample Date/Time: Monday, February 23, 2015 20:54:38
Number of Replicates: 3
Autosampler Position: 228
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	143759.1	2.7				ug/L	102148	Standard
	Be	9	6.7	86.6	**-0.0070**	0.003	42.5	ug/L	8	Standard
	Al	27	160535.3	6.9	**0.7180**	0.036	5.0	ug/L	1058	Standard
	Sc	45	38796.3	2.7				ug/L	49932	Standard
	Ti	47	19.7	2.9	**-0.0011**	0.003	308.7	ug/L	25	Standard
	V	51	2112.0	4.1	**-0.0253**	0.006	25.2	ug/L	2343	Standard
	Cr	52	9482.3	1.6	**0.0902**	0.024	27.1	ug/L	9255	Standard
	Cr	53	576.7	1.0	**0.1848**	0.009	5.0	ug/L	355	Standard
	Mn	55	5892.4	62.0	**0.3788**	0.287	75.7	ug/L	920	Standard
	Co	59	221.0	49.5	**0.0017**	0.011	625.8	ug/L	117	Standard
	Ni	60	119.7	18.4	**0.0168**	0.009	52.7	ug/L	48	Standard
	Cu	65	237.0	7.5	**-0.0016**	0.009	543.4	ug/L	211	Standard
	Zn	66	1747.4	4.6	**1.1193**	0.048	4.3	ug/L	477	Standard
>	**Ge**	72	507180.5	1.5				ug/L	543406	Standard
	As	75	-44.7	54.2	**0.0642**	0.019	29.8	ug/L	-90	Standard
	Se	82	29.4	21.3	**0.0311**	0.046	146.9	ug/L	31	Standard
	Se-1	77	113.0	6.2	**0.0106**	0.072	679.0	ug/L	117	Standard
>	**Ga**	71	16.7	45.8				mg/L	22	Standard
	Rb	85	3365.4	4.3				ug/L	53	Standard
	Y	89	540915.5	2.7				ug/L	557276	Standard
>	**Rh**	103	20.0	25.0				ug/L	12	Standard
	Mo	98	120.3	21.6	**0.0198**	0.008	41.0	ug/L	159	Standard
	Ag	107	144.3	47.2	**-0.0047**	0.006	137.8	ug/L	102	Standard
	Cd	111	19.1	138.6	**-0.0023**	0.009	392.7	mg/L	4	Standard
	Cd	114	47.4	301.4	**-0.0085**	0.020	234.2	ug/L	34	Standard
>	**In**	115	870909.6	0.6				ug/L	828245	Standard
	Sn	118	13267.5	3.5	**1.4426**	0.052	3.6	ug/L	850	Standard
	Sb	123	61.5	44.1	**-0.0089**	0.004	48.6	ug/L	499	Standard
	Ba	135	2529.9	5.7	**0.7228**	0.039	5.3	ug/L	23	Standard
	Ce	140	230.0	145.0				ug/L	45	Standard
>	**Tb**	159	1306059.3	2.8				ug/L	1408642	Standard
	Ho	165	28.3	127.7				ug/L	15	Standard
	Tl	203	81.3	100.8	**0.0009**	0.008	868.8	ug/L	5	Standard
	Tl	205	30.0	60.1	**-0.0028**	0.002	73.5	ug/L	8	Standard
	Pb	206	412.3	11.9	**0.0074**	0.007	95.0	ug/L	348	Standard
	Pb	207	337.3	4.4	**-0.0016**	0.003	182.7	ug/L	284	Standard
	Pb	208	974.3	2.8	**-0.0061**	0.001	22.1	ug/L	938	Standard
	U	238	53.3	34.0	**0.0053**	0.003	50.2	ug/L	3	Standard
>	**Bi**	209	595940.1	1.7				ug/L	615841	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	3	Standard
Mg	24	1038.4	8.8	**1.1257**	0.134	11.9	mg/L	68	Standard
K	39	23.3	75.3	**0.0283**	0.063	222.7	mg/L	23	Standard
Ca	43	43.3	33.3	**0.5796**	1.194	206.0	mg/L	52	Standard
Fe	54	197.5	10.3	**0.0398**	0.021	51.8	mg/L	214	Standard
Fe	57	166.7	12.1	**-0.0189**	0.048	254.6	mg/L	213	Standard
> **Sc-1**	45	38796.3	2.7				mg/L	49932	Standard
Cl	35	24199.3	1.3				ug/L	23537	Standard
Kr	83	2.7	21.7				ug/L	3	Standard
Br	81	2316.8	6.9				ug/L	1553	Standard
P	31	16632.6	13.5				ug/L	15523	Standard
S	34	756.7	3.4				ug/L	1052	Standard
Sr	88	183.3	4.2				ug/L	147	Standard
C	12	683.3	7.2				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	34.6	157.1				mg/L	29	Standard
Ho-1	165	28.3	127.7				mg/L	15	Standard
Er	166	43.3	48.0				mg/L	23	Standard
I	127	16065.4	18.7				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		140.736	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.334	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	105.151	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.769	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1502097115
Sample Date/Time: Monday, February 23, 2015 20:57:50
Number of Replicates: 3
Autosampler Position: 229
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	146729.4	3.8				ug/L	102148	Standard
	Be	9	35.0	51.5	**0.0072**	0.010	133.0	ug/L	8	Standard
	Al	27	43807940.9	2.4	**197.0148**	5.592	2.8	ug/L	1058	Standard
	Sc	45	38701.1	2.9				ug/L	49932	Standard
	Ti	47	783.4	3.7	**3.3269**	0.135	4.0	ug/L	25	Standard
	V	51	4369.2	7.1	**0.2860**	0.039	13.7	ug/L	2343	Standard
	Cr	52	13751.6	1.1	**0.7467**	0.018	2.5	ug/L	9255	Standard
	Cr	53	14223.3	2.6	**14.1383**	0.407	2.9	ug/L	355	Standard
	Mn	55	265874.6	1.8	**22.2985**	0.355	1.6	ug/L	920	Standard
	Co	59	4056.9	2.5	**0.4031**	0.009	2.3	ug/L	117	Standard
	Ni	60	7011.0	1.8	**2.9520**	0.046	1.6	ug/L	48	Standard
	Cu	65	2213.8	3.4	**0.8664**	0.030	3.5	ug/L	211	Standard
	Zn	66	3877.8	0.7	**3.1764**	0.017	0.5	ug/L	477	Standard
>	**Ge**	72	470264.8	0.3				ug/L	543406	Standard
	As	75	2245.6	2.7	**1.9923**	0.047	2.3	ug/L	-90	Standard
	Se	82	879.7	1.6	**7.2560**	0.104	1.4	ug/L	31	Standard
	Se-1	77	1052.4	3.7	**12.1669**	0.500	4.1	ug/L	117	Standard
>	**Ga**	71	253.3	9.3				mg/L	22	Standard
	Rb	85	11762.9	2.0				ug/L	53	Standard
	Y	89	525920.1	1.7				ug/L	557276	Standard
>	**Rh**	103	353.3	11.5				ug/L	12	Standard
	Mo	98	659.3	4.5	**0.1975**	0.005	2.5	ug/L	159	Standard
	Ag	107	111.7	23.6	**-0.0070**	0.002	35.2	ug/L	102	Standard
	Cd	111	278.9	8.2	**0.0942**	0.006	6.5	mg/L	4	Standard
	Cd	114	739.8	8.3	**0.0958**	0.011	12.0	ug/L	34	Standard
>	**In**	115	812994.1	2.2				ug/L	828245	Standard
	Sn	118	1250.1	2.6	**0.0687**	0.004	5.6	ug/L	850	Standard
	Sb	123	229.4	8.1	**0.0206**	0.004	18.6	ug/L	499	Standard
	Ba	135	92281.9	1.6	**28.8455**	0.188	0.7	ug/L	23	Standard
	Ce	140	7705.3	3.8				ug/L	45	Standard
>	**Tb**	159	1253449.1	2.0				ug/L	1408642	Standard
	Ho	165	148.3	14.0				ug/L	15	Standard
	Tl	203	163.7	11.0	**0.0113**	0.002	16.2	ug/L	5	Standard
	Tl	205	156.7	11.2	**0.0146**	0.002	14.9	ug/L	8	Standard
	Pb	206	1324.7	3.0	**0.1598**	0.005	2.9	ug/L	348	Standard
	Pb	207	1076.7	3.9	**0.1358**	0.006	4.2	ug/L	284	Standard
	Pb	208	3403.2	3.5	**0.1396**	0.005	3.8	ug/L	938	Standard
	U	238	19301.3	4.0	**3.1929**	0.098	3.1	ug/L	3	Standard
>	**Bi**	209	511843.7	1.0				ug/L	615841	Standard

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Na	23	6.7	86.6	**16.8500**	14.604	86.7	mg/L	3	Standard
Mg	24	128978.4	1.2	**149.9642**	2.613	1.7	mg/L	68	Standard
K	39	121.7	8.6	**0.3683**	0.037	10.1	mg/L	23	Standard
Ca	43	525.0	9.2	**41.6569**	3.699	8.9	mg/L	52	Standard
Fe	54	510.3	9.4	**0.2966**	0.044	14.7	mg/L	214	Standard
Fe	57	536.7	5.5	**1.1015**	0.041	3.7	mg/L	213	Standard
> **Sc-1**	45	38701.1	2.9				mg/L	49932	Standard
Cl	35	28588.3	1.8				ug/L	23537	Standard
Kr	83	2.0	86.6				ug/L	3	Standard
Br	81	111415.9	6.4				ug/L	1553	Standard
P	31	28688.9	6.5				ug/L	15523	Standard
S	34	826.7	2.9				ug/L	1052	Standard
Sr	88	1161.7	7.7				ug/L	147	Standard
C	12	1116.7	7.6				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	20.0	50.0				mg/L	0	Standard
Dy	164	229.2	9.5				mg/L	29	Standard
Ho-1	165	148.3	14.0				mg/L	15	Standard
Er	166	86.7	33.3				mg/L	23	Standard
I	127	581897.4	3.9				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		143.643	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		86.540	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.159
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		83.113
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1502097115
Sample Date/Time: Monday, February 23, 2015 21:01:02
Number of Replicates: 3
Autosampler Position: 230
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	146322.3	4.3				ug/L	102148	Standard
	Be	9	11.7	65.5	**-0.0045**	0.004	91.4	ug/L	8	Standard
	Al	27	1076529.2	1.5	**4.8425**	0.283	5.8	ug/L	1058	Standard
	Sc	45	38831.5	5.6				ug/L	49932	Standard
	Ti	47	39.0	30.2	**0.0765**	0.048	63.3	ug/L	25	Standard
	V	51	2377.7	1.1	**0.0056**	0.002	43.8	ug/L	2343	Standard
	Cr	52	9876.2	2.8	**0.1342**	0.025	18.6	ug/L	9255	Standard
	Cr	53	1300.1	9.8	**0.8648**	0.129	14.9	ug/L	355	Standard
	Mn	55	7169.0	2.9	**0.4759**	0.015	3.2	ug/L	920	Standard
	Co	59	219.0	11.9	**0.0014**	0.002	172.5	ug/L	117	Standard
	Ni	60	314.7	41.2	**0.0931**	0.050	54.1	ug/L	48	Standard
	Cu	65	296.0	10.0	**0.0217**	0.011	51.2	ug/L	211	Standard
	Zn	66	1958.5	3.2	**1.2922**	0.045	3.5	ug/L	477	Standard
>	**Ge**	72	508915.7	0.8				ug/L	543406	Standard
	As	75	-56.0	102.2	**0.0558**	0.044	79.5	ug/L	-90	Standard
	Se	82	48.8	10.8	**0.1830**	0.043	23.7	ug/L	31	Standard
	Se-1	77	147.0	11.9	**0.4106**	0.221	53.9	ug/L	117	Standard
>	**Ga**	71	28.3	10.2				mg/L	22	Standard
	Rb	85	295.0	23.7				ug/L	53	Standard
	Y	89	535655.4	2.2				ug/L	557276	Standard
>	**Rh**	103	21.7	35.3				ug/L	12	Standard
	Mo	98	36.4	20.0	**-0.0055**	0.002	41.8	ug/L	159	Standard
	Ag	107	109.0	20.7	**-0.0079**	0.002	28.2	ug/L	102	Standard
	Cd	111	15.3	16.3	**-0.0036**	0.001	24.8	mg/L	4	Standard
	Cd	114	59.6	55.3	**-0.0066**	0.005	70.8	ug/L	34	Standard
>	**In**	115	859510.7	0.5				ug/L	828245	Standard
	Sn	118	883.4	10.0	**0.0176**	0.011	60.6	ug/L	850	Standard
	Sb	123	37.2	21.9	**-0.0126**	0.001	10.6	ug/L	499	Standard
	Ba	135	2118.5	1.8	**0.6110**	0.014	2.4	ug/L	23	Standard
	Ce	140	215.0	22.4				ug/L	45	Standard
>	**Tb**	159	1329966.3	2.6				ug/L	1408642	Standard
	Ho	165	10.0	86.6				ug/L	15	Standard
	Tl	203	233.0	11.5	**0.0155**	0.003	17.7	ug/L	5	Standard
	Tl	205	196.7	11.5	**0.0164**	0.003	16.6	ug/L	8	Standard
	Pb	206	408.3	4.9	**0.0072**	0.002	33.1	ug/L	348	Standard
	Pb	207	339.0	7.8	**-0.0010**	0.004	389.2	ug/L	284	Standard
	Pb	208	1027.3	5.1	**-0.0031**	0.003	90.6	ug/L	938	Standard
	U	238	414.7	2.6	**0.0571**	0.001	1.9	ug/L	3	Standard
>	**Bi**	209	591391.7	0.7				ug/L	615841	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	3	Standard
Mg	24	2751.9	6.1	**3.1222**	0.374	12.0	mg/L	68	Standard
K	39	16.7	45.8	**0.0052**	0.030	576.2	mg/L	23	Standard
Ca	43	33.3	34.6	**-0.2597**	1.012	389.7	mg/L	52	Standard
Fe	54	202.2	7.8	**0.0435**	0.015	35.1	mg/L	214	Standard
Fe	57	266.7	8.5	**0.2821**	0.023	8.3	mg/L	213	Standard
> **Sc-1**	45	38831.5	5.6				mg/L	49932	Standard
Cl	35	26724.9	0.7				ug/L	23537	Standard
Kr	83	3.0	0.0				ug/L	3	Standard
Br	81	4514.0	3.2				ug/L	1553	Standard
P	31	17745.4	4.2				ug/L	15523	Standard
S	34	773.4	2.7				ug/L	1052	Standard
Sr	88	201.7	10.3				ug/L	147	Standard
C	12	636.7	7.7				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.5	126.6				mg/L	29	Standard
Ho-1	165	10.0	86.6				mg/L	15	Standard
Er	166	16.7	124.9				mg/L	23	Standard
I	127	18244.5	15.1				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		143.245	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.653	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.775	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.030	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, February 23, 2015 21:04:14
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	142816.7	1.8				ug/L	102148	Standard
	Be	9	80617.5	4.3	**41.5144**	1.493	3.6	ug/L	8	Standard
	Al	27	8162131.8	3.1	**37.6716**	0.528	1.4	ug/L	1058	Standard
	Sc	45	38036.0	1.8				ug/L	49932	Standard
	Ti	47	22699.0	1.3	**92.9331**	2.127	2.3	ug/L	25	Standard
	V	51	410711.4	2.5	**49.6908**	1.386	2.8	ug/L	2343	Standard
	Cr	52	414586.6	1.4	**50.6402**	1.190	2.3	ug/L	9255	Standard
	Cr	53	52037.6	2.6	**49.6155**	1.716	3.5	ug/L	355	Standard
	Mn	55	635637.1	0.8	**50.3260**	0.887	1.8	ug/L	920	Standard
	Co	59	512456.7	2.4	**50.2985**	1.708	3.4	ug/L	117	Standard
	Ni	60	130967.0	0.9	**52.4560**	0.919	1.8	ug/L	48	Standard
	Cu	65	127373.9	1.7	**52.1427**	1.350	2.6	ug/L	211	Standard
	Zn	66	61106.0	1.5	**52.0894**	1.237	2.4	ug/L	477	Standard
>	Ge	72	499230.8	1.0				ug/L	543406	Standard
	As	75	67416.4	2.4	**53.6486**	1.702	3.2	ug/L	-90	Standard
	Se	82	7066.5	1.5	**56.2223**	1.331	2.4	ug/L	31	Standard
	Se-1	77	4534.3	0.2	**53.4639**	0.652	1.2	ug/L	117	Standard
>	Ga	71	43.3	46.6				mg/L	22	Standard
	Rb	85	1100.0	12.5				ug/L	53	Standard
	Y	89	537534.3	0.8				ug/L	557276	Standard
>	Rh	103	55.0	9.1				ug/L	12	Standard
	Mo	98	328142.2	2.4	**100.0294**	2.377	2.4	ug/L	159	Standard
	Ag	107	507022.6	1.3	**48.4270**	0.551	1.1	ug/L	102	Standard
	Cd	111	149376.6	2.0	**51.8494**	1.084	2.1	mg/L	4	Standard
	Cd	114	363358.3	1.5	**51.0021**	0.694	1.4	ug/L	34	Standard
>	In	115	866427.5	0.2				ug/L	828245	Standard
	Sn	118	436374.8	2.1	**50.4371**	1.068	2.1	ug/L	850	Standard
	Sb	123	293786.6	1.2	**47.0743**	0.598	1.3	ug/L	499	Standard
	Ba	135	152454.9	1.5	**44.7203**	0.691	1.5	ug/L	23	Standard
	Ce	140	398.3	47.5				ug/L	45	Standard
>	Tb	159	1314263.5	1.5				ug/L	1408642	Standard
	Ho	165	31.7	50.8				ug/L	15	Standard
	Tl	203	532536.5	1.6	**51.6051**	1.160	2.2	ug/L	5	Standard
	Tl	205	460578.0	2.3	**53.4081**	1.587	3.0	ug/L	8	Standard
	Pb	206	385154.0	0.4	**52.7444**	0.465	0.9	ug/L	348	Standard
	Pb	207	346047.1	1.2	**52.6689**	0.926	1.8	ug/L	284	Standard
	Pb	208	1014931.9	1.5	**50.2184**	1.080	2.2	ug/L	938	Standard
	U	238	381083.2	1.1	**55.0469**	0.841	1.5	ug/L	3	Standard
>	Bi	209	586724.0	0.7				ug/L	615841	Standard

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Na	23	1.7	173.2	**4.2246**	7.309	173.0	mg/L	3	Standard
Mg	24	4820.8	8.3	**5.6225**	0.449	8.0	mg/L	68	Standard
K	39	833.4	9.4	**2.8889**	0.325	11.3	mg/L	23	Standard
Ca	43	76.7	32.8	**3.5459**	2.180	61.5	mg/L	52	Standard
Fe	54	7053.2	3.4	**5.7584**	0.194	3.4	mg/L	214	Standard
Fe	57	2045.1	1.5	**5.7730**	0.045	0.8	mg/L	213	Standard
Sc-1	45	38036.0	1.8				mg/L	49932	Standard
Cl	35	24372.3	4.0				ug/L	23537	Standard
Kr	83	2.3	99.0				ug/L	3	Standard
Br	81	2090.1	8.7				ug/L	1553	Standard
P	31	17895.6	0.4				ug/L	15523	Standard
S	34	861.7	3.4				ug/L	1052	Standard
Sr	88	135.0	29.4				ug/L	147	Standard
C	12	680.0	11.1				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	62.1	77.3				mg/L	29	Standard
Ho-1	165	31.7	50.8				mg/L	15	Standard
Er	166	26.7	108.3				mg/L	23	Standard
I	127	2520.2	11.7				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	83.029		
Al	27	75.343		
Sc	45			
Ti	47	92.933		
V	51	99.382		
Cr	52	101.280		
Cr	53			
Mn	55	100.652		
Co	59	100.597		
Ni	60	104.912		
Cu	65	104.285		
Zn	66	104.179		
Ge	72		91.871	
As	75	107.297		
Se	82	112.445		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	100.029		
Ag	107	96.854		
Cd	111	103.699		
Cd	114			
> In	115		104.610	
Sn	118	100.874		
Sb	123	94.149		
Ba	135	89.441		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	103.210		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.437		
U	238	110.094		
> Bi	209		95.272	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	
QC Std 6	Se	82	

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QC Std 6	Ba	135
QC Std 6	U	238

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, February 23, 2015 21:07:26
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	145770.0	3.3				ug/L	102148	Standard
	Be	9	35.0	65.5	**0.0070**	0.011	161.2	ug/L	8	Standard
	Al	27	7394.0	69.2	**0.0149**	0.023	151.9	ug/L	1058	Standard
	Sc	45	39217.4	2.7				ug/L	49932	Standard
	Ti	47	13.7	27.7	**-0.0245**	0.015	62.8	ug/L	25	Standard
	V	51	2060.3	1.1	**-0.0277**	0.003	11.5	ug/L	2343	Standard
	Cr	52	8172.5	1.2	**-0.0553**	0.011	19.8	ug/L	9255	Standard
	Cr	53	501.7	13.4	**0.1211**	0.064	53.2	ug/L	355	Standard
	Mn	55	4004.8	134.7	**0.2353**	0.427	181.3	ug/L	920	Standard
	Co	59	296.7	77.6	**0.0094**	0.023	239.1	ug/L	117	Standard
	Ni	60	78.3	43.6	**0.0009**	0.014	1453.9	ug/L	48	Standard
	Cu	65	243.7	5.7	**0.0025**	0.006	225.5	ug/L	211	Standard
	Zn	66	294.7	9.9	**-0.1036**	0.025	24.3	ug/L	477	Standard
>	**Ge**	72	499524.1	0.2				ug/L	543406	Standard
	As	75	-103.0	5.5	**0.0175**	0.005	26.7	ug/L	-90	Standard
	Se	82	31.5	4.2	**0.0516**	0.011	20.4	ug/L	31	Standard
	Se-1	77	116.3	10.5	**0.0719**	0.149	206.8	ug/L	117	Standard
>	**Ga**	71	18.3	31.5				mg/L	22	Standard
	Rb	85	65.0	40.7				ug/L	53	Standard
	Y	89	554086.6	2.4				ug/L	557276	Standard
>	**Rh**	103	6.7	43.3				ug/L	12	Standard
	Mo	98	179.7	37.0	**0.0382**	0.021	54.5	ug/L	159	Standard
	Ag	107	129.7	30.2	**-0.0060**	0.004	62.8	ug/L	102	Standard
	Cd	111	19.4	65.0	**-0.0022**	0.004	200.2	mg/L	4	Standard
	Cd	114	51.6	77.3	**-0.0078**	0.006	72.4	ug/L	34	Standard
>	**In**	115	866478.7	2.2				ug/L	828245	Standard
	Sn	118	808.4	8.0	**0.0081**	0.008	93.5	ug/L	850	Standard
	Sb	123	162.2	41.3	**0.0074**	0.011	147.9	ug/L	499	Standard
	Ba	135	52.7	39.5	**-0.0002**	0.006	3009.2	ug/L	23	Standard
	Ce	140	25.0	52.9				ug/L	45	Standard
>	**Tb**	159	1302764.7	2.2				ug/L	1408642	Standard
	Ho	165	8.3	34.6				ug/L	15	Standard
	Tl	203	78.0	54.0	**0.0007**	0.004	596.6	ug/L	5	Standard
	Tl	205	63.3	67.1	**0.0011**	0.005	440.6	ug/L	8	Standard
	Pb	206	354.0	14.6	**0.0004**	0.007	1899.5	ug/L	348	Standard
	Pb	207	318.0	12.2	**-0.0035**	0.006	182.7	ug/L	284	Standard
	Pb	208	999.0	14.3	**-0.0040**	0.007	181.2	ug/L	938	Standard
	U	238	49.0	90.9	**0.0048**	0.007	136.2	ug/L	3	Standard
>	**Bi**	209	584843.6	1.5				ug/L	615841	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	3	Standard
Mg	24	125.0	30.2	**0.0624**	0.043	68.5	mg/L	68	Standard
K	39	13.3	43.3	**-0.0081**	0.019	233.1	mg/L	23	Standard
Ca	43	30.0	16.7	**-0.5769**	0.409	71.0	mg/L	52	Standard
Fe	54	199.6	12.8	**0.0398**	0.024	59.3	mg/L	214	Standard
Fe	57	236.7	5.3	**0.1856**	0.037	19.8	mg/L	213	Standard
Sc-1	45	39217.4	2.7				mg/L	49932	Standard
Cl	35	23873.5	1.4				ug/L	23537	Standard
Kr	83	3.0	88.2				ug/L	3	Standard
Br	81	2003.5	11.2				ug/L	1553	Standard
P	31	18364.5	4.9				ug/L	15523	Standard
S	34	870.0	10.4				ug/L	1052	Standard
Sr	88	156.7	19.5				ug/L	147	Standard
C	12	583.3	12.0				mg/L	397	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.7	5.7				mg/L	29	Standard
Ho-1	165	8.3	34.6				mg/L	15	Standard
Er	166	6.7	173.2				mg/L	23	Standard
I	127	1700.1	3.8				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		91.925	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.616
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.967
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Approved: February 24, 2015

Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Monday, February 23, 2015 21:10:39
Number of Replicates: 3
Autosampler Position: 202
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	137381.0	4.9				ug/L	102148	Standard
	Be	9	331.7	7.1	**0.1675**	0.018	10.6	ug/L	8	Standard
	Al	27	411.7	44.0	**-0.0162**	0.001	4.9	ug/L	1058	Standard
	Sc	45	38560.7	2.3				ug/L	49932	Standard
	Ti	47	14.7	21.9	**-0.0189**	0.014	74.2	ug/L	25	Standard
	V	51	5003.0	4.6	**0.3453**	0.037	10.7	ug/L	2343	Standard
	Cr	52	14520.3	1.0	**0.7804**	0.043	5.5	ug/L	9255	Standard
	Cr	53	1315.1	5.3	**0.9321**	0.056	6.0	ug/L	355	Standard
	Mn	55	6690.5	3.3	**0.4615**	0.020	4.3	ug/L	920	Standard
	Co	59	3884.8	1.9	**0.3708**	0.011	3.0	ug/L	117	Standard
	Ni	60	3935.8	3.6	**1.5839**	0.034	2.2	ug/L	48	Standard
	Cu	65	2219.8	3.6	**0.8345**	0.028	3.4	ug/L	211	Standard
	Zn	66	7925.1	3.2	**6.6070**	0.232	3.5	ug/L	477	Standard
>	**Ge**	72	487639.3	1.5				ug/L	543406	Standard
	As	75	395.7	18.8	**0.4216**	0.066	15.6	ug/L	-90	Standard
	Se	82	71.1	14.4	**0.3826**	0.092	24.2	ug/L	31	Standard
	Se-1	77	132.3	18.6	**0.3069**	0.328	107.0	ug/L	117	Standard
>	**Ga**	71	15.0	33.3				mg/L	22	Standard
	Rb	85	18.3	15.7				ug/L	53	Standard
	Y	89	552516.3	2.6				ug/L	557276	Standard
>	**Rh**	103	11.7	49.5				ug/L	12	Standard
	Mo	98	47.3	3.3	**-0.0021**	0.000	22.4	ug/L	159	Standard
	Ag	107	4036.2	0.7	**0.3713**	0.005	1.2	ug/L	102	Standard
	Cd	111	685.9	2.4	**0.2317**	0.008	3.4	mg/L	4	Standard
	Cd	114	1812.3	4.7	**0.2420**	0.012	5.0	ug/L	34	Standard
>	**In**	115	857648.3	1.5				ug/L	828245	Standard
	Sn	118	725.0	8.3	**-0.0008**	0.006	755.7	ug/L	850	Standard
	Sb	123	2084.9	2.4	**0.3190**	0.009	2.8	ug/L	499	Standard
	Ba	135	2126.5	2.3	**0.6148**	0.017	2.8	ug/L	23	Standard
	Ce	140	31.7	24.1				ug/L	45	Standard
>	**Tb**	159	1268817.4	2.5				ug/L	1408642	Standard
	Ho	165	16.7	17.3				ug/L	15	Standard
	Tl	203	829.7	3.4	**0.0740**	0.001	1.6	ug/L	5	Standard
	Tl	205	651.7	11.7	**0.0700**	0.011	15.2	ug/L	8	Standard
	Pb	206	1931.1	3.2	**0.2182**	0.008	3.6	ug/L	348	Standard
	Pb	207	1576.7	2.8	**0.1896**	0.004	2.3	ug/L	284	Standard
	Pb	208	4831.6	2.7	**0.1873**	0.005	2.4	ug/L	938	Standard
	U	238	2880.6	2.0	**0.4166**	0.011	2.7	ug/L	3	Standard
>	**Bi**	209	582894.7	2.3				ug/L	615841	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	3	Standard
Mg	24	100.0	5.0	**0.0356**	0.004	12.0	mg/L	68	Standard
K	39	15.0	66.7	**-0.0011**	0.035	3019.9	mg/L	23	Standard
Ca	43	31.7	45.6	**-0.3846**	1.252	325.6	mg/L	52	Standard
Fe	54	201.8	16.4	**0.0438**	0.025	57.6	mg/L	214	Standard
Fe	57	198.3	29.1	**0.0795**	0.164	206.7	mg/L	213	Standard
Sc-1	45	38560.7	2.3				mg/L	49932	Standard
Cl	35	24145.2	2.5				ug/L	23537	Standard
Kr	83	4.3	58.1				ug/L	3	Standard
Br	81	1900.1	5.0				ug/L	1553	Standard
P	31	18166.2	19.7				ug/L	15523	Standard
S	34	833.4	8.7				ug/L	1052	Standard
Sr	88	175.0	17.4				ug/L	147	Standard
C	12	670.0	17.0				mg/L	397	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.9	117.7				mg/L	29	Standard
Ho-1	165	16.7	17.3				mg/L	15	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	1350.1	11.3				mg/L	1075	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		134.492	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		89.738	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.550
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.650
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: QC Std 8
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2.4 General Chemistry Data

2.4.1 Method 9056

2.4.1.1 Summary Data

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-06	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	50WW24-021815	**Prep Method:**	9056	**Prep Date:**	02/19/2015 17:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/01/2014 14:10
Workgroup #:	WG512917	**Analyst:**	ALS	**Run Date:**	02/19/2015 18:25
Collect Date:	02/18/2015 08:25	**Dilution:**	2	**File ID:**	I3_021915-07
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	69.0	J	0.800	0.400	0.200
Nitrate	14797-55-8	0.400	U	0.800	0.400	0.200
Nitrite	14797-65-0	0.400	U	0.800	0.400	0.200
Sulfate	14808-79-8	109		4.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-06	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	50WW24-021815	**Prep Method:**	9056	**Prep Date:**	02/19/2015 17:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/01/2014 14:10
Workgroup #:	WG512917	**Analyst:**	ALS	**Run Date:**	02/19/2015 18:46
Collect Date:	02/18/2015 08:25	**Dilution:**	20	**File ID:**	I3_021915-08
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	390		8.00	4.00	2.00
Nitrate	14797-55-8	4.00	U	8.00	4.00	2.00
Nitrite	14797-65-0	4.00	U	8.00	4.00	2.00
Sulfate	14808-79-8	86.4		40.0	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-08	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	50WW23-021815	**Prep Method:**	9056	**Prep Date:**	02/19/2015 17:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/01/2014 14:10
Workgroup #:	WG512917	**Analyst:**	ALS	**Run Date:**	02/19/2015 19:06
Collect Date:	02/18/2015 09:40	**Dilution:**	10	**File ID:**	I3_021915-09
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	2600	J	4.00	2.00	1.00
Nitrate	14797-55-8	2.00	U	4.00	2.00	1.00
Nitrite	14797-65-0	2.00	U	4.00	2.00	1.00
Sulfate	14808-79-8	67.6		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-08	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	50WW23-021815	**Prep Method:**	9056	**Prep Date:**	02/19/2015 17:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/01/2014 14:10
Workgroup #:	WG512917	**Analyst:**	ALS	**Run Date:**	02/19/2015 19:26
Collect Date:	02/18/2015 09:40	**Dilution:**	100	**File ID:**	I3_021915-10
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1900		40.0	20.0	10.0
Nitrate	14797-55-8	20.0	U	40.0	20.0	10.0
Nitrite	14797-65-0	20.0	U	40.0	20.0	10.0
Sulfate	14808-79-8	100	U	200	100	50.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-10	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	50WW12-021815	**Prep Method:**	9056	**Prep Date:**	02/19/2015 17:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/01/2014 14:10
Workgroup #:	WG512917	**Analyst:**	ALS	**Run Date:**	02/19/2015 19:47
Collect Date:	02/18/2015 11:05	**Dilution:**	10	**File ID:**	I3_021915-11
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1530	J	4.00	2.00	1.00
Nitrate	14797-55-8	2.00	U	4.00	2.00	1.00
Nitrite	14797-65-0	2.00	U	4.00	2.00	1.00
Sulfate	14808-79-8	546		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-10	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	50WW12-021815	**Prep Method:**	9056	**Prep Date:**	02/19/2015 17:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/01/2014 14:10
Workgroup #:	WG512917	**Analyst:**	ALS	**Run Date:**	02/19/2015 20:07
Collect Date:	02/18/2015 11:05	**Dilution:**	100	**File ID:**	I3_021915-12
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1170		40.0	20.0	10.0
Nitrate	14797-55-8	20.0	U	40.0	20.0	10.0
Nitrite	14797-65-0	20.0	U	40.0	20.0	10.0
Sulfate	14808-79-8	411		200	100	50.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-12	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	50WWW25-021815	**Prep Method:**	9056	**Prep Date:**	02/19/2015 17:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/01/2014 14:10
Workgroup #:	WG512917	**Analyst:**	ALS	**Run Date:**	02/19/2015 20:27
Collect Date:	02/18/2015 13:30	**Dilution:**	1	**File ID:**	I3_021915-13
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	30.7	J	0.400	0.200	0.100
Nitrate	14797-55-8	0.200	U	0.400	0.200	0.100
Nitrite	14797-65-0	0.200	U	0.400	0.200	0.100
Sulfate	14808-79-8	65.9		2.00	1.00	0.500

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-12	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	50WWW25-021815	**Prep Method:**	9056	**Prep Date:**	02/19/2015 17:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/01/2014 14:10
Workgroup #:	WG512917	**Analyst:**	ALS	**Run Date:**	02/19/2015 20:48
Collect Date:	02/18/2015 13:30	**Dilution:**	3	**File ID:**	I3_021915-14
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	30.3		1.20	0.600	0.300
Nitrate	14797-55-8	0.600	U	1.20	0.600	0.300
Nitrite	14797-65-0	0.600	U	1.20	0.600	0.300
Sulfate	14808-79-8	59.8		6.00	3.00	1.50

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-14	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	50WW18-021815	**Prep Method:**	9056	**Prep Date:**	02/19/2015 17:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/01/2014 14:10
Workgroup #:	WG512917	**Analyst:**	ALS	**Run Date:**	02/19/2015 21:49
Collect Date:	02/18/2015 14:45	**Dilution:**	5	**File ID:**	I3_021915-17
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	998	J	2.00	1.00	0.500
Nitrate	14797-55-8	1.00	U	2.00	1.00	0.500
Nitrite	14797-65-0	1.00	U	2.00	1.00	0.500
Sulfate	14808-79-8	154		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-14	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	50WW18-021815	**Prep Method:**	9056	**Prep Date:**	02/19/2015 17:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/01/2014 14:10
Workgroup #:	WG512917	**Analyst:**	ALS	**Run Date:**	02/19/2015 22:09
Collect Date:	02/18/2015 14:45	**Dilution:**	50	**File ID:**	I3_021915-18
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	775		20.0	10.0	5.00
Nitrate	14797-55-8	10.0	U	20.0	10.0	5.00
Nitrite	14797-65-0	10.0	U	20.0	10.0	5.00
Sulfate	14808-79-8	112		100	50.0	25.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.4.1.2 QC Summary Data

Example Calculations - Ion Chromatography

A. Methods 9056/300.0 (Quadratic with Offset)

1. Retrieve Curve Data from the ICAL Curve

c2 = the value of curve constant
c1= the curve slope
c0 = the curve offset

2. Obtain the area, y , from the instrument raw data

3. Calculate the concentration of the analyte, f(y), where:

$$f(y) = \frac{1}{2 * c_2} * \left(-c_1 \pm \sqrt{c_1^2 - 4 * c_2 * (c_0 - y)}\right)$$

Example Calculation:

Value of constant, c2, (curve):	0.0003
Value of curve constant, c1, (slope):	0.0869
Value of curve constant, c0, (offset):	-0.0103
Area of target analyte, y, (uS*min):	2.993
Calculated concentration, f(y), (mg/L):	31.1998864
or:	-40.1161215 *
Dilution factor (D):	1.00
Concentration of analyte in sample (mg/L):	31.200

* There are two possible solutions, but only one is valid.

B. Method 314.0 - Perchlorate (Linear)

Retrieve Curve Data from Linear Plot

c1 = the curve slope

Obtain the area, y , from the quantitation report

Calculate the concentration of the analyte, f(y), where:

f (y) = y / c1

Example Calculation:

Value of c1, slope:	0.0034
Area of target analyte, y:	0.083
Calculated concentration:	24.4117647
Dilution Factor:	1
Concentration in sample:	24.4117647

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC3 Dataset: 100114 IC3.SEQ
Analyst1: Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 15

Maintenance Log ID: 51930 Syringe Filter Lot#: 00180133
Eluent ID#:

Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM

Workgroups: WG494944 WG494945

Internal STD: NA Surrogate STD: NA Calibration STD STD66516 (10/01/14)

CCV STD: STD66516 LCS STD: STD66517 MS/MSD STD: STD66516

Comments: ICAL and 7 rep MDL verification (waters and soils).
All MDL's need rerun.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I3_100114-01	ELUENT	1	1		10/01/14 11:48
2	I3_100114-02	DI WATER	1	1		10/01/14 12:08
3	I3_100114-03	WG494943-01 STD \#6	1	1		10/01/14 12:28
4	I3_100114-04	WG494943-02 STD \#5	1	1		10/01/14 12:48
5	I3_100114-05	WG494943-03 STD \#4	1	1		10/01/14 13:09
6	I3_100114-06	WG494943-04 STD \#3	1	1		10/01/14 13:29
7	I3_100114-07	WG494943-05 STD \#2	1	1		10/01/14 13:49
8	I3_100114-08	WG494943-06 STD \#1	1	1		10/01/14 14:10
9	I3_100114-09	WG494943-07 ALT STD	1	1		10/01/14 14:30
10	I3_100114-10	L14100001-01 (F,CL,BR,SO4)	1	1		10/01/14 14:50
11	I3_100114-11	L14100001-02	1	1		10/01/14 15:11
12	I3_100114-12	L14100001-03	1	1		10/01/14 15:31
13	I3_100114-13	L14100001-04	1	1		10/01/14 15:52
14	I3_100114-14	L14100001-05	1	1		10/01/14 16:12
15	I3_100114-15	L14100001-06	1	1		10/01/14 16:32
16	I3_100114-16	L14100001-07	1	1		10/01/14 16:53
17	I3_100114-17	WG494946-03 ANION CCV	1	1		10/01/14 17:13
18	I3_100114-18	WG494946-04 ANION CCB	1	1		10/01/14 17:33
19	I3_100114-19	L14100001-01 (NO2,NO3)	1	1		10/01/14 17:54
20	I3_100114-20	L14100001-02	1	1		10/01/14 18:14
21	I3_100114-21	L14100001-03	1	1		10/01/14 18:34
22	I3_100114-22	L14100001-04	1	1		10/01/14 18:55
23	I3_100114-23	L14100001-05	1	1		10/01/14 19:15
24	I3_100114-24	L14100001-06	1	1		10/01/14 19:35
25	I3_100114-25	L14100001-07	1	1		10/01/14 19:56
26	I3_100114-26	WG494944-01 ANION BLANK	1	1		10/01/14 20:16
27	I3_100114-27	L-1/2 CHECK	1	1		10/01/14 20:37
28	I3_100114-28	WG494946-05 ANION CCV	1	1		10/01/14 20:57
29	I3_100114-29	WG494946-06 ANION CCB	1	1		10/01/14 21:17
30	I3_100114-30	L14100003-01 (F,CL,BR,SO4)	7	1		10/01/14 21:38
31	I3_100114-31	L14100003-02	7	1		10/01/14 21:58
32	I3_100114-32	L14100003-03	7	1		10/01/14 22:18
33	I3_100114-33	L14100003-04	7	1		10/01/14 22:39

Page: 1 Approved: 15-OCT-14

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC3 Dataset: 100114 IC3.SEQ

Analyst1: Analyst2: NA

Method: 300/9056 SOP: IC01 Rev: 15

Maintenance Log ID: 51930 Syringe Filter Lot#: 00180133

Eluent ID#:

Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM

Workgroups: WG494944 WG494945

Internal STD: NA Surrogate STD: NA STD66516 (10/01/14)

CCV STD: STD66516 LCS STD: STD66517 STD66516

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	I3_100114-34	L14100003-05	7	1		10/01/14 22:59
35	I3_100114-35	L14100003-06	7	1		10/01/14 23:19
36	I3_100114-36	L14100003-07	7	1		10/01/14 23:40
37	I3_100114-37	WG494946-07 ANION CCV	1	1		10/02/14 00:00
38	I3_100114-38	WG494946-08 ANION CCB	1	1		10/02/14 00:20
39	I3_100114-39	L14100003-01 (NO2,NO3)	7	1		10/02/14 00:41
40	I3_100114-40	L14100003-02	7	1		10/02/14 01:01
41	I3_100114-41	L14100003-03	7	1		10/02/14 01:22
42	I3_100114-42	L14100003-04	7	1		10/02/14 01:42
43	I3_100114-43	L14100003-05	7	1		10/02/14 02:02
44	I3_100114-44	L14100003-06	7	1		10/02/14 02:23
45	I3_100114-45	L14100003-07	7	1		10/02/14 02:43
46	I3_100114-46	WG494945-01 SOIL BLANK	7	1		10/02/14 03:03
47	I3_100114-47	WG494946-09 ANION CCV	1	1		10/02/14 03:24
48	I3_100114-48	WG494946-10 ANION CCB	1	1		10/02/14 03:44
49	I3_100114-49	END	1	1		10/02/14 04:04

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 2 Approved: 15-OCT-14

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC3 Dataset: 021915 IC3.SEQ
Analyst1: ALS Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 16

Maintenance Log ID: 52855 Syringe Filter Lot#: 190001
Eluent ID#: RGT32875
Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
Workgroups: WG512917
Internal STD: NA Surrogate STD: NA Calibration STD STD66516
CCV STD: STD66516 LCS STD: STD66517 MS/MSD STD: STD66516

Comments: Fractions L15029877 (01,02) and L15020971 (06,08,10,14) were analyzed a dilutions due to one or more analytes existing in concentrations greater than 200ppm.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I3_021915-01	ELUENT	1	1		02/19/15 16:24
2	I3_021915-02	DI WATER	1	1		02/19/15 16:43
3	I3_021915-03	WG512949-01 ANION CCV	1	1		02/19/15 17:04
4	I3_021915-04	WG512949-02 ANION CCB	1	1		02/19/15 17:24
5	I3_021915-05	WG512917-01 ANION BLANK	1	1		02/19/15 17:45
6	I3_021915-06	WG512917-02 ANION LCS	1	1		02/19/15 18:05
7	I3_021915-07	L15020971-06 1/2 (CL,NO2,NO3,SO4)	1	2		02/19/15 18:25
8	I3_021915-08	L15020971-06 1/20 (CL,NO2,NO3.SO4)	1	20		02/19/15 18:46
9	I3_021915-09	L15020971-08 1/10 (CL,NO2,NO3,SO4)	1	10		02/19/15 19:06
10	I3_021915-10	L15020971-08 1/100 (CL,NO2,NO3,SO4)	1	100		02/19/15 19:26
11	I3_021915-11	L15020971-10 1/10 (CL,NO2,NO3,SO4)	1	10		02/19/15 19:47
12	I3_021915-12	L15020971-10 1/100 (CL,NO2,NO3,SO4)	1	100		02/19/15 20:07
13	I3_021915-13	L15020971-12 (CL,NO2,NO3,SO4)	1	1		02/19/15 20:27
14	I3_021915-14	L15020971-12 1/3 (CL,NO2,NO3,SO4)	1	3		02/19/15 20:48
15	I3_021915-15	WG512949-03 ANION CCV	1	1		02/19/15 21:08
16	I3_021915-16	WG512949-04 ANION CCB	1	1		02/19/15 21:28
17	I3_021915-17	L15020971-14 1/5 (CL,NO2,NO3,SO4)	1	5		02/19/15 21:49
18	I3_021915-18	L15020971-14 1/50 (CL,NO2,NO3,SO4)	1	50		02/19/15 22:09
19	I3_021915-19	L15020877-01 1/5 (CL,SO4)	1	5		02/19/15 22:30
20	I3_021915-20	L15020877-01 1/50 (CL,SO4)	1	50		02/19/15 22:50
21	I3_021915-21	L15020877-02 1/5 (CL,SO4)	1	5		02/19/15 23:10
22	I3_021915-22	L15020877-02 1/50 (CL,SO4)	1	50		02/19/15 23:31
46	I3_021915-23	L15020842-01 (CL) REF	18	1		02/19/15 23:51
24	I3_021915-24	WG512917-04 DUP 0842-01	18	1		02/20/15 00:11
25	I3_021915-25	WG512917-05 MS	18	1		02/20/15 00:32
26	I3_021915-26	WG512917-06 MSD	18	1		02/20/15 00:52
27	I3_021915-27	WG512949-05 ANION CCV	1	1		02/20/15 01:12
28	I3_021915-28	WG512949-06 ANION CCB	1	1		02/20/15 01:33
29	I3_021915-29	L15020842-02 (CL)	18	1		02/20/15 01:53
30	I3_021915-30	L15020842-03 (CL)	18	1		02/20/15 02:13
31	I3_021915-31	L15020842-04 (CL)	18	1		02/20/15 02:34
32	I3_021915-32	L15020842-05 (CL)	18	1		02/20/15 02:54
33	I3_021915-33	L15020842-06 (CL)	18	1		02/20/15 03:15

Page: 1 Approved: 20-FEB-15

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC3 Dataset: 021915 IC3.SEQ

Analyst1: ALS Analyst2: NA

Method: 300/9056 SOP: IC01 Rev: 16

Maintenance Log ID: 52855 Syringe Filter Lot#: 190001

Eluent ID#: RGT32875

Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM

Workgroups: WG512917

Internal STD: NA Surrogate STD: NA STD66516

CCV STD: STD66516 LCS STD: STD66517 STD66516

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	I3_021915-34	WG512511 FLUID BLANK	18	1		02/20/15 03:35
35	I3_021915-35	L15020866-01 (SO4)	2	1		02/20/15 03:55
36	I3_021915-36	L15020866-02 (SO4)	2	1		02/20/15 04:16
37	I3_021915-37	L15020866-03 (SO4)	2	1		02/20/15 04:36
38	I3_021915-38	L15020866-05 (SO4)	2	1		02/20/15 04:56
39	I3_021915-39	WG512949-07 ANION CCV	1	1		02/20/15 05:17
40	I3_021915-40	WG512949-08 ANION CCB	1	1		02/20/15 05:37
41	I3_021915-41	L15020882-01 (CL,SO4)	1	1		02/20/15 05:57
42	I3_021915-42	L15020882-03 (CL,SO4)	1	1		02/20/15 06:18
43	I3_021915-43	WG512949-09 ANION CCV	1	1		02/20/15 06:38
44	I3_021915-44	WG512949-10 ANION CCB	1	1		02/20/15 06:58
45	I3_021915-45	END	1	1		02/20/15 07:19

Comments

Seq.	Rerun	Dil.	Reason	Analytes
14				
	L15020971-12 1/3 (CL,NO2,NO3,SO4) was ran at a dilution due to CL exceeding the ICAL.			

Page: 2 Approved: 20-FEB-15

Microbac Laboratories Inc.

Data Checklist

Date: 01-OCT-2014
Analyst: JBK
Analyst: ALS
Method: 300/9056
Instrument: IC3
Curve Workgroup: NA
Runlog ID: 63927
Analytical Workgroups: ICAL, 10-001 MDL, 10-003 MDL

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	WG494943
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	NA
Recoveries	NA
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual Integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	X
Check for completeness	
Primary Reviewer	JBK
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer:
08-OCT-2014

Secondary Reviewer:
15-OCT-2014

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-15-2014 16:18:07

Microbac Laboratories Inc.

Data Checklist

Date: 19-FEB-2015
Analyst: ALS
Analyst: NA
Method: 300/9056
Instrument: IC3
Curve Workgroup: NA
Runlog ID: 66439
Analytical Workgroups: L15020842, L15020866, L15020877, L15020882, L15020971

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	X
Special standards	NA
Blanks	X
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual Integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	ALS
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 20-FEB-2015

Secondary Reviewer: 20-FEB-2015

CHECKLIST1 - Modified 03/05/2008

Generated: FEB-20-2015 13:27:54

Microbac Laboratories Inc.

00636446

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 9056 AAB#: WG512917

Login Number: L15020971

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW24-021815	06	02/18/15					02/19/2015	1.4	2		02/19/15	1.4	2	
50WW24-021815	06	02/18/15					02/19/2015	1.4	2		02/19/15	1.4	2	
50WW23-021815	08	02/18/15					02/19/2015	1.3	2		02/19/15	1.4	2	
50WW23-021815	08	02/18/15					02/19/2015	1.3	2		02/19/15	1.4	2	
50WW12-021815	10	02/18/15					02/19/2015	1.2	2		02/19/15	1.4	2	
50WW12-021815	10	02/18/15					02/19/2015	1.2	2		02/19/15	1.4	2	
50WWW25-021815	12	02/18/15					02/19/2015	1.1	2		02/19/15	1.3	2	
50WWW25-021815	12	02/18/15					02/19/2015	1.1	2		02/19/15	1.3	2	
50WW18-021815	14	02/18/15					02/19/2015	1.1	2		02/19/15	1.3	2	
50WW18-021815	14	02/18/15					02/19/2015	1.1	2		02/19/15	1.3	2	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4030934
Report generated 02/20/2015 16:01

METHOD BLANK SUMMARY

Login Number: L15020971
Blank File ID: I3_021915-05
Prep Date: 02/19/15 17:00
Analyzed Date: 02/19/15 17:45
Analyst: ALS

Work Group: WG512917
Blank Sample ID: WG512917-01
Instrument ID: IC3
Method: 9056

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG512917-02	I3_021915-06	02/19/15 18:05	01
50WW24-021815	L15020971-06	I3_021915-07	02/19/15 18:25	DL01
50WW24-021815	L15020971-06	I3_021915-08	02/19/15 18:46	DL02
50WW23-021815	L15020971-08	I3_021915-09	02/19/15 19:06	DL01
50WW23-021815	L15020971-08	I3_021915-10	02/19/15 19:26	DL02
50WW12-021815	L15020971-10	I3_021915-11	02/19/15 19:47	DL01
50WW12-021815	L15020971-10	I3_021915-12	02/19/15 20:07	DL02
50WWW25-021815	L15020971-12	I3_021915-13	02/19/15 20:27	01
50WWW25-021815	L15020971-12	I3_021915-14	02/19/15 20:48	DL01
50WW18-021815	L15020971-14	I3_021915-17	02/19/15 21:49	DL01
50WW18-021815	L15020971-14	I3_021915-18	02/19/15 22:09	DL02
DUP	WG512917-04	I3_021915-24	02/20/15 00:11	01

Report Name: BLANK_SUMMARY
PDF File ID: 4030935
Report generated 02/20/2015 16:01

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15020971 Prep Date: 02/19/15 17:00 Sample ID: WG512917-01
Instrument ID: IC3 Run Date: 02/19/15 17:45 Prep Method: 9056
File ID: I3 021915-05 Analyst: ALS Method: 9056
Workgroup (AAB#): WG512917 Matrix: Water Units: mg/L
Contract #: Cal ID: IC3 - 01-OCT-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Chloride	0.100	0.400	0.100	1	U
Nitrate	0.100	0.400	0.100	1	U
Nitrite	0.100	0.400	0.100	1	U
Sulfate	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4030936
20-FEB-2015 16:01

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15020971 Run Date: 02/19/2015 Sample ID: WG512917-02
Instrument ID: IC3 Run Time: 18:05 Prep Method: 9056
File ID: I3 021915-06 Analyst: ALS Method: 9056
Workgroup (AAB#): WG512917 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD66516 Cal ID: IC3 - 01-OCT-14

Analytes	Expected	Found	% Rec	LCS Limits	Q
Chloride	8.00	8.15	102	90 - 110	
Nitrate	5.42	5.46	101	90 - 110	
Nitrite	4.87	4.93	101	90 - 110	
Sulfate	40.0	40.1	100	90 - 110	

LCS - Modified 03/06/2008
PDF File ID: 4030937
Report generated: 02/20/2015 16:01

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L15020971
Analytical Method: 9056
ICAL Workgroup: WG494943

Instrument ID: IC3
Initial Calibration Date: 01-OCT-14 14:10
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Chloride		5.731	9.16	0.99700	
Nitrate		2.313	8.88	0.99800	
Nitrite		3.164	6.19	0.99900	
Sulfate		7.485	6.67	0.99700	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4030939
Report generated 02/20/2015 16:01

Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number: L15020971
Analytical Method: 9056
Instrument ID: IC3
Initial Calibration Date: 01-OCT-14 14:10
Column ID: F

Analyte	WG494943-01			WG494943-02			WG494943-03		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	24.0	4.39330000	5.463	12.0	2.05670000	5.835	8.00	1.32150000	6.054
Nitrate	16.3	7.34240000	2.215	8.13	3.44850000	2.358	5.42	2.20020000	2.464
Nitrite	14.6	4.94760000	2.954	7.31	2.42710000	3.011	4.87	1.54570000	3.152
Sulfate	120	17.9456000	6.687	60.0	8.31390000	7.217	40.0	5.27040000	7.590

INT_CAL - Modified 03/06/2008
PDF File ID: 4030939
Report generated 02/20/2015 16:01

Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number: L15020971
Analytical Method: 9056
Instrument ID: IC3
Initial Calibration Date: 01-OCT-14 14:10
Column ID: F

Analyte	WG494943-04			WG494943-05			WG494943-06		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	4.00	0.665000000	6.015	1.00	0.162900000	6.139	0.200	0.0410000000	4.878
Nitrate	2.71	1.11940000	2.422	0.678	0.277200000	2.444	0.134	0.0676000000	1.976
Nitrite	2.44	0.784800000	3.103	0.609	0.188200000	3.235	0.122	0.0345000000	3.530
Sulfate	20.0	2.64930000	7.549	5.00	0.637800000	7.839	1.00	0.124600000	8.026

INT_CAL - Modified 03/06/2008
PDF File ID: 4030939
Report generated 02/20/2015 16:01

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15020971 Run Date: 10/01/2014 Sample ID: WG494943-07
Instrument ID: IC3 Run Time: 14:30 Method: 9056
File ID: I3 100114-09 Analyst: ALS QC Key: DOD4
ICal Workgroup: WG494943 Cal ID: IC3 - 01-OCT-14

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloride		8.00	7.92	mg/L	6.00	1.10	10	
Nitrate		5.42	5.34	mg/L	2.42	1.50	10	
Nitrite		4.87	4.79	mg/L	3.13	1.80	10	
Sulfate		40.0	39.2	mg/L	7.49	1.90	10	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4030940
Report generated 02/20/2015 16:02

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15020971
Run Date: 02/19/2015
Sample ID: WG512949-02
Instrument ID: IC3
Run Time: 17:24
Method: 9056
File ID: I3_021915-04
Analyst: ALS
Units: mg/L
Workgroup (AAB#): WG512917
Cal ID: IC3 - 01-OCT-14
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4030942
Report generated 02/20/2015 16:02

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15020971
Run Date: 02/19/2015
Sample ID: WG512949-04
Instrument ID: IC3
Run Time: 21:28
Method: 9056
File ID: I3_021915-16
Analyst: ALS
Units: mg/L
Workgroup (AAB#): WG512917
Cal ID: IC3 - 01-OCT-14
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4030942
Report generated 02/20/2015 16:02

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15020971
Run Date: 02/20/2015
Sample ID: WG512949-06
Instrument ID: IC3
Run Time: 01:33
Method: 9056
File ID: I3 021915-28
Analyst: ALS
Units: mg/L
Workgroup (AAB#): WG512917
Cal ID: IC3 - 01-OCT-14
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4030942
Report generated 02/20/2015 16:02

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15020971
Run Date: 02/19/2015
Sample ID: WG512949-01
Instrument ID: IC3
Run Time: 17:04
Method: 9056
File ID: I3 021915-03
Analyst: ALS
QC Key: DOD4
Workgroup (AAB#): WG512917
Cal ID: IC3 - 01-OCT-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.12	mg/L	5.85	1.46	10	
Nitrate		5.42	5.43	mg/L	2.38	0.136	10	
Nitrite		4.87	4.74	mg/L	3.16	2.68	10	
Sulfate		40.0	40.3	mg/L	7.30	0.763	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4030941
Report generated 02/20/2015 16:02

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15020971
Run Date: 02/19/2015
Sample ID: WG512949-03
Instrument ID: IC3
Run Time: 21:08
Method: 9056
File ID: I3 021915-15
Analyst: ALS
QC Key: DOD4
Workgroup (AAB#): WG512917
Cal ID: IC3 - 01-OCT-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.07	mg/L	5.89	0.825	10	
Nitrate		5.42	5.45	mg/L	2.38	0.487	10	
Nitrite		4.87	4.82	mg/L	3.11	1.14	10	
Sulfate		40.0	40.1	mg/L	7.34	0.215	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4030941
Report generated 02/20/2015 16:02

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15020971 Run Date: 02/20/2015 Sample ID: WG512949-05
Instrument ID: IC3 Run Time: 01:12 Method: 9056
File ID: I3 021915-27 Analyst: ALS QC Key: DOD4
Workgroup (AAB#): WG512917 Cal ID: IC3 - 01-OCT-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.03	mg/L	5.92	0.388	10	
Nitrate		5.42	5.42	mg/L	2.39	0.0443	10	
Nitrite		4.87	5.01	mg/L	2.99	2.76	10	
Sulfate		40.0	39.8	mg/L	7.39	0.463	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4030941
Report generated 02/20/2015 16:02

2.4.1.3 Sample Data

7 L15020971-06 1/2 (CL,NO2,NO3,SO4) 1,2 ALS (CL>200PPM)

Sample Name:	**L15020971-06 1/2 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**5000.0**
Vial Number:	**7**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/19/2015 18:25**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

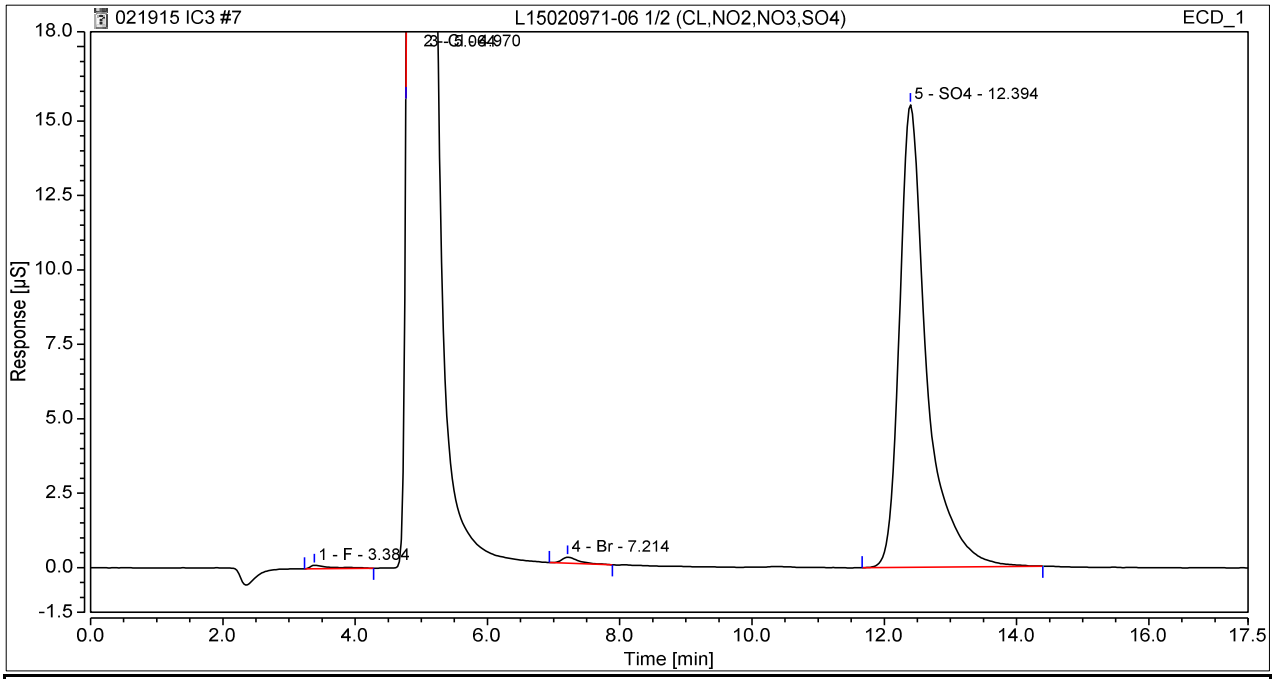

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.38	F	0.1163	0.0441	0.3	0.237	M
2	4.97	Cl	26.4260	5.7868	40.5	34.498	M
4	7.21	Br	0.2022	0.0579	0.4	0.890	M
5	12.39	SO4	15.5432	7.4174	51.9	54.501	M
Total:			**42.29**	**13.31**	**93**	**90.13**	

8 L15020971-06 1/20 (CL,NO2,NO3.SO4) 1,20 ALS (CL>ICAL)

Sample Name:	**L15020971-06 1/20 (CL,NO2,NO3.SO4)**	*Injection Volume:*	**5000.0**
Vial Number:	**8**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/19/2015 18:46**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

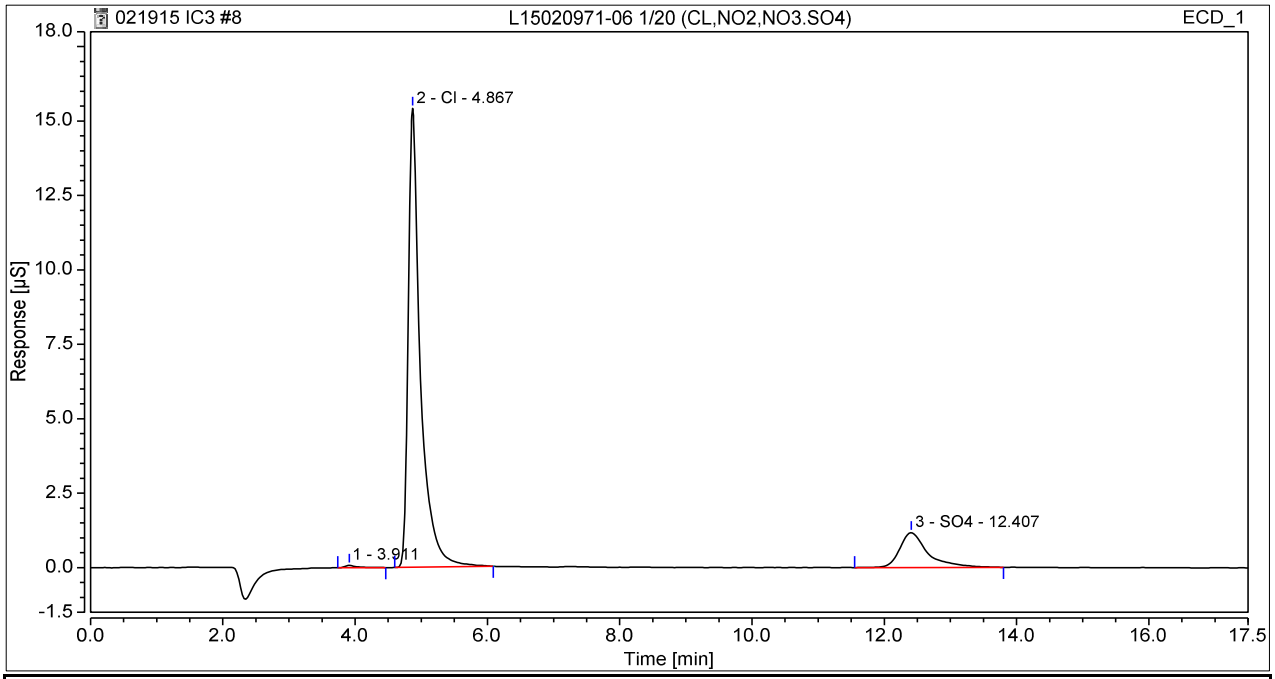

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
2	4.87	Cl	15.4106	3.2765	84.7	19.515	M
3	12.41	SO4	1.1718	0.5757	14.9	4.319	M
Total:			**16.58**	**3.85**	**100**	**23.83**	

9 L15020971-08 1/10 (CL,NO2,NO3,SO4) 1,10 ALS (CL>200PPM)

Sample Name:	**L15020971-08 1/10 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**5000.0**
Vial Number:	**9**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/19/2015 19:06**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

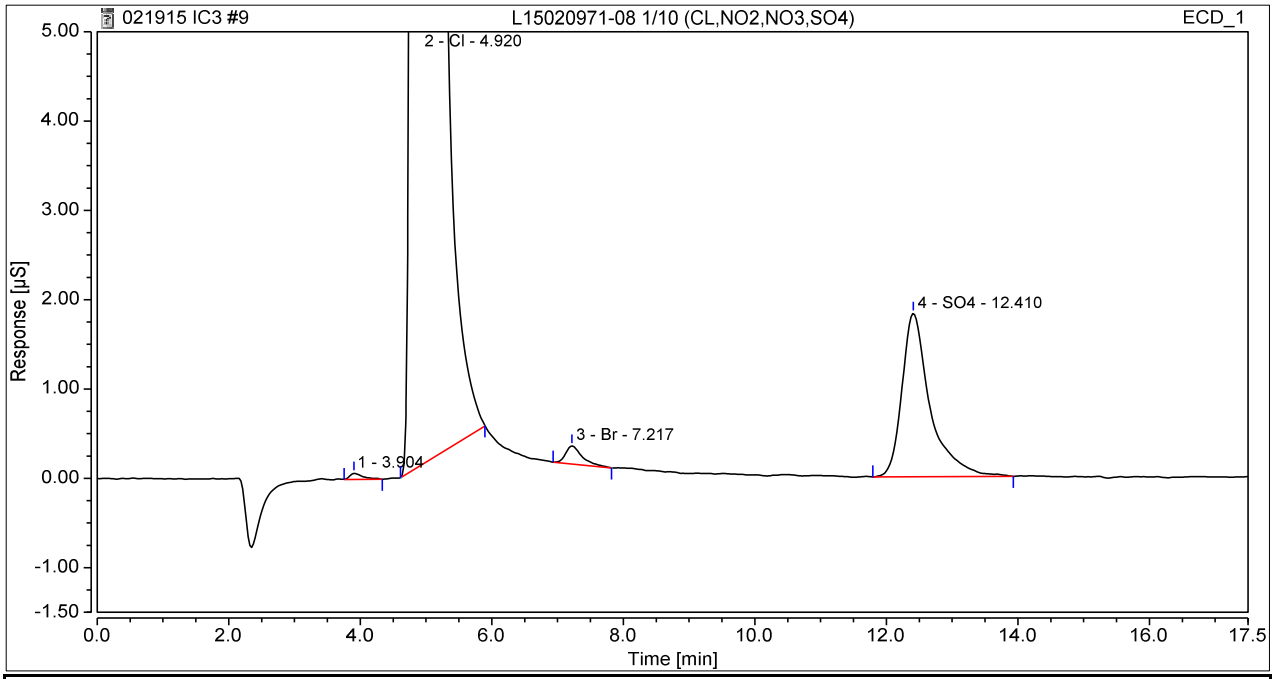

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
2	4.92	Cl	213.5393	43.6156	97.8	260.278	M
3	7.22	Br	0.2018	0.0594	0.1	0.914	M
4	12.41	SO4	1.8295	0.9091	2.0	6.763	M
Total:			**215.57**	**44.58**	**100**	**267.96**	

10 L15020971-08 1/100 (CL,NO2,NO3,SO4) 1,100 ALS (CL>ICAL)

Sample Name:	**L15020971-08 1/100 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**5000.0**
Vial Number:	**10**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/19/2015 19:26**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

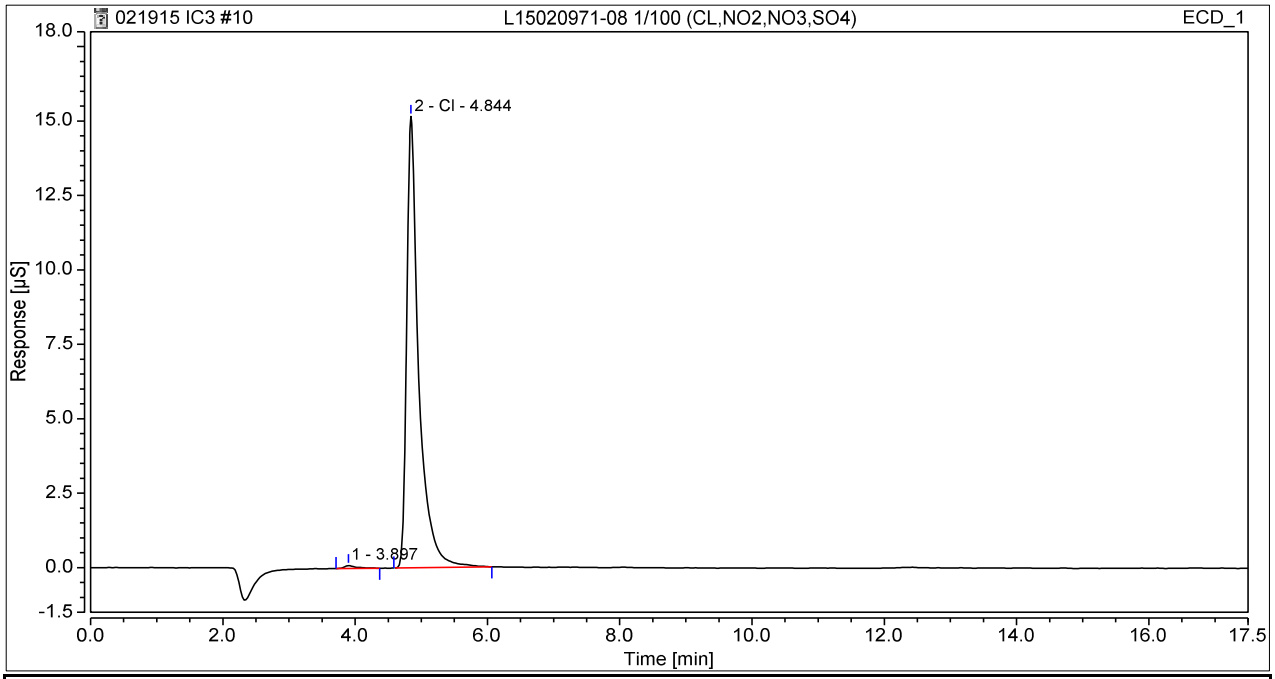

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
2	4.84	Cl	15.1582	3.1958	99.4	19.034	M
Total:			**15.16**	**3.20**	**99**	**19.03**	

11 L15020971-10 1/10 (CL,NO2,NO3,SO4) 1,10 ALS (CL,SO4>200PPM)

Sample Name:	**L15020971-10 1/10 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**5000.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/19/2015 19:47**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

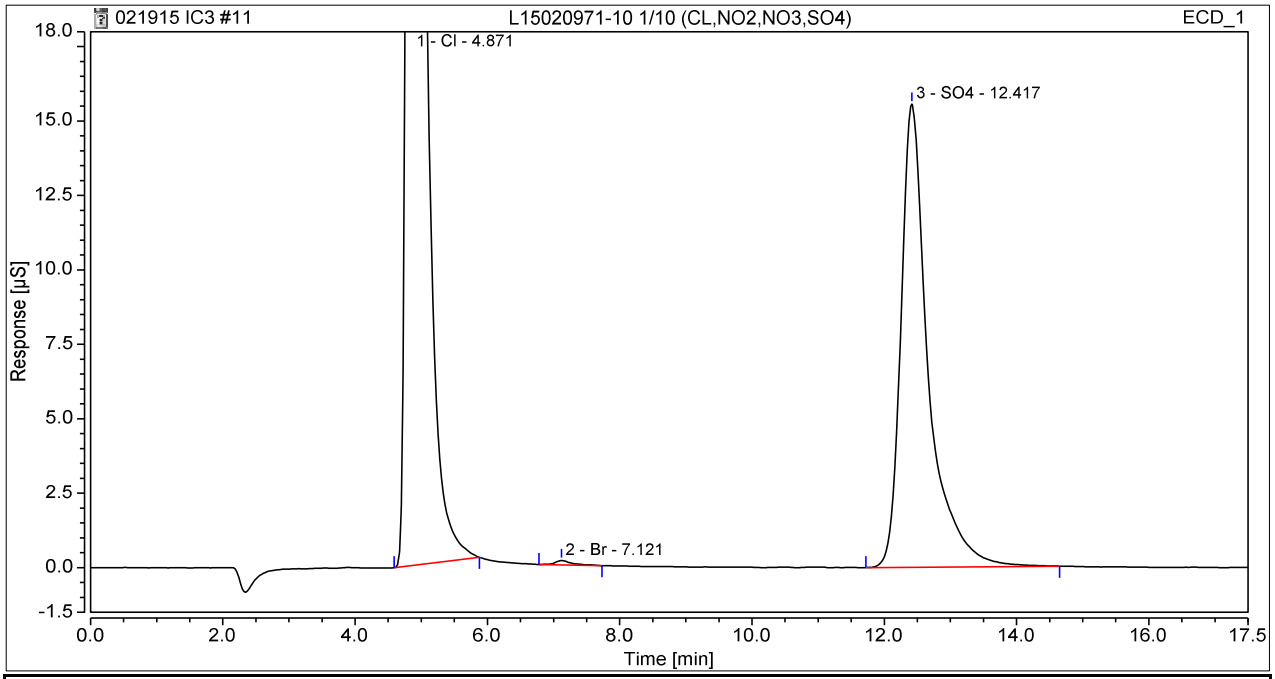

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	4.87	Cl	128.7171	25.5736	77.4	152.595	M
2	7.12	Br	0.1499	0.0453	0.1	0.696	M
3	12.42	SO4	15.5579	7.4266	22.5	54.569	M
Total:			**144.42**	**33.05**	**100**	**207.86**	

12 L15020971-10 1/100 (CL,NO2,NO3,SO4) 1,100 ALS (CL>ICAL)

Sample Name:	**L15020971-10 1/100 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**5000.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/19/2015 20:07**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

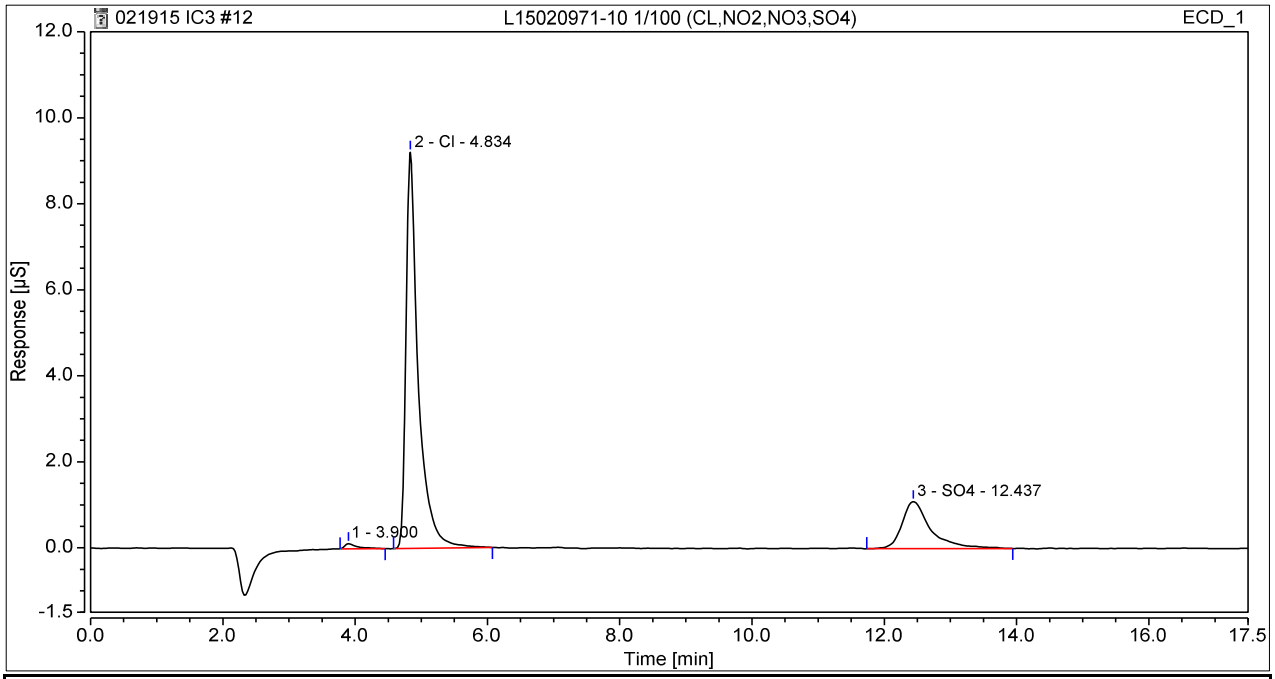

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
2	4.83	Cl	9.2085	1.9733	77.5	11.737	M
3	12.44	SO4	1.0928	0.5472	21.5	4.110	M
Total:			**10.30**	**2.52**	**99**	**15.85**	

13 L15020971-12 (CL,NO2,NO3,SO4)
1,1 ALS

Sample Name:	**L15020971-12 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**5000.0**
Vial Number:	**13**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/19/2015 20:27**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

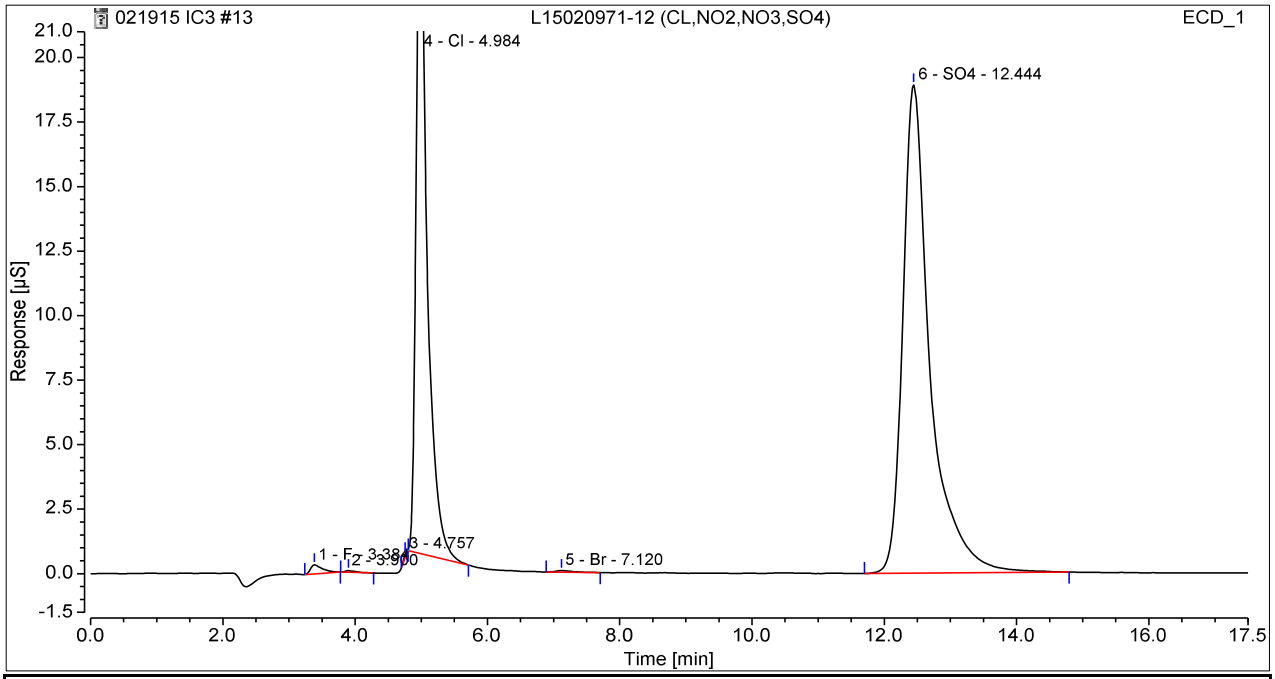

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.38	F	0.3538	0.0760	0.5	0.356	M
4	4.98	Cl	28.5460	5.1579	36.2	30.745	M
5	7.12	Br	0.0676	0.0211	0.1	0.323	M
6	12.44	SO4	18.9176	8.9755	63.0	65.930	M
Total:			**47.89**	**14.23**	**100**	**97.35**	

14 L15020971-12 1/3 (CL,NO2,NO3,SO4) 1,3 ALS (CL>ICAL)

Sample Name:	**L15020971-12 1/3 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**5000.0**
Vial Number:	**14**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/19/2015 20:48**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

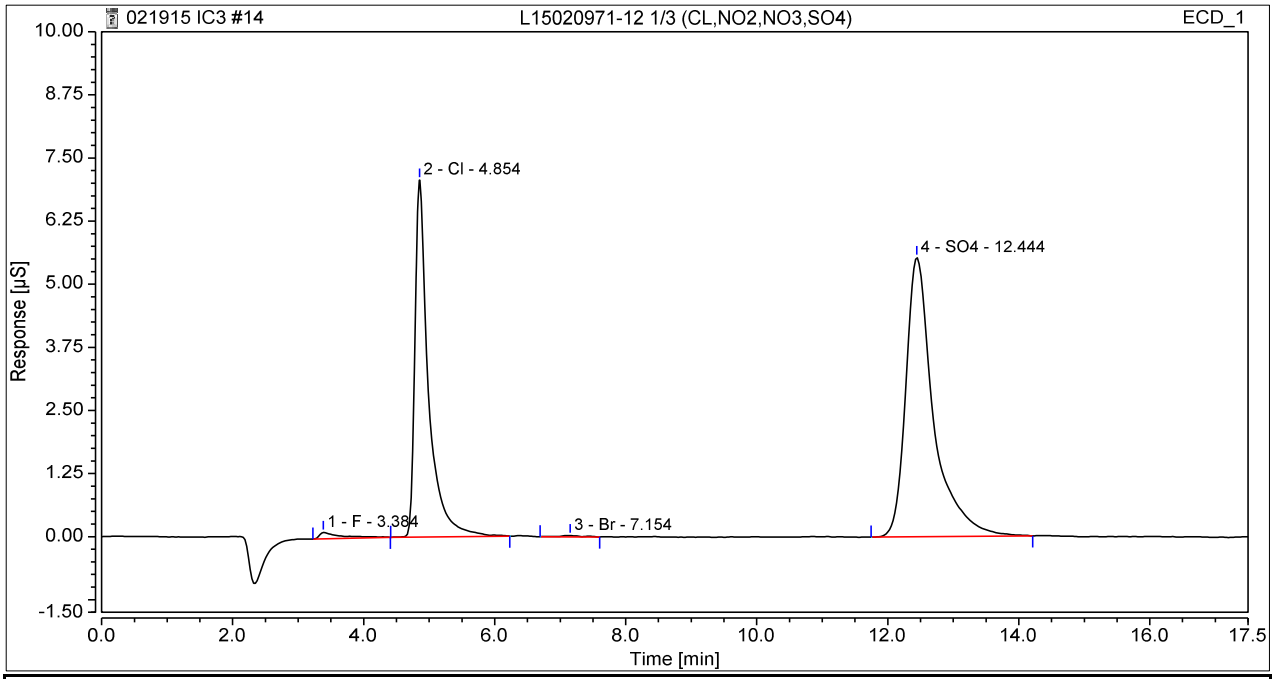

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.38	F	0.1241	0.0477	1.1	0.250	M
2	4.85	Cl	7.0714	1.6997	38.1	10.105	M
3	7.15	Br	0.0256	0.0103	0.2	0.158	M
4	12.44	SO4	5.5321	2.7063	60.6	19.946	M
Total:			**12.75**	**4.46**	**100**	**30.46**	

17 L15020971-14 1/5 (CL,NO2,NO3,SO4) 1,5 ALS (CL,SO4>200PPM)

Sample Name:	**L15020971-14 1/5 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**5000.0**
Vial Number:	**17**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/19/2015 21:49**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

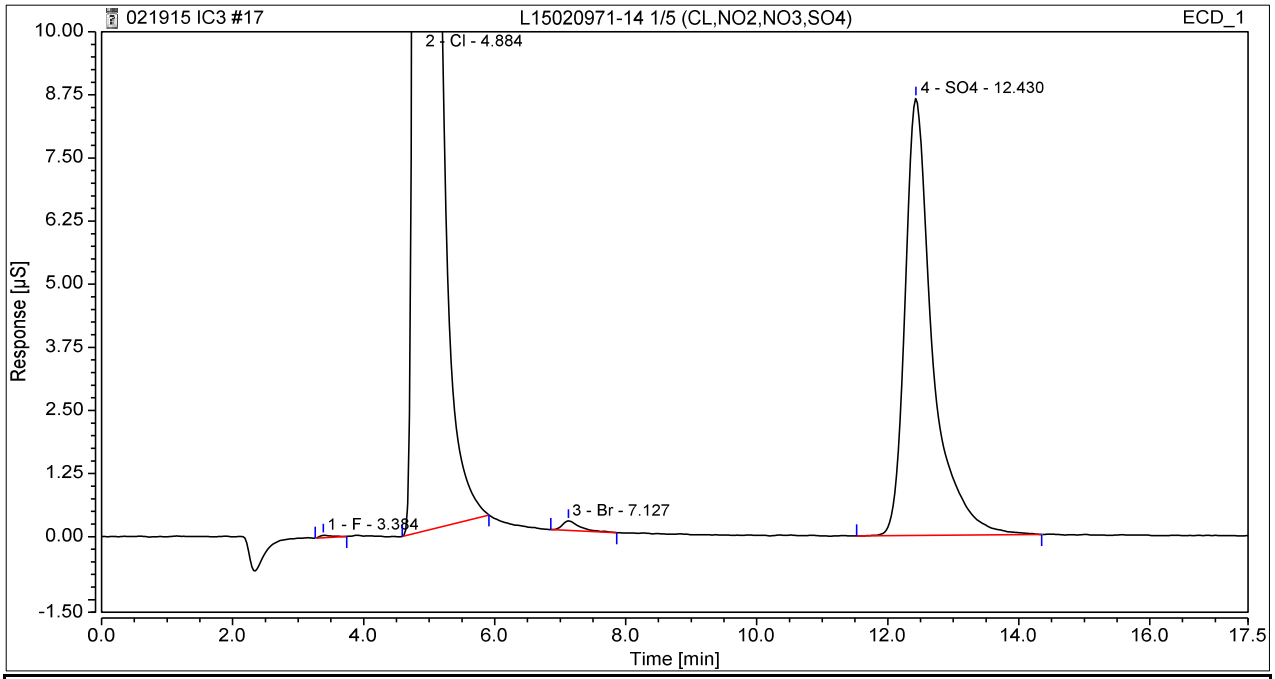

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.38	F	0.0488	0.0107	0.0	0.111	M
2	4.88	Cl	159.1449	33.4657	88.7	199.699	M
3	7.13	Br	0.1874	0.0578	0.2	0.888	M
4	12.43	SO4	8.6605	4.1971	11.1	30.881	M
Total:			**168.04**	**37.73**	**100**	**231.58**	

18 L15020971-14 1/50 (CL,NO2,NO3,SO4) 1,50 ALS (CL>ICAL)

Sample Name:	**L15020971-14 1/50 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**5000.0**
Vial Number:	**18**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/19/2015 22:09**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

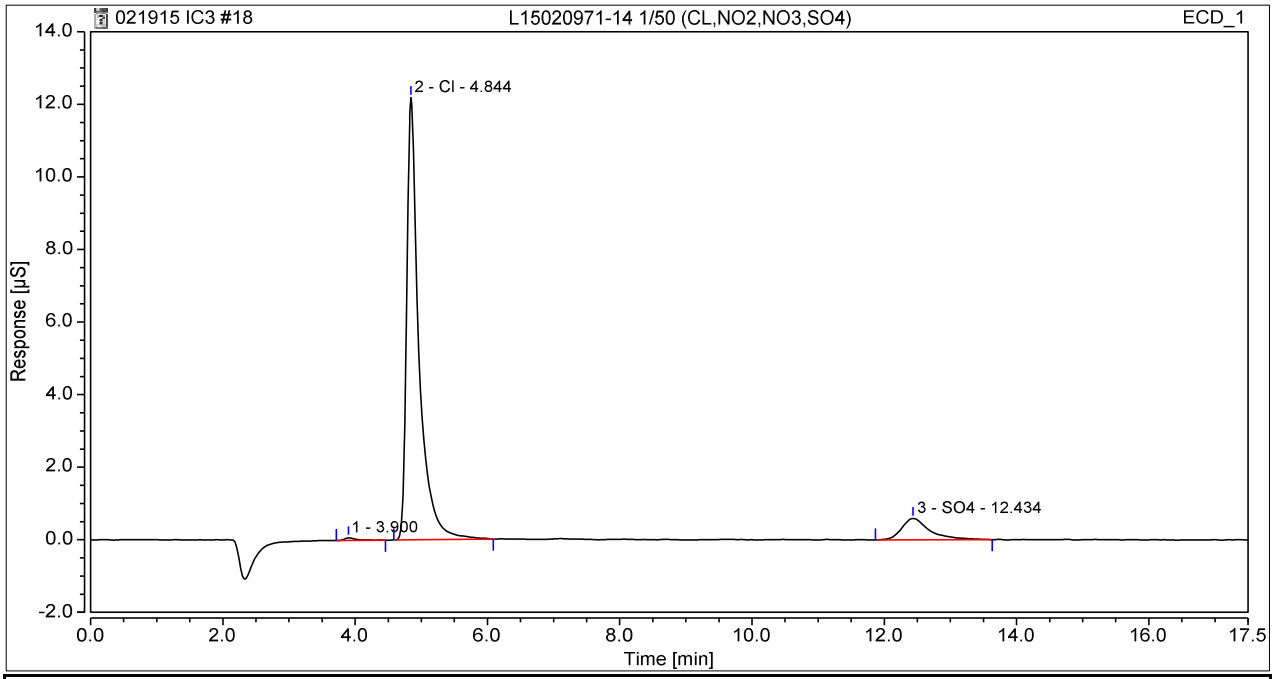

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
2	4.84	Cl	12.1860	2.6051	89.5	15.508	M
3	12.43	SO4	0.5894	0.2918	10.0	2.236	M
Total:			**12.78**	**2.90**	**99**	**17.74**	

2.4.1.4 Standards Data

3 WG494943-01 STD #6
1,1 ALS STD66516

Sample Name:	**WG494943-01 STD #6**	*Injection Volume:*	**5000.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**Calibration Standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/01/2014 12:28**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

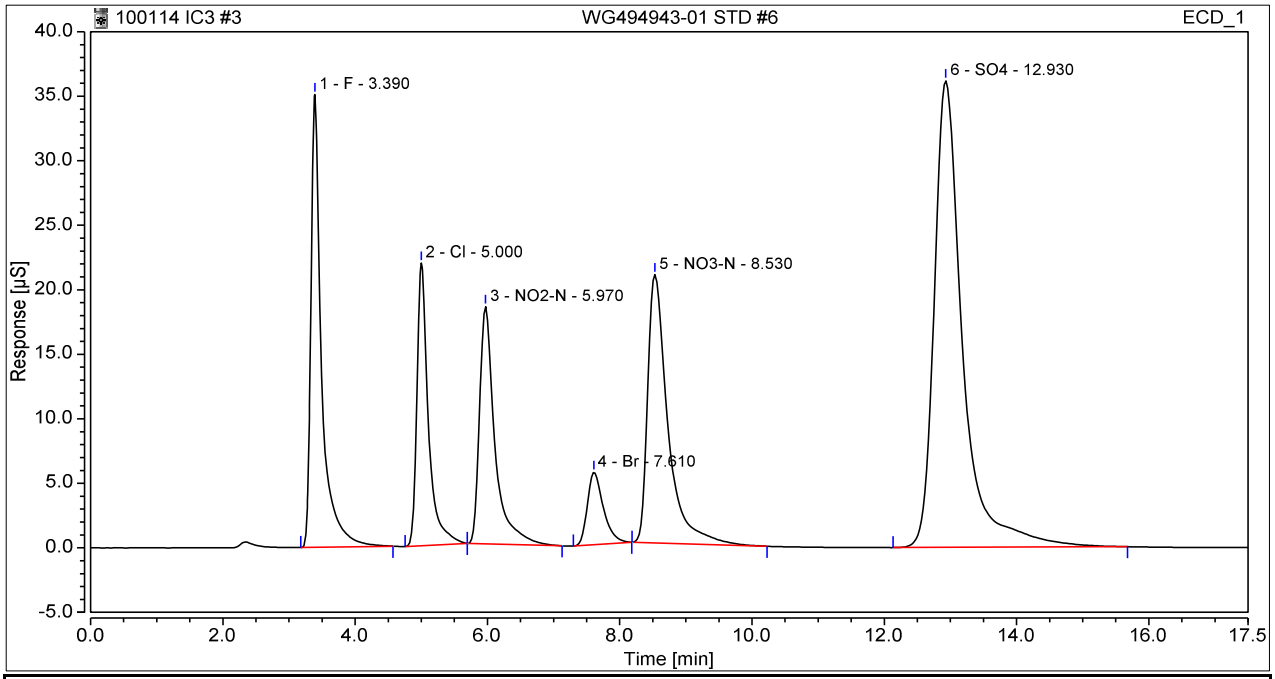

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.39	F	35.1083	6.5671	15.4	24.728	M
2	5.00	Cl	21.9002	4.3933	10.3	26.181	M
3	5.97	NO2-N	18.4030	4.9476	11.6	15.173	M
4	7.61	Br	5.6107	1.5784	3.7	24.304	M
5	8.53	NO3-N	20.7983	7.3424	17.2	17.592	M
6	12.93	SO4	36.1788	17.9456	42.0	131.725	M
Total:			**138.00**	**42.77**	**100**	**239.70**	

4 WG494943-02 STD #5
1,1 ALS STD66516

Sample Name:	**WG494943-02 STD #5**	*Injection Volume:*	**5000.0**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**Calibration Standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/01/2014 12:48**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

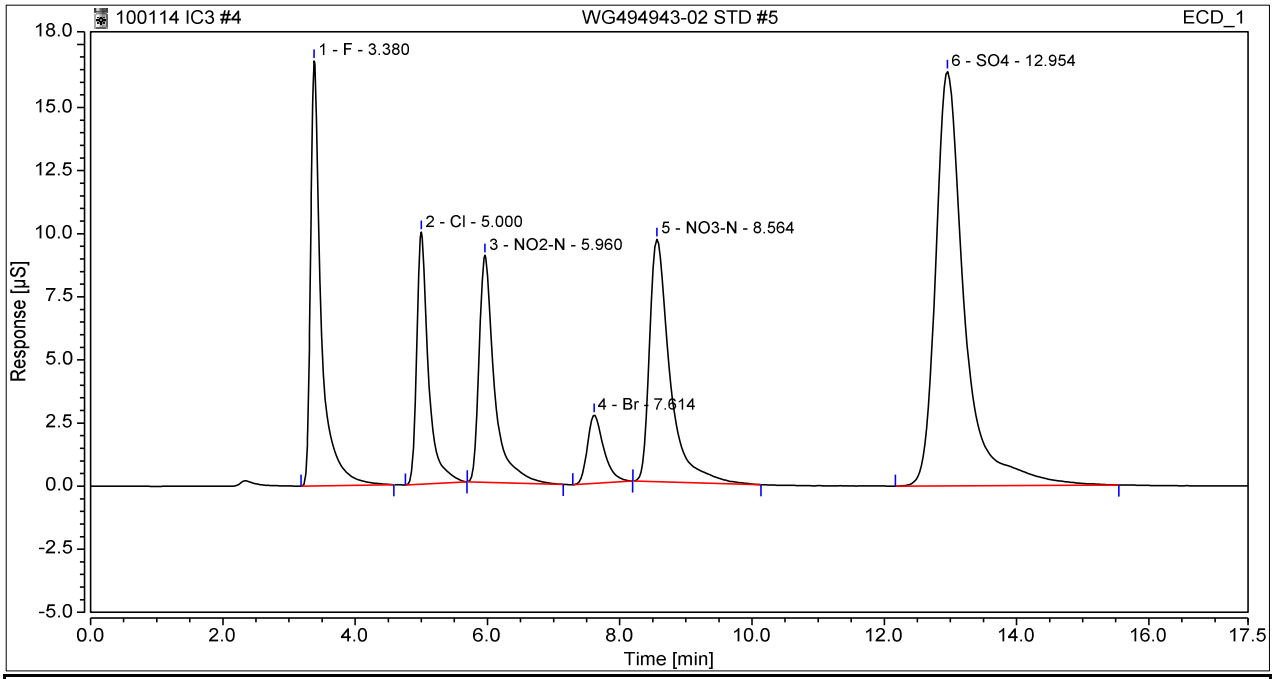

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.38	F	16.8357	3.1587	15.7	11.931	M
2	5.00	Cl	9.9819	2.0567	10.2	12.235	M
3	5.96	NO2-N	8.9912	2.4271	12.0	7.452	M
4	7.61	Br	2.7127	0.7768	3.8	11.960	M
5	8.56	NO3-N	9.6047	3.4485	17.1	8.249	M
6	12.95	SO4	16.4233	8.3139	41.2	61.077	M
Total:			**64.55**	**20.18**	**100**	**112.90**	

5 WG494943-03 STD #4
1,1 ALS STD66516

Sample Name:	**WG494943-03 STD #4**	*Injection Volume:*	**5000.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**Calibration Standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/01/2014 13:09**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

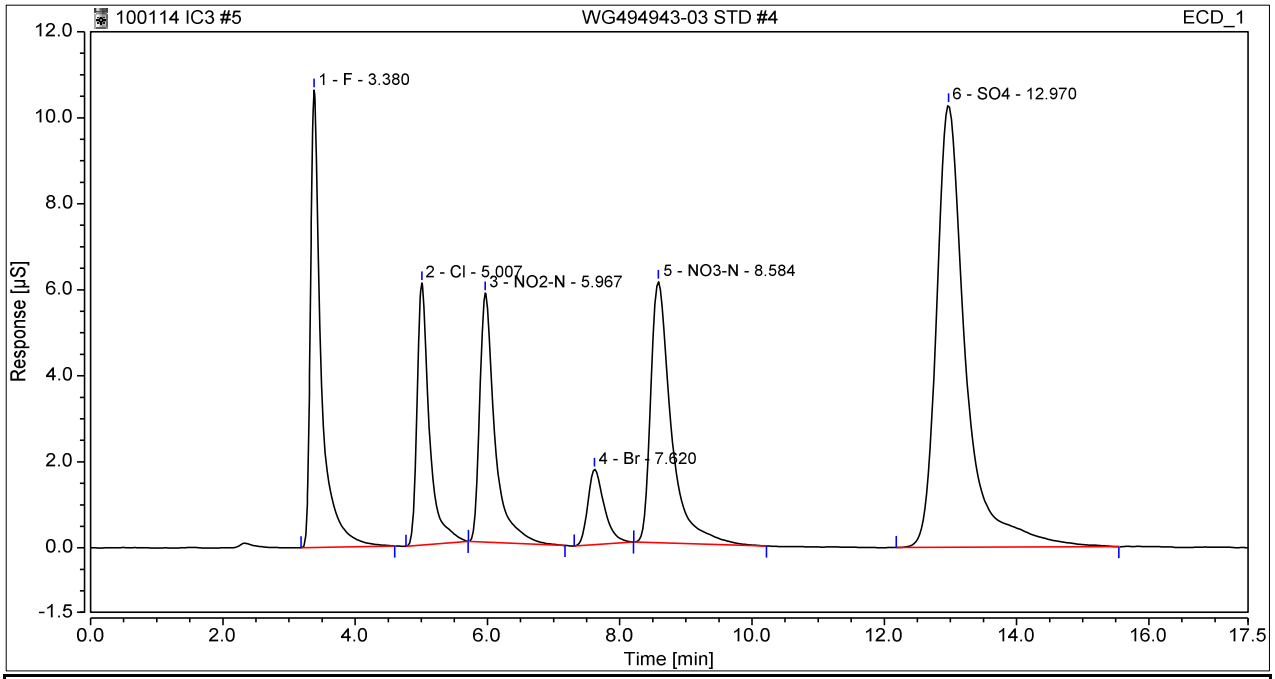

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.38	F	10.6292	2.0133	15.7	7.630	M
2	5.01	Cl	6.0951	1.3215	10.3	7.847	M
3	5.97	NO2-N	5.7939	1.5457	12.0	4.752	M
4	7.62	Br	1.7494	0.5039	3.9	7.758	M
5	8.58	NO3-N	6.0729	2.2002	17.1	5.254	M
6	12.97	SO4	10.2871	5.2704	41.0	38.753	M
Total:			**40.63**	**12.85**	**100**	**71.99**	

Sequence: 100114 IC3
Injection #5: WG494943-03 STD #4

Calibration Plot

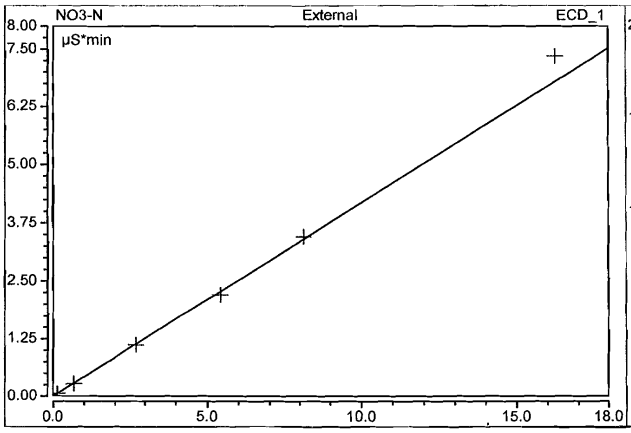

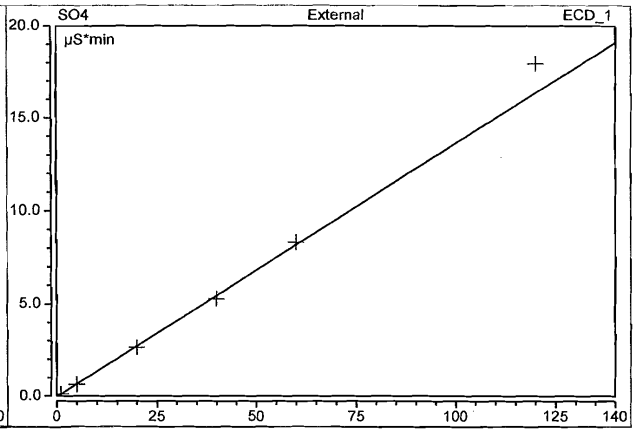

Sequence: 100114 IC3
Injection #5: WG494943-03 STD #4

Calibration

Peak No.	Peak Name	Ret.Time min	Cal.Type	Eval.Type	Number of Points	Rel.Std.Dev. %	Coeff.of Determination	C0 (Offset)	C1 (Slope)	C2 (Curve)
1	*F*	*3.380*	*Lin, WithOffset, 1/R*	*Area*	*6*	*15.1320*	*0.99843*	*-0.0189*	*0.2663*	*0.0000*
2	Cl	5.007	Lin, WithOffset, 1/R²	Area	6	10.5957	0.99688	0.0067	0.1675	0.0000
3	NO2-N	5.967	Lin, WithOffset, 1/R²	Area	6	5.5275	0.99929	-0.0054	0.3264	0.0000
4	Br	7.620	Lin, WithOffset, 1/R	Area	6	5.7102	0.99972	0.0001	0.0649	0.0000
5	NO3-N	8.584	Lin, WithOffset, 1/R²	Area	6	8.8163	0.99787	0.0104	0.4168	0.0000
6	SO4	12.970	Lin, WithOffset, 1/R²	Area	6	10.7714	0.99720	-0.0130	0.1363	0.0000
Maximum						15.1320	0.99972			
Minimum						5.5275	0.99688			

Sequence: 100114 IC3
Injection #5: WG494943-03 STD #4

Calibration Plot

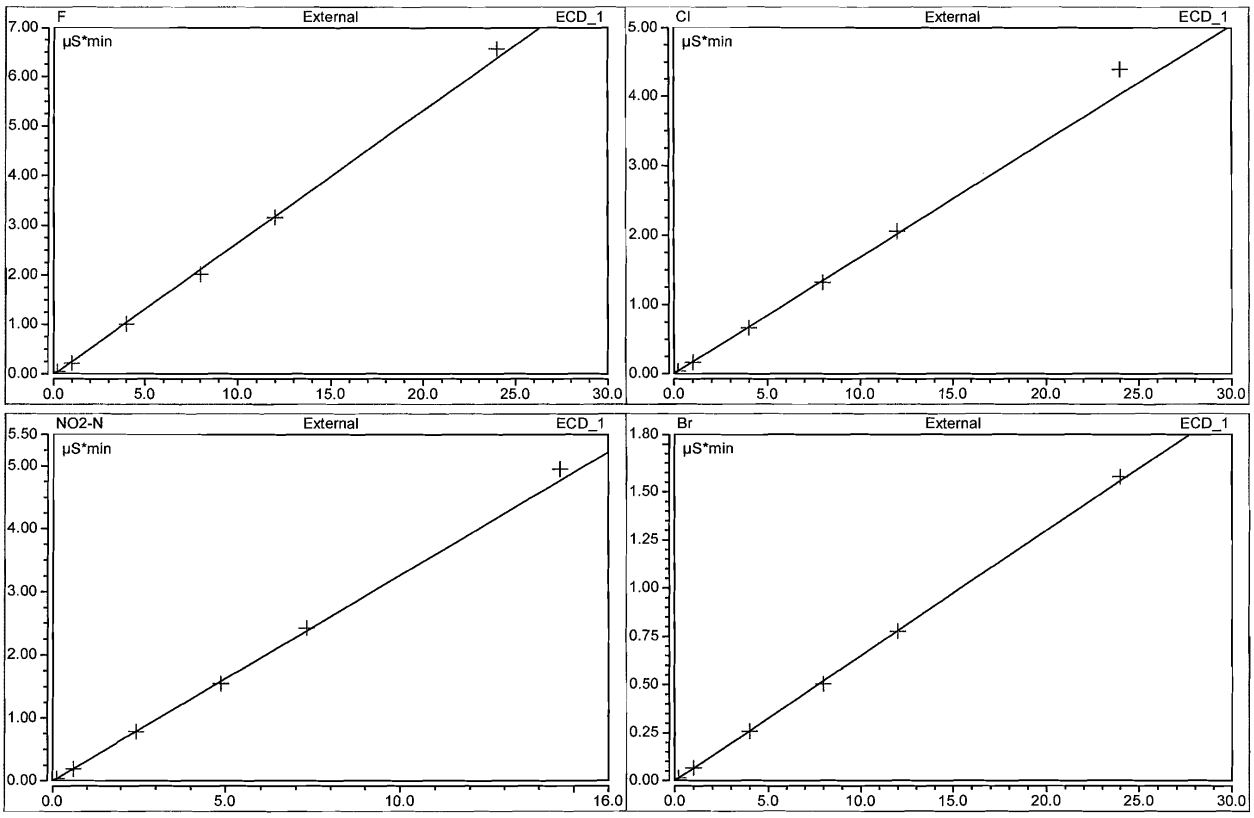

Chromeleon 7,
Version 7.2.0.3765, Thermo Fisher Scientific

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6 WG494943-04 STD #3
1,1 ALS STD66516

Sample Name:	**WG494943-04 STD #3**	*Injection Volume:*	**5000.0**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**Calibration Standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/01/2014 13:29**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

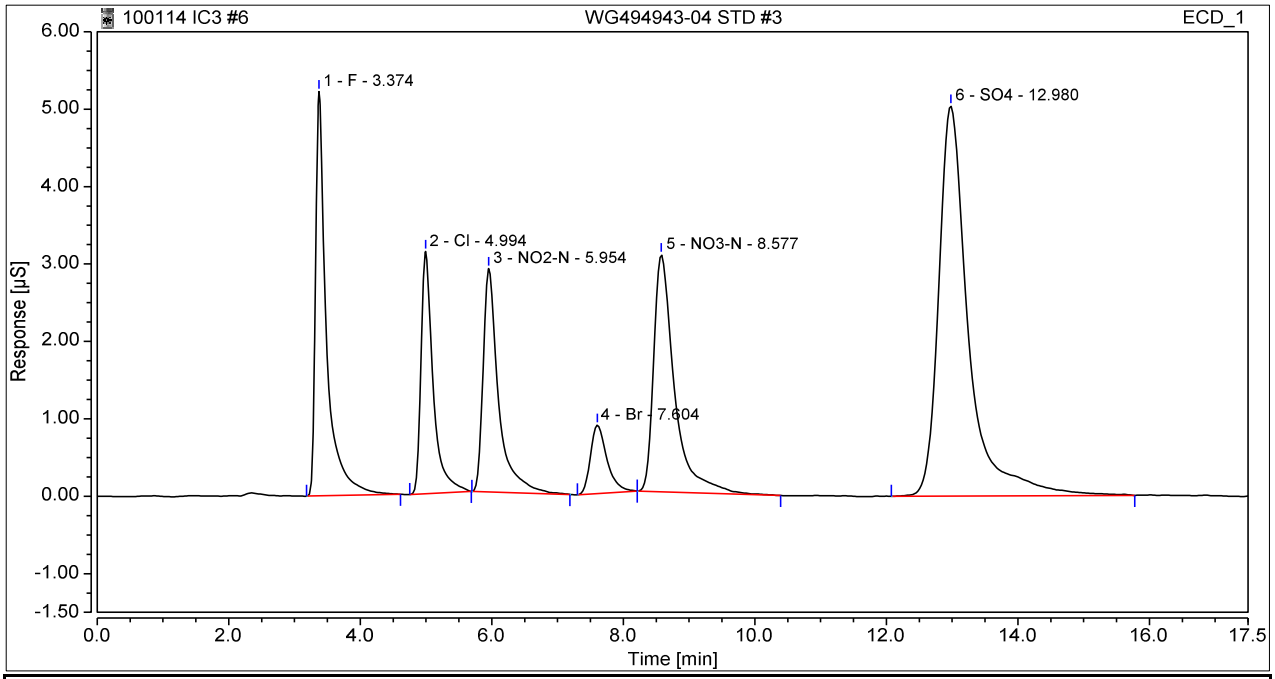

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.37	F	5.2217	1.0111	15.6	3.867	M
2	4.99	Cl	3.1310	0.6650	10.3	3.929	M
3	5.95	NO2-N	2.8877	0.7848	12.1	2.421	M
4	7.60	Br	0.8846	0.2578	4.0	3.968	M
5	8.58	NO3-N	3.0631	1.1194	17.3	2.661	M
6	12.98	SO4	5.0398	2.6493	40.8	19.528	M
Total:			**20.23**	**6.49**	**100**	**36.37**	

7 WG494943-05 STD #2
1,1 ALS STD66516

Sample Name:	**WG494943-05 STD #2**	*Injection Volume:*	**5000.0**
Vial Number:	**7**	*Channel:*	**ECD_1**
Sample Type:	**Calibration Standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/01/2014 13:49**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

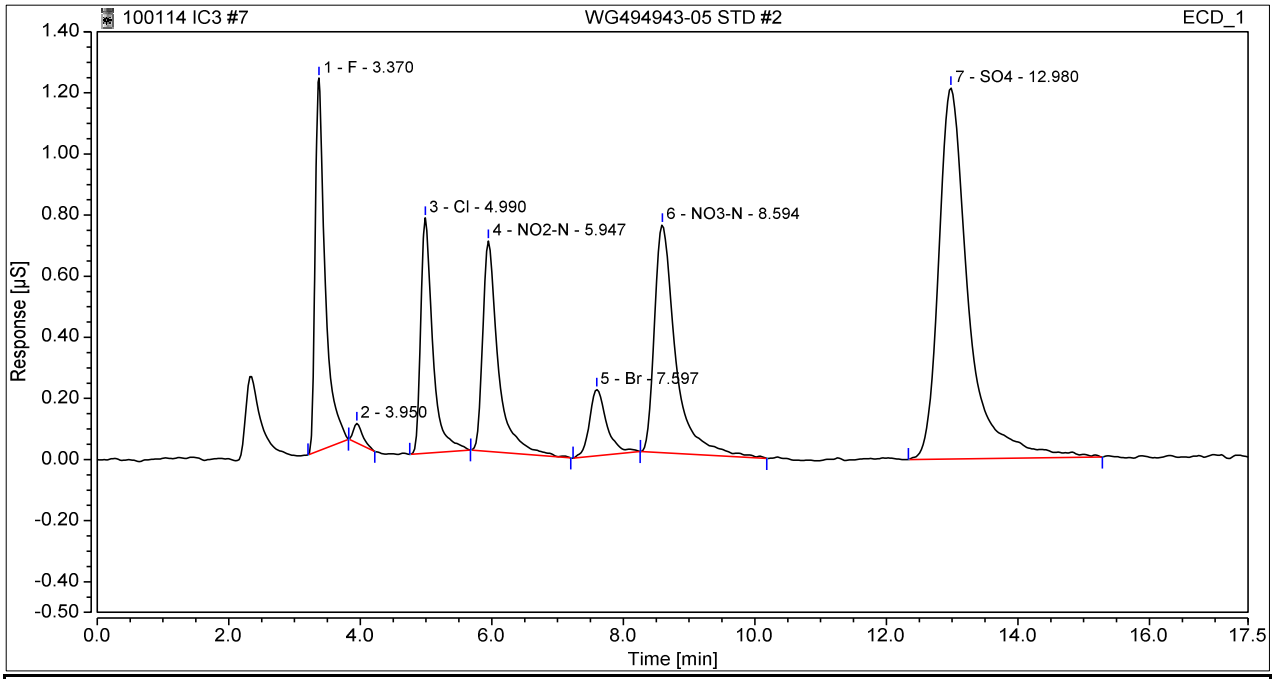

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.37	F	1.2192	0.2154	13.8	0.880	M
3	4.99	Cl	0.7701	0.1629	10.4	0.932	M
4	5.95	NO2-N	0.6881	0.1882	12.1	0.593	M
5	7.60	Br	0.2170	0.0664	4.3	1.021	M
6	8.59	NO3-N	0.7456	0.2772	17.8	0.640	M
7	12.98	SO4	1.2144	0.6378	40.9	4.774	M
Total:			**4.85**	**1.55**	**99**	**8.84**	

8 WG494943-06 STD #1
1,1 ALS STD66516

Sample Name:	**WG494943-06 STD #1**	*Injection Volume:*	**5000.0**
Vial Number:	**8**	*Channel:*	**ECD_1**
Sample Type:	**Calibration Standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/01/2014 14:10**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

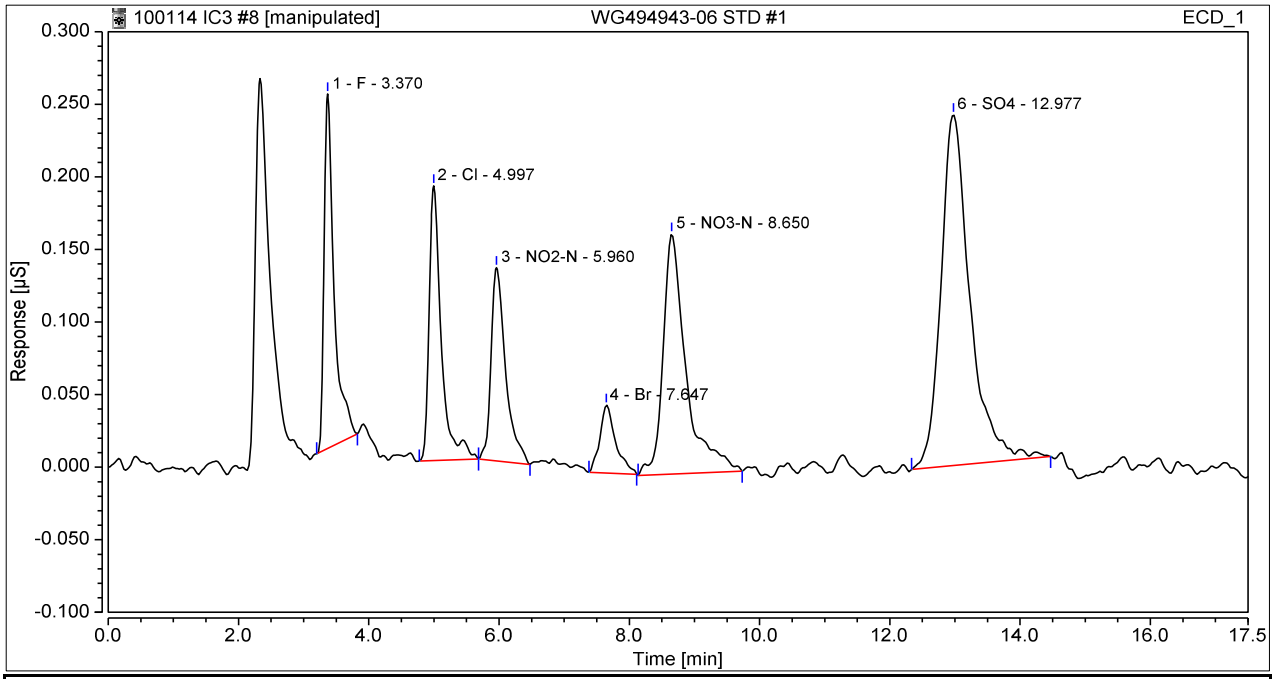

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.37	F	0.2441	0.0435	13.4	0.234	MB*
2	5.00	Cl	0.1892	0.0410	12.6	0.204	M
3	5.96	NO2-N	0.1332	0.0345	10.6	0.122	M
4	7.65	Br	0.0467	0.0132	4.1	0.202	M
5	8.65	NO3-N	0.1653	0.0676	20.9	0.137	M
6	12.98	SO4	0.2418	0.1246	38.4	1.010	M
Total:			**1.02**	**0.32**	**100**	**1.91**	

8 WG494943-06 STD #1
1,1 ALS STD66516

Sample Name:	**WG494943-06 STD #1**	*Injection Volume:*	**5000.0**
Vial Number:	**8**	*Channel:*	**ECD_1**
Sample Type:	**Calibration Standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/01/2014 14:10**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

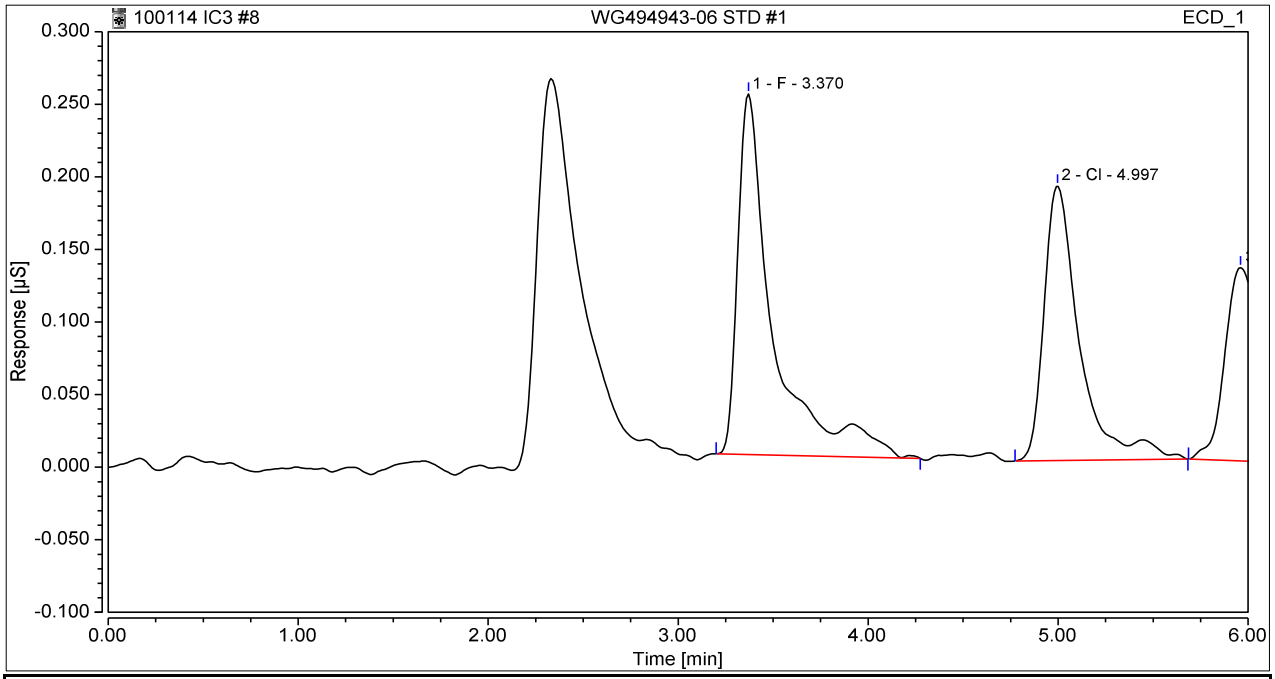

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.37	F	0.2484	0.0533	16.0	0.271	M
2	5.00	Cl	0.1892	0.0410	12.3	0.204	M
3	5.96	NO2-N	0.1332	0.0345	10.3	0.122	M
4	7.65	Br	0.0467	0.0132	4.0	0.202	M
5	8.65	NO3-N	0.1653	0.0676	20.2	0.137	M
6	12.98	SO4	0.2418	0.1246	37.3	1.010	M
Total:			**1.02**	**0.33**	**100**	**1.95**	

8 WG494943-06 STD #1
1,1 ALS STD66516

Sample Name:	**WG494943-06 STD #1**	*Injection Volume:*	**5000.0**
Vial Number:	**8**	*Channel:*	**ECD_1**
Sample Type:	**Calibration Standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/01/2014 14:10**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

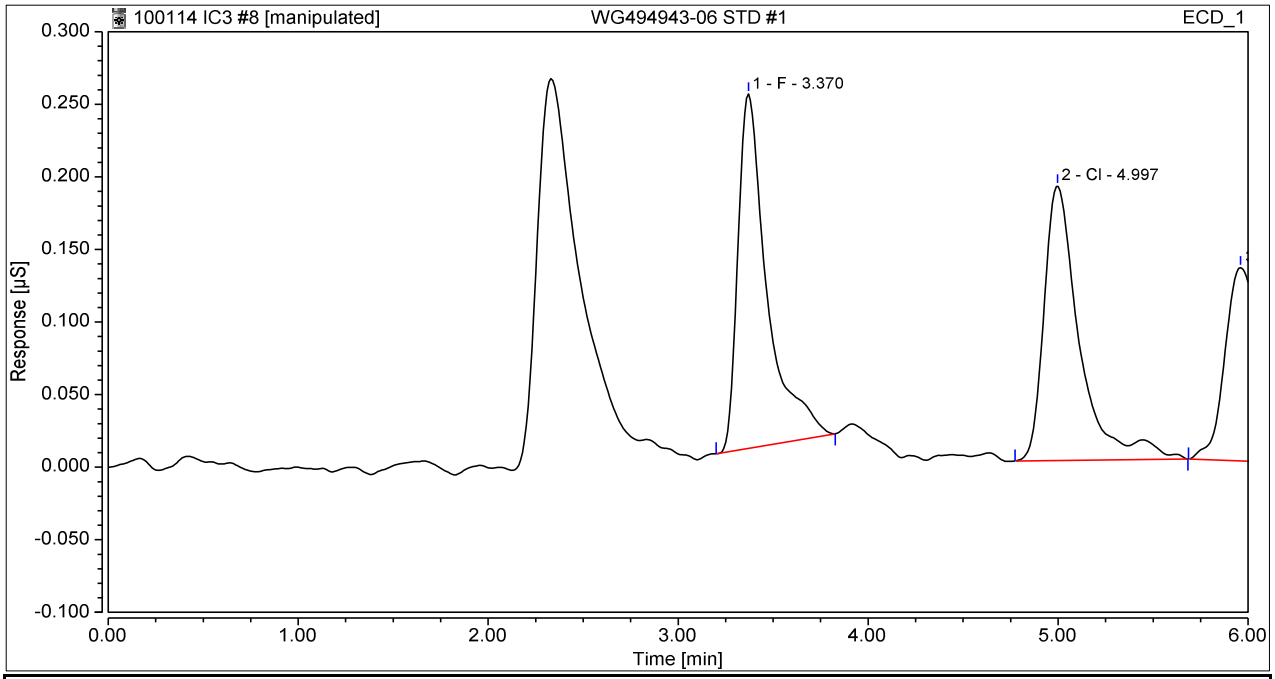

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.37	F	0.2441	0.0435	13.4	0.234	MB*
2	5.00	Cl	0.1892	0.0410	12.6	0.204	M
3	5.96	NO2-N	0.1332	0.0345	10.6	0.122	M
4	7.65	Br	0.0467	0.0132	4.1	0.202	M
5	8.65	NO3-N	0.1653	0.0676	20.9	0.137	M
6	12.98	SO4	0.2418	0.1246	38.4	1.010	M
Total:			**1.02**	**0.32**	**100**	**1.91**	

9056Rept/Integration

Analyst: 10/08/2014 14:14 Supervisor: 10/15/2014 16:15

#4 - System establishes incorrect baseline

Chromeleon (c) Dionex
Version 7.2.0.3765

9 WG494943-07 ALT STD
1,1 ALS STD 66517

Sample Name:	**WG494943-07 ALT STD**	*Injection Volume:*	**5000.0**
Vial Number:	**9**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/01/2014 14:30**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

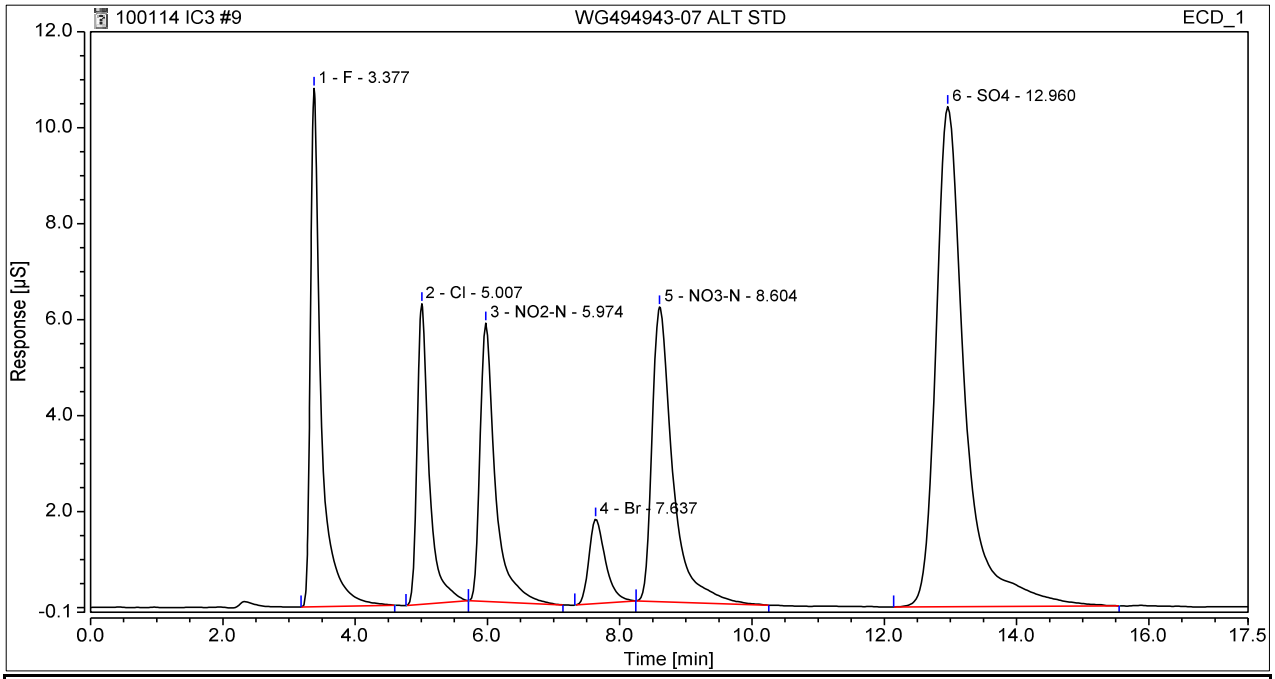

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.38	F	10.8042	2.0421	15.7	7.738	M
2	5.01	Cl	6.2662	1.3330	10.2	7.916	M
3	5.97	NO2-N	5.8008	1.5570	12.0	4.786	M
4	7.64	Br	1.7629	0.5109	3.9	7.866	M
5	8.60	NO3-N	6.1389	2.2364	17.2	5.341	M
6	12.96	SO4	10.4217	5.3378	41.0	39.248	M
Total:			**41.19**	**13.02**	**100**	**72.89**	

9 WG494943-07 ALT STD
1,1 ALS STD 66517

Sequence Details

Name:	**WG494943-07 ALT STD**	*Run Time:*	**17.50**
Vial Number:	**9**	*Injection Volume:*	**10.00**
Instrument Method:	**9056**	*Channel:*	**ECD_1**
Processing Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/1/2014 14:30**	*Sample Weight:*	**1.0000**

WG494943-	Actual mg/L	Recovered mg/L	% Difference	Pass/Fail
F	8.00	**7.738152714**	**-3.273091078**	**PASS**
CL	8.00	**7.916005505**	**-1.049931189**	**PASS**
NO2	4.87	**4.786413978**	**-1.716345427**	**PASS**
BR	8.00	**7.865666303**	**-1.679171217**	**PASS**
NO3	5.42	**5.340888585**	**-1.478070384**	**PASS**
SO4	40.00	**39.24765366**	**-1.880865855**	**PASS**

3 WG512949-01 ANION CCV
1,1 ALS STD66516

Sample Name:	**WG512949-01 ANION CCV**	*Injection Volume:*	**5000.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/19/2015 17:04**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

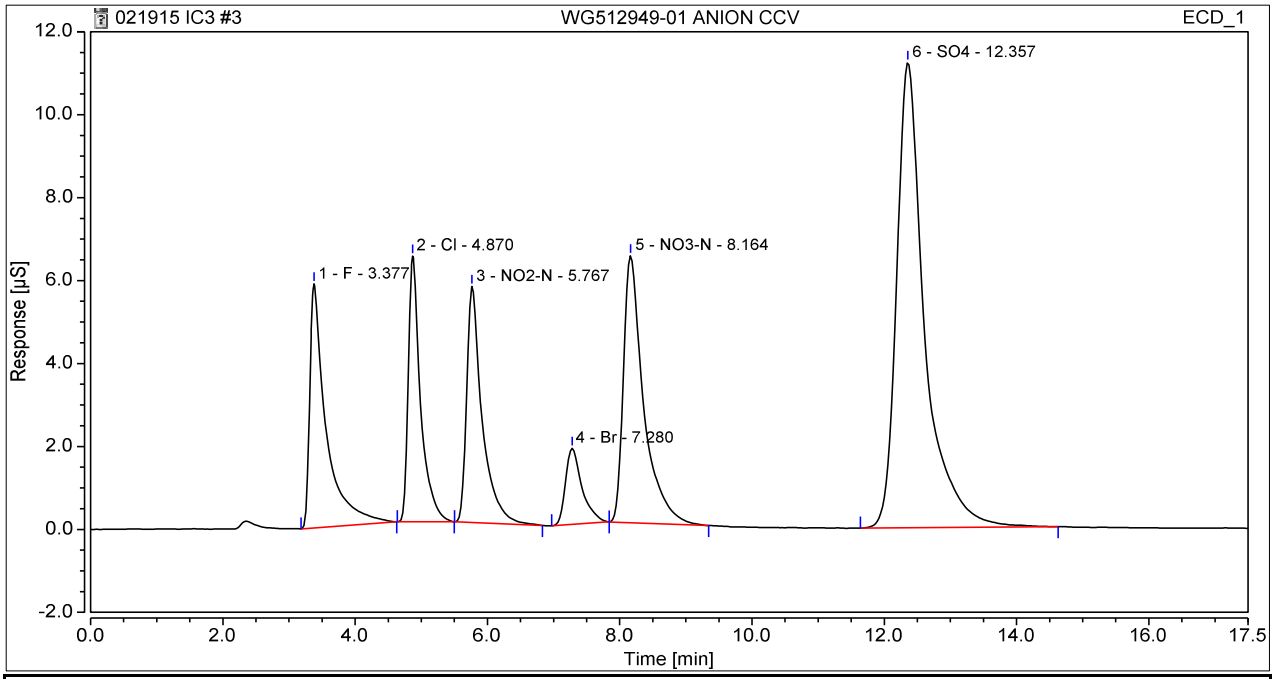

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.38	F	5.8826	1.6841	13.1	6.394	M
2	4.87	Cl	6.4091	1.3667	10.6	8.117	M
3	5.77	NO2-N	5.6888	1.5422	12.0	4.741	M
4	7.28	Br	1.8348	0.5292	4.1	8.148	M
5	8.16	NO3-N	6.4380	2.2733	17.7	5.429	M
6	12.36	SO4	11.2259	5.4819	42.6	40.305	M
Total:			**37.48**	**12.88**	**100**	**73.13**	

3 WG512949-01 ANION CCV
1,1 ALS STD66516

Sequence Details

Name:	**WG512949-01 ANION CCV**	*Run Time:*	**17.50**
Vial Number:	**3**	*Injection Volume:*	**10.00**
Instrument Method:	**9056**	*Channel:*	**ECD_1**
Processing Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**2/19/2015 17:04**	*Sample Weight:*	**1.0000**

WG512949-	Actual mg/L	Recovered mg/L	% Difference	Pass/Fail
F	8.00	**6.394184657**	**-20.07269179**	**FAIL**
CL	8.00	**8.117017735**	**1.46272169**	**PASS**
NO2	4.87	**4.741122223**	**-2.646360926**	**PASS**
BR	8.00	**8.147663234**	**1.845790419**	**PASS**
NO3	5.42	**5.429354603**	**0.1541439726**	**PASS**
SO4	40.00	**40.30481061**	**0.7620265374**	**PASS**

15 WG512949-03 ANION CCV
1,1 ALS STD66516

Sample Name:	**WG512949-03 ANION CCV**	*Injection Volume:*	**5000.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/19/2015 21:08**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

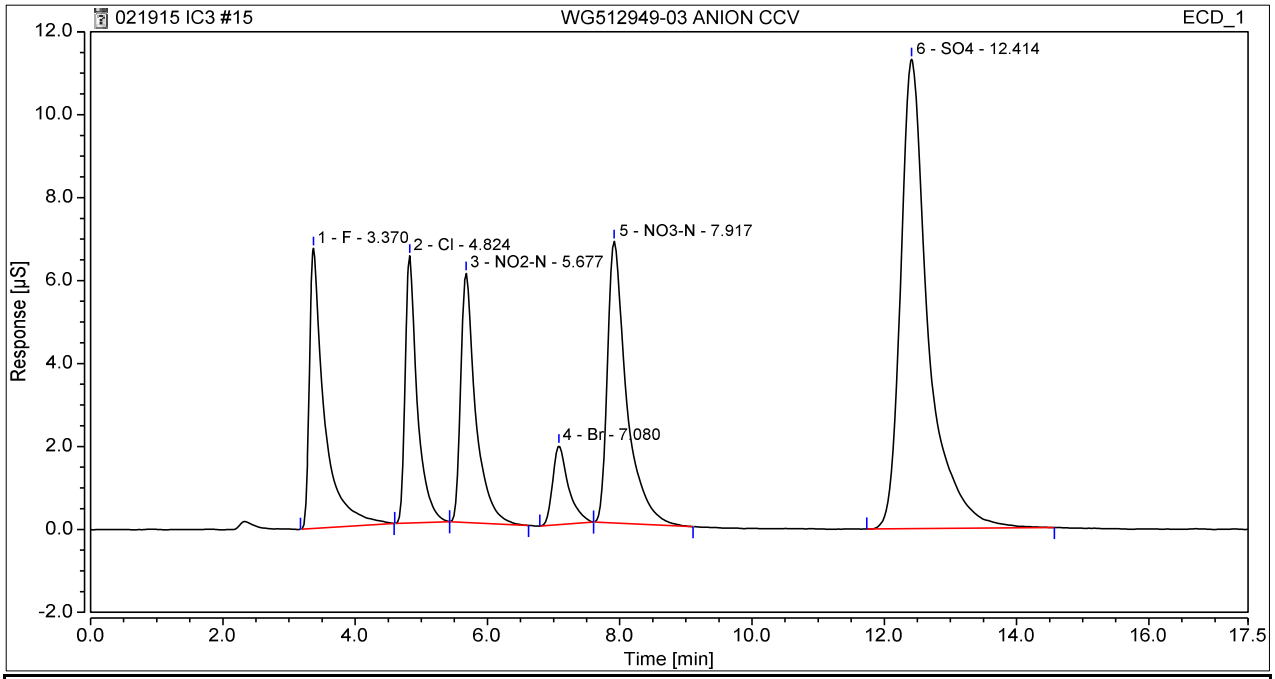

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.37	F	6.7556	1.7762	13.7	6.740	M
2	4.82	Cl	6.4436	1.3581	10.5	8.066	M
3	5.68	NO2-N	6.0122	1.5668	12.1	4.816	M
4	7.08	Br	1.9004	0.5247	4.0	8.078	M
5	7.92	NO3-N	6.7921	2.2809	17.6	5.448	M
6	12.41	SO4	11.3162	5.4521	42.1	40.086	M
Total:			**39.22**	**12.96**	**100**	**73.23**	

9056Rept/Integration

Chromeleon (c) Dionex
Version 7.2.0.3765

15 WG512949-03 ANION CCV
1,1 ALS STD66516

Sequence Details

Name:	**WG512949-03 ANION CCV**	*Run Time:*	**17.50**
Vial Number:	**15**	*Injection Volume:*	**10.00**
Instrument Method:	**9056**	*Channel:*	**ECD_1**
Processing Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**2/19/2015 21:08**	*Sample Weight:*	**1.0000**

WG512949-	Actual mg/L	Recovered mg/L	% Difference	Pass/Fail
F	8.00	**6.739873484**	**-15.75158145**	**FAIL**
CL	8.00	**8.065789288**	**0.8223661045**	**PASS**
NO2	4.87	**4.816299456**	**-1.102680566**	**PASS**
BR	8.00	**8.078331386**	**0.9791423192**	**PASS**
NO3	5.42	**5.447701008**	**0.4926385221**	**PASS**
SO4	40.00	**40.0861777**	**0.2154442591**	**PASS**

27 WG512949-05 ANION CCV
1,1 ALS STD66516

Sample Name:	**WG512949-05 ANION CCV**	*Injection Volume:*	**5000.0**
Vial Number:	**27**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/20/2015 1:12**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

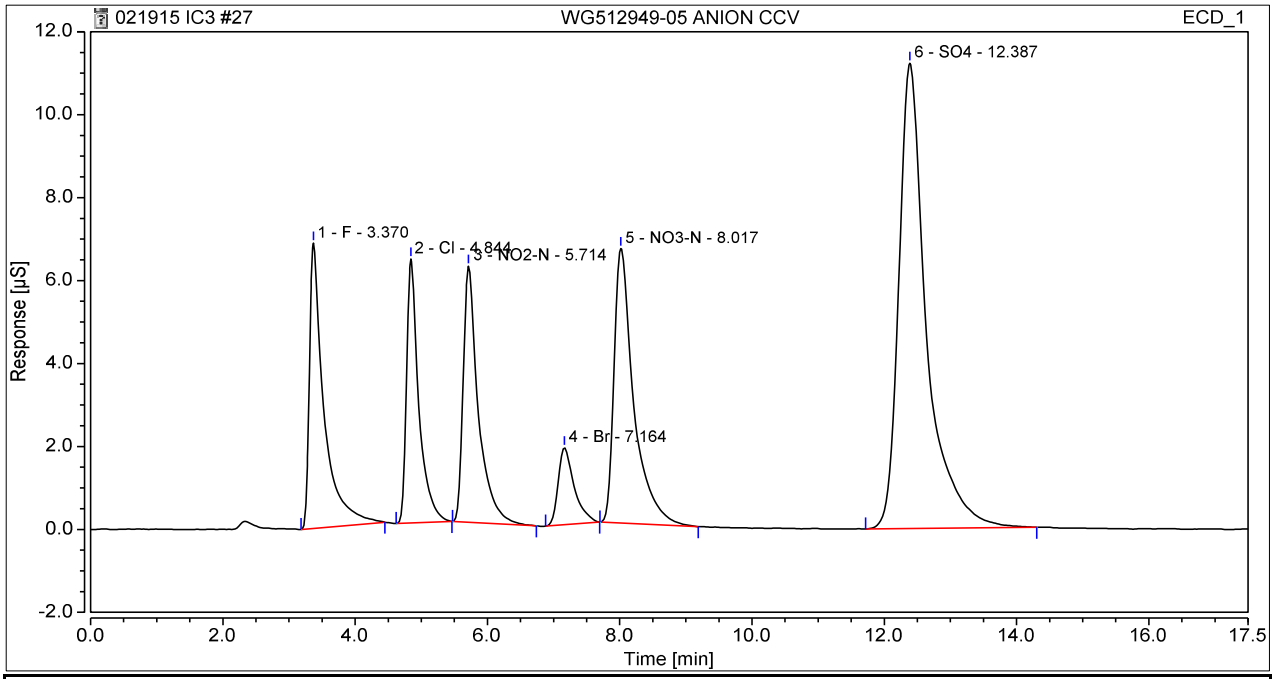

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.37	F	6.8845	1.7464	13.5	6.628	M
2	4.84	Cl	6.3627	1.3524	10.5	8.031	M
3	5.71	NO2-N	6.1794	1.6287	12.6	5.006	M
4	7.16	Br	1.8584	0.5226	4.0	8.046	M
5	8.02	NO3-N	6.6180	2.2709	17.6	5.424	M
6	12.39	SO4	11.2210	5.4152	41.9	39.815	M
Total:			**39.12**	**12.94**	**100**	**72.95**	

9056Rept/Integration

Chromeleon (c) Dionex
Version 7.2.0.3765

27 WG512949-05 ANION CCV
1,1 ALS STD66516

Sequence Details

Name:	**WG512949-05 ANION CCV**	*Run Time:*	**17.50**
Vial Number:	**27**	*Injection Volume:*	**10.00**
Instrument Method:	**9056**	*Channel:*	**ECD_1**
Processing Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**2/20/2015 1:12**	*Sample Weight:*	**1.0000**

WG512949-	Actual mg/L	Recovered mg/L	% Difference	Pass/Fail
F	8.00	**6.628005051**	**-17.14993687**	**FAIL**
CL	8.00	**8.031495931**	**0.3936991364**	**PASS**
NO2	4.87	**5.005961445**	**2.791816113**	**PASS**
BR	8.00	**8.045753993**	**0.5719249129**	**PASS**
NO3	5.42	**5.423665378**	**0.04917671069**	**PASS**
SO4	40.00	**39.81536014**	**-0.4615996543**	**PASS**

4 WG512949-02 ANION CCB
1,1 ALS

Sample Name:	**WG512949-02 ANION CCB**	*Injection Volume:*	**5000.0**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/19/2015 17:24**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

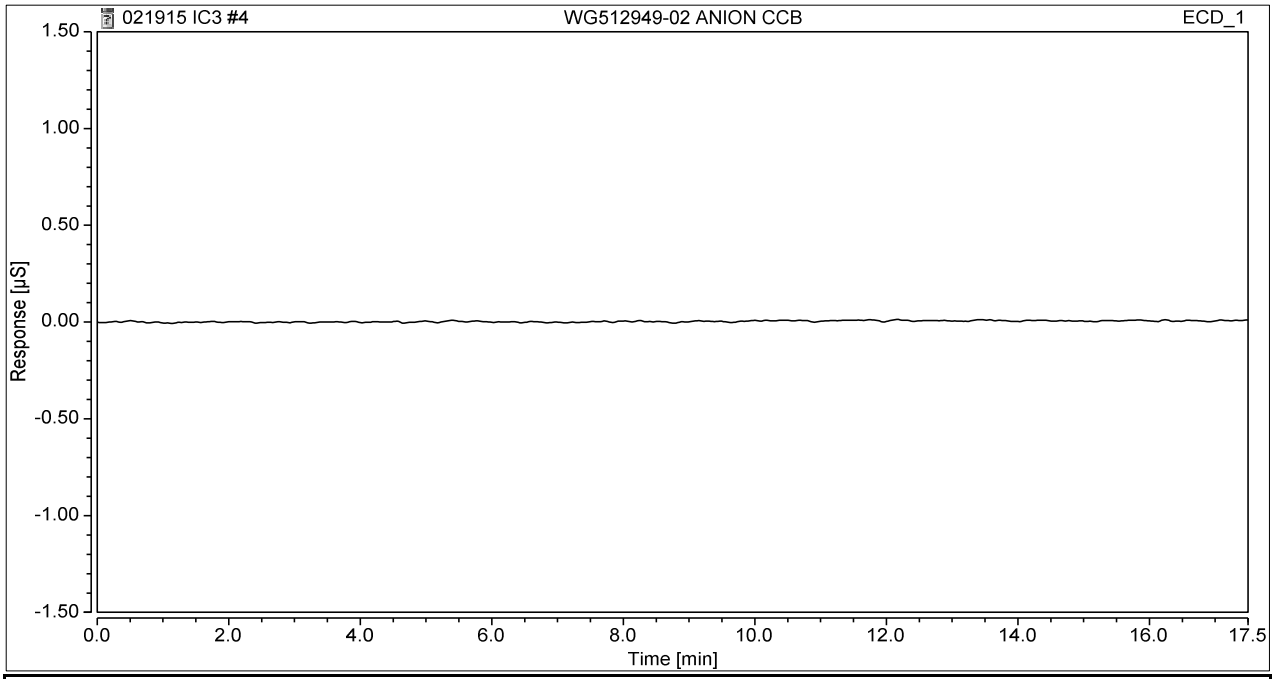

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
Total:			**0.00**	**0.00**	**0**	**0.00**	

16 WG512949-04 ANION CCB
1,1 ALS

Sample Name:	**WG512949-04 ANION CCB**	*Injection Volume:*	**5000.0**
Vial Number:	**16**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/19/2015 21:28**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

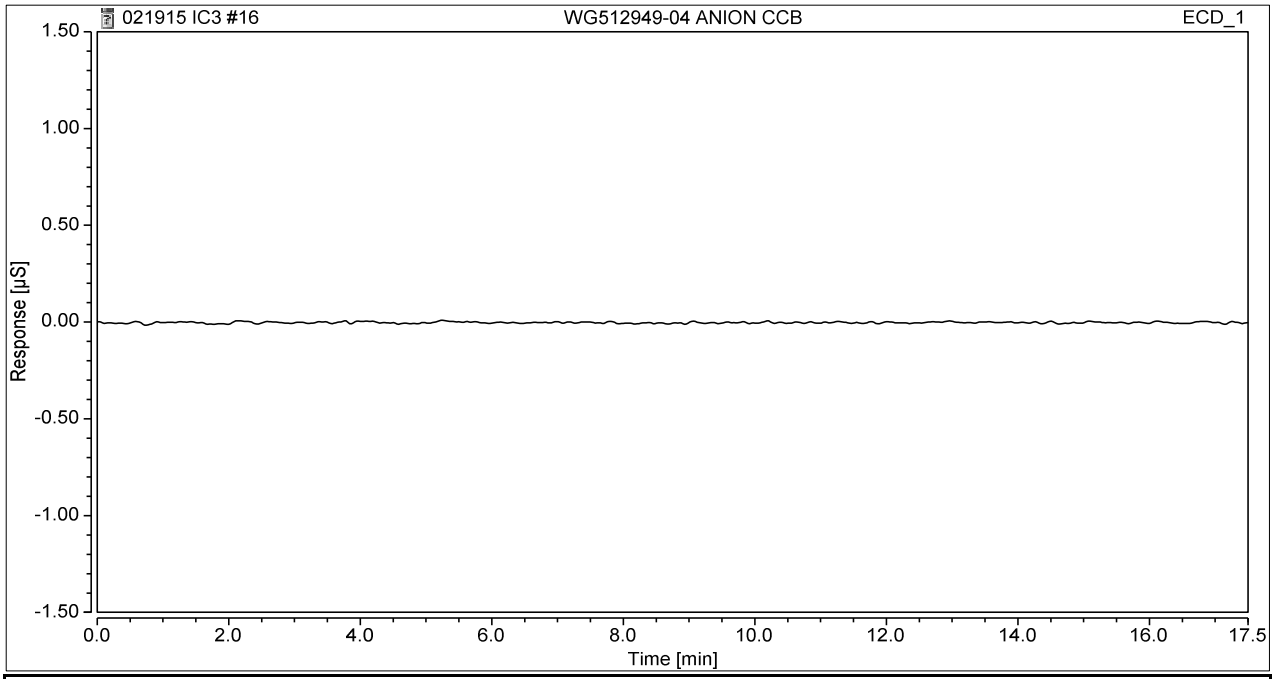

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
Total:			**0.00**	**0.00**	**0**	**0.00**	

28 WG512949-06 ANION CCB
1,1 ALS

Sample Name:	**WG512949-06 ANION CCB**	*Injection Volume:*	**5000.0**
Vial Number:	**28**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/20/2015 1:33**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

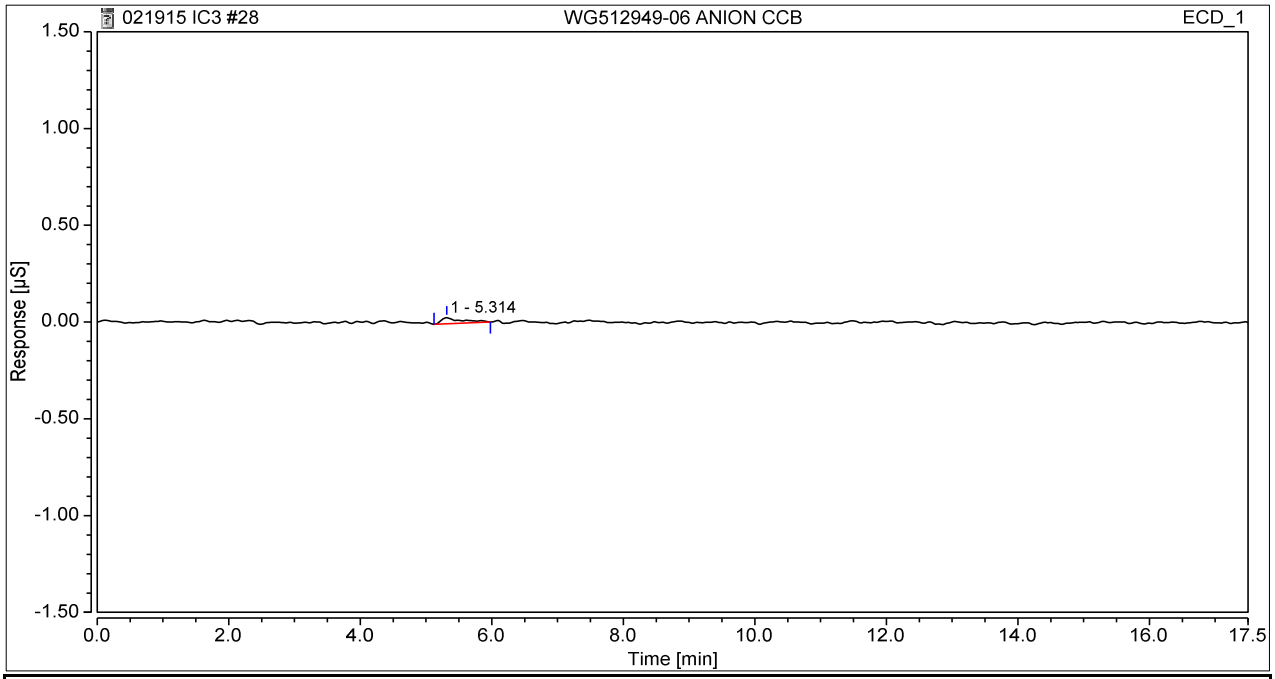

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
Total:			**0.00**	**0.00**	**0**	**0.00**	

9056Rept/Integration

Chromeleon (c) Dionex
Version 7.2.0.3765

RETENTION TIME WINDOWS

Lab Name: MICROBAC Laboratories, Inc.

Instrument ID: IC1

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	6/5/2013	6/5/2013	6/6/2013
File #	WG432976-05	WG432976-07	WG433275-01
Time	16:16	18:25	16:50

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.41	3.40	3.41	0.017
Cl	4.87	4.87	4.88	0.017
NO2-N	5.67	5.66	5.67	0.017
Br	7.01	6.99	7.02	0.046
NO3-N	7.76	7.74	7.77	0.046
SO4	13.35	13.35	13.35	0.000

Instrument ID: IC2

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	6/6/2013	6/6/2013	6/7/2013
File #	WG433163-01	WG433163-05	WG433448-01
Time	12:58	18:54	12:23

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.31	3.30	3.31	0.017
Cl	4.90	4.89	4.92	0.046
NO2-N	5.79	5.78	5.83	0.079
Br	7.34	7.31	7.43	0.187
NO3-N	8.21	8.18	8.32	0.221
SO4	13.74	13.74	13.67	0.121

Instrument ID: IC3

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	5/20/2014	5/21/2014	5/21/2014
File #	WG476910-05	WG476934-01	WG476934-03
Time	12:41	9:54	13:59

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.41	3.41	3.41	0.000
Cl	5.11	5.09	5.07	0.050
NO2-N	6.14	6.11	6.07	0.101
Br	7.90	7.84	7.75	0.220
NO3-N	8.94	8.86	8.76	0.271
SO4	13.35	13.39	13.42	0.101

2.4.1.5 Raw QC Data

5 WG512917-01 ANION BLANK
1,1 ALS

Sample Name:	**WG512917-01 ANION BLANK**	*Injection Volume:*	**5000.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/19/2015 17:45**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

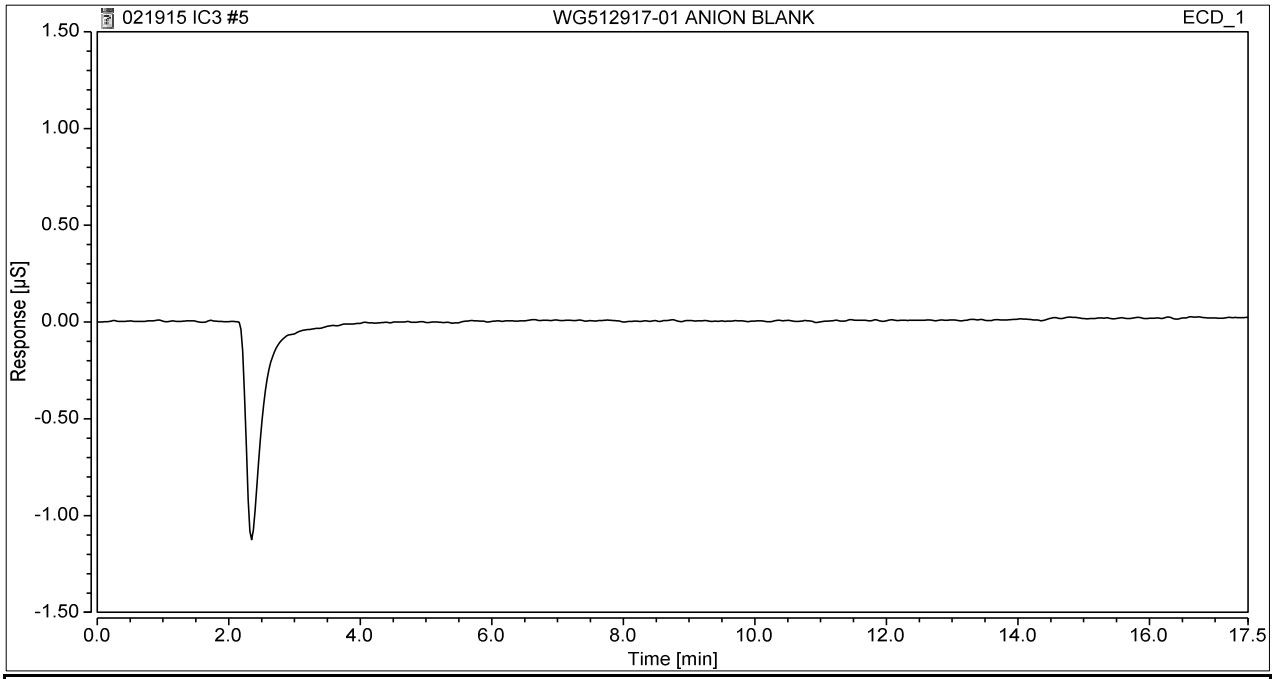

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
Total:			**0.00**	**0.00**	**0**	**0.00**	

6 WG512917-02 ANION LCS
1,1 ALS

Sample Name:	**WG512917-02 ANION LCS**	*Injection Volume:*	**5000.0**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/19/2015 18:05**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

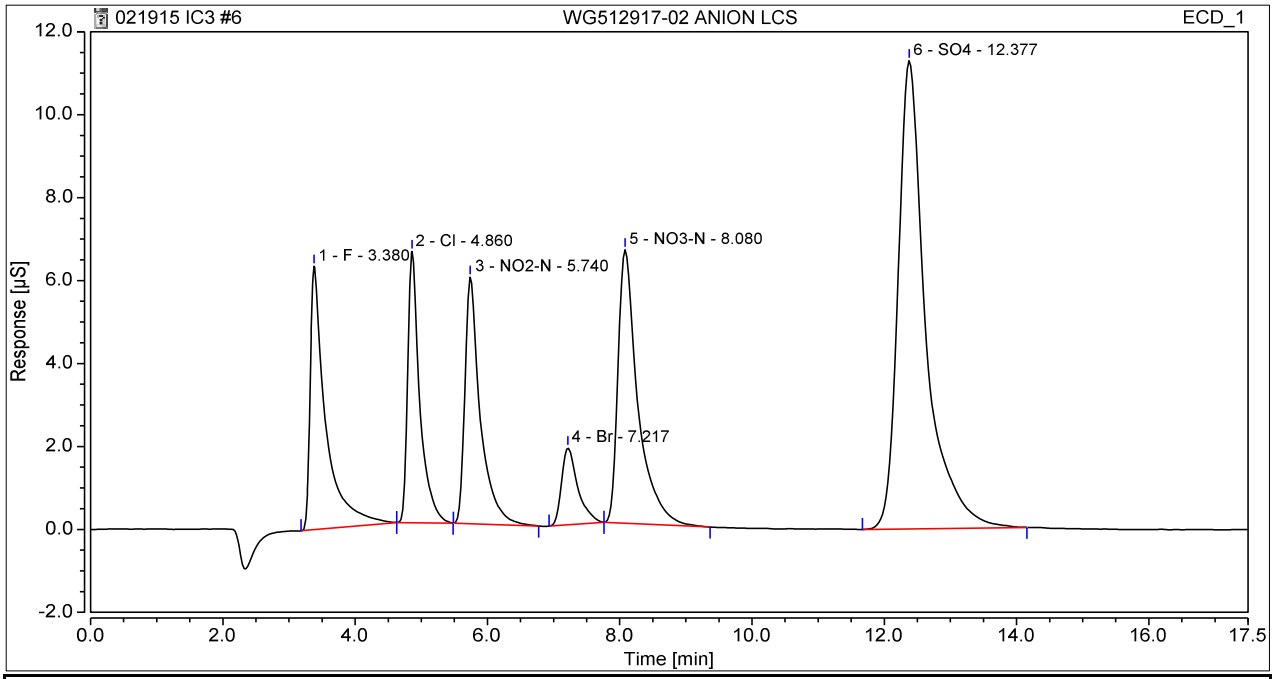

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.38	F	6.3561	1.7298	13.3	6.566	M
2	4.86	Cl	6.5407	1.3713	10.6	8.145	M
3	5.74	NO2-N	5.9469	1.6029	12.4	4.927	M
4	7.22	Br	1.8564	0.5272	4.1	8.116	M
5	8.08	NO3-N	6.5961	2.2863	17.6	5.461	M
6	12.38	SO4	11.2919	5.4544	42.0	40.103	M
Total:			**38.59**	**12.97**	**100**	**73.32**	

2.4.2 Alkalinity Data

2.4.2.1 Summary Data

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-06	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW24-021815	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/20/2015 13:55
Workgroup #:	WG512978	**Analyst:**	TB	**Run Date:**	02/20/2015 14:02
Collect Date:	02/18/2015 08:25	**Dilution:**	2	**File ID:**	S2150220002.019
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	303		80.0	40.0	20.0

Certificate of Analysis

Sample #:	L15020971-08	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW23-021815	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/20/2015 13:55
Workgroup #:	WG512978	**Analyst:**	TB	**Run Date:**	02/20/2015 14:02
Collect Date:	02/18/2015 09:40	**Dilution:**	1	**File ID:**	S2150220002.020
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	249		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L15020971-10	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW12-021815	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/20/2015 15:07
Workgroup #:	WG513096	**Analyst:**	TB	**Run Date:**	02/20/2015 15:11
Collect Date:	02/18/2015 11:05	**Dilution:**	1	**File ID:**	S2150220003.015
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	218		40.0	20.0	10.0

Certificate of Analysis

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15020971-12	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WWW25-021815	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/20/2015 15:07
Workgroup #:	WG513096	**Analyst:**	TB	**Run Date:**	02/20/2015 15:12
Collect Date:	02/18/2015 13:30	**Dilution:**	2	**File ID:**	S2150220003.016
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	340		80.0	40.0	20.0

Certificate of Analysis

Sample #:	L15020971-14	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW18-021815	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/20/2015 15:07
Workgroup #:	WG513096	**Analyst:**	TB	**Run Date:**	02/20/2015 15:12
Collect Date:	02/18/2015 14:45	**Dilution:**	2	**File ID:**	S2150220003.017
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	346		80.0	40.0	20.0

2.4.2.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809
Value of b from plot:	0.0004135
Absorbance of unknown from quantitation report (y):	0.31
Calculated concentration (x):	0.03964483
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	0.0396 mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796
Value of B from plot:	318.9056
Value of C from plot:	-2.2712
Absorbance of unknown from quantitation report (x):	0.1583
Calculated concentration (y):	50.7495108
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	50.75 mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 20-FEB-2015
Analyst: TB
Analyst: NA
Method: ALK
Instrument: SC2
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG512978 WG513096

Calibration/Linearity	02/20/2015
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	TB
Secondary Reviewer	DIH
Comments	

Primary Reviewer: 23-FEB-2015

Secondary Reviewer: 26-FEB-2015

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-26-2015 08:21:00

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 310.2 AAB#: WG512978

Login Number: L15020971

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW24-021815	06	02/18/15					02/20/2015	2.2	14		02/20/15	2.2	14	
50WW23-021815	08	02/18/15					02/20/2015	2.2	14		02/20/15	2.2	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4035261
Report generated 02/24/2015 08:15

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 310.2 AAB#: WG513096

Login Number: L15020971

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW12-021815	10	02/18/15					02/20/2015	2.2	14		02/20/15	2.2	14	
50WWW25-021815	12	02/18/15					02/20/2015	2.1	14		02/20/15	2.1	14	
50WW18-021815	14	02/18/15					02/20/2015	2	14		02/20/15	2	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4035261
Report generated 02/24/2015 08:15

METHOD BLANK SUMMARY

Login Number: L15020971
Blank File ID: S2150220002.012
Prep Date: 02/20/15 13:58
Analyzed Date: 02/20/15 13:58
Analyst: TB

Work Group: WG512978
Blank Sample ID: WG512978-01
Instrument ID: SMARTCHEM2
Method: 310.2

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG512978-02	S2150220002.013	02/20/15 13:58	01
LCS2	WG512978-03	S2150220002.014	02/20/15 13:59	01
50WW24-021815	L15020971-06	S2150220002.019	02/20/15 14:02	DL01
50WW23-021815	L15020971-08	S2150220002.020	02/20/15 14:02	01
DUP	WG512978-05	S2150220002.032	02/20/15 14:10	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4035262
Report generated 02/24/2015 08:15

METHOD BLANK SUMMARY

Login Number: L15020971
Blank File ID: S2150220003.012
Prep Date: 02/20/15 15:10
Analyzed Date: 02/20/15 15:10
Analyst: TB

Work Group: WG513096
Blank Sample ID: WG513096-01
Instrument ID: SMARTCHEM2
Method: 310.2

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG513096-02	S2150220003.013	02/20/15 15:10	01
LCS2	WG513096-03	S2150220003.014	02/20/15 15:11	01
50WW12-021815	L15020971-10	S2150220003.015	02/20/15 15:11	01
50WWW25-021815	L15020971-12	S2150220003.016	02/20/15 15:12	DL01
50WW18-021815	L15020971-14	S2150220003.017	02/20/15 15:12	DL01
DUP	WG513096-05	S2150220003.026	02/20/15 15:18	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4035262
Report generated 02/24/2015 08:15

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15020971 Prep Date: 02/20/15 13:58 Sample ID: WG512978-01
Instrument ID: SMARTCHEM2 Run Date: 02/20/15 13:58 Prep Method: 310.2
File ID: S2150220002.012 Analyst: TB Method: 310.2
Workgroup (AAB#): WG512978 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-20-FEB-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Alkalinity, Total (as CaCO3)	10.0	40.0	10.0	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4035263
24-FEB-2015 08:15

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15020971 Prep Date: 02/20/15 15:10 Sample ID: WG513096-01
Instrument ID: SMARTCHEM2 Run Date: 02/20/15 15:10 Prep Method: 310.2
File ID: S2150220003.012 Analyst: TB Method: 310.2
Workgroup (AAB#): WG513096 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-20-FEB-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Alkalinity, Total (as CaCO3)	10.0	40.0	13.5	1	J

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4035263
24-FEB-2015 08:15

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15020971 Analyst: TB Prep Method: 310.2
Instrument ID: SMARTCHEM2 Matrix: Water Method: 310.2
Workgroup (AAB#): WG512978 Units: mg/L
QC Key: DOD4 Lot #: STD68978

Sample ID: WG512978-02 LCS File ID: S2150220002.013 Run Date: 02/20/2015 13:58
Sample ID: WG512978-03 LCS2 File ID: S2150220002.014 Run Date: 02/20/2015 13:59

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Alkalinity, Total (as CaCO3)	200	201	100	200	203	102	1.28	85 - 115	20	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4035264
Report generated: 02/24/2015 08:15

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15020971 Analyst: TB Prep Method: 310.2
Instrument ID: SMARTCHEM2 Matrix: Water Method: 310.2
Workgroup (AAB#): WG513096 Units: mg/L
QC Key: DOD4 Lot #: STD68978

Sample ID: WG513096-02 LCS File ID: S2150220003.013 Run Date: 02/20/2015 15:10
Sample ID: WG513096-03 LCS2 File ID: S2150220003.014 Run Date: 02/20/2015 15:11

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Alkalinity, Total (as CaCO3)	200	200	100	200	203	101	1.25	85 - 115	20	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4035264
Report generated: 02/24/2015 08:15

2.4.2.3 Raw Data

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

WORKGROUP: WG512978
513096

Daily Check

- [x] Lamp On
- [x] Probe Rinse Full
- [x] DI Water > ½ Full
- [x] Wash Solution > ½ Full
- [ ] NO3 Reagent bottle connected / purged
- [ ] NO3 pH adj to pH 5-9
- Syringe filter lot # _____

- [x] WBL Run
- [x] Reagents Full
- [x] Dilution H_2O Full
- [x] Waste Container Check

1) **Workgroup** 512978 / ~~513096~~
Plan # 20150220002
2) **Workgroup** 513096
Plan # 20150220003
3) **Workgroup** _____
Plan # _____

Instrument: SC1 [ ] SC2 [x]

	Analyte	1	2	3
		Alk		
		Dilution		
SC Prepared Curve				
Position				
1-1	ICV			
1-2	Blk			
1-3	LCS			
1-4	LCSDUP			
1-5	2-880-02	1/4		
1-6	03	1/4		
1-7	05	1/4		
1-8	06	1/4		
1-9	971-06	1/2		
1-10	08	~~1/2~~		
1-11	10	1/2		
1-12	12			
1-13	14	1/2		
1-14	1053-01	1/2		
1-15	03			
1-16	05	1/2		
1-17	07	1/2		
1-18	09	1/2		
1-19	11	1/2		
1-20	Dup	1/2		
1-21				
1-22				
2-1	ICV			
2-2	Blk			
2-3	LCS			

	Analyte	1	2	3
Position				
2-4	LCSDUP			
2-5	2-971-10			
2-6	12	1/2		
2-7	14	1/2		
2-8	1053-01	1/2		
2-9	03			
2-10	05	1/2		
2-11	07	1/2		
2-12	09	1/2		
2-13	11	1/2		
2-14	Dup	1/2		
2-15	1059-02	1/4		
2-16	03	1/4		
2-17	05	1/4		
2-18	06	1/4		
2-19	08	1/4		
2-20	09	1/4		
2-21				
2-22				
2-23				
2-24				
2-25				
2-26				
3-1				
3-2				

NOTES:
* Run NO2 std on NO3 runs
* LCSD must be run if no MS or Duplicate
*MS(10% sample): NO3, TKN, NH3, PHOS

DCN#108778

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

WORKGROUP: WG512978

Position	Analyte	1	2	3
3-3				
3-4				
3-5				
3-6				
3-7				
3-8				
3-9				
3-10				
3-11				
3-12				
3-13				
3-14				
3-15				

Position	Analyte	1	2	3
3-16				
3-17				
3-18				
3-19				
3-20				
3-21				
3-22				
3-23				
3-24				
3-25				
3-26				
3-27				
3-28				

	Chloride	EPA 325.2/SM 4500-CI E-2000
X	Nitrate-Nitrite	EPA 353.2/SM 4500-NO3 F-2000
✓	Alkalinity	EPA 310.2
	Sulfate	EPA 375.4/SM 426C (15th)/ SM4500-504 E-1997

HB 2/20/15

	Ammonia	EPA 350.1/SM 4500-NH3 B-1997
	TKN	EPA 351.2
	Phos	EPA 365.4

Analyte	A/h		Reagents
SOP & Revision	L 3102		
Curve Stock (SC made)	Std 67556		32879
NO2 STD			
ICV	Std 68724		
CCV	Std 68725		
LCS	Std 68978		
MS	Dilution		

Comments: _____

Analyst: Tom Boyle Date: 2/20/15

DCN#108778

MICROBAC (OVD)

SMARTCHEM200 INST2 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.0	0.5184	0.00		1:49:43 PM
DIL-1	RBL	0.0	0.5249	0.00		1:50:01 PM
DIL-1	RBL	0.0	0.5199	0.00		1:50:55 PM
DIL-1	Std-1	0.0	0.0040	0.00	INV	1:51:13 PM
SR5-1	Std-2	10.0	-0.0012	0.00		1:52:07 PM
SR5-2	Std-3	20.0	-0.0162	0.00		1:52:25 PM
SR5-3	Std-4	50.0	-0.0440	0.00		1:53:19 PM
SR5-4	Std-5	100.0	-0.0983	0.00		1:53:37 PM
SR5-5	Std-6	200.0	-0.2099	0.00		1:54:31 PM
SR5-6	Std-7	250.0	-0.2767	0.00		1:54:49 PM
SR5-7	Std-8	300.0	-0.3280	0.00		1:55:43 PM
ST-3	1CCV (150 mg/L)	144.7	-0.1487	96.49		1:56:01 PM
ST-2	2CCB (0 mg/L)	6.4	-0.0001	0.00		1:56:55 PM
1	ICV	248.4	-0.2686	0.00		1:57:13 PM
2	WG512978-01 BLK	4.6	0.0017	0.00	INV	1:58:07 PM
3	WG512978-02 LCS	200.5	-0.2122	0.00		1:58:25 PM
4	WG512978-03 LCSDUP	203.1	-0.2152	0.00		1:59:19 PM
5	L15020880-02 (4)	245.1	-0.2647	0.00		1:59:37 PM
6	L15020880-03 (4)	83.3	-0.0812	0.00		2:00:31 PM
7	L15020880-05 (4)	207.9	-0.2208	0.00		2:00:49 PM
8	L15020880-06 (4)	82.5	-0.0804	0.00		2:01:43 PM
9	L15020971-06 (2)	151.5	-0.1563	0.00		2:02:01 PM
10	L15020971-08	249.3	-0.2697	0.00		2:02:55 PM
ST-3	1CCV (150 mg/L)	155.3	-0.1605	103.51		2:03:13 PM
ST-2	2CCB (0 mg/L)	5.8	0.0005	0.00	INV	2:04:07 PM
11	L15020971-10 (2)	117.8	-0.1188	0.00		2:04:25 PM
12	L15020971-12	315.5	-0.3511	0.00	><,LH	2:05:19 PM
13	L15020971-14 (2)	173.7	-0.1814	0.00		2:05:37 PM
14	L15021053-01 (2)	163.1	-0.1693	0.00		2:06:31 PM
15	L15021053-03	259.8	-0.2823	0.00		2:06:49 PM
16	L15021053-05 (2)	156.9	-0.1623	0.00		2:07:43 PM
17	L15021053-07 (2)	138.0	-0.1412	0.00		2:08:01 PM

Report Date :02/20/2015 **Run Date :2/20/2015** **Operator : WESTCO** **Plan # :20150220002**

Plan Description : ALK-A2-TB/02/20/2015

MICROBAC (OVD)
SMARTCHEM200 INST2 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
18	L15021053-09 (2) TB 2/20/15	216.7	-0.2311	0.00		2:08:55 PM
19	~~L15021053-11~~ (2) Ref	185.8	-0.1952	0.00		2:09:13 PM
20	WG512978-05 (2) DUP	192.2	-0.2026	0.00		2:10:07 PM
ST-3	1CCV (150 mg/L)	158.0	-0.1636	105.34		2:10:25 PM
ST-2	2CCB (0 mg/L)	20.5	-0.0147	0.00		2:11:19 PM
21	ID 21	21.7	-0.0160	0.00		2:11:37 PM
22	ID 22	17.4	-0.0114	0.00		2:12:31 PM
23	ID 23	18.2	-0.0124	0.00		2:12:49 PM
24	ID 24	211.8	-0.2253	0.00		2:13:43 PM
25	ID 25	213.9	-0.2278	0.00		2:14:01 PM
ST-3	1CCV (150 mg/L)	156.7	-0.1621	104.45		2:14:55 PM
ST-2	2CCB (0 mg/L)	27.0	-0.0215	0.00		2:15:13 PM
12-[1/2]	L15020971-12	362.7	-0.1901	0.00	LH	2:22:53 PM
ST-3	1CCV (150 mg/L)	163.4	-0.1697	108.94		2:22:53 PM
ST-2	2CCB (0 mg/L)	31.9	-0.0266	0.00		2:23:47 PM

Report Date :02/20/2015 **Run Date :2/20/2015** **Operator : WESTCO** **Plan # :20150220002**

Plan Description : ALK-A2-TB/02/20/2015

Calibrant Report - WALK -

Calib Lot #:010104 Exp Date:6/21/2020 User:MICROBAC

Plan # : 20150220002 Description : [ALK-A2-TB/02/20/2015] Unit

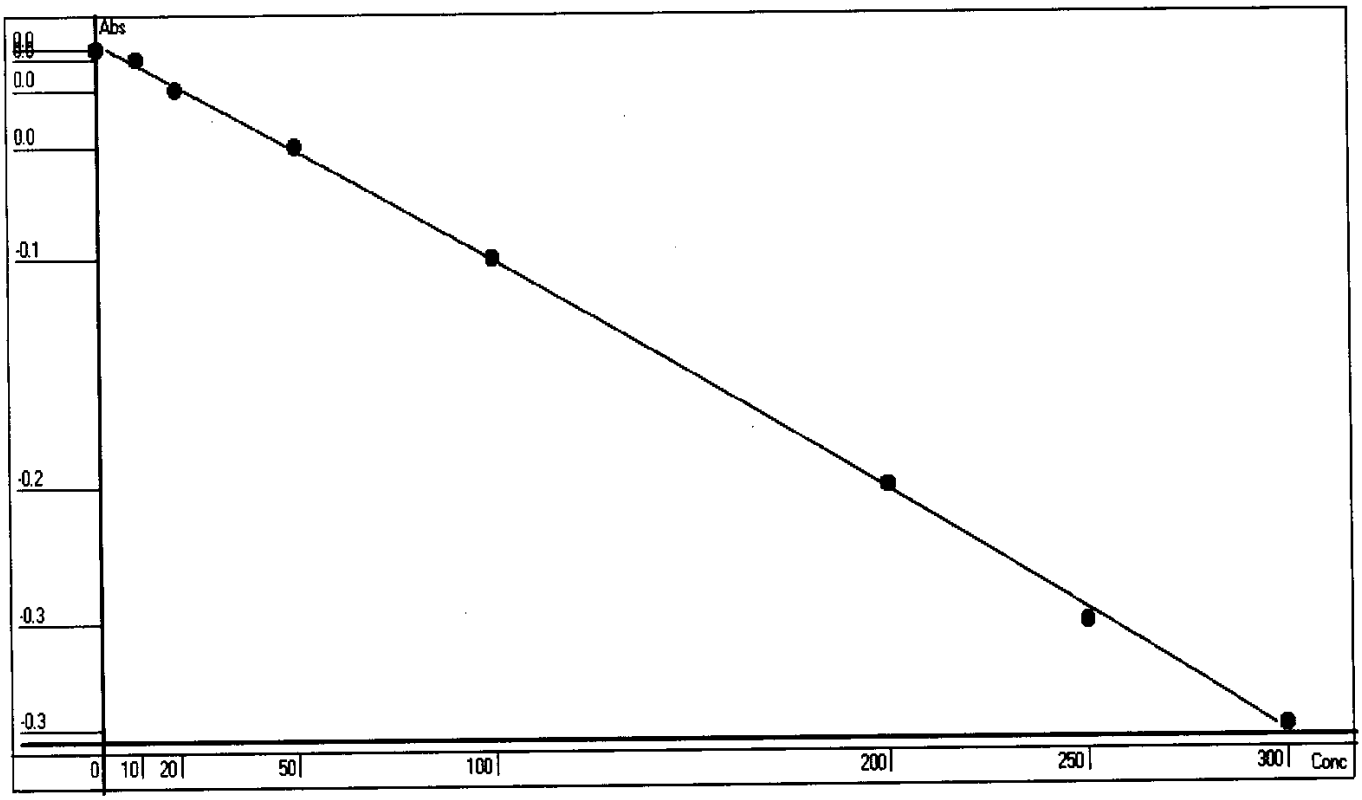

Point	OD	Conc	Recalc Conc	% Error
1	0.0039	0	2.5491	254.91
2	-0.0012	10	7.4899	-25.10
3	-0.0161	20	21.8505	9.25
4	-0.0440	50	48.4436	-3.11
5	-0.0983	100	99.0899	-0.91
6	-0.2098	200	198.4892	-0.76
7	-0.2767	250	255.1602	2.06
8	-0.3280	300	297.1083	-0.96
				RBL 0.5192 0

Conc= -248.726*Abso^2 -968.1059*Abso +6.3285 R^2=0.9994

Report Date 2/20/2015 Run Date 2/20/2015

MICROBAC (OVD)

SMARTCHEM200 INST2 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.0	0.4826	0.00		3:01:48 PM
DIL-1	RBL	0.0	0.4761	0.00		3:02:06 PM
DIL-1	RBL	0.0	0.4804	0.00		3:03:00 PM
DIL-1	Std-1	0.0	-0.0052	0.00		3:03:18 PM
SR5-1	Std-2	10.0	-0.0102	0.00		3:04:13 PM
SR5-2	Std-3	20.0	-0.0251	0.00		3:04:31 PM
SR5-3	Std-4	50.0	-0.0492	0.00		3:05:25 PM
SR5-4	Std-5	100.0	-0.1027	0.00		3:05:43 PM
SR5-5	Std-6	200.0	-0.2065	0.00		3:06:37 PM
SR5-6	Std-7	250.0	-0.2695	0.00		3:06:55 PM
SR5-7	Std-8	300.0	-0.3132	0.00		3:07:49 PM
ST-3	1CCV (150 mg/L)	152.6	-0.1580	101.72		3:08:07 PM
ST-2	2CCB (0 mg/L)	16.7	-0.0191	0.00		3:09:01 PM
1	ICV	253.3	-0.2660	0.00		3:09:19 PM
2	~~WG512978-01~~ BLK	13.5	-0.0160	0.00		3:10:13 PM
3	WG513096 ~~WG512978-02~~ LCS	200.2	-0.2085	0.00		3:10:31 PM
4	~~WG512978-03~~ LCSDUP	202.7	-0.2112	0.00		3:11:25 PM
5	TB 2/20/15 L15020971-10	217.8	-0.2274	0.00		3:11:43 PM
6	L15020971-12 (2)	170.1	-0.1765	0.00		3:12:37 PM
7	L15020971-14 (2)	173.2	-0.1797	0.00		3:12:55 PM
8	L15021053-01 (2)	154.6	-0.1601	0.00		3:13:49 PM
9	L15021053-03	261.8	-0.2753	0.00		3:14:07 PM
10	L15021053-05 (2)	153.6	-0.1591	0.00		3:15:01 PM
ST-3	1CCV (150 mg/L)	153.0	-0.1584	101.97		3:15:19 PM
ST-2	2CCB (0 mg/L)	13.9	-0.0164	0.00		3:16:13 PM
11	L15021053-07 (2)	134.5	-0.1391	0.00		3:16:31 PM
12	L15021053-09 (2)	221.5	-0.2314	0.00		3:17:25 PM
13	L15021053-11 (2)	186.7	-0.1941	0.00		3:17:43 PM
14	WG513096 ~~WG512978-05~~ (2) DUP	186.1	-0.1934	0.00		3:18:37 PM
15	ID 15 2- 1059-02 (4)	164.2	-0.1702	0.00		3:18:55 PM
16	ID 16 1059-03 (4)	109.2	-0.1129	0.00		3:19:49 PM
17	ID 17 1059-05 (4) ~~06 (4)~~	122.1	-0.1262	0.00		3:20:07 PM

TB 2/20/15

Report Date :02/20/2015 **Run Date :2/20/2015** **Operator : WESTCO** **Plan # :20150220003**

Plan Description : ALK-B2-TB/02/20/2015

MICROBAC (OVD)

SMARTCHEM200 INST2 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
18	ID 18 2-1059-06 (4)	114.2	-0.1180	0.00		3:21:01 PM
19	ID 19 1059-08 (4)	94.0	-0.0972	0.00		3:21:19 PM
20	ID 20 09 (4)	74.9	-0.0777	0.00		3:22:13 PM
ST-3	1CCV (150 mg/L)	157.6	-0.1633	105.08		3:22:31 PM
ST-2	2CCB (0 mg/L)	19.1	-0.0215	0.00		3:23:25 PM

Report Date :02/20/2015 **Run Date :2/20/2015** **Operator : WESTCO** **Plan # :20150220003**

Plan Description : ALK-B2-TB/02/20/2015

Calibrant Report - WALK -

Calib Lot #:010104 Exp Date:6/21/2020 User:MICROBAC

Plan # : 20150220003 Description : [ALK-B2-TB/02/20/2015] Unit

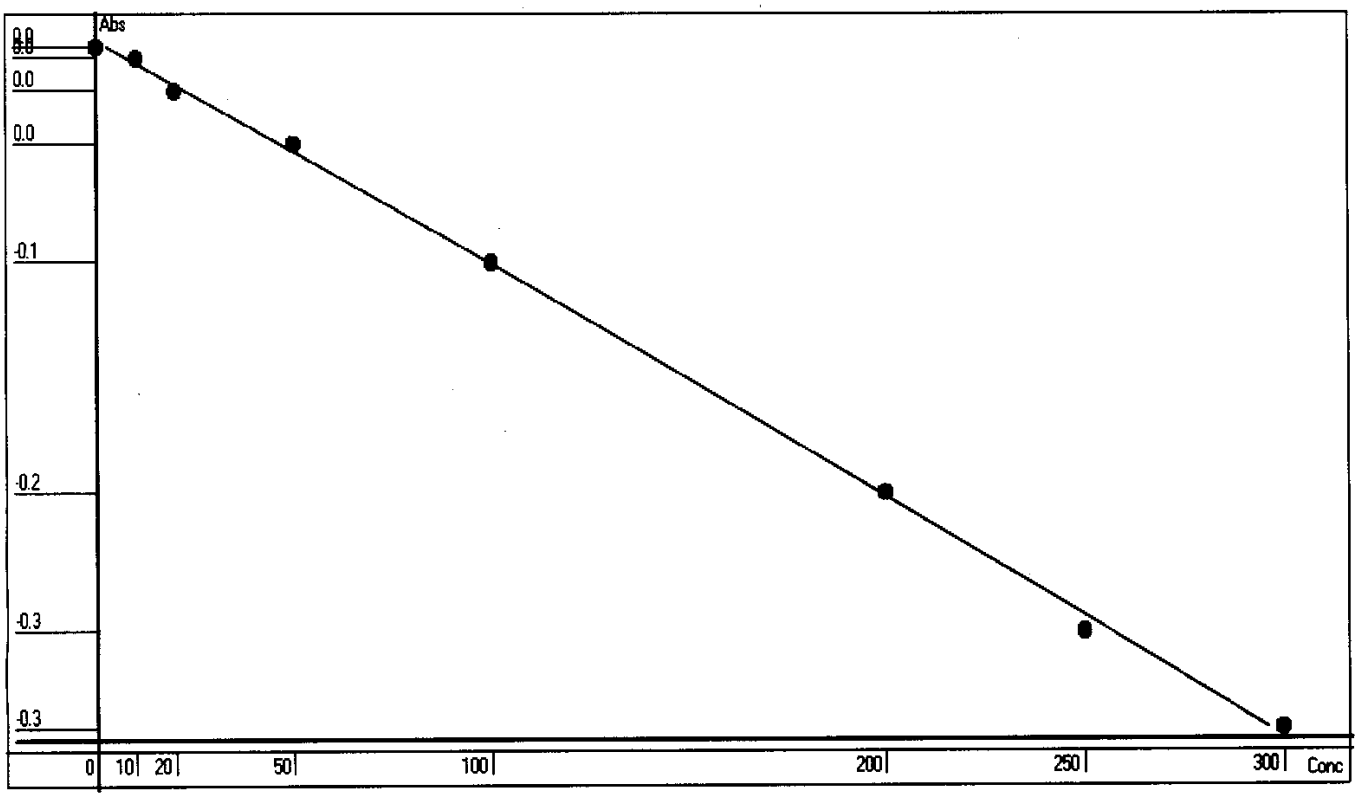

Point	OD	Conc	Recalc Conc	% Error
1	-0.0052	0	2.6667	266.67
2	-0.0102	10	7.7087	-22.91
3	-0.0251	20	22.6791	13.40
4	-0.0492	50	46.7194	-6.56
5	-0.1027	100	99.3200	-0.68
6	-0.2065	200	198.3594	-0.82
7	-0.2695	250	256.5291	2.61
8	-0.3132	300	296.0173	-1.33

Conc= -184.6979*Abso^2 -1011.245*Abso -2.5868 R^2=0.9991

RBL
0.4815
0

Report Date 2/20/2015 Run Date 2/20/2015

2.4.3 Phosphorus Data

2.4.3.1 Summary Data

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-06	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW24-021815	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	02/24/2015 09:14
Workgroup #:	WG513212	**Analyst:**	DCM	**Run Date:**	02/24/2015 09:26
Collect Date:	02/18/2015 08:25	**Dilution:**	1	**File ID:**	S2150224002.026
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	1.21		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15020971-08	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW23-021815	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	02/24/2015 11:12
Workgroup #:	WG513272	**Analyst:**	DCM	**Run Date:**	02/24/2015 11:19
Collect Date:	02/18/2015 09:40	**Dilution:**	1	**File ID:**	S2150224003.018
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-10	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW12-021815	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	02/24/2015 09:14
Workgroup #:	WG513212	**Analyst:**	DCM	**Run Date:**	02/24/2015 09:27
Collect Date:	02/18/2015 11:05	**Dilution:**	1	**File ID:**	S2150224002.028
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.300	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-12	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WWW25-021815	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	02/24/2015 09:14
Workgroup #:	WG513212	**Analyst:**	DCM	**Run Date:**	02/24/2015 09:27
Collect Date:	02/18/2015 13:30	**Dilution:**	1	**File ID:**	S2150224002.029
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-14	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW18-021815	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	02/24/2015 09:14
Workgroup #:	WG513212	**Analyst:**	DCM	**Run Date:**	02/24/2015 09:28
Collect Date:	02/18/2015 14:45	**Dilution:**	1	**File ID:**	S2150224002.030
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.4.3.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809
Value of b from plot:	0.0004135
Absorbance of unknown from quantitation report (y):	0.31
Calculated concentration (x):	0.03964483
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	0.0396 mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796
Value of B from plot:	318.9056
Value of C from plot:	-2.2712
Absorbance of unknown from quantitation report (x):	0.1583
Calculated concentration (y):	50.7495108
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	50.75 mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 24-FEB-2015
Analyst: DCM
Analyst: NA
Method: PHOS
Instrument: SC
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG513272 WG513212

Calibration/Linearity	02-24-2015
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DCM
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
24-FEB-2015

Secondary Reviewer:
27-FEB-2015

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-27-2015 09:30:16

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 365.4 AAB#: WG513212

Login Number: L15020971

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW24-021815	06	02/18/15					02/24/2015	6	28		02/24/15	6	28	
50WW12-021815	10	02/18/15					02/24/2015	5.9	28		02/24/15	5.9	28	
50WWW25-021815	12	02/18/15					02/24/2015	5.8	28		02/24/15	5.8	28	
50WW18-021815	14	02/18/15					02/24/2015	5.8	28		02/24/15	5.8	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4038756
Report generated 02/26/2015 13:40

Microbac Laboratories Inc.

00636532

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 365.4 AAB#: WG513272

Login Number: L15020971

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW23-021815	08	02/18/15					02/24/2015	6.1	28		02/24/15	6.1	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4038756
Report generated 02/26/2015 13:40

METHOD BLANK SUMMARY

Login Number: L15020971
Blank File ID: S2150224002.010
Prep Date: 02/24/15 09:16
Analyzed Date: 02/24/15 09:16
Analyst: DCM

Work Group: WG513212
Blank Sample ID: WG513212-01
Instrument ID: SMARTCHEM2
Method: 365.4

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG513212-02	S2150224002.011	02/24/15 09:17	01
50WW24-021815	L15020971-06	S2150224002.026	02/24/15 09:26	01
50WW12-021815	L15020971-10	S2150224002.028	02/24/15 09:27	01
50WWW25-021815	L15020971-12	S2150224002.029	02/24/15 09:27	01
50WW18-021815	L15020971-14	S2150224002.030	02/24/15 09:28	01
DUP	WG513212-04	S2150224002.036	02/24/15 09:32	01

Report Name: BLANK_SUMMARY
PDF File ID: 4038757
Report generated 02/26/2015 13:40

METHOD BLANK SUMMARY

Login Number: L15020971
Blank File ID: S2150224003.010
Prep Date: 02/24/15 11:15
Analyzed Date: 02/24/15 11:15
Analyst: DCM

Work Group: WG513272
Blank Sample ID: WG513272-01
Instrument ID: SMARTCHEM2
Method: 365.4

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG513272-02	S2150224003.011	02/24/15 11:15	01
DUP	WG513272-04	S2150224003.017	02/24/15 11:19	01
50WW23-021815	L15020971-08	S2150224003.018	02/24/15 11:19	01

Report Name: BLANK_SUMMARY
PDF File ID: 4038757
Report generated 02/26/2015 13:40

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15020971 Prep Date: 02/24/15 09:16 Sample ID: WG513212-01
Instrument ID: SMARTCHEM2 Run Date: 02/24/15 09:16 Prep Method: 365.4
File ID: S2150224002.010 Analyst: DCM Method: 365.4
Workgroup (AAB#): WG513212 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-24-FEB-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Phosphorus, Total	0.100	0.400	-0.121	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4038758
26-FEB-2015 13:40

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15020971 Prep Date: 02/24/15 11:15 Sample ID: WG513272-01
Instrument ID: SMARTCHEM2 Run Date: 02/24/15 11:15 Prep Method: 365.4
File ID: S2150224003.010 Analyst: DCM Method: 365.4
Workgroup (AAB#): WG513272 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-24-FEB-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Phosphorus, Total	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4038758
26-FEB-2015 13:40

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15020971 Run Date: 02/24/2015 Sample ID: WG513212-02
Instrument ID: SMARTCHEM2 Run Time: 09:17 Prep Method: 365.4
File ID: S2150224002.011 Analyst: DCM Method: 365.4
Workgroup (AAB#): WG513212 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD68738 Cal ID: SMARTC-24-FEB-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Phosphorus, Total	1.00	1.06	106	70 - 130	

LCS - Modified 03/06/2008
PDF File ID: 4038759
Report generated: 02/26/2015 13:40

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15020971 Run Date: 02/24/2015 Sample ID: WG513272-02
Instrument ID: SMARTCHEM2 Run Time: 11:15 Prep Method: 365.4
File ID: S2150224003.011 Analyst: DCM Method: 365.4
Workgroup (AAB#): WG513272 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD68738 Cal ID: SMARTC-24-FEB-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Phosphorus, Total	1.00	0.976	97.6	70 - 130	

LCS - Modified 03/06/2008
PDF File ID: 4038759
Report generated: 02/26/2015 13:40

2.4.3.3 Raw Data

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

WORKGROUP: WG513212
513272

Daily Check

- [x] Lamp On
- [x] Probe Rinse Full
- [x] DI Water > ½ Full
- [x] Wash Solution > ½ Full
- [ ] NO3 Reagent bottle connected / purged
- [ ] NO3 pH adj to pH 5-9

Syringe filter lot # _____

- [x] WBL Run
- [x] Reagents Full
- [x] Dilution H_2O Full
- [x] Waste Container Check

1) **Workgroup** _____
Plan # 20150224003
2) **Workgroup** _____
Plan # 20150224003
3) **Workgroup** _____
Plan # _____

Instrument: SC1 [ ] SC2 [x]

	Analyte	1	2	3
		PHOS		
		Dilution		
SC Prepared Curve				
Position				
1-1	ICV			
1-2	BLK			
1-3	LCS			
1-4	02-985-01			
1-5	02			
1-6	03			
1-7	04			
QNS 1-8	02-985-01	12.5ml/25	* Auto	1/5 * Auto 1/5
1-9	02-996-01			
1-10	02-998-01	Auto 1/5		
1-11	02-999-01	Auto 1/5		
1-12	02-1008-01			
1-13	02-1009-01			
1-14	02			
1-15	02-904-03	1ml/250		
1-16	02-971-06			
1-17	08			
1-18	10			
1-19	12			
1-20	14			
1-21	02-1053-01			
1-22	03			
2-1	05			
2-2	DUP 02-985-01			
2-3	MS 02-985-01			

Position	Analyte	1	2	3
2-4	MS 02-985-02	1/2 * 1/10		
2-5	02-995-01	1/20 *	Auto 1/5	
2-6	02-998-01	1/10		
2-7	02-999-01	1/10 *	Auto 1/2	
2-8				
2-9				
2-10 1	ICV			
2-11 2	BLK			
2-12 3	LCS			
2-13 4	02-971-08	1/2		
2-14 5	02-1053-03	1/2		
2-15 6	02-904-03	1ml/250	* 1/2	
2-16 7	02-985-01			
2-17 8	DUP 02-985-01			
2-18 9	MS 02-985-01			
2-19 10	02-971-08			
2-20 11	02-1053-03			
2-21 12	02-904-03	1ml/250		
2-22 13	02-955-01	~~1/500~~	1/1000	
2-23		dcm		
2-24		2/24/15		
2-25				
2-26				
3-1				
3-2				

NOTES:
* Run NO2 std on NO3 runs
* LCSD must be run if no MS or Duplicate
*MS(10% sample): NO3, TKN, NH3, PHOS

DCN#108816

SMARTCHEM RUN LOG
(smartchem2, smartchem3)

WORKGROUP: WG513212

Position	Analyte	1	2	3
3-3				
3-4				
3-5				
3-6				
3-7				
3-8				
3-9				
3-10				
3-11				
3-12				
3-13				
3-14				
3-15				

Position	Analyte	1	2	3
3-16				
3-17				
3-18				
3-19				
3-20				
3-21				
3-22				
3-23				
3-24				
3-25				
3-26				
3-27				
3-28				

	Chloride	EPA 325.2/SM 4500-CI E-2000
	Nitrate-Nitrite	EPA 353.2/SM 4500-NO3 F-2000
	Alkalinity	EPA 310.2
	Sulfate	EPA 375.4/SM 426C (15th)/ SM4500-504 E-1997

	Ammonia	EPA 350.1/SM 4500-NH3 B-1997
	TKN	EPA 351.2
✓	Phos	EPA 365.4

Analyte	PHOS		Reagents
SOP & Revision	K 3654 R17		RGT 32805
Curve Stock (SC made)			RGT 32028
NO2 STD			RGT 32865
ICV	See Digest Log		
CCV			
LCS			
MS	Dilution		

Comments: _____

Analyst: David Merchle Date: 2/24/15

DCN#108816

TKN/Phosphorus Digestion Log

TKN WG:
TKN Std: Std 69003
TKN CCV: 1/2(Std 69003)
TKN ICV: Std 68889
TKN LCS: Std 68888

Phos WG:
Phos Std: Std 69003
Phos CCV: 1/2(Std 69003)
Phos ICV: Std 68886
Phos LCS: Std 68738

MS/MSD: Std 67891
Daily Dilution: 1(25)/25 = 1

Block Digester Temperature: 380 °C
Digest Reagent: RGT 32616

	Sample	Volume	TKN Dilution	Phos Dilution		Sample	Volume	TKN Dilution	Phos Dilution
1	Std		5	2	26	02-971-14			✓
2	Std		5	2	27	02-1053-01			✓
3	ICVT		2		28	03			✓
4	ICVP			1.5	29	05			✓
5	LCST		1		30	DUP02985-01		✓	✓
6	LCSP			1	31	MS02985-01		✓	✓
7	02-1059-02	1/50	✓		32	MS02985-02			✓
8	05	1/50	✓		33				
9	08	1/50	✓		34				
10	02-985-01		✓	✓	35				
11	02		✓	✓	36				
12	03		✓	✓	37				
13	04		✓	✓	38				
QNS 14	02-995-01	1/2		✓	39				
15	02-996-01			✓	40				
16	02-998-01			✓	41				
17	02-999-01			✓	42				
18	02-1008-01			✓	43				
19	02-1009-01			✓	44				
20	02			✓	45				
21	02-964-03	1/250		✓	46				
22	02-971-06			✓	47				
23	08			✓	48				
24	10			✓	49				
25	12			✓	50				

Analyst: [signature] Date: 2/23/15

MICROBAC (OVD)

SMARTCHEM200 INST2 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WTPH -Unit [mg/L] - EPA 365.4 TOTAL PHOSPHORUS

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.000	0.0447	0.00		9:09:36 AM
DIL-1	RBL	0.000	0.0448	0.00		9:09:54 AM
DIL-1	RBL	0.000	0.0428	0.00		9:10:48 AM
SR5-1	Std-1	0.010	0.0114	0.00		9:11:06 AM
SR5-2	Std-2	0.200	0.0318	0.00		9:12:00 AM
SR5-3	Std-3	0.500	0.0684	0.00		9:12:18 AM
SR5-4	Std-4	1.000	0.1312	0.00		9:13:13 AM
SR5-5	Std-5	1.500	0.1898	0.00		9:13:30 AM
ST-1	Std-6	2.000	0.2630	0.00		9:14:24 AM
ST-3	1CCV (1 mg/L)	0.999	0.1323	99.85		9:14:42 AM
ST-2	2CCB (0 mg/L)	-0.033	0.0025	0.00	><,LL	9:15:37 AM
1	ICV	1.499	0.1952	0.00		9:15:54 AM
2	WG513212-01 BLK	-0.121	-0.0085	0.00	INV,><,LL	9:16:49 AM
3	WG513212-02 LCS	1.062	0.1403	0.00		9:17:06 AM
4	L15020985-01	-0.030	0.0029	0.00	><,LL	9:18:01 AM
5	L15020985-02	-0.008	0.0058	0.00	><,LL	9:18:18 AM
6	L15020985-03	0.238	0.0367	0.00		9:19:13 AM
7	L15020985-04	0.357	0.0517	0.00		9:19:30 AM
8	L15020995-01 (2)	X 23.402	2.9483	0.00	EPL,><,LH	9:20:25 AM
9	L15020996-01	-0.002	0.0064	0.00	><,LL	9:20:42 AM
10	L15020998-01	X22.090	2.7834	0.00	EPL,><,LH	9:21:37 AM
ST-3	1CCV (1 mg/L)	0.986	0.1307	98.58		9:21:54 AM
ST-2	2CCB (0 mg/L)	-0.044	0.0012	0.00	><,LL	9:22:49 AM
11	L15020999-01	X21.415	2.6985	0.00	EPL,><,LH	9:23:06 AM
12	L15021008-01	1.232	0.1616	0.00		9:24:01 AM
13	L15021009-01	-0.147	-0.0118	0.00	INV,><,LL	9:24:19 AM
14	L15021009-02	1.369	0.1788	0.00	EPL	9:25:13 AM
15	L15020904-03 (250)	X 3.563	0.4546	0.00	EPL,><,LH	9:25:30 AM
16	L15020971-06	1.209	0.1588	0.00	EPL	9:26:25 AM
17	L15020971-08	X3.196	0.4085	0.00	EPL,><,LH	9:26:43 AM
18	L15020971-10	0.300	0.0445	0.00	EPL	9:27:37 AM
19	L15020971-12	-0.103	-0.0062	0.00	INV,><,LL	9:27:55 AM

Report Date :02/24/2015 **Run Date :2/24/2015** **Operator : WESTCO** **Plan # :20150224002**

Plan Description : PHOS-A2-DCM/02/24/2015

MICROBAC (OVD)

SMARTCHEM200 INST2 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WTPH -Unit [mg/L] - EPA 365.4 TOTAL PHOSPHORUS

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
20	L15020971-14	0.092	0.0184	0.00		9:28:49 AM
ST-3	1CCV (1 mg/L)	0.974	0.1292	97.39		9:29:07 AM
ST-2	2CCB (0 mg/L)	-0.066	-0.0016	0.00	INV,><,LL	9:30:01 AM
21	L15011053-01	0.026	0.0099	0.00	><	9:30:19 AM
22	L15021053-03	2.645	0.3392	0.00	EPL,><,LH	9:31:13 AM
23	L15021053-05	-0.113	-0.0074	0.00	INV,><,LL	9:31:31 AM
24	WG513212-04 DUP	0.321	0.0471	0.00	EPL	9:32:25 AM
25	WG513212-05 MS	-0.068	-0.0019	0.00	INV,><,LL	9:32:42 AM
26	WG513212-07 MS	-0.111	-0.0073	0.00	INV,><,LL	9:33:37 AM
27	ID 27 02-995-01 (20)	18.602	2.3449	0.00	EPL,><,LH	9:33:54 AM
28	ID 28 02-998-01 (10)	12.978	1.6381	0.00	EPL,><,LH	9:34:49 AM
29	ID 29 02-999-01 (10)	15.846	1.9985	0.00	EPL,><,LH	9:35:07 AM
30	ID 30	1.092	0.1440	0.00		9:36:01 AM
ST-3	1CCV (1 mg/L)	0.976	0.1295	97.63		9:36:19 AM
ST-2	2CCB (0 mg/L)	-0.085	-0.0040	0.00	INV,><,LL	9:37:13 AM
8-[1/2]	L15020995-01 (2)	41.609	2.6218	0.00	EPL,><,LH	9:44:53 AM
10-[1/2]	L15020998-01	7.577	0.4830	0.00	><,LH	9:46:05 AM
11-[1/2]	L15020999-01	20.432	1.2909	0.00	EPL,><,LH	9:47:17 AM
15-[1/2]	L15020904-03 (250)	0.051	0.0099	0.00	><	9:48:29 AM
17-[1/2]	L15020971-08	-0.226	-0.0074	0.00	INV,><,LL	9:49:41 AM
22-[1/2]	L15021053-03	-0.242	-0.0085	0.00	INV,><,LL	9:50:53 AM
27-[1/2]	ID 27 02-995-01 (100)	28.873	1.8214	0.00	EPL,><,LH	9:52:05 AM
28-[1/2]	ID 28 02-998-01 (10)	15.387	0.9738	0.00	><,LH	9:53:17 AM
29-[1/2]	ID 29 02-999-01 (20)	18.741	1.1846	0.00	EPL,><,LH	9:54:29 AM
ST-3	1CCV (1 mg/L)	1.003	0.1329	100.33		9:54:29 AM
ST-2	2CCB (0 mg/L)	-0.060	-0.0008	0.00	INV,><,LL	9:55:23 AM
8-[1/5]	L15020995-01 (2)(26)	33.196	0.8413	0.00	><,LH	10:03:03 AM
10-[1/5]	L15020998-01 (5)	6.962	0.1818	0.00	LH	10:04:15 AM
11-[1/5]	L15020999-01 (5)	25.857	0.6568	0.00	><,LH	10:05:27 AM
27-[1/5]	ID 27 02-995-01 (100)	ok 8.847	0.2292	0.00	LH	10:06:39 AM
28-[1/5]	ID 28 02-998-01 (10)	20.463	0.5212	0.00	><,LH	10:07:51 AM
29-[1/5]	ID 29 02-999-01 (20)	13.378	0.3431	0.00	><,LH	10:09:03 AM

Report Date :02/24/2015 **Run Date :2/24/2015** **Operator : WESTCO** **Plan # :20150224002**

Plan Description : PHOS-A2-DCM/02/24/2015

MICROBAC (OVD)

SMARTCHEM200 INST2 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WTPH -Unit [mg/L] - EPA 365.4 TOTAL PHOSPHORUS

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
ST-3	1CCV (1 mg/L)	1.005	0.1331	100.49		10:09:03 AM
ST-2	2CCB (0 mg/L)	-0.068	-0.0019	0.00	INV,><,LL	10:09:57 AM
8-[1/15]	L15020995-01 (2) (25)	X42.294	0.3612	0.00	><,LH	10:17:37 AM
11-[1/15]	L15020999-01 (5)	29.167	0.2512	0.00	LH	10:18:49 AM
28-[1/15]	ID 28 02-988-01 (10)	X20.360	0.1774	0.00	LH	10:20:01 AM
29-[1/15]	ID 29 02-989-01 (20)	X12.866	0.1146	0.00	LH	10:21:13 AM
ST-3	1CCV (1 mg/L)	0.979	0.1299	97.94		10:21:13 AM
ST-2	2CCB (0 mg/L)	-0.096	-0.0054	0.00	INV,><,LL	10:22:07 AM
8-[1/25]	L15020995-01 (2) (25)	X41.253	0.2142	0.00	LH	10:29:47 AM
ST-3	1CCV (1 mg/L)	0.990	0.1312	98.98		10:29:47 AM
ST-2	2CCB (0 mg/L)	-0.084	-0.0039	0.00	INV,><,LL	10:30:41 AM

Report Date :02/24/2015 **Run Date :2/24/2015** **Operator : WESTCO** **Plan # :20150224002**

Plan Description : PHOS-A2-DCM/02/24/2015

Calibrant Report - WTPH -

Calib Lot #:010104 Exp Date:6/18/2020 User:MICROBAC

Plan # : 20150224002 Description : [PHOS-A2-DCM/02/24/2015] Unit

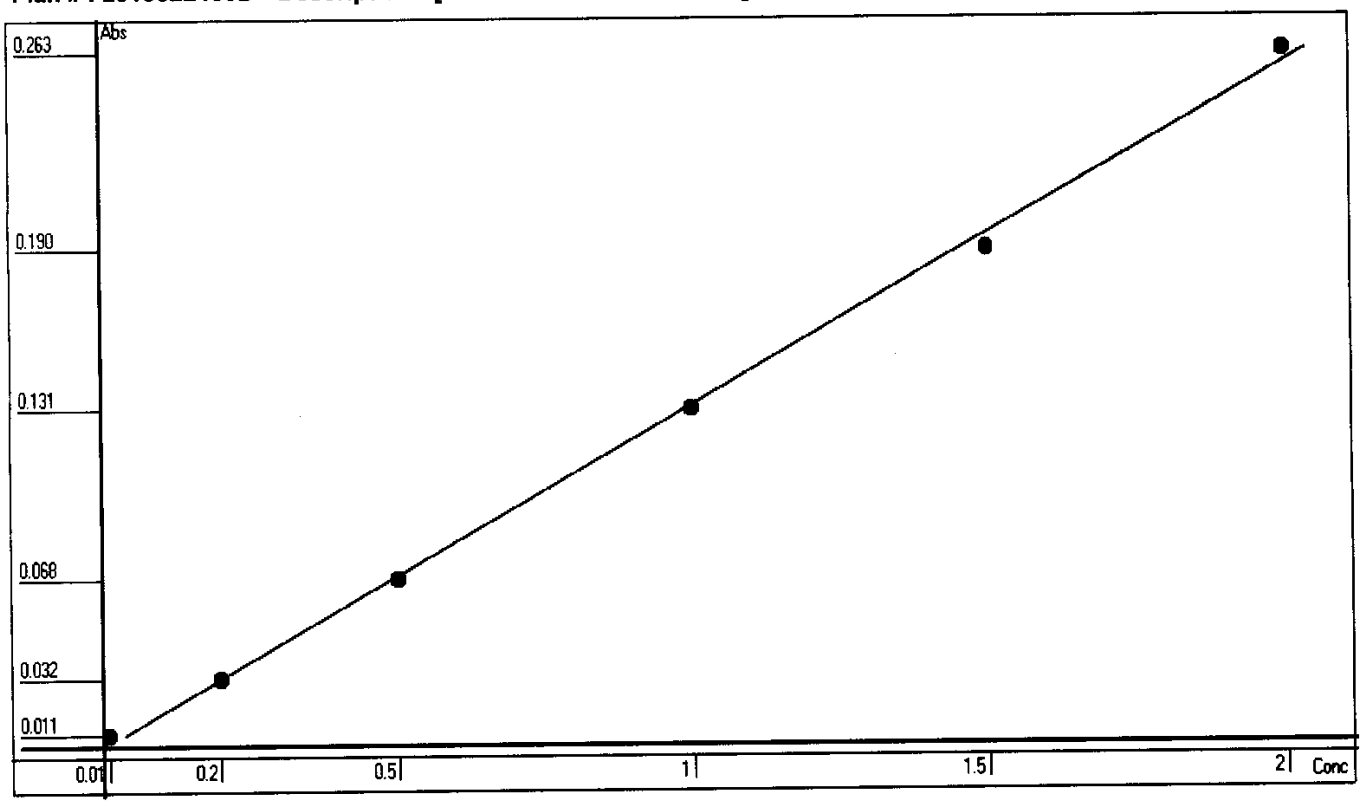

Point	OD	Conc	Recalc Conc	% Error
1	0.0114	0.01	0.0371	271.00
2	0.0318	0.2	0.1994	-0.30
3	0.0684	0.5	0.4906	-1.88
4	0.1312	1	0.9902	-0.98
5	0.1898	1.5	1.4564	-2.91
6	0.2630	2	2.0388	1.94

Conc= +7.9558*Abso -0.0536 **R^2=0.9986**

RBL
0.0448
0

Report Date 2/24/2015 Run Date 2/24/2015

MICROBAC (OVD)

SMARTCHEM200 INST2 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WTPH -Unit [mg/L] - EPA 365.4 TOTAL PHOSPHORUS

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.000	0.0386	0.00		11:07:59 AM
DIL-1	RBL	0.000	0.0376	0.00		11:08:16 AM
DIL-1	RBL	0.000	0.0379	0.00		11:09:11 AM
SR5-1	Std-1	0.010	0.0051	0.00		11:09:29 AM
SR5-2	Std-2	0.200	0.0323	0.00		11:10:23 AM
SR5-3	Std-3	0.500	0.0774	0.00		11:10:41 AM
SR5-4	Std-4	1.000	0.1477	0.00		11:11:35 AM
SR5-5	Std-5	1.500	0.2211	0.00		11:11:53 AM
ST-1	Std-6	2.000	0.2991	0.00		11:12:47 AM
ST-3	1CCV (1 mg/L)	0.991	0.1485	99.12		11:13:05 AM
ST-2	2CCB (0 mg/L)	-0.028	-0.0013	0.00	INV,><,LL	11:13:59 AM
1	ICV	1.376	0.2051	0.00		11:14:17 AM
2	WG513272-01 BLK	-0.010	0.0014	0.00	><,LL	11:15:11 AM
3	WG513272-02 LCS	0.976	0.1463	0.00		11:15:29 AM
4	L15020971-08 (2)	0.036	0.0082	0.00		11:16:23 AM
5	L15021053-03 (2)	0.010	0.0043	0.00	><	11:16:41 AM
6	L15020904-03 (250)(4)	0.437	0.0670	0.00		11:17:35 AM
7	WG513272-03 REF	0.046	0.0096	0.00		11:17:53 AM
8	WG513272-04 DUP	0.298	0.0466	0.00	EPL	11:18:47 AM
9	WG513272-05 MS	0.023	0.0062	0.00		11:19:05 AM
10	ID 10 02-971-08	0.057	0.0112	0.00		11:19:59 AM
ST-3	1CCV (1 mg/L)	0.995	0.1491	99.52		11:20:17 AM
ST-2	2CCB (0 mg/L)	-0.047	-0.0040	0.00	INV,><,LL	11:21:11 AM
11	ID 11 02-1053-03	0.041	0.0089	0.00		11:21:29 AM
12	ID 12 02-904-03 (250)	0.939	0.1408	0.00		11:22:23 AM
13	ID 13 02-995-01 (1000)	0.799	0.1202	0.00		11:22:41 AM
14	ID 14	1.002	0.1501	0.00		11:23:35 AM
ST-3	1CCV (1 mg/L)	1.001	0.1500	100.14		11:23:53 AM
ST-2	2CCB (0 mg/L)	-0.043	-0.0034	0.00	INV,><,LL	11:24:47 AM

Report Date :02/24/2015 **Run Date :2/24/2015** **Operator : WESTCO** **Plan # :20150224003**

Plan Description : PHOS-B2-DCM/02/24/2015

Calibrant Report - WTPH -

Calib Lot #:010104 Exp Date:6/18/2020 User:MICROBAC

Plan # : 20150224003 Description : [PHOS-B2-DCM/02/24/2015] Unit

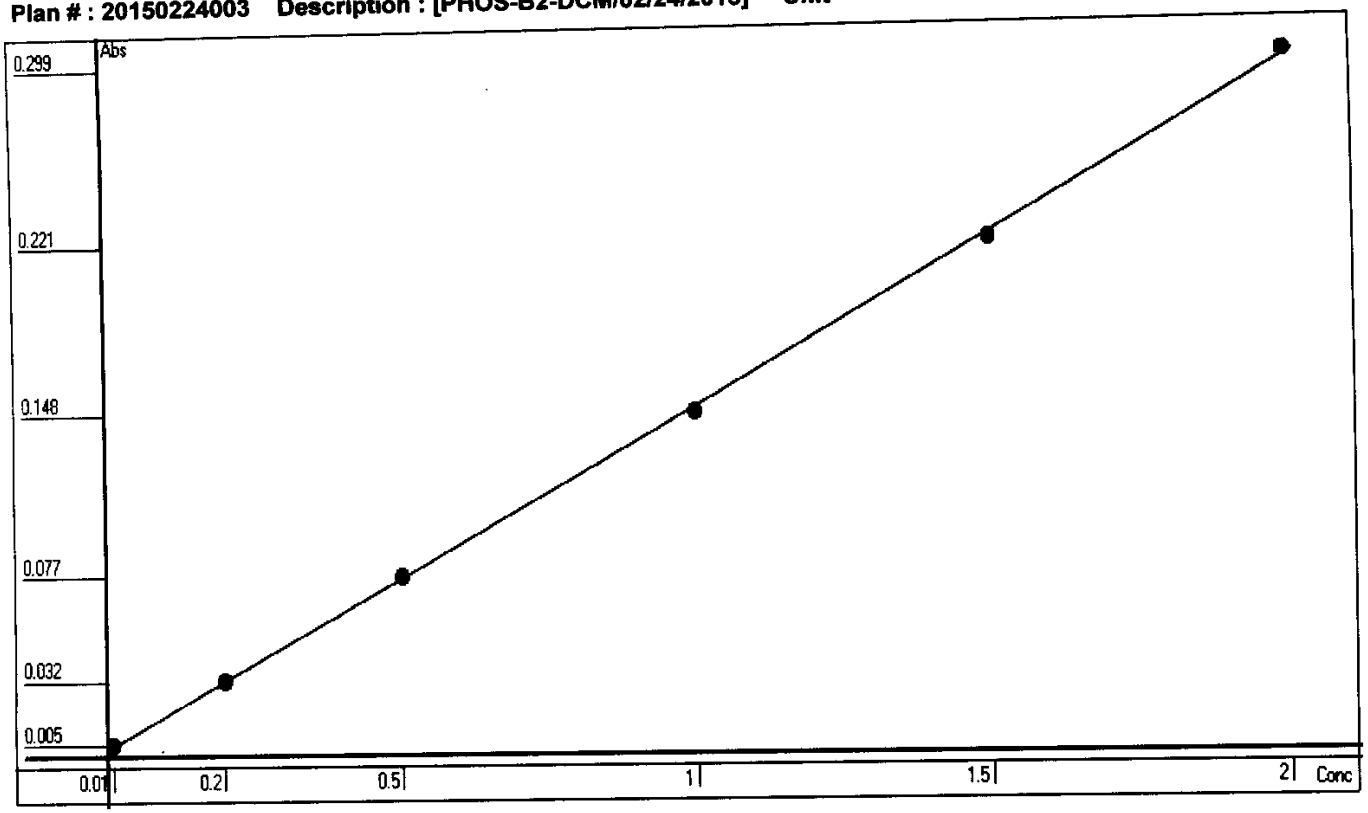

Point	OD	Conc	Recalc Conc	% Error
1	0.0051	0.01	0.0157	57.00
2	0.0322	0.2	0.2001	0.05
3	0.0773	0.5	0.5070	1.40
4	0.1477	1	0.9861	-1.39
5	0.2210	1.5	1.4849	-1.01
6	0.2991	2	2.0163	0.82

Conc= +6.8048*Abso -0.019 R^2=0.9997

RBL
0.0377
0

Report Date 2/24/2015 Run Date 2/24/2015

2.4.4 Sulfide Data

2.4.4.1 Summary Data

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-06	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW24-021815	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG513077	**Analyst:**	EPT	**Run Date:**	02/23/2015 11:15
Collect Date:	02/18/2015 08:25	**Dilution:**	1	**File ID:**	ET.1502231115-04
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	6.96		2.00	1.00	0.500

Certificate of Analysis

Sample #:	L15020971-08	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW23-021815	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG513077	**Analyst:**	EPT	**Run Date:**	02/23/2015 11:15
Collect Date:	02/18/2015 09:40	**Dilution:**	1	**File ID:**	ET.1502231115-05
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-10	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW12-021815	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG513077	**Analyst:**	EPT	**Run Date:**	02/23/2015 11:15
Collect Date:	02/18/2015 11:05	**Dilution:**	1	**File ID:**	ET.1502231115-06
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-12	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WWW25-021815	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG513077	**Analyst:**	EPT	**Run Date:**	02/23/2015 11:15
Collect Date:	02/18/2015 13:30	**Dilution:**	1	**File ID:**	ET.1502231115-07
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-14	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW18-021815	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG513077	**Analyst:**	EPT	**Run Date:**	02/23/2015 11:15
Collect Date:	02/18/2015 14:45	**Dilution:**	1	**File ID:**	ET.1502231115-08
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.4.4.2 QC Summary Data

Example Total Sulfide(Liquid) Calculations

[mL Iodine * N Iodide) - (mL titrant * N titrant)] * 16000/(volume * dilution) = mg/L Sulfide

where:

mL Iodine = mL of Iodine used
N Iodine = normality of Iodine
mL titrant = mL of titrant used
N titrant = normality of titrant
16000 = factor: 1mL of 0.025 N iodine reacts with 0.4mg sulfide
volume = mL filtered of mL titrated(if not filtered)
dilution = dilution in decimal form (1/5 = 0.2)

Example Total Sulfide(Soil) Calculations

[(mL Iodine * N Iodine) - (mL titrant * N titrant)] * 16.03/weight = mg/kg sulfide

where:

mL Iodine = mL of Iodine used
N Iodine = normality of Iodine
mL titrant = normality of titrant
16.03 = 32.06 grams per 2 equivalents
weight = kg of sample used

Microbac Laboratories Inc.

Data Checklist

Date: 23-FEB-2015
Analyst: EPT
Analyst: NA
Method: SULFIDE
Instrument: BURET
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG513077

Calibration/Linearity	02/23/15
Second Source Check	
ICV/CCV (std)	
ICB/CCB	
Blank	X
LCS/LCS Dup	X
MS/MSD	
Duplicate	
Upload Results	X
Client Forms	
QC Violation Sheet	
Case Narratives	
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	
Primary Reviewer	EPT
Secondary Reviewer	SAV
Comments	

Primary Reviewer:
24-FEB-2015
Ethan Tido

Secondary Reviewer:
27-FEB-2015
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-27-2015 10:17:20

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: SM4500-S-(-2)-F- AAB#: WG513077

Login Number: L15020971

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW24-021815	06	02/18/15					02/23/2015	5.1	7		02/23/15	5.1	7	
50WW23-021815	08	02/18/15					02/23/2015	5.1	7		02/23/15	5.1	7	
50WW12-021815	10	02/18/15					02/23/2015	5	7		02/23/15	5	7	
50WWW25-021815	12	02/18/15					02/23/2015	4.9	7		02/23/15	4.9	7	
50WW18-021815	14	02/18/15					02/23/2015	4.9	7		02/23/15	4.9	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4040586
Report generated 02/27/2015 10:05

METHOD BLANK SUMMARY

Login Number: L15020971
Blank File ID: ET.1502231115-01
Prep Date: 02/23/15 11:15
Analyzed Date: 02/23/15 11:15
Analyst: EPT

Work Group: WG513077
Blank Sample ID: WG513077-01
Instrument ID: BURET
Method: SM4500-S-(-2)-F-

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG513077-02	ET.1502231115-02	02/23/15 11:15	
LCS2	WG513077-03	ET.1502231115-03	02/23/15 11:15	
50WW24-021815	L15020971-06	ET.1502231115-04	02/23/15 11:15	
50WW23-021815	L15020971-08	ET.1502231115-05	02/23/15 11:15	
50WW12-021815	L15020971-10	ET.1502231115-06	02/23/15 11:15	
50WWW25-021815	L15020971-12	ET.1502231115-07	02/23/15 11:15	
50WW18-021815	L15020971-14	ET.1502231115-08	02/23/15 11:15	

Report Name: BLANK_SUMMARY
PDF File ID: 4040587
Report generated 02/27/2015 10:05

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15020971 Prep Date: 02/23/15 11:15 Sample ID: WG513077-01
Instrument ID: BURET Run Date: 02/23/15 11:15 Prep Method: SM4500-S-(-2)-F
File ID: ET.1502231115-01 Analyst: EPT Method: SM4500-S-(-2)-F
Workgroup (AAB#): WG513077 Matrix: Water Units: mg/L
Contract #: Cal ID: BURET-

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Sulfide	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4040589
27-FEB-2015 10:05

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15020971 Analyst: EPT Prep Method: SM4500-S-(-2)-F
Instrument ID: BURET Matrix: Water Method: SM4500-S-(-2)-F
Workgroup (AAB#): WG513077 Units: mg/L
QC Key: DOD4 Lot #: STD69004

Sample ID: WG513077-02 LCS File ID: ET.1502231115-02 Run Date: 02/23/2015 11:15
Sample ID: WG513077-03 LCS2 File ID: ET.1502231115-03 Run Date: 02/23/2015 11:15

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Sulfide	22.8	23.4	103	22.8	23.4	103	0.00	85 - 115	10	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4040590
Report generated: 02/27/2015 10:05

2.4.4.3 Raw Data

SULFIDE
(sulfide1)

WORKGROUP: WG513077

Water:
EPA 376.1 / SM4500-S(-2)-F
SOP K3761 Revision #: 16

Soil:
SM846 9030B/9034
SOP K9030 Revision #: _____

Instrument: Buret

LCS: Std 69004

Iodine standardization (0.025N) COA: 17611
mL 0.025N titrant: 10.0
Volume I: 10.0 mL
Normality I: 0.0250

(0.1 N I) COA: ~~17705~~ 18088 ept 2/23/15
mL 0.025 N titrant: 8.0
Volume I: 2.0 mL
Normality I: 0.100

Stock standardization (in duplicate) 5.0 mL stock
mL I 1) 10.0 2) 10.0
N I 1) 0.100 2) 0.100
mL 0.025 titrant 1) 21.0 2) 21.0
LCS daily dilution: (5)(1520)/200 = 22.8 mg/L

1520 = stock conc (mg/L)

Titrant: T- 1484-15-03

SAMPLE	Volume Filtered mL	mL Iodine	N Iodine	0.0250 N Sodium Thiosulfate (mL)
BLANK	200	15.0	0.0250	15.0
LCS (mL)	200	15.0	0.0250	3.3
LCSDUP (mL)	200	15.0	0.0250	3.3
02-0971-06	460	15.0	0.0250	7.0
-08	480	15.0	0.0250	14.6
-10	470	15.0	0.0250	14.7
-12	480	15.0	0.0250	14.6
-14	500	15.0	0.0250	14.6
02-1053-01	510	15.0	0.0250	14.6
-03	480	15.0	0.0250	14.8
-05	480	15.0	0.0250	14.6
-07	470	15.0	0.0250	14.7
-09	490	15.0	0.0250	14.5
-11	470	15.0	0.0250	14.2

Analyst: Ethan Tidd Date/Time: 02/23/15 1115

DCN#108795

Microbac Laboratories Inc.
TITRAMETRIC REPORT

Workgroup (AAB#): WG513077
Product: EPA 376.1\9034
Analyte: Sulfide

Analyst: EPT
Run Date: 02/23/2015 11:15

SAMPLE NUMBER	Volume	Vol I	Nor I	Vol T	Nor T	Dil	Analytical	Reported	Units
WG513077-01	200.0	15	.025	15	.025	1	0	0	mg/L
WG513077-02	200.0	15	.025	3.3	.025	1	23.4	23.40	mg/L
WG513077-03	200.0	15	.025	3.3	.025	1	23.4	23.40	mg/L
L15020971-06	460.0	15	.025	7	.025	1	6.96	6.957	mg/L
L15020971-08	480.0	15	.025	14.6	.025	1	0.333	ND	mg/L
L15020971-10	470.0	15	.025	14.7	.025	1	0.255	ND	mg/L
L15020971-12	480.0	15	.025	14.6	.025	1	0.333	ND	mg/L
L15020971-14	500.0	15	.025	14.6	.025	1	0.320	ND	mg/L
L15021053-01	510.0	15	.025	14.6	.025	1	0.314	ND	mg/L
L15021053-03	480.0	15	.025	14.8	.025	1	0.167	ND	mg/L
L15021053-05	480.0	15	.025	14.6	.025	1	0.333	ND	mg/L
L15021053-07	470.0	15	.025	14.7	.025	1	0.255	ND	mg/L
L15021053-09	490.0	15	.025	14.5	.025	1	0.408	ND	mg/L
L15021053-11	470.0	15	.025	14.2	.025	1	0.681	0.6809 F	mg/L

SULFIDE_REPORT - Modified 03/06/2008

Report generated 02/25/2015 08:58

[redacted]

2.4.5 Total Organic Carbon Data

2.4.5.1 Summary Data

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-06	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW24-021815	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG513146	**Analyst:**	DCM	**Run Date:**	02/24/2015 02:25
Collect Date:	02/18/2015 08:25	**Dilution:**	1	**File ID:**	TC02232015.035
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	1.74	J	2.00	1.00	0.500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-08	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW23-021815	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG513146	**Analyst:**	DCM	**Run Date:**	02/24/2015 02:39
Collect Date:	02/18/2015 09:40	**Dilution:**	1	**File ID:**	TC02232015.036
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	1.25	J	2.00	1.00	0.500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-10	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW12-021815	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG513146	**Analyst:**	DCM	**Run Date:**	02/24/2015 02:52
Collect Date:	02/18/2015 11:05	**Dilution:**	1	**File ID:**	TC02232015.037
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	1.09	J	2.00	1.00	0.500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15020971-12	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WWW25-021815	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG513146	**Analyst:**	DCM	**Run Date:**	02/24/2015 08:30
Collect Date:	02/18/2015 13:30	**Dilution:**	3	**File ID:**	TC02232015.055
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	17.2		6.00	3.00	1.50

Certificate of Analysis

Sample #:	L15020971-14	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW18-021815	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG513146	**Analyst:**	DCM	**Run Date:**	02/24/2015 08:43
Collect Date:	02/18/2015 14:45	**Dilution:**	3	**File ID:**	TC02232015.056
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	5.10	J	6.00	3.00	1.50

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15020971
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.4.5.2 QC Summary Data

Total Organic Carbon Example Calculations
(Direct Readout Parameter)

(Readout)/(dilution) = mg/L

where:

Readout = direct readout from the instrument
dilution = dilution in decimal form (ex. 1/5 dilution = 0.2)

Microbac Laboratories Inc.

Data Checklist

Date: 23-FEB-2015
Analyst: DCM
Analyst: NA
Method: TOC
Instrument: TOC-VWP
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG513145 WG513146

Calibration/Linearity	7/16/15
Second Source Check	
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	
QC Violation Sheet	
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	
Primary Reviewer	DCM
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
24-FEB-2015

Secondary Reviewer:
26-FEB-2015

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-26-2015 08:18:58

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 415.1 AAB#: WG513146

Login Number: L15020971

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW24-021815	06	02/18/15					02/24/2015	5.8	28		02/24/15	5.8	28	
50WW23-021815	08	02/18/15					02/24/2015	5.7	28		02/24/15	5.7	28	
50WW12-021815	10	02/18/15					02/24/2015	5.7	28		02/24/15	5.7	28	
50WWW25-021815	12	02/18/15					02/24/2015	5.8	28		02/24/15	5.8	28	
50WW18-021815	14	02/18/15					02/24/2015	5.7	28		02/24/15	5.7	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4036971
Report generated 02/25/2015 10:33

METHOD BLANK SUMMARY

Login Number: L15020971
Blank File ID: TC02232015.032
Prep Date: 02/24/15 01:48
Analyzed Date: 02/24/15 01:48
Analyst: DCM

Work Group: WG513146
Blank Sample ID: WG513146-01
Instrument ID: TOC-VWP
Method: 415.1

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG513146-02	TC02232015.033	02/24/15 02:00	01
LCS2	WG513146-03	TC02232015.034	02/24/15 02:13	01
50WW24-021815	L15020971-06	TC02232015.035	02/24/15 02:25	01
50WW23-021815	L15020971-08	TC02232015.036	02/24/15 02:39	01
50WW12-021815	L15020971-10	TC02232015.037	02/24/15 02:52	01
DUP	WG513146-05	TC02232015.048	02/24/15 05:13	01
50WWW25-021815	L15020971-12	TC02232015.055	02/24/15 08:30	DL01
50WW18-021815	L15020971-14	TC02232015.056	02/24/15 08:43	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4036972
Report generated 02/25/2015 10:33

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15020971 Prep Date: 02/24/15 01:48 Sample ID: WG513146-01
Instrument ID: TOC-VWP Run Date: 02/24/15 01:48 Prep Method: 415.1
File ID: TC02232015.032 Analyst: DCM Method: 415.1
Workgroup (AAB#): WG513146 Matrix: Water Units: mg/L
Contract #: Cal ID: TOC-VW-16-JUL-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Total Organic Carbon	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4036973
25-FEB-2015 10:33

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15020971 Analyst: DCM Prep Method: 415.1
Instrument ID: TOC-VWP Matrix: Water Method: 415.1
Workgroup (AAB#): WG513146 Units: mg/L
QC Key: DOD4 Lot #: STD67086

Sample ID: WG513146-02 LCS File ID: TC02232015.033 Run Date: 02/24/2015 02:00
Sample ID: WG513146-03 LCS2 File ID: TC02232015.034 Run Date: 02/24/2015 02:13

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Total Organic Carbon	25.0	25.7	103	25.0	25.0	100	2.76	85 - 115	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4036974
Report generated: 02/25/2015 10:33

2.4.5.3 Raw Data

TC/TIC Curves wg484708

Total Organic Carbon

MAKE DAILY

CCV (TOC): _____ (5/200)(1000) = 25mg/L

LCS (TOC): _____ (5/200)(1000) = 25mg/L

CCV (TIC): see below (5/200)(1000) = 25mg/L

MS (TOC): _____

Calibration Curve Date: _____

Reagent: 30583 / 30943

☑ SM5310-C : Matrix 2 WG_____

☐ EPA 415.1/9060A(mod): Matrix 1 WG_____ SOP: K 4151 Rev. 16

WG_____ Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

☑ drain reservoir filled
☑ ASI water bottle full
☑ dilution water bottle full

☑ 3rd bottle full
☑ sufficient gas
☑ sufficient persulfate

☑ sufficient acid
☑ waste container

Position	Sample ID	Dilution	Position	Sample ID	Dilution	Position	Sample ID	Dilution
1	TC Curve		26	TC Curve		51		
2	TIC Curve		27	Std 65368		52		
3	TC ICV		28			53	see SOP	
4	TIC ICV		29	TIC Curve		54	for curve	
5			30	Std 65406		55	points	
6			31			56		
7			32			57		
8			33	TC ICV		58	ept 7/16/14	
9			34	Std 63965		59	~~5/200~~ 5/200	(1000)
10			35			60		=25mg/L
11			36	TIC ICV		61		
12			37	Std 65405		62		
13			38			63		
14	all points		39	analyzed	in	64	duplicate	
15			40			65		
16			41			66		
17			42			67		
18			43			68		
19			44			69		
20			45			70		
21			46			71		
22			47			72		
23			48			73		
24			49			74		
25			50			75		

Analyst: Ethan Todd / Deanne Hesson

Date/Time: 07/16/14 0930 + 7/17

DCN#103908

C:\TOC3201\Data\07-16-2014-DIH-CURVE.t32

	Anal	Sample Name	Result	Status	Date / Time
1	TC	TCCURVE		Completed	7/16/2014 12:06:36 PM
2	TC	TC ICV	TC:24.54mg/L	Completed	7/16/2014 1:33:15 PM
3	IC	TICCURVE		Completed	7/17/2014 12:33:06 PM
4	IC	TIC ICV	IC:25.59mg/L	Completed	7/17/2014 12:47:00 PM

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Cal. Curve

Sample Name: TCCURVE
Sample ID: Untitled
Cal. Curve: TCCURVE-07-16-2014.2014_07_16_11_05_11.cal
Status Completed

Type	Anal.
Standard	TC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	5.492	500uL	1	*******		7/16/2014 11:08:39 AM
2	4.691	500uL	1	*******		7/16/2014 11:12:03 AM

Acid Add. 0.000%
Mean Area 5.091

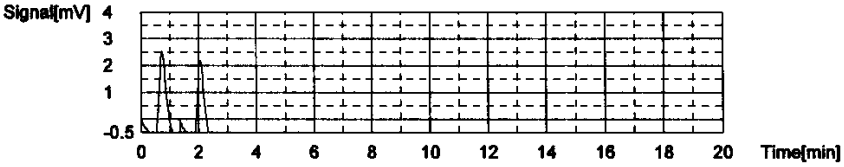

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	51.17	500uL	1	*******		7/16/2014 11:17:40 AM
2	51.30	500uL	1	*******		7/16/2014 11:21:41 AM

Acid Add. 0.000%
Mean Area 51.23

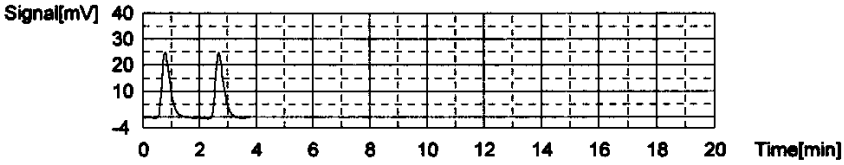

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	184.4	500uL	1	*******		7/16/2014 11:27:31 AM
2	188.1	500uL	1	*******		7/16/2014 11:31:40 AM

Acid Add. 0.000%
Mean Area 186.3

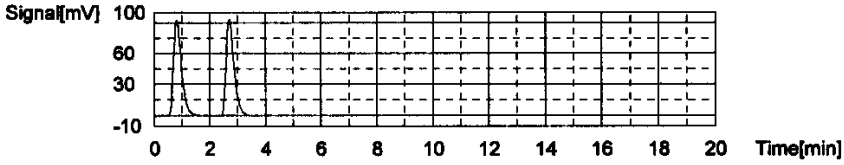

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	371.5	500uL	1	*******		7/16/2014 11:37:40 AM
2	397.8	500uL	1	*******		7/16/2014 11:42:09 AM

Acid Add. 0.000%
Mean Area 384.6

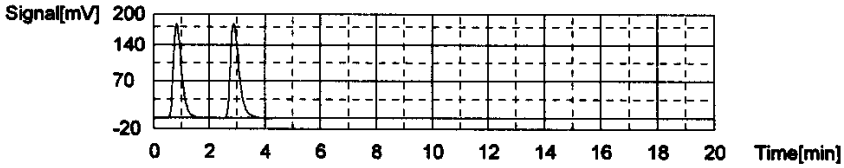

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	928.1	500uL	1	*******		7/16/2014 11:48:37 AM
2	992.4	500uL	1	*******		7/16/2014 11:53:28 AM

Acid Add. 0.000%
Mean Area 960.3

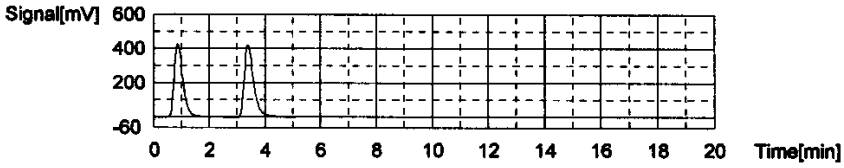

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1809	500uL	1	*******		7/16/2014 12:00:11 PM
2	2029	500uL	1	*******		7/16/2014 12:06:36 PM

Acid Add. 0.000%
Mean Area 1919

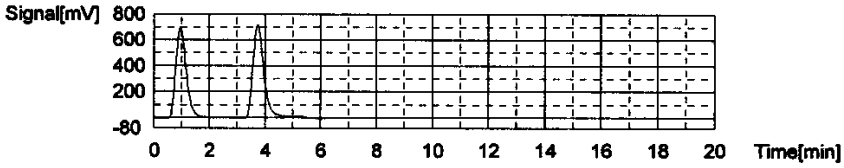

Slope: 38.27
Intercept 3.929
r^2 0.999938 ✓
Zero Shift No

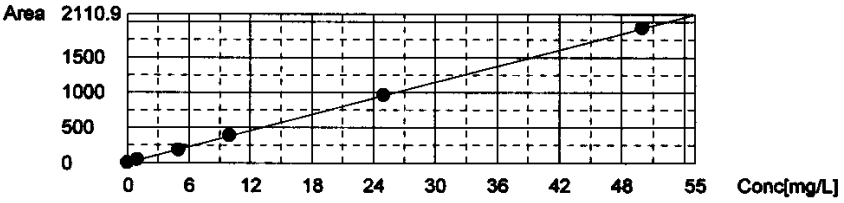

Sample

Sample Name: TC ICV
Sample ID: Untitled
Origin: TCCURVE-07-16-2014.cal
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TC	1.000	TC:24.54mg/L

= 98%

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	966.9	25.16mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/16/2014 1:28:24 PM
2	919.5	23.92mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/16/2014 1:33:15 PM

Mean Area 943.2
Mean Conc. 24.54mg/L

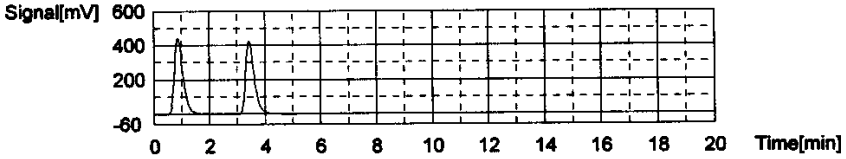

Cal. Curve

Sample Name: TICCURVE
Sample ID: Untitled
Cal. Curve: TICCURVE-A-07-17-2014.2014_07_17_11_16_59.cal
Status Completed

Type	Anal.
Standard	IC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	7.193	500uL	1	*******		7/17/2014 11:21:04 AM
2	6.644	500uL	1	*******		7/17/2014 11:25:12 AM

Acid Add. 10.00%
Mean Area 6.918

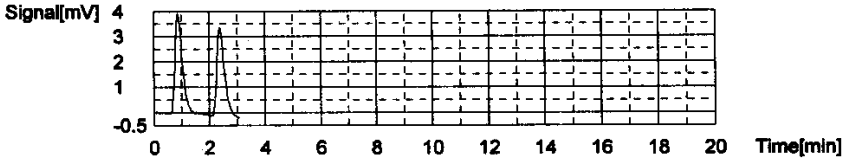

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	49.75	500uL	1	*******		7/17/2014 11:32:57 AM
2	50.58	500uL	1	*******		7/17/2014 11:37:28 AM

Acid Add. 10.00%
Mean Area 50.17

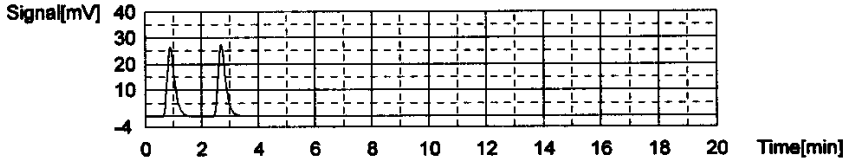

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	98.15	500uL	1	*******		7/17/2014 11:46:02 AM
2	158.0	500uL	1	*******		7/17/2014 11:50:52 AM

Acid Add. 10.00%
Mean Area 128.1

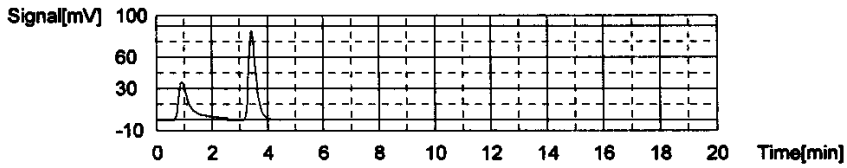

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	313.9	500uL	1	*******		7/17/2014 11:59:03 AM
2	314.5	500uL	1	*******		7/17/2014 12:04:02 PM

Acid Add. 10.00%
Mean Area 314.2

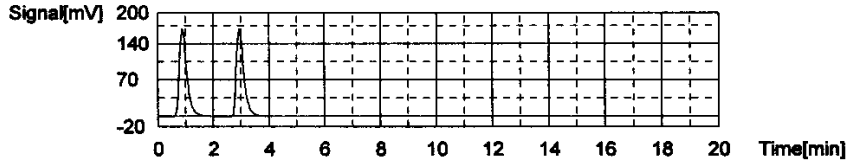

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	774.3	500uL	1	*******		7/17/2014 12:12:42 PM
2	781.8	500uL	1	*******		7/17/2014 12:17:58 PM

Acid Add. 10.00%
Mean Area 778.1

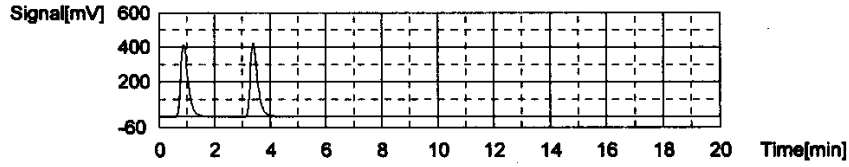

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1490	500uL	1	*******		7/17/2014 12:27:11 PM
2	1503	500uL	1	*******		7/17/2014 12:33:06 PM

Acid Add. 10.00%
Mean Area 1497

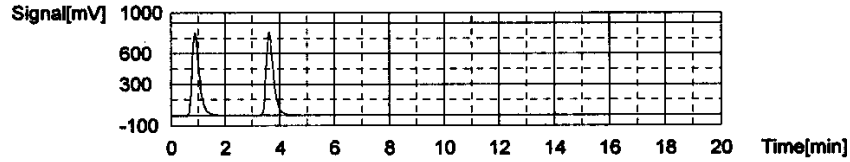

Slope: 29.95
Intercept 8.025
r^2 0.999041 ✓
Zero Shift No

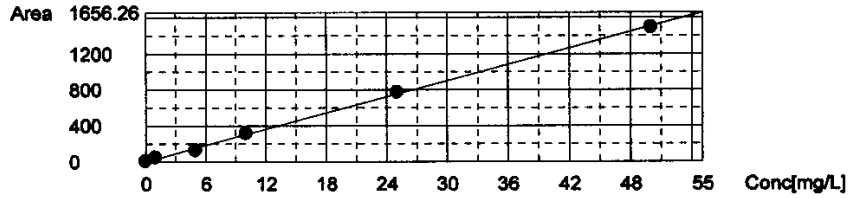

Sample

Sample Name: TIC ICV
Sample ID: Untitled
Origin: TICCURVE-A-07-17-2014.cal
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	IC	1.000	IC:25.59mg/L

=102%

1. Det

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	775.9	25.64mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/17/2014 12:41:44 PM
2	773.4	25.55mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/17/2014 12:47:00 PM

Mean Area 774.7
Mean Conc. 25.59mg/L

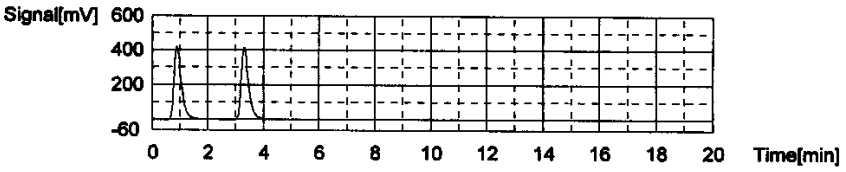

WORKGROUP: WG513145
513146

Total Organic Carbon

MAKE DAILY

CCV (TOC): Std 65368
(5/200)(1000) = 25mg/L

LCS (TOC): Std 67086 / Std 68222
(5/200)(1000) = 25mg/L

CCV (TIC): Std 68222
(5/200)(1000) = 25mg/L

MS (TOC): Std 67086
0.4 (1000) / 40 = 10

Calibration Curve Date: 7/16/15

Reagent: RGT 32645
RGT 32721

☑ SM5310-C : Matrix 2 WG 513145
☑ EPA 415.1/9060A(mod): Matrix 1 WG 513146
WG

SOP: K 4151 Rev. 17
Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

☑ drain reservoir filled
☑ ASI water bottle full
☑ dilution water bottle full
☑ 3rd bottle full
☑ sufficient gas
☑ sufficient persulfate
☑ sufficient acid
☑ waste container

Position	Sample ID	Dilution
1	TIC	
2	CCV	
3	Blk	
4	LCS	
5	LCSDUP	
6	02-960-09	
7	02-1013-01	
8	02-1064-01	1/10000
9	02-1009-01	
10	02	
11	02-1051-01	
12	02	
13	03	
14	CCV	
15	CCB	
16	02-1051-04	
17	05	
18	06	
19	07	
20	08	
21	09	
22	10	
23	11	
24	12	
25	13	

Position	Sample ID	Dilution
26	CCV	
27	CCB	
28	02-1051-14	
29	15	
30	DUP 02-1051-15	
31	MS 02-1051-15	
32	Blk	
33	LCS	
34	LCSDUP	
35	02-971-06	
36	08	
37	10	
38	CCV	
39	CCB	
40	02-971-12	1/2
41	14	1/2
42	02-1053-01	1/2
43	03	
44	05	
45	07	
46	09	
47	11	
48	DUP 02-1053-11	
49	MS 02-1053-11	
50	CCV	

Position	Sample ID	Dilution
51	CCB	
52	CCV	
53	CCB	
54	02-1064-01	1/10000
55	02-971-12	1/3
56	14	1/3
57	02-1053-01	1/3
58	09	~~1/2~~ 1/5
59	CCV	
60	CCB	
61		
62		
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Analyst: David Merckle

Date/Time: 2/23/15 1200

DCN#108804

C:\TOC3201\Data\02-23-2015-DCM-TOC.t32

	Analysis	Sample Name	Result	Status	Date / Time	Vial
1	TOC	TIC	TOC:0.9005mg/L TC:26.76mg/L IC:25.86mg/L	Complete	2/23/2015 12:05:20 PM	1
2	TOC	CCV	!!Error!! TOC:25.76mg/L TC:25.74mg/L IC:-0.02082mg/	Complete	2/23/2015 12:18:01 PM	2
3	TOC	WG513145-01 BLK	TOC:0.1480mg/L TC:0.1889mg/L IC:0.04096mg/L	Complete	2/23/2015 12:35:09 PM	0
4	TOC	WG513145-02 LCS	TOC:26.42mg/L TC:43.52mg/L IC:17.10mg/L	Complete	2/23/2015 3:41:59 PM	4
5	TOC	WG513145-03 LCSDUP	TOC:28.19mg/L TC:43.07mg/L IC:14.88mg/L	Complete	2/23/2015 4:39:55 PM	5
6	TOC	L15020960-09	TOC:2.392mg/L TC:7.536mg/L IC:5.144mg/L	Complete	2/23/2015 5:02:25 PM	6
7	TOC	L15020/1013-01	TOC:4.231mg/L TC:7.886mg/L IC:3.655mg/L	Complete	2/23/2015 5:28:17 PM	7
8	TOC		TOC:51.15mg/L TC:52.56mg/L IC:1.411mg/L	Complete	2/23/2015 5:53:54 PM	8
9	TOC	L15021009-01	TOC:0.3224mg/L TC:0.6212mg/L IC:0.2988mg/L	Complete	2/23/2015 6:13:48 PM	9
10	TOC	L15021009-02	TOC:0.4279mg/L TC:0.8653mg/L IC:0.4374mg/L	Complete	2/23/2015 6:33:57 PM	10
11	TOC	L15021051-01	TOC:16.15mg/L TC:21.46mg/L IC:5.306mg/L	Complete	2/23/2015 6:58:50 PM	11
12	TOC	L15021051-02	TOC:16.24mg/L TC:21.58mg/L IC:5.342mg/L	Complete	2/23/2015 7:23:27 PM	12
13	TOC	L15021051-03	TOC:16.04mg/L TC:20.78mg/L IC:4.735mg/L	Complete	2/23/2015 7:47:50 PM	13
14	TOC	CCV	TOC:26.26mg/L TC:26.29mg/L IC:0.02916mg/L	Complete	2/23/2015 8:00:46 PM	14
15	TOC	CCB	TOC:0.1372mg/L TC:0.1746mg/L IC:0.03737mg/L	Complete	2/23/2015 8:10:06 PM	0
16	TOC	L15021051-04	TOC:16.89mg/L TC:25.63mg/L IC:8.746mg/L	Complete	2/23/2015 8:34:32 PM	16
17	TOC	L15021051-05	TOC:16.50mg/L TC:23.55mg/L IC:7.042mg/L	Complete	2/23/2015 8:58:52 PM	17
18	TOC	L15021051-06	TOC:16.00mg/L TC:23.14mg/L IC:7.140mg/L	Complete	2/23/2015 9:22:57 PM	18
19	TOC	L15021051-07	TOC:1.620mg/L TC:7.959mg/L IC:6.339mg/L	Complete	2/23/2015 9:44:34 PM	19
20	TOC	L15021051-08	TOC:1.584mg/L TC:7.685mg/L IC:6.100mg/L	Complete	2/23/2015 10:06:08 PM	20
21	TOC	L15021051-09	TOC:1.461mg/L TC:8.533mg/L IC:7.072mg/L	Complete	2/23/2015 10:27:42 PM	21
22	TOC	L15021051-10	TOC:1.930mg/L TC:7.793mg/L IC:5.863mg/L	Complete	2/23/2015 10:50:09 PM	22
23	TOC	L15021051-11	TOC:1.772mg/L TC:6.126mg/L IC:4.354mg/L	Complete	2/23/2015 11:11:55 PM	23
24	TOC	L15021051-12	TOC:1.482mg/L TC:6.280mg/L IC:4.798mg/L	Complete	2/23/2015 11:33:24 PM	24
25	TOC	L15021051-13	TOC:15.14mg/L TC:17.94mg/L IC:2.805mg/L	Complete	2/23/2015 11:55:19 PM	25
26	TOC	CCV	TOC:26.60mg/L TC:26.63mg/L IC:0.02108mg/L	Complete	2/24/2015 12:07:59 AM	26
27	TOC	CCB	TOC:0.1398mg/L TC:0.1748mg/L IC:0.03507mg/L	Complete	2/24/2015 12:17:12 AM	0
28	TOC	L15021051-14	TOC:5.753mg/L TC:9.695mg/L IC:3.942mg/L	Complete	2/24/2015 12:38:43 AM	28
29	TOC	L15021051-15	TOC:4.887mg/L TC:8.425mg/L IC:3.538mg/L	Complete	2/24/2015 1:00:24 AM	29
30	TOC	WG513145-05 DUP	TOC:5.083mg/L TC:8.074mg/L IC:2.991mg/L	Complete	2/24/2015 1:21:43 AM	30
31	TOC	WG513145-06 MS	TOC:16.14mg/L TC:17.07mg/L IC:0.9233mg/L	Complete	2/24/2015 1:43:01 AM	31
32	TOC	WG513146-01 BLK	TOC:0.1264mg/L TC:0.1649mg/L IC:0.03847mg/L	Complete	2/24/2015 1:52:12 AM	0
33	TOC	WG513146-02 LCS	TOC:25.73mg/L TC:28.45mg/L IC:2.728mg/L	Complete	2/24/2015 2:04:58 AM	33
34	TOC	WG513146-03 LCSDUP	TOC:25.03mg/L TC:27.59mg/L IC:2.566mg/L	Complete	2/24/2015 2:17:45 AM	34
35	TOC	L15020971-06	TOC:1.742mg/L TC:31.69mg/L IC:29.95mg/L	Complete	2/24/2015 2:30:58 AM	35
36	TOC	L15020971-08	TOC:1.250mg/L TC:10.16mg/L IC:8.913mg/L	Complete	2/24/2015 2:44:10 AM	36
37	TOC	L15020971-10	TOC:1.090mg/L TC:3.540mg/L IC:2.449mg/L	Complete	2/24/2015 2:57:08 AM	37
38	TOC	CCV	TOC:25.47mg/L TC:25.49mg/L IC:0.01470mg/L	Complete	2/24/2015 3:09:37 AM	38
39	TOC	CCB	TOC:0.1224mg/L TC:0.1605mg/L IC:0.03804mg/L	Complete	2/24/2015 3:18:45 AM	0
40	TOC		TOC:1.470mg/L TC:5.465mg/L IC:3.995mg/L	Complete	2/24/2015 3:31:05 AM	40
41	TOC		TOC:0.8736mg/L TC:2.920mg/L IC:2.047mg/L	Complete	2/24/2015 3:43:16 AM	41
42	TOC		TOC:1.791mg/L TC:5.018mg/L IC:3.228mg/L	Complete	2/24/2015 3:55:42 AM	42
43	TOC	L15021053-03	TOC:2.693mg/L TC:20.15mg/L IC:17.45mg/L	Complete	2/24/2015 4:09:12 AM	43
44	TOC	L15021053-05	TOC:3.442mg/L TC:28.51mg/L IC:25.06mg/L	Complete	2/24/2015 4:23:06 AM	44
45	TOC	L15021053-07	TOC:2.931mg/L TC:12.01mg/L IC:9.077mg/L	Complete	2/24/2015 4:35:38 AM	45
46	TOC		TOC:3.022mg/L TC:52.23mg/L IC:49.21mg/L	Complete	2/24/2015 4:50:20 AM	46
47	TOC	L15021053-11	TOC:2.314mg/L TC:13.81mg/L IC:11.49mg/L	Complete	2/24/2015 5:04:00 AM	47
48	TOC	WG513146-05 DUP	TOC:2.712mg/L TC:7.926mg/L IC:5.214mg/L	Complete	2/24/2015 5:18:33 AM	48
49	TOC	WG513146-06 MS	TOC:13.49mg/L TC:16.86mg/L IC:3.368mg/L	Complete	2/24/2015 5:32:43 AM	49
50	TOC	CCV	TOC:27.47mg/L TC:27.49mg/L IC:0.01971mg/L	Complete	2/24/2015 5:46:01 AM	50
51	TOC	CCB	TOC:0.1317mg/L TC:0.1743mg/L IC:0.04264mg/L	Complete	2/24/2015 5:55:16 AM	0
52	TOC	CCV	TOC:24.66mg/L TC:24.80mg/L IC:0.1397mg/L	Complete	2/24/2015 7:32:13 AM	52
53	TOC	CCB	TOC:0.1230mg/L TC:0.1592mg/L IC:0.03617mg/L	Complete	2/24/2015 7:41:20 AM	0
54	TOC	L15021064-01 (10000)	TOC:26.49mg/L TC:26.82mg/L IC:0.3290mg/L	Complete	2/24/2015 8:03:57 AM	54
55	TOC	L15020971-12 (3)	TOC:5.729mg/L TC:35.72mg/L IC:29.99mg/L	Complete	2/24/2015 8:36:10 AM	55
56	TOC	L15020971-14 (3)	TOC:1.701mg/L TC:18.06mg/L IC:16.35mg/L	Complete	2/24/2015 8:48:53 AM	56
57	TOC	L15021053-01 (3)	TOC:3.650mg/L TC:35.25mg/L IC:31.60mg/L	Complete	2/24/2015 9:23:02 AM	57
58	TOC	L15021053-09 (5)	TOC:3.010mg/L TC:38.93mg/L IC:35.92mg/L	Complete	2/24/2015 10:05:19 AM	58
59	TOC	CCV	TOC:25.78mg/L TC:25.86mg/L IC:0.08064mg/L	Complete	2/24/2015 10:18:37 AM	59
60	TOC	CCB	TOC:0.1237mg/L TC:0.1910mg/L IC:0.06728mg/L	Complete	2/24/2015 10:27:46 AM	0

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Sample

Sample Name: TIC
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.9005mg/L TC:26.76mg/L IC:25.86mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1028	26.76mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 11:59:29 AM

Mean Area 1028
Mean Conc. 26.76mg/L

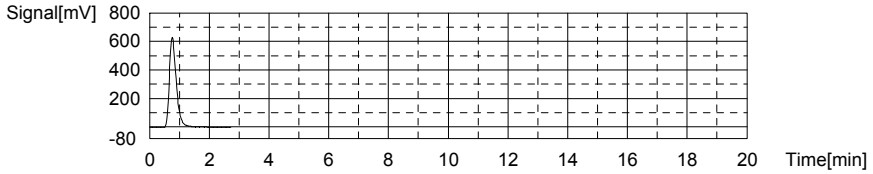

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	782.5	25.86mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 12:05:20 PM

Mean Area 782.5
Mean Conc. 25.86mg/L

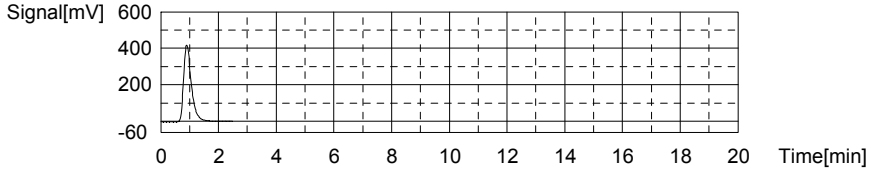

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:25.76mg/L TC:25.74mg/L IC:-0.02082mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	989.2	25.74mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 12:13:32 PM

Mean Area 989.2
Mean Conc. 25.74mg/L

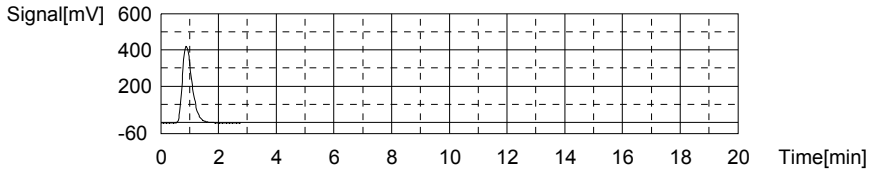

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.401	-0.02082mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 12:18:01 PM

Mean Area 7.401
Mean Conc. -0.02082mg/L

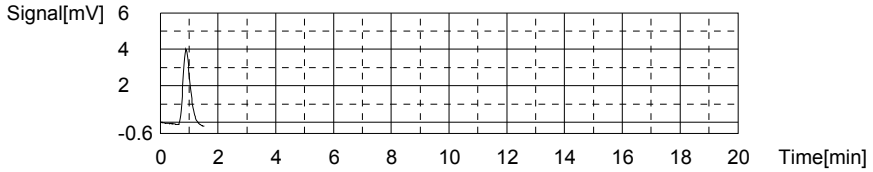

Sample

Sample Name: WG513145-01 BLK
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1480mg/L TC:0.1889mg/L IC:0.04096mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.07	0.1866mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 12:23:15 PM
2	11.25	0.1913mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 12:26:58 PM

Mean Area 11.16
Mean Conc. 0.1889mg/L

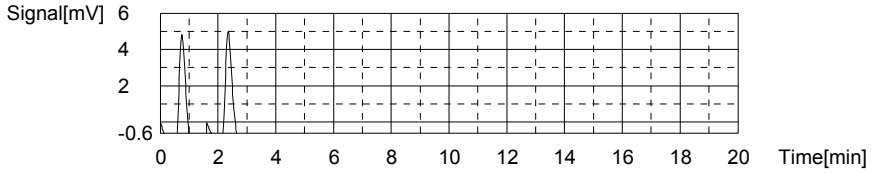

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.245	0.04074mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 12:31:04 PM
2	9.258	0.04118mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 12:35:09 PM

Mean Area 9.252
Mean Conc. 0.04096mg/L

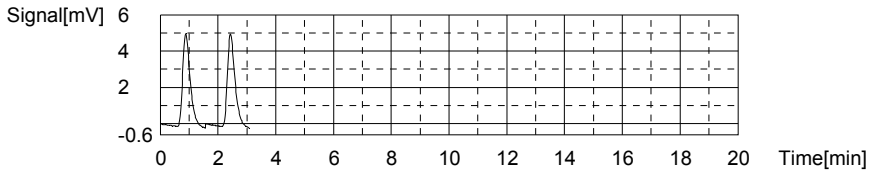

Sample

Sample Name: WG513145-02 LCS
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:26.42mg/L TC:43.52mg/L IC:17.10mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1722	44.89mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 3:22:11 PM
2	1617	42.15mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 3:29:00 PM

Mean Area 1670
Mean Conc. 43.52mg/L

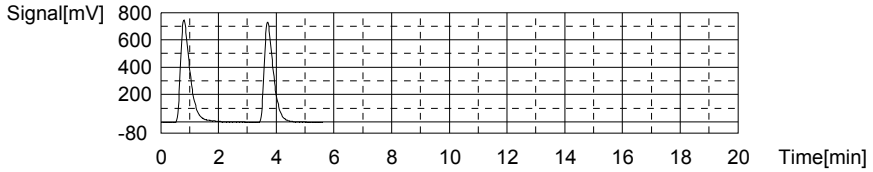

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	525.2	17.27mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 3:36:53 PM
2	515.2	16.93mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 3:41:59 PM

Mean Area 520.2
Mean Conc. 17.10mg/L

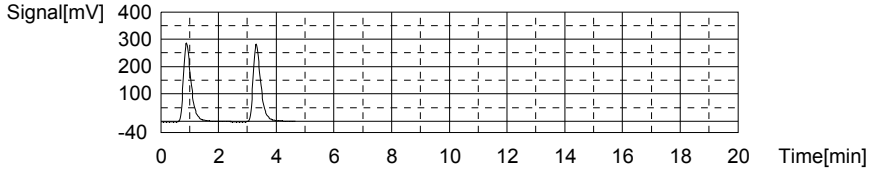

Sample

Sample Name: WG513145-03 LCSDUP
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:28.19mg/L TC:43.07mg/L IC:14.88mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1665	43.40mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 4:22:57 PM
2	1640	42.75mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 4:29:23 PM

Mean Area 1653
Mean Conc. 43.07mg/L

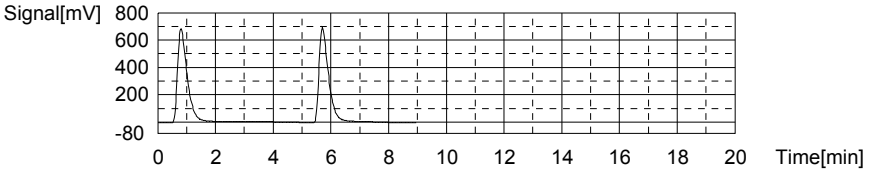

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	458.0	15.02mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 4:34:43 PM
2	449.4	14.74mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 4:39:55 PM

Mean Area 453.7
Mean Conc. 14.88mg/L

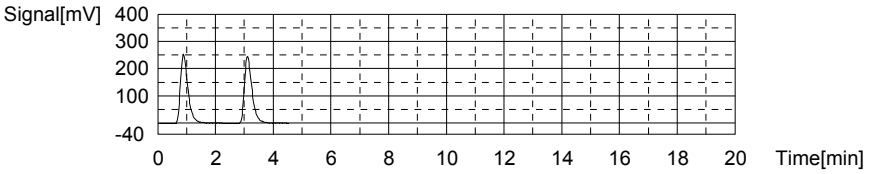

Sample

Sample Name: L15020960-09
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.392mg/L TC:7.536mg/L IC:5.144mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	293.6	7.568mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 4:47:55 PM
2	291.1	7.503mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 4:52:43 PM

Mean Area 292.4
Mean Conc. 7.536mg/L

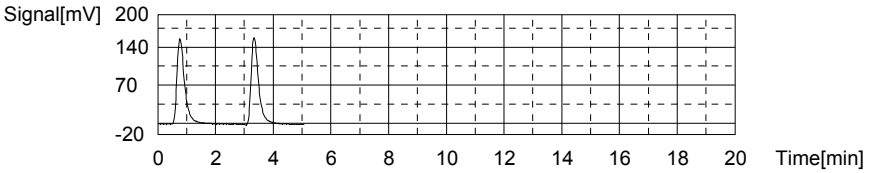

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	164.9	5.237mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 4:57:42 PM
2	159.3	5.050mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 5:02:25 PM

Mean Area 162.1
Mean Conc. 5.144mg/L

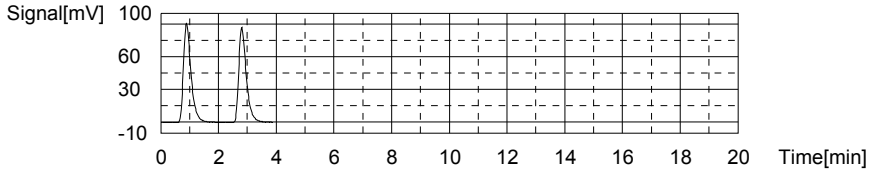

Sample

Sample Name: L150201013-01
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.231mg/L TC:7.886mg/L IC:3.655mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	303.8	7.835mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 5:11:28 PM
2	307.7	7.937mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 5:18:43 PM

Mean Area 305.8
Mean Conc. 7.886mg/L

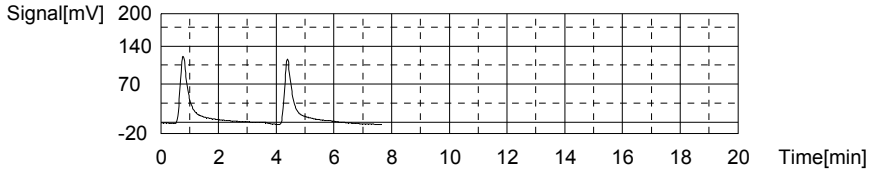

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	118.4	3.685mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 5:23:36 PM
2	116.6	3.625mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 5:28:17 PM

Mean Area 117.5
Mean Conc. 3.655mg/L

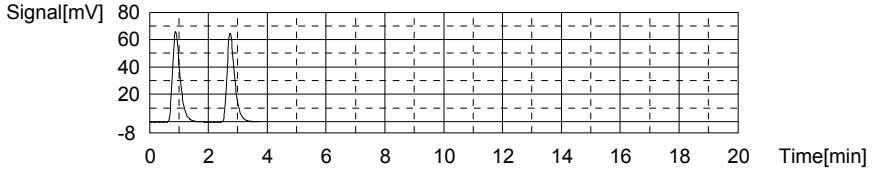

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:51.15mg/L TC:52.56mg/L IC:1.411mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2048	53.41mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 5:38:36 PM
2	1983	51.71mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 5:44:35 PM

Mean Area 2016
Mean Conc. 52.56mg/L

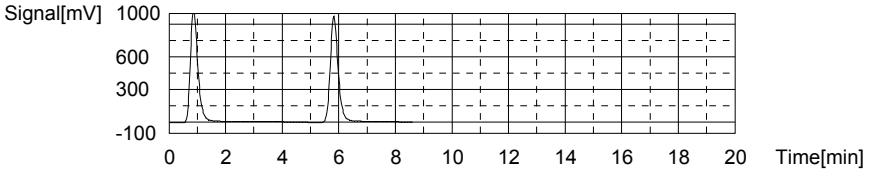

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	50.05	1.403mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 5:49:23 PM
2	50.52	1.419mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 5:53:54 PM

Mean Area 50.29
Mean Conc. 1.411mg/L

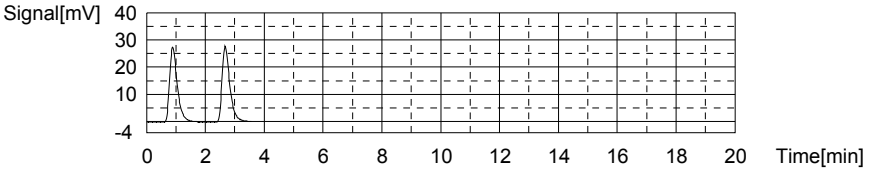

Sample

Sample Name: L15021009-01
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.3224mg/L TC:0.6212mg/L IC:0.2988mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	28.18	0.6336mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 6:00:59 PM
2	27.23	0.6088mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 6:04:54 PM

Mean Area 27.70
Mean Conc. 0.6212mg/L

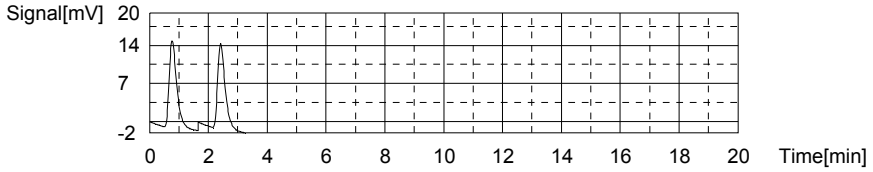

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	17.08	0.3023mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 6:09:26 PM
2	16.87	0.2953mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 6:13:48 PM

Mean Area 16.98
Mean Conc. 0.2988mg/L

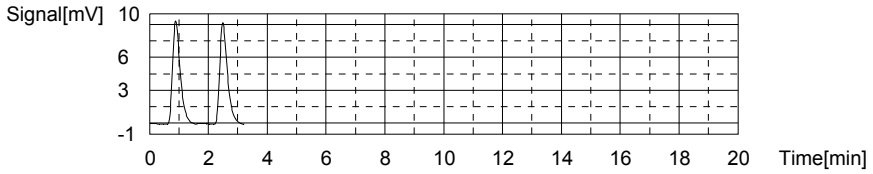

Sample

Sample Name: L15021009-02
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.4279mg/L TC:0.8653mg/L IC:0.4374mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	38.20	0.8954mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 6:20:58 PM
2	35.89	0.8351mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 6:24:58 PM

Mean Area 37.05
Mean Conc. 0.8653mg/L

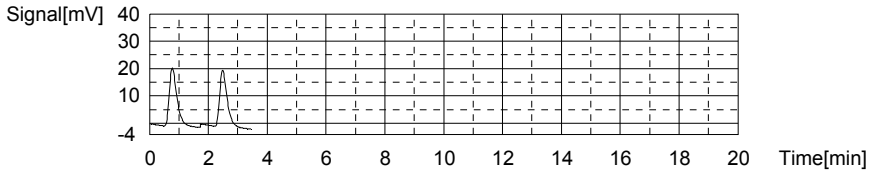

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	21.55	0.4515mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 6:29:34 PM
2	20.70	0.4232mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 6:33:57 PM

Mean Area 21.13
Mean Conc. 0.4374mg/L

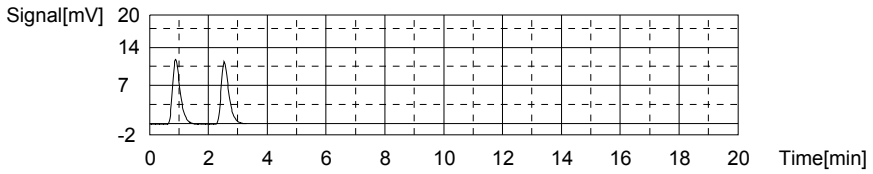

Sample

Sample Name: L15021051-01
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:16.15mg/L TC:21.46mg/L IC:5.306mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	823.4	21.41mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 6:42:37 PM
2	827.1	21.51mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 6:49:04 PM

Mean Area 825.3
Mean Conc. 21.46mg/L

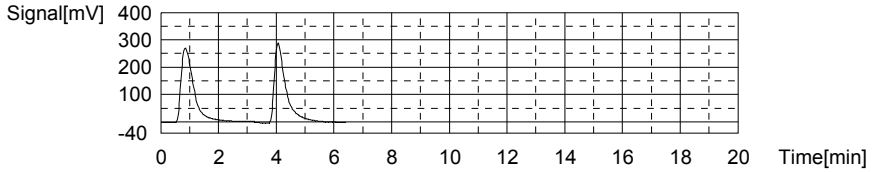

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	170.2	5.414mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 6:54:04 PM
2	163.7	5.197mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 6:58:50 PM

Mean Area 167.0
Mean Conc. 5.306mg/L

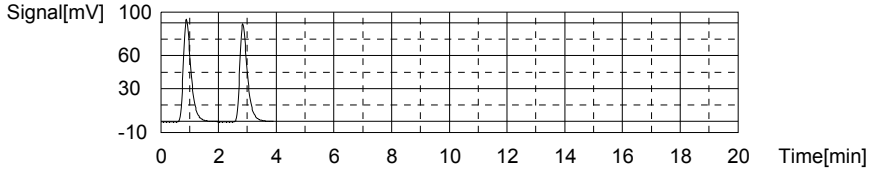

Sample

Sample Name: L15021051-02
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:16.24mg/L TC:21.58mg/L IC:5.342mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	827.9	21.53mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 7:07:20 PM
2	831.9	21.63mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 7:13:41 PM

Mean Area 829.9
Mean Conc. 21.58mg/L

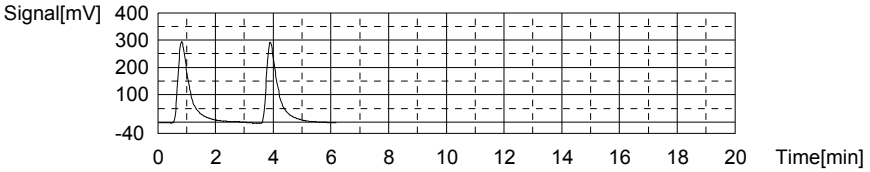

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	171.4	5.454mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 7:18:42 PM
2	164.7	5.231mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 7:23:27 PM

Mean Area 168.1
Mean Conc. 5.342mg/L

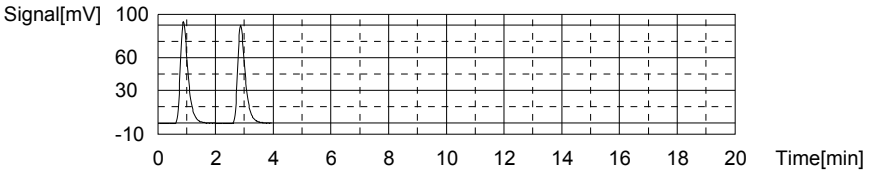

Sample

Sample Name: L15021051-03
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:16.04mg/L TC:20.78mg/L IC:4.735mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	796.7	20.71mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 7:31:45 PM
2	801.5	20.84mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 7:38:09 PM

Mean Area 799.1
Mean Conc. 20.78mg/L

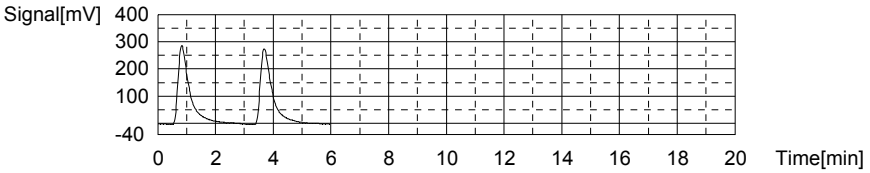

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	151.7	4.797mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 7:43:06 PM
2	148.0	4.673mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 7:47:50 PM

Mean Area 149.9
Mean Conc. 4.735mg/L

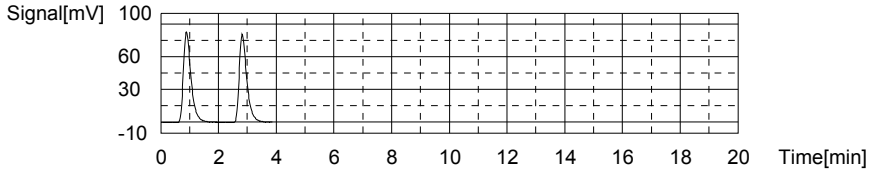

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:26.26mg/L TC:26.29mg/L IC:0.02916mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1010	26.29mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 7:56:19 PM

Mean Area 1010
Mean Conc. 26.29mg/L

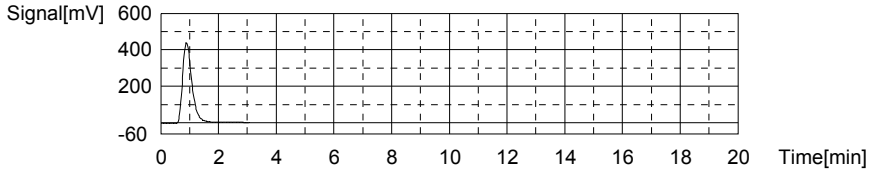

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.898	0.02916mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 8:00:46 PM

Mean Area 8.898
Mean Conc. 0.02916mg/L

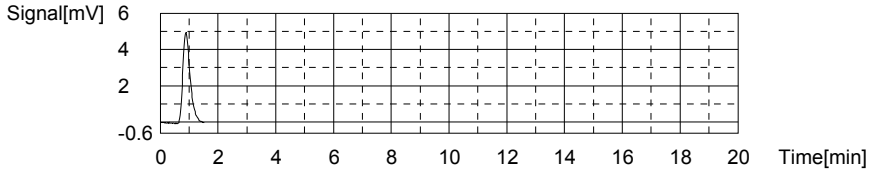

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1372mg/L TC:0.1746mg/L IC:0.03737mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.61	0.1746mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 8:06:00 PM

Mean Area 10.61
Mean Conc. 0.1746mg/L

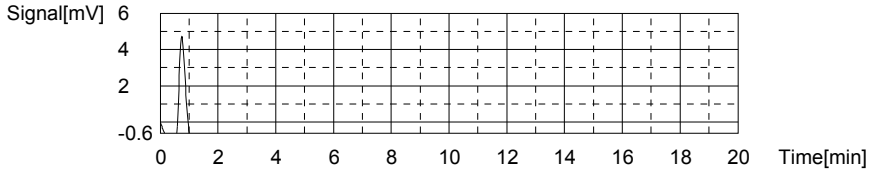

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.144	0.03737mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 8:10:06 PM

Mean Area 9.144
Mean Conc. 0.03737mg/L

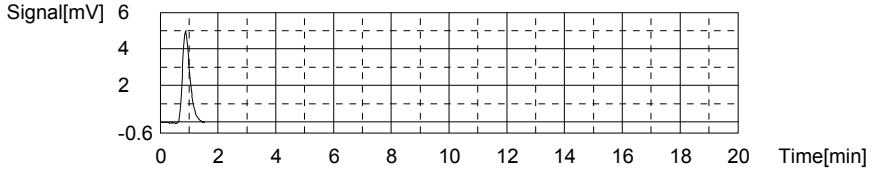

Sample

Sample Name: L15021051-04
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:16.89mg/L TC:25.63mg/L IC:8.746mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	981.0	25.53mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 8:18:42 PM
2	989.0	25.74mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 8:24:39 PM

Mean Area 985.0
Mean Conc. 25.63mg/L

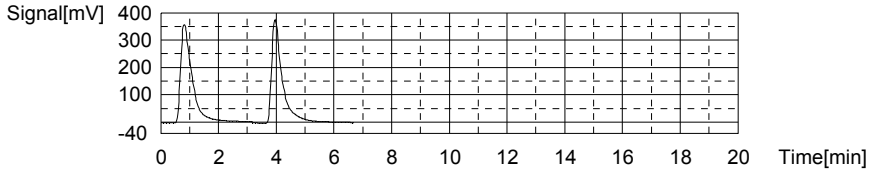

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	269.0	8.713mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 8:29:42 PM
2	271.0	8.779mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 8:34:32 PM

Mean Area 270.0
Mean Conc. 8.746mg/L

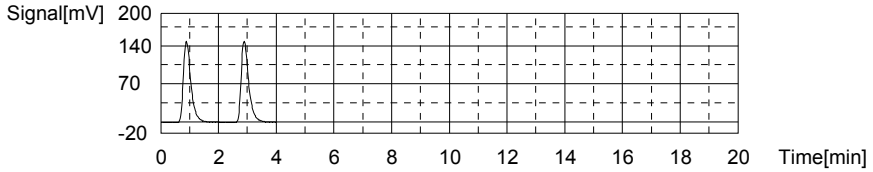

Sample

Sample Name: L15021051-05
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:16.50mg/L TC:23.55mg/L IC:7.042mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	912.1	23.73mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 8:43:31 PM
2	898.2	23.37mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 8:49:02 PM

Mean Area 905.2
Mean Conc. 23.55mg/L

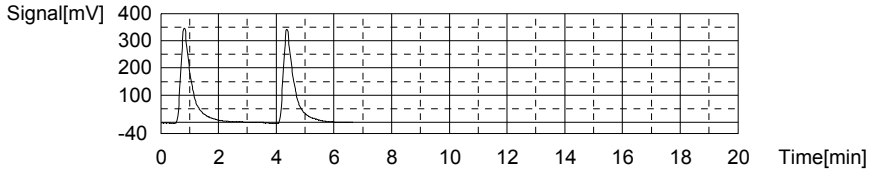

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	224.1	7.214mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 8:54:05 PM
2	213.8	6.870mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 8:58:52 PM

Mean Area 219.0
Mean Conc. 7.042mg/L

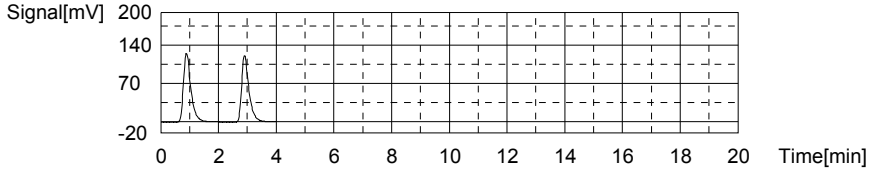

Sample

Sample Name: L15021051-06
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:16.00mg/L TC:23.14mg/L IC:7.140mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	890.8	23.17mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 9:07:26 PM
2	888.1	23.10mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 9:13:00 PM

Mean Area 889.5
Mean Conc. 23.14mg/L

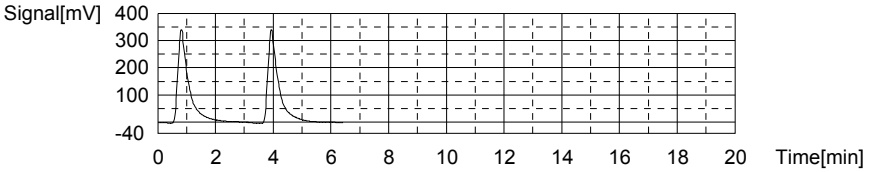

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	221.7	7.134mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 9:18:05 PM
2	222.1	7.147mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 9:22:57 PM

Mean Area 221.9
Mean Conc. 7.140mg/L

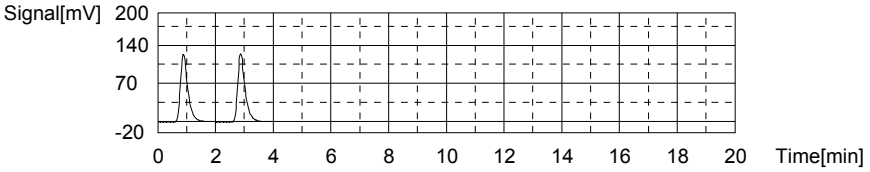

Sample

Sample Name: L15021051-07
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.620mg/L TC:7.959mg/L IC:6.339mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	300.7	7.754mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 9:30:17 PM
2	316.4	8.164mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 9:34:46 PM

Mean Area 308.6
Mean Conc. 7.959mg/L

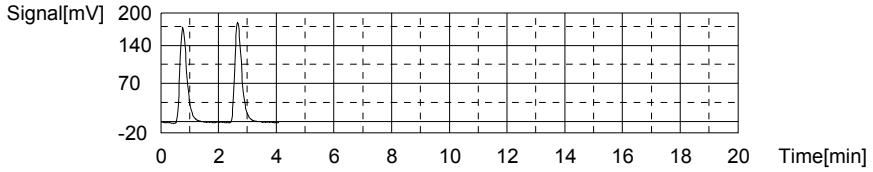

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	204.1	6.546mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 9:39:44 PM
2	191.7	6.132mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 9:44:34 PM

Mean Area 197.9
Mean Conc. 6.339mg/L

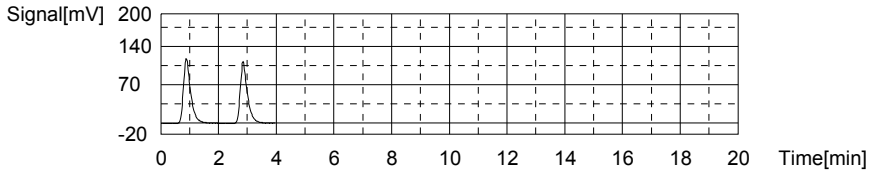

Sample

Sample Name: L15021051-08
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.584mg/L TC:7.685mg/L IC:6.100mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	292.9	7.550mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 9:52:03 PM
2	303.2	7.819mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 9:56:22 PM

Mean Area 298.1
Mean Conc. 7.685mg/L

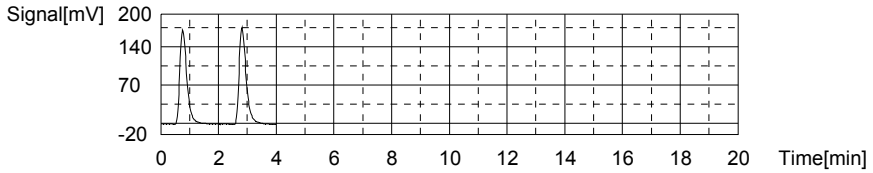

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	196.9	6.306mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 10:01:23 PM
2	184.6	5.895mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 10:06:08 PM

Mean Area 190.8
Mean Conc. 6.100mg/L

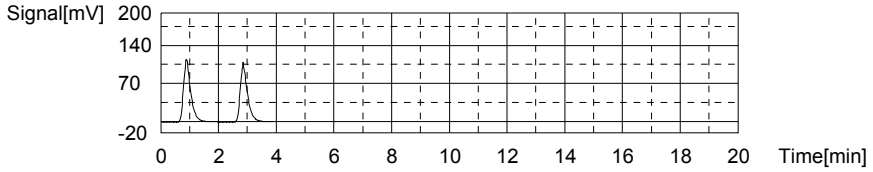

Sample

Sample Name: L15021051-09
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.461mg/L TC:8.533mg/L IC:7.072mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	328.7	8.486mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 10:13:47 PM
2	332.3	8.580mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 10:17:55 PM

Mean Area 330.5
Mean Conc. 8.533mg/L

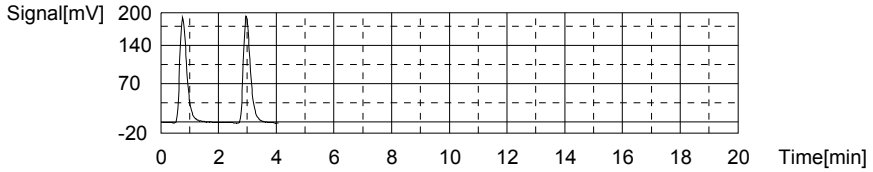

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	224.3	7.220mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 10:22:55 PM
2	215.4	6.923mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 10:27:42 PM

Mean Area 219.9
Mean Conc. 7.072mg/L

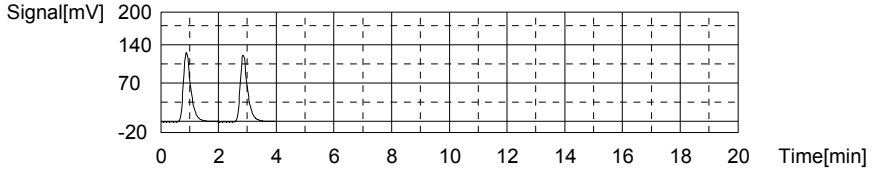

Sample

Sample Name: L15021051-10
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.930mg/L TC:7.793mg/L IC:5.863mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	301.5	7.775mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 10:35:03 PM
2	302.9	7.811mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 10:40:26 PM

Mean Area 302.2
Mean Conc. 7.793mg/L

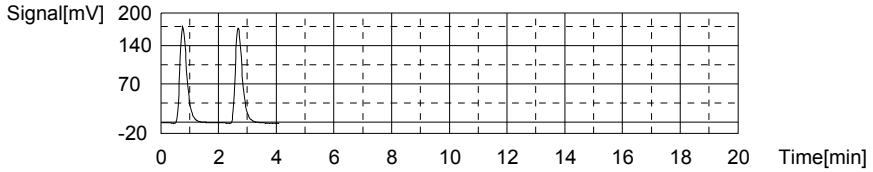

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	187.5	5.992mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 10:45:25 PM
2	179.8	5.735mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 10:50:09 PM

Mean Area 183.7
Mean Conc. 5.863mg/L

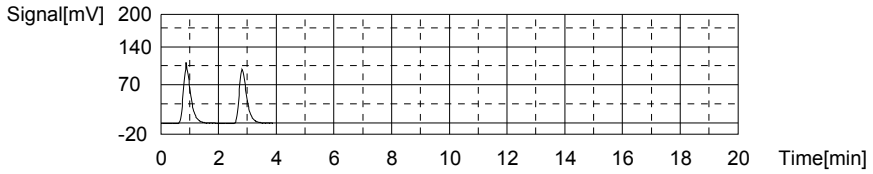

Sample

Sample Name: L15021051-11
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.772mg/L TC:6.126mg/L IC:4.354mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	241.3	6.202mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 10:57:41 PM
2	235.5	6.050mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 11:02:18 PM

Mean Area 238.4
Mean Conc. 6.126mg/L

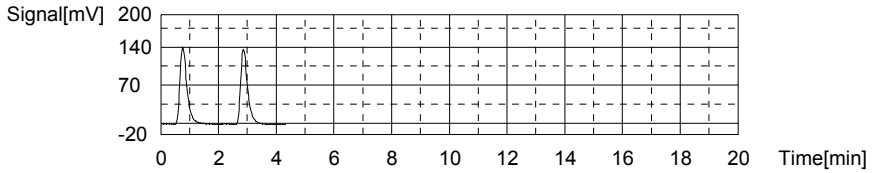

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	139.1	4.376mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 11:07:12 PM
2	137.8	4.333mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 11:11:55 PM

Mean Area 138.4
Mean Conc. 4.354mg/L

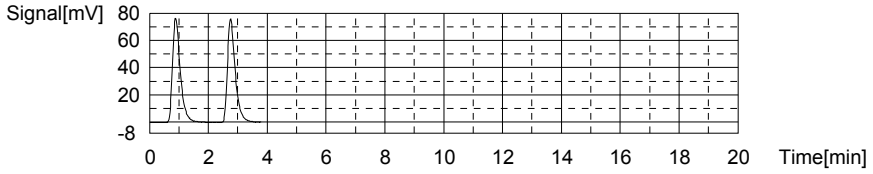

Sample

Sample Name: L15021051-12
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.482mg/L TC:6.280mg/L IC:4.798mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	247.2	6.356mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 11:19:24 PM
2	241.4	6.205mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 11:23:50 PM

Mean Area 244.3
Mean Conc. 6.280mg/L

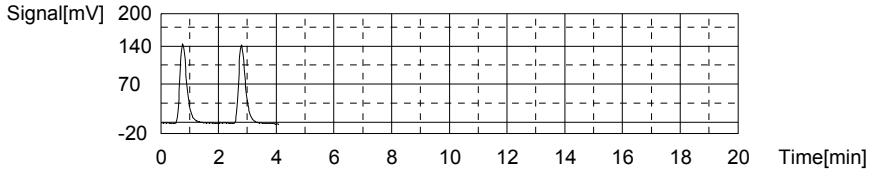

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	154.3	4.883mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 11:28:46 PM
2	149.2	4.713mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 11:33:24 PM

Mean Area 151.8
Mean Conc. 4.798mg/L

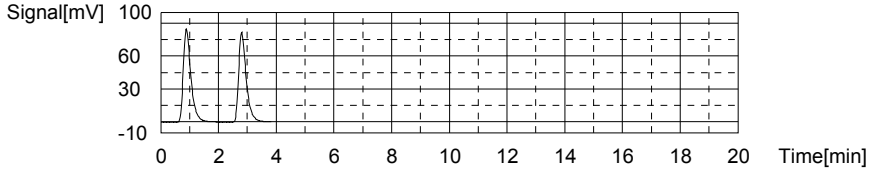

Sample

Sample Name: L15021051-13
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:15.14mg/L TC:17.94mg/L IC:2.805mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	687.0	17.85mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 11:41:17 PM
2	694.2	18.04mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 11:45:54 PM

Mean Area 690.6
Mean Conc. 17.94mg/L

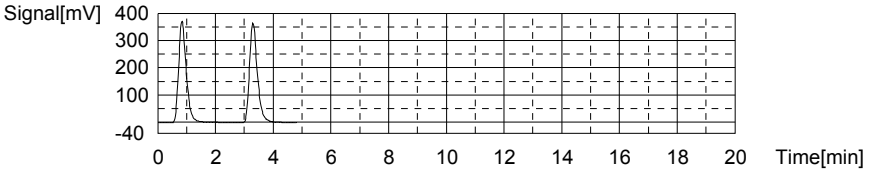

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	94.14	2.875mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 11:50:45 PM
2	89.92	2.734mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 11:55:19 PM

Mean Area 92.03
Mean Conc. 2.805mg/L

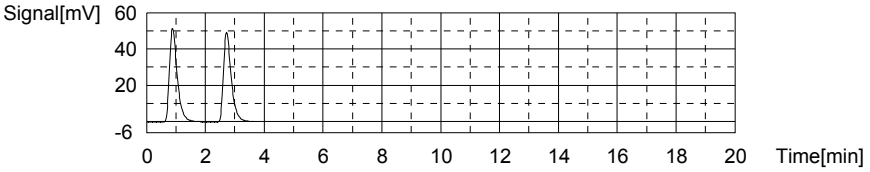

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:26.60mg/L TC:26.63mg/L IC:0.02108mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1023	26.63mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 12:03:33 AM

Mean Area 1023
Mean Conc. 26.63mg/L

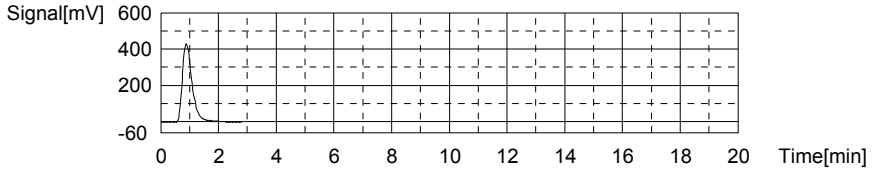

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.656	0.02108mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 12:07:59 AM

Mean Area 8.656
Mean Conc. 0.02108mg/L

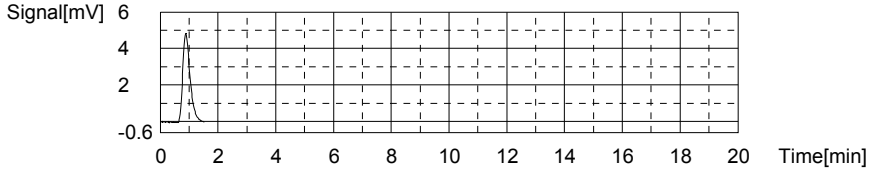

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1398mg/L TC:0.1748mg/L IC:0.03507mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.62	0.1748mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 12:13:09 AM

Mean Area 10.62
Mean Conc. 0.1748mg/L

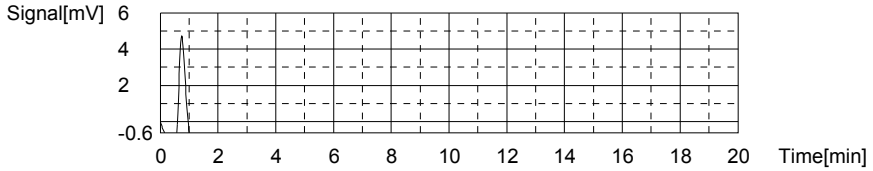

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.075	0.03507mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 12:17:12 AM

Mean Area 9.075
Mean Conc. 0.03507mg/L

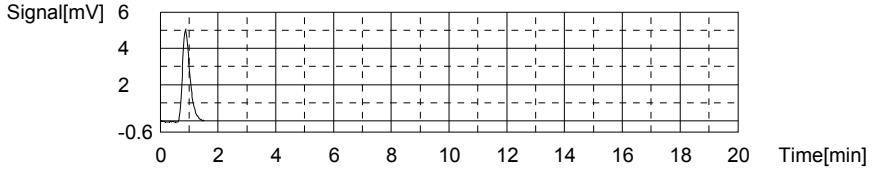

Sample

Sample Name: L15021051-14
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.753mg/L TC:9.695mg/L IC:3.942mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	375.3	9.703mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 12:24:47 AM
2	374.7	9.687mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 12:29:15 AM

Mean Area 375.0
Mean Conc. 9.695mg/L

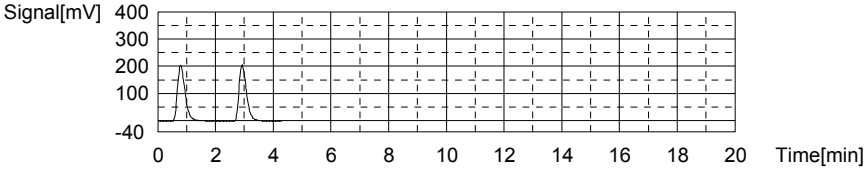

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	125.9	3.935mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 12:34:07 AM
2	126.3	3.949mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 12:38:43 AM

Mean Area 126.1
Mean Conc. 3.942mg/L

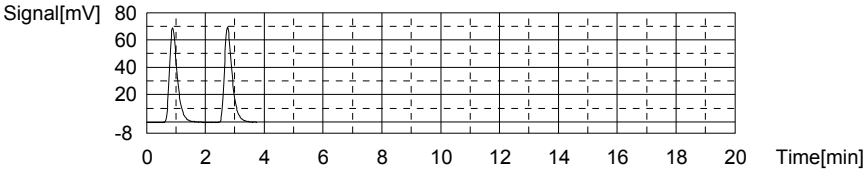

Sample

Sample Name: L15021051-15
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.887mg/L TC:8.425mg/L IC:3.538mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	322.5	8.324mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 12:46:22 AM
2	330.3	8.527mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 12:50:56 AM

Mean Area 326.4
Mean Conc. 8.425mg/L

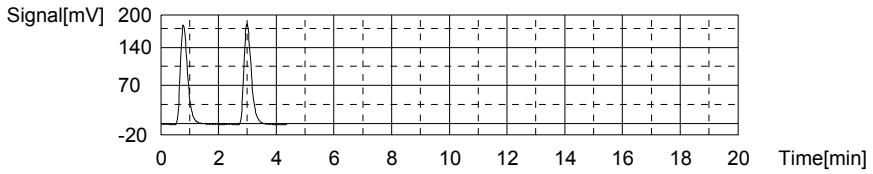

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	114.9	3.568mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 12:55:46 AM
2	113.1	3.508mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 1:00:24 AM

Mean Area 114.0
Mean Conc. 3.538mg/L

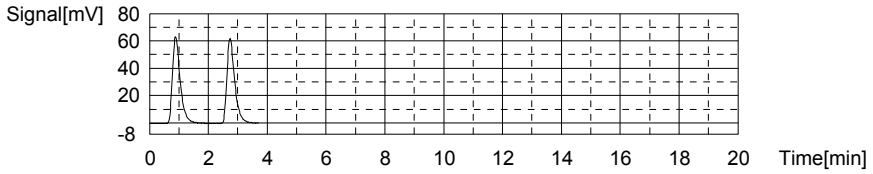

Sample

Sample Name: WG513145-05 DUP
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.083mg/L TC:8.074mg/L IC:2.991mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	314.6	8.117mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 1:07:52 AM
2	311.3	8.031mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 1:12:17 AM

Mean Area 313.0
Mean Conc. 8.074mg/L

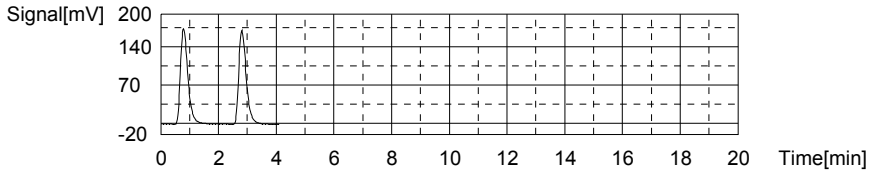

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	99.34	3.049mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 1:17:08 AM
2	95.92	2.934mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 1:21:43 AM

Mean Area 97.63
Mean Conc. 2.991mg/L

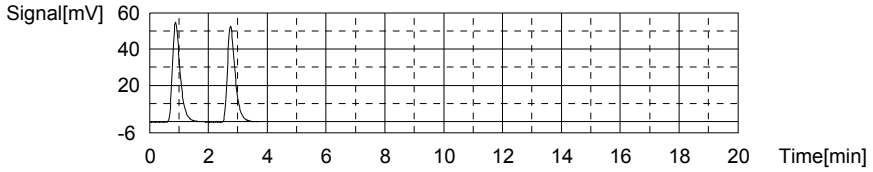

Sample

Sample Name: WG513145-06 MS
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:16.14mg/L TC:17.07mg/L IC:0.9233mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	663.3	17.23mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 1:29:34 AM
2	651.0	16.91mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 1:34:04 AM

Mean Area 657.2
Mean Conc. 17.07mg/L

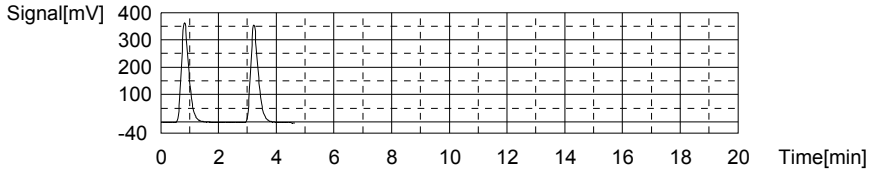

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	53.53	1.519mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 1:38:51 AM
2	17.83	0.3274mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 1:43:01 AM

Mean Area 35.68
Mean Conc. 0.9233mg/L

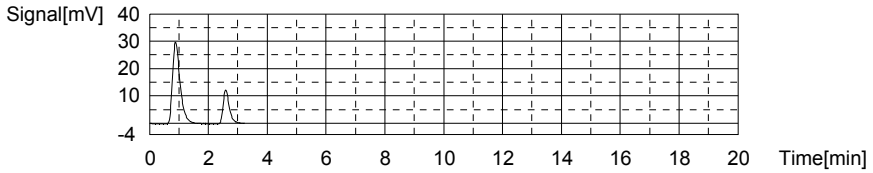

Sample

Sample Name: WG513146-01 BLK
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1264mg/L TC:0.1649mg/L IC:0.03847mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.24	0.1649mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 1:48:12 AM

Mean Area 10.24
Mean Conc. 0.1649mg/L

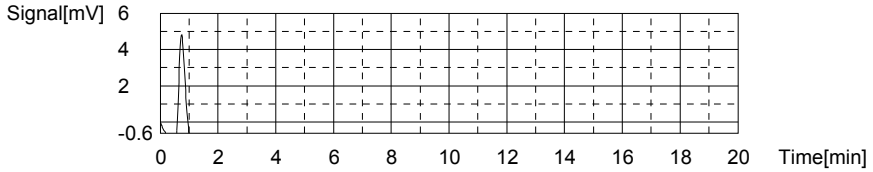

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.177	0.03847mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 1:52:12 AM

Mean Area 9.177
Mean Conc. 0.03847mg/L

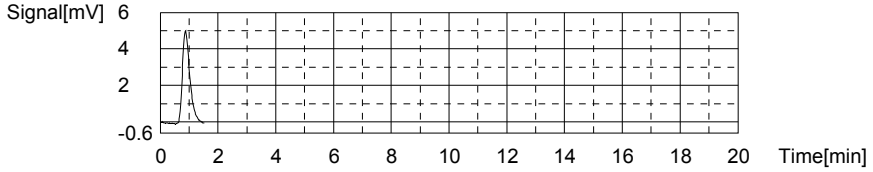

Sample

Sample Name: WG513146-02 LCS
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:25.73mg/L TC:28.45mg/L IC:2.728mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1093	28.45mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 2:00:12 AM

Mean Area 1093
Mean Conc. 28.45mg/L

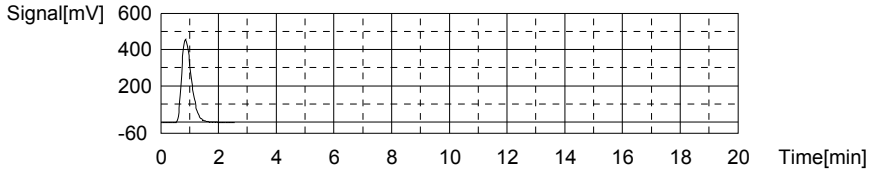

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	89.73	2.728mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 2:04:58 AM

Mean Area 89.73
Mean Conc. 2.728mg/L

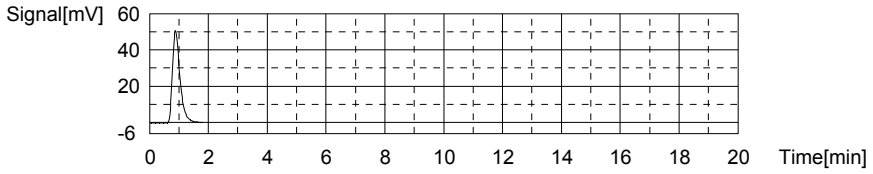

Sample

Sample Name: WG513146-03 LCSDUP
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:25.03mg/L TC:27.59mg/L IC:2.566mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1060	27.59mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 2:13:01 AM

Mean Area 1060
Mean Conc. 27.59mg/L

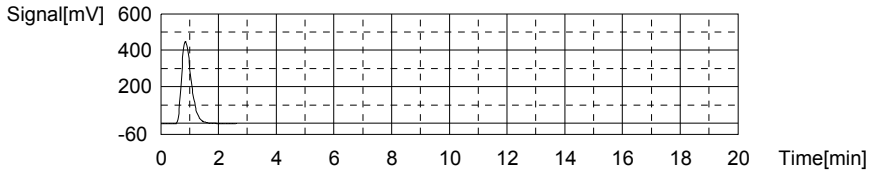

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	84.89	2.566mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 2:17:45 AM

Mean Area 84.89
Mean Conc. 2.566mg/L

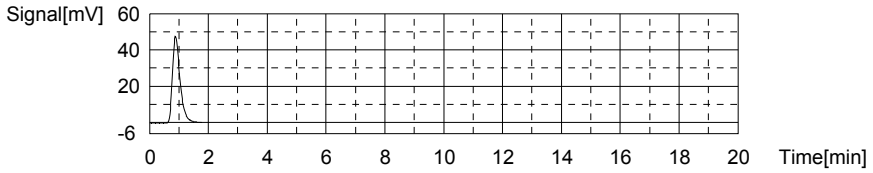

Sample

Sample Name: L15020971-06
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.742mg/L TC:31.69mg/L IC:29.95mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1217	31.69mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 2:25:14 AM

Mean Area 1217
Mean Conc. 31.69mg/L

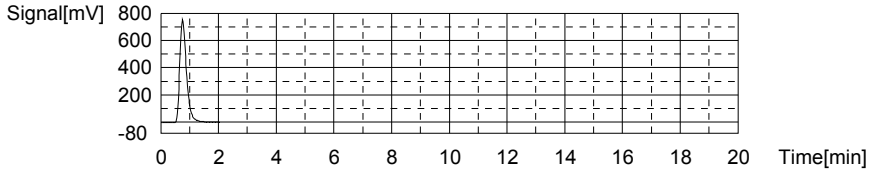

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	905.2	29.95mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 2:30:58 AM

Mean Area 905.2
Mean Conc. 29.95mg/L

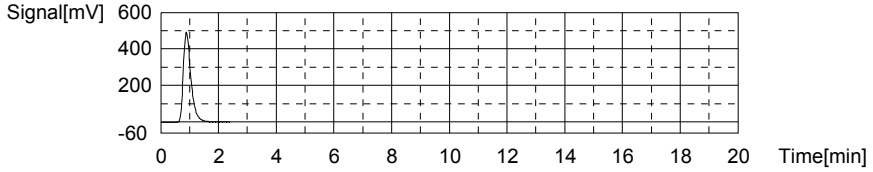

Sample

Sample Name: L15020971-08
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.250mg/L TC:10.16mg/L IC:8.913mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	392.9	10.16mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 2:39:11 AM

Mean Area 392.9
Mean Conc. 10.16mg/L

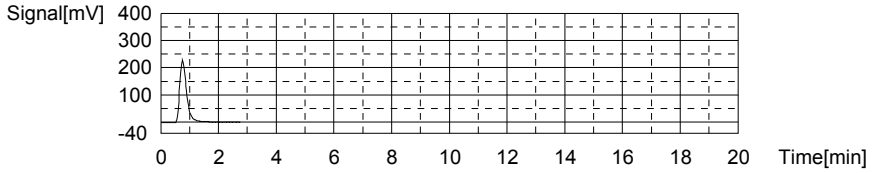

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	275.0	8.913mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 2:44:10 AM

Mean Area 275.0
Mean Conc. 8.913mg/L

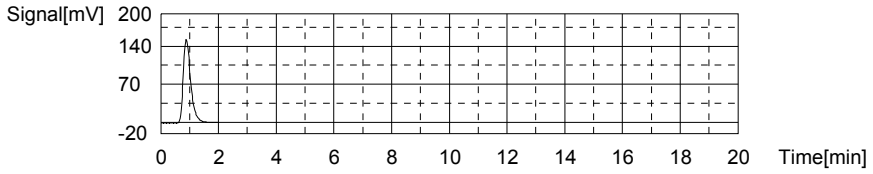

Sample

Sample Name: L15020971-10
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.090mg/L TC:3.540mg/L IC:2.449mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	139.4	3.540mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 2:52:23 AM

Mean Area 139.4
Mean Conc. 3.540mg/L

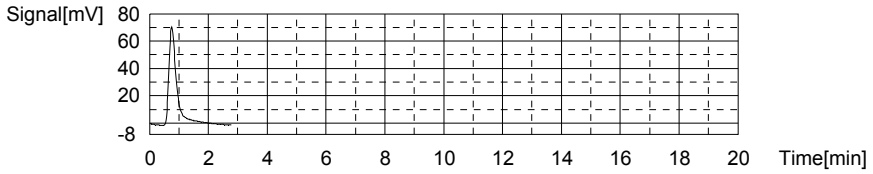

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	81.39	2.449mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 2:57:08 AM

Mean Area 81.39
Mean Conc. 2.449mg/L

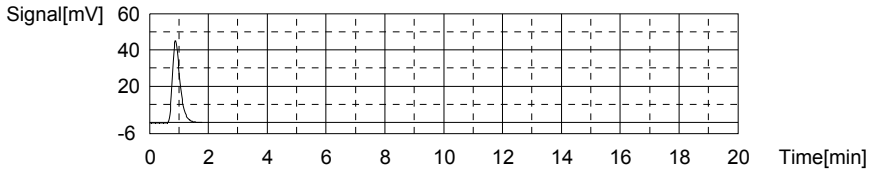

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:25.47mg/L TC:25.49mg/L IC:0.01470mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	979.5	25.49mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 3:05:10 AM

Mean Area 979.5
Mean Conc. 25.49mg/L

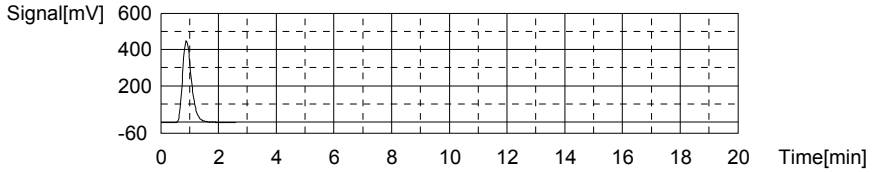

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.465	0.01470mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 3:09:37 AM

Mean Area 8.465
Mean Conc. 0.01470mg/L

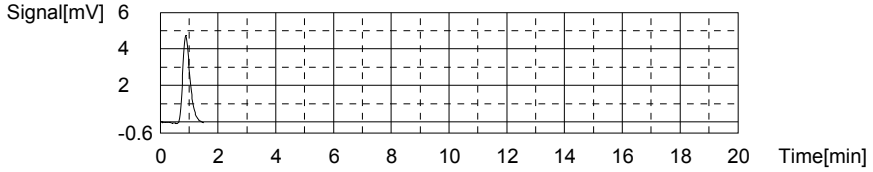

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1224mg/L TC:0.1605mg/L IC:0.03804mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.07	0.1605mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 3:14:45 AM

Mean Area 10.07
Mean Conc. 0.1605mg/L

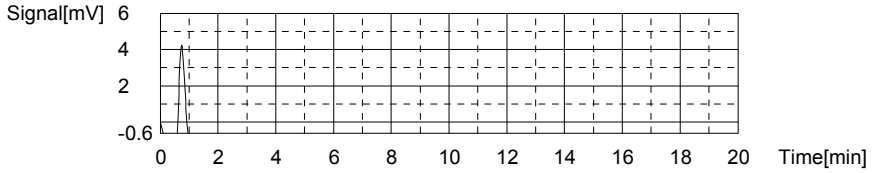

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.164	0.03804mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 3:18:45 AM

Mean Area 9.164
Mean Conc. 0.03804mg/L

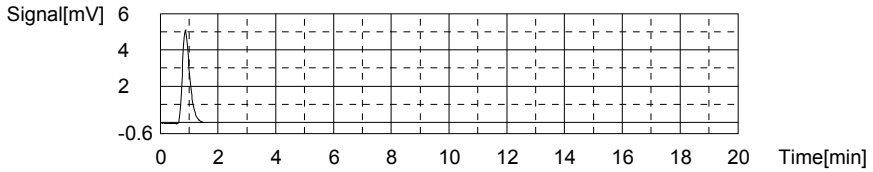

Sample

Sample Name:
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.470mg/L TC:5.465mg/L IC:3.995mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	213.1	5.465mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 3:26:12 AM

Mean Area 213.1
Mean Conc. 5.465mg/L

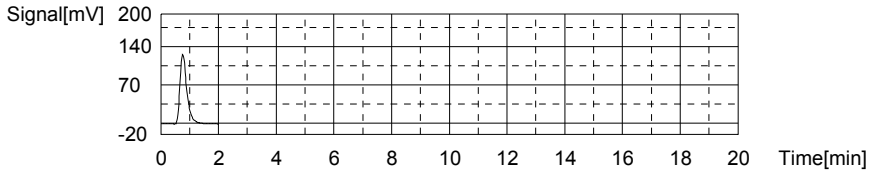

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	127.7	3.995mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 3:31:05 AM

Mean Area 127.7
Mean Conc. 3.995mg/L

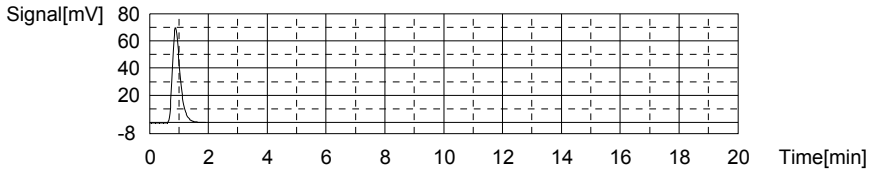

Sample

Sample Name:
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.8736mg/L TC:2.920mg/L IC:2.047mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	115.7	2.920mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 3:38:30 AM

Mean Area 115.7
Mean Conc. 2.920mg/L

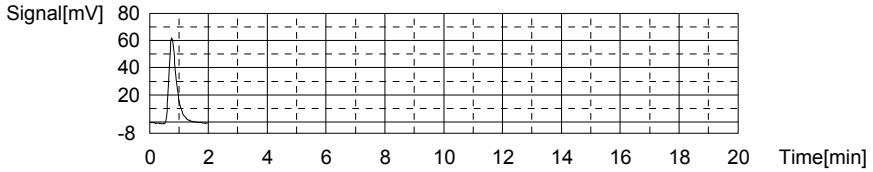

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	69.33	2.047mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 3:43:16 AM

Mean Area 69.33
Mean Conc. 2.047mg/L

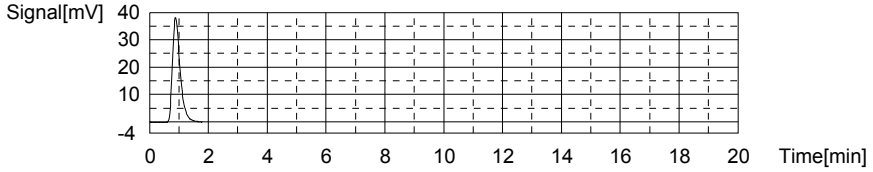

Sample

Sample Name:
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.791mg/L TC:5.018mg/L IC:3.228mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	196.0	5.018mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 3:50:53 AM

Mean Area 196.0
Mean Conc. 5.018mg/L

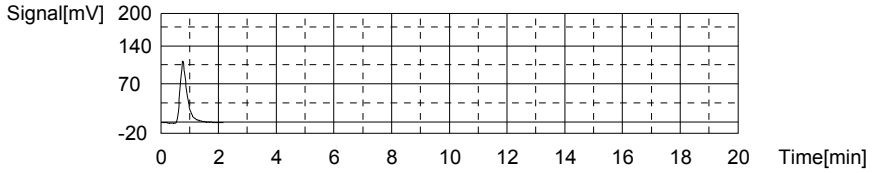

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	104.7	3.228mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 3:55:42 AM

Mean Area 104.7
Mean Conc. 3.228mg/L

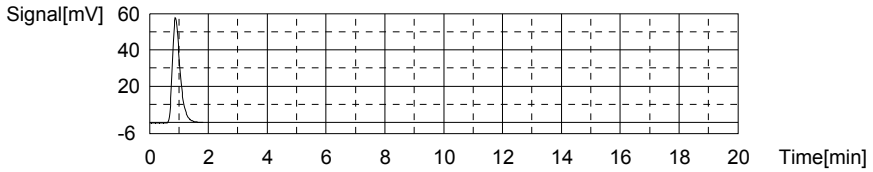

Sample

Sample Name: L15021053-03
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.693mg/L TC:20.15mg/L IC:17.45mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	775.0	20.15mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 4:03:54 AM

Mean Area 775.0
Mean Conc. 20.15mg/L

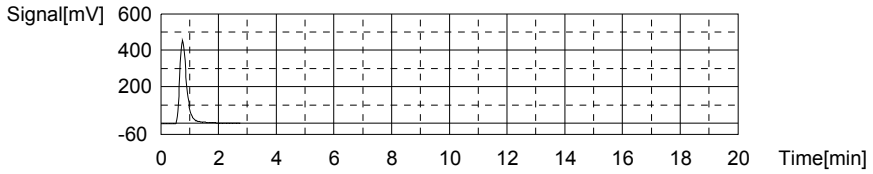

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	530.8	17.45mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 4:09:12 AM

Mean Area 530.8
Mean Conc. 17.45mg/L

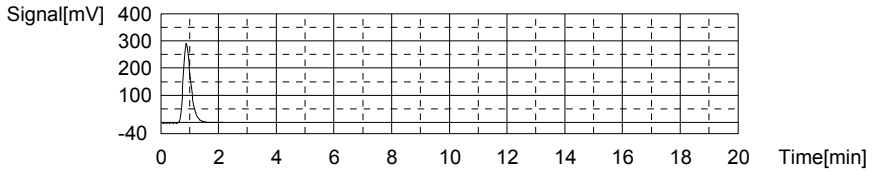

Sample

Sample Name: L15021053-05
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.442mg/L TC:28.51mg/L IC:25.06mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1095	28.51mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 4:17:30 AM

Mean Area 1095
Mean Conc. 28.51mg/L

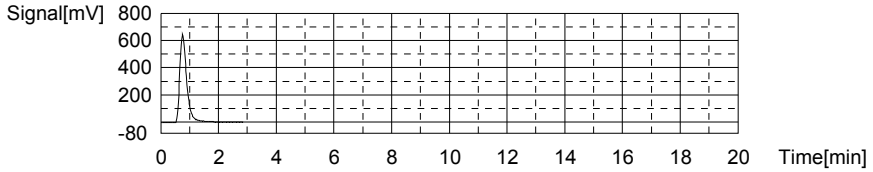

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	758.8	25.06mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 4:23:06 AM

Mean Area 758.8
Mean Conc. 25.06mg/L

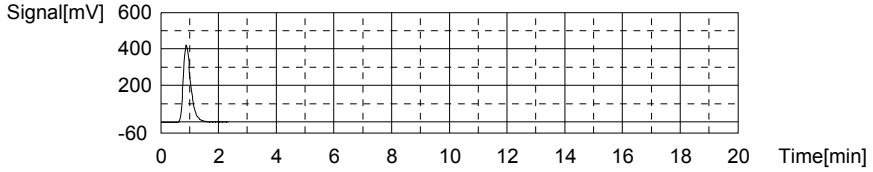

Sample

Sample Name: L15021053-07
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.931mg/L TC:12.01mg/L IC:9.077mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	463.5	12.01mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 4:30:33 AM

Mean Area 463.5
Mean Conc. 12.01mg/L

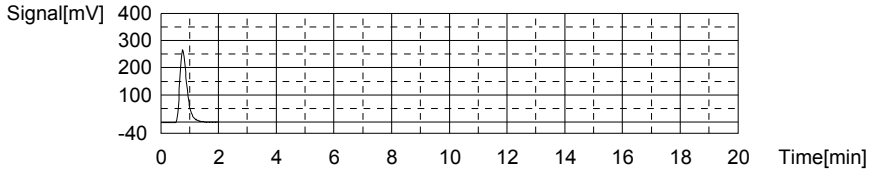

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	279.9	9.077mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 4:35:38 AM

Mean Area 279.9
Mean Conc. 9.077mg/L

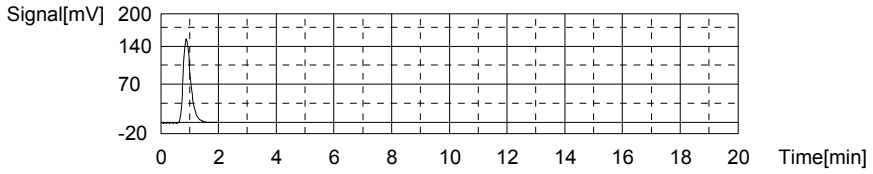

Sample

Sample Name:
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.022mg/L TC:52.23mg/L IC:49.21mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2003	52.23mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 4:44:10 AM

Mean Area 2003
Mean Conc. 52.23mg/L

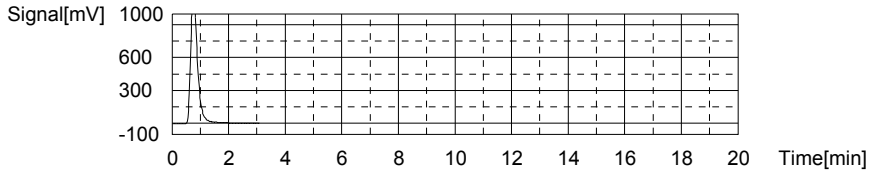

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1482	49.21mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 4:50:20 AM

Mean Area 1482
Mean Conc. 49.21mg/L

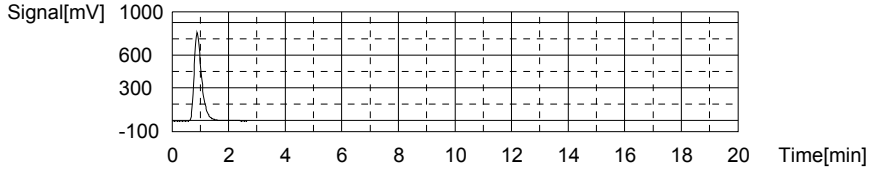

Sample

Sample Name: L15021053-11
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.314mg/L TC:13.81mg/L IC:11.49mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	532.4	13.81mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 4:58:47 AM

Mean Area 532.4
Mean Conc. 13.81mg/L

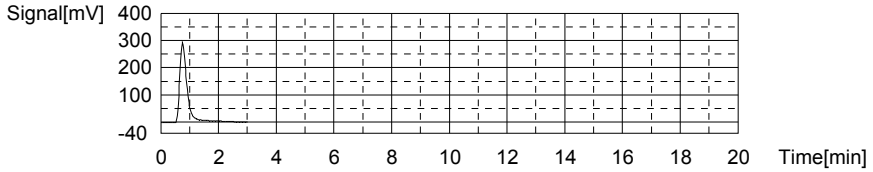

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	352.3	11.49mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 5:04:00 AM

Mean Area 352.3
Mean Conc. 11.49mg/L

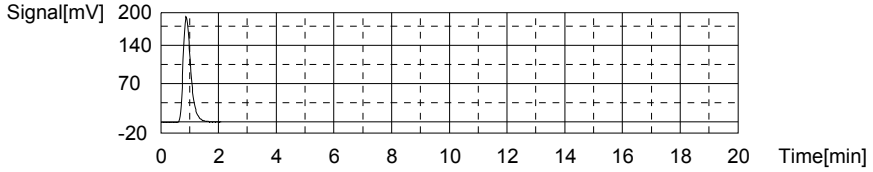

Sample

Sample Name: WG513146-05 DUP
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.712mg/L TC:7.926mg/L IC:5.214mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	307.3	7.926mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 5:13:37 AM

Mean Area 307.3
Mean Conc. 7.926mg/L

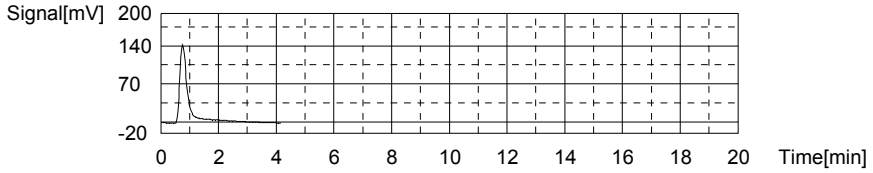

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	164.2	5.214mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 5:18:33 AM

Mean Area 164.2
Mean Conc. 5.214mg/L

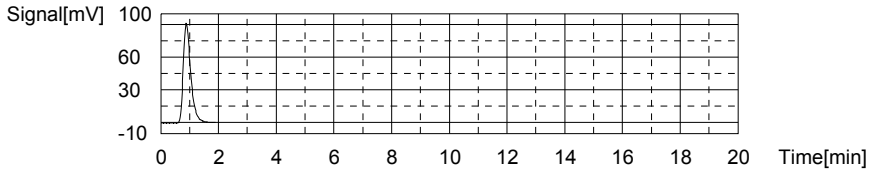

Sample

Sample Name: WG513146-06 MS
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:13.49mg/L TC:16.86mg/L IC:3.368mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	649.3	16.86mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 5:27:56 AM

Mean Area 649.3
Mean Conc. 16.86mg/L

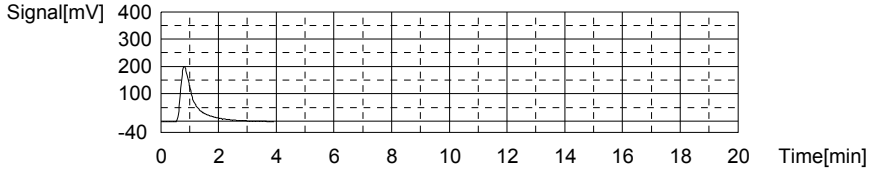

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	108.9	3.368mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 5:32:43 AM

Mean Area 108.9
Mean Conc. 3.368mg/L

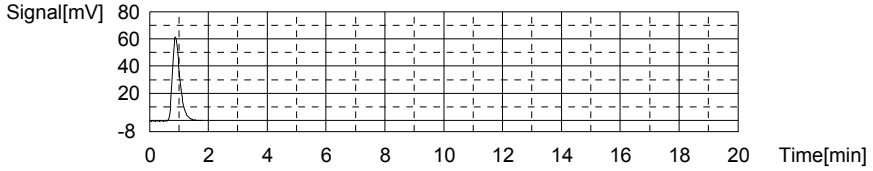

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:27.47mg/L TC:27.49mg/L IC:0.01971mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1056	27.49mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 5:41:34 AM

Mean Area 1056
Mean Conc. 27.49mg/L

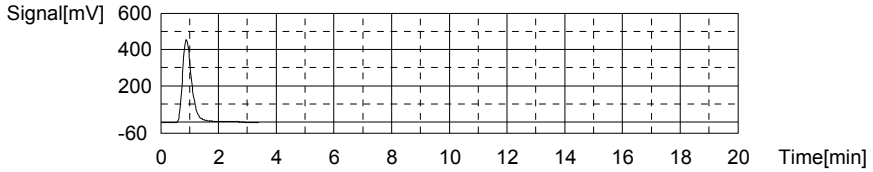

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.615	0.01971mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 5:46:01 AM

Mean Area 8.615
Mean Conc. 0.01971mg/L

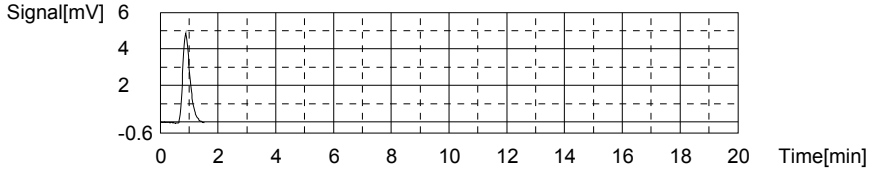

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1317mg/L TC:0.1743mg/L IC:0.04264mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.60	0.1743mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 5:51:14 AM

Mean Area 10.60
Mean Conc. 0.1743mg/L

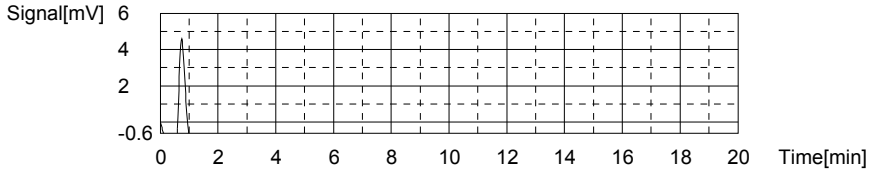

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.302	0.04264mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 5:55:16 AM

Mean Area 9.302
Mean Conc. 0.04264mg/L

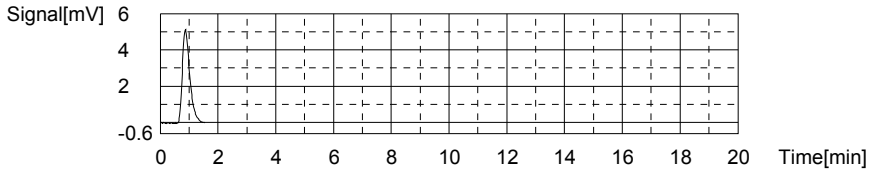

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:24.66mg/L TC:24.80mg/L IC:0.1397mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	953.2	24.80mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 7:27:45 AM

Mean Area 953.2
Mean Conc. 24.80mg/L

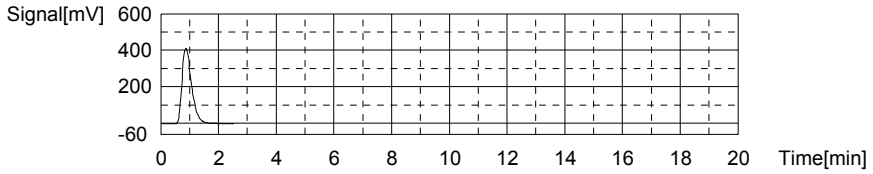

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	12.21	0.1397mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 7:32:13 AM

Mean Area 12.21
Mean Conc. 0.1397mg/L

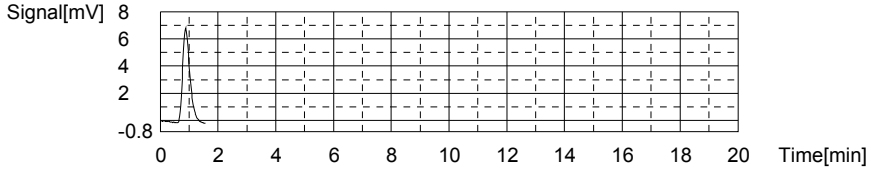

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1230mg/L TC:0.1592mg/L IC:0.03617mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.02	0.1592mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 7:37:24 AM

Mean Area 10.02
Mean Conc. 0.1592mg/L

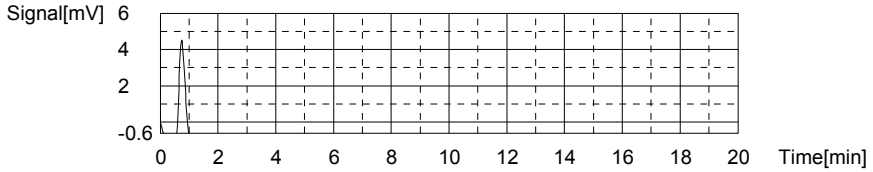

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.108	0.03617mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 7:41:20 AM

Mean Area 9.108
Mean Conc. 0.03617mg/L

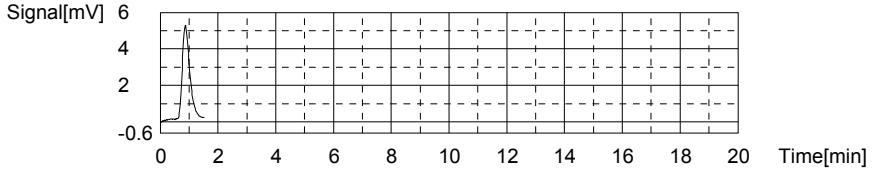

Sample

Sample Name: L15021064-01 (10000)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:26.49mg/L TC:26.82mg/L IC:0.3290mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1070	27.85mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 7:49:57 AM
2	990.7	25.78mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 7:55:08 AM

Mean Area 1030
Mean Conc. 26.82mg/L

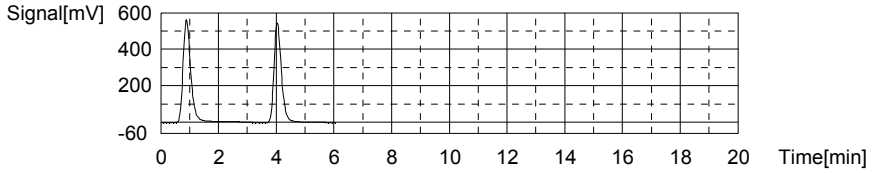

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	17.61	0.3200mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 7:59:41 AM
2	18.15	0.3380mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 8:03:57 AM

Mean Area 17.88
Mean Conc. 0.3290mg/L

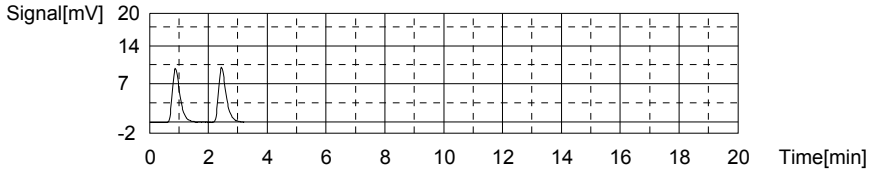

Sample

Sample Name: L15020971-12 (3)
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.729mg/L TC:35.72mg/L IC:29.99mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1371	35.72mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 8:30:22 AM

Mean Area 1371
Mean Conc. 35.72mg/L

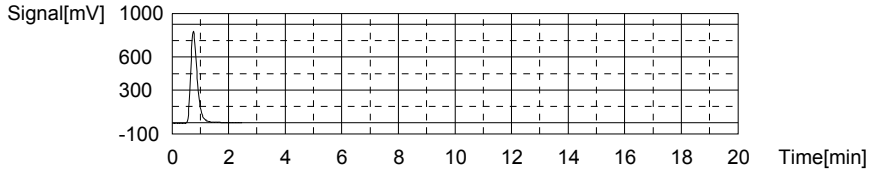

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	906.3	29.99mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 8:36:10 AM

Mean Area 906.3
Mean Conc. 29.99mg/L

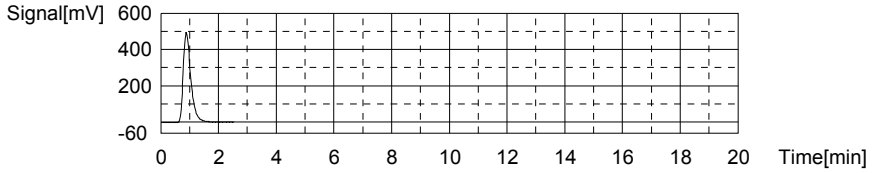

Sample

Sample Name: L15020971-14 (3)
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.701mg/L TC:18.06mg/L IC:16.35mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	695.0	18.06mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 8:43:39 AM

Mean Area 695.0
Mean Conc. 18.06mg/L

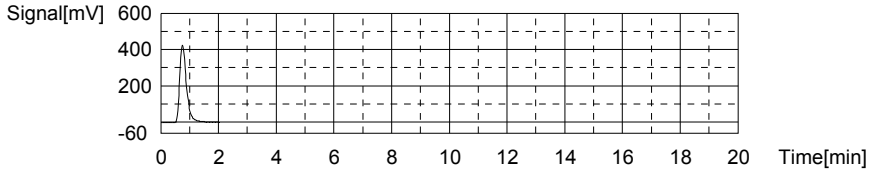

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	497.9	16.35mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 8:48:53 AM

Mean Area 497.9
Mean Conc. 16.35mg/L

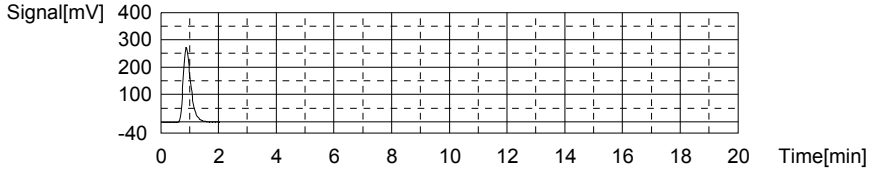

Sample

Sample Name: L15021053-01 (3)
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.650mg/L TC:35.25mg/L IC:31.60mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1353	35.25mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 9:17:35 AM

Mean Area 1353
Mean Conc. 35.25mg/L

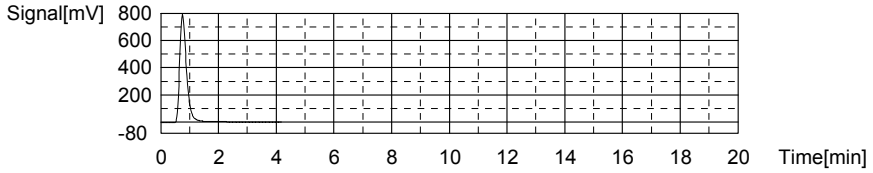

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	954.5	31.60mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 9:23:02 AM

Mean Area 954.5
Mean Conc. 31.60mg/L

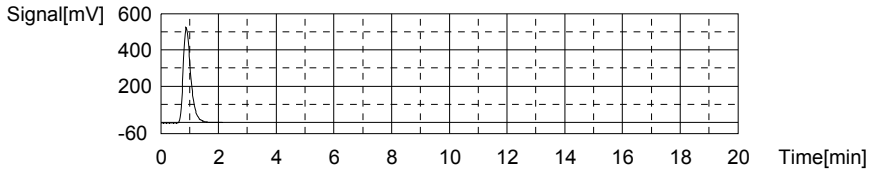

Sample

Sample Name: L15021053-09 (5)
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.010mg/L TC:38.93mg/L IC:35.92mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1494	38.93mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 9:59:17 AM

Mean Area 1494
Mean Conc. 38.93mg/L

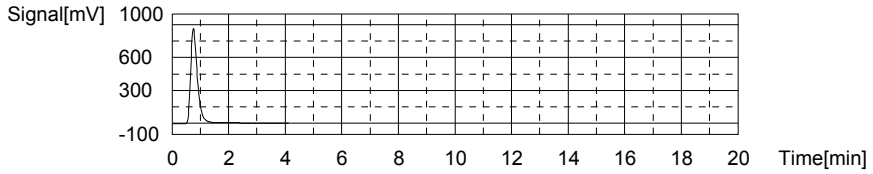

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1084	35.92mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 10:05:19 AM

Mean Area 1084
Mean Conc. 35.92mg/L

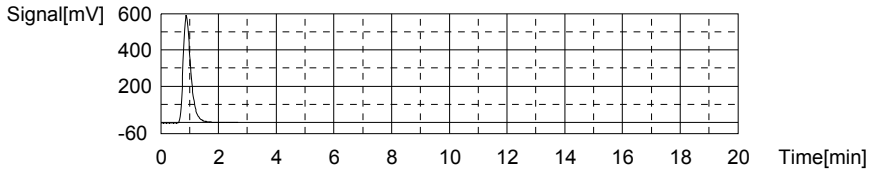

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:25.78mg/L TC:25.86mg/L IC:0.08064mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	993.8	25.86mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 10:14:05 AM

Mean Area 993.8
Mean Conc. 25.86mg/L

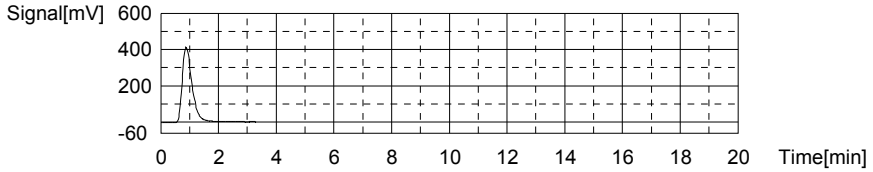

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.44	0.08064mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 10:18:37 AM

Mean Area 10.44
Mean Conc. 0.08064mg/L

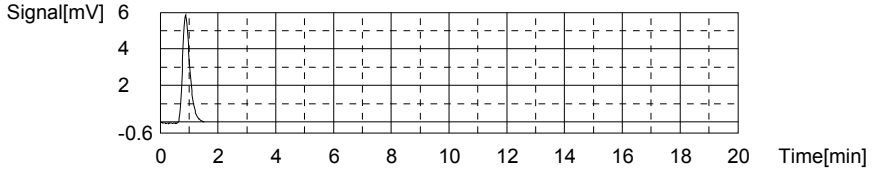

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1237mg/L TC:0.1910mg/L IC:0.06728mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.24	0.1910mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 10:23:47 AM

Mean Area 11.24
Mean Conc. 0.1910mg/L

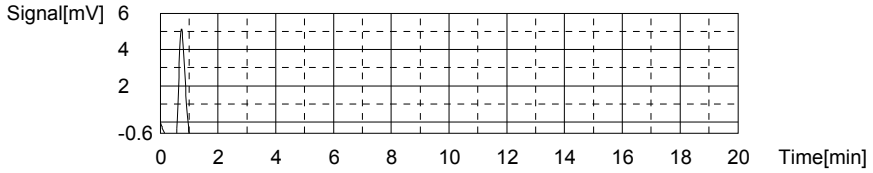

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.04	0.06728mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 10:27:46 AM

Mean Area 10.04
Mean Conc. 0.06728mg/L

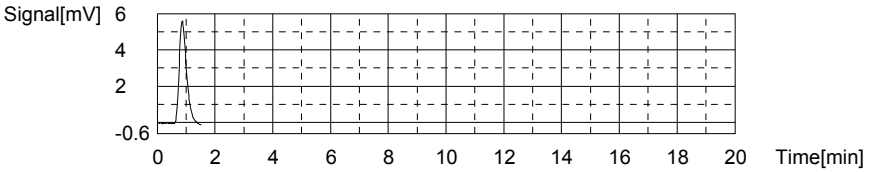

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
March 2, 2015

001 - BIO-CHEM TESTING WVDEP 220	002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental	004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES	006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES	008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND	ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE	AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED	AWE - ANDREW W. ESSIG
AZH - AFTER HOURS	BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE	BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY	CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS	CEB - CHAD E. BARNES
CJR - COURTNEY J. REXROAD	CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER	CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS	CSH - CHRIS S. HILL
DAK - DEAN A. KETELSEN	DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG	DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER	DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT	DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON	ENY - EMILY N. YOAK
EPT - ETHAN P. TIDD	ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN	JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON	JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE	JKP - JACQUELINE K. PARSONS
JLL - JOHN L. LENT	JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON	JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES	JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON	KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH	KEB - KATIE E. BARNES
KHR - KIM H. RHODES	KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON	KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS	LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF	LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA	MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON	MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING	MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY	MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON	PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE	PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB	QX - QIN XU
RAH - ROY A. HALSTEAD	REK - BOB E. KYER
RLB - BOB BUCHANAN	RM - RAYMOND MALEKE
RNP - RICK N. PETTY	RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG	SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG	SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE	TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS	VC - VICKI COLLIER
WJB - WILL J. BEASLEY	WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG	XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
March 02, 2015

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value; the analyte concentration was less than the RL/LOQ.
J,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL/MDL).
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
TIC	Library Search Compound
TNTC	Too numerous to count
TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.

Microbac Laboratories Inc.
List of Valid Qualifiers
March 02, 2015

Qualkey: DOD

TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Kathy Albertson	Project Manager: ~~Dave Wacker~~ MARK HEASTON	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): Scott Beesinger	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205			
Turn Around Time: STANDARD	pH:	Program:	
Project Name/Location: Longhorn			
Project Number: 60256135.0002GA			

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Dissolved Gases Carbon Dioxide	Nitrate/Nitrite Chloride/Sulfate	Alkalinity	Sulfide	TOC Total Phosphorous	Dissolved Iron Manganese	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
	GPW1A-021715			2/17/15	1625		✓	W	4	✓	✓											
	GPW1-021715			2/17/15	1635		✓	W	4	✓	✓											
	50SW06-021715			2/17/15	1645		✓	W	4	✓	✓											
	50WW28-021715			2/17/15	1750		✓	W	4	✓	✓											
	50WW28FD-021715			2/17/15	1750		✓	W	4	✓	✓											
	50WW24-021815			2/18/15	0825		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW24FF-021815			2/18/15	0825		✓	W	1								✓					
	50WW23-021815			2/18/15	0940		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW23FF-021815			2/18/15	0940		✓	W	1								✓					
	50WW12-021815			2/18/15	1105		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW12FF-021815			2/18/15	1105		✓	W	1								✓					
	50WW25-021815			2/18/15	1330		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW25FF-021815			2/18/15	1330		✓	W	1								✓					
	50WW18-021815			2/18/15	1415		✓	W	11	✓	✓	✓	✓	✓	✓	✓						

50 of 18

Comments: STANDARD TAT

	Date	Time	Received by: (Signature)
(Signature) Scott Beesinger	2/18/15	1525	
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)

Microbac OVD
Received: 02/19/2015 09:50
By: BRENDA GREGORY 221000065852

Brenda Gregory

*Homogenize all composite samples prior to analysis

Distribution: Whit

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Kathy Albertson	Project Manager: ~~Dave Wacker~~ MARK HEASTON	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): Scott Beesinger	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205	pH:	Program:	
Turn Around Time: STANDARD			
Project Name/Location: Longhorn			
Project Number: 60256135.0002GA			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	Dissolved Iron	Dissolved Manganese	VOC							SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
Site 50	50WW18FF-021815			2/18/15	1445		✓	W	1	✓													
	Trip Blank			2/18/15			✓	W	2			✓											

ERPIMS REQUIRED FIELDS

Comments: STANDARD TAT

1 (Signature) Scott Beesinger	Date 2/18/15	Time 1525	Received by: (Signature)	quished by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory (Signature)	arks:

Microbac OVD
Received: 02/19/2015 09:50
By: BRENDA GREGORY 221000065852
Brenda Gregory

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15020971
Account: 2551
Project: 2551.096
Samples: 16
Due Date: 02-MAR-2015

Samplenum	Container ID	Products
L15020971-01	524834	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-FEB-2015 10:50	BRG		
2	ANALYZ	V1	ORG4	19-FEB-2015 12:35	DLW	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-FEB-2015 10:50	BRG		
2	ANALYZ	V1	ORG4	19-FEB-2015 12:35	DLW	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-FEB-2015 10:50	BRG		
2	ANALYZ	V1	ORG4	19-FEB-2015 12:35	DLW	CLS	

Samplenum	Container ID	Products
L15020971-01	524835	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-FEB-2015 10:50	BRG		
2	ANALYZ	W1	SEM	19-FEB-2015 15:13	JWR	BRG	
3	STORE	SEM	A1	25-FEB-2015 09:57	BRG	JWR	

Samplenum	Container ID	Products
L15020971-02	524836	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-FEB-2015 10:50	BRG		
2	ANALYZ	V1	ORG4	19-FEB-2015 12:35	DLW	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-FEB-2015 10:50	BRG		
2	ANALYZ	V1	ORG4	19-FEB-2015 12:35	DLW	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-FEB-2015 10:50	BRG		
2	ANALYZ	V1	ORG4	19-FEB-2015 12:35	DLW	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15020971
Account: 2551
Project: 2551.096
Samples: 16
Due Date: 02-MAR-2015

Samplenum	Container ID	Products
L15020971-02	524837	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-FEB-2015 10:50	BRG		
2	ANALYZ	W1	SEM	19-FEB-2015 15:13	JWR	BRG	
3	STORE	SEM	A1	25-FEB-2015 09:57	BRG	JWR	

Samplenum	Container ID	Products
L15020971-03	524838	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-FEB-2015 10:50	BRG		
2	ANALYZ	V1	ORG4	19-FEB-2015 12:35	DLW	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-FEB-2015 10:50	BRG		
2	ANALYZ	V1	ORG4	19-FEB-2015 12:35	DLW	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-FEB-2015 10:50	BRG		
2	ANALYZ	V1	ORG4	19-FEB-2015 12:35	DLW	CLS	

Samplenum	Container ID	Products
L15020971-03	524839	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-FEB-2015 10:50	BRG		
2	ANALYZ	W1	SEM	19-FEB-2015 15:13	JWR	BRG	
3	STORE	SEM	A1	25-FEB-2015 09:57	BRG	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15020971
Account: 2551
Project: 2551.096
Samples: 16
Due Date: 02-MAR-2015

Samplenum	Container ID	Products
L15020971-04	524840	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-FEB-2015 10:50	BRG		
2	ANALYZ	V1	ORG4	19-FEB-2015 12:35	DLW	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-FEB-2015 10:50	BRG		
2	ANALYZ	V1	ORG4	19-FEB-2015 12:35	DLW	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-FEB-2015 10:50	BRG		
2	ANALYZ	V1	ORG4	19-FEB-2015 12:35	DLW	CLS	

Samplenum	Container ID	Products
L15020971-04	524841	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-FEB-2015 10:50	BRG		
2	ANALYZ	W1	SEM	19-FEB-2015 15:13	JWR	BRG	
3	STORE	SEM	A1	25-FEB-2015 09:57	BRG	JWR	

Samplenum	Container ID	Products
L15020971-05	524842	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-FEB-2015 10:50	BRG		
2	ANALYZ	V1	ORG4	19-FEB-2015 12:35	DLW	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-FEB-2015 10:50	BRG		
2	ANALYZ	V1	ORG4	19-FEB-2015 12:35	DLW	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-FEB-2015 10:50	BRG		
2	ANALYZ	V1	ORG4	19-FEB-2015 12:35	DLW	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15020971
Account: 2551
Project: 2551.096
Samples: 16
Due Date: 02-MAR-2015

Samplenum	Container ID	Products
L15020971-05	524843	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-FEB-2015 10:50	BRG		
2	ANALYZ	W1	SEM	19-FEB-2015 15:13	JWR	BRG	
3	STORE	SEM	A1	25-FEB-2015 09:57	BRG	JWR	

Samplenum	Container ID	Products
L15020971-06	524844	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-FEB-2015 10:50	BRG		
2	ANALYZ	V1	ORG4	19-FEB-2015 12:35	DLW	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-FEB-2015 10:50	BRG		
2	ANALYZ	V1	ORG4	19-FEB-2015 12:35	DLW	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-FEB-2015 10:50	BRG		
2	ANALYZ	V1	ORG4	19-FEB-2015 12:35	DLW	CLS	

Samplenum	Container ID	Products
L15020971-06	524845	RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-FEB-2015 10:50	BRG		
2	ANALYZ	V1	ORG1	19-FEB-2015 12:36	DLW	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-FEB-2015 10:50	BRG		
2	ANALYZ	V1	ORG1	19-FEB-2015 12:36	DLW	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-FEB-2015 10:50	BRG		
2	ANALYZ	V1	ORG1	19-FEB-2015 12:36	DLW	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15020971
Account: 2551
Project: 2551.096
Samples: 16
Due Date: 02-MAR-2015

Samplenum	Container ID	Products
L15020971-06	524846	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	SEM	19-FEB-2015 10:50	BRG		
2	STORE	SEM	A1	24-FEB-2015 12:08	CLS	AED	

Samplenum	Container ID	Products
L15020971-06	524847	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-FEB-2015 10:50	BRG		
2	ANALYZ	W1	WET	20-FEB-2015 12:56	TB	BRG	
3	STORE	WET	A1	23-FEB-2015 14:09	BRG	TB	

Samplenum	Container ID	Products
L15020971-06	524848	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-FEB-2015 10:50	BRG		
2	ANALYZ	W1	SEM	19-FEB-2015 15:13	JWR	BRG	
3	STORE	SEM	A1	25-FEB-2015 09:57	BRG	JWR	

Samplenum	Container ID	Products
L15020971-06	524849	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-FEB-2015 10:50	BRG		<2

Samplenum	Container ID	Products
L15020971-06	524850	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-FEB-2015 10:50	BRG		
2	ANALYZ	W1	WET	23-FEB-2015 07:59	EPT	BRG	
3	STORE	WET	A1	23-FEB-2015 15:44	BRG	EPT	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15020971
Account: 2551
Project: 2551.096
Samples: 16
Due Date: 02-MAR-2015

Samplenum	Container ID	Products
L15020971-07	524851	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-FEB-2015 10:50	BRG		
2	PREP	W1	DIG	19-FEB-2015 14:45	ERP	CLS	
3	STORE	W1	DIG	20-FEB-2015 13:45	BRG	ERP	
4	ANALYZ*	DIG	METALS	23-FEB-2015 09:03	KHR	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L15020971-08	524852	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-FEB-2015 10:50	BRG		
2	ANALYZ	V1	ORG4	19-FEB-2015 12:35	DLW	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-FEB-2015 10:50	BRG		
2	ANALYZ	V1	ORG4	19-FEB-2015 12:35	DLW	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-FEB-2015 10:50	BRG		
2	ANALYZ	V1	ORG4	19-FEB-2015 12:35	DLW	CLS	

Samplenum	Container ID	Products
L15020971-08	524853	RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-FEB-2015 10:50	BRG		
2	ANALYZ	V1	ORG1	19-FEB-2015 12:36	DLW	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-FEB-2015 10:50	BRG		
2	ANALYZ	V1	ORG1	19-FEB-2015 12:36	DLW	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-FEB-2015 10:50	BRG		
2	ANALYZ	V1	ORG1	19-FEB-2015 12:36	DLW	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15020971
Account: 2551
Project: 2551.096
Samples: 16
Due Date: 02-MAR-2015

Samplenum	Container ID	Products
L15020971-08	524854	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	SEM	19-FEB-2015 10:50	BRG		
2	STORE	SEM	A1	24-FEB-2015 12:08	CLS	AED	

Samplenum	Container ID	Products
L15020971-08	524855	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-FEB-2015 10:50	BRG		
2	ANALYZ	W1	WET	20-FEB-2015 12:56	TB	BRG	
3	STORE	WET	A1	23-FEB-2015 14:09	BRG	TB	

Samplenum	Container ID	Products
L15020971-08	524856	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-FEB-2015 10:50	BRG		
2	ANALYZ	W1	SEM	19-FEB-2015 15:13	JWR	BRG	
3	STORE	SEM	A1	25-FEB-2015 09:57	BRG	JWR	

Samplenum	Container ID	Products
L15020971-08	524857	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-FEB-2015 10:50	BRG		<2

Samplenum	Container ID	Products
L15020971-08	524858	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-FEB-2015 10:50	BRG		
2	ANALYZ	W1	WET	23-FEB-2015 07:59	EPT	BRG	
3	STORE	WET	A1	23-FEB-2015 15:44	BRG	EPT	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15020971
Account: 2551
Project: 2551.096
Samples: 16
Due Date: 02-MAR-2015

Samplenum	Container ID	Products
L15020971-09	524859	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-FEB-2015 10:50	BRG		
2	PREP	W1	DIG	19-FEB-2015 14:45	ERP	CLS	
3	STORE	W1	DIG	20-FEB-2015 13:45	BRG	ERP	
4	ANALYZ*	DIG	METALS	23-FEB-2015 09:03	KHR	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L15020971-10	524860	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		19-FEB-2015 10:50	BRG		

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-FEB-2015 10:50	BRG		
2	ANALYZ	V1	ORG4	19-FEB-2015 12:35	DLW	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-FEB-2015 10:50	BRG		
2	ANALYZ	V1	ORG4	19-FEB-2015 12:35	DLW	CLS	

Samplenum	Container ID	Products
L15020971-10	524861	RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-FEB-2015 10:50	BRG		
2	ANALYZ	V1	ORG1	19-FEB-2015 12:37	DLW	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-FEB-2015 10:50	BRG		
2	ANALYZ	V1	ORG1	19-FEB-2015 12:36	DLW	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-FEB-2015 10:50	BRG		
2	ANALYZ	V1	ORG1	19-FEB-2015 12:36	DLW	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15020971
Account: 2551
Project: 2551.096
Samples: 16
Due Date: 02-MAR-2015

Samplenum	Container ID	Products
L15020971-10	524862	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	SEM	19-FEB-2015 10:50	BRG		
2	STORE	SEM	A1	24-FEB-2015 12:08	CLS	AED	

Samplenum	Container ID	Products
L15020971-10	524863	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-FEB-2015 10:50	BRG		
2	ANALYZ	W1	WET	20-FEB-2015 12:56	TB	BRG	
3	STORE	WET	A1	23-FEB-2015 14:08	BRG	TB	

Samplenum	Container ID	Products
L15020971-10	524864	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-FEB-2015 10:50	BRG		
2	ANALYZ	W1	SEM	19-FEB-2015 15:13	JWR	BRG	
3	STORE	SEM	A1	25-FEB-2015 09:57	BRG	JWR	

Samplenum	Container ID	Products
L15020971-10	524865	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-FEB-2015 10:50	BRG		<2

Samplenum	Container ID	Products
L15020971-10	524866	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-FEB-2015 10:50	BRG		
2	ANALYZ	W1	WET	23-FEB-2015 07:59	EPT	BRG	
3	STORE	WET	A1	23-FEB-2015 15:44	BRG	EPT	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15020971
Account: 2551
Project: 2551.096
Samples: 16
Due Date: 02-MAR-2015

Samplenum	Container ID	Products
L15020971-11	524867	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-FEB-2015 10:50	BRG		
2	PREP	W1	DIG	19-FEB-2015 14:45	ERP	CLS	
3	STORE	W1	DIG	20-FEB-2015 13:45	BRG	ERP	
4	ANALYZ*	DIG	METALS	23-FEB-2015 09:03	KHR	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L15020971-12	524868	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-FEB-2015 10:50	BRG		
2	ANALYZ	V1	ORG4	19-FEB-2015 12:35	DLW	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-FEB-2015 10:50	BRG		
2	ANALYZ	V1	ORG4	19-FEB-2015 12:35	DLW	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-FEB-2015 10:50	BRG		
2	ANALYZ	V1	ORG4	19-FEB-2015 12:35	DLW	CLS	

Samplenum	Container ID	Products
L15020971-12	524869	RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-FEB-2015 10:50	BRG		
2	ANALYZ	V1	ORG1	19-FEB-2015 12:37	DLW	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-FEB-2015 10:50	BRG		
2	ANALYZ	V1	ORG1	19-FEB-2015 12:37	DLW	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-FEB-2015 10:50	BRG		
2	ANALYZ	V1	ORG1	19-FEB-2015 12:37	DLW	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15020971
Account: 2551
Project: 2551.096
Samples: 16
Due Date: 02-MAR-2015

Samplenum	Container ID	Products
L15020971-12	524870	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	SEM	19-FEB-2015 10:50	BRG		
2	STORE	SEM	A1	24-FEB-2015 12:08	CLS	AED	

Samplenum	Container ID	Products
L15020971-12	524871	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-FEB-2015 10:50	BRG		
2	ANALYZ	W1	WET	20-FEB-2015 12:56	TB	BRG	
3	STORE	WET	A1	23-FEB-2015 14:09	BRG	TB	

Samplenum	Container ID	Products
L15020971-12	524872	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-FEB-2015 10:50	BRG		
2	ANALYZ	W1	SEM	19-FEB-2015 15:13	JWR	BRG	
3	STORE	SEM	A1	25-FEB-2015 09:57	BRG	JWR	

Samplenum	Container ID	Products
L15020971-12	524873	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-FEB-2015 10:50	BRG		<2

Samplenum	Container ID	Products
L15020971-12	524874	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-FEB-2015 10:50	BRG		
2	ANALYZ	W1	WET	23-FEB-2015 07:59	EPT	BRG	
3	STORE	WET	A1	23-FEB-2015 15:44	BRG	EPT	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15020971
Account: 2551
Project: 2551.096
Samples: 16
Due Date: 02-MAR-2015

Samplenum	Container ID	Products
L15020971-13	524875	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-FEB-2015 10:50	BRG		
2	PREP	W1	DIG	19-FEB-2015 14:45	ERP	CLS	
3	STORE	W1	DIG	20-FEB-2015 13:45	BRG	ERP	
4	ANALYZ*	DIG	METALS	23-FEB-2015 09:03	KHR	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L15020971-14	524876	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-FEB-2015 10:50	BRG		
2	ANALYZ	V1	ORG4	19-FEB-2015 12:35	DLW	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-FEB-2015 10:50	BRG		
2	ANALYZ	V1	ORG4	19-FEB-2015 12:35	DLW	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		19-FEB-2015 10:50	BRG		

Samplenum	Container ID	Products
L15020971-14	524877	RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-FEB-2015 10:50	BRG		
2	ANALYZ	V1	ORG1	19-FEB-2015 12:37	DLW	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-FEB-2015 10:50	BRG		
2	ANALYZ	V1	ORG1	19-FEB-2015 12:37	DLW	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-FEB-2015 10:50	BRG		
2	ANALYZ	V1	ORG1	19-FEB-2015 12:37	DLW	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15020971
Account: 2551
Project: 2551.096
Samples: 16
Due Date: 02-MAR-2015

Samplenum	Container ID	Products
L15020971-14	524878	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	SEM	19-FEB-2015 10:50	BRG		
2	STORE	SEM	A1	24-FEB-2015 12:08	CLS	AED	

Samplenum	Container ID	Products
L15020971-14	524879	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-FEB-2015 10:50	BRG		
2	ANALYZ	W1	WET	20-FEB-2015 12:56	TB	BRG	
3	STORE	WET	A1	23-FEB-2015 14:09	BRG	TB	

Samplenum	Container ID	Products
L15020971-14	524880	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-FEB-2015 10:50	BRG		
2	ANALYZ	W1	SEM	19-FEB-2015 15:13	JWR	BRG	
3	STORE	SEM	A1	25-FEB-2015 09:57	BRG	JWR	

Samplenum	Container ID	Products
L15020971-14	524881	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-FEB-2015 10:50	BRG		<2

Samplenum	Container ID	Products
L15020971-14	524882	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-FEB-2015 10:50	BRG		
2	ANALYZ	W1	WET	23-FEB-2015 07:59	EPT	BRG	
3	STORE	WET	A1	23-FEB-2015 15:44	BRG	EPT	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15020971
Account: 2551
Project: 2551.096
Samples: 16
Due Date: 02-MAR-2015

Samplenum	Container ID	Products
L15020971-15	524883	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-FEB-2015 10:50	BRG		
2	PREP	W1	DIG	19-FEB-2015 14:45	ERP	CLS	
3	STORE	W1	DIG	20-FEB-2015 13:45	BRG	ERP	
4	ANALYZ*	DIG	METALS	23-FEB-2015 09:03	KHR	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L15020971-16	524884	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-FEB-2015 10:50	BRG		
2	ANALYZ	V1	ORG4	19-FEB-2015 12:35	DLW	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-FEB-2015 10:50	BRG		
2	ANALYZ	V1	ORG4	19-FEB-2015 12:35	DLW	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - May 22, 2014

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVL NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Thiodiglycol (TDG-LCMS)
Acetate (HPLC-UV)
Formate (HPLC-UV)
Acetaldehyde (HPLC-UV)
Propionaldehyde (HPLC-UV)
Fluoroborate (ISE)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVL MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam

Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL MSV0I/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVL RSKOI/GC-FID

Isobutane
n-Butane
Propane
Propylene
Propyne

OVL HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

SOLID AND HAZARDOUS CHEMICALS

OVL MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVL MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L15021036

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on March 02 2015

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L15021036
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00112411	I	1.0		J2317161209	X
0013144	I	2.0		J2317161227	X
0019280	I	3.0		J2317161183	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L15021036
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
LHSMW54-021815	L15021036-01	02/18/2015 16:35	02/20/2015 10:18
47WW38-021815	L15021036-02	02/18/2015 17:45	02/20/2015 10:18
TRIP BLANK	L15021036-03	02/18/2015 00:01	02/20/2015 10:18

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L15021036
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.0 Summary Data

1.1 Narratives

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021036
Project Name:		**Method:**	8260
Prep Batch Number(s):	512986	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-02-24 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden	Franci Bolden	Analyst I	2015-02-24 19:10:53

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021036
Project Name:		**Method:**	8260
Prep Batch Number(s):	512986	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-02-24 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021036
Project Name:		**Method:**	8260
Prep Batch Number(s):	512986	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-02-24 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021036
Project Name:		**Method:**	8260
Prep Batch Number(s):	512986	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-02-24 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021036
Project Name:		**Method:**	8260
Prep Batch Number(s):	512986	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-02-24 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021036
Project Name:		**Method:**	8260
Prep Batch Number(s):	512986	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-02-24 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) Dichlorodifluoromethane exceeded the UCL in the CCV.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021036
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG513403	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-03-02 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2015-03-02 14:38:50

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021036
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG513403	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-03-02 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021036
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG513403	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-03-02 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021036
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG513403	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-03-02 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021036
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG513403	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-03-02 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021036
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG513403	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-03-02 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L15021036
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021036-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	LHSMW54-021815	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512986	**Analyst:**	TMB	**Run Date:**	02/20/2015 22:02
Collect Date:	02/18/2015 16:35	**Dilution:**	1	**File ID:**	8M403147
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.316	J	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15021036
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	93.8		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.8	85	115	
1,2-Dichloroethane-d4	91.3	70	120	
Toluene-d8	99.5	85	120	
4-Bromofluorobenzene	98.5	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15021036
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021036
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021036-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	LHSMW54-021815	**Prep Method:**	6850	**Prep Date:**	02/25/2015 12:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG513403	**Analyst:**	JWR	**Run Date:**	02/25/2015 18:15
Collect Date:	02/18/2015 16:35	**Dilution:**	1	**File ID:**	1LM.LM29059
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.271	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15021036
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021036-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	47WW38-021815	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512986	**Analyst:**	TMB	**Run Date:**	02/20/2015 20:35
Collect Date:	02/18/2015 17:45	**Dilution:**	1	**File ID:**	8M403144
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15021036
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.1	85	115	
1,2-Dichloroethane-d4	83.0	70	120	
Toluene-d8	99.7	85	120	
4-Bromofluorobenzene	100	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15021036
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021036
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021036-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	47WW38-021815	**Prep Method:**	6850	**Prep Date:**	02/25/2015 12:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG513403	**Analyst:**	JWR	**Run Date:**	02/25/2015 18:34
Collect Date:	02/18/2015 17:45	**Dilution:**	500	**File ID:**	1LM.LM29060
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1500		200	100	50.0

Certificate of Analysis

Sample #:	L15021036-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512986	**Analyst:**	TMB	**Run Date:**	02/20/2015 19:08
Collect Date:	02/18/2015 00:01	**Dilution:**	1	**File ID:**	8M403141
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15021036
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L15021036
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.6	85	115	
1,2-Dichloroethane-d4	87.1	70	120	
Toluene-d8	97.6	85	120	
4-Bromofluorobenzene	97.7	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021036
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L15021036
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021036-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	LHSMW54-021815	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512986	**Analyst:**	TMB	**Run Date:**	02/20/2015 22:02
Collect Date:	02/18/2015 16:35	**Dilution:**	1	**File ID:**	8M403147
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.316	J	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

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Lab Report #: L15021036
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	93.8		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.8	85	115	
1,2-Dichloroethane-d4	91.3	70	120	
Toluene-d8	99.5	85	120	
4-Bromofluorobenzene	98.5	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15021036
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021036
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021036-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	47WW38-021815	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512986	**Analyst:**	TMB	**Run Date:**	02/20/2015 20:35
Collect Date:	02/18/2015 17:45	**Dilution:**	1	**File ID:**	8M403144
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

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Lab Report #: L15021036
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.1	85	115	
1,2-Dichloroethane-d4	83.0	70	120	
Toluene-d8	99.7	85	120	
4-Bromofluorobenzene	100	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15021036
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021036
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021036-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512986	**Analyst:**	TMB	**Run Date:**	02/20/2015 19:08
Collect Date:	02/18/2015 00:01	**Dilution:**	1	**File ID:**	8M403141
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

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Lab Report #: L15021036
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.6	85	115	
1,2-Dichloroethane-d4	87.1	70	120	
Toluene-d8	97.6	85	120	
4-Bromofluorobenzene	97.7	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15021036
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021036
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 100214
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 19
Method: 624 SOP: MSV10 Rev: 12
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 16
Maintenance Log ID: 51878

Internal Standard: STD66600 Surrogate Standard: STD66600
CCV: STD66818; STD66687 LCS: STD66693; STD66677 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG494714; WG494980

Comments: File # 8m400369 and 70 were skipped and not used.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M400354	RINSE	NA	1	1		10/02/14 10:24
8M400355	WG494714-01 50ng BFB STD 8260	NA	1	1	STD66476	10/02/14 11:16
8M400356	WG494714-01 50ng BFB STD 8260	NA	1	1	STD66476	10/02/14 11:33
8M400357	WG494714-01 50ng BFB STD 8260	NA	1	1	STD66476	10/02/14 11:58
8M400358	WG494714-02 5ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 12:24
8M400359	WG494714-03 20ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 12:53
8M400360	WG494714-04 50ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 13:22
8M400361	WG494714-05 100ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 13:51
8M400362	WG494714-06 200ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 14:19
8M400363	WG494714-07 300ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 14:48
8M400364	WG494714-08 400ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 15:16
8M400365	WG494714-09 500ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 15:45
8M400366	RINSE	NA	1	1		10/02/14 16:14
8M400367	WG494714-10 100ug/L ALT SRC STD A9/F	NA	1	1	STD66677	10/02/14 16:47
8M400368	WG494979-01 50ug/L CCV STD 8260	NA	1	1	STD66687	10/02/14 17:22
8M400371	WG494980-02 20ug/L LCS STD 624	NA	2	1	STD66693	10/02/14 17:51
8M400372	WG494980-03 20ug/L LCSDUP STD 624	NA	2	1	STD66693	10/02/14 18:20
8M400373	RINSE	NA	2	1		10/02/14 18:49
8M400374	WG494980-01 VBLK1002 BLANK STD 624	NA	2	1		10/02/14 19:18
8M400375	L14100004-01 LOD 826-SPE A9/FOO	NA	1	1		10/02/14 19:47
8M400376	L14100006-01 LOQ 826-SPE A9/FOO	NA	1	1		10/02/14 20:16
8M400377	L14100004-01 LOD 826-SPE	NA	1	1		10/02/14 20:45
8M400378	L14100006-01 LOQ 826-SPE	NA	1	1		10/02/14 21:14
8M400379	L14100004-01 LOD 826-SPE	NA	1	1		10/02/14 21:42
8M400380	L14100006-01 LOQ 826-SPE	NA	1	1		10/02/14 22:12
8M400381	L14100098-10 A 624-SPE	5	2	1		10/02/14 22:40
8M400382	L14100089-02 A 624-SPE	5	2	1		10/02/14 23:09
8M400383	L14100098-04 A 624-SPE	<2	2	1		10/02/14 23:38
8M400384	L14100098-05 A 624-SPE	<2	2	1		10/03/14 00:06
8M400385	L14100098-06 A 624-SPE	<2	2	1		10/03/14 00:36
8M400386	L14100098-07 A 624-SPE	<2	2	1		10/03/14 01:06
8M400387	L14100098-08 A 624-SPE	<2	2	1		10/03/14 01:34
8M400388	L14100098-09 A 624-SPE	<2	2	1		10/03/14 02:04
8M400389	L14100110-01 A 624-SPE2	<2	2	1		10/03/14 02:32

Approved: October 03, 2014

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 100214
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 19
Method: 624 SOP: MSV10 Rev: 12
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 16
Maintenance Log ID: 51878

Internal Standard: STD66600 Surrogate Standard: STD66600
CCV: STD66818; STD66687 LCS: STD66693; STD66677 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG494714; WG494980

Comments: File # 8m400369 and 70 were skipped and not used.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M400390	L14100110-02 A 624-SPE1	<2	2	1		10/03/14 03:02
8M400391	RINSE	NA	1	1		10/03/14 03:30
8M400392	RINSE	NA	1	1		10/03/14 03:59

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 8M400355				
	Tune failed, DNR.			
3	X			
File ID: 8M400356				
	Tune failed, DNR.			
4				
File ID: 8M400357				
	Purged BFB.			
30	X	100	Over Calibration Range	TCE
File ID: 8M400385				
31	X	1	Carry-over contamination	
File ID: 8M400386				
	DNR.			
32	X	1	Carry-over contamination	
File ID: 8M400387				
	DNR.			
33	X	50	Over Calibration Range	TCE
File ID: 8M400388				
34	X	1	Carry-over contamination	
File ID: 8M400389				
	DNR.			

Approved: October 03, 2014

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 020615
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV10 Rev: 20
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 17
Maintenance Log ID: 52808

Internal Standard: STD68442 Surrogate Standard: STD68442
CCV: STD68794 LCS: STD68730 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG511287

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M402824	WG511287-01 50ng BFB STD 8260	NA	1	1	STD68443	02/06/15 13:01
8M402825	WG511287-02 50ug/L CCV STD 8260	NA	1	1	STD68794	02/06/15 13:25
8M402826	WG511287-02 50ug/L CCV STD 8260	NA	1	1	STD68794	02/06/15 13:56
8M402827	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD68288	02/06/15 14:28
8M402828	RINSE	NA	1	1		02/06/15 15:02
8M402829	WG511287-01 50ng BFB STD 8260	NA	1	1	STD68443	02/06/15 15:35
8M402830	WG511287-02 0.3ug/L STD 8260	NA	1	1	STD68794	02/06/15 15:59
8M402831	WG511287-03 0.4ug/L STD 8260	NA	1	1	STD68794	02/06/15 16:27
8M402832	WG511287-04 1ug/L STD 8260	NA	1	1	STD68794	02/06/15 16:57
8M402833	WG511287-05 2ug/L STD 8260	NA	1	1	STD68794	02/06/15 17:26
8M402834	WG511287-06 5ug/L STD 8260	NA	1	1	STD68794	02/06/15 17:54
8M402835	WG511287-07 20ug/L STD 8260	NA	1	1	STD68794	02/06/15 18:23
8M402836	WG511287-08 50ug/L STD 8260	NA	1	1	STD68794	02/06/15 18:53
8M402837	WG511287-09 100ug/L STD 8260	NA	1	1	STD68794	02/06/15 19:22
8M402838	WG511287-10 200ug/L STD 8260	NA	1	1	STD68794	02/06/15 19:51
8M402839	WG511287-11 300ug/L STD 8260	NA	1	1	STD68794	02/06/15 20:20
8M402840	RINSE	NA	1	1		02/06/15 20:48
8M402841	RINSE	NA	1	1		02/06/15 21:18
8M402842	WG511287-12 50ug/L ALT SRC STD 8260	NA	1	1	STD68730	02/06/15 21:48
8M402843	RINSE	NA	1	1		02/06/15 22:17
8M402844	RINSE	NA	1	1		02/06/15 22:47
8M402845	RINSE	NA	1	1		02/06/15 23:16

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 8M402825				
	Vc was high, DNR.			
3	X			
File ID: 8M402826				
	Vc was high, DNR. Running a curve. DNR.			
4				
File ID: 8M402827				
	Not needed, DNR.			

Approved: February 10, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 022015
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 20
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 17
Maintenance Log ID: 52863

Internal Standard: STD68997 Surrogate Standard: STD68997
CCV: STD68957 LCS: STD68939 MS/MSD: STD68939

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG512986

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M403127	WG512985-01 50ng BFB STD 8260	NA	1	1	STD68998	02/20/15 12:26
8M403128	WG512985-02 50ug/L CCV STD 8260	NA	1	1	STD68957	02/20/15 12:50
8M403129	WG512985-02 50ug/L CCV STD 8260	NA	1	1	STD68957	02/20/15 13:19
8M403130	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD68819	02/20/15 13:48
8M403131	WG512986-01 VBLK0220 BLANK STD 826	NA	1	1		02/20/15 14:16
8M403132	L15020300-01 A 826-REF-BLK	<2	1	1		02/20/15 14:45
8M403133	L15020300-02 A 826-REF-BLK	<2	1	1		02/20/15 15:14
8M403134	L15020300-03 A 826-REF-BLK	<2	1	1		02/20/15 15:43
8M403135	L15020300-04 A 826-REF-BLK	<2	1	1		02/20/15 16:13
8M403136	L15020300-05 A 826-REF-BLK	<2	1	1		02/20/15 16:42
8M403137	WG512986-02 20ug/L LCS STD 8260	NA	1	1	STD68939	02/20/15 17:11
8M403138	WG512986-03 20ug/L LCSDUP STD 8260	NA	1	1	STD68939	02/20/15 17:40
8M403139	L15020906-01 A 10X 826-TC-SPE	NA	1	10		02/20/15 18:09
8M403140	L15020929-01 A 10X 826-TC	NA	17	10		02/20/15 18:39
8M403141	L15021036-03 A TB 826-LOW	<2	1	1		02/20/15 19:08
8M403142	L15021053-13 A TB 826-LOW	<2	1	1		02/20/15 19:37
8M403143	L15021053-11 A 826-LOW	<2	1	1		02/20/15 20:06
8M403144	L15021036-02 A 826-LOW	<2	1	1		02/20/15 20:35
8M403145	L15021053-03 A 826-LOW	<2	1	1		02/20/15 21:04
8M403146	L15021053-07 A 826-LOW	<2	1	1		02/20/15 21:33
8M403147	L15021036-01 A 826-LOW	<2	1	1		02/20/15 22:02
8M403148	L15021053-01 A 100X 826-LOW	<2	1	100		02/20/15 22:30
8M403149	L15021053-05 A 50X 826-LOW	<2	1	50		02/20/15 22:59
8M403150	L15021053-09 A 2.5X 826-LOW	<2	1	2.5		02/20/15 23:27
8M403151	WG512986-06 MS 906-01 10X 826-TC-SPE	NA	17	10	STD68939	02/20/15 23:55
8M403152	RINSE	NA	1	1		02/21/15 00:24
8M403153	WG512986-04 VBLK0220 BLANK STD 624	NA	2	1		02/21/15 00:52
8M403154	L15020928-01 A 624-SPE12	<2	2	1		02/21/15 01:21
8M403155	L15021060-01 A 624-SPE	<2	2	1		02/21/15 01:50
8M403156	L15021063-01 A 624-SPE	<2	2	1		02/21/15 02:19
8M403157	CCV	NA	1	1		02/21/15 02:48
8M403158	RINSE	NA	1	1		02/21/15 03:18
8M403159	RINSE	NA	1	1		02/21/15 03:47
8M403160	WG512824-01 FBLK 10X 826-TC-SPE	NA	17	10		02/21/15 04:16

Approved: February 23, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 022015
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 20
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 17
Maintenance Log ID: 52863

Internal Standard: STD68997 Surrogate Standard: STD68997
CCV: STD68957 LCS: STD68939 MS/MSD: STD68939

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG512986

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 8M403128				
	Ketones were low, DNR.			
4				
File ID: 8M403130				
	Not needed, DNR.			
22	X	5	Analyzed too dilute	
File ID: 8M403148				
23	X	2	Analyzed too dilute	
File ID: 8M403149				
24	X	20	Over Calibration Range	TCE
File ID: 8M403150				

Approved: February 23, 2015

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Microbac Laboratories Inc.

Data Checklist

Date: 02-OCT-2014
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 63840
Analytical Workgroups: WG494714; WG494980

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
03-OCT-2014
Tiffany Bailey

Secondary Reviewer:
03-OCT-2014

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-03-2014 13:21:54

Microbac Laboratories Inc.

Data Checklist

Date: 06-FEB-2015
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 66219
Analytical Workgroups: WG511287

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
09-FEB-2015
Tiffany Bailey

Secondary Reviewer:
10-FEB-2015

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-10-2015 10:32:48

Microbac Laboratories Inc.

Data Checklist

Date: 20-FEB-2015
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 66469
Analytical Workgroups: WG512986

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
23-FEB-2015
Tiffany Bailey

Secondary Reviewer:
23-FEB-2015

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-23-2015 16:01:16

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG512986

Login Number: L15021036

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
LHSMW54-021815	01	02/18/15					02/20/2015	2.2	14		02/20/15	2.2	14	
47WW38-021815	02	02/18/15					02/20/2015	2.1	14		02/20/15	2.1	14	
TRIP BLANK	03	02/18/15					02/20/2015	2.8	14		02/20/15	2.8	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4033979
Report generated 02/23/2015 16:24

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L15021036
Instrument Id: HPMS8
Workgroup (AAB#): WG512986

Method: 8260
CAL ID: HPMS8-06-FEB-15
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L15021036-01	1.00	01	91.3	96.8	98.5	99.5
L15021036-02	1.00	01	83.0	92.1	100	99.7
L15021036-03	1.00	01	87.1	96.6	97.7	97.6
WG512986-01	1.00	01	88.1	97.3	100	98.6
WG512986-02	1.00	01	87.9	93.9	99.4	99.1
WG512986-03	1.00	01	88.8	92.8	99.6	99.1
WG512986-04	1.00	01	83.3	93.3	91.9	111

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4033984
Report generated: 02/23/2015 16:24

METHOD BLANK SUMMARY

Login Number: L15021036
Blank File ID: 8M403131
Prep Date: 02/20/15 14:16
Analyzed Date: 02/20/15 14:16
Analyst: TMB

Work Group: WG512986
Blank Sample ID: WG512986-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG512986-02	8M403137	02/20/15 17:11	01
LCS2	WG512986-03	8M403138	02/20/15 17:40	01
TRIP BLANK	L15021036-03	8M403141	02/20/15 19:08	01
47WW38-021815	L15021036-02	8M403144	02/20/15 20:35	01
LHSMW54-021815	L15021036-01	8M403147	02/20/15 22:02	01

Report Name: BLANK_SUMMARY
PDF File ID: 4035001
Report generated 02/23/2015 16:24

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L15021036 Prep Date: 02/20/15 14:16 Sample ID: WG512986-01
Instrument ID: HPMS8 Run Date: 02/20/15 14:16 Prep Method: 5030B/5030C/503
File ID: 8M403131 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG512986 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-06-FEB-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4035002
23-FEB-2015 16:24

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15021036 Prep Date: 02/20/15 14:16 Sample ID: WG512986-01
Instrument ID: HPMS8 Run Date: 02/20/15 14:16 Prep Method: 5030B/5030C/503
File ID: 8M403131 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG512986 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-06-FEB-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	97.3	85 - 115	PASS
1,2-Dichloroethane-d4	88.1	70 - 120	PASS
Toluene-d8	98.6	85 - 120	PASS
4-Bromofluorobenzene	100	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4035002
23-FEB-2015 16:24

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15021036 | Run Date: 02/20/2015 | Sample ID: WG512986-02
Instrument ID: HPMS8 | Run Time: 17:11 | Prep Method: 5030B/5030C/503
File ID: 8M403137 | Analyst: TMB | Method: 8260B
Workgroup (AAB#): WG512986 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD68939 | Cal ID: HPMS8-06-FEB-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	18.7	93.4	40 - 140	
Benzene	20.0	20.2	101	80 - 120	
Bromobenzene	20.0	23.3	117	75 - 125	
Bromochloromethane	20.0	20.3	102	65 - 130	
Bromodichloromethane	20.0	20.1	100	75 - 120	
Bromoform	20.0	21.5	108	70 - 130	
Bromomethane	20.0	16.4	82.0	30 - 145	
2-Butanone	20.0	18.4	92.1	30 - 150	
n-Butylbenzene	20.0	20.3	102	70 - 135	
sec-Butylbenzene	20.0	20.1	100	70 - 125	
tert-Butylbenzene	20.0	19.8	99.2	70 - 130	
Carbon disulfide	20.0	16.7	83.7	35 - 160	
Carbon tetrachloride	20.0	19.8	99.2	65 - 140	
Chlorobenzene	20.0	20.2	101	80 - 120	
Chlorodibromomethane	20.0	22.1	111	60 - 135	
Chloroethane	20.0	20.3	101	60 - 135	
Chloroform	20.0	19.5	97.5	65 - 135	
Chloromethane	20.0	14.5	72.4	40 - 125	
2-Chlorotoluene	20.0	21.4	107	75 - 125	
4-Chlorotoluene	20.0	20.5	103	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	21.9	109	50 - 130	
1,2-Dibromoethane	20.0	21.4	107	80 - 120	
Dibromomethane	20.0	19.2	96.1	75 - 125	
1,2-Dichlorobenzene	20.0	20.5	103	70 - 120	
1,3-Dichlorobenzene	20.0	20.2	101	75 - 125	
1,4-Dichlorobenzene	20.0	21.3	106	75 - 125	
Dichlorodifluoromethane	20.0	10.1	50.4	30 - 155	
1,1-Dichloroethane	20.0	18.5	92.7	70 - 135	
1,2-Dichloroethane	20.0	19.5	97.3	70 - 130	
1,1-Dichloroethene	20.0	17.6	88.1	70 - 130	
cis-1,2-Dichloroethene	20.0	20.2	101	70 - 125	
trans-1,2-Dichloroethene	20.0	19.2	96.0	60 - 140	
1,2-Dichloropropane	20.0	19.9	99.4	75 - 125	
1,3-Dichloropropane	20.0	21.0	105	75 - 125	
2,2-Dichloropropane	20.0	19.6	98.0	70 - 135	
cis-1,3-Dichloropropene	20.0	21.9	109	70 - 130	
trans-1,3-Dichloropropene	20.0	21.3	106	55 - 140	
1,1-Dichloropropene	20.0	19.6	97.9	75 - 130	
Ethylbenzene	20.0	20.8	104	75 - 125	
2-Hexanone	20.0	19.8	99.0	55 - 130	
Hexachlorobutadiene	20.0	19.3	96.4	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4035003
Report generated: 02/23/2015 16:24

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15021036 Run Date: 02/20/2015 Sample ID: WG512986-02
Instrument ID: HPMS8 Run Time: 17:11 Prep Method: 5030B/5030C/503
File ID: 8M403137 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG512986 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD68939 Cal ID: HPMS8-06-FEB-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	21.3	107	75 - 125	
p-Isopropyltoluene	20.0	21.0	105	75 - 130	
4-Methyl-2-pentanone	20.0	17.9	89.7	60 - 135	
Methylene chloride	20.0	18.9	94.3	55 - 140	
Naphthalene	20.0	22.9	115	55 - 140	
n-Propylbenzene	20.0	20.6	103	70 - 130	
Styrene	20.0	23.4	117	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	21.9	110	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	21.4	107	65 - 130	
Tetrachloroethene	20.0	21.0	105	45 - 150	
Toluene	20.0	23.0	115	75 - 120	
1,2,3-Trichlorobenzene	20.0	21.6	108	55 - 140	
1,2,4-Trichlorobenzene	20.0	22.0	110	65 - 135	
1,1,1-Trichloroethane	20.0	19.9	99.4	65 - 130	
1,1,2-Trichloroethane	20.0	21.5	107	75 - 125	
Trichloroethene	20.0	21.9	109	70 - 125	
Trichlorofluoromethane	20.0	17.7	88.3	60 - 145	
1,2,3-Trichloropropane	20.0	21.4	107	75 - 125	
1,2,4-Trimethylbenzene	20.0	23.4	117	75 - 130	
1,3,5-Trimethylbenzene	20.0	24.6	123	75 - 130	
Vinyl chloride	20.0	17.4	87.2	50 - 145	
o-Xylene	20.0	20.8	104	80 - 120	
m-,p-Xylene	40.0	43.5	109	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	93.9	85 - 115	PASS
1,2-Dichloroethane-d4	87.9	70 - 120	PASS
Toluene-d8	99.1	85 - 120	PASS
4-Bromofluorobenzene	99.4	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4035003
Report generated: 02/23/2015 16:24

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15021036 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG512986 Units: ug/L
QC Key: DOD4 Lot #: STD68939

Sample ID: WG512986-02 LCS File ID: 8M403137 Run Date: 02/20/2015 17:11
Sample ID: WG512986-03 LCS2 File ID: 8M403138 Run Date: 02/20/2015 17:40

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	21.9	110	20.0	22.0	110	0.271	80 - 130	30	
1,1,1-Trichloroethane	20.0	19.9	99.4	20.0	19.8	99.2	0.143	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	21.4	107	20.0	21.4	107	0.0260	65 - 130	30	
1,1,2-Trichloroethane	20.0	21.5	107	20.0	21.5	108	0.137	75 - 125	30	
1,1-Dichloroethane	20.0	18.5	92.7	20.0	18.6	92.8	0.0811	70 - 135	30	
1,1-Dichloroethene	20.0	17.6	88.1	20.0	16.9	84.6	4.08	70 - 130	30	
1,1-Dichloropropene	20.0	19.6	97.9	20.0	19.3	96.4	1.55	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	21.6	108	20.0	22.1	110	1.88	55 - 140	30	
1,2,3-Trichloropropane	20.0	21.4	107	20.0	22.3	112	4.18	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	22.0	110	20.0	21.8	109	0.718	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	23.4	117	20.0	23.0	115	2.03	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	21.9	109	20.0	22.5	112	2.52	50 - 130	30	
1,2-Dibromoethane	20.0	21.4	107	20.0	22.3	112	4.06	80 - 120	30	
1,2-Dichlorobenzene	20.0	20.5	103	20.0	20.6	103	0.0771	70 - 120	30	
1,2-Dichloroethane	20.0	19.5	97.3	20.0	19.9	99.3	2.04	70 - 130	30	
1,2-Dichloropropane	20.0	19.9	99.4	20.0	19.8	99.0	0.492	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	24.6	123	20.0	23.3	116	5.52	75 - 130	30	
1,3-Dichlorobenzene	20.0	20.2	101	20.0	20.1	101	0.370	75 - 125	30	
1,3-Dichloropropane	20.0	21.0	105	20.0	21.5	108	2.30	75 - 125	30	
1,4-Dichlorobenzene	20.0	21.3	106	20.0	21.3	106	0.0967	75 - 125	30	
2,2-Dichloropropane	20.0	19.6	98.0	20.0	19.4	97.0	1.02	70 - 135	30	
2-Butanone	20.0	18.4	92.1	20.0	20.0	100	8.30	30 - 150	30	
2-Chlorotoluene	20.0	21.4	107	20.0	21.2	106	1.15	75 - 125	30	
2-Hexanone	20.0	19.8	99.0	20.0	21.3	106	7.18	55 - 130	30	
4-Chlorotoluene	20.0	20.5	103	20.0	20.4	102	0.786	75 - 130	30	
4-Methyl-2-pentanone	20.0	17.9	89.7	20.0	19.6	97.9	8.68	60 - 135	30	
Acetone	20.0	18.7	93.4	20.0	20.0	100	6.94	40 - 140	30	
Benzene	20.0	20.2	101	20.0	20.0	100	0.945	80 - 120	30	
Bromobenzene	20.0	23.3	117	20.0	22.6	113	3.19	75 - 125	30	
Bromochloromethane	20.0	20.3	102	20.0	20.7	104	1.88	65 - 130	30	
Bromodichloromethane	20.0	20.1	100	20.0	20.2	101	0.545	75 - 120	30	
Bromoform	20.0	21.5	108	20.0	21.9	110	1.64	70 - 130	30	
Bromomethane	20.0	16.4	82.0	20.0	16.8	84.0	2.51	30 - 145	30	
Carbon disulfide	20.0	16.7	83.7	20.0	16.8	83.9	0.212	35 - 160	30	
Carbon tetrachloride	20.0	19.8	99.2	20.0	20.1	101	1.41	65 - 140	30	
Chlorobenzene	20.0	20.2	101	20.0	20.2	101	0.0210	80 - 120	30	
Chloroethane	20.0	20.3	101	20.0	17.7	88.4	13.8	60 - 135	30	
Chloroform	20.0	19.5	97.5	20.0	19.2	96.0	1.56	65 - 135	30	
Chloromethane	20.0	14.5	72.4	20.0	14.5	72.7	0.493	40 - 125	30	
cis-1,2-Dichloroethene	20.0	20.2	101	20.0	20.0	100	0.966	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4033980
Report generated: 02/23/2015 16:24

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15021036 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG512986 Units: ug/L
QC Key: DOD4 Lot #: STD68939

Sample ID: WG512986-02 LCS File ID: 8M403137 Run Date: 02/20/2015 17:11
Sample ID: WG512986-03 LCS2 File ID: 8M403138 Run Date: 02/20/2015 17:40

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	21.9	109	20.0	22.0	110	0.605	70 - 130	30	
Chlorodibromomethane	20.0	22.1	111	20.0	22.8	114	2.86	60 - 135	30	
Dibromomethane	20.0	19.2	96.1	20.0	19.7	98.3	2.25	75 - 125	30	
Dichlorodifluoromethane	20.0	10.1	50.4	20.0	9.88	49.4	2.06	30 - 155	30	
Ethylbenzene	20.0	20.8	104	20.0	20.7	104	0.399	75 - 125	30	
Hexachlorobutadiene	20.0	19.3	96.4	20.0	19.4	97.0	0.581	50 - 140	30	
Isopropylbenzene	20.0	21.3	107	20.0	21.2	106	0.789	75 - 125	30	
m-,p-Xylene	40.0	43.5	109	40.0	42.5	106	2.12	75 - 130	30	
Methylene chloride	20.0	18.9	94.3	20.0	18.8	93.8	0.580	55 - 140	30	
n-Butylbenzene	20.0	20.3	102	20.0	19.9	99.7	2.05	70 - 135	30	
n-Propylbenzene	20.0	20.6	103	20.0	20.4	102	0.824	70 - 130	30	
Naphthalene	20.0	22.9	115	20.0	23.1	116	0.873	55 - 140	30	
o-Xylene	20.0	20.8	104	20.0	20.7	104	0.434	80 - 120	30	
p-Isopropyltoluene	20.0	21.0	105	20.0	20.8	104	0.835	75 - 130	30	
sec-Butylbenzene	20.0	20.1	100	20.0	20.0	100	0.320	70 - 125	30	
Styrene	20.0	23.4	117	20.0	23.1	115	1.55	65 - 135	30	
tert-Butylbenzene	20.0	19.8	99.2	20.0	20.2	101	1.97	70 - 130	30	
Tetrachloroethene	20.0	21.0	105	20.0	20.7	104	1.41	45 - 150	30	
Toluene	20.0	23.0	115	20.0	21.9	110	4.81	75 - 120	30	
trans-1,2-Dichloroethene	20.0	19.2	96.0	20.0	18.8	94.2	1.94	60 - 140	30	
trans-1,3-Dichloropropene	20.0	21.3	106	20.0	20.7	104	2.65	55 - 140	30	
Trichloroethene	20.0	21.9	109	20.0	21.8	109	0.0904	70 - 125	30	
Trichlorofluoromethane	20.0	17.7	88.3	20.0	17.3	86.7	1.83	60 - 145	30	
Vinyl chloride	20.0	17.4	87.2	20.0	16.8	84.2	3.42	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	87.9	88.8	70 - 120	PASS
Dibromofluoromethane	93.9	92.8	85 - 115	PASS
4-Bromofluorobenzene	99.4	99.6	75 - 120	PASS
Toluene-d8	99.1	99.1	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4033980
Report generated: 02/23/2015 16:24

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15021036
Instrument: HPMS8
Analyst: TMB
Workgroup: WG494714

Tune ID: WG494714-01
Run Date: 10/02/2014
Run Time: 11:58
File ID: 8M400357
Cal ID: HPMS8 - 02-OCT-14

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.7	5158	PASS
75.0	95.0	30.0	60.0	51.7	12312	PASS
95.0	95.0	100	100	100	23818	PASS
96.0	95.0	5.00	9.00	7.56	1800	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	69.7	16590	PASS
175	174	5.00	9.00	7.78	1290	PASS
176	174	95.0	101	97.3	16145	PASS
177	176	5.00	9.00	6.34	1023	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG494714-02	STD	01	10/02/2014 12:24	
WG494714-03	STD	01	10/02/2014 12:53	
WG494714-04	STD	01	10/02/2014 13:22	
WG494714-05	STD	01	10/02/2014 13:51	
WG494714-06	STD	01	10/02/2014 14:19	
WG494714-07	STD	01	10/02/2014 14:48	
WG494714-08	STD	01	10/02/2014 15:16	
WG494714-09	STD	01	10/02/2014 15:45	
WG494714-10	SSCV	01	10/02/2014 16:47	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4033982
Report generated 02/23/2015 16:24

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15021036
Instrument: HPMS8
Analyst: TMB
Workgroup: WG511287

Tune ID: WG511287-01
Run Date: 02/06/2015
Run Time: 15:35
File ID: 8M402829
Cal ID: HPMS8 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.1	6438	PASS
75.0	95.0	30.0	60.0	49.7	15924	PASS
95.0	95.0	100	100	100	32031	PASS
96.0	95.0	5.00	9.00	5.78	1851	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	86.9	27829	PASS
175	174	5.00	9.00	6.67	1855	PASS
176	174	95.0	101	95.9	26698	PASS
177	176	5.00	9.00	7.23	1931	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG511287-02	STD	01	02/06/2015 15:59	
WG511287-03	STD	01	02/06/2015 16:27	
WG511287-04	STD	01	02/06/2015 16:57	
WG511287-05	STD	01	02/06/2015 17:26	
WG511287-06	STD	01	02/06/2015 17:54	
WG511287-07	STD	01	02/06/2015 18:23	
WG511287-08	STD-CCV	01	02/06/2015 18:53	
WG511287-09	STD	01	02/06/2015 19:22	
WG511287-10	STD	01	02/06/2015 19:51	
WG511287-11	STD	01	02/06/2015 20:20	
WG511287-12	SSCV	01	02/06/2015 21:48	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4033982
Report generated 02/23/2015 16:24

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15021036
Instrument: HPMS8
Analyst: TMB
Workgroup: WG512985

Tune ID: WG512985-01
Run Date: 02/20/2015
Run Time: 12:26
File ID: 8M403127
Cal ID: HPMS8 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.3	6857	PASS
75.0	95.0	30.0	60.0	51.3	16484	PASS
95.0	95.0	100	100	100	32122	PASS
96.0	95.0	5.00	9.00	6.63	2131	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	76.3	24521	PASS
175	174	5.00	9.00	7.33	1798	PASS
176	174	95.0	101	99.1	24301	PASS
177	176	5.00	9.00	6.69	1625	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG512985-02	CCV	01	02/20/2015 13:19	
WG512986-01	BLANK	01	02/20/2015 14:16	
WG512986-02	LCS	01	02/20/2015 17:11	
WG512986-03	LCS2	01	02/20/2015 17:40	
L15021036-03	TRIP BLANK	01	02/20/2015 19:08	
L15021036-02	47WW38-021815	01	02/20/2015 20:35	
L15021036-01	LHSMW54-021815	01	02/20/2015 22:02	
WG512986-04	BLANK2	01	02/21/2015 00:52	*

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4033982
Report generated 02/23/2015 16:24

Calibration Table Report
Method: A9FOOWTR.M
Title: A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Calibration: Fri Oct 03 12:32:07 2014
Curve: WG494714
Calibration Files

	Compound	5 8M400358.D	20 8M400359.D	50 8M400360.D	100 8M400361.D	200 8M400362.D	300 8M400363.D	400 8M400364.D	500 8M400365.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD											
T	Acetonitrile	0.015	0.015	0.015	0.016	0.017	0.016	0.015	0.016	0.016	4.015		
T	3-Chloro-1-propene	0.416	0.403	0.416	0.438	0.434	0.423	0.407	0.394	0.416	3.619		
T	2-Chloro-1,3-butadiene	0.467	0.479	0.496	0.520	0.522	0.508	0.485	0.462	0.493	4.640		
T	Ethyl Acetate	0.104	0.115	0.123	0.133	0.135	0.133	0.126	0.130	0.125	8.569		
T	Methacrylonitrile	0.062	0.065	0.072	0.077	0.080	0.080	0.077	0.081	0.074	9.397		
T	Isobutyl Alcohol			0.004	0.005	0.005	0.005	0.005	0.005	0.005	9.693		
T	1-Butanol			0.002	0.002	0.003	0.003	0.003	0.003	0.003	21.690	0.995	
T	Methyl methacrylate	0.115	0.123	0.137	0.147	0.154	0.151	0.145	0.150	0.140	10.193		
T	2-Nitropropane	0.032	0.035	0.039	0.043	0.047	0.046	0.046	0.048	0.042	14.057		
I	Chlorobenzene-d5	ISTD											
I	1,4-Dichlorobenzene-d4	ISTD											
T	Cyclohexanone			0.039	0.043	0.037	0.043	0.036	0.038	0.039	7.787		

Fri Oct 03 12:35:36 2014

Calibration Table Report
Method: 8260WTR.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Calibration: Mon Feb 09 12:21:39 2015
Curve: WG511287
Calibration Files

	Compound	0.3 8M402830.D	0.4 8M402831.D	1 8M402832.D	2 8M402833.D	5 8M402834.D	20 8M402835.D	50 8M402836.D	100 8M402837.D	200 8M402838.D	300 8M402839.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.383	0.374	0.385	0.416	0.446	0.426	0.409	0.365	0.401	7.007		
P	Chloromethane			0.397	0.365	0.350	0.346	0.351	0.335	0.320	0.307	0.346	7.946		
C	Vinyl Chloride		0.385	0.349	0.335	0.350	0.348	0.357	0.337	0.321	0.286	0.341	7.935		
T	1,3-Butadiene				0.267	0.299	0.289	0.290	0.257	0.219	0.185	0.258	16.257		1.000
T	Bromomethane			0.084	0.089	0.099	0.120	0.136	0.157	0.173	0.193	0.131	30.782		1.001
T	Chloroethane			0.207	0.207	0.211	0.214	0.219	0.212	0.212	0.204	0.211	2.293		
T	Trichlorofluoromethane		0.529	0.439	0.456	0.485	0.473	0.487	0.477	0.471	0.439	0.473	5.837		
T	Diethyl ether			0.170	0.177	0.174	0.179	0.174	0.172		0.163	0.173	2.960		
T	Isoprene					0.356	0.369	0.387	0.377	0.370	0.341	0.366	4.426		
T	Acrolein				0.022	0.018	0.020	0.019	0.020		0.020	0.020	6.106		
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.280	0.255	0.273	0.265	0.273	0.267	0.270	0.253	0.267	3.442		
T	Acetone					0.044	0.039	0.040	0.033	0.037	0.034	0.038	10.920		
C	1,1-Dichloroethene		0.466	0.428	0.417	0.432	0.428	0.442	0.432	0.423	0.398	0.430	4.289		
T	Tert-Butyl Alcohol				0.008	0.008	0.008	0.008	0.008		0.008	0.008	2.347		
T	Dimethyl Sulfide				0.268	0.276	0.293	0.298	0.294	0.294	0.282	0.286	3.896		
T	Iodomethane						0.047	0.116	0.154	0.184	0.187	0.138	42.077	0.998	
T	Methyl acetate				0.163	0.160	0.160	0.155	0.156	0.159	0.150	0.158	2.718		
T	Methylene Chloride			0.279	0.286	0.273	0.268	0.268	0.263	0.260	0.252	0.269	3.917		
T	Carbon Disulfide			0.958	0.918	0.921	0.926	0.925	0.886	0.823	0.740	0.887	8.060		
T	Acrylonitrile			0.049	0.056	0.051	0.056	0.058	0.056		0.061	0.055	7.447		
T	Methyl Tert Butyl Ether			0.412	0.423	0.464	0.487	0.492	0.494	0.501	0.464	0.467	7.191		
T	trans-1,2-Dichloroethene		0.466	0.403	0.414	0.407	0.415	0.422	0.414	0.405	0.379	0.414	5.540		
T	n-Hexane					0.367	0.353	0.380	0.379	0.372	0.328	0.363	5.440		
T	Diisopropyl ether			0.839	0.898	0.889	0.903	0.889	0.836		0.748	0.857	6.457		
T	Vinyl Acetate					0.116	0.121	0.121	0.119	0.120	0.113	0.118	2.570		
P	1,1-Dichloroethane		0.534	0.541	0.535	0.537	0.521	0.539	0.513	0.496	0.465	0.520	4.859		
T	Ethyl-Tert-Butyl ether			0.650	0.698	0.697	0.723	0.711	0.691		0.641	0.687	4.450		
T	2-Butanone					0.052	0.057	0.056	0.057	0.060	0.057	0.056	4.364		
T	Propionitrile				0.019	0.018	0.019	0.019	0.018		0.018	0.019	2.425		
T	2,2-Dichloropropane		0.427	0.363	0.392	0.366	0.368	0.390	0.387	0.387	0.374	0.384	5.070		
T	cis-1,2-Dichloroethene		0.307	0.277	0.285	0.291	0.287	0.290	0.284	0.282	0.270	0.286	3.583		
C	Chloroform	0.537	0.535	0.484	0.502	0.496	0.496	0.502	0.486	0.468	0.435	0.494	6.004		
T	1-Bromopropane			0.037	0.047	0.049	0.055	0.057	0.056	0.057	0.055	0.052	13.194		
T	Bromochloromethane		0.118	0.132	0.149	0.149	0.150	0.151	0.149	0.148	0.143	0.143	7.805		
T	Tetrahydrofuran			0.040	0.039	0.039	0.040	0.039	0.040		0.038	0.039	2.502		
S	Dibromofluoromethane			0.255	0.273	0.277	0.267	0.264	0.260	0.257	0.253	0.263	3.274		
T	1,1,1-Trichloroethane		0.430	0.421	0.420	0.421	0.439	0.447	0.443	0.438	0.416	0.430	2.688		
T	Cyclohexane			0.404	0.456	0.470	0.471	0.498	0.488	0.484	0.435	0.463	6.660		
T	1,1-Dichloropropene			0.339	0.342	0.371	0.385	0.397	0.393	0.385	0.359	0.372	6.126		
T	Tert-Amyl-Methyl ether			0.475	0.528	0.518	0.540	0.534	0.526		0.499	0.517	4.418		
T	Carbon Tetrachloride		0.352	0.338	0.354	0.369	0.373	0.389	0.393	0.385	0.37	0.369	5.02675		
S	1,2-Dichloroethane-d4			0.277	0.306	0.293	0.279	0.27	0.265	0.265	0.251	0.2758	6.301		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.349	0.305	0.321	0.321	0.335	0.34	0.332	0.327	0.307	0.3264	4.44766		
T	Benzene	1.133	1.092	1.007	1.037	1.092	1.079	1.077	1.017	0.887	0.744	1.0165	11.5588		
T	Trichloroethene		0.232	0.246	0.242	0.253	0.26	0.273	0.269	0.268	0.257	0.2557	5.33604		
T	Methylcyclohexane					0.403	0.406	0.435	0.438	0.432	0.387	0.4167	5.06962		
C	1,2-Dichloropropane		0.272	0.25	0.269	0.281	0.289	0.292	0.287	0.28	0.268	0.2764	4.79727		
T	Bromodichloromethane		0.33	0.314	0.36	0.352	0.36	0.371	0.363	0.358	0.337	0.3495	5.29056		
T	1,4-Dioxane				0.001	0.001	0.001	0.001	0.001		0.001	0.0011	9.34383		
T	Dibromomethane		0.123	0.132	0.13	0.132	0.131	0.133	0.131	0.134	0.127	0.1304	2.62867		
T	2-Chloroethyl Vinyl Ether				0.096	0.097	0.103	0.11	0.109	0.114	0.106	0.105	6.21087		
T	4-Methyl-2-Pentanone					0.041	0.045	0.049	0.048	0.052	0.048	0.0471	7.70157		
T	cis-1,3-Dichloropropene		0.325	0.325	0.333	0.37	0.386	0.402	0.397	0.389	0.361	0.3654	8.53122		

T	Dimethyl Disulfide					0.327	0.375	0.215	0.412	0.417	0.386	0.3555	21.3736	0.991
I	Chlorobenzene-d5	ISTD												
S	Toluene-d8			1.216	1.222	1.244	1.246	1.217	1.182	1.144	1.032	1.1877	5.99874	
C	Toluene		1.462	1.362	1.418	1.489	1.485	1.46	1.368	1.16	0.925	1.3478	13.9692	
T	Ethyl Methacrylate			0.205	0.225	0.234	0.277	0.278	0.285	0.296	0.26	0.2576	12.6359	
T	Paraldehyde											0	0	
T	trans-1,3-Dichloropropene			0.33	0.392	0.394	0.438	0.449	0.449	0.447	0.401	0.4124	10.1172	
T	1,1,2-Trichloroethane		0.177	0.201	0.22	0.212	0.232	0.227	0.223	0.226	0.208	0.214	7.90044	
T	2-Hexanone					0.046	0.054	0.056	0.058	0.062	0.055	0.0553	9.58298	
T	1,3-Dichloropropane		0.364	0.341	0.389	0.4	0.417	0.41	0.402	0.404	0.364	0.3878	6.56699	
T	Tetrachloroethene		0.277	0.264	0.278	0.293	0.302	0.302	0.304	0.311	0.288	0.291	5.32701	
T	Dibromochloromethane		0.223	0.213	0.266	0.272	0.294	0.297	0.3	0.309	0.286	0.2734	12.4997	
T	1,2-Dibromoethane		0.168	0.189	0.22	0.207	0.223	0.229	0.229	0.234	0.216	0.2127	10.2149	
T	1-Chlorohexane		0.442	0.4	0.423	0.452	0.481	0.491	0.501	0.483	0.429	0.4559	7.65058	
P	Chlorobenzene		0.962	0.959	0.931	0.962	0.945	0.95	0.923	0.849	0.72	0.9113	8.77727	
T	1,1,1,2-Tetrachloroethane		0.261	0.254	0.284	0.301	0.321	0.338	0.348	0.356	0.338	0.3112	12.1749	
C	Ethylbenzene		0.528	0.494	0.508	0.52	0.537	0.551	0.544	0.525	0.486	0.5214	4.25536	
T	m-,p-Xylene		0.628	0.587	0.609	0.644	0.647	0.644	0.617	0.537	0.433	0.5938	11.7598	
T	o-Xylene			0.504	0.542	0.598	0.618	0.641	0.626	0.601	0.547	0.5843	8.23297	
T	Styrene		0.817	0.829	0.936	1.033	1.056	1.063	1.019	0.919	0.763	0.9372	12.1047	
P	Bromoform			0.127	0.154	0.159	0.169	0.179	0.185	0.194	0.183	0.1687	12.9032	
T	Isopropylbenzene		1.506	1.431	1.499	1.601	1.661	1.649	1.532	1.265	0.995	1.4598	14.5172	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.393	0.418	0.48	0.466	0.488	0.457	0.467	0.475	0.446	0.4544	6.80176	
S	p-Bromofluorobenzene			0.876	0.859	0.916	0.922	0.904	0.906	0.906	0.883	0.8966	2.4069	
T	1,2,3-Trichloropropane			0.095	0.124	0.133	0.136	0.129	0.131	0.138	0.131	0.127	10.6025	
T	trans-1,4-Dichloro-2-Butene			0.061	0.106	0.127	0.156	0.151	0.16	0.15	0.159	0.1338	26.0881	0.999
T	n-Propylbenzene		3.61	3.608	3.78	4.023	4.07	3.889	3.568	2.693		3.6553	11.8578	
T	Bromobenzene	0.599	0.709	0.651	0.732	0.743	0.759	0.727	0.737	0.724	0.693	0.7074	6.86685	
T	1,3,5-Trimethylbenzene	2.611	2.417	2.353	2.379	2.652	2.746	2.664	2.601	2.18	1.798	2.4401	11.7205	
T	2-Chlorotoluene		2.628	2.193	2.404	2.374	2.362	2.326	2.162	1.875	1.739	2.229	12.3866	
T	4-Chlorotoluene		2.059	2.197	2.285	2.514	2.501	2.391	2.325	1.892		2.2705	9.45973	
T	a-Methylstyrene					1.362	1.452	1.482	1.492	1.395	1.253	1.406	6.42359	
T	tert-Butylbenzene			0.509	0.469	0.535	0.55	0.546	0.56	0.55	0.536	0.5317	5.55451	
T	1,2,4-Trimethylbenzene			2.411	2.71	2.83	2.828	2.735	2.609	2.167	1.769	2.5074	14.9214	
T	sec-Butylbenzene			3.117	3.305	3.466	3.514	3.397	3.225	2.553		3.2253	10.1298	
T	p-Isopropyltoluene		2.779	2.476	2.67	2.747	2.831	2.737	2.678	2.222	1.806	2.5495	13.169	
T	1,3-Dichlorobenzene		1.666	1.374	1.45	1.491	1.523	1.494	1.481	1.371	1.211	1.4513	8.64488	
T	1,4-Dichlorobenzene	1.843	1.595	1.461	1.452	1.523	1.509	1.488	1.469	1.342	1.181	1.4862	11.3872	
T	n-Butylbenzene		3.078	2.646	2.785	3.012	2.994	2.879	2.751	2.208		2.7941	9.96071	
T	1,2-Dichlorobenzene	1.353	1.353	1.233	1.35	1.351	1.367	1.326	1.326	1.238	1.11	1.3006	6.32887	
T	1,2-Dibromo-3-Chloropropane				0.066	0.078	0.092	0.088	0.088	0.092	0.086	0.0844	11.2808	
T	1,2,4-Trichlorobenzene		1.085	0.951	1.019	1.042	1.073	1.07	1.071	1.044	0.943	1.0329	5.12639	
T	Hexachlorobutadiene		0.583	0.578	0.579	0.62	0.618	0.619	0.629	0.643	0.601	0.6078	3.85144	
T	Naphthalene		1.601	1.434	1.451	1.567	1.699	1.609	1.595	1.493	1.258	1.523	8.54079	
T	1,2,3-Trichlorobenzene	0.996	0.801	0.853	0.92	0.884	0.95	0.931	0.935	0.916	0.833	0.9019	6.53208	

Mon Feb 09 13:05:24 2015

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15021036 Run Date: 02/06/2015 Sample ID: WG511287-12
Instrument ID: HPMS8 Run Time: 21:48 Method: 8260B
File ID: 8M402842 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG511287 Cal ID: HPMS8 - 06-FEB-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	48.2	ug/L	0.476	3.60	20	
1,1-Dichloroethene	CCC	50.0	47.6	ug/L	0.409	4.70	20	
1,2-Dichloropropane	CCC	50.0	51.0	ug/L	0.282	2.10	20	
Ethylbenzene	CCC	50.0	50.9	ug/L	0.531	1.80	20	
Toluene	CCC	50.0	53.1	ug/L	1.43	6.20	20	
Vinyl Chloride	CCC	50.0	48.2	ug/L	0.329	3.50	20	
Bromoform	SPCC	50.0	52.5	ug/L	0.177	5.00	20	
Chlorobenzene	SPCC	50.0	48.2	ug/L	0.879	3.50	20	
Chloromethane	SPCC	50.0	46.4	ug/L	0.322	7.10	20	
1,1-Dichloroethane	SPCC	50.0	49.2	ug/L	0.512	1.50	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.5	ug/L	0.450	0.900	20	
Acetone		50.0	51.3	ug/L	0.0389	2.60	20	
Benzene		50.0	51.3	ug/L	1.04	2.70	20	
Bromobenzene		50.0	51.1	ug/L	0.723	2.20	20	
Bromochloromethane		50.0	51.9	ug/L	0.149	3.80	20	
Bromodichloromethane		50.0	49.9	ug/L	0.349	0.300	20	
Bromomethane		50.0	51.0	ug/L	0.143	2.00	20	
2-Butanone		50.0	50.8	ug/L	0.0573	1.70	20	
n-Butylbenzene		50.0	50.7	ug/L	2.83	1.30	20	
sec-Butylbenzene		50.0	49.4	ug/L	3.19	1.20	20	
tert-Butylbenzene		50.0	48.6	ug/L	0.516	2.90	20	
Carbon Disulfide		50.0	44.9	ug/L	0.796	10.3	20	
Carbon Tetrachloride		50.0	50.1	ug/L	0.370	0.300	20	
Dibromochloromethane		50.0	53.2	ug/L	0.291	6.40	20	
Chloroethane		50.0	53.3	ug/L	0.225	6.60	20	
2-Chlorotoluene		50.0	50.1	ug/L	2.24	0.300	20	
4-Chlorotoluene		50.0	47.3	ug/L	2.15	5.40	20	
1,2-Dibromo-3-Chloropropane		50.0	49.9	ug/L	0.0842	0.200	20	
1,2-Dibromoethane		50.0	52.1	ug/L	0.222	4.20	20	
Dibromomethane		50.0	48.2	ug/L	0.126	3.70	20	
1,2-Dichlorobenzene		50.0	47.9	ug/L	1.25	4.20	20	
1,3-Dichlorobenzene		50.0	47.2	ug/L	1.37	5.60	20	
1,4-Dichlorobenzene		50.0	49.5	ug/L	1.47	1.00	20	
Dichlorodifluoromethane		50.0	50.9	ug/L	0.408	1.80	20	
1,2-Dichloroethane		50.0	49.1	ug/L	0.320	1.90	20	
cis-1,2-Dichloroethene		50.0	50.8	ug/L	0.291	1.70	20	
trans-1,2-Dichloroethene		50.0	50.4	ug/L	0.417	0.900	20	
1,3-Dichloropropane		50.0	52.1	ug/L	0.404	4.10	20	
2,2-Dichloropropane		50.0	47.6	ug/L	0.366	4.70	20	
cis-1,3-Dichloropropene		50.0	55.2	ug/L	0.404	10.4	20	
trans-1,3-Dichloropropene		50.0	49.7	ug/L	0.410	0.500	20	
1,1-Dichloropropene		50.0	50.6	ug/L	0.376	1.10	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4033981
Report generated 02/23/2015 16:24

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15021036 Run Date: 02/06/2015 Sample ID: WG511287-12
Instrument ID: HPMS8 Run Time: 21:48 Method: 8260B
File ID: 8M402842 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG511287 Cal ID: HPMS8 - 06-FEB-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	50.7	ug/L	0.0561	1.40	20	
Hexachlorobutadiene		50.0	52.1	ug/L	0.633	4.10	20	
Isopropylbenzene		50.0	51.6	ug/L	1.51	3.30	20	
p-Isopropyltoluene		50.0	50.8	ug/L	2.59	1.50	20	
4-Methyl-2-Pentanone		50.0	48.4	ug/L	0.0456	3.30	20	
Methylene Chloride		50.0	49.7	ug/L	0.267	0.700	20	
Naphthalene		50.0	51.5	ug/L	1.57	3.00	20	
n-Propylbenzene		50.0	48.7	ug/L	3.56	2.50	20	
Styrene		50.0	55.3	ug/L	1.04	10.6	20	
1,1,1,2-Tetrachloroethane		50.0	52.6	ug/L	0.328	5.20	20	
Tetrachloroethene		50.0	51.0	ug/L	0.297	2.10	20	
1,2,3-Trichlorobenzene		50.0	50.8	ug/L	0.917	1.70	20	
1,2,4-Trichlorobenzene		50.0	51.7	ug/L	1.07	3.50	20	
1,1,1-Trichloroethane		50.0	50.1	ug/L	0.431	0.100	20	
1,1,2-Trichloroethane		50.0	52.0	ug/L	0.223	4.00	20	
Trichloroethene		50.0	54.8	ug/L	0.280	9.60	20	
Trichlorofluoromethane		50.0	46.6	ug/L	0.441	6.80	20	
1,2,3-Trichloropropane		50.0	50.2	ug/L	0.128	0.400	20	
1,2,4-Trimethylbenzene		50.0	54.5	ug/L	2.73	9.00	20	
1,3,5-Trimethylbenzene		50.0	55.2	ug/L	2.70	10.5	20	
o-Xylene		50.0	50.1	ug/L	0.586	0.200	20	
m-,p-Xylene		100	104	ug/L	0.620	4.30	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4033981
Report generated 02/23/2015 16:24

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15021036 Run Date: 02/20/2015 Sample ID: WG512985-02
Instrument ID: HPMS8 Run Time: 13:19 Method: 8260B
File ID: 8M403129 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG512986 Cal ID: HPMS8 - 06-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	44.4	ug/L	0.439	11.2	20	
1,1-Dichloroethene	CCC	50.0	43.9	ug/L	0.377	12.2	20	
1,2-Dichloropropane	CCC	50.0	47.6	ug/L	0.263	4.72	20	
Ethylbenzene	CCC	50.0	49.4	ug/L	0.516	1.13	20	
Toluene	CCC	50.0	52.6	ug/L	1.42	5.22	20	
Vinyl Chloride	CCC	50.0	44.4	ug/L	0.303	11.2	20	
Bromoform	SPCC	50.0	49.3	ug/L	0.166	1.38	20	
Chlorobenzene	SPCC	50.0	50.2	ug/L	0.916	0.469	20	
Chloromethane	SPCC	50.0	44.3	ug/L	0.307	11.4	20	
1,1-Dichloroethane	SPCC	50.0	45.6	ug/L	0.474	8.79	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	51.0	ug/L	0.463	1.93	20	
Xylenes		150	154	ug/L	0.605	2.63	20	
Acetone		50.0	44.4	ug/L	0.0336	11.2	20	
Benzene		50.0	47.9	ug/L	0.975	4.13	20	
Bromobenzene		50.0	51.3	ug/L	0.725	2.55	20	
Bromochloromethane		50.0	47.9	ug/L	0.137	4.25	20	
Bromodichloromethane		50.0	46.2	ug/L	0.323	7.60	20	
Bromomethane		50.0	53.1	ug/L	0.150	6.11	20	
2-Butanone		50.0	46.1	ug/L	0.0520	7.76	20	
n-Butylbenzene		50.0	47.9	ug/L	2.68	4.22	20	
sec-Butylbenzene		50.0	50.7	ug/L	3.27	1.41	20	
tert-Butylbenzene		50.0	51.5	ug/L	0.548	2.98	20	
Carbon Disulfide		50.0	48.8	ug/L	0.867	2.34	20	
Carbon Tetrachloride		50.0	45.1	ug/L	0.333	9.71	20	
Dibromochloromethane		50.0	51.6	ug/L	0.282	3.19	20	
Chloroethane		50.0	46.0	ug/L	0.194	8.00	20	
2-Chlorotoluene		50.0	52.2	ug/L	2.33	4.48	20	
4-Chlorotoluene		50.0	50.1	ug/L	2.28	0.266	20	
1,2-Dibromo-3-Chloropropane		50.0	45.5	ug/L	0.0768	9.01	20	
1,2-Dibromoethane		50.0	51.2	ug/L	0.218	2.40	20	
Dibromomethane		50.0	44.1	ug/L	0.115	11.8	20	
1,2-Dichlorobenzene		50.0	46.8	ug/L	1.22	6.37	20	
1,3-Dichlorobenzene		50.0	51.8	ug/L	1.50	3.62	20	
1,4-Dichlorobenzene		50.0	50.0	ug/L	1.49	0.00600	20	
Dichlorodifluoromethane		50.0	38.8	ug/L	0.311	22.4	20	*
1,2-Dichloroethane		50.0	43.5	ug/L	0.284	13.1	20	
cis-1,2-Dichloroethene		50.0	46.9	ug/L	0.268	6.30	20	
trans-1,2-Dichloroethene		50.0	45.3	ug/L	0.375	9.48	20	
1,3-Dichloropropane		50.0	51.0	ug/L	0.396	2.07	20	
2,2-Dichloropropane		50.0	50.6	ug/L	0.389	1.28	20	
cis-1,3-Dichloropropene		50.0	50.2	ug/L	0.367	0.469	20	
trans-1,3-Dichloropropene		50.0	52.9	ug/L	0.437	5.84	20	

CCV - Modified 03/05/2008
PDF File ID: 4033983
Report generated 02/23/2015 16:24

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15021036 Run Date: 02/20/2015 Sample ID: WG512985-02
Instrument ID: HPMS8 Run Time: 13:19 Method: 8260B
File ID: 8M403129 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG512986 Cal ID: HPMS8 - 06-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	47.4	ug/L	0.352	5.22	20	
2-Hexanone		50.0	52.1	ug/L	0.0577	4.18	20	
Hexachlorobutadiene		50.0	44.6	ug/L	0.542	10.8	20	
Isopropylbenzene		50.0	50.4	ug/L	1.47	0.818	20	
p-Isopropyltoluene		50.0	51.9	ug/L	2.64	3.73	20	
4-Methyl-2-Pentanone		50.0	48.3	ug/L	0.0455	3.44	20	
Methylene Chloride		50.0	46.2	ug/L	0.248	7.62	20	
Naphthalene		50.0	47.1	ug/L	1.43	5.85	20	
n-Propylbenzene		50.0	51.5	ug/L	3.76	2.99	20	
Styrene		50.0	53.8	ug/L	1.01	7.66	20	
1,1,1,2-Tetrachloroethane		50.0	51.9	ug/L	0.323	3.83	20	
Tetrachloroethene		50.0	50.0	ug/L	0.291	0.0256	20	
1,2,3-Trichlorobenzene		50.0	46.1	ug/L	0.832	7.77	20	
1,2,4-Trichlorobenzene		50.0	46.8	ug/L	0.966	6.44	20	
1,1,1-Trichloroethane		50.0	44.6	ug/L	0.384	10.8	20	
1,1,2-Trichloroethane		50.0	49.6	ug/L	0.212	0.798	20	
Trichloroethene		50.0	46.6	ug/L	0.238	6.79	20	
Trichlorofluoromethane		50.0	42.7	ug/L	0.404	14.6	20	
1,2,3-Trichloropropane		50.0	49.7	ug/L	0.126	0.608	20	
1,2,4-Trimethylbenzene		50.0	53.6	ug/L	2.69	7.15	20	
1,3,5-Trimethylbenzene		50.0	52.8	ug/L	2.58	5.63	20	
o-Xylene		50.0	51.5	ug/L	0.602	3.09	20	
m-,p-Xylene		100	102	ug/L	0.608	2.41	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4033983
Report generated 02/23/2015 16:24

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15021036
Instrument ID: HPMS8
Workgroup (AAB#): WG512986

ICAL CCV Number: WG511287-08
CAL ID: HPMS8-06-FEB-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG511287-08	NA	NA	298746	559024	749967
Upper Limit	NA	NA	597492	1118048	1499934
Lower Limit	NA	NA	149373	279512	374984
L15021036-01	1.00	01	251329	491394	664312
L15021036-02	1.00	01	247631	521388	703497
L15021036-03	1.00	01	264543	520736	694821
WG512986-01	1.00	01	278756	547422	730017
WG512986-02	1.00	01	274748	535009	745407
WG512986-03	1.00	01	280389	547063	762975

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4035004
Report generated 02/23/2015 16:24

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15021036
Instrument ID: HPMS8
Workgroup (AAB#): WG512986

ICAL CCV Number: WG511287-08
CAL ID: HPMS8 - 06-FEB-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG511287-08	NA	NA	17.72	14.69	10.83
Upper Limit	NA	NA	18.22	15.19	11.33
Lower Limit	NA	NA	17.22	14.19	10.33
L15021036-01	1.00	01	17.72	14.69	10.82
L15021036-02	1.00	01	17.72	14.69	10.82
L15021036-03	1.00	01	17.72	14.69	10.82
WG512986-01	1.00	01	17.71	14.69	10.83
WG512986-02	1.00	01	17.72	14.69	10.82
WG512986-03	1.00	01	17.71	14.69	10.83

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4035005
Report generated: 02/23/2015 16:24

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\022015\8M403147.D Vial: 21
Acq On : 20 Feb 2015 22:02 Operator: TMB
Sample : L15021036-01 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 23 10:53:28 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	664312	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	491394	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.72	152	251329	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	169222	24.2044 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.80%		
43) 1,2-Dichloroethane-d4	10.42	65	167370	22.8351 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 91.36%		
58) Toluene-d8	12.80	98	580949	24.8861 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.56%		
80) p-Bromofluorobenzene	16.19	95	221990	24.6276 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.52%		

Target Compounds					Qvalue
32) cis-1,2-Dichloroethene	9.28	96	2399	0.3156 ug/L	76
47) Trichloroethene	11.33	130	637097	93.7683 ug/L	98
48) Methylcyclohexane	11.32	83	7346	0.6635 ug/L #	1

(#) = qualifier out of range (m) = manual integration
8M403147.D 8260WTR.M Mon Feb 23 10:53:29 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\022015\8M403147.D Vial: 21
Acq On : 20 Feb 2015 22:02 Operator: TMB
Sample : L15021036-01 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 23 10:53 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration

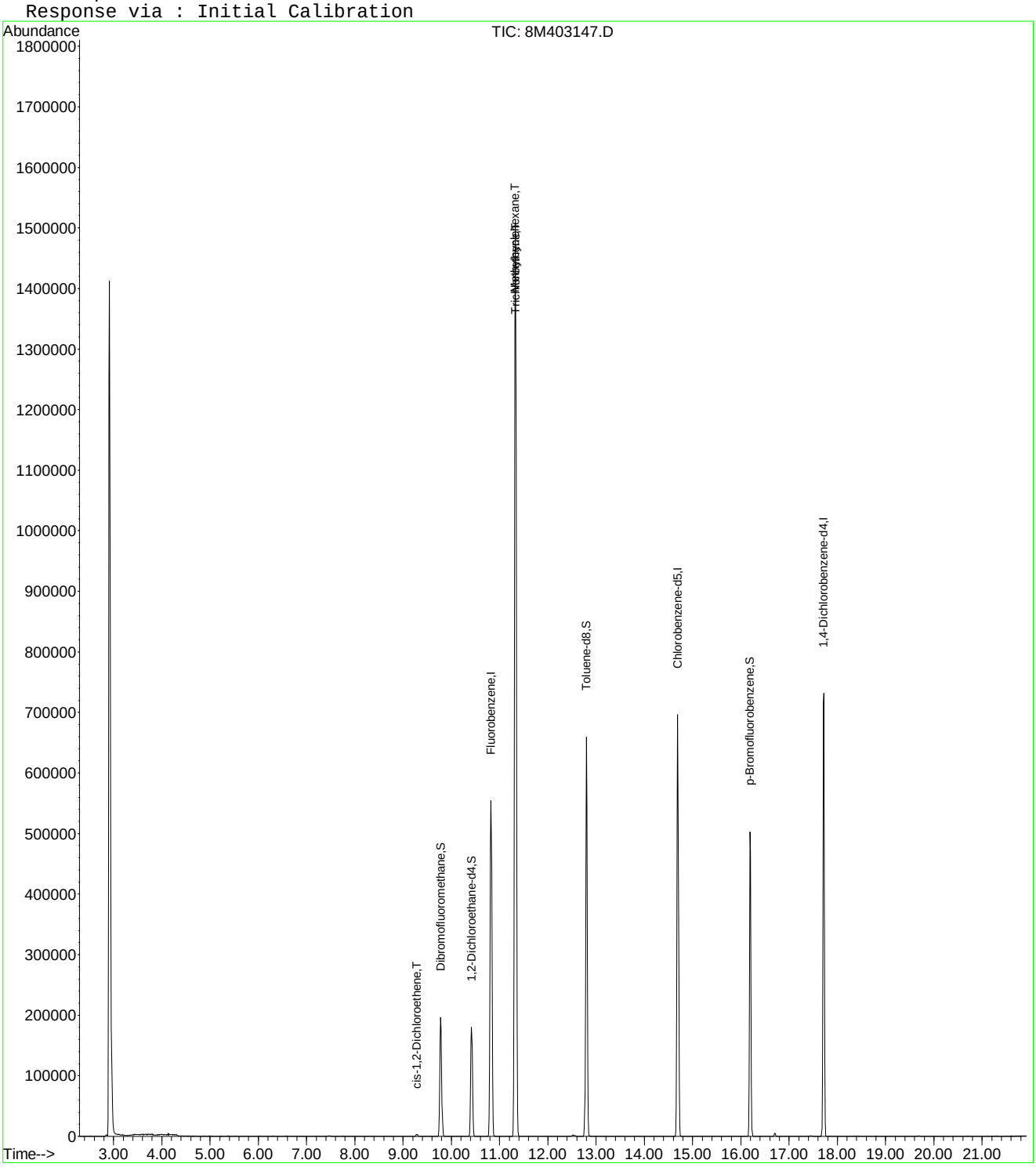

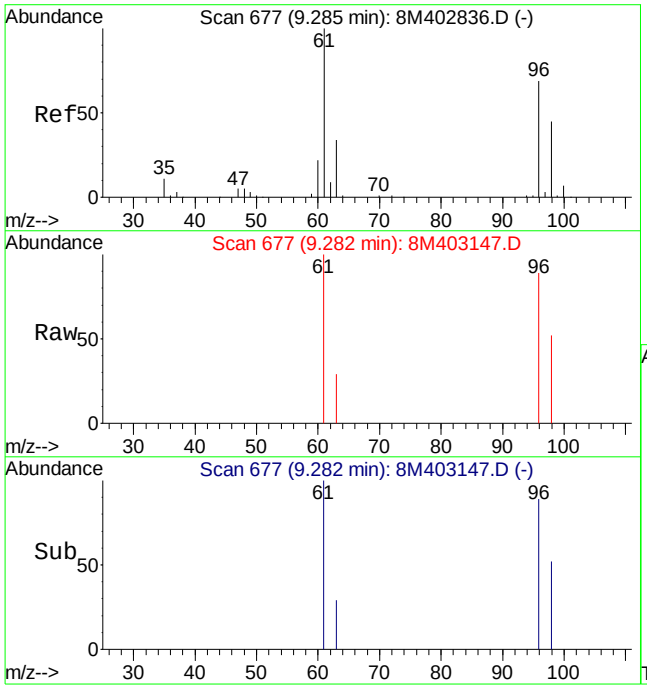

#32
cis-1,2-Dichloroethene
Concen: 0.32 ug/L
RT: 9.28 min Scan# 677
Delta R.T. -0.01 min
Lab File: 8M403147.D
Acq: 20 Feb 2015 22:02

Tgt Ion: 96 Resp: 2399

Ion	Ratio	Lower	Upper
96	100		
61	131.6	98.7	230.3

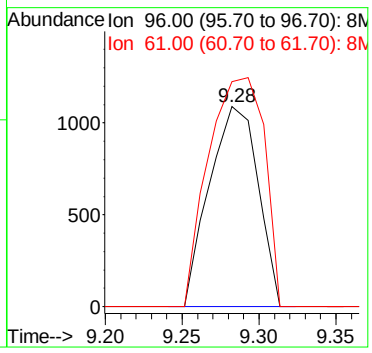

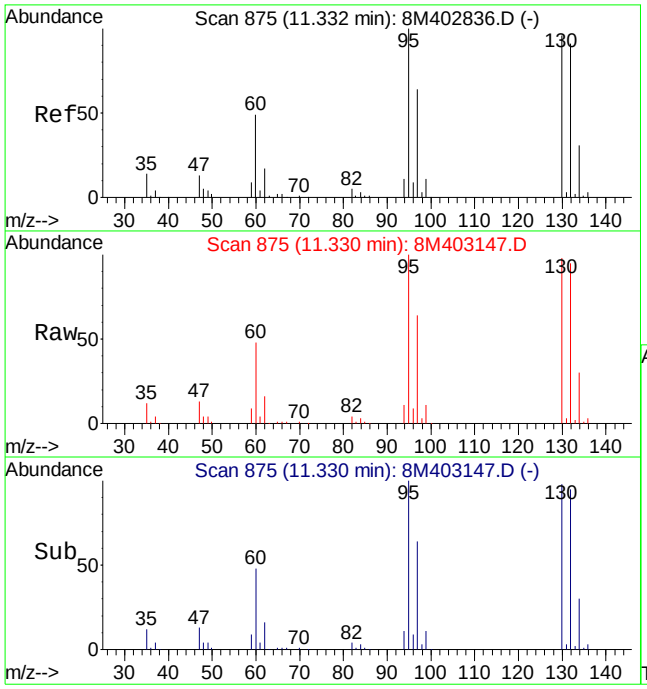

#47
Trichloroethene
Concen: 93.77 ug/L
RT: 11.33 min Scan# 875
Delta R.T. -0.01 min
Lab File: 8M403147.D
Acq: 20 Feb 2015 22:02

Tgt Ion:130 Resp: 637097

Ion	Ratio	Lower	Upper
130	100		
132	96.6	57.4	133.8
95	102.1	63.1	147.1

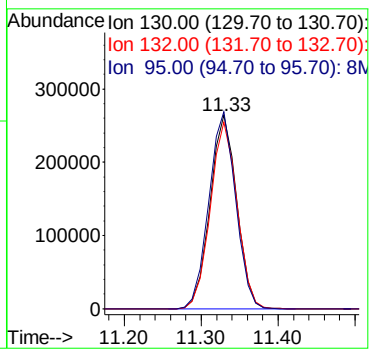

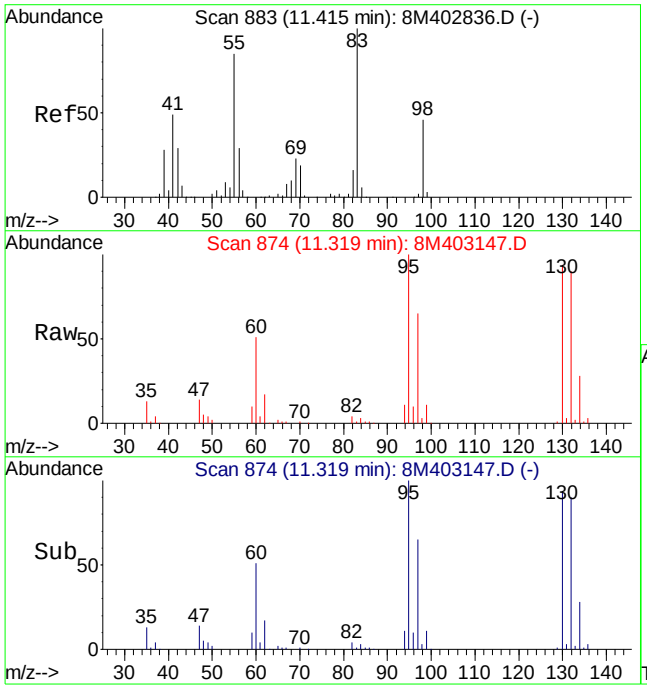

#48
Methylcyclohexane
Concen: 0.66 ug/L
RT: 11.32 min Scan# 874
Delta R.T. -0.11 min
Lab File: 8M403147.D
Acq: 20 Feb 2015 22:02

Tgt Ion: 83 Resp: 7346

Ion	Ratio	Lower	Upper
83	100		
55	0.0	50.9	118.9#
98	230.4	27.5	64.1#

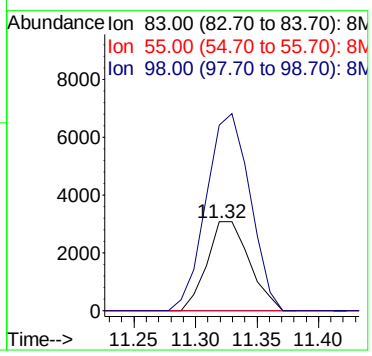

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\022015\8M403144.D Vial: 18
Acq On : 20 Feb 2015 20:35 Operator: TMB
Sample : L15021036-02 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 23 10:53:25 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	703497	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	521388	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.72	152	247631	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	170479	23.0260 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 92.12%		
43) 1,2-Dichloroethane-d4	10.42	65	161072	20.7517 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 83.00%		
58) Toluene-d8	12.80	98	617517	24.9309 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.72%		
80) p-Bromofluorobenzene	16.19	95	222218	25.0210 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.08%		

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
8M403144.D 8260WTR.M Mon Feb 23 10:53:25 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\022015\8M403144.D Vial: 18
Acq On : 20 Feb 2015 20:35 Operator: TMB
Sample : L15021036-02 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 23 10:53 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration

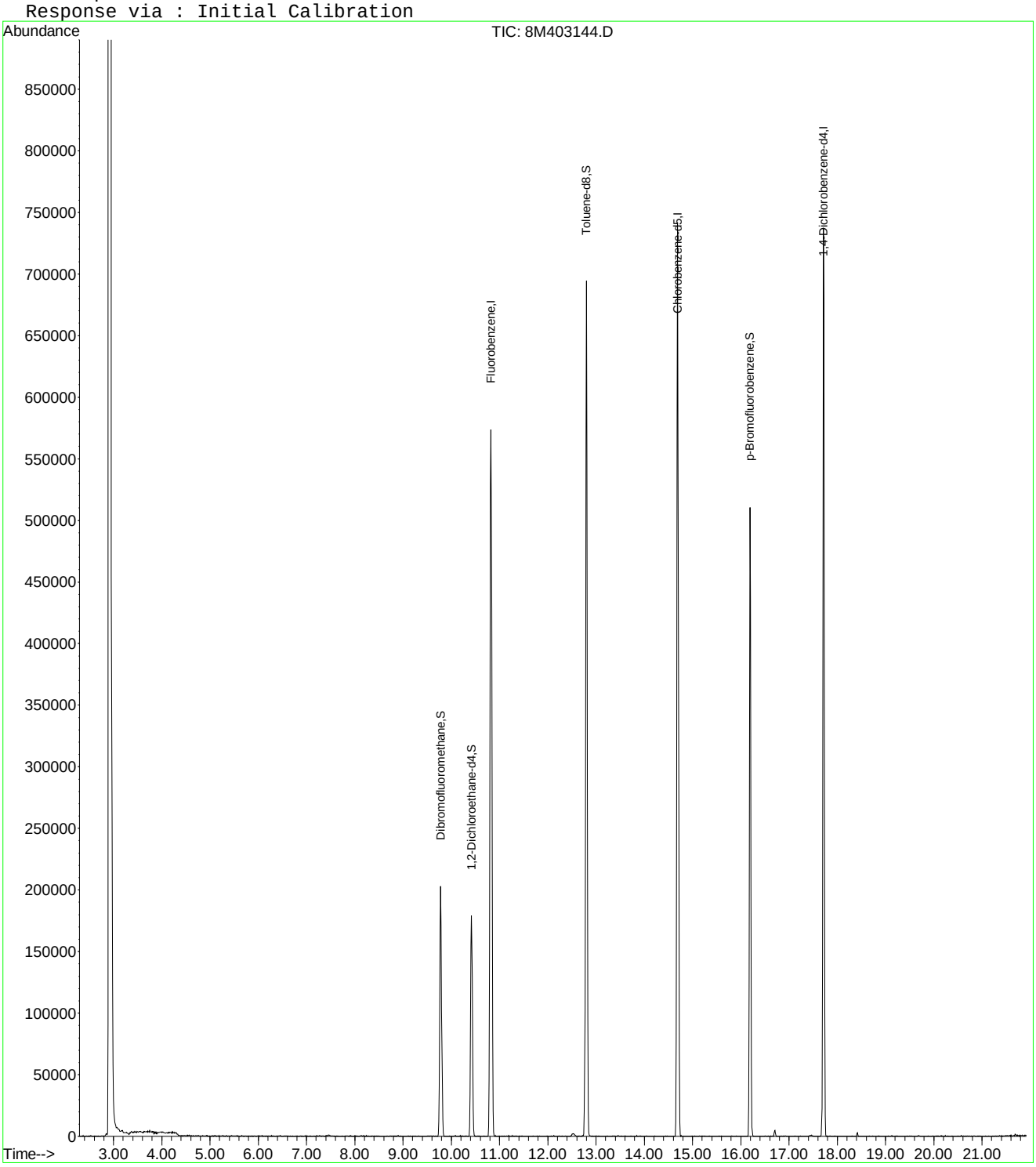

8M403144.D 8260WTR.M Mon Feb 23 10:53:25 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\022015\8M403141.D Vial: 15
Acq On : 20 Feb 2015 19:08 Operator: TMB
Sample : L15021036-03 A TB 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 23 10:53:21 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	694821	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	520736	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.72	152	264543	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	176626	24.1541 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.60%		
43) 1,2-Dichloroethane-d4	10.42	65	166863	21.7662 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 87.08%		
58) Toluene-d8	12.80	98	603851	24.4097 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.64%		
80) p-Bromofluorobenzene	16.19	95	231635	24.4140 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.64%		

Target Compounds					Qvalue
13) Acetone	6.36	43	410	0.3894 ug/L #	48

(#) = qualifier out of range (m) = manual integration
8M403141.D 8260WTR.M Mon Feb 23 10:53:22 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\022015\8M403141.D Vial: 15
Acq On : 20 Feb 2015 19:08 Operator: TMB
Sample : L15021036-03 A TB 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 23 10:53 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration

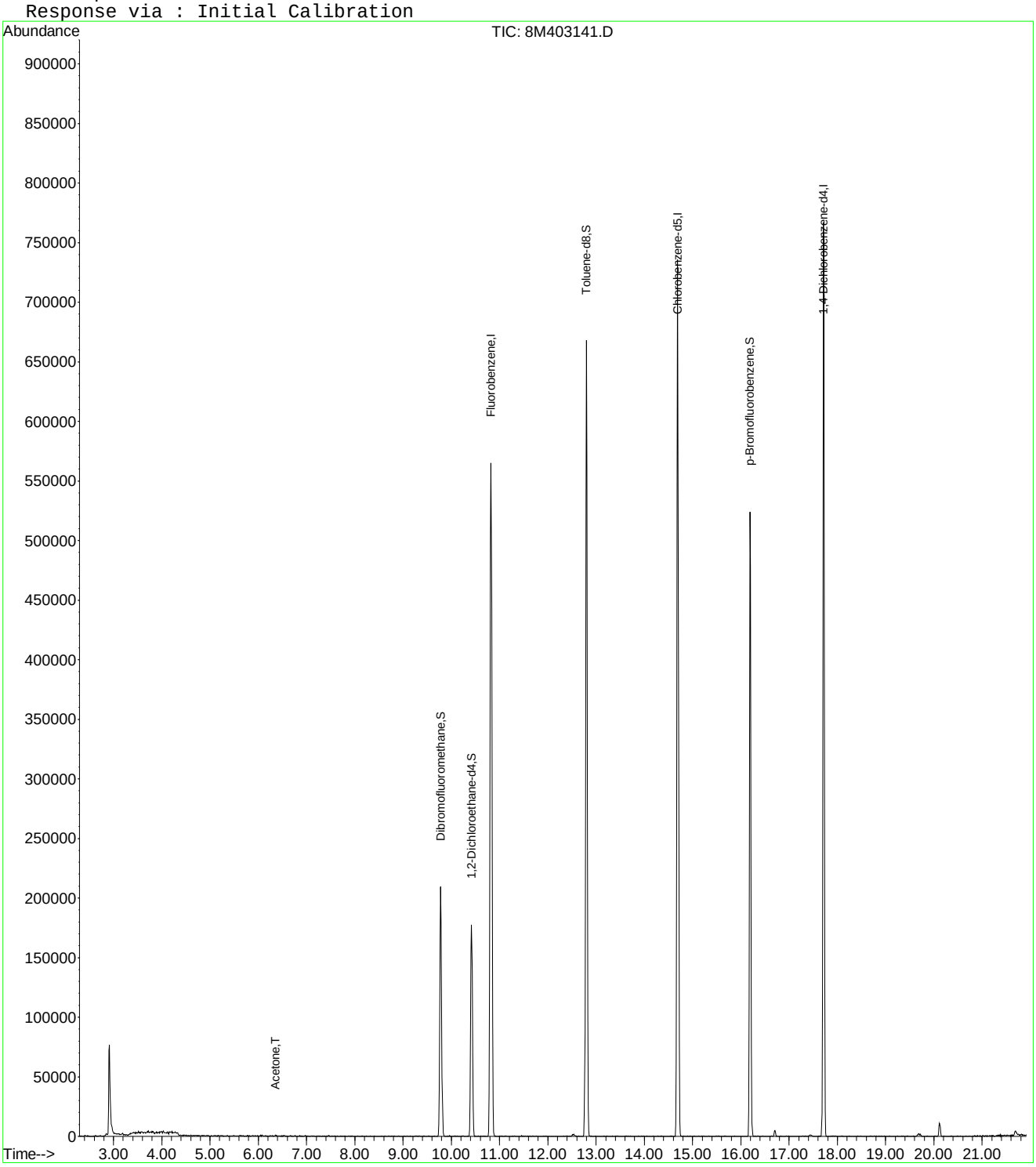

8M403141.D 8260WTR.M Mon Feb 23 10:53:22 2015 Page 2

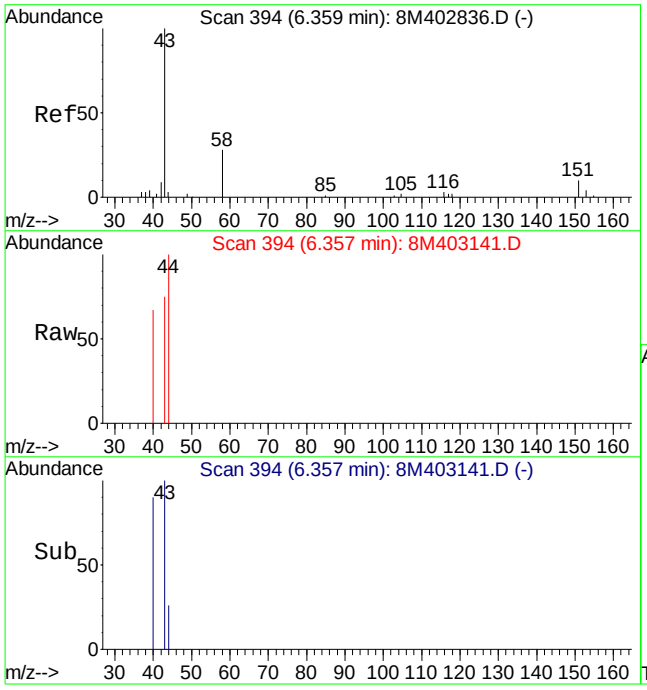

#13
Acetone
Concen: 0.39 ug/L
RT: 6.36 min Scan# 394
Delta R.T. -0.00 min
Lab File: 8M403141.D
Acq: 20 Feb 2015 19:08

Tgt Ion: 43 Resp: 410

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

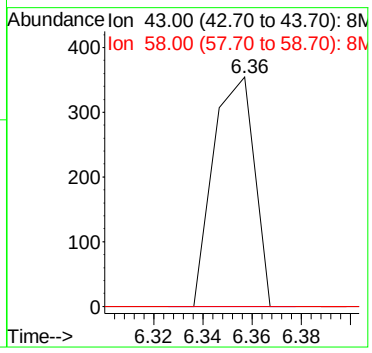

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400358.D Vial: 2
Acq On : 2 Oct 2014 12:24 Operator: TMB
Sample : WG494714-02 5ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:40 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	619208	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	544510	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	254129	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	1884	4.8234 ug/L #	23
3) 3-Chloro-1-propene	7.26	41	51461	4.9911 ug/L	88
4) 2-Chloro-1,3-butadiene	8.64	53	57885	4.7445 ug/L	89
5) Ethyl Acetate	9.28	43	12831	4.1474 ug/L	98
6) Methacrylonitrile	9.44	67	7738	4.2085 ug/L #	61
7) Isobutyl Alcohol	9.28	43	12831	104.0280 ug/L #	12
9) Methyl methacrylate	11.60	41	14247	4.0960 ug/L	83
10) 2-Nitropropane	11.94	43	3986	3.8294 ug/L	98
13) Cyclohexanone	16.03	55	1559	3.8882 ug/L #	43

(#) = qualifier out of range (m) = manual integration
8M400358.D A9FOOWTR.M Fri Oct 03 12:32:40 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400358.D Vial: 2
Acq On : 2 Oct 2014 12:24 Operator: TMB
Sample : WG494714-02 5ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

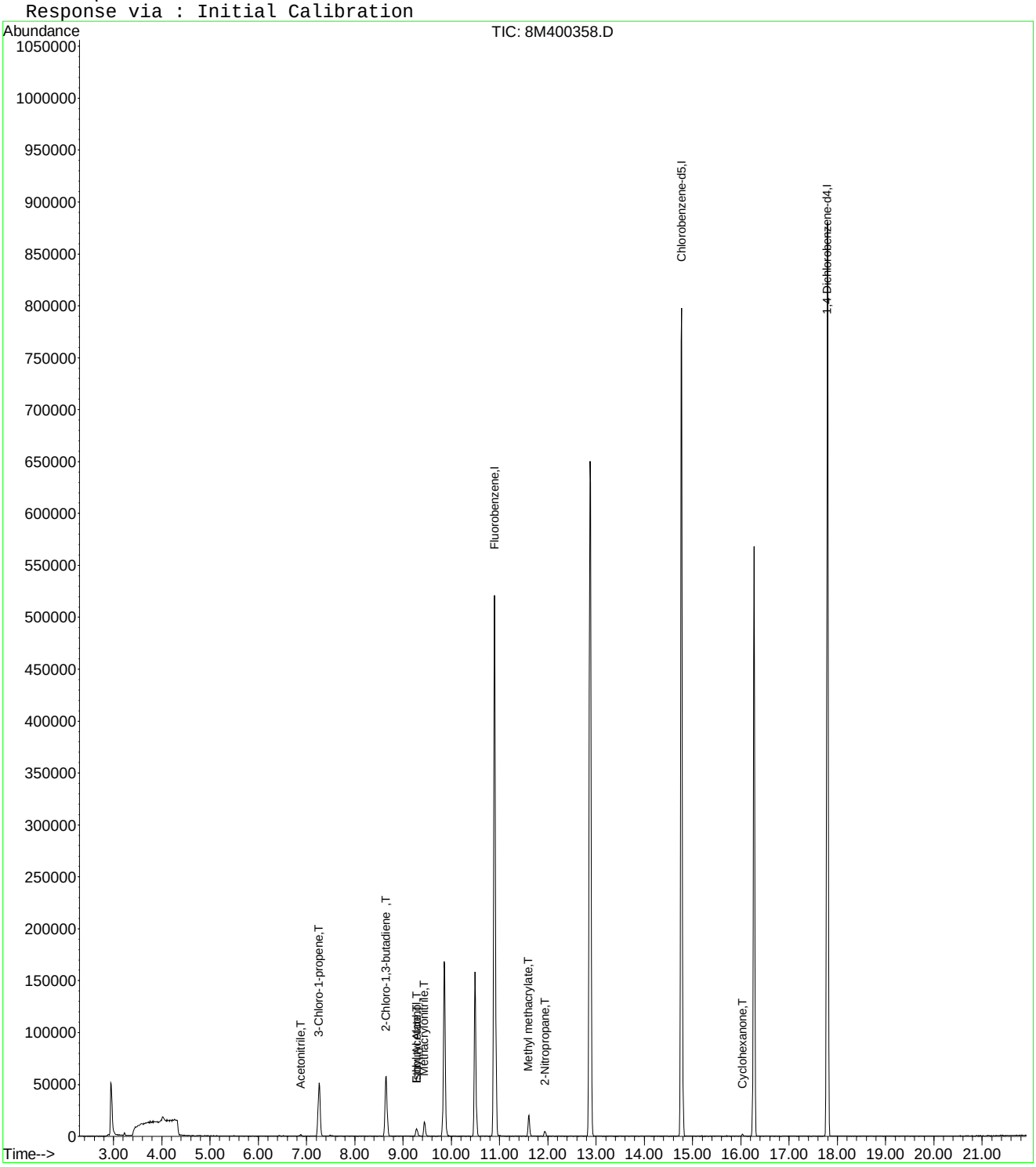

8M400358.D A9FOOWTR.M Fri Oct 03 12:32:41 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400359.D Vial: 3
Acq On : 2 Oct 2014 12:53 Operator: TMB
Sample : WG494714-03 20ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:41 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	590707	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	530005	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	246254	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	7263	19.4920 ug/L	97
3) 3-Chloro-1-propene	7.26	41	190581	19.3757 ug/L	90
4) 2-Chloro-1,3-butadiene	8.65	53	226534	19.4636 ug/L	90
5) Ethyl Acetate	9.28	43	54503	18.4670 ug/L	94
6) Methacrylonitrile	9.44	67	30898	17.6155 ug/L #	65
7) Isobutyl Alcohol	9.45	43	3143	26.7115 ug/L #	95
9) Methyl methacrylate	11.61	41	58234	17.5500 ug/L	72
10) 2-Nitropropane	11.94	43	16687	16.8050 ug/L	98
13) Cyclohexanone	16.03	55	7124	18.3357 ug/L	88

(#) = qualifier out of range (m) = manual integration
8M400359.D A9FOOWTR.M Fri Oct 03 12:32:41 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400359.D Vial: 3
Acq On : 2 Oct 2014 12:53 Operator: TMB
Sample : WG494714-03 20ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

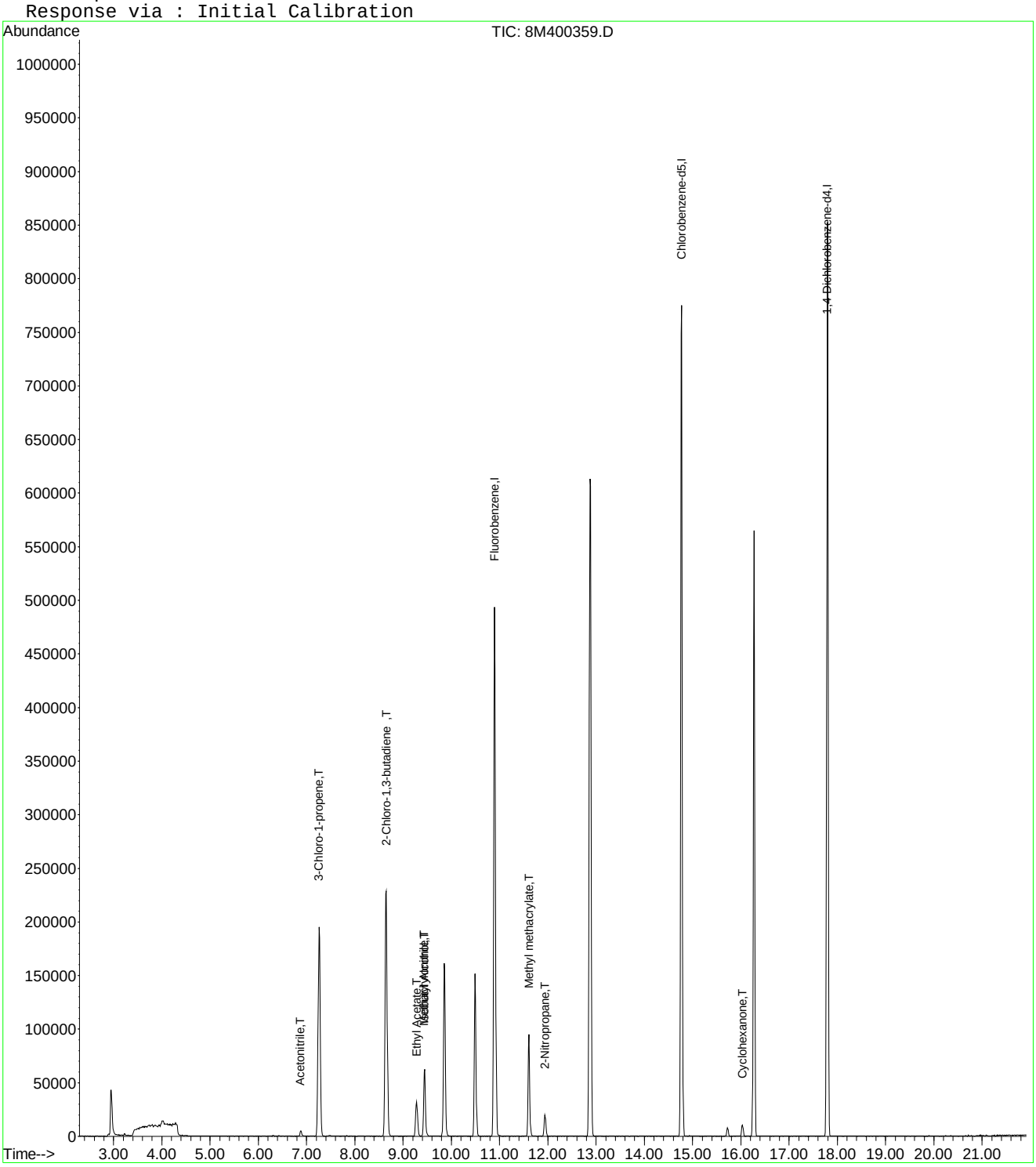

8M400359.D A9FOOWTR.M Fri Oct 03 12:32:42 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400360.D Vial: 4
Acq On : 2 Oct 2014 13:22 Operator: TMB
Sample : WG494714-04 50ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:42 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	590667	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	524443	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	249595	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	17698	47.5001 ug/L	100
3) 3-Chloro-1-propene	7.26	41	491365	49.9588 ug/L	90
4) 2-Chloro-1,3-butadiene	8.65	53	586258	50.3743 ug/L	90
5) Ethyl Acetate	9.27	43	145862	49.4250 ug/L	93
6) Methacrylonitrile	9.44	67	84924	48.4200 ug/L #	62
7) Isobutyl Alcohol	9.46	43	9563	81.2789 ug/L #	95
8) 1-Butanol	10.38	56	1895	48.4971 ug/L	87
9) Methyl methacrylate	11.61	41	161451	48.6599 ug/L	75
10) 2-Nitropropane	11.94	43	45766	46.0929 ug/L	98
13) Cyclohexanone	16.04	55	19698	50.0200 ug/L	89

(#) = qualifier out of range (m) = manual integration
8M400360.D A9FOOWTR.M Fri Oct 03 12:32:42 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400360.D Vial: 4
Acq On : 2 Oct 2014 13:22 Operator: TMB
Sample : WG494714-04 50ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

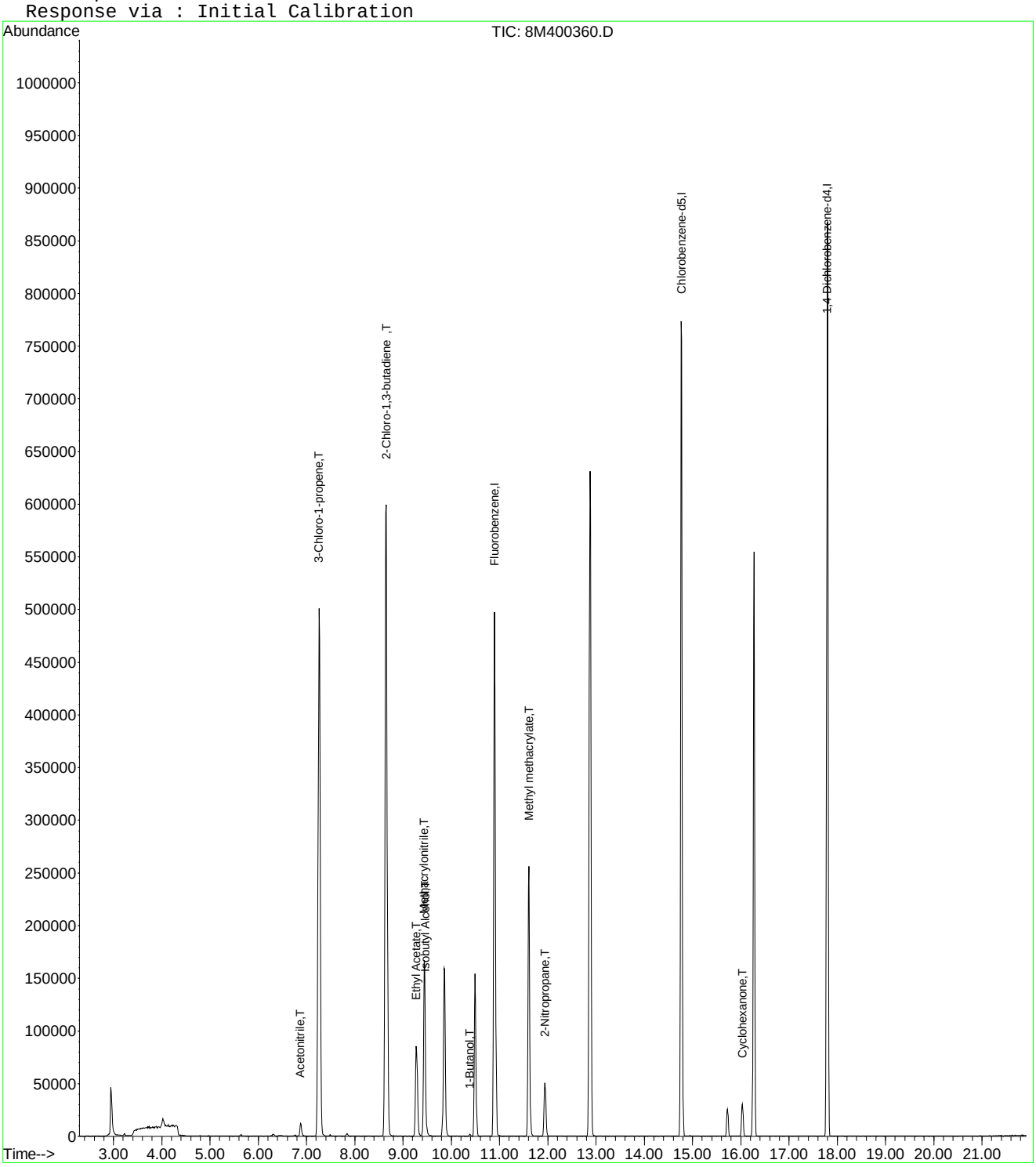

8M400360.D A9FOOWTR.M Fri Oct 03 12:32:42 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400361.D Vial: 5
Acq On : 2 Oct 2014 13:51 Operator: TMB
Sample : WG494714-05 100ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:43 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	595542	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	525736	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	251203	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	38265	101.8596 ug/L	98
3) 3-Chloro-1-propene	7.26	41	1042545	105.1315 ug/L	90
4) 2-Chloro-1,3-butadiene	8.65	53	1239135	105.6013 ug/L	88
5) Ethyl Acetate	9.27	43	315872	106.1564 ug/L	93
6) Methacrylonitrile	9.44	67	182857	103.4038 ug/L #	63
7) Isobutyl Alcohol	9.45	43	23247	195.9661 ug/L #	92
8) 1-Butanol	10.38	56	5482	96.3312 ug/L	88
9) Methyl methacrylate	11.61	41	351287	105.0082 ug/L	73
10) 2-Nitropropane	11.94	43	103249	103.1352 ug/L	99
13) Cyclohexanone	16.04	55	43523	109.8125 ug/L	88

(#) = qualifier out of range (m) = manual integration
8M400361.D A9FOOWTR.M Fri Oct 03 12:32:43 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400361.D Vial: 5
Acq On : 2 Oct 2014 13:51 Operator: TMB
Sample : WG494714-05 100ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

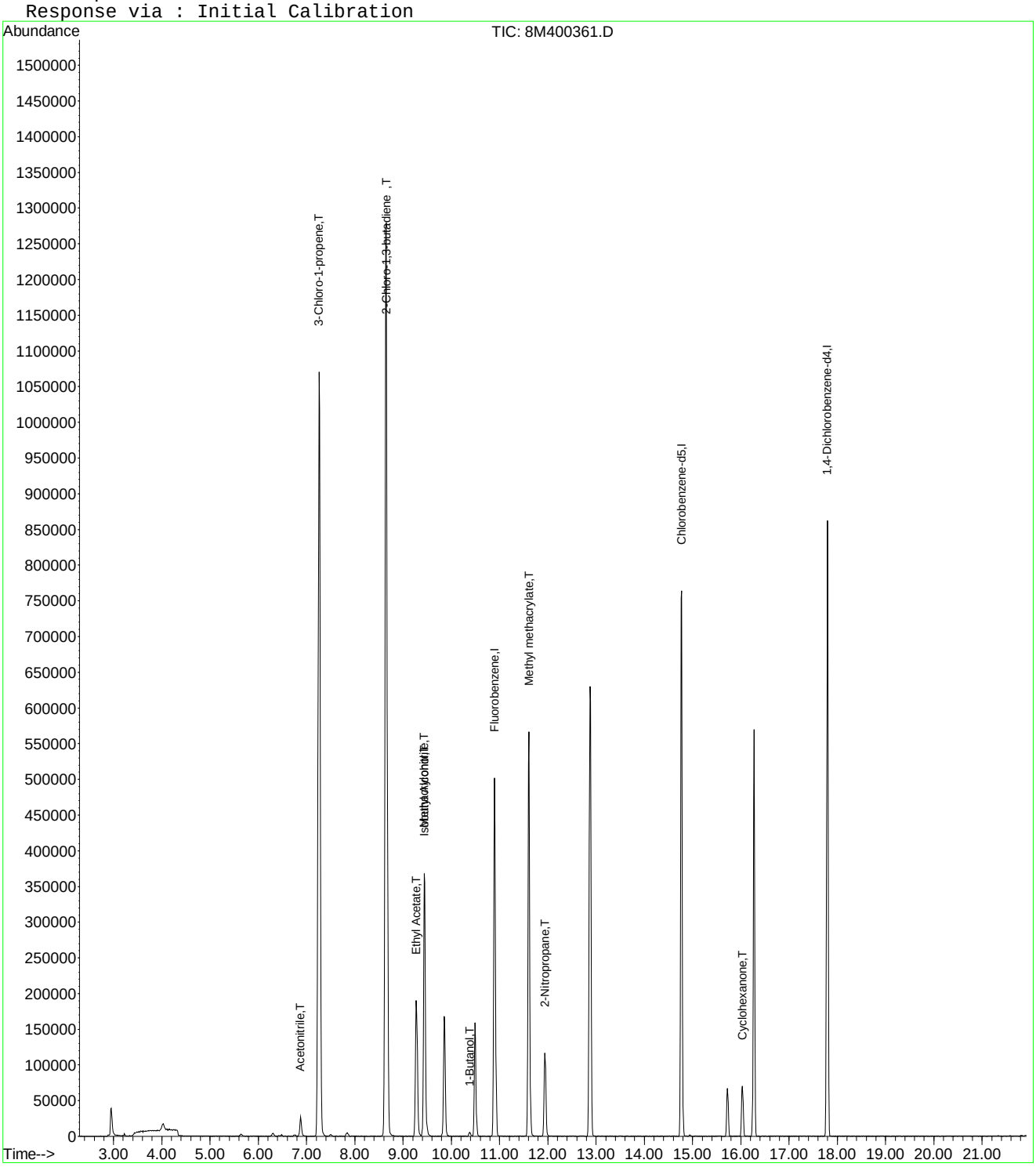

8M400361.D A9FOOWTR.M Fri Oct 03 12:32:43 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400362.D Vial: 6
Acq On : 2 Oct 2014 14:19 Operator: TMB
Sample : WG494714-06 200ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:43 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	605985	25.00 ug/L	-0.02
11) Chlorobenzene-d5	14.77	117	543073	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.80	152	256990	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	81322	212.7447 ug/L	93
3) 3-Chloro-1-propene	7.26	41	2105378	208.6501 ug/L	89
4) 2-Chloro-1,3-butadiene	8.65	53	2530154	211.9083 ug/L	84
5) Ethyl Acetate	9.28	43	654842	216.2828 ug/L	92
6) Methacrylonitrile	9.44	67	386897	215.0159 ug/L #	62
7) Isobutyl Alcohol	9.44	43	51188	424.0654 ug/L	97
8) 1-Butanol	10.37	56	13189	196.5131 ug/L	88
9) Methyl methacrylate	11.60	41	747593	219.6225 ug/L	71
10) 2-Nitropropane	11.94	43	227212	223.0503 ug/L	99
13) Cyclohexanone	16.03	55	76140	187.7821 ug/L	85

(#) = qualifier out of range (m) = manual integration
8M400362.D A9FOOWTR.M Fri Oct 03 12:32:44 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400362.D Vial: 6
Acq On : 2 Oct 2014 14:19 Operator: TMB
Sample : WG494714-06 200ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

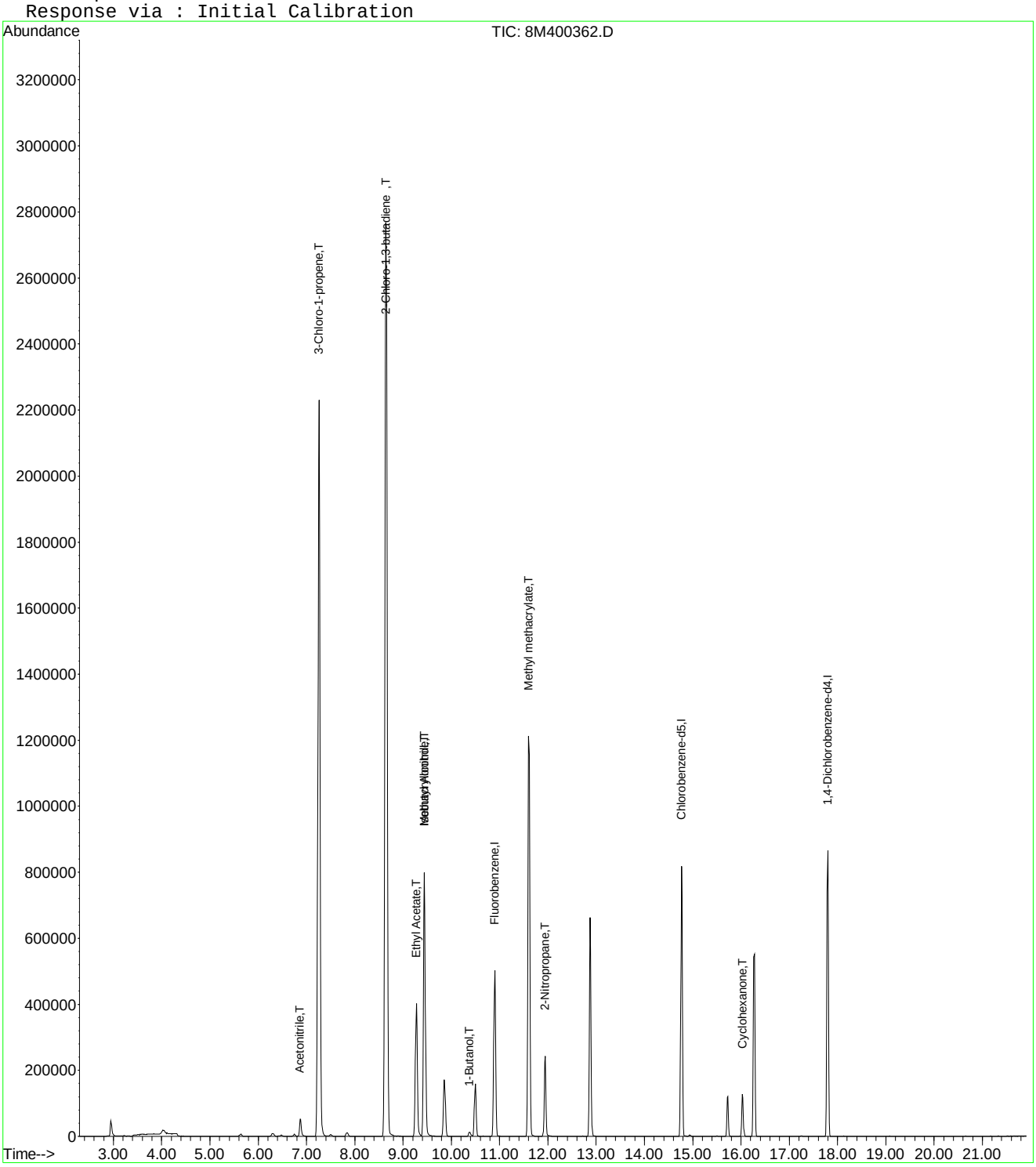

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400363.D Vial: 7
Acq On : 2 Oct 2014 14:48 Operator: TMB
Sample : WG494714-07 300ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:45 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	617316	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	555877	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	259867	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	120718	310.0110 ug/L	94
3) 3-Chloro-1-propene	7.26	41	3133181	304.8093 ug/L	86
4) 2-Chloro-1,3-butadiene	8.64	53	3764580	309.5080 ug/L	79
5) Ethyl Acetate	9.27	43	984728	319.2685 ug/L	92
6) Methacrylonitrile	9.44	67	589378	321.5315 ug/L #	62
7) Isobutyl Alcohol	9.45	43	76604	622.9747 ug/L	98
8) 1-Butanol	10.37	56	23186	322.5015 ug/L	89
9) Methyl methacrylate	11.61	41	1120843	323.2293 ug/L	70
10) 2-Nitropropane	11.94	43	340074	327.7172 ug/L	99
13) Cyclohexanone	16.03	55	133635	325.9318 ug/L	85

(#) = qualifier out of range (m) = manual integration
8M400363.D A9FOOWTR.M Fri Oct 03 12:32:45 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400363.D Vial: 7
Acq On : 2 Oct 2014 14:48 Operator: TMB
Sample : WG494714-07 300ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

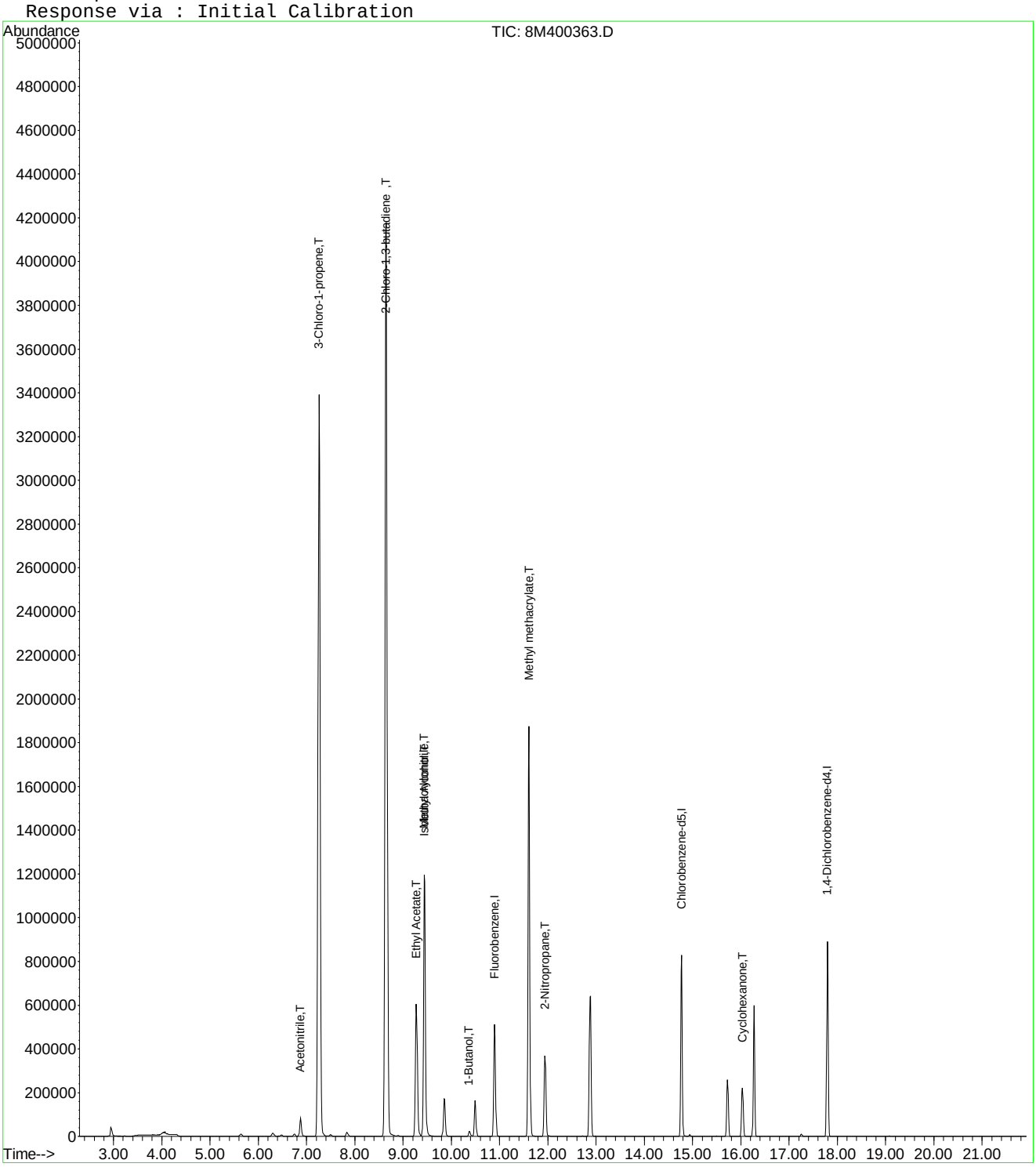

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400364.D Vial: 8
Acq On : 2 Oct 2014 15:16 Operator: TMB
Sample : WG494714-08 400ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:46 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	618926	25.00 ug/L	-0.02
11) Chlorobenzene-d5	14.77	117	559909	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.80	152	262346	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	151708	388.5818 ug/L	95
3) 3-Chloro-1-propene	7.26	41	4028272	390.8682 ug/L	83
4) 2-Chloro-1,3-butadiene	8.65	53	4802050	393.7774 ug/L	74
5) Ethyl Acetate	9.28	43	1250397	404.3491 ug/L	91
6) Methacrylonitrile	9.44	67	762998	415.1660 ug/L #	61
7) Isobutyl Alcohol	9.45	43	102436	830.8840 ug/L #	97
8) 1-Butanol	10.37	56	28243	386.8957 ug/L	89
9) Methyl methacrylate	11.60	41	1436773	413.2595 ug/L	68
10) 2-Nitropropane	11.94	43	451706	434.1607 ug/L	98
13) Cyclohexanone	16.03	55	150327	363.1785 ug/L	84

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400364.D Vial: 8
Acq On : 2 Oct 2014 15:16 Operator: TMB
Sample : WG494714-08 400ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

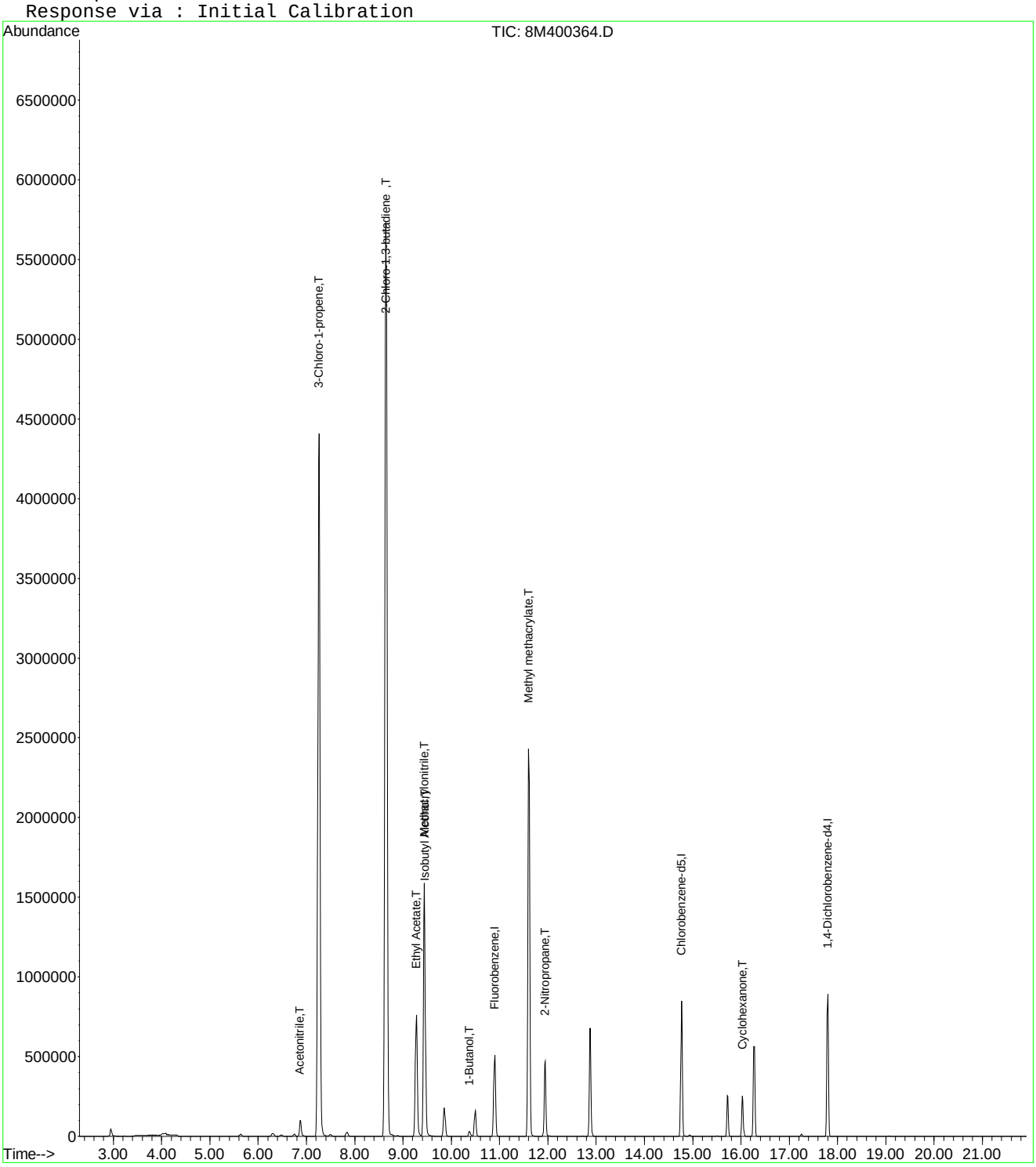

8M400364.D A9FOOWTR.M Fri Oct 03 12:32:47 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400365.D Vial: 9
Acq On : 2 Oct 2014 15:45 Operator: TMB
Sample : WG494714-09 500ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:47 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	611679	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	574048	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	266141	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	197468	511.7830 ug/L	95
3) 3-Chloro-1-propene	7.26	41	4817953	473.0307 ug/L	79
4) 2-Chloro-1,3-butadiene	8.64	53	5656851	469.3686 ug/L	68
5) Ethyl Acetate	9.27	43	1590123	520.3008 ug/L	90
6) Methacrylonitrile	9.44	67	990168	545.1581 ug/L #	61
7) Isobutyl Alcohol	9.45	43	130410	1070.3205 ug/L	98
8) 1-Butanol	10.38	56	36529	499.2614 ug/L	87
9) Methyl methacrylate	11.61	41	1840524	535.6626 ug/L	68
10) 2-Nitropropane	11.94	43	590003	573.8046 ug/L	98
13) Cyclohexanone	16.04	55	203273	484.0894 ug/L	84

(#) = qualifier out of range (m) = manual integration
8M400365.D A9FOOWTR.M Fri Oct 03 12:32:47 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400365.D Vial: 9
Acq On : 2 Oct 2014 15:45 Operator: TMB
Sample : WG494714-09 500ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

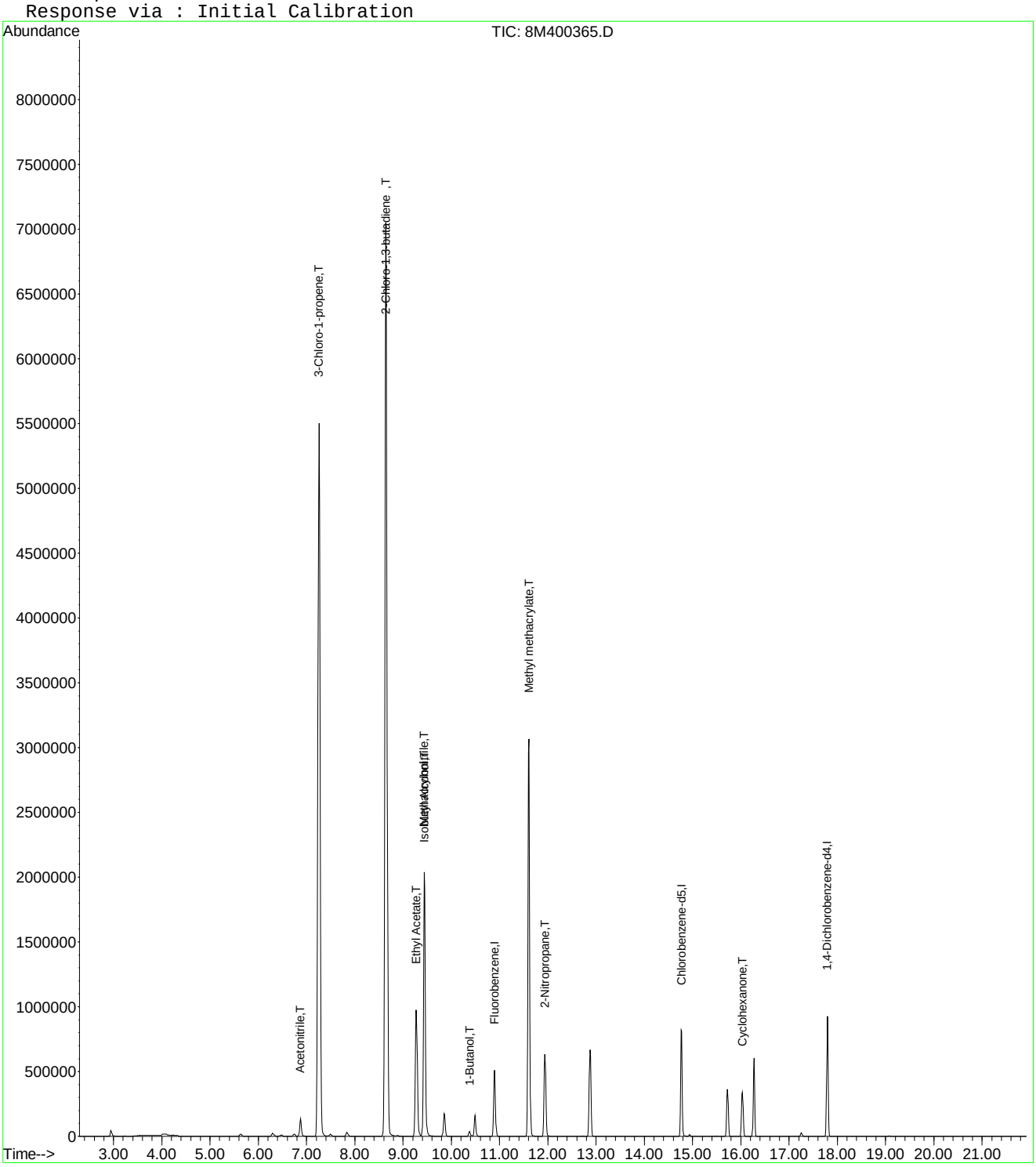

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400367.D Vial: 11
Acq On : 2 Oct 2014 16:47 Operator: TMB
Sample : WG494714-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66677 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:48 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	548066	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	508831	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	240116	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	36847	106.5815 ug/L	98
3) 3-Chloro-1-propene	7.26	41	1001386	109.7284 ug/L	90
4) 2-Chloro-1,3-butadiene	8.64	53	982184	90.9542 ug/L	89
5) Ethyl Acetate	9.27	43	328991	120.1430 ug/L	94
6) Methacrylonitrile	9.44	67	174278	107.0895 ug/L #	64
7) Isobutyl Alcohol	9.45	43	21185	194.0538 ug/L	99
8) 1-Butanol	10.39	56	5303	100.0865 ug/L	77
9) Methyl methacrylate	11.61	41	317777	103.2198 ug/L	73
10) 2-Nitropropane	11.94	43	95761	103.9416 ug/L	99
13) Cyclohexanone	16.03	55	11614	30.6562 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M400367.D A9FOOWTR.M Fri Oct 03 12:32:49 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400367.D Vial: 11
Acq On : 2 Oct 2014 16:47 Operator: TMB
Sample : WG494714-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66677 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

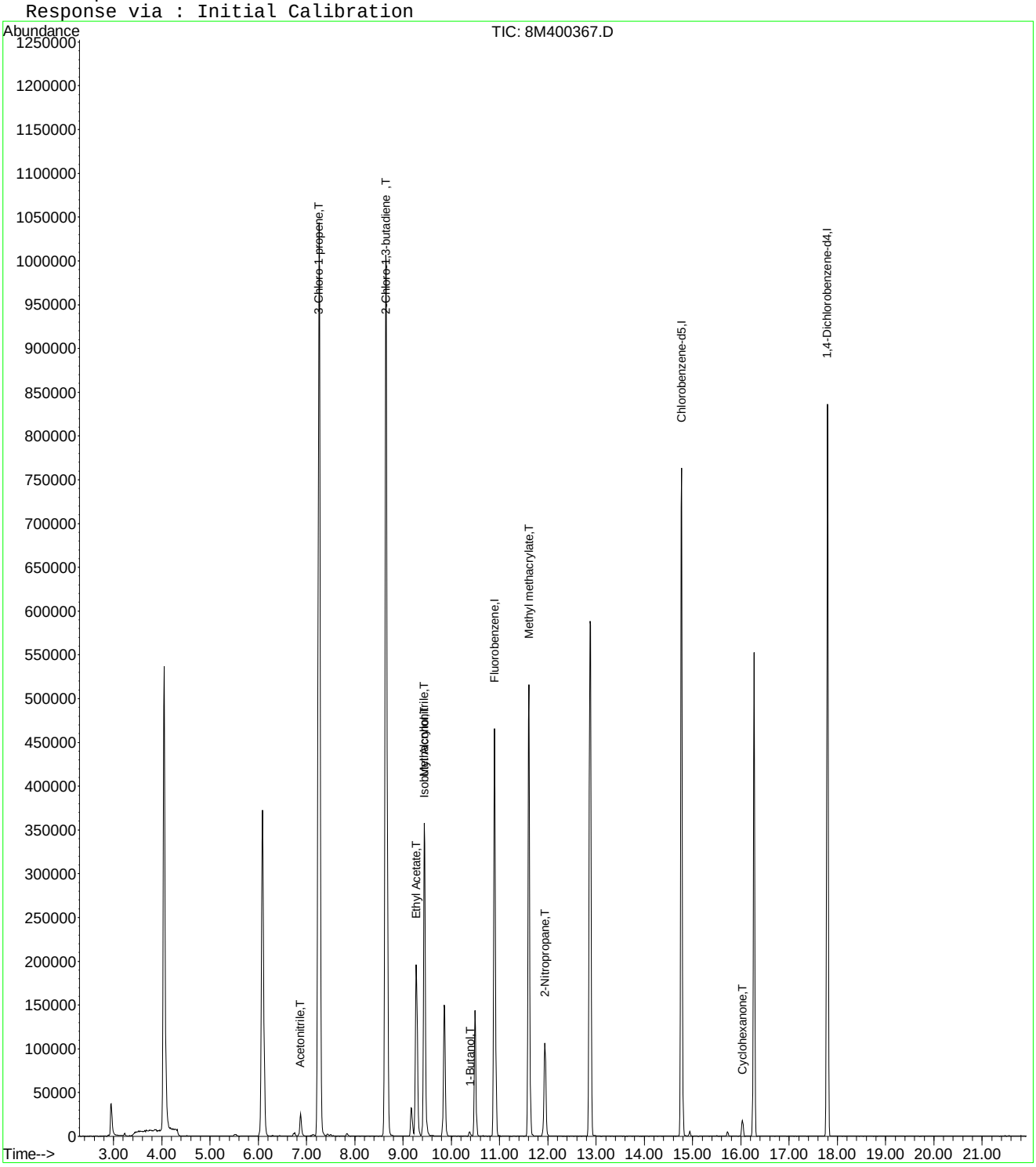

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\100214\8M400367.D Vial: 11
Acq On : 2 Oct 2014 16:47 Operator: TMB
Sample : WG494714-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66677 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	92	-0.03
2	T	Acetonitrile	100.0000	106.5815	-6.6	96	-0.02
3	T	3-Chloro-1-propene	100.0000	109.7284	-9.7	96	-0.03
4	T	2-Chloro-1,3-butadiene	100.0000	90.9542	9.0	79	-0.03
5	T	Ethyl Acetate	100.0000	120.1430	-20.1	104	-0.02
6	T	Methacrylonitrile	100.0000	107.0895	-7.1	95	-0.03
7	T	Isobutyl Alcohol	200.0000	194.0538	3.0	91	-0.02
8	T	1-Butanol	100.0000	100.0865	-0.1	97	0.00
9	T	Methyl methacrylate	100.0000	103.2198	-3.2	90	-0.02
10	T	2-Nitropropane	100.0000	103.9416	-3.9	93	-0.03
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	97	-0.03
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	96	-0.04
13	T	Cyclohexanone	100.0000	30.6562	69.3	27	-0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M400367.D A9FOOWTR.M Fri Oct 03 12:33:23 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402830.D Vial: 2
Acq On : 6 Feb 2015 15:59 Operator: TMB
Sample : WG511287-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:12 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	677676	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	517186	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.72	152	259482	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.80	98	285	0.0116 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.04%#	
80) p-Bromofluorobenzene	0.00	95	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.24	85	3534	0.3255 ug/L	87
3) Chloromethane	3.70	50	3788	0.4033 ug/L	93
4) Vinyl Chloride	3.94	62	3105	0.3359 ug/L #	63
5) 1,3-Butadiene	3.99	54	2460	Below Cal #	13
6) Bromomethane	4.85	94	760	0.8109 ug/L #	55
7) Chloroethane	4.99	64	1783	0.3120 ug/L #	45
8) Trichlorofluoromethane	5.49	101	4678	0.3649 ug/L #	82
10) Isoprene	6.05	67	2406	0.2423 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	1698	0.2345 ug/L	80
13) Acetone	6.36	43	3064	2.9838 ug/L #	1
14) 1,1-Dichloroethene	6.57	61	3490	0.2996 ug/L	95
16) Dimethyl Sulfide	6.84	62	2118	0.2728 ug/L	84
18) Methyl acetate	7.11	43	538	0.1260 ug/L #	64
19) Methylene Chloride	7.37	84	2731	0.3749 ug/L	88
20) Carbon Disulfide	7.41	76	9675	0.4022 ug/L #	82
22) Methyl Tert Butyl Ether	7.59	73	3208	0.2533 ug/L #	48
23) trans-1,2-Dichloroethene	7.83	61	3525	0.3142 ug/L	92
24) n-Hexane	7.90	57	3525	0.3580 ug/L	88
27) 1,1-Dichloroethane	8.44	63	4535	0.3217 ug/L #	85
31) 2,2-Dichloropropane	9.22	77	3265	0.3137 ug/L #	58
32) cis-1,2-Dichloroethene	9.28	96	2413	0.3112 ug/L	72
33) Chloroform	9.48	83	4365	0.3259 ug/L	94
35) Bromochloromethane	9.72	130	1272	0.3280 ug/L	84
36) Tetrahydrofuran	9.76	42	1302	1.2211 ug/L #	38
38) 1,1,1-Trichloroethane	10.01	97	3598	0.3084 ug/L	90
39) Cyclohexane	10.05	56	3685	0.2935 ug/L #	82
40) 1,1-Dichloropropene	10.21	75	2775	0.2755 ug/L #	70
42) Carbon Tetrachloride	10.37	117	3031	0.3030 ug/L #	85
45) 1,2-Dichloroethane	10.53	62	2824	0.3192 ug/L #	71
46) Benzene	10.58	78	9211	0.3343 ug/L	88
47) Trichloroethene	11.33	130	1942	0.2802 ug/L	98
48) Methylcyclohexane	11.42	83	3549	0.3142 ug/L	84
49) 1,2-Dichloropropane	11.55	63	1881	0.2510 ug/L	95
50) Bromodichloromethane	11.84	83	2819	0.2975 ug/L #	85
52) Dibromomethane	11.92	93	948	0.2681 ug/L #	51
55) cis-1,3-Dichloropropene	12.48	75	3166	0.3196 ug/L	85
56) Dimethyl Disulfide	12.75	79	837	4.7918 ug/L #	35
59) Toluene	12.90	91	8628	0.3095 ug/L	95
60) Ethyl Methacrylate	13.00	69	948	0.1779 ug/L	91
62) trans-1,3-Dichloropropene	13.08	75	1801	0.2111 ug/L	82

(#) = qualifier out of range (m) = manual integration
8M402830.D 8260WTR.M Mon Feb 09 12:25:12 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402830.D Vial: 2
Acq On : 6 Feb 2015 15:59 Operator: TMB
Sample : WG511287-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:12 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
63)	1,1,2-Trichloroethane	13.29	97	932	0.2106 ug/L		73
65)	1,3-Dichloropropane	13.60	76	2102	0.2620 ug/L		80
66)	Tetrachloroethene	13.72	164	2034	0.3378 ug/L		89
67)	Dibromochloromethane	13.99	129	1483	0.2622 ug/L		85
68)	1,2-Dibromoethane	14.25	107	1151	0.2616 ug/L		87
69)	1-Chlorohexane	14.32	91	2908	0.3084 ug/L		79
70)	Chlorobenzene	14.74	112	6589	0.3495 ug/L		86
71)	1,1,1,2-Tetrachloroethane	14.78	131	1539	0.2390 ug/L		81
72)	Ethylbenzene	14.76	106	3527	0.3270 ug/L		98
73)	m-,p-Xylene	14.86	106	8641	0.7034 ug/L		97
74)	o-Xylene	15.42	106	3653	0.3022 ug/L		96
75)	Styrene	15.46	104	4801	0.2476 ug/L		87
76)	Bromoform	15.95	173	809	0.2318 ug/L	#	27
77)	Isopropylbenzene	15.85	105	9493	0.3144 ug/L		93
79)	1,1,2,2-Tetrachloroethane	16.07	83	1379	0.2924 ug/L	#	91
83)	n-Propylbenzene	16.36	91	13025	0.3433 ug/L		93
84)	Bromobenzene	16.49	156	1864	0.2539 ug/L		76
85)	1,3,5-Trimethylbenzene	16.54	105	8131	0.3210 ug/L		89
86)	2-Chlorotoluene	16.64	91	6967	0.3011 ug/L		98
87)	4-Chlorotoluene	16.68	91	7557	0.3207 ug/L		98
88)	a-Methylstyrene	16.95	118	3398	0.2329 ug/L		100
89)	tert-Butylbenzene	17.01	134	1383	0.2506 ug/L		80
90)	1,2,4-Trimethylbenzene	17.06	105	8919	0.3427 ug/L		85
91)	sec-Butylbenzene	17.28	105	10858	0.3243 ug/L		94
92)	p-Isopropyltoluene	17.43	119	8474	0.3202 ug/L		93
93)	1,3-Dichlorobenzene	17.63	146	5020	0.3333 ug/L		99
94)	1,4-Dichlorobenzene	17.76	146	5740	0.3721 ug/L	#	11
95)	n-Butylbenzene	17.96	91	10346	0.3567 ug/L	#	84
96)	1,2-Dichlorobenzene	18.26	146	4213	0.3121 ug/L		95
98)	1,2,4-Trichlorobenzene	20.40	180	3165	0.2952 ug/L		84
99)	Hexachlorobutadiene	20.54	225	2332	0.3697 ug/L		90
100)	Naphthalene	20.76	128	4212	0.2665 ug/L	#	68
101)	1,2,3-Trichlorobenzene	21.08	180	3100	0.3311 ug/L		92

(#) = qualifier out of range (m) = manual integration
8M402830.D 8260WTR.M Mon Feb 09 12:25:12 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402830.D Vial: 2
Acq On : 6 Feb 2015 15:59 Operator: TMB
Sample : WG511287-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 9 12:25 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration

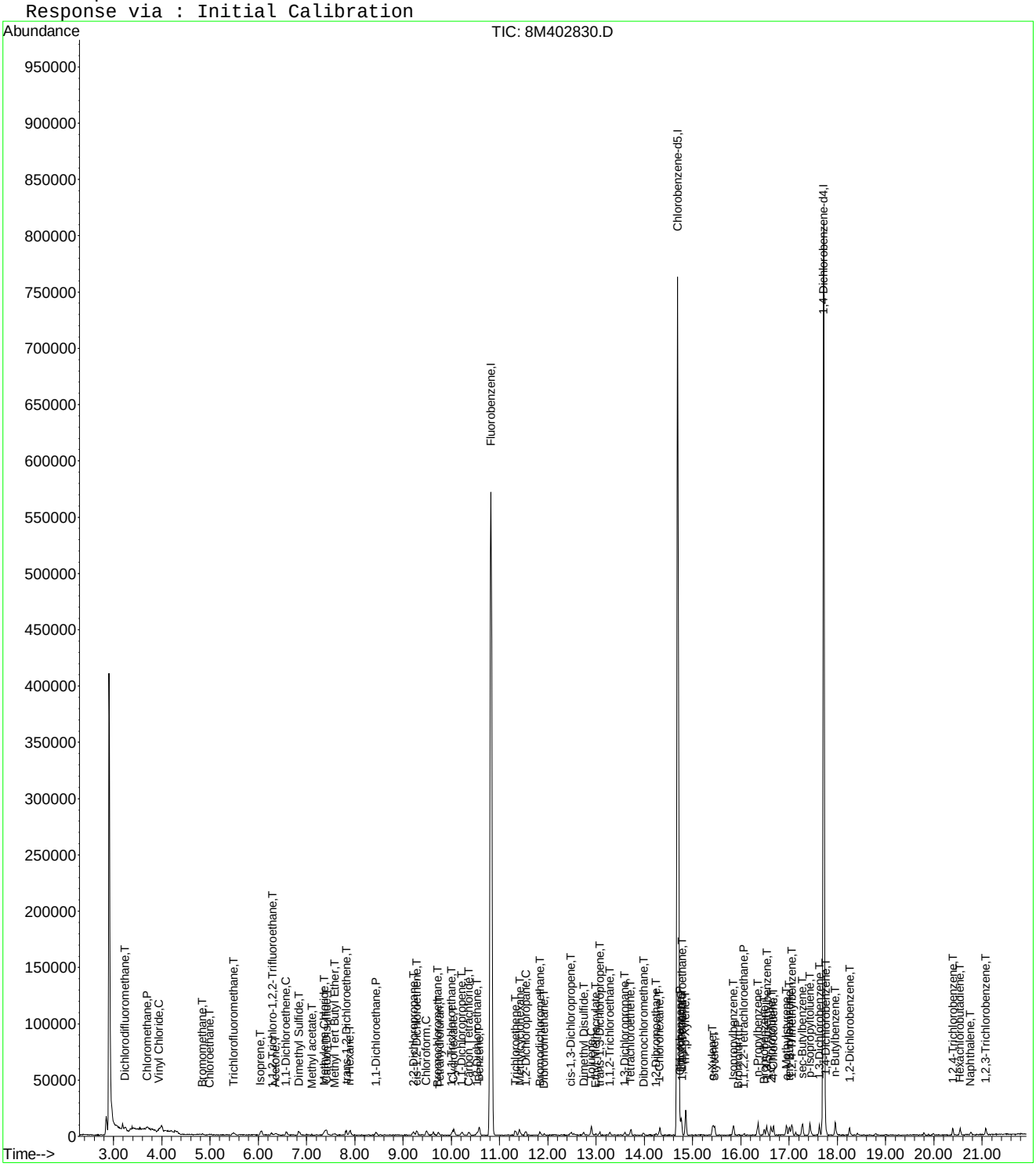

8M402830.D 8260WTR.M Mon Feb 09 12:25:13 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402831.D Vial: 3
Acq On : 6 Feb 2015 16:27 Operator: TMB
Sample : WG511287-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:13 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	669605	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	519790	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.72	152	260996	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.79	98	420	0.0170 ug/L	-0.02
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.08%#	
80) p-Bromofluorobenzene	0.00	95	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.23	85	4476	0.4173 ug/L	79
3) Chloromethane	3.71	50	4971	0.5356 ug/L #	71
4) Vinyl Chloride	3.94	62	4128	0.4520 ug/L	96
5) 1,3-Butadiene	4.00	54	3492	Below Cal #	58
6) Bromomethane	4.85	94	782	0.8197 ug/L	92
7) Chloroethane	5.01	64	2166	0.3836 ug/L #	56
8) Trichlorofluoromethane	5.48	101	5667	0.4474 ug/L #	93
10) Isoprene	6.07	67	3425	0.3491 ug/L	83
12) 1,1,2-Trichloro-1,2,2-Trif	6.27	101	2789	0.3898 ug/L	79
13) Acetone	6.37	43	2081	2.0509 ug/L #	1
14) 1,1-Dichloroethene	6.58	61	4994	0.4339 ug/L	92
16) Dimethyl Sulfide	6.84	62	2867	0.3738 ug/L	97
18) Methyl acetate	7.11	43	1151	0.2728 ug/L #	64
19) Methylene Chloride	7.36	84	3447	0.4789 ug/L	81
20) Carbon Disulfide	7.41	76	10450	0.4397 ug/L	100
22) Methyl Tert Butyl Ether	7.59	73	4612	0.3686 ug/L #	58
23) trans-1,2-Dichloroethene	7.83	61	4989	0.4501 ug/L	97
24) n-Hexane	7.90	57	3804	0.3910 ug/L	98
26) Vinyl Acetate	8.41	43	811	0.2562 ug/L #	76
27) 1,1-Dichloroethane	8.45	63	5717	0.4104 ug/L #	87
31) 2,2-Dichloropropane	9.22	77	4570	0.4444 ug/L #	58
32) cis-1,2-Dichloroethene	9.28	96	3293	0.4298 ug/L	77
33) Chloroform	9.49	83	5730	0.4330 ug/L	98
35) Bromochloromethane	9.72	130	1259	0.3285 ug/L	82
38) 1,1,1-Trichloroethane	10.03	97	4607	0.3997 ug/L	98
39) Cyclohexane	10.06	56	5367	0.4327 ug/L	95
40) 1,1-Dichloropropene	10.22	75	3807	0.3826 ug/L	90
42) Carbon Tetrachloride	10.36	117	3770	0.3814 ug/L	95
45) 1,2-Dichloroethane	10.53	62	3737	0.4275 ug/L #	70
46) Benzene	10.58	78	11704	0.4299 ug/L	91
47) Trichloroethene	11.33	130	2490	0.3636 ug/L	93
48) Methylcyclohexane	11.41	83	4494	0.4027 ug/L	88
49) 1,2-Dichloropropane	11.54	63	2912	0.3933 ug/L #	73
50) Bromodichloromethane	11.85	83	3539	0.3780 ug/L #	92
52) Dibromomethane	11.92	93	1317	0.3769 ug/L	94
53) 2-Chloroethyl Vinyl Ether	12.14	63	582	0.2070 ug/L #	52
55) cis-1,3-Dichloropropene	12.48	75	3482	0.3558 ug/L #	68
56) Dimethyl Disulfide	12.75	79	941	4.8024 ug/L #	20
59) Toluene	12.90	91	12159	0.4339 ug/L	95
60) Ethyl Methacrylate	13.00	69	1427	0.2664 ug/L	94

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402831.D Vial: 3
Acq On : 6 Feb 2015 16:27 Operator: TMB
Sample : WG511287-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:13 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
62)	trans-1,3-Dichloropropene	13.08	75	2603	0.3036 ug/L #	75
63)	1,1,2-Trichloroethane	13.28	97	1475	0.3316 ug/L	96
65)	1,3-Dichloropropane	13.59	76	3031	0.3759 ug/L	88
66)	Tetrachloroethene	13.72	164	2304	0.3808 ug/L	82
67)	Dibromochloromethane	13.98	129	1855	0.3263 ug/L	78
68)	1,2-Dibromoethane	14.25	107	1394	0.3152 ug/L	95
69)	1-Chlorohexane	14.32	91	3675	0.3877 ug/L	94
70)	Chlorobenzene	14.74	112	8004	0.4224 ug/L	93
71)	1,1,1,2-Tetrachloroethane	14.77	131	2173	0.3358 ug/L	90
72)	Ethylbenzene	14.77	106	4389	0.4049 ug/L	86
73)	m-,p-Xylene	14.86	106	10439	0.8455 ug/L	94
74)	o-Xylene	15.42	106	4821	0.3968 ug/L	98
75)	Styrene	15.46	104	6791	0.3485 ug/L	92
76)	Bromoform	15.95	173	953	0.2717 ug/L #	27
77)	Isopropylbenzene	15.85	105	12521	0.4125 ug/L	95
79)	1,1,2,2-Tetrachloroethane	16.06	83	1641	0.3459 ug/L #	77
83)	n-Propylbenzene	16.36	91	15075	0.3950 ug/L	98
84)	Bromobenzene	16.49	156	2959	0.4007 ug/L	93
85)	1,3,5-Trimethylbenzene	16.54	105	10092	0.3962 ug/L	99
86)	2-Chlorotoluene	16.62	91	10974	0.4716 ug/L	81
87)	4-Chlorotoluene	16.68	91	8600	0.3628 ug/L #	77
88)	a-Methylstyrene	16.94	118	4721	0.3216 ug/L	86
89)	tert-Butylbenzene	17.02	134	1933	0.3482 ug/L	66
90)	1,2,4-Trimethylbenzene	17.06	105	11257	0.4300 ug/L	93
91)	sec-Butylbenzene	17.28	105	14453	0.4292 ug/L	99
92)	p-Isopropyltoluene	17.43	119	11603	0.4359 ug/L	90
93)	1,3-Dichlorobenzene	17.63	146	6958	0.4592 ug/L	85
94)	1,4-Dichlorobenzene	17.75	146	6661	0.4293 ug/L #	66
95)	n-Butylbenzene	17.96	91	12852	0.4406 ug/L	90
96)	1,2-Dichlorobenzene	18.26	146	5649	0.4160 ug/L	91
98)	1,2,4-Trichlorobenzene	20.40	180	4530	0.4201 ug/L	96
99)	Hexachlorobutadiene	20.54	225	2435	0.3838 ug/L	81
100)	Naphthalene	20.77	128	6685	0.4205 ug/L #	78
101)	1,2,3-Trichlorobenzene	21.07	180	3345	0.3552 ug/L	86

(#) = qualifier out of range (m) = manual integration
8M402831.D 8260WTR.M Mon Feb 09 12:25:13 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402831.D Vial: 3
Acq On : 6 Feb 2015 16:27 Operator: TMB
Sample : WG511287-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 9 12:25 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration

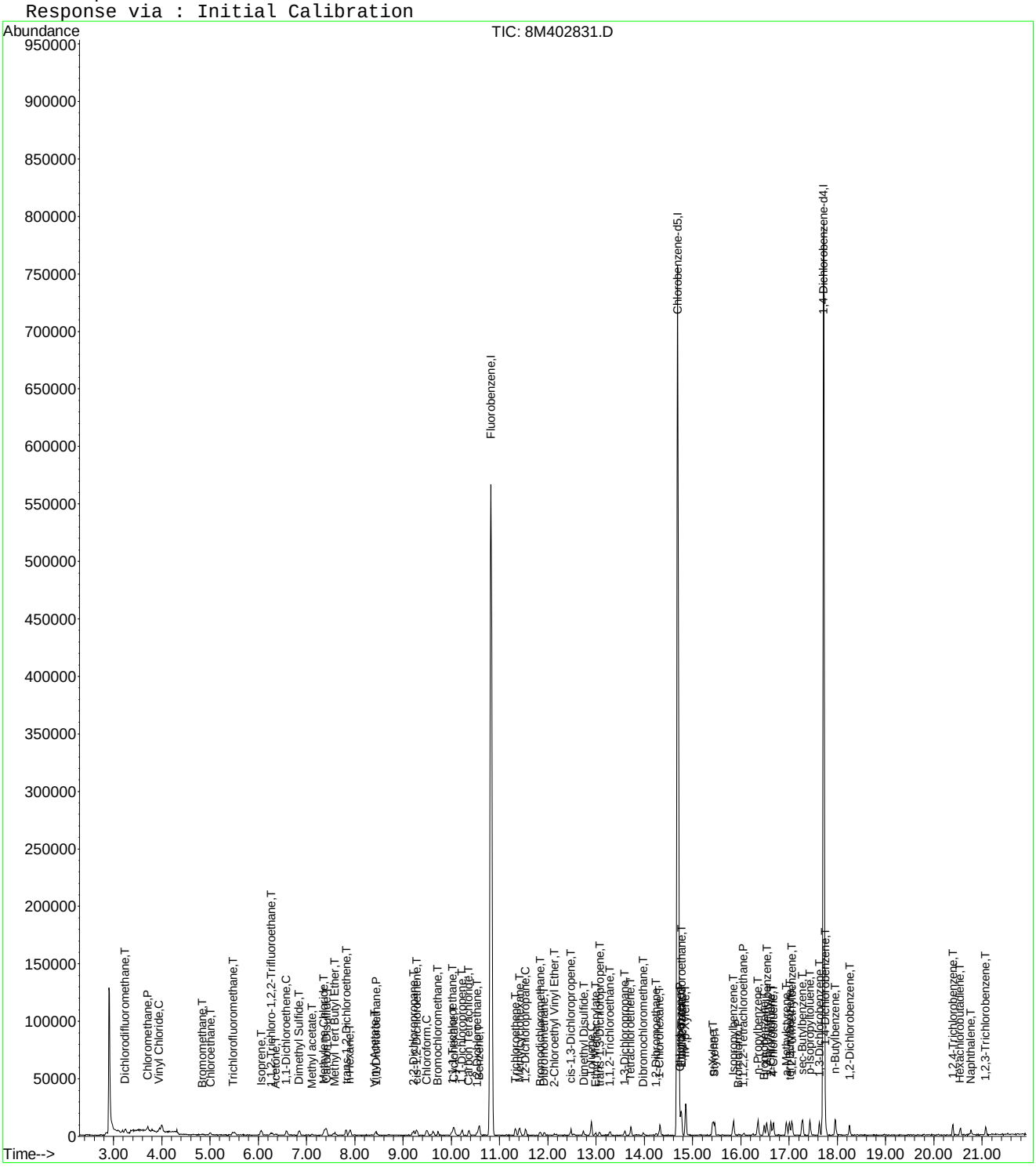

8M402831.D 8260WTR.M Mon Feb 09 12:25:14 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402832.D Vial: 4
Acq On : 6 Feb 2015 16:57 Operator: TMB
Sample : WG511287-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:14 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	680652	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	518318	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.71	152	261331	25.00 ug/L	-0.02

System Monitoring Compounds					
37) Dibromofluoromethane	9.78	111	3473	0.4848 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.92%#	
43) 1,2-Dichloroethane-d4	10.42	65	3775	0.5027 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	2.00%#	
58) Toluene-d8	12.79	98	12605	0.5119 ug/L	-0.02
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.04%#	
80) p-Bromofluorobenzene	16.19	95	4581	0.4888 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	1.96%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.24	85	10429	0.9564 ug/L	92
3) Chloromethane	3.70	50	10808	1.1457 ug/L	87
4) Vinyl Chloride	3.94	62	9513	1.0246 ug/L	97
5) 1,3-Butadiene	3.99	54	7889	0.4011 ug/L #	54
6) Bromomethane	4.86	94	2276	1.2327 ug/L	67
7) Chloroethane	5.01	64	5623	0.9798 ug/L	87
8) Trichlorofluoromethane	5.48	101	11946	0.9278 ug/L	96
9) Diethyl ether	6.03	59	23190	4.9278 ug/L	93
10) Isoprene	6.06	67	8558	0.8581 ug/L	94
11) Acrolein	6.26	56	1236	2.2750 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	7630	1.0490 ug/L	95
13) Acetone	6.36	43	2205	2.1379 ug/L #	8
14) 1,1-Dichloroethene	6.59	61	11643	0.9952 ug/L	98
15) Tert-Butyl Alcohol	6.69	59	1494	6.8913 ug/L #	59
16) Dimethyl Sulfide	6.85	62	7069	0.9066 ug/L	100
18) Methyl acetate	7.11	43	3952	0.9215 ug/L #	79
19) Methylene Chloride	7.37	84	7588	1.0372 ug/L	91
20) Carbon Disulfide	7.41	76	26089	1.0799 ug/L	98
21) Acrylonitrile	7.55	53	3354	2.2270 ug/L	97
22) Methyl Tert Butyl Ether	7.59	73	11218	0.8820 ug/L #	75
23) trans-1,2-Dichloroethene	7.82	61	10975	0.9740 ug/L	89
24) n-Hexane	7.90	57	9364	0.9469 ug/L	97
25) Diisopropyl ether	8.24	45	114147	4.8902 ug/L	98
26) Vinyl Acetate	8.42	43	2291	0.7120 ug/L #	76
27) 1,1-Dichloroethane	8.44	63	14740	1.0410 ug/L	98
28) Ethyl-Tert-Butyl ether	8.82	59	88489	4.7290 ug/L	95
29) 2-Butanone	9.01	43	954	0.6213 ug/L #	55
30) Propionitrile	9.11	54	2224	4.3798 ug/L #	56
31) 2,2-Dichloropropane	9.21	77	9893	0.9464 ug/L	95
32) cis-1,2-Dichloroethene	9.30	96	7553	0.9699 ug/L	92
33) Chloroform	9.49	83	13178	0.9797 ug/L	94
34) 1-Bromopropane	9.63	122	1017	0.7247 ug/L	88
35) Bromochloromethane	9.73	130	3602	0.9247 ug/L	90
36) Tetrahydrofuran	9.75	42	5513	5.1479 ug/L	92
38) 1,1,1-Trichloroethane	10.02	97	11460	0.9781 ug/L	96
39) Cyclohexane	10.06	56	11006	0.8729 ug/L	79
40) 1,1-Dichloropropene	10.22	75	9225	0.9119 ug/L	94
41) Tert-Amyl-Methyl ether	10.33	73	64606	4.5896 ug/L	93
42) Carbon Tetrachloride	10.37	117	9189	0.9145 ug/L	97
45) 1,2-Dichloroethane	10.54	62	8304	0.9345 ug/L	94

(#) = qualifier out of range (m) = manual integration
8M402832.D 8260WTR.M Mon Feb 09 12:25:14 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402832.D Vial: 4
Acq On : 6 Feb 2015 16:57 Operator: TMB
Sample : WG511287-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:14 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	10.58	78	27406	0.9903 ug/L		92
47)	Trichloroethene	11.32	130	6694	0.9616 ug/L		94
48)	Methylcyclohexane	11.42	83	9364	0.8254 ug/L		94
49)	1,2-Dichloropropane	11.54	63	6798	0.9033 ug/L		86
50)	Bromodichloromethane	11.84	83	8550	0.8985 ug/L		98
52)	Dibromomethane	11.93	93	3606	1.0153 ug/L		91
53)	2-Chloroethyl Vinyl Ether	12.14	63	2475	0.8659 ug/L	#	52
54)	4-Methyl-2-Pentanone	12.17	58	762	0.5942 ug/L	#	42
55)	cis-1,3-Dichloropropene	12.48	75	8836	0.8882 ug/L		95
56)	Dimethyl Disulfide	12.74	79	3497	5.0341 ug/L		100
59)	Toluene	12.89	91	28238	1.0106 ug/L		100
60)	Ethyl Methacrylate	12.99	69	4257	0.7971 ug/L		88
62)	trans-1,3-Dichloropropene	13.07	75	6842	0.8003 ug/L		97
63)	1,1,2-Trichloroethane	13.29	97	4173	0.9407 ug/L		99
64)	2-Hexanone	13.25	58	236	0.2057 ug/L	#	1
65)	1,3-Dichloropropane	13.60	76	7076	0.8800 ug/L		93
66)	Tetrachloroethene	13.72	164	5469	0.9064 ug/L		97
67)	Dibromochloromethane	13.98	129	4423	0.7803 ug/L		85
68)	1,2-Dibromoethane	14.25	107	3915	0.8878 ug/L		95
69)	1-Chlorohexane	14.32	91	8295	0.8777 ug/L		85
70)	Chlorobenzene	14.75	112	19891	1.0528 ug/L		93
71)	1,1,1,2-Tetrachloroethane	14.77	131	5260	0.8152 ug/L		96
72)	Ethylbenzene	14.77	106	10234	0.9467 ug/L		88
73)	m-,p-Xylene	14.86	106	24326	1.9758 ug/L		94
74)	o-Xylene	15.42	106	10442	0.8620 ug/L		90
75)	Styrene	15.46	104	17184	0.8844 ug/L		94
76)	Bromoform	15.96	173	2628	0.7514 ug/L		95
77)	Isopropylbenzene	15.84	105	29668	0.9803 ug/L		94
79)	1,1,2,2-Tetrachloroethane	16.06	83	4368	0.9196 ug/L	#	85
81)	1,2,3-Trichloropropane	16.25	110	998	0.7515 ug/L	#	43
82)	trans-1,4-Dichloro-2-Buten	16.30	53	637	1.0436 ug/L	#	1
83)	n-Propylbenzene	16.35	91	37716	0.9871 ug/L		95
84)	Bromobenzene	16.48	156	6808	0.9207 ug/L		97
85)	1,3,5-Trimethylbenzene	16.53	105	24594	0.9642 ug/L		92
86)	2-Chlorotoluene	16.63	91	22921	0.9837 ug/L		85
87)	4-Chlorotoluene	16.68	91	22964	0.9676 ug/L		95
88)	a-Methylstyrene	16.95	118	10986	0.7475 ug/L		95
89)	tert-Butylbenzene	17.01	134	5320	0.9571 ug/L		81
90)	1,2,4-Trimethylbenzene	17.06	105	25207	0.9617 ug/L		95
91)	sec-Butylbenzene	17.28	105	32585	0.9665 ug/L		99
92)	p-Isopropyltoluene	17.43	119	25877	0.9710 ug/L		93
93)	1,3-Dichlorobenzene	17.63	146	14367	0.9470 ug/L		98
94)	1,4-Dichlorobenzene	17.75	146	15270	0.9829 ug/L	#	63
95)	n-Butylbenzene	17.96	91	27659	0.9470 ug/L		96
96)	1,2-Dichlorobenzene	18.26	146	12888	0.9480 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.25	75	411	0.4661 ug/L	#	44
98)	1,2,4-Trichlorobenzene	20.39	180	9937	0.9204 ug/L		99
99)	Hexachlorobutadiene	20.55	225	6043	0.9512 ug/L		97
100)	Naphthalene	20.76	128	14995	0.9419 ug/L		96
101)	1,2,3-Trichlorobenzene	21.07	180	8916	0.9457 ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402832.D Vial: 4
Acq On : 6 Feb 2015 16:57 Operator: TMB
Sample : WG511287-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 9 12:25 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration

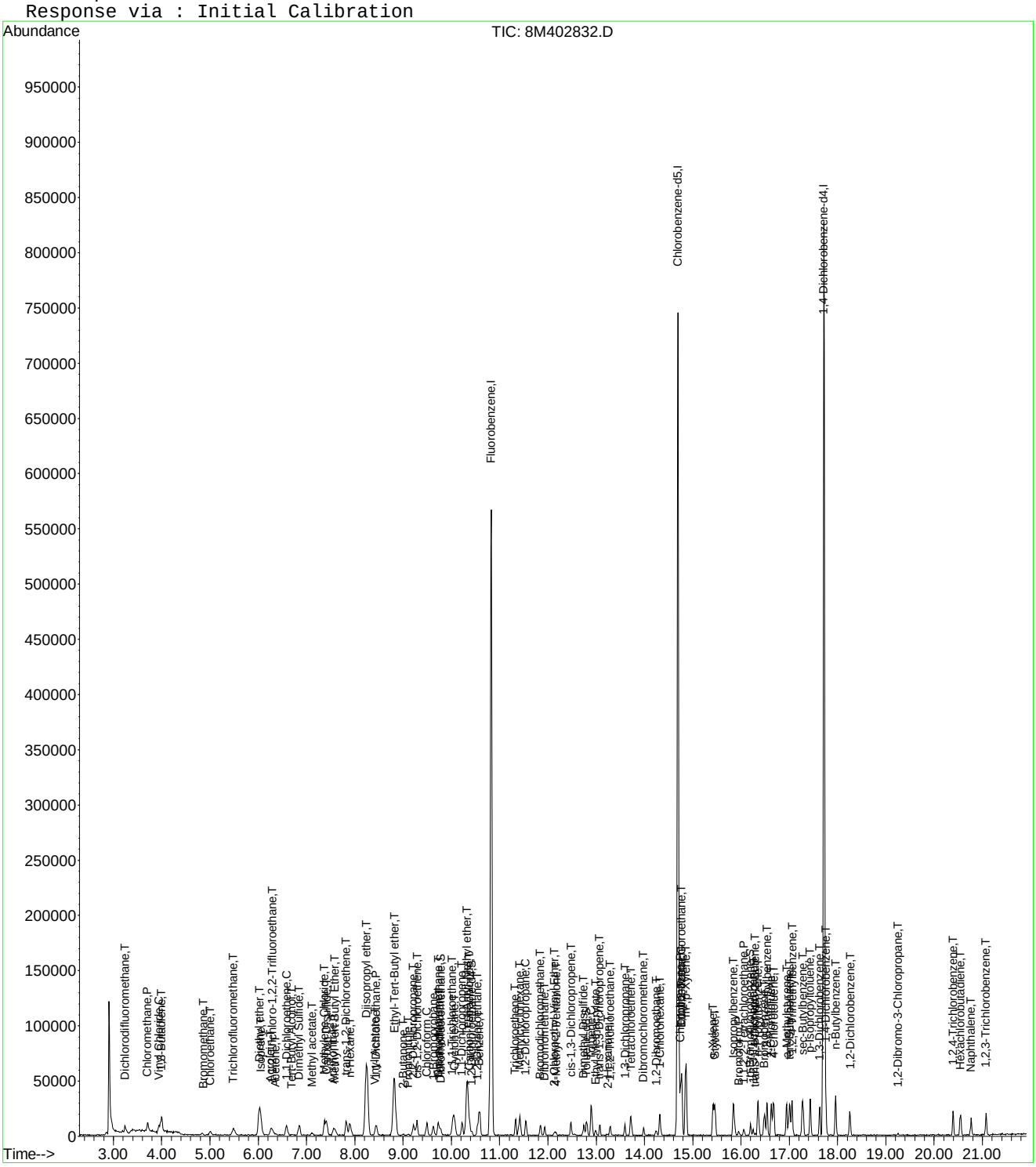

8M402832.D 8260WTR.M Mon Feb 09 12:25:15 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402833.D Vial: 5
Acq On : 6 Feb 2015 17:26 Operator: TMB
Sample : WG511287-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:15 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	684209	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	512100	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.71	152	259877	25.00 ug/L	-0.02

System Monitoring Compounds					
37) Dibromofluoromethane	9.78	111	7460	1.0360 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	4.16%#	
43) 1,2-Dichloroethane-d4	10.42	65	8372	1.1090 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	4.44%#	
58) Toluene-d8	12.80	98	25029	1.0288 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.12%#	
80) p-Bromofluorobenzene	16.19	95	8934	0.9585 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	3.84%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.24	85	20472	1.8677 ug/L	100
3) Chloromethane	3.70	50	19974	2.1063 ug/L	94
4) Vinyl Chloride	3.94	62	18345	1.9657 ug/L	97
5) 1,3-Butadiene	3.99	54	14633	1.2441 ug/L #	64
6) Bromomethane	4.84	94	4890	1.9533 ug/L	96
7) Chloroethane	5.01	64	11310	1.9605 ug/L	94
8) Trichlorofluoromethane	5.49	101	24971	1.9292 ug/L	98
9) Diethyl ether	6.02	59	121007	25.5797 ug/L	90
10) Isoprene	6.06	67	18886	1.8837 ug/L	88
11) Acrolein	6.26	56	7529	13.7860 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	13985	1.9127 ug/L	97
13) Acetone	6.37	43	3124	3.0132 ug/L #	5
14) 1,1-Dichloroethene	6.59	61	22809	1.9396 ug/L	94
15) Tert-Butyl Alcohol	6.70	59	10841	49.7454 ug/L #	88
16) Dimethyl Sulfide	6.85	62	14670	1.8717 ug/L	95
18) Methyl acetate	7.12	43	8916	2.0681 ug/L #	90
19) Methylene Chloride	7.37	84	15632	2.1257 ug/L	92
20) Carbon Disulfide	7.42	76	50256	2.0694 ug/L	99
21) Acrylonitrile	7.55	53	19250	12.7155 ug/L	97
22) Methyl Tert Butyl Ether	7.58	73	23150	1.8107 ug/L	92
23) trans-1,2-Dichloroethene	7.82	61	22661	2.0007 ug/L	95
24) n-Hexane	7.91	57	18875	1.8988 ug/L	91
25) Diisopropyl ether	8.24	45	614110	26.1727 ug/L	98
26) Vinyl Acetate	8.42	43	7611	2.3529 ug/L #	76
27) 1,1-Dichloroethane	8.44	63	29275	2.0567 ug/L	97
28) Ethyl-Tert-Butyl ether	8.81	59	477463	25.3836 ug/L	97
29) 2-Butanone	9.00	43	3235	2.0960 ug/L #	55
30) Propionitrile	9.10	54	13019	25.5056 ug/L	98
31) 2,2-Dichloropropane	9.22	77	21477	2.0439 ug/L	100
32) cis-1,2-Dichloroethene	9.29	96	15599	1.9926 ug/L	95
33) Chloroform	9.49	83	27455	2.0306 ug/L	98
34) 1-Bromopropane	9.62	122	2581	1.8297 ug/L	94
35) Bromochloromethane	9.72	130	8164	2.0849 ug/L	95
36) Tetrahydrofuran	9.75	42	26690	24.7928 ug/L	95
38) 1,1,1-Trichloroethane	10.03	97	22970	1.9502 ug/L	97
39) Cyclohexane	10.06	56	24983	1.9710 ug/L	91
40) 1,1-Dichloropropene	10.22	75	18702	1.8392 ug/L	99
41) Tert-Amyl-Methyl ether	10.32	73	360978	25.5105 ug/L	99
42) Carbon Tetrachloride	10.36	117	19375	1.9183 ug/L	100
45) 1,2-Dichloroethane	10.54	62	17547	1.9643 ug/L	96

(#) = qualifier out of range (m) = manual integration
8M402833.D 8260WTR.M Mon Feb 09 12:25:16 2015 Page 1

Data File : C:\MSDCHEM\2\DATA\020615\8M402833.D Vial: 5
Acq On : 6 Feb 2015 17:26 Operator: TMB
Sample : WG511287-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:15 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	10.58	78	56783	2.0412 ug/L		94
47)	Trichloroethene	11.33	130	13237	1.8916 ug/L		94
48)	Methylcyclohexane	11.41	83	20025	1.7560 ug/L		91
49)	1,2-Dichloropropane	11.54	63	14715	1.9452 ug/L		98
50)	Bromodichloromethane	11.84	83	19679	2.0572 ug/L		98
51)	1,4-Dioxane	11.84	88	1488	50.6455 ug/L	#	55
52)	Dibromomethane	11.93	93	7126	1.9960 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.14	63	5258	1.8299 ug/L		89
54)	4-Methyl-2-Pentanone	12.17	58	2374	1.8416 ug/L	#	69
55)	cis-1,3-Dichloropropene	12.47	75	18245	1.8244 ug/L		96
56)	Dimethyl Disulfide	12.74	79	8238	5.4625 ug/L		94
59)	Toluene	12.90	91	58092	2.1042 ug/L		96
60)	Ethyl Methacrylate	13.00	69	9206	1.7447 ug/L		96
62)	trans-1,3-Dichloropropene	13.07	75	16051	1.9002 ug/L		94
63)	1,1,2-Trichloroethane	13.30	97	9010	2.0557 ug/L		99
64)	2-Hexanone	13.23	58	1834	1.6177 ug/L	#	30
65)	1,3-Dichloropropane	13.60	76	15954	2.0082 ug/L		91
66)	Tetrachloroethene	13.72	164	11407	1.9135 ug/L		96
67)	Dibromochloromethane	13.98	129	10891	1.9448 ug/L		97
68)	1,2-Dibromoethane	14.24	107	9032	2.0731 ug/L		92
69)	1-Chlorohexane	14.32	91	17339	1.8568 ug/L		96
70)	Chlorobenzene	14.74	112	38160	2.0442 ug/L		79
71)	1,1,1,2-Tetrachloroethane	14.78	131	11640	1.8258 ug/L		99
72)	Ethylbenzene	14.77	106	20794	1.9470 ug/L		91
73)	m-,p-Xylene	14.86	106	49918	4.1036 ug/L		94
74)	o-Xylene	15.42	106	22192	1.8542 ug/L		87
75)	Styrene	15.46	104	38336	1.9970 ug/L		98
76)	Bromoform	15.96	173	6299	1.8230 ug/L		84
77)	Isopropylbenzene	15.84	105	61420	2.0541 ug/L		100
79)	1,1,2,2-Tetrachloroethane	16.06	83	9970	2.1107 ug/L		96
81)	1,2,3-Trichloropropane	16.26	110	2570	1.9461 ug/L		82
82)	trans-1,4-Dichloro-2-Buten	16.30	53	2207	2.0091 ug/L		60
83)	n-Propylbenzene	16.35	91	78597	2.0685 ug/L		97
84)	Bromobenzene	16.48	156	15210	2.0686 ug/L		98
85)	1,3,5-Trimethylbenzene	16.55	105	49457	1.9498 ug/L		100
86)	2-Chlorotoluene	16.63	91	49976	2.1568 ug/L		87
87)	4-Chlorotoluene	16.67	91	47500	2.0125 ug/L		92
88)	a-Methylstyrene	16.95	118	26221	1.7941 ug/L		99
89)	tert-Butylbenzene	17.00	134	9753	1.7644 ug/L		81
90)	1,2,4-Trimethylbenzene	17.06	105	56340	2.1615 ug/L		96
91)	sec-Butylbenzene	17.28	105	68712	2.0494 ug/L		100
92)	p-Isopropyltoluene	17.43	119	55519	2.0949 ug/L		92
93)	1,3-Dichlorobenzene	17.63	146	30149	1.9984 ug/L		96
94)	1,4-Dichlorobenzene	17.75	146	30189	1.9540 ug/L		77
95)	n-Butylbenzene	17.96	91	57908	1.9937 ug/L		98
96)	1,2-Dichlorobenzene	18.25	146	28070	2.0762 ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.25	75	1368	1.5599 ug/L		72
98)	1,2,4-Trichlorobenzene	20.40	180	21185	1.9731 ug/L		93
99)	Hexachlorobutadiene	20.55	225	12046	1.9067 ug/L		90
100)	Naphthalene	20.76	128	30158	1.9050 ug/L		97
101)	1,2,3-Trichlorobenzene	21.07	180	19124	2.0397 ug/L		94

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402833.D Vial: 5
Acq On : 6 Feb 2015 17:26 Operator: TMB
Sample : WG511287-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 9 12:25 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration

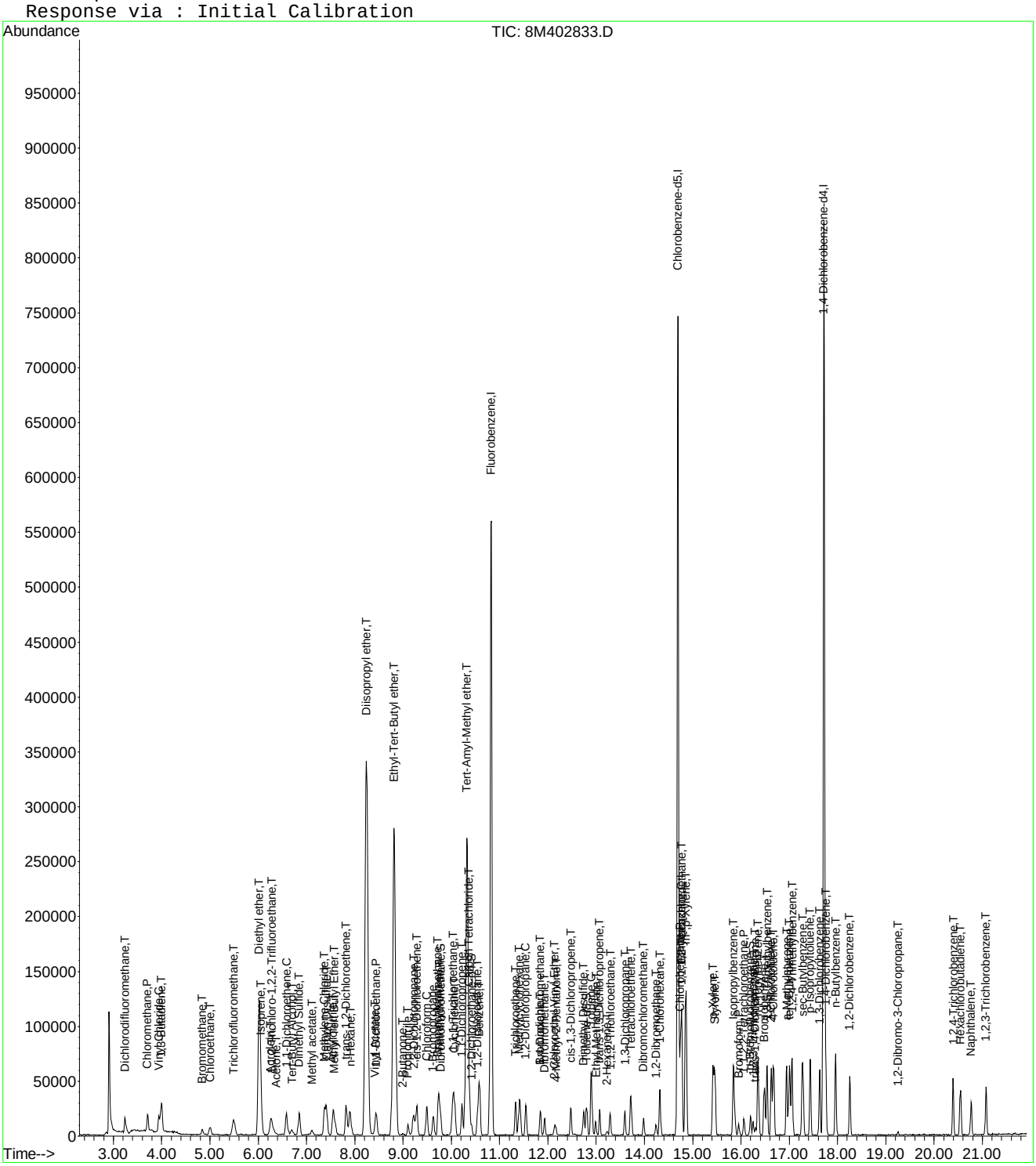

8M402833.D 8260WTR.M Mon Feb 09 12:25:16 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402834.D Vial: 6
Acq On : 6 Feb 2015 17:54 Operator: TMB
Sample : WG511287-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:16 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	701000	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	517318	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.72	152	264517	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	19430	2.6337 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 10.52%#		
43) 1,2-Dichloroethane-d4	10.42	65	20557	2.6579 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 10.64%#		
58) Toluene-d8	12.80	98	64338	2.6179 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 10.48%#		
80) p-Bromofluorobenzene	16.20	95	24229	2.5540 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 10.20%#		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.24	85	53946	4.8037 ug/L	95
3) Chloromethane	3.70	50	49077	5.0513 ug/L	99
4) Vinyl Chloride	3.94	62	49043	5.1290 ug/L	97
5) 1,3-Butadiene	3.99	54	41912	4.5658 ug/L #	79
6) Bromomethane	4.84	94	13843	4.3290 ug/L	91
7) Chloroethane	5.00	64	29596	5.0073 ug/L	97
8) Trichlorofluoromethane	5.49	101	67946	5.1237 ug/L	100
9) Diethyl ether	6.02	59	244432	50.4329 ug/L	92
10) Isoprene	6.06	67	49866	4.8546 ug/L	91
11) Acrolein	6.25	56	12812	22.8976 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	38315	5.1147 ug/L	93
13) Acetone	6.35	43	6167	5.8057 ug/L #	26
14) 1,1-Dichloroethene	6.58	61	60623	5.0316 ug/L	97
15) Tert-Butyl Alcohol	6.69	59	21974	98.4156 ug/L	93
16) Dimethyl Sulfide	6.85	62	38750	4.8255 ug/L	96
17) Iodomethane	7.10	142	1335	17.1832 ug/L #	32
18) Methyl acetate	7.11	43	22452	5.0831 ug/L	98
19) Methylene Chloride	7.37	84	38342	5.0889 ug/L	96
20) Carbon Disulfide	7.41	76	129184	5.1921 ug/L	99
21) Acrylonitrile	7.55	53	35517	22.8986 ug/L	95
22) Methyl Tert Butyl Ether	7.59	73	65059	4.9667 ug/L	92
23) trans-1,2-Dichloroethene	7.81	61	57105	4.9208 ug/L	93
24) n-Hexane	7.90	57	51504	5.0571 ug/L	92
25) Diisopropyl ether	8.24	45	1246526	51.8531 ug/L	98
26) Vinyl Acetate	8.41	43	16287	4.9145 ug/L	96
27) 1,1-Dichloroethane	8.45	63	75270	5.1614 ug/L	99
28) Ethyl-Tert-Butyl ether	8.81	59	977865	50.7414 ug/L	96
29) 2-Butanone	9.00	43	7302	4.6177 ug/L	93
30) Propionitrile	9.10	54	25675	49.0953 ug/L	99
31) 2,2-Dichloropropane	9.22	77	51352	4.7700 ug/L	99
32) cis-1,2-Dichloroethene	9.28	96	40797	5.0866 ug/L	89
33) Chloroform	9.49	83	69512	5.0180 ug/L	100
34) 1-Bromopropane	9.62	122	6848	4.7382 ug/L	96
35) Bromochloromethane	9.73	130	20831	5.1924 ug/L	94
36) Tetrahydrofuran	9.75	42	54903	49.7788 ug/L	97
38) 1,1,1-Trichloroethane	10.02	97	58972	4.8870 ug/L	98
39) Cyclohexane	10.06	56	65876	5.0728 ug/L	89
40) 1,1-Dichloropropene	10.22	75	52084	4.9993 ug/L	95
41) Tert-Amyl-Methyl ether	10.33	73	726207	50.0921 ug/L	99
42) Carbon Tetrachloride	10.37	117	51723	4.9983 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M402834.D 8260WTR.M Mon Feb 09 12:25:17 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402834.D Vial: 6
Acq On : 6 Feb 2015 17:54 Operator: TMB
Sample : WG511287-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:16 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.53	62	45071	4.9247	ug/L	99
46)	Benzene	10.58	78	153041	5.3696	ug/L	93
47)	Trichloroethene	11.33	130	35521	4.9544	ug/L	99
48)	Methylcyclohexane	11.41	83	56528	4.8382	ug/L	92
49)	1,2-Dichloropropane	11.55	63	39432	5.0877	ug/L	99
50)	Bromodichloromethane	11.85	83	49339	5.0343	ug/L	99
51)	1,4-Dioxane	11.83	88	2693	89.4633	ug/L	67
52)	Dibromomethane	11.93	93	18541	5.0689	ug/L	93
53)	2-Chloroethyl Vinyl Ether	12.14	63	13638	4.6327	ug/L	96
54)	4-Methyl-2-Pentanone	12.17	58	5811	4.3998	ug/L	93
55)	cis-1,3-Dichloropropene	12.48	75	51835	5.0590	ug/L	95
56)	Dimethyl Disulfide	12.75	79	23468	6.7931	ug/L	97
59)	Toluene	12.90	91	154018	5.5226	ug/L	96
60)	Ethyl Methacrylate	12.98	69	24235	4.5466	ug/L	97
62)	trans-1,3-Dichloropropene	13.07	75	40777	4.7786	ug/L	98
63)	1,1,2-Trichloroethane	13.29	97	21942	4.9558	ug/L	96
64)	2-Hexanone	13.23	58	4784	4.1773	ug/L	75
65)	1,3-Dichloropropane	13.59	76	41347	5.1520	ug/L	94
66)	Tetrachloroethene	13.72	164	30321	5.0349	ug/L	94
67)	Dibromochloromethane	13.99	129	28092	4.9658	ug/L	99
68)	1,2-Dibromoethane	14.25	107	21416	4.8659	ug/L	98
69)	1-Chlorohexane	14.32	91	46767	4.9577	ug/L	94
70)	Chlorobenzene	14.74	112	99494	5.2761	ug/L	94
71)	1,1,1,2-Tetrachloroethane	14.77	131	31159	4.8382	ug/L	99
72)	Ethylbenzene	14.77	106	53750	4.9819	ug/L	89
73)	m-,p-Xylene	14.86	106	133314	10.8489	ug/L	97
74)	o-Xylene	15.42	106	61832	5.1141	ug/L	94
75)	Styrene	15.46	104	106910	5.5130	ug/L	99
76)	Bromoform	15.96	173	16402	4.6989	ug/L	97
77)	Isopropylbenzene	15.85	105	165605	5.4825	ug/L	96
79)	1,1,2,2-Tetrachloroethane	16.07	83	24669	5.1310	ug/L	97
81)	1,2,3-Trichloropropane	16.25	110	7054	5.2479	ug/L	93
82)	trans-1,4-Dichloro-2-Buten	16.30	53	6707	4.6978	ug/L	90
83)	n-Propylbenzene	16.36	91	212816	5.5026	ug/L	97
84)	Bromobenzene	16.49	156	39314	5.2529	ug/L	97
85)	1,3,5-Trimethylbenzene	16.54	105	140321	5.4350	ug/L	98
86)	2-Chlorotoluene	16.62	91	125596	5.3253	ug/L	96
87)	4-Chlorotoluene	16.68	91	132986	5.5357	ug/L	98
88)	a-Methylstyrene	16.94	118	72043	4.8429	ug/L	96
89)	tert-Butylbenzene	17.01	134	28280	5.0265	ug/L	93
90)	1,2,4-Trimethylbenzene	17.06	105	149715	5.6432	ug/L	97
91)	sec-Butylbenzene	17.28	105	183357	5.3729	ug/L	96
92)	p-Isopropyltoluene	17.43	119	145342	5.3879	ug/L	100
93)	1,3-Dichlorobenzene	17.63	146	78874	5.1364	ug/L	98
94)	1,4-Dichlorobenzene	17.76	146	80578	5.1241	ug/L	93
95)	n-Butylbenzene	17.96	91	159334	5.3895	ug/L	96
96)	1,2-Dichlorobenzene	18.26	146	71466	5.1933	ug/L	100
97)	1,2-Dibromo-3-Chloropropan	19.24	75	4130	4.6268	ug/L	94
98)	1,2,4-Trichlorobenzene	20.40	180	55102	5.0421	ug/L	98
99)	Hexachlorobutadiene	20.54	225	32814	5.1028	ug/L	95
100)	Naphthalene	20.77	128	82876	5.1431	ug/L	98
101)	1,2,3-Trichlorobenzene	21.08	180	46793	4.9033	ug/L	95

(#) = qualifier out of range (m) = manual integration
8M402834.D 8260WTR.M Mon Feb 09 12:25:17 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402834.D Vial: 6
Acq On : 6 Feb 2015 17:54 Operator: TMB
Sample : WG511287-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 9 12:25 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration

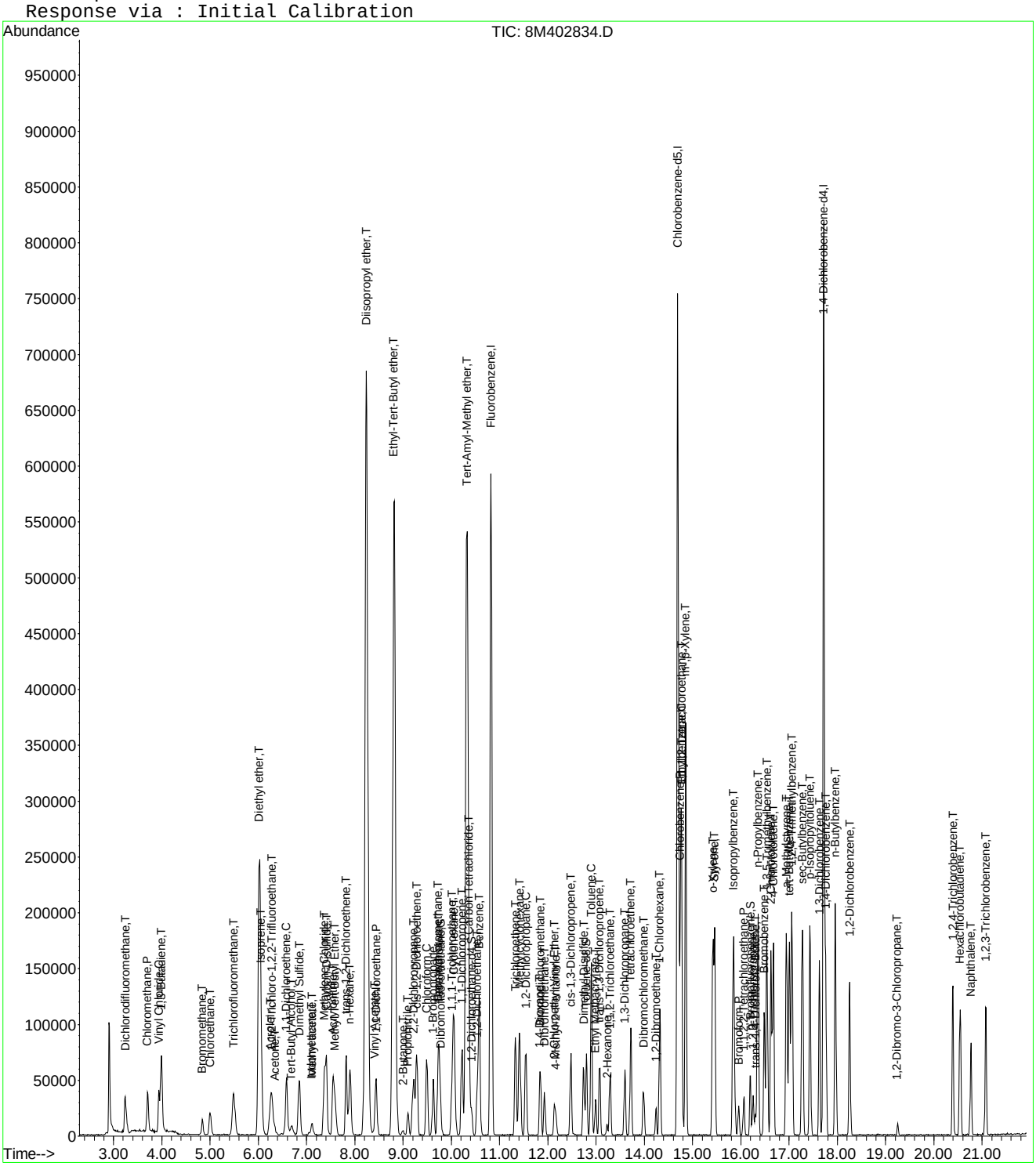

8M402834.D 8260WTR.M Mon Feb 09 12:25:17 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402835.D Vial: 7
Acq On : 6 Feb 2015 18:23 Operator: TMB
Sample : WG511287-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:17 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	723508	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	530120	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.72	152	273581	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	77163	10.1339 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 40.52%#		
43) 1,2-Dichloroethane-d4	10.42	65	80882	10.1322 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 40.52%#		
58) Toluene-d8	12.80	98	264106	10.4871 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 41.96%#		
80) p-Bromofluorobenzene	16.19	95	100946	10.2881 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 41.16%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.25	85	240807	20.7759 ug/L	99
3) Chloromethane	3.71	50	200541	19.9987 ug/L	99
4) Vinyl Chloride	3.94	62	201316	20.3992 ug/L	97
5) 1,3-Butadiene	3.99	54	166991	19.7037 ug/L #	77
6) Bromomethane	4.84	94	69373	18.3247 ug/L	97
7) Chloroethane	5.00	64	124147	20.3509 ug/L	100
8) Trichlorofluoromethane	5.49	101	273696	19.9968 ug/L	100
9) Diethyl ether	6.02	59	414362	82.8343 ug/L	92
10) Isoprene	6.06	67	213419	20.1307 ug/L	93
11) Acrolein	6.26	56	23441	40.5904 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	153405	19.8411 ug/L	88
13) Acetone	6.36	43	22510	20.5321 ug/L #	27
14) 1,1-Dichloroethene	6.59	61	247819	19.9287 ug/L	95
15) Tert-Butyl Alcohol	6.69	59	37293	161.8291 ug/L	96
16) Dimethyl Sulfide	6.85	62	169308	20.4280 ug/L	95
17) Iodomethane	7.10	142	27436	21.7678 ug/L	93
18) Methyl acetate	7.11	43	92700	20.3342 ug/L	99
19) Methylene Chloride	7.37	84	154971	19.9285 ug/L	92
20) Carbon Disulfide	7.41	76	535775	20.8637 ug/L	100
21) Acrylonitrile	7.55	53	64465	40.2690 ug/L	95
22) Methyl Tert Butyl Ether	7.59	73	282067	20.8634 ug/L	95
23) trans-1,2-Dichloroethene	7.82	61	240030	20.0404 ug/L	94
24) n-Hexane	7.90	57	204275	19.4336 ug/L	91
25) Diisopropyl ether	8.24	45	2090125	84.2403 ug/L	98
26) Vinyl Acetate	8.40	43	69804	20.4078 ug/L	98
27) 1,1-Dichloroethane	8.45	63	301526	20.0331 ug/L	97
28) Ethyl-Tert-Butyl ether	8.81	59	1673546	84.1387 ug/L	97
29) 2-Butanone	8.99	43	32769	20.0780 ug/L	98
30) Propionitrile	9.10	54	44612	82.6525 ug/L	98
31) 2,2-Dichloropropane	9.22	77	213017	19.1710 ug/L	100
32) cis-1,2-Dichloroethene	9.28	96	165979	20.0506 ug/L	91
33) Chloroform	9.49	83	287225	20.0894 ug/L	99
34) 1-Bromopropane	9.64	122	31569	21.1635 ug/L	94
35) Bromochloromethane	9.73	130	86620	20.9197 ug/L	96
36) Tetrahydrofuran	9.75	42	93194	81.8673 ug/L	98
38) 1,1,1-Trichloroethane	10.03	97	253973	20.3919 ug/L	99
39) Cyclohexane	10.06	56	272449	20.3272 ug/L	87
40) 1,1-Dichloropropene	10.22	75	222924	20.7319 ug/L	97
41) Tert-Amyl-Methyl ether	10.33	73	1250827	83.5951 ug/L	100
42) Carbon Tetrachloride	10.37	117	215678	20.1939 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M402835.D 8260WTR.M Mon Feb 09 12:25:18 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402835.D Vial: 7
Acq On : 6 Feb 2015 18:23 Operator: TMB
Sample : WG511287-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:17 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.53	62	194079	20.5464 ug/L	99
46)	Benzene	10.58	78	624813	21.2402 ug/L	95
47)	Trichloroethene	11.33	130	150656	20.3594 ug/L	99
48)	Methylcyclohexane	11.41	83	234780	19.4695 ug/L	91
49)	1,2-Dichloropropane	11.54	63	167083	20.8873 ug/L	97
50)	Bromodichloromethane	11.85	83	208601	20.6225 ug/L	99
51)	1,4-Dioxane	11.84	88	4630	149.0267 ug/L	90
52)	Dibromomethane	11.93	93	75951	20.1183 ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.14	63	59789	19.6777 ug/L	100
54)	4-Methyl-2-Pentanone	12.17	58	25980	19.0586 ug/L	97
55)	cis-1,3-Dichloropropene	12.48	75	223588	21.1428 ug/L	100
56)	Dimethyl Disulfide	12.74	79	112646	14.3791 ug/L	95
59)	Toluene	12.90	91	629702	22.0339 ug/L	100
60)	Ethyl Methacrylate	12.99	69	117632	21.5356 ug/L	93
62)	trans-1,3-Dichloropropene	13.08	75	185618	21.2272 ug/L	99
63)	1,1,2-Trichloroethane	13.29	97	98242	21.6532 ug/L	100
64)	2-Hexanone	13.22	58	22977	19.5786 ug/L #	78
65)	1,3-Dichloropropane	13.60	76	176762	21.4933 ug/L	96
66)	Tetrachloroethene	13.72	164	128193	20.7729 ug/L	95
67)	Dibromochloromethane	13.99	129	124859	21.5383 ug/L	98
68)	1,2-Dibromoethane	14.24	107	94365	20.9229 ug/L	98
69)	1-Chlorohexane	14.32	91	203918	21.0952 ug/L	92
70)	Chlorobenzene	14.74	112	400587	20.7298 ug/L	97
71)	1,1,1,2-Tetrachloroethane	14.77	131	136307	20.6539 ug/L	99
72)	Ethylbenzene	14.77	106	227873	20.6109 ug/L	93
73)	m-,p-Xylene	14.86	106	548631	43.5686 ug/L	97
74)	o-Xylene	15.43	106	261971	21.1441 ug/L	95
75)	Styrene	15.46	104	447823	22.5349 ug/L	99
76)	Bromoform	15.95	173	71884	20.0964 ug/L	99
77)	Isopropylbenzene	15.85	105	704265	22.7522 ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.07	83	106769	21.4717 ug/L	100
81)	1,2,3-Trichloropropane	16.25	110	29722	21.3794 ug/L	88
82)	trans-1,4-Dichloro-2-Buten	16.30	53	34101	20.5291 ug/L	87
83)	n-Propylbenzene	16.36	91	890795	22.2694 ug/L	97
84)	Bromobenzene	16.49	156	166061	21.4530 ug/L	97
85)	1,3,5-Trimethylbenzene	16.54	105	600947	22.5049 ug/L	96
86)	2-Chlorotoluene	16.62	91	516971	21.1935 ug/L	99
87)	4-Chlorotoluene	16.68	91	547408	22.0315 ug/L	99
88)	a-Methylstyrene	16.95	118	317871	20.6600 ug/L	96
89)	tert-Butylbenzene	17.01	134	120327	20.6782 ug/L	94
90)	1,2,4-Trimethylbenzene	17.06	105	618928	22.5561 ug/L	98
91)	sec-Butylbenzene	17.28	105	769120	21.7909 ug/L	98
92)	p-Isopropyltoluene	17.43	119	619554	22.2062 ug/L	99
93)	1,3-Dichlorobenzene	17.63	146	333290	20.9854 ug/L	99
94)	1,4-Dichlorobenzene	17.76	146	330243	20.3049 ug/L	100
95)	n-Butylbenzene	17.96	91	655292	21.4311 ug/L	97
96)	1,2-Dichlorobenzene	18.26	146	299166	21.0194 ug/L	98
97)	1,2-Dibromo-3-Chloropropan	19.25	75	20244	21.9280 ug/L	92
98)	1,2,4-Trichlorobenzene	20.40	180	234939	20.7858 ug/L	98
99)	Hexachlorobutadiene	20.54	225	135161	20.3222 ug/L	97
100)	Naphthalene	20.77	128	371805	22.3090 ug/L	100
101)	1,2,3-Trichlorobenzene	21.08	180	207913	21.0648 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M402835.D 8260WTR.M Mon Feb 09 12:25:18 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402835.D Vial: 7
Acq On : 6 Feb 2015 18:23 Operator: TMB
Sample : WG511287-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 9 12:25 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration

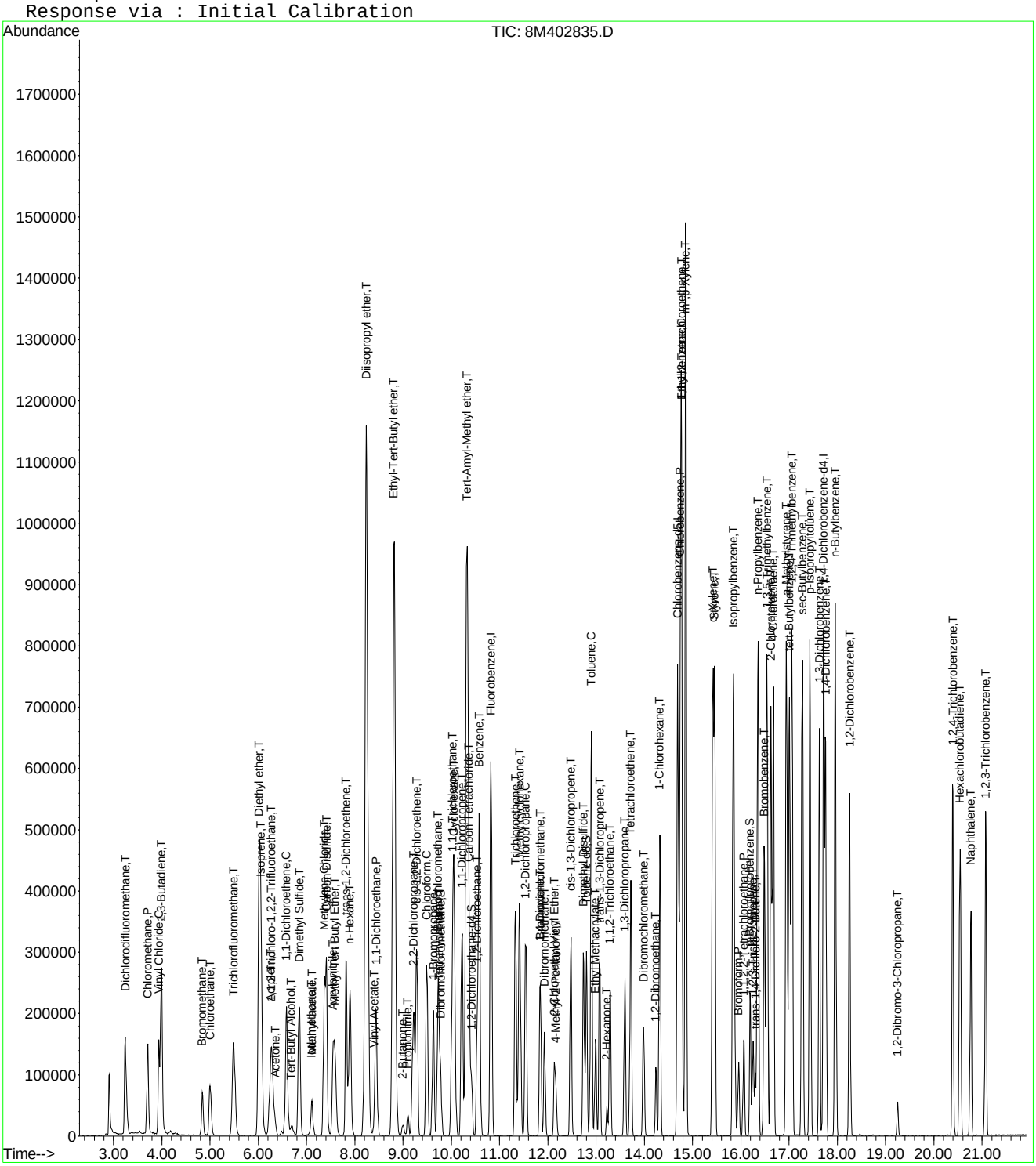

8M402835.D 8260WTR.M Mon Feb 09 12:25:18 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402836.D Vial: 8
Acq On : 6 Feb 2015 18:53 Operator: TMB
Sample : WG511287-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:18 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	749967	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	559024	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.72	152	298746	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.78	111	197651	25.0418 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.16%		
43) 1,2-Dichloroethane-d4	10.42	65	202135	24.4284 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.72%		
58) Toluene-d8	12.80	98	680220	25.6135 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.44%		
80) p-Bromofluorobenzene	16.19	95	269996	25.1991 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.80%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.25	85	668948	55.6781 ug/L	99
3) Chloromethane	3.70	50	527166	50.7163 ug/L	99
4) Vinyl Chloride	3.94	62	535788	52.3755 ug/L	97
5) 1,3-Butadiene	3.98	54	434610	52.5608 ug/L	80
6) Bromomethane	4.84	94	204341	48.7204 ug/L	99
7) Chloroethane	5.00	64	328744	51.9884 ug/L	100
8) Trichlorofluoromethane	5.49	101	731212	51.5392 ug/L	99
9) Diethyl ether	6.02	59	522889	100.8419 ug/L	90
10) Isoprene	6.06	67	579894	52.7685 ug/L	91
11) Acrolein	6.26	56	29167	48.7236 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	409007	51.0338 ug/L	92
13) Acetone	6.36	43	60434	53.1790 ug/L #	25
14) 1,1-Dichloroethene	6.59	61	663486	51.4727 ug/L	96
15) Tert-Butyl Alcohol	6.69	59	46377	194.1481 ug/L	93
16) Dimethyl Sulfide	6.85	62	446327	51.9520 ug/L	97
17) Iodomethane	7.10	142	174342	46.5321 ug/L	96
18) Methyl acetate	7.11	43	232528	49.2068 ug/L	97
19) Methylene Chloride	7.37	84	402285	49.9067 ug/L	93
20) Carbon Disulfide	7.41	76	1388043	52.1450 ug/L	100
21) Acrylonitrile	7.55	53	86556	52.1610 ug/L	100
22) Methyl Tert Butyl Ether	7.58	73	737231	52.6062 ug/L	95
23) trans-1,2-Dichloroethene	7.82	61	633510	51.0263 ug/L	93
24) n-Hexane	7.90	57	569519	52.2695 ug/L	91
25) Diisopropyl ether	8.24	45	2666140	103.6650 ug/L	97
26) Vinyl Acetate	8.41	43	181262	51.1238 ug/L	99
27) 1,1-Dichloroethane	8.45	63	807937	51.7848 ug/L	98
28) Ethyl-Tert-Butyl ether	8.82	59	2132420	103.4266 ug/L	97
29) 2-Butanone	9.00	43	84296	49.8272 ug/L	100
30) Propionitrile	9.10	54	56488	100.9628 ug/L	98
31) 2,2-Dichloropropane	9.22	77	585159	50.8050 ug/L	100
32) cis-1,2-Dichloroethene	9.28	96	435219	50.7206 ug/L	93
33) Chloroform	9.49	83	753305	50.8297 ug/L	100
34) 1-Bromopropane	9.63	122	85577	55.3459 ug/L	96
35) Bromochloromethane	9.73	130	226053	52.6682 ug/L	97
36) Tetrahydrofuran	9.75	42	117159	99.2886 ug/L	99
38) 1,1,1-Trichloroethane	10.03	97	670293	51.9201 ug/L	100
39) Cyclohexane	10.06	56	746335	53.7189 ug/L	87
40) 1,1-Dichloropropene	10.22	75	595750	53.4499 ug/L	99
41) Tert-Amyl-Methyl ether	10.32	73	1600676	103.2020 ug/L	98
42) Carbon Tetrachloride	10.37	117	582809	52.6431 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M402836.D 8260WTR.M Mon Feb 09 12:25:19 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402836.D Vial: 8
Acq On : 6 Feb 2015 18:53 Operator: TMB
Sample : WG511287-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:18 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.54	62	510056	52.0927	ug/L		99
46)	Benzene	10.58	78	1614922	52.9617	ug/L		96
47)	Trichloroethene	11.33	130	409083	53.3325	ug/L		99
48)	Methylcyclohexane	11.41	83	652403	52.1929	ug/L		90
49)	1,2-Dichloropropane	11.54	63	438636	52.8999	ug/L		97
50)	Bromodichloromethane	11.84	83	556255	53.0517	ug/L		100
51)	1,4-Dioxane	11.83	88	6135	190.5017	ug/L		90
52)	Dibromomethane	11.93	93	200168	51.1510	ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.14	63	165026	52.3971	ug/L		100
54)	4-Methyl-2-Pentanone	12.17	58	72781	51.5076	ug/L		97
55)	cis-1,3-Dichloropropene	12.48	75	603636	55.0669	ug/L		99
56)	Dimethyl Disulfide	12.74	79	322600	31.4146	ug/L		92
59)	Toluene	12.90	91	1632851	54.1809	ug/L		100
60)	Ethyl Methacrylate	12.99	69	311031	53.9981	ug/L		94
62)	trans-1,3-Dichloropropene	13.07	75	501878	54.4270	ug/L		99
63)	1,1,2-Trichloroethane	13.29	97	253504	52.9850	ug/L		99
64)	2-Hexanone	13.22	58	62675	50.6439	ug/L		82
65)	1,3-Dichloropropane	13.60	76	458035	52.8149	ug/L		95
66)	Tetrachloroethene	13.72	164	337654	51.8858	ug/L		96
67)	Dibromochloromethane	13.98	129	332555	54.4001	ug/L		100
68)	1,2-Dibromoethane	14.24	107	256030	53.8326	ug/L		100
69)	1-Chlorohexane	14.32	91	548777	53.8354	ug/L		91
70)	Chlorobenzene	14.74	112	1062642	52.1469	ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.77	131	378327	54.3620	ug/L		100
72)	Ethylbenzene	14.77	106	616387	52.8690	ug/L		98
73)	m-,p-Xylene	14.86	106	1439778	108.4258	ug/L		99
74)	o-Xylene	15.43	106	716501	54.8399	ug/L		99
75)	Styrene	15.46	104	1188549	56.7166	ug/L		97
76)	Bromoform	15.95	173	199721	52.9485	ug/L		99
77)	Isopropylbenzene	15.85	105	1843492	56.4772	ug/L		100
79)	1,1,2,2-Tetrachloroethane	16.06	83	273239	50.3208	ug/L		100
81)	1,2,3-Trichloropropane	16.25	110	76841	50.6168	ug/L		50
82)	trans-1,4-Dichloro-2-Buten	16.29	53	90183	48.7864	ug/L	#	36
83)	n-Propylbenzene	16.36	91	2323945	53.2035	ug/L		99
84)	Bromobenzene	16.48	156	434524	51.4064	ug/L		99
85)	1,3,5-Trimethylbenzene	16.54	105	1591921	54.5942	ug/L		99
86)	2-Chlorotoluene	16.63	91	1389731	52.1737	ug/L		90
87)	4-Chlorotoluene	16.68	91	1428553	52.6517	ug/L		90
88)	a-Methylstyrene	16.95	118	885565	52.7090	ug/L		98
89)	tert-Butylbenzene	17.01	134	325970	51.2994	ug/L		96
90)	1,2,4-Trimethylbenzene	17.06	105	1634263	54.5418	ug/L		99
91)	sec-Butylbenzene	17.28	105	2029634	52.6602	ug/L		100
92)	p-Isopropyltoluene	17.43	119	1635037	53.6669	ug/L		100
93)	1,3-Dichlorobenzene	17.63	146	892891	51.4846	ug/L		100
94)	1,4-Dichlorobenzene	17.76	146	889032	50.0574	ug/L		100
95)	n-Butylbenzene	17.96	91	1720306	51.5228	ug/L		98
96)	1,2-Dichlorobenzene	18.26	146	792394	50.9839	ug/L		100
97)	1,2-Dibromo-3-Chloropropan	19.25	75	52790	52.3646	ug/L		94
98)	1,2,4-Trichlorobenzene	20.40	180	639152	51.7844	ug/L		98
99)	Hexachlorobutadiene	20.54	225	369594	50.8895	ug/L		97
100)	Naphthalene	20.77	128	961232	52.8174	ug/L		100
101)	1,2,3-Trichlorobenzene	21.07	180	556451	51.6281	ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402836.D Vial: 8
Acq On : 6 Feb 2015 18:53 Operator: TMB
Sample : WG511287-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 9 12:25 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration

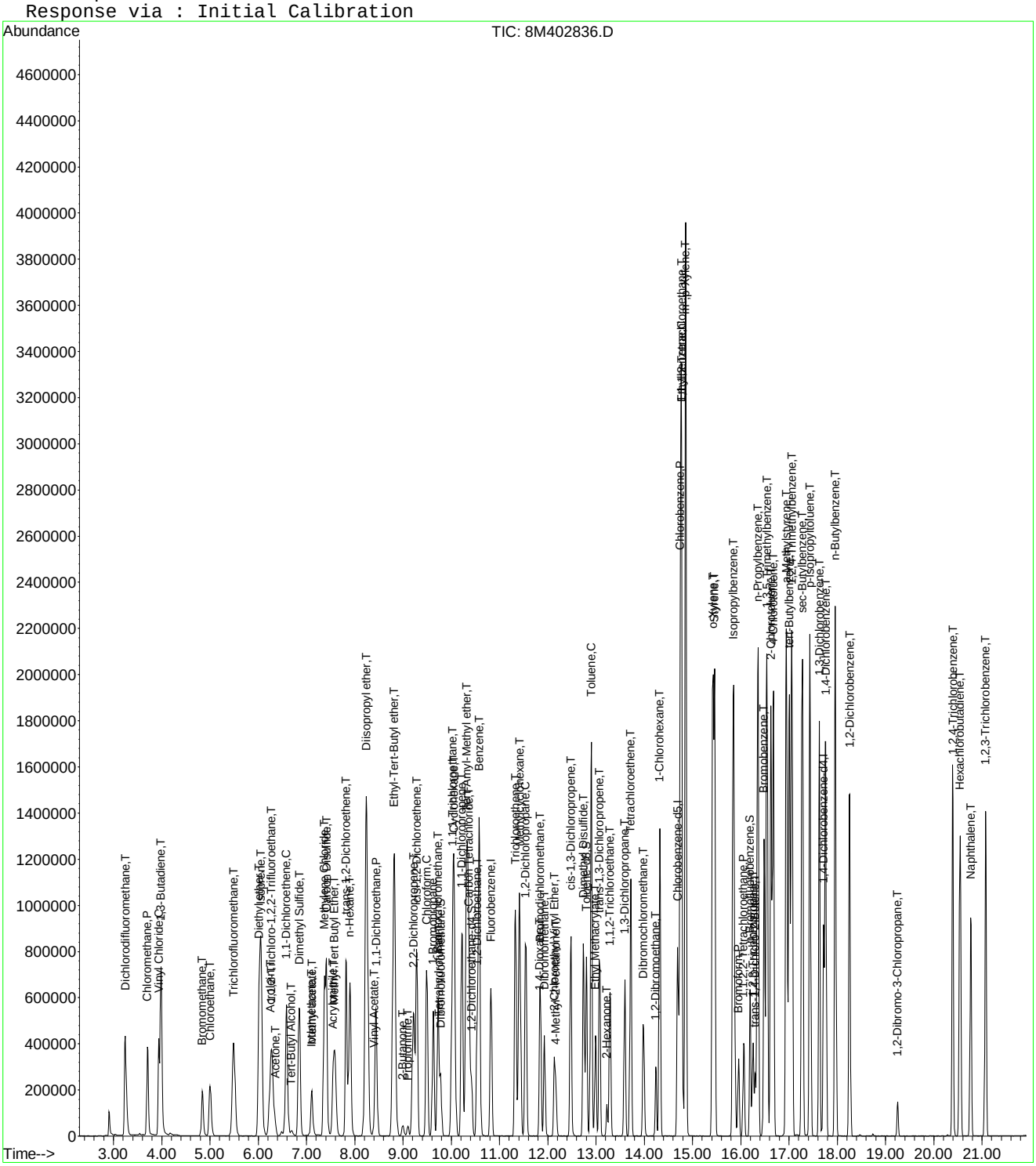

8M402836.D 8260WTR.M Mon Feb 09 12:25:19 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402837.D Vial: 9
Acq On : 6 Feb 2015 19:22 Operator: TMB
Sample : WG511287-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:19 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	815180	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	604018	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.72	152	318263	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	423859	49.4057 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 197.64%#		
43) 1,2-Dichloroethane-d4	10.42	65	432708	48.1103 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 192.44%#		
58) Toluene-d8	12.80	98	1427730	49.7560 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 199.04%#		
80) p-Bromofluorobenzene	16.19	95	576985	50.5486 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 202.20%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.25	85	1388100	106.2921 ug/L	100
3) Chloromethane	3.70	50	1091798	96.6343 ug/L	99
4) Vinyl Chloride	3.94	62	1098992	98.8368 ug/L	96
5) 1,3-Butadiene	3.98	54	838191	99.9573 ug/L	92
6) Bromomethane	4.84	94	512923	103.4536 ug/L	99
7) Chloroethane	5.00	64	692663	100.7765 ug/L	99
8) Trichlorofluoromethane	5.49	101	1556241	100.9159 ug/L	99
9) Diethyl ether	6.02	59	1120720	198.8462 ug/L	92
10) Isoprene	6.06	67	1228258	102.8263 ug/L	92
11) Acrolein	6.25	56	64380	98.9436 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	872133	100.1148 ug/L	93
13) Acetone	6.36	43	107813	87.2808 ug/L #	31
14) 1,1-Dichloroethene	6.59	61	1409929	100.6309 ug/L	95
15) Tert-Butyl Alcohol	6.69	59	103873	400.0570 ug/L	96
16) Dimethyl Sulfide	6.84	62	959323	102.7313 ug/L	97
17) Iodomethane	7.10	142	501675	95.2790 ug/L	99
18) Methyl acetate	7.11	43	507647	98.8325 ug/L	98
19) Methylene Chloride	7.37	84	858667	98.0027 ug/L	91
20) Carbon Disulfide	7.41	76	2889975	99.8833 ug/L	99
21) Acrylonitrile	7.55	53	183542	101.7589 ug/L	99
22) Methyl Tert Butyl Ether	7.58	73	1612164	105.8355 ug/L	95
23) trans-1,2-Dichloroethene	7.82	61	1349765	100.0202 ug/L	93
24) n-Hexane	7.90	57	1235596	104.3290 ug/L	90
25) Diisopropyl ether	8.24	45	5454993	195.1335 ug/L	95
26) Vinyl Acetate	8.41	43	387905	100.6538 ug/L	99
27) 1,1-Dichloroethane	8.44	63	1672935	98.6490 ug/L	97
28) Ethyl-Tert-Butyl ether	8.81	59	4508376	201.1724 ug/L	94
29) 2-Butanone	8.99	43	186462	101.4001 ug/L	99
30) Propionitrile	9.10	54	118765	195.2911 ug/L	99
31) 2,2-Dichloropropane	9.21	77	1263381	100.9150 ug/L	99
32) cis-1,2-Dichloroethene	9.28	96	927623	99.4572 ug/L	92
33) Chloroform	9.49	83	1583842	98.3211 ug/L	100
34) 1-Bromopropane	9.63	122	181166	107.7939 ug/L	100
35) Bromochloromethane	9.73	130	486821	104.3509 ug/L	95
36) Tetrahydrofuran	9.75	42	259639	202.4335 ug/L	100
38) 1,1,1-Trichloroethane	10.03	97	1443938	102.8983 ug/L	99
39) Cyclohexane	10.06	56	1591281	105.3729 ug/L	87
40) 1,1-Dichloropropene	10.21	75	1282749	105.8799 ug/L	99
41) Tert-Amyl-Methyl ether	10.33	73	3430853	203.5052 ug/L	98
42) Carbon Tetrachloride	10.37	117	1282120	106.5449 ug/L	99

(#) = qualifier out of range (m) = manual integration

Data File : C:\MSDCHEM\2\DATA\020615\8M402837.D Vial: 9
Acq On : 6 Feb 2015 19:22 Operator: TMB
Sample : WG511287-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:19 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.54	62	1082141	101.6791 ug/L		99
46)	Benzene	10.58	78	3316966	100.0783 ug/L		98
47)	Trichloroethene	11.33	130	878171	105.3291 ug/L		99
48)	Methylcyclohexane	11.41	83	1428264	105.1217 ug/L		90
49)	1,2-Dichloropropane	11.54	63	934601	103.6968 ug/L		96
50)	Bromodichloromethane	11.85	83	1185022	103.9777 ug/L		99
51)	1,4-Dioxane	11.84	88	14861	424.5423 ug/L		84
52)	Dibromomethane	11.93	93	426089	100.1724 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.14	63	354137	103.4463 ug/L		99
54)	4-Methyl-2-Pentanone	12.17	58	156627	101.9785 ug/L		95
55)	cis-1,3-Dichloropropene	12.48	75	1295440	108.7231 ug/L		100
56)	Dimethyl Disulfide	12.74	79	729029	60.2252 ug/L		90
59)	Toluene	12.90	91	3306160	101.5323 ug/L		97
60)	Ethyl Methacrylate	12.99	69	687483	110.4631 ug/L		94
62)	trans-1,3-Dichloropropene	13.07	75	1084719	108.8716 ug/L		99
63)	1,1,2-Trichloroethane	13.30	97	538554	104.1785 ug/L		98
64)	2-Hexanone	13.22	58	139552	104.3637 ug/L		85
65)	1,3-Dichloropropane	13.60	76	970528	103.5731 ug/L		95
66)	Tetrachloroethene	13.72	164	735083	104.5427 ug/L		97
67)	Dibromochloromethane	13.98	129	724779	109.7293 ug/L		100
68)	1,2-Dibromoethane	14.24	107	553643	107.7370 ug/L		99
69)	1-Chlorohexane	14.32	91	1210846	109.9364 ug/L		90
70)	Chlorobenzene	14.74	112	2230091	101.2850 ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.77	131	839765	111.6778 ug/L		100
72)	Ethylbenzene	14.77	106	1314757	104.3696 ug/L		92
73)	m-,p-Xylene	14.86	106	2979118	207.6374 ug/L		85
74)	o-Xylene	15.43	106	1511516	107.0714 ug/L		97
75)	Styrene	15.46	104	2462150	108.7397 ug/L		94
76)	Bromoform	15.95	173	447717	109.8536 ug/L		100
77)	Isopropylbenzene	15.85	105	3701043	104.9388 ug/L		97
79)	1,1,2,2-Tetrachloroethane	16.06	83	594374	102.7497 ug/L		100
81)	1,2,3-Trichloropropane	16.25	110	166544	102.9786 ug/L		48
82)	trans-1,4-Dichloro-2-Buten	16.29	53	204164	102.9369 ug/L	#	31
83)	n-Propylbenzene	16.36	91	4542815	97.6237 ug/L		96
84)	Bromobenzene	16.49	156	937963	104.1610 ug/L		97
85)	1,3,5-Trimethylbenzene	16.54	105	3311538	106.6033 ug/L		97
86)	2-Chlorotoluene	16.63	91	2751978	96.9798 ug/L		96
87)	4-Chlorotoluene	16.68	91	2959606	102.3919 ug/L		97
88)	a-Methylstyrene	16.95	118	1898822	106.0875 ug/L		95
89)	tert-Butylbenzene	17.01	134	712509	105.2545 ug/L		96
90)	1,2,4-Trimethylbenzene	17.06	105	3321281	104.0470 ug/L		96
91)	sec-Butylbenzene	17.28	105	4105408	99.9855 ug/L		98
92)	p-Isopropyltoluene	17.43	119	3409611	105.0509 ug/L		98
93)	1,3-Dichlorobenzene	17.63	146	1885872	102.0721 ug/L		98
94)	1,4-Dichlorobenzene	17.76	146	1869896	98.8289 ug/L		99
95)	n-Butylbenzene	17.96	91	3501826	98.4474 ug/L		99
96)	1,2-Dichlorobenzene	18.26	146	1687435	101.9143 ug/L		100
97)	1,2-Dibromo-3-Chloropropan	19.25	75	111649	103.9578 ug/L		99
98)	1,2,4-Trichlorobenzene	20.40	180	1362814	103.6447 ug/L		98
99)	Hexachlorobutadiene	20.54	225	801125	103.5427 ug/L		98
100)	Naphthalene	20.77	128	2030559	104.7323 ug/L		99
101)	1,2,3-Trichlorobenzene	21.08	180	1190643	103.6947 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M402837.D 8260WTR.M Mon Feb 09 12:25:20 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402837.D Vial: 9
Acq On : 6 Feb 2015 19:22 Operator: TMB
Sample : WG511287-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 9 12:25 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration

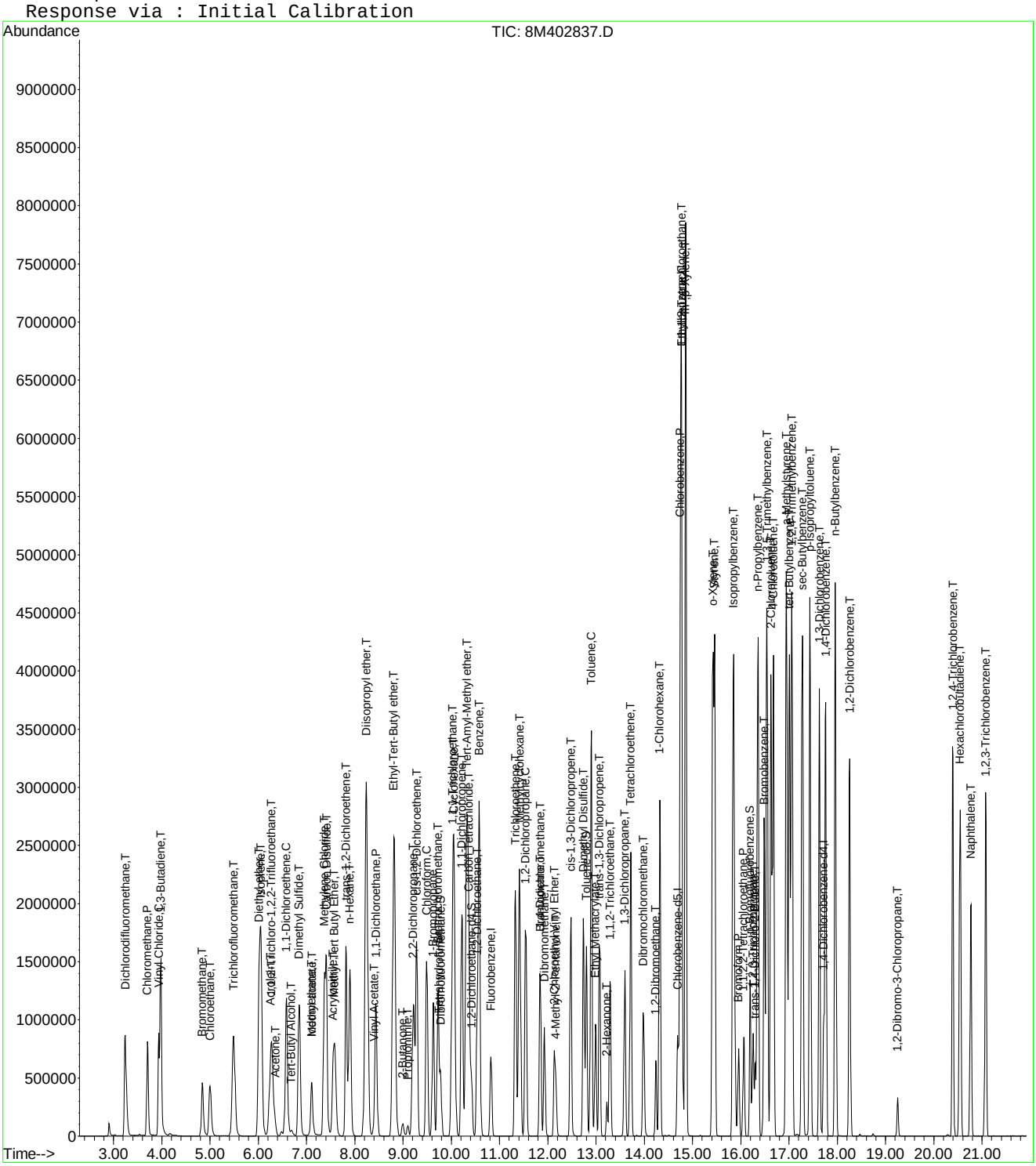

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402838.D Vial: 10
Acq On : 6 Feb 2015 19:51 Operator: TMB
Sample : WG511287-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:21 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	860361	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	638607	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.71	152	337778	25.00 ug/L	-0.02

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	885400	97.7841 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 391.12%#		
43) 1,2-Dichloroethane-d4	10.42	65	911736	96.0472 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 384.20%#		
58) Toluene-d8	12.80	98	2921364	96.2945 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 385.16%#		
80) p-Bromofluorobenzene	16.19	95	1223901	101.0289 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 404.12%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.24	85	2816154	204.3194 ug/L	99
3) Chloromethane	3.70	50	2203682	184.8037 ug/L	99
4) Vinyl Chloride	3.94	62	2209286	188.2560 ug/L	95
5) 1,3-Butadiene	3.98	54	1506086	197.5932 ug/L	94
6) Bromomethane	4.84	94	1191822	200.6064 ug/L	100
7) Chloroethane	5.00	64	1456195	200.7380 ug/L	99
8) Trichlorofluoromethane	5.49	101	3242524	199.2227 ug/L	99
10) Isoprene	6.06	67	2544866	201.8610 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	1859443	202.2419 ug/L	93
13) Acetone	6.36	43	257620	197.6058 ug/L #	27
14) 1,1-Dichloroethene	6.58	61	2913532	197.0274 ug/L	93
16) Dimethyl Sulfide	6.85	62	2025921	205.5575 ug/L	98
17) Iodomethane	7.10	142	1264753	204.0649 ug/L	99
18) Methyl acetate	7.12	43	1092654	201.5550 ug/L	97
19) Methylene Chloride	7.36	84	1790347	193.6081 ug/L	89
20) Carbon Disulfide	7.42	76	5667088	185.5801 ug/L	96
21) Acrylonitrile	7.58	53	36749	19.3044 ug/L #	33
22) Methyl Tert Butyl Ether	7.58	73	3448006	214.4682 ug/L	95
23) trans-1,2-Dichloroethene	7.82	61	2784226	195.4821 ug/L	92
24) n-Hexane	7.90	57	2561760	204.9461 ug/L	90
26) Vinyl Acetate	8.41	43	822817	202.2930 ug/L	98
27) 1,1-Dichloroethane	8.44	63	3414401	190.7661 ug/L	95
29) 2-Butanone	9.00	43	410926	211.7309 ug/L	97
31) 2,2-Dichloropropane	9.21	77	2664401	201.6479 ug/L	99
32) cis-1,2-Dichloroethene	9.29	96	1940263	197.1053 ug/L	90
33) Chloroform	9.49	83	3218476	189.3033 ug/L	97
34) 1-Bromopropane	9.63	122	391900	220.9355 ug/L	98
35) Bromochloromethane	9.72	130	1015883	206.3209 ug/L	93
36) Tetrahydrofuran	9.75	42	1000	0.7387 ug/L #	38
38) 1,1,1-Trichloroethane	10.02	97	3013671	203.4831 ug/L	97
39) Cyclohexane	10.06	56	3329052	208.8698 ug/L	86
40) 1,1-Dichloropropene	10.22	75	2652828	207.4692 ug/L	99
42) Carbon Tetrachloride	10.37	117	2650945	208.7264 ug/L	99
45) 1,2-Dichloroethane	10.54	62	2252771	200.5570 ug/L	97
46) Benzene	10.58	78	6102505	174.4535 ug/L	96
47) Trichloroethene	11.33	130	1845107	209.6831 ug/L	99
48) Methylcyclohexane	11.42	83	2971812	207.2422 ug/L	90
49) 1,2-Dichloropropane	11.54	63	1927503	202.6316 ug/L	94
50) Bromodichloromethane	11.84	83	2466038	205.0153 ug/L	98
51) 1,4-Dioxane	11.83	88	3938	106.5912 ug/L #	17

(#) = qualifier out of range (m) = manual integration
8M402838.D 8260WTR.M Mon Feb 09 12:25:21 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402838.D Vial: 10
Acq On : 6 Feb 2015 19:51 Operator: TMB
Sample : WG511287-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:21 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
52)	Dibromomethane	11.93	93	919872	204.9029 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.14	63	781577	216.3158 ug/L		99
54)	4-Methyl-2-Pentanone	12.16	58	359184	221.5806 ug/L		95
55)	cis-1,3-Dichloropropene	12.48	75	2680475	213.1518 ug/L		98
56)	Dimethyl Disulfide	12.74	79	1579386	118.6582 ug/L		88
59)	Toluene	12.91	91	5926888	172.1565 ug/L		89
60)	Ethyl Methacrylate	12.99	69	1514564	230.1756 ug/L		94
62)	trans-1,3-Dichloropropene	13.07	75	2283279	216.7566 ug/L		97
63)	1,1,2-Trichloroethane	13.29	97	1155476	211.4101 ug/L		98
64)	2-Hexanone	13.23	58	318879	225.5565 ug/L		88
65)	1,3-Dichloropropane	13.60	76	2062564	208.1912 ug/L		95
66)	Tetrachloroethene	13.72	164	1587589	213.5560 ug/L		97
67)	Dibromochloromethane	13.98	129	1577360	225.8728 ug/L		100
68)	1,2-Dibromoethane	14.24	107	1193493	219.6703 ug/L		100
69)	1-Chlorohexane	14.32	91	2468939	212.0212 ug/L		92
70)	Chlorobenzene	14.75	112	4337847	186.3429 ug/L		91
71)	1,1,1,2-Tetrachloroethane	14.78	131	1817884	228.6606 ug/L		100
72)	Ethylbenzene	14.77	106	2683363	201.4763 ug/L		68
73)	m-,p-Xylene	14.86	106	5486910	361.7111 ug/L		64
74)	o-Xylene	15.42	106	3068021	205.5584 ug/L		82
75)	Styrene	15.46	104	4696352	196.1780 ug/L		87
76)	Bromoform	15.96	173	993399	230.5422 ug/L		99
77)	Isopropylbenzene	15.84	105	6460651	173.2625 ug/L		86
79)	1,1,2,2-Tetrachloroethane	16.06	83	1282544	208.9046 ug/L		100
81)	1,2,3-Trichloropropane	16.26	110	372019	216.7394 ug/L		46
82)	trans-1,4-Dichloro-2-Buten	16.30	53	406314	192.4496 ug/L	#	37
83)	n-Propylbenzene	16.36	91	7277550	147.3568 ug/L		81
84)	Bromobenzene	16.48	156	1957667	204.8391 ug/L		95
85)	1,3,5-Trimethylbenzene	16.54	105	5891317	178.6932 ug/L		88
86)	2-Chlorotoluene	16.63	91	5065452	168.1936 ug/L		97
87)	4-Chlorotoluene	16.68	91	5113794	166.6978 ug/L	#	76
88)	a-Methylstyrene	16.95	118	3769742	198.4479 ug/L		92
89)	tert-Butylbenzene	17.01	134	1486695	206.9317 ug/L		88
90)	1,2,4-Trimethylbenzene	17.06	105	5855124	172.8282 ug/L		84
91)	sec-Butylbenzene	17.28	105	6899397	158.3239 ug/L		86
92)	p-Isopropyltoluene	17.43	119	6004148	174.3015 ug/L		88
93)	1,3-Dichlorobenzene	17.63	146	3704237	188.9072 ug/L		94
94)	1,4-Dichlorobenzene	17.76	146	3625483	180.5457 ug/L		94
95)	n-Butylbenzene	17.96	91	5966987	158.0590 ug/L		89
96)	1,2-Dichlorobenzene	18.26	146	3344633	190.3317 ug/L		95
97)	1,2-Dibromo-3-Chloropropan	19.25	75	249595	218.9742 ug/L		98
98)	1,2,4-Trichlorobenzene	20.39	180	2820114	202.0840 ug/L		99
99)	Hexachlorobutadiene	20.55	225	1736414	211.4595 ug/L		97
100)	Naphthalene	20.76	128	4034735	196.0807 ug/L		96
101)	1,2,3-Trichlorobenzene	21.07	180	2475726	203.1574 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M402838.D 8260WTR.M Mon Feb 09 12:25:21 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402838.D Vial: 10
Acq On : 6 Feb 2015 19:51 Operator: TMB
Sample : WG511287-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 9 12:25 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration

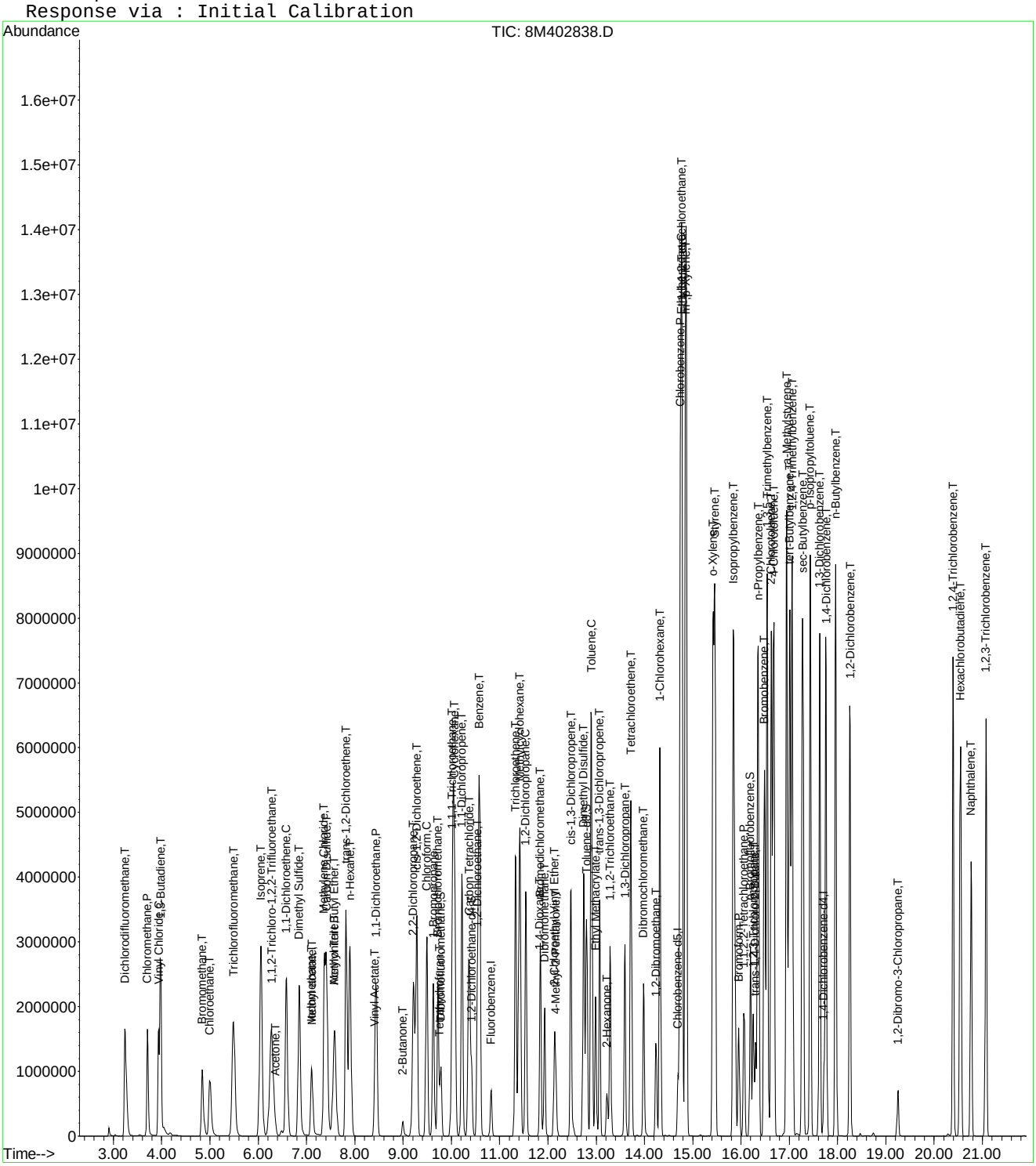

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402839.D Vial: 11
Acq On : 6 Feb 2015 20:20 Operator: TMB
Sample : WG511287-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:22 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	901523	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	691046	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.72	152	352262	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.78	111	1366035	143.9775 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 575.92%#		
43) 1,2-Dichloroethane-d4	10.42	65	1356888	136.4155 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 545.68%#		
58) Toluene-d8	12.80	98	4278628	130.3308 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 521.32%#		
80) p-Bromofluorobenzene	16.19	95	1865361	147.6480 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 590.60%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.24	85	3951974	273.6347 ug/L	96
3) Chloromethane	3.70	50	3322248	265.8874 ug/L	97
4) Vinyl Chloride	3.94	62	3097789	251.9142 ug/L	92
5) 1,3-Butadiene	3.98	54	2002756	301.8722 ug/L	95
6) Bromomethane	4.84	94	2084169	299.0729 ug/L	99
7) Chloroethane	4.99	64	2211352	290.9189 ug/L	99
8) Trichlorofluoromethane	5.49	101	4750855	278.5680 ug/L	98
9) Diethyl ether	6.02	59	1766187	283.3568 ug/L	91
10) Isoprene	6.06	67	3684082	278.8821 ug/L	94
11) Acrolein	6.25	56	108214	150.3823 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.27	101	2736018	283.9953 ug/L	94
13) Acetone	6.36	43	363855	266.3499 ug/L #	29
14) 1,1-Dichloroethene	6.58	61	4306812	277.9500 ug/L	92
15) Tert-Butyl Alcohol	6.70	59	178942	623.1723 ug/L	96
16) Dimethyl Sulfide	6.85	62	3047092	295.0531 ug/L	98
17) Iodomethane	7.10	142	2021387	302.3562 ug/L	97
18) Methyl acetate	7.11	43	1622991	285.7136 ug/L	97
19) Methylene Chloride	7.37	84	2731192	281.8658 ug/L	87
20) Carbon Disulfide	7.41	76	8007309	250.2430 ug/L	94
21) Acrylonitrile	7.55	53	331665	166.2698 ug/L	94
22) Methyl Tert Butyl Ether	7.58	73	5020254	298.0056 ug/L	96
23) trans-1,2-Dichloroethene	7.81	61	4101940	274.8500 ug/L	90
24) n-Hexane	7.90	57	3550055	271.0443 ug/L	90
25) Diisopropyl ether	8.24	45	8093785	261.7979 ug/L	91
26) Vinyl Acetate	8.40	43	1222650	286.8690 ug/L	98
27) 1,1-Dichloroethane	8.44	63	5033833	268.4042 ug/L	92
28) Ethyl-Tert-Butyl ether	8.82	59	6930958	279.6522 ug/L	91
29) 2-Butanone	8.99	43	612144	301.0081 ug/L	97
30) Propionitrile	9.11	54	197455	293.5884 ug/L	100
31) 2,2-Dichloropropane	9.22	77	4048150	292.3847 ug/L	97
32) cis-1,2-Dichloroethene	9.28	96	2923895	283.4675 ug/L	89
33) Chloroform	9.49	83	4711098	264.4441 ug/L	94
34) 1-Bromopropane	9.62	122	593904	319.5291 ug/L	100
35) Bromochloromethane	9.73	130	1545541	299.5601 ug/L	92
36) Tetrahydrofuran	9.75	42	406272	286.4218 ug/L	96
38) 1,1,1-Trichloroethane	10.03	97	4496547	289.7447 ug/L	96
39) Cyclohexane	10.06	56	4700986	281.4802 ug/L	84
40) 1,1-Dichloropropene	10.22	75	3886329	290.0601 ug/L	97
41) Tert-Amyl-Methyl ether	10.33	73	5399436	289.6000 ug/L	98
42) Carbon Tetrachloride	10.37	117	3998573	300.4593 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M402839.D 8260WTR.M Mon Feb 09 12:25:22 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402839.D Vial: 11
Acq On : 6 Feb 2015 20:20 Operator: TMB
Sample : WG511287-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:22 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.53	62	3322645	282.2985 ug/L		96
46)	Benzene	10.58	78	8047028	219.5386 ug/L		88
47)	Trichloroethene	11.33	130	2784062	301.9428 ug/L		99
48)	Methylcyclohexane	11.41	83	4181394	278.2799 ug/L		90
49)	1,2-Dichloropropane	11.55	63	2902586	291.2065 ug/L		92
50)	Bromodichloromethane	11.85	83	3644923	289.1870 ug/L		96
51)	1,4-Dioxane	11.84	88	26646	688.3061 ug/L		87
52)	Dibromomethane	11.93	93	1376488	292.6153 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.14	63	1147889	303.1937 ug/L		97
54)	4-Methyl-2-Pentanone	12.17	58	514297	302.7838 ug/L		94
55)	cis-1,3-Dichloropropene	12.48	75	3901617	296.0914 ug/L		95
56)	Dimethyl Disulfide	12.74	79	2357589	167.0349 ug/L		85
59)	Toluene	12.90	91	7673615	205.9792 ug/L		81
60)	Ethyl Methacrylate	13.00	69	2155268	302.6911 ug/L		94
62)	trans-1,3-Dichloropropene	13.08	75	3322242	291.4549 ug/L		95
63)	1,1,2-Trichloroethane	13.29	97	1721378	291.0502 ug/L		98
64)	2-Hexanone	13.22	58	459551	300.3930 ug/L		89
65)	1,3-Dichloropropane	13.59	76	3017318	281.4510 ug/L		96
66)	Tetrachloroethene	13.72	164	2385319	296.5151 ug/L		98
67)	Dibromochloromethane	13.99	129	2372759	313.9883 ug/L		98
68)	1,2-Dibromoethane	14.24	107	1791795	304.7660 ug/L		100
69)	1-Chlorohexane	14.33	91	3561465	282.6339 ug/L		93
70)	Chlorobenzene	14.74	112	5968974	236.9546 ug/L		85
71)	1,1,1,2-Tetrachloroethane	14.77	131	2799595	325.4222 ug/L		100
72)	Ethylbenzene	14.77	106	4030538	279.6626 ug/L		47
73)	m-,p-Xylene	14.86	106	7175198	437.1139 ug/L		57
74)	o-Xylene	15.42	106	4533258	280.6816 ug/L		68
75)	Styrene	15.46	104	6324791	244.1533 ug/L		77
76)	Bromoform	15.95	173	1513912	324.6789 ug/L		99
77)	Isopropylbenzene	15.85	105	8255060	204.5857 ug/L	#	74
79)	1,1,2,2-Tetrachloroethane	16.07	83	1886198	294.5972 ug/L		99
81)	1,2,3-Trichloropropane	16.25	110	553680	309.3123 ug/L	#	44
82)	trans-1,4-Dichloro-2-Buten	16.30	53	673607	305.5475 ug/L	#	28
83)	n-Propylbenzene	16.36	91	8923406	173.2532 ug/L	#	67
84)	Bromobenzene	16.49	156	2929634	293.9362 ug/L		90
85)	1,3,5-Trimethylbenzene	16.54	105	7599401	221.0246 ug/L		78
86)	2-Chlorotoluene	16.63	91	7349101	233.9866 ug/L		90
87)	4-Chlorotoluene	16.68	91	5830696	182.2521 ug/L	#	60
88)	a-Methylstyrene	16.94	118	5296153	267.3381 ug/L		89
89)	tert-Butylbenzene	17.01	134	2266389	302.4859 ug/L		75
90)	1,2,4-Trimethylbenzene	17.06	105	7479458	211.6968 ug/L		71
91)	sec-Butylbenzene	17.28	105	8565701	188.4794 ug/L	#	75
92)	p-Isopropyltoluene	17.44	119	7636038	212.5609 ug/L	#	77
93)	1,3-Dichlorobenzene	17.64	146	5117667	250.2577 ug/L		87
94)	1,4-Dichlorobenzene	17.76	146	4990248	238.2917 ug/L		87
95)	n-Butylbenzene	17.96	91	7420061	188.4679 ug/L	#	78
96)	1,2-Dichlorobenzene	18.26	146	4692167	256.0364 ug/L		90
97)	1,2-Dibromo-3-Chloropropan	19.25	75	362506	304.9565 ug/L		100
98)	1,2,4-Trichlorobenzene	20.40	180	3984191	273.7606 ug/L		97
99)	Hexachlorobutadiene	20.55	225	2540466	296.6558 ug/L		97
100)	Naphthalene	20.77	128	5319732	247.8992 ug/L		91
101)	1,2,3-Trichlorobenzene	21.08	180	3520415	277.0062 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M402839.D 8260WTR.M Mon Feb 09 12:25:22 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402839.D Vial: 11
Acq On : 6 Feb 2015 20:20 Operator: TMB
Sample : WG511287-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 9 12:25 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration

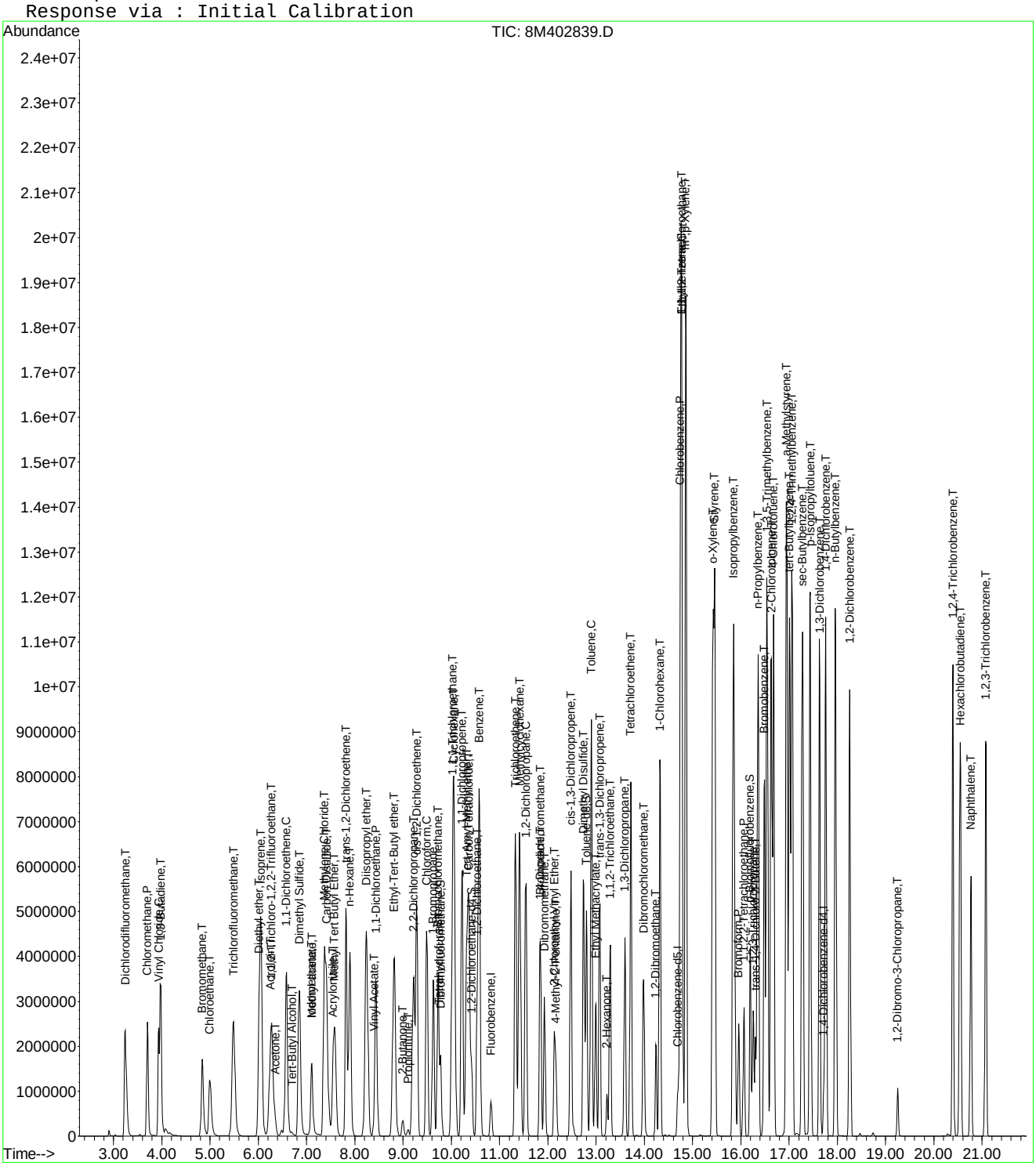

8M402839.D 8260WTR.M Mon Feb 09 12:25:22 2015 Page 3

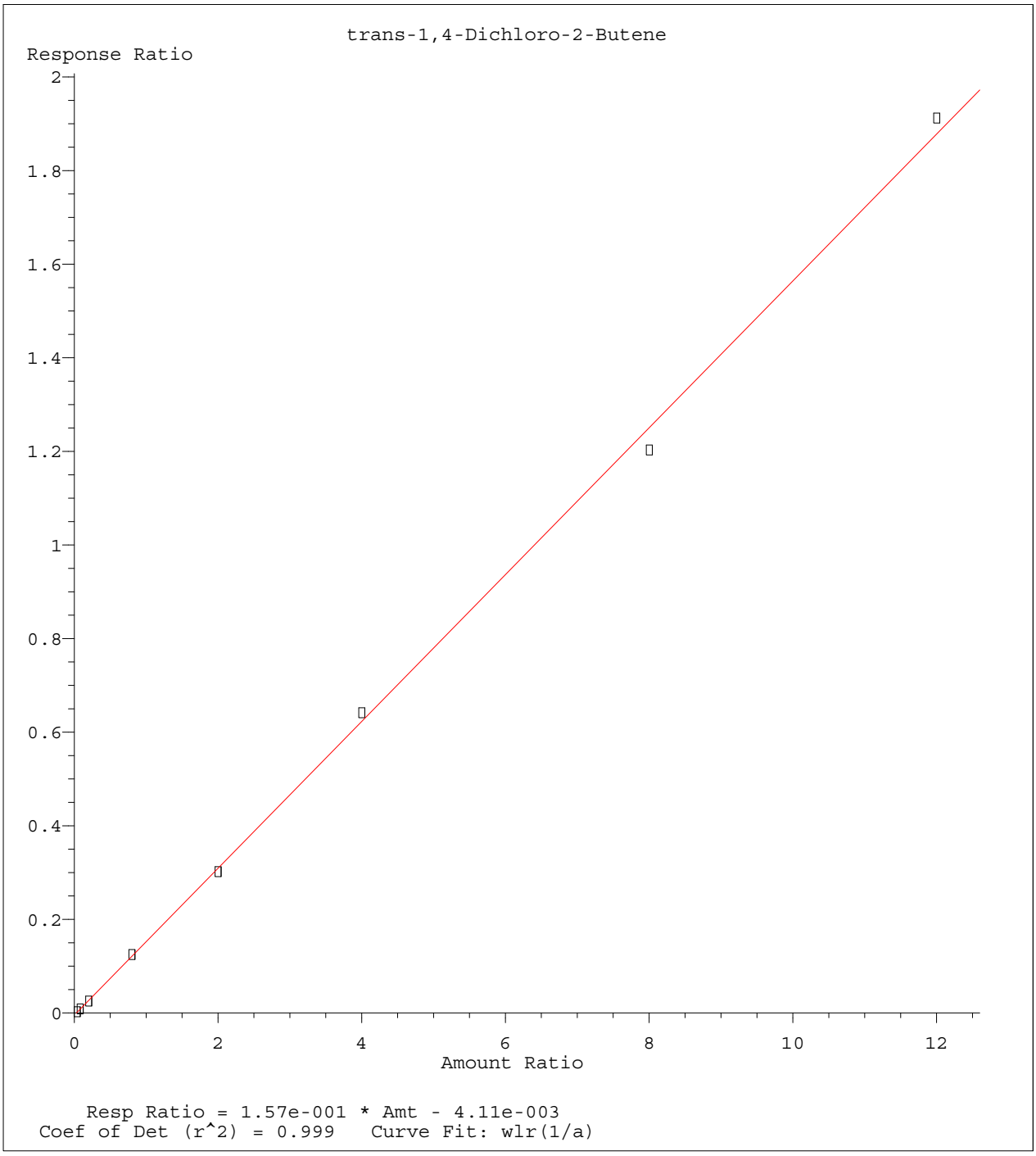

Method Name: C:\MSDCHEM\2\METHODS\8260WTR.M
Calibration Table Last Updated: Mon Feb 09 12:21:39 2015

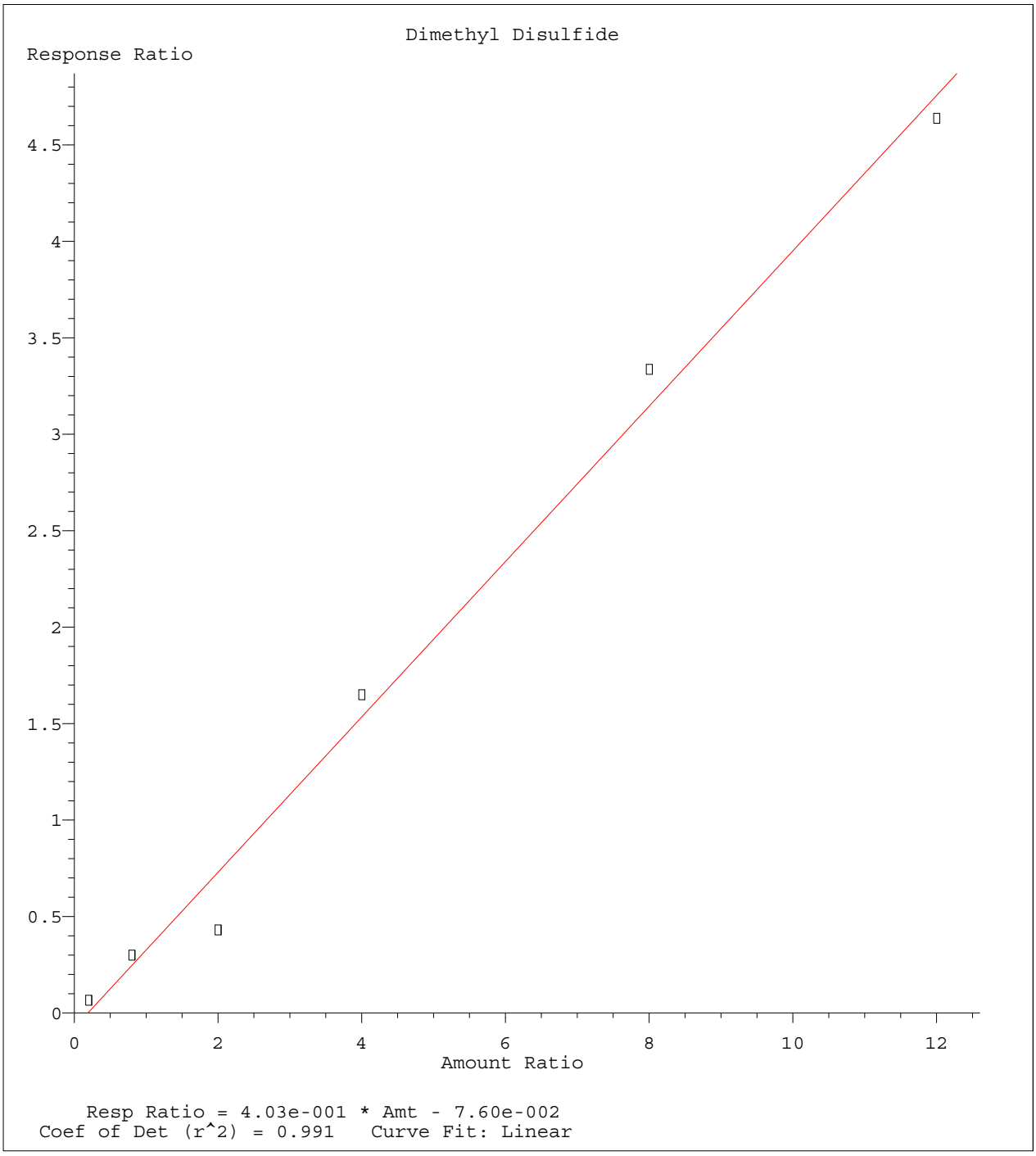

Method Name: C:\MSDCHEM\2\METHODS\8260WTR.M
Calibration Table Last Updated: Mon Feb 09 12:21:39 2015

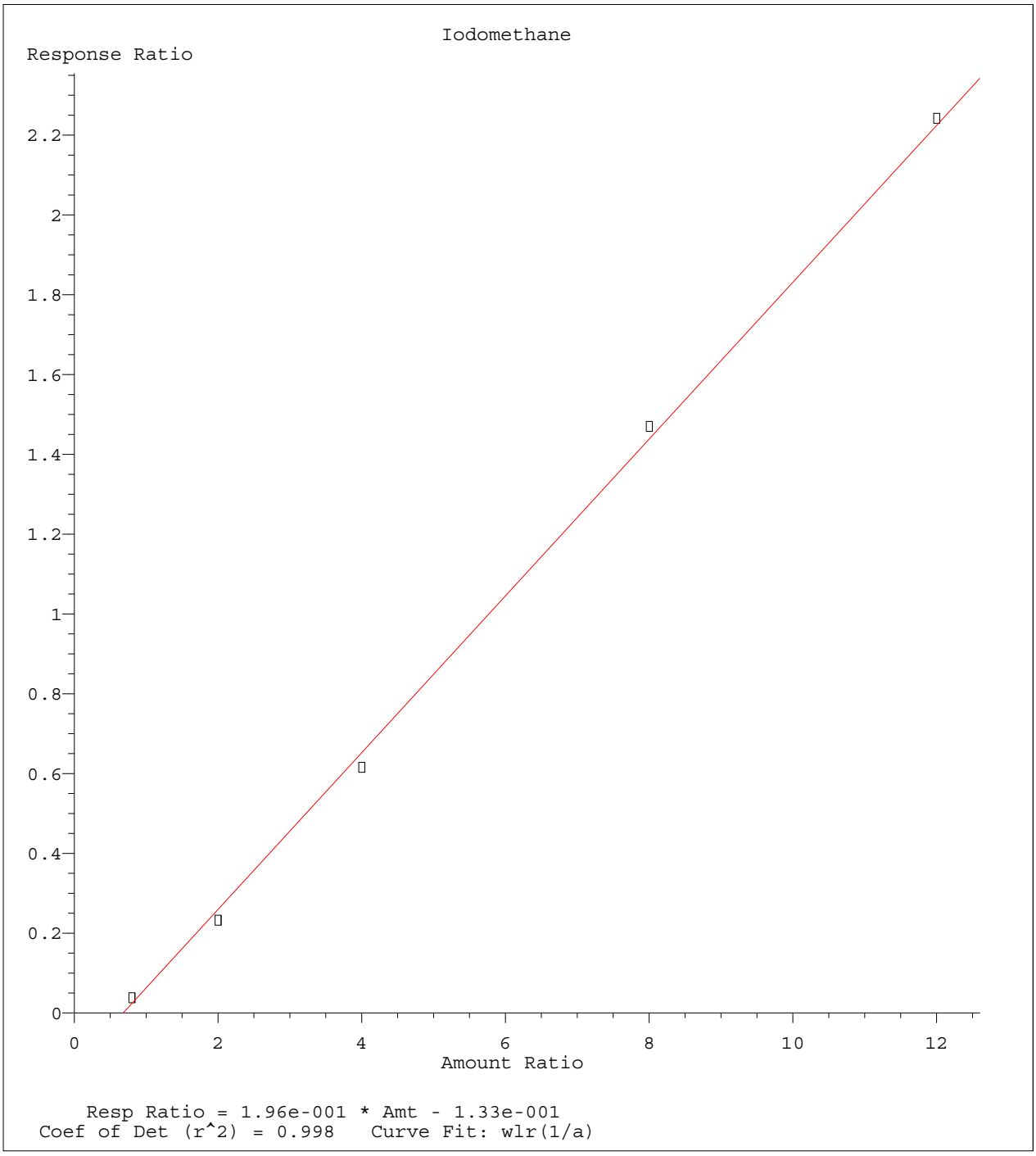

Method Name: C:\MSDCHEM\2\METHODS\8260WTR.M
Calibration Table Last Updated: Mon Feb 09 12:21:39 2015

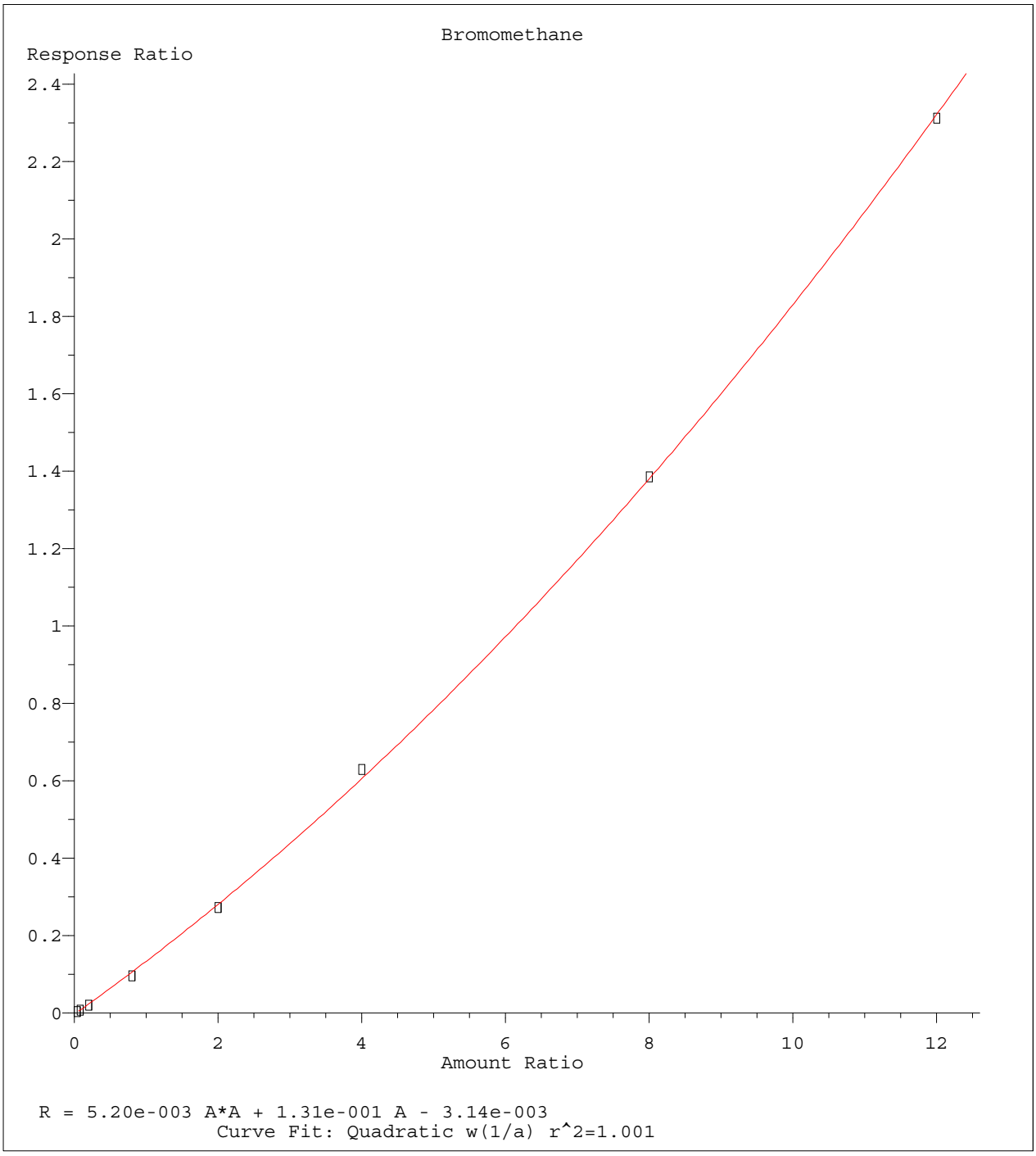

Method Name: C:\MSDCHEM\2\METHODS\8260WTR.M
Calibration Table Last Updated: Mon Feb 09 12:21:39 2015

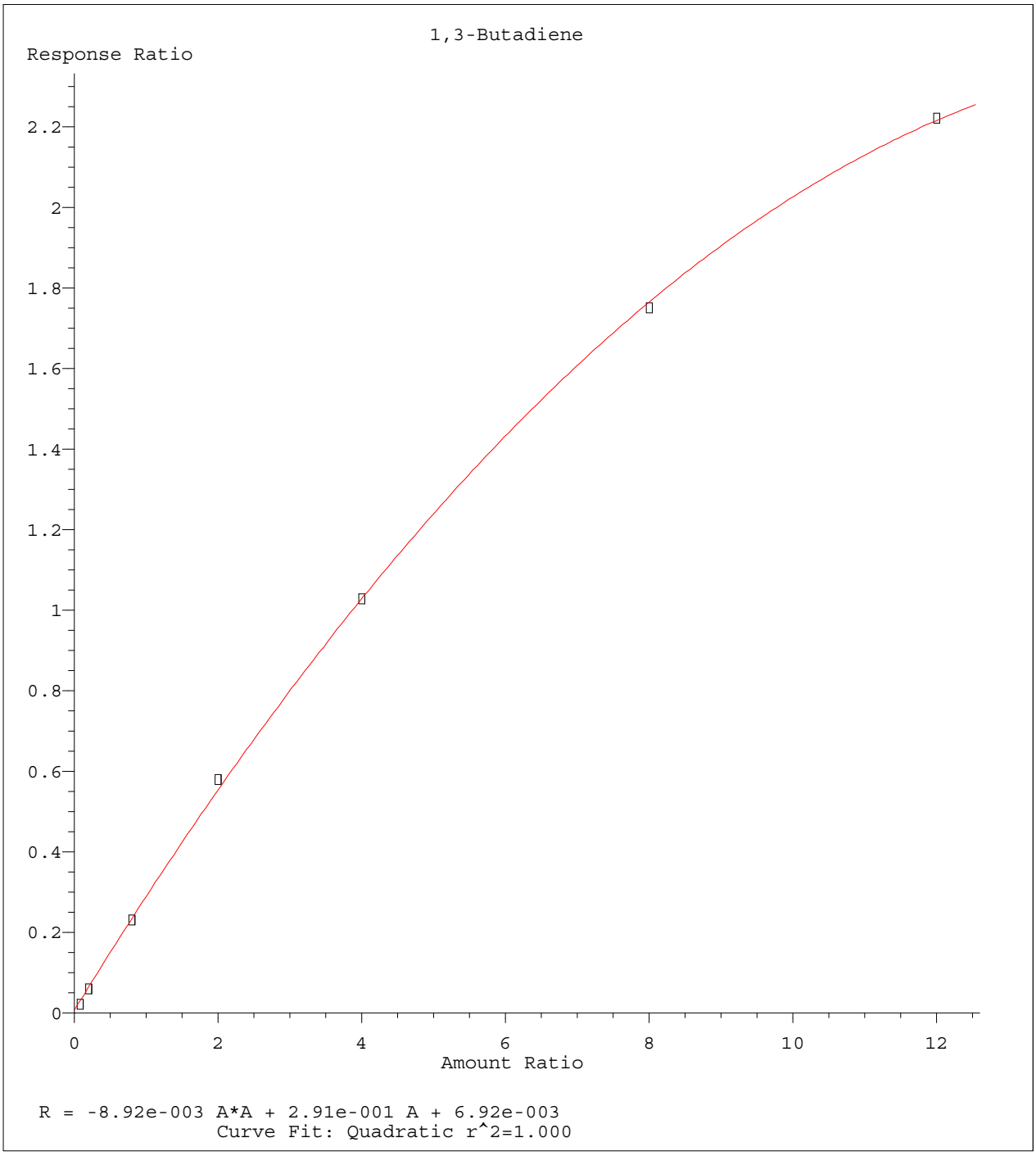

Method Name: C:\MSDCHEM\2\METHODS\8260WTR.M
Calibration Table Last Updated: Mon Feb 09 12:21:39 2015

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402842.D Vial: 14
Acq On : 6 Feb 2015 21:48 Operator: TMB
Sample : WG511287-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD68730 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:23 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	855532	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	630488	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.71	152	331609	25.00 ug/L	-0.02

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	218364	24.2524 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.00%		
43) 1,2-Dichloroethane-d4	10.41	65	218547	23.1529 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 92.60%		
58) Toluene-d8	12.80	98	752913	25.1372 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.56%		
80) p-Bromofluorobenzene	16.19	95	299900	25.2163 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.88%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.24	85	697424	50.8856 ug/L	100
3) Chloromethane	3.70	50	550557	46.4311 ug/L	99
4) Vinyl Chloride	3.93	62	562990	48.2439 ug/L	97
5) 1,3-Butadiene	3.97	54	297404	30.3925 ug/L	93
6) Bromomethane	4.84	94	244889	50.9856 ug/L	100
7) Chloroethane	5.00	64	384533	53.3075 ug/L	99
8) Trichlorofluoromethane	5.48	101	754351	46.6094 ug/L	100
9) Diethyl ether	6.02	59	579930	98.0422 ug/L	91
10) Isoprene	6.05	67	712297	56.8189 ug/L	90
11) Acrolein	6.25	56	64407	94.3164 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.27	101	430157	47.0500 ug/L	94
13) Acetone	6.36	43	66535	51.3233 ug/L #	27
14) 1,1-Dichloroethene	6.58	61	700548	47.6419 ug/L	94
15) Tert-Butyl Alcohol	6.69	59	56163	206.1041 ug/L	96
16) Dimethyl Sulfide	6.85	62	548230	55.9394 ug/L	99
17) Iodomethane	7.11	142	65634	26.7063 ug/L	93
18) Methyl acetate	7.11	43	188523	34.9719 ug/L	97
19) Methylene Chloride	7.36	84	456615	49.6570 ug/L	88
20) Carbon Disulfide	7.40	76	1362504	44.8698 ug/L	100
21) Acrylonitrile	7.55	53	95648	50.5278 ug/L	98
22) Methyl Tert Butyl Ether	7.58	73	856561	53.5794 ug/L	93
23) trans-1,2-Dichloroethene	7.82	61	714277	50.4329 ug/L	92
24) n-Hexane	7.90	57	609026	48.9984 ug/L	93
25) Diisopropyl ether	8.24	45	2905564	99.0342 ug/L	97
26) Vinyl Acetate	8.41	43	471143	116.4863 ug/L	98
27) 1,1-Dichloroethane	8.44	63	876334	49.2380 ug/L	97
28) Ethyl-Tert-Butyl ether	8.81	59	2350768	99.9483 ug/L	96
29) 2-Butanone	9.00	43	98114	50.8389 ug/L	97
30) Propionitrile	9.10	54	62361	97.7067 ug/L	98
31) 2,2-Dichloropropane	9.21	77	626022	47.6462 ug/L	99
32) cis-1,2-Dichloroethene	9.29	96	497542	50.8290 ug/L	89
33) Chloroform	9.49	83	814463	48.1752 ug/L	99
34) 1-Bromopropane	9.63	122	99927	56.6523 ug/L	98
35) Bromochloromethane	9.72	130	254046	51.8867 ug/L	93
36) Tetrahydrofuran	9.75	42	134189	99.6889 ug/L	98
38) 1,1,1-Trichloroethane	10.02	97	737177	50.0551 ug/L	99
39) Cyclohexane	10.05	56	813171	51.3076 ug/L	86
40) 1,1-Dichloropropene	10.22	75	642786	50.5540 ug/L	99
41) Tert-Amyl-Methyl ether	10.32	73	1771098	100.0998 ug/L	97
42) Carbon Tetrachloride	10.37	117	633075	50.1275 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402842.D Vial: 14
Acq On : 6 Feb 2015 21:48 Operator: TMB
Sample : WG511287-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD68730 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:23 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.54	62	548103	49.0713 ug/L		99
46)	Benzene	10.58	78	1785435	51.3287 ug/L		95
47)	Trichloroethene	11.33	130	479699	54.8220 ug/L		100
48)	Methylcyclohexane	11.42	83	733175	51.4173 ug/L		89
49)	1,2-Dichloropropane	11.54	63	482689	51.0298 ug/L		95
50)	Bromodichloromethane	11.84	83	596284	49.8522 ug/L		100
51)	1,4-Dioxane	11.83	88	7338	199.7413 ug/L		79
52)	Dibromomethane	11.92	93	215030	48.1686 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.14	63	185184	51.5424 ug/L		99
54)	4-Methyl-2-Pentanone	12.17	58	77968	48.3699 ug/L		94
55)	cis-1,3-Dichloropropene	12.48	75	690516	55.2199 ug/L		100
56)	Dimethyl Disulfide	12.74	79	362318	31.0017 ug/L		93
59)	Toluene	12.89	91	1804687	53.0952 ug/L		100
60)	Ethyl Methacrylate	12.99	69	363517	55.9568 ug/L		91
62)	trans-1,3-Dichloropropene	13.07	75	517158	49.7271 ug/L		99
63)	1,1,2-Trichloroethane	13.29	97	280655	52.0109 ug/L		99
64)	2-Hexanone	13.23	58	70765	50.6996 ug/L	#	47
65)	1,3-Dichloropropane	13.60	76	509174	52.0569 ug/L		92
66)	Tetrachloroethene	13.72	164	374590	51.0372 ug/L		98
67)	Dibromochloromethane	13.98	129	366960	53.2241 ug/L		99
68)	1,2-Dibromoethane	14.24	107	279439	52.0949 ug/L		99
69)	1-Chlorohexane	14.32	91	631195	54.9021 ug/L		89
70)	Chlorobenzene	14.75	112	1108566	48.2344 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.78	131	413036	52.6223 ug/L		99
72)	Ethylbenzene	14.77	106	669189	50.8921 ug/L		98
73)	m-,p-Xylene	14.86	106	1562317	104.3182 ug/L		97
74)	o-Xylene	15.42	106	738446	50.1132 ug/L		99
75)	Styrene	15.46	104	1307371	55.3153 ug/L		99
76)	Bromoform	15.96	173	223365	52.5048 ug/L		99
77)	Isopropylbenzene	15.84	105	1900600	51.6269 ug/L		99
79)	1,1,2,2-Tetrachloroethane	16.06	83	298623	49.5455 ug/L		99
81)	1,2,3-Trichloropropane	16.25	110	84563	50.1832 ug/L	#	46
82)	trans-1,4-Dichloro-2-Buten	16.30	53	80281	39.2554 ug/L		47
83)	n-Propylbenzene	16.35	91	2363376	48.7442 ug/L		99
84)	Bromobenzene	16.48	156	479352	51.0897 ug/L		94
85)	1,3,5-Trimethylbenzene	16.54	105	1788045	55.2432 ug/L		99
86)	2-Chlorotoluene	16.63	91	1482440	50.1387 ug/L		91
87)	4-Chlorotoluene	16.68	91	1425040	47.3172 ug/L		89
88)	a-Methylstyrene	16.95	118	997655	53.4959 ug/L		97
89)	tert-Butylbenzene	17.01	134	342459	48.5533 ug/L		96
90)	1,2,4-Trimethylbenzene	17.06	105	1812453	54.4942 ug/L		99
91)	sec-Butylbenzene	17.28	105	2114294	49.4204 ug/L		99
92)	p-Isopropyltoluene	17.43	119	1716865	50.7681 ug/L		100
93)	1,3-Dichlorobenzene	17.63	146	908402	47.1881 ug/L		99
94)	1,4-Dichlorobenzene	17.75	146	975480	49.4817 ug/L		100
95)	n-Butylbenzene	17.96	91	1877671	50.6628 ug/L		99
96)	1,2-Dichlorobenzene	18.26	146	826012	47.8800 ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.25	75	55836	49.8972 ug/L		98
98)	1,2,4-Trichlorobenzene	20.39	180	708749	51.7324 ug/L		98
99)	Hexachlorobutadiene	20.55	225	419806	52.0748 ug/L		96
100)	Naphthalene	20.76	128	1039998	51.4822 ug/L		99
101)	1,2,3-Trichlorobenzene	21.07	180	608129	50.8312 ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402842.D Vial: 14
Acq On : 6 Feb 2015 21:48 Operator: TMB
Sample : WG511287-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD68730 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 9 12:25 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration

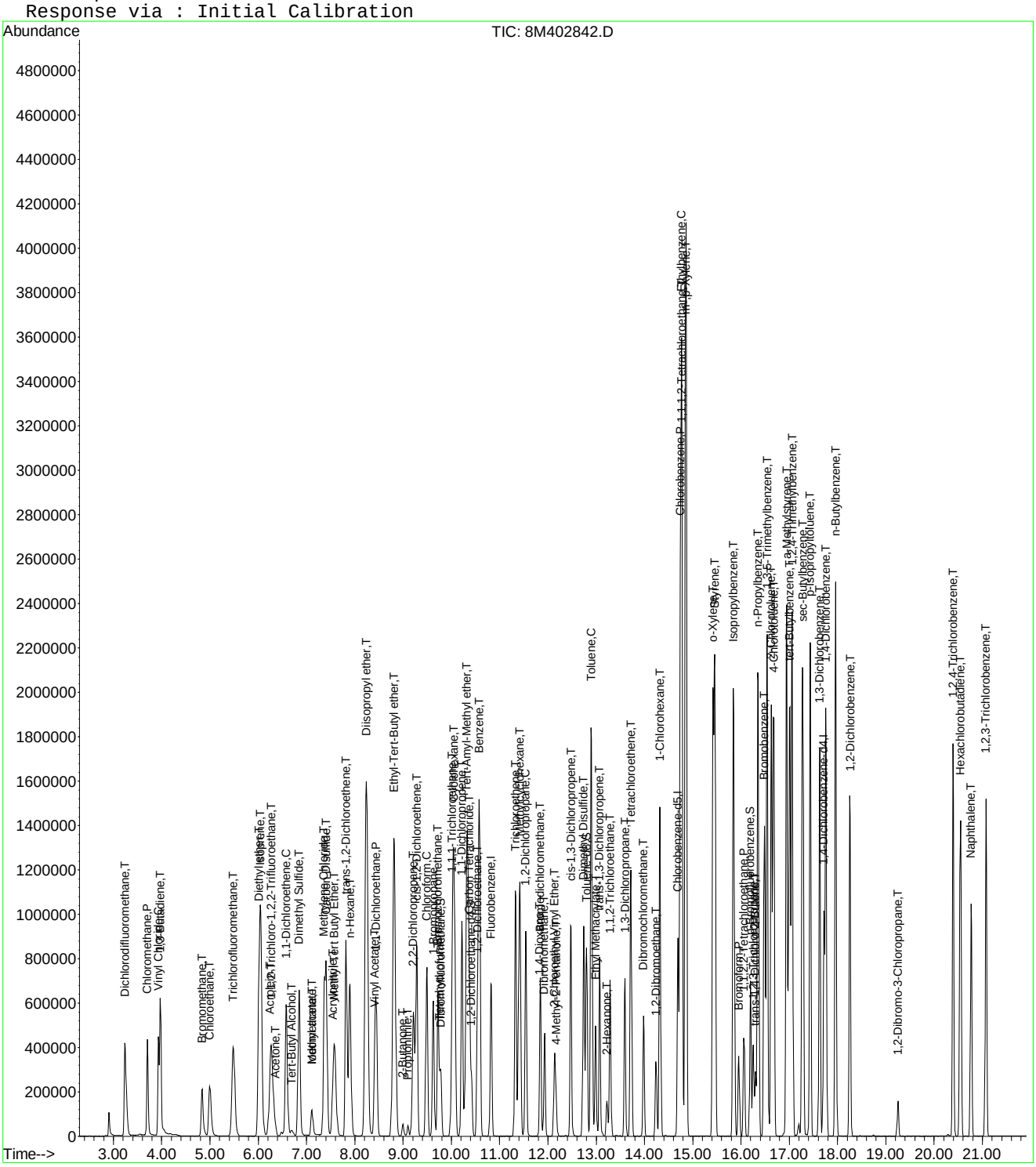

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\020615\8M402842.D Vial: 14
Acq On : 6 Feb 2015 21:48 Operator: TMB
Sample : WG511287-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD68730 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	114	0.00
2	T	Dichlorodifluoromethane	50.0000	50.8856	-1.8	104	0.00
3	P	Chloromethane	50.0000	46.4311	7.1	104	0.00
4	C	Vinyl Chloride	50.0000	48.2439	3.5	105	0.00
5	T	1,3-Butadiene	50.0000	30.3925	39.2#	68	0.00
6	T	Bromomethane	50.0000	50.9856	-2.0	120	0.00
7	T	Chloroethane	50.0000	53.3075	-6.6	117	0.00
8	T	Trichlorofluoromethane	50.0000	46.6094	6.8	103	0.00
9	T	Diethyl ether	100.0000	98.0422	2.0	111	0.00
10	T	Isoprene	50.0000	56.8189	-13.6	123	0.00
11	T	Acrolein	50.0000	94.3164	-88.6#	221	-0.02
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	47.0500	5.9	105	0.00
13	T	Acetone	50.0000	51.3233	-2.6	110	0.00
14	C	1,1-Dichloroethene	50.0000	47.6419	4.7	106	0.00
15	T	Tert-Butyl Alcohol	200.0000	206.1042	-3.1	121	-0.02
16	T	Dimethyl Sulfide	50.0000	55.9394	-11.9	123	0.00
17	T	Iodomethane	50.0000	26.7063	46.6#	38	0.00
18	T	Methyl acetate	50.0000	34.9719	30.1#	81	0.00
19	T	Methylene Chloride	50.0000	49.6570	0.7	114	0.00
20	T	Carbon Disulfide	50.0000	44.8698	10.3	98	-0.02
21	T	Acrylonitrile	50.0000	50.5278	-1.1	111	0.00
22	T	Methyl Tert Butyl Ether	50.0000	53.5794	-7.2	116	0.00
23	T	trans-1,2-Dichloroethene	50.0000	50.4329	-0.9	113	0.00
24	T	n-Hexane	50.0000	48.9984	2.0	107	0.00
25	T	Diisopropyl ether	100.0000	99.0343	1.0	109	0.00
26	T	Vinyl Acetate	50.0000	116.4863	-133.0#	260	0.00
27	P	1,1-Dichloroethane	50.0000	49.2380	1.5	108	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	99.9483	0.1	110	0.00
29	T	2-Butanone	50.0000	50.8389	-1.7	116	0.00
30	T	Propionitrile	100.0000	97.7067	2.3	110	0.00
31	T	2,2-Dichloropropane	50.0000	47.6462	4.7	107	0.00
32	T	cis-1,2-Dichloroethene	50.0000	50.8290	-1.7	114	0.00
33	C	Chloroform	50.0000	48.1752	3.6	108	0.00
34		1-Bromopropane	50.0000	56.6523	-13.3	117	0.00
35	T	Bromochloromethane	50.0000	51.8867	-3.8	112	-0.02
36	T	Tetrahydrofuran	100.0000	99.6889	0.3	115	0.00
37	S	Dibromofluoromethane	25.0000	24.2524	3.0	110	0.00
38	T	1,1,1-Trichloroethane	50.0000	50.0551	-0.1	110	-0.02
39	T	Cyclohexane	50.0000	51.3076	-2.6	109	-0.02
40	T	1,1-Dichloropropene	50.0000	50.5540	-1.1	108	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	100.0998	-0.1	111	0.00
42	T	Carbon Tetrachloride	50.0000	50.1275	-0.3	109	0.00
43	S	1,2-Dichloroethane-d4	25.0000	23.1529	7.4	108	-0.02
44		Heptane	-1.0000	0.0000	0.0	0	-2.67#
45	T	1,2-Dichloroethane	50.0000	49.0713	1.9	107	0.00
46	T	Benzene	50.0000	51.3287	-2.7	111	0.00
47	T	Trichloroethene	50.0000	54.8220	-9.6	117	0.00
48	T	Methylcyclohexane	50.0000	51.4173	-2.8	112	0.00
49	C	1,2-Dichloropropane	50.0000	51.0298	-2.1	110	0.00
50	T	Bromodichloromethane	50.0000	49.8522	0.3	107	0.00
51	T	1,4-Dioxane	200.0000	199.7413	0.1	120	0.00
52	T	Dibromomethane	50.0000	48.1686	3.7	107	-0.02
53	T	2-Chloroethyl Vinyl Ether	50.0000	51.5424	-3.1	112	0.00
54	T	4-Methyl-2-Pentanone	50.0000	48.3699	3.3	107	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\020615\8M402842.D Vial: 14
Acq On : 6 Feb 2015 21:48 Operator: TMB
Sample : WG511287-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD68730 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	55.2199	-10.4	114	0.00
56	T	Dimethyl Disulfide	50.0000	31.0017	38.0#	112	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	113	0.00
58	S	Toluene-d8	25.0000	25.1372	-0.5	111	0.00
59	C	Toluene	50.0000	53.0952	-6.2	111	-0.02
60	T	Ethyl Methacrylate	50.0000	55.9568	-11.9	117	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.27#
62	T	trans-1,3-Dichloropropene	50.0000	49.7271	0.5	103	0.00
63	T	1,1,2-Trichloroethane	50.0000	52.0109	-4.0	111	-0.02
64	T	2-Hexanone	50.0000	50.6996	-1.4	113	0.00
65	T	1,3-Dichloropropane	50.0000	52.0569	-4.1	111	0.00
66	T	Tetrachloroethene	50.0000	51.0372	-2.1	111	0.00
67	T	Dibromochloromethane	50.0000	53.2241	-6.4	110	-0.02
68	T	1,2-Dibromoethane	50.0000	52.0949	-4.2	109	0.00
69	T	1-Chlorohexane	50.0000	54.9021	-9.8	115	0.00
70	P	Chlorobenzene	50.0000	48.2344	3.5	104	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	52.6223	-5.2	109	0.00
72	C	Ethylbenzene	50.0000	50.8921	-1.8	109	-0.02
73	T	m-,p-Xylene	100.0000	104.3182	-4.3	109	-0.02
74	T	o-Xylene	50.0000	50.1132	-0.2	103	-0.02
75	T	Styrene	50.0000	55.3153	-10.6	110	0.00
76	P	Bromoform	50.0000	52.5048	-5.0	112	0.00
77	T	Isopropylbenzene	50.0000	51.6269	-3.3	103	-0.02
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	111	-0.02
79	P	1,1,2,2-Tetrachloroethane	50.0000	49.5455	0.9	109	-0.02
80	S	p-Bromofluorobenzene	25.0000	25.2163	-0.9	111	0.00
81	T	1,2,3-Trichloropropane	50.0000	50.1832	-0.4	110	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	39.2554	21.5	89	-0.02
83	T	n-Propylbenzene	50.0000	48.7442	2.5	102	-0.02
84	T	Bromobenzene	50.0000	51.0897	-2.2	110	-0.02
85	T	1,3,5-Trimethylbenzene	50.0000	55.2432	-10.5	112	0.00
86	T	2-Chlorotoluene	50.0000	50.1388	-0.3	107	0.00
87	T	4-Chlorotoluene	50.0000	47.3172	5.4	100	0.00
88	T	a-Methylstyrene	50.0000	53.4959	-7.0	113	0.00
89	T	tert-Butylbenzene	50.0000	48.5533	2.9	105	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	54.4942	-9.0	111	0.00
91	T	sec-Butylbenzene	50.0000	49.4203	1.2	104	0.00
92	T	p-Isopropyltoluene	50.0000	50.7681	-1.5	105	0.00
93	T	1,3-Dichlorobenzene	50.0000	47.1882	5.6	102	0.00
94	T	1,4-Dichlorobenzene	50.0000	49.4817	1.0	110	-0.02
95	T	n-Butylbenzene	50.0000	50.6628	-1.3	109	0.00
96	T	1,2-Dichlorobenzene	50.0000	47.8800	4.2	104	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	49.8972	0.2	106	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	51.7324	-3.5	111	-0.02
99	T	Hexachlorobutadiene	50.0000	52.0748	-4.1	114	0.00
100	T	Naphthalene	50.0000	51.4822	-3.0	108	-0.02
101	T	1,2,3-Trichlorobenzene	50.0000	50.8312	-1.7	109	-0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M402842.D 8260WTR.M Mon Feb 09 12:27:08 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\022015\8M403129.D Vial: 3
Acq On : 20 Feb 2015 13:19 Operator: TMB
Sample : WG512985-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD68957 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 20 13:41:32 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	877243	25.00 ug/L	-0.02
57) Chlorobenzene-d5	14.69	117	610334	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.71	152	308495	25.00 ug/L	-0.02

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	206966	22.4176 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 89.68%		
43) 1,2-Dichloroethane-d4	10.41	65	197241	20.3786 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 81.52%		
58) Toluene-d8	12.80	98	729154	25.1479 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.60%		
80) p-Bromofluorobenzene	16.19	95	271900	24.5749 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.28%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.24	85	545017	38.7814 ug/L	99
3) Chloromethane	3.70	50	538446	44.2858 ug/L	100
4) Vinyl Chloride	3.94	62	531254	44.3976 ug/L	100
5) 1,3-Butadiene	3.98	54	464452	47.6594 ug/L	96
6) Bromomethane	4.84	94	262213	53.0557 ug/L	100
7) Chloroethane	5.01	64	340237	45.9994 ug/L	98
8) Trichlorofluoromethane	5.49	101	708955	42.7204 ug/L	99
9) Diethyl ether	6.02	59	563272	92.8693 ug/L	99
10) Isoprene	6.06	67	632684	49.2193 ug/L	97
11) Acrolein	6.26	56	32013	45.7190 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	423237	45.1474 ug/L	99
13) Acetone	6.35	43	59032	44.4087 ug/L	93
14) 1,1-Dichloroethene	6.59	61	662023	43.9077 ug/L	97
15) Tert-Butyl Alcohol	6.69	59	60053	214.9253 ug/L	94
16) Dimethyl Sulfide	6.85	62	487757	48.5372 ug/L	98
17) Iodomethane	7.11	142	247778	52.8948 ug/L	94
18) Methyl acetate	7.12	43	207830	37.5993 ug/L	99
19) Methylene Chloride	7.36	84	435532	46.1920 ug/L	93
20) Carbon Disulfide	7.42	76	1520441	48.8317 ug/L	100
21) Acrylonitrile	7.55	53	92774	47.7966 ug/L	97
22) Methyl Tert Butyl Ether	7.58	73	779920	47.5779 ug/L	100
23) trans-1,2-Dichloroethene	7.82	61	657300	45.2613 ug/L	98
24) n-Hexane	7.90	57	648730	50.9010 ug/L	99
25) Diisopropyl ether	8.24	45	2910434	96.7451 ug/L	99
26) Vinyl Acetate	8.41	43	473404	114.1485 ug/L	99
27) 1,1-Dichloroethane	8.44	63	832228	45.6026 ug/L	99
28) Ethyl-Tert-Butyl ether	8.81	59	2368772	98.2212 ug/L	99
29) 2-Butanone	9.00	43	91265	46.1196 ug/L	95
30) Propionitrile	9.10	54	61340	93.7284 ug/L	99
31) 2,2-Dichloropropane	9.21	77	682224	50.6386 ug/L	100
32) cis-1,2-Dichloroethene	9.29	96	470247	46.8516 ug/L	96
33) Chloroform	9.49	83	769367	44.3815 ug/L	99
34) 1-Bromopropane	9.63	122	94658	52.3369 ug/L	97
35) Bromochloromethane	9.72	130	240364	47.8773 ug/L	97
36) Tetrahydrofuran	9.75	42	124572	90.2540 ug/L	98
38) 1,1,1-Trichloroethane	10.02	97	673300	44.5864 ug/L	99
39) Cyclohexane	10.05	56	818164	50.3450 ug/L	100
40) 1,1-Dichloropropene	10.22	75	617872	47.3919 ug/L	98
41) Tert-Amyl-Methyl ether	10.32	73	1777047	97.9503 ug/L	97
42) Carbon Tetrachloride	10.36	117	584620	45.1452 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M403129.D 8260WTR.M Fri Feb 20 13:41:32 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\022015\8M403129.D Vial: 3
Acq On : 20 Feb 2015 13:19 Operator: TMB
Sample : WG512985-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD68957 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 20 13:41:32 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.54	62	497635	43.4503 ug/L	100
46)	Benzene	10.58	78	1709693	47.9347 ug/L	98
47)	Trichloroethene	11.32	130	418153	46.6056 ug/L	99
48)	Methylcyclohexane	11.42	83	715193	48.9149 ug/L	99
49)	1,2-Dichloropropane	11.54	63	462067	47.6407 ug/L	99
50)	Bromodichloromethane	11.84	83	566622	46.1999 ug/L	100
51)	1,4-Dioxane	11.83	88	8375	222.3266 ug/L	90
52)	Dibromomethane	11.92	93	201860	44.0993 ug/L	95
53)	2-Chloroethyl Vinyl Ether	12.13	63	183812	49.8943 ug/L	97
54)	4-Methyl-2-Pentanone	12.16	58	79795	48.2782 ug/L	97
55)	cis-1,3-Dichloropropene	12.47	75	644115	50.2344 ug/L	99
56)	Dimethyl Disulfide	12.74	79	360902	30.2510 ug/L	98
59)	Toluene	12.90	91	1731085	52.6116 ug/L	100
60)	Ethyl Methacrylate	12.99	69	356322	56.6605 ug/L	97
62)	trans-1,3-Dichloropropene	13.07	75	532782	52.9211 ug/L	100
63)	1,1,2-Trichloroethane	13.29	97	259095	49.6010 ug/L	99
64)	2-Hexanone	13.23	58	70380	52.0889 ug/L #	60
65)	1,3-Dichloropropane	13.60	76	483244	51.0373 ug/L	96
66)	Tetrachloroethene	13.72	164	355156	49.9872 ug/L	97
67)	Dibromochloromethane	13.98	129	344360	51.5955 ug/L	100
68)	1,2-Dibromoethane	14.24	107	265852	51.1985 ug/L	99
69)	1-Chlorohexane	14.32	91	616420	55.3875 ug/L	95
70)	Chlorobenzene	14.75	112	1117623	50.2343 ug/L	97
71)	1,1,1,2-Tetrachloroethane	14.78	131	394440	51.9125 ug/L	100
72)	Ethylbenzene	14.77	106	629240	49.4341 ug/L	97
73)	m-,p-Xylene	14.86	106	1484660	102.4064 ug/L	98
74)	o-Xylene	15.42	106	735262	51.5448 ug/L	97
75)	Styrene	15.46	104	1231577	53.8291 ug/L	97
76)	Bromoform	15.96	173	203074	49.3114 ug/L	99
77)	Isopropylbenzene	15.84	105	1796448	50.4091 ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.06	83	285775	50.9663 ug/L	100
81)	1,2,3-Trichloropropane	16.26	110	77905	49.6960 ug/L	94
82)	trans-1,4-Dichloro-2-Buten	16.30	53	86213	45.2135 ug/L	95
83)	n-Propylbenzene	16.35	91	2322789	51.4965 ug/L	99
84)	Bromobenzene	16.48	156	447573	51.2768 ug/L	92
85)	1,3,5-Trimethylbenzene	16.55	105	1590250	52.8134 ug/L	98
86)	2-Chlorotoluene	16.63	91	1436973	52.2424 ug/L	99
87)	4-Chlorotoluene	16.67	91	1404605	50.1330 ug/L	98
88)	a-Methylstyrene	16.94	118	963238	55.5203 ug/L	97
89)	tert-Butylbenzene	17.01	134	337850	51.4887 ug/L	92
90)	1,2,4-Trimethylbenzene	17.06	105	1657667	53.5746 ug/L	99
91)	sec-Butylbenzene	17.28	105	2018121	50.7068 ug/L	100
92)	p-Isopropyltoluene	17.43	119	1631666	51.8638 ug/L	100
93)	1,3-Dichlorobenzene	17.63	146	927889	51.8118 ug/L	99
94)	1,4-Dichlorobenzene	17.75	146	916936	49.9970 ug/L	98
95)	n-Butylbenzene	17.96	91	1651273	47.8924 ug/L	99
96)	1,2-Dichlorobenzene	18.25	146	751378	46.8171 ug/L	99
97)	1,2-Dibromo-3-Chloropropan	19.24	75	47359	45.4928 ug/L	97
98)	1,2,4-Trichlorobenzene	20.39	180	596224	46.7798 ug/L	100
99)	Hexachlorobutadiene	20.55	225	334464	44.5971 ug/L	99
100)	Naphthalene	20.76	128	884667	47.0742 ug/L	99
101)	1,2,3-Trichlorobenzene	21.07	180	513239	46.1140 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M403129.D 8260WTR.M Fri Feb 20 13:41:32 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\022015\8M403129.D Vial: 3
Acq On : 20 Feb 2015 13:19 Operator: TMB
Sample : WG512985-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD68957 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 20 13:41 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration

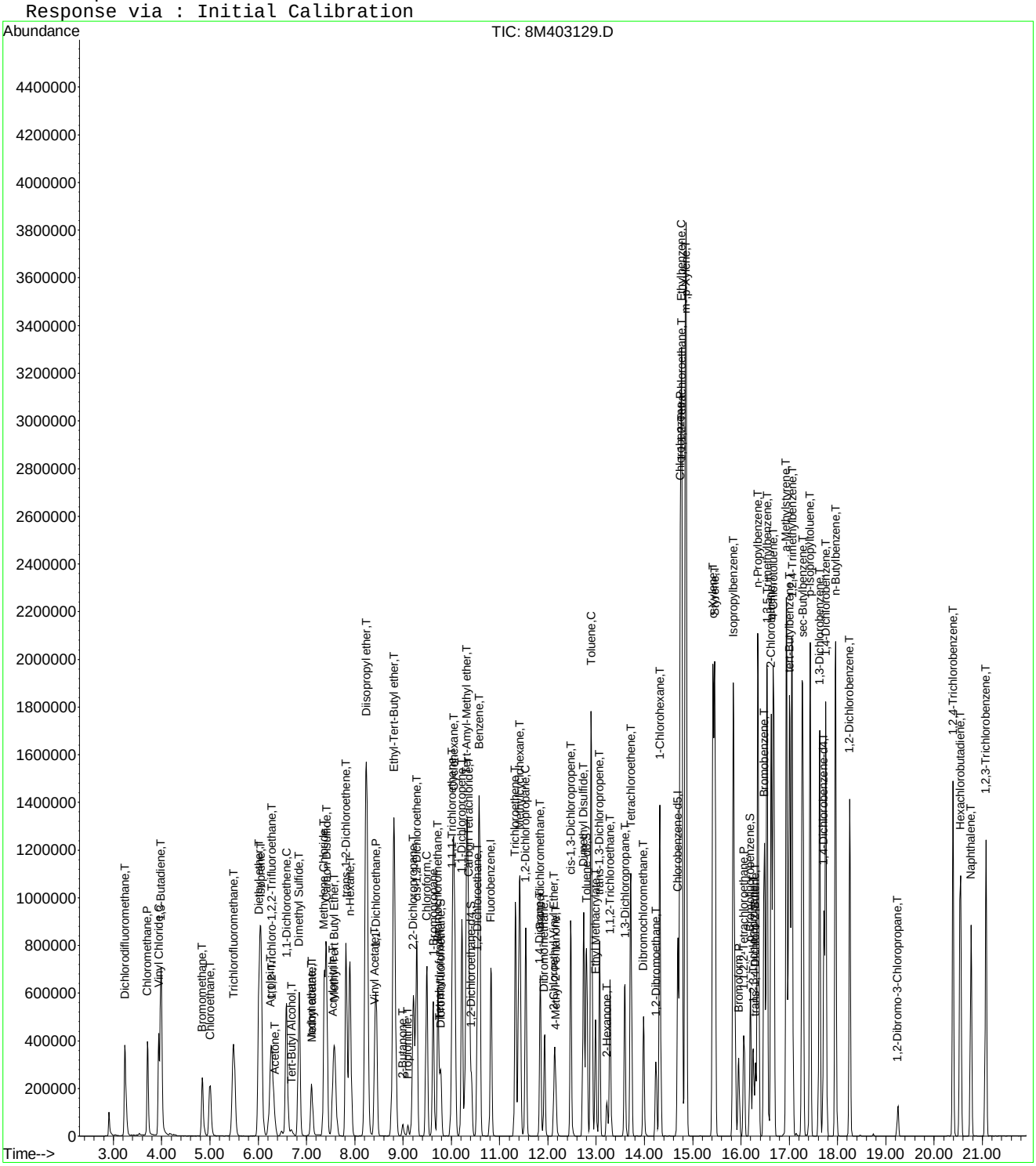

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Continuing Calibration Area and RT check

Instrument: HPMS8
Initial cal date: 6 Feb 2015 18:53
CCV date: 20 Feb 2015 13:19
CCV Filename: 8M403129.D

	Fluorobenzene		**Chlorobenzene-d5**		**1,4-Dichlorobenzene-d4**	
	Amount	RT	Amount	RT	Amount	RT
InitCal	749967	10.83	559024	14.69	298746	17.72
CCV	877243	10.82	610334	14.69	308495	17.71

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\022015\8M403129.D Vial: 3
Acq On : 20 Feb 2015 13:19 Operator: TMB
Sample : WG512985-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD68957 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	117	-0.02
2	T	Dichlorodifluoromethane	0.4005	0.3106	22.4	81	0.00
3	P	Chloromethane	0.3465	0.3069	11.4	102	0.00
4	C	Vinyl Chloride	0.3410	0.3028	11.2	99	0.00
5	T	1,3-Butadiene	0.2579	0.2647	-2.6	107	0.00
6	T	Bromomethane	0.1314	0.1495	-13.8	128	0.00
7	T	Chloroethane	0.2108	0.1939	8.0	103	0.00
8	T	Trichlorofluoromethane	0.4729	0.4041	14.6	97	0.00
9	T	Diethyl ether	0.1729	0.1605	7.1	108	0.00
10	T	Isoprene	0.3663	0.3606	1.6	109	0.00
11	T	Acrolein	0.0199	0.0182	8.5	110	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2672	0.2412	9.7	103	0.00
13	T	Acetone	0.0379	0.0336	11.2	98	0.00
14	C	1,1-Dichloroethene	0.4297	0.3773	12.2	100	0.00
15	T	Tert-Butyl Alcohol	0.0080	0.0086	-7.5	129	-0.02
16	T	Dimethyl Sulfide	0.2864	0.2780	2.9	109	0.00
17	T	Iodomethane	0.1376	0.1412	-2.6	142	0.00
18	T	Methyl acetate	0.1575	0.1185	24.8	89	0.00
19	T	Methylene Chloride	0.2687	0.2482	7.6	108	0.00
20	T	Carbon Disulfide	0.8873	0.8666	2.3	110	0.00
21	T	Acrylonitrile	0.0553	0.0529	4.4	107	0.00
22	T	Methyl Tert Butyl Ether	0.4672	0.4445	4.8	106	0.00
23	T	trans-1,2-Dichloroethene	0.4139	0.3746	9.5	104	0.00
24	T	n-Hexane	0.3632	0.3698	-1.8	114	0.00
25	T	Diisopropyl ether	0.8573	0.8294	3.3	109	0.00
26	T	Vinyl Acetate	0.1182	0.2698	-128.3#	261#	0.00
27	P	1,1-Dichloroethane	0.5201	0.4743	8.8	103	0.00
28	T	Ethyl-Tert-Butyl ether	0.6873	0.6751	1.8	111	0.00
29	T	2-Butanone	0.0564	0.0520	7.7	108	0.00
30	T	Propionitrile	0.0187	0.0175	6.3	109	0.00
31	T	2,2-Dichloropropane	0.3839	0.3888	-1.3	117	0.00
32	T	cis-1,2-Dichloroethene	0.2860	0.2680	6.3	108	0.00
33	C	Chloroform	0.4940	0.4385	11.2	102	0.00
34		1-Bromopropane	0.0515	0.0539	-4.7	111	0.00
35	T	Bromochloromethane	0.1431	0.1370	4.2	106	-0.02
36	T	Tetrahydrofuran	0.0393	0.0355	9.7	106	0.00
37	S	Dibromofluoromethane	0.2631	0.2359	10.3	105	0.00
38	T	1,1,1-Trichloroethane	0.4304	0.3838	10.8	100	-0.02
39	T	Cyclohexane	0.4631	0.4663	-0.7	110	-0.02
40	T	1,1-Dichloropropene	0.3715	0.3522	5.2	104	0.00
41	T	Tert-Amyl-Methyl ether	0.5170	0.5064	2.1	111	0.00
42	T	Carbon Tetrachloride	0.3690	0.3332	9.7	100	-0.02
43	S	1,2-Dichloroethane-d4	0.2758	0.2248	18.5	98	-0.02
44		Heptane	0.0000	0.0000	0.0	0#	-2.67#
45	T	1,2-Dichloroethane	0.3264	0.2836	13.1	98	0.00
46	T	Benzene	1.0165	0.9745	4.1	106	0.00
47	T	Trichloroethene	0.2557	0.2383	6.8	102	-0.02
48	T	Methylcyclohexane	0.4167	0.4076	2.2	110	0.00
49	C	1,2-Dichloropropane	0.2764	0.2634	4.7	105	0.00
50	T	Bromodichloromethane	0.3495	0.3230	7.6	102	0.00
51	T	1,4-Dioxane	0.0011	0.0012	-11.2	137	0.00
52	T	Dibromomethane	0.1305	0.1151	11.8	101	-0.02
53	T	2-Chloroethyl Vinyl Ether	0.1050	0.1048	0.2	111	-0.02
54	T	4-Methyl-2-Pentanone	0.0471	0.0455	3.4	110	-0.02

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\022015\8M403129.D Vial: 3
Acq On : 20 Feb 2015 13:19 Operator: TMB
Sample : WG512985-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD68957 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.3654	0.3671	-0.5	107	-0.02
56	T	Dimethyl Disulfide	0.3555	0.2057	42.1#	112	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	109	0.00
58	S	Toluene-d8	1.1877	1.1947	-0.6	107	0.00
59	C	Toluene	1.3478	1.4182	-5.2	106	-0.02
60	T	Ethyl Methacrylate	0.2576	0.2919	-13.3	115	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.27#
62	T	trans-1,3-Dichloropropene	0.4124	0.4365	-5.8	106	0.00
63	T	1,1,2-Trichloroethane	0.2140	0.2123	0.8	102	-0.02
64	T	2-Hexanone	0.0553	0.0577	-4.2	112	0.00
65	T	1,3-Dichloropropane	0.3878	0.3959	-2.1	106	0.00
66	T	Tetrachloroethene	0.2910	0.2909	0.0	105	0.00
67	T	Dibromochloromethane	0.2734	0.2821	-3.2	104	-0.02
68	T	1,2-Dibromoethane	0.2127	0.2178	-2.4	104	0.00
69	T	1-Chlorohexane	0.4559	0.5050	-10.8	112	0.00
70	P	Chlorobenzene	0.9113	0.9156	-0.5	105	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3112	0.3231	-3.8	104	0.00
72	C	Ethylbenzene	0.5214	0.5155	1.1	102	-0.02
73	T	m-,p-Xylene	0.5938	0.6081	-2.4	103	-0.02
74	T	o-Xylene	0.5843	0.6023	-3.1	103	-0.02
75	T	Styrene	0.9372	1.0089	-7.7	104	0.00
76	P	Bromoform	0.1687	0.1664	1.4	102	0.00
77	T	Isopropylbenzene	1.4598	1.4717	-0.8	97	-0.02
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	103	-0.02
79	P	1,1,2,2-Tetrachloroethane	0.4544	0.4632	-1.9	105	-0.02
80	S	p-Bromofluorobenzene	0.8966	0.8814	1.7	101	0.00
81	T	1,2,3-Trichloropropane	0.1270	0.1263	0.6	101	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1338	0.1397	-4.4	96	-0.02
83	T	n-Propylbenzene	3.6553	3.7647	-3.0	100	-0.02
84	T	Bromobenzene	0.7074	0.7254	-2.6	103	-0.02
85	T	1,3,5-Trimethylbenzene	2.4401	2.5774	-5.6	100	0.00
86	T	2-Chlorotoluene	2.2290	2.3290	-4.5	103	0.00
87	T	4-Chlorotoluene	2.2705	2.2765	-0.3	98	-0.02
88	T	a-Methylstyrene	1.4060	1.5612	-11.0	109	-0.02
89	T	tert-Butylbenzene	0.5317	0.5476	-3.0	104	0.00
90	T	1,2,4-Trimethylbenzene	2.5074	2.6867	-7.1	101	0.00
91	T	sec-Butylbenzene	3.2253	3.2709	-1.4	99	0.00
92	T	p-Isopropyltoluene	2.5495	2.6446	-3.7	100	0.00
93	T	1,3-Dichlorobenzene	1.4513	1.5039	-3.6	104	0.00
94	T	1,4-Dichlorobenzene	1.4862	1.4861	0.0	103	-0.02
95	T	n-Butylbenzene	2.7941	2.6763	4.2	96	0.00
96	T	1,2-Dichlorobenzene	1.3006	1.2178	6.4	95	-0.02
97	T	1,2-Dibromo-3-Chloropropane	0.0844	0.0768	9.0	90	-0.02
98	T	1,2,4-Trichlorobenzene	1.0329	0.9663	6.4	93	-0.02
99	T	Hexachlorobutadiene	0.6078	0.5421	10.8	90	0.00
100	T	Naphthalene	1.5230	1.4338	5.9	92	-0.02
101	T	1,2,3-Trichlorobenzene	0.9019	0.8318	7.8	92	-0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M403129.D 8260WTR.M Fri Feb 20 13:51:09 2015 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\022015\8M403129.D Vial: 3
Acq On : 20 Feb 2015 13:19 Operator: TMB
Sample : WG512985-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD68957 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	117	-0.02
2	T	Dichlorodifluoromethane	50.0000	38.7815	22.4	81	0.00
3	P	Chloromethane	50.0000	44.2858	11.4	102	0.00
4	C	Vinyl Chloride	50.0000	44.3976	11.2	99	0.00
5	T	1,3-Butadiene	50.0000	47.6594	4.7	107	0.00
6	T	Bromomethane	50.0000	53.0557	-6.1	128	0.00
7	T	Chloroethane	50.0000	45.9994	8.0	103	0.00
8	T	Trichlorofluoromethane	50.0000	42.7204	14.6	97	0.00
9	T	Diethyl ether	100.0000	92.8693	7.1	108	0.00
10	T	Isoprene	50.0000	49.2193	1.6	109	0.00
11	T	Acrolein	50.0000	45.7190	8.6	110	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	45.1474	9.7	103	0.00
13	T	Acetone	50.0000	44.4087	11.2	98	0.00
14	C	1,1-Dichloroethene	50.0000	43.9077	12.2	100	0.00
15	T	Tert-Butyl Alcohol	200.0000	214.9253	-7.5	129	-0.02
16	T	Dimethyl Sulfide	50.0000	48.5372	2.9	109	0.00
17	T	Iodomethane	50.0000	52.8948	-5.8	142	0.00
18	T	Methyl acetate	50.0000	37.5993	24.8	89	0.00
19	T	Methylene Chloride	50.0000	46.1920	7.6	108	0.00
20	T	Carbon Disulfide	50.0000	48.8317	2.3	110	0.00
21	T	Acrylonitrile	50.0000	47.7966	4.4	107	0.00
22	T	Methyl Tert Butyl Ether	50.0000	47.5780	4.8	106	0.00
23	T	trans-1,2-Dichloroethene	50.0000	45.2613	9.5	104	0.00
24	T	n-Hexane	50.0000	50.9010	-1.8	114	0.00
25	T	Diisopropyl ether	100.0000	96.7451	3.3	109	0.00
26	T	Vinyl Acetate	50.0000	114.1485	-128.3#	261	0.00
27	P	1,1-Dichloroethane	50.0000	45.6026	8.8	103	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.2212	1.8	111	0.00
29	T	2-Butanone	50.0000	46.1196	7.8	108	0.00
30	T	Propionitrile	100.0000	93.7284	6.3	109	0.00
31	T	2,2-Dichloropropane	50.0000	50.6386	-1.3	117	0.00
32	T	cis-1,2-Dichloroethene	50.0000	46.8516	6.3	108	0.00
33	C	Chloroform	50.0000	44.3815	11.2	102	0.00
34		1-Bromopropane	50.0000	52.3369	-4.7	111	0.00
35	T	Bromochloromethane	50.0000	47.8773	4.2	106	-0.02
36	T	Tetrahydrofuran	100.0000	90.2540	9.7	106	0.00
37	S	Dibromofluoromethane	25.0000	22.4176	10.3	105	0.00
38	T	1,1,1-Trichloroethane	50.0000	44.5864	10.8	100	-0.02
39	T	Cyclohexane	50.0000	50.3450	-0.7	110	-0.02
40	T	1,1-Dichloropropene	50.0000	47.3919	5.2	104	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	97.9503	2.0	111	0.00
42	T	Carbon Tetrachloride	50.0000	45.1452	9.7	100	-0.02
43	S	1,2-Dichloroethane-d4	25.0000	20.3786	18.5	98	-0.02
44		Heptane	-1.0000	0.0000	0.0	0	-2.67#
45	T	1,2-Dichloroethane	50.0000	43.4503	13.1	98	0.00
46	T	Benzene	50.0000	47.9348	4.1	106	0.00
47	T	Trichloroethene	50.0000	46.6056	6.8	102	-0.02
48	T	Methylcyclohexane	50.0000	48.9149	2.2	110	0.00
49	C	1,2-Dichloropropane	50.0000	47.6407	4.7	105	0.00
50	T	Bromodichloromethane	50.0000	46.1999	7.6	102	0.00
51	T	1,4-Dioxane	200.0000	222.3266	-11.2	137	0.00
52	T	Dibromomethane	50.0000	44.0993	11.8	101	-0.02
53	T	2-Chloroethyl Vinyl Ether	50.0000	49.8943	0.2	111	-0.02
54	T	4-Methyl-2-Pentanone	50.0000	48.2782	3.4	110	-0.02

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\022015\8M403129.D Vial: 3
Acq On : 20 Feb 2015 13:19 Operator: TMB
Sample : WG512985-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD68957 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	50.2344	-0.5	107	-0.02
56	T	Dimethyl Disulfide	50.0000	30.2510	39.5#	112	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	109	0.00
58	S	Toluene-d8	25.0000	25.1479	-0.6	107	0.00
59	C	Toluene	50.0000	52.6116	-5.2	106	-0.02
60	T	Ethyl Methacrylate	50.0000	56.6605	-13.3	115	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.27#
62	T	trans-1,3-Dichloropropene	50.0000	52.9211	-5.8	106	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.6009	0.8	102	-0.02
64	T	2-Hexanone	50.0000	52.0889	-4.2	112	0.00
65	T	1,3-Dichloropropane	50.0000	51.0373	-2.1	106	0.00
66	T	Tetrachloroethene	50.0000	49.9872	0.0	105	0.00
67	T	Dibromochloromethane	50.0000	51.5955	-3.2	104	-0.02
68	T	1,2-Dibromoethane	50.0000	51.1985	-2.4	104	0.00
69	T	1-Chlorohexane	50.0000	55.3875	-10.8	112	0.00
70	P	Chlorobenzene	50.0000	50.2343	-0.5	105	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	51.9125	-3.8	104	0.00
72	C	Ethylbenzene	50.0000	49.4342	1.1	102	-0.02
73	T	m-,p-Xylene	100.0000	102.4064	-2.4	103	-0.02
74	T	o-Xylene	50.0000	51.5448	-3.1	103	-0.02
75	T	Styrene	50.0000	53.8291	-7.7	104	0.00
76	P	Bromoform	50.0000	49.3114	1.4	102	0.00
77	T	Isopropylbenzene	50.0000	50.4091	-0.8	97	-0.02
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	103	-0.02
79	P	1,1,2,2-Tetrachloroethane	50.0000	50.9663	-1.9	105	-0.02
80	S	p-Bromofluorobenzene	25.0000	24.5749	1.7	101	0.00
81	T	1,2,3-Trichloropropane	50.0000	49.6960	0.6	101	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	45.2135	9.6	96	-0.02
83	T	n-Propylbenzene	50.0000	51.4965	-3.0	100	-0.02
84	T	Bromobenzene	50.0000	51.2768	-2.6	103	-0.02
85	T	1,3,5-Trimethylbenzene	50.0000	52.8134	-5.6	100	0.00
86	T	2-Chlorotoluene	50.0000	52.2424	-4.5	103	0.00
87	T	4-Chlorotoluene	50.0000	50.1330	-0.3	98	-0.02
88	T	a-Methylstyrene	50.0000	55.5203	-11.0	109	-0.02
89	T	tert-Butylbenzene	50.0000	51.4887	-3.0	104	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	53.5746	-7.1	101	0.00
91	T	sec-Butylbenzene	50.0000	50.7068	-1.4	99	0.00
92	T	p-Isopropyltoluene	50.0000	51.8638	-3.7	100	0.00
93	T	1,3-Dichlorobenzene	50.0000	51.8118	-3.6	104	0.00
94	T	1,4-Dichlorobenzene	50.0000	49.9969	0.0	103	-0.02
95	T	n-Butylbenzene	50.0000	47.8924	4.2	96	0.00
96	T	1,2-Dichlorobenzene	50.0000	46.8171	6.4	95	-0.02
97	T	1,2-Dibromo-3-Chloropropane	50.0000	45.4928	9.0	90	-0.02
98	T	1,2,4-Trichlorobenzene	50.0000	46.7798	6.4	93	-0.02
99	T	Hexachlorobutadiene	50.0000	44.5971	10.8	90	0.00
100	T	Naphthalene	50.0000	47.0742	5.9	92	-0.02
101	T	1,2,3-Trichlorobenzene	50.0000	46.1140	7.8	92	-0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M403129.D 8260WTR.M Fri Feb 20 13:51:11 2015 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\2\DATA\100214\8M400357.D          Vial: 3
Acq On    :  2 Oct 2014  11:58                       Operator: TMB
Sample    : WG494714-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD66476                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

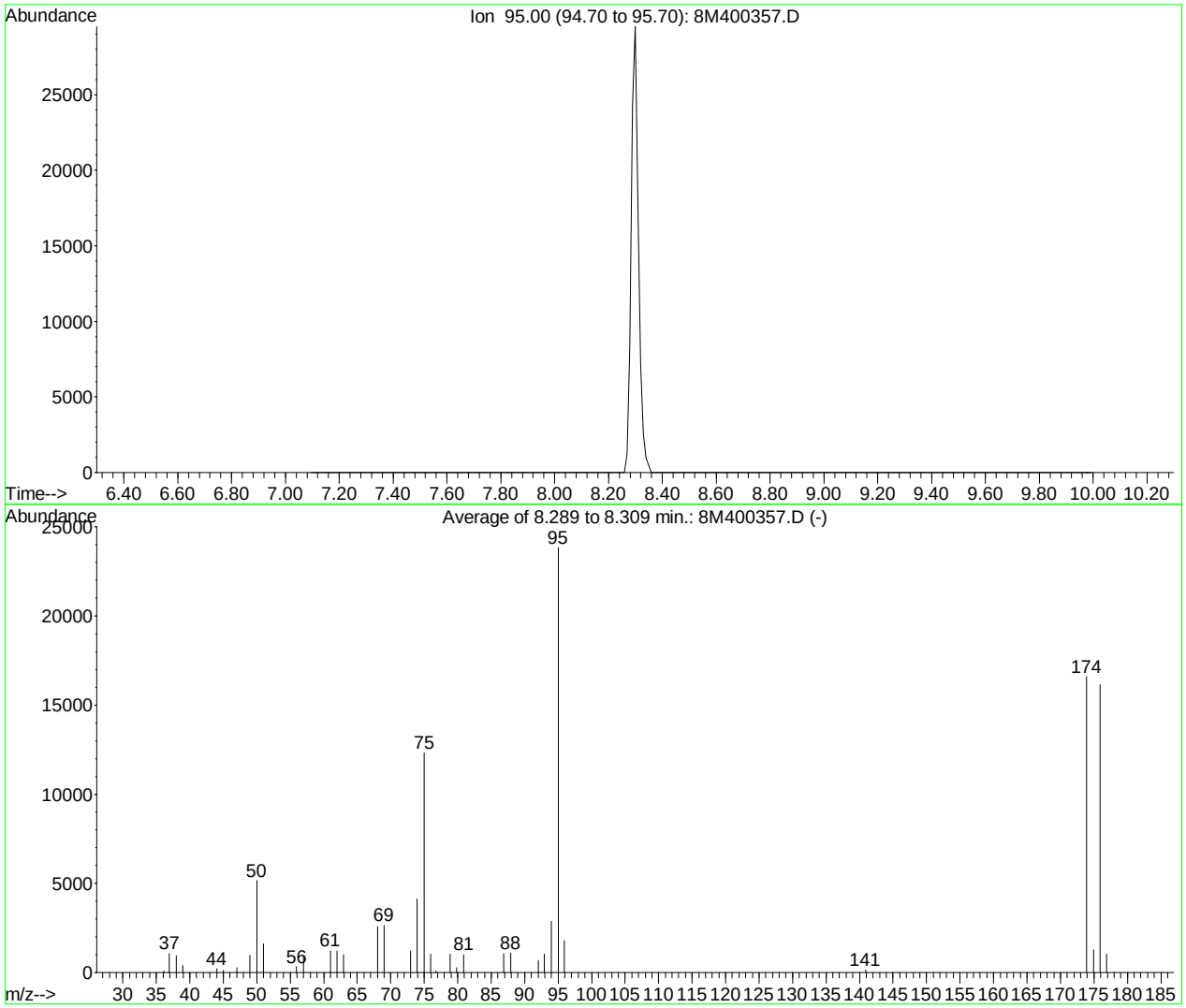

AutoFind: Scans 118, 119, 120; Background Corrected with Scan 113

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.7	5158	PASS
75	95	30	60	51.7	12312	PASS
95	95	100	100	100.0	23818	PASS
96	95	5	9	7.6	1800	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	69.7	16590	PASS
175	174	5	9	7.8	1290	PASS
176	174	95	101	97.3	16145	PASS
177	176	5	9	6.3	1023	PASS

8M400357.D BFB.M Thu Oct 02 12:09:27 2014

BFB

```
Data File : C:\MSDCHEM\2\DATA\020615\8M402829.D          Vial: 1
Acq On    :  6 Feb 2015  15:35                       Operator: TMB
Sample    : WG511287-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD68443                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

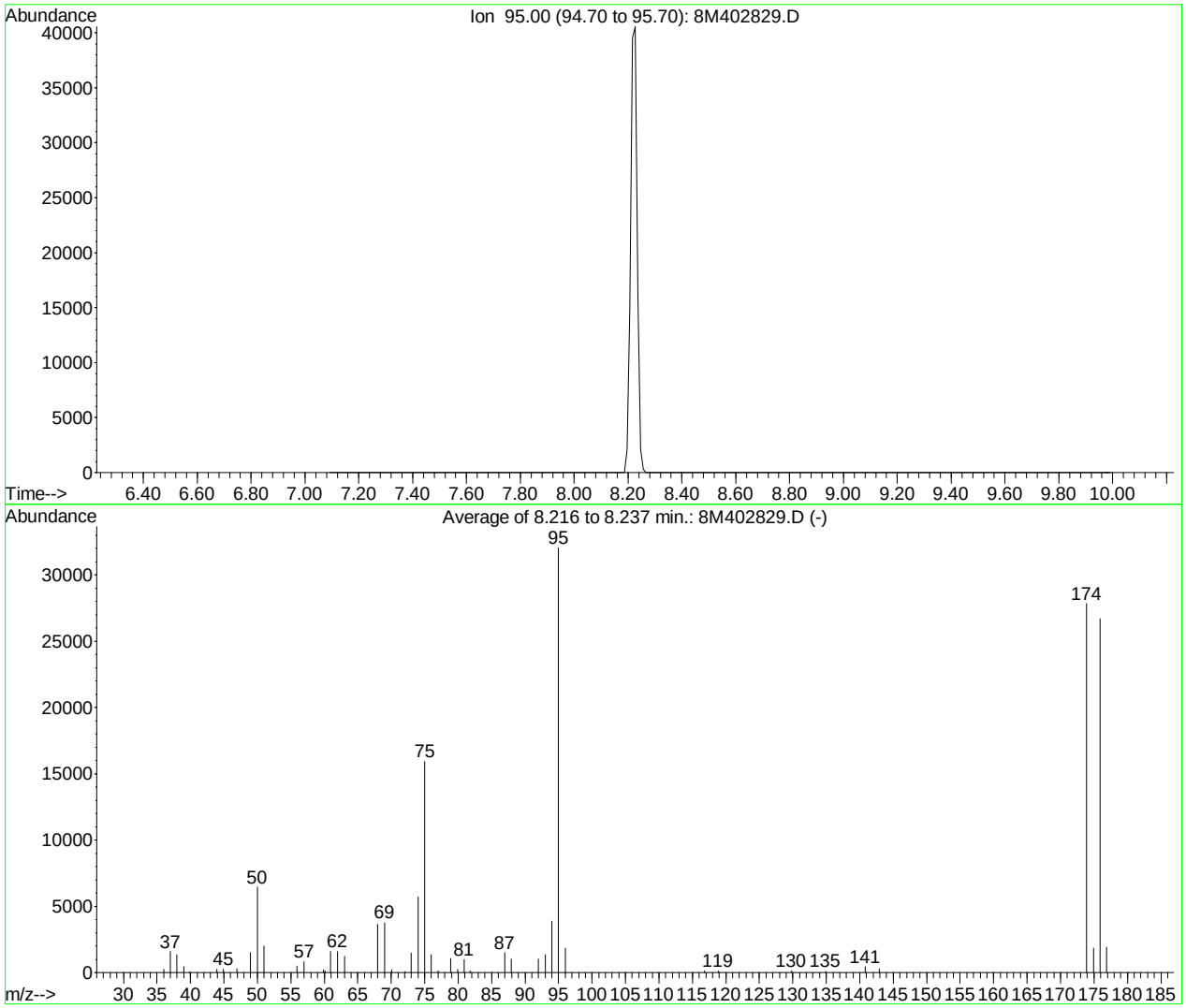

AutoFind: Scans 111, 112, 113; Background Corrected with Scan 106

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.1	6438	PASS
75	95	30	60	49.7	15924	PASS
95	95	100	100	100.0	32031	PASS
96	95	5	9	5.8	1851	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	86.9	27829	PASS
175	174	5	9	6.7	1855	PASS
176	174	95	101	95.9	26698	PASS
177	176	5	9	7.2	1931	PASS

8M402829.D BFB.M Fri Feb 06 15:56:08 2015

BFB

```
Data File : C:\MSDCHEM\2\DATA\022015\8M403127.D          Vial: 1
Acq On    : 20 Feb 2015  12:26                       Operator: TMB
Sample    : WG512985-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD68998                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

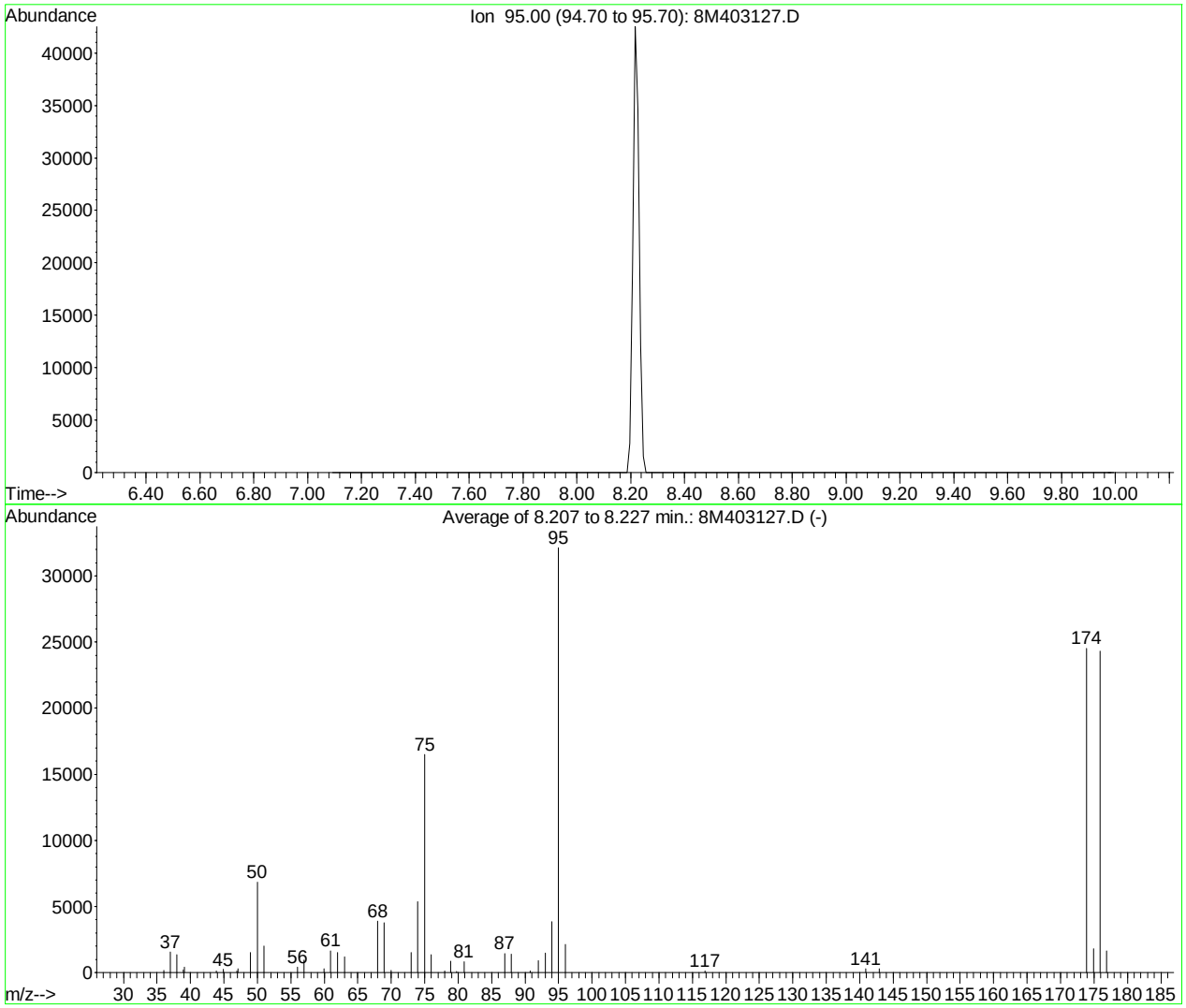

AutoFind: Scans 110, 111, 112; Background Corrected with Scan 106

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.3	6857	PASS
75	95	30	60	51.3	16484	PASS
95	95	100	100	100.0	32122	PASS
96	95	5	9	6.6	2131	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	76.3	24521	PASS
175	174	5	9	7.3	1798	PASS
176	174	95	101	99.1	24301	PASS
177	176	5	9	6.7	1625	PASS

8M403127.D BFB.M Fri Feb 20 12:42:39 2015

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\022015\8M403131.D Vial: 5
Acq On : 20 Feb 2015 14:16 Operator: TMB
Sample : WG512986-01 VBLK0220 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 23 10:53:13 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	730017	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	547422	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.71	152	278756	25.00 ug/L	-0.02

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	186880	24.3242 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.28%		
43) 1,2-Dichloroethane-d4	10.41	65	177393	22.0242 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 88.08%		
58) Toluene-d8	12.80	98	640883	24.6437 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.56%		
80) p-Bromofluorobenzene	16.19	95	250684	25.0745 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.28%		

Target Compounds					Qvalue
19) Methylene Chloride	7.38	84	1504	0.1917 ug/L #	52

(#) = qualifier out of range (m) = manual integration
8M403131.D 8260WTR.M Mon Feb 23 10:53:14 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\022015\8M403131.D Vial: 5
Acq On : 20 Feb 2015 14:16 Operator: TMB
Sample : WG512986-01 VBLK0220 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 23 10:53 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration

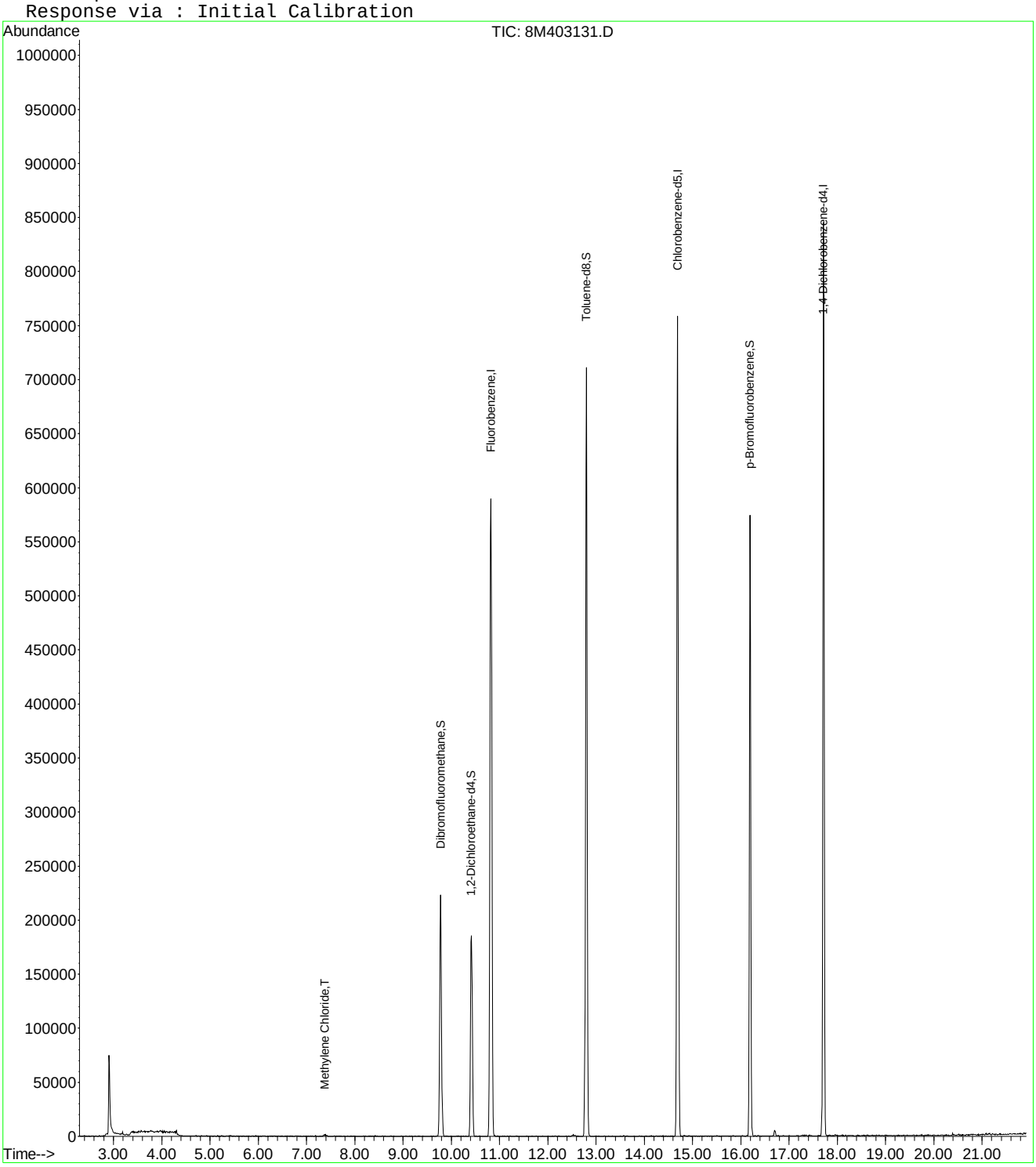

8M403131.D 8260WTR.M Mon Feb 23 10:53:14 2015 Page 2

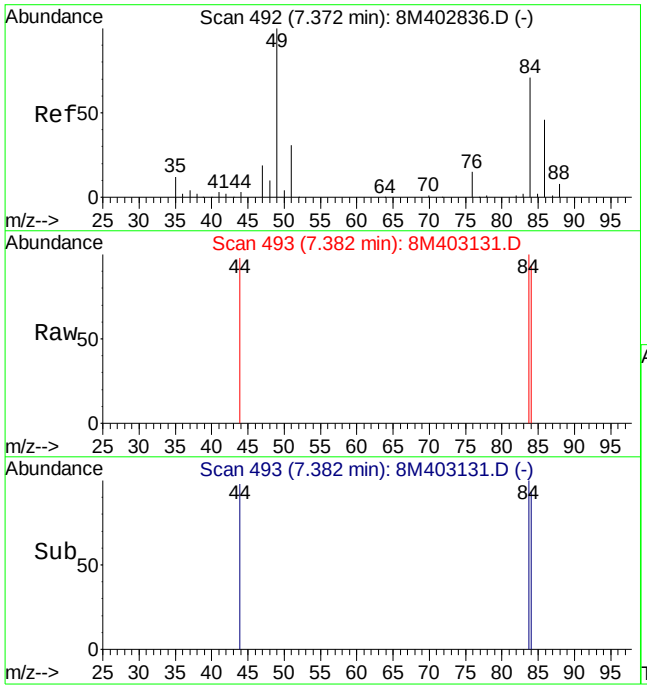

#19
Methylene Chloride
Concen: 0.19 ug/L
RT: 7.38 min Scan# 493
Delta R.T. 0.01 min
Lab File: 8M403131.D
Acq: 20 Feb 2015 14:16

Tgt Ion: 84 Resp: 1504

Ion	Ratio	Lower	Upper
84	100		
49	84.8	86.3	201.5#

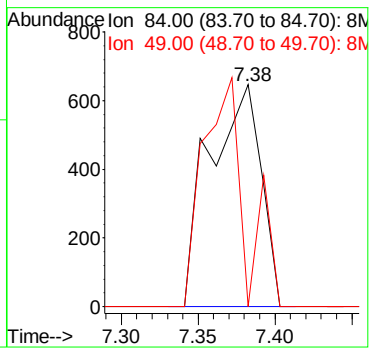

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\022015\8M403153.D Vial: 27
Acq On : 21 Feb 2015 00:52 Operator: TMB
Sample : WG512986-04 VBLK0220 BLANK STD 624 Inst : HPMS8
Misc : 2,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 23 10:53:41 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	682380	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	434870	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.71	152	239519	25.00 ug/L	-0.02

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	167585	23.3356 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.36%		
43) 1,2-Dichloroethane-d4	10.41	65	156824	20.8297 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 83.32%		
58) Toluene-d8	12.80	98	574516	27.8094 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 111.24%#		
80) p-Bromofluorobenzene	16.19	95	197424	22.9821 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 91.92%		

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
8M403153.D 8260WTR.M Mon Feb 23 10:53:41 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\022015\8M403153.D Vial: 27
Acq On : 21 Feb 2015 00:52 Operator: TMB
Sample : WG512986-04 VBLK0220 BLANK STD 624 Inst : HPMS8
Misc : 2,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 23 10:53 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration

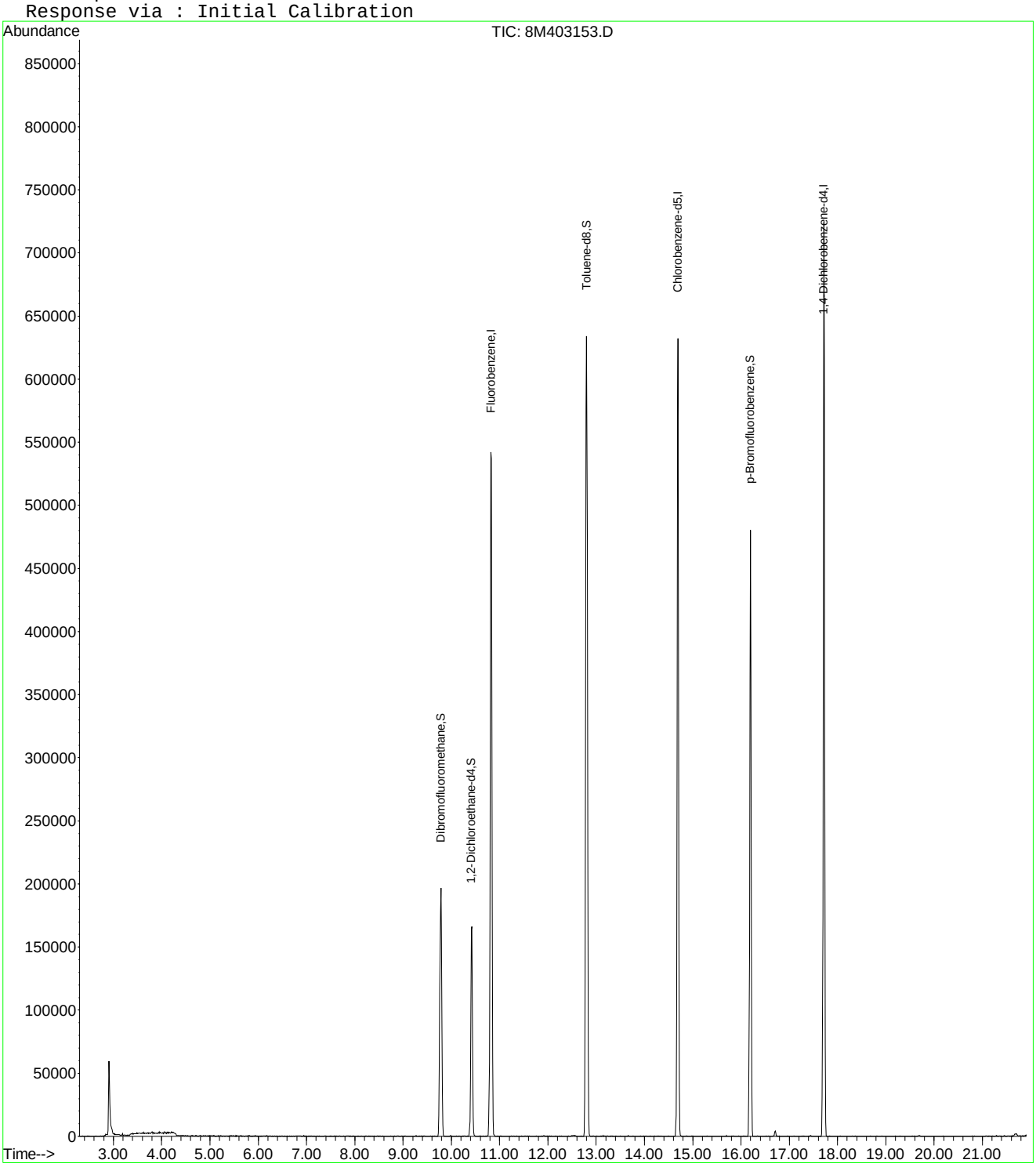

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\022015\8M403137.D Vial: 11
Acq On : 20 Feb 2015 17:11 Operator: TMB
Sample : WG512986-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD68939 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 20 17:32:57 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	745407	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	535009	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.72	152	274748	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	184080	23.4651 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.88%		
43) 1,2-Dichloroethane-d4	10.42	65	180638	21.9640 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 87.84%		
58) Toluene-d8	12.80	98	629619	24.7723 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.08%		
80) p-Bromofluorobenzene	16.19	95	244976	24.8611 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.44%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.25	85	120413	10.0836 ug/L	99
3) Chloromethane	3.70	50	149573	14.4778 ug/L	100
4) Vinyl Chloride	3.94	62	177263	17.4342 ug/L	99
5) 1,3-Butadiene	3.98	54	56648	5.9760 ug/L	88
6) Bromomethane	4.84	94	63487	16.3911 ug/L	98
7) Chloroethane	5.00	64	127535	20.2921 ug/L	98
8) Trichlorofluoromethane	5.49	101	249123	17.6668 ug/L	99
9) Diethyl ether	6.02	59	478016	92.7519 ug/L	98
10) Isoprene	6.06	67	235195	21.5329 ug/L	97
11) Acrolein	6.25	56	50198	84.3690 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	145733	18.2950 ug/L	96
13) Acetone	6.36	43	21097	18.6779 ug/L	96
14) 1,1-Dichloroethene	6.59	61	225807	17.6251 ug/L	98
15) Tert-Butyl Alcohol	6.69	59	51510	216.9556 ug/L	92
16) Dimethyl Sulfide	6.84	62	177208	20.7530 ug/L	95
17) Iodomethane	7.10	142	22955	20.8608 ug/L	92
18) Methyl acetate	7.11	43	57226	12.1840 ug/L	98
19) Methylene Chloride	7.37	84	151158	18.8671 ug/L	89
20) Carbon Disulfide	7.41	76	443006	16.7444 ug/L	100
21) Acrylonitrile	7.55	53	30591	18.5477 ug/L	95
22) Methyl Tert Butyl Ether	7.58	73	298515	21.4313 ug/L	96
23) trans-1,2-Dichloroethene	7.82	61	236909	19.1987 ug/L	98
24) n-Hexane	7.90	57	184560	17.0422 ug/L	98
25) Diisopropyl ether	8.24	45	2332719	91.2557 ug/L	98
26) Vinyl Acetate	8.41	43	172359	48.9101 ug/L	99
27) 1,1-Dichloroethane	8.44	63	287554	18.5436 ug/L	99
28) Ethyl-Tert-Butyl ether	8.81	59	2010194	98.0949 ug/L	98
29) 2-Butanone	8.99	43	30977	18.4224 ug/L	97
30) Propionitrile	9.11	54	49388	88.8128 ug/L	100
31) 2,2-Dichloropropane	9.22	77	224315	19.5947 ug/L	99
32) cis-1,2-Dichloroethene	9.28	96	172248	20.1966 ug/L	93
33) Chloroform	9.49	83	287294	19.5039 ug/L	99
34) 1-Bromopropane	9.63	122	31731	20.6472 ug/L	94
35) Bromochloromethane	9.73	130	86805	20.3485 ug/L	92
36) Tetrahydrofuran	9.75	42	106511	90.8170 ug/L	96
38) 1,1,1-Trichloroethane	10.03	97	255042	19.8761 ug/L	99
39) Cyclohexane	10.06	56	257005	18.6116 ug/L	97
40) 1,1-Dichloropropene	10.21	75	217000	19.5881 ug/L	100
41) Tert-Amyl-Methyl ether	10.33	73	1544633	100.1979 ug/L	96
42) Carbon Tetrachloride	10.37	117	218344	19.8429 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M403137.D 8260WTR.M Fri Feb 20 17:32:57 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\022015\8M403137.D Vial: 11
Acq On : 20 Feb 2015 17:11 Operator: TMB
Sample : WG512986-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD68939 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 20 17:32:57 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.54	62	189418	19.4639 ug/L	98
46)	Benzene	10.58	78	612972	20.2255 ug/L	97
47)	Trichloroethene	11.33	130	166584	21.8506 ug/L	96
48)	Methylcyclohexane	11.41	83	230554	18.5574 ug/L	97
49)	1,2-Dichloropropane	11.54	63	163902	19.8877 ug/L	97
50)	Bromodichloromethane	11.84	83	209193	20.0734 ug/L	100
51)	1,4-Dioxane	11.83	88	5248	163.9558 ug/L	90
52)	Dibromomethane	11.93	93	74741	19.2162 ug/L	95
53)	2-Chloroethyl Vinyl Ether	12.14	63	61921	19.7807 ug/L	95
54)	4-Methyl-2-Pentanone	12.17	58	25207	17.9483 ug/L	96
55)	cis-1,3-Dichloropropene	12.48	75	238259	21.8682 ug/L	98
56)	Dimethyl Disulfide	12.74	79	115786	14.3566 ug/L	88
59)	Toluene	12.90	91	663863	23.0169 ug/L	99
60)	Ethyl Methacrylate	12.99	69	132538	24.0428 ug/L	94
62)	trans-1,3-Dichloropropene	13.07	75	187786	21.2789 ug/L	98
63)	1,1,2-Trichloroethane	13.29	97	98391	21.4878 ug/L	99
64)	2-Hexanone	13.22	58	23440	19.7906 ug/L #	57
65)	1,3-Dichloropropane	13.60	76	174497	21.0240 ug/L	97
66)	Tetrachloroethene	13.72	164	130822	21.0052 ug/L	96
67)	Dibromochloromethane	13.99	129	129504	22.1355 ug/L	98
68)	1,2-Dibromoethane	14.24	107	97572	21.4363 ug/L	98
69)	1-Chlorohexane	14.32	91	205382	21.0525 ug/L	96
70)	Chlorobenzene	14.74	112	394346	20.2204 ug/L	99
71)	1,1,1,2-Tetrachloroethane	14.77	131	146112	21.9373 ug/L	99
72)	Ethylbenzene	14.76	106	232088	20.8003 ug/L	95
73)	m-,p-Xylene	14.86	106	552304	43.4595 ug/L	97
74)	o-Xylene	15.42	106	260184	20.8080 ug/L	100
75)	Styrene	15.46	104	469870	23.4283 ug/L	95
76)	Bromoform	15.95	173	77785	21.5474 ug/L	99
77)	Isopropylbenzene	15.85	105	666448	21.3337 ug/L	100
79)	1,1,2,2-Tetrachloroethane	16.06	83	106793	21.3853 ug/L	98
81)	1,2,3-Trichloropropane	16.25	110	29908	21.4219 ug/L	81
82)	trans-1,4-Dichloro-2-Buten	16.29	53	29896	18.0044 ug/L	98
83)	n-Propylbenzene	16.36	91	826091	20.5641 ug/L	99
84)	Bromobenzene	16.48	156	181433	23.3393 ug/L	96
85)	1,3,5-Trimethylbenzene	16.54	105	659337	24.5867 ug/L	100
86)	2-Chlorotoluene	16.63	91	524628	21.4161 ug/L	100
87)	4-Chlorotoluene	16.68	91	511989	20.5184 ug/L	99
88)	a-Methylstyrene	16.95	118	332596	21.5253 ug/L	99
89)	tert-Butylbenzene	17.01	134	115893	19.8317 ug/L	97
90)	1,2,4-Trimethylbenzene	17.06	105	645721	23.4326 ug/L	98
91)	sec-Butylbenzene	17.28	105	712398	20.0981 ug/L	99
92)	p-Isopropyltoluene	17.43	119	587974	20.9848 ug/L	100
93)	1,3-Dichlorobenzene	17.63	146	322063	20.1924 ug/L	99
94)	1,4-Dichlorobenzene	17.76	146	347857	21.2970 ug/L	99
95)	n-Butylbenzene	17.96	91	624691	20.3435 ug/L	99
96)	1,2-Dichlorobenzene	18.26	146	293550	20.5372 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	19.25	75	20301	21.8963 ug/L	98
98)	1,2,4-Trichlorobenzene	20.40	180	249204	21.9542 ug/L	100
99)	Hexachlorobutadiene	20.54	225	128840	19.2895 ug/L	98
100)	Naphthalene	20.77	128	383744	22.9276 ug/L	99
101)	1,2,3-Trichlorobenzene	21.07	180	214590	21.6489 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M403137.D 8260WTR.M Fri Feb 20 17:32:58 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\022015\8M403137.D Vial: 11
Acq On : 20 Feb 2015 17:11 Operator: TMB
Sample : WG512986-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD68939 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 20 17:32 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration

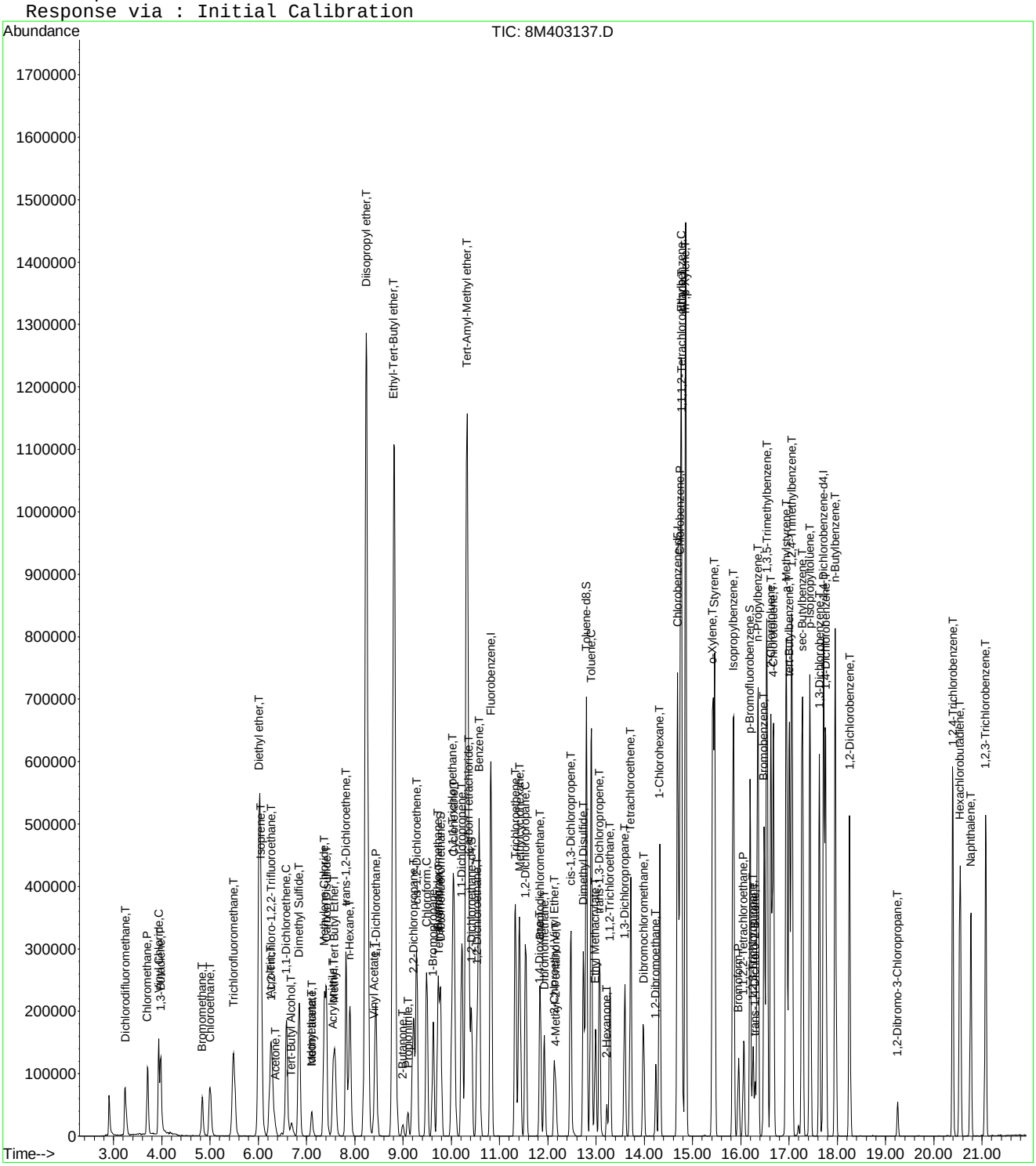

8M403137.D 8260WTR.M Fri Feb 20 17:32:58 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\022015\8M403138.D Vial: 12
Acq On : 20 Feb 2015 17:40 Operator: TMB
Sample : WG512986-03 20ug/L LCSDUP STD 8260 Inst : HPMS8
Misc : 1,1 STD68939 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 20 18:01:59 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	762975	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	547063	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.71	152	280389	25.00 ug/L	-0.02

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	186226	23.1921 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 92.76%		
43) 1,2-Dichloroethane-d4	10.42	65	186897	22.2018 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 88.80%		
58) Toluene-d8	12.80	98	643891	24.7756 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.12%		
80) p-Bromofluorobenzene	16.19	95	250419	24.9022 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.60%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.25	85	120740	9.8781 ug/L	100
3) Chloromethane	3.71	50	153855	14.5494 ug/L	97
4) Vinyl Chloride	3.94	62	175339	16.8479 ug/L	100
5) 1,3-Butadiene	3.98	54	54808	5.6134 ug/L	86
6) Bromomethane	4.84	94	66738	16.8071 ug/L	100
7) Chloroethane	5.00	64	113697	17.6738 ug/L	97
8) Trichlorofluoromethane	5.49	101	250369	17.3463 ug/L	99
9) Diethyl ether	6.02	59	481997	91.3709 ug/L	98
10) Isoprene	6.06	67	231752	20.7291 ug/L	98
11) Acrolein	6.26	56	52252	85.7991 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.27	101	145739	17.8745 ug/L	97
13) Acetone	6.36	43	23147	20.0210 ug/L	98
14) 1,1-Dichloroethene	6.59	61	221898	16.9212 ug/L	95
15) Tert-Butyl Alcohol	6.70	59	56270	231.5471 ug/L	92
16) Dimethyl Sulfide	6.84	62	179379	20.5236 ug/L	96
17) Iodomethane	7.10	142	36061	22.9571 ug/L	95
18) Methyl acetate	7.11	43	63678	13.2456 ug/L	98
19) Methylene Chloride	7.37	84	153825	18.7579 ug/L	89
20) Carbon Disulfide	7.41	76	454408	16.7798 ug/L	99
21) Acrylonitrile	7.55	53	31267	18.5211 ug/L	99
22) Methyl Tert Butyl Ether	7.58	73	315870	22.1551 ug/L	95
23) trans-1,2-Dichloroethene	7.82	61	237838	18.8302 ug/L	97
24) n-Hexane	7.90	57	189504	17.0958 ug/L	97
25) Diisopropyl ether	8.24	45	2375365	90.7844 ug/L	98
26) Vinyl Acetate	8.41	43	167657	46.4804 ug/L	99
27) 1,1-Dichloroethane	8.44	63	294570	18.5586 ug/L	100
28) Ethyl-Tert-Butyl ether	8.81	59	2063124	98.3596 ug/L	98
29) 2-Butanone	9.00	43	34451	20.0167 ug/L	96
30) Propionitrile	9.10	54	52713	92.6094 ug/L	96
31) 2,2-Dichloropropane	9.21	77	227264	19.3952 ug/L	99
32) cis-1,2-Dichloroethene	9.28	96	174613	20.0025 ug/L	93
33) Chloroform	9.49	83	289520	19.2025 ug/L	98
34) 1-Bromopropane	9.63	122	32494	20.6568 ug/L	100
35) Bromochloromethane	9.72	130	90533	20.7337 ug/L	91
36) Tetrahydrofuran	9.74	42	109083	90.8684 ug/L	94
38) 1,1,1-Trichloroethane	10.03	97	260680	19.8477 ug/L	99
39) Cyclohexane	10.06	56	258485	18.2878 ug/L	95
40) 1,1-Dichloropropene	10.22	75	218695	19.2865 ug/L	100
41) Tert-Amyl-Methyl ether	10.32	73	1589845	100.7561 ug/L	96
42) Carbon Tetrachloride	10.36	117	226674	20.1256 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M403138.D 8260WTR.M Fri Feb 20 18:02:00 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\022015\8M403138.D Vial: 12
Acq On : 20 Feb 2015 17:40 Operator: TMB
Sample : WG512986-03 20ug/L LCSDUP STD 8260 Inst : HPMS8
Misc : 1,1 STD68939 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 20 18:01:59 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.54	62	197874	19.8646	ug/L	97
46)	Benzene	10.58	78	621520	20.0354	ug/L	97
47)	Trichloroethene	11.33	130	170356	21.8308	ug/L	98
48)	Methylcyclohexane	11.41	83	233634	18.3723	ug/L	98
49)	1,2-Dichloropropane	11.54	63	166942	19.7901	ug/L	95
50)	Bromodichloromethane	11.84	83	215293	20.1831	ug/L	99
51)	1,4-Dioxane	11.83	88	6464	197.2956	ug/L	93
52)	Dibromomethane	11.93	93	78247	19.6544	ug/L	94
53)	2-Chloroethyl Vinyl Ether	12.14	63	66441	20.7359	ug/L	97
54)	4-Methyl-2-Pentanone	12.16	58	28141	19.5760	ug/L	94
55)	cis-1,3-Dichloropropene	12.48	75	245354	22.0009	ug/L	99
56)	Dimethyl Disulfide	12.74	79	122586	14.6878	ug/L	88
59)	Toluene	12.90	91	646963	21.9368	ug/L	100
60)	Ethyl Methacrylate	12.99	69	135078	23.9636	ug/L	92
62)	trans-1,3-Dichloropropene	13.07	75	187000	20.7229	ug/L	99
63)	1,1,2-Trichloroethane	13.29	97	100746	21.5174	ug/L	99
64)	2-Hexanone	13.22	58	25752	21.2636	ug/L	91
65)	1,3-Dichloropropane	13.60	76	182577	21.5128	ug/L	96
66)	Tetrachloroethene	13.72	164	131891	20.7102	ug/L	98
67)	Dibromochloromethane	13.98	129	136261	22.7772	ug/L	100
68)	1,2-Dibromoethane	14.24	107	103904	22.3244	ug/L	99
69)	1-Chlorohexane	14.32	91	211500	21.2019	ug/L	95
70)	Chlorobenzene	14.74	112	403146	20.2161	ug/L	98
71)	1,1,1,2-Tetrachloroethane	14.78	131	149809	21.9968	ug/L	100
72)	Ethylbenzene	14.76	106	236373	20.7176	ug/L	97
73)	m-,p-Xylene	14.86	106	552906	42.5482	ug/L	96
74)	o-Xylene	15.42	106	264893	20.7178	ug/L	100
75)	Styrene	15.46	104	473067	23.0679	ug/L	96
76)	Bromoform	15.95	173	80853	21.9038	ug/L	98
77)	Isopropylbenzene	15.85	105	676111	21.1662	ug/L	100
79)	1,1,2,2-Tetrachloroethane	16.06	83	109014	21.3909	ug/L	99
81)	1,2,3-Trichloropropane	16.25	110	31826	22.3370	ug/L	80
82)	trans-1,4-Dichloro-2-Buten	16.30	53	30873	18.2109	ug/L	96
83)	n-Propylbenzene	16.36	91	836136	20.3954	ug/L	99
84)	Bromobenzene	16.48	156	179343	22.6063	ug/L	94
85)	1,3,5-Trimethylbenzene	16.54	105	636736	23.2662	ug/L	100
86)	2-Chlorotoluene	16.63	91	529261	21.1705	ug/L	100
87)	4-Chlorotoluene	16.68	91	518411	20.3578	ug/L	100
88)	a-Methylstyrene	16.95	118	342160	21.6987	ug/L	99
89)	tert-Butylbenzene	17.01	134	120622	20.2256	ug/L	98
90)	1,2,4-Trimethylbenzene	17.06	105	645718	22.9611	ug/L	99
91)	sec-Butylbenzene	17.28	105	724701	20.0339	ug/L	98
92)	p-Isopropyltoluene	17.43	119	595059	20.8104	ug/L	99
93)	1,3-Dichlorobenzene	17.63	146	327460	20.1177	ug/L	99
94)	1,4-Dichlorobenzene	17.76	146	354656	21.2764	ug/L	98
95)	n-Butylbenzene	17.96	91	624560	19.9301	ug/L	99
96)	1,2-Dichlorobenzene	18.25	146	299808	20.5531	ug/L	98
97)	1,2-Dibromo-3-Chloropropan	19.25	75	21247	22.4556	ug/L	98
98)	1,2,4-Trichlorobenzene	20.39	180	252500	21.7970	ug/L	99
99)	Hexachlorobutadiene	20.54	225	132252	19.4020	ug/L	99
100)	Naphthalene	20.77	128	395055	23.1285	ug/L	99
101)	1,2,3-Trichlorobenzene	21.07	180	223151	22.0597	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M403138.D 8260WTR.M Fri Feb 20 18:02:00 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\022015\8M403138.D Vial: 12
Acq On : 20 Feb 2015 17:40 Operator: TMB
Sample : WG512986-03 20ug/L LCSDUP STD 8260 Inst : HPMS8
Misc : 1,1 STD68939 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 20 18:01 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration

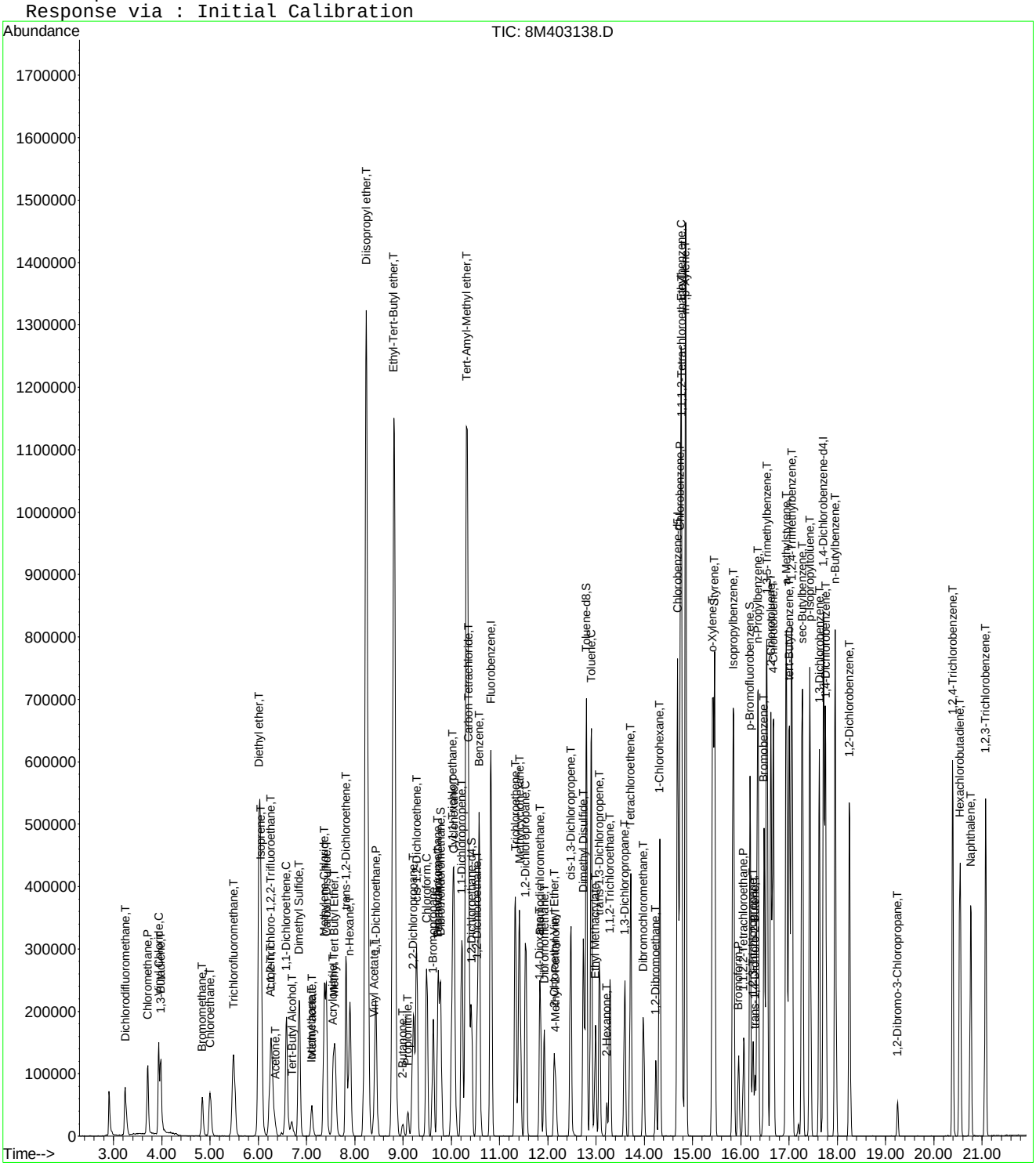

2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L15021036
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021036-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	LHSMW54-021815	**Prep Method:**	6850	**Prep Date:**	02/25/2015 12:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG513403	**Analyst:**	JWR	**Run Date:**	02/25/2015 18:15
Collect Date:	02/18/2015 16:35	**Dilution:**	1	**File ID:**	1LM.LM29059
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.271	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15021036
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021036-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	47WW38-021815	**Prep Method:**	6850	**Prep Date:**	02/25/2015 12:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG513403	**Analyst:**	JWR	**Run Date:**	02/25/2015 18:34
Collect Date:	02/18/2015 17:45	**Dilution:**	500	**File ID:**	1LM.LM29060
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1500		200	100	50.0

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe
Calibration Check: 1408 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG513403-01 MCT	10,050.0	
WG513403-02 Blank	0.40	
WG513403-03 LCS	0.40	
L15021036-01	1,343.0	
-02	1,099.0	
L15021037-01	5,850.0	
-02	5,830.0	
-03 RS	1,400.0	
-04 MS	2,830.0	
-05 MSD	2,550.0	
-06	7,360.0	
-07	7,620.0	
-08	1,965.0	
-09	4,740.0	
-10	5,360.0	
-11	575.0	
L15021053-01	1,944.0	
-03	1,926.0	
-05	1,583.0	
-07	677.0	
-09	2,360.0	
-11	4,730.0	

Analyst: John Richards

Date/Time: 02/27/15 11:30

DCN#108849

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 111714_ADC.TXT
Analyst1: ADC Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 6

Maintenance Log ID: Syringe Filter Lot#: 130818254-1
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG501261

Internal STD: COA17578 Surrogate STD: NA Calibration STD STD67080 (11/17/2014)

CCV STD: STD67080 LCS STD: STD67080 MS/MSD STD: STD67080

Comments: ICAL WG501146 : Alternate Source :STD67082

Diluted samples in this analytical workgroup were ran according to sample's historical data.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM27603	WG501146-01 CCB	1	1		11/17/14 12:41
2	1LM.LM27604	WG501146-02 STD (0.1 ug/L)	1	1	STD67080	11/17/14 13:00
3	1LM.LM27605	WG501146-03 STD (0.2 ug/L)	1	1	STD67080	11/17/14 13:19
4	1LM.LM27606	WG501146-04 STD (0.5 ug/L)	1	1	STD67080	11/17/14 13:38
5	1LM.LM27607	WG501146-05 STD (1.0 ug/L)	1	1	STD67080	11/17/14 13:56
6	1LM.LM27608	WG501146-06 STD (2.0 ug/L)	1	1	STD67080	11/17/14 14:15
7	1LM.LM27609	WG501146-07 STD (5.0 ug/L)	1	1	STD67080	11/17/14 14:34
8	1LM.LM27610	WG501146-08 STD (10 ug/L)	1	1	STD67080	11/17/14 14:53
9	1LM.LM27611	WG501146-09 SSCV (1.0 ug/L)	1	1	STD67082	11/17/14 15:12
10	1LM.LM27612	WG501260-01 CCB	1	1		11/17/14 15:31
11	1LM.LM27613	WG501260-02 CCV (1.0ug/L)	1	1	STD67080	11/17/14 15:50
12	1LM.LM27614	WG501261-07 MRL (0.2ug/L)	1	1	STD67080	11/17/14 16:09
13	1LM.LM27615	WG501261-01 MCT (0.2ug/L)	1	1	STD67080	11/17/14 16:28
14	1LM.LM27616	WG501261-02 BLANK	1	1		11/17/14 16:47
15	1LM.LM27617	WG501261-03 LCS (0.2ug/L)	1	1	STD67080	11/17/14 17:06
16	1LM.LM27618	L14110479-26	1	1		11/17/14 17:25
17	1LM.LM27619	L14110648-01	1	1		11/17/14 17:44
18	1LM.LM27620	L14110438-01 100X	1	100		11/17/14 18:03
19	1LM.LM27621	L14110438-03	1	1		11/17/14 18:22
20	1LM.LM27622	L14110438-05 10X	1	10		11/17/14 18:40
21	1LM.LM27623	L14110618-01	1	1		11/17/14 18:59
22	1LM.LM27624	L14110635-01 10,000X	1	10000		11/17/14 19:18
23	1LM.LM27625	WG501260-03 CCV (1.0ug/L)	1	1	STD67080	11/17/14 19:37
24	1LM.LM27626	WG501261-08 MRL (0.2ug/L)	1	1	STD67080	11/17/14 19:56
25	1LM.LM27627	WG501260-04 CCB	1	1		11/17/14 20:15
26	1LM.LM27628	L14110626-03 RS	1	1		11/17/14 20:34
27	1LM.LM27629	L14110626-04 MS	1	1	STD67080	11/17/14 20:53
28	1LM.LM27630	L14110626-05 MSD	1	1	STD67080	11/17/14 21:12
29	1LM.LM27631	L14110626-01	1	1	STD67080	11/17/14 21:31
30	1LM.LM27632	L14110626-02	1	1	STD67080	11/17/14 21:50
31	1LM.LM27633	L14110626-06	1	1	STD67080	11/17/14 22:09
32	1LM.LM27634	WG501260-05 CCV (1.0ug/L)	1	1	STD67080	11/17/14 22:28
33	1LM.LM27635	WG501261-09 MRL (0.2ug/L)	1	1	STD67080	11/17/14 22:47

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 111714_ADC.TXT

Analyst1: ADC Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 6

Maintenance Log ID: Syringe Filter Lot#: 130818254-1

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG501261

Internal STD: COA17578 Surrogate STD: NA STD67080 (11/17/2014)

CCV STD: STD67080 LCS STD: STD67080 STD67080

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM27636	WG501260-06 CCB	1	1		11/17/14 23:06

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 2 Approved: 19-NOV-14

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 022515_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 6

Maintenance Log ID: Syringe Filter Lot#: 140701254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG513403 (waters)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD67080 (11/17/2014)

CCV STD: STD67080 LCS STD: STD67080 MS/MSD STD: STD67080

Comments: All samples initially analyzed at a dilution were based on their historical results.
Samples tagged with (NR) did not conform to their historical results. These samples were reanalyzed either neat, or at a lesser dilution on the end of this run.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM29053	WG513413-01 CCB	1	1		02/25/15 16:21
2	1LM.LM29054	WG513413-02 CCV (1.0ug/L)	1	1	STD67080	02/25/15 16:40
3	1LM.LM29055	WG513403-07 MRL (0.2ug/L)	1	1	STD67080	02/25/15 16:59
4	1LM.LM29056	WG513403-01 MCT (0.2ug/L)	1	1	STD67080	02/25/15 17:18
5	1LM.LM29057	WG513403-02 BLANK	1	1		02/25/15 17:37
6	1LM.LM29058	WG513403-03 LCS (0.2ug/L)	1	1	STD67080	02/25/15 17:56
7	1LM.LM29059	L15021036-01	1	1		02/25/15 18:15
8	1LM.LM29060	L15021036-02 (500x)	1	500		02/25/15 18:34
9	1LM.LM29061	L15021037-01 (500x)(NR)	1	500		02/25/15 18:53
10	1LM.LM29062	L15021037-02 (500x)(NR)	1	500		02/25/15 19:12
11	1LM.LM29063	L15021037-03 RS (250x)(NR)	1	250		02/25/15 19:31
12	1LM.LM29064	L15021037-04 MS (250x)(NR)	1	250	STD67080	02/25/15 19:50
13	1LM.LM29065	L15021037-05 MSD (250x)(NR)	1	250	STD67080	02/25/15 20:09
14	1LM.LM29066	WG513413-03 CCV (1.0ug/L)	1	1	STD67080	02/25/15 20:28
15	1LM.LM29067	WG513403-08 MRL (0.2ug/L)	1	1	STD67080	02/25/15 20:46
16	1LM.LM29068	WG513413-04 CCB	1	1		02/25/15 21:05
17	1LM.LM29069	L15021037-06 (100x)(NR)	1	100		02/25/15 21:24
18	1LM.LM29070	L15021037-07 (50x)	1	50		02/25/15 21:43
19	1LM.LM29071	L15021037-08	1	1		02/25/15 22:02
20	1LM.LM29072	L15021037-09	1	1		02/25/15 22:21
21	1LM.LM29073	L15021037-10	1	1		02/25/15 22:40
22	1LM.LM29074	L15021037-11	1	1		02/25/15 22:59
23	1LM.LM29075	L15021053-01 (5,000x)(NR)	1	5000		02/25/15 23:18
24	1LM.LM29076	L15021053-03	1	1		02/25/15 23:37
25	1LM.LM29077	L15021053-05 (10,000x)(NR)	1	10000		02/25/15 23:56
26	1LM.LM29078	L15021053-07 (1,000x)	1	1000		02/26/15 00:15
27	1LM.LM29079	WG513413-05 CCV (1.0ug/L)	1	1	STD67080	02/26/15 00:34
28	1LM.LM29080	WG513403-09 MRL (0.2ug/L)	1	1	STD67080	02/26/15 00:53
29	1LM.LM29081	WG513413-06 CCB	1	1		02/26/15 01:12
30	1LM.LM29082	L15021053-09 (50x)	1	50		02/26/15 01:30
31	1LM.LM29083	L15021053-11	1	1		02/26/15 01:49
32	1LM.LM29084	WG513413-07 CCV (1.0ug/L)	1	1	STD67080	02/26/15 02:08
33	1LM.LM29085	WG513403-10 MRL (0.2ug/L)	1	1	STD67080	02/26/15 02:27

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 022515_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 6

Maintenance Log ID: Syringe Filter Lot#: 140701254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG513403 (waters)

Internal STD: COA18071 Surrogate STD: NA STD67080 (11/17/2014)

CCV STD: STD67080 LCS STD: STD67080 STD67080

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM29086	WG513413-08 CCB	1	1		02/26/15 02:46
35	1LM.LM29087	WG513413-09 CCV (1.0ug/L)	1	1	STD67080	02/26/15 12:34
36	1LM.LM29088	WG513403-11 MRL (0.2ug/L)	1	1	STD67080	02/26/15 12:53
37	1LM.LM29089	WG513413-10 CCB	1	1		02/26/15 13:12
38	1LM.LM29090	L15021037-01 (RR 100x)	1	100		02/26/15 13:31
39	1LM.LM29091	L15021037-02 (RR 100x)	1	100		02/26/15 13:50
40	1LM.LM29092	L15021037-03 RS (RR 50x)	1	50		02/26/15 14:09
41	1LM.LM29093	L15021037-04 MS (RR 50x)	1	50		02/26/15 14:27
42	1LM.LM29094	L15021037-05 MSD (RR 50x)	1	50		02/26/15 14:46
43	1LM.LM29095	L15021037-06 (RR Neat)	1	1		02/26/15 15:05
44	1LM.LM29096	L15021053-01 (RR 250x)	1	250		02/26/15 15:24
45	1LM.LM29097	L15021053-05 (RR 1,000x)	1	1000		02/26/15 15:43
46	1LM.LM29098	WG513413-11 CCV (1.0ug/L)	1	1	STD67080	02/26/15 16:02
47	1LM.LM29099	WG513403-12 MRL (0.2ug/L)	1	1	STD67080	02/26/15 16:21
48	1LM.LM29100	WG513413-12 CCB	1	1		02/26/15 16:40

Comments

Seq.	Rerun	Dil.	Reason	Analytes
41				
	L15021037-04 MS (RR 50x) : The MS %Rec is below zero. The parent sample to this MS has a perchlorate result greater than that of the MS/MSD-spiking standard. In addition, at this level of dilution, the spiked amount has been diluted below the method detection limit.			
42				
	L15021037-05 MSD (RR 50x) : The MSD %Rec is below zero. The parent sample to this MSD has a perchlorate result greater than that of the MS/MSD-spiking standard. In addition, at this level of dilution, the spiked amount has been diluted below the method detection limit.			

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Microbac Laboratories Inc.

Data Checklist

Date: 17-NOV-2014
Analyst: ADC
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG501146
Runlog ID: 64764
Analytical Workgroups: L14110438, 0479, 0618, 0626, 0635, 0648

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	ADC
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 19-NOV-2014

Secondary Reviewer: 19-NOV-2014

CHECKLIST1 - Modified 03/05/2008

Generated: NOV-19-2014 16:22:21

Microbac Laboratories Inc.

Data Checklist

Date: 25-FEB-2015
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 66560
Analytical Workgroups: L15021036, 1037, 1053 (WATERS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	DL@50X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
27-FEB-2015
John Richards

Secondary Reviewer:
27-FEB-2015
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-27-2015 13:28:47

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG513403

Login Number: L15021036

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
LHSMW54-021815	01	02/18/15					02/25/2015	6.8	28		02/25/15	.3	28	
47WW38-021815	02	02/18/15					02/25/2015	6.8	28		02/25/15	.3	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4040762
Report generated 02/27/2015 13:47

METHOD BLANK SUMMARY

Login Number: L15021036
Blank File ID: 1LM.LM29057
Prep Date: 02/25/15 12:00
Analyzed Date: 02/25/15 17:37
Analyst: JWR

Work Group: WG513403
Blank Sample ID: WG513403-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG513403-07	1LM.LM29055	02/25/15 16:59	01
MCT	WG513403-01	1LM.LM29056	02/25/15 17:18	01
LCS	WG513403-03	1LM.LM29058	02/25/15 17:56	01
LHSMW54-021815	L15021036-01	1LM.LM29059	02/25/15 18:15	01
47WW38-021815	L15021036-02	1LM.LM29060	02/25/15 18:34	DL01
QCMRL	WG513403-08	1LM.LM29067	02/25/15 20:46	01
QCMRL	WG513403-09	1LM.LM29080	02/26/15 00:53	01
QCMRL	WG513403-10	1LM.LM29085	02/26/15 02:27	01
QCMRL	WG513403-11	1LM.LM29088	02/26/15 12:53	01
QCMRL	WG513403-12	1LM.LM29099	02/26/15 16:21	01

Report Name: BLANK_SUMMARY
PDF File ID: 4040763
Report generated 02/27/2015 13:47

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15021036 Prep Date: 02/25/15 12:00 Sample ID: WG513403-02
Instrument ID: LCMS1 Run Date: 02/25/15 17:37 Prep Method: 6850
File ID: 1LM.LM29057 Analyst: JWR Method: 6850
Workgroup (AAB#): WG513403 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-17-NOV-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4040765
27-FEB-2015 13:47

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15021036 Run Date: 02/25/2015 Sample ID: WG513403-03
Instrument ID: LCMS1 Run Time: 17:56 Prep Method: 6850
File ID: 1LM.LM29058 Analyst: JWR Method: 6850
Workgroup (AAB#): WG513403 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD67080 Cal ID: LCMS1-17-NOV-14

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	0.200	0.204	102	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4040769
Report generated: 02/27/2015 13:47

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L15021036
Analytical Method: 6850
ICAL Workgroup: WG501146

Instrument ID: LCMS1
Initial Calibration Date: 17-NOV-14 14:53
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.387	10.9	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4041270
Report generated 02/27/2015 13:47

Login Number: L15021036
Analytical Method: 6850
Instrument ID: LCMS1
Initial Calibration Date: 17-NOV-14 14:53
Column ID: F

Analyte	WG501146-02			WG501146-03			WG501146-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	11100.0000	1.719	0.200	17300.0000	1.339	0.500	44100.0000	1.338

INT_CAL - Modified 03/06/2008
PDF File ID: 4041270
Report generated 02/27/2015 13:47

Login Number: L15021036
Analytical Method: 6850
Instrument ID: LCMS1
Initial Calibration Date: 17-NOV-14 14:53
Column ID: F

Analyte	WG501146-05			WG501146-06			WG501146-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	84400.0000	1.290	2.00	173000.000	1.337	5.00	420000.000	1.337

INT_CAL - Modified 03/06/2008
PDF File ID: 4041270
Report generated 02/27/2015 13:47

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15021036

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 17-NOV-14 14:53

Column ID: F

Analyte	WG501146-08		
	CONC	RESP	RF
Perchlorate	10.0	841000.000	1.347

INT_CAL - Modified 03/06/2008
PDF File ID: 4041270
Report generated 02/27/2015 13:47

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15021036 Run Date: 11/17/2014 Sample ID: WG501146-09
Instrument ID: LCMS1 Run Time: 15:12 Method: 6850
File ID: 1LM.LM27611 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG501146 Cal ID: LCMS1 - 17-NOV-14

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.36	1.00	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4041271
Report generated 02/27/2015 13:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15021036
Run Date: 02/25/2015
Sample ID: WG513413-01
Instrument ID: LCMS1
Run Time: 16:21
Method: 6850
File ID: 1LM.LM29053
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG513403
Cal ID: LCMS1 - 17-NOV-14
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4040772
Report generated 02/27/2015 13:47

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15021036
Run Date: 02/25/2015
Sample ID: WG513413-04
Instrument ID: LCMS1
Run Time: 21:05
Method: 6850
File ID: 1LM.LM29068
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG513403
Cal ID: LCMS1 - 17-NOV-14
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4040772
Report generated 02/27/2015 13:47

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15021036
Run Date: 02/26/2015
Sample ID: WG513413-06
Instrument ID: LCMS1
Run Time: 01:12
Method: 6850
File ID: 1LM.LM29081
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG513403
Cal ID: LCMS1 - 17-NOV-14
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4040772
Report generated 02/27/2015 13:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15021036
Run Date: 02/26/2015
Sample ID: WG513413-08
Instrument ID: LCMS1
Run Time: 02:46
Method: 6850
File ID: 1LM.LM29086
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG513403
Cal ID: LCMS1 - 17-NOV-14
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4040772
Report generated 02/27/2015 13:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15021036
Run Date: 02/26/2015
Sample ID: WG513413-10
Instrument ID: LCMS1
Run Time: 13:12
Method: 6850
File ID: 1LM.LM29089
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG513403
Cal ID: LCMS1 - 17-NOV-14
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4040772
Report generated 02/27/2015 13:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15021036
Run Date: 02/26/2015
Sample ID: WG513413-12
Instrument ID: LCMS1
Run Time: 16:40
Method: 6850
File ID: 1LM.LM29100
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG513403
Cal ID: LCMS1 - 17-NOV-14
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4040772
Report generated 02/27/2015 13:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15021036 Run Date: 02/25/2015 Sample ID: WG513413-02
Instrument ID: LCMS1 Run Time: 16:40 Method: 6850
File ID: 1LM.LM29054 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG513403 Cal ID: LCMS1 - 17-NOV-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.06	ug/L	1.44	6.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4040771
Report generated 02/27/2015 13:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15021036 Run Date: 02/25/2015 Sample ID: WG513413-03
Instrument ID: LCMS1 Run Time: 20:28 Method: 6850
File ID: 1LM.LM29066 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG513403 Cal ID: LCMS1 - 17-NOV-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.39	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4040771
Report generated 02/27/2015 13:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15021036
Run Date: 02/26/2015
Sample ID: WG513413-05
Instrument ID: LCMS1
Run Time: 00:34
Method: 6850
File ID: 1LM.LM29079
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG513403
Cal ID: LCMS1 - 17-NOV-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.40	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4040771
Report generated 02/27/2015 13:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15021036 Run Date: 02/26/2015 Sample ID: WG513413-07
Instrument ID: LCMS1 Run Time: 02:08 Method: 6850
File ID: 1LM.LM29084 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG513403 Cal ID: LCMS1 - 17-NOV-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.37	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4040771
Report generated 02/27/2015 13:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15021036
Run Date: 02/26/2015
Sample ID: WG513413-09
Instrument ID: LCMS1
Run Time: 12:34
Method: 6850
File ID: 1LM.LM29087
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG513403
Cal ID: LCMS1 - 17-NOV-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.08	ug/L	1.46	8.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4040771
Report generated 02/27/2015 13:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15021036 Run Date: 02/26/2015 Sample ID: WG513413-11
Instrument ID: LCMS1 Run Time: 16:02 Method: 6850
File ID: 1LM.LM29098 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG513403 Cal ID: LCMS1 - 17-NOV-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.41	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4040771
Report generated 02/27/2015 13:47

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15021036 Run Date: 02/25/2015 Sample ID: WG513403-07
Instrument ID: LCMS1 Run Time: 16:59 Prep Method: 6850
File ID: 1LM.LM29055 Analyst: JWR Method: 6850
Workgroup (AAB#): WG513403 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-17-NOV-14

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.217	109	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4040770
Report generated 02/27/2015 13:47

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15021036 Run Date: 02/25/2015 Sample ID: WG513403-08
Instrument ID: LCMS1 Run Time: 20:46 Prep Method: 6850
File ID: 1LM.LM29067 Analyst: JWR Method: 6850
Workgroup (AAB#): WG513403 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-17-NOV-14

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.190	95.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4040770
Report generated 02/27/2015 13:47

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15021036 Run Date: 02/26/2015 Sample ID: WG513403-09
Instrument ID: LCMS1 Run Time: 00:53 Prep Method: 6850
File ID: 1LM.LM29080 Analyst: JWR Method: 6850
Workgroup (AAB#): WG513403 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-17-NOV-14

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.198	99.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4040770
Report generated 02/27/2015 13:47

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15021036 Run Date: 02/26/2015 Sample ID: WG513403-10
Instrument ID: LCMS1 Run Time: 02:27 Prep Method: 6850
File ID: 1LM.LM29085 Analyst: JWR Method: 6850
Workgroup (AAB#): WG513403 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-17-NOV-14

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.194	97.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4040770
Report generated 02/27/2015 13:47

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15021036 Run Date: 02/26/2015 Sample ID: WG513403-11
Instrument ID: LCMS1 Run Time: 12:53 Prep Method: 6850
File ID: 1LM.LM29088 Analyst: JWR Method: 6850
Workgroup (AAB#): WG513403 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-17-NOV-14

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.196	98.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4040770
Report generated 02/27/2015 13:47

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15021036 Run Date: 02/26/2015 Sample ID: WG513403-12
Instrument ID: LCMS1 Run Time: 16:21 Prep Method: 6850
File ID: 1LM.LM29099 Analyst: JWR Method: 6850
Workgroup (AAB#): WG513403 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-17-NOV-14

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.184	92.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4040770
Report generated 02/27/2015 13:47

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L15021036
Instrument ID: LCMS1
Workgroup (AAB#): WG513403

ICAL CCV Number: WG501146-05
CAL ID: LCMS1-17-NOV-14
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG501146	NA	NA	321000
Upper Limit	NA	NA	481500
Lower Limit	NA	NA	160500
L15021036-01	1.00	01	272000
L15021036-02	500	DL01	270000
WG513403-02	1.00	01	273000
WG513403-03	1.00	01	278000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4040788
Report generated 02/27/2015 13:48

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021036	**Prep Method:**	6850	**Samplenum:**	L15021036-01
Instrument:	LCMS1	**Prep Date:**	02/25/2015 12:00	**File ID:**	1LM.LM29059
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/25/2015 18:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	20700	6570	3.15	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021036	**Prep Method:**	6850	**Samplenum:**	L15021036-02
Instrument:	LCMS1	**Prep Date:**	02/25/2015 12:00	**File ID:**	1LM.LM29060
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/25/2015 18:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	217000	71000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021036	**Prep Method:**		**Samplenum:**	WG501146-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM27604
Analyst:	ADC	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	11/17/2014 13:00	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	11100	3370	3.29	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021036	**Prep Method:**		**Samplenum:**	WG501146-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM27605
Analyst:	ADC	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	11/17/2014 13:19	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17300	5740	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021036	**Prep Method:**		**Samplenum:**	WG501146-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM27606
Analyst:	ADC	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	11/17/2014 13:38	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	44100	14600	3.02	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021036	**Prep Method:**		**Samplenum:**	WG501146-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM27607
Analyst:	ADC	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	11/17/2014 13:56	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	84400	29400	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021036	**Prep Method:**		**Samplenum:**	WG501146-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM27608
Analyst:	ADC	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	11/17/2014 14:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	173000	54700	3.16	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021036	**Prep Method:**		**Samplenum:**	WG501146-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM27609
Analyst:	ADC	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	11/17/2014 14:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	420000	140000	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021036	**Prep Method:**		**Samplenum:**	WG501146-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM27610
Analyst:	ADC	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	11/17/2014 14:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	841000	276000	3.05	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021036	**Prep Method:**		**Samplenum:**	WG501146-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM27611
Analyst:	ADC	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	11/17/2014 15:12	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	88800	29400	3.02	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021036	**Prep Method:**	6850	**Samplenum:**	WG513403-01
Instrument:	LCMS1	**Prep Date:**	02/25/2015 12:00	**File ID:**	1LM.LM29056
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/25/2015 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	16000	4670	3.43	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021036	**Prep Method:**	6850	**Samplenum:**	WG513403-02
Instrument:	LCMS1	**Prep Date:**	02/25/2015 12:00	**File ID:**	1LM.LM29057
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/25/2015 17:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021036	**Prep Method:**	6850	**Samplenum:**	WG513403-03
Instrument:	LCMS1	**Prep Date:**	02/25/2015 12:00	**File ID:**	1LM.LM29058
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/25/2015 17:56	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	16200	5040	3.21	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021036	**Prep Method:**	6850	**Samplenum:**	WG513403-07
Instrument:	LCMS1	**Prep Date:**	02/25/2015 12:00	**File ID:**	1LM.LM29055
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/25/2015 16:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	16500	5600	2.95	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021036	**Prep Method:**	6850	**Samplenum:**	WG513403-08
Instrument:	LCMS1	**Prep Date:**	02/25/2015 12:00	**File ID:**	1LM.LM29067
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/25/2015 20:46	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	16100	5060	3.18	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021036	**Prep Method:**	6850	**Samplenum:**	WG513403-09
Instrument:	LCMS1	**Prep Date:**	02/25/2015 12:00	**File ID:**	1LM.LM29080
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/26/2015 00:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17500	5650	3.10	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021036	**Prep Method:**	6850	**Samplenum:**	WG513403-10
Instrument:	LCMS1	**Prep Date:**	02/25/2015 12:00	**File ID:**	1LM.LM29085
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/26/2015 02:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17700	5780	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021036	**Prep Method:**	6850	**Samplenum:**	WG513403-11
Instrument:	LCMS1	**Prep Date:**	02/25/2015 12:00	**File ID:**	1LM.LM29088
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/26/2015 12:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	16400	5970	2.75	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021036	**Prep Method:**	6850	**Samplenum:**	WG513403-12
Instrument:	LCMS1	**Prep Date:**	02/25/2015 12:00	**File ID:**	1LM.LM29099
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/26/2015 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	16000	5720	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021036	**Prep Method:**		**Samplenum:**	WG513413-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29053
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/25/2015 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	710	322	2.20	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021036	**Prep Method:**		**Samplenum:**	WG513413-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29054
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/25/2015 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	79800	26300	3.03	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021036	**Prep Method:**		**Samplenum:**	WG513413-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29066
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/25/2015 20:28	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82700	28300	2.92	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021036	**Prep Method:**		**Samplenum:**	WG513413-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29068
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/25/2015 21:05	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	475	88.3	5.38	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021036	**Prep Method:**		**Samplenum:**	WG513413-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29079
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/26/2015 00:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	91600	29800	3.07	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021036	**Prep Method:**		**Samplenum:**	WG513413-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29081
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/26/2015 01:12	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	607	396	1.53	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021036	**Prep Method:**		**Samplenum:**	WG513413-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29084
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/26/2015 02:08	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	89200	29500	3.02	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021036	**Prep Method:**		**Samplenum:**	WG513413-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29086
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/26/2015 02:46	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	509	245	2.08	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021036	**Prep Method:**		**Samplenum:**	WG513413-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29087
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/26/2015 12:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	87100	28900	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021036	**Prep Method:**		**Samplenum:**	WG513413-10
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29089
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/26/2015 13:12	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	482	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021036	**Prep Method:**		**Samplenum:**	WG513413-11
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29098
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/26/2015 16:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	88100	28200	3.12	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021036	**Prep Method:**		**Samplenum:**	WG513413-12
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29100
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/26/2015 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	252	0.000	2.3	3.8	*

2.2.1.3 Sample Data

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Data File	LM29059.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/25/2015 6:15:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15021036-01	**Injection Vial**	7.00
Data File	LM29059.wiff	**Injection Volume**	10.00
Acquisition Date	2/25/2015 6:15:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	L15021036-01	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.720e+05	9.35	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.070e+04	9.36	N/A	0.271
Perchlorate conf	6.570e+03	9.35	N/A	0.264

O18LP (Internal Standard)

RT (Exp. RT): 9.35(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

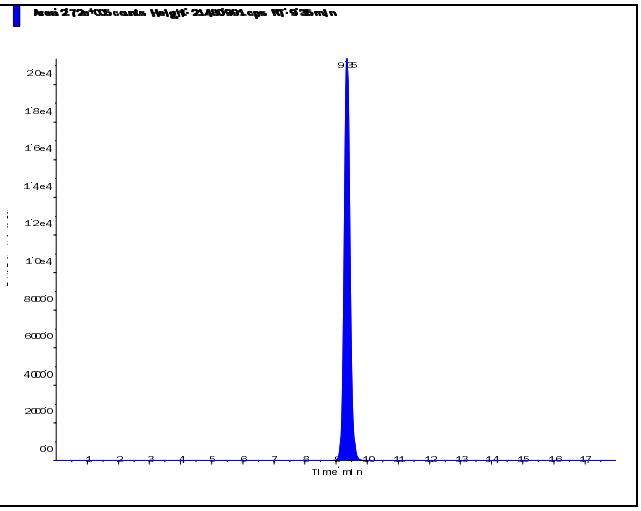

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.36 (10.30) min
Calculated conc:	0.271 ng/ml
Area Ratio:	0.076
Sample Type:	(Unknown)

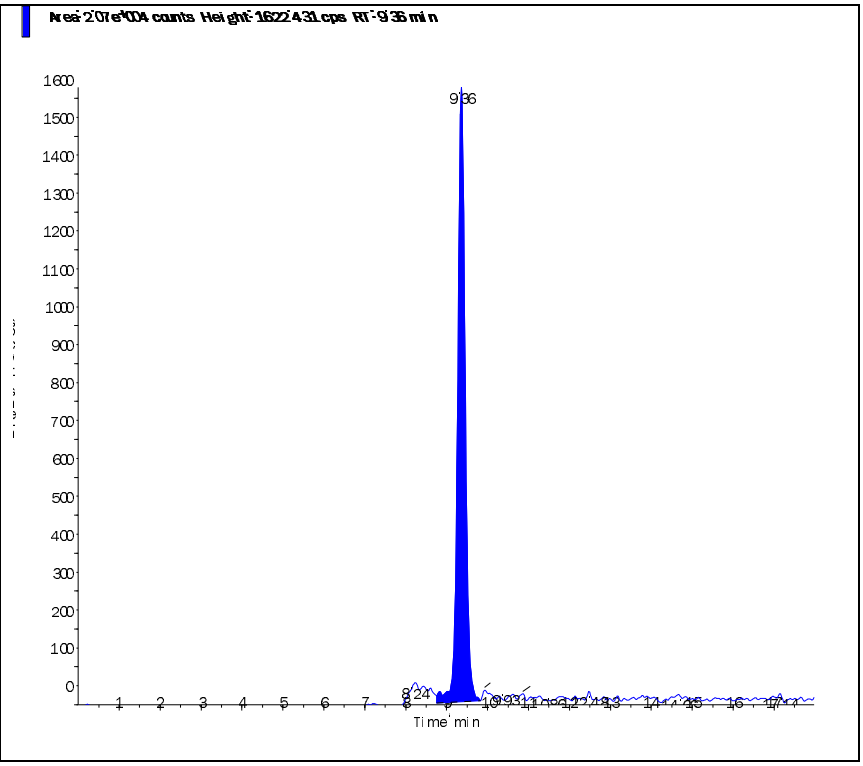

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.35 (10.30) min
Calculated conc:	0.264 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

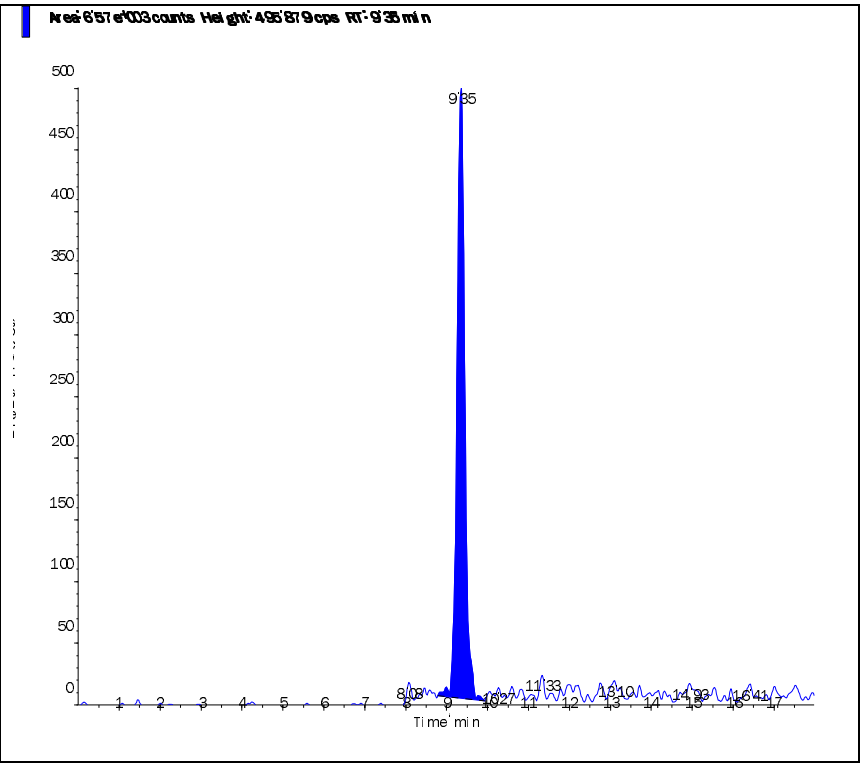

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Data File	LM29060.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/25/2015 6:34:26 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15021036-02 (500x)	**Injection Vial**	8.00
Data File	LM29060.wiff	**Injection Volume**	10.00
Acquisition Date	2/25/2015 6:34:26 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	L15021036-02	**Dilution Factor**	1.00
Sample Comment	1,500 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.700e+05	9.72	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.170e+05	9.73	N/A	3.00
Perchlorate conf	7.100e+04	9.72	N/A	2.97

O18LP (Internal Standard)

RT (Exp. RT): 9.72(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

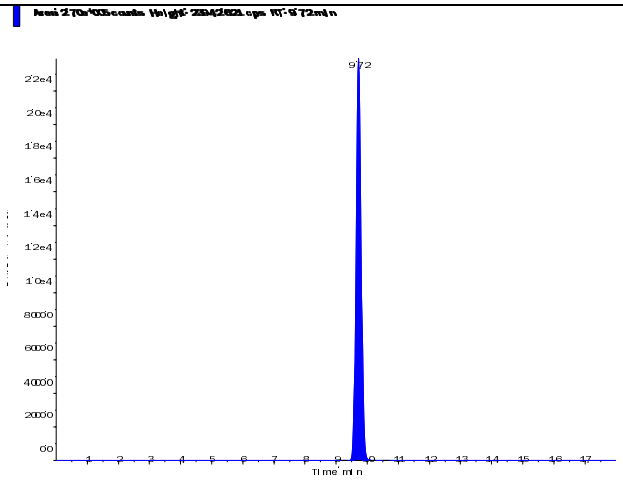

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.73 (10.30) min
Calculated conc:	3.00 ng/ml
Area Ratio:	0.804
Sample Type:	(Unknown)

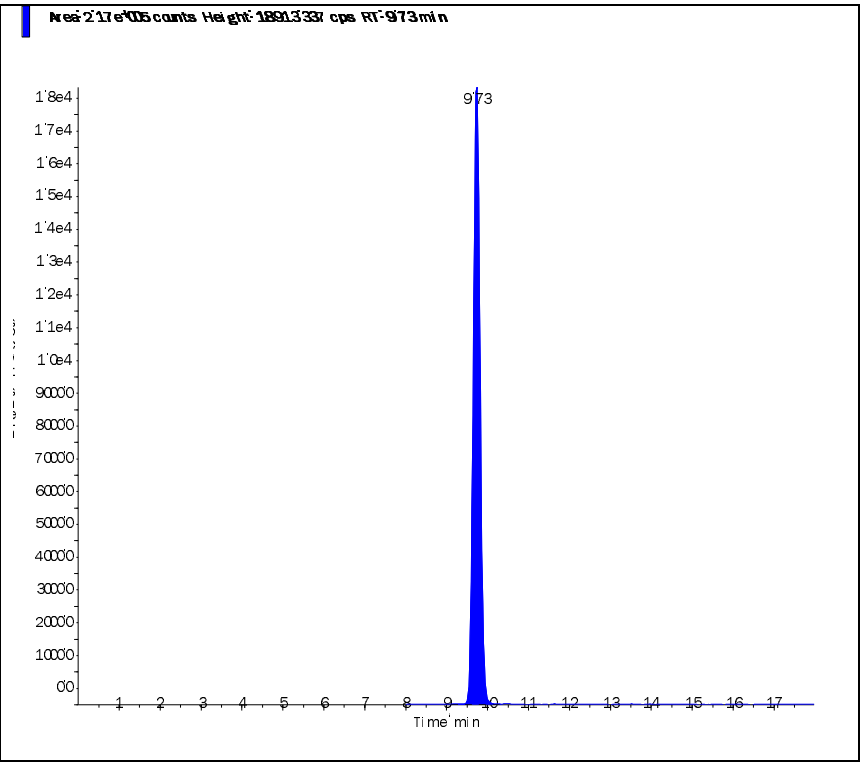

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.72 (10.30) min
Calculated conc:	2.97 ng/ml
Area Ratio:	0.263
Sample Type:	(Unknown)

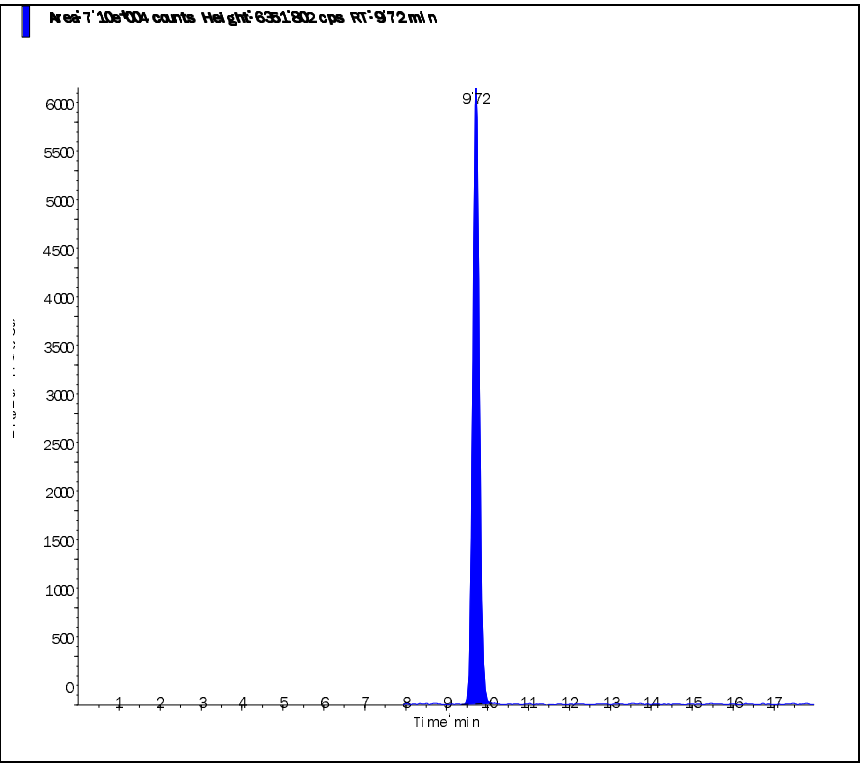

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2.2.1.4 Standards Data

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Data File	LM27603.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	11/17/2014 12:41:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG501146-01 CCB	**Injection Vial**	1.00
Data File	LM27603.wiff	**Injection Volume**	10.00
Acquisition Date	11/17/2014 12:41:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG501146-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.170e+05	10.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.340e+02	10.30	N/A	< 0
Perchlorate conf	2.010e+02	10.30	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 10.30(10.30) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

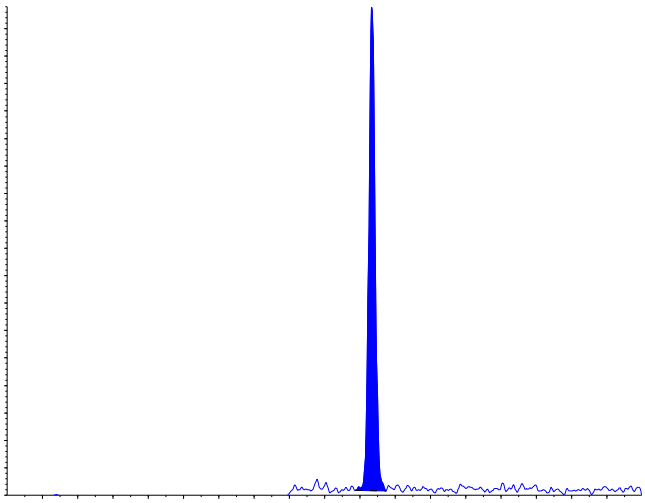

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.30 (10.30) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

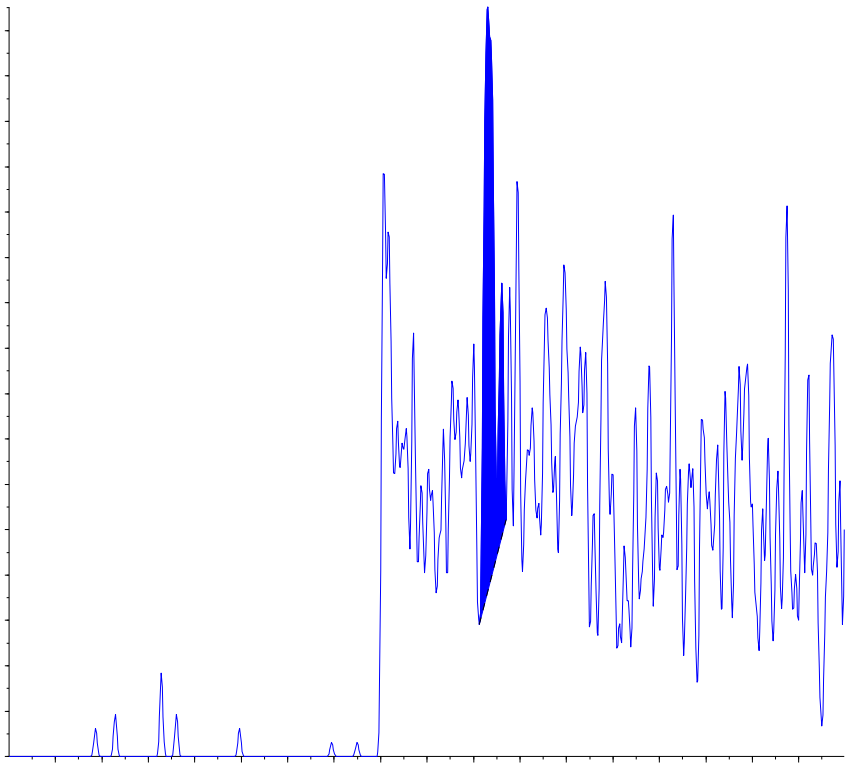

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.30 (10.30) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

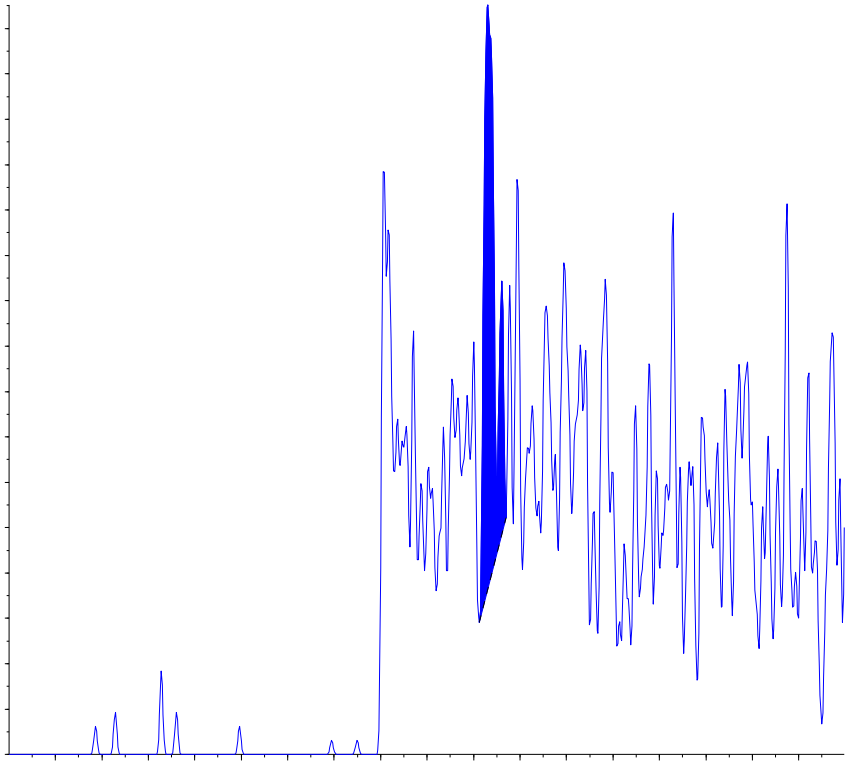

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Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM27603.wiff	**Result Table**	111714_ADC.rdb
Acquisition Date	11/17/2014 12:41:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.33 x + 0.00387 (r = 0.9998)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.11	114.3	N/A	N/A
0.20	1	0.19	93.0	N/A	N/A
0.50	1	0.49	97.3	N/A	N/A
1.00	1	0.95	95.2	N/A	N/A
2.00	1	1.99	99.5	N/A	N/A
5.00	1	4.99	99.9	N/A	N/A
10.00	1	10.08	100.8	N/A	N/A

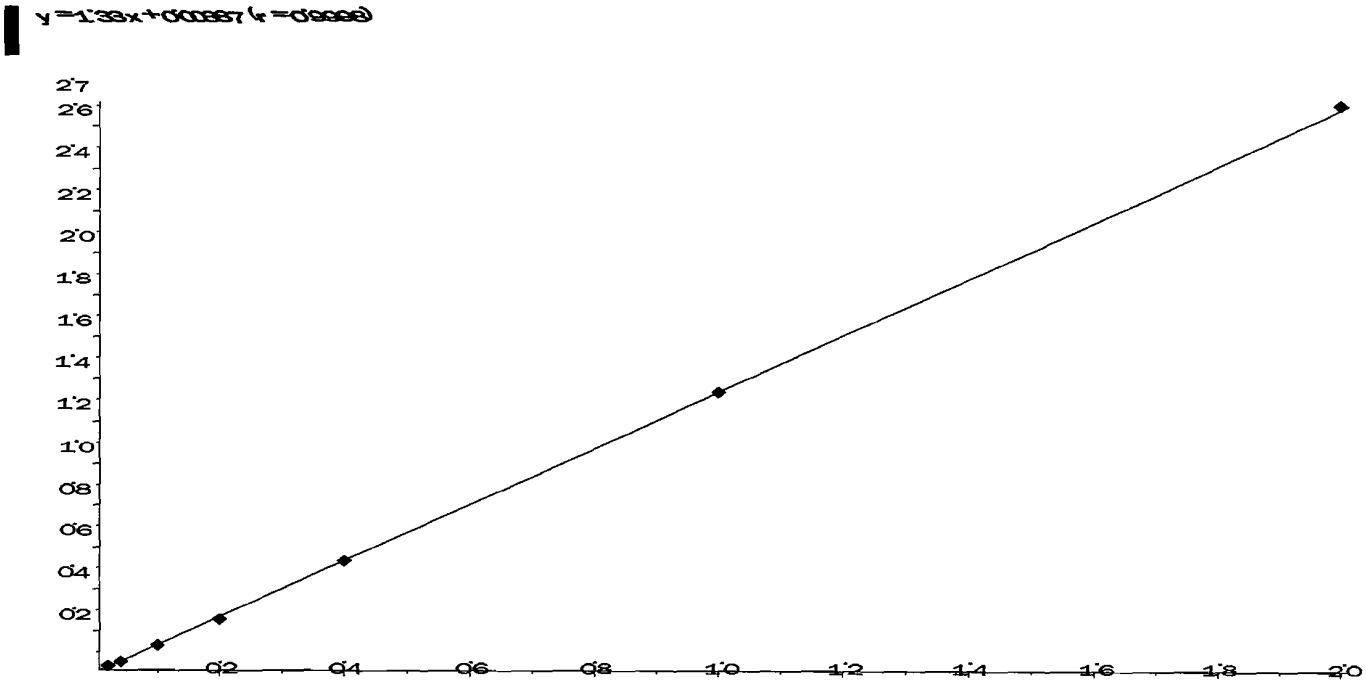

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Created with Analyst Reporter
Printed: 11/19/2014 2:12 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM27603.wiff	**Result Table**	111714_ADC.rdb
Acquisition Date	11/17/2014 12:41:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.44 x + 0.000963 (r = 0.9998)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.11	108.0	N/A	N/A
0.20	1	0.19	95.6	N/A	N/A
0.50	1	0.49	98.3	N/A	N/A
1.00	1	1.01	101.2	N/A	N/A
2.00	1	1.91	95.6	N/A	N/A
5.00	1	5.04	100.8	N/A	N/A
10.00	1	10.05	100.5	N/A	N/A

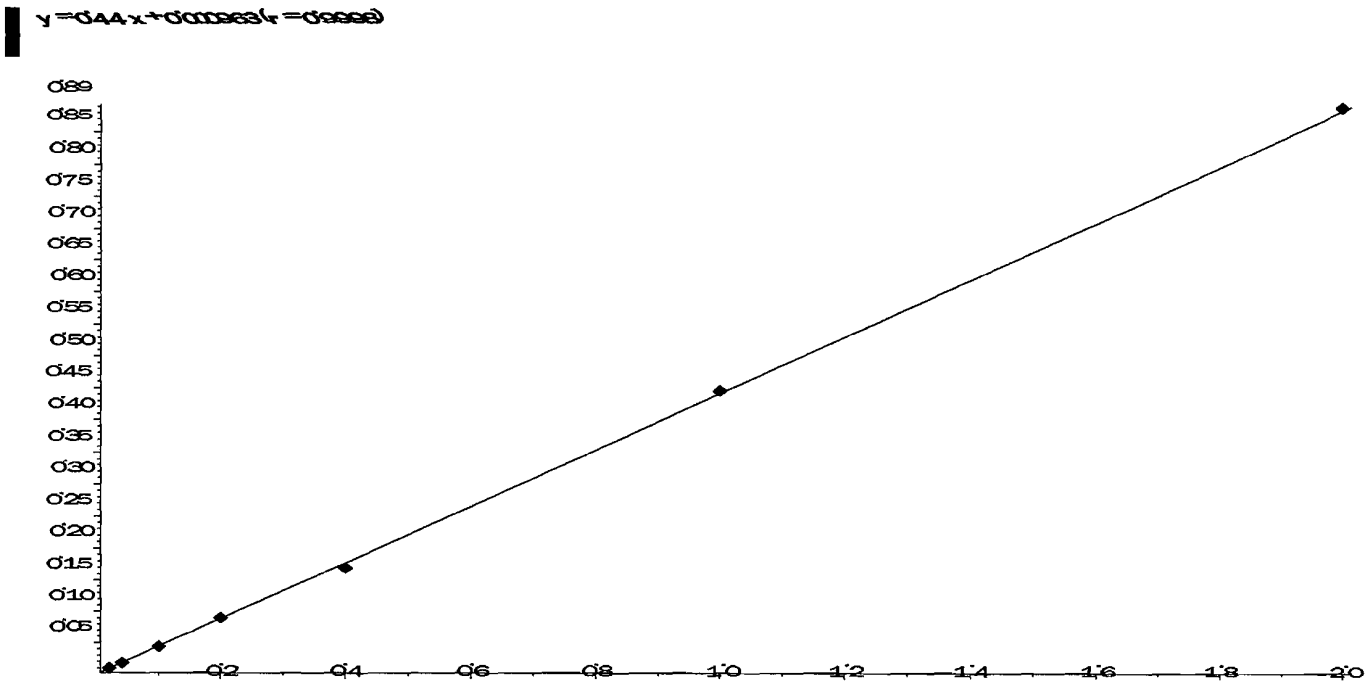

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Data File	LM27604.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	11/17/2014 1:00:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG501146-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM27604.wiff	**Injection Volume**	10.00
Acquisition Date	11/17/2014 1:00:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG501146-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.220e+05	10.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.110e+04	10.30	0.10	0.114
Perchlorate conf	3.370e+03	10.30	0.10	0.108

O18LP (Internal Standard)

RT (Exp. RT): 10.30(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

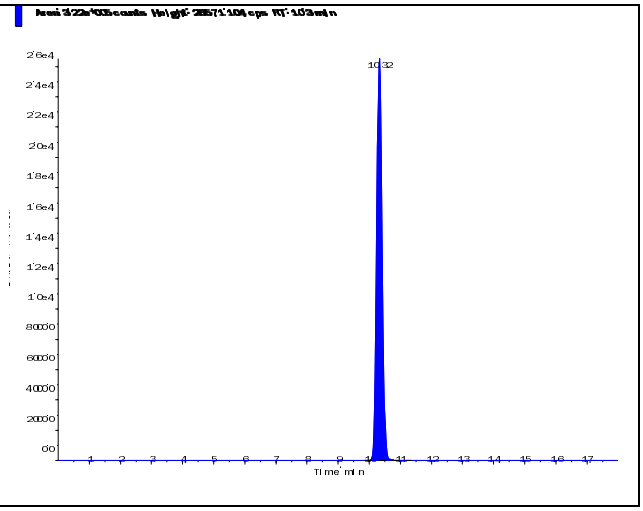

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.30 (10.30) min Calculated conc: 0.114 ng/ml Area Ratio: 0.034 Sample Type: (Standard)	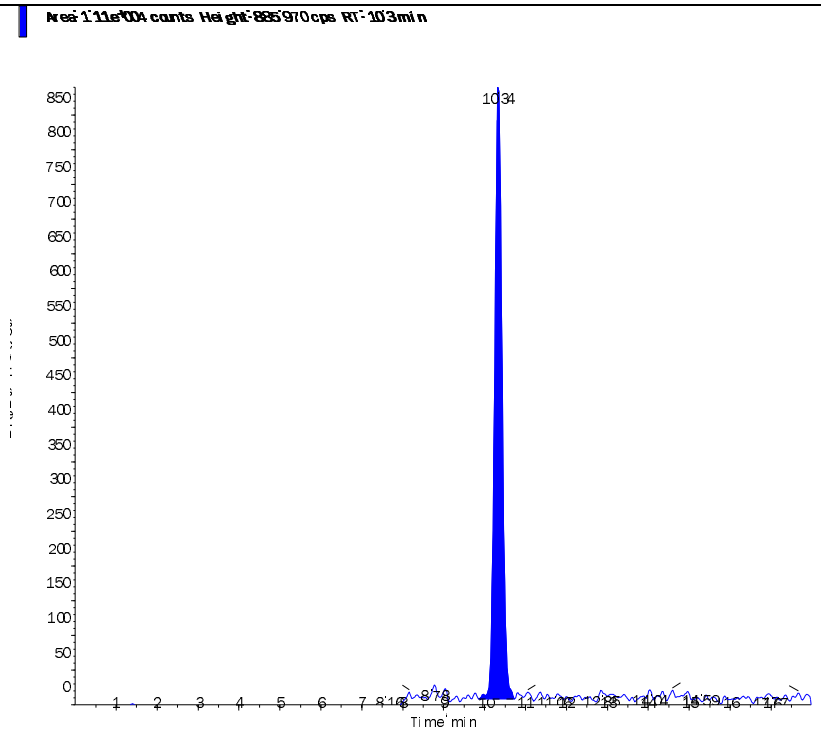
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 10.30 (10.30) min Calculated conc: 0.108 ng/ml Area Ratio: 0.01 Sample Type: (Standard)	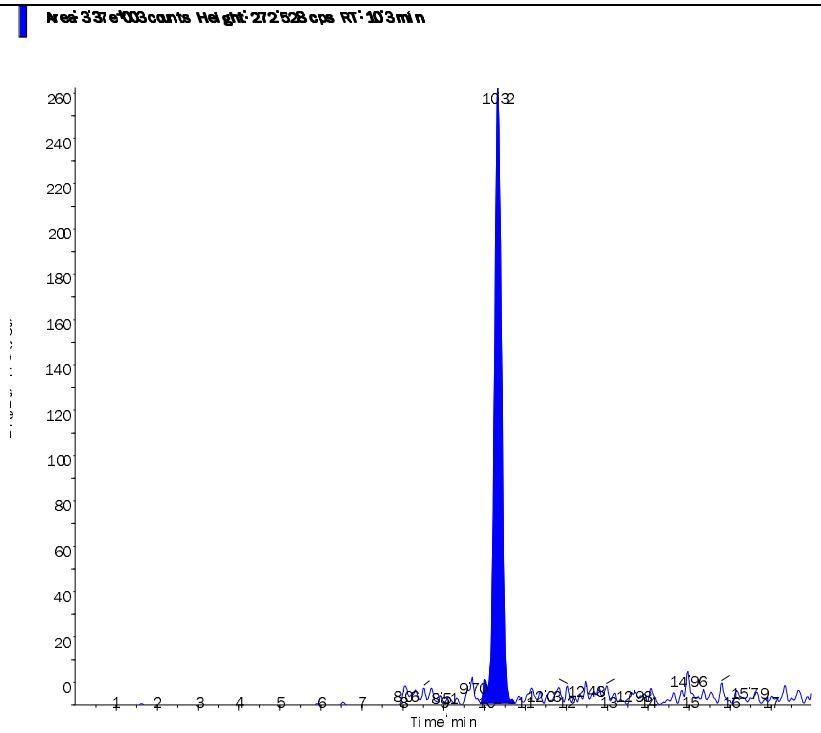

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Data File	LM27605.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	11/17/2014 1:19:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG501146-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM27605.wiff	**Injection Volume**	10.00
Acquisition Date	11/17/2014 1:19:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG501146-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.220e+05	10.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.730e+04	10.30	0.20	0.186
Perchlorate conf	5.740e+03	10.30	0.20	0.191

O18LP (Internal Standard)

RT (Exp. RT): 10.30(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

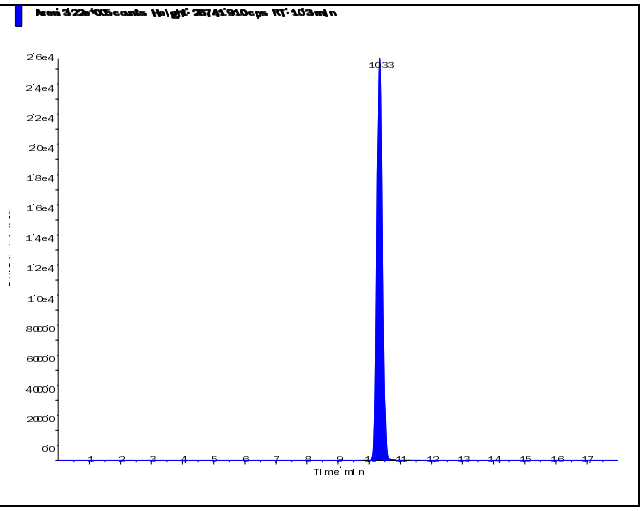

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.30 (10.30) min Calculated conc: 0.186 ng/ml Area Ratio: 0.054 Sample Type: (Standard)	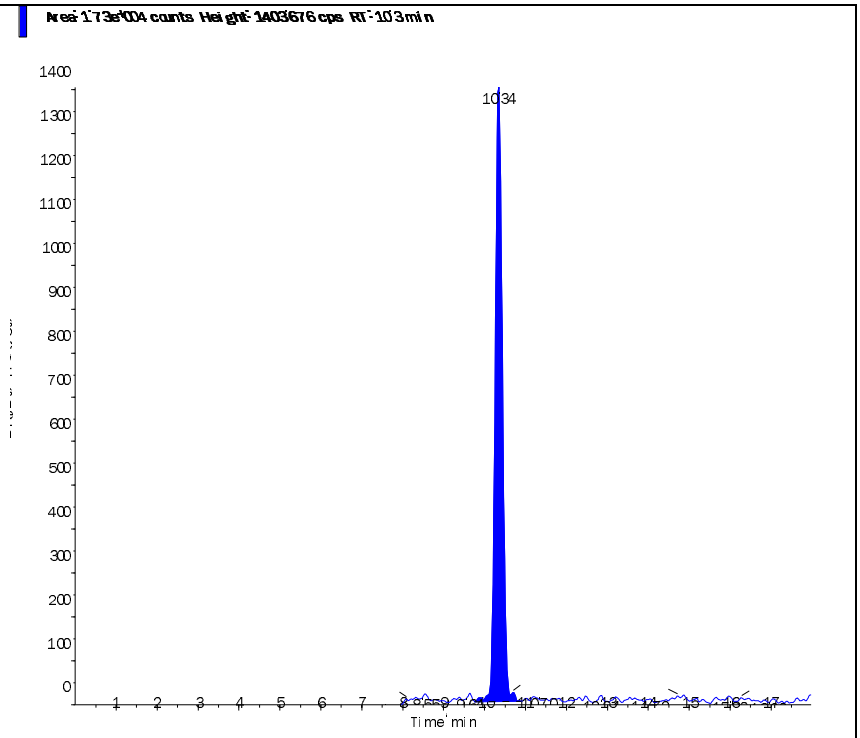
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 10.30 (10.30) min Calculated conc: 0.191 ng/ml Area Ratio: 0.018 Sample Type: (Standard)	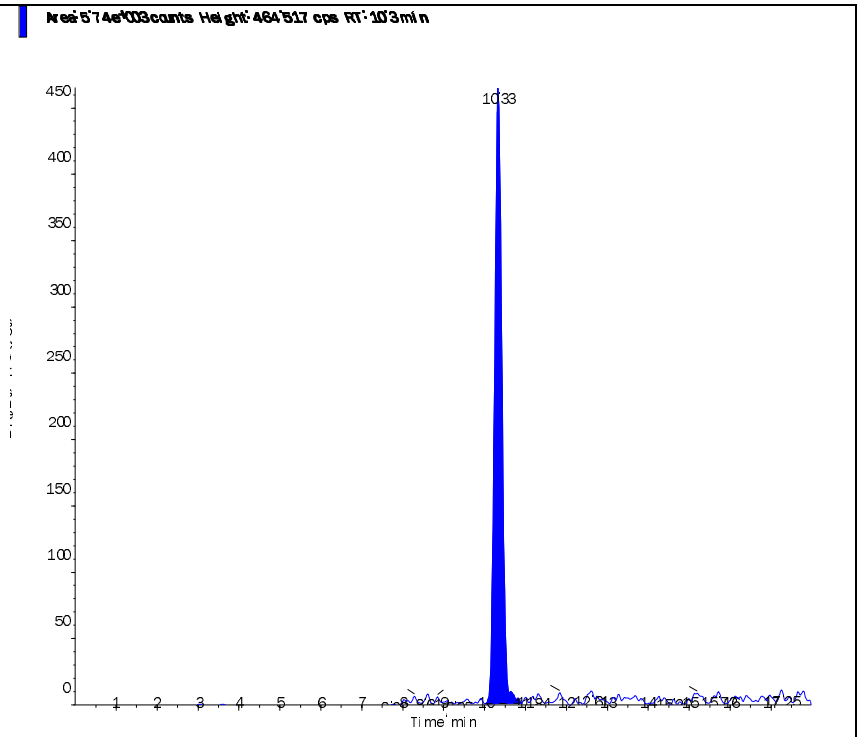

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Data File	LM27606.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	11/17/2014 1:38:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG501146-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM27606.wiff	**Injection Volume**	10.00
Acquisition Date	11/17/2014 1:38:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG501146-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.290e+05	10.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.410e+04	10.30	0.50	0.487
Perchlorate conf	1.460e+04	10.30	0.50	0.492

O18LP (Internal Standard)

RT (Exp. RT): 10.30(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

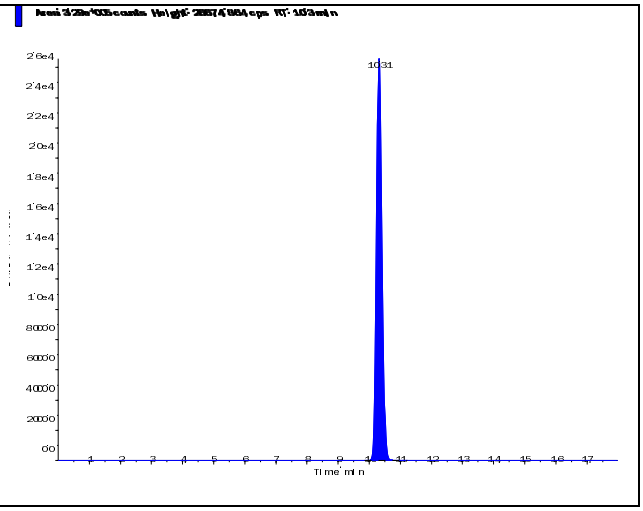

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.30 (10.30) min
Calculated conc:	0.487 ng/ml
Area Ratio:	0.134
Sample Type:	(Standard)

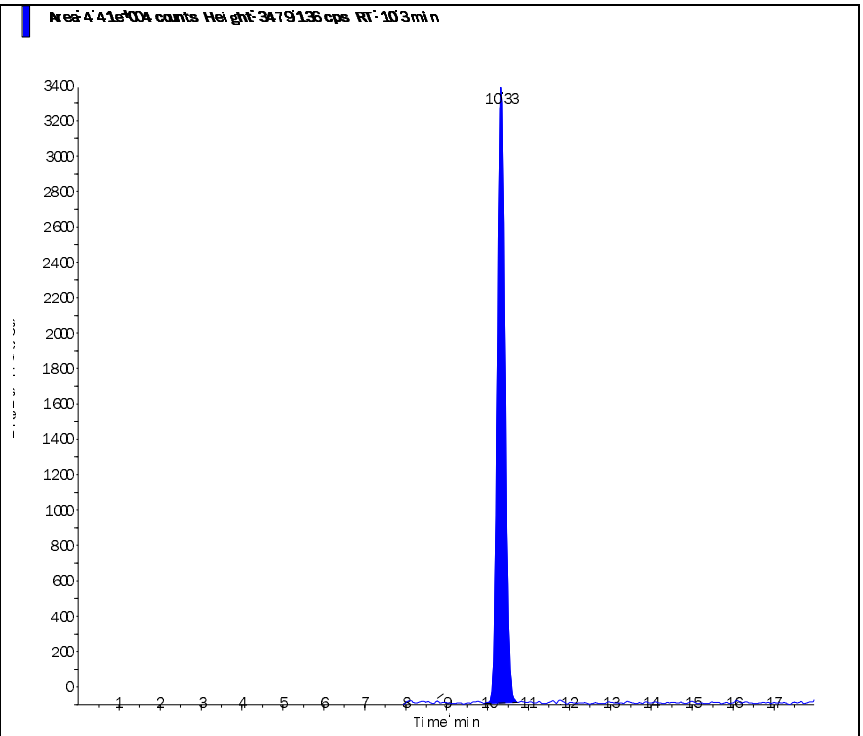

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.30 (10.30) min
Calculated conc:	0.492 ng/ml
Area Ratio:	0.044
Sample Type:	(Standard)

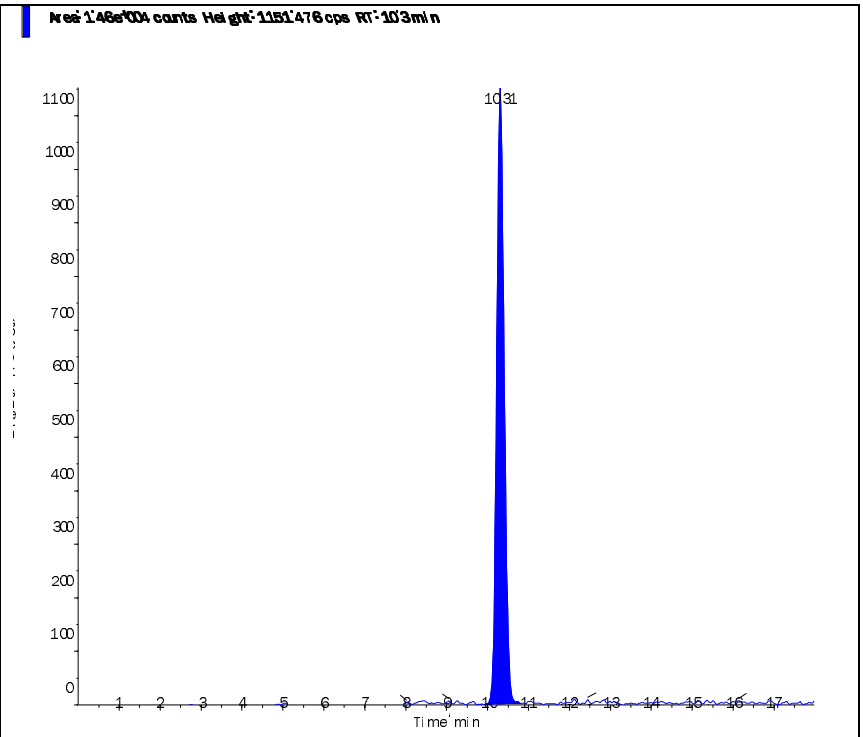

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Data File	LM27607.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	11/17/2014 1:56:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG501146-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM27607.wiff	**Injection Volume**	10.00
Acquisition Date	11/17/2014 1:56:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG501146-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.270e+05	10.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.440e+04	10.30	1.00	0.952
Perchlorate conf	2.940e+04	10.30	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 10.30(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

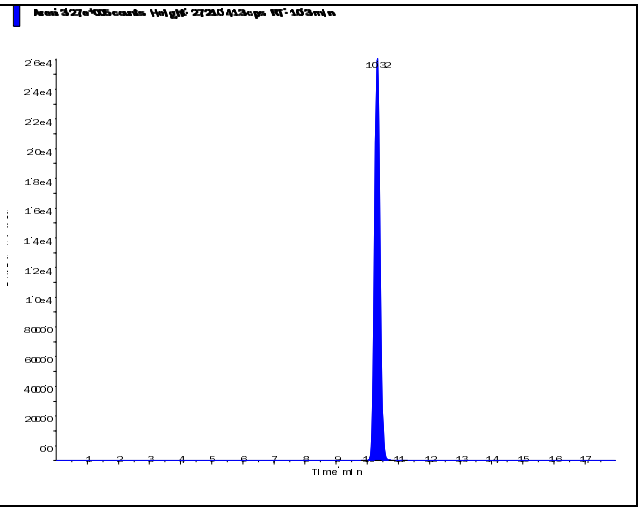

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.30 (10.30) min
Calculated conc:	0.952 ng/ml
Area Ratio:	0.258
Sample Type:	(Standard)

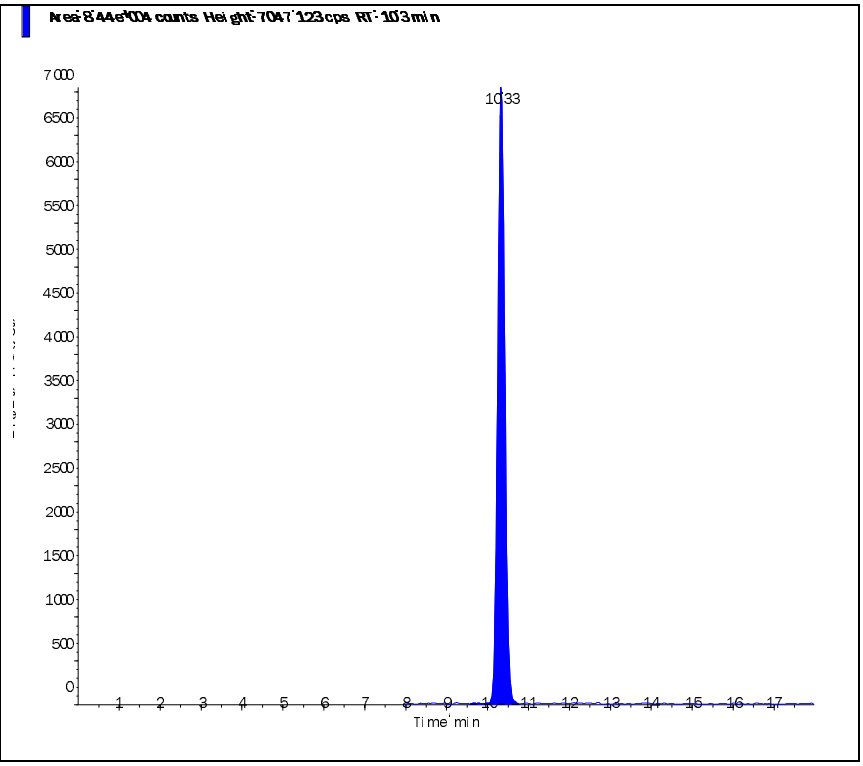

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.30 (10.30) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.09
Sample Type:	(Standard)

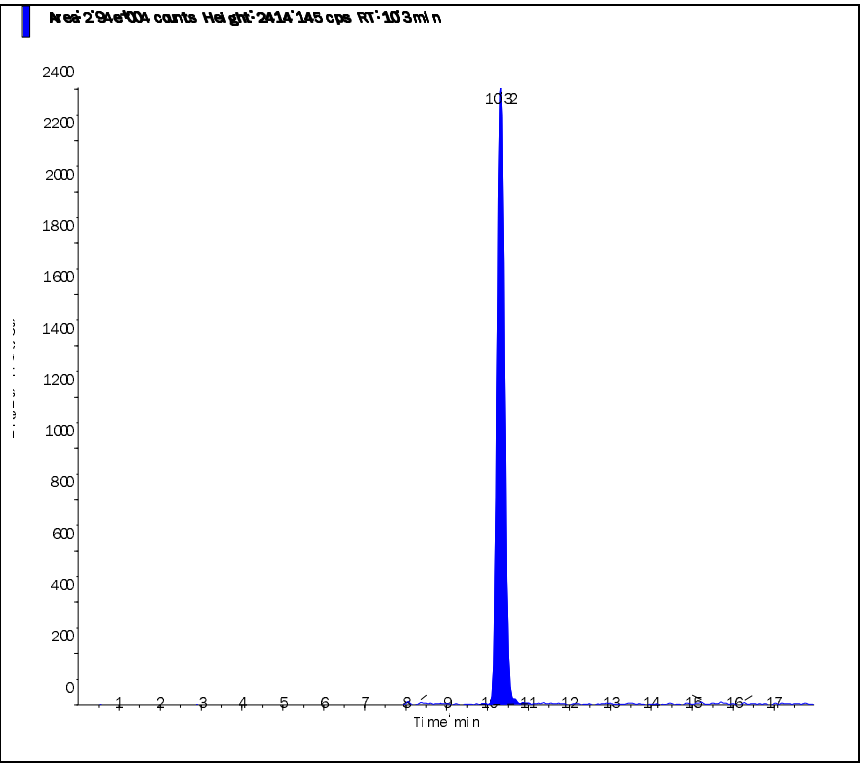

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Data File	LM27608.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	11/17/2014 2:15:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG501146-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM27608.wiff	**Injection Volume**	10.00
Acquisition Date	11/17/2014 2:15:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG501146-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.230e+05	10.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.730e+05	10.30	2.00	1.99
Perchlorate conf	5.470e+04	10.30	2.00	1.91

O18LP (Internal Standard)

RT (Exp. RT): 10.30(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

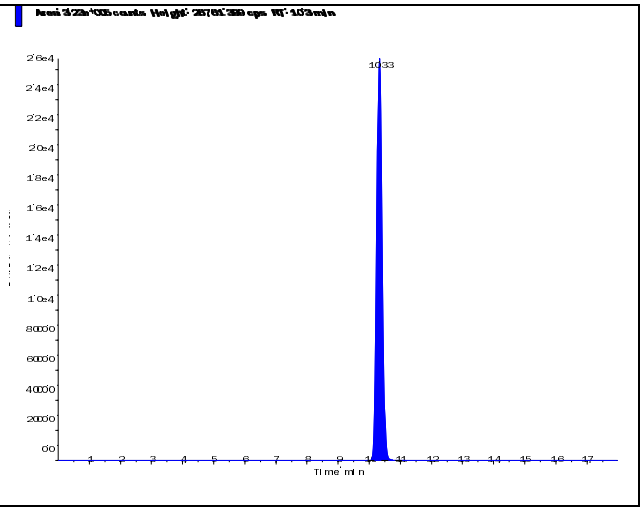

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.30 (10.30) min Calculated conc: 1.99 ng/ml Area Ratio: 0.535 Sample Type: (Standard)	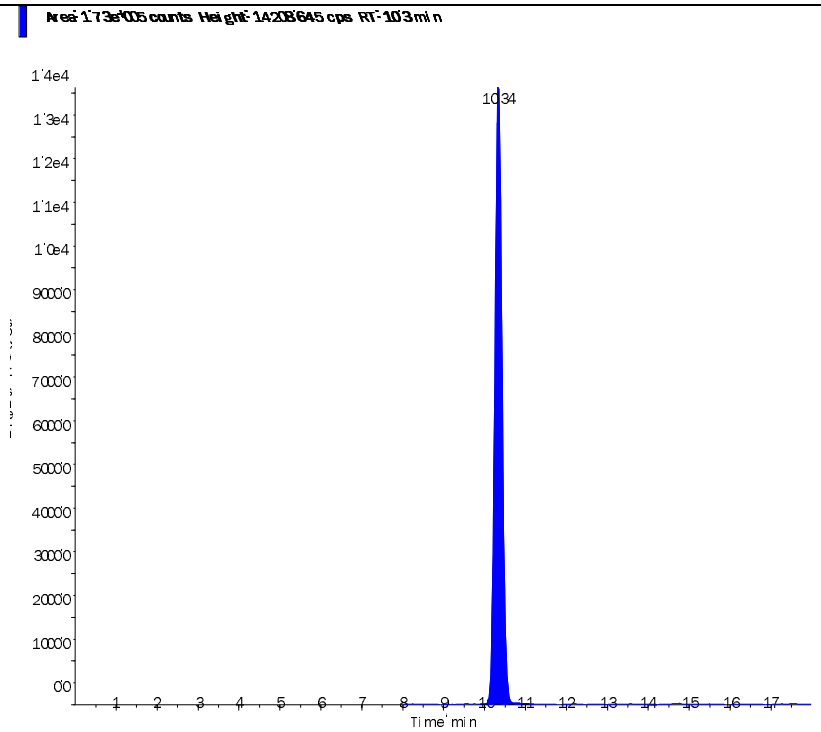
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 10.30 (10.30) min Calculated conc: 1.91 ng/ml Area Ratio: 0.169 Sample Type: (Standard)	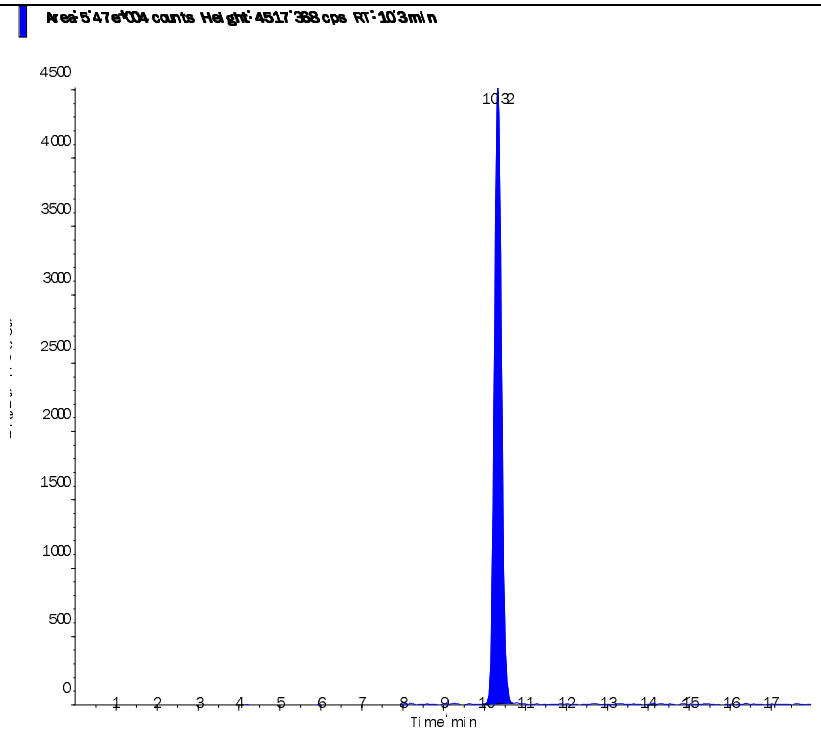

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Data File	LM27609.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	11/17/2014 2:34:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG501146-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM27609.wiff	**Injection Volume**	10.00
Acquisition Date	11/17/2014 2:34:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG501146-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.140e+05	10.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.200e+05	10.30	5.00	4.99
Perchlorate conf	1.400e+05	10.30	5.00	5.04

O18LP (Internal Standard)

RT (Exp. RT): 10.30(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

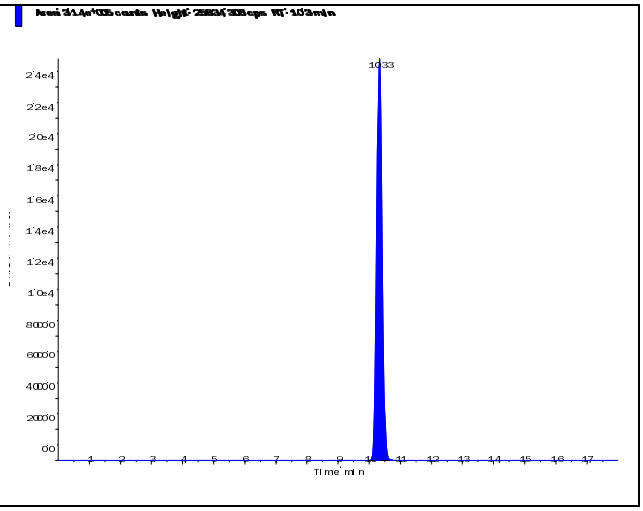

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.30 (10.30) min Calculated conc: 4.99 ng/ml Area Ratio: 1.337 Sample Type: (Standard)	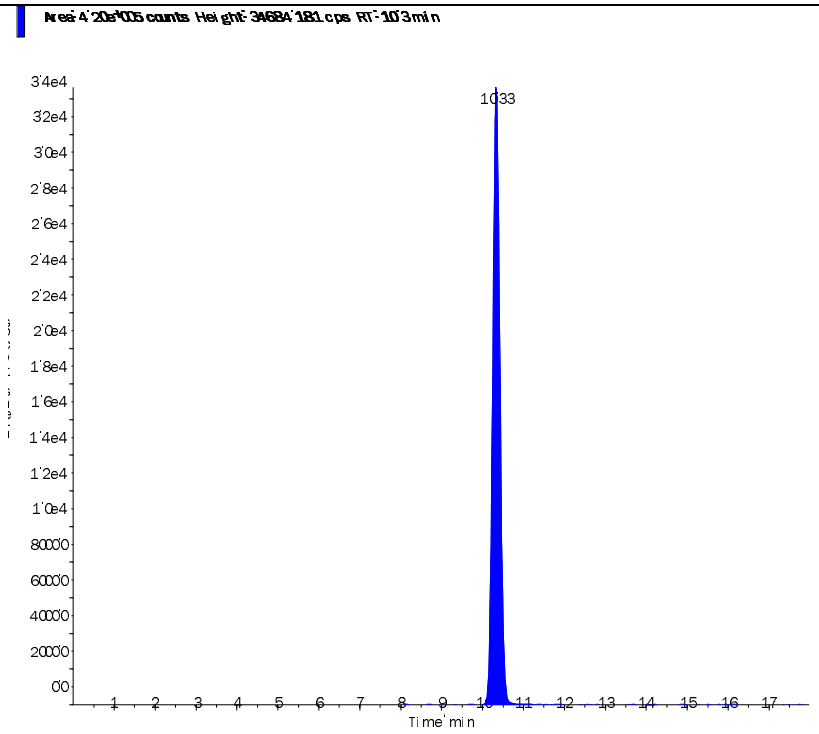
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 10.30 (10.30) min Calculated conc: 5.04 ng/ml Area Ratio: 0.445 Sample Type: (Standard)	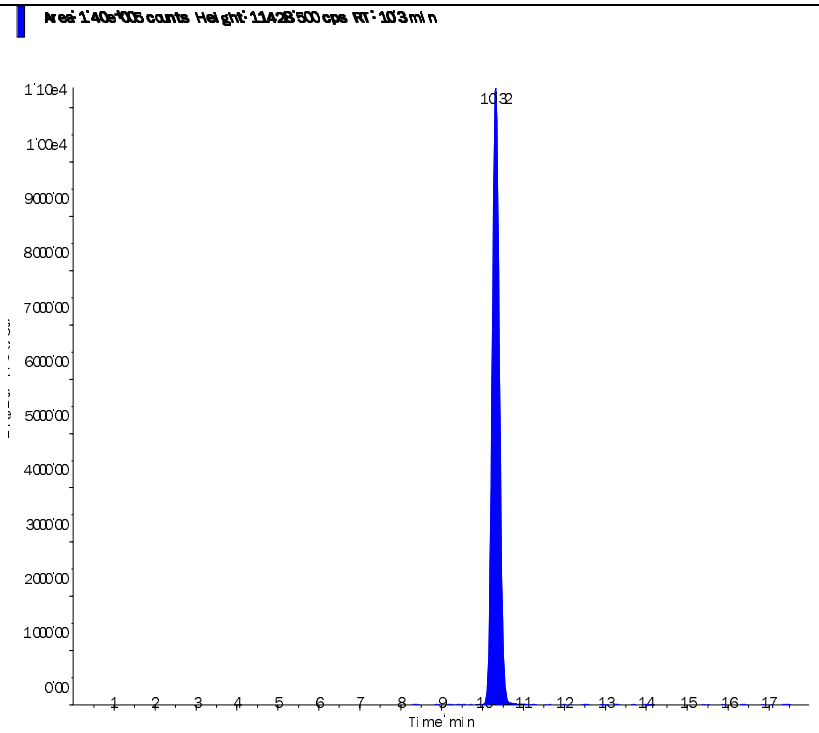

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Data File	LM27610.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	11/17/2014 2:53:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG501146-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM27610.wiff	**Injection Volume**	10.00
Acquisition Date	11/17/2014 2:53:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG501146-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.120e+05	10.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.410e+05	10.30	10.00	10.10
Perchlorate conf	2.760e+05	10.30	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 10.30(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

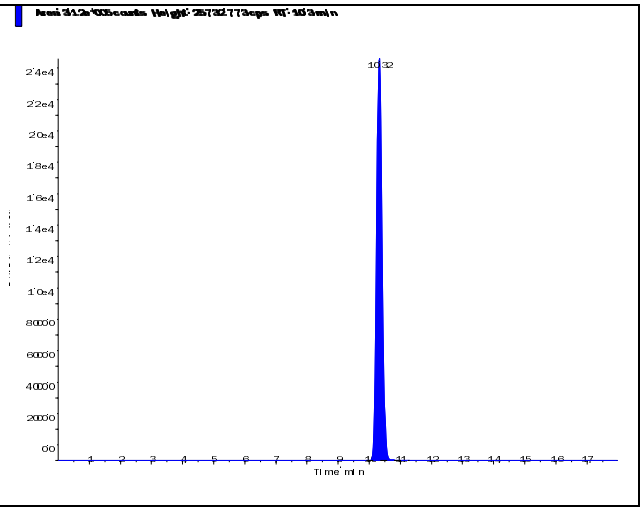

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.30 (10.30) min Calculated conc: 10.10 ng/ml Area Ratio: 2.694 Sample Type: (Standard)	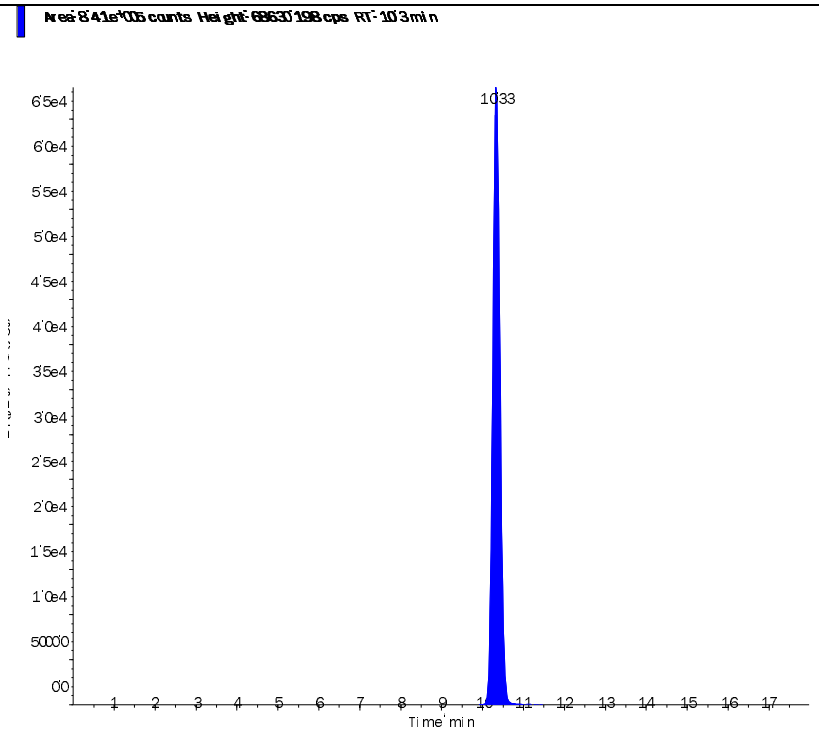
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 10.30 (10.30) min Calculated conc: 10.00 ng/ml Area Ratio: 0.886 Sample Type: (Standard)	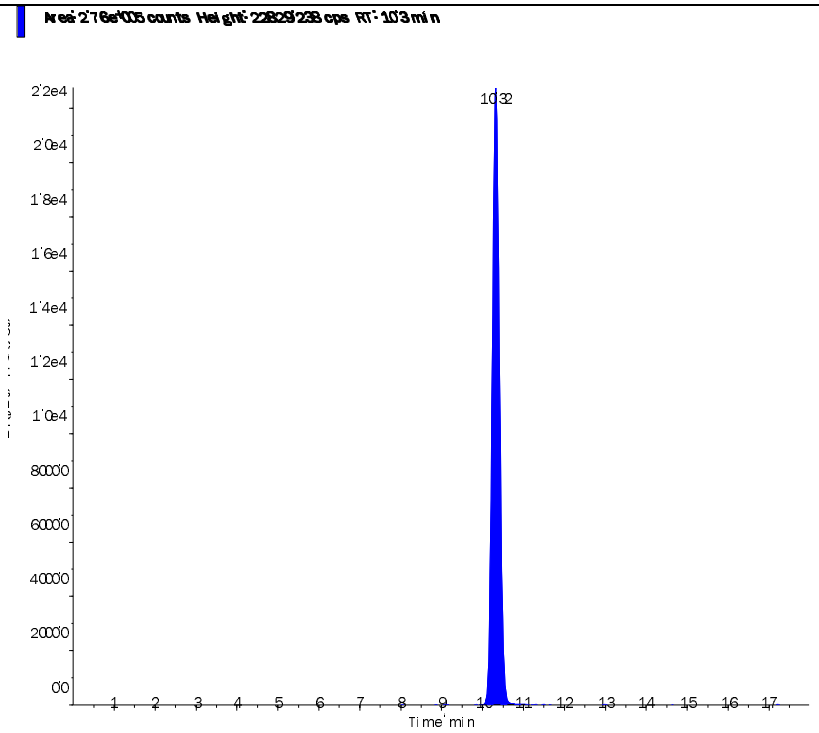

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Data File	LM27611.wiff	**Result Table**	111714_ADC.rdb
Acquisition Date	11/17/2014 3:12:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG501146-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM27611.wiff	**Injection Volume**	10.00
Acquisition Date	11/17/2014 3:12:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	111714_ADC.rdb
Sample ID	WG501146-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD67082	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.260e+05	10.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.880e+04	10.30	1.00	1.01
Perchlorate conf	2.940e+04	10.30	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 10.30(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

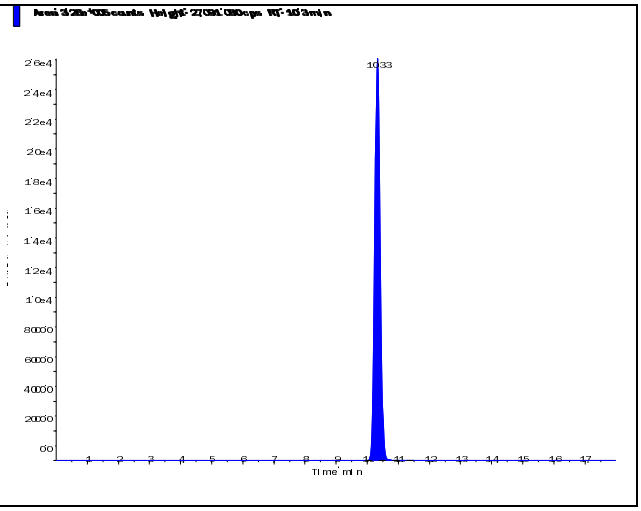

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.30 (10.30) min Calculated conc: 1.01 ng/ml Area Ratio: 0.272 Sample Type: (Quality Control)	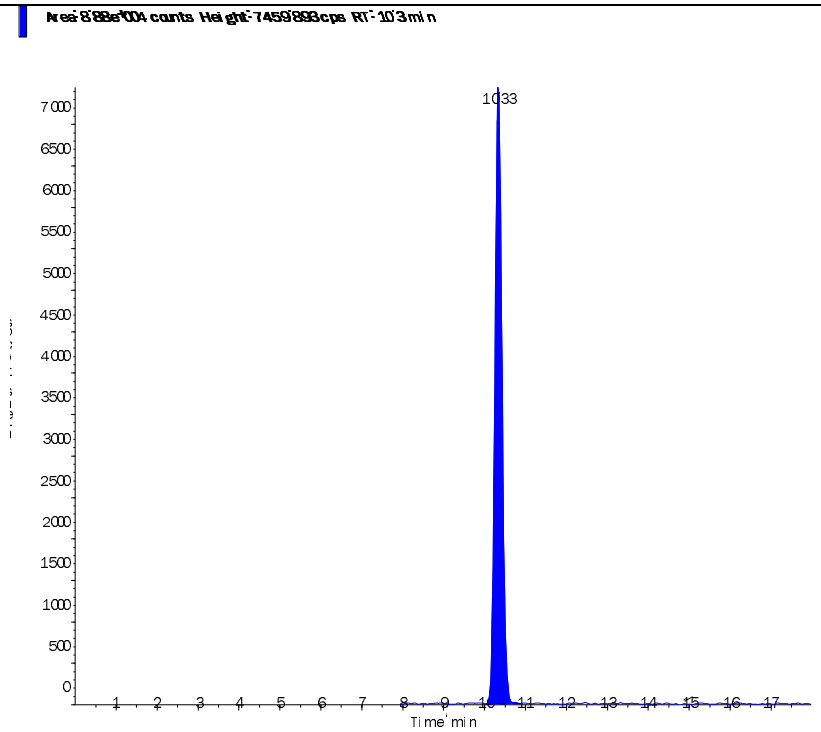
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 10.30 (10.30) min Calculated conc: 1.01 ng/ml Area Ratio: 0.09 Sample Type: (Quality Control)	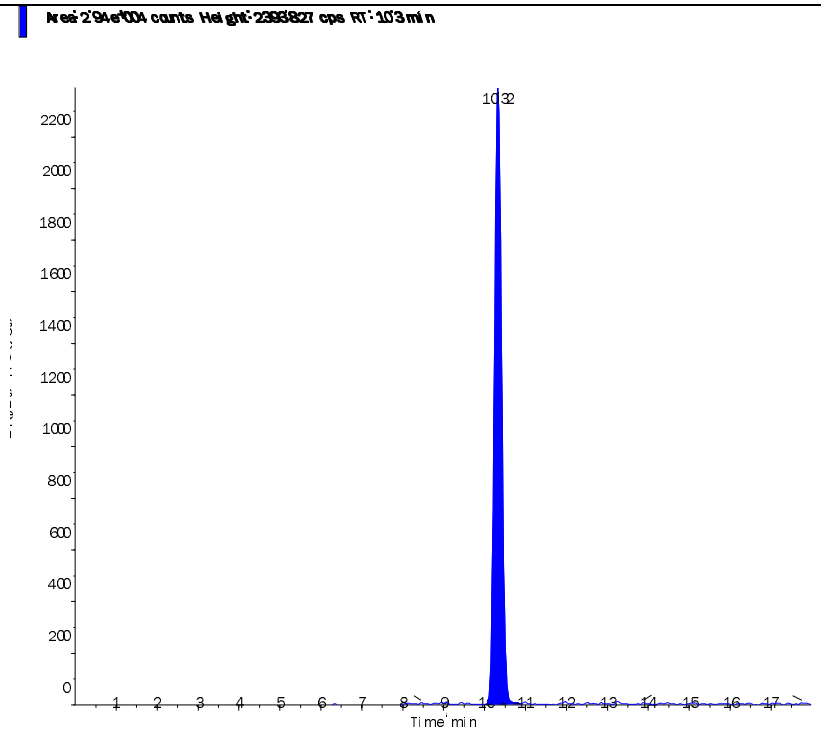

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Data File	LM29054.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/25/2015 4:40:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513413-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM29054.wiff	**Injection Volume**	10.00
Acquisition Date	2/25/2015 4:40:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG513413-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.780e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.980e+04	9.67	1.00	1.06
Perchlorate conf	2.630e+04	9.65	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 9.66(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

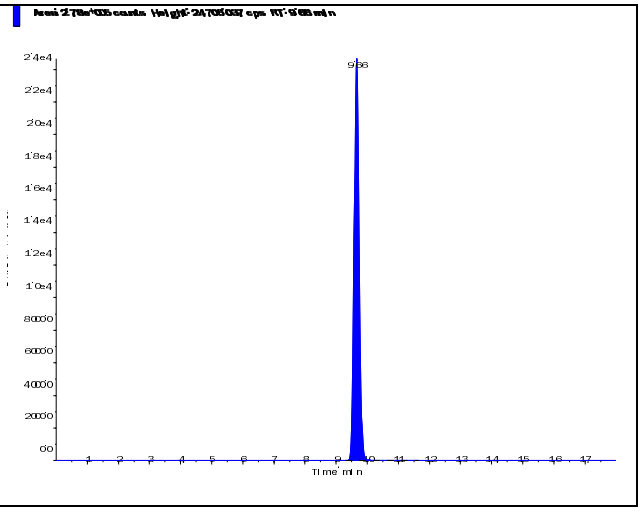

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.67 (10.30) min Calculated conc: 1.06 ng/ml Area Ratio: 0.287 Sample Type: (Quality Control)	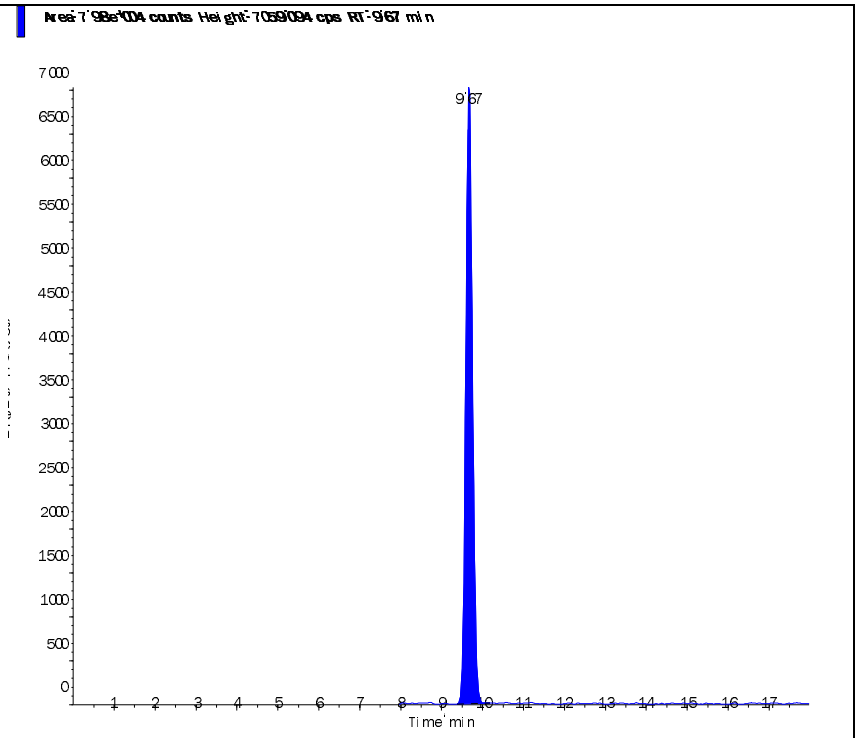
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.65 (10.30) min Calculated conc: 1.07 ng/ml Area Ratio: 0.095 Sample Type: (Quality Control)	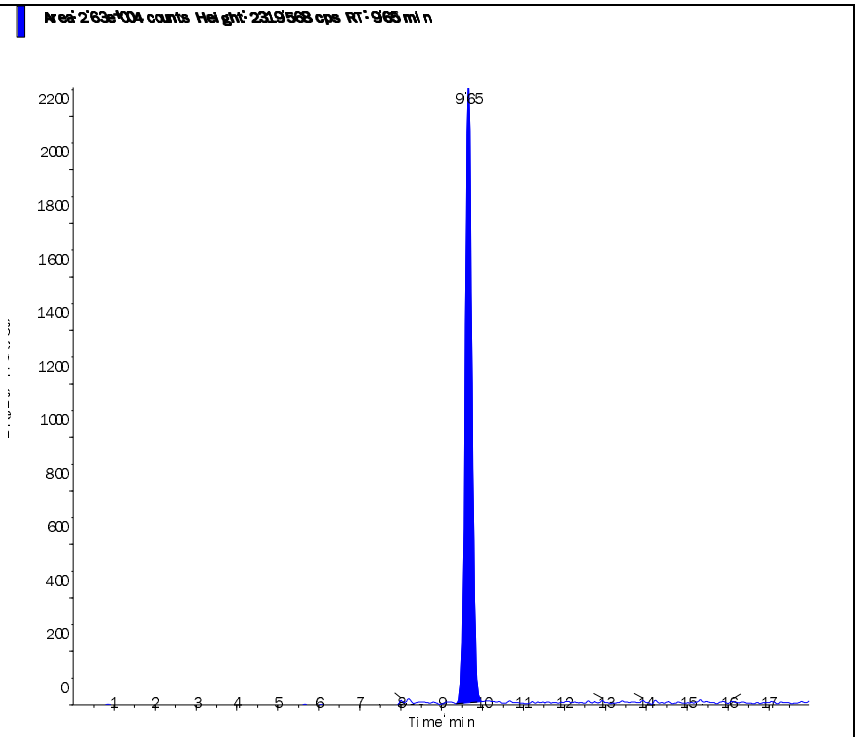

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Data File	LM29066.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/25/2015 8:28:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513413-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM29066.wiff	**Injection Volume**	10.00
Acquisition Date	2/25/2015 8:28:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG513413-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.970e+05	9.71	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.270e+04	9.72	1.00	1.03
Perchlorate conf	2.830e+04	9.70	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 9.71(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

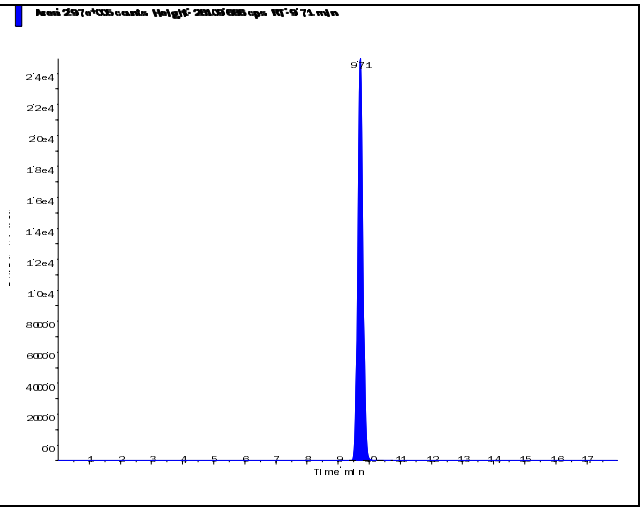

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.72 (10.30) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.279
Sample Type:	(Quality Control)

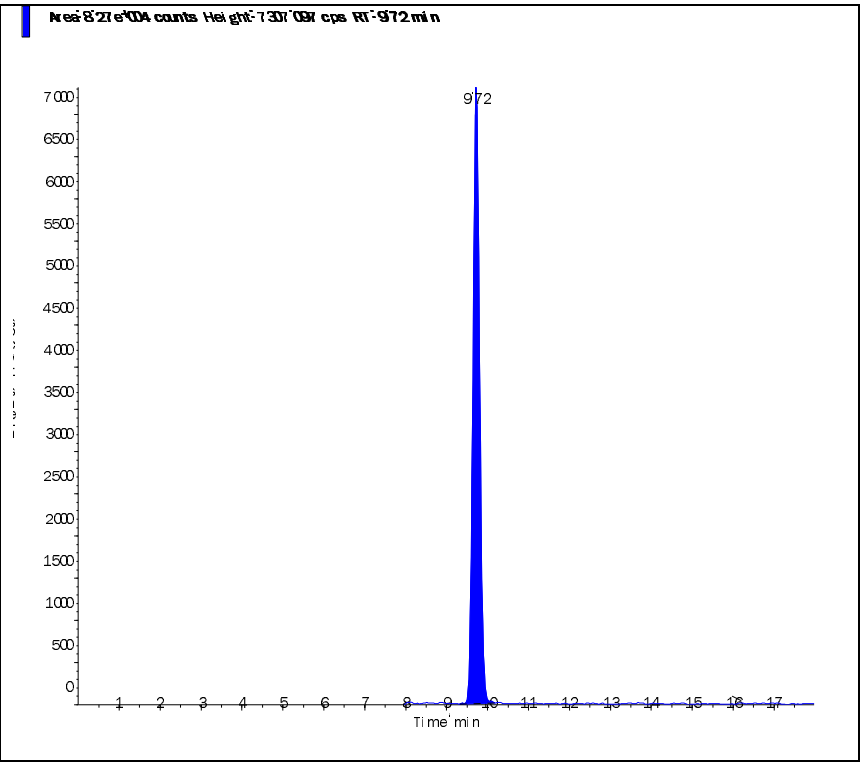

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.70 (10.30) min
Calculated conc:	1.07 ng/ml
Area Ratio:	0.095
Sample Type:	(Quality Control)

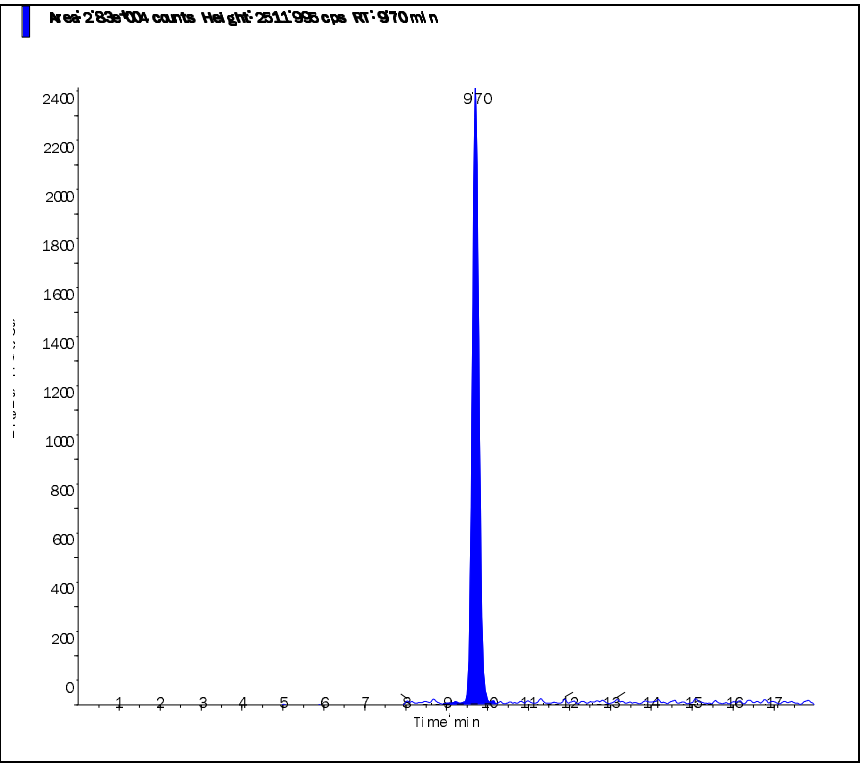

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Data File	LM29079.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/26/2015 12:34:10 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513413-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM29079.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2015 12:34:10 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG513413-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.270e+05	9.75	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	9.160e+04	9.76	1.00	1.04
Perchlorate conf	2.980e+04	9.75	1.00	1.03

O18LP (Internal Standard)

RT (Exp. RT): 9.75(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

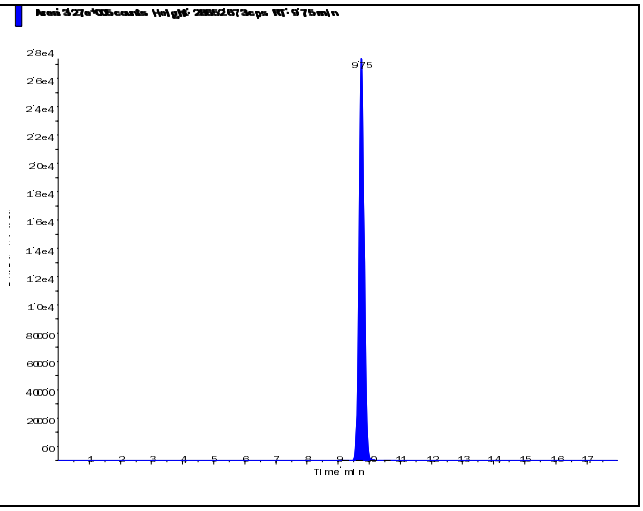

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.76 (10.30) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.28
Sample Type:	(Quality Control)

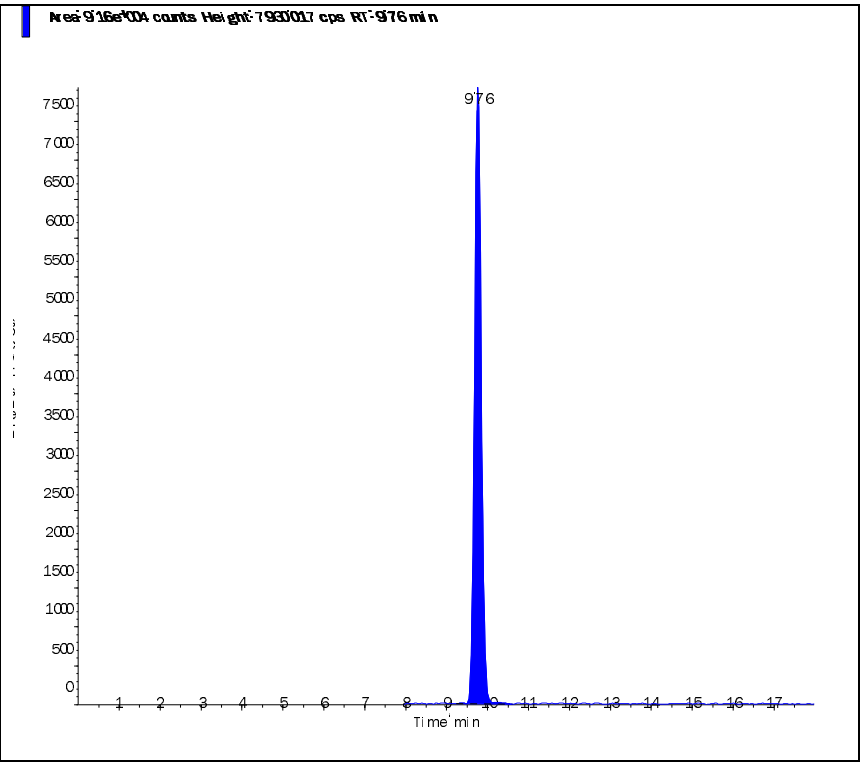

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.75 (10.30) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.091
Sample Type:	(Quality Control)

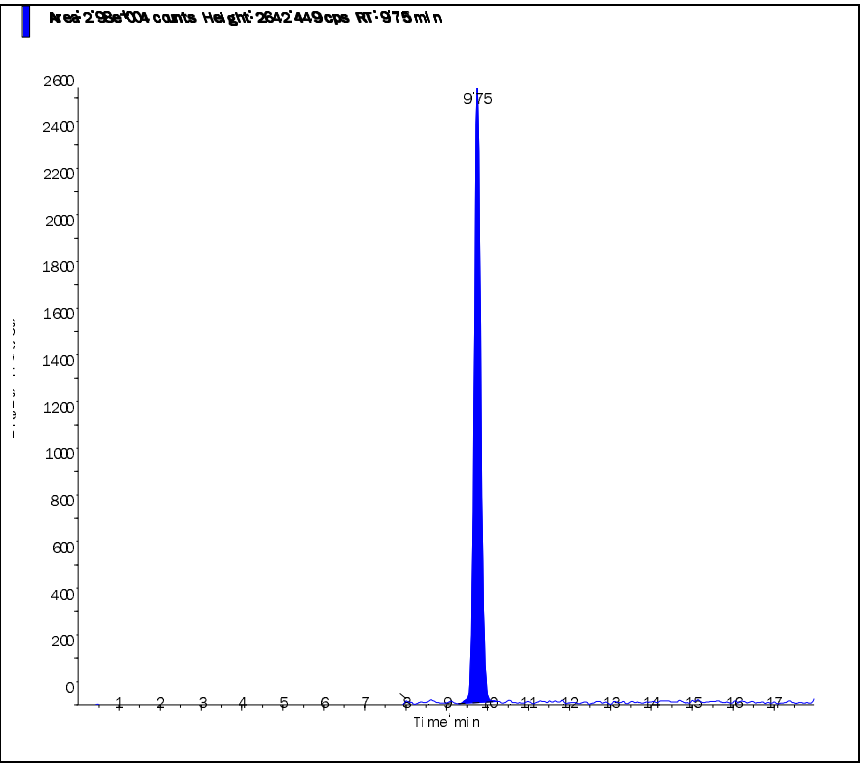

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Created with Analyst Reporter
Printed: 2/27/2015 9:49 AM

Data File	LM29084.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/26/2015 2:08:50 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513413-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM29084.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2015 2:08:50 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG513413-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.250e+05	9.76	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.920e+04	9.77	1.00	1.01
Perchlorate conf	2.950e+04	9.76	1.00	1.02

O18LP (Internal Standard)

RT (Exp. RT): 9.76(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

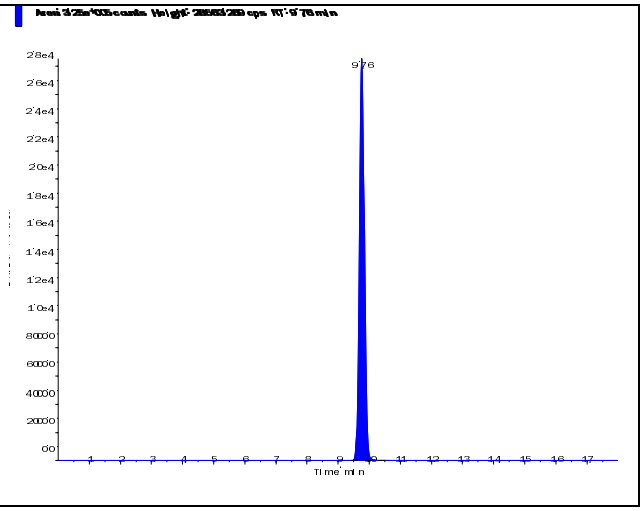

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Printed: 2/27/2015 9:49 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.77 (10.30) min Calculated conc: 1.01 ng/ml Area Ratio: 0.274 Sample Type: (Quality Control)	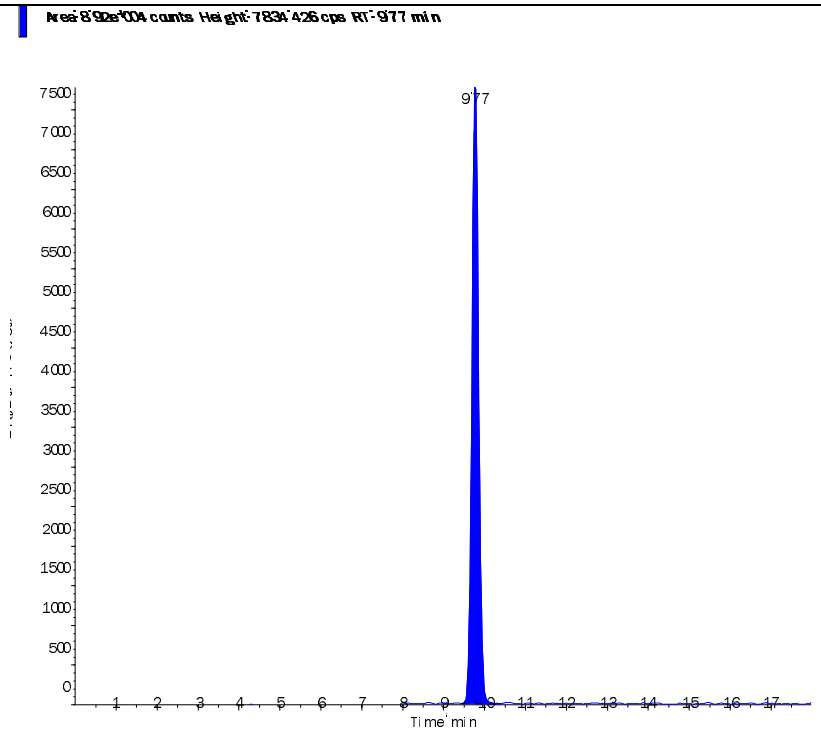
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.76 (10.30) min Calculated conc: 1.02 ng/ml Area Ratio: 0.091 Sample Type: (Quality Control)	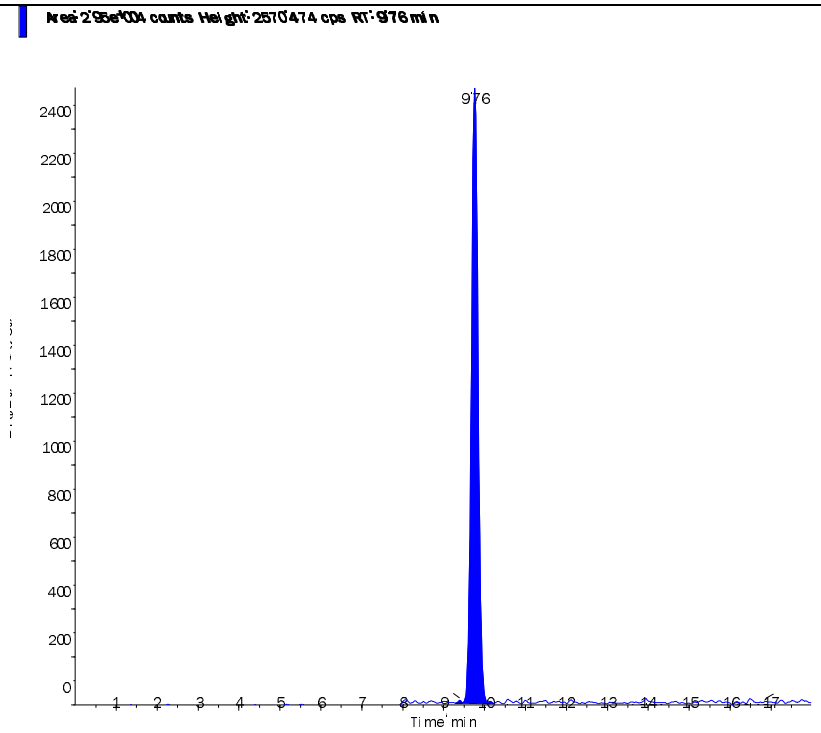

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Created with Analyst Reporter
Printed: 2/27/2015 9:51 AM

Data File	LM29087.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/26/2015 12:34:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513413-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM29087.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2015 12:34:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG513413-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.980e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.710e+04	9.82	1.00	1.08
Perchlorate conf	2.890e+04	9.81	1.00	1.09

O18LP (Internal Standard)

RT (Exp. RT): 9.81(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

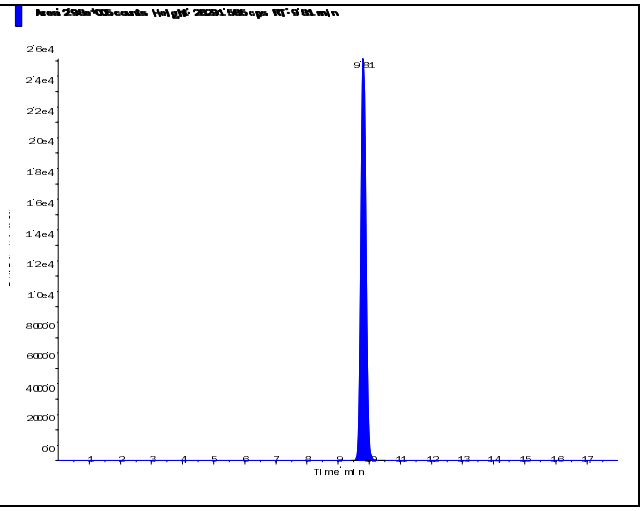

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Printed: 2/27/2015 9:51 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.82 (10.30) min Calculated conc: 1.08 ng/ml Area Ratio: 0.292 Sample Type: (Quality Control)	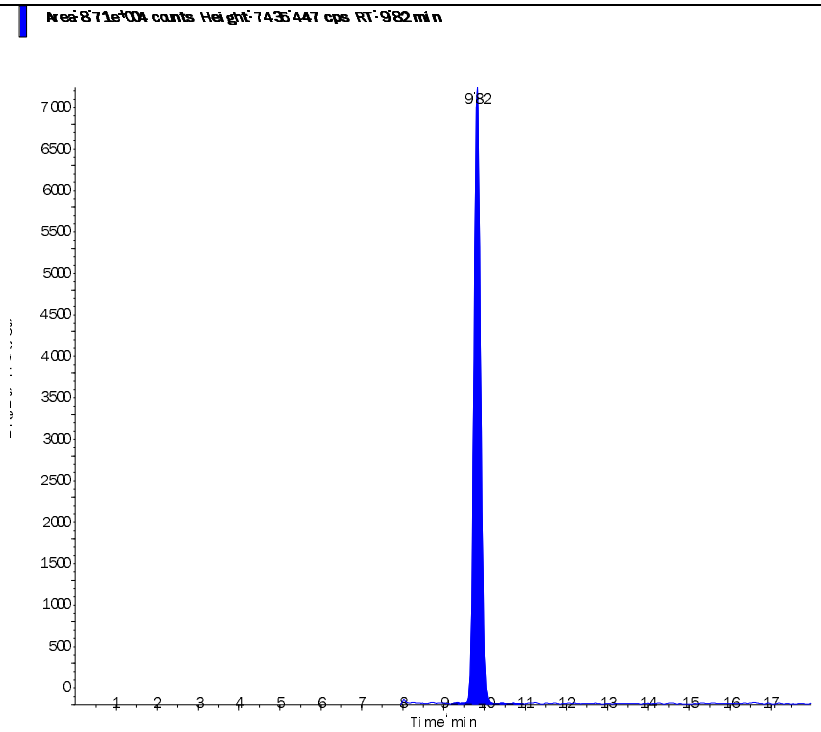
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.81 (10.30) min Calculated conc: 1.09 ng/ml Area Ratio: 0.097 Sample Type: (Quality Control)	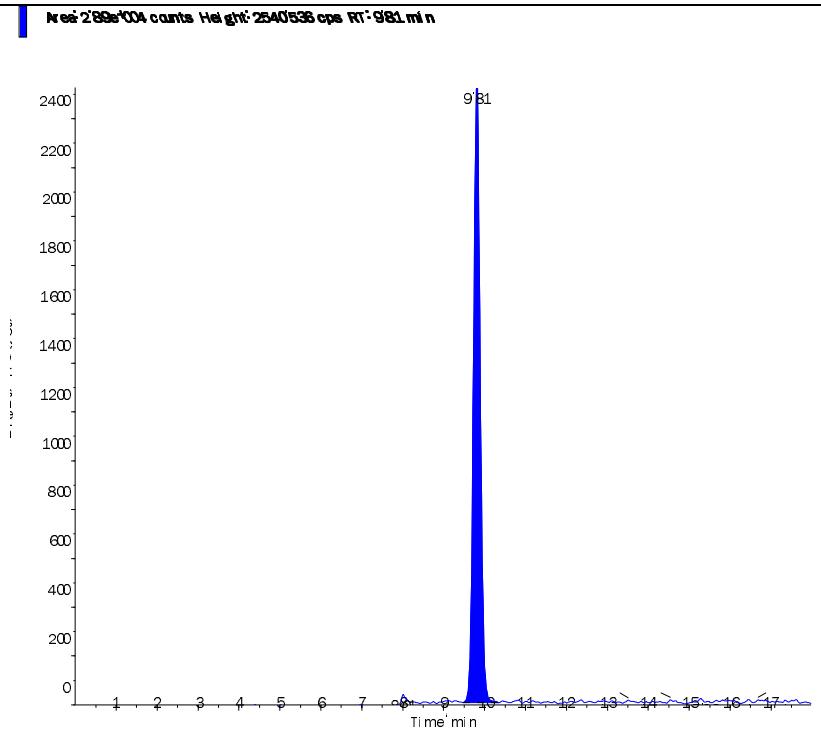

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Created with Analyst Reporter
Printed: 2/27/2015 9:55 AM

Data File	LM29098.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/26/2015 4:02:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513413-11 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM29098.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2015 4:02:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG513413-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.130e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.810e+04	9.84	1.00	1.04
Perchlorate conf	2.820e+04	9.83	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.83(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

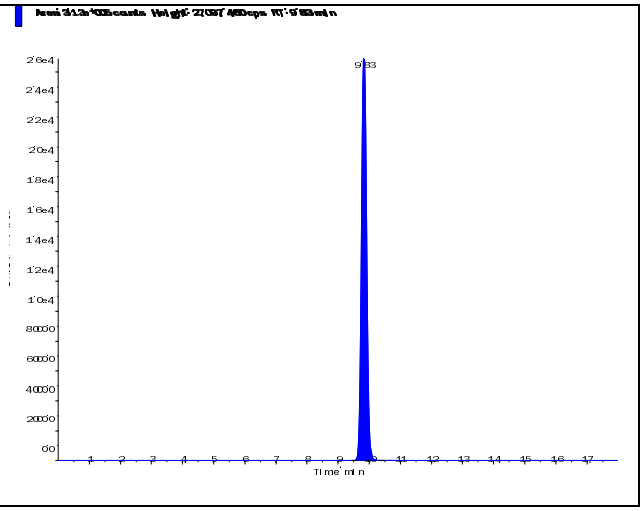

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.84 (10.30) min Calculated conc: 1.04 ng/ml Area Ratio: 0.282 Sample Type: (Quality Control)	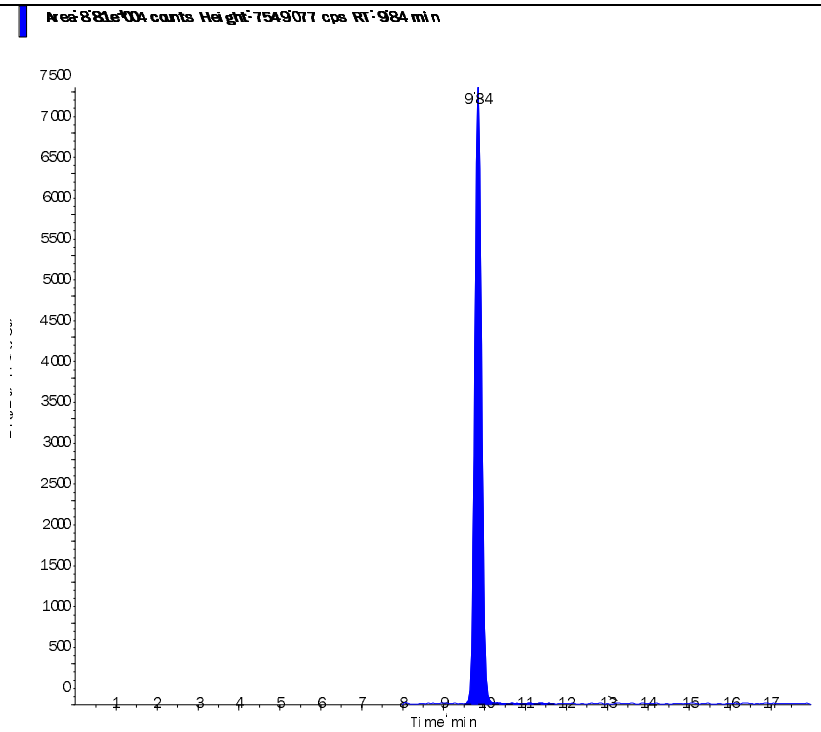
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (10.30) min Calculated conc: 1.01 ng/ml Area Ratio: 0.09 Sample Type: (Quality Control)	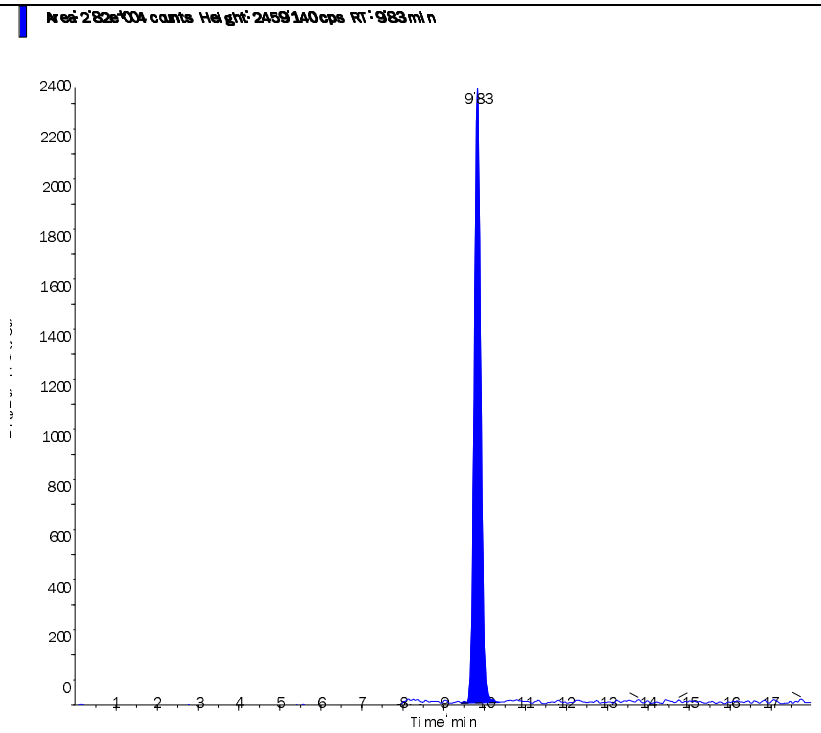

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Created with Analyst Reporter
Printed: 2/27/2015 9:39 AM

Data File	LM29055.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/25/2015 4:59:47 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513403-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM29055.wiff	**Injection Volume**	10.00
Acquisition Date	2/25/2015 4:59:47 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG513403-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.670e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.650e+04	9.64	N/A	0.217
Perchlorate conf	5.600e+03	9.62	N/A	0.227

O18LP (Internal Standard)

RT (Exp. RT): 9.63(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

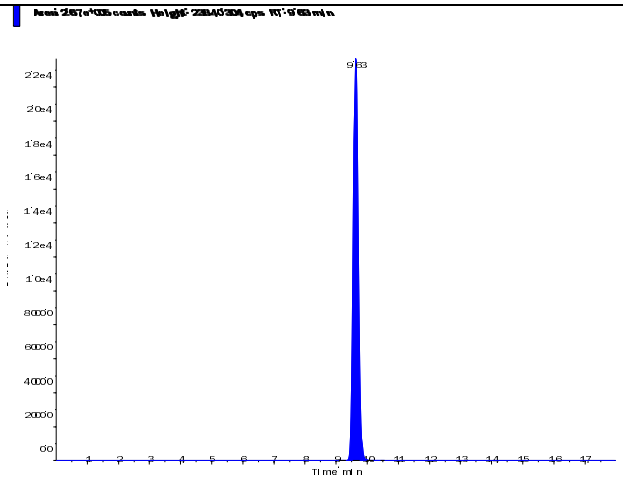

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.64 (10.30) min Calculated conc: 0.217 ng/ml Area Ratio: 0.062 Sample Type: (Unknown)	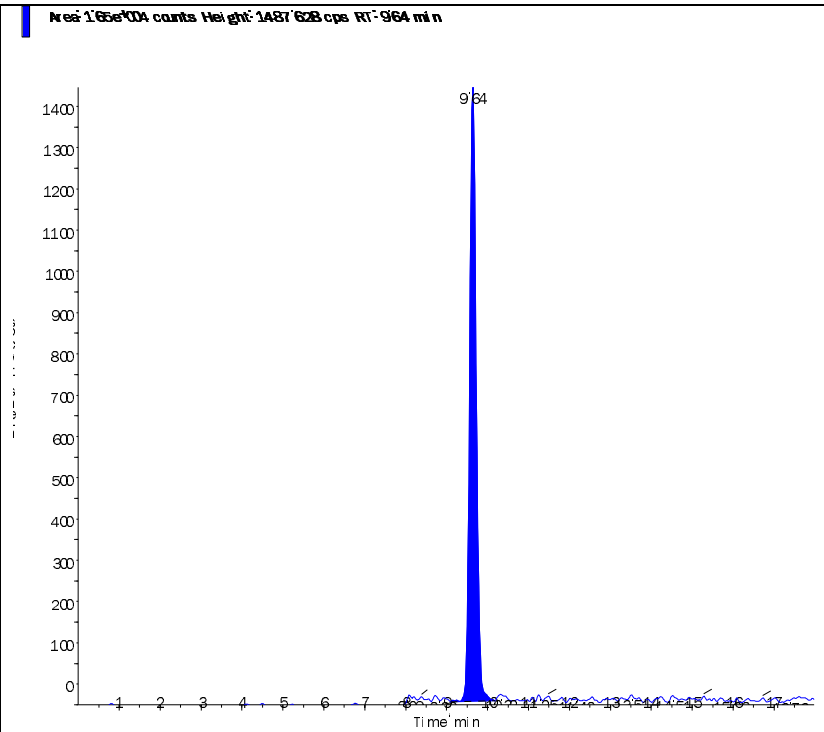
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.62 (10.30) min Calculated conc: 0.227 ng/ml Area Ratio: 0.021 Sample Type: (Unknown)	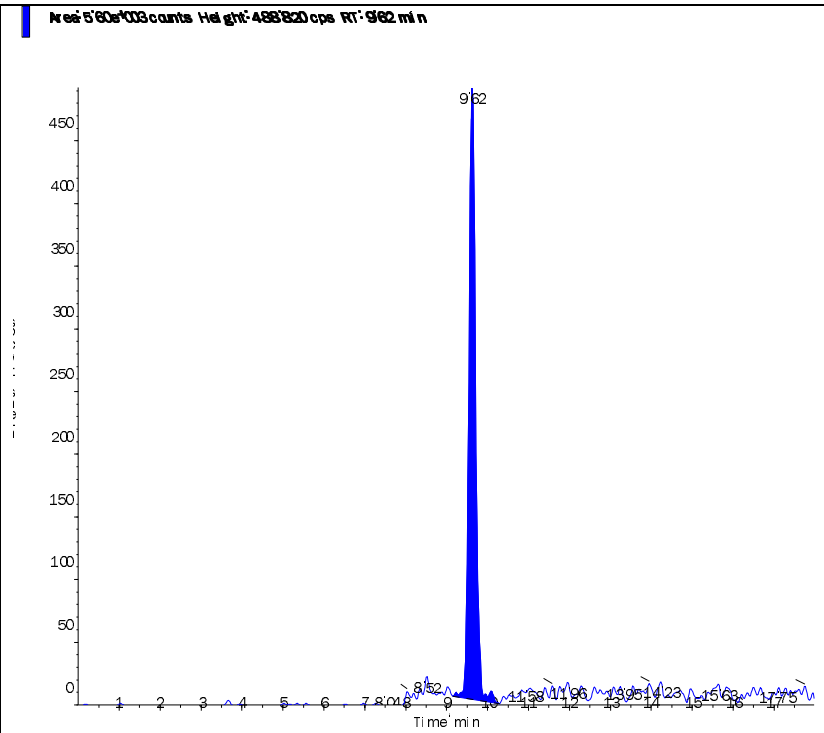

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Created with Analyst Reporter
Printed: 2/27/2015 9:44 AM

Data File	LM29067.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/25/2015 8:46:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513403-08 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM29067.wiff	**Injection Volume**	10.00
Acquisition Date	2/25/2015 8:46:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG513403-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.950e+05	9.69	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.610e+04	9.69	N/A	0.19
Perchlorate conf	5.060e+03	9.68	N/A	0.184

O18LP (Internal Standard)

RT (Exp. RT): 9.69(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

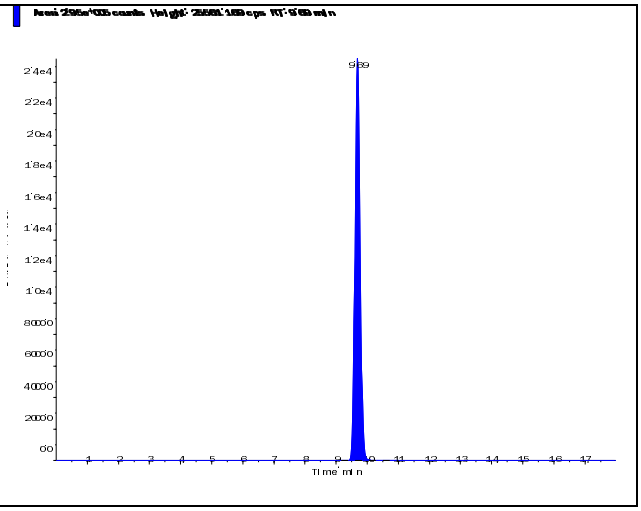

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.69 (10.30) min
Calculated conc:	0.19 ng/ml
Area Ratio:	0.055
Sample Type:	(Unknown)

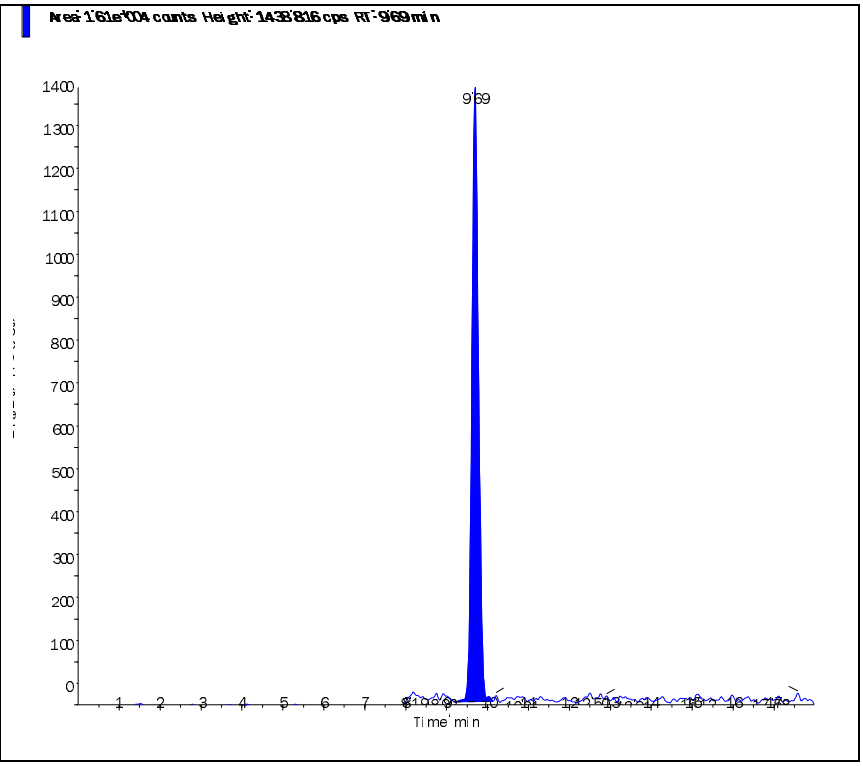

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.68 (10.30) min
Calculated conc:	0.184 ng/ml
Area Ratio:	0.017
Sample Type:	(Unknown)

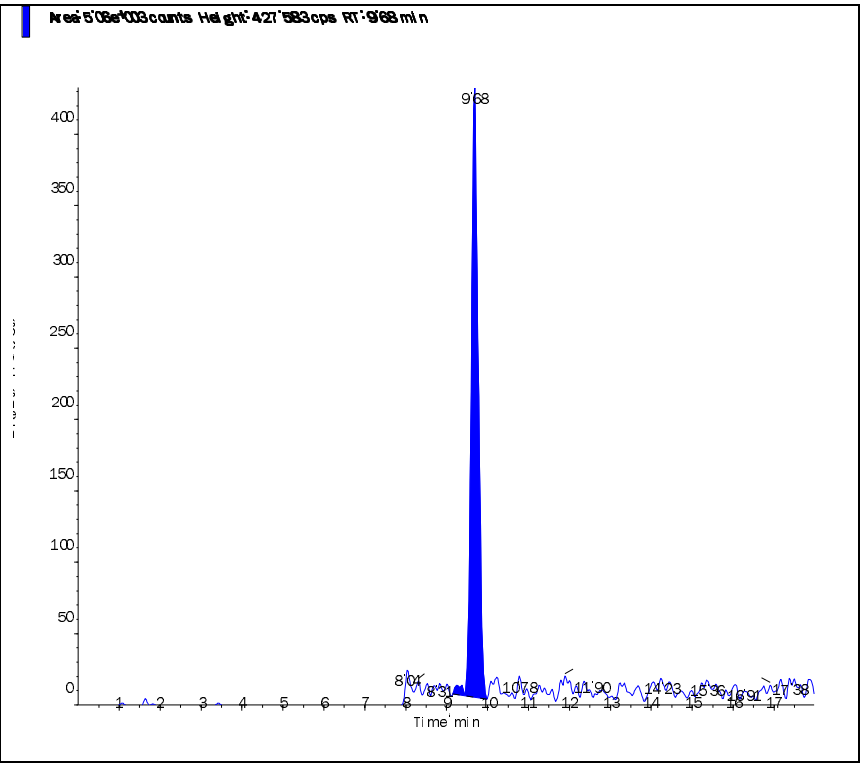

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Created with Analyst Reporter
Printed: 2/27/2015 9:49 AM

Data File	LM29080.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/26/2015 12:53:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513403-09 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM29080.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2015 12:53:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG513403-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.080e+05	9.72	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.750e+04	9.73	N/A	0.198
Perchlorate conf	5.650e+03	9.71	N/A	0.197

O18LP (Internal Standard)

RT (Exp. RT): 9.72(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

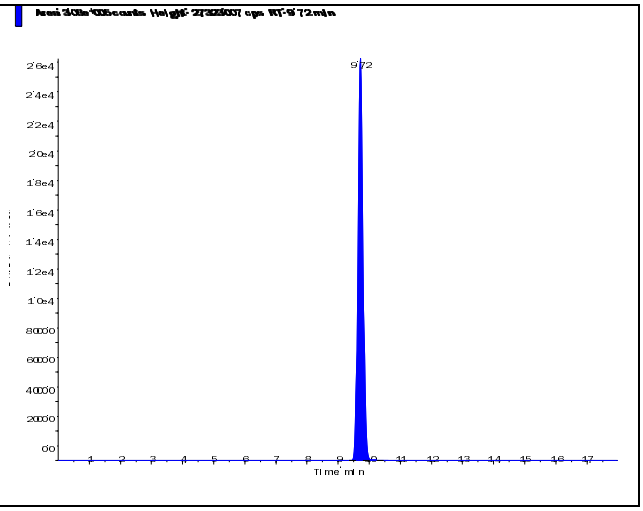

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.73 (10.30) min Calculated conc: 0.198 ng/ml Area Ratio: 0.057 Sample Type: (Unknown)	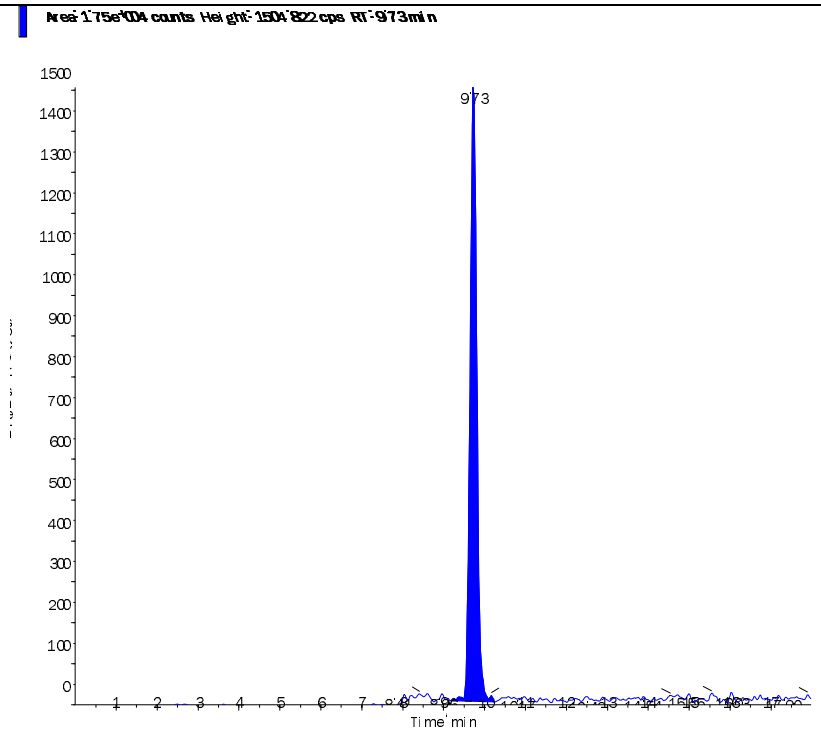
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.71 (10.30) min Calculated conc: 0.197 ng/ml Area Ratio: 0.018 Sample Type: (Unknown)	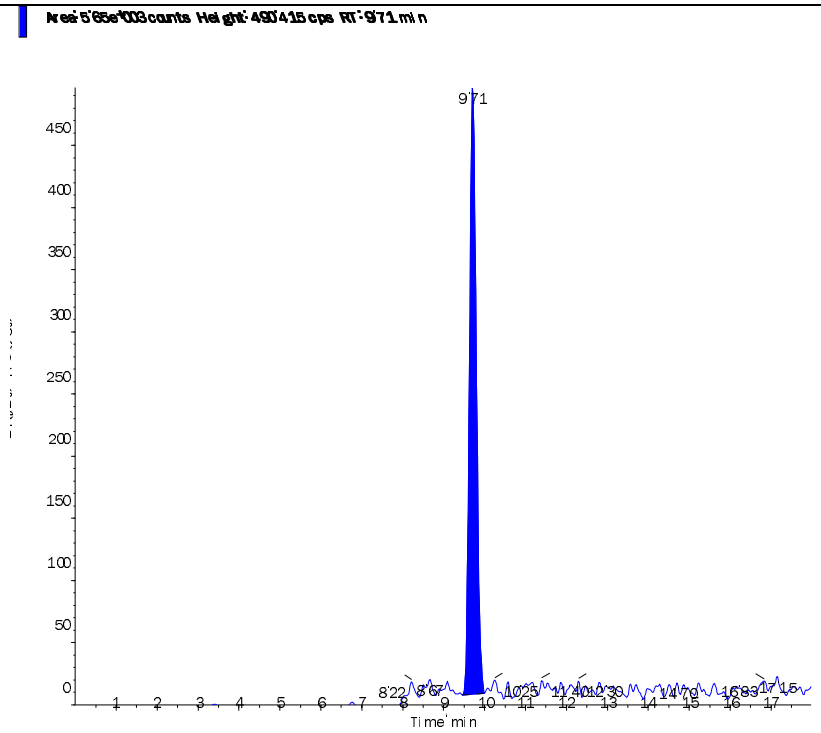

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Created with Analyst Reporter
Printed: 2/27/2015 9:50 AM

Data File	LM29085.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/26/2015 2:27:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513403-10 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM29085.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2015 2:27:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG513403-10	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.180e+05	9.73	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.770e+04	9.74	N/A	0.194
Perchlorate conf	5.780e+03	9.74	N/A	0.196

O18LP (Internal Standard)

RT (Exp. RT): 9.73(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

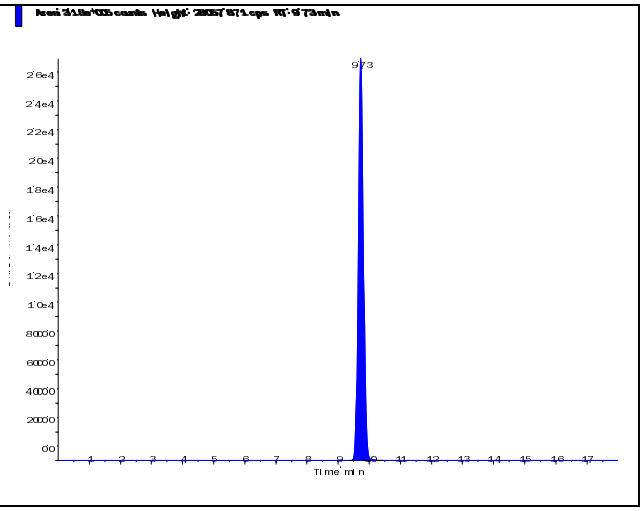

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Created with Analyst Reporter
Printed: 2/27/2015 9:50 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.74 (10.30) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.056
Sample Type:	(Unknown)

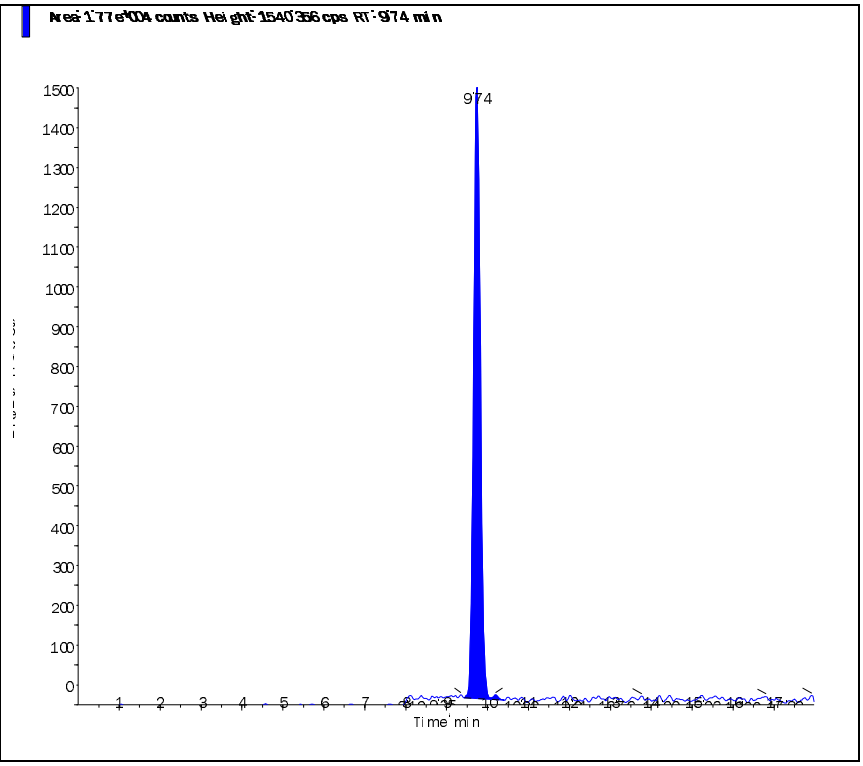

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.74 (10.30) min
Calculated conc:	0.196 ng/ml
Area Ratio:	0.018
Sample Type:	(Unknown)

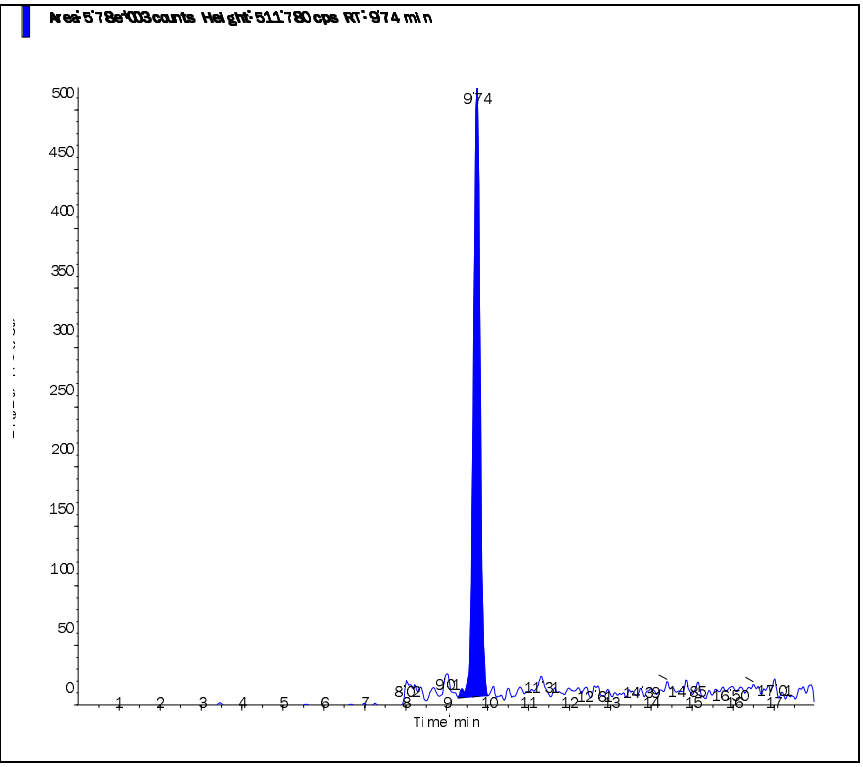

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Created with Analyst Reporter
Printed: 2/27/2015 9:51 AM

Data File	LM29088.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/26/2015 12:53:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513403-11 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM29088.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2015 12:53:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG513403-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.920e+05	9.77	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.640e+04	9.78	N/A	0.196
Perchlorate conf	5.970e+03	9.78	N/A	0.221

O18LP (Internal Standard)

RT (Exp. RT): 9.77(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

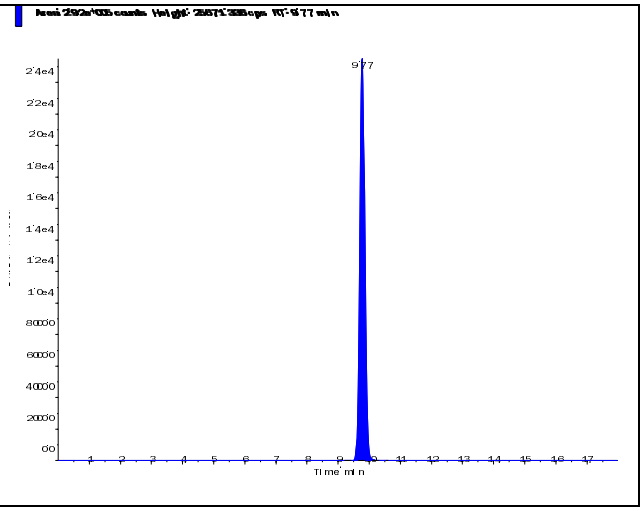

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.78 (10.30) min
Calculated conc:	0.196 ng/ml
Area Ratio:	0.056
Sample Type:	(Unknown)

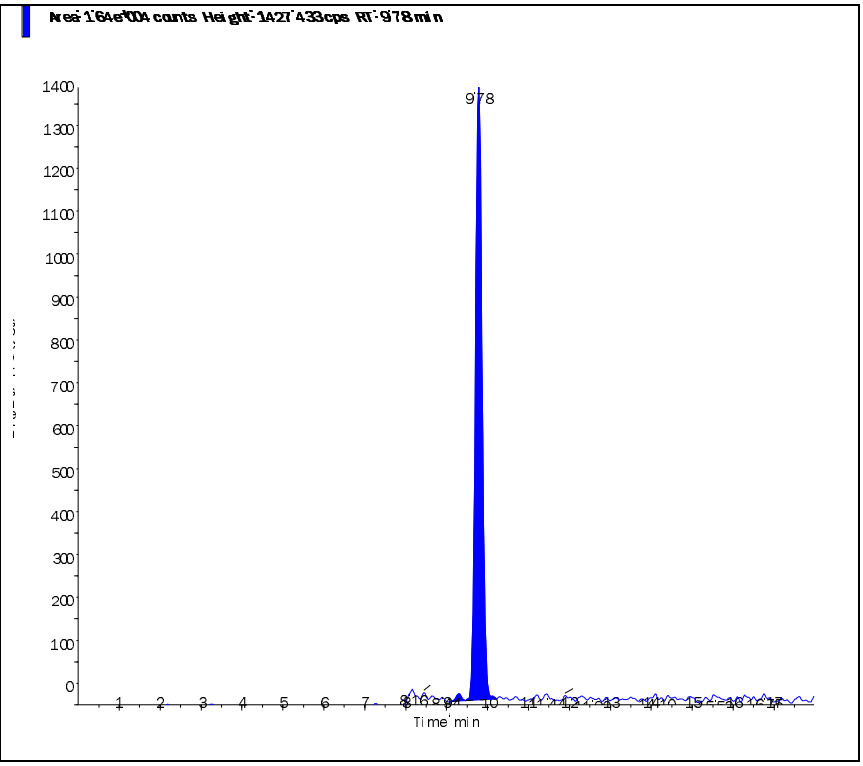

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.78 (10.30) min
Calculated conc:	0.221 ng/ml
Area Ratio:	0.02
Sample Type:	(Unknown)

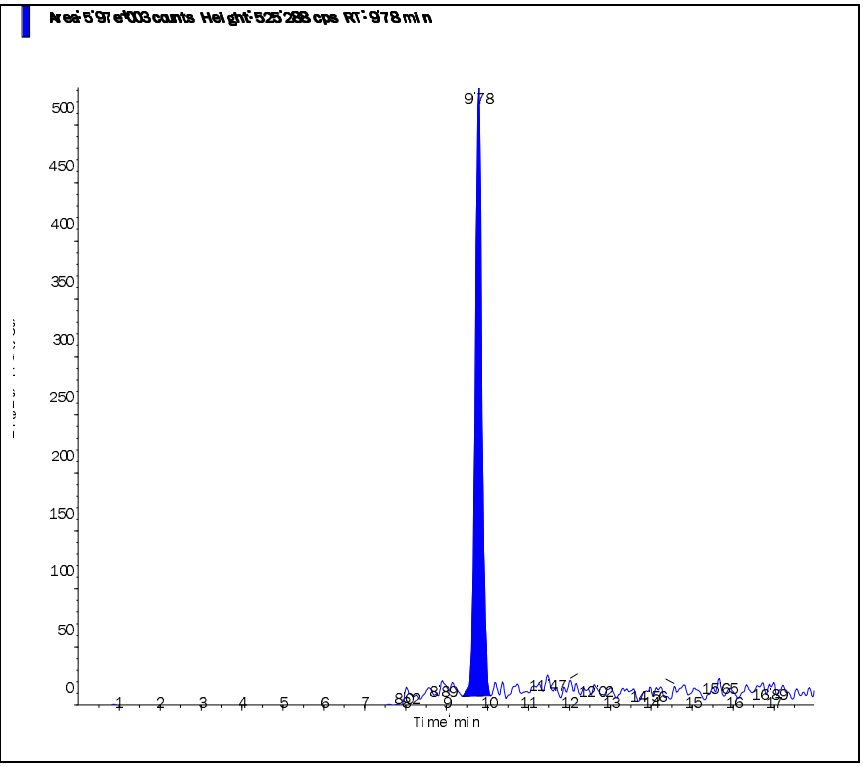

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Printed: 2/27/2015 9:55 AM

Data File	LM29099.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/26/2015 4:21:36 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513403-12 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM29099.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2015 4:21:36 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG513403-12	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.020e+05	9.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.600e+04	9.81	N/A	0.184
Perchlorate conf	5.720e+03	9.79	N/A	0.204

O18LP (Internal Standard)

RT (Exp. RT): 9.80(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

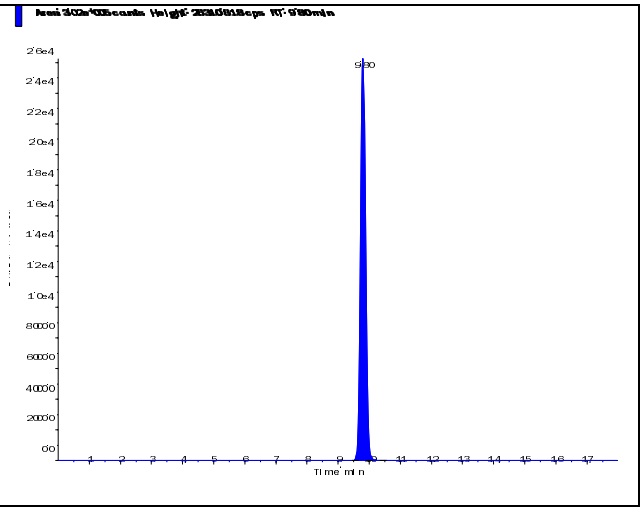

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.81 (10.30) min
Calculated conc:	0.184 ng/ml
Area Ratio:	0.053
Sample Type:	(Unknown)

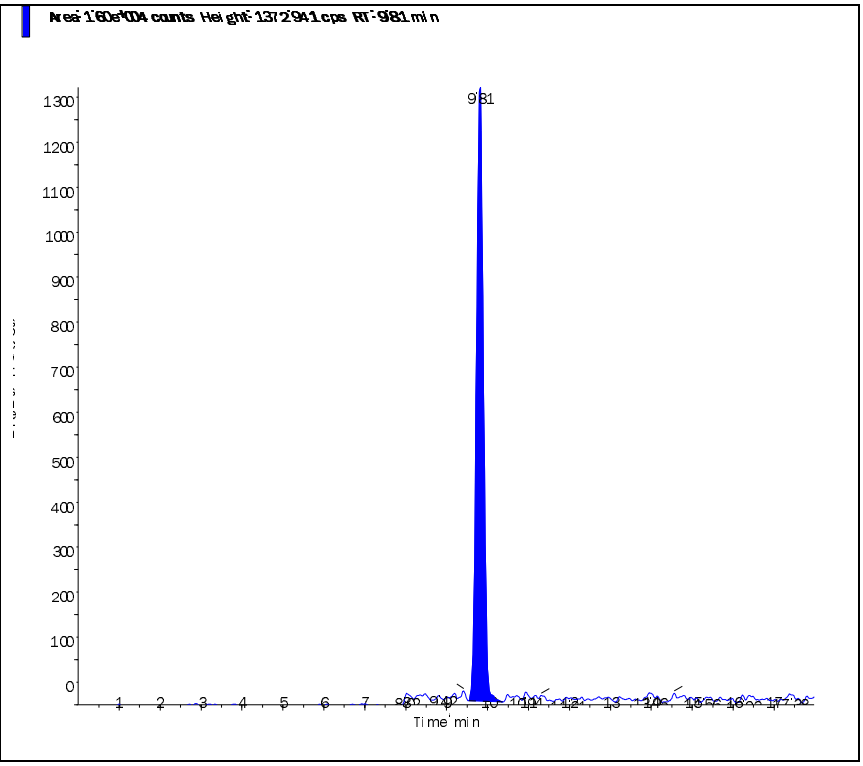

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.79 (10.30) min
Calculated conc:	0.204 ng/ml
Area Ratio:	0.019
Sample Type:	(Unknown)

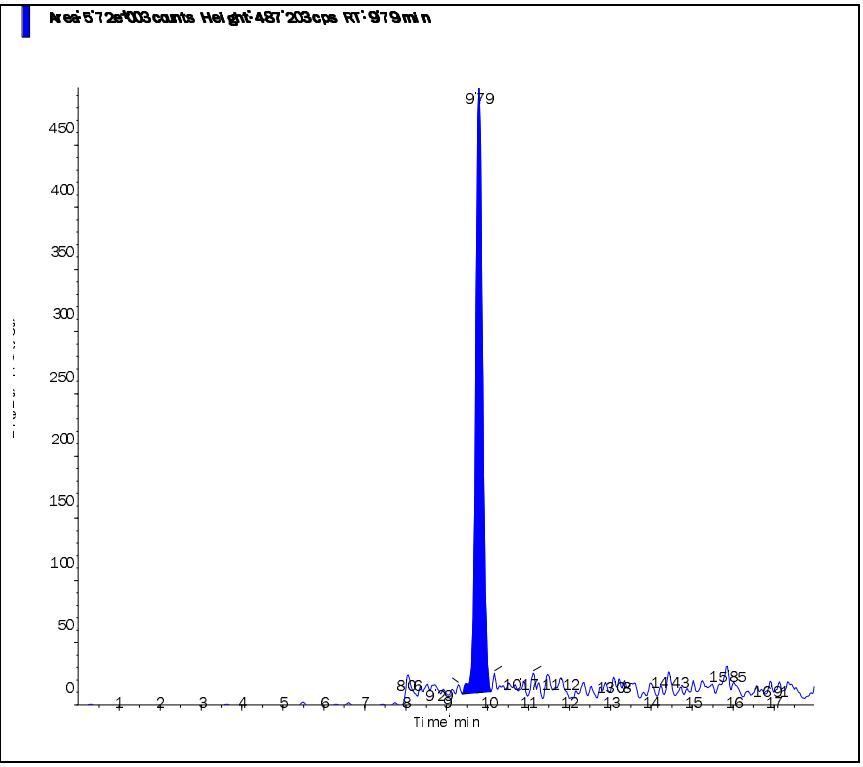

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Data File	LM29053.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/25/2015 4:21:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513413-01 CCB	**Injection Vial**	1.00
Data File	LM29053.wiff	**Injection Volume**	10.00
Acquisition Date	2/25/2015 4:21:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG513413-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.570e+05	9.69	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.100e+02	9.74	N/A	< 0
Perchlorate conf	3.220e+02	9.67	N/A	0.0033

O18LP (Internal Standard)

RT (Exp. RT): 9.69(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

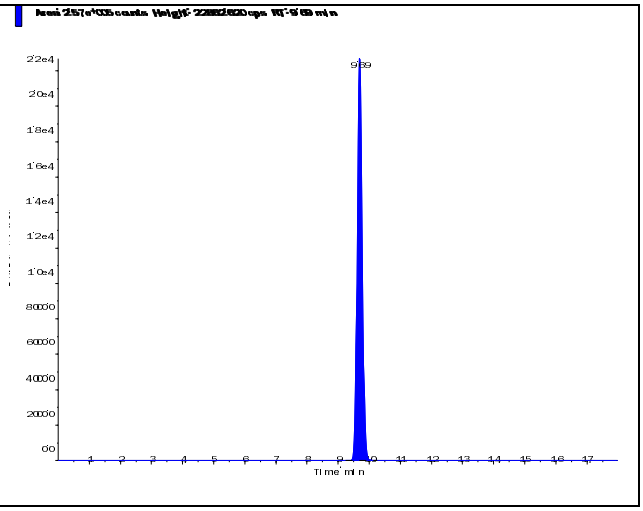

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.74 (10.30) min Calculated conc: < 0 ng/ml Area Ratio: 0.003 Sample Type: (Unknown)	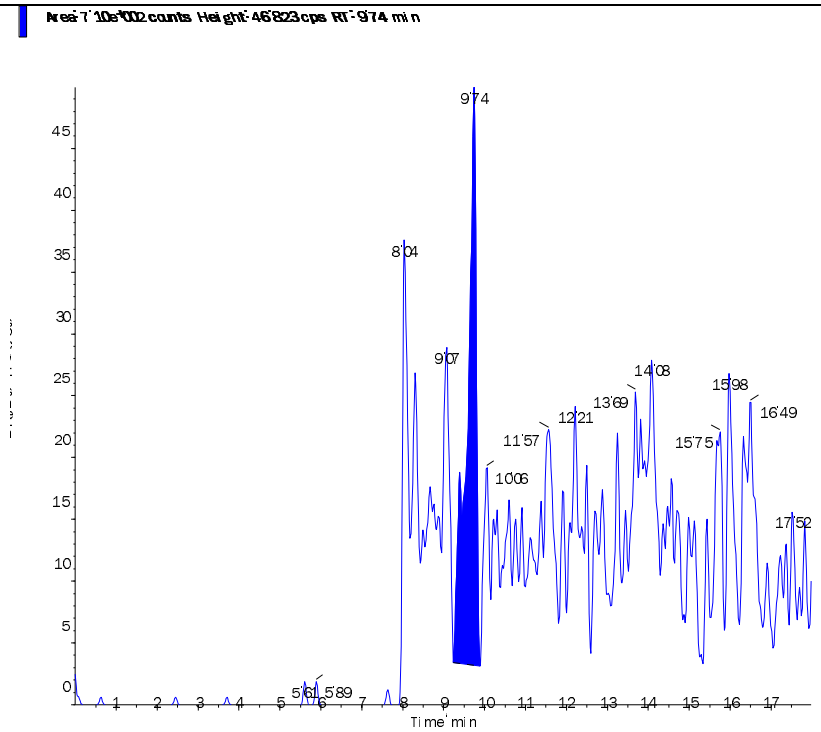
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.67 (10.30) min Calculated conc: 0.0033 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	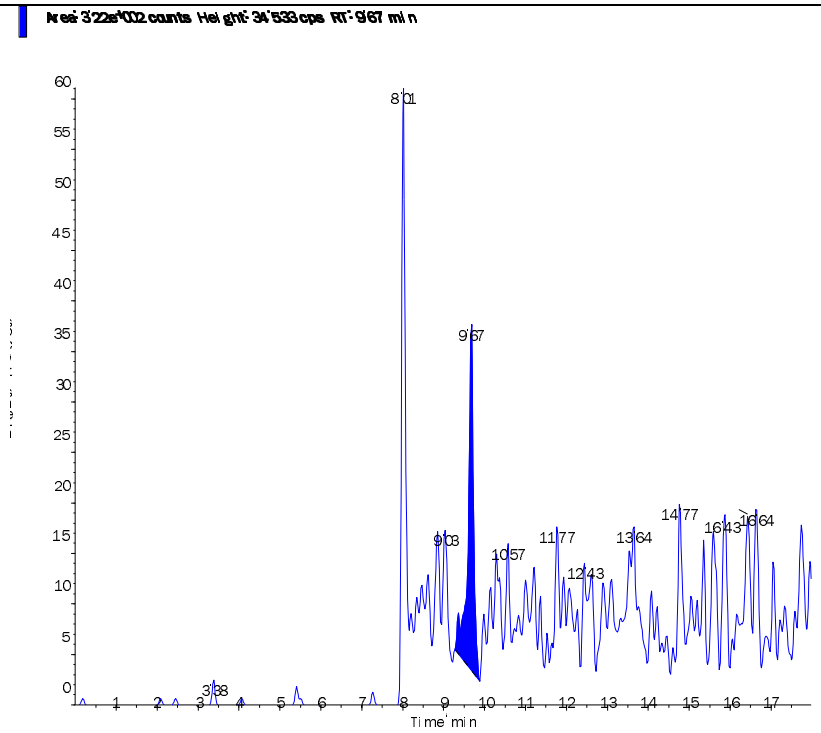

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Data File	LM29068.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/25/2015 9:05:55 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513413-04 CCB	**Injection Vial**	1.00
Data File	LM29068.wiff	**Injection Volume**	10.00
Acquisition Date	2/25/2015 9:05:55 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG513413-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.960e+05	9.75	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.750e+02	9.80	N/A	< 0
Perchlorate conf	8.830e+01	9.74	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.75(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

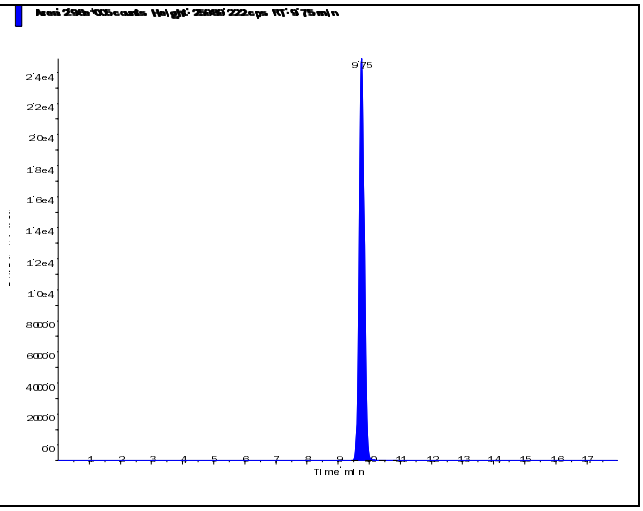

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.80 (10.30) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

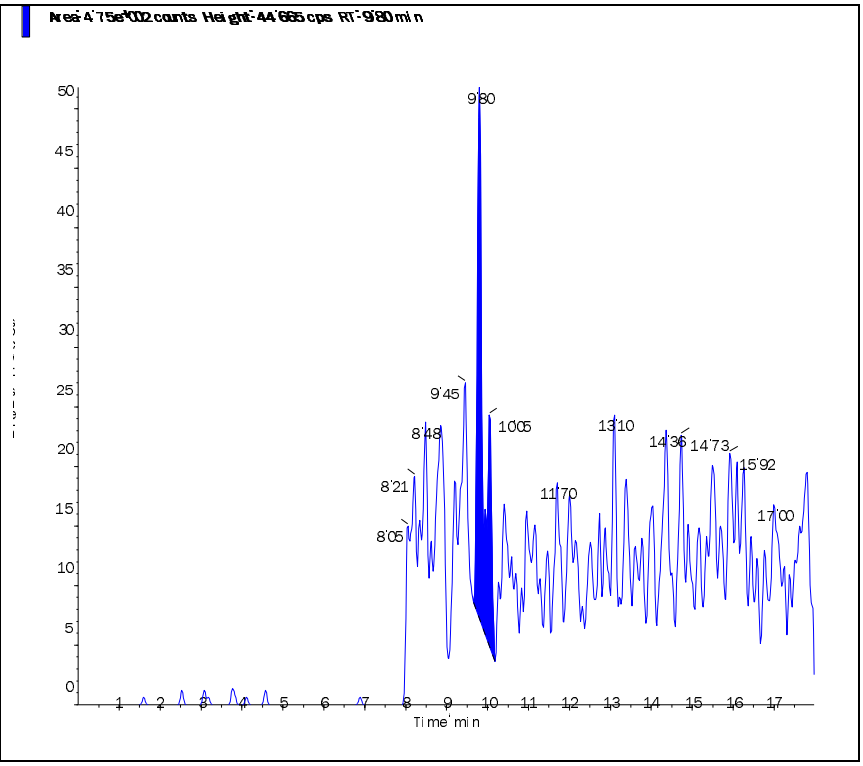

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.74 (10.30) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

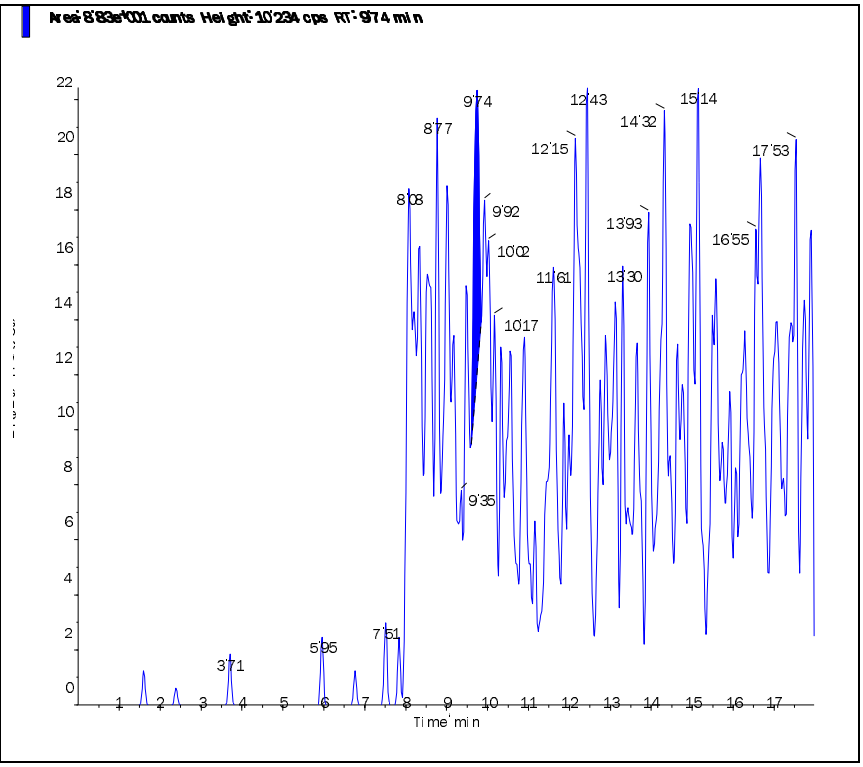

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Data File	LM29081.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/26/2015 1:12:02 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513413-06 CCB	**Injection Vial**	1.00
Data File	LM29081.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2015 1:12:02 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG513413-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.990e+05	9.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	6.070e+02	9.81	N/A	< 0
Perchlorate conf	3.960e+02	9.79	N/A	0.0041

O18LP (Internal Standard)

RT (Exp. RT): 9.80(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

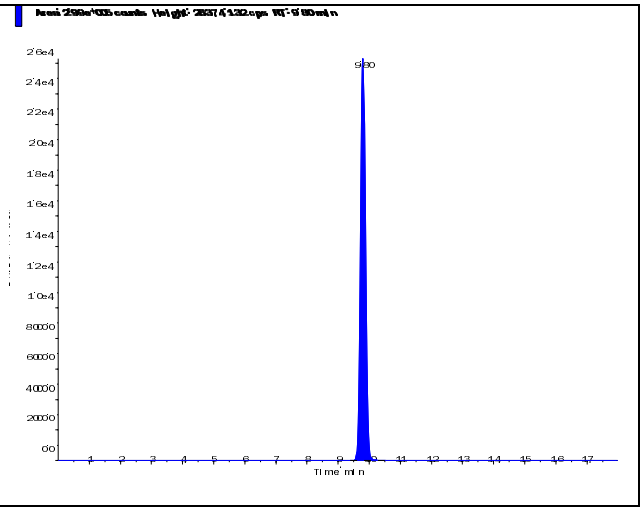

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.81 (10.30) min Calculated conc: < 0 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	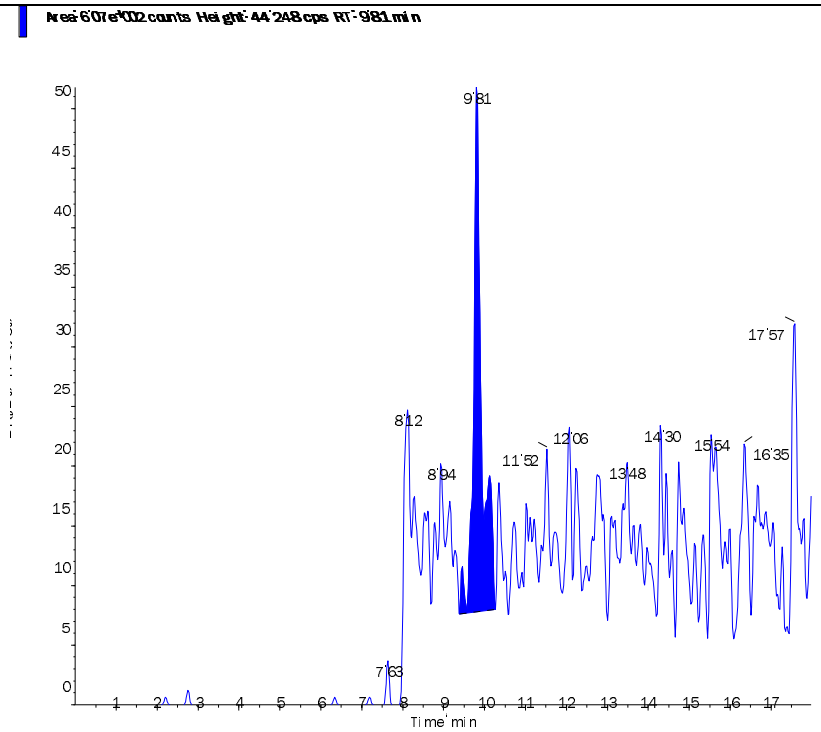
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.79 (10.30) min Calculated conc: 0.0041 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	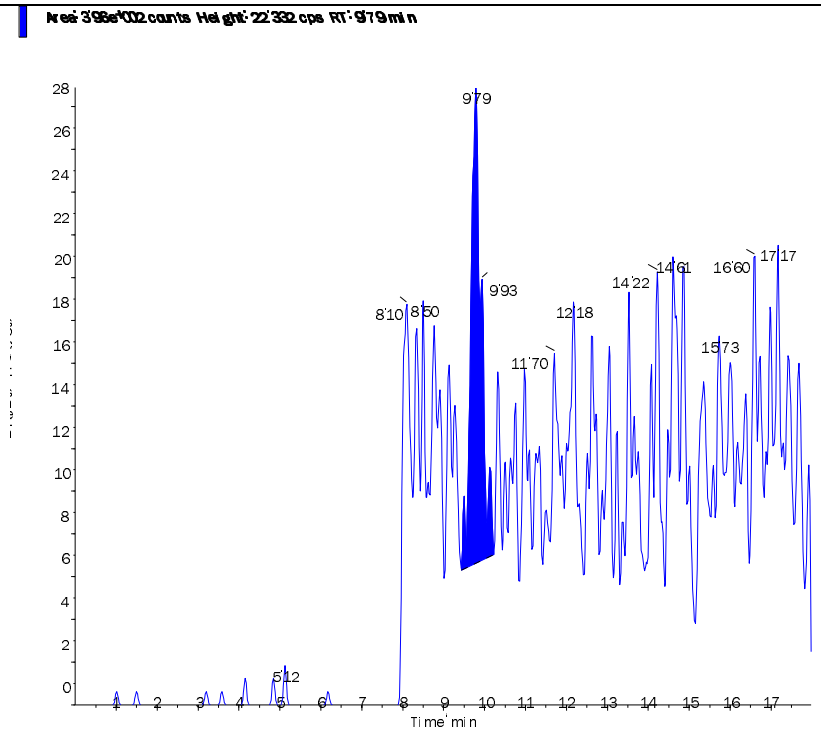

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Data File	LM29086.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/26/2015 2:46:40 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513413-08 CCB	**Injection Vial**	1.00
Data File	LM29086.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2015 2:46:40 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG513413-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.070e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.090e+02	9.80	N/A	< 0
Perchlorate conf	2.450e+02	9.84	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.81(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

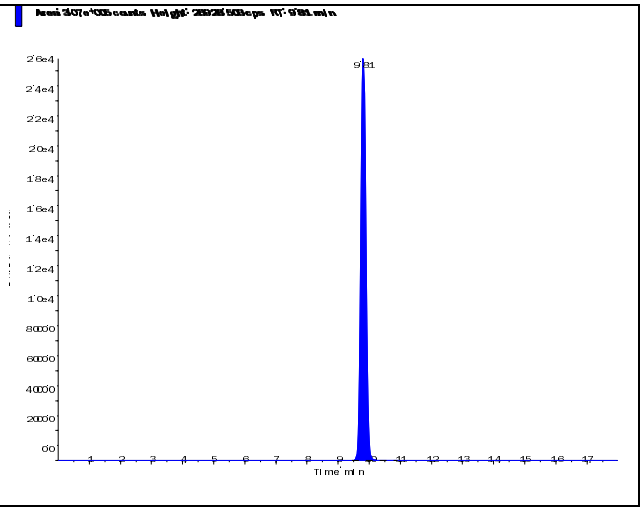

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.80 (10.30) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

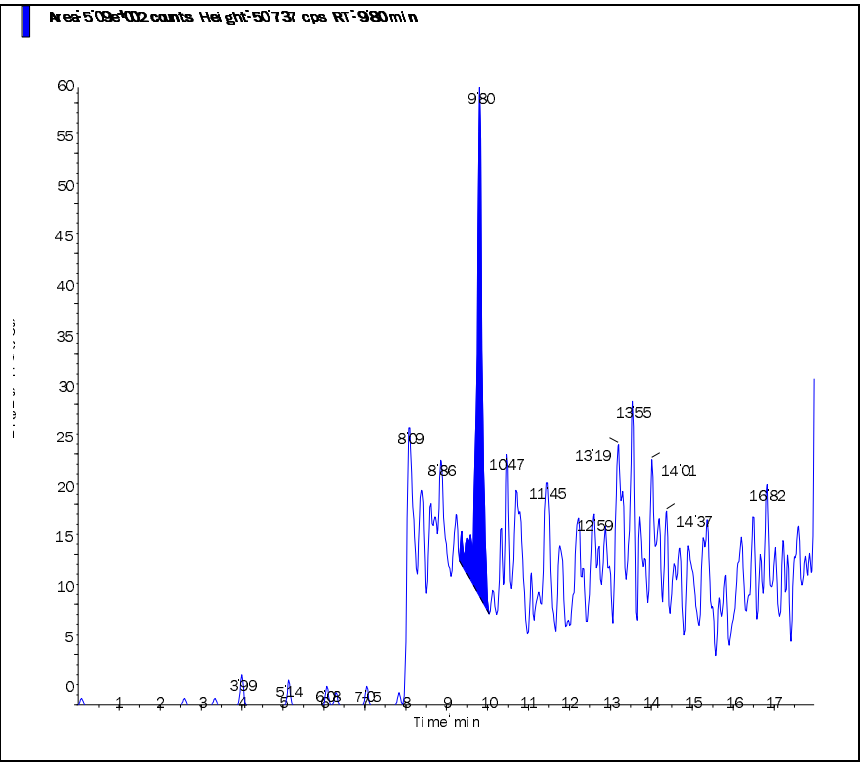

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (10.30) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

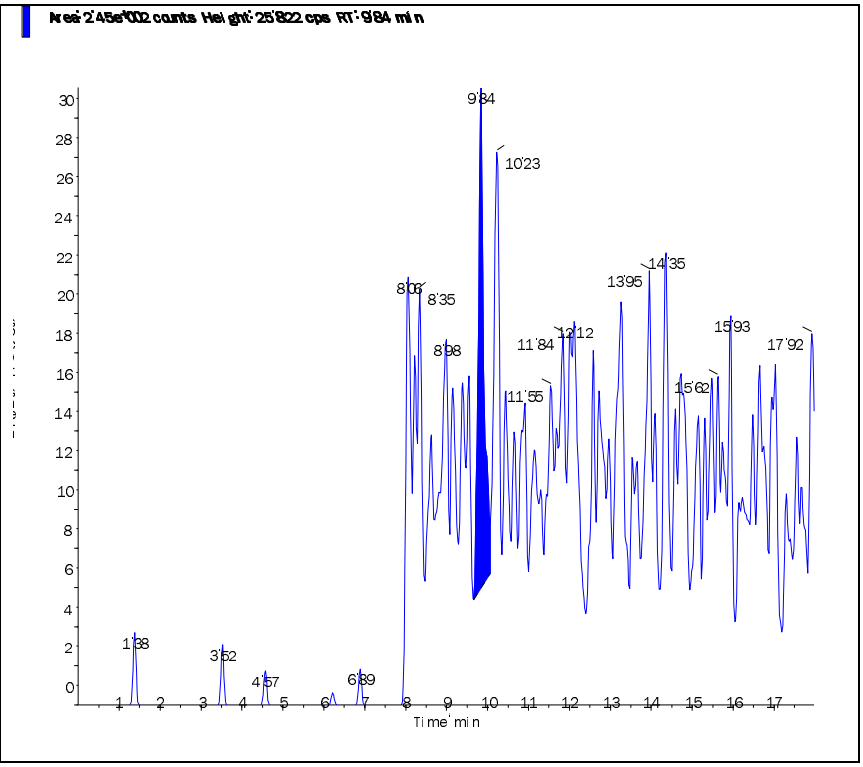

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Data File	LM29089.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/26/2015 1:12:15 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513413-10 CCB	**Injection Vial**	1.00
Data File	LM29089.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2015 1:12:15 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG513413-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.800e+05	9.86	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.820e+02	9.88	N/A	< 0
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.86(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

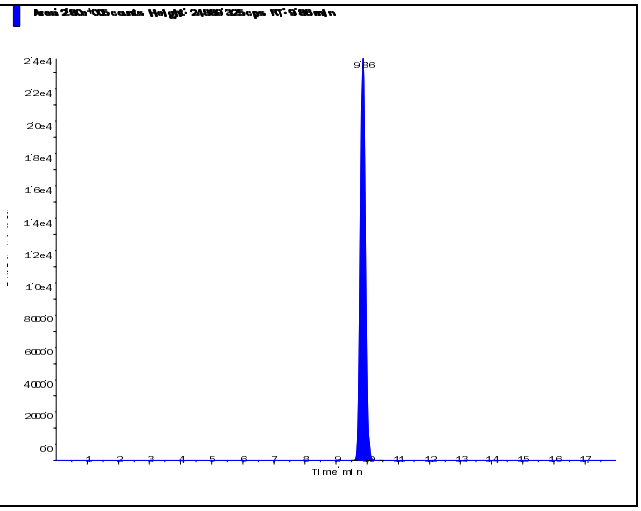

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Printed: 2/27/2015 9:52 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.88 (10.30) min Calculated conc: < 0 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	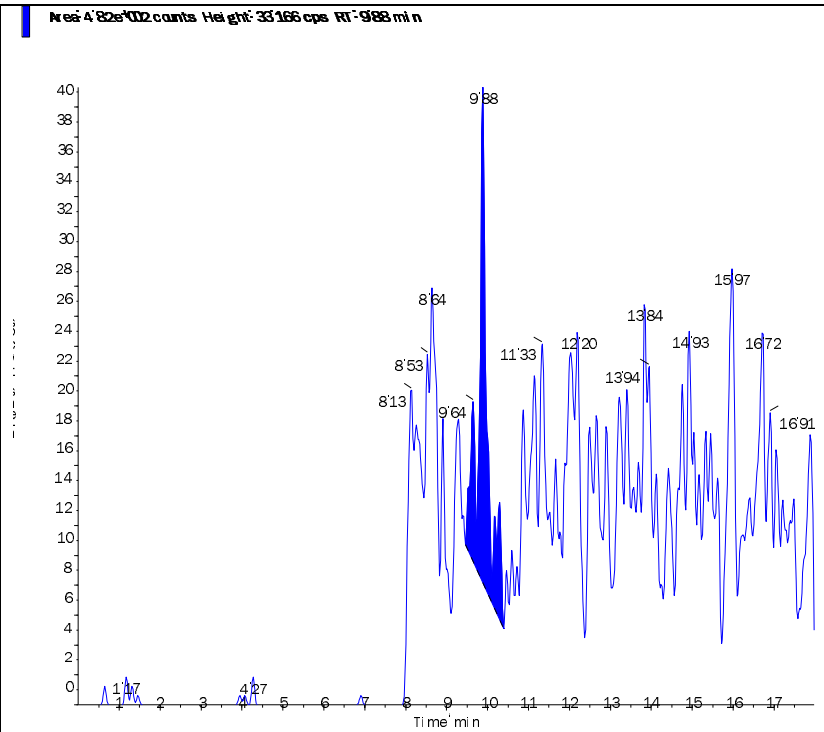
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (10.30) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	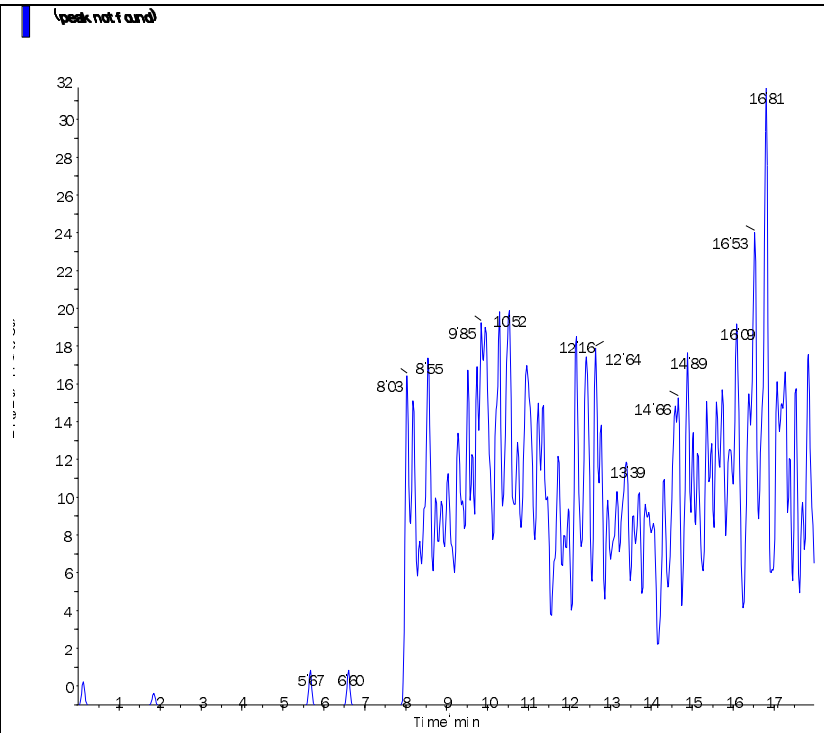

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Data File	LM29100.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/26/2015 4:40:31 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513413-12 CCB	**Injection Vial**	1.00
Data File	LM29100.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2015 4:40:31 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG513413-12	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.040e+05	9.88	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	2.520e+02	9.93	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.88(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

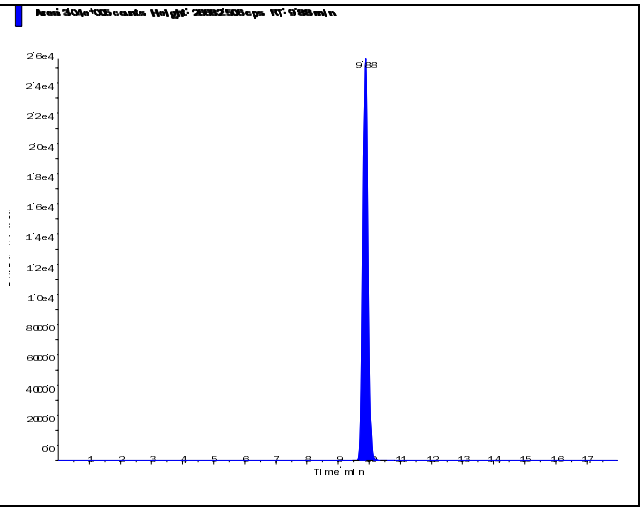

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (10.30) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

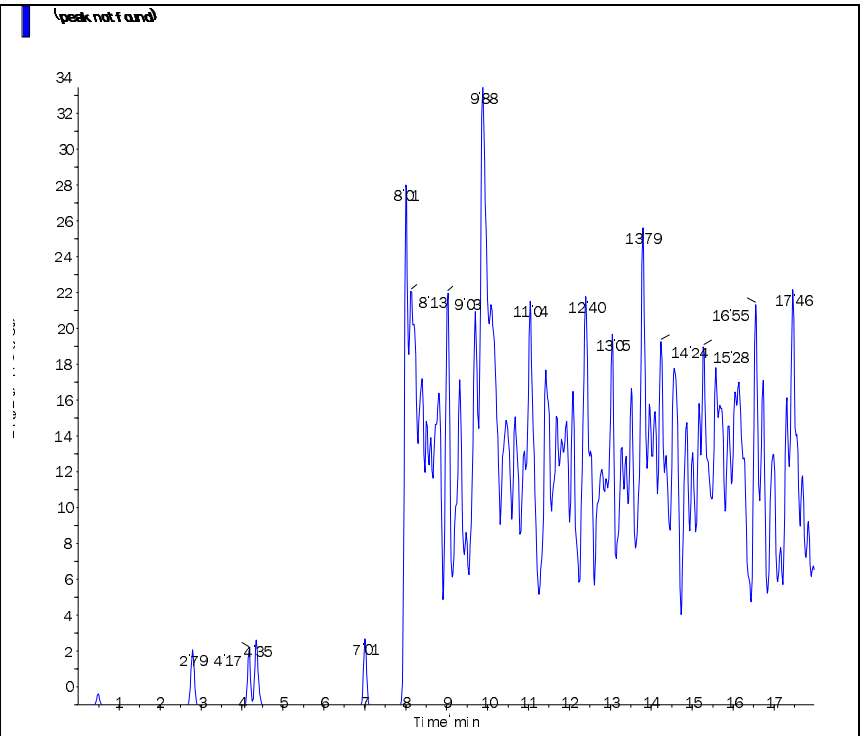

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (10.30) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

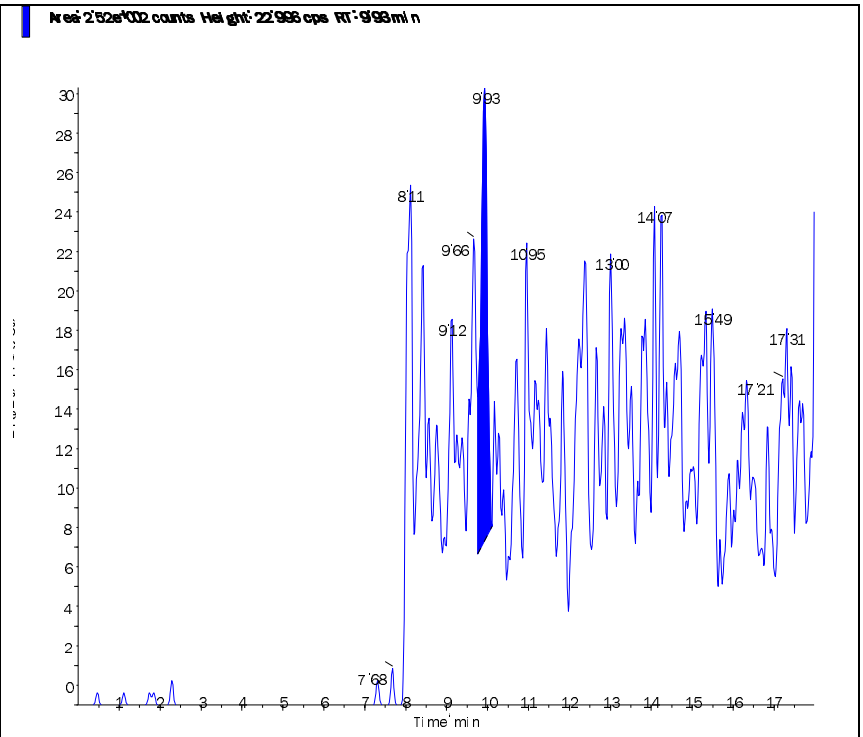

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Printed: 2/27/2015 9:40 AM

Data File	LM29056.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/25/2015 5:18:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513403-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM29056.wiff	**Injection Volume**	10.00
Acquisition Date	2/25/2015 5:18:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG513403-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.570e+05	9.15	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.600e+04	9.16	N/A	0.219
Perchlorate conf	4.670e+03	9.15	N/A	0.195

O18LP (Internal Standard)

RT (Exp. RT): 9.15(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

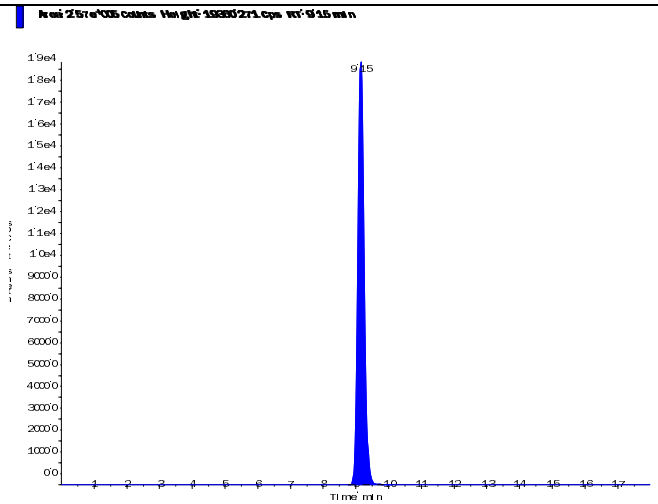

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 2/27/2015 9:40 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.16 (10.30) min
Calculated conc:	0.219 ng/ml
Area Ratio:	0.062
Sample Type:	(Unknown)

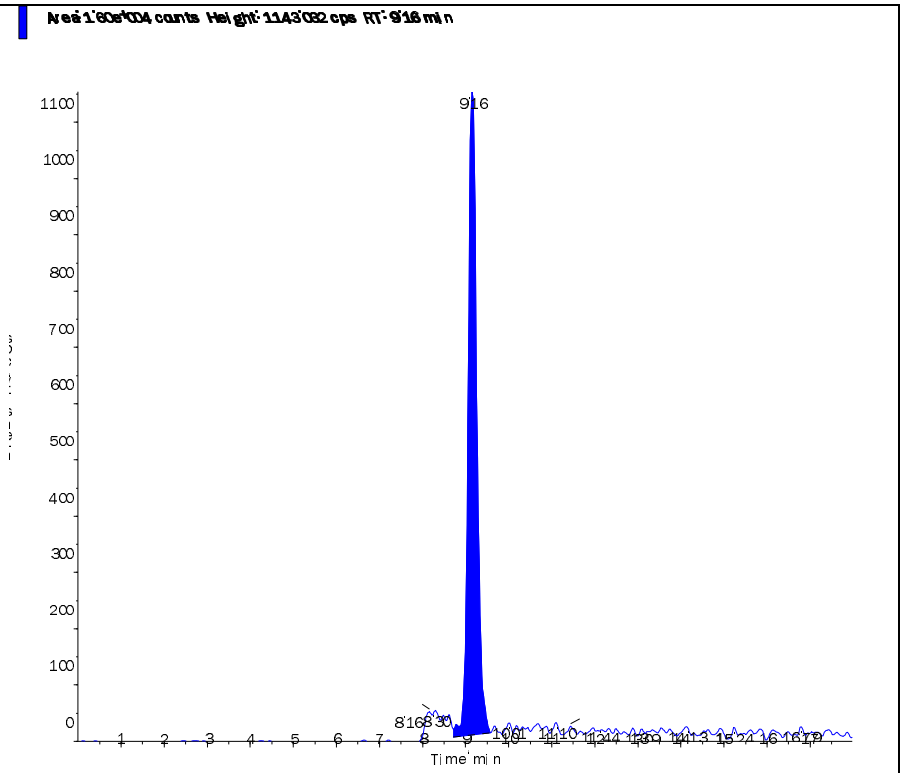

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.15 (10.30) min
Calculated conc:	0.195 ng/ml
Area Ratio:	0.018
Sample Type:	(Unknown)

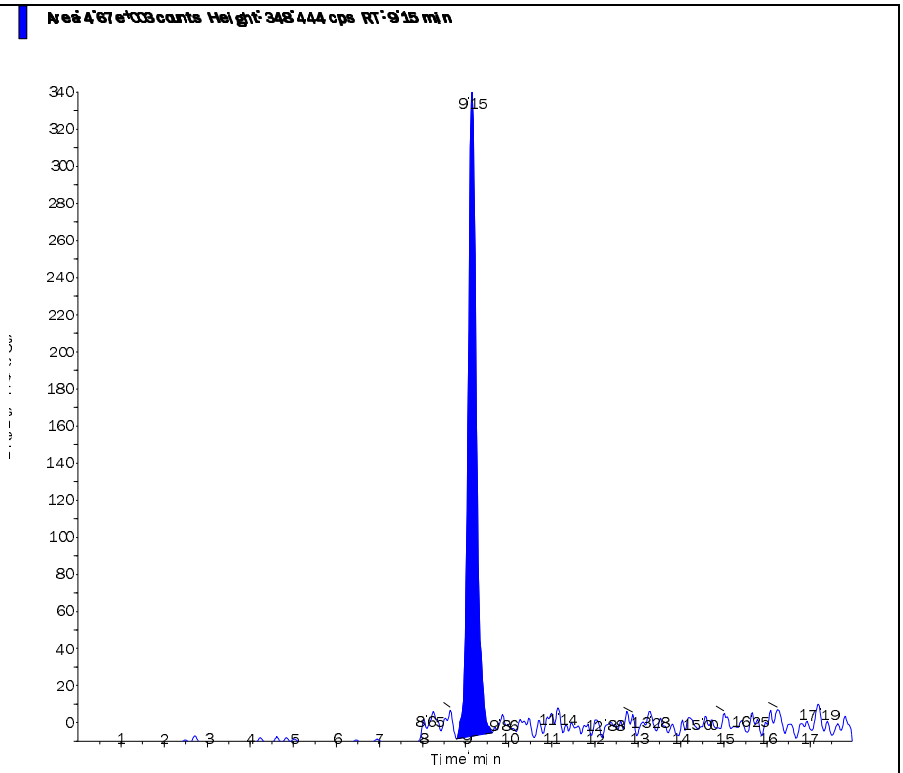

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2.2.1.5 Raw QC Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 2/27/2015 9:40 AM

Data File	LM29057.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/25/2015 5:37:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513403-02 BLANK	**Injection Vial**	5.00
Data File	LM29057.wiff	**Injection Volume**	10.00
Acquisition Date	2/25/2015 5:37:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG513403-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.730e+05	9.71	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.71(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

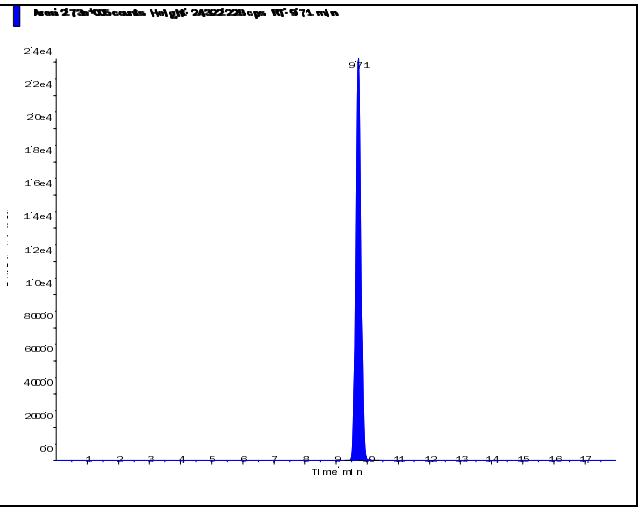

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (10.30) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

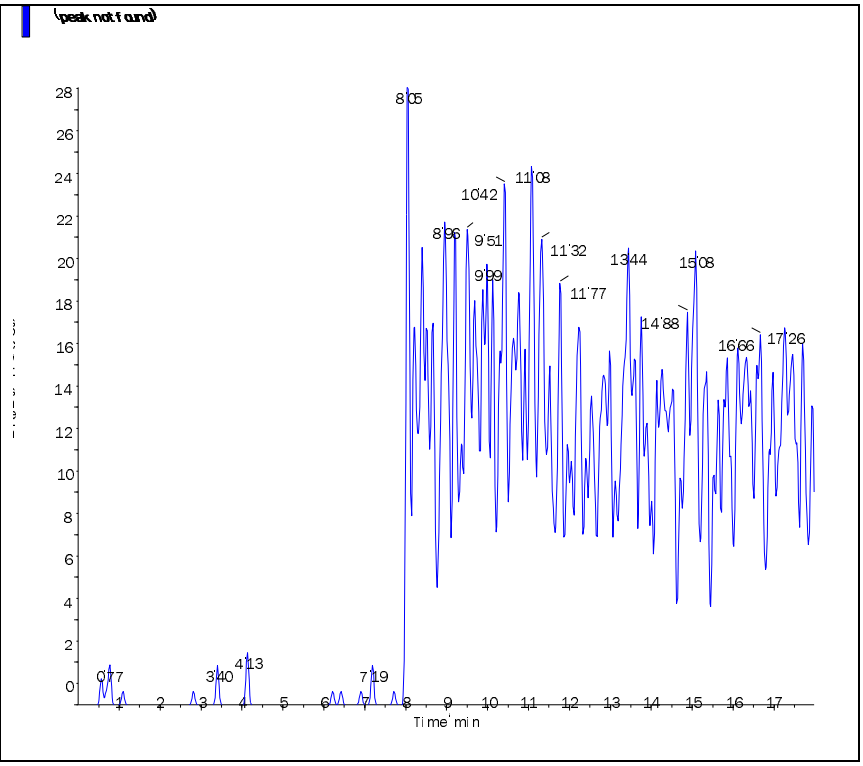

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (10.30) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

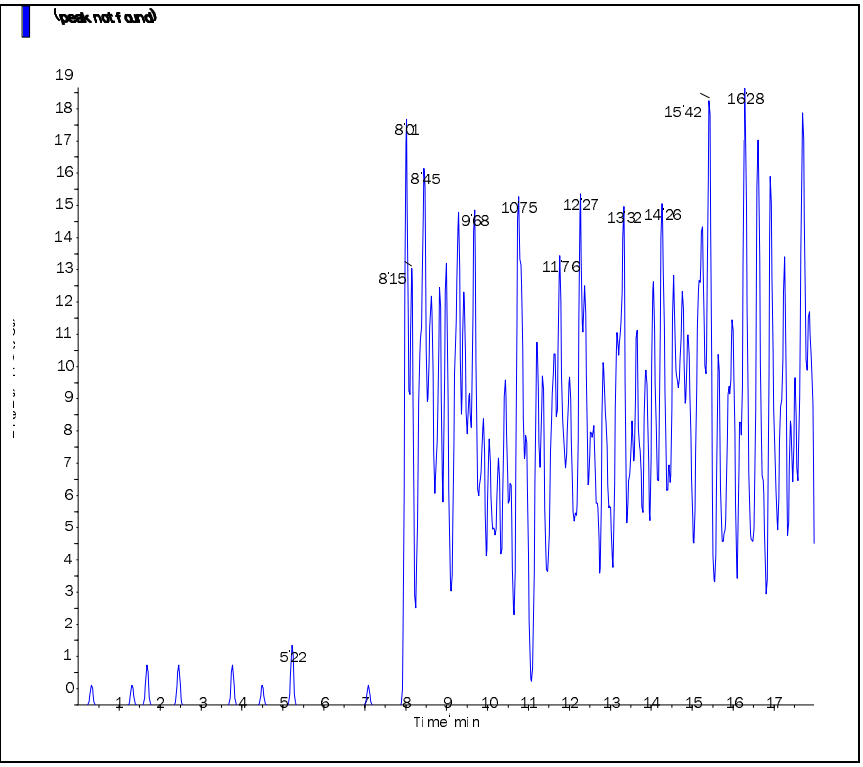

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 2/27/2015 9:40 AM

Data File	LM29058.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/25/2015 5:56:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513403-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM29058.wiff	**Injection Volume**	10.00
Acquisition Date	2/25/2015 5:56:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG513403-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.780e+05	9.71	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.620e+04	9.73	N/A	0.204
Perchlorate conf	5.040e+03	9.70	N/A	0.195

O18LP (Internal Standard)

RT (Exp. RT): 9.71(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

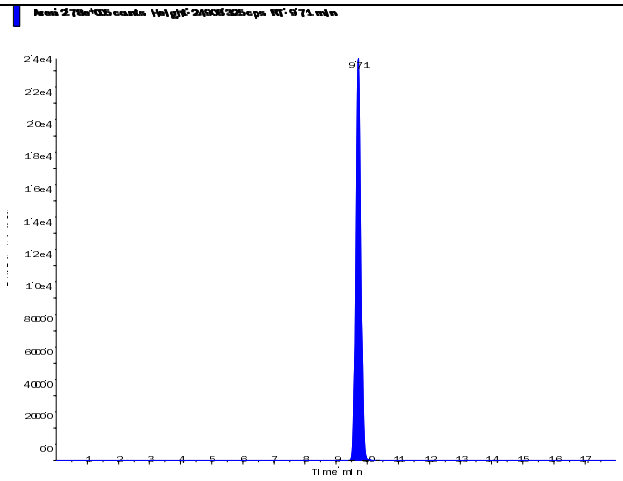

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.73 (10.30) min
Calculated conc:	0.204 ng/ml
Area Ratio:	0.058
Sample Type:	(Unknown)

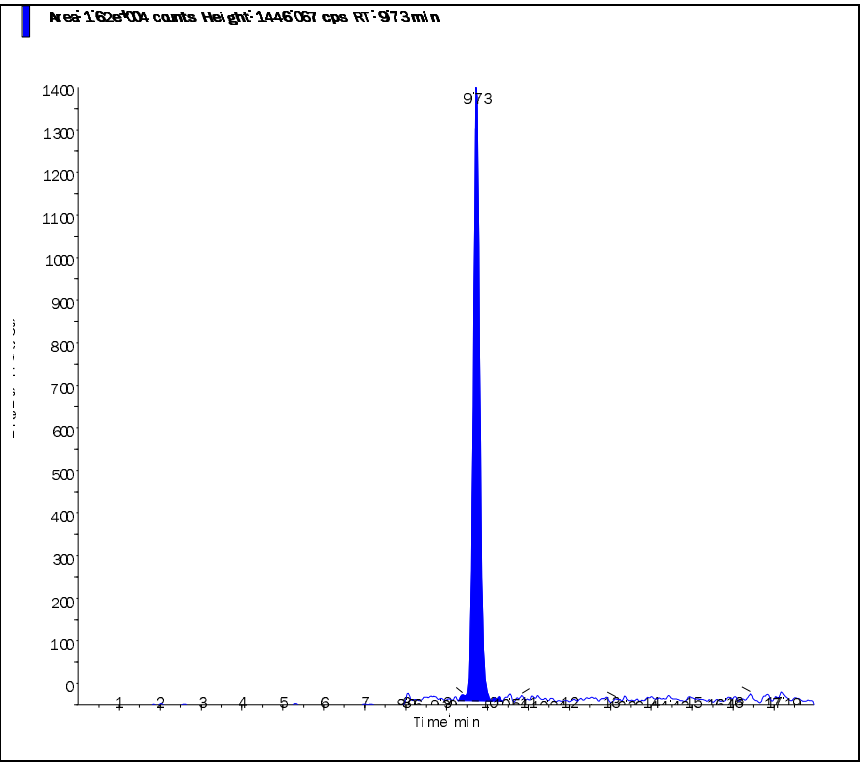

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.70 (10.30) min
Calculated conc:	0.195 ng/ml
Area Ratio:	0.018
Sample Type:	(Unknown)

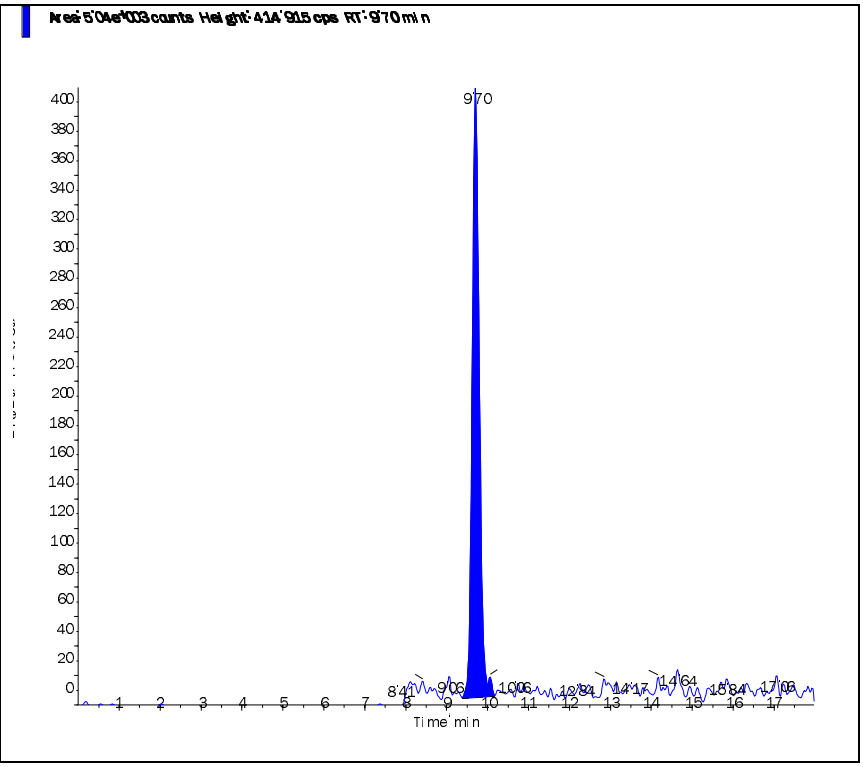

s.dataFile Page 2 of 2

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
March 2, 2015

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001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK
EPT - ETHAN P. TIDD
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
March 02, 2015

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value; the analyte concentration was less than the RL/LOQ.
J,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL/MDL).
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
TIC	Library Search Compound
TNTC	Too numerous to count
TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.

Microbac Laboratories Inc.
List of Valid Qualifiers
March 02, 2015

Qualkey: DOD

TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Kathy Albertson	Project Manager: ~~Dave Wacker~~ Mark Heaston	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): Scott Beesinger	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205			
Turn Around Time: STANDARD	pH:	Program:	
Project Name/Location: Longhorn			
Project Number: 60256135.0002GA			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
Site 50	LH3MW54-021815			2/18/15	1635		✓	W	4	✓	✓					
	47WW38-021815			2/18/15	1745		✓	W	4	✓	✓					
	TRip BLANK			2/18/15			✓	W	2	✓						

ERPIMS REQUIRED FIELDS

Microbac OVD
Received: 02/20/2015 10:18
By: BRENDA GREGORY
221000065895
Brenda Gregory

Comments: STANDARD TAT

(Signature) Scott Beesinger	Date 2/19/15	Time 0900	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time	Remarks:	

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15021036
Account: 2551
Project: 2551.096
Samples: 3
Due Date: 03-MAR-2015

Samplenum	Container ID	Products
L15021036-01	525357	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-FEB-2015 11:35	CLS		
2	ANALYZ	V1	ORG4	20-FEB-2015 14:33	DLW	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-FEB-2015 11:35	CLS		
2	ANALYZ	V1	ORG4	20-FEB-2015 14:33	DLW	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-FEB-2015 11:35	CLS		
2	ANALYZ	V1	ORG4	20-FEB-2015 14:33	DLW	CLS	

Samplenum	Container ID	Products
L15021036-01	525358	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-FEB-2015 11:35	CLS		
2	ANALYZ	W1	SEM	25-FEB-2015 10:01	JWR	BRG	

Samplenum	Container ID	Products
L15021036-02	525359	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-FEB-2015 11:35	CLS		
2	ANALYZ	V1	ORG4	20-FEB-2015 14:33	DLW	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-FEB-2015 11:35	CLS		
2	ANALYZ	V1	ORG4	20-FEB-2015 14:33	DLW	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-FEB-2015 11:35	CLS		
2	ANALYZ	V1	ORG4	20-FEB-2015 14:33	DLW	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15021036
Account: 2551
Project: 2551.096
Samples: 3
Due Date: 03-MAR-2015

Samplenum	Container ID	Products
L15021036-02	525360	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-FEB-2015 11:35	CLS		
2	ANALYZ	W1	SEM	25-FEB-2015 10:01	JWR	BRG	

Samplenum	Container ID	Products
L15021036-03	525361	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-FEB-2015 11:35	CLS		
2	ANALYZ	V1	ORG4	20-FEB-2015 14:33	DLW	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-FEB-2015 11:35	CLS		
2	ANALYZ	V1	ORG4	20-FEB-2015 14:33	DLW	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - May 22, 2014

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVL NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Thiodiglycol (TDG-LCMS)
Acetate (HPLC-UV)
Formate (HPLC-UV)
Acetaldehyde (HPLC-UV)
Propionaldehyde (HPLC-UV)
Fluoroborate (ISE)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVL MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam

Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL MSV0I/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVL RSKOI/GC-FID

Isobutane
n-Butane
Propane
Propylene
Propyne

OVL HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

SOLID AND HAZARDOUS CHEMICALS

OVL MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVL MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L15021053

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on March 11 2015

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

The following discrepancies were noted:

Discrepancy	Resolution
Sample ID: 50WW22-021715. Received (1 of 3)voa vial broken. BRG	Please proceed with the remaining vial SLM
All samples for 9056 were received out of hold. CLS	The shipping was delayed because of weather issues. Per the client please proceed with analysis out of hold. SLM

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00112411	I	1.0		J2317161209	X
0013144	I	2.0		J2317161227	X
0019280	I	3.0		J2317161183	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	No
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	No
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
50WW13-021715	L15021053-01	02/17/2015 08:10	02/20/2015 10:18
50WW13FF-021715	L15021053-02	02/17/2015 08:10	02/20/2015 10:18
50WW14-021715	L15021053-03	02/17/2015 09:20	02/20/2015 10:18
50WW14FF-021715	L15021053-04	02/17/2015 09:20	02/20/2015 10:18
50WW11-021715	L15021053-05	02/17/2015 10:45	02/20/2015 10:18
50WW11FF-021715	L15021053-06	02/17/2015 10:45	02/20/2015 10:18
50WW06-021715	L15021053-07	02/17/2015 11:55	02/20/2015 10:18
50WW06FF-021715	L15021053-08	02/17/2015 11:55	02/20/2015 10:18
50WW08-021715	L15021053-09	02/17/2015 14:05	02/20/2015 10:18
50WW08FF-021715	L15021053-10	02/17/2015 14:05	02/20/2015 10:18
50WW22-021715	L15021053-11	02/17/2015 15:15	02/20/2015 10:18
50WW22FF-021715	L15021053-12	02/17/2015 15:15	02/20/2015 10:18
TRIP BLANK	L15021053-13	02/17/2015 00:01	02/20/2015 10:18

Microbac Laboratories ● Ohio Valley Division
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Microbac REPORT L15021053
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	8260
Prep Batch Number(s):	512986,513149	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-03-11 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden	Franci Bolden	Analyst I	2015-03-11 14:32:36

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	8260
Prep Batch Number(s):	512986,513149	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-03-11 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	8260
Prep Batch Number(s):	512986,513149	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-03-11 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	8260
Prep Batch Number(s):	512986,513149	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-03-11 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	8260
Prep Batch Number(s):	512986,513149	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-03-11 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	8260
Prep Batch Number(s):	512986,513149	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-03-11 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) Dichlorofluoromethane exceeded the UCL in the CCV analyzed 02/20/2015 on HPMS8.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	513170,513247	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-02-27 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden	Franci Bolden	Analyst I	2015-02-27 18:03:06

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	513170,513247	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-02-27 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	513170,513247	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-02-27 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	513170,513247	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-02-27 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	513170,513247	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-02-27 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	513170,513247	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-02-27 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There were no exceptions.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG513403	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-03-02 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2015-03-02 14:45:26

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG513403	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-03-02 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG513403	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-03-02 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG513403	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-03-02 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG513403	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-03-02 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG513403	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-03-02 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG513127	**Reviewer Name:**	Maren Beery
LRC Date:	2015-02-26 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Maren Beery	Maren Beery	Metals Supervisor	2015-02-26 21:21:53

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG513127	**Reviewer Name:**	Maren Beery
LRC Date:	2015-02-26 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?			X		
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG513127	**Reviewer Name:**	Maren Beery
LRC Date:	2015-02-26 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG513127	**Reviewer Name:**	Maren Beery
LRC Date:	2015-02-26 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG513127	**Reviewer Name:**	Maren Beery
LRC Date:	2015-02-26 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG513127	**Reviewer Name:**	Maren Beery
LRC Date:	2015-02-26 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG513220	**Reviewer Name:**	Maren Beery
LRC Date:	2015-02-26 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Maren Beery	Maren Beery	Metals Supervisor	2015-02-26 21:18:37

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG513220	**Reviewer Name:**	Maren Beery
LRC Date:	2015-02-26 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				ER#1
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG513220	**Reviewer Name:**	Maren Beery
LRC Date:	2015-02-26 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG513220	**Reviewer Name:**	Maren Beery
LRC Date:	2015-02-26 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG513220	**Reviewer Name:**	Maren Beery
LRC Date:	2015-02-26 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG513220	**Reviewer Name:**	Maren Beery
LRC Date:	2015-02-26 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - Client sample 04 required dilution analysis in order to obtain a result for manganese within the calibration range.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG513061	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-02-21 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Adriane Steed	Adriane Steed		2015-02-23 21:32:23

RG-366/TRRP-13 May 2010 **ID:** 6124

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG513061	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-02-21 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?	X				
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG513061	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-02-21 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					1
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG513061	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-02-21 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG513061	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-02-21 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG513061	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-02-21 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. Fractions -01,03,05,09, and 11 were analyzed at dilutions only due to their high analyte concentrations (Cl and/or SO4) which were over 200 ppm. Any sample that has a single anion load greater than 200 ppm (or a total anion load greater than 400 ppm) will be diluted in order to prevent damage to the IC from repeated overloading of the analytical column and oversaturation of the suppressor membranes. Fraction -07 was analyzed at a dilution due to high screen results for a target analyte that was over the uppermost point of the calibration range.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG513096	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-03-02 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-03-02 16:08:10

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG513096	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-03-02 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG513096	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-03-02 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG513096	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-03-02 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG513096	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-03-02 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG513096	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-03-02 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG513212, WG513272, WG513563	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-03-02 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-03-02 16:04:45

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG513212, WG513272, WG513563	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-03-02 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG513212, WG513272, WG513563	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-03-02 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG513212, WG513272, WG513563	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-03-02 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG513212, WG513272, WG513563	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-03-02 00:00:00		

Method detection limit (MDL) studies					
Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG513212, WG513272, WG513563	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-03-02 00:00:00		

accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	S
Prep Batch Number(s):	WG513077	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-03-02 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-03-02 16:05:33

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	S
Prep Batch Number(s):	WG513077	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-03-02 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	S
Prep Batch Number(s):	WG513077	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-03-02 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	S
Prep Batch Number(s):	WG513077	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-03-02 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	S
Prep Batch Number(s):	WG513077	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-03-02 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	S
Prep Batch Number(s):	WG513077	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-03-02 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG513146	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-03-02 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-03-02 16:04:08

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG513146	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-03-02 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG513146	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-03-02 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG513146	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-03-02 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG513146	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-03-02 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15021053
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG513146	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-03-02 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW13-021715	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG513149	**Analyst:**	TMB	**Run Date:**	02/23/2015 19:49
Collect Date:	02/17/2015 08:10	**Dilution:**	5	**File ID:**	8M403178
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	25.0	U	50.0	25.0	12.5
Benzene	71-43-2	1.25	U	5.00	1.25	0.625
Bromobenzene	108-86-1	1.25	U	5.00	1.25	0.625
Bromochloromethane	74-97-5	2.00	U	5.00	2.00	1.00
Bromodichloromethane	75-27-4	2.50	U	5.00	2.50	1.25
Bromoform	75-25-2	5.00	U	10.0	5.00	2.50
Bromomethane	74-83-9	5.00	U	10.0	5.00	2.50
2-Butanone	78-93-3	25.0	U	50.0	25.0	12.5
n-Butylbenzene	104-51-8	2.50	U	5.00	2.50	1.25
sec-Butylbenzene	135-98-8	2.50	U	5.00	2.50	1.25
tert-Butylbenzene	98-06-6	2.50	U	5.00	2.50	1.25
Carbon disulfide	75-15-0	5.00	U	10.0	5.00	2.50
Carbon tetrachloride	56-23-5	2.50	U	5.00	2.50	1.25
Chlorobenzene	108-90-7	1.25	U	5.00	1.25	0.625
Chlorodibromomethane	124-48-1	2.50	U	5.00	2.50	1.25
Chloroethane	75-00-3	5.00	U	10.0	5.00	2.50
Chloroform	67-66-3	1.25	U	5.00	1.25	0.625
Chloromethane	74-87-3	5.00	U	10.0	5.00	2.50
2-Chlorotoluene	95-49-8	1.25	U	5.00	1.25	0.625
4-Chlorotoluene	106-43-4	2.50	U	5.00	2.50	1.25
1,2-Dibromo-3-chloropropane	96-12-8	10.0	U	25.0	10.0	5.00
1,2-Dibromoethane	106-93-4	2.50	U	5.00	2.50	1.25
Dibromomethane	74-95-3	2.50	U	5.00	2.50	1.25
1,2-Dichlorobenzene	95-50-1	1.25	U	5.00	1.25	0.625
1,3-Dichlorobenzene	541-73-1	2.50	U	5.00	2.50	1.25
1,4-Dichlorobenzene	106-46-7	1.25	U	5.00	1.25	0.625
Dichlorodifluoromethane	75-71-8	2.50	U	5.00	2.50	1.25
1,1-Dichloroethane	75-34-3	0.880	J	5.00	1.25	0.625
1,2-Dichloroethane	107-06-2	4.99	J	5.00	2.50	1.25
1,1-Dichloroethene	75-35-4	5.00	U	10.0	5.00	2.50
cis-1,2-Dichloroethene	156-59-2	32.1		5.00	2.50	1.25
trans-1,2-Dichloroethene	156-60-5	2.50	U	5.00	2.50	1.25

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	2.00	U	5.00	2.00	1.00
1,3-Dichloropropane	142-28-9	2.00	U	5.00	2.00	1.00
2,2-Dichloropropane	594-20-7	2.50	U	5.00	2.50	1.25
cis-1,3-Dichloropropene	10061-01-5	2.50	U	5.00	2.50	1.25
trans-1,3-Dichloropropene	10061-02-6	5.00	U	10.0	5.00	2.50
1,1-Dichloropropene	563-58-6	2.50	U	5.00	2.50	1.25
Ethylbenzene	100-41-4	2.50	U	5.00	2.50	1.25
2-Hexanone	591-78-6	25.0	U	50.0	25.0	12.5
Hexachlorobutadiene	87-68-3	2.50	U	5.00	2.50	1.25
Isopropylbenzene	98-82-8	2.50	U	5.00	2.50	1.25
p-Isopropyltoluene	99-87-6	2.50	U	5.00	2.50	1.25
4-Methyl-2-pentanone	108-10-1	25.0	U	50.0	25.0	12.5
Methylene chloride	75-09-2	2.50	U	5.00	2.50	1.25
Naphthalene	91-20-3	2.00	U	5.00	2.00	1.00
n-Propylbenzene	103-65-1	1.25	U	5.00	1.25	0.625
Styrene	100-42-5	1.25	U	5.00	1.25	0.625
1,1,1,2-Tetrachloroethane	630-20-6	2.50	U	5.00	2.50	1.25
1,1,2,2-Tetrachloroethane	79-34-5	2.00	U	5.00	2.00	1.00
Tetrachloroethene	127-18-4	1.89	J	5.00	2.50	1.25
Toluene	108-88-3	2.50	U	5.00	2.50	1.25
1,2,3-Trichlorobenzene	87-61-6	1.50	U	5.00	1.50	0.750
1,2,4-Trichlorobenzene	120-82-1	2.00	U	5.00	2.00	1.00
1,1,1-Trichloroethane	71-55-6	2.50	U	5.00	2.50	1.25
1,1,2-Trichloroethane	79-00-5	2.50	U	5.00	2.50	1.25
Trichloroethene	79-01-6	1080		5.00	2.50	1.25
Trichlorofluoromethane	75-69-4	2.50	U	5.00	2.50	1.25
1,2,3-Trichloropropane	96-18-4	5.00	U	10.0	5.00	2.50
1,2,4-Trimethylbenzene	95-63-6	2.50	U	5.00	2.50	1.25
1,3,5-Trimethylbenzene	108-67-8	2.50	U	5.00	2.50	1.25
Vinyl chloride	75-01-4	2.50	U	5.00	2.50	1.25
o-Xylene	95-47-6	2.50	U	5.00	2.50	1.25
m-,p-Xylene	179601-23-1	5.00	U	10.0	5.00	2.50

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.0	85	115	
1,2-Dichloroethane-d4	88.5	70	120	
Toluene-d8	97.8	85	120	
4-Bromofluorobenzene	97.4	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-01	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW13-021715	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	02/19/2015 16:08
Workgroup #:	WG513170	**Analyst:**	JDS	**Run Date:**	02/23/2015 15:38
Collect Date:	02/17/2015 08:10	**Dilution:**	1	**File ID:**	16G46759
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	18.4		5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-01	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW13-021715	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	02/19/2015 16:08
Workgroup #:	WG513170	**Analyst:**	JDS	**Run Date:**	02/23/2015 18:53
Collect Date:	02/17/2015 08:10	**Dilution:**	5	**File ID:**	16G46774
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	444000		50000	25000	12500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW13-021715	**Prep Method:**	6850	**Prep Date:**	02/25/2015 12:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG513403	**Analyst:**	JWR	**Run Date:**	02/26/2015 15:24
Collect Date:	02/17/2015 08:10	**Dilution:**	250	**File ID:**	1LM.LM29096
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	648		100	50.0	25.0

Certificate of Analysis

Sample #:	L15021053-01	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	50WW13-021715	**Prep Method:**	9056	**Prep Date:**	02/21/2015 17:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/01/2014 14:10
Workgroup #:	WG513061	**Analyst:**	AED	**Run Date:**	02/22/2015 01:53
Collect Date:	02/17/2015 08:10	**Dilution:**	10	**File ID:**	I3_022115-29
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	2.00	U,H1	4.00	2.00	1.00
Nitrite	14797-65-0	2.00	U,H1	4.00	2.00	1.00
Sulfate	14808-79-8	302	H1	20.0	10.0	5.00

H1	Sample analysis performed past holding time.
J	Estimated value ; the analyte concentration was greater than the highest standard
U,H1	Not detected; Sample analysis performed past holding time.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-01	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	50WW13-021715	**Prep Method:**	9056	**Prep Date:**	02/21/2015 17:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/01/2014 14:10
Workgroup #:	WG513061	**Analyst:**	AED	**Run Date:**	02/22/2015 02:13
Collect Date:	02/17/2015 08:10	**Dilution:**	20	**File ID:**	I3_022115-30
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	372	H1	8.00	4.00	2.00

H1	Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW13-021715	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/20/2015 15:07
Workgroup #:	WG513096	**Analyst:**	TB	**Run Date:**	02/20/2015 15:13
Collect Date:	02/17/2015 08:10	**Dilution:**	2	**File ID:**	S2150220003.018
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	309		80.0	40.0	20.0

Certificate of Analysis

Sample #:	L15021053-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW13-021715	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	02/24/2015 09:14
Workgroup #:	WG513212	**Analyst:**	DCM	**Run Date:**	02/24/2015 09:30
Collect Date:	02/17/2015 08:10	**Dilution:**	1	**File ID:**	S2150224002.033
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-01	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW13-021715	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG513077	**Analyst:**	EPT	**Run Date:**	02/23/2015 11:15
Collect Date:	02/17/2015 08:10	**Dilution:**	1	**File ID:**	ET.1502231115-09
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-01	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW13-021715	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG513146	**Analyst:**	DCM	**Run Date:**	02/24/2015 09:17
Collect Date:	02/17/2015 08:10	**Dilution:**	3	**File ID:**	TC02232015.057
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	11.0		6.00	3.00	1.50

Certificate of Analysis

Sample #:	L15021053-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO2
Client ID:	50WW13FF-021715	**Prep Method:**	3015	**Prep Date:**	02/23/2015 11:11
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	02/25/2015 08:00
Workgroup #:	WG513301	**Analyst:**	KHR	**Run Date:**	02/25/2015 09:43
Collect Date:	02/17/2015 08:10	**Dilution:**	1	**File ID:**	T2.022515.094333
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.310		0.200	0.100	0.0500

Certificate of Analysis

Sample #:	L15021053-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW13FF-021715	**Prep Method:**	3015	**Prep Date:**	02/24/2015 08:43
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	02/24/2015 12:23
Workgroup #:	WG513279	**Analyst:**	BKT	**Run Date:**	02/24/2015 15:17
Collect Date:	02/17/2015 08:10	**Dilution:**	1	**File ID:**	NI.022415.151715
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.190		0.00400	0.00200	0.00100

Certificate of Analysis

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15021053-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW14-021715	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512986	**Analyst:**	TMB	**Run Date:**	02/20/2015 21:04
Collect Date:	02/17/2015 09:20	**Dilution:**	1	**File ID:**	8M403145
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	13.5		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	9.14		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.2	85	115	
1,2-Dichloroethane-d4	85.8	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	103	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-03	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW14-021715	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	02/19/2015 16:08
Workgroup #:	WG513170	**Analyst:**	JDS	**Run Date:**	02/23/2015 15:51
Collect Date:	02/17/2015 09:20	**Dilution:**	1	**File ID:**	16G46760
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	5.53		5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-03	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW14-021715	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	02/19/2015 16:08
Workgroup #:	WG513247	**Analyst:**	JDS	**Run Date:**	02/24/2015 14:44
Collect Date:	02/17/2015 09:20	**Dilution:**	5	**File ID:**	16G46797
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	241000	H1	50000	25000	12500

H1	Sample analysis performed past holding time.
U,H1	Not detected; Sample analysis performed past holding time.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW14-021715	**Prep Method:**	6850	**Prep Date:**	02/25/2015 12:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG513403	**Analyst:**	JWR	**Run Date:**	02/25/2015 23:37
Collect Date:	02/17/2015 09:20	**Dilution:**	1	**File ID:**	1LM.LM29076
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.381	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-03	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	50WW14-021715	**Prep Method:**	9056	**Prep Date:**	02/21/2015 17:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/01/2014 14:10
Workgroup #:	WG513061	**Analyst:**	AED	**Run Date:**	02/22/2015 02:34
Collect Date:	02/17/2015 09:20	**Dilution:**	5	**File ID:**	I3_022115-31
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	1.00	U,H1	2.00	1.00	0.500
Nitrite	14797-65-0	1.00	U,H1	2.00	1.00	0.500
Sulfate	14808-79-8	352	H1	10.0	5.00	2.50

H1	Sample analysis performed past holding time.
J	Estimated value ; the analyte concentration was greater than the highest standard
U,H1	Not detected; Sample analysis performed past holding time.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-03	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	50WW14-021715	**Prep Method:**	9056	**Prep Date:**	02/21/2015 17:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/01/2014 14:10
Workgroup #:	WG513061	**Analyst:**	AED	**Run Date:**	02/22/2015 02:54
Collect Date:	02/17/2015 09:20	**Dilution:**	20	**File ID:**	I3_022115-32
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	400	H1	8.00	4.00	2.00

H1	Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW14-021715	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/20/2015 15:07
Workgroup #:	WG513096	**Analyst:**	TB	**Run Date:**	02/20/2015 15:14
Collect Date:	02/17/2015 09:20	**Dilution:**	1	**File ID:**	S2150220003.019
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	262		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L15021053-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW14-021715	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	02/24/2015 11:12
Workgroup #:	WG513272	**Analyst:**	DCM	**Run Date:**	02/24/2015 11:21
Collect Date:	02/17/2015 09:20	**Dilution:**	1	**File ID:**	S2150224003.021
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-03	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW14-021715	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG513077	**Analyst:**	EPT	**Run Date:**	02/23/2015 11:15
Collect Date:	02/17/2015 09:20	**Dilution:**	1	**File ID:**	ET.1502231115-10
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-03	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW14-021715	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG513146	**Analyst:**	DCM	**Run Date:**	02/24/2015 04:03
Collect Date:	02/17/2015 09:20	**Dilution:**	1	**File ID:**	TC02232015.043
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	2.69		2.00	1.00	0.500

Certificate of Analysis

Sample #:	L15021053-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO2
Client ID:	50WW14FF-021715	**Prep Method:**	3015	**Prep Date:**	02/23/2015 11:11
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	02/25/2015 08:00
Workgroup #:	WG513301	**Analyst:**	KHR	**Run Date:**	02/25/2015 09:53
Collect Date:	02/17/2015 09:20	**Dilution:**	1	**File ID:**	T2.022515.095350
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	8.11		0.200	0.100	0.0500

Certificate of Analysis

Sample #:	L15021053-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW14FF-021715	**Prep Method:**	3015	**Prep Date:**	02/24/2015 08:43
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	02/24/2015 12:23
Workgroup #:	WG513279	**Analyst:**	BKT	**Run Date:**	02/24/2015 15:26
Collect Date:	02/17/2015 09:20	**Dilution:**	50	**File ID:**	NI.022415.152649
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.619		0.200	0.100	0.0500

Certificate of Analysis

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15021053-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW11-021715	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG513149	**Analyst:**	TMB	**Run Date:**	02/23/2015 20:17
Collect Date:	02/17/2015 10:45	**Dilution:**	2	**File ID:**	8M403179
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	10.0	U	20.0	10.0	5.00
Benzene	71-43-2	0.500	U	2.00	0.500	0.250
Bromobenzene	108-86-1	0.500	U	2.00	0.500	0.250
Bromochloromethane	74-97-5	0.800	U	2.00	0.800	0.400
Bromodichloromethane	75-27-4	1.00	U	2.00	1.00	0.500
Bromoform	75-25-2	2.00	U	4.00	2.00	1.00
Bromomethane	74-83-9	2.00	U	4.00	2.00	1.00
2-Butanone	78-93-3	10.0	U	20.0	10.0	5.00
n-Butylbenzene	104-51-8	1.00	U	2.00	1.00	0.500
sec-Butylbenzene	135-98-8	1.00	U	2.00	1.00	0.500
tert-Butylbenzene	98-06-6	1.00	U	2.00	1.00	0.500
Carbon disulfide	75-15-0	2.00	U	4.00	2.00	1.00
Carbon tetrachloride	56-23-5	1.00	U	2.00	1.00	0.500
Chlorobenzene	108-90-7	0.500	U	2.00	0.500	0.250
Chlorodibromomethane	124-48-1	1.00	U	2.00	1.00	0.500
Chloroethane	75-00-3	2.00	U	4.00	2.00	1.00
Chloroform	67-66-3	0.500	U	2.00	0.500	0.250
Chloromethane	74-87-3	2.00	U	4.00	2.00	1.00
2-Chlorotoluene	95-49-8	0.500	U	2.00	0.500	0.250
4-Chlorotoluene	106-43-4	1.00	U	2.00	1.00	0.500
1,2-Dibromo-3-chloropropane	96-12-8	4.00	U	10.0	4.00	2.00
1,2-Dibromoethane	106-93-4	1.00	U	2.00	1.00	0.500
Dibromomethane	74-95-3	1.00	U	2.00	1.00	0.500
1,2-Dichlorobenzene	95-50-1	0.500	U	2.00	0.500	0.250
1,3-Dichlorobenzene	541-73-1	1.00	U	2.00	1.00	0.500
1,4-Dichlorobenzene	106-46-7	0.500	U	2.00	0.500	0.250
Dichlorodifluoromethane	75-71-8	1.00	U	2.00	1.00	0.500
1,1-Dichloroethane	75-34-3	0.638	J	2.00	0.500	0.250
1,2-Dichloroethane	107-06-2	2.42		2.00	1.00	0.500
1,1-Dichloroethene	75-35-4	2.47	J	4.00	2.00	1.00
cis-1,2-Dichloroethene	156-59-2	6.86		2.00	1.00	0.500
trans-1,2-Dichloroethene	156-60-5	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.800	U	2.00	0.800	0.400
1,3-Dichloropropane	142-28-9	0.800	U	2.00	0.800	0.400
2,2-Dichloropropane	594-20-7	1.00	U	2.00	1.00	0.500
cis-1,3-Dichloropropene	10061-01-5	1.00	U	2.00	1.00	0.500
trans-1,3-Dichloropropene	10061-02-6	2.00	U	4.00	2.00	1.00
1,1-Dichloropropene	563-58-6	1.00	U	2.00	1.00	0.500
Ethylbenzene	100-41-4	1.00	U	2.00	1.00	0.500
2-Hexanone	591-78-6	10.0	U	20.0	10.0	5.00
Hexachlorobutadiene	87-68-3	1.00	U	2.00	1.00	0.500
Isopropylbenzene	98-82-8	1.00	U	2.00	1.00	0.500
p-Isopropyltoluene	99-87-6	1.00	U	2.00	1.00	0.500
4-Methyl-2-pentanone	108-10-1	10.0	U	20.0	10.0	5.00
Methylene chloride	75-09-2	1.00	U	2.00	1.00	0.500
Naphthalene	91-20-3	0.800	U	2.00	0.800	0.400
n-Propylbenzene	103-65-1	0.500	U	2.00	0.500	0.250
Styrene	100-42-5	0.500	U	2.00	0.500	0.250
1,1,1,2-Tetrachloroethane	630-20-6	1.00	U	2.00	1.00	0.500
1,1,2,2-Tetrachloroethane	79-34-5	0.800	U	2.00	0.800	0.400
Tetrachloroethene	127-18-4	0.951	J	2.00	1.00	0.500
Toluene	108-88-3	1.00	U	2.00	1.00	0.500
1,2,3-Trichlorobenzene	87-61-6	0.600	U	2.00	0.600	0.300
1,2,4-Trichlorobenzene	120-82-1	0.800	U	2.00	0.800	0.400
1,1,1-Trichloroethane	71-55-6	1.00	U	2.00	1.00	0.500
1,1,2-Trichloroethane	79-00-5	1.00	U	2.00	1.00	0.500
Trichloroethene	79-01-6	512		2.00	1.00	0.500
Trichlorofluoromethane	75-69-4	1.00	U	2.00	1.00	0.500
1,2,3-Trichloropropane	96-18-4	2.00	U	4.00	2.00	1.00
1,2,4-Trimethylbenzene	95-63-6	1.00	U	2.00	1.00	0.500
1,3,5-Trimethylbenzene	108-67-8	1.00	U	2.00	1.00	0.500
Vinyl chloride	75-01-4	1.00	U	2.00	1.00	0.500
o-Xylene	95-47-6	1.00	U	2.00	1.00	0.500
m-,p-Xylene	179601-23-1	2.00	U	4.00	2.00	1.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.8	85	115	
1,2-Dichloroethane-d4	84.3	70	120	
Toluene-d8	106	85	120	
4-Bromofluorobenzene	103	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-05	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW11-021715	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	02/19/2015 16:08
Workgroup #:	WG513170	**Analyst:**	JDS	**Run Date:**	02/23/2015 16:03
Collect Date:	02/17/2015 10:45	**Dilution:**	1	**File ID:**	16G46761
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	10.9		5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-05	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW11-021715	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	02/19/2015 16:08
Workgroup #:	WG513170	**Analyst:**	JDS	**Run Date:**	02/23/2015 19:06
Collect Date:	02/17/2015 10:45	**Dilution:**	5	**File ID:**	16G46775
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	398000		50000	25000	12500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW11-021715	**Prep Method:**	6850	**Prep Date:**	02/25/2015 12:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG513403	**Analyst:**	JWR	**Run Date:**	02/26/2015 15:43
Collect Date:	02/17/2015 10:45	**Dilution:**	1000	**File ID:**	1LM.LM29097
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2690		400	200	100

Certificate of Analysis

Sample #:	L15021053-05	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	50WW11-021715	**Prep Method:**	9056	**Prep Date:**	02/21/2015 17:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/01/2014 14:10
Workgroup #:	WG513061	**Analyst:**	AED	**Run Date:**	02/22/2015 03:14
Collect Date:	02/17/2015 10:45	**Dilution:**	5	**File ID:**	I3_022115-33
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	1.00	U,H1	2.00	1.00	0.500
Nitrite	14797-65-0	1.00	U,H1	2.00	1.00	0.500
Sulfate	14808-79-8	304	H1	10.0	5.00	2.50

H1	Sample analysis performed past holding time.
J	Estimated value ; the analyte concentration was greater than the highest standard
U,H1	Not detected; Sample analysis performed past holding time.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-05	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	50WW11-021715	**Prep Method:**	9056	**Prep Date:**	02/21/2015 17:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/01/2014 14:10
Workgroup #:	WG513061	**Analyst:**	AED	**Run Date:**	02/22/2015 03:35
Collect Date:	02/17/2015 10:45	**Dilution:**	20	**File ID:**	I3_022115-34
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	250	H1	8.00	4.00	2.00

H1	Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-05	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW11-021715	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/20/2015 15:07
Workgroup #:	WG513096	**Analyst:**	TB	**Run Date:**	02/20/2015 15:15
Collect Date:	02/17/2015 10:45	**Dilution:**	2	**File ID:**	S2150220003.020
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	307		80.0	40.0	20.0

Certificate of Analysis

Sample #:	L15021053-05	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW11-021715	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	02/24/2015 09:14
Workgroup #:	WG513212	**Analyst:**	DCM	**Run Date:**	02/24/2015 09:31
Collect Date:	02/17/2015 10:45	**Dilution:**	1	**File ID:**	S2150224002.035
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-05	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW11-021715	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG513077	**Analyst:**	EPT	**Run Date:**	02/23/2015 11:15
Collect Date:	02/17/2015 10:45	**Dilution:**	1	**File ID:**	ET.1502231115-11
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-05	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW11-021715	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG513146	**Analyst:**	DCM	**Run Date:**	02/24/2015 04:17
Collect Date:	02/17/2015 10:45	**Dilution:**	1	**File ID:**	TC02232015.044
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	3.44		2.00	1.00	0.500

Certificate of Analysis

Sample #:	L15021053-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO2
Client ID:	50WW11FF-021715	**Prep Method:**	3015	**Prep Date:**	02/23/2015 11:11
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	02/25/2015 08:00
Workgroup #:	WG513301	**Analyst:**	KHR	**Run Date:**	02/25/2015 09:57
Collect Date:	02/17/2015 10:45	**Dilution:**	1	**File ID:**	T2.022515.095721
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.0718	J	0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW11FF-021715	**Prep Method:**	3015	**Prep Date:**	02/24/2015 08:43
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	02/24/2015 12:23
Workgroup #:	WG513279	**Analyst:**	BKT	**Run Date:**	02/24/2015 15:30
Collect Date:	02/17/2015 10:45	**Dilution:**	1	**File ID:**	NI.022415.153000
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.123		0.00400	0.00200	0.00100

Certificate of Analysis

Sample #:	L15021053-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW06-021715	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512986	**Analyst:**	TMB	**Run Date:**	02/20/2015 21:33
Collect Date:	02/17/2015 11:55	**Dilution:**	1	**File ID:**	8M403146
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	3.61	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.257	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.572	J	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	53.9		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.1	85	115	
1,2-Dichloroethane-d4	90.7	70	120	
Toluene-d8	98.9	85	120	
4-Bromofluorobenzene	98.8	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-07	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW06-021715	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	02/19/2015 16:08
Workgroup #:	WG513170	**Analyst:**	JDS	**Run Date:**	02/23/2015 20:01
Collect Date:	02/17/2015 11:55	**Dilution:**	1	**File ID:**	16G46779
Sample Tag:	02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	170000		10000	5000	2500
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW06-021715	**Prep Method:**	6850	**Prep Date:**	02/25/2015 12:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG513403	**Analyst:**	JWR	**Run Date:**	02/26/2015 00:15
Collect Date:	02/17/2015 11:55	**Dilution:**	1000	**File ID:**	1LM.LM29078
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2490		400	200	100

Certificate of Analysis

Sample #:	L15021053-07	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	50WW06-021715	**Prep Method:**	9056	**Prep Date:**	02/21/2015 17:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/01/2014 14:10
Workgroup #:	WG513061	**Analyst:**	AED	**Run Date:**	02/22/2015 03:55
Collect Date:	02/17/2015 11:55	**Dilution:**	5	**File ID:**	I3_022115-35
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	74.7	H1	2.00	1.00	0.500
Nitrate	14797-55-8	1.00	U,H1	2.00	1.00	0.500
Nitrite	14797-65-0	1.00	U,H1	2.00	1.00	0.500
Sulfate	14808-79-8	36.2	H1	10.0	5.00	2.50

H1	Sample analysis performed past holding time.
U,H1	Not detected; Sample analysis performed past holding time.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-07	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW06-021715	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/20/2015 15:07
Workgroup #:	WG513096	**Analyst:**	TB	**Run Date:**	02/20/2015 15:16
Collect Date:	02/17/2015 11:55	**Dilution:**	2	**File ID:**	S2150220003.023
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	269		80.0	40.0	20.0

Certificate of Analysis

Sample #:	L15021053-07	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW06-021715	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	02/26/2015 11:15
Workgroup #:	WG513563	**Analyst:**	DCM	**Run Date:**	02/26/2015 11:23
Collect Date:	02/17/2015 11:55	**Dilution:**	1	**File ID:**	SC150226002.015
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-07	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW06-021715	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG513077	**Analyst:**	EPT	**Run Date:**	02/23/2015 11:15
Collect Date:	02/17/2015 11:55	**Dilution:**	1	**File ID:**	ET.1502231115-12
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-07	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW06-021715	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG513146	**Analyst:**	DCM	**Run Date:**	02/24/2015 04:30
Collect Date:	02/17/2015 11:55	**Dilution:**	1	**File ID:**	TC02232015.045
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	2.93		2.00	1.00	0.500

Certificate of Analysis

Sample #:	L15021053-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO2
Client ID:	50WW06FF-021715	**Prep Method:**	3015	**Prep Date:**	02/23/2015 11:11
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	02/25/2015 08:00
Workgroup #:	WG513301	**Analyst:**	KHR	**Run Date:**	02/25/2015 10:00
Collect Date:	02/17/2015 11:55	**Dilution:**	1	**File ID:**	T2.022515.100054
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.100	U	0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW06FF-021715	**Prep Method:**	3015	**Prep Date:**	02/24/2015 08:43
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	02/24/2015 12:23
Workgroup #:	WG513279	**Analyst:**	BKT	**Run Date:**	02/24/2015 15:36
Collect Date:	02/17/2015 11:55	**Dilution:**	1	**File ID:**	NI.022415.153623
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0123		0.00400	0.00200	0.00100

Certificate of Analysis

Sample #:	L15021053-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW08-021715	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512986	**Analyst:**	TMB	**Run Date:**	02/20/2015 23:27
Collect Date:	02/17/2015 14:05	**Dilution:**	2.5	**File ID:**	8M403150
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	25.0	12.5	6.25
Benzene	71-43-2	0.626	U	2.50	0.626	0.313
Bromobenzene	108-86-1	0.626	U	2.50	0.626	0.313
Bromochloromethane	74-97-5	1.00	U	2.50	1.00	0.500
Bromodichloromethane	75-27-4	1.25	U	2.50	1.25	0.625
Bromoform	75-25-2	2.50	U	5.00	2.50	1.25
Bromomethane	74-83-9	2.50	U	5.00	2.50	1.25
2-Butanone	78-93-3	12.5	U	25.0	12.5	6.25
n-Butylbenzene	104-51-8	1.25	U	2.50	1.25	0.625
sec-Butylbenzene	135-98-8	1.25	U	2.50	1.25	0.625
tert-Butylbenzene	98-06-6	1.25	U	2.50	1.25	0.625
Carbon disulfide	75-15-0	2.50	U	5.00	2.50	1.25
Carbon tetrachloride	56-23-5	1.25	U	2.50	1.25	0.625
Chlorobenzene	108-90-7	0.626	U	2.50	0.626	0.313
Chlorodibromomethane	124-48-1	1.25	U	2.50	1.25	0.625
Chloroethane	75-00-3	2.50	U	5.00	2.50	1.25
Chloroform	67-66-3	0.494	J	2.50	0.626	0.313
Chloromethane	74-87-3	2.50	U	5.00	2.50	1.25
2-Chlorotoluene	95-49-8	0.626	U	2.50	0.626	0.313
4-Chlorotoluene	106-43-4	1.25	U	2.50	1.25	0.625

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	5.00	U	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	2.50	1.25	0.625
Dibromomethane	74-95-3	1.25	U	2.50	1.25	0.625
1,2-Dichlorobenzene	95-50-1	0.626	U	2.50	0.626	0.313
1,3-Dichlorobenzene	541-73-1	1.25	U	2.50	1.25	0.625
1,4-Dichlorobenzene	106-46-7	0.626	U	2.50	0.626	0.313
Dichlorodifluoromethane	75-71-8	1.25	Q	2.50	1.25	0.625
1,1-Dichloroethane	75-34-3	1.55	J	2.50	0.626	0.313
1,2-Dichloroethane	107-06-2	3.59		2.50	1.25	0.625
1,1-Dichloroethene	75-35-4	2.50	U	5.00	2.50	1.25
cis-1,2-Dichloroethene	156-59-2	70.5		2.50	1.25	0.625
trans-1,2-Dichloroethene	156-60-5	1.25	U	2.50	1.25	0.625
1,2-Dichloropropane	78-87-5	1.00	U	2.50	1.00	0.500
1,3-Dichloropropane	142-28-9	1.00	U	2.50	1.00	0.500
2,2-Dichloropropane	594-20-7	1.25	U	2.50	1.25	0.625
cis-1,3-Dichloropropene	10061-01-5	1.25	U	2.50	1.25	0.625
trans-1,3-Dichloropropene	10061-02-6	2.50	U	5.00	2.50	1.25
1,1-Dichloropropene	563-58-6	1.25	U	2.50	1.25	0.625
Ethylbenzene	100-41-4	1.25	U	2.50	1.25	0.625
2-Hexanone	591-78-6	12.5	U	25.0	12.5	6.25
Hexachlorobutadiene	87-68-3	1.25	U	2.50	1.25	0.625
Isopropylbenzene	98-82-8	1.25	U	2.50	1.25	0.625
p-Isopropyltoluene	99-87-6	1.25	U	2.50	1.25	0.625
4-Methyl-2-pentanone	108-10-1	12.5	U	25.0	12.5	6.25
Methylene chloride	75-09-2	1.25	U	2.50	1.25	0.625
Naphthalene	91-20-3	1.00	U	2.50	1.00	0.500
n-Propylbenzene	103-65-1	0.626	U	2.50	0.626	0.313
Styrene	100-42-5	0.626	U	2.50	0.626	0.313
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	2.50	1.25	0.625
1,1,2,2-Tetrachloroethane	79-34-5	1.00	U	2.50	1.00	0.500
Tetrachloroethene	127-18-4	2.55		2.50	1.25	0.625
Toluene	108-88-3	1.25	U	2.50	1.25	0.625
1,2,3-Trichlorobenzene	87-61-6	0.750	U	2.50	0.750	0.375
1,2,4-Trichlorobenzene	120-82-1	1.00	U	2.50	1.00	0.500
1,1,1-Trichloroethane	71-55-6	1.25	U	2.50	1.25	0.625
1,1,2-Trichloroethane	79-00-5	1.25	U	2.50	1.25	0.625
Trichlorofluoromethane	75-69-4	1.25	U	2.50	1.25	0.625
1,2,3-Trichloropropane	96-18-4	2.50	U	5.00	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	2.50	1.25	0.625

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,3,5-Trimethylbenzene	108-67-8	1.25	U	2.50	1.25	0.625
Vinyl chloride	75-01-4	1.25	U	2.50	1.25	0.625
o-Xylene	95-47-6	1.25	U	2.50	1.25	0.625
m-,p-Xylene	179601-23-1	2.50	U	5.00	2.50	1.25

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.0	85	115	
1,2-Dichloroethane-d4	90.4	70	120	
Toluene-d8	98.6	85	120	
4-Bromofluorobenzene	97.7	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW08-021715	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG513149	**Analyst:**	TMB	**Run Date:**	02/23/2015 15:56
Collect Date:	02/17/2015 14:05	**Dilution:**	20	**File ID:**	8M403170
Sample Tag:	DL02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Trichloroethene	79-01-6	852		20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.6	85	115	
1,2-Dichloroethane-d4	87.0	70	120	
Toluene-d8	99.2	85	120	
4-Bromofluorobenzene	103	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-09	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW08-021715	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	02/19/2015 16:08
Workgroup #:	WG513170	**Analyst:**	JDS	**Run Date:**	02/23/2015 16:29
Collect Date:	02/17/2015 14:05	**Dilution:**	1	**File ID:**	16G46763
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	2.28	J	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-09	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW08-021715	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	02/19/2015 16:08
Workgroup #:	WG513170	**Analyst:**	JDS	**Run Date:**	02/23/2015 19:18
Collect Date:	02/17/2015 14:05	**Dilution:**	5	**File ID:**	16G46776
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	444000		50000	25000	12500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-09	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW08-021715	**Prep Method:**	6850	**Prep Date:**	02/25/2015 12:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG513403	**Analyst:**	JWR	**Run Date:**	02/26/2015 01:30
Collect Date:	02/17/2015 14:05	**Dilution:**	50	**File ID:**	1LM.LM29082
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	99.0		20.0	10.0	5.00

Certificate of Analysis

Sample #:	L15021053-09	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	50WW08-021715	**Prep Method:**	9056	**Prep Date:**	02/21/2015 17:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/01/2014 14:10
Workgroup #:	WG513061	**Analyst:**	AED	**Run Date:**	02/22/2015 04:15
Collect Date:	02/17/2015 14:05	**Dilution:**	5	**File ID:**	I3_022115-36
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	1.00	U,H1	2.00	1.00	0.500
Nitrite	14797-65-0	1.00	U,H1	2.00	1.00	0.500
Sulfate	14808-79-8	302	H1	10.0	5.00	2.50

H1	Sample analysis performed past holding time.
J	Estimated value ; the analyte concentration was greater than the highest standard
U,H1	Not detected; Sample analysis performed past holding time.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-09	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	50WW08-021715	**Prep Method:**	9056	**Prep Date:**	02/21/2015 17:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/01/2014 14:10
Workgroup #:	WG513061	**Analyst:**	AED	**Run Date:**	02/22/2015 04:36
Collect Date:	02/17/2015 14:05	**Dilution:**	20	**File ID:**	I3_022115-37
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	373	H1	8.00	4.00	2.00

H1	Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-09	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW08-021715	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/20/2015 15:07
Workgroup #:	WG513096	**Analyst:**	TB	**Run Date:**	02/20/2015 15:17
Collect Date:	02/17/2015 14:05	**Dilution:**	2	**File ID:**	S2150220003.024
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	443		80.0	40.0	20.0

Certificate of Analysis

Sample #:	L15021053-09	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW08-021715	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	02/26/2015 11:15
Workgroup #:	WG513563	**Analyst:**	DCM	**Run Date:**	02/26/2015 11:24
Collect Date:	02/17/2015 14:05	**Dilution:**	1	**File ID:**	SC150226002.016
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.159	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-09	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW08-021715	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG513077	**Analyst:**	EPT	**Run Date:**	02/23/2015 11:15
Collect Date:	02/17/2015 14:05	**Dilution:**	1	**File ID:**	ET.1502231115-13
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-09	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW08-021715	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG513146	**Analyst:**	DCM	**Run Date:**	02/24/2015 09:59
Collect Date:	02/17/2015 14:05	**Dilution:**	5	**File ID:**	TC02232015.058
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	15.1		10.0	5.00	2.50

Certificate of Analysis

Sample #:	L15021053-10	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO2
Client ID:	50WW08FF-021715	**Prep Method:**	3015	**Prep Date:**	02/23/2015 11:11
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	02/25/2015 08:00
Workgroup #:	WG513301	**Analyst:**	KHR	**Run Date:**	02/25/2015 10:18
Collect Date:	02/17/2015 14:05	**Dilution:**	1	**File ID:**	T2.022515.101816
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.285		0.200	0.100	0.0500

Certificate of Analysis

Sample #:	L15021053-10	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW08FF-021715	**Prep Method:**	3015	**Prep Date:**	02/24/2015 08:43
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	02/24/2015 12:23
Workgroup #:	WG513279	**Analyst:**	BKT	**Run Date:**	02/24/2015 15:49
Collect Date:	02/17/2015 14:05	**Dilution:**	1	**File ID:**	NI.022415.154910
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0569		0.00400	0.00200	0.00100

Certificate of Analysis

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15021053-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW22-021715	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512986	**Analyst:**	TMB	**Run Date:**	02/20/2015 20:06
Collect Date:	02/17/2015 15:15	**Dilution:**	1	**File ID:**	8M403143
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.5	85	115	
1,2-Dichloroethane-d4	89.0	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	99.8	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-11	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW22-021715	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	02/19/2015 16:08
Workgroup #:	WG513170	**Analyst:**	JDS	**Run Date:**	02/23/2015 20:12
Collect Date:	02/17/2015 15:15	**Dilution:**	1	**File ID:**	16G46780
Sample Tag:	02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	98400		10000	5000	2500
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-11	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW22-021715	**Prep Method:**	6850	**Prep Date:**	02/25/2015 12:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG513403	**Analyst:**	JWR	**Run Date:**	02/26/2015 01:49
Collect Date:	02/17/2015 15:15	**Dilution:**	1	**File ID:**	1LM.LM29083
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1.51		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15021053-11	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	50WW22-021715	**Prep Method:**	9056	**Prep Date:**	02/21/2015 17:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/01/2014 14:10
Workgroup #:	WG513061	**Analyst:**	AED	**Run Date:**	02/22/2015 04:56
Collect Date:	02/17/2015 15:15	**Dilution:**	5	**File ID:**	I3_022115-38
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	1.00	U,H1	2.00	1.00	0.500
Nitrite	14797-65-0	1.00	U,H1	2.00	1.00	0.500

J	Estimated value ; the analyte concentration was greater than the highest standard
U,H1	Not detected; Sample analysis performed past holding time.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-11	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	50WW22-021715	**Prep Method:**	9056	**Prep Date:**	02/21/2015 17:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/01/2014 14:10
Workgroup #:	WG513061	**Analyst:**	AED	**Run Date:**	02/22/2015 05:57
Collect Date:	02/17/2015 15:15	**Dilution:**	100	**File ID:**	I3_022115-41
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1040	H1	40.0	20.0	10.0
Sulfate	14808-79-8	601	H1	200	100	50.0

H1	Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-11	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW22-021715	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/20/2015 15:07
Workgroup #:	WG513096	**Analyst:**	TB	**Run Date:**	02/20/2015 15:17
Collect Date:	02/17/2015 15:15	**Dilution:**	2	**File ID:**	S2150220003.025
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	373		80.0	40.0	20.0

Certificate of Analysis

Sample #:	L15021053-11	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW22-021715	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	02/26/2015 11:15
Workgroup #:	WG513563	**Analyst:**	DCM	**Run Date:**	02/26/2015 11:26
Collect Date:	02/17/2015 15:15	**Dilution:**	1	**File ID:**	SC150226002.017
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	1.96		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15021053-11	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW22-021715	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG513077	**Analyst:**	EPT	**Run Date:**	02/23/2015 11:15
Collect Date:	02/17/2015 15:15	**Dilution:**	1	**File ID:**	ET.1502231115-14
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	0.681	J	2.00	1.00	0.500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-11	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW22-021715	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG513146	**Analyst:**	DCM	**Run Date:**	02/24/2015 04:58
Collect Date:	02/17/2015 15:15	**Dilution:**	1	**File ID:**	TC02232015.047
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	2.31		2.00	1.00	0.500

Certificate of Analysis

Sample #:	L15021053-12	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO2
Client ID:	50WW22FF-021715	**Prep Method:**	3015	**Prep Date:**	02/23/2015 11:11
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	02/25/2015 08:00
Workgroup #:	WG513301	**Analyst:**	KHR	**Run Date:**	02/25/2015 11:01
Collect Date:	02/17/2015 15:15	**Dilution:**	1	**File ID:**	T2.022515.110125
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.0711	J	0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-12	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW22FF-021715	**Prep Method:**	3015	**Prep Date:**	02/24/2015 08:43
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	02/24/2015 12:23
Workgroup #:	WG513279	**Analyst:**	BKT	**Run Date:**	02/24/2015 15:55
Collect Date:	02/17/2015 15:15	**Dilution:**	1	**File ID:**	NI.022415.155533
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0235		0.00400	0.00200	0.00100

Certificate of Analysis

Sample #:	L15021053-13	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512986	**Analyst:**	TMB	**Run Date:**	02/20/2015 19:37
Collect Date:	02/17/2015 00:01	**Dilution:**	1	**File ID:**	8M403142
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

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Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.5	85	115	
1,2-Dichloroethane-d4	90.2	70	120	
Toluene-d8	99.8	85	120	
4-Bromofluorobenzene	99.2	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW13-021715	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG513149	**Analyst:**	TMB	**Run Date:**	02/23/2015 19:49
Collect Date:	02/17/2015 08:10	**Dilution:**	5	**File ID:**	8M403178
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	25.0	U	50.0	25.0	12.5
Benzene	71-43-2	1.25	U	5.00	1.25	0.625
Bromobenzene	108-86-1	1.25	U	5.00	1.25	0.625
Bromochloromethane	74-97-5	2.00	U	5.00	2.00	1.00
Bromodichloromethane	75-27-4	2.50	U	5.00	2.50	1.25
Bromoform	75-25-2	5.00	U	10.0	5.00	2.50
Bromomethane	74-83-9	5.00	U	10.0	5.00	2.50
2-Butanone	78-93-3	25.0	U	50.0	25.0	12.5
n-Butylbenzene	104-51-8	2.50	U	5.00	2.50	1.25
sec-Butylbenzene	135-98-8	2.50	U	5.00	2.50	1.25
tert-Butylbenzene	98-06-6	2.50	U	5.00	2.50	1.25
Carbon disulfide	75-15-0	5.00	U	10.0	5.00	2.50
Carbon tetrachloride	56-23-5	2.50	U	5.00	2.50	1.25
Chlorobenzene	108-90-7	1.25	U	5.00	1.25	0.625
Chlorodibromomethane	124-48-1	2.50	U	5.00	2.50	1.25
Chloroethane	75-00-3	5.00	U	10.0	5.00	2.50
Chloroform	67-66-3	1.25	U	5.00	1.25	0.625
Chloromethane	74-87-3	5.00	U	10.0	5.00	2.50
2-Chlorotoluene	95-49-8	1.25	U	5.00	1.25	0.625
4-Chlorotoluene	106-43-4	2.50	U	5.00	2.50	1.25
1,2-Dibromo-3-chloropropane	96-12-8	10.0	U	25.0	10.0	5.00
1,2-Dibromoethane	106-93-4	2.50	U	5.00	2.50	1.25
Dibromomethane	74-95-3	2.50	U	5.00	2.50	1.25
1,2-Dichlorobenzene	95-50-1	1.25	U	5.00	1.25	0.625
1,3-Dichlorobenzene	541-73-1	2.50	U	5.00	2.50	1.25
1,4-Dichlorobenzene	106-46-7	1.25	U	5.00	1.25	0.625
Dichlorodifluoromethane	75-71-8	2.50	U	5.00	2.50	1.25
1,1-Dichloroethane	75-34-3	0.880	J	5.00	1.25	0.625
1,2-Dichloroethane	107-06-2	4.99	J	5.00	2.50	1.25
1,1-Dichloroethene	75-35-4	5.00	U	10.0	5.00	2.50
cis-1,2-Dichloroethene	156-59-2	32.1		5.00	2.50	1.25
trans-1,2-Dichloroethene	156-60-5	2.50	U	5.00	2.50	1.25

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Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	2.00	U	5.00	2.00	1.00
1,3-Dichloropropane	142-28-9	2.00	U	5.00	2.00	1.00
2,2-Dichloropropane	594-20-7	2.50	U	5.00	2.50	1.25
cis-1,3-Dichloropropene	10061-01-5	2.50	U	5.00	2.50	1.25
trans-1,3-Dichloropropene	10061-02-6	5.00	U	10.0	5.00	2.50
1,1-Dichloropropene	563-58-6	2.50	U	5.00	2.50	1.25
Ethylbenzene	100-41-4	2.50	U	5.00	2.50	1.25
2-Hexanone	591-78-6	25.0	U	50.0	25.0	12.5
Hexachlorobutadiene	87-68-3	2.50	U	5.00	2.50	1.25
Isopropylbenzene	98-82-8	2.50	U	5.00	2.50	1.25
p-Isopropyltoluene	99-87-6	2.50	U	5.00	2.50	1.25
4-Methyl-2-pentanone	108-10-1	25.0	U	50.0	25.0	12.5
Methylene chloride	75-09-2	2.50	U	5.00	2.50	1.25
Naphthalene	91-20-3	2.00	U	5.00	2.00	1.00
n-Propylbenzene	103-65-1	1.25	U	5.00	1.25	0.625
Styrene	100-42-5	1.25	U	5.00	1.25	0.625
1,1,1,2-Tetrachloroethane	630-20-6	2.50	U	5.00	2.50	1.25
1,1,2,2-Tetrachloroethane	79-34-5	2.00	U	5.00	2.00	1.00
Tetrachloroethene	127-18-4	1.89	J	5.00	2.50	1.25
Toluene	108-88-3	2.50	U	5.00	2.50	1.25
1,2,3-Trichlorobenzene	87-61-6	1.50	U	5.00	1.50	0.750
1,2,4-Trichlorobenzene	120-82-1	2.00	U	5.00	2.00	1.00
1,1,1-Trichloroethane	71-55-6	2.50	U	5.00	2.50	1.25
1,1,2-Trichloroethane	79-00-5	2.50	U	5.00	2.50	1.25
Trichloroethene	79-01-6	1080		5.00	2.50	1.25
Trichlorofluoromethane	75-69-4	2.50	U	5.00	2.50	1.25
1,2,3-Trichloropropane	96-18-4	5.00	U	10.0	5.00	2.50
1,2,4-Trimethylbenzene	95-63-6	2.50	U	5.00	2.50	1.25
1,3,5-Trimethylbenzene	108-67-8	2.50	U	5.00	2.50	1.25
Vinyl chloride	75-01-4	2.50	U	5.00	2.50	1.25
o-Xylene	95-47-6	2.50	U	5.00	2.50	1.25
m-,p-Xylene	179601-23-1	5.00	U	10.0	5.00	2.50

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.0	85	115	
1,2-Dichloroethane-d4	88.5	70	120	
Toluene-d8	97.8	85	120	
4-Bromofluorobenzene	97.4	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW14-021715	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512986	**Analyst:**	TMB	**Run Date:**	02/20/2015 21:04
Collect Date:	02/17/2015 09:20	**Dilution:**	1	**File ID:**	8M403145
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	13.5		1.00	0.500	0.250

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	9.14		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.2	85	115	
1,2-Dichloroethane-d4	85.8	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	103	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW11-021715	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG513149	**Analyst:**	TMB	**Run Date:**	02/23/2015 20:17
Collect Date:	02/17/2015 10:45	**Dilution:**	2	**File ID:**	8M403179
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	10.0	U	20.0	10.0	5.00
Benzene	71-43-2	0.500	U	2.00	0.500	0.250
Bromobenzene	108-86-1	0.500	U	2.00	0.500	0.250
Bromochloromethane	74-97-5	0.800	U	2.00	0.800	0.400
Bromodichloromethane	75-27-4	1.00	U	2.00	1.00	0.500
Bromoform	75-25-2	2.00	U	4.00	2.00	1.00
Bromomethane	74-83-9	2.00	U	4.00	2.00	1.00
2-Butanone	78-93-3	10.0	U	20.0	10.0	5.00
n-Butylbenzene	104-51-8	1.00	U	2.00	1.00	0.500
sec-Butylbenzene	135-98-8	1.00	U	2.00	1.00	0.500
tert-Butylbenzene	98-06-6	1.00	U	2.00	1.00	0.500
Carbon disulfide	75-15-0	2.00	U	4.00	2.00	1.00
Carbon tetrachloride	56-23-5	1.00	U	2.00	1.00	0.500
Chlorobenzene	108-90-7	0.500	U	2.00	0.500	0.250
Chlorodibromomethane	124-48-1	1.00	U	2.00	1.00	0.500
Chloroethane	75-00-3	2.00	U	4.00	2.00	1.00
Chloroform	67-66-3	0.500	U	2.00	0.500	0.250
Chloromethane	74-87-3	2.00	U	4.00	2.00	1.00
2-Chlorotoluene	95-49-8	0.500	U	2.00	0.500	0.250
4-Chlorotoluene	106-43-4	1.00	U	2.00	1.00	0.500
1,2-Dibromo-3-chloropropane	96-12-8	4.00	U	10.0	4.00	2.00
1,2-Dibromoethane	106-93-4	1.00	U	2.00	1.00	0.500
Dibromomethane	74-95-3	1.00	U	2.00	1.00	0.500
1,2-Dichlorobenzene	95-50-1	0.500	U	2.00	0.500	0.250
1,3-Dichlorobenzene	541-73-1	1.00	U	2.00	1.00	0.500
1,4-Dichlorobenzene	106-46-7	0.500	U	2.00	0.500	0.250
Dichlorodifluoromethane	75-71-8	1.00	U	2.00	1.00	0.500
1,1-Dichloroethane	75-34-3	0.638	J	2.00	0.500	0.250
1,2-Dichloroethane	107-06-2	2.42		2.00	1.00	0.500
1,1-Dichloroethene	75-35-4	2.47	J	4.00	2.00	1.00
cis-1,2-Dichloroethene	156-59-2	6.86		2.00	1.00	0.500

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.00	U	2.00	1.00	0.500
1,2-Dichloropropane	78-87-5	0.800	U	2.00	0.800	0.400
1,3-Dichloropropane	142-28-9	0.800	U	2.00	0.800	0.400
2,2-Dichloropropane	594-20-7	1.00	U	2.00	1.00	0.500
cis-1,3-Dichloropropene	10061-01-5	1.00	U	2.00	1.00	0.500
trans-1,3-Dichloropropene	10061-02-6	2.00	U	4.00	2.00	1.00
1,1-Dichloropropene	563-58-6	1.00	U	2.00	1.00	0.500
Ethylbenzene	100-41-4	1.00	U	2.00	1.00	0.500
2-Hexanone	591-78-6	10.0	U	20.0	10.0	5.00
Hexachlorobutadiene	87-68-3	1.00	U	2.00	1.00	0.500
Isopropylbenzene	98-82-8	1.00	U	2.00	1.00	0.500
p-Isopropyltoluene	99-87-6	1.00	U	2.00	1.00	0.500
4-Methyl-2-pentanone	108-10-1	10.0	U	20.0	10.0	5.00
Methylene chloride	75-09-2	1.00	U	2.00	1.00	0.500
Naphthalene	91-20-3	0.800	U	2.00	0.800	0.400
n-Propylbenzene	103-65-1	0.500	U	2.00	0.500	0.250
Styrene	100-42-5	0.500	U	2.00	0.500	0.250
1,1,1,2-Tetrachloroethane	630-20-6	1.00	U	2.00	1.00	0.500
1,1,2,2-Tetrachloroethane	79-34-5	0.800	U	2.00	0.800	0.400
Tetrachloroethene	127-18-4	0.951	J	2.00	1.00	0.500
Toluene	108-88-3	1.00	U	2.00	1.00	0.500
1,2,3-Trichlorobenzene	87-61-6	0.600	U	2.00	0.600	0.300
1,2,4-Trichlorobenzene	120-82-1	0.800	U	2.00	0.800	0.400
1,1,1-Trichloroethane	71-55-6	1.00	U	2.00	1.00	0.500
1,1,2-Trichloroethane	79-00-5	1.00	U	2.00	1.00	0.500
Trichloroethene	79-01-6	512		2.00	1.00	0.500
Trichlorofluoromethane	75-69-4	1.00	U	2.00	1.00	0.500
1,2,3-Trichloropropane	96-18-4	2.00	U	4.00	2.00	1.00
1,2,4-Trimethylbenzene	95-63-6	1.00	U	2.00	1.00	0.500
1,3,5-Trimethylbenzene	108-67-8	1.00	U	2.00	1.00	0.500
Vinyl chloride	75-01-4	1.00	U	2.00	1.00	0.500
o-Xylene	95-47-6	1.00	U	2.00	1.00	0.500
m-,p-Xylene	179601-23-1	2.00	U	4.00	2.00	1.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.8	85	115	
1,2-Dichloroethane-d4	84.3	70	120	
Toluene-d8	106	85	120	
4-Bromofluorobenzene	103	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW06-021715	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512986	**Analyst:**	TMB	**Run Date:**	02/20/2015 21:33
Collect Date:	02/17/2015 11:55	**Dilution:**	1	**File ID:**	8M403146
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	3.61	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.257	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.572	J	1.00	0.500	0.250

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	53.9		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.1	85	115	
1,2-Dichloroethane-d4	90.7	70	120	
Toluene-d8	98.9	85	120	
4-Bromofluorobenzene	98.8	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW08-021715	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512986	**Analyst:**	TMB	**Run Date:**	02/20/2015 23:27
Collect Date:	02/17/2015 14:05	**Dilution:**	2.5	**File ID:**	8M403150
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	25.0	12.5	6.25
Benzene	71-43-2	0.626	U	2.50	0.626	0.313
Bromobenzene	108-86-1	0.626	U	2.50	0.626	0.313
Bromochloromethane	74-97-5	1.00	U	2.50	1.00	0.500
Bromodichloromethane	75-27-4	1.25	U	2.50	1.25	0.625
Bromoform	75-25-2	2.50	U	5.00	2.50	1.25
Bromomethane	74-83-9	2.50	U	5.00	2.50	1.25
2-Butanone	78-93-3	12.5	U	25.0	12.5	6.25
n-Butylbenzene	104-51-8	1.25	U	2.50	1.25	0.625
sec-Butylbenzene	135-98-8	1.25	U	2.50	1.25	0.625
tert-Butylbenzene	98-06-6	1.25	U	2.50	1.25	0.625
Carbon disulfide	75-15-0	2.50	U	5.00	2.50	1.25
Carbon tetrachloride	56-23-5	1.25	U	2.50	1.25	0.625
Chlorobenzene	108-90-7	0.626	U	2.50	0.626	0.313
Chlorodibromomethane	124-48-1	1.25	U	2.50	1.25	0.625
Chloroethane	75-00-3	2.50	U	5.00	2.50	1.25
Chloroform	67-66-3	0.494	J	2.50	0.626	0.313
Chloromethane	74-87-3	2.50	U	5.00	2.50	1.25
2-Chlorotoluene	95-49-8	0.626	U	2.50	0.626	0.313
4-Chlorotoluene	106-43-4	1.25	U	2.50	1.25	0.625
1,2-Dibromo-3-chloropropane	96-12-8	5.00	U	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	2.50	1.25	0.625
Dibromomethane	74-95-3	1.25	U	2.50	1.25	0.625
1,2-Dichlorobenzene	95-50-1	0.626	U	2.50	0.626	0.313
1,3-Dichlorobenzene	541-73-1	1.25	U	2.50	1.25	0.625
1,4-Dichlorobenzene	106-46-7	0.626	U	2.50	0.626	0.313
Dichlorodifluoromethane	75-71-8	1.25	Q	2.50	1.25	0.625
1,1-Dichloroethane	75-34-3	1.55	J	2.50	0.626	0.313
1,2-Dichloroethane	107-06-2	3.59		2.50	1.25	0.625
1,1-Dichloroethene	75-35-4	2.50	U	5.00	2.50	1.25
cis-1,2-Dichloroethene	156-59-2	70.5		2.50	1.25	0.625

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Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.25	U	2.50	1.25	0.625
1,2-Dichloropropane	78-87-5	1.00	U	2.50	1.00	0.500
1,3-Dichloropropane	142-28-9	1.00	U	2.50	1.00	0.500
2,2-Dichloropropane	594-20-7	1.25	U	2.50	1.25	0.625
cis-1,3-Dichloropropene	10061-01-5	1.25	U	2.50	1.25	0.625
trans-1,3-Dichloropropene	10061-02-6	2.50	U	5.00	2.50	1.25
1,1-Dichloropropene	563-58-6	1.25	U	2.50	1.25	0.625
Ethylbenzene	100-41-4	1.25	U	2.50	1.25	0.625
2-Hexanone	591-78-6	12.5	U	25.0	12.5	6.25
Hexachlorobutadiene	87-68-3	1.25	U	2.50	1.25	0.625
Isopropylbenzene	98-82-8	1.25	U	2.50	1.25	0.625
p-Isopropyltoluene	99-87-6	1.25	U	2.50	1.25	0.625
4-Methyl-2-pentanone	108-10-1	12.5	U	25.0	12.5	6.25
Methylene chloride	75-09-2	1.25	U	2.50	1.25	0.625
Naphthalene	91-20-3	1.00	U	2.50	1.00	0.500
n-Propylbenzene	103-65-1	0.626	U	2.50	0.626	0.313
Styrene	100-42-5	0.626	U	2.50	0.626	0.313
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	2.50	1.25	0.625
1,1,2,2-Tetrachloroethane	79-34-5	1.00	U	2.50	1.00	0.500
Tetrachloroethene	127-18-4	2.55		2.50	1.25	0.625
Toluene	108-88-3	1.25	U	2.50	1.25	0.625
1,2,3-Trichlorobenzene	87-61-6	0.750	U	2.50	0.750	0.375
1,2,4-Trichlorobenzene	120-82-1	1.00	U	2.50	1.00	0.500
1,1,1-Trichloroethane	71-55-6	1.25	U	2.50	1.25	0.625
1,1,2-Trichloroethane	79-00-5	1.25	U	2.50	1.25	0.625
Trichloroethene	79-01-6	866	J	2.50	1.25	0.625
Trichlorofluoromethane	75-69-4	1.25	U	2.50	1.25	0.625
1,2,3-Trichloropropane	96-18-4	2.50	U	5.00	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	2.50	1.25	0.625
1,3,5-Trimethylbenzene	108-67-8	1.25	U	2.50	1.25	0.625
Vinyl chloride	75-01-4	1.25	U	2.50	1.25	0.625
o-Xylene	95-47-6	1.25	U	2.50	1.25	0.625
m-,p-Xylene	179601-23-1	2.50	U	5.00	2.50	1.25

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.0	85	115	
1,2-Dichloroethane-d4	90.4	70	120	
Toluene-d8	98.6	85	120	
4-Bromofluorobenzene	97.7	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

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Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

J	Estimated value ; the analyte concentration was greater than the highest standard
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW08-021715	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG513149	**Analyst:**	TMB	**Run Date:**	02/23/2015 15:56
Collect Date:	02/17/2015 14:05	**Dilution:**	20	**File ID:**	8M403170
Sample Tag:	DL02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	100	U	200	100	50.0
Benzene	71-43-2	5.00	U	20.0	5.00	2.50
Bromobenzene	108-86-1	5.00	U	20.0	5.00	2.50
Bromochloromethane	74-97-5	8.00	U	20.0	8.00	4.00
Bromodichloromethane	75-27-4	10.0	U	20.0	10.0	5.00
Bromoform	75-25-2	20.0	U	40.0	20.0	10.0
Bromomethane	74-83-9	20.0	U	40.0	20.0	10.0
2-Butanone	78-93-3	100	U	200	100	50.0
n-Butylbenzene	104-51-8	10.0	U	20.0	10.0	5.00
sec-Butylbenzene	135-98-8	10.0	U	20.0	10.0	5.00
tert-Butylbenzene	98-06-6	10.0	U	20.0	10.0	5.00
Carbon disulfide	75-15-0	20.0	U	40.0	20.0	10.0
Carbon tetrachloride	56-23-5	10.0	U	20.0	10.0	5.00
Chlorobenzene	108-90-7	5.00	U	20.0	5.00	2.50
Chlorodibromomethane	124-48-1	10.0	U	20.0	10.0	5.00
Chloroethane	75-00-3	20.0	U	40.0	20.0	10.0
Chloroform	67-66-3	5.00	U	20.0	5.00	2.50
Chloromethane	74-87-3	20.0	U	40.0	20.0	10.0
2-Chlorotoluene	95-49-8	5.00	U	20.0	5.00	2.50
4-Chlorotoluene	106-43-4	10.0	U	20.0	10.0	5.00
1,2-Dibromo-3-chloropropane	96-12-8	40.0	U	100	40.0	20.0
1,2-Dibromoethane	106-93-4	10.0	U	20.0	10.0	5.00
Dibromomethane	74-95-3	10.0	U	20.0	10.0	5.00
1,2-Dichlorobenzene	95-50-1	5.00	U	20.0	5.00	2.50
1,3-Dichlorobenzene	541-73-1	10.0	U	20.0	10.0	5.00
1,4-Dichlorobenzene	106-46-7	5.00	U	20.0	5.00	2.50
Dichlorodifluoromethane	75-71-8	10.0	U	20.0	10.0	5.00
1,1-Dichloroethane	75-34-3	5.00	U	20.0	5.00	2.50
1,2-Dichloroethane	107-06-2	10.0	U	20.0	10.0	5.00
1,1-Dichloroethene	75-35-4	20.0	U	40.0	20.0	10.0
cis-1,2-Dichloroethene	156-59-2	75.9		20.0	10.0	5.00

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Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	10.0	U	20.0	10.0	5.00
1,2-Dichloropropane	78-87-5	8.00	U	20.0	8.00	4.00
1,3-Dichloropropane	142-28-9	8.00	U	20.0	8.00	4.00
2,2-Dichloropropane	594-20-7	10.0	U	20.0	10.0	5.00
cis-1,3-Dichloropropene	10061-01-5	10.0	U	20.0	10.0	5.00
trans-1,3-Dichloropropene	10061-02-6	20.0	U	40.0	20.0	10.0
1,1-Dichloropropene	563-58-6	10.0	U	20.0	10.0	5.00
Ethylbenzene	100-41-4	10.0	U	20.0	10.0	5.00
2-Hexanone	591-78-6	100	U	200	100	50.0
Hexachlorobutadiene	87-68-3	10.0	U	20.0	10.0	5.00
Isopropylbenzene	98-82-8	10.0	U	20.0	10.0	5.00
p-Isopropyltoluene	99-87-6	10.0	U	20.0	10.0	5.00
4-Methyl-2-pentanone	108-10-1	100	U	200	100	50.0
Methylene chloride	75-09-2	10.0	U	20.0	10.0	5.00
Naphthalene	91-20-3	8.00	U	20.0	8.00	4.00
n-Propylbenzene	103-65-1	5.00	U	20.0	5.00	2.50
Styrene	100-42-5	5.00	U	20.0	5.00	2.50
1,1,1,2-Tetrachloroethane	630-20-6	10.0	U	20.0	10.0	5.00
1,1,2,2-Tetrachloroethane	79-34-5	8.00	U	20.0	8.00	4.00
Tetrachloroethene	127-18-4	10.0	U	20.0	10.0	5.00
Toluene	108-88-3	10.0	U	20.0	10.0	5.00
1,2,3-Trichlorobenzene	87-61-6	6.00	U	20.0	6.00	3.00
1,2,4-Trichlorobenzene	120-82-1	8.00	U	20.0	8.00	4.00
1,1,1-Trichloroethane	71-55-6	10.0	U	20.0	10.0	5.00
1,1,2-Trichloroethane	79-00-5	10.0	U	20.0	10.0	5.00
Trichloroethene	79-01-6	852		20.0	10.0	5.00
Trichlorofluoromethane	75-69-4	10.0	U	20.0	10.0	5.00
1,2,3-Trichloropropane	96-18-4	20.0	U	40.0	20.0	10.0
1,2,4-Trimethylbenzene	95-63-6	10.0	U	20.0	10.0	5.00
1,3,5-Trimethylbenzene	108-67-8	10.0	U	20.0	10.0	5.00
Vinyl chloride	75-01-4	10.0	U	20.0	10.0	5.00
o-Xylene	95-47-6	10.0	U	20.0	10.0	5.00
m-,p-Xylene	179601-23-1	20.0	U	40.0	20.0	10.0

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.6	85	115	
1,2-Dichloroethane-d4	87.0	70	120	
Toluene-d8	99.2	85	120	
4-Bromofluorobenzene	103	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW22-021715	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512986	**Analyst:**	TMB	**Run Date:**	02/20/2015 20:06
Collect Date:	02/17/2015 15:15	**Dilution:**	1	**File ID:**	8M403143
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

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Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.5	85	115	
1,2-Dichloroethane-d4	89.0	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	99.8	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-13	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	02/06/2015 20:20
Workgroup #:	WG512986	**Analyst:**	TMB	**Run Date:**	02/20/2015 19:37
Collect Date:	02/17/2015 00:01	**Dilution:**	1	**File ID:**	8M403142
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

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Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.5	85	115	
1,2-Dichloroethane-d4	90.2	70	120	
Toluene-d8	99.8	85	120	
4-Bromofluorobenzene	99.2	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 100214
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 19
Method: 624 SOP: MSV10 Rev: 12
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 16
Maintenance Log ID: 51878

Internal Standard: STD66600 Surrogate Standard: STD66600
CCV: STD66818; STD66687 LCS: STD66693; STD66677 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG494714; WG494980

Comments: File # 8m400369 and 70 were skipped and not used.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M400354	RINSE	NA	1	1		10/02/14 10:24
8M400355	WG494714-01 50ng BFB STD 8260	NA	1	1	STD66476	10/02/14 11:16
8M400356	WG494714-01 50ng BFB STD 8260	NA	1	1	STD66476	10/02/14 11:33
8M400357	WG494714-01 50ng BFB STD 8260	NA	1	1	STD66476	10/02/14 11:58
8M400358	WG494714-02 5ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 12:24
8M400359	WG494714-03 20ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 12:53
8M400360	WG494714-04 50ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 13:22
8M400361	WG494714-05 100ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 13:51
8M400362	WG494714-06 200ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 14:19
8M400363	WG494714-07 300ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 14:48
8M400364	WG494714-08 400ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 15:16
8M400365	WG494714-09 500ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 15:45
8M400366	RINSE	NA	1	1		10/02/14 16:14
8M400367	WG494714-10 100ug/L ALT SRC STD A9/F	NA	1	1	STD66677	10/02/14 16:47
8M400368	WG494979-01 50ug/L CCV STD 8260	NA	1	1	STD66687	10/02/14 17:22
8M400371	WG494980-02 20ug/L LCS STD 624	NA	2	1	STD66693	10/02/14 17:51
8M400372	WG494980-03 20ug/L LCSDUP STD 624	NA	2	1	STD66693	10/02/14 18:20
8M400373	RINSE	NA	2	1		10/02/14 18:49
8M400374	WG494980-01 VBLK1002 BLANK STD 624	NA	2	1		10/02/14 19:18
8M400375	L14100004-01 LOD 826-SPE A9/FOO	NA	1	1		10/02/14 19:47
8M400376	L14100006-01 LOQ 826-SPE A9/FOO	NA	1	1		10/02/14 20:16
8M400377	L14100004-01 LOD 826-SPE	NA	1	1		10/02/14 20:45
8M400378	L14100006-01 LOQ 826-SPE	NA	1	1		10/02/14 21:14
8M400379	L14100004-01 LOD 826-SPE	NA	1	1		10/02/14 21:42
8M400380	L14100006-01 LOQ 826-SPE	NA	1	1		10/02/14 22:12
8M400381	L14100098-10 A 624-SPE	5	2	1		10/02/14 22:40
8M400382	L14100089-02 A 624-SPE	5	2	1		10/02/14 23:09
8M400383	L14100098-04 A 624-SPE	<2	2	1		10/02/14 23:38
8M400384	L14100098-05 A 624-SPE	<2	2	1		10/03/14 00:06
8M400385	L14100098-06 A 624-SPE	<2	2	1		10/03/14 00:36
8M400386	L14100098-07 A 624-SPE	<2	2	1		10/03/14 01:06
8M400387	L14100098-08 A 624-SPE	<2	2	1		10/03/14 01:34
8M400388	L14100098-09 A 624-SPE	<2	2	1		10/03/14 02:04
8M400389	L14100110-01 A 624-SPE2	<2	2	1		10/03/14 02:32

Approved: October 03, 2014

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 100214
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 19
Method: 624 SOP: MSV10 Rev: 12
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 16
Maintenance Log ID: 51878

Internal Standard: STD66600 Surrogate Standard: STD66600
CCV: STD66818; STD66687 LCS: STD66693; STD66677 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG494714; WG494980

Comments: File # 8m400369 and 70 were skipped and not used.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M400390	L14100110-02 A 624-SPE1	<2	2	1		10/03/14 03:02
8M400391	RINSE	NA	1	1		10/03/14 03:30
8M400392	RINSE	NA	1	1		10/03/14 03:59

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 8M400355				
	Tune failed, DNR.			
3	X			
File ID: 8M400356				
	Tune failed, DNR.			
4				
File ID: 8M400357				
	Purged BFB.			
30	X	100	Over Calibration Range	TCE
File ID: 8M400385				
31	X	1	Carry-over contamination	
File ID: 8M400386				
	DNR.			
32	X	1	Carry-over contamination	
File ID: 8M400387				
	DNR.			
33	X	50	Over Calibration Range	TCE
File ID: 8M400388				
34	X	1	Carry-over contamination	
File ID: 8M400389				
	DNR.			

Approved: October 03, 2014

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 020615
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV10 Rev: 20
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 17
Maintenance Log ID: 52808

Internal Standard: STD68442 Surrogate Standard: STD68442
CCV: STD68794 LCS: STD68730 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG511287

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M402824	WG511287-01 50ng BFB STD 8260	NA	1	1	STD68443	02/06/15 13:01
8M402825	WG511287-02 50ug/L CCV STD 8260	NA	1	1	STD68794	02/06/15 13:25
8M402826	WG511287-02 50ug/L CCV STD 8260	NA	1	1	STD68794	02/06/15 13:56
8M402827	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD68288	02/06/15 14:28
8M402828	RINSE	NA	1	1		02/06/15 15:02
8M402829	WG511287-01 50ng BFB STD 8260	NA	1	1	STD68443	02/06/15 15:35
8M402830	WG511287-02 0.3ug/L STD 8260	NA	1	1	STD68794	02/06/15 15:59
8M402831	WG511287-03 0.4ug/L STD 8260	NA	1	1	STD68794	02/06/15 16:27
8M402832	WG511287-04 1ug/L STD 8260	NA	1	1	STD68794	02/06/15 16:57
8M402833	WG511287-05 2ug/L STD 8260	NA	1	1	STD68794	02/06/15 17:26
8M402834	WG511287-06 5ug/L STD 8260	NA	1	1	STD68794	02/06/15 17:54
8M402835	WG511287-07 20ug/L STD 8260	NA	1	1	STD68794	02/06/15 18:23
8M402836	WG511287-08 50ug/L STD 8260	NA	1	1	STD68794	02/06/15 18:53
8M402837	WG511287-09 100ug/L STD 8260	NA	1	1	STD68794	02/06/15 19:22
8M402838	WG511287-10 200ug/L STD 8260	NA	1	1	STD68794	02/06/15 19:51
8M402839	WG511287-11 300ug/L STD 8260	NA	1	1	STD68794	02/06/15 20:20
8M402840	RINSE	NA	1	1		02/06/15 20:48
8M402841	RINSE	NA	1	1		02/06/15 21:18
8M402842	WG511287-12 50ug/L ALT SRC STD 8260	NA	1	1	STD68730	02/06/15 21:48
8M402843	RINSE	NA	1	1		02/06/15 22:17
8M402844	RINSE	NA	1	1		02/06/15 22:47
8M402845	RINSE	NA	1	1		02/06/15 23:16

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 8M402825				
	Vc was high, DNR.			
3	X			
File ID: 8M402826				
	Vc was high, DNR. Running a curve. DNR.			
4				
File ID: 8M402827				
	Not needed, DNR.			

Approved: February 10, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 022015
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 20
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 17
Maintenance Log ID: 52863

Internal Standard: STD68997 Surrogate Standard: STD68997
CCV: STD68957 LCS: STD68939 MS/MSD: STD68939

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG512986

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M403127	WG512985-01 50ng BFB STD 8260	NA	1	1	STD68998	02/20/15 12:26
8M403128	WG512985-02 50ug/L CCV STD 8260	NA	1	1	STD68957	02/20/15 12:50
8M403129	WG512985-02 50ug/L CCV STD 8260	NA	1	1	STD68957	02/20/15 13:19
8M403130	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD68819	02/20/15 13:48
8M403131	WG512986-01 VBLK0220 BLANK STD 826	NA	1	1		02/20/15 14:16
8M403132	L15020300-01 A 826-REF-BLK	<2	1	1		02/20/15 14:45
8M403133	L15020300-02 A 826-REF-BLK	<2	1	1		02/20/15 15:14
8M403134	L15020300-03 A 826-REF-BLK	<2	1	1		02/20/15 15:43
8M403135	L15020300-04 A 826-REF-BLK	<2	1	1		02/20/15 16:13
8M403136	L15020300-05 A 826-REF-BLK	<2	1	1		02/20/15 16:42
8M403137	WG512986-02 20ug/L LCS STD 8260	NA	1	1	STD68939	02/20/15 17:11
8M403138	WG512986-03 20ug/L LCSDUP STD 8260	NA	1	1	STD68939	02/20/15 17:40
8M403139	L15020906-01 A 10X 826-TC-SPE	NA	1	10		02/20/15 18:09
8M403140	L15020929-01 A 10X 826-TC	NA	17	10		02/20/15 18:39
8M403141	L15021036-03 A TB 826-LOW	<2	1	1		02/20/15 19:08
8M403142	L15021053-13 A TB 826-LOW	<2	1	1		02/20/15 19:37
8M403143	L15021053-11 A 826-LOW	<2	1	1		02/20/15 20:06
8M403144	L15021036-02 A 826-LOW	<2	1	1		02/20/15 20:35
8M403145	L15021053-03 A 826-LOW	<2	1	1		02/20/15 21:04
8M403146	L15021053-07 A 826-LOW	<2	1	1		02/20/15 21:33
8M403147	L15021036-01 A 826-LOW	<2	1	1		02/20/15 22:02
8M403148	L15021053-01 A 100X 826-LOW	<2	1	100		02/20/15 22:30
8M403149	L15021053-05 A 50X 826-LOW	<2	1	50		02/20/15 22:59
8M403150	L15021053-09 A 2.5X 826-LOW	<2	1	2.5		02/20/15 23:27
8M403151	WG512986-06 MS 906-01 10X 826-TC-SPE	NA	17	10	STD68939	02/20/15 23:55
8M403152	RINSE	NA	1	1		02/21/15 00:24
8M403153	WG512986-04 VBLK0220 BLANK STD 624	NA	2	1		02/21/15 00:52
8M403154	L15020928-01 A 624-SPE12	<2	2	1		02/21/15 01:21
8M403155	L15021060-01 A 624-SPE	<2	2	1		02/21/15 01:50
8M403156	L15021063-01 A 624-SPE	<2	2	1		02/21/15 02:19
8M403157	CCV	NA	1	1		02/21/15 02:48
8M403158	RINSE	NA	1	1		02/21/15 03:18
8M403159	RINSE	NA	1	1		02/21/15 03:47
8M403160	WG512824-01 FBLK 10X 826-TC-SPE	NA	17	10		02/21/15 04:16

Approved: February 23, 2015

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Instrument Run Log

Instrument: HPMS8 Dataset: 022015
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 20
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 17
Maintenance Log ID: 52863

Internal Standard: STD68997 Surrogate Standard: STD68997
CCV: STD68957 LCS: STD68939 MS/MSD: STD68939

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG512986

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 8M403128				
	Ketones were low, DNR.			
4				
File ID: 8M403130				
	Not needed, DNR.			
22	X	5	Analyzed too dilute	
File ID: 8M403148				
23	X	2	Analyzed too dilute	
File ID: 8M403149				
24	X	20	Over Calibration Range	TCE
File ID: 8M403150				

Approved: February 23, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 022315
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 20
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 17
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Maintenance Log ID: 52871

Internal Standard: STD68997 Surrogate Standard: STD68997
CCV: STD68957 LCS: STD68939 MS/MSD: STD68939

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG513149

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M403161	WG513148-01 50ng BFB STD 8260	NA	1	1	STD68998	02/23/15 11:41
8M403162	WG513148-02 50ug/L CCV STD 8260	NA	1	1	STD68957	02/23/15 12:05
8M403163	WG513148-02 50ug/L CCV STD 8260	NA	1	1	STD68957	02/23/15 12:34
8M403164	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD68819	02/23/15 13:02
8M403165	WG513149-01 VBLK0223 BLANK STD 826	NA	1	1		02/23/15 13:31
8M403166	WG513149-02 20ug/L LCS STD 8260	NA	1	1	STD68939	02/23/15 13:59
8M403167	L15021037-04 B 5X MS 826-LOW	<2	1	5	STD68939	02/23/15 14:28
8M403168	L15021037-05 B 5X MSD 826-LOW	<2	1	5	STD68939	02/23/15 14:58
8M403169	L15021060-01 B 25X 624-SPE	<2	2	25		02/23/15 15:27
8M403170	L15021053-09 B 20X 826-LOW D1	<2	1	20		02/23/15 15:56
8M403171	L15021037-09 B 25X 826-LOW D1	<2	1	25		02/23/15 16:25
8M403172	L15021062-01 B 25X 826-BETX	<2	1	25		02/23/15 16:55
8M403173	L15021037-02 B 250X 826-LOW D1	<2	1	250		02/23/15 17:24
8M403174	L15021037-01 B 250X 826-LOW D1	<2	1	250		02/23/15 17:54
8M403175	L15021037-08 B 20X 826-LOW	<2	1	20		02/23/15 18:24
8M403176	L15021037-10 B 100X 826-LOW	<2	1	100		02/23/15 18:52
8M403177	L15021037-03 B 5X REF 826-LOW	<2	1	5		02/23/15 19:20
8M403178	L15021053-01 B 5X 826-LOW	<2	1	5		02/23/15 19:49
8M403179	L15021053-05 B 2X 826-LOW	<2	1	2		02/23/15 20:17
8M403180	RINSE	NA	1	1		02/23/15 20:46
8M403181	ANTIFOAM BLANK	NA	1	1		02/23/15 21:16
8M403182	L15021079-01 A 8260	5	1	1		02/23/15 21:44
8M403183	CCV	NA	1	1		02/23/15 22:13
8M403184	RINSE	NA	1	1		02/23/15 22:41
8M403185	RINSE	NA	1	1		02/23/15 23:10

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 8M403162				
	Acetone was low, DNR.			
4				
File ID: 8M403164				

Approved: February 24, 2015

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS8	Dataset:	022315		
Analyst1:	TMB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	20
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	17
Method:	OVAP	SOP:	MSV01/PAT01	Rev:	0
Maintenance Log ID:	52871				

Internal Standard: STD68997 Surrogate Standard: STD68997

CCV: STD68957 LCS: STD68939 MS/MSD: STD68939

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG513149

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			Not needed, DNR.	

Approved: February 24, 2015

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 02-OCT-2014
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 63840
Analytical Workgroups: WG494714; WG494980

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
03-OCT-2014
Tiffany Bailey

Secondary Reviewer:
03-OCT-2014

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-03-2014 13:21:54

Microbac Laboratories Inc.

Data Checklist

Date: 06-FEB-2015
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 66219
Analytical Workgroups: WG511287

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
09-FEB-2015
Tiffany Bailey

Secondary Reviewer:
10-FEB-2015

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-10-2015 10:32:48

Microbac Laboratories Inc.

Data Checklist

Date: 20-FEB-2015
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 66469
Analytical Workgroups: WG512986

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
23-FEB-2015
Tiffany Bailey

Secondary Reviewer:
23-FEB-2015

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-23-2015 16:01:16

Microbac Laboratories Inc.

Data Checklist

Date: 23-FEB-2015
Analyst: TMB
Analyst: NA
Method: 8260B/OVAP
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 66488
Analytical Workgroups: WG513149

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
24-FEB-2015
Tiffany Bailey

Secondary Reviewer:
24-FEB-2015

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-24-2015 10:53:20

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG512986

Login Number: L15021053

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW14-021715	03	02/17/15					02/20/2015	3.5	14		02/20/15	3.5	14	
50WW06-021715	07	02/17/15					02/20/2015	3.4	14		02/20/15	3.4	14	
50WW08-021715	09	02/17/15					02/20/2015	3.4	14		02/20/15	3.4	14	
50WW22-021715	11	02/17/15					02/20/2015	3.2	14		02/20/15	3.2	14	
TRIP BLANK	13	02/17/15					02/20/2015	3.8	14		02/20/15	3.8	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4033991
Report generated 03/10/2015 12:04

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG513149

Login Number: L15021053

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW13-021715	01	02/17/15					02/23/2015	6.5	14		02/23/15	6.5	14	
50WW11-021715	05	02/17/15					02/23/2015	6.4	14		02/23/15	6.4	14	
50WW08-021715	09	02/17/15					02/23/2015	6.1	14		02/23/15	6.1	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4033991
Report generated 03/10/2015 12:04

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L15021053
Instrument Id: HPMS8
Workgroup (AAB#): WG512986

Method: 8260
CAL ID: HPMS8-06-FEB-15
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L15021053-03	1.00	01	85.8	92.2	103	104
L15021053-07	1.00	01	90.7	96.1	98.8	98.9
L15021053-09	2.50	DL01	90.4	95.0	97.7	98.6
L15021053-11	1.00	01	89.0	97.5	99.8	101
L15021053-13	1.00	01	90.2	94.5	99.2	99.8
WG512986-01	1.00	01	88.1	97.3	100	98.6
WG512986-02	1.00	01	87.9	93.9	99.4	99.1
WG512986-03	1.00	01	88.8	92.8	99.6	99.1
WG512986-04	1.00	01	83.3	93.3	91.9	111

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4033997
Report generated: 03/10/2015 12:05

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L15021053
Instrument Id: HPMS8
Workgroup (AAB#): WG513149

Method: 8260
CAL ID: HPMS8-06-FEB-15
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L15021053-01	5.00	DL01	88.5	96.0	97.4	97.8
L15021053-05	2.00	DL01	84.3	91.8	103	106
L15021053-09	20.0	DL02	87.0	96.6	103	99.2
WG513149-01	1.00	01	88.8	92.6	103	99.5
WG513149-02	1.00	01	89.5	90.2	101	101

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4033997
Report generated: 03/10/2015 12:05

METHOD BLANK SUMMARY

Login Number: L15021053
Blank File ID: 8M403131
Prep Date: 02/20/15 14:16
Analyzed Date: 02/20/15 14:16
Analyst: TMB

Work Group: WG512986
Blank Sample ID: WG512986-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG512986-02	8M403137	02/20/15 17:11	01
LCS2	WG512986-03	8M403138	02/20/15 17:40	01
TRIP BLANK	L15021053-13	8M403142	02/20/15 19:37	01
50WW22-021715	L15021053-11	8M403143	02/20/15 20:06	01
50WW14-021715	L15021053-03	8M403145	02/20/15 21:04	01
50WW06-021715	L15021053-07	8M403146	02/20/15 21:33	01
50WW08-021715	L15021053-09	8M403150	02/20/15 23:27	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4054724
Report generated 03/10/2015 12:04

METHOD BLANK SUMMARY

Login Number: L15021053
Blank File ID: 8M403165
Prep Date: 02/23/15 13:31
Analyzed Date: 02/23/15 13:31
Analyst: TMB

Work Group: WG513149
Blank Sample ID: WG513149-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG513149-02	8M403166	02/23/15 13:59	01
50WW08-021715	L15021053-09	8M403170	02/23/15 15:56	DL02
50WW13-021715	L15021053-01	8M403178	02/23/15 19:49	DL01
50WW11-021715	L15021053-05	8M403179	02/23/15 20:17	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4054724
Report generated 03/10/2015 12:04

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L15021053 Prep Date: 02/20/15 14:16 Sample ID: WG512986-01
Instrument ID: HPMS8 Run Date: 02/20/15 14:16 Prep Method: 5030B/5030C/503
File ID: 8M403131 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG512986 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-06-FEB-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4054725
10-MAR-2015 12:04

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15021053 Prep Date: 02/20/15 14:16 Sample ID: WG512986-01
Instrument ID: HPMS8 Run Date: 02/20/15 14:16 Prep Method: 5030B/5030C/503
File ID: 8M403131 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG512986 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-06-FEB-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	97.3	85 - 115	PASS
1,2-Dichloroethane-d4	88.1	70 - 120	PASS
Toluene-d8	98.6	85 - 120	PASS
4-Bromofluorobenzene	100	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4054725
10-MAR-2015 12:04

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L15021053 Prep Date: 02/23/15 13:31 Sample ID: WG513149-01
Instrument ID: HPMS8 Run Date: 02/23/15 13:31 Prep Method: 5030B/5030C/503
File ID: 8M403165 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG513149 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-06-FEB-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 4054725
10-MAR-2015 12:04

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15021053 Prep Date: 02/23/15 13:31 Sample ID: WG513149-01
Instrument ID: HPMS8 Run Date: 02/23/15 13:31 Prep Method: 5030B/5030C/503
File ID: 8M403165 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG513149 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-06-FEB-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	92.6	85 - 115	PASS
1,2-Dichloroethane-d4	88.8	70 - 120	PASS
Toluene-d8	99.5	85 - 120	PASS
4-Bromofluorobenzene	103	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4054725
10-MAR-2015 12:04

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15021053 | Run Date: 02/20/2015 | Sample ID: WG512986-02
Instrument ID: HPMS8 | Run Time: 17:11 | Prep Method: 5030B/5030C/503
File ID: 8M403137 | Analyst: TMB | Method: 8260B
Workgroup (AAB#): WG512986 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD68939 | Cal ID: HPMS8-06-FEB-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	18.7	93.4	40 - 140	
Benzene	20.0	20.2	101	80 - 120	
Bromobenzene	20.0	23.3	117	75 - 125	
Bromochloromethane	20.0	20.3	102	65 - 130	
Bromodichloromethane	20.0	20.1	100	75 - 120	
Bromoform	20.0	21.5	108	70 - 130	
Bromomethane	20.0	16.4	82.0	30 - 145	
2-Butanone	20.0	18.4	92.1	30 - 150	
n-Butylbenzene	20.0	20.3	102	70 - 135	
sec-Butylbenzene	20.0	20.1	100	70 - 125	
tert-Butylbenzene	20.0	19.8	99.2	70 - 130	
Carbon disulfide	20.0	16.7	83.7	35 - 160	
Carbon tetrachloride	20.0	19.8	99.2	65 - 140	
Chlorobenzene	20.0	20.2	101	80 - 120	
Chlorodibromomethane	20.0	22.1	111	60 - 135	
Chloroethane	20.0	20.3	101	60 - 135	
Chloroform	20.0	19.5	97.5	65 - 135	
Chloromethane	20.0	14.5	72.4	40 - 125	
2-Chlorotoluene	20.0	21.4	107	75 - 125	
4-Chlorotoluene	20.0	20.5	103	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	21.9	109	50 - 130	
1,2-Dibromoethane	20.0	21.4	107	80 - 120	
Dibromomethane	20.0	19.2	96.1	75 - 125	
1,2-Dichlorobenzene	20.0	20.5	103	70 - 120	
1,3-Dichlorobenzene	20.0	20.2	101	75 - 125	
1,4-Dichlorobenzene	20.0	21.3	106	75 - 125	
Dichlorodifluoromethane	20.0	10.1	50.4	30 - 155	
1,1-Dichloroethane	20.0	18.5	92.7	70 - 135	
1,2-Dichloroethane	20.0	19.5	97.3	70 - 130	
1,1-Dichloroethene	20.0	17.6	88.1	70 - 130	
cis-1,2-Dichloroethene	20.0	20.2	101	70 - 125	
trans-1,2-Dichloroethene	20.0	19.2	96.0	60 - 140	
1,2-Dichloropropane	20.0	19.9	99.4	75 - 125	
1,3-Dichloropropane	20.0	21.0	105	75 - 125	
2,2-Dichloropropane	20.0	19.6	98.0	70 - 135	
cis-1,3-Dichloropropene	20.0	21.9	109	70 - 130	
trans-1,3-Dichloropropene	20.0	21.3	106	55 - 140	
1,1-Dichloropropene	20.0	19.6	97.9	75 - 130	
Ethylbenzene	20.0	20.8	104	75 - 125	
2-Hexanone	20.0	19.8	99.0	55 - 130	
Hexachlorobutadiene	20.0	19.3	96.4	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4035329
Report generated: 02/24/2015 09:01

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15021053 Run Date: 02/20/2015 Sample ID: WG512986-02
Instrument ID: HPMS8 Run Time: 17:11 Prep Method: 5030B/5030C/503
File ID: 8M403137 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG512986 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD68939 Cal ID: HPMS8-06-FEB-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	21.3	107	75 - 125	
p-Isopropyltoluene	20.0	21.0	105	75 - 130	
4-Methyl-2-pentanone	20.0	17.9	89.7	60 - 135	
Methylene chloride	20.0	18.9	94.3	55 - 140	
Naphthalene	20.0	22.9	115	55 - 140	
n-Propylbenzene	20.0	20.6	103	70 - 130	
Styrene	20.0	23.4	117	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	21.9	110	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	21.4	107	65 - 130	
Tetrachloroethene	20.0	21.0	105	45 - 150	
Toluene	20.0	23.0	115	75 - 120	
1,2,3-Trichlorobenzene	20.0	21.6	108	55 - 140	
1,2,4-Trichlorobenzene	20.0	22.0	110	65 - 135	
1,1,1-Trichloroethane	20.0	19.9	99.4	65 - 130	
1,1,2-Trichloroethane	20.0	21.5	107	75 - 125	
Trichloroethene	20.0	21.9	109	70 - 125	
Trichlorofluoromethane	20.0	17.7	88.3	60 - 145	
1,2,3-Trichloropropane	20.0	21.4	107	75 - 125	
1,2,4-Trimethylbenzene	20.0	23.4	117	75 - 130	
1,3,5-Trimethylbenzene	20.0	24.6	123	75 - 130	
Vinyl chloride	20.0	17.4	87.2	50 - 145	
o-Xylene	20.0	20.8	104	80 - 120	
m-,p-Xylene	40.0	43.5	109	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	93.9	85 - 115	PASS
1,2-Dichloroethane-d4	87.9	70 - 120	PASS
Toluene-d8	99.1	85 - 120	PASS
4-Bromofluorobenzene	99.4	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4035329
Report generated: 02/24/2015 09:01

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15021053 | Run Date: 02/23/2015 | Sample ID: WG513149-02
Instrument ID: HPMS8 | Run Time: 13:59 | Prep Method: 5030B/5030C/503
File ID: 8M403166 | Analyst: TMB | Method: 8260B
Workgroup (AAB#): WG513149 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD68939 | Cal ID: HPMS8-06-FEB-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	19.7	98.4	40 - 140	
Benzene	20.0	21.2	106	80 - 120	
Bromobenzene	20.0	21.7	109	75 - 125	
Bromochloromethane	20.0	20.0	99.9	65 - 130	
Bromodichloromethane	20.0	19.8	98.8	75 - 120	
Bromoform	20.0	21.2	106	70 - 130	
Bromomethane	20.0	18.0	89.9	30 - 145	
2-Butanone	20.0	20.6	103	30 - 150	
n-Butylbenzene	20.0	21.9	109	70 - 135	
sec-Butylbenzene	20.0	21.1	106	70 - 125	
tert-Butylbenzene	20.0	20.7	103	70 - 130	
Carbon disulfide	20.0	17.3	86.6	35 - 160	
Carbon tetrachloride	20.0	20.0	99.8	65 - 140	
Chlorobenzene	20.0	20.8	104	80 - 120	
Chlorodibromomethane	20.0	21.8	109	60 - 135	
Chloroethane	20.0	21.2	106	60 - 135	
Chloroform	20.0	19.5	97.6	65 - 135	
Chloromethane	20.0	24.9	125	40 - 125	
2-Chlorotoluene	20.0	21.7	108	75 - 125	
4-Chlorotoluene	20.0	20.5	103	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	21.0	105	50 - 130	
1,2-Dibromoethane	20.0	21.1	105	80 - 120	
Dibromomethane	20.0	19.2	96.2	75 - 125	
1,2-Dichlorobenzene	20.0	20.1	101	70 - 120	
1,3-Dichlorobenzene	20.0	20.3	101	75 - 125	
1,4-Dichlorobenzene	20.0	21.3	106	75 - 125	
Dichlorodifluoromethane	20.0	24.2	121	30 - 155	
1,1-Dichloroethane	20.0	20.1	101	70 - 135	
1,2-Dichloroethane	20.0	20.3	101	70 - 130	
1,1-Dichloroethene	20.0	19.7	98.3	70 - 130	
cis-1,2-Dichloroethene	20.0	20.4	102	70 - 125	
trans-1,2-Dichloroethene	20.0	20.6	103	60 - 140	
1,2-Dichloropropane	20.0	20.7	104	75 - 125	
1,3-Dichloropropane	20.0	22.4	112	75 - 125	
2,2-Dichloropropane	20.0	21.4	107	70 - 135	
cis-1,3-Dichloropropene	20.0	22.5	113	70 - 130	
trans-1,3-Dichloropropene	20.0	21.3	107	55 - 140	
1,1-Dichloropropene	20.0	20.5	103	75 - 130	
Ethylbenzene	20.0	21.3	106	75 - 125	
2-Hexanone	20.0	21.1	105	55 - 130	
Hexachlorobutadiene	20.0	19.3	96.7	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4035329
Report generated: 02/24/2015 09:01

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15021053 Run Date: 02/23/2015 Sample ID: WG513149-02
Instrument ID: HPMS8 Run Time: 13:59 Prep Method: 5030B/5030C/503
File ID: 8M403166 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG513149 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD68939 Cal ID: HPMS8-06-FEB-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	22.2	111	75 - 125	
p-Isopropyltoluene	20.0	21.6	108	75 - 130	
4-Methyl-2-pentanone	20.0	19.6	98.1	60 - 135	
Methylene chloride	20.0	19.7	98.6	55 - 140	
Naphthalene	20.0	21.5	108	55 - 140	
n-Propylbenzene	20.0	21.5	108	70 - 130	
Styrene	20.0	23.7	119	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	21.7	108	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	21.5	108	65 - 130	
Tetrachloroethene	20.0	20.7	104	45 - 150	
Toluene	20.0	23.2	116	75 - 120	
1,2,3-Trichlorobenzene	20.0	20.6	103	55 - 140	
1,2,4-Trichlorobenzene	20.0	20.9	105	65 - 135	
1,1,1-Trichloroethane	20.0	19.8	99.2	65 - 130	
1,1,2-Trichloroethane	20.0	21.4	107	75 - 125	
Trichloroethene	20.0	21.4	107	70 - 125	
Trichlorofluoromethane	20.0	19.4	96.8	60 - 145	
1,2,3-Trichloropropane	20.0	21.3	106	75 - 125	
1,2,4-Trimethylbenzene	20.0	23.7	118	75 - 130	
1,3,5-Trimethylbenzene	20.0	23.7	119	75 - 130	
Vinyl chloride	20.0	26.4	132	50 - 145	
o-Xylene	20.0	21.4	107	80 - 120	
m-,p-Xylene	40.0	44.9	112	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	90.2	85 - 115	PASS
1,2-Dichloroethane-d4	89.5	70 - 120	PASS
Toluene-d8	101	85 - 120	PASS
4-Bromofluorobenzene	101	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4035329
Report generated: 02/24/2015 09:01

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15021053 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG512986 Units: ug/L
QC Key: DOD4 Lot #: STD68939

Sample ID: WG512986-02 LCS File ID: 8M403137 Run Date: 02/20/2015 17:11
Sample ID: WG512986-03 LCS2 File ID: 8M403138 Run Date: 02/20/2015 17:40

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	21.9	110	20.0	22.0	110	0.271	80 - 130	30	
1,1,1-Trichloroethane	20.0	19.9	99.4	20.0	19.8	99.2	0.143	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	21.4	107	20.0	21.4	107	0.0260	65 - 130	30	
1,1,2-Trichloroethane	20.0	21.5	107	20.0	21.5	108	0.137	75 - 125	30	
1,1-Dichloroethane	20.0	18.5	92.7	20.0	18.6	92.8	0.0811	70 - 135	30	
1,1-Dichloroethene	20.0	17.6	88.1	20.0	16.9	84.6	4.08	70 - 130	30	
1,1-Dichloropropene	20.0	19.6	97.9	20.0	19.3	96.4	1.55	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	21.6	108	20.0	22.1	110	1.88	55 - 140	30	
1,2,3-Trichloropropane	20.0	21.4	107	20.0	22.3	112	4.18	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	22.0	110	20.0	21.8	109	0.718	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	23.4	117	20.0	23.0	115	2.03	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	21.9	109	20.0	22.5	112	2.52	50 - 130	30	
1,2-Dibromoethane	20.0	21.4	107	20.0	22.3	112	4.06	80 - 120	30	
1,2-Dichlorobenzene	20.0	20.5	103	20.0	20.6	103	0.0771	70 - 120	30	
1,2-Dichloroethane	20.0	19.5	97.3	20.0	19.9	99.3	2.04	70 - 130	30	
1,2-Dichloropropane	20.0	19.9	99.4	20.0	19.8	99.0	0.492	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	24.6	123	20.0	23.3	116	5.52	75 - 130	30	
1,3-Dichlorobenzene	20.0	20.2	101	20.0	20.1	101	0.370	75 - 125	30	
1,3-Dichloropropane	20.0	21.0	105	20.0	21.5	108	2.30	75 - 125	30	
1,4-Dichlorobenzene	20.0	21.3	106	20.0	21.3	106	0.0967	75 - 125	30	
2,2-Dichloropropane	20.0	19.6	98.0	20.0	19.4	97.0	1.02	70 - 135	30	
2-Butanone	20.0	18.4	92.1	20.0	20.0	100	8.30	30 - 150	30	
2-Chlorotoluene	20.0	21.4	107	20.0	21.2	106	1.15	75 - 125	30	
2-Hexanone	20.0	19.8	99.0	20.0	21.3	106	7.18	55 - 130	30	
4-Chlorotoluene	20.0	20.5	103	20.0	20.4	102	0.786	75 - 130	30	
4-Methyl-2-pentanone	20.0	17.9	89.7	20.0	19.6	97.9	8.68	60 - 135	30	
Acetone	20.0	18.7	93.4	20.0	20.0	100	6.94	40 - 140	30	
Benzene	20.0	20.2	101	20.0	20.0	100	0.945	80 - 120	30	
Bromobenzene	20.0	23.3	117	20.0	22.6	113	3.19	75 - 125	30	
Bromochloromethane	20.0	20.3	102	20.0	20.7	104	1.88	65 - 130	30	
Bromodichloromethane	20.0	20.1	100	20.0	20.2	101	0.545	75 - 120	30	
Bromoform	20.0	21.5	108	20.0	21.9	110	1.64	70 - 130	30	
Bromomethane	20.0	16.4	82.0	20.0	16.8	84.0	2.51	30 - 145	30	
Carbon disulfide	20.0	16.7	83.7	20.0	16.8	83.9	0.212	35 - 160	30	
Carbon tetrachloride	20.0	19.8	99.2	20.0	20.1	101	1.41	65 - 140	30	
Chlorobenzene	20.0	20.2	101	20.0	20.2	101	0.0210	80 - 120	30	
Chloroethane	20.0	20.3	101	20.0	17.7	88.4	13.8	60 - 135	30	
Chloroform	20.0	19.5	97.5	20.0	19.2	96.0	1.56	65 - 135	30	
Chloromethane	20.0	14.5	72.4	20.0	14.5	72.7	0.493	40 - 125	30	
cis-1,2-Dichloroethene	20.0	20.2	101	20.0	20.0	100	0.966	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4033992
Report generated: 03/10/2015 12:04

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15021053 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG512986 Units: ug/L
QC Key: DOD4 Lot #: STD68939

Sample ID: WG512986-02 LCS File ID: 8M403137 Run Date: 02/20/2015 17:11
Sample ID: WG512986-03 LCS2 File ID: 8M403138 Run Date: 02/20/2015 17:40

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	21.9	109	20.0	22.0	110	0.605	70 - 130	30	
Chlorodibromomethane	20.0	22.1	111	20.0	22.8	114	2.86	60 - 135	30	
Dibromomethane	20.0	19.2	96.1	20.0	19.7	98.3	2.25	75 - 125	30	
Dichlorodifluoromethane	20.0	10.1	50.4	20.0	9.88	49.4	2.06	30 - 155	30	
Ethylbenzene	20.0	20.8	104	20.0	20.7	104	0.399	75 - 125	30	
Hexachlorobutadiene	20.0	19.3	96.4	20.0	19.4	97.0	0.581	50 - 140	30	
Isopropylbenzene	20.0	21.3	107	20.0	21.2	106	0.789	75 - 125	30	
m-,p-Xylene	40.0	43.5	109	40.0	42.5	106	2.12	75 - 130	30	
Methylene chloride	20.0	18.9	94.3	20.0	18.8	93.8	0.580	55 - 140	30	
n-Butylbenzene	20.0	20.3	102	20.0	19.9	99.7	2.05	70 - 135	30	
n-Propylbenzene	20.0	20.6	103	20.0	20.4	102	0.824	70 - 130	30	
Naphthalene	20.0	22.9	115	20.0	23.1	116	0.873	55 - 140	30	
o-Xylene	20.0	20.8	104	20.0	20.7	104	0.434	80 - 120	30	
p-Isopropyltoluene	20.0	21.0	105	20.0	20.8	104	0.835	75 - 130	30	
sec-Butylbenzene	20.0	20.1	100	20.0	20.0	100	0.320	70 - 125	30	
Styrene	20.0	23.4	117	20.0	23.1	115	1.55	65 - 135	30	
tert-Butylbenzene	20.0	19.8	99.2	20.0	20.2	101	1.97	70 - 130	30	
Tetrachloroethene	20.0	21.0	105	20.0	20.7	104	1.41	45 - 150	30	
Toluene	20.0	23.0	115	20.0	21.9	110	4.81	75 - 120	30	
trans-1,2-Dichloroethene	20.0	19.2	96.0	20.0	18.8	94.2	1.94	60 - 140	30	
trans-1,3-Dichloropropene	20.0	21.3	106	20.0	20.7	104	2.65	55 - 140	30	
Trichloroethene	20.0	21.9	109	20.0	21.8	109	0.0904	70 - 125	30	
Trichlorofluoromethane	20.0	17.7	88.3	20.0	17.3	86.7	1.83	60 - 145	30	
Vinyl chloride	20.0	17.4	87.2	20.0	16.8	84.2	3.42	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	87.9	88.8	70 - 120	PASS
Dibromofluoromethane	93.9	92.8	85 - 115	PASS
4-Bromofluorobenzene	99.4	99.6	75 - 120	PASS
Toluene-d8	99.1	99.1	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4033992
Report generated: 03/10/2015 12:04

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15021053
Instrument: HPMS8
Analyst: TMB
Workgroup: WG494714

Tune ID: WG494714-01
Run Date: 10/02/2014
Run Time: 11:58
File ID: 8M400357
Cal ID: HPMS8 - 02-OCT-14

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.7	5158	PASS
75.0	95.0	30.0	60.0	51.7	12312	PASS
95.0	95.0	100	100	100	23818	PASS
96.0	95.0	5.00	9.00	7.56	1800	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	69.7	16590	PASS
175	174	5.00	9.00	7.78	1290	PASS
176	174	95.0	101	97.3	16145	PASS
177	176	5.00	9.00	6.34	1023	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG494714-02	STD	01	10/02/2014 12:24	
WG494714-03	STD	01	10/02/2014 12:53	
WG494714-04	STD	01	10/02/2014 13:22	
WG494714-05	STD	01	10/02/2014 13:51	
WG494714-06	STD	01	10/02/2014 14:19	
WG494714-07	STD	01	10/02/2014 14:48	
WG494714-08	STD	01	10/02/2014 15:16	
WG494714-09	STD	01	10/02/2014 15:45	
WG494714-10	SSCV	01	10/02/2014 16:47	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4033994
Report generated 03/10/2015 12:04

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15021053
Instrument: HPMS8
Analyst: TMB
Workgroup: WG511287

Tune ID: WG511287-01
Run Date: 02/06/2015
Run Time: 15:35
File ID: 8M402829
Cal ID: HPMS8 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.1	6438	PASS
75.0	95.0	30.0	60.0	49.7	15924	PASS
95.0	95.0	100	100	100	32031	PASS
96.0	95.0	5.00	9.00	5.78	1851	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	86.9	27829	PASS
175	174	5.00	9.00	6.67	1855	PASS
176	174	95.0	101	95.9	26698	PASS
177	176	5.00	9.00	7.23	1931	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG511287-02	STD	01	02/06/2015 15:59	
WG511287-03	STD	01	02/06/2015 16:27	
WG511287-04	STD	01	02/06/2015 16:57	
WG511287-05	STD	01	02/06/2015 17:26	
WG511287-06	STD	01	02/06/2015 17:54	
WG511287-07	STD	01	02/06/2015 18:23	
WG511287-08	STD-CCV	01	02/06/2015 18:53	
WG511287-09	STD	01	02/06/2015 19:22	
WG511287-10	STD	01	02/06/2015 19:51	
WG511287-11	STD	01	02/06/2015 20:20	
WG511287-12	SSCV	01	02/06/2015 21:48	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4033994
Report generated 03/10/2015 12:04

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15021053
Instrument: HPMS8
Analyst: TMB
Workgroup: WG512985

Tune ID: WG512985-01
Run Date: 02/20/2015
Run Time: 12:26
File ID: 8M403127
Cal ID: HPMS8 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.3	6857	PASS
75.0	95.0	30.0	60.0	51.3	16484	PASS
95.0	95.0	100	100	100	32122	PASS
96.0	95.0	5.00	9.00	6.63	2131	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	76.3	24521	PASS
175	174	5.00	9.00	7.33	1798	PASS
176	174	95.0	101	99.1	24301	PASS
177	176	5.00	9.00	6.69	1625	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG512985-02	CCV	01	02/20/2015 13:19	
WG512986-01	BLANK	01	02/20/2015 14:16	
WG512986-02	LCS	01	02/20/2015 17:11	
WG512986-03	LCS2	01	02/20/2015 17:40	
L15021053-13	TRIP BLANK	01	02/20/2015 19:37	
L15021053-11	50WW22-021715	01	02/20/2015 20:06	
L15021053-03	50WW14-021715	01	02/20/2015 21:04	
L15021053-07	50WW06-021715	01	02/20/2015 21:33	
L15021053-09	50WW08-021715	DL01	02/20/2015 23:27	
WG512986-04	BLANK2	01	02/21/2015 00:52	*

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4033994
Report generated 03/10/2015 12:04

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15021053
Instrument: HPMS8
Analyst: TMB
Workgroup: WG513148

Tune ID: WG513148-01
Run Date: 02/23/2015
Run Time: 11:41
File ID: 8M403161
Cal ID: HPMS8 - 06-FEB-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.7	6449	PASS
75.0	95.0	30.0	60.0	52.5	16388	PASS
95.0	95.0	100	100	100	31229	PASS
96.0	95.0	5.00	9.00	6.15	1921	PASS
173	174	0	2.00	0.517	124	PASS
174	95.0	50.0	100	76.8	23976	PASS
175	174	5.00	9.00	6.94	1663	PASS
176	174	95.0	101	97.1	23277	PASS
177	176	5.00	9.00	6.24	1453	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG513148-02	CCV	01	02/23/2015 12:34	
WG513149-01	BLANK	01	02/23/2015 13:31	
WG513149-02	LCS	01	02/23/2015 13:59	
L15021053-09	50WW08-021715	DL02	02/23/2015 15:56	
L15021053-01	50WW13-021715	DL01	02/23/2015 19:49	
L15021053-05	50WW11-021715	DL01	02/23/2015 20:17	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4033994
Report generated 03/10/2015 12:04

Calibration Table Report
Method: A9FOOWTR.M
Title: A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Calibration: Fri Oct 03 12:32:07 2014
Curve: WG494714
Calibration Files

	Compound	5 8M400358.D	20 8M400359.D	50 8M400360.D	100 8M400361.D	200 8M400362.D	300 8M400363.D	400 8M400364.D	500 8M400365.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD											
T	Acetonitrile	0.015	0.015	0.015	0.016	0.017	0.016	0.015	0.016	0.016	4.015		
T	3-Chloro-1-propene	0.416	0.403	0.416	0.438	0.434	0.423	0.407	0.394	0.416	3.619		
T	2-Chloro-1,3-butadiene	0.467	0.479	0.496	0.520	0.522	0.508	0.485	0.462	0.493	4.640		
T	Ethyl Acetate	0.104	0.115	0.123	0.133	0.135	0.133	0.126	0.130	0.125	8.569		
T	Methacrylonitrile	0.062	0.065	0.072	0.077	0.080	0.080	0.077	0.081	0.074	9.397		
T	Isobutyl Alcohol			0.004	0.005	0.005	0.005	0.005	0.005	0.005	9.693		
T	1-Butanol			0.002	0.002	0.003	0.003	0.003	0.003	0.003	21.690	0.995	
T	Methyl methacrylate	0.115	0.123	0.137	0.147	0.154	0.151	0.145	0.150	0.140	10.193		
T	2-Nitropropane	0.032	0.035	0.039	0.043	0.047	0.046	0.046	0.048	0.042	14.057		
I	Chlorobenzene-d5	ISTD											
I	1,4-Dichlorobenzene-d4	ISTD											
T	Cyclohexanone			0.039	0.043	0.037	0.043	0.036	0.038	0.039	7.787		

Fri Oct 03 12:35:36 2014

Calibration Table Report
Method: 8260WTR.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Calibration: Mon Feb 09 12:21:39 2015
Curve: WG511287
Calibration Files

	Compound	0.3 8M402830.D	0.4 8M402831.D	1 8M402832.D	2 8M402833.D	5 8M402834.D	20 8M402835.D	50 8M402836.D	100 8M402837.D	200 8M402838.D	300 8M402839.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.383	0.374	0.385	0.416	0.446	0.426	0.409	0.365	0.401	7.007		
P	Chloromethane			0.397	0.365	0.350	0.346	0.351	0.335	0.320	0.307	0.346	7.946		
C	Vinyl Chloride		0.385	0.349	0.335	0.350	0.348	0.357	0.337	0.321	0.286	0.341	7.935		
T	1,3-Butadiene				0.267	0.299	0.289	0.290	0.257	0.219	0.185	0.258	16.257		1.000
T	Bromomethane			0.084	0.089	0.099	0.120	0.136	0.157	0.173	0.193	0.131	30.782		1.001
T	Chloroethane			0.207	0.207	0.211	0.214	0.219	0.212	0.212	0.204	0.211	2.293		
T	Trichlorofluoromethane		0.529	0.439	0.456	0.485	0.473	0.487	0.477	0.471	0.439	0.473	5.837		
T	Diethyl ether			0.170	0.177	0.174	0.179	0.174	0.172		0.163	0.173	2.960		
T	Isoprene					0.356	0.369	0.387	0.377	0.370	0.341	0.366	4.426		
T	Acrolein				0.022	0.018	0.020	0.019	0.020		0.020	0.020	6.106		
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.280	0.255	0.273	0.265	0.273	0.267	0.270	0.253	0.267	3.442		
T	Acetone					0.044	0.039	0.040	0.033	0.037	0.034	0.038	10.920		
C	1,1-Dichloroethene		0.466	0.428	0.417	0.432	0.428	0.442	0.432	0.423	0.398	0.430	4.289		
T	Tert-Butyl Alcohol				0.008	0.008	0.008	0.008	0.008		0.008	0.008	2.347		
T	Dimethyl Sulfide				0.268	0.276	0.293	0.298	0.294	0.294	0.282	0.286	3.896		
T	Iodomethane						0.047	0.116	0.154	0.184	0.187	0.138	42.077	0.998	
T	Methyl acetate				0.163	0.160	0.160	0.155	0.156	0.159	0.150	0.158	2.718		
T	Methylene Chloride			0.279	0.286	0.273	0.268	0.268	0.263	0.260	0.252	0.269	3.917		
T	Carbon Disulfide			0.958	0.918	0.921	0.926	0.925	0.886	0.823	0.740	0.887	8.060		
T	Acrylonitrile			0.049	0.056	0.051	0.056	0.058	0.056		0.061	0.055	7.447		
T	Methyl Tert Butyl Ether			0.412	0.423	0.464	0.487	0.492	0.494	0.501	0.464	0.467	7.191		
T	trans-1,2-Dichloroethene		0.466	0.403	0.414	0.407	0.415	0.422	0.414	0.405	0.379	0.414	5.540		
T	n-Hexane					0.367	0.353	0.380	0.379	0.372	0.328	0.363	5.440		
T	Diisopropyl ether			0.839	0.898	0.889	0.903	0.889	0.836		0.748	0.857	6.457		
T	Vinyl Acetate					0.116	0.121	0.121	0.119	0.120	0.113	0.118	2.570		
P	1,1-Dichloroethane		0.534	0.541	0.535	0.537	0.521	0.539	0.513	0.496	0.465	0.520	4.859		
T	Ethyl-Tert-Butyl ether			0.650	0.698	0.697	0.723	0.711	0.691		0.641	0.687	4.450		
T	2-Butanone					0.052	0.057	0.056	0.057	0.060	0.057	0.056	4.364		
T	Propionitrile				0.019	0.018	0.019	0.019	0.018		0.018	0.019	2.425		
T	2,2-Dichloropropane		0.427	0.363	0.392	0.366	0.368	0.390	0.387	0.387	0.374	0.384	5.070		
T	cis-1,2-Dichloroethene		0.307	0.277	0.285	0.291	0.287	0.290	0.284	0.282	0.270	0.286	3.583		
C	Chloroform	0.537	0.535	0.484	0.502	0.496	0.496	0.502	0.486	0.468	0.435	0.494	6.004		
T	1-Bromopropane			0.037	0.047	0.049	0.055	0.057	0.056	0.057	0.055	0.052	13.194		
T	Bromochloromethane		0.118	0.132	0.149	0.149	0.150	0.151	0.149	0.148	0.143	0.143	7.805		
T	Tetrahydrofuran			0.040	0.039	0.039	0.040	0.039	0.040		0.038	0.039	2.502		
S	Dibromofluoromethane			0.255	0.273	0.277	0.267	0.264	0.260	0.257	0.253	0.263	3.274		
T	1,1,1-Trichloroethane		0.430	0.421	0.420	0.421	0.439	0.447	0.443	0.438	0.416	0.430	2.688		
T	Cyclohexane			0.404	0.456	0.470	0.471	0.498	0.488	0.484	0.435	0.463	6.660		
T	1,1-Dichloropropene			0.339	0.342	0.371	0.385	0.397	0.393	0.385	0.359	0.372	6.126		
T	Tert-Amyl-Methyl ether			0.475	0.528	0.518	0.540	0.534	0.526		0.499	0.517	4.418		
T	Carbon Tetrachloride		0.352	0.338	0.354	0.369	0.373	0.389	0.393	0.385	0.37	0.369	5.02675		
S	1,2-Dichloroethane-d4			0.277	0.306	0.293	0.279	0.27	0.265	0.265	0.251	0.2758	6.301		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.349	0.305	0.321	0.321	0.335	0.34	0.332	0.327	0.307	0.3264	4.44766		
T	Benzene	1.133	1.092	1.007	1.037	1.092	1.079	1.077	1.017	0.887	0.744	1.0165	11.5588		
T	Trichloroethene		0.232	0.246	0.242	0.253	0.26	0.273	0.269	0.268	0.257	0.2557	5.33604		
T	Methylcyclohexane					0.403	0.406	0.435	0.438	0.432	0.387	0.4167	5.06962		
C	1,2-Dichloropropane		0.272	0.25	0.269	0.281	0.289	0.292	0.287	0.28	0.268	0.2764	4.79727		
T	Bromodichloromethane		0.33	0.314	0.36	0.352	0.36	0.371	0.363	0.358	0.337	0.3495	5.29056		
T	1,4-Dioxane				0.001	0.001	0.001	0.001	0.001		0.001	0.0011	9.34383		
T	Dibromomethane		0.123	0.132	0.13	0.132	0.131	0.133	0.131	0.134	0.127	0.1304	2.62867		
T	2-Chloroethyl Vinyl Ether				0.096	0.097	0.103	0.11	0.109	0.114	0.106	0.105	6.21087		
T	4-Methyl-2-Pentanone					0.041	0.045	0.049	0.048	0.052	0.048	0.0471	7.70157		
T	cis-1,3-Dichloropropene		0.325	0.325	0.333	0.37	0.386	0.402	0.397	0.389	0.361	0.3654	8.53122		

T	Dimethyl Disulfide					0.327	0.375	0.215	0.412	0.417	0.386	0.3555	21.3736	0.991
I	Chlorobenzene-d5	ISTD												
S	Toluene-d8			1.216	1.222	1.244	1.246	1.217	1.182	1.144	1.032	1.1877	5.99874	
C	Toluene		1.462	1.362	1.418	1.489	1.485	1.46	1.368	1.16	0.925	1.3478	13.9692	
T	Ethyl Methacrylate			0.205	0.225	0.234	0.277	0.278	0.285	0.296	0.26	0.2576	12.6359	
T	Paraldehyde											0	0	
T	trans-1,3-Dichloropropene			0.33	0.392	0.394	0.438	0.449	0.449	0.447	0.401	0.4124	10.1172	
T	1,1,2-Trichloroethane		0.177	0.201	0.22	0.212	0.232	0.227	0.223	0.226	0.208	0.214	7.90044	
T	2-Hexanone					0.046	0.054	0.056	0.058	0.062	0.055	0.0553	9.58298	
T	1,3-Dichloropropane		0.364	0.341	0.389	0.4	0.417	0.41	0.402	0.404	0.364	0.3878	6.56699	
T	Tetrachloroethene		0.277	0.264	0.278	0.293	0.302	0.302	0.304	0.311	0.288	0.291	5.32701	
T	Dibromochloromethane		0.223	0.213	0.266	0.272	0.294	0.297	0.3	0.309	0.286	0.2734	12.4997	
T	1,2-Dibromoethane		0.168	0.189	0.22	0.207	0.223	0.229	0.229	0.234	0.216	0.2127	10.2149	
T	1-Chlorohexane		0.442	0.4	0.423	0.452	0.481	0.491	0.501	0.483	0.429	0.4559	7.65058	
P	Chlorobenzene		0.962	0.959	0.931	0.962	0.945	0.95	0.923	0.849	0.72	0.9113	8.77727	
T	1,1,1,2-Tetrachloroethane		0.261	0.254	0.284	0.301	0.321	0.338	0.348	0.356	0.338	0.3112	12.1749	
C	Ethylbenzene		0.528	0.494	0.508	0.52	0.537	0.551	0.544	0.525	0.486	0.5214	4.25536	
T	m-,p-Xylene		0.628	0.587	0.609	0.644	0.647	0.644	0.617	0.537	0.433	0.5938	11.7598	
T	o-Xylene			0.504	0.542	0.598	0.618	0.641	0.626	0.601	0.547	0.5843	8.23297	
T	Styrene		0.817	0.829	0.936	1.033	1.056	1.063	1.019	0.919	0.763	0.9372	12.1047	
P	Bromoform			0.127	0.154	0.159	0.169	0.179	0.185	0.194	0.183	0.1687	12.9032	
T	Isopropylbenzene		1.506	1.431	1.499	1.601	1.661	1.649	1.532	1.265	0.995	1.4598	14.5172	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.393	0.418	0.48	0.466	0.488	0.457	0.467	0.475	0.446	0.4544	6.80176	
S	p-Bromofluorobenzene			0.876	0.859	0.916	0.922	0.904	0.906	0.906	0.883	0.8966	2.4069	
T	1,2,3-Trichloropropane			0.095	0.124	0.133	0.136	0.129	0.131	0.138	0.131	0.127	10.6025	
T	trans-1,4-Dichloro-2-Butene			0.061	0.106	0.127	0.156	0.151	0.16	0.15	0.159	0.1338	26.0881	0.999
T	n-Propylbenzene		3.61	3.608	3.78	4.023	4.07	3.889	3.568	2.693		3.6553	11.8578	
T	Bromobenzene	0.599	0.709	0.651	0.732	0.743	0.759	0.727	0.737	0.724	0.693	0.7074	6.86685	
T	1,3,5-Trimethylbenzene	2.611	2.417	2.353	2.379	2.652	2.746	2.664	2.601	2.18	1.798	2.4401	11.7205	
T	2-Chlorotoluene		2.628	2.193	2.404	2.374	2.362	2.326	2.162	1.875	1.739	2.229	12.3866	
T	4-Chlorotoluene		2.059	2.197	2.285	2.514	2.501	2.391	2.325	1.892		2.2705	9.45973	
T	a-Methylstyrene					1.362	1.452	1.482	1.492	1.395	1.253	1.406	6.42359	
T	tert-Butylbenzene			0.509	0.469	0.535	0.55	0.546	0.56	0.55	0.536	0.5317	5.55451	
T	1,2,4-Trimethylbenzene			2.411	2.71	2.83	2.828	2.735	2.609	2.167	1.769	2.5074	14.9214	
T	sec-Butylbenzene			3.117	3.305	3.466	3.514	3.397	3.225	2.553		3.2253	10.1298	
T	p-Isopropyltoluene		2.779	2.476	2.67	2.747	2.831	2.737	2.678	2.222	1.806	2.5495	13.169	
T	1,3-Dichlorobenzene		1.666	1.374	1.45	1.491	1.523	1.494	1.481	1.371	1.211	1.4513	8.64488	
T	1,4-Dichlorobenzene	1.843	1.595	1.461	1.452	1.523	1.509	1.488	1.469	1.342	1.181	1.4862	11.3872	
T	n-Butylbenzene		3.078	2.646	2.785	3.012	2.994	2.879	2.751	2.208		2.7941	9.96071	
T	1,2-Dichlorobenzene	1.353	1.353	1.233	1.35	1.351	1.367	1.326	1.326	1.238	1.11	1.3006	6.32887	
T	1,2-Dibromo-3-Chloropropane				0.066	0.078	0.092	0.088	0.088	0.092	0.086	0.0844	11.2808	
T	1,2,4-Trichlorobenzene		1.085	0.951	1.019	1.042	1.073	1.07	1.071	1.044	0.943	1.0329	5.12639	
T	Hexachlorobutadiene		0.583	0.578	0.579	0.62	0.618	0.619	0.629	0.643	0.601	0.6078	3.85144	
T	Naphthalene		1.601	1.434	1.451	1.567	1.699	1.609	1.595	1.493	1.258	1.523	8.54079	
T	1,2,3-Trichlorobenzene	0.996	0.801	0.853	0.92	0.884	0.95	0.931	0.935	0.916	0.833	0.9019	6.53208	

Mon Feb 09 13:05:24 2015

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15021053 Run Date: 02/06/2015 Sample ID: WG511287-12
Instrument ID: HPMS8 Run Time: 21:48 Method: 8260B
File ID: 8M402842 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG511287 Cal ID: HPMS8 - 06-FEB-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	48.2	ug/L	0.476	3.60	20	
1,1-Dichloroethene	CCC	50.0	47.6	ug/L	0.409	4.70	20	
1,2-Dichloropropane	CCC	50.0	51.0	ug/L	0.282	2.10	20	
Ethylbenzene	CCC	50.0	50.9	ug/L	0.531	1.80	20	
Toluene	CCC	50.0	53.1	ug/L	1.43	6.20	20	
Vinyl Chloride	CCC	50.0	48.2	ug/L	0.329	3.50	20	
Bromoform	SPCC	50.0	52.5	ug/L	0.177	5.00	20	
Chlorobenzene	SPCC	50.0	48.2	ug/L	0.879	3.50	20	
Chloromethane	SPCC	50.0	46.4	ug/L	0.322	7.10	20	
1,1-Dichloroethane	SPCC	50.0	49.2	ug/L	0.512	1.50	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.5	ug/L	0.450	0.900	20	
Acetone		50.0	51.3	ug/L	0.0389	2.60	20	
Benzene		50.0	51.3	ug/L	1.04	2.70	20	
Bromobenzene		50.0	51.1	ug/L	0.723	2.20	20	
Bromochloromethane		50.0	51.9	ug/L	0.149	3.80	20	
Bromodichloromethane		50.0	49.9	ug/L	0.349	0.300	20	
Bromomethane		50.0	51.0	ug/L	0.143	2.00	20	
2-Butanone		50.0	50.8	ug/L	0.0573	1.70	20	
n-Butylbenzene		50.0	50.7	ug/L	2.83	1.30	20	
sec-Butylbenzene		50.0	49.4	ug/L	3.19	1.20	20	
tert-Butylbenzene		50.0	48.6	ug/L	0.516	2.90	20	
Carbon Disulfide		50.0	44.9	ug/L	0.796	10.3	20	
Carbon Tetrachloride		50.0	50.1	ug/L	0.370	0.300	20	
Dibromochloromethane		50.0	53.2	ug/L	0.291	6.40	20	
Chloroethane		50.0	53.3	ug/L	0.225	6.60	20	
2-Chlorotoluene		50.0	50.1	ug/L	2.24	0.300	20	
4-Chlorotoluene		50.0	47.3	ug/L	2.15	5.40	20	
1,2-Dibromo-3-Chloropropane		50.0	49.9	ug/L	0.0842	0.200	20	
1,2-Dibromoethane		50.0	52.1	ug/L	0.222	4.20	20	
Dibromomethane		50.0	48.2	ug/L	0.126	3.70	20	
1,2-Dichlorobenzene		50.0	47.9	ug/L	1.25	4.20	20	
1,3-Dichlorobenzene		50.0	47.2	ug/L	1.37	5.60	20	
1,4-Dichlorobenzene		50.0	49.5	ug/L	1.47	1.00	20	
Dichlorodifluoromethane		50.0	50.9	ug/L	0.408	1.80	20	
1,2-Dichloroethane		50.0	49.1	ug/L	0.320	1.90	20	
cis-1,2-Dichloroethene		50.0	50.8	ug/L	0.291	1.70	20	
trans-1,2-Dichloroethene		50.0	50.4	ug/L	0.417	0.900	20	
1,3-Dichloropropane		50.0	52.1	ug/L	0.404	4.10	20	
2,2-Dichloropropane		50.0	47.6	ug/L	0.366	4.70	20	
cis-1,3-Dichloropropene		50.0	55.2	ug/L	0.404	10.4	20	
trans-1,3-Dichloropropene		50.0	49.7	ug/L	0.410	0.500	20	
1,1-Dichloropropene		50.0	50.6	ug/L	0.376	1.10	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4033993
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Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15021053 Run Date: 02/06/2015 Sample ID: WG511287-12
Instrument ID: HPMS8 Run Time: 21:48 Method: 8260B
File ID: 8M402842 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG511287 Cal ID: HPMS8 - 06-FEB-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	50.7	ug/L	0.0561	1.40	20	
Hexachlorobutadiene		50.0	52.1	ug/L	0.633	4.10	20	
Isopropylbenzene		50.0	51.6	ug/L	1.51	3.30	20	
p-Isopropyltoluene		50.0	50.8	ug/L	2.59	1.50	20	
4-Methyl-2-Pentanone		50.0	48.4	ug/L	0.0456	3.30	20	
Methylene Chloride		50.0	49.7	ug/L	0.267	0.700	20	
Naphthalene		50.0	51.5	ug/L	1.57	3.00	20	
n-Propylbenzene		50.0	48.7	ug/L	3.56	2.50	20	
Styrene		50.0	55.3	ug/L	1.04	10.6	20	
1,1,1,2-Tetrachloroethane		50.0	52.6	ug/L	0.328	5.20	20	
Tetrachloroethene		50.0	51.0	ug/L	0.297	2.10	20	
1,2,3-Trichlorobenzene		50.0	50.8	ug/L	0.917	1.70	20	
1,2,4-Trichlorobenzene		50.0	51.7	ug/L	1.07	3.50	20	
1,1,1-Trichloroethane		50.0	50.1	ug/L	0.431	0.100	20	
1,1,2-Trichloroethane		50.0	52.0	ug/L	0.223	4.00	20	
Trichloroethene		50.0	54.8	ug/L	0.280	9.60	20	
Trichlorofluoromethane		50.0	46.6	ug/L	0.441	6.80	20	
1,2,3-Trichloropropane		50.0	50.2	ug/L	0.128	0.400	20	
1,2,4-Trimethylbenzene		50.0	54.5	ug/L	2.73	9.00	20	
1,3,5-Trimethylbenzene		50.0	55.2	ug/L	2.70	10.5	20	
o-Xylene		50.0	50.1	ug/L	0.586	0.200	20	
m-,p-Xylene		100	104	ug/L	0.620	4.30	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4033993
Report generated 03/10/2015 12:04

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15021053 Run Date: 02/20/2015 Sample ID: WG512985-02
Instrument ID: HPMS8 Run Time: 13:19 Method: 8260B
File ID: 8M403129 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG512986 Cal ID: HPMS8 - 06-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	44.4	ug/L	0.439	11.2	20	
1,1-Dichloroethene	CCC	50.0	43.9	ug/L	0.377	12.2	20	
1,2-Dichloropropane	CCC	50.0	47.6	ug/L	0.263	4.72	20	
Ethylbenzene	CCC	50.0	49.4	ug/L	0.516	1.13	20	
Toluene	CCC	50.0	52.6	ug/L	1.42	5.22	20	
Vinyl Chloride	CCC	50.0	44.4	ug/L	0.303	11.2	20	
Bromoform	SPCC	50.0	49.3	ug/L	0.166	1.38	20	
Chlorobenzene	SPCC	50.0	50.2	ug/L	0.916	0.469	20	
Chloromethane	SPCC	50.0	44.3	ug/L	0.307	11.4	20	
1,1-Dichloroethane	SPCC	50.0	45.6	ug/L	0.474	8.79	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	51.0	ug/L	0.463	1.93	20	
Xylenes		150	154	ug/L	0.605	2.63	20	
Acetone		50.0	44.4	ug/L	0.0336	11.2	20	
Benzene		50.0	47.9	ug/L	0.975	4.13	20	
Bromobenzene		50.0	51.3	ug/L	0.725	2.55	20	
Bromochloromethane		50.0	47.9	ug/L	0.137	4.25	20	
Bromodichloromethane		50.0	46.2	ug/L	0.323	7.60	20	
Bromomethane		50.0	53.1	ug/L	0.150	6.11	20	
2-Butanone		50.0	46.1	ug/L	0.0520	7.76	20	
n-Butylbenzene		50.0	47.9	ug/L	2.68	4.22	20	
sec-Butylbenzene		50.0	50.7	ug/L	3.27	1.41	20	
tert-Butylbenzene		50.0	51.5	ug/L	0.548	2.98	20	
Carbon Disulfide		50.0	48.8	ug/L	0.867	2.34	20	
Carbon Tetrachloride		50.0	45.1	ug/L	0.333	9.71	20	
Dibromochloromethane		50.0	51.6	ug/L	0.282	3.19	20	
Chloroethane		50.0	46.0	ug/L	0.194	8.00	20	
2-Chlorotoluene		50.0	52.2	ug/L	2.33	4.48	20	
4-Chlorotoluene		50.0	50.1	ug/L	2.28	0.266	20	
1,2-Dibromo-3-Chloropropane		50.0	45.5	ug/L	0.0768	9.01	20	
1,2-Dibromoethane		50.0	51.2	ug/L	0.218	2.40	20	
Dibromomethane		50.0	44.1	ug/L	0.115	11.8	20	
1,2-Dichlorobenzene		50.0	46.8	ug/L	1.22	6.37	20	
1,3-Dichlorobenzene		50.0	51.8	ug/L	1.50	3.62	20	
1,4-Dichlorobenzene		50.0	50.0	ug/L	1.49	0.00600	20	
Dichlorodifluoromethane		50.0	38.8	ug/L	0.311	22.4	20	*
1,2-Dichloroethane		50.0	43.5	ug/L	0.284	13.1	20	
cis-1,2-Dichloroethene		50.0	46.9	ug/L	0.268	6.30	20	
trans-1,2-Dichloroethene		50.0	45.3	ug/L	0.375	9.48	20	
1,3-Dichloropropane		50.0	51.0	ug/L	0.396	2.07	20	
2,2-Dichloropropane		50.0	50.6	ug/L	0.389	1.28	20	
cis-1,3-Dichloropropene		50.0	50.2	ug/L	0.367	0.469	20	
trans-1,3-Dichloropropene		50.0	52.9	ug/L	0.437	5.84	20	

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15021053 Run Date: 02/20/2015 Sample ID: WG512985-02
Instrument ID: HPMS8 Run Time: 13:19 Method: 8260B
File ID: 8M403129 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG512986 Cal ID: HPMS8 - 06-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	47.4	ug/L	0.352	5.22	20	
2-Hexanone		50.0	52.1	ug/L	0.0577	4.18	20	
Hexachlorobutadiene		50.0	44.6	ug/L	0.542	10.8	20	
Isopropylbenzene		50.0	50.4	ug/L	1.47	0.818	20	
p-Isopropyltoluene		50.0	51.9	ug/L	2.64	3.73	20	
4-Methyl-2-Pentanone		50.0	48.3	ug/L	0.0455	3.44	20	
Methylene Chloride		50.0	46.2	ug/L	0.248	7.62	20	
Naphthalene		50.0	47.1	ug/L	1.43	5.85	20	
n-Propylbenzene		50.0	51.5	ug/L	3.76	2.99	20	
Styrene		50.0	53.8	ug/L	1.01	7.66	20	
1,1,1,2-Tetrachloroethane		50.0	51.9	ug/L	0.323	3.83	20	
Tetrachloroethene		50.0	50.0	ug/L	0.291	0.0256	20	
1,2,3-Trichlorobenzene		50.0	46.1	ug/L	0.832	7.77	20	
1,2,4-Trichlorobenzene		50.0	46.8	ug/L	0.966	6.44	20	
1,1,1-Trichloroethane		50.0	44.6	ug/L	0.384	10.8	20	
1,1,2-Trichloroethane		50.0	49.6	ug/L	0.212	0.798	20	
Trichloroethene		50.0	46.6	ug/L	0.238	6.79	20	
Trichlorofluoromethane		50.0	42.7	ug/L	0.404	14.6	20	
1,2,3-Trichloropropane		50.0	49.7	ug/L	0.126	0.608	20	
1,2,4-Trimethylbenzene		50.0	53.6	ug/L	2.69	7.15	20	
1,3,5-Trimethylbenzene		50.0	52.8	ug/L	2.58	5.63	20	
o-Xylene		50.0	51.5	ug/L	0.602	3.09	20	
m-,p-Xylene		100	102	ug/L	0.608	2.41	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
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Report generated 03/10/2015 12:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15021053 Run Date: 02/23/2015 Sample ID: WG513148-02
Instrument ID: HPMS8 Run Time: 12:34 Method: 8260B
File ID: 8M403163 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG513149 Cal ID: HPMS8 - 06-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	48.4	ug/L	0.479	3.15	20	
1,1-Dichloroethene	CCC	50.0	49.8	ug/L	0.428	0.401	20	
1,2-Dichloropropane	CCC	50.0	47.7	ug/L	0.264	4.62	20	
Ethylbenzene	CCC	50.0	52.8	ug/L	0.551	5.61	20	
Toluene	CCC	50.0	56.1	ug/L	1.51	12.1	20	
Vinyl Chloride	CCC	50.0	53.1	ug/L	0.362	6.21	20	
Bromoform	SPCC	50.0	49.5	ug/L	0.167	0.923	20	
Chlorobenzene	SPCC	50.0	52.1	ug/L	0.949	4.14	20	
Chloromethane	SPCC	50.0	50.6	ug/L	0.351	1.23	20	
1,1-Dichloroethane	SPCC	50.0	50.0	ug/L	0.520	0.0888	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	51.4	ug/L	0.467	2.75	20	
Xylenes		150	165	ug/L	0.649	10.3	20	
Acetone		50.0	48.1	ug/L	0.0364	3.88	20	
Benzene		50.0	48.5	ug/L	0.985	3.08	20	
Bromobenzene		50.0	51.5	ug/L	0.728	2.91	20	
Bromochloromethane		50.0	48.2	ug/L	0.138	3.59	20	
Bromodichloromethane		50.0	46.7	ug/L	0.326	6.63	20	
Bromomethane		50.0	57.6	ug/L	0.163	15.1	20	
2-Butanone		50.0	47.9	ug/L	0.0540	4.17	20	
n-Butylbenzene		50.0	53.1	ug/L	2.97	6.14	20	
sec-Butylbenzene		50.0	54.3	ug/L	3.50	8.64	20	
tert-Butylbenzene		50.0	51.9	ug/L	0.552	3.84	20	
Carbon Disulfide		50.0	52.7	ug/L	0.935	5.31	20	
Carbon Tetrachloride		50.0	47.1	ug/L	0.347	5.87	20	
Dibromochloromethane		50.0	51.7	ug/L	0.283	3.43	20	
Chloroethane		50.0	50.6	ug/L	0.213	1.13	20	
2-Chlorotoluene		50.0	54.4	ug/L	2.43	8.90	20	
4-Chlorotoluene		50.0	53.8	ug/L	2.44	7.66	20	
1,2-Dibromo-3-Chloropropane		50.0	49.3	ug/L	0.0832	1.32	20	
1,2-Dibromoethane		50.0	50.6	ug/L	0.215	1.22	20	
Dibromomethane		50.0	44.2	ug/L	0.115	11.6	20	
1,2-Dichlorobenzene		50.0	50.5	ug/L	1.31	1.09	20	
1,3-Dichlorobenzene		50.0	52.9	ug/L	1.53	5.76	20	
1,4-Dichlorobenzene		50.0	50.5	ug/L	1.50	0.944	20	
Dichlorodifluoromethane		50.0	42.0	ug/L	0.336	16.1	20	
1,2-Dichloroethane		50.0	44.8	ug/L	0.293	10.4	20	
cis-1,2-Dichloroethene		50.0	50.3	ug/L	0.288	0.559	20	
trans-1,2-Dichloroethene		50.0	50.6	ug/L	0.419	1.16	20	
1,3-Dichloropropane		50.0	51.6	ug/L	0.400	3.16	20	
2,2-Dichloropropane		50.0	54.9	ug/L	0.421	9.76	20	
cis-1,3-Dichloropropene		50.0	49.4	ug/L	0.361	1.16	20	
trans-1,3-Dichloropropene		50.0	56.0	ug/L	0.462	12.1	20	

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15021053 | Run Date: 02/23/2015 | Sample ID: WG513148-02
Instrument ID: HPMS8 | Run Time: 12:34 | Method: 8260B
File ID: 8M403163 | Analyst: TMB | QC Key: DOD4
Workgroup (AAB#): WG513149 | Cal ID: HPMS8 - 06-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	48.7	ug/L	0.362	2.67	20	
2-Hexanone		50.0	52.6	ug/L	0.0582	5.18	20	
Hexachlorobutadiene		50.0	47.2	ug/L	0.574	5.61	20	
Isopropylbenzene		50.0	56.3	ug/L	1.64	12.6	20	
p-Isopropyltoluene		50.0	55.3	ug/L	2.82	10.7	20	
4-Methyl-2-Pentanone		50.0	43.7	ug/L	0.0412	12.6	20	
Methylene Chloride		50.0	49.1	ug/L	0.264	1.72	20	
Naphthalene		50.0	48.0	ug/L	1.46	3.96	20	
n-Propylbenzene		50.0	55.4	ug/L	4.05	10.8	20	
Styrene		50.0	56.8	ug/L	1.06	13.6	20	
1,1,1,2-Tetrachloroethane		50.0	54.0	ug/L	0.336	8.09	20	
Tetrachloroethene		50.0	53.2	ug/L	0.310	6.48	20	
1,2,3-Trichlorobenzene		50.0	48.3	ug/L	0.871	3.46	20	
1,2,4-Trichlorobenzene		50.0	49.7	ug/L	1.03	0.662	20	
1,1,1-Trichloroethane		50.0	48.6	ug/L	0.418	2.84	20	
1,1,2-Trichloroethane		50.0	51.7	ug/L	0.221	3.44	20	
Trichloroethene		50.0	47.2	ug/L	0.242	5.54	20	
Trichlorofluoromethane		50.0	48.7	ug/L	0.461	2.61	20	
1,2,3-Trichloropropane		50.0	48.2	ug/L	0.123	3.59	20	
1,2,4-Trimethylbenzene		50.0	56.6	ug/L	2.84	13.2	20	
1,3,5-Trimethylbenzene		50.0	56.5	ug/L	2.76	12.9	20	
o-Xylene		50.0	54.7	ug/L	0.640	9.44	20	
m-,p-Xylene		100	111	ug/L	0.658	10.8	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4033996
Report generated 03/10/2015 12:05

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15021053
Instrument ID: HPMS8
Workgroup (AAB#): WG512986

ICAL CCV Number: WG511287-08
CAL ID: HPMS8-06-FEB-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG511287-08	NA	NA	298746	559024	749967
Upper Limit	NA	NA	597492	1118048	1499934
Lower Limit	NA	NA	149373	279512	374984
L15021053-03	1.00	01	252167	498310	721943
L15021053-07	1.00	01	251881	497955	675200
L15021053-09	2.50	DL01	232958	461404	630164
L15021053-11	1.00	01	257881	503205	690523
L15021053-13	1.00	01	262892	518632	707581
WG512986-01	1.00	01	278756	547422	730017
WG512986-02	1.00	01	274748	535009	745407
WG512986-03	1.00	01	280389	547063	762975

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4054729
Report generated 03/10/2015 12:05

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15021053
Instrument ID: HPMS8
Workgroup (AAB#): WG513149

ICAL CCV Number: WG511287-08
CAL ID: HPMS8-06-FEB-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG511287-08	NA	NA	298746	559024	749967
Upper Limit	NA	NA	597492	1118048	1499934
Lower Limit	NA	NA	149373	279512	374984
L15021053-01	5.00	DL01	251904	493320	661106
L15021053-05	2.00	DL01	236999	486320	681428
L15021053-09	20.0	DL02	257318	526823	726828
WG513149-01	1.00	01	230031	474948	639321
WG513149-02	1.00	01	251756	481992	681564

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4054729
Report generated 03/10/2015 12:05

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15021053
Instrument ID: HPMS8
Workgroup (AAB#): WG512986

ICAL CCV Number: WG511287-08
CAL ID: HPMS8-06-FEB-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG511287-08	NA	NA	17.72	14.69	10.83
Upper Limit	NA	NA	18.22	15.19	11.33
Lower Limit	NA	NA	17.22	14.19	10.33
L15021053-03	1.00	01	17.71	14.69	10.82
L15021053-07	1.00	01	17.72	14.69	10.82
L15021053-09	2.50	DL01	17.72	14.69	10.82
L15021053-11	1.00	01	17.71	14.69	10.83
L15021053-13	1.00	01	17.71	14.69	10.83
WG512986-01	1.00	01	17.71	14.69	10.83
WG512986-02	1.00	01	17.72	14.69	10.82
WG512986-03	1.00	01	17.71	14.69	10.83

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4054738
Report generated: 03/10/2015 12:06

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15021053
Instrument ID: HPMS8
Workgroup (AAB#): WG513149

ICAL CCV Number: WG511287-08
CAL ID: HPMS8 - 06-FEB-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG511287-08	NA	NA	17.72	14.69	10.83
Upper Limit	NA	NA	18.22	15.19	11.33
Lower Limit	NA	NA	17.22	14.19	10.33
L15021053-01	5.00	DL01	17.71	14.69	10.83
L15021053-05	2.00	DL01	17.71	14.69	10.82
L15021053-09	20.0	DL02	17.72	14.69	10.82
WG513149-01	1.00	01	17.72	14.69	10.82
WG513149-02	1.00	01	17.71	14.69	10.82

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4054738
Report generated: 03/10/2015 12:06

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\022315\8M403178.D Vial: 18
Acq On : 23 Feb 2015 19:49 Operator: TMB
Sample : L15021053-01 B 5X 826-LOW Inst : HPMS8
Misc : 1,5 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 24 08:15:22 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	661106	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	493320	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.71	152	251904	25.00 ug/L	-0.02

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	166986	24.0004 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.00%		
43) 1,2-Dichloroethane-d4	10.42	65	161429	22.1313 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 88.52%		
58) Toluene-d8	12.80	98	572976	24.4488 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.80%		
80) p-Bromofluorobenzene	16.19	95	220031	24.3545 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.40%		

Target Compounds

					Qvalue
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	1667	0.2360 ug/L #	30
14) 1,1-Dichloroethene	6.58	61	4382	0.3856 ug/L	99
27) 1,1-Dichloroethane	8.44	63	2421	0.1760 ug/L #	61
32) cis-1,2-Dichloroethene	9.28	96	48579	6.4224 ug/L	81
45) 1,2-Dichloroethane	10.54	62	8614	0.9980 ug/L	89
47) Trichloroethene	11.33	130	1454174	215.0641 ug/L	99
48) Methylcyclohexane	11.32	83	17900	1.6245 ug/L #	1
66) Tetrachloroethene	13.72	164	2171	0.3780 ug/L	90

(#) = qualifier out of range (m) = manual integration
8M403178.D 8260WTR.M Tue Feb 24 08:15:23 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\022315\8M403178.D Vial: 18
Acq On : 23 Feb 2015 19:49 Operator: TMB
Sample : L15021053-01 B 5X 826-LOW Inst : HPMS8
Misc : 1,5 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 24 8:15 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration

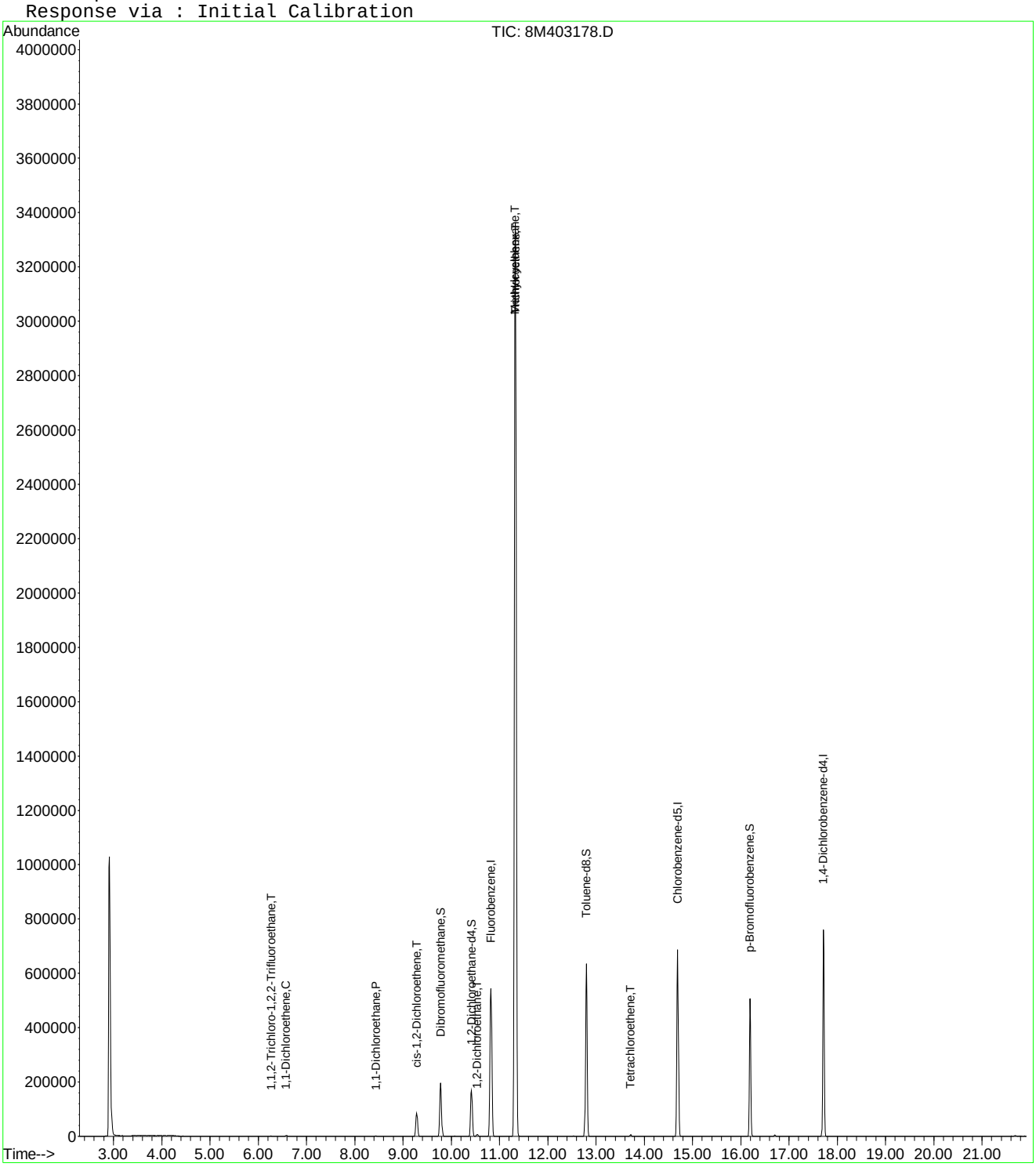

8M403178.D 8260WTR.M Tue Feb 24 08:15:23 2015 Page 2

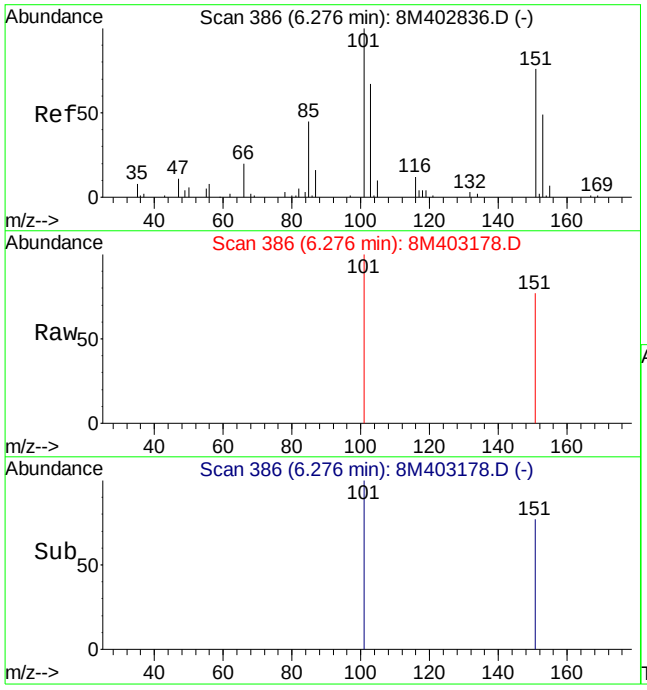

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 0.24 ug/L
RT: 6.28 min Scan# 386
Delta R.T. 0.00 min
Lab File: 8M403178.D
Acq: 23 Feb 2015 19:49

Tgt Ion:101 Resp: 1667

Ion	Ratio	Lower	Upper
101	100		
151	15.2	35.4	115.4#

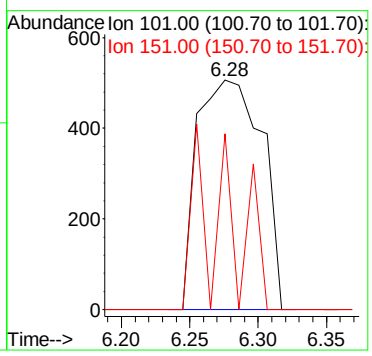

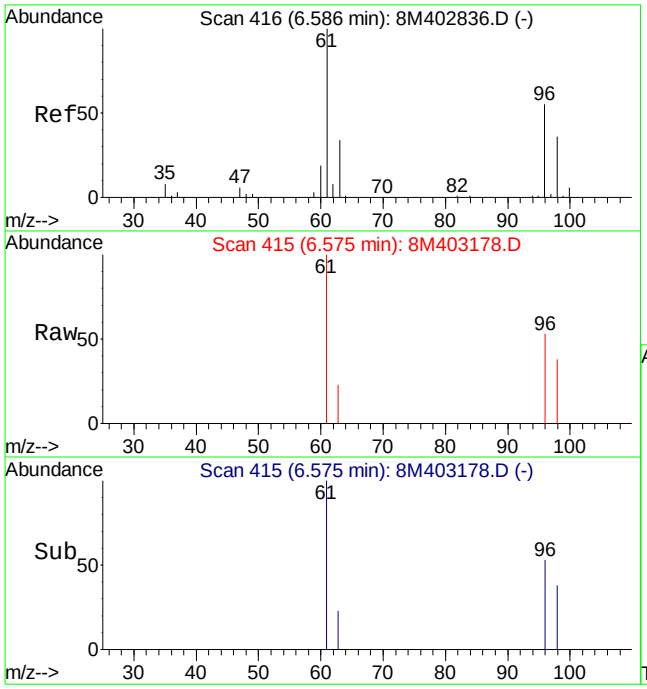

#14
1,1-Dichloroethene
Concen: 0.39 ug/L
RT: 6.58 min Scan# 415
Delta R.T. -0.01 min
Lab File: 8M403178.D
Acq: 23 Feb 2015 19:49

Tgt Ion: 61 Resp: 4382

Ion	Ratio	Lower	Upper
61	100		
96	53.4	32.6	76.0

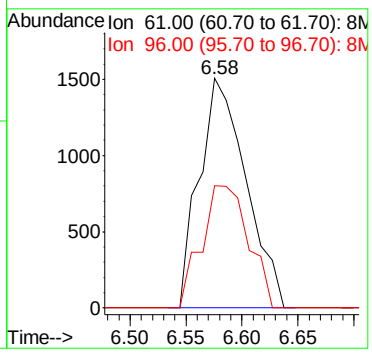

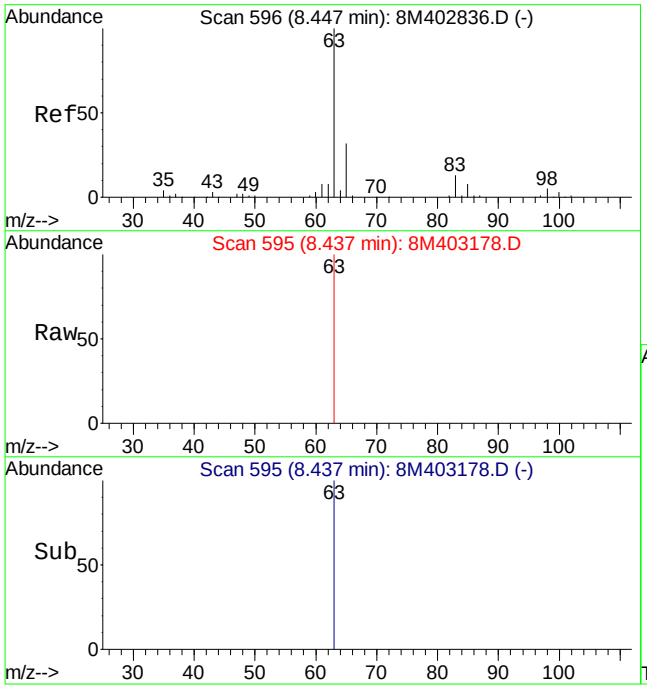

#27
1,1-Dichloroethane
Concen: 0.18 ug/L
RT: 8.44 min Scan# 595
Delta R.T. -0.01 min
Lab File: 8M403178.D
Acq: 23 Feb 2015 19:49

Tgt Ion: 63 Resp: 2421

Ion	Ratio	Lower	Upper
63	100		
65	8.4	19.0	44.2#
83	0.0	7.7	17.9#

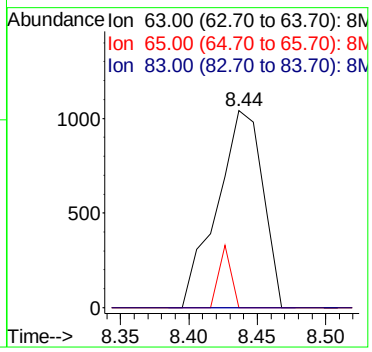

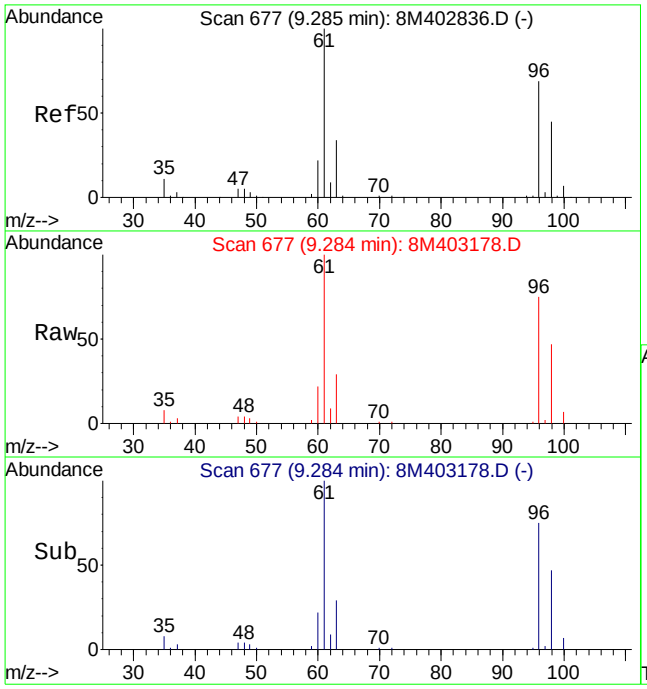

#32
cis-1,2-Dichloroethene
Concen: 6.42 ug/L
RT: 9.28 min Scan# 677
Delta R.T. -0.01 min
Lab File: 8M403178.D
Acq: 23 Feb 2015 19:49

Tgt Ion: 96 Resp: 48579

Ion	Ratio	Lower	Upper
96	100		
61	139.3	98.7	230.3

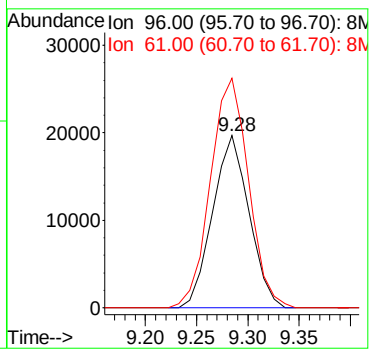

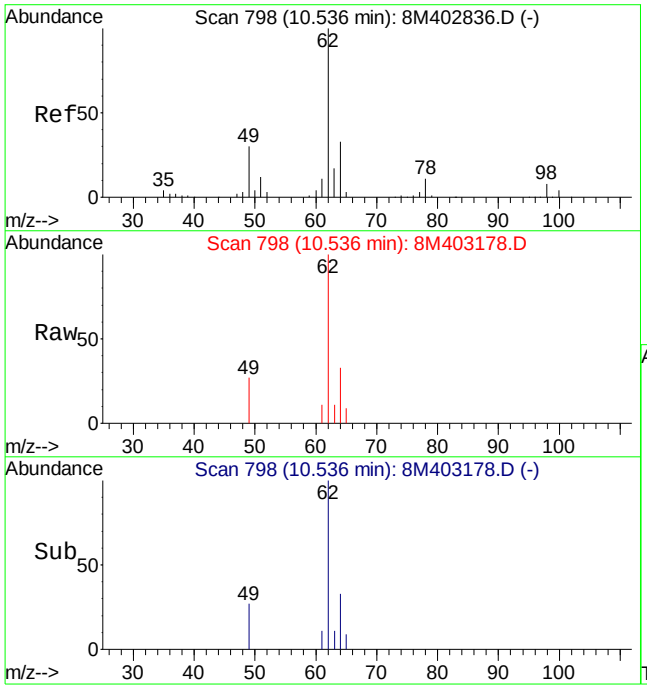

#45
1,2-Dichloroethane
Concen: 1.00 ug/L
RT: 10.54 min Scan# 798
Delta R.T. -0.01 min
Lab File: 8M403178.D
Acq: 23 Feb 2015 19:49

Tgt Ion: 62 Resp: 8614

Ion	Ratio	Lower	Upper
62	100		
64	32.8	19.4	45.2
49	24.8	21.9	51.1

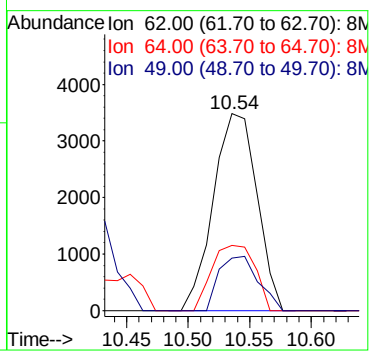

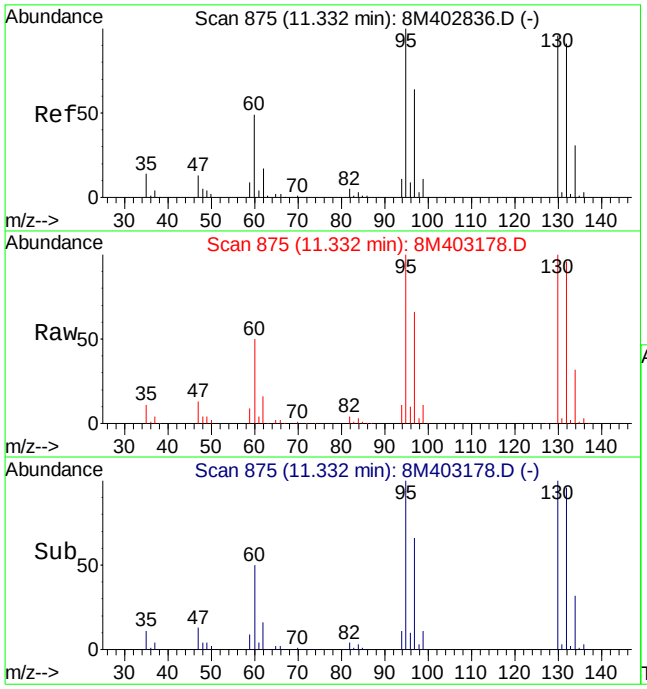

#47
Trichloroethene
Concen: 215.06 ug/L
RT: 11.33 min Scan# 875
Delta R.T. -0.01 min
Lab File: 8M403178.D
Acq: 23 Feb 2015 19:49

Tgt Ion:130 Resp: 1454174

Ion	Ratio	Lower	Upper
130	100		
132	96.1	57.4	133.8
95	102.9	63.1	147.1

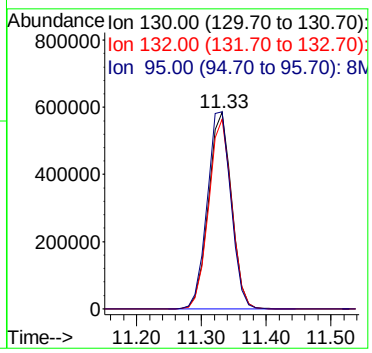

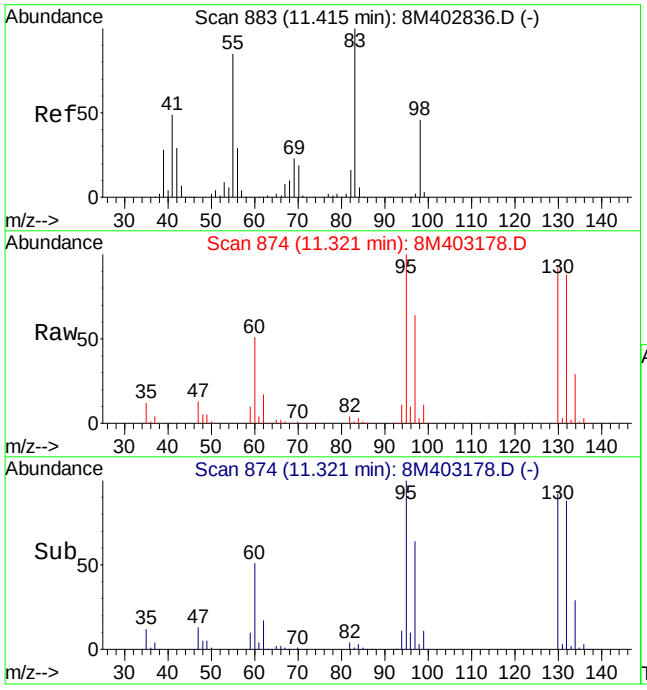

#48
Methylcyclohexane
Concen: 1.62 ug/L
RT: 11.32 min Scan# 874
Delta R.T. -0.10 min
Lab File: 8M403178.D
Acq: 23 Feb 2015 19:49

Tgt Ion: 83 Resp: 17900

Ion	Ratio	Lower	Upper
83	100		
55	0.0	50.9	118.9#
98	220.9	27.5	64.1#

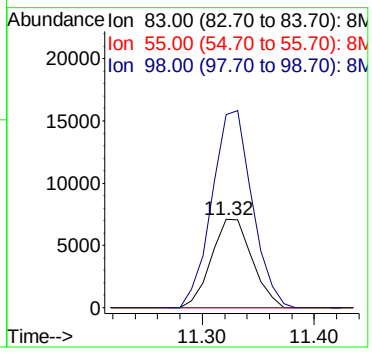

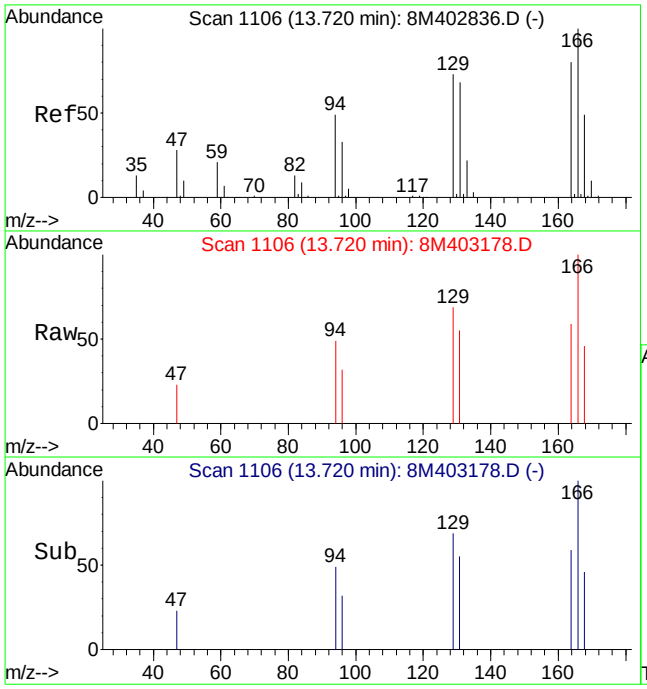

#66
Tetrachloroethene
Concen: 0.38 ug/L
RT: 13.72 min Scan# 1106
Delta R.T. -0.01 min
Lab File: 8M403178.D
Acq: 23 Feb 2015 19:49

Tgt Ion:164 Resp: 2171

Ion	Ratio	Lower	Upper
164	100		
129	105.3	53.9	125.9
94	62.5	37.6	87.8

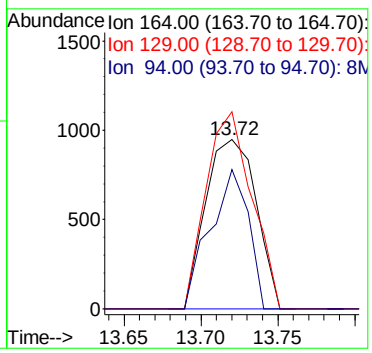

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\022015\8M403145.D Vial: 19
Acq On : 20 Feb 2015 21:04 Operator: TMB
Sample : L15021053-03 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 23 10:53:26 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	721943	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	498310	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.71	152	252167	25.00 ug/L	-0.02

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	175092	23.0448 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 92.16%		
43) 1,2-Dichloroethane-d4	10.42	65	170768	21.4388 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 85.76%		
58) Toluene-d8	12.80	98	615275	25.9908 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.96%		
80) p-Bromofluorobenzene	16.19	95	231848	25.6357 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.56%		

Target Compounds					Qvalue
3) Chloromethane	3.71	50	2474	0.2473 ug/L	89
32) cis-1,2-Dichloroethene	9.28	96	111154	13.4568 ug/L	84
47) Trichloroethene	11.33	130	67468	9.1373 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M403145.D 8260WTR.M Mon Feb 23 10:53:26 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\022015\8M403145.D Vial: 19
Acq On : 20 Feb 2015 21:04 Operator: TMB
Sample : L15021053-03 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 23 10:53 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration

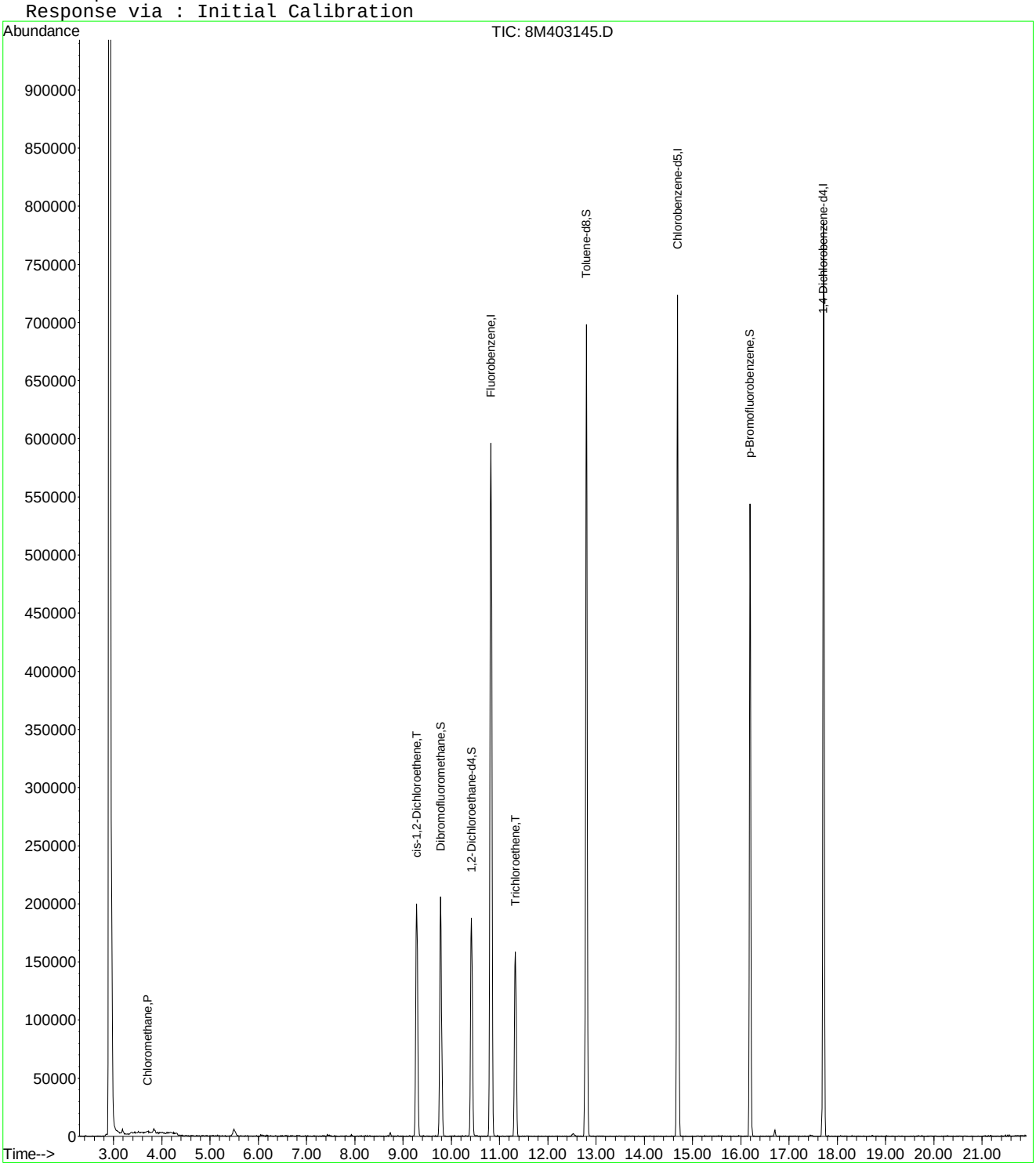

8M403145.D 8260WTR.M Mon Feb 23 10:53:26 2015 Page 2

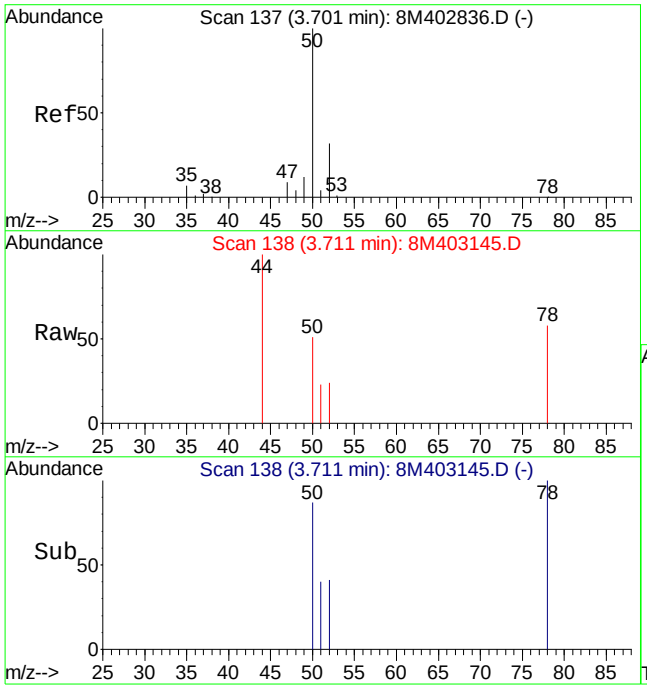

#3
Chloromethane
Concen: 0.25 ug/L
RT: 3.71 min Scan# 138
Delta R.T. 0.01 min
Lab File: 8M403145.D
Acq: 20 Feb 2015 21:04

Tgt Ion: 50 Resp: 2474

Ion	Ratio	Lower	Upper
50	100		
52	26.2	19.6	45.6

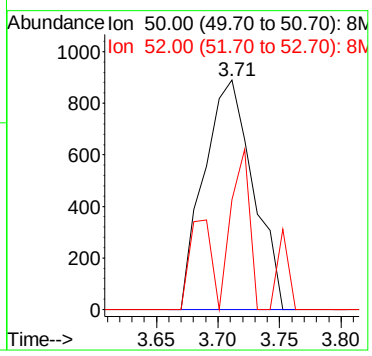

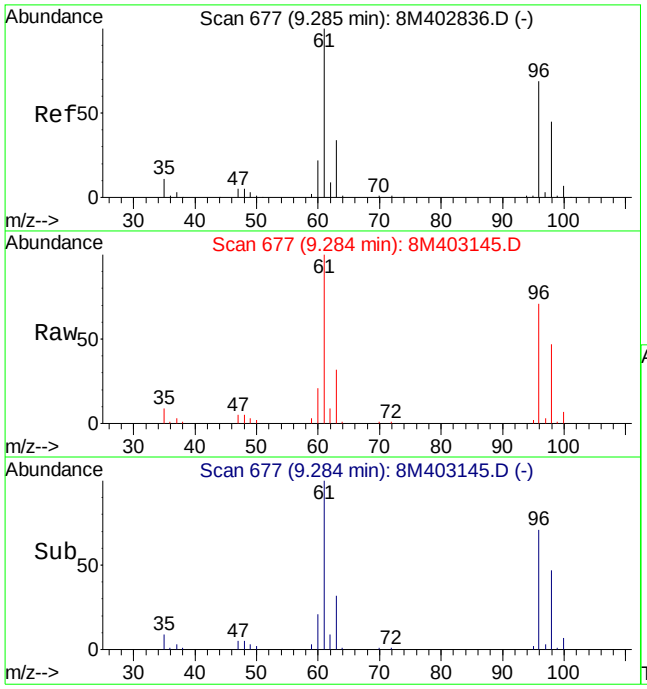

#32
cis-1,2-Dichloroethene
Concen: 13.46 ug/L
RT: 9.28 min Scan# 677
Delta R.T. -0.01 min
Lab File: 8M403145.D
Acq: 20 Feb 2015 21:04

Tgt Ion: 96 Resp: 111154

Ion	Ratio	Lower	Upper
96	100		
61	142.6	98.7	230.3

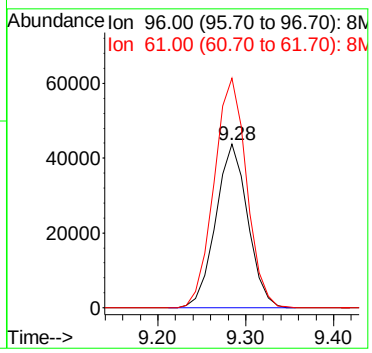

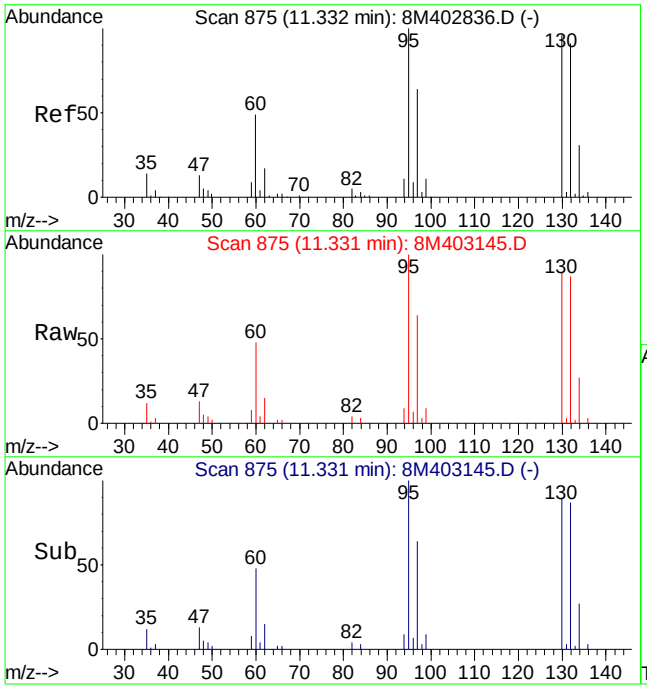

#47
Trichloroethene
Concen: 9.14 ug/L
RT: 11.33 min Scan# 875
Delta R.T. -0.01 min
Lab File: 8M403145.D
Acq: 20 Feb 2015 21:04

Tgt Ion:130 Resp: 67468

Ion	Ratio	Lower	Upper
130	100		
132	96.6	57.4	133.8
95	102.2	63.1	147.1

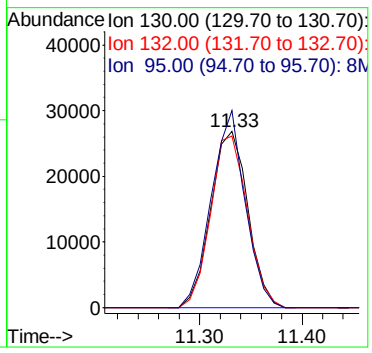

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\022315\8M403179.D Vial: 19
Acq On : 23 Feb 2015 20:17 Operator: TMB
Sample : L15021053-05 B 2X 826-LOW Inst : HPMS8
Misc : 1,2 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 24 08:15:24 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	681428	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	486320	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.71	152	236999	25.00 ug/L	-0.02

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	164625	22.9554 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 91.84%		
43) 1,2-Dichloroethane-d4	10.42	65	158440	21.0737 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 84.28%		
58) Toluene-d8	12.80	98	613997	26.5762 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 106.32%		
80) p-Bromofluorobenzene	16.19	95	219728	25.8505 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.40%		

Target Compounds

					Qvalue
14) 1,1-Dichloroethene	6.59	61	14485	1.2368 ug/L	96
27) 1,1-Dichloroethane	8.45	63	4524	0.3191 ug/L #	81
32) cis-1,2-Dichloroethene	9.28	96	26736	3.4292 ug/L	82
45) 1,2-Dichloroethane	10.54	62	10773	1.2109 ug/L	89
47) Trichloroethene	11.33	130	1784410	256.0338 ug/L	99
48) Methylcyclohexane	11.32	83	22999	2.0250 ug/L #	1
66) Tetrachloroethene	13.72	164	2691	0.4753 ug/L	87

(#) = qualifier out of range (m) = manual integration
8M403179.D 8260WTR.M Tue Feb 24 08:15:24 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\022315\8M403179.D Vial: 19
Acq On : 23 Feb 2015 20:17 Operator: TMB
Sample : L15021053-05 B 2X 826-LOW Inst : HPMS8
Misc : 1,2 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 24 8:15 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration

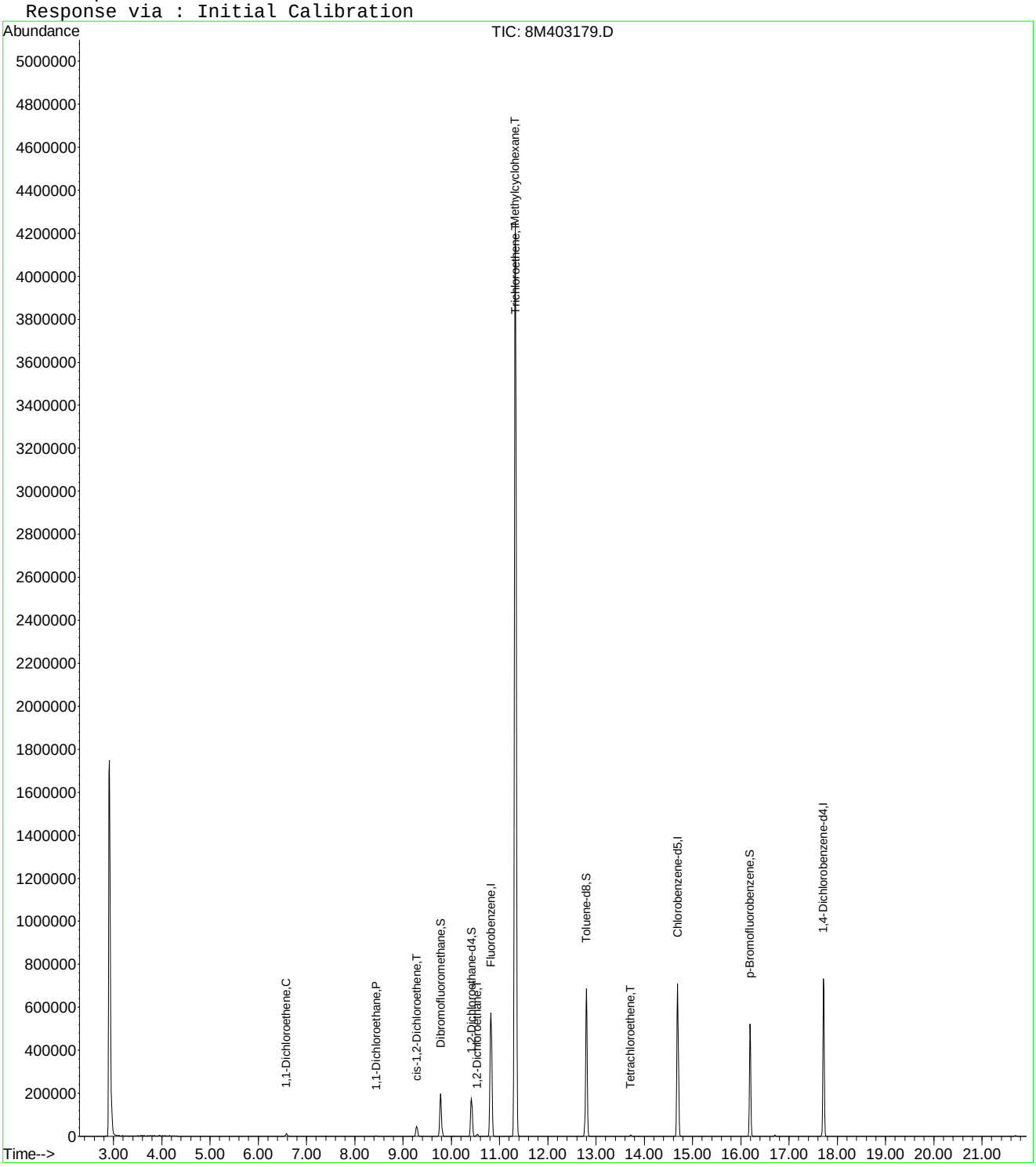

8M403179.D 8260WTR.M Tue Feb 24 08:15:25 2015 Page 2

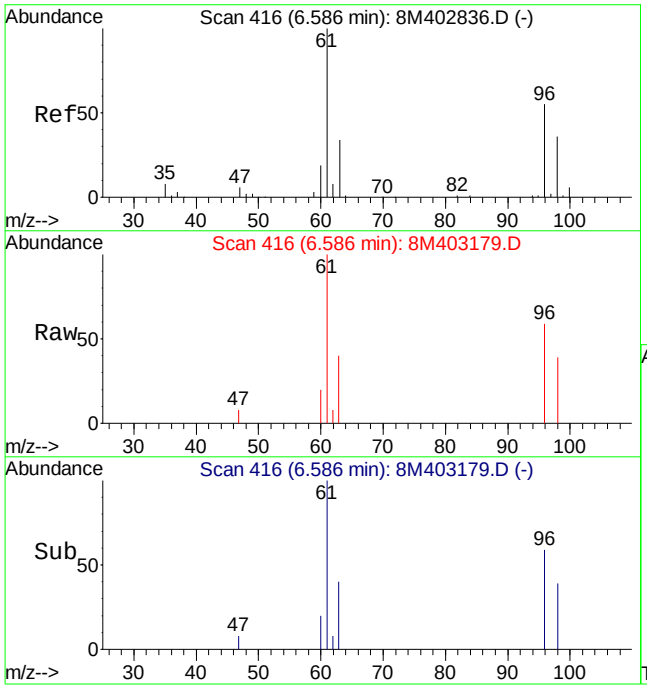

#14
1,1-Dichloroethene
Concen: 1.24 ug/L
RT: 6.59 min Scan# 416
Delta R.T. 0.00 min
Lab File: 8M403179.D
Acq: 23 Feb 2015 20:17

Tgt Ion: 61 Resp: 14485

Ion	Ratio	Lower	Upper
61	100		
96	57.1	32.6	76.0

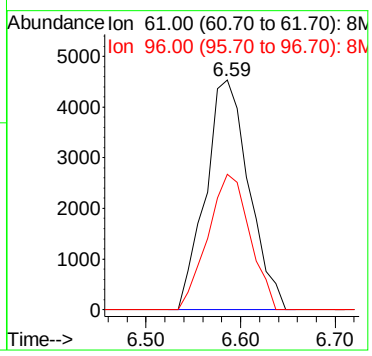

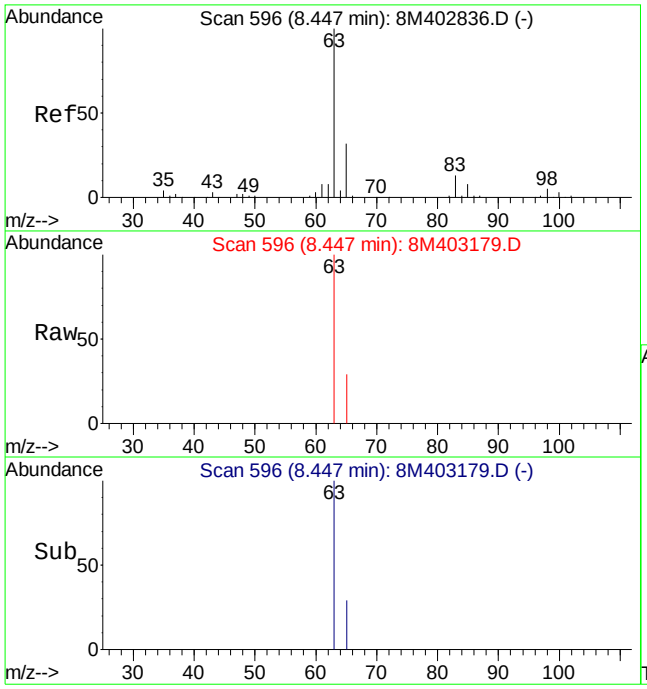

#27
1,1-Dichloroethane
Concen: 0.32 ug/L
RT: 8.45 min Scan# 596
Delta R.T. 0.00 min
Lab File: 8M403179.D
Acq: 23 Feb 2015 20:17

Tgt Ion: 63 Resp: 4524

Ion	Ratio	Lower	Upper
63	100		
65	24.3	19.0	44.2
83	0.0	7.7	17.9#

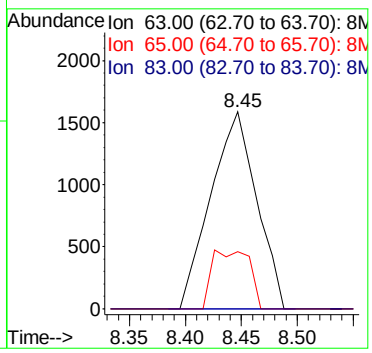

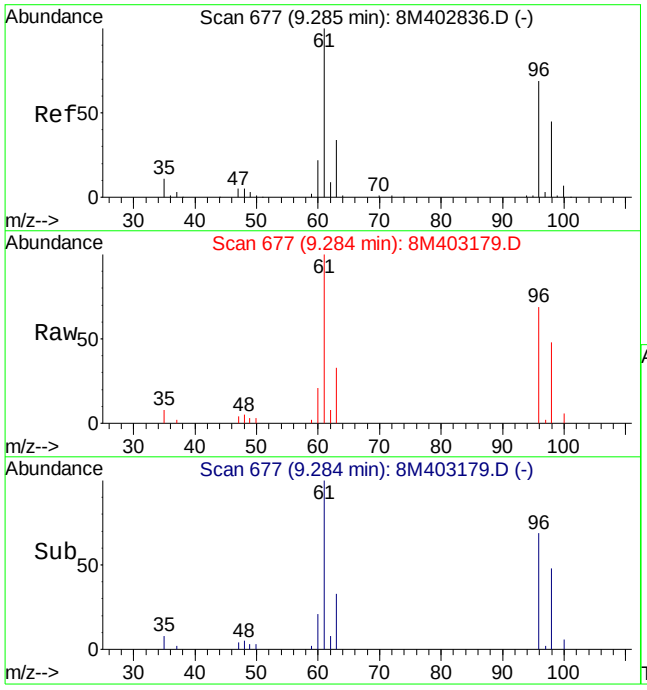

#32
cis-1,2-Dichloroethene
Concen: 3.43 ug/L
RT: 9.28 min Scan# 677
Delta R.T. -0.01 min
Lab File: 8M403179.D
Acq: 23 Feb 2015 20:17

Tgt Ion: 96 Resp: 26736

Ion	Ratio	Lower	Upper
96	100		
61	140.2	98.7	230.3

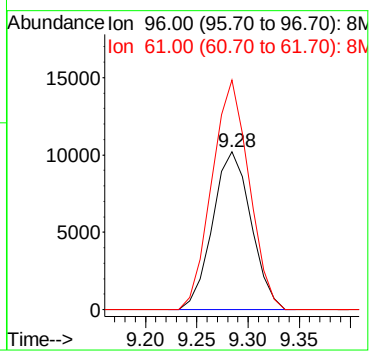

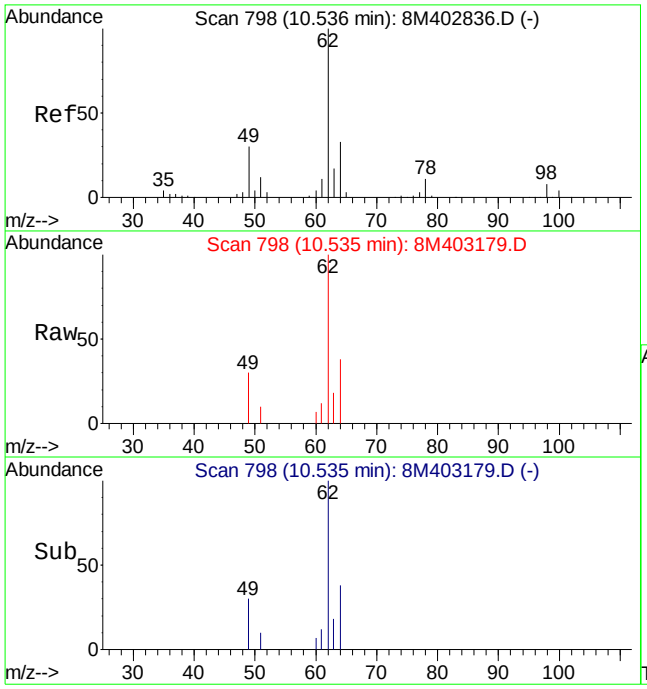

#45
1,2-Dichloroethane
Concen: 1.21 ug/L
RT: 10.54 min Scan# 798
Delta R.T. -0.01 min
Lab File: 8M403179.D
Acq: 23 Feb 2015 20:17

Tgt Ion: 62 Resp: 10773

Ion	Ratio	Lower	Upper
62	100		
64	33.9	19.4	45.2
49	25.9	21.9	51.1

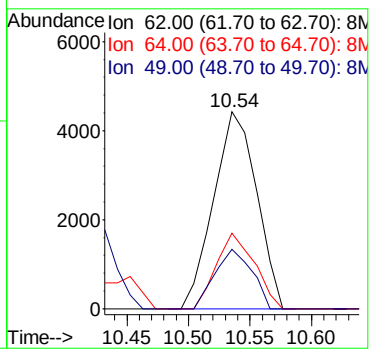

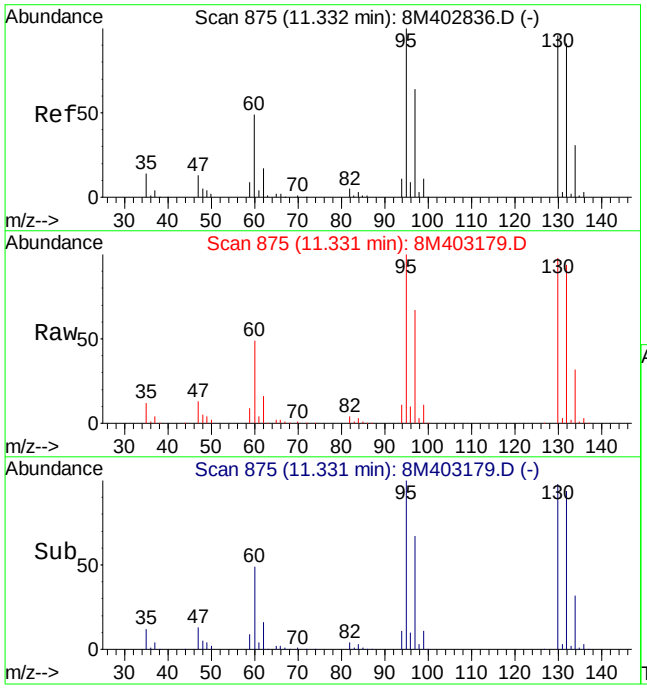

#47
Trichloroethene
Concen: 256.03 ug/L
RT: 11.33 min Scan# 875
Delta R.T. -0.01 min
Lab File: 8M403179.D
Acq: 23 Feb 2015 20:17

Tgt Ion:130 Resp: 1784410

Ion	Ratio	Lower	Upper
130	100		
132	96.3	57.4	133.8
95	103.8	63.1	147.1

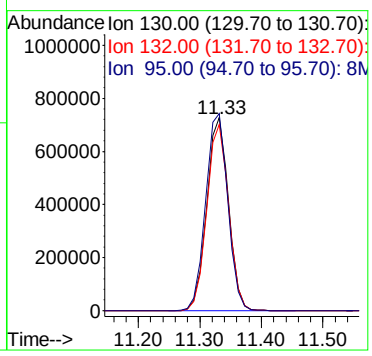

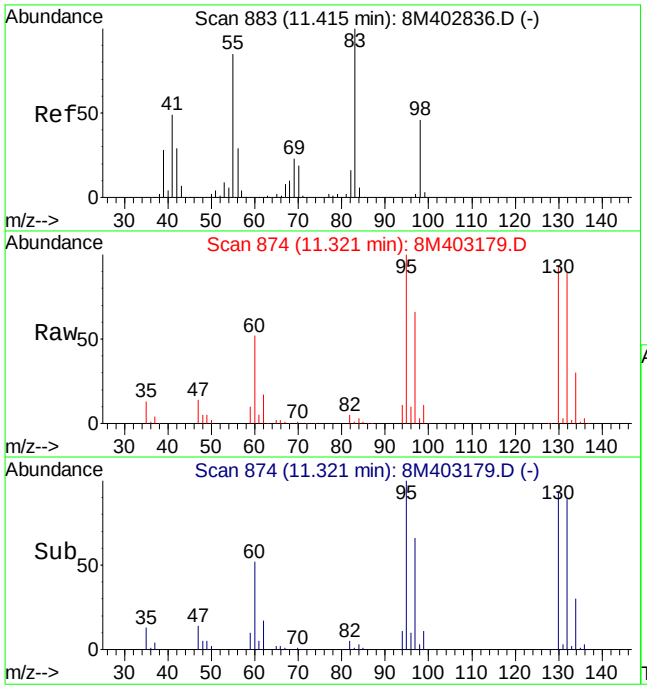

#48
Methylcyclohexane
Concen: 2.03 ug/L
RT: 11.32 min Scan# 874
Delta R.T. -0.10 min
Lab File: 8M403179.D
Acq: 23 Feb 2015 20:17

Tgt Ion: 83 Resp: 22999

Ion	Ratio	Lower	Upper
83	100		
55	0.0	50.9	118.9#
98	200.0	27.5	64.1#

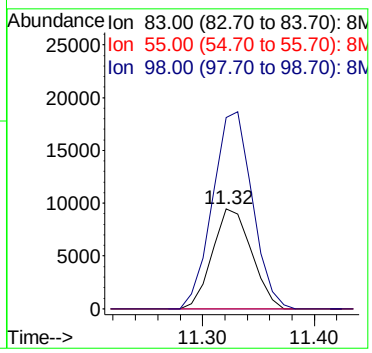

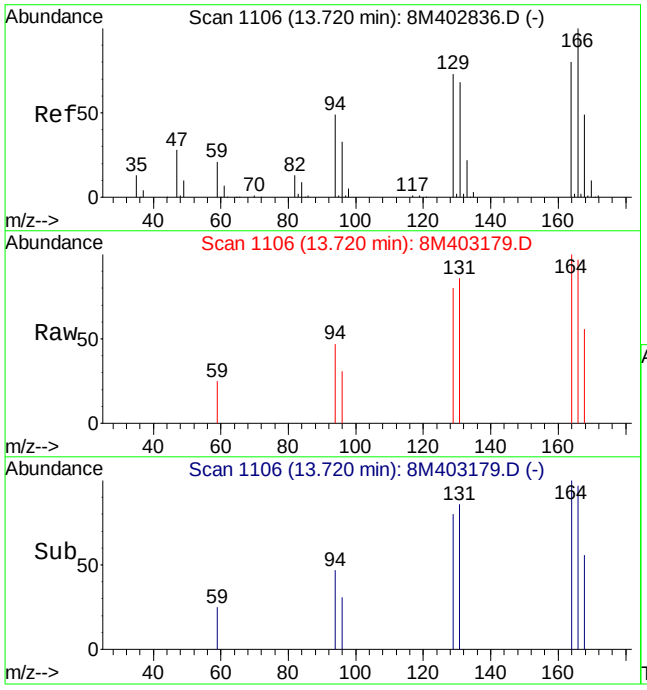

#66
Tetrachloroethene
Concen: 0.48 ug/L
RT: 13.72 min Scan# 1106
Delta R.T. -0.01 min
Lab File: 8M403179.D
Acq: 23 Feb 2015 20:17

Tgt Ion:164 Resp: 2691

Ion	Ratio	Lower	Upper
164	100		
129	84.0	53.9	125.9
94	45.2	37.6	87.8

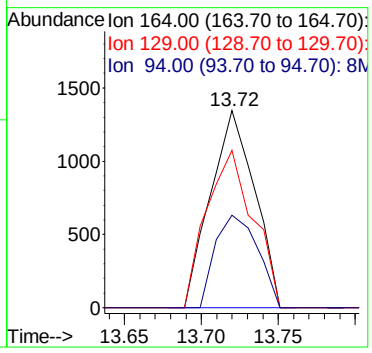

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\022015\8M403146.D Vial: 20
Acq On : 20 Feb 2015 21:33 Operator: TMB
Sample : L15021053-07 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 23 10:53:27 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	675200	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	497955	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.72	152	251881	25.00 ug/L	-0.01
System Monitoring Compounds					
37) Dibromofluoromethane	9.78	111	170796	24.0356 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.16%		
43) 1,2-Dichloroethane-d4	10.42	65	168885	22.6702 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 90.68%		
58) Toluene-d8	12.80	98	584825	24.7221 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.88%		
80) p-Bromofluorobenzene	16.19	95	223075	24.6937 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.76%		

Target Compounds					Qvalue
3) Chloromethane	3.71	50	2623	0.2803 ug/L	86
13) Acetone	6.37	43	3698	3.6144 ug/L	82
32) cis-1,2-Dichloroethene	9.28	96	4416	0.5716 ug/L	78
33) Chloroform	9.49	83	3427	0.2568 ug/L	100
45) 1,2-Dichloroethane	10.54	62	1256	0.1425 ug/L #	40
47) Trichloroethene	11.33	130	372386	53.9242 ug/L	98
48) Methylcyclohexane	11.33	83	4154	0.3691 ug/L #	1

(#) = qualifier out of range (m) = manual integration
8M403146.D 8260WTR.M Mon Feb 23 10:53:27 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\022015\8M403146.D Vial: 20
Acq On : 20 Feb 2015 21:33 Operator: TMB
Sample : L15021053-07 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 23 10:53 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration

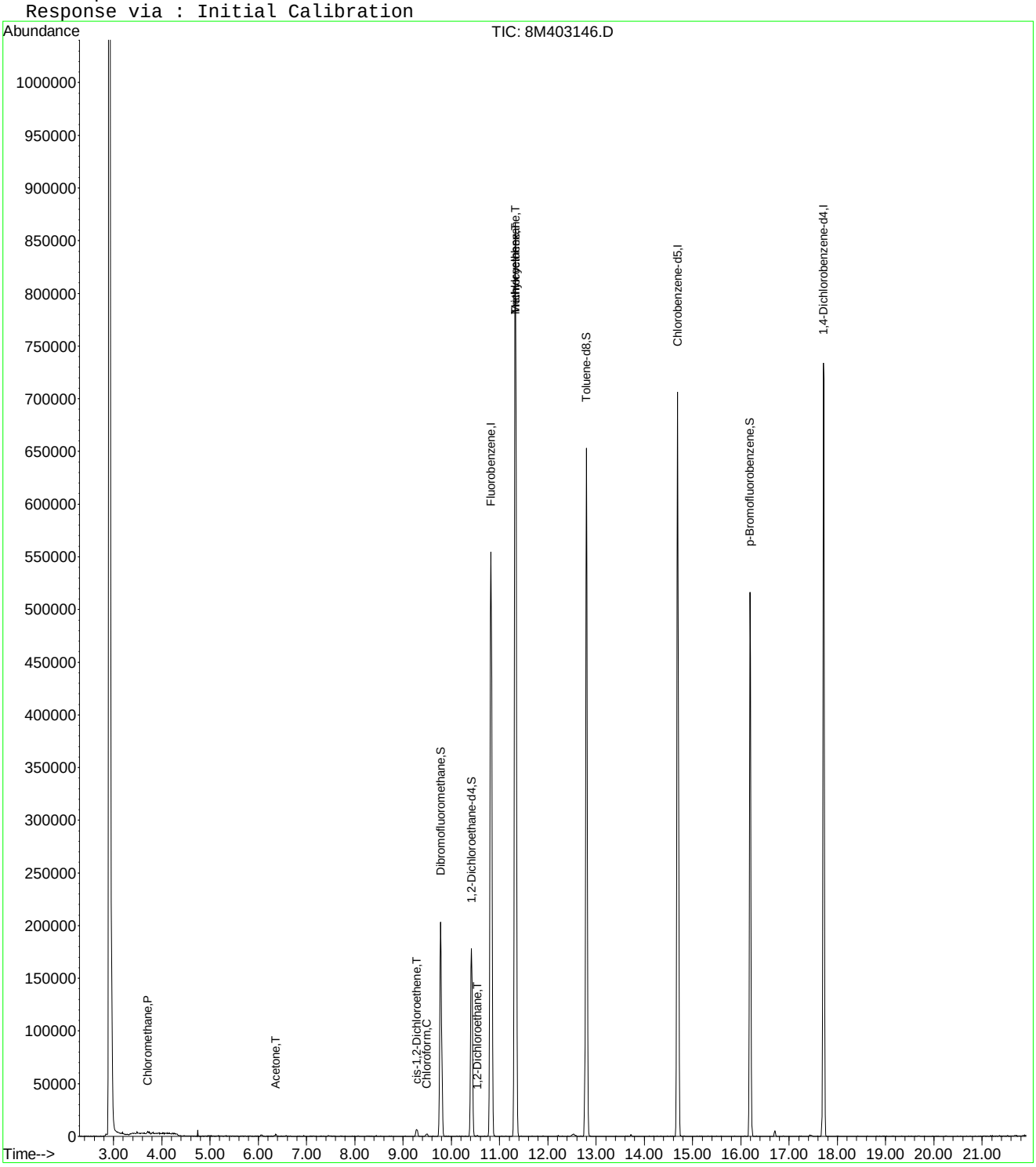

8M403146.D 8260WTR.M Mon Feb 23 10:53:28 2015 Page 2

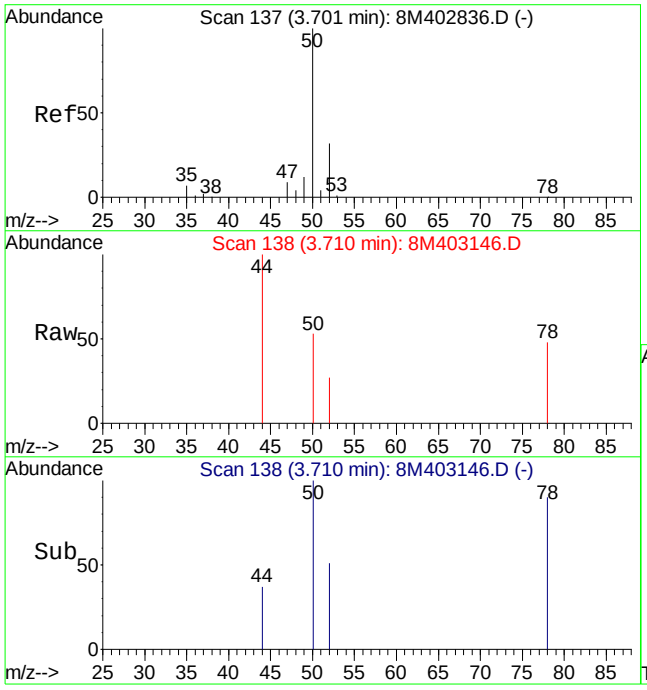

#3
Chloromethane
Concen: 0.28 ug/L
RT: 3.71 min Scan# 138
Delta R.T. 0.01 min
Lab File: 8M403146.D
Acq: 20 Feb 2015 21:33

Tgt Ion: 50 Resp: 2623

Ion	Ratio	Lower	Upper
50	100		
52	24.5	19.6	45.6

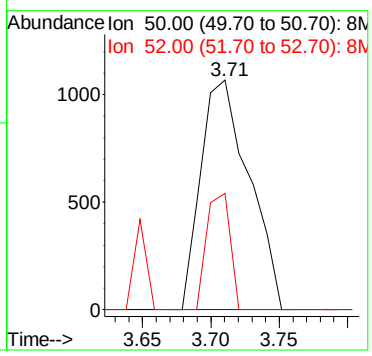

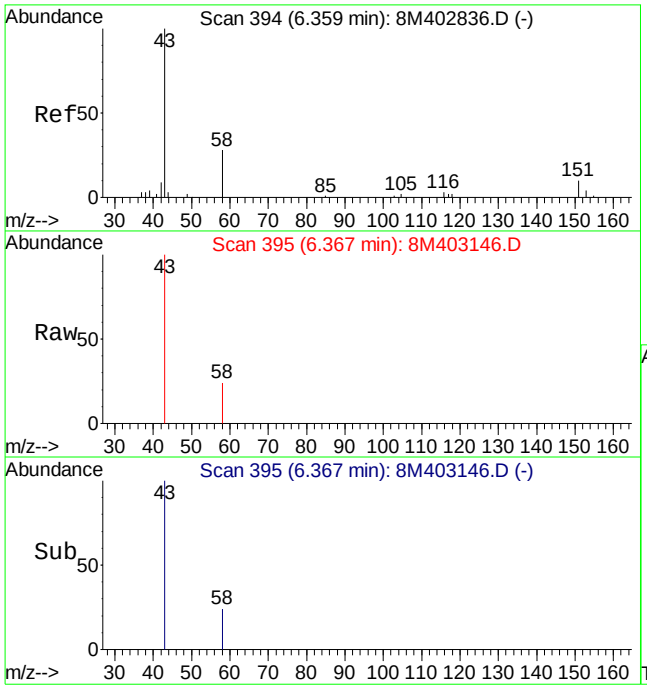

#13
Acetone
Concen: 3.61 ug/L
RT: 6.37 min Scan# 395
Delta R.T. 0.01 min
Lab File: 8M403146.D
Acq: 20 Feb 2015 21:33

Tgt Ion: 43 Resp: 3698

Ion	Ratio	Lower	Upper
43	100		
58	17.8	16.4	38.2

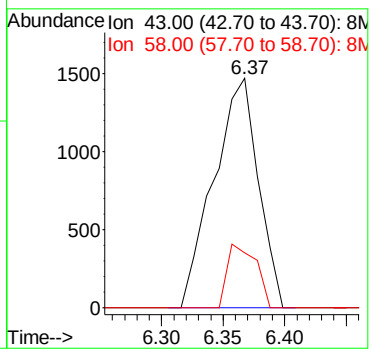

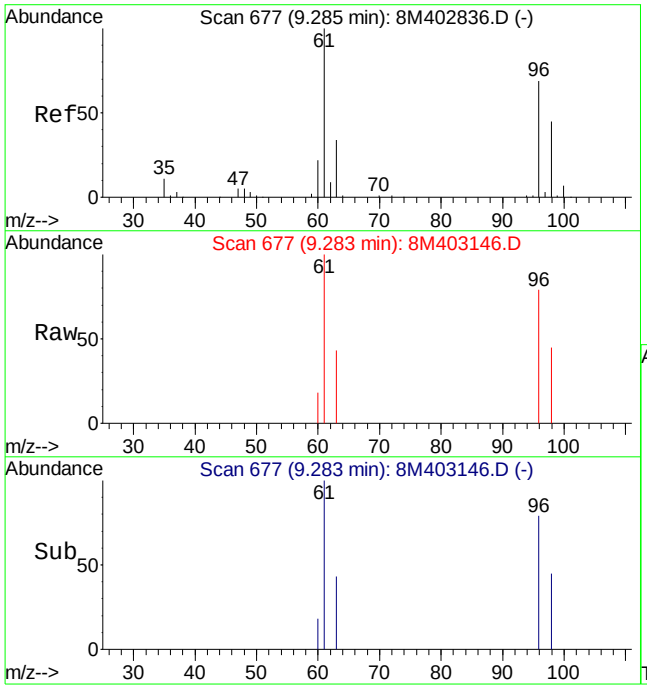

#32
cis-1,2-Dichloroethene
Concen: 0.57 ug/L
RT: 9.28 min Scan# 677
Delta R.T. -0.01 min
Lab File: 8M403146.D
Acq: 20 Feb 2015 21:33

Tgt Ion: 96 Resp: 4416

Ion	Ratio	Lower	Upper
96	100		
61	135.2	98.7	230.3

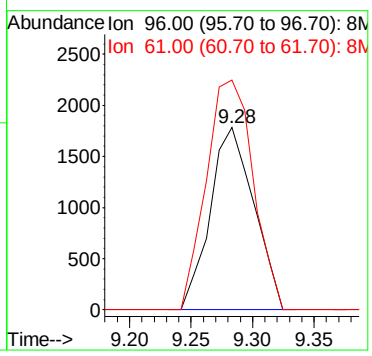

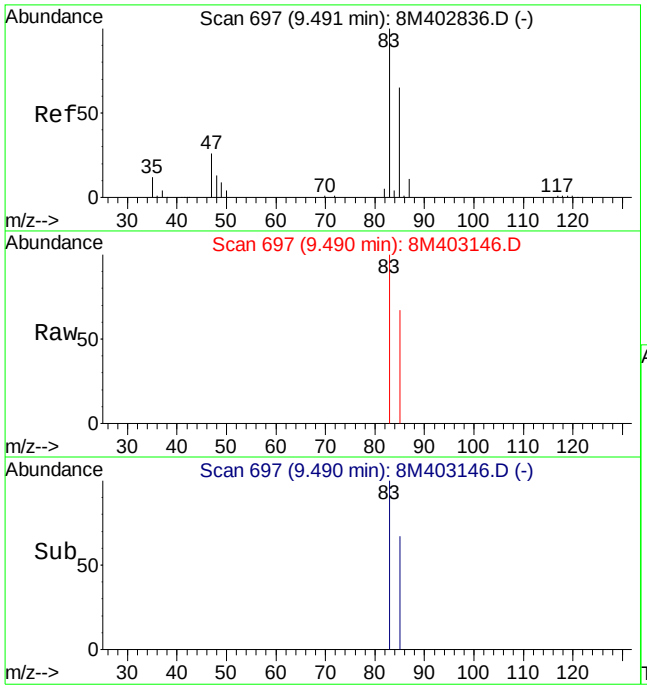

#33
Chloroform
Concen: 0.26 ug/L
RT: 9.49 min Scan# 697
Delta R.T. -0.01 min
Lab File: 8M403146.D
Acq: 20 Feb 2015 21:33

Tgt Ion: 83 Resp: 3427

Ion	Ratio	Lower	Upper
83	100		
85	65.0	38.9	90.7

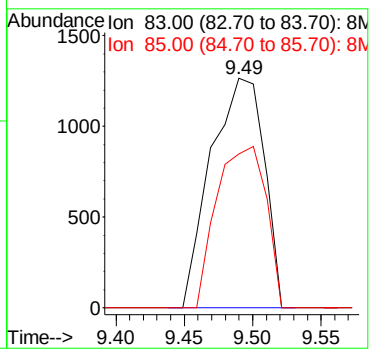

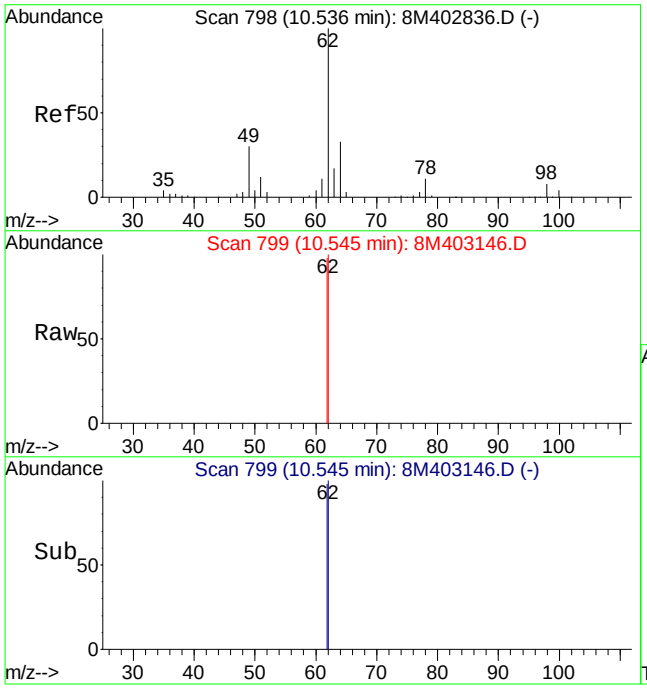

#45
1,2-Dichloroethane
Concen: 0.14 ug/L
RT: 10.54 min Scan# 799
Delta R.T. -0.00 min
Lab File: 8M403146.D
Acq: 20 Feb 2015 21:33

Tgt Ion: 62 Resp: 1256

Ion	Ratio	Lower	Upper
62	100		
64	0.0	19.4	45.2#
49	0.0	21.9	51.1#

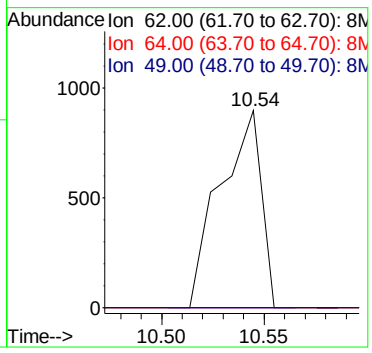

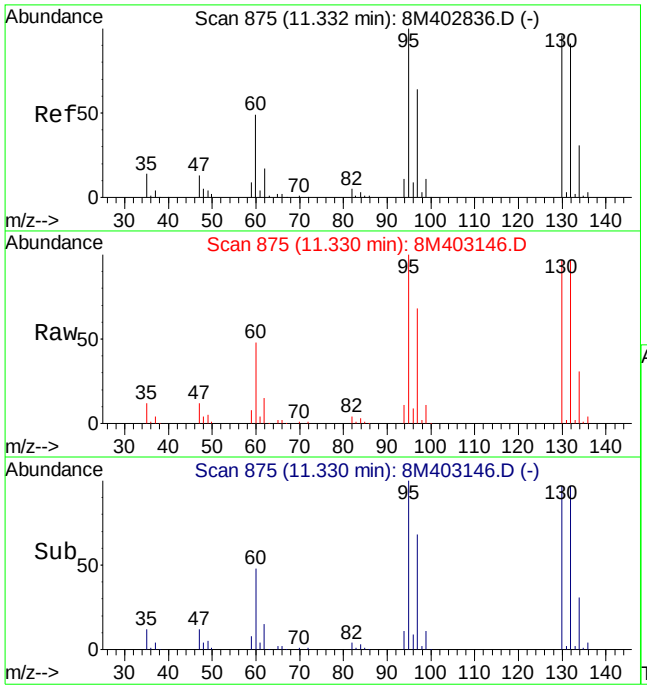

#47
Trichloroethene
Concen: 53.92 ug/L
RT: 11.33 min Scan# 875
Delta R.T. -0.01 min
Lab File: 8M403146.D
Acq: 20 Feb 2015 21:33

Tgt Ion:130 Resp: 372386

Ion	Ratio	Lower	Upper
130	100		
132	97.2	57.4	133.8
95	103.1	63.1	147.1

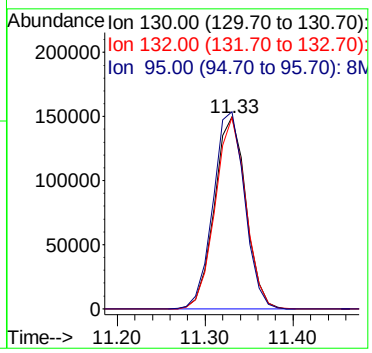

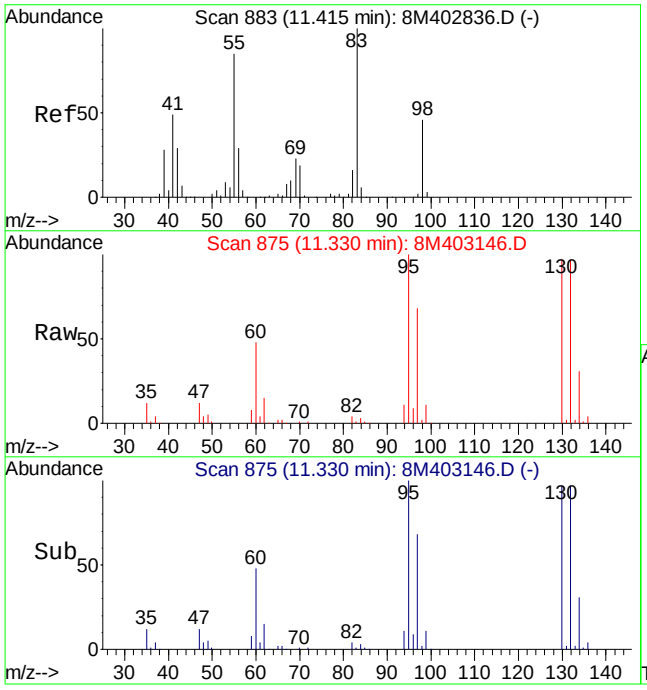

#48
Methylcyclohexane
Concen: 0.37 ug/L
RT: 11.33 min Scan# 875
Delta R.T. -0.09 min
Lab File: 8M403146.D
Acq: 20 Feb 2015 21:33

Tgt Ion: 83 Resp: 4154

Ion	Ratio	Lower	Upper
83	100		
55	0.0	50.9	118.9#
98	249.7	27.5	64.1#

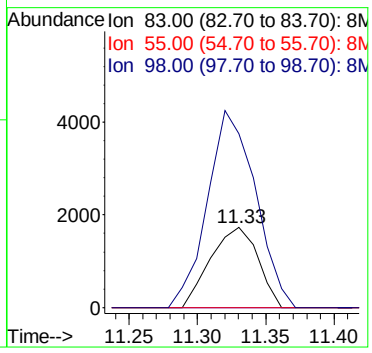

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\022015\8M403150.D Vial: 24
Acq On : 20 Feb 2015 23:27 Operator: TMB
Sample : L15021053-09 A 2.5X 826-LOW Inst : HPMS8
Misc : 1,2.5 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 23 10:53:32 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	630164	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	461404	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.72	152	232958	25.00 ug/L	-0.01
System Monitoring Compounds					
37) Dibromofluoromethane	9.78	111	157592	23.7624 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.04%		
43) 1,2-Dichloroethane-d4	10.42	65	157204	22.6103 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 90.44%		
58) Toluene-d8	12.80	98	540582	24.6621 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.64%		
80) p-Bromofluorobenzene	16.19	95	204121	24.4310 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.72%		

Target Compounds					Qvalue
12) 1,1,2-Trichloro-1,2,2-Trif	6.27	101	4385	0.6512 ug/L	99
14) 1,1-Dichloroethene	6.58	61	4827	0.4457 ug/L	94
27) 1,1-Dichloroethane	8.44	63	8106	0.6183 ug/L #	87
32) cis-1,2-Dichloroethene	9.28	96	203411	28.2123 ug/L	80
33) Chloroform	9.49	83	2459	0.1975 ug/L	99
45) 1,2-Dichloroethane	10.53	62	11810	1.4355 ug/L	86
47) Trichloroethene	11.33	130	2232629	346.4061 ug/L	99
48) Methylcyclohexane	11.33	83	31086	2.9597 ug/L #	1
66) Tetrachloroethene	13.72	164	5480	1.0202 ug/L	95

(#) = qualifier out of range (m) = manual integration
8M403150.D 8260WTR.M Mon Feb 23 10:53:32 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\022015\8M403150.D Vial: 24
Acq On : 20 Feb 2015 23:27 Operator: TMB
Sample : L15021053-09 A 2.5X 826-LOW Inst : HPMS8
Misc : 1,2.5 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 23 10:53 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration

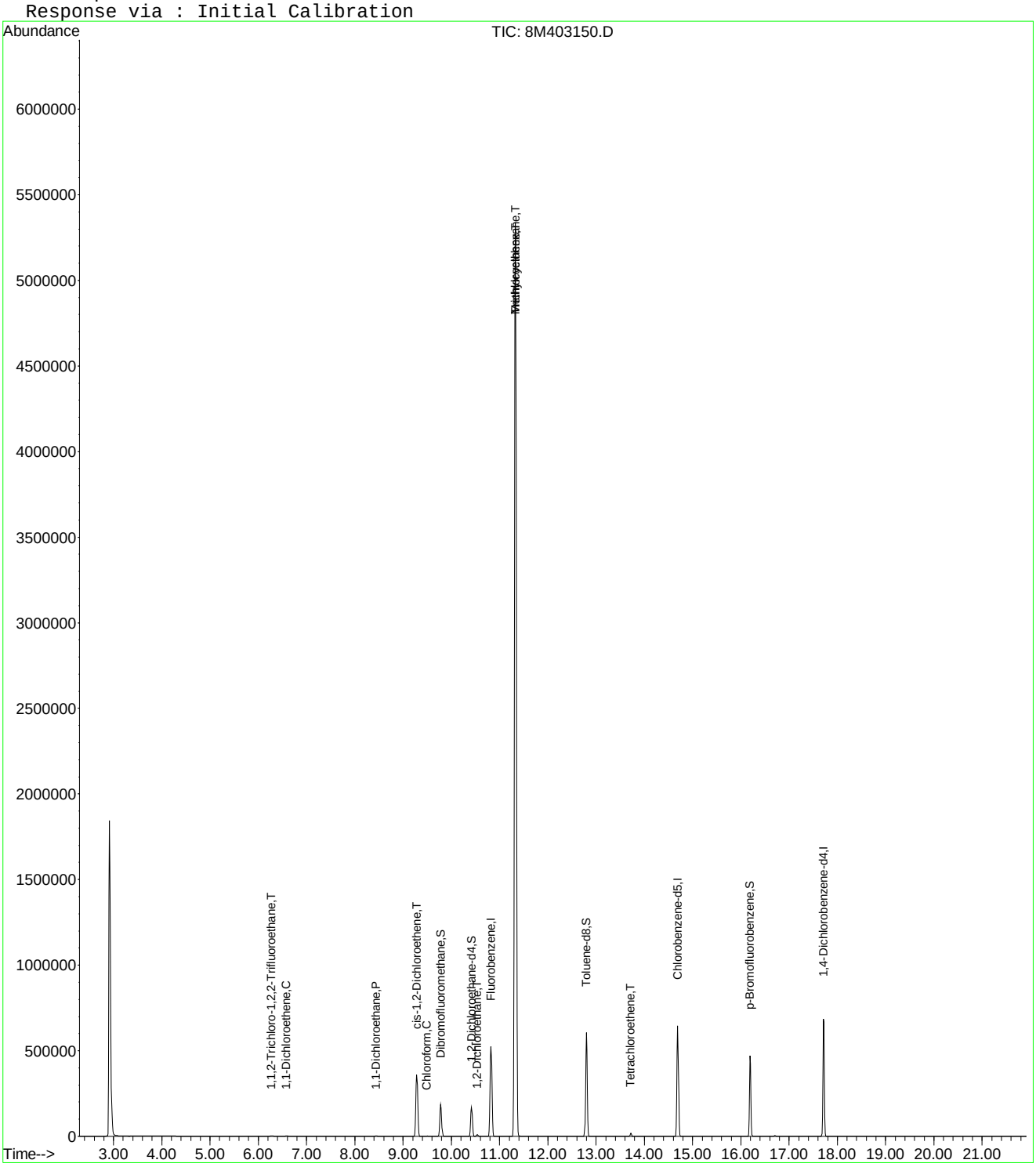

8M403150.D 8260WTR.M Mon Feb 23 10:53:32 2015 Page 2

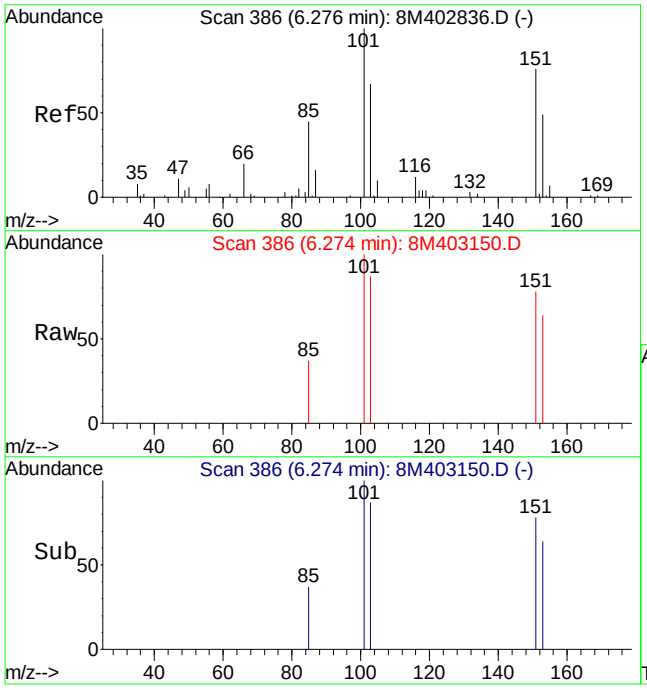

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 0.65 ug/L
RT: 6.27 min Scan# 386
Delta R.T. -0.00 min
Lab File: 8M403150.D
Acq: 20 Feb 2015 23:27

Tgt Ion:101 Resp: 4385

Ion	Ratio	Lower	Upper
101	100		
151	75.9	35.4	115.4

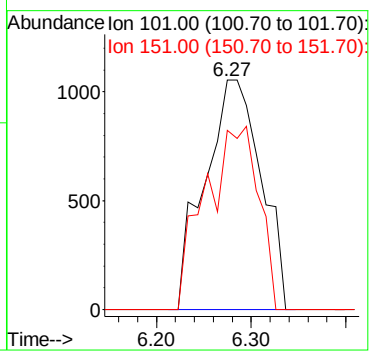

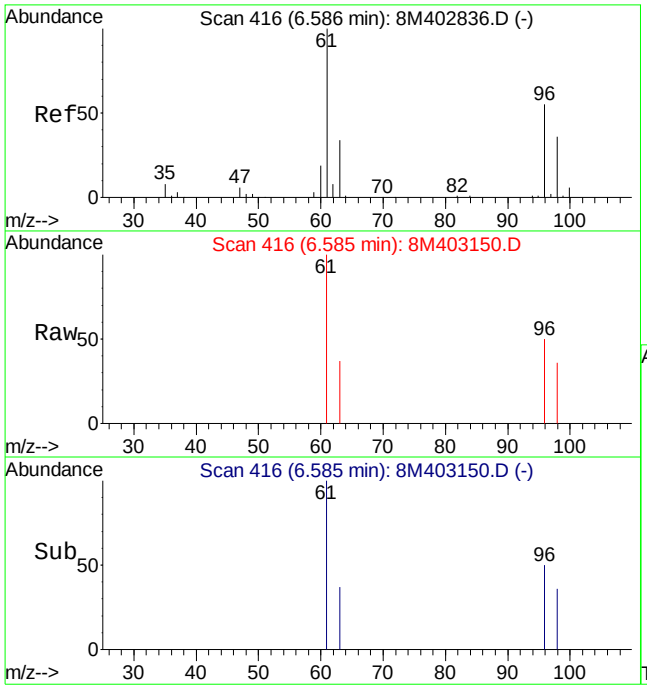

#14
1,1-Dichloroethene
Concen: 0.45 ug/L
RT: 6.58 min Scan# 416
Delta R.T. -0.00 min
Lab File: 8M403150.D
Acq: 20 Feb 2015 23:27

Tgt Ion: 61 Resp: 4827

Ion	Ratio	Lower	Upper
61	100		
96	49.7	32.6	76.0

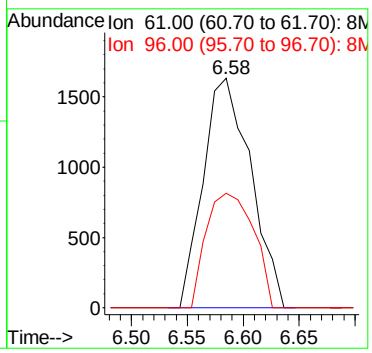

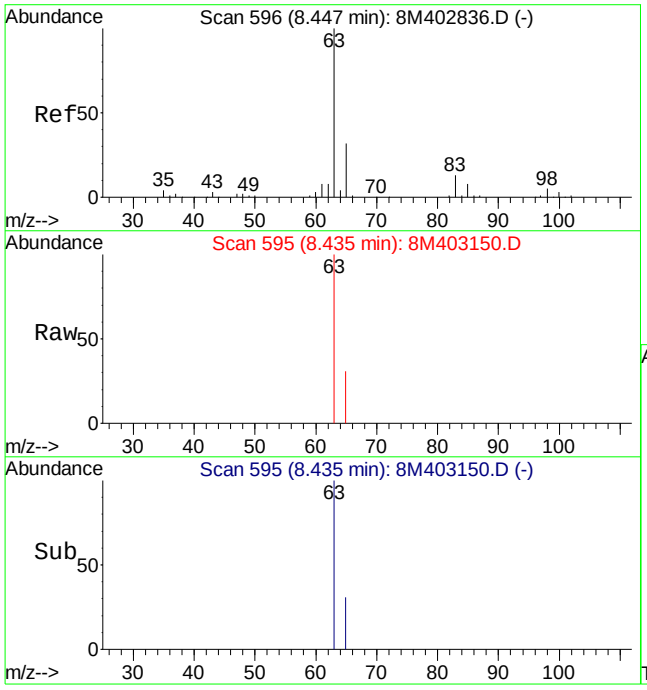

#27
1,1-Dichloroethane
Concen: 0.62 ug/L
RT: 8.44 min Scan# 595
Delta R.T. -0.01 min
Lab File: 8M403150.D
Acq: 20 Feb 2015 23:27

Tgt Ion: 63 Resp: 8106

Ion	Ratio	Lower	Upper
63	100		
65	27.0	19.0	44.2
83	2.6	7.7	17.9#

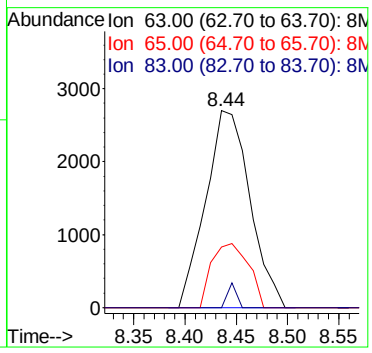

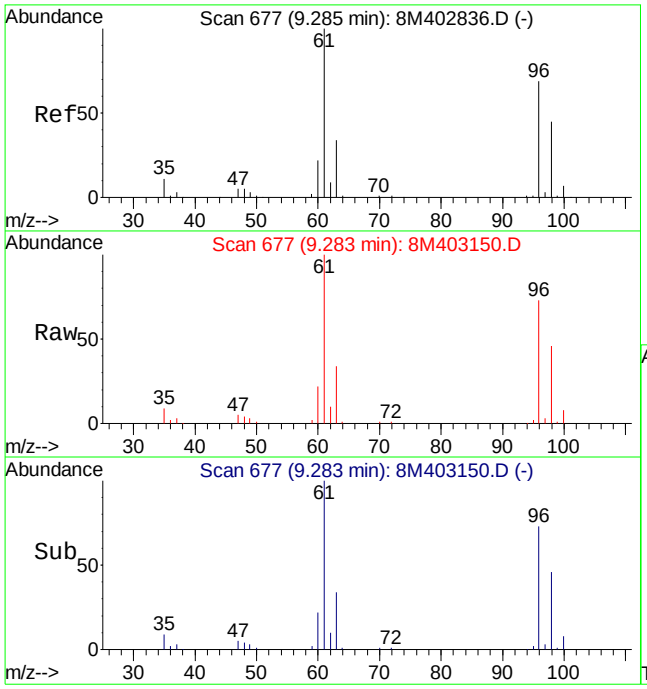

#32
cis-1,2-Dichloroethene
Concen: 28.21 ug/L
RT: 9.28 min Scan# 677
Delta R.T. -0.01 min
Lab File: 8M403150.D
Acq: 20 Feb 2015 23:27

Tgt Ion: 96 Resp: 203411

Ion	Ratio	Lower	Upper
96	100		
61	138.3	98.7	230.3

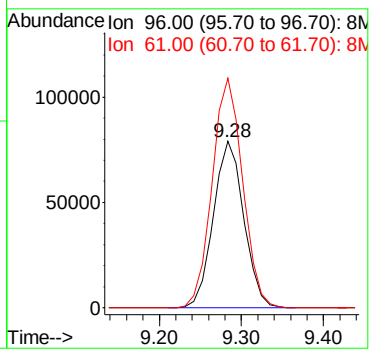

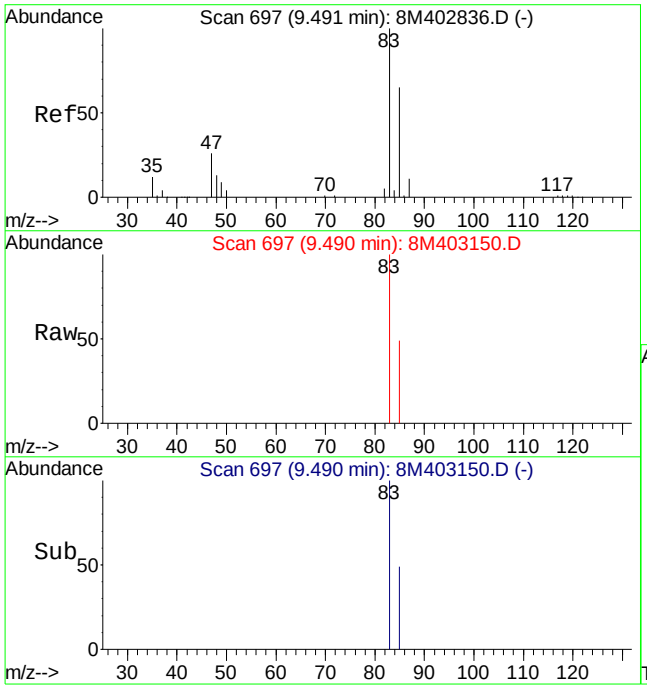

#33
Chloroform
Concen: 0.20 ug/L
RT: 9.49 min Scan# 697
Delta R.T. -0.01 min
Lab File: 8M403150.D
Acq: 20 Feb 2015 23:27

Tgt Ion: 83 Resp: 2459

Ion	Ratio	Lower	Upper
83	100		
85	65.6	38.9	90.7

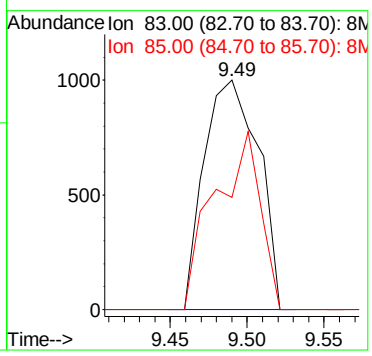

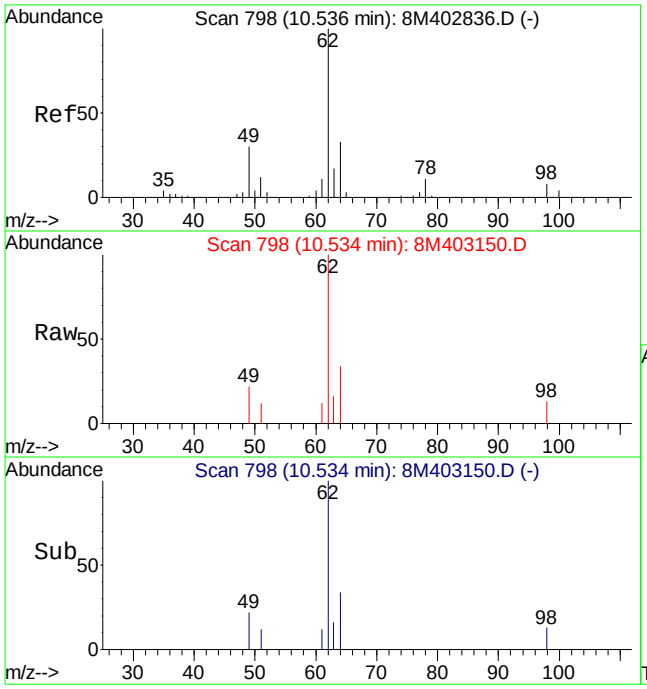

#45
1,2-Dichloroethane
Concen: 1.44 ug/L
RT: 10.53 min Scan# 798
Delta R.T. -0.01 min
Lab File: 8M403150.D
Acq: 20 Feb 2015 23:27

Tgt Ion: 62 Resp: 11810

Ion	Ratio	Lower	Upper
62	100		
64	33.9	19.4	45.2
49	22.3	21.9	51.1

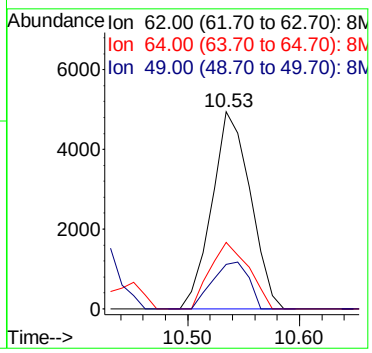

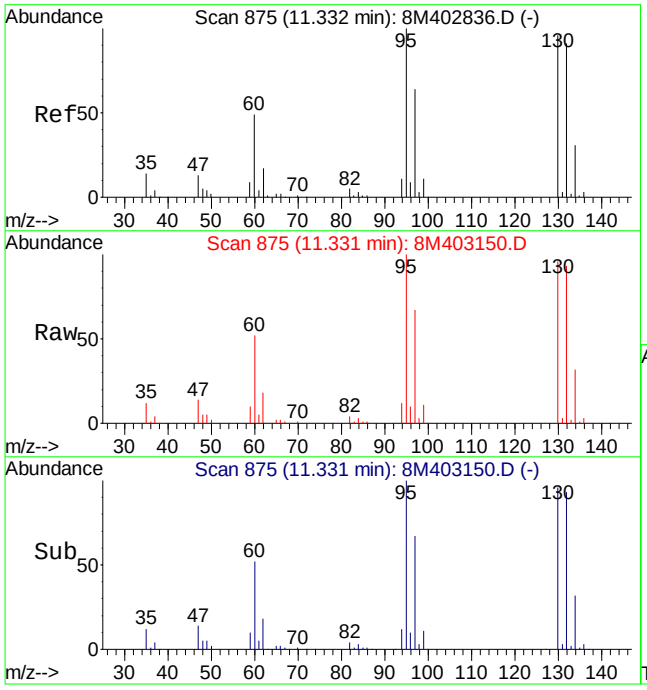

#47
Trichloroethene
Concen: 346.41 ug/L
RT: 11.33 min Scan# 875
Delta R.T. -0.01 min
Lab File: 8M403150.D
Acq: 20 Feb 2015 23:27

Tgt Ion:130 Resp: 2232629

Ion	Ratio	Lower	Upper
130	100		
132	96.6	57.4	133.8
95	103.8	63.1	147.1

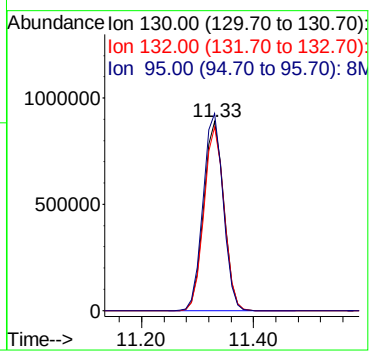

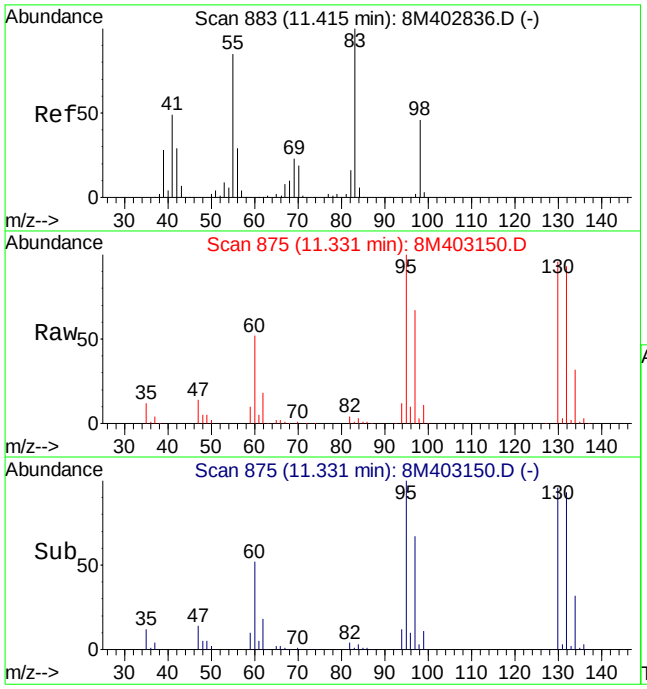

#48
Methylcyclohexane
Concen: 2.96 ug/L
RT: 11.33 min Scan# 875
Delta R.T. -0.09 min
Lab File: 8M403150.D
Acq: 20 Feb 2015 23:27

Tgt Ion: 83 Resp: 31086

Ion	Ratio	Lower	Upper
83	100		
55	0.0	50.9	118.9#
98	207.1	27.5	64.1#

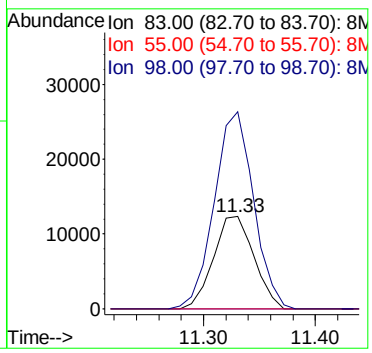

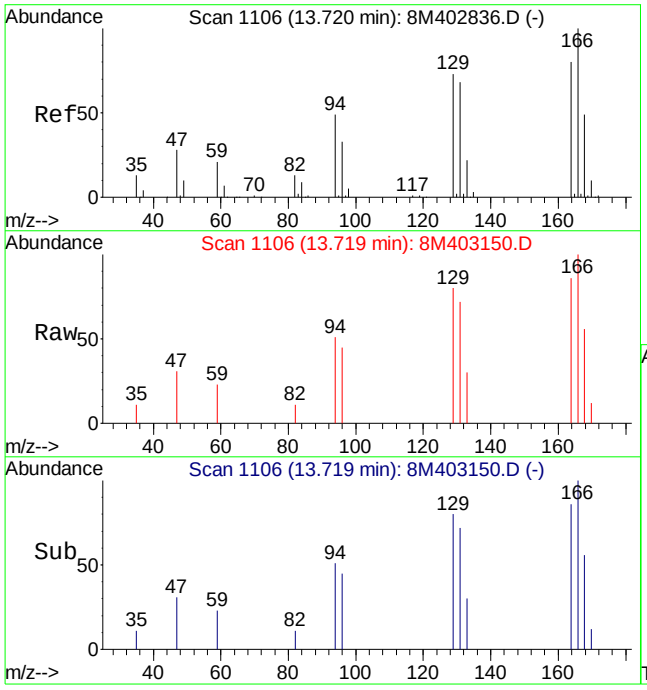

#66
Tetrachloroethene
Concen: 1.02 ug/L
RT: 13.72 min Scan# 1106
Delta R.T. -0.01 min
Lab File: 8M403150.D
Acq: 20 Feb 2015 23:27

Tgt Ion:164 Resp: 5480

Ion	Ratio	Lower	Upper
164	100		
129	93.1	53.9	125.9
94	56.9	37.6	87.8

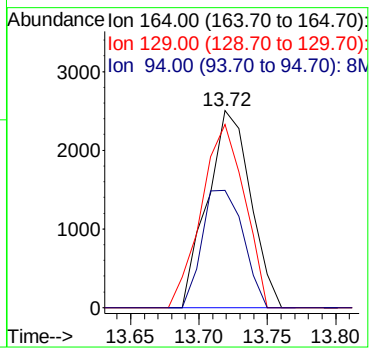

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\022315\8M403170.D Vial: 10
Acq On : 23 Feb 2015 15:56 Operator: TMB
Sample : L15021053-09 B 20X 826-LOW D1 Inst : HPMS8
Misc : 1,20 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 24 08:15:09 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	726828	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	526823	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.72	152	257318	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	184673	24.1424 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.56%		
43) 1,2-Dichloroethane-d4	10.42	65	174399	21.7475 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 87.00%		
58) Toluene-d8	12.80	98	620416	24.7895 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.16%		
80) p-Bromofluorobenzene	16.19	95	236771	25.6560 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.64%		

Target Compounds					Qvalue
32) cis-1,2-Dichloroethene	9.28	96	31576	3.7970 ug/L	83
45) 1,2-Dichloroethane	10.53	62	1341	0.1413 ug/L #	54
47) Trichloroethene	11.33	130	316524	42.5792 ug/L	100
48) Methylcyclohexane	11.33	83	3735	0.3083 ug/L #	1
66) Tetrachloroethene	13.72	164	748	0.1220 ug/L #	30

(#) = qualifier out of range (m) = manual integration
8M403170.D 8260WTR.M Tue Feb 24 08:15:10 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\022315\8M403170.D Vial: 10
Acq On : 23 Feb 2015 15:56 Operator: TMB
Sample : L15021053-09 B 20X 826-LOW D1 Inst : HPMS8
Misc : 1,20 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 24 8:15 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration

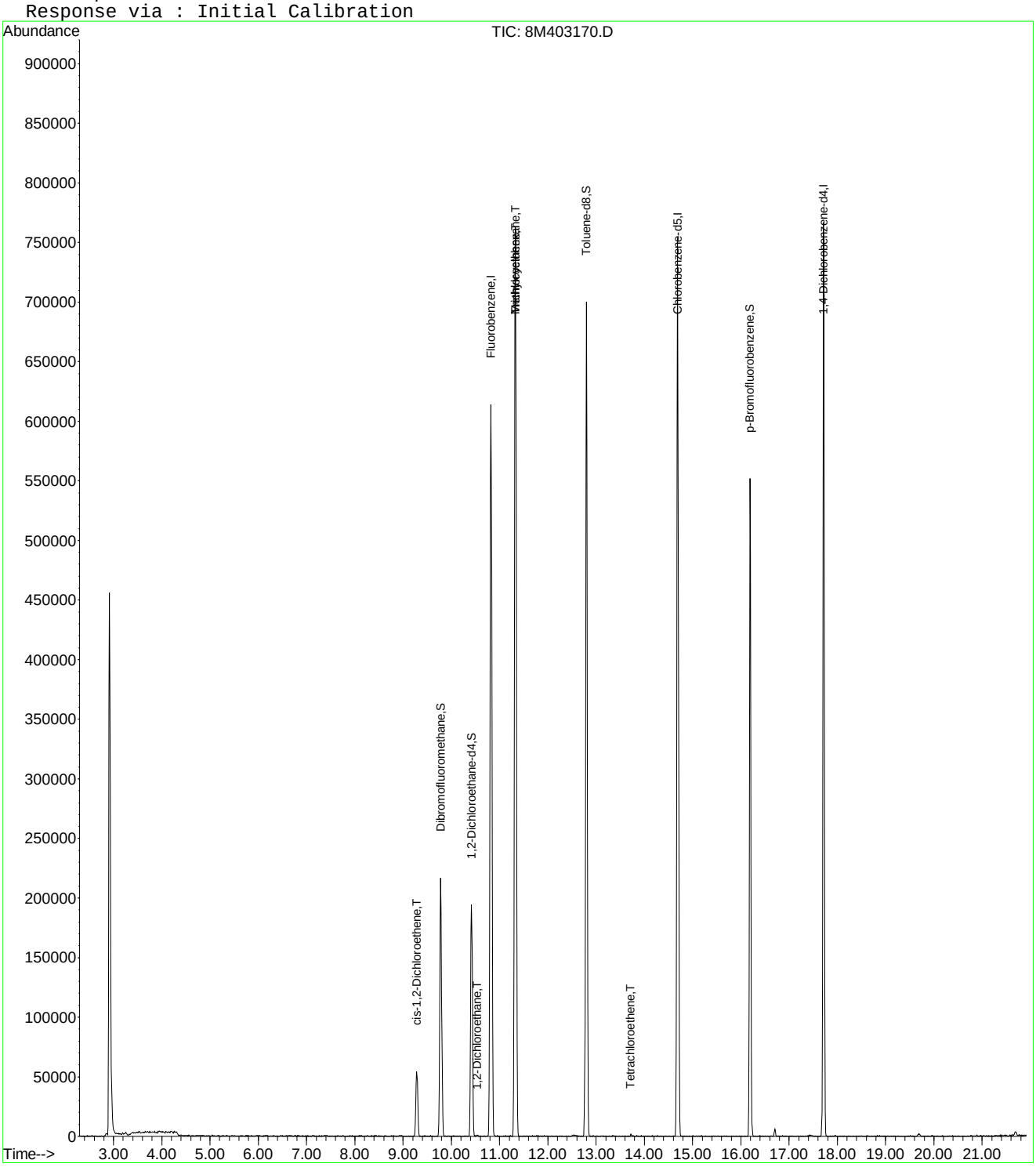

8M403170.D 8260WTR.M Tue Feb 24 08:15:10 2015 Page 2

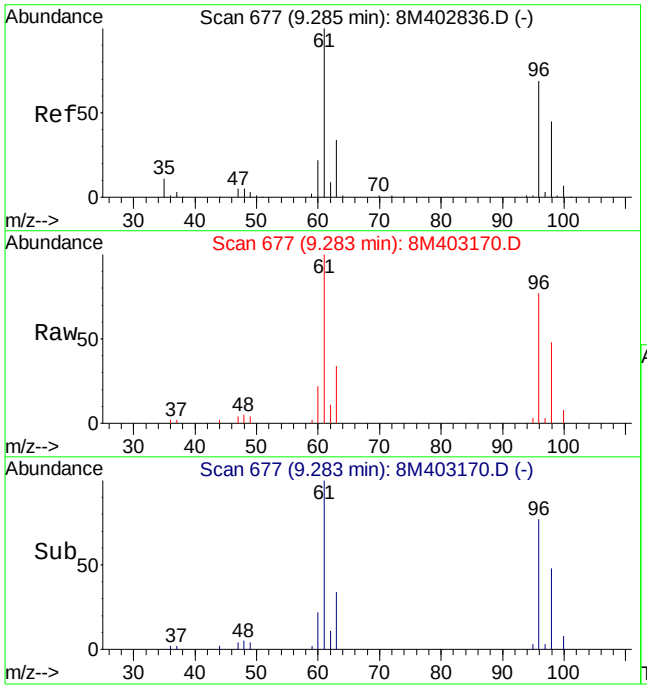

#32
cis-1,2-Dichloroethene
Concen: 3.80 ug/L
RT: 9.28 min Scan# 677
Delta R.T. -0.01 min
Lab File: 8M403170.D
Acq: 23 Feb 2015 15:56

Tgt Ion: 96 Resp: 31576

Ion	Ratio	Lower	Upper
96	100		
61	141.2	98.7	230.3

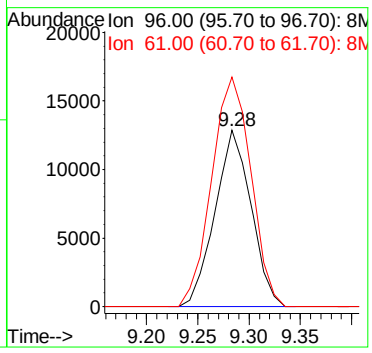

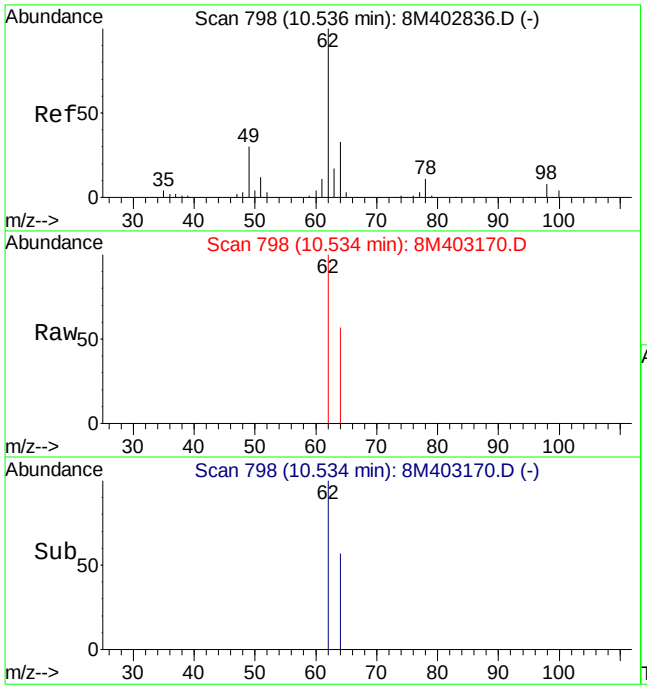

#45
1,2-Dichloroethane
Concen: 0.14 ug/L
RT: 10.53 min Scan# 798
Delta R.T. -0.01 min
Lab File: 8M403170.D
Acq: 23 Feb 2015 15:56

Tgt Ion: 62 Resp: 1341

Ion	Ratio	Lower	Upper
62	100		
64	17.0	19.4	45.2#
49	0.0	21.9	51.1#

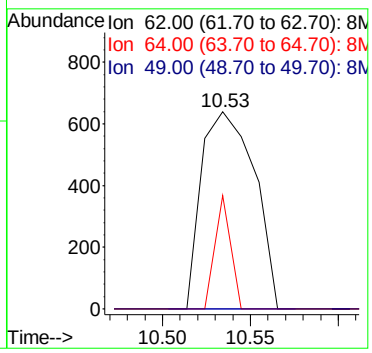

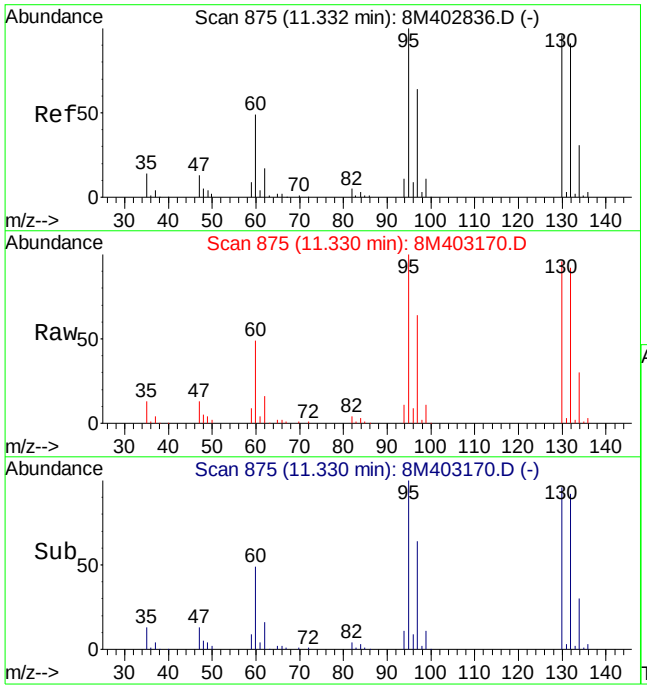

#47
Trichloroethene
Concen: 42.58 ug/L
RT: 11.33 min Scan# 875
Delta R.T. -0.01 min
Lab File: 8M403170.D
Acq: 23 Feb 2015 15:56

Tgt Ion:130 Resp: 316524

Ion	Ratio	Lower	Upper
130	100		
132	95.7	57.4	133.8
95	104.7	63.1	147.1

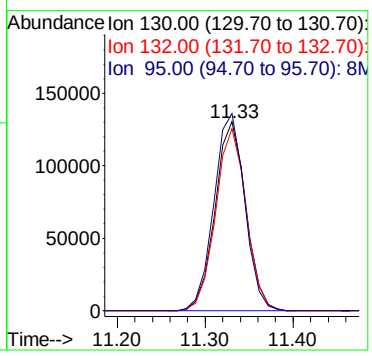

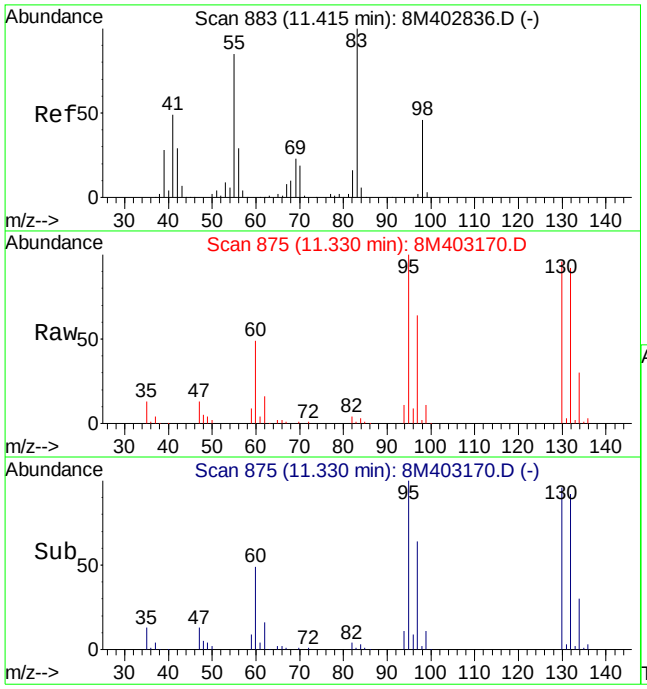

#48
Methylcyclohexane
Concen: 0.31 ug/L
RT: 11.33 min Scan# 875
Delta R.T. -0.09 min
Lab File: 8M403170.D
Acq: 23 Feb 2015 15:56

Tgt Ion: 83 Resp: 3735

Ion	Ratio	Lower	Upper
83	100		
55	0.0	50.9	118.9#
98	217.4	27.5	64.1#

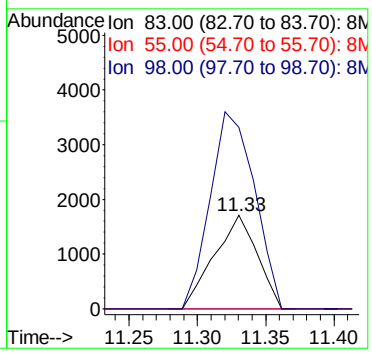

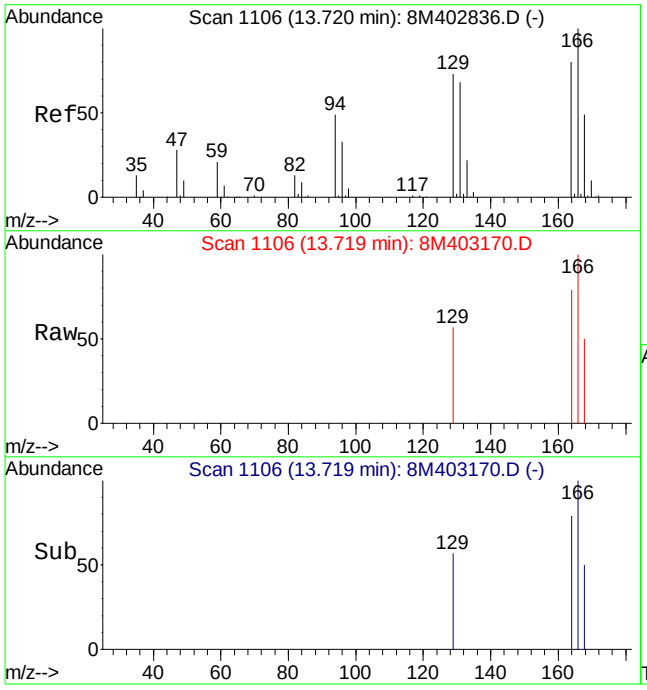

#66
Tetrachloroethene
Concen: 0.12 ug/L
RT: 13.72 min Scan# 1106
Delta R.T. -0.01 min
Lab File: 8M403170.D
Acq: 23 Feb 2015 15:56

Tgt Ion:164 Resp: 748

Ion	Ratio	Lower	Upper
164	100		
129	31.0	53.9	125.9#
94	0.0	37.6	87.8#

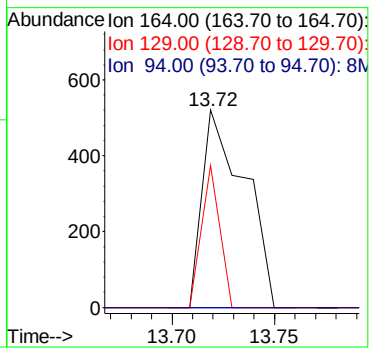

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\022015\8M403143.D Vial: 17
Acq On : 20 Feb 2015 20:06 Operator: TMB
Sample : L15021053-11 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 23 10:53:24 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	690523	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	503205	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.71	152	257881	25.00 ug/L	-0.02

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	177129	24.3737 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.48%		
43) 1,2-Dichloroethane-d4	10.42	65	169575	22.2577 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 89.04%		
58) Toluene-d8	12.80	98	602665	25.2104 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.84%		
80) p-Bromofluorobenzene	16.19	95	230709	24.9446 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.76%		

Target Compounds					Qvalue
3) Chloromethane	3.70	50	2458	0.2568 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	5144	0.6971 ug/L	90
13) Acetone	6.35	43	2427	2.3195 ug/L	90

(#) = qualifier out of range (m) = manual integration
8M403143.D 8260WTR.M Mon Feb 23 10:53:24 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\022015\8M403143.D Vial: 17
Acq On : 20 Feb 2015 20:06 Operator: TMB
Sample : L15021053-11 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 23 10:53 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration

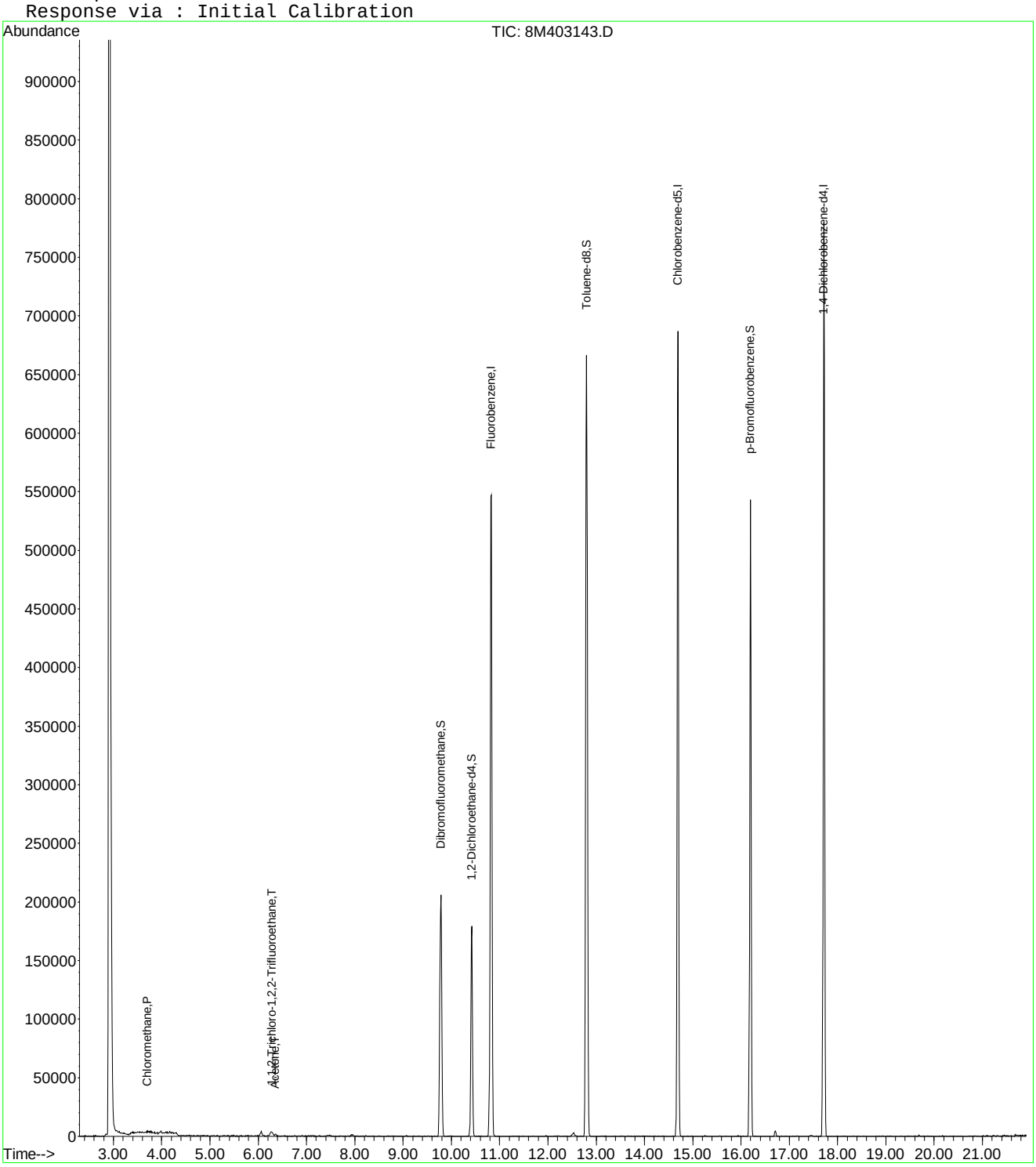

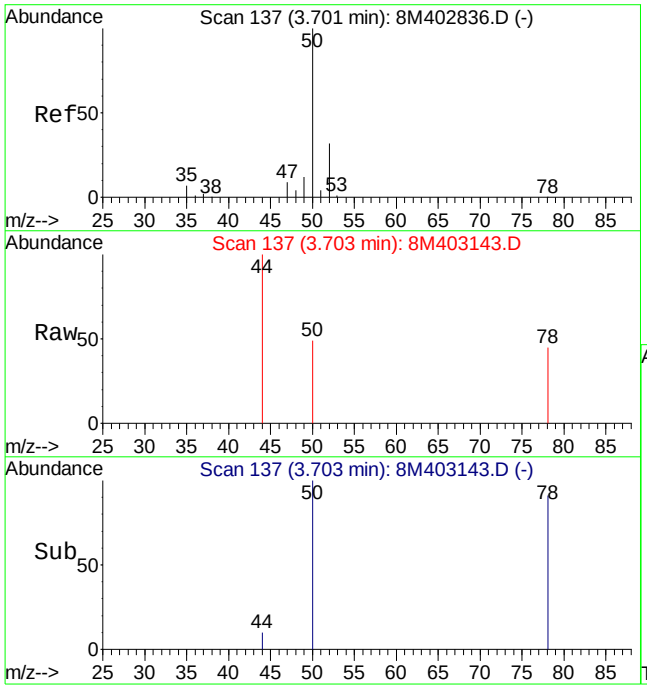

#3
Chloromethane
Concen: 0.26 ug/L
RT: 3.70 min Scan# 137
Delta R.T. 0.00 min
Lab File: 8M403143.D
Acq: 20 Feb 2015 20:06

Tgt Ion: 50 Resp: 2458

Ion	Ratio	Lower	Upper
50	100		
52	33.8	19.6	45.6

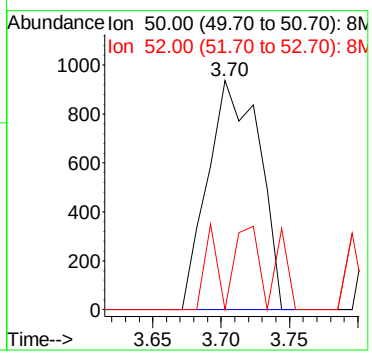

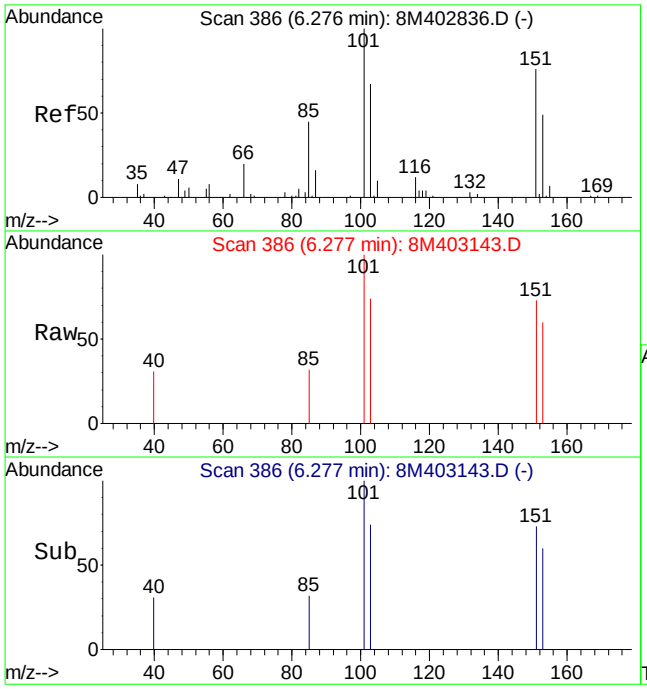

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 0.70 ug/L
RT: 6.28 min Scan# 386
Delta R.T. 0.00 min
Lab File: 8M403143.D
Acq: 20 Feb 2015 20:06

Tgt Ion:101 Resp: 5144

Ion	Ratio	Lower	Upper
101	100		
151	66.7	35.4	115.4

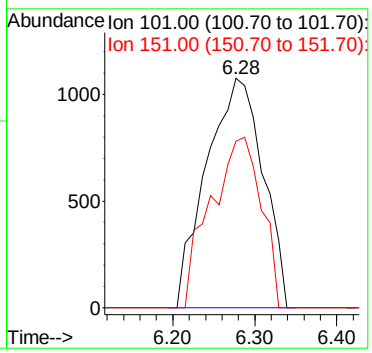

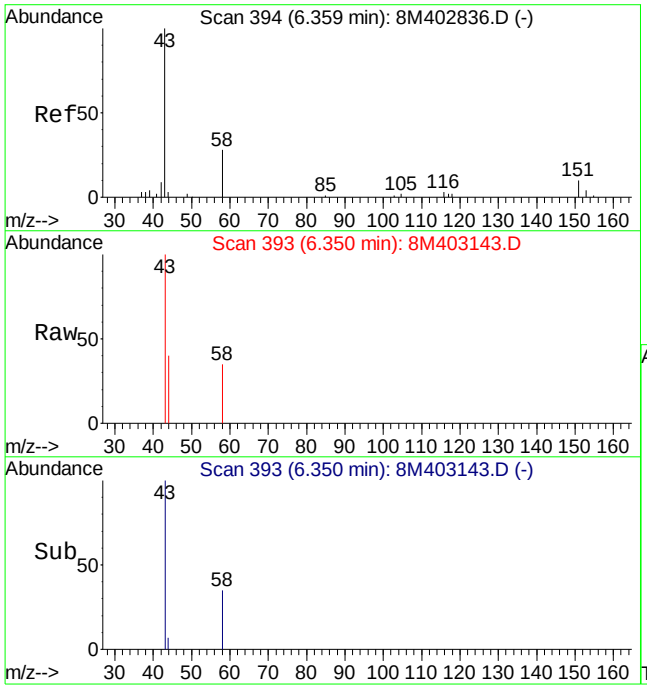

#13
Acetone
Concen: 2.32 ug/L
RT: 6.35 min Scan# 393
Delta R.T. -0.01 min
Lab File: 8M403143.D
Acq: 20 Feb 2015 20:06

Tgt Ion: 43 Resp: 2427

Ion	Ratio	Lower	Upper
43	100		
58	21.9	16.4	38.2

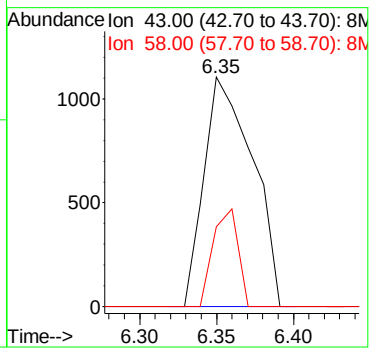

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\022015\8M403142.D Vial: 16
Acq On : 20 Feb 2015 19:37 Operator: TMB
Sample : L15021053-13 A TB 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 23 10:53:23 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	707581	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	518632	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.71	152	262892	25.00 ug/L	-0.02

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	175971	23.6306 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.52%		
43) 1,2-Dichloroethane-d4	10.41	65	175954	22.5382 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 90.16%		
58) Toluene-d8	12.80	98	614509	24.9413 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.76%		
80) p-Bromofluorobenzene	16.19	95	233747	24.7913 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.16%		

Target Compounds					Qvalue
13) Acetone	6.36	43	479	0.4467 ug/L #	48

(#) = qualifier out of range (m) = manual integration
8M403142.D 8260WTR.M Mon Feb 23 10:53:23 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\022015\8M403142.D Vial: 16
Acq On : 20 Feb 2015 19:37 Operator: TMB
Sample : L15021053-13 A TB 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 23 10:53 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration

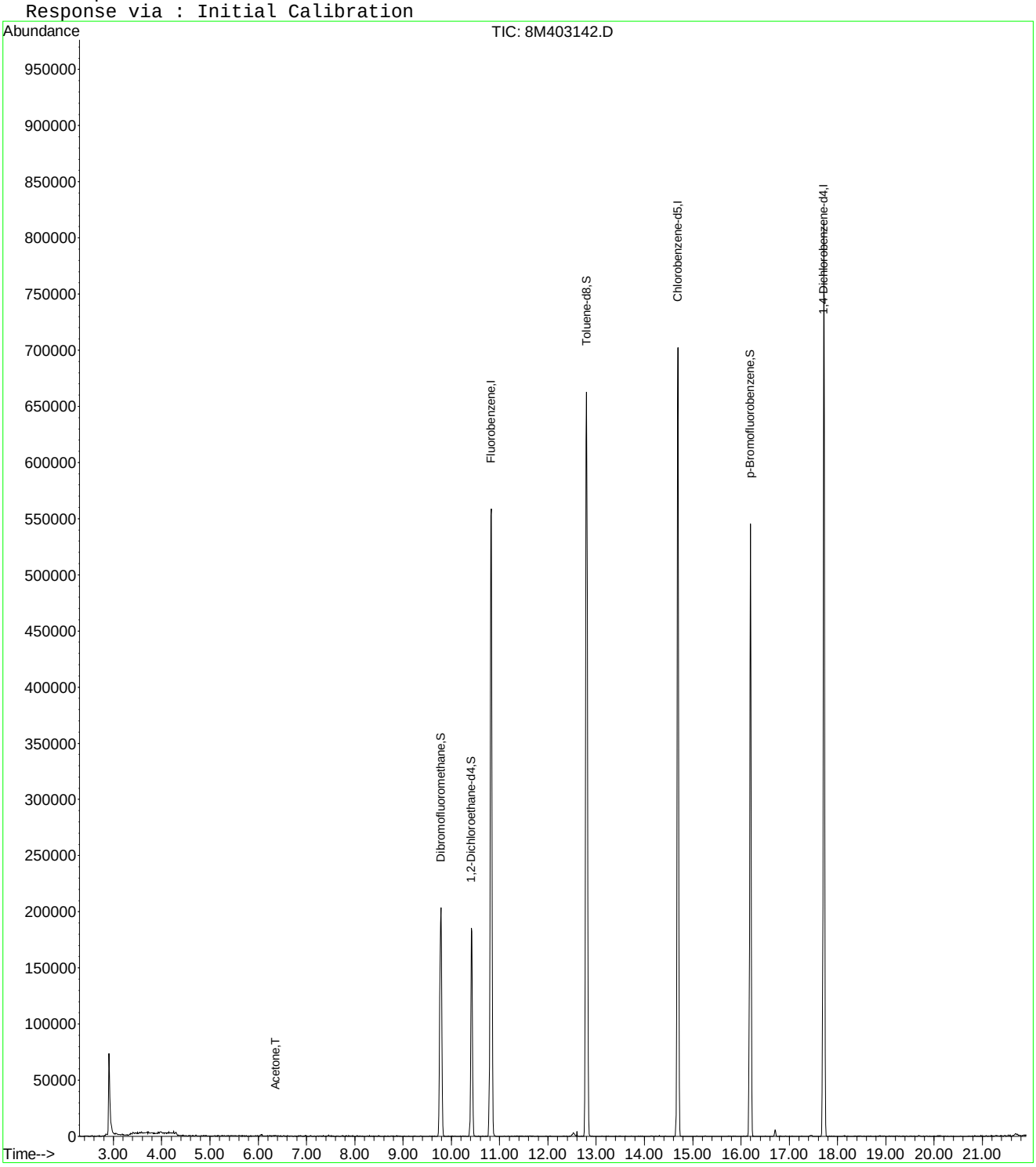

8M403142.D 8260WTR.M Mon Feb 23 10:53:23 2015 Page 2

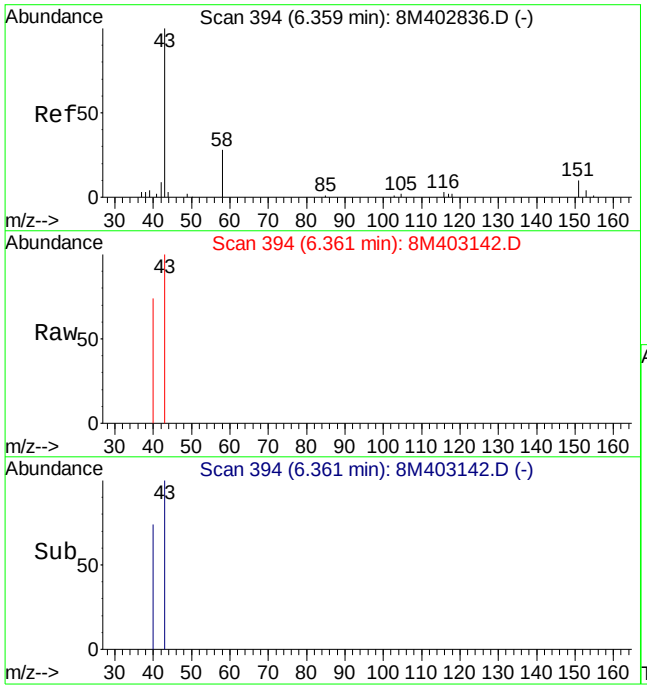

#13
Acetone
Concen: 0.45 ug/L
RT: 6.36 min Scan# 394
Delta R.T. 0.00 min
Lab File: 8M403142.D
Acq: 20 Feb 2015 19:37

Tgt Ion: 43 Resp: 479

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

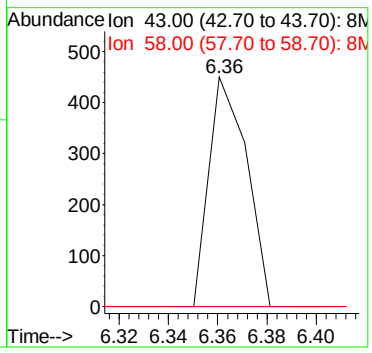

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400358.D Vial: 2
Acq On : 2 Oct 2014 12:24 Operator: TMB
Sample : WG494714-02 5ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:40 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	619208	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	544510	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	254129	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	1884	4.8234 ug/L #	23
3) 3-Chloro-1-propene	7.26	41	51461	4.9911 ug/L	88
4) 2-Chloro-1,3-butadiene	8.64	53	57885	4.7445 ug/L	89
5) Ethyl Acetate	9.28	43	12831	4.1474 ug/L	98
6) Methacrylonitrile	9.44	67	7738	4.2085 ug/L #	61
7) Isobutyl Alcohol	9.28	43	12831	104.0280 ug/L #	12
9) Methyl methacrylate	11.60	41	14247	4.0960 ug/L	83
10) 2-Nitropropane	11.94	43	3986	3.8294 ug/L	98
13) Cyclohexanone	16.03	55	1559	3.8882 ug/L #	43

(#) = qualifier out of range (m) = manual integration
8M400358.D A9FOOWTR.M Fri Oct 03 12:32:40 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400358.D Vial: 2
Acq On : 2 Oct 2014 12:24 Operator: TMB
Sample : WG494714-02 5ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

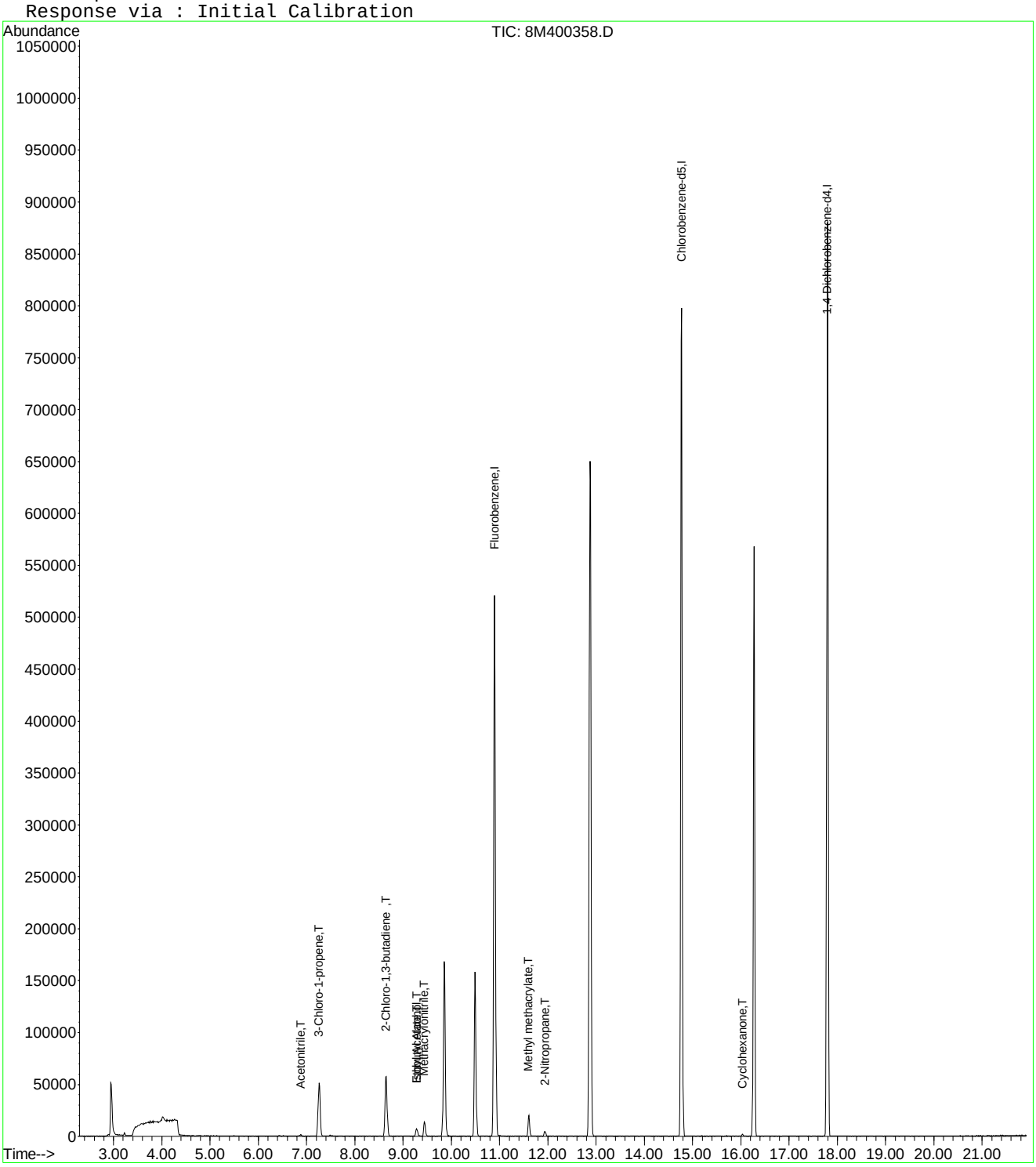

8M400358.D A9FOOWTR.M Fri Oct 03 12:32:41 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400359.D Vial: 3
Acq On : 2 Oct 2014 12:53 Operator: TMB
Sample : WG494714-03 20ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:41 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	590707	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	530005	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	246254	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	7263	19.4920 ug/L	97
3) 3-Chloro-1-propene	7.26	41	190581	19.3757 ug/L	90
4) 2-Chloro-1,3-butadiene	8.65	53	226534	19.4636 ug/L	90
5) Ethyl Acetate	9.28	43	54503	18.4670 ug/L	94
6) Methacrylonitrile	9.44	67	30898	17.6155 ug/L #	65
7) Isobutyl Alcohol	9.45	43	3143	26.7115 ug/L #	95
9) Methyl methacrylate	11.61	41	58234	17.5500 ug/L	72
10) 2-Nitropropane	11.94	43	16687	16.8050 ug/L	98
13) Cyclohexanone	16.03	55	7124	18.3357 ug/L	88

(#) = qualifier out of range (m) = manual integration
8M400359.D A9FOOWTR.M Fri Oct 03 12:32:41 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400359.D Vial: 3
Acq On : 2 Oct 2014 12:53 Operator: TMB
Sample : WG494714-03 20ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

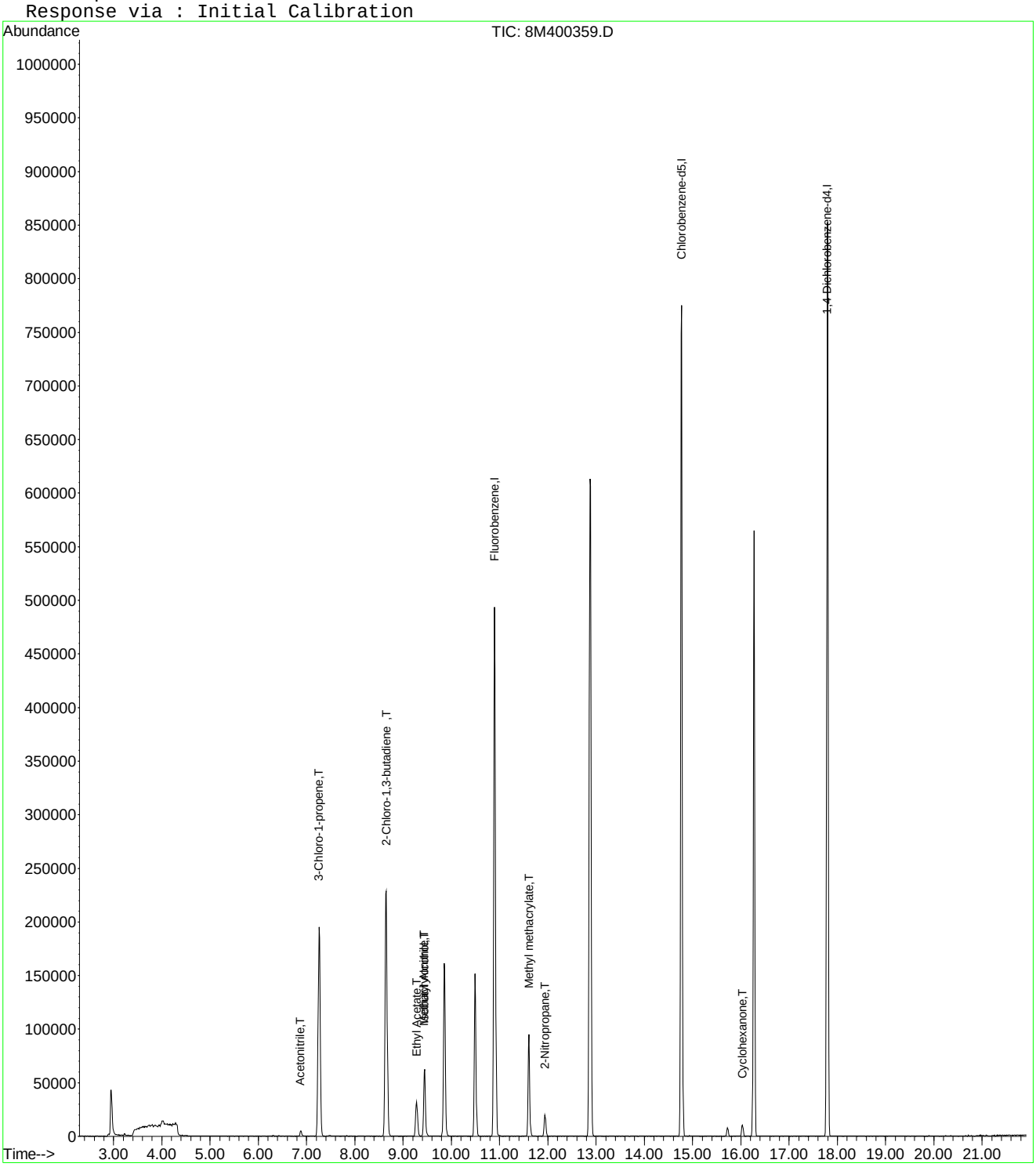

8M400359.D A9FOOWTR.M Fri Oct 03 12:32:42 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400360.D Vial: 4
Acq On : 2 Oct 2014 13:22 Operator: TMB
Sample : WG494714-04 50ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:42 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	590667	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	524443	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	249595	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	17698	47.5001 ug/L	100
3) 3-Chloro-1-propene	7.26	41	491365	49.9588 ug/L	90
4) 2-Chloro-1,3-butadiene	8.65	53	586258	50.3743 ug/L	90
5) Ethyl Acetate	9.27	43	145862	49.4250 ug/L	93
6) Methacrylonitrile	9.44	67	84924	48.4200 ug/L #	62
7) Isobutyl Alcohol	9.46	43	9563	81.2789 ug/L #	95
8) 1-Butanol	10.38	56	1895	48.4971 ug/L	87
9) Methyl methacrylate	11.61	41	161451	48.6599 ug/L	75
10) 2-Nitropropane	11.94	43	45766	46.0929 ug/L	98
13) Cyclohexanone	16.04	55	19698	50.0200 ug/L	89

(#) = qualifier out of range (m) = manual integration
8M400360.D A9FOOWTR.M Fri Oct 03 12:32:42 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400360.D Vial: 4
Acq On : 2 Oct 2014 13:22 Operator: TMB
Sample : WG494714-04 50ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

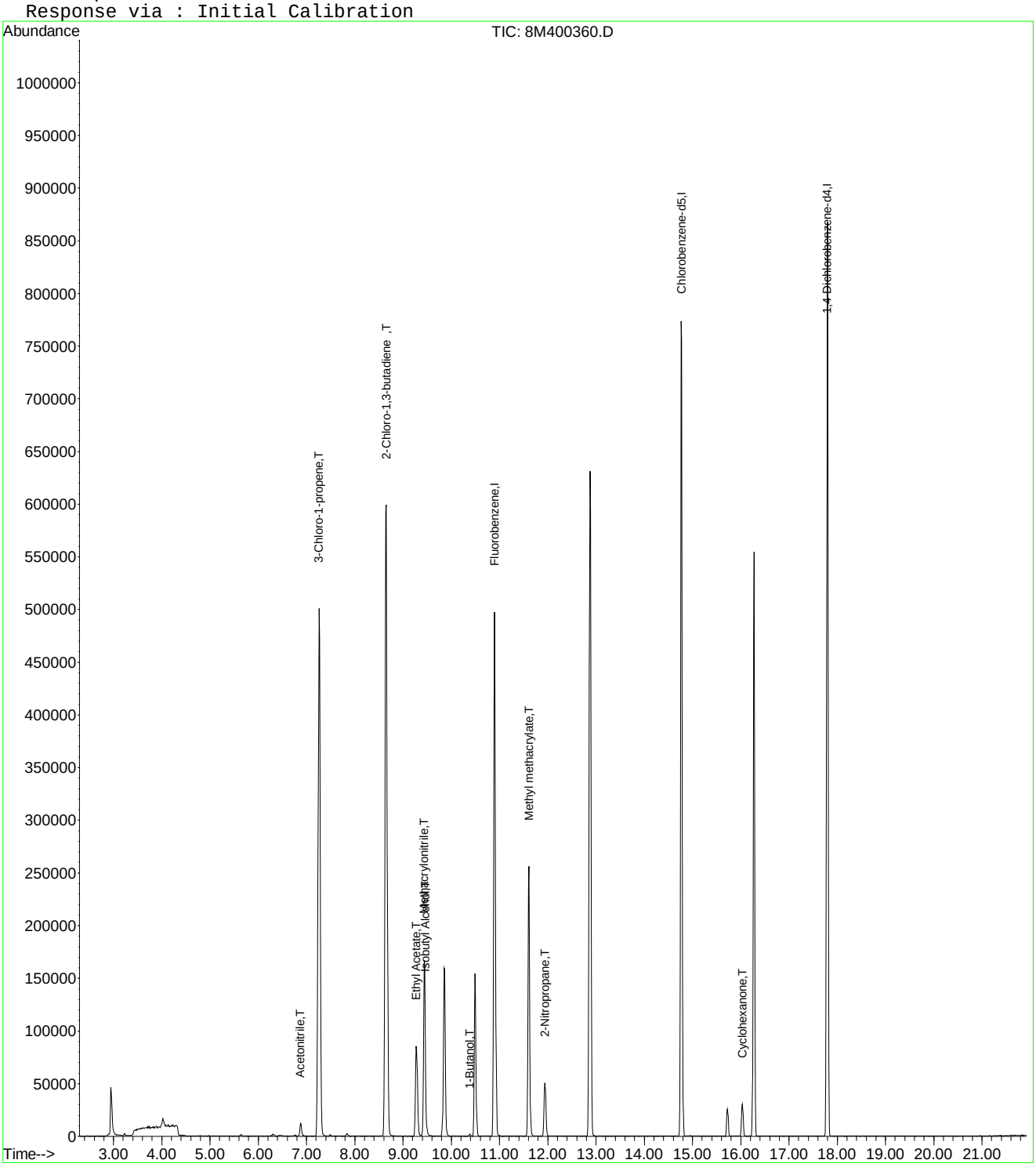

8M400360.D A9FOOWTR.M Fri Oct 03 12:32:42 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400361.D Vial: 5
Acq On : 2 Oct 2014 13:51 Operator: TMB
Sample : WG494714-05 100ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:43 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	595542	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	525736	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	251203	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	38265	101.8596 ug/L	98
3) 3-Chloro-1-propene	7.26	41	1042545	105.1315 ug/L	90
4) 2-Chloro-1,3-butadiene	8.65	53	1239135	105.6013 ug/L	88
5) Ethyl Acetate	9.27	43	315872	106.1564 ug/L	93
6) Methacrylonitrile	9.44	67	182857	103.4038 ug/L #	63
7) Isobutyl Alcohol	9.45	43	23247	195.9661 ug/L #	92
8) 1-Butanol	10.38	56	5482	96.3312 ug/L	88
9) Methyl methacrylate	11.61	41	351287	105.0082 ug/L	73
10) 2-Nitropropane	11.94	43	103249	103.1352 ug/L	99
13) Cyclohexanone	16.04	55	43523	109.8125 ug/L	88

(#) = qualifier out of range (m) = manual integration
8M400361.D A9FOOWTR.M Fri Oct 03 12:32:43 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400361.D Vial: 5
Acq On : 2 Oct 2014 13:51 Operator: TMB
Sample : WG494714-05 100ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

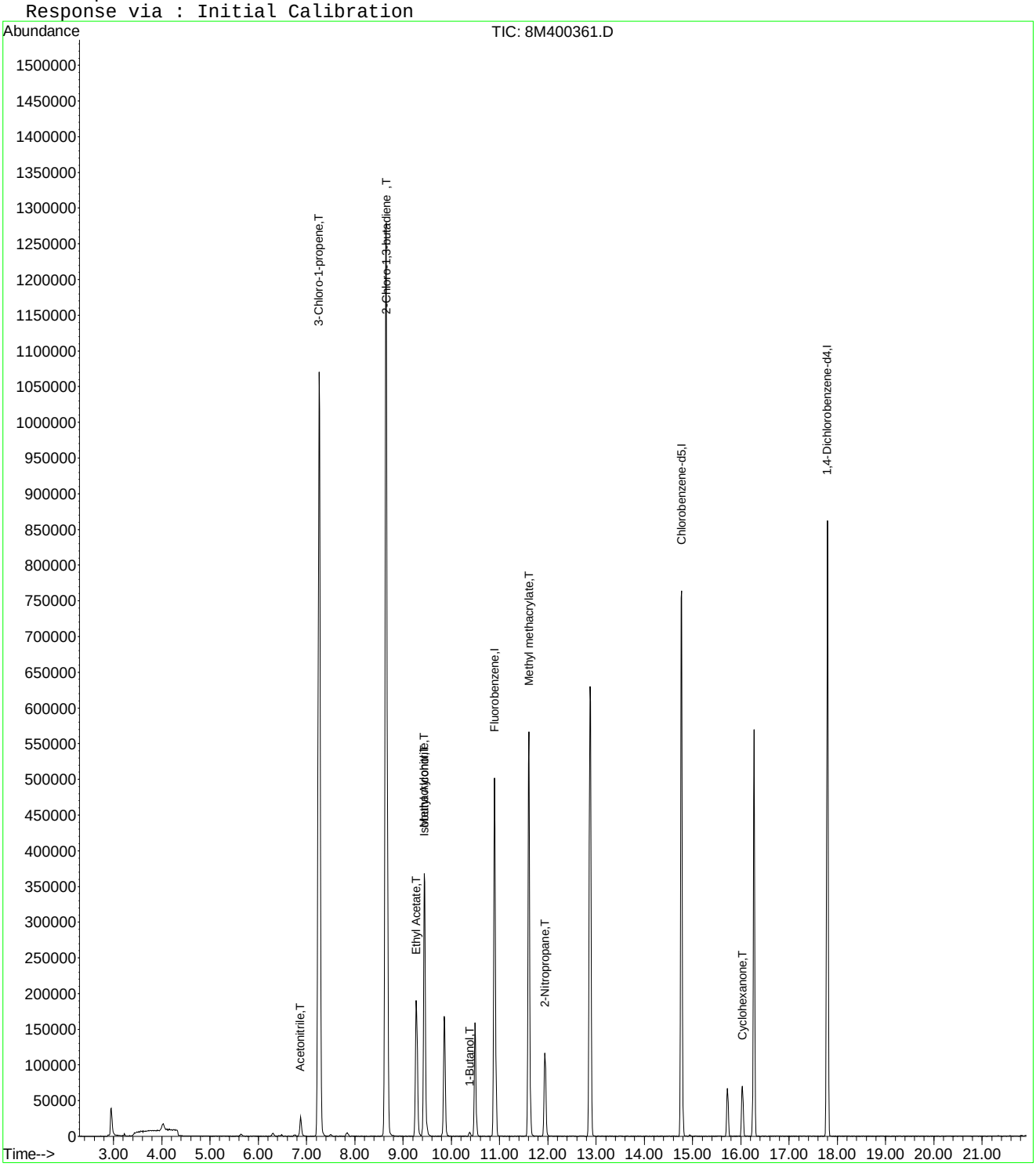

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400362.D Vial: 6
Acq On : 2 Oct 2014 14:19 Operator: TMB
Sample : WG494714-06 200ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:43 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	605985	25.00 ug/L	-0.02
11) Chlorobenzene-d5	14.77	117	543073	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.80	152	256990	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	81322	212.7447 ug/L	93
3) 3-Chloro-1-propene	7.26	41	2105378	208.6501 ug/L	89
4) 2-Chloro-1,3-butadiene	8.65	53	2530154	211.9083 ug/L	84
5) Ethyl Acetate	9.28	43	654842	216.2828 ug/L	92
6) Methacrylonitrile	9.44	67	386897	215.0159 ug/L #	62
7) Isobutyl Alcohol	9.44	43	51188	424.0654 ug/L	97
8) 1-Butanol	10.37	56	13189	196.5131 ug/L	88
9) Methyl methacrylate	11.60	41	747593	219.6225 ug/L	71
10) 2-Nitropropane	11.94	43	227212	223.0503 ug/L	99
13) Cyclohexanone	16.03	55	76140	187.7821 ug/L	85

(#) = qualifier out of range (m) = manual integration
8M400362.D A9FOOWTR.M Fri Oct 03 12:32:44 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400362.D Vial: 6
Acq On : 2 Oct 2014 14:19 Operator: TMB
Sample : WG494714-06 200ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

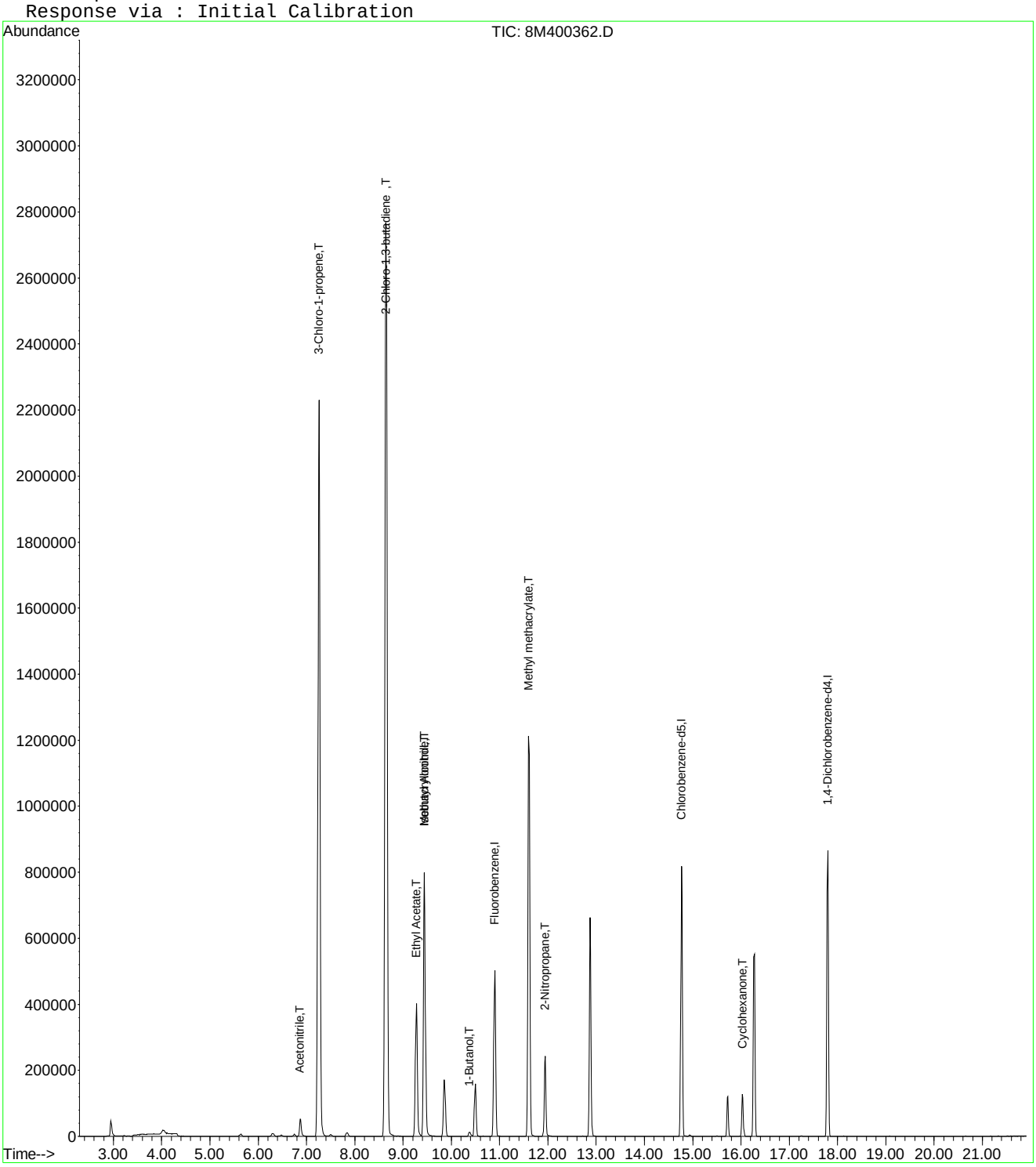

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400363.D Vial: 7
Acq On : 2 Oct 2014 14:48 Operator: TMB
Sample : WG494714-07 300ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:45 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	617316	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	555877	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	259867	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	120718	310.0110 ug/L	94
3) 3-Chloro-1-propene	7.26	41	3133181	304.8093 ug/L	86
4) 2-Chloro-1,3-butadiene	8.64	53	3764580	309.5080 ug/L	79
5) Ethyl Acetate	9.27	43	984728	319.2685 ug/L	92
6) Methacrylonitrile	9.44	67	589378	321.5315 ug/L #	62
7) Isobutyl Alcohol	9.45	43	76604	622.9747 ug/L	98
8) 1-Butanol	10.37	56	23186	322.5015 ug/L	89
9) Methyl methacrylate	11.61	41	1120843	323.2293 ug/L	70
10) 2-Nitropropane	11.94	43	340074	327.7172 ug/L	99
13) Cyclohexanone	16.03	55	133635	325.9318 ug/L	85

(#) = qualifier out of range (m) = manual integration
8M400363.D A9FOOWTR.M Fri Oct 03 12:32:45 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400363.D Vial: 7
Acq On : 2 Oct 2014 14:48 Operator: TMB
Sample : WG494714-07 300ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

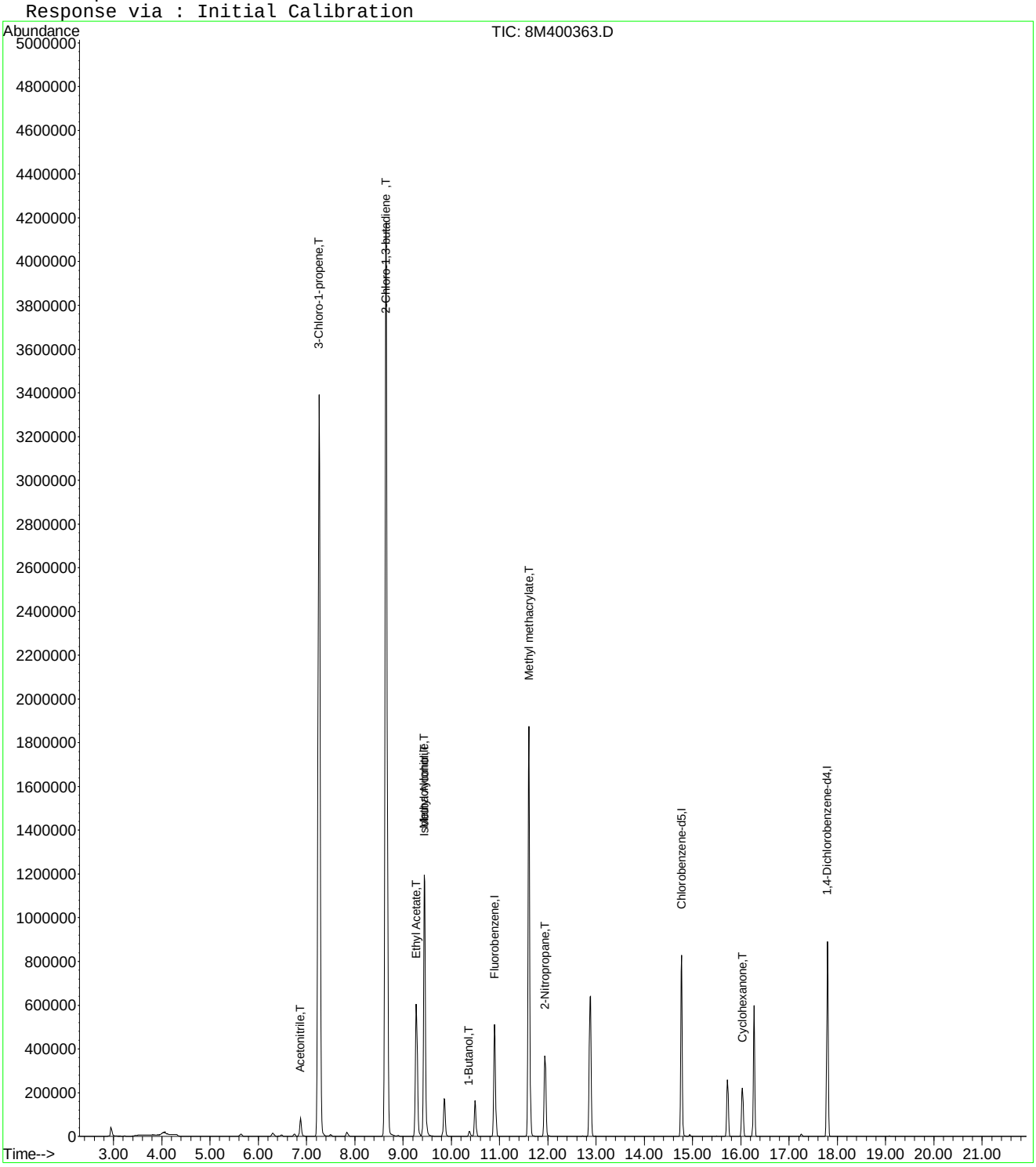

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400364.D Vial: 8
Acq On : 2 Oct 2014 15:16 Operator: TMB
Sample : WG494714-08 400ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:46 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	618926	25.00 ug/L	-0.02
11) Chlorobenzene-d5	14.77	117	559909	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.80	152	262346	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	151708	388.5818 ug/L	95
3) 3-Chloro-1-propene	7.26	41	4028272	390.8682 ug/L	83
4) 2-Chloro-1,3-butadiene	8.65	53	4802050	393.7774 ug/L	74
5) Ethyl Acetate	9.28	43	1250397	404.3491 ug/L	91
6) Methacrylonitrile	9.44	67	762998	415.1660 ug/L #	61
7) Isobutyl Alcohol	9.45	43	102436	830.8840 ug/L #	97
8) 1-Butanol	10.37	56	28243	386.8957 ug/L	89
9) Methyl methacrylate	11.60	41	1436773	413.2595 ug/L	68
10) 2-Nitropropane	11.94	43	451706	434.1607 ug/L	98
13) Cyclohexanone	16.03	55	150327	363.1785 ug/L	84

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400364.D Vial: 8
Acq On : 2 Oct 2014 15:16 Operator: TMB
Sample : WG494714-08 400ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

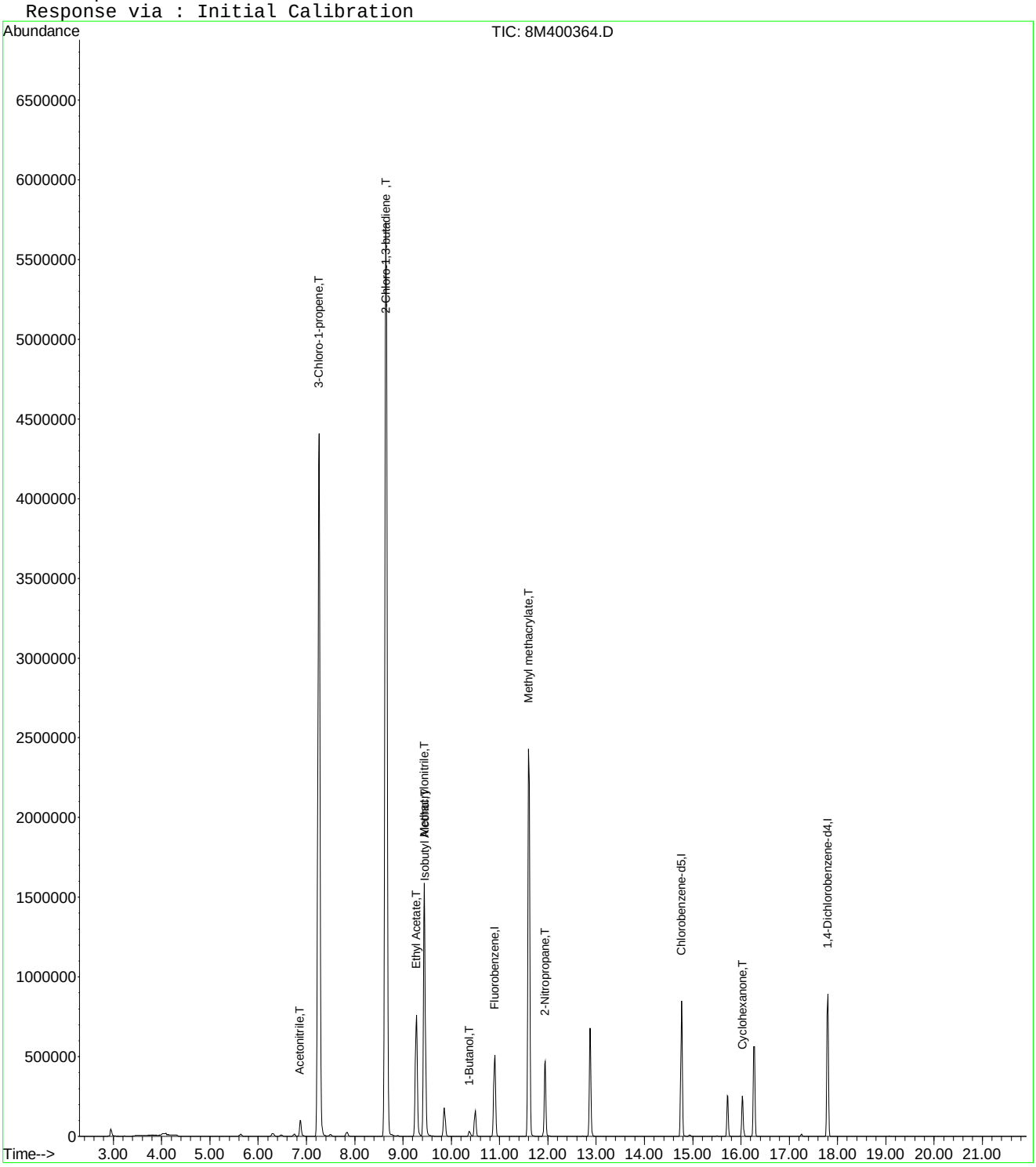

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400365.D Vial: 9
Acq On : 2 Oct 2014 15:45 Operator: TMB
Sample : WG494714-09 500ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:47 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	611679	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	574048	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	266141	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	197468	511.7830 ug/L	95
3) 3-Chloro-1-propene	7.26	41	4817953	473.0307 ug/L	79
4) 2-Chloro-1,3-butadiene	8.64	53	5656851	469.3686 ug/L	68
5) Ethyl Acetate	9.27	43	1590123	520.3008 ug/L	90
6) Methacrylonitrile	9.44	67	990168	545.1581 ug/L #	61
7) Isobutyl Alcohol	9.45	43	130410	1070.3205 ug/L	98
8) 1-Butanol	10.38	56	36529	499.2614 ug/L	87
9) Methyl methacrylate	11.61	41	1840524	535.6626 ug/L	68
10) 2-Nitropropane	11.94	43	590003	573.8046 ug/L	98
13) Cyclohexanone	16.04	55	203273	484.0894 ug/L	84

(#) = qualifier out of range (m) = manual integration
8M400365.D A9FOOWTR.M Fri Oct 03 12:32:47 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400365.D Vial: 9
Acq On : 2 Oct 2014 15:45 Operator: TMB
Sample : WG494714-09 500ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

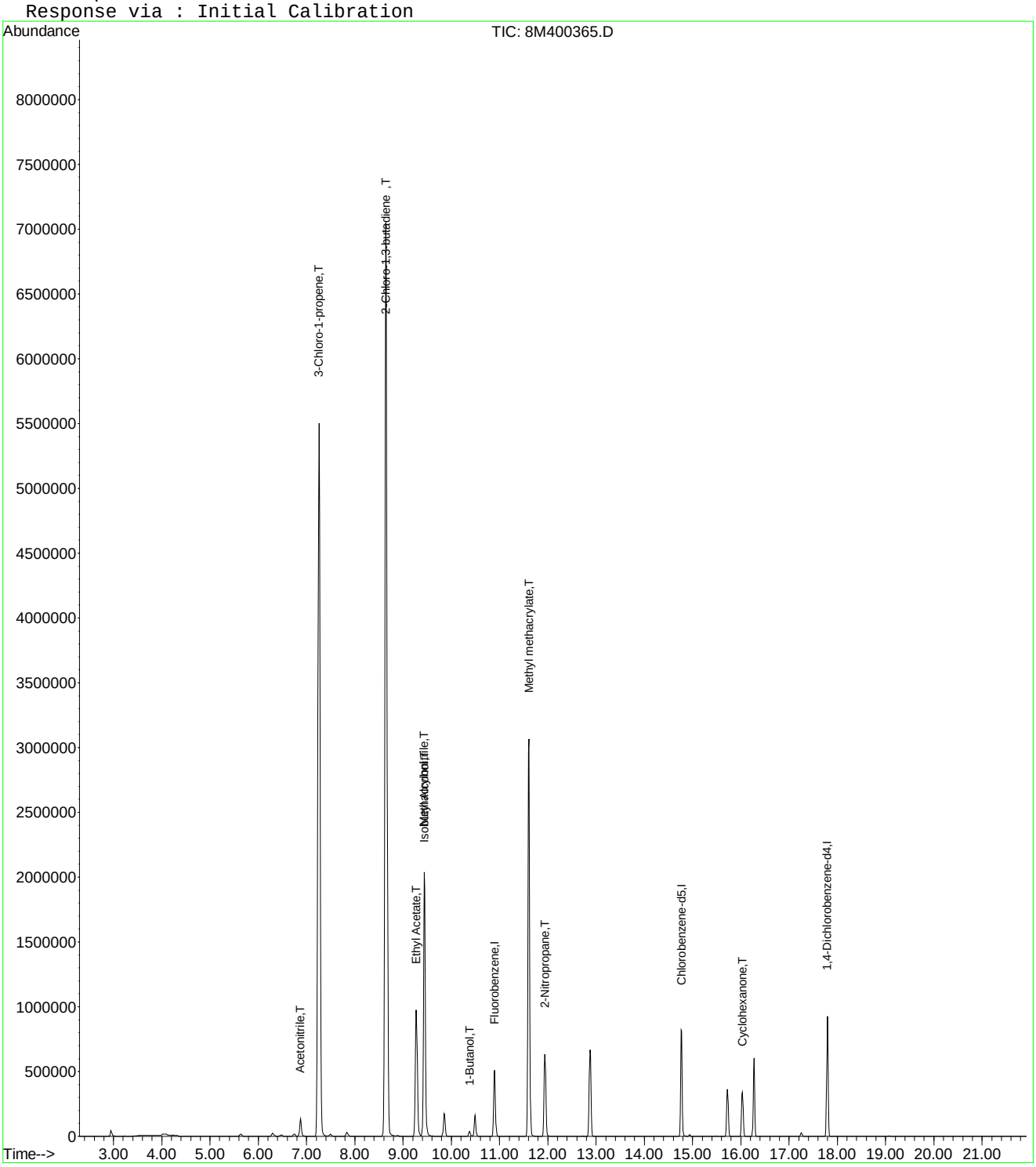

8M400365.D A9FOOWTR.M Fri Oct 03 12:32:47 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400367.D Vial: 11
Acq On : 2 Oct 2014 16:47 Operator: TMB
Sample : WG494714-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66677 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:48 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	548066	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	508831	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	240116	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	36847	106.5815 ug/L	98
3) 3-Chloro-1-propene	7.26	41	1001386	109.7284 ug/L	90
4) 2-Chloro-1,3-butadiene	8.64	53	982184	90.9542 ug/L	89
5) Ethyl Acetate	9.27	43	328991	120.1430 ug/L	94
6) Methacrylonitrile	9.44	67	174278	107.0895 ug/L #	64
7) Isobutyl Alcohol	9.45	43	21185	194.0538 ug/L	99
8) 1-Butanol	10.39	56	5303	100.0865 ug/L	77
9) Methyl methacrylate	11.61	41	317777	103.2198 ug/L	73
10) 2-Nitropropane	11.94	43	95761	103.9416 ug/L	99
13) Cyclohexanone	16.03	55	11614	30.6562 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M400367.D A9FOOWTR.M Fri Oct 03 12:32:49 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400367.D Vial: 11
Acq On : 2 Oct 2014 16:47 Operator: TMB
Sample : WG494714-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66677 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

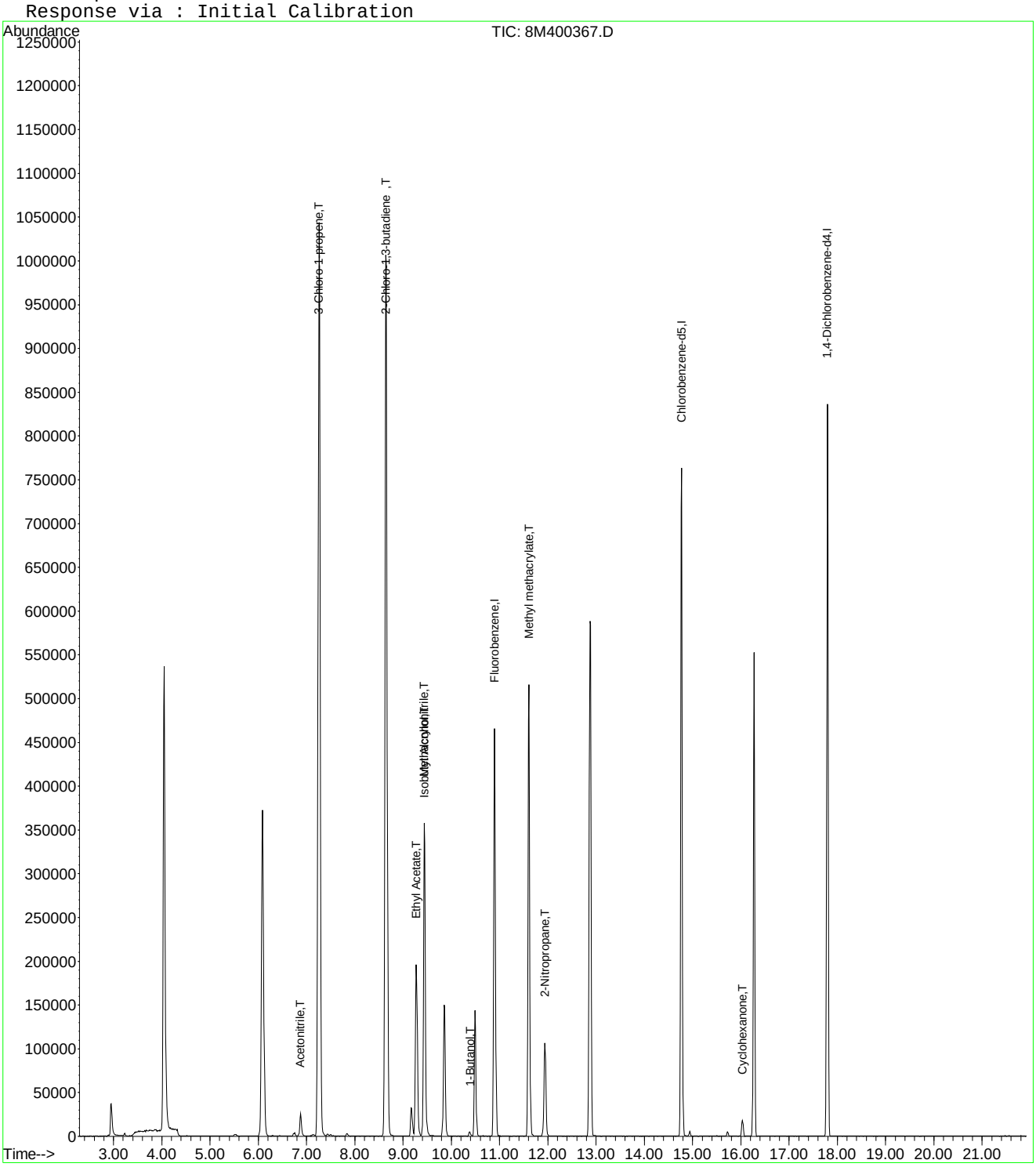

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\100214\8M400367.D Vial: 11
Acq On : 2 Oct 2014 16:47 Operator: TMB
Sample : WG494714-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66677 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	92	-0.03
2	T	Acetonitrile	100.0000	106.5815	-6.6	96	-0.02
3	T	3-Chloro-1-propene	100.0000	109.7284	-9.7	96	-0.03
4	T	2-Chloro-1,3-butadiene	100.0000	90.9542	9.0	79	-0.03
5	T	Ethyl Acetate	100.0000	120.1430	-20.1	104	-0.02
6	T	Methacrylonitrile	100.0000	107.0895	-7.1	95	-0.03
7	T	Isobutyl Alcohol	200.0000	194.0538	3.0	91	-0.02
8	T	1-Butanol	100.0000	100.0865	-0.1	97	0.00
9	T	Methyl methacrylate	100.0000	103.2198	-3.2	90	-0.02
10	T	2-Nitropropane	100.0000	103.9416	-3.9	93	-0.03
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	97	-0.03
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	96	-0.04
13	T	Cyclohexanone	100.0000	30.6562	69.3	27	-0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M400367.D A9FOOWTR.M Fri Oct 03 12:33:23 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402830.D Vial: 2
Acq On : 6 Feb 2015 15:59 Operator: TMB
Sample : WG511287-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:12 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	677676	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	517186	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.72	152	259482	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.80	98	285	0.0116 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.04%#	
80) p-Bromofluorobenzene	0.00	95	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.24	85	3534	0.3255 ug/L	87
3) Chloromethane	3.70	50	3788	0.4033 ug/L	93
4) Vinyl Chloride	3.94	62	3105	0.3359 ug/L #	63
5) 1,3-Butadiene	3.99	54	2460	Below Cal #	13
6) Bromomethane	4.85	94	760	0.8109 ug/L #	55
7) Chloroethane	4.99	64	1783	0.3120 ug/L #	45
8) Trichlorofluoromethane	5.49	101	4678	0.3649 ug/L #	82
10) Isoprene	6.05	67	2406	0.2423 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	1698	0.2345 ug/L	80
13) Acetone	6.36	43	3064	2.9838 ug/L #	1
14) 1,1-Dichloroethene	6.57	61	3490	0.2996 ug/L	95
16) Dimethyl Sulfide	6.84	62	2118	0.2728 ug/L	84
18) Methyl acetate	7.11	43	538	0.1260 ug/L #	64
19) Methylene Chloride	7.37	84	2731	0.3749 ug/L	88
20) Carbon Disulfide	7.41	76	9675	0.4022 ug/L #	82
22) Methyl Tert Butyl Ether	7.59	73	3208	0.2533 ug/L #	48
23) trans-1,2-Dichloroethene	7.83	61	3525	0.3142 ug/L	92
24) n-Hexane	7.90	57	3525	0.3580 ug/L	88
27) 1,1-Dichloroethane	8.44	63	4535	0.3217 ug/L #	85
31) 2,2-Dichloropropane	9.22	77	3265	0.3137 ug/L #	58
32) cis-1,2-Dichloroethene	9.28	96	2413	0.3112 ug/L	72
33) Chloroform	9.48	83	4365	0.3259 ug/L	94
35) Bromochloromethane	9.72	130	1272	0.3280 ug/L	84
36) Tetrahydrofuran	9.76	42	1302	1.2211 ug/L #	38
38) 1,1,1-Trichloroethane	10.01	97	3598	0.3084 ug/L	90
39) Cyclohexane	10.05	56	3685	0.2935 ug/L #	82
40) 1,1-Dichloropropene	10.21	75	2775	0.2755 ug/L #	70
42) Carbon Tetrachloride	10.37	117	3031	0.3030 ug/L #	85
45) 1,2-Dichloroethane	10.53	62	2824	0.3192 ug/L #	71
46) Benzene	10.58	78	9211	0.3343 ug/L	88
47) Trichloroethene	11.33	130	1942	0.2802 ug/L	98
48) Methylcyclohexane	11.42	83	3549	0.3142 ug/L	84
49) 1,2-Dichloropropane	11.55	63	1881	0.2510 ug/L	95
50) Bromodichloromethane	11.84	83	2819	0.2975 ug/L #	85
52) Dibromomethane	11.92	93	948	0.2681 ug/L #	51
55) cis-1,3-Dichloropropene	12.48	75	3166	0.3196 ug/L	85
56) Dimethyl Disulfide	12.75	79	837	4.7918 ug/L #	35
59) Toluene	12.90	91	8628	0.3095 ug/L	95
60) Ethyl Methacrylate	13.00	69	948	0.1779 ug/L	91
62) trans-1,3-Dichloropropene	13.08	75	1801	0.2111 ug/L	82

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402830.D Vial: 2
Acq On : 6 Feb 2015 15:59 Operator: TMB
Sample : WG511287-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:12 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
63)	1,1,2-Trichloroethane	13.29	97	932	0.2106 ug/L		73
65)	1,3-Dichloropropane	13.60	76	2102	0.2620 ug/L		80
66)	Tetrachloroethene	13.72	164	2034	0.3378 ug/L		89
67)	Dibromochloromethane	13.99	129	1483	0.2622 ug/L		85
68)	1,2-Dibromoethane	14.25	107	1151	0.2616 ug/L		87
69)	1-Chlorohexane	14.32	91	2908	0.3084 ug/L		79
70)	Chlorobenzene	14.74	112	6589	0.3495 ug/L		86
71)	1,1,1,2-Tetrachloroethane	14.78	131	1539	0.2390 ug/L		81
72)	Ethylbenzene	14.76	106	3527	0.3270 ug/L		98
73)	m-,p-Xylene	14.86	106	8641	0.7034 ug/L		97
74)	o-Xylene	15.42	106	3653	0.3022 ug/L		96
75)	Styrene	15.46	104	4801	0.2476 ug/L		87
76)	Bromoform	15.95	173	809	0.2318 ug/L	#	27
77)	Isopropylbenzene	15.85	105	9493	0.3144 ug/L		93
79)	1,1,2,2-Tetrachloroethane	16.07	83	1379	0.2924 ug/L	#	91
83)	n-Propylbenzene	16.36	91	13025	0.3433 ug/L		93
84)	Bromobenzene	16.49	156	1864	0.2539 ug/L		76
85)	1,3,5-Trimethylbenzene	16.54	105	8131	0.3210 ug/L		89
86)	2-Chlorotoluene	16.64	91	6967	0.3011 ug/L		98
87)	4-Chlorotoluene	16.68	91	7557	0.3207 ug/L		98
88)	a-Methylstyrene	16.95	118	3398	0.2329 ug/L		100
89)	tert-Butylbenzene	17.01	134	1383	0.2506 ug/L		80
90)	1,2,4-Trimethylbenzene	17.06	105	8919	0.3427 ug/L		85
91)	sec-Butylbenzene	17.28	105	10858	0.3243 ug/L		94
92)	p-Isopropyltoluene	17.43	119	8474	0.3202 ug/L		93
93)	1,3-Dichlorobenzene	17.63	146	5020	0.3333 ug/L		99
94)	1,4-Dichlorobenzene	17.76	146	5740	0.3721 ug/L	#	11
95)	n-Butylbenzene	17.96	91	10346	0.3567 ug/L	#	84
96)	1,2-Dichlorobenzene	18.26	146	4213	0.3121 ug/L		95
98)	1,2,4-Trichlorobenzene	20.40	180	3165	0.2952 ug/L		84
99)	Hexachlorobutadiene	20.54	225	2332	0.3697 ug/L		90
100)	Naphthalene	20.76	128	4212	0.2665 ug/L	#	68
101)	1,2,3-Trichlorobenzene	21.08	180	3100	0.3311 ug/L		92

(#) = qualifier out of range (m) = manual integration
8M402830.D 8260WTR.M Mon Feb 09 12:25:12 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402830.D Vial: 2
Acq On : 6 Feb 2015 15:59 Operator: TMB
Sample : WG511287-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 9 12:25 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration

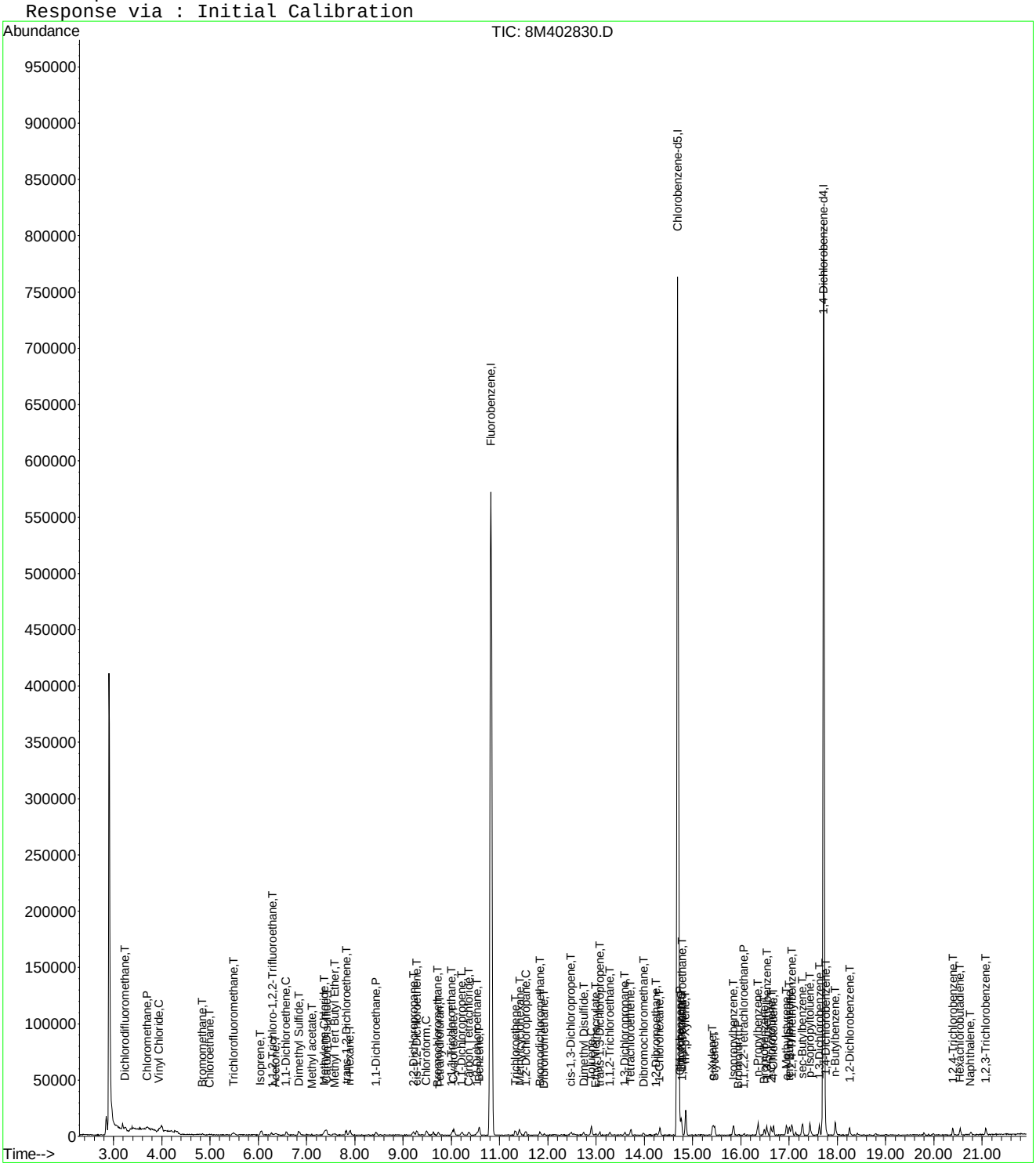

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402831.D Vial: 3
Acq On : 6 Feb 2015 16:27 Operator: TMB
Sample : WG511287-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:13 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	669605	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	519790	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.72	152	260996	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.79	98	420	0.0170 ug/L	-0.02
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.08%#	
80) p-Bromofluorobenzene	0.00	95	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.23	85	4476	0.4173 ug/L	79
3) Chloromethane	3.71	50	4971	0.5356 ug/L #	71
4) Vinyl Chloride	3.94	62	4128	0.4520 ug/L	96
5) 1,3-Butadiene	4.00	54	3492	Below Cal #	58
6) Bromomethane	4.85	94	782	0.8197 ug/L	92
7) Chloroethane	5.01	64	2166	0.3836 ug/L #	56
8) Trichlorofluoromethane	5.48	101	5667	0.4474 ug/L #	93
10) Isoprene	6.07	67	3425	0.3491 ug/L	83
12) 1,1,2-Trichloro-1,2,2-Trif	6.27	101	2789	0.3898 ug/L	79
13) Acetone	6.37	43	2081	2.0509 ug/L #	1
14) 1,1-Dichloroethene	6.58	61	4994	0.4339 ug/L	92
16) Dimethyl Sulfide	6.84	62	2867	0.3738 ug/L	97
18) Methyl acetate	7.11	43	1151	0.2728 ug/L #	64
19) Methylene Chloride	7.36	84	3447	0.4789 ug/L	81
20) Carbon Disulfide	7.41	76	10450	0.4397 ug/L	100
22) Methyl Tert Butyl Ether	7.59	73	4612	0.3686 ug/L #	58
23) trans-1,2-Dichloroethene	7.83	61	4989	0.4501 ug/L	97
24) n-Hexane	7.90	57	3804	0.3910 ug/L	98
26) Vinyl Acetate	8.41	43	811	0.2562 ug/L #	76
27) 1,1-Dichloroethane	8.45	63	5717	0.4104 ug/L #	87
31) 2,2-Dichloropropane	9.22	77	4570	0.4444 ug/L #	58
32) cis-1,2-Dichloroethene	9.28	96	3293	0.4298 ug/L	77
33) Chloroform	9.49	83	5730	0.4330 ug/L	98
35) Bromochloromethane	9.72	130	1259	0.3285 ug/L	82
38) 1,1,1-Trichloroethane	10.03	97	4607	0.3997 ug/L	98
39) Cyclohexane	10.06	56	5367	0.4327 ug/L	95
40) 1,1-Dichloropropene	10.22	75	3807	0.3826 ug/L	90
42) Carbon Tetrachloride	10.36	117	3770	0.3814 ug/L	95
45) 1,2-Dichloroethane	10.53	62	3737	0.4275 ug/L #	70
46) Benzene	10.58	78	11704	0.4299 ug/L	91
47) Trichloroethene	11.33	130	2490	0.3636 ug/L	93
48) Methylcyclohexane	11.41	83	4494	0.4027 ug/L	88
49) 1,2-Dichloropropane	11.54	63	2912	0.3933 ug/L #	73
50) Bromodichloromethane	11.85	83	3539	0.3780 ug/L #	92
52) Dibromomethane	11.92	93	1317	0.3769 ug/L	94
53) 2-Chloroethyl Vinyl Ether	12.14	63	582	0.2070 ug/L #	52
55) cis-1,3-Dichloropropene	12.48	75	3482	0.3558 ug/L #	68
56) Dimethyl Disulfide	12.75	79	941	4.8024 ug/L #	20
59) Toluene	12.90	91	12159	0.4339 ug/L	95
60) Ethyl Methacrylate	13.00	69	1427	0.2664 ug/L	94

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402831.D Vial: 3
Acq On : 6 Feb 2015 16:27 Operator: TMB
Sample : WG511287-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:13 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
62)	trans-1,3-Dichloropropene	13.08	75	2603	0.3036 ug/L	#	75
63)	1,1,2-Trichloroethane	13.28	97	1475	0.3316 ug/L		96
65)	1,3-Dichloropropane	13.59	76	3031	0.3759 ug/L		88
66)	Tetrachloroethene	13.72	164	2304	0.3808 ug/L		82
67)	Dibromochloromethane	13.98	129	1855	0.3263 ug/L		78
68)	1,2-Dibromoethane	14.25	107	1394	0.3152 ug/L		95
69)	1-Chlorohexane	14.32	91	3675	0.3877 ug/L		94
70)	Chlorobenzene	14.74	112	8004	0.4224 ug/L		93
71)	1,1,1,2-Tetrachloroethane	14.77	131	2173	0.3358 ug/L		90
72)	Ethylbenzene	14.77	106	4389	0.4049 ug/L		86
73)	m-,p-Xylene	14.86	106	10439	0.8455 ug/L		94
74)	o-Xylene	15.42	106	4821	0.3968 ug/L		98
75)	Styrene	15.46	104	6791	0.3485 ug/L		92
76)	Bromoform	15.95	173	953	0.2717 ug/L	#	27
77)	Isopropylbenzene	15.85	105	12521	0.4125 ug/L		95
79)	1,1,2,2-Tetrachloroethane	16.06	83	1641	0.3459 ug/L	#	77
83)	n-Propylbenzene	16.36	91	15075	0.3950 ug/L		98
84)	Bromobenzene	16.49	156	2959	0.4007 ug/L		93
85)	1,3,5-Trimethylbenzene	16.54	105	10092	0.3962 ug/L		99
86)	2-Chlorotoluene	16.62	91	10974	0.4716 ug/L		81
87)	4-Chlorotoluene	16.68	91	8600	0.3628 ug/L	#	77
88)	a-Methylstyrene	16.94	118	4721	0.3216 ug/L		86
89)	tert-Butylbenzene	17.02	134	1933	0.3482 ug/L		66
90)	1,2,4-Trimethylbenzene	17.06	105	11257	0.4300 ug/L		93
91)	sec-Butylbenzene	17.28	105	14453	0.4292 ug/L		99
92)	p-Isopropyltoluene	17.43	119	11603	0.4359 ug/L		90
93)	1,3-Dichlorobenzene	17.63	146	6958	0.4592 ug/L		85
94)	1,4-Dichlorobenzene	17.75	146	6661	0.4293 ug/L	#	66
95)	n-Butylbenzene	17.96	91	12852	0.4406 ug/L		90
96)	1,2-Dichlorobenzene	18.26	146	5649	0.4160 ug/L		91
98)	1,2,4-Trichlorobenzene	20.40	180	4530	0.4201 ug/L		96
99)	Hexachlorobutadiene	20.54	225	2435	0.3838 ug/L		81
100)	Naphthalene	20.77	128	6685	0.4205 ug/L	#	78
101)	1,2,3-Trichlorobenzene	21.07	180	3345	0.3552 ug/L		86

(#) = qualifier out of range (m) = manual integration
8M402831.D 8260WTR.M Mon Feb 09 12:25:13 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402831.D Vial: 3
Acq On : 6 Feb 2015 16:27 Operator: TMB
Sample : WG511287-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 9 12:25 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration

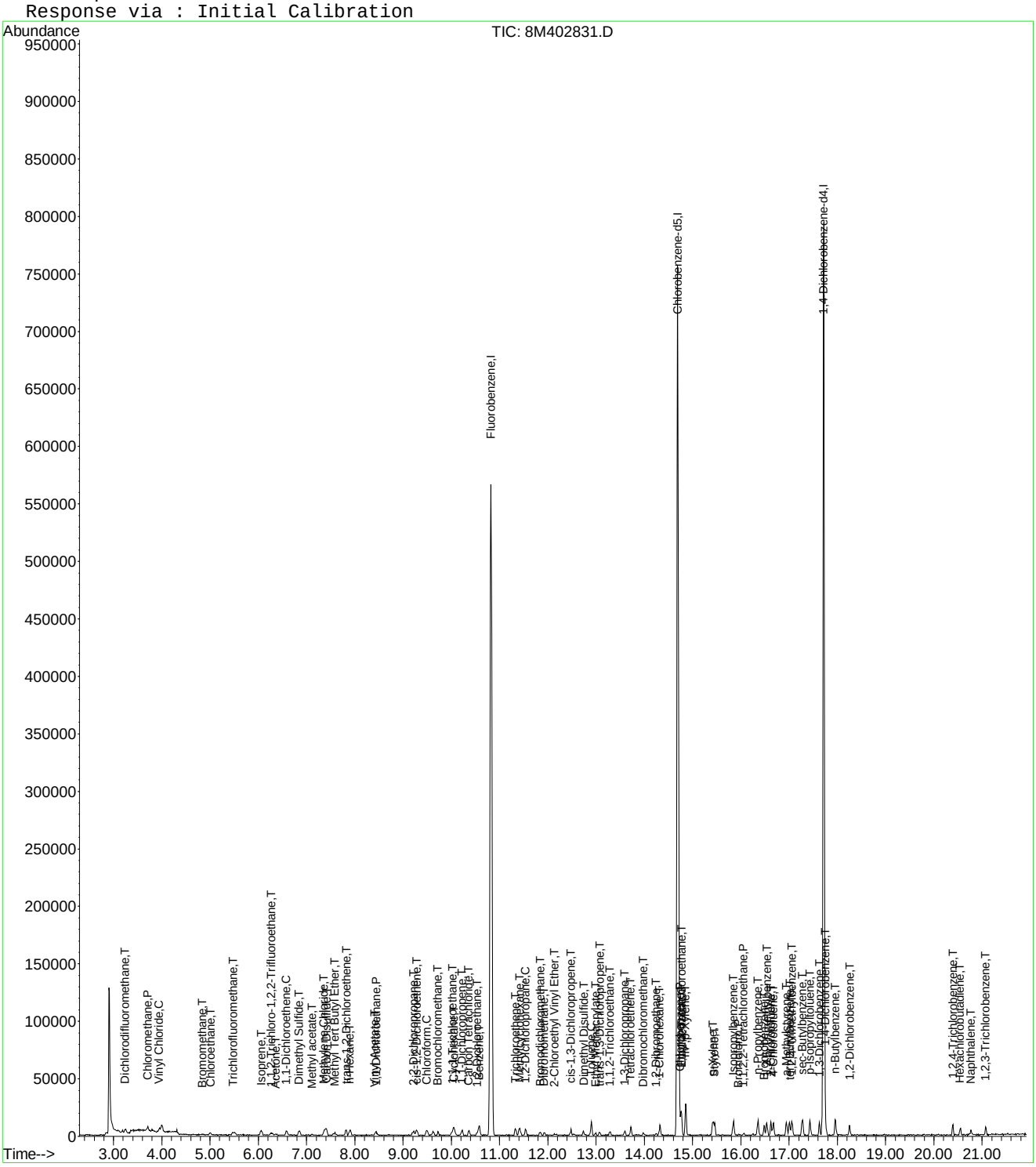

8M402831.D 8260WTR.M Mon Feb 09 12:25:14 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402832.D Vial: 4
Acq On : 6 Feb 2015 16:57 Operator: TMB
Sample : WG511287-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:14 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	680652	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	518318	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.71	152	261331	25.00 ug/L	-0.02

System Monitoring Compounds					
37) Dibromofluoromethane	9.78	111	3473	0.4848 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.92%#	
43) 1,2-Dichloroethane-d4	10.42	65	3775	0.5027 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	2.00%#	
58) Toluene-d8	12.79	98	12605	0.5119 ug/L	-0.02
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.04%#	
80) p-Bromofluorobenzene	16.19	95	4581	0.4888 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	1.96%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.24	85	10429	0.9564 ug/L	92
3) Chloromethane	3.70	50	10808	1.1457 ug/L	87
4) Vinyl Chloride	3.94	62	9513	1.0246 ug/L	97
5) 1,3-Butadiene	3.99	54	7889	0.4011 ug/L #	54
6) Bromomethane	4.86	94	2276	1.2327 ug/L	67
7) Chloroethane	5.01	64	5623	0.9798 ug/L	87
8) Trichlorofluoromethane	5.48	101	11946	0.9278 ug/L	96
9) Diethyl ether	6.03	59	23190	4.9278 ug/L	93
10) Isoprene	6.06	67	8558	0.8581 ug/L	94
11) Acrolein	6.26	56	1236	2.2750 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	7630	1.0490 ug/L	95
13) Acetone	6.36	43	2205	2.1379 ug/L #	8
14) 1,1-Dichloroethene	6.59	61	11643	0.9952 ug/L	98
15) Tert-Butyl Alcohol	6.69	59	1494	6.8913 ug/L #	59
16) Dimethyl Sulfide	6.85	62	7069	0.9066 ug/L	100
18) Methyl acetate	7.11	43	3952	0.9215 ug/L #	79
19) Methylene Chloride	7.37	84	7588	1.0372 ug/L	91
20) Carbon Disulfide	7.41	76	26089	1.0799 ug/L	98
21) Acrylonitrile	7.55	53	3354	2.2270 ug/L	97
22) Methyl Tert Butyl Ether	7.59	73	11218	0.8820 ug/L #	75
23) trans-1,2-Dichloroethene	7.82	61	10975	0.9740 ug/L	89
24) n-Hexane	7.90	57	9364	0.9469 ug/L	97
25) Diisopropyl ether	8.24	45	114147	4.8902 ug/L	98
26) Vinyl Acetate	8.42	43	2291	0.7120 ug/L #	76
27) 1,1-Dichloroethane	8.44	63	14740	1.0410 ug/L	98
28) Ethyl-Tert-Butyl ether	8.82	59	88489	4.7290 ug/L	95
29) 2-Butanone	9.01	43	954	0.6213 ug/L #	55
30) Propionitrile	9.11	54	2224	4.3798 ug/L #	56
31) 2,2-Dichloropropane	9.21	77	9893	0.9464 ug/L	95
32) cis-1,2-Dichloroethene	9.30	96	7553	0.9699 ug/L	92
33) Chloroform	9.49	83	13178	0.9797 ug/L	94
34) 1-Bromopropane	9.63	122	1017	0.7247 ug/L	88
35) Bromochloromethane	9.73	130	3602	0.9247 ug/L	90
36) Tetrahydrofuran	9.75	42	5513	5.1479 ug/L	92
38) 1,1,1-Trichloroethane	10.02	97	11460	0.9781 ug/L	96
39) Cyclohexane	10.06	56	11006	0.8729 ug/L	79
40) 1,1-Dichloropropene	10.22	75	9225	0.9119 ug/L	94
41) Tert-Amyl-Methyl ether	10.33	73	64606	4.5896 ug/L	93
42) Carbon Tetrachloride	10.37	117	9189	0.9145 ug/L	97
45) 1,2-Dichloroethane	10.54	62	8304	0.9345 ug/L	94

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402832.D Vial: 4
Acq On : 6 Feb 2015 16:57 Operator: TMB
Sample : WG511287-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:14 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	10.58	78	27406	0.9903 ug/L		92
47)	Trichloroethene	11.32	130	6694	0.9616 ug/L		94
48)	Methylcyclohexane	11.42	83	9364	0.8254 ug/L		94
49)	1,2-Dichloropropane	11.54	63	6798	0.9033 ug/L		86
50)	Bromodichloromethane	11.84	83	8550	0.8985 ug/L		98
52)	Dibromomethane	11.93	93	3606	1.0153 ug/L		91
53)	2-Chloroethyl Vinyl Ether	12.14	63	2475	0.8659 ug/L	#	52
54)	4-Methyl-2-Pentanone	12.17	58	762	0.5942 ug/L	#	42
55)	cis-1,3-Dichloropropene	12.48	75	8836	0.8882 ug/L		95
56)	Dimethyl Disulfide	12.74	79	3497	5.0341 ug/L		100
59)	Toluene	12.89	91	28238	1.0106 ug/L		100
60)	Ethyl Methacrylate	12.99	69	4257	0.7971 ug/L		88
62)	trans-1,3-Dichloropropene	13.07	75	6842	0.8003 ug/L		97
63)	1,1,2-Trichloroethane	13.29	97	4173	0.9407 ug/L		99
64)	2-Hexanone	13.25	58	236	0.2057 ug/L	#	1
65)	1,3-Dichloropropane	13.60	76	7076	0.8800 ug/L		93
66)	Tetrachloroethene	13.72	164	5469	0.9064 ug/L		97
67)	Dibromochloromethane	13.98	129	4423	0.7803 ug/L		85
68)	1,2-Dibromoethane	14.25	107	3915	0.8878 ug/L		95
69)	1-Chlorohexane	14.32	91	8295	0.8777 ug/L		85
70)	Chlorobenzene	14.75	112	19891	1.0528 ug/L		93
71)	1,1,1,2-Tetrachloroethane	14.77	131	5260	0.8152 ug/L		96
72)	Ethylbenzene	14.77	106	10234	0.9467 ug/L		88
73)	m-,p-Xylene	14.86	106	24326	1.9758 ug/L		94
74)	o-Xylene	15.42	106	10442	0.8620 ug/L		90
75)	Styrene	15.46	104	17184	0.8844 ug/L		94
76)	Bromoform	15.96	173	2628	0.7514 ug/L		95
77)	Isopropylbenzene	15.84	105	29668	0.9803 ug/L		94
79)	1,1,2,2-Tetrachloroethane	16.06	83	4368	0.9196 ug/L	#	85
81)	1,2,3-Trichloropropane	16.25	110	998	0.7515 ug/L	#	43
82)	trans-1,4-Dichloro-2-Buten	16.30	53	637	1.0436 ug/L	#	1
83)	n-Propylbenzene	16.35	91	37716	0.9871 ug/L		95
84)	Bromobenzene	16.48	156	6808	0.9207 ug/L		97
85)	1,3,5-Trimethylbenzene	16.53	105	24594	0.9642 ug/L		92
86)	2-Chlorotoluene	16.63	91	22921	0.9837 ug/L		85
87)	4-Chlorotoluene	16.68	91	22964	0.9676 ug/L		95
88)	a-Methylstyrene	16.95	118	10986	0.7475 ug/L		95
89)	tert-Butylbenzene	17.01	134	5320	0.9571 ug/L		81
90)	1,2,4-Trimethylbenzene	17.06	105	25207	0.9617 ug/L		95
91)	sec-Butylbenzene	17.28	105	32585	0.9665 ug/L		99
92)	p-Isopropyltoluene	17.43	119	25877	0.9710 ug/L		93
93)	1,3-Dichlorobenzene	17.63	146	14367	0.9470 ug/L		98
94)	1,4-Dichlorobenzene	17.75	146	15270	0.9829 ug/L	#	63
95)	n-Butylbenzene	17.96	91	27659	0.9470 ug/L		96
96)	1,2-Dichlorobenzene	18.26	146	12888	0.9480 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.25	75	411	0.4661 ug/L	#	44
98)	1,2,4-Trichlorobenzene	20.39	180	9937	0.9204 ug/L		99
99)	Hexachlorobutadiene	20.55	225	6043	0.9512 ug/L		97
100)	Naphthalene	20.76	128	14995	0.9419 ug/L		96
101)	1,2,3-Trichlorobenzene	21.07	180	8916	0.9457 ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402832.D Vial: 4
Acq On : 6 Feb 2015 16:57 Operator: TMB
Sample : WG511287-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 9 12:25 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration

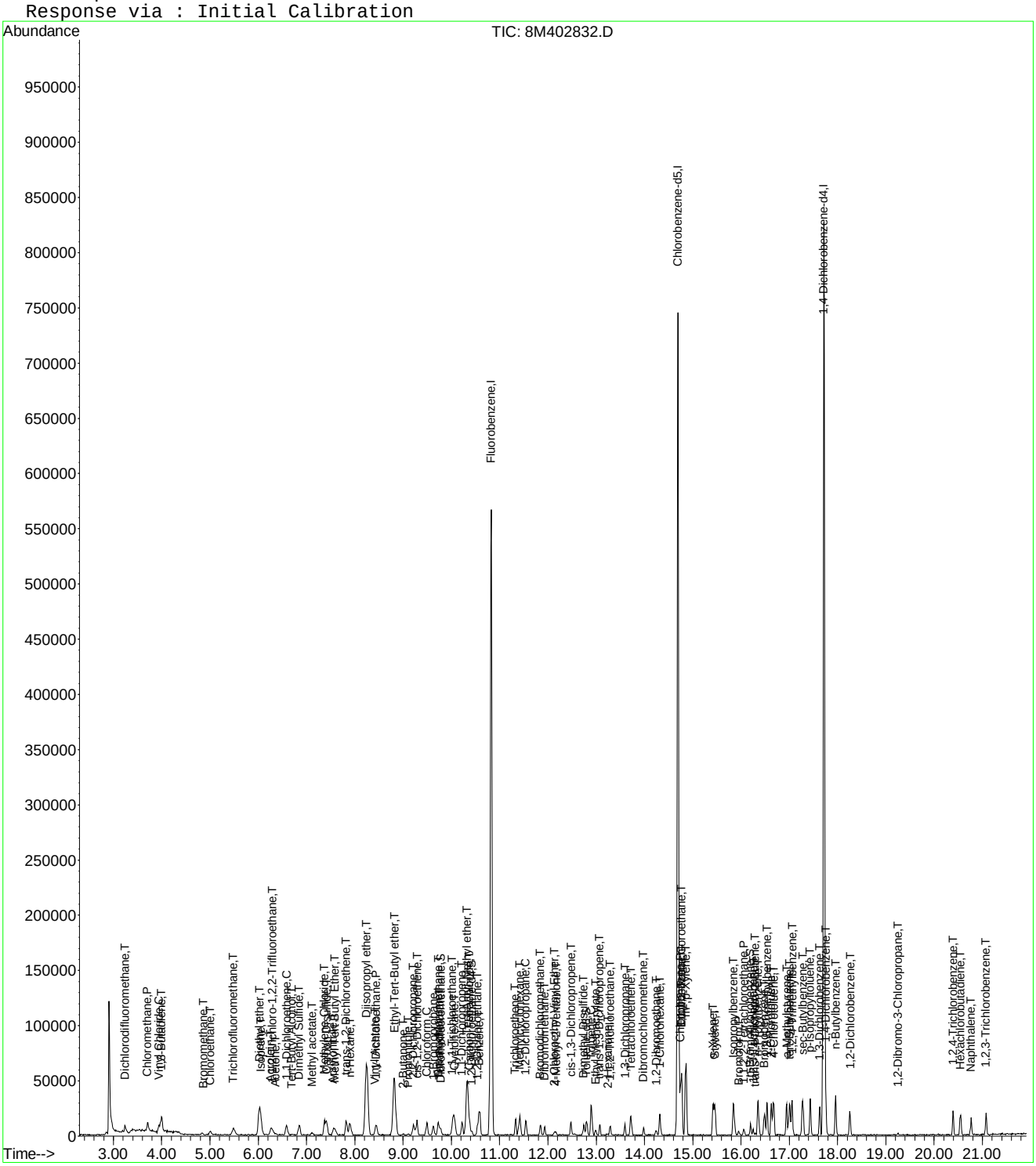

8M402832.D 8260WTR.M Mon Feb 09 12:25:15 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402833.D Vial: 5
Acq On : 6 Feb 2015 17:26 Operator: TMB
Sample : WG511287-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:15 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	684209	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	512100	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.71	152	259877	25.00 ug/L	-0.02

System Monitoring Compounds					
37) Dibromofluoromethane	9.78	111	7460	1.0360 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	4.16%#	
43) 1,2-Dichloroethane-d4	10.42	65	8372	1.1090 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	4.44%#	
58) Toluene-d8	12.80	98	25029	1.0288 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.12%#	
80) p-Bromofluorobenzene	16.19	95	8934	0.9585 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	3.84%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.24	85	20472	1.8677 ug/L	100
3) Chloromethane	3.70	50	19974	2.1063 ug/L	94
4) Vinyl Chloride	3.94	62	18345	1.9657 ug/L	97
5) 1,3-Butadiene	3.99	54	14633	1.2441 ug/L #	64
6) Bromomethane	4.84	94	4890	1.9533 ug/L	96
7) Chloroethane	5.01	64	11310	1.9605 ug/L	94
8) Trichlorofluoromethane	5.49	101	24971	1.9292 ug/L	98
9) Diethyl ether	6.02	59	121007	25.5797 ug/L	90
10) Isoprene	6.06	67	18886	1.8837 ug/L	88
11) Acrolein	6.26	56	7529	13.7860 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	13985	1.9127 ug/L	97
13) Acetone	6.37	43	3124	3.0132 ug/L #	5
14) 1,1-Dichloroethene	6.59	61	22809	1.9396 ug/L	94
15) Tert-Butyl Alcohol	6.70	59	10841	49.7454 ug/L #	88
16) Dimethyl Sulfide	6.85	62	14670	1.8717 ug/L	95
18) Methyl acetate	7.12	43	8916	2.0681 ug/L #	90
19) Methylene Chloride	7.37	84	15632	2.1257 ug/L	92
20) Carbon Disulfide	7.42	76	50256	2.0694 ug/L	99
21) Acrylonitrile	7.55	53	19250	12.7155 ug/L	97
22) Methyl Tert Butyl Ether	7.58	73	23150	1.8107 ug/L	92
23) trans-1,2-Dichloroethene	7.82	61	22661	2.0007 ug/L	95
24) n-Hexane	7.91	57	18875	1.8988 ug/L	91
25) Diisopropyl ether	8.24	45	614110	26.1727 ug/L	98
26) Vinyl Acetate	8.42	43	7611	2.3529 ug/L #	76
27) 1,1-Dichloroethane	8.44	63	29275	2.0567 ug/L	97
28) Ethyl-Tert-Butyl ether	8.81	59	477463	25.3836 ug/L	97
29) 2-Butanone	9.00	43	3235	2.0960 ug/L #	55
30) Propionitrile	9.10	54	13019	25.5056 ug/L	98
31) 2,2-Dichloropropane	9.22	77	21477	2.0439 ug/L	100
32) cis-1,2-Dichloroethene	9.29	96	15599	1.9926 ug/L	95
33) Chloroform	9.49	83	27455	2.0306 ug/L	98
34) 1-Bromopropane	9.62	122	2581	1.8297 ug/L	94
35) Bromochloromethane	9.72	130	8164	2.0849 ug/L	95
36) Tetrahydrofuran	9.75	42	26690	24.7928 ug/L	95
38) 1,1,1-Trichloroethane	10.03	97	22970	1.9502 ug/L	97
39) Cyclohexane	10.06	56	24983	1.9710 ug/L	91
40) 1,1-Dichloropropene	10.22	75	18702	1.8392 ug/L	99
41) Tert-Amyl-Methyl ether	10.32	73	360978	25.5105 ug/L	99
42) Carbon Tetrachloride	10.36	117	19375	1.9183 ug/L	100
45) 1,2-Dichloroethane	10.54	62	17547	1.9643 ug/L	96

(#) = qualifier out of range (m) = manual integration
8M402833.D 8260WTR.M Mon Feb 09 12:25:16 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402833.D Vial: 5
Acq On : 6 Feb 2015 17:26 Operator: TMB
Sample : WG511287-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:15 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	10.58	78	56783	2.0412 ug/L		94
47)	Trichloroethene	11.33	130	13237	1.8916 ug/L		94
48)	Methylcyclohexane	11.41	83	20025	1.7560 ug/L		91
49)	1,2-Dichloropropane	11.54	63	14715	1.9452 ug/L		98
50)	Bromodichloromethane	11.84	83	19679	2.0572 ug/L		98
51)	1,4-Dioxane	11.84	88	1488	50.6455 ug/L	#	55
52)	Dibromomethane	11.93	93	7126	1.9960 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.14	63	5258	1.8299 ug/L		89
54)	4-Methyl-2-Pentanone	12.17	58	2374	1.8416 ug/L	#	69
55)	cis-1,3-Dichloropropene	12.47	75	18245	1.8244 ug/L		96
56)	Dimethyl Disulfide	12.74	79	8238	5.4625 ug/L		94
59)	Toluene	12.90	91	58092	2.1042 ug/L		96
60)	Ethyl Methacrylate	13.00	69	9206	1.7447 ug/L		96
62)	trans-1,3-Dichloropropene	13.07	75	16051	1.9002 ug/L		94
63)	1,1,2-Trichloroethane	13.30	97	9010	2.0557 ug/L		99
64)	2-Hexanone	13.23	58	1834	1.6177 ug/L	#	30
65)	1,3-Dichloropropane	13.60	76	15954	2.0082 ug/L		91
66)	Tetrachloroethene	13.72	164	11407	1.9135 ug/L		96
67)	Dibromochloromethane	13.98	129	10891	1.9448 ug/L		97
68)	1,2-Dibromoethane	14.24	107	9032	2.0731 ug/L		92
69)	1-Chlorohexane	14.32	91	17339	1.8568 ug/L		96
70)	Chlorobenzene	14.74	112	38160	2.0442 ug/L		79
71)	1,1,1,2-Tetrachloroethane	14.78	131	11640	1.8258 ug/L		99
72)	Ethylbenzene	14.77	106	20794	1.9470 ug/L		91
73)	m-,p-Xylene	14.86	106	49918	4.1036 ug/L		94
74)	o-Xylene	15.42	106	22192	1.8542 ug/L		87
75)	Styrene	15.46	104	38336	1.9970 ug/L		98
76)	Bromoform	15.96	173	6299	1.8230 ug/L		84
77)	Isopropylbenzene	15.84	105	61420	2.0541 ug/L		100
79)	1,1,2,2-Tetrachloroethane	16.06	83	9970	2.1107 ug/L		96
81)	1,2,3-Trichloropropane	16.26	110	2570	1.9461 ug/L		82
82)	trans-1,4-Dichloro-2-Buten	16.30	53	2207	2.0091 ug/L		60
83)	n-Propylbenzene	16.35	91	78597	2.0685 ug/L		97
84)	Bromobenzene	16.48	156	15210	2.0686 ug/L		98
85)	1,3,5-Trimethylbenzene	16.55	105	49457	1.9498 ug/L		100
86)	2-Chlorotoluene	16.63	91	49976	2.1568 ug/L		87
87)	4-Chlorotoluene	16.67	91	47500	2.0125 ug/L		92
88)	a-Methylstyrene	16.95	118	26221	1.7941 ug/L		99
89)	tert-Butylbenzene	17.00	134	9753	1.7644 ug/L		81
90)	1,2,4-Trimethylbenzene	17.06	105	56340	2.1615 ug/L		96
91)	sec-Butylbenzene	17.28	105	68712	2.0494 ug/L		100
92)	p-Isopropyltoluene	17.43	119	55519	2.0949 ug/L		92
93)	1,3-Dichlorobenzene	17.63	146	30149	1.9984 ug/L		96
94)	1,4-Dichlorobenzene	17.75	146	30189	1.9540 ug/L		77
95)	n-Butylbenzene	17.96	91	57908	1.9937 ug/L		98
96)	1,2-Dichlorobenzene	18.25	146	28070	2.0762 ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.25	75	1368	1.5599 ug/L		72
98)	1,2,4-Trichlorobenzene	20.40	180	21185	1.9731 ug/L		93
99)	Hexachlorobutadiene	20.55	225	12046	1.9067 ug/L		90
100)	Naphthalene	20.76	128	30158	1.9050 ug/L		97
101)	1,2,3-Trichlorobenzene	21.07	180	19124	2.0397 ug/L		94

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402833.D Vial: 5
Acq On : 6 Feb 2015 17:26 Operator: TMB
Sample : WG511287-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 9 12:25 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration

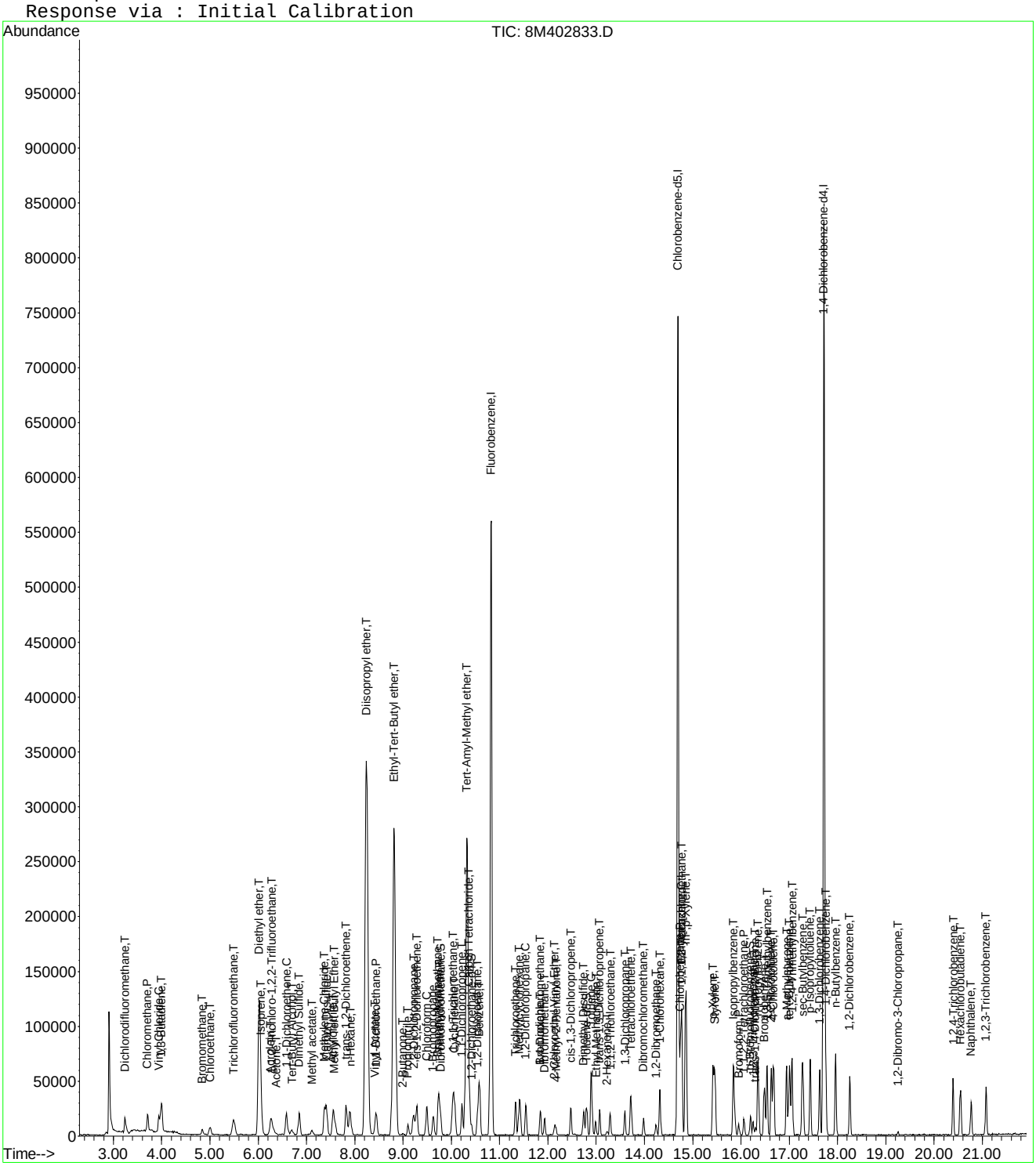

8M402833.D 8260WTR.M Mon Feb 09 12:25:16 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402834.D Vial: 6
Acq On : 6 Feb 2015 17:54 Operator: TMB
Sample : WG511287-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:16 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	701000	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	517318	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.72	152	264517	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	19430	2.6337 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 10.52%#		
43) 1,2-Dichloroethane-d4	10.42	65	20557	2.6579 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 10.64%#		
58) Toluene-d8	12.80	98	64338	2.6179 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 10.48%#		
80) p-Bromofluorobenzene	16.20	95	24229	2.5540 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 10.20%#		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.24	85	53946	4.8037 ug/L	95
3) Chloromethane	3.70	50	49077	5.0513 ug/L	99
4) Vinyl Chloride	3.94	62	49043	5.1290 ug/L	97
5) 1,3-Butadiene	3.99	54	41912	4.5658 ug/L #	79
6) Bromomethane	4.84	94	13843	4.3290 ug/L	91
7) Chloroethane	5.00	64	29596	5.0073 ug/L	97
8) Trichlorofluoromethane	5.49	101	67946	5.1237 ug/L	100
9) Diethyl ether	6.02	59	244432	50.4329 ug/L	92
10) Isoprene	6.06	67	49866	4.8546 ug/L	91
11) Acrolein	6.25	56	12812	22.8976 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	38315	5.1147 ug/L	93
13) Acetone	6.35	43	6167	5.8057 ug/L #	26
14) 1,1-Dichloroethene	6.58	61	60623	5.0316 ug/L	97
15) Tert-Butyl Alcohol	6.69	59	21974	98.4156 ug/L	93
16) Dimethyl Sulfide	6.85	62	38750	4.8255 ug/L	96
17) Iodomethane	7.10	142	1335	17.1832 ug/L #	32
18) Methyl acetate	7.11	43	22452	5.0831 ug/L	98
19) Methylene Chloride	7.37	84	38342	5.0889 ug/L	96
20) Carbon Disulfide	7.41	76	129184	5.1921 ug/L	99
21) Acrylonitrile	7.55	53	35517	22.8986 ug/L	95
22) Methyl Tert Butyl Ether	7.59	73	65059	4.9667 ug/L	92
23) trans-1,2-Dichloroethene	7.81	61	57105	4.9208 ug/L	93
24) n-Hexane	7.90	57	51504	5.0571 ug/L	92
25) Diisopropyl ether	8.24	45	1246526	51.8531 ug/L	98
26) Vinyl Acetate	8.41	43	16287	4.9145 ug/L	96
27) 1,1-Dichloroethane	8.45	63	75270	5.1614 ug/L	99
28) Ethyl-Tert-Butyl ether	8.81	59	977865	50.7414 ug/L	96
29) 2-Butanone	9.00	43	7302	4.6177 ug/L	93
30) Propionitrile	9.10	54	25675	49.0953 ug/L	99
31) 2,2-Dichloropropane	9.22	77	51352	4.7700 ug/L	99
32) cis-1,2-Dichloroethene	9.28	96	40797	5.0866 ug/L	89
33) Chloroform	9.49	83	69512	5.0180 ug/L	100
34) 1-Bromopropane	9.62	122	6848	4.7382 ug/L	96
35) Bromochloromethane	9.73	130	20831	5.1924 ug/L	94
36) Tetrahydrofuran	9.75	42	54903	49.7788 ug/L	97
38) 1,1,1-Trichloroethane	10.02	97	58972	4.8870 ug/L	98
39) Cyclohexane	10.06	56	65876	5.0728 ug/L	89
40) 1,1-Dichloropropene	10.22	75	52084	4.9993 ug/L	95
41) Tert-Amyl-Methyl ether	10.33	73	726207	50.0921 ug/L	99
42) Carbon Tetrachloride	10.37	117	51723	4.9983 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M402834.D 8260WTR.M Mon Feb 09 12:25:17 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402834.D Vial: 6
Acq On : 6 Feb 2015 17:54 Operator: TMB
Sample : WG511287-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:16 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.53	62	45071	4.9247	ug/L	99
46)	Benzene	10.58	78	153041	5.3696	ug/L	93
47)	Trichloroethene	11.33	130	35521	4.9544	ug/L	99
48)	Methylcyclohexane	11.41	83	56528	4.8382	ug/L	92
49)	1,2-Dichloropropane	11.55	63	39432	5.0877	ug/L	99
50)	Bromodichloromethane	11.85	83	49339	5.0343	ug/L	99
51)	1,4-Dioxane	11.83	88	2693	89.4633	ug/L	67
52)	Dibromomethane	11.93	93	18541	5.0689	ug/L	93
53)	2-Chloroethyl Vinyl Ether	12.14	63	13638	4.6327	ug/L	96
54)	4-Methyl-2-Pentanone	12.17	58	5811	4.3998	ug/L	93
55)	cis-1,3-Dichloropropene	12.48	75	51835	5.0590	ug/L	95
56)	Dimethyl Disulfide	12.75	79	23468	6.7931	ug/L	97
59)	Toluene	12.90	91	154018	5.5226	ug/L	96
60)	Ethyl Methacrylate	12.98	69	24235	4.5466	ug/L	97
62)	trans-1,3-Dichloropropene	13.07	75	40777	4.7786	ug/L	98
63)	1,1,2-Trichloroethane	13.29	97	21942	4.9558	ug/L	96
64)	2-Hexanone	13.23	58	4784	4.1773	ug/L	75
65)	1,3-Dichloropropane	13.59	76	41347	5.1520	ug/L	94
66)	Tetrachloroethene	13.72	164	30321	5.0349	ug/L	94
67)	Dibromochloromethane	13.99	129	28092	4.9658	ug/L	99
68)	1,2-Dibromoethane	14.25	107	21416	4.8659	ug/L	98
69)	1-Chlorohexane	14.32	91	46767	4.9577	ug/L	94
70)	Chlorobenzene	14.74	112	99494	5.2761	ug/L	94
71)	1,1,1,2-Tetrachloroethane	14.77	131	31159	4.8382	ug/L	99
72)	Ethylbenzene	14.77	106	53750	4.9819	ug/L	89
73)	m-,p-Xylene	14.86	106	133314	10.8489	ug/L	97
74)	o-Xylene	15.42	106	61832	5.1141	ug/L	94
75)	Styrene	15.46	104	106910	5.5130	ug/L	99
76)	Bromoform	15.96	173	16402	4.6989	ug/L	97
77)	Isopropylbenzene	15.85	105	165605	5.4825	ug/L	96
79)	1,1,2,2-Tetrachloroethane	16.07	83	24669	5.1310	ug/L	97
81)	1,2,3-Trichloropropane	16.25	110	7054	5.2479	ug/L	93
82)	trans-1,4-Dichloro-2-Buten	16.30	53	6707	4.6978	ug/L	90
83)	n-Propylbenzene	16.36	91	212816	5.5026	ug/L	97
84)	Bromobenzene	16.49	156	39314	5.2529	ug/L	97
85)	1,3,5-Trimethylbenzene	16.54	105	140321	5.4350	ug/L	98
86)	2-Chlorotoluene	16.62	91	125596	5.3253	ug/L	96
87)	4-Chlorotoluene	16.68	91	132986	5.5357	ug/L	98
88)	a-Methylstyrene	16.94	118	72043	4.8429	ug/L	96
89)	tert-Butylbenzene	17.01	134	28280	5.0265	ug/L	93
90)	1,2,4-Trimethylbenzene	17.06	105	149715	5.6432	ug/L	97
91)	sec-Butylbenzene	17.28	105	183357	5.3729	ug/L	96
92)	p-Isopropyltoluene	17.43	119	145342	5.3879	ug/L	100
93)	1,3-Dichlorobenzene	17.63	146	78874	5.1364	ug/L	98
94)	1,4-Dichlorobenzene	17.76	146	80578	5.1241	ug/L	93
95)	n-Butylbenzene	17.96	91	159334	5.3895	ug/L	96
96)	1,2-Dichlorobenzene	18.26	146	71466	5.1933	ug/L	100
97)	1,2-Dibromo-3-Chloropropan	19.24	75	4130	4.6268	ug/L	94
98)	1,2,4-Trichlorobenzene	20.40	180	55102	5.0421	ug/L	98
99)	Hexachlorobutadiene	20.54	225	32814	5.1028	ug/L	95
100)	Naphthalene	20.77	128	82876	5.1431	ug/L	98
101)	1,2,3-Trichlorobenzene	21.08	180	46793	4.9033	ug/L	95

(#) = qualifier out of range (m) = manual integration
8M402834.D 8260WTR.M Mon Feb 09 12:25:17 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402834.D Vial: 6
Acq On : 6 Feb 2015 17:54 Operator: TMB
Sample : WG511287-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 9 12:25 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration

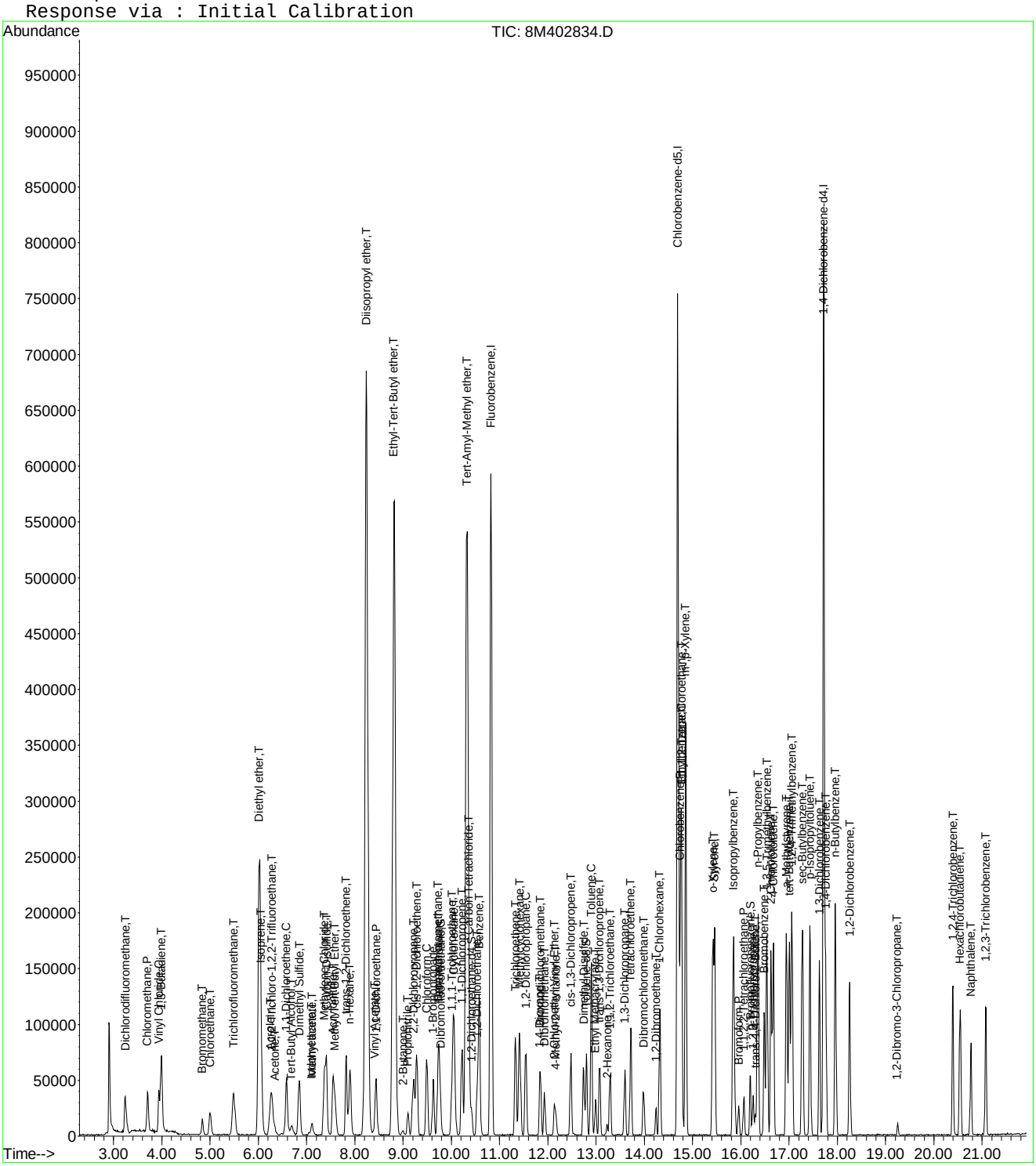

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402835.D Vial: 7
Acq On : 6 Feb 2015 18:23 Operator: TMB
Sample : WG511287-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:17 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	723508	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	530120	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.72	152	273581	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	77163	10.1339 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 40.52%#		
43) 1,2-Dichloroethane-d4	10.42	65	80882	10.1322 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 40.52%#		
58) Toluene-d8	12.80	98	264106	10.4871 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 41.96%#		
80) p-Bromofluorobenzene	16.19	95	100946	10.2881 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 41.16%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.25	85	240807	20.7759 ug/L	99
3) Chloromethane	3.71	50	200541	19.9987 ug/L	99
4) Vinyl Chloride	3.94	62	201316	20.3992 ug/L	97
5) 1,3-Butadiene	3.99	54	166991	19.7037 ug/L #	77
6) Bromomethane	4.84	94	69373	18.3247 ug/L	97
7) Chloroethane	5.00	64	124147	20.3509 ug/L	100
8) Trichlorofluoromethane	5.49	101	273696	19.9968 ug/L	100
9) Diethyl ether	6.02	59	414362	82.8343 ug/L	92
10) Isoprene	6.06	67	213419	20.1307 ug/L	93
11) Acrolein	6.26	56	23441	40.5904 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	153405	19.8411 ug/L	88
13) Acetone	6.36	43	22510	20.5321 ug/L #	27
14) 1,1-Dichloroethene	6.59	61	247819	19.9287 ug/L	95
15) Tert-Butyl Alcohol	6.69	59	37293	161.8291 ug/L	96
16) Dimethyl Sulfide	6.85	62	169308	20.4280 ug/L	95
17) Iodomethane	7.10	142	27436	21.7678 ug/L	93
18) Methyl acetate	7.11	43	92700	20.3342 ug/L	99
19) Methylene Chloride	7.37	84	154971	19.9285 ug/L	92
20) Carbon Disulfide	7.41	76	535775	20.8637 ug/L	100
21) Acrylonitrile	7.55	53	64465	40.2690 ug/L	95
22) Methyl Tert Butyl Ether	7.59	73	282067	20.8634 ug/L	95
23) trans-1,2-Dichloroethene	7.82	61	240030	20.0404 ug/L	94
24) n-Hexane	7.90	57	204275	19.4336 ug/L	91
25) Diisopropyl ether	8.24	45	2090125	84.2403 ug/L	98
26) Vinyl Acetate	8.40	43	69804	20.4078 ug/L	98
27) 1,1-Dichloroethane	8.45	63	301526	20.0331 ug/L	97
28) Ethyl-Tert-Butyl ether	8.81	59	1673546	84.1387 ug/L	97
29) 2-Butanone	8.99	43	32769	20.0780 ug/L	98
30) Propionitrile	9.10	54	44612	82.6525 ug/L	98
31) 2,2-Dichloropropane	9.22	77	213017	19.1710 ug/L	100
32) cis-1,2-Dichloroethene	9.28	96	165979	20.0506 ug/L	91
33) Chloroform	9.49	83	287225	20.0894 ug/L	99
34) 1-Bromopropane	9.64	122	31569	21.1635 ug/L	94
35) Bromochloromethane	9.73	130	86620	20.9197 ug/L	96
36) Tetrahydrofuran	9.75	42	93194	81.8673 ug/L	98
38) 1,1,1-Trichloroethane	10.03	97	253973	20.3919 ug/L	99
39) Cyclohexane	10.06	56	272449	20.3272 ug/L	87
40) 1,1-Dichloropropene	10.22	75	222924	20.7319 ug/L	97
41) Tert-Amyl-Methyl ether	10.33	73	1250827	83.5951 ug/L	100
42) Carbon Tetrachloride	10.37	117	215678	20.1939 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M402835.D 8260WTR.M Mon Feb 09 12:25:18 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402835.D Vial: 7
Acq On : 6 Feb 2015 18:23 Operator: TMB
Sample : WG511287-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:17 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.53	62	194079	20.5464 ug/L		99
46)	Benzene	10.58	78	624813	21.2402 ug/L		95
47)	Trichloroethene	11.33	130	150656	20.3594 ug/L		99
48)	Methylcyclohexane	11.41	83	234780	19.4695 ug/L		91
49)	1,2-Dichloropropane	11.54	63	167083	20.8873 ug/L		97
50)	Bromodichloromethane	11.85	83	208601	20.6225 ug/L		99
51)	1,4-Dioxane	11.84	88	4630	149.0267 ug/L		90
52)	Dibromomethane	11.93	93	75951	20.1183 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.14	63	59789	19.6777 ug/L		100
54)	4-Methyl-2-Pentanone	12.17	58	25980	19.0586 ug/L		97
55)	cis-1,3-Dichloropropene	12.48	75	223588	21.1428 ug/L		100
56)	Dimethyl Disulfide	12.74	79	112646	14.3791 ug/L		95
59)	Toluene	12.90	91	629702	22.0339 ug/L		100
60)	Ethyl Methacrylate	12.99	69	117632	21.5356 ug/L		93
62)	trans-1,3-Dichloropropene	13.08	75	185618	21.2272 ug/L		99
63)	1,1,2-Trichloroethane	13.29	97	98242	21.6532 ug/L		100
64)	2-Hexanone	13.22	58	22977	19.5786 ug/L	#	78
65)	1,3-Dichloropropane	13.60	76	176762	21.4933 ug/L		96
66)	Tetrachloroethene	13.72	164	128193	20.7729 ug/L		95
67)	Dibromochloromethane	13.99	129	124859	21.5383 ug/L		98
68)	1,2-Dibromoethane	14.24	107	94365	20.9229 ug/L		98
69)	1-Chlorohexane	14.32	91	203918	21.0952 ug/L		92
70)	Chlorobenzene	14.74	112	400587	20.7298 ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.77	131	136307	20.6539 ug/L		99
72)	Ethylbenzene	14.77	106	227873	20.6109 ug/L		93
73)	m-,p-Xylene	14.86	106	548631	43.5686 ug/L		97
74)	o-Xylene	15.43	106	261971	21.1441 ug/L		95
75)	Styrene	15.46	104	447823	22.5349 ug/L		99
76)	Bromoform	15.95	173	71884	20.0964 ug/L		99
77)	Isopropylbenzene	15.85	105	704265	22.7522 ug/L		99
79)	1,1,2,2-Tetrachloroethane	16.07	83	106769	21.4717 ug/L		100
81)	1,2,3-Trichloropropane	16.25	110	29722	21.3794 ug/L		88
82)	trans-1,4-Dichloro-2-Buten	16.30	53	34101	20.5291 ug/L		87
83)	n-Propylbenzene	16.36	91	890795	22.2694 ug/L		97
84)	Bromobenzene	16.49	156	166061	21.4530 ug/L		97
85)	1,3,5-Trimethylbenzene	16.54	105	600947	22.5049 ug/L		96
86)	2-Chlorotoluene	16.62	91	516971	21.1935 ug/L		99
87)	4-Chlorotoluene	16.68	91	547408	22.0315 ug/L		99
88)	a-Methylstyrene	16.95	118	317871	20.6600 ug/L		96
89)	tert-Butylbenzene	17.01	134	120327	20.6782 ug/L		94
90)	1,2,4-Trimethylbenzene	17.06	105	618928	22.5561 ug/L		98
91)	sec-Butylbenzene	17.28	105	769120	21.7909 ug/L		98
92)	p-Isopropyltoluene	17.43	119	619554	22.2062 ug/L		99
93)	1,3-Dichlorobenzene	17.63	146	333290	20.9854 ug/L		99
94)	1,4-Dichlorobenzene	17.76	146	330243	20.3049 ug/L		100
95)	n-Butylbenzene	17.96	91	655292	21.4311 ug/L		97
96)	1,2-Dichlorobenzene	18.26	146	299166	21.0194 ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.25	75	20244	21.9280 ug/L		92
98)	1,2,4-Trichlorobenzene	20.40	180	234939	20.7858 ug/L		98
99)	Hexachlorobutadiene	20.54	225	135161	20.3222 ug/L		97
100)	Naphthalene	20.77	128	371805	22.3090 ug/L		100
101)	1,2,3-Trichlorobenzene	21.08	180	207913	21.0648 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M402835.D 8260WTR.M Mon Feb 09 12:25:18 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402835.D Vial: 7
Acq On : 6 Feb 2015 18:23 Operator: TMB
Sample : WG511287-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 9 12:25 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration

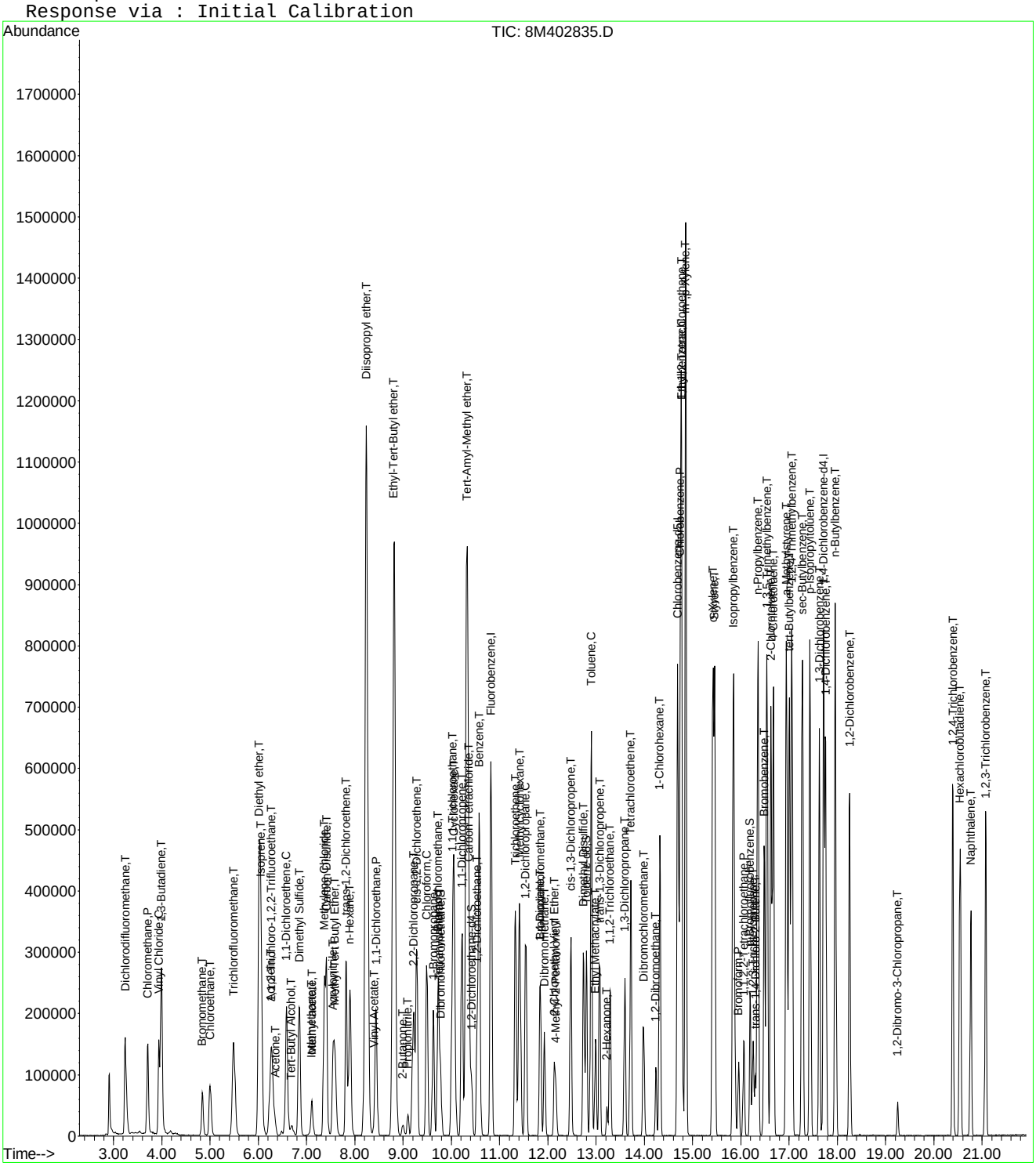

8M402835.D 8260WTR.M Mon Feb 09 12:25:18 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402836.D Vial: 8
Acq On : 6 Feb 2015 18:53 Operator: TMB
Sample : WG511287-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:18 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	749967	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	559024	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.72	152	298746	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.78	111	197651	25.0418 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.16%		
43) 1,2-Dichloroethane-d4	10.42	65	202135	24.4284 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.72%		
58) Toluene-d8	12.80	98	680220	25.6135 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.44%		
80) p-Bromofluorobenzene	16.19	95	269996	25.1991 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.80%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.25	85	668948	55.6781 ug/L	99
3) Chloromethane	3.70	50	527166	50.7163 ug/L	99
4) Vinyl Chloride	3.94	62	535788	52.3755 ug/L	97
5) 1,3-Butadiene	3.98	54	434610	52.5608 ug/L	80
6) Bromomethane	4.84	94	204341	48.7204 ug/L	99
7) Chloroethane	5.00	64	328744	51.9884 ug/L	100
8) Trichlorofluoromethane	5.49	101	731212	51.5392 ug/L	99
9) Diethyl ether	6.02	59	522889	100.8419 ug/L	90
10) Isoprene	6.06	67	579894	52.7685 ug/L	91
11) Acrolein	6.26	56	29167	48.7236 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	409007	51.0338 ug/L	92
13) Acetone	6.36	43	60434	53.1790 ug/L #	25
14) 1,1-Dichloroethene	6.59	61	663486	51.4727 ug/L	96
15) Tert-Butyl Alcohol	6.69	59	46377	194.1481 ug/L	93
16) Dimethyl Sulfide	6.85	62	446327	51.9520 ug/L	97
17) Iodomethane	7.10	142	174342	46.5321 ug/L	96
18) Methyl acetate	7.11	43	232528	49.2068 ug/L	97
19) Methylene Chloride	7.37	84	402285	49.9067 ug/L	93
20) Carbon Disulfide	7.41	76	1388043	52.1450 ug/L	100
21) Acrylonitrile	7.55	53	86556	52.1610 ug/L	100
22) Methyl Tert Butyl Ether	7.58	73	737231	52.6062 ug/L	95
23) trans-1,2-Dichloroethene	7.82	61	633510	51.0263 ug/L	93
24) n-Hexane	7.90	57	569519	52.2695 ug/L	91
25) Diisopropyl ether	8.24	45	2666140	103.6650 ug/L	97
26) Vinyl Acetate	8.41	43	181262	51.1238 ug/L	99
27) 1,1-Dichloroethane	8.45	63	807937	51.7848 ug/L	98
28) Ethyl-Tert-Butyl ether	8.82	59	2132420	103.4266 ug/L	97
29) 2-Butanone	9.00	43	84296	49.8272 ug/L	100
30) Propionitrile	9.10	54	56488	100.9628 ug/L	98
31) 2,2-Dichloropropane	9.22	77	585159	50.8050 ug/L	100
32) cis-1,2-Dichloroethene	9.28	96	435219	50.7206 ug/L	93
33) Chloroform	9.49	83	753305	50.8297 ug/L	100
34) 1-Bromopropane	9.63	122	85577	55.3459 ug/L	96
35) Bromochloromethane	9.73	130	226053	52.6682 ug/L	97
36) Tetrahydrofuran	9.75	42	117159	99.2886 ug/L	99
38) 1,1,1-Trichloroethane	10.03	97	670293	51.9201 ug/L	100
39) Cyclohexane	10.06	56	746335	53.7189 ug/L	87
40) 1,1-Dichloropropene	10.22	75	595750	53.4499 ug/L	99
41) Tert-Amyl-Methyl ether	10.32	73	1600676	103.2020 ug/L	98
42) Carbon Tetrachloride	10.37	117	582809	52.6431 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402836.D Vial: 8
Acq On : 6 Feb 2015 18:53 Operator: TMB
Sample : WG511287-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:18 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.54	62	510056	52.0927	ug/L		99
46)	Benzene	10.58	78	1614922	52.9617	ug/L		96
47)	Trichloroethene	11.33	130	409083	53.3325	ug/L		99
48)	Methylcyclohexane	11.41	83	652403	52.1929	ug/L		90
49)	1,2-Dichloropropane	11.54	63	438636	52.8999	ug/L		97
50)	Bromodichloromethane	11.84	83	556255	53.0517	ug/L		100
51)	1,4-Dioxane	11.83	88	6135	190.5017	ug/L		90
52)	Dibromomethane	11.93	93	200168	51.1510	ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.14	63	165026	52.3971	ug/L		100
54)	4-Methyl-2-Pentanone	12.17	58	72781	51.5076	ug/L		97
55)	cis-1,3-Dichloropropene	12.48	75	603636	55.0669	ug/L		99
56)	Dimethyl Disulfide	12.74	79	322600	31.4146	ug/L		92
59)	Toluene	12.90	91	1632851	54.1809	ug/L		100
60)	Ethyl Methacrylate	12.99	69	311031	53.9981	ug/L		94
62)	trans-1,3-Dichloropropene	13.07	75	501878	54.4270	ug/L		99
63)	1,1,2-Trichloroethane	13.29	97	253504	52.9850	ug/L		99
64)	2-Hexanone	13.22	58	62675	50.6439	ug/L		82
65)	1,3-Dichloropropane	13.60	76	458035	52.8149	ug/L		95
66)	Tetrachloroethene	13.72	164	337654	51.8858	ug/L		96
67)	Dibromochloromethane	13.98	129	332555	54.4001	ug/L		100
68)	1,2-Dibromoethane	14.24	107	256030	53.8326	ug/L		100
69)	1-Chlorohexane	14.32	91	548777	53.8354	ug/L		91
70)	Chlorobenzene	14.74	112	1062642	52.1469	ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.77	131	378327	54.3620	ug/L		100
72)	Ethylbenzene	14.77	106	616387	52.8690	ug/L		98
73)	m-,p-Xylene	14.86	106	1439778	108.4258	ug/L		99
74)	o-Xylene	15.43	106	716501	54.8399	ug/L		99
75)	Styrene	15.46	104	1188549	56.7166	ug/L		97
76)	Bromoform	15.95	173	199721	52.9485	ug/L		99
77)	Isopropylbenzene	15.85	105	1843492	56.4772	ug/L		100
79)	1,1,2,2-Tetrachloroethane	16.06	83	273239	50.3208	ug/L		100
81)	1,2,3-Trichloropropane	16.25	110	76841	50.6168	ug/L		50
82)	trans-1,4-Dichloro-2-Buten	16.29	53	90183	48.7864	ug/L	#	36
83)	n-Propylbenzene	16.36	91	2323945	53.2035	ug/L		99
84)	Bromobenzene	16.48	156	434524	51.4064	ug/L		99
85)	1,3,5-Trimethylbenzene	16.54	105	1591921	54.5942	ug/L		99
86)	2-Chlorotoluene	16.63	91	1389731	52.1737	ug/L		90
87)	4-Chlorotoluene	16.68	91	1428553	52.6517	ug/L		90
88)	a-Methylstyrene	16.95	118	885565	52.7090	ug/L		98
89)	tert-Butylbenzene	17.01	134	325970	51.2994	ug/L		96
90)	1,2,4-Trimethylbenzene	17.06	105	1634263	54.5418	ug/L		99
91)	sec-Butylbenzene	17.28	105	2029634	52.6602	ug/L		100
92)	p-Isopropyltoluene	17.43	119	1635037	53.6669	ug/L		100
93)	1,3-Dichlorobenzene	17.63	146	892891	51.4846	ug/L		100
94)	1,4-Dichlorobenzene	17.76	146	889032	50.0574	ug/L		100
95)	n-Butylbenzene	17.96	91	1720306	51.5228	ug/L		98
96)	1,2-Dichlorobenzene	18.26	146	792394	50.9839	ug/L		100
97)	1,2-Dibromo-3-Chloropropan	19.25	75	52790	52.3646	ug/L		94
98)	1,2,4-Trichlorobenzene	20.40	180	639152	51.7844	ug/L		98
99)	Hexachlorobutadiene	20.54	225	369594	50.8895	ug/L		97
100)	Naphthalene	20.77	128	961232	52.8174	ug/L		100
101)	1,2,3-Trichlorobenzene	21.07	180	556451	51.6281	ug/L		99

(#) = qualifier out of range (m) = manual integration
8M402836.D 8260WTR.M Mon Feb 09 12:25:19 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402836.D Vial: 8
Acq On : 6 Feb 2015 18:53 Operator: TMB
Sample : WG511287-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 9 12:25 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration

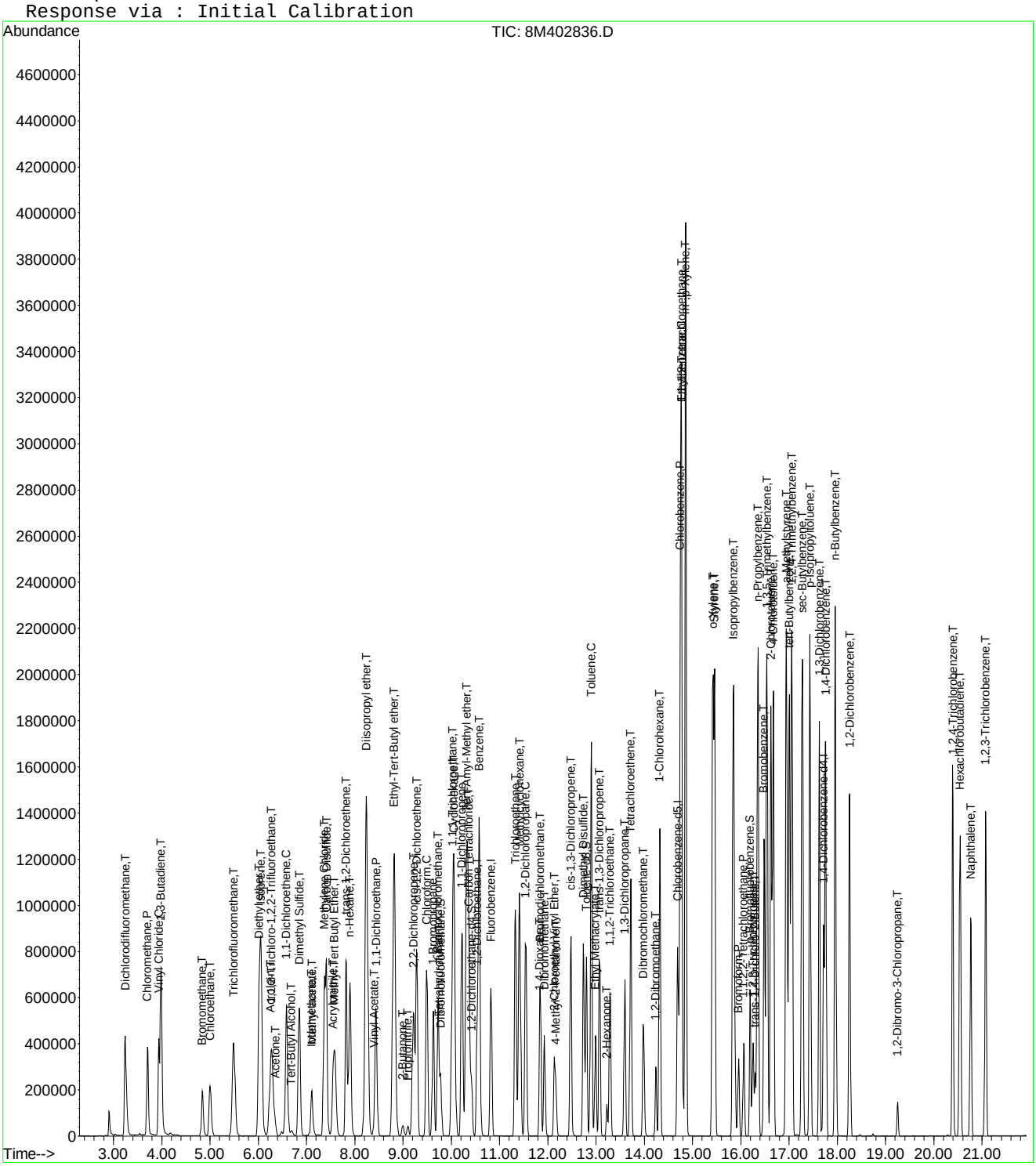

8M402836.D 8260WTR.M Mon Feb 09 12:25:19 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402837.D Vial: 9
Acq On : 6 Feb 2015 19:22 Operator: TMB
Sample : WG511287-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:19 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	815180	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	604018	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.72	152	318263	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	423859	49.4057 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 197.64%#		
43) 1,2-Dichloroethane-d4	10.42	65	432708	48.1103 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 192.44%#		
58) Toluene-d8	12.80	98	1427730	49.7560 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 199.04%#		
80) p-Bromofluorobenzene	16.19	95	576985	50.5486 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 202.20%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.25	85	1388100	106.2921 ug/L	100
3) Chloromethane	3.70	50	1091798	96.6343 ug/L	99
4) Vinyl Chloride	3.94	62	1098992	98.8368 ug/L	96
5) 1,3-Butadiene	3.98	54	838191	99.9573 ug/L	92
6) Bromomethane	4.84	94	512923	103.4536 ug/L	99
7) Chloroethane	5.00	64	692663	100.7765 ug/L	99
8) Trichlorofluoromethane	5.49	101	1556241	100.9159 ug/L	99
9) Diethyl ether	6.02	59	1120720	198.8462 ug/L	92
10) Isoprene	6.06	67	1228258	102.8263 ug/L	92
11) Acrolein	6.25	56	64380	98.9436 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	872133	100.1148 ug/L	93
13) Acetone	6.36	43	107813	87.2808 ug/L #	31
14) 1,1-Dichloroethene	6.59	61	1409929	100.6309 ug/L	95
15) Tert-Butyl Alcohol	6.69	59	103873	400.0570 ug/L	96
16) Dimethyl Sulfide	6.84	62	959323	102.7313 ug/L	97
17) Iodomethane	7.10	142	501675	95.2790 ug/L	99
18) Methyl acetate	7.11	43	507647	98.8325 ug/L	98
19) Methylene Chloride	7.37	84	858667	98.0027 ug/L	91
20) Carbon Disulfide	7.41	76	2889975	99.8833 ug/L	99
21) Acrylonitrile	7.55	53	183542	101.7589 ug/L	99
22) Methyl Tert Butyl Ether	7.58	73	1612164	105.8355 ug/L	95
23) trans-1,2-Dichloroethene	7.82	61	1349765	100.0202 ug/L	93
24) n-Hexane	7.90	57	1235596	104.3290 ug/L	90
25) Diisopropyl ether	8.24	45	5454993	195.1335 ug/L	95
26) Vinyl Acetate	8.41	43	387905	100.6538 ug/L	99
27) 1,1-Dichloroethane	8.44	63	1672935	98.6490 ug/L	97
28) Ethyl-Tert-Butyl ether	8.81	59	4508376	201.1724 ug/L	94
29) 2-Butanone	8.99	43	186462	101.4001 ug/L	99
30) Propionitrile	9.10	54	118765	195.2911 ug/L	99
31) 2,2-Dichloropropane	9.21	77	1263381	100.9150 ug/L	99
32) cis-1,2-Dichloroethene	9.28	96	927623	99.4572 ug/L	92
33) Chloroform	9.49	83	1583842	98.3211 ug/L	100
34) 1-Bromopropane	9.63	122	181166	107.7939 ug/L	100
35) Bromochloromethane	9.73	130	486821	104.3509 ug/L	95
36) Tetrahydrofuran	9.75	42	259639	202.4335 ug/L	100
38) 1,1,1-Trichloroethane	10.03	97	1443938	102.8983 ug/L	99
39) Cyclohexane	10.06	56	1591281	105.3729 ug/L	87
40) 1,1-Dichloropropene	10.21	75	1282749	105.8799 ug/L	99
41) Tert-Amyl-Methyl ether	10.33	73	3430853	203.5052 ug/L	98
42) Carbon Tetrachloride	10.37	117	1282120	106.5449 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402837.D Vial: 9
Acq On : 6 Feb 2015 19:22 Operator: TMB
Sample : WG511287-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:19 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.54	62	1082141	101.6791 ug/L		99
46)	Benzene	10.58	78	3316966	100.0783 ug/L		98
47)	Trichloroethene	11.33	130	878171	105.3291 ug/L		99
48)	Methylcyclohexane	11.41	83	1428264	105.1217 ug/L		90
49)	1,2-Dichloropropane	11.54	63	934601	103.6968 ug/L		96
50)	Bromodichloromethane	11.85	83	1185022	103.9777 ug/L		99
51)	1,4-Dioxane	11.84	88	14861	424.5423 ug/L		84
52)	Dibromomethane	11.93	93	426089	100.1724 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.14	63	354137	103.4463 ug/L		99
54)	4-Methyl-2-Pentanone	12.17	58	156627	101.9785 ug/L		95
55)	cis-1,3-Dichloropropene	12.48	75	1295440	108.7231 ug/L		100
56)	Dimethyl Disulfide	12.74	79	729029	60.2252 ug/L		90
59)	Toluene	12.90	91	3306160	101.5323 ug/L		97
60)	Ethyl Methacrylate	12.99	69	687483	110.4631 ug/L		94
62)	trans-1,3-Dichloropropene	13.07	75	1084719	108.8716 ug/L		99
63)	1,1,2-Trichloroethane	13.30	97	538554	104.1785 ug/L		98
64)	2-Hexanone	13.22	58	139552	104.3637 ug/L		85
65)	1,3-Dichloropropane	13.60	76	970528	103.5731 ug/L		95
66)	Tetrachloroethene	13.72	164	735083	104.5427 ug/L		97
67)	Dibromochloromethane	13.98	129	724779	109.7293 ug/L		100
68)	1,2-Dibromoethane	14.24	107	553643	107.7370 ug/L		99
69)	1-Chlorohexane	14.32	91	1210846	109.9364 ug/L		90
70)	Chlorobenzene	14.74	112	2230091	101.2850 ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.77	131	839765	111.6778 ug/L		100
72)	Ethylbenzene	14.77	106	1314757	104.3696 ug/L		92
73)	m-,p-Xylene	14.86	106	2979118	207.6374 ug/L		85
74)	o-Xylene	15.43	106	1511516	107.0714 ug/L		97
75)	Styrene	15.46	104	2462150	108.7397 ug/L		94
76)	Bromoform	15.95	173	447717	109.8536 ug/L		100
77)	Isopropylbenzene	15.85	105	3701043	104.9388 ug/L		97
79)	1,1,2,2-Tetrachloroethane	16.06	83	594374	102.7497 ug/L		100
81)	1,2,3-Trichloropropane	16.25	110	166544	102.9786 ug/L		48
82)	trans-1,4-Dichloro-2-Buten	16.29	53	204164	102.9369 ug/L	#	31
83)	n-Propylbenzene	16.36	91	4542815	97.6237 ug/L		96
84)	Bromobenzene	16.49	156	937963	104.1610 ug/L		97
85)	1,3,5-Trimethylbenzene	16.54	105	3311538	106.6033 ug/L		97
86)	2-Chlorotoluene	16.63	91	2751978	96.9798 ug/L		96
87)	4-Chlorotoluene	16.68	91	2959606	102.3919 ug/L		97
88)	a-Methylstyrene	16.95	118	1898822	106.0875 ug/L		95
89)	tert-Butylbenzene	17.01	134	712509	105.2545 ug/L		96
90)	1,2,4-Trimethylbenzene	17.06	105	3321281	104.0470 ug/L		96
91)	sec-Butylbenzene	17.28	105	4105408	99.9855 ug/L		98
92)	p-Isopropyltoluene	17.43	119	3409611	105.0509 ug/L		98
93)	1,3-Dichlorobenzene	17.63	146	1885872	102.0721 ug/L		98
94)	1,4-Dichlorobenzene	17.76	146	1869896	98.8289 ug/L		99
95)	n-Butylbenzene	17.96	91	3501826	98.4474 ug/L		99
96)	1,2-Dichlorobenzene	18.26	146	1687435	101.9143 ug/L		100
97)	1,2-Dibromo-3-Chloropropan	19.25	75	111649	103.9578 ug/L		99
98)	1,2,4-Trichlorobenzene	20.40	180	1362814	103.6447 ug/L		98
99)	Hexachlorobutadiene	20.54	225	801125	103.5427 ug/L		98
100)	Naphthalene	20.77	128	2030559	104.7323 ug/L		99
101)	1,2,3-Trichlorobenzene	21.08	180	1190643	103.6947 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M402837.D 8260WTR.M Mon Feb 09 12:25:20 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402837.D Vial: 9
Acq On : 6 Feb 2015 19:22 Operator: TMB
Sample : WG511287-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 9 12:25 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration

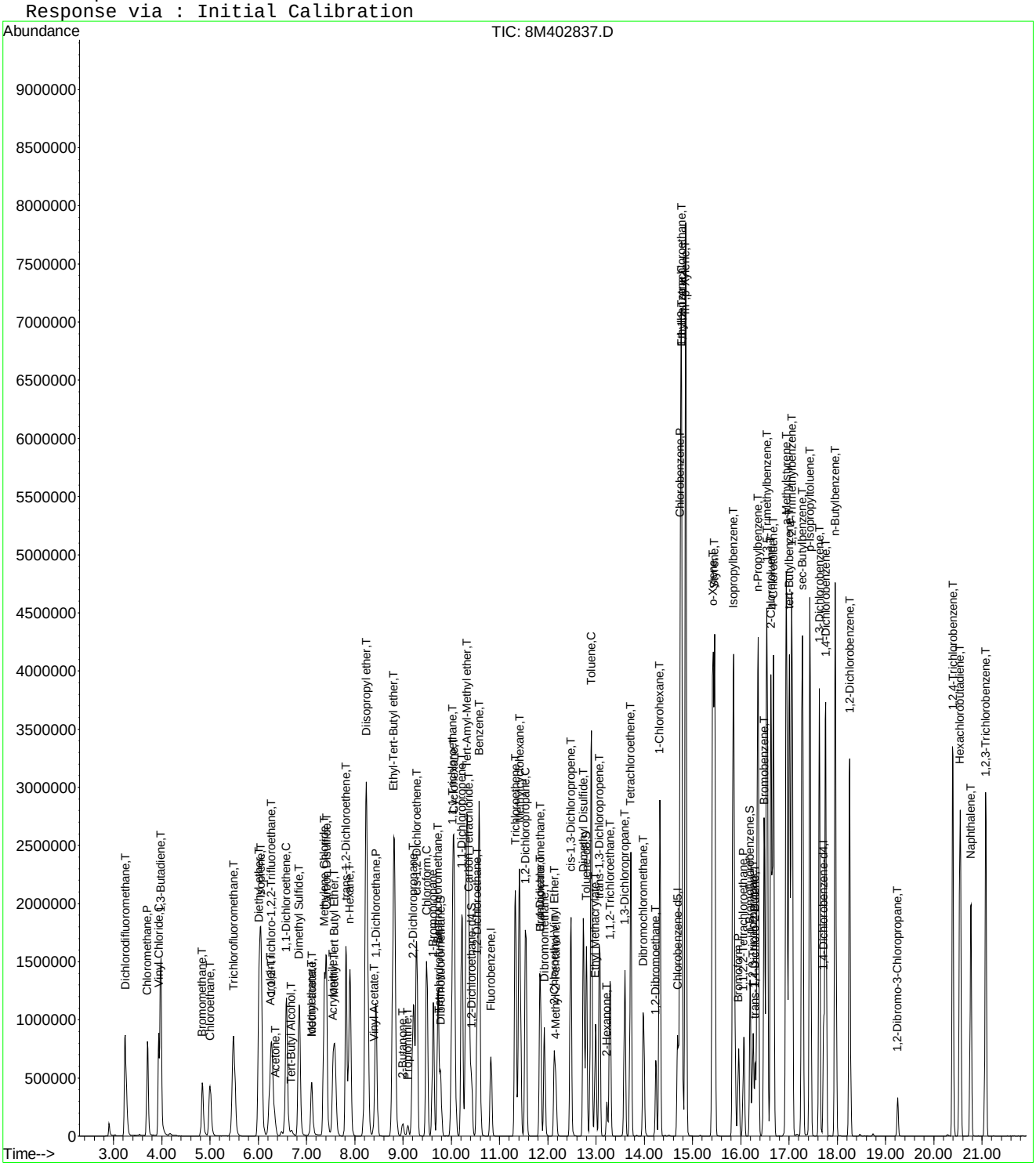

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402838.D Vial: 10
Acq On : 6 Feb 2015 19:51 Operator: TMB
Sample : WG511287-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:21 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	860361	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	638607	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.71	152	337778	25.00 ug/L	-0.02

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	885400	97.7841 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 391.12%#		
43) 1,2-Dichloroethane-d4	10.42	65	911736	96.0472 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 384.20%#		
58) Toluene-d8	12.80	98	2921364	96.2945 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 385.16%#		
80) p-Bromofluorobenzene	16.19	95	1223901	101.0289 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 404.12%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.24	85	2816154	204.3194 ug/L	99
3) Chloromethane	3.70	50	2203682	184.8037 ug/L	99
4) Vinyl Chloride	3.94	62	2209286	188.2560 ug/L	95
5) 1,3-Butadiene	3.98	54	1506086	197.5932 ug/L	94
6) Bromomethane	4.84	94	1191822	200.6064 ug/L	100
7) Chloroethane	5.00	64	1456195	200.7380 ug/L	99
8) Trichlorofluoromethane	5.49	101	3242524	199.2227 ug/L	99
10) Isoprene	6.06	67	2544866	201.8610 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	1859443	202.2419 ug/L	93
13) Acetone	6.36	43	257620	197.6058 ug/L #	27
14) 1,1-Dichloroethene	6.58	61	2913532	197.0274 ug/L	93
16) Dimethyl Sulfide	6.85	62	2025921	205.5575 ug/L	98
17) Iodomethane	7.10	142	1264753	204.0649 ug/L	99
18) Methyl acetate	7.12	43	1092654	201.5550 ug/L	97
19) Methylene Chloride	7.36	84	1790347	193.6081 ug/L	89
20) Carbon Disulfide	7.42	76	5667088	185.5801 ug/L	96
21) Acrylonitrile	7.58	53	36749	19.3044 ug/L #	33
22) Methyl Tert Butyl Ether	7.58	73	3448006	214.4682 ug/L	95
23) trans-1,2-Dichloroethene	7.82	61	2784226	195.4821 ug/L	92
24) n-Hexane	7.90	57	2561760	204.9461 ug/L	90
26) Vinyl Acetate	8.41	43	822817	202.2930 ug/L	98
27) 1,1-Dichloroethane	8.44	63	3414401	190.7661 ug/L	95
29) 2-Butanone	9.00	43	410926	211.7309 ug/L	97
31) 2,2-Dichloropropane	9.21	77	2664401	201.6479 ug/L	99
32) cis-1,2-Dichloroethene	9.29	96	1940263	197.1053 ug/L	90
33) Chloroform	9.49	83	3218476	189.3033 ug/L	97
34) 1-Bromopropane	9.63	122	391900	220.9355 ug/L	98
35) Bromochloromethane	9.72	130	1015883	206.3209 ug/L	93
36) Tetrahydrofuran	9.75	42	1000	0.7387 ug/L #	38
38) 1,1,1-Trichloroethane	10.02	97	3013671	203.4831 ug/L	97
39) Cyclohexane	10.06	56	3329052	208.8698 ug/L	86
40) 1,1-Dichloropropene	10.22	75	2652828	207.4692 ug/L	99
42) Carbon Tetrachloride	10.37	117	2650945	208.7264 ug/L	99
45) 1,2-Dichloroethane	10.54	62	2252771	200.5570 ug/L	97
46) Benzene	10.58	78	6102505	174.4535 ug/L	96
47) Trichloroethene	11.33	130	1845107	209.6831 ug/L	99
48) Methylcyclohexane	11.42	83	2971812	207.2422 ug/L	90
49) 1,2-Dichloropropane	11.54	63	1927503	202.6316 ug/L	94
50) Bromodichloromethane	11.84	83	2466038	205.0153 ug/L	98
51) 1,4-Dioxane	11.83	88	3938	106.5912 ug/L #	17

(#) = qualifier out of range (m) = manual integration
8M402838.D 8260WTR.M Mon Feb 09 12:25:21 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402838.D Vial: 10
Acq On : 6 Feb 2015 19:51 Operator: TMB
Sample : WG511287-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:21 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
52)	Dibromomethane	11.93	93	919872	204.9029 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.14	63	781577	216.3158 ug/L		99
54)	4-Methyl-2-Pentanone	12.16	58	359184	221.5806 ug/L		95
55)	cis-1,3-Dichloropropene	12.48	75	2680475	213.1518 ug/L		98
56)	Dimethyl Disulfide	12.74	79	1579386	118.6582 ug/L		88
59)	Toluene	12.91	91	5926888	172.1565 ug/L		89
60)	Ethyl Methacrylate	12.99	69	1514564	230.1756 ug/L		94
62)	trans-1,3-Dichloropropene	13.07	75	2283279	216.7566 ug/L		97
63)	1,1,2-Trichloroethane	13.29	97	1155476	211.4101 ug/L		98
64)	2-Hexanone	13.23	58	318879	225.5565 ug/L		88
65)	1,3-Dichloropropane	13.60	76	2062564	208.1912 ug/L		95
66)	Tetrachloroethene	13.72	164	1587589	213.5560 ug/L		97
67)	Dibromochloromethane	13.98	129	1577360	225.8728 ug/L		100
68)	1,2-Dibromoethane	14.24	107	1193493	219.6703 ug/L		100
69)	1-Chlorohexane	14.32	91	2468939	212.0212 ug/L		92
70)	Chlorobenzene	14.75	112	4337847	186.3429 ug/L		91
71)	1,1,1,2-Tetrachloroethane	14.78	131	1817884	228.6606 ug/L		100
72)	Ethylbenzene	14.77	106	2683363	201.4763 ug/L		68
73)	m-,p-Xylene	14.86	106	5486910	361.7111 ug/L		64
74)	o-Xylene	15.42	106	3068021	205.5584 ug/L		82
75)	Styrene	15.46	104	4696352	196.1780 ug/L		87
76)	Bromoform	15.96	173	993399	230.5422 ug/L		99
77)	Isopropylbenzene	15.84	105	6460651	173.2625 ug/L		86
79)	1,1,2,2-Tetrachloroethane	16.06	83	1282544	208.9046 ug/L		100
81)	1,2,3-Trichloropropane	16.26	110	372019	216.7394 ug/L		46
82)	trans-1,4-Dichloro-2-Buten	16.30	53	406314	192.4496 ug/L	#	37
83)	n-Propylbenzene	16.36	91	7277550	147.3568 ug/L		81
84)	Bromobenzene	16.48	156	1957667	204.8391 ug/L		95
85)	1,3,5-Trimethylbenzene	16.54	105	5891317	178.6932 ug/L		88
86)	2-Chlorotoluene	16.63	91	5065452	168.1936 ug/L		97
87)	4-Chlorotoluene	16.68	91	5113794	166.6978 ug/L	#	76
88)	a-Methylstyrene	16.95	118	3769742	198.4479 ug/L		92
89)	tert-Butylbenzene	17.01	134	1486695	206.9317 ug/L		88
90)	1,2,4-Trimethylbenzene	17.06	105	5855124	172.8282 ug/L		84
91)	sec-Butylbenzene	17.28	105	6899397	158.3239 ug/L		86
92)	p-Isopropyltoluene	17.43	119	6004148	174.3015 ug/L		88
93)	1,3-Dichlorobenzene	17.63	146	3704237	188.9072 ug/L		94
94)	1,4-Dichlorobenzene	17.76	146	3625483	180.5457 ug/L		94
95)	n-Butylbenzene	17.96	91	5966987	158.0590 ug/L		89
96)	1,2-Dichlorobenzene	18.26	146	3344633	190.3317 ug/L		95
97)	1,2-Dibromo-3-Chloropropan	19.25	75	249595	218.9742 ug/L		98
98)	1,2,4-Trichlorobenzene	20.39	180	2820114	202.0840 ug/L		99
99)	Hexachlorobutadiene	20.55	225	1736414	211.4595 ug/L		97
100)	Naphthalene	20.76	128	4034735	196.0807 ug/L		96
101)	1,2,3-Trichlorobenzene	21.07	180	2475726	203.1574 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M402838.D 8260WTR.M Mon Feb 09 12:25:21 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402838.D Vial: 10
Acq On : 6 Feb 2015 19:51 Operator: TMB
Sample : WG511287-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 9 12:25 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration

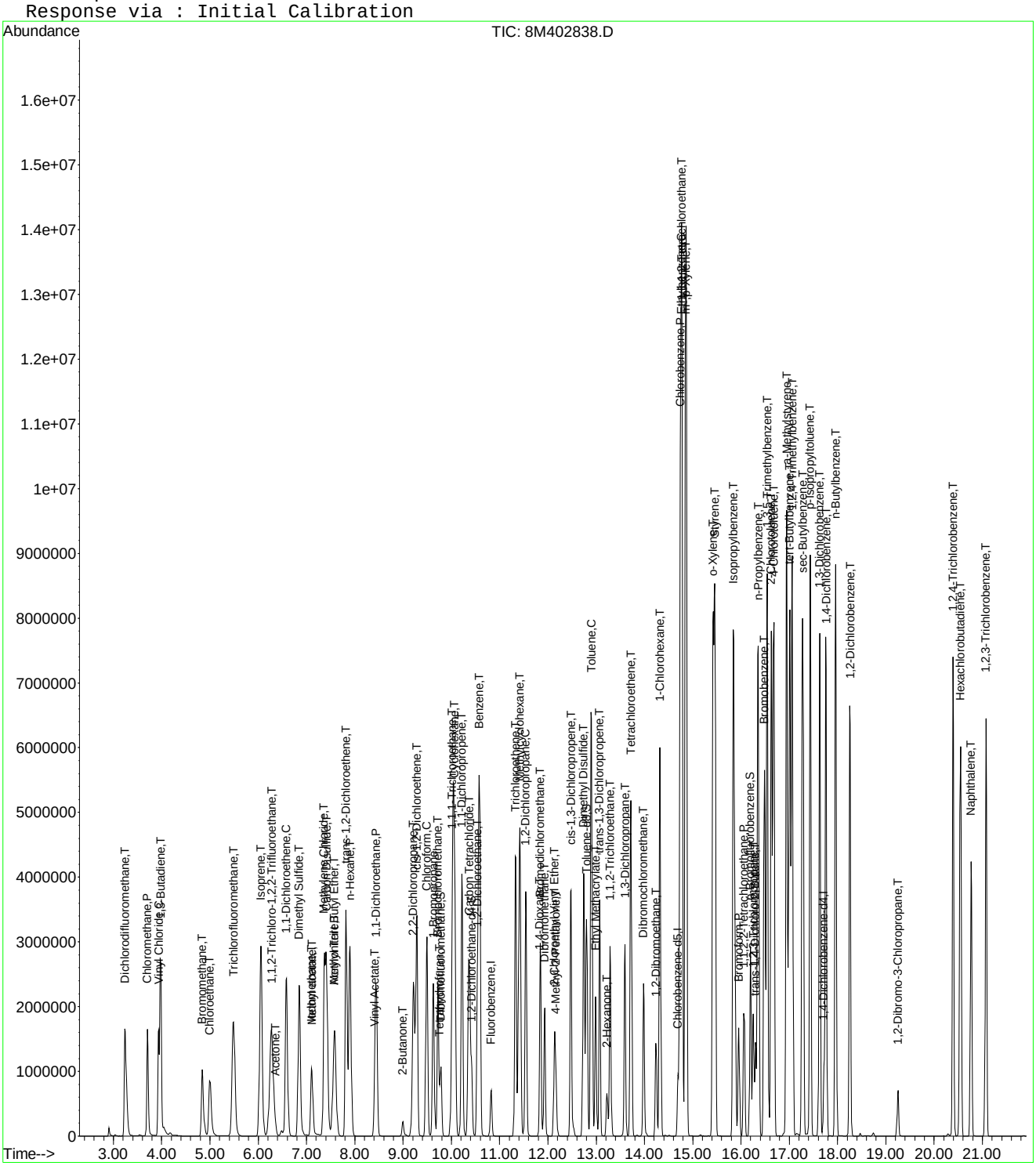

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402839.D Vial: 11
Acq On : 6 Feb 2015 20:20 Operator: TMB
Sample : WG511287-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:22 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	901523	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	691046	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.72	152	352262	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	1366035	143.9775 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 575.92%#		
43) 1,2-Dichloroethane-d4	10.42	65	1356888	136.4155 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 545.68%#		
58) Toluene-d8	12.80	98	4278628	130.3308 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 521.32%#		
80) p-Bromofluorobenzene	16.19	95	1865361	147.6480 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 590.60%#		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.24	85	3951974	273.6347 ug/L	96
3) Chloromethane	3.70	50	3322248	265.8874 ug/L	97
4) Vinyl Chloride	3.94	62	3097789	251.9142 ug/L	92
5) 1,3-Butadiene	3.98	54	2002756	301.8722 ug/L	95
6) Bromomethane	4.84	94	2084169	299.0729 ug/L	99
7) Chloroethane	4.99	64	2211352	290.9189 ug/L	99
8) Trichlorofluoromethane	5.49	101	4750855	278.5680 ug/L	98
9) Diethyl ether	6.02	59	1766187	283.3568 ug/L	91
10) Isoprene	6.06	67	3684082	278.8821 ug/L	94
11) Acrolein	6.25	56	108214	150.3823 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.27	101	2736018	283.9953 ug/L	94
13) Acetone	6.36	43	363855	266.3499 ug/L #	29
14) 1,1-Dichloroethene	6.58	61	4306812	277.9500 ug/L	92
15) Tert-Butyl Alcohol	6.70	59	178942	623.1723 ug/L	96
16) Dimethyl Sulfide	6.85	62	3047092	295.0531 ug/L	98
17) Iodomethane	7.10	142	2021387	302.3562 ug/L	97
18) Methyl acetate	7.11	43	1622991	285.7136 ug/L	97
19) Methylene Chloride	7.37	84	2731192	281.8658 ug/L	87
20) Carbon Disulfide	7.41	76	8007309	250.2430 ug/L	94
21) Acrylonitrile	7.55	53	331665	166.2698 ug/L	94
22) Methyl Tert Butyl Ether	7.58	73	5020254	298.0056 ug/L	96
23) trans-1,2-Dichloroethene	7.81	61	4101940	274.8500 ug/L	90
24) n-Hexane	7.90	57	3550055	271.0443 ug/L	90
25) Diisopropyl ether	8.24	45	8093785	261.7979 ug/L	91
26) Vinyl Acetate	8.40	43	1222650	286.8690 ug/L	98
27) 1,1-Dichloroethane	8.44	63	5033833	268.4042 ug/L	92
28) Ethyl-Tert-Butyl ether	8.82	59	6930958	279.6522 ug/L	91
29) 2-Butanone	8.99	43	612144	301.0081 ug/L	97
30) Propionitrile	9.11	54	197455	293.5884 ug/L	100
31) 2,2-Dichloropropane	9.22	77	4048150	292.3847 ug/L	97
32) cis-1,2-Dichloroethene	9.28	96	2923895	283.4675 ug/L	89
33) Chloroform	9.49	83	4711098	264.4441 ug/L	94
34) 1-Bromopropane	9.62	122	593904	319.5291 ug/L	100
35) Bromochloromethane	9.73	130	1545541	299.5601 ug/L	92
36) Tetrahydrofuran	9.75	42	406272	286.4218 ug/L	96
38) 1,1,1-Trichloroethane	10.03	97	4496547	289.7447 ug/L	96
39) Cyclohexane	10.06	56	4700986	281.4802 ug/L	84
40) 1,1-Dichloropropene	10.22	75	3886329	290.0601 ug/L	97
41) Tert-Amyl-Methyl ether	10.33	73	5399436	289.6000 ug/L	98
42) Carbon Tetrachloride	10.37	117	3998573	300.4593 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M402839.D 8260WTR.M Mon Feb 09 12:25:22 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402839.D Vial: 11
Acq On : 6 Feb 2015 20:20 Operator: TMB
Sample : WG511287-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:22 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.53	62	3322645	282.2985 ug/L		96
46)	Benzene	10.58	78	8047028	219.5386 ug/L		88
47)	Trichloroethene	11.33	130	2784062	301.9428 ug/L		99
48)	Methylcyclohexane	11.41	83	4181394	278.2799 ug/L		90
49)	1,2-Dichloropropane	11.55	63	2902586	291.2065 ug/L		92
50)	Bromodichloromethane	11.85	83	3644923	289.1870 ug/L		96
51)	1,4-Dioxane	11.84	88	26646	688.3061 ug/L		87
52)	Dibromomethane	11.93	93	1376488	292.6153 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.14	63	1147889	303.1937 ug/L		97
54)	4-Methyl-2-Pentanone	12.17	58	514297	302.7838 ug/L		94
55)	cis-1,3-Dichloropropene	12.48	75	3901617	296.0914 ug/L		95
56)	Dimethyl Disulfide	12.74	79	2357589	167.0349 ug/L		85
59)	Toluene	12.90	91	7673615	205.9792 ug/L		81
60)	Ethyl Methacrylate	13.00	69	2155268	302.6911 ug/L		94
62)	trans-1,3-Dichloropropene	13.08	75	3322242	291.4549 ug/L		95
63)	1,1,2-Trichloroethane	13.29	97	1721378	291.0502 ug/L		98
64)	2-Hexanone	13.22	58	459551	300.3930 ug/L		89
65)	1,3-Dichloropropane	13.59	76	3017318	281.4510 ug/L		96
66)	Tetrachloroethene	13.72	164	2385319	296.5151 ug/L		98
67)	Dibromochloromethane	13.99	129	2372759	313.9883 ug/L		98
68)	1,2-Dibromoethane	14.24	107	1791795	304.7660 ug/L		100
69)	1-Chlorohexane	14.33	91	3561465	282.6339 ug/L		93
70)	Chlorobenzene	14.74	112	5968974	236.9546 ug/L		85
71)	1,1,1,2-Tetrachloroethane	14.77	131	2799595	325.4222 ug/L		100
72)	Ethylbenzene	14.77	106	4030538	279.6626 ug/L		47
73)	m-,p-Xylene	14.86	106	7175198	437.1139 ug/L		57
74)	o-Xylene	15.42	106	4533258	280.6816 ug/L		68
75)	Styrene	15.46	104	6324791	244.1533 ug/L		77
76)	Bromoform	15.95	173	1513912	324.6789 ug/L		99
77)	Isopropylbenzene	15.85	105	8255060	204.5857 ug/L	#	74
79)	1,1,2,2-Tetrachloroethane	16.07	83	1886198	294.5972 ug/L		99
81)	1,2,3-Trichloropropane	16.25	110	553680	309.3123 ug/L	#	44
82)	trans-1,4-Dichloro-2-Buten	16.30	53	673607	305.5475 ug/L	#	28
83)	n-Propylbenzene	16.36	91	8923406	173.2532 ug/L	#	67
84)	Bromobenzene	16.49	156	2929634	293.9362 ug/L		90
85)	1,3,5-Trimethylbenzene	16.54	105	7599401	221.0246 ug/L		78
86)	2-Chlorotoluene	16.63	91	7349101	233.9866 ug/L		90
87)	4-Chlorotoluene	16.68	91	5830696	182.2521 ug/L	#	60
88)	a-Methylstyrene	16.94	118	5296153	267.3381 ug/L		89
89)	tert-Butylbenzene	17.01	134	2266389	302.4859 ug/L		75
90)	1,2,4-Trimethylbenzene	17.06	105	7479458	211.6968 ug/L		71
91)	sec-Butylbenzene	17.28	105	8565701	188.4794 ug/L	#	75
92)	p-Isopropyltoluene	17.44	119	7636038	212.5609 ug/L	#	77
93)	1,3-Dichlorobenzene	17.64	146	5117667	250.2577 ug/L		87
94)	1,4-Dichlorobenzene	17.76	146	4990248	238.2917 ug/L		87
95)	n-Butylbenzene	17.96	91	7420061	188.4679 ug/L	#	78
96)	1,2-Dichlorobenzene	18.26	146	4692167	256.0364 ug/L		90
97)	1,2-Dibromo-3-Chloropropan	19.25	75	362506	304.9565 ug/L		100
98)	1,2,4-Trichlorobenzene	20.40	180	3984191	273.7606 ug/L		97
99)	Hexachlorobutadiene	20.55	225	2540466	296.6558 ug/L		97
100)	Naphthalene	20.77	128	5319732	247.8992 ug/L		91
101)	1,2,3-Trichlorobenzene	21.08	180	3520415	277.0062 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M402839.D 8260WTR.M Mon Feb 09 12:25:22 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402839.D Vial: 11
Acq On : 6 Feb 2015 20:20 Operator: TMB
Sample : WG511287-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD68794 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 9 12:25 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration

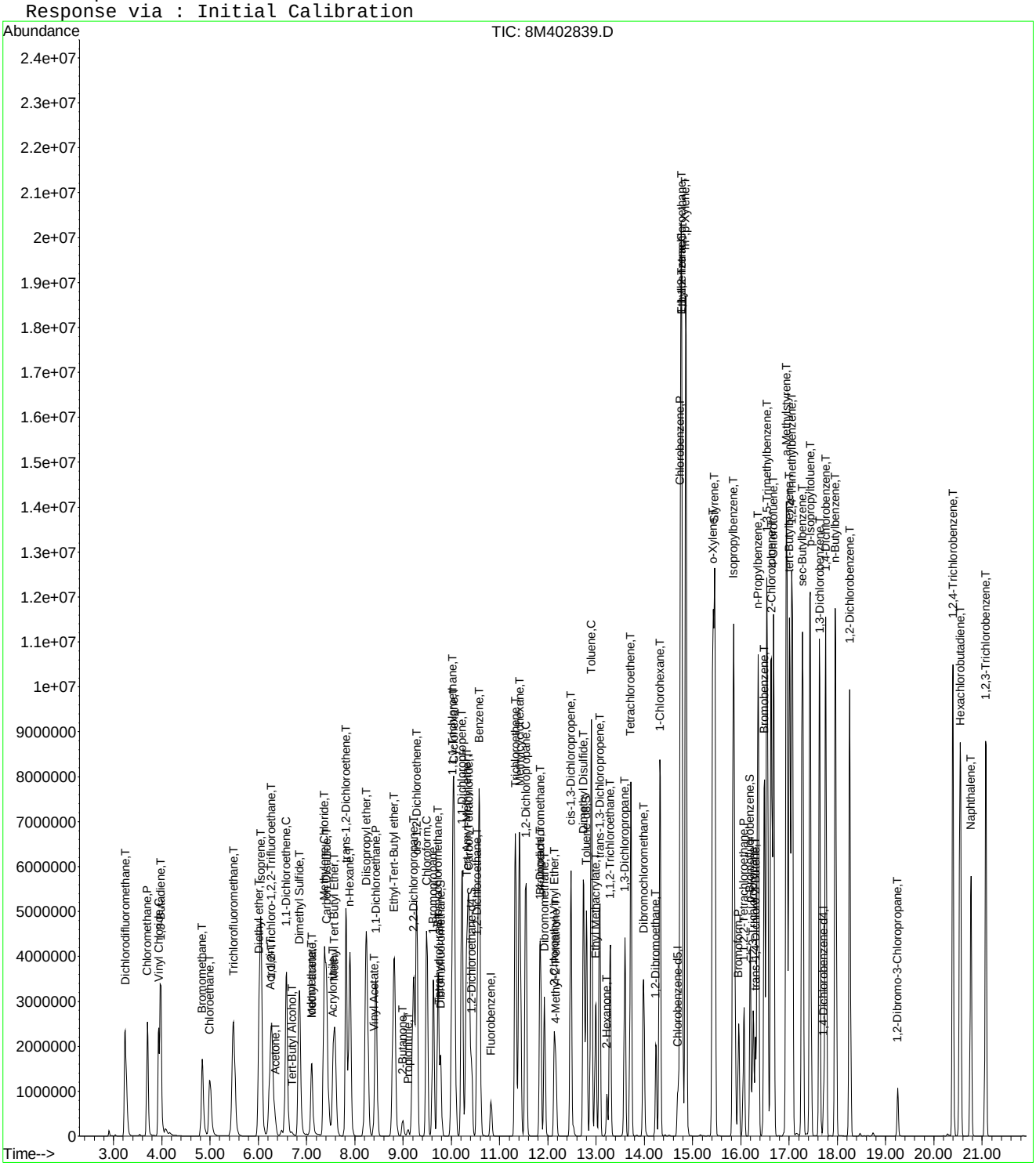

8M402839.D 8260WTR.M Mon Feb 09 12:25:22 2015 Page 3

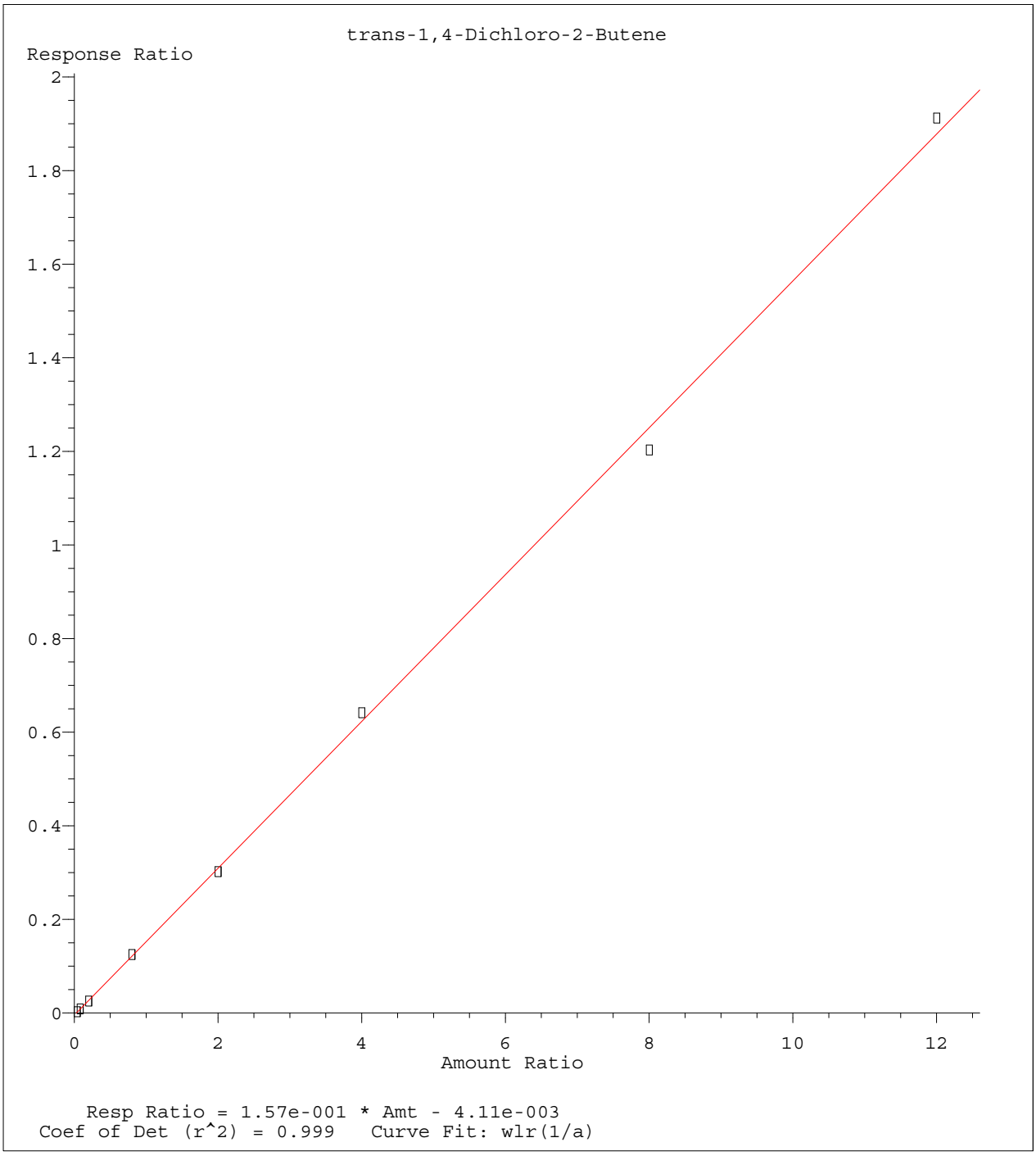

Method Name: C:\MSDCHEM\2\METHODS\8260WTR.M
Calibration Table Last Updated: Mon Feb 09 12:21:39 2015

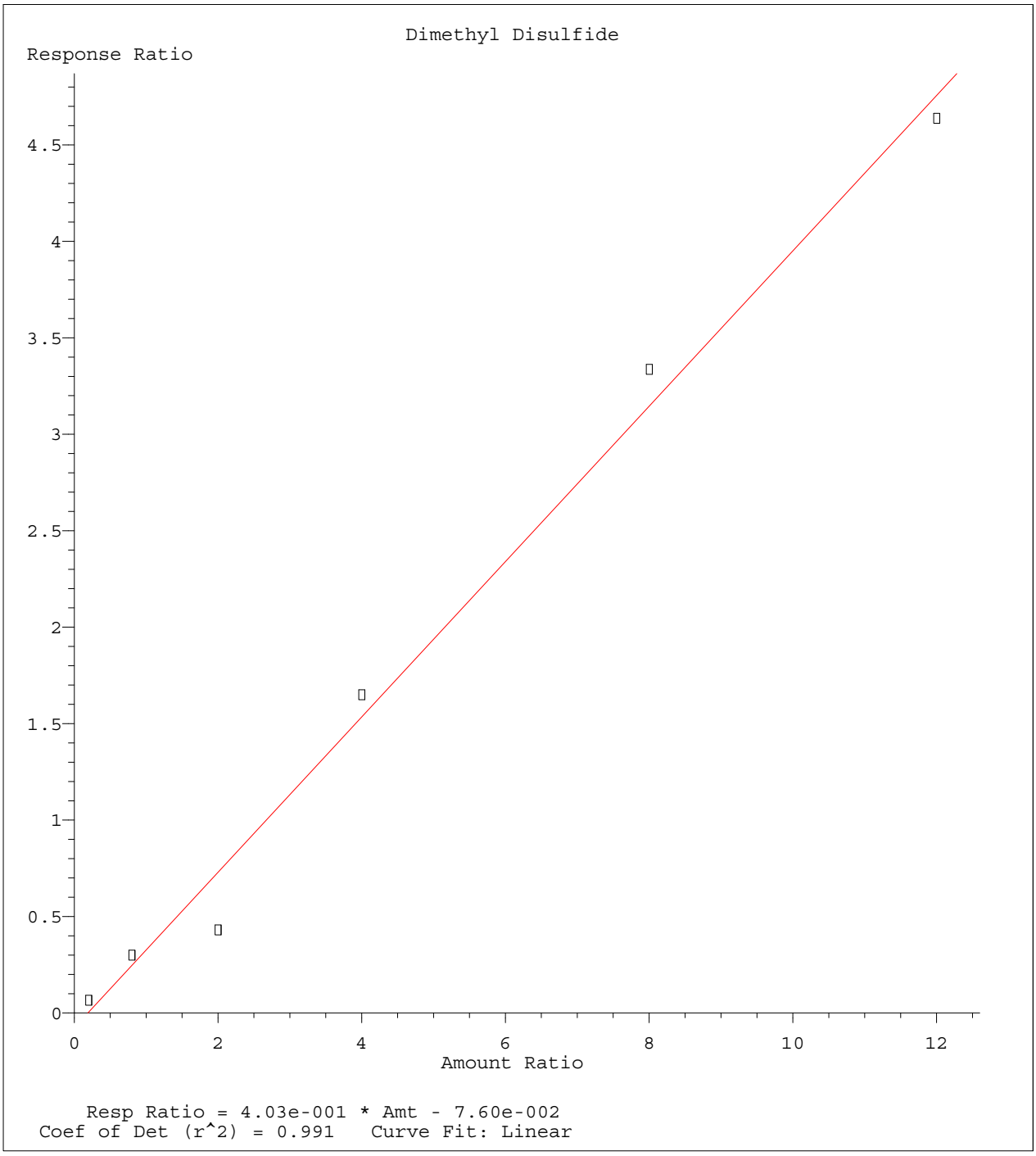

Method Name: C:\MSDCHEM\2\METHODS\8260WTR.M
Calibration Table Last Updated: Mon Feb 09 12:21:39 2015

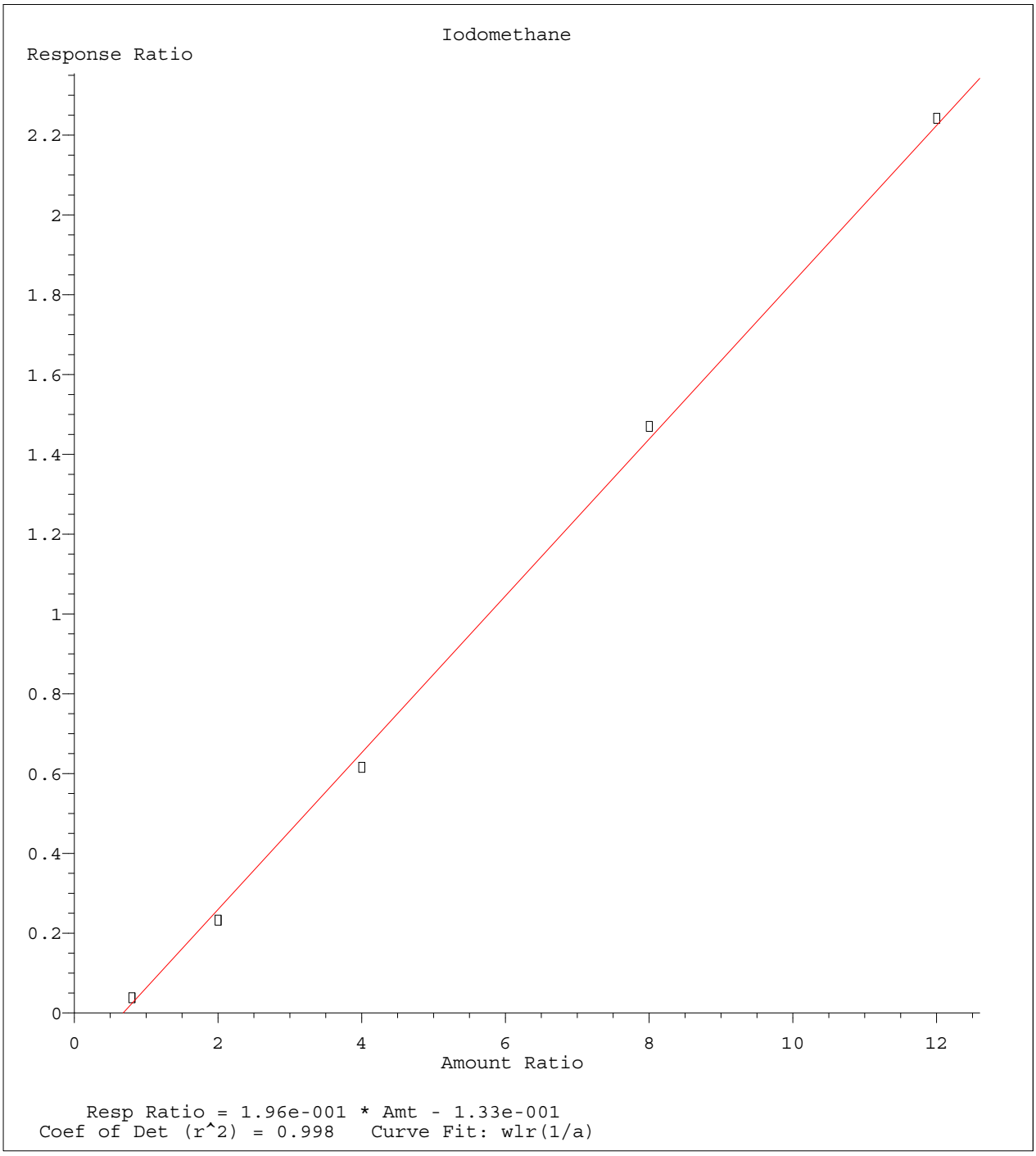

Method Name: C:\MSDCHEM\2\METHODS\8260WTR.M
Calibration Table Last Updated: Mon Feb 09 12:21:39 2015

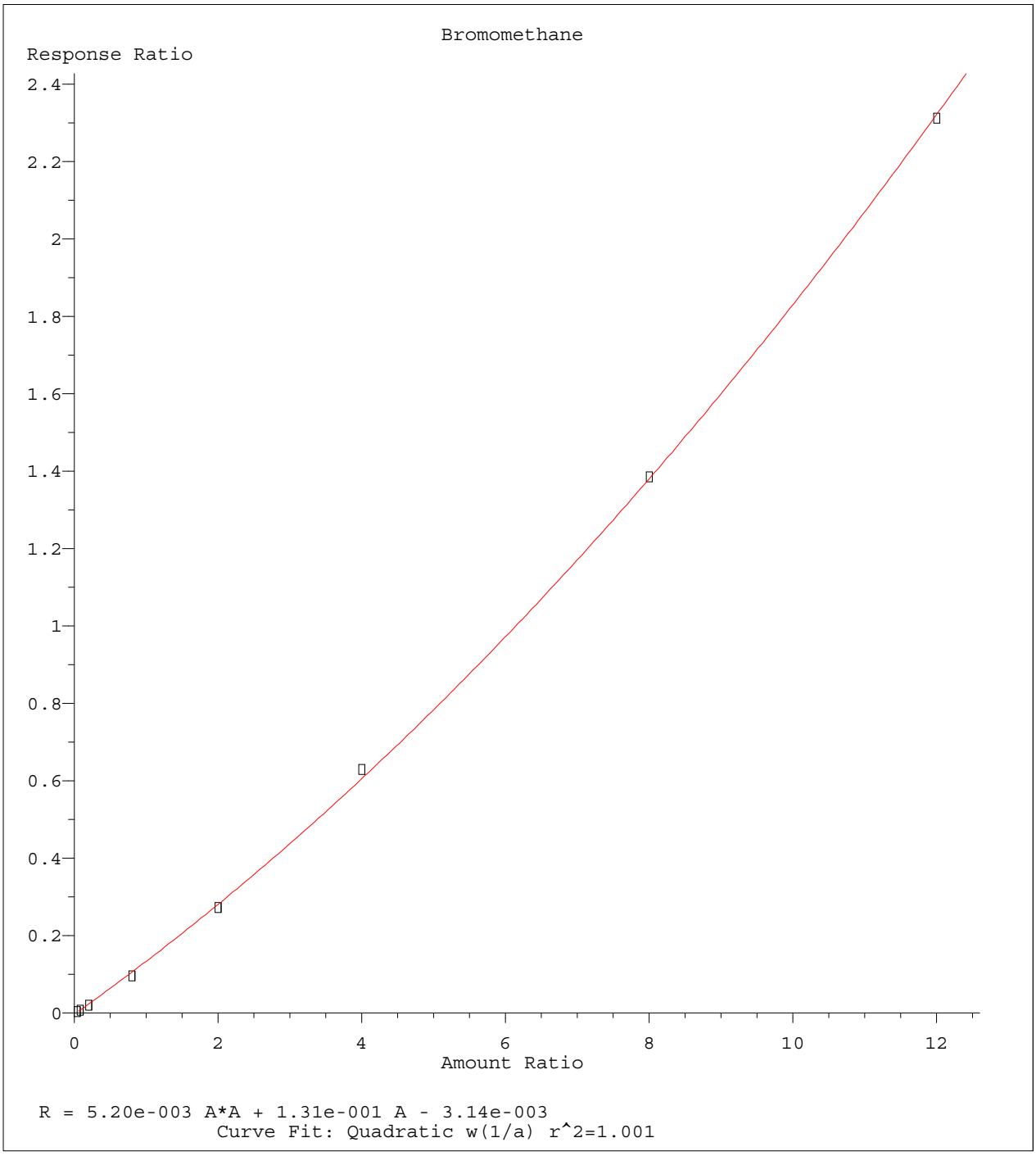

Method Name: C:\MSDCHEM\2\METHODS\8260WTR.M
Calibration Table Last Updated: Mon Feb 09 12:21:39 2015

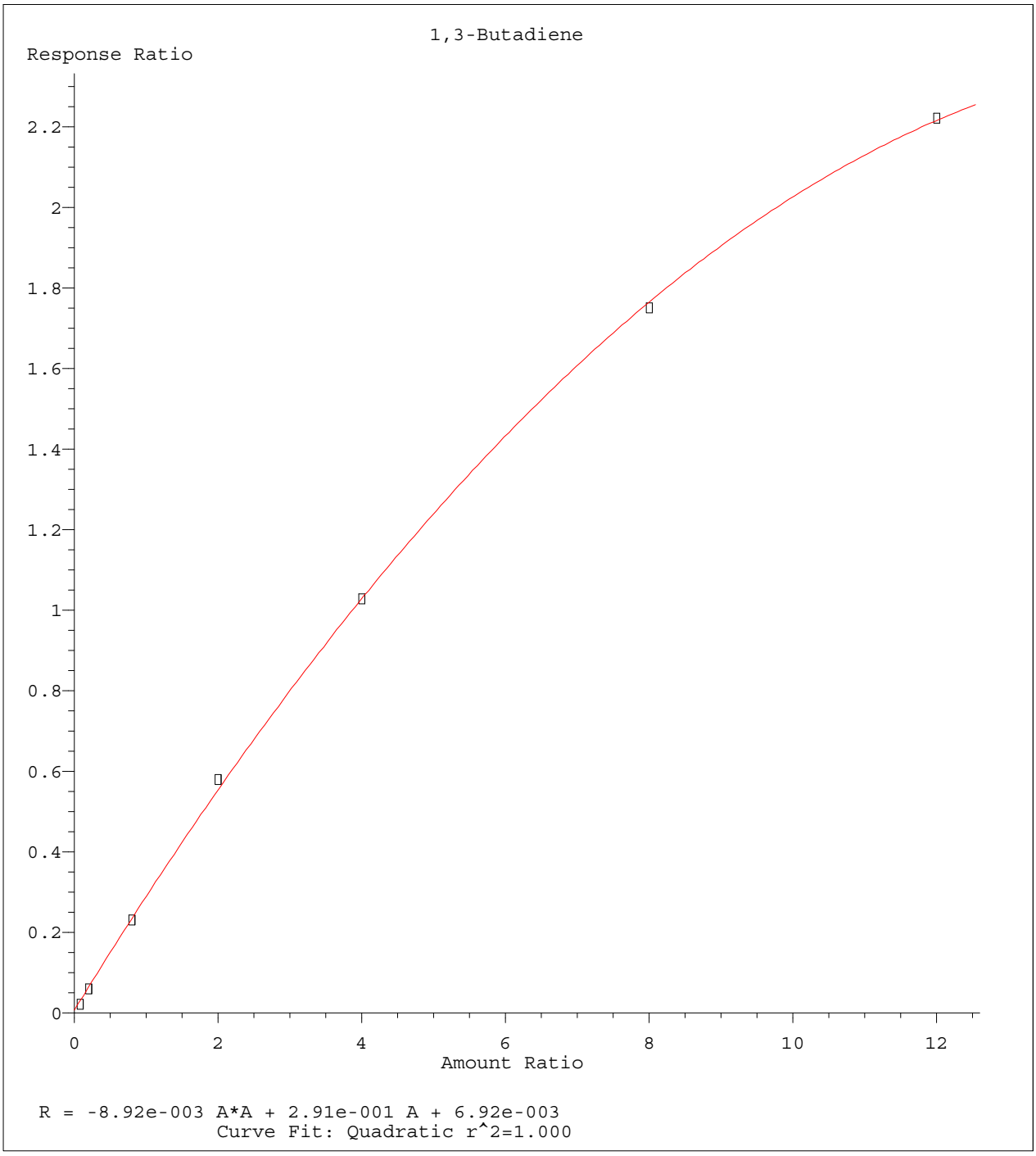

Method Name: C:\MSDCHEM\2\METHODS\8260WTR.M
Calibration Table Last Updated: Mon Feb 09 12:21:39 2015

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402842.D Vial: 14
Acq On : 6 Feb 2015 21:48 Operator: TMB
Sample : WG511287-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD68730 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:23 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	855532	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	630488	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.71	152	331609	25.00 ug/L	-0.02

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	218364	24.2524 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.00%		
43) 1,2-Dichloroethane-d4	10.41	65	218547	23.1529 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 92.60%		
58) Toluene-d8	12.80	98	752913	25.1372 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.56%		
80) p-Bromofluorobenzene	16.19	95	299900	25.2163 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.88%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.24	85	697424	50.8856 ug/L	100
3) Chloromethane	3.70	50	550557	46.4311 ug/L	99
4) Vinyl Chloride	3.93	62	562990	48.2439 ug/L	97
5) 1,3-Butadiene	3.97	54	297404	30.3925 ug/L	93
6) Bromomethane	4.84	94	244889	50.9856 ug/L	100
7) Chloroethane	5.00	64	384533	53.3075 ug/L	99
8) Trichlorofluoromethane	5.48	101	754351	46.6094 ug/L	100
9) Diethyl ether	6.02	59	579930	98.0422 ug/L	91
10) Isoprene	6.05	67	712297	56.8189 ug/L	90
11) Acrolein	6.25	56	64407	94.3164 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.27	101	430157	47.0500 ug/L	94
13) Acetone	6.36	43	66535	51.3233 ug/L #	27
14) 1,1-Dichloroethene	6.58	61	700548	47.6419 ug/L	94
15) Tert-Butyl Alcohol	6.69	59	56163	206.1041 ug/L	96
16) Dimethyl Sulfide	6.85	62	548230	55.9394 ug/L	99
17) Iodomethane	7.11	142	65634	26.7063 ug/L	93
18) Methyl acetate	7.11	43	188523	34.9719 ug/L	97
19) Methylene Chloride	7.36	84	456615	49.6570 ug/L	88
20) Carbon Disulfide	7.40	76	1362504	44.8698 ug/L	100
21) Acrylonitrile	7.55	53	95648	50.5278 ug/L	98
22) Methyl Tert Butyl Ether	7.58	73	856561	53.5794 ug/L	93
23) trans-1,2-Dichloroethene	7.82	61	714277	50.4329 ug/L	92
24) n-Hexane	7.90	57	609026	48.9984 ug/L	93
25) Diisopropyl ether	8.24	45	2905564	99.0342 ug/L	97
26) Vinyl Acetate	8.41	43	471143	116.4863 ug/L	98
27) 1,1-Dichloroethane	8.44	63	876334	49.2380 ug/L	97
28) Ethyl-Tert-Butyl ether	8.81	59	2350768	99.9483 ug/L	96
29) 2-Butanone	9.00	43	98114	50.8389 ug/L	97
30) Propionitrile	9.10	54	62361	97.7067 ug/L	98
31) 2,2-Dichloropropane	9.21	77	626022	47.6462 ug/L	99
32) cis-1,2-Dichloroethene	9.29	96	497542	50.8290 ug/L	89
33) Chloroform	9.49	83	814463	48.1752 ug/L	99
34) 1-Bromopropane	9.63	122	99927	56.6523 ug/L	98
35) Bromochloromethane	9.72	130	254046	51.8867 ug/L	93
36) Tetrahydrofuran	9.75	42	134189	99.6889 ug/L	98
38) 1,1,1-Trichloroethane	10.02	97	737177	50.0551 ug/L	99
39) Cyclohexane	10.05	56	813171	51.3076 ug/L	86
40) 1,1-Dichloropropene	10.22	75	642786	50.5540 ug/L	99
41) Tert-Amyl-Methyl ether	10.32	73	1771098	100.0998 ug/L	97
42) Carbon Tetrachloride	10.37	117	633075	50.1275 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402842.D Vial: 14
Acq On : 6 Feb 2015 21:48 Operator: TMB
Sample : WG511287-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD68730 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 09 12:25:23 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.54	62	548103	49.0713 ug/L		99
46)	Benzene	10.58	78	1785435	51.3287 ug/L		95
47)	Trichloroethene	11.33	130	479699	54.8220 ug/L		100
48)	Methylcyclohexane	11.42	83	733175	51.4173 ug/L		89
49)	1,2-Dichloropropane	11.54	63	482689	51.0298 ug/L		95
50)	Bromodichloromethane	11.84	83	596284	49.8522 ug/L		100
51)	1,4-Dioxane	11.83	88	7338	199.7413 ug/L		79
52)	Dibromomethane	11.92	93	215030	48.1686 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.14	63	185184	51.5424 ug/L		99
54)	4-Methyl-2-Pentanone	12.17	58	77968	48.3699 ug/L		94
55)	cis-1,3-Dichloropropene	12.48	75	690516	55.2199 ug/L		100
56)	Dimethyl Disulfide	12.74	79	362318	31.0017 ug/L		93
59)	Toluene	12.89	91	1804687	53.0952 ug/L		100
60)	Ethyl Methacrylate	12.99	69	363517	55.9568 ug/L		91
62)	trans-1,3-Dichloropropene	13.07	75	517158	49.7271 ug/L		99
63)	1,1,2-Trichloroethane	13.29	97	280655	52.0109 ug/L		99
64)	2-Hexanone	13.23	58	70765	50.6996 ug/L	#	47
65)	1,3-Dichloropropane	13.60	76	509174	52.0569 ug/L		92
66)	Tetrachloroethene	13.72	164	374590	51.0372 ug/L		98
67)	Dibromochloromethane	13.98	129	366960	53.2241 ug/L		99
68)	1,2-Dibromoethane	14.24	107	279439	52.0949 ug/L		99
69)	1-Chlorohexane	14.32	91	631195	54.9021 ug/L		89
70)	Chlorobenzene	14.75	112	1108566	48.2344 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.78	131	413036	52.6223 ug/L		99
72)	Ethylbenzene	14.77	106	669189	50.8921 ug/L		98
73)	m-,p-Xylene	14.86	106	1562317	104.3182 ug/L		97
74)	o-Xylene	15.42	106	738446	50.1132 ug/L		99
75)	Styrene	15.46	104	1307371	55.3153 ug/L		99
76)	Bromoform	15.96	173	223365	52.5048 ug/L		99
77)	Isopropylbenzene	15.84	105	1900600	51.6269 ug/L		99
79)	1,1,2,2-Tetrachloroethane	16.06	83	298623	49.5455 ug/L		99
81)	1,2,3-Trichloropropane	16.25	110	84563	50.1832 ug/L	#	46
82)	trans-1,4-Dichloro-2-Buten	16.30	53	80281	39.2554 ug/L		47
83)	n-Propylbenzene	16.35	91	2363376	48.7442 ug/L		99
84)	Bromobenzene	16.48	156	479352	51.0897 ug/L		94
85)	1,3,5-Trimethylbenzene	16.54	105	1788045	55.2432 ug/L		99
86)	2-Chlorotoluene	16.63	91	1482440	50.1387 ug/L		91
87)	4-Chlorotoluene	16.68	91	1425040	47.3172 ug/L		89
88)	a-Methylstyrene	16.95	118	997655	53.4959 ug/L		97
89)	tert-Butylbenzene	17.01	134	342459	48.5533 ug/L		96
90)	1,2,4-Trimethylbenzene	17.06	105	1812453	54.4942 ug/L		99
91)	sec-Butylbenzene	17.28	105	2114294	49.4204 ug/L		99
92)	p-Isopropyltoluene	17.43	119	1716865	50.7681 ug/L		100
93)	1,3-Dichlorobenzene	17.63	146	908402	47.1881 ug/L		99
94)	1,4-Dichlorobenzene	17.75	146	975480	49.4817 ug/L		100
95)	n-Butylbenzene	17.96	91	1877671	50.6628 ug/L		99
96)	1,2-Dichlorobenzene	18.26	146	826012	47.8800 ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.25	75	55836	49.8972 ug/L		98
98)	1,2,4-Trichlorobenzene	20.39	180	708749	51.7324 ug/L		98
99)	Hexachlorobutadiene	20.55	225	419806	52.0748 ug/L		96
100)	Naphthalene	20.76	128	1039998	51.4822 ug/L		99
101)	1,2,3-Trichlorobenzene	21.07	180	608129	50.8312 ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\020615\8M402842.D Vial: 14
Acq On : 6 Feb 2015 21:48 Operator: TMB
Sample : WG511287-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD68730 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 9 12:25 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Initial Calibration

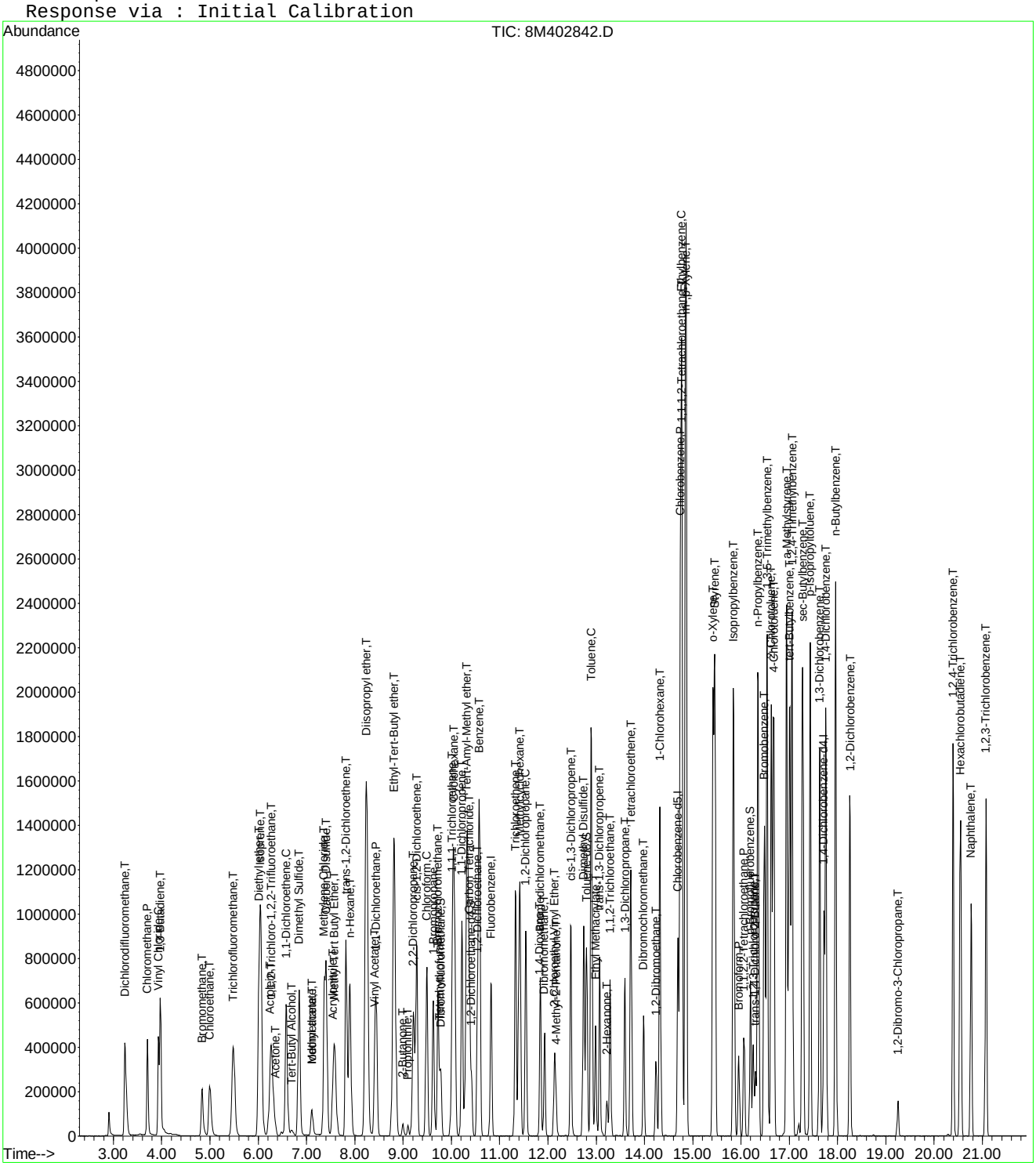

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\020615\8M402842.D Vial: 14
Acq On : 6 Feb 2015 21:48 Operator: TMB
Sample : WG511287-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD68730 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	114	0.00
2	T	Dichlorodifluoromethane	50.0000	50.8856	-1.8	104	0.00
3	P	Chloromethane	50.0000	46.4311	7.1	104	0.00
4	C	Vinyl Chloride	50.0000	48.2439	3.5	105	0.00
5	T	1,3-Butadiene	50.0000	30.3925	39.2#	68	0.00
6	T	Bromomethane	50.0000	50.9856	-2.0	120	0.00
7	T	Chloroethane	50.0000	53.3075	-6.6	117	0.00
8	T	Trichlorofluoromethane	50.0000	46.6094	6.8	103	0.00
9	T	Diethyl ether	100.0000	98.0422	2.0	111	0.00
10	T	Isoprene	50.0000	56.8189	-13.6	123	0.00
11	T	Acrolein	50.0000	94.3164	-88.6#	221	-0.02
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	47.0500	5.9	105	0.00
13	T	Acetone	50.0000	51.3233	-2.6	110	0.00
14	C	1,1-Dichloroethene	50.0000	47.6419	4.7	106	0.00
15	T	Tert-Butyl Alcohol	200.0000	206.1042	-3.1	121	-0.02
16	T	Dimethyl Sulfide	50.0000	55.9394	-11.9	123	0.00
17	T	Iodomethane	50.0000	26.7063	46.6#	38	0.00
18	T	Methyl acetate	50.0000	34.9719	30.1#	81	0.00
19	T	Methylene Chloride	50.0000	49.6570	0.7	114	0.00
20	T	Carbon Disulfide	50.0000	44.8698	10.3	98	-0.02
21	T	Acrylonitrile	50.0000	50.5278	-1.1	111	0.00
22	T	Methyl Tert Butyl Ether	50.0000	53.5794	-7.2	116	0.00
23	T	trans-1,2-Dichloroethene	50.0000	50.4329	-0.9	113	0.00
24	T	n-Hexane	50.0000	48.9984	2.0	107	0.00
25	T	Diisopropyl ether	100.0000	99.0343	1.0	109	0.00
26	T	Vinyl Acetate	50.0000	116.4863	-133.0#	260	0.00
27	P	1,1-Dichloroethane	50.0000	49.2380	1.5	108	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	99.9483	0.1	110	0.00
29	T	2-Butanone	50.0000	50.8389	-1.7	116	0.00
30	T	Propionitrile	100.0000	97.7067	2.3	110	0.00
31	T	2,2-Dichloropropane	50.0000	47.6462	4.7	107	0.00
32	T	cis-1,2-Dichloroethene	50.0000	50.8290	-1.7	114	0.00
33	C	Chloroform	50.0000	48.1752	3.6	108	0.00
34		1-Bromopropane	50.0000	56.6523	-13.3	117	0.00
35	T	Bromochloromethane	50.0000	51.8867	-3.8	112	-0.02
36	T	Tetrahydrofuran	100.0000	99.6889	0.3	115	0.00
37	S	Dibromofluoromethane	25.0000	24.2524	3.0	110	0.00
38	T	1,1,1-Trichloroethane	50.0000	50.0551	-0.1	110	-0.02
39	T	Cyclohexane	50.0000	51.3076	-2.6	109	-0.02
40	T	1,1-Dichloropropene	50.0000	50.5540	-1.1	108	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	100.0998	-0.1	111	0.00
42	T	Carbon Tetrachloride	50.0000	50.1275	-0.3	109	0.00
43	S	1,2-Dichloroethane-d4	25.0000	23.1529	7.4	108	-0.02
44		Heptane	-1.0000	0.0000	0.0	0	-2.67#
45	T	1,2-Dichloroethane	50.0000	49.0713	1.9	107	0.00
46	T	Benzene	50.0000	51.3287	-2.7	111	0.00
47	T	Trichloroethene	50.0000	54.8220	-9.6	117	0.00
48	T	Methylcyclohexane	50.0000	51.4173	-2.8	112	0.00
49	C	1,2-Dichloropropane	50.0000	51.0298	-2.1	110	0.00
50	T	Bromodichloromethane	50.0000	49.8522	0.3	107	0.00
51	T	1,4-Dioxane	200.0000	199.7413	0.1	120	0.00
52	T	Dibromomethane	50.0000	48.1686	3.7	107	-0.02
53	T	2-Chloroethyl Vinyl Ether	50.0000	51.5424	-3.1	112	0.00
54	T	4-Methyl-2-Pentanone	50.0000	48.3699	3.3	107	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\020615\8M402842.D Vial: 14
Acq On : 6 Feb 2015 21:48 Operator: TMB
Sample : WG511287-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD68730 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Mon Feb 09 12:21:39 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	55.2199	-10.4	114	0.00
56	T	Dimethyl Disulfide	50.0000	31.0017	38.0#	112	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	113	0.00
58	S	Toluene-d8	25.0000	25.1372	-0.5	111	0.00
59	C	Toluene	50.0000	53.0952	-6.2	111	-0.02
60	T	Ethyl Methacrylate	50.0000	55.9568	-11.9	117	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.27#
62	T	trans-1,3-Dichloropropene	50.0000	49.7271	0.5	103	0.00
63	T	1,1,2-Trichloroethane	50.0000	52.0109	-4.0	111	-0.02
64	T	2-Hexanone	50.0000	50.6996	-1.4	113	0.00
65	T	1,3-Dichloropropane	50.0000	52.0569	-4.1	111	0.00
66	T	Tetrachloroethene	50.0000	51.0372	-2.1	111	0.00
67	T	Dibromochloromethane	50.0000	53.2241	-6.4	110	-0.02
68	T	1,2-Dibromoethane	50.0000	52.0949	-4.2	109	0.00
69	T	1-Chlorohexane	50.0000	54.9021	-9.8	115	0.00
70	P	Chlorobenzene	50.0000	48.2344	3.5	104	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	52.6223	-5.2	109	0.00
72	C	Ethylbenzene	50.0000	50.8921	-1.8	109	-0.02
73	T	m-,p-Xylene	100.0000	104.3182	-4.3	109	-0.02
74	T	o-Xylene	50.0000	50.1132	-0.2	103	-0.02
75	T	Styrene	50.0000	55.3153	-10.6	110	0.00
76	P	Bromoform	50.0000	52.5048	-5.0	112	0.00
77	T	Isopropylbenzene	50.0000	51.6269	-3.3	103	-0.02
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	111	-0.02
79	P	1,1,2,2-Tetrachloroethane	50.0000	49.5455	0.9	109	-0.02
80	S	p-Bromofluorobenzene	25.0000	25.2163	-0.9	111	0.00
81	T	1,2,3-Trichloropropane	50.0000	50.1832	-0.4	110	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	39.2554	21.5	89	-0.02
83	T	n-Propylbenzene	50.0000	48.7442	2.5	102	-0.02
84	T	Bromobenzene	50.0000	51.0897	-2.2	110	-0.02
85	T	1,3,5-Trimethylbenzene	50.0000	55.2432	-10.5	112	0.00
86	T	2-Chlorotoluene	50.0000	50.1388	-0.3	107	0.00
87	T	4-Chlorotoluene	50.0000	47.3172	5.4	100	0.00
88	T	a-Methylstyrene	50.0000	53.4959	-7.0	113	0.00
89	T	tert-Butylbenzene	50.0000	48.5533	2.9	105	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	54.4942	-9.0	111	0.00
91	T	sec-Butylbenzene	50.0000	49.4203	1.2	104	0.00
92	T	p-Isopropyltoluene	50.0000	50.7681	-1.5	105	0.00
93	T	1,3-Dichlorobenzene	50.0000	47.1882	5.6	102	0.00
94	T	1,4-Dichlorobenzene	50.0000	49.4817	1.0	110	-0.02
95	T	n-Butylbenzene	50.0000	50.6628	-1.3	109	0.00
96	T	1,2-Dichlorobenzene	50.0000	47.8800	4.2	104	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	49.8972	0.2	106	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	51.7324	-3.5	111	-0.02
99	T	Hexachlorobutadiene	50.0000	52.0748	-4.1	114	0.00
100	T	Naphthalene	50.0000	51.4822	-3.0	108	-0.02
101	T	1,2,3-Trichlorobenzene	50.0000	50.8312	-1.7	109	-0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M402842.D 8260WTR.M Mon Feb 09 12:27:08 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\022015\8M403129.D Vial: 3
Acq On : 20 Feb 2015 13:19 Operator: TMB
Sample : WG512985-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD68957 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 20 13:41:32 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	877243	25.00 ug/L	-0.02
57) Chlorobenzene-d5	14.69	117	610334	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.71	152	308495	25.00 ug/L	-0.02
System Monitoring Compounds					
37) Dibromofluoromethane	9.78	111	206966	22.4176 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 89.68%		
43) 1,2-Dichloroethane-d4	10.41	65	197241	20.3786 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 81.52%		
58) Toluene-d8	12.80	98	729154	25.1479 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.60%		
80) p-Bromofluorobenzene	16.19	95	271900	24.5749 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.28%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.24	85	545017	38.7814 ug/L	99
3) Chloromethane	3.70	50	538446	44.2858 ug/L	100
4) Vinyl Chloride	3.94	62	531254	44.3976 ug/L	100
5) 1,3-Butadiene	3.98	54	464452	47.6594 ug/L	96
6) Bromomethane	4.84	94	262213	53.0557 ug/L	100
7) Chloroethane	5.01	64	340237	45.9994 ug/L	98
8) Trichlorofluoromethane	5.49	101	708955	42.7204 ug/L	99
9) Diethyl ether	6.02	59	563272	92.8693 ug/L	99
10) Isoprene	6.06	67	632684	49.2193 ug/L	97
11) Acrolein	6.26	56	32013	45.7190 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	423237	45.1474 ug/L	99
13) Acetone	6.35	43	59032	44.4087 ug/L	93
14) 1,1-Dichloroethene	6.59	61	662023	43.9077 ug/L	97
15) Tert-Butyl Alcohol	6.69	59	60053	214.9253 ug/L	94
16) Dimethyl Sulfide	6.85	62	487757	48.5372 ug/L	98
17) Iodomethane	7.11	142	247778	52.8948 ug/L	94
18) Methyl acetate	7.12	43	207830	37.5993 ug/L	99
19) Methylene Chloride	7.36	84	435532	46.1920 ug/L	93
20) Carbon Disulfide	7.42	76	1520441	48.8317 ug/L	100
21) Acrylonitrile	7.55	53	92774	47.7966 ug/L	97
22) Methyl Tert Butyl Ether	7.58	73	779920	47.5779 ug/L	100
23) trans-1,2-Dichloroethene	7.82	61	657300	45.2613 ug/L	98
24) n-Hexane	7.90	57	648730	50.9010 ug/L	99
25) Diisopropyl ether	8.24	45	2910434	96.7451 ug/L	99
26) Vinyl Acetate	8.41	43	473404	114.1485 ug/L	99
27) 1,1-Dichloroethane	8.44	63	832228	45.6026 ug/L	99
28) Ethyl-Tert-Butyl ether	8.81	59	2368772	98.2212 ug/L	99
29) 2-Butanone	9.00	43	91265	46.1196 ug/L	95
30) Propionitrile	9.10	54	61340	93.7284 ug/L	99
31) 2,2-Dichloropropane	9.21	77	682224	50.6386 ug/L	100
32) cis-1,2-Dichloroethene	9.29	96	470247	46.8516 ug/L	96
33) Chloroform	9.49	83	769367	44.3815 ug/L	99
34) 1-Bromopropane	9.63	122	94658	52.3369 ug/L	97
35) Bromochloromethane	9.72	130	240364	47.8773 ug/L	97
36) Tetrahydrofuran	9.75	42	124572	90.2540 ug/L	98
38) 1,1,1-Trichloroethane	10.02	97	673300	44.5864 ug/L	99
39) Cyclohexane	10.05	56	818164	50.3450 ug/L	100
40) 1,1-Dichloropropene	10.22	75	617872	47.3919 ug/L	98
41) Tert-Amyl-Methyl ether	10.32	73	1777047	97.9503 ug/L	97
42) Carbon Tetrachloride	10.36	117	584620	45.1452 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M403129.D 8260WTR.M Fri Feb 20 13:41:32 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\022015\8M403129.D Vial: 3
Acq On : 20 Feb 2015 13:19 Operator: TMB
Sample : WG512985-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD68957 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 20 13:41:32 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.54	62	497635	43.4503 ug/L	100
46)	Benzene	10.58	78	1709693	47.9347 ug/L	98
47)	Trichloroethene	11.32	130	418153	46.6056 ug/L	99
48)	Methylcyclohexane	11.42	83	715193	48.9149 ug/L	99
49)	1,2-Dichloropropane	11.54	63	462067	47.6407 ug/L	99
50)	Bromodichloromethane	11.84	83	566622	46.1999 ug/L	100
51)	1,4-Dioxane	11.83	88	8375	222.3266 ug/L	90
52)	Dibromomethane	11.92	93	201860	44.0993 ug/L	95
53)	2-Chloroethyl Vinyl Ether	12.13	63	183812	49.8943 ug/L	97
54)	4-Methyl-2-Pentanone	12.16	58	79795	48.2782 ug/L	97
55)	cis-1,3-Dichloropropene	12.47	75	644115	50.2344 ug/L	99
56)	Dimethyl Disulfide	12.74	79	360902	30.2510 ug/L	98
59)	Toluene	12.90	91	1731085	52.6116 ug/L	100
60)	Ethyl Methacrylate	12.99	69	356322	56.6605 ug/L	97
62)	trans-1,3-Dichloropropene	13.07	75	532782	52.9211 ug/L	100
63)	1,1,2-Trichloroethane	13.29	97	259095	49.6010 ug/L	99
64)	2-Hexanone	13.23	58	70380	52.0889 ug/L #	60
65)	1,3-Dichloropropane	13.60	76	483244	51.0373 ug/L	96
66)	Tetrachloroethene	13.72	164	355156	49.9872 ug/L	97
67)	Dibromochloromethane	13.98	129	344360	51.5955 ug/L	100
68)	1,2-Dibromoethane	14.24	107	265852	51.1985 ug/L	99
69)	1-Chlorohexane	14.32	91	616420	55.3875 ug/L	95
70)	Chlorobenzene	14.75	112	1117623	50.2343 ug/L	97
71)	1,1,1,2-Tetrachloroethane	14.78	131	394440	51.9125 ug/L	100
72)	Ethylbenzene	14.77	106	629240	49.4341 ug/L	97
73)	m-,p-Xylene	14.86	106	1484660	102.4064 ug/L	98
74)	o-Xylene	15.42	106	735262	51.5448 ug/L	97
75)	Styrene	15.46	104	1231577	53.8291 ug/L	97
76)	Bromoform	15.96	173	203074	49.3114 ug/L	99
77)	Isopropylbenzene	15.84	105	1796448	50.4091 ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.06	83	285775	50.9663 ug/L	100
81)	1,2,3-Trichloropropane	16.26	110	77905	49.6960 ug/L	94
82)	trans-1,4-Dichloro-2-Buten	16.30	53	86213	45.2135 ug/L	95
83)	n-Propylbenzene	16.35	91	2322789	51.4965 ug/L	99
84)	Bromobenzene	16.48	156	447573	51.2768 ug/L	92
85)	1,3,5-Trimethylbenzene	16.55	105	1590250	52.8134 ug/L	98
86)	2-Chlorotoluene	16.63	91	1436973	52.2424 ug/L	99
87)	4-Chlorotoluene	16.67	91	1404605	50.1330 ug/L	98
88)	a-Methylstyrene	16.94	118	963238	55.5203 ug/L	97
89)	tert-Butylbenzene	17.01	134	337850	51.4887 ug/L	92
90)	1,2,4-Trimethylbenzene	17.06	105	1657667	53.5746 ug/L	99
91)	sec-Butylbenzene	17.28	105	2018121	50.7068 ug/L	100
92)	p-Isopropyltoluene	17.43	119	1631666	51.8638 ug/L	100
93)	1,3-Dichlorobenzene	17.63	146	927889	51.8118 ug/L	99
94)	1,4-Dichlorobenzene	17.75	146	916936	49.9970 ug/L	98
95)	n-Butylbenzene	17.96	91	1651273	47.8924 ug/L	99
96)	1,2-Dichlorobenzene	18.25	146	751378	46.8171 ug/L	99
97)	1,2-Dibromo-3-Chloropropan	19.24	75	47359	45.4928 ug/L	97
98)	1,2,4-Trichlorobenzene	20.39	180	596224	46.7798 ug/L	100
99)	Hexachlorobutadiene	20.55	225	334464	44.5971 ug/L	99
100)	Naphthalene	20.76	128	884667	47.0742 ug/L	99
101)	1,2,3-Trichlorobenzene	21.07	180	513239	46.1140 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M403129.D 8260WTR.M Fri Feb 20 13:41:32 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\022015\8M403129.D Vial: 3
Acq On : 20 Feb 2015 13:19 Operator: TMB
Sample : WG512985-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD68957 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 20 13:41 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration

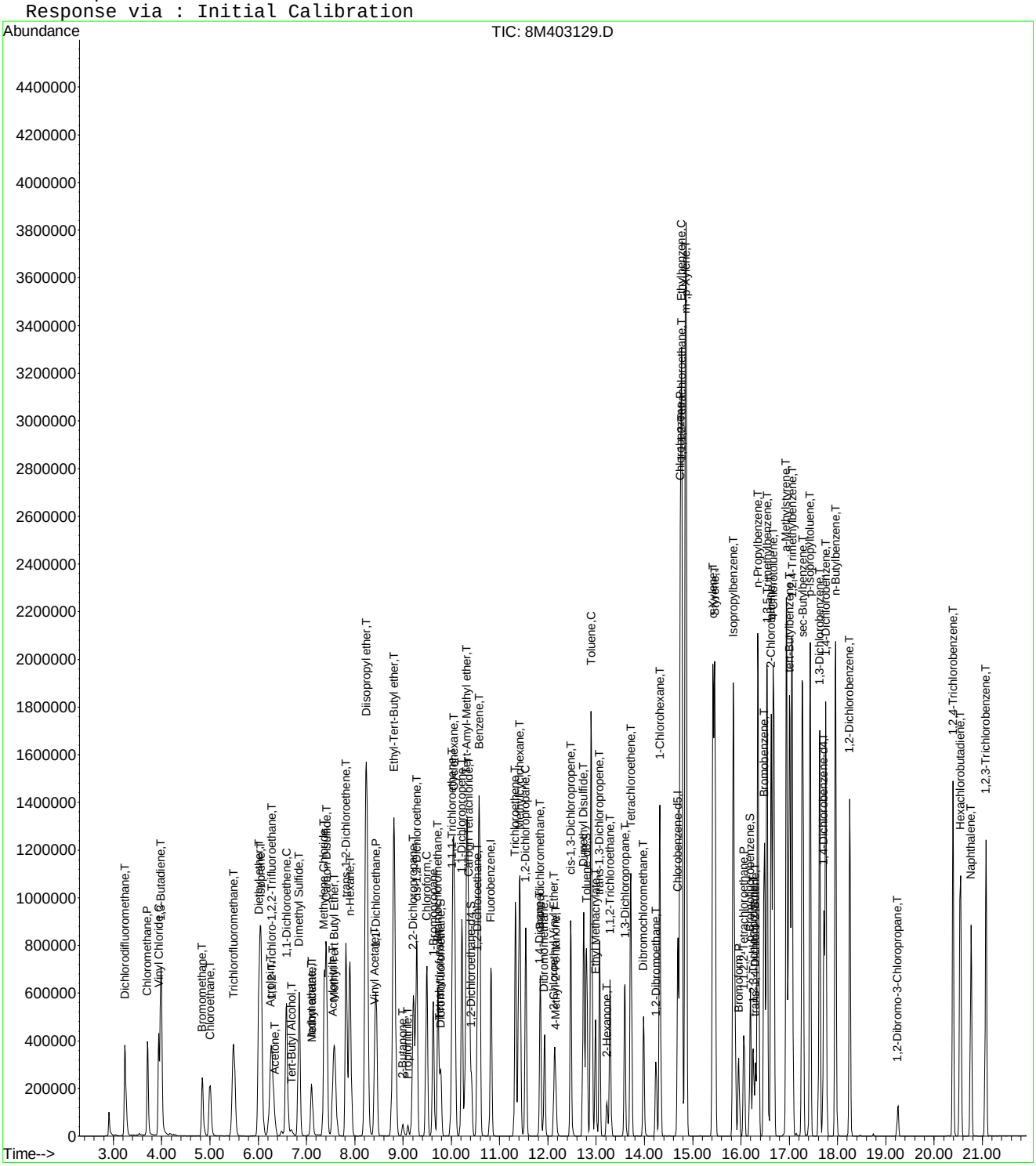

8M403129.D 8260WTR.M Fri Feb 20 13:41:33 2015 Page 3

Continuing Calibration Area and RT check

Instrument: HPMS8
Initial cal date: 6 Feb 2015 18:53
CCV date: 20 Feb 2015 13:19
CCV Filename: 8M403129.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	749967	10.83	559024	14.69	298746	17.72
CCV	877243	10.82	610334	14.69	308495	17.71

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\022015\8M403129.D Vial: 3
Acq On : 20 Feb 2015 13:19 Operator: TMB
Sample : WG512985-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD68957 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	117	-0.02
2	T	Dichlorodifluoromethane	0.4005	0.3106	22.4	81	0.00
3	P	Chloromethane	0.3465	0.3069	11.4	102	0.00
4	C	Vinyl Chloride	0.3410	0.3028	11.2	99	0.00
5	T	1,3-Butadiene	0.2579	0.2647	-2.6	107	0.00
6	T	Bromomethane	0.1314	0.1495	-13.8	128	0.00
7	T	Chloroethane	0.2108	0.1939	8.0	103	0.00
8	T	Trichlorofluoromethane	0.4729	0.4041	14.6	97	0.00
9	T	Diethyl ether	0.1729	0.1605	7.1	108	0.00
10	T	Isoprene	0.3663	0.3606	1.6	109	0.00
11	T	Acrolein	0.0199	0.0182	8.5	110	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2672	0.2412	9.7	103	0.00
13	T	Acetone	0.0379	0.0336	11.2	98	0.00
14	C	1,1-Dichloroethene	0.4297	0.3773	12.2	100	0.00
15	T	Tert-Butyl Alcohol	0.0080	0.0086	-7.5	129	-0.02
16	T	Dimethyl Sulfide	0.2864	0.2780	2.9	109	0.00
17	T	Iodomethane	0.1376	0.1412	-2.6	142	0.00
18	T	Methyl acetate	0.1575	0.1185	24.8	89	0.00
19	T	Methylene Chloride	0.2687	0.2482	7.6	108	0.00
20	T	Carbon Disulfide	0.8873	0.8666	2.3	110	0.00
21	T	Acrylonitrile	0.0553	0.0529	4.4	107	0.00
22	T	Methyl Tert Butyl Ether	0.4672	0.4445	4.8	106	0.00
23	T	trans-1,2-Dichloroethene	0.4139	0.3746	9.5	104	0.00
24	T	n-Hexane	0.3632	0.3698	-1.8	114	0.00
25	T	Diisopropyl ether	0.8573	0.8294	3.3	109	0.00
26	T	Vinyl Acetate	0.1182	0.2698	-128.3#	261#	0.00
27	P	1,1-Dichloroethane	0.5201	0.4743	8.8	103	0.00
28	T	Ethyl-Tert-Butyl ether	0.6873	0.6751	1.8	111	0.00
29	T	2-Butanone	0.0564	0.0520	7.7	108	0.00
30	T	Propionitrile	0.0187	0.0175	6.3	109	0.00
31	T	2,2-Dichloropropane	0.3839	0.3888	-1.3	117	0.00
32	T	cis-1,2-Dichloroethene	0.2860	0.2680	6.3	108	0.00
33	C	Chloroform	0.4940	0.4385	11.2	102	0.00
34		1-Bromopropane	0.0515	0.0539	-4.7	111	0.00
35	T	Bromochloromethane	0.1431	0.1370	4.2	106	-0.02
36	T	Tetrahydrofuran	0.0393	0.0355	9.7	106	0.00
37	S	Dibromofluoromethane	0.2631	0.2359	10.3	105	0.00
38	T	1,1,1-Trichloroethane	0.4304	0.3838	10.8	100	-0.02
39	T	Cyclohexane	0.4631	0.4663	-0.7	110	-0.02
40	T	1,1-Dichloropropene	0.3715	0.3522	5.2	104	0.00
41	T	Tert-Amyl-Methyl ether	0.5170	0.5064	2.1	111	0.00
42	T	Carbon Tetrachloride	0.3690	0.3332	9.7	100	-0.02
43	S	1,2-Dichloroethane-d4	0.2758	0.2248	18.5	98	-0.02
44		Heptane	0.0000	0.0000	0.0	0#	-2.67#
45	T	1,2-Dichloroethane	0.3264	0.2836	13.1	98	0.00
46	T	Benzene	1.0165	0.9745	4.1	106	0.00
47	T	Trichloroethene	0.2557	0.2383	6.8	102	-0.02
48	T	Methylcyclohexane	0.4167	0.4076	2.2	110	0.00
49	C	1,2-Dichloropropane	0.2764	0.2634	4.7	105	0.00
50	T	Bromodichloromethane	0.3495	0.3230	7.6	102	0.00
51	T	1,4-Dioxane	0.0011	0.0012	-11.2	137	0.00
52	T	Dibromomethane	0.1305	0.1151	11.8	101	-0.02
53	T	2-Chloroethyl Vinyl Ether	0.1050	0.1048	0.2	111	-0.02
54	T	4-Methyl-2-Pentanone	0.0471	0.0455	3.4	110	-0.02

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\022015\8M403129.D Vial: 3
Acq On : 20 Feb 2015 13:19 Operator: TMB
Sample : WG512985-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD68957 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.3654	0.3671	-0.5	107	-0.02
56	T	Dimethyl Disulfide	0.3555	0.2057	42.1#	112	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	109	0.00
58	S	Toluene-d8	1.1877	1.1947	-0.6	107	0.00
59	C	Toluene	1.3478	1.4182	-5.2	106	-0.02
60	T	Ethyl Methacrylate	0.2576	0.2919	-13.3	115	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.27#
62	T	trans-1,3-Dichloropropene	0.4124	0.4365	-5.8	106	0.00
63	T	1,1,2-Trichloroethane	0.2140	0.2123	0.8	102	-0.02
64	T	2-Hexanone	0.0553	0.0577	-4.2	112	0.00
65	T	1,3-Dichloropropane	0.3878	0.3959	-2.1	106	0.00
66	T	Tetrachloroethene	0.2910	0.2909	0.0	105	0.00
67	T	Dibromochloromethane	0.2734	0.2821	-3.2	104	-0.02
68	T	1,2-Dibromoethane	0.2127	0.2178	-2.4	104	0.00
69	T	1-Chlorohexane	0.4559	0.5050	-10.8	112	0.00
70	P	Chlorobenzene	0.9113	0.9156	-0.5	105	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3112	0.3231	-3.8	104	0.00
72	C	Ethylbenzene	0.5214	0.5155	1.1	102	-0.02
73	T	m-,p-Xylene	0.5938	0.6081	-2.4	103	-0.02
74	T	o-Xylene	0.5843	0.6023	-3.1	103	-0.02
75	T	Styrene	0.9372	1.0089	-7.7	104	0.00
76	P	Bromoform	0.1687	0.1664	1.4	102	0.00
77	T	Isopropylbenzene	1.4598	1.4717	-0.8	97	-0.02
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	103	-0.02
79	P	1,1,2,2-Tetrachloroethane	0.4544	0.4632	-1.9	105	-0.02
80	S	p-Bromofluorobenzene	0.8966	0.8814	1.7	101	0.00
81	T	1,2,3-Trichloropropane	0.1270	0.1263	0.6	101	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1338	0.1397	-4.4	96	-0.02
83	T	n-Propylbenzene	3.6553	3.7647	-3.0	100	-0.02
84	T	Bromobenzene	0.7074	0.7254	-2.6	103	-0.02
85	T	1,3,5-Trimethylbenzene	2.4401	2.5774	-5.6	100	0.00
86	T	2-Chlorotoluene	2.2290	2.3290	-4.5	103	0.00
87	T	4-Chlorotoluene	2.2705	2.2765	-0.3	98	-0.02
88	T	a-Methylstyrene	1.4060	1.5612	-11.0	109	-0.02
89	T	tert-Butylbenzene	0.5317	0.5476	-3.0	104	0.00
90	T	1,2,4-Trimethylbenzene	2.5074	2.6867	-7.1	101	0.00
91	T	sec-Butylbenzene	3.2253	3.2709	-1.4	99	0.00
92	T	p-Isopropyltoluene	2.5495	2.6446	-3.7	100	0.00
93	T	1,3-Dichlorobenzene	1.4513	1.5039	-3.6	104	0.00
94	T	1,4-Dichlorobenzene	1.4862	1.4861	0.0	103	-0.02
95	T	n-Butylbenzene	2.7941	2.6763	4.2	96	0.00
96	T	1,2-Dichlorobenzene	1.3006	1.2178	6.4	95	-0.02
97	T	1,2-Dibromo-3-Chloropropane	0.0844	0.0768	9.0	90	-0.02
98	T	1,2,4-Trichlorobenzene	1.0329	0.9663	6.4	93	-0.02
99	T	Hexachlorobutadiene	0.6078	0.5421	10.8	90	0.00
100	T	Naphthalene	1.5230	1.4338	5.9	92	-0.02
101	T	1,2,3-Trichlorobenzene	0.9019	0.8318	7.8	92	-0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\022015\8M403129.D Vial: 3
Acq On : 20 Feb 2015 13:19 Operator: TMB
Sample : WG512985-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD68957 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	117	-0.02
2	T	Dichlorodifluoromethane	50.0000	38.7815	22.4	81	0.00
3	P	Chloromethane	50.0000	44.2858	11.4	102	0.00
4	C	Vinyl Chloride	50.0000	44.3976	11.2	99	0.00
5	T	1,3-Butadiene	50.0000	47.6594	4.7	107	0.00
6	T	Bromomethane	50.0000	53.0557	-6.1	128	0.00
7	T	Chloroethane	50.0000	45.9994	8.0	103	0.00
8	T	Trichlorofluoromethane	50.0000	42.7204	14.6	97	0.00
9	T	Diethyl ether	100.0000	92.8693	7.1	108	0.00
10	T	Isoprene	50.0000	49.2193	1.6	109	0.00
11	T	Acrolein	50.0000	45.7190	8.6	110	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	45.1474	9.7	103	0.00
13	T	Acetone	50.0000	44.4087	11.2	98	0.00
14	C	1,1-Dichloroethene	50.0000	43.9077	12.2	100	0.00
15	T	Tert-Butyl Alcohol	200.0000	214.9253	-7.5	129	-0.02
16	T	Dimethyl Sulfide	50.0000	48.5372	2.9	109	0.00
17	T	Iodomethane	50.0000	52.8948	-5.8	142	0.00
18	T	Methyl acetate	50.0000	37.5993	24.8	89	0.00
19	T	Methylene Chloride	50.0000	46.1920	7.6	108	0.00
20	T	Carbon Disulfide	50.0000	48.8317	2.3	110	0.00
21	T	Acrylonitrile	50.0000	47.7966	4.4	107	0.00
22	T	Methyl Tert Butyl Ether	50.0000	47.5780	4.8	106	0.00
23	T	trans-1,2-Dichloroethene	50.0000	45.2613	9.5	104	0.00
24	T	n-Hexane	50.0000	50.9010	-1.8	114	0.00
25	T	Diisopropyl ether	100.0000	96.7451	3.3	109	0.00
26	T	Vinyl Acetate	50.0000	114.1485	-128.3#	261	0.00
27	P	1,1-Dichloroethane	50.0000	45.6026	8.8	103	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.2212	1.8	111	0.00
29	T	2-Butanone	50.0000	46.1196	7.8	108	0.00
30	T	Propionitrile	100.0000	93.7284	6.3	109	0.00
31	T	2,2-Dichloropropane	50.0000	50.6386	-1.3	117	0.00
32	T	cis-1,2-Dichloroethene	50.0000	46.8516	6.3	108	0.00
33	C	Chloroform	50.0000	44.3815	11.2	102	0.00
34		1-Bromopropane	50.0000	52.3369	-4.7	111	0.00
35	T	Bromochloromethane	50.0000	47.8773	4.2	106	-0.02
36	T	Tetrahydrofuran	100.0000	90.2540	9.7	106	0.00
37	S	Dibromofluoromethane	25.0000	22.4176	10.3	105	0.00
38	T	1,1,1-Trichloroethane	50.0000	44.5864	10.8	100	-0.02
39	T	Cyclohexane	50.0000	50.3450	-0.7	110	-0.02
40	T	1,1-Dichloropropene	50.0000	47.3919	5.2	104	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	97.9503	2.0	111	0.00
42	T	Carbon Tetrachloride	50.0000	45.1452	9.7	100	-0.02
43	S	1,2-Dichloroethane-d4	25.0000	20.3786	18.5	98	-0.02
44		Heptane	-1.0000	0.0000	0.0	0	-2.67#
45	T	1,2-Dichloroethane	50.0000	43.4503	13.1	98	0.00
46	T	Benzene	50.0000	47.9348	4.1	106	0.00
47	T	Trichloroethene	50.0000	46.6056	6.8	102	-0.02
48	T	Methylcyclohexane	50.0000	48.9149	2.2	110	0.00
49	C	1,2-Dichloropropane	50.0000	47.6407	4.7	105	0.00
50	T	Bromodichloromethane	50.0000	46.1999	7.6	102	0.00
51	T	1,4-Dioxane	200.0000	222.3266	-11.2	137	0.00
52	T	Dibromomethane	50.0000	44.0993	11.8	101	-0.02
53	T	2-Chloroethyl Vinyl Ether	50.0000	49.8943	0.2	111	-0.02
54	T	4-Methyl-2-Pentanone	50.0000	48.2782	3.4	110	-0.02

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\022015\8M403129.D Vial: 3
Acq On : 20 Feb 2015 13:19 Operator: TMB
Sample : WG512985-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD68957 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	50.2344	-0.5	107	-0.02
56	T	Dimethyl Disulfide	50.0000	30.2510	39.5#	112	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	109	0.00
58	S	Toluene-d8	25.0000	25.1479	-0.6	107	0.00
59	C	Toluene	50.0000	52.6116	-5.2	106	-0.02
60	T	Ethyl Methacrylate	50.0000	56.6605	-13.3	115	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.27#
62	T	trans-1,3-Dichloropropene	50.0000	52.9211	-5.8	106	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.6009	0.8	102	-0.02
64	T	2-Hexanone	50.0000	52.0889	-4.2	112	0.00
65	T	1,3-Dichloropropane	50.0000	51.0373	-2.1	106	0.00
66	T	Tetrachloroethene	50.0000	49.9872	0.0	105	0.00
67	T	Dibromochloromethane	50.0000	51.5955	-3.2	104	-0.02
68	T	1,2-Dibromoethane	50.0000	51.1985	-2.4	104	0.00
69	T	1-Chlorohexane	50.0000	55.3875	-10.8	112	0.00
70	P	Chlorobenzene	50.0000	50.2343	-0.5	105	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	51.9125	-3.8	104	0.00
72	C	Ethylbenzene	50.0000	49.4342	1.1	102	-0.02
73	T	m-,p-Xylene	100.0000	102.4064	-2.4	103	-0.02
74	T	o-Xylene	50.0000	51.5448	-3.1	103	-0.02
75	T	Styrene	50.0000	53.8291	-7.7	104	0.00
76	P	Bromoform	50.0000	49.3114	1.4	102	0.00
77	T	Isopropylbenzene	50.0000	50.4091	-0.8	97	-0.02
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	103	-0.02
79	P	1,1,2,2-Tetrachloroethane	50.0000	50.9663	-1.9	105	-0.02
80	S	p-Bromofluorobenzene	25.0000	24.5749	1.7	101	0.00
81	T	1,2,3-Trichloropropane	50.0000	49.6960	0.6	101	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	45.2135	9.6	96	-0.02
83	T	n-Propylbenzene	50.0000	51.4965	-3.0	100	-0.02
84	T	Bromobenzene	50.0000	51.2768	-2.6	103	-0.02
85	T	1,3,5-Trimethylbenzene	50.0000	52.8134	-5.6	100	0.00
86	T	2-Chlorotoluene	50.0000	52.2424	-4.5	103	0.00
87	T	4-Chlorotoluene	50.0000	50.1330	-0.3	98	-0.02
88	T	a-Methylstyrene	50.0000	55.5203	-11.0	109	-0.02
89	T	tert-Butylbenzene	50.0000	51.4887	-3.0	104	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	53.5746	-7.1	101	0.00
91	T	sec-Butylbenzene	50.0000	50.7068	-1.4	99	0.00
92	T	p-Isopropyltoluene	50.0000	51.8638	-3.7	100	0.00
93	T	1,3-Dichlorobenzene	50.0000	51.8118	-3.6	104	0.00
94	T	1,4-Dichlorobenzene	50.0000	49.9969	0.0	103	-0.02
95	T	n-Butylbenzene	50.0000	47.8924	4.2	96	0.00
96	T	1,2-Dichlorobenzene	50.0000	46.8171	6.4	95	-0.02
97	T	1,2-Dibromo-3-Chloropropane	50.0000	45.4928	9.0	90	-0.02
98	T	1,2,4-Trichlorobenzene	50.0000	46.7798	6.4	93	-0.02
99	T	Hexachlorobutadiene	50.0000	44.5971	10.8	90	0.00
100	T	Naphthalene	50.0000	47.0742	5.9	92	-0.02
101	T	1,2,3-Trichlorobenzene	50.0000	46.1140	7.8	92	-0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M403129.D 8260WTR.M Fri Feb 20 13:51:11 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\022315\8M403163.D Vial: 3
Acq On : 23 Feb 2015 12:34 Operator: TMB
Sample : WG513148-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD68957 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 23 12:56:26 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	747016	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	498711	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.71	152	257743	25.00 ug/L	-0.02

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	180123	22.9112 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 91.64%		
43) 1,2-Dichloroethane-d4	10.42	65	171354	20.7903 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 83.16%		
58) Toluene-d8	12.80	98	618615	26.1108 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.44%		
80) p-Bromofluorobenzene	16.19	95	234628	25.3819 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.52%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.25	85	502134	41.9589 ug/L	99
3) Chloromethane	3.71	50	524046	50.6153 ug/L	100
4) Vinyl Chloride	3.94	62	541113	53.1050 ug/L	99
5) 1,3-Butadiene	3.99	54	468121	57.2397 ug/L	97
6) Bromomethane	4.84	94	244089	57.5673 ug/L	99
7) Chloroethane	5.00	64	318478	50.5639 ug/L	99
8) Trichlorofluoromethane	5.49	101	688111	48.6928 ug/L	100
9) Diethyl ether	6.02	59	498656	96.5484 ug/L	100
10) Isoprene	6.06	67	589738	53.8763 ug/L	99
11) Acrolein	6.25	56	28512	47.8176 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	410613	51.4365 ug/L	99
13) Acetone	6.36	43	54402	48.0602 ug/L	96
14) 1,1-Dichloroethene	6.59	61	639391	49.7994 ug/L	98
15) Tert-Butyl Alcohol	6.69	59	47854	201.1227 ug/L	96
16) Dimethyl Sulfide	6.84	62	444301	51.9205 ug/L	97
17) Iodomethane	7.10	142	231745	56.4306 ug/L	92
18) Methyl acetate	7.11	43	190084	40.3838 ug/L	98
19) Methylene Chloride	7.37	84	394534	49.1385 ug/L	99
20) Carbon Disulfide	7.41	76	1396141	52.6564 ug/L	100
21) Acrylonitrile	7.55	53	80233	48.5416 ug/L	100
22) Methyl Tert Butyl Ether	7.58	73	687929	49.2821 ug/L	99
23) trans-1,2-Dichloroethene	7.82	61	625496	50.5799 ug/L	100
24) n-Hexane	7.90	57	625569	57.6404 ug/L	100
25) Diisopropyl ether	8.24	45	2662309	103.9249 ug/L	99
26) Vinyl Acetate	8.41	43	419167	118.6904 ug/L	99
27) 1,1-Dichloroethane	8.44	63	776331	49.9556 ug/L	99
28) Ethyl-Tert-Butyl ether	8.81	59	2083712	101.4634 ug/L	100
29) 2-Butanone	8.99	43	80741	47.9144 ug/L	100
30) Propionitrile	9.10	54	51635	92.6535 ug/L	98
31) 2,2-Dichloropropane	9.22	77	629593	54.8788 ug/L	99
32) cis-1,2-Dichloroethene	9.28	96	429736	50.2794 ug/L	99
33) Chloroform	9.49	83	714838	48.4246 ug/L	100
34) 1-Bromopropane	9.63	122	81527	52.9349 ug/L	95
35) Bromochloromethane	9.72	130	206073	48.2027 ug/L	97
36) Tetrahydrofuran	9.75	42	108332	92.1707 ug/L	99
38) 1,1,1-Trichloroethane	10.03	97	624693	48.5792 ug/L	100
39) Cyclohexane	10.06	56	748628	54.0968 ug/L	99
40) 1,1-Dichloropropene	10.21	75	540286	48.6653 ug/L	100
41) Tert-Amyl-Methyl ether	10.32	73	1418589	91.8235 ug/L	98
42) Carbon Tetrachloride	10.37	117	518997	47.0644 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M403163.D 8260WTR.M Mon Feb 23 12:56:27 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\022315\8M403163.D Vial: 3
Acq On : 23 Feb 2015 12:34 Operator: TMB
Sample : WG513148-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD68957 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 23 12:56:26 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.54	62	437090	44.8170	ug/L		99
46)	Benzene	10.58	78	1471779	48.4579	ug/L		100
47)	Trichloroethene	11.33	130	360833	47.2279	ug/L		99
48)	Methylcyclohexane	11.41	83	631102	50.6882	ug/L		99
49)	1,2-Dichloropropane	11.54	63	393893	47.6915	ug/L		100
50)	Bromodichloromethane	11.84	83	487563	46.6840	ug/L		100
51)	1,4-Dioxane	11.84	88	6042	188.3550	ug/L		98
52)	Dibromomethane	11.93	93	172206	44.1794	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.14	63	147475	47.0095	ug/L		99
54)	4-Methyl-2-Pentanone	12.17	58	61500	43.6959	ug/L		98
55)	cis-1,3-Dichloropropene	12.48	75	539623	49.4218	ug/L		100
56)	Dimethyl Disulfide	12.74	79	296725	29.3701	ug/L		99
59)	Toluene	12.90	91	1507238	56.0613	ug/L		100
60)	Ethyl Methacrylate	12.99	69	287768	56.0014	ug/L		98
62)	trans-1,3-Dichloropropene	13.07	75	460909	56.0291	ug/L		99
63)	1,1,2-Trichloroethane	13.29	97	220761	51.7216	ug/L		99
64)	2-Hexanone	13.22	58	58061	52.5895	ug/L	#	94
65)	1,3-Dichloropropane	13.60	76	399074	51.5814	ug/L		98
66)	Tetrachloroethene	13.72	164	309095	53.2415	ug/L		99
67)	Dibromochloromethane	13.98	129	282044	51.7172	ug/L		98
68)	1,2-Dibromoethane	14.24	107	214724	50.6077	ug/L		100
69)	1-Chlorohexane	14.32	91	534680	58.7960	ug/L		99
70)	Chlorobenzene	14.74	112	946596	52.0701	ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.77	131	335533	54.0437	ug/L		99
72)	Ethylbenzene	14.76	106	549201	52.8033	ug/L		98
73)	m-,p-Xylene	14.86	106	1312009	110.7530	ug/L		100
74)	o-Xylene	15.42	106	637810	54.7209	ug/L		100
75)	Styrene	15.46	104	1061715	56.7914	ug/L		99
76)	Bromoform	15.95	173	166699	49.5387	ug/L		99
77)	Isopropylbenzene	15.85	105	1639810	56.3127	ug/L		100
79)	1,1,2,2-Tetrachloroethane	16.06	83	240678	51.3756	ug/L		98
81)	1,2,3-Trichloropropane	16.25	110	63139	48.2075	ug/L		100
82)	trans-1,4-Dichloro-2-Buten	16.29	53	74509	46.7472	ug/L		97
83)	n-Propylbenzene	16.36	91	2088411	55.4173	ug/L		100
84)	Bromobenzene	16.48	156	375227	51.4532	ug/L		97
85)	1,3,5-Trimethylbenzene	16.54	105	1420647	56.4711	ug/L		100
86)	2-Chlorotoluene	16.62	91	1251268	54.4485	ug/L		100
87)	4-Chlorotoluene	16.68	91	1260048	53.8292	ug/L		100
88)	a-Methylstyrene	16.95	118	791844	54.6285	ug/L		100
89)	tert-Butylbenzene	17.01	134	284620	51.9176	ug/L		99
90)	1,2,4-Trimethylbenzene	17.06	105	1462815	56.5865	ug/L		100
91)	sec-Butylbenzene	17.28	105	1806242	54.3195	ug/L		99
92)	p-Isopropyltoluene	17.43	119	1454626	55.3408	ug/L		100
93)	1,3-Dichlorobenzene	17.63	146	791197	52.8785	ug/L		99
94)	1,4-Dichlorobenzene	17.76	146	773366	50.4720	ug/L		98
95)	n-Butylbenzene	17.96	91	1528732	53.0689	ug/L		99
96)	1,2-Dichlorobenzene	18.26	146	677741	50.5442	ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.25	75	42913	49.3390	ug/L		98
98)	1,2,4-Trichlorobenzene	20.39	180	528904	49.6691	ug/L		100
99)	Hexachlorobutadiene	20.54	225	295729	47.1968	ug/L		100
100)	Naphthalene	20.76	128	753963	48.0191	ug/L		100
101)	1,2,3-Trichlorobenzene	21.07	180	448868	48.2718	ug/L		99

(#) = qualifier out of range (m) = manual integration
8M403163.D 8260WTR.M Mon Feb 23 12:56:27 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\022315\8M403163.D Vial: 3
Acq On : 23 Feb 2015 12:34 Operator: TMB
Sample : WG513148-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD68957 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 23 12:56 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration

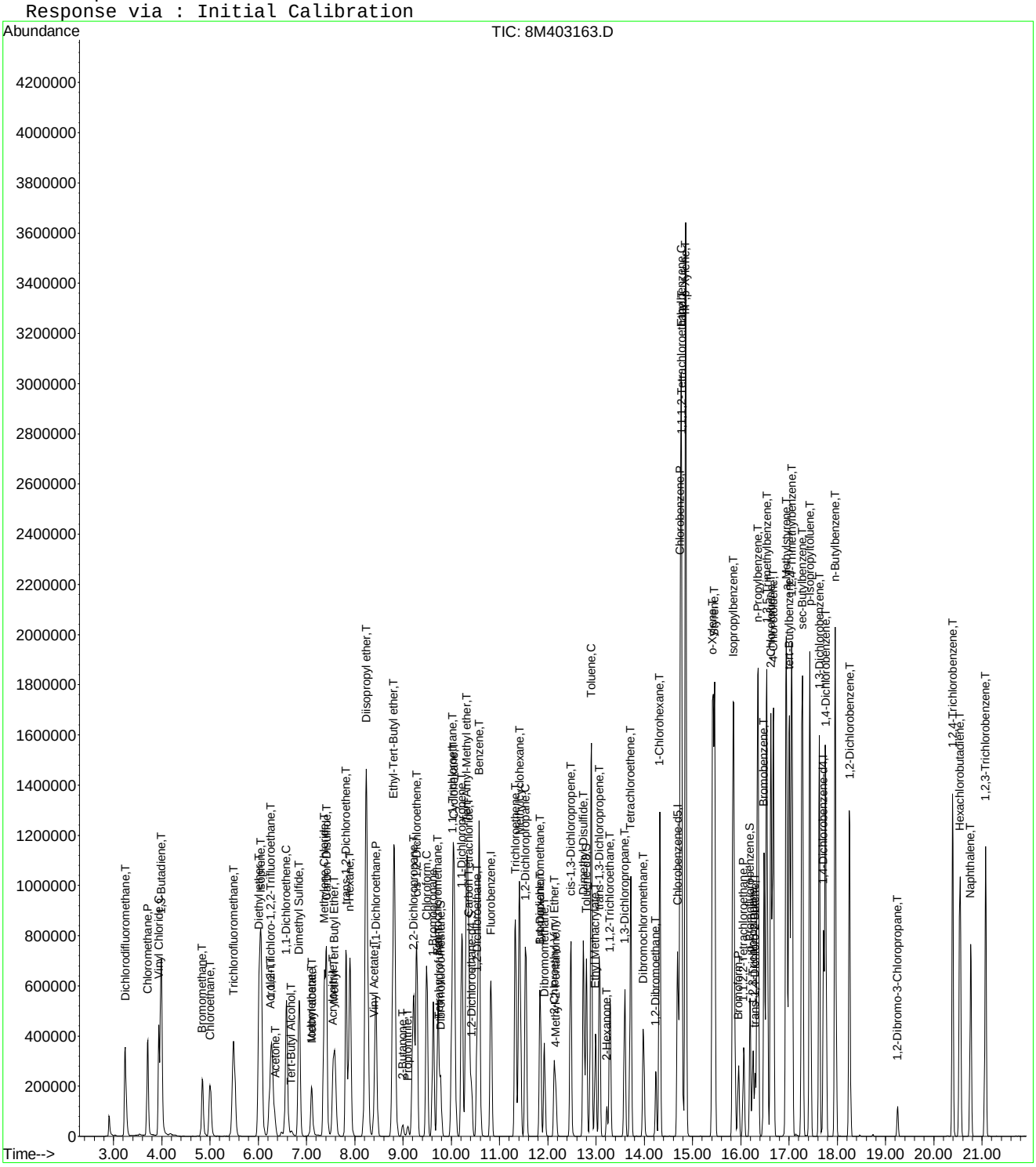

Continuing Calibration Area and RT check

Instrument: HPMS8
Initial cal date: 6 Feb 2015 18:53
CCV date: 23 Feb 2015 12:34
CCV Filename: 8M403163.D

	Fluorobenzene		**Chlorobenzene-d5**		**1,4-Dichlorobenzene-d4**	
	Amount	RT	Amount	RT	Amount	RT
InitCal	749967	10.83	559024	14.69	298746	17.72
CCV	747016	10.82	498711	14.69	257743	17.71

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\022315\8M403163.D Vial: 3
Acq On : 23 Feb 2015 12:34 Operator: TMB
Sample : WG513148-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD68957 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	100	-0.01
2	T	Dichlorodifluoromethane	0.4005	0.3361	16.1	75	0.00
3	P	Chloromethane	0.3465	0.3508	-1.2	99	0.01
4	C	Vinyl Chloride	0.3410	0.3622	-6.2	101	0.00
5	T	1,3-Butadiene	0.2579	0.3133	-21.5	108	0.01
6	T	Bromomethane	0.1314	0.1634	-24.4	119	0.00
7	T	Chloroethane	0.2108	0.2132	-1.1	97	0.00
8	T	Trichlorofluoromethane	0.4729	0.4606	2.6	94	0.00
9	T	Diethyl ether	0.1729	0.1669	3.5	95	-0.01
10	T	Isoprene	0.3663	0.3947	-7.8	102	0.00
11	T	Acrolein	0.0199	0.0191	4.4	98	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2672	0.2748	-2.9	100	-0.01
13	T	Acetone	0.0379	0.0364	3.9	90	0.00
14	C	1,1-Dichloroethene	0.4297	0.4280	0.4	96	0.00
15	T	Tert-Butyl Alcohol	0.0080	0.0080	-0.6	103	-0.02
16	T	Dimethyl Sulfide	0.2864	0.2974	-3.8	100	-0.01
17	T	Iodomethane	0.1376	0.1551	-12.7	133	0.00
18	T	Methyl acetate	0.1575	0.1272	19.2	82	0.00
19	T	Methylene Chloride	0.2687	0.2641	1.7	98	0.00
20	T	Carbon Disulfide	0.8873	0.9345	-5.3	101	-0.01
21	T	Acrylonitrile	0.0553	0.0537	2.9	93	-0.01
22	T	Methyl Tert Butyl Ether	0.4672	0.4605	1.4	93	-0.01
23	T	trans-1,2-Dichloroethene	0.4139	0.4187	-1.2	99	-0.01
24	T	n-Hexane	0.3632	0.4187	-15.3	110	-0.01
25	T	Diisopropyl ether	0.8573	0.8910	-3.9	100	-0.01
26	T	Vinyl Acetate	0.1182	0.2806	-137.4#	231#	-0.01
27	P	1,1-Dichloroethane	0.5201	0.5196	0.1	96	-0.01
28	T	Ethyl-Tert-Butyl ether	0.6873	0.6974	-1.5	98	-0.01
29	T	2-Butanone	0.0564	0.0540	4.2	96	-0.01
30	T	Propionitrile	0.0187	0.0173	7.3	91	-0.01
31	T	2,2-Dichloropropane	0.3839	0.4214	-9.8	108	0.00
32	T	cis-1,2-Dichloroethene	0.2860	0.2876	-0.6	99	-0.01
33	C	Chloroform	0.4940	0.4785	3.2	95	-0.01
34		1-Bromopropane	0.0515	0.0546	-5.9	95	0.00
35	T	Bromochloromethane	0.1431	0.1379	3.6	91	-0.02
36	T	Tetrahydrofuran	0.0393	0.0362	7.8	92	0.00
37	S	Dibromofluoromethane	0.2631	0.2411	8.4	91	-0.01
38	T	1,1,1-Trichloroethane	0.4304	0.4181	2.8	93	-0.01
39	T	Cyclohexane	0.4631	0.5011	-8.2	100	-0.01
40	T	1,1-Dichloropropene	0.3715	0.3616	2.7	91	-0.01
41	T	Tert-Amyl-Methyl ether	0.5170	0.4748	8.2	89	-0.01
42	T	Carbon Tetrachloride	0.3690	0.3474	5.9	89	-0.01
43	S	1,2-Dichloroethane-d4	0.2758	0.2294	16.8	85	-0.01
44		Heptane	0.0000	0.0000	0.0	0#	-2.67#
45	T	1,2-Dichloroethane	0.3264	0.2926	10.4	86	-0.01
46	T	Benzene	1.0165	0.9851	3.1	91	-0.01
47	T	Trichloroethene	0.2557	0.2415	5.5	88	-0.01
48	T	Methylcyclohexane	0.4167	0.4224	-1.4	97	-0.01
49	C	1,2-Dichloropropane	0.2764	0.2636	4.6	90	-0.01
50	T	Bromodichloromethane	0.3495	0.3263	6.6	88	-0.01
51	T	1,4-Dioxane	0.0011	0.0010	5.6	98	0.00
52	T	Dibromomethane	0.1305	0.1153	11.6	86	-0.01
53	T	2-Chloroethyl Vinyl Ether	0.1050	0.0987	6.0	89	-0.01
54	T	4-Methyl-2-Pentanone	0.0471	0.0412	12.6	85	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\022315\8M403163.D Vial: 3
Acq On : 23 Feb 2015 12:34 Operator: TMB
Sample : WG513148-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD68957 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.3654	0.3612	1.2	89	-0.01
56	T	Dimethyl Disulfide	0.3555	0.1986	44.1#	92	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	89	-0.01
58	S	Toluene-d8	1.1877	1.2404	-4.4	91	-0.01
59	C	Toluene	1.3478	1.5111	-12.1	92	-0.01
60	T	Ethyl Methacrylate	0.2576	0.2885	-12.0	93	-0.01
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.27#
62	T	trans-1,3-Dichloropropene	0.4124	0.4621	-12.1	92	-0.01
63	T	1,1,2-Trichloroethane	0.2140	0.2213	-3.4	87	-0.02
64	T	2-Hexanone	0.0553	0.0582	-5.2	93	-0.01
65	T	1,3-Dichloropropane	0.3878	0.4001	-3.2	87	-0.01
66	T	Tetrachloroethene	0.2910	0.3099	-6.5	92	-0.01
67	T	Dibromochloromethane	0.2734	0.2828	-3.4	85	-0.02
68	T	1,2-Dibromoethane	0.2127	0.2153	-1.2	84	-0.01
69	T	1-Chlorohexane	0.4559	0.5361	-17.6	97	-0.01
70	P	Chlorobenzene	0.9113	0.9490	-4.1	89	-0.01
71	T	1,1,1,2-Tetrachloroethane	0.3112	0.3364	-8.1	89	-0.01
72	C	Ethylbenzene	0.5214	0.5506	-5.6	89	-0.02
73	T	m-,p-Xylene	0.5938	0.6577	-10.8	91	-0.02
74	T	o-Xylene	0.5843	0.6395	-9.4	89	-0.02
75	T	Styrene	0.9372	1.0645	-13.6	89	-0.01
76	P	Bromoform	0.1687	0.1671	0.9	83	-0.01
77	T	Isopropylbenzene	1.4598	1.6441	-12.6	89	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	86	-0.02
79	P	1,1,2,2-Tetrachloroethane	0.4544	0.4669	-2.8	88	-0.02
80	S	p-Bromofluorobenzene	0.8966	0.9103	-1.5	87	-0.01
81	T	1,2,3-Trichloropropane	0.1270	0.1225	3.6	82	-0.01
82	T	trans-1,4-Dichloro-2-Butene	0.1338	0.1445	-8.0	83	-0.02
83	T	n-Propylbenzene	3.6553	4.0513	-10.8	90	0.00
84	T	Bromobenzene	0.7074	0.7279	-2.9	86	-0.02
85	T	1,3,5-Trimethylbenzene	2.4401	2.7559	-12.9	89	0.00
86	T	2-Chlorotoluene	2.2290	2.4274	-8.9	90	-0.01
87	T	4-Chlorotoluene	2.2705	2.4444	-7.7	88	-0.01
88	T	a-Methylstyrene	1.4060	1.5361	-9.3	89	-0.01
89	T	tert-Butylbenzene	0.5317	0.5521	-3.8	87	-0.01
90	T	1,2,4-Trimethylbenzene	2.5074	2.8377	-13.2	90	0.00
91	T	sec-Butylbenzene	3.2253	3.5040	-8.6	89	0.00
92	T	p-Isopropyltoluene	2.5495	2.8219	-10.7	89	0.00
93	T	1,3-Dichlorobenzene	1.4513	1.5349	-5.8	89	-0.01
94	T	1,4-Dichlorobenzene	1.4862	1.5003	-0.9	87	0.00
95	T	n-Butylbenzene	2.7941	2.9656	-6.1	89	-0.01
96	T	1,2-Dichlorobenzene	1.3006	1.3148	-1.1	86	-0.01
97	T	1,2-Dibromo-3-Chloropropane	0.0844	0.0833	1.3	81	0.00
98	T	1,2,4-Trichlorobenzene	1.0329	1.0260	0.7	83	-0.02
99	T	Hexachlorobutadiene	0.6078	0.5737	5.6	80	-0.01
100	T	Naphthalene	1.5230	1.4626	4.0	78	-0.02
101	T	1,2,3-Trichlorobenzene	0.9019	0.8708	3.5	81	-0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M403163.D 8260WTR.M Mon Feb 23 13:01:56 2015 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\022315\8M403163.D Vial: 3
Acq On : 23 Feb 2015 12:34 Operator: TMB
Sample : WG513148-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD68957 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	-0.01
2	T	Dichlorodifluoromethane	50.0000	41.9588	16.1	75	0.00
3	P	Chloromethane	50.0000	50.6153	-1.2	99	0.01
4	C	Vinyl Chloride	50.0000	53.1050	-6.2	101	0.00
5	T	1,3-Butadiene	50.0000	57.2396	-14.5	108	0.01
6	T	Bromomethane	50.0000	57.5673	-15.1	119	0.00
7	T	Chloroethane	50.0000	50.5639	-1.1	97	0.00
8	T	Trichlorofluoromethane	50.0000	48.6928	2.6	94	0.00
9	T	Diethyl ether	100.0000	96.5484	3.5	95	-0.01
10	T	Isoprene	50.0000	53.8762	-7.8	102	0.00
11	T	Acrolein	50.0000	47.8176	4.4	98	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	51.4365	-2.9	100	-0.01
13	T	Acetone	50.0000	48.0602	3.9	90	0.00
14	C	1,1-Dichloroethene	50.0000	49.7994	0.4	96	0.00
15	T	Tert-Butyl Alcohol	200.0000	201.1227	-0.6	103	-0.02
16	T	Dimethyl Sulfide	50.0000	51.9205	-3.8	100	-0.01
17	T	Iodomethane	50.0000	56.4306	-12.9	133	0.00
18	T	Methyl acetate	50.0000	40.3838	19.2	82	0.00
19	T	Methylene Chloride	50.0000	49.1384	1.7	98	0.00
20	T	Carbon Disulfide	50.0000	52.6564	-5.3	101	-0.01
21	T	Acrylonitrile	50.0000	48.5416	2.9	93	-0.01
22	T	Methyl Tert Butyl Ether	50.0000	49.2821	1.4	93	-0.01
23	T	trans-1,2-Dichloroethene	50.0000	50.5799	-1.2	99	-0.01
24	T	n-Hexane	50.0000	57.6404	-15.3	110	-0.01
25	T	Diisopropyl ether	100.0000	103.9249	-3.9	100	-0.01
26	T	Vinyl Acetate	50.0000	118.6904	-137.4#	231	-0.01
27	P	1,1-Dichloroethane	50.0000	49.9556	0.1	96	-0.01
28	T	Ethyl-Tert-Butyl ether	100.0000	101.4634	-1.5	98	-0.01
29	T	2-Butanone	50.0000	47.9143	4.2	96	-0.01
30	T	Propionitrile	100.0000	92.6535	7.3	91	-0.01
31	T	2,2-Dichloropropane	50.0000	54.8788	-9.8	108	0.00
32	T	cis-1,2-Dichloroethene	50.0000	50.2794	-0.6	99	-0.01
33	C	Chloroform	50.0000	48.4246	3.2	95	-0.01
34		1-Bromopropane	50.0000	52.9350	-5.9	95	0.00
35	T	Bromochloromethane	50.0000	48.2027	3.6	91	-0.02
36	T	Tetrahydrofuran	100.0000	92.1707	7.8	92	0.00
37	S	Dibromofluoromethane	25.0000	22.9112	8.4	91	-0.01
38	T	1,1,1-Trichloroethane	50.0000	48.5792	2.8	93	-0.01
39	T	Cyclohexane	50.0000	54.0968	-8.2	100	-0.01
40	T	1,1-Dichloropropene	50.0000	48.6653	2.7	91	-0.01
41	T	Tert-Amyl-Methyl ether	100.0000	91.8234	8.2	89	-0.01
42	T	Carbon Tetrachloride	50.0000	47.0644	5.9	89	-0.01
43	S	1,2-Dichloroethane-d4	25.0000	20.7903	16.8	85	-0.01
44		Heptane	-1.0000	0.0000	0.0	0	-2.67#
45	T	1,2-Dichloroethane	50.0000	44.8170	10.4	86	-0.01
46	T	Benzene	50.0000	48.4579	3.1	91	-0.01
47	T	Trichloroethene	50.0000	47.2279	5.5	88	-0.01
48	T	Methylcyclohexane	50.0000	50.6882	-1.4	97	-0.01
49	C	1,2-Dichloropropane	50.0000	47.6915	4.6	90	-0.01
50	T	Bromodichloromethane	50.0000	46.6840	6.6	88	-0.01
51	T	1,4-Dioxane	200.0000	188.3550	5.8	98	0.00
52	T	Dibromomethane	50.0000	44.1794	11.6	86	-0.01
53	T	2-Chloroethyl Vinyl Ether	50.0000	47.0095	6.0	89	-0.01
54	T	4-Methyl-2-Pentanone	50.0000	43.6959	12.6	85	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\022315\8M403163.D Vial: 3
Acq On : 23 Feb 2015 12:34 Operator: TMB
Sample : WG513148-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD68957 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	49.4218	1.2	89	-0.01
56	T	Dimethyl Disulfide	50.0000	29.3701	41.3#	92	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	89	-0.01
58	S	Toluene-d8	25.0000	26.1108	-4.4	91	-0.01
59	C	Toluene	50.0000	56.0613	-12.1	92	-0.01
60	T	Ethyl Methacrylate	50.0000	56.0014	-12.0	93	-0.01
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.27#
62	T	trans-1,3-Dichloropropene	50.0000	56.0291	-12.1	92	-0.01
63	T	1,1,2-Trichloroethane	50.0000	51.7216	-3.4	87	-0.02
64	T	2-Hexanone	50.0000	52.5894	-5.2	93	-0.01
65	T	1,3-Dichloropropane	50.0000	51.5814	-3.2	87	-0.01
66	T	Tetrachloroethene	50.0000	53.2415	-6.5	92	-0.01
67	T	Dibromochloromethane	50.0000	51.7172	-3.4	85	-0.02
68	T	1,2-Dibromoethane	50.0000	50.6077	-1.2	84	-0.01
69	T	1-Chlorohexane	50.0000	58.7960	-17.6	97	-0.01
70	P	Chlorobenzene	50.0000	52.0701	-4.1	89	-0.01
71	T	1,1,1,2-Tetrachloroethane	50.0000	54.0437	-8.1	89	-0.01
72	C	Ethylbenzene	50.0000	52.8032	-5.6	89	-0.02
73	T	m-,p-Xylene	100.0000	110.7530	-10.8	91	-0.02
74	T	o-Xylene	50.0000	54.7208	-9.4	89	-0.02
75	T	Styrene	50.0000	56.7914	-13.6	89	-0.01
76	P	Bromoform	50.0000	49.5387	0.9	83	-0.01
77	T	Isopropylbenzene	50.0000	56.3127	-12.6	89	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	86	-0.02
79	P	1,1,2,2-Tetrachloroethane	50.0000	51.3756	-2.8	88	-0.02
80	S	p-Bromofluorobenzene	25.0000	25.3819	-1.5	87	-0.01
81	T	1,2,3-Trichloropropane	50.0000	48.2075	3.6	82	-0.01
82	T	trans-1,4-Dichloro-2-Butene	50.0000	46.7472	6.5	83	-0.02
83	T	n-Propylbenzene	50.0000	55.4173	-10.8	90	0.00
84	T	Bromobenzene	50.0000	51.4532	-2.9	86	-0.02
85	T	1,3,5-Trimethylbenzene	50.0000	56.4711	-12.9	89	0.00
86	T	2-Chlorotoluene	50.0000	54.4485	-8.9	90	-0.01
87	T	4-Chlorotoluene	50.0000	53.8292	-7.7	88	-0.01
88	T	a-Methylstyrene	50.0000	54.6285	-9.3	89	-0.01
89	T	tert-Butylbenzene	50.0000	51.9176	-3.8	87	-0.01
90	T	1,2,4-Trimethylbenzene	50.0000	56.5865	-13.2	90	0.00
91	T	sec-Butylbenzene	50.0000	54.3195	-8.6	89	0.00
92	T	p-Isopropyltoluene	50.0000	55.3408	-10.7	89	0.00
93	T	1,3-Dichlorobenzene	50.0000	52.8785	-5.8	89	-0.01
94	T	1,4-Dichlorobenzene	50.0000	50.4720	-0.9	87	0.00
95	T	n-Butylbenzene	50.0000	53.0689	-6.1	89	-0.01
96	T	1,2-Dichlorobenzene	50.0000	50.5442	-1.1	86	-0.01
97	T	1,2-Dibromo-3-Chloropropane	50.0000	49.3390	1.3	81	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	49.6691	0.7	83	-0.02
99	T	Hexachlorobutadiene	50.0000	47.1968	5.6	80	-0.01
100	T	Naphthalene	50.0000	48.0191	4.0	78	-0.02
101	T	1,2,3-Trichlorobenzene	50.0000	48.2718	3.5	81	-0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M403163.D 8260WTR.M Mon Feb 23 13:01:58 2015 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\2\DATA\100214\8M400357.D          Vial: 3
Acq On    :  2 Oct 2014  11:58                       Operator: TMB
Sample    : WG494714-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD66476                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

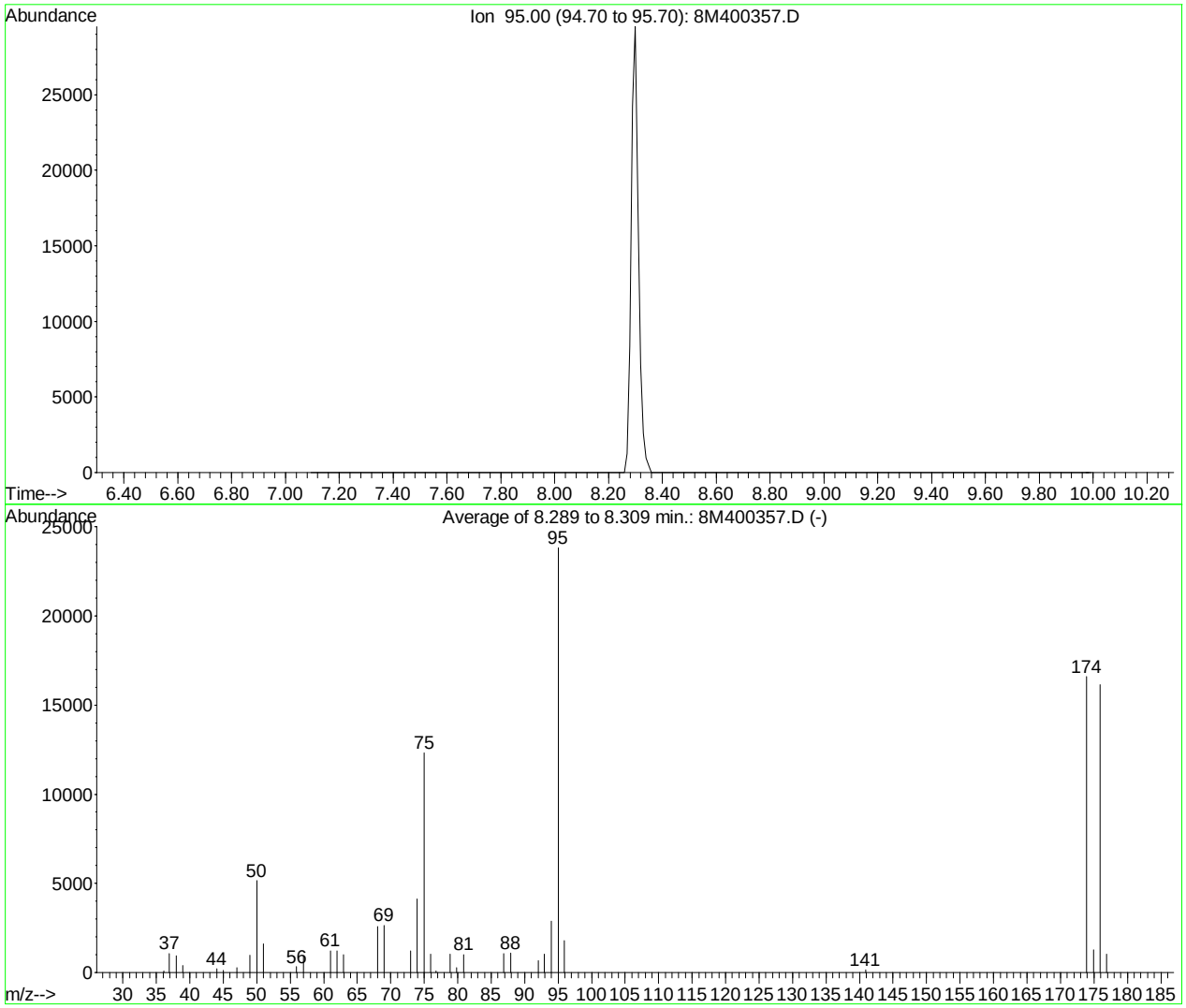

AutoFind: Scans 118, 119, 120; Background Corrected with Scan 113

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.7	5158	PASS
75	95	30	60	51.7	12312	PASS
95	95	100	100	100.0	23818	PASS
96	95	5	9	7.6	1800	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	69.7	16590	PASS
175	174	5	9	7.8	1290	PASS
176	174	95	101	97.3	16145	PASS
177	176	5	9	6.3	1023	PASS

8M400357.D BFB.M Thu Oct 02 12:09:27 2014

BFB

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Data File : C:\MSDCHEM\2\DATA\020615\8M402829.D          Vial: 1
Acq On    :  6 Feb 2015  15:35                       Operator: TMB
Sample    : WG511287-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD68443                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

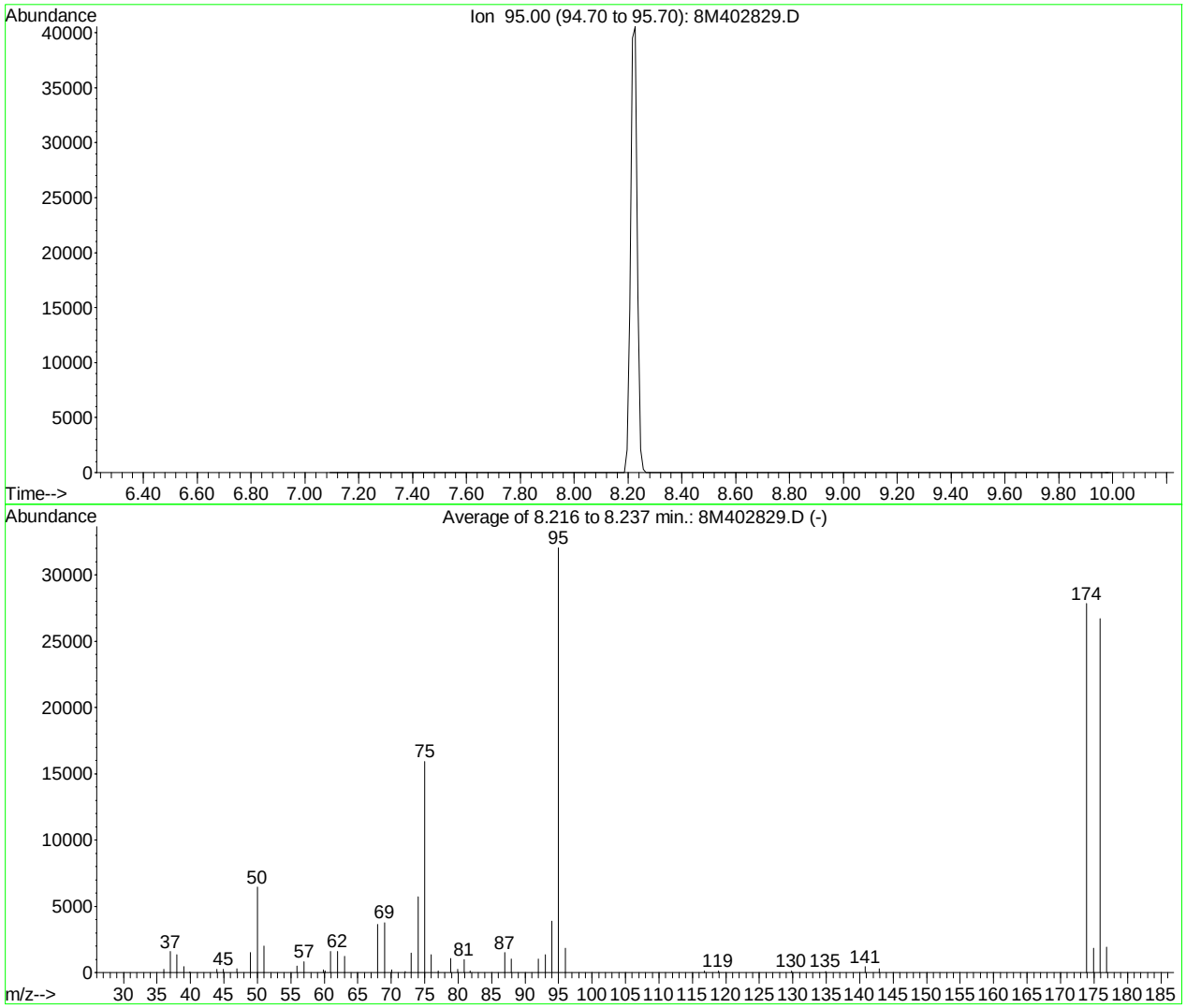

AutoFind: Scans 111, 112, 113; Background Corrected with Scan 106

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.1	6438	PASS
75	95	30	60	49.7	15924	PASS
95	95	100	100	100.0	32031	PASS
96	95	5	9	5.8	1851	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	86.9	27829	PASS
175	174	5	9	6.7	1855	PASS
176	174	95	101	95.9	26698	PASS
177	176	5	9	7.2	1931	PASS

8M402829.D BFB.M Fri Feb 06 15:56:08 2015

BFB

Data File : C:\MSDCHEM\2\DATA\022015\8M403127.D Vial: 1
Acq On : 20 Feb 2015 12:26 Operator: TMB
Sample : WG512985-01 50ng BFB STD 8260 Inst : HPMS8
Misc : 1,1 STD68998 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title : SOP:OVL MSV01

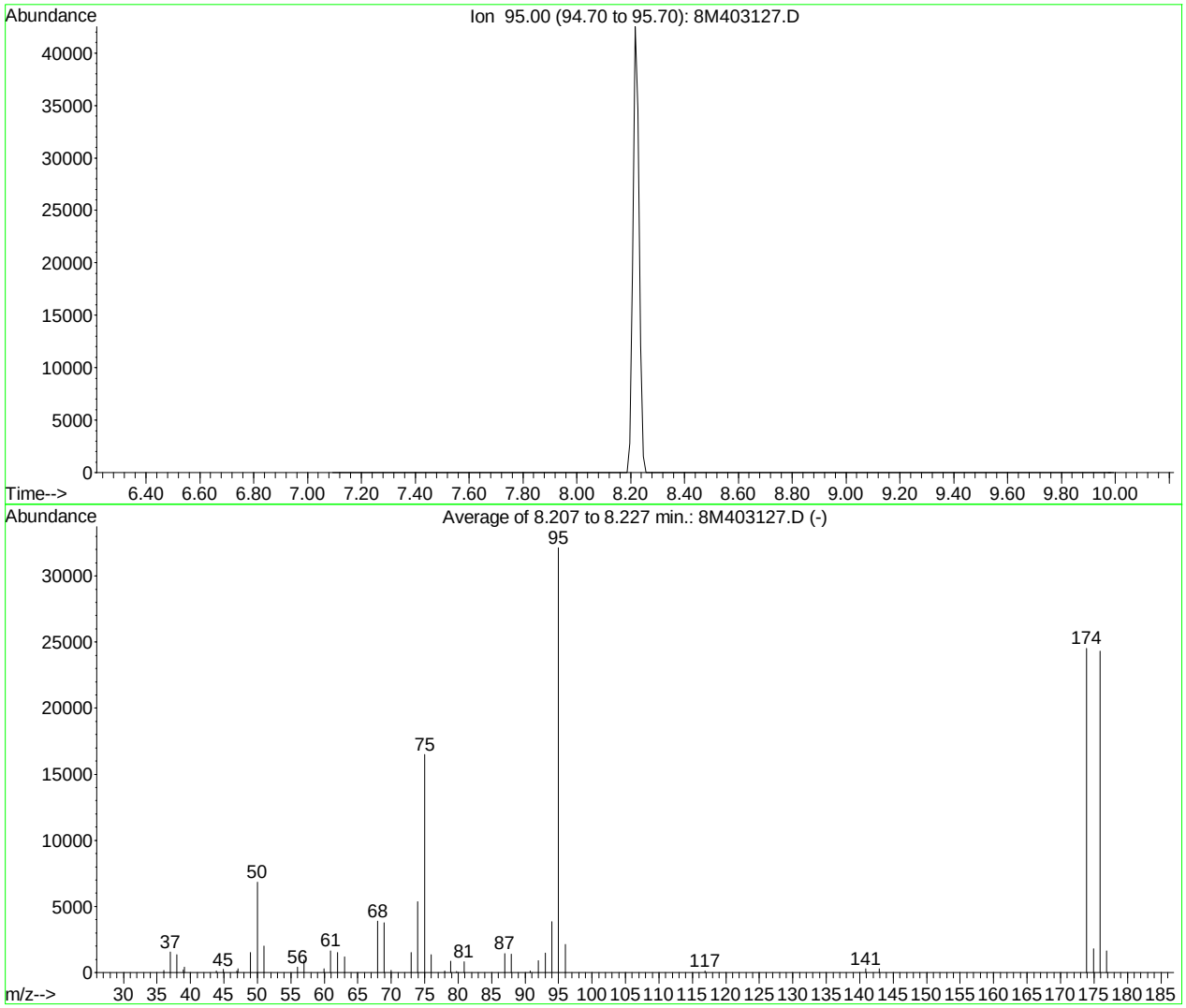

AutoFind: Scans 110, 111, 112; Background Corrected with Scan 106

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.3	6857	PASS
75	95	30	60	51.3	16484	PASS
95	95	100	100	100.0	32122	PASS
96	95	5	9	6.6	2131	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	76.3	24521	PASS
175	174	5	9	7.3	1798	PASS
176	174	95	101	99.1	24301	PASS
177	176	5	9	6.7	1625	PASS

8M403127.D BFB.M Fri Feb 20 12:42:39 2015

BFB

```
Data File : C:\MSDCHEM\2\DATA\022315\8M403161.D          Vial: 1
Acq On    : 23 Feb 2015  11:41                       Operator: TMB
Sample    : WG513148-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD68998                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

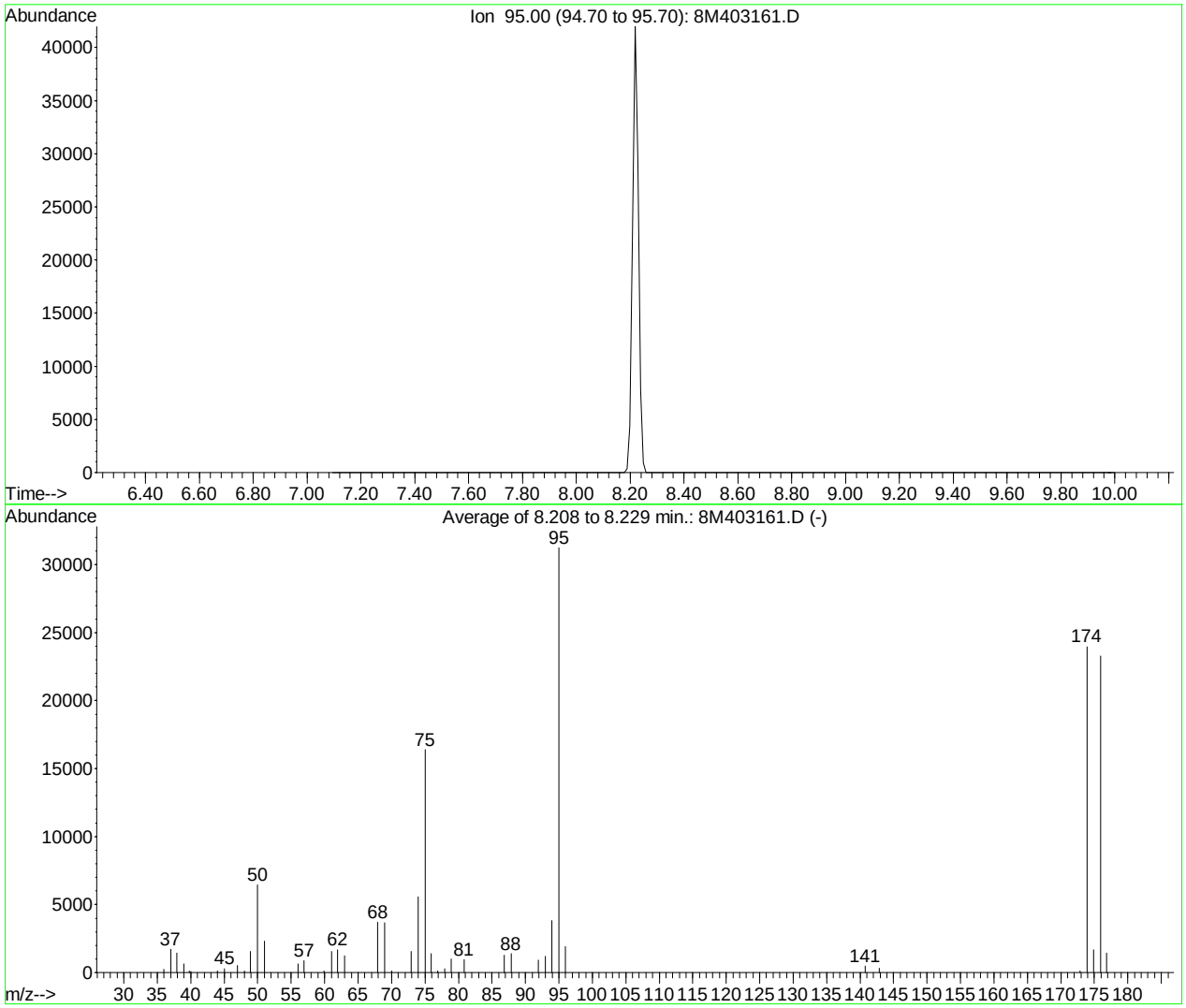

AutoFind: Scans 110, 111, 112; Background Corrected with Scan 105

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.7	6449	PASS
75	95	30	60	52.5	16388	PASS
95	95	100	100	100.0	31229	PASS
96	95	5	9	6.2	1921	PASS
173	174	0.00	2	0.5	124	PASS
174	95	50	100	76.8	23976	PASS
175	174	5	9	6.9	1663	PASS
176	174	95	101	97.1	23277	PASS
177	176	5	9	6.2	1453	PASS

8M403161.D BFB.M Mon Feb 23 11:52:10 2015

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\022015\8M403131.D Vial: 5
Acq On : 20 Feb 2015 14:16 Operator: TMB
Sample : WG512986-01 VBLK0220 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 23 10:53:13 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	730017	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	547422	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.71	152	278756	25.00 ug/L	-0.02

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	186880	24.3242 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.28%		
43) 1,2-Dichloroethane-d4	10.41	65	177393	22.0242 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 88.08%		
58) Toluene-d8	12.80	98	640883	24.6437 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.56%		
80) p-Bromofluorobenzene	16.19	95	250684	25.0745 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.28%		

Target Compounds					Qvalue
19) Methylene Chloride	7.38	84	1504	0.1917 ug/L #	52

(#) = qualifier out of range (m) = manual integration
8M403131.D 8260WTR.M Mon Feb 23 10:53:14 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\022015\8M403131.D Vial: 5
Acq On : 20 Feb 2015 14:16 Operator: TMB
Sample : WG512986-01 VBLK0220 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 23 10:53 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration

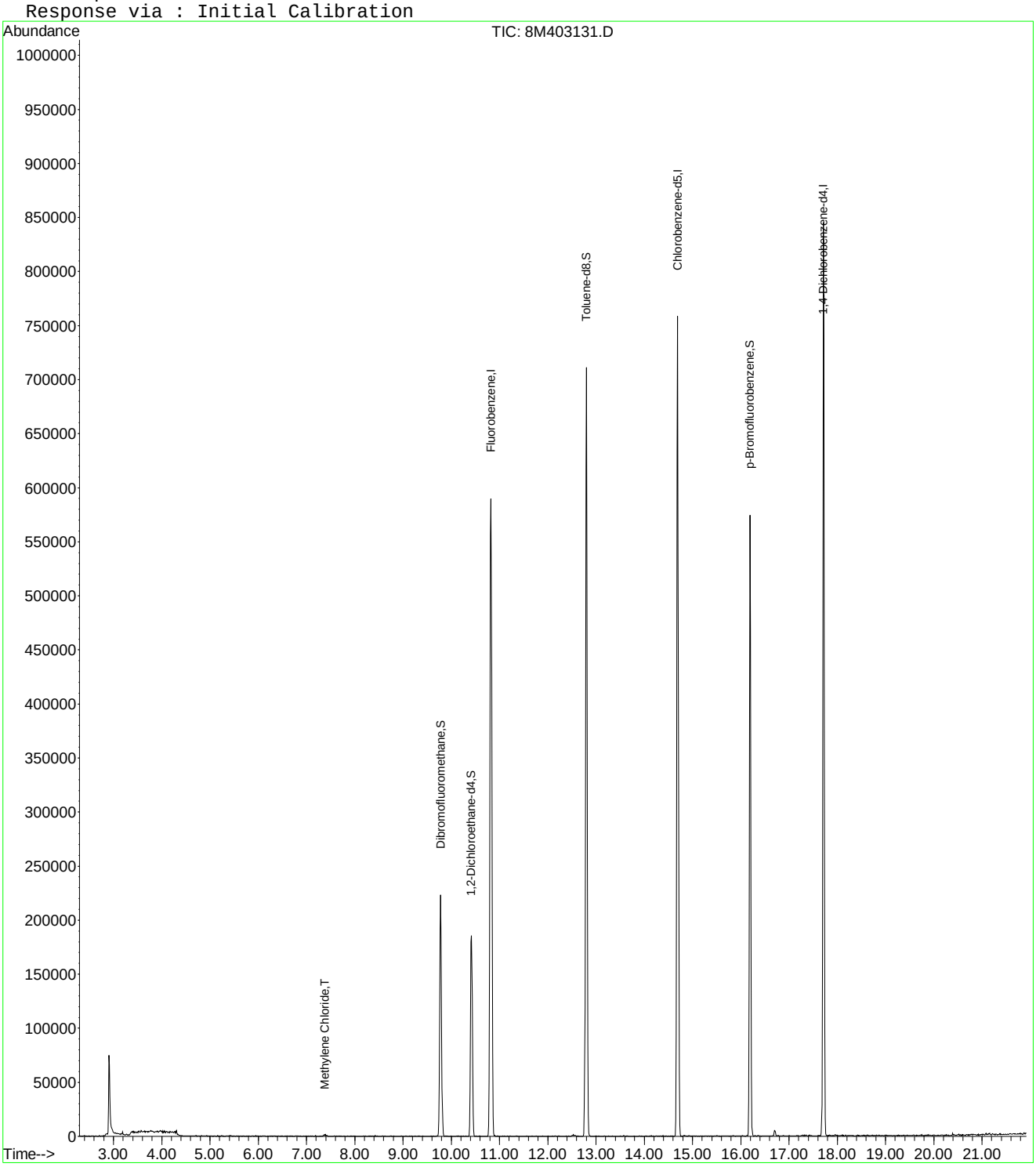

8M403131.D 8260WTR.M Mon Feb 23 10:53:14 2015 Page 2

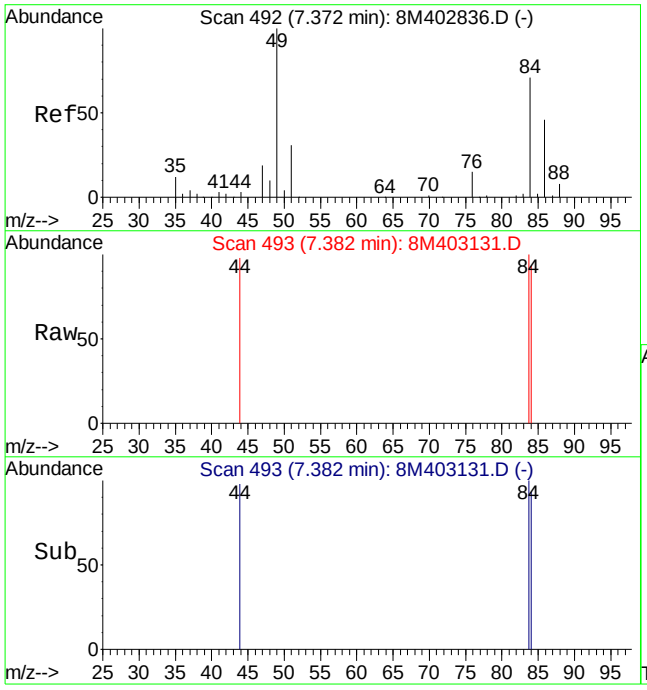

#19
Methylene Chloride
Concen: 0.19 ug/L
RT: 7.38 min Scan# 493
Delta R.T. 0.01 min
Lab File: 8M403131.D
Acq: 20 Feb 2015 14:16

Tgt Ion: 84 Resp: 1504

Ion	Ratio	Lower	Upper
84	100		
49	84.8	86.3	201.5#

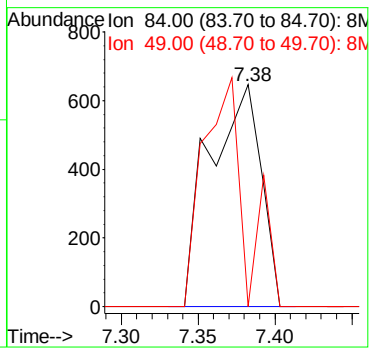

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\022315\8M403165.D Vial: 5
Acq On : 23 Feb 2015 13:31 Operator: TMB
Sample : WG513149-01 VBLK0223 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 24 08:15:07 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	639321	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	474948	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.72	152	230031	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	155678	23.1376 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 92.56%		
43) 1,2-Dichloroethane-d4	10.42	65	156598	22.2005 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 88.80%		
58) Toluene-d8	12.80	98	561032	24.8651 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.48%		
80) p-Bromofluorobenzene	16.19	95	213266	25.8503 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.40%		

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
8M403165.D 8260WTR.M Tue Feb 24 08:15:08 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\022315\8M403165.D Vial: 5
Acq On : 23 Feb 2015 13:31 Operator: TMB
Sample : WG513149-01 VBLK0223 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 24 8:15 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration

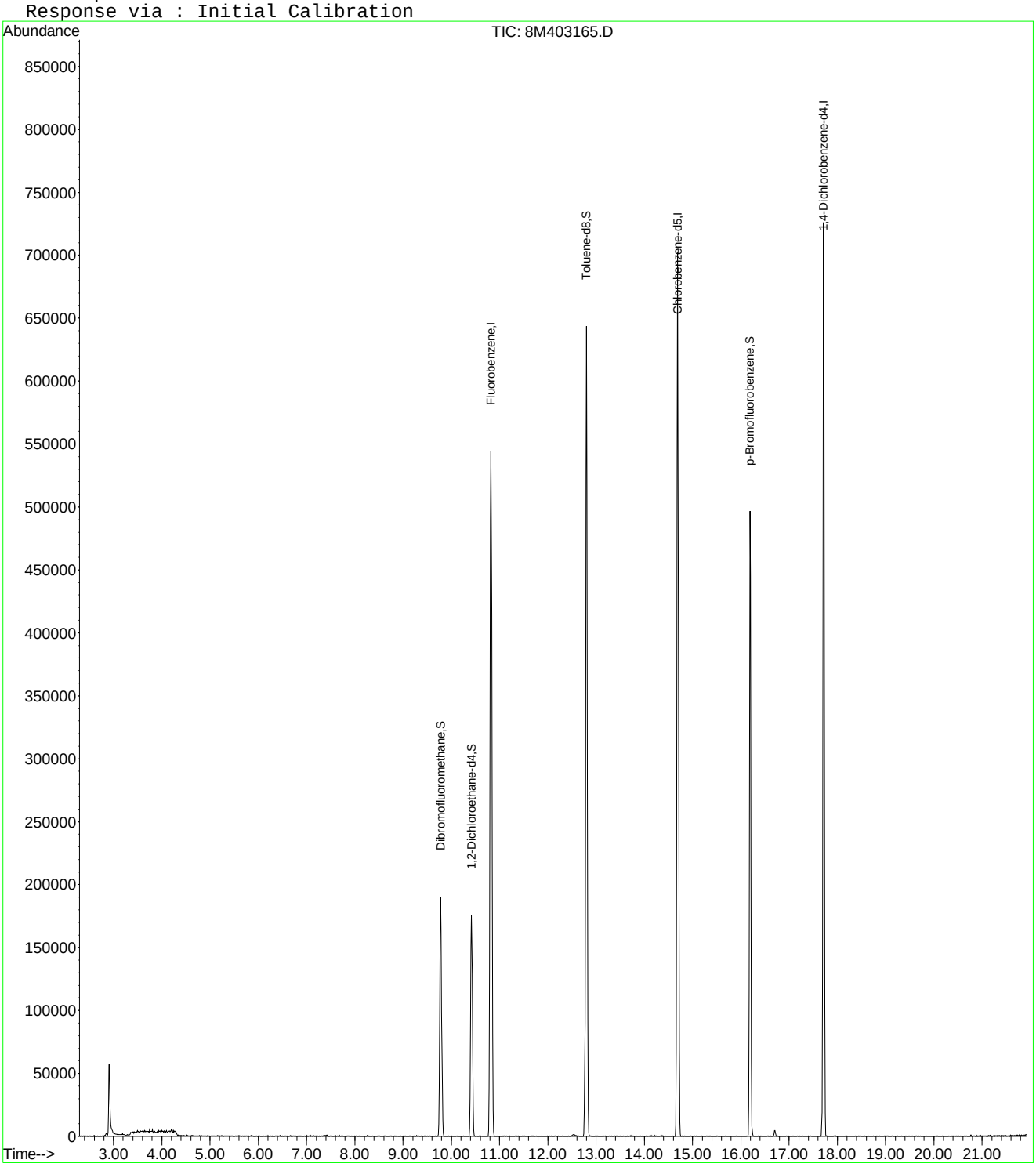

8M403165.D 8260WTR.M Tue Feb 24 08:15:08 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\022015\8M403153.D Vial: 27
Acq On : 21 Feb 2015 00:52 Operator: TMB
Sample : WG512986-04 VBLK0220 BLANK STD 624 Inst : HPMS8
Misc : 2,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 23 10:53:41 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	682380	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	434870	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.71	152	239519	25.00 ug/L	-0.02

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	167585	23.3356 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.36%		
43) 1,2-Dichloroethane-d4	10.41	65	156824	20.8297 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 83.32%		
58) Toluene-d8	12.80	98	574516	27.8094 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 111.24%#		
80) p-Bromofluorobenzene	16.19	95	197424	22.9821 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 91.92%		

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
8M403153.D 8260WTR.M Mon Feb 23 10:53:41 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\022015\8M403153.D Vial: 27
Acq On : 21 Feb 2015 00:52 Operator: TMB
Sample : WG512986-04 VBLK0220 BLANK STD 624 Inst : HPMS8
Misc : 2,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 23 10:53 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration

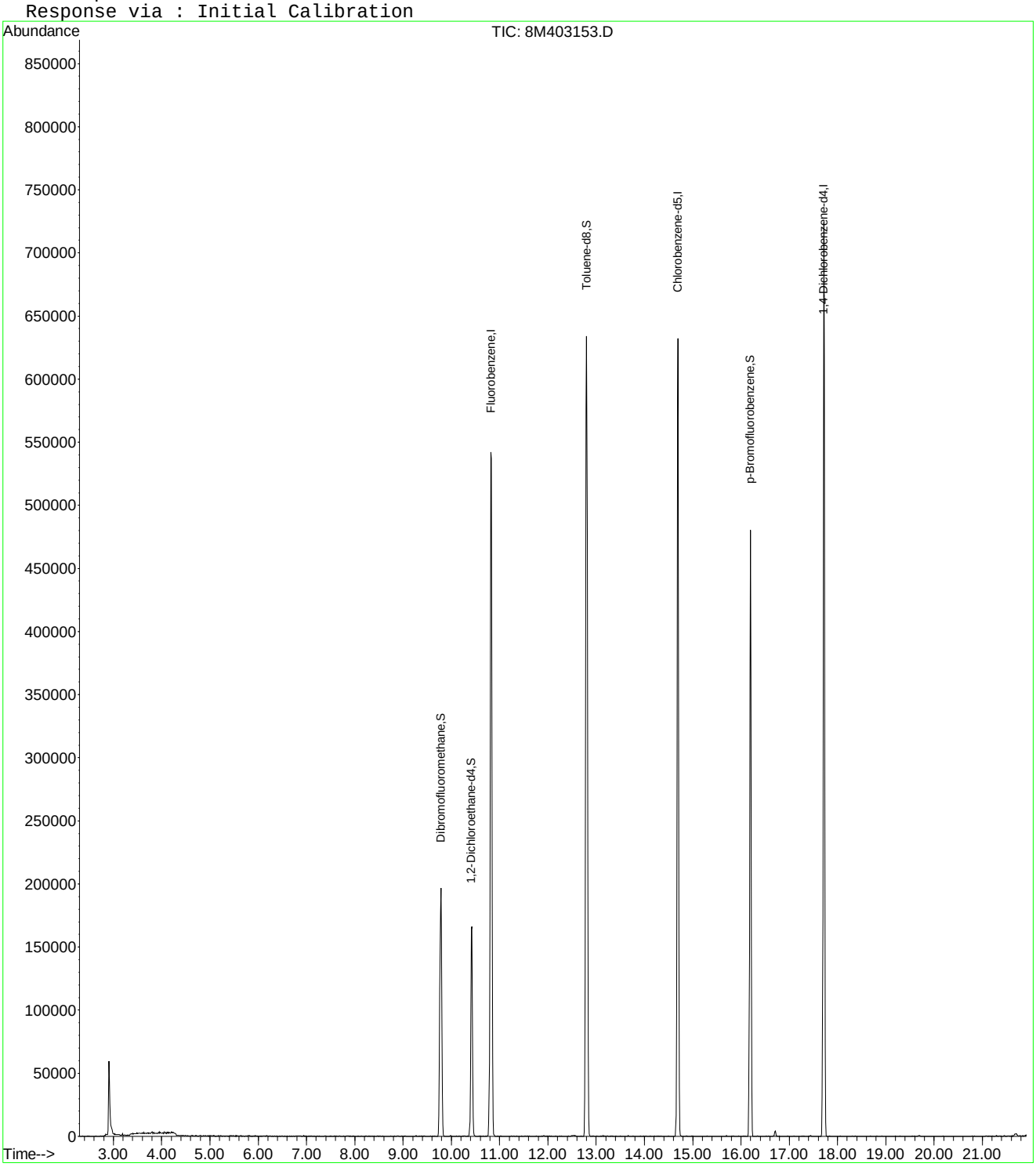

8M403153.D 8260WTR.M Mon Feb 23 10:53:41 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\022015\8M403137.D Vial: 11
Acq On : 20 Feb 2015 17:11 Operator: TMB
Sample : WG512986-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD68939 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 20 17:32:57 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	745407	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	535009	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.72	152	274748	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	184080	23.4651 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.88%		
43) 1,2-Dichloroethane-d4	10.42	65	180638	21.9640 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 87.84%		
58) Toluene-d8	12.80	98	629619	24.7723 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.08%		
80) p-Bromofluorobenzene	16.19	95	244976	24.8611 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.44%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.25	85	120413	10.0836 ug/L	99
3) Chloromethane	3.70	50	149573	14.4778 ug/L	100
4) Vinyl Chloride	3.94	62	177263	17.4342 ug/L	99
5) 1,3-Butadiene	3.98	54	56648	5.9760 ug/L	88
6) Bromomethane	4.84	94	63487	16.3911 ug/L	98
7) Chloroethane	5.00	64	127535	20.2921 ug/L	98
8) Trichlorofluoromethane	5.49	101	249123	17.6668 ug/L	99
9) Diethyl ether	6.02	59	478016	92.7519 ug/L	98
10) Isoprene	6.06	67	235195	21.5329 ug/L	97
11) Acrolein	6.25	56	50198	84.3690 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	145733	18.2950 ug/L	96
13) Acetone	6.36	43	21097	18.6779 ug/L	96
14) 1,1-Dichloroethene	6.59	61	225807	17.6251 ug/L	98
15) Tert-Butyl Alcohol	6.69	59	51510	216.9556 ug/L	92
16) Dimethyl Sulfide	6.84	62	177208	20.7530 ug/L	95
17) Iodomethane	7.10	142	22955	20.8608 ug/L	92
18) Methyl acetate	7.11	43	57226	12.1840 ug/L	98
19) Methylene Chloride	7.37	84	151158	18.8671 ug/L	89
20) Carbon Disulfide	7.41	76	443006	16.7444 ug/L	100
21) Acrylonitrile	7.55	53	30591	18.5477 ug/L	95
22) Methyl Tert Butyl Ether	7.58	73	298515	21.4313 ug/L	96
23) trans-1,2-Dichloroethene	7.82	61	236909	19.1987 ug/L	98
24) n-Hexane	7.90	57	184560	17.0422 ug/L	98
25) Diisopropyl ether	8.24	45	2332719	91.2557 ug/L	98
26) Vinyl Acetate	8.41	43	172359	48.9101 ug/L	99
27) 1,1-Dichloroethane	8.44	63	287554	18.5436 ug/L	99
28) Ethyl-Tert-Butyl ether	8.81	59	2010194	98.0949 ug/L	98
29) 2-Butanone	8.99	43	30977	18.4224 ug/L	97
30) Propionitrile	9.11	54	49388	88.8128 ug/L	100
31) 2,2-Dichloropropane	9.22	77	224315	19.5947 ug/L	99
32) cis-1,2-Dichloroethene	9.28	96	172248	20.1966 ug/L	93
33) Chloroform	9.49	83	287294	19.5039 ug/L	99
34) 1-Bromopropane	9.63	122	31731	20.6472 ug/L	94
35) Bromochloromethane	9.73	130	86805	20.3485 ug/L	92
36) Tetrahydrofuran	9.75	42	106511	90.8170 ug/L	96
38) 1,1,1-Trichloroethane	10.03	97	255042	19.8761 ug/L	99
39) Cyclohexane	10.06	56	257005	18.6116 ug/L	97
40) 1,1-Dichloropropene	10.21	75	217000	19.5881 ug/L	100
41) Tert-Amyl-Methyl ether	10.33	73	1544633	100.1979 ug/L	96
42) Carbon Tetrachloride	10.37	117	218344	19.8429 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M403137.D 8260WTR.M Fri Feb 20 17:32:57 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\022015\8M403137.D Vial: 11
Acq On : 20 Feb 2015 17:11 Operator: TMB
Sample : WG512986-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD68939 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 20 17:32:57 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.54	62	189418	19.4639 ug/L	98
46)	Benzene	10.58	78	612972	20.2255 ug/L	97
47)	Trichloroethene	11.33	130	166584	21.8506 ug/L	96
48)	Methylcyclohexane	11.41	83	230554	18.5574 ug/L	97
49)	1,2-Dichloropropane	11.54	63	163902	19.8877 ug/L	97
50)	Bromodichloromethane	11.84	83	209193	20.0734 ug/L	100
51)	1,4-Dioxane	11.83	88	5248	163.9558 ug/L	90
52)	Dibromomethane	11.93	93	74741	19.2162 ug/L	95
53)	2-Chloroethyl Vinyl Ether	12.14	63	61921	19.7807 ug/L	95
54)	4-Methyl-2-Pentanone	12.17	58	25207	17.9483 ug/L	96
55)	cis-1,3-Dichloropropene	12.48	75	238259	21.8682 ug/L	98
56)	Dimethyl Disulfide	12.74	79	115786	14.3566 ug/L	88
59)	Toluene	12.90	91	663863	23.0169 ug/L	99
60)	Ethyl Methacrylate	12.99	69	132538	24.0428 ug/L	94
62)	trans-1,3-Dichloropropene	13.07	75	187786	21.2789 ug/L	98
63)	1,1,2-Trichloroethane	13.29	97	98391	21.4878 ug/L	99
64)	2-Hexanone	13.22	58	23440	19.7906 ug/L #	57
65)	1,3-Dichloropropane	13.60	76	174497	21.0240 ug/L	97
66)	Tetrachloroethene	13.72	164	130822	21.0052 ug/L	96
67)	Dibromochloromethane	13.99	129	129504	22.1355 ug/L	98
68)	1,2-Dibromoethane	14.24	107	97572	21.4363 ug/L	98
69)	1-Chlorohexane	14.32	91	205382	21.0525 ug/L	96
70)	Chlorobenzene	14.74	112	394346	20.2204 ug/L	99
71)	1,1,1,2-Tetrachloroethane	14.77	131	146112	21.9373 ug/L	99
72)	Ethylbenzene	14.76	106	232088	20.8003 ug/L	95
73)	m-,p-Xylene	14.86	106	552304	43.4595 ug/L	97
74)	o-Xylene	15.42	106	260184	20.8080 ug/L	100
75)	Styrene	15.46	104	469870	23.4283 ug/L	95
76)	Bromoform	15.95	173	77785	21.5474 ug/L	99
77)	Isopropylbenzene	15.85	105	666448	21.3337 ug/L	100
79)	1,1,2,2-Tetrachloroethane	16.06	83	106793	21.3853 ug/L	98
81)	1,2,3-Trichloropropane	16.25	110	29908	21.4219 ug/L	81
82)	trans-1,4-Dichloro-2-Buten	16.29	53	29896	18.0044 ug/L	98
83)	n-Propylbenzene	16.36	91	826091	20.5641 ug/L	99
84)	Bromobenzene	16.48	156	181433	23.3393 ug/L	96
85)	1,3,5-Trimethylbenzene	16.54	105	659337	24.5867 ug/L	100
86)	2-Chlorotoluene	16.63	91	524628	21.4161 ug/L	100
87)	4-Chlorotoluene	16.68	91	511989	20.5184 ug/L	99
88)	a-Methylstyrene	16.95	118	332596	21.5253 ug/L	99
89)	tert-Butylbenzene	17.01	134	115893	19.8317 ug/L	97
90)	1,2,4-Trimethylbenzene	17.06	105	645721	23.4326 ug/L	98
91)	sec-Butylbenzene	17.28	105	712398	20.0981 ug/L	99
92)	p-Isopropyltoluene	17.43	119	587974	20.9848 ug/L	100
93)	1,3-Dichlorobenzene	17.63	146	322063	20.1924 ug/L	99
94)	1,4-Dichlorobenzene	17.76	146	347857	21.2970 ug/L	99
95)	n-Butylbenzene	17.96	91	624691	20.3435 ug/L	99
96)	1,2-Dichlorobenzene	18.26	146	293550	20.5372 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	19.25	75	20301	21.8963 ug/L	98
98)	1,2,4-Trichlorobenzene	20.40	180	249204	21.9542 ug/L	100
99)	Hexachlorobutadiene	20.54	225	128840	19.2895 ug/L	98
100)	Naphthalene	20.77	128	383744	22.9276 ug/L	99
101)	1,2,3-Trichlorobenzene	21.07	180	214590	21.6489 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M403137.D 8260WTR.M Fri Feb 20 17:32:58 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\022015\8M403137.D Vial: 11
Acq On : 20 Feb 2015 17:11 Operator: TMB
Sample : WG512986-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD68939 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 20 17:32 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration

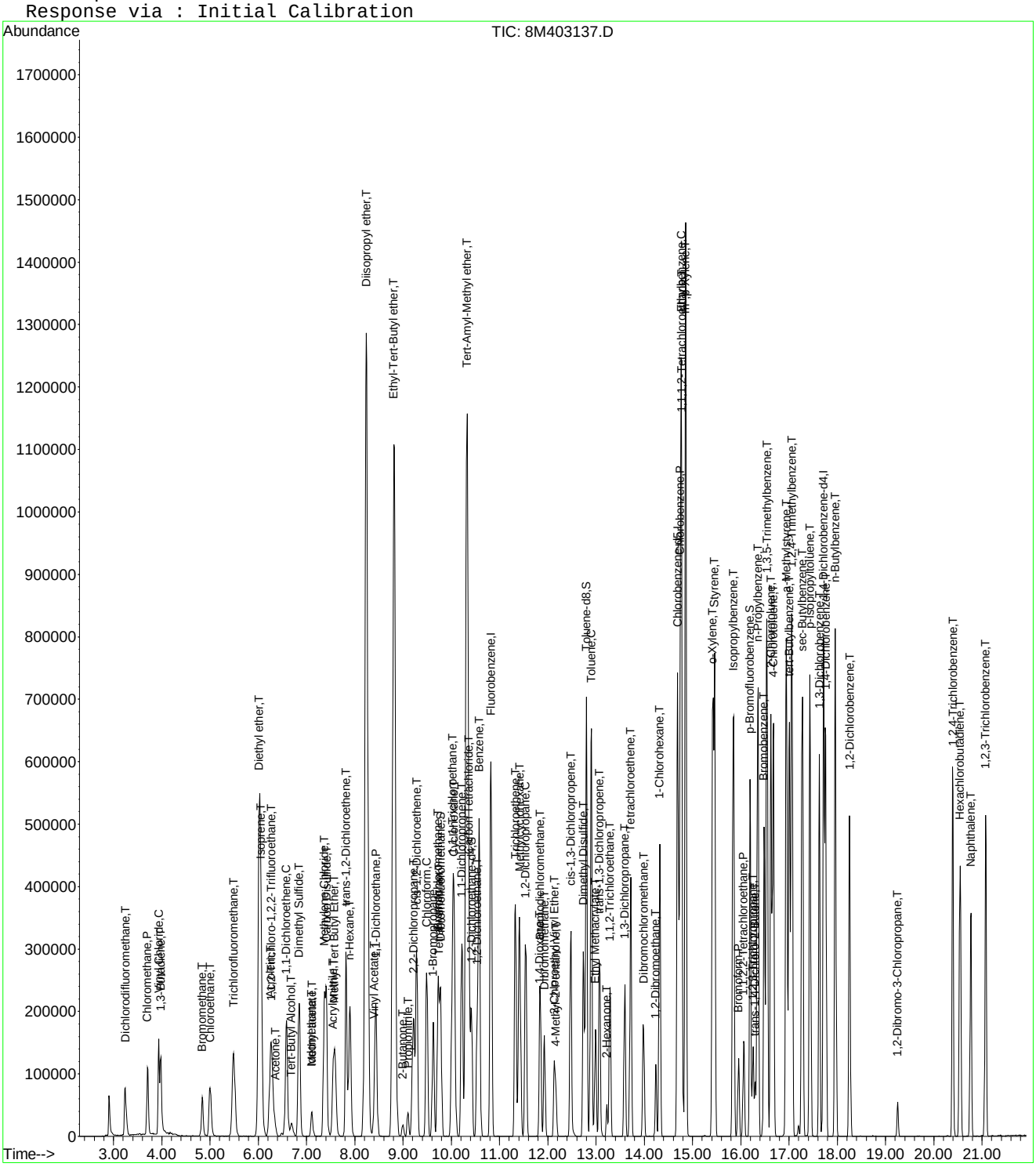

8M403137.D 8260WTR.M Fri Feb 20 17:32:58 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\022315\8M403166.D Vial: 6
Acq On : 23 Feb 2015 13:59 Operator: TMB
Sample : WG513149-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD68939 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 23 14:21:50 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.82	96	681564	25.00 ug/L	-0.01
57) Chlorobenzene-d5	14.69	117	481992	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	17.71	152	251756	25.00 ug/L	-0.02

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	161661	22.5376 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 90.16%		
43) 1,2-Dichloroethane-d4	10.42	65	168231	22.3715 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 89.48%		
58) Toluene-d8	12.80	98	575348	25.1270 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.52%		
80) p-Bromofluorobenzene	16.19	95	227262	25.1697 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.68%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.25	85	264034	24.1817 ug/L	99
3) Chloromethane	3.70	50	235477	24.9278 ug/L	99
4) Vinyl Chloride	3.94	62	245350	26.3911 ug/L	100
5) 1,3-Butadiene	3.98	54	33637	3.6604 ug/L	88
6) Bromomethane	4.84	94	64022	17.9735 ug/L	99
7) Chloroethane	5.00	64	121675	21.1732 ug/L	100
8) Trichlorofluoromethane	5.49	101	249492	19.3502 ug/L	99
9) Diethyl ether	6.02	59	447948	95.0593 ug/L	99
10) Isoprene	6.06	67	223778	22.4068 ug/L	99
11) Acrolein	6.25	56	43637	80.2118 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	141183	19.3841 ug/L	100
13) Acetone	6.36	43	20330	19.6848 ug/L	97
14) 1,1-Dichloroethene	6.59	61	230380	19.6664 ug/L	99
15) Tert-Butyl Alcohol	6.69	59	49564	228.3139 ug/L	94
16) Dimethyl Sulfide	6.84	62	167524	21.4566 ug/L	99
17) Iodomethane	7.10	142	26846	21.9547 ug/L	93
18) Methyl acetate	7.11	43	55138	12.8391 ug/L	96
19) Methylene Chloride	7.37	84	144484	19.7233 ug/L	100
20) Carbon Disulfide	7.41	76	419189	17.3283 ug/L	99
21) Acrylonitrile	7.55	53	29213	19.3714 ug/L	98
22) Methyl Tert Butyl Ether	7.58	73	269502	21.1607 ug/L	100
23) trans-1,2-Dichloroethene	7.82	61	232120	20.5726 ug/L	98
24) n-Hexane	7.90	57	195573	19.7508 ug/L	99
25) Diisopropyl ether	8.24	45	2420234	103.5481 ug/L	99
26) Vinyl Acetate	8.40	43	179998	55.8624 ug/L	98
27) 1,1-Dichloroethane	8.44	63	285495	20.1354 ug/L	100
28) Ethyl-Tert-Butyl ether	8.81	59	1957123	104.4511 ug/L	99
29) 2-Butanone	8.99	43	31632	20.5741 ug/L	98
30) Propionitrile	9.10	54	48947	96.2647 ug/L	98
31) 2,2-Dichloropropane	9.22	77	223876	21.3883 ug/L	99
32) cis-1,2-Dichloroethene	9.28	96	158753	20.3579 ug/L	100
33) Chloroform	9.49	83	262974	19.5252 ug/L	99
34) 1-Bromopropane	9.63	122	28325	20.1574 ug/L	99
35) Bromochloromethane	9.73	130	77931	19.9795 ug/L	98
36) Tetrahydrofuran	9.75	42	107042	99.8191 ug/L	100
38) 1,1,1-Trichloroethane	10.02	97	232823	19.8441 ug/L	99
39) Cyclohexane	10.06	56	260265	20.6132 ug/L	99
40) 1,1-Dichloropropene	10.21	75	207672	20.5020 ug/L	99
41) Tert-Amyl-Methyl ether	10.32	73	1465632	103.9789 ug/L	98
42) Carbon Tetrachloride	10.37	117	200882	19.9660 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M403166.D 8260WTR.M Mon Feb 23 14:21:50 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\022315\8M403166.D Vial: 6
Acq On : 23 Feb 2015 13:59 Operator: TMB
Sample : WG513149-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD68939 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 23 14:21:50 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.53	62	180194	20.2505	ug/L	99
46)	Benzene	10.58	78	588230	21.2272	ug/L	99
47)	Trichloroethene	11.33	130	149204	21.4041	ug/L	99
48)	Methylcyclohexane	11.41	83	227291	20.0084	ug/L	98
49)	1,2-Dichloropropane	11.54	63	156037	20.7068	ug/L	99
50)	Bromodichloromethane	11.84	83	188308	19.7619	ug/L	99
51)	1,4-Dioxane	11.83	88	5214	178.1520	ug/L	94
52)	Dibromomethane	11.93	93	68459	19.2498	ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.14	63	60233	21.0438	ug/L	99
54)	4-Methyl-2-Pentanone	12.17	58	25195	19.6202	ug/L	96
55)	cis-1,3-Dichloropropene	12.48	75	224363	22.5218	ug/L	100
56)	Dimethyl Disulfide	12.74	79	111058	14.8292	ug/L	94
59)	Toluene	12.90	91	601826	23.1612	ug/L	99
60)	Ethyl Methacrylate	12.99	69	117948	23.7496	ug/L	99
62)	trans-1,3-Dichloropropene	13.07	75	169707	21.3455	ug/L	99
63)	1,1,2-Trichloroethane	13.29	97	88387	21.4263	ug/L	98
64)	2-Hexanone	13.22	58	22493	21.0800	ug/L	99
65)	1,3-Dichloropropane	13.60	76	167224	22.3639	ug/L	100
66)	Tetrachloroethene	13.72	164	116392	20.7439	ug/L	97
67)	Dibromochloromethane	13.98	129	114696	21.7608	ug/L	99
68)	1,2-Dibromoethane	14.24	107	86369	21.0622	ug/L	99
69)	1-Chlorohexane	14.32	91	199912	22.7458	ug/L	99
70)	Chlorobenzene	14.74	112	365807	20.8202	ug/L	98
71)	1,1,1,2-Tetrachloroethane	14.77	131	130149	21.6900	ug/L	100
72)	Ethylbenzene	14.76	106	213826	21.2715	ug/L	93
73)	m-,p-Xylene	14.86	106	514274	44.9182	ug/L	96
74)	o-Xylene	15.42	106	240508	21.3501	ug/L	100
75)	Styrene	15.46	104	428996	23.7431	ug/L	97
76)	Bromoform	15.95	173	69061	21.2351	ug/L	98
77)	Isopropylbenzene	15.85	105	625708	22.2328	ug/L	100
79)	1,1,2,2-Tetrachloroethane	16.06	83	98517	21.5297	ug/L	99
81)	1,2,3-Trichloropropane	16.25	110	27245	21.2966	ug/L	85
82)	trans-1,4-Dichloro-2-Buten	16.29	53	26901	17.6920	ug/L	92
83)	n-Propylbenzene	16.36	91	792114	21.5191	ug/L	98
84)	Bromobenzene	16.48	156	154574	21.7001	ug/L	97
85)	1,3,5-Trimethylbenzene	16.54	105	583306	23.7380	ug/L	100
86)	2-Chlorotoluene	16.62	91	486208	21.6603	ug/L	100
87)	4-Chlorotoluene	16.68	91	469614	20.5390	ug/L	100
88)	a-Methylstyrene	16.95	118	312626	22.0806	ug/L	99
89)	tert-Butylbenzene	17.01	134	110791	20.6900	ug/L	99
90)	1,2,4-Trimethylbenzene	17.06	105	597534	23.6643	ug/L	99
91)	sec-Butylbenzene	17.28	105	686626	21.1401	ug/L	99
92)	p-Isopropyltoluene	17.43	119	554237	21.5872	ug/L	99
93)	1,3-Dichlorobenzene	17.63	146	296095	20.2597	ug/L	98
94)	1,4-Dichlorobenzene	17.76	146	318349	21.2704	ug/L	99
95)	n-Butylbenzene	17.96	91	614967	21.8558	ug/L	98
96)	1,2-Dichlorobenzene	18.26	146	263728	20.1359	ug/L	99
97)	1,2-Dibromo-3-Chloropropan	19.24	75	17850	21.0110	ug/L	99
98)	1,2,4-Trichlorobenzene	20.39	180	217883	20.9479	ug/L	99
99)	Hexachlorobutadiene	20.54	225	118426	19.3496	ug/L	99
100)	Naphthalene	20.76	128	329865	21.5084	ug/L	99
101)	1,2,3-Trichlorobenzene	21.07	180	187497	20.6431	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M403166.D 8260WTR.M Mon Feb 23 14:21:50 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\022315\8M403166.D Vial: 6
Acq On : 23 Feb 2015 13:59 Operator: TMB
Sample : WG513149-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD68939 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 23 14:21 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration

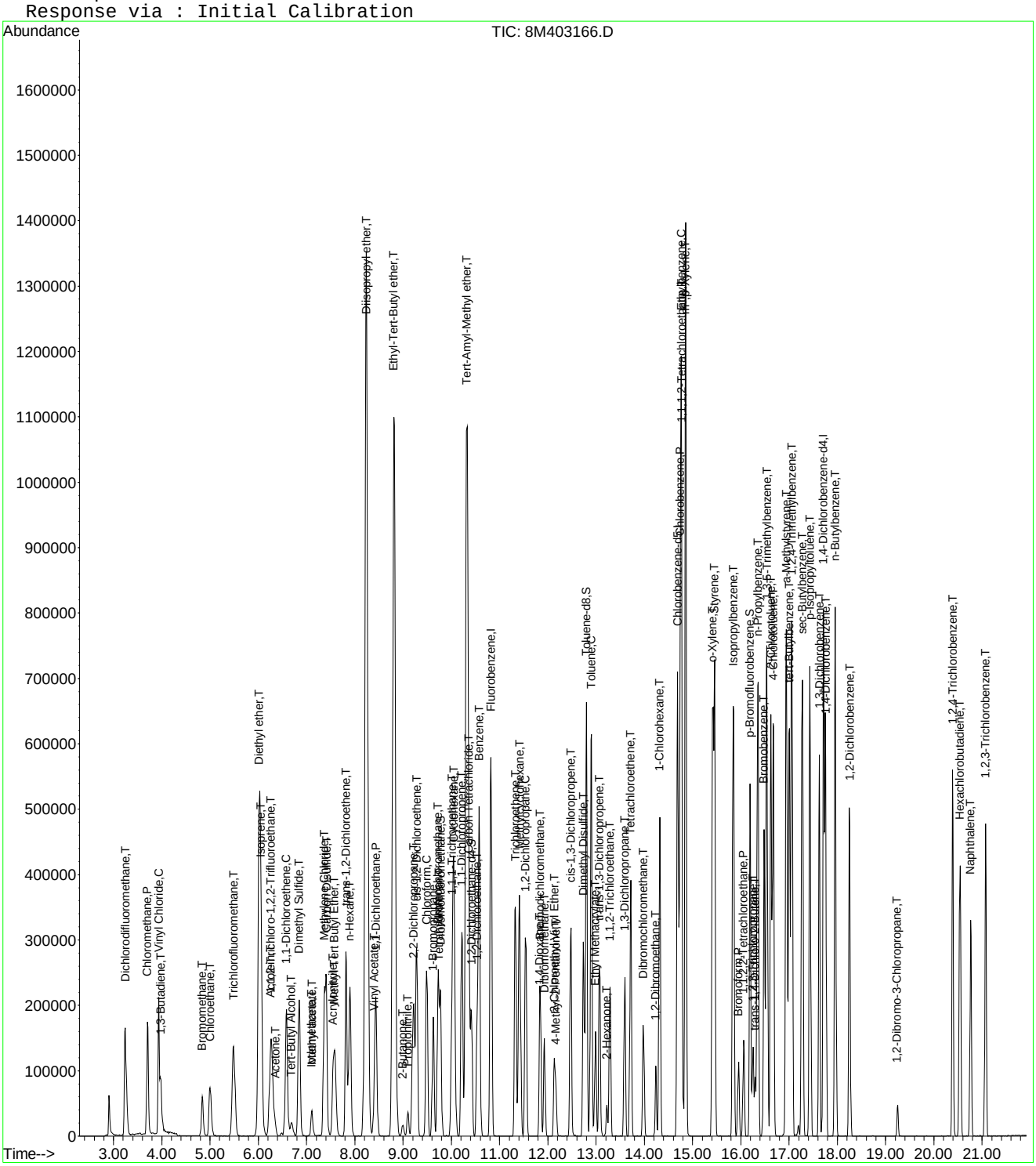

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\022015\8M403138.D Vial: 12
Acq On : 20 Feb 2015 17:40 Operator: TMB
Sample : WG512986-03 20ug/L LCSDUP STD 8260 Inst : HPMS8
Misc : 1,1 STD68939 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 20 18:01:59 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.83	96	762975	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.69	117	547063	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.71	152	280389	25.00 ug/L	-0.02

System Monitoring Compounds

37) Dibromofluoromethane	9.78	111	186226	23.1921 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 92.76%		
43) 1,2-Dichloroethane-d4	10.42	65	186897	22.2018 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 88.80%		
58) Toluene-d8	12.80	98	643891	24.7756 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.12%		
80) p-Bromofluorobenzene	16.19	95	250419	24.9022 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.60%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.25	85	120740	9.8781 ug/L	100
3) Chloromethane	3.71	50	153855	14.5494 ug/L	97
4) Vinyl Chloride	3.94	62	175339	16.8479 ug/L	100
5) 1,3-Butadiene	3.98	54	54808	5.6134 ug/L	86
6) Bromomethane	4.84	94	66738	16.8071 ug/L	100
7) Chloroethane	5.00	64	113697	17.6738 ug/L	97
8) Trichlorofluoromethane	5.49	101	250369	17.3463 ug/L	99
9) Diethyl ether	6.02	59	481997	91.3709 ug/L	98
10) Isoprene	6.06	67	231752	20.7291 ug/L	98
11) Acrolein	6.26	56	52252	85.7991 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.27	101	145739	17.8745 ug/L	97
13) Acetone	6.36	43	23147	20.0210 ug/L	98
14) 1,1-Dichloroethene	6.59	61	221898	16.9212 ug/L	95
15) Tert-Butyl Alcohol	6.70	59	56270	231.5471 ug/L	92
16) Dimethyl Sulfide	6.84	62	179379	20.5236 ug/L	96
17) Iodomethane	7.10	142	36061	22.9571 ug/L	95
18) Methyl acetate	7.11	43	63678	13.2456 ug/L	98
19) Methylene Chloride	7.37	84	153825	18.7579 ug/L	89
20) Carbon Disulfide	7.41	76	454408	16.7798 ug/L	99
21) Acrylonitrile	7.55	53	31267	18.5211 ug/L	99
22) Methyl Tert Butyl Ether	7.58	73	315870	22.1551 ug/L	95
23) trans-1,2-Dichloroethene	7.82	61	237838	18.8302 ug/L	97
24) n-Hexane	7.90	57	189504	17.0958 ug/L	97
25) Diisopropyl ether	8.24	45	2375365	90.7844 ug/L	98
26) Vinyl Acetate	8.41	43	167657	46.4804 ug/L	99
27) 1,1-Dichloroethane	8.44	63	294570	18.5586 ug/L	100
28) Ethyl-Tert-Butyl ether	8.81	59	2063124	98.3596 ug/L	98
29) 2-Butanone	9.00	43	34451	20.0167 ug/L	96
30) Propionitrile	9.10	54	52713	92.6094 ug/L	96
31) 2,2-Dichloropropane	9.21	77	227264	19.3952 ug/L	99
32) cis-1,2-Dichloroethene	9.28	96	174613	20.0025 ug/L	93
33) Chloroform	9.49	83	289520	19.2025 ug/L	98
34) 1-Bromopropane	9.63	122	32494	20.6568 ug/L	100
35) Bromochloromethane	9.72	130	90533	20.7337 ug/L	91
36) Tetrahydrofuran	9.74	42	109083	90.8684 ug/L	94
38) 1,1,1-Trichloroethane	10.03	97	260680	19.8477 ug/L	99
39) Cyclohexane	10.06	56	258485	18.2878 ug/L	95
40) 1,1-Dichloropropene	10.22	75	218695	19.2865 ug/L	100
41) Tert-Amyl-Methyl ether	10.32	73	1589845	100.7561 ug/L	96
42) Carbon Tetrachloride	10.36	117	226674	20.1256 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M403138.D 8260WTR.M Fri Feb 20 18:02:00 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\022015\8M403138.D Vial: 12
Acq On : 20 Feb 2015 17:40 Operator: TMB
Sample : WG512986-03 20ug/L LCSDUP STD 8260 Inst : HPMS8
Misc : 1,1 STD68939 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 20 18:01:59 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.54	62	197874	19.8646	ug/L	97
46)	Benzene	10.58	78	621520	20.0354	ug/L	97
47)	Trichloroethene	11.33	130	170356	21.8308	ug/L	98
48)	Methylcyclohexane	11.41	83	233634	18.3723	ug/L	98
49)	1,2-Dichloropropane	11.54	63	166942	19.7901	ug/L	95
50)	Bromodichloromethane	11.84	83	215293	20.1831	ug/L	99
51)	1,4-Dioxane	11.83	88	6464	197.2956	ug/L	93
52)	Dibromomethane	11.93	93	78247	19.6544	ug/L	94
53)	2-Chloroethyl Vinyl Ether	12.14	63	66441	20.7359	ug/L	97
54)	4-Methyl-2-Pentanone	12.16	58	28141	19.5760	ug/L	94
55)	cis-1,3-Dichloropropene	12.48	75	245354	22.0009	ug/L	99
56)	Dimethyl Disulfide	12.74	79	122586	14.6878	ug/L	88
59)	Toluene	12.90	91	646963	21.9368	ug/L	100
60)	Ethyl Methacrylate	12.99	69	135078	23.9636	ug/L	92
62)	trans-1,3-Dichloropropene	13.07	75	187000	20.7229	ug/L	99
63)	1,1,2-Trichloroethane	13.29	97	100746	21.5174	ug/L	99
64)	2-Hexanone	13.22	58	25752	21.2636	ug/L	91
65)	1,3-Dichloropropane	13.60	76	182577	21.5128	ug/L	96
66)	Tetrachloroethene	13.72	164	131891	20.7102	ug/L	98
67)	Dibromochloromethane	13.98	129	136261	22.7772	ug/L	100
68)	1,2-Dibromoethane	14.24	107	103904	22.3244	ug/L	99
69)	1-Chlorohexane	14.32	91	211500	21.2019	ug/L	95
70)	Chlorobenzene	14.74	112	403146	20.2161	ug/L	98
71)	1,1,1,2-Tetrachloroethane	14.78	131	149809	21.9968	ug/L	100
72)	Ethylbenzene	14.76	106	236373	20.7176	ug/L	97
73)	m-,p-Xylene	14.86	106	552906	42.5482	ug/L	96
74)	o-Xylene	15.42	106	264893	20.7178	ug/L	100
75)	Styrene	15.46	104	473067	23.0679	ug/L	96
76)	Bromoform	15.95	173	80853	21.9038	ug/L	98
77)	Isopropylbenzene	15.85	105	676111	21.1662	ug/L	100
79)	1,1,2,2-Tetrachloroethane	16.06	83	109014	21.3909	ug/L	99
81)	1,2,3-Trichloropropane	16.25	110	31826	22.3370	ug/L	80
82)	trans-1,4-Dichloro-2-Buten	16.30	53	30873	18.2109	ug/L	96
83)	n-Propylbenzene	16.36	91	836136	20.3954	ug/L	99
84)	Bromobenzene	16.48	156	179343	22.6063	ug/L	94
85)	1,3,5-Trimethylbenzene	16.54	105	636736	23.2662	ug/L	100
86)	2-Chlorotoluene	16.63	91	529261	21.1705	ug/L	100
87)	4-Chlorotoluene	16.68	91	518411	20.3578	ug/L	100
88)	a-Methylstyrene	16.95	118	342160	21.6987	ug/L	99
89)	tert-Butylbenzene	17.01	134	120622	20.2256	ug/L	98
90)	1,2,4-Trimethylbenzene	17.06	105	645718	22.9611	ug/L	99
91)	sec-Butylbenzene	17.28	105	724701	20.0339	ug/L	98
92)	p-Isopropyltoluene	17.43	119	595059	20.8104	ug/L	99
93)	1,3-Dichlorobenzene	17.63	146	327460	20.1177	ug/L	99
94)	1,4-Dichlorobenzene	17.76	146	354656	21.2764	ug/L	98
95)	n-Butylbenzene	17.96	91	624560	19.9301	ug/L	99
96)	1,2-Dichlorobenzene	18.25	146	299808	20.5531	ug/L	98
97)	1,2-Dibromo-3-Chloropropan	19.25	75	21247	22.4556	ug/L	98
98)	1,2,4-Trichlorobenzene	20.39	180	252500	21.7970	ug/L	99
99)	Hexachlorobutadiene	20.54	225	132252	19.4020	ug/L	99
100)	Naphthalene	20.77	128	395055	23.1285	ug/L	99
101)	1,2,3-Trichlorobenzene	21.07	180	223151	22.0597	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M403138.D 8260WTR.M Fri Feb 20 18:02:00 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\022015\8M403138.D Vial: 12
Acq On : 20 Feb 2015 17:40 Operator: TMB
Sample : WG512986-03 20ug/L LCSDUP STD 8260 Inst : HPMS8
Misc : 1,1 STD68939 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 20 18:01 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 02-06-15 HPMS 8
Last Update : Wed Feb 18 13:42:16 2015
Response via : Initial Calibration

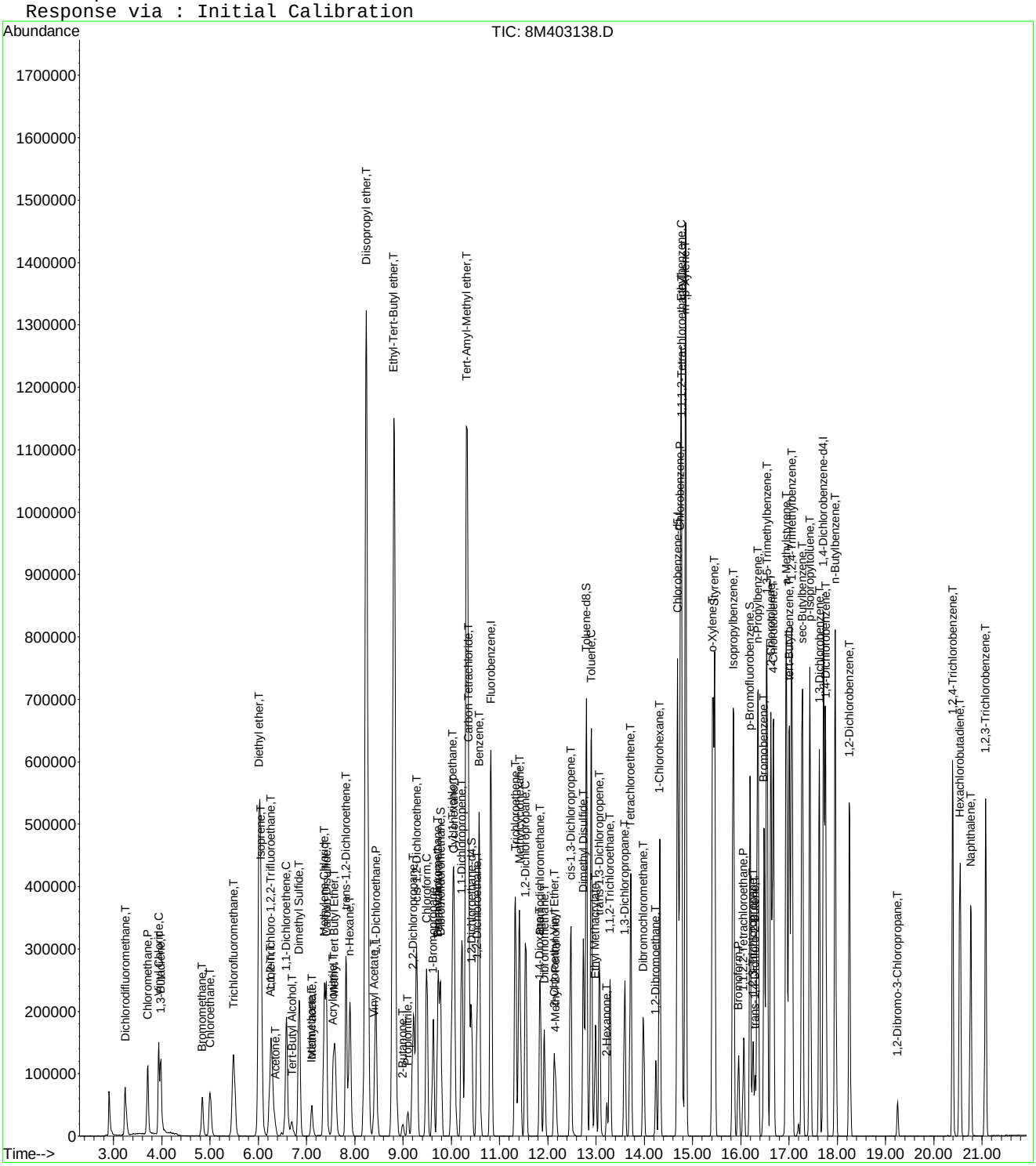

8M403138.D 8260WTR.M Fri Feb 20 18:02:00 2015 Page 3

2.1.2 RSK 175

2.1.2.1 Summary Data

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-01	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW13-021715	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	02/19/2015 16:08
Workgroup #:	WG513170	**Analyst:**	JDS	**Run Date:**	02/23/2015 15:38
Collect Date:	02/17/2015 08:10	**Dilution:**	1	**File ID:**	16G46759
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	468000	J	10000	5000	2500
Methane	74-82-8	18.4		5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-01	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW13-021715	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	02/19/2015 16:08
Workgroup #:	WG513170	**Analyst:**	JDS	**Run Date:**	02/23/2015 18:53
Collect Date:	02/17/2015 08:10	**Dilution:**	5	**File ID:**	16G46774
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	444000		50000	25000	12500
Methane	74-82-8	8.65	J	25.0	10.0	5.00
ethene	74-85-1	10.0	U	25.0	10.0	5.00
ethane	74-84-0	10.0	U	25.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-03	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW14-021715	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	02/19/2015 16:08
Workgroup #:	WG513170	**Analyst:**	JDS	**Run Date:**	02/23/2015 15:51
Collect Date:	02/17/2015 09:20	**Dilution:**	1	**File ID:**	16G46760
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	289000	J	10000	5000	2500
Methane	74-82-8	5.53		5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-03	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW14-021715	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	02/19/2015 16:08
Workgroup #:	WG513247	**Analyst:**	JDS	**Run Date:**	02/24/2015 14:44
Collect Date:	02/17/2015 09:20	**Dilution:**	5	**File ID:**	16G46797
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	241000	H1	50000	25000	12500
Methane	74-82-8	10.0	U,H1	25.0	10.0	5.00
ethene	74-85-1	10.0	U,H1	25.0	10.0	5.00
ethane	74-84-0	10.0	U,H1	25.0	10.0	5.00

H1	Sample analysis performed past holding time.
U,H1	Not detected; Sample analysis performed past holding time.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-05	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW11-021715	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	02/19/2015 16:08
Workgroup #:	WG513170	**Analyst:**	JDS	**Run Date:**	02/23/2015 16:03
Collect Date:	02/17/2015 10:45	**Dilution:**	1	**File ID:**	16G46761
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	420000	J	10000	5000	2500
Methane	74-82-8	10.9		5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-05	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW11-021715	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	02/19/2015 16:08
Workgroup #:	WG513170	**Analyst:**	JDS	**Run Date:**	02/23/2015 19:06
Collect Date:	02/17/2015 10:45	**Dilution:**	5	**File ID:**	16G46775
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	398000		50000	25000	12500
Methane	74-82-8	10.0	U	25.0	10.0	5.00
ethene	74-85-1	10.0	U	25.0	10.0	5.00
ethane	74-84-0	10.0	U	25.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-07	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW06-021715	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	02/19/2015 16:08
Workgroup #:	WG513170	**Analyst:**	JDS	**Run Date:**	02/23/2015 20:01
Collect Date:	02/17/2015 11:55	**Dilution:**	1	**File ID:**	16G46779
Sample Tag:	02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	170000		10000	5000	2500
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-09	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW08-021715	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	02/19/2015 16:08
Workgroup #:	WG513170	**Analyst:**	JDS	**Run Date:**	02/23/2015 16:29
Collect Date:	02/17/2015 14:05	**Dilution:**	1	**File ID:**	16G46763
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	465000	J	10000	5000	2500
Methane	74-82-8	2.28	J	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-09	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW08-021715	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	02/19/2015 16:08
Workgroup #:	WG513170	**Analyst:**	JDS	**Run Date:**	02/23/2015 19:18
Collect Date:	02/17/2015 14:05	**Dilution:**	5	**File ID:**	16G46776
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	444000		50000	25000	12500
Methane	74-82-8	10.0	U	25.0	10.0	5.00
ethene	74-85-1	10.0	U	25.0	10.0	5.00
ethane	74-84-0	10.0	U	25.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-11	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW22-021715	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	02/19/2015 16:08
Workgroup #:	WG513170	**Analyst:**	JDS	**Run Date:**	02/23/2015 20:12
Collect Date:	02/17/2015 15:15	**Dilution:**	1	**File ID:**	16G46780
Sample Tag:	02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	98400		10000	5000	2500
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.2.2 QC Summary Data

RSK-175 - Example Calculation for Methane

1.0 Linear Calibration Models

Option A - Average RF Method

ICAL_x	ICAL_r		RF
1.67	19901		11917
6.67	69174		10371
16.7	176923		10594
66.7	685135		10272
133	1324853		9961
300	2845104		9484
		Average RF:	**10433**

Where:
ICAL_x = the ICAL concentration
ICAL_r = the ICAL response (area)
RF = calibration factor = ICAL_r / ICAL_x

Option B - Agilent Linear Regression Constant

ICAL_x	ICAL_r	[ICAL_r}^2	[ICAL-x][ICAL-r]
1.67	19901	396049801	33235
6.67	69174	4785042276	461391
16.7	176923	31301747929	2954614
66.7	685135	4.6941E+11	45698505
133	1324853	1.75524E+12	176205449
300	2845104	8.09462E+12	853531200
Summation:		**1.03557E+13**	**1078884393**

Agilent Linear Regression Constant : **9598.567853**
(1.03557E+13)/1078884393)

2.0 Calculate the concentration in extract, Cx

Where:

y = area response of methane from quant report	**1157414**
a = average RF (or Agilent regression constant)	**10433.00**
Cx = y/a	**110.9377935**

3.0 Calculate the concentration in sample

Cs = Cx (MW/Tf) (HS/S) (DF)

Where:

Cx = Concentration in extract	**110.9377935**	umol/mol
MW = molecular weight of analyte	**16.04**	ug/umol
TF = temperature factor = (22.4)(313/273)	**25.68**	L/mol
HS = headspace volume	**0.015**	L
S = sample volume remaining after headspace removal	**0.00547**	L
DF = dilution factor	**2**	
Cs = calculated sample concentration	**380.034301**	ug/L

RSK-175 - Example Calculation for Carbon Dioxide

ICAL Plot - Quadratic Regression (y = Ax^2 + Bx +C)

Ax^2 + Bx + (C - y) = 0

Step 1 - Calculate the concentration in extract, Cx

Data from quadratic regression plot:		
Value of A from plot:	**0.916**	
Value of B from plot:	**1540**	
Value of C from plot:	**0**	
Response for methane from quantitation report (y):	**8763828**	
Value of C - y	**-8763828**	
Solving for Cx using the quadratic formula:		
Root 1 - Computed Cx1:	**2364.716284**	umol/mol
Root 2 - Computed Cx2:	**-4045.938991**	

Step 2 - Calculate the concentration in sample

Cs = Cx (MW/Tf) (HS/S) (DF)

Where:

Cx = Concentration in extract :	**2364.716284**	umol/mol
MW = molecular weight of analyte:	**44.0**	ug/umol
TF = temperature factor = (22.4)(313/273):	**25.68**	L/mol
HS = initial headspace volume (extraction log):	**0.015**	L
S = final volume (extraction log):	**0.00547**	L
DF = dilution factor:	**10**	
Cs = calculated sample concentration:	**111106.798**	ug/L

Other Notes:

Temperature of headspace = 40 C = 313 K

Analyte	**MW (g/mol)**
Methane	16.04
Ethane	30.07
Ethene	28.05
Propane	44.1
Carbon Dioxide	44.0

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 021915
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG512843

Comments: all samples ran on 2/19/15. Date chaanged from 2/19/15 to 2/18/15 between 16G46722 and 16G46725.

PDFs and uploaded data fixed to reflect actual run date.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G46714	WG512843-01 133umol/mol CCV STD RSK1	NA	1	1	STD67274	02/19/15 10:51
16G46716	WG512843-01 0.67 umol/mol STD RSK175	NA	1	1	STD67276	02/19/15 13:00
16G46717	WG512843-02 1.67 umol/mol STD RSK175	NA	1	1	STD67276	02/19/15 13:13
16G46718	WG512843-03 33.3 umol/mol STD RSK175	NA	1	1	STD67276	02/19/15 13:24
16G46719	WG512843-04 66.7 umol/mol STD RSK175	NA	1	1	STD67274	02/19/15 13:39
16G46720	WG512843-05 133 umol/mol STD RSK175	NA	1	1	STD67274	02/19/15 13:50
16G46721	WG512843-06 333 umol/mol STD RSK175	NA	1	1	STD67274	02/19/15 14:05
16G46722	WG512843-07 533 umol/mol STD RSK175	NA	1	1	STD67274	02/19/15 14:16
16G46725	WG512843-02 1.67 umol/mol STD RSK175	NA	1	1	STD67276	02/19/15 16:08
16G46726	WG512843-08 133 umol/mol ALT SRC STD	NA	1	1	STD68250	02/19/15 17:27
16G46727	WG512843-08 133 umol/mol ALT SRC STD	NA	1	1	STD68250	02/19/15 18:16

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1				
File ID: 16G46714				
			Failing. Recalibrate.	
3	X			
File ID: 16G46717				
10	X			
File ID: 16G46726				
			failed	

Approved: February 25, 2015

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 022315
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID: 52861

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG513170

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G46755	WG513154-01 133umol/mol CCV STD RSK1	NA	1	1	STD67274	02/23/15 11:57
16G46756	WG513170-01 BLANK STD RSK175	NA	1	1		02/23/15 13:44
16G46757	WG513170-02 67umol/mol LCS STD RSK17	NA	1	1	STD68250	02/23/15 13:56
16G46758	WG513170-03 67umol/mol LCS2 STD RSK1	NA	1	1	STD68250	02/23/15 14:08
16G46759	L15021053-01 A RSK175	5	1	1		02/23/15 15:38
16G46760	L15021053-03 A RSK175	5	1	1		02/23/15 15:51
16G46761	L15021053-05 A RSK175	5	1	1		02/23/15 16:03
16G46762	L15021053-07 A RSK175	5	1	1		02/23/15 16:16
16G46763	L15021053-09 A RSK175	5	1	1		02/23/15 16:29
16G46764	L15021053-11 A RSK175	5	1	1		02/23/15 16:42
16G46765	L15020813-06 A RSK175	<2	2	1		02/23/15 16:55
16G46766	WG513154-02 133umol/mol CCV STD RSK1	NA	1	1	STD67274	02/23/15 17:07
16G46767	L15020813-09 A RSK175	<2	2	1		02/23/15 17:21
16G46768	L15020813-10 A RSK175	<2	2	1		02/23/15 17:34
16G46769	L15020813-13 A RSK175	<2	2	1		02/23/15 17:46
16G46770	L15020813-14 A RSK175	<2	2	1		02/23/15 18:00
16G46771	L15020813-15 A RSK175	<2	2	1		02/23/15 18:13
16G46772	L15020813-17 A RSK175	<2	2	1		02/23/15 18:29
16G46773	L15020930-01 A RSK175	<2	1	1		02/23/15 18:41
16G46774	L15021053-01 B D1 5X RSK175	5	1	5		02/23/15 18:53
16G46775	L15021053-05 B D1 5X RSK175	5	1	5		02/23/15 19:06
16G46776	L15021053-09 B D1 5X RSK175	5	1	5		02/23/15 19:18
16G46777	WG513154-03 133umol/mol CCV STD RSK1	NA	1	1	STD67274	02/23/15 19:33
16G46778	L15021053-03 B A1 RSK175	5	1	1		02/23/15 19:45
16G46779	L15021053-07 B A1 RSK175	5	1	1		02/23/15 20:01
16G46780	L15021053-11 B A1 RSK175	5	1	1		02/23/15 20:12
16G46781	WG513154-04 133umol/mol CCV STD RSK1	NA	1	1	STD67274	02/23/15 20:28
16G46782	S5B0095-CCV-1	NA	1			02/23/15 20:40
16G46784	B5B0124-BS1	NA	1			02/23/15 21:06
16G46785	B5B0124-BSD1	NA	1			02/23/15 21:19
16G46786	15B0020-04 A	NA	1			02/23/15 21:31
16G46787	S5B0095-CCV-2	NA	1			02/23/15 21:44

Approved: February 26, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 022315
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID: 52861

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG513170

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
5	X	5	Over Calibration Range	CO2
File ID: 16G46759				
6	X		Carry-over contamination	CO2
File ID: 16G46760				
7	X	5	Over Calibration Range	CO2
File ID: 16G46761				
8	X		Carry-over contamination	CO2
File ID: 16G46762				
9		5	Over Calibration Range	CO2
File ID: 16G46763				
10	X		Carry-over contamination	CO2
File ID: 16G46764				
11	X	5	Over Calibration Range	m
File ID: 16G46765				
13	X		Carry-over contamination	m
File ID: 16G46767				
14	X	5	Over Calibration Range	m
File ID: 16G46768				
15	X		Carry-over contamination	m
File ID: 16G46769				
24	X	5	Over Calibration Range	CO2
File ID: 16G46778				

Approved: February 26, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 022415
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG513247

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G46788	WG513245-01 133umol/mol CCV RSK175	NA	1	1	STD67274	02/24/15 09:47
16G46789	WG513247-01 BLANK STD RSK175	NA	1	1		02/24/15 10:04
16G46790	WG513247-02 67umol/mol LCS STD RSK17	NA	1	1	STD68250	02/24/15 10:16
16G46791	WG513247-03 67umol/mol LCS2 STD RSK1	NA	1	1	STD68250	02/24/15 10:29
16G46792	L15020971-06 B D1 10X RSK175	5	1	10		02/24/15 13:40
16G46793	L15020971-12 B D1 5X RSK175	5	1	5		02/24/15 13:52
16G46794	L15020813-06 B D1 5X RSK175	<2	2	5		02/24/15 14:08
16G46795	L15020813-09 B D1 5X RSK175	<2	2	5		02/24/15 14:20
16G46796	L15020813-13 B D1 5X RSK175	<2	2	5		02/24/15 14:32
16G46797	L15021053-03 C D1 5X RSK175	5	1	5		02/24/15 14:44
16G46798	L15020971-08 B A1 RSK175	5	1	1		02/24/15 14:59
16G46799	WG513245-02 133umol/mol CCV RSK175	NA	1	1	STD67274	02/24/15 15:12
16G46800	L15020971-14 B A1 RSK175	5	1	1		02/24/15 15:24
16G46801	L15020813-10 B A1 RSK175	<2	2	1		02/24/15 15:36
16G46802	L15020813-14 B A1 RSK175	<2	2	1		02/24/15 15:52
16G46803	L15020882-01 A RSK175	<2	1	1		02/24/15 16:05
16G46804	L15020882-03 A RSK175	<2	1	1		02/24/15 16:17
16G46805	L15020978-01 A RSK175	5	1	1		02/24/15 16:30
16G46806	L15021027-01 A RSK175	5	1	1		02/24/15 16:42
16G46807	L15021158-01 A RSK175	<2	1	1		02/24/15 16:55
16G46808	L15021062-01 A RSK175	<2	1	1		02/24/15 17:07
16G46809	L15020930-03 A RSK175	<2	1	1		02/24/15 17:21
16G46810	WG513245-03 133umol/mol CCV RSK175	NA	1	1	STD67274	02/24/15 17:34
16G46811	L15020930-05 A RSK175	<2	1	1		02/24/15 17:47
16G46812	L15020930-07 A RSK175	<2	1	1		02/24/15 17:59
16G46813	L15020930-09 A RSK175	<2	1	1		02/24/15 18:11
16G46814	WG513245-04 133umol/mol CCV RSK175	NA	1	1	STD67274	02/24/15 18:28

Comments

Seq.	Rerun	Dil.	Reason	Analytes
10				
File ID: 16G46797				
ran out of hold				

Approved: February 26, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 022415
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG513247

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
21	X	10	Over Calibration Range	m, ethane, p, n-but.
File ID: 16G46808				
22	X			p
File ID: 16G46809				
	matrix effect possibly masking propane			
24	X			p
File ID: 16G46811				
	matrix effect possibly masking propane			
25	X			p
File ID: 16G46812				
	matrix effect possibly masking propane			
26	X			P
File ID: 16G46813				
	matrix effect possibly masking propane			

Approved: February 26, 2015

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Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B202076

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG512843-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG512843-08	15	mL	15	mL					5.47	mL	5.47	mL	40
WG512843-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG512843-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG512843-04	15	mL	15	mL					5.47	mL	5.47	mL	40
WG512843-05	15	mL	15	mL					5.47	mL	5.47	mL	40
WG512843-06	15	mL	15	mL					5.47	mL	5.47	mL	40
WG512843-07	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B202186

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG513154-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG513154-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG513154-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG513154-04	15	mL	15	mL					5.47	mL	5.47	mL	40
WG513170-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15021053-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020930-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020813-13	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020813-14	15	mL	15	mL					5.47	mL	5.47	mL	40
WG513170-02	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L15020813-09	15	mL	15	mL					5.47	mL	5.47	mL	40
L15021053-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L15021053-05	15	mL	15	mL					5.47	mL	5.47	mL	40
WG513170-03	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L15021053-09	15	mL	15	mL					5.47	mL	5.47	mL	40
L15021053-11	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020813-17	15	mL	15	mL					5.47	mL	5.47	mL	40
L15021053-07	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020813-15	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020813-06	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020813-10	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B202245

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG513245-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG513245-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG513245-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG513245-04	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020971-06	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020978-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15021062-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020930-07	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020813-09	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020971-08	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020882-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG513247-02	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
WG513247-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020813-06	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020882-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG513247-03	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L15021053-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020813-10	15	mL	15	mL					5.47	mL	5.47	mL	40
L15021027-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020930-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020971-12	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020971-14	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020930-09	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020930-05	15	mL	15	mL					5.47	mL	5.47	mL	40
L15021158-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020813-13	15	mL	15	mL					5.47	mL	5.47	mL	40
L15020813-14	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.

Data Checklist

Date: 23-FEB-2015
Analyst: JDS
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 66496
Analytical Workgroups: WG513170

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	NA
Special Standards	NA
Blanks	X
TCL's	NA
Surrogates	NA
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	X
Surrogates	NA
Calculations & Correct Factors	NA
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
25-FEB-2015

Secondary Reviewer:
26-FEB-2015

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-26-2015 15:53:11

Microbac Laboratories Inc.

Data Checklist

Date: 24-FEB-2015
Analyst: JDS
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 66526
Analytical Workgroups: WG513247

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	NA
Special Standards	NA
Blanks	X
TCL's	NA
Surrogates	NA
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	X
Surrogates	NA
Calculations & Correct Factors	NA
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
25-FEB-2015

Secondary Reviewer:
26-FEB-2015

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-26-2015 16:11:57

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: RSK175 AAB#: WG513170

Login Number: L15021053

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW13-021715	01	02/17/15					02/23/2015	6.3	7		02/23/15	6.3	7	
50WW13-021715	01	02/17/15					02/23/2015	6.4	7		02/23/15	6.4	7	
50WW14-021715	03	02/17/15					02/23/2015	6.3	7		02/23/15	6.3	7	
50WW11-021715	05	02/17/15					02/23/2015	6.2	7		02/23/15	6.2	7	
50WW11-021715	05	02/17/15					02/23/2015	6.3	7		02/23/15	6.3	7	
50WW06-021715	07	02/17/15					02/23/2015	6.3	7		02/23/15	6.3	7	
50WW08-021715	09	02/17/15					02/23/2015	6.2	7		02/23/15	6.2	7	
50WW08-021715	09	02/17/15					02/23/2015	6.1	7		02/23/15	6.1	7	
50WW22-021715	11	02/17/15					02/23/2015	6.2	7		02/23/15	6.2	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4037666
Report generated 02/27/2015 12:54

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: RSK175 AAB#: WG513247

Login Number: L15021053

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW14-021715	03	02/17/15					02/24/2015	7.2	7	*	02/24/15	7.2	7	*

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4037666
Report generated 02/27/2015 12:54

METHOD BLANK SUMMARY

Login Number: L15021053
Blank File ID: 16G46756
Prep Date: 02/23/15 13:44
Analyzed Date: 02/23/15 13:44
Analyst: JDS

Work Group: WG513170
Blank Sample ID: WG513170-01
Instrument ID: HP16
Method: RSK175

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG513170-02	16G46757	02/23/15 13:56	01
LCS2	WG513170-03	16G46758	02/23/15 14:08	01
50WW13-021715	L15021053-01	16G46759	02/23/15 15:38	01
50WW14-021715	L15021053-03	16G46760	02/23/15 15:51	01
50WW11-021715	L15021053-05	16G46761	02/23/15 16:03	01
50WW08-021715	L15021053-09	16G46763	02/23/15 16:29	01
50WW13-021715	L15021053-01	16G46774	02/23/15 18:53	DL01
50WW11-021715	L15021053-05	16G46775	02/23/15 19:06	DL01
50WW08-021715	L15021053-09	16G46776	02/23/15 19:18	DL01
50WW06-021715	L15021053-07	16G46779	02/23/15 20:01	02
50WW22-021715	L15021053-11	16G46780	02/23/15 20:12	02

Report Name: BLANK_SUMMARY
PDF File ID: 4041159
Report generated 02/27/2015 12:54

METHOD BLANK SUMMARY

Login Number: L15021053
Blank File ID: 16G46789
Prep Date: 02/24/15 10:04
Analyzed Date: 02/24/15 10:04
Analyst: JDS

Work Group: WG513247
Blank Sample ID: WG513247-01
Instrument ID: HP16
Method: RSK175

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG513247-02	16G46790	02/24/15 10:16	01
LCS2	WG513247-03	16G46791	02/24/15 10:29	01
50WW14-021715	L15021053-03	16G46797	02/24/15 14:44	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4041159
Report generated 02/27/2015 12:54

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15021053 Prep Date: 02/23/15 13:44 Sample ID: WG513170-01
Instrument ID: HP16 Run Date: 02/23/15 13:44 Prep Method: 5021
File ID: 16G46756 Analyst: JDS Method: RSK175
Workgroup (AAB#): WG513170 Matrix: Water Units: ug/L
Contract #: Cal ID: HP16-19-FEB-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Carbon Dioxide	2500	10000	2500	1	U
Methane	1.00	5.00	1.00	1	U
ethene	1.00	5.00	1.00	1	U
ethane	1.00	5.00	1.00	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4041160
27-FEB-2015 12:54

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15021053 Prep Date: 02/24/15 10:04 Sample ID: WG513247-01
Instrument ID: HP16 Run Date: 02/24/15 10:04 Prep Method: 5021
File ID: 16G46789 Analyst: JDS Method: RSK175
Workgroup (AAB#): WG513247 Matrix: Water Units: ug/L
Contract #: Cal ID: HP16-19-FEB-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Carbon Dioxide	2500	10000	2500	1	U
Methane	1.00	5.00	1.00	1	U
ethene	1.00	5.00	1.00	1	U
ethane	1.00	5.00	1.00	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4041160
27-FEB-2015 12:54

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15021053 Run Date: 02/23/2015 Sample ID: WG513170-02
Instrument ID: HP16 Run Time: 13:56 Prep Method: 5021
File ID: 16G46757 Analyst: JDS Method: RSK175
Workgroup (AAB#): WG513170 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD68250 Cal ID: HP16 - 19-FEB-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Carbon Dioxide	31300	19500	62.2	10 - 200	
Methane	114	119	104	85 - 115	
ethene	200	203	102	85 - 115	
ethane	214	226	106	85 - 115	

LCS - Modified 03/06/2008
PDF File ID: 4041194
Report generated: 02/27/2015 12:54

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15021053 Run Date: 02/24/2015 Sample ID: WG513247-02
Instrument ID: HP16 Run Time: 10:16 Prep Method: 5021
File ID: 16G46790 Analyst: JDS Method: RSK175
Workgroup (AAB#): WG513247 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD68250 Cal ID: HP16 - 19-FEB-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Carbon Dioxide	31300	22500	71.9	10 - 200	
Methane	114	116	101	85 - 115	
ethene	200	199	99.8	85 - 115	
ethane	214	221	103	85 - 115	

LCS - Modified 03/06/2008
PDF File ID: 4041194
Report generated: 02/27/2015 12:54

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15021053 Analyst: JDS Prep Method: 5021
Instrument ID: HP16 Matrix: Water Method: RSK175
Workgroup (AAB#): WG513247 Units: ug/L
QC Key: DOD4 Lot #: STD68250

Sample ID: WG513247-02 LCS File ID: 16G46790 Run Date: 02/24/2015 10:16
Sample ID: WG513247-03 LCS2 File ID: 16G46791 Run Date: 02/24/2015 10:29

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Methane	114	116	101	114	118	103	1.79	85 - 115	20	
ethene	200	199	99.8	200	200	100	0.285	85 - 115	20	
ethane	214	221	103	214	223	104	0.607	85 - 115	20	
Carbon Dioxide	31300	22500	71.9	31300	25000	79.7	10.3	10 - 200	40	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4041161
Report generated: 02/27/2015 12:54

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15021053 Analyst: JDS Prep Method: 5021
Instrument ID: HP16 Matrix: Water Method: RSK175
Workgroup (AAB#): WG513170 Units: ug/L
QC Key: DOD4 Lot #: STD68250

Sample ID: WG513170-02 LCS File ID: 16G46757 Run Date: 02/23/2015 13:56
Sample ID: WG513170-03 LCS2 File ID: 16G46758 Run Date: 02/23/2015 14:08

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Methane	114	119	104	114	119	104	0.533	85 - 115	20	
ethene	200	203	102	200	202	101	0.518	85 - 115	20	
ethane	214	226	106	214	226	105	0.341	85 - 115	20	
Carbon Dioxide	31300	19500	62.2	31300	22100	70.4	12.4	10 - 200	40	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4041161
Report generated: 02/27/2015 12:54

Calibration Table Report
Method: RSKEXT.M
Title: RSK175 HP16 (SOP: OVL RSK01) 021915
Last Calibration: Wed Feb 18 16:20:53 2015
Curve: WG512843
Calibration Files

	Compound	0.67 16G46716.D	1.67 16G46725.D	33.3 16G46718.D	66.7 16G46719.D	133 16G46720.D	333 16G46721.D	533 16G46722.D	Avg	%RSD	Linear
T	methane		469991	216913	201174	205164	205675	189314	248039	43.983	0.999
T	ethene		362081	354680	329998	343165	349674	317458	342842	4.822	
T	acetylene		354975	361682	332643	368520	367143	326668	351939	5.116	
T	ethane	250100	370704	365461	348342	360148	368915	334980	342664	12.473	
T	propane	348508	546226	538360	511241	531019	544577	490547	501497	14.031	
T	n-butane	435718	687121	696500	655852	692618	713209	636035	645293	14.883	
	Signal #2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
T	carbon dioxide		6835	5856	5442	6197	6408	5536	6046	8.870	

Wed Feb 18 16:21:35 2015

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15021053 Run Date: 02/19/2015 Sample ID: WG512843-08
Instrument ID: HP16 Run Time: 18:16 Method: RSK175
File ID: 16G46727 Analyst: JDS QC Key: DOD4
ICal Workgroup: WG512843 Cal ID: HP16 - 19-FEB-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
carbon dioxide		62700	65900	ug/L	6360	5.20	15	
methane		228	243	ug/L	212000	6.50	15	
ethene		398	414	ug/L	356000	3.80	15	
ethane		427	459	ug/L	369000	7.60	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4041163
Report generated 02/27/2015 12:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15021053 Run Date: 02/23/2015 Sample ID: WG513154-01
Instrument ID: HP16 Run Time: 11:57 Method: RSK175
File ID: 16G46755 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG513170 Cal ID: HP16 - 19-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62700	67600	ug/L	6530	7.96	15	
methane		228	212	ug/L	186000	6.76	15	
ethene		398	371	ug/L	319000	6.88	15	
ethane		427	419	ug/L	337000	1.78	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4041164
Report generated 02/27/2015 12:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15021053 Run Date: 02/23/2015 Sample ID: WG513154-02
Instrument ID: HP16 Run Time: 17:07 Method: RSK175
File ID: 16G46766 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG513170 Cal ID: HP16 - 19-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62700	59200	ug/L	5720	5.44	15	
methane		228	231	ug/L	202000	1.34	15	
ethene		398	394	ug/L	339000	1.09	15	
ethane		427	446	ug/L	358000	4.49	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4041164
Report generated 02/27/2015 12:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15021053 Run Date: 02/23/2015 Sample ID: WG513154-03
Instrument ID: HP16 Run Time: 19:33 Method: RSK175
File ID: 16G46777 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG513170 Cal ID: HP16 - 19-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62700	55200	ug/L	5330	11.9	15	
methane		228	230	ug/L	201000	0.951	15	
ethene		398	385	ug/L	332000	3.27	15	
ethane		427	437	ug/L	351000	2.37	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4041164
Report generated 02/27/2015 12:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15021053 Run Date: 02/23/2015 Sample ID: WG513154-04
Instrument ID: HP16 Run Time: 20:28 Method: RSK175
File ID: 16G46781 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG513170 Cal ID: HP16 - 19-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62700	54200	ug/L	5230	13.6	15	
methane		228	231	ug/L	202000	1.36	15	
ethene		398	384	ug/L	331000	3.54	15	
ethane		427	437	ug/L	351000	2.37	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4041164
Report generated 02/27/2015 12:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15021053 Run Date: 02/24/2015 Sample ID: WG513245-01
Instrument ID: HP16 Run Time: 09:47 Method: RSK175
File ID: 16G46788 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG513247 Cal ID: HP16 - 19-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62700	64700	ug/L	6240	3.27	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4041164
Report generated 02/27/2015 12:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15021053 Run Date: 02/24/2015 Sample ID: WG513245-02
Instrument ID: HP16 Run Time: 15:12 Method: RSK175
File ID: 16G46799 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG513247 Cal ID: HP16 - 19-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62700	61000	ug/L	5880	2.68	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4041164
Report generated 02/27/2015 12:54

2.1.2.3 Sample Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022315\16G46759.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\022315\16G46759.D\TCD2B.CH
Acq On : 23 Feb 2015 15:38 Operator: JDS
Sample : L15021053-01 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 24 08:41:31 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.54	2585291	10.766	umol/
2) T	ethene	1.04	30920	0.090	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.37	24311	0.071	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.19	601731965	99530.900	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46759.D RSKEXT.M Tue Feb 24 08:41:31 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\022315\16G46759.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\022315\16G46759.D\TCD2B.CH
Acq On : 23 Feb 2015 15:38 Operator: JDS
Sample : L15021053-01 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 24 8:41 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

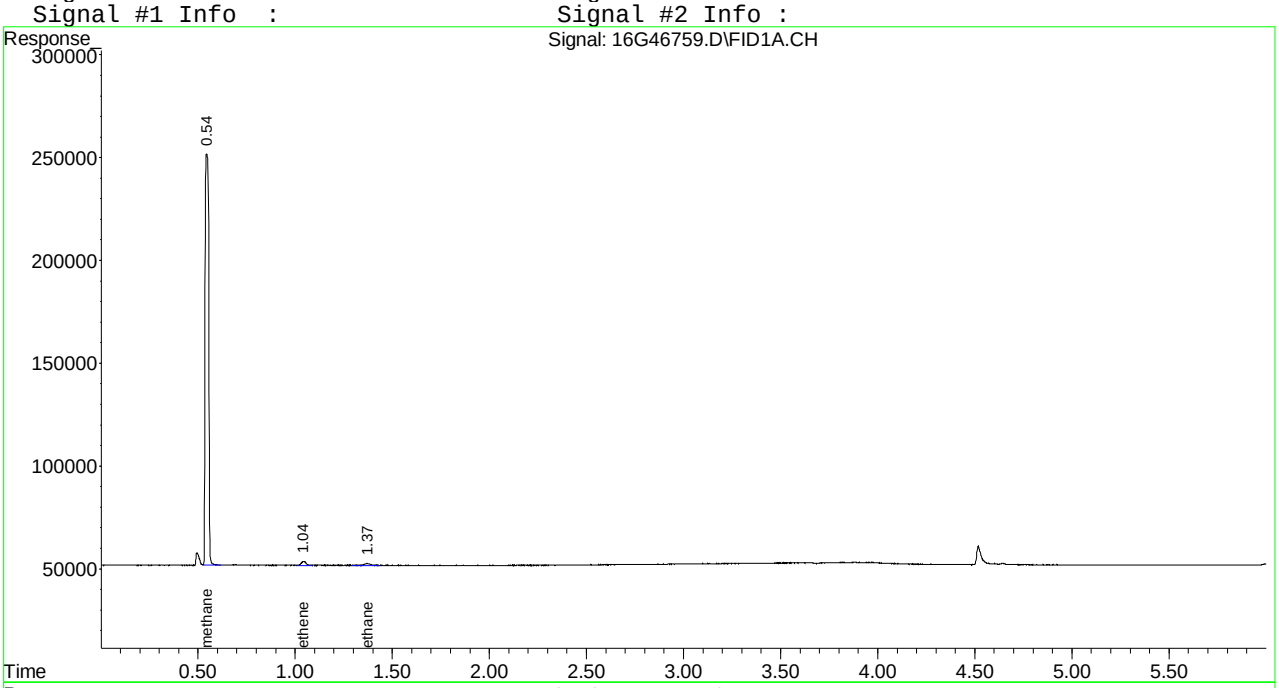

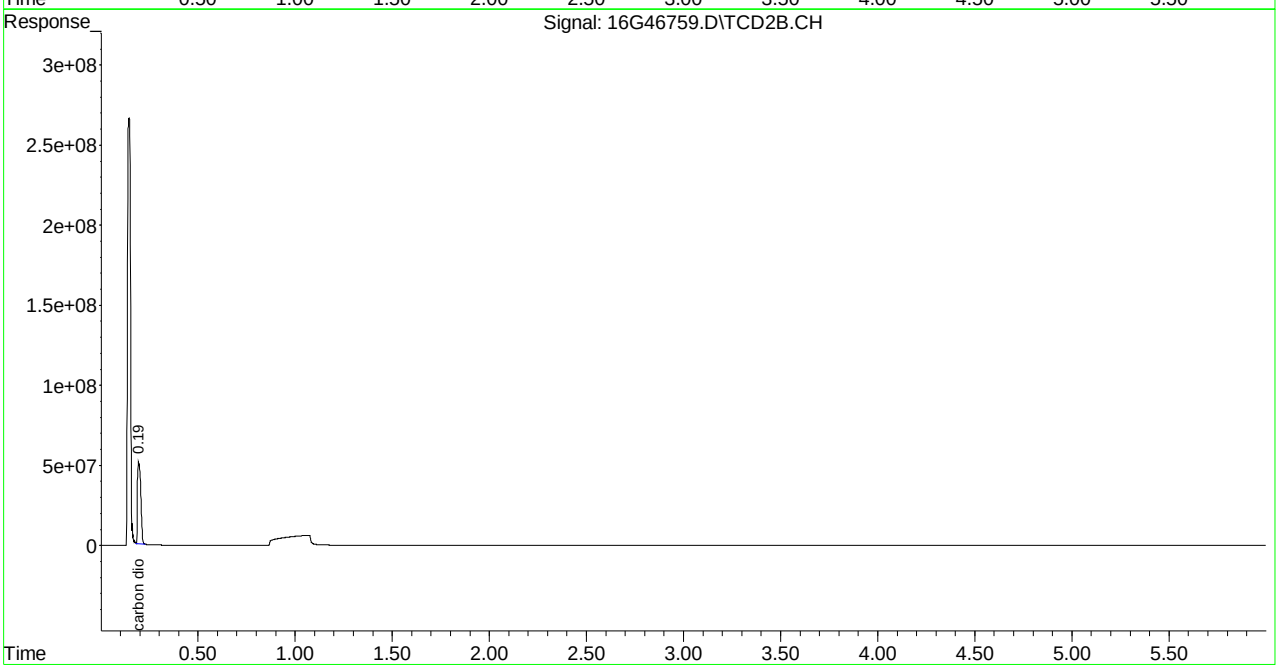

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022315\16G46774.D\FID1A.CH Vial: 20
Signal #2 : C:\MSDCHEM\1\DATA\022315\16G46774.D\TCD2B.CH
Acq On : 23 Feb 2015 18:53 Operator: JDS
Sample : L15021053-01 B D1 5X RSK175 Inst : HP16
Misc : 1,5 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 24 08:42:09 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	678101	1.013	umol/
2) T	ethene	1.06	7453	0.022	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.39	9567	0.028	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	114147090	18880.769	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46774.D RSKEXT.M Tue Feb 24 08:42:09 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\022315\16G46774.D\FID1A.CH Vial: 20
Signal #2 : C:\MSDCHEM\1\DATA\022315\16G46774.D\TCD2B.CH
Acq On : 23 Feb 2015 18:53 Operator: JDS
Sample : L15021053-01 B D1 5X RSK175 Inst : HP16
Misc : 1,5 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 24 8:42 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

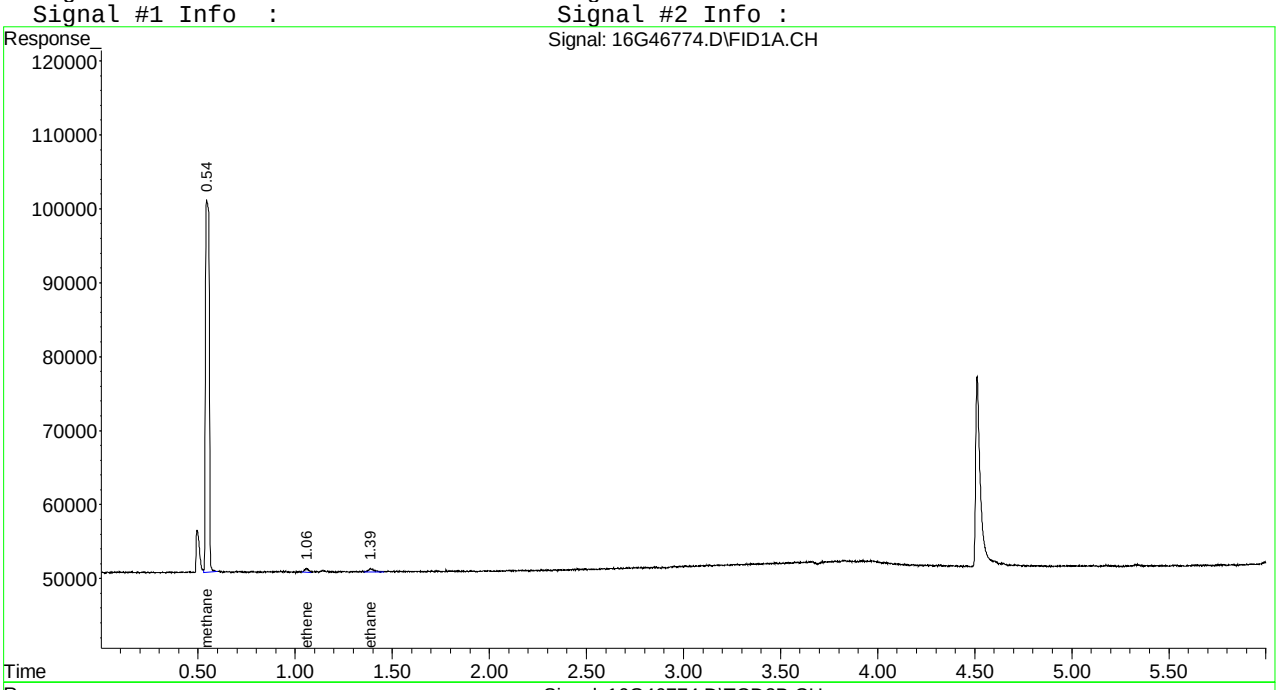

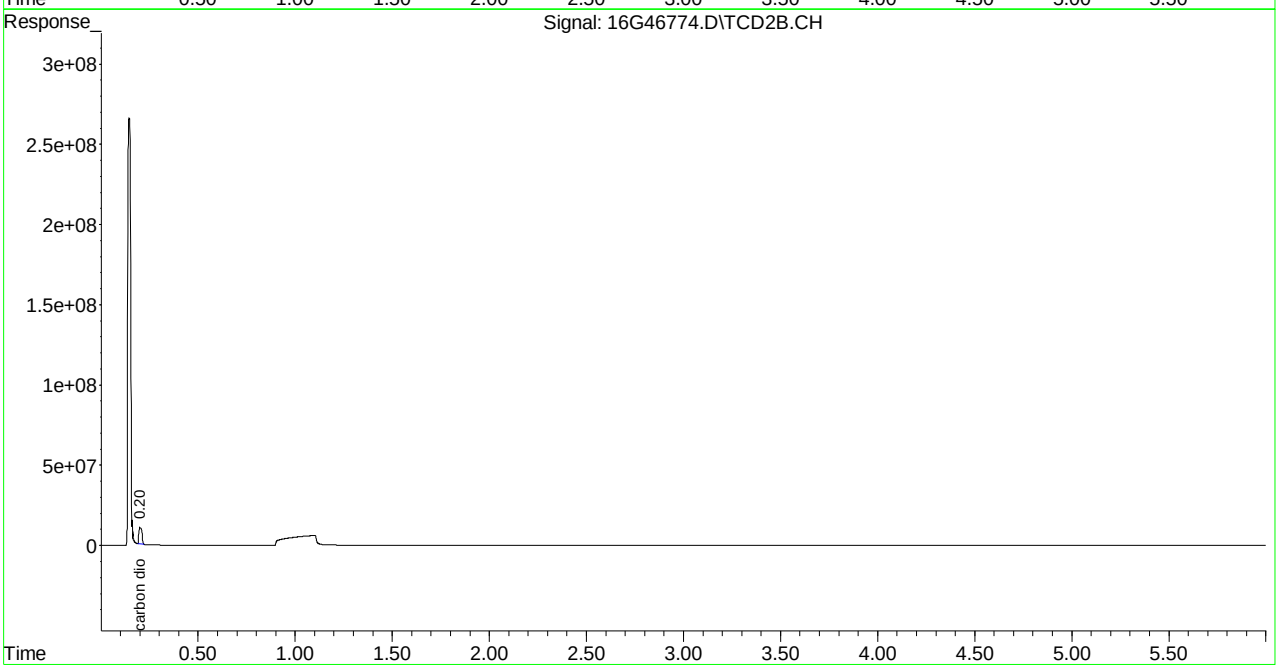

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022315\16G46760.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\022315\16G46760.D\TCD2B.CH
Acq On : 23 Feb 2015 15:51 Operator: JDS
Sample : L15021053-03 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 24 08:41:33 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	1112398	3.234	umol/
2) T	ethene	1.05	76684	0.224	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.39	27193	0.079	umol/
5) T	propane	3.82	10300	0.021	umol/
6) T	n-butane	5.33	12315	0.019	umol/
8) T	carbon dioxide	0.20	371394528	61431.391	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46760.D RSKEXT.M Tue Feb 24 08:41:33 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022315\16G46760.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\022315\16G46760.D\TCD2B.CH
Acq On : 23 Feb 2015 15:51 Operator: JDS
Sample : L15021053-03 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 24 8:41 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

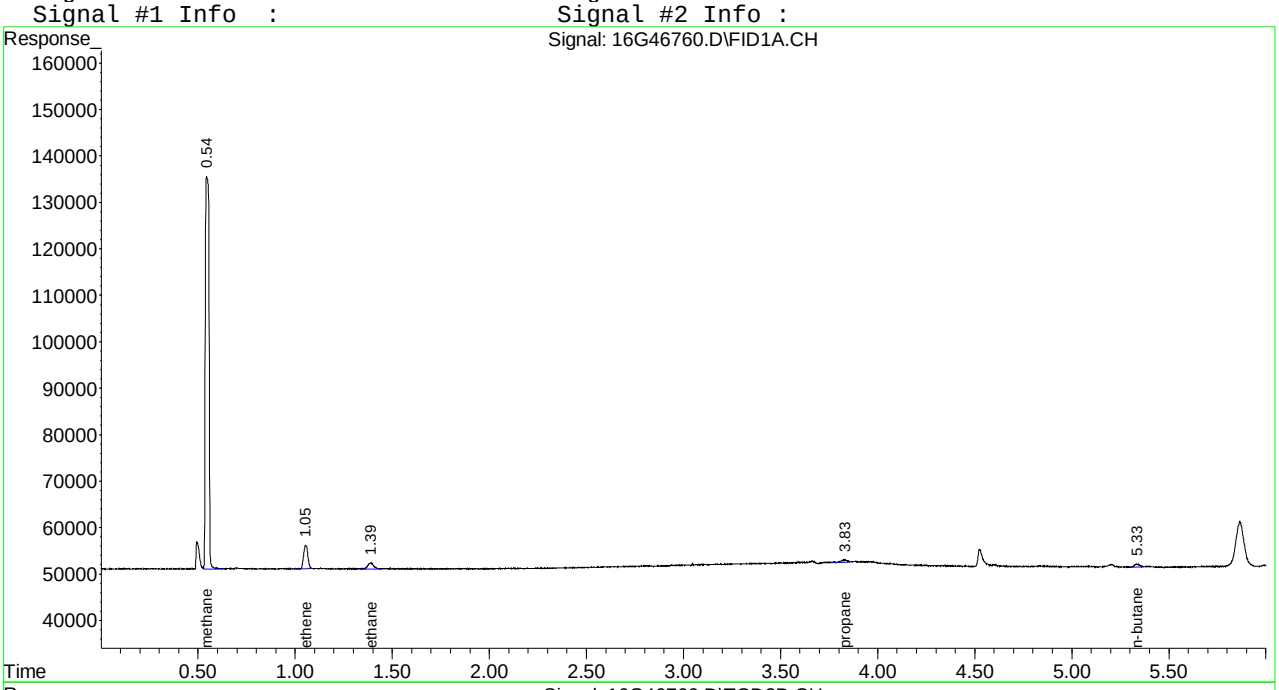

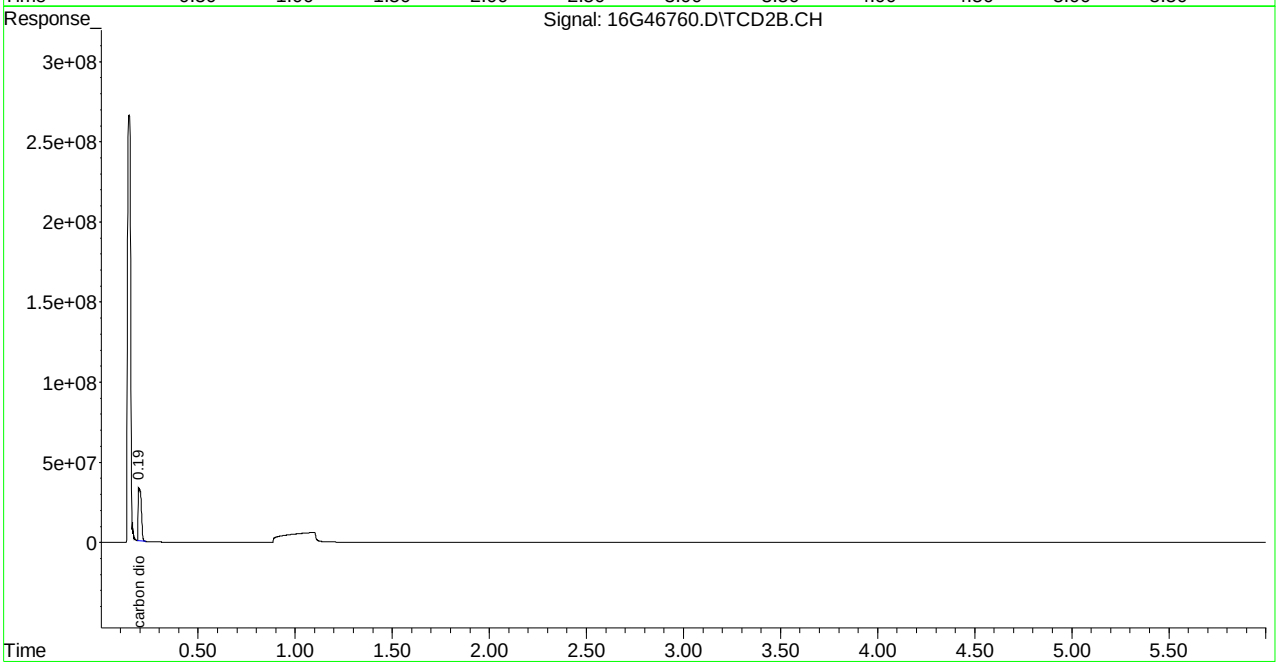

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022415\16G46797.D\FID1A.CH Vial: 10
Signal #2 : C:\MSDCHEM\1\DATA\022415\16G46797.D\TCD2B.CH
Acq On : 24 Feb 2015 14:44 Operator: JDS
Sample : L15021053-03 C D1 5X RSK175 Inst : HP16
Misc : 1,5 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 25 10:55:59 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	487672	0.039	umol/
2) T	ethene	1.06	12532	0.037	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.39	9646	0.028	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	62093789	10270.770	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46797.D RSKEXT.M Wed Feb 25 10:55:59 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\022415\16G46797.D\FID1A.CH Vial: 10
Signal #2 : C:\MSDCHEM\1\DATA\022415\16G46797.D\TCD2B.CH
Acq On : 24 Feb 2015 14:44 Operator: JDS
Sample : L15021053-03 C D1 5X RSK175 Inst : HP16
Misc : 1,5 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 25 10:55 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

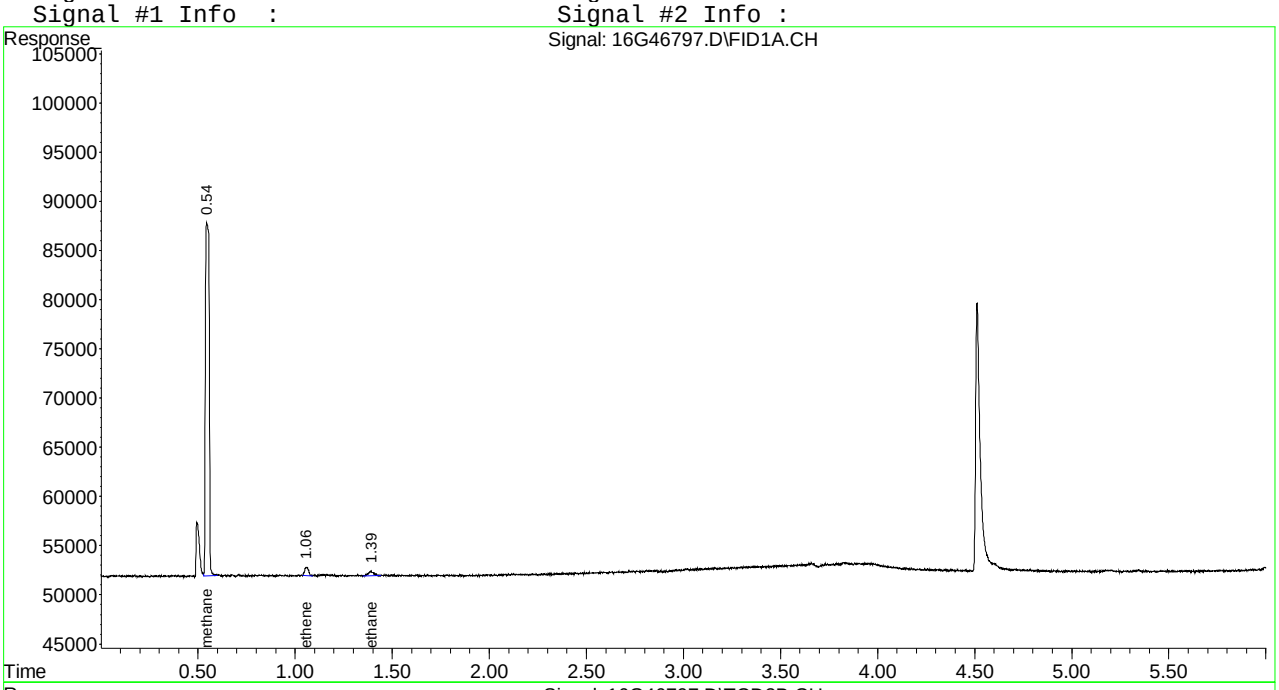

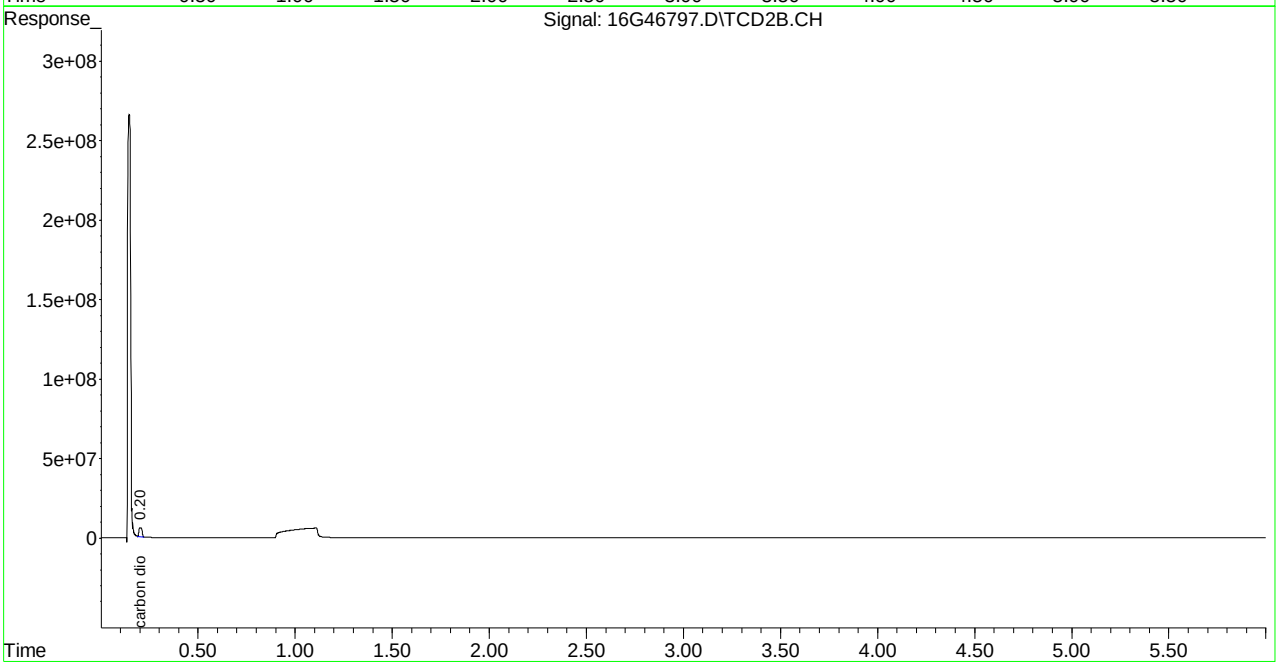

Quantitation Report (Not Reviewed)

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Signal #1 : C:\MSDCHEM\1\DATA\022315\16G46761.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\022315\16G46761.D\TCD2B.CH
Acq On    : 23 Feb 2015  16:03                        Operator: JDS
Sample    : L15021053-05 A RSK175                     Inst    : HP16
Misc      : 1,1                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Feb 24 08:41:34 2015  Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update  : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj.     :
Signal #1 Phase :                   Signal #2 Phase:
Signal #1 Info  :                   Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	1726884	6.377	umol/
2) T	ethene	1.06	12937	0.038	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.39	18770	0.055	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.19	540950391	89477.179	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

Signal #1 : C:\MSDCHEM\1\DATA\022315\16G46761.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\022315\16G46761.D\TCD2B.CH
Acq On : 23 Feb 2015 16:03 Operator: JDS
Sample : L15021053-05 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 24 8:41 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

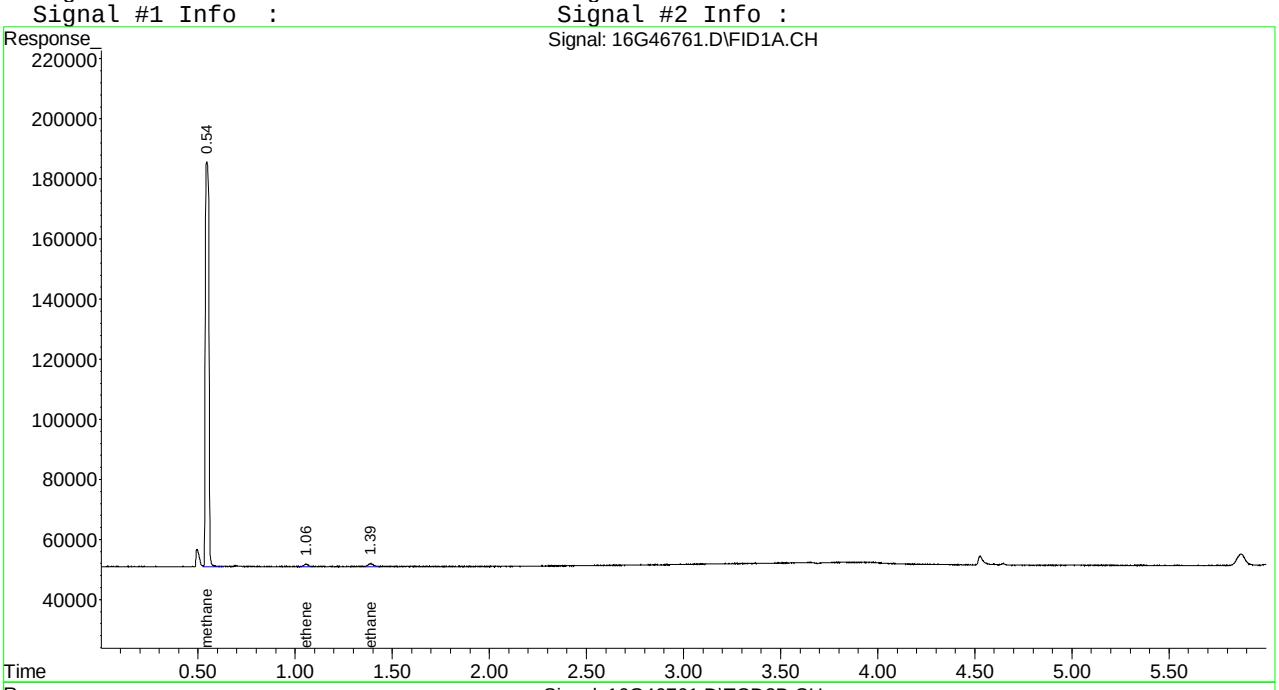

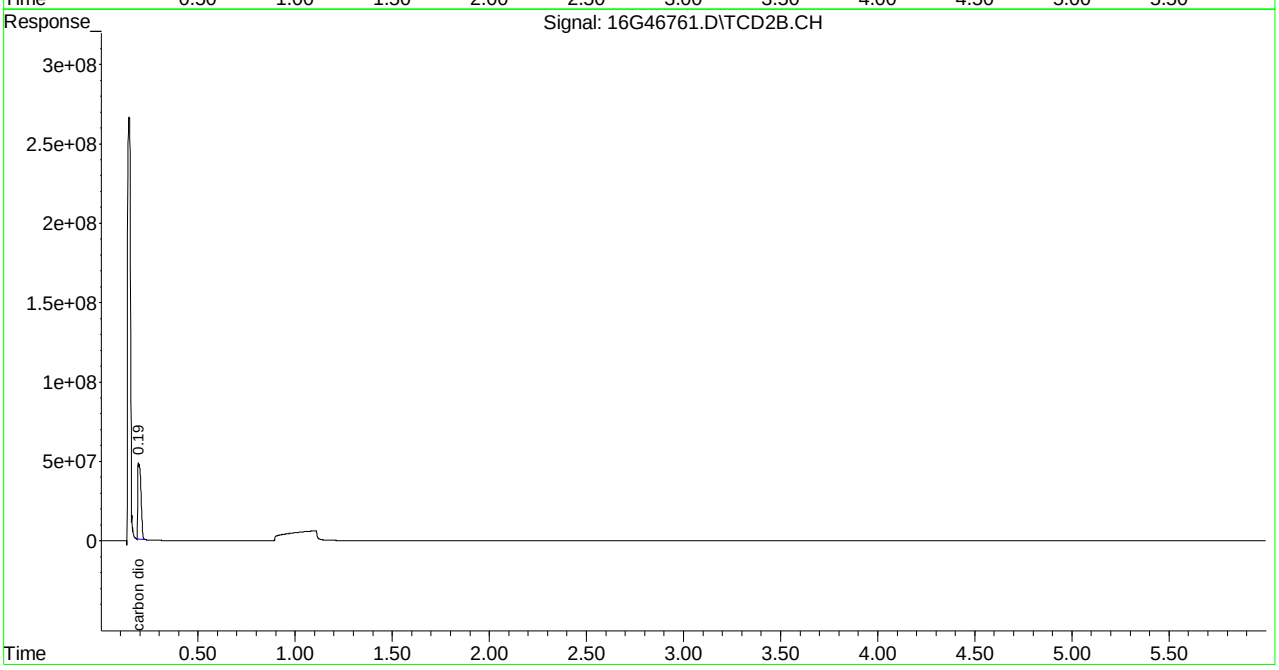

Quantitation Report (Not Reviewed)

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Signal #1 : C:\MSDCHEM\1\DATA\022315\16G46775.D\FID1A.CH Vial: 21
Signal #2 : C:\MSDCHEM\1\DATA\022315\16G46775.D\TCD2B.CH
Acq On    : 23 Feb 2015  19:06                        Operator: JDS
Sample    : L15021053-05 B D1 5X RSK175               Inst    : HP16
Misc      : 1,5                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Feb 24 08:42:11 2015  Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update  : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	555485	0.386	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.39	5437	0.016	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	102431117	16942.861	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

16G46775.D RSKEXT.M Tue Feb 24 08:42:11 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022315\16G46775.D\FID1A.CH Vial: 21
Signal #2 : C:\MSDCHEM\1\DATA\022315\16G46775.D\TCD2B.CH
Acq On : 23 Feb 2015 19:06 Operator: JDS
Sample : L15021053-05 B D1 5X RSK175 Inst : HP16
Misc : 1,5 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 24 8:42 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

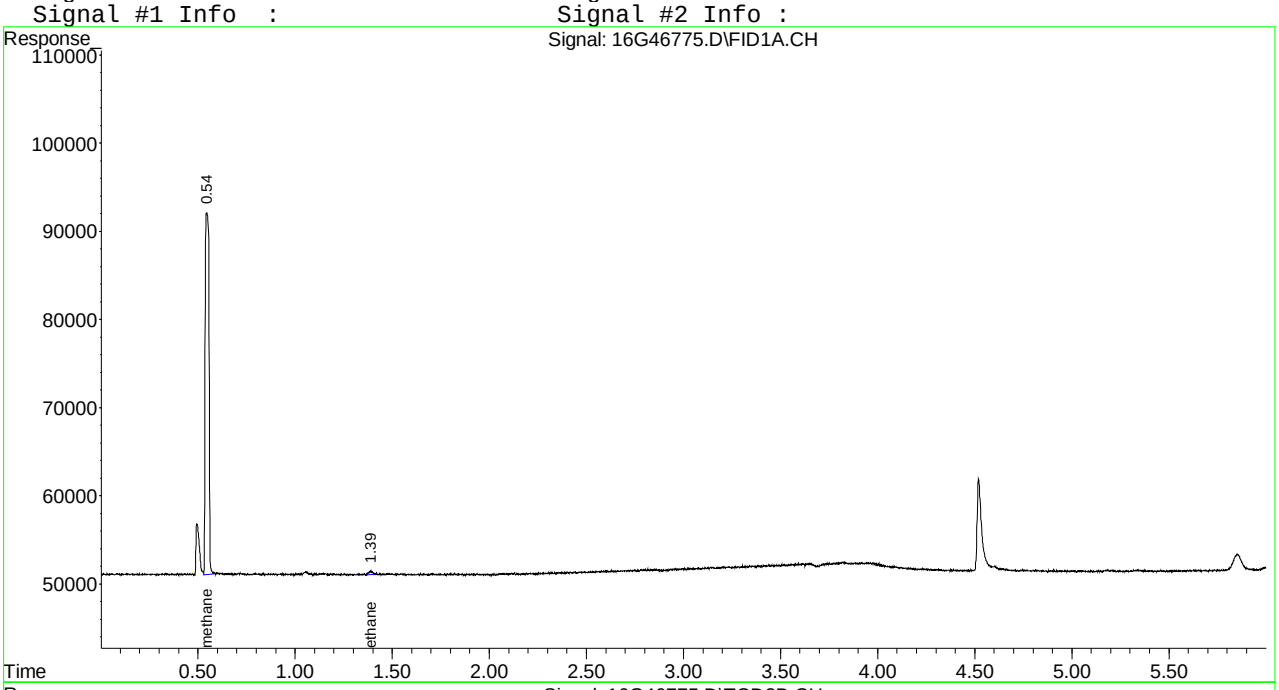

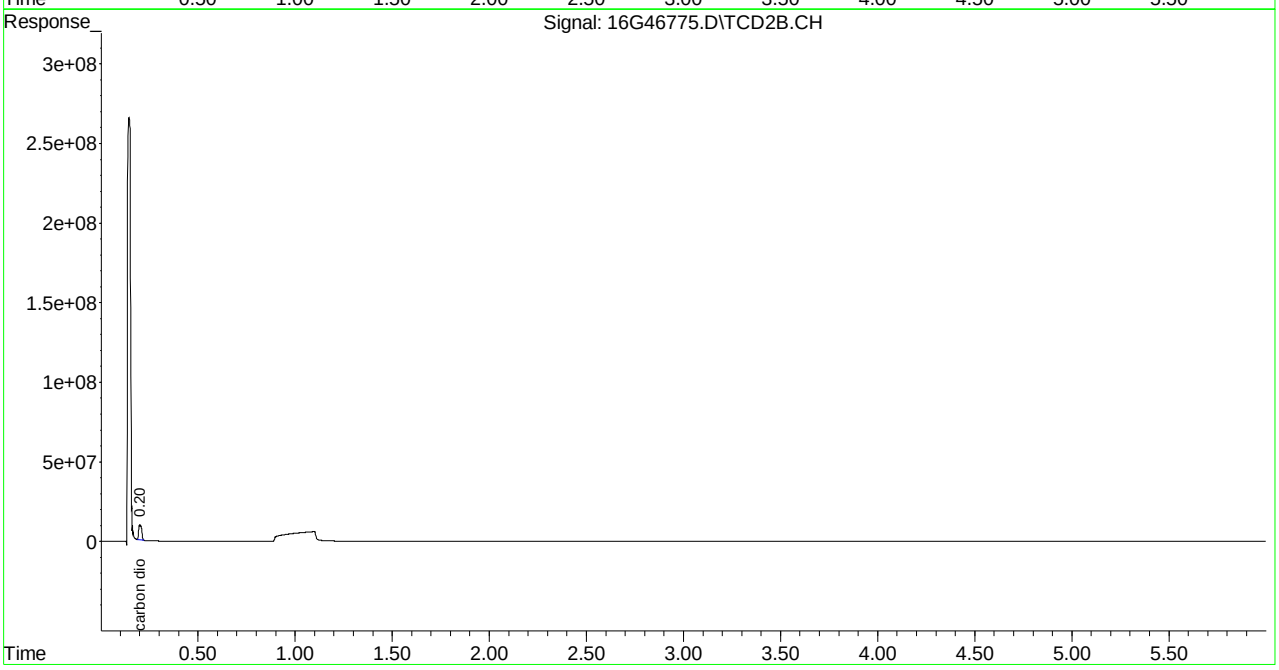

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022315\16G46779.D\FID1A.CH Vial: 25
Signal #2 : C:\MSDCHEM\1\DATA\022315\16G46779.D\TCD2B.CH
Acq On : 23 Feb 2015 20:01 Operator: JDS
Sample : L15021053-07 B A1 RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 24 08:42:14 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	373085	N.D.	umol/
2) T	ethene	1.05	8512	0.025	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.39	15280	0.045	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	5.38	688734	1.067	umol/
8) T	carbon dioxide	0.20	218470835	36136.685	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46779.D RSKEXT.M Tue Feb 24 08:42:14 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022315\16G46779.D\FID1A.CH Vial: 25
Signal #2 : C:\MSDCHEM\1\DATA\022315\16G46779.D\TCD2B.CH
Acq On : 23 Feb 2015 20:01 Operator: JDS
Sample : L15021053-07 B A1 RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 24 8:42 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

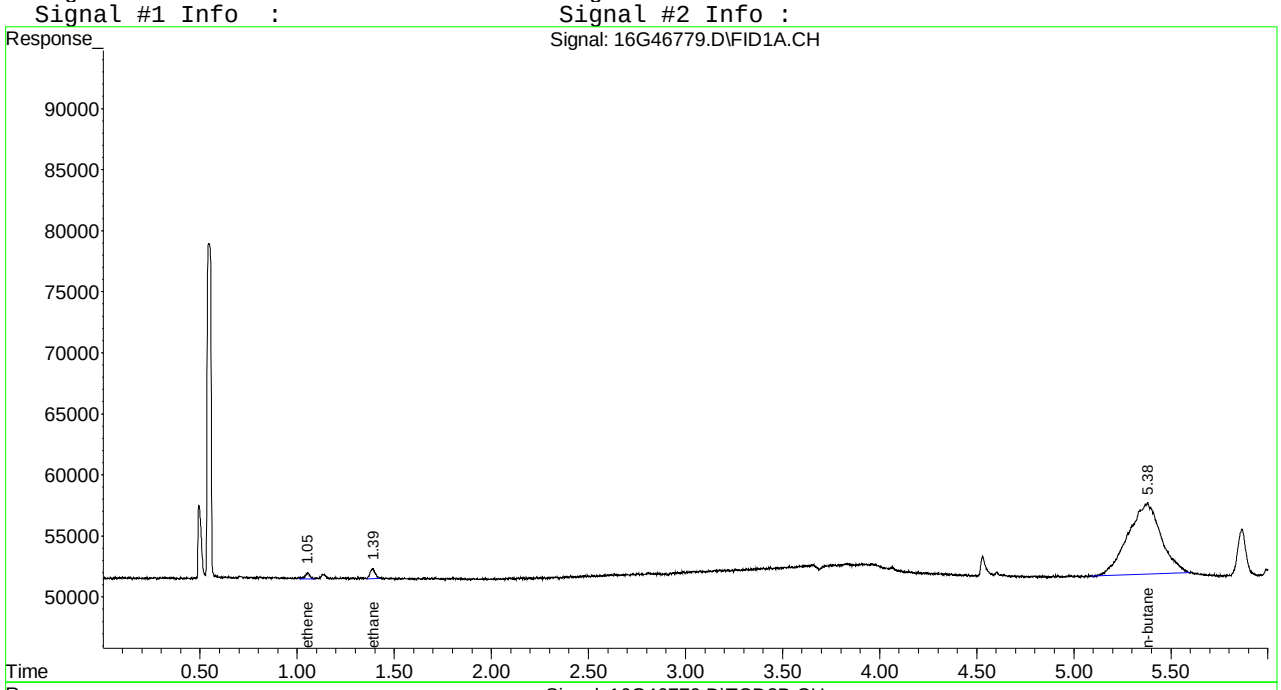

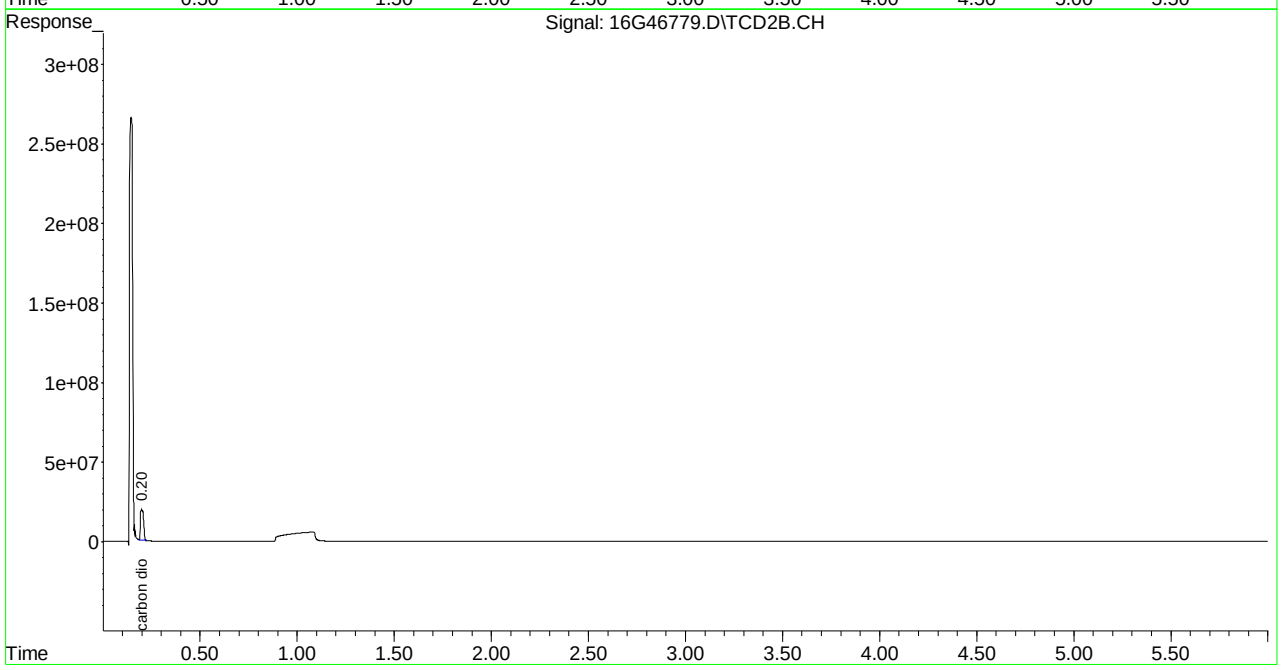

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\022315\16G46763.D\FID1A.CH Vial: 9
Signal #2 : C:\MSDCHEM\1\DATA\022315\16G46763.D\TCD2B.CH
Acq On    : 23 Feb 2015  16:29                        Operator: JDS
Sample    : L15021053-09 A RSK175                     Inst    : HP16
Misc      : 1,1                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Feb 24 08:41:35 2015  Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update  : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj.     :
Signal #1 Phase :                   Signal #2 Phase:
Signal #1 Info  :                   Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	740740	1.333	umol/
2) T	ethene	1.05	11818	0.034	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.38	15637	0.046	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	5.34	5173962	8.018	umol/
8) T	carbon dioxide	0.19	597886607	98894.849	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

16G46763.D RSKEXT.M Tue Feb 24 08:41:36 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022315\16G46763.D\FID1A.CH Vial: 9
Signal #2 : C:\MSDCHEM\1\DATA\022315\16G46763.D\TCD2B.CH
Acq On : 23 Feb 2015 16:29 Operator: JDS
Sample : L15021053-09 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 24 8:41 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

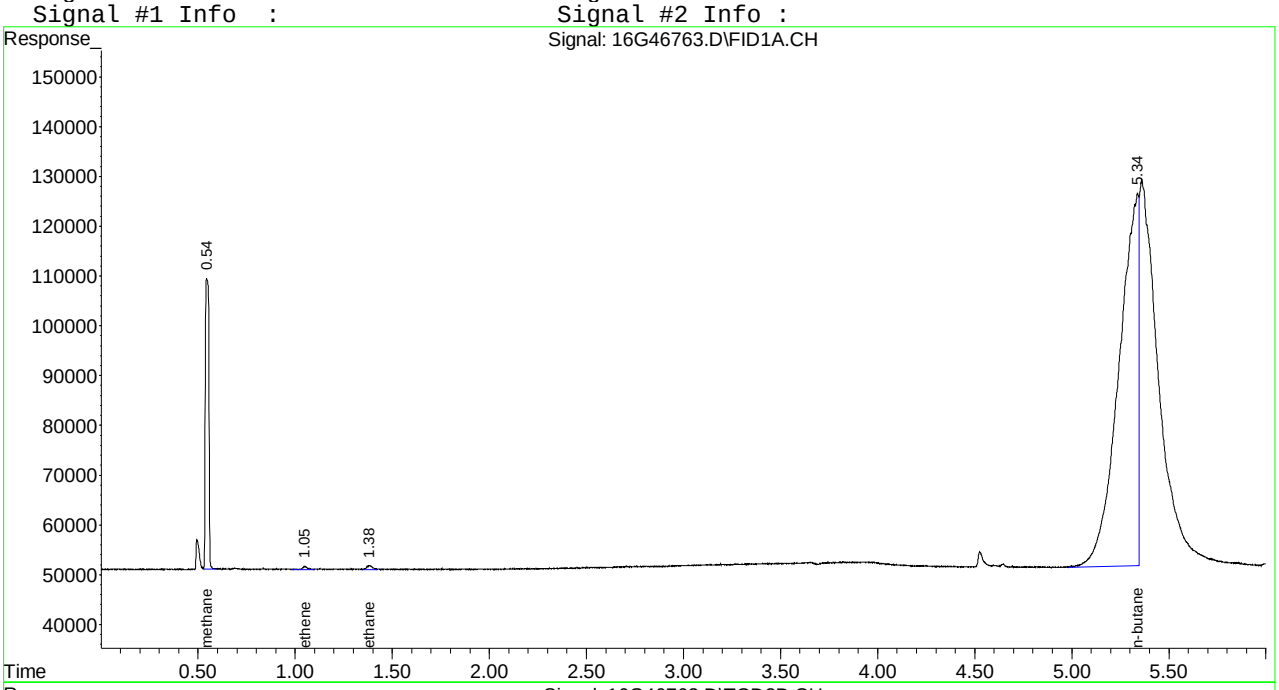

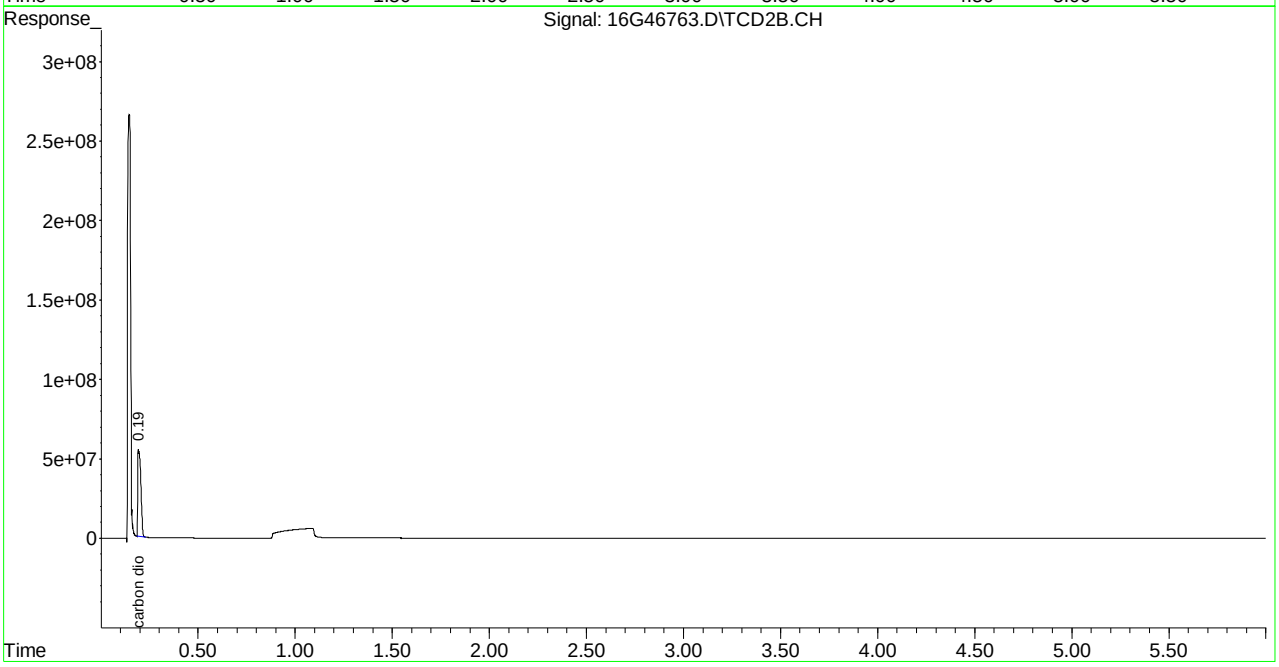

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022315\16G46776.D\FID1A.CH Vial: 22
Signal #2 : C:\MSDCHEM\1\DATA\022315\16G46776.D\TCD2B.CH
Acq On : 23 Feb 2015 19:18 Operator: JDS
Sample : L15021053-09 B D1 5X RSK175 Inst : HP16
Misc : 1,5 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 24 08:42:12 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	397646	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	3.84	12117	0.024	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	114311559	18907.974	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46776.D RSKEXT.M Tue Feb 24 08:42:12 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022315\16G46776.D\FID1A.CH Vial: 22
Signal #2 : C:\MSDCHEM\1\DATA\022315\16G46776.D\TCD2B.CH
Acq On : 23 Feb 2015 19:18 Operator: JDS
Sample : L15021053-09 B D1 5X RSK175 Inst : HP16
Misc : 1,5 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 24 8:42 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

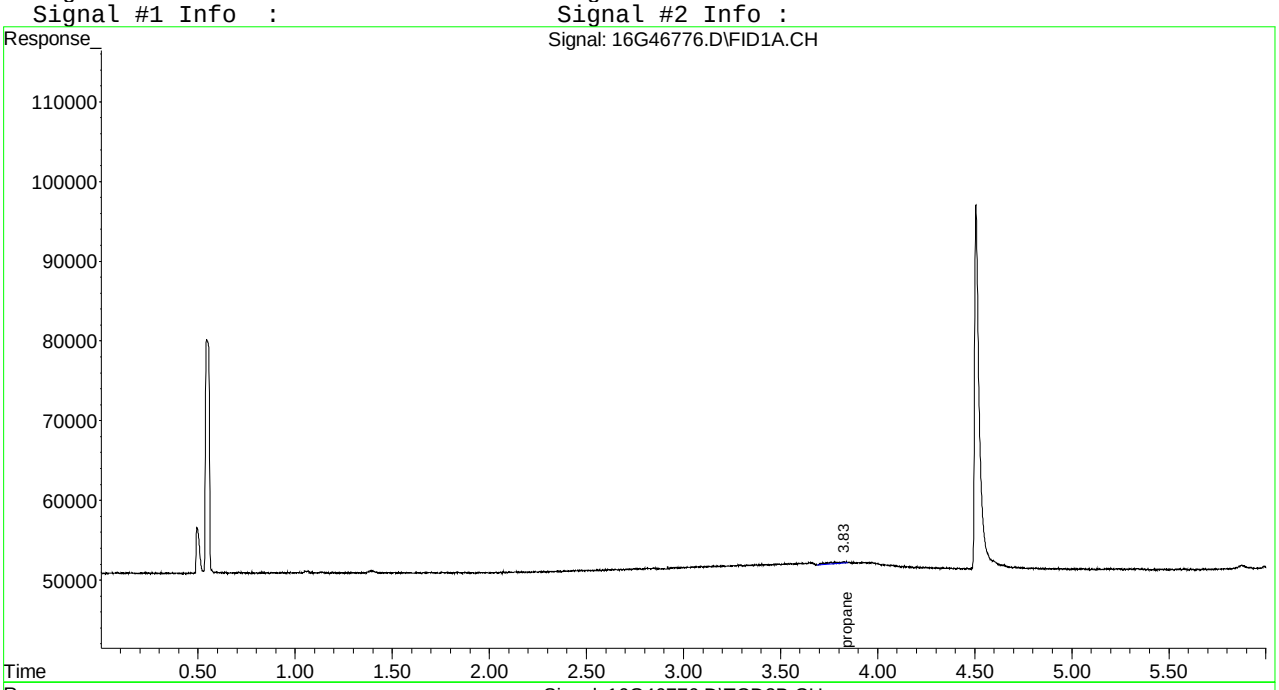

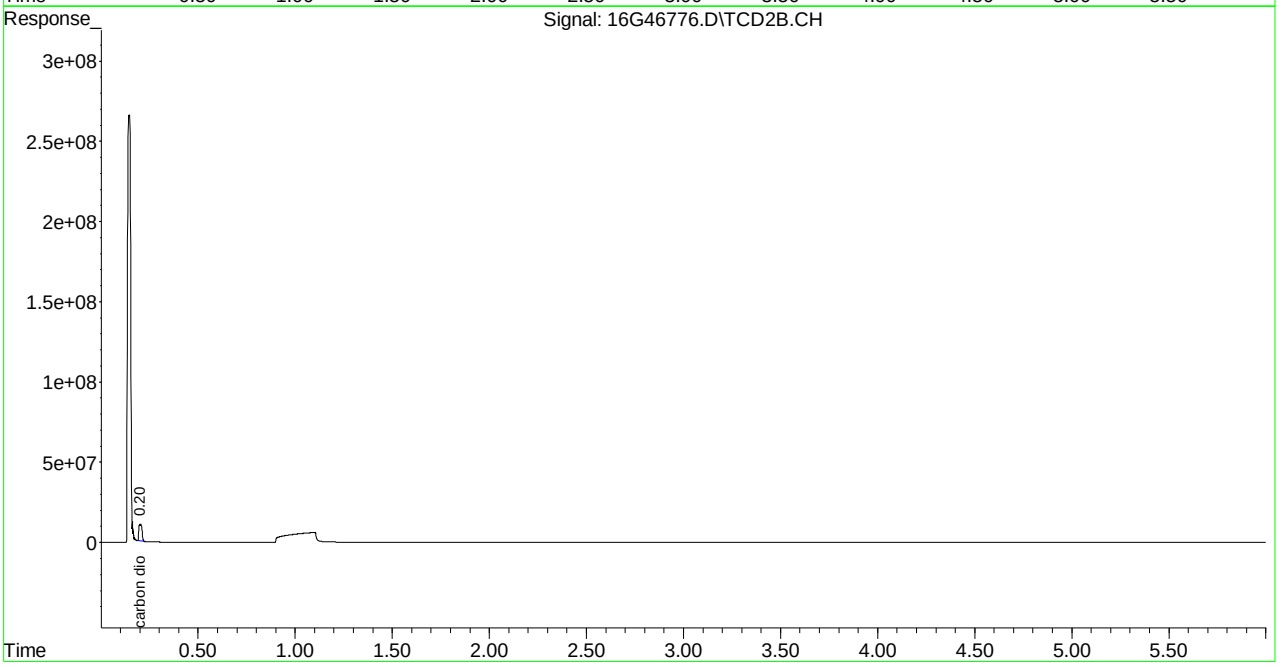

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022315\16G46780.D\FID1A.CH Vial: 26
Signal #2 : C:\MSDCHEM\1\DATA\022315\16G46780.D\TCD2B.CH
Acq On : 23 Feb 2015 20:12 Operator: JDS
Sample : L15021053-11 B A1 RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 24 08:42:15 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	331952	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	5.37	780113	1.209	umol/
8) T	carbon dioxide	0.20	126579305	20937.149	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46780.D RSKEXT.M Tue Feb 24 08:42:15 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022315\16G46780.D\FID1A.CH Vial: 26
Signal #2 : C:\MSDCHEM\1\DATA\022315\16G46780.D\TCD2B.CH
Acq On : 23 Feb 2015 20:12 Operator: JDS
Sample : L15021053-11 B A1 RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 24 8:42 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

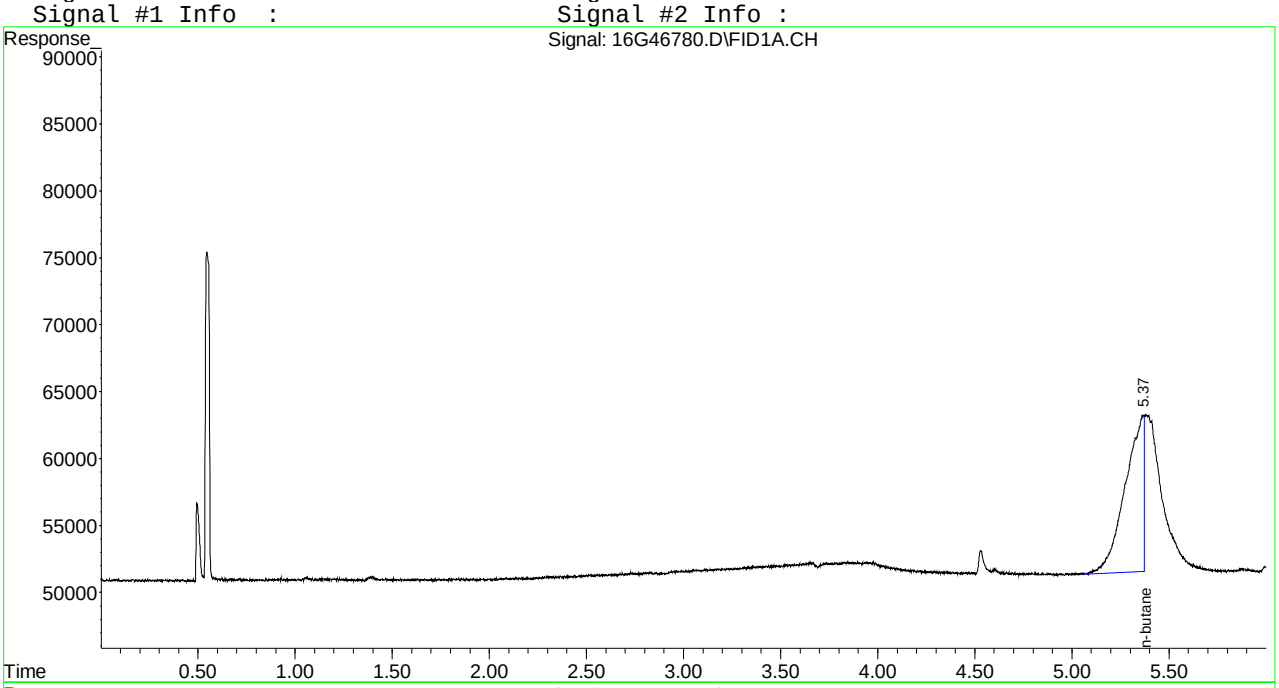

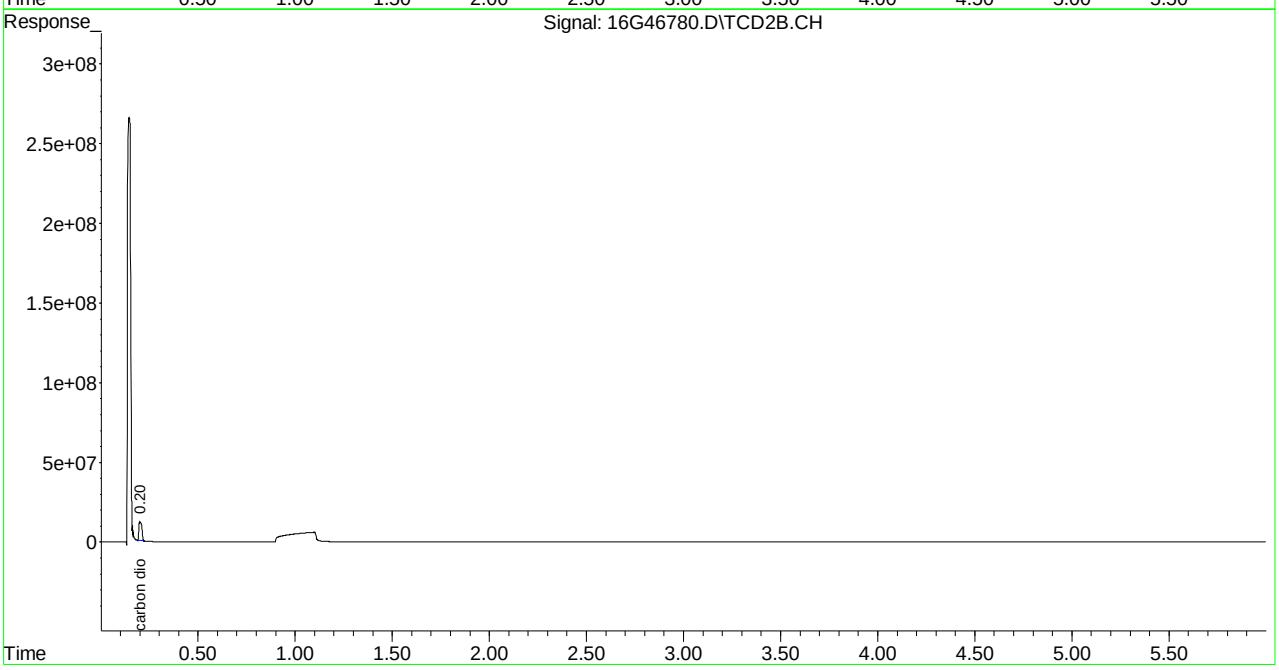

2.1.2.4 Standards Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\021915\16G46716.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\021915\16G46716.D\TCD2B.CH
Acq On : 19 Feb 2015 13:00 Operator: JDS
Sample : WG512843-01 0.67 umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 18 17:11:32 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	520694	0.208	umol/
2) T	ethene	1.06	160683	0.469	umol/
3) T	acetylene	1.14	141615	0.402	umol/
4) T	ethane	1.39	166817	0.487	umol/
5) T	propane	3.83	232455	0.464	umol/
6) T	n-butane	5.34	290624	0.450	umol/
8) T	carbon dioxide	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46716.D RSKEXT.M Wed Feb 18 17:11:39 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\021915\16G46716.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\021915\16G46716.D\TCD2B.CH
Acq On : 19 Feb 2015 13:00 Operator: JDS
Sample : WG512843-01 0.67 umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 18 17:11 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

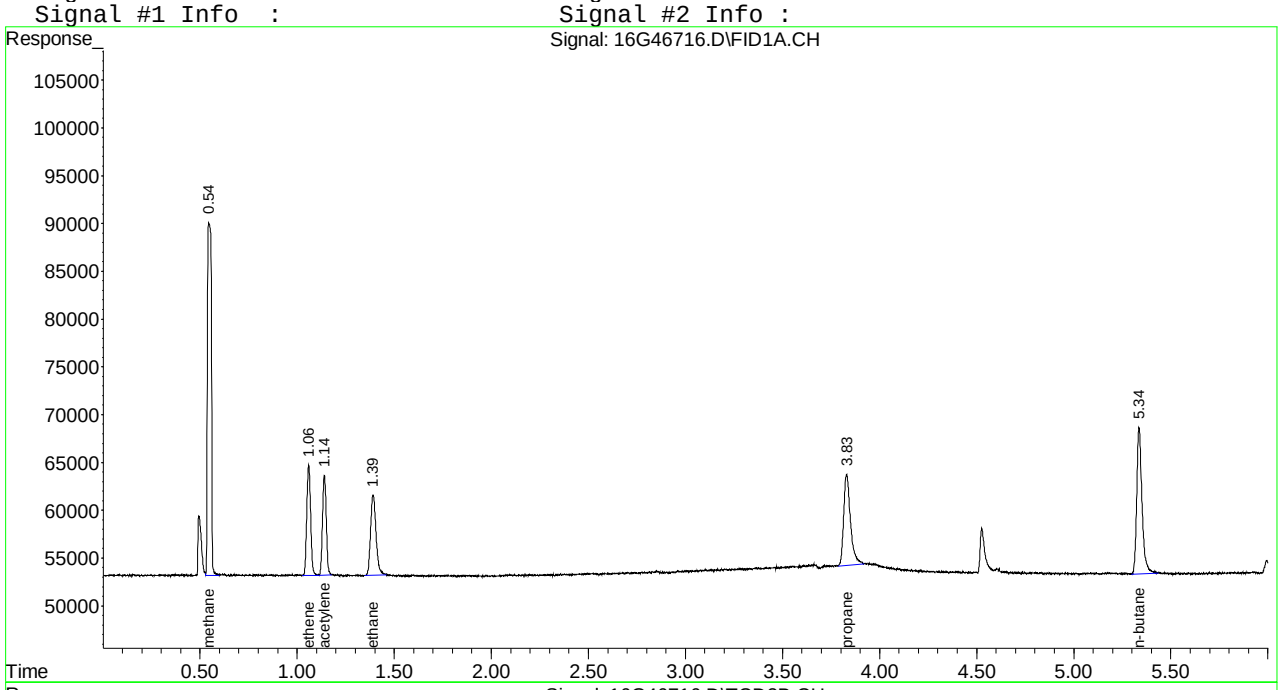

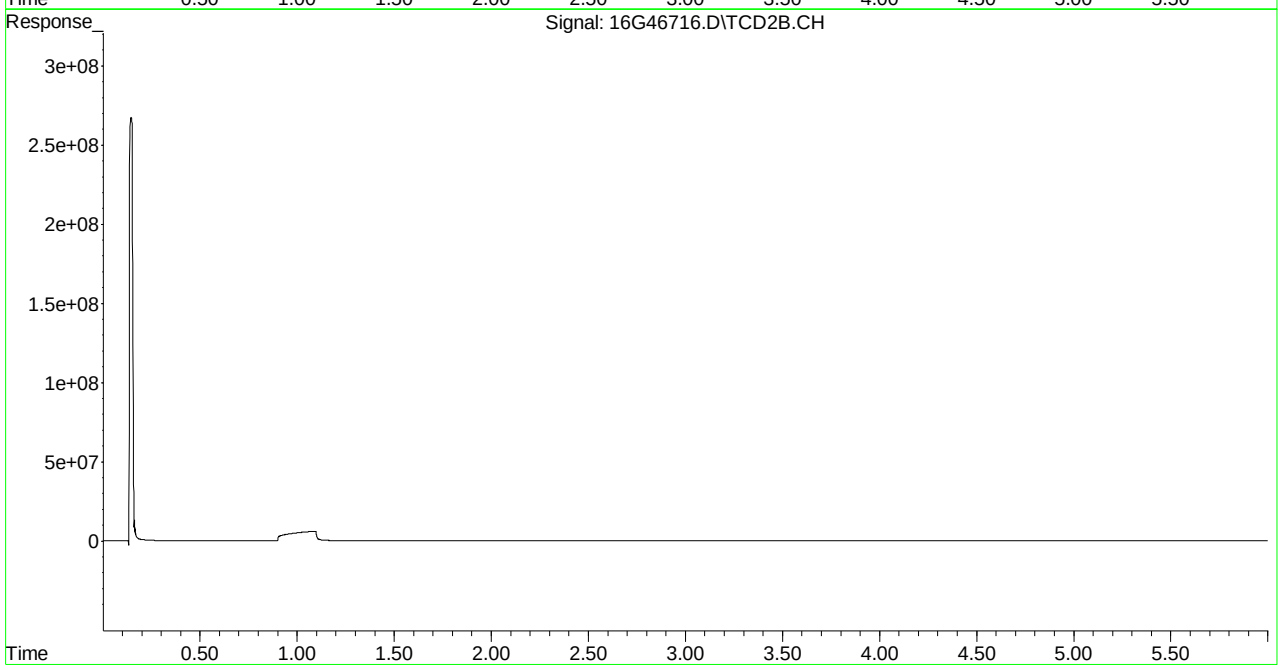

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\021915\16G46716.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\021915\16G46716.D\TCD2B.CH
Acq On : 19 Feb 2015 13:00 Operator: JDS
Sample : WG512843-01 0.67 umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	-1.000	0.208	0.0	0	0.00
2	T	ethene	-1.000	0.469	0.0	100	0.00
3	T	acetylene	-1.000	0.402	0.0	100	0.00
4	T	ethane	0.667	0.487	27.0#	100	0.00
5	T	propane	0.667	0.464	30.4#	100	0.00
6	T	n-butane	0.667	0.450	32.5#	100	0.00

Signal #2

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46716.D RSKEXT.M Wed Feb 18 16:33:52 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\021915\16G46716.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\021915\16G46716.D\TCD2B.CH
Acq On    : 19 Feb 2015  13:00                        Operator: JDS
Sample    : WG512843-01 0.67 umol/mol STD RSK175      Inst    : HP16
Misc      : 1,1 STD67276                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update  : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
 ---------------------------------------------------------------------------


Signal #2
8 T   carbon dioxide               -1.000   0.000       0.0     0  -0.21
```

```
---------------------------------------------------------------------------
 (#) = Out of Range            SPCC's out = 0  CCC's out = 0
 16G46716.D  RSKEXT.M      Wed Feb 18 16:33:52 2015                          Page 2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\021915\16G46718.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\021915\16G46718.D\TCD2B.CH
Acq On : 19 Feb 2015 13:24 Operator: JDS
Sample : WG512843-03 33.3 umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 18 17:11:54 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	7223199	34.485	umol/
2) T	ethene	1.06	11810846	34.450	umol/
3) T	acetylene	1.14	12044005	34.222	umol/
4) T	ethane	1.39	12169854	35.515	umol/
5) T	propane	3.83	17927393	35.748	umol/
6) T	n-butane	5.34	23193440	35.942	umol/
8) T	carbon dioxide	0.20	19519477	3228.665	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46718.D RSKEXT.M Wed Feb 18 17:11:54 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\021915\16G46718.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\021915\16G46718.D\TCD2B.CH
Acq On : 19 Feb 2015 13:24 Operator: JDS
Sample : WG512843-03 33.3 umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 18 17:11 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

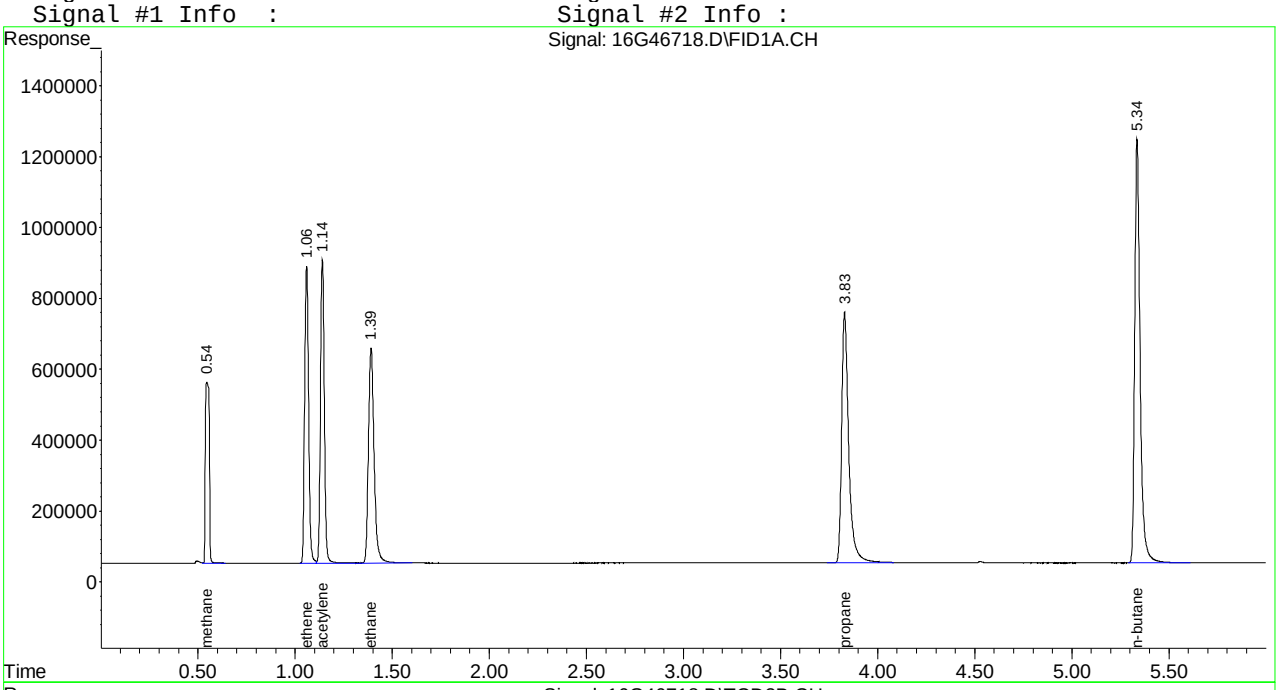

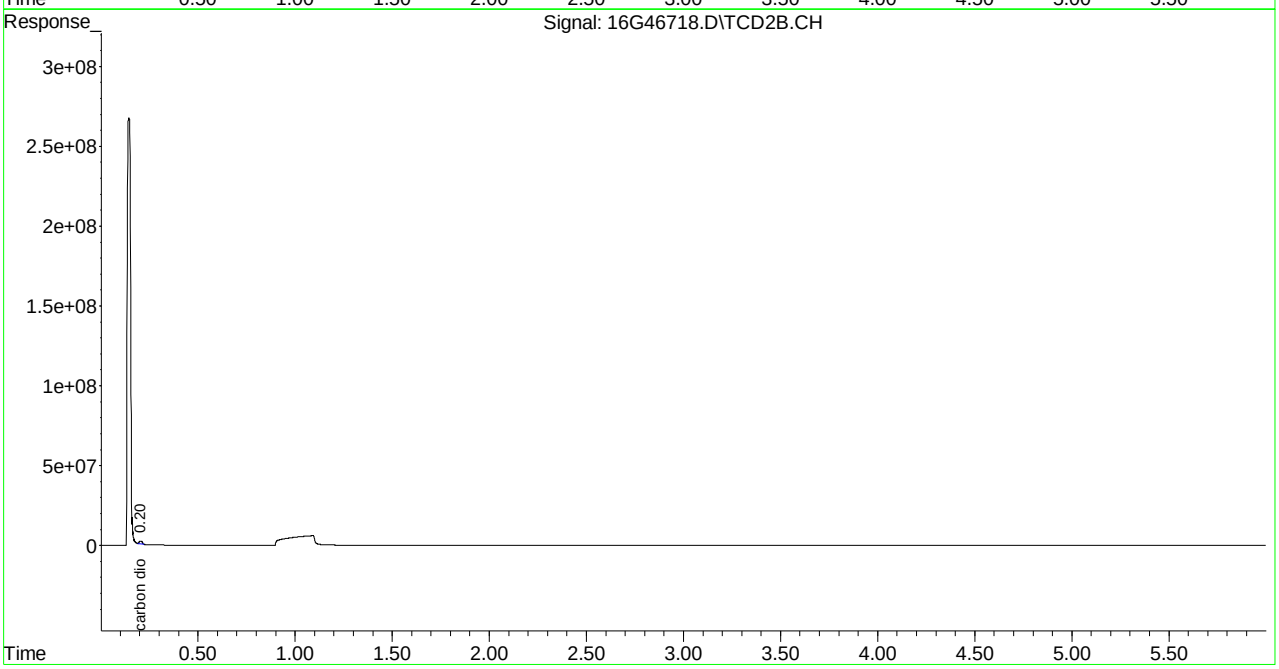

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\021915\16G46719.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\021915\16G46719.D\TCD2B.CH
Acq On : 19 Feb 2015 13:39 Operator: JDS
Sample : WG512843-04 66.7 umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 18 17:11:56 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	13418328	66.166	umol/
2) T	ethene	1.06	22010842	64.201	umol/
3) T	acetylene	1.14	22187281	63.043	umol/
4) T	ethane	1.39	23234404	67.805	umol/
5) T	propane	3.83	34099797	67.996	umol/
6) T	n-butane	5.33	43745307	67.791	umol/
8) T	carbon dioxide	0.20	36280138	6001.002	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46719.D RSKEXT.M Wed Feb 18 17:11:56 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\021915\16G46719.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\021915\16G46719.D\TCD2B.CH
Acq On : 19 Feb 2015 13:39 Operator: JDS
Sample : WG512843-04 66.7 umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 18 17:11 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

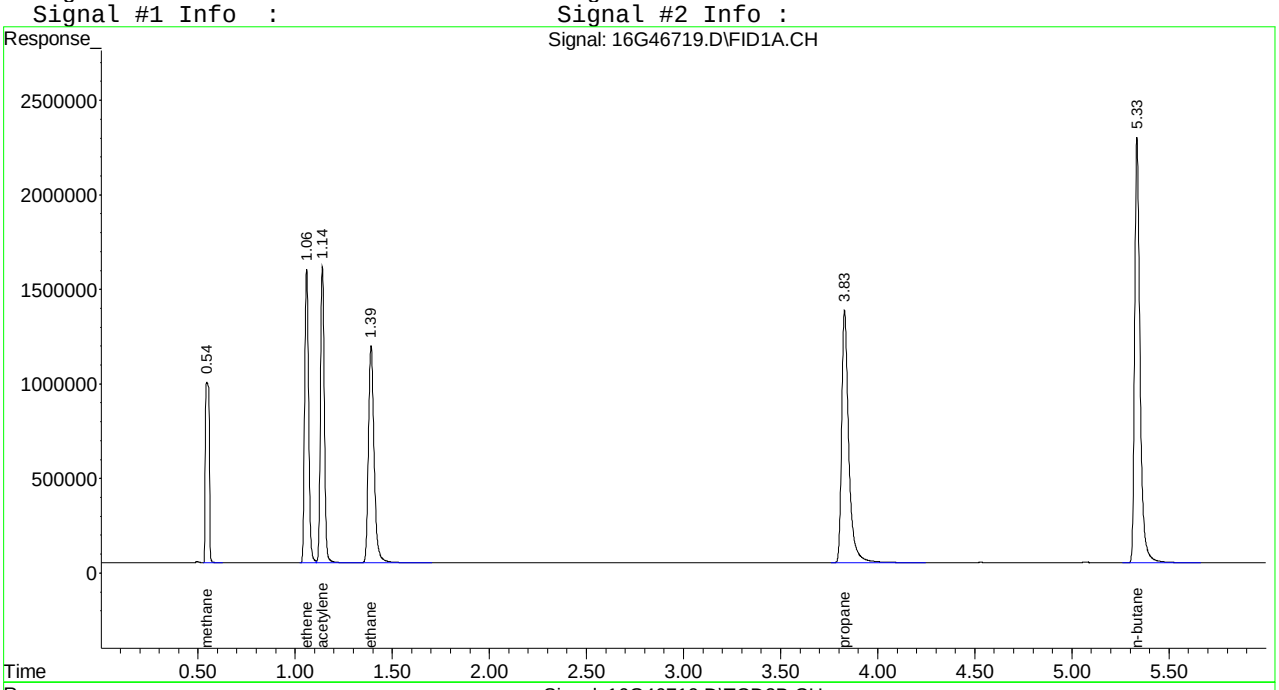

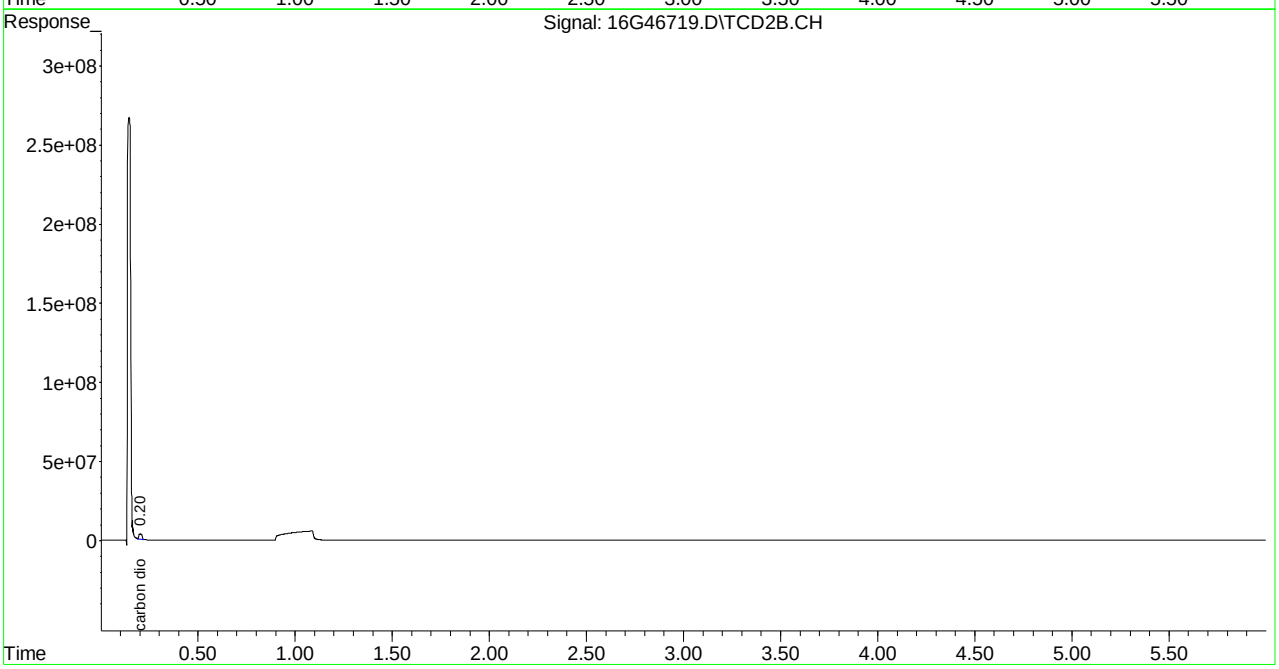

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\021915\16G46720.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\021915\16G46720.D\TCD2B.CH
Acq On : 19 Feb 2015 13:50 Operator: JDS
Sample : WG512843-05 133 umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 18 17:11:57 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	27286784	137.090	umol/
2) T	ethene	1.06	45640883	133.125	umol/
3) T	acetylene	1.14	49013193	139.266	umol/
4) T	ethane	1.39	47899711	139.786	umol/
5) T	propane	3.83	70625509	140.829	umol/
6) T	n-butane	5.33	92118251	142.754	umol/
8) T	carbon dioxide	0.20	82629458	13667.521	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46720.D RSKEXT.M Wed Feb 18 17:11:57 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\021915\16G46720.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\021915\16G46720.D\TCD2B.CH
Acq On : 19 Feb 2015 13:50 Operator: JDS
Sample : WG512843-05 133 umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 18 17:11 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

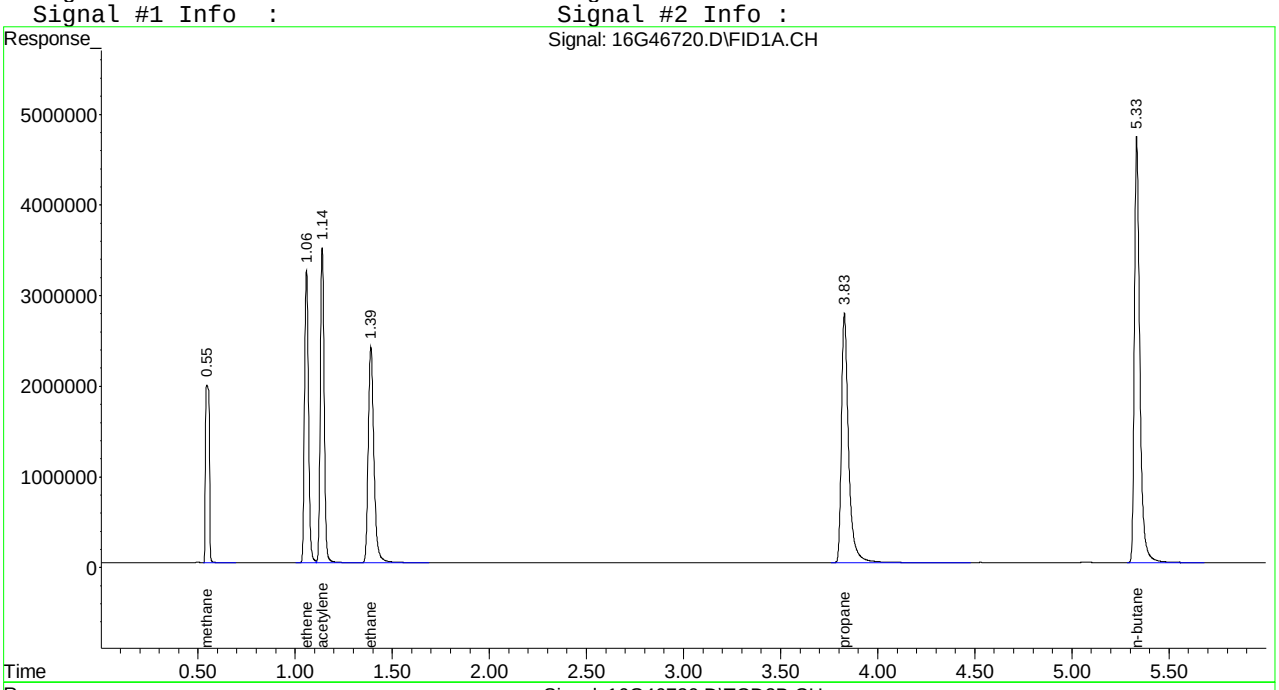

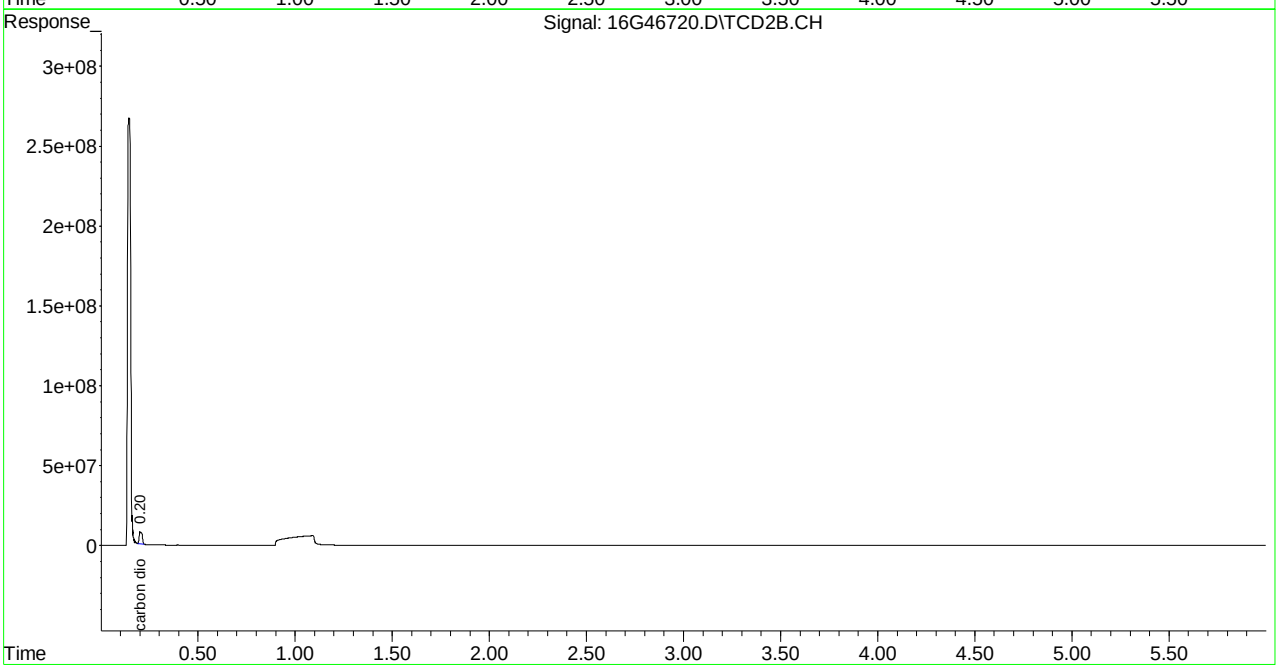

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\021915\16G46721.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\021915\16G46721.D\TCD2B.CH
Acq On : 19 Feb 2015 14:05 Operator: JDS
Sample : WG512843-06 333 umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 18 17:11:57 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	68489813	347.801	umol/
2) T	ethene	1.06	116441461	339.635	umol/
3) T	acetylene	1.14	122258562	347.386	umol/
4) T	ethane	1.39	122848670	358.510	umol/
5) T	propane	3.82	181344139	361.606	umol/
6) T	n-butane	5.33	237498673	368.048	umol/
8) T	carbon dioxide	0.20	213586073	35328.710	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46721.D RSKEXT.M Wed Feb 18 17:11:57 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\021915\16G46721.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\021915\16G46721.D\TCD2B.CH
Acq On : 19 Feb 2015 14:05 Operator: JDS
Sample : WG512843-06 333 umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 18 17:11 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

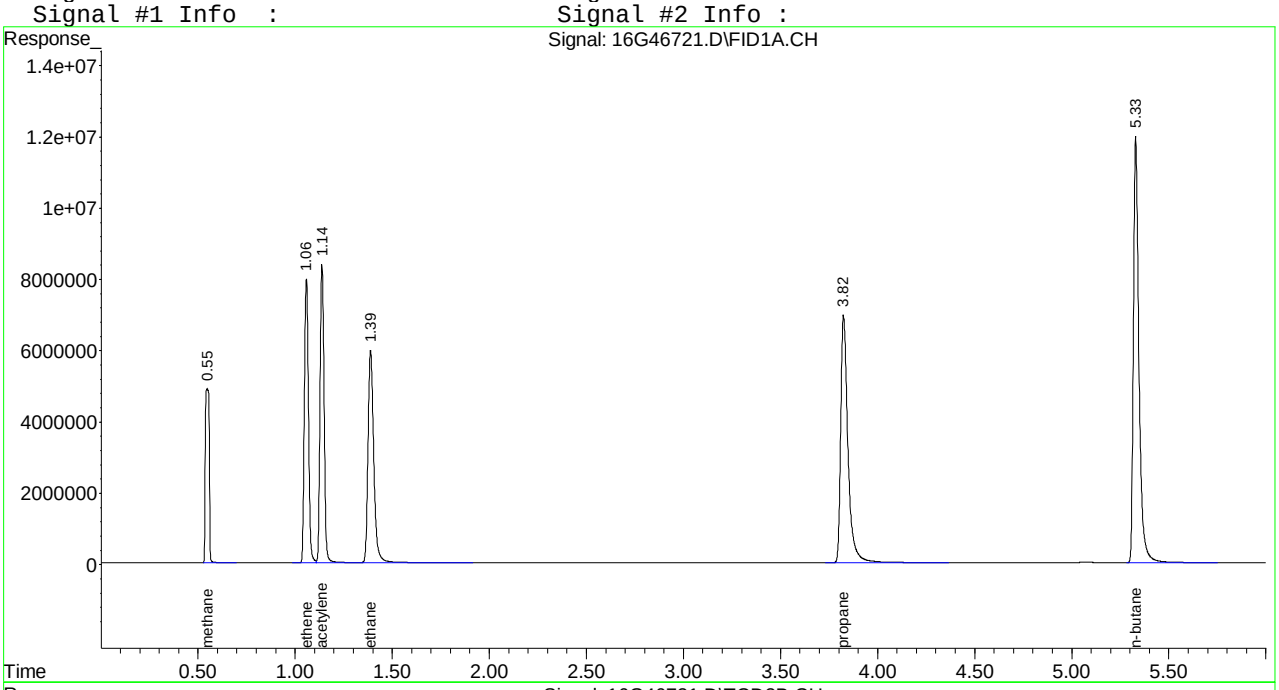

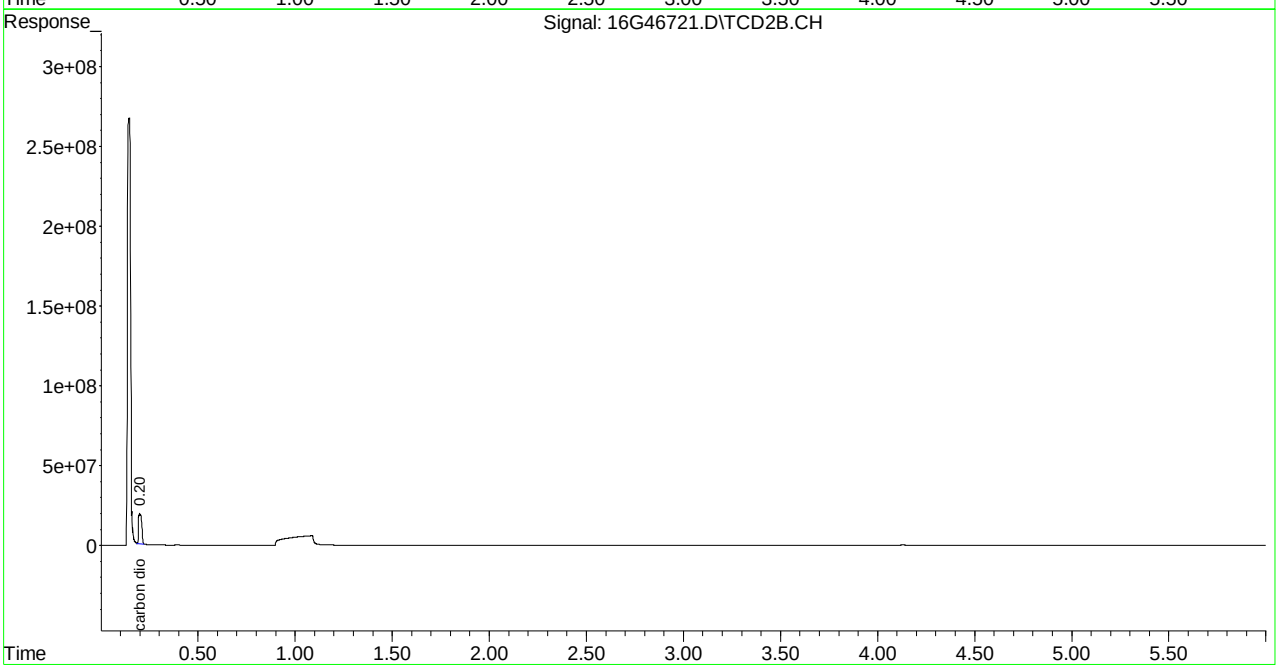

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\021915\16G46722.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\021915\16G46722.D\TCD2B.CH
Acq On : 19 Feb 2015 14:16 Operator: JDS
Sample : WG512843-07 533 umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 18 17:11:58 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	100904420	513.569	umol/
2) T	ethene	1.06	169204973	493.536	umol/
3) T	acetylene	1.14	174114291	494.729	umol/
4) T	ethane	1.39	178544480	521.048	umol/
5) T	propane	3.82	261461418	521.362	umol/
6) T	n-butane	5.33	339006433	525.353	umol/
8) T	carbon dioxide	0.20	295240413	48834.939	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46722.D RSKEXT.M Wed Feb 18 17:11:58 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\021915\16G46722.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\021915\16G46722.D\TCD2B.CH
Acq On : 19 Feb 2015 14:16 Operator: JDS
Sample : WG512843-07 533 umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 18 17:11 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

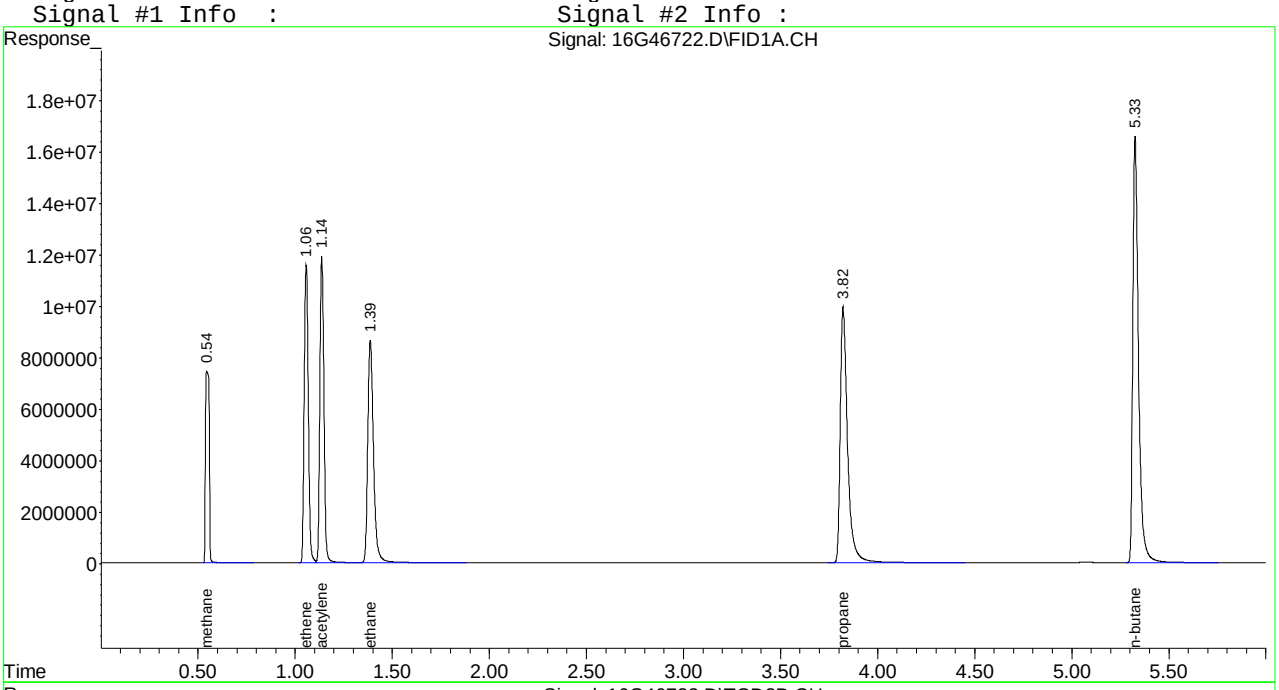

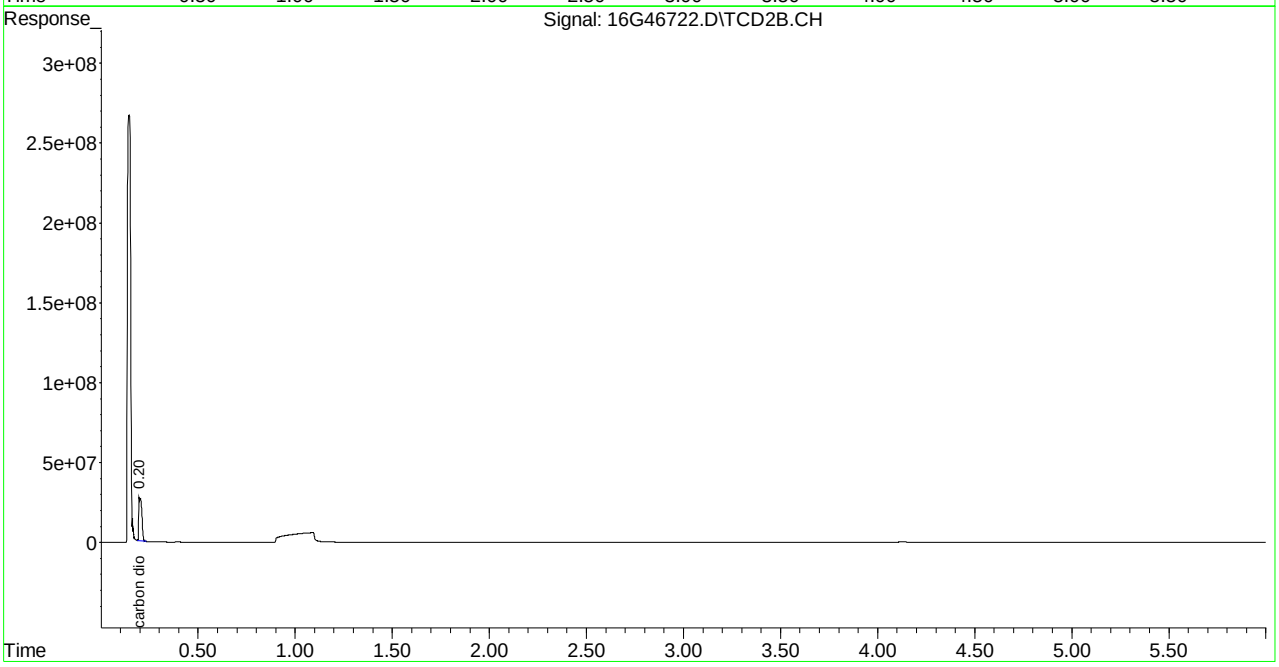

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\021915\16G46725.D\FID1A.CH Vial: 10
Signal #2 : C:\MSDCHEM\1\DATA\021915\16G46725.D\TCD2B.CH
Acq On : 19 Feb 2015 16:08 Operator: JDS
Sample : WG512843-02 1.67 umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 18 17:11:59 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	784885	1.559	umol/
2) T	ethene	1.06	604675	1.764	umol/
3) T	acetylene	1.14	592809	1.684	umol/
4) T	ethane	1.39	619076	1.807	umol/
5) T	propane	3.83	912198	1.819	umol/
6) T	n-butane	5.34	1147492	1.778	umol/
8) T	carbon dioxide	0.20	13670199	2261.152	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46725.D RSKEXT.M Wed Feb 18 17:11:59 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\021915\16G46725.D\FID1A.CH Vial: 10
Signal #2 : C:\MSDCHEM\1\DATA\021915\16G46725.D\TCD2B.CH
Acq On : 19 Feb 2015 16:08 Operator: JDS
Sample : WG512843-02 1.67 umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 18 17:11 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

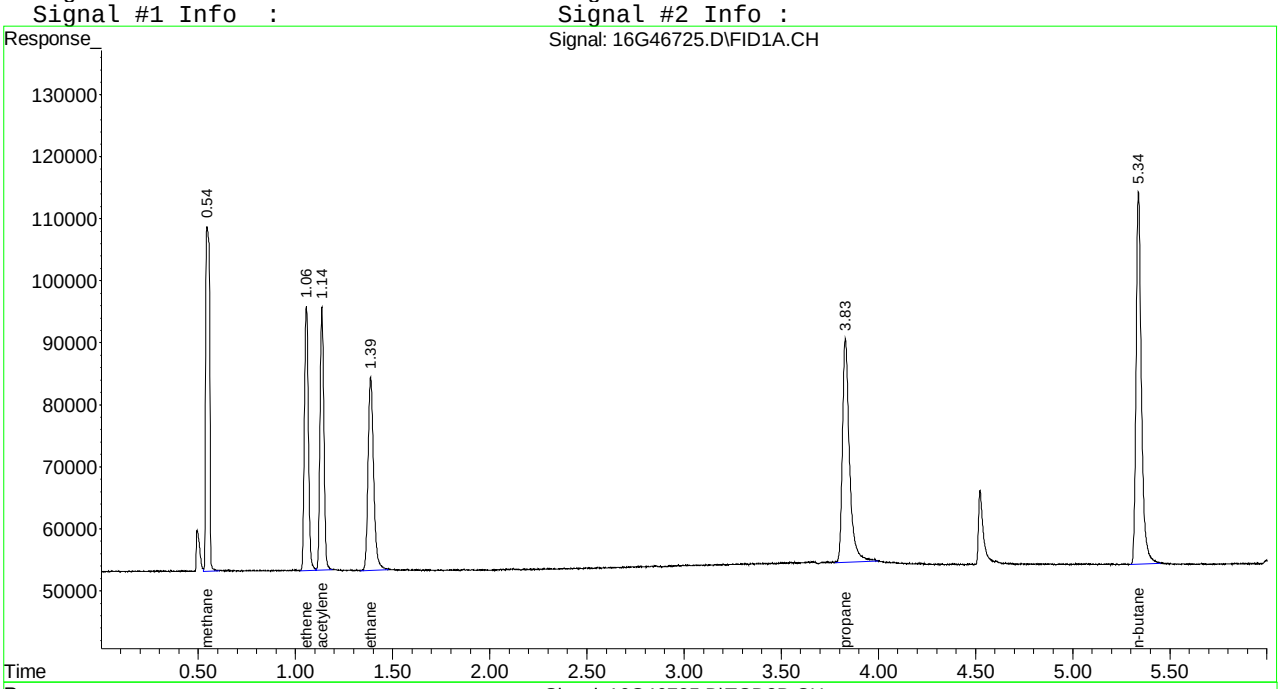

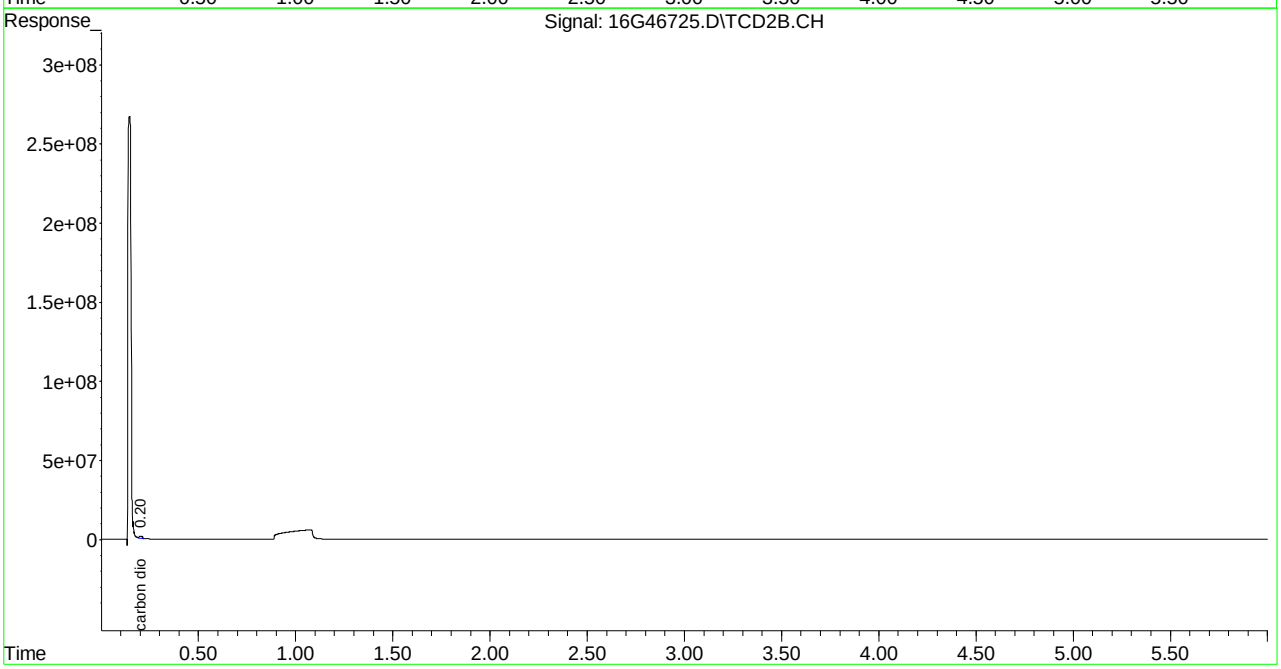

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\021915\16G46725.D\FID1A.CH Vial: 10
Signal #2 : C:\MSDCHEM\1\DATA\021915\16G46725.D\TCD2B.CH
Acq On : 19 Feb 2015 16:08 Operator: JDS
Sample : WG512843-02 1.67 umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	1.670	1.559	6.6	100	0.00
2	T	ethene	1.670	1.764	-5.6	100	0.00
3	T	acetylene	1.670	1.684	-0.8	100	0.00
4	T	ethane	1.670	1.807	-8.2	100	0.00
5	T	propane	1.670	1.819	-8.9	100	0.00
6	T	n-butane	1.670	1.778	-6.5	100	0.00

Signal #2

8	T	carbon dioxide	2000.000	2261.152	-13.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46725.D RSKEXT.M Wed Feb 18 16:34:52 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\021915\16G46725.D\FID1A.CH Vial: 10
Signal #2 : C:\MSDCHEM\1\DATA\021915\16G46725.D\TCD2B.CH
Acq On    : 18 Feb 2015  16:08                        Operator: JDS
Sample    : WG512843-02 1.67 umol/mol STD RSK175      Inst    : HP16
Misc      : 1,1 STD67276                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update  : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

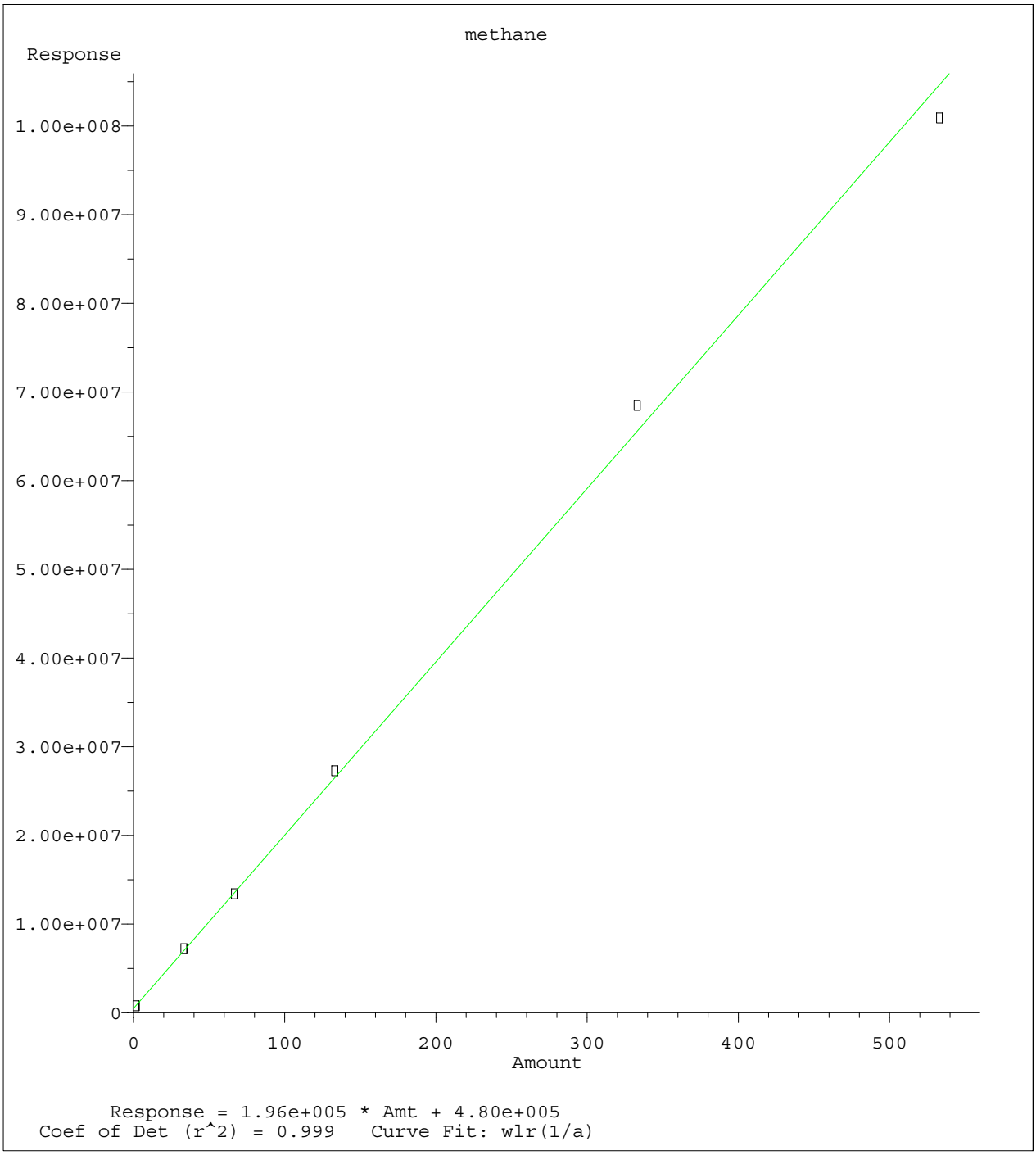

Method Name: C:\MSDCHEM\1\METHODS\RSK.M
Calibration Table Last Updated: Wed Feb 18 16:33:00 2015

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\021915\16G46727.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\021915\16G46727.D\TCD2B.CH
Acq On : 19 Feb 2015 18:16 Operator: JDS
Sample : WG512843-08 133 umol/mol ALT SRC STD RSK Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 18 18:22:53 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc Units
	Target Compounds			
1) T	methane	0.55	28172408	141.619 umol/
2) T	ethene	1.06	47347175	138.102 umol/
3) T	acetylene	1.14	51744535	147.027 umol/
4) T	ethane	1.39	49019407	143.054 umol/
5) T	propane	3.83	71497191	142.568 umol/
6) T	n-butane	5.33	92231156	142.929 umol/
8) T	carbon dioxide	0.20	84767309	14021.137 umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46727.D RSKEXT.M Wed Feb 18 18:22:53 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\021915\16G46727.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\021915\16G46727.D\TCD2B.CH
Acq On : 19 Feb 2015 18:16 Operator: JDS
Sample : WG512843-08 133 umol/mol ALT SRC STD RSK Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 18 18:22 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

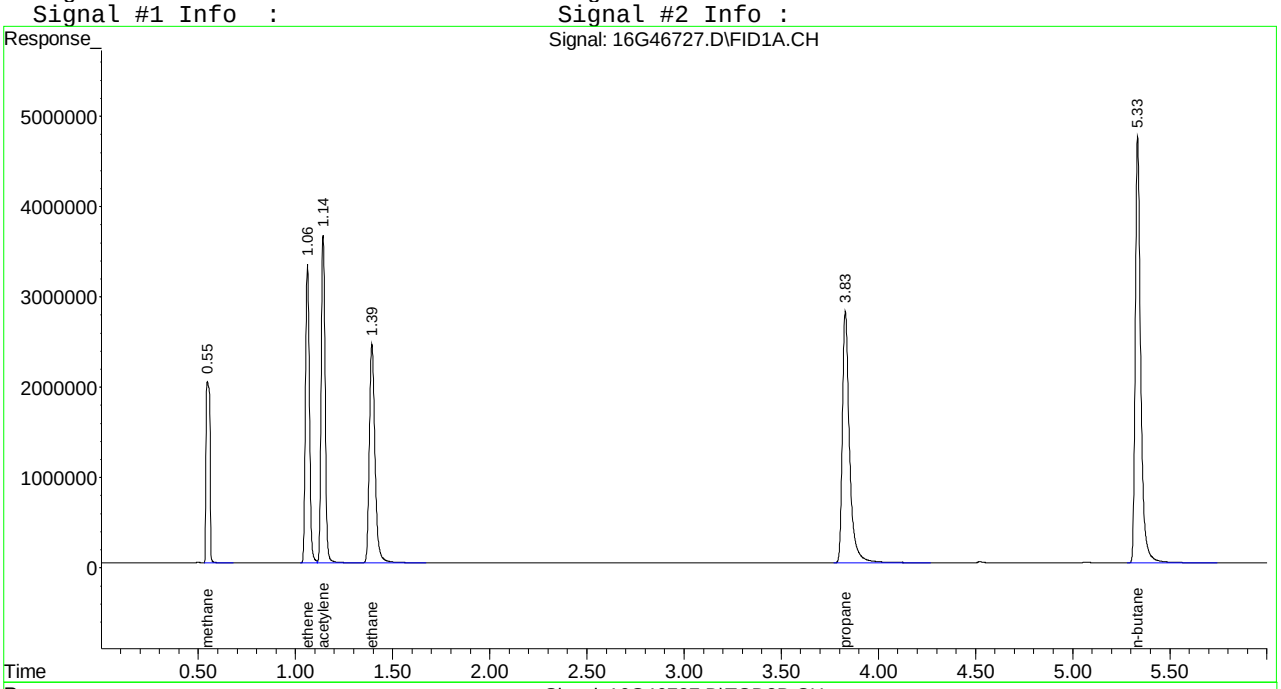

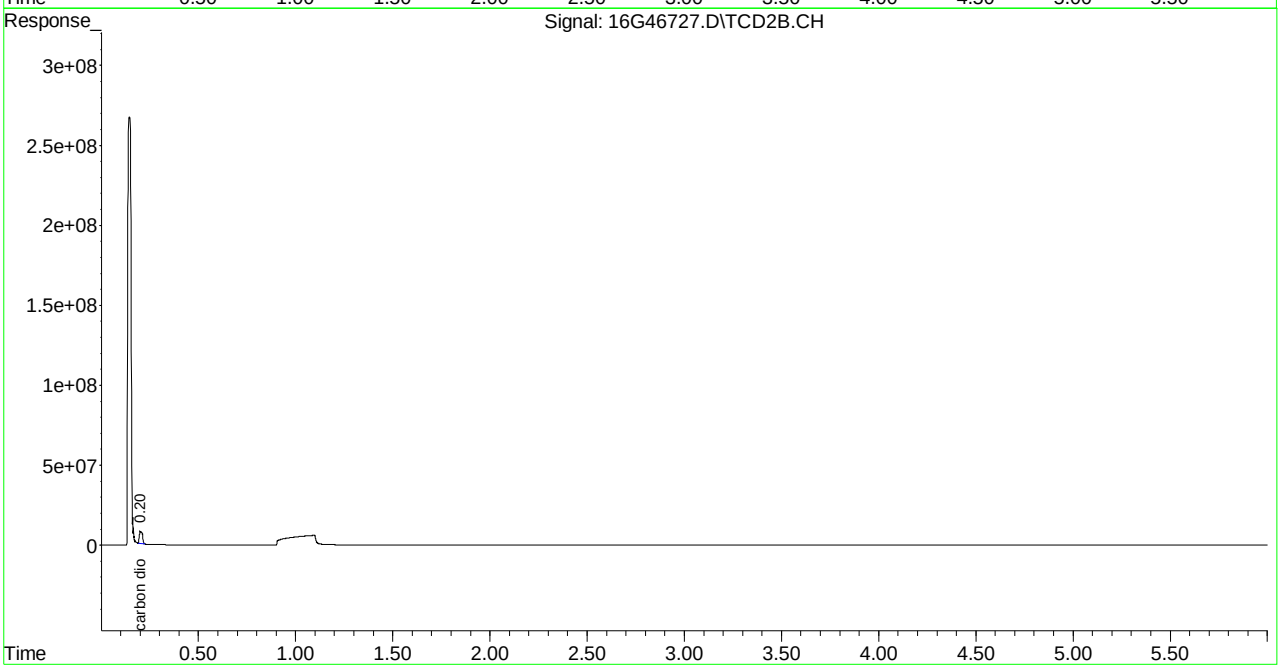

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\021915\16G46727.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\021915\16G46727.D\TCD2B.CH
Acq On : 19 Feb 2015 18:16 Operator: JDS
Sample : WG512843-08 133 umol/mol ALT SRC STD RSK Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	141.619	-6.5	103	0.00
2	T	ethene	133.000	138.102	-3.8	104	0.00
3	T	acetylene	133.000	147.027	-10.5	106	0.00
4	T	ethane	133.000	143.054	-7.6	102	0.00
5	T	propane	133.000	142.568	-7.2	101	0.00
6	T	n-butane	133.000	142.929	-7.5	100	0.00
		Signal #2					
8	T	carbon dioxide	13333.000	14021.137	-5.2	103	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46727.D RSKEXT.M Thu Feb 19 09:59:10 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\021915\16G46727.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\021915\16G46727.D\TCD2B.CH
Acq On    : 18 Feb 2015  18:16                        Operator: JDS
Sample    : WG512843-08 133 umol/mol ALT SRC STD RSK Inst    : HP16
Misc      : 1,1 STD68250                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update  : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

```
---------------------------------------------------------------------------
 (#) = Out of Range            SPCC's out = 0  CCC's out = 0
 16G46727.D  RSKEXT.M      Thu Feb 19 09:59:10 2015                                Page 2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022315\16G46755.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\022315\16G46755.D\TCD2B.CH
Acq On : 23 Feb 2015 11:57 Operator: JDS
Sample : WG513154-01 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 24 10:59:18 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc Units
Target Compounds				
1) T	methane	0.55	24727988	124.004 umol/
2) T	ethene	1.06	42460982	123.850 umol/
3) T	acetylene	1.14	46170748	131.190 umol/
4) T	ethane	1.39	44762638	130.631 umol/
5) T	propane	3.83	66734010	133.070 umol/
6) T	n-butane	5.33	87983682	136.347 umol/
8) T	carbon dioxide	0.20	87025864	14394.719 umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46755.D RSKEXT.M Tue Feb 24 10:59:18 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\022315\16G46755.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\022315\16G46755.D\TCD2B.CH
Acq On : 23 Feb 2015 11:57 Operator: JDS
Sample : WG513154-01 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 24 10:59 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

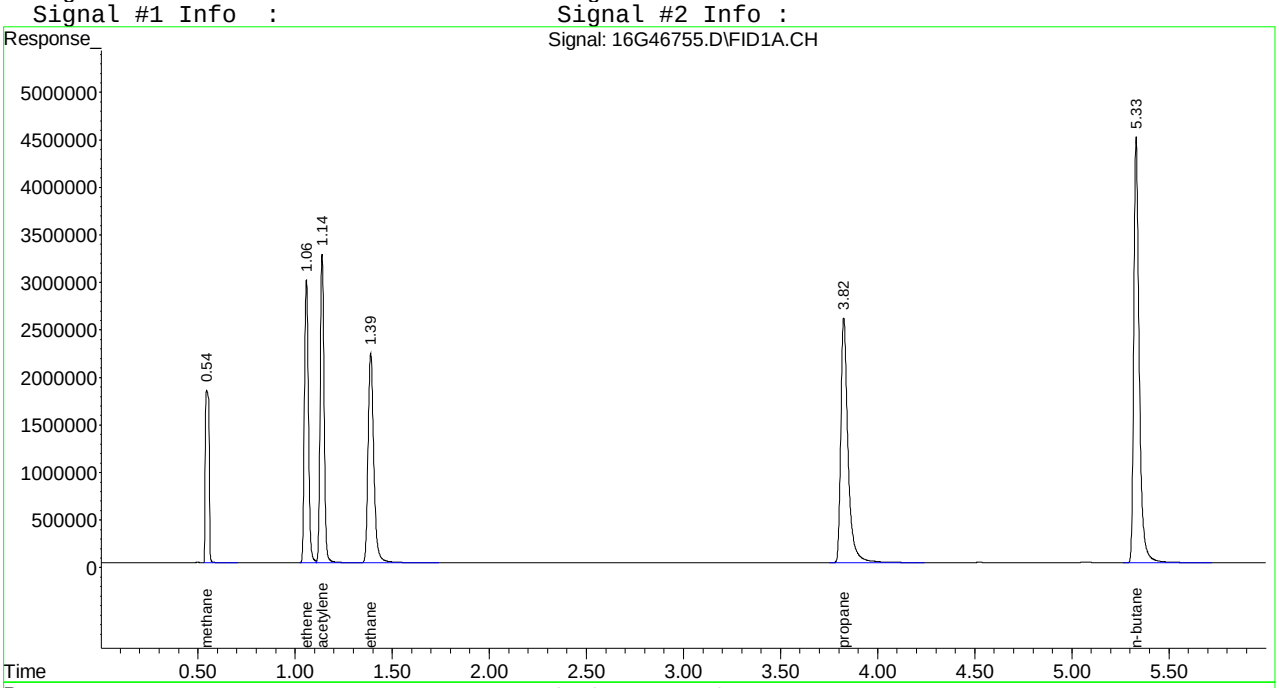

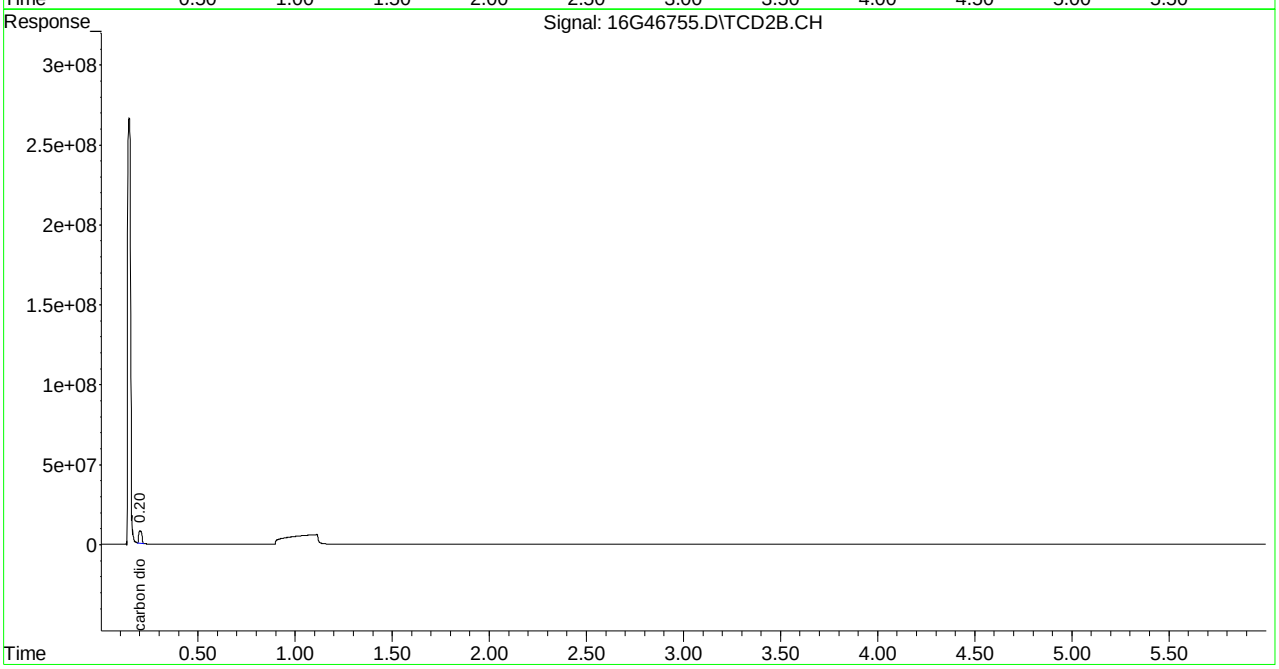

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\022315\16G46755.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\022315\16G46755.D\TCD2B.CH
Acq On : 23 Feb 2015 11:57 Operator: JDS
Sample : WG513154-01 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	124.004	6.8	91	0.00
2	T	ethene	133.000	123.850	6.9	93	0.00
3	T	acetylene	133.000	131.190	1.4	94	0.00
4	T	ethane	133.000	130.631	1.8	93	0.00
5	T	propane	133.000	133.070	-0.1	94	0.00
6	T	n-butane	133.000	136.347	-2.5	96	0.00

Signal #2

8	T	carbon dioxide	13333.000	14394.719	-8.0	105	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46755.D RSKEXT.M Tue Feb 24 10:50:16 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\022315\16G46755.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\022315\16G46755.D\TCD2B.CH
Acq On    : 23 Feb 2015  11:57                        Operator: JDS
Sample    : WG513154-01 133umol/mol CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD67274                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update  : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022315\16G46766.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\022315\16G46766.D\TCD2B.CH
Acq On : 23 Feb 2015 17:07 Operator: JDS
Sample : WG513154-02 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 24 10:59:50 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc Units
Target Compounds				
1) T	methane	0.55	26834973	134.779 umol/
2) T	ethene	1.06	45101188	131.551 umol/
3) T	acetylene	1.14	45264337	128.614 umol/
4) T	ethane	1.39	47620916	138.972 umol/
5) T	propane	3.83	70519066	140.617 umol/
6) T	n-butane	5.33	92575635	143.463 umol/
8) T	carbon dioxide	0.20	76219864	12607.327 umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46766.D RSKEXT.M Tue Feb 24 10:59:51 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022315\16G46766.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\022315\16G46766.D\TCD2B.CH
Acq On : 23 Feb 2015 17:07 Operator: JDS
Sample : WG513154-02 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 24 10:59 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

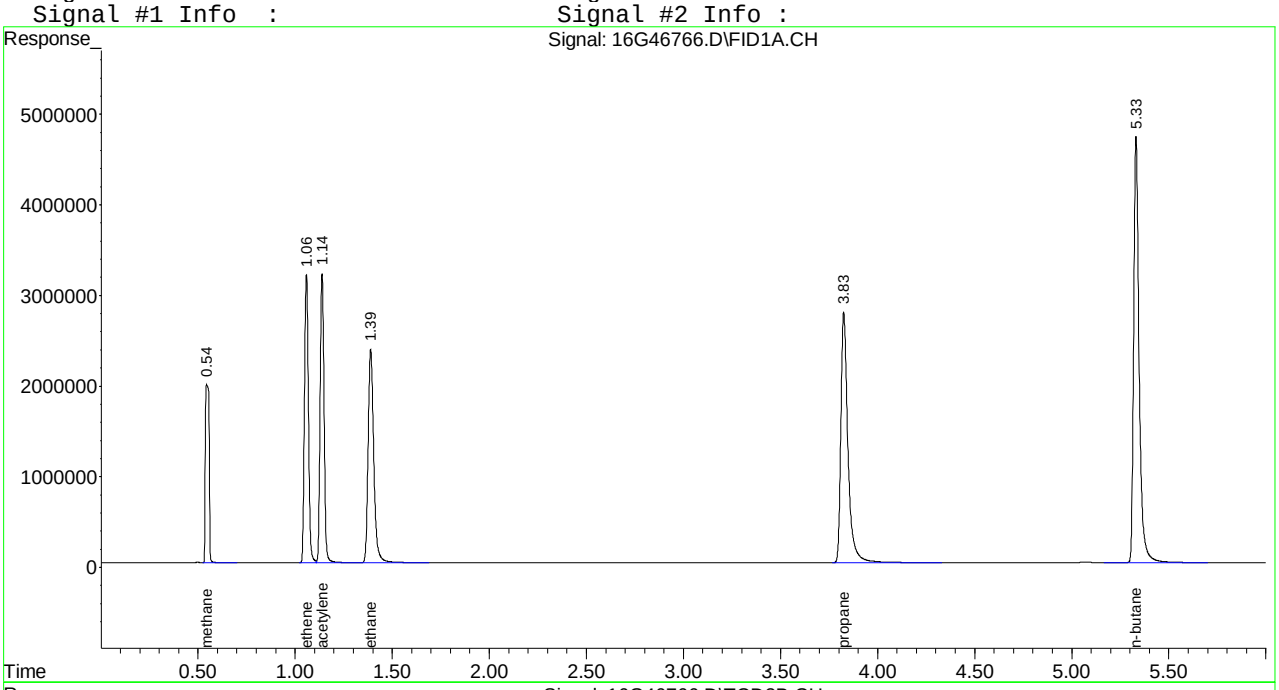

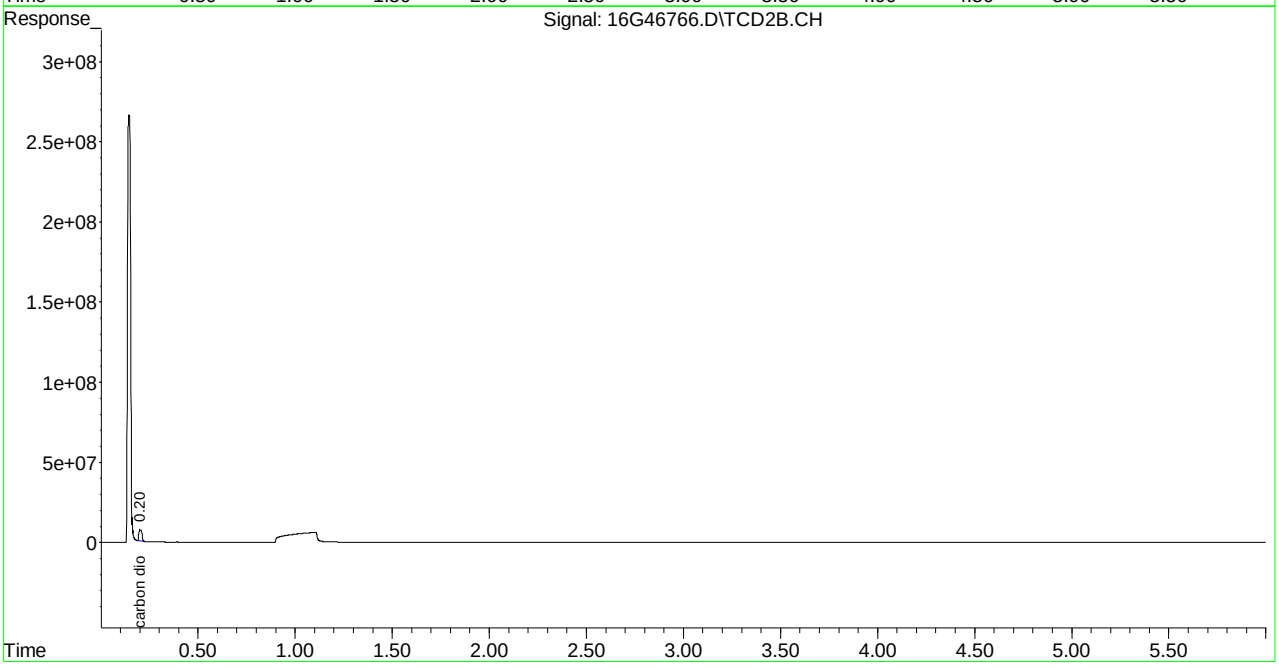

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\022315\16G46766.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\022315\16G46766.D\TCD2B.CH
Acq On : 23 Feb 2015 17:07 Operator: JDS
Sample : WG513154-02 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	134.779	-1.3	98	0.00
2	T	ethene	133.000	131.551	1.1	99	0.00
3	T	acetylene	133.000	128.614	3.3	92	0.00
4	T	ethane	133.000	138.972	-4.5	99	0.00
5	T	propane	133.000	140.617	-5.7	100	0.00
6	T	n-butane	133.000	143.463	-7.9	100	0.00

Signal #2

8	T	carbon dioxide	13333.000	12607.327	5.4	92	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46766.D RSKEXT.M Tue Feb 24 10:59:26 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\022315\16G46766.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\022315\16G46766.D\TCD2B.CH
Acq On    : 23 Feb 2015  17:07                        Operator: JDS
Sample    : WG513154-02 133umol/mol CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD67274                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update  : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022315\16G46777.D\FID1A.CH Vial: 23
Signal #2 : C:\MSDCHEM\1\DATA\022315\16G46777.D\TCD2B.CH
Acq On : 23 Feb 2015 19:33 Operator: JDS
Sample : WG513154-03 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 24 10:59:35 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc Units
	Target Compounds			
1) T	methane	0.54	26734539	134.265 umol/
2) T	ethene	1.05	44108281	128.655 umol/
3) T	acetylene	1.14	42583352	120.997 umol/
4) T	ethane	1.39	46656227	136.157 umol/
5) T	propane	3.83	68165777	135.925 umol/
6) T	n-butane	5.33	87116457	135.003 umol/
8) T	carbon dioxide	0.20	71007273	11745.126 umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46777.D RSKEXT.M Tue Feb 24 10:59:35 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\022315\16G46777.D\FID1A.CH Vial: 23
Signal #2 : C:\MSDCHEM\1\DATA\022315\16G46777.D\TCD2B.CH
Acq On : 23 Feb 2015 19:33 Operator: JDS
Sample : WG513154-03 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 24 10:59 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

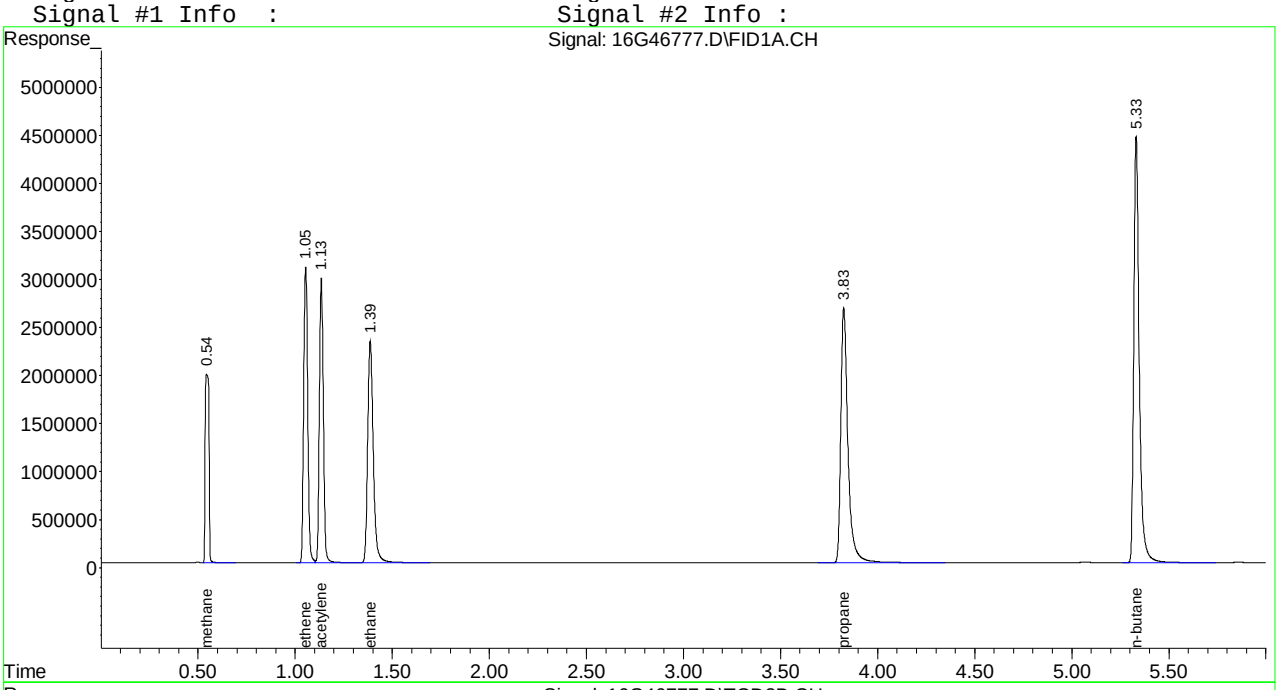

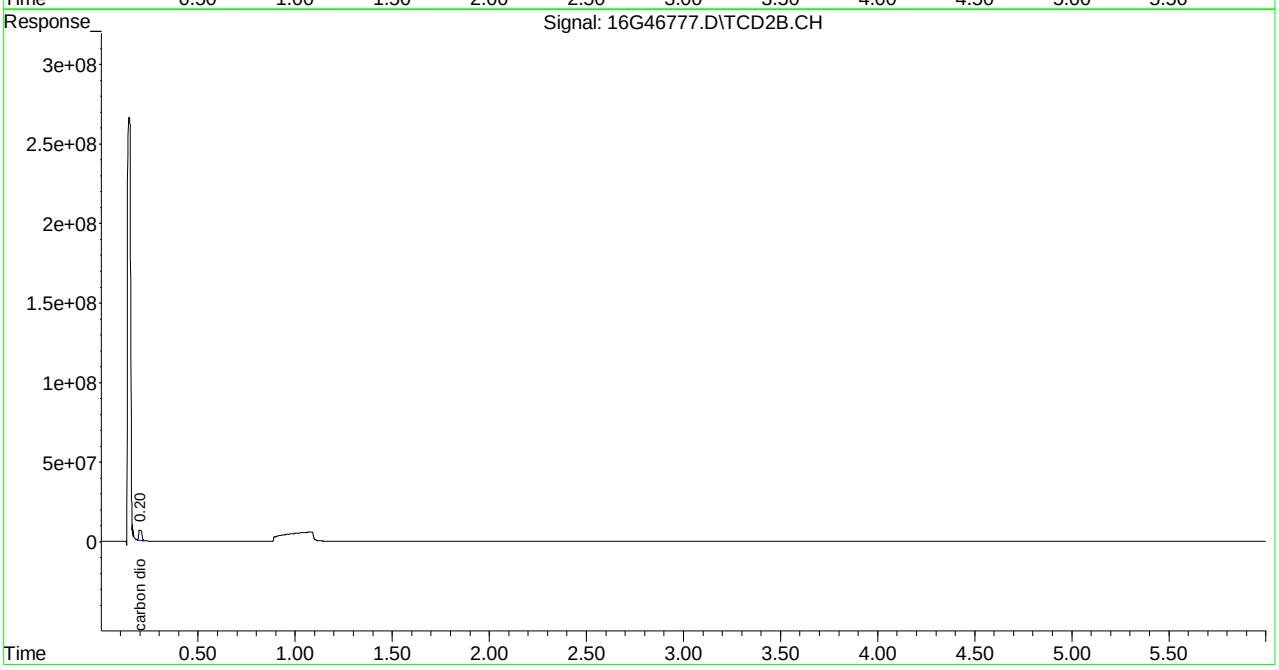

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\022315\16G46777.D\FID1A.CH Vial: 23
Signal #2 : C:\MSDCHEM\1\DATA\022315\16G46777.D\TCD2B.CH
Acq On : 23 Feb 2015 19:33 Operator: JDS
Sample : WG513154-03 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	134.265	-1.0	98	0.00
2	T	ethene	133.000	128.655	3.3	97	0.00
3	T	acetylene	133.000	120.997	9.0	87	0.00
4	T	ethane	133.000	136.157	-2.4	97	0.00
5	T	propane	133.000	135.925	-2.2	97	0.00
6	T	n-butane	133.000	135.003	-1.5	95	0.00

Signal #2

8	T	carbon dioxide	13333.000	11745.126	11.9	86	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46777.D RSKEXT.M Tue Feb 24 10:50:27 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\022315\16G46777.D\FID1A.CH Vial: 23
Signal #2 : C:\MSDCHEM\1\DATA\022315\16G46777.D\TCD2B.CH
Acq On    : 23 Feb 2015  19:33                        Operator: JDS
Sample    : WG513154-03 133umol/mol CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD67274                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update  : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022315\16G46781.D\FID1A.CH Vial: 27
Signal #2 : C:\MSDCHEM\1\DATA\022315\16G46781.D\TCD2B.CH
Acq On : 23 Feb 2015 20:28 Operator: JDS
Sample : WG513154-04 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 24 10:59:42 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc Units
	Target Compounds			
1) T	methane	0.54	26840043	134.805 umol/
2) T	ethene	1.06	43982025	128.286 umol/
3) T	acetylene	1.14	41340874	117.466 umol/
4) T	ethane	1.39	46652912	136.148 umol/
5) T	propane	3.83	67794294	135.184 umol/
6) T	n-butane	5.33	85942707	133.184 umol/
8) T	carbon dioxide	0.20	69683631	11526.186 umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46781.D RSKEXT.M Tue Feb 24 10:59:42 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022315\16G46781.D\FID1A.CH Vial: 27
Signal #2 : C:\MSDCHEM\1\DATA\022315\16G46781.D\TCD2B.CH
Acq On : 23 Feb 2015 20:28 Operator: JDS
Sample : WG513154-04 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 24 10:59 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

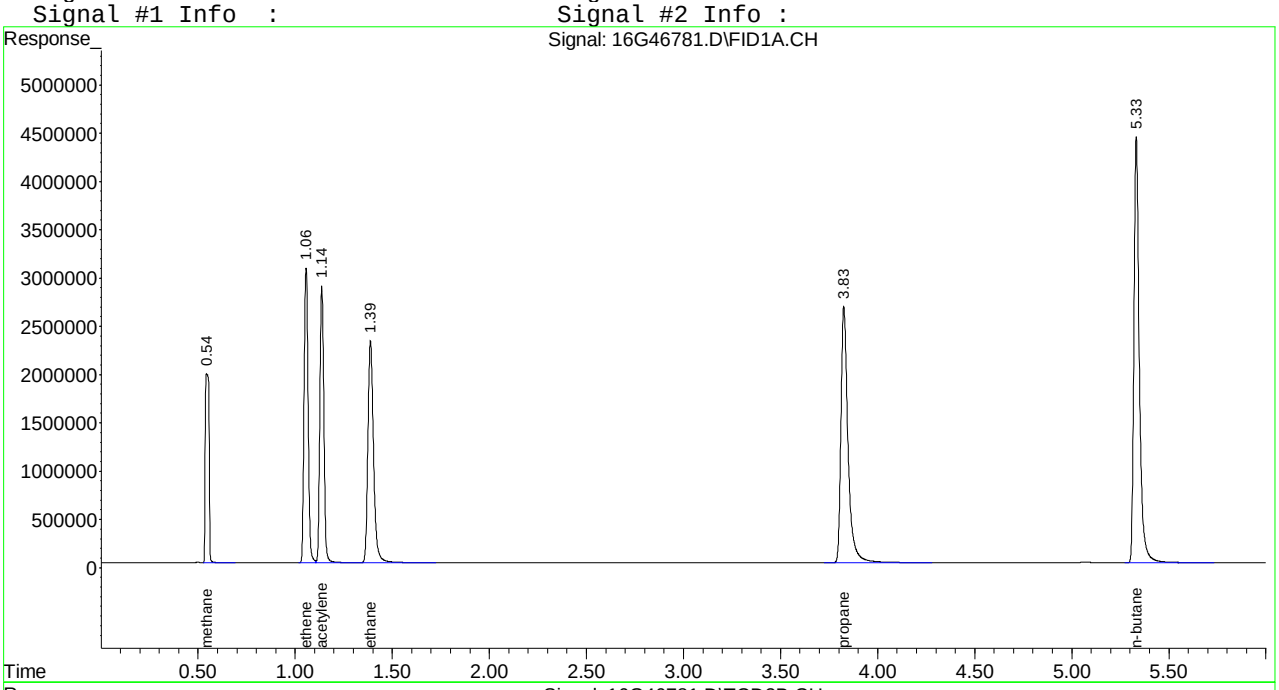

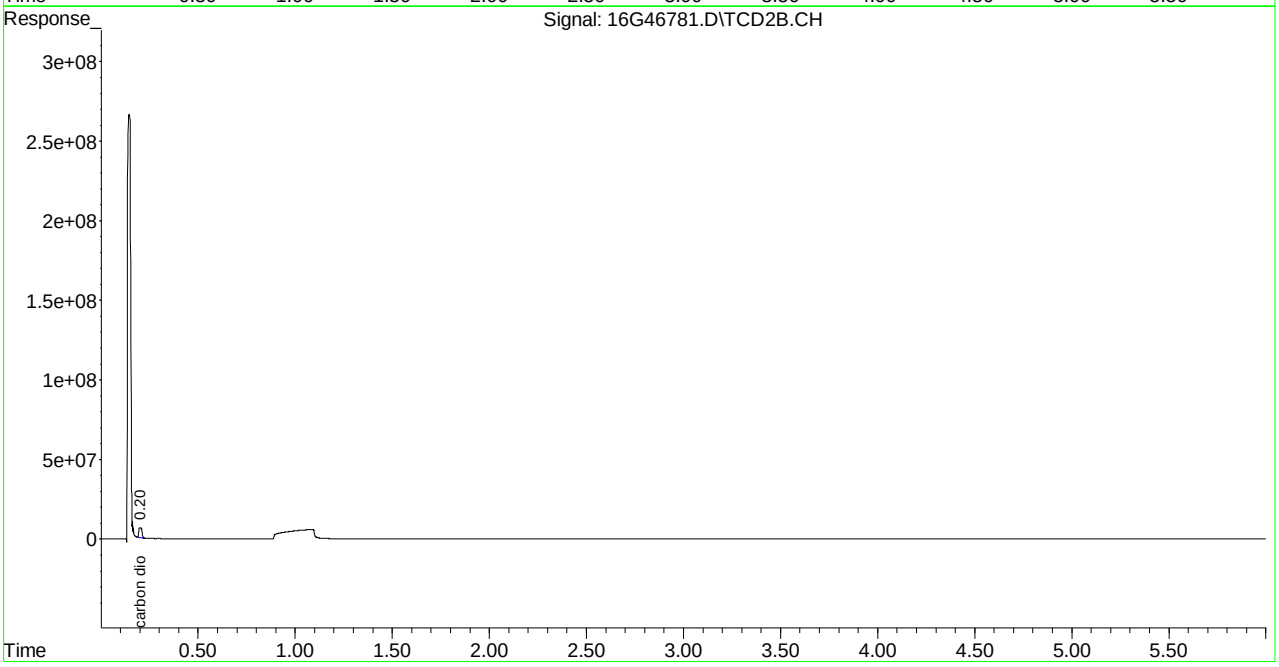

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\022315\16G46781.D\FID1A.CH Vial: 27
Signal #2 : C:\MSDCHEM\1\DATA\022315\16G46781.D\TCD2B.CH
Acq On : 23 Feb 2015 20:28 Operator: JDS
Sample : WG513154-04 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	134.805	-1.4	98	0.00
2	T	ethene	133.000	128.286	3.5	96	0.00
3	T	acetylene	133.000	117.466	11.7	84	0.00
4	T	ethane	133.000	136.148	-2.4	97	0.00
5	T	propane	133.000	135.184	-1.6	96	0.00
6	T	n-butane	133.000	133.184	-0.1	93	0.00

Signal #2

8	T	carbon dioxide	13333.000	11526.186	13.6	84	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46781.D RSKEXT.M Tue Feb 24 10:50:32 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\022315\16G46781.D\FID1A.CH Vial: 27
Signal #2 : C:\MSDCHEM\1\DATA\022315\16G46781.D\TCD2B.CH
Acq On    : 23 Feb 2015  20:28                        Operator: JDS
Sample    : WG513154-04 133umol/mol CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD67274                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update  : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022415\16G46788.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\022415\16G46788.D\TCD2B.CH
Acq On : 24 Feb 2015 9:47 Operator: JDS
Sample : WG513245-01 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 24 09:54:13 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	25852213	129.753	umol/
2) T	ethene	1.06	43744971	127.595	umol/
3) T	acetylene	1.14	47710197	135.564	umol/
4) T	ethane	1.39	46057230	134.409	umol/
5) T	propane	3.83	68280016	136.152	umol/
6) T	n-butane	5.33	89850098	139.239	umol/
8) T	carbon dioxide	0.20	83243115	13769.024	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46788.D RSKEXT.M Tue Feb 24 09:54:13 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022415\16G46788.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\022415\16G46788.D\TCD2B.CH
Acq On : 24 Feb 2015 9:47 Operator: JDS
Sample : WG513245-01 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 24 9:54 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

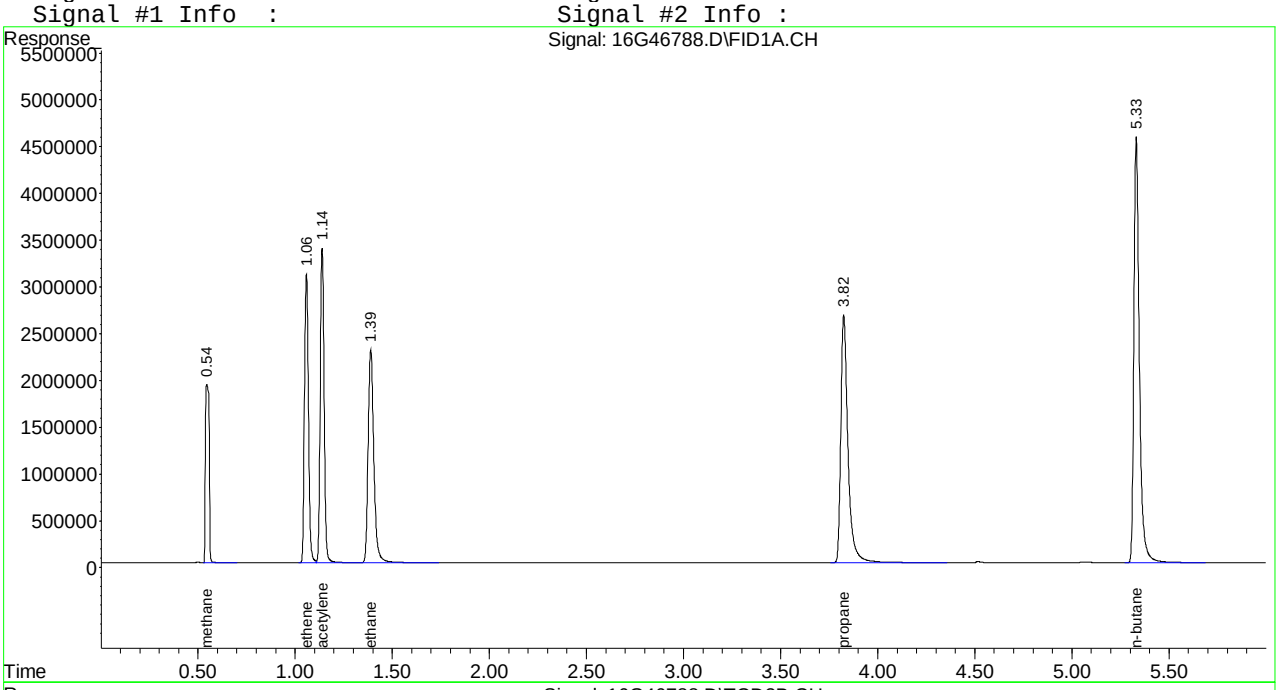

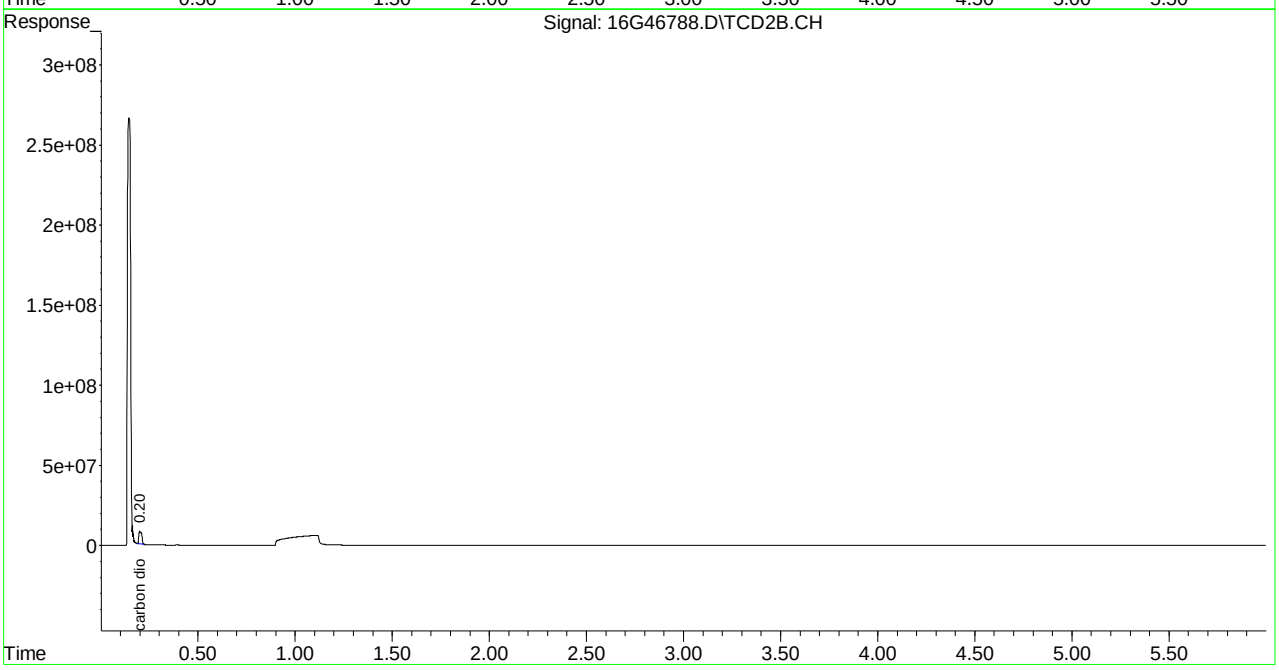

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\022415\16G46788.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\022415\16G46788.D\TCD2B.CH
Acq On : 24 Feb 2015 9:47 Operator: JDS
Sample : WG513245-01 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	129.753	2.4	95	0.00
2	T	ethene	133.000	127.595	4.1	96	0.00
3	T	acetylene	133.000	135.564	-1.9	97	0.00
4	T	ethane	133.000	134.409	-1.1	96	0.00
5	T	propane	133.000	136.152	-2.4	97	0.00
6	T	n-butane	133.000	139.239	-4.7	98	0.00

Signal #2

8	T	carbon dioxide	13333.000	13769.024	-3.3	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46788.D RSKEXT.M Wed Feb 25 08:55:07 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\022415\16G46788.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\022415\16G46788.D\TCD2B.CH
Acq On    : 24 Feb 2015   9:47                      Operator: JDS
Sample    : WG513245-01 133umol/mol CCV RSK175      Inst    : HP16
Misc      : 1,1 STD67274                            Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update  : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022415\16G46799.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\022415\16G46799.D\TCD2B.CH
Acq On : 24 Feb 2015 15:12 Operator: JDS
Sample : WG513245-02 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 25 08:52:36 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.54	26055282	130.792	umol/
2) T	ethene	1.06	43373316	126.511	umol/
3) T	acetylene	1.14	46501436	132.129	umol/
4) T	ethane	1.39	45590824	133.048	umol/
5) T	propane	3.83	67108363	133.816	umol/
6) T	n-butane	5.33	87362938	135.385	umol/
8) T	carbon dioxide	0.20	78446937	12975.701	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46799.D RSKEXT.M Wed Feb 25 08:52:36 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\022415\16G46799.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\022415\16G46799.D\TCD2B.CH
Acq On : 24 Feb 2015 15:12 Operator: JDS
Sample : WG513245-02 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 25 8:52 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

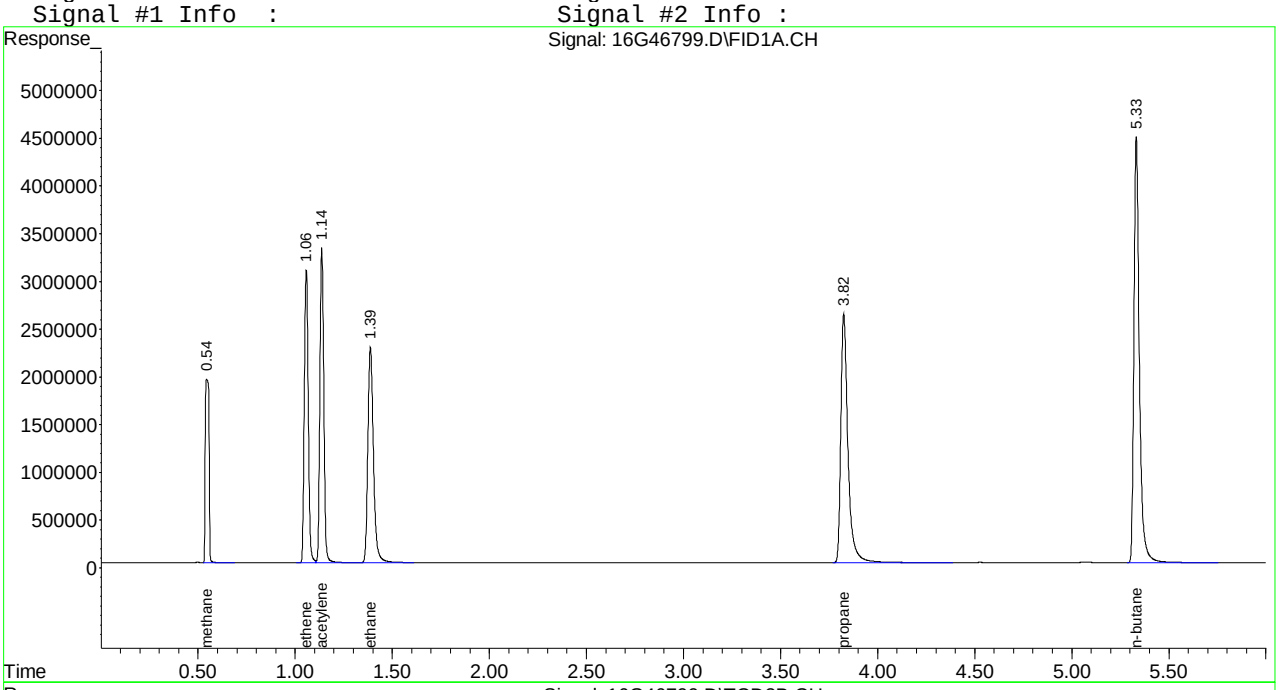

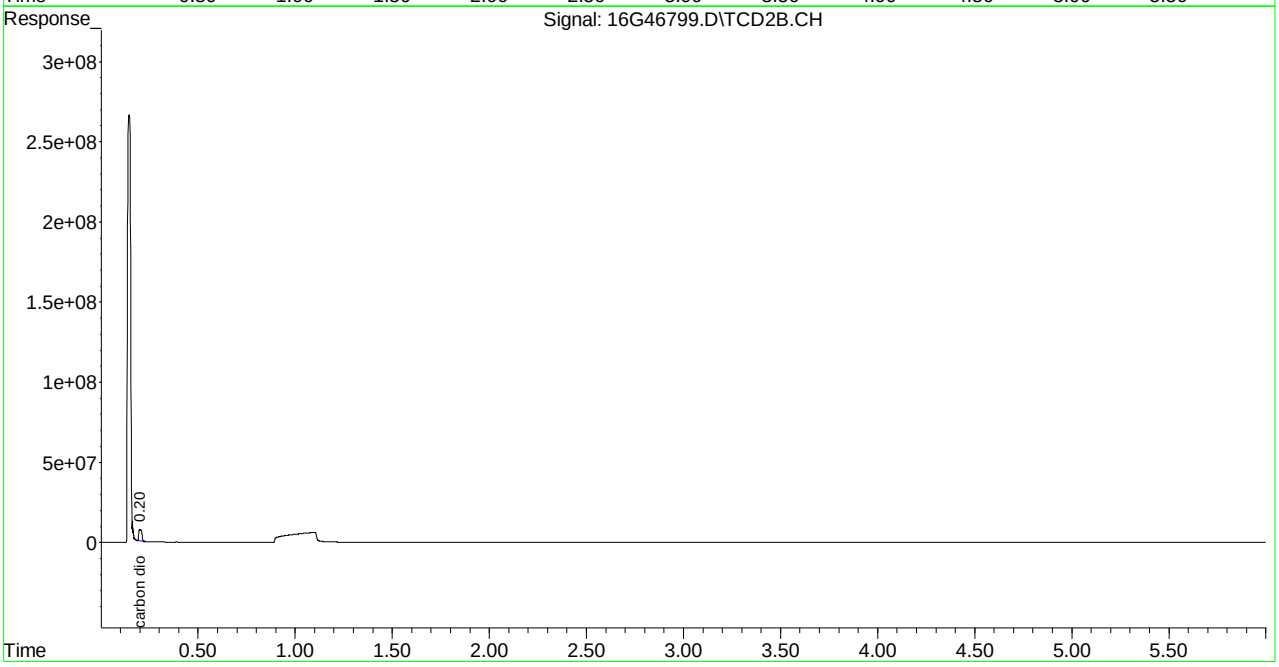

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\022415\16G46799.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\022415\16G46799.D\TCD2B.CH
Acq On : 24 Feb 2015 15:12 Operator: JDS
Sample : WG513245-02 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	130.792	1.7	95	0.00
2	T	ethene	133.000	126.511	4.9	95	0.00
3	T	acetylene	133.000	132.129	0.7	95	0.00
4	T	ethane	133.000	133.048	-0.0	95	0.00
5	T	propane	133.000	133.816	-0.6	95	0.00
6	T	n-butane	133.000	135.385	-1.8	95	0.00
		Signal #2					
8	T	carbon dioxide	13333.000	12975.701	2.7	95	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46799.D RSKEXT.M Wed Feb 25 08:55:13 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\022415\16G46799.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\022415\16G46799.D\TCD2B.CH
Acq On    : 24 Feb 2015  15:12                      Operator: JDS
Sample    : WG513245-02 133umol/mol CCV RSK175      Inst    : HP16
Misc      : 1,1 STD67274                            Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update  : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Microbac Laboratories Inc.
Daily Retention Time Window Determination

Login #: L15021053 **Run Date:** 02/23/2015 **Sample ID:** WG513154-01
Instrument: HP16 **Run Time:** 11:57 **Method:** RSK175
Workgroup (AAB#): WG513170 **File ID:** 16G46755

RT Standard	Analysis Date	File ID	Analyst
WG507817-01	01/13/2015	16G46159	JDS
WG507448-01	01/09/2015	16G46148	JDS
WG507013-01	01/06/2015	16G46125	JDS

Analyte	RT #1	RT #2	RT #3	STD	Lower	Upper
METHANE	.54	.55	.55	.55	0.520	0.580
ETHENE	1.06	1.06	1.06	1.06	1.030	1.090
ETHANE	1.39	1.39	1.39	1.39	1.360	1.420
PROPANE	3.82	3.83	3.83	3.83	3.800	3.860
N-BUTANE	5.33	5.34	5.34	5.33	5.300	5.360
CARBON DIOXIDE	.2	.2	.2	.2	0.170	0.230
ACETYLENE	1.14	1.14	1.14	1.14	1.110	1.170

RT_WIN - Modified 01/06/2010
PDF File ID: 4041165
Report generated 02/27/2015 12:54

Microbac Laboratories Inc.
Daily Retention Time Window Determination

Login #: L15021053 **Run Date:** 02/24/2015 **Sample ID:** WG513245-01
Instrument: HP16 **Run Time:** 09:47 **Method:** RSK175
Workgroup (AAB#): WG513247 **File ID:** 16G46788

RT Standard	Analysis Date	File ID	Analyst
WG507817-01	01/13/2015	16G46159	JDS
WG507448-01	01/09/2015	16G46148	JDS
WG507013-01	01/06/2015	16G46125	JDS

Analyte	RT #1	RT #2	RT #3	STD	Lower	Upper
METHANE	.54	.55	.55	.55	0.520	0.580
ETHENE	1.06	1.06	1.06	1.06	1.030	1.090
ETHANE	1.39	1.39	1.39	1.39	1.360	1.420
PROPANE	3.82	3.83	3.83	3.83	3.800	3.860
N-BUTANE	5.33	5.34	5.34	5.33	5.300	5.360
CARBON DIOXIDE	.2	.2	.2	.2	0.170	0.230
ACETYLENE	1.14	1.14	1.14	1.14	1.110	1.170

RT_WIN - Modified 01/06/2010
PDF File ID: 4041165
Report generated 02/27/2015 12:54

2.1.2.5 Raw QC Data

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\022315\16G46756.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\022315\16G46756.D\TCD2B.CH
Acq On    : 23 Feb 2015  13:44                        Operator: JDS
Sample    : WG513170-01 BLANK STD RSK175              Inst    : HP16
Misc      : 1,1                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Feb 23 13:50:09 2015  Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update  : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.54	375095	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.00	0	N.D.	umol/

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\022315\16G46756.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\022315\16G46756.D\TCD2B.CH
Acq On    : 23 Feb 2015  13:44                        Operator: JDS
Sample    : WG513170-01 BLANK STD RSK175              Inst    : HP16
Misc      : 1,1                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Feb 23 13:50 2015  Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update  : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

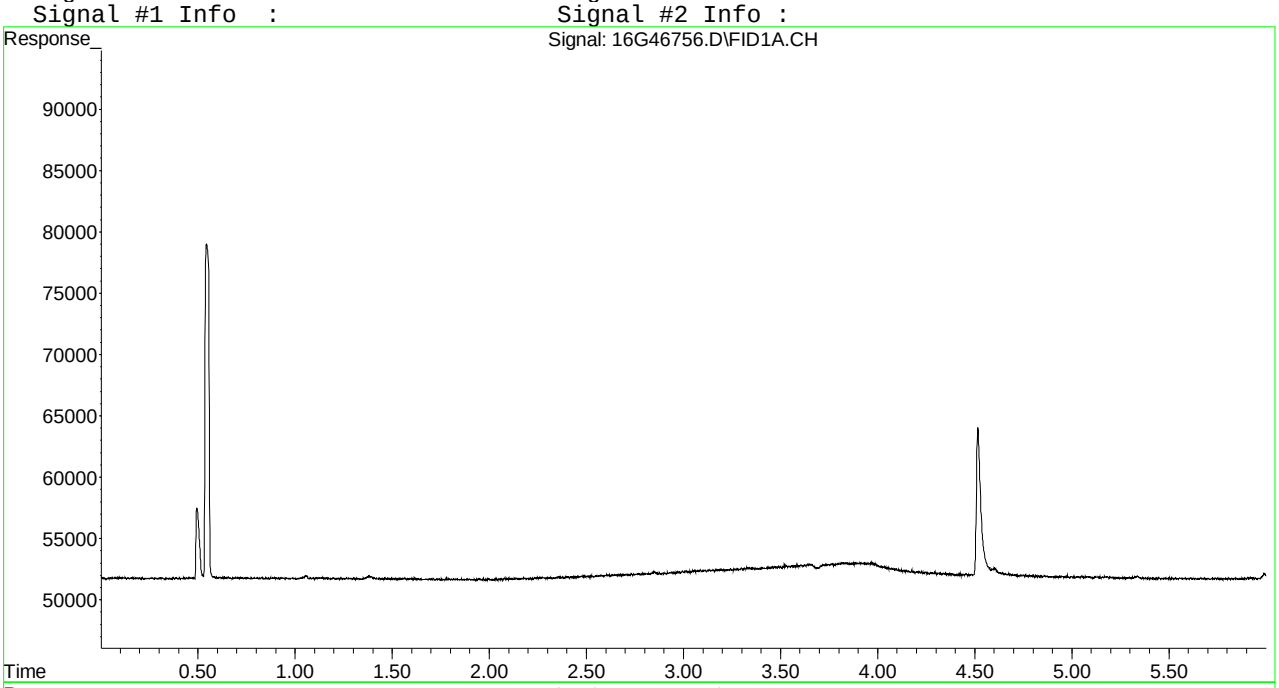

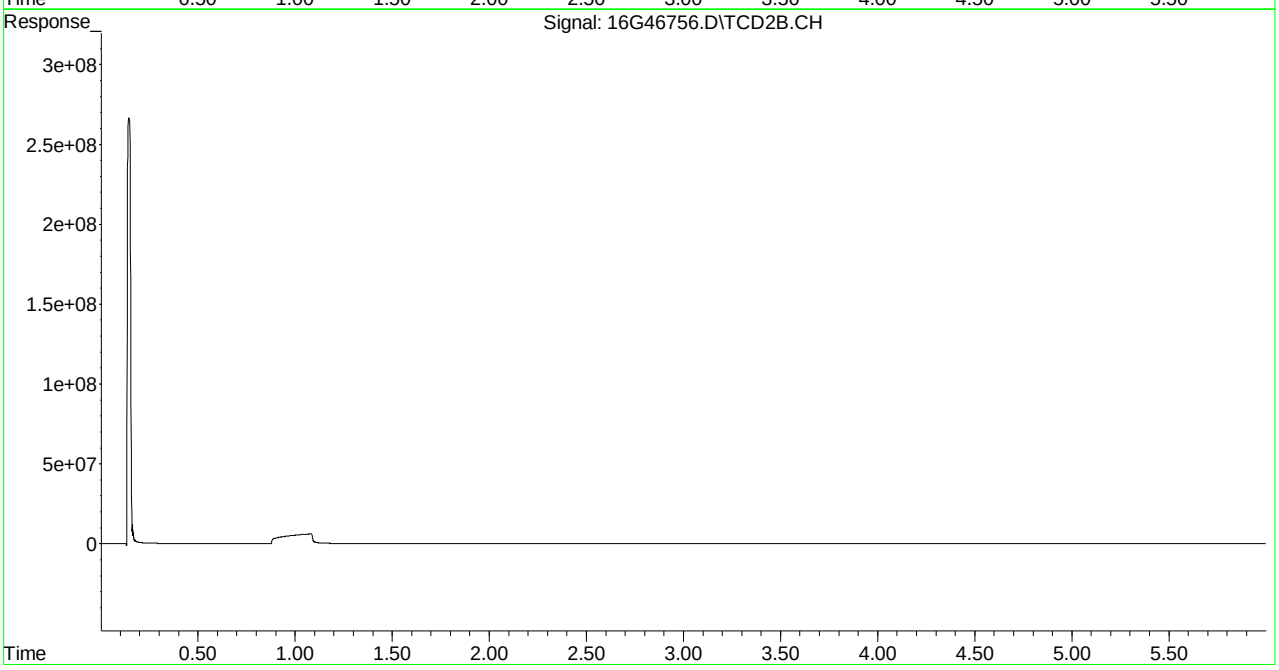

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022415\16G46789.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\022415\16G46789.D\TCD2B.CH
Acq On : 24 Feb 2015 10:04 Operator: JDS
Sample : WG513247-01 BLANK STD RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 24 10:10:54 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	406480	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.39	14245	0.042	umol/
5) T	propane	3.83	9741	0.019	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46789.D RSKEXT.M Tue Feb 24 10:35:51 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\022415\16G46789.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\022415\16G46789.D\TCD2B.CH
Acq On : 24 Feb 2015 10:04 Operator: JDS
Sample : WG513247-01 BLANK STD RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 24 10:10 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

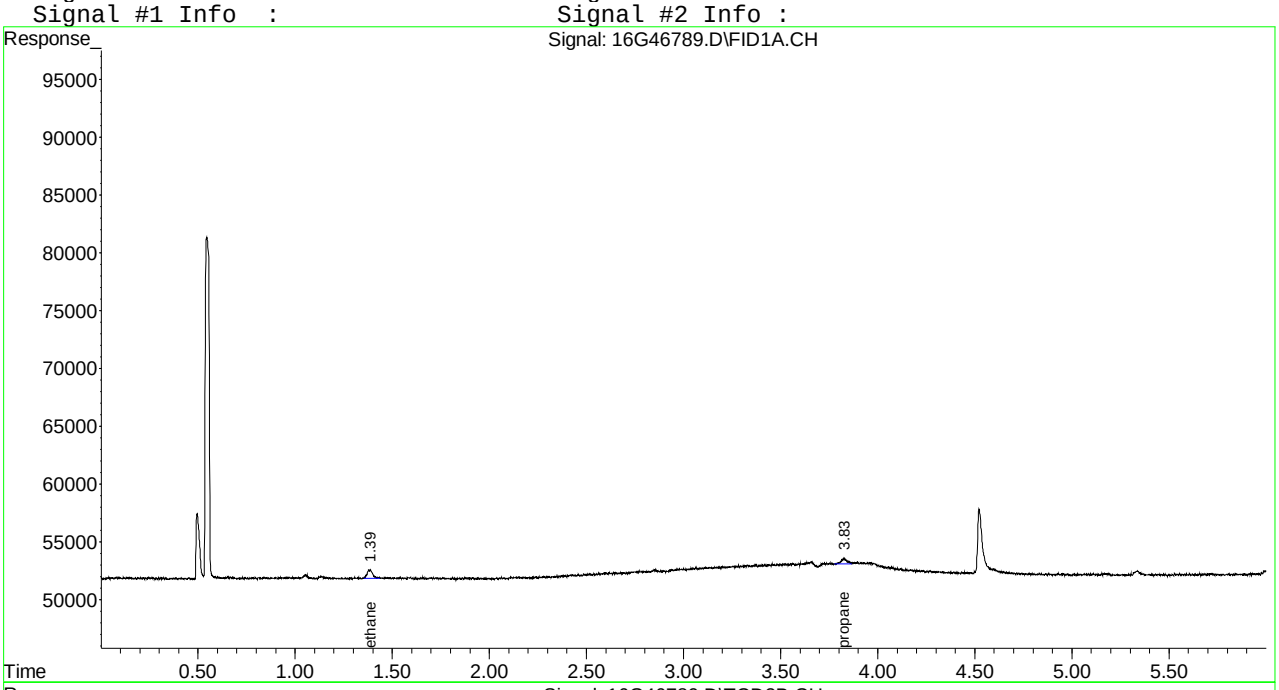

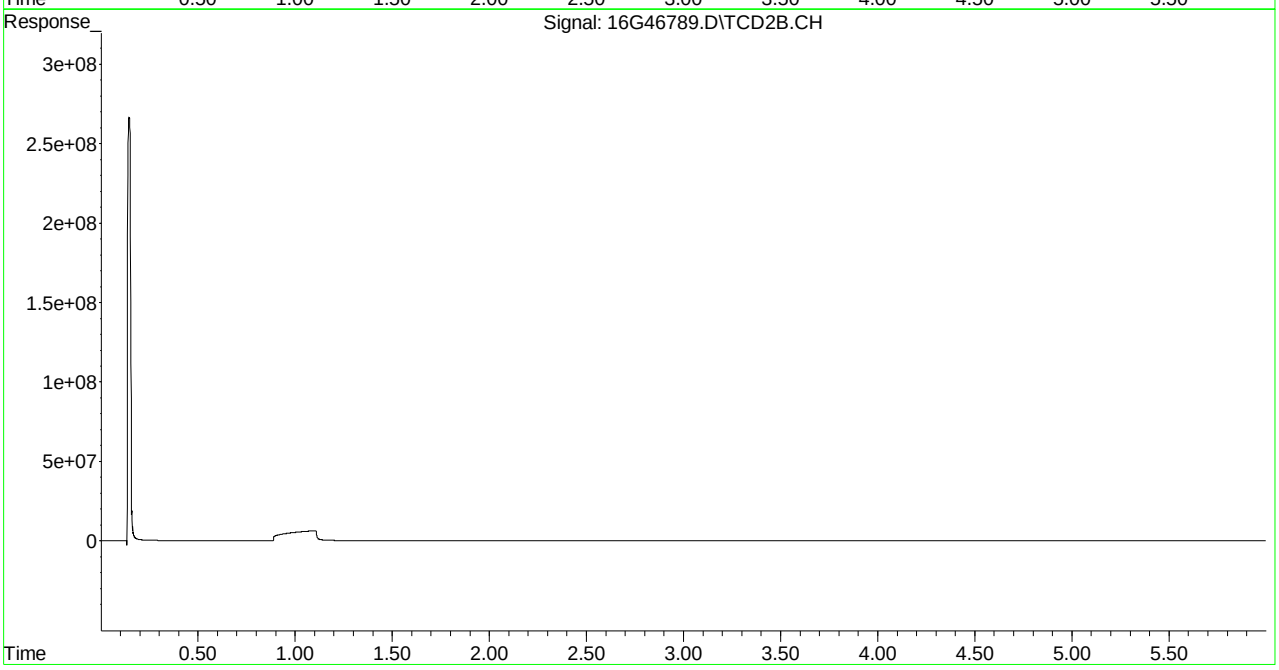

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022315\16G46757.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\022315\16G46757.D\TCD2B.CH
Acq On : 23 Feb 2015 13:56 Operator: JDS
Sample : WG513170-02 67umol/mol LCS STD RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 23 14:16:56 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	14017790	69.232	umol/
2) T	ethene	1.06	23245122	67.801	umol/
3) T	acetylene	1.14	24042069	68.313	umol/
4) T	ethane	1.39	24166255	70.525	umol/
5) T	propane	3.83	34783167	69.359	umol/
6) T	n-butane	5.33	43070065	66.745	umol/
8) T	carbon dioxide	0.20	25071211	4146.963	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46757.D RSKEXT.M Mon Feb 23 14:16:56 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022315\16G46757.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\022315\16G46757.D\TCD2B.CH
Acq On : 23 Feb 2015 13:56 Operator: JDS
Sample : WG513170-02 67umol/mol LCS STD RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 23 14:16 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

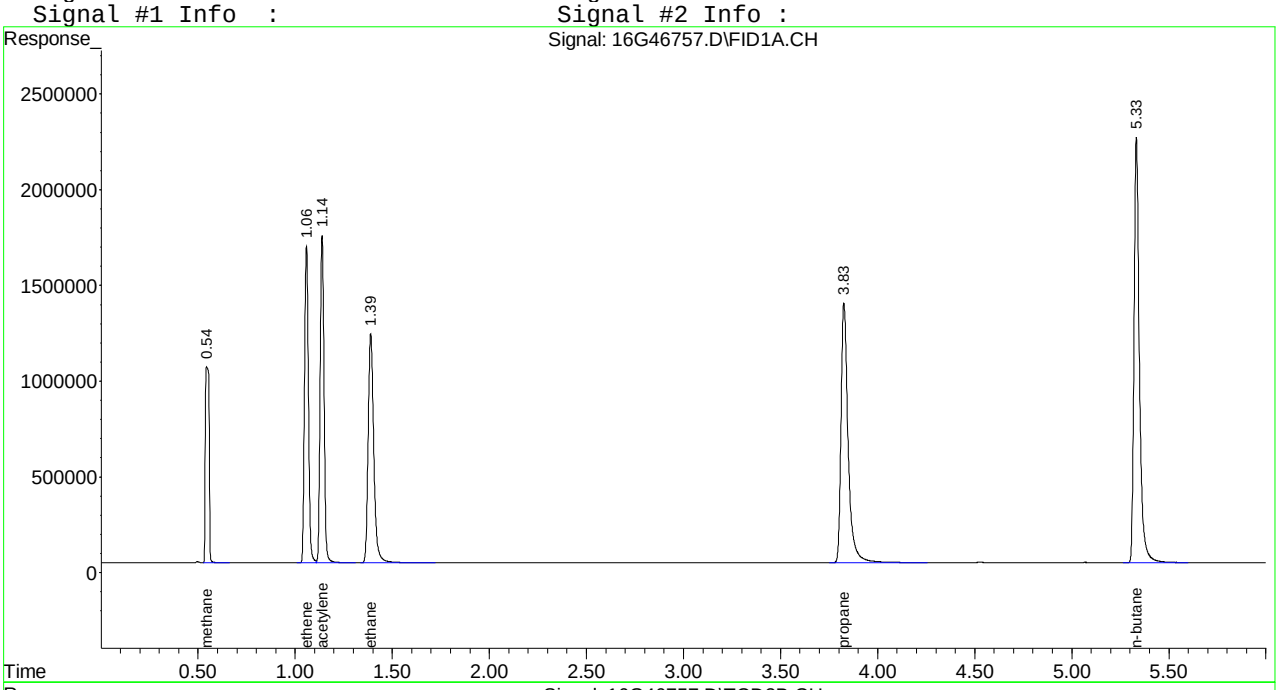

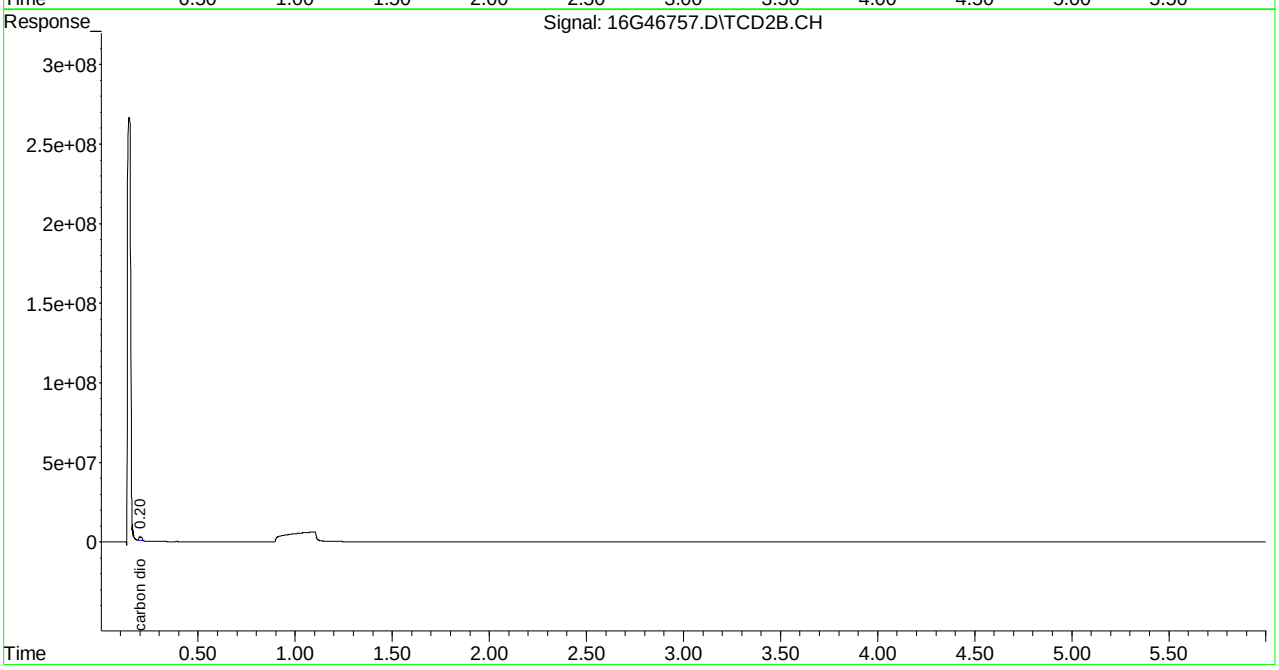

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022415\16G46790.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\022415\16G46790.D\TCD2B.CH
Acq On : 24 Feb 2015 10:16 Operator: JDS
Sample : WG513247-02 67umol/mol LCS STD RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 24 10:35:56 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.54	13686867	67.540	umol/
2) T	ethene	1.04	22807565	66.525	umol/
3) T	acetylene	1.12	24649753	70.040	umol/
4) T	ethane	1.36	23622321	68.937	umol/
5) T	propane	3.82	34344012	68.483	umol/
6) T	n-butane	5.33	42865800	66.428	umol/
8) T	carbon dioxide	0.20	28989816	4795.129	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46790.D RSKEXT.M Tue Feb 24 10:35:56 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\022415\16G46790.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\022415\16G46790.D\TCD2B.CH
Acq On    : 24 Feb 2015  10:16                        Operator: JDS
Sample    : WG513247-02 67umol/mol LCS STD RSK175     Inst    : HP16
Misc      : 1,1 STD68250                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Feb 24 10:35 2015  Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update  : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

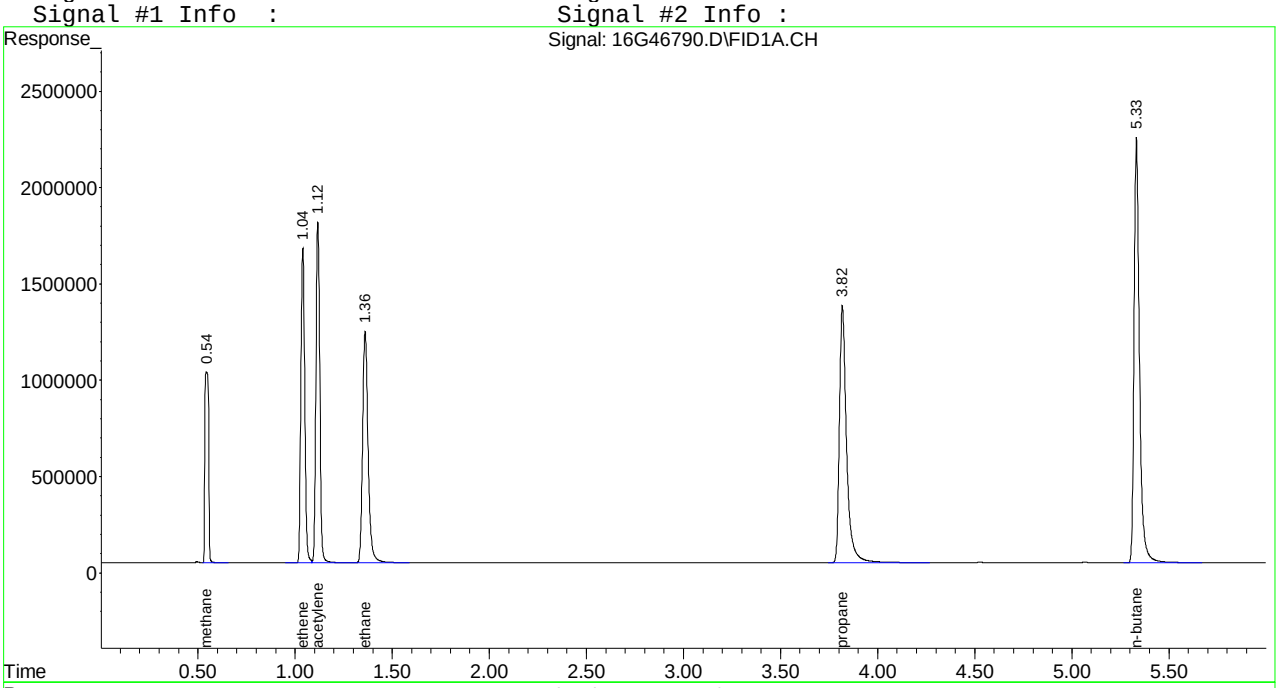

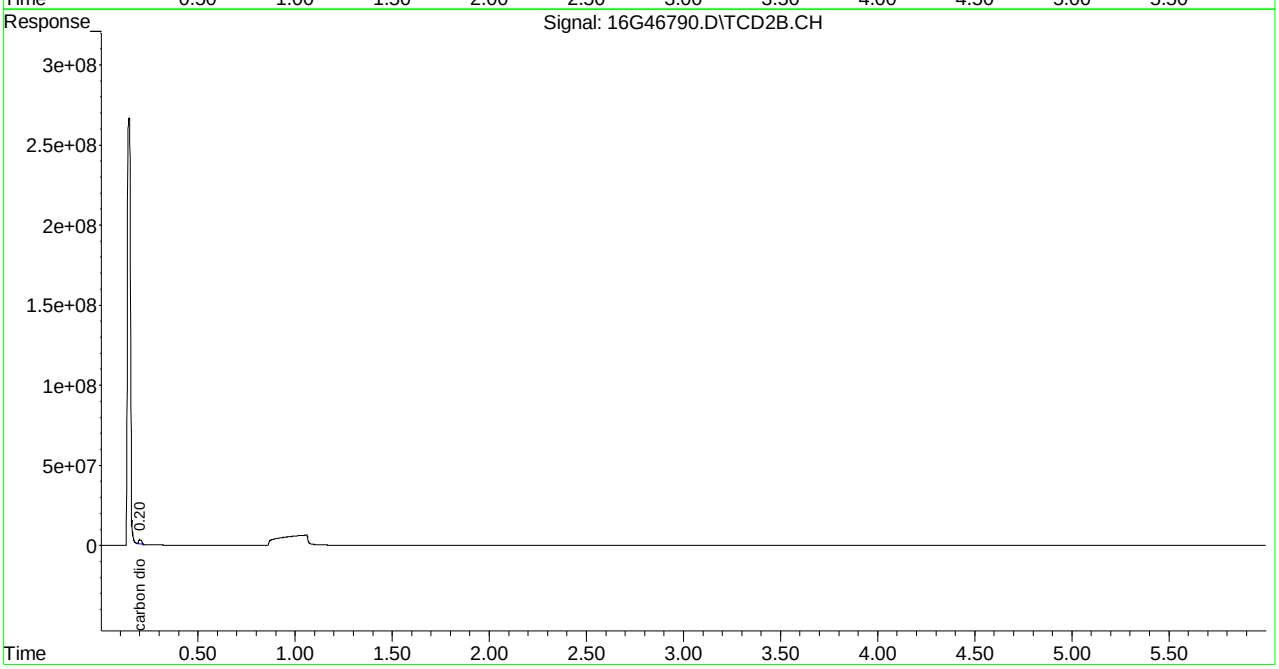

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022315\16G46758.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\022315\16G46758.D\TCD2B.CH
Acq On : 23 Feb 2015 14:08 Operator: JDS
Sample : WG513170-03 67umol/mol LCS2 STD RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 23 14:17:01 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	14089818	69.600	umol/
2) T	ethene	1.06	23124445	67.449	umol/
3) T	acetylene	1.14	23026784	65.428	umol/
4) T	ethane	1.39	24081345	70.277	umol/
5) T	propane	3.83	34798979	69.390	umol/
6) T	n-butane	5.33	44374089	68.766	umol/
8) T	carbon dioxide	0.20	28377082	4693.778	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46758.D RSKEXT.M Mon Feb 23 14:17:02 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022315\16G46758.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\022315\16G46758.D\TCD2B.CH
Acq On : 23 Feb 2015 14:08 Operator: JDS
Sample : WG513170-03 67umol/mol LCS2 STD RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 23 14:17 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

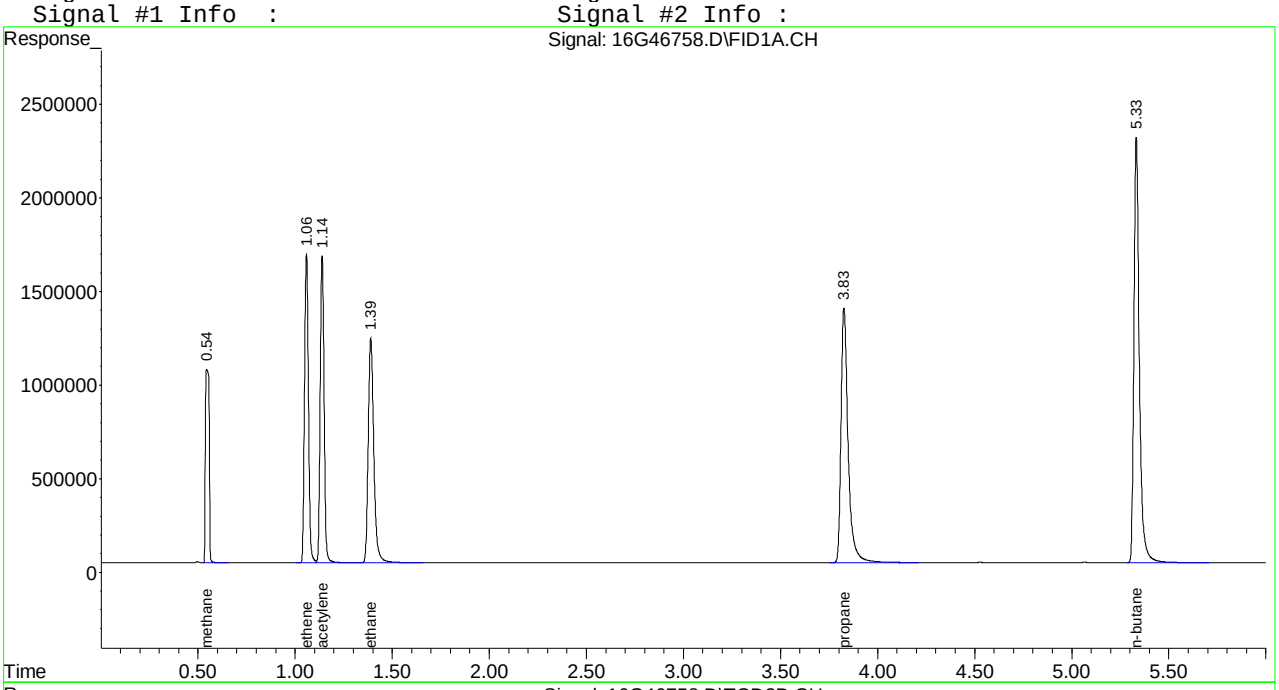

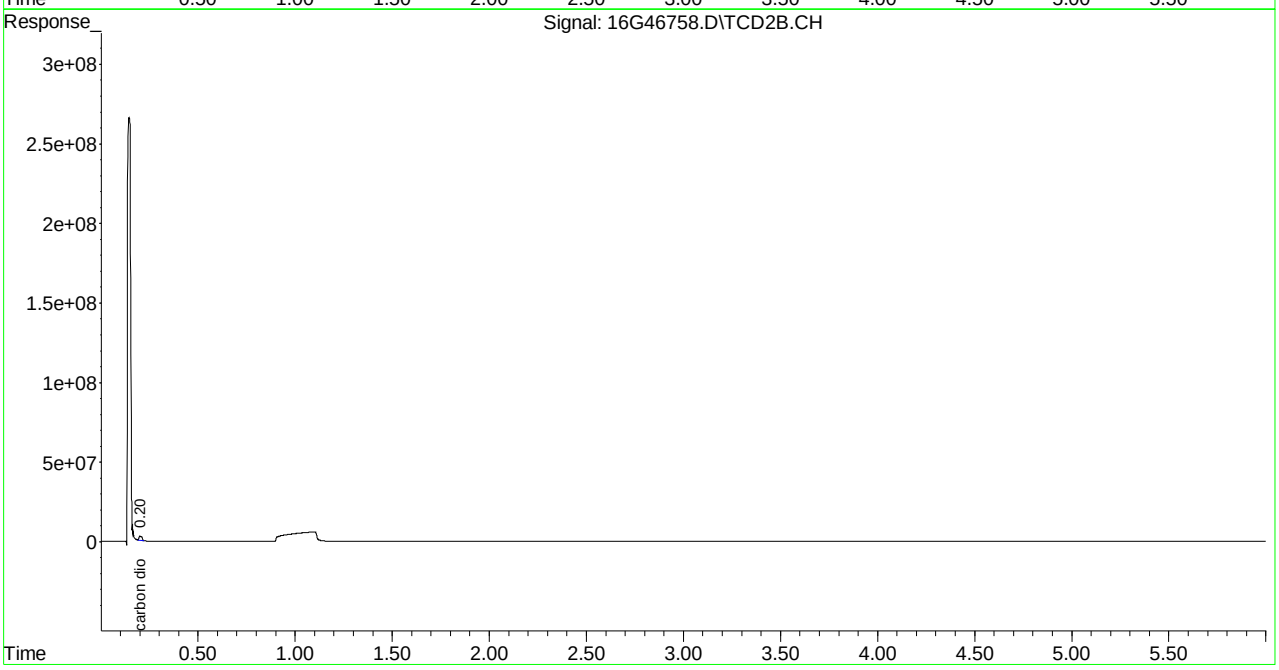

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022415\16G46791.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\022415\16G46791.D\TCD2B.CH
Acq On : 24 Feb 2015 10:29 Operator: JDS
Sample : WG513247-03 67umol/mol LCS2 STD RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 24 10:36:01 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	13925282	68.759	umol/
2) T	ethene	1.06	22871154	66.710	umol/
3) T	acetylene	1.14	23795086	67.611	umol/
4) T	ethane	1.39	23765627	69.355	umol/
5) T	propane	3.83	34367005	68.529	umol/
6) T	n-butane	5.33	43313856	67.123	umol/
8) T	carbon dioxide	0.20	32128775	5314.336	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46791.D RSKEXT.M Tue Feb 24 10:36:01 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\022415\16G46791.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\022415\16G46791.D\TCD2B.CH
Acq On : 24 Feb 2015 10:29 Operator: JDS
Sample : WG513247-03 67umol/mol LCS2 STD RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Feb 24 10:36 2015 Quant Results File: RSKEXT.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 021915
Last Update : Wed Feb 18 16:33:00 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

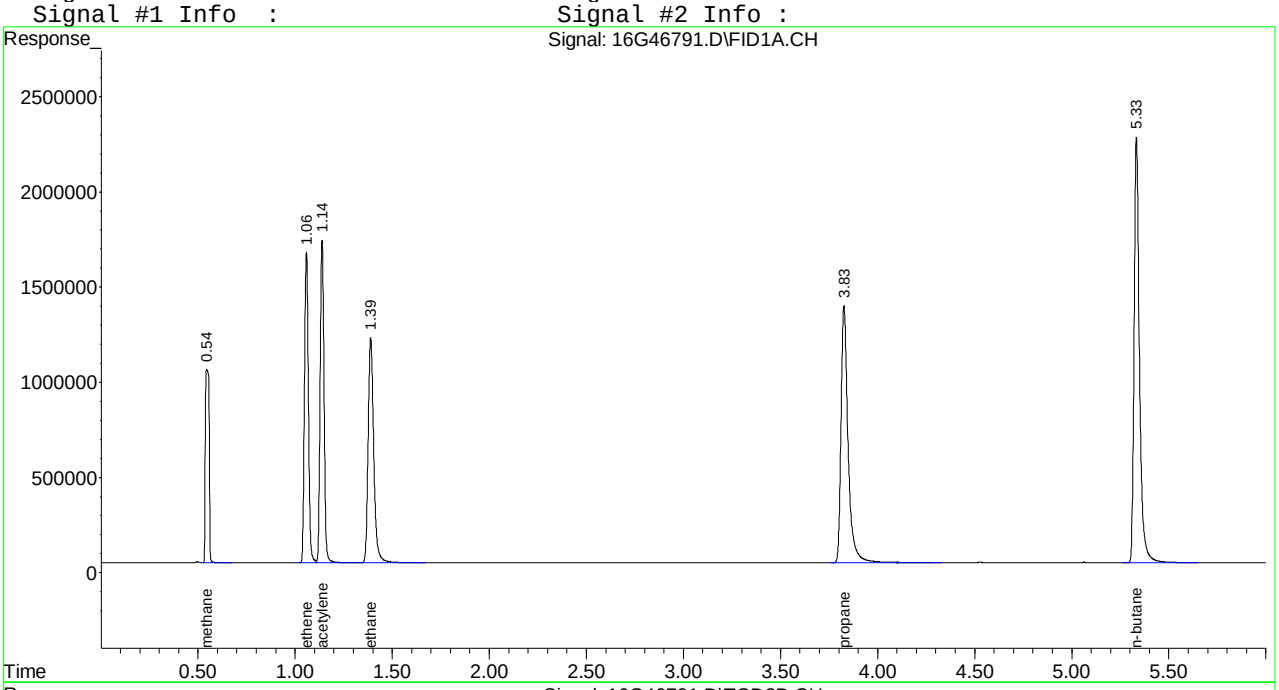

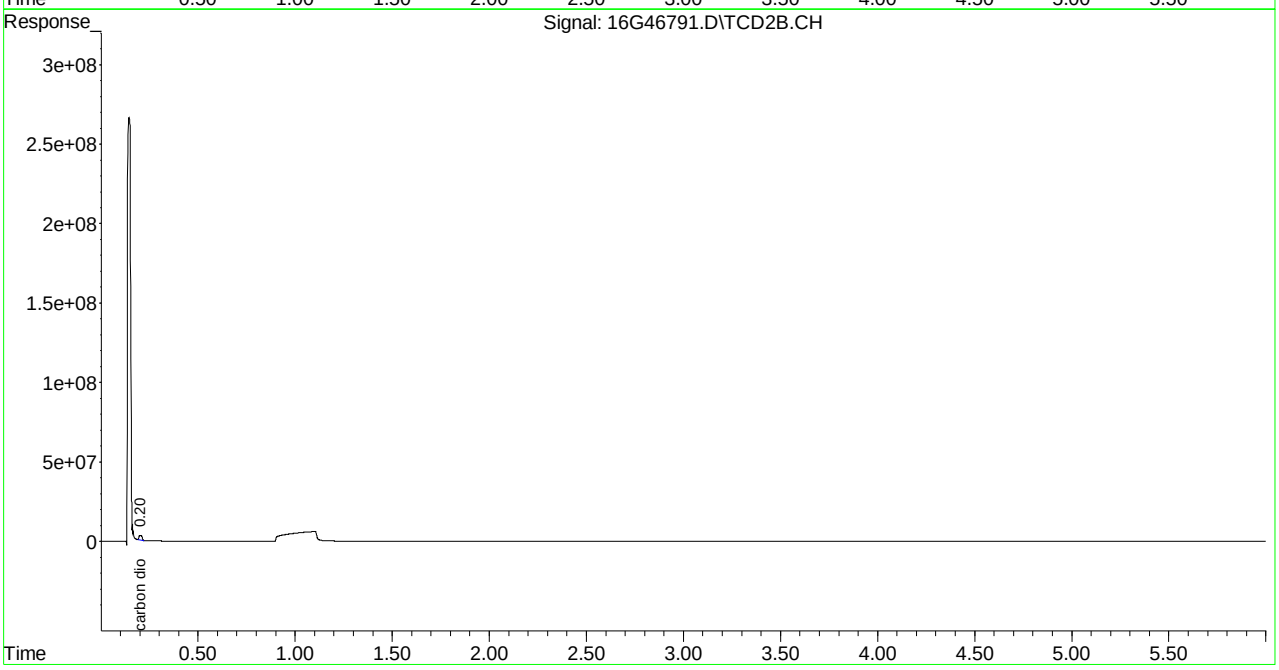

2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW13-021715	**Prep Method:**	6850	**Prep Date:**	02/25/2015 12:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG513403	**Analyst:**	JWR	**Run Date:**	02/26/2015 15:24
Collect Date:	02/17/2015 08:10	**Dilution:**	250	**File ID:**	1LM.LM29096
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	648		100	50.0	25.0

Certificate of Analysis

Sample #:	L15021053-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW14-021715	**Prep Method:**	6850	**Prep Date:**	02/25/2015 12:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG513403	**Analyst:**	JWR	**Run Date:**	02/25/2015 23:37
Collect Date:	02/17/2015 09:20	**Dilution:**	1	**File ID:**	1LM.LM29076
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.381	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW11-021715	**Prep Method:**	6850	**Prep Date:**	02/25/2015 12:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG513403	**Analyst:**	JWR	**Run Date:**	02/26/2015 15:43
Collect Date:	02/17/2015 10:45	**Dilution:**	1000	**File ID:**	1LM.LM29097
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2690		400	200	100

Certificate of Analysis

Sample #:	L15021053-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW06-021715	**Prep Method:**	6850	**Prep Date:**	02/25/2015 12:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG513403	**Analyst:**	JWR	**Run Date:**	02/26/2015 00:15
Collect Date:	02/17/2015 11:55	**Dilution:**	1000	**File ID:**	1LM.LM29078
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2490		400	200	100

Certificate of Analysis

Sample #:	L15021053-09	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW08-021715	**Prep Method:**	6850	**Prep Date:**	02/25/2015 12:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG513403	**Analyst:**	JWR	**Run Date:**	02/26/2015 01:30
Collect Date:	02/17/2015 14:05	**Dilution:**	50	**File ID:**	1LM.LM29082
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	99.0		20.0	10.0	5.00

Certificate of Analysis

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15021053-11	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW22-021715	**Prep Method:**	6850	**Prep Date:**	02/25/2015 12:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	11/17/2014 14:53
Workgroup #:	WG513403	**Analyst:**	JWR	**Run Date:**	02/26/2015 01:49
Collect Date:	02/17/2015 15:15	**Dilution:**	1	**File ID:**	1LM.LM29083
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1.51		0.400	0.200	0.100

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe
Calibration Check: 1408 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG513403-01 MCT	10,050.0	
WG513403-02 Blank	0.40	
WG513403-03 LCS	0.40	
L15021036-01	1,343.0	
-02	1,099.0	
L15021037-01	5,850.0	
-02	5,830.0	
-03 RS	1,400.0	
-04 MS	2,830.0	
-05 MSD	2,550.0	
-06	7,360.0	
-07	7,620.0	
-08	1,965.0	
-09	4,740.0	
-10	5,360.0	
-11	575.0	
L15021053-01	1,944.0	
-03	1,926.0	
-05	1,583.0	
-07	677.0	
-09	2,360.0	
-11	4,730.0	

Analyst: John Richards

Date/Time: 02/27/15 11:30

DCN#108849

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 111714_ADC.TXT
Analyst1: ADC Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 6

Maintenance Log ID: Syringe Filter Lot#: 130818254-1
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG501261

Internal STD: COA17578 Surrogate STD: NA Calibration STD STD67080 (11/17/2014)

CCV STD: STD67080 LCS STD: STD67080 MS/MSD STD: STD67080

Comments: ICAL WG501146 : Alternate Source :STD67082

Diluted samples in this analytical workgroup were ran according to sample's historical data.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM27603	WG501146-01 CCB	1	1		11/17/14 12:41
2	1LM.LM27604	WG501146-02 STD (0.1 ug/L)	1	1	STD67080	11/17/14 13:00
3	1LM.LM27605	WG501146-03 STD (0.2 ug/L)	1	1	STD67080	11/17/14 13:19
4	1LM.LM27606	WG501146-04 STD (0.5 ug/L)	1	1	STD67080	11/17/14 13:38
5	1LM.LM27607	WG501146-05 STD (1.0 ug/L)	1	1	STD67080	11/17/14 13:56
6	1LM.LM27608	WG501146-06 STD (2.0 ug/L)	1	1	STD67080	11/17/14 14:15
7	1LM.LM27609	WG501146-07 STD (5.0 ug/L)	1	1	STD67080	11/17/14 14:34
8	1LM.LM27610	WG501146-08 STD (10 ug/L)	1	1	STD67080	11/17/14 14:53
9	1LM.LM27611	WG501146-09 SSCV (1.0 ug/L)	1	1	STD67082	11/17/14 15:12
10	1LM.LM27612	WG501260-01 CCB	1	1		11/17/14 15:31
11	1LM.LM27613	WG501260-02 CCV (1.0ug/L)	1	1	STD67080	11/17/14 15:50
12	1LM.LM27614	WG501261-07 MRL (0.2ug/L)	1	1	STD67080	11/17/14 16:09
13	1LM.LM27615	WG501261-01 MCT (0.2ug/L)	1	1	STD67080	11/17/14 16:28
14	1LM.LM27616	WG501261-02 BLANK	1	1		11/17/14 16:47
15	1LM.LM27617	WG501261-03 LCS (0.2ug/L)	1	1	STD67080	11/17/14 17:06
16	1LM.LM27618	L14110479-26	1	1		11/17/14 17:25
17	1LM.LM27619	L14110648-01	1	1		11/17/14 17:44
18	1LM.LM27620	L14110438-01 100X	1	100		11/17/14 18:03
19	1LM.LM27621	L14110438-03	1	1		11/17/14 18:22
20	1LM.LM27622	L14110438-05 10X	1	10		11/17/14 18:40
21	1LM.LM27623	L14110618-01	1	1		11/17/14 18:59
22	1LM.LM27624	L14110635-01 10,000X	1	10000		11/17/14 19:18
23	1LM.LM27625	WG501260-03 CCV (1.0ug/L)	1	1	STD67080	11/17/14 19:37
24	1LM.LM27626	WG501261-08 MRL (0.2ug/L)	1	1	STD67080	11/17/14 19:56
25	1LM.LM27627	WG501260-04 CCB	1	1		11/17/14 20:15
26	1LM.LM27628	L14110626-03 RS	1	1		11/17/14 20:34
27	1LM.LM27629	L14110626-04 MS	1	1	STD67080	11/17/14 20:53
28	1LM.LM27630	L14110626-05 MSD	1	1	STD67080	11/17/14 21:12
29	1LM.LM27631	L14110626-01	1	1	STD67080	11/17/14 21:31
30	1LM.LM27632	L14110626-02	1	1	STD67080	11/17/14 21:50
31	1LM.LM27633	L14110626-06	1	1	STD67080	11/17/14 22:09
32	1LM.LM27634	WG501260-05 CCV (1.0ug/L)	1	1	STD67080	11/17/14 22:28
33	1LM.LM27635	WG501261-09 MRL (0.2ug/L)	1	1	STD67080	11/17/14 22:47

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 111714_ADC.TXT

Analyst1: ADC Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 6

Maintenance Log ID: Syringe Filter Lot#: 130818254-1

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG501261

Internal STD: COA17578 Surrogate STD: NA STD67080 (11/17/2014)

CCV STD: STD67080 LCS STD: STD67080 STD67080

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM27636	WG501260-06 CCB	1	1		11/17/14 23:06

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 2 Approved: 19-NOV-14

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 022515_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 6

Maintenance Log ID: Syringe Filter Lot#: 140701254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG513403 (waters)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD67080 (11/17/2014)

CCV STD: STD67080 LCS STD: STD67080 MS/MSD STD: STD67080

Comments: All samples initially analyzed at a dilution were based on their historical results.
Samples tagged with (NR) did not conform to their historical results. These samples were reanalyzed either neat, or at a lesser dilution on the end of this run.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM29053	WG513413-01 CCB	1	1		02/25/15 16:21
2	1LM.LM29054	WG513413-02 CCV (1.0ug/L)	1	1	STD67080	02/25/15 16:40
3	1LM.LM29055	WG513403-07 MRL (0.2ug/L)	1	1	STD67080	02/25/15 16:59
4	1LM.LM29056	WG513403-01 MCT (0.2ug/L)	1	1	STD67080	02/25/15 17:18
5	1LM.LM29057	WG513403-02 BLANK	1	1		02/25/15 17:37
6	1LM.LM29058	WG513403-03 LCS (0.2ug/L)	1	1	STD67080	02/25/15 17:56
7	1LM.LM29059	L15021036-01	1	1		02/25/15 18:15
8	1LM.LM29060	L15021036-02 (500x)	1	500		02/25/15 18:34
9	1LM.LM29061	L15021037-01 (500x)(NR)	1	500		02/25/15 18:53
10	1LM.LM29062	L15021037-02 (500x)(NR)	1	500		02/25/15 19:12
11	1LM.LM29063	L15021037-03 RS (250x)(NR)	1	250		02/25/15 19:31
12	1LM.LM29064	L15021037-04 MS (250x)(NR)	1	250	STD67080	02/25/15 19:50
13	1LM.LM29065	L15021037-05 MSD (250x)(NR)	1	250	STD67080	02/25/15 20:09
14	1LM.LM29066	WG513413-03 CCV (1.0ug/L)	1	1	STD67080	02/25/15 20:28
15	1LM.LM29067	WG513403-08 MRL (0.2ug/L)	1	1	STD67080	02/25/15 20:46
16	1LM.LM29068	WG513413-04 CCB	1	1		02/25/15 21:05
17	1LM.LM29069	L15021037-06 (100x)(NR)	1	100		02/25/15 21:24
18	1LM.LM29070	L15021037-07 (50x)	1	50		02/25/15 21:43
19	1LM.LM29071	L15021037-08	1	1		02/25/15 22:02
20	1LM.LM29072	L15021037-09	1	1		02/25/15 22:21
21	1LM.LM29073	L15021037-10	1	1		02/25/15 22:40
22	1LM.LM29074	L15021037-11	1	1		02/25/15 22:59
23	1LM.LM29075	L15021053-01 (5,000x)(NR)	1	5000		02/25/15 23:18
24	1LM.LM29076	L15021053-03	1	1		02/25/15 23:37
25	1LM.LM29077	L15021053-05 (10,000x)(NR)	1	10000		02/25/15 23:56
26	1LM.LM29078	L15021053-07 (1,000x)	1	1000		02/26/15 00:15
27	1LM.LM29079	WG513413-05 CCV (1.0ug/L)	1	1	STD67080	02/26/15 00:34
28	1LM.LM29080	WG513403-09 MRL (0.2ug/L)	1	1	STD67080	02/26/15 00:53
29	1LM.LM29081	WG513413-06 CCB	1	1		02/26/15 01:12
30	1LM.LM29082	L15021053-09 (50x)	1	50		02/26/15 01:30
31	1LM.LM29083	L15021053-11	1	1		02/26/15 01:49
32	1LM.LM29084	WG513413-07 CCV (1.0ug/L)	1	1	STD67080	02/26/15 02:08
33	1LM.LM29085	WG513403-10 MRL (0.2ug/L)	1	1	STD67080	02/26/15 02:27

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 022515_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 6

Maintenance Log ID: Syringe Filter Lot#: 140701254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG513403 (waters)

Internal STD: COA18071 Surrogate STD: NA STD67080 (11/17/2014)

CCV STD: STD67080 LCS STD: STD67080 STD67080

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM29086	WG513413-08 CCB	1	1		02/26/15 02:46
35	1LM.LM29087	WG513413-09 CCV (1.0ug/L)	1	1	STD67080	02/26/15 12:34
36	1LM.LM29088	WG513403-11 MRL (0.2ug/L)	1	1	STD67080	02/26/15 12:53
37	1LM.LM29089	WG513413-10 CCB	1	1		02/26/15 13:12
38	1LM.LM29090	L15021037-01 (RR 100x)	1	100		02/26/15 13:31
39	1LM.LM29091	L15021037-02 (RR 100x)	1	100		02/26/15 13:50
40	1LM.LM29092	L15021037-03 RS (RR 50x)	1	50		02/26/15 14:09
41	1LM.LM29093	L15021037-04 MS (RR 50x)	1	50		02/26/15 14:27
42	1LM.LM29094	L15021037-05 MSD (RR 50x)	1	50		02/26/15 14:46
43	1LM.LM29095	L15021037-06 (RR Neat)	1	1		02/26/15 15:05
44	1LM.LM29096	L15021053-01 (RR 250x)	1	250		02/26/15 15:24
45	1LM.LM29097	L15021053-05 (RR 1,000x)	1	1000		02/26/15 15:43
46	1LM.LM29098	WG513413-11 CCV (1.0ug/L)	1	1	STD67080	02/26/15 16:02
47	1LM.LM29099	WG513403-12 MRL (0.2ug/L)	1	1	STD67080	02/26/15 16:21
48	1LM.LM29100	WG513413-12 CCB	1	1		02/26/15 16:40

Comments

Seq.	Rerun	Dil.	Reason	Analytes
41				
	L15021037-04 MS (RR 50x) : The MS %Rec is below zero. The parent sample to this MS has a perchlorate result greater than that of the MS/MSD-spiking standard. In addition, at this level of dilution, the spiked amount has been diluted below the method detection limit.			
42				
	L15021037-05 MSD (RR 50x) : The MSD %Rec is below zero. The parent sample to this MSD has a perchlorate result greater than that of the MS/MSD-spiking standard. In addition, at this level of dilution, the spiked amount has been diluted below the method detection limit.			

Page: 2 Approved: 27-FEB-15

Microbac Laboratories Inc.

Data Checklist

Date: 17-NOV-2014
Analyst: ADC
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG501146
Runlog ID: 64764
Analytical Workgroups: L14110438, 0479, 0618, 0626, 0635, 0648

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	ADC
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 19-NOV-2014

Secondary Reviewer: 19-NOV-2014

CHECKLIST1 - Modified 03/05/2008

Generated: NOV-19-2014 16:22:21

Microbac Laboratories Inc.

Data Checklist

Date: 25-FEB-2015
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 66560
Analytical Workgroups: L15021036, 1037, 1053 (WATERS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	DL@50X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
27-FEB-2015
John Richards

Secondary Reviewer:
27-FEB-2015
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-27-2015 13:28:47

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG513403

Login Number: L15021053

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW13-021715	01	02/17/15					02/25/2015	8.2	28		02/26/15	1.1	28	
50WW14-021715	03	02/17/15					02/25/2015	8.1	28		02/25/15	.5	28	
50WW11-021715	05	02/17/15					02/25/2015	8.1	28		02/26/15	1.2	28	
50WW06-021715	07	02/17/15					02/25/2015	8	28		02/26/15	.5	28	
50WW08-021715	09	02/17/15					02/25/2015	7.9	28		02/26/15	.6	28	
50WW22-021715	11	02/17/15					02/25/2015	7.9	28		02/26/15	.6	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4040906
Report generated 02/27/2015 13:49

METHOD BLANK SUMMARY

Login Number: L15021053
Blank File ID: 1LM.LM29057
Prep Date: 02/25/15 12:00
Analyzed Date: 02/25/15 17:37
Analyst: JWR

Work Group: WG513403
Blank Sample ID: WG513403-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG513403-07	1LM.LM29055	02/25/15 16:59	01
MCT	WG513403-01	1LM.LM29056	02/25/15 17:18	01
LCS	WG513403-03	1LM.LM29058	02/25/15 17:56	01
QCMRL	WG513403-08	1LM.LM29067	02/25/15 20:46	01
50WW14-021715	L15021053-03	1LM.LM29076	02/25/15 23:37	01
50WW06-021715	L15021053-07	1LM.LM29078	02/26/15 00:15	DL01
QCMRL	WG513403-09	1LM.LM29080	02/26/15 00:53	01
50WW08-021715	L15021053-09	1LM.LM29082	02/26/15 01:30	DL01
50WW22-021715	L15021053-11	1LM.LM29083	02/26/15 01:49	01
QCMRL	WG513403-10	1LM.LM29085	02/26/15 02:27	01
QCMRL	WG513403-11	1LM.LM29088	02/26/15 12:53	01
50WW13-021715	L15021053-01	1LM.LM29096	02/26/15 15:24	DL01
50WW11-021715	L15021053-05	1LM.LM29097	02/26/15 15:43	DL01
QCMRL	WG513403-12	1LM.LM29099	02/26/15 16:21	01

Report Name: BLANK_SUMMARY
PDF File ID: 4040908
Report generated 02/27/2015 13:49

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15021053 Prep Date: 02/25/15 12:00 Sample ID: WG513403-02
Instrument ID: LCMS1 Run Date: 02/25/15 17:37 Prep Method: 6850
File ID: 1LM.LM29057 Analyst: JWR Method: 6850
Workgroup (AAB#): WG513403 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-17-NOV-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4040909
27-FEB-2015 13:49

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15021053 Run Date: 02/25/2015 Sample ID: WG513403-03
Instrument ID: LCMS1 Run Time: 17:56 Prep Method: 6850
File ID: 1LM.LM29058 Analyst: JWR Method: 6850
Workgroup (AAB#): WG513403 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD67080 Cal ID: LCMS1-17-NOV-14

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	0.200	0.204	102	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4040910
Report generated: 02/27/2015 13:49

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L15021053
Analytical Method: 6850
ICAL Workgroup: WG501146

Instrument ID: LCMS1
Initial Calibration Date: 17-NOV-14 14:53
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.387	10.9	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4041286
Report generated 02/27/2015 13:50

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15021053

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 17-NOV-14 14:53

Column ID: F

Analyte	WG501146-02			WG501146-03			WG501146-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	11100.0000	1.719	0.200	17300.0000	1.339	0.500	44100.0000	1.338

INT_CAL - Modified 03/06/2008
PDF File ID: 4041286
Report generated 02/27/2015 13:50

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15021053

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 17-NOV-14 14:53

Column ID: F

Analyte	WG501146-05			WG501146-06			WG501146-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	84400.0000	1.290	2.00	173000.000	1.337	5.00	420000.000	1.337

INT_CAL - Modified 03/06/2008
PDF File ID: 4041286
Report generated 02/27/2015 13:50

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15021053

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 17-NOV-14 14:53

Column ID: F

Analyte	WG501146-08		
	CONC	RESP	RF
Perchlorate	10.0	841000.000	1.347

INT_CAL - Modified 03/06/2008
PDF File ID: 4041286
Report generated 02/27/2015 13:50

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15021053 Run Date: 11/17/2014 Sample ID: WG501146-09
Instrument ID: LCMS1 Run Time: 15:12 Method: 6850
File ID: 1LM.LM27611 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG501146 Cal ID: LCMS1 - 17-NOV-14

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.36	1.00	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4041287
Report generated 02/27/2015 13:50

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15021053 Run Date: 02/25/2015 Sample ID: WG513413-01
Instrument ID: LCMS1 Run Time: 16:21 Method: 6850
File ID: 1LM.LM29053 Analyst: JWR Units: ug/L
Workgroup (AAB#): WG513403 Cal ID: LCMS1 - 17-NOV-14
Matrix: WATER QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4040915
Report generated 02/27/2015 13:50

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15021053
Run Date: 02/25/2015
Sample ID: WG513413-04
Instrument ID: LCMS1
Run Time: 21:05
Method: 6850
File ID: 1LM.LM29068
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG513403
Cal ID: LCMS1 - 17-NOV-14
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4040915
Report generated 02/27/2015 13:50

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15021053
Run Date: 02/26/2015
Sample ID: WG513413-06
Instrument ID: LCMS1
Run Time: 01:12
Method: 6850
File ID: 1LM.LM29081
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG513403
Cal ID: LCMS1 - 17-NOV-14
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4040915
Report generated 02/27/2015 13:50

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15021053
Run Date: 02/26/2015
Sample ID: WG513413-08
Instrument ID: LCMS1
Run Time: 02:46
Method: 6850
File ID: 1LM.LM29086
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG513403
Cal ID: LCMS1 - 17-NOV-14
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4040915
Report generated 02/27/2015 13:50

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15021053
Run Date: 02/26/2015
Sample ID: WG513413-10
Instrument ID: LCMS1
Run Time: 13:12
Method: 6850
File ID: 1LM.LM29089
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG513403
Cal ID: LCMS1 - 17-NOV-14
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4040915
Report generated 02/27/2015 13:50

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15021053
Run Date: 02/26/2015
Sample ID: WG513413-12
Instrument ID: LCMS1
Run Time: 16:40
Method: 6850
File ID: 1LM.LM29100
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG513403
Cal ID: LCMS1 - 17-NOV-14
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4040915
Report generated 02/27/2015 13:50

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15021053 Run Date: 02/25/2015 Sample ID: WG513413-02
Instrument ID: LCMS1 Run Time: 16:40 Method: 6850
File ID: 1LM.LM29054 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG513403 Cal ID: LCMS1 - 17-NOV-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.06	ug/L	1.44	6.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4040913
Report generated 02/27/2015 13:50

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15021053 Run Date: 02/25/2015 Sample ID: WG513413-03
Instrument ID: LCMS1 Run Time: 20:28 Method: 6850
File ID: 1LM.LM29066 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG513403 Cal ID: LCMS1 - 17-NOV-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.39	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4040913
Report generated 02/27/2015 13:50

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15021053 Run Date: 02/26/2015 Sample ID: WG513413-05
Instrument ID: LCMS1 Run Time: 00:34 Method: 6850
File ID: 1LM.LM29079 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG513403 Cal ID: LCMS1 - 17-NOV-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.40	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4040913
Report generated 02/27/2015 13:50

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15021053 Run Date: 02/26/2015 Sample ID: WG513413-07
Instrument ID: LCMS1 Run Time: 02:08 Method: 6850
File ID: 1LM.LM29084 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG513403 Cal ID: LCMS1 - 17-NOV-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.37	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4040913
Report generated 02/27/2015 13:50

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15021053 Run Date: 02/26/2015 Sample ID: WG513413-09
Instrument ID: LCMS1 Run Time: 12:34 Method: 6850
File ID: 1LM.LM29087 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG513403 Cal ID: LCMS1 - 17-NOV-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.08	ug/L	1.46	8.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4040913
Report generated 02/27/2015 13:50

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15021053 Run Date: 02/26/2015 Sample ID: WG513413-11
Instrument ID: LCMS1 Run Time: 16:02 Method: 6850
File ID: 1LM.LM29098 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG513403 Cal ID: LCMS1 - 17-NOV-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.41	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4040913
Report generated 02/27/2015 13:50

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15021053 Run Date: 02/25/2015 Sample ID: WG513403-07
Instrument ID: LCMS1 Run Time: 16:59 Prep Method: 6850
File ID: 1LM.LM29055 Analyst: JWR Method: 6850
Workgroup (AAB#): WG513403 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-17-NOV-14

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.217	109	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4040911
Report generated 02/27/2015 13:50

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15021053 Run Date: 02/25/2015 Sample ID: WG513403-08
Instrument ID: LCMS1 Run Time: 20:46 Prep Method: 6850
File ID: 1LM.LM29067 Analyst: JWR Method: 6850
Workgroup (AAB#): WG513403 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-17-NOV-14

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.190	95.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4040911
Report generated 02/27/2015 13:50

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15021053 Run Date: 02/26/2015 Sample ID: WG513403-09

Instrument ID: LCMS1 Run Time: 00:53 Prep Method: 6850

File ID: 1LM.LM29080 Analyst: JWR Method: 6850

Workgroup (AAB#): WG513403 Matrix: Water Units: ug/L

Contract #: Cal ID: LCMS1-17-NOV-14

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.198	99.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4040911
Report generated 02/27/2015 13:50

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15021053 Run Date: 02/26/2015 Sample ID: WG513403-10
Instrument ID: LCMS1 Run Time: 02:27 Prep Method: 6850
File ID: 1LM.LM29085 Analyst: JWR Method: 6850
Workgroup (AAB#): WG513403 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-17-NOV-14

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.194	97.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4040911
Report generated 02/27/2015 13:50

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15021053 Run Date: 02/26/2015 Sample ID: WG513403-11
Instrument ID: LCMS1 Run Time: 12:53 Prep Method: 6850
File ID: 1LM.LM29088 Analyst: JWR Method: 6850
Workgroup (AAB#): WG513403 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-17-NOV-14

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.196	98.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4040911
Report generated 02/27/2015 13:50

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15021053 Run Date: 02/26/2015 Sample ID: WG513403-12
Instrument ID: LCMS1 Run Time: 16:21 Prep Method: 6850
File ID: 1LM.LM29099 Analyst: JWR Method: 6850
Workgroup (AAB#): WG513403 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-17-NOV-14

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.184	92.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4040911
Report generated 02/27/2015 13:50

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L15021053
Instrument ID: LCMS1
Workgroup (AAB#): WG513403

ICAL CCV Number: WG501146-05
CAL ID: LCMS1-17-NOV-14
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG501146	NA	NA	321000
Upper Limit	NA	NA	481500
Lower Limit	NA	NA	160500
L15021053-01	250	DL01	290000
L15021053-03	1.00	01	304000
L15021053-05	1000	DL01	292000
L15021053-07	1000	DL01	290000
L15021053-09	50.0	DL01	308000
L15021053-11	1.00	01	301000
WG513403-02	1.00	01	273000
WG513403-03	1.00	01	278000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4040916
Report generated 02/27/2015 13:50

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021053	**Prep Method:**	6850	**Samplenum:**	L15021053-01
Instrument:	LCMS1	**Prep Date:**	02/25/2015 12:00	**File ID:**	1LM.LM29096
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/26/2015 15:24	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	201000	65400	3.07	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021053	**Prep Method:**	6850	**Samplenum:**	L15021053-03
Instrument:	LCMS1	**Prep Date:**	02/25/2015 12:00	**File ID:**	1LM.LM29076
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/25/2015 23:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32100	11000	2.92	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021053	**Prep Method:**	6850	**Samplenum:**	L15021053-05
Instrument:	LCMS1	**Prep Date:**	02/25/2015 12:00	**File ID:**	1LM.LM29097
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/26/2015 15:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	211000	67200	3.14	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021053	**Prep Method:**	6850	**Samplenum:**	L15021053-07
Instrument:	LCMS1	**Prep Date:**	02/25/2015 12:00	**File ID:**	1LM.LM29078
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/26/2015 00:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	194000	64800	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021053	**Prep Method:**	6850	**Samplenum:**	L15021053-09
Instrument:	LCMS1	**Prep Date:**	02/25/2015 12:00	**File ID:**	1LM.LM29082
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/26/2015 01:30	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	164000	54200	3.03	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021053	**Prep Method:**	6850	**Samplenum:**	L15021053-11
Instrument:	LCMS1	**Prep Date:**	02/25/2015 12:00	**File ID:**	1LM.LM29083
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/26/2015 01:49	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	123000	40600	3.03	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021053	**Prep Method:**		**Samplenum:**	WG501146-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM27604
Analyst:	ADC	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	11/17/2014 13:00	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	11100	3370	3.29	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021053	**Prep Method:**		**Samplenum:**	WG501146-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM27605
Analyst:	ADC	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	11/17/2014 13:19	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17300	5740	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021053	**Prep Method:**		**Samplenum:**	WG501146-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM27606
Analyst:	ADC	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	11/17/2014 13:38	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	44100	14600	3.02	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021053	**Prep Method:**		**Samplenum:**	WG501146-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM27607
Analyst:	ADC	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	11/17/2014 13:56	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	84400	29400	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021053	**Prep Method:**		**Samplenum:**	WG501146-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM27608
Analyst:	ADC	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	11/17/2014 14:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	173000	54700	3.16	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021053	**Prep Method:**		**Samplenum:**	WG501146-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM27609
Analyst:	ADC	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	11/17/2014 14:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	420000	140000	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021053	**Prep Method:**		**Samplenum:**	WG501146-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM27610
Analyst:	ADC	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	11/17/2014 14:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	841000	276000	3.05	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021053	**Prep Method:**		**Samplenum:**	WG501146-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM27611
Analyst:	ADC	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	11/17/2014 15:12	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	88800	29400	3.02	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021053	**Prep Method:**	6850	**Samplenum:**	WG513403-01
Instrument:	LCMS1	**Prep Date:**	02/25/2015 12:00	**File ID:**	1LM.LM29056
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/25/2015 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	16000	4670	3.43	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021053	**Prep Method:**	6850	**Samplenum:**	WG513403-02
Instrument:	LCMS1	**Prep Date:**	02/25/2015 12:00	**File ID:**	1LM.LM29057
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/25/2015 17:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021053	**Prep Method:**	6850	**Samplenum:**	WG513403-03
Instrument:	LCMS1	**Prep Date:**	02/25/2015 12:00	**File ID:**	1LM.LM29058
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/25/2015 17:56	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	16200	5040	3.21	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021053	**Prep Method:**	6850	**Samplenum:**	WG513403-07
Instrument:	LCMS1	**Prep Date:**	02/25/2015 12:00	**File ID:**	1LM.LM29055
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/25/2015 16:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	16500	5600	2.95	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021053	**Prep Method:**	6850	**Samplenum:**	WG513403-08
Instrument:	LCMS1	**Prep Date:**	02/25/2015 12:00	**File ID:**	1LM.LM29067
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/25/2015 20:46	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	16100	5060	3.18	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021053	**Prep Method:**	6850	**Samplenum:**	WG513403-09
Instrument:	LCMS1	**Prep Date:**	02/25/2015 12:00	**File ID:**	1LM.LM29080
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/26/2015 00:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17500	5650	3.10	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021053	**Prep Method:**	6850	**Samplenum:**	WG513403-10
Instrument:	LCMS1	**Prep Date:**	02/25/2015 12:00	**File ID:**	1LM.LM29085
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/26/2015 02:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17700	5780	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021053	**Prep Method:**	6850	**Samplenum:**	WG513403-11
Instrument:	LCMS1	**Prep Date:**	02/25/2015 12:00	**File ID:**	1LM.LM29088
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/26/2015 12:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	16400	5970	2.75	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021053	**Prep Method:**	6850	**Samplenum:**	WG513403-12
Instrument:	LCMS1	**Prep Date:**	02/25/2015 12:00	**File ID:**	1LM.LM29099
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/26/2015 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	16000	5720	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021053	**Prep Method:**		**Samplenum:**	WG513413-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29053
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/25/2015 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	710	322	2.20	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021053	**Prep Method:**		**Samplenum:**	WG513413-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29054
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/25/2015 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	79800	26300	3.03	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021053	**Prep Method:**		**Samplenum:**	WG513413-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29066
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/25/2015 20:28	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82700	28300	2.92	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021053	**Prep Method:**		**Samplenum:**	WG513413-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29068
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/25/2015 21:05	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	475	88.3	5.38	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021053	**Prep Method:**		**Samplenum:**	WG513413-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29079
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/26/2015 00:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	91600	29800	3.07	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021053	**Prep Method:**		**Samplenum:**	WG513413-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29081
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/26/2015 01:12	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	607	396	1.53	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021053	**Prep Method:**		**Samplenum:**	WG513413-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29084
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/26/2015 02:08	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	89200	29500	3.02	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021053	**Prep Method:**		**Samplenum:**	WG513413-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29086
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/26/2015 02:46	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	509	245	2.08	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021053	**Prep Method:**		**Samplenum:**	WG513413-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29087
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/26/2015 12:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	87100	28900	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021053	**Prep Method:**		**Samplenum:**	WG513413-10
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29089
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/26/2015 13:12	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	482	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021053	**Prep Method:**		**Samplenum:**	WG513413-11
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29098
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/26/2015 16:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	88100	28200	3.12	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15021053	**Prep Method:**		**Samplenum:**	WG513413-12
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29100
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG513403	**Analysis Date:**	02/26/2015 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	252	0.000	2.3	3.8	*

2.2.1.3 Sample Data

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Data File	LM29096.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/26/2015 3:24:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15021053-01 (RR 250x)	**Injection Vial**	32.00
Data File	LM29096.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2015 3:24:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	L15021053-01	**Dilution Factor**	1.00
Sample Comment	1,250.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.900e+05	9.86	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.010e+05	9.87	N/A	2.59
Perchlorate conf	6.540e+04	9.85	N/A	2.56

O18LP (Internal Standard)

RT (Exp. RT): 9.86(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

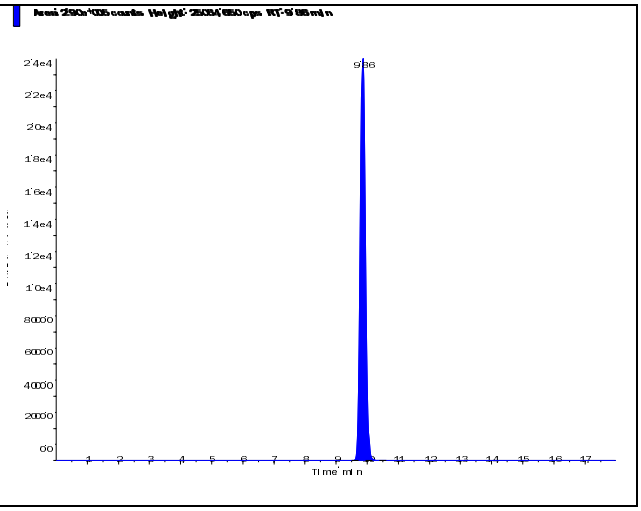

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.87 (10.30) min Calculated conc: 2.59 ng/ml Area Ratio: 0.694 Sample Type: (Unknown)	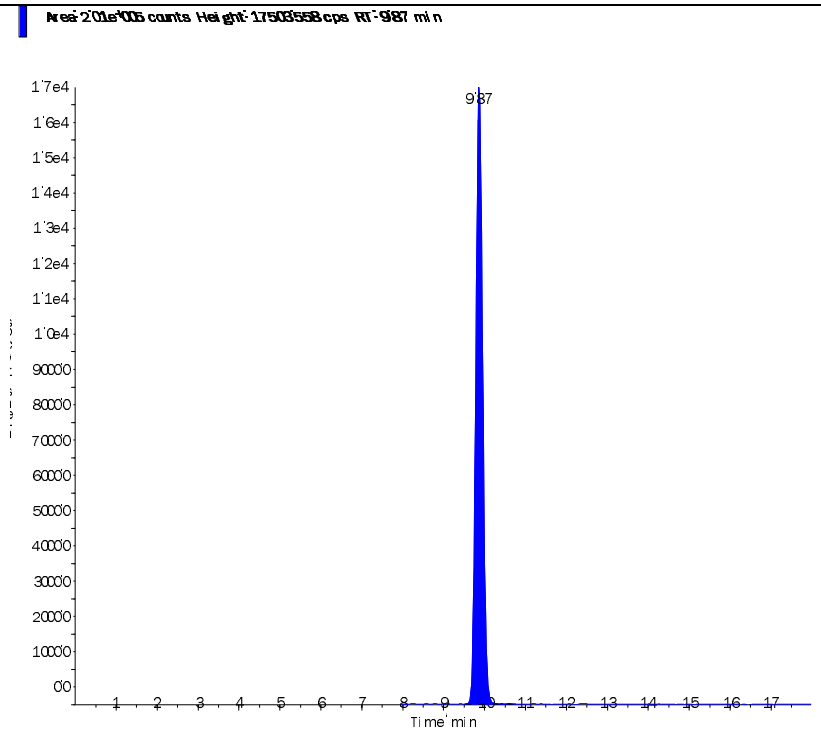
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.85 (10.30) min Calculated conc: 2.56 ng/ml Area Ratio: 0.226 Sample Type: (Unknown)	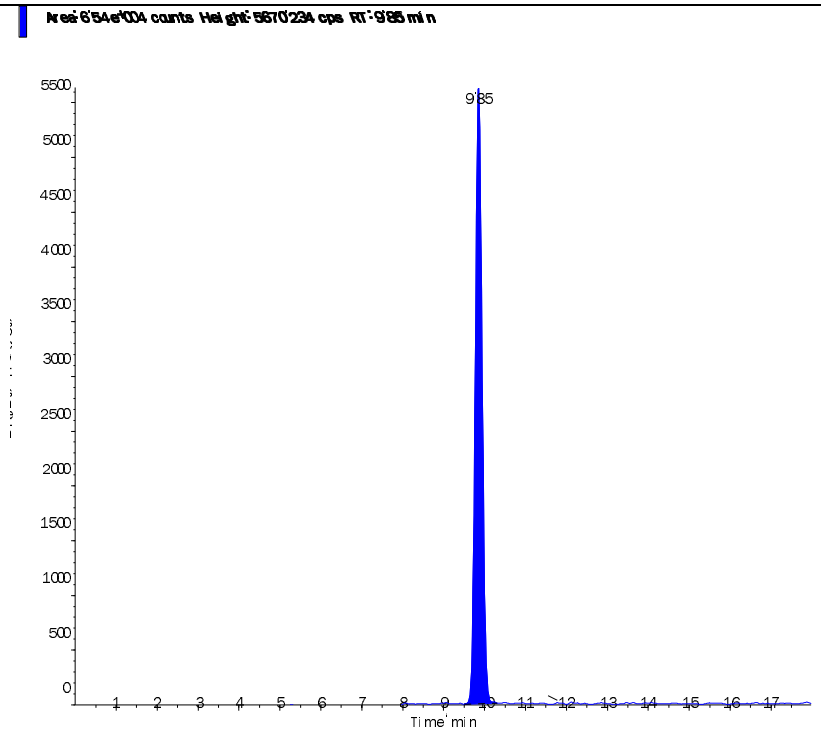

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Printed: 2/27/2015 9:47 AM

Data File	LM29076.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/25/2015 11:37:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15021053-03	**Injection Vial**	21.00
Data File	LM29076.wiff	**Injection Volume**	10.00
Acquisition Date	2/25/2015 11:37:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	L15021053-03	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.040e+05	9.41	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.210e+04	9.42	N/A	0.381
Perchlorate conf	1.100e+04	9.41	N/A	0.402

O18LP (Internal Standard)

RT (Exp. RT): 9.41(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

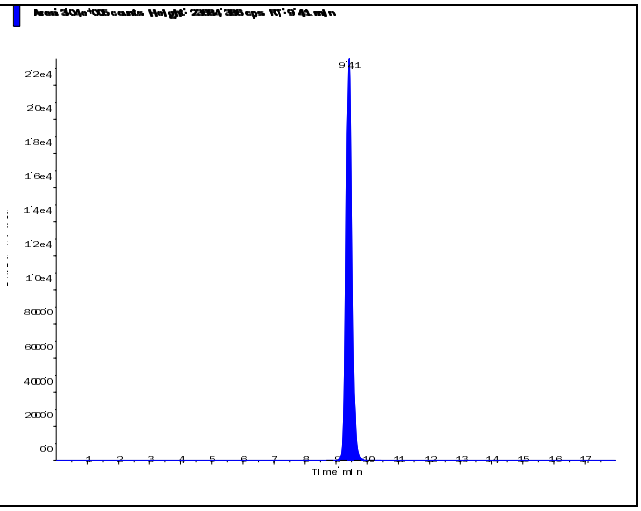

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.42 (10.30) min Calculated conc: 0.381 ng/ml Area Ratio: 0.105 Sample Type: (Unknown)	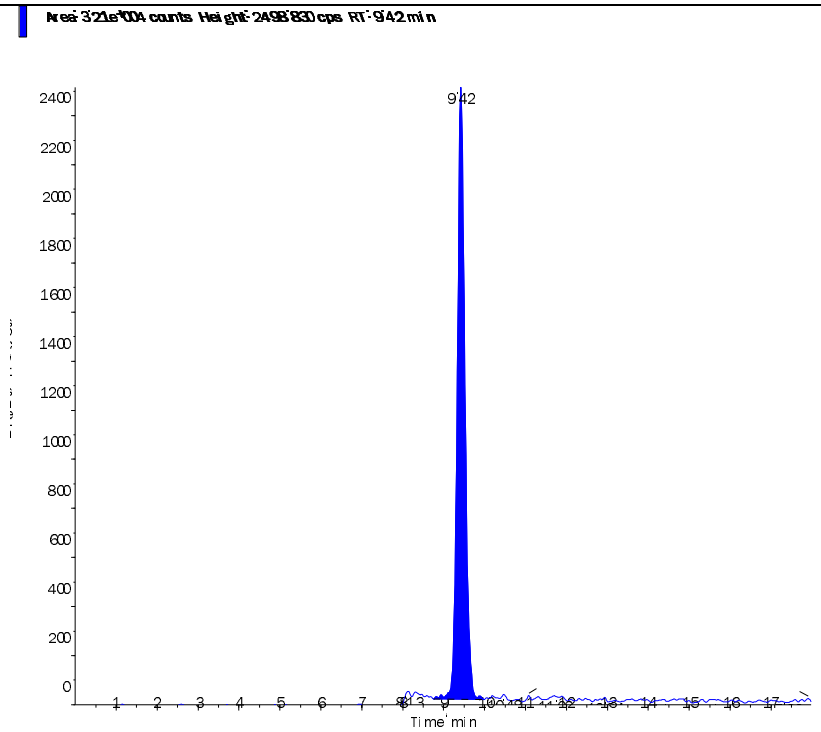
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.41 (10.30) min Calculated conc: 0.402 ng/ml Area Ratio: 0.036 Sample Type: (Unknown)	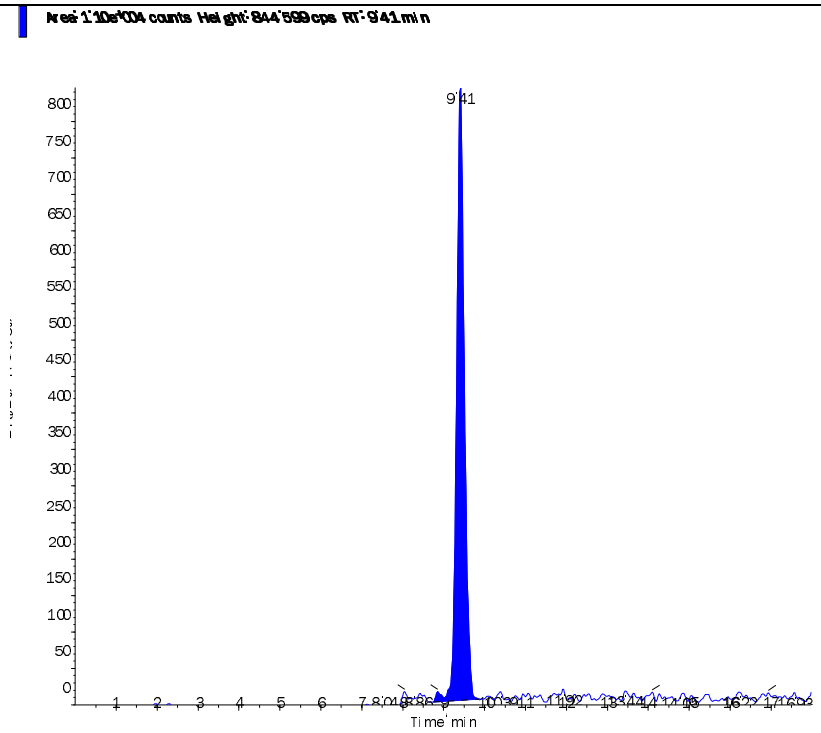

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Data File	LM29097.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/26/2015 3:43:44 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15021053-05 (RR 1,000x)	**Injection Vial**	33.00
Data File	LM29097.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2015 3:43:44 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	L15021053-05	**Dilution Factor**	1.00
Sample Comment	11,000.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.920e+05	9.87	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.110e+05	9.88	N/A	2.69
Perchlorate conf	6.720e+04	9.87	N/A	2.60

O18LP (Internal Standard)

RT (Exp. RT): 9.87(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

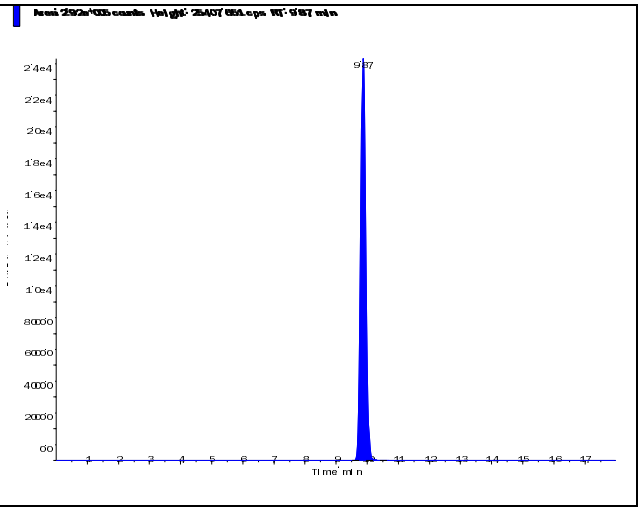

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.88 (10.30) min Calculated conc: 2.69 ng/ml Area Ratio: 0.722 Sample Type: (Unknown)	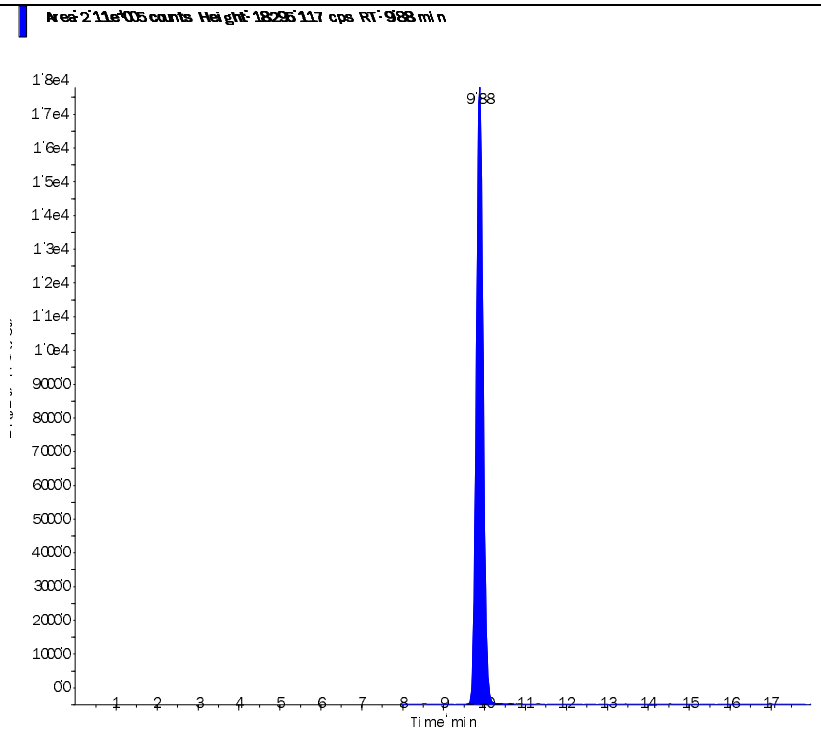
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.87 (10.30) min Calculated conc: 2.60 ng/ml Area Ratio: 0.23 Sample Type: (Unknown)	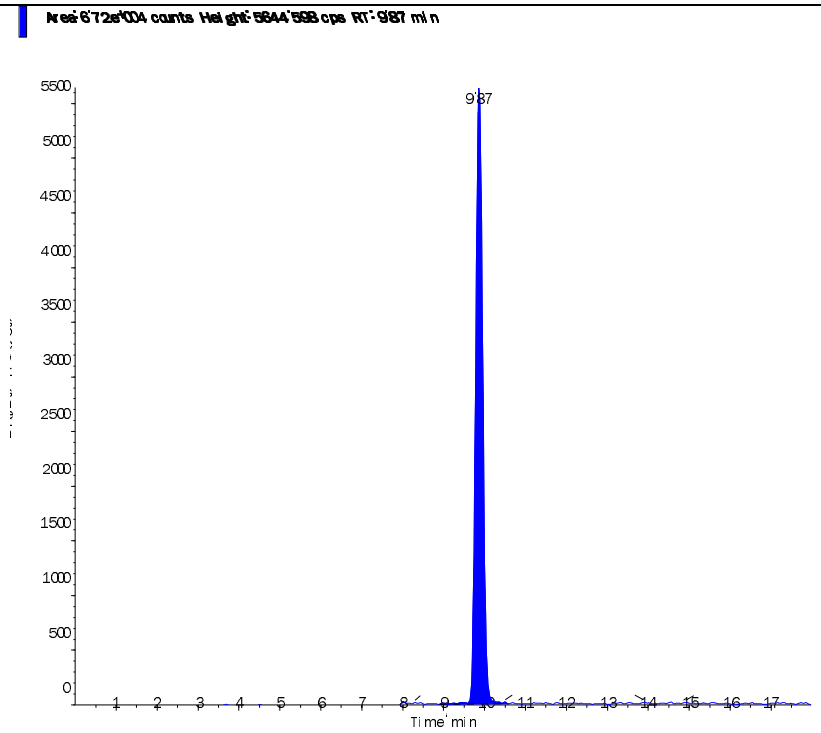

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Data File	LM29078.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/26/2015 12:15:16 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15021053-07 (1,000x)	**Injection Vial**	23.00
Data File	LM29078.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2015 12:15:16 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	L15021053-07	**Dilution Factor**	1.00
Sample Comment	1,1000 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.900e+05	9.78	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.940e+05	9.79	N/A	2.49
Perchlorate conf	6.480e+04	9.78	N/A	2.53

O18LP (Internal Standard)

RT (Exp. RT): 9.78(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

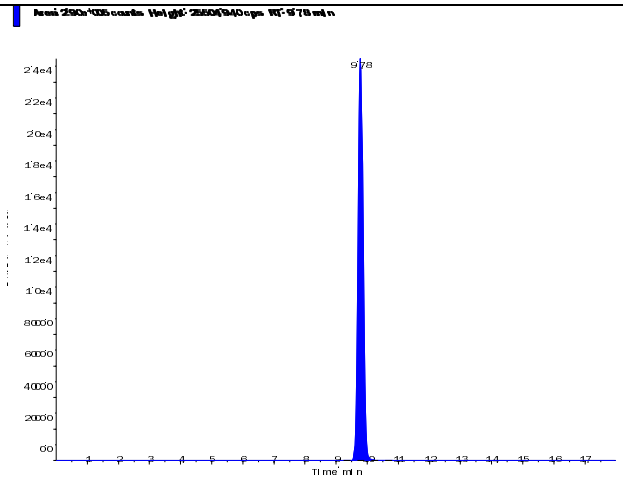

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.79 (10.30) min
Calculated conc:	2.49 ng/ml
Area Ratio:	0.67
Sample Type:	(Unknown)

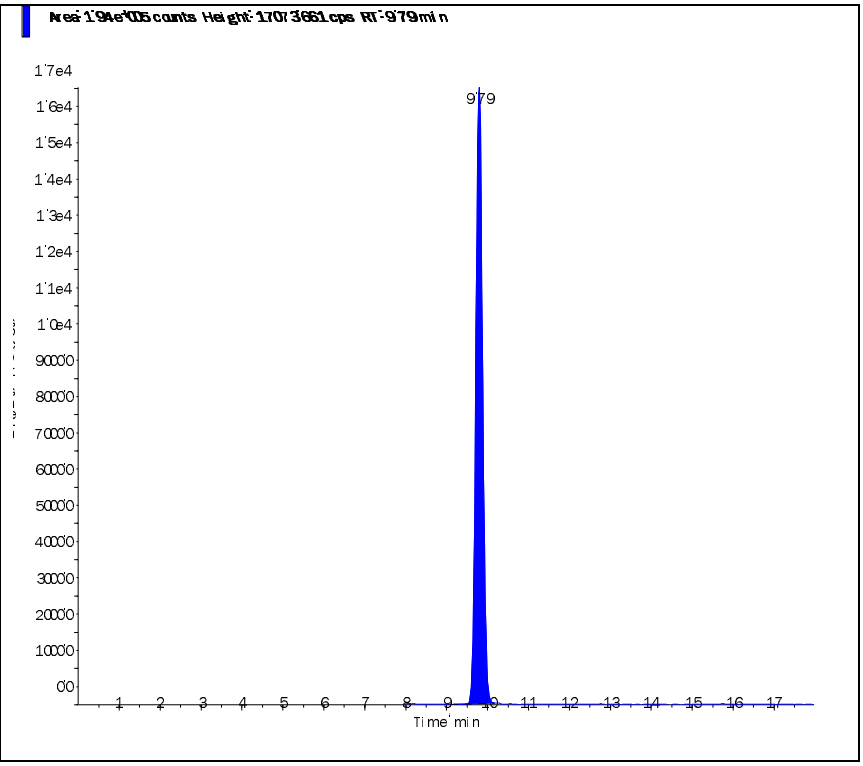

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.78 (10.30) min
Calculated conc:	2.53 ng/ml
Area Ratio:	0.224
Sample Type:	(Unknown)

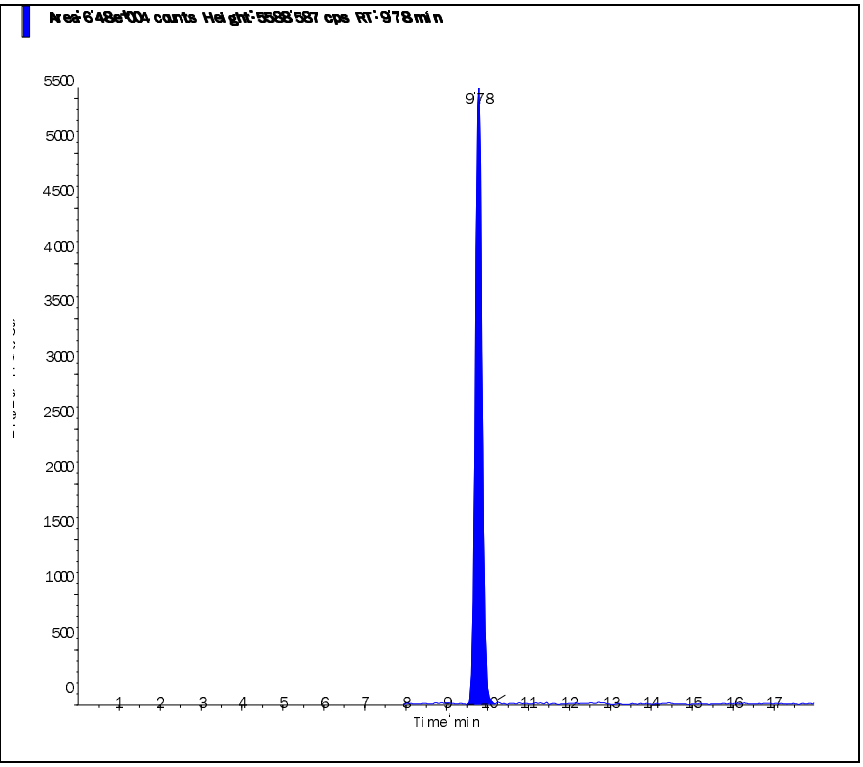

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Data File	LM29082.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/26/2015 1:30:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15021053-09 (50x)	**Injection Vial**	24.00
Data File	LM29082.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2015 1:30:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	L15021053-09	**Dilution Factor**	1.00
Sample Comment	1,50 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.080e+05	9.75	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.640e+05	9.76	N/A	1.98
Perchlorate conf	5.420e+04	9.75	N/A	1.99

O18LP (Internal Standard)

RT (Exp. RT): 9.75(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

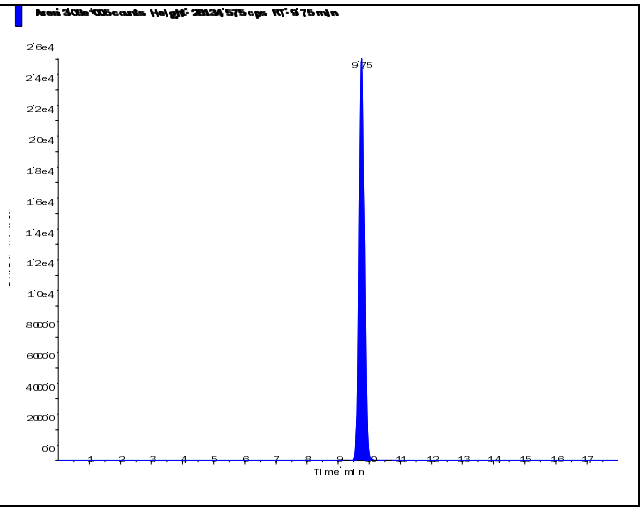

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.76 (10.30) min
Calculated conc:	1.98 ng/ml
Area Ratio:	0.533
Sample Type:	(Unknown)

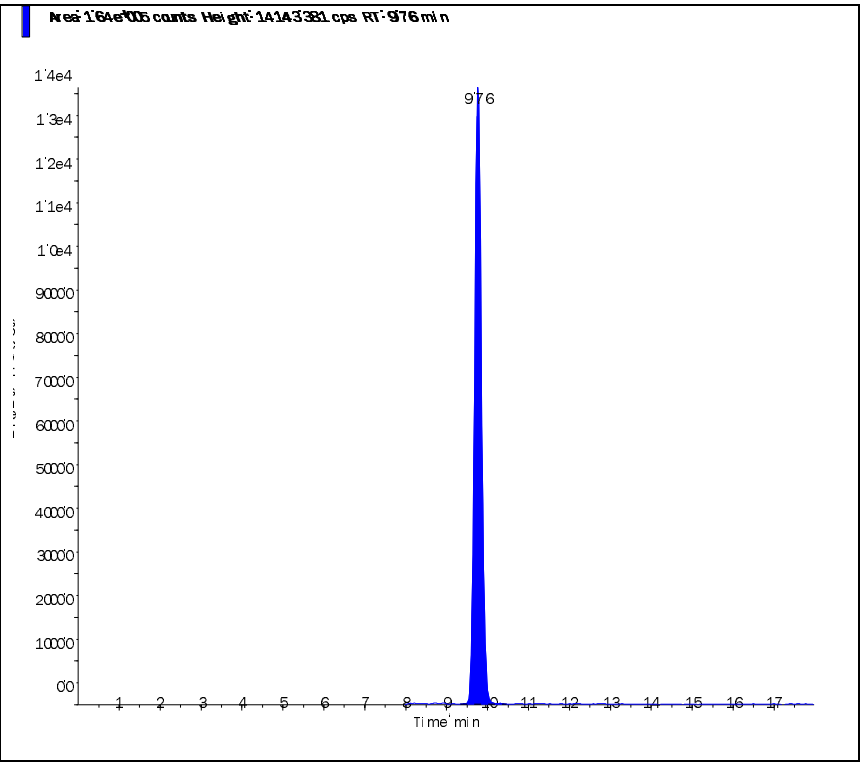

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.75 (10.30) min
Calculated conc:	1.99 ng/ml
Area Ratio:	0.176
Sample Type:	(Unknown)

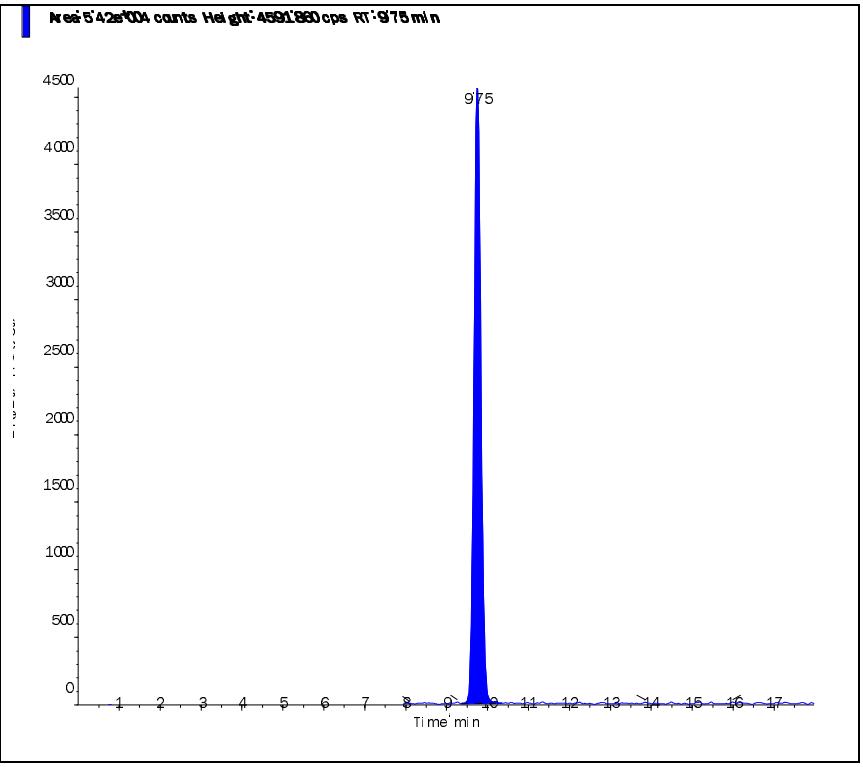

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Data File	LM29083.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/26/2015 1:49:53 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15021053-11	**Injection Vial**	25.00
Data File	LM29083.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2015 1:49:53 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	L15021053-11	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.010e+05	9.33	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.230e+05	9.35	N/A	1.51
Perchlorate conf	4.060e+04	9.34	N/A	1.52

O18LP (Internal Standard)

RT (Exp. RT): 9.33(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

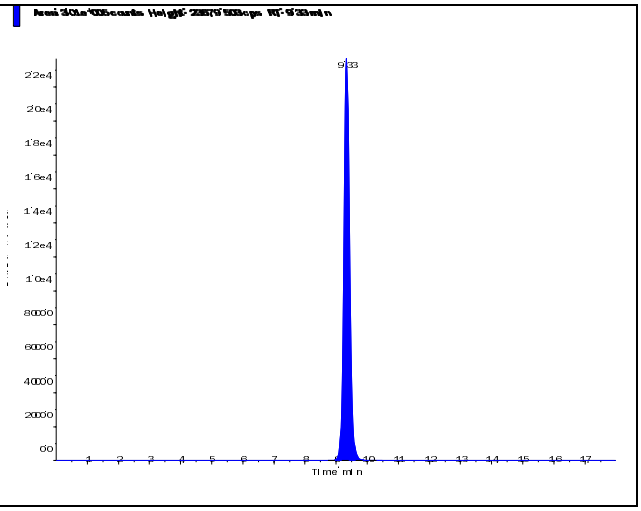

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.35 (10.30) min Calculated conc: 1.51 ng/ml Area Ratio: 0.407 Sample Type: (Unknown)	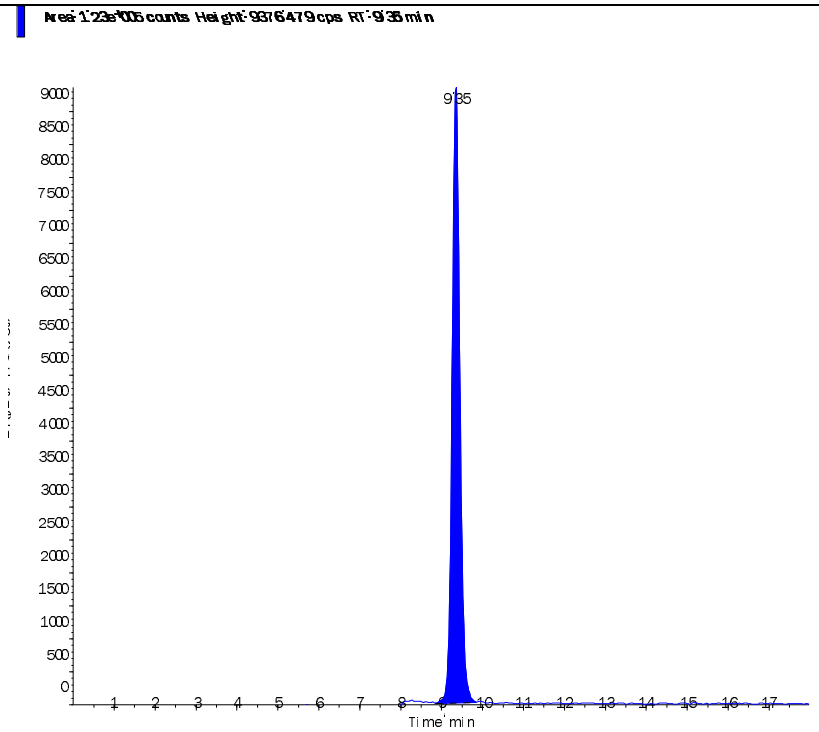
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.34 (10.30) min Calculated conc: 1.52 ng/ml Area Ratio: 0.135 Sample Type: (Unknown)	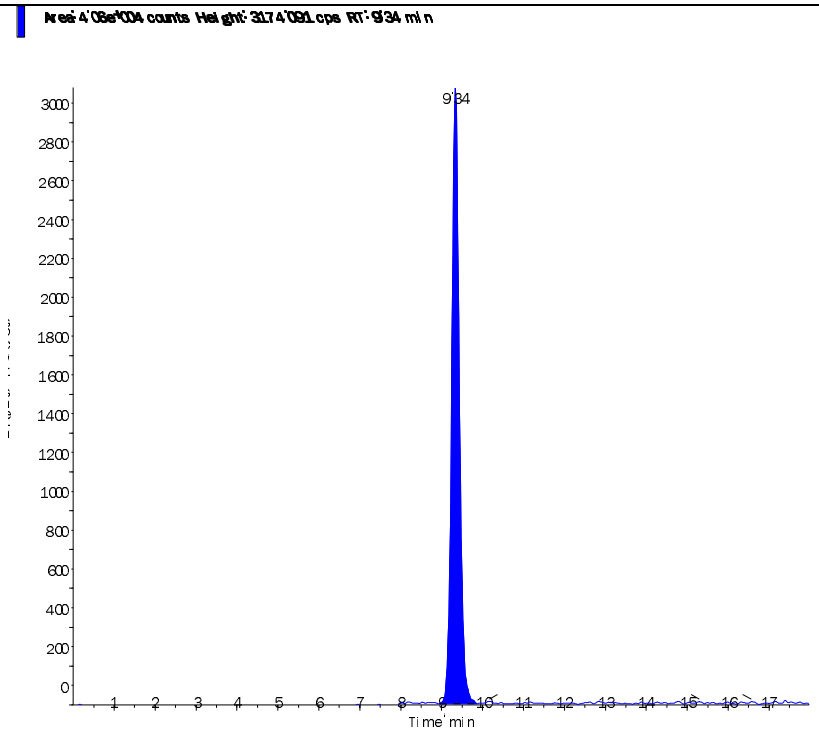

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2.2.1.4 Standards Data

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Data File	LM27603.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	11/17/2014 12:41:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG501146-01 CCB	**Injection Vial**	1.00
Data File	LM27603.wiff	**Injection Volume**	10.00
Acquisition Date	11/17/2014 12:41:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG501146-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.170e+05	10.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.340e+02	10.30	N/A	< 0
Perchlorate conf	2.010e+02	10.30	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 10.30(10.30) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

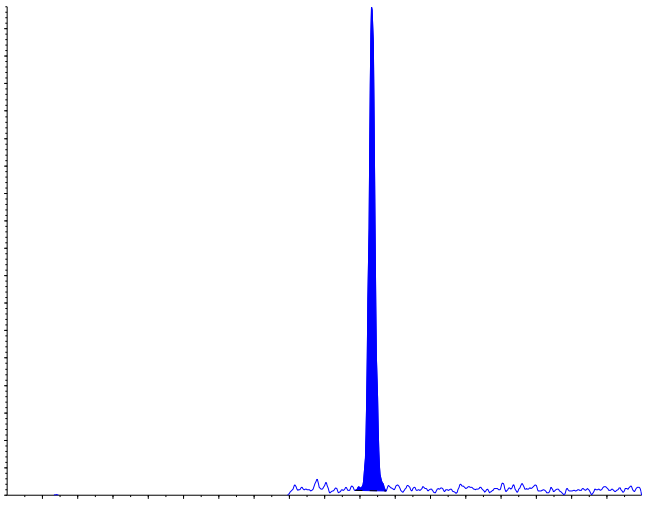

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.30 (10.30) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	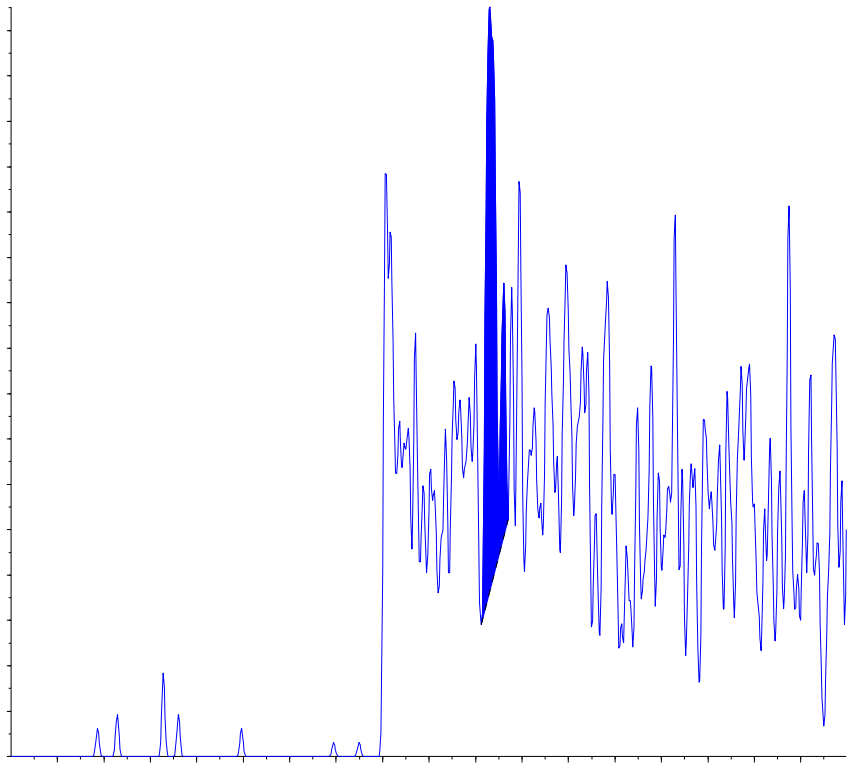
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 10.30 (10.30) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	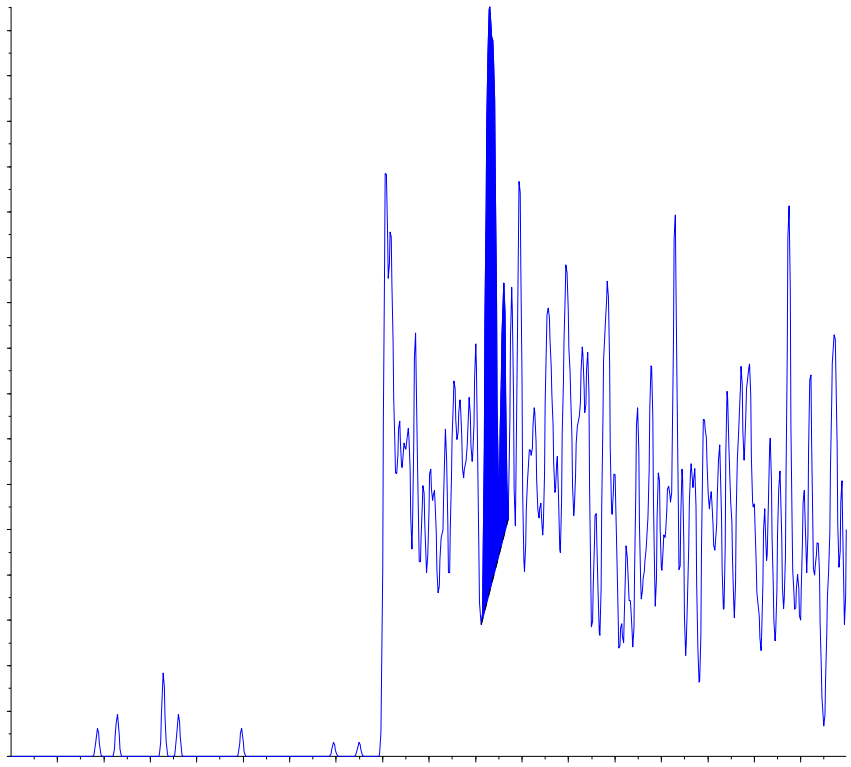

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Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM27603.wiff	**Result Table**	111714_ADC.rdb
Acquisition Date	11/17/2014 12:41:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.33 x + 0.00387 (r = 0.9998)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.11	114.3	N/A	N/A
0.20	1	0.19	93.0	N/A	N/A
0.50	1	0.49	97.3	N/A	N/A
1.00	1	0.95	95.2	N/A	N/A
2.00	1	1.99	99.5	N/A	N/A
5.00	1	4.99	99.9	N/A	N/A
10.00	1	10.08	100.8	N/A	N/A

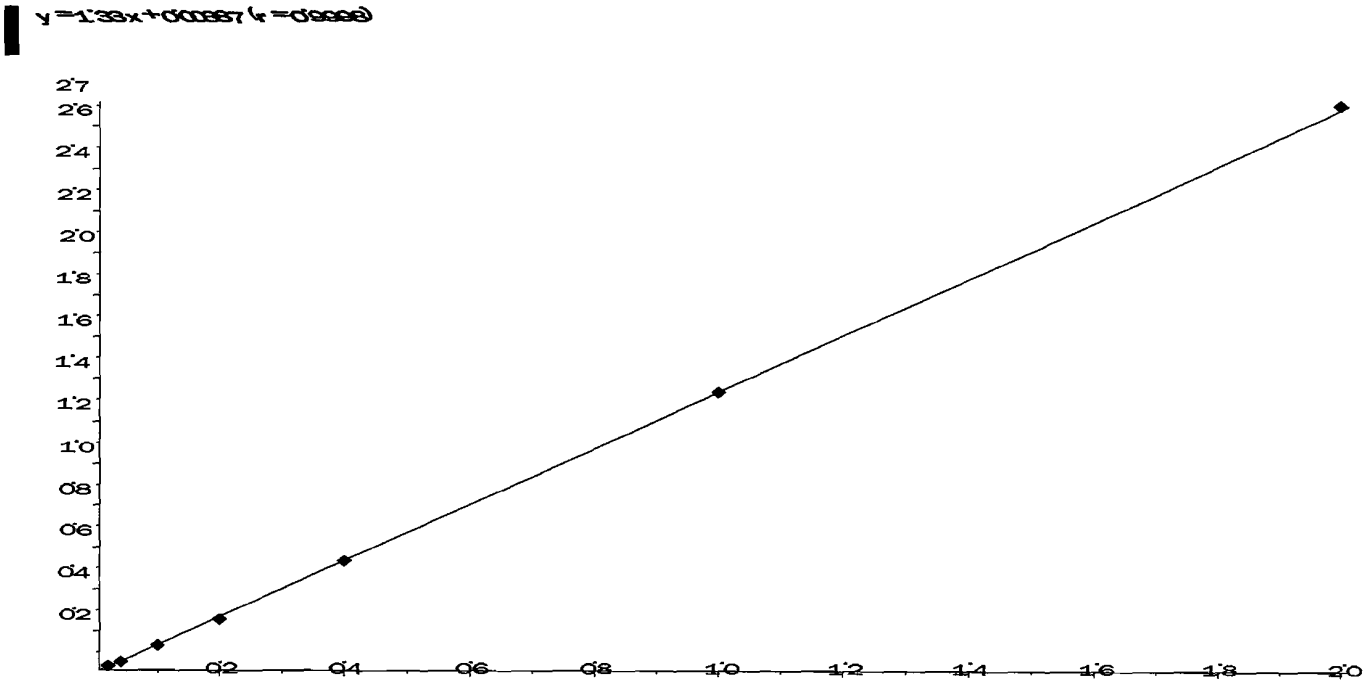

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Printed: 11/19/2014 2:12 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM27603.wiff	**Result Table**	111714_ADC.rdb
Acquisition Date	11/17/2014 12:41:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.44 x + 0.000963 (r = 0.9998)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.11	108.0	N/A	N/A
0.20	1	0.19	95.6	N/A	N/A
0.50	1	0.49	98.3	N/A	N/A
1.00	1	1.01	101.2	N/A	N/A
2.00	1	1.91	95.6	N/A	N/A
5.00	1	5.04	100.8	N/A	N/A
10.00	1	10.05	100.5	N/A	N/A

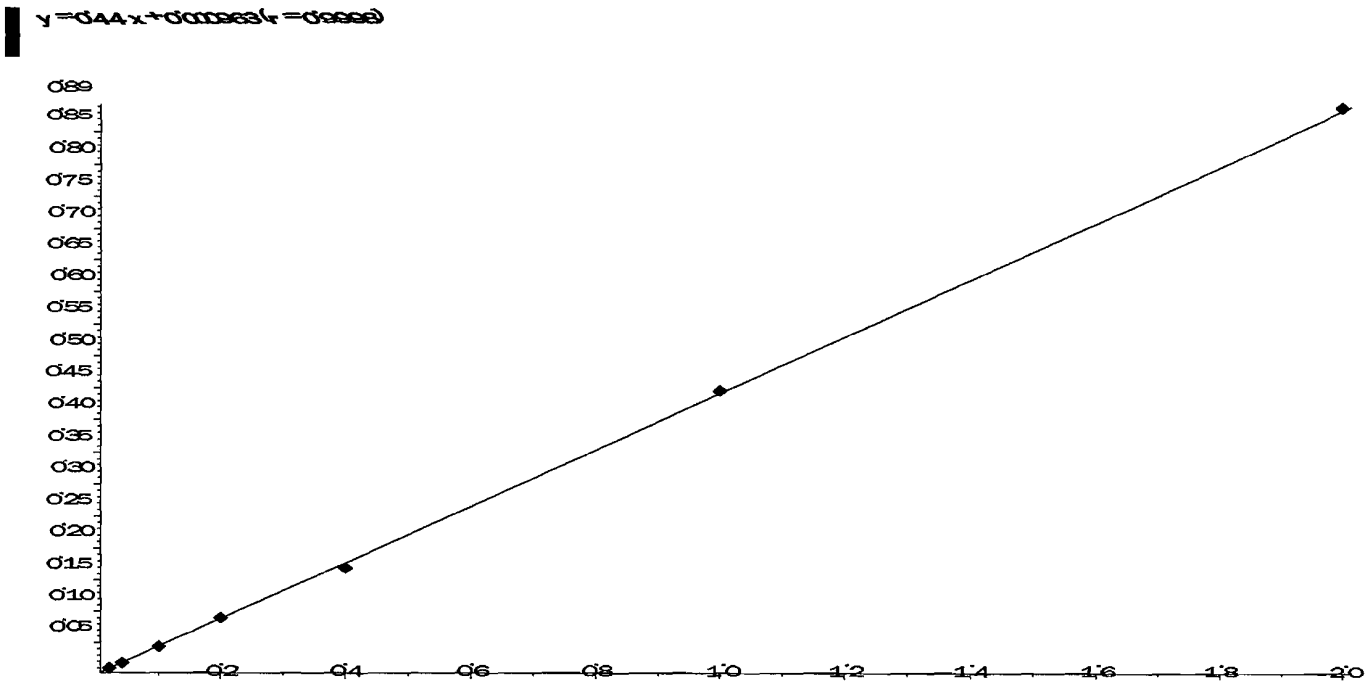

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Data File	LM27604.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	11/17/2014 1:00:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG501146-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM27604.wiff	**Injection Volume**	10.00
Acquisition Date	11/17/2014 1:00:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG501146-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.220e+05	10.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.110e+04	10.30	0.10	0.114
Perchlorate conf	3.370e+03	10.30	0.10	0.108

O18LP (Internal Standard)

RT (Exp. RT): 10.30(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

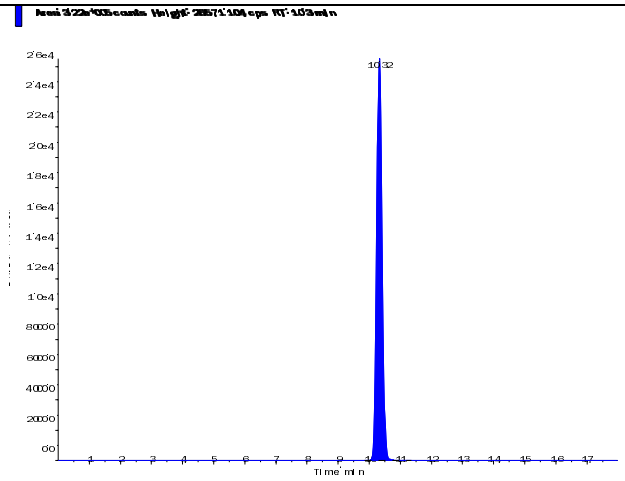

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.30 (10.30) min Calculated conc: 0.114 ng/ml Area Ratio: 0.034 Sample Type: (Standard)	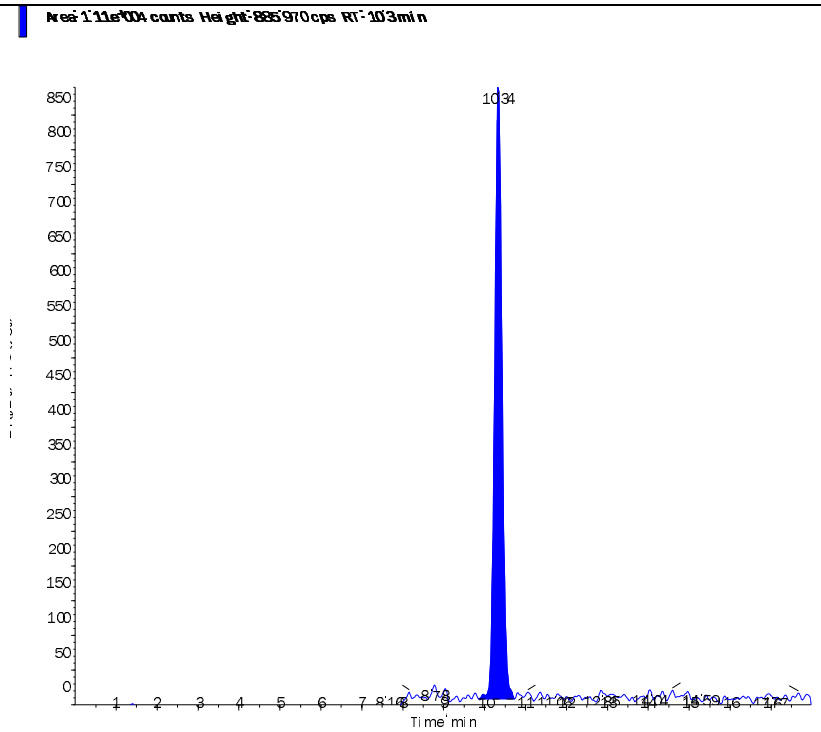
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 10.30 (10.30) min Calculated conc: 0.108 ng/ml Area Ratio: 0.01 Sample Type: (Standard)	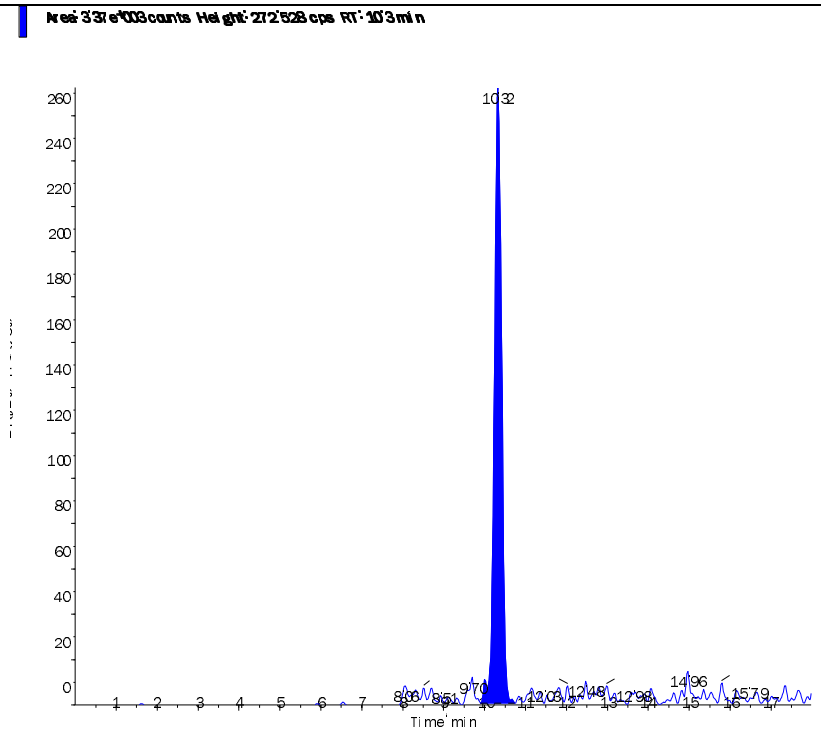

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Data File	LM27605.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	11/17/2014 1:19:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG501146-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM27605.wiff	**Injection Volume**	10.00
Acquisition Date	11/17/2014 1:19:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG501146-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.220e+05	10.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.730e+04	10.30	0.20	0.186
Perchlorate conf	5.740e+03	10.30	0.20	0.191

O18LP (Internal Standard)

RT (Exp. RT): 10.30(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

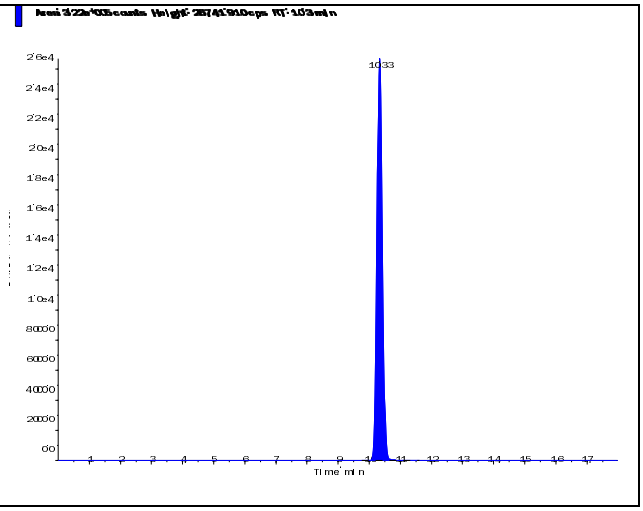

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.30 (10.30) min
Calculated conc:	0.186 ng/ml
Area Ratio:	0.054
Sample Type:	(Standard)

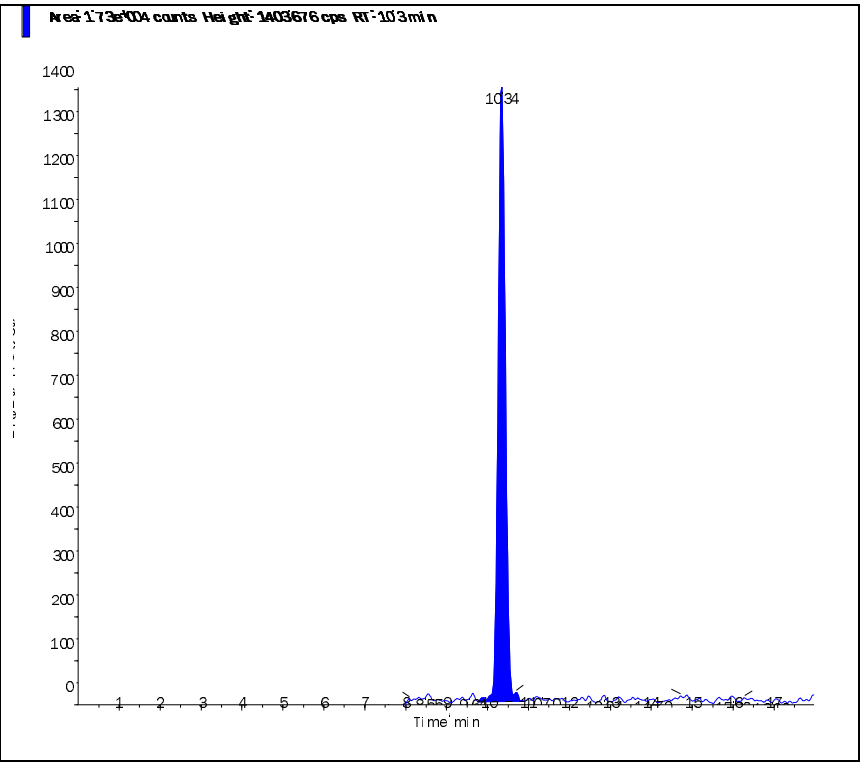

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.30 (10.30) min
Calculated conc:	0.191 ng/ml
Area Ratio:	0.018
Sample Type:	(Standard)

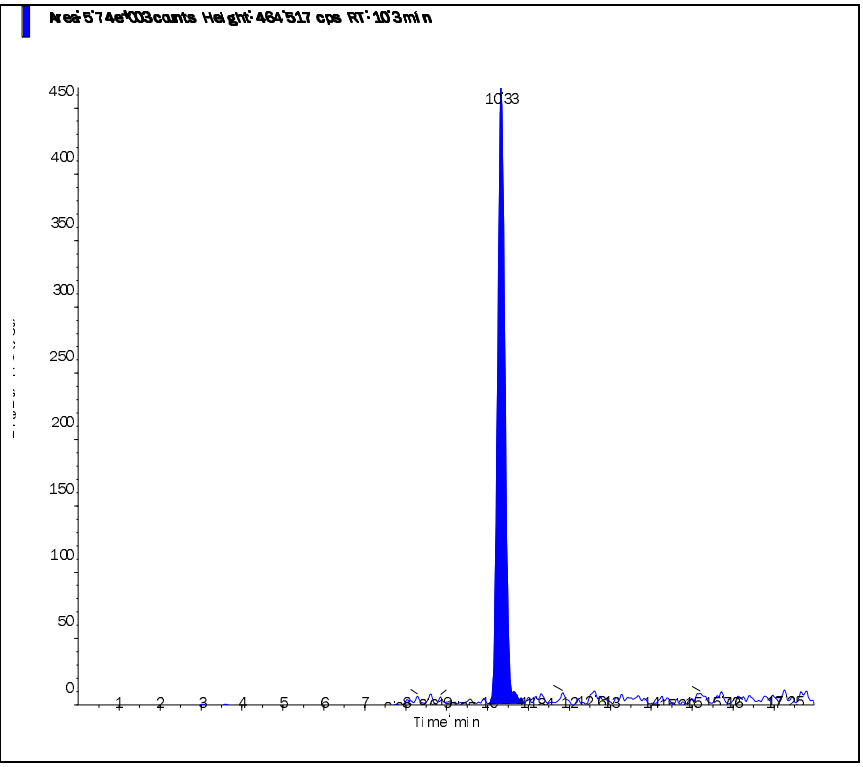

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Data File	LM27606.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	11/17/2014 1:38:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG501146-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM27606.wiff	**Injection Volume**	10.00
Acquisition Date	11/17/2014 1:38:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG501146-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.290e+05	10.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.410e+04	10.30	0.50	0.487
Perchlorate conf	1.460e+04	10.30	0.50	0.492

O18LP (Internal Standard)

RT (Exp. RT): 10.30(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

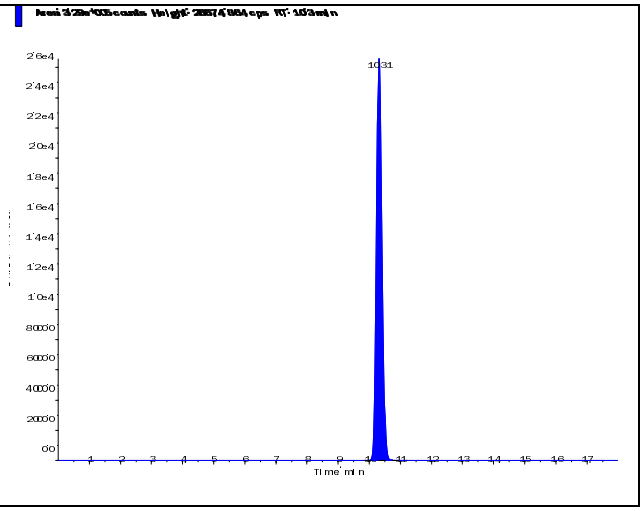

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.30 (10.30) min Calculated conc: 0.487 ng/ml Area Ratio: 0.134 Sample Type: (Standard)	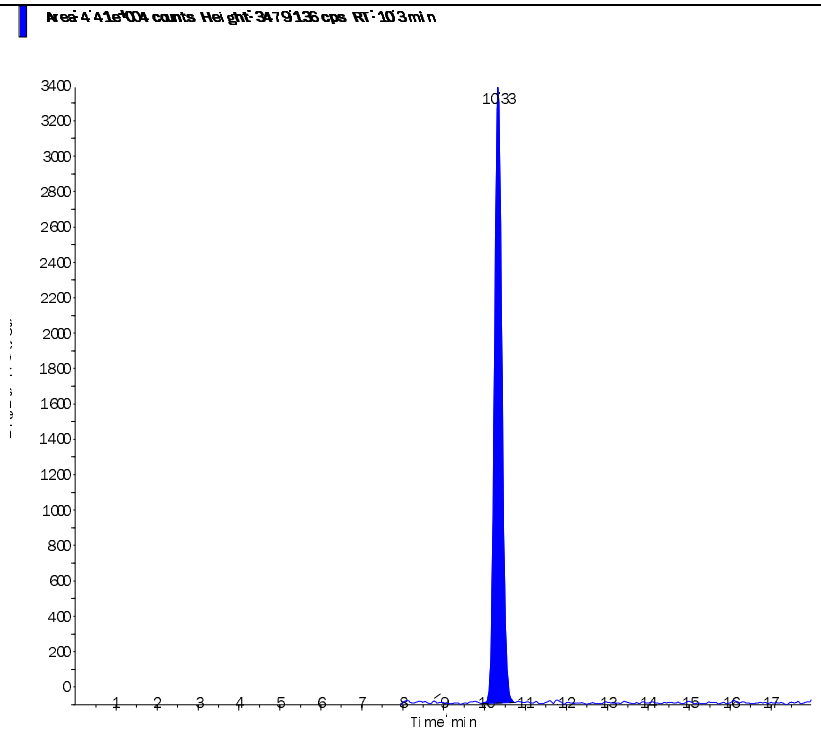
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 10.30 (10.30) min Calculated conc: 0.492 ng/ml Area Ratio: 0.044 Sample Type: (Standard)	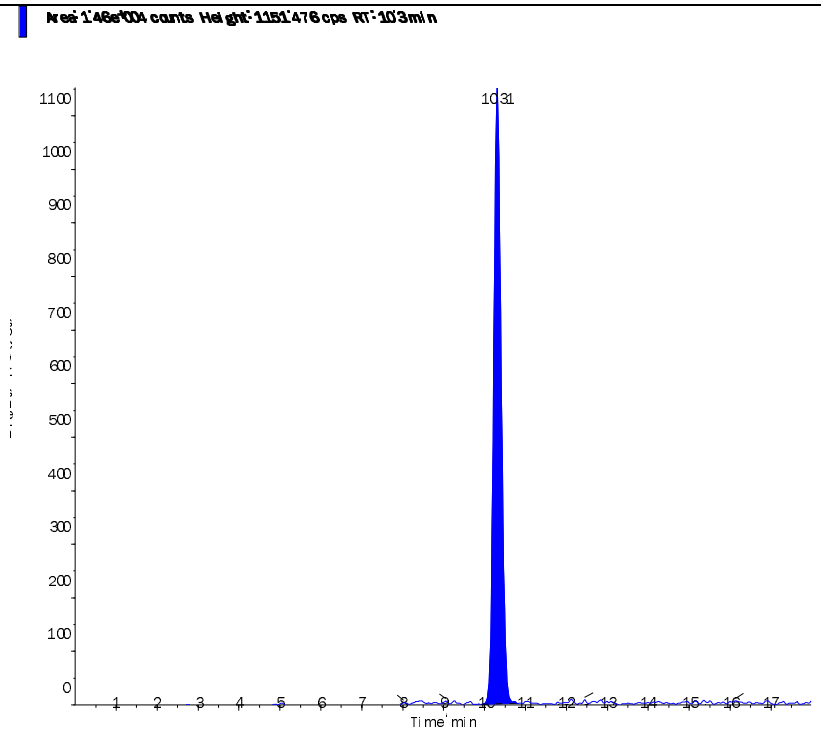

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Data File	LM27607.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	11/17/2014 1:56:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG501146-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM27607.wiff	**Injection Volume**	10.00
Acquisition Date	11/17/2014 1:56:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG501146-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.270e+05	10.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.440e+04	10.30	1.00	0.952
Perchlorate conf	2.940e+04	10.30	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 10.30(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

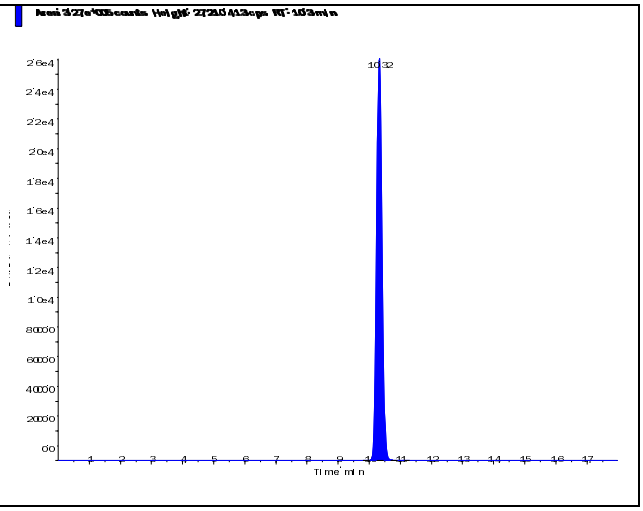

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.30 (10.30) min
Calculated conc:	0.952 ng/ml
Area Ratio:	0.258
Sample Type:	(Standard)

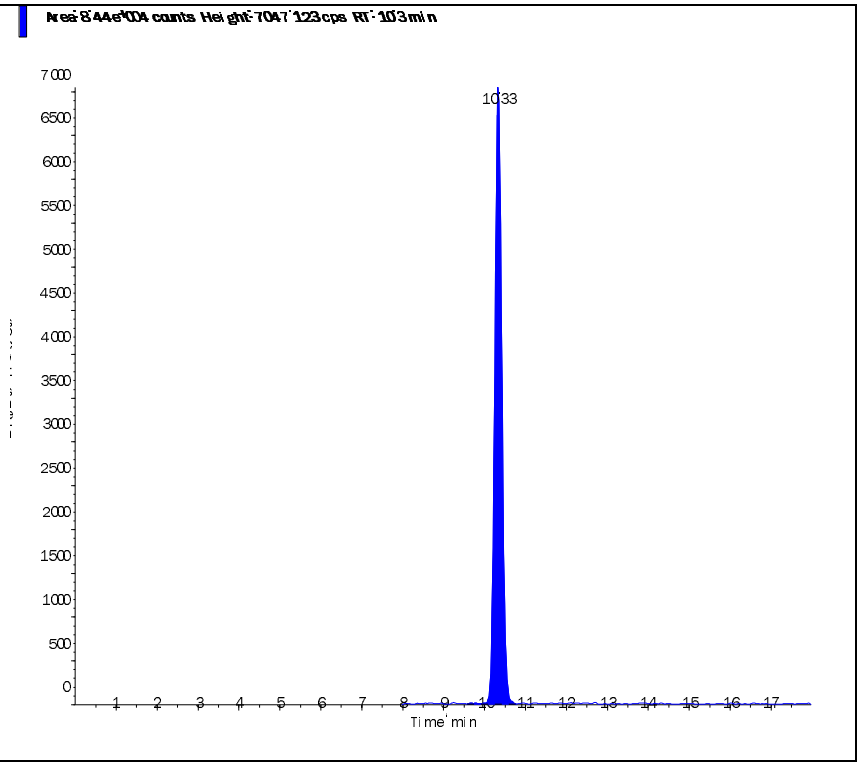

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.30 (10.30) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.09
Sample Type:	(Standard)

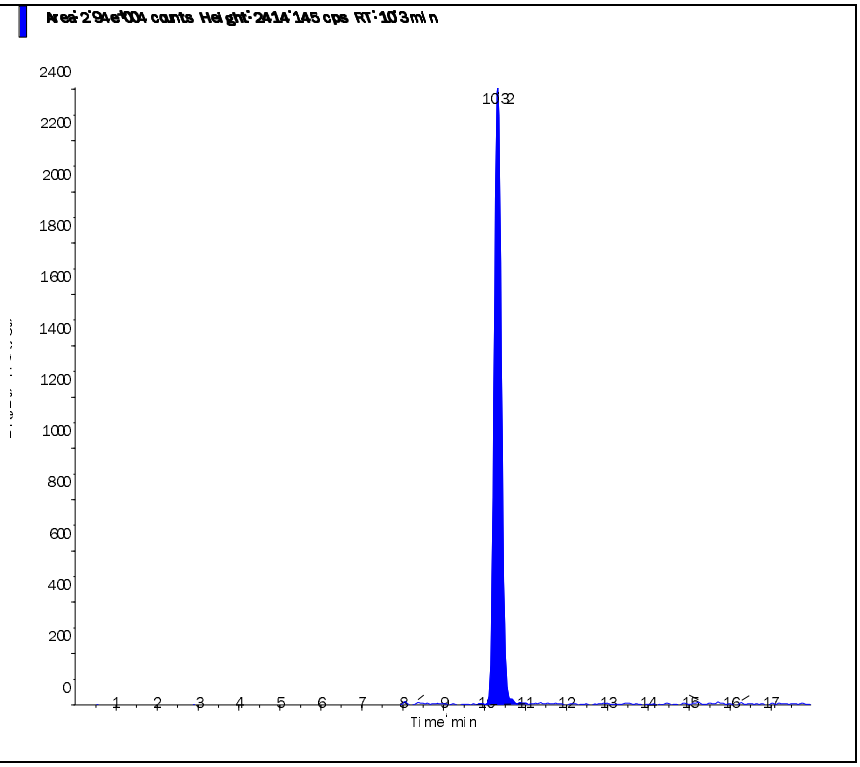

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Data File	LM27608.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	11/17/2014 2:15:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG501146-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM27608.wiff	**Injection Volume**	10.00
Acquisition Date	11/17/2014 2:15:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG501146-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.230e+05	10.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.730e+05	10.30	2.00	1.99
Perchlorate conf	5.470e+04	10.30	2.00	1.91

O18LP (Internal Standard)

RT (Exp. RT): 10.30(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

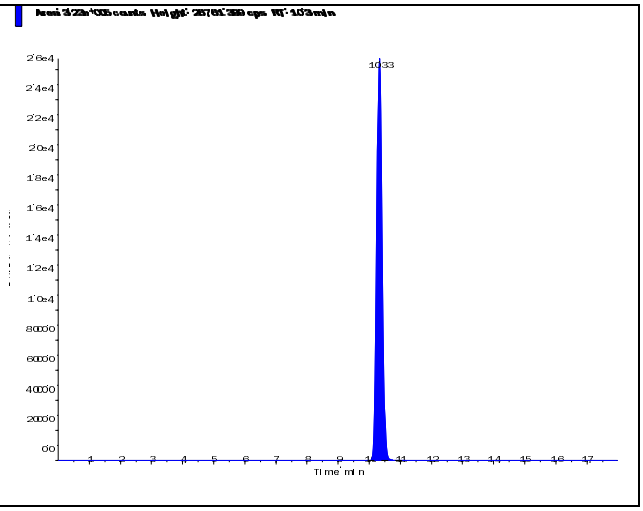

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.30 (10.30) min
Calculated conc:	1.99 ng/ml
Area Ratio:	0.535
Sample Type:	(Standard)

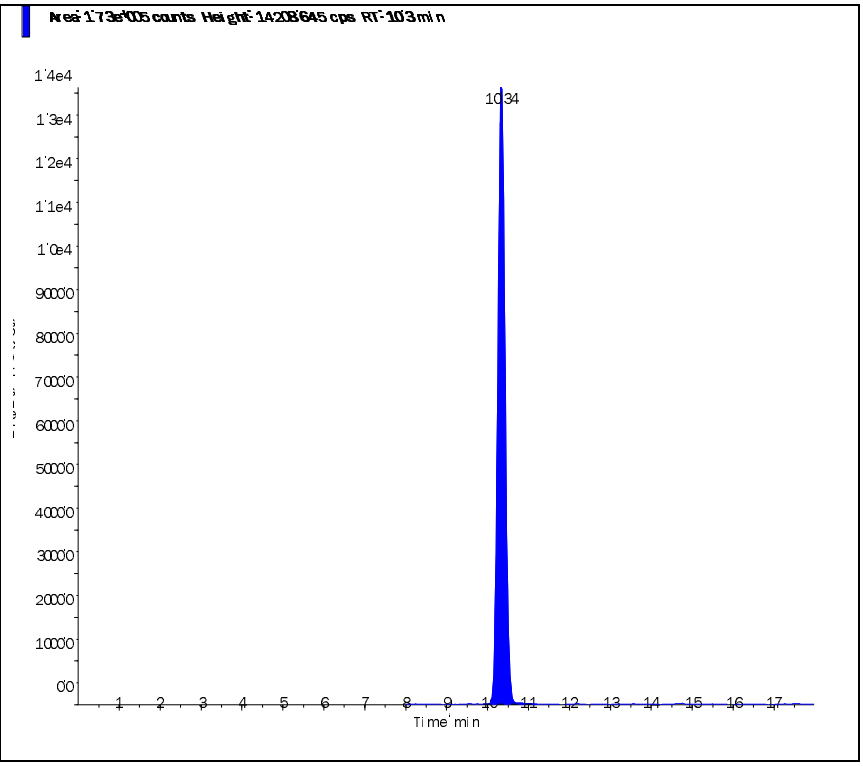

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.30 (10.30) min
Calculated conc:	1.91 ng/ml
Area Ratio:	0.169
Sample Type:	(Standard)

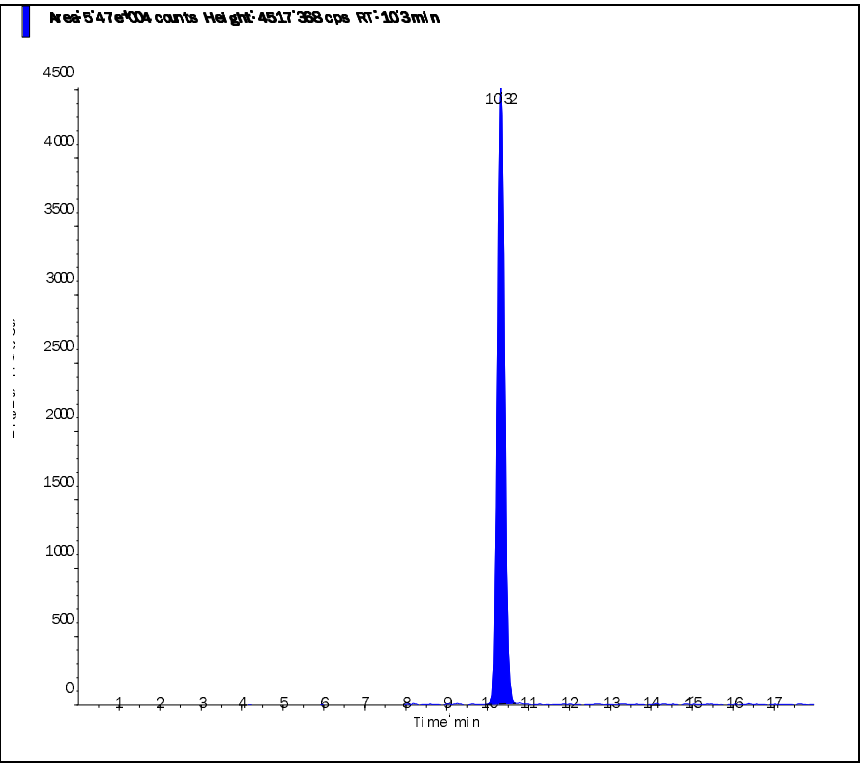

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Data File	LM27609.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	11/17/2014 2:34:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG501146-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM27609.wiff	**Injection Volume**	10.00
Acquisition Date	11/17/2014 2:34:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG501146-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.140e+05	10.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.200e+05	10.30	5.00	4.99
Perchlorate conf	1.400e+05	10.30	5.00	5.04

O18LP (Internal Standard)

RT (Exp. RT): 10.30(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

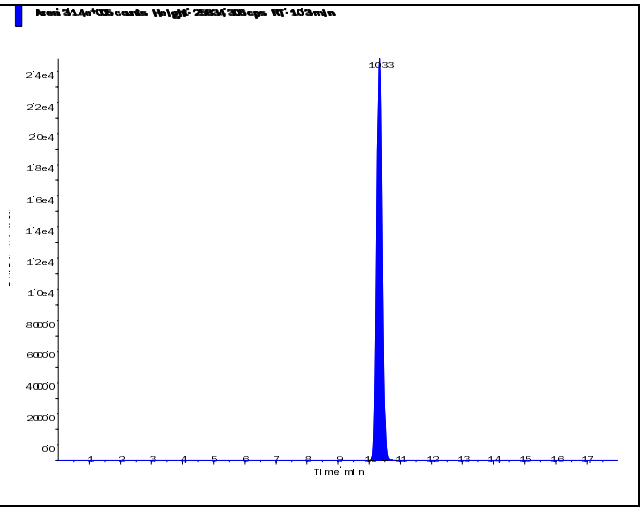

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.30 (10.30) min Calculated conc: 4.99 ng/ml Area Ratio: 1.337 Sample Type: (Standard)	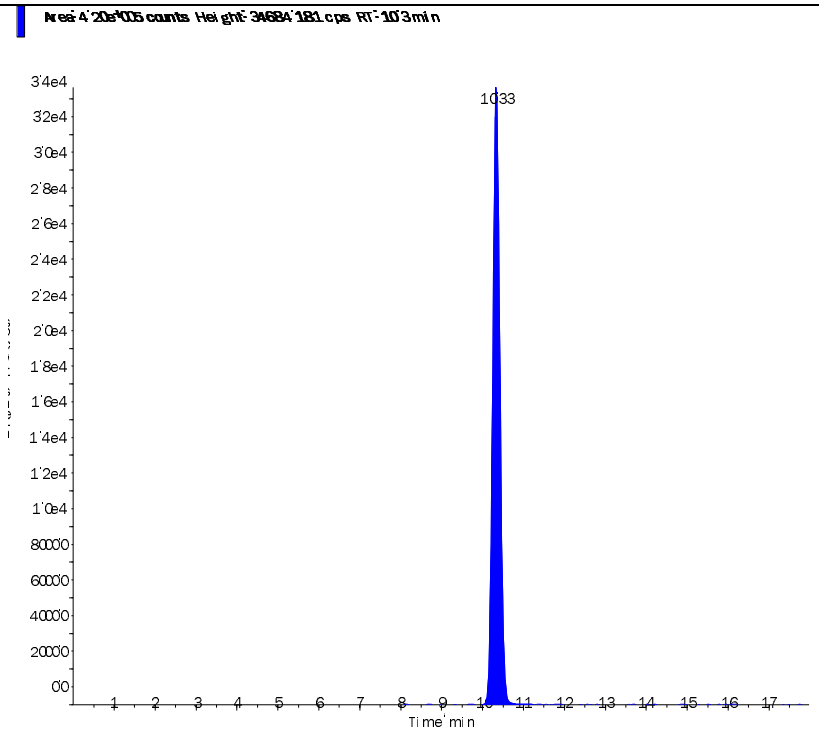
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 10.30 (10.30) min Calculated conc: 5.04 ng/ml Area Ratio: 0.445 Sample Type: (Standard)	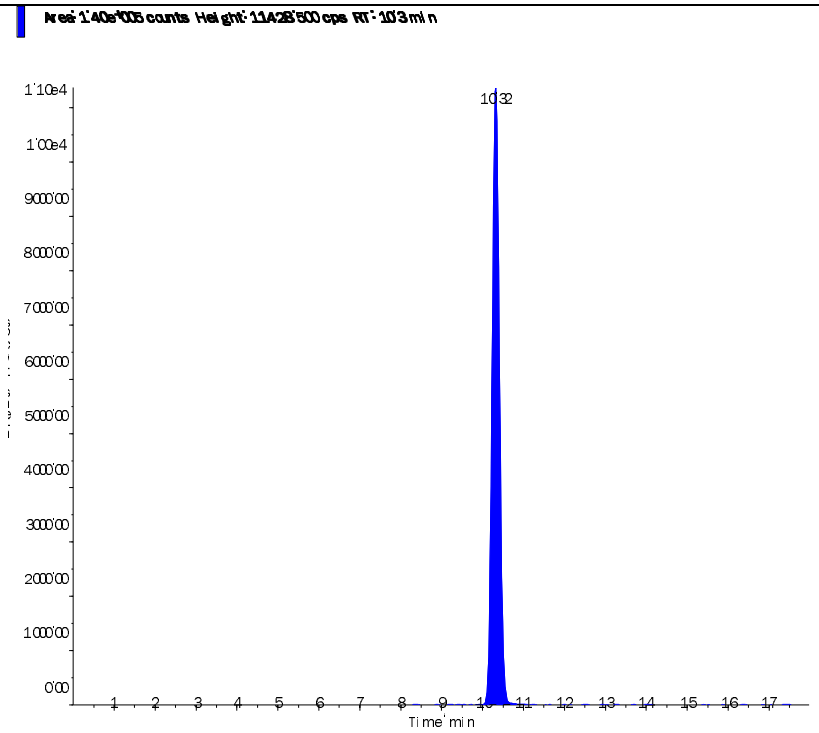

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Data File	LM27610.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	11/17/2014 2:53:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG501146-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM27610.wiff	**Injection Volume**	10.00
Acquisition Date	11/17/2014 2:53:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG501146-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.120e+05	10.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.410e+05	10.30	10.00	10.10
Perchlorate conf	2.760e+05	10.30	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 10.30(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

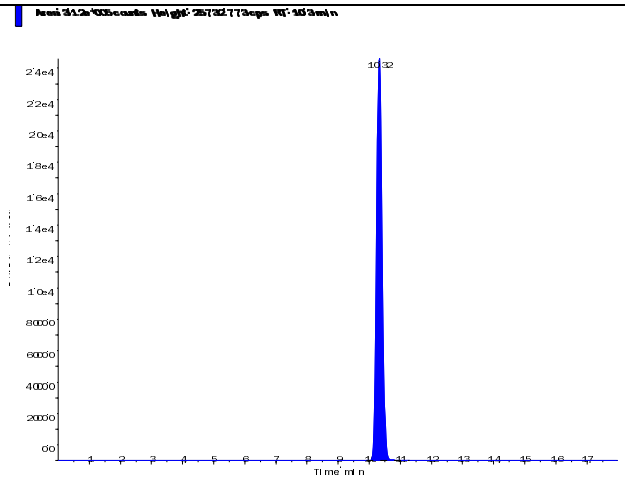

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Printed: 2/27/2015 9:38 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.30 (10.30) min Calculated conc: 10.10 ng/ml Area Ratio: 2.694 Sample Type: (Standard)	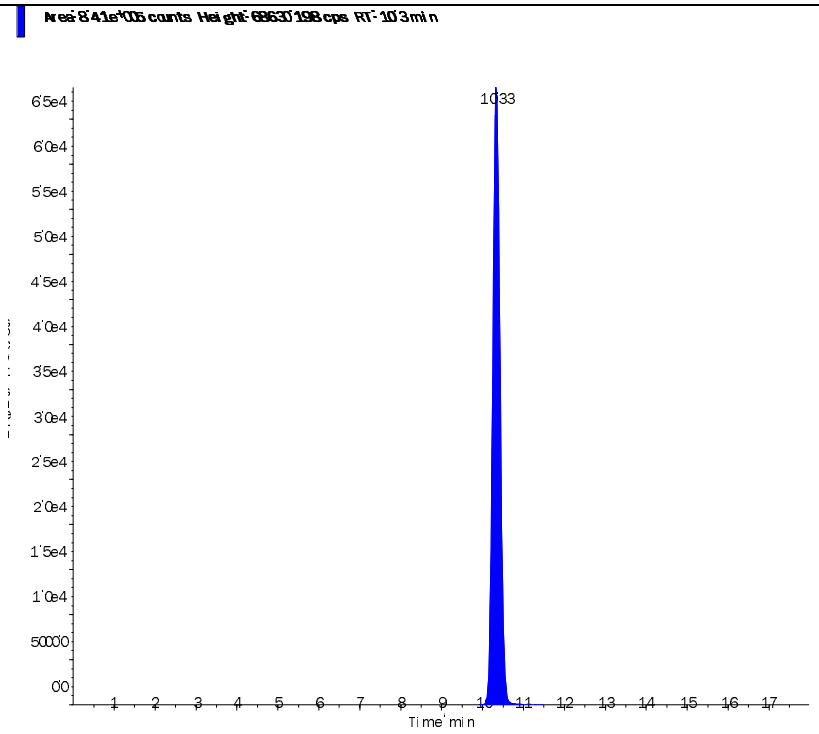
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 10.30 (10.30) min Calculated conc: 10.00 ng/ml Area Ratio: 0.886 Sample Type: (Standard)	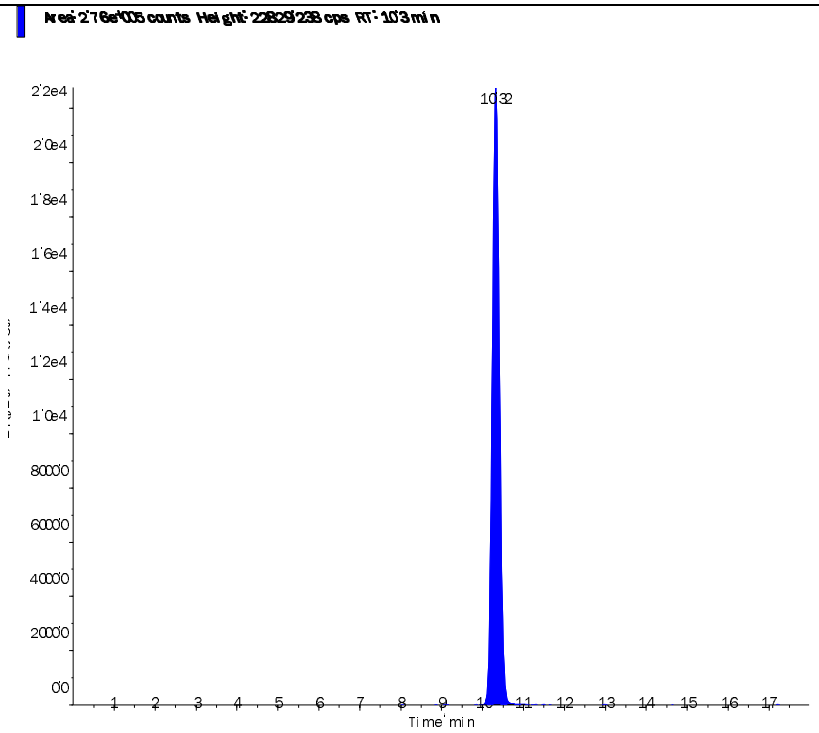

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Created with Analyst Reporter
Printed: 11/18/2014 4:15 PM

Data File	LM27611.wiff	**Result Table**	111714_ADC.rdb
Acquisition Date	11/17/2014 3:12:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG501146-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM27611.wiff	**Injection Volume**	10.00
Acquisition Date	11/17/2014 3:12:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	111714_ADC.rdb
Sample ID	WG501146-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD67082	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.260e+05	10.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.880e+04	10.30	1.00	1.01
Perchlorate conf	2.940e+04	10.30	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 10.30(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

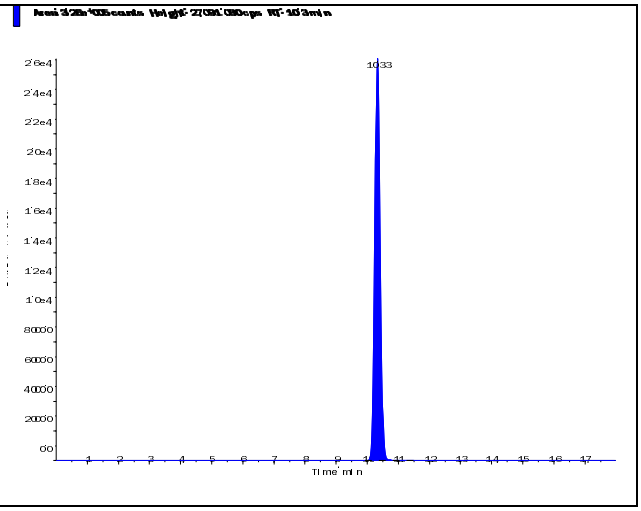

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Printed: 11/18/2014 4:15 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.30 (10.30) min Calculated conc: 1.01 ng/ml Area Ratio: 0.272 Sample Type: (Quality Control)	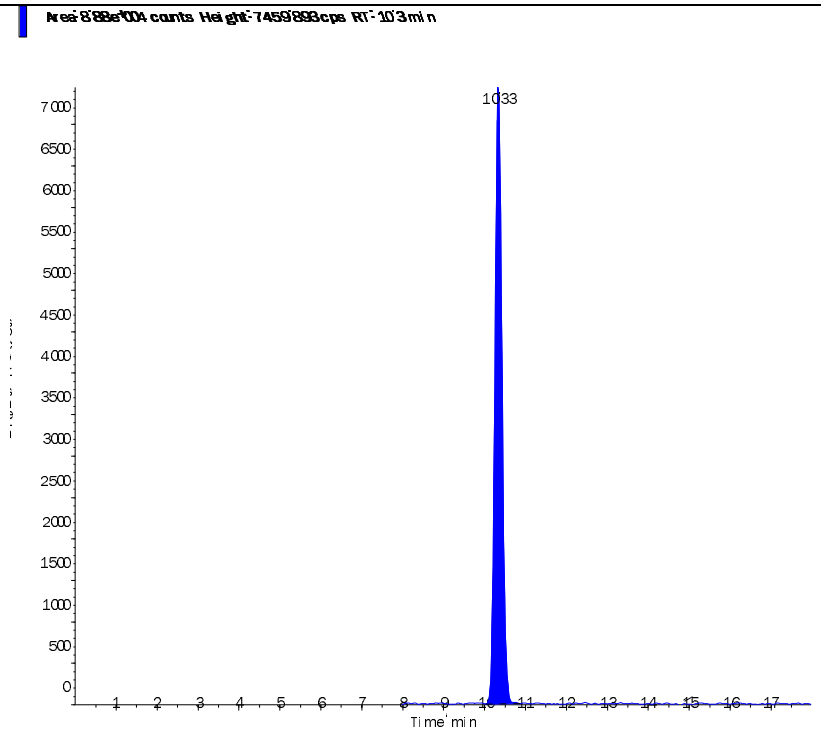
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 10.30 (10.30) min Calculated conc: 1.01 ng/ml Area Ratio: 0.09 Sample Type: (Quality Control)	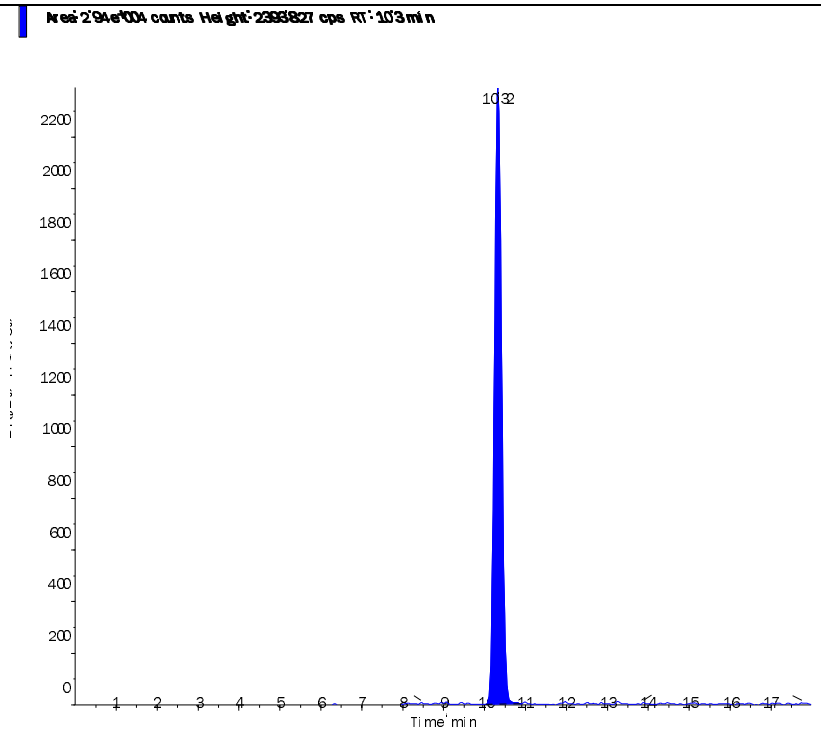

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Created with Analyst Reporter
Printed: 2/27/2015 9:39 AM

Data File	LM29054.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/25/2015 4:40:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513413-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM29054.wiff	**Injection Volume**	10.00
Acquisition Date	2/25/2015 4:40:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG513413-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.780e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.980e+04	9.67	1.00	1.06
Perchlorate conf	2.630e+04	9.65	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 9.66(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

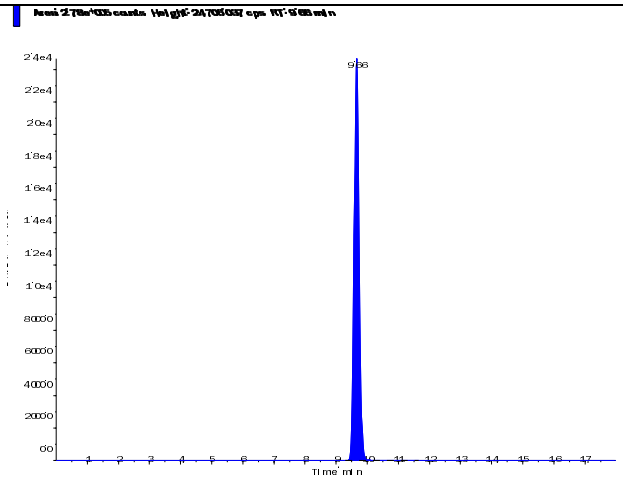

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.67 (10.30) min Calculated conc: 1.06 ng/ml Area Ratio: 0.287 Sample Type: (Quality Control)	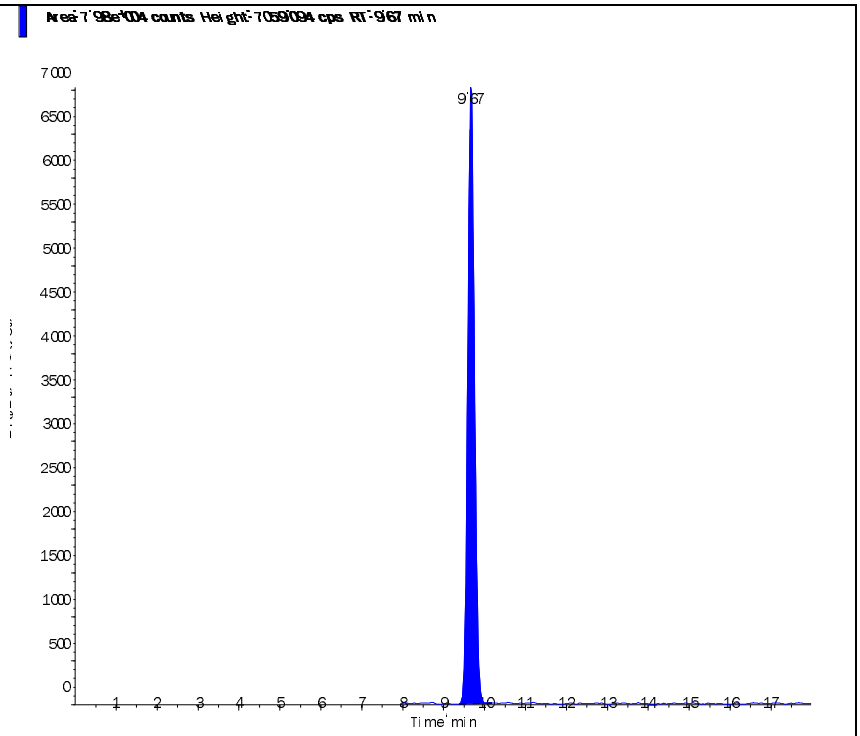
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.65 (10.30) min Calculated conc: 1.07 ng/ml Area Ratio: 0.095 Sample Type: (Quality Control)	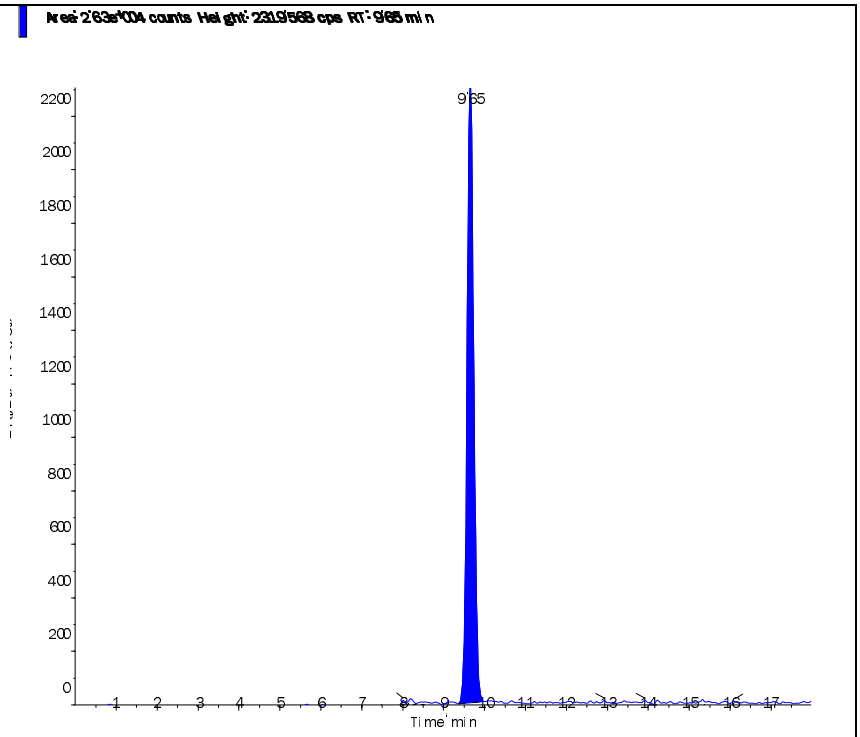

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Printed: 2/27/2015 9:44 AM

Data File	LM29066.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/25/2015 8:28:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513413-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM29066.wiff	**Injection Volume**	10.00
Acquisition Date	2/25/2015 8:28:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG513413-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.970e+05	9.71	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.270e+04	9.72	1.00	1.03
Perchlorate conf	2.830e+04	9.70	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 9.71(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

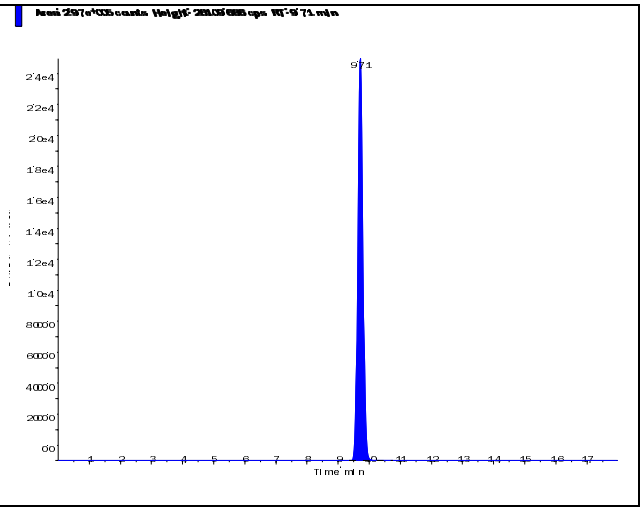

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.72 (10.30) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.279
Sample Type:	(Quality Control)

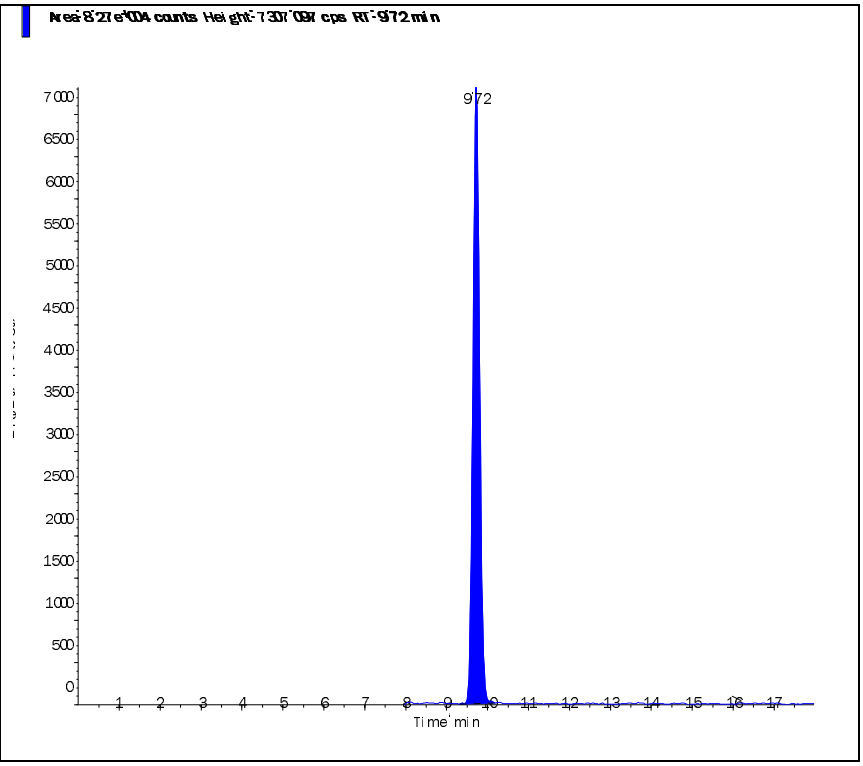

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.70 (10.30) min
Calculated conc:	1.07 ng/ml
Area Ratio:	0.095
Sample Type:	(Quality Control)

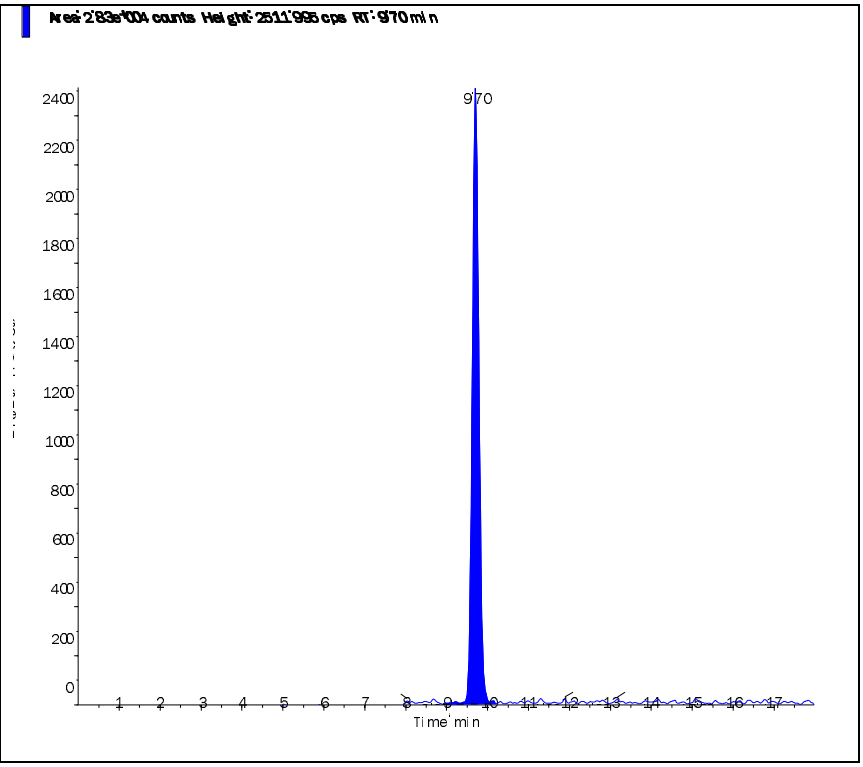

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Printed: 2/27/2015 9:48 AM

Data File	LM29079.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/26/2015 12:34:10 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513413-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM29079.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2015 12:34:10 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG513413-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.270e+05	9.75	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	9.160e+04	9.76	1.00	1.04
Perchlorate conf	2.980e+04	9.75	1.00	1.03

O18LP (Internal Standard)

RT (Exp. RT): 9.75(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

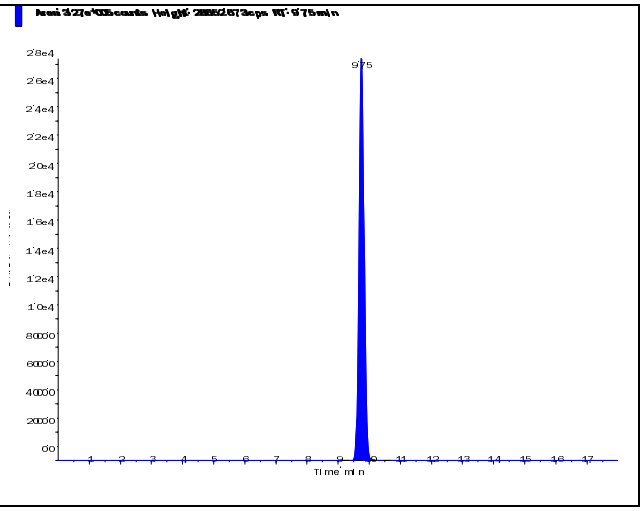

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.76 (10.30) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.28
Sample Type:	(Quality Control)

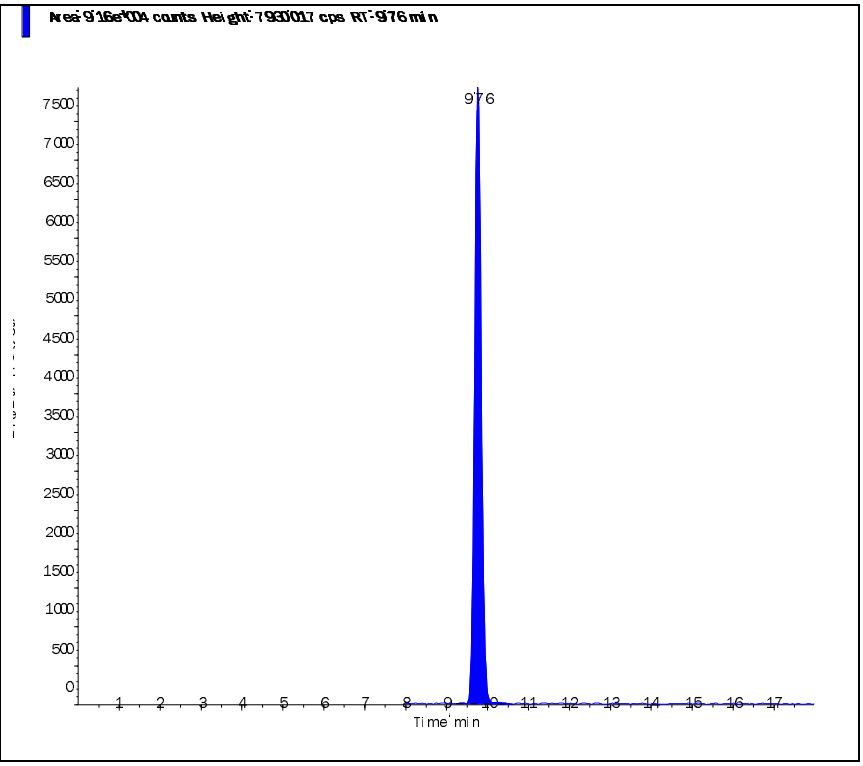

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.75 (10.30) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.091
Sample Type:	(Quality Control)

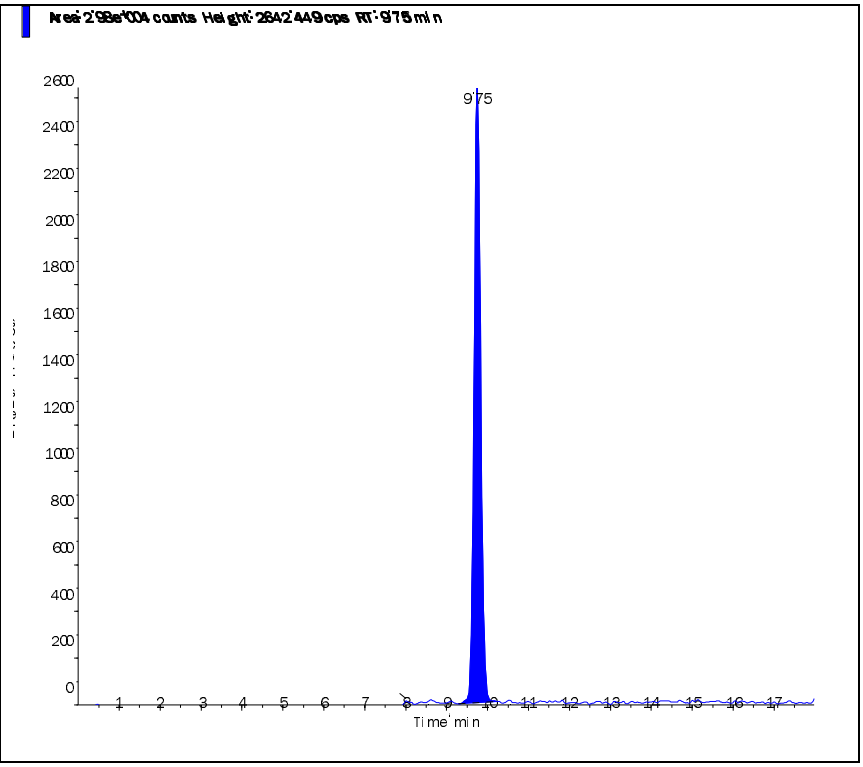

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Printed: 2/27/2015 9:49 AM

Data File	LM29084.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/26/2015 2:08:50 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513413-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM29084.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2015 2:08:50 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG513413-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.250e+05	9.76	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.920e+04	9.77	1.00	1.01
Perchlorate conf	2.950e+04	9.76	1.00	1.02

O18LP (Internal Standard)

RT (Exp. RT): 9.76(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

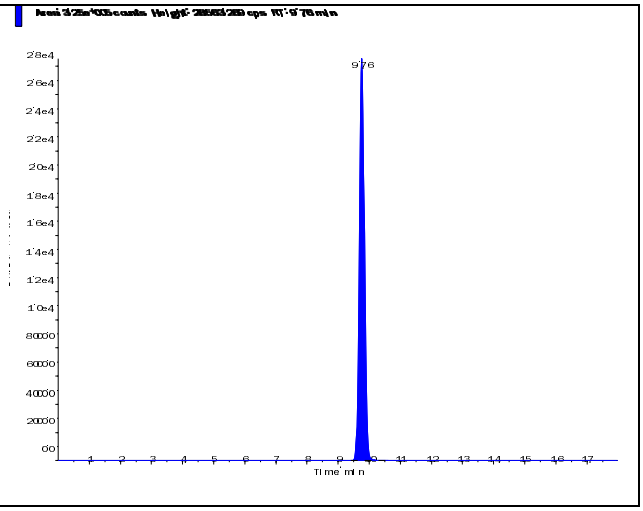

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.77 (10.30) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.274
Sample Type:	(Quality Control)

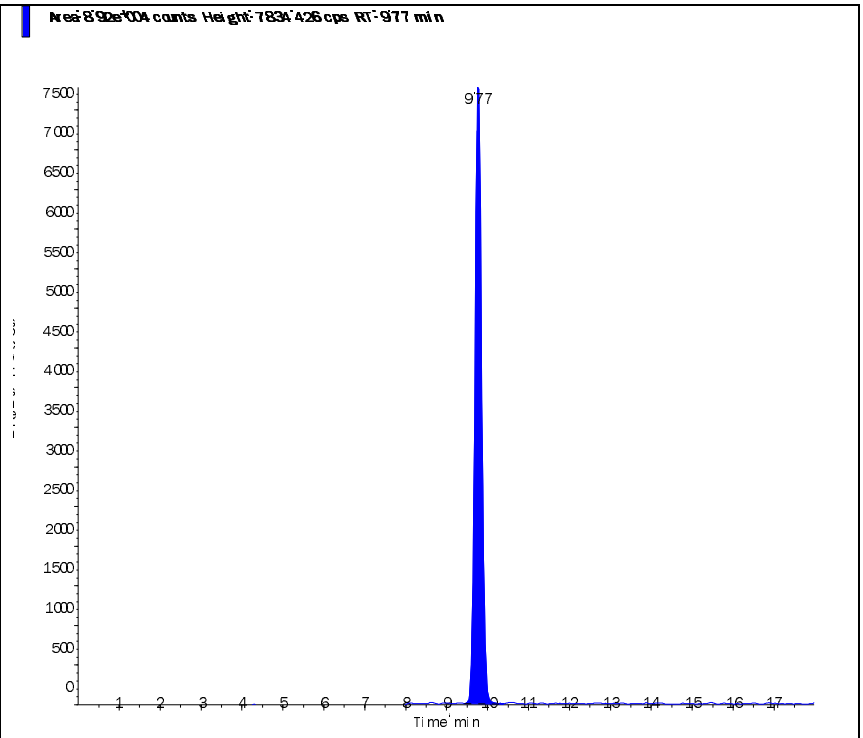

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.76 (10.30) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.091
Sample Type:	(Quality Control)

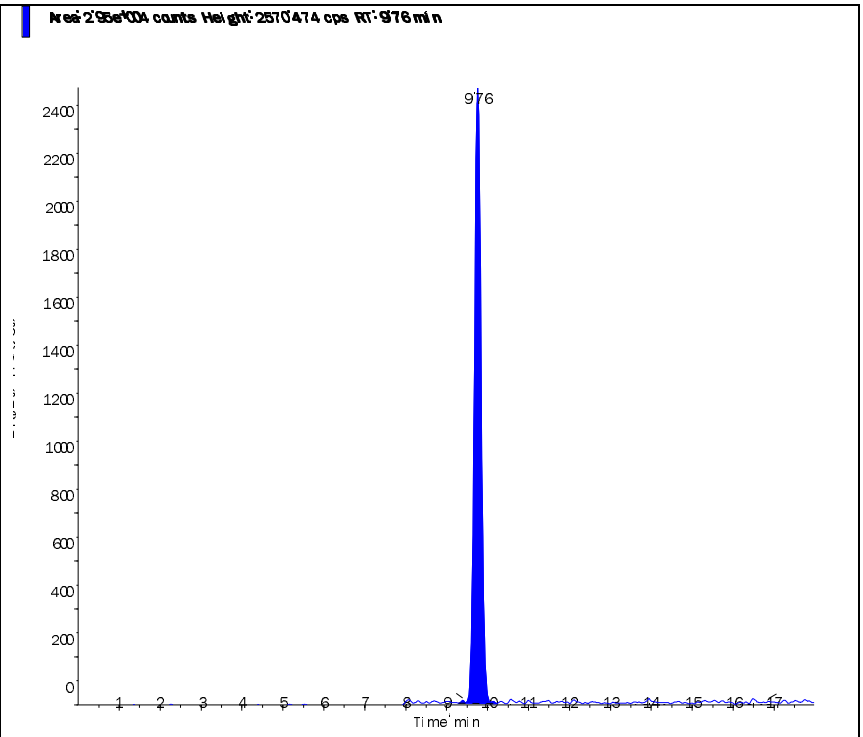

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Created with Analyst Reporter
Printed: 2/27/2015 9:51 AM

Data File	LM29087.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/26/2015 12:34:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513413-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM29087.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2015 12:34:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG513413-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.980e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.710e+04	9.82	1.00	1.08
Perchlorate conf	2.890e+04	9.81	1.00	1.09

O18LP (Internal Standard)

RT (Exp. RT): 9.81(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

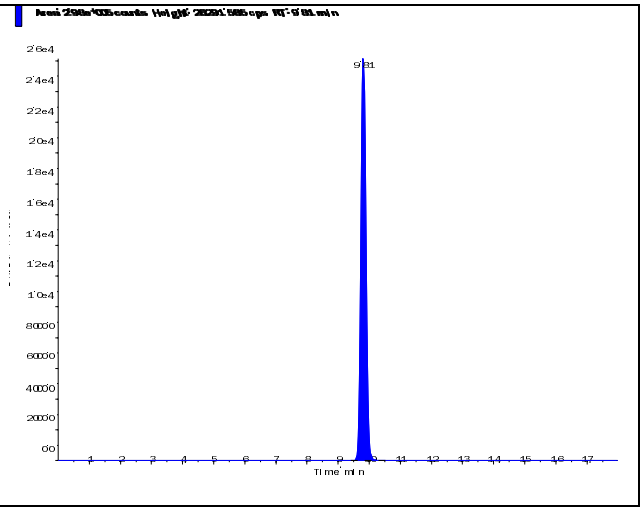

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Printed: 2/27/2015 9:51 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.82 (10.30) min
Calculated conc:	1.08 ng/ml
Area Ratio:	0.292
Sample Type:	(Quality Control)

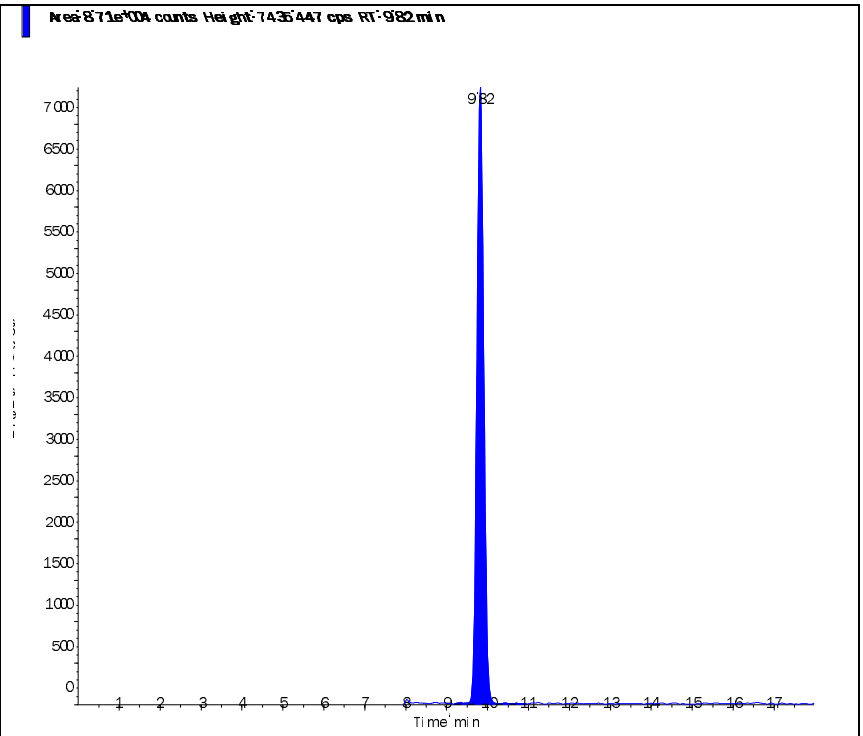

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.81 (10.30) min
Calculated conc:	1.09 ng/ml
Area Ratio:	0.097
Sample Type:	(Quality Control)

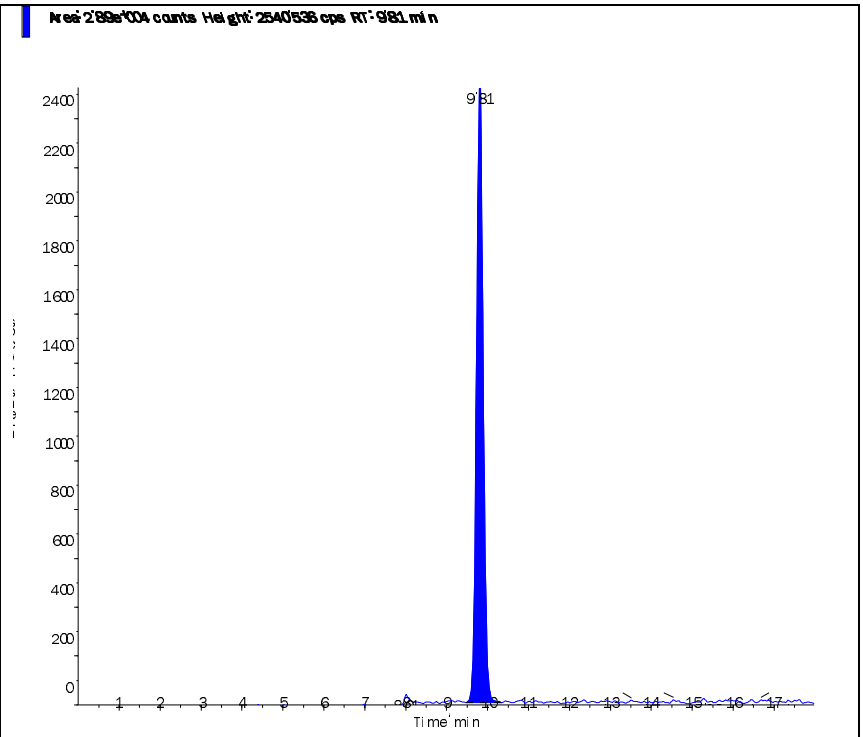

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Created with Analyst Reporter
Printed: 2/27/2015 9:55 AM

Data File	LM29098.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/26/2015 4:02:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513413-11 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM29098.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2015 4:02:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG513413-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.130e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.810e+04	9.84	1.00	1.04
Perchlorate conf	2.820e+04	9.83	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.83(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

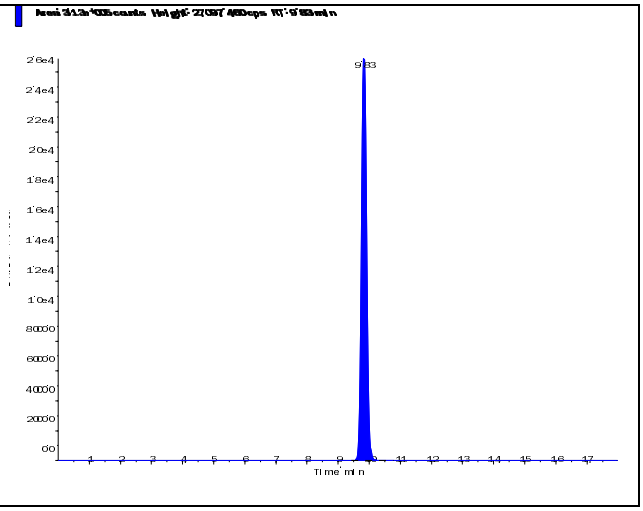

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (10.30) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.282
Sample Type:	(Quality Control)

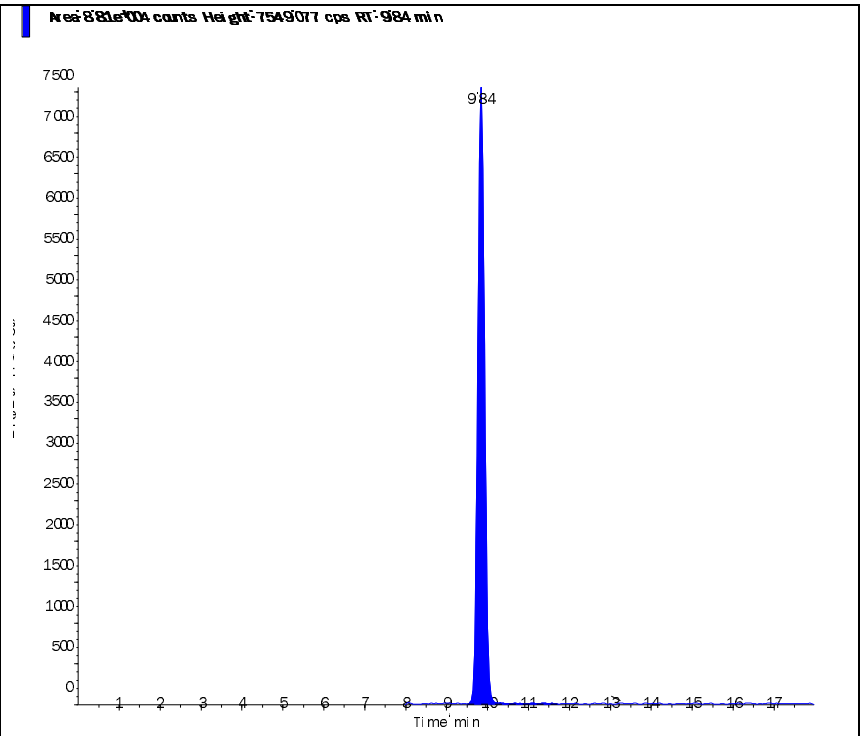

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (10.30) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.09
Sample Type:	(Quality Control)

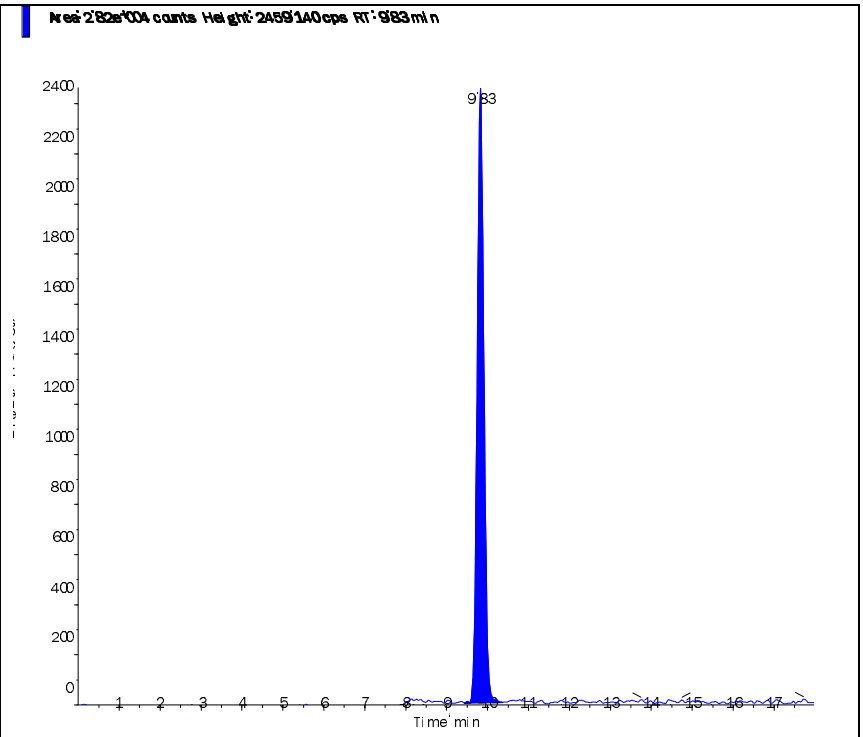

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Created with Analyst Reporter
Printed: 2/27/2015 9:39 AM

Data File	LM29055.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/25/2015 4:59:47 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513403-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM29055.wiff	**Injection Volume**	10.00
Acquisition Date	2/25/2015 4:59:47 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG513403-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.670e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.650e+04	9.64	N/A	0.217
Perchlorate conf	5.600e+03	9.62	N/A	0.227

O18LP (Internal Standard)

RT (Exp. RT): 9.63(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

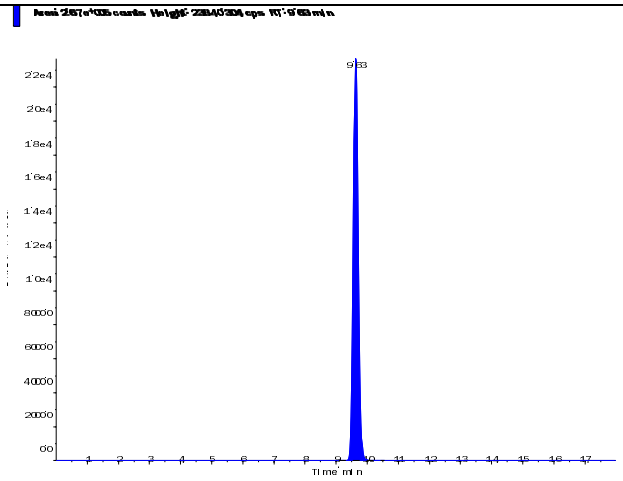

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (10.30) min
Calculated conc:	0.217 ng/ml
Area Ratio:	0.062
Sample Type:	(Unknown)

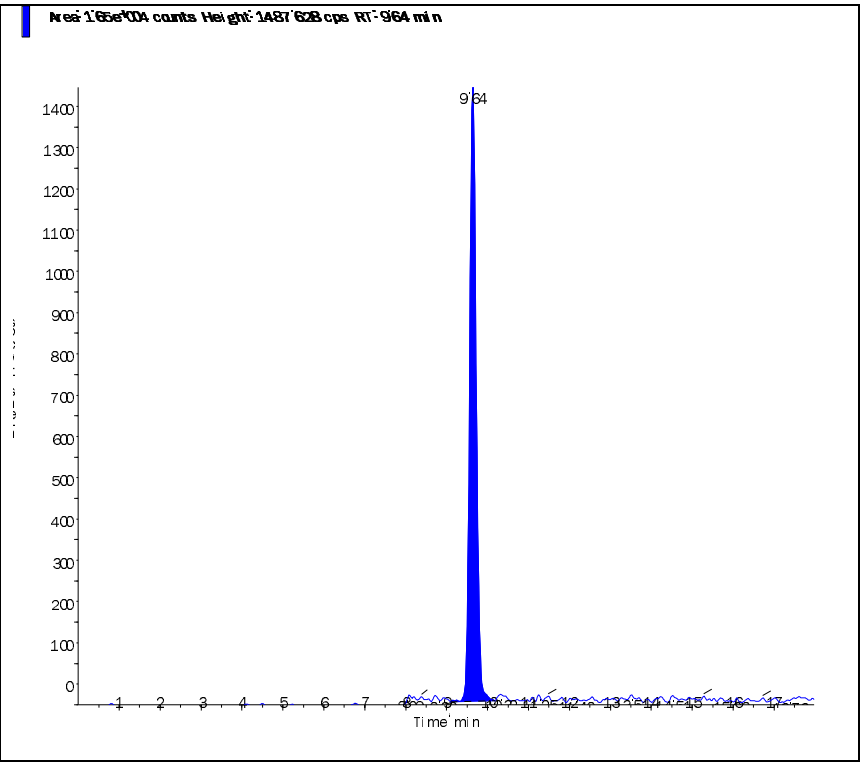

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.62 (10.30) min
Calculated conc:	0.227 ng/ml
Area Ratio:	0.021
Sample Type:	(Unknown)

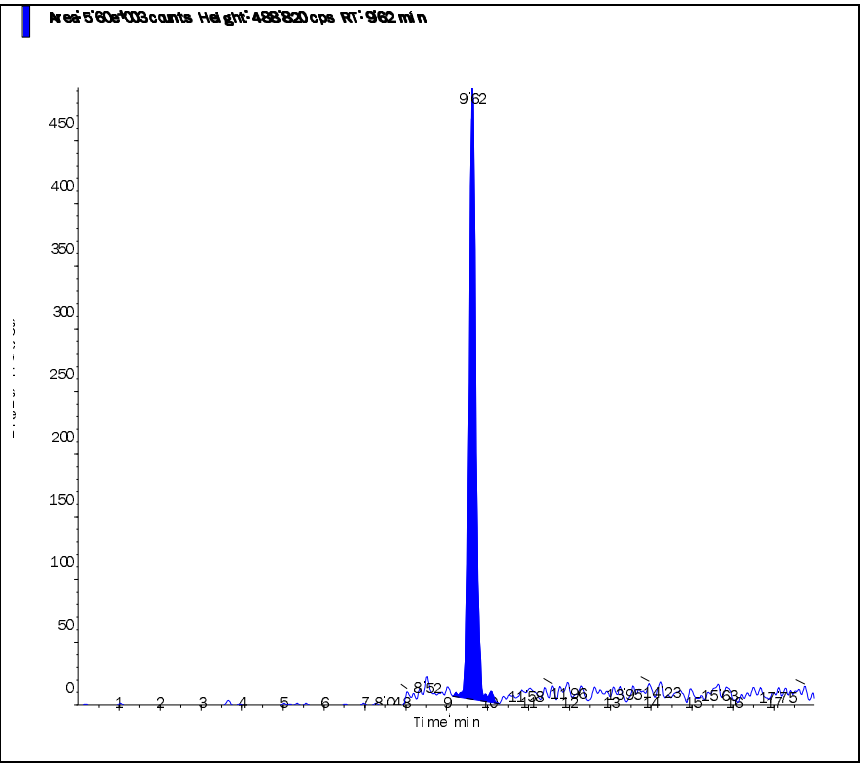

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Data File	LM29067.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/25/2015 8:46:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513403-08 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM29067.wiff	**Injection Volume**	10.00
Acquisition Date	2/25/2015 8:46:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG513403-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.950e+05	9.69	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.610e+04	9.69	N/A	0.19
Perchlorate conf	5.060e+03	9.68	N/A	0.184

O18LP (Internal Standard)

RT (Exp. RT): 9.69(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

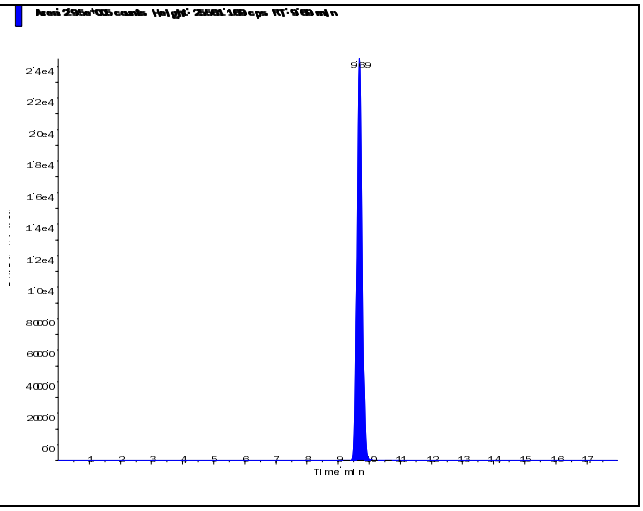

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.69 (10.30) min
Calculated conc:	0.19 ng/ml
Area Ratio:	0.055
Sample Type:	(Unknown)

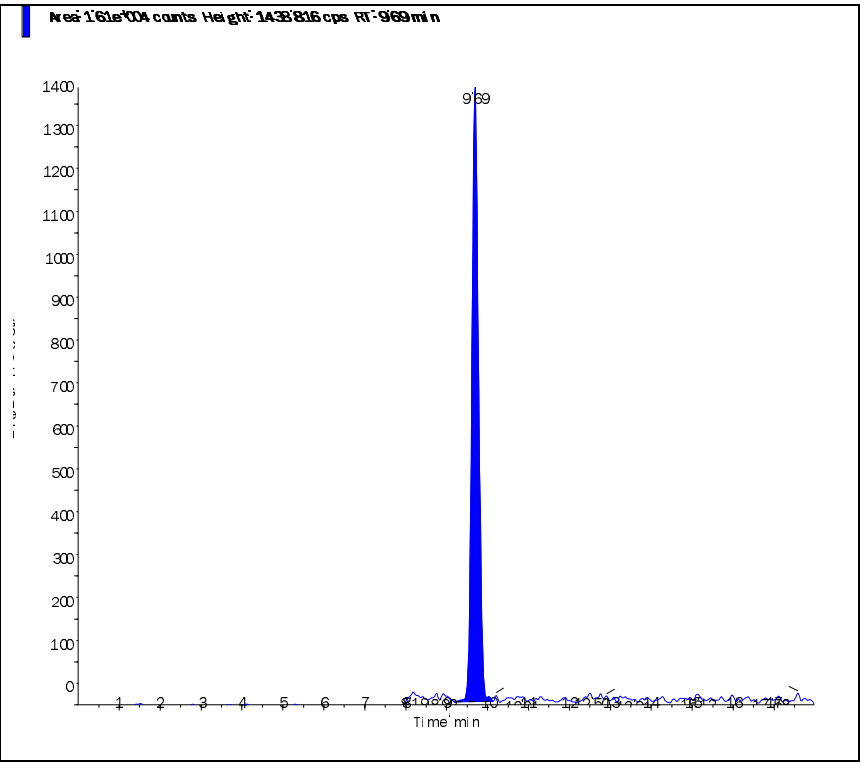

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.68 (10.30) min
Calculated conc:	0.184 ng/ml
Area Ratio:	0.017
Sample Type:	(Unknown)

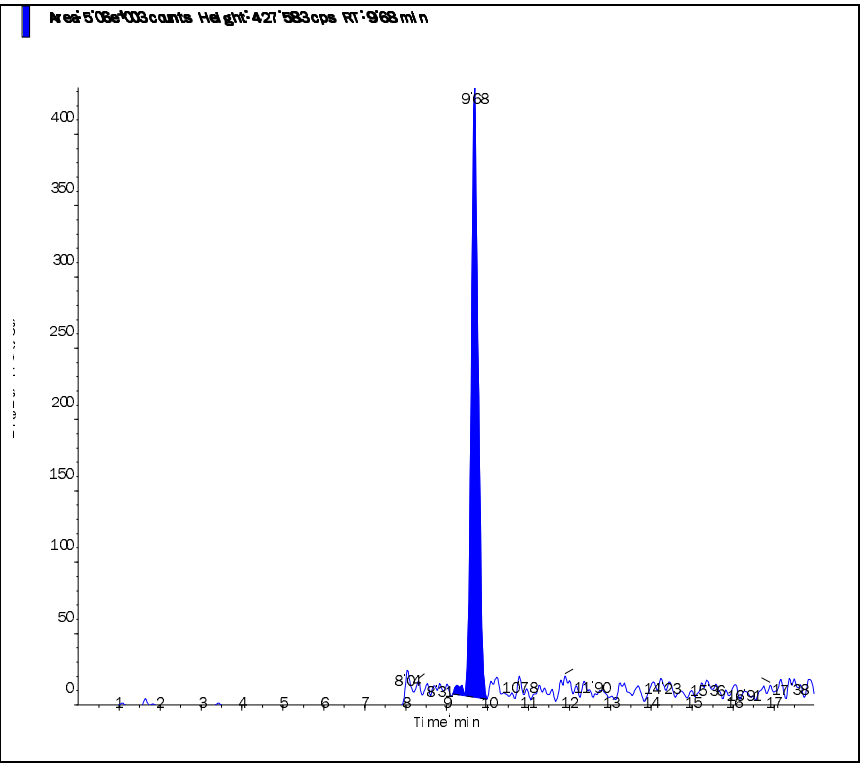

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Data File	LM29080.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/26/2015 12:53:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513403-09 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM29080.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2015 12:53:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG513403-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.080e+05	9.72	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.750e+04	9.73	N/A	0.198
Perchlorate conf	5.650e+03	9.71	N/A	0.197

O18LP (Internal Standard)

RT (Exp. RT): 9.72(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

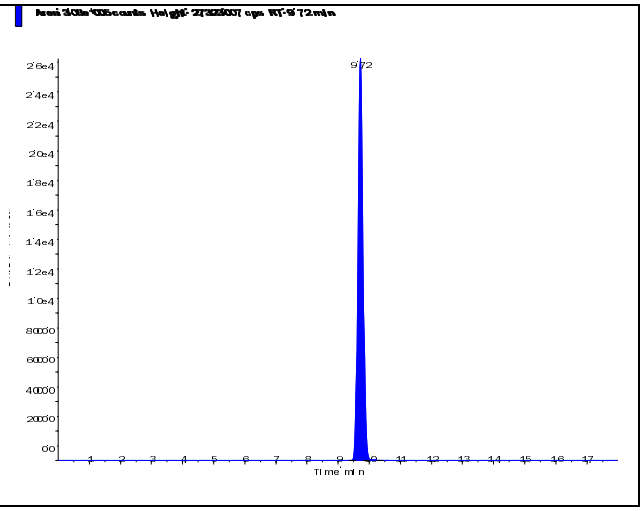

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.73 (10.30) min
Calculated conc:	0.198 ng/ml
Area Ratio:	0.057
Sample Type:	(Unknown)

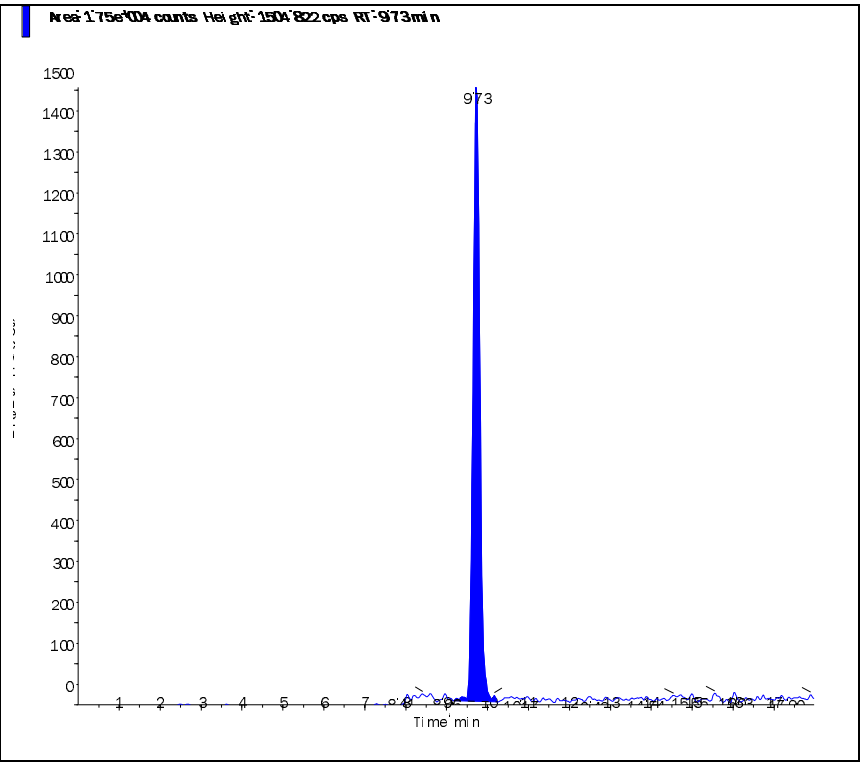

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.71 (10.30) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.018
Sample Type:	(Unknown)

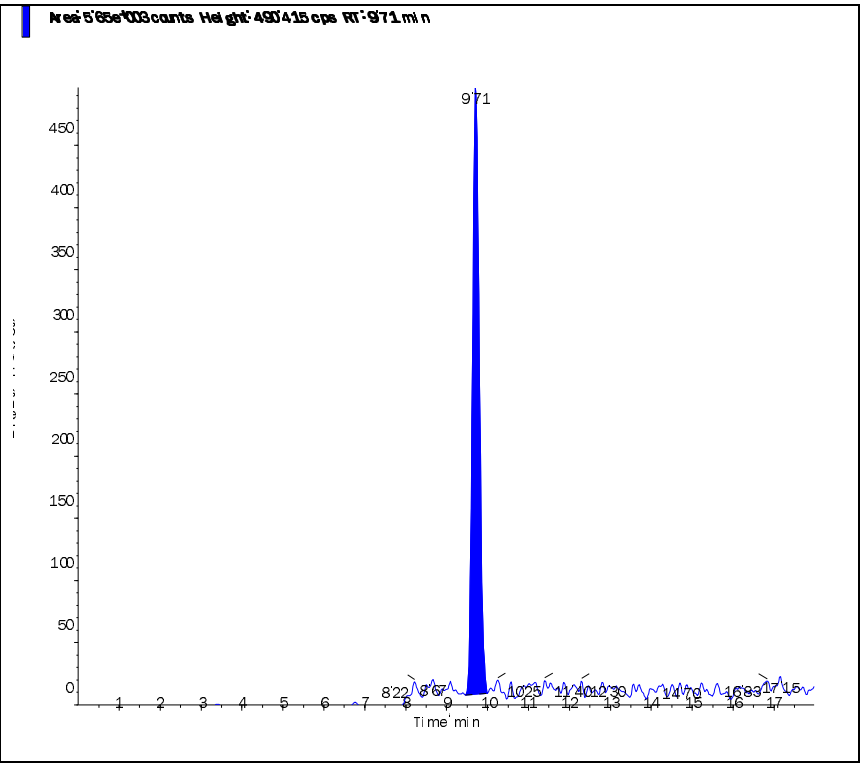

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Data File	LM29085.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/26/2015 2:27:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513403-10 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM29085.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2015 2:27:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG513403-10	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.180e+05	9.73	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.770e+04	9.74	N/A	0.194
Perchlorate conf	5.780e+03	9.74	N/A	0.196

O18LP (Internal Standard)

RT (Exp. RT): 9.73(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

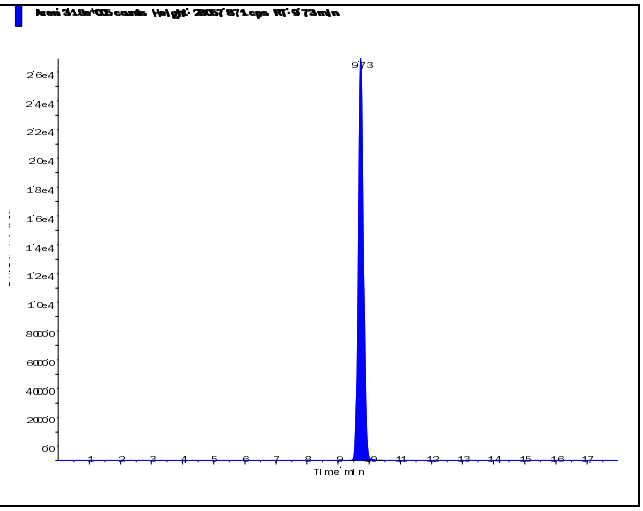

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.74 (10.30) min Calculated conc: 0.194 ng/ml Area Ratio: 0.056 Sample Type: (Unknown)	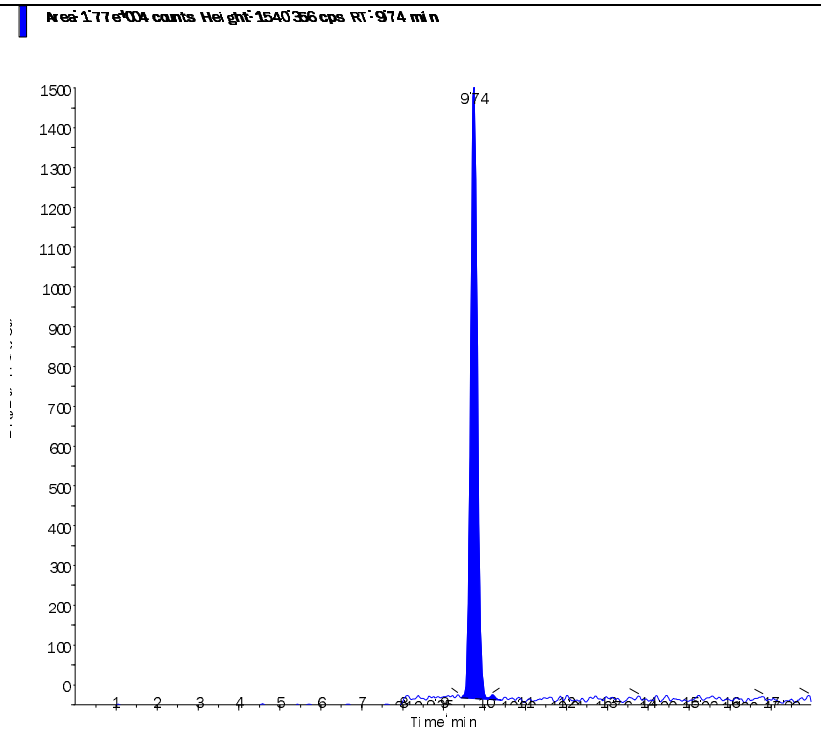
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.74 (10.30) min Calculated conc: 0.196 ng/ml Area Ratio: 0.018 Sample Type: (Unknown)	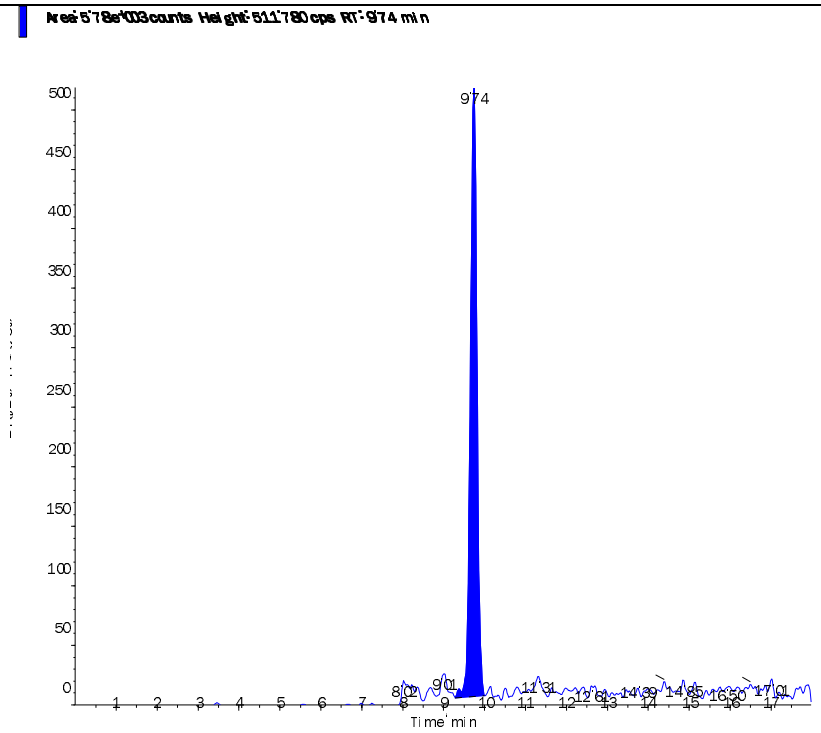

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Data File	LM29088.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/26/2015 12:53:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513403-11 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM29088.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2015 12:53:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG513403-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.920e+05	9.77	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.640e+04	9.78	N/A	0.196
Perchlorate conf	5.970e+03	9.78	N/A	0.221

O18LP (Internal Standard)

RT (Exp. RT): 9.77(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

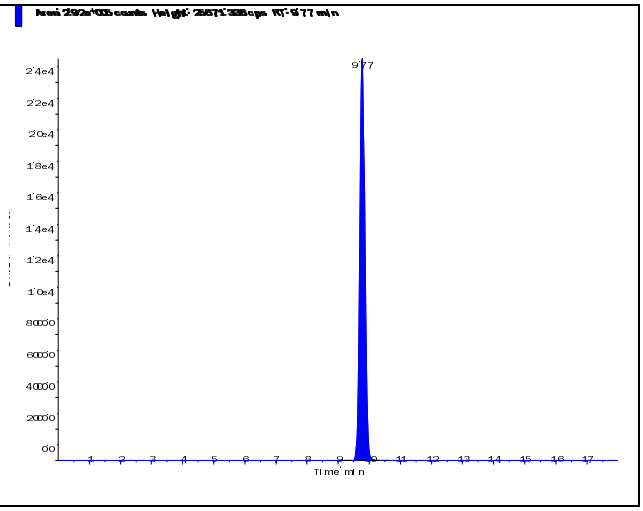

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.78 (10.30) min
Calculated conc:	0.196 ng/ml
Area Ratio:	0.056
Sample Type:	(Unknown)

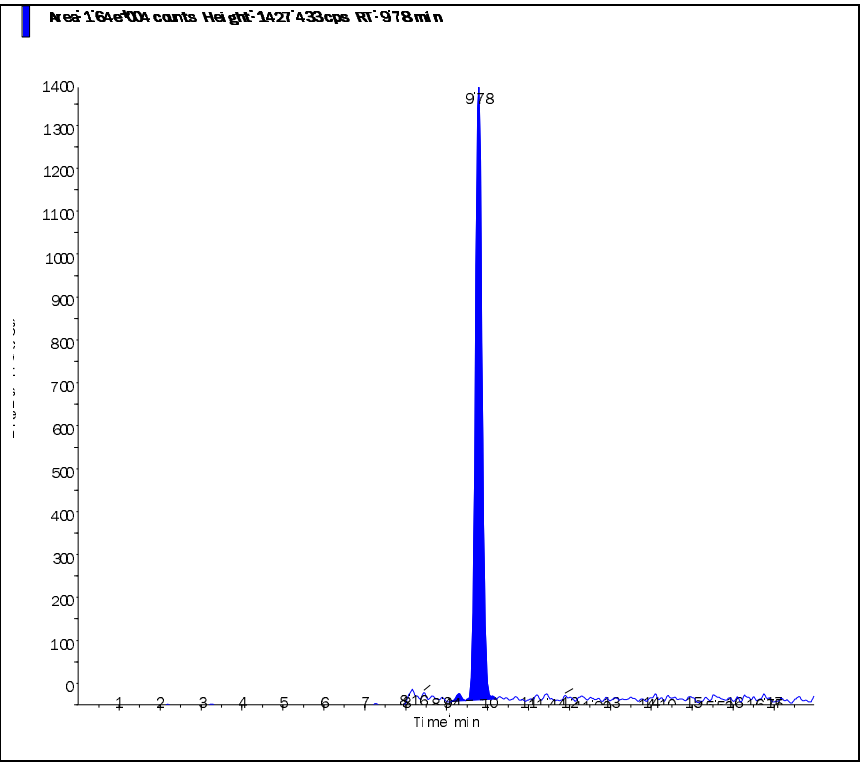

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.78 (10.30) min
Calculated conc:	0.221 ng/ml
Area Ratio:	0.02
Sample Type:	(Unknown)

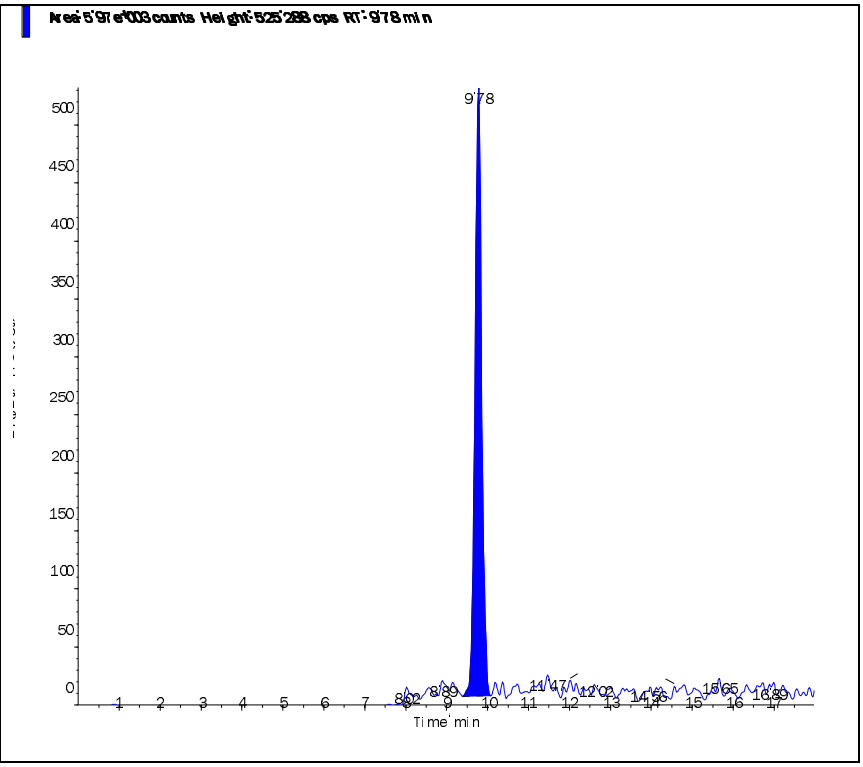

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Data File	LM29099.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/26/2015 4:21:36 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513403-12 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM29099.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2015 4:21:36 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG513403-12	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.020e+05	9.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.600e+04	9.81	N/A	0.184
Perchlorate conf	5.720e+03	9.79	N/A	0.204

O18LP (Internal Standard)

RT (Exp. RT): 9.80(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

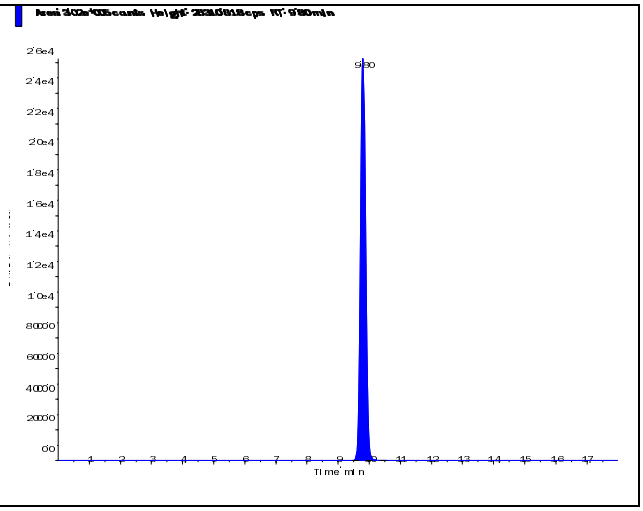

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.81 (10.30) min
Calculated conc:	0.184 ng/ml
Area Ratio:	0.053
Sample Type:	(Unknown)

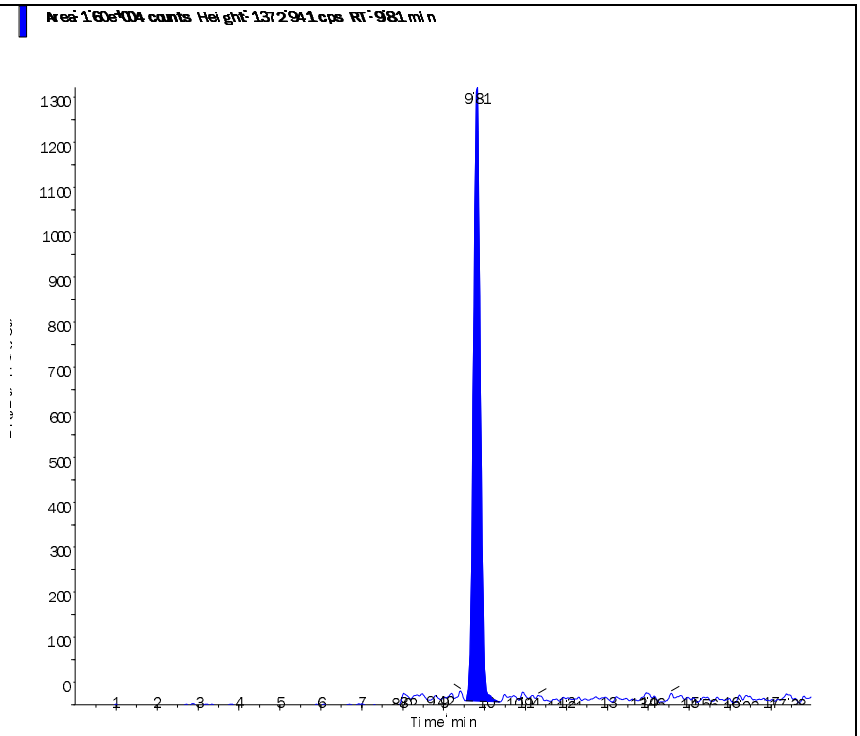

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.79 (10.30) min
Calculated conc:	0.204 ng/ml
Area Ratio:	0.019
Sample Type:	(Unknown)

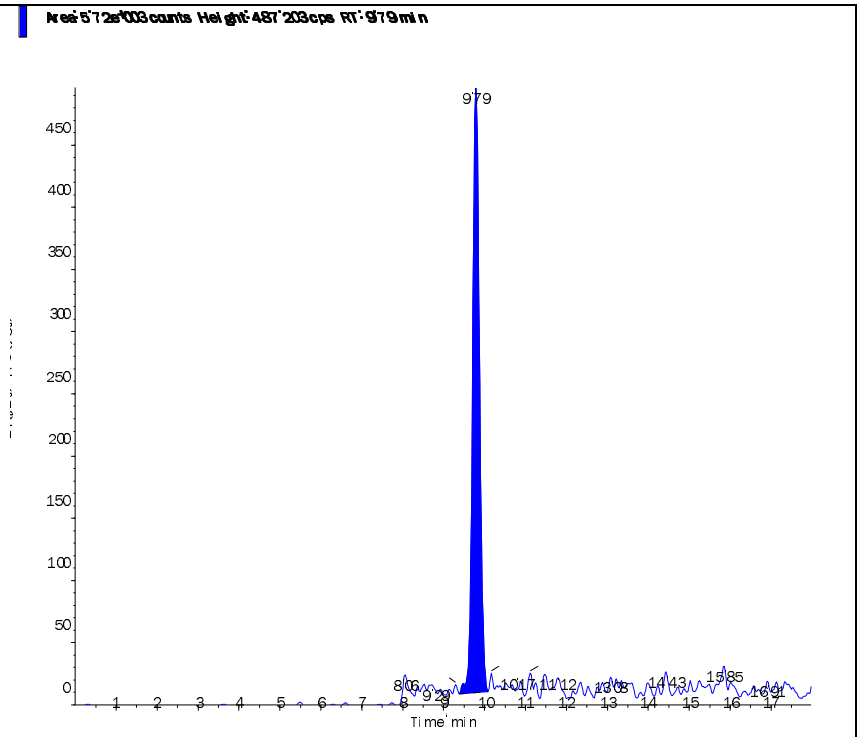

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Data File	LM29053.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/25/2015 4:21:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513413-01 CCB	**Injection Vial**	1.00
Data File	LM29053.wiff	**Injection Volume**	10.00
Acquisition Date	2/25/2015 4:21:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG513413-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.570e+05	9.69	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.100e+02	9.74	N/A	< 0
Perchlorate conf	3.220e+02	9.67	N/A	0.0033

O18LP (Internal Standard)

RT (Exp. RT): 9.69(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

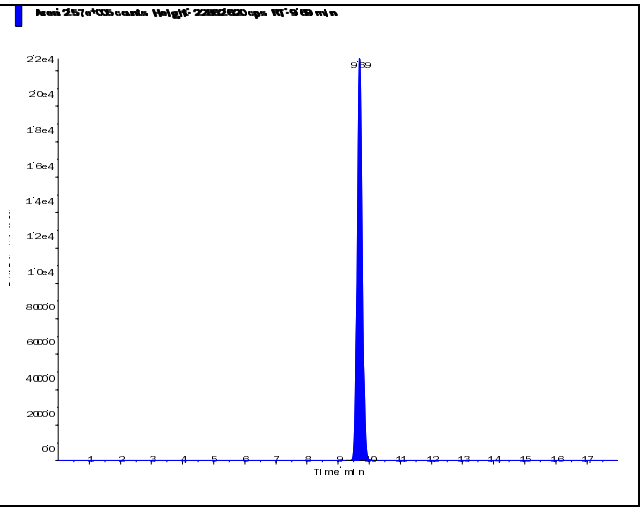

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.74 (10.30) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.003
Sample Type:	(Unknown)

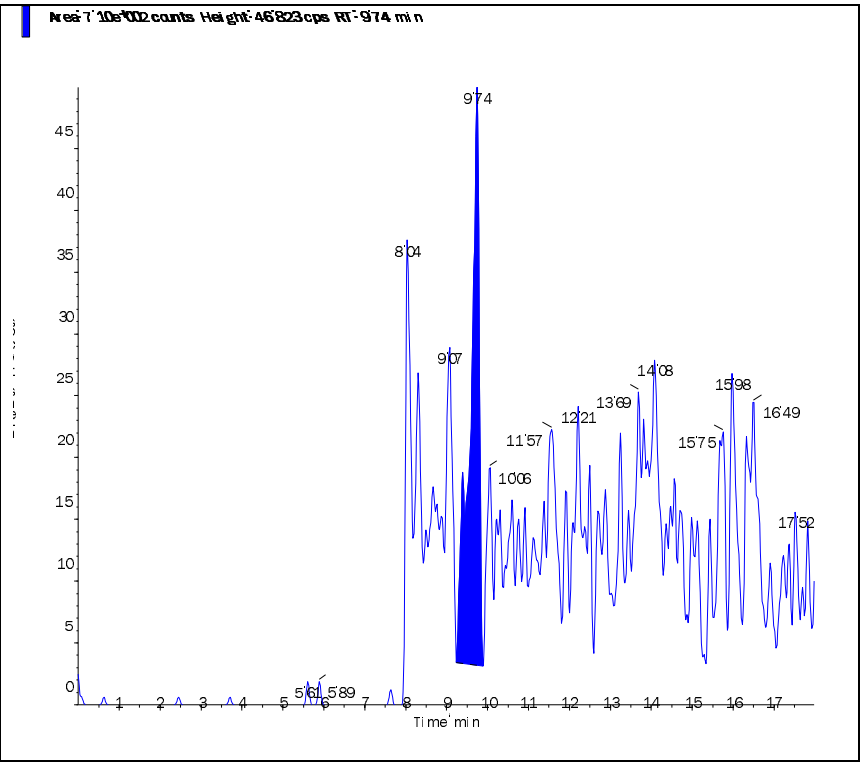

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.67 (10.30) min
Calculated conc:	0.0033 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

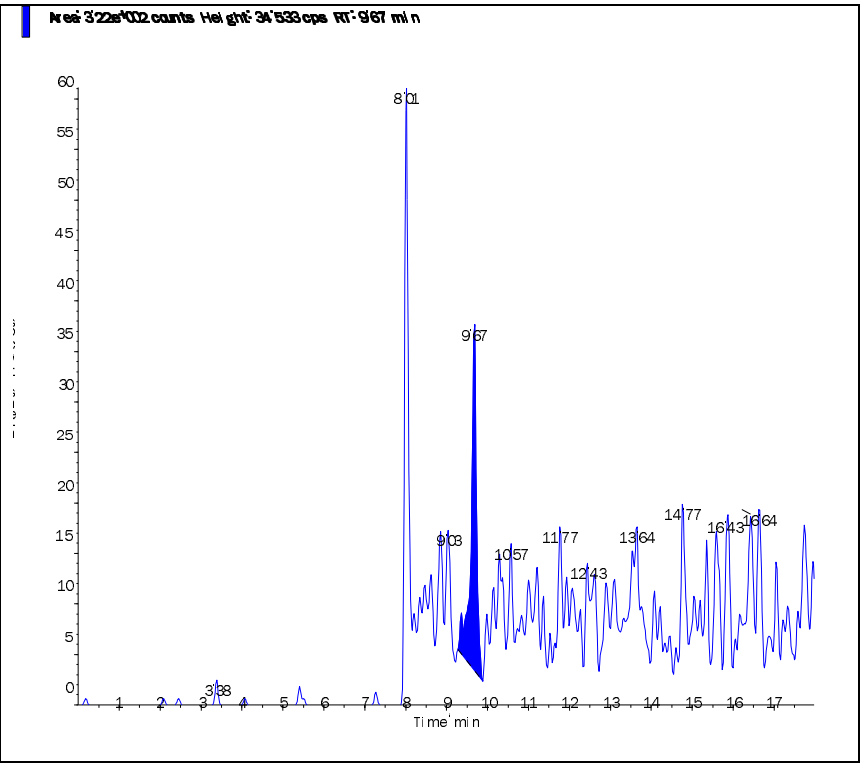

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Data File	LM29068.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/25/2015 9:05:55 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513413-04 CCB	**Injection Vial**	1.00
Data File	LM29068.wiff	**Injection Volume**	10.00
Acquisition Date	2/25/2015 9:05:55 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG513413-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.960e+05	9.75	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.750e+02	9.80	N/A	< 0
Perchlorate conf	8.830e+01	9.74	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.75(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

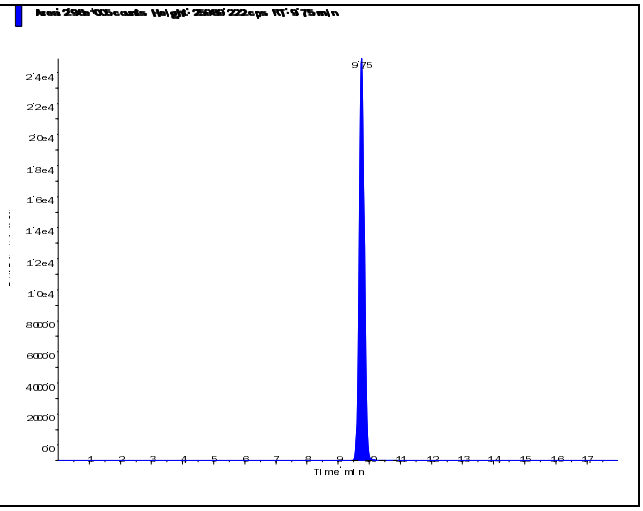

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.80 (10.30) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

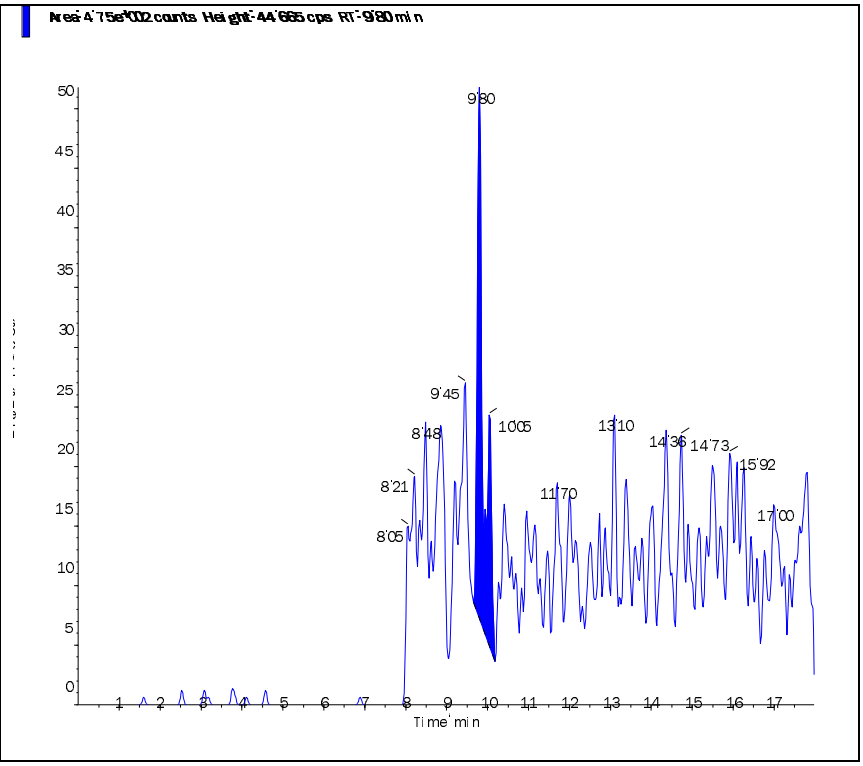

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.74 (10.30) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

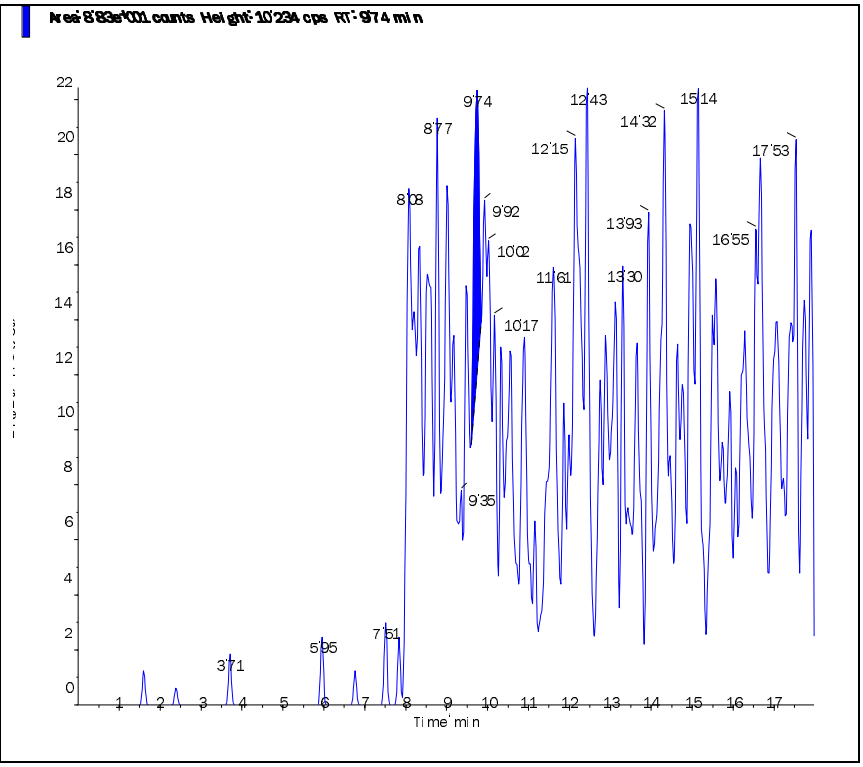

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Created with Analyst Reporter
Printed: 2/27/2015 9:49 AM

Data File	LM29081.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/26/2015 1:12:02 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513413-06 CCB	**Injection Vial**	1.00
Data File	LM29081.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2015 1:12:02 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG513413-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.990e+05	9.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	6.070e+02	9.81	N/A	< 0
Perchlorate conf	3.960e+02	9.79	N/A	0.0041

O18LP (Internal Standard)

RT (Exp. RT): 9.80(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

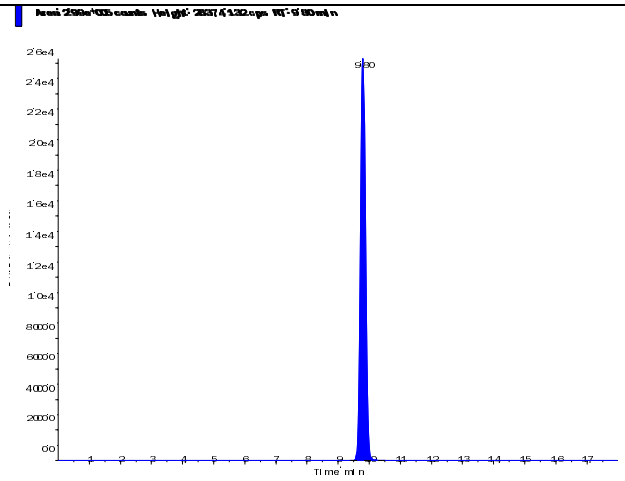

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.81 (10.30) min Calculated conc: < 0 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	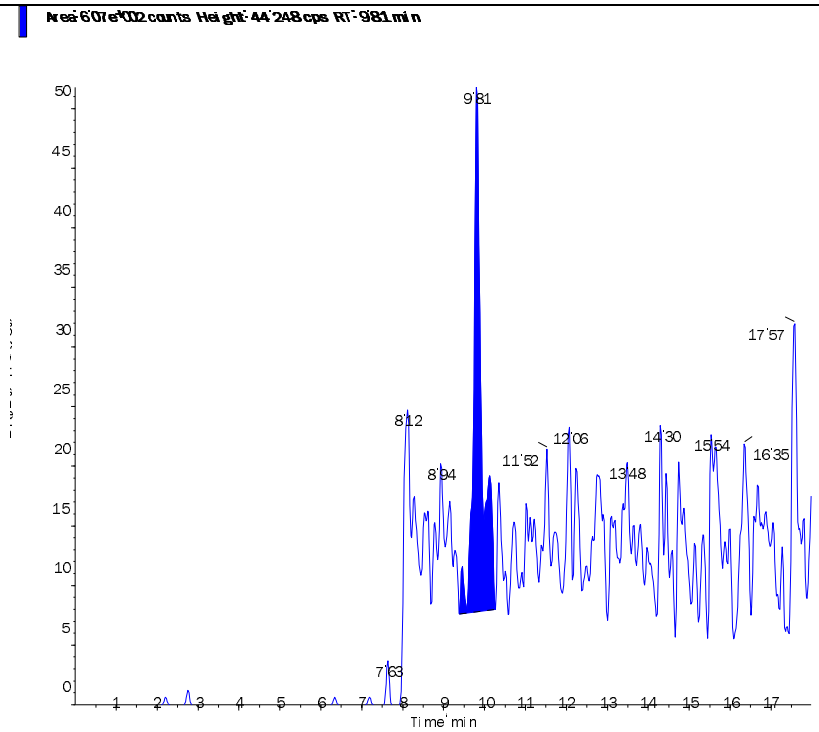
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.79 (10.30) min Calculated conc: 0.0041 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	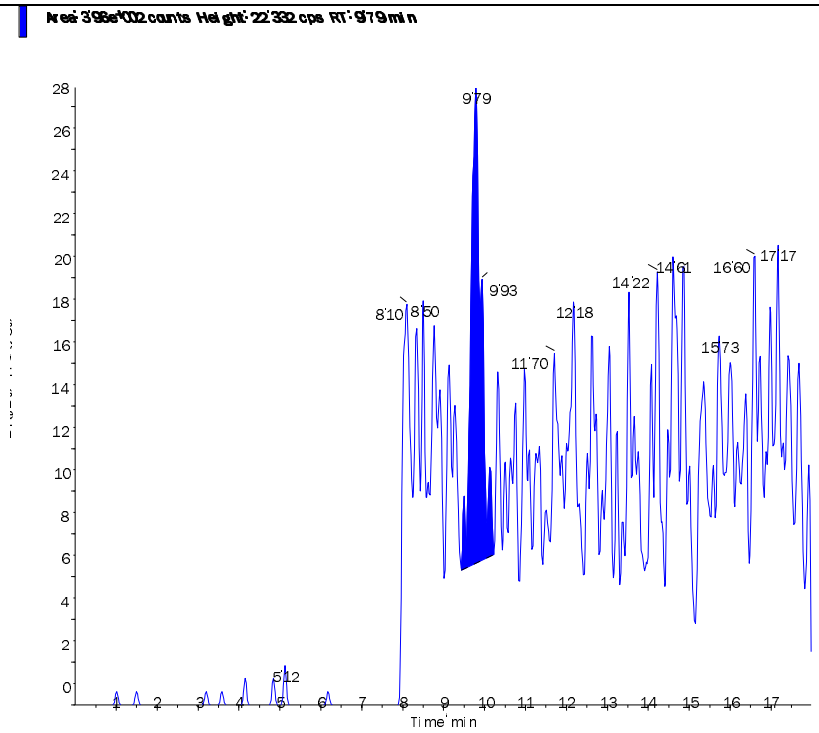

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 2/27/2015 9:50 AM

Data File	LM29086.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/26/2015 2:46:40 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513413-08 CCB	**Injection Vial**	1.00
Data File	LM29086.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2015 2:46:40 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG513413-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.070e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.090e+02	9.80	N/A	< 0
Perchlorate conf	2.450e+02	9.84	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.81(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

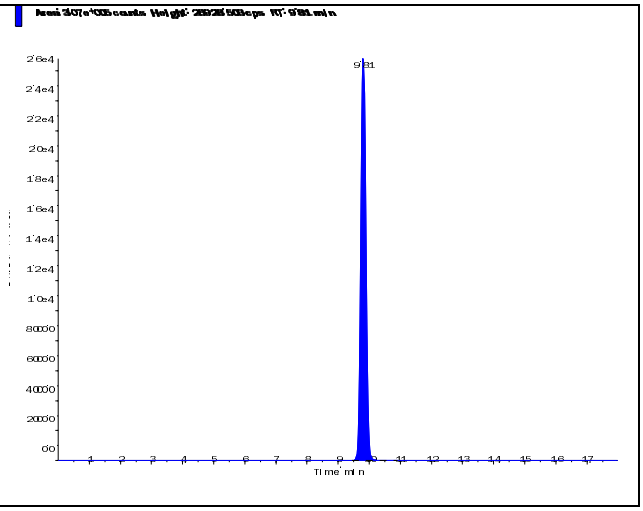

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Created with Analyst Reporter
Printed: 2/27/2015 9:50 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.80 (10.30) min Calculated conc: < 0 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	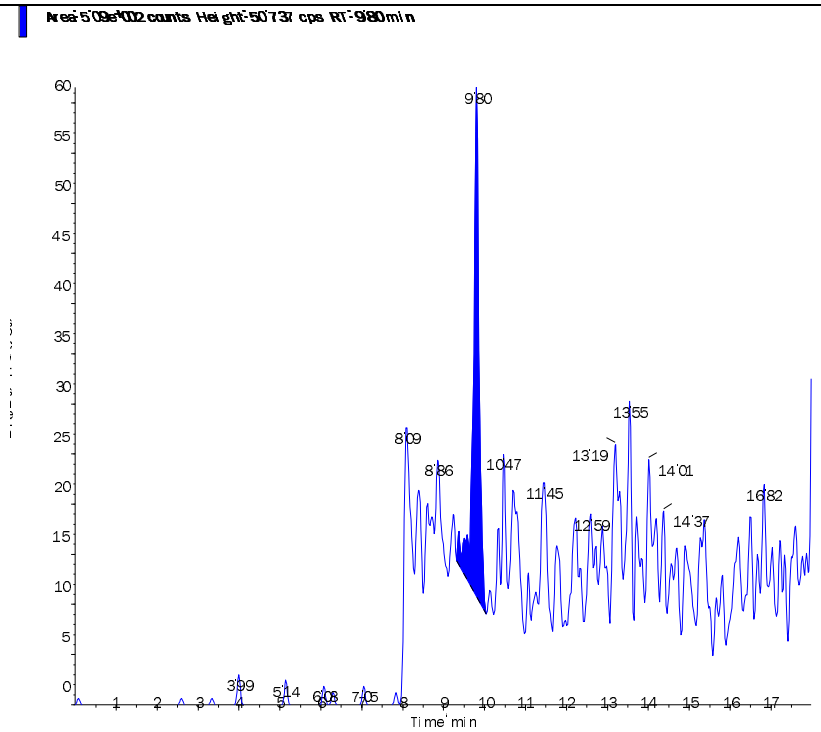
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.84 (10.30) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	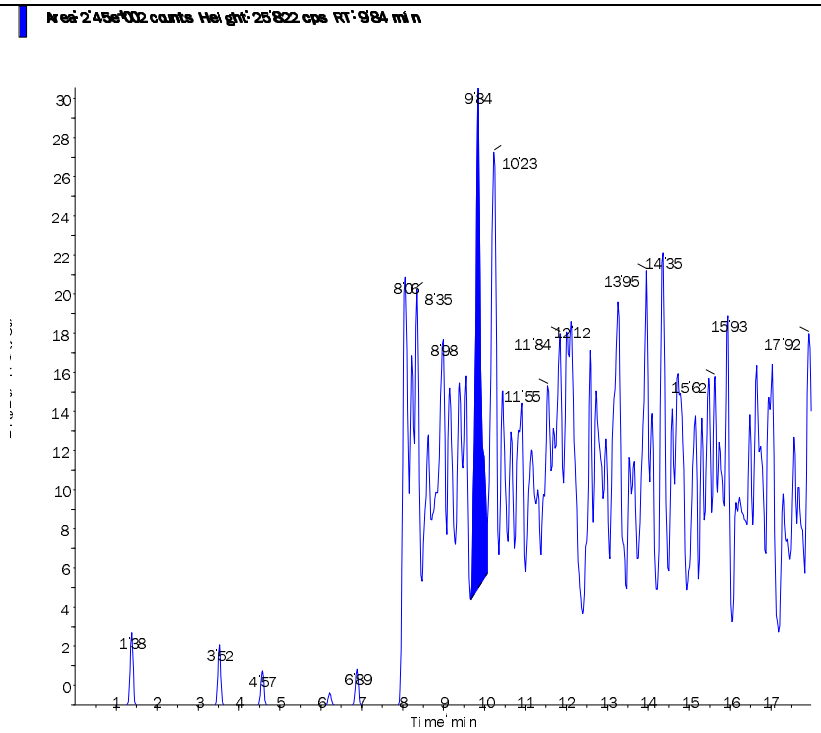

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Created with Analyst Reporter
Printed: 2/27/2015 9:52 AM

Data File	LM29089.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/26/2015 1:12:15 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513413-10 CCB	**Injection Vial**	1.00
Data File	LM29089.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2015 1:12:15 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG513413-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.800e+05	9.86	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.820e+02	9.88	N/A	< 0
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.86(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

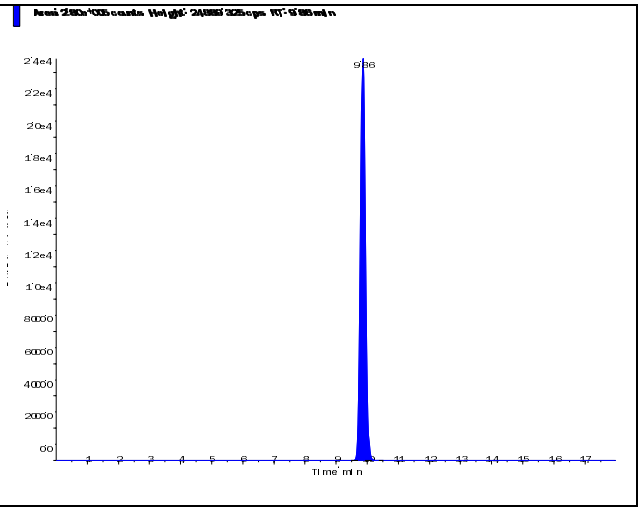

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 2/27/2015 9:52 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.88 (10.30) min Calculated conc: < 0 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	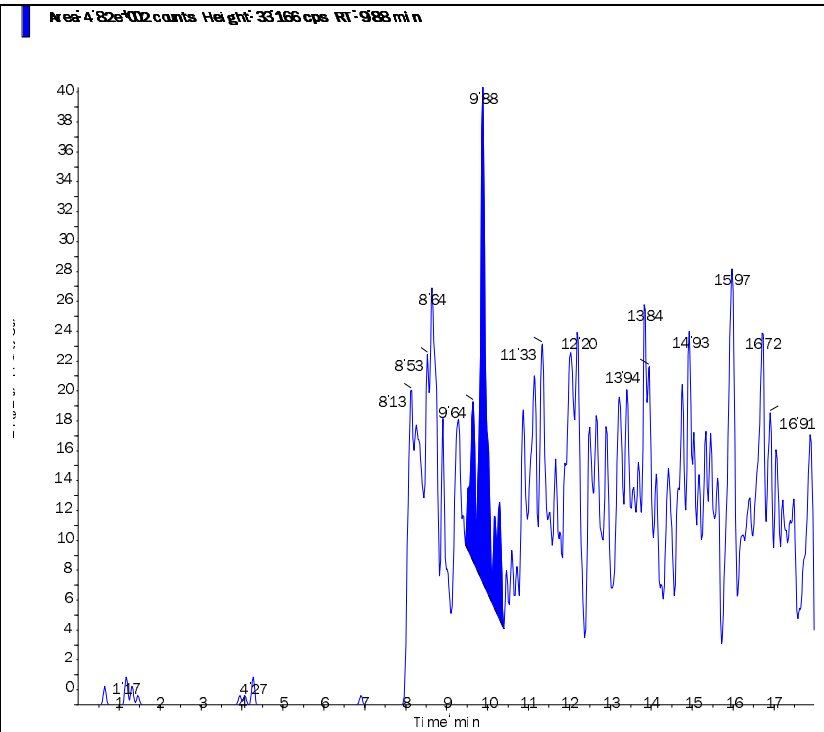
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (10.30) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	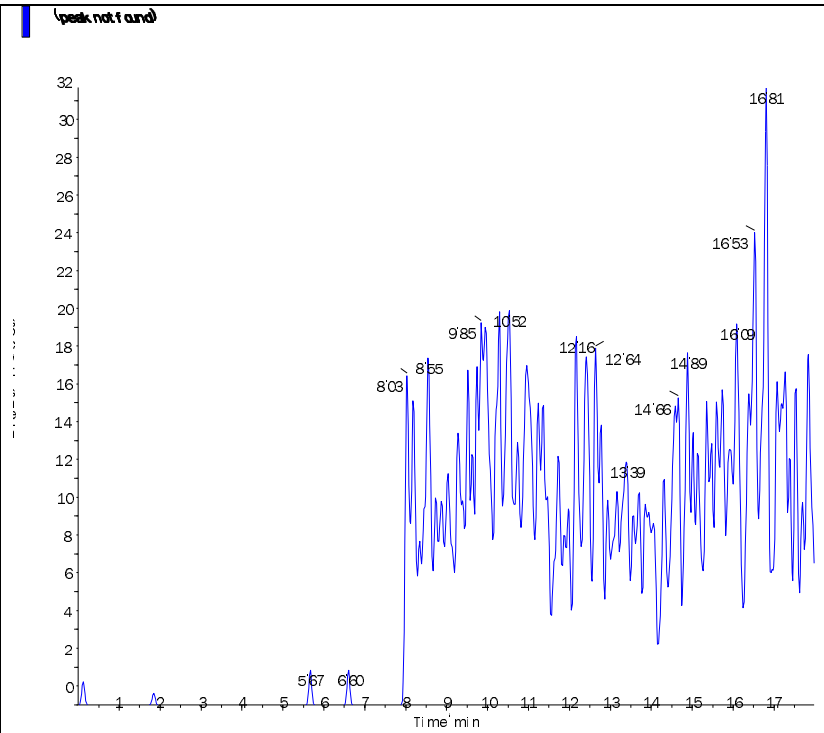

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 2/27/2015 9:55 AM

Data File	LM29100.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/26/2015 4:40:31 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513413-12 CCB	**Injection Vial**	1.00
Data File	LM29100.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2015 4:40:31 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG513413-12	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.040e+05	9.88	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	2.520e+02	9.93	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.88(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

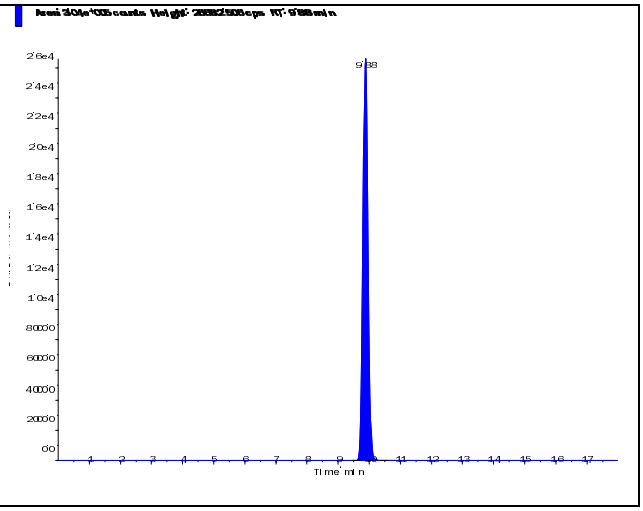

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (10.30) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	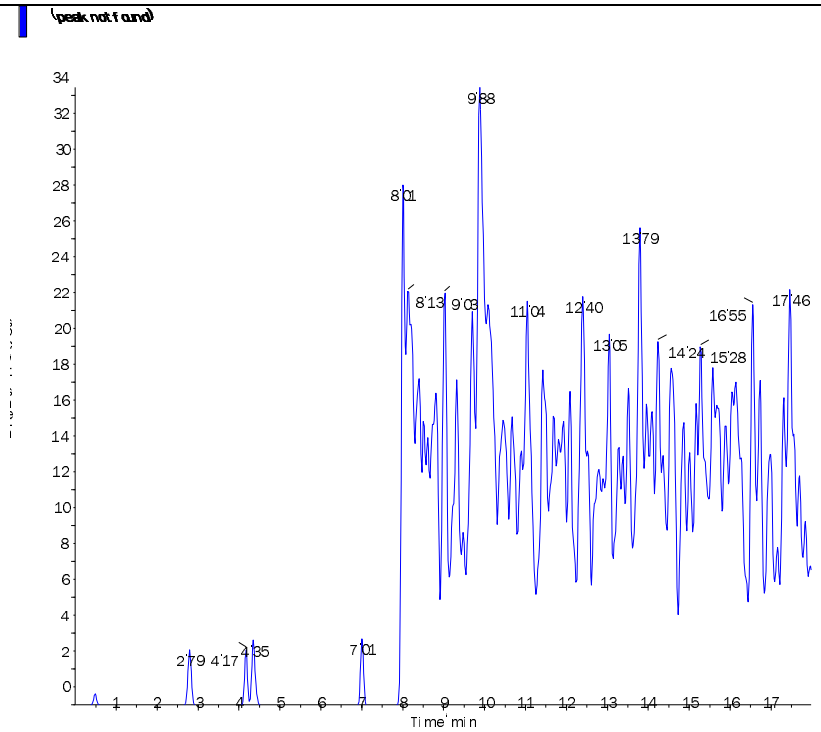
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.93 (10.30) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	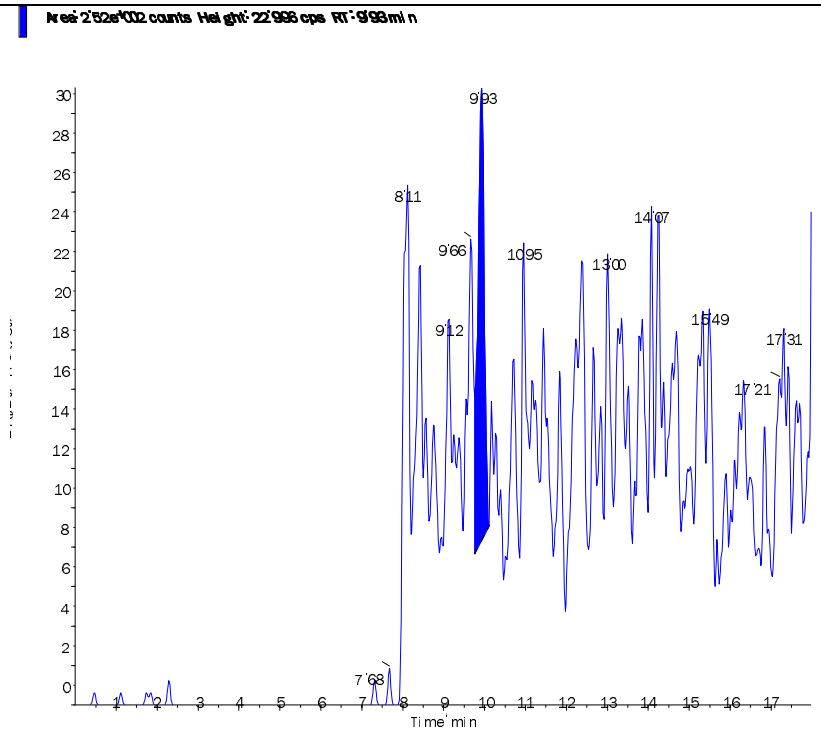

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 2/27/2015 9:40 AM

Data File	LM29056.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/25/2015 5:18:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513403-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM29056.wiff	**Injection Volume**	10.00
Acquisition Date	2/25/2015 5:18:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG513403-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.570e+05	9.15	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.600e+04	9.16	N/A	0.219
Perchlorate conf	4.670e+03	9.15	N/A	0.195

O18LP (Internal Standard)

RT (Exp. RT): 9.15(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

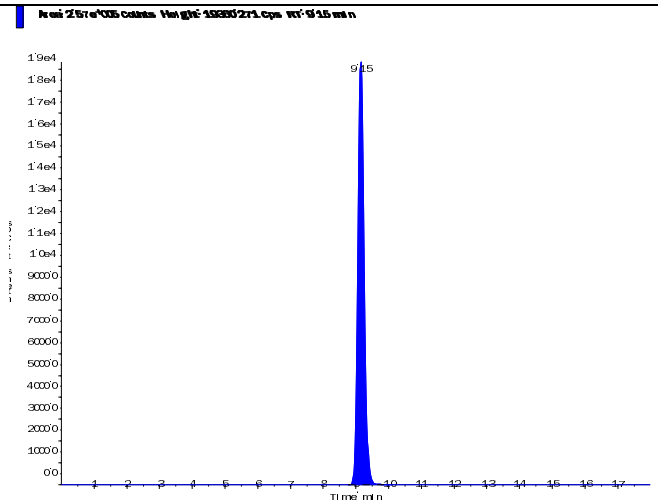

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Printed: 2/27/2015 9:40 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.16 (10.30) min
Calculated conc:	0.219 ng/ml
Area Ratio:	0.062
Sample Type:	(Unknown)

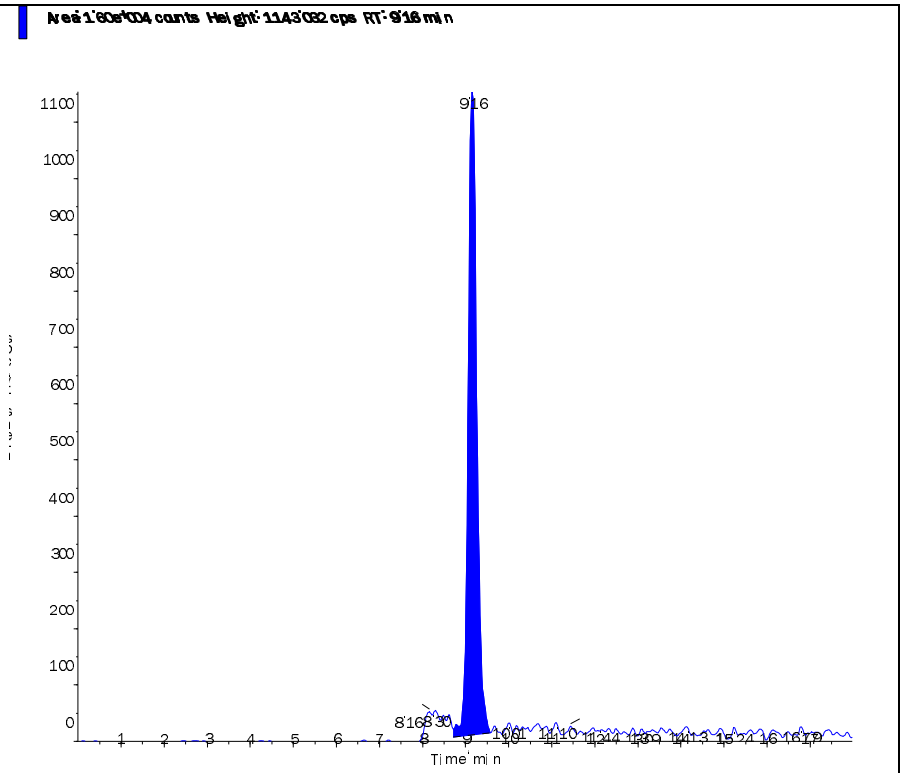

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.15 (10.30) min
Calculated conc:	0.195 ng/ml
Area Ratio:	0.018
Sample Type:	(Unknown)

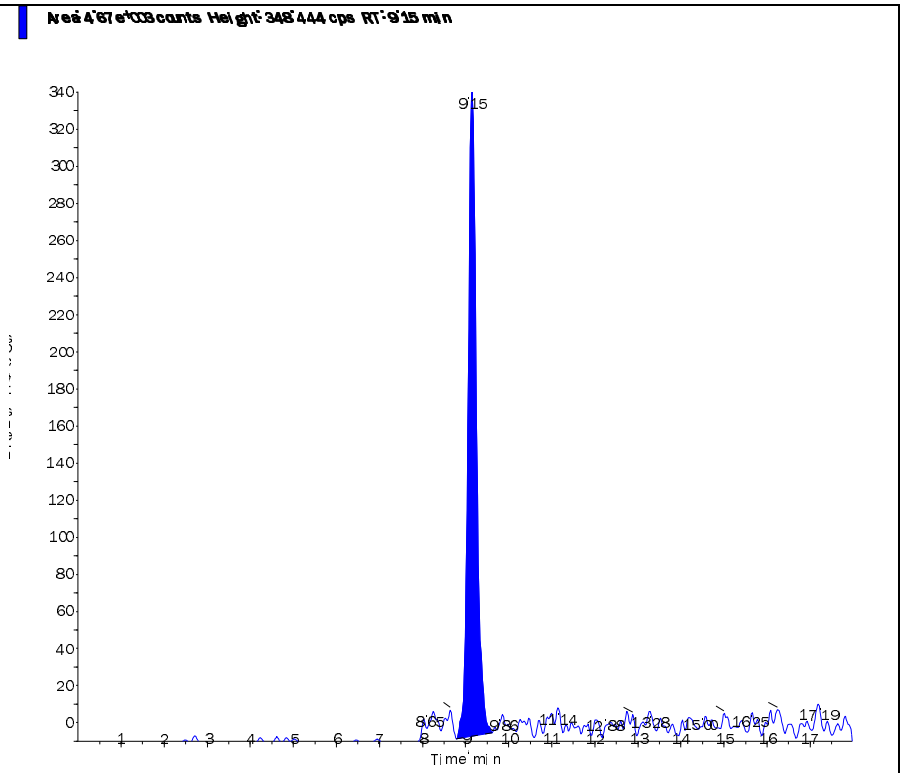

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2.2.1.5 Raw QC Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 2/27/2015 9:40 AM

Data File	LM29057.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/25/2015 5:37:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513403-02 BLANK	**Injection Vial**	5.00
Data File	LM29057.wiff	**Injection Volume**	10.00
Acquisition Date	2/25/2015 5:37:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG513403-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.730e+05	9.71	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.71(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

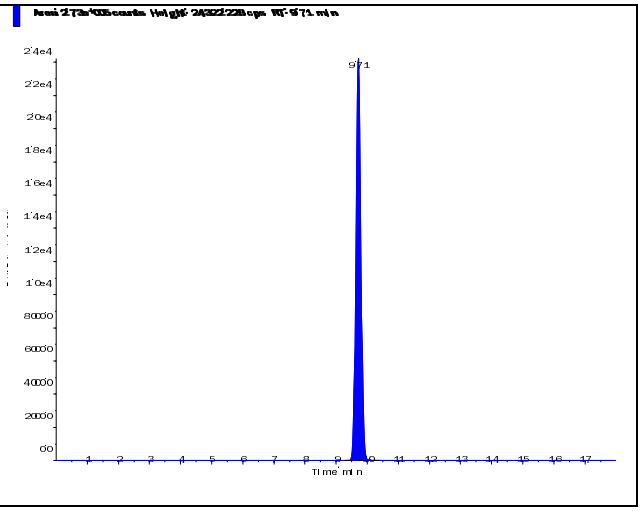

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (10.30) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

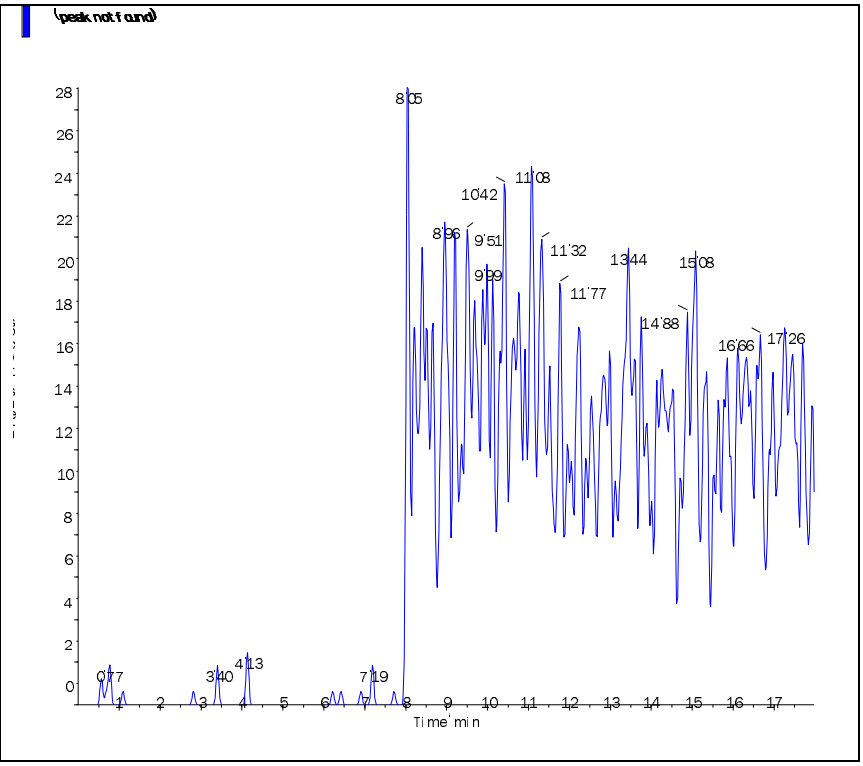

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (10.30) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

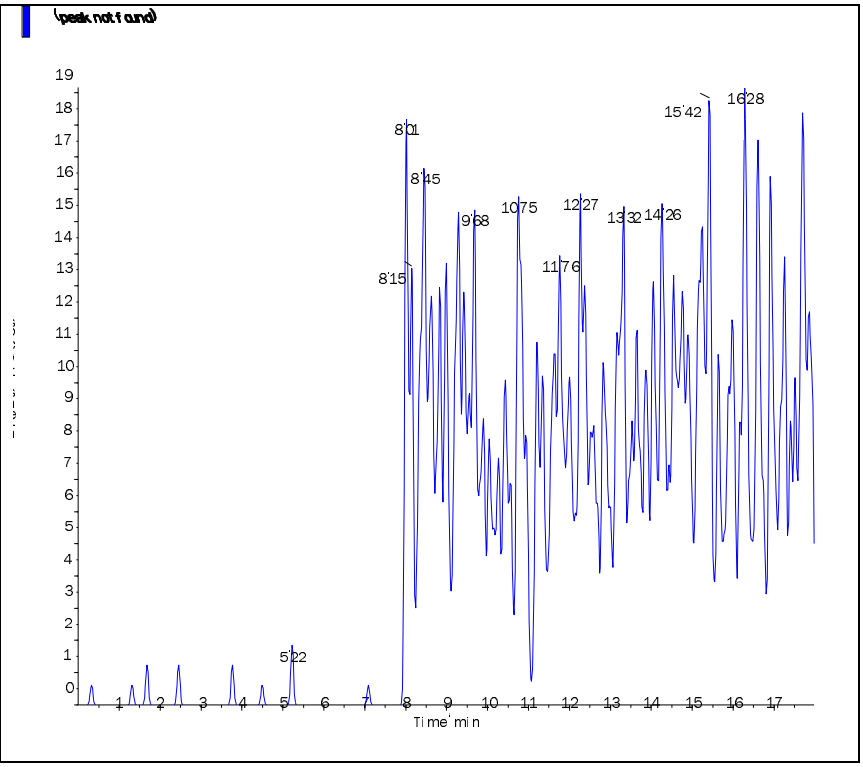

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Created with Analyst Reporter
Printed: 2/27/2015 9:40 AM

Data File	LM29058.wiff	**Result Table**	022515_JWR.rdb
Acquisition Date	2/25/2015 5:56:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG513403-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM29058.wiff	**Injection Volume**	10.00
Acquisition Date	2/25/2015 5:56:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022515_JWR.rdb
Sample ID	WG513403-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD67080	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.780e+05	9.71	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.620e+04	9.73	N/A	0.204
Perchlorate conf	5.040e+03	9.70	N/A	0.195

O18LP (Internal Standard)

RT (Exp. RT): 9.71(10.30) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

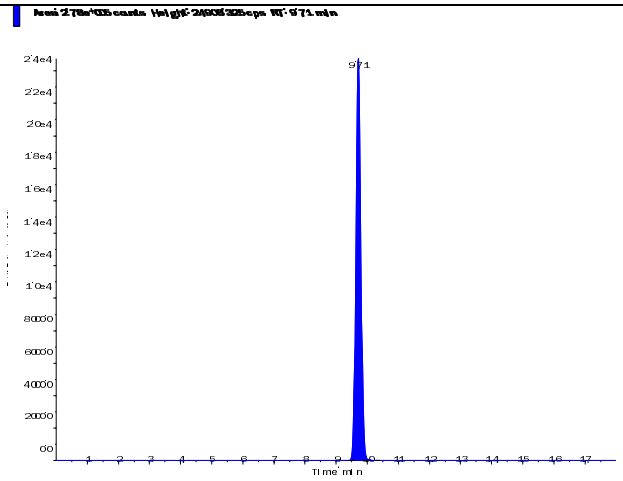

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Created with Analyst Reporter
Printed: 2/27/2015 9:40 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.73 (10.30) min
Calculated conc:	0.204 ng/ml
Area Ratio:	0.058
Sample Type:	(Unknown)

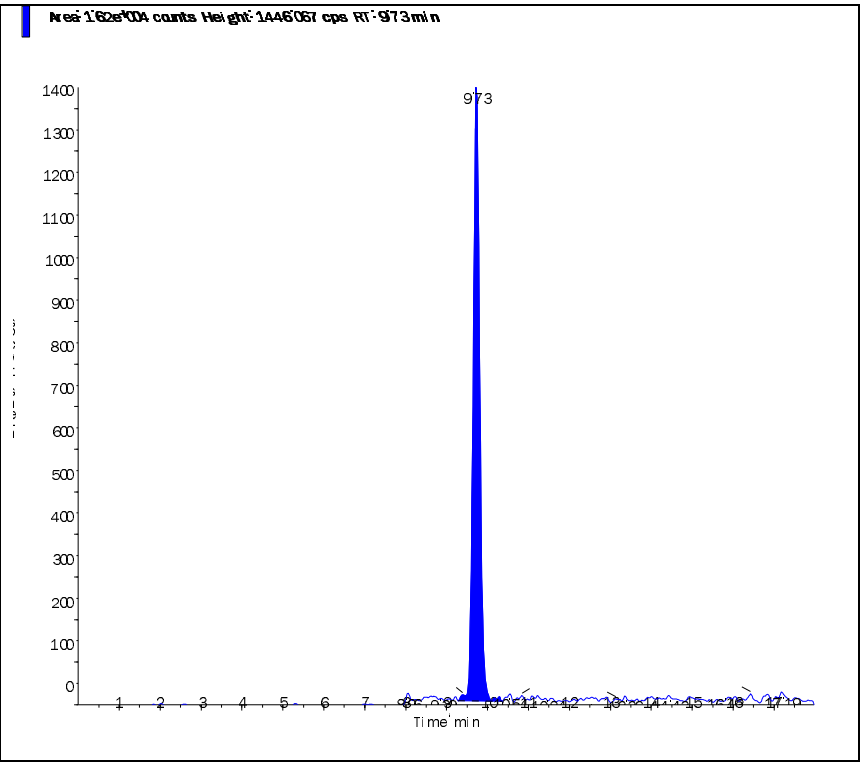

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.70 (10.30) min
Calculated conc:	0.195 ng/ml
Area Ratio:	0.018
Sample Type:	(Unknown)

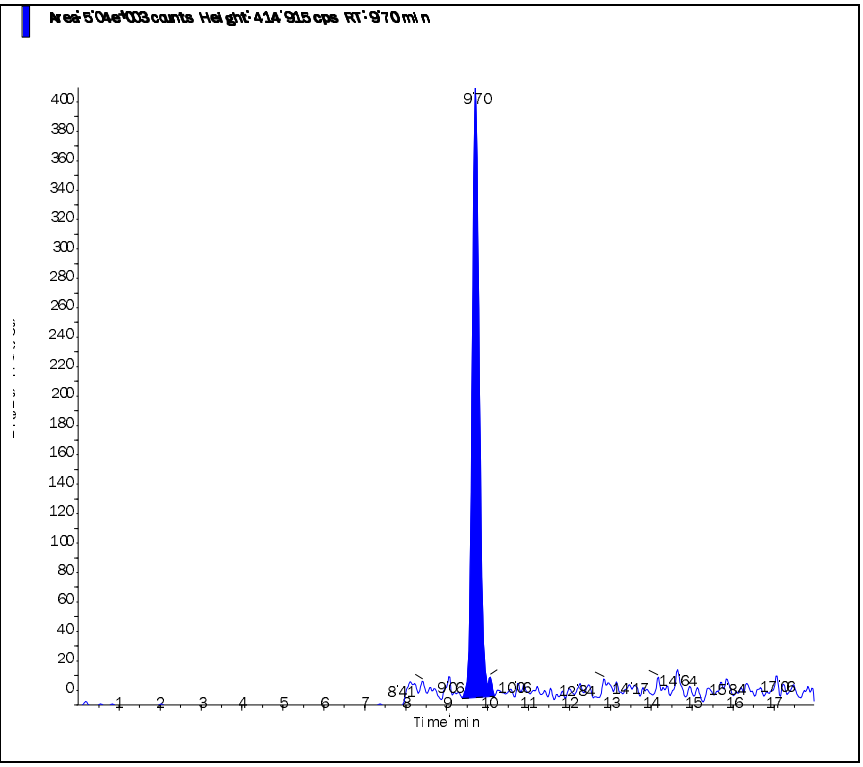

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2.3 Metals Data

2.3.1 Metals I C P Data

2.3.1.1 Summary Data

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO2
Client ID:	50WW13FF-021715	**Prep Method:**	3015	**Prep Date:**	02/23/2015 11:11
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	02/25/2015 08:00
Workgroup #:	WG513301	**Analyst:**	KHR	**Run Date:**	02/25/2015 09:43
Collect Date:	02/17/2015 08:10	**Dilution:**	1	**File ID:**	T2.022515.094333
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.310		0.200	0.100	0.0500

Certificate of Analysis

Sample #:	L15021053-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO2
Client ID:	50WW14FF-021715	**Prep Method:**	3015	**Prep Date:**	02/23/2015 11:11
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	02/25/2015 08:00
Workgroup #:	WG513301	**Analyst:**	KHR	**Run Date:**	02/25/2015 09:53
Collect Date:	02/17/2015 09:20	**Dilution:**	1	**File ID:**	T2.022515.095350
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	8.11		0.200	0.100	0.0500

Certificate of Analysis

Sample #:	L15021053-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO2
Client ID:	50WW11FF-021715	**Prep Method:**	3015	**Prep Date:**	02/23/2015 11:11
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	02/25/2015 08:00
Workgroup #:	WG513301	**Analyst:**	KHR	**Run Date:**	02/25/2015 09:57
Collect Date:	02/17/2015 10:45	**Dilution:**	1	**File ID:**	T2.022515.095721
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.0718	J	0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO2
Client ID:	50WW06FF-021715	**Prep Method:**	3015	**Prep Date:**	02/23/2015 11:11
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	02/25/2015 08:00
Workgroup #:	WG513301	**Analyst:**	KHR	**Run Date:**	02/25/2015 10:00
Collect Date:	02/17/2015 11:55	**Dilution:**	1	**File ID:**	T2.022515.100054
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.100	U	0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-10	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO2
Client ID:	50WW08FF-021715	**Prep Method:**	3015	**Prep Date:**	02/23/2015 11:11
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	02/25/2015 08:00
Workgroup #:	WG513301	**Analyst:**	KHR	**Run Date:**	02/25/2015 10:18
Collect Date:	02/17/2015 14:05	**Dilution:**	1	**File ID:**	T2.022515.101816
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.285		0.200	0.100	0.0500

Certificate of Analysis

Sample #:	L15021053-12	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO2
Client ID:	50WW22FF-021715	**Prep Method:**	3015	**Prep Date:**	02/23/2015 11:11
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	02/25/2015 08:00
Workgroup #:	WG513301	**Analyst:**	KHR	**Run Date:**	02/25/2015 11:01
Collect Date:	02/17/2015 15:15	**Dilution:**	1	**File ID:**	T2.022515.110125
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.0711	J	0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.3.1.2 QC Summary Data

Example 6010 Calculations
Thermo Scientific iCAP 6500

1.0 Initial Calibration (ICAL) Parameters
For a multi-point calibration, the system performs linear regression from data consisting of a blank and four standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG513127
Analyst: KKB
Spike Analyst: ERP
Run Date: 02/23/2015 11:11
Method: 3015
Balance: BAL019
Instrument: MW-1
Instrument Start: 02/23/2015 11:11

SOP: ME407 Revison 16
Spike Solution: STD68767
Spike Witness: VC
HNO3 Lot #: COA18078
HCL Lot #: COA18026
ICP Filters- fisher-Lot# RGT28961
40 & 50 ML. DIGESTION TU COA17948

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG513127-02	BLANK	1	40 mL	50 mL	204.334 g	204.311 g		
2	WG513127-03	LCS	1	40 mL	50 mL	209.931 g	209.907 g	5 mL	
3	WG513127-01	REF	1	40 mL	50 mL	205.888 g	205.873 g		
4	L15021053-02	SAMP	1	40 mL	50 mL	205.888 g	205.873 g		03/03/15
5	L15021053-04	SAMP	1	40 mL	50 mL	203.533 g	203.521 g		03/03/15
6	L15021053-06	SAMP	1	40 mL	50 mL	204.856 g	204.847 g		03/03/15
7	L15021053-08	SAMP	1	40 mL	50 mL	206.867 g	206.85 g		03/03/15
8	L15021053-10	SAMP	1	40 mL	50 mL	204.208 g	204.188 g		03/03/15
9	L15021053-12	SAMP	1	40 mL	50 mL	205.204 g	205.187 g		03/03/15
10	L15021062-01	SAMP	1	40 mL	50 mL	210.233 g	210.215 g		02/27/15
11	L15021076-01	SAMP	1	40 mL	50 mL	203.531 g	203.51 g		03/02/15
12	L15021076-02	SAMP	1	40 mL	50 mL	204.2 g	204.18 g		03/02/15
13	L15021086-01	SAMP	1	40 mL	50 mL	206.994 g	206.981 g		03/02/15
14	L15021087-01	SAMP	1	40 mL	50 mL	205.263 g	205.256 g		03/02/15
15	L15021087-02	SAMP	1	40 mL	50 mL	204.711 g	204.698 g		03/02/15
16	L15021087-03	SAMP	1	40 mL	50 mL	205.009 g	204.994 g		03/02/15
17	L15021087-04	SAMP	1	40 mL	50 mL	205.95 g	205.93 g		03/02/15
18	L15021092-01	SAMP	1	40 mL	50 mL	207.632 g	207.607 g		03/02/15
19	L15021092-02	SAMP	1	40 mL	50 mL	206.816 g	206.803 g		03/02/15
20	L15021092-03	SAMP	1	40 mL	50 mL	205.019 g	205 g		03/02/15
21	L15021092-04	SAMP	1	40 mL	50 mL	206.986 g	206.974 g		03/02/15
22	L15021092-05	SAMP	1	40 mL	50 mL	205.867 g	205.853 g		03/02/15
23	WG513127-04	MS	1	40 mL	50 mL	212.663 g	212.644 g	5 mL	
24	WG513127-05	MSD	1	40 mL	50 mL	209.439 g	209.424 g	5 mL	

L15021062-01	filtered digestate

Analyst: Kim K Buck

Reviewer: Vicki Collins

MW_DIG - Modified 09/30/2009
PDF ID: 4033964
Report generated: 02/23/2015 12:04

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO2 Dataset: 022515T2.1R.TXT
Analyst1: KHR Analyst2: N/A
Method: 6010B SOP: ME600G Rev: 13
Maintenance Log ID:

Calibration Std: STD68913 ICV Std: STD68699 Post Spike: STD68437
ICSA: STD69020 ICSAB: STD68772 Int. Std: RGT28137
CCV: STD68823 LLCCV: STD68913 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 513286, 513301, 513157, 513277, 513289, 513390, 513437, 513387

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T2.022515.074644	WG513398-01	Calibration Point		1		02/25/15 07:46
2	T2.022515.075020	WG513398-02	Calibration Point		1		02/25/15 07:50
3	T2.022515.075356	WG513398-03	Calibration Point		1		02/25/15 07:53
4	T2.022515.075731	WG513398-04	Calibration Point		1		02/25/15 07:57
5	T2.022515.080047	WG513398-05	Calibration Point		1		02/25/15 08:00
6	T2.022515.080405	WG513398-06	Initial Calibration Verification		1		02/25/15 08:04
7	T2.022515.080720	WG513398-07	Initial Calib Blank		1		02/25/15 08:07
8	T2.022515.081058	WG513398-08	Low Level Initial Calibration V		1		02/25/15 08:10
9	T2.022515.081434	WG513398-09	Low Level Initial Calibration V		1		02/25/15 08:14
10	T2.022515.081808	WG513398-10	Interference Check		1		02/25/15 08:18
11	T2.022515.082148	WG513398-11	Interference Check		1		02/25/15 08:21
12	T2.022515.082516	WG513398-12	CCV		1		02/25/15 08:25
13	T2.022515.082832	WG513398-13	CCB		1		02/25/15 08:28
14	T2.022515.084053	WG513260-02	Method/Prep Blank	40/50	1		02/25/15 08:40
15	T2.022515.084429	WG513260-03	Laboratory Control S	40/50	1		02/25/15 08:44
16	T2.022515.084748	WG513158-01	Fluid Blank		1		02/25/15 08:47
17	T2.022515.085124	L15011395-14	D089-544	5/50	1		02/25/15 08:51
18	T2.022515.085456	WG513286-03	Serial Dilution		5	L15011395-14	02/25/15 08:54
19	T2.022515.085828	L15020973-02	S5B1172-01	5/50	1		02/25/15 08:58
20	T2.022515.090203	WG513286-04	Post Digestion Spike		1	L15020973-02	02/25/15 09:02
21	T2.022515.090521	WG513286-05	Serial Dilution		5	L15020973-02	02/25/15 09:05
22	T2.022515.090858	WG513398-14	CCV		1		02/25/15 09:08
23	T2.022515.091213	WG513398-15	CCB		1		02/25/15 09:12
24	T2.022515.091554	WG513260-01	Reference Sample		1	L15021110-05	02/25/15 09:15
25	T2.022515.091929	WG513260-04	Matrix Spike	40/50	1	L15021110-05	02/25/15 09:19
26	T2.022515.092245	WG513260-05	Matrix Spike Duplica	40/50	1	L15021110-05	02/25/15 09:22
27	T2.022515.092608	WG513398-16	CCV		1		02/25/15 09:26
28	T2.022515.092923	WG513398-17	CCB		1		02/25/15 09:29
29	T2.022515.093303	WG513398-18	Low Level Continuing Calibra		1		02/25/15 09:33
30	T2.022515.093639	WG513127-02	Method/Prep Blank	40/50	1		02/25/15 09:36
31	T2.022515.094016	WG513127-03	Laboratory Control S	40/50	1		02/25/15 09:40
32	T2.022515.094333	WG513127-01	Reference Sample		1	L15021053-02	02/25/15 09:43
33	T2.022515.094712	WG513127-04	Matrix Spike	40/50	1	L15021053-02	02/25/15 09:47
34	T2.022515.095031	WG513127-05	Matrix Spike Duplica	40/50	1	L15021053-02	02/25/15 09:50

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO2 Dataset: 022515T2.1R.TXT
Analyst1: KHR Analyst2: N/A
Method: 6010B SOP: ME600G Rev: 13
Maintenance Log ID:

Calibration Std: STD68913 ICV Std: STD68699 Post Spike: STD68437
ICSA: STD69020 ICSAB: STD68772 Int. Std: RGT28137
CCV: STD68823 LLCCV: STD68913 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 513286, 513301, 513157, 513277, 513289, 513390, 513437, 513387

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T2.022515.095350	L15021053-04	50WW14FF-021715	40/50	1		02/25/15 09:53
36	T2.022515.095721	L15021053-06	50WW11FF-021715	40/50	1		02/25/15 09:57
37	T2.022515.100054	L15021053-08	50WW06FF-021715	40/50	1		02/25/15 10:00
38	T2.022515.100427	WG513301-01	Post Digestion Spike		1	L15021053-08	02/25/15 10:04
39	T2.022515.100744	WG513301-02	Serial Dilution		5	L15021053-08	02/25/15 10:07
40	T2.022515.101121	WG513398-19	CCV		1		02/25/15 10:11
41	T2.022515.101436	WG513398-20	CCB		1		02/25/15 10:14
42	T2.022515.101816	L15021053-10	50WW08FF-021715	40/50	1		02/25/15 10:18
43	T2.022515.102154	L15021053-12	50WW22FF-021715		1		02/25/15 10:21
44	T2.022515.102540	L15021062-01	RITCHIE \#2	40/50	200		02/25/15 10:25
45	T2.022515.102923	L15021076-01	2203-110A RPW1 POST	40/50	1		02/25/15 10:29
46	T2.022515.103259	L15021076-02	2203-110A RPW1 PRE	40/50	1		02/25/15 10:32
47	T2.022515.103635	L15021086-01	3-7-6 P1	40/50	1		02/25/15 10:36
48	T2.022515.104008	L15021087-01	6-10-19 W1	40/50	1		02/25/15 10:40
49	T2.022515.104341	L15021087-02	45-11-4.02 S1	40/50	1		02/25/15 10:43
50	T2.022515.104716	L15021087-03	45-11-4.02 W1	40/50	1		02/25/15 10:47
51	T2.022515.105049	L15021087-04	45-11-14.02 W1	40/50	1		02/25/15 10:50
52	T2.022515.105428	WG513398-21	CCV		1		02/25/15 10:54
53	T2.022515.105743	WG513398-22	CCB		1		02/25/15 10:57
54	T2.022515.110125	L15021053-12	50WW22FF-021715	40/50	1		02/25/15 11:01
55	T2.022515.110509	L15021053-12	50WW22FF-021715		2		02/25/15 11:05
56	T2.022515.110843	L15021092-01	2212-156-A W1	40/50	1		02/25/15 11:08
57	T2.022515.111217	L15021092-02	2212-156-A S1/S2	40/50	1		02/25/15 11:12
58	T2.022515.111551	L15021092-03	2212-156-A S1	40/50	1		02/25/15 11:15
59	T2.022515.111925	L15021092-04	2212-156-A S3	40/50	1		02/25/15 11:19
60	T2.022515.112302	L15021092-05	2212-156-A S4	40/50	1		02/25/15 11:23
61	T2.022515.112640	WG513398-23	CCV		1		02/25/15 11:26
62	T2.022515.112955	WG513398-24	CCB		1		02/25/15 11:29
63	T2.022515.113335	WG513398-25	Low Level Continuing Calibra		1		02/25/15 11:33
64	T2.022515.113711	WG513398-26	Low Level Continuing Calibra		1		02/25/15 11:37
65	T2.022515.114048	WG513107-03	Method/Prep Blank	40/50	1		02/25/15 11:40
66	T2.022515.114425	WG513107-04	Laboratory Control S	40/50	1		02/25/15 11:44
67	T2.022515.120725	L15021044-02	PC-1RW	40/50	1		02/25/15 12:07
68	T2.022515.121102	L15021044-04	PC-21RW	40/50	1		02/25/15 12:11

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Instrument Run Log

Instrument: ICP-THERMO2 Dataset: 022515T2.1R.TXT
Analyst1: KHR Analyst2: N/A
Method: 6010B SOP: ME600G Rev: 13
Maintenance Log ID:

Calibration Std: STD68913 ICV Std: STD68699 Post Spike: STD68437
ICSA: STD69020 ICSAB: STD68772 Int. Std: RGT28137
CCV: STD68823 LLCCV: STD68913 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 513286, 513301, 513157, 513277, 513289, 513390, 513437, 513387

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T2.022515.121440	L15021044-06	PC-24RW	40/50	1		02/25/15 12:14
70	T2.022515.121812	L15021045-08	FC-4	40/50	1		02/25/15 12:18
71	T2.022515.122144	L15021045-10	FC-5	40/50	1		02/25/15 12:21
72	T2.022515.122531	L15021045-12	FC-40	40/50	1		02/25/15 12:25
73	T2.022515.122904	WG513157-01	Post Digestion Spike		1	L15021045-12	02/25/15 12:29
74	T2.022515.123221	WG513157-02	Serial Dilution		5	L15021045-12	02/25/15 12:32
75	T2.022515.123603	WG513398-27	CCV		1		02/25/15 12:36
76	T2.022515.123918	WG513398-28	CCB		1		02/25/15 12:39
77	T2.022515.124301	WG513107-01	Reference Sample		1	L15021044-08	02/25/15 12:43
78	T2.022515.124634	WG513107-05	Duplicate	40/50	1	L15021044-08	02/25/15 12:46
79	T2.022515.125006	WG513107-06	Matrix Spike	40/50	1	L15021044-08	02/25/15 12:50
80	T2.022515.125337	L15021045-15	FC-87	40/50	1		02/25/15 12:53
81	T2.022515.125710	L15021045-17	FC-147	40/50	1		02/25/15 12:57
82	T2.022515.130043	WG513107-02	Reference Sample		1	L15021045-19	02/25/15 13:00
83	T2.022515.130416	WG513107-07	Matrix Spike	40/50	1	L15021045-19	02/25/15 13:04
84	T2.022515.130753	L15021045-24	FC-61	40/50	1		02/25/15 13:07
85	T2.022515.131126	L15021045-26	FC-17	40/50	1		02/25/15 13:11
86	T2.022515.131500	L15021052-05	FC-34	40/50	1		02/25/15 13:15
87	T2.022515.131837	WG513398-29	CCV		1		02/25/15 13:18
88	T2.022515.132152	WG513398-30	CCB		1		02/25/15 13:21
89	T2.022515.132533	L15021052-08	FC-36	40/50	1		02/25/15 13:25
90	T2.022515.132905	L15021052-11	FC-86	40/50	1		02/25/15 13:29
91	T2.022515.133238	L15021052-16	FC-139	40/50	1		02/25/15 13:32
92	T2.022515.133610	L15021052-18	FC-50	40/50	1		02/25/15 13:36
93	T2.022515.133942	L15021052-22	FC-56	40/50	1		02/25/15 13:39
94	T2.022515.134313	L15021052-24	FC-100	40/50	1		02/25/15 13:43
95	T2.022515.134647	WG513398-31	CCV		1		02/25/15 13:46
96	T2.022515.135002	WG513398-32	CCB		1		02/25/15 13:50
97	T2.022515.135340	WG513110-03	Method/Prep Blank	40/50	1		02/25/15 13:53
98	T2.022515.135717	WG513110-04	Laboratory Control S	40/50	1		02/25/15 13:57
99	T2.022515.140035	WG513110-01	Reference Sample		1	L15021044-01	02/25/15 14:00
100	T2.022515.140407	WG513110-05	Duplicate	40/50	1	L15021044-01	02/25/15 14:04
101	T2.022515.140740	WG513110-06	Matrix Spike	40/50	1	L15021044-01	02/25/15 14:07
102	T2.022515.141055	L15021044-03	PC-21RW	40/50	1		02/25/15 14:10

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO2 Dataset: 022515T2.1R.TXT
Analyst1: KHR Analyst2: N/A
Method: 6010B SOP: ME600G Rev: 13
Maintenance Log ID:

Calibration Std: STD68913 ICV Std: STD68699 Post Spike: STD68437
ICSA: STD69020 ICSAB: STD68772 Int. Std: RGT28137
CCV: STD68823 LLCCV: STD68913 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 513286, 513301, 513157, 513277, 513289, 513390, 513437, 513387

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T2.022515.141427	L15021044-05	PC-24RW	40/50	1		02/25/15 14:14
104	T2.022515.141759	WG513277-01	Post Digestion Spike		1	L15021044-05	02/25/15 14:17
105	T2.022515.142114	WG513277-02	Serial Dilution		5	L15021044-05	02/25/15 14:21
106	T2.022515.142450	WG513398-33	CCV		1		02/25/15 14:24
107	T2.022515.142806	WG513398-34	CCB		1		02/25/15 14:28
108	T2.022515.143144	L15021044-07	PC-27RW	40/50	1		02/25/15 14:31
109	T2.022515.143516	L15021052-04	FC-34	40/50	1		02/25/15 14:35
110	T2.022515.143848	L15021052-07	FC-36	40/50	1		02/25/15 14:38
111	T2.022515.144219	L15021052-10	FC-86	40/50	1		02/25/15 14:42
112	T2.022515.144551	L15021052-15	FC-139	40/50	1		02/25/15 14:45
113	T2.022515.144924	L15021052-17	FC-50	40/50	1		02/25/15 14:49
114	T2.022515.145256	L15021052-21	FC-56	40/50	1		02/25/15 14:52
115	T2.022515.145629	WG513110-02	Reference Sample		1	L15021052-23	02/25/15 14:56
116	T2.022515.150004	WG513110-07	Matrix Spike	40/50	1	L15021052-23	02/25/15 15:00
117	T2.022515.150328	L15021052-25	FC-101	40/50	1		02/25/15 15:03
118	T2.022515.150705	WG513398-35	CCV		1		02/25/15 15:07
119	T2.022515.151020	WG513398-36	CCB		1		02/25/15 15:10
120	T2.022515.151400	L15021052-27	FC-557	40/50	1		02/25/15 15:14
121	T2.022515.151735	L15021052-29	FC-11	40/50	1		02/25/15 15:17
122	T2.022515.152108	L15021057-01	OUTFALL 101	40/50	1		02/25/15 15:21
123	T2.022515.152445	L15021068-01	JMA01	40/50	1		02/25/15 15:24
124	T2.022515.152822	L15021070-01	M7A01	40/50	1		02/25/15 15:28
125	T2.022515.153155	L15021070-02	M7A03	40/50	1		02/25/15 15:31
126	T2.022515.153528	L15021081-01	HOA01	40/50	1		02/25/15 15:35
127	T2.022515.153903	WG513398-37	CCV		1		02/25/15 15:39
128	T2.022515.154219	WG513398-38	CCB		1		02/25/15 15:42
129	T2.022515.154559	WG513100-03	Method/Prep Blank	40/50	1		02/25/15 15:45
130	T2.022515.154935	WG513100-04	Laboratory Control S	40/50	1		02/25/15 15:49
131	T2.022515.155309	WG513100-01	Reference Sample		1	L15021035-17	02/25/15 15:53
132	T2.022515.155642	WG513100-05	Duplicate	40/50	1	L15021035-17	02/25/15 15:56
133	T2.022515.160017	WG513100-06	Matrix Spike	40/50	1	L15021035-17	02/25/15 16:00
134	T2.022515.160348	L15021045-18	FC-148	40/50	1		02/25/15 16:03
135	T2.022515.160722	L15021045-23	FC-61	40/50	1		02/25/15 16:07
136	T2.022515.161054	L15021045-25	FC-17	40/50	1		02/25/15 16:10

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO2 Dataset: 022515T2.1R.TXT
Analyst1: KHR Analyst2: N/A
Method: 6010B SOP: ME600G Rev: 13
Maintenance Log ID:

Calibration Std: STD68913 ICV Std: STD68699 Post Spike: STD68437
ICSA: STD69020 ICSAB: STD68772 Int. Std: RGT28137
CCV: STD68823 LLCCV: STD68913 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 513286, 513301, 513157, 513277, 513289, 513390, 513437, 513387

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	T2.022515.161428	WG513289-03	Post Digestion Spike		1	L15021045-25	02/25/15 16:14
138	T2.022515.161745	WG513289-04	Serial Dilution		5	L15021045-25	02/25/15 16:17
139	T2.022515.162125	WG513398-39	CCV		1		02/25/15 16:21
140	T2.022515.162439	WG513398-40	CCB		1		02/25/15 16:24
141	T2.022515.162822	L15021065-01	L6A02	40/50	1		02/25/15 16:28
142	T2.022515.163157	L15021065-03	L6A04	40/50	1		02/25/15 16:31
143	T2.022515.163537	L15021066-04	L9A03	40/50	1		02/25/15 16:35
144	T2.022515.163917	WG513398-41	CCV		1		02/25/15 16:39
145	T2.022515.164232	WG513398-42	CCB		1		02/25/15 16:42
146	T2.022515.164613	WG513358-03	Method/Prep Blank	40/50	1		02/25/15 16:46
147	T2.022515.164950	WG513358-04	Laboratory Control S	40/50	1		02/25/15 16:49
148	T2.022515.165306	WG513358-08	Filter Blank		1		02/25/15 16:53
149	T2.022515.165643	WG513358-01	Reference Sample		1	L15021142-02	02/25/15 16:56
150	T2.022515.170017	WG513358-05	Duplicate	40/50	1	L15021142-02	02/25/15 17:00
151	T2.022515.170351	WG513358-06	Matrix Spike	40/50	1	L15021142-02	02/25/15 17:03
152	T2.022515.170707	L15021142-03	EFK03		1		02/25/15 17:07
153	T2.022515.171054	L15021142-07	EFK07	40/50	1		02/25/15 17:10
154	T2.022515.171433	WG513390-01	Post Digestion Spike		1	L15021142-07	02/25/15 17:14
155	T2.022515.171754	WG513390-02	Serial Dilution		5	L15021142-07	02/25/15 17:17
156	T2.022515.172135	WG513398-43	CCV		1		02/25/15 17:21
157	T2.022515.172450	WG513398-44	CCB		1		02/25/15 17:24
158	T2.022515.172833	L15021142-08	EFK08	40/50	1		02/25/15 17:28
159	T2.022515.173212	L15021142-09	EFK09	40/50	1		02/25/15 17:32
160	T2.022515.173547	L15021142-11	EFK11		1		02/25/15 17:35
161	T2.022515.173927	L15021147-01	15B1090-01		5		02/25/15 17:39
162	T2.022515.174304	L15021153-01	15B0956-01	40/50	1		02/25/15 17:43
163	T2.022515.174635	L15021153-03	15B0956-03	40/50	1		02/25/15 17:46
164	T2.022515.175004	L15021176-04	OUTFALL 003/COMP	40/50	1		02/25/15 17:50
165	T2.022515.175339	WG513358-02	Reference Sample		1	L15021177-01	02/25/15 17:53
166	T2.022515.175711	WG513358-07	Matrix Spike	40/50	1	L15021177-01	02/25/15 17:57
167	T2.022515.180032	WG513398-45	CCV		1		02/25/15 18:00
168	T2.022515.180347	WG513398-46	CCB		1		02/25/15 18:03
169	T2.022515.180726	WG513370-02	Method/Prep Blank	40/50	1		02/25/15 18:07
170	T2.022515.181105	WG513370-03	Laboratory Control S	40/50	1		02/25/15 18:11

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO2 Dataset: 022515T2.1R.TXT
Analyst1: KHR Analyst2: N/A
Method: 6010B SOP: ME600G Rev: 13
Maintenance Log ID:

Calibration Std: STD68913 ICV Std: STD68699 Post Spike: STD68437
ICSA: STD69020 ICSAB: STD68772 Int. Std: RGT28137
CCV: STD68823 LLCCV: STD68913 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 513286, 513301, 513157, 513277, 513289, 513390, 513437, 513387

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
171	T2.022515.181423	WG513248-01	Fluid Blank		1		02/25/15 18:14
172	T2.022515.181820	L15021089-01	5007-B03-WQ-W0188	40/50	1		02/25/15 18:18
173	T2.022515.182157	L15021089-02	5007-B03-WQ-W0189	40/50	1		02/25/15 18:21
174	T2.022515.182542	L15021089-03	5007-B19-WQ-W0094	40/50	1		02/25/15 18:25
175	T2.022515.182919	L15021089-04	5099-R01-WQ-W0015	40/50	1		02/25/15 18:29
176	T2.022515.183253	L15021089-05	5416-B01-WQ-W0004	40/50	1		02/25/15 18:32
177	T2.022515.183630	WG513437-01	Post Digestion Spike		1	L15021089-05	02/25/15 18:36
178	T2.022515.183946	WG513437-02	Serial Dilution		5	L15021089-05	02/25/15 18:39
179	T2.022515.184328	WG513398-47	CCV		1		02/25/15 18:43
180	T2.022515.184644	WG513398-48	CCB		1		02/25/15 18:46
181	T2.022515.185032	L15021089-06	5416-L01-BC-W0038	40/50	1		02/25/15 18:50
182	T2.022515.185408	L15021089-07	5419-L01-WQ-W0023	40/50	1		02/25/15 18:54
183	T2.022515.185745	L15021089-08	5419-R01-WQ-W0035	40/50	1		02/25/15 18:57
184	T2.022515.190122	L15021126-01	11971-D01-WQ-W0003	40/50	1		02/25/15 19:01
185	T2.022515.190459	L15021126-02	11971-G15-WQ-W0053	40/50	1		02/25/15 19:04
186	T2.022515.190835	L15021126-03	12003-G24-WQ-W0030	40/50	1		02/25/15 19:08
187	T2.022515.191209	L15021126-04	12003-G52-WQ-W0062	40/50	1		02/25/15 19:12
188	T2.022515.191546	L15021126-05	13421-G15-WQ-W0111	40/50	1		02/25/15 19:15
189	T2.022515.191922	L15021126-06	15259-C05-WQ-W0010	40/50	1		02/25/15 19:19
190	T2.022515.192306	WG513370-01	Reference Sample		1	L15021126-07	02/25/15 19:23
191	T2.022515.192644	WG513398-49	CCV		1		02/25/15 19:26
192	T2.022515.193009	WG513398-50	CCB		1		02/25/15 19:30
193	T2.022515.193347	WG513370-04	Matrix Spike	40/50	1	L15021126-07	02/25/15 19:33
194	T2.022515.193703	WG513370-05	Matrix Spike Duplica	40/50	1	L15021126-07	02/25/15 19:37
195	T2.022515.194019	L15021126-08	15849-D01-WQ-W0007	40/50	1		02/25/15 19:40
196	T2.022515.194354	L15021138-01	RAV 5 BAGS		1		02/25/15 19:43
197	T2.022515.194730	L15021139-01	ALAN 10 BAGS		1		02/25/15 19:47
198	T2.022515.195106	WG513398-51	CCV		1		02/25/15 19:51
199	T2.022515.195422	WG513398-52	CCB		1		02/25/15 19:54
200	T2.022515.195802	WG513355-04	Method/Prep Blank	40/50	1		02/25/15 19:58
201	T2.022515.200144	WG513355-05	Laboratory Control S	40/50	1		02/25/15 20:01
202	T2.022515.200517	L15021052-26	FC-101		1	WG513355-01	02/25/15 20:05
203	T2.022515.200849	WG513355-06	Duplicate	40/50	1	L15021052-26	02/25/15 20:08
204	T2.022515.201225	L15021052-28	FC-557		1	WG513355-02	02/25/15 20:12

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO2 Dataset: 022515T2.1R.TXT
Analyst1: KHR Analyst2: N/A
Method: 6010B SOP: ME600G Rev: 13
Maintenance Log ID:

Calibration Std: STD68913 ICV Std: STD68699 Post Spike: STD68437
ICSA: STD69020 ICSAB: STD68772 Int. Std: RGT28137
CCV: STD68823 LLCCV: STD68913 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 513286, 513301, 513157, 513277, 513289, 513390, 513437, 513387

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
205	T2.022515.201558	WG513355-07	Matrix Spike	40/50	1	L15021052-28	02/25/15 20:15
206	T2.022515.201932	L15021052-30	FC-11	40/50	1		02/25/15 20:19
207	T2.022515.202312	L15021107-04	TV-014	40/50	1		02/25/15 20:23
208	T2.022515.202645	WG513387-01	Post Digestion Spike		1	L15021107-04	02/25/15 20:26
209	T2.022515.203001	WG513387-02	Serial Dilution		5	L15021107-04	02/25/15 20:30
210	T2.022515.203340	WG513398-53	CCV		1		02/25/15 20:33
211	T2.022515.203655	WG513398-54	CCB		1		02/25/15 20:36
212	T2.022515.204035	L15021107-08	TV-018	40/50	1		02/25/15 20:40
213	T2.022515.204409	L15021107-15	4027	40/50	1		02/25/15 20:44
214	T2.022515.204743	L15021107-17	4025	40/50	1		02/25/15 20:47
215	T2.022515.205116	L15021107-19	SCI-001	40/50	1		02/25/15 20:51
216	T2.022515.205450	L15021107-21	4037	40/50	1		02/25/15 20:54
217	T2.022515.205822	L15021107-23	BASDSF1	40/50	1		02/25/15 20:58
218	T2.022515.210155	L15021107-25	BASUSF1		1	WG513355-03	02/25/15 21:01
219	T2.022515.210528	WG513355-08	Matrix Spike	40/50	1	L15021107-25	02/25/15 21:05
220	T2.022515.210900	L15021111-03	4150	40/50	1		02/25/15 21:09
221	T2.022515.211234	L15021111-06	4152	40/50	1		02/25/15 21:12
222	T2.022515.211611	WG513398-55	CCV		1		02/25/15 21:16
223	T2.022515.211926	WG513398-56	CCB		1		02/25/15 21:19
224	T2.022515.212306	L15021111-09	4040	40/50	1		02/25/15 21:23
225	T2.022515.212639	L15021111-11	4151	40/50	1		02/25/15 21:26
226	T2.022515.213012	L15021113-06	4118	40/50	1		02/25/15 21:30
227	T2.022515.213344	L15021115-02	DSCB1	40/50	1		02/25/15 21:33
228	T2.022515.213718	L15021115-04	USCB1	40/50	1		02/25/15 21:37
229	T2.022515.214054	L15021115-06	DSB1	40/50	1		02/25/15 21:40
230	T2.022515.214434	WG513398-57	CCV		1		02/25/15 21:44
231	T2.022515.214750	WG513398-58	CCB		1		02/25/15 21:47

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Microbac Laboratories Inc.

Data Checklist

Date: 25-FEB-2015
Analyst: KHR
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO2
Curve Workgroup: 513398
Runlog ID: 66522
Analytical Workgroups: 513286, 513301, 513157, 513277, 513289, 513390, 513437, 513387

Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	
Level 4	1395, 1053, 1089, 1126
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	KHR
Secondary Reviewer	BKT
Comments	

Primary Reviewer: 26-FEB-2015

Secondary Reviewer: 26-FEB-2015

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-26-2015 11:07:11

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010C

AAB#: WG513301

Login Number: L15021053

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW13FF-021715	02	02/17/15					02/23/2015	6.1	180		02/25/15	8.1	180	
50WW14FF-021715	04	02/17/15					02/23/2015	6.1	180		02/25/15	8	180	
50WW11FF-021715	06	02/17/15					02/23/2015	6	180		02/25/15	8	180	
50WW06FF-021715	08	02/17/15					02/23/2015	6	180		02/25/15	7.9	180	
50WW08FF-021715	10	02/17/15					02/23/2015	5.9	180		02/25/15	7.8	180	
50WW22FF-021715	12	02/17/15					02/23/2015	5.8	180		02/25/15	7.8	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4037301
Report generated 02/25/2015 12:14

METHOD BLANK SUMMARY

Login Number: L15021053
Blank File ID: T2.022515.093639
Prep Date: 02/23/15 11:11
Analyzed Date: 02/25/15 09:36
Analyst: KHR

Work Group: WG513301
Blank Sample ID: WG513127-02
Instrument ID: ICP-THERMO2
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG513127-03	T2.022515.094016	02/25/15 09:40	01
50WW13FF-021715	L15021053-02	T2.022515.094333	02/25/15 09:43	01
50WW14FF-021715	L15021053-04	T2.022515.095350	02/25/15 09:53	01
50WW11FF-021715	L15021053-06	T2.022515.095721	02/25/15 09:57	01
50WW06FF-021715	L15021053-08	T2.022515.100054	02/25/15 10:00	01
50WW08FF-021715	L15021053-10	T2.022515.101816	02/25/15 10:18	01
50WW22FF-021715	L15021053-12	T2.022515.110125	02/25/15 11:01	01

Report Name: BLANK_SUMMARY
PDF File ID: 4037302
Report generated 02/25/2015 12:16

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15021053 Prep Date: 02/23/15 11:11 Sample ID: WG513127-02
Instrument ID: ICP-THERMO2 Run Date: 02/25/15 09:36 Prep Method: 3015
File ID: T2.022515.093639 Analyst: KHR Method: 6010C
Workgroup (AAB#): WG513301 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-25-FEB-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Iron, Dissolved	0.0500	0.200	0.0500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4037303
25-FEB-2015 12:16

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15021053 Run Date: 02/25/2015 Sample ID: WG513127-03
Instrument ID: ICP-THERMO2 Run Time: 09:40 Prep Method: 3015
File ID: T2.022515.094016 Analyst: KHR Method: 6010C
Workgroup (AAB#): WG513301 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD68767 Cal ID: ICP-TH-25-FEB-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Iron, Dissolved	2.50	2.60	104	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4037304
Report generated: 02/25/2015 12:16

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L15021053 Cal ID: ICP-THERMO2 - Worknum: WG513301
Instrument ID: ICP-THERMO2 Contract #: Method: 6010C
Parent ID: WG513127-01 File ID: T2.022515.094333 Dil: 1 Matrix: WATER
Sample ID: WG513127-04 MS File ID: T2.022515.094712 Dil: 1 Units: mg/L
Sample ID: WG513127-05 MSD File ID: T2.022515.095031 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Iron, Dissolved	0.310	2.50	2.85	102	2.50	2.89	103	1.37	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4037305
Report generated 02/25/2015 12:16

Microbac Laboratories Inc.
Serial Dilution Report

Login: L15021053 **Worknum:** WG513301
Instrument: ICP-THERMO2 **Method:** 6010C
Serial Dil: WG513301-02 **File ID:** T2.022515.100744 **Dil:** 5 **Units:** mg/L
Sample: L15021053-08 **File ID:** T2.022515.100054 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Iron	ND	U	ND	U		

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 50 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 50 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4037299
02/25/2015 12:16

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L15021053 **Worknum:** WG513301
Instrument ID: ICP-THERMO2 **Method:** 6010C
Post Spike ID: WG513301-01 **File ID:** T2.022515.100427 **Dil:** 1 **Units:** mg/L
Sample ID: L15021053-08 **File ID:** T2.022515.100054 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
IRON	2.11		0	U	2	105.5	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4037300
Report generated: 02/25/2015 12:16

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L15021053	Workgroup (AAB#):	WG513301
Analytical Method:	6010C	Instrument ID:	ICP-THERMO2
ICAL Worknum:	WG513398	Initial Calibration Date:	25-FEB-2015 08:00

	WG513398-01		WG513398-02		WG513398-03		WG513398-04		WG513398-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
IRON	0	0	.04	0.000380	.08	0.000850	4	0.0512	8	0.102	.99999	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4037308
Report generated: 25-FEB-2015 12:16

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L15021053
Instrument ID: ICP-THERMO2
File ID: T2.022515.080720
Workgroup (AAB#): WG513301
Matrix: WATER

Run Date: 02/25/2015
Run Time: 08:07
Analyst: KHR
Cal ID: ICP-THERI - 25-FEB-15

Sample ID: WG513398-07
Method: 6010C
Units: mg/L

Analytes	MDL	RDL	Concentration	Qualifier
IRON	.04	.16	.04	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4037310
Report generated 02/25/2015 12:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15021053
Run Date: 02/25/2015
Sample ID: WG513398-13
Instrument ID: ICP-THERMO2
Run Time: 08:28
Method: 6010C
File ID: T2.022515.082832
Analyst: KHR
Units: mg/L
Workgroup (AAB#): WG513301
Cal ID: ICP-TH - 25-FEB-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4037313
Report generated 02/25/2015 12:17

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15021053
Run Date: 02/25/2015
Sample ID: WG513398-17
Instrument ID: ICP-THERMO2
Run Time: 09:29
Method: 6010C
File ID: T2.022515.092923
Analyst: KHR
Units: mg/L
Workgroup (AAB#): WG513301
Cal ID: ICP-TH - 25-FEB-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4037313
Report generated 02/25/2015 12:17

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15021053
Run Date: 02/25/2015
Sample ID: WG513398-20
Instrument ID: ICP-THERMO2
Run Time: 10:14
Method: 6010C
File ID: T2.022515.101436
Analyst: KHR
Units: mg/L
Workgroup (AAB#): WG513301
Cal ID: ICP-TH - 25-FEB-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4037313
Report generated 02/25/2015 12:17

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15021053
Run Date: 02/25/2015
Sample ID: WG513398-22
Instrument ID: ICP-THERMO2
Run Time: 10:57
Method: 6010C
File ID: T2.022515.105743
Analyst: KHR
Units: mg/L
Workgroup (AAB#): WG513301
Cal ID: ICP-TH - 25-FEB-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4037313
Report generated 02/25/2015 12:17

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15021053
Run Date: 02/25/2015
Sample ID: WG513398-24
Instrument ID: ICP-THERMO2
Run Time: 11:29
Method: 6010C
File ID: T2.022515.112955
Analyst: KHR
Units: mg/L
Workgroup (AAB#): WG513301
Cal ID: ICP-TH - 25-FEB-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4037313
Report generated 02/25/2015 12:17

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L15021053 Run Date: 02/25/2015 Sample ID: WG513398-06
Instrument ID: ICP-THERMO2 Run Time: 08:04 Method: 6010C
File ID: T2.022515.080405 Analyst: KHR Units: mg/L
Workgroup (AAB#): WG513301 Cal ID: ICP-TH - 25-FEB-15
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Iron		4	4.08	102	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4037309
Report generated 02/25/2015 12:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15021053
Run Date: 02/25/2015
Sample ID: WG513398-12
Instrument ID: ICP-THERMO2
Run Time: 08:25
Method: 6010C
File ID: T2.022515.082516
Analyst: KHR
QC Key: DOD4
Workgroup (AAB#): WG513301
Cal ID: ICP-TH - 25-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.15	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4037312
Report generated 02/25/2015 12:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15021053
Run Date: 02/25/2015
Sample ID: WG513398-16
Instrument ID: ICP-THERMO2
Run Time: 09:26
Method: 6010C
File ID: T2.022515.092608
Analyst: KHR
QC Key: DOD4
Workgroup (AAB#): WG513301
Cal ID: ICP-TH - 25-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.17	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4037312
Report generated 02/25/2015 12:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15021053
Run Date: 02/25/2015
Sample ID: WG513398-19
Instrument ID: ICP-THERMO2
Run Time: 10:11
Method: 6010C
File ID: T2.022515.101121
Analyst: KHR
QC Key: DOD4
Workgroup (AAB#): WG513301
Cal ID: ICP-TH - 25-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.19	mg/L	105	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4037312
Report generated 02/25/2015 12:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15021053
Run Date: 02/25/2015
Sample ID: WG513398-21
Instrument ID: ICP-THERMO2
Run Time: 10:54
Method: 6010C
File ID: T2.022515.105428
Analyst: KHR
QC Key: DOD4
Workgroup (AAB#): WG513301
Cal ID: ICP-TH - 25-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.25	mg/L	106	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4037312
Report generated 02/25/2015 12:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15021053
Run Date: 02/25/2015
Sample ID: WG513398-23
Instrument ID: ICP-THERMO2
Run Time: 11:26
Method: 6010C
File ID: T2.022515.112640
Analyst: KHR
QC Key: DOD4
Workgroup (AAB#): WG513301
Cal ID: ICP-TH - 25-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.23	mg/L	106	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4037312
Report generated 02/25/2015 12:16

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15021053
Run Date: 02/25/2015
Sample ID: WG513398-09
Instrument ID: ICP-THERMO2
Run Time: 08:14
Method: 6010C
File ID: T2.022515.081434
Analyst: KHR
QC Key: DOD4
Workgroup (AAB#): WG513301
Cal ID: ICP-TH - 25-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		0.160	0.175	mg/L	109	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4039421
Report generated 02/26/2015 16:49

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15021053
Run Date: 02/25/2015
Sample ID: WG513398-25
Instrument ID: ICP-THERMO2
Run Time: 11:33
Method: 6010C
File ID: T2.022515.113335
Analyst: KHR
QC Key: DOD4
Workgroup (AAB#): WG513301
Cal ID: ICP-TH - 25-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		0.160	0.175	mg/L	110	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4039421
Report generated 02/26/2015 16:49

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L15021053
Instrument ID: ICP-THERMO2
Sol. A : WG513398-10 **File ID:** T2.022515.081808
Sol. AB : WG513398-11 **File ID:** T2.022515.082148

Workgroup (AAB#): WG513301
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Iron	100	96.2	96.2	100	96.9	96.9	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4037311
Report generated 02/25/2015 12:16

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15021053 **Date:** 01/02/2015
Insturment ID: ICP-THERMO2 **Method:** 6010C

Analyte	Wave Length	AL	AS	B	BA	BE
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	-0.0000160	0	0	0	0
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0.00000100	0	0	0	0
BERYLLIUM	313.00	0	0	0	0	0
BORON	249.70	0	0	0	0	0
CADMIUM	228.80	0	0.00756	0	-0.0000140	0
CALCIUM	422.70	0	0	0	0	0
CHROMIUM	267.70	0	-0.000660	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0	0	0	0
IRON	261.20	0	0	0	0	0
LEAD	220.30	0.000240	0	0	0	0
LITHIUM	670.80	0	0	0	0	0
MAGNESIUM	279.10	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.03	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	-0.000522	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	-0.0000220	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.80	0	0	0	0	0
THALLIUM	190.80	-0.0000120	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.30	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0.00000200	0	0	0	0
ZIRCONIUM	339.20	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4037307
Report generated: 02/25/2015 12:14

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15021053 **Date:** 01/02/2015
Insturment ID: ICP-THERMO2 **Method:** 6010C

Analyte	Wave Length	CA	CD	CO	CR	CU
ALUMINUM	308.20	0	0	-0.000820	0	0
ANTIMONY	206.80	0	0	0	0.00950	0
ARSENIC	189.00	0	0	0	-0.00220	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.00	0	0	0	0	0
BORON	249.70	0	0	0.00343	0	0
CADMIUM	228.80	0	0	-0.00247	0	0
CALCIUM	422.70	0	0	0	0	0
CHROMIUM	267.70	0	0	-0.000160	0	0
COBALT	228.60	0	0	0	-0.000108	0
COPPER	224.70	0	0	0.0000770	0	0
IRON	261.20	-0.000120	-0.00000600	0	-0.0000460	-0.0000290
LEAD	220.30	0	0	-0.0000930	-0.000172	0.000809
LITHIUM	670.80	0	0	0	0	0
MAGNESIUM	279.10	0	0	0	0	0
MANGANESE	257.60	0	0	0	-0.0000150	0
MOLYBDENUM	202.03	0	0	0	0	0
NICKEL	231.60	0	0	0.000100	0	0
PHOSPHORUS	214.90	0	0	0	0	0.00200
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.80	0.00000600	0	0	0	0
THALLIUM	190.80	0	0	0.00194	0.000276	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.30	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.20	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4037307
Report generated: 02/25/2015 12:14

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15021053 **Date:** 01/02/2015
Insturment ID: ICP-THERMO2 **Method:** 6010C

Analyte	Wave Length	FE	LI	MG	MN	MO
ALUMINUM	308.20	0	0	0	0	0.0153
ANTIMONY	206.80	0.000140	0	0	0	0.000670
ARSENIC	189.00	-0.0000190	0	0	0	0.0000100
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.00	0	0	0	0	0
BORON	249.70	-0.000259	0	0	0	-0.00169
CADMIUM	228.80	0.00000100	0	0	0	0.0000220
CALCIUM	422.70	0	0	0	0	0
CHROMIUM	267.70	0.0000220	0	0	0.000160	0
COBALT	228.60	0	0	0	0	-0.00105
COPPER	224.70	0.000110	0	0	0	0.00160
IRON	261.20	0	0	0	0	0
LEAD	220.30	0	0	0	0	-0.00110
LITHIUM	670.80	0	0	0	0	0
MAGNESIUM	279.10	0	0	0	-0.00190	-0.0110
MANGANESE	257.60	0	0	-0.00000500	0	-0.0000720
MOLYBDENUM	202.03	0	0	0	0	0
NICKEL	231.60	0.00000300	0	0	0	0
PHOSPHORUS	214.90	0.00120	0	0	0	0.00800
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0.000156
SILICON	212.40	0	0	0	0	0.0187
SILVER	328.00	0	0	0	0	-0.0000440
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.80	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.30	0	0	0	0	-0.000153
VANADIUM	292.40	0.0000110	0	0	0	-0.00960
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.20	-0.0000300	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4037307
Report generated: 02/25/2015 12:14

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15021053 **Date:** 01/02/2015
Insturment ID: ICP-THERMO2 **Method:** 6010C

Analyte	Wave Length	NA	NI	PB	SB	SN
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0	0	0	-0.00840
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.00	0	0	0	0	0
BORON	249.70	0	0	0	0	0
CADMIUM	228.80	0	-0.000180	0	0	0
CALCIUM	422.70	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0.000420	0	0	0
COPPER	224.70	0	-0.00402	0.00173	0	0
IRON	261.20	0	0	0	0	0
LEAD	220.30	0	0.000110	0	0	0
LITHIUM	670.80	0	0	0	0	0
MAGNESIUM	279.10	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.03	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.80	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.30	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.20	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4037307
Report generated: 02/25/2015 12:14

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15021053 **Date:** 01/02/2015
Insturment ID: ICP-THERMO2 **Method:** 6010C

Analyte	Wave Length	SR	TI	TL	V	ZN
ALUMINUM	308.20	0	0	0	0.00300	0
ANTIMONY	206.80	0	-0.000990	0	-0.00312	0
ARSENIC	189.00	0	0	0	0.000107	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.00	0	-0.00160	0	0.000170	0
BORON	249.70	0	0	0	0	0
CADMIUM	228.80	0	0	0	0.0000820	0
CALCIUM	422.70	0	0	0	0	0
CHROMIUM	267.70	0	0.0000550	0	-0.000120	-0.000740
COBALT	228.60	0	0.00200	-0.00120	0.0000200	0
COPPER	224.70	0	0.000460	0	0	0
IRON	261.20	0	0	0	0	0
LEAD	220.30	0	0	0	-0.000126	0
LITHIUM	670.80	0	0	0	0	0
MAGNESIUM	279.10	0	-0.00290	0	0	0
MANGANESE	257.60	0	0	0	-0.00000600	0
MOLYBDENUM	202.03	0	0	0	-0.000110	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	-0.00500	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	-0.0000400	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.00620	0	-0.00617	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.80	0	0	0	0	0
THALLIUM	190.80	0	-0.00120	0	-0.00540	0
TIN	189.90	0	-0.00220	0	0	0
TITANIUM	337.30	0	0	0	0.000200	0
VANADIUM	292.40	0	0.00104	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.20	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4037307
Report generated: 02/25/2015 12:14

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15021053 **Date:** 01/02/2015
Insturment ID: ICP-THERMO2 **Method:** 6010C

Analyte	Wave Length	ZR
ALUMINUM	308.20	0
ANTIMONY	206.80	0
ARSENIC	189.00	0
BARIUM	455.40	0
BERYLLIUM	313.00	0
BORON	249.70	0
CADMIUM	228.80	0
CALCIUM	422.70	0
CHROMIUM	267.70	0
COBALT	228.60	0
COPPER	224.70	0
IRON	261.20	0
LEAD	220.30	0
LITHIUM	670.80	0
MAGNESIUM	279.10	0
MANGANESE	257.60	0
MOLYBDENUM	202.03	0
NICKEL	231.60	0
PHOSPHORUS	214.90	0.00200
POTASSIUM	766.40	0
SELENIUM	196.00	0
SILICON	212.40	0
SILVER	328.00	0
SODIUM	589.50	0
STRONTIUM	407.80	0
THALLIUM	190.80	0
TIN	189.90	0
TITANIUM	337.30	0
VANADIUM	292.40	
ZINC	206.20	0
ZIRCONIUM	339.20	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4037307
Report generated: 02/25/2015 12:14

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L15021053 **Date:** 01/12/2015
Insturment ID: ICP-THERMO2 **Method:** 6010C

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	450.0
Antimony	10.00	90.0
Arsenic	10.00	90.0
Barium	10.00	81.0
Beryllium	15.00	4.5
Boron	10.00	90.0
Cadmium	10.00	4.5
Calcium	10.00	900.0
Chromium	10.00	45.0
Cobalt	10.00	9.0
Copper	10.00	180.0
Iron	5.00	630.0
Lead	10.00	225.0
Lithium	10.00	90.0
Magnesium	15.00	900.0
Manganese	15.00	27.0
Molybdenum	10.00	9.0
Nickel	10.00	90.0
Phosphorus	10.00	900.0
Potassium	10.00	360.0
Selenium	10.00	90.0
Silicon	10.00	81.0
Silver	5.00	4.5
Sodium	10.00	360.0
Strontium	10.00	4.5
Thallium	10.00	9.0
Tin	10.00	90.0
Titanium	15.00	90.0
Vanadium	10.00	18.0
Zinc	10.00	45.0
Zirconium	10.00	18.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4037306
Report generated: 02/25/2015 12:14

2.3.1.3 Raw Data

Sample Name: S0 Acquired: 2/25/2015 7:46:44 Type: Cal
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: IR Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00220**	**.00759**	**-.00004**	**.00095**	**.00733**	**-.00492**	**-.00293**
Stddev	.00018	.00035	.00002	.00018	.00035	.00022	.00030
%RSD	8.1066	4.5468	51.069	18.682	4.7317	4.3691	10.274
#1	-.00216	.00733	-.00006	.00110	.00713	-.00506	-.00327
#2	-.00205	.00746	-.00002	.00101	.00773	-.00468	-.00271
#3	-.00240	.00798	-.00005	.00076	.00713	-.00504	-.00281

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00004**	**-.00001**	**.00012**	**-.00001**	**.00000**	**.00224**	**.00164**
Stddev	.00003	.00005	.00014	.00007	.0000	.00009	.00108
%RSD	88.913	560.12	119.67	569.55	529.56	4.0923	66.010
#1	.00007	-.00006	.00002	-.00008	-.00003	.00229	.00041
#2	.00004	.00005	.00028	-.00002	.00000	.00213	.00246
#3	.00000	-.00001	.00006	.00006	.00002	.00229	.00205

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00009**	**.00011**	**-.00004**	**-.00135**	**-.00043**	**.00021**	**-.00057**
Stddev	.00011	.00011	.00003	.00017	.00004	.00003	.00004
%RSD	121.60	97.770	88.284	12.586	9.7666	14.791	6.7086
#1	-.00003	.00018	-.00001	-.00134	-.00039	.00021	-.00062
#2	.00018	-.00001	-.00004	-.00119	-.00043	.00025	-.00055
#3	.00011	.00016	-.00007	-.00153	-.00047	.00018	-.00056

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00004**	**.00000**	**.00078**	**.00010**	**.00096**	**-.00053**	**-.00015**
Stddev	.00008	.00004	.00005	.00002	.00012	.00021	.00003
%RSD	206.38	971.00	6.0679	22.438	12.966	39.257	17.878
#1	.00011	-.00004	.00082	.00010	.00095	-.00048	-.00014
#2	-.00004	.00001	.00078	.00008	.00109	-.00035	-.00013
#3	.00005	.00005	.00073	.00013	.00084	-.00075	-.00018

Approved: February 26, 2015

Sample Name: S0 Acquired: 2/25/2015 7:46:44 Type: Cal
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: IR Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00009	-.00028	-.00323
Stddev	.00017	.00000	.00007
%RSD	195.35	1.7628	2.1473
#1	-.00003	-.00029	-.00327
#2	.00000	-.00029	-.00327
#3	.00028	-.00028	-.00315

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10597.	10509.
Stddev	5.	55.
%RSD	.04843	.52430
#1	10596.	10527.
#2	10603.	10448.
#3	10593.	10554.

Approved: February 26, 2015

Sample Name: S1 Acquired: 2/25/2015 7:50:20 Type: Cal
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: IR Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00023**	**.02226**	**.01941**	**-.00161**	**-.00065**	**.00036**	**.00061**
Stddev	.00023	.00025	.00043	.00014	.00025	.00006	.00009
%RSD	102.31	1.1011	2.2380	8.6966	38.555	16.897	15.180
#1	.00043	.02230	.01891	-.00158	-.00046	.00042	.00061
#2	.00028	.02248	.01960	-.00149	-.00055	.00038	.00070
#3	-.00003	.02199	.01971	-.00176	-.00093	.00030	.00052

Elem	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00223**	**.00054**	**.00038**	**.01058**	**.00593**	**.00036**	**.01001**
Stddev	.00009	.00002	.00003	.00103	.00020	.00010	.00012
%RSD	4.2178	4.1888	7.6982	9.7412	3.3594	28.653	1.1828
#1	.00220	.00051	.00036	.01001	.00604	.00036	.00990
#2	.00215	.00056	.00042	.00997	.00570	.00047	.01000
#3	.00233	.00055	.00037	.01177	.00604	.00026	.01014

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00130**	**.03342**	**-.00004**	**.00104**	**-.00038**	**.00030**	**.00201**
Stddev	.00005	.00050	.00008	.00002	.00002	.00002	.00006
%RSD	3.9919	1.5033	195.53	1.8906	6.1767	8.1695	3.1241
#1	.00130	.03347	.00005	.00104	-.00038	.00028	.00201
#2	.00135	.03290	-.00011	.00106	-.00040	.00033	.00195
#3	.00125	.03390	-.00006	.00102	-.00036	.00029	.00208

Elem	Sn1899	Sr4077	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00064**	**.02265**	**.00061**	**.00794**	**.00226**	**-.00315**
Stddev	.00002	.00007	.00005	.00025	.00002	.00051
%RSD	2.8285	.28810	8.0515	3.0973	.70286	16.071
#1	.00066	.02265	.00057	.00781	.00226	-.00257
#2	.00063	.02259	.00066	.00778	.00228	-.00353
#3	.00063	.02272	.00060	.00822	.00225	-.00334

Approved: February 26, 2015

Sample Name: S1 Acquired: 2/25/2015 7:50:20 Type: Cal
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: IR Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10606.	10567.
Stddev	21.	66.
%RSD	.19559	.62102
#1	10626.	10601.
#2	10606.	10608.
#3	10585.	10491.

Approved: February 26, 2015

Sample Name: S2 Acquired: 2/25/2015 7:53:56 Type: Cal
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: IR Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00255	.03749	.00009	.00285	.03122	.00176	.00190
Stddev	.00016	.00080	.00004	.00013	.00035	.00012	.00010
%RSD	6.3541	2.1335	40.977	4.5278	1.1069	6.6358	5.1809
#1	.00258	.03657	.00013	.00270	.03142	.00189	.00193
#2	.00269	.03803	.00005	.00294	.03141	.00167	.00179
#3	.00237	.03788	.00008	.00290	.03082	.00171	.00197

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00056	.00114	.00426	.00100	.00085	.01969	.00963
Stddev	.00007	.00001	.00015	.00008	.00003	.00060	.00049
%RSD	12.441	1.0111	3.5757	7.8482	3.4660	3.0427	5.1239
#1	.00051	.00115	.00432	.00109	.00085	.01926	.00906
#2	.00052	.00113	.00438	.00095	.00082	.01944	.00985
#3	.00064	.00113	.00409	.00096	.00087	.02037	.00997

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00070	.01975	.00261	.06369	.00032	.00189	-.00011
Stddev	.00004	.00008	.00006	.00039	.00006	.00003	.00008
%RSD	5.1382	.40994	2.4132	.60635	20.084	1.6002	72.775
#1	.00067	.01967	.00254	.06355	.00039	.00188	-.00004
#2	.00069	.01983	.00263	.06412	.00029	.00186	-.00009
#3	.00074	.01975	.00266	.06338	.00027	.00192	-.00019

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00056	.00007	.00322	.00118	.04400	.00166	.00009
Stddev	.00001	.00008	.00002	.00001	.00033	.00007	.00004
%RSD	2.0875	111.81	.73383	1.0151	.75657	4.1929	44.998
#1	.00058	-.00001	.00321	.00117	.04402	.00171	.00011
#2	.00055	.00007	.00325	.00119	.04432	.00158	.00013
#3	.00055	.00014	.00321	.00118	.04365	.00170	.00005

Approved: February 26, 2015

Sample Name: S2 Acquired: 2/25/2015 7:53:56 Type: Cal
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: IR Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.01599	.00479	-.00368
Stddev	.00044	.00003	.00022
%RSD	2.7428	.70234	5.8710
#1	.01602	.00479	-.00393
#2	.01554	.00483	-.00352
#3	.01642	.00476	-.00361

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10607.	10495.
Stddev	19.	82.
%RSD	.17888	.78484
#1	10602.	10590.
#2	10590.	10440.
#3	10627.	10455.

Approved: February 26, 2015

Sample Name: S3 Acquired: 2/25/2015 7:57:31 Type: Cal
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: IR Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.26632**	**1.7018**	**.00924**	**.11099**	**1.4799**	**.39850**	**.29822**
Stddev	.00088	.0052	.00007	.00054	.0014	.00124	.00101
%RSD	.33181	.30416	.77570	.48363	.09236	.31078	.33800
#1	.26532	1.6958	.00933	.11063	1.4783	.39827	.29733
#2	.26666	1.7047	.00922	.11073	1.4810	.39740	.29931
#3	.26699	1.7048	.00919	.11160	1.4803	.39984	.29801

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.03224**	**.07014**	**.24606**	**.06065**	**.05116**	**1.0340**	**.50291**
Stddev	.00004	.00005	.00056	.00010	.00028	.0031	.00071
%RSD	.13158	.06659	.22810	.16577	.55273	.29534	.14080
#1	.03222	.07019	.24541	.06054	.05116	1.0308	.50319
#2	.03229	.07010	.24635	.06067	.05087	1.0369	.50344
#3	.03221	.07012	.24642	.06073	.05144	1.0343	.50211

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.03307**	**1.1067**	**.15884**	**3.6586**	**.04039**	**.10411**	**.02530**
Stddev	.00017	.0064	.00007	.0132	.00010	.00016	.00005
%RSD	.51026	.57454	.04549	.35952	.24221	.15631	.20483
#1	.03287	1.0994	.15892	3.6472	.04032	.10428	.02525
#2	.03316	1.1110	.15878	3.6730	.04050	.10395	.02535
#3	.03317	1.1098	.15882	3.6555	.04036	.10410	.02532

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.03255**	**.00514**	**.15147**	**.06443**	**2.5253**	**.13465**	**.01050**
Stddev	.00006	.00003	.00073	.00024	.0089	.00011	.00009
%RSD	.17732	.58682	.48257	.37898	.35447	.07956	.89509
#1	.03249	.00513	.15199	.06455	2.5182	.13455	.01057
#2	.03260	.00512	.15064	.06415	2.5354	.13462	.01040
#3	.03255	.00518	.15178	.06460	2.5224	.13476	.01055

Approved: February 26, 2015

Sample Name: S3 Acquired: 2/25/2015 7:57:31 Type: Cal
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: IR Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.93208	.29998	-.00290
Stddev	.00263	.00058	.00029
%RSD	.28219	.19287	9.9625
#1	.93063	.29933	-.00294
#2	.93050	.30042	-.00259
#3	.93512	.30019	-.00316

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10623.	10619.
Stddev	20.	55.
%RSD	.19099	.52131
#1	10641.	10683.
#2	10627.	10585.
#3	10601.	10590.

Approved: February 26, 2015

Sample Name: S4 Acquired: 2/25/2015 8:00:47 Type: Cal
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: IR Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.52352	3.3403	.01835	.21861	2.9603	.78651	.59986
Stddev	.00053	.0197	.00006	.00036	.0125	.00140	.00199
%RSD	.10043	.58982	.31971	.16338	.42331	.17769	.33133
#1	.52412	3.3385	.01842	.21872	2.9513	.78804	.59912
#2	.52313	3.3216	.01832	.21821	2.9548	.78619	.59835
#3	.52332	3.3609	.01831	.21890	2.9746	.78530	.60211

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.06335	.13641	.48035	.11793	.10191	2.0614	.99744
Stddev	.00009	.00011	.00080	.00016	.00050	.0075	.00269
%RSD	.13582	.08158	.16569	.13235	.49031	.36594	.26942
#1	.06339	.13651	.48122	.11807	.10145	2.0558	.99503
#2	.06340	.13629	.47967	.11795	.10185	2.0583	.99696
#3	.06325	.13644	.48017	.11776	.10244	2.0700	1.0003

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.06542	2.1666	.30802	7.2955	.07889	.20365	.04947
Stddev	.00011	.0143	.00036	.0301	.00020	.00027	.00010
%RSD	.16632	.65922	.11807	.41209	.24767	.13323	.20214
#1	.06534	2.1639	.30840	7.2709	.07901	.20396	.04958
#2	.06538	2.1539	.30767	7.2865	.07899	.20350	.04947
#3	.06555	2.1821	.30799	7.3290	.07866	.20349	.04938

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.06380	.01007	.28872	.12578	5.0194	.26502	.02016
Stddev	.00008	.00004	.00012	.00019	.0220	.00090	.00013
%RSD	.12413	.41372	.04064	.14769	.43812	.34076	.62620
#1	.06386	.01006	.28861	.12586	5.0014	.26440	.02029
#2	.06382	.01011	.28884	.12557	5.0129	.26461	.02004
#3	.06371	.01003	.28870	.12592	5.0439	.26606	.02015

Approved: February 26, 2015

Sample Name: S4 Acquired: 2/25/2015 8:00:47 Type: Cal
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: IR Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	1.8301	.58619	-.00385
Stddev	.0032	.00007	.00018
%RSD	.17460	.01140	4.6279
#1	1.8286	.58625	-.00405
#2	1.8280	.58612	-.00371
#3	1.8338	.58620	-.00380

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10630.	10621.
Stddev	6.	45.
%RSD	.05977	.42587
#1	10627.	10619.
#2	10626.	10667.
#3	10638.	10576.

Approved: February 26, 2015

Sample Name: ICV Acquired: 2/25/2015 8:04:05 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39458	10.181	.41844	.50343	1.0089	.05098	10.118
Stddev	.00215	.026	.00276	.00111	.0033	.00024	.031
%RSD	.54472	.25763	.65860	.22112	.32627	.47149	.30165
#1	.39492	10.202	.41536	.50339	1.0065	.05118	10.083
#2	.39653	10.190	.41930	.50457	1.0075	.05071	10.135
#3	.39227	10.151	.42067	.50234	1.0126	.05104	10.137
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05127	.20602	.50526	.50811	4.0778	50.498	1.0024
Stddev	.00017	.00027	.00039	.00060	.0113	.154	.0030
%RSD	.34018	.12907	.07728	.11722	.27761	.30472	.29556
#1	.05110	.20609	.50483	.50879	4.0897	50.371	.99998
#2	.05128	.20573	.50560	.50768	4.0766	50.454	1.0016
#3	.05145	.20625	.50534	.50785	4.0672	50.669	1.0057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.042	.49556	1.0129	50.509	.49830	10.443	.49564
Stddev	.056	.00104	.0021	.238	.00105	.018	.00226
%RSD	.55885	.20941	.20715	.47217	.20993	.17145	.45502
#1	10.006	.49642	1.0112	50.361	.49940	10.453	.49455
#2	10.014	.49584	1.0123	50.381	.49732	10.422	.49824
#3	10.107	.49441	1.0153	50.784	.49817	10.453	.49414
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 26, 2015

Sample Name: ICV Acquired: 2/25/2015 8:04:05 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2199	F .42001	F 5.3044	1.0299	1.0026	1.0116	.51479
Stddev	.0022	.00269	.0809	.0025	.0046	.0064	.00110
%RSD	.17911	.63958	1.5262	.23878	.45735	.62978	.21332
#1	1.2176	.42156	5.2115	1.0308	.99899	1.0118	.51559
#2	1.2201	.42157	5.3414	1.0271	1.0010	1.0051	.51354
#3	1.2219	.41691	5.3602	1.0318	1.0077	1.0179	.51525
Check ?	Chk Pass	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.40000	5.0000				
Range		5.0000%	5.0000%				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0111	1.0184	F .46769
Stddev	.0033	.0001	.25138
%RSD	.32484	.00929	53.749
#1	1.0145	1.0185	.66293
#2	1.0107	1.0183	.18405
#3	1.0080	1.0185	.55607
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-5.0000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10647.	10604.
Stddev	7.	9.
%RSD	.06321	.08112
#1	10652.	10613.
#2	10639.	10597.
#3	10651.	10600.

Approved: February 26, 2015

Sample Name: ICB Acquired: 2/25/2015 8:07:20 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**.00288**	**.00048**	**.00421**	**-.00006**	**-.00002**	**.00368**
Stddev	.00039	.00062	.00193	.00068	.00021	.00002	.00379
%RSD	1184.2	21.646	401.25	16.243	366.86	109.01	103.09
#1	.00012	.00345	.00073	.00344	.00014	-.00003	.00274
#2	-.00040	.00221	-.00156	.00473	-.00003	.00000	.00786
#3	.00037	.00297	.00227	.00446	-.00028	-.00002	.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**-.00017**	**.00079**	**.00004**	**.00136**	**.04101**	**-.00099**
Stddev	.00010	.00030	.00030	.00039	.00509	.01322	.00131
%RSD	501.19	172.60	37.514	1094.4	372.97	32.239	131.64
#1	-.00009	-.00023	.00097	.00024	-.00407	.02735	.00042
#2	.00003	.00015	.00045	.00028	.00602	.04194	-.00216
#3	.00012	-.00043	.00096	-.00041	.00214	.05374	-.00123
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00833**	**.00004**	**.00614**	**-.03514**	**.00021**	**.00090**	**-.00148**
Stddev	.02650	.00003	.00022	.00396	.00067	.00570	.00180
%RSD	318.11	73.502	3.5873	11.268	315.30	633.82	121.77
#1	-.01218	.00004	.00588	-.03154	.00039	.00653	.00005
#2	-.00108	.00001	.00628	-.03448	-.00053	.00104	-.00346
#3	.03826	.00007	.00625	-.03938	.00077	-.00487	-.00102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: ICB Acquired: 2/25/2015 8:07:20 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00078	.00239	.00847	.00027	.00014	-.00067	.00204
Stddev	.00114	.00069	.00058	.00054	.00001	.00044	.00108
%RSD	146.76	28.734	6.8236	201.42	4.5770	65.674	52.922
#1	.00043	.00171	.00858	.00021	.00014	-.00084	.00181
#2	-.00183	.00238	.00898	-.00024	.00013	-.00017	.00109
#3	-.00094	.00309	.00784	.00083	.00015	-.00099	.00322
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00032	.00066	F 1.5341
Stddev	.00018	.00005	.7285
%RSD	55.772	8.0080	47.485
#1	.00011	.00063	2.3613
#2	.00043	.00072	.98860
#3	.00041	.00062	1.2523
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10598.	10645.
Stddev	17.	43.
%RSD	.15797	.40776
#1	10606.	10693.
#2	10609.	10609.
#3	10579.	10632.

Approved: February 26, 2015

Sample Name: LLICV Acquired: 2/25/2015 8:10:58 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01221	.00022	.10615	.00200	.01164	-.00003	.00494	.01256
Stddev	.00045	.00047	.00189	.00010	.00028	.00005	.00387	.00005
%RSD	3.6823	216.43	1.7777	4.8161	2.4097	176.02	78.467	.42891
#1	.01170	.00033	.10736	.00211	.01189	.00002	.00623	.01250
#2	.01239	.00062	.10713	.00197	.01133	-.00009	.00058	.01261
#3	.01254	-.00030	.10398	.00193	.01170	-.00002	.00799	.01257
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.02365	.00001	-.00155	-.00114	.00092	.00016	.00008
Stddev	.00033	.00060	.00015	.00452	.01065	.00063	.01585	.00006
%RSD	528.46	2.5410	1223.9	292.17	936.89	68.557	9977.0	72.547
#1	.00045	.02425	-.00001	.00129	.01110	.00019	-.00852	.00008
#2	-.00011	.02305	.00017	-.00675	-.00618	.00127	-.00946	.00014
#3	-.00015	.02366	-.00012	.00082	-.00833	.00129	.01845	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00167	-.03095	-.00007	.00075	.11793	-.00089	.08983	.00562
Stddev	.00025	.00331	.00037	.00254	.00252	.00306	.00594	.00075
%RSD	14.813	10.693	532.86	340.52	2.1364	344.37	6.6073	13.340
#1	.00144	-.02960	-.00020	-.00176	.12022	-.00283	.09487	.00648
#2	.00162	-.02853	.00035	.00332	.11523	.00264	.09132	.00526
#3	.00193	-.03472	-.00035	.00068	.11833	-.00247	.08329	.00512
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 26, 2015

Sample Name: LLICV Acquired: 2/25/2015 8:10:58 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.00014**	**-.00127**	**.00334**	**.00020**	**.00131**	**.11388**
Stddev	.00020	.00004	.00102	.00050	.00026	.00004	.85586
%RSD	193.18	27.039	80.444	14.918	129.83	2.6876	751.52
#1	.00012	.00017	-.00137	.00344	.00046	.00131	.31900
#2	-.00026	.00010	-.00020	.00279	-.00005	.00135	-.82590
#3	-.00015	.00014	-.00224	.00377	.00019	.00127	.84854
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10581.**	**10612.**
Stddev	19.	23.
%RSD	.17925	.21593
#1	10598.	10586.
#2	10560.	10629.
#3	10585.	10621.

Approved: February 26, 2015

Sample Name: LLICV Acquired: 2/25/2015 8:14:34 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01734	.42829	.01665	.02122	.04069	.00213	.41657	.00220
Stddev	.00038	.00110	.00149	.00069	.00013	.00002	.00774	.00009
%RSD	2.1953	.25771	8.9708	3.2632	.32824	.94105	1.8580	3.9145
#1	.01749	.42763	.01551	.02137	.04064	.00211	.40966	.00216
#2	.01762	.42768	.01834	.02182	.04084	.00213	.42493	.00230
#3	.01691	.42957	.01610	.02046	.04058	.00215	.41510	.00215
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00876	.02236	.02233	.17457	2.0852	.04192	.39447	.02223
Stddev	.00015	.00048	.00056	.00478	.0418	.00151	.00781	.00010
%RSD	1.7178	2.1247	2.5078	2.7404	2.0063	3.6107	1.9787	.44507
#1	.00860	.02230	.02227	.17905	2.0946	.04348	.38610	.02218
#2	.00878	.02287	.02180	.17512	2.1216	.04046	.39577	.02216
#3	.00890	.02192	.02292	.16953	2.0395	.04183	.40155	.02234
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04463	2.0717	.02248	.43162	.02355	.05315	.01899	.23133
Stddev	.00015	.0181	.00002	.00619	.00089	.00292	.00123	.00940
%RSD	.32656	.87290	.09041	1.4334	3.7697	5.4893	6.4696	4.0615
#1	.04475	2.0587	.02247	.42614	.02456	.05024	.01895	.22048
#2	.04447	2.0924	.02250	.43038	.02292	.05607	.02024	.23658
#3	.04467	2.0641	.02246	.43833	.02316	.05313	.01779	.23693
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 26, 2015

Sample Name: LLICV Acquired: 2/25/2015 8:14:34 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04597	.04277	.04168	.02635	.04364	.04754	2.3235
Stddev	.00198	.00018	.00170	.00058	.00026	.00170	.6787
%RSD	4.2992	.42405	4.0754	2.2091	.60682	3.5777	29.211
#1	.04371	.04259	.04029	.02668	.04389	.04565	3.0760
#2	.04737	.04295	.04357	.02668	.04336	.04803	1.7577
#3	.04683	.04277	.04116	.02568	.04369	.04894	2.1369
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10602.	10606.
Stddev	13.	27.
%RSD	.11836	.25365
#1	10615.	10592.
#2	10601.	10638.
#3	10590.	10590.

Approved: February 26, 2015

Sample Name: ICSA Acquired: 2/25/2015 8:18:08 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00080	221.18	-.00179	-.01380	-.00019	-.00006	250.01
Stddev	.00061	33.81	.00293	.00149	.00010	.00001	3.51
%RSD	76.876	15.287	164.25	10.803	54.277	15.746	1.4029
#1	-.00053	237.85	-.00515	-.01451	-.00007	-.00006	245.98
#2	-.00036	182.27	.00025	-.01209	-.00025	-.00005	252.38
#3	-.00150	243.42	-.00046	-.01480	-.00025	-.00006	251.67
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	-.00026	.00015	-.00059	96.184	-.02727	.01080
Stddev	.00007	.00017	.00073	.00098	1.191	.02677	.00057
%RSD	77.366	62.948	500.39	166.83	1.2385	98.168	5.2349
#1	.00018	-.00012	.00045	.00053	94.903	-.02698	.01031
#2	.00008	-.00044	.00068	-.00130	97.258	-.00064	.01068
#3	.00003	-.00022	-.00069	-.00098	96.391	-.05418	.01142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	254.77	.00003	-.00077	-.03330	-.00063	-.09750	.00002
Stddev	2.74	.00014	.00027	.01070	.00046	.02519	.01291
%RSD	1.0769	476.06	34.415	32.130	73.328	25.840	51802.
#1	251.70	.00011	-.00101	-.03999	-.00102	-.08357	-.00743
#2	256.98	.00011	-.00081	-.03894	-.00074	-.12658	.01494
#3	255.63	-.00013	-.00049	-.02096	-.00012	-.08234	-.00743
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: ICSA Acquired: 2/25/2015 8:18:08 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00289	-.00284	.01805	.00004	.00057	-.00931	.00090
Stddev	.00482	.00446	.00177	.00028	.00006	.00053	.00384
%RSD	166.70	156.78	9.8194	685.86	11.151	5.6730	425.69
#1	.00221	.00094	.01869	.00001	.00063	-.00870	.00520
#2	-.00738	-.00171	.01941	.00034	.00050	-.00967	-.00221
#3	-.00351	-.00776	.01605	-.00022	.00059	-.00956	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00089	-.00161	F 37.439
Stddev	.00024	.00029	3.041
%RSD	26.799	17.859	8.1216
#1	-.00101	-.00192	34.871
#2	-.00062	-.00135	36.650
#3	-.00105	-.00158	40.796
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.08000
Low Limit			-.08000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10225.	10508.
Stddev	14.	91.
%RSD	.13810	.86814
#1	10234.	10613.
#2	10233.	10469.
#3	10209.	10443.

Approved: February 26, 2015

Sample Name: ICSAB Acquired: 2/25/2015 8:21:48 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.47576	203.33	.25170	-.01452	.23801	.23577	253.00
Stddev	.01406	33.50	.00359	.00172	.00084	.00374	.45
%RSD	2.9557	16.476	1.4262	11.818	.35473	1.5872	.17603
#1	.49180	242.00	.25547	-.01634	.23788	.24006	252.50
#2	.46994	184.88	.24832	-.01294	.23723	.23405	253.16
#3	.46554	183.11	.25131	-.01427	.23891	.23320	253.35
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.42879	.23049	.23519	.23171	96.900	5.1804	.01076
Stddev	.00062	.00044	.00448	.00033	.193	.0391	.00156
%RSD	.14461	.18970	1.9062	.14271	.19892	.75540	14.506
#1	.42951	.23022	.24030	.23166	96.779	5.1567	.01229
#2	.42838	.23099	.23335	.23206	96.797	5.2255	.00917
#3	.42849	.23025	.23192	.23141	97.122	5.1588	.01082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	256.10	.21707	-.00071	5.2268	.45724	-.10518	.46595
Stddev	.80	.00604	.00018	.0169	.00043	.02601	.01213
%RSD	.31174	2.7846	25.750	.32351	.09379	24.732	2.6031
#1	255.50	.22398	-.00051	5.2129	.45676	-.07517	.45242
#2	255.79	.21453	-.00076	5.2220	.45758	-.11895	.47584
#3	257.00	.21272	-.00087	5.2456	.45738	-.12140	.46958
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: ICSAB Acquired: 2/25/2015 8:21:48 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52556	.24223	.00413	.00018	.00061	-.01139	.48162
Stddev	.00357	.00619	.00206	.00054	.00003	.00179	.00557
%RSD	.67990	2.5543	49.950	306.51	4.2779	15.700	1.1566
#1	.52192	.23860	.00306	-.00016	.00059	-.01323	.48227
#2	.52571	.23872	.00651	.00080	.00064	-.00966	.47576
#3	.52906	.24938	.00282	-.00011	.00060	-.01127	.48684
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.23143	.45824	F 37.807
Stddev	.00856	.00068	1.760
%RSD	3.6967	.14858	4.6556
#1	.24125	.45900	39.837
#2	.22744	.45768	36.867
#3	.22559	.45805	36.717
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10215.	10505.
Stddev	2.	55.
%RSD	.01820	.52078
#1	10216.	10567.
#2	10213.	10485.
#3	10217.	10463.

Approved: February 26, 2015

Sample Name: CCV Acquired: 2/25/2015 8:25:16 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41136	10.464	.41299	.51149	1.0172	.05185	10.350	.05176
Stddev	.00200	.056	.00126	.00176	.0019	.00017	.021	.00002
%RSD	.48529	.53733	.30550	.34378	.18845	.31932	.20684	.03907
#1	.41351	10.446	.41297	.51029	1.0155	.05166	10.335	.05178
#2	.41100	10.418	.41427	.51067	1.0169	.05197	10.340	.05174
#3	.40956	10.527	.41175	.51351	1.0193	.05193	10.374	.05175
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20834	.52223	.51828	4.1521	51.467	1.0199	10.493	.52697
Stddev	.00063	.00266	.00088	.0288	.079	.0009	.037	.00198
%RSD	.30430	.50897	.16974	.69404	.15369	.08569	.35001	.37491
#1	.20861	.51930	.51893	4.1338	51.429	1.0197	10.535	.52759
#2	.20879	.52292	.51728	4.1373	51.414	1.0209	10.467	.52475
#3	.20761	.52448	.51862	4.1854	51.558	1.0192	10.476	.52855
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0392	52.007	.52141	10.347	.52440	1.2457	.41715	5.1823
Stddev	.0078	.057	.00169	.087	.00093	.0034	.00235	.0769
%RSD	.74885	.11045	.32331	.84134	.17780	.27370	.56362	1.4829
#1	1.0446	51.946	.52068	10.391	.52334	1.2433	.41474	5.1398
#2	1.0303	52.014	.52020	10.247	.52479	1.2496	.41944	5.1361
#3	1.0427	52.060	.52333	10.403	.52508	1.2442	.41726	5.2710
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: February 26, 2015

Sample Name: CCV Acquired: 2/25/2015 8:25:16 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0478**	**1.0387**	**1.0410**	**.52873**	**1.0254**	**1.0477**	**1.0306**
Stddev	.0003	.0026	.0011	.00090	.0033	.0013	1.2185
%RSD	.03169	.24882	.10792	.16933	.31793	.12675	118.24
#1	1.0480	1.0357	1.0414	.52770	1.0236	1.0462	2.0889
#2	1.0481	1.0403	1.0419	.52920	1.0292	1.0488	1.3043
#3	1.0475	1.0401	1.0398	.52929	1.0234	1.0479	-.30154
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10555.**	**10305.**
Stddev	20.	37.
%RSD	.19068	.36385
#1	10566.	10290.
#2	10532.	10348.
#3	10568.	10278.

Approved: February 26, 2015

Sample Name: CCB Acquired: 2/25/2015 8:28:32 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00040**	**.00528**	**.00005**	**.00211**	**.00042**	**-.00001**	**-.00082**
Stddev	.00035	.00253	.00124	.00055	.00013	.00003	.00963
%RSD	86.455	47.942	2301.4	26.066	30.325	254.43	1176.6
#1	-.00001	.00801	.00057	.00273	.00038	.00002	-.01039
#2	-.00068	.00479	.00096	.00170	.00031	-.00002	-.00092
#3	-.00051	.00302	-.00137	.00189	.00056	-.00005	.00886
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.00017**	**.00019**	**-.00015**	**.00077**	**-.00558**	**.00055**
Stddev	.00014	.00015	.00051	.00019	.00341	.01103	.00166
%RSD	407.96	88.312	265.42	121.09	441.16	197.63	300.33
#1	-.00009	.00034	-.00030	-.00036	.00464	-.01574	.00143
#2	-.00013	.00007	.00071	.00001	-.00180	.00615	-.00136
#3	.00012	.00009	.00017	-.00011	-.00052	-.00715	.00158
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01743**	**.00001**	**.00464**	**-.04159**	**-.00037**	**.00190**	**-.00171**
Stddev	.03952	.00005	.00049	.00330	.00063	.00246	.00213
%RSD	226.73	825.99	10.563	7.9285	169.18	129.35	124.10
#1	-.00916	.00005	.00419	-.04537	-.00039	.00459	.00054
#2	-.00139	.00001	.00456	-.03933	-.00100	.00136	-.00369
#3	.06284	-.00004	.00516	-.04006	.00027	-.00024	-.00199
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: CCB Acquired: 2/25/2015 8:28:32 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00267	.00325	.00253	.00002	.00014	-.00160	.00209
Stddev	.00196	.00109	.00072	.00043	.00008	.00036	.00104
%RSD	73.385	33.509	28.373	2666.4	58.311	22.362	49.883
#1	.00493	.00359	.00323	.00036	.00021	-.00198	.00279
#2	.00158	.00413	.00179	.00015	.00005	-.00127	.00258
#3	.00149	.00203	.00256	-.00047	.00015	-.00155	.00089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00019	-.00028	F 2.0270
Stddev	.00021	.00015	.8515
%RSD	110.18	55.582	42.010
#1	-.00003	-.00010	1.5913
#2	.00022	-.00040	3.0082
#3	.00037	-.00033	1.4815
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10501.	10262.
Stddev	13.	121.
%RSD	.11979	1.1748
#1	10490.	10237.
#2	10515.	10156.
#3	10498.	10393.

Approved: February 26, 2015

Sample Name: PBW B2 Acquired: 2/25/2015 8:40:53 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513260-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	.00417	-.00139	.00097	.00019	-.00004	.01850
Stddev	.00029	.00154	.00084	.00099	.00026	.00002	.01914
%RSD	57.712	36.889	60.673	102.47	134.91	59.927	103.45
#1	.00075	.00493	-.00106	.00069	-.00004	-.00002	.03918
#2	.00057	.00517	-.00076	.00015	.00048	-.00003	.01491
#3	.00018	.00240	-.00234	.00207	.00015	-.00007	.00141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	-.00010	-.00014	.00013	.00106	-.02909	.00102
Stddev	.00005	.00020	.00043	.00037	.00812	.02165	.00065
%RSD	24.235	199.98	308.63	290.21	762.84	74.399	63.834
#1	.00016	.00010	.00031	.00002	-.00831	-.05321	.00029
#2	.00024	-.00009	-.00054	-.00018	.00569	-.01134	.00123
#3	.00025	-.00030	-.00018	.00054	.00582	-.02274	.00154
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00061	.00052	.00048	-.02115	.00088	-.00279	.00046
Stddev	.02243	.00009	.00022	.00448	.00088	.00104	.00366
%RSD	3693.7	16.778	46.279	21.189	99.779	37.219	794.92
#1	-.02398	.00061	.00039	-.02447	.00096	-.00393	-.00080
#2	.00143	.00043	.00073	-.01605	-.00003	-.00190	.00458
#3	.02074	.00052	.00032	-.02292	.00173	-.00254	-.00240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: PBW B2 Acquired: 2/25/2015 8:40:53 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513260-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	.00062	.00274	-.00026	.00010	.00011	-.00038
Stddev	.00193	.00138	.00105	.00064	.00006	.00135	.00132
%RSD	356.77	221.69	38.304	243.89	63.205	1210.9	349.37
#1	-.00003	-.00012	.00371	-.00015	.00004	.00150	.00114
#2	-.00104	.00221	.00162	.00032	.00017	.00002	-.00106
#3	.00270	-.00022	.00288	-.00095	.00009	-.00119	-.00122
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00013	.00305	F -.56543
Stddev	.00020	.00015	1.4250
%RSD	150.17	4.9976	252.02
#1	-.00004	.00289	-.85753
#2	-.00037	.00318	-1.8217
#3	.00000	.00309	.98300
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10538.	10353.
Stddev	39.	31.
%RSD	.36920	.29657
#1	10580.	10330.
#2	10504.	10341.
#3	10530.	10388.

Approved: February 26, 2015

Sample Name: LCSW B2 Acquired: 2/25/2015 8:44:29 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513260-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20414	5.0964	.19392	.96715	.51071	.02515	5.1912
Stddev	.00256	.0640	.00315	.00128	.00107	.00008	.0038
%RSD	1.2540	1.2563	1.6266	.13236	.20967	.30883	.07394
#1	.20636	5.1586	.19538	.96840	.51064	.02518	5.1947
#2	.20134	5.1000	.19608	.96584	.51181	.02506	5.1871
#3	.20472	5.0307	.19030	.96720	.50967	.02520	5.1917
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02477	.10344	.26228	.25236	2.0941	25.721	.51237
Stddev	.00015	.00039	.00156	.00140	.0131	.038	.00180
%RSD	.61570	.37552	.59461	.55603	.62350	.14643	.35062
#1	.02474	.10377	.26215	.25358	2.0934	25.692	.51439
#2	.02464	.10354	.26079	.25268	2.1075	25.708	.51178
#3	.02494	.10301	.26390	.25083	2.0814	25.763	.51094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.1281	.26104	.52473	25.873	.25669	4.8301	.25332
Stddev	.0176	.00279	.00113	.076	.00056	.0040	.00039
%RSD	.34420	1.0679	.21624	.29450	.21890	.08248	.15258
#1	5.1186	.26376	.52600	25.940	.25715	4.8283	.25368
#2	5.1173	.26118	.52383	25.888	.25686	4.8273	.25336
#3	5.1485	.25819	.52435	25.790	.25606	4.8346	.25291
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: LCSW B2 Acquired: 2/25/2015 8:44:29 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513260-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.60964	.18938	2.6269	.52211	.52200	.52905	.26473
Stddev	.00130	.00296	.0036	.00146	.00148	.00376	.00312
%RSD	.21403	1.5643	.13687	.27893	.28283	.70990	1.1796
#1	.60983	.19195	2.6308	.52055	.52299	.53175	.26795
#2	.60825	.18614	2.6236	.52234	.52272	.53064	.26171
#3	.61084	.19004	2.6263	.52344	.52031	.52476	.26455
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.51502	.50637	F -1.5963
Stddev	.00239	.00046	3.5155
%RSD	.46327	.09056	220.23
#1	.51729	.50686	-2.6547
#2	.51253	.50629	2.3268
#3	.51523	.50595	-4.4610
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10552.	10279.
Stddev	6.	95.
%RSD	.05514	.92719
#1	10551.	10197.
#2	10559.	10257.
#3	10547.	10383.

Approved: February 26, 2015

Sample Name: FBLK Acquired: 2/25/2015 8:47:48 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513158-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.00841	.00063	.00377	.00031	-.00002	.02074
Stddev	.00066	.00214	.00367	.00035	.00004	.00003	.00915
%RSD	336.23	25.416	586.41	9.2157	13.113	171.52	44.100
#1	.00036	.00960	-.00154	.00338	.00035	-.00005	.02784
#2	.00075	.00595	.00486	.00403	.00027	-.00002	.02397
#3	-.00053	.00970	-.00144	.00391	.00031	.00001	.01042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	-.00003	.00083	.00028	.01463	.03715	.00029
Stddev	.00009	.00017	.00020	.00032	.00110	.01237	.00234
%RSD	61.451	598.49	23.789	113.44	7.4894	33.297	818.91
#1	.00021	-.00002	.00080	-.00008	.01427	.05143	-.00033
#2	.00004	-.00020	.00065	.00052	.01585	.02988	.00287
#3	.00019	.00014	.00105	.00041	.01375	.03014	-.00169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.01024	.00156	.00159	29.864	.00192	F -.00607	-.00249
Stddev	.05055	.00009	.00028	.065	.00022	.00147	.00172
%RSD	493.60	5.8579	17.260	.21778	11.231	24.204	68.915
#1	.03541	.00162	.00128	29.894	.00215	-.00728	-.00322
#2	-.06457	.00146	.00171	29.909	.00190	-.00443	-.00373
#3	-.00157	.00161	.00179	29.790	.00172	-.00650	-.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: FBLK Acquired: 2/25/2015 8:47:48 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513158-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	.00270	.01036	-.00030	.00019	-.00084	.00093
Stddev	.00132	.00380	.00157	.00062	.00008	.00058	.00143
%RSD	5584.3	140.38	15.108	205.69	42.644	68.660	154.01
#1	-.00082	.00070	.00856	-.00024	.00020	-.00134	.00005
#2	-.00075	.00708	.01111	-.00094	.00027	-.00096	.00258
#3	.00150	.00033	.01141	.00029	.00011	-.00021	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00011	.00487	.95941
Stddev	.00043	.00002	.74615
%RSD	385.96	.46344	77.772
#1	.00035	.00485	.69722
#2	-.00039	.00489	1.8013
#3	.00038	.00488	.37974
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10528.	10382.
Stddev	11.	43.
%RSD	.10280	.40989
#1	10538.	10345.
#2	10528.	10373.
#3	10517.	10429.

Approved: February 26, 2015

Sample Name: L1501139514 Acquired: 2/25/2015 8:51:24 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.14895	.14827	.13697	.08099	.19086	.17240	19.111
Stddev	.00109	.00309	.00267	.00058	.00093	.00055	.038
%RSD	.73509	2.0859	1.9472	.71213	.48627	.31944	.19783
#1	.15020	.14753	.13414	.08039	.18979	.17303	19.137
#2	.14813	.15166	.13734	.08155	.19149	.17211	19.068
#3	.14854	.14561	.13943	.08102	.19129	.17205	19.129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.15857	.00172	.23178	.00264	.07645	1.0292	.00258
Stddev	.00063	.00001	.00027	.00063	.00659	.0273	.00059
%RSD	.39468	.69493	.11716	23.937	8.6220	2.6573	22.863
#1	.15922	.00173	.23147	.00335	.07882	1.0599	.00190
#2	.15798	.00171	.23197	.00246	.06900	1.0074	.00290
#3	.15849	.00172	.23190	.00212	.08152	1.0203	.00294
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0287	.25077	.00050	150.97	.12592	.07121	.28363
Stddev	.0469	.00209	.00030	.70	.00139	.00487	.00658
%RSD	4.5565	.83172	61.101	.46544	1.1011	6.8441	2.3192
#1	.99164	.25317	.00080	151.77	.12678	.07650	.28631
#2	1.0814	.24942	.00019	150.71	.12667	.06690	.28844
#3	1.0130	.24971	.00051	150.44	.12432	.07023	.27613
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: L1501139514 Acquired: 2/25/2015 8:51:24 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.26692	.19015	.51584	-.00020	.07154	.00273	-.00033
Stddev	.00385	.00395	.02004	.00038	.00035	.00193	.00248
%RSD	1.4412	2.0765	3.8855	185.63	.48364	70.560	746.17
#1	.26868	.19415	.52659	-.00064	.07179	.00218	.00118
#2	.26957	.19006	.52823	-.00002	.07114	.00114	-.00320
#3	.26250	.18625	.49272	.00005	.07167	.00488	.00102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00021	.10550	F -24.735
Stddev	.00032	.00534	1.793
%RSD	156.36	5.0635	7.2484
#1	.00052	.10890	-26.706
#2	-.00013	.10825	-24.297
#3	.00023	.09934	-23.201
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10347.	10495.
Stddev	36.	93.
%RSD	.34497	.88499
#1	10306.	10388.
#2	10375.	10557.
#3	10358.	10540.

Approved: February 26, 2015

Sample Name: L1501139514 0.2 Acquired: 2/25/2015 8:54:56 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG513286-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03046	.03163	.02780	.01747	.03847	.03575	3.8326
Stddev	.00128	.00064	.00292	.00140	.00025	.00016	.0072
%RSD	4.1897	2.0357	10.501	8.0159	.64491	.44942	.18751
#1	.03042	.03166	.02994	.01774	.03874	.03560	3.8260
#2	.02921	.03226	.02899	.01595	.03842	.03573	3.8402
#3	.03176	.03097	.02447	.01871	.03825	.03592	3.8315
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03252	.00042	.04714	.00021	.00975	.17257	.00088
Stddev	.00021	.00007	.00049	.00019	.00487	.05656	.00144
%RSD	.63210	17.250	1.0419	90.114	49.910	32.773	163.63
#1	.03251	.00049	.04760	.00026	.00413	.18095	.00196
#2	.03232	.00035	.04662	.00000	.01241	.22447	.00143
#3	.03273	.00043	.04718	.00036	.01271	.11229	-.00075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21745	.05406	.00021	29.999	.02564	.01689	.05759
Stddev	.03761	.00053	.00018	.034	.00029	.00447	.00235
%RSD	17.295	.97880	87.704	.11222	1.1293	26.487	4.0885
#1	.24970	.05462	.00024	30.021	.02596	.02004	.06029
#2	.22650	.05357	.00038	30.016	.02553	.01885	.05649
#3	.17614	.05400	.00001	29.960	.02542	.01177	.05599
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: L1501139514 0.2 Acquired: 2/25/2015 8:54:56 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG513286-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05410**	**.04008**	**.10164**	**.00011**	**.01424**	**-.00072**	**.00154**
Stddev	.00404	.00207	.00665	.00030	.00011	.00096	.00091
%RSD	7.4591	5.1722	6.5392	265.45	.76888	134.41	58.908
#1	.05691	.04113	.10608	-.00020	.01413	-.00120	.00050
#2	.05590	.04142	.10486	.00014	.01435	-.00135	.00214
#3	.04947	.03769	.09400	.00039	.01424	.00039	.00197
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00007**	**.02729**	F **-4.3160**
Stddev	.00041	.00113	.2928
%RSD	569.69	4.1419	6.7834
#1	.00013	.02828	-4.1618
#2	-.00036	.02753	-4.1326
#3	.00045	.02605	-4.6537
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10572.**	**10381.**
Stddev	16.	46.
%RSD	.14729	.43896
#1	10577.	10343.
#2	10585.	10432.
#3	10555.	10368.

Approved: February 26, 2015

Sample Name: L1502097302 Acquired: 2/25/2015 8:58:28 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.02255	.00094	.11801	.04885	.00004	35.916
Stddev	.00079	.00140	.00129	.00011	.00004	.00002	.165
%RSD	140.13	6.1955	136.25	.09596	.09116	45.908	.45989
#1	-.00032	.02107	.00070	.11799	.04881	.00002	35.792
#2	.00081	.02385	.00234	.11791	.04890	.00006	35.854
#3	.00120	.02273	-.00020	.11814	.04883	.00005	36.104
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	-.00006	.00122	-.00015	.32105	5.3230	.00287
Stddev	.00001	.00012	.00019	.00030	.00860	.0358	.00117
%RSD	5.2313	186.40	15.646	203.11	2.6778	.67171	40.843
#1	.00026	-.00020	.00140	.00007	.32580	5.2882	.00421
#2	.00027	-.00002	.00102	-.00002	.31113	5.3212	.00206
#3	.00029	.00003	.00123	-.00049	.32623	5.3596	.00234
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.6520	.38914	.00001	147.67	.00113	3.2794	-.00046
Stddev	.0452	.00157	.00026	1.28	.00052	.0049	.00119
%RSD	2.7339	.40462	3630.1	.86417	45.681	.14828	260.74
#1	1.6162	.38738	.00015	148.11	.00138	3.2750	.00062
#2	1.7027	.38961	-.00029	148.66	.00148	3.2785	-.00174
#3	1.6369	.39042	.00017	146.23	.00054	3.2846	-.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: L1502097302 Acquired: 2/25/2015 8:58:28 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00084	.00428	.25074	-.00016	.05793	-.00046	.00015
Stddev	.00123	.00463	.00248	.00063	.00015	.00106	.00194
%RSD	147.22	108.16	.98800	381.74	.26416	228.24	1285.6
#1	-.00046	-.00104	.25118	-.00048	.05776	-.00017	-.00194
#2	.00199	.00740	.25296	.00056	.05795	-.00163	.00049
#3	.00098	.00649	.24807	-.00057	.05807	.00042	.00190
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00013	.03096	F -.81887
Stddev	.00004	.00098	1.6594
%RSD	29.526	3.1685	202.65
#1	.00016	.03189	-1.4856
#2	.00009	.03105	-2.0413
#3	.00012	.02994	1.0702
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10285.	10488.
Stddev	7.	61.
%RSD	.07090	.58207
#1	10277.	10557.
#2	10291.	10468.
#3	10286.	10440.

Approved: February 26, 2015

Sample Name: L1502097302PS Acquired: 2/25/2015 9:02:03 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513286-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20374	4.9974	.20278	1.0719	.54681	.02554	37.351
Stddev	.00119	.0145	.00084	.0044	.00102	.00007	.099
%RSD	.58465	.29071	.41521	.40839	.18618	.29356	.26414
#1	.20254	5.0084	.20189	1.0673	.54580	.02549	37.446
#2	.20492	5.0029	.20356	1.0760	.54681	.02563	37.249
#3	.20377	4.9809	.20288	1.0723	.54783	.02551	37.359
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02510	.10131	.26042	.24884	2.3299	30.253	.51094
Stddev	.00007	.00018	.00188	.00039	.0101	.037	.00032
%RSD	.28598	.17435	.72256	.15724	.43145	.12132	.06306
#1	.02517	.10149	.25918	.24908	2.3253	30.291	.51132
#2	.02508	.10129	.26258	.24906	2.3230	30.218	.51074
#3	.02504	.10114	.25950	.24839	2.3415	30.250	.51078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.5167	.59801	.52475	159.22	.25120	7.7884	.24928
Stddev	.0197	.00174	.00049	.62	.00163	.0149	.00049
%RSD	.30260	.29019	.09244	.38656	.64893	.19172	.19488
#1	6.5380	.59984	.52428	159.92	.24980	7.7891	.24930
#2	6.4991	.59780	.52472	158.92	.25298	7.8030	.24975
#3	6.5130	.59639	.52524	158.80	.25081	7.7732	.24878
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: L1502097302PS Acquired: 2/25/2015 9:02:03 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513286-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.61182**	**.19389**	**2.8492**	**.51557**	**.56290**	**.52468**	**.25277**
Stddev	.00350	.00247	.0037	.00106	.00119	.00220	.00112
%RSD	.57251	1.2721	.13004	.20535	.21061	.41998	.44142
#1	.60786	.19655	2.8518	.51530	.56422	.52634	.25252
#2	.61451	.19343	2.8509	.51674	.56256	.52218	.25179
#3	.61309	.19168	2.8450	.51467	.56192	.52552	.25398
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.51372**	**.53071**	F **-3.2720**
Stddev	.00247	.00038	2.2294
%RSD	.48011	.07165	68.136
#1	.51360	.53037	-1.2200
#2	.51624	.53065	-5.6442
#3	.51132	.53112	-2.9518
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10369.**	**10388.**
Stddev	18.	42.
%RSD	.17716	.40645
#1	10378.	10343.
#2	10348.	10426.
#3	10381.	10396.

Approved: February 26, 2015

Sample Name: L1502097302SDL Acquired: 2/25/2015 9:05:21 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG513286-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	.00450	-.00088	.02941	.00997	-.00002	7.2404	.00023
Stddev	.00067	.00144	.00171	.00102	.00033	.00003	.0039	.00006
%RSD	148.94	32.072	195.10	3.4632	3.2878	202.21	.05441	27.760
#1	.00025	.00489	-.00011	.03052	.01034	-.00005	7.2379	.00030
#2	.00121	.00291	-.00284	.02921	.00980	-.00001	7.2383	.00019
#3	-.00010	.00572	.00031	.02852	.00976	.00001	7.2449	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	-.00005	.00006	.06197	1.0637	.00082	.36682	.08629
Stddev	.00017	.00013	.00020	.01281	.0125	.00124	.02995	.00026
%RSD	636.74	243.83	315.37	20.679	1.1754	151.85	8.1648	.30272
#1	.00013	-.00010	-.00017	.06312	1.0496	.00017	.33432	.08609
#2	.00012	.00009	.00018	.07416	1.0733	.00003	.37284	.08658
#3	-.00017	-.00016	.00018	.04861	1.0682	.00225	.39330	.08619
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00184	29.661	.00000	.65664	-.00032	.00038	.00319	.04905
Stddev	.00025	.126	.0009	.01619	.00133	.00066	.00407	.00431
%RSD	13.757	.42327	124110.	2.4657	414.78	174.21	127.48	8.7947
#1	.00168	29.569	-.00070	.66825	-.00006	-.00020	.00180	.05258
#2	.00213	29.610	.00107	.66352	-.00176	.00109	.00000	.05032
#3	.00171	29.804	-.00037	.63814	.00086	.00024	.00778	.04424
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 26, 2015

Sample Name: L1502097302SDL Acquired: 2/25/2015 9:05:21 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG513286-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00128	.01179	-.00020	.00153	.00012	.00746	.07915
Stddev	.00026	.00008	.00125	.00198	.00028	.00029	1.0333
%RSD	20.100	.71637	610.21	128.92	235.06	3.9183	1305.5
#1	.00104	.01173	-.00164	.00318	.00005	.00759	-1.1139
#2	.00127	.01189	.00046	-.00066	.00043	.00766	.68190
#3	.00155	.01176	.00057	.00209	-.00012	.00712	.66947
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10538.	10366.
Stddev	9.	28.
%RSD	.08790	.27002
#1	10535.	10367.
#2	10549.	10393.
#3	10532.	10337.

Approved: February 26, 2015

Sample Name: CCV Acquired: 2/25/2015 9:08:58 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40700	10.464	.40999	.50790	1.0168	.05147	10.375
Stddev	.00050	.028	.00214	.00204	.0049	.00005	.040
%RSD	.12174	.26837	.52091	.40259	.47950	.09653	.38155
#1	.40715	10.442	.41044	.50554	1.0115	.05153	10.353
#2	.40741	10.455	.41186	.50920	1.0211	.05145	10.421
#3	.40645	10.496	.40766	.50896	1.0178	.05144	10.351
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05087	.20518	.51885	.50961	4.1247	51.569	1.0180
Stddev	.00030	.00047	.00088	.00231	.0276	.168	.0050
%RSD	.58250	.23141	.16949	.45416	.67015	.32607	.48812
#1	.05054	.20464	.51845	.50702	4.0949	51.379	1.0126
#2	.05111	.20542	.51824	.51147	4.1495	51.699	1.0224
#3	.05097	.20550	.51986	.51034	4.1297	51.629	1.0189
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.447	.53078	1.0284	52.163	.51747	10.258	.51522
Stddev	.035	.00320	.0041	.180	.00109	.042	.00035
%RSD	.33766	.60217	.39929	.34564	.21035	.40696	.06837
#1	10.435	.52861	1.0239	51.962	.51622	10.210	.51554
#2	10.420	.52927	1.0321	52.309	.51821	10.288	.51530
#3	10.487	.53445	1.0291	52.218	.51798	10.275	.51484
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 26, 2015

Sample Name: CCV Acquired: 2/25/2015 9:08:58 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2305	.40914	5.1198	1.0301	1.0389	1.0383	.52330
Stddev	.0075	.00275	.0169	.0108	.0041	.0053	.00738
%RSD	.61095	.67293	.32961	1.0484	.39414	.51480	1.4110
#1	1.2219	.40931	5.1389	1.0177	1.0345	1.0325	.51478
#2	1.2336	.41181	5.1134	1.0374	1.0425	1.0431	.52772
#3	1.2359	.40631	5.1070	1.0351	1.0399	1.0393	.52742
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0177	1.0352	F -.76044
Stddev	.0036	.0022	1.9374
%RSD	.35213	.21115	254.77
#1	1.0137	1.0329	-2.9884
#2	1.0206	1.0372	.52882
#3	1.0188	1.0356	.17825
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10619.	10213.
Stddev	16.	43.
%RSD	.15027	.42297
#1	10634.	10216.
#2	10621.	10254.
#3	10602.	10168.

Approved: February 26, 2015

Sample Name: CCB Acquired: 2/25/2015 9:12:13 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00046**	**-.00229**	**.00180**	**.00288**	**.00028**	**-.00002**	**-.00126**
Stddev	.00037	.00082	.00142	.00112	.00019	.00000	.00214
%RSD	80.151	35.697	79.030	39.019	69.913	19.248	169.73
#1	-.00004	-.00157	.00302	.00417	.00047	-.00002	-.00041
#2	-.00074	-.00318	.00215	.00230	.00009	-.00003	.00032
#3	-.00060	-.00213	.00024	.00217	.00027	-.00002	-.00370
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**-.00003**	**-.00003**	**.00016**	**-.00220**	**.00086**	**.00064**
Stddev	.00003	.00047	.00015	.00032	.00504	.02442	.00053
%RSD	313.90	1540.6	572.90	202.50	228.79	2844.5	82.445
#1	.00003	.00004	-.00015	-.00017	-.00263	-.02436	.00048
#2	-.00003	-.00054	.00014	.00017	.00303	.00254	.00021
#3	-.00003	.00040	-.00007	.00047	-.00701	.02440	.00122
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.01994**	**.00003**	**.00456**	**-.02953**	**-.00011**	**.00303**	**-.00166**
Stddev	.02342	.00005	.00021	.00539	.00089	.00232	.00087
%RSD	117.47	148.51	4.5491	18.271	789.20	76.654	52.156
#1	-.04416	-.00002	.00448	-.02393	.00012	.00201	-.00201
#2	-.01824	.00007	.00441	-.03470	.00064	.00569	-.00230
#3	.00259	.00005	.00480	-.02995	-.00110	.00139	-.00067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: CCB Acquired: 2/25/2015 9:12:13 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	-.00022	-.00262	-.00032	.00018	-.00177	.00365
Stddev	.00120	.00373	.00149	.00052	.00017	.00142	.00061
%RSD	599.25	1671.9	56.807	161.97	98.757	80.509	16.651
#1	.00115	.00229	-.00326	.00028	.00035	-.00267	.00422
#2	-.00064	-.00451	-.00370	-.00059	.00018	-.00013	.00301
#3	-.00112	.00155	-.00092	-.00066	.00000	-.00251	.00370
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00011	-.00026	F 1.3045
Stddev	.00026	.00015	2.6456
%RSD	243.10	59.653	202.80
#1	-.00022	-.00021	.23595
#2	.00019	-.00014	-.63964
#3	-.00029	-.00043	4.3172
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10569.	10240.
Stddev	4.	89.
%RSD	.03584	.86666
#1	10565.	10272.
#2	10573.	10308.
#3	10569.	10140.

Approved: February 26, 2015

Sample Name: L1502111005 Acquired: 2/25/2015 9:15:54 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513260-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	.03420	-.00261	.00439	.00040	-.00003	.22183
Stddev	.00032	.00082	.00259	.00074	.00041	.00001	.01194
%RSD	154.87	2.4036	99.165	16.841	101.91	39.878	5.3817
#1	.00053	.03509	-.00326	.00522	-.00006	-.00002	.23131
#2	-.00012	.03347	-.00480	.00378	.00053	-.00004	.20842
#3	.00021	.03402	.00024	.00419	.00074	-.00003	.22577
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	-.00020	.00057	.03026	.06675	.13485	.00046
Stddev	.00008	.00005	.00017	.00013	.00801	.01212	.00191
%RSD	43.297	28.073	30.506	.41819	11.999	8.9896	414.08
#1	.00027	-.00018	.00077	.03026	.05761	.12339	.00249
#2	.00010	-.00015	.00046	.03039	.07256	.14754	-.00132
#3	.00021	-.00026	.00048	.03014	.07008	.13362	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05036	.00368	.00105	.04784	.00052	F -.00404	.00353
Stddev	.01761	.00012	.00026	.00844	.00011	.00448	.00232
%RSD	34.969	3.1594	24.589	17.632	20.486	110.94	65.865
#1	.06460	.00356	.00091	.04689	.00048	-.00064	.00545
#2	.03067	.00370	.00134	.03992	.00063	-.00912	.00095
#3	.05582	.00379	.00089	.05672	.00043	-.00236	.00418
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502111005 Acquired: 2/25/2015 9:15:54 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513260-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	-.00004	.06119	.00010	.00029	.00057	.00067
Stddev	.00249	.00083	.00289	.00021	.00006	.00113	.00112
%RSD	605.77	2001.7	4.7174	204.99	20.545	196.87	167.41
#1	.00232	-.00099	.06223	.00034	.00025	.00167	.00127
#2	-.00241	.00042	.06341	.00001	.00036	.00063	-.00062
#3	.00132	.00045	.05792	-.00005	.00027	-.00058	.00135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00014	.01358	1.3755
Stddev	.00036	.00053	3.4524
%RSD	261.94	3.8947	251.00
#1	.00054	.01382	-2.0346
#2	.00002	.01394	1.2923
#3	-.00015	.01297	4.8687
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10596.	10357.
Stddev	4.	23.
%RSD	.03452	.21974
#1	10597.	10331.
#2	10599.	10366.
#3	10592.	10373.

Approved: February 26, 2015

Sample Name: L1502111005MS Acquired: 2/25/2015 9:19:29 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513260-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20364	5.0064	.20038	.95370	.51031	.02492	5.7407
Stddev	.00141	.0148	.00287	.00340	.00706	.00003	.0812
%RSD	.69458	.29558	1.4317	.35637	1.3830	.10384	1.4141
#1	.20350	5.0035	.19874	.95291	.50551	.02489	5.6781
#2	.20229	5.0224	.20369	.95742	.50700	.02494	5.7115
#3	.20511	4.9933	.19870	.95076	.51841	.02492	5.8324
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02501	.10390	.26207	.28353	2.1120	25.545	.50983
Stddev	.00047	.00185	.00159	.00526	.0263	.051	.00319
%RSD	1.8619	1.7811	.60600	1.8538	1.2477	.19824	.62473
#1	.02461	.10216	.26038	.28023	2.0925	25.491	.50711
#2	.02552	.10584	.26232	.28959	2.1016	25.591	.50904
#3	.02491	.10370	.26352	.28076	2.1420	25.553	.51333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.0518	.25533	.52941	25.755	.25703	4.8695	.25656
Stddev	.0512	.00003	.00829	.049	.00252	.0784	.00355
%RSD	1.0139	.00980	1.5663	.19197	.98103	1.6093	1.3853
#1	5.0002	.25533	.52344	25.723	.25500	4.8087	.25732
#2	5.1027	.25530	.53888	25.812	.25985	4.9579	.25967
#3	5.0526	.25535	.52592	25.731	.25624	4.8418	.25268
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: L1502111005MS Acquired: 2/25/2015 9:19:29 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513260-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.60932	.18782	2.6739	.51475	.51927	.52358	.26061
Stddev	.01074	.00410	.0257	.00401	.00101	.00130	.00112
%RSD	1.7629	2.1818	.96091	.77927	.19389	.24804	.43135
#1	.60663	.18661	2.6593	.51313	.51844	.52211	.26074
#2	.62115	.19238	2.7036	.51932	.52039	.52407	.26167
#3	.60018	.18446	2.6588	.51180	.51898	.52456	.25943
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.51054	.51130	F -.33399
Stddev	.00102	.00100	.22437
%RSD	.19942	.19605	67.180
#1	.50946	.51240	-.32980
#2	.51149	.51107	-.11174
#3	.51067	.51043	-.56043
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10535.	10483.
Stddev	10.	23.
%RSD	.09443	.22104
#1	10546.	10469.
#2	10526.	10471.
#3	10533.	10510.

Approved: February 26, 2015

Sample Name: L1502111005MSD Acquired: 2/25/2015 9:22:45 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513260-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.18258	4.4634	.17481	.85860	.44827	.02212	4.7521
Stddev	.00039	.0178	.00298	.00106	.00103	.00007	.0106
%RSD	.21309	.39883	1.7028	.12305	.23005	.33612	.22277
#1	.18213	4.4802	.17385	.85945	.44934	.02220	4.7533
#2	.18275	4.4448	.17244	.85742	.44728	.02206	4.7410
#3	.18285	4.4652	.17815	.85894	.44821	.02209	4.7620
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02243	.09230	.23343	.25232	1.8886	22.619	.45127
Stddev	.00050	.00149	.00059	.00376	.0147	.041	.00046
%RSD	2.2116	1.6131	.25173	1.4900	.77679	.18174	.10301
#1	.02223	.09123	.23403	.25008	1.9049	22.586	.45132
#2	.02206	.09167	.23339	.25023	1.8848	22.665	.45170
#3	.02299	.09400	.23286	.25666	1.8763	22.607	.45078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.4426	.22798	.47148	22.705	.23023	4.3547	.22949
Stddev	.0218	.00010	.00841	.057	.00308	.0697	.00122
%RSD	.49143	.04466	1.7837	.25086	1.3393	1.6011	.53153
#1	4.4177	.22791	.46614	22.692	.22828	4.3303	.23016
#2	4.4517	.22792	.46712	22.767	.22863	4.3005	.22808
#3	4.4584	.22809	.48118	22.655	.23379	4.4334	.23022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: L1502111005MSD Acquired: 2/25/2015 9:22:45 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513260-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.55060	.17473	2.4113	.46472	.45795	.46106	.23695
Stddev	.00128	.00209	.0120	.00248	.00111	.00465	.00197
%RSD	.23311	1.1935	.49662	.53302	.24239	1.0093	.83333
#1	.55207	.17698	2.4211	.46755	.45750	.46416	.23913
#2	.55005	.17436	2.4147	.46370	.45922	.46330	.23527
#3	.54968	.17286	2.3979	.46293	.45714	.45571	.23646
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.45423	.47307	F -.72155
Stddev	.00162	.01650	.58204
%RSD	.35625	3.4879	80.666
#1	.45426	.48435	-.42888
#2	.45260	.48073	-.34392
#3	.45584	.45413	-1.3918
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10572.	10521.
Stddev	14.	24.
%RSD	.13414	.23113
#1	10588.	10526.
#2	10563.	10494.
#3	10564.	10542.

Approved: February 26, 2015

Sample Name: CCV Acquired: 2/25/2015 9:26:08 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41183	10.304	.41665	.51958	1.0364	.05172	10.503
Stddev	.00253	.035	.00831	.00098	.0013	.00015	.049
%RSD	.61323	.33984	1.9942	.18938	.12977	.28241	.46590
#1	.41335	10.268	.41245	.52049	1.0350	.05183	10.448
#2	.40891	10.305	.41127	.51854	1.0376	.05155	10.519
#3	.41322	10.338	.42622	.51972	1.0367	.05178	10.542
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05162	.20782	.52287	.51536	4.1671	52.186	1.0334
Stddev	.00080	.00360	.00177	.00853	.0192	.168	.0004
%RSD	1.5503	1.7335	.33841	1.6547	.45957	.32277	.04140
#1	.05127	.20562	.52164	.50986	4.1476	51.992	1.0335
#2	.05106	.20585	.52206	.51104	4.1859	52.298	1.0329
#3	.05254	.21197	.52489	.52518	4.1677	52.268	1.0337
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.381	.52286	1.0407	52.603	.52576	10.348	.52477
Stddev	.058	.00206	.0097	.291	.01134	.101	.00796
%RSD	.55558	.39338	.93247	.55303	2.1571	.97616	1.5161
#1	10.317	.52049	1.0373	52.270	.51926	10.290	.52181
#2	10.430	.52394	1.0332	52.729	.51916	10.288	.51872
#3	10.396	.52415	1.0517	52.810	.53886	10.464	.53378
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 26, 2015

Sample Name: CCV Acquired: 2/25/2015 9:26:08 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2550**	**.41839**	**5.1566**	**1.0416**	**1.0528**	**1.0478**	**.53172**
Stddev	.0222	.00202	.0477	.0087	.0049	.0038	.00417
%RSD	1.7660	.48163	.92457	.83436	.46956	.36325	.78499
#1	1.2460	.41607	5.1317	1.0374	1.0471	1.0488	.53121
#2	1.2387	.41955	5.1265	1.0358	1.0554	1.0511	.52782
#3	1.2802	.41956	5.2116	1.0516	1.0558	1.0437	.53612
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0219**	**1.0318**	F **-.31056**
Stddev	.0045	.0013	2.3294
%RSD	.44108	.12108	750.09
#1	1.0267	1.0333	-2.6160
#2	1.0178	1.0314	2.0421
#3	1.0211	1.0309	-.35774
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10658.**	**10473.**
Stddev	26.	74.
%RSD	.24739	.70346
#1	10666.	10549.
#2	10679.	10468.
#3	10628.	10402.

Approved: February 26, 2015

Sample Name: CCB Acquired: 2/25/2015 9:29:23 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00039**	**-.00228**	**.00105**	**.00540**	**-.00009**	**-.00004**	**.00641**
Stddev	.00008	.00298	.00266	.00055	.00028	.00002	.00792
%RSD	20.750	130.97	253.78	10.150	309.41	56.767	123.69
#1	.00032	-.00093	.00011	.00506	-.00028	-.00002	.00693
#2	.00037	-.00021	.00406	.00510	.00023	-.00006	.01405
#3	.00048	-.00570	-.00102	.00603	-.00023	-.00003	-.00177
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**-.00005**	**.00029**	**-.00005**	**-.00152**	**.00723**	**.00108**
Stddev	.00011	.00016	.00066	.00030	.00776	.01096	.00086
%RSD	381.87	344.70	225.55	601.17	508.63	151.65	79.580
#1	.00006	.00012	.00105	.00004	-.00997	.00345	.00204
#2	-.00010	-.00005	.00000	-.00038	.00010	.01958	.00038
#3	.00012	-.00020	-.00017	.00019	.00529	-.00134	.00083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00787**	**-.00010**	**.00472**	**-.03244**	**.00001**	**.00150**	**-.00194**
Stddev	.01648	.00011	.00032	.01062	.00063	.00144	.00205
%RSD	209.52	113.03	6.8094	32.736	4859.6	96.344	105.24
#1	.00174	.00000	.00436	-.02028	.00005	.00010	-.00263
#2	.02654	-.00008	.00498	-.03711	.00062	.00299	-.00356
#3	-.00468	-.00021	.00481	-.03991	-.00063	.00141	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: CCB Acquired: 2/25/2015 9:29:23 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00058	.00348	-.00417	.00000	.00018	-.00097	.00144
Stddev	.00172	.00144	.00139	.0003	.00009	.00180	.00140
%RSD	298.25	41.297	33.462	10418.	50.043	185.74	97.398
#1	.00077	.00502	-.00504	-.00009	.00017	-.00199	.00300
#2	-.00123	.00326	-.00256	.00034	.00010	.00111	.00027
#3	.00219	.00217	-.00490	-.00026	.00028	-.00203	.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00019	-.00013	F .71211
Stddev	.00013	.00020	.99984
%RSD	66.582	147.21	140.41
#1	.00023	.00009	1.5319
#2	.00030	-.00027	-.40178
#3	.00005	-.00022	1.0062
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10565.	10353.
Stddev	18.	50.
%RSD	.17409	.48503
#1	10546.	10389.
#2	10583.	10375.
#3	10565.	10296.

Approved: February 26, 2015

Sample Name: LLCCV Acquired: 2/25/2015 9:33:03 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01195	-.00477	.10142	.00216	.01138	-.00003	.01297	.01216
Stddev	.00031	.00031	.00197	.00059	.00059	.00002	.00620	.00007
%RSD	2.5539	6.5894	1.9377	27.152	5.1569	71.784	47.783	.57627
#1	.01161	-.00441	.10333	.00231	.01166	-.00002	.00581	.01211
#2	.01202	-.00495	.10153	.00152	.01070	-.00006	.01662	.01213
#3	.01221	-.00495	.09941	.00266	.01177	-.00002	.01646	.01224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.02376	-.00092	-.00171	-.01525	.00146	-.04204	.00013
Stddev	.00003	.00041	.00019	.00725	.03605	.00073	.01462	.00005
%RSD	78.375	1.7330	21.102	423.38	236.48	50.227	34.769	37.355
#1	.00006	.02415	-.00070	.00182	-.03224	.00085	-.04168	.00009
#2	.00004	.02333	-.00104	-.01005	-.03965	.00125	-.02760	.00019
#3	.00001	.02378	-.00103	.00309	.02616	.00227	-.05682	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	-.01803	-.00010	-.00140	.11362	-.00067	.09125	-.00327
Stddev	.00011	.00318	.00053	.00085	.00420	.00152	.00444	.00108
%RSD	11.894	17.651	540.53	61.122	3.6947	228.53	4.8666	33.030
#1	.00095	-.01790	.00044	-.00045	.11652	-.00129	.09381	-.00220
#2	.00077	-.01492	-.00062	-.00211	.11552	-.00178	.09381	-.00324
#3	.00096	-.02128	-.00012	-.00163	.10880	.00107	.08612	-.00436
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 26, 2015

Sample Name: LLCCV Acquired: 2/25/2015 9:33:03 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	-.00016	.00023	.00273	.00008	.00288	.81962
Stddev	.00032	.00014	.00036	.00275	.00041	.00023	1.8364
%RSD	70.289	87.612	159.22	100.79	512.14	7.9129	224.05
#1	.00073	-.00030	.00049	.00171	-.00034	.00301	2.4355
#2	.00051	-.00003	.00038	.00584	.00047	.00302	-1.1775
#3	.00011	-.00014	-.00019	.00063	.00011	.00262	1.2009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10666.	10486.
Stddev	25.	154.
%RSD	.23737	1.4710
#1	10689.	10309.
#2	10639.	10590.
#3	10671.	10559.

Approved: February 26, 2015

Sample Name: PBW 78 Acquired: 2/25/2015 9:36:39 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513127-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.01531	-.00144	.00176	.00007	-.00006	.14198
Stddev	.00073	.00063	.00247	.00133	.00021	.00001	.00141
%RSD	772.56	4.1116	171.89	75.820	288.36	10.077	.99457
#1	-.00016	.01549	-.00281	.00071	.00030	-.00007	.14080
#2	-.00047	.01583	-.00291	.00326	-.00012	-.00006	.14160
#3	.00091	.01461	.00141	.00131	.00004	-.00005	.14354
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	-.00012	.00026	.00013	.00894	.04251	.00032
Stddev	.00004	.00014	.00037	.00018	.01148	.02215	.00108
%RSD	25.189	111.53	142.57	141.17	128.43	52.113	333.76
#1	.00012	-.00007	.00068	.00018	-.00367	.04942	.00124
#2	.00019	-.00028	.00006	-.00007	.01170	.06038	.00060
#3	.00015	-.00002	.00003	.00028	.01878	.01772	-.00087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00751	.00067	.00042	.05038	.00067	F -.01058	-.00056
Stddev	.01482	.00002	.00017	.00373	.00047	.00571	.00077
%RSD	197.20	2.6742	40.031	7.4010	70.245	53.923	137.79
#1	.00694	.00068	.00023	.05427	.00089	-.01296	.00010
#2	-.00682	.00068	.00051	.05002	.00100	-.01471	-.00037
#3	-.02267	.00065	.00052	.04684	.00013	-.00407	-.00141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: PBW 78 Acquired: 2/25/2015 9:36:39 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513127-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00212	.00301	-.00043	.00017	.00200	.00169
Stddev	.00306	.00170	.00112	.00022	.00002	.00072	.00140
%RSD	987.07	80.301	37.056	51.878	10.842	36.037	82.522
#1	-.00149	.00163	.00199	-.00024	.00016	.00125	.00289
#2	-.00142	.00401	.00421	-.00038	.00017	.00269	.00203
#3	.00384	.00072	.00285	-.00068	.00020	.00206	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00025	.00484	.89027
Stddev	.00038	.00012	1.1586
%RSD	155.54	2.4621	130.14
#1	-.00018	.00490	-.44725
#2	.00057	.00470	1.5854
#3	.00034	.00491	1.5326
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10647.	10557.
Stddev	9.	22.
%RSD	.08335	.21002
#1	10649.	10533.
#2	10637.	10562.
#3	10654.	10576.

Approved: February 26, 2015

Sample Name: LCSW 78 Acquired: 2/25/2015 9:40:16 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513127-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20353	4.9604	.19336	.95270	.51469	.02497	5.2268
Stddev	.00305	.0081	.00227	.01103	.00082	.00017	.0190
%RSD	1.4987	.16306	1.1755	1.1581	.15918	.66582	.36280
#1	.20449	4.9599	.19388	.95540	.51473	.02504	5.2054
#2	.20598	4.9687	.19532	.96214	.51386	.02510	5.2415
#3	.20011	4.9525	.19087	.94057	.51549	.02479	5.2335
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02453	.10212	.26232	.25016	2.0839	25.889	.51637
Stddev	.00033	.00187	.00211	.00304	.0135	.068	.00129
%RSD	1.3524	1.8324	.80533	1.2154	.64852	.26406	.25012
#1	.02477	.10302	.26325	.25227	2.0945	25.839	.51520
#2	.02467	.10337	.26381	.25154	2.0687	25.967	.51775
#3	.02415	.09997	.25990	.24668	2.0886	25.861	.51616
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.0812	.25559	.51963	26.016	.25435	4.8155	.25716
Stddev	.0492	.00055	.00895	.105	.00334	.0509	.00478
%RSD	.96838	.21497	1.7229	.40267	1.3135	1.0571	1.8605
#1	5.0260	.25510	.52498	25.964	.25586	4.8424	.25916
#2	5.0969	.25618	.52461	26.136	.25668	4.8473	.26062
#3	5.1206	.25548	.50929	25.948	.25052	4.7568	.25170
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: LCSW 78 Acquired: 2/25/2015 9:40:16 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513127-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.60853	.18298	2.5971	.51187	.52620	.53193	.26151
Stddev	.00877	.00142	.0587	.01124	.00129	.00326	.00452
%RSD	1.4409	.77388	2.2621	2.1965	.24608	.61304	1.7279
#1	.61063	.18363	2.6049	.51506	.52523	.52868	.26246
#2	.61605	.18396	2.6516	.52118	.52767	.53189	.26548
#3	.59890	.18136	2.5349	.49938	.52571	.53521	.25659
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.51085	.51265	F -3.3971
Stddev	.00451	.01572	.9994
%RSD	.88350	3.0654	29.419
#1	.51202	.50437	-2.3239
#2	.51466	.53078	-3.5661
#3	.50586	.50282	-4.3012
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10650.	10484.
Stddev	98.	5.
%RSD	.92213	.04487
#1	10604.	10479.
#2	10584.	10485.
#3	10763.	10488.

Approved: February 26, 2015

Sample Name: L1502105302 Acquired: 2/25/2015 9:43:33 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513127-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	.00251	-.00250	.02901	.04521	-.00007	92.728	.00106
Stddev	.00021	.00287	.00288	.00033	.00028	.00001	.139	.00014
%RSD	107.87	114.15	115.01	1.1220	.61873	7.7603	.15000	13.616
#1	-.00040	.00557	-.00046	.02928	.04515	-.00007	92.887	.00090
#2	.00001	-.00012	-.00580	.02911	.04551	-.00008	92.665	.00110
#3	-.00019	.00209	-.00125	.02865	.04496	-.00007	92.632	.00117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00258	.00374	-.00042	.24781	2.7620	.07391	43.848	.15977
Stddev	.00009	.00049	.00068	.00468	.0148	.00059	.053	.00086
%RSD	3.5053	13.238	161.84	1.8877	.53689	.79799	.12014	.53949
#1	.00250	.00327	.00036	.24466	2.7636	.07445	43.875	.16069
#2	.00268	.00369	-.00074	.25319	2.7760	.07328	43.787	.15964
#3	.00255	.00425	-.00089	.24559	2.7465	.07400	43.881	.15898
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00200	228.70	.00403	.08728	-.00157	-.00006	.00406	17.519
Stddev	.00010	4.23	.00052	.00424	.00109	.00053	.00454	.051
%RSD	5.0068	1.8477	12.844	4.8589	69.849	929.81	111.86	.29313
#1	.00191	231.89	.00462	.09074	-.00088	-.00063	.00004	17.499
#2	.00200	230.30	.00380	.08255	-.00099	.00040	.00315	17.577
#3	.00211	223.91	.00367	.08854	-.00283	.00007	.00898	17.481
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 26, 2015

Sample Name: L1502105302 Acquired: 2/25/2015 9:43:33 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513127-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**1.9536**	**-.00473**	**.00202**	**.00033**	**.00392**	**1.4243**
Stddev	.00083	.0062	.00146	.00194	.00033	.00008	.7449
%RSD	851.28	.31951	30.825	95.890	98.698	2.1580	52.302
#1	.00102	1.9604	-.00441	.00398	-.00005	.00397	2.1842
#2	-.00058	1.9524	-.00346	.00197	.00052	.00397	1.3932
#3	-.00015	1.9481	-.00632	.00011	.00053	.00382	.69535
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10168.**	**10470.**
Stddev	5.	45.
%RSD	.04961	.43152
#1	10173.	10418.
#2	10164.	10492.
#3	10167.	10500.

Approved: February 26, 2015

Sample Name: L1502105302MS Acquired: 2/25/2015 9:47:12 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513127-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20638	4.9582	.20651	.99977	.55485	.02547	100.71
Stddev	.00074	.0902	.00796	.00360	.00110	.00008	.69
%RSD	.36067	1.8193	3.8538	.36033	.19903	.33141	.68916
#1	.20557	4.8555	.19738	.99696	.55396	.02538	99.983
#2	.20655	4.9940	.21193	.99852	.55451	.02551	100.79
#3	.20703	5.0249	.21024	1.0038	.55609	.02553	101.37
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02630	.10364	.26280	.24733	2.2807	28.686	.58095
Stddev	.00060	.00186	.00140	.00475	.0152	.099	.01245
%RSD	2.2941	1.7944	.53167	1.9216	.66565	.34495	2.1436
#1	.02563	.10156	.26119	.24187	2.2828	28.770	.59522
#2	.02647	.10421	.26356	.24955	2.2646	28.577	.57541
#3	.02680	.10515	.26366	.25056	2.2947	28.712	.57223
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	49.941	.41060	.53075	211.16	.25217	5.2434	.24707
Stddev	.206	.00566	.01016	42.60	.00492	.0949	.00459
%RSD	.41281	1.3794	1.9148	20.174	1.9504	1.8096	1.8584
#1	50.040	.40458	.51906	260.35	.24683	5.1341	.24177
#2	49.704	.41141	.53575	186.06	.25317	5.3048	.24962
#3	50.080	.41582	.53745	187.09	.25651	5.2912	.24983
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: L1502105302MS Acquired: 2/25/2015 9:47:12 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513127-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.62737**	**.19805**	**20.657**	**.50868**	**2.5362**	**.51950**	**.24008**
Stddev	.00997	.00181	.177	.00211	.0180	.00475	.00109
%RSD	1.5895	.91243	.85531	.41481	.70972	.91502	.45339
#1	.61827	.19596	20.455	.51055	2.5212	.51615	.23890
#2	.62581	.19913	20.736	.50639	2.5314	.51743	.24028
#3	.63803	.19905	20.781	.50909	2.5562	.52494	.24105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.51182**	**.50456**	F **-.38526**
Stddev	.00152	.01518	.90771
%RSD	.29613	3.0086	235.61
#1	.51117	.52207	-1.4077
#2	.51074	.49516	-.07397
#3	.51356	.49646	.32585
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10081.**	**10143.**
Stddev	23.	158.
%RSD	.22705	1.5603
#1	10104.	10323.
#2	10081.	10079.
#3	10058.	10026.

Approved: February 26, 2015

Sample Name: L1502105302MSD Acquired: 2/25/2015 9:50:31 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513127-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20710	5.0306	.20638	1.0013	.56044	.02556	99.587
Stddev	.00062	.1236	.00505	.0025	.00733	.00008	1.350
%RSD	.29760	2.4576	2.4473	.25239	1.3085	.31285	1.3559
#1	.20653	4.8898	.20064	.99865	.55740	.02560	98.445
#2	.20703	5.0802	.20837	1.0017	.55512	.02547	99.238
#3	.20776	5.1217	.21014	1.0037	.56881	.02561	101.08
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02643	.10480	.26229	.24891	2.3122	28.752	.57685
Stddev	.00025	.00201	.00049	.00318	.0420	.246	.01673
%RSD	.96222	1.9171	.18496	1.2791	1.8150	.85420	2.8994
#1	.02614	.10250	.26256	.24526	2.2828	29.020	.59616
#2	.02654	.10572	.26173	.25034	2.2935	28.538	.56713
#3	.02661	.10619	.26258	.25112	2.3602	28.696	.56725
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	49.294	.41315	.53540	206.91	.25301	5.2461	.24545
Stddev	.243	.01091	.00898	39.67	.00488	.0860	.00190
%RSD	.49240	2.6405	1.6781	19.172	1.9281	1.6400	.77374
#1	49.188	.40092	.52524	252.71	.24820	5.1484	.24333
#2	49.123	.41666	.53869	183.44	.25289	5.2792	.24699
#3	49.572	.42187	.54228	184.57	.25795	5.3106	.24604
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: L1502105302MSD Acquired: 2/25/2015 9:50:31 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513127-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.62936	.19833	20.255	.51142	2.5093	.52379	.24435
Stddev	.00783	.00276	.138	.00192	.0166	.00446	.00288
%RSD	1.2445	1.3906	.67898	.37637	.66284	.85238	1.1774
#1	.62090	.19816	20.108	.51230	2.4913	.52029	.24533
#2	.63636	.19566	20.278	.50922	2.5127	.52226	.24111
#3	.63082	.20117	20.380	.51276	2.5240	.52881	.24661
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.51459	.49822	F -1.5168
Stddev	.00179	.00019	.2795
%RSD	.34860	.03813	18.425
#1	.51293	.49844	-1.3790
#2	.51434	.49809	-1.8384
#3	.51650	.49813	-1.3330
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10063.	10026.
Stddev	13.	262.
%RSD	.12990	2.6122
#1	10074.	10322.
#2	10066.	9931.3
#3	10048.	9824.3

Approved: February 26, 2015

Sample Name: L1502105304 Acquired: 2/25/2015 9:53:50 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	.00713	-.00170	.03806	.04734	-.00011	100.21	.00082
Stddev	.00031	.00140	.00145	.00025	.00043	.00002	1.47	.00021
%RSD	59.028	19.602	85.400	.65534	.90293	17.082	1.4676	25.794
#1	.00021	.00623	-.00066	.03806	.04753	-.00011	99.104	.00065
#2	.00083	.00874	-.00336	.03830	.04686	-.00012	99.642	.00106
#3	.00055	.00641	-.00108	.03780	.04765	-.00009	101.88	.00076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00319	.00113	-.00037	6.4893	2.8205	.06903	48.990	.48037
Stddev	.00014	.00037	.00016	.1177	.0755	.00070	.431	.00933
%RSD	4.3784	33.248	43.731	1.8135	2.6768	1.0134	.88007	1.9423
#1	.00311	.00118	-.00024	6.3960	2.9076	.06945	48.893	.46997
#2	.00335	.00073	-.00031	6.4504	2.7800	.06943	48.615	.48316
#3	.00310	.00147	-.00055	6.6215	2.7740	.06822	49.461	.48799
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00262	166.59	.00241	.03799	.00029	-.00220	.00514	13.990
Stddev	.00009	38.79	.00113	.00175	.00114	.00266	.00565	.020
%RSD	3.4243	23.281	46.864	4.5946	389.62	120.78	109.89	.14488
#1	.00272	211.32	.00323	.03718	.00119	.00083	.00028	14.006
#2	.00257	142.26	.00112	.03680	.00066	-.00327	.01134	13.968
#3	.00257	146.20	.00289	.04000	-.00098	-.00417	.00381	13.998
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 26, 2015

Sample Name: L1502105304 Acquired: 2/25/2015 9:53:50 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00030**	**1.8824**	**-.00498**	**-.00021**	**.00031**	**.00419**	**3.9886**
Stddev	.00019	.0244	.00180	.00134	.00007	.00026	.8741
%RSD	63.858	1.2946	36.136	622.56	23.994	6.1654	21.914
#1	-.00012	1.8631	-.00400	.00019	.00037	.00398	3.5050
#2	-.00028	1.8744	-.00705	.00087	.00032	.00410	3.4631
#3	-.00051	1.9098	-.00388	-.00171	.00023	.00448	4.9975
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10087.**	**10143.**
Stddev	20.	200.
%RSD	.19613	1.9735
#1	10110.	10369.
#2	10076.	10071.
#3	10076.	9989.0

Approved: February 26, 2015

Sample Name: L1502105306 Acquired: 2/25/2015 9:57:21 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.01194	-.00283	.02987	.02308	-.00007	73.214	.00096
Stddev	.00069	.00189	.00139	.00117	.00007	.00001	.307	.00012
%RSD	385.45	15.826	48.926	3.9291	.32272	13.977	.41932	12.629
#1	.00098	.00980	-.00127	.02980	.02302	-.00006	72.873	.00096
#2	-.00019	.01267	-.00333	.03108	.02316	-.00007	73.299	.00084
#3	-.00025	.01336	-.00390	.02873	.02306	-.00007	73.469	.00108
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00108	.00053	-.00015	.05744	1.4902	.06110	34.759	.11931
Stddev	.00006	.00042	.00038	.01159	.0117	.00046	.232	.00284
%RSD	5.8428	78.887	255.98	20.185	.78775	.75453	.66633	2.3775
#1	.00111	.00099	-.00048	.07036	1.4951	.06162	34.536	.11619
#2	.00112	.00043	-.00024	.05402	1.4768	.06096	34.742	.12001
#3	.00101	.00017	.00027	.04794	1.4988	.06073	34.999	.12174
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	157.21	.00110	.06480	-.00154	-.00033	.00013	17.816
Stddev	.00011	38.15	.00054	.00521	.00148	.00045	.00274	.025
%RSD	15.325	24.266	48.869	8.0380	96.025	135.59	2184.1	.13979
#1	.00079	201.25	.00056	.07031	-.00126	-.00045	-.00141	17.796
#2	.00084	134.45	.00110	.05996	-.00022	.00017	-.00151	17.808
#3	.00062	135.94	.00164	.06413	-.00314	-.00071	.00329	17.844
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 26, 2015

Sample Name: L1502105306 Acquired: 2/25/2015 9:57:21 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**.93620**	**-.00171**	**-.00104**	**.00064**	**.00355**	**.72917**
Stddev	.00062	.00273	.00110	.00156	.00043	.00006	.36063
%RSD	667.25	.29184	64.434	150.91	67.392	1.6433	49.457
#1	.00003	.93310	-.00287	-.00170	.00028	.00358	.31298
#2	-.00076	.93824	-.00067	-.00216	.00111	.00358	.92542
#3	.00045	.93727	-.00159	.00075	.00052	.00348	.94912
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10197.**	**10051.**
Stddev	10.	256.
%RSD	.10249	2.5518
#1	10208.	10341.
#2	10187.	9957.5
#3	10197.	9854.4

Approved: February 26, 2015

Sample Name: L1502105308 Acquired: 2/25/2015 10:00:54 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.00917	-.00140	.02670	.08830	-.00006	92.579	.00042
Stddev	.00080	.00283	.00016	.00086	.00064	.00002	.034	.00008
%RSD	246.55	30.846	11.150	3.2079	.72929	29.604	.03715	19.232
#1	.00102	.01017	-.00157	.02765	.08863	-.00008	92.613	.00033
#2	-.00055	.00598	-.00136	.02647	.08756	-.00007	92.580	.00049
#3	.00050	.01137	-.00127	.02598	.08871	-.00004	92.544	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	.00595	.00006	.03455	1.9869	.01831	5.0845	.01096
Stddev	.00025	.00067	.00039	.00676	.0318	.00057	.0586	.00011
%RSD	137.96	11.203	676.03	19.578	1.6003	3.0934	1.1530	1.0276
#1	-.00037	.00671	-.00038	.03376	2.0235	.01875	5.0766	.01103
#2	-.00028	.00570	.00018	.04167	1.9662	.01767	5.0302	.01083
#3	.00010	.00545	.00037	.02822	1.9711	.01852	5.1467	.01103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00757	28.762	.00111	.02404	-.00015	-.00028	.00027	11.017
Stddev	.00018	.096	.00033	.00388	.00091	.00182	.00342	.008
%RSD	2.3472	.33269	29.391	16.123	602.87	655.82	1257.0	.07107
#1	.00775	28.791	.00132	.02319	.00090	.00072	-.00080	11.025
#2	.00758	28.840	.00073	.02827	-.00072	-.00237	-.00248	11.009
#3	.00739	28.655	.00127	.02066	-.00063	.00082	.00410	11.016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 26, 2015

Sample Name: L1502105308 Acquired: 2/25/2015 10:00:54 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00045**	**2.1416**	**-.00468**	**.00104**	**.00554**	**.00237**	**1.6643**
Stddev	.00011	.0071	.00039	.00091	.00010	.00013	2.4233
%RSD	24.506	.33320	8.2566	87.924	1.8105	5.3196	145.60
#1	-.00053	2.1462	-.00427	.00100	.00545	.00249	-.88562
#2	-.00032	2.1452	-.00473	.00014	.00551	.00224	1.9413
#3	-.00048	2.1334	-.00504	.00196	.00565	.00238	3.9371
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10395.**	**10320.**
Stddev	21.	70.
%RSD	.20366	.67367
#1	10417.	10320.
#2	10394.	10389.
#3	10374.	10250.

Approved: February 26, 2015

Sample Name: L1502105308PS Acquired: 2/25/2015 10:04:27 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513301-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20423	4.9620	.19444	.99000	.59730	.02531	88.854	.02507
Stddev	.00127	.0053	.00273	.00183	.00197	.00003	.025	.00024
%RSD	.62007	.10597	1.4030	.18531	.33001	.10987	.02814	.97391
#1	.20387	4.9664	.19164	.99167	.59553	.02528	88.847	.02492
#2	.20318	4.9635	.19459	.98804	.59696	.02533	88.881	.02535
#3	.20564	4.9562	.19709	.99030	.59942	.02532	88.832	.02493
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10034	.26599	.24610	2.1098	28.188	.53570	9.6849	.26181
Stddev	.00049	.00073	.00152	.0199	.016	.00120	.0527	.00053
%RSD	.48733	.27353	.61887	.94117	.05581	.22451	.54367	.20280
#1	.10040	.26536	.24554	2.0870	28.190	.53683	9.6364	.26153
#2	.10079	.26582	.24782	2.1191	28.202	.53584	9.7409	.26148
#3	.09982	.26679	.24493	2.1233	28.171	.53444	9.6774	.26242
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52704	52.577	.25124	5.0163	.25097	.60670	.19048	12.430
Stddev	.00241	.132	.00143	.0236	.00172	.00376	.00212	.001
%RSD	.45681	.25176	.56918	.47116	.68550	.61949	1.1143	.00828
#1	.52512	52.674	.24960	4.9951	.24931	.61013	.19281	12.431
#2	.52974	52.630	.25223	5.0418	.25274	.60728	.18996	12.431
#3	.52626	52.426	.25189	5.0121	.25085	.60268	.18866	12.429
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 26, 2015

Sample Name: L1502105308PS Acquired: 2/25/2015 10:04:27 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513301-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51088**	**2.4621**	**.52993**	**.25513**	**.51309**	**.50035**	**.13323**
Stddev	.00238	.0039	.00202	.00328	.00113	.00064	2.4070
%RSD	.46682	.15679	.38074	1.2873	.22048	.12856	1806.7
#1	.50960	2.4651	.52828	.25164	.51409	.49976	-2.5100
#2	.51363	2.4635	.53218	.25817	.51186	.50026	2.1991
#3	.50941	2.4578	.52933	.25558	.51332	.50104	.71052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10418.**	**10228.**
Stddev	17.	6.
%RSD	.16161	.05655
#1	10430.	10234.
#2	10424.	10228.
#3	10399.	10222.

Approved: February 26, 2015

Sample Name: L1502105308SDL Acquired: 2/25/2015 10:07:44 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG513301-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	-.00236	-.00030	.01018	.01783	-.00008	18.776	.00010
Stddev	.00046	.00160	.00144	.00073	.00015	.00001	.071	.00001
%RSD	213.58	68.043	483.58	7.1641	.84016	17.517	.38025	13.097
#1	-.00057	-.00378	.00111	.01065	.01787	-.00009	18.858	.00012
#2	-.00039	-.00062	-.00177	.01054	.01766	-.00006	18.739	.00010
#3	.00031	-.00267	-.00024	.00934	.01796	-.00009	18.731	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.00131	-.00036	.01320	.40549	.00594	1.0495	.00240
Stddev	.00017	.00036	.00068	.00585	.02615	.00071	.0135	.00010
%RSD	557.37	27.617	189.68	44.317	6.4489	11.997	1.2891	4.0040
#1	-.00023	.00098	.00031	.01710	.43565	.00638	1.0634	.00251
#2	.00008	.00170	-.00106	.00647	.38907	.00631	1.0488	.00234
#3	.00006	.00124	-.00033	.01603	.39176	.00512	1.0364	.00235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00312	5.7837	-.00079	.00500	.00037	.00058	.00159	2.4313
Stddev	.00028	.0248	.00047	.00437	.00208	.00162	.00219	.0755
%RSD	8.9529	.42852	59.604	87.450	566.73	279.33	137.15	3.1069
#1	.00309	5.8112	-.00025	.00033	-.00108	.00235	-.00040	2.4741
#2	.00286	5.7630	-.00109	.00899	.00275	.00023	.00393	2.4758
#3	.00341	5.7768	-.00104	.00567	-.00057	-.00084	.00125	2.3441
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 26, 2015

Sample Name: L1502105308SDL Acquired: 2/25/2015 10:07:44 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG513301-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00169	.43336	-.00109	.00057	.00133	.00137	1.6297
Stddev	.00066	.00229	.00047	.00140	.00014	.00024	.5346
%RSD	39.082	.52908	43.248	245.49	10.599	17.214	32.803
#1	.00113	.43590	-.00056	-.00011	.00123	.00151	1.3056
#2	.00242	.43274	-.00147	-.00036	.00127	.00149	1.3367
#3	.00153	.43144	-.00123	.00218	.00149	.00109	2.2467
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10578.	10285.
Stddev	12.	79.
%RSD	.11130	.76998
#1	10586.	10208.
#2	10583.	10367.
#3	10564.	10281.

Approved: February 26, 2015

Sample Name: CCV Acquired: 2/25/2015 10:11:21 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40638	10.219	.41398	.50770	1.0454	.05108	10.650
Stddev	.00157	.035	.00595	.00112	.0032	.00017	.075
%RSD	.38584	.33852	1.4365	.21994	.31137	.32605	.70096
#1	.40708	10.254	.40714	.50822	1.0477	.05103	10.663
#2	.40748	10.218	.41794	.50847	1.0467	.05126	10.717
#3	.40458	10.185	.41685	.50642	1.0416	.05094	10.569
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05160	.20647	.52039	.51130	4.1867	52.894	1.0374
Stddev	.00101	.00389	.00242	.00884	.0410	.272	.0029
%RSD	1.9646	1.8853	.46554	1.7295	.98015	.51493	.28128
#1	.05046	.20210	.52121	.50109	4.2016	52.957	1.0383
#2	.05239	.20954	.52230	.51677	4.2182	53.130	1.0398
#3	.05196	.20778	.51767	.51602	4.1403	52.596	1.0341
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.470	.52785	1.0250	53.349	.52321	10.291	.52674
Stddev	.084	.00265	.0100	.293	.00911	.097	.00641
%RSD	.80645	.50277	.97436	.54901	1.7414	.94281	1.2175
#1	10.504	.52880	1.0145	53.441	.51271	10.179	.51952
#2	10.532	.52990	1.0343	53.586	.52901	10.339	.53179
#3	10.374	.52486	1.0263	53.022	.52791	10.354	.52889
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 26, 2015

Sample Name: CCV Acquired: 2/25/2015 10:11:21 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2497**	**.41111**	**5.1328**	**1.0362**	**1.0673**	**1.0535**	**.52976**
Stddev	.0198	.00617	.0547	.0082	.0058	.0053	.00561
%RSD	1.5823	1.5017	1.0653	.79482	.54236	.50336	1.0591
#1	1.2275	.40410	5.0702	1.0267	1.0701	1.0526	.52375
#2	1.2654	.41572	5.1707	1.0403	1.0712	1.0592	.53486
#3	1.2562	.41352	5.1576	1.0415	1.0607	1.0487	.53067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0041**	**1.0270**	F **-.45257**
Stddev	.0028	.0041	1.6417
%RSD	.27774	.40053	362.75
#1	1.0051	1.0286	-2.2733
#2	1.0062	1.0300	.00053
#3	1.0009	1.0223	.91501
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10601.**	**10193.**
Stddev	32.	48.
%RSD	.30422	.47538
#1	10613.	10183.
#2	10564.	10150.
#3	10626.	10245.

Approved: February 26, 2015

Sample Name: CCB Acquired: 2/25/2015 10:14:36 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**-.00633**	**.00044**	**.00296**	**-.00011**	**-.00010**	**-.00815**
Stddev	.00013	.00141	.00075	.00103	.00011	.00002	.00765
%RSD	2181.1	22.308	170.85	34.659	101.45	25.093	93.824
#1	.00012	-.00470	.00062	.00371	-.00003	-.00008	.00061
#2	.00003	-.00704	.00108	.00339	-.00006	-.00008	-.01154
#3	-.00014	-.00724	-.00039	.00179	-.00023	-.00013	-.01352
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**.00021**	**-.00011**	**.00006**	**-.00430**	**.05308**	**.00035**
Stddev	.00009	.00007	.00047	.00056	.00605	.01635	.00233
%RSD	88.122	32.555	439.63	892.81	140.59	30.792	667.83
#1	.00005	.00020	-.00064	-.00036	.00242	.05804	.00026
#2	.00004	.00028	.00007	.00070	-.00601	.06638	-.00193
#3	.00020	.00015	.00025	-.00015	-.00931	.03483	.00272
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.01635**	**.00001**	**.00481**	**-.01922**	**-.00021**	**-.00182**	**-.00034**
Stddev	.01058	.00008	.00062	.00700	.00046	.00433	.00114
%RSD	64.721	584.87	12.998	36.417	213.67	237.28	338.39
#1	-.00465	-.00007	.00418	-.02660	.00024	.00145	.00063
#2	-.02525	.00009	.00482	-.01268	-.00068	-.00673	-.00159
#3	-.01915	.00002	.00543	-.01838	-.00020	-.00019	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: CCB Acquired: 2/25/2015 10:14:36 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00224	.00397	-.00382	.00009	.00021	-.00082	.00235
Stddev	.00253	.00429	.00175	.00047	.00013	.00114	.00134
%RSD	113.32	108.08	45.960	499.57	63.120	139.44	57.177
#1	.00516	-.00040	-.00553	.00024	.00026	.00001	.00158
#2	.00088	.00817	-.00203	.00047	.00031	-.00035	.00157
#3	.00067	.00413	-.00389	-.00043	.00006	-.00211	.00390
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00035	-.00020	F 1.3940
Stddev	.00014	.00004	.9643
%RSD	39.249	20.074	69.176
#1	.00048	-.00022	.28454
#2	.00020	-.00015	1.8668
#3	.00037	-.00022	2.0308
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10585.	10109.
Stddev	11.	84.
%RSD	.10123	.83349
#1	10584.	10155.
#2	10575.	10159.
#3	10596.	10011.

Approved: February 26, 2015

Sample Name: L1502105310 Acquired: 2/25/2015 10:18:16 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	.12085	-.00209	.02167	.02693	-.00007	80.325	.00088
Stddev	.00022	.00302	.00294	.00055	.00020	.00002	.349	.00016
%RSD	102.08	2.5011	140.67	2.5429	.73543	29.155	.43435	17.789
#1	-.00001	.12125	-.00287	.02106	.02676	-.00009	80.119	.00104
#2	.00023	.11765	-.00456	.02182	.02715	-.00006	80.127	.00072
#3	.00042	.12366	.00116	.02213	.02689	-.00006	80.728	.00089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00024	.00118	-.00022	.22783	1.0062	.07222	44.753	.05021
Stddev	.00034	.00042	.00040	.01615	.0512	.00199	.064	.00085
%RSD	141.24	35.477	181.13	7.0867	5.0878	2.7548	.14189	1.6967
#1	-.00039	.00071	.00024	.23760	.97643	.07333	44.754	.05003
#2	.00015	.00133	-.00048	.23670	.97683	.07342	44.688	.04947
#3	-.00049	.00151	-.00042	.20919	1.0653	.06993	44.815	.05114
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00139	254.97	.00169	.09846	-.00158	-.00200	.00182	16.959
Stddev	.00011	45.86	.00054	.00408	.00251	.00054	.00747	.013
%RSD	7.8933	17.985	32.285	4.1434	159.31	26.798	409.60	.07666
#1	.00150	283.85	.00228	.10300	-.00042	-.00182	.00062	16.970
#2	.00140	278.96	.00121	.09728	.00015	-.00261	.00982	16.962
#3	.00128	202.09	.00157	.09510	-.00446	-.00159	-.00497	16.945
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 26, 2015

Sample Name: L1502105310 Acquired: 2/25/2015 10:18:16 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	1.2055	-.00149	.00242	.00182	.00428	1.4979
Stddev	.00019	.0064	.00081	.00153	.00029	.00007	1.6050
%RSD	436.72	.53404	54.471	63.216	16.210	1.6786	107.15
#1	.00026	1.2002	-.00203	.00151	.00152	.00435	-.04209
#2	-.00001	1.2037	-.00056	.00418	.00211	.00427	1.3750
#3	-.00012	1.2126	-.00189	.00156	.00183	.00421	3.1608
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10065.	10056.
Stddev	21.	183.
%RSD	.20649	1.8243
#1	10072.	10128.
#2	10041.	10193.
#3	10081.	9847.9

Approved: February 26, 2015

Sample Name: L1502105312 Acquired: 2/25/2015 10:21:54 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .00008	k -.00417	k -.00256	k .11134	.03254	k -.00013	^ *****
Stddev	.00030	.00235	.00206	.00047	.00019	.00003	-----
%RSD	381.43	56.353	80.518	.42039	.59566	22.179	-----
#1	-.00026	-.00665	-.00416	.11188	.03247	-.00015	272.73
#2	.00029	-.00388	-.00024	.11109	.03276	-.00015	272.56
#3	k .00021	k -.00198	k -.00327	k .11105	.03240	k -.00010	^ -----
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .00145	k -.00051	k .00249	k -.00020	k .04234	2.8208	.09767
Stddev	.00004	.00011	.00051	.00042	.01288	.0132	.00167
%RSD	2.4832	21.577	20.341	213.33	30.424	.46780	1.7075
#1	.00148	-.00039	.00217	-.00029	.05237	2.8077	.09581
#2	.00141	-.00061	.00223	.00026	.04683	2.8341	.09815
#3	k .00146	k -.00052	k .00308	k -.00057	k .02781	2.8205	.09904
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	104.53	k .01993	k .00066	^ *****	k .00224	k .08033	k -.00170
Stddev	.49	.00005	.00025	-----	.00109	.00332	.00147
%RSD	.47069	.24407	38.185	-----	48.721	4.1388	86.366
#1	105.07	.01997	.00052	460.35	.00347	.08046	-.00326
#2	104.12	.01993	.00051	^ -----	.00142	.08359	-.00148
#3	104.40	k .01988	k .00096	^ -----	k .00182	k .07694	k -.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: L1502105312 Acquired: 2/25/2015 10:21:54 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k -.00089	k -.00185	15.801	k -.00080	k 2.9860	k -.01081	k -.00007
Stddev	.00121	.00225	.025	.00071	.0236	.00149	.00186
%RSD	136.59	121.72	.15565	89.393	.79037	13.819	2797.5
#1	.00029	-.00412	15.784	-.00062	3.0049	-.01228	-.00216
#2	-.00213	-.00183	15.789	-.00158	2.9936	-.00929	.00055
#3	k -.00082	k .00039	15.829	k -.00019	k 2.9595	k -.01087	k .00141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	k .00081	.00515	k 3.2494
Stddev	.00026	.00018	.7944
%RSD	31.838	3.4320	24.447
#1	.00052	.00509	2.5960
#2	.00102	.00501	3.0187
#3	k .00087	.00535	k 4.1337
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	9625.2	9954.3
Stddev	16.7	40.8
%RSD	.17305	.40970
#1	9639.7	10001.
#2	9607.0	9938.7
#3	9628.9	9923.6

Approved: February 26, 2015

Sample Name: L1502106201 0.005 Acquired: 2/25/2015 10:25:40 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: 200 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	-.00767	.00073	.19171	3.2178	-.00008	70.433
Stddev	.00057	.00165	.00166	.00110	.0113	.00003	.139
%RSD	141.36	21.453	226.17	.57137	.34995	37.004	.19700
#1	.00104	-.00813	-.00058	.19298	3.2239	-.00009	70.493
#2	-.00003	-.00584	.00259	.19108	3.2048	-.00010	70.274
#3	.00019	-.00903	.00019	.19108	3.2248	-.00005	70.531
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	-.00005	.00071	-.00046	.54015	3.1311	.29071
Stddev	.00005	.00021	.00036	.00020	.00538	.0044	.00120
%RSD	32.931	392.82	50.205	42.388	.99684	.14112	.41291
#1	.00018	.00015	.00113	-.00066	.54302	3.1309	.28972
#2	.00009	-.00027	.00056	-.00027	.53394	3.1268	.29204
#3	.00016	-.00004	.00046	-.00045	.54349	3.1356	.29037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.0836	.05397	.00032	172.27	-.00058	.00212	-.00028
Stddev	.0512	.00019	.00028	.25	.00062	.00254	.00207
%RSD	.72292	.34583	89.787	.14432	106.77	120.09	746.14
#1	7.1263	.05418	.00024	172.02	-.00045	-.00035	-.00084
#2	7.0269	.05383	.00008	172.52	-.00126	.00198	.00201
#3	7.0977	.05389	.00063	172.28	-.00004	.00472	-.00201
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: L1502106201 0.005 Acquired: 2/25/2015 10:25:40 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: 200 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00139**	**.00189**	**.06331**	**.00062**	F **11.136**	**-.00458**	**.00182**
Stddev	.00295	.00314	.00476	.00037	.148	.00085	.00240
%RSD	212.71	166.70	7.5202	58.804	1.3292	18.529	131.86
#1	-.00479	.00530	.06531	.00024	11.270	-.00363	.00071
#2	.00058	.00125	.05788	.00097	10.977	-.00487	.00017
#3	.00004	-.00089	.06675	.00067	11.159	-.00525	.00457
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					4.5000		
Low Limit					-.00800		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00022**	**.00240**	**1.5695**
Stddev	.00024	.00014	.3851
%RSD	109.88	5.7574	24.534
#1	-.00001	.00256	1.2340
#2	-.00049	.00231	1.9899
#3	-.00016	.00234	1.4846
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10248.**	**10151.**
Stddev	8.	23.
%RSD	.07762	.22175
#1	10256.	10131.
#2	10248.	10175.
#3	10240.	10145.

Approved: February 26, 2015

Sample Name: L1502107601 Acquired: 2/25/2015 10:29:23 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	.08577	.00594	.00203	.02685	-.00014	16.159	.00042
Stddev	.00112	.00181	.00147	.00073	.00012	.00001	.030	.00002
%RSD	282.08	2.1132	24.761	35.849	.42889	8.6453	.18637	5.6240
#1	.00120	.08474	.00638	.00138	.02676	-.00014	16.181	.00044
#2	.00087	.08786	.00430	.00282	.02698	-.00013	16.170	.00042
#3	-.00088	.08471	.00714	.00189	.02681	-.00015	16.125	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	.00057	.00085	.08385	1.5052	.00689	4.0057	.00443
Stddev	.00017	.00013	.00007	.00681	.0656	.00201	.0268	.00005
%RSD	91.288	23.416	8.0726	8.1228	4.3578	29.139	.66978	1.0174
#1	.00001	.00071	.00083	.07685	1.5801	.00508	3.9945	.00446
#2	-.00032	.00045	.00080	.09046	1.4577	.00905	4.0363	.00438
#3	-.00026	.00055	.00093	.08424	1.4780	.00654	3.9863	.00444
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00182	149.50	.00034	.07737	-.00010	-.00231	.00411	2.4283
Stddev	.00024	1.71	.00063	.00457	.00261	.00348	.00359	.0131
%RSD	12.976	1.1408	185.81	5.9109	2598.5	150.81	87.471	.53773
#1	.00162	150.60	.00104	.07222	.00231	-.00253	-.00001	2.4173
#2	.00176	150.37	.00019	.07894	-.00287	.00128	.00576	2.4428
#3	.00208	147.53	-.00021	.08095	.00026	-.00567	.00658	2.4249
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 26, 2015

Sample Name: L1502107601 Acquired: 2/25/2015 10:29:23 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**.15438**	**.00118**	**-.00024**	**.00047**	**.00410**	**3.5400**
Stddev	.00006	.00097	.00097	.00270	.00029	.00026	2.6713
%RSD	21.186	.62700	82.347	1108.8	60.733	6.2244	75.459
#1	-.00034	.15545	.00224	.00243	.00023	.00381	2.0617
#2	-.00023	.15411	.00033	-.00018	.00079	.00426	6.6237
#3	-.00026	.15357	.00098	-.00298	.00040	.00423	1.9347
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10250.**	**10198.**
Stddev	24.	128.
%RSD	.23582	1.2572
#1	10271.	10072.
#2	10255.	10192.
#3	10224.	10329.

Approved: February 26, 2015

Sample Name: L1502107602 Acquired: 2/25/2015 10:32:59 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.07485	.01828	.13483	.05890	-.00015	9.3753
Stddev	.00072	.00577	.00150	.00235	.00072	.00003	.2663
%RSD	272.51	7.7070	8.2077	1.7456	1.2280	21.915	2.8403
#1	-.00056	.07179	.01681	.13297	.05969	-.00013	9.6253
#2	.00056	.08151	.01822	.13405	.05875	-.00014	9.0953
#3	.00079	.07126	.01980	.13748	.05827	-.00019	9.4054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	-.00032	.00048	.00053	.08545	1.9167	.01170
Stddev	.00010	.00015	.00008	.00029	.01141	.0153	.00278
%RSD	20.392	47.793	16.332	55.744	13.359	.79644	23.726
#1	.00040	-.00042	.00053	.00069	.09568	1.9342	.01023
#2	.00058	-.00014	.00051	.00070	.07313	1.9064	.01490
#3	.00042	-.00040	.00039	.00019	.08753	1.9095	.00996
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.2724	.00521	.00350	^ *****	.00037	.06125	.00018
Stddev	.0771	.00013	.00015	-----	.00023	.00385	.00055
%RSD	3.3915	2.4784	4.2498	-----	62.485	6.2787	314.79
#1	2.2525	.00516	.00338	316.47	.00014	.05786	.00020
#2	2.3574	.00535	.00366	228.20	.00038	.06046	.00072
#3	2.2072	.00511	.00346	^ -----	.00061	.06543	-.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: L1502107602 Acquired: 2/25/2015 10:32:59 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00030**	**-.00081**	**2.9586**	**-.00055**	**.18874**	**.00038**	**.00046**
Stddev	.00081	.00211	.0511	.00027	.00266	.00196	.00319
%RSD	268.81	261.27	1.7259	49.289	1.4094	522.24	687.90
#1	.00062	.00020	2.8999	-.00066	.19180	.00240	.00180
#2	-.00089	.00061	2.9827	-.00024	.18699	-.00152	-.00318
#3	-.00063	-.00323	2.9931	-.00075	.18744	.00024	.00276
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00037**	**.00460**	F **-7.3352**
Stddev	.00030	.00024	1.9510
%RSD	80.275	5.2525	26.597
#1	.00072	.00432	-8.9552
#2	.00018	.00476	-7.8810
#3	.00022	.00472	-5.1695
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10144.**	**10164.**
Stddev	9.	229.
%RSD	.08957	2.2565
#1	10136.	10180.
#2	10154.	9927.5
#3	10143.	10385.

Approved: February 26, 2015

Sample Name: L1502108601 Acquired: 2/25/2015 10:36:35 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00128	.03331	-.00014	.05439	.08279	-.00011	45.657
Stddev	.00060	.00061	.00284	.00047	.00005	.00001	.001
%RSD	46.943	1.8441	1992.6	.86745	.05656	13.590	.00110
#1	.00089	.03349	.00176	.05431	.08284	-.00012	45.657
#2	.00097	.03382	.00122	.05489	.08275	-.00011	45.656
#3	.00197	.03263	-.00341	.05396	.08278	-.00009	45.657
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	-.00027	.00057	-.00062	.22816	1.2221	.00674
Stddev	.00020	.00014	.00040	.00017	.01198	.0437	.00071
%RSD	70.860	51.100	70.433	27.620	5.2507	3.5734	10.493
#1	.00023	-.00026	.00086	-.00057	.23464	1.1813	.00621
#2	.00011	-.00041	.00011	-.00081	.21434	1.2681	.00754
#3	.00051	-.00014	.00073	-.00048	.23551	1.2169	.00646
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.0541	.40199	.00141	62.788	.00063	.00291	.00018
Stddev	.0132	.00240	.00033	.109	.00069	.00444	.00202
%RSD	.18700	.59604	23.189	.17332	109.93	152.76	1093.0
#1	7.0691	.40463	.00151	62.771	.00143	-.00151	-.00195
#2	7.0492	.40139	.00169	62.689	.00021	.00286	.00205
#3	7.0441	.39995	.00105	62.905	.00025	.00737	.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: L1502108601 Acquired: 2/25/2015 10:36:35 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.00125	3.4127	-.00050	.45851	-.00086	-.00053
Stddev	.00208	.00161	.1865	.00012	.00110	.00051	.00161
%RSD	572.98	128.91	5.4648	23.181	.24080	59.537	304.72
#1	.00269	.00070	3.5183	-.00039	.45947	-.00106	-.00096
#2	-.00029	.00307	3.1974	-.00062	.45730	-.00028	.00125
#3	-.00131	-.00002	3.5224	-.00049	.45874	-.00124	-.00187
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00022	.00141	F -.82989
Stddev	.00029	.00011	1.9894
%RSD	130.93	7.9331	239.72
#1	.00056	.00130	1.4504
#2	.00007	.00152	-2.2111
#3	.00004	.00140	-1.7289
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10273.	10326.
Stddev	24.	32.
%RSD	.22922	.31260
#1	10277.	10290.
#2	10247.	10333.
#3	10294.	10354.

Approved: February 26, 2015

Sample Name: L1502108701 Acquired: 2/25/2015 10:40:08 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	-.00694	-.00043	.02755	.04876	-.00010	89.565	.00051
Stddev	.00079	.00192	.00247	.00174	.00015	.00003	.166	.00015
%RSD	219.08	27.608	574.88	6.2983	.31426	32.878	.18582	29.326
#1	.00116	-.00806	-.00083	.02945	.04865	-.00013	89.503	.00060
#2	.00035	-.00473	-.00268	.02714	.04893	-.00009	89.754	.00033
#3	-.00043	-.00804	.00222	.02605	.04869	-.00007	89.439	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.00106	-.00049	.01595	1.5465	.01064	17.006	.04336
Stddev	.00014	.00024	.00081	.00628	.0338	.00049	.034	.00023
%RSD	83.334	22.928	163.12	39.353	2.1883	4.6274	.19765	.52923
#1	-.00023	.00134	-.00116	.01231	1.5255	.01014	17.010	.04361
#2	-.00001	.00088	.00040	.01234	1.5284	.01067	17.037	.04316
#3	-.00027	.00097	-.00073	.02319	1.5855	.01112	16.971	.04331
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	18.651	.00092	.00000	-.00166	.00308	-.00219	4.6798
Stddev	.00017	.053	.00151	.00271	.00212	.00113	.00464	.0067
%RSD	28.845	.28419	165.37	786910.	127.42	36.787	211.69	.14321
#1	.00078	18.611	.00199	.00133	-.00203	.00177	.00065	4.6870
#2	.00050	18.711	.00157	.00178	.00062	.00370	.00032	4.6737
#3	.00048	18.630	-.00082	-.00311	-.00358	.00375	-.00755	4.6788
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 26, 2015

Sample Name: L1502108701 Acquired: 2/25/2015 10:40:08 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00065**	**.26449**	**-.00472**	**.00065**	**.00005**	**.00176**	**3.8854**
Stddev	.00093	.00046	.00133	.00154	.00055	.00005	1.9504
%RSD	144.69	.17218	28.144	236.11	1186.9	2.6010	50.200
#1	-.00064	.26436	-.00626	.00018	-.00044	.00177	5.9074
#2	.00028	.26499	-.00386	.00238	.00065	.00180	3.7333
#3	-.00159	.26411	-.00405	-.00060	-.00007	.00171	2.0154
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10273.**	**10184.**
Stddev	3.	4.
%RSD	.03362	.03720
#1	10269.	10180.
#2	10274.	10186.
#3	10276.	10187.

Approved: February 26, 2015

Sample Name: L1502108702 Acquired: 2/25/2015 10:43:41 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00108	.00578	-.00101	.01133	.07564	-.00011	65.492
Stddev	.00034	.00065	.00044	.00096	.00019	.00002	.057
%RSD	31.461	11.207	43.253	8.4365	.24464	18.376	.08684
#1	.00120	.00524	-.00116	.01243	.07566	-.00013	65.443
#2	.00070	.00561	-.00136	.01069	.07581	-.00012	65.554
#3	.00135	.00650	-.00052	.01088	.07544	-.00009	65.478
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	-.00026	.00058	.02108	.01911	.62367	.00640
Stddev	.00005	.00014	.00025	.00046	.00587	.01912	.00084
%RSD	20.597	54.920	43.125	2.2044	30.697	3.0663	13.174
#1	.00029	-.00042	.00087	.02092	.02043	.64129	.00723
#2	.00020	-.00018	.00048	.02160	.01270	.62638	.00642
#3	.00029	-.00018	.00040	.02072	.02421	.60333	.00555
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.3215	.00049	.00098	5.1317	.00097	.00807	.00562
Stddev	.0040	.00008	.00020	.0067	.00027	.00249	.00325
%RSD	.07462	17.218	20.791	.13102	27.536	30.797	57.828
#1	5.3185	.00042	.00081	5.1248	.00127	.01070	.00187
#2	5.3260	.00046	.00093	5.1382	.00084	.00776	.00768
#3	5.3200	.00059	.00121	5.1322	.00078	.00576	.00731
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: L1502108702 Acquired: 2/25/2015 10:43:41 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00033**	**-.00078**	**4.3556**	**.00675**	**.22542**	**-.00391**	**.00119**
Stddev	.00217	.00067	.1346	.00061	.00083	.00067	.00162
%RSD	664.19	86.121	3.0903	8.9887	.37027	17.187	135.99
#1	-.00060	-.00053	4.4352	.00718	.22555	-.00378	-.00066
#2	.00197	-.00154	4.4315	.00702	.22619	-.00464	.00235
#3	-.00235	-.00027	4.2002	.00606	.22453	-.00331	.00188
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00006**	**.01290**	F **-.18514**
Stddev	.00003	.00046	1.3694
%RSD	51.708	3.5681	739.65
#1	.00008	.01336	-1.5713
#2	.00002	.01290	-.15098
#3	.00007	.01244	1.1669
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10372.**	**10120.**
Stddev	30.	46.
%RSD	.28541	.45823
#1	10341.	10153.
#2	10375.	10067.
#3	10400.	10141.

Approved: February 26, 2015

Sample Name: L1502108703 Acquired: 2/25/2015 10:47:16 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	.10185	-.00107	.00871	.07925	-.00012	47.055	.00027
Stddev	.00050	.00422	.00027	.00163	.00080	.00002	.131	.00012
%RSD	109.80	4.1469	25.618	18.748	1.0033	18.174	.27909	45.415
#1	.00042	.10126	-.00076	.01058	.07970	-.00013	47.087	.00032
#2	-.00002	.10634	-.00128	.00796	.07833	-.00010	46.910	.00013
#3	.00097	.09796	-.00116	.00758	.07971	-.00014	47.167	.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.00121	-.00016	.28742	.56217	.00482	4.3388	.02285
Stddev	.00007	.00110	.00061	.00648	.02007	.00060	.0044	.00023
%RSD	139.63	91.076	376.04	2.2549	3.5702	12.545	.10078	1.0115
#1	.00006	.00146	.00054	.28438	.58008	.00498	4.3376	.02265
#2	-.00002	.00216	-.00057	.28302	.54048	.00415	4.3437	.02280
#3	.00012	.00000	-.00046	.29486	.56594	.00533	4.3352	.02310
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	3.5132	.00109	.01388	-.00035	-.00204	.00176	4.4124
Stddev	.00016	.0070	.00110	.00429	.00108	.00200	.00531	.0112
%RSD	25.707	.19957	101.45	30.900	310.03	97.617	302.06	.25428
#1	.00082	3.5195	-.00018	.01127	-.00149	-.00418	-.00359	4.4001
#2	.00051	3.5057	.00164	.01154	-.00021	-.00172	.00183	4.4150
#3	.00058	3.5145	.00181	.01884	.00066	-.00023	.00703	4.4221
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 26, 2015

Sample Name: L1502108703 Acquired: 2/25/2015 10:47:16 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00044**	**.13671**	**-.00049**	**.00014**	**.00063**	**.00464**	**.44991**
Stddev	.00027	.00184	.00125	.00118	.00036	.00019	1.7212
%RSD	60.406	1.3430	252.75	832.06	57.506	4.1185	382.56
#1	-.00036	.13764	-.00098	-.00017	.00047	.00475	-1.3402
#2	-.00022	.13459	-.00143	-.00085	.00038	.00474	2.0928
#3	-.00074	.13790	.00092	.00145	.00105	.00442	.59716
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10417.**	**10161.**
Stddev	5.	37.
%RSD	.04851	.36415
#1	10412.	10186.
#2	10418.	10179.
#3	10422.	10119.

Approved: February 26, 2015

Sample Name: L1502108704 Acquired: 2/25/2015 10:50:49 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	-.00730	-.00195	.02320	.07775	-.00011	70.448
Stddev	.00060	.00286	.00031	.00077	.00174	.00001	1.254
%RSD	91.196	39.139	15.701	3.3374	2.2406	5.0459	1.7796
#1	.00130	-.00511	-.00185	.02389	.07724	-.00011	69.879
#2	.00011	-.00625	-.00171	.02333	.07632	-.00011	69.580
#3	.00056	-.01053	-.00230	.02236	.07969	-.00012	71.885
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	-.00016	.00097	.00704	.01659	1.0400	.01031
Stddev	.00005	.00014	.00037	.00039	.00476	.0283	.00223
%RSD	9.1482	85.828	37.657	5.5254	28.709	2.7248	21.641
#1	.00056	-.00021	.00117	.00714	.02109	1.0610	.01273
#2	.00052	-.00001	.00119	.00738	.01706	1.0078	.00988
#3	.00063	-.00026	.00055	.00661	.01160	1.0512	.00833
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	13.787	.00072	.00028	7.8134	.00075	F -.00594	-.00100
Stddev	.105	.00006	.00032	.0516	.00059	.00107	.00293
%RSD	.76383	8.3878	114.67	.66019	79.059	18.103	294.44
#1	13.739	.00079	-.00008	7.7743	.00018	-.00470	.00224
#2	13.714	.00068	.00055	7.7941	.00070	-.00647	-.00176
#3	13.907	.00070	.00037	7.8719	.00137	-.00664	-.00347
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502108704 Acquired: 2/25/2015 10:50:49 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.00428	4.6869	-.00014	.30833	-.00402	-.00017
Stddev	.00296	.00235	.0789	.00017	.00256	.00114	.00137
%RSD	933.14	54.883	1.6826	125.49	.83150	28.280	807.21
#1	-.00137	.00671	4.7297	.00006	.30731	-.00515	.00099
#2	.00374	.00202	4.5959	-.00023	.30642	-.00288	-.00168
#3	-.00141	.00413	4.7351	-.00024	.31124	-.00402	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00002	.02642	2.3001
Stddev	.00018	.00084	2.4627
%RSD	940.82	3.1705	107.07
#1	-.00014	.02707	4.6425
#2	.00018	.02548	-.26738
#3	-.00010	.02672	2.5251
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10363.	10263.
Stddev	5.	10.
%RSD	.05225	.10011
#1	10370.	10252.
#2	10361.	10271.
#3	10359.	10266.

Approved: February 26, 2015

Sample Name: CCV Acquired: 2/25/2015 10:54:28 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40809	10.074	.40967	.50423	1.0688	.05095	10.907
Stddev	.00115	.048	.00707	.00150	.0006	.00028	.038
%RSD	.28259	.47270	1.7267	.29678	.05762	.55847	.34746
#1	.40790	10.019	.40165	.50305	1.0684	.05063	10.875
#2	.40932	10.108	.41236	.50374	1.0695	.05103	10.949
#3	.40704	10.094	.41501	.50591	1.0685	.05118	10.898
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05112	.20440	.51994	.50633	4.2504	53.761	1.0522
Stddev	.00091	.00317	.00344	.00795	.0062	.122	.0036
%RSD	1.7825	1.5494	.66216	1.5711	.14617	.22710	.34528
#1	.05011	.20095	.51626	.49752	4.2488	53.650	1.0483
#2	.05138	.20508	.52048	.50846	4.2452	53.892	1.0555
#3	.05188	.20717	.52308	.51300	4.2573	53.743	1.0528
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.471	.52666	1.0189	54.324	.51917	10.253	.52246
Stddev	.033	.00351	.0105	.232	.00924	.105	.00784
%RSD	.31872	.66607	1.0341	.42703	1.7801	1.0235	1.5008
#1	10.435	.52487	1.0067	54.106	.50921	10.132	.51345
#2	10.478	.53070	1.0255	54.567	.52083	10.320	.52623
#3	10.500	.52441	1.0245	54.299	.52747	10.306	.52770
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 26, 2015

Sample Name: CCV Acquired: 2/25/2015 10:54:28 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2469**	**.40152**	**5.1912**	**1.0301**	**1.0907**	**1.0714**	**.53035**
Stddev	.0157	.00545	.0245	.0094	.0033	.0060	.00318
%RSD	1.2621	1.3575	.47201	.91359	.30341	.56290	.59997
#1	1.2300	.39598	5.2186	1.0223	1.0875	1.0656	.53355
#2	1.2497	.40171	5.1715	1.0274	1.0941	1.0777	.52719
#3	1.2611	.40688	5.1834	1.0406	1.0907	1.0710	.53030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0002**	**1.0158**	F **-.15536**
Stddev	.0004	.0017	1.4570
%RSD	.03865	.17039	937.81
#1	.99982	1.0177	.84186
#2	1.0002	1.0143	.51952
#3	1.0006	1.0154	-1.8275
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10649.**	**10254.**
Stddev	35.	75.
%RSD	.32903	.73147
#1	10689.	10318.
#2	10631.	10171.
#3	10626.	10273.

Approved: February 26, 2015

Sample Name: CCB Acquired: 2/25/2015 10:57:43 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	-.01237	-.00067	.00169	-.00019	-.00008	.01635
Stddev	.00077	.00133	.00117	.00026	.00025	.00002	.00200
%RSD	85.153	10.777	173.80	15.663	126.63	22.337	12.263
#1	.00009	-.01190	.00045	.00171	.00007	-.00010	.01833
#2	.00162	-.01133	-.00058	.00194	-.00024	-.00006	.01639
#3	.00101	-.01387	-.00189	.00141	-.00042	-.00008	.01432
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.00018	.00044	-.00020	-.00549	-.01829	.00114
Stddev	.00013	.00009	.00036	.00031	.00284	.04379	.00042
%RSD	101.27	49.064	82.269	159.98	51.643	239.37	37.026
#1	.00015	.00026	.00002	-.00014	-.00832	-.02934	.00157
#2	-.00001	.00009	.00063	-.00053	-.00552	-.05550	.00112
#3	.00024	.00019	.00067	.00008	-.00264	.02996	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.02124	.00003	.00445	-.01160	-.00004	-.00487	-.00178
Stddev	.02885	.00005	.00032	.01485	.00017	.00216	.00310
%RSD	135.84	184.17	7.1166	128.04	494.64	44.426	174.35
#1	-.04903	.00008	.00409	-.00975	.00015	-.00525	-.00377
#2	-.02324	-.00002	.00463	-.02729	-.00007	-.00682	-.00336
#3	.00856	.00002	.00464	.00224	-.00019	-.00254	.00179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: CCB Acquired: 2/25/2015 10:57:43 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00145	.00044	-.00417	-.00021	.00026	-.00082	.00260
Stddev	.00100	.00152	.00105	.00007	.00019	.00013	.00113
%RSD	68.598	346.70	25.278	31.735	71.655	16.320	43.522
#1	-.00034	.00178	-.00338	-.00025	.00045	-.00097	.00354
#2	-.00227	-.00122	-.00376	-.00025	.00007	-.00075	.00292
#3	-.00174	.00075	-.00537	-.00013	.00026	-.00073	.00135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00015	-.00028	F 2.0819
Stddev	.00037	.00009	.9026
%RSD	242.64	31.778	43.354
#1	-.00027	-.00038	2.6207
#2	.00034	-.00025	2.5852
#3	.00040	-.00021	1.0399
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10594.	10320.
Stddev	45.	23.
%RSD	.42363	.22277
#1	10617.	10294.
#2	10622.	10336.
#3	10542.	10331.

Approved: February 26, 2015

Sample Name: L1502105312 Acquired: 2/25/2015 11:01:25 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	-.00452	-.00197	.11097	.03291	-.00016	277.45
Stddev	.00016	.00189	.00105	.00231	.00042	.00002	2.10
%RSD	25.063	41.744	53.374	2.0831	1.2737	11.716	.75739
#1	.00058	-.00519	-.00134	.11187	.03261	-.00017	275.57
#2	.00051	-.00597	-.00139	.11270	.03339	-.00017	279.72
#3	.00082	-.00239	-.00319	.10835	.03274	-.00014	277.06
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00139	-.00077	.00262	.00008	.05685	2.8275	.09925
Stddev	.00016	.00024	.00055	.00050	.00433	.0071	.00149
%RSD	11.683	31.706	21.058	615.34	7.6190	.25227	1.4997
#1	.00121	-.00051	.00315	.00042	.05387	2.8357	.09756
#2	.00148	-.00099	.00267	-.00050	.06182	2.8227	.10034
#3	.00150	-.00081	.00205	.00033	.05487	2.8240	.09986
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	105.34	.01979	.00100	F 465.46	.00191	.07287	-.00131
Stddev	.62	.00033	.00037	3.85	.00026	.00650	.00090
%RSD	.58950	1.6778	37.560	.82613	13.447	8.9137	68.516
#1	104.79	.01941	.00069	463.99	.00219	.06657	-.00062
#2	105.22	.01997	.00141	469.83	.00168	.07954	-.00233
#3	106.01	.01999	.00089	462.58	.00188	.07250	-.00099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				360.00			
Low Limit				-.40000			

Approved: February 26, 2015

Sample Name: L1502105312 Acquired: 2/25/2015 11:01:25 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00207**	**.00254**	**15.828**	**-.00003**	**3.0567**	**-.01279**	**.00122**
Stddev	.00140	.00241	.033	.00026	.0225	.00103	.00153
%RSD	67.813	94.651	.20610	755.08	.73495	8.0769	125.61
#1	-.00283	.00529	15.833	-.00029	3.0391	-.01387	.00298
#2	-.00293	.00154	15.858	-.00006	3.0820	-.01269	.00037
#3	-.00045	.00080	15.793	.00024	3.0489	-.01181	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00029**	**.00495**	**3.4226**
Stddev	.00066	.00012	1.3023
%RSD	222.29	2.4400	38.050
#1	.00003	.00486	1.9377
#2	.00104	.00508	3.9591
#3	-.00018	.00489	4.3709
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**9606.2**	**9895.9**
Stddev	36.6	38.3
%RSD	.38083	.38719
#1	9569.3	9937.1
#2	9606.9	9861.3
#3	9642.4	9889.4

Approved: February 26, 2015

Sample Name: L1502105312 0.5 Acquired: 2/25/2015 11:05:09 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	-.00873	-.00249	.05762	.01676	-.00014	140.26	.00089
Stddev	.00023	.00105	.00259	.00109	.00035	.00002	.51	.00010
%RSD	30.929	12.020	104.04	1.8862	2.1019	16.704	.36661	11.305
#1	.00078	-.00762	-.00162	.05882	.01663	-.00012	139.67	.00100
#2	.00051	-.00971	-.00540	.05735	.01649	-.00016	140.51	.00080
#3	.00097	-.00886	-.00044	.05670	.01716	-.00014	140.60	.00087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00033	.00147	-.00039	.03650	1.4160	.05018	53.682	.01072
Stddev	.00019	.00042	.00052	.00779	.0198	.00065	.106	.00020
%RSD	58.200	28.618	133.88	21.327	1.3952	1.2939	.19695	1.8235
#1	-.00030	.00102	-.00059	.03434	1.3964	.04956	53.591	.01088
#2	-.00016	.00153	.00020	.04514	1.4156	.05086	53.798	.01050
#3	-.00054	.00186	-.00078	.03003	1.4359	.05013	53.657	.01077
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	235.48	.00166	.03710	.00038	.00021	.00148	7.9631
Stddev	.00020	.77	.00033	.00778	.00117	.00108	.00271	.0154
%RSD	51.779	.32705	20.147	20.968	309.53	525.18	183.46	.19347
#1	.00016	234.67	.00139	.04314	.00013	.00107	-.00106	7.9566
#2	.00046	235.59	.00155	.03984	-.00065	-.00101	.00116	7.9807
#3	.00053	236.20	.00203	.02832	.00166	.00055	.00434	7.9520
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 26, 2015

Sample Name: L1502105312 0.5 Acquired: 2/25/2015 11:05:09 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	1.5496	-.00769	.00139	.00040	.00279	2.2564
Stddev	.00025	.0056	.00018	.00163	.00008	.00009	2.1384
%RSD	929.42	.36319	2.3781	117.45	19.398	3.3223	94.769
#1	.00023	1.5432	-.00790	.00223	.00032	.00288	.59452
#2	-.00025	1.5516	-.00756	.00242	.00042	.00269	1.5058
#3	.00010	1.5539	-.00761	-.00049	.00047	.00279	4.6689
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	9941.7	9932.7
Stddev	11.2	25.7
%RSD	.11221	.25865
#1	9940.1	9960.0
#2	9931.5	9909.1
#3	9953.6	9928.9

Approved: February 26, 2015

Sample Name: L1502109201 Acquired: 2/25/2015 11:08:43 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.00152	-.00139	.02634	.17859	-.00011	54.524	.00042
Stddev	.00069	.00146	.00260	.00033	.00415	.00002	1.330	.00003
%RSD	84.413	96.622	186.73	1.2534	2.3220	16.858	2.4390	7.3613
#1	.00130	.00072	-.00091	.02629	.17390	-.00011	52.989	.00042
#2	.00003	.00062	-.00420	.02603	.18013	-.00009	55.264	.00039
#3	.00112	.00321	.00093	.02669	.18175	-.00013	55.320	.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00029	.00089	.02390	.02220	1.1581	.00851	10.566	.00374
Stddev	.00015	.00007	.00074	.00558	.0327	.00078	.228	.00014
%RSD	51.848	8.3128	3.1049	25.146	2.8228	9.1308	2.1538	3.7506
#1	-.00016	.00081	.02314	.01717	1.1233	.00831	10.308	.00359
#2	-.00025	.00094	.02463	.02820	1.1626	.00936	10.736	.00387
#3	-.00046	.00093	.02394	.02122	1.1882	.00785	10.656	.00376
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00104	16.070	.00048	-.00156	.00147	-.00031	.00125	4.6326
Stddev	.00005	.389	.00039	.00406	.00152	.00423	.00290	.1583
%RSD	4.4086	2.4182	80.908	260.29	103.14	1371.1	231.29	3.4175
#1	.00108	15.622	.00068	.00287	.00301	.00345	-.00190	4.6347
#2	.00099	16.312	.00072	-.00245	.00144	.00051	.00184	4.4733
#3	.00104	16.277	.00003	-.00510	-.00003	-.00489	.00382	4.7899
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 26, 2015

Sample Name: L1502109201 Acquired: 2/25/2015 11:08:43 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00056**	**.37910**	**-.00358**	**.00100**	**.00019**	**.00981**	**.03945**
Stddev	.00037	.00923	.00137	.00143	.00012	.00038	1.8247
%RSD	66.532	2.4359	38.372	143.54	59.915	3.8430	4624.8
#1	-.00053	.36844	-.00209	-.00049	.00018	.00942	1.6088
#2	-.00020	.38411	-.00383	.00112	.00032	.01018	.47227
#3	-.00094	.38475	-.00480	.00237	.00008	.00981	-1.9627
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10401.**	**10159.**
Stddev	55.	208.
%RSD	.52568	2.0441
#1	10377.	10399.
#2	10463.	10042.
#3	10362.	10036.

Approved: February 26, 2015

Sample Name: L1502109202 Acquired: 2/25/2015 11:12:17 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00083	.15794	-.00361	.01308	.04340	-.00010	34.739
Stddev	.00044	.00190	.00138	.00148	.00048	.00001	.198
%RSD	53.493	1.2030	38.149	11.281	1.1106	8.5525	.56951
#1	.00067	.16007	-.00442	.01471	.04396	-.00010	34.968
#2	.00133	.15731	-.00441	.01184	.04312	-.00009	34.633
#3	.00049	.15643	-.00202	.01267	.04313	-.00009	34.617
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	-.00010	.00106	.00419	.10347	.94855	.00298
Stddev	.00005	.00029	.00016	.00045	.00403	.07571	.00044
%RSD	9.8279	281.29	14.755	10.632	3.8982	7.9815	14.627
#1	.00047	-.00033	.00104	.00470	.10483	1.0357	.00258
#2	.00057	.00022	.00123	.00393	.10665	.89905	.00291
#3	.00050	-.00020	.00092	.00394	.09894	.91090	.00344
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.3599	.00407	.00063	4.8658	.00106	.00866	-.00280
Stddev	.0404	.00006	.00016	.0329	.00073	.00323	.00103
%RSD	.92580	1.4531	25.580	.67707	69.350	37.294	36.697
#1	4.4022	.00413	.00081	4.8933	.00033	.00641	-.00361
#2	4.3556	.00401	.00050	4.8293	.00179	.00721	-.00315
#3	4.3219	.00409	.00058	4.8749	.00105	.01236	-.00164
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: L1502109202 Acquired: 2/25/2015 11:12:17 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00040**	**-.00104**	**4.0497**	**-.00044**	**.12572**	**.00177**	**-.00046**
Stddev	.00140	.00176	.0108	.00055	.00070	.00103	.00137
%RSD	348.63	169.27	.26627	123.31	.55940	57.935	299.29
#1	-.00107	.00023	4.0394	-.00040	.12637	.00061	-.00112
#2	.00172	-.00305	4.0609	-.00101	.12497	.00254	.00112
#3	.00056	-.00030	4.0488	.00008	.12583	.00217	-.00138
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00031**	**.00587**	F **-.67281**
Stddev	.00021	.00012	1.0005
%RSD	66.221	1.9618	148.70
#1	.00011	.00599	-1.7582
#2	.00030	.00576	.21257
#3	.00053	.00588	-.47281
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10518.**	**10150.**
Stddev	23.	57.
%RSD	.21585	.55889
#1	10536.	10087.
#2	10525.	10196.
#3	10492.	10168.

Approved: February 26, 2015

Sample Name: L1502109203 Acquired: 2/25/2015 11:15:51 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00096	.12771	-.00269	.01047	.04597	-.00014	36.135
Stddev	.00068	.00097	.00085	.00091	.00034	.00003	.057
%RSD	71.121	.75813	31.580	8.6494	.73594	18.407	.15906
#1	.00090	.12870	-.00360	.00970	.04568	-.00014	36.077
#2	.00166	.12676	-.00255	.01147	.04634	-.00016	36.135
#3	.00031	.12768	-.00192	.01024	.04587	-.00011	36.192
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	.00000	.00040	-.00022	.10004	.94255	.00296
Stddev	.00005	.0003	.00041	.00023	.00617	.02840	.00116
%RSD	11.600	53679.	102.07	104.15	6.1659	3.0134	39.327
#1	.00047	-.00015	.00005	-.00007	.09390	.94929	.00316
#2	.00037	-.00020	.00031	-.00048	.09999	.91138	.00401
#3	.00041	.00035	.00086	-.00011	.10624	.96697	.00171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.5507	.00266	.00057	5.1956	.00113	.00793	.00016
Stddev	.0146	.00003	.00029	.0255	.00066	.00062	.00148
%RSD	.32134	1.2519	50.029	.49020	58.726	7.7566	927.81
#1	4.5494	.00263	.00071	5.2015	.00128	.00860	-.00119
#2	4.5659	.00268	.00024	5.1677	.00171	.00738	.00175
#3	4.5367	.00269	.00076	5.2176	.00041	.00782	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: L1502109203 Acquired: 2/25/2015 11:15:51 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00168**	**.00316**	**3.8471**	**-.00050**	**.13313**	**-.00012**	**.00090**
Stddev	.00068	.00272	.1908	.00072	.00118	.00149	.00164
%RSD	40.464	86.049	4.9603	143.59	.88831	1249.1	182.76
#1	-.00168	.00532	4.0645	-.00040	.13400	-.00183	.00223
#2	-.00236	.00011	3.7695	.00016	.13360	.00057	.00139
#3	-.00100	.00406	3.7073	-.00127	.13178	.00090	-.00093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00037**	**.00173**	F **-.91788**
Stddev	.00013	.00009	.78810
%RSD	35.422	5.3722	85.861
#1	.00022	.00163	-.73064
#2	.00046	.00174	-.24025
#3	.00043	.00181	-1.7827
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10435.**	**10218.**
Stddev	33.	38.
%RSD	.31262	.37287
#1	10451.	10262.
#2	10456.	10195.
#3	10397.	10198.

Approved: February 26, 2015

Sample Name: L1502109204 Acquired: 2/25/2015 11:19:25 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.16793	-.00286	.00826	.04804	-.00009	38.201
Stddev	.00033	.00100	.00179	.00045	.00033	.00005	.163
%RSD	55.240	.59340	62.622	5.5020	.68224	51.914	.42665
#1	.00047	.16777	-.00234	.00861	.04823	-.00005	38.039
#2	.00096	.16703	-.00486	.00844	.04766	-.00009	38.198
#3	.00034	.16900	-.00139	.00775	.04823	-.00014	38.365
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	-.00001	.00059	-.00067	.16250	.77679	.00337
Stddev	.00009	.00015	.00051	.00062	.00478	.03193	.00129
%RSD	21.270	1072.9	86.187	93.045	2.9387	4.1108	38.344
#1	.00034	.00005	.00031	-.00138	.15814	.75659	.00434
#2	.00039	-.00019	.00118	-.00034	.16760	.81360	.00190
#3	.00051	.00010	.00029	-.00028	.16176	.76017	.00387
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.2760	.00239	.00028	2.6998	.00081	-.00202	-.00073
Stddev	.0256	.00006	.00004	.0131	.00071	.00354	.00058
%RSD	.35161	2.3876	15.825	.48590	88.188	174.83	79.078
#1	7.2925	.00244	.00023	2.6998	.00013	.00106	-.00023
#2	7.2889	.00233	.00032	2.7129	.00074	-.00124	-.00059
#3	7.2465	.00241	.00028	2.6866	.00156	-.00589	-.00136
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: L1502109204 Acquired: 2/25/2015 11:19:25 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00182**	**.00211**	**3.8315**	**-.00093**	**.11954**	**.00231**	**-.00087**
Stddev	.00062	.00042	.0225	.00064	.00042	.00042	.00213
%RSD	33.843	19.752	.58625	68.050	.35017	18.204	245.03
#1	-.00252	.00216	3.8220	-.00155	.11914	.00251	-.00232
#2	-.00134	.00250	3.8154	-.00028	.11949	.00183	.00158
#3	-.00162	.00167	3.8572	-.00097	.11997	.00259	-.00187
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00048**	**.00147**	F **-.59184**
Stddev	.00024	.00015	1.4057
%RSD	49.410	10.446	237.51
#1	.00057	.00160	-.85988
#2	.00021	.00150	-1.8442
#3	.00065	.00130	.92856
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10400.**	**10133.**
Stddev	41.	78.
%RSD	.39354	.77358
#1	10381.	10223.
#2	10372.	10096.
#3	10447.	10080.

Approved: February 26, 2015

Sample Name: L1502109205 Acquired: 2/25/2015 11:23:02 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.46063	.00036	.01179	.04377	-.00007	37.937
Stddev	.00034	.00203	.00180	.00113	.00036	.00001	.148
%RSD	42.368	.43999	492.99	9.6129	.82984	19.054	.38954
#1	.00045	.46294	-.00131	.01051	.04418	-.00008	38.053
#2	.00084	.45975	.00015	.01264	.04350	-.00005	37.771
#3	.00113	.45918	.00226	.01223	.04363	-.00007	37.987
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	-.00006	.00137	-.00012	.44708	.78769	.00388
Stddev	.00005	.00020	.00019	.00005	.00529	.04490	.00101
%RSD	11.785	319.64	13.552	39.485	1.1839	5.7001	25.905
#1	.00039	-.00018	.00158	-.00008	.45071	.74673	.00473
#2	.00046	-.00018	.00131	-.00011	.44101	.78065	.00277
#3	.00037	.00017	.00122	-.00017	.44952	.83569	.00415
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.4119	.00616	.00051	4.8055	.00127	.00761	.00174
Stddev	.0256	.00009	.00014	.0294	.00063	.00216	.00111
%RSD	.39860	1.4247	28.357	.61216	49.171	28.447	64.159
#1	6.4337	.00608	.00054	4.8199	.00178	.00641	.00105
#2	6.4182	.00614	.00063	4.7717	.00057	.01011	.00114
#3	6.3838	.00625	.00035	4.8250	.00146	.00631	.00302
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: L1502109205 Acquired: 2/25/2015 11:23:02 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00149**	**.00088**	**3.6110**	**-.00049**	**.16288**	**.00715**	**.00084**
Stddev	.00140	.00200	.0889	.00020	.00093	.00062	.00329
%RSD	93.691	226.92	2.4618	41.031	.57398	8.6357	391.23
#1	-.00049	.00119	3.5091	-.00071	.16358	.00667	.00464
#2	-.00089	.00271	3.6513	-.00044	.16182	.00694	-.00111
#3	-.00309	-.00126	3.6726	-.00032	.16324	.00785	-.00101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00088**	**.00218**	F **-1.2739**
Stddev	.00041	.00011	.5032
%RSD	46.258	5.1982	39.504
#1	.00084	.00220	-1.6034
#2	.00130	.00228	-1.5237
#3	.00049	.00206	-.69464
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10439.**	**10055.**
Stddev	9.	35.
%RSD	.08214	.35195
#1	10449.	10033.
#2	10433.	10096.
#3	10436.	10036.

Approved: February 26, 2015

Sample Name: CCV Acquired: 2/25/2015 11:26:40 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41141	10.116	.40376	.50710	1.0697	.05086	10.896
Stddev	.00037	.073	.00609	.00076	.0026	.00016	.052
%RSD	.09014	.72307	1.5074	.15002	.23829	.31533	.47641
#1	.41176	10.165	.40149	.50675	1.0671	.05076	10.855
#2	.41146	10.032	.39913	.50659	1.0700	.05077	10.880
#3	.41102	10.150	.41065	.50798	1.0721	.05104	10.955
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05078	.20095	.52350	.49902	4.2299	53.800	1.0564
Stddev	.00066	.00261	.00106	.00539	.0050	.180	.0002
%RSD	1.2992	1.3000	.20205	1.0794	.11712	.33447	.01820
#1	.05035	.19902	.52244	.49564	4.2288	53.719	1.0565
#2	.05045	.19992	.52456	.49619	4.2256	53.676	1.0562
#3	.05154	.20393	.52351	.50523	4.2354	54.007	1.0566
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.489	.52955	1.0101	54.156	.51319	10.155	.51565
Stddev	.083	.00309	.0086	.176	.00532	.106	.00868
%RSD	.78833	.58397	.85459	.32568	1.0365	1.0467	1.6828
#1	10.407	.52835	1.0037	54.149	.50971	10.078	.51180
#2	10.489	.52723	1.0068	53.984	.51055	10.110	.50957
#3	10.572	.53306	1.0199	54.336	.51931	10.276	.52559
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 26, 2015

Sample Name: CCV Acquired: 2/25/2015 11:26:40 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2358**	**.40019**	**5.2013**	**1.0243**	**1.0859**	**1.0658**	**.52816**
Stddev	.0122	.00316	.0266	.0021	.0033	.0026	.00335
%RSD	.98950	.78922	.51081	.20538	.30403	.24120	.63376
#1	1.2280	.39749	5.2091	1.0220	1.0838	1.0633	.53008
#2	1.2294	.40366	5.2231	1.0247	1.0842	1.0657	.53010
#3	1.2499	.39942	5.1717	1.0261	1.0897	1.0684	.52430
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0039**	**1.0168**	F **.50800**
Stddev	.0033	.0010	.42266
%RSD	.32766	.09425	83.200
#1	1.0001	1.0163	.04416
#2	1.0051	1.0179	.87137
#3	1.0064	1.0161	.60848
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10547.**	**10155.**
Stddev	27.	53.
%RSD	.25290	.51781
#1	10578.	10163.
#2	10528.	10204.
#3	10536.	10099.

Approved: February 26, 2015

Sample Name: CCB Acquired: 2/25/2015 11:29:55 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	-.01185	.00007	.00263	-.00009	-.00009	.00208
Stddev	.00023	.00154	.00107	.00039	.00021	.00001	.00909
%RSD	33.637	13.001	1452.2	14.730	228.74	7.9282	438.05
#1	.00042	-.01011	-.00112	.00244	.00015	-.00010	.00554
#2	.00083	-.01305	.00096	.00308	-.00019	-.00009	-.00824
#3	.00081	-.01240	.00038	.00237	-.00024	-.00009	.00892
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	-.00006	-.00019	-.00049	.00148	.01039	.00110
Stddev	.00018	.00002	.00057	.00073	.00906	.02261	.00081
%RSD	196.02	39.501	304.75	149.05	612.85	217.62	73.386
#1	.00027	-.00007	-.00058	-.00011	.00385	.03643	.00034
#2	-.00008	-.00008	-.00046	-.00132	-.00853	-.00412	.00101
#3	.00008	-.00004	.00047	-.00003	.00911	-.00115	.00195
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00750	-.00006	.00488	-.01559	-.00023	.00191	-.00074
Stddev	.01349	.00003	.00047	.00634	.00130	.00329	.00157
%RSD	179.94	54.914	9.6918	40.663	556.54	172.37	211.16
#1	-.02206	-.00008	.00440	-.00829	-.00108	-.00162	-.00071
#2	.00458	-.00002	.00534	-.01969	.00127	.00245	-.00232
#3	-.00502	-.00008	.00491	-.01879	-.00089	.00490	.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: CCB Acquired: 2/25/2015 11:29:55 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.00016**	**-.00441**	**.00020**	**.00019**	**-.00166**	**.00262**
Stddev	.00086	.00180	.00113	.00050	.00009	.00129	.00012
%RSD	1820.7	1106.4	25.636	248.98	47.291	77.920	4.5740
#1	-.00065	.00216	-.00315	-.00020	.00021	-.00256	.00250
#2	-.00044	-.00035	-.00534	.00076	.00026	-.00225	.00274
#3	.00094	-.00132	-.00474	.00005	.00009	-.00018	.00261
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00011**	**-.00017**	F **.28640**
Stddev	.00048	.00016	.92797
%RSD	448.32	96.868	324.01
#1	-.00042	-.00024	-.61619
#2	.00052	.00002	.23758
#3	.00023	-.00028	1.2378
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10520.**	**10030.**
Stddev	16.	22.
%RSD	.15510	.22165
#1	10503.	10013.
#2	10522.	10055.
#3	10535.	10022.

Approved: February 26, 2015

Sample Name: LLCCV Acquired: 2/25/2015 11:33:35 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01728	.40061	.01408	.02184	.04246	.00197	.43551	.00218
Stddev	.00027	.00290	.00058	.00045	.00012	.00001	.00906	.00008
%RSD	1.5807	.72318	4.1232	2.0729	.28778	.34716	2.0810	3.7786
#1	.01719	.39924	.01464	.02235	.04234	.00198	.43024	.00225
#2	.01759	.39864	.01348	.02168	.04258	.00197	.43033	.00219
#3	.01707	.40393	.01410	.02149	.04245	.00197	.44598	.00209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00840	.02179	.02055	.17536	2.1908	.04309	.40461	.02257
Stddev	.00021	.00008	.00061	.00237	.0341	.00025	.02344	.00012
%RSD	2.5181	.34705	2.9657	1.3495	1.5555	.57267	5.7920	.54837
#1	.00833	.02187	.01989	.17758	2.2086	.04334	.40409	.02251
#2	.00864	.02172	.02109	.17287	2.2122	.04284	.42830	.02249
#3	.00824	.02179	.02068	.17564	2.1515	.04309	.38144	.02271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04307	2.1815	.02279	.41665	.02214	.05388	.01729	.22346
Stddev	.00048	.0344	.00041	.00502	.00205	.00196	.00547	.00060
%RSD	1.1159	1.5788	1.8099	1.2046	9.2516	3.6434	31.623	.26771
#1	.04345	2.1773	.02301	.42113	.02209	.05614	.02359	.22388
#2	.04323	2.2179	.02305	.41759	.02421	.05294	.01374	.22373
#3	.04253	2.1494	.02232	.41123	.02012	.05257	.01454	.22278
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 26, 2015

Sample Name: LLCCV Acquired: 2/25/2015 11:33:35 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04563**	**.04481**	**.04231**	**.02545**	**.04237**	**.04748**	**1.3570**
Stddev	.00106	.00031	.00101	.00157	.00040	.00055	.9749
%RSD	2.3171	.68862	2.3783	6.1763	.95316	1.1517	71.843
#1	.04661	.04451	.04329	.02708	.04278	.04784	1.8565
#2	.04451	.04512	.04234	.02533	.04198	.04685	.23356
#3	.04576	.04479	.04128	.02394	.04234	.04776	1.9808
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10464.**	**10178.**
Stddev	5.	28.
%RSD	.04930	.27129
#1	10458.	10204.
#2	10468.	10182.
#3	10465.	10149.

Approved: February 26, 2015

Sample Name: LLCCV Acquired: 2/25/2015 11:37:11 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00333**	**.05725**	**.00192**	**.00434**	**.00633**	**.00025**	**.09240**	**.00038**
Stddev	.00019	.00174	.00043	.00130	.00034	.00001	.00692	.00007
%RSD	5.6360	3.0430	22.187	30.061	5.3489	4.0099	7.4926	18.644
#1	.00347	.05734	.00143	.00583	.00618	.00025	.09868	.00032
#2	.00312	.05894	.00219	.00379	.00608	.00024	.09355	.00037
#3	.00341	.05546	.00215	.00340	.00671	.00026	.08498	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00147**	**.00384**	**.00315**	**.03390**	**.34777**	**.00746**	**.03772**	**.00385**
Stddev	.00024	.00074	.00026	.00427	.02531	.00181	.05687	.00006
%RSD	16.518	19.370	8.1347	12.603	7.2769	24.254	150.77	1.6209
#1	.00152	.00298	.00303	.02954	.31937	.00540	.08511	.00379
#2	.00169	.00421	.00345	.03409	.36794	.00880	-.02534	.00391
#3	.00121	.00432	.00299	.03808	.35600	.00817	.05340	.00384
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00743**	**.38931**	**.00411**	**.06228**	**.00334**	**.00580**	**.00434**	**.03207**
Stddev	.00006	.00535	.00136	.00641	.00291	.00081	.00170	.00162
%RSD	.74943	1.3750	33.104	10.287	87.363	13.967	39.075	5.0486
#1	.00737	.38821	.00436	.06139	.00349	.00493	.00298	.03051
#2	.00746	.39513	.00533	.05636	.00035	.00594	.00624	.03375
#3	.00747	.38460	.00265	.06908	.00617	.00653	.00379	.03196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 26, 2015

Sample Name: LLCCV Acquired: 2/25/2015 11:37:11 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00767**	**.00727**	**.00534**	**.00606**	**.00702**	**.00903**	**1.7270**
Stddev	.00017	.00011	.00165	.00134	.00032	.00039	.9295
%RSD	2.2004	1.5146	30.911	22.152	4.5341	4.2883	53.824
#1	.00782	.00721	.00667	.00722	.00671	.00862	.90565
#2	.00771	.00720	.00349	.00459	.00734	.00939	1.5392
#3	.00749	.00740	.00587	.00636	.00701	.00909	2.7360
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10503.**	**10192.**
Stddev	8.	59.
%RSD	.07771	.57705
#1	10506.	10258.
#2	10510.	10171.
#3	10494.	10146.

Approved: February 26, 2015

Sample Name: PBW V8 Acquired: 2/25/2015 11:40:48 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513107-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	-.00936	-.00105	-.00010	-.00039	-.00012	.02237
Stddev	.00023	.00334	.00197	.00025	.00025	.00002	.00237
%RSD	82.997	35.658	188.27	264.16	64.115	20.009	10.611
#1	.00008	-.01059	-.00014	-.00032	-.00064	-.00009	.02497
#2	.00023	-.01192	-.00331	.00018	-.00039	-.00014	.02182
#3	.00053	-.00558	.00030	-.00015	-.00014	-.00012	.02032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	-.00027	.00073	-.00045	.00359	-.01579	-.00090
Stddev	.00028	.00012	.00048	.00007	.00785	.02818	.00059
%RSD	109.22	43.340	65.716	15.646	218.58	178.40	64.716
#1	.00022	-.00040	.00105	-.00037	.00306	-.03043	-.00146
#2	.00056	-.00017	.00095	-.00050	.01169	.01669	-.00029
#3	.00000	-.00024	.00018	-.00047	-.00398	-.03364	-.00096
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00475	.00028	.00057	-.00813	.00102	F -.01327	.00205
Stddev	.03439	.00009	.00044	.00433	.00033	.00064	.00129
%RSD	723.81	33.211	76.693	53.280	32.577	4.8374	62.928
#1	.02782	.00017	.00081	-.00368	.00139	-.01287	.00189
#2	-.04070	.00034	.00007	-.01233	.00089	-.01401	.00085
#3	-.00137	.00033	.00083	-.00839	.00077	-.01293	.00342
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: PBW V8 Acquired: 2/25/2015 11:40:48 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513107-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00185	-.00103	-.00112	-.00060	.00014	.00065	.00355
Stddev	.00262	.00327	.00323	.00050	.00013	.00021	.00062
%RSD	141.53	317.03	289.17	83.773	92.063	31.606	17.432
#1	-.00390	-.00240	.00260	-.00106	.00028	.00050	.00426
#2	-.00276	.00270	-.00323	-.00067	.00006	.00057	.00316
#3	.00110	-.00339	-.00272	-.00007	.00006	.00089	.00323
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00003	.00128	1.2300
Stddev	.00015	.00007	.8562
%RSD	503.42	5.2772	69.613
#1	.00006	.00134	.28966
#2	-.00013	.00129	1.4357
#3	.00017	.00121	1.9647
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10540.	10186.
Stddev	8.	18.
%RSD	.07598	.17248
#1	10531.	10197.
#2	10542.	10195.
#3	10547.	10165.

Approved: February 26, 2015

Sample Name: LCSW V8 Acquired: 2/25/2015 11:44:25 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513107-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.16064	5.0372	-.00273	-.00064	-.00051	.02577	5.5534
Stddev	.00157	.0436	.00250	.00095	.00043	.00016	.0139
%RSD	.98035	.86474	91.468	149.03	83.704	.61960	.25093
#1	.16134	5.0407	-.00084	-.00045	-.00070	.02572	5.5673
#2	.15884	4.9920	-.00556	-.00167	-.00081	.02565	5.5394
#3	.16175	5.0789	-.00179	.00020	-.00002	.02595	5.5536
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	-.00008	.00056	.00003	2.1674	27.313	.00038
Stddev	.00003	.00026	.00060	.00050	.0151	.136	.00084
%RSD	9.2630	342.25	106.06	1935.5	.69754	.49755	223.01
#1	.00028	-.00036	-.00002	-.00020	2.1579	27.299	.00131
#2	.00029	.00001	.00117	.00060	2.1596	27.184	-.00033
#3	.00033	.00013	.00054	-.00032	2.1849	27.455	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.3169	.26598	.00032	27.292	.00108	F -.01239	-.00143
Stddev	.0388	.00175	.00020	.124	.00044	.00332	.00043
%RSD	.72907	.65956	62.885	.45338	41.274	26.756	30.254
#1	5.3074	.26694	.00011	27.307	.00064	-.00859	-.00111
#2	5.2837	.26395	.00034	27.161	.00152	-.01388	-.00126
#3	5.3595	.26704	.00052	27.407	.00107	-.01470	-.00192
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: LCSW V8 Acquired: 2/25/2015 11:44:25 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513107-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	-.00021	-.00350	-.00058	.00001	-.00056	.00117
Stddev	.00100	.00213	.00045	.00024	.00009	.00174	.00078
%RSD	260.07	1012.8	12.825	40.855	910.13	309.06	67.104
#1	-.00002	-.00259	-.00352	-.00030	.00012	-.00210	.00193
#2	-.00035	.00151	-.00304	-.00072	-.00005	.00132	.00122
#3	.00152	.00045	-.00394	-.00071	-.00004	-.00091	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00006	.00132	.57907
Stddev	.00005	.00014	1.3844
%RSD	73.386	10.638	239.07
#1	-.00011	.00127	-.42797
#2	-.00002	.00148	.00747
#3	-.00006	.00122	2.1577
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10501.	10232.
Stddev	64.	40.
%RSD	.60711	.39068
#1	10503.	10203.
#2	10564.	10278.
#3	10436.	10216.

Approved: February 26, 2015

Sample Name: L1502104402 Acquired: 2/25/2015 12:07:25 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	-.00555	-.00064	.01139	.02290	-.00012	59.833
Stddev	.00021	.00136	.00056	.00122	.00017	.00003	.144
%RSD	32.692	24.533	87.394	10.715	.72998	27.906	.23996
#1	.00052	-.00711	-.00108	.01223	.02274	-.00013	59.726
#2	.00090	-.00486	-.00083	.01196	.02289	-.00008	59.777
#3	.00055	-.00466	-.00001	.00999	.02308	-.00014	59.996
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	-.00012	.00057	-.00018	.01775	3.7863	.02120
Stddev	.00005	.00018	.00051	.00038	.00514	.0219	.00089
%RSD	7.0907	156.53	90.040	205.86	28.953	.57798	4.1931
#1	.00073	.00009	.00022	-.00059	.02337	3.7781	.02148
#2	.00074	-.00024	.00032	.00015	.01329	3.8111	.02021
#3	.00065	-.00021	.00115	-.00011	.01660	3.7698	.02192
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	37.604	.00151	-.00004	5.0523	.00207	F -.00562	-.00073
Stddev	.025	.00003	.00025	.0171	.00027	.00441	.00196
%RSD	.06724	1.8613	692.69	.33848	13.229	78.557	268.31
#1	37.602	.00154	-.00032	5.0476	.00193	-.00987	.00047
#2	37.631	.00149	.00015	5.0380	.00191	-.00105	-.00300
#3	37.580	.00150	.00007	5.0712	.00239	-.00594	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502104402 Acquired: 2/25/2015 12:07:25 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00202**	**.00290**	**2.3497**	**-.00020**	**1.0544**	**-.00281**	**.00075**
Stddev	.00193	.00407	.0120	.00032	.0019	.00118	.00074
%RSD	95.360	140.47	.50971	162.31	.17647	41.811	98.463
#1	-.00251	.00255	2.3620	-.00025	1.0532	-.00190	.00007
#2	-.00366	.00713	2.3490	-.00050	1.0535	-.00414	.00155
#3	.00010	-.00099	2.3381	.00015	1.0566	-.00240	.00064
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00041**	**.00420**	**.49421**
Stddev	.00032	.00009	2.5940
%RSD	77.976	2.2029	524.89
#1	-.00050	.00431	.00274
#2	-.00066	.00416	3.2988
#3	-.00005	.00413	-1.8189
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10269.**	**10035.**
Stddev	15.	35.
%RSD	.14603	.35326
#1	10266.	10014.
#2	10255.	10016.
#3	10285.	10076.

Approved: February 26, 2015

Sample Name: L1502104404 Acquired: 2/25/2015 12:11:02 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	-.00908	-.00165	.01009	.02208	-.00014	45.078
Stddev	.00024	.00196	.00132	.00019	.00038	.00003	.053
%RSD	26.909	21.569	79.624	1.9122	1.7071	18.784	.11845
#1	.00062	-.00893	-.00020	.00987	.02192	-.00012	45.133
#2	.00109	-.01112	-.00201	.01022	.02180	-.00017	45.074
#3	.00093	-.00721	-.00276	.01018	.02251	-.00013	45.026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00070	.00003	.00041	-.00068	.03523	3.1893	.01382
Stddev	.00006	.00004	.00037	.00060	.00124	.0014	.00204
%RSD	8.5291	155.40	91.750	88.143	3.5170	.04249	14.727
#1	.00068	.00000	.00005	-.00037	.03440	3.1878	.01605
#2	.00065	.00007	.00080	-.00137	.03665	3.1904	.01206
#3	.00077	.00001	.00038	-.00030	.03463	3.1896	.01337
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	30.114	.08306	.00006	4.6502	.00275	F -.00589	.00085
Stddev	.084	.00052	.00019	.0222	.00038	.00765	.00088
%RSD	.27987	.62426	350.00	.47651	13.678	129.90	103.48
#1	30.183	.08328	.00012	4.6746	.00236	-.01274	.00174
#2	30.020	.08246	-.00016	4.6447	.00311	-.00731	-.00002
#3	30.139	.08342	.00021	4.6314	.00280	.00237	.00083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502104404 Acquired: 2/25/2015 12:11:02 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00053**	**.00333**	**2.8827**	**-.00066**	**.49997**	**-.00230**	**-.00132**
Stddev	.00068	.00224	.0062	.00039	.00096	.00076	.00104
%RSD	128.79	67.387	.21663	59.220	.19132	33.187	78.387
#1	-.00076	.00083	2.8845	-.00021	.50100	-.00267	-.00096
#2	-.00106	.00517	2.8878	-.00086	.49980	-.00142	-.00249
#3	.00024	.00399	2.8757	-.00090	.49911	-.00279	-.00052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00003**	**.00404**	**.71014**
Stddev	.00015	.00018	1.1818
%RSD	526.39	4.5672	166.42
#1	.00014	.00420	1.3618
#2	-.00012	.00408	1.4227
#3	-.00011	.00384	-.65407
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10304.**	**10160.**
Stddev	19.	35.
%RSD	.18379	.34764
#1	10283.	10157.
#2	10308.	10196.
#3	10321.	10126.

Approved: February 26, 2015

Sample Name: L1502104406 Acquired: 2/25/2015 12:14:40 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.01118	-.00418	.00766	.05428	-.00014	56.724	.00077
Stddev	.00029	.00245	.00068	.00040	.00027	.00002	.219	.00009
%RSD	57.487	21.959	16.230	5.1723	.49274	17.211	.38533	11.193
#1	.00056	.00995	-.00481	.00735	.05406	-.00013	56.544	.00082
#2	.00019	.00958	-.00346	.00810	.05420	-.00017	56.661	.00067
#3	.00076	.01400	-.00426	.00752	.05457	-.00013	56.967	.00082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.00093	-.00006	.05895	3.5144	.00880	36.673	.04201
Stddev	.00022	.00087	.00091	.00464	.0374	.00094	.141	.00016
%RSD	409.56	93.611	1401.3	7.8725	1.0627	10.652	.38406	.39029
#1	-.00003	.00158	.00050	.05454	3.5570	.00835	36.535	.04183
#2	-.00011	-.00006	.00042	.05853	3.4990	.00817	36.666	.04215
#3	.00030	.00125	-.00111	.06379	3.4872	.00987	36.817	.04205
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	6.3282	.00121	-.00129	.00128	-.00136	.00631	1.9184
Stddev	.00002	.0474	.00053	.00084	.00246	.00264	.00147	.0623
%RSD	315.81	.74927	44.094	64.567	191.87	193.75	23.305	3.2482
#1	-.00002	6.2942	.00182	-.00040	-.00156	.00158	.00798	1.9888
#2	.00003	6.3081	.00090	-.00142	.00267	-.00215	.00576	1.8960
#3	.00001	6.3824	.00090	-.00206	.00272	-.00352	.00520	1.8703
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 26, 2015

Sample Name: L1502104406 Acquired: 2/25/2015 12:14:40 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**.98079**	**-.00237**	**-.00027**	**.00026**	**.00120**	**.34516**
Stddev	.00028	.00494	.00115	.00156	.00021	.00014	3.8516
%RSD	316.50	.50327	48.629	573.31	82.373	11.356	1115.9
#1	-.00025	.97661	-.00368	.00006	.00007	.00131	-4.0176
#2	-.00026	.97952	-.00186	.00110	.00049	.00125	3.2748
#3	.00024	.98624	-.00156	-.00198	.00021	.00105	1.7783
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10247.**	**10150.**
Stddev	16.	41.
%RSD	.15735	.40227
#1	10256.	10197.
#2	10228.	10134.
#3	10256.	10121.

Approved: February 26, 2015

Sample Name: L1502104508 Acquired: 2/25/2015 12:18:12 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	.07499	-.00190	.00883	.01408	-.00013	91.669
Stddev	.00030	.00164	.00278	.00057	.00016	.00002	.138
%RSD	52.502	2.1819	146.74	6.4733	1.1346	13.015	.15072
#1	.00036	.07328	-.00230	.00863	.01391	-.00014	91.555
#2	.00091	.07515	.00107	.00948	.01411	-.00011	91.823
#3	.00044	.07654	-.00446	.00839	.01422	-.00013	91.630
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00121	.00033	.00110	-.00051	.02019	9.9502	.01534
Stddev	.00005	.00008	.00028	.00037	.00467	.0343	.00066
%RSD	4.1791	25.421	25.761	72.670	23.155	.34506	4.3011
#1	.00124	.00034	.00142	-.00010	.02347	9.9309	.01556
#2	.00115	.00041	.00099	-.00060	.01483	9.9898	.01586
#3	.00124	.00024	.00088	-.00082	.02226	9.9299	.01460
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	97.593	.63574	-.00028	38.980	.00545	F -.00845	.00011
Stddev	.255	.00456	.00027	.103	.00075	.00019	.00114
%RSD	.26152	.71748	96.266	.26451	13.702	2.2146	994.50
#1	97.400	.63107	-.00058	38.916	.00534	-.00865	-.00004
#2	97.882	.63595	-.00005	39.099	.00477	-.00843	-.00094
#3	97.496	.64018	-.00022	38.925	.00625	-.00827	.00133
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502104508 Acquired: 2/25/2015 12:18:12 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00093**	**.00016**	**2.1340**	**-.00092**	**.27033**	**-.00463**	**.00073**
Stddev	.00107	.00422	.0455	.00053	.00093	.00046	.00158
%RSD	115.24	2598.4	2.1322	57.092	.34464	9.8505	215.21
#1	-.00133	-.00471	2.1050	-.00070	.27009	-.00433	.00180
#2	.00028	.00249	2.1105	-.00055	.27136	-.00440	-.00108
#3	-.00174	.00271	2.1864	-.00153	.26954	-.00515	.00148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00034**	**.00108**	**.71517**
Stddev	.00036	.00008	1.7315
%RSD	106.39	7.5048	242.10
#1	-.00049	.00109	-1.2038
#2	-.00061	.00116	1.1887
#3	.00007	.00100	2.1606
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10017.**	**10316.**
Stddev	12.	51.
%RSD	.11623	.49023
#1	10025.	10365.
#2	10023.	10320.
#3	10004.	10264.

Approved: February 26, 2015

Sample Name: L1502104510 Acquired: 2/25/2015 12:21:44 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.03652	-.00341	.00964	.01835	-.00009	163.23	.00129
Stddev	.00044	.00165	.00054	.00090	.00030	.00002	.12	.00007
%RSD	839.18	4.5288	15.716	9.3513	1.6427	18.519	.07555	5.1193
#1	.00045	.03843	-.00403	.00880	.01839	-.00007	163.09	.00130
#2	.00012	.03564	-.00308	.01059	.01803	-.00010	163.28	.00123
#3	-.00041	.03550	-.00313	.00954	.01863	-.00009	163.32	.00136
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00246	.00105	-.00047	.02303	13.630	.04460	149.80	.30204
Stddev	.00005	.00079	.00057	.00710	.062	.00140	.23	.00120
%RSD	1.8975	74.887	120.76	30.818	.45729	3.1393	.15558	.39683
#1	.00246	.00059	.00019	.01633	13.568	.04300	149.57	.30310
#2	.00251	.00196	-.00083	.02230	13.630	.04520	149.79	.30074
#3	.00242	.00061	-.00078	.03046	13.692	.04560	150.04	.30227
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00006	169.57	.00666	.00230	-.00113	-.00134	.00156	1.2808
Stddev	.00019	1.72	.00064	.00084	.00074	.00306	.00204	.0370
%RSD	316.16	1.0128	9.6154	36.714	65.748	228.67	130.90	2.8901
#1	-.00019	169.81	.00739	.00325	-.00183	-.00068	.00103	1.3114
#2	-.00014	167.75	.00640	.00202	-.00121	.00134	.00382	1.2397
#3	.00016	171.16	.00619	.00163	-.00035	-.00468	-.00016	1.2914
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 26, 2015

Sample Name: L1502104510 Acquired: 2/25/2015 12:21:44 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00068**	**.42991**	**-.00798**	**-.00014**	**-.00027**	**.00331**	**.86234**
Stddev	.00049	.00103	.00031	.00049	.00023	.00011	.20048
%RSD	71.800	.23845	3.8763	362.21	85.113	3.2129	23.248
#1	-.00012	.42876	-.00826	-.00056	-.00051	.00339	.89575
#2	-.00087	.43025	-.00802	.00041	-.00005	.00334	.64725
#3	-.00104	.43073	-.00765	-.00026	-.00025	.00319	1.0440
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**9980.5**	**10107.**
Stddev	31.3	31.
%RSD	.31383	.30488
#1	9949.2	10098.
#2	9980.4	10141.
#3	10012.	10081.

Approved: February 26, 2015

Sample Name: L1502104512 Acquired: 2/25/2015 12:25:31 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00067	-.00874	-.00078	.01288	.04524	-.00011	84.713
Stddev	.00037	.00079	.00218	.00020	.00023	.00002	.493
%RSD	55.005	9.0672	280.01	1.5378	.50413	21.478	.58186
#1	.00037	-.00941	.00163	.01311	.04513	-.00013	84.789
#2	.00108	-.00786	-.00262	.01276	.04550	-.00008	85.165
#3	.00057	-.00896	-.00135	.01278	.04508	-.00011	84.187
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	.00047	.00035	-.00113	.09837	5.7475	.00627
Stddev	.00014	.00006	.00045	.00023	.00506	.0621	.00035
%RSD	31.793	11.657	129.91	20.203	5.1397	1.0796	5.5515
#1	.00058	.00050	.00000	-.00089	.09317	5.7811	.00668
#2	.00030	.00051	.00086	-.00134	.10327	5.7856	.00606
#3	.00047	.00041	.00018	-.00115	.09868	5.6759	.00609
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.089	1.1237	.00046	2.9766	.00160	F -.00340	.00197
Stddev	.062	.0129	.00010	.0156	.00030	.00242	.00105
%RSD	.56134	1.1476	20.578	.52244	18.961	71.271	53.137
#1	11.124	1.1362	.00047	2.9870	.00194	-.00527	.00081
#2	11.125	1.1244	.00036	2.9842	.00134	-.00066	.00285
#3	11.017	1.1105	.00055	2.9588	.00153	-.00425	.00224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502104512 Acquired: 2/25/2015 12:25:31 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00233**	**.00257**	**2.6227**	**-.00038**	**.40217**	**-.00408**	**.00194**
Stddev	.00117	.00490	.0418	.00023	.00222	.00044	.00147
%RSD	50.349	191.04	1.5953	61.381	.55097	10.847	75.689
#1	-.00099	-.00285	2.6524	-.00042	.40287	-.00410	.00208
#2	-.00317	.00386	2.5749	-.00059	.40395	-.00363	.00334
#3	-.00282	.00669	2.6409	-.00013	.39969	-.00451	.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00012**	**.00508**	**.86794**
Stddev	.00057	.00013	2.2749
%RSD	491.01	2.5013	262.11
#1	-.00051	.00517	-.84173
#2	.00060	.00514	-.00440
#3	.00026	.00494	3.4499
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10310.**	**10445.**
Stddev	15.	127.
%RSD	.14708	1.2121
#1	10293.	10346.
#2	10319.	10400.
#3	10320.	10588.

Approved: February 26, 2015

Sample Name: L1502104512PS Acquired: 2/25/2015 12:29:04 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513157-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21266	4.9543	.20030	1.0064	.58467	.02545	81.944	.02542
Stddev	.00126	.0105	.00332	.0057	.00173	.00017	.090	.00037
%RSD	.59146	.21252	1.6555	.56945	.29660	.68477	.11034	1.4492
#1	.21122	4.9462	.19657	1.0006	.58267	.02525	81.932	.02502
#2	.21351	4.9504	.20293	1.0066	.58554	.02558	81.860	.02574
#3	.21325	4.9662	.20140	1.0121	.58579	.02552	82.040	.02549
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10215	.26814	.25106	2.2205	32.461	.55106	14.954	1.2521
Stddev	.00075	.00264	.00254	.0127	.033	.00080	.009	.0021
%RSD	.73432	.98275	1.0104	.57035	.10014	.14540	.05879	.16724
#1	.10134	.26512	.24821	2.2309	32.429	.55056	14.949	1.2541
#2	.10282	.26938	.25308	2.2242	32.460	.55199	14.949	1.2523
#3	.10230	.26994	.25188	2.2064	32.494	.55064	14.964	1.2499
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52805	30.241	.25593	5.0510	.25383	.62889	.19684	4.9314
Stddev	.00481	.080	.00235	.0511	.00229	.00988	.00477	.1059
%RSD	.91169	.26343	.91792	1.0109	.90292	1.5706	2.4235	2.1481
#1	.52249	30.299	.25328	4.9927	.25123	.61772	.19228	4.8093
#2	.53085	30.150	.25675	5.0875	.25471	.63646	.19643	4.9864
#3	.53081	30.274	.25775	5.0730	.25555	.63250	.20180	4.9985
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 26, 2015

Sample Name: L1502104512PS Acquired: 2/25/2015 12:29:04 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513157-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52179**	**.91394**	**.54133**	**.26646**	**.52187**	**.50884**	**.92010**
Stddev	.01129	.00096	.00176	.00657	.00181	.01477	1.5188
%RSD	2.1634	.10541	.32596	2.4667	.34597	2.9035	165.07
#1	.50879	.91394	.54048	.25919	.51988	.49665	.15958
#2	.52757	.91297	.54016	.26818	.52340	.52527	-.06824
#3	.52902	.91490	.54336	.27199	.52233	.50460	2.6690
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10290.**	**10357.**
Stddev	41.	4.
%RSD	.40242	.04214
#1	10336.	10355.
#2	10257.	10355.
#3	10275.	10362.

Approved: February 26, 2015

Sample Name: L1502104512SDL Acquired: 2/25/2015 12:32:21 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG513157-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00100	-.01148	.00042	.00776	.00870	-.00011	17.376
Stddev	.00016	.00217	.00024	.00134	.00012	.00002	.073
%RSD	16.020	18.889	56.545	17.273	1.3218	18.417	.41849
#1	.00109	-.00937	.00070	.00923	.00857	-.00010	17.361
#2	.00109	-.01137	.00030	.00745	.00878	-.00009	17.455
#3	.00082	-.01370	.00027	.00660	.00876	-.00013	17.312
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	.00036	.00044	-.00044	.02636	1.1444	.00181
Stddev	.00007	.00028	.00044	.00035	.00469	.0078	.00108
%RSD	64.217	77.683	98.556	79.378	17.788	.68104	59.918
#1	.00020	.00058	-.00001	-.00043	.03009	1.1400	.00306
#2	.00009	.00047	.00049	-.00009	.02110	1.1534	.00123
#3	.00006	.00004	.00085	-.00079	.02788	1.1398	.00113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.2619	.23576	.00179	.60168	.00065	F -.00492	.00029
Stddev	.0326	.00145	.00034	.00613	.00075	.00593	.00052
%RSD	1.4427	.61378	18.769	1.0191	114.99	120.58	177.35
#1	2.2899	.23572	.00154	.60020	.00043	-.00965	.00083
#2	2.2261	.23723	.00167	.60842	.00148	.00173	.00027
#3	2.2697	.23433	.00218	.59643	.00004	-.00683	-.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502104512SDL Acquired: 2/25/2015 12:32:21 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG513157-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00117	.00237	.50829	.00018	.08473	-.00139	.00085
Stddev	.00098	.00167	.00699	.00066	.00056	.00158	.00148
%RSD	83.540	70.296	1.3745	372.81	.66491	113.95	174.24
#1	-.00005	.00388	.50142	-.00029	.08440	-.00178	-.00057
#2	-.00187	.00266	.50806	.00094	.08538	-.00273	.00240
#3	-.00159	.00058	.51539	-.00012	.08440	.00035	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00038	.00183	2.7310
Stddev	.00027	.00005	.4598
%RSD	71.321	2.5207	16.837
#1	.00067	.00183	3.2281
#2	.00035	.00179	2.3209
#3	.00012	.00188	2.6441
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10509.	10413.
Stddev	20.	74.
%RSD	.19197	.71443
#1	10521.	10422.
#2	10521.	10335.
#3	10486.	10483.

Approved: February 26, 2015

Sample Name: CCV Acquired: 2/25/2015 12:36:03 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41670	10.098	.40906	.51592	1.0772	.05142	10.857
Stddev	.00173	.089	.00741	.00310	.0031	.00006	.020
%RSD	.41557	.88457	1.8118	.60065	.28498	.11723	.17989
#1	.41568	10.098	.40777	.51389	1.0737	.05140	10.879
#2	.41572	10.009	.40238	.51439	1.0783	.05137	10.841
#3	.41870	10.188	.41703	.51949	1.0795	.05148	10.852
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05152	.20409	.52522	.50776	4.2165	53.740	1.0654
Stddev	.00099	.00371	.00205	.01012	.0127	.030	.0032
%RSD	1.9177	1.8195	.39080	1.9922	.30141	.05603	.30420
#1	.05091	.20285	.52340	.50386	4.2055	53.766	1.0665
#2	.05099	.20115	.52482	.50017	4.2135	53.748	1.0680
#3	.05266	.20826	.52744	.51925	4.2304	53.707	1.0618
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.354	.52347	1.0168	54.097	.51969	10.165	.52244
Stddev	.043	.00299	.0131	.164	.00884	.120	.01134
%RSD	.41326	.57029	1.2869	.30316	1.7014	1.1832	2.1706
#1	10.359	.52378	1.0082	54.205	.51594	10.078	.51551
#2	10.309	.52035	1.0104	53.908	.51333	10.115	.51629
#3	10.395	.52630	1.0319	54.177	.52978	10.302	.53553
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 26, 2015

Sample Name: CCV Acquired: 2/25/2015 12:36:03 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2470**	**.40334**	**5.1713**	**1.0293**	**1.0854**	**1.0645**	**.53224**
Stddev	.0179	.00870	.0241	.0103	.0018	.0040	.00594
%RSD	1.4345	2.1566	.46541	.99537	.16117	.37804	1.1164
#1	1.2425	.40458	5.1532	1.0275	1.0854	1.0607	.53051
#2	1.2318	.39408	5.1620	1.0202	1.0837	1.0641	.52736
#3	1.2667	.41135	5.1986	1.0404	1.0872	1.0687	.53886
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0177**	**1.0156**	F **.23912**
Stddev	.0027	.0010	2.1736
%RSD	.26662	.10223	909.03
#1	1.0150	1.0144	-1.4119
#2	1.0178	1.0160	-.57258
#3	1.0204	1.0164	2.7018
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10493.**	**10319.**
Stddev	15.	51.
%RSD	.14008	.49218
#1	10510.	10297.
#2	10481.	10377.
#3	10489.	10283.

Approved: February 26, 2015

Sample Name: CCB Acquired: 2/25/2015 12:39:18 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00058	-.01194	.00012	.00354	-.00028	-.00011	.01273
Stddev	.00098	.00130	.00219	.00116	.00024	.00001	.00717
%RSD	170.28	10.910	1864.8	32.711	84.375	9.8067	56.339
#1	-.00056	-.01046	-.00219	.00226	-.00002	-.00010	.01873
#2	.00116	-.01294	.00038	.00450	-.00036	-.00011	.01469
#3	.00113	-.01240	.00216	.00387	-.00048	-.00012	.00478
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.00013	.00002	-.00036	-.00069	.01985	-.00071
Stddev	.00014	.00025	.00013	.00047	.00046	.03870	.00132
%RSD	95.683	190.92	529.35	133.31	66.405	194.96	185.47
#1	.00004	.00030	.00017	.00018	-.00122	.03432	-.00018
#2	.00031	.00024	-.00006	-.00054	-.00046	-.02400	-.00222
#3	.00009	-.00016	-.00003	-.00071	-.00040	.04924	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.03100	-.00009	.00471	-.01325	.00023	-.00343	.00009
Stddev	.01979	.00003	.00015	.01003	.00057	.00250	.00115
%RSD	63.820	29.898	3.1158	75.700	253.37	72.840	1285.7
#1	-.00903	-.00008	.00462	-.01720	.00087	-.00098	.00023
#2	-.04742	-.00011	.00462	-.00184	-.00023	-.00334	.00116
#3	-.03656	-.00006	.00488	-.02070	.00004	-.00598	-.00112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: CCB Acquired: 2/25/2015 12:39:18 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00028**	**.00209**	**-.00553**	**-.00010**	**.00012**	**-.00022**	**.00292**
Stddev	.00148	.00136	.00063	.00014	.00007	.00184	.00045
%RSD	535.40	65.047	11.478	142.79	55.907	831.10	15.451
#1	-.00037	.00271	-.00516	-.00012	.00019	.00036	.00325
#2	.00197	.00053	-.00517	-.00023	.00012	-.00229	.00311
#3	-.00077	.00302	-.00626	.00005	.00005	.00126	.00241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00009**	**-.00011**	F **-.17527**
Stddev	.00033	.00006	.51084
%RSD	360.04	54.256	291.46
#1	.00000	-.00009	.38275
#2	-.00019	-.00007	-.61986
#3	.00046	-.00019	-.28870
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10491.**	**10244.**
Stddev	10.	67.
%RSD	.09534	.65409
#1	10496.	10223.
#2	10497.	10190.
#3	10479.	10319.

Approved: February 26, 2015

Sample Name: L1502104408 Acquired: 2/25/2015 12:43:01 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513107-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00072	-.00285	-.00059	.01113	.03098	-.00015	80.374	.00083
Stddev	.00066	.00109	.00051	.00101	.00018	.00003	.214	.00012
%RSD	91.804	38.455	85.788	9.1083	.59438	23.161	.26680	13.918
#1	.00100	-.00168	-.00106	.01094	.03077	-.00018	80.208	.00089
#2	-.00004	-.00386	-.00006	.01022	.03112	-.00014	80.616	.00069
#3	.00119	-.00300	-.00065	.01222	.03104	-.00012	80.299	.00089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	.00068	-.00098	.01968	4.7382	.02292	49.866	.02893
Stddev	.00021	.00038	.00075	.00280	.0294	.00087	.121	.00020
%RSD	457.98	55.913	76.148	14.247	.61947	3.7976	.24182	.67657
#1	-.00029	.00072	-.00016	.01734	4.7061	.02387	49.899	.02916
#2	.00012	.00028	-.00116	.02279	4.7636	.02271	49.967	.02883
#3	.00003	.00104	-.00163	.01891	4.7450	.02217	49.733	.02881
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	8.2680	.00111	.00052	-.00063	-.00414	.00197	2.0013
Stddev	.00033	.0298	.00046	.00756	.00155	.00249	.00325	.0144
%RSD	27.976	.36006	41.070	1443.8	247.52	60.205	164.96	.72020
#1	.00094	8.2341	.00140	-.00733	.00028	-.00382	.00172	2.0142
#2	.00103	8.2899	.00136	.00115	-.00242	-.00182	.00534	2.0039
#3	.00155	8.2800	.00059	.00774	.00025	-.00677	-.00115	1.9857
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 26, 2015

Sample Name: L1502104408 Acquired: 2/25/2015 12:43:01 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513107-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00041**	**1.3733**	**-.00474**	**-.00001**	**-.00002**	**.00111**	**.30359**
Stddev	.00035	.0036	.00122	.00189	.00055	.00007	1.3177
%RSD	85.583	.26257	25.738	23085.	2838.9	5.8972	434.04
#1	.00000	1.3707	-.00379	-.00109	-.00066	.00117	-.09552
#2	-.00061	1.3774	-.00431	-.00111	.00035	.00111	1.7747
#3	-.00060	1.3717	-.00612	.00217	.00025	.00104	-.76842
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10186.**	**10350.**
Stddev	11.	41.
%RSD	.10627	.39475
#1	10176.	10338.
#2	10186.	10317.
#3	10198.	10396.

Approved: February 26, 2015

Sample Name: L1502104408DUP Acquired: 2/25/2015 12:46:34 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513107-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00097	-.00759	-.00159	.00945	.03140	-.00014	81.841
Stddev	.00004	.00184	.00240	.00073	.00032	.00003	.135
%RSD	4.4553	24.180	150.93	7.7247	1.0120	22.436	.16455
#1	.00101	-.00635	-.00279	.00997	.03116	-.00013	81.951
#2	.00096	-.00673	-.00316	.00976	.03176	-.00011	81.691
#3	.00093	-.00970	.00118	.00861	.03128	-.00017	81.881
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00090	.00001	.00080	-.00007	.01996	4.8005	.02230
Stddev	.00008	.00026	.00053	.00076	.00150	.0450	.00277
%RSD	9.1198	2014.7	66.163	1133.3	7.5294	.93715	12.424
#1	.00086	.00007	.00061	.00000	.01832	4.8152	.02524
#2	.00099	-.00027	.00040	.00066	.02128	4.8363	.01974
#3	.00084	.00024	.00140	-.00086	.02027	4.7500	.02193
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	50.761	.02926	.00085	8.4555	.00131	F -.00382	.00162
Stddev	.160	.00040	.00023	.0239	.00042	.00575	.00060
%RSD	.31488	1.3661	26.826	.28298	31.841	150.52	37.033
#1	50.799	.02949	.00073	8.4809	.00114	-.00510	.00232
#2	50.586	.02880	.00111	8.4521	.00100	-.00882	.00128
#3	50.898	.02950	.00070	8.4334	.00178	.00246	.00128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502104408DUP Acquired: 2/25/2015 12:46:34 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513107-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00197	.00362	2.0965	-.00039	1.4010	-.00503	-.00009
Stddev	.00338	.00383	.0361	.00016	.0017	.00062	.00245
%RSD	171.63	105.75	1.7217	40.161	.12345	12.313	2651.3
#1	-.00370	.00453	2.1381	-.00035	1.4029	-.00564	-.00088
#2	.00193	-.00058	2.0737	-.00056	1.3995	-.00440	.00265
#3	-.00414	.00691	2.0777	-.00025	1.4007	-.00504	-.00205
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00053	.00094	.15480
Stddev	.00028	.00006	.35520
%RSD	52.670	6.3769	229.46
#1	-.00021	.00096	-.09289
#2	-.00071	.00098	.56176
#3	-.00067	.00087	-.00447
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10184.	10381.
Stddev	23.	27.
%RSD	.22929	.25726
#1	10209.	10356.
#2	10182.	10409.
#3	10163.	10379.

Approved: February 26, 2015

Sample Name: L1502104408MS Acquired: 2/25/2015 12:50:06 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513107-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.16642	5.1109	-.00258	.01021	.03138	.02630	86.815
Stddev	.00080	.0111	.00081	.00087	.00010	.00004	.201
%RSD	.47891	.21779	31.254	8.5363	.32855	.16249	.23123
#1	.16568	5.1073	-.00294	.00921	.03126	.02634	86.590
#2	.16631	5.1234	-.00314	.01064	.03145	.02626	86.977
#3	.16726	5.1020	-.00166	.01079	.03142	.02629	86.878
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00095	-.00004	.00115	-.00023	2.1887	32.633	.02311
Stddev	.00010	.00013	.00051	.00059	.0048	.041	.00118
%RSD	10.297	300.78	44.597	260.50	.22040	.12472	5.0858
#1	.00091	-.00008	.00101	.00042	2.1832	32.604	.02215
#2	.00107	.00010	.00072	-.00072	2.1910	32.679	.02442
#3	.00089	-.00015	.00171	-.00038	2.1920	32.614	.02275
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	55.740	.28943	.00035	36.255	.00133	F -.00389	-.00253
Stddev	.146	.00170	.00032	.081	.00071	.00566	.00078
%RSD	.26118	.58631	90.171	.22464	53.328	145.65	30.682
#1	55.593	.28769	.00011	36.161	.00071	.00183	-.00342
#2	55.884	.29108	.00071	36.293	.00118	-.00401	-.00217
#3	55.743	.28951	.00023	36.310	.00210	-.00949	-.00200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502104408MS Acquired: 2/25/2015 12:50:06 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513107-06

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00231**	**.00366**	**2.0253**	**-.00021**	**1.3805**	**-.00496**	**.00081**
Stddev	.00062	.00198	.0802	.00021	.0002	.00043	.00283
%RSD	26.590	54.034	3.9615	98.279	.01508	8.5828	349.50
#1	-.00161	.00168	2.0048	-.00042	1.3804	-.00545	.00406
#2	-.00262	.00564	2.1137	-.00001	1.3805	-.00464	-.00060
#3	-.00272	.00367	1.9573	-.00020	1.3808	-.00480	-.00103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00003**	**.00133**	**.48347**
Stddev	.00044	.00011	1.3090
%RSD	1714.2	8.6027	270.75
#1	-.00015	.00124	1.2641
#2	-.00039	.00146	-1.0278
#3	.00047	.00129	1.2141
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10079.**	**10146.**
Stddev	18.	44.
%RSD	.17594	.42981
#1	10081.	10178.
#2	10095.	10096.
#3	10060.	10164.

Approved: February 26, 2015

Sample Name: L1502104515 Acquired: 2/25/2015 12:53:37 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	-.00660	-.00247	.01868	.01114	-.00009	84.619
Stddev	.00038	.00113	.00106	.00123	.00014	.00003	.218
%RSD	80.883	17.058	42.735	6.5612	1.2709	31.922	.25807
#1	.00045	-.00605	-.00311	.01974	.01099	-.00006	84.803
#2	.00010	-.00586	-.00125	.01895	.01127	-.00011	84.675
#3	.00086	-.00790	-.00305	.01734	.01117	-.00010	84.378
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	.00185	.00080	-.00136	.18290	5.0567	.02882
Stddev	.00011	.00021	.00047	.00032	.00368	.0539	.00266
%RSD	13.855	11.138	58.322	23.677	2.0140	1.0668	9.2245
#1	.00093	.00167	.00115	-.00144	.18643	5.0270	.03133
#2	.00076	.00207	.00027	-.00100	.17908	5.0242	.02910
#3	.00072	.00181	.00099	-.00163	.18320	5.1190	.02603
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	43.820	.31709	.00014	2.7151	.01127	F -.00509	.00075
Stddev	.122	.00072	.00017	.0053	.00099	.00439	.00311
%RSD	.27883	.22765	124.73	.19392	8.7384	86.286	414.44
#1	43.746	.31787	.00030	2.7168	.01090	-.00305	-.00017
#2	43.753	.31694	-.00004	2.7092	.01239	-.01014	-.00180
#3	43.961	.31645	.00016	2.7193	.01053	-.00209	.00422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502104515 Acquired: 2/25/2015 12:53:37 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00061	.00277	2.7685	.00019	.38141	-.00314	-.00101
Stddev	.00182	.00408	.0865	.00060	.00132	.00115	.00132
%RSD	297.80	147.18	3.1228	317.83	.34506	36.618	130.07
#1	.00048	-.00084	2.7111	-.00024	.38265	-.00196	-.00249
#2	-.00271	.00196	2.7265	.00087	.38154	-.00319	.00004
#3	.00039	.00720	2.8679	-.00006	.38003	-.00426	-.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00015	.01125	1.8908
Stddev	.00036	.00023	1.1257
%RSD	245.12	2.0167	59.537
#1	-.00004	.01109	2.6344
#2	.00056	.01115	.59565
#3	-.00008	.01151	2.4422
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10176.	10244.
Stddev	20.	8.
%RSD	.19925	.07595
#1	10163.	10235.
#2	10165.	10248.
#3	10199.	10249.

Approved: February 26, 2015

Sample Name: L1502104517 Acquired: 2/25/2015 12:57:10 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.01262	-.00165	.01732	.01136	-.00007	99.937
Stddev	.00039	.00121	.00133	.00082	.00023	.00001	1.141
%RSD	114.23	9.5822	80.600	4.7610	1.9958	19.688	1.1413
#1	.00009	.01173	-.00301	.01758	.01137	-.00009	99.387
#2	.00015	.01213	-.00161	.01799	.01113	-.00007	99.176
#3	.00080	.01400	-.00034	.01640	.01158	-.00006	101.25
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00099	.00323	.00088	-.00072	.13375	5.8721	.01881
Stddev	.00019	.00010	.00031	.00034	.00957	.0143	.00033
%RSD	18.859	3.1319	35.624	47.523	7.1526	.24279	1.7749
#1	.00086	.00318	.00110	-.00111	.14445	5.8873	.01881
#2	.00120	.00335	.00052	-.00055	.12604	5.8591	.01915
#3	.00090	.00317	.00101	-.00050	.13075	5.8699	.01848
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	70.319	.35127	.00033	12.191	.00978	F -.00521	-.00003
Stddev	.325	.00128	.00008	.005	.00074	.00523	.00054
%RSD	.46279	.36300	24.767	.04499	7.5402	100.34	1834.5
#1	70.383	.35256	.00035	12.193	.00919	.00062	.00025
#2	69.966	.35001	.00024	12.185	.01060	-.00950	-.00065
#3	70.607	.35123	.00040	12.195	.00954	-.00676	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502104517 Acquired: 2/25/2015 12:57:10 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00164	.00031	2.6198	-.00075	.66181	-.00473	.00080
Stddev	.00049	.00322	.1127	.00031	.00095	.00140	.00121
%RSD	30.127	1044.9	4.3013	40.695	.14334	29.608	150.18
#1	-.00202	-.00084	2.7484	-.00102	.66176	-.00449	-.00057
#2	-.00180	.00394	2.5383	-.00081	.66089	-.00346	.00129
#3	-.00108	-.00218	2.5728	-.00042	.66278	-.00623	.00169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00033	.01084	.93659
Stddev	.00038	.00042	1.0194
%RSD	116.22	3.8654	108.84
#1	-.00053	.01132	.06301
#2	-.00055	.01068	2.0566
#3	.00011	.01053	.69017
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10079.	10279.
Stddev	12.	40.
%RSD	.11556	.38760
#1	10077.	10234.
#2	10069.	10308.
#3	10092.	10295.

Approved: February 26, 2015

Sample Name: L1502104519 Acquired: 2/25/2015 13:00:43 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513107-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	.04417	-.00202	.01001	.01012	-.00009	101.14
Stddev	.00032	.00171	.00268	.00136	.00011	.00001	.35
%RSD	42.478	3.8763	132.87	13.597	1.0512	15.451	.34563
#1	.00112	.04245	-.00472	.01148	.01012	-.00008	100.74
#2	.00057	.04420	.00064	.00879	.01001	-.00011	101.41
#3	.00057	.04587	-.00197	.00976	.01022	-.00009	101.26
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00085	.00029	.00099	-.00077	.02330	5.1767	.07532
Stddev	.00005	.00008	.00071	.00061	.00592	.0310	.00094
%RSD	6.5016	26.334	71.551	78.760	25.412	.59801	1.2534
#1	.00091	.00026	.00082	-.00009	.01667	5.1435	.07570
#2	.00080	.00024	.00176	-.00126	.02517	5.1817	.07424
#3	.00083	.00038	.00038	-.00097	.02805	5.2048	.07601
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	56.940	.28052	.00022	119.51	.00379	F -.00824	.00152
Stddev	.154	.00113	.00008	.45	.00026	.00416	.00188
%RSD	.27048	.40427	36.480	.37805	6.9324	50.478	123.92
#1	56.797	.27922	.00022	119.14	.00408	-.00394	.00037
#2	56.921	.28110	.00014	120.02	.00374	-.01224	.00049
#3	57.103	.28125	.00030	119.39	.00356	-.00853	.00369
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502104519 Acquired: 2/25/2015 13:00:43 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513107-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00193**	**-.00036**	**2.2977**	**-.00090**	**.63975**	**-.00443**	**.00102**
Stddev	.00313	.00335	.0568	.00029	.00213	.00121	.00221
%RSD	162.50	941.40	2.4736	31.641	.33337	27.225	216.18
#1	.00073	-.00255	2.2568	-.00061	.63751	-.00333	.00131
#2	-.00538	.00350	2.3626	-.00092	.64176	-.00572	-.00132
#3	-.00113	-.00202	2.2737	-.00118	.63999	-.00424	.00308
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00035**	**.00130**	**.49818**
Stddev	.00027	.00012	.35786
%RSD	76.326	8.9181	71.833
#1	-.00043	.00125	.13411
#2	-.00057	.00121	.84948
#3	-.00005	.00143	.51095
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10056.**	**10223.**
Stddev	10.	42.
%RSD	.10239	.41503
#1	10046.	10267.
#2	10054.	10182.
#3	10067.	10219.

Approved: February 26, 2015

Sample Name: L1502104519MS Acquired: 2/25/2015 13:04:16 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513107-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.16681	5.1727	-.00336	.01106	.01008	.02660	108.71
Stddev	.00044	.0090	.00036	.00054	.00026	.00005	.36
%RSD	.26272	.17466	10.704	4.9052	2.6072	.18782	.33145
#1	.16731	5.1771	-.00378	.01069	.01032	.02664	109.08
#2	.16650	5.1623	-.00315	.01169	.00980	.02655	108.37
#3	.16663	5.1787	-.00316	.01081	.01013	.02662	108.67
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	.00027	.00127	-.00069	2.1958	33.385	.07682
Stddev	.00009	.00027	.00021	.00030	.0054	.082	.00104
%RSD	10.917	100.59	16.192	43.777	.24505	.24501	1.3600
#1	.00090	.00047	.00105	-.00093	2.1903	33.357	.07721
#2	.00075	-.00004	.00145	-.00079	2.1959	33.321	.07563
#3	.00093	.00039	.00130	-.00035	2.2011	33.477	.07760
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	63.376	.54316	-.00007	150.63	.00415	F -.01458	-.00025
Stddev	.189	.00233	.00022	.53	.00106	.00696	.00178
%RSD	.29891	.42964	296.48	.35284	25.685	47.726	707.06
#1	63.540	.54579	.00018	150.65	.00538	-.01723	-.00079
#2	63.169	.54232	-.00019	150.09	.00354	-.00668	-.00170
#3	63.420	.54136	-.00021	151.15	.00352	-.01982	.00174
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502104519MS Acquired: 2/25/2015 13:04:16 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513107-07

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00111	.00040	2.2657	-.00072	.64864	-.00545	.00222
Stddev	.00365	.00329	.0463	.00040	.00238	.00062	.00175
%RSD	328.86	823.65	2.0429	55.941	.36727	11.330	78.708
#1	-.00134	.00160	2.2161	-.00118	.65139	-.00610	.00328
#2	-.00464	.00292	2.2733	-.00046	.64740	-.00538	.00020
#3	.00265	-.00332	2.3077	-.00052	.64714	-.00487	.00317
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00018	.00075	3.1184
Stddev	.00007	.00010	1.4312
%RSD	37.116	13.091	45.897
#1	-.00026	.00066	1.4830
#2	-.00013	.00085	4.1427
#3	-.00016	.00073	3.7293
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	9965.8	10099.
Stddev	8.9	36.
%RSD	.08889	.35391
#1	9955.7	10065.
#2	9969.0	10136.
#3	9972.5	10097.

Approved: February 26, 2015

Sample Name: L1502104524 Acquired: 2/25/2015 13:07:53 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.00593	-.00320	.01764	.01329	-.00009	111.90
Stddev	.00042	.00153	.00156	.00102	.00035	.00002	.23
%RSD	115.49	25.779	48.717	5.7571	2.6619	16.140	.20607
#1	-.00004	.00760	-.00479	.01736	.01319	-.00011	112.10
#2	.00080	.00459	-.00314	.01877	.01368	-.00008	111.94
#3	.00033	.00560	-.00167	.01680	.01300	-.00010	111.65
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00107	.00071	.00050	-.00060	.02425	6.9714	.01416
Stddev	.00002	.00024	.00048	.00103	.00596	.0503	.00137
%RSD	2.0870	33.234	97.164	170.75	24.580	.72150	9.6664
#1	.00108	.00070	.00072	-.00049	.02102	7.0272	.01398
#2	.00108	.00048	.00083	.00036	.03113	6.9575	.01289
#3	.00104	.00095	-.00006	-.00168	.02060	6.9295	.01561
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	88.306	.11226	.00019	3.0374	.00630	F -.00790	.00205
Stddev	.252	.00041	.00029	.0154	.00033	.00240	.00236
%RSD	.28498	.36599	154.43	.50669	5.2128	30.357	115.05
#1	88.575	.11227	-.00009	3.0496	.00655	-.00915	.00030
#2	88.076	.11184	.00017	3.0426	.00593	-.00513	.00112
#3	88.267	.11266	.00048	3.0201	.00641	-.00941	.00473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502104524 Acquired: 2/25/2015 13:07:53 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00093	.00353	2.1754	-.00033	.56086	-.00532	-.00002
Stddev	.00220	.00498	.0068	.00057	.00126	.00103	.00117
%RSD	237.06	141.05	.31150	172.60	.22424	19.351	4754.8
#1	.00158	.00002	2.1803	-.00062	.56190	-.00609	-.00130
#2	-.00153	.00135	2.1677	.00033	.56122	-.00415	.00100
#3	.00273	.00923	2.1782	-.00070	.55946	-.00573	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00042	.00583	.25385
Stddev	.00008	.00010	1.4922
%RSD	19.698	1.7603	587.82
#1	-.00050	.00575	-1.4591
#2	-.00041	.00595	.94918
#3	-.00034	.00579	1.2715
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10107.	10161.
Stddev	9.	38.
%RSD	.08998	.37227
#1	10110.	10142.
#2	10113.	10136.
#3	10096.	10204.

Approved: February 26, 2015

Sample Name: L1502104526 Acquired: 2/25/2015 13:11:26 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00083	.07968	-.00261	.01180	.00938	-.00009	179.08	.00131
Stddev	.00016	.00049	.00184	.00035	.00008	.00003	.12	.00008
%RSD	18.866	.61051	70.349	2.9391	.90351	34.360	.06872	6.3382
#1	.00072	.08003	-.00423	.01214	.00945	-.00008	179.14	.00129
#2	.00077	.07989	-.00298	.01144	.00929	-.00013	178.94	.00124
#3	.00101	.07913	-.00062	.01182	.00939	-.00008	179.16	.00140
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01268	.00109	-.00099	.02788	14.206	.02936	121.53	.94095
Stddev	.00026	.00046	.00028	.00248	.028	.00162	.12	.00302
%RSD	2.0201	42.178	27.816	8.8929	.19558	5.5126	.09519	.32130
#1	.01297	.00107	-.00111	.02521	14.215	.03003	121.60	.94437
#2	.01261	.00156	-.00120	.03010	14.175	.03054	121.40	.93986
#3	.01247	.00064	-.00068	.02833	14.228	.02752	121.60	.93862
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	^ *****	.03024	-.00202	.00173	-.00218	.00487	2.0360
Stddev	.00013	-----	.00116	.00304	.00269	.00250	.00203	.0687
%RSD	361.55	-----	3.8433	150.21	155.67	114.55	41.667	3.3728
#1	.00013	125.41	.03051	-.00323	.00212	-.00495	.00568	2.0326
#2	.00009	125.01	.03124	-.00427	-.00114	-.00009	.00637	2.1062
#3	-.00011	^ -----	.02896	.00143	.00421	-.00151	.00256	1.9690
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 26, 2015

Sample Name: L1502104526 Acquired: 2/25/2015 13:11:26 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00112**	**.48614**	**-.00805**	**.00269**	**-.00038**	**.00903**	**2.2305**
Stddev	.00053	.00178	.00040	.00118	.00021	.00021	3.5273
%RSD	47.377	.36717	4.9880	43.623	54.831	2.2778	158.14
#1	-.00120	.48480	-.00768	.00169	-.00017	.00882	-1.3952
#2	-.00056	.48546	-.00848	.00240	-.00059	.00923	5.6503
#3	-.00161	.48817	-.00798	.00399	-.00039	.00903	2.4363
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**9963.2**	**10148.**
Stddev	4.9	28.
%RSD	.04881	.27503
#1	9966.9	10121.
#2	9965.1	10176.
#3	9957.7	10146.

Approved: February 26, 2015

Sample Name: L1502105205 Acquired: 2/25/2015 13:15:00 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	.00043	-.00180	.02007	.00703	-.00012	153.15
Stddev	.00041	.00163	.00129	.00067	.00034	.00003	2.12
%RSD	88.674	382.23	71.349	3.3140	4.8812	22.654	1.3843
#1	.00001	.00187	-.00287	.02005	.00666	-.00011	151.82
#2	.00081	-.00134	-.00037	.01941	.00711	-.00015	152.03
#3	.00056	.00075	-.00217	.02074	.00733	-.00009	155.59
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00135	.00062	.00111	-.00055	.02383	9.3417	.03260
Stddev	.00020	.00028	.00015	.00088	.01028	.0232	.00122
%RSD	14.881	45.676	13.292	160.40	43.135	.24827	3.7461
#1	.00149	.00041	.00127	-.00106	.03190	9.3179	.03145
#2	.00144	.00094	.00100	-.00106	.01226	9.3643	.03388
#3	.00112	.00050	.00104	.00047	.02734	9.3430	.03246
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	142.48	.12392	.00010	33.222	.00352	F -.00329	-.00028
Stddev	.80	.00105	.00014	.241	.00049	.00369	.00228
%RSD	.55899	.84500	132.28	.72421	13.878	112.18	822.97
#1	141.92	.12349	.00003	33.047	.00307	-.00094	-.00287
#2	142.12	.12315	.00002	33.123	.00345	-.00753	.00064
#3	143.39	.12511	.00026	33.497	.00404	-.00139	.00140
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502105205 Acquired: 2/25/2015 13:15:00 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00170	-.00067	2.0940	-.00064	.48046	-.00719	.00085
Stddev	.00175	.00219	.0844	.00022	.00284	.00105	.00103
%RSD	102.66	324.31	4.0315	34.626	.59176	14.586	121.67
#1	-.00026	.00013	2.1535	-.00053	.47785	-.00618	.00005
#2	-.00364	-.00315	2.1311	-.00090	.48003	-.00828	.00202
#3	-.00120	.00100	1.9974	-.00050	.48349	-.00710	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00049	.00161	.23851
Stddev	.00019	.00013	.68879
%RSD	38.348	8.0714	288.79
#1	-.00027	.00174	.95525
#2	-.00060	.00148	.17872
#3	-.00060	.00163	-.41844
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	9964.3	10366.
Stddev	12.5	58.
%RSD	.12521	.56000
#1	9954.7	10391.
#2	9959.7	10409.
#3	9978.4	10300.

Approved: February 26, 2015

Sample Name: CCV Acquired: 2/25/2015 13:18:37 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41400**	**9.9719**	**.40455**	**.51147**	**1.0730**	**.05112**	**10.881**
Stddev	.00116	.1230	.00262	.00293	.0141	.00010	.116
%RSD	.28045	1.2333	.64810	.57203	1.3185	.20378	1.0697
#1	.41275	9.8735	.40225	.50810	1.0622	.05109	10.784
#2	.41421	9.9324	.40741	.51341	1.0677	.05124	10.850
#3	.41504	10.110	.40400	.51288	1.0890	.05103	11.010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05063**	**.20178**	**.52132**	**.50212**	**4.1939**	**53.727**	**1.0628**
Stddev	.00007	.00003	.00116	.00221	.0838	.534	.0087
%RSD	.13882	.01340	.22297	.44103	1.9979	.99373	.82138
#1	.05064	.20178	.52116	.50153	4.1526	53.421	1.0548
#2	.05070	.20175	.52255	.50026	4.1389	53.416	1.0616
#3	.05056	.20180	.52024	.50457	4.2904	54.343	1.0721
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.271**	**.51426**	**1.0117**	**54.177**	**.51187**	**10.122**	**.51359**
Stddev	.131	.00499	.0071	.079	.00086	.070	.00253
%RSD	1.2718	.97088	.70256	.14671	.16771	.69327	.49289
#1	10.189	.51199	1.0162	54.108	.51128	10.164	.51133
#2	10.203	.51080	1.0035	54.160	.51285	10.041	.51632
#3	10.422	.51998	1.0155	54.264	.51147	10.161	.51312
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 26, 2015

Sample Name: CCV Acquired: 2/25/2015 13:18:37 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2349	.40060	5.1693	1.0208	1.0843	1.0563	.52640
Stddev	.0042	.00036	.0700	.0024	.0022	.0017	.00604
%RSD	.33911	.08997	1.3539	.23392	.19910	.15614	1.1482
#1	1.2355	.40022	5.2501	1.0232	1.0818	1.0546	.53175
#2	1.2387	.40065	5.1274	1.0209	1.0853	1.0578	.51984
#3	1.2304	.40094	5.1304	1.0184	1.0857	1.0566	.52762
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0105	1.0100	F .24672
Stddev	.0006	.0022	1.2575
%RSD	.06304	.21508	509.70
#1	1.0101	1.0120	.09280
#2	1.0102	1.0105	1.5741
#3	1.0113	1.0077	-.92675
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10564.	10460.
Stddev	8.	97.
%RSD	.07655	.93164
#1	10566.	10488.
#2	10555.	10540.
#3	10571.	10352.

Approved: February 26, 2015

Sample Name: CCB Acquired: 2/25/2015 13:21:52 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	-.00871	-.00142	.00179	-.00028	-.00007	.00473
Stddev	.00056	.00137	.00045	.00088	.00016	.00001	.00511
%RSD	65.176	15.718	31.458	48.919	57.469	9.2258	107.91
#1	.00035	-.00997	-.00155	.00279	-.00046	-.00007	.00621
#2	.00076	-.00725	-.00178	.00118	-.00023	-.00007	.00894
#3	.00146	-.00890	-.00092	.00140	-.00015	-.00006	-.00095
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00008	-.00002	.00018	.00748	.02421	.00130
Stddev	.00011	.00016	.00014	.00061	.00296	.02760	.00062
%RSD	87.447	188.25	662.67	340.57	39.612	114.04	48.160
#1	.00022	.00026	-.00010	.00087	.00979	.00941	.00186
#2	.00001	-.00005	-.00011	-.00028	.00414	.00715	.00140
#3	.00013	.00004	.00014	-.00006	.00852	.05605	.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01042	-.00005	.00502	-.01662	-.00023	-.00440	-.00079
Stddev	.01896	.00002	.00064	.00602	.00050	.00191	.00032
%RSD	181.99	43.494	12.837	36.195	217.80	43.520	40.888
#1	.01321	-.00005	.00427	-.02356	-.00038	-.00647	-.00049
#2	-.00978	-.00008	.00539	-.01327	-.00064	-.00271	-.00074
#3	.02784	-.00003	.00538	-.01302	.00033	-.00401	-.00113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: CCB Acquired: 2/25/2015 13:21:52 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00084	.00428	-.00544	.00061	.00008	-.00076	.00252
Stddev	.00067	.00317	.00170	.00067	.00008	.00156	.00203
%RSD	79.913	74.173	31.254	110.02	93.094	205.88	80.680
#1	.00154	.00075	-.00404	.00130	.00016	-.00049	.00036
#2	.00079	.00517	-.00495	.00054	.00008	-.00243	.00439
#3	.00020	.00691	-.00733	-.00002	.00001	.00065	.00281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00020	-.00026	F 2.3603
Stddev	.00011	.00004	1.9682
%RSD	53.103	14.143	83.388
#1	.00008	-.00025	.88890
#2	.00025	-.00023	1.5960
#3	.00027	-.00030	4.5961
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10515.	10243.
Stddev	17.	61.
%RSD	.15801	.59679
#1	10510.	10313.
#2	10501.	10207.
#3	10533.	10208.

Approved: February 26, 2015

Sample Name: L1502105208 Acquired: 2/25/2015 13:25:33 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00102	.02628	-.00080	.02520	.00660	-.00015	155.00
Stddev	.00053	.00457	.00039	.00091	.00023	.00001	2.59
%RSD	51.645	17.409	49.414	3.6014	3.5223	7.1090	1.6741
#1	.00158	.02352	-.00069	.02446	.00650	-.00015	152.96
#2	.00053	.02376	-.00123	.02622	.00643	-.00014	154.11
#3	.00095	.03156	-.00047	.02493	.00687	-.00016	157.92
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00127	.00028	.00076	-.00093	.02505	10.000	.04287
Stddev	.00011	.00019	.00069	.00036	.00189	.085	.00026
%RSD	8.5284	69.770	90.855	38.630	7.5249	.84695	.61252
#1	.00122	.00048	.00049	-.00115	.02337	9.9523	.04295
#2	.00119	.00025	.00154	-.00112	.02470	9.9504	.04308
#3	.00139	.00010	.00024	-.00052	.02709	10.098	.04258
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	135.96	.08248	.00098	40.178	.00226	F -.00569	-.00064
Stddev	1.15	.00082	.00026	.437	.00100	.00162	.00082
%RSD	.84944	.99674	26.155	1.0885	44.338	28.380	127.64
#1	135.06	.08238	.00101	39.776	.00295	-.00384	-.00158
#2	135.57	.08335	.00122	40.115	.00111	-.00677	-.00032
#3	137.27	.08172	.00071	40.644	.00273	-.00647	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502105208 Acquired: 2/25/2015 13:25:33 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00141**	**.00202**	**2.4339**	**-.00032**	**.45751**	**-.00793**	**.00024**
Stddev	.00151	.00367	.0266	.00037	.00417	.00135	.00207
%RSD	107.70	181.48	1.0946	116.44	.91183	17.006	874.18
#1	-.00226	-.00006	2.4246	-.00071	.45322	-.00726	.00164
#2	-.00230	-.00014	2.4131	-.00027	.45776	-.00704	-.00214
#3	.00034	.00625	2.4639	.00003	.46155	-.00948	.00122
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00031**	**.00111**	**.73637**
Stddev	.00016	.00013	1.3443
%RSD	52.517	12.091	182.56
#1	-.00030	.00122	.35157
#2	-.00048	.00116	-.37358
#3	-.00015	.00096	2.2311
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**9940.2**	**10206.**
Stddev	12.7	40.
%RSD	.12749	.39581
#1	9954.4	10250.
#2	9930.0	10198.
#3	9936.2	10170.

Approved: February 26, 2015

Sample Name: L1502105211 Acquired: 2/25/2015 13:29:05 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	-.00223	-.00277	.01328	.00816	-.00007	76.293
Stddev	.00023	.00292	.00264	.00079	.00016	.00003	.367
%RSD	850.67	131.09	95.357	5.9249	1.9806	49.983	.48062
#1	.00006	-.00374	.00018	.01243	.00833	-.00003	76.234
#2	.00015	.00114	-.00356	.01399	.00801	-.00009	76.686
#3	-.00029	-.00408	-.00493	.01341	.00813	-.00008	75.960
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00100	.00032	.00060	-.00081	.02972	5.3122	.01753
Stddev	.00013	.00007	.00084	.00041	.00174	.0637	.00108
%RSD	13.345	22.964	140.89	51.088	5.8604	1.1990	6.1875
#1	.00115	.00038	.00008	-.00089	.03132	5.2666	.01676
#2	.00093	.00034	.00015	-.00036	.02996	5.3849	.01707
#3	.00091	.00024	.00157	-.00117	.02787	5.2850	.01877
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	54.593	.13483	.00038	3.4178	.01169	F -.01105	.00088
Stddev	.450	.00197	.00022	.0266	.00051	.00238	.00270
%RSD	.82414	1.4643	58.171	.77958	4.3721	21.522	308.46
#1	54.567	.13478	.00064	3.4313	.01225	-.00878	.00389
#2	55.055	.13683	.00023	3.4350	.01156	-.01085	-.00133
#3	54.156	.13288	.00028	3.3871	.01125	-.01352	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502105211 Acquired: 2/25/2015 13:29:05 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00110**	**.00357**	**2.9662**	**-.00021**	**.34118**	**-.00291**	**.00110**
Stddev	.00288	.00288	.0338	.00083	.00172	.00063	.00242
%RSD	260.91	80.639	1.1382	396.62	.50491	21.581	219.87
#1	-.00435	.00143	2.9921	.00063	.34124	-.00341	.00275
#2	-.00010	.00244	2.9784	-.00103	.34287	-.00221	.00224
#3	.00114	.00685	2.9280	-.00022	.33943	-.00311	-.00168
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00028**	**.01378**	**3.3919**
Stddev	.00022	.00015	1.1911
%RSD	78.703	1.0540	35.115
#1	-.00052	.01392	2.0751
#2	-.00009	.01379	4.3941
#3	-.00022	.01363	3.7064
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10270.**	**10414.**
Stddev	26.	147.
%RSD	.24980	1.4115
#1	10240.	10372.
#2	10286.	10292.
#3	10283.	10577.

Approved: February 26, 2015

Sample Name: L1502105216 Acquired: 2/25/2015 13:32:38 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	-.00489	-.00344	.00773	.02222	-.00010	43.892
Stddev	.00036	.00420	.00160	.00101	.00012	.00002	.063
%RSD	52.956	85.914	46.506	13.026	.52610	22.850	.14449
#1	.00040	-.00917	-.00514	.00657	.02235	-.00007	43.933
#2	.00109	-.00078	-.00322	.00836	.02215	-.00011	43.819
#3	.00056	-.00470	-.00196	.00827	.02215	-.00010	43.925
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00067	.00020	.00119	-.00039	.02742	4.5910	.00407
Stddev	.00013	.00010	.00025	.00044	.00205	.0059	.00079
%RSD	18.638	50.131	21.403	112.69	7.4871	.12830	19.364
#1	.00080	.00014	.00145	-.00087	.02940	4.5890	.00492
#2	.00067	.00015	.00094	-.00027	.02755	4.5864	.00337
#3	.00055	.00032	.00119	-.00002	.02530	4.5977	.00390
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	36.401	.03715	.00043	1.3253	.00194	F -.00804	.00086
Stddev	.021	.00039	.00018	.0014	.00113	.00282	.00102
%RSD	.05657	1.0482	42.074	.10233	57.867	35.076	118.51
#1	36.378	.03674	.00026	1.3238	.00324	-.00772	.00198
#2	36.418	.03718	.00042	1.3260	.00124	-.00539	.00061
#3	36.406	.03752	.00062	1.3262	.00135	-.01100	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502105216 Acquired: 2/25/2015 13:32:38 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	.00275	1.6306	-.00064	.14904	-.00294	.00011
Stddev	.00214	.00281	.0269	.00006	.00003	.00046	.00277
%RSD	248.59	102.20	1.6503	9.6252	.02247	15.480	2599.0
#1	-.00145	.00276	1.6328	-.00068	.14901	-.00244	-.00294
#2	.00277	-.00007	1.6026	-.00068	.14908	-.00332	.00079
#3	.00126	.00555	1.6563	-.00057	.14903	-.00306	.00247
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00004	.00206	F -.19115
Stddev	.00033	.00010	1.4268
%RSD	777.92	4.8447	746.43
#1	-.00030	.00205	.03770
#2	.00033	.00196	-1.7185
#3	-.00015	.00216	1.1074
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10241.	10357.
Stddev	47.	28.
%RSD	.45627	.26929
#1	10187.	10383.
#2	10262.	10361.
#3	10274.	10328.

Approved: February 26, 2015

Sample Name: L1502105218 Acquired: 2/25/2015 13:36:10 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	-.00374	-.00268	.01859	.01339	-.00010	78.873
Stddev	.00106	.00435	.00153	.00064	.00026	.00002	.185
%RSD	405.43	116.09	56.989	3.4521	1.9793	23.410	.23456
#1	.00054	-.00847	-.00395	.01805	.01361	-.00012	79.082
#2	-.00091	-.00284	-.00311	.01843	.01345	-.00011	78.804
#3	.00116	.00008	-.00099	.01930	.01310	-.00007	78.732
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	.00012	.00112	-.00044	.02682	4.8529	.02160
Stddev	.00010	.00006	.00034	.00067	.01090	.0682	.00114
%RSD	14.850	47.763	30.490	152.23	40.663	1.4055	5.3015
#1	.00080	.00008	.00113	.00027	.03487	4.9317	.02145
#2	.00061	.00009	.00145	-.00105	.03118	4.8117	.02281
#3	.00064	.00018	.00077	-.00053	.01441	4.8154	.02053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	37.237	.09591	.00042	4.1469	.00350	F -.00373	-.00048
Stddev	.168	.00115	.00018	.0111	.00024	.00380	.00142
%RSD	.45210	1.1962	43.543	.26744	6.8979	101.96	293.64
#1	37.209	.09585	.00054	4.1573	.00338	.00047	-.00130
#2	37.085	.09480	.00021	4.1480	.00378	-.00473	-.00130
#3	37.418	.09709	.00051	4.1352	.00335	-.00694	.00115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502105218 Acquired: 2/25/2015 13:36:10 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00093	-.00055	2.3987	-.00082	.78201	-.00346	.00159
Stddev	.00258	.00224	.0965	.00066	.00144	.00216	.00044
%RSD	279.08	409.09	4.0247	80.006	.18466	62.463	27.705
#1	.00285	.00045	2.4456	-.00155	.78364	-.00114	.00164
#2	-.00201	.00102	2.4629	-.00062	.78086	-.00541	.00200
#3	.00193	-.00311	2.2877	-.00029	.78154	-.00384	.00113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00006	.00282	2.0268
Stddev	.00031	.00013	1.4166
%RSD	503.13	4.6636	69.891
#1	-.00019	.00274	1.6046
#2	.00029	.00297	.86931
#3	-.00028	.00274	3.6065
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10217.	10221.
Stddev	16.	44.
%RSD	.15376	.42993
#1	10209.	10215.
#2	10235.	10268.
#3	10206.	10181.

Approved: February 26, 2015

Sample Name: L1502105222 Acquired: 2/25/2015 13:39:42 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.05881	.00065	.01435	.01581	-.00012	181.21
Stddev	.00067	.00519	.00343	.00195	.00022	.00003	.51
%RSD	723.68	8.8238	525.44	13.620	1.3853	20.411	.27972
#1	-.00001	.05518	.00150	.01351	.01556	-.00012	181.78
#2	.00054	.05649	-.00312	.01295	.01591	-.00010	181.05
#3	-.00081	.06475	.00358	.01658	.01596	-.00015	180.80
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00134	.00244	.00160	-.00044	.02029	9.9944	.03726
Stddev	.00021	.00026	.00073	.00063	.00563	.0475	.00091
%RSD	15.963	10.593	45.261	142.27	27.751	.47568	2.4404
#1	.00113	.00232	.00236	-.00117	.01396	10.024	.03746
#2	.00156	.00274	.00155	-.00003	.02220	9.9396	.03627
#3	.00133	.00227	.00091	-.00013	.02472	10.020	.03806
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	136.87	.36802	.00018	22.987	.01021	F -.00518	-.00058
Stddev	.34	.00148	.00026	.133	.00079	.00850	.00226
%RSD	.24802	.40195	139.87	.57939	7.7438	164.12	390.00
#1	136.50	.36672	.00003	23.099	.01002	-.01496	.00140
#2	137.18	.36771	.00004	23.022	.01108	-.00101	-.00305
#3	136.91	.36963	.00048	22.839	.00953	.00043	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502105222 Acquired: 2/25/2015 13:39:42 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	.01065	2.6796	-.00084	.91163	-.00950	.00146
Stddev	.00103	.00257	.0902	.00031	.00464	.00142	.00120
%RSD	164.22	24.131	3.3663	37.600	.50933	14.941	82.524
#1	.00162	.01262	2.7494	-.00065	.91605	-.01086	.00050
#2	-.00044	.01158	2.7116	-.00120	.91204	-.00961	.00281
#3	.00071	.00774	2.5777	-.00066	.90680	-.00803	.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00029	.00273	3.0053
Stddev	.00065	.00010	2.0728
%RSD	224.44	3.4979	68.972
#1	.00011	.00283	.61419
#2	.00006	.00264	4.1082
#3	-.00103	.00274	4.2934
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	9876.8	10179.
Stddev	23.8	58.
%RSD	.24101	.57247
#1	9875.0	10209.
#2	9853.9	10112.
#3	9901.4	10216.

Approved: February 26, 2015

Sample Name: L1502105224 Acquired: 2/25/2015 13:43:13 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	-.00331	-.00364	.02037	.00843	-.00010	172.39	.00143
Stddev	.00008	.00052	.00070	.00043	.00026	.00001	.19	.00004
%RSD	8.0969	15.834	19.103	2.0951	3.1136	12.953	.10835	2.8370
#1	.00101	-.00391	-.00444	.02009	.00858	-.00009	172.24	.00146
#2	.00086	-.00294	-.00331	.02015	.00859	-.00010	172.33	.00144
#3	.00094	-.00308	-.00317	.02086	.00813	-.00011	172.60	.00138
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00517	.00103	-.00109	.03836	9.4843	.02406	183.99	.81002
Stddev	.00014	.00012	.00069	.00961	.0046	.00105	.39	.00040
%RSD	2.7856	11.990	63.128	25.044	.04875	4.3639	.20995	.04901
#1	.00512	.00089	-.00078	.04807	9.4850	.02439	183.56	.81013
#2	.00533	.00110	-.00061	.03814	9.4794	.02491	184.31	.81035
#3	.00506	.00109	-.00188	.02886	9.4886	.02289	184.11	.80958
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	6.0494	.02249	-.00300	-.00220	-.00192	.00384	2.0214
Stddev	.00026	.0154	.00074	.00468	.00139	.00077	.00168	.0077
%RSD	142.90	.25517	3.3085	156.20	63.327	40.217	43.717	.38014
#1	.00010	6.0529	.02312	-.00828	-.00376	-.00231	.00574	2.0294
#2	.00048	6.0325	.02268	.00063	-.00109	-.00103	.00325	2.0206
#3	-.00003	6.0627	.02167	-.00134	-.00175	-.00241	.00254	2.0141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 26, 2015

Sample Name: L1502105224 Acquired: 2/25/2015 13:43:13 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00115**	**.66002**	**-.00815**	**-.00066**	**-.00018**	**.02586**	**1.5758**
Stddev	.00048	.00126	.00094	.00106	.00033	.00019	.9736
%RSD	41.745	.19078	11.543	161.06	185.39	.73131	61.781
#1	-.00164	.65956	-.00921	-.00004	-.00040	.02604	1.7414
#2	-.00068	.65905	-.00780	-.00005	.00020	.02587	.53005
#3	-.00113	.66144	-.00743	-.00189	-.00033	.02566	2.4559
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**9869.0**	**10182.**
Stddev	12.1	30.
%RSD	.12226	.29839
#1	9872.6	10198.
#2	9878.8	10147.
#3	9855.5	10202.

Approved: February 26, 2015

Sample Name: CCV Acquired: 2/25/2015 13:46:47 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41646	10.171	.42464	.51422	1.0753	.05156	10.899
Stddev	.00085	.010	.00190	.00092	.0101	.00004	.051
%RSD	.20513	.09780	.44770	.17794	.93889	.07838	.46646
#1	.41625	10.162	.42477	.51331	1.0698	.05155	10.897
#2	.41739	10.168	.42268	.51421	1.0692	.05160	10.849
#3	.41572	10.182	.42648	.51514	1.0870	.05152	10.951
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05260	.21003	.52621	.52230	4.2087	54.048	1.0701
Stddev	.00011	.00056	.00170	.00048	.0347	.313	.0085
%RSD	.21627	.26822	.32220	.09099	.82322	.57833	.79592
#1	.05268	.20963	.52597	.52261	4.2086	53.963	1.0657
#2	.05266	.20979	.52802	.52253	4.1741	53.787	1.0646
#3	.05247	.21067	.52465	.52175	4.2433	54.395	1.0799
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.361	.52420	1.0412	54.552	.52982	10.393	.53020
Stddev	.071	.00064	.0016	.086	.00195	.019	.00180
%RSD	.68556	.12239	.15702	.15743	.36874	.18439	.34009
#1	10.325	.52369	1.0416	54.651	.53207	10.376	.53199
#2	10.315	.52400	1.0393	54.497	.52857	10.390	.52838
#3	10.442	.52492	1.0425	54.509	.52882	10.414	.53022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 26, 2015

Sample Name: CCV Acquired: 2/25/2015 13:46:47 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2775	.41855	5.2281	1.0455	1.0898	1.0670	.53775
Stddev	.0086	.00107	.0047	.0016	.0019	.0004	.00411
%RSD	.67645	.25632	.08997	.15376	.17492	.04233	.76454
#1	1.2783	.41899	5.2328	1.0470	1.0920	1.0667	.54247
#2	1.2685	.41733	5.2234	1.0438	1.0884	1.0668	.53493
#3	1.2857	.41934	5.2281	1.0457	1.0891	1.0675	.53585
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0199	1.0192	F .57777
Stddev	.0019	.0032	1.5629
%RSD	.18417	.31784	270.51
#1	1.0178	1.0210	.20231
#2	1.0210	1.0155	-.76325
#3	1.0210	1.0212	2.2943
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10478.	10283.
Stddev	13.	17.
%RSD	.12125	.16235
#1	10469.	10283.
#2	10493.	10300.
#3	10472.	10267.

Approved: February 26, 2015

Sample Name: CCB Acquired: 2/25/2015 13:50:02 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	-.00363	.00198	.00217	.00019	-.00009	-.00421
Stddev	.00020	.00244	.00157	.00015	.00015	.00002	.00733
%RSD	694.54	67.211	78.975	6.9549	78.831	22.990	174.16
#1	.00025	-.00104	.00366	.00234	.00004	-.00008	-.00861
#2	-.00015	-.00588	.00174	.00212	.00033	-.00012	.00425
#3	-.00001	-.00396	.00055	.00205	.00019	-.00009	-.00826
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	.00027	.00008	-.00121	.00126	.00742	.00084
Stddev	.00009	.00017	.00042	.00055	.01049	.01644	.00027
%RSD	478.72	62.661	540.73	45.078	831.27	221.59	32.191
#1	.00003	.00012	.00046	-.00099	-.00785	.00129	.00077
#2	-.00013	.00045	-.00037	-.00183	-.00110	.02604	.00113
#3	.00004	.00023	.00014	-.00081	.01273	-.00508	.00061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00302	.00003	.00466	-.01684	-.00036	F -.01049	-.00007
Stddev	.01194	.00007	.00072	.00114	.00084	.00724	.00163
%RSD	395.14	278.48	15.382	6.7458	234.44	69.000	2288.4
#1	-.00835	.00002	.00416	-.01707	-.00124	-.01561	-.00086
#2	.00196	.00010	.00435	-.01560	-.00027	-.00221	-.00116
#3	.01546	-.00004	.00548	-.01784	.00043	-.01366	.00180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						.01000	
Low Limit						-.01000	

Approved: February 26, 2015

Sample Name: CCB Acquired: 2/25/2015 13:50:02 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00133**	**.00434**	**-.00564**	**.00020**	**.00016**	**-.00178**	**.00232**
Stddev	.00249	.00418	.00141	.00106	.00008	.00118	.00121
%RSD	187.30	96.366	25.033	520.71	51.589	66.155	52.164
#1	-.00219	.00192	-.00726	-.00070	.00023	-.00045	.00349
#2	-.00328	.00193	-.00503	-.00005	.00019	-.00220	.00107
#3	.00148	.00916	-.00464	.00136	.00007	-.00268	.00240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00041**	**-.00013**	F **2.0914**
Stddev	.00034	.00009	.5320
%RSD	82.374	69.055	25.435
#1	.00079	-.00008	2.5175
#2	.00012	-.00008	1.4952
#3	.00033	-.00023	2.2616
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10446.**	**10034.**
Stddev	26.	48.
%RSD	.25347	.48114
#1	10440.	10067.
#2	10423.	10055.
#3	10475.	9978.3

Approved: February 26, 2015

Sample Name: PBW 76 Acquired: 2/25/2015 13:53:40 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513110-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00062	-.00963	-.00335	.00128	-.00016	-.00008	.00932
Stddev	.00009	.00231	.00068	.00142	.00019	.00001	.00654
%RSD	13.773	23.982	20.359	111.42	117.99	14.186	70.172
#1	.00059	-.00720	-.00304	.00067	.00004	-.00007	.00561
#2	.00072	-.01180	-.00289	.00026	-.00033	-.00009	.01687
#3	.00056	-.00989	-.00414	.00290	-.00018	-.00009	.00548
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	-.00007	.00025	-.00051	-.00456	-.00143	.00119
Stddev	.00004	.00021	.00102	.00088	.00243	.04505	.00113
%RSD	29.972	304.33	404.40	171.75	53.421	3140.8	95.246
#1	.00010	-.00013	.00051	.00017	-.00364	-.04688	.00175
#2	.00019	-.00024	.00111	-.00020	-.00731	-.00064	-.00011
#3	.00014	.00017	-.00087	-.00150	-.00271	.04322	.00194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01153	.00005	.00121	.00053	.00122	F -.01500	.00011
Stddev	.02310	.00005	.00010	.00811	.00021	.00090	.00219
%RSD	200.30	104.31	7.9697	1531.3	17.002	6.0088	1924.4
#1	-.00935	.00002	.00116	.00777	.00142	-.01594	-.00241
#2	.00761	.00002	.00132	.00205	.00101	-.01415	.00136
#3	.03634	.00012	.00114	-.00823	.00122	-.01492	.00139
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: PBW 76 Acquired: 2/25/2015 13:53:40 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513110-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	.00107	-.00329	-.00009	.00000	-.00035	.00164
Stddev	.00137	.00302	.00238	.00060	.0001	.00093	.00049
%RSD	208.51	280.99	72.390	693.67	2284.5	263.32	30.190
#1	-.00072	-.00128	-.00478	-.00073	.00004	.00065	.00123
#2	.00067	.00447	-.00054	.00045	-.00007	-.00118	.00149
#3	.00202	.00003	-.00456	.00003	.00003	-.00052	.00219
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00016	.00152	.57772
Stddev	.00023	.00020	1.3562
%RSD	148.34	12.818	234.76
#1	.00031	.00135	2.0081
#2	-.00011	.00173	.41480
#3	.00027	.00149	-.68970
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10422.	10351.
Stddev	13.	46.
%RSD	.11998	.44806
#1	10417.	10381.
#2	10436.	10374.
#3	10412.	10298.

Approved: February 26, 2015

Sample Name: LCSW 76 Acquired: 2/25/2015 13:57:17 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513110-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21018	4.9756	.19855	1.0187	.54636	.02554	5.5157
Stddev	.00039	.0150	.00089	.0043	.00837	.00004	.0885
%RSD	.18437	.30146	.44994	.42314	1.5312	.14056	1.6046
#1	.21030	4.9887	.19918	1.0222	.54133	.02558	5.4425
#2	.20974	4.9592	.19894	1.0139	.54173	.02551	5.4905
#3	.21049	4.9788	.19753	1.0202	.55602	.02552	5.6141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02537	.10384	.26952	.25484	2.1280	27.111	.54325
Stddev	.00032	.00124	.00117	.00108	.0161	.097	.00144
%RSD	1.2629	1.1911	.43511	.42366	.75860	.35704	.26495
#1	.02567	.10526	.27074	.25606	2.1097	27.013	.54163
#2	.02503	.10320	.26839	.25446	2.1341	27.114	.54378
#3	.02542	.10305	.26944	.25400	2.1402	27.207	.54436
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.0716	.25742	.53173	27.268	.26003	4.9116	.25563
Stddev	.0488	.00057	.00557	.160	.00339	.0589	.00175
%RSD	.96252	.22064	1.0468	.58525	1.3027	1.1988	.68281
#1	5.0690	.25778	.53812	27.218	.26373	4.9768	.25654
#2	5.0240	.25677	.52791	27.446	.25708	4.8623	.25362
#3	5.1216	.25772	.52916	27.139	.25930	4.8958	.25674
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: LCSW 76 Acquired: 2/25/2015 13:57:17 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513110-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.62334	.19097	2.6299	.51695	.54955	.54269	.26526
Stddev	.00723	.00243	.0341	.00635	.00311	.00432	.00426
%RSD	1.1592	1.2717	1.2970	1.2287	.56553	.79546	1.6052
#1	.62938	.19138	2.6297	.51733	.54900	.54131	.26511
#2	.61533	.18836	2.5959	.51042	.55289	.54753	.26108
#3	.62532	.19317	2.6642	.52310	.54675	.53923	.26959
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.52125	.50362	F -8.3238
Stddev	.00244	.00126	1.1488
%RSD	.46870	.25103	13.801
#1	.52381	.50224	-7.8832
#2	.51894	.50473	-9.6277
#3	.52100	.50390	-7.4606
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10351.	10323.
Stddev	19.	14.
%RSD	.18224	.13317
#1	10332.	10332.
#2	10370.	10308.
#3	10351.	10330.

Approved: February 26, 2015

Sample Name: L1502104401 Acquired: 2/25/2015 14:00:35 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513110-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.00951	-.00211	.01722	.02504	-.00009	64.821
Stddev	.00047	.00282	.00190	.00072	.00033	.00001	.476
%RSD	96.364	29.666	90.183	4.1842	1.3138	7.3521	.73395
#1	.00097	.00639	-.00079	.01738	.02475	-.00008	64.308
#2	.00044	.01028	-.00429	.01644	.02497	-.00010	65.248
#3	.00004	.01187	-.00125	.01785	.02540	-.00009	64.906
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	-.00019	.00510	-.00012	.04972	4.1662	.02245
Stddev	.00004	.00023	.00074	.00009	.00297	.0317	.00045
%RSD	5.5634	121.23	14.443	72.204	5.9688	.76062	2.0262
#1	.00083	-.00005	.00426	-.00008	.04674	4.1538	.02193
#2	.00075	-.00007	.00538	-.00022	.04976	4.2022	.02266
#3	.00083	-.00045	.00565	-.00007	.05267	4.1426	.02276
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	40.289	.00178	.00190	5.5477	.00375	F -.00379	.00079
Stddev	.396	.00003	.00032	.0553	.00118	.00651	.00138
%RSD	.98231	1.4292	16.834	.99674	31.439	171.83	173.24
#1	39.839	.00177	.00155	5.4841	.00476	-.00791	.00217
#2	40.444	.00176	.00196	5.5846	.00404	.00372	-.00058
#3	40.583	.00181	.00218	5.5743	.00245	-.00717	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502104401 Acquired: 2/25/2015 14:00:35 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513110-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00130	.00601	2.7960	-.00046	1.1521	-.00254	-.00048
Stddev	.00283	.00138	.0683	.00047	.0088	.00101	.00129
%RSD	217.43	22.994	2.4435	103.63	.76092	39.600	271.01
#1	.00032	.00617	2.7175	-.00013	1.1424	-.00154	.00101
#2	-.00457	.00455	2.8279	-.00100	1.1594	-.00252	-.00129
#3	.00035	.00730	2.8424	-.00025	1.1546	-.00355	-.00116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00010	.00549	F -1.0362
Stddev	.00014	.00022	1.7039
%RSD	141.04	4.0413	164.44
#1	-.00004	.00528	-2.8386
#2	.00024	.00546	.54816
#3	.00009	.00572	-.81802
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10103.	10319.
Stddev	9.	82.
%RSD	.08799	.79382
#1	10101.	10410.
#2	10112.	10250.
#3	10095.	10296.

Approved: February 26, 2015

Sample Name: L1502104401DUP Acquired: 2/25/2015 14:04:07 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513110-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00072	.00182	-.00437	.01287	.02468	-.00014	63.446
Stddev	.00040	.00115	.00351	.00109	.00075	.00004	1.193
%RSD	55.146	62.845	80.367	8.4464	3.0539	26.728	1.8797
#1	.00071	.00059	-.00046	.01161	.02480	-.00012	63.309
#2	.00112	.00202	-.00726	.01349	.02387	-.00011	62.328
#3	.00033	.00286	-.00539	.01351	.02536	-.00018	64.702
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	-.00028	.00084	-.00059	.01579	4.0294	.02195
Stddev	.00005	.00021	.00048	.00050	.00524	.0144	.00142
%RSD	5.9313	76.240	57.155	84.913	33.166	.35783	6.4755
#1	.00091	-.00017	.00066	-.00050	.01839	4.0310	.02343
#2	.00096	-.00014	.00048	-.00014	.01922	4.0142	.02182
#3	.00085	-.00053	.00139	-.00112	.00976	4.0429	.02059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	39.775	.00130	.00048	5.3691	.00126	F -.00344	-.00125
Stddev	.323	.00013	.00008	.0833	.00020	.00515	.00222
%RSD	.81195	9.5893	17.679	1.5524	15.780	149.69	178.29
#1	39.844	.00116	.00052	5.3925	.00129	-.00881	-.00338
#2	39.423	.00134	.00038	5.2766	.00145	.00146	-.00142
#3	40.058	.00140	.00053	5.4383	.00105	-.00298	.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502104401DUP Acquired: 2/25/2015 14:04:07 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513110-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00180	.00254	2.7824	-.00088	1.1179	-.00291	.00107
Stddev	.00155	.00189	.0153	.00104	.0147	.00031	.00071
%RSD	86.049	74.330	.54856	118.40	1.3128	10.589	65.795
#1	-.00004	.00118	2.7649	.00020	1.1205	-.00263	.00119
#2	-.00297	.00469	2.7932	-.00187	1.1021	-.00284	.00032
#3	-.00239	.00174	2.7891	-.00097	1.1311	-.00324	.00171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00012	.00522	.62066
Stddev	.00032	.00021	2.0588
%RSD	276.55	4.0810	331.72
#1	.00047	.00517	-1.7556
#2	.00004	.00503	1.7464
#3	-.00016	.00545	1.8711
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10348.	10148.
Stddev	8.	35.
%RSD	.08127	.34601
#1	10349.	10111.
#2	10356.	10151.
#3	10339.	10181.

Approved: February 26, 2015

Sample Name: L1502104401MS Acquired: 2/25/2015 14:07:40 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513110-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20675	4.8397	.20272	.97860	.55270	.02468	69.682	.02577
Stddev	.00099	.0052	.00253	.00160	.00551	.00002	.462	.00005
%RSD	.47774	.10780	1.2473	.16339	.99686	.10025	.66366	.20791
#1	.20786	4.8340	.20219	.97969	.54903	.02465	69.355	.02583
#2	.20595	4.8409	.20051	.97676	.55003	.02468	69.481	.02574
#3	.20646	4.8443	.20548	.97935	.55903	.02470	70.211	.02574
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10231	.26114	.25061	2.0732	30.491	.55096	44.652	.24817
Stddev	.00024	.00162	.00039	.0296	.124	.00211	.144	.00072
%RSD	.23520	.61847	.15710	1.4266	.40535	.38274	.32228	.28898
#1	.10251	.26239	.25102	2.0545	30.538	.55320	44.517	.24735
#2	.10204	.26171	.25059	2.0577	30.584	.54902	44.634	.24854
#3	.10237	.25932	.25023	2.1073	30.351	.55064	44.804	.24864
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53270	32.170	.25584	5.0547	.25139	.62424	.19320	5.0888
Stddev	.00026	.121	.00195	.0079	.00192	.00365	.00163	.0108
%RSD	.04922	.37533	.76392	.15607	.76379	.58531	.84456	.21247
#1	.53241	32.193	.25804	5.0618	.25338	.62798	.19497	5.1012
#2	.53282	32.277	.25431	5.0462	.24955	.62068	.19288	5.0839
#3	.53289	32.039	.25516	5.0562	.25125	.62404	.19175	5.0813
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 26, 2015

Sample Name: L1502104401MS Acquired: 2/25/2015 14:07:40 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513110-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50984	1.6684	.52040	.25678	.51106	.48755	.10893
Stddev	.00201	.0053	.00206	.00131	.00142	.00033	1.3724
%RSD	.39457	.32035	.39631	.51111	.27870	.06819	1259.8
#1	.51082	1.6694	.51859	.25623	.51268	.48747	1.4975
#2	.50753	1.6731	.52264	.25827	.51002	.48726	.07597
#3	.51117	1.6626	.51996	.25582	.51047	.48791	-1.2467
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10114.	10196.
Stddev	17.	21.
%RSD	.16732	.20855
#1	10095.	10218.
#2	10128.	10192.
#3	10119.	10176.

Approved: February 26, 2015

Sample Name: L1502104403 Acquired: 2/25/2015 14:10:55 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.01951	-.00049	.01494	.02276	-.00005	45.826	.00072
Stddev	.00048	.00199	.00099	.00066	.00029	.00001	.164	.00004
%RSD	523.17	10.210	202.09	4.4075	1.2562	11.044	.35759	5.9807
#1	.00048	.01830	.00044	.01559	.02308	-.00005	46.007	.00067
#2	.00023	.02181	-.00152	.01494	.02252	-.00004	45.781	.00074
#3	-.00044	.01843	-.00038	.01428	.02267	-.00006	45.688	.00075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.00098	-.00014	.25603	3.3177	.01628	30.612	.08923
Stddev	.00013	.00048	.00005	.00651	.0376	.00017	.067	.00131
%RSD	90.459	49.417	31.469	2.5411	1.1334	1.0533	.21778	1.4731
#1	.00010	.00148	-.00013	.26313	3.3588	.01645	30.689	.09052
#2	.00029	.00051	-.00019	.25035	3.3092	.01628	30.572	.08929
#3	.00004	.00094	-.00011	.25462	3.2850	.01611	30.575	.08789
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00159	4.7768	.00239	-.00272	.00001	.00083	.00693	3.0999
Stddev	.00024	.0116	.00039	.00178	.00070	.00370	.00086	.0870
%RSD	14.906	.24190	16.479	65.404	8654.5	445.88	12.427	2.8056
#1	.00164	4.7886	.00193	-.00430	.00036	.00505	.00767	3.1966
#2	.00133	4.7655	.00260	-.00079	-.00080	-.00069	.00713	3.0281
#3	.00180	4.7763	.00263	-.00306	.00046	-.00187	.00599	3.0749
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 26, 2015

Sample Name: L1502104403 Acquired: 2/25/2015 14:10:55 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00045**	**.50734**	**-.00033**	**.00169**	**-.00014**	**.00583**	**.21099**
Stddev	.00026	.00182	.00057	.00165	.00018	.00014	1.3091
%RSD	56.850	.35892	175.04	97.616	128.81	2.4808	620.45
#1	-.00022	.50933	.00018	.00354	-.00034	.00592	1.5909
#2	-.00041	.50577	-.00094	.00117	-.00007	.00566	.05555
#3	-.00073	.50692	-.00022	.00036	.00000	.00591	-1.0135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10259.**	**10358.**
Stddev	99.	42.
%RSD	.96736	.40779
#1	10145.	10322.
#2	10318.	10405.
#3	10315.	10349.

Approved: February 26, 2015

Sample Name: L1502104405 Acquired: 2/25/2015 14:14:27 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	.18059	-.00290	.01026	.05838	-.00011	58.444
Stddev	.00086	.00257	.00211	.00009	.00139	.00002	1.034
%RSD	215.11	1.4248	72.836	.88097	2.3759	16.050	1.7686
#1	.00136	.18138	-.00123	.01015	.05688	-.00010	57.252
#2	.00013	.17771	-.00219	.01030	.05863	-.00010	58.991
#3	-.00029	.18267	-.00527	.01031	.05962	-.00013	59.089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00065	.00018	.00070	-.00029	.35872	3.6307	.00865
Stddev	.00004	.00037	.00029	.00027	.01346	.0353	.00124
%RSD	6.9138	210.47	41.952	94.637	3.7513	.97325	14.396
#1	.00069	-.00025	.00084	-.00060	.34318	3.6019	.00948
#2	.00060	.00040	.00036	-.00012	.36683	3.6202	.00925
#3	.00065	.00038	.00089	-.00014	.36614	3.6701	.00721
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	37.136	.06082	.00062	6.5262	.00140	.00834	-.00046
Stddev	.405	.00060	.00009	.0466	.00049	.00260	.00116
%RSD	1.0895	.99090	14.261	.71366	34.966	31.195	252.91
#1	36.719	.06070	.00054	6.4760	.00183	.01005	-.00011
#2	37.160	.06029	.00060	6.5679	.00150	.00961	-.00176
#3	37.527	.06147	.00071	6.5347	.00087	.00534	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: L1502104405 Acquired: 2/25/2015 14:14:27 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00147**	**.00294**	**2.3021**	**-.00052**	**1.0042**	**-.00043**	**.00007**
Stddev	.00144	.00143	.0107	.00018	.0101	.00081	.00228
%RSD	97.718	48.670	.46507	34.337	1.0041	187.98	3325.1
#1	-.00185	.00275	2.2900	-.00061	.99262	.00048	-.00197
#2	-.00267	.00446	2.3058	-.00032	1.0105	-.00108	.00253
#3	.00012	.00161	2.3105	-.00064	1.0097	-.00069	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00017**	**.00282**	F **-2.0249**
Stddev	.00025	.00007	.7899
%RSD	146.26	2.5917	39.011
#1	.00008	.00286	-2.8817
#2	.00046	.00285	-1.8677
#3	-.00002	.00273	-1.3254
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10354.**	**10437.**
Stddev	20.	73.
%RSD	.18888	.69604
#1	10370.	10435.
#2	10360.	10510.
#3	10332.	10365.

Approved: February 26, 2015

Sample Name: L1502104405PS Acquired: 2/25/2015 14:17:59 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513277-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21550	5.2052	.21108	1.0198	.59697	.02566	57.149
Stddev	.00019	.0202	.00301	.0013	.00458	.00003	.533
%RSD	.08988	.38836	1.4268	.12446	.76791	.13232	.93333
#1	.21564	5.1877	.21414	1.0187	.59383	.02566	56.776
#2	.21557	5.2273	.20812	1.0195	.59485	.02570	56.910
#3	.21528	5.2006	.21098	1.0212	.60223	.02563	57.760
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02697	.10644	.27013	.26115	2.4485	30.406	.55274
Stddev	.00006	.00012	.00061	.00083	.0076	.123	.00284
%RSD	.21549	.11553	.22540	.31707	.31198	.40360	.51381
#1	.02698	.10652	.26974	.26205	2.4397	30.451	.55598
#2	.02702	.10629	.26981	.26042	2.4533	30.499	.55152
#3	.02691	.10650	.27083	.26099	2.4526	30.267	.55071
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	38.159	.30755	.55200	33.169	.26603	5.2617	.26254
Stddev	.183	.00080	.00085	.040	.00041	.0125	.00231
%RSD	.47958	.26009	.15366	.11915	.15474	.23683	.88161
#1	38.327	.30698	.55215	33.196	.26594	5.2757	.26092
#2	37.964	.30846	.55109	33.124	.26648	5.2518	.26150
#3	38.187	.30720	.55277	33.188	.26567	5.2576	.26519
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: L1502104405PS Acquired: 2/25/2015 14:17:59 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513277-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.64742	.19903	4.5283	.52924	1.4338	.54000	.26709
Stddev	.00287	.00789	.0056	.00055	.0005	.00046	.00295
%RSD	.44271	3.9623	.12397	.10370	.03601	.08560	1.1032
#1	.65068	.19002	4.5300	.52895	1.4332	.53954	.26684
#2	.64528	.20469	4.5220	.52890	1.4341	.53998	.27015
#3	.64629	.20238	4.5329	.52987	1.4340	.54046	.26427
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.53168	.50419	F -1.7987
Stddev	.00242	.00031	1.8819
%RSD	.45579	.06175	104.62
#1	.52890	.50387	-1.1982
#2	.53282	.50450	-.29039
#3	.53332	.50420	-3.9076
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10149.	10294.
Stddev	7.	33.
%RSD	.06685	.32237
#1	10156.	10273.
#2	10146.	10278.
#3	10143.	10333.

Approved: February 26, 2015

Sample Name: L1502104405SDL Acquired: 2/25/2015 14:21:14 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG513277-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00099	.02839	.00104	.00555	.01142	-.00007	11.547
Stddev	.00032	.00246	.00099	.00087	.00023	.00002	.065
%RSD	32.729	8.6773	95.907	15.691	2.0006	21.531	.56067
#1	.00065	.02623	.00029	.00460	.01128	-.00008	11.507
#2	.00129	.03107	.00065	.00630	.01130	-.00009	11.513
#3	.00101	.02786	.00217	.00576	.01168	-.00006	11.622
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	.00008	.00020	.00031	.07349	.71270	.00190
Stddev	.00006	.00037	.00038	.00007	.00487	.04668	.00175
%RSD	27.034	472.36	190.92	22.534	6.6322	6.5497	91.788
#1	.00020	.00024	.00038	.00023	.06973	.70929	.00237
#2	.00031	-.00034	-.00024	.00036	.07175	.66782	.00337
#3	.00020	.00033	.00045	.00033	.07900	.76099	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.4962	.01314	.00179	1.3132	.00129	-.00285	.00302
Stddev	.0795	.00055	.00008	.0174	.00044	.00477	.00140
%RSD	1.0598	4.1681	4.6007	1.3250	33.901	167.42	46.439
#1	7.4254	.01285	.00181	1.2952	.00147	.00092	.00150
#2	7.5821	.01280	.00171	1.3143	.00161	-.00821	.00427
#3	7.4812	.01377	.00187	1.3300	.00079	-.00126	.00329
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: L1502104405SDL Acquired: 2/25/2015 14:21:14 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG513277-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00200**	**.00109**	**.42273**	**.00161**	**.19954**	**-.00083**	**.00246**
Stddev	.00084	.00278	.00483	.00085	.00136	.00033	.00063
%RSD	41.926	253.73	1.1434	52.969	.68233	40.152	25.570
#1	-.00108	-.00156	.42830	.00254	.19825	-.00089	.00251
#2	-.00273	.00086	.42025	.00141	.19940	-.00047	.00307
#3	-.00220	.00398	.41964	.00087	.20096	-.00112	.00181
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00027**	**.00236**	F **-2.3434**
Stddev	.00011	.00014	2.2373
%RSD	39.800	6.0965	95.474
#1	.00024	.00251	-3.6452
#2	.00019	.00236	.24002
#3	.00040	.00222	-3.6249
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10483.**	**10146.**
Stddev	32.	305.
%RSD	.30282	3.0021
#1	10454.	10292.
#2	10479.	10349.
#3	10517.	9795.6

Approved: February 26, 2015

Sample Name: CCV Acquired: 2/25/2015 14:24:50 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41503	9.9818	.41073	.51323	1.0820	.05128	10.930
Stddev	.00185	.0260	.00769	.00303	.0122	.00004	.110
%RSD	.44477	.26083	1.8716	.58987	1.1294	.08694	1.0034
#1	.41596	10.012	.40703	.51658	1.0744	.05127	10.855
#2	.41291	9.9637	.40559	.51068	1.0755	.05133	10.879
#3	.41623	9.9700	.41956	.51242	1.0961	.05124	11.056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05090	.20354	.52133	.50771	4.2103	53.979	1.0711
Stddev	.00069	.00347	.00015	.00681	.0376	.503	.0126
%RSD	1.3567	1.7067	.02794	1.3411	.89280	.93209	1.1757
#1	.05055	.20174	.52127	.50437	4.2033	53.696	1.0642
#2	.05046	.20134	.52122	.50321	4.1768	53.681	1.0635
#3	.05170	.20755	.52149	.51554	4.2510	54.560	1.0856
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.309	.51790	1.0230	54.318	.51714	10.226	.51564
Stddev	.067	.00274	.0067	.274	.00884	.077	.00798
%RSD	.65116	.52856	.65602	.50464	1.7099	.75576	1.5482
#1	10.310	.51929	1.0207	54.101	.51155	10.183	.51057
#2	10.242	.51475	1.0177	54.226	.51254	10.179	.51150
#3	10.376	.51967	1.0305	54.626	.52733	10.315	.52484
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 26, 2015

Sample Name: CCV Acquired: 2/25/2015 14:24:50 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2510**	**.40905**	**5.2215**	**1.0300**	**1.0882**	**1.0642**	**.53286**
Stddev	.0136	.00250	.0624	.0081	.0044	.0050	.00302
%RSD	1.0881	.61200	1.1941	.78944	.40827	.47471	.56605
#1	1.2422	.40793	5.1641	1.0265	1.0838	1.0587	.53280
#2	1.2441	.40730	5.2879	1.0242	1.0883	1.0651	.52988
#3	1.2667	.41192	5.2125	1.0393	1.0926	1.0687	.53591
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0149**	**1.0082**	F **-1.4676**
Stddev	.0044	.0006	.6302
%RSD	.43420	.06050	42.944
#1	1.0187	1.0086	-.79144
#2	1.0101	1.0084	-1.5726
#3	1.0159	1.0075	-2.0388
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10554.**	**10421.**
Stddev	7.	19.
%RSD	.06935	.18069
#1	10548.	10419.
#2	10562.	10441.
#3	10553.	10404.

Approved: February 26, 2015

Sample Name: CCB Acquired: 2/25/2015 14:28:06 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00082**	**-.01235**	**.00120**	**.00385**	**-.00039**	**-.00009**	**.00678**
Stddev	.00027	.00054	.00092	.00036	.00012	.00001	.00697
%RSD	32.601	4.3679	76.595	9.2465	30.788	13.375	102.76
#1	.00065	-.01292	.00226	.00406	-.00031	-.00008	.00712
#2	.00113	-.01228	.00075	.00344	-.00032	-.00010	-.00035
#3	.00069	-.01185	.00060	.00405	-.00053	-.00010	.01358
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**.00004**	**.00000**	**-.00038**	**.00390**	**-.03585**	**-.00031**
Stddev	.00012	.00015	.00014	.00020	.00498	.02770	.00029
%RSD	386.85	399.00	10002.	52.884	127.66	77.260	92.351
#1	-.00010	-.00010	.00009	-.00035	-.00076	-.01931	-.00056
#2	.00014	.00001	.00008	-.00060	.00332	-.02041	.00001
#3	.00005	.00020	-.00016	-.00020	.00915	-.06782	-.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.02724**	**.00000**	**.00483**	**-.01822**	**.00061**	**-.00409**	**-.00016**
Stddev	.01431	.00005	.00021	.00459	.00072	.00218	.00055
%RSD	52.542	1753.8	4.3064	25.170	118.55	53.255	337.87
#1	-.04363	-.00005	.00488	-.01336	.00126	-.00344	-.00006
#2	-.02088	.00005	.00500	-.01884	-.00016	-.00230	.00033
#3	-.01721	.00002	.00460	-.02247	.00073	-.00651	-.00076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: CCB Acquired: 2/25/2015 14:28:06 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00205	.00387	-.00466	.00039	.00018	-.00107	.00280
Stddev	.00142	.00188	.00037	.00040	.00001	.00167	.00073
%RSD	69.296	48.470	7.8521	102.03	7.8221	156.15	26.061
#1	-.00101	.00276	-.00505	.00053	.00018	-.00220	.00312
#2	-.00368	.00282	-.00433	.00070	.00019	.00085	.00332
#3	-.00148	.00604	-.00461	-.00006	.00016	-.00186	.00197
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00008	-.00028	F .40918
Stddev	.00012	.00012	1.5349
%RSD	156.14	41.195	375.11
#1	.00017	-.00030	2.1649
#2	.00013	-.00016	-.67841
#3	-.00006	-.00039	-.25892
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10487.	10347.
Stddev	11.	33.
%RSD	.10033	.32226
#1	10498.	10329.
#2	10485.	10386.
#3	10477.	10327.

Approved: February 26, 2015

Sample Name: L1502104407 Acquired: 2/25/2015 14:31:44 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.04438	-.00171	.01178	.03373	-.00010	85.875
Stddev	.00028	.00111	.00122	.00053	.00010	.00002	.256
%RSD	82.368	2.4938	71.719	4.5027	.28675	18.337	.29815
#1	.00067	.04470	-.00254	.01153	.03379	-.00008	85.772
#2	.00020	.04529	-.00227	.01239	.03361	-.00011	85.686
#3	.00016	.04315	-.00030	.01142	.03377	-.00010	86.167
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	-.00018	.00075	.00015	.14611	5.0927	.02343
Stddev	.00010	.00017	.00023	.00057	.00395	.0180	.00118
%RSD	10.906	95.082	31.384	377.12	2.7008	.35286	5.0463
#1	.00086	-.00013	.00073	.00006	.14819	5.1037	.02364
#2	.00103	-.00037	.00099	-.00036	.14156	5.0720	.02449
#3	.00085	-.00004	.00052	.00076	.14858	5.1024	.02215
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	52.860	.03794	.00090	8.9515	.00141	.00250	-.00088
Stddev	.354	.00012	.00020	.0530	.00019	.00682	.00298
%RSD	.67045	.32941	22.619	.59196	13.133	273.17	337.10
#1	52.526	.03780	.00077	8.9379	.00143	-.00529	.00248
#2	52.822	.03798	.00080	8.9065	.00159	.00737	-.00321
#3	53.232	.03804	.00114	9.0099	.00122	.00541	-.00192
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: L1502104407 Acquired: 2/25/2015 14:31:44 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00086**	**.00412**	**2.1970**	**-.00041**	**1.4754**	**-.00299**	**.00233**
Stddev	.00144	.00064	.0447	.00022	.0064	.00071	.00157
%RSD	166.73	15.568	2.0328	54.358	.43633	23.738	67.304
#1	-.00104	.00338	2.1610	-.00067	1.4743	-.00348	.00172
#2	-.00220	.00451	2.1829	-.00029	1.4696	-.00217	.00115
#3	.00066	.00448	2.2470	-.00027	1.4823	-.00331	.00411
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00002**	**.00254**	F **-.45151**
Stddev	.00017	.00021	2.1009
%RSD	806.42	8.3710	465.31
#1	-.00011	.00278	1.9483
#2	-.00012	.00237	-1.3440
#3	.00017	.00246	-1.9589
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10090.**	**10361.**
Stddev	3.	73.
%RSD	.03423	.70665
#1	10093.	10409.
#2	10091.	10398.
#3	10086.	10277.

Approved: February 26, 2015

Sample Name: L1502105204 Acquired: 2/25/2015 14:35:16 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00044	.02984	-.00309	.02149	.00797	-.00009	156.98
Stddev	.00033	.00360	.00215	.00257	.00021	.00001	2.64
%RSD	74.466	12.052	69.460	11.973	2.6067	13.572	1.6840
#1	.00080	.03398	-.00102	.02446	.00787	-.00011	155.88
#2	.00015	.02796	-.00294	.01998	.00784	-.00008	155.05
#3	.00037	.02757	-.00531	.02004	.00821	-.00009	159.99
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00119	.00143	.00103	-.00047	.12888	9.5550	.03205
Stddev	.00008	.00035	.00041	.00005	.00245	.0509	.00086
%RSD	6.8480	24.526	40.298	9.7336	1.9030	.53240	2.6748
#1	.00116	.00159	.00126	-.00051	.13144	9.4976	.03169
#2	.00113	.00103	.00127	-.00047	.12655	9.5732	.03302
#3	.00128	.00168	.00055	-.00042	.12865	9.5943	.03142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	147.70	.32204	.00027	34.045	.00700	F -.00367	-.00018
Stddev	1.21	.00354	.00030	.331	.00128	.00810	.00065
%RSD	.81866	1.0996	110.49	.97153	18.254	220.61	365.77
#1	147.23	.32611	.00021	34.009	.00670	-.00086	.00000
#2	146.79	.31965	.00001	33.734	.00840	.00265	.00036
#3	149.07	.32037	.00060	34.393	.00590	-.01280	-.00090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502105204 Acquired: 2/25/2015 14:35:16 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00148**	**.00612**	**2.1427**	**-.00054**	**.49050**	**-.00792**	**.00008**
Stddev	.00110	.00101	.0150	.00017	.00469	.00237	.00160
%RSD	74.391	16.454	.70193	30.822	.95651	29.916	2045.7
#1	-.00241	.00665	2.1254	-.00036	.48955	-.00526	.00192
#2	-.00027	.00495	2.1514	-.00069	.48636	-.00981	-.00070
#3	-.00175	.00674	2.1514	-.00055	.49560	-.00870	-.00099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00002**	**.00591**	**2.9005**
Stddev	.00034	.00022	.3723
%RSD	1660.5	3.7128	12.836
#1	-.00005	.00597	3.1146
#2	-.00028	.00610	2.4706
#3	.00039	.00567	3.1164
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**9888.6**	**10149.**
Stddev	10.3	60.
%RSD	.10366	.58800
#1	9900.2	10082.
#2	9884.8	10198.
#3	9880.7	10166.

Approved: February 26, 2015

Sample Name: L1502105207 Acquired: 2/25/2015 14:38:48 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	.03718	-.00174	.02327	.00673	-.00008	150.82
Stddev	.00043	.00422	.00212	.00102	.00040	.00002	3.35
%RSD	60.286	11.339	121.37	4.3909	5.9138	22.222	2.2233
#1	.00025	.04133	-.00334	.02228	.00692	-.00010	153.85
#2	.00110	.03291	-.00255	.02322	.00628	-.00008	147.22
#3	.00079	.03729	.00066	.02432	.00701	-.00007	151.38
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00132	.00069	.00108	-.00132	.08837	9.7071	.04354
Stddev	.00010	.00015	.00085	.00049	.00443	.2996	.00175
%RSD	7.2727	21.286	78.032	37.089	5.0110	3.0865	4.0179
#1	.00130	.00061	.00065	-.00085	.09128	10.030	.04524
#2	.00142	.00086	.00054	-.00183	.08328	9.4375	.04175
#3	.00123	.00061	.00206	-.00127	.09056	9.6541	.04364
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	132.32	.12911	.00026	39.172	.00360	F -.00323	-.00129
Stddev	3.37	.00340	.00005	.964	.00057	.00242	.00105
%RSD	2.5446	2.6303	19.037	2.4607	15.871	74.981	81.479
#1	136.06	.13303	.00027	40.190	.00399	-.00043	-.00030
#2	129.54	.12706	.00021	38.273	.00388	-.00463	-.00118
#3	131.36	.12725	.00031	39.054	.00295	-.00463	-.00240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502105207 Acquired: 2/25/2015 14:38:48 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	.00189	2.4407	-.00083	.44564	-.00630	-.00037
Stddev	.00302	.00230	.0833	.00043	.01071	.00220	.00232
%RSD	339.12	121.63	3.4113	52.472	2.4023	34.985	627.58
#1	.00437	.00204	2.5367	-.00093	.45707	-.00552	-.00090
#2	-.00084	-.00048	2.3973	-.00035	.43585	-.00459	.00217
#3	-.00087	.00410	2.3881	-.00120	.44399	-.00879	-.00238
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00016	.00441	.47948
Stddev	.00028	.00023	3.0725
%RSD	179.42	5.2397	640.80
#1	.00015	.00468	-1.7804
#2	-.00041	.00426	-.75913
#3	-.00021	.00429	3.9780
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	9923.8	10078.
Stddev	13.6	285.
%RSD	.13731	2.8286
#1	9926.4	9749.1
#2	9909.1	10250.
#3	9936.0	10236.

Approved: February 26, 2015

Sample Name: L1502105210 Acquired: 2/25/2015 14:42:19 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00111	.01496	-.00295	.01334	.00919	.00001	80.749
Stddev	.00051	.00160	.00070	.00073	.00037	.00000	.630
%RSD	45.689	10.674	23.672	5.4928	3.9799	21.714	.78023
#1	.00147	.01531	-.00365	.01419	.00879	.00001	80.370
#2	.00134	.01321	-.00225	.01288	.00926	.00001	80.402
#3	.00053	.01635	-.00294	.01296	.00951	.00001	81.477
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00097	.00075	.00124	.00011	.07740	5.5688	.01696
Stddev	.00003	.00029	.00035	.00051	.00927	.0621	.00227
%RSD	2.8789	38.195	28.509	452.21	11.974	1.1155	13.359
#1	.00095	.00062	.00110	.00051	.06952	5.6017	.01925
#2	.00096	.00108	.00098	-.00046	.07508	5.4971	.01691
#3	.00100	.00056	.00164	.00029	.08761	5.6075	.01472
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	57.316	.18871	.00016	3.5971	.01283	F -.00549	-.00031
Stddev	.357	.00043	.00027	.0180	.00003	.00574	.00101
%RSD	.62263	.22791	174.41	.50071	.24310	104.39	322.98
#1	57.114	.18824	.00044	3.6166	.01283	.00042	-.00048
#2	57.105	.18909	.00012	3.5935	.01286	-.00587	-.00123
#3	57.728	.18879	-.00010	3.5812	.01280	-.01104	.00077
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502105210 Acquired: 2/25/2015 14:42:19 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00161**	**.00109**	**3.1801**	**-.00079**	**.35877**	**-.00478**	**-.00022**
Stddev	.00236	.00121	.0579	.00064	.00053	.00180	.00143
%RSD	146.08	111.55	1.8217	80.046	.14772	37.740	660.04
#1	-.00399	.00240	3.2035	-.00112	.35925	-.00635	-.00144
#2	.00072	.00084	3.1142	-.00006	.35886	-.00517	.00136
#3	-.00156	.00001	3.2227	-.00120	.35820	-.00281	-.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00002**	**.01627**	F **-.06231**
Stddev	.00046	.00014	2.6279
%RSD	2384.3	.84750	4217.4
#1	.00036	.01625	-1.1079
#2	.00020	.01614	-2.0065
#3	-.00050	.01642	2.9275
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10173.**	**10204.**
Stddev	13.	18.
%RSD	.12852	.17783
#1	10159.	10225.
#2	10178.	10192.
#3	10184.	10196.

Approved: February 26, 2015

Sample Name: L1502105215 Acquired: 2/25/2015 14:45:51 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.00710	-.00201	.00509	.01957	-.00008	37.658
Stddev	.00059	.00065	.00283	.00010	.00012	.00006	.100
%RSD	100.08	9.0908	140.35	1.8679	.58768	71.427	.26603
#1	-.00009	.00773	-.00319	.00513	.01948	-.00014	37.554
#2	.00087	.00715	.00121	.00498	.01953	-.00002	37.753
#3	.00099	.00644	-.00406	.00516	.01970	-.00010	37.669
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00067	.00011	.00058	-.00042	.08546	3.9642	.00389
Stddev	.00006	.00011	.00018	.00034	.00432	.0261	.00008
%RSD	9.3001	97.268	31.394	79.901	5.0578	.65833	2.1830
#1	.00061	.00000	.00039	-.00012	.09035	3.9929	.00381
#2	.00066	.00011	.00075	-.00079	.08385	3.9419	.00398
#3	.00073	.00022	.00060	-.00037	.08217	3.9579	.00388
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	31.234	.04478	.00024	1.1338	.00170	F -.00679	.00008
Stddev	.052	.00022	.00015	.0164	.00064	.00366	.00243
%RSD	.16729	.49443	63.550	1.4466	37.832	53.973	2925.9
#1	31.290	.04462	.00037	1.1318	.00204	-.00575	.00228
#2	31.188	.04468	.00029	1.1511	.00096	-.01086	.00049
#3	31.223	.04503	.00007	1.1184	.00210	-.00376	-.00252
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502105215 Acquired: 2/25/2015 14:45:51 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00126**	**.00129**	**1.5074**	**-.00078**	**.12953**	**-.00250**	**-.00033**
Stddev	.00080	.00153	.0420	.00019	.00036	.00128	.00130
%RSD	63.896	118.45	2.7891	24.422	.27978	51.104	390.11
#1	-.00078	.00241	1.4591	-.00099	.12913	-.00105	-.00083
#2	-.00218	-.00045	1.5274	-.00071	.12984	-.00347	.00114
#3	-.00081	.00191	1.5356	-.00063	.12962	-.00299	-.00131
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00011**	**.00507**	F **-.21049**
Stddev	.00021	.00021	.70202
%RSD	185.59	4.2356	333.52
#1	.00007	.00486	-1.0030
#2	-.00006	.00506	.03819
#3	-.00034	.00529	.33334
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10294.**	**10402.**
Stddev	19.	18.
%RSD	.18481	.17118
#1	10291.	10420.
#2	10315.	10403.
#3	10277.	10384.

Approved: February 26, 2015

Sample Name: L1502105217 Acquired: 2/25/2015 14:49:24 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.02751	-.00250	.01940	.01343	-.00010	77.999
Stddev	.00068	.00194	.00196	.00088	.00027	.00004	.029
%RSD	164.56	7.0357	78.340	4.5221	2.0208	35.588	.03704
#1	-.00011	.02628	-.00449	.01865	.01365	-.00011	77.975
#2	.00118	.02651	-.00242	.01920	.01353	-.00014	78.031
#3	.00017	.02974	-.00058	.02037	.01313	-.00007	77.992
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	.00024	.00055	-.00052	.11758	4.8215	.02214
Stddev	.00010	.00017	.00079	.00032	.00277	.0427	.00229
%RSD	12.405	73.634	143.94	62.561	2.3547	.88588	10.346
#1	.00083	.00029	-.00016	-.00080	.12069	4.8320	.02469
#2	.00066	.00037	.00041	-.00059	.11666	4.8579	.02146
#3	.00083	.00004	.00140	-.00017	.11539	4.7745	.02026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	36.635	.10158	.00014	4.0147	.00268	F -.00342	.00052
Stddev	.051	.00076	.00004	.0161	.00067	.00307	.00077
%RSD	.13968	.74717	27.472	.40178	25.047	89.908	148.45
#1	36.600	.10076	.00012	3.9967	.00239	-.00033	.00133
#2	36.610	.10225	.00011	4.0194	.00221	-.00345	-.00021
#3	36.693	.10174	.00018	4.0279	.00345	-.00648	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502105217 Acquired: 2/25/2015 14:49:24 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	-.00001	2.4257	-.00036	.77566	-.00304	.00045
Stddev	.00214	.00221	.0506	.00054	.00135	.00054	.00221
%RSD	1343.9	28393.	2.0867	150.82	.17432	17.874	489.34
#1	-.00031	-.00248	2.4798	-.00088	.77411	-.00357	-.00186
#2	-.00171	.00175	2.3795	.00020	.77625	-.00248	.00255
#3	.00250	.00071	2.4179	-.00039	.77661	-.00307	.00066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00038	.00310	1.6181
Stddev	.00029	.00018	2.1928
%RSD	75.785	5.8462	135.52
#1	.00005	.00329	4.0539
#2	.00059	.00293	.99894
#3	.00050	.00308	-.19865
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10157.	10249.
Stddev	40.	48.
%RSD	.39449	.47128
#1	10112.	10274.
#2	10189.	10194.
#3	10170.	10281.

Approved: February 26, 2015

Sample Name: L1502105221 Acquired: 2/25/2015 14:52:56 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.08829	-.00191	.01178	.01273	-.00004	145.11
Stddev	.00045	.00229	.00061	.00077	.00021	.00001	.35
%RSD	110.70	2.5972	31.756	6.5792	1.6573	32.302	.23913
#1	.00091	.08784	-.00244	.01091	.01298	-.00005	145.16
#2	.00006	.08626	-.00203	.01199	.01264	-.00003	145.43
#3	.00025	.09078	-.00125	.01242	.01259	-.00005	144.74
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	.00262	.00027	-.00032	.03986	8.0666	.03078
Stddev	.00011	.00019	.00085	.00031	.00102	.0377	.00126
%RSD	9.7211	7.2150	310.81	94.437	2.5639	.46801	4.0786
#1	.00130	.00266	-.00045	-.00056	.03890	8.1092	.03082
#2	.00114	.00242	.00006	.00002	.03973	8.0372	.03202
#3	.00108	.00279	.00121	-.00044	.04093	8.0535	.02951
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	110.47	.34209	.00004	18.373	.00961	F -.00556	-.00069
Stddev	.32	.00176	.00046	.060	.00054	.00315	.00130
%RSD	.29046	.51320	1221.7	.32576	5.5680	56.725	188.54
#1	110.55	.34249	-.00028	18.381	.00910	-.00870	.00019
#2	110.12	.34017	-.00017	18.429	.01017	-.00240	-.00008
#3	110.74	.34361	.00056	18.310	.00958	-.00557	-.00218
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502105221 Acquired: 2/25/2015 14:52:56 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	.00158	2.2302	-.00031	.72975	-.00693	-.00097
Stddev	.00246	.00359	.0755	.00042	.00173	.00071	.00102
%RSD	445.90	227.39	3.3840	135.33	.23641	10.275	105.27
#1	.00204	.00519	2.1432	.00009	.72929	-.00768	-.00096
#2	-.00229	.00153	2.2785	-.00075	.73166	-.00627	.00005
#3	.00190	-.00198	2.2688	-.00028	.72831	-.00683	-.00200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00028	.00919	1.2234
Stddev	.00049	.00045	.5936
%RSD	178.91	4.8653	48.517
#1	-.00008	.00868	1.4343
#2	-.00084	.00937	.55320
#3	.00009	.00951	1.6827
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	9968.0	10092.
Stddev	19.3	82.
%RSD	.19312	.80953
#1	9945.8	9998.5
#2	9979.1	10151.
#3	9979.1	10126.

Approved: February 26, 2015

Sample Name: L1502105223 Acquired: 2/25/2015 14:56:29 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513110-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00733	-.00215	.02126	.00931	-.00009	188.01	.00149
Stddev	.00021	.00275	.00152	.00019	.00031	.00002	2.92	.00018
%RSD	78.790	37.424	70.605	.88200	3.3182	17.650	1.5537	12.093
#1	.00045	.00676	-.00331	.02148	.00896	-.00009	185.82	.00161
#2	.00033	.01032	-.00273	.02117	.00945	-.00010	186.88	.00158
#3	.00003	.00492	-.00043	.02114	.00953	-.00007	191.33	.00128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00603	.00108	-.00066	.09571	10.305	.02723	200.34	.93074
Stddev	.00009	.00050	.00018	.00322	.107	.00012	1.93	.00400
%RSD	1.5181	46.539	27.028	3.3653	1.0353	.45688	.96475	.42935
#1	.00610	.00065	-.00059	.09329	10.220	.02714	198.90	.93144
#2	.00607	.00096	-.00086	.09447	10.270	.02717	199.59	.93434
#3	.00593	.00163	-.00053	.09936	10.425	.02737	202.54	.92644
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	6.5490	.02505	.00061	-.00088	-.00361	.00221	2.1158
Stddev	.00019	.0523	.00057	.00302	.00112	.00368	.00084	.0808
%RSD	922.92	.79878	2.2835	494.68	126.22	101.90	38.035	3.8207
#1	-.00013	6.5218	.02516	-.00256	-.00196	-.00433	.00126	2.1994
#2	-.00013	6.5159	.02443	.00345	-.00096	.00037	.00250	2.0380
#3	.00020	6.6093	.02556	.00095	.00027	-.00688	.00287	2.1099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 26, 2015

Sample Name: L1502105223 Acquired: 2/25/2015 14:56:29 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513110-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.71342**	**-.00876**	**-.00062**	**-.00070**	**.02934**	**1.6582**
Stddev	.00012	.00641	.00073	.00134	.00051	.00106	1.2077
%RSD	69.136	.89887	8.3180	215.72	73.271	3.6299	72.830
#1	-.00028	.70757	-.00959	-.00173	-.00128	.03051	.35214
#2	-.00005	.71241	-.00841	-.00099	-.00029	.02843	2.7344
#3	-.00019	.72027	-.00827	.00086	-.00053	.02908	1.8879
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**9805.7**	**10080.**
Stddev	7.9	33.
%RSD	.08105	.32385
#1	9797.7	10110.
#2	9805.8	10084.
#3	9813.6	10045.

Approved: February 26, 2015

Sample Name: L1502105223MS Acquired: 2/25/2015 15:00:04 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513110-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21291	4.9305	.20261	1.0080	.54001	.02511	185.46	.02658
Stddev	.00042	.0321	.00169	.0046	.00206	.00003	.25	.00068
%RSD	.19682	.65123	.83455	.45821	.38185	.11422	.13666	2.5694
#1	.21253	4.9457	.20102	1.0067	.54076	.02511	185.70	.02604
#2	.21285	4.8936	.20243	1.0041	.54159	.02508	185.50	.02636
#3	.21336	4.9522	.20438	1.0131	.53768	.02514	185.19	.02735
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10613	.26394	.24846	2.1400	36.999	.56694	196.47	1.1313
Stddev	.00181	.00100	.00369	.0237	.078	.00077	.07	.0050
%RSD	1.7055	.37751	1.4862	1.1072	.21070	.13575	.03457	.43918
#1	.10579	.26288	.24774	2.1386	37.038	.56719	196.40	1.1301
#2	.10452	.26485	.24517	2.1644	37.050	.56755	196.53	1.1271
#3	.10809	.26410	.25245	2.1170	36.910	.56607	196.47	1.1368
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52806	33.887	.27079	5.1744	.24727	.62333	.19740	4.5601
Stddev	.00757	.048	.00334	.0937	.00221	.00902	.00339	.0343
%RSD	1.4342	.14206	1.2332	1.8101	.89424	1.4475	1.7165	.75237
#1	.52424	33.832	.27102	5.1318	.24900	.62250	.19374	4.5475
#2	.52316	33.915	.26735	5.1096	.24478	.61475	.20043	4.5338
#3	.53678	33.916	.27402	5.2818	.24803	.63274	.19802	4.5989
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 26, 2015

Sample Name: L1502105223MS Acquired: 2/25/2015 15:00:04 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513110-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50880	1.2284	.51822	.24882	.51859	.50746	.03497
Stddev	.00239	.0018	.00118	.00080	.00193	.00095	1.4561
%RSD	.46934	.14643	.22714	.32278	.37301	.18681	4164.5
#1	.50708	1.2288	.51815	.24809	.51785	.50726	.44738
#2	.50779	1.2299	.51943	.24870	.51713	.50849	-1.5829
#3	.51153	1.2264	.51708	.24968	.52078	.50662	1.2404
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	9717.0	9981.1
Stddev	10.3	20.4
%RSD	.10617	.20427
#1	9705.4	9976.0
#2	9725.1	10004.
#3	9720.6	9963.7

Approved: February 26, 2015

Sample Name: L1502105225 Acquired: 2/25/2015 15:03:28 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00093	.03990	-.00255	.02890	.00989	-.00007	282.87	.00143
Stddev	.00064	.00056	.00150	.00104	.00022	.00002	2.52	.00009
%RSD	68.467	1.4062	58.885	3.6149	2.1905	23.277	.89089	6.4576
#1	.00037	.03979	-.00091	.02920	.00964	-.00006	279.97	.00132
#2	.00162	.03940	-.00386	.02976	.01003	-.00008	284.23	.00149
#3	.00080	.04051	-.00289	.02774	.01000	-.00006	284.43	.00147
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00090	.00074	-.00069	.09327	13.248	.03293	245.63	.17634
Stddev	.00026	.00053	.00060	.00256	.162	.00162	2.21	.00152
%RSD	29.124	71.604	86.720	2.7473	1.2226	4.9307	.89852	.86258
#1	.00063	.00121	-.00009	.09211	13.064	.03230	243.11	.17534
#2	.00092	.00086	-.00070	.09149	13.311	.03171	246.59	.17560
#3	.00115	.00016	-.00129	.09621	13.369	.03477	247.21	.17809
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00139	7.1647	.00941	.00527	-.00097	.00052	.00551	1.9825
Stddev	.00003	.0635	.00022	.00301	.00347	.00292	.00541	.0441
%RSD	2.3808	.88556	2.3290	57.195	357.70	560.78	98.156	2.2258
#1	.00136	7.0935	.00916	.00228	-.00462	.00294	.01032	1.9659
#2	.00142	7.2153	.00950	.00522	-.00057	.00135	.00657	2.0325
#3	.00138	7.1853	.00958	.00831	.00228	-.00273	-.00035	1.9491
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 26, 2015

Sample Name: L1502105225 Acquired: 2/25/2015 15:03:28 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00064	1.6935	-.01233	.00165	-.00018	.00755	1.7413
Stddev	.00015	.0171	.00095	.00096	.00020	.00028	.6846
%RSD	22.820	1.0082	7.7407	58.265	111.96	3.7660	39.318
#1	-.00081	1.6738	-.01123	.00258	.00005	.00735	.95524
#2	-.00061	1.7026	-.01292	.00171	-.00030	.00788	2.0614
#3	-.00052	1.7041	-.01285	.00066	-.00028	.00743	2.2073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	9690.6	10094.
Stddev	18.4	72.
%RSD	.18969	.70990
#1	9676.4	10166.
#2	9711.4	10092.
#3	9684.0	10023.

Approved: February 26, 2015

Sample Name: CCV Acquired: 2/25/2015 15:07:05 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40996	9.8289	.41349	.50428	1.0561	.05063	10.667
Stddev	.00303	.0966	.00485	.00211	.0160	.00018	.186
%RSD	.73994	.98273	1.1720	.41902	1.5182	.34649	1.7413
#1	.40879	9.9404	.41623	.50497	1.0732	.05072	10.880
#2	.40769	9.7756	.40789	.50190	1.0415	.05074	10.540
#3	.41340	9.7707	.41634	.50595	1.0536	.05043	10.581
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05116	.20482	.51640	.50970	4.1398	52.992	1.0465
Stddev	.00044	.00147	.00127	.00381	.0354	.774	.0148
%RSD	.85705	.71745	.24511	.74762	.85582	1.4614	1.4124
#1	.05146	.20565	.51783	.51120	4.1756	53.874	1.0633
#2	.05066	.20312	.51591	.50536	4.1048	52.424	1.0352
#3	.05137	.20568	.51544	.51252	4.1390	52.677	1.0411
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.112	.51221	1.0211	53.372	.51813	10.188	.51906
Stddev	.232	.00558	.0018	1.066	.00386	.054	.00749
%RSD	2.2921	1.0889	.17210	1.9976	.74529	.53383	1.4436
#1	10.380	.51854	1.0215	54.528	.51774	10.160	.52396
#2	9.9842	.51008	1.0192	53.160	.51447	10.153	.51043
#3	9.9731	.50801	1.0227	52.428	.52217	10.251	.52279
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 26, 2015

Sample Name: CCV Acquired: 2/25/2015 15:07:05 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2399	.40714	5.1252	1.0227	1.0654	1.0384	.52834
Stddev	.0099	.00039	.0075	.0060	.0221	.0181	.00570
%RSD	.79622	.09688	.14642	.58600	2.0725	1.7386	1.0785
#1	1.2455	.40669	5.1273	1.0267	1.0899	1.0588	.53130
#2	1.2285	.40730	5.1315	1.0158	1.0593	1.0323	.52178
#3	1.2458	.40742	5.1169	1.0256	1.0470	1.0243	.53196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0027	.99808	F .23343
Stddev	.0031	.00314	2.2514
%RSD	.31171	.31508	964.52
#1	1.0026	.99651	-2.3638
#2	.99972	.99604	1.4319
#3	1.0060	1.0017	1.6321
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10482.	10359.
Stddev	16.	114.
%RSD	.15427	1.0981
#1	10478.	10236.
#2	10500.	10380.
#3	10469.	10461.

Approved: February 26, 2015

Sample Name: CCB Acquired: 2/25/2015 15:10:20 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	-.00798	.00141	.00234	-.00002	-.00005	.00685
Stddev	.00026	.00300	.00162	.00079	.00023	.00002	.00572
%RSD	526.71	37.612	114.95	33.697	959.50	31.171	83.468
#1	-.00031	-.00727	.00245	.00180	.00013	-.00007	.00772
#2	.00021	-.00540	.00222	.00324	-.00028	-.00004	.00075
#3	-.00004	-.01128	-.00046	.00197	.00008	-.00006	.01208
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.00010	.00058	-.00030	.00698	.02101	.00113
Stddev	.00020	.00018	.00047	.00044	.00691	.02820	.00071
%RSD	280.15	177.41	80.565	145.37	99.001	134.24	62.605
#1	-.00006	.00003	.00076	-.00045	.01286	-.01045	.00168
#2	.00012	.00030	.00005	.00019	-.00063	.04403	.00033
#3	-.00027	-.00003	.00092	-.00065	.00870	.02943	.00137
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.02640	.00000	.00463	-.02281	.00032	-.00645	-.00106
Stddev	.01308	.00007	.00017	.00689	.00117	.00555	.00234
%RSD	49.535	2244.1	3.7152	30.196	370.19	86.057	220.99
#1	-.01135	-.00003	.00443	-.02832	.00077	-.01254	-.00359
#2	-.03290	-.00004	.00471	-.01509	-.00102	-.00515	-.00062
#3	-.03496	.00008	.00475	-.02501	.00119	-.00167	.00103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: CCB Acquired: 2/25/2015 15:10:20 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00168	-.00011	-.00580	.00021	.00021	-.00089	.00139
Stddev	.00055	.00227	.00058	.00022	.00008	.00083	.00063
%RSD	32.740	2091.9	9.9370	102.94	38.675	93.119	45.416
#1	.00198	-.00208	-.00559	-.00004	.00021	-.00153	.00081
#2	.00201	-.00063	-.00645	.00036	.00012	.00005	.00206
#3	.00104	.00238	-.00535	.00032	.00028	-.00119	.00129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00011	-.00021	F -.14144
Stddev	.00037	.00022	1.2228
%RSD	331.56	106.47	864.48
#1	.00003	.00003	-.58394
#2	.00052	-.00041	-1.0814
#3	-.00021	-.00023	1.2410
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10413.	10079.
Stddev	36.	38.
%RSD	.34405	.38045
#1	10374.	10059.
#2	10421.	10124.
#3	10444.	10056.

Approved: February 26, 2015

Sample Name: L1502105227 Acquired: 2/25/2015 15:14:00 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00103	.03503	-.00185	.01023	.00480	-.00007	22.244
Stddev	.00068	.00408	.00068	.00049	.00046	.00002	.512
%RSD	65.796	11.634	36.717	4.8003	9.5589	27.872	2.3011
#1	.00034	.03034	-.00234	.00996	.00427	-.00009	21.936
#2	.00169	.03768	-.00108	.01080	.00499	-.00006	21.961
#3	.00105	.03707	-.00215	.00993	.00513	-.00005	22.835
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.00081	.00045	.00012	.01943	7.9962	.02983
Stddev	.00005	.00025	.00066	.00034	.01609	.3102	.00187
%RSD	14.358	30.649	146.61	281.46	82.820	3.8795	6.2672
#1	.00027	.00108	.00107	.00026	.03464	8.1663	.02776
#2	.00036	.00077	-.00025	.00037	.02107	8.1840	.03140
#3	.00033	.00059	.00053	-.00027	.00258	7.6381	.03031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.6269	.03606	.00108	190.96	.00477	F -.00636	-.00016
Stddev	.2332	.00130	.00028	37.00	.00077	.00664	.00069
%RSD	3.5189	3.6011	26.188	19.377	16.236	104.44	421.82
#1	6.4605	.03526	.00102	214.28	.00547	-.01016	-.00060
#2	6.5269	.03537	.00138	210.31	.00394	-.01023	.00063
#3	6.8935	.03756	.00083	148.29	.00490	.00131	-.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502105227 Acquired: 2/25/2015 15:14:00 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00173	.00215	2.2237	-.00070	.11865	-.00149	-.00002
Stddev	.00248	.00287	.0980	.00067	.00234	.00138	.00184
%RSD	143.64	133.64	4.4078	96.402	1.9682	92.814	8532.0
#1	.00158	.00274	2.2823	.00005	.12007	-.00224	-.00105
#2	.00428	.00469	2.2782	-.00125	.11992	-.00232	.00210
#3	-.00068	-.00097	2.1105	-.00089	.11595	.00011	-.00111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00027	.00627	1.2290
Stddev	.00042	.00029	.4460
%RSD	155.63	4.6246	36.287
#1	.00062	.00638	1.3094
#2	-.00019	.00648	.74834
#3	.00038	.00594	1.6294
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10125.	9933.7
Stddev	37.	353.2
%RSD	.36096	3.5554
#1	10083.	10130.
#2	10150.	10145.
#3	10141.	9526.0

Approved: February 26, 2015

Sample Name: L1502105229 Acquired: 2/25/2015 15:17:35 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.02444	-.00143	.00978	.01221	-.00009	117.23
Stddev	.00060	.00126	.00238	.00137	.00027	.00002	.72
%RSD	248.67	5.1737	165.82	14.028	2.1897	25.840	.61556
#1	.00083	.02512	-.00276	.00829	.01221	-.00008	116.40
#2	-.00037	.02522	-.00285	.01008	.01248	-.00007	117.65
#3	.00026	.02298	.00131	.01098	.01195	-.00011	117.64
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00110	.00058	.00106	-.00058	.02946	7.9262	.02105
Stddev	.00008	.00025	.00071	.00042	.00458	.1006	.00147
%RSD	7.2148	42.653	66.762	72.591	15.531	1.2686	6.9607
#1	.00106	.00041	.00025	-.00011	.02418	7.8872	.02248
#2	.00119	.00086	.00155	-.00092	.03231	8.0404	.01955
#3	.00104	.00045	.00139	-.00072	.03188	7.8510	.02114
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	83.266	.03818	.00048	2.5523	.00630	F -.00617	.00193
Stddev	.337	.00026	.00060	.0137	.00103	.00823	.00165
%RSD	.40481	.69268	125.85	.53720	16.420	133.29	85.481
#1	82.934	.03805	.00048	2.5484	.00587	.00062	.00247
#2	83.608	.03848	-.00012	2.5675	.00556	-.01533	.00008
#3	83.257	.03801	.00108	2.5409	.00748	-.00382	.00324
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502105229 Acquired: 2/25/2015 15:17:35 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00045**	**.00429**	**2.3028**	**-.00027**	**.33625**	**-.00528**	**.00092**
Stddev	.00014	.00030	.0447	.00045	.00218	.00192	.00193
%RSD	29.958	6.9845	1.9400	169.28	.64704	36.361	209.09
#1	-.00054	.00430	2.3542	-.00035	.33374	-.00636	.00306
#2	-.00030	.00458	2.2810	.00022	.33735	-.00306	-.00071
#3	-.00053	.00398	2.2733	-.00067	.33765	-.00640	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00008**	**.00286**	F **-2.1513**
Stddev	.00012	.00008	.9018
%RSD	150.99	2.6825	41.917
#1	.00021	.00292	-2.3158
#2	.00004	.00290	-1.1786
#3	-.00002	.00278	-2.9595
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10033.**	**10145.**
Stddev	8.	75.
%RSD	.08234	.73804
#1	10030.	10210.
#2	10042.	10063.
#3	10026.	10161.

Approved: February 26, 2015

Sample Name: L1502105701 Acquired: 2/25/2015 15:21:08 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	.07384	-.00030	26.869	.04850	-.00019	41.854
Stddev	.00024	.00079	.00062	.401	.00026	.00004	.033
%RSD	155.79	1.0750	207.34	1.4921	.53148	23.685	.07939
#1	.00002	.07419	-.00029	27.180	.04876	-.00016	41.832
#2	-.00006	.07439	.00032	27.011	.04825	-.00016	41.892
#3	-.00042	.07293	-.00092	26.416	.04848	-.00024	41.837
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	.00166	.00061	.00149	.02829	4.5071	.00876
Stddev	.00006	.00004	.00043	.00022	.01718	.1224	.00211
%RSD	21.301	2.6624	71.349	14.630	60.744	2.7155	24.060
#1	.00035	.00170	.00028	.00124	.04360	4.5509	.00813
#2	.00025	.00165	.00110	.00162	.00971	4.3688	.01111
#3	.00025	.00162	.00045	.00162	.03155	4.6016	.00703
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.010	.28229	.00200	F 425.53	.00492	.59762	.00150
Stddev	.089	.01249	.00019	60.50	.00107	.00935	.00137
%RSD	.88539	4.4236	9.2317	14.217	21.765	1.5646	91.348
#1	9.9615	.28562	.00207	467.46	.00369	.59781	.00178
#2	10.112	.29277	.00214	356.18	.00547	.58817	.00270
#3	9.9565	.26847	.00179	452.95	.00560	.60687	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				360.00			
Low Limit				-.40000			

Approved: February 26, 2015

Sample Name: L1502105701 Acquired: 2/25/2015 15:21:08 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00239**	**-.00135**	**4.5970**	**-.00066**	**.27826**	**-.00176**	**.00023**
Stddev	.00273	.00263	.1534	.00072	.00342	.00142	.00202
%RSD	114.08	194.46	3.3370	109.26	1.2298	80.760	893.69
#1	-.00258	-.00438	4.4347	-.00150	.28027	-.00194	.00127
#2	.00043	.00035	4.6169	-.00030	.27431	-.00308	.00152
#3	-.00502	-.00003	4.7396	-.00019	.28019	-.00026	-.00210
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00043**	**.03441**	F **-1.3202**
Stddev	.00023	.00047	1.6769
%RSD	54.059	1.3534	127.02
#1	.00016	.03415	-3.0205
#2	.00053	.03413	.33218
#3	.00058	.03495	-1.2722
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**9782.7**	**10067.**
Stddev	54.3	183.
%RSD	.55529	1.8216
#1	9720.0	10090.
#2	9815.3	9873.9
#3	9812.8	10239.

Approved: February 26, 2015

Sample Name: L1502106801 Acquired: 2/25/2015 15:24:45 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	-.00005	-.00195	.19759	.00788	-.00015	71.990	.00048
Stddev	.00056	.00109	.00171	.00571	.00022	.00004	.386	.00008
%RSD	62.744	2024.6	87.573	2.8920	2.8267	23.488	.53674	16.085
#1	.00102	-.00131	-.00031	.20256	.00808	-.00011	71.814	.00039
#2	.00028	.00059	-.00371	.19887	.00764	-.00018	71.722	.00052
#3	.00137	.00056	-.00183	.19135	.00792	-.00016	72.433	.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	.00092	-.00034	.85758	3.6465	.03263	16.921	.39639
Stddev	.00009	.00063	.00020	.00596	.1318	.00217	.220	.01011
%RSD	25.962	68.468	57.803	.69481	3.6149	6.6394	1.3020	2.5497
#1	-.00030	.00114	-.00024	.86445	3.7100	.03072	16.838	.38978
#2	-.00032	.00021	-.00021	.85445	3.7345	.03498	16.755	.39136
#3	-.00047	.00141	-.00057	.85383	3.4949	.03218	17.171	.40802
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00125	245.60	.00055	-.00125	-.00282	-.00140	.00194	3.5123
Stddev	.00022	45.78	.00037	.00746	.00082	.00147	.00449	.1652
%RSD	17.399	18.641	67.875	594.99	29.110	104.75	232.02	4.7045
#1	.00143	272.04	.00085	.00732	-.00262	-.00214	.00229	3.3239
#2	.00101	272.03	.00013	-.00484	-.00372	.00029	.00624	3.5800
#3	.00131	192.74	.00067	-.00624	-.00212	-.00236	-.00272	3.6329
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 26, 2015

Sample Name: L1502106801 Acquired: 2/25/2015 15:24:45 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00072**	**.98651**	**-.00393**	**-.00140**	**.00004**	**.00181**	**.24351**
Stddev	.00019	.00369	.00151	.00290	.00004	.00019	2.5489
%RSD	26.118	.37354	38.287	207.64	119.06	10.529	1046.7
#1	-.00079	.98517	-.00226	-.00373	-.00001	.00171	-.80530
#2	-.00050	.98369	-.00437	.00185	.00006	.00169	-1.6136
#3	-.00086	.99068	-.00517	-.00232	.00006	.00203	3.1495
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10054.**	**10172.**
Stddev	56.	191.
%RSD	.56074	1.8760
#1	9990.3	10248.
#2	10078.	10314.
#3	10096.	9955.2

Approved: February 26, 2015

Sample Name: L1502107001 Acquired: 2/25/2015 15:28:22 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	.01396	-.00212	.08821	.03256	-.00013	55.960	.00040
Stddev	.00042	.00111	.00257	.00158	.00023	.00000	.287	.00003
%RSD	48.330	7.9219	121.02	1.7863	.70935	1.6308	.51250	7.2924
#1	.00133	.01283	-.00432	.08790	.03231	-.00014	55.646	.00043
#2	.00049	.01504	.00070	.08682	.03277	-.00013	56.025	.00039
#3	.00082	.01401	-.00274	.08992	.03259	-.00013	56.208	.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.00044	.00017	.41878	2.1995	.01068	11.588	.04836
Stddev	.00028	.00036	.00058	.00257	.0503	.00040	.146	.00058
%RSD	812.89	80.849	351.96	.61348	2.2882	3.7714	1.2561	1.1955
#1	-.00012	.00063	-.00032	.41687	2.1910	.01093	11.473	.04828
#2	-.00026	.00067	.00001	.41777	2.1539	.01089	11.540	.04783
#3	.00028	.00003	.00081	.42170	2.2535	.01022	11.751	.04897
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	61.377	.00131	-.00176	.00025	-.00149	.00149	2.5667
Stddev	.00004	.308	.00032	.00802	.00222	.00213	.00599	.1177
%RSD	7.6522	.50148	24.127	456.80	872.30	143.41	402.36	4.5844
#1	.00061	61.067	.00112	.00714	-.00074	-.00367	-.00103	2.7022
#2	.00055	61.382	.00113	-.00843	-.00130	-.00137	.00832	2.4912
#3	.00053	61.682	.00167	-.00398	.00280	.00059	-.00283	2.5065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 26, 2015

Sample Name: L1502107001 Acquired: 2/25/2015 15:28:22 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00063**	**1.0741**	**-.00257**	**.00095**	**.00013**	**.00170**	**.97539**
Stddev	.00039	.0047	.00102	.00113	.00046	.00011	1.0406
%RSD	61.632	.43598	39.763	118.59	345.39	6.4916	106.68
#1	-.00053	1.0689	-.00344	.00046	.00065	.00178	-.22610
#2	-.00030	1.0755	-.00282	.00015	-.00023	.00157	1.5864
#3	-.00106	1.0780	-.00144	.00224	-.00002	.00174	1.5658
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10148.**	**10452.**
Stddev	56.	32.
%RSD	.55042	.30332
#1	10084.	10475.
#2	10175.	10465.
#3	10185.	10416.

Approved: February 26, 2015

Sample Name: L1502107002 Acquired: 2/25/2015 15:31:55 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	.03171	-.00057	.05423	.00936	-.00012	122.70
Stddev	.00018	.00169	.00175	.00165	.00012	.00001	3.17
%RSD	25.091	5.3136	305.83	3.0410	1.2960	9.2622	2.5811
#1	.00059	.03036	.00019	.05575	.00925	-.00011	119.64
#2	.00068	.03360	.00067	.05447	.00949	-.00013	122.51
#3	.00094	.03118	-.00257	.05248	.00934	-.00012	125.96
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	.00041	.00084	-.00070	.04887	2.4654	.01944
Stddev	.00002	.00020	.00063	.00016	.00466	.0445	.00153
%RSD	3.3666	47.395	75.379	22.589	9.5427	1.8052	7.8647
#1	.00067	.00032	.00129	-.00056	.04884	2.4140	.01768
#2	.00067	.00064	.00111	-.00087	.04422	2.4904	.02021
#3	.00063	.00028	.00012	-.00066	.05354	2.4918	.02044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	23.524	.14716	.00014	17.099	.00244	F -.00455	-.00047
Stddev	.388	.00082	.00018	.310	.00083	.00573	.00271
%RSD	1.6492	.55938	124.18	1.8115	33.937	125.96	581.08
#1	23.212	.14626	.00001	16.836	.00257	-.00016	.00041
#2	23.402	.14733	.00007	17.021	.00155	-.00245	-.00350
#3	23.958	.14788	.00035	17.441	.00319	-.01103	.00169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502107002 Acquired: 2/25/2015 15:31:55 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00105**	**.00058**	**2.8755**	**-.00036**	**2.0778**	**-.00479**	**.00165**
Stddev	.00064	.00500	.0136	.00048	.0442	.00227	.00129
%RSD	61.265	866.75	.47263	131.44	2.1278	47.384	78.218
#1	-.00092	.00630	2.8887	-.00059	2.0371	-.00345	.00194
#2	-.00048	-.00159	2.8615	-.00069	2.0714	-.00352	.00024
#3	-.00174	-.00298	2.8763	.00019	2.1249	-.00742	.00278
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00012**	**.00249**	**1.3157**
Stddev	.00019	.00015	.8436
%RSD	159.20	6.0318	64.117
#1	.00009	.00261	1.8675
#2	-.00028	.00255	.34462
#3	-.00018	.00232	1.7351
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10203.**	**10304.**
Stddev	11.	40.
%RSD	.10357	.39004
#1	10191.	10327.
#2	10212.	10328.
#3	10206.	10258.

Approved: February 26, 2015

Sample Name: L1502108101 Acquired: 2/25/2015 15:35:28 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	.03650	-.00371	.04346	.01200	-.00012	111.26	.00073
Stddev	.00090	.00131	.00140	.00108	.00006	.00003	.85	.00002
%RSD	557.18	3.5874	37.777	2.4880	.50563	21.035	.76565	3.4159
#1	.00008	.03506	-.00513	.04271	.01207	-.00014	112.18	.00074
#2	-.00116	.03681	-.00233	.04470	.01199	-.00009	110.51	.00075
#3	.00060	.03763	-.00368	.04297	.01195	-.00013	111.07	.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	.00041	-.00040	.09284	3.0074	.00890	25.109	.07843
Stddev	.00020	.00023	.00071	.00301	.0314	.00159	.154	.00062
%RSD	32.995	56.750	179.69	3.2447	1.0426	17.891	.61247	.79435
#1	.00081	.00014	-.00069	.08937	3.0330	.01012	25.273	.07802
#2	.00042	.00050	.00041	.09454	2.9724	.00710	24.967	.07812
#3	.00058	.00058	-.00091	.09463	3.0167	.00948	25.088	.07915
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	197.00	.00731	-.00188	.00117	.00101	.00060	2.4722
Stddev	.00021	2.00	.00015	.00704	.00222	.00133	.00205	.0889
%RSD	370.56	1.0139	2.1199	375.12	188.91	131.68	341.11	3.5977
#1	.00003	199.21	.00741	-.00849	.00098	.00174	.00174	2.3695
#2	.00027	195.31	.00713	.00553	-.00094	.00183	-.00177	2.5257
#3	-.00014	196.49	.00739	-.00267	.00348	-.00053	.00183	2.5214
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 26, 2015

Sample Name: L1502108101 Acquired: 2/25/2015 15:35:28 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00056**	**.41776**	**-.00529**	**-.00045**	**-.00008**	**.01004**	**1.8871**
Stddev	.00039	.00442	.00120	.00219	.00032	.00055	1.0693
%RSD	69.481	1.0577	22.631	485.00	422.59	5.4692	56.666
#1	-.00094	.42257	-.00664	.00155	-.00044	.00941	2.9996
#2	-.00016	.41387	-.00491	-.00279	.00010	.01030	.86685
#3	-.00058	.41685	-.00434	-.00011	.00011	.01041	1.7949
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10012.**	**10282.**
Stddev	45.	52.
%RSD	.44599	.50377
#1	9961.1	10236.
#2	10028.	10338.
#3	10046.	10271.

Approved: February 26, 2015

Sample Name: CCV Acquired: 2/25/2015 15:39:03 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41256	10.126	.41709	.51775	1.0854	.05070	11.000
Stddev	.00181	.380	.00210	.00518	.0376	.00007	.406
%RSD	.43876	3.7492	.50356	1.0006	3.4664	.13320	3.6884
#1	.41237	10.023	.41764	.51861	1.0765	.05072	10.896
#2	.41446	9.8081	.41477	.52244	1.0529	.05075	10.656
#3	.41085	10.546	.41886	.51219	1.1266	.05062	11.447
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05128	.20611	.51712	.51215	4.2059	54.502	1.0774
Stddev	.00020	.00084	.00304	.00154	.1562	1.956	.0333
%RSD	.38449	.40646	.58875	.30127	3.7142	3.5881	3.0874
#1	.05139	.20586	.51781	.51217	4.1568	54.029	1.0693
#2	.05140	.20704	.51977	.51368	4.0802	52.826	1.0489
#3	.05106	.20543	.51380	.51060	4.3808	56.651	1.1139
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.328	.52370	1.0244	F 55.256	.52066	10.207	.51926
Stddev	.398	.01955	.0040	2.061	.00241	.031	.00100
%RSD	3.8494	3.7330	.38792	3.7306	.46285	.30502	.19307
#1	10.237	.51678	1.0242	54.770	.51812	10.180	.51937
#2	9.9839	.50856	1.0285	53.481	.52292	10.241	.52021
#3	10.763	.54578	1.0206	57.517	.52094	10.200	.51821
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value				50.000			
Range				10.000%			

Approved: February 26, 2015

Sample Name: CCV Acquired: 2/25/2015 15:39:03 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2545	.41064	5.1603	1.0271	F 1.1013	1.0711	.53081
Stddev	.0017	.00547	.0158	.0045	.0385	.0383	.00500
%RSD	.13641	1.3311	.30634	.43521	3.4982	3.5747	.94138
#1	1.2559	.41694	5.1565	1.0259	1.0923	1.0628	.52771
#2	1.2526	.40716	5.1777	1.0321	1.0680	1.0376	.53658
#3	1.2550	.40782	5.1468	1.0234	1.1435	1.1128	.52815
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
Value					1.0000		
Range					10.000%		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0074	.99462	F -.37127
Stddev	.0059	.00374	2.5645
%RSD	.58739	.37637	690.74
#1	1.0071	.99158	-2.2020
#2	1.0135	.99880	2.5598
#3	1.0017	.99350	-1.4716
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10462.	10151.
Stddev	31.	389.
%RSD	.29725	3.8342
#1	10468.	10284.
#2	10428.	10457.
#3	10490.	9713.2

Approved: February 26, 2015

Sample Name: CCB Acquired: 2/25/2015 15:42:19 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	-.01150	.00065	.00944	-.00027	-.00008	-.00380
Stddev	.00046	.00188	.00002	.00049	.00025	.00002	.00614
%RSD	61.356	16.333	3.1332	5.1925	93.185	20.449	161.68
#1	.00061	-.00973	.00063	.01000	-.00029	-.00008	-.00685
#2	.00126	-.01129	.00067	.00923	-.00051	-.00006	.00327
#3	.00037	-.01347	.00065	.00909	-.00001	-.00009	-.00781
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00004	.00044	-.00077	.00126	.03774	.00174
Stddev	.00009	.00008	.00040	.00012	.01333	.05835	.00170
%RSD	157.95	187.56	90.748	16.312	1058.6	154.61	97.612
#1	-.00002	-.00002	.00089	-.00063	.00190	.04972	-.00017
#2	.00016	.00002	.00016	-.00087	-.01238	-.02567	.00233
#3	.00003	.00013	.00026	-.00080	.01426	.08918	.00307
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00169	.00007	.00490	-.00368	.00062	-.00518	-.00103
Stddev	.00619	.00007	.00032	.00569	.00044	.00287	.00167
%RSD	365.55	106.02	6.5761	154.35	70.320	55.396	163.07
#1	.00861	.00015	.00454	-.00137	.00075	-.00798	-.00126
#2	-.00024	.00005	.00514	-.01017	.00014	-.00225	.00075
#3	-.00330	.00001	.00504	.00048	.00099	-.00529	-.00257
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: CCB Acquired: 2/25/2015 15:42:19 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00408	.00309	-.00486	-.00030	.00006	-.00077	.00243
Stddev	.00319	.00346	.00149	.00040	.00004	.00006	.00114
%RSD	78.192	111.81	30.723	133.84	61.167	7.5425	47.131
#1	.00314	.00429	-.00653	-.00076	.00007	-.00082	.00278
#2	.00764	-.00080	-.00442	-.00001	.00002	-.00080	.00115
#3	.00147	.00580	-.00364	-.00013	.00009	-.00071	.00336
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00023	-.00007	F 1.1846
Stddev	.00019	.00008	1.5161
%RSD	80.449	112.44	127.98
#1	.00044	-.00015	2.8928
#2	.00012	.00001	-.00144
#3	.00013	-.00008	.66250
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10402.	10244.
Stddev	9.	32.
%RSD	.08239	.31084
#1	10394.	10240.
#2	10401.	10278.
#3	10411.	10215.

Approved: February 26, 2015

Sample Name: PBW 75 Acquired: 2/25/2015 15:45:59 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513100-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00044	-.00986	-.00154	.00581	-.00054	-.00007	.02351
Stddev	.00078	.00161	.00119	.00084	.00015	.00002	.00239
%RSD	178.41	16.335	77.708	14.461	27.173	27.434	10.168
#1	.00133	-.01115	-.00291	.00485	-.00070	-.00006	.02216
#2	-.00010	-.01039	-.00093	.00644	-.00041	-.00005	.02211
#3	.00008	-.00805	-.00077	.00613	-.00051	-.00009	.02627
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	-.00010	.00033	.00004	-.00098	.02717	.00073
Stddev	.00010	.00026	.00040	.00073	.00279	.05202	.00222
%RSD	43.532	259.63	119.84	1806.4	285.34	191.46	302.20
#1	.00015	.00011	.00073	.00086	-.00410	.03577	.00035
#2	.00035	-.00001	-.00007	-.00022	-.00013	-.02861	-.00127
#3	.00020	-.00039	.00034	-.00052	.00129	.07435	.00312
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00666	.00023	.00137	-.00610	.00135	F -.01091	-.00005
Stddev	.01274	.00005	.00011	.00436	.00099	.00208	.00022
%RSD	191.15	22.295	8.1448	71.515	73.253	19.081	461.50
#1	.00109	.00019	.00124	-.00593	.00249	-.01211	-.00009
#2	.00028	.00028	.00141	-.00183	.00071	-.00850	-.00025
#3	-.02136	.00021	.00145	-.01055	.00085	-.01210	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: PBW 75 Acquired: 2/25/2015 15:45:59 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513100-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00164	.00230	-.00126	-.00055	.00012	-.00075	-.00018
Stddev	.00207	.00106	.00046	.00018	.00005	.00186	.00046
%RSD	126.44	45.875	36.861	32.651	42.857	247.38	264.68
#1	.00351	.00326	-.00091	-.00058	.00016	.00000	.00006
#2	.00200	.00248	-.00108	-.00036	.00015	-.00287	.00013
#3	-.00059	.00117	-.00178	-.00071	.00006	.00061	-.00071
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00003	.00205	.93548
Stddev	.00029	.00012	1.0829
%RSD	1042.5	5.7572	115.76
#1	-.00036	.00215	.35218
#2	.00009	.00209	2.1850
#3	.00019	.00192	.26927
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10424.	10309.
Stddev	12.	47.
%RSD	.11618	.45194
#1	10438.	10358.
#2	10415.	10266.
#3	10420.	10302.

Approved: February 26, 2015

Sample Name: LCSW 75 Acquired: 2/25/2015 15:49:35 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513100-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.17075	5.2805	-.00011	.00422	-.00060	.02707	5.6836
Stddev	.00351	.1406	.00131	.00109	.00037	.00045	.0732
%RSD	2.0547	2.6626	1199.5	25.910	61.595	1.6728	1.2870
#1	.16679	5.1201	-.00136	.00548	-.00097	.02656	5.6572
#2	.17347	5.3388	-.00022	.00350	-.00059	.02743	5.6273
#3	.17200	5.3825	.00125	.00368	-.00023	.02722	5.7663
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	-.00029	-.00004	-.00016	2.2066	27.920	.00107
Stddev	.00023	.00022	.00022	.00023	.0259	.248	.00003
%RSD	70.579	77.153	541.55	141.54	1.1729	.88964	2.4709
#1	.00059	-.00037	.00003	-.00001	2.1857	27.781	.00105
#2	.00026	-.00004	.00013	-.00043	2.1985	27.772	.00105
#3	.00014	-.00046	-.00029	-.00005	2.2356	28.206	.00110
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.3191	.27004	.00046	27.844	.00137	F -.01710	.00148
Stddev	.0819	.00221	.00005	.018	.00084	.00728	.00192
%RSD	1.5393	.81686	11.778	.06517	61.227	42.582	129.98
#1	5.2833	.26750	.00041	27.849	.00049	-.02435	.00199
#2	5.2611	.27113	.00046	27.824	.00216	-.01716	.00309
#3	5.4127	.27149	.00052	27.859	.00145	-.00979	-.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: LCSW 75 Acquired: 2/25/2015 15:49:35 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513100-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00191**	**.00376**	**-.00359**	**-.00044**	**.00016**	**-.00047**	**.00202**
Stddev	.00188	.00284	.00154	.00056	.00017	.00155	.00075
%RSD	98.439	75.336	42.749	127.09	110.77	330.84	37.078
#1	-.00334	.00284	-.00308	.00017	.00026	.00049	.00231
#2	-.00260	.00151	-.00532	-.00055	.00025	-.00226	.00257
#3	.00022	.00695	-.00238	-.00093	-.00004	.00036	.00117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00019**	**.00190**	**1.6496**
Stddev	.00036	.00029	.1773
%RSD	183.54	15.087	10.750
#1	-.00005	.00216	1.4787
#2	.00060	.00159	1.8327
#3	.00003	.00194	1.6373
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10306.**	**10271.**
Stddev	11.	40.
%RSD	.10339	.39254
#1	10296.	10291.
#2	10306.	10298.
#3	10317.	10225.

Approved: February 26, 2015

Sample Name: L1502103517 Acquired: 2/25/2015 15:53:09 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513100-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.01526	-.00360	.00393	.01291	-.00007	2.1656
Stddev	.00044	.00112	.00111	.00122	.00044	.00003	.0415
%RSD	933.34	7.3586	30.894	31.105	3.3972	36.480	1.9139
#1	.00052	.01576	-.00232	.00252	.01284	-.00004	2.1396
#2	-.00034	.01397	-.00431	.00466	.01337	-.00007	2.2134
#3	-.00004	.01604	-.00417	.00461	.01250	-.00010	2.1438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	-.00032	.00029	-.00053	.06749	.27376	-.00086
Stddev	.00010	.00024	.00029	.00085	.00271	.02962	.00155
%RSD	31.036	74.140	102.60	158.87	4.0106	10.819	181.30
#1	.00026	-.00024	.00017	-.00032	.06567	.29101	-.00006
#2	.00028	-.00014	.00007	-.00147	.07060	.23956	-.00264
#3	.00045	-.00060	.00062	.00019	.06620	.29072	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.1825	.00269	.00038	.47339	.00327	F -.00938	-.00027
Stddev	.0007	.00005	.00013	.00077	.00072	.00417	.00184
%RSD	.05765	1.7380	33.155	.16176	22.119	44.457	683.75
#1	1.1817	.00266	.00035	.47424	.00384	-.00813	-.00187
#2	1.1830	.00268	.00027	.47276	.00246	-.00598	.00175
#3	1.1828	.00275	.00052	.47316	.00350	-.01403	-.00068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502103517 Acquired: 2/25/2015 15:53:09 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513100-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00158**	**-.00237**	**1.0941**	**-.00043**	**.01672**	**.00017**	**.00092**
Stddev	.00253	.00225	.0250	.00055	.00025	.00135	.00199
%RSD	160.64	94.992	2.2866	129.25	1.4730	781.37	215.59
#1	-.00429	.00020	1.1088	-.00045	.01645	-.00125	.00183
#2	-.00116	-.00335	1.0652	.00013	.01694	.00034	.00230
#3	.00072	-.00397	1.1082	-.00097	.01677	.00143	-.00136
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00015**	**.01106**	F **-.00978**
Stddev	.00042	.00042	.87815
%RSD	282.31	3.7580	8977.9
#1	-.00064	.01142	-.71310
#2	.00012	.01060	-.29071
#3	.00007	.01116	.97446
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10461.**	**10241.**
Stddev	21.	30.
%RSD	.19741	.28939
#1	10483.	10231.
#2	10441.	10218.
#3	10459.	10275.

Approved: February 26, 2015

Sample Name: L1502103517DUP Acquired: 2/25/2015 15:56:42 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513100-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.01549	-.00154	.00356	.01288	-.00008	2.1627
Stddev	.00021	.00243	.00129	.00114	.00036	.00005	.0233
%RSD	25.912	15.707	83.797	31.917	2.7968	61.300	1.0760
#1	.00064	.01348	-.00005	.00460	.01248	-.00014	2.1718
#2	.00075	.01820	-.00233	.00375	.01301	-.00007	2.1363
#3	.00105	.01480	-.00224	.00234	.01316	-.00004	2.1802
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	-.00005	.00039	-.00054	.07008	.32777	.00033
Stddev	.00007	.00006	.00084	.00050	.00369	.04108	.00149
%RSD	32.035	118.34	216.35	92.554	5.2606	12.533	448.27
#1	.00017	-.00004	-.00056	-.00043	.07143	.33050	-.00137
#2	.00031	-.00012	.00067	-.00107	.06590	.28539	.00098
#3	.00021	.00000	.00106	-.00010	.07289	.36741	.00139
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.1896	.00273	.00041	.50854	.00203	F -.01174	.00119
Stddev	.0144	.00013	.00032	.00565	.00033	.00179	.00279
%RSD	1.2088	4.5794	77.608	1.1108	16.204	15.217	234.63
#1	1.1895	.00287	.00068	.51495	.00186	-.01077	.00182
#2	1.2041	.00262	.00006	.50426	.00241	-.01380	-.00186
#3	1.1753	.00270	.00048	.50643	.00182	-.01065	.00362
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502103517DUP Acquired: 2/25/2015 15:56:42 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513100-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00152**	**.00087**	**1.0887**	**-.00020**	**.01668**	**-.00014**	**.00106**
Stddev	.00104	.00329	.0201	.00035	.00008	.00047	.00207
%RSD	68.535	375.49	1.8457	178.09	.48322	325.42	195.28
#1	-.00209	.00390	1.0975	-.00027	.01676	.00011	-.00133
#2	-.00032	.00134	1.1029	-.00050	.01669	-.00069	.00229
#3	-.00214	-.00262	1.0657	.00018	.01660	.00014	.00222
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00016**	**.01066**	F **-.05367**
Stddev	.00019	.00034	2.0807
%RSD	119.19	3.2176	3876.7
#1	-.00027	.01092	-2.4216
#2	-.00028	.01079	1.4823
#3	.00006	.01027	.77827
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10451.**	**10252.**
Stddev	25.	56.
%RSD	.24007	.54185
#1	10479.	10274.
#2	10442.	10293.
#3	10431.	10189.

Approved: February 26, 2015

Sample Name: L1502103517MS Acquired: 2/25/2015 16:00:17 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513100-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.16568	5.1581	-.00309	.00308	.01257	.02617	7.6652
Stddev	.00402	.0709	.00320	.00135	.00002	.00042	.0144
%RSD	2.4259	1.3747	103.38	43.763	.16779	1.5982	.18821
#1	.16149	5.0768	-.00644	.00196	.01258	.02569	7.6488
#2	.16951	5.1902	-.00007	.00270	.01259	.02646	7.6759
#3	.16603	5.2073	-.00277	.00458	.01255	.02637	7.6710
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	-.00002	.00003	-.00059	2.1891	27.620	.00060
Stddev	.00003	.00008	.00025	.00005	.0056	.044	.00091
%RSD	8.6508	382.65	835.12	8.2878	.25480	.15871	150.25
#1	.00040	-.00010	.00014	-.00065	2.1955	27.651	.00022
#2	.00036	-.00003	.00021	-.00055	2.1867	27.640	.00164
#3	.00034	.00007	-.00026	-.00057	2.1852	27.570	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.3673	.26690	.00007	27.928	.00185	F -.01072	.00196
Stddev	.0368	.00201	.00024	.040	.00067	.00209	.00067
%RSD	.57797	.75298	360.88	.14370	36.165	19.506	34.243
#1	6.4069	.26473	.00007	27.882	.00190	-.00904	.00240
#2	6.3609	.26729	-.00018	27.957	.00116	-.01005	.00119
#3	6.3342	.26869	.00030	27.945	.00249	-.01306	.00229
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502103517MS Acquired: 2/25/2015 16:00:17 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513100-06

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00070	-.00356	1.0521	-.00058	.01644	-.00002	.00236
Stddev	.00122	.00354	.0301	.00015	.00008	.00071	.00057
%RSD	173.41	99.256	2.8629	26.412	.48989	4531.0	24.071
#1	.00052	.00012	1.0263	-.00074	.01651	-.00041	.00173
#2	-.00192	-.00692	1.0448	-.00055	.01645	.00081	.00285
#3	-.00072	-.00389	1.0852	-.00044	.01635	-.00044	.00249
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00016	.00977	.18367
Stddev	.00009	.00035	2.0340
%RSD	57.693	3.5956	1107.4
#1	.00026	.00942	1.9846
#2	.00008	.00976	.58886
#3	.00013	.01012	-2.0224
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10356.	10228.
Stddev	16.	42.
%RSD	.15714	.40857
#1	10343.	10182.
#2	10350.	10265.
#3	10374.	10236.

Approved: February 26, 2015

Sample Name: L1502104518 Acquired: 2/25/2015 16:03:48 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.19972	-.00130	.01439	.01117	.00016	113.15	.00096
Stddev	.00008	.00587	.00189	.00066	.00003	.00001	.34	.00021
%RSD	11.721	2.9391	146.09	4.6214	.28875	6.6068	.29937	22.237
#1	.00077	.19298	.00063	.01366	.01114	.00016	112.76	.00113
#2	.00061	.20240	-.00316	.01453	.01120	.00017	113.34	.00102
#3	.00069	.20376	-.00137	.01497	.01116	.00015	113.35	.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00577	.00105	-.00064	.19298	5.7814	.08536	63.275	.55017
Stddev	.00011	.00053	.00047	.00208	.0345	.00201	.021	.00577
%RSD	1.9551	50.634	72.484	1.0787	.59639	2.3501	.03339	1.0485
#1	.00573	.00046	-.00118	.19534	5.7503	.08311	63.261	.54372
#2	.00569	.00149	-.00031	.19142	5.7754	.08597	63.299	.55195
#3	.00590	.00118	-.00045	.19218	5.8185	.08698	63.264	.55484
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	^ *****	.01151	-.00105	-.00155	.00000	-.00003	2.6999
Stddev	.00027	-----	.00053	.00439	.00232	.00008	.00208	.0967
%RSD	212.24	-----	4.6214	417.19	149.64	1920.5	7114.4	3.5826
#1	.00043	133.29	.01150	.00247	-.00160	.00009	.00237	2.6730
#2	-.00003	133.84	.01099	-.00598	-.00384	.00001	-.00137	2.8072
#3	-.00002	^ -----	.01205	.00035	.00079	-.00008	-.00108	2.6194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 26, 2015

Sample Name: L1502104518 Acquired: 2/25/2015 16:03:48 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	.71506	-.00508	.00233	-.00052	.01711	.17722
Stddev	.00049	.00361	.00149	.00078	.00029	.00067	.46881
%RSD	86.933	.50495	29.367	33.502	55.560	3.9025	264.54
#1	-.00081	.71103	-.00400	.00172	-.00048	.01687	.00061
#2	-.00088	.71616	-.00445	.00321	-.00025	.01786	.70868
#3	.00000	.71800	-.00678	.00206	-.00083	.01659	-.17763
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	9996.5	10224.
Stddev	15.8	36.
%RSD	.15845	.35068
#1	9979.7	10237.
#2	9998.6	10251.
#3	10011.	10183.

Approved: February 26, 2015

Sample Name: L1502104523 Acquired: 2/25/2015 16:07:22 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	.01551	-.00130	.02105	.01444	-.00008	121.17
Stddev	.00017	.00221	.00363	.00075	.00032	.00001	.28
%RSD	24.646	14.231	279.24	3.5664	2.2388	13.853	.22999
#1	.00091	.01304	.00121	.02025	.01474	-.00007	121.46
#2	.00062	.01729	.00035	.02116	.01410	-.00009	120.91
#3	.00060	.01622	-.00546	.02173	.01449	-.00009	121.15
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00125	.00086	.00088	-.00090	.04976	7.5928	.01559
Stddev	.00012	.00013	.00083	.00082	.00712	.0098	.00066
%RSD	9.8932	15.140	93.938	91.521	14.312	.12928	4.2297
#1	.00138	.00100	.00167	-.00182	.04354	7.6031	.01593
#2	.00114	.00081	.00002	-.00063	.05753	7.5916	.01483
#3	.00122	.00076	.00096	-.00024	.04821	7.5836	.01600
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	93.446	.12543	.00014	3.3173	.00752	F -.00516	-.00011
Stddev	.303	.00094	.00016	.0050	.00006	.00068	.00173
%RSD	.32388	.74769	112.56	.15019	.83184	13.120	1507.9
#1	93.308	.12442	.00015	3.3121	.00748	-.00495	.00057
#2	93.237	.12559	-.00002	3.3178	.00748	-.00591	-.00209
#3	93.793	.12627	.00029	3.3221	.00759	-.00461	.00118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502104523 Acquired: 2/25/2015 16:07:22 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00157	.00346	2.3623	-.00091	.61066	-.00534	.00074
Stddev	.00118	.00416	.0398	.00024	.00076	.00247	.00149
%RSD	75.317	120.07	1.6867	26.615	.12380	46.302	201.71
#1	-.00283	.00084	2.3171	-.00065	.61089	-.00735	-.00068
#2	-.00140	.00129	2.3776	-.00097	.60981	-.00609	.00229
#3	-.00048	.00826	2.3923	-.00112	.61127	-.00258	.00061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00001	.00844	.27933
Stddev	.00044	.00015	1.7028
%RSD	3236.7	1.7768	609.60
#1	-.00030	.00840	.88158
#2	-.00018	.00860	-1.6428
#3	.00052	.00831	1.5992
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	9973.1	10169.
Stddev	10.1	40.
%RSD	.10135	.39439
#1	9962.0	10179.
#2	9975.5	10203.
#3	9981.8	10125.

Approved: February 26, 2015

Sample Name: L1502104525 Acquired: 2/25/2015 16:10:54 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.15307	-.00440	.01328	.01005	-.00001	184.33	.00135
Stddev	.00019	.00079	.00176	.00038	.00017	.00004	.10	.00014
%RSD	33.792	.51555	40.092	2.8565	1.6880	623.77	.05344	10.687
#1	.00070	.15303	-.00280	.01327	.01001	.00004	184.22	.00118
#2	.00034	.15230	-.00412	.01367	.00990	-.00005	184.38	.00145
#3	.00062	.15388	-.00629	.01291	.01024	-.00001	184.39	.00141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01789	.00164	-.00061	.10290	14.680	.02941	123.60	1.2038
Stddev	.00088	.00019	.00067	.00220	.017	.00163	.05	.0047
%RSD	4.9109	11.532	109.02	2.1415	.11913	5.5552	.03994	.38860
#1	.01734	.00183	.00014	.10541	14.660	.02992	123.54	1.1987
#2	.01742	.00145	-.00112	.10128	14.687	.03073	123.62	1.2079
#3	.01890	.00165	-.00086	.10201	14.693	.02758	123.63	1.2048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	^ *****	.03882	.00274	-.00001	.00082	.00707	2.2901
Stddev	.00017	-----	.00195	.00277	.00174	.00251	.00263	.0224
%RSD	359.80	-----	5.0200	100.98	15324.	307.17	37.213	.97842
#1	-.00005	130.57	.03830	.00573	.00067	-.00195	.00424	2.2770
#2	.00024	130.72	.03719	.00026	.00128	.00295	.00752	2.2775
#3	-.00005	^ -----	.04098	.00224	-.00199	.00145	.00945	2.3160
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 26, 2015

Sample Name: L1502104525 Acquired: 2/25/2015 16:10:54 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.50129	-.00814	.00004	-.00011	.01892	.73063
Stddev	.00048	.00140	.00306	.00104	.00015	.00016	1.0267
%RSD	364.07	.27869	37.570	2578.8	131.13	.82801	140.52
#1	-.00042	.50041	-.01167	-.00028	-.00014	.01906	.97851
#2	.00039	.50056	-.00642	-.00080	-.00025	.01895	1.6107
#3	.00042	.50290	-.00633	.00120	.00005	.01876	-.39728
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	9849.3	10096.
Stddev	62.0	42.
%RSD	.62938	.41894
#1	9816.6	10137.
#2	9810.5	10098.
#3	9920.8	10053.

Approved: February 26, 2015

Sample Name: L1502104525PS Acquired: 2/25/2015 16:14:28 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513289-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.22076	5.2001	.21776	1.0370	.55746	.02599	171.41	.02775
Stddev	.00113	.0293	.00033	.0039	.00124	.00008	.22	.00010
%RSD	.51362	.56254	.15148	.37839	.22318	.30163	.12665	.37725
#1	.22153	5.1825	.21746	1.0394	.55890	.02601	171.25	.02768
#2	.21946	5.1838	.21772	1.0325	.55681	.02605	171.66	.02787
#3	.22130	5.2338	.21811	1.0391	.55668	.02590	171.32	.02769
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.12023	.26994	.25894	2.2266	41.242	.58819	116.03	1.3339
Stddev	.00021	.00103	.00059	.0188	.053	.00166	.12	.0069
%RSD	.17670	.38234	.22962	.84438	.12956	.28254	.10124	.51852
#1	.12046	.27099	.25864	2.2478	41.259	.58652	116.07	1.3321
#2	.12005	.26990	.25856	2.2119	41.182	.58819	115.90	1.3281
#3	.12018	.26893	.25963	2.2202	41.285	.58985	116.12	1.3416
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.55208	^ *****	.29268	5.5189	.25771	.65858	.21382	4.6204
Stddev	.00049	-----	.00159	.0013	.00181	.00246	.00060	.0033
%RSD	.08947	-----	.54467	.02366	.70306	.37361	.28255	.07118
#1	.55209	145.76	.29127	5.5201	.25579	.66098	.21423	4.6226
#2	.55159	146.36	.29441	5.5175	.25939	.65606	.21313	4.6166
#3	.55258	^ -----	.29236	5.5190	.25796	.65870	.21410	4.6221
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 26, 2015

Sample Name: L1502104525PS Acquired: 2/25/2015 16:14:28 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513289-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52545	1.0061	.53946	.25602	.53644	.51059	.27971
Stddev	.00086	.0017	.00233	.00078	.00174	.00130	.78258
%RSD	.16319	.17094	.43139	.30527	.32472	.25365	279.78
#1	.52459	1.0042	.54143	.25650	.53773	.50995	.79389
#2	.52630	1.0065	.53689	.25512	.53446	.50973	.66615
#3	.52546	1.0076	.54005	.25645	.53714	.51208	-.62091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	9754.9	10040.
Stddev	22.2	21.
%RSD	.22800	.21372
#1	9730.0	10037.
#2	9761.9	10062.
#3	9772.8	10020.

Approved: February 26, 2015

Sample Name: L1502104525SDL Acquired: 2/25/2015 16:17:45 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG513289-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	.02156	-.00019	.00800	.00167	-.00008	37.232
Stddev	.00028	.00207	.00324	.00046	.00016	.00003	.040
%RSD	75.342	9.6106	1730.9	5.7006	9.3770	37.383	.10779
#1	.00006	.01918	.00307	.00851	.00150	-.00007	37.214
#2	.00059	.02290	-.00023	.00785	.00181	-.00011	37.278
#3	.00048	.02261	-.00340	.00764	.00170	-.00005	37.204
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	.00357	.00032	-.00054	.02390	2.9777	.00628
Stddev	.00012	.00009	.00044	.00039	.00478	.0107	.00101
%RSD	27.056	2.4646	135.74	71.865	20.014	.35830	16.057
#1	.00044	.00347	-.00001	-.00095	.02474	2.9818	.00662
#2	.00034	.00364	.00016	-.00017	.01875	2.9857	.00515
#3	.00059	.00360	.00082	-.00051	.02821	2.9656	.00707
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	25.079	.25451	.00188	26.009	.00774	-.00263	.00055
Stddev	.113	.00282	.00036	.062	.00105	.00332	.00051
%RSD	.44880	1.1092	19.256	.23801	13.625	126.19	92.632
#1	24.962	.25255	.00147	25.991	.00744	.00118	.00097
#2	25.186	.25775	.00203	26.078	.00687	-.00491	.00070
#3	25.089	.25323	.00214	25.958	.00891	-.00415	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: L1502104525SDL Acquired: 2/25/2015 16:17:45 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG513289-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00058	.00151	.44795	-.00005	.10362	-.00323	.00251
Stddev	.00158	.00321	.01847	.00028	.00010	.00087	.00209
%RSD	270.35	213.20	4.1235	551.09	.09680	27.000	83.123
#1	.00156	.00309	.45993	-.00009	.10363	-.00346	.00395
#2	.00143	-.00219	.45724	-.00031	.10372	-.00227	.00012
#3	-.00124	.00362	.42668	.00025	.10352	-.00397	.00346
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00013	.00480	F -.22079
Stddev	.00020	.00036	.66414
%RSD	150.80	7.5011	300.80
#1	.00000	.00515	.50641
#2	-.00004	.00482	-.37351
#3	-.00037	.00443	-.79528
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10291.	10306.
Stddev	17.	75.
%RSD	.16526	.72461
#1	10273.	10364.
#2	10307.	10222.
#3	10293.	10332.

Approved: February 26, 2015

Sample Name: CCV Acquired: 2/25/2015 16:21:25 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41366	9.9930	.41514	.50935	1.0968	.05071	F 11.050
Stddev	.00348	.2746	.00209	.00174	.0490	.00022	.463
%RSD	.84011	2.7476	.50318	.34197	4.4684	.44318	4.1922
#1	.41247	9.8992	.41359	.50877	1.0713	.05060	10.817
#2	.41093	9.7776	.41752	.50797	1.0658	.05057	10.750
#3	.41757	10.302	.41432	.51131	1.1533	.05097	11.584
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
Value							10.000
Range							10.000%

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05111	.20428	.51826	.50741	4.2420	54.801	1.0821
Stddev	.00025	.00100	.00063	.00304	.1923	2.316	.0460
%RSD	.49349	.49167	.12152	.60001	4.5329	4.2252	4.2468
#1	.05082	.20341	.51867	.50398	4.1360	53.699	1.0578
#2	.05126	.20404	.51857	.50847	4.1260	53.242	1.0535
#3	.05125	.20538	.51753	.50979	4.4639	57.462	1.1352
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.277	.52024	1.0215	F 55.110	.51944	10.201	.51875
Stddev	.322	.01396	.0014	1.956	.00052	.024	.00139
%RSD	3.1298	2.6838	.14029	3.5498	.10035	.23560	.26731
#1	10.139	.51477	1.0231	54.267	.51927	10.174	.51724
#2	10.048	.50984	1.0202	53.716	.52002	10.213	.51997
#3	10.645	.53611	1.0213	57.346	.51902	10.218	.51904
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value				50.000			
Range				10.000%			

Approved: February 26, 2015

Sample Name: CCV Acquired: 2/25/2015 16:21:25 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2490	.41143	5.1654	1.0217	F 1.1017	1.0683	.52745
Stddev	.0056	.00276	.0109	.0070	.0382	.0361	.00254
%RSD	.44643	.67068	.21188	.68889	3.4645	3.3791	.48238
#1	1.2425	.40989	5.1558	1.0137	1.0848	1.0519	.52727
#2	1.2526	.41461	5.1629	1.0247	1.0750	1.0433	.52500
#3	1.2517	.40977	5.1773	1.0268	1.1454	1.1097	.53008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
Value					1.0000		
Range					10.000%		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0059	.99053	F -1.7684
Stddev	.0016	.00161	1.3826
%RSD	.15579	.16207	78.186
#1	1.0073	.99070	-2.3565
#2	1.0042	.98884	-.18893
#3	1.0062	.99204	-2.7598
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10484.	10239.
Stddev	12.	265.
%RSD	.11477	2.5873
#1	10496.	10356.
#2	10485.	10426.
#3	10472.	9936.3

Approved: February 26, 2015

Sample Name: CCB Acquired: 2/25/2015 16:24:39 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00025**	**-.00974**	**-.00040**	**.00379**	**-.00030**	**-.00011**	**.01078**
Stddev	.00056	.00215	.00178	.00047	.00023	.00001	.00900
%RSD	224.59	22.099	444.04	12.458	76.461	8.6910	83.490
#1	.00080	-.00775	-.00238	.00429	-.00053	-.00011	.01864
#2	-.00031	-.01203	.00009	.00373	-.00007	-.00011	.00096
#3	.00025	-.00945	.00108	.00335	-.00031	-.00012	.01273
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**.00016**	**-.00007**	**-.00073**	**.00785**	**.01078**	**.00142**
Stddev	.00015	.00045	.00064	.00019	.00293	.00709	.00108
%RSD	298.86	280.93	945.86	26.457	37.295	65.715	76.211
#1	.00021	-.00022	-.00074	-.00079	.00449	.01822	.00256
#2	-.00008	.00066	-.00001	-.00089	.00915	.00411	.00041
#3	.00001	.00004	.00055	-.00052	.00989	.01002	.00130
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01204**	**.00006**	**.00542**	**-.00834**	**.00006**	**-.00155**	**.00057**
Stddev	.01958	.00004	.00019	.00571	.00037	.00121	.00249
%RSD	162.60	71.745	3.5640	68.390	590.15	78.313	440.21
#1	.03192	.00011	.00526	-.01461	.00010	-.00250	.00242
#2	.01143	.00004	.00536	-.00345	-.00033	-.00018	-.00227
#3	-.00722	.00003	.00563	-.00697	.00042	-.00195	.00154
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: CCB Acquired: 2/25/2015 16:24:39 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00184	.00701	-.00208	.00022	.00008	-.00032	.00279
Stddev	.00124	.00638	.00002	.00019	.00003	.00169	.00180
%RSD	67.405	90.996	.99839	86.947	35.558	533.82	64.662
#1	.00327	.00899	-.00207	.00004	.00006	.00011	.00246
#2	.00112	.01217	-.00207	.00042	.00008	-.00218	.00472
#3	.00112	-.00012	-.00210	.00020	.00011	.00112	.00117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00009	-.00011	F 1.3789
Stddev	.00055	.00012	1.3379
%RSD	649.60	109.34	97.028
#1	-.00054	-.00015	1.2707
#2	-.00025	-.00019	2.7676
#3	.00053	.00003	.09833
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10515.	10265.
Stddev	18.	38.
%RSD	.17169	.37337
#1	10513.	10309.
#2	10498.	10239.
#3	10534.	10247.

Approved: February 26, 2015

Sample Name: L1502106501 Acquired: 2/25/2015 16:28:22 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	-.00589	-.00170	.07522	.01073	-.00009	219.31	.00023
Stddev	.00062	.00143	.00169	.00061	.00012	.00004	.21	.00012
%RSD	584.11	24.263	99.953	.81387	1.0912	43.511	.09389	52.424
#1	.00064	-.00715	-.00201	.07528	.01066	-.00005	219.27	.00030
#2	.00025	-.00617	-.00321	.07459	.01086	-.00012	219.12	.00009
#3	-.00057	-.00433	.00013	.07581	.01066	-.00011	219.53	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00091	.00102	-.00247	30.757	4.5438	.07988	33.067	.39014
Stddev	.00011	.00069	.00074	.028	.0419	.00168	.080	.00344
%RSD	12.331	66.986	29.801	.09222	.92126	2.1068	.24211	.88153
#1	-.00100	.00181	-.00245	30.761	4.5591	.07930	33.156	.38814
#2	-.00095	.00066	-.00175	30.728	4.4964	.07857	33.001	.38817
#3	-.00078	.00060	-.00322	30.784	4.5759	.08178	33.044	.39411
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	^ *****	.00177	.01194	.00183	-.00339	.00391	7.5809
Stddev	.00019	-----	.00033	.00579	.00344	.00074	.00426	.0103
%RSD	53.823	-----	18.450	48.490	188.58	21.912	108.99	.13596
#1	.00036	338.75	.00169	.01793	.00561	-.00390	.00205	7.5830
#2	.00017	^ -----	.00149	.01152	.00098	-.00254	.00879	7.5900
#3	.00055	^ -----	.00213	.00637	-.00111	-.00372	.00090	7.5697
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 26, 2015

Sample Name: L1502106501 Acquired: 2/25/2015 16:28:22 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	2.1327	-.00982	-.00095	-.00022	.00147	8.4776
Stddev	.00048	.0046	.00129	.00116	.00018	.00020	.7772
%RSD	188.35	.21658	13.092	121.60	80.266	13.946	9.1672
#1	.00040	2.1283	-.00931	-.00208	-.00019	.00160	8.4560
#2	-.00028	2.1323	-.01129	-.00103	-.00006	.00157	9.2654
#3	.00065	2.1375	-.00888	.00024	-.00041	.00123	7.7115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	9710.7	10160.
Stddev	30.6	17.
%RSD	.31529	.16472
#1	9676.5	10155.
#2	9719.9	10179.
#3	9735.6	10147.

Approved: February 26, 2015

Sample Name: L1502106503 Acquired: 2/25/2015 16:31:57 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	.93501	-.00061	.07880	.01082	.00015	324.58	.00050
Stddev	.00074	.02637	.00209	.00205	.00014	.00002	1.30	.00020
%RSD	96.749	2.8204	342.57	2.5958	1.3054	14.141	.39999	39.796
#1	-.00003	.90488	-.00281	.07649	.01070	.00017	325.04	.00033
#2	.00089	.95390	.00134	.08038	.01077	.00015	325.58	.00044
#3	.00142	.94624	-.00035	.07953	.01097	.00013	323.11	.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00816	.00449	.00247	31.133	6.3867	.09922	46.705	1.6146
Stddev	.00017	.00058	.00026	.078	.0423	.00087	.136	.0058
%RSD	2.1411	12.848	10.656	.25001	.66159	.88163	.29181	.35935
#1	.00804	.00385	.00220	31.088	6.3449	.10022	46.566	1.6107
#2	.00807	.00465	.00273	31.223	6.4294	.09881	46.839	1.6212
#3	.00836	.00497	.00247	31.087	6.3857	.09863	46.709	1.6117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	^ *****	.01955	.02116	.00374	-.00138	.00023	6.8371
Stddev	.00021	-----	.00088	.00147	.00234	.00418	.00128	.0592
%RSD	30.578	-----	4.4967	6.9616	62.582	302.66	559.25	.86580
#1	.00047	471.47	.02056	.02285	.00349	-.00619	.00116	6.7920
#2	.00072	459.73	.01911	.02048	.00620	.00067	.00075	6.8151
#3	.00089	^ -----	.01897	.02015	.00153	.00138	-.00123	6.9041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 26, 2015

Sample Name: L1502106503 Acquired: 2/25/2015 16:31:57 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	1.7925	-.00839	.00179	.00160	.03622	6.2717
Stddev	.00046	.0047	.00132	.00101	.00023	.00104	2.4469
%RSD	177.79	.26250	15.679	56.146	14.262	2.8617	39.015
#1	.00000	1.7937	-.00695	.00168	.00148	.03733	6.1442
#2	.00002	1.7965	-.00954	.00285	.00145	.03528	8.7798
#3	-.00080	1.7873	-.00868	.00085	.00186	.03605	3.8910
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	9577.2	10065.
Stddev	37.6	34.
%RSD	.39228	.33699
#1	9596.1	10047.
#2	9601.6	10044.
#3	9534.0	10104.

Approved: February 26, 2015

Sample Name: L1502106604 Acquired: 2/25/2015 16:35:37 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00095	-.00688	.00048	.09483	.03210	-.00019	26.004
Stddev	.00072	.00268	.00082	.00079	.00061	.00003	.619
%RSD	75.937	39.013	170.09	.82848	1.9125	17.687	2.3789
#1	.00092	-.00380	-.00039	.09397	.03177	-.00015	25.606
#2	.00024	-.00870	.00123	.09501	.03171	-.00019	25.689
#3	.00168	-.00813	.00061	.09552	.03280	-.00022	26.716
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	-.00025	.00018	-.00095	.53175	2.3205	.01850
Stddev	.00004	.00025	.00061	.00036	.01524	.0191	.00154
%RSD	20.245	99.470	337.57	38.250	2.8663	.82141	8.3388
#1	.00024	-.00053	-.00022	-.00107	.53077	2.3421	.01830
#2	.00017	-.00009	.00089	-.00125	.51703	2.3132	.01707
#3	.00017	-.00012	-.00012	-.00054	.54747	2.3061	.02014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.4230	.02736	.00352	240.87	.00097	.01848	-.00109
Stddev	.1313	.00070	.00055	43.75	.00130	.00142	.00111
%RSD	2.4204	2.5685	15.583	18.162	134.29	7.6844	101.12
#1	5.3403	.02701	.00289	265.68	-.00047	.01794	-.00236
#2	5.3543	.02691	.00377	266.57	.00132	.01741	-.00060
#3	5.5743	.02817	.00389	190.36	.00207	.02009	-.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: L1502106604 Acquired: 2/25/2015 16:35:37 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.00134**	**3.3911**	**-.00053**	**.17530**	**-.00097**	**.00114**
Stddev	.00110	.00538	.1208	.00035	.00197	.00093	.00369
%RSD	633.27	401.98	3.5631	66.021	1.1265	95.132	323.77
#1	-.00089	-.00483	3.3522	-.00071	.17632	-.00175	.00153
#2	.00109	.00508	3.2945	-.00074	.17657	-.00122	.00463
#3	-.00072	.00377	3.5266	-.00013	.17303	.00005	-.00273
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00002**	**.00256**	F **-1.1192**
Stddev	.00032	.00020	2.6774
%RSD	1842.2	7.9732	239.23
#1	-.00030	.00233	-.52789
#2	.00035	.00267	1.2132
#3	.00001	.00269	-4.0428
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10047.**	**10035.**
Stddev	104.	265.
%RSD	1.0389	2.6445
#1	10168.	10190.
#2	9994.0	10186.
#3	9980.4	9728.7

Approved: February 26, 2015

Sample Name: CCV Acquired: 2/25/2015 16:39:17 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41163	9.9318	.41745	.50834	1.0823	.05073	10.906
Stddev	.00236	.0152	.00130	.00046	.0019	.00006	.043
%RSD	.57262	.15341	.31241	.08969	.17855	.12115	.39780
#1	.40924	9.9248	.41859	.50886	1.0829	.05074	10.941
#2	.41395	9.9493	.41603	.50814	1.0838	.05066	10.921
#3	.41170	9.9213	.41773	.50802	1.0801	.05079	10.857
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05127	.20501	.51967	.51103	4.1880	54.040	1.0680
Stddev	.00011	.00018	.00202	.00155	.0058	.107	.0049
%RSD	.21683	.08889	.38948	.30424	.13850	.19770	.45418
#1	.05137	.20509	.51778	.51224	4.1817	54.137	1.0736
#2	.05115	.20513	.51943	.50928	4.1889	54.058	1.0657
#3	.05128	.20480	.52180	.51159	4.1932	53.926	1.0648
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.224	.51979	1.0204	54.713	.52158	10.229	.52065
Stddev	.026	.00164	.0023	.111	.00095	.039	.00146
%RSD	.25180	.31518	.22896	.20323	.18179	.38203	.28013
#1	10.236	.51894	1.0210	54.806	.52152	10.240	.52145
#2	10.242	.52168	1.0223	54.743	.52066	10.262	.52154
#3	10.195	.51875	1.0178	54.590	.52255	10.186	.51897
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: February 26, 2015

Sample Name: CCV Acquired: 2/25/2015 16:39:17 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2566	.40598	5.1632	1.0303	1.0921	1.0600	.52916
Stddev	.0020	.00250	.0027	.0022	.0024	.0021	.00210
%RSD	.15849	.61475	.05161	.20890	.22219	.19929	.39710
#1	1.2549	.40802	5.1611	1.0327	1.0934	1.0623	.52957
#2	1.2562	.40673	5.1662	1.0293	1.0936	1.0597	.52688
#3	1.2588	.40320	5.1623	1.0288	1.0893	1.0581	.53102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0062	.99738	F -1.7970
Stddev	.0011	.00078	.5069
%RSD	.10952	.07869	28.205
#1	1.0049	.99728	-1.2569
#2	1.0065	.99822	-2.2623
#3	1.0071	.99666	-1.8718
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10455.	10233.
Stddev	2.	23.
%RSD	.02161	.22544
#1	10453.	10234.
#2	10458.	10210.
#3	10454.	10256.

Approved: February 26, 2015

Sample Name: CCB Acquired: 2/25/2015 16:42:32 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00063**	**-.01367**	**-.00109**	**.00245**	**-.00040**	**-.00010**	**.00403**
Stddev	.00038	.00269	.00081	.00081	.00008	.00002	.00960
%RSD	59.916	19.686	74.974	33.032	21.035	21.833	238.26
#1	.00080	-.01209	-.00178	.00339	-.00047	-.00012	.00893
#2	.00089	-.01213	-.00019	.00190	-.00031	-.00011	.01019
#3	.00020	-.01677	-.00129	.00208	-.00042	-.00008	-.00703
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.00018**	**.00015**	**-.00080**	**.00516**	**.04295**	**.00132**
Stddev	.00002	.00017	.00014	.00020	.00542	.02982	.00101
%RSD	18.799	97.195	91.656	24.879	105.11	69.435	77.002
#1	.00016	.00020	.00032	-.00062	.00704	.03030	.00171
#2	.00011	-.00001	.00008	-.00101	.00940	.02153	.00017
#3	.00012	.00033	.00007	-.00076	-.00095	.07701	.00208
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02403**	**.00004**	**.00511**	**-.00060**	**-.00006**	**-.00452**	**.00055**
Stddev	.01256	.00003	.00078	.01078	.00100	.00119	.00134
%RSD	52.264	78.110	15.289	1781.9	1671.0	26.400	243.35
#1	.01344	.00005	.00467	.01021	-.00026	-.00329	.00126
#2	.03790	.00001	.00466	-.00068	.00102	-.00459	-.00099
#3	.02074	.00007	.00602	-.01134	-.00094	-.00567	.00139
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: CCB Acquired: 2/25/2015 16:42:32 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00202**	**.00073**	**-.00494**	**.00036**	**.00006**	**.00050**	**.00281**
Stddev	.00078	.00097	.00212	.00011	.00012	.00121	.00142
%RSD	38.447	133.86	42.969	31.139	197.97	240.32	50.436
#1	.00250	.00155	-.00733	.00047	-.00006	.00188	.00169
#2	.00112	-.00035	-.00423	.00036	.00018	-.00038	.00234
#3	.00243	.00098	-.00327	.00024	.00005	.00000	.00441
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00017**	**-.00021**	F **.65475**
Stddev	.00031	.00009	1.1499
%RSD	187.49	42.956	175.62
#1	.00013	-.00011	1.8341
#2	-.00049	-.00026	.59334
#3	-.00014	-.00028	-.46318
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10430.**	**10176.**
Stddev	48.	59.
%RSD	.46173	.58269
#1	10410.	10219.
#2	10395.	10108.
#3	10485.	10200.

Approved: February 26, 2015

Sample Name: PBW 11 Acquired: 2/25/2015 16:46:13 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513358-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00119	-.00966	-.00099	.00148	-.00060	-.00014	.02130
Stddev	.00033	.00275	.00205	.00099	.00021	.00003	.00951
%RSD	28.091	28.508	206.61	67.087	35.869	18.978	44.629
#1	.00108	-.01153	-.00262	.00262	-.00073	-.00013	.01366
#2	.00092	-.01095	-.00167	.00084	-.00035	-.00017	.01830
#3	.00156	-.00650	.00131	.00097	-.00071	-.00012	.03194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	-.00001	.00020	-.00028	.00652	.00867	.00212
Stddev	.00012	.00001	.00036	.00026	.00263	.02062	.00209
%RSD	44.287	113.26	180.62	93.251	40.442	237.69	98.786
#1	.00033	.00000	-.00019	-.00046	.00599	-.01405	.00448
#2	.00013	-.00002	.00027	.00002	.00418	.02619	.00138
#3	.00032	-.00002	.00053	-.00038	.00937	.01389	.00049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.02025	.00330	.00113	.00208	.00111	F -.01094	.00022
Stddev	.04584	.00006	.00010	.00588	.00010	.00801	.00038
%RSD	226.43	1.8740	8.9017	282.31	9.0956	73.241	172.42
#1	-.00942	.00326	.00102	.00841	.00118	-.01724	-.00018
#2	.01921	.00337	.00122	.00105	.00100	-.01366	.00026
#3	-.07053	.00326	.00115	-.00321	.00116	-.00192	.00057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: PBW 11 Acquired: 2/25/2015 16:46:13 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513358-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00081	.00485	-.00060	-.00041	-.00007	.00099	.00078
Stddev	.00296	.00088	.00102	.00051	.00018	.00126	.00163
%RSD	362.93	18.210	169.15	126.29	239.69	127.00	208.03
#1	.00232	.00445	.00057	-.00021	.00013	-.00003	-.00099
#2	-.00121	.00425	-.00108	-.00099	-.00019	.00240	.00220
#3	-.00355	.00587	-.00129	-.00002	-.00016	.00060	.00114
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00004	.00162	.60722
Stddev	.00018	.00017	.95312
%RSD	491.79	10.728	156.96
#1	-.00016	.00182	.73313
#2	.00017	.00156	1.4911
#3	-.00013	.00149	-.40259
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10361.	10196.
Stddev	30.	17.
%RSD	.29357	.16505
#1	10326.	10178.
#2	10376.	10212.
#3	10380.	10197.

Approved: February 26, 2015

Sample Name: LCSW 11 Acquired: 2/25/2015 16:49:50 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513358-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20473	4.7728	.19755	.96225	.53741	.02459	5.4237
Stddev	.00063	.0325	.00215	.00287	.00981	.00012	.0741
%RSD	.30619	.68018	1.0873	.29857	1.8245	.48006	1.3666
#1	.20521	4.7850	.19943	.96538	.53263	.02462	5.3724
#2	.20495	4.7975	.19802	.95974	.53090	.02446	5.3900
#3	.20402	4.7360	.19521	.96163	.54868	.02469	5.5087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02469	.10231	.26072	.25075	2.0758	26.674	.53100
Stddev	.00006	.00024	.00140	.00049	.0279	.194	.00066
%RSD	.22350	.23681	.53575	.19360	1.3450	.72737	.12415
#1	.02474	.10224	.26079	.25019	2.0708	26.590	.53176
#2	.02463	.10258	.25928	.25106	2.0507	26.536	.53068
#3	.02471	.10210	.26207	.25099	2.1059	26.896	.53057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.9597	.25244	.52577	26.859	.25649	4.8582	.25197
Stddev	.0438	.00083	.00046	.121	.00040	.0054	.00413
%RSD	.88290	.32686	.08717	.44965	.15466	.11184	1.6384
#1	5.0098	.25274	.52555	26.903	.25695	4.8624	.24720
#2	4.9407	.25308	.52629	26.952	.25627	4.8601	.25442
#3	4.9286	.25151	.52546	26.722	.25625	4.8520	.25428
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: LCSW 11 Acquired: 2/25/2015 16:49:50 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513358-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.61041	.18661	2.5894	.50898	.54173	.53331	.26483
Stddev	.00196	.00437	.0043	.00185	.00173	.00205	.00076
%RSD	.32118	2.3406	.16775	.36253	.32018	.38512	.28578
#1	.60815	.19069	2.5939	.50990	.54284	.53556	.26544
#2	.61149	.18715	2.5892	.50686	.54262	.53154	.26506
#3	.61160	.18200	2.5852	.51019	.53973	.53283	.26398
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.50458	.48285	F -2.7367
Stddev	.00162	.00095	.5509
%RSD	.32082	.19777	20.130
#1	.50638	.48390	-3.2926
#2	.50324	.48204	-2.1909
#3	.50413	.48260	-2.7265
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10305.	10227.
Stddev	18.	33.
%RSD	.17340	.31971
#1	10294.	10222.
#2	10325.	10197.
#3	10295.	10262.

Approved: February 26, 2015

Sample Name: FLT BLK Acquired: 2/25/2015 16:53:06 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513358-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	-.01343	.00121	.00412	-.00043	-.00012	.00268	-.00014
Stddev	.00052	.00157	.00094	.00094	.00025	.00000	.01251	.00009
%RSD	67.852	11.712	77.435	22.715	57.036	4.0062	467.21	67.254
#1	.00077	-.01418	.00213	.00504	-.00015	-.00013	.01711	-.00003
#2	.00025	-.01450	.00026	.00414	-.00056	-.00012	-.00412	-.00017
#3	.00130	-.01163	.00125	.00317	-.00059	-.00012	-.00495	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.00015	-.00027	.00049	.02209	.00213	.00330	-.00003
Stddev	.00012	.00033	.00044	.00854	.02555	.00075	.03414	.00003
%RSD	121.10	221.85	163.62	1760.7	115.67	35.331	1033.6	103.84
#1	-.00001	.00032	-.00075	-.00323	.00828	.00201	.02210	.00001
#2	-.00006	-.00023	.00012	.01025	.00642	.00294	-.03611	-.00006
#3	-.00024	.00035	-.00018	-.00557	.05157	.00145	.02392	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00062	.03283	-.00088	.00327	.00182	-.00341	-.00158	-.00935
Stddev	.00026	.00838	.00053	.00058	.00061	.00092	.00350	.00106
%RSD	42.197	25.524	60.903	17.754	33.346	26.964	221.50	11.279
#1	.00053	.02324	-.00032	.00344	.00212	-.00245	.00076	-.00837
#2	.00042	.03871	-.00138	.00375	.00112	-.00428	.00010	-.00923
#3	.00092	.03655	-.00093	.00263	.00223	-.00351	-.00561	-.01047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 26, 2015

Sample Name: FLT BLK Acquired: 2/25/2015 16:53:06 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513358-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	.00018	-.00118	.00460	-.00011	.00029	2.3046
Stddev	.00059	.00007	.00164	.00145	.00028	.00011	1.4280
%RSD	524.91	37.370	138.31	31.402	270.70	39.326	61.965
#1	.00001	.00013	.00054	.00358	.00011	.00023	.66875
#2	-.00075	.00014	-.00138	.00626	-.00043	.00021	3.3024
#3	.00040	.00025	-.00271	.00397	.00000	.00042	2.9425
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10606.	10220.
Stddev	43.	103.
%RSD	.40879	1.0057
#1	10647.	10104.
#2	10610.	10252.
#3	10561.	10302.

Approved: February 26, 2015

Sample Name: L1502114202 Acquired: 2/25/2015 16:56:43 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513358-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	.24179	-.00396	.01023	.11211	-.00013	38.681
Stddev	.00061	.00373	.00036	.00105	.00018	.00003	.049
%RSD	86.416	1.5427	9.1944	10.230	.16269	24.433	.12760
#1	.00106	.24610	-.00396	.01133	.11216	-.00016	38.625
#2	.00000	.23974	-.00432	.00925	.11191	-.00010	38.703
#3	.00106	.23954	-.00359	.01012	.11227	-.00012	38.717
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	-.00028	.00124	.00065	.18021	.79266	.00658
Stddev	.00007	.00010	.00059	.00045	.00376	.04414	.00341
%RSD	15.193	36.419	47.401	69.526	2.0888	5.5691	51.820
#1	.00056	-.00020	.00112	.00093	.17679	.82603	.00388
#2	.00044	-.00025	.00187	.00089	.17960	.80934	.00545
#3	.00043	-.00040	.00072	.00013	.18424	.74260	.01042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.9375	.00468	.00120	2.5323	.00136	.01548	.00083
Stddev	.0494	.00004	.00026	.0127	.00086	.00358	.00186
%RSD	.71247	.87662	21.591	.50059	63.126	23.126	223.06
#1	6.9312	.00469	.00116	2.5414	.00041	.01250	.00006
#2	6.8916	.00463	.00096	2.5378	.00161	.01449	.00295
#3	6.9898	.00471	.00148	2.5178	.00208	.01945	-.00052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: L1502114202 Acquired: 2/25/2015 16:56:43 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513358-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00028**	**.00205**	**5.0236**	**-.00023**	**.07276**	**.00614**	**.00163**
Stddev	.00123	.00312	.1989	.00053	.00012	.00208	.00072
%RSD	431.90	151.91	3.9583	228.16	.16819	33.802	44.033
#1	.00151	.00424	5.2528	.00024	.07264	.00376	.00245
#2	.00029	.00342	4.8981	-.00013	.07275	.00708	.00111
#3	-.00095	-.00152	4.9197	-.00080	.07288	.00758	.00134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00040**	**.00237**	F **-2.0060**
Stddev	.00015	.00013	2.0635
%RSD	36.400	5.5890	102.87
#1	.00023	.00237	-1.8939
#2	.00048	.00223	-.00076
#3	.00048	.00250	-4.1232
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10309.**	**10209.**
Stddev	86.	61.
%RSD	.83068	.60025
#1	10212.	10153.
#2	10338.	10275.
#3	10376.	10200.

Approved: February 26, 2015

Sample Name: L1502114202DUP Acquired: 2/25/2015 17:00:17 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513358-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	.27775	-.00159	.00974	.11508	-.00009	39.764
Stddev	.00068	.00094	.00215	.00072	.00073	.00002	.060
%RSD	107.96	.33848	135.44	7.3640	.63006	23.287	.15001
#1	-.00013	.27722	-.00096	.01000	.11580	-.00006	39.830
#2	.00083	.27884	.00018	.01030	.11435	-.00010	39.749
#3	.00118	.27720	-.00398	.00893	.11511	-.00010	39.714
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	-.00018	.00133	-.00003	.21420	.81512	.00575
Stddev	.00011	.00008	.00081	.00034	.00427	.00568	.00059
%RSD	24.845	42.590	60.913	1000.2	1.9925	.69703	10.337
#1	.00035	-.00009	.00063	-.00026	.21555	.80874	.00539
#2	.00044	-.00024	.00221	.00036	.21762	.81698	.00643
#3	.00058	-.00021	.00114	-.00020	.20941	.81963	.00543
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.0834	.00514	.00043	2.5950	.00140	.01580	.00125
Stddev	.0343	.00007	.00017	.0044	.00087	.00697	.00202
%RSD	.48484	1.3431	40.072	.17019	62.500	44.130	161.25
#1	7.0452	.00508	.00023	2.5958	.00220	.01268	.00303
#2	7.1117	.00514	.00052	2.5990	.00153	.02378	.00167
#3	7.0933	.00521	.00053	2.5903	.00047	.01093	-.00094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: L1502114202DUP Acquired: 2/25/2015 17:00:17 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513358-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00114	.00077	5.0545	-.00044	.07492	.00605	.00164
Stddev	.00380	.00401	.2990	.00072	.00031	.00144	.00122
%RSD	332.59	521.14	5.9148	163.08	.41770	23.757	74.313
#1	-.00313	-.00088	4.9537	-.00002	.07488	.00440	.00113
#2	.00242	.00534	5.3908	-.00003	.07525	.00673	.00076
#3	.00414	-.00215	4.8189	-.00128	.07463	.00703	.00304
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00049	.00353	F -3.6296
Stddev	.00014	.00012	2.1265
%RSD	28.597	3.2607	58.590
#1	.00055	.00341	-2.7451
#2	.00060	.00364	-6.0556
#3	.00033	.00355	-2.0880
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10355.	10319.
Stddev	45.	23.
%RSD	.43572	.22743
#1	10303.	10299.
#2	10377.	10312.
#3	10384.	10345.

Approved: February 26, 2015

Sample Name: L1502114202MS Acquired: 2/25/2015 17:03:51 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513358-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20085	4.8497	.19369	.93840	.63933	.02407	44.058
Stddev	.00053	.0467	.00068	.00345	.01119	.00008	.822
%RSD	.26247	.96327	.34929	.36739	1.7504	.33431	1.8654
#1	.20146	4.8832	.19358	.93585	.63128	.02411	43.526
#2	.20055	4.7964	.19442	.93704	.63460	.02398	43.644
#3	.20054	4.8696	.19308	.94232	.65211	.02412	45.005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02446	.09815	.25332	.24136	2.1790	26.877	.52637
Stddev	.00031	.00017	.00016	.00137	.0201	.205	.00283
%RSD	1.2617	.17163	.06147	.56911	.92158	.76292	.53843
#1	.02412	.09808	.25320	.24263	2.1812	26.727	.52365
#2	.02454	.09834	.25350	.23990	2.1579	26.793	.52616
#3	.02472	.09803	.25326	.24153	2.1978	27.111	.52931
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.610	.24408	.51045	28.751	.24586	4.8212	.24334
Stddev	.114	.00144	.00083	.132	.00119	.0089	.00309
%RSD	.98402	.58901	.16339	.45784	.48346	.18365	1.2708
#1	11.579	.24505	.51138	28.625	.24452	4.8265	.24004
#2	11.515	.24243	.51023	28.741	.24627	4.8261	.24617
#3	11.737	.24476	.50975	28.888	.24678	4.8110	.24381
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: L1502114202MS Acquired: 2/25/2015 17:03:51 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513358-06

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.59942	.18417	7.2024	.49068	.59866	.52616	.25217
Stddev	.00324	.00512	.0021	.00015	.00217	.00215	.00031
%RSD	.54128	2.7794	.02917	.03016	.36302	.40903	.12418
#1	.59588	.18488	7.2030	.49085	.59624	.52632	.25237
#2	.60013	.17873	7.2042	.49061	.59929	.52393	.25181
#3	.60225	.18889	7.2001	.49057	.60044	.52822	.25232
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.49382	.46104	F -6.2377
Stddev	.00205	.00091	.3925
%RSD	.41605	.19740	6.2918
#1	.49604	.46061	-5.8224
#2	.49199	.46042	-6.2881
#3	.49344	.46208	-6.6025
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10313.	10365.
Stddev	16.	79.
%RSD	.15970	.76614
#1	10296.	10311.
#2	10328.	10457.
#3	10315.	10329.

Approved: February 26, 2015

Sample Name: L1502114203 Acquired: 2/25/2015 17:07:07 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k -.00004	k .07208	k -.00167	k .02363	.73447	k -.00020	^ *****
Stddev	.00017	.00502	.00089	.00102	.00305	.00002	-----
%RSD	454.43	6.9638	53.321	4.2984	.41497	9.0741	-----
#1	.00016	.06634	-.00269	.02295	.73458	-.00022	321.08
#2	-.00010	.07566	-.00106	.02480	.73138	-.00020	322.87
#3	k -.00017	k .07423	k -.00125	k .02315	.73747	k -.00019	^ -----
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .00073	k -.00056	k .00088	k -.00020	k .35488	3.3796	.02612
Stddev	.00003	.00007	.00055	.00060	.02467	.0958	.00139
%RSD	4.3137	11.628	62.913	302.94	6.9527	2.8353	5.3276
#1	.00069	-.00049	.00150	.00038	.37943	3.4171	.02479
#2	.00075	-.00059	.00043	-.00015	.35511	3.2707	.02757
#3	k .00075	k -.00060	k .00071	k -.00082	k .33008	3.4509	.02601
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	34.647	k .01787	.00162	261.75	k .00243	k .03528	k .00176
Stddev	.120	.00034	.00042	236.15	.00034	.00338	.00187
%RSD	.34730	1.8857	26.226	90.220	14.025	9.5745	106.73
#1	34.549	.01764	.00115	450.45	.00262	.03635	.00142
#2	34.781	.01826	.00171	337.88	.00263	.03800	.00378
#3	34.610	k .01771	.00199	-3.0753	k .00203	k .03150	k .00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: L1502114203 Acquired: 2/25/2015 17:07:07 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k -.00126	.00108	4.9183	k -.00086	k 1.3286	k -.01157	k .00057
Stddev	.00097	.00370	.2404	.00046	.0066	.00077	.00043
%RSD	76.583	342.97	4.8876	54.002	.49997	6.6791	75.206
#1	-.00227	.00123	4.7294	-.00140	1.3293	-.01204	.00015
#2	-.00034	.00470	5.1889	-.00061	1.3348	-.01068	.00055
#3	k -.00118	-.00270	4.8366	k -.00058	k 1.3216	k -.01200	k .00100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	k .00021	.00304	k 3.6163
Stddev	.00027	.00019	1.2139
%RSD	126.70	6.2677	33.568
#1	.00050	.00326	2.9220
#2	.00018	.00294	5.0179
#3	k -.00004	.00292	k 2.9088
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	9529.0	9906.6
Stddev	17.8	204.1
%RSD	.18633	2.0603
#1	9508.5	9988.9
#2	9540.1	9674.2
#3	9538.3	10057.

Approved: February 26, 2015

Sample Name: L1502114207 Acquired: 2/25/2015 17:10:54 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	.00259	-.00297	.01227	.28315	-.00018	194.35
Stddev	.00048	.00157	.00241	.00095	.00253	.00002	.68
%RSD	79.041	60.852	80.929	7.7242	.89288	8.6929	.34839
#1	.00016	.00096	-.00036	.01117	.28480	-.00016	194.07
#2	.00113	.00269	-.00511	.01286	.28440	-.00019	193.86
#3	.00055	.00411	-.00345	.01277	.28024	-.00019	195.12
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00087	-.00002	.00076	-.00022	.11731	2.1146	.01173
Stddev	.00008	.00034	.00015	.00035	.01540	.0163	.00111
%RSD	9.7427	2209.6	19.250	157.31	13.130	.76905	9.4738
#1	.00092	.00037	.00082	-.00015	.12246	2.1306	.01173
#2	.00092	-.00028	.00087	.00008	.12948	2.1150	.01061
#3	.00077	-.00014	.00059	-.00060	.10000	2.0981	.01284
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	26.471	1.4848	.00054	269.04	.00103	F -.00372	.00097
Stddev	.182	.0290	.00039	46.73	.00049	.00304	.00244
%RSD	.68784	1.9553	72.401	17.369	47.530	81.892	250.65
#1	26.430	1.4723	.00009	294.69	.00104	-.00460	.00217
#2	26.313	1.4642	.00080	297.33	.00151	-.00622	.00259
#3	26.670	1.5180	.00072	215.10	.00053	-.00033	-.00184
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502114207 Acquired: 2/25/2015 17:10:54 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00097**	**.00270**	**3.4776**	**-.00073**	**.61829**	**-.00846**	**.00175**
Stddev	.00075	.00381	.0538	.00010	.00106	.00136	.00204
%RSD	77.461	141.12	1.5474	13.382	.17191	16.033	116.91
#1	-.00047	.00703	3.5367	-.00077	.61745	-.00860	-.00059
#2	-.00060	.00120	3.4314	-.00062	.61793	-.00973	.00319
#3	-.00183	-.00013	3.4648	-.00080	.61949	-.00703	.00265
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00025**	**.00379**	**.59575**
Stddev	.00005	.00007	1.2394
%RSD	19.941	1.9459	208.04
#1	-.00024	.00375	-.75470
#2	-.00030	.00375	1.6813
#3	-.00020	.00388	.86061
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**9720.0**	**10117.**
Stddev	23.2	201.
%RSD	.23907	1.9835
#1	9713.8	10214.
#2	9700.4	10251.
#3	9745.7	9886.4

Approved: February 26, 2015

Sample Name: L1502114207PS Acquired: 2/25/2015 17:14:33 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513390-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21674	4.9040	.20809	1.0124	.80831	.02547	181.47
Stddev	.00111	.0920	.00206	.0011	.00612	.00005	.40
%RSD	.51268	1.8768	.99006	.11238	.75678	.20983	.22251
#1	.21547	4.8729	.21046	1.0129	.81103	.02541	181.17
#2	.21728	4.8315	.20708	1.0111	.81259	.02551	181.31
#3	.21748	5.0076	.20673	1.0132	.80130	.02549	181.93
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02637	.10100	.26369	.24970	2.2138	29.777	.55801
Stddev	.00007	.00033	.00198	.00062	.0071	.196	.01837
%RSD	.26635	.32730	.74917	.24949	.31870	.65894	3.2916
#1	.02644	.10076	.26160	.24917	2.2069	29.853	.56795
#2	.02630	.10086	.26395	.24953	2.2136	29.924	.56928
#3	.02636	.10137	.26552	.25039	2.2210	29.554	.53682
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	28.752	1.5805	.53640	267.58	.25313	5.3158	.24899
Stddev	.083	.0267	.00043	46.54	.00116	.0114	.00339
%RSD	.28994	1.6900	.08033	17.392	.45672	.21527	1.3619
#1	28.782	1.5682	.53631	294.85	.25301	5.3220	.24699
#2	28.658	1.5622	.53687	294.05	.25434	5.3227	.25290
#3	28.817	1.6112	.53603	213.84	.25204	5.3026	.24707
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: L1502114207PS Acquired: 2/25/2015 17:14:33 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513390-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.64174	.19628	5.5948	.51032	1.1157	.53606	.24834
Stddev	.00252	.00157	.0052	.00039	.0028	.00172	.00142
%RSD	.39342	.80106	.09285	.07617	.24778	.32168	.57038
#1	.63895	.19617	5.5993	.51077	1.1138	.53486	.24752
#2	.64243	.19790	5.5960	.51011	1.1143	.53804	.24998
#3	.64386	.19476	5.5891	.51009	1.1188	.53529	.24753
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.51790	.48580	F -.02787
Stddev	.00126	.00080	.70308
%RSD	.24321	.16511	2522.9
#1	.51844	.48504	-.82782
#2	.51879	.48664	.25220
#3	.51646	.48573	.49201
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	9795.0	10053.
Stddev	20.4	167.
%RSD	.20830	1.6605
#1	9806.9	10142.
#2	9771.5	10156.
#3	9806.8	9860.2

Approved: February 26, 2015

Sample Name: L1502114207SDL Acquired: 2/25/2015 17:17:54 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG513390-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	-.01117	.00009	.00636	.05759	-.00015	39.443	.00023
Stddev	.00011	.00264	.00206	.00171	.00035	.00002	.062	.00005
%RSD	13.340	23.682	2410.6	26.879	.60699	11.309	.15626	23.189
#1	.00091	-.01422	-.00216	.00459	.05769	-.00013	39.378	.00029
#2	.00069	-.00973	.00053	.00800	.05789	-.00016	39.449	.00019
#3	.00082	-.00955	.00188	.00650	.05721	-.00016	39.501	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.00053	-.00113	.02084	.43810	.00299	5.4422	.31485
Stddev	.00027	.00034	.00014	.00785	.01187	.00097	.0582	.00155
%RSD	133.39	63.854	12.587	37.651	2.7096	32.414	1.0697	.49339
#1	-.00011	.00051	-.00102	.01184	.42440	.00203	5.3815	.31640
#2	.00034	.00088	-.00107	.02625	.44544	.00396	5.4976	.31330
#3	.00037	.00020	-.00129	.02443	.44445	.00296	5.4474	.31484
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00152	60.306	.04299	.00355	.00038	-.00016	-.00321	.73934
Stddev	.00018	.134	.07358	.00651	.00090	.00321	.00163	.10613
%RSD	11.848	.22224	171.15	183.24	235.10	2007.0	50.791	14.354
#1	.00153	60.282	.00051	-.00082	.00040	-.00387	-.00202	.69115
#2	.00169	60.185	.00051	.00045	.00128	.00154	-.00507	.66585
#3	.00133	60.450	.12796	.01104	-.00053	.00184	-.00255	.86101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 26, 2015

Sample Name: L1502114207SDL Acquired: 2/25/2015 17:17:54 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG513390-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00068**	**.12974**	**-.00153**	**.00212**	**.00008**	**.00947**	**2.0751**
Stddev	.00149	.00032	.00091	.00015	.00058	.01337	.8328
%RSD	218.94	.25017	59.214	7.2341	746.60	141.18	40.131
#1	-.00029	.12977	-.00051	.00197	-.00043	.00172	1.8232
#2	-.00007	.12940	-.00186	.00213	-.00004	.00179	3.0048
#3	.00239	.13005	-.00223	.00227	.00071	.02492	1.3974
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10182.**	**10289.**
Stddev	111.	51.
%RSD	1.0866	.49234
#1	10243.	10257.
#2	10249.	10347.
#3	10054.	10263.

Approved: February 26, 2015

Sample Name: CCV Acquired: 2/25/2015 17:21:35 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41573	9.8003	.40819	.51431	1.0925	.05070	F 11.042
Stddev	.00114	.0173	.00745	.00258	.0003	.00015	.046
%RSD	.27482	.17662	1.8247	.50130	.02604	.30485	.41242
#1	.41443	9.7809	.41295	.51138	1.0922	.05054	11.005
#2	.41659	9.8141	.39960	.51530	1.0927	.05071	11.029
#3	.41615	9.8060	.41200	.51624	1.0926	.05085	11.093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
Value							10.000
Range							10.000%

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05065	.20135	.51885	.50211	4.1838	54.466	1.0827
Stddev	.00052	.00215	.00172	.00421	.0153	.076	.0024
%RSD	1.0196	1.0685	.33129	.83766	.36561	.13954	.21981
#1	.05100	.20241	.51822	.50302	4.1669	54.379	1.0800
#2	.05006	.19887	.51754	.49753	4.1967	54.498	1.0843
#3	.05090	.20276	.52080	.50579	4.1877	54.521	1.0839
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.084	.51305	1.0083	F 55.027	.51435	10.147	.51272
Stddev	.033	.00225	.0046	.132	.00728	.055	.00361
%RSD	.32796	.43832	.45199	.23975	1.4149	.54369	.70394
#1	10.068	.51048	1.0107	54.897	.51857	10.170	.51572
#2	10.122	.51400	1.0030	55.024	.50595	10.084	.50871
#3	10.062	.51466	1.0110	55.161	.51854	10.187	.51374
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value				50.000			
Range				10.000%			

Approved: February 26, 2015

Sample Name: CCV Acquired: 2/25/2015 17:21:35 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2405	.40436	5.1972	1.0170	F 1.1014	1.0624	.52873
Stddev	.0105	.00328	.0624	.0031	.0033	.0035	.00296
%RSD	.84718	.81182	1.2002	.30323	.29999	.33126	.56047
#1	1.2452	.40142	5.1493	1.0166	1.0976	1.0586	.52739
#2	1.2285	.40375	5.2677	1.0141	1.1029	1.0628	.53213
#3	1.2478	.40790	5.1746	1.0203	1.1036	1.0656	.52667
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
Value					1.0000		
Range					10.000%		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0081	.98831	F -.19967
Stddev	.0011	.00222	.55024
%RSD	.10840	.22503	275.57
#1	1.0069	.98844	-.33385
#2	1.0091	.99046	.40525
#3	1.0082	.98602	-.67042
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10420.	10354.
Stddev	19.	55.
%RSD	.18526	.53371
#1	10428.	10409.
#2	10434.	10353.
#3	10398.	10299.

Approved: February 26, 2015

Sample Name: CCB Acquired: 2/25/2015 17:24:50 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	-.01551	-.00011	.00376	-.00028	-.00012	.00847
Stddev	.00054	.00191	.00102	.00095	.00026	.00004	.00819
%RSD	70.365	12.338	906.73	25.163	93.056	34.408	96.665
#1	.00139	-.01719	.00077	.00267	.00001	-.00013	.01426
#2	.00051	-.01343	.00012	.00435	-.00034	-.00016	.01204
#3	.00041	-.01591	-.00123	.00427	-.00051	-.00008	-.00090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.00013	-.00008	-.00029	.00165	-.02528	.00237
Stddev	.00015	.00011	.00086	.00044	.01011	.02557	.00078
%RSD	114.66	86.137	1089.6	150.81	611.88	101.17	33.095
#1	.00011	.00015	.00074	-.00070	-.00507	-.02348	.00170
#2	-.00001	.00001	-.00099	.00018	.01328	-.00065	.00323
#3	.00029	.00021	.00001	-.00036	-.00325	-.05170	.00218
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00783	.00000	.00506	-.00717	-.00054	-.00448	-.00008
Stddev	.03145	.00001	.00041	.00713	.00083	.00380	.00356
%RSD	401.65	8251.3	8.1173	99.491	155.09	84.763	4567.9
#1	-.01719	.00001	.00460	-.00052	-.00002	-.00624	-.00411
#2	.02723	-.00002	.00520	-.01470	-.00009	-.00709	.00265
#3	-.03354	.00001	.00539	-.00628	-.00150	-.00012	.00123
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: CCB Acquired: 2/25/2015 17:24:50 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00552	.00376	-.00417	-.00022	.00007	-.00001	.00132
Stddev	.00061	.00524	.00136	.00032	.00005	.00140	.00127
%RSD	10.969	139.56	32.621	143.42	81.843	25518.	95.845
#1	.00612	.00502	-.00332	-.00057	.00008	-.00149	.00255
#2	.00491	-.00200	-.00574	-.00015	.00011	.00130	.00141
#3	.00553	.00825	-.00345	.00005	.00001	.00018	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00001	-.00024	F -.97866
Stddev	.00033	.00007	1.8785
%RSD	3441.5	29.795	191.95
#1	-.00031	-.00026	-3.0880
#2	.00035	-.00031	.51418
#3	-.00001	-.00016	-.36220
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10371.	10258.
Stddev	29.	55.
%RSD	.28245	.53621
#1	10404.	10213.
#2	10363.	10242.
#3	10347.	10319.

Approved: February 26, 2015

Sample Name: L1502114208 Acquired: 2/25/2015 17:28:33 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.04831	-.00293	.02061	.20767	-.00021	127.89
Stddev	.00022	.00242	.00093	.00101	.00076	.00001	.20
%RSD	65.879	5.0035	31.781	4.9065	.36544	5.1078	.15685
#1	.00013	.04924	-.00302	.02168	.20854	-.00020	128.03
#2	.00057	.04556	-.00382	.02048	.20730	-.00020	127.66
#3	.00030	.05012	-.00196	.01967	.20717	-.00022	127.99
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	-.00051	.00120	-.00031	.13148	1.9658	.01435
Stddev	.00004	.00018	.00033	.00038	.00302	.0164	.00177
%RSD	7.2120	36.230	27.567	122.27	2.2936	.83235	12.345
#1	.00050	-.00051	.00082	-.00068	.12800	1.9764	.01264
#2	.00055	-.00032	.00134	.00007	.13316	1.9469	.01423
#3	.00058	-.00069	.00144	-.00032	.13329	1.9741	.01618
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	18.158	.27661	.00132	^ *****	.00156	.00109	.00034
Stddev	.072	.00187	.00015	-----	.00063	.00360	.00139
%RSD	.39534	.67550	11.383	-----	40.564	330.74	404.94
#1	18.232	.27861	.00149	366.63	.00229	-.00305	-.00126
#2	18.088	.27491	.00119	364.63	.00110	.00349	.00102
#3	18.156	.27631	.00129	^ -----	.00131	.00282	.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: L1502114208 Acquired: 2/25/2015 17:28:33 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00065**	**-.00154**	**3.5212**	**-.00025**	**.50529**	**-.00324**	**.00121**
Stddev	.00135	.00164	.1681	.00037	.00070	.00297	.00090
%RSD	206.85	106.51	4.7751	150.27	.13770	91.785	74.506
#1	.00076	.00014	3.5482	-.00006	.50545	-.00264	.00027
#2	-.00075	-.00162	3.6743	-.00068	.50452	-.00061	.00206
#3	.00194	-.00314	3.3413	-.00001	.50588	-.00646	.00129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00049**	**.00260**	F **-7.5535**
Stddev	.00017	.00031	4.8010
%RSD	34.022	11.985	63.560
#1	.00052	.00286	-6.1462
#2	.00064	.00270	-3.6135
#3	.00031	.00226	-12.901
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**9725.6**	**10184.**
Stddev	3.7	53.
%RSD	.03796	.52454
#1	9726.7	10130.
#2	9721.5	10237.
#3	9728.6	10185.

Approved: February 26, 2015

Sample Name: L1502114209 Acquired: 2/25/2015 17:32:12 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	1.0011	-.00169	.01039	.38719	-.00021	167.69
Stddev	.00019	.0220	.00228	.00048	.00369	.00001	.30
%RSD	24.259	2.2014	134.26	4.6368	.95399	6.6148	.18005
#1	.00100	.97979	-.00304	.01094	.38915	-.00020	167.65
#2	.00077	.99965	-.00298	.01007	.38293	-.00020	168.00
#3	.00062	1.0238	.00093	.01016	.38949	-.00022	167.40
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00072	-.00027	.00158	.00021	.93516	2.7304	.01427
Stddev	.00014	.00014	.00029	.00069	.01005	.0714	.00202
%RSD	19.915	50.679	18.322	324.16	1.0743	2.6154	14.139
#1	.00079	-.00042	.00149	.00101	.94439	2.7922	.01198
#2	.00082	-.00023	.00190	-.00010	.92446	2.6522	.01577
#3	.00056	-.00015	.00135	-.00026	.93663	2.7467	.01507
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	20.413	.07725	.00097	^ *****	.00213	.03134	.00068
Stddev	.167	.00132	.00033	-----	.00098	.00593	.00119
%RSD	.81579	1.7052	34.413	-----	45.998	18.923	174.28
#1	20.287	.07588	.00072	685.87	.00100	.03812	.00147
#2	20.602	.07851	.00083	531.87	.00260	.02711	.00128
#3	20.351	.07736	.00134	^ -----	.00278	.02879	-.00069
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: L1502114209 Acquired: 2/25/2015 17:32:12 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	-.00123	4.4648	-.00048	.61554	.02096	.00232
Stddev	.00076	.00316	.2087	.00046	.00176	.00208	.00057
%RSD	1019.2	256.34	4.6742	95.639	.28649	9.9299	24.611
#1	-.00012	-.00161	4.2460	-.00096	.61658	.01883	.00278
#2	-.00058	-.00419	4.4865	-.00004	.61351	.02108	.00250
#3	.00092	.00210	4.6617	-.00045	.61655	.02298	.00168
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00204	.01422	F -8.3258
Stddev	.00037	.00060	1.7504
%RSD	17.999	4.2352	21.023
#1	.00183	.01362	-6.3977
#2	.00183	.01421	-9.8147
#3	.00247	.01482	-8.7650
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	9572.8	9989.0
Stddev	15.5	196.8
%RSD	.16241	1.9700
#1	9554.9	10129.
#2	9582.7	9764.0
#3	9580.8	10074.

Approved: February 26, 2015

Sample Name: L1502114211 Acquired: 2/25/2015 17:35:47 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .00045	.66922	k -.00246	k .01759	.75391	k -.00016
Stddev	.00060	.02638	.00282	.00026	.00045	.00001
%RSD	133.61	3.9416	114.75	1.4568	.06026	7.4676
#1	-.00019	.63882	-.00548	.01741	.75356	-.00015
#2	.00099	.68280	-.00200	.01749	.75442	-.00015
#3	k .00055	.68605	k .00011	k .01789	.75374	k -.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Elem	Ca4226	Cd2288	Co2286	Cr2677	Cu2247	Fe2611
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	^ *****	k .00086	k .00024	k .00137	k .00167	k 1.8899
Stddev	-----	.00008	.00037	.00007	.00039	.0132
%RSD	-----	9.5183	154.12	5.0633	23.242	.69697
#1	328.66	.00085	-.00007	.00141	.00186	1.8907
#2	328.96	.00095	.00064	.00141	.00122	1.9026
#3	^ -----	k .00079	k .00015	k .00129	k .00192	k 1.8763
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.7945	.02271	33.419	k .16643	k .00060	^ *****
Stddev	.0407	.00116	.019	.00229	.00036	-----
%RSD	1.0721	5.0907	.05796	1.3787	60.697	-----
#1	3.7553	.02404	33.417	.16420	.00079	417.54
#2	3.8365	.02191	33.440	.16630	.00018	432.78
#3	3.7918	.02219	33.401	k .16879	k .00082	^ -----
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Approved: February 26, 2015

Sample Name: L1502114211 Acquired: 2/25/2015 17:35:47 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .00291	k .11958	k .00112	k -.00255	k .00041	4.7164
Stddev	.00122	.01290	.00296	.00200	.00226	.2004
%RSD	41.895	10.785	264.84	78.459	551.57	4.2491
#1	.00399	.10751	.00358	-.00141	.00206	4.4922
#2	.00159	.11806	.00196	-.00485	.00134	4.7786
#3	k .00317	k .13317	k -.00217	k -.00138	k -.00217	4.8783
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k -.00045	k 1.2667	k -.00175	k .00147	k .00184	.01992
Stddev	.00017	.0029	.00071	.00255	.00050	.00070
%RSD	37.496	.22672	40.268	173.15	27.177	3.5092
#1	-.00037	1.2644	-.00099	.00441	.00127	.01915
#2	-.00064	1.2657	-.00237	.00010	.00222	.02010
#3	k -.00033	k 1.2699	k -.00190	k -.00009	k .00203	.02051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Elem	Zr3391
Units	ppm
Avg	kF -.97623
Stddev	2.4688
%RSD	252.89
#1	-2.4987
#2	1.8722
#3	k -2.3022
Check ?	Chk Fail
High Limit	36.000
Low Limit	-.00320

Approved: February 26, 2015

Sample Name: L1502114211 Acquired: 2/25/2015 17:35:47 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	9527.0	10135.
Stddev	12.0	77.
%RSD	.12627	.76466
#1	9514.9	10172.
#2	9539.0	10186.
#3	9527.1	10046.

Approved: February 26, 2015

Sample Name: L1502114701 0.2 Acquired: 2/25/2015 17:39:27 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00090	.08415	.00126	.01606	-.00045	-.00025	39.223
Stddev	.00031	.00674	.00060	.00105	.00041	.00002	.027
%RSD	34.612	8.0049	47.394	6.5198	91.483	9.3303	.06982
#1	.00058	.07972	.00086	.01725	-.00047	-.00025	39.229
#2	.00092	.08084	.00195	.01529	-.00002	-.00023	39.247
#3	.00120	.09191	.00098	.01564	-.00084	-.00027	39.193
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	-.00002	.00044	.01117	.09166	4.8355	.00309
Stddev	.00002	.00022	.00043	.00066	.00463	.0102	.00194
%RSD	10.776	1137.5	98.315	5.9335	5.0528	.21129	62.957
#1	.00018	-.00010	.00080	.01054	.08928	4.8473	.00501
#2	.00015	.00022	.00055	.01186	.08870	4.8308	.00313
#3	.00018	-.00018	-.00004	.01110	.09700	4.8286	.00112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.96927	.00908	.00208	24.994	.00136	.07986	-.00025
Stddev	.00765	.00022	.00006	.037	.00050	.00463	.00016
%RSD	.78891	2.4428	2.7561	.14876	37.086	5.8011	61.932
#1	.96045	.00886	.00206	25.004	.00092	.07716	-.00039
#2	.97406	.00908	.00215	25.026	.00124	.07721	-.00008
#3	.97330	.00930	.00204	24.954	.00191	.08521	-.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: L1502114701 0.2 Acquired: 2/25/2015 17:39:27 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00209**	**.00052**	**.74944**	**.00014**	**.08071**	**-.00233**	**.00067**
Stddev	.00168	.00438	.02073	.00042	.00020	.00118	.00030
%RSD	80.261	846.56	2.7658	300.57	.25225	50.897	45.071
#1	-.00196	.00341	.76076	.00020	.08094	-.00175	.00079
#2	-.00383	-.00452	.72552	-.00031	.08065	-.00154	.00089
#3	-.00048	.00266	.76205	.00053	.08054	-.00369	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00046**	**.00889**	F **-2.7381**
Stddev	.00018	.00025	.5407
%RSD	39.068	2.8064	19.746
#1	.00058	.00899	-3.3616
#2	.00056	.00861	-2.3977
#3	.00025	.00907	-2.4552
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10258.**	**10547.**
Stddev	27.	47.
%RSD	.26242	.44385
#1	10285.	10594.
#2	10231.	10548.
#3	10257.	10500.

Approved: February 26, 2015

Sample Name: L1502115301 Acquired: 2/25/2015 17:43:04 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00090	.07970	-.00238	.04971	.11589	-.00023	33.200
Stddev	.00047	.00087	.00276	.00134	.00051	.00001	.058
%RSD	52.189	1.0940	116.00	2.7002	.44084	3.4708	.17519
#1	.00092	.08013	-.00114	.04817	.11547	-.00024	33.193
#2	.00135	.07870	-.00046	.05036	.11646	-.00022	33.262
#3	.00042	.08027	-.00555	.05061	.11575	-.00023	33.146
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	.00005	.00158	.07617	1.1605	17.010	.00439
Stddev	.00005	.00011	.00007	.00342	.0175	.029	.00097
%RSD	8.2461	204.12	4.3202	4.4956	1.5114	.17319	22.017
#1	.00060	.00011	.00150	.07236	1.1804	16.981	.00546
#2	.00067	-.00007	.00160	.07899	1.1539	17.040	.00358
#3	.00071	.00012	.00163	.07716	1.1473	17.007	.00414
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.1758	.01796	.00151	^ *****	.00317	6.3713	.00330
Stddev	.0801	.00019	.00028	-----	.00060	.1960	.00207
%RSD	1.1160	1.0601	18.235	-----	18.910	3.0761	62.665
#1	7.0834	.01774	.00120	135.33	.00321	6.1450	.00282
#2	7.2256	.01810	.00171	135.50	.00375	6.4884	.00151
#3	7.2183	.01803	.00162	^ -----	.00255	6.4804	.00557
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: L1502115301 Acquired: 2/25/2015 17:43:04 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00075**	**.00867**	**.95276**	**.00454**	**.15976**	**-.00139**	**-.00036**
Stddev	.00106	.00258	.00999	.00019	.00011	.00095	.00305
%RSD	141.39	29.785	1.0490	4.2731	.06766	68.392	858.01
#1	-.00117	.00570	.94125	.00473	.15965	-.00227	-.00362
#2	.00046	.01000	.95776	.00435	.15986	-.00038	.00015
#3	-.00154	.01033	.95926	.00453	.15977	-.00153	.00241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00033**	**.12137**	F **-7.5027**
Stddev	.00019	.00058	1.2670
%RSD	58.869	.47502	16.888
#1	.00049	.12202	-6.9223
#2	.00011	.12091	-6.6298
#3	.00039	.12119	-8.9559
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**9947.6**	**10472.**
Stddev	22.5	44.
%RSD	.22574	.42044
#1	9973.5	10455.
#2	9933.2	10440.
#3	9936.2	10522.

Approved: February 26, 2015

Sample Name: L1502115303 Acquired: 2/25/2015 17:46:35 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00151	.17433	-.00099	.06850	.03126	-.00023	33.337
Stddev	.00014	.00455	.00191	.00152	.00046	.00000	.029
%RSD	9.1433	2.6111	192.39	2.2187	1.4692	1.5590	.08644
#1	.00167	.16925	-.00272	.06675	.03074	-.00024	33.304
#2	.00146	.17806	-.00131	.06930	.03144	-.00023	33.350
#3	.00140	.17567	.00105	.06945	.03160	-.00023	33.358
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00239	.00008	.00250	.05441	1.2982	24.556	.00332
Stddev	.00009	.00020	.00089	.00041	.0028	.051	.00101
%RSD	3.8766	260.78	35.583	.75237	.21228	.20800	30.303
#1	.00235	.00018	.00352	.05480	1.2989	24.545	.00396
#2	.00231	-.00015	.00194	.05398	1.2952	24.511	.00216
#3	.00249	.00020	.00204	.05446	1.3006	24.611	.00384
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.2694	.01947	.00178	59.298	.00353	7.1707	.00317
Stddev	.0566	.00014	.00011	.088	.00057	.0673	.00048
%RSD	.77789	.72650	6.3181	.14806	16.052	.93928	15.015
#1	7.2210	.01934	.00167	59.198	.00295	7.2064	.00275
#2	7.3316	.01945	.00179	59.364	.00408	7.0930	.00369
#3	7.2558	.01962	.00189	59.331	.00358	7.2126	.00306
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: L1502115303 Acquired: 2/25/2015 17:46:35 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	.00140	1.0110	.00335	.14621	.00673	-.00145
Stddev	.00108	.00187	.0077	.00039	.00025	.00138	.00177
%RSD	253.95	133.30	.76324	11.732	.17363	20.589	121.53
#1	.00167	-.00040	1.0181	.00380	.14638	.00699	-.00337
#2	-.00029	.00127	1.0028	.00311	.14592	.00523	.00011
#3	-.00011	.00333	1.0121	.00313	.14633	.00796	-.00111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00041	.12990	F -9.8040
Stddev	.00016	.00240	2.1107
%RSD	37.703	1.8501	21.529
#1	.00043	.13248	-7.9253
#2	.00025	.12773	-12.088
#3	.00056	.12948	-9.3987
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10099.	10404.
Stddev	19.	50.
%RSD	.18807	.48177
#1	10111.	10425.
#2	10077.	10347.
#3	10110.	10441.

Approved: February 26, 2015

Sample Name: L1502117604 Acquired: 2/25/2015 17:50:04 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.08218	.00011	.09356	.00930	-.00023	29.705
Stddev	.00024	.00085	.00485	.00072	.00021	.00004	.094
%RSD	40.032	1.0391	4435.0	.76454	2.2062	18.927	.31609
#1	.00032	.08176	.00565	.09302	.00907	-.00026	29.784
#2	.00074	.08316	-.00197	.09330	.00943	-.00018	29.601
#3	.00071	.08161	-.00335	.09437	.00942	-.00026	29.729
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.02037	.00075	-.00103	.01126	2.9561	10.364
Stddev	.00012	.00031	.00043	.00035	.00486	.0087	.007
%RSD	34.927	1.5080	58.195	33.811	43.171	.29331	.06299
#1	.00023	.02071	.00051	-.00115	.01043	2.9547	10.366
#2	.00046	.02012	.00125	-.00131	.01648	2.9654	10.369
#3	.00031	.02027	.00048	-.00064	.00687	2.9482	10.356
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.1852	.00330	.04507	^ *****	.09034	6.7411	-.00014
Stddev	.0408	.00011	.00041	-----	.00080	.0956	.00099
%RSD	.56761	3.2904	.91573	-----	.88393	1.4185	691.33
#1	7.1383	.00335	.04554	976.99	.09004	6.8016	.00078
#2	7.2056	.00338	.04490	^ -----	.08974	6.6308	-.00003
#3	7.2118	.00318	.04477	^ -----	.09125	6.7907	-.00118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: L1502117604 Acquired: 2/25/2015 17:50:04 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	.00034	1.8400	-.00080	.15154	-.00271	-.00160
Stddev	.00157	.00195	.0469	.00027	.00187	.00103	.00333
%RSD	7436.0	581.23	2.5469	33.302	1.2361	37.941	208.41
#1	-.00128	.00245	1.8885	-.00106	.15304	-.00329	.00223
#2	-.00052	-.00139	1.7950	-.00053	.15214	-.00332	-.00320
#3	.00173	-.00005	1.8365	-.00081	.14944	-.00152	-.00382
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00024	.00158	F -28.570
Stddev	.00026	.00005	3.158
%RSD	109.07	3.4208	11.055
#1	.00003	.00161	-30.602
#2	-.00025	.00152	-30.176
#3	-.00050	.00162	-24.931
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	9662.1	9948.9
Stddev	2.9	12.9
%RSD	.03018	.13002
#1	9665.2	9945.3
#2	9661.6	9963.3
#3	9659.4	9938.2

Approved: February 26, 2015

Sample Name: L1502117701 Acquired: 2/25/2015 17:53:39 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513358-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.12851	.00736	.99872	.11277	.00000	58.922
Stddev	.00113	.00379	.00145	.00502	.00022	.0000	.063
%RSD	303.59	2.9511	19.715	.50221	.19136	1403.0	.10624
#1	-.00067	.13234	.00904	.99427	.11284	-.00002	58.993
#2	.00158	.12846	.00653	.99773	.11252	.00002	58.902
#3	.00022	.12475	.00653	1.0042	.11294	-.00001	58.873
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	.00141	.00883	.00190	.38197	3.5979	.06496
Stddev	.00008	.00012	.00061	.00039	.00958	.0390	.00286
%RSD	10.482	8.3955	6.9415	20.441	2.5090	1.0829	4.3955
#1	.00068	.00136	.00949	.00200	.37790	3.5869	.06821
#2	.00076	.00132	.00827	.00148	.39292	3.6412	.06386
#3	.00084	.00154	.00874	.00224	.37510	3.5657	.06282
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.9446	.05900	.05045	42.138	.00777	.01497	.00055
Stddev	.0233	.00032	.00014	.096	.00026	.00252	.00164
%RSD	.23424	.53940	.26872	.22751	3.3052	16.858	297.01
#1	9.9239	.05904	.05058	42.208	.00798	.01302	.00210
#2	9.9698	.05867	.05031	42.176	.00748	.01406	-.00118
#3	9.9401	.05931	.05047	42.028	.00786	.01782	.00074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: L1502117701 Acquired: 2/25/2015 17:53:39 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513358-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00172	.00087	2.8862	-.00045	.31806	.00552	.00435
Stddev	.00141	.00301	.0269	.00046	.00077	.00100	.00210
%RSD	82.042	345.06	.93070	102.25	.24253	18.113	48.175
#1	.00020	-.00238	2.9126	-.00017	.31854	.00581	.00373
#2	.00300	.00355	2.8589	-.00020	.31846	.00441	.00264
#3	.00197	.00144	2.8871	-.00099	.31717	.00635	.00669
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00482	.00534	F -3.0255
Stddev	.00030	.00016	2.2668
%RSD	6.1454	2.9371	74.924
#1	.00466	.00550	-5.0837
#2	.00516	.00519	-.59590
#3	.00464	.00532	-3.3970
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10128.	10024.
Stddev	21.	38.
%RSD	.21031	.37474
#1	10153.	9989.8
#2	10116.	10064.
#3	10116.	10019.

Approved: February 26, 2015

Sample Name: L1502117701MS Acquired: 2/25/2015 17:57:11 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513358-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20427	4.7901	.20518	1.9156	.63810	.02430	62.398
Stddev	.00029	.0135	.00074	.0026	.00303	.00008	.142
%RSD	.14090	.28267	.36238	.13331	.47423	.32364	.22746
#1	.20418	4.7777	.20601	1.9165	.63460	.02422	62.258
#2	.20459	4.7881	.20496	1.9127	.63981	.02432	62.541
#3	.20404	4.8045	.20458	1.9175	.63988	.02437	62.394
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02514	.10016	.26411	.24423	2.4295	30.010	.59419
Stddev	.00006	.00092	.00017	.00050	.0158	.069	.00245
%RSD	.25185	.91961	.06318	.20334	.65170	.23033	.41259
#1	.02507	.09916	.26392	.24379	2.4119	29.935	.59415
#2	.02517	.10097	.26419	.24477	2.4426	30.071	.59666
#3	.02518	.10034	.26423	.24414	2.4341	30.024	.59176
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	14.303	.29671	.56325	67.843	.25382	4.9036	.24521
Stddev	.094	.00095	.00276	.088	.00218	.0216	.00161
%RSD	.66063	.32032	.49087	.12991	.85912	.44120	.65633
#1	14.194	.29600	.56017	67.797	.25131	4.8789	.24412
#2	14.363	.29635	.56550	67.945	.25519	4.9188	.24445
#3	14.352	.29779	.56408	67.787	.25497	4.9132	.24706
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: L1502117701MS Acquired: 2/25/2015 17:57:11 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513358-07

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.60712	.18835	5.1446	.49632	.84256	.52612	.25325
Stddev	.00403	.00440	.0281	.00278	.00295	.00450	.00039
%RSD	.66423	2.3351	.54692	.55926	.35048	.85606	.15216
#1	.60258	.18327	5.1142	.49323	.84014	.52094	.25285
#2	.61029	.19098	5.1697	.49860	.84585	.52909	.25362
#3	.60848	.19080	5.1500	.49712	.84170	.52834	.25329
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.50111	.47415	F -5.6682
Stddev	.00052	.00052	2.7390
%RSD	.10422	.10868	48.324
#1	.50061	.47370	-8.4874
#2	.50165	.47404	-5.5000
#3	.50107	.47471	-3.0171
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10046.	10100.
Stddev	11.	12.
%RSD	.10476	.12258
#1	10034.	10113.
#2	10049.	10098.
#3	10054.	10088.

Approved: February 26, 2015

Sample Name: CCV Acquired: 2/25/2015 18:00:32 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41686	9.8655	.41479	.51891	1.0923	.05090	F 11.047
Stddev	.00055	.0147	.00392	.00288	.0038	.00016	.009
%RSD	.13209	.14857	.94505	.55518	.34429	.32111	.08278
#1	.41721	9.8494	.41310	.51693	1.0880	.05108	11.038
#2	.41622	9.8688	.41200	.51757	1.0945	.05076	11.048
#3	.41714	9.8782	.41927	.52221	1.0945	.05087	11.056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
Value							10.000
Range							10.000%

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05117	.20326	.52247	.50643	4.1759	54.616	1.0823
Stddev	.00044	.00165	.00178	.00334	.0170	.155	.0028
%RSD	.85690	.80961	.33994	.66040	.40732	.28305	.26226
#1	.05067	.20137	.52358	.50269	4.1574	54.441	1.0791
#2	.05148	.20433	.52042	.50912	4.1908	54.735	1.0834
#3	.05137	.20409	.52341	.50748	4.1797	54.672	1.0844
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.113	.51734	1.0176	F 55.335	.51803	10.227	.52079
Stddev	.080	.00050	.0005	.041	.00502	.041	.00179
%RSD	.78845	.09673	.05208	.07464	.96979	.39739	.34336
#1	10.089	.51706	1.0171	55.288	.51225	10.205	.51892
#2	10.048	.51704	1.0175	55.352	.52051	10.274	.52249
#3	10.202	.51792	1.0181	55.365	.52133	10.202	.52095
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value				50.000			
Range				10.000%			

Approved: February 26, 2015

Sample Name: CCV Acquired: 2/25/2015 18:00:32 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2498	.40945	5.1834	1.0213	F 1.1040	1.0604	.53356
Stddev	.0117	.00499	.0063	.0066	.0015	.0021	.00098
%RSD	.93534	1.2194	.12237	.64500	.13272	.20096	.18409
#1	1.2366	.40566	5.1772	1.0138	1.1024	1.0579	.53247
#2	1.2542	.40757	5.1832	1.0240	1.1044	1.0615	.53437
#3	1.2587	.41510	5.1899	1.0260	1.1052	1.0617	.53384
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
Value					1.0000		
Range					10.000%		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0069	.98754	F -.33626
Stddev	.0035	.00039	1.1330
%RSD	.34573	.03968	336.93
#1	1.0060	.98780	-1.5120
#2	1.0039	.98773	.74836
#3	1.0107	.98709	-.24510
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10457.	10325.
Stddev	16.	19.
%RSD	.15381	.18074
#1	10472.	10346.
#2	10458.	10316.
#3	10440.	10312.

Approved: February 26, 2015

Sample Name: CCB Acquired: 2/25/2015 18:03:47 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00103	-.01483	-.00073	.00671	-.00051	-.00014	.00338
Stddev	.00059	.00043	.00262	.00123	.00012	.00004	.00244
%RSD	57.316	2.8989	359.43	18.262	23.498	31.976	72.254
#1	.00100	-.01482	-.00076	.00812	-.00038	-.00018	.00598
#2	.00046	-.01527	.00190	.00592	-.00054	-.00009	.00113
#3	.00164	-.01441	-.00333	.00608	-.00062	-.00014	.00303
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.00006	-.00020	-.00043	.00261	.01623	.00059
Stddev	.00016	.00018	.00054	.00044	.00619	.07078	.00084
%RSD	165.25	320.93	269.18	100.66	237.05	436.20	141.10
#1	-.00001	.00024	-.00075	-.00088	-.00427	.06591	.00122
#2	.00002	-.00013	-.00018	-.00040	.00774	.04759	.00091
#3	.00029	.00006	.00033	-.00001	.00437	-.06481	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00566	-.00002	.00510	.00698	.00045	-.00575	-.00160
Stddev	.04435	.00002	.00031	.00176	.00010	.00376	.00069
%RSD	783.59	99.977	6.1269	25.268	23.447	65.473	43.248
#1	-.05434	-.00003	.00476	.00601	.00041	-.01006	-.00212
#2	.03245	.00000	.00515	.00901	.00057	-.00312	-.00082
#3	.00491	-.00004	.00538	.00591	.00037	-.00407	-.00188
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: CCB Acquired: 2/25/2015 18:03:47 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00543**	**.00074**	**-.00546**	**.00034**	**.00013**	**.00031**	**.00317**
Stddev	.00153	.00081	.00039	.00048	.00009	.00134	.00127
%RSD	28.174	109.88	7.1234	139.92	72.496	430.89	40.000
#1	.00543	.00160	-.00509	.00072	.00005	-.00009	.00455
#2	.00695	-.00002	-.00541	.00051	.00010	-.00078	.00289
#3	.00390	.00064	-.00587	-.00020	.00022	.00181	.00206
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00028**	**-.00017**	F **1.4335**
Stddev	.00021	.00015	1.5967
%RSD	74.203	87.406	111.39
#1	.00009	-.00033	.74943
#2	.00051	-.00015	.29273
#3	.00026	-.00003	3.2582
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10388.**	**10125.**
Stddev	15.	7.
%RSD	.14177	.07267
#1	10403.	10121.
#2	10389.	10133.
#3	10374.	10120.

Approved: February 26, 2015

Sample Name: PBW C6 Acquired: 2/25/2015 18:07:26 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513370-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	-.01585	-.00011	.00449	-.00070	-.00012	.02130
Stddev	.00047	.00178	.00051	.00077	.00025	.00000	.01812
%RSD	58.512	11.216	452.23	17.230	35.968	1.3274	85.098
#1	.00030	-.01761	-.00068	.00503	-.00054	-.00012	.04087
#2	.00088	-.01589	.00031	.00360	-.00099	-.00012	.01792
#3	.00124	-.01406	.00003	.00484	-.00057	-.00012	.00510
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	-.00006	.00024	-.00044	.00365	-.00049	-.00068
Stddev	.00007	.00016	.00026	.00053	.00201	.02955	.00192
%RSD	48.396	247.74	109.86	119.91	55.026	5979.5	282.60
#1	.00007	-.00024	-.00003	-.00088	.00552	.01819	-.00262
#2	.00018	.00002	.00026	-.00059	.00389	-.03456	.00122
#3	.00021	.00003	.00048	.00015	.00153	.01489	-.00064
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.01217	.00018	.00118	.01717	.00108	F -.01556	.00020
Stddev	.04733	.00006	.00028	.00530	.00086	.00078	.00245
%RSD	388.87	32.645	23.449	30.894	79.368	4.9847	1238.9
#1	.02269	.00011	.00086	.01184	.00060	-.01541	.00148
#2	-.06605	.00020	.00136	.02245	.00057	-.01639	.00173
#3	.00685	.00023	.00132	.01720	.00207	-.01487	-.00263
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: PBW C6 Acquired: 2/25/2015 18:07:26 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513370-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00174**	**.00059**	**-.00238**	**-.00033**	**.00014**	**-.00047**	**.00145**
Stddev	.00086	.00159	.00159	.00045	.00015	.00159	.00162
%RSD	49.693	270.66	67.054	136.08	110.95	338.44	112.07
#1	-.00086	.00003	-.00384	-.00068	.00012	-.00222	-.00036
#2	-.00258	-.00065	-.00068	.00018	.00029	.00090	.00279
#3	-.00177	.00239	-.00261	-.00048	-.00001	-.00009	.00191
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00013**	**.00121**	F **-.28120**
Stddev	.00029	.00012	2.8112
%RSD	221.48	9.6977	999.73
#1	.00020	.00132	-3.2617
#2	-.00019	.00109	2.3229
#3	.00037	.00121	.09515
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10385.**	**10073.**
Stddev	15.	35.
%RSD	.14381	.34384
#1	10379.	10088.
#2	10373.	10098.
#3	10401.	10034.

Approved: February 26, 2015

Sample Name: LCSW C6 Acquired: 2/25/2015 18:11:05 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513370-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20850	4.8665	.19418	.96622	.54840	.02504	5.5574
Stddev	.00101	.0162	.00184	.00290	.00209	.00010	.0088
%RSD	.48283	.33379	.94505	.30009	.38179	.38416	.15823
#1	.20892	4.8673	.19453	.96876	.54893	.02515	5.5607
#2	.20923	4.8823	.19582	.96306	.54610	.02496	5.5474
#3	.20735	4.8499	.19220	.96684	.55018	.02502	5.5640
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02462	.10036	.26716	.24743	2.1334	27.445	.54501
Stddev	.00005	.00022	.00147	.00074	.0064	.104	.00219
%RSD	.20830	.21605	.54925	.29979	.29960	.37754	.40102
#1	.02467	.10060	.26885	.24744	2.1324	27.468	.54478
#2	.02457	.10019	.26624	.24817	2.1275	27.331	.54295
#3	.02461	.10029	.26639	.24669	2.1402	27.534	.54730
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.0697	.26012	.51821	27.742	.25391	4.7879	.25030
Stddev	.0388	.00051	.00183	.067	.00074	.0013	.00172
%RSD	.76579	.19494	.35378	.24288	.28986	.02722	.68740
#1	5.0252	.25974	.51976	27.820	.25432	4.7864	.24930
#2	5.0872	.26069	.51867	27.709	.25306	4.7887	.24932
#3	5.0966	.25992	.51618	27.698	.25435	4.7886	.25229
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: LCSW C6 Acquired: 2/25/2015 18:11:05 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513370-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.61162	.18534	2.6375	.51598	.55818	.54432	.27046
Stddev	.00441	.00160	.0202	.00429	.00220	.00375	.00328
%RSD	.72101	.86435	.76586	.83208	.39462	.68894	1.2138
#1	.60657	.18354	2.6150	.51104	.56071	.54852	.26684
#2	.61361	.18586	2.6541	.51880	.55711	.54130	.27324
#3	.61468	.18662	2.6434	.51811	.55671	.54314	.27131
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.51321	.50070	F -1.0600
Stddev	.00100	.01443	.3682
%RSD	.19538	2.8819	34.735
#1	.51409	.49163	-.67784
#2	.51212	.51734	-1.4124
#3	.51341	.49314	-1.0897
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10339.	10135.
Stddev	35.	14.
%RSD	.34004	.14226
#1	10299.	10137.
#2	10349.	10120.
#3	10367.	10148.

Approved: February 26, 2015

Sample Name: L1502108901 Acquired: 2/25/2015 18:18:20 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00126	.00360	-.00297	.00385	.00077	-.00013	.41744
Stddev	.00021	.00074	.00169	.00094	.00014	.00003	.00718
%RSD	16.694	20.527	56.891	24.270	17.708	21.165	1.7205
#1	.00150	.00401	-.00451	.00423	.00063	-.00016	.41516
#2	.00112	.00405	-.00116	.00454	.00091	-.00010	.42549
#3	.00116	.00275	-.00326	.00279	.00077	-.00013	.41168
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	-.00002	.00033	-.00100	.02248	.02601	-.00054
Stddev	.00002	.00018	.00041	.00016	.00366	.04321	.00088
%RSD	6.9191	777.71	122.65	15.685	16.271	166.14	161.65
#1	.00036	.00007	-.00012	-.00082	.02132	.01954	-.00054
#2	.00032	-.00023	.00066	-.00109	.01955	-.01360	.00033
#3	.00032	.00009	.00046	-.00110	.02658	.07209	-.00143
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.06907	.00110	.00072	.02645	.00105	F -.01199	-.00034
Stddev	.04411	.00003	.00027	.01372	.00046	.00517	.00030
%RSD	63.859	3.1438	37.347	51.870	44.162	43.128	90.172
#1	.01926	.00111	.00068	.01084	.00064	-.01387	.00001
#2	.08478	.00106	.00047	.03191	.00155	-.01596	-.00056
#3	.10317	.00113	.00101	.03661	.00095	-.00614	-.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502108901 Acquired: 2/25/2015 18:18:20 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00350	-.00008	.04610	-.00015	.00155	-.00060	.00003
Stddev	.00247	.00204	.00201	.00009	.00013	.00027	.00231
%RSD	70.533	2455.2	4.3551	57.857	8.2922	44.829	7314.3
#1	-.00410	-.00192	.04736	-.00005	.00152	-.00073	-.00255
#2	-.00079	-.00045	.04379	-.00022	.00169	-.00079	.00071
#3	-.00562	.00212	.04716	-.00019	.00144	-.00029	.00193
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00017	.00306	F -.83304
Stddev	.00013	.00008	2.0852
%RSD	72.417	2.7199	250.31
#1	.00030	.00313	-3.2343
#2	.00005	.00309	.21375
#3	.00017	.00297	.52142
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10366.	10100.
Stddev	24.	57.
%RSD	.23631	.56332
#1	10394.	10081.
#2	10349.	10164.
#3	10355.	10055.

Approved: February 26, 2015

Sample Name: L1502108902 Acquired: 2/25/2015 18:21:57 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00101	-.01133	-.00143	.00247	.00054	-.00014	.08628
Stddev	.00076	.00209	.00234	.00087	.00020	.00004	.00338
%RSD	75.017	18.467	164.45	35.168	38.125	29.718	3.9120
#1	.00064	-.00892	.00111	.00238	.00044	-.00017	.08309
#2	.00051	-.01268	-.00188	.00338	.00040	-.00009	.08981
#3	.00189	-.01238	-.00351	.00165	.00077	-.00015	.08593
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00000	.00012	-.00042	.01687	-.02883	.00010
Stddev	.00011	.0001	.00051	.00070	.00905	.05362	.00159
%RSD	41.194	131790.	408.94	166.25	53.631	185.95	1622.9
#1	.00015	.00011	-.00032	.00032	.01792	.00377	-.00173
#2	.00030	-.00006	.00068	-.00052	.02534	.00044	.00116
#3	.00036	-.00006	.00002	-.00107	.00734	-.09072	.00087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.01400	.00058	.00052	.01099	.00108	F -.01426	-.00196
Stddev	.01112	.00006	.00030	.00119	.00038	.00574	.00084
%RSD	79.387	10.273	58.892	10.828	34.859	40.263	43.097
#1	-.00670	.00054	.00028	.01226	.00065	-.00771	-.00211
#2	-.00851	.00065	.00041	.01078	.00133	-.01842	-.00105
#3	-.02679	.00056	.00086	.00991	.00126	-.01664	-.00271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502108902 Acquired: 2/25/2015 18:21:57 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**.00111**	**.00505**	**-.00002**	**.00034**	**-.00111**	**-.00075**
Stddev	.00108	.00240	.00032	.00031	.00010	.00110	.00066
%RSD	382.60	216.73	6.2967	1500.7	28.569	98.770	88.050
#1	.00089	.00125	.00493	-.00006	.00023	-.00098	-.00035
#2	-.00125	-.00136	.00542	-.00031	.00042	-.00008	-.00152
#3	-.00049	.00344	.00482	.00030	.00037	-.00226	-.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00013**	**.00281**	**1.3377**
Stddev	.00037	.00009	2.1794
%RSD	279.40	3.3589	162.92
#1	.00025	.00275	1.8148
#2	-.00049	.00276	-1.0407
#3	-.00016	.00292	3.2390
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10381.**	**10141.**
Stddev	16.	33.
%RSD	.15612	.32552
#1	10385.	10117.
#2	10394.	10179.
#3	10363.	10127.

Approved: February 26, 2015

Sample Name: L1502108903 Acquired: 2/25/2015 18:25:42 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00102	-.01382	-.00196	.00258	.00083	-.00016	.04627
Stddev	.00023	.00130	.00097	.00130	.00017	.00005	.01179
%RSD	22.533	9.4284	49.643	50.446	20.761	33.387	25.473
#1	.00128	-.01528	-.00094	.00135	.00096	-.00014	.04119
#2	.00092	-.01339	-.00207	.00243	.00090	-.00012	.03788
#3	.00085	-.01278	-.00287	.00394	.00064	-.00022	.05975
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	-.00008	.00109	-.00054	.01513	-.01744	-.00053
Stddev	.00006	.00024	.00067	.00020	.00408	.00903	.00166
%RSD	21.241	309.45	61.461	36.436	26.925	51.786	311.62
#1	.00033	.00015	.00032	-.00074	.01120	-.00816	-.00143
#2	.00022	-.00005	.00143	-.00054	.01934	-.01796	.00138
#3	.00029	-.00033	.00151	-.00035	.01486	-.02620	-.00154
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00968	.00052	.00024	.01122	.00145	F -.01436	-.00076
Stddev	.02619	.00008	.00009	.01308	.00008	.00181	.00117
%RSD	270.43	16.065	37.111	116.61	5.6312	12.629	155.43
#1	.03987	.00050	.00033	.01633	.00140	-.01226	-.00167
#2	-.00698	.00061	.00026	-.00365	.00141	-.01539	-.00116
#3	-.00383	.00045	.00015	.02096	.00155	-.01541	.00057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502108903 Acquired: 2/25/2015 18:25:42 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00134**	**.00079**	**.00973**	**-.00054**	**.00023**	**-.00027**	**.00210**
Stddev	.00224	.00465	.00089	.00064	.00016	.00157	.00097
%RSD	167.49	590.58	9.1518	116.94	71.102	578.77	46.027
#1	-.00378	-.00452	.00969	-.00122	.00012	-.00071	.00244
#2	.00061	.00274	.01064	-.00045	.00014	.00147	.00101
#3	-.00083	.00414	.00886	.00004	.00041	-.00158	.00286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00004**	**.00317**	**1.2073**
Stddev	.00034	.00005	1.9634
%RSD	795.61	1.6920	162.62
#1	.00040	.00318	3.2358
#2	-.00001	.00312	1.0697
#3	-.00027	.00323	-.68365
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10391.**	**10068.**
Stddev	15.	13.
%RSD	.14792	.12569
#1	10406.	10082.
#2	10392.	10057.
#3	10375.	10065.

Approved: February 26, 2015

Sample Name: L1502108904 Acquired: 2/25/2015 18:29:19 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	.01990	-.00168	.00119	.00070	-.00015	16.175	.00036
Stddev	.00110	.00409	.00328	.00051	.00019	.00001	.018	.00007
%RSD	179.55	20.578	195.39	43.360	27.268	7.5284	.11008	18.133
#1	.00032	.01738	.00066	.00102	.00069	-.00014	16.193	.00036
#2	-.00031	.01769	-.00543	.00176	.00089	-.00014	16.174	.00043
#3	.00183	.02462	-.00027	.00078	.00051	-.00016	16.157	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00052	-.00025	.02781	-.03618	.00222	.05318	.00334
Stddev	.00032	.00069	.00073	.00356	.00922	.00080	.01501	.00004
%RSD	502.56	132.64	290.67	12.782	25.494	36.108	28.220	1.0931
#1	-.00024	.00131	.00050	.02952	-.02558	.00141	.06036	.00330
#2	.00003	.00021	-.00096	.02373	-.04061	.00224	.06325	.00335
#3	.00040	.00004	-.00030	.03020	-.04236	.00301	.03593	.00337
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.25751	.00146	.16388	-.00060	-.00219	-.00068	-.00180
Stddev	.00025	.00354	.00034	.00420	.00010	.00152	.00097	.00044
%RSD	104.15	1.3746	23.346	2.5599	16.727	69.409	143.21	24.161
#1	.00048	.25611	.00118	.16712	-.00061	-.00272	-.00144	-.00225
#2	-.00002	.26153	.00136	.15914	-.00069	-.00048	.00041	-.00177
#3	.00028	.25488	.00184	.16538	-.00049	-.00338	-.00101	-.00138
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 26, 2015

Sample Name: L1502108904 Acquired: 2/25/2015 18:29:19 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00030**	**.00775**	**.00071**	**.00022**	**.00021**	**.05956**	**.25110**
Stddev	.00021	.00009	.00084	.00205	.00013	.00266	.40305
%RSD	68.034	1.1856	117.98	939.24	62.338	4.4674	160.51
#1	-.00010	.00785	.00144	-.00042	.00027	.06255	.23446
#2	-.00052	.00767	-.00020	-.00144	.00029	.05747	-.14337
#3	-.00029	.00773	.00089	.00251	.00006	.05864	.66222
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10398.**	**10097.**
Stddev	18.	63.
%RSD	.17244	.62192
#1	10410.	10038.
#2	10378.	10090.
#3	10407.	10163.

Approved: February 26, 2015

Sample Name: L1502108905 Acquired: 2/25/2015 18:32:53 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	-.01538	-.00316	.00197	.00033	-.00011	.05525
Stddev	.00082	.00101	.00142	.00071	.00016	.00001	.00388
%RSD	112.86	6.5550	44.980	36.331	46.421	11.550	7.0233
#1	.00096	-.01430	-.00265	.00120	.00022	-.00010	.05973
#2	-.00018	-.01629	-.00207	.00262	.00027	-.00011	.05297
#3	.00140	-.01554	-.00477	.00207	.00051	-.00013	.05306
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	-.00008	.00048	-.00020	.01016	-.01625	-.00007
Stddev	.00006	.00019	.00063	.00079	.00337	.04864	.00091
%RSD	27.088	235.93	131.38	390.84	33.187	299.33	1246.6
#1	.00028	-.00011	.00106	-.00022	.00639	.03392	.00041
#2	.00017	-.00024	.00055	-.00098	.01119	-.06319	.00049
#3	.00020	.00012	-.00018	.00060	.01289	-.01947	-.00112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01764	.00032	.00044	.03141	.00090	F -.01268	-.00113
Stddev	.00811	.00009	.00028	.00749	.00043	.00864	.00096
%RSD	45.937	27.030	64.181	23.836	48.212	68.188	85.227
#1	.01147	.00041	.00048	.03296	.00139	-.00941	-.00224
#2	.01464	.00033	.00070	.03800	.00071	-.02248	-.00050
#3	.02682	.00023	.00014	.02327	.00059	-.00615	-.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502108905 Acquired: 2/25/2015 18:32:53 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00421**	**.00477**	**-.00090**	**-.00023**	**.00023**	**-.00005**	**.00151**
Stddev	.00186	.00376	.00062	.00018	.00008	.00011	.00112
%RSD	44.138	78.808	68.741	81.516	35.100	209.64	74.488
#1	-.00228	.00097	-.00109	-.00041	.00014	-.00016	.00269
#2	-.00436	.00848	-.00141	-.00004	.00026	-.00007	.00137
#3	-.00599	.00485	-.00021	-.00022	.00029	.00007	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00009**	**.00460**	**1.3907**
Stddev	.00036	.00003	.9378
%RSD	421.60	.68119	67.433
#1	.00026	.00459	.31984
#2	-.00033	.00457	2.0655
#3	.00034	.00463	1.7867
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10391.**	**10009.**
Stddev	10.	70.
%RSD	.09157	.69503
#1	10400.	10022.
#2	10381.	10071.
#3	10392.	9933.4

Approved: February 26, 2015

Sample Name: L1502108905PS Acquired: 2/25/2015 18:36:30 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513437-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21132	4.9600	.20244	.97604	.56058	.02523	5.7154
Stddev	.00168	.0450	.00509	.00027	.00701	.00004	.0370
%RSD	.79563	.90713	2.5158	.02753	1.2505	.16054	.64747
#1	.21309	4.9831	.19659	.97633	.55566	.02527	5.6793
#2	.20974	4.9082	.20594	.97598	.55747	.02522	5.7138
#3	.21112	4.9887	.20477	.97580	.56861	.02519	5.7532
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02527	.10368	.26877	.25376	2.1660	27.857	.55477
Stddev	.00049	.00186	.00081	.00358	.0383	.079	.00217
%RSD	1.9202	1.7907	.30315	1.4114	1.7664	.28509	.39073
#1	.02472	.10154	.26902	.24963	2.1294	27.768	.55227
#2	.02550	.10471	.26786	.25574	2.1629	27.921	.55583
#3	.02560	.10479	.26944	.25591	2.2058	27.881	.55620
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.1370	.26600	.53131	28.178	.26275	4.9412	.25843
Stddev	.0834	.00217	.00843	.041	.00575	.0752	.00370
%RSD	1.6238	.81759	1.5869	.14685	2.1888	1.5216	1.4325
#1	5.0829	.26659	.52160	28.183	.25622	4.8570	.25428
#2	5.0951	.26360	.53555	28.217	.26707	4.9647	.26139
#3	5.2331	.26783	.53679	28.134	.26495	5.0018	.25963
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: L1502108905PS Acquired: 2/25/2015 18:36:30 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513437-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.62385	.18768	2.6614	.52073	.56627	.55443	.27146
Stddev	.00883	.00311	.0182	.00566	.00089	.00136	.00139
%RSD	1.4158	1.6545	.68341	1.0863	.15731	.24580	.51312
#1	.61371	.18728	2.6404	.51420	.56601	.55286	.27301
#2	.62795	.18480	2.6731	.52380	.56726	.55518	.27103
#3	.62988	.19097	2.6707	.52418	.56554	.55526	.27033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.51610	.49822	F -.61020
Stddev	.00200	.00097	2.0225
%RSD	.38779	.19372	331.46
#1	.51830	.49915	-2.8347
#2	.51564	.49829	-.11382
#3	.51438	.49723	1.1179
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10333.	10014.
Stddev	13.	69.
%RSD	.12425	.68639
#1	10325.	10025.
#2	10325.	10076.
#3	10347.	9940.1

Approved: February 26, 2015

Sample Name: L1502108905SDL Acquired: 2/25/2015 18:39:46 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG513437-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	-.01376	.00021	.00470	-.00036	-.00013	.02185
Stddev	.00059	.00026	.00122	.00100	.00015	.00001	.00889
%RSD	97.858	1.8747	584.75	21.187	40.170	7.2347	40.684
#1	.00004	-.01388	-.00093	.00582	-.00051	-.00014	.02023
#2	.00122	-.01393	.00006	.00437	-.00035	-.00013	.03144
#3	.00056	-.01346	.00150	.00391	-.00022	-.00012	.01388
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.00022	.00021	-.00047	.00389	-.01465	.00136
Stddev	.00008	.00003	.00058	.00043	.00446	.03942	.00157
%RSD	45.802	15.361	274.90	90.081	114.43	269.16	115.30
#1	.00011	.00020	.00079	-.00056	.00751	-.05285	.00302
#2	.00014	.00020	-.00037	-.00001	.00526	.02590	-.00009
#3	.00025	.00026	.00022	-.00085	-.00108	-.01699	.00115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04612	.00017	.00178	.00983	.00011	F -.00740	-.00015
Stddev	.04204	.00006	.00030	.01801	.00051	.00329	.00208
%RSD	91.147	34.974	16.753	183.08	455.81	44.437	1354.2
#1	.07293	.00010	.00152	.01920	-.00046	-.00816	-.00146
#2	.06777	.00022	.00171	.02122	.00054	-.00380	-.00125
#3	-.00233	.00019	.00210	-.01092	.00025	-.01025	.00225
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502108905SDL Acquired: 2/25/2015 18:39:46 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG513437-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00107**	**.00095**	**-.00458**	**.00004**	**.00010**	**-.00007**	**.00031**
Stddev	.00155	.00293	.00177	.00052	.00007	.00169	.00219
%RSD	145.47	308.76	38.737	1187.8	69.449	2296.2	712.56
#1	-.00170	.00074	-.00542	.00062	.00004	.00169	.00196
#2	.00070	.00397	-.00254	-.00012	.00017	-.00168	-.00218
#3	-.00221	-.00187	-.00578	-.00037	.00008	-.00023	.00114
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00009**	**.00131**	**1.2034**
Stddev	.00017	.00012	2.0342
%RSD	186.96	8.8252	169.04
#1	-.00002	.00124	.19900
#2	.00028	.00144	-.13332
#3	.00000	.00125	3.5444
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10371.**	**9958.7**
Stddev	7.	27.9
%RSD	.06654	.28036
#1	10363.	9970.1
#2	10374.	9926.9
#3	10375.	9979.2

Approved: February 26, 2015

Sample Name: CCV Acquired: 2/25/2015 18:43:28 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41646	10.094	.41147	.51206	F 1.1086	.05072	F 11.198
Stddev	.00117	.048	.00875	.00119	.0009	.00010	.003
%RSD	.28091	.47185	2.1259	.23325	.08290	.19842	.02934
#1	.41640	10.132	.40140	.51333	1.1095	.05075	11.195
#2	.41533	10.041	.41579	.51095	1.1085	.05061	11.201
#3	.41767	10.110	.41721	.51190	1.1077	.05081	11.200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Fail
Value					1.0000		10.000
Range					10.000%		10.000%

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05086	.20236	.52192	.50238	4.2535	F 55.520	1.0945
Stddev	.00084	.00320	.00144	.00728	.0033	.102	.0026
%RSD	1.6479	1.5810	.27676	1.4488	.07762	.18392	.23515
#1	.04989	.19867	.52271	.49399	4.2509	55.605	1.0965
#2	.05131	.20398	.52025	.50614	4.2524	55.548	1.0955
#3	.05137	.20442	.52280	.50701	4.2572	55.407	1.0916
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
Value						50.000	
Range						10.000%	

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.239	.53046	1.0067	F 56.088	.51735	10.116	.51672
Stddev	.030	.00147	.0144	.033	.00631	.144	.00875
%RSD	.29146	.27636	1.4317	.05808	1.2195	1.4216	1.6937
#1	10.249	.53189	.99007	56.116	.51011	9.9514	.50701
#2	10.206	.52896	1.0138	56.052	.52020	10.176	.52400
#3	10.263	.53052	1.0161	56.096	.52173	10.219	.51915
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value				50.000			
Range				10.000%			

Approved: February 26, 2015

Sample Name: CCV Acquired: 2/25/2015 18:43:28 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2423	.40315	5.1481	1.0241	F 1.1174	1.0746	.53104
Stddev	.0209	.00618	.0445	.0058	.0003	.0008	.00356
%RSD	1.6848	1.5318	.86357	.56453	.02919	.07432	.67008
#1	1.2182	.39656	5.0970	1.0175	1.1177	1.0754	.52705
#2	1.2546	.40407	5.1693	1.0274	1.1170	1.0738	.53387
#3	1.2542	.40881	5.1781	1.0276	1.1175	1.0744	.53220
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
Value					1.0000		
Range					10.000%		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0065	.99426	F .19507
Stddev	.0006	.00216	.67690
%RSD	.05880	.21736	347.00
#1	1.0063	.99670	-.21267
#2	1.0072	.99260	-.17855
#3	1.0061	.99347	.97643
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10436.	10049.
Stddev	11.	46.
%RSD	.10627	.46039
#1	10438.	10015.
#2	10446.	10102.
#3	10424.	10031.

Approved: February 26, 2015

Sample Name: CCB Acquired: 2/25/2015 18:46:44 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00021**	**-.01671**	**-.00005**	**.00343**	**-.00033**	**-.00016**	**.01062**
Stddev	.00044	.00181	.00228	.00055	.00015	.00004	.00870
%RSD	207.55	10.831	4355.0	15.989	44.165	25.918	81.914
#1	-.00024	-.01840	.00254	.00338	-.00049	-.00011	.00223
#2	.00024	-.01693	-.00174	.00401	-.00021	-.00019	.01960
#3	.00063	-.01480	-.00096	.00291	-.00029	-.00017	.01004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00012**	**.00011**	**.00073**	**-.00036**	**.00045**	**-.04154**	**.00019**
Stddev	.00008	.00019	.00050	.00036	.00125	.00938	.00075
%RSD	69.324	177.42	69.275	99.538	279.24	22.579	392.38
#1	.00008	.00012	.00077	-.00035	-.00088	-.05184	.00098
#2	.00006	.00030	.00020	-.00072	.00159	-.03930	.00013
#3	.00021	-.00009	.00121	.00000	.00063	-.03349	-.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.01679**	**.00003**	**.00463**	**-.00761**	**.00023**	**-.00201**	**-.00188**
Stddev	.02425	.00008	.00040	.00605	.00073	.00453	.00139
%RSD	144.41	305.92	8.6551	79.517	314.74	225.44	73.764
#1	-.03918	-.00005	.00418	-.00106	-.00011	.00320	-.00326
#2	-.02016	.00011	.00494	-.01300	.00108	-.00508	-.00049
#3	.00897	.00002	.00477	-.00878	-.00026	-.00415	-.00190
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: CCB Acquired: 2/25/2015 18:46:44 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00463	.00099	-.00670	.00011	.00023	-.00025	.00401
Stddev	.00060	.00331	.00125	.00032	.00002	.00132	.00123
%RSD	13.025	332.88	18.669	298.66	7.4849	533.05	30.684
#1	.00515	.00264	-.00526	.00022	.00023	.00127	.00528
#2	.00477	-.00282	-.00742	-.00025	.00022	-.00119	.00392
#3	.00397	.00317	-.00743	.00036	.00025	-.00082	.00283
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00010	-.00019	F 1.4184
Stddev	.00029	.00012	1.9306
%RSD	305.81	65.654	136.11
#1	-.00022	-.00009	1.8478
#2	.00014	-.00015	-.69072
#3	.00036	-.00033	3.0981
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10335.	9988.0
Stddev	81.	40.4
%RSD	.78560	.40452
#1	10412.	10018.
#2	10250.	10003.
#3	10343.	9942.2

Approved: February 26, 2015

Sample Name: L1502108906 Acquired: 2/25/2015 18:50:32 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00099	-.00276	-.00159	.00274	.00045	-.00013	.42410
Stddev	.00043	.00013	.00101	.00041	.00036	.00003	.00755
%RSD	42.965	4.8696	63.646	14.923	80.783	20.327	1.7797
#1	.00146	-.00261	-.00146	.00310	.00082	-.00015	.42829
#2	.00063	-.00287	-.00065	.00230	.00043	-.00014	.42862
#3	.00089	-.00281	-.00266	.00282	.00010	-.00010	.41538
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00015	.00041	-.00053	.22601	.03094	.00061
Stddev	.00005	.00016	.00004	.00064	.01239	.03249	.00035
%RSD	18.940	104.46	9.5845	119.82	5.4825	105.00	56.399
#1	.00026	-.00001	.00041	-.00002	.22909	.06527	.00076
#2	.00032	.00016	.00036	-.00124	.23657	.02688	.00086
#3	.00022	.00031	.00044	-.00034	.21237	.00067	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.07561	.00458	.00093	.60875	.00093	F -.01186	.00150
Stddev	.02746	.00011	.00016	.00550	.00034	.00638	.00221
%RSD	36.318	2.5024	17.549	.90384	36.730	53.752	147.17
#1	.10357	.00461	.00076	.60905	.00120	-.01875	.00237
#2	.07456	.00445	.00094	.61410	.00105	-.00615	-.00101
#3	.04868	.00468	.00108	.60311	.00055	-.01069	.00316
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502108906 Acquired: 2/25/2015 18:50:32 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00126	.00043	.03226	-.00031	.00278	-.00022	.00185
Stddev	.00098	.00389	.00013	.00015	.00016	.00173	.00167
%RSD	78.196	905.39	.41358	47.588	5.7669	773.69	90.468
#1	.00067	.00077	.03211	-.00038	.00294	-.00215	-.00006
#2	.00071	-.00362	.03235	-.00014	.00278	.00028	.00256
#3	.00240	.00413	.03232	-.00041	.00262	.00120	.00306
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00009	.00318	1.5050
Stddev	.00018	.00010	.8727
%RSD	201.36	3.1562	57.983
#1	.00026	.00330	1.2469
#2	.00010	.00311	2.4777
#3	-.00010	.00313	.79054
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10330.	10052.
Stddev	22.	44.
%RSD	.21100	.43748
#1	10340.	10038.
#2	10306.	10101.
#3	10346.	10016.

Approved: February 26, 2015

Sample Name: L1502108907 Acquired: 2/25/2015 18:54:08 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	-.01234	-.00332	.00105	.00049	-.00013	.03839
Stddev	.00046	.00151	.00087	.00088	.00032	.00003	.00329
%RSD	72.674	12.217	26.153	84.285	65.834	23.189	8.5797
#1	.00054	-.01408	-.00426	.00123	.00021	-.00011	.03863
#2	.00022	-.01154	-.00313	.00009	.00042	-.00017	.03498
#3	.00112	-.01140	-.00256	.00183	.00084	-.00013	.04155
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	-.00014	.00054	-.00062	.00959	-.00491	.00010
Stddev	.00005	.00011	.00046	.00029	.00859	.03757	.00080
%RSD	15.208	78.380	84.954	47.583	89.595	764.91	805.75
#1	.00036	-.00025	.00006	-.00049	.01010	-.02477	.00091
#2	.00033	-.00003	.00097	-.00095	.00076	.03842	-.00068
#3	.00026	-.00013	.00059	-.00041	.01792	-.02839	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00976	.00070	.00053	.00666	.00085	F -.01202	-.00020
Stddev	.02461	.00003	.00019	.00292	.00009	.00154	.00168
%RSD	252.25	4.6974	35.469	43.892	10.283	12.805	820.45
#1	-.03390	.00070	.00050	.00981	.00086	-.01263	.00060
#2	-.01069	.00073	.00036	.00614	.00075	-.01316	.00092
#3	.01531	.00066	.00074	.00403	.00093	-.01027	-.00214
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502108907 Acquired: 2/25/2015 18:54:08 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00057	.00417	-.00039	.00011	-.00030	.00019
Stddev	.00134	.00553	.00090	.00038	.00014	.00047	.00262
%RSD	1106.1	965.12	21.609	96.658	126.12	157.81	1385.3
#1	-.00082	.00696	.00364	-.00015	.00027	-.00014	.00280
#2	.00165	-.00244	.00521	-.00083	.00009	.00007	-.00245
#3	-.00047	-.00279	.00366	-.00020	-.00001	-.00083	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00005	.00279	F -.69422
Stddev	.00045	.00010	.86227
%RSD	907.44	3.6387	124.21
#1	-.00024	.00283	.30127
#2	.00047	.00267	-1.2079
#3	-.00038	.00286	-1.1760
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10293.	9968.1
Stddev	49.	65.9
%RSD	.47973	.66139
#1	10238.	9984.0
#2	10305.	9895.6
#3	10335.	10025.

Approved: February 26, 2015

Sample Name: L1502108908 Acquired: 2/25/2015 18:57:45 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	-.00910	-.00312	.00195	.00049	-.00012	.04509
Stddev	.00054	.00104	.00039	.00145	.00022	.00001	.00691
%RSD	136.16	11.432	12.499	74.214	45.585	10.566	15.334
#1	.00062	-.00896	-.00352	.00212	.00064	-.00012	.03839
#2	.00079	-.00815	-.00274	.00331	.00059	-.00014	.05220
#3	-.00022	-.01021	-.00312	.00043	.00023	-.00011	.04469
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.00003	.00020	-.00069	.00772	.02433	.00145
Stddev	.00010	.00007	.00026	.00030	.00344	.03917	.00118
%RSD	69.431	242.18	128.32	43.773	44.591	160.99	81.981
#1	.00016	-.00002	.00010	-.00093	.00592	.03652	.00029
#2	.00023	.00011	.00001	-.00035	.00555	.05597	.00139
#3	.00003	.00000	.00049	-.00078	.01168	-.01948	.00266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01955	.00063	.00041	.00514	.00115	F -.00964	.00176
Stddev	.02460	.00004	.00033	.00722	.00024	.00182	.00130
%RSD	125.81	5.9439	80.896	140.45	21.304	18.847	73.865
#1	.02389	.00062	.00022	.01347	.00142	-.00805	.00270
#2	.04169	.00067	.00079	.00082	.00095	-.00925	.00028
#3	-.00693	.00060	.00021	.00112	.00107	-.01161	.00231
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502108908 Acquired: 2/25/2015 18:57:45 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	.00158	.00634	-.00039	.00012	-.00145	.00210
Stddev	.00318	.00225	.00102	.00016	.00008	.00078	.00080
%RSD	1087.6	141.80	16.016	41.030	64.266	53.713	38.203
#1	.00330	.00377	.00693	-.00051	.00008	-.00195	.00144
#2	.00063	.00170	.00517	-.00045	.00007	-.00185	.00299
#3	-.00305	-.00072	.00692	-.00021	.00021	-.00055	.00186
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00007	.00298	1.0635
Stddev	.00024	.00006	2.0691
%RSD	341.71	2.1297	194.55
#1	.00012	.00293	1.1022
#2	.00028	.00305	-1.0246
#3	-.00019	.00296	3.1130
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10501.	10011.
Stddev	140.	42.
%RSD	1.3368	.41977
#1	10425.	10044.
#2	10415.	9963.5
#3	10663.	10025.

Approved: February 26, 2015

Sample Name: L1502112601 Acquired: 2/25/2015 19:01:22 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	.01187	-.00248	.00157	-.00029	-.00012	.22308
Stddev	.00044	.00117	.00089	.00120	.00024	.00002	.00209
%RSD	70.212	9.8475	35.964	76.731	81.983	13.286	.93661
#1	.00110	.01273	-.00151	.00245	-.00012	-.00014	.22165
#2	.00055	.01054	-.00265	.00020	-.00019	-.00011	.22212
#3	.00023	.01234	-.00327	.00205	-.00056	-.00013	.22548
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	.00001	.00054	.00875	.02598	.34687	.00085
Stddev	.00010	.00024	.00016	.00071	.00374	.01947	.00175
%RSD	37.976	1684.3	29.415	8.1721	14.389	5.6129	205.58
#1	.00035	-.00018	.00068	.00956	.02805	.32439	.00183
#2	.00029	.00028	.00037	.00844	.02166	.35794	-.00117
#3	.00015	-.00005	.00058	.00824	.02822	.35828	.00189
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03546	.00146	.00027	.17509	.00186	F -.00949	.00084
Stddev	.01162	.00004	.00003	.00583	.00069	.00624	.00135
%RSD	32.756	2.8379	12.213	3.3293	37.290	65.732	161.56
#1	.04769	.00143	.00023	.16837	.00193	-.00924	-.00037
#2	.02457	.00151	.00030	.17816	.00114	-.01584	.00229
#3	.03414	.00145	.00028	.17875	.00252	-.00338	.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502112601 Acquired: 2/25/2015 19:01:22 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**.00067**	**.04491**	**-.00064**	**.00068**	**-.00066**	**.00074**
Stddev	.00212	.00204	.00093	.00023	.00009	.00090	.00088
%RSD	568.70	305.23	2.0767	35.281	13.211	136.75	119.73
#1	.00129	-.00148	.04425	-.00040	.00058	-.00156	.00157
#2	-.00276	.00091	.04598	-.00069	.00075	.00024	.00083
#3	.00036	.00257	.04449	-.00085	.00072	-.00065	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00009**	**.00418**	**.37612**
Stddev	.00024	.00020	3.5390
%RSD	286.08	4.8399	940.93
#1	-.00024	.00395	1.5230
#2	.00020	.00430	-3.5941
#3	-.00022	.00429	3.1995
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10427.**	**10099.**
Stddev	36.	8.
%RSD	.34773	.07586
#1	10454.	10092.
#2	10441.	10107.
#3	10386.	10097.

Approved: February 26, 2015

Sample Name: L1502112602 Acquired: 2/25/2015 19:04:59 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00082	.12514	-.00214	.00216	.00226	-.00011	1.2017
Stddev	.00011	.00261	.00082	.00058	.00011	.00002	.0116
%RSD	13.193	2.0881	38.198	27.085	4.6739	19.605	.96157
#1	.00086	.12792	-.00125	.00272	.00221	-.00012	1.2075
#2	.00090	.12475	-.00286	.00220	.00238	-.00008	1.2092
#3	.00070	.12274	-.00230	.00156	.00219	-.00012	1.1884
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	-.00006	.00034	.02403	.09738	.23678	-.00007
Stddev	.00011	.00026	.00015	.00045	.00358	.02107	.00131
%RSD	39.157	413.18	42.666	1.8606	3.6778	8.8969	1992.7
#1	.00042	-.00033	.00046	.02404	.09740	.25488	-.00036
#2	.00023	.00019	.00039	.02357	.10096	.21366	-.00121
#3	.00023	-.00005	.00018	.02447	.09379	.24179	.00137
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02899	.00359	.00038	.18935	.00092	F -.00526	.00494
Stddev	.01918	.00011	.00036	.01161	.00131	.00413	.00246
%RSD	66.149	3.0079	94.676	6.1318	141.99	78.573	49.781
#1	.03861	.00372	.00076	.20263	.00216	-.00999	.00468
#2	.00691	.00354	.00029	.18109	-.00045	-.00238	.00752
#3	.04146	.00352	.00007	.18433	.00105	-.00340	.00262
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502112602 Acquired: 2/25/2015 19:04:59 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00034**	**.00087**	**.31982**	**.00054**	**.00267**	**.00406**	**.00175**
Stddev	.00050	.00215	.00225	.00032	.00004	.00171	.00130
%RSD	147.01	247.15	.70438	59.253	1.6330	42.176	74.432
#1	.00028	-.00158	.31737	.00062	.00266	.00575	.00293
#2	.00086	.00245	.32181	.00082	.00271	.00233	.00198
#3	-.00013	.00174	.32027	.00019	.00262	.00411	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00020**	**.00887**	F **-1.0100**
Stddev	.00023	.00007	2.8361
%RSD	114.78	.74464	280.80
#1	-.00004	.00884	2.0827
#2	.00021	.00895	-1.6235
#3	.00042	.00883	-3.4892
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10451.**	**9968.1**
Stddev	11.	98.3
%RSD	.10233	.98578
#1	10455.	9884.9
#2	10439.	9942.7
#3	10459.	10077.

Approved: February 26, 2015

Sample Name: L1502112603 Acquired: 2/25/2015 19:08:35 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00039	.12453	-.00213	.00130	.00195	-.00013	1.9827
Stddev	.00047	.00182	.00402	.00119	.00008	.00001	.0311
%RSD	121.93	1.4619	188.38	91.865	4.0573	9.1530	1.5674
#1	.00036	.12571	-.00204	.00259	.00195	-.00012	1.9617
#2	-.00007	.12244	-.00620	.00107	.00186	-.00012	1.9680
#3	.00087	.12545	.00184	.00024	.00202	-.00014	2.0184
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	-.00004	.00075	.02425	.14805	.27372	.00071
Stddev	.00010	.00020	.00049	.00035	.00419	.02186	.00054
%RSD	29.328	464.80	65.560	1.4436	2.8328	7.9864	75.991
#1	.00046	-.00027	.00019	.02423	.14700	.29887	.00035
#2	.00028	.00002	.00095	.02462	.15267	.25923	.00046
#3	.00029	.00012	.00112	.02392	.14448	.26306	.00134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.07030	.00470	.00042	.26484	.00178	.00389	.00044
Stddev	.05611	.00003	.00008	.01902	.00028	.00094	.00026
%RSD	79.822	.64636	18.602	7.1818	15.813	24.264	59.222
#1	.00551	.00468	.00033	.27673	.00147	.00424	.00074
#2	.10221	.00470	.00045	.24290	.00200	.00461	.00026
#3	.10317	.00474	.00048	.27488	.00188	.00282	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: L1502112603 Acquired: 2/25/2015 19:08:35 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00220**	**.00417**	**.33869**	**.00027**	**.00313**	**.00698**	**.00170**
Stddev	.00286	.00135	.00219	.00070	.00006	.00246	.00116
%RSD	129.84	32.414	.64530	264.81	1.9121	35.207	67.984
#1	-.00096	.00293	.33906	.00058	.00306	.00981	.00039
#2	-.00547	.00562	.34067	-.00054	.00317	.00568	.00214
#3	-.00017	.00397	.33634	.00076	.00315	.00544	.00258
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00054**	**.01349**	F **-1.0478**
Stddev	.00008	.00018	.9125
%RSD	15.318	1.3141	87.088
#1	.00057	.01340	-.61405
#2	.00060	.01337	-2.0962
#3	.00044	.01369	-.43303
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10430.**	**9905.0**
Stddev	7.	19.8
%RSD	.06520	.19969
#1	10436.	9888.4
#2	10423.	9926.9
#3	10431.	9899.7

Approved: February 26, 2015

Sample Name: L1502112604 Acquired: 2/25/2015 19:12:09 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00065	.11983	-.00019	.00128	.00190	-.00011	1.7188
Stddev	.00028	.00313	.00251	.00080	.00040	.00003	.0098
%RSD	43.870	2.6134	1348.7	62.297	20.878	26.916	.57202
#1	.00094	.11988	.00191	.00077	.00146	-.00011	1.7301
#2	.00038	.11667	-.00297	.00087	.00201	-.00008	1.7138
#3	.00062	.12293	.00051	.00221	.00223	-.00014	1.7125
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	-.00002	.00096	.03632	.11133	.25147	.00014
Stddev	.00006	.00011	.00010	.00048	.00268	.01292	.00048
%RSD	20.583	451.04	10.791	1.3287	2.4063	5.1381	334.91
#1	.00023	-.00007	.00104	.03686	.10825	.25257	-.00039
#2	.00027	.00010	.00084	.03615	.11260	.23803	.00054
#3	.00035	-.00010	.00100	.03594	.11312	.26380	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02939	.00407	.00019	.15913	.00073	.00429	.00178
Stddev	.01409	.00004	.00015	.00490	.00053	.00242	.00060
%RSD	47.956	.88592	77.621	3.0811	72.315	56.438	33.841
#1	.04550	.00411	.00014	.15355	.00133	.00500	.00111
#2	.01938	.00404	.00035	.16275	.00051	.00159	.00228
#3	.02327	.00407	.00007	.16108	.00034	.00627	.00195
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: L1502112604 Acquired: 2/25/2015 19:12:09 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00129**	**.00169**	**.30184**	**.00031**	**.00250**	**.00351**	**.00048**
Stddev	.00036	.00434	.01442	.00028	.00001	.00117	.00203
%RSD	28.072	256.46	4.7760	90.461	.32534	33.194	424.99
#1	-.00169	-.00264	.31214	.00062	.00250	.00379	.00240
#2	-.00099	.00167	.28536	.00021	.00249	.00452	-.00164
#3	-.00118	.00605	.30800	.00009	.00251	.00223	.00067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00015**	**.01130**	F **-.52421**
Stddev	.00017	.00040	.82706
%RSD	120.28	3.5171	157.77
#1	-.00004	.01161	-1.4056
#2	.00031	.01145	.23492
#3	.00017	.01085	-.40196
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10461.**	**9889.4**
Stddev	36.	34.0
%RSD	.33978	.34351
#1	10455.	9869.2
#2	10429.	9928.6
#3	10499.	9870.4

Approved: February 26, 2015

Sample Name: L1502112605 Acquired: 2/25/2015 19:15:46 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	.10511	-.00161	.00188	.00086	-.00014	.51000
Stddev	.00047	.00241	.00287	.00054	.00015	.00001	.01127
%RSD	109.23	2.2886	177.95	28.703	17.390	6.8387	2.2098
#1	.00068	.10262	-.00043	.00212	.00073	-.00015	.50449
#2	-.00011	.10742	-.00488	.00126	.00103	-.00014	.50255
#3	.00073	.10530	.00048	.00226	.00084	-.00014	.52297
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	-.00008	-.00006	.03090	.09229	.30502	.00104
Stddev	.00015	.00009	.00022	.00041	.00827	.02442	.00164
%RSD	89.910	104.74	353.58	1.3309	8.9575	8.0054	158.34
#1	.00001	-.00014	-.00029	.03111	.09498	.31741	.00236
#2	.00031	-.00013	-.00004	.03116	.08301	.27689	.00156
#3	.00019	.00002	.00015	.03042	.09888	.32077	-.00080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01672	.00282	.00032	.10682	.00093	F -.00376	.00159
Stddev	.04144	.00007	.00021	.01203	.00051	.00407	.00052
%RSD	247.79	2.4701	64.932	11.258	54.866	108.19	32.820
#1	.04702	.00274	.00030	.11767	.00131	-.00620	.00217
#2	.03365	.00288	.00013	.09389	.00114	-.00601	.00144
#3	-.03050	.00283	.00055	.10889	.00035	.00094	.00116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502112605 Acquired: 2/25/2015 19:15:46 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00247**	**-.00182**	**.26967**	**-.00006**	**.00172**	**.00187**	**.00053**
Stddev	.00094	.00277	.00558	.00037	.00005	.00226	.00220
%RSD	37.865	152.17	2.0685	572.94	2.7024	120.66	418.09
#1	-.00353	-.00027	.26388	.00031	.00168	.00155	.00293
#2	-.00212	-.00017	.27013	-.00008	.00170	-.00021	-.00138
#3	-.00176	-.00502	.27500	-.00042	.00177	.00427	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00004**	**.00913**	F **-1.2320**
Stddev	.00016	.00015	1.7373
%RSD	381.68	1.6104	141.02
#1	-.00012	.00926	.35727
#2	.00019	.00897	-3.0868
#3	.00006	.00915	-.96644
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10412.**	**9926.2**
Stddev	26.	10.0
%RSD	.25042	.10116
#1	10434.	9927.8
#2	10417.	9915.4
#3	10383.	9935.3

Approved: February 26, 2015

Sample Name: L1502112606 Acquired: 2/25/2015 19:19:22 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00095	.10183	-.00201	.00166	.00162	-.00015	.76843
Stddev	.00025	.00154	.00153	.00011	.00015	.00002	.00137
%RSD	26.376	1.5099	75.923	6.8790	9.1850	16.149	.17801
#1	.00093	.10360	-.00139	.00170	.00176	-.00013	.76965
#2	.00071	.10109	-.00090	.00153	.00163	-.00016	.76870
#3	.00121	.10080	-.00375	.00174	.00147	-.00017	.76695
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.00013	.00022	.04154	.10160	.25524	.00091
Stddev	.00005	.00017	.00016	.00029	.00522	.02453	.00025
%RSD	22.633	132.80	71.797	.70163	5.1410	9.6118	27.675
#1	.00026	.00008	.00034	.04135	.10162	.22944	.00081
#2	.00017	-.00001	.00028	.04140	.09637	.25800	.00119
#3	.00024	.00032	.00004	.04188	.10682	.27827	.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02825	.00351	.00027	.33041	.00094	F -.00572	.00180
Stddev	.00589	.00008	.00024	.00937	.00074	.00516	.00047
%RSD	20.838	2.3752	86.384	2.8360	78.441	90.332	25.986
#1	.02288	.00345	.00027	.33280	.00009	-.00752	.00132
#2	.03454	.00361	.00004	.33835	.00133	-.00974	.00226
#3	.02733	.00347	.00052	.32007	.00140	.00011	.00183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502112606 Acquired: 2/25/2015 19:19:22 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00115**	**.00054**	**.27378**	**-.00002**	**.00117**	**.00520**	**.00064**
Stddev	.00266	.00153	.01203	.00052	.00009	.00131	.00156
%RSD	232.57	281.64	4.3956	3232.4	8.1348	25.108	241.91
#1	.00111	.00224	.27555	-.00061	.00122	.00504	-.00023
#2	-.00409	.00008	.26096	.00038	.00106	.00398	-.00028
#3	-.00046	-.00070	.28483	.00018	.00123	.00657	.00245
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00026**	**.01402**	F **-.23660**
Stddev	.00019	.00008	2.1864
%RSD	71.785	.57303	924.10
#1	.00044	.01400	-.81150
#2	.00007	.01410	-2.0781
#3	.00027	.01394	2.1798
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10453.**	**10159.**
Stddev	9.	37.
%RSD	.08148	.36316
#1	10463.	10143.
#2	10449.	10134.
#3	10448.	10202.

Approved: February 26, 2015

Sample Name: L1502112607 Acquired: 2/25/2015 19:23:06 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513370-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	.14419	-.00060	.00203	.00080	-.00014	1.0733
Stddev	.00038	.00066	.00083	.00136	.00016	.00001	.0113
%RSD	56.476	.45879	139.52	67.038	20.130	7.2837	1.0563
#1	.00058	.14455	-.00058	.00146	.00082	-.00013	1.0822
#2	.00109	.14343	-.00144	.00359	.00064	-.00014	1.0770
#3	.00035	.14459	.00023	.00105	.00096	-.00014	1.0605
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00067	-.00006	.00172	.02242	.27552	.16131	.00021
Stddev	.00009	.00020	.00041	.00012	.01036	.01952	.00141
%RSD	13.939	353.45	23.874	.53319	3.7602	12.104	661.87
#1	.00068	-.00001	.00219	.02229	.28302	.14671	.00184
#2	.00057	-.00028	.00152	.02248	.27985	.15374	-.00063
#3	.00076	.00012	.00144	.02250	.26370	.18349	-.00057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03308	.00417	.00049	.14613	.00139	F -.00399	-.00288
Stddev	.00448	.00007	.00024	.01018	.00126	.00315	.00266
%RSD	13.546	1.7873	49.863	6.9672	90.670	78.888	92.341
#1	.03747	.00425	.00076	.15263	.00089	-.00439	-.00009
#2	.02851	.00410	.00041	.13440	.00046	-.00066	-.00538
#3	.03327	.00417	.00029	.15137	.00283	-.00693	-.00316
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502112607 Acquired: 2/25/2015 19:23:06 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513370-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00098**	**-.00127**	**.37186**	**-.00031**	**.00123**	**.00564**	**.00164**
Stddev	.00065	.00053	.00225	.00021	.00001	.00276	.00209
%RSD	65.709	41.551	.60592	66.617	1.1394	48.883	127.28
#1	-.00037	-.00070	.37369	-.00041	.00123	.00247	.00090
#2	-.00092	-.00174	.37255	-.00007	.00122	.00747	.00002
#3	-.00166	-.00136	.36934	-.00045	.00125	.00697	.00399
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00001**	**.01230**	F **-1.3296**
Stddev	.00014	.00010	1.1403
%RSD	2158.6	.85118	85.760
#1	.00002	.01232	-.26606
#2	-.00014	.01218	-1.1892
#3	.00013	.01239	-2.5336
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10440.**	**10132.**
Stddev	31.	22.
%RSD	.29858	.21825
#1	10471.	10155.
#2	10408.	10112.
#3	10441.	10128.

Approved: February 26, 2015

Sample Name: CCV Acquired: 2/25/2015 19:26:44 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41639	10.077	.41447	.51178	F 1.1070	.05081	F 11.196
Stddev	.00122	.089	.00422	.00123	.0098	.00008	.069
%RSD	.29327	.88326	1.0180	.24055	.88292	.15280	.61456
#1	.41536	10.009	.41929	.51039	1.1011	.05079	11.168
#2	.41774	10.177	.41144	.51273	1.1017	.05089	11.145
#3	.41607	10.044	.41268	.51222	1.1183	.05074	11.274
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Fail
Value					1.0000		10.000
Range					10.000%		10.000%

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05137	.20440	.52370	.50792	4.2573	F 55.506	1.0937
Stddev	.00007	.00016	.00128	.00105	.0547	.365	.0080
%RSD	.14236	.07747	.24415	.20635	1.2838	.65807	.73638
#1	.05130	.20449	.52350	.50674	4.2183	55.290	1.0890
#2	.05137	.20422	.52507	.50826	4.2339	55.299	1.0890
#3	.05145	.20450	.52254	.50875	4.3198	55.927	1.1030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
Value						50.000	
Range						10.000%	

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.291	.52863	1.0166	F 55.893	.52189	10.228	.52221
Stddev	.051	.00336	.0002	.144	.00143	.011	.00177
%RSD	.49974	.63573	.02104	.25715	.27327	.11116	.33965
#1	10.246	.52491	1.0164	55.962	.52031	10.240	.52153
#2	10.279	.53145	1.0168	55.990	.52308	10.224	.52423
#3	10.347	.52953	1.0165	55.728	.52228	10.218	.52088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value				50.000			
Range				10.000%			

Approved: February 26, 2015

Sample Name: CCV Acquired: 2/25/2015 19:26:44 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2575**	**.40653**	**5.1956**	**1.0301**	F **1.1126**	**1.0700**	**.53300**
Stddev	.0015	.00440	.0085	.0022	.0025	.0033	.00143
%RSD	.11804	1.0828	.16428	.21167	.22095	.30738	.26842
#1	1.2591	.40561	5.1878	1.0287	1.1147	1.0669	.53421
#2	1.2574	.41132	5.1945	1.0326	1.1133	1.0734	.53337
#3	1.2561	.40267	5.2047	1.0289	1.1099	1.0698	.53142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
Value					1.0000		
Range					10.000%		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0074**	**.99187**	F **.03976**
Stddev	.0007	.00166	.12172
%RSD	.06852	.16739	306.14
#1	1.0073	.99014	-.08806
#2	1.0068	.99201	.05305
#3	1.0082	.99345	.15428
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10476.**	**10137.**
Stddev	7.	72.
%RSD	.06725	.70788
#1	10484.	10213.
#2	10476.	10070.
#3	10469.	10127.

Approved: February 26, 2015

Sample Name: CCB Acquired: 2/25/2015 19:30:09 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	-.01569	-.00042	.00165	-.00045	-.00012	.01232
Stddev	.00035	.00189	.00209	.00074	.00024	.00004	.00411
%RSD	47.677	12.061	500.78	44.726	52.774	30.939	33.367
#1	.00102	-.01783	.00175	.00249	-.00017	-.00011	.01019
#2	.00034	-.01423	-.00242	.00110	-.00059	-.00016	.01706
#3	.00087	-.01501	-.00058	.00136	-.00058	-.00009	.00971
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00015	-.00012	-.00054	-.00110	.01384	.00163
Stddev	.00006	.00013	.00027	.00066	.00450	.03653	.00161
%RSD	101.73	87.663	231.91	122.89	409.09	263.91	98.605
#1	.00000	.00022	-.00012	-.00029	-.00397	.02778	.00062
#2	.00007	.00000	-.00038	-.00129	-.00341	.04135	.00078
#3	.00012	.00022	.00015	-.00004	.00409	-.02760	.00348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00611	-.00002	.00471	-.00494	.00039	-.00641	.00132
Stddev	.01034	.00012	.00049	.00648	.00051	.00513	.00150
%RSD	169.31	602.07	10.505	131.18	130.38	80.102	114.05
#1	.00570	.00004	.00501	-.01220	.00043	-.01189	.00303
#2	-.01049	.00005	.00414	-.00284	-.00014	-.00172	.00021
#3	-.01354	-.00016	.00497	.00023	.00089	-.00561	.00071
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: CCB Acquired: 2/25/2015 19:30:09 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00559	.00287	-.00468	.00016	.00021	-.00046	.00317
Stddev	.00050	.00237	.00199	.00022	.00005	.00100	.00112
%RSD	8.9006	82.814	42.403	138.23	22.414	218.57	35.298
#1	.00558	.00523	-.00407	.00027	.00016	-.00123	.00422
#2	.00510	.00049	-.00690	.00030	.00025	-.00081	.00331
#3	.00609	.00288	-.00308	-.00009	.00021	.00067	.00199
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00000	-.00010	F -.33672
Stddev	.00026	.00006	2.5491
%RSD	95773.	65.009	757.02
#1	-.00030	-.00010	-1.2520
#2	.00011	-.00003	-2.3018
#3	.00018	-.00016	2.5436
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10385.	10127.
Stddev	13.	30.
%RSD	.12527	.29430
#1	10381.	10145.
#2	10400.	10145.
#3	10375.	10093.

Approved: February 26, 2015

Sample Name: L1502112607MS Acquired: 2/25/2015 19:33:47 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513370-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21383	5.2177	.20311	.98804	.56454	.02561	6.6630
Stddev	.00170	.0221	.00498	.00234	.00193	.00002	.0184
%RSD	.79501	.42403	2.4535	.23654	.34219	.07265	.27554
#1	.21188	5.1932	.19735	.98766	.56563	.02560	6.6433
#2	.21459	5.2363	.20604	.99055	.56567	.02563	6.6660
#3	.21501	5.2236	.20592	.98592	.56231	.02560	6.6797
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02616	.10530	.27498	.28012	2.4652	28.344	.56065
Stddev	.00045	.00156	.00134	.00492	.0064	.046	.00199
%RSD	1.7138	1.4842	.48725	1.7567	.25897	.16268	.35549
#1	.02564	.10356	.27387	.27447	2.4685	28.309	.56208
#2	.02644	.10659	.27459	.28241	2.4692	28.396	.56150
#3	.02640	.10574	.27647	.28347	2.4578	28.327	.55837
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.1974	.27245	.54302	28.578	.26719	5.0122	.26340
Stddev	.0304	.00075	.01006	.074	.00312	.0885	.00406
%RSD	.58446	.27460	1.8518	.25788	1.1689	1.7647	1.5415
#1	5.1844	.27263	.53141	28.492	.26364	4.9115	.25997
#2	5.1756	.27309	.54879	28.622	.26953	5.0775	.26236
#3	5.2321	.27162	.54886	28.619	.26839	5.0476	.26788
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: L1502112607MS Acquired: 2/25/2015 19:33:47 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513370-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.63540**	**.19187**	**3.0934**	**.52974**	**.57333**	**.56238**	**.27243**
Stddev	.01070	.00135	.0203	.00279	.00163	.00060	.00358
%RSD	1.6839	.70146	.65539	.52710	.28445	.10711	1.3134
#1	.62431	.19196	3.0700	.52654	.57177	.56168	.26982
#2	.64566	.19049	3.1036	.53095	.57502	.56273	.27096
#3	.63622	.19318	3.1065	.53171	.57320	.56273	.27651
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.52488**	**.51441**	F **-1.4513**
Stddev	.00078	.00173	1.1160
%RSD	.14894	.33610	76.897
#1	.52430	.51241	-1.1964
#2	.52577	.51544	-2.6726
#3	.52458	.51538	-.48479
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10292.**	**10000.**
Stddev	15.	25.
%RSD	.14435	.24674
#1	10309.	10026.
#2	10283.	9976.5
#3	10283.	9998.2

Approved: February 26, 2015

Sample Name: L1502112607MSD Acquired: 2/25/2015 19:37:03 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513370-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21856	5.3552	.20868	1.0079	.57536	.02617	6.0910
Stddev	.00144	.0205	.00533	.0042	.00185	.00011	.0187
%RSD	.65881	.38331	2.5522	.41304	.32191	.41516	.30789
#1	.21726	5.3364	.20399	1.0031	.57721	.02605	6.1097
#2	.22011	5.3771	.20758	1.0109	.57537	.02620	6.0912
#3	.21831	5.3520	.21447	1.0096	.57351	.02626	6.0721
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02670	.10743	.28142	.28545	2.5067	28.907	.57044
Stddev	.00053	.00216	.00229	.00502	.0025	.084	.00261
%RSD	1.9910	2.0121	.81491	1.7575	.09993	.29225	.45741
#1	.02609	.10494	.27937	.27967	2.5095	28.958	.57262
#2	.02708	.10864	.28101	.28860	2.5059	28.952	.57114
#3	.02692	.10872	.28390	.28809	2.5047	28.809	.56755
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.2890	.27805	.55265	29.169	.27083	5.0938	.26903
Stddev	.0231	.00047	.01020	.104	.00499	.0835	.00279
%RSD	.43637	.16909	1.8451	.35617	1.8418	1.6393	1.0375
#1	5.2910	.27799	.54103	29.196	.26508	4.9987	.26623
#2	5.2649	.27854	.56011	29.257	.27393	5.1550	.27181
#3	5.3110	.27761	.55681	29.055	.27349	5.1278	.26903
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: L1502112607MSD Acquired: 2/25/2015 19:37:03 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513370-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.64918	.20105	3.2465	.54039	.58381	.57200	.27966
Stddev	.00547	.00214	.0019	.00205	.00236	.00410	.00378
%RSD	.84197	1.0633	.05970	.37977	.40393	.71760	1.3534
#1	.64293	.20296	3.2469	.54273	.58437	.57648	.28398
#2	.65310	.19874	3.2483	.53954	.58583	.57111	.27803
#3	.65149	.20145	3.2445	.53890	.58122	.56842	.27696
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.53494	.52179	F -3.1806
Stddev	.00282	.00180	1.9134
%RSD	.52745	.34446	60.159
#1	.53201	.52262	-2.4364
#2	.53764	.52304	-1.7511
#3	.53515	.51973	-5.3544
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10315.	10001.
Stddev	22.	17.
%RSD	.21191	.17033
#1	10338.	9996.4
#2	10295.	9986.9
#3	10310.	10020.

Approved: February 26, 2015

Sample Name: L1502112608 Acquired: 2/25/2015 19:40:19 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00108	.64003	-.00094	.00675	.00478	-.00012	1.6502
Stddev	.00032	.03429	.00293	.00146	.00048	.00001	.0790
%RSD	29.666	5.3574	310.26	21.606	9.9466	10.061	4.7869
#1	.00103	.67931	-.00354	.00706	.00530	-.00013	1.7414
#2	.00079	.61611	.00223	.00803	.00436	-.00011	1.6029
#3	.00142	.62467	-.00152	.00516	.00468	-.00013	1.6063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	.00000	.00088	.03776	.37008	.33696	.00059
Stddev	.00005	.0001	.00032	.00049	.01491	.06284	.00182
%RSD	12.955	7430.4	36.448	1.2938	4.0297	18.649	306.82
#1	.00035	-.00014	.00114	.03824	.38669	.40617	.00096
#2	.00034	.00000	.00098	.03777	.35785	.28348	-.00139
#3	.00043	.00013	.00052	.03727	.36571	.32122	.00220
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.17220	.00785	.00190	.37202	.00132	.00015	.00597
Stddev	.03756	.00043	.00009	.03361	.00074	.00463	.00220
%RSD	21.811	5.4950	4.7192	9.0348	55.726	3020.3	36.951
#1	.21500	.00835	.00179	.41011	.00217	-.00457	.00632
#2	.15687	.00762	.00195	.34651	.00081	.00036	.00798
#3	.14474	.00759	.00195	.35945	.00099	.00467	.00361
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: L1502112608 Acquired: 2/25/2015 19:40:19 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00044**	**.00399**	**1.3859**	**.00030**	**.00386**	**.01685**	**.00154**
Stddev	.00115	.00347	.0047	.00003	.00020	.00105	.00168
%RSD	259.61	86.990	.34199	9.5770	5.0546	6.2280	109.13
#1	-.00112	.00055	1.3872	.00033	.00409	.01635	-.00038
#2	.00089	.00392	1.3897	.00027	.00372	.01806	.00274
#3	-.00111	.00750	1.3806	.00030	.00378	.01615	.00225
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00076**	**.01198**	F **-7.0866**
Stddev	.00023	.00012	1.3034
%RSD	30.191	1.0088	18.393
#1	.00054	.01196	-8.4424
#2	.00100	.01187	-5.8428
#3	.00074	.01211	-6.9748
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10491.**	**10010.**
Stddev	28.	424.
%RSD	.26957	4.2397
#1	10521.	9519.7
#2	10486.	10256.
#3	10465.	10254.

Approved: February 26, 2015

Sample Name: L1502113801 Acquired: 2/25/2015 19:43:54 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .00081	^ *****	k .00873	k .60644	k .26405	k .00143
Stddev	.00054	-----	.00306	.01044	.00066	.00003
%RSD	66.725	-----	35.081	1.7209	.25012	2.4387
#1	.00061	42.720	.00587	.59449	.26330	.00140
#2	k .00040	^ -----	k .01196	k .61380	k .26430	k .00147
#3	k .00143	43.137	k .00835	k .61103	.26455	k .00142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Elem	Ca4226	Cd2288	Co2286	Cr2677	Cu2247	Fe2611
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	^ *****	k .00166	k .00173	k .04225	k .00386	k 1.8370
Stddev	-----	.00008	.00015	.00189	.00048	.0726
%RSD	-----	4.7212	8.7342	4.4685	12.374	3.9498
#1	931.33	.00158	.00172	.04315	.00433	1.9199
#2	^ -----	k .00165	k .00158	k .04008	k .00337	k 1.7850
#3	^ -----	k .00174	k .00188	k .04353	k .00387	k 1.8061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	236.63	.26291	82.560	k 1.3828	k .00198	^ *****
Stddev	.51	.00285	.036	.0069	.00020	-----
%RSD	.21750	1.0850	.04382	.50028	10.161	-----
#1	236.21	.26065	82.597	1.3872	.00212	435.13
#2	236.46	.26611	82.559	k 1.3748	k .00175	^ -----
#3	237.20	.26196	82.525	k 1.3863	k .00208	^ -----
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Approved: February 26, 2015

Sample Name: L1502113801 Acquired: 2/25/2015 19:43:54 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .02362	k 6.5429	k .00242	k .01125	k .32589	8.6708
Stddev	.00157	.0538	.00843	.00143	.00347	.0365
%RSD	6.6323	.82262	348.29	12.752	1.0635	.42101
#1	.02509	6.5834	-.00137	.01287	.32278	8.6666
#2	k .02197	k 6.4818	k .01208	k .01076	k .32525	8.6366
#3	k .02379	k 6.5636	k -.00345	k .01012	k .32963	8.7092
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .01007	k .56200	k .03636	k -.01106	k .04343	k 3.9107
Stddev	.00046	.00472	.00099	.00232	.00009	.0047
%RSD	4.5864	.83972	2.7289	20.989	.21834	.12015
#1	.00998	.55656	.03748	-.01006	.04334	3.9152
#2	k .00965	k .56467	k .03601	k -.01371	k .04352	k 3.9059
#3	k .01056	k .56479	k .03559	k -.00940	k .04342	3.9111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Elem	Zr3391
Units	ppm
Avg	kF -106.96
Stddev	3.24
%RSD	3.0268
#1	-103.23
#2	k -108.73
#3	k -108.94
Check ?	Chk Fail
High Limit	36.000
Low Limit	-.00320

Approved: February 26, 2015

Sample Name: L1502113801 Acquired: 2/25/2015 19:43:54 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	9336.1	10136.
Stddev	17.5	31.
%RSD	.18698	.30323
#1	9352.4	10123.
#2	9338.2	10171.
#3	9317.6	10114.

Approved: February 26, 2015

Sample Name: L1502113901 Acquired: 2/25/2015 19:47:30 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .00036	50.431	k .01093	k .58638	.29410	k .00137
Stddev	.00033	.351	.00312	.00317	.00154	.00008
%RSD	90.515	.69523	28.537	.54083	.52336	5.6636
#1	.00073	50.081	.01192	.58610	.29264	.00140
#2	.00009	50.782	.01342	.58336	.29571	.00142
#3	k .00027	50.430	k .00743	k .58968	.29395	k .00128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Elem	Ca4226	Cd2288	Co2286	Cr2677	Cu2247	Fe2611
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	^ *****	k .00439	k .00139	k .04999	k .01316	k 2.4654
Stddev	-----	.00029	.00032	.00098	.00092	.0590
%RSD	-----	6.5393	22.947	1.9539	6.9675	2.3926
#1	1004.1	.00443	.00133	.05045	.01220	2.5330
#2	-4.011	.00409	.00111	.04887	.01326	2.4390
#3	^ -----	k .00466	k .00174	k .05066	k .01403	k 2.4242
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	280.76	.21702	79.082	k 1.2517	k .00262	^ *****
Stddev	.68	.00086	.599	.0107	.00055	-----
%RSD	.24175	.39465	.75771	.85400	20.909	-----
#1	280.13	.21782	78.460	1.2417	.00207	508.01
#2	281.47	.21713	79.656	1.2630	.00262	-4.9930
#3	280.67	.21612	79.129	k 1.2504	k .00316	^ -----
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Approved: February 26, 2015

Sample Name: L1502113901 Acquired: 2/25/2015 19:47:30 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .02289	k 5.3205	k .00223	k .01582	k .43421	8.2163
Stddev	.00096	.1316	.00094	.00145	.00771	.0544
%RSD	4.1934	2.4733	41.989	9.1793	1.7747	.66202
#1	.02212	5.2552	.00116	.01710	.42859	8.1828
#2	.02259	5.2343	.00288	.01424	.43104	8.1871
#3	k .02397	k 5.4719	k .00267	k .01613	k .44299	8.2791
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .01318	k .57011	k .06175	k -.01208	k .04113	5.5871
Stddev	.00053	.00478	.00049	.00282	.00048	.0061
%RSD	3.9946	.83778	.79645	23.333	1.1679	.10884
#1	.01341	.56461	.06224	-.01512	.04154	5.5860
#2	.01355	.57254	.06175	-.01156	.04060	5.5816
#3	k .01258	k .57318	k .06126	k -.00955	k .04127	5.5936
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Elem	Zr3391
Units	ppm
Avg	kF -108.76
Stddev	1.15
%RSD	1.0548
#1	-109.26
#2	-107.44
#3	k -109.57
Check ?	Chk Fail
High Limit	36.000
Low Limit	-.00320

Approved: February 26, 2015

Sample Name: L1502113901 Acquired: 2/25/2015 19:47:30 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	9333.3	9887.1
Stddev	17.0	73.9
%RSD	.18184	.74742
#1	9326.5	9955.9
#2	9352.6	9809.0
#3	9320.7	9896.5

Approved: February 26, 2015

Sample Name: CCV Acquired: 2/25/2015 19:51:06 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41643	10.235	.41732	.51530	F 1.1099	.05099	F 11.303
Stddev	.00110	.043	.00133	.00118	.0126	.00008	.073
%RSD	.26363	.42353	.31989	.22844	1.1327	.14976	.64398
#1	.41541	10.188	.41587	.51398	1.0954	.05090	11.221
#2	.41759	10.244	.41759	.51564	1.1177	.05105	11.360
#3	.41631	10.273	.41850	.51626	1.1166	.05100	11.329
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Fail
Value					1.0000		10.000
Range					10.000%		10.000%

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05151	.20453	.52550	.50751	4.2764	F 55.836	1.0972
Stddev	.00020	.00034	.00119	.00074	.0517	.486	.0092
%RSD	.39699	.16705	.22563	.14556	1.2100	.87098	.83681
#1	.05132	.20492	.52561	.50781	4.2172	55.276	1.0867
#2	.05173	.20439	.52663	.50806	4.2993	56.155	1.1012
#3	.05149	.20429	.52426	.50667	4.3128	56.077	1.1037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
Value						50.000	
Range						10.000%	

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.409	.53721	1.0183	F 55.855	.52320	10.222	.52319
Stddev	.033	.00138	.0032	.281	.00164	.006	.00445
%RSD	.31875	.25729	.31498	.50397	.31277	.05747	.84982
#1	10.395	.53655	1.0219	55.540	.52499	10.215	.51878
#2	10.447	.53880	1.0158	55.942	.52282	10.227	.52312
#3	10.385	.53628	1.0171	56.082	.52179	10.223	.52768
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value				50.000			
Range				10.000%			

Approved: February 26, 2015

Sample Name: CCV Acquired: 2/25/2015 19:51:06 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2448	.41007	5.1642	1.0303	F 1.1066	1.0681	.53463
Stddev	.0041	.00182	.0074	.0010	.0038	.0013	.00083
%RSD	.32932	.44430	.14307	.09533	.34723	.12536	.15436
#1	1.2417	.40798	5.1596	1.0297	1.1022	1.0679	.53493
#2	1.2495	.41086	5.1728	1.0299	1.1081	1.0695	.53526
#3	1.2432	.41136	5.1604	1.0315	1.1095	1.0668	.53369
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
Value					1.0000		
Range					10.000%		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0122	.99768	F -.29564
Stddev	.0005	.00183	1.5345
%RSD	.05328	.18385	519.04
#1	1.0116	.99738	-2.0430
#2	1.0123	.99964	.83267
#3	1.0126	.99601	.32338
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10468.	9999.3
Stddev	14.	40.4
%RSD	.13323	.40381
#1	10484.	10037.
#2	10463.	9956.9
#3	10458.	10004.

Approved: February 26, 2015

Sample Name: CCB Acquired: 2/25/2015 19:54:22 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**-.01211**	**.00022**	**.00528**	**-.00022**	**-.00012**	**.03400**
Stddev	.00017	.00078	.00159	.00082	.00020	.00006	.00715
%RSD	78.891	6.4185	721.34	15.588	92.497	51.686	21.044
#1	.00034	-.01274	.00036	.00602	-.00035	-.00007	.03386
#2	.00002	-.01234	-.00144	.00439	.00001	-.00019	.02692
#3	.00030	-.01124	.00174	.00543	-.00030	-.00010	.04122
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**.00001**	**-.00020**	**-.00022**	**.00139**	**.07221**	**.00106**
Stddev	.00003	.00008	.00057	.00046	.00844	.01406	.00143
%RSD	27.081	548.36	285.77	214.34	608.52	19.471	135.80
#1	.00007	-.00004	-.00033	-.00001	.00509	.08409	.00087
#2	.00013	.00010	-.00070	.00011	.00735	.07586	.00257
#3	.00011	-.00002	.00042	-.00075	-.00827	.05669	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01328**	**.00005**	**.00494**	**.01695**	**.00016**	**-.00181**	**-.00125**
Stddev	.06003	.00008	.00030	.00728	.00076	.00101	.00250
%RSD	451.99	175.02	6.0645	42.921	468.39	55.541	201.10
#1	-.03545	.00009	.00472	.01131	.00086	-.00114	-.00366
#2	-.00505	-.00005	.00528	.02516	.00026	-.00297	-.00142
#3	.08034	.00010	.00482	.01438	-.00064	-.00133	.00134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: CCB Acquired: 2/25/2015 19:54:22 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00457	.00384	-.00221	.00019	.00011	.00025	.00351
Stddev	.00118	.00622	.00050	.00037	.00012	.00190	.00096
%RSD	25.721	161.78	22.569	194.46	111.25	748.37	27.464
#1	.00557	.00706	-.00172	.00059	.00024	.00211	.00459
#2	.00487	-.00333	-.00271	-.00015	-.00001	-.00169	.00322
#3	.00327	.00780	-.00218	.00013	.00010	.00035	.00273
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00003	-.00009	F .62075
Stddev	.00011	.00016	3.2275
%RSD	437.51	189.08	519.94
#1	-.00014	-.00021	3.7690
#2	-.00001	-.00014	.77380
#3	.00008	.00010	-2.6806
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10371.	9902.0
Stddev	14.	78.4
%RSD	.13159	.79142
#1	10371.	9970.8
#2	10357.	9816.7
#3	10384.	9918.5

Approved: February 26, 2015

Sample Name: PBW 68 Acquired: 2/25/2015 19:58:02 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513355-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	-.01262	-.00090	.00261	-.00054	-.00014	.00780
Stddev	.00065	.00299	.00124	.00058	.00040	.00004	.00704
%RSD	307.79	23.719	137.90	22.313	74.070	31.601	90.201
#1	.00051	-.01482	-.00231	.00315	-.00095	-.00011	.00755
#2	.00066	-.00921	-.00037	.00268	-.00054	-.00018	.01496
#3	-.00053	-.01382	-.00001	.00200	-.00014	-.00012	.00090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	-.00013	-.00005	-.00049	.00173	.03930	.00112
Stddev	.00009	.00019	.00022	.00045	.00788	.00974	.00102
%RSD	49.361	141.07	436.87	91.434	455.51	24.798	91.510
#1	.00010	.00003	.00020	-.00008	.01044	.03390	-.00004
#2	.00028	-.00035	-.00022	-.00042	-.00034	.05055	.00150
#3	.00017	-.00009	-.00014	-.00097	-.00491	.03344	.00190
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02418	.00009	.00107	-.01013	.00094	F -.01080	.00047
Stddev	.01393	.00006	.00011	.00078	.00052	.00381	.00177
%RSD	57.608	66.144	10.370	7.6648	55.078	35.265	379.83
#1	.02463	.00004	.00096	-.00971	.00146	-.01029	.00222
#2	.03788	.00007	.00118	-.01102	.00093	-.01484	.00050
#3	.01003	.00015	.00108	-.00965	.00043	-.00727	-.00132
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: PBW 68 Acquired: 2/25/2015 19:58:02 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513355-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00078	-.00002	-.00292	-.00037	.00017	-.00154	.00021
Stddev	.00348	.00284	.00029	.00014	.00005	.00093	.00040
%RSD	446.89	18367.	9.9363	36.658	29.853	60.693	195.13
#1	-.00118	-.00042	-.00319	-.00047	.00022	-.00122	.00067
#2	-.00403	-.00263	-.00295	-.00022	.00012	-.00258	.00001
#3	.00288	.00300	-.00261	-.00043	.00017	-.00080	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00010	.00076	1.5097
Stddev	.00035	.00028	3.1781
%RSD	338.59	36.027	210.51
#1	.00014	.00098	4.2790
#2	-.00051	.00045	-1.9602
#3	.00005	.00086	2.2103
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10408.	9980.4
Stddev	27.	48.6
%RSD	.25818	.48711
#1	10432.	10002.
#2	10413.	10014.
#3	10379.	9924.7

Approved: February 26, 2015

Sample Name: LCSW 68 Acquired: 2/25/2015 20:01:44 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513355-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.16174	5.1085	-.00152	.00125	-.00041	.02550	5.5004
Stddev	.00419	.1304	.00186	.00090	.00033	.00032	.0072
%RSD	2.5915	2.5528	121.98	71.732	80.077	1.2698	.13128
#1	.15901	4.9994	.00057	.00228	-.00078	.02533	5.5012
#2	.15965	5.0732	-.00216	.00088	-.00025	.02530	5.4929
#3	.16657	5.2530	-.00299	.00060	-.00019	.02588	5.5072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	-.00004	.00004	-.00019	2.1239	27.243	.00061
Stddev	.00007	.00014	.00013	.00049	.0252	.063	.00172
%RSD	33.059	347.34	293.30	257.74	1.1866	.23011	280.33
#1	.00014	-.00016	.00003	.00037	2.0948	27.174	-.00034
#2	.00025	.00012	.00018	-.00042	2.1381	27.257	-.00042
#3	.00028	-.00009	-.00008	-.00053	2.1389	27.297	.00260
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.0978	.26645	.00053	27.205	-.00002	F -.00938	-.00105
Stddev	.0546	.00208	.00027	.051	.00041	.00305	.00187
%RSD	1.0709	.77924	51.813	.18612	2089.6	32.529	179.29
#1	5.0357	.26417	.00023	27.147	-.00027	-.00619	-.00284
#2	5.1194	.26693	.00059	27.230	.00046	-.01227	-.00120
#3	5.1382	.26824	.00076	27.239	-.00025	-.00969	.00090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: LCSW 68 Acquired: 2/25/2015 20:01:44 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513355-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00204	.00026	-.00371	-.00066	.00006	-.00069	.00373
Stddev	.00117	.00357	.00173	.00025	.00005	.00178	.00135
%RSD	57.537	1370.8	46.724	38.308	95.067	256.70	36.226
#1	-.00291	-.00153	-.00429	-.00039	.00009	-.00238	.00227
#2	-.00251	.00437	-.00508	-.00089	.00008	.00117	.00398
#3	-.00070	-.00206	-.00176	-.00071	.00000	-.00087	.00494
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00019	.00100	.78460
Stddev	.00040	.00018	2.0615
%RSD	206.87	17.672	262.74
#1	.00010	.00112	.84972
#2	-.00004	.00107	2.8127
#3	-.00064	.00080	-1.3087
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10372.	9913.4
Stddev	6.	48.9
%RSD	.06248	.49295
#1	10372.	9964.5
#2	10366.	9867.1
#3	10379.	9908.6

Approved: February 26, 2015

Sample Name: L1502105226 Acquired: 2/25/2015 20:05:17 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513355-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00062	.01554	-.00362	.02596	.01013	-.00014	290.10	.00157
Stddev	.00033	.00297	.00295	.00070	.00041	.00004	.85	.00015
%RSD	52.824	19.107	81.536	2.6884	4.0713	26.446	.29162	9.3100
#1	.00098	.01387	-.00135	.02594	.01049	-.00018	290.00	.00158
#2	.00057	.01379	-.00256	.02527	.00968	-.00011	290.99	.00171
#3	.00033	.01897	-.00695	.02667	.01023	-.00014	289.31	.00142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00044	.00161	-.00062	.04747	13.577	.03357	247.43	.12431
Stddev	.00026	.00012	.00016	.00389	.060	.00019	.37	.00050
%RSD	60.082	7.3036	25.894	8.1923	.44073	.56411	.14858	.40185
#1	.00049	.00170	-.00043	.04948	13.539	.03378	247.85	.12449
#2	.00067	.00148	-.00073	.04994	13.646	.03349	247.24	.12374
#3	.00015	.00164	-.00068	.04299	13.547	.03343	247.19	.12469
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	7.4725	.00743	.00083	-.00250	-.00011	.00033	2.0501
Stddev	.00019	.0263	.00106	.00106	.00272	.00089	.00203	.0366
%RSD	137.26	.35253	14.308	127.09	108.56	792.14	609.32	1.7838
#1	.00023	7.4846	.00670	-.00024	.00062	.00090	.00004	2.0743
#2	-.00008	7.4906	.00695	.00187	-.00377	-.00046	-.00153	2.0080
#3	.00027	7.4423	.00865	.00086	-.00435	-.00078	.00249	2.0680
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 26, 2015

Sample Name: L1502105226 Acquired: 2/25/2015 20:05:17 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513355-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00079**	**1.7269**	**-.01408**	**-.00072**	**-.00033**	**.00487**	**2.7071**
Stddev	.00006	.0073	.00114	.00095	.00019	.00015	2.3509
%RSD	7.7774	.41994	8.0989	131.47	57.889	3.1834	86.843
#1	-.00073	1.7257	-.01529	-.00031	-.00011	.00503	.00100
#2	-.00078	1.7347	-.01303	-.00181	-.00044	.00473	3.8739
#3	-.00085	1.7203	-.01393	-.00005	-.00045	.00484	4.2464
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**9619.9**	**9723.2**
Stddev	30.4	35.7
%RSD	.31609	.36734
#1	9612.1	9683.3
#2	9594.2	9752.3
#3	9653.5	9733.9

Approved: February 26, 2015

Sample Name: L1502105226DUP Acquired: 2/25/2015 20:08:49 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513355-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .00049	.01328	k -.00483	.02592	.01011	k -.00010	^ *****
Stddev	.00039	.00086	.00196	.00049	.00013	.00002	-----
%RSD	78.917	6.4947	40.542	1.8806	1.2395	16.225	-----
#1	.00092	.01424	-.00264	.02607	.01001	-.00009	288.11
#2	k .00036	.01304	k -.00641	.02538	.01025	k -.00009	^ -----
#3	k .00018	.01256	k -.00545	.02632	.01007	k -.00012	^ -----
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .00147	k .00044	k .00077	k -.00019	k .01964	13.597	.03290
Stddev	.00007	.00020	.00060	.00030	.02279	.044	.00103
%RSD	5.0283	45.015	77.263	155.57	116.03	.32137	3.1285
#1	.00155	.00056	.00019	.00006	.04594	13.638	.03242
#2	k .00141	k .00021	k .00074	k -.00011	k .00559	13.551	.03408
#3	k .00144	k .00054	k .00139	k -.00052	k .00740	13.602	.03221
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	246.46	k .12522	k .00012	7.3848	k .00676	k .00657	k -.00193
Stddev	.98	.00096	.00001	.0162	.00044	.00316	.00329
%RSD	.39794	.76692	7.6440	.21985	6.5151	48.030	170.16
#1	245.33	.12419	.00013	7.3688	.00625	.01015	-.00347
#2	247.13	k .12536	k .00012	7.3843	k .00702	k .00418	k .00184
#3	246.91	k .12609	.00011	7.4013	k .00701	k .00539	k -.00417
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: L1502105226DUP Acquired: 2/25/2015 20:08:49 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513355-06

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .00099	.00759	2.0505	k -.00042	k 1.7212	k -.01291	k -.00124
Stddev	.00151	.00040	.0350	.00031	.0073	.00235	.00374
%RSD	152.22	5.2860	1.7049	74.354	.42554	18.227	302.35
#1	-.00047	.00716	2.0684	-.00016	1.7143	-.01098	.00307
#2	k .00255	.00767	2.0729	k -.00076	k 1.7204	k -.01223	k -.00369
#3	k .00090	.00795	2.0102	k -.00032	k 1.7289	k -.01553	k -.00310
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	k -.00029	.00533	k 2.8645
Stddev	.00016	.00012	1.1023
%RSD	54.872	2.3423	38.480
#1	-.00042	.00523	1.7191
#2	k -.00034	.00547	k 3.9179
#3	k -.00011	.00529	k 2.9564
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	9617.3	9725.6
Stddev	27.1	55.6
%RSD	.28154	.57170
#1	9612.8	9789.7
#2	9592.7	9690.6
#3	9646.3	9696.5

Approved: February 26, 2015

Sample Name: L1502105228 Acquired: 2/25/2015 20:12:25 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513355-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	-.00339	-.00223	.00707	.00373	-.00016	18.610
Stddev	.00009	.00296	.00187	.00045	.00047	.00002	.026
%RSD	16.079	87.291	83.745	6.3974	12.506	13.862	.13925
#1	.00055	-.00242	-.00048	.00657	.00347	-.00014	18.636
#2	.00067	-.00671	-.00420	.00744	.00345	-.00016	18.584
#3	.00049	-.00104	-.00202	.00721	.00427	-.00018	18.610
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00097	.00085	-.00043	.00173	6.9219	.02541
Stddev	.00001	.00011	.00053	.00024	.00651	.0310	.00047
%RSD	2.8944	11.008	62.092	55.645	375.96	.44743	1.8554
#1	.00031	.00101	.00121	-.00035	-.00562	6.9217	.02570
#2	.00031	.00106	.00024	-.00024	.00408	6.8910	.02486
#3	.00030	.00085	.00111	-.00070	.00674	6.9529	.02565
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.1792	.02288	.00019	181.70	.00472	F -.00946	.00050
Stddev	.0688	.00018	.00016	.32	.00035	.00519	.00143
%RSD	1.3290	.77776	86.316	.17400	7.4916	54.900	287.64
#1	5.2234	.02271	.00000	181.63	.00506	-.00823	-.00108
#2	5.0999	.02307	.00027	181.43	.00474	-.01515	.00089
#3	5.2144	.02285	.00029	182.05	.00436	-.00498	.00168
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502105228 Acquired: 2/25/2015 20:12:25 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513355-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00169	.00310	1.6950	-.00049	.10184	-.00118	.00089
Stddev	.00110	.00411	.0203	.00020	.00018	.00179	.00043
%RSD	65.209	132.38	1.1961	40.567	.17676	150.88	48.404
#1	-.00095	.00179	1.6716	-.00072	.10177	-.00323	.00088
#2	-.00116	-.00019	1.7052	-.00038	.10171	.00010	.00132
#3	-.00296	.00770	1.7082	-.00037	.10205	-.00043	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00030	.00215	1.0836
Stddev	.00026	.00010	.6091
%RSD	88.374	4.4566	56.209
#1	.00003	.00209	1.0623
#2	.00030	.00226	.48541
#3	.00056	.00209	1.7030
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10107.	10078.
Stddev	25.	50.
%RSD	.24649	.49956
#1	10080.	10022.
#2	10128.	10120.
#3	10113.	10090.

Approved: February 26, 2015

Sample Name: L1502105228MS Acquired: 2/25/2015 20:15:58 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513355-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.16192	5.0891	-.00161	.00729	.00383	.02601	24.165
Stddev	.00289	.0440	.00385	.00086	.00017	.00017	.230
%RSD	1.7845	.86358	239.72	11.748	4.5705	.67239	.95119
#1	.15910	5.0640	-.00604	.00674	.00387	.02582	24.345
#2	.16488	5.1399	.00086	.00828	.00398	.02617	23.906
#3	.16177	5.0635	.00037	.00685	.00364	.02604	24.245
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	.00089	.00093	-.00029	2.1239	34.697	.02370
Stddev	.00004	.00027	.00001	.00041	.0321	.362	.00154
%RSD	10.569	30.291	.68350	143.08	1.5139	1.0432	6.5020
#1	.00038	.00111	.00092	-.00037	2.1388	34.948	.02292
#2	.00045	.00096	.00094	.00016	2.0870	34.282	.02547
#3	.00036	.00059	.00093	-.00065	2.1460	34.861	.02271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.572	.28328	-.00006	210.21	.00373	F -.01284	-.00038
Stddev	.156	.00219	.00027	3.34	.00064	.00352	.00252
%RSD	1.4800	.77399	454.23	1.5870	17.109	27.443	669.18
#1	10.653	.28516	-.00012	210.69	.00316	-.01392	-.00314
#2	10.391	.28087	-.00029	206.66	.00360	-.00890	.00022
#3	10.671	.28381	.00023	213.28	.00442	-.01569	.00179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502105228MS Acquired: 2/25/2015 20:15:58 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513355-07

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00082	.00156	1.6972	-.00051	.10106	-.00236	.00117
Stddev	.00215	.00105	.0086	.00066	.00092	.00099	.00157
%RSD	261.07	67.446	.50924	128.59	.90792	41.823	134.35
#1	.00136	.00083	1.7001	.00003	.10166	-.00128	.00071
#2	-.00090	.00276	1.7040	-.00124	.10001	-.00260	.00291
#3	-.00293	.00107	1.6875	-.00032	.10153	-.00321	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00020	.00171	2.1981
Stddev	.00018	.00015	1.4940
%RSD	89.873	8.7283	67.969
#1	.00024	.00162	3.8715
#2	.00001	.00189	.99818
#3	.00037	.00164	1.7246
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10128.	9873.7
Stddev	25.	63.6
%RSD	.24736	.64385
#1	10152.	9818.4
#2	10131.	9943.1
#3	10102.	9859.6

Approved: February 26, 2015

Sample Name: L1502105230 Acquired: 2/25/2015 20:19:32 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.00221	-.00250	.01044	.01345	-.00011	129.96	.00123
Stddev	.00071	.00075	.00139	.00147	.00025	.00002	2.40	.00024
%RSD	102.49	33.945	55.806	14.117	1.8781	18.265	1.8499	19.174
#1	-.00010	.00226	-.00178	.01112	.01341	-.00013	128.51	.00096
#2	.00093	.00294	-.00160	.01145	.01322	-.00012	128.64	.00141
#3	.00126	.00144	-.00410	.00875	.01372	-.00009	132.74	.00133
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	.00176	-.00048	.01772	8.7020	.02451	91.094	.02440
Stddev	.00022	.00003	.00036	.00177	.0662	.00026	.764	.00010
%RSD	28.720	1.4613	75.519	9.9790	.76063	1.0781	.83909	.41269
#1	.00054	.00176	-.00089	.01644	8.7076	.02471	90.492	.02429
#2	.00079	.00174	-.00037	.01698	8.6332	.02461	90.834	.02442
#3	.00097	.00179	-.00019	.01974	8.7652	.02421	91.954	.02449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	2.7473	.00448	-.00111	-.00161	-.00155	.00243	2.4859
Stddev	.00022	.0260	.00079	.00576	.00081	.00149	.00182	.0307
%RSD	489.59	.94678	17.519	521.33	50.017	96.327	74.723	1.2342
#1	.00010	2.7353	.00481	-.00685	-.00163	-.00015	.00453	2.4533
#2	-.00030	2.7295	.00358	-.00114	-.00080	-.00138	.00131	2.4903
#3	.00007	2.7772	.00505	.00467	-.00241	-.00312	.00146	2.5142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: February 26, 2015

Sample Name: L1502105230 Acquired: 2/25/2015 20:19:32 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00061	.37042	-.00795	-.00075	.00017	.00126	1.6557
Stddev	.00028	.00396	.00006	.00059	.00041	.00014	1.4303
%RSD	46.073	1.0692	.77433	79.611	245.51	11.069	86.389
#1	-.00063	.36769	-.00802	-.00014	.00065	.00123	.18043
#2	-.00088	.36861	-.00790	-.00077	-.00008	.00113	3.0364
#3	-.00032	.37496	-.00794	-.00133	-.00006	.00141	1.7502
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10005.	9809.4
Stddev	57.	6.1
%RSD	.56668	.06215
#1	9939.8	9813.9
#2	10033.	9811.8
#3	10042.	9802.4

Approved: February 26, 2015

Sample Name: L1502110704 Acquired: 2/25/2015 20:23:12 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.06125	-.00197	.01135	.02011	-.00011	16.014
Stddev	.00068	.00143	.00183	.00125	.00004	.00002	.033
%RSD	310.81	2.3308	93.131	11.010	.20244	19.108	.20362
#1	.00036	.06084	-.00204	.01226	.02014	-.00010	16.010
#2	.00082	.06007	-.00010	.00992	.02006	-.00009	15.983
#3	-.00052	.06284	-.00376	.01187	.02012	-.00013	16.048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	.00018	.00092	.00003	.06400	2.2667	.00367
Stddev	.00005	.00019	.00039	.00072	.00538	.0307	.00121
%RSD	12.330	103.88	42.108	2260.1	8.4006	1.3534	33.024
#1	.00041	.00037	.00090	.00043	.06816	2.2325	.00456
#2	.00037	-.00001	.00055	-.00080	.06591	2.2758	.00417
#3	.00048	.00020	.00132	.00046	.05793	2.2918	.00229
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.1104	.01786	.00006	2.7577	.00088	F -.00832	.00087
Stddev	.0119	.00023	.00024	.0348	.00053	.00286	.00179
%RSD	.13077	1.2869	381.47	1.2613	60.353	34.400	205.96
#1	9.0993	.01774	-.00018	2.7850	.00086	-.01139	.00273
#2	9.1089	.01772	.00006	2.7695	.00036	-.00572	-.00084
#3	9.1230	.01813	.00030	2.7185	.00143	-.00786	.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502110704 Acquired: 2/25/2015 20:23:12 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00151**	**.00364**	**1.8593**	**-.00031**	**.14156**	**.00396**	**.00072**
Stddev	.00219	.00283	.0228	.00046	.00025	.00056	.00238
%RSD	144.25	77.787	1.2252	150.71	.17929	14.065	331.69
#1	-.00275	.00689	1.8814	.00016	.14168	.00423	-.00160
#2	-.00280	.00179	1.8359	-.00033	.14127	.00433	.00059
#3	.00101	.00222	1.8608	-.00076	.14173	.00332	.00316
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00009**	**.00456**	F **-.49536**
Stddev	.00017	.00009	.98418
%RSD	182.43	1.9325	198.68
#1	.00023	.00456	.37445
#2	-.00010	.00465	-1.5637
#3	.00016	.00448	-.29687
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10282.**	**9881.2**
Stddev	46.	20.0
%RSD	.44880	.20214
#1	10264.	9887.2
#2	10335.	9897.4
#3	10248.	9858.8

Approved: February 26, 2015

Sample Name: L1502110704PS Acquired: 2/25/2015 20:26:45 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513387-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20865	5.2156	.20084	.97964	.56941	.02548	20.072
Stddev	.00106	.2089	.00762	.00097	.01670	.00008	.664
%RSD	.50867	4.0056	3.7952	.09867	2.9321	.29567	3.3078
#1	.20922	5.4569	.19217	.98074	.58869	.02556	20.839
#2	.20930	5.0925	.20649	.97928	.55958	.02541	19.685
#3	.20742	5.0976	.20385	.97891	.55997	.02547	19.692
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02559	.10385	.26806	.25362	2.2198	29.981	.55678
Stddev	.00042	.00170	.00100	.00481	.0640	.953	.01796
%RSD	1.6361	1.6323	.37216	1.8976	2.8837	3.1774	3.2249
#1	.02513	.10191	.26918	.24807	2.2938	31.080	.57752
#2	.02570	.10454	.26774	.25675	2.1836	29.390	.54660
#3	.02595	.10509	.26726	.25602	2.1822	29.473	.54623
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	13.357	.28396	.53310	30.650	.26124	5.0016	.25682
Stddev	.449	.01113	.00781	1.111	.00395	.0829	.00246
%RSD	3.3613	3.9198	1.4653	3.6247	1.5113	1.6581	.95749
#1	13.875	.29678	.52409	31.932	.25731	4.9062	.25446
#2	13.100	.27676	.53728	29.970	.26520	5.0426	.25937
#3	13.095	.27833	.53794	30.047	.26122	5.0562	.25663
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: L1502110704PS Acquired: 2/25/2015 20:26:45 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513387-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.62142**	**.19186**	**4.1033**	**.52107**	**.68360**	**.55223**	**.26489**
Stddev	.00734	.00302	.0301	.00069	.02338	.01778	.00309
%RSD	1.1806	1.5727	.73431	.13266	3.4205	3.2202	1.1673
#1	.61359	.18856	4.0685	.52050	.71059	.57269	.26223
#2	.62814	.19448	4.1212	.52184	.66932	.54051	.26828
#3	.62252	.19253	4.1203	.52087	.67090	.54349	.26416
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.51824**	**.49871**	F **-3.5085**
Stddev	.00222	.00237	2.7181
%RSD	.42924	.47467	77.473
#1	.52056	.50143	-4.9922
#2	.51804	.49751	-5.1620
#3	.51613	.49717	-.37140
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10266.**	**9760.9**
Stddev	5.	349.3
%RSD	.05248	3.5783
#1	10266.	9359.4
#2	10261.	9995.1
#3	10272.	9928.1

Approved: February 26, 2015

Sample Name: L1502110704SDL Acquired: 2/25/2015 20:30:01 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG513387-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00058	.00539	-.00199	.00675	.00422	-.00012	3.2949
Stddev	.00026	.00136	.00344	.00079	.00035	.00001	.0748
%RSD	45.818	25.313	173.09	11.767	8.3785	8.8124	2.2710
#1	.00076	.00536	-.00301	.00727	.00394	-.00012	3.2100
#2	.00027	.00404	-.00481	.00715	.00462	-.00011	3.3236
#3	.00069	.00677	.00185	.00584	.00410	-.00013	3.3512
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00006	.00003	-.00052	.02007	.45906	.00231
Stddev	.00013	.00014	.00038	.00027	.00766	.00696	.00164
%RSD	69.601	231.71	1197.1	50.764	38.147	1.5152	70.828
#1	.00005	.00017	.00037	-.00022	.02436	.45482	.00198
#2	.00020	.00012	.00010	-.00070	.01123	.45527	.00408
#3	.00029	-.00010	-.00038	-.00065	.02462	.46709	.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.8626	.00389	.00179	.55508	.00043	F -.00377	.00160
Stddev	.0411	.00014	.00009	.01505	.00050	.00678	.00380
%RSD	2.2043	3.6612	5.0837	2.7116	114.94	179.82	237.67
#1	1.8167	.00390	.00176	.55802	.00099	-.01147	-.00276
#2	1.8958	.00374	.00172	.56844	.00004	-.00119	.00336
#3	1.8752	.00402	.00190	.53877	.00027	.00134	.00420
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502110704SDL Acquired: 2/25/2015 20:30:01 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG513387-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	.00106	.37661	.00009	.02857	-.00056	.00163
Stddev	.00069	.00097	.00009	.00022	.00032	.00155	.00194
%RSD	102.08	91.435	.02489	254.80	1.1035	276.73	119.22
#1	.00138	.00049	.37670	.00025	.02822	.00111	.00169
#2	.00066	.00218	.37651	.00016	.02863	-.00196	-.00034
#3	.00000	.00052	.37662	-.00016	.02884	-.00083	.00355
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00018	.00213	1.2159
Stddev	.00026	.00008	1.3019
%RSD	144.32	3.5317	107.08
#1	.00038	.00221	1.5432
#2	-.00011	.00208	-.21849
#3	.00027	.00209	2.3229
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10392.	9885.0
Stddev	25.	39.9
%RSD	.24369	.40328
#1	10409.	9910.8
#2	10405.	9905.2
#3	10363.	9839.1

Approved: February 26, 2015

Sample Name: CCV Acquired: 2/25/2015 20:33:40 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41290	10.344	.41087	.50814	1.0900	.05121	F 11.063
Stddev	.00045	.035	.00891	.00242	.0144	.00016	.095
%RSD	.10918	.33650	2.1677	.47714	1.3197	.30768	.85451
#1	.41255	10.321	.40496	.50667	1.0822	.05111	11.004
#2	.41274	10.384	.40655	.50682	1.0813	.05113	11.013
#3	.41341	10.327	.42112	.51094	1.1066	.05139	11.172
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
Value							10.000
Range							10.000%

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05092	.20395	.52299	.50659	4.2101	F 55.156	1.0899
Stddev	.00088	.00362	.00103	.00785	.0381	.528	.0101
%RSD	1.7284	1.7739	.19621	1.5497	.90389	.95747	.92186
#1	.05053	.20175	.52191	.50116	4.1955	54.786	1.0875
#2	.05030	.20197	.52309	.50302	4.1815	54.921	1.0812
#3	.05193	.20812	.52396	.51559	4.2533	55.761	1.1009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
Value						50.000	
Range						10.000%	

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.341	.53727	1.0211	F 55.779	.51741	10.155	.51885
Stddev	.089	.00136	.0089	.170	.00807	.078	.00896
%RSD	.86342	.25318	.86772	.30507	1.5599	.77229	1.7264
#1	10.255	.53584	1.0153	55.605	.51275	10.096	.51046
#2	10.336	.53855	1.0167	55.789	.51275	10.126	.51781
#3	10.433	.53743	1.0313	55.945	.52673	10.244	.52828
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value				50.000			
Range				10.000%			

Approved: February 26, 2015

Sample Name: CCV Acquired: 2/25/2015 20:33:40 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2346	.40574	5.1602	1.0286	1.0999	1.0609	.52909
Stddev	.0245	.00761	.0338	.0082	.0035	.0038	.00078
%RSD	1.9849	1.8753	.65504	.79382	.31569	.36118	.14782
#1	1.2213	.39702	5.1409	1.0217	1.0981	1.0566	.52864
#2	1.2196	.40919	5.1404	1.0265	1.0978	1.0637	.52999
#3	1.2629	.41101	5.1992	1.0376	1.1039	1.0626	.52863
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0098	1.0069	F -.39524
Stddev	.0025	.0010	1.4862
%RSD	.24832	.10445	376.03
#1	1.0101	1.0076	-1.7558
#2	1.0071	1.0073	1.1909
#3	1.0121	1.0057	-.62077
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10419.	9886.3
Stddev	19.	47.7
%RSD	.17878	.48232
#1	10431.	9930.4
#2	10429.	9835.7
#3	10398.	9892.9

Approved: February 26, 2015

Sample Name: CCB Acquired: 2/25/2015 20:36:55 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	-.00762	.00104	.00354	-.00021	-.00008	.00316
Stddev	.00059	.00233	.00228	.00038	.00005	.00004	.01391
%RSD	422.90	30.562	219.85	10.824	22.151	47.588	440.23
#1	-.00051	-.00817	.00168	.00380	-.00022	-.00004	.00871
#2	.00027	-.00507	.00292	.00310	-.00026	-.00012	.01343
#3	.00065	-.00964	-.00149	.00371	-.00017	-.00007	-.01267
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.00002	.00021	-.00050	.00047	.02835	.00080
Stddev	.00009	.00013	.00029	.00027	.00296	.03515	.00086
%RSD	260.58	570.48	137.92	53.727	627.25	123.96	106.97
#1	.00011	-.00012	.00006	-.00080	-.00159	.03920	-.00006
#2	.00006	.00007	.00055	-.00035	-.00086	-.01094	.00081
#3	-.00006	.00012	.00003	-.00033	.00386	.05679	.00167
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.01400	.00008	.00494	-.00747	-.00097	-.00613	-.00139
Stddev	.03191	.00002	.00002	.01033	.00079	.00650	.00270
%RSD	227.98	22.969	.43818	138.27	80.933	105.91	194.43
#1	-.05079	.00010	.00496	-.00477	-.00026	-.01252	.00033
#2	.00607	.00007	.00495	-.01887	-.00182	-.00636	-.00451
#3	.00274	.00006	.00492	.00124	-.00083	.00047	.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: CCB Acquired: 2/25/2015 20:36:55 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00581	.00419	-.00407	-.00009	.00028	-.00056	.00180
Stddev	.00200	.00159	.00094	.00028	.00014	.00085	.00148
%RSD	34.455	38.073	23.179	301.96	48.186	150.95	82.248
#1	.00550	.00269	-.00515	-.00033	.00043	-.00036	.00290
#2	.00398	.00400	-.00337	-.00017	.00026	-.00150	.00012
#3	.00795	.00586	-.00371	.00022	.00016	.00017	.00239
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00025	-.00032	F 2.9956
Stddev	.00022	.00009	.7642
%RSD	87.906	28.192	25.510
#1	.00018	-.00043	3.5939
#2	.00051	-.00028	3.2581
#3	.00008	-.00026	2.1348
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10303.	9891.6
Stddev	10.	43.1
%RSD	.09594	.43543
#1	10309.	9911.0
#2	10291.	9921.5
#3	10308.	9842.2

Approved: February 26, 2015

Sample Name: L1502110708 Acquired: 2/25/2015 20:40:35 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	.04462	-.00230	.01629	.01823	-.00013	22.460
Stddev	.00036	.00467	.00078	.00149	.00013	.00001	.042
%RSD	40.639	10.476	33.836	9.1156	.73429	8.0171	.18828
#1	.00083	.03934	-.00317	.01651	.01836	-.00014	22.423
#2	.00055	.04629	-.00207	.01766	.01823	-.00012	22.450
#3	.00126	.04824	-.00167	.01471	.01809	-.00013	22.506
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	.00008	.00047	-.00078	.04909	2.8647	.00656
Stddev	.00010	.00013	.00045	.00034	.00118	.0071	.00286
%RSD	26.486	160.31	96.153	43.069	2.4040	.24712	43.645
#1	.00049	-.00001	.00068	-.00066	.04877	2.8567	.00942
#2	.00033	.00023	-.00005	-.00116	.05040	2.8670	.00370
#3	.00031	.00002	.00078	-.00052	.04811	2.8703	.00654
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.231	.00591	.00096	3.9634	.00089	F -.00574	.00033
Stddev	.033	.00011	.00007	.0273	.00012	.00636	.00096
%RSD	.27382	1.9455	7.0269	.68880	13.849	110.65	291.02
#1	12.256	.00585	.00104	3.9355	.00087	-.00376	-.00066
#2	12.193	.00583	.00091	3.9900	.00078	-.01286	.00126
#3	12.244	.00604	.00093	3.9647	.00102	-.00062	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502110708 Acquired: 2/25/2015 20:40:35 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00062**	**.00339**	**1.8466**	**-.00032**	**.21771**	**.00149**	**-.00097**
Stddev	.00348	.00350	.0026	.00049	.00064	.00191	.00130
%RSD	558.46	103.29	.14161	156.81	.29610	127.68	133.84
#1	-.00363	.00122	1.8437	-.00001	.21697	.00004	-.00238
#2	.00319	.00743	1.8476	-.00005	.21809	.00366	.00017
#3	-.00143	.00152	1.8486	-.00089	.21807	.00079	-.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00038**	**.00386**	F **-1.1028**
Stddev	.00039	.00023	1.5406
%RSD	100.34	5.8565	139.71
#1	-.00005	.00361	.00044
#2	.00054	.00405	-.44575
#3	.00067	.00391	-2.8629
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10262.**	**9961.2**
Stddev	17.	16.6
%RSD	.16662	.16619
#1	10248.	9951.6
#2	10256.	9951.7
#3	10281.	9980.3

Approved: February 26, 2015

Sample Name: L1502110715 Acquired: 2/25/2015 20:44:09 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.05115	-.00119	.01244	.01912	-.00008	16.150
Stddev	.00034	.00234	.00327	.00040	.00023	.00002	.011
%RSD	97.333	4.5783	274.45	3.2130	1.1880	23.421	.06689
#1	.00028	.05294	-.00225	.01250	.01895	-.00009	16.151
#2	.00005	.04850	.00247	.01281	.01903	-.00009	16.139
#3	.00072	.05201	-.00380	.01202	.01938	-.00006	16.161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00039	.00006	.00039	-.00063	.06374	2.2535	.00483
Stddev	.00002	.00010	.00034	.00058	.00751	.0434	.00085
%RSD	5.1746	159.17	87.425	92.066	11.784	1.9261	17.573
#1	.00040	.00001	.00049	-.00069	.07163	2.2463	.00409
#2	.00036	.00000	.00067	-.00002	.05667	2.3000	.00575
#3	.00039	.00017	.00001	-.00117	.06292	2.2141	.00465
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.1906	.01552	.00065	2.6439	.00148	-.00054	-.00116
Stddev	.0349	.00025	.00029	.0349	.00043	.00456	.00157
%RSD	.37966	1.6295	45.241	1.3184	29.124	842.20	135.20
#1	9.2034	.01523	.00051	2.6509	.00193	.00084	-.00156
#2	9.2173	.01573	.00044	2.6747	.00142	-.00563	-.00249
#3	9.1511	.01559	.00098	2.6061	.00108	.00316	.00057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: L1502110715 Acquired: 2/25/2015 20:44:09 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00126**	**-.00018**	**1.7891**	**-.00100**	**.14529**	**.00283**	**.00165**
Stddev	.00207	.00253	.0168	.00040	.00158	.00023	.00087
%RSD	164.42	1382.9	.93793	39.801	1.0853	8.1071	52.567
#1	-.00162	.00224	1.7714	-.00054	.14706	.00309	.00240
#2	-.00313	.00001	1.8047	-.00119	.14475	.00274	.00070
#3	.00097	-.00280	1.7913	-.00126	.14404	.00266	.00183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00017**	**.00326**	F **-1.1955**
Stddev	.00015	.00009	1.7675
%RSD	87.315	2.7989	147.84
#1	.00018	.00336	-3.1954
#2	.00032	.00319	-.54832
#3	.00002	.00323	.15717
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10294.**	**9939.7**
Stddev	68.	6.9
%RSD	.66299	.06955
#1	10363.	9937.4
#2	10227.	9934.3
#3	10293.	9947.5

Approved: February 26, 2015

Sample Name: L1502110717 Acquired: 2/25/2015 20:47:43 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	.08765	-.00061	.00815	.01401	-.00011	14.548
Stddev	.00042	.00095	.00084	.00022	.00021	.00001	.118
%RSD	61.790	1.0839	136.88	2.6866	1.5267	5.9057	.80968
#1	.00084	.08683	-.00050	.00830	.01409	-.00012	14.421
#2	.00020	.08743	-.00149	.00825	.01418	-.00011	14.570
#3	.00100	.08869	.00017	.00790	.01377	-.00010	14.654
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	-.00015	.00055	-.00006	.11223	1.6438	.00323
Stddev	.00005	.00023	.00004	.00044	.00509	.0163	.00110
%RSD	15.187	149.67	6.9510	696.29	4.5378	.99226	34.081
#1	.00033	.00011	.00059	.00025	.10800	1.6329	.00231
#2	.00038	-.00030	.00051	-.00057	.11082	1.6360	.00445
#3	.00028	-.00028	.00055	.00013	.11788	1.6626	.00293
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.2371	.01481	.00071	1.5972	.00063	F -.00365	-.00218
Stddev	.0172	.00016	.00030	.0096	.00055	.00167	.00194
%RSD	.27643	1.0726	41.960	.60301	87.761	45.730	88.767
#1	6.2177	.01474	.00105	1.5974	.00120	-.00474	-.00431
#2	6.2507	.01500	.00056	1.6067	.00010	-.00173	-.00052
#3	6.2428	.01470	.00051	1.5874	.00057	-.00448	-.00171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502110717 Acquired: 2/25/2015 20:47:43 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00130	-.00157	1.9019	-.00079	.11909	.00688	.00104
Stddev	.00284	.00154	.0098	.00048	.00044	.00066	.00263
%RSD	217.91	98.638	.51264	61.384	.37148	9.5684	253.60
#1	-.00010	.00019	1.9016	-.00023	.11872	.00761	-.00113
#2	-.00455	-.00273	1.9118	-.00101	.11958	.00670	.00397
#3	.00073	-.00216	1.8923	-.00111	.11897	.00632	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00013	.00284	F -2.7706
Stddev	.00017	.00013	.9504
%RSD	131.29	4.4612	34.302
#1	.00031	.00294	-3.8309
#2	-.00003	.00287	-1.9955
#3	.00012	.00270	-2.4853
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10325.	9841.0
Stddev	27.	35.0
%RSD	.25781	.35549
#1	10346.	9845.4
#2	10295.	9804.0
#3	10334.	9873.6

Approved: February 26, 2015

Sample Name: L1502110719 Acquired: 2/25/2015 20:51:16 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	.09281	-.00447	.01223	.02375	-.00008	19.838
Stddev	.00038	.00564	.00394	.00046	.00014	.00005	.015
%RSD	70.512	6.0788	88.097	3.7425	.60635	60.406	.07640
#1	.00035	.08848	-.00761	.01223	.02391	-.00011	19.823
#2	.00029	.09076	-.00005	.01177	.02364	-.00002	19.853
#3	.00097	.09919	-.00576	.01269	.02370	-.00011	19.840
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.00008	.00061	-.00029	.11540	2.3750	.00585
Stddev	.00013	.00017	.00023	.00051	.00873	.0409	.00370
%RSD	32.058	210.26	37.977	173.03	7.5683	1.7227	63.285
#1	.00055	.00023	.00038	.00014	.11170	2.4097	.00933
#2	.00038	.00012	.00061	-.00017	.10913	2.3854	.00196
#3	.00029	-.00011	.00084	-.00085	.12538	2.3299	.00626
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.7561	.05177	.00003	4.1884	.00178	F -.00853	.00049
Stddev	.0133	.00045	.00015	.0076	.00048	.00111	.00185
%RSD	.15217	.87284	474.77	.18020	26.978	13.033	375.85
#1	8.7685	.05152	-.00005	4.1799	.00169	-.00930	.00227
#2	8.7578	.05150	.00020	4.1911	.00230	-.00904	-.00142
#3	8.7420	.05229	-.00006	4.1943	.00135	-.00726	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502110719 Acquired: 2/25/2015 20:51:16 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00034**	**-.00353**	**1.8554**	**-.00053**	**.20783**	**.00421**	**.00140**
Stddev	.00193	.00099	.0037	.00038	.00020	.00085	.00376
%RSD	559.98	27.988	.19651	72.063	.09623	20.280	269.09
#1	-.00185	-.00266	1.8532	-.00095	.20760	.00506	-.00284
#2	.00113	-.00334	1.8596	-.00019	.20799	.00419	.00434
#3	.00175	-.00460	1.8534	-.00045	.20789	.00336	.00269
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00037**	**.00787**	F **-4.3511**
Stddev	.00016	.00013	1.1911
%RSD	43.211	1.6113	27.374
#1	.00039	.00790	-2.9851
#2	.00051	.00772	-5.1726
#3	.00020	.00797	-4.8956
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10302.**	**9887.7**
Stddev	31.	53.8
%RSD	.30246	.54454
#1	10268.	9847.2
#2	10309.	9948.8
#3	10329.	9867.0

Approved: February 26, 2015

Sample Name: L1502110721 Acquired: 2/25/2015 20:54:50 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.08149	-.00171	.01352	.02505	-.00011	21.399
Stddev	.00096	.00458	.00097	.00092	.00018	.00003	.024
%RSD	139.25	5.6176	56.476	6.7727	.72871	22.569	.11239
#1	.00091	.07629	-.00281	.01247	.02487	-.00008	21.396
#2	.00152	.08324	-.00100	.01410	.02506	-.00012	21.376
#3	-.00036	.08493	-.00132	.01400	.02523	-.00013	21.424
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	.00019	.00067	-.00003	.09427	2.4983	.00656
Stddev	.00011	.00007	.00077	.00030	.00248	.0211	.00135
%RSD	23.826	37.889	114.90	1116.1	2.6323	.84337	20.585
#1	.00054	.00011	.00111	-.00011	.09622	2.5143	.00588
#2	.00033	.00024	.00111	-.00027	.09148	2.4744	.00812
#3	.00049	.00023	-.00022	.00031	.09512	2.5062	.00569
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.3774	.05304	.00039	4.4609	.00210	F -.00430	-.00068
Stddev	.1474	.00079	.00012	.0150	.00063	.00594	.00144
%RSD	1.5722	1.4934	31.751	.33652	29.896	138.03	210.40
#1	9.2724	.05222	.00051	4.4728	.00198	.00140	-.00198
#2	9.3139	.05310	.00040	4.4658	.00278	-.01045	-.00093
#3	9.5460	.05380	.00026	4.4440	.00154	-.00386	.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502110721 Acquired: 2/25/2015 20:54:50 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00137	-.00210	1.8034	-.00030	.23109	.00332	.00109
Stddev	.00223	.00057	.0251	.00009	.00043	.00124	.00189
%RSD	162.70	27.093	1.3904	29.129	.18646	37.431	172.33
#1	-.00113	-.00275	1.8145	-.00020	.23092	.00329	-.00090
#2	.00073	-.00168	1.8210	-.00035	.23158	.00209	.00133
#3	-.00371	-.00188	1.7747	-.00035	.23077	.00458	.00285
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00001	.00450	.26026
Stddev	.00005	.00022	2.4181
%RSD	704.86	4.8597	929.09
#1	.00003	.00468	.71241
#2	.00001	.00456	2.4204
#3	-.00006	.00426	-2.3520
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10294.	9885.8
Stddev	8.	69.9
%RSD	.07398	.70732
#1	10295.	9942.2
#2	10300.	9907.6
#3	10285.	9807.5

Approved: February 26, 2015

Sample Name: L1502110723 Acquired: 2/25/2015 20:58:22 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.07059	-.00163	.01357	.02615	-.00010	22.142
Stddev	.00058	.00408	.00190	.00091	.00081	.00004	.559
%RSD	1206.3	5.7862	116.53	6.7004	3.0900	40.218	2.5225
#1	.00067	.06915	-.00290	.01360	.02537	-.00006	21.811
#2	-.00049	.06743	.00055	.01264	.02609	-.00011	21.827
#3	-.00003	.07520	-.00254	.01446	.02699	-.00013	22.786
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.00010	.00051	-.00028	.09331	2.6166	.00696
Stddev	.00010	.00019	.00056	.00083	.00260	.0433	.00023
%RSD	30.098	187.59	109.70	298.42	2.7818	1.6541	3.3570
#1	.00024	.00005	.00093	-.00088	.09150	2.5848	.00671
#2	.00033	-.00005	.00072	-.00062	.09628	2.5992	.00718
#3	.00044	.00031	-.00012	.00066	.09215	2.6659	.00699
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.6977	.05405	.00028	4.5650	.00132	F -.00976	-.00153
Stddev	.1786	.00120	.00018	.0457	.00103	.00492	.00163
%RSD	1.8421	2.2235	65.231	1.0022	78.087	50.360	106.17
#1	9.5311	.05339	.00007	4.5273	.00043	-.00414	-.00198
#2	9.6756	.05332	.00036	4.5517	.00245	-.01188	.00027
#3	9.8864	.05544	.00041	4.6159	.00108	-.01326	-.00290
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502110723 Acquired: 2/25/2015 20:58:22 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.00261	1.8425	-.00094	.23701	.00196	-.00178
Stddev	.00217	.00618	.0093	.00016	.00260	.00093	.00097
%RSD	1463.3	236.33	.50497	17.313	1.0958	47.769	54.332
#1	-.00155	-.00443	1.8346	-.00099	.23529	.00273	-.00216
#2	-.00060	.00711	1.8402	-.00108	.23575	.00223	-.00068
#3	.00259	.00516	1.8528	-.00076	.24000	.00092	-.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00006	.00382	F -13.106
Stddev	.00017	.00013	1.449
%RSD	288.90	3.4604	11.054
#1	.00013	.00373	-13.882
#2	-.00010	.00375	-14.000
#3	-.00020	.00397	-11.434
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10273.	9780.6
Stddev	34.	95.2
%RSD	.32785	.97360
#1	10263.	9842.1
#2	10310.	9828.9
#3	10245.	9670.9

Approved: February 26, 2015

Sample Name: L1502110725 Acquired: 2/25/2015 21:01:55 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513355-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.07809	-.00079	.00949	.01661	-.00009	15.510
Stddev	.00070	.00237	.00129	.00071	.00022	.00002	.030
%RSD	232.15	3.0395	163.49	7.4573	1.3193	27.578	.19601
#1	.00063	.07593	.00068	.01026	.01670	-.00011	15.475
#2	.00077	.08063	-.00133	.00937	.01636	-.00009	15.521
#3	-.00050	.07772	-.00173	.00886	.01677	-.00006	15.533
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	-.00011	.00087	-.00014	.08715	1.9329	.00400
Stddev	.00008	.00025	.00065	.00034	.00939	.0331	.00070
%RSD	20.597	225.99	74.084	243.91	10.770	1.7112	17.576
#1	.00046	-.00036	.00119	-.00030	.08631	1.9066	.00473
#2	.00030	.00014	.00013	-.00037	.07821	1.9701	.00332
#3	.00039	-.00011	.00131	.00025	.09693	1.9221	.00395
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.7024	.01397	-.00005	2.1378	.00212	F -.00467	-.00071
Stddev	.0478	.00013	.00039	.0070	.00057	.00389	.00015
%RSD	.61994	.90230	759.36	.32642	26.691	83.239	21.481
#1	7.7522	.01403	-.00045	2.1305	.00229	-.00912	-.00053
#2	7.6570	.01406	.00032	2.1445	.00258	-.00291	-.00081
#3	7.6980	.01382	-.00003	2.1385	.00149	-.00197	-.00078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502110725 Acquired: 2/25/2015 21:01:55 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513355-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00207**	**.00305**	**1.8718**	**-.00041**	**.13456**	**.00415**	**.00007**
Stddev	.00216	.00262	.0065	.00036	.00023	.00191	.00132
%RSD	104.03	85.803	.34621	87.477	.17292	46.015	1926.6
#1	-.00331	.00057	1.8792	.00000	.13431	.00197	-.00093
#2	-.00332	.00579	1.8669	-.00061	.13476	.00551	.00156
#3	.00042	.00280	1.8694	-.00062	.13462	.00498	-.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00002**	**.00514**	F **-5.1643**
Stddev	.00028	.00011	.8513
%RSD	1464.8	2.1286	16.485
#1	-.00020	.00527	-5.0744
#2	-.00016	.00507	-4.3615
#3	.00030	.00508	-6.0570
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10314.**	**9777.4**
Stddev	22.	73.4
%RSD	.21434	.75051
#1	10339.	9818.3
#2	10303.	9692.7
#3	10299.	9821.3

Approved: February 26, 2015

Sample Name: L1502110725MS Acquired: 2/25/2015 21:05:28 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513355-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.15708	5.2229	-.00196	.00923	.01642	.02527	20.928
Stddev	.00057	.0155	.00171	.00053	.00019	.00007	.082
%RSD	.36310	.29706	87.294	5.7386	1.1366	.26735	.39058
#1	.15725	5.2156	-.00287	.00910	.01621	.02521	20.834
#2	.15754	5.2125	.00001	.00877	.01657	.02526	20.980
#3	.15644	5.2408	-.00303	.00981	.01648	.02534	20.970
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	.00012	.00084	.00004	2.1802	28.850	.00443
Stddev	.00003	.00018	.00041	.00019	.0068	.045	.00041
%RSD	7.0607	151.26	48.879	522.36	.31225	.15525	9.2723
#1	.00044	.00009	.00057	.00024	2.1753	28.823	.00469
#2	.00042	-.00005	.00131	.00002	2.1774	28.901	.00465
#3	.00048	.00032	.00063	-.00014	2.1880	28.824	.00396
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.927	.28063	.00003	29.120	.00148	F -.01061	-.00008
Stddev	.094	.00031	.00017	.124	.00084	.00567	.00086
%RSD	.72548	.11192	527.12	.42652	56.604	53.497	1042.2
#1	12.928	.28097	-.00014	28.978	.00068	-.00529	.00090
#2	12.833	.28059	.00003	29.209	.00235	-.01658	-.00068
#3	13.020	.28034	.00021	29.173	.00140	-.00995	-.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502110725MS Acquired: 2/25/2015 21:05:28 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment: WG513355-08

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00139**	**.00308**	**1.8301**	**-.00044**	**.13309**	**.00376**	**.00082**
Stddev	.00188	.00189	.0582	.00036	.00120	.00106	.00119
%RSD	135.33	61.379	3.1776	80.593	.89902	28.110	145.71
#1	-.00348	.00161	1.8623	-.00006	.13415	.00436	.00108
#2	.00014	.00521	1.7630	-.00076	.13334	.00438	.00186
#3	-.00081	.00242	1.8651	-.00052	.13179	.00254	-.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00008**	**.00483**	F **-.71252**
Stddev	.00015	.00016	2.2846
%RSD	180.39	3.2875	320.63
#1	-.00012	.00498	-1.5371
#2	-.00020	.00466	1.8699
#3	.00008	.00485	-2.4703
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10309.**	**9717.5**
Stddev	38.	34.8
%RSD	.36574	.35813
#1	10326.	9757.7
#2	10266.	9697.8
#3	10335.	9697.0

Approved: February 26, 2015

Sample Name: L1502111103 Acquired: 2/25/2015 21:09:00 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	.04640	-.00106	.01165	.01876	-.00008	16.353
Stddev	.00113	.00068	.00121	.00053	.00037	.00001	.052
%RSD	141.97	1.4693	114.65	4.5302	1.9532	13.292	.31958
#1	.00122	.04688	-.00074	.01210	.01908	-.00008	16.406
#2	-.00049	.04562	-.00003	.01107	.01836	-.00007	16.302
#3	.00165	.04670	-.00239	.01179	.01885	-.00009	16.352
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00005	.00029	.00024	.05773	2.2338	.00326
Stddev	.00010	.00011	.00083	.00056	.00631	.0383	.00048
%RSD	30.480	247.66	288.91	228.23	10.937	1.7127	14.827
#1	.00026	-.00008	.00089	.00076	.06483	2.2758	.00352
#2	.00025	.00013	-.00066	-.00035	.05563	2.2011	.00271
#3	.00042	.00009	.00062	.00032	.05274	2.2244	.00356
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.3803	.01565	.00034	2.6518	.00117	F -.00733	-.00071
Stddev	.0250	.00012	.00013	.0508	.00149	.00392	.00138
%RSD	.26619	.75703	36.686	1.9175	127.96	53.443	193.04
#1	9.3515	.01578	.00022	2.7104	.00178	-.00591	-.00050
#2	9.3929	.01562	.00033	2.6243	-.00054	-.01176	-.00219
#3	9.3965	.01556	.00047	2.6206	.00225	-.00432	.00055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502111103 Acquired: 2/25/2015 21:09:00 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00130**	**.00433**	**1.7665**	**-.00065**	**.14727**	**.00352**	**.00121**
Stddev	.00153	.00572	.0407	.00009	.00250	.00107	.00113
%RSD	118.05	131.91	2.3018	13.392	1.6979	30.375	93.367
#1	-.00267	.00378	1.7196	-.00066	.15009	.00279	.00105
#2	-.00159	-.00109	1.7900	-.00056	.14534	.00475	.00242
#3	.00036	.01031	1.7900	-.00073	.14636	.00302	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00009**	**.00235**	F **-2.2742**
Stddev	.00020	.00025	1.1568
%RSD	230.60	10.845	50.865
#1	-.00012	.00206	-3.4302
#2	.00011	.00247	-2.2757
#3	.00027	.00252	-1.1167
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10332.**	**9755.8**
Stddev	5.	44.0
%RSD	.04586	.45107
#1	10333.	9739.7
#2	10336.	9805.6
#3	10327.	9722.2

Approved: February 26, 2015

Sample Name: L1502111106 Acquired: 2/25/2015 21:12:34 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00021	.10874	-.00095	.00954	.01900	-.00008	14.401
Stddev	.00059	.00065	.00162	.00064	.00063	.00003	.015
%RSD	283.54	.59817	169.50	6.7025	3.3034	32.957	.10211
#1	-.00082	.10922	-.00248	.00881	.01904	-.00007	14.385
#2	.00035	.10899	-.00112	.00989	.01961	-.00010	14.402
#3	-.00015	.10800	.00074	.00993	.01835	-.00006	14.415
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	-.00004	.00054	.00037	.12433	1.8966	.00387
Stddev	.00005	.00004	.00078	.00057	.00292	.0371	.00108
%RSD	16.405	91.592	143.66	154.25	2.3479	1.9570	27.810
#1	.00029	-.00005	-.00033	.00091	.12683	1.8863	.00264
#2	.00033	.00000	.00115	.00042	.12112	1.9378	.00463
#3	.00024	-.00007	.00081	-.00023	.12504	1.8657	.00434
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.6246	.03283	.00012	3.0736	.00168	F -.00477	-.00020
Stddev	.0468	.00016	.00025	.0184	.00066	.00479	.00167
%RSD	.70571	.47495	201.51	.59945	39.259	100.28	834.16
#1	6.5810	.03275	.00010	3.0539	.00108	-.00786	-.00134
#2	6.6740	.03300	.00038	3.0904	.00239	-.00720	.00171
#3	6.6188	.03272	-.00011	3.0765	.00158	.00074	-.00098
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502111106 Acquired: 2/25/2015 21:12:34 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00045**	**.00102**	**1.8276**	**.00000**	**.13226**	**.00656**	**.00177**
Stddev	.00076	.00236	.0386	.00044	.00040	.00095	.00251
%RSD	169.20	232.15	2.1103	241860.	.30520	14.501	141.65
#1	.00042	-.00098	1.8501	.00016	.13180	.00754	.00012
#2	-.00100	.00362	1.7831	-.00049	.13241	.00648	.00466
#3	-.00076	.00041	1.8498	.00034	.13256	.00565	.00054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00008**	**.00981**	F **-3.2560**
Stddev	.00066	.00043	1.0513
%RSD	879.22	4.3446	32.290
#1	.00018	.00993	-4.0833
#2	.00068	.00934	-3.6116
#3	-.00063	.01017	-2.0729
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10357.**	**9837.5**
Stddev	4.	39.2
%RSD	.03916	.39808
#1	10352.	9869.8
#2	10360.	9793.9
#3	10358.	9848.6

Approved: February 26, 2015

Sample Name: CCV Acquired: 2/25/2015 21:16:11 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41230	10.590	.41589	.50707	1.0772	.05154	10.927
Stddev	.00278	.034	.00945	.00089	.0023	.00006	.060
%RSD	.67388	.32366	2.2722	.17545	.21372	.11829	.54796
#1	.41136	10.592	.40518	.50613	1.0746	.05148	10.881
#2	.41011	10.555	.42303	.50718	1.0787	.05161	10.904
#3	.41543	10.624	.41947	.50790	1.0784	.05153	10.994
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05141	.20682	.52595	.51126	4.2122	54.706	1.0796
Stddev	.00075	.00337	.00086	.00723	.0087	.159	.0025
%RSD	1.4670	1.6316	.16267	1.4146	.20576	.29153	.22820
#1	.05055	.20293	.52502	.50304	4.2188	54.645	1.0771
#2	.05196	.20869	.52671	.51665	4.2153	54.585	1.0798
#3	.05172	.20885	.52610	.51410	4.2024	54.886	1.0820
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.470	.54669	1.0272	F 55.305	.52262	10.239	.52094
Stddev	.071	.00248	.0069	.272	.00839	.086	.00627
%RSD	.68142	.45395	.67409	.49136	1.6054	.84034	1.2041
#1	10.434	.54586	1.0193	55.114	.51294	10.139	.51382
#2	10.552	.54474	1.0323	55.185	.52750	10.290	.52565
#3	10.423	.54948	1.0300	55.617	.52743	10.287	.52334
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value				50.000			
Range				10.000%			

Approved: February 26, 2015

Sample Name: CCV Acquired: 2/25/2015 21:16:11 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2387**	**.40719**	**5.1505**	**1.0358**	**1.0896**	**1.0613**	**.52924**
Stddev	.0153	.01177	.0309	.0086	.0058	.0074	.00127
%RSD	1.2365	2.8912	.59994	.83542	.53634	.69359	.23931
#1	1.2214	.39360	5.1151	1.0259	1.0850	1.0534	.52801
#2	1.2504	.41424	5.1719	1.0420	1.0877	1.0625	.53054
#3	1.2444	.41373	5.1646	1.0395	1.0962	1.0679	.52918
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0145**	**1.0169**	F **-.63732**
Stddev	.0051	.0025	3.8516
%RSD	.50567	.24803	604.35
#1	1.0112	1.0190	-.60860
#2	1.0119	1.0175	3.1998
#3	1.0204	1.0141	-4.5032
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10439.**	**9760.5**
Stddev	10.	27.4
%RSD	.09768	.28067
#1	10450.	9755.3
#2	10433.	9790.1
#3	10432.	9736.1

Approved: February 26, 2015

Sample Name: CCB Acquired: 2/25/2015 21:19:26 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00098	-.01031	-.00115	.00337	.00005	-.00008	-.00476
Stddev	.00049	.00117	.00244	.00110	.00029	.00003	.00468
%RSD	49.847	11.395	211.20	32.592	589.34	38.392	98.371
#1	.00083	-.01160	-.00270	.00441	.00005	-.00009	-.00592
#2	.00152	-.01001	-.00242	.00350	.00034	-.00004	.00039
#3	.00058	-.00931	.00165	.00222	-.00024	-.00009	-.00875
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00023	.00042	-.00007	.00147	.02142	.00106
Stddev	.00011	.00025	.00063	.00024	.00417	.02500	.00158
%RSD	112.45	109.41	150.94	345.85	284.25	116.70	147.98
#1	.00019	.00029	.00115	.00004	.00315	.02379	-.00073
#2	.00011	-.00005	.00012	.00010	-.00328	-.00468	.00222
#3	-.00002	.00044	-.00001	-.00034	.00454	.04514	.00170
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00971	-.00002	.00511	-.01631	.00102	-.00146	.00004
Stddev	.01279	.00003	.00035	.01445	.00015	.00145	.00038
%RSD	131.74	149.24	6.8955	88.608	14.294	98.722	1067.6
#1	-.01904	-.00003	.00475	-.01072	.00086	-.00069	.00042
#2	.00487	.00001	.00513	-.00549	.00104	-.00057	-.00033
#3	-.01494	-.00004	.00546	-.03273	.00115	-.00313	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: CCB Acquired: 2/25/2015 21:19:26 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00584	.00260	-.00576	-.00006	.00008	-.00010	.00278
Stddev	.00188	.00218	.00051	.00036	.00016	.00139	.00140
%RSD	32.156	84.035	8.8600	585.29	190.06	1434.6	50.416
#1	.00428	.00046	-.00633	-.00047	.00020	-.00137	.00365
#2	.00532	.00482	-.00563	.00008	.00014	-.00032	.00354
#3	.00792	.00250	-.00534	.00020	-.00010	.00139	.00116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00011	-.00021	F .49276
Stddev	.00018	.00020	1.4905
%RSD	158.55	97.298	302.48
#1	-.00010	.00002	-.39122
#2	-.00030	-.00029	-.34413
#3	.00006	-.00035	2.2136
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10359.	9757.8
Stddev	29.	65.9
%RSD	.27595	.67553
#1	10392.	9755.5
#2	10342.	9693.1
#3	10343.	9824.9

Approved: February 26, 2015

Sample Name: L1502111109 Acquired: 2/25/2015 21:23:06 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00000	.08660	-.00023	.01017	.02194	-.00009	20.259
Stddev	.0001	.00276	.00174	.00165	.00035	.00003	.055
%RSD	2202.5	3.1819	768.70	16.185	1.5993	27.808	.27195
#1	.00000	.08377	.00176	.01088	.02166	-.00007	20.223
#2	.00010	.08676	-.00151	.00829	.02233	-.00010	20.323
#3	-.00011	.08927	-.00093	.01134	.02182	-.00012	20.232
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	.00009	.00092	.00006	.08858	1.9611	.00433
Stddev	.00005	.00023	.00029	.00026	.00250	.0165	.00061
%RSD	9.6554	249.26	32.103	450.53	2.8231	.83944	13.973
#1	.00042	.00011	.00126	.00025	.08856	1.9692	.00376
#2	.00050	-.00015	.00077	-.00023	.08609	1.9421	.00427
#3	.00049	.00032	.00073	.00016	.09109	1.9718	.00497
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.930	.03142	.00101	3.2665	.00156	F -.00573	.00125
Stddev	.070	.00017	.00025	.0095	.00150	.00721	.00138
%RSD	.64187	.54667	24.779	.29138	96.544	125.79	110.21
#1	10.978	.03139	.00094	3.2559	.00101	-.00623	.00056
#2	10.964	.03127	.00081	3.2743	.00326	.00172	.00284
#3	10.850	.03161	.00129	3.2692	.00040	-.01267	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502111109 Acquired: 2/25/2015 21:23:06 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00076**	**.00175**	**2.0835**	**-.00055**	**.17246**	**.00424**	**-.00167**
Stddev	.00236	.00013	.0323	.00050	.00078	.00077	.00117
%RSD	310.71	7.1581	1.5515	90.897	.45457	18.229	70.182
#1	-.00021	.00162	2.0740	-.00070	.17156	.00467	-.00229
#2	.00128	.00187	2.1196	-.00097	.17294	.00470	-.00239
#3	-.00335	.00176	2.0570	.00001	.17289	.00335	-.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00037**	**.00898**	F **-.43942**
Stddev	.00023	.00023	1.0745
%RSD	62.518	2.5097	244.52
#1	.00064	.00909	.52835
#2	.00021	.00913	-1.5956
#3	.00027	.00872	-.25099
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**10304.**	**9870.0**
Stddev	34.	13.2
%RSD	.33464	.13361
#1	10312.	9875.7
#2	10334.	9879.4
#3	10267.	9854.9

Approved: February 26, 2015

Sample Name: L1502111111 Acquired: 2/25/2015 21:26:39 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	.11071	-.00035	.00946	.01954	-.00007	14.477
Stddev	.00036	.00025	.00089	.00057	.00007	.00001	.072
%RSD	56.618	.22430	256.94	6.0198	.34766	21.621	.49608
#1	.00044	.11046	-.00022	.01005	.01954	-.00008	14.397
#2	.00105	.11096	-.00129	.00943	.01961	-.00007	14.536
#3	.00042	.11071	.00048	.00891	.01948	-.00005	14.497
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.00015	.00019	.00015	.11238	1.9641	.00403
Stddev	.00002	.00001	.00057	.00020	.00383	.0341	.00292
%RSD	7.0334	6.9318	302.48	136.61	3.4049	1.7368	72.546
#1	.00036	.00014	-.00047	-.00005	.11238	1.9465	.00674
#2	.00032	.00016	.00049	.00035	.10856	1.9425	.00443
#3	.00036	.00014	.00055	.00015	.11622	2.0035	.00093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.6767	.03412	.00059	3.1995	.00182	F -.00573	-.00082
Stddev	.0413	.00021	.00009	.0401	.00034	.00559	.00033
%RSD	.61834	.61841	14.972	1.2538	18.518	97.493	40.076
#1	6.6666	.03392	.00068	3.1638	.00174	-.00100	-.00076
#2	6.7221	.03434	.00051	3.2429	.00219	-.00429	-.00052
#3	6.6414	.03410	.00058	3.1919	.00153	-.01190	-.00117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502111111 Acquired: 2/25/2015 21:26:39 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	.00312	1.8470	-.00045	.13245	.00388	-.00065
Stddev	.00197	.00250	.0052	.00066	.00066	.00264	.00130
%RSD	344.37	80.055	.28295	146.10	.50208	67.920	199.41
#1	.00130	.00448	1.8411	.00028	.13170	.00576	-.00199
#2	.00208	.00024	1.8488	-.00064	.13298	.00087	.00060
#3	-.00166	.00464	1.8511	-.00099	.13267	.00501	-.00057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00016	.01981	F -2.1717
Stddev	.00020	.00036	1.0672
%RSD	122.29	1.8351	49.141
#1	-.00007	.01945	-2.8465
#2	.00027	.02017	-.94133
#3	.00029	.01981	-2.7274
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10359.	9884.3
Stddev	7.	12.8
%RSD	.07191	.12999
#1	10368.	9898.9
#2	10356.	9874.7
#3	10354.	9879.4

Approved: February 26, 2015

Sample Name: L1502111306 Acquired: 2/25/2015 21:30:12 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.05369	-.00189	.00872	.01519	-.00009	22.469
Stddev	.00026	.00149	.00234	.00119	.00025	.00001	.045
%RSD	171.20	2.7759	123.96	13.649	1.6447	10.397	.20089
#1	-.00012	.05283	-.00453	.00998	.01527	-.00009	22.421
#2	.00040	.05541	-.00007	.00858	.01539	-.00008	22.510
#3	.00017	.05282	-.00107	.00761	.01491	-.00010	22.475
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	-.00002	.00100	-.00013	.07049	2.0646	.00456
Stddev	.00004	.00007	.00023	.00026	.00275	.0069	.00045
%RSD	7.5491	388.61	23.188	210.83	3.8963	.33646	9.8880
#1	.00050	.00006	.00125	.00010	.07366	2.0726	.00488
#2	.00044	-.00005	.00080	-.00041	.06904	2.0614	.00476
#3	.00050	-.00007	.00095	-.00006	.06877	2.0599	.00404
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	14.183	.01887	.00052	2.2219	.00135	F -.00757	-.00089
Stddev	.059	.00002	.00028	.0030	.00120	.00337	.00186
%RSD	.41454	.12768	54.213	.13634	88.820	44.559	208.40
#1	14.121	.01887	.00045	2.2214	.00201	-.00791	.00069
#2	14.191	.01890	.00028	2.2251	-.00003	-.01077	-.00042
#3	14.238	.01885	.00083	2.2191	.00207	-.00404	-.00295
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502111306 Acquired: 2/25/2015 21:30:12 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00304	.00179	1.9858	-.00042	.13539	.00130	.00054
Stddev	.00056	.00136	.0311	.00012	.00075	.00200	.00064
%RSD	18.450	75.886	1.5680	29.386	.55316	153.42	118.06
#1	.00270	.00287	2.0063	-.00052	.13587	-.00032	-.00004
#2	.00368	.00224	1.9500	-.00047	.13452	.00353	.00123
#3	.00272	.00027	2.0012	-.00028	.13576	.00069	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00021	.00382	F -2.0958
Stddev	.00020	.00013	1.7519
%RSD	94.161	3.5283	83.595
#1	.00017	.00393	-2.0594
#2	.00003	.00367	-.36226
#3	.00042	.00386	-3.8656
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10301.	9832.6
Stddev	19.	39.9
%RSD	.18371	.40552
#1	10307.	9878.0
#2	10279.	9816.8
#3	10316.	9803.0

Approved: February 26, 2015

Sample Name: L1502111502 Acquired: 2/25/2015 21:33:44 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	.06183	-.00014	.00573	.01157	-.00007	2.5927
Stddev	.00077	.00130	.00187	.00099	.00022	.00003	.0060
%RSD	270.33	2.1080	1387.5	17.333	1.9364	40.360	.22962
#1	.00113	.06179	-.00020	.00568	.01183	-.00004	2.5955
#2	-.00036	.06315	-.00198	.00674	.01148	-.00008	2.5968
#3	.00008	.06054	.00177	.00476	.01141	-.00009	2.5859
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.00002	.00012	.00041	.07284	.94973	.00190
Stddev	.00005	.00014	.00051	.00015	.01237	.01352	.00109
%RSD	27.406	619.37	413.67	35.449	16.976	1.4240	57.211
#1	.00013	-.00013	.00003	.00027	.07458	.94539	.00255
#2	.00023	.00014	-.00033	.00040	.05970	.93890	.00252
#3	.00021	.00006	.00068	.00057	.08425	.96489	.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.7871	.01403	.00028	1.1606	.00032	F -.00993	.00178
Stddev	.0163	.00024	.00009	.0083	.00032	.00283	.00239
%RSD	.91411	1.6841	32.735	.71281	99.400	28.493	134.13
#1	1.7687	.01427	.00019	1.1533	.00052	-.01130	.00335
#2	1.7999	.01404	.00027	1.1696	.00049	-.00668	-.00097
#3	1.7927	.01379	.00038	1.1590	-.00005	-.01183	.00297
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502111502 Acquired: 2/25/2015 21:33:44 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00107	-.00176	2.9698	-.00065	.01726	.00131	.00002
Stddev	.00091	.00330	.0168	.00014	.00013	.00086	.00085
%RSD	85.135	187.79	.56598	20.734	.73675	65.472	4491.8
#1	.00093	.00205	2.9504	-.00077	.01740	.00143	-.00094
#2	.00024	-.00377	2.9806	-.00069	.01722	.00209	.00033
#3	.00204	-.00357	2.9783	-.00050	.01715	.00040	.00067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00028	.00368	F -.24056
Stddev	.00059	.00019	1.8025
%RSD	210.97	5.1896	749.28
#1	-.00040	.00347	-2.2579
#2	.00056	.00384	.32443
#3	.00067	.00374	1.2118
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10402.	9911.9
Stddev	13.	51.7
%RSD	.12195	.52196
#1	10413.	9852.2
#2	10404.	9944.1
#3	10388.	9939.3

Approved: February 26, 2015

Sample Name: L1502111504 Acquired: 2/25/2015 21:37:18 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	.05648	-.00137	.00432	.01177	-.00004	2.5642
Stddev	.00031	.00052	.00109	.00063	.00015	.00003	.0154
%RSD	48.495	.91770	79.722	14.686	1.3133	92.579	.60151
#1	.00049	.05708	-.00263	.00467	.01161	-.00004	2.5641
#2	.00043	.05615	-.00077	.00469	.01179	.00000	2.5797
#3	.00100	.05622	-.00071	.00358	.01192	-.00007	2.5488
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	-.00030	.00092	.00005	.06645	.96489	.00148
Stddev	.00006	.00019	.00016	.00040	.00416	.03587	.00142
%RSD	18.623	64.695	17.615	741.08	6.2527	3.7174	96.058
#1	.00037	-.00050	.00087	.00005	.06181	.92477	.00086
#2	.00031	-.00025	.00079	-.00034	.06981	.97601	.00311
#3	.00025	-.00013	.00111	.00045	.06775	.99388	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.8160	.02615	.00043	1.1331	.00094	F -.00348	-.00019
Stddev	.0021	.00014	.00013	.0036	.00064	.00237	.00238
%RSD	.11598	.52041	30.111	.32062	67.632	68.163	1273.9
#1	1.8142	.02629	.00042	1.1293	.00098	-.00198	-.00140
#2	1.8183	.02615	.00057	1.1334	.00156	-.00621	-.00171
#3	1.8157	.02602	.00031	1.1365	.00029	-.00224	.00255
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502111504 Acquired: 2/25/2015 21:37:18 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00112	-.00124	2.9461	-.00020	.01724	.00256	.00086
Stddev	.00238	.00445	.0054	.00018	.00002	.00112	.00107
%RSD	212.95	359.07	.18388	91.290	.14255	43.682	123.95
#1	-.00283	.00003	2.9401	-.00009	.01723	.00130	.00009
#2	.00160	-.00618	2.9506	-.00010	.01722	.00296	.00041
#3	-.00213	.00243	2.9476	-.00040	.01727	.00343	.00208
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00013	.00386	F -.66045
Stddev	.00009	.00004	.52160
%RSD	70.233	1.1439	78.976
#1	.00022	.00387	-.47784
#2	.00004	.00390	-.25471
#3	.00014	.00382	-1.2488
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10408.	9882.5
Stddev	18.	62.6
%RSD	.17124	.63349
#1	10420.	9853.2
#2	10387.	9840.0
#3	10417.	9954.4

Approved: February 26, 2015

Sample Name: L1502111506 Acquired: 2/25/2015 21:40:54 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.06978	-.00039	.00556	.00981	-.00007	4.0615
Stddev	.00076	.00210	.00162	.00078	.00030	.00002	.0103
%RSD	1198.9	3.0060	419.39	14.117	3.0813	33.340	.25233
#1	-.00016	.07162	.00141	.00477	.00953	-.00008	4.0503
#2	.00091	.06749	-.00082	.00634	.01013	-.00008	4.0704
#3	-.00056	.07022	-.00175	.00556	.00976	-.00004	4.0639
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	.00003	.00005	.00008	.07514	1.0788	.00208
Stddev	.00007	.00009	.00095	.00028	.00394	.0291	.00040
%RSD	24.779	271.29	2055.0	373.33	5.2433	2.7007	19.189
#1	.00022	-.00004	.00035	.00039	.07944	1.0906	.00185
#2	.00036	.00014	.00080	.00001	.07425	1.0456	.00185
#3	.00028	.00000	-.00101	-.00017	.07172	1.1002	.00254
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.1292	.01224	.00027	1.3404	.00111	F -.00973	.00141
Stddev	.0320	.00010	.00022	.0067	.00084	.00516	.00198
%RSD	1.0228	.83393	81.750	.50084	74.937	53.016	140.97
#1	3.1271	.01212	.00002	1.3327	.00104	-.00460	.00370
#2	3.0982	.01232	.00038	1.3432	.00198	-.01492	.00029
#3	3.1622	.01227	.00041	1.3452	.00032	-.00968	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: February 26, 2015

Sample Name: L1502111506 Acquired: 2/25/2015 21:40:54 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00124	.00007	2.7985	-.00010	.02061	.00316	.00081
Stddev	.00139	.00444	.0065	.00012	.00022	.00069	.00111
%RSD	112.02	6139.1	.23228	128.34	1.0807	21.795	136.35
#1	-.00137	.00417	2.7945	-.00003	.02055	.00309	.00075
#2	-.00256	-.00464	2.8060	-.00024	.02043	.00252	-.00027
#3	.00021	.00069	2.7949	-.00003	.02086	.00389	.00195
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00032	.00253	.06805
Stddev	.00013	.00020	.61276
%RSD	40.909	7.9936	900.46
#1	.00019	.00272	-.63509
#2	.00044	.00254	.35132
#3	.00032	.00232	.48792
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10386.	9798.8
Stddev	29.	12.7
%RSD	.28268	.12987
#1	10375.	9794.6
#2	10363.	9813.1
#3	10419.	9788.7

Approved: February 26, 2015

Sample Name: CCV Acquired: 2/25/2015 21:44:34 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41124	10.592	.40950	.50600	1.0788	.05157	10.952
Stddev	.00278	.029	.01007	.00228	.0025	.00016	.060
%RSD	.67672	.27335	2.4595	.45097	.23010	.31488	.55033
#1	.41046	10.569	.40370	.50342	1.0760	.05158	10.890
#2	.41433	10.625	.40368	.50776	1.0798	.05140	10.958
#3	.40894	10.583	.42113	.50681	1.0806	.05173	11.010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05097	.20434	.52563	.50707	4.2096	54.830	1.0826
Stddev	.00080	.00308	.00127	.00669	.0202	.119	.0025
%RSD	1.5746	1.5071	.24200	1.3202	.47963	.21721	.23257
#1	.05039	.20255	.52471	.50174	4.2056	54.693	1.0801
#2	.05063	.20258	.52511	.50490	4.2314	54.891	1.0825
#3	.05189	.20790	.52708	.51458	4.1916	54.907	1.0851
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.471	.54568	1.0190	F 55.447	.51678	10.172	.51858
Stddev	.086	.00062	.0074	.217	.00779	.090	.00688
%RSD	.82192	.11358	.72874	.39095	1.5080	.88275	1.3271
#1	10.381	.54606	1.0132	55.266	.51029	10.100	.51228
#2	10.482	.54496	1.0164	55.388	.51464	10.143	.51754
#3	10.552	.54601	1.0274	55.687	.52542	10.272	.52593
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value				50.000			
Range				10.000%			

Approved: February 26, 2015

Sample Name: CCV Acquired: 2/25/2015 21:44:34 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2263	.40220	5.1628	1.0284	1.0922	1.0616	.52950
Stddev	.0187	.00552	.0805	.0076	.0047	.0039	.00146
%RSD	1.5239	1.3719	1.5587	.73583	.43344	.36419	.27502
#1	1.2107	.40653	5.0799	1.0214	1.0874	1.0580	.52802
#2	1.2213	.39599	5.2406	1.0273	1.0923	1.0612	.53093
#3	1.2470	.40408	5.1679	1.0365	1.0969	1.0657	.52957
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0124	1.0148	F -.99511
Stddev	.0021	.0038	.39373
%RSD	.20804	.37250	39.566
#1	1.0105	1.0140	-1.2229
#2	1.0121	1.0189	-1.2219
#3	1.0147	1.0115	-.54048
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10463.	9782.7
Stddev	27.	10.0
%RSD	.25733	.10248
#1	10492.	9786.3
#2	10458.	9790.4
#3	10439.	9771.4

Approved: February 26, 2015

Sample Name: CCB Acquired: 2/25/2015 21:47:50 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00044	-.00974	-.00046	.00306	-.00008	-.00007	-.00250
Stddev	.00065	.00170	.00216	.00057	.00020	.00002	.01204
%RSD	147.35	17.460	466.37	18.576	247.39	28.036	481.74
#1	.00066	-.00787	.00136	.00306	-.00019	-.00005	.00841
#2	-.00029	-.01016	.00009	.00250	.00015	-.00009	-.00049
#3	.00096	-.01120	-.00284	.00363	-.00020	-.00007	-.01542
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.00002	.00032	-.00040	.00102	.01104	.00034
Stddev	.00010	.00026	.00007	.00015	.00150	.02501	.00052
%RSD	102.80	1056.5	22.029	36.536	146.97	226.60	154.61
#1	.00001	-.00026	.00033	-.00027	.00189	.01073	.00066
#2	.00022	.00026	.00039	-.00056	-.00071	-.01382	.00062
#3	.00007	.00007	.00025	-.00038	.00188	.03621	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.02142	-.00001	.00525	-.02525	-.00027	-.00028	-.00106
Stddev	.04354	.00004	.00016	.00122	.00048	.00258	.00073
%RSD	203.28	470.07	3.1006	4.8148	177.89	920.29	69.055
#1	-.00356	.00004	.00527	-.02605	-.00047	-.00321	-.00175
#2	.01035	-.00001	.00508	-.02385	-.00061	.00164	-.00115
#3	-.07105	-.00005	.00541	-.02586	.00028	.00073	-.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: February 26, 2015

Sample Name: CCB Acquired: 2/25/2015 21:47:50 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v289) Mode: CONC Corr. Factor: 1.000000
User: KHR Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00844	-.00180	.00087	.00044	.00019	.00006	.00124
Stddev	.00043	.00071	.00108	.00046	.00010	.00233	.00037
%RSD	5.1026	39.613	123.78	105.41	52.087	4219.8	29.797
#1	.00872	-.00259	.00086	.00003	.00028	.00142	.00152
#2	.00795	-.00164	-.00020	.00095	.00021	.00138	.00082
#3	.00866	-.00119	.00196	.00034	.00008	-.00263	.00137
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00001	-.00019	F 1.5351
Stddev	.00017	.00008	.2796
%RSD	2641.2	41.107	18.213
#1	.00013	-.00010	1.2517
#2	.00008	-.00023	1.8107
#3	-.00019	-.00024	1.5429
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	10386.	9973.8
Stddev	30.	191.9
%RSD	.29162	1.9236
#1	10358.	9767.2
#2	10418.	10146.
#3	10381.	10008.

Approved: February 26, 2015

2.3.2 Metals ICP-MS Data

2.3.2.1 Summary Data

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW13FF-021715	**Prep Method:**	3015	**Prep Date:**	02/24/2015 08:43
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	02/24/2015 12:23
Workgroup #:	WG513279	**Analyst:**	BKT	**Run Date:**	02/24/2015 15:17
Collect Date:	02/17/2015 08:10	**Dilution:**	1	**File ID:**	NI.022415.151715
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.190		0.00400	0.00200	0.00100

Certificate of Analysis

Sample #:	L15021053-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW14FF-021715	**Prep Method:**	3015	**Prep Date:**	02/24/2015 08:43
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	02/24/2015 12:23
Workgroup #:	WG513279	**Analyst:**	BKT	**Run Date:**	02/24/2015 15:26
Collect Date:	02/17/2015 09:20	**Dilution:**	50	**File ID:**	NI.022415.152649
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.619		0.200	0.100	0.0500

Certificate of Analysis

Sample #:	L15021053-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW11FF-021715	**Prep Method:**	3015	**Prep Date:**	02/24/2015 08:43
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	02/24/2015 12:23
Workgroup #:	WG513279	**Analyst:**	BKT	**Run Date:**	02/24/2015 15:30
Collect Date:	02/17/2015 10:45	**Dilution:**	1	**File ID:**	NI.022415.153000
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.123		0.00400	0.00200	0.00100

Certificate of Analysis

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15021053-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW06FF-021715	**Prep Method:**	3015	**Prep Date:**	02/24/2015 08:43
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	02/24/2015 12:23
Workgroup #:	WG513279	**Analyst:**	BKT	**Run Date:**	02/24/2015 15:36
Collect Date:	02/17/2015 11:55	**Dilution:**	1	**File ID:**	NI.022415.153623
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0123		0.00400	0.00200	0.00100

Certificate of Analysis

Sample #:	L15021053-10	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW08FF-021715	**Prep Method:**	3015	**Prep Date:**	02/24/2015 08:43
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	02/24/2015 12:23
Workgroup #:	WG513279	**Analyst:**	BKT	**Run Date:**	02/24/2015 15:49
Collect Date:	02/17/2015 14:05	**Dilution:**	1	**File ID:**	NI.022415.154910
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0569		0.00400	0.00200	0.00100

Certificate of Analysis

Sample #:	L15021053-12	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW22FF-021715	**Prep Method:**	3015	**Prep Date:**	02/24/2015 08:43
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	02/24/2015 12:23
Workgroup #:	WG513279	**Analyst:**	BKT	**Run Date:**	02/24/2015 15:55
Collect Date:	02/17/2015 15:15	**Dilution:**	1	**File ID:**	NI.022415.155533
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0235		0.00400	0.00200	0.00100

2.3.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer NexION 300X

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	100
Vi = Initial volume	40
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/L)	0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	200
Vi = Initial volume	0.5
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/kg)	40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	40
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	50

50 ug/kg = 0.050 mg/kg

Perkin Elmer NexION ICP/MS

STANDARDS KEY

QC Std 1 - ICV
QC Std 2 - ICB
QC Std 3 - LLICV
QC Std 4 - ICSA
QC Std 5 - ICSAB
QC Std 6 - CCV
QC Std 7 - CCB
QC Std 8 - LLCCV

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.00005	0.05	0.1
Sb	10	0	0.00005	0.05	0.1
As	10	0	0.00005	0.05	0.1
Ba	10	0	0.00005	0.05	0.1
Be	10	0	0.00005	0.05	0.1
Ca	1000	0	0.005	5	10
Cd	10	0	0.0005	0.05	0.1
Cr	10	0	0.0005	0.05	0.1
Co	10	0	0.0005	0.05	0.1
Cu	10	0	0.0005	0.05	0.1
Fe	1000	0	0.005	5	10
Pb	10	0	0.00005	0.05	0.1
Mg	1000	0	0.005	5	10
Mn	10	0	0.00005	0.05	0.1
Ni	10	0	0.00005	0.05	0.1
K	1000	0	0.005	5	10
Se	10	0	0.00005	0.05	0.1
Ag	10	0	0.00005	0.05	0.1
Na	1000	0	0.005	5	10
Tl	10	0	0.00005	0.05	0.1
V	10	0	0.00005	0.05	0.1
U	1000	0	0.00005	0.05	0.1
Zn	10	0	0.00005	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG513220
Analyst: VC
Spike Analyst: VC
Run Date: 02/24/2015 08:43
Method: 3015
Balance: BAL016
Instrument: MW-3
Instrument Start: 02/24/2015 08:59

SOP: ME407 Revison 16
Spike Solution: STD68313
Spike Witness: ERP
HNO3 Lot #: COA18078
Lot #:
40 & 50 ML. DIGESTION TU COA17948
MS Filters- fisher-Lot#R RGT28963

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG513220-02	BLANK	1	20 mL	50 mL	180.959 g	180.982 g		
2	WG513220-03	LCS	1	20 mL	50 mL	182.414 g	182.427 g	.25 mL	
3	L15011662-06	SAMP	1	20 mL	50 mL	184.077 g	184.086 g		02/18/15
4	L15021053-02	SAMP	1	20 mL	50 mL	183.614 g	183.596 g		03/03/15
5	L15021053-04	SAMP	1	20 mL	50 mL	182.553 g	182.561 g		03/03/15
6	L15021053-06	SAMP	1	20 mL	50 mL	182.69 g	182.71 g		03/03/15
7	L15021053-08	SAMP	1	20 mL	50 mL	183.672 g	183.676 g		03/03/15
8	L15021053-10	SAMP	1	20 mL	50 mL	182.736 g	182.746 g		03/03/15
9	L15021053-12	SAMP	1	20 mL	50 mL	182.969 g	182.97 g		03/03/15
10	WG513220-01	REF	2	20 mL	50 mL	182.176 g	182.177 g		
11	L15021081-01	SAMP	2	20 mL	50 mL	182.176 g	182.177 g		03/02/15
12	WG513220-04	DUP	1	20 mL	50 mL	183.013 g	183.021 g		
13	WG513220-05	MS	1	20 mL	50 mL	182.895 g	182.887 g	.25 mL	
14	WG513220-06	MSD	1	20 mL	50 mL	183.185 g	183.188 g	.25 mL	

Analyst: Vicki Collins

Reviewer: Erin Potter

MW_DIG - Modified 09/30/2009
PDF ID: 4035551
Report generated: 02/24/2015 10:42

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 022415A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 1
Maintenance Log ID:

Calibration Std: STD68814 ICV Std: STD68816 Post Spike: STD66295
ICSA: STD68812 ICSAB: STD67979 Int. Std: RGT31676
CCV: STD68682 LLCCV: STD68182 Tuning Sol : STD68643
Stannous : Hydroxylamine :

Workgroups: 513054,512869,513279

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.022415.121024	Blank	Blank		1		02/24/15 12:10
2	NI.022415.121336	WG513318-01	Calibration Point		1		02/24/15 12:13
3	NI.022415.121647	WG513318-02	Calibration Point		1		02/24/15 12:16
4	NI.022415.121959	WG513318-03	Calibration Point		1		02/24/15 12:19
5	NI.022415.122310	WG513318-04	Calibration Point		1		02/24/15 12:23
6	NI.022415.122624	WG513318-05	Initial Calibration Verification		1		02/24/15 12:26
7	NI.022415.122944	WG513318-06	Initial Calib Blank		1		02/24/15 12:29
8	NI.022415.123256	WG513318-07	Low Level Initial Calibration V		1		02/24/15 12:32
9	NI.022415.123607	WG513318-08	Interference Check		1		02/24/15 12:36
10	NI.022415.123919	WG513318-09	Interference Check		1		02/24/15 12:39
11	NI.022415.124232	WG513318-10	CCV		1		02/24/15 12:42
12	NI.022415.124544	WG513318-11	CCB		1		02/24/15 12:45
13	NI.022415.124856	L15020939-01	RAVENSWOOD 11 BAGS	5/50	50		02/24/15 12:48
14	NI.022415.125207	+10	+10		50		02/24/15 12:52
15	NI.022415.125519	+20	+20		50		02/24/15 12:55
16	NI.022415.125830	+30	+30		50		02/24/15 12:58
17	NI.022415.130143	WG513318-12	CCV		1		02/24/15 13:01
18	NI.022415.130454	WG513318-13	CCB		1		02/24/15 13:04
19	NI.022415.140251	L15020879-01	5020843-01	20/50	1		02/24/15 14:02
20	NI.022415.140624	WG513318-14	CCV		1		02/24/15 14:06
21	NI.022415.141035	WG513318-15	CCB		1		02/24/15 14:10
22	NI.022415.143538	WG513220-02	Method/Prep Blank	20/50	1		02/24/15 14:35
23	NI.022415.143849	WG513220-03	Laboratory Control S	20/50	1		02/24/15 14:38
24	NI.022415.144200	L15011662-06	QC-500	20/50	25		02/24/15 14:42
25	NI.022415.144512	WG513279-03	Serial Dilution		125	L15011662-06	02/24/15 14:45
26	NI.022415.144829	WG513220-01	Reference Sample		1	L15021081-01	02/24/15 14:48
27	NI.022415.145141	WG513220-04	Duplicate	20/50	1	L15021081-01	02/24/15 14:51
28	NI.022415.145452	WG513220-05	Matrix Spike	20/50	1	L15021081-01	02/24/15 14:54
29	NI.022415.145803	WG513220-06	Matrix Spike Duplica	20/50	1	L15021081-01	02/24/15 14:58
30	NI.022415.150115	WG513279-01	Post Digestion Spike		1	L15021081-01	02/24/15 15:01
31	NI.022415.150426	WG513279-02	Serial Dilution		5	L15021081-01	02/24/15 15:04
32	NI.022415.150739	WG513318-16	CCV		1		02/24/15 15:07
33	NI.022415.151051	WG513318-17	CCB		1		02/24/15 15:10
34	NI.022415.151403	WG513279-02	Serial Dilution		25	L15021081-01	02/24/15 15:14

Page: 1 Approved: February 25, 2015

Maren Berry

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 022415A.REP

Analyst1: BKT Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 1

Maintenance Log ID:

Calibration Std: STD68814 ICV Std: STD68816 Post Spike: STD66295

ICSA: STD68812 ICSAB: STD67979 Int. Std: RGT31676

CCV: STD68682 LLCCV: STD68182 Tuning Sol : STD68643

Stannous : Hydroxylamine :

Workgroups: 513054,512869,513279

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.022415.151715	L15021053-02	50WW13FF-021715	20/50	1		02/24/15 15:17
36	NI.022415.152026	L15021053-02	50WW13FF-021715	20/50	50		02/24/15 15:20
37	NI.022415.152338	L15021053-04	50WW14FF-021715	20/50	1		02/24/15 15:23
38	NI.022415.152649	L15021053-04	50WW14FF-021715	20/50	50		02/24/15 15:26
39	NI.022415.153000	L15021053-06	50WW11FF-021715	20/50	1		02/24/15 15:30
40	NI.022415.153312	L15021053-06	50WW11FF-021715	20/50	50		02/24/15 15:33
41	NI.022415.153623	L15021053-08	50WW06FF-021715	20/50	1		02/24/15 15:36
42	NI.022415.153935	L15021053-08	50WW06FF-021715	20/50	50		02/24/15 15:39
43	NI.022415.154247	WG513318-18	CCV		1		02/24/15 15:42
44	NI.022415.154558	WG513318-19	CCB		1		02/24/15 15:45
45	NI.022415.154910	L15021053-10	50WW08FF-021715	20/50	1		02/24/15 15:49
46	NI.022415.155221	L15021053-10	50WW08FF-021715	20/50	50		02/24/15 15:52
47	NI.022415.155533	L15021053-12	50WW22FF-021715	20/50	1		02/24/15 15:55
48	NI.022415.155844	L15021053-12	50WW22FF-021715	20/50	50		02/24/15 15:58
49	NI.022415.160156	WG513318-20	CCV		1		02/24/15 16:01
50	NI.022415.160508	WG513318-21	CCB		1		02/24/15 16:05
51	NI.022415.160820	WG513318-22	Low Level Continuing Calibra		1		02/24/15 16:08

Page: 2 Approved: February 25, 2015

Maren Berry

Microbac Laboratories Inc.

Data Checklist

Date: 24-FEB-2015
Analyst: BKT
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 513318
Runlog ID: 66504
Analytical Workgroups: 513054,512869,513279

Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	879,939,1053
Client Forms	X
Level X	
Level 3	
Level 4	1662,1053
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BKT
Secondary Reviewer	MMB
Comments	

Primary Reviewer:
25-FEB-2015

Secondary Reviewer:
25-FEB-2015

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-25-2015 13:08:01

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG513279

Login Number: L15021053

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW13FF-021715	02	02/17/15					02/24/2015	7	180		02/24/15	7.3	180	
50WW14FF-021715	04	02/17/15					02/24/2015	7	180		02/24/15	7.3	180	
50WW11FF-021715	06	02/17/15					02/24/2015	6.9	180		02/24/15	7.2	180	
50WW06FF-021715	08	02/17/15					02/24/2015	6.9	180		02/24/15	7.2	180	
50WW08FF-021715	10	02/17/15					02/24/2015	6.8	180		02/24/15	7.1	180	
50WW22FF-021715	12	02/17/15					02/24/2015	6.7	180		02/24/15	7	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4036658
Report generated 02/24/2015 17:01

METHOD BLANK SUMMARY

Login Number: L15021053
Blank File ID: NI.022415.143538
Prep Date: 02/24/15 08:43
Analyzed Date: 02/24/15 14:35
Analyst: BKT

Work Group: WG513279
Blank Sample ID: WG513220-02
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG513220-03	NI.022415.143849	02/24/15 14:38	01
DUP	WG513220-04	NI.022415.145141	02/24/15 14:51	01
50WW13FF-021715	L15021053-02	NI.022415.151715	02/24/15 15:17	01
50WW14FF-021715	L15021053-04	NI.022415.152649	02/24/15 15:26	DL01
50WW11FF-021715	L15021053-06	NI.022415.153000	02/24/15 15:30	01
50WW06FF-021715	L15021053-08	NI.022415.153623	02/24/15 15:36	01
50WW08FF-021715	L15021053-10	NI.022415.154910	02/24/15 15:49	01
50WW22FF-021715	L15021053-12	NI.022415.155533	02/24/15 15:55	01

Report Name: BLANK_SUMMARY
PDF File ID: 4036659
Report generated 02/24/2015 17:01

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15021053 Prep Date: 02/24/15 08:43 Sample ID: WG513220-02
Instrument ID: ICP-MS2 Run Date: 02/24/15 14:35 Prep Method: 3015
File ID: NI.022415.143538 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG513279 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-24-FEB-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Manganese, Dissolved	0.00100	0.00400	0.00100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4036660
24-FEB-2015 17:01

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15021053 Run Date: 02/24/2015 Sample ID: WG513220-03
Instrument ID: ICP-MS2 Run Time: 14:38 Prep Method: 3015
File ID: NI.022415.143849 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG513279 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD68313 Cal ID: ICP-MS-24-FEB-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Manganese, Dissolved	0.125	0.127	102	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4036661
Report generated: 02/24/2015 17:01

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L15021053 Cal ID: ICP-MS2 - Worknum: WG513279
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG513220-01 File ID: NI.022415.144829 Dil: 1 Matrix: WATER
Sample ID: WG513220-05 MS File ID: NI.022415.145452 Dil: 1 Units: mg/L
Sample ID: WG513220-06 MSD File ID: NI.022415.145803 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Manganese	0.0907	0.125	0.207	93.4	0.125	0.203	89.5	2.32	80 - 120	20	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4036662
Report generated 02/24/2015 17:01

Microbac Laboratories Inc.
Serial Dilution Report

Login: L15021053 **Worknum:** WG513279
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG513279-03 **File ID:** NI.022415.144512 **Dil:** 125 **Units:** ug/L
Sample: L15011662-06 **File ID:** NI.022415.144200 **Dil:** 25

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Manganese	585	X	658	X	12.50	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4036656
02/24/2015 17:01

Microbac Laboratories Inc.
Serial Dilution Report

Login: L15021053 **Worknum:** WG513279
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG513279-02 **File ID:** NI.022415.150426 **Dil:** 5 **Units:** ug/L
Sample: L15021081-01 **File ID:** NI.022415.144829 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Manganese	36.3	X	39.1	X	7.77	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4036656
02/24/2015 17:01

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L15021053 **Worknum:** WG513279
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG513279-01 **File ID:** NI.022415.150115 **Dil:** 1 **Units:** ug/L
Sample ID: L15021081-01 **File ID:** NI.022415.144829 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MANGANESE	83.7		36.3		50	94.8	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4036657
Report generated: 02/24/2015 17:01

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L15021053	Workgroup (AAB#):	WG513279
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG513318	Initial Calibration Date:	24-FEB-2015 12:23

	WG513318-01		WG513318-02		WG513318-03		WG513318-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
MANGANESE	0	1010	.4	1990	50	771000	100	1530000	.999958	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4036665
Report generated: 24-FEB-2015 17:01

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L15021053
Run Date: 02/24/2015
Sample ID: WG513318-06
Instrument ID: ICP-MS2
Run Time: 12:29
Method: 6020A
File ID: NI.022415.122944
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG513279
Cal ID: ICP-MS2 - 24-FEB-15
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
MANGANESE	.4	1.6	.4	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4036667
Report generated 02/24/2015 17:01

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15021053
Run Date: 02/24/2015
Sample ID: WG513318-11
Instrument ID: ICP-MS2
Run Time: 12:45
Method: 6020A
File ID: NI.022415.124544
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG513279
Cal ID: ICP-MS - 24-FEB-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4036670
Report generated 02/24/2015 17:01

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15021053
Run Date: 02/24/2015
Sample ID: WG513318-15
Instrument ID: ICP-MS2
Run Time: 14:10
Method: 6020A
File ID: NI.022415.141035
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG513279
Cal ID: ICP-MS - 24-FEB-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4036670
Report generated 02/24/2015 17:01

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15021053
Run Date: 02/24/2015
Sample ID: WG513318-17
Instrument ID: ICP-MS2
Run Time: 15:10
Method: 6020A
File ID: NI.022415.151051
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG513279
Cal ID: ICP-MS - 24-FEB-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4036670
Report generated 02/24/2015 17:01

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15021053
Run Date: 02/24/2015
Sample ID: WG513318-19
Instrument ID: ICP-MS2
Run Time: 15:45
Method: 6020A
File ID: NI.022415.154558
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG513279
Cal ID: ICP-MS - 24-FEB-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4036670
Report generated 02/24/2015 17:01

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15021053
Run Date: 02/24/2015
Sample ID: WG513318-21
Instrument ID: ICP-MS2
Run Time: 16:05
Method: 6020A
File ID: NI.022415.160508
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG513279
Cal ID: ICP-MS - 24-FEB-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4036670
Report generated 02/24/2015 17:01

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L15021053 Run Date: 02/24/2015 Sample ID: WG513318-05
Instrument ID: ICP-MS2 Run Time: 12:26 Method: 6020A
File ID: NI.022415.122624 Analyst: BKT Units: ug/L
Workgroup (AAB#): WG513279 Cal ID: ICP-MS - 24-FEB-15
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Manganese		50	48.4	96.7	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4036666
Report generated 02/24/2015 17:01

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15021053
Run Date: 02/24/2015
Sample ID: WG513318-10
Instrument ID: ICP-MS2
Run Time: 12:42
Method: 6020A
File ID: NI.022415.124232
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG513279
Cal ID: ICP-MS - 24-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0501	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4036669
Report generated 02/24/2015 17:01

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15021053
Run Date: 02/24/2015
Sample ID: WG513318-14
Instrument ID: ICP-MS2
Run Time: 14:06
Method: 6020A
File ID: NI.022415.140624
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG513279
Cal ID: ICP-MS - 24-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0490	mg/L	98.0	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4036669
Report generated 02/24/2015 17:01

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15021053
Run Date: 02/24/2015
Sample ID: WG513318-16
Instrument ID: ICP-MS2
Run Time: 15:07
Method: 6020A
File ID: NI.022415.150739
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG513279
Cal ID: ICP-MS - 24-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0483	mg/L	96.6	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4036669
Report generated 02/24/2015 17:01

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15021053
Run Date: 02/24/2015
Sample ID: WG513318-18
Instrument ID: ICP-MS2
Run Time: 15:42
Method: 6020A
File ID: NI.022415.154247
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG513279
Cal ID: ICP-MS - 24-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0484	mg/L	96.9	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4036669
Report generated 02/24/2015 17:01

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15021053
Run Date: 02/24/2015
Sample ID: WG513318-20
Instrument ID: ICP-MS2
Run Time: 16:01
Method: 6020A
File ID: NI.022415.160156
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG513279
Cal ID: ICP-MS - 24-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0483	mg/L	96.5	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4036669
Report generated 02/24/2015 17:01

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

00638142

Login Number: L15021053
Run Date: 02/24/2015
Sample ID: WG513318-07
Instrument ID: ICP-MS2
Run Time: 12:32
Method: 6020A
File ID: NI.022415.123256
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG513279
Cal ID: ICP-MS - 24-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.500	0.461	ug/L	92.2	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4036671
Report generated 02/24/2015 17:01

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15021053
Run Date: 02/24/2015
Sample ID: WG513318-22
Instrument ID: ICP-MS2
Run Time: 16:08
Method: 6020A
File ID: NI.022415.160820
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG513279
Cal ID: ICP-MS - 24-FEB-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.500	0.448	ug/L	89.6	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4036671
Report generated 02/24/2015 17:01

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L15021053
Instrument ID: ICP-MS2
Sol. A : WG513318-08 **File ID:** NI.022415.123607
Sol. AB : WG513318-09 **File ID:** NI.022415.123919

Workgroup (AAB#): WG513279
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Manganese	NS	0.00710	NS	100	98.5	98.5	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4036668
Report generated 02/24/2015 17:01

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L15021053 **Analytical Method:** 6020
Analytical Workgroup: WG513279 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 24-FEB-2015 12:13

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L15011662-06	SAMP	24-FEB-2015 14:42	108.705	109.022	113.262
L15021053-02	SAMP	24-FEB-2015 15:17	97.942	109.171	109.05
L15021053-04	SAMP	24-FEB-2015 15:26	112.034	116.231	116.694
L15021053-06	SAMP	24-FEB-2015 15:30	99.642	109.893	110.108
L15021053-08	SAMP	24-FEB-2015 15:36	106.189	112.526	114.136
L15021053-10	SAMP	24-FEB-2015 15:49	96.48	107.16	109.187
L15021053-12	SAMP	24-FEB-2015 15:55	87.057	99.512	100.411
WG513220-02	BLANK	24-FEB-2015 14:35	109.156	113.102	113.189
WG513220-03	LCS	24-FEB-2015 14:38	109.597	112.437	113.999
WG513279-01	PSPK	24-FEB-2015 15:01	101.175	110.423	112.837
WG513279-02	SERIAL	24-FEB-2015 15:04	108.095	112.927	116.225
WG513279-03	SERIAL	24-FEB-2015 14:45	108.014	110.067	112.663
WG513318-05	ICV	24-FEB-2015 12:26	98.426	102.613	103.09
WG513318-06	ICB	24-FEB-2015 12:29	99.773	100.975	101.82
WG513318-07	LLICV	24-FEB-2015 12:32	100.146	100.865	102.596
WG513318-08	ICS	24-FEB-2015 12:36	88.755	88.957	89.144
WG513318-09	ICS	24-FEB-2015 12:39	96.924	102.749	102.254
WG513318-10	CCV	24-FEB-2015 12:42	101.959	104.68	106.167
WG513318-11	CCB	24-FEB-2015 12:45	101.124	103.24	105.78
WG513318-14	CCV	24-FEB-2015 14:06	108.463	113.81	114.664
WG513318-15	CCB	24-FEB-2015 14:10	110.652	111.808	115.427
WG513318-16	CCV	24-FEB-2015 15:07	108.381	112.913	115.124
WG513318-17	CCB	24-FEB-2015 15:10	109.839	110.635	116.338
WG513318-18	CCV	24-FEB-2015 15:42	109.017	112.797	116.901
WG513318-19	CCB	24-FEB-2015 15:45	110.145	111.567	115.721
WG513318-20	CCV	24-FEB-2015 16:01	107.44	111.407	113.17
WG513318-21	CCB	24-FEB-2015 16:05	107.411	109.679	115.107
WG513318-22	LLCCV	24-FEB-2015 16:08	107.95	107.831	113.196

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4036664
Report generated: 02/24/2015 17:01

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L15021053 **Analytical Method:** 6020
Analytical Workgroup: WG513279 **Matrix:** 2
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 24-FEB-2015 12:13

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L15021081-01	SAMP	24-FEB-2015 14:48	98.859	108.925	109.611

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4036664
Report generated: 02/24/2015 17:01

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L15021053 **Date:** 01/07/2015
Insturment ID: ICP-MS2 **Method:** 6020A

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Uranium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4036663
Report generated: 02/24/2015 17:01

2.3.2.3 Raw Data

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexION Data\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Tuesday, February 24, 2015 11:47:05

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1344	2025	0.684	
Mg	23.985	23.975	4507	2019	0.713	
Co	58.933	58.975	11690	2022	0.681	
In	114.904	114.925	22863	2028	0.694	
U	238.050	238.025	47449	2043	0.700	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	3.103
5.575	4.863
5.625	1.270
5.675	1.372
5.725	3.431
5.775	1.904
5.825	1.427
5.875	1.841
5.925	1.590
5.975	2.017
6.025	1.805
6.075	0.906
6.125	1.228
6.175	9.175
6.225	64.043
6.275	81.312
6.325	136.931
6.375	58.685
6.425	19.405
6.475	10.809
6.525	4.572
6.575	4.614
6.625	2.217
6.675	3.454
6.725	1.789
6.775	2.959
6.825	4.305

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6.875	1.908
6.925	2.829
6.975	2.212
7.025	3.383
7.075	2.883
7.125	3.546
7.175	3.203
7.225	5.778
7.275	53.931
7.325	63.888
7.375	0.000
7.425	63.888
7.475	46.481
7.525	63.888
7.575	69.722
7.625	72.436
7.675	70.711
7.725	66.667
7.775	104.583
7.825	81.223
7.875	149.071
7.925	37.268
7.975	100.000
8.025	108.327
8.075	81.441
8.125	95.831
8.175	148.117
8.225	100.000
8.275	71.261
8.325	70.711
8.375	149.071
8.425	100.000
8.475	81.441
22.525	136.931
22.575	98.543
22.625	46.351
22.675	33.535
22.725	52.322
22.775	76.199
22.825	34.233
22.875	35.315
22.925	36.991
22.975	45.166
23.025	53.926
23.075	13.574
23.125	32.070
23.175	30.987

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23.225	30.842
23.275	19.939
23.325	50.998
23.375	40.572
23.425	12.026
23.475	6.462
23.525	2.537
23.575	1.446
23.625	2.300
23.675	1.079
23.725	1.307
23.775	0.621
23.825	2.185
23.875	1.313
23.925	1.012
23.975	2.109
24.025	1.985
24.075	1.677
24.125	1.551
24.175	1.566
24.225	2.497
24.275	6.200
24.325	31.672
24.375	22.480
24.425	12.576
24.475	3.503
24.525	4.183
24.575	1.941
24.625	1.656
24.675	1.849
24.725	0.865
24.775	1.025
24.825	2.037
24.875	0.911
24.925	1.564
24.975	2.354
25.025	1.393
25.075	2.068
25.125	2.786
25.175	0.716
25.225	6.883
25.275	17.275
25.325	40.745
25.375	14.142
25.425	17.399
25.475	9.639
57.525	19.551

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57.575	8.479
57.625	5.954
57.675	2.917
57.725	2.231
57.775	1.599
57.825	2.508
57.875	0.936
57.925	0.878
57.975	2.171
58.025	2.589
58.075	1.661
58.125	2.650
58.175	1.794
58.225	2.264
58.275	3.800
58.325	15.581
58.375	73.023
58.425	58.310
58.475	31.487
58.525	6.495
58.575	7.168
58.625	3.446
58.675	2.017
58.725	2.130
58.775	3.573
58.825	2.924
58.875	3.021
58.925	1.270
58.975	0.793
59.025	2.383
59.075	3.003
59.125	3.785
59.175	3.276
59.225	1.169
59.275	6.350
59.325	18.390
59.375	39.123
59.425	39.123
59.475	42.426
59.525	22.362
59.575	16.319
59.625	4.691
59.675	6.409
59.725	4.944
59.775	2.753
59.825	1.470
59.875	5.279

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59.925	2.526
59.975	4.646
60.025	4.225
60.075	2.798
60.125	4.295
60.175	4.243
60.225	8.148
60.275	11.582
60.325	79.708
60.375	69.869
60.425	23.570
60.475	38.030
113.525	17.108
113.575	2.102
113.625	2.293
113.675	1.998
113.725	3.190
113.775	2.826
113.825	1.042
113.875	1.595
113.925	1.734
113.975	0.958
114.025	1.556
114.075	3.614
114.125	3.106
114.175	4.558
114.225	6.241
114.275	8.263
114.325	21.066
114.375	18.858
114.425	12.019
114.475	5.121
114.525	3.255
114.575	1.863
114.625	1.445
114.675	1.562
114.725	1.215
114.775	1.191
114.825	0.656
114.875	0.544
114.925	2.468
114.975	1.333
115.025	1.251
115.075	1.829
115.125	1.779
115.175	1.666
115.225	2.146

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115.275	3.649
115.325	20.600
115.375	34.401
115.425	52.296
115.475	52.744
115.525	14.483
115.575	2.459
115.625	7.320
115.675	4.218
115.725	5.830
115.775	2.032
115.825	6.008
115.875	5.389
115.925	6.032
115.975	6.923
116.025	3.720
116.075	4.850
116.125	2.208
116.175	4.653
116.225	11.543
116.275	20.117
116.325	44.721
116.375	20.360
116.425	59.266
116.475	31.623
236.525	
236.575	53.032
236.625	21.651
236.675	50.933
236.725	26.716
236.775	34.881
236.825	38.932
236.875	37.180
236.925	26.146
236.975	24.636
237.025	34.401
237.075	48.479
237.125	38.061
237.175	18.054
237.225	48.914
237.275	29.166
237.325	29.323
237.375	44.780
237.425	14.273
237.475	30.888
237.525	23.443
237.575	13.376

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237.625	6.365
237.675	2.992
237.725	1.604
237.775	2.411
237.825	1.459
237.875	1.967
237.925	1.863
237.975	1.934
238.025	1.391
238.075	0.682
238.125	1.919
238.175	1.127
238.225	2.256
238.275	2.530
238.325	1.721
238.375	3.295
238.425	4.145
238.475	8.697
238.525	17.415
238.575	28.782
238.625	24.786
238.675	39.123
238.725	56.218
238.775	47.394
238.825	39.316
238.875	27.386
238.925	21.217
238.975	35.067
239.025	20.039
239.075	37.741
239.125	54.294
239.175	41.211
239.225	30.649
239.275	30.162
239.325	23.458
239.375	24.776
239.425	38.948
239.475	15.901

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SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 2/24/2015 11:58:57 AM
End Time: 2/24/2015 12:01:20 PM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 4453.72
        Obtained Intensity (Mg 23.985): 213664.99
        Obtained Intensity (In 114.904): 134274.39
        Obtained Intensity (U 238.05): 78943.13
        Obtained Intensity (Bkgd 220): 0.40
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.019 (=5640.05 / 303337.45)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.005 (=1577.08 / 303337.45)
```

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SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 2/24/2015 11:58:57 AM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 4453.72
                Obtained Intensity (Mg 23.985): 213664.99
                Obtained Intensity (In 114.904): 134274.39
                Obtained Intensity (U 238.05): 78943.13
                Obtained Intensity (Bkgd 220): 0.40
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.019 (=5640.05 / 303337.45)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.005 (=1577.08 / 303337.45)
[Passed]  Optimum value(s): N/A

End Time: 2/24/2015 12:01:20 PM
```


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Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Tuesday, February 24, 2015 12:10:24
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	151539.5	2.9				ug/L		Standard
	Be	9	10.0	100.0				ug/L		Standard
	Al	27	1353.4	4.3				ug/L		Standard
	Sc	45	81803.6	0.8				ug/L		Standard
	Ti	47	33.0	13.9				ug/L		Standard
	V	51	3161.1	3.1				ug/L		Standard
	Cr	52	13150.4	1.8				ug/L		Standard
	Cr	53	513.3	13.9				ug/L		Standard
	Mn	55	1028.0	1.2				ug/L		Standard
	Co	59	168.3	16.3				ug/L		Standard
	Ni	60	46.7	4.9				ug/L		Standard
	Cu	65	247.0	4.0				ug/L		Standard
	Zn	66	269.0	2.3				ug/L		Standard
>	**Ge**	72	590931.1	2.0				ug/L		Standard
	As	75	-178.1	19.7				ug/L		Standard
	Se	82	27.0	19.7				ug/L		Standard
	Se-1	77	155.3	8.4				ug/L		Standard
>	**Ga**	71	26.7	57.3				mg/L		Standard
	Rb	85	51.7	29.6				ug/L		Standard
	Y	89	610565.0	1.1				ug/L		Standard
>	**Rh**	103	10.0	50.0				ug/L		Standard
	Mo	98	29.0	22.6				ug/L		Standard
	Ag	107	112.0	14.4				ug/L		Standard
	Cd	111	3.0	33.4				mg/L		Standard
	Cd	114	26.7	68.0				ug/L		Standard
>	**In**	115	919955.0	0.2				ug/L		Standard
	Sn	118	931.7	10.8				ug/L		Standard
	Sb	123	105.4	19.8				ug/L		Standard
	Ba	135	29.3	14.2				ug/L		Standard
	Ce	140	305.0	15.8				ug/L		Standard
>	**Tb**	159	1429879.6	1.1				ug/L		Standard
	Ho	165	13.3	43.3				ug/L		Standard
	Tl	203	4.7	81.1				ug/L		Standard
	Tl	205	5.0	100.0				ug/L		Standard
	Pb	206	368.3	8.8				ug/L		Standard
	Pb	207	311.0	6.2				ug/L		Standard
	Pb	208	939.0	1.5				ug/L		Standard
	U	238	2.7	78.1				ug/L		Standard
>	**Bi**	209	663779.0	1.5				ug/L		Standard

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	Na	23	0.0		mg/L	Standard
	Mg	24	116.7	23.6	mg/L	Standard
	K	39	18.3	56.8	mg/L	Standard
	Ca	43	41.7	45.4	mg/L	Standard
	Fe	54	279.9	14.9	mg/L	Standard
	Fe	57	295.0	7.4	mg/L	Standard
>	**Sc-1**	45	81803.6	0.8	mg/L	Standard
	Cl	35	23536.9	1.3	ug/L	Standard
	Kr	83	3.0	33.3	ug/L	Standard
	Br	81	2400.2	4.6	ug/L	Standard
	P	31	22883.9	2.2	ug/L	Standard
	S	34	876.7	3.7	ug/L	Standard
	Sr	88	151.7	5.0	ug/L	Standard
	C	12	623.3	12.9	mg/L	Standard
	N	14	0.0		mg/L	Standard
	Hg	202	6.7	86.6	mg/L	Standard
	Dy	164	32.2	79.1	mg/L	Standard
	Ho-1	165	13.3	43.3	mg/L	Standard
	Er	166	23.3	65.5	mg/L	Standard
	I	127	1360.1	12.6	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Tuesday, February 24, 2015 12:13:36
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	150170.8	2.6				ug/L	151539	Standard
	Be	9	8.3	69.3				ug/L	10	Standard
	Al	27	1315.1	3.1				ug/L	1353	Standard
	Sc	45	79123.0	4.2				ug/L	81804	Standard
	Ti	47	33.3	4.6				ug/L	33	Standard
	V	51	3163.3	5.1				ug/L	3161	Standard
	Cr	52	13032.3	2.1				ug/L	13150	Standard
	Cr	53	488.3	6.0				ug/L	513	Standard
	Mn	55	1013.0	2.1				ug/L	1028	Standard
	Co	59	167.3	12.0				ug/L	168	Standard
	Ni	60	42.7	19.7				ug/L	47	Standard
	Cu	65	230.0	11.7				ug/L	247	Standard
	Zn	66	301.0	3.5				ug/L	269	Standard
>	**Ge**	72	590400.6	1.6				ug/L	590931	Standard
	As	75	-181.1	13.1				ug/L	-178	Standard
	Se	82	28.3	18.1				ug/L	27	Standard
	Se-1	77	135.0	13.7				ug/L	155	Standard
>	**Ga**	71	16.7	17.3				mg/L	27	Standard
	Rb	85	68.3	23.5				ug/L	52	Standard
	Y	89	619638.5	0.6				ug/L	610565	Standard
>	**Rh**	103	8.3	69.3				ug/L	10	Standard
	Mo	98	15.5	64.1				ug/L	29	Standard
	Ag	107	112.0	37.3				ug/L	112	Standard
	Cd	111	3.6	57.3				mg/L	3	Standard
	Cd	114	4.1	506.3				ug/L	27	Standard
>	**In**	115	929555.2	1.5				ug/L	919955	Standard
	Sn	118	718.4	3.5				ug/L	932	Standard
	Sb	123	57.1	7.1				ug/L	105	Standard
	Ba	135	47.0	30.9				ug/L	29	Standard
	Ce	140	223.3	64.8				ug/L	305	Standard
>	**Tb**	159	1421128.9	2.7				ug/L	1429880	Standard
	Ho	165	10.0	50.0				ug/L	13	Standard
	Tl	203	14.7	108.7				ug/L	5	Standard
	Tl	205	5.0	100.0				ug/L	5	Standard
	Pb	206	347.0	5.6				ug/L	368	Standard
	Pb	207	289.0	0.9				ug/L	311	Standard
	Pb	208	947.7	3.1				ug/L	939	Standard
	U	238	2.7	78.1				ug/L	3	Standard
>	**Bi**	209	650900.9	2.1				ug/L	663779	Standard

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	Na	23	0.0		mg/L	0	Standard
	Mg	24	110.0	20.8	mg/L	117	Standard
	K	39	35.0	28.6	mg/L	18	Standard
	Ca	43	36.7	15.7	mg/L	42	Standard
	Fe	54	243.8	16.3	mg/L	280	Standard
	Fe	57	291.7	30.5	mg/L	295	Standard
>	**Sc-1**	45	79123.0	4.2	mg/L	81804	Standard
	Cl	35	22437.9	0.4	ug/L	23537	Standard
	Kr	83	5.0	20.0	ug/L	3	Standard
	Br	81	2223.5	1.8	ug/L	2400	Standard
	P	31	22162.9	8.9	ug/L	22884	Standard
	S	34	926.7	1.7	ug/L	877	Standard
	Sr	88	135.0	22.5	ug/L	152	Standard
	C	12	596.7	3.5	mg/L	623	Standard
	N	14	3.3	173.2	mg/L	0	Standard
	Hg	202	0.0		mg/L	7	Standard
	Dy	164	15.5	30.9	mg/L	32	Standard
	Ho-1	165	10.0	50.0	mg/L	13	Standard
	Er	166	23.3	89.2	mg/L	23	Standard
	I	127	966.7	3.9	mg/L	1360	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 1
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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Tuesday, February 24, 2015 12:16:47
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	155914.8	1.1				ug/L	151539	Standard
	Be	9	101.7	31.2				ug/L	10	Standard
	Al	27	13240.8	4.9				ug/L	1353	Standard
	Sc	45	80627.3	0.9				ug/L	81804	Standard
	Ti	47	82.3	10.9				ug/L	33	Standard
	V	51	3834.0	1.9				ug/L	3161	Standard
	Cr	52	13464.6	1.8				ug/L	13150	Standard
	Cr	53	568.3	12.5				ug/L	513	Standard
	Mn	55	1988.8	3.0				ug/L	1028	Standard
	Co	59	807.4	6.0				ug/L	168	Standard
	Ni	60	236.7	8.3				ug/L	47	Standard
	Cu	65	397.7	3.1				ug/L	247	Standard
	Zn	66	463.3	2.9				ug/L	269	Standard
>	**Ge**	72	597967.2	1.3				ug/L	590931	Standard
	As	75	-121.2	40.4				ug/L	-178	Standard
	Se	82	33.6	19.2				ug/L	27	Standard
	Se-1	77	140.7	14.2				ug/L	155	Standard
>	**Ga**	71	18.3	31.5				mg/L	27	Standard
	Rb	85	51.7	47.7				ug/L	52	Standard
	Y	89	630874.7	2.1				ug/L	610565	Standard
>	**Rh**	103	10.0	86.6				ug/L	10	Standard
	Mo	98	419.4	4.8				ug/L	29	Standard
	Ag	107	723.7	2.9				ug/L	112	Standard
	Cd	111	164.4	21.1				mg/L	3	Standard
	Cd	114	466.0	4.3				ug/L	27	Standard
>	**In**	115	938349.2	1.7				ug/L	919955	Standard
	Sn	118	1268.4	6.4				ug/L	932	Standard
	Sb	123	403.2	2.7				ug/L	105	Standard
	Ba	135	262.7	4.4				ug/L	29	Standard
	Ce	140	75.0	46.7				ug/L	305	Standard
>	**Tb**	159	1450839.2	2.6				ug/L	1429880	Standard
	Ho	165	10.0	50.0				ug/L	13	Standard
	Tl	203	610.3	3.8				ug/L	5	Standard
	Tl	205	543.3	7.4				ug/L	5	Standard
	Pb	206	875.0	2.4				ug/L	368	Standard
	Pb	207	746.7	2.8				ug/L	311	Standard
	Pb	208	2313.4	4.5				ug/L	939	Standard
	U	238	445.3	4.3				ug/L	3	Standard
>	**Bi**	209	657586.1	1.1				ug/L	663779	Standard

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Na	23	1.7	173.2	mg/L	0	Standard
Mg	24	140.0	21.7	mg/L	117	Standard
K	39	26.7	60.3	mg/L	18	Standard
Ca	43	41.7	36.7	mg/L	42	Standard
Fe	54	315.4	6.5	mg/L	280	Standard
Fe	57	280.0	9.9	mg/L	295	Standard
> **Sc-1**	45	80627.3	0.9	mg/L	81804	Standard
Cl	35	23474.8	2.2	ug/L	23537	Standard
Kr	83	2.3	49.5	ug/L	3	Standard
Br	81	2386.9	5.2	ug/L	2400	Standard
P	31	22905.6	0.9	ug/L	22884	Standard
S	34	943.4	1.3	ug/L	877	Standard
Sr	88	173.3	6.0	ug/L	152	Standard
C	12	596.7	9.2	mg/L	623	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	3.3	173.2	mg/L	7	Standard
Dy	164	25.7	147.5	mg/L	32	Standard
Ho-1	165	10.0	50.0	mg/L	13	Standard
Er	166	20.0	50.0	mg/L	23	Standard
I	127	786.7	9.3	mg/L	1360	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: Standard 2
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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 2
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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Tuesday, February 24, 2015 12:19:59
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	150797.2	3.3				ug/L	151539	Standard
	Be	9	92178.0	2.4	**50.0000**	2.287	4.6	ug/L	10	Standard
	Al	27	10051393.0	3.0	**50.0000**	2.581	5.2	ug/L	1353	Standard
	Sc	45	80106.2	0.5				ug/L	81804	Standard
	Ti	47	50555.9	2.9	**100.0000**	2.179	2.2	ug/L	33	Standard
	V	51	552510.4	1.8	**50.0000**	0.574	1.1	ug/L	3161	Standard
	Cr	52	542184.8	1.7	**50.0000**	0.843	1.7	ug/L	13150	Standard
	Cr	53	71937.1	2.5	**50.0000**	0.903	1.8	ug/L	513	Standard
	Mn	55	771416.4	3.5	**50.0000**	1.461	2.9	ug/L	1028	Standard
	Co	59	606278.4	3.1	**50.0000**	1.237	2.5	ug/L	168	Standard
	Ni	60	161076.7	2.3	**50.0000**	0.870	1.7	ug/L	47	Standard
	Cu	65	151408.9	1.5	**50.0000**	0.647	1.3	ug/L	247	Standard
	Zn	66	73612.5	2.5	**50.0000**	1.043	2.1	ug/L	269	Standard
>	**Ge**	72	590273.3	0.8				ug/L	590931	Standard
	As	75	75872.6	1.3	**50.0000**	0.542	1.1	ug/L	-178	Standard
	Se	82	7877.3	1.3	**50.0000**	0.804	1.6	ug/L	27	Standard
	Se-1	77	5296.9	4.9	**50.0000**	2.346	4.7	ug/L	155	Standard
>	**Ga**	71	91.7	12.6				mg/L	27	Standard
	Rb	85	1266.7	4.9				ug/L	52	Standard
	Y	89	626207.7	2.3				ug/L	610565	Standard
>	**Rh**	103	58.3	17.8				ug/L	10	Standard
	Mo	98	370446.8	1.7	**100.0000**	1.285	1.3	ug/L	29	Standard
	Ag	107	576466.8	2.3	**50.0000**	0.953	1.9	ug/L	112	Standard
	Cd	111	163262.4	1.1	**50.0000**	0.288	0.6	mg/L	3	Standard
	Cd	114	393420.5	1.8	**50.0000**	1.087	2.2	ug/L	27	Standard
>	**In**	115	942215.0	0.9				ug/L	919955	Standard
	Sn	118	477298.2	0.8	**50.0000**	0.484	1.0	ug/L	932	Standard
	Sb	123	302266.7	1.5	**50.0000**	0.452	0.9	ug/L	105	Standard
	Ba	135	173067.9	1.1	**50.0000**	0.184	0.4	ug/L	29	Standard
	Ce	140	353.3	51.9				ug/L	305	Standard
>	**Tb**	159	1456293.2	2.4				ug/L	1429880	Standard
	Ho	165	16.7	17.3				ug/L	13	Standard
	Tl	203	587643.5	1.3	**50.0000**	0.175	0.4	ug/L	5	Standard
	Tl	205	491079.7	0.4	**50.0000**	0.651	1.3	ug/L	5	Standard
	Pb	206	412020.2	1.2	**50.0000**	0.134	0.3	ug/L	368	Standard
	Pb	207	370419.2	1.8	**50.0000**	0.233	0.5	ug/L	311	Standard
	Pb	208	1124245.7	1.5	**50.0000**	0.233	0.5	ug/L	939	Standard
	U	238	415592.3	1.0	**50.0000**	0.254	0.5	ug/L	3	Standard
>	**Bi**	209	647562.9	1.5				ug/L	663779	Standard

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	Na	23	5.0	173.2	**5.0000**	13.020	260.4	mg/L	0	Standard
	Mg	24	6169.6	6.0	**5.0000**	0.318	6.4	mg/L	117	Standard
	K	39	2180.2	10.4	**5.0000**	0.539	10.8	mg/L	18	Standard
	Ca	43	148.3	3.9	**5.0000**	0.241	4.8	mg/L	42	Standard
	Fe	54	9062.5	1.4	**5.0000**	0.098	2.0	mg/L	280	Standard
	Fe	57	2706.9	3.6	**5.0000**	0.220	4.4	mg/L	295	Standard
>	**Sc-1**	45	80106.2	0.5				mg/L	81804	Standard
	Cl	35	22665.6	2.9				ug/L	23537	Standard
	Kr	83	2.3	49.5				ug/L	3	Standard
	Br	81	2643.6	5.9				ug/L	2400	Standard
	P	31	24441.4	6.8				ug/L	22884	Standard
	S	34	963.4	3.3				ug/L	877	Standard
	Sr	88	143.3	26.2				ug/L	152	Standard
	C	12	660.0	13.9				mg/L	623	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	6.7	86.6				mg/L	7	Standard
	Dy	164	25.9	44.2				mg/L	32	Standard
	Ho-1	165	16.7	17.3				mg/L	13	Standard
	Er	166	16.7	91.7				mg/L	23	Standard
	I	127	931.7	4.0				mg/L	1360	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Tuesday, February 24, 2015 12:23:10
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	155864.5	2.2				ug/L	151539	Standard
	Be	9	186563.9	2.9	**98.8984**	1.253	1.3	ug/L	10	Standard
	Al	27	20650977.7	2.2	**99.6566**	1.377	1.4	ug/L	1353	Standard
	Sc	45	83192.8	0.9				ug/L	81804	Standard
	Ti	47	99575.1	0.7	**197.5497**	2.723	1.4	ug/L	33	Standard
	V	51	1113069.0	2.2	**100.0327**	2.671	2.7	ug/L	3161	Standard
	Cr	52	1083672.9	1.3	**100.0797**	1.738	1.7	ug/L	13150	Standard
	Cr	53	141067.7	4.1	**98.7233**	5.313	5.4	ug/L	513	Standard
	Mn	55	1528076.8	2.5	**99.0840**	2.756	2.8	ug/L	1028	Standard
	Co	59	1191835.5	3.5	**98.6815**	4.381	4.4	ug/L	168	Standard
	Ni	60	315831.3	2.7	**98.5518**	3.607	3.7	ug/L	47	Standard
	Cu	65	298189.7	2.4	**98.7899**	2.647	2.7	ug/L	247	Standard
	Zn	66	143838.9	0.9	**98.4914**	2.320	2.4	ug/L	269	Standard
>	Ge	72	596040.8	1.5				ug/L	590931	Standard
	As	75	151417.3	1.4	**99.3482**	1.841	1.9	ug/L	-178	Standard
	Se	82	15508.8	0.9	**98.8132**	1.993	2.0	ug/L	27	Standard
	Se-1	77	10205.1	1.1	**98.2668**	1.350	1.4	ug/L	155	Standard
>	Ga	71	165.0	18.2				mg/L	27	Standard
	Rb	85	2575.2	5.6				ug/L	52	Standard
	Y	89	615367.3	2.4				ug/L	610565	Standard
>	Rh	103	95.0	10.5				ug/L	10	Standard
	Mo	98	735517.3	2.8	**199.8430**	6.128	3.1	ug/L	29	Standard
	Ag	107	1148168.6	2.2	**100.0785**	1.967	2.0	ug/L	112	Standard
	Cd	111	317732.4	1.8	**98.9154**	1.910	1.9	mg/L	3	Standard
	Cd	114	773470.9	3.3	**99.4171**	2.668	2.7	ug/L	27	Standard
>	In	115	937038.2	1.4				ug/L	919955	Standard
	Sn	118	968966.4	4.2	**101.0829**	5.360	5.3	ug/L	932	Standard
	Sb	123	608551.2	2.7	**100.6199**	2.782	2.8	ug/L	105	Standard
	Ba	135	341847.3	1.6	**99.6706**	1.919	1.9	ug/L	29	Standard
	Ce	140	568.3	21.6				ug/L	305	Standard
>	Tb	159	1456220.1	1.8				ug/L	1429880	Standard
	Ho	165	20.0	43.3				ug/L	13	Standard
	Tl	203	1163022.2	2.0	**99.8180**	2.453	2.5	ug/L	5	Standard
	Tl	205	964765.6	1.2	**99.4427**	1.317	1.3	ug/L	5	Standard
	Pb	206	817061.7	2.2	**99.9421**	2.385	2.4	ug/L	368	Standard
	Pb	207	733234.4	2.0	**99.8506**	2.116	2.1	ug/L	311	Standard
	Pb	208	2201435.8	1.6	**99.3087**	1.791	1.8	ug/L	939	Standard
	U	238	823183.8	2.1	**99.8550**	2.077	2.1	ug/L	3	Standard
>	Bi	209	643185.1	0.5				ug/L	663779	Standard

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Na	23	8.3	34.6	**9.8049**	4.324	44.1	mg/L	0	Standard
Mg	24	12341.7	2.6	**9.8645**	0.279	2.8	mg/L	117	Standard
K	39	4263.9	6.3	**9.7236**	0.558	5.7	mg/L	18	Standard
Ca	43	321.7	14.1	**11.1250**	1.727	15.5	mg/L	42	Standard
Fe	54	18342.5	2.7	**9.9549**	0.317	3.2	mg/L	280	Standard
Fe	57	5135.9	1.7	**9.7981**	0.265	2.7	mg/L	295	Standard
Sc-1	45	83192.8	0.9				mg/L	81804	Standard
Cl	35	21994.6	1.0				ug/L	23537	Standard
Kr	83	3.3	17.3				ug/L	3	Standard
Br	81	2663.6	9.1				ug/L	2400	Standard
P	31	25618.4	8.5				ug/L	22884	Standard
S	34	968.4	7.9				ug/L	877	Standard
Sr	88	140.0	0.0				ug/L	152	Standard
C	12	660.0	13.2				mg/L	623	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	28.4	1.9				mg/L	32	Standard
Ho-1	165	20.0	43.3				mg/L	13	Standard
Er	166	33.3	34.6				mg/L	23	Standard
I	127	985.0	8.4				mg/L	1360	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Ca	43	Correlation coefficient < 0.998

Sample ID: Standard 4
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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Tuesday, February 24, 2015 12:26:24
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	152347.2	1.5				ug/L	151539	Standard
	Be	9	93621.8	2.8	**50.7722**	0.880	1.7	ug/L	10	Standard
	Al	27	9905385.1	1.8	**48.8957**	0.684	1.4	ug/L	1353	Standard
	Sc	45	82755.4	1.2				ug/L	81804	Standard
	Ti	47	53000.6	1.6	**103.3302**	2.555	2.5	ug/L	33	Standard
	V	51	553223.6	2.8	**48.7236**	1.739	3.6	ug/L	3161	Standard
	Cr	52	542816.9	3.6	**48.6711**	2.197	4.5	ug/L	13150	Standard
	Cr	53	70718.2	4.3	**48.4616**	2.472	5.1	ug/L	513	Standard
	Mn	55	759431.3	3.3	**48.3689**	1.999	4.1	ug/L	1028	Standard
	Co	59	601767.1	4.6	**48.9669**	2.634	5.4	ug/L	168	Standard
	Ni	60	161118.3	4.7	**49.4084**	2.713	5.5	ug/L	47	Standard
	Cu	65	151918.4	2.3	**49.4349**	1.571	3.2	ug/L	247	Standard
	Zn	66	72743.0	3.0	**48.8250**	1.811	3.7	ug/L	269	Standard
>	Ge	72	606370.1	0.8				ug/L	590931	Standard
	As	75	76105.6	2.1	**49.1502**	1.363	2.8	ug/L	-178	Standard
	Se	82	8058.8	2.7	**50.3911**	1.723	3.4	ug/L	27	Standard
	Se-1	77	5466.0	0.9	**51.1106**	0.696	1.4	ug/L	155	Standard
>	Ga	71	66.7	24.1				mg/L	27	Standard
	Rb	85	1266.7	3.8				ug/L	52	Standard
	Y	89	638792.3	3.6				ug/L	610565	Standard
>	Rh	103	53.3	28.6				ug/L	10	Standard
	Mo	98	395313.8	3.7	**106.0847**	2.840	2.7	ug/L	29	Standard
	Ag	107	576960.5	2.5	**49.6755**	0.768	1.5	ug/L	112	Standard
	Cd	111	159817.1	3.7	**49.1455**	1.290	2.6	mg/L	3	Standard
	Cd	114	398257.8	2.7	**50.5688**	0.830	1.6	ug/L	27	Standard
>	In	115	948385.6	1.1				ug/L	919955	Standard
	Sn	118	520278.3	3.4	**53.5627**	1.525	2.8	ug/L	932	Standard
	Sb	123	327401.8	2.2	**53.4697**	0.619	1.2	ug/L	105	Standard
	Ba	135	170990.8	2.6	**49.2358**	0.812	1.7	ug/L	29	Standard
	Ce	140	345.0	18.1				ug/L	305	Standard
>	Tb	159	1449364.2	0.7				ug/L	1429880	Standard
	Ho	165	15.0	33.3				ug/L	13	Standard
	Tl	203	583923.9	1.8	**49.3375**	1.141	2.3	ug/L	5	Standard
	Tl	205	490280.1	1.2	**49.7505**	0.831	1.7	ug/L	5	Standard
	Pb	206	413369.6	2.5	**49.7535**	1.510	3.0	ug/L	368	Standard
	Pb	207	371437.3	3.9	**49.7783**	2.221	4.5	ug/L	311	Standard
	Pb	208	1123303.1	2.6	**49.8644**	1.567	3.1	ug/L	939	Standard
	U	238	458742.7	2.2	**54.7868**	1.513	2.8	ug/L	3	Standard
>	Bi	209	653328.0	0.5				ug/L	663779	Standard

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Na	23	0.0		**-2.5666**			mg/L	0	Standard
Mg	24	6388.0	4.5	**5.0797**	0.249	4.9	mg/L	117	Standard
K	39	2233.5	1.4	**5.0947**	0.115	2.3	mg/L	18	Standard
Ca	43	188.3	5.5	**5.8464**	0.394	6.7	mg/L	42	Standard
Fe	54	9020.5	2.4	**4.8339**	0.181	3.7	mg/L	280	Standard
Fe	57	2633.6	7.9	**4.7670**	0.360	7.6	mg/L	295	Standard
Sc-1	45	82755.4	1.2				mg/L	81804	Standard
Cl	35	21987.9	1.6				ug/L	23537	Standard
Kr	83	3.0	57.7				ug/L	3	Standard
Br	81	2403.5	10.1				ug/L	2400	Standard
P	31	22967.4	1.7				ug/L	22884	Standard
S	34	980.0	5.9				ug/L	877	Standard
Sr	88	168.3	6.2				ug/L	152	Standard
C	12	710.0	5.1				mg/L	623	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	18.9	104.7				mg/L	32	Standard
Ho-1	165	15.0	33.3				mg/L	13	Standard
Er	166	23.3	65.5				mg/L	23	Standard
I	127	1070.0	9.0				mg/L	1360	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	101.544		
Al	27	97.791		
Sc	45			
Ti	47	103.330		
V	51	97.447		
Cr	52	97.342		
Cr	53			
Mn	55	96.738		
Co	59	97.934		
Ni	60	98.817		
Cu	65	98.870		
Zn	66	97.650		
> Ge	72		102.613	
As	75	98.300		
Se	82	100.782		
Se-1	77			
> Ga	71			

Sample ID: QC Std 1
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Rb	85			
Y	89			
> Rh	103			
Mo	98	106.085		
Ag	107	99.351		
Cd	111	98.291		
Cd	114			
> In	115		103.090	
Sn	118	107.125		
Sb	123	106.939		
Ba	135	98.472		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.675		
Tl	205			
Pb	206	99.507		
Pb	207	99.557		
Pb	208	99.729		
U	238	109.574		
> Bi	209		98.426	
Na	23	-51.332		
Mg	24	101.594		
K	39	101.894		
Ca	43	116.927		
Fe	54	96.679		
Fe	57	95.340		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	

Sample ID: QC Std 1
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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Tuesday, February 24, 2015 12:29:44
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	150858.0	3.7				ug/L	151539	Standard
	Be	9	21.7	26.6	**0.0079**	0.003	44.1	ug/L	10	Standard
	Al	27	3132.1	64.9	**0.0018**	0.010	580.5	ug/L	1353	Standard
	Sc	45	81341.1	0.9				ug/L	81804	Standard
	Ti	47	39.3	7.3	**0.0151**	0.005	30.8	ug/L	33	Standard
	V	51	3063.4	5.7	**-0.0185**	0.020	105.5	ug/L	3161	Standard
	Cr	52	11944.4	0.9	**-0.0890**	0.025	27.9	ug/L	13150	Standard
	Cr	53	418.3	23.6	**-0.0552**	0.065	118.5	ug/L	513	Standard
	Mn	55	1106.0	18.8	**-0.0068**	0.015	215.5	ug/L	1028	Standard
	Co	59	306.3	48.4	**0.0088**	0.013	144.2	ug/L	168	Standard
	Ni	60	70.7	13.1	**-0.0015**	0.003	211.2	ug/L	47	Standard
	Cu	65	269.3	3.2	**0.0078**	0.004	50.2	ug/L	247	Standard
	Zn	66	327.3	4.3	**-0.0425**	0.011	25.5	ug/L	269	Standard
>	Ge	72	596694.9	1.5				ug/L	590931	Standard
	As	75	-187.7	4.5	**0.0065**	0.004	59.9	ug/L	-178	Standard
	Se	82	33.5	10.7	**0.0498**	0.024	48.9	ug/L	27	Standard
	Se-1	77	147.0	2.4	**0.1152**	0.015	13.0	ug/L	155	Standard
>	Ga	71	16.7	45.8				mg/L	27	Standard
	Rb	85	53.3	5.4				ug/L	52	Standard
	Y	89	609682.2	1.1				ug/L	610565	Standard
>	Rh	103	5.0	100.0				ug/L	10	Standard
	Mo	98	263.5	49.5	**0.0581**	0.036	62.8	ug/L	29	Standard
	Ag	107	338.7	98.3	**0.0167**	0.029	176.2	ug/L	112	Standard
	Cd	111	66.2	137.3	**0.0198**	0.029	145.0	mg/L	3	Standard
	Cd	114	196.6	116.0	**0.0156**	0.030	190.5	ug/L	27	Standard
>	In	115	936694.8	1.4				ug/L	919955	Standard
	Sn	118	1181.7	36.3	**0.0415**	0.046	111.4	ug/L	932	Standard
	Sb	123	958.5	28.4	**0.1424**	0.047	33.0	ug/L	105	Standard
	Ba	135	122.3	92.5	**0.0094**	0.034	356.7	ug/L	29	Standard
	Ce	140	28.3	20.4				ug/L	305	Standard
>	Tb	159	1446698.8	3.0				ug/L	1429880	Standard
	Ho	165	16.7	69.3				ug/L	13	Standard
	Tl	203	285.0	140.7	**0.0226**	0.034	148.5	ug/L	5	Standard
	Tl	205	118.3	66.9	**0.0071**	0.008	112.1	ug/L	5	Standard
	Pb	206	488.7	37.8	**0.0034**	0.022	659.4	ug/L	368	Standard
	Pb	207	437.0	39.8	**0.0083**	0.023	278.2	ug/L	311	Standard
	Pb	208	1166.0	18.9	**-0.0010**	0.010	1027.2	ug/L	939	Standard
	U	238	93.3	112.7	**0.0082**	0.012	152.0	ug/L	3	Standard
>	Bi	209	662275.5	1.0				ug/L	663779	Standard

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Na	23	0.0		**-2.5666**			mg/L	0	Standard
Mg	24	143.3	22.7	**0.0067**	0.026	388.0	mg/L	117	Standard
K	39	28.3	36.7	**0.0085**	0.024	284.3	mg/L	18	Standard
Ca	43	53.3	23.6	**0.4643**	0.516	111.1	mg/L	42	Standard
Fe	54	291.8	11.0	**-0.0100**	0.017	171.3	mg/L	280	Standard
Fe	57	260.0	9.6	**-0.0414**	0.047	114.4	mg/L	295	Standard
Sc-1	45	81341.1	0.9				mg/L	81804	Standard
Cl	35	21698.2	3.3				ug/L	23537	Standard
Kr	83	2.7	43.3				ug/L	3	Standard
Br	81	2340.2	5.2				ug/L	2400	Standard
P	31	24902.3	10.9				ug/L	22884	Standard
S	34	980.0	4.7				ug/L	877	Standard
Sr	88	130.0	6.7				ug/L	152	Standard
C	12	636.7	10.1				mg/L	623	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	12.7	46.6				mg/L	32	Standard
Ho-1	165	16.7	69.3				mg/L	13	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	698.3	7.7				mg/L	1360	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.975	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.820	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.773	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Na	23	
QC Std 2	Ca	43	

Sample ID: QC Std 2
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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Tuesday, February 24, 2015 12:32:56
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	151872.9	3.4				ug/L	151539	Standard
	Be	9	401.7	7.1	**0.2150**	0.023	10.5	ug/L	10	Standard
	Al	27	645.0	70.3	**-0.0107**	0.002	22.2	ug/L	1353	Standard
	Sc	45	80954.2	3.3				ug/L	81804	Standard
	Ti	47	34.7	31.9	**0.0060**	0.022	366.4	ug/L	33	Standard
	V	51	7283.5	1.2	**0.3620**	0.010	2.7	ug/L	3161	Standard
	Cr	52	20084.0	1.3	**0.6727**	0.012	1.8	ug/L	13150	Standard
	Cr	53	1495.1	3.8	**0.7014**	0.024	3.5	ug/L	513	Standard
	Mn	55	8320.0	1.4	**0.4612**	0.006	1.2	ug/L	1028	Standard
	Co	59	4771.1	2.5	**0.3784**	0.009	2.4	ug/L	168	Standard
	Ni	60	5101.9	1.7	**1.5683**	0.011	0.7	ug/L	47	Standard
	Cu	65	2768.3	5.2	**0.8360**	0.037	4.4	ug/L	247	Standard
	Zn	66	9560.0	1.9	**6.2954**	0.095	1.5	ug/L	269	Standard
>	**Ge**	72	596045.3	1.5				ug/L	590931	Standard
	As	75	435.6	12.3	**0.4145**	0.033	7.9	ug/L	-178	Standard
	Se	82	97.1	5.2	**0.4553**	0.028	6.2	ug/L	27	Standard
	Se-1	77	162.7	7.1	**0.2702**	0.120	44.4	ug/L	155	Standard
>	**Ga**	71	21.7	35.3				mg/L	27	Standard
	Rb	85	25.0	52.9				ug/L	52	Standard
	Y	89	632011.4	1.0				ug/L	610565	Standard
>	**Rh**	103	10.0	100.0				ug/L	10	Standard
	Mo	98	99.3	45.5	**0.0130**	0.012	95.3	ug/L	29	Standard
	Ag	107	4662.4	2.3	**0.3906**	0.010	2.6	ug/L	112	Standard
	Cd	111	781.5	4.0	**0.2405**	0.006	2.4	mg/L	3	Standard
	Cd	114	1919.2	0.6	**0.2352**	0.005	2.1	ug/L	27	Standard
>	**In**	115	943838.9	2.2				ug/L	919955	Standard
	Sn	118	903.4	21.1	**0.0117**	0.021	181.9	ug/L	932	Standard
	Sb	123	2813.8	2.5	**0.4455**	0.014	3.2	ug/L	105	Standard
	Ba	135	2516.2	1.6	**0.7020**	0.006	0.8	ug/L	29	Standard
	Ce	140	26.7	28.6				ug/L	305	Standard
>	**Tb**	159	1444197.5	2.1				ug/L	1429880	Standard
	Ho	165	11.7	65.5				ug/L	13	Standard
	Tl	203	955.0	2.5	**0.0781**	0.003	3.8	ug/L	5	Standard
	Tl	205	825.0	3.8	**0.0775**	0.002	2.6	ug/L	5	Standard
	Pb	206	2121.1	3.0	**0.1964**	0.005	2.8	ug/L	368	Standard
	Pb	207	1739.4	0.6	**0.1799**	0.005	2.8	ug/L	311	Standard
	Pb	208	5578.4	2.0	**0.1915**	0.003	1.7	ug/L	939	Standard
	U	238	3283.7	3.4	**0.3826**	0.014	3.6	ug/L	3	Standard
>	**Bi**	209	664745.3	2.3				ug/L	663779	Standard

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Na	23	0.0		**-2.5666**			mg/L	0	Standard
Mg	24	118.3	23.3	**-0.0137**	0.020	147.8	mg/L	117	Standard
K	39	30.0	0.0	**0.0129**	0.002	18.4	mg/L	18	Standard
Ca	43	41.7	13.9	**-0.0030**	0.251	8479.6	mg/L	42	Standard
Fe	54	285.2	5.4	**-0.0129**	0.009	71.7	mg/L	280	Standard
Fe	57	268.3	15.8	**-0.0216**	0.082	381.5	mg/L	295	Standard
Sc-1	45	80954.2	3.3				mg/L	81804	Standard
Cl	35	21678.8	1.1				ug/L	23537	Standard
Kr	83	4.0	25.0				ug/L	3	Standard
Br	81	2753.6	7.4				ug/L	2400	Standard
P	31	24782.0	9.7				ug/L	22884	Standard
S	34	1006.7	7.2				ug/L	877	Standard
Sr	88	183.3	12.9				ug/L	152	Standard
C	12	703.4	25.1				mg/L	623	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	18.6	61.6				mg/L	32	Standard
Ho-1	165	11.7	65.5				mg/L	13	Standard
Er	166	30.0	100.0				mg/L	23	Standard
I	127	756.7	6.7				mg/L	1360	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	107.521		
Al	27	-1.066		
Sc	45			
Ti	47			
V	51	90.508		
Cr	52	84.092		
Cr	53			
Mn	55	92.245		
Co	59	94.593		
Ni	60	98.019		
Cu	65	104.503		
Zn	66	100.727		
Ge	72		100.865	
As	75	103.631		
Se	82	113.818		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	97.646		
Cd	111	100.196		
Cd	114			
> In	115			102.596
Sn	118			
Sb	123	111.373		
Ba	135	93.605		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	97.631		
Tl	205			
Pb	206			
Pb	207			
Pb	208	95.759		
U	238	95.661		
> Bi	209			100.146
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

Sample ID: QC Std 3
Report Date/Time: Tuesday, February 24, 2015 12:35:13
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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Tuesday, February 24, 2015 12:36:07
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	126850.6	2.1				ug/L	151539	Standard
	Be	9	31.7	39.7	**0.0166**	0.008	50.4	ug/L	10	Standard
	Al	27	7445688.0	2.3	**44.1394**	0.468	1.1	ug/L	1353	Standard
	Sc	45	67262.3	1.9				ug/L	81804	Standard
	Ti	47	40409.8	0.8	**90.8578**	0.656	0.7	ug/L	33	Standard
	V	51	2420.7	6.2	**-0.0471**	0.014	30.4	ug/L	3161	Standard
	Cr	52	10803.5	1.5	**-0.0594**	0.021	34.5	ug/L	13150	Standard
	Cr	53	3305.4	6.3	**2.2826**	0.157	6.9	ug/L	513	Standard
	Mn	55	1165.4	4.6	**0.0071**	0.004	57.9	ug/L	1028	Standard
	Co	59	339.0	17.4	**0.0152**	0.006	37.2	ug/L	168	Standard
	Ni	60	853.4	3.5	**0.2783**	0.010	3.8	ug/L	47	Standard
	Cu	65	584.7	5.0	**0.1384**	0.012	8.5	ug/L	247	Standard
	Zn	66	1095.0	2.7	**0.5853**	0.024	4.0	ug/L	269	Standard
>	Ge	72	525672.2	0.4				ug/L	590931	Standard
	As	75	-144.5	39.5	**0.0219**	0.043	194.0	ug/L	-178	Standard
	Se	82	25.4	20.9	**0.0199**	0.038	189.6	ug/L	27	Standard
	Se-1	77	296.7	3.8	**1.9645**	0.113	5.7	ug/L	155	Standard
>	Ga	71	175.0	12.5				mg/L	27	Standard
	Rb	85	1033.4	3.9				ug/L	52	Standard
	Y	89	532380.6	2.6				ug/L	610565	Standard
>	Rh	103	6.7	43.3				ug/L	10	Standard
	Mo	98	270512.1	1.4	**83.9644**	1.311	1.6	ug/L	29	Standard
	Ag	107	138.0	22.1	**0.0008**	0.003	405.5	ug/L	112	Standard
	Cd	111	-60.5	35.7	**-0.0225**	0.008	33.9	mg/L	3	Standard
	Cd	114	677.5	12.7	**0.0897**	0.013	14.3	ug/L	27	Standard
>	In	115	820087.9	0.2				ug/L	919955	Standard
	Sn	118	2330.2	5.7	**0.1958**	0.016	8.3	ug/L	932	Standard
	Sb	123	162.5	9.8	**0.0141**	0.003	20.9	ug/L	105	Standard
	Ba	135	242.3	8.9	**0.0542**	0.007	13.5	ug/L	29	Standard
	Ce	140	215.0	20.3				ug/L	305	Standard
>	Tb	159	1288469.2	2.2				ug/L	1429880	Standard
	Ho	165	6.7	43.3				ug/L	13	Standard
	Tl	203	216.0	26.5	**0.0190**	0.005	27.3	ug/L	5	Standard
	Tl	205	195.0	47.5	**0.0171**	0.010	59.6	ug/L	5	Standard
	Pb	206	757.7	8.4	**0.0464**	0.008	16.3	ug/L	368	Standard
	Pb	207	662.7	7.6	**0.0490**	0.007	14.1	ug/L	311	Standard
	Pb	208	2112.1	10.5	**0.0519**	0.010	19.1	ug/L	939	Standard
	U	238	30.3	150.4	**0.0011**	0.006	522.6	ug/L	3	Standard
>	Bi	209	589135.6	1.0				ug/L	663779	Standard

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Na	23	1.7	173.2	**0.4993**	5.310	1063.6	mg/L	0	Standard
Mg	24	11966.4	1.8	**11.8527**	0.216	1.8	mg/L	117	Standard
K	39	1635.1	5.4	**4.5852**	0.311	6.8	mg/L	18	Standard
Ca	43	340.0	8.9	**15.0684**	1.210	8.0	mg/L	42	Standard
Fe	54	17268.8	2.7	**11.6208**	0.324	2.8	mg/L	280	Standard
Fe	57	4692.4	1.9	**11.1458**	0.032	0.3	mg/L	295	Standard
Sc-1	45	67262.3	1.9				mg/L	81804	Standard
Cl	35	18227.6	1.6				ug/L	23537	Standard
Kr	83	3.0	66.7				ug/L	3	Standard
Br	81	2070.1	16.3				ug/L	2400	Standard
P	31	7610.3	12.9				ug/L	22884	Standard
S	34	830.0	5.7				ug/L	877	Standard
Sr	88	136.7	5.6				ug/L	152	Standard
C	12	1026.7	8.8				mg/L	623	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	7	Standard
Dy	164	15.5	33.6				mg/L	32	Standard
Ho-1	165	6.7	43.3				mg/L	13	Standard
Er	166	23.3	49.5				mg/L	23	Standard
I	127	845.0	7.6				mg/L	1360	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27	0.883		
Sc	45			
Ti	47	90.858		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		88.957	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	83.964		
Ag	107			
Cd	111			
Cd	114			
> In	115			89.144
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209			88.755
Na	23	3.994		
Mg	24	237.054		
K	39	91.704		
Ca	43	100.456		
Fe	54	92.966		
Fe	57	89.166		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	

Sample ID: QC Std 4
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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Tuesday, February 24, 2015 12:39:19
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	162346.5	4.9				ug/L	151539	Standard
	Be	9	195718.2	2.6	**99.7320**	4.214	4.2	ug/L	10	Standard
	Al	27	11074342.4	1.9	**51.3498**	1.623	3.2	ug/L	1353	Standard
	Sc	45	81195.5	3.4				ug/L	81804	Standard
	Ti	47	58148.1	3.6	**113.2184**	4.494	4.0	ug/L	33	Standard
	V	51	1129320.1	2.1	**99.6188**	2.174	2.2	ug/L	3161	Standard
	Cr	52	1112653.1	1.8	**100.8784**	2.374	2.4	ug/L	13150	Standard
	Cr	53	153007.9	4.1	**105.1065**	4.921	4.7	ug/L	513	Standard
	Mn	55	1547111.1	1.6	**98.4683**	1.767	1.8	ug/L	1028	Standard
	Co	59	1227252.7	1.2	**99.7227**	1.542	1.5	ug/L	168	Standard
	Ni	60	328522.9	1.5	**100.6114**	2.040	2.0	ug/L	47	Standard
	Cu	65	311525.4	1.9	**101.3116**	2.359	2.3	ug/L	247	Standard
	Zn	66	155073.6	1.4	**104.2352**	1.956	1.9	ug/L	269	Standard
>	**Ge**	72	607176.5	0.6				ug/L	590931	Standard
	As	75	163049.1	0.9	**105.0033**	1.439	1.4	ug/L	-178	Standard
	Se	82	16963.0	1.3	**106.0967**	1.904	1.8	ug/L	27	Standard
	Se-1	77	11462.3	2.1	**108.4758**	2.392	2.2	ug/L	155	Standard
>	**Ga**	71	291.7	15.6				mg/L	27	Standard
	Rb	85	1836.8	9.7				ug/L	52	Standard
	Y	89	652350.1	1.7				ug/L	610565	Standard
>	**Rh**	103	93.3	29.5				ug/L	10	Standard
	Mo	98	425513.0	2.6	**115.1401**	2.545	2.2	ug/L	29	Standard
	Ag	107	1041333.5	3.7	**90.4071**	3.187	3.5	ug/L	112	Standard
	Cd	111	332925.4	2.3	**103.2299**	1.909	1.8	mg/L	3	Standard
	Cd	114	830846.1	3.3	**106.3767**	3.172	3.0	ug/L	27	Standard
>	**In**	115	940686.6	0.5				ug/L	919955	Standard
	Sn	118	16719.2	2.9	**1.6561**	0.054	3.3	ug/L	932	Standard
	Sb	123	649638.9	2.6	**106.9904**	2.751	2.6	ug/L	105	Standard
	Ba	135	348311.2	1.8	**101.1492**	1.452	1.4	ug/L	29	Standard
	Ce	140	296.7	26.1				ug/L	305	Standard
>	**Tb**	159	1441465.5	2.7				ug/L	1429880	Standard
	Ho	165	20.0	25.0				ug/L	13	Standard
	Tl	203	1198660.5	1.7	**102.8369**	1.336	1.3	ug/L	5	Standard
	Tl	205	1019151.0	1.0	**105.0215**	1.362	1.3	ug/L	5	Standard
	Pb	206	837521.3	2.9	**102.4079**	2.585	2.5	ug/L	368	Standard
	Pb	207	760404.7	0.9	**103.5205**	0.669	0.6	ug/L	311	Standard
	Pb	208	2293578.4	1.2	**103.4339**	0.964	0.9	ug/L	939	Standard
	U	238	862988.0	0.9	**104.6530**	0.541	0.5	ug/L	3	Standard
>	**Bi**	209	643361.7	0.4				ug/L	663779	Standard

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Na	23	5.0	100.0	**4.8684**	7.336	150.7	mg/L	0	Standard
Mg	24	15447.9	3.5	**12.7010**	0.872	6.9	mg/L	117	Standard
K	39	2083.5	3.5	**4.8409**	0.107	2.2	mg/L	18	Standard
Ca	43	436.7	2.4	**16.1652**	0.608	3.8	mg/L	42	Standard
Fe	54	23533.0	2.2	**13.1530**	0.645	4.9	mg/L	280	Standard
Fe	57	6596.4	3.7	**13.0921**	0.873	6.7	mg/L	295	Standard
Sc-1	45	81195.5	3.4				mg/L	81804	Standard
Cl	35	21203.5	3.6				ug/L	23537	Standard
Kr	83	2.7	21.7				ug/L	3	Standard
Br	81	2730.2	6.7				ug/L	2400	Standard
P	31	21799.0	4.2				ug/L	22884	Standard
S	34	900.0	4.7				ug/L	877	Standard
Sr	88	141.7	12.4				ug/L	152	Standard
C	12	1360.1	8.2				mg/L	623	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	7	Standard
Dy	164	25.1	62.9				mg/L	32	Standard
Ho-1	165	20.0	25.0				mg/L	13	Standard
Er	166	33.3	105.4				mg/L	23	Standard
I	127	993.4	4.3				mg/L	1360	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	99.732		
Al	27	1.027		
Sc	45			
Ti	47	113.218		
V	51	99.619		
Cr	52	100.878		
Cr	53			
Mn	55	98.468		
Co	59	99.723		
Ni	60	100.611		
Cu	65	101.312		
Zn	66	104.235		
Ge	72		102.749	
As	75	105.003		
Se	82	106.097		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	115.140		
Ag	107	90.407		
Cd	111	103.230		
Cd	114			
In	115		102.254	
Sn	118			
Sb	123	106.990		
Ba	135	101.149		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.837		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.434		
U	238	104.653		
Bi	209		96.924	
Na	23	38.947		
Mg	24	254.020		
K	39	96.817		
Ca	43	107.768		
Fe	54	105.224		
Fe	57	104.737		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, February 24, 2015 12:42:32
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	163687.8	5.3				ug/L	151539	Standard
	Be	9	98167.1	2.5	**49.6854**	3.763	7.6	ug/L	10	Standard
	Al	27	10566541.1	0.8	**48.6204**	2.149	4.4	ug/L	1353	Standard
	Sc	45	82646.5	0.6				ug/L	81804	Standard
	Ti	47	52259.0	0.7	**99.8563**	0.101	0.1	ug/L	33	Standard
	V	51	590326.4	1.8	**50.9659**	0.587	1.2	ug/L	3161	Standard
	Cr	52	579528.6	1.4	**50.9789**	0.436	0.9	ug/L	13150	Standard
	Cr	53	75583.1	1.2	**50.7753**	0.522	1.0	ug/L	513	Standard
	Mn	55	802856.8	2.2	**50.1130**	0.799	1.6	ug/L	1028	Standard
	Co	59	631229.7	1.3	**50.3339**	0.365	0.7	ug/L	168	Standard
	Ni	60	170634.0	1.7	**51.2781**	0.808	1.6	ug/L	47	Standard
	Cu	65	160019.4	2.9	**51.0325**	1.247	2.4	ug/L	247	Standard
	Zn	66	77137.2	1.6	**50.7512**	0.566	1.1	ug/L	269	Standard
>	**Ge**	72	618586.1	0.6				ug/L	590931	Standard
	As	75	81699.7	2.1	**51.7043**	0.806	1.6	ug/L	-178	Standard
	Se	82	8481.8	2.5	**51.9810**	1.006	1.9	ug/L	27	Standard
	Se-1	77	5751.1	0.9	**52.7523**	0.174	0.3	ug/L	155	Standard
>	**Ga**	71	93.3	17.2				mg/L	27	Standard
	Rb	85	1428.4	5.1				ug/L	52	Standard
	Y	89	650664.6	1.6				ug/L	610565	Standard
>	**Rh**	103	46.7	27.0				ug/L	10	Standard
	Mo	98	397867.8	1.9	**103.6921**	0.434	0.4	ug/L	29	Standard
	Ag	107	606808.1	2.0	**50.7339**	0.212	0.4	ug/L	112	Standard
	Cd	111	172704.3	1.4	**51.5806**	0.348	0.7	mg/L	3	Standard
	Cd	114	416988.3	0.8	**51.4241**	0.495	1.0	ug/L	27	Standard
>	**In**	115	976692.6	1.7				ug/L	919955	Standard
	Sn	118	495197.9	1.2	**49.5029**	0.296	0.6	ug/L	932	Standard
	Sb	123	348217.6	1.6	**55.2307**	0.828	1.5	ug/L	105	Standard
	Ba	135	178110.7	1.9	**49.8029**	0.130	0.3	ug/L	29	Standard
	Ce	140	280.0	16.4				ug/L	305	Standard
>	**Tb**	159	1488144.4	2.2				ug/L	1429880	Standard
	Ho	165	11.7	89.2				ug/L	13	Standard
	Tl	203	610806.0	2.2	**49.8168**	0.526	1.1	ug/L	5	Standard
	Tl	205	514367.8	1.3	**50.4007**	1.426	2.8	ug/L	5	Standard
	Pb	206	437747.0	2.1	**50.8580**	0.395	0.8	ug/L	368	Standard
	Pb	207	390485.6	1.8	**50.5119**	0.290	0.6	ug/L	311	Standard
	Pb	208	1178076.6	1.1	**50.4873**	0.770	1.5	ug/L	939	Standard
	U	238	438918.6	2.7	**50.5945**	0.581	1.1	ug/L	3	Standard
>	**Bi**	209	676784.6	2.0				ug/L	663779	Standard

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Na	23	8.3	124.9	**9.8855**	15.523	157.0	mg/L	0	Standard
Mg	24	6219.6	5.8	**4.9500**	0.323	6.5	mg/L	117	Standard
K	39	2193.5	6.7	**5.0076**	0.324	6.5	mg/L	18	Standard
Ca	43	153.3	30.3	**4.4514**	1.872	42.1	mg/L	42	Standard
Fe	54	9761.7	4.2	**5.2511**	0.220	4.2	mg/L	280	Standard
Fe	57	2686.9	4.0	**4.8856**	0.227	4.6	mg/L	295	Standard
> **Sc-1**	45	82646.5	0.6				mg/L	81804	Standard
Cl	35	21370.4	2.1				ug/L	23537	Standard
Kr	83	4.7	53.9				ug/L	3	Standard
Br	81	2556.9	3.4				ug/L	2400	Standard
P	31	24560.0	8.4				ug/L	22884	Standard
S	34	848.4	4.5				ug/L	877	Standard
Sr	88	150.0	14.5				ug/L	152	Standard
C	12	703.3	9.7				mg/L	623	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	28.7	64.7				mg/L	32	Standard
Ho-1	165	11.7	89.2				mg/L	13	Standard
Er	166	26.7	142.0				mg/L	23	Standard
I	127	918.4	1.3				mg/L	1360	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	99.371		
	Al	27	97.241		
	Sc	45			
	Ti	47	99.856		
	V	51	101.932		
	Cr	52	101.958		
	Cr	53			
	Mn	55	100.226		
	Co	59	100.668		
	Ni	60	102.556		
	Cu	65	102.065		
	Zn	66	101.502		
>	Ge	72		104.680	
	As	75	103.409		
	Se	82	103.962		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	103.692		
Ag	107	101.468		
Cd	111	103.161		
Cd	114			
In	115			106.167
Sn	118	99.006		
Sb	123	110.461		
Ba	135	99.606		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.634		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.975		
U	238	101.189		
Bi	209			101.959
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Sb	123	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, February 24, 2015 12:45:44
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	161242.1	2.5				ug/L	151539	Standard
	Be	9	93.3	54.2	**0.0439**	0.026	59.6	ug/L	10	Standard
	Al	27	8254.6	66.9	**0.0247**	0.026	104.9	ug/L	1353	Standard
	Sc	45	80439.7	1.6				ug/L	81804	Standard
	Ti	47	63.7	51.7	**0.0617**	0.066	106.6	ug/L	33	Standard
	V	51	2985.4	1.2	**-0.0315**	0.008	24.6	ug/L	3161	Standard
	Cr	52	12136.9	1.3	**-0.0958**	0.020	21.4	ug/L	13150	Standard
	Cr	53	548.3	4.1	**0.0281**	0.007	24.7	ug/L	513	Standard
	Mn	55	1514.1	53.3	**0.0181**	0.054	296.4	ug/L	1028	Standard
	Co	59	668.7	119.6	**0.0383**	0.066	173.4	ug/L	168	Standard
	Ni	60	178.3	60.0	**0.0312**	0.033	106.6	ug/L	47	Standard
	Cu	65	362.7	19.0	**0.0362**	0.023	64.5	ug/L	247	Standard
	Zn	66	352.3	13.0	**-0.0305**	0.033	107.3	ug/L	269	Standard
>	**Ge**	72	610075.3	2.6				ug/L	590931	Standard
	As	75	-185.3	24.3	**0.0110**	0.027	240.5	ug/L	-178	Standard
	Se	82	26.8	16.1	**0.0037**	0.031	817.9	ug/L	27	Standard
	Se-1	77	152.3	3.7	**0.1350**	0.050	36.7	ug/L	155	Standard
>	**Ga**	71	30.0	66.7				mg/L	27	Standard
	Rb	85	85.0	15.6				ug/L	52	Standard
	Y	89	632311.2	1.5				ug/L	610565	Standard
>	**Rh**	103	18.3	63.0				ug/L	10	Standard
	Mo	98	582.5	87.4	**0.1404**	0.138	98.0	ug/L	29	Standard
	Ag	107	208.7	16.0	**0.0046**	0.003	67.3	ug/L	112	Standard
	Cd	111	30.2	77.2	**0.0081**	0.007	86.9	mg/L	3	Standard
	Cd	114	109.0	46.9	**0.0037**	0.006	174.5	ug/L	27	Standard
>	**In**	115	973130.2	2.2				ug/L	919955	Standard
	Sn	118	908.4	4.1	**0.0092**	0.005	55.0	ug/L	932	Standard
	Sb	123	785.5	20.2	**0.1087**	0.026	24.3	ug/L	105	Standard
	Ba	135	72.3	9.2	**-0.0062**	0.002	30.4	ug/L	29	Standard
	Ce	140	51.7	14.8				ug/L	305	Standard
>	**Tb**	159	1460187.9	2.0				ug/L	1429880	Standard
	Ho	165	16.7	34.6				ug/L	13	Standard
	Tl	203	127.0	42.9	**0.0093**	0.005	49.8	ug/L	5	Standard
	Tl	205	275.0	130.7	**0.0226**	0.036	159.0	ug/L	5	Standard
	Pb	206	409.3	1.8	**-0.0067**	0.002	23.9	ug/L	368	Standard
	Pb	207	347.3	4.1	**-0.0041**	0.003	61.9	ug/L	311	Standard
	Pb	208	1696.0	67.6	**0.0215**	0.050	234.3	ug/L	939	Standard
	U	238	239.0	140.1	**0.0252**	0.039	156.2	ug/L	3	Standard
>	**Bi**	209	671242.3	1.6				ug/L	663779	Standard

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Na	23	0.0		**-2.5666**			mg/L	0	Standard
Mg	24	150.0	15.3	**0.0136**	0.018	129.6	mg/L	117	Standard
K	39	21.7	48.0	**-0.0064**	0.025	390.5	mg/L	18	Standard
Ca	43	40.0	12.5	**-0.0641**	0.189	295.0	mg/L	42	Standard
Fe	54	276.9	10.8	**-0.0167**	0.016	97.4	mg/L	280	Standard
Fe	57	323.3	14.0	**0.0983**	0.106	107.8	mg/L	295	Standard
Sc-1	45	80439.7	1.6				mg/L	81804	Standard
Cl	35	21535.3	2.2				ug/L	23537	Standard
Kr	83	3.7	41.7				ug/L	3	Standard
Br	81	2370.2	16.0				ug/L	2400	Standard
P	31	22431.7	10.2				ug/L	22884	Standard
S	34	873.4	5.5				ug/L	877	Standard
Sr	88	145.0	31.6				ug/L	152	Standard
C	12	676.7	8.4				mg/L	623	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	33.2	76.5				mg/L	32	Standard
Ho-1	165	16.7	34.6				mg/L	13	Standard
Er	166	3.3	173.2				mg/L	23	Standard
I	127	703.3	10.2				mg/L	1360	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.240	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.780
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.124
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1502093901
Sample Date/Time: Tuesday, February 24, 2015 12:48:56
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	168291.5	2.3				ug/L	151539	Standard
	Be	9	328.3	36.3	**0.1579**	0.062	39.0	ug/L	10	Standard
	Al	27	2814347.5	2.8	**12.5679**	0.365	2.9	ug/L	1353	Standard
	Sc	45	83197.9	2.2				ug/L	81804	Standard
	Ti	47	1461.1	6.2	**2.7269**	0.148	5.4	ug/L	33	Standard
	V	51	13105.9	2.8	**0.8423**	0.027	3.2	ug/L	3161	Standard
	Cr	52	39440.0	2.5	**2.3430**	0.064	2.8	ug/L	13150	Standard
	Cr	53	10853.9	11.0	**6.9817**	0.756	10.8	ug/L	513	Standard
	Mn	55	325348.7	0.6	**20.2408**	0.228	1.1	ug/L	1028	Standard
	Co	59	1424.1	2.8	**0.0969**	0.004	3.7	ug/L	168	Standard
	Ni	60	5674.7	4.5	**1.6803**	0.063	3.7	ug/L	47	Standard
	Cu	65	2775.9	5.3	**0.8041**	0.040	4.9	ug/L	247	Standard
	Zn	66	371006.4	1.9	**244.8722**	5.783	2.4	ug/L	269	Standard
>	**Ge**	72	619272.9	0.8				ug/L	590931	Standard
	As	75	313.9	12.4	**0.3273**	0.025	7.8	ug/L	-178	Standard
	Se	82	412.8	2.0	**2.3718**	0.071	3.0	ug/L	27	Standard
	Se-1	77	863.4	8.9	**6.7886**	0.683	10.1	ug/L	155	Standard
>	**Ga**	71	1553.4	6.1				mg/L	27	Standard
	Rb	85	22693.7	2.6				ug/L	52	Standard
	Y	89	647018.0	4.2				ug/L	610565	Standard
>	**Rh**	103	16.7	45.8				ug/L	10	Standard
	Mo	98	373.7	17.7	**0.0840**	0.017	20.6	ug/L	29	Standard
	Ag	107	187.7	45.1	**0.0028**	0.007	256.2	ug/L	112	Standard
	Cd	111	1943.8	1.8	**0.5823**	0.011	1.9	mg/L	3	Standard
	Cd	114	4773.3	5.0	**0.5817**	0.029	5.1	ug/L	27	Standard
>	**In**	115	972042.1	0.1				ug/L	919955	Standard
	Sn	118	11838.0	3.7	**1.1088**	0.045	4.0	ug/L	932	Standard
	Sb	123	5806.7	2.5	**0.9090**	0.023	2.5	ug/L	105	Standard
	Ba	135	29808.6	0.6	**8.3531**	0.044	0.5	ug/L	29	Standard
	Ce	140	5862.8	2.9				ug/L	305	Standard
>	**Tb**	159	1485981.0	2.2				ug/L	1429880	Standard
	Ho	165	173.3	16.9				ug/L	13	Standard
	Tl	203	406.3	26.4	**0.0319**	0.008	26.6	ug/L	5	Standard
	Tl	205	310.0	17.0	**0.0256**	0.005	20.1	ug/L	5	Standard
	Pb	206	38320.1	0.8	**4.4068**	0.108	2.4	ug/L	368	Standard
	Pb	207	31726.2	1.0	**4.0625**	0.088	2.2	ug/L	311	Standard
	Pb	208	99124.1	0.9	**4.2037**	0.076	1.8	ug/L	939	Standard
	U	238	898.0	3.1	**0.1008**	0.002	1.5	ug/L	3	Standard
>	**Bi**	209	676244.2	1.6				ug/L	663779	Standard

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Na	23	8.3	91.7	**9.6449**	11.206	116.2	mg/L	0	Standard
Mg	24	8941.0	2.5	**7.1143**	0.027	0.4	mg/L	117	Standard
K	39	1740.1	3.7	**3.9350**	0.141	3.6	mg/L	18	Standard
Ca	43	498.3	7.5	**18.1760**	1.171	6.4	mg/L	42	Standard
Fe	54	450.3	7.8	**0.0742**	0.025	33.0	mg/L	280	Standard
Fe	57	421.7	9.0	**0.2748**	0.096	34.9	mg/L	295	Standard
> **Sc-1**	45	83197.9	2.2				mg/L	81804	Standard
Cl	35	23817.4	2.7				ug/L	23537	Standard
Kr	83	4.3	70.5				ug/L	3	Standard
Br	81	3307.0	8.3				ug/L	2400	Standard
P	31	23072.6	6.2				ug/L	22884	Standard
S	34	948.4	15.6				ug/L	877	Standard
Sr	88	166.7	15.4				ug/L	152	Standard
C	12	3790.5	15.4				mg/L	623	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	276.3	9.0				mg/L	32	Standard
Ho-1	165	173.3	16.9				mg/L	13	Standard
Er	166	216.7	17.5				mg/L	23	Standard
I	127	7712.0	5.4				mg/L	1360	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.055	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.796	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.662
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.878
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: +10
Sample Date/Time: Tuesday, February 24, 2015 12:52:07
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	167964.6	2.7				ug/L	151539	Standard
	Be	9	22950.7	0.3	**11.2922**	0.294	2.6	ug/L	10	Standard
	Al	27	2845183.7	3.7	**12.7293**	0.398	3.1	ug/L	1353	Standard
	Sc	45	83678.8	0.5				ug/L	81804	Standard
	Ti	47	1496.1	1.5	**2.7996**	0.085	3.0	ug/L	33	Standard
	V	51	145071.6	2.7	**12.3062**	0.142	1.2	ug/L	3161	Standard
	Cr	52	170405.0	1.3	**14.1461**	0.109	0.8	ug/L	13150	Standard
	Cr	53	31781.6	2.1	**21.1557**	0.276	1.3	ug/L	513	Standard
	Mn	55	506864.3	1.8	**31.6224**	0.383	1.2	ug/L	1028	Standard
	Co	59	145934.1	0.3	**11.6302**	0.193	1.7	ug/L	168	Standard
	Ni	60	43516.8	2.4	**13.0632**	0.114	0.9	ug/L	47	Standard
	Cu	65	38823.0	2.8	**12.3234**	0.185	1.5	ug/L	247	Standard
	Zn	66	388742.0	3.3	**256.8944**	4.489	1.7	ug/L	269	Standard
>	Ge	72	618375.5	1.6				ug/L	590931	Standard
	As	75	18813.4	3.4	**12.0082**	0.216	1.8	ug/L	-178	Standard
	Se	82	2341.1	1.8	**14.2344**	0.081	0.6	ug/L	27	Standard
	Se-1	77	2243.2	2.1	**19.7799**	0.326	1.6	ug/L	155	Standard
>	Ga	71	1600.1	7.5				mg/L	27	Standard
	Rb	85	22899.0	5.7				ug/L	52	Standard
	Y	89	650196.9	1.7				ug/L	610565	Standard
>	Rh	103	23.3	32.7				ug/L	10	Standard
	Mo	98	366.7	13.2	**0.0820**	0.012	14.8	ug/L	29	Standard
	Ag	107	130271.3	0.5	**10.9200**	0.129	1.2	ug/L	112	Standard
	Cd	111	40847.1	1.7	**12.2395**	0.088	0.7	mg/L	3	Standard
	Cd	114	100376.2	4.3	**12.4082**	0.352	2.8	ug/L	27	Standard
>	In	115	973404.6	1.5				ug/L	919955	Standard
	Sn	118	11966.4	3.3	**1.1202**	0.039	3.5	ug/L	932	Standard
	Sb	123	78252.2	3.3	**12.4380**	0.271	2.2	ug/L	105	Standard
	Ba	135	70061.6	1.5	**19.6418**	0.190	1.0	ug/L	29	Standard
	Ce	140	6042.9	4.3				ug/L	305	Standard
>	Tb	159	1459086.2	0.3				ug/L	1429880	Standard
	Ho	165	180.0	11.1				ug/L	13	Standard
	Tl	203	139312.9	0.9	**11.2526**	0.196	1.7	ug/L	5	Standard
	Tl	205	115330.6	0.5	**11.1857**	0.225	2.0	ug/L	5	Standard
	Pb	206	134959.6	2.0	**15.4886**	0.056	0.4	ug/L	368	Standard
	Pb	207	118866.9	2.0	**15.1915**	0.147	1.0	ug/L	311	Standard
	Pb	208	365108.1	2.1	**15.4552**	0.016	0.1	ug/L	939	Standard
	U	238	99651.8	2.9	**11.3723**	0.148	1.3	ug/L	3	Standard
>	Bi	209	683466.9	2.1				ug/L	663779	Standard

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Na	23	3.3	86.6	**2.3404**	4.250	181.6	mg/L	0	Standard
Mg	24	9426.3	1.9	**7.4631**	0.141	1.9	mg/L	117	Standard
K	39	1926.8	9.2	**4.3362**	0.380	8.8	mg/L	18	Standard
Ca	43	490.0	16.4	**17.7340**	3.108	17.5	mg/L	42	Standard
Fe	54	458.5	9.5	**0.0770**	0.024	31.5	mg/L	280	Standard
Fe	57	410.0	9.7	**0.2453**	0.083	33.7	mg/L	295	Standard
> **Sc-1**	45	83678.8	0.5				mg/L	81804	Standard
Cl	35	25844.0	3.0				ug/L	23537	Standard
Kr	83	2.3	49.5				ug/L	3	Standard
Br	81	3693.8	3.2				ug/L	2400	Standard
P	31	24277.8	7.6				ug/L	22884	Standard
S	34	925.0	8.0				ug/L	877	Standard
Sr	88	140.0	0.0				ug/L	152	Standard
C	12	3693.8	5.8				mg/L	623	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	321.1	23.6				mg/L	32	Standard
Ho-1	165	180.0	11.1				mg/L	13	Standard
Er	166	186.7	17.2				mg/L	23	Standard
I	127	7808.7	7.8				mg/L	1360	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		110.839	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		104.644	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.810
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.966
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: +20
Sample Date/Time: Tuesday, February 24, 2015 12:55:19
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	166485.4	3.4				ug/L	151539	Standard
	Be	9	43418.8	1.3	**21.5601**	0.639	3.0	ug/L	10	Standard
	Al	27	2864563.9	0.3	**12.9386**	0.429	3.3	ug/L	1353	Standard
	Sc	45	84538.6	2.1				ug/L	81804	Standard
	Ti	47	1464.1	4.0	**2.7091**	0.077	2.8	ug/L	33	Standard
	V	51	259105.0	1.4	**21.9935**	0.516	2.3	ug/L	3161	Standard
	Cr	52	277800.8	1.2	**23.5751**	0.552	2.3	ug/L	13150	Standard
	Cr	53	45628.8	6.3	**30.2266**	2.080	6.9	ug/L	513	Standard
	Mn	55	664359.3	1.4	**41.0597**	0.415	1.0	ug/L	1028	Standard
	Co	59	265504.2	0.9	**20.9595**	0.071	0.3	ug/L	168	Standard
	Ni	60	75656.5	2.2	**22.5103**	0.739	3.3	ug/L	47	Standard
	Cu	65	69182.6	2.3	**21.8086**	0.545	2.5	ug/L	247	Standard
	Zn	66	400670.4	1.8	**262.2218**	5.328	2.0	ug/L	269	Standard
>	Ge	72	624578.2	1.3				ug/L	590931	Standard
	As	75	35357.0	0.3	**22.2389**	0.307	1.4	ug/L	-178	Standard
	Se	82	4011.6	1.2	**24.2686**	0.586	2.4	ug/L	27	Standard
	Se-1	77	3364.4	1.4	**30.0164**	0.807	2.7	ug/L	155	Standard
>	Ga	71	1576.7	3.8				mg/L	27	Standard
	Rb	85	22939.0	1.5				ug/L	52	Standard
	Y	89	639899.7	1.4				ug/L	610565	Standard
>	Rh	103	45.0	33.3				ug/L	10	Standard
	Mo	98	518.2	51.7	**0.1234**	0.070	56.5	ug/L	29	Standard
	Ag	107	244288.4	1.0	**20.8019**	0.383	1.8	ug/L	112	Standard
	Cd	111	73820.0	0.8	**22.4585**	0.054	0.2	mg/L	3	Standard
	Cd	114	183612.8	0.4	**23.0603**	0.171	0.7	ug/L	27	Standard
>	In	115	958751.2	0.8				ug/L	919955	Standard
	Sn	118	12063.1	3.3	**1.1482**	0.033	2.9	ug/L	932	Standard
	Sb	123	143860.9	1.6	**23.2329**	0.291	1.3	ug/L	105	Standard
	Ba	135	105684.0	1.1	**30.0941**	0.103	0.3	ug/L	29	Standard
	Ce	140	5851.1	2.2				ug/L	305	Standard
>	Tb	159	1462711.3	0.9				ug/L	1429880	Standard
	Ho	165	180.0	14.7				ug/L	13	Standard
	Tl	203	257301.8	1.7	**20.9461**	0.292	1.4	ug/L	5	Standard
	Tl	205	214533.7	2.3	**20.9744**	0.545	2.6	ug/L	5	Standard
	Pb	206	217593.0	0.7	**25.2083**	0.345	1.4	ug/L	368	Standard
	Pb	207	193262.5	0.7	**24.9312**	0.434	1.7	ug/L	311	Standard
	Pb	208	588597.2	1.1	**25.1530**	0.610	2.4	ug/L	939	Standard
	U	238	186470.1	0.1	**21.4571**	0.309	1.4	ug/L	3	Standard
>	Bi	209	678043.4	1.4				ug/L	663779	Standard

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Na	23	6.7	43.3	**7.1095**	3.969	55.8	mg/L	0	Standard
Mg	24	9066.0	4.5	**7.0978**	0.219	3.1	mg/L	117	Standard
K	39	1701.8	0.9	**3.7862**	0.114	3.0	mg/L	18	Standard
Ca	43	495.0	11.5	**17.7186**	1.841	10.4	mg/L	42	Standard
Fe	54	420.3	3.4	**0.0538**	0.012	22.1	mg/L	280	Standard
Fe	57	460.0	15.4	**0.3344**	0.120	36.0	mg/L	295	Standard
> **Sc-1**	45	84538.6	2.1				mg/L	81804	Standard
Cl	35	25068.7	0.9				ug/L	23537	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	3317.0	3.5				ug/L	2400	Standard
P	31	24171.0	6.8				ug/L	22884	Standard
S	34	890.0	3.9				ug/L	877	Standard
Sr	88	175.0	12.5				ug/L	152	Standard
C	12	3767.1	8.1				mg/L	623	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	252.3	18.9				mg/L	32	Standard
Ho-1	165	180.0	14.7				mg/L	13	Standard
Er	166	160.0	27.2				mg/L	23	Standard
I	127	7750.3	6.0				mg/L	1360	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.863	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.694	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.217
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.149
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: +20
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Method 6020 - Summary Report

Sample ID: +30
Sample Date/Time: Tuesday, February 24, 2015 12:58:30
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	170815.1	4.0				ug/L	151539	Standard
	Be	9	64498.7	1.0	**31.2351**	1.425	4.6	ug/L	10	Standard
	Al	27	2759399.3	1.5	**12.1462**	0.326	2.7	ug/L	1353	Standard
	Sc	45	85549.2	1.3				ug/L	81804	Standard
	Ti	47	1449.1	5.1	**2.6904**	0.158	5.9	ug/L	33	Standard
	V	51	375006.3	2.3	**32.0595**	0.829	2.6	ug/L	3161	Standard
	Cr	52	395746.1	1.8	**34.2003**	0.714	2.1	ug/L	13150	Standard
	Cr	53	61933.1	4.1	**41.2777**	1.998	4.8	ug/L	513	Standard
	Mn	55	817090.6	1.9	**50.6755**	1.145	2.3	ug/L	1028	Standard
	Co	59	393192.0	1.6	**31.1447**	0.627	2.0	ug/L	168	Standard
	Ni	60	110853.5	2.4	**33.0916**	1.005	3.0	ug/L	47	Standard
	Cu	65	100849.5	1.0	**31.9256**	0.453	1.4	ug/L	247	Standard
	Zn	66	416959.3	1.6	**273.7403**	6.001	2.2	ug/L	269	Standard
>	Ge	72	622653.1	0.7				ug/L	590931	Standard
	As	75	51580.8	0.1	**32.4812**	0.237	0.7	ug/L	-178	Standard
	Se	82	5760.1	2.3	**35.0216**	0.909	2.6	ug/L	27	Standard
	Se-1	77	4571.0	0.6	**41.3798**	0.545	1.3	ug/L	155	Standard
>	Ga	71	1613.4	3.4				mg/L	27	Standard
	Rb	85	23129.3	3.5				ug/L	52	Standard
	Y	89	655987.2	3.5				ug/L	610565	Standard
>	Rh	103	46.7	16.4				ug/L	10	Standard
	Mo	98	337.4	5.4	**0.0746**	0.003	4.2	ug/L	29	Standard
	Ag	107	359846.2	1.8	**30.2677**	0.497	1.6	ug/L	112	Standard
	Cd	111	108016.5	1.7	**32.4632**	0.867	2.7	mg/L	3	Standard
	Cd	114	264756.5	3.8	**32.8381**	0.926	2.8	ug/L	27	Standard
>	In	115	970803.0	1.9				ug/L	919955	Standard
	Sn	118	11776.2	4.5	**1.1038**	0.037	3.3	ug/L	932	Standard
	Sb	123	210747.6	2.1	**33.6205**	0.330	1.0	ug/L	105	Standard
	Ba	135	141468.6	2.1	**39.7938**	0.459	1.2	ug/L	29	Standard
	Ce	140	6172.9	2.2				ug/L	305	Standard
>	Tb	159	1483498.3	3.4				ug/L	1429880	Standard
	Ho	165	166.7	25.2				ug/L	13	Standard
	Tl	203	382995.0	2.4	**31.3605**	0.530	1.7	ug/L	5	Standard
	Tl	205	319733.5	0.9	**31.4453**	0.398	1.3	ug/L	5	Standard
	Pb	206	303602.2	2.6	**35.3961**	0.638	1.8	ug/L	368	Standard
	Pb	207	268507.0	1.7	**34.8560**	0.273	0.8	ug/L	311	Standard
	Pb	208	820063.7	1.2	**35.2658**	0.406	1.2	ug/L	939	Standard
	U	238	270125.7	2.1	**31.2655**	0.666	2.1	ug/L	3	Standard
>	Bi	209	674069.3	1.3				ug/L	663779	Standard

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Na	23	10.0	86.6	**11.9423**	12.712	106.4	mg/L	0	Standard
Mg	24	9234.5	2.3	**7.1466**	0.126	1.8	mg/L	117	Standard
K	39	1831.8	6.6	**4.0301**	0.280	7.0	mg/L	18	Standard
Ca	43	465.0	9.9	**16.3543**	1.879	11.5	mg/L	42	Standard
Fe	54	447.8	7.7	**0.0656**	0.015	23.6	mg/L	280	Standard
Fe	57	425.0	13.9	**0.2576**	0.126	48.9	mg/L	295	Standard
> **Sc-1**	45	85549.2	1.3				mg/L	81804	Standard
Cl	35	25166.2	2.2				ug/L	23537	Standard
Kr	83	2.7	57.3				ug/L	3	Standard
Br	81	3120.3	1.4				ug/L	2400	Standard
P	31	24346.2	1.3				ug/L	22884	Standard
S	34	888.4	15.8				ug/L	877	Standard
Sr	88	166.7	14.2				ug/L	152	Standard
C	12	3950.5	7.9				mg/L	623	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	238.2	22.4				mg/L	32	Standard
Ho-1	165	166.7	25.2				mg/L	13	Standard
Er	166	176.7	21.4				mg/L	23	Standard
I	127	7930.4	2.3				mg/L	1360	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.720	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.368	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	105.527
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.550
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, February 24, 2015 13:01:43
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	165877.3	4.0				ug/L	151539	Standard
	Be	9	100920.7	5.8	**50.3021**	3.127	6.2	ug/L	10	Standard
	Al	27	10730468.8	3.0	**48.6586**	0.466	1.0	ug/L	1353	Standard
	Sc	45	81952.9	3.5				ug/L	81804	Standard
	Ti	47	51948.3	2.2	**100.1011**	1.213	1.2	ug/L	33	Standard
	V	51	592678.2	1.1	**51.6107**	0.105	0.2	ug/L	3161	Standard
	Cr	52	578283.4	2.1	**51.3099**	0.782	1.5	ug/L	13150	Standard
	Cr	53	74909.9	4.3	**50.7405**	1.673	3.3	ug/L	513	Standard
	Mn	55	803966.2	1.5	**50.6142**	0.595	1.2	ug/L	1028	Standard
	Co	59	624775.6	2.0	**50.2430**	0.619	1.2	ug/L	168	Standard
	Ni	60	168713.5	2.3	**51.1296**	0.787	1.5	ug/L	47	Standard
	Cu	65	160779.4	1.8	**51.7219**	1.200	2.3	ug/L	247	Standard
	Zn	66	75939.0	3.4	**50.3916**	1.804	3.6	ug/L	269	Standard
>	**Ge**	72	613360.1	1.0				ug/L	590931	Standard
	As	75	81363.3	1.4	**51.9370**	0.997	1.9	ug/L	-178	Standard
	Se	82	8462.1	2.1	**52.3065**	0.957	1.8	ug/L	27	Standard
	Se-1	77	5760.8	3.0	**53.2996**	1.199	2.2	ug/L	155	Standard
>	**Ga**	71	83.3	25.0				mg/L	27	Standard
	Rb	85	1280.1	3.1				ug/L	52	Standard
	Y	89	650590.9	1.9				ug/L	610565	Standard
>	**Rh**	103	51.7	14.8				ug/L	10	Standard
	Mo	98	388792.2	0.8	**102.5796**	1.296	1.3	ug/L	29	Standard
	Ag	107	605545.2	1.7	**51.2509**	0.614	1.2	ug/L	112	Standard
	Cd	111	170835.5	0.5	**51.6496**	0.501	1.0	mg/L	3	Standard
	Cd	114	418760.3	1.9	**52.2774**	1.296	2.5	ug/L	27	Standard
>	**In**	115	964827.1	0.6				ug/L	919955	Standard
	Sn	118	499870.2	1.8	**50.5851**	0.997	2.0	ug/L	932	Standard
	Sb	123	349530.8	1.2	**56.1155**	0.412	0.7	ug/L	105	Standard
	Ba	135	179673.6	1.7	**50.8578**	0.609	1.2	ug/L	29	Standard
	Ce	140	260.0	10.7				ug/L	305	Standard
>	**Tb**	159	1475898.9	2.1				ug/L	1429880	Standard
	Ho	165	23.3	75.3				ug/L	13	Standard
	Tl	203	614687.7	1.7	**50.0864**	0.197	0.4	ug/L	5	Standard
	Tl	205	515631.6	2.3	**50.4587**	0.672	1.3	ug/L	5	Standard
	Pb	206	435577.4	1.7	**50.5581**	0.197	0.4	ug/L	368	Standard
	Pb	207	386296.9	0.5	**49.9264**	0.418	0.8	ug/L	311	Standard
	Pb	208	1190473.4	1.1	**50.9652**	0.140	0.3	ug/L	939	Standard
	U	238	436081.7	1.2	**50.2259**	0.110	0.2	ug/L	3	Standard
>	**Bi**	209	677391.2	1.3				ug/L	663779	Standard

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Na	23	5.0	100.0	**4.9973**	7.432	148.7	mg/L	0	Standard
Mg	24	6926.6	6.1	**5.5686**	0.175	3.1	mg/L	117	Standard
K	39	2278.5	7.6	**5.2574**	0.509	9.7	mg/L	18	Standard
Ca	43	163.3	23.8	**4.8759**	1.368	28.1	mg/L	42	Standard
Fe	54	9814.3	3.9	**5.3278**	0.175	3.3	mg/L	280	Standard
Fe	57	2815.3	7.2	**5.1899**	0.232	4.5	mg/L	295	Standard
> **Sc-1**	45	81952.9	3.5				mg/L	81804	Standard
Cl	35	24845.0	2.0				ug/L	23537	Standard
Kr	83	3.0	57.7				ug/L	3	Standard
Br	81	2763.6	7.5				ug/L	2400	Standard
P	31	25104.2	6.1				ug/L	22884	Standard
S	34	1025.0	9.3				ug/L	877	Standard
Sr	88	153.3	15.4				ug/L	152	Standard
C	12	803.4	19.9				mg/L	623	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	18.2	3.0				mg/L	32	Standard
Ho-1	165	23.3	75.3				mg/L	13	Standard
Er	166	36.7	31.5				mg/L	23	Standard
I	127	1000.0	5.2				mg/L	1360	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	100.604		
Al	27	97.317		
Sc	45			
Ti	47	100.101		
V	51	103.221		
Cr	52	102.620		
Cr	53			
Mn	55	101.228		
Co	59	100.486		
Ni	60	102.259		
Cu	65	103.444		
Zn	66	100.783		
> Ge	72		103.796	
As	75	103.874		
Se	82	104.613		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	102.580		
Ag	107	102.502		
Cd	111	103.299		
Cd	114			
In	115			104.878
Sn	118	101.170		
Sb	123	112.231		
Ba	135	101.716		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.173		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.930		
U	238	100.452		
Bi	209			102.051
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Sb	123	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, February 24, 2015 13:04:54
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	163547.5	7.1				ug/L	151539	Standard
	Be	9	10.0	86.6	**0.0009**	0.004	448.9	ug/L	10	Standard
	Al	27	2153.5	24.0	**-0.0041**	0.002	40.7	ug/L	1353	Standard
	Sc	45	81748.3	0.9				ug/L	81804	Standard
	Ti	47	39.3	19.1	**0.0137**	0.014	100.2	ug/L	33	Standard
	V	51	3045.6	1.3	**-0.0252**	0.004	16.0	ug/L	3161	Standard
	Cr	52	12450.8	1.6	**-0.0626**	0.027	42.8	ug/L	13150	Standard
	Cr	53	633.3	5.3	**0.0883**	0.024	27.4	ug/L	513	Standard
	Mn	55	1022.7	7.4	**-0.0136**	0.004	31.9	ug/L	1028	Standard
	Co	59	223.7	31.9	**0.0015**	0.005	366.8	ug/L	168	Standard
	Ni	60	61.3	13.1	**-0.0048**	0.002	47.3	ug/L	47	Standard
	Cu	65	270.7	5.7	**0.0066**	0.004	66.3	ug/L	247	Standard
	Zn	66	321.3	5.7	**-0.0505**	0.015	30.3	ug/L	269	Standard
>	Ge	72	607625.4	1.8				ug/L	590931	Standard
	As	75	-142.6	33.4	**0.0376**	0.031	82.1	ug/L	-178	Standard
	Se	82	32.2	29.8	**0.0369**	0.058	156.5	ug/L	27	Standard
	Se-1	77	152.0	16.5	**0.1400**	0.264	188.3	ug/L	155	Standard
>	Ga	71	28.3	62.0				mg/L	27	Standard
	Rb	85	41.7	13.9				ug/L	52	Standard
	Y	89	621476.1	1.4				ug/L	610565	Standard
>	Rh	103	10.0	50.0				ug/L	10	Standard
	Mo	98	171.6	9.3	**0.0320**	0.004	12.4	ug/L	29	Standard
	Ag	107	166.0	36.5	**0.0012**	0.005	415.0	ug/L	112	Standard
	Cd	111	9.0	54.9	**0.0017**	0.001	84.0	mg/L	3	Standard
	Cd	114	40.9	71.9	**-0.0047**	0.004	81.8	ug/L	27	Standard
>	In	115	953150.0	2.3				ug/L	919955	Standard
	Sn	118	900.0	6.9	**0.0102**	0.007	64.7	ug/L	932	Standard
	Sb	123	528.5	10.1	**0.0695**	0.010	14.2	ug/L	105	Standard
	Ba	135	45.3	13.3	**-0.0135**	0.002	11.6	ug/L	29	Standard
	Ce	140	26.7	10.8				ug/L	305	Standard
>	Tb	159	1459311.4	1.3				ug/L	1429880	Standard
	Ho	165	15.0	33.3				ug/L	13	Standard
	Tl	203	95.3	42.8	**0.0067**	0.003	50.5	ug/L	5	Standard
	Tl	205	71.7	64.8	**0.0024**	0.005	192.8	ug/L	5	Standard
	Pb	206	404.0	13.1	**-0.0068**	0.006	89.7	ug/L	368	Standard
	Pb	207	358.7	13.4	**-0.0021**	0.006	290.0	ug/L	311	Standard
	Pb	208	1062.3	10.6	**-0.0056**	0.005	85.8	ug/L	939	Standard
	U	238	36.3	71.0	**0.0014**	0.003	211.8	ug/L	3	Standard
>	Bi	209	663392.6	0.7				ug/L	663779	Standard

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Na	23	0.0		**-2.5666**			mg/L	0	Standard
Mg	24	90.0	28.9	**-0.0375**	0.022	58.9	mg/L	117	Standard
K	39	28.3	10.2	**0.0082**	0.006	76.1	mg/L	18	Standard
Ca	43	26.7	28.6	**-0.6298**	0.319	50.7	mg/L	42	Standard
Fe	54	267.0	12.8	**-0.0248**	0.018	73.5	mg/L	280	Standard
Fe	57	325.0	5.3	**0.0900**	0.041	45.9	mg/L	295	Standard
> **Sc-1**	45	81748.3	0.9				mg/L	81804	Standard
Cl	35	23271.9	0.9				ug/L	23537	Standard
Kr	83	4.3	26.6				ug/L	3	Standard
Br	81	2396.9	9.2				ug/L	2400	Standard
P	31	25615.1	9.3				ug/L	22884	Standard
S	34	1003.4	10.8				ug/L	877	Standard
Sr	88	151.7	16.3				ug/L	152	Standard
C	12	716.7	4.9				mg/L	623	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	29.5	89.3				mg/L	32	Standard
Ho-1	165	15.0	33.3				mg/L	13	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	753.4	8.4				mg/L	1360	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.825	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.608	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.942	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Tuesday, February 24, 2015 13:07:11
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Method 6020 - Summary Report

Sample ID: L1502087901
Sample Date/Time: Tuesday, February 24, 2015 14:02:51
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	193269.7	4.3				ug/L	151539	Standard
	Be	9	143.3	14.5	**0.0571**	0.006	11.2	ug/L	10	Standard
	Al	27	175728980.4	4.5	**685.6297**	60.181	8.8	ug/L	1353	Standard
	Sc	45	84978.0	4.9				ug/L	81804	Standard
	Ti	47	2683.2	4.8	**5.0493**	0.336	6.7	ug/L	33	Standard
	V	51	44787.5	3.4	**3.5802**	0.197	5.5	ug/L	3161	Standard
	Cr	52	36825.0	1.9	**2.0988**	0.119	5.7	ug/L	13150	Standard
	Cr	53	17541.8	1.9	**11.4680**	0.304	2.7	ug/L	513	Standard
	Mn	55	10545287.7	2.1	**656.5936**	22.989	3.5	ug/L	1028	Standard
	Co	59	51018.4	1.2	**4.0365**	0.106	2.6	ug/L	168	Standard
	Ni	60	219452.1	1.7	**65.6963**	2.268	3.5	ug/L	47	Standard
	Cu	65	13102.3	0.8	**4.0871**	0.103	2.5	ug/L	247	Standard
	Zn	66	147124.1	2.3	**96.6234**	1.598	1.7	ug/L	269	Standard
>	**Ge**	72	621287.5	1.9				ug/L	590931	Standard
	As	75	3646.0	14.0	**2.4181**	0.283	11.7	ug/L	-178	Standard
	Se	82	5327.8	3.6	**32.4440**	0.581	1.8	ug/L	27	Standard
	Se-1	77	4276.9	1.9	**38.7187**	0.310	0.8	ug/L	155	Standard
>	**Ga**	71	625.0	9.7				mg/L	27	Standard
	Rb	85	42584.8	3.0				ug/L	52	Standard
	Y	89	686710.1	4.3				ug/L	610565	Standard
>	**Rh**	103	450.0	10.6				ug/L	10	Standard
	Mo	98	29449.9	1.5	**7.7130**	0.174	2.3	ug/L	29	Standard
	Ag	107	204.3	6.6	**0.0042**	0.001	26.9	ug/L	112	Standard
	Cd	111	10644.4	2.0	**3.1984**	0.041	1.3	mg/L	3	Standard
	Cd	114	26503.7	3.4	**3.2793**	0.072	2.2	ug/L	27	Standard
>	**In**	115	970461.4	1.3				ug/L	919955	Standard
	Sn	118	2346.8	5.0	**0.1545**	0.015	9.4	ug/L	932	Standard
	Sb	123	2884.4	7.8	**0.4437**	0.031	7.1	ug/L	105	Standard
	Ba	135	79517.5	0.9	**22.3647**	0.228	1.0	ug/L	29	Standard
	Ce	140	22902.3	2.2				ug/L	305	Standard
>	**Tb**	159	1474555.5	1.0				ug/L	1429880	Standard
	Ho	165	1146.7	4.1				ug/L	13	Standard
	Tl	203	2890.3	2.2	**0.2539**	0.003	1.1	ug/L	5	Standard
	Tl	205	2273.5	6.4	**0.2362**	0.013	5.5	ug/L	5	Standard
	Pb	206	4920.5	2.0	**0.5646**	0.014	2.5	ug/L	368	Standard
	Pb	207	2968.6	1.0	**0.3665**	0.008	2.1	ug/L	311	Standard
	Pb	208	10364.0	0.9	**0.4291**	0.010	2.4	ug/L	939	Standard
	U	238	167659.3	1.1	**20.9168**	0.337	1.6	ug/L	3	Standard
>	**Bi**	209	625370.8	1.4				ug/L	663779	Standard

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Na	23	21.7	48.0	**29.0977**	15.900	54.6	mg/L	0	Standard
Mg	24	93950.4	1.4	**74.3287**	3.153	4.2	mg/L	117	Standard
K	39	811.7	6.8	**1.7647**	0.060	3.4	mg/L	18	Standard
Ca	43	1565.1	2.5	**59.5364**	1.815	3.0	mg/L	42	Standard
Fe	54	764.0	5.8	**0.2384**	0.020	8.2	mg/L	280	Standard
Fe	57	800.0	6.6	**1.0054**	0.112	11.1	mg/L	295	Standard
> **Sc-1**	45	84978.0	4.9				mg/L	81804	Standard
Cl	35	44318.1	4.0				ug/L	23537	Standard
Kr	83	3.3	62.4				ug/L	3	Standard
Br	81	42716.9	5.8				ug/L	2400	Standard
P	31	30980.1	8.0				ug/L	22884	Standard
S	34	866.7	4.3				ug/L	877	Standard
Sr	88	1150.0	6.0				ug/L	152	Standard
C	12	1160.0	0.9				mg/L	623	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	323.3	17.9				mg/L	7	Standard
Dy	164	1576.1	3.1				mg/L	32	Standard
Ho-1	165	1146.7	4.1				mg/L	13	Standard
Er	166	1266.7	5.9				mg/L	23	Standard
I	127	903347.1	3.8				mg/L	1360	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		127.538	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.137	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	105.490	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	94.214	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, February 24, 2015 14:06:24
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	181917.5	1.7				ug/L	151539	Standard
	Be	9	109781.3	0.7	**49.8733**	1.010	2.0	ug/L	10	Standard
	Al	27	11738928.3	1.7	**48.5287**	0.648	1.3	ug/L	1353	Standard
	Sc	45	86043.8	3.6				ug/L	81804	Standard
	Ti	47	55041.8	1.4	**96.7588**	2.559	2.6	ug/L	33	Standard
	V	51	616480.9	0.8	**48.9540**	0.931	1.9	ug/L	3161	Standard
	Cr	52	620697.3	1.6	**50.2068**	0.664	1.3	ug/L	13150	Standard
	Cr	53	80272.2	3.1	**49.5845**	0.916	1.8	ug/L	513	Standard
	Mn	55	853378.1	1.8	**48.9949**	0.391	0.8	ug/L	1028	Standard
	Co	59	670492.5	0.5	**49.1834**	0.643	1.3	ug/L	168	Standard
	Ni	60	186024.2	1.4	**51.4230**	0.724	1.4	ug/L	47	Standard
	Cu	65	174747.0	1.1	**51.2690**	0.778	1.5	ug/L	247	Standard
	Zn	66	83617.8	0.6	**50.6102**	0.787	1.6	ug/L	269	Standard
>	Ge	72	672539.6	1.6				ug/L	590931	Standard
	As	75	88971.1	0.2	**51.7998**	0.745	1.4	ug/L	-178	Standard
	Se	82	9282.4	0.7	**52.3342**	0.507	1.0	ug/L	27	Standard
	Se-1	77	6222.6	1.6	**52.5019**	1.226	2.3	ug/L	155	Standard
>	Ga	71	93.3	6.2				mg/L	27	Standard
	Rb	85	1425.1	2.9				ug/L	52	Standard
	Y	89	687788.2	2.4				ug/L	610565	Standard
>	Rh	103	51.7	11.2				ug/L	10	Standard
	Mo	98	436440.1	1.3	**105.3215**	1.385	1.3	ug/L	29	Standard
	Ag	107	658685.5	1.4	**50.9989**	1.146	2.2	ug/L	112	Standard
	Cd	111	186561.9	0.4	**51.5919**	0.594	1.2	mg/L	3	Standard
	Cd	114	460222.8	0.4	**52.5485**	0.603	1.1	ug/L	27	Standard
>	In	115	1054853.2	0.8				ug/L	919955	Standard
	Sn	118	549282.2	1.4	**50.8386**	0.359	0.7	ug/L	932	Standard
	Sb	123	367165.7	0.3	**53.9185**	0.466	0.9	ug/L	105	Standard
	Ba	135	190288.9	1.1	**49.2698**	0.777	1.6	ug/L	29	Standard
	Ce	140	301.7	10.7				ug/L	305	Standard
>	Tb	159	1583058.8	1.7				ug/L	1429880	Standard
	Ho	165	10.0	50.0				ug/L	13	Standard
	Tl	203	662568.4	0.7	**50.7981**	0.351	0.7	ug/L	5	Standard
	Tl	205	563741.4	0.7	**51.9078**	0.167	0.3	ug/L	5	Standard
	Pb	206	465815.3	1.6	**50.8762**	1.035	2.0	ug/L	368	Standard
	Pb	207	417922.5	0.7	**50.8195**	0.584	1.1	ug/L	311	Standard
	Pb	208	1279699.8	0.4	**51.5470**	0.384	0.7	ug/L	939	Standard
	U	238	484629.5	0.8	**52.5168**	0.273	0.5	ug/L	3	Standard
>	Bi	209	719953.6	0.4				ug/L	663779	Standard

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Na	23	0.0		**-2.5666**			mg/L	0	Standard
Mg	24	7226.7	1.6	**5.5403**	0.206	3.7	mg/L	117	Standard
K	39	2128.5	3.6	**4.6679**	0.240	5.1	mg/L	18	Standard
Ca	43	168.3	11.2	**4.7744**	0.502	10.5	mg/L	42	Standard
Fe	54	10186.6	2.1	**5.2706**	0.296	5.6	mg/L	280	Standard
Fe	57	2850.3	3.7	**4.9904**	0.181	3.6	mg/L	295	Standard
> **Sc-1**	45	86043.8	3.6				mg/L	81804	Standard
Cl	35	26212.0	1.8				ug/L	23537	Standard
Kr	83	2.7	43.3				ug/L	3	Standard
Br	81	3380.4	5.7				ug/L	2400	Standard
P	31	28946.1	8.0				ug/L	22884	Standard
S	34	910.0	6.8				ug/L	877	Standard
Sr	88	163.3	29.7				ug/L	152	Standard
C	12	866.7	7.7				mg/L	623	Standard
N	14	6.7	173.2				mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	7	Standard
Dy	164	21.9	113.6				mg/L	32	Standard
Ho-1	165	10.0	50.0				mg/L	13	Standard
Er	166	30.0	33.3				mg/L	23	Standard
I	127	6905.1	48.1				mg/L	1360	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	99.747		
Al	27	97.057		
Sc	45			
Ti	47	96.759		
V	51	97.908		
Cr	52	100.414		
Cr	53			
Mn	55	97.990		
Co	59	98.367		
Ni	60	102.846		
Cu	65	102.538		
Zn	66	101.220		
> Ge	72		113.810	
As	75	103.600		
Se	82	104.668		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	105.322		
Ag	107	101.998		
Cd	111	103.184		
Cd	114			
In	115			114.664
Sn	118	101.677		
Sb	123	107.837		
Ba	135	98.540		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.596		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.094		
U	238	105.034		
Bi	209			108.463
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, February 24, 2015 14:10:35
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	184564.4	2.5				ug/L	151539	Standard
	Be	9	25.0	52.9	**0.0071**	0.006	81.2	ug/L	10	Standard
	Al	27	9255.8	125.1	**0.0231**	0.046	197.7	ug/L	1353	Standard
	Sc	45	86320.3	2.9				ug/L	81804	Standard
	Ti	47	41.7	25.9	**0.0121**	0.021	171.4	ug/L	33	Standard
	V	51	3429.3	3.7	**-0.0156**	0.010	62.4	ug/L	3161	Standard
	Cr	52	13864.3	0.7	**-0.0349**	0.030	86.6	ug/L	13150	Standard
	Cr	53	656.7	3.1	**0.0680**	0.007	10.2	ug/L	513	Standard
	Mn	55	1478.7	42.9	**0.0083**	0.039	464.7	ug/L	1028	Standard
	Co	59	226.3	29.4	**0.0003**	0.005	1621.9	ug/L	168	Standard
	Ni	60	87.7	26.2	**0.0012**	0.007	589.8	ug/L	47	Standard
	Cu	65	300.7	7.8	**0.0085**	0.007	85.4	ug/L	247	Standard
	Zn	66	373.0	7.9	**-0.0359**	0.020	55.0	ug/L	269	Standard
>	**Ge**	72	660709.7	2.4				ug/L	590931	Standard
	As	75	-253.9	23.5	**-0.0205**	0.034	165.6	ug/L	-178	Standard
	Se	82	27.0	48.5	**-0.0078**	0.078	1004.1	ug/L	27	Standard
	Se-1	77	166.3	14.5	**0.1466**	0.211	144.2	ug/L	155	Standard
>	**Ga**	71	26.7	78.1				mg/L	27	Standard
	Rb	85	90.0	14.7				ug/L	52	Standard
	Y	89	683045.8	2.8				ug/L	610565	Standard
>	**Rh**	103	5.0	100.0				ug/L	10	Standard
	Mo	98	207.6	27.0	**0.0359**	0.013	36.6	ug/L	29	Standard
	Ag	107	226.0	73.6	**0.0043**	0.013	291.7	ug/L	112	Standard
	Cd	111	43.3	134.7	**0.0108**	0.016	147.4	mg/L	3	Standard
	Cd	114	122.5	140.1	**0.0040**	0.019	487.0	ug/L	27	Standard
>	**In**	115	1061873.2	1.7				ug/L	919955	Standard
	Sn	118	1148.4	26.6	**0.0236**	0.028	117.2	ug/L	932	Standard
	Sb	123	241.6	34.2	**0.0187**	0.012	63.8	ug/L	105	Standard
	Ba	135	101.7	85.6	**-0.0005**	0.022	4735.5	ug/L	29	Standard
	Ce	140	40.0	43.3				ug/L	305	Standard
>	**Tb**	159	1593274.3	3.0				ug/L	1429880	Standard
	Ho	165	23.3	44.6				ug/L	13	Standard
	Tl	203	161.7	132.5	**0.0111**	0.016	148.3	ug/L	5	Standard
	Tl	205	115.0	69.6	**0.0056**	0.007	126.8	ug/L	5	Standard
	Pb	206	459.3	17.1	**-0.0054**	0.009	169.3	ug/L	368	Standard
	Pb	207	382.7	19.6	**-0.0038**	0.010	256.6	ug/L	311	Standard
	Pb	208	1188.4	11.7	**-0.0052**	0.005	100.4	ug/L	939	Standard
	U	238	69.0	74.6	**0.0045**	0.005	120.3	ug/L	3	Standard
>	**Bi**	209	734484.7	1.7				ug/L	663779	Standard

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Na	23	1.7	173.2	**-0.1365**	4.209	3084.3	mg/L	0	Standard
Mg	24	111.7	12.9	**-0.0247**	0.010	40.9	mg/L	117	Standard
K	39	33.3	56.8	**0.0150**	0.039	260.4	mg/L	18	Standard
Ca	43	41.7	30.2	**-0.1083**	0.505	466.0	mg/L	42	Standard
Fe	54	258.6	3.9	**-0.0372**	0.002	6.6	mg/L	280	Standard
Fe	57	306.7	12.0	**0.0204**	0.088	430.0	mg/L	295	Standard
> **Sc-1**	45	86320.3	2.9				mg/L	81804	Standard
Cl	35	26543.2	2.6				ug/L	23537	Standard
Kr	83	2.7	43.3				ug/L	3	Standard
Br	81	3310.4	6.2				ug/L	2400	Standard
P	31	25900.6	10.0				ug/L	22884	Standard
S	34	961.7	12.0				ug/L	877	Standard
Sr	88	168.3	6.9				ug/L	152	Standard
C	12	716.7	5.8				mg/L	623	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	11.9	48.7				mg/L	32	Standard
Ho-1	165	23.3	44.6				mg/L	13	Standard
Er	166	30.0	33.3				mg/L	23	Standard
I	127	2025.1	8.9				mg/L	1360	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		111.808	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		115.427
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.652
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW 48 WG513220-02
Sample Date/Time: Tuesday, February 24, 2015 14:35:38
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	180138.1	1.9				ug/L	151539	Standard
	Be	9	11.7	49.5	**0.0013**	0.003	197.6	ug/L	10	Standard
	Al	27	4187.2	4.5	**0.0036**	0.001	26.1	ug/L	1353	Standard
	Sc	45	89409.8	2.2				ug/L	81804	Standard
	Ti	47	43.3	19.9	**0.0139**	0.015	111.0	ug/L	33	Standard
	V	51	3708.1	2.3	**0.0036**	0.005	131.1	ug/L	3161	Standard
	Cr	52	14431.5	1.1	**-0.0015**	0.008	528.9	ug/L	13150	Standard
	Cr	53	521.7	14.0	**-0.0214**	0.044	206.6	ug/L	513	Standard
	Mn	55	3642.1	11.3	**0.1321**	0.024	18.3	ug/L	1028	Standard
	Co	59	184.7	5.0	**-0.0030**	0.001	20.2	ug/L	168	Standard
	Ni	60	109.0	6.9	**0.0067**	0.002	29.7	ug/L	47	Standard
	Cu	65	626.3	1.6	**0.1038**	0.004	4.1	ug/L	247	Standard
	Zn	66	2528.9	2.7	**1.2810**	0.035	2.7	ug/L	269	Standard
>	**Ge**	72	668352.1	0.8				ug/L	590931	Standard
	As	75	-218.5	7.7	**0.0016**	0.010	620.1	ug/L	-178	Standard
	Se	82	36.6	19.7	**0.0438**	0.039	89.8	ug/L	27	Standard
	Se-1	77	154.3	7.7	**0.0260**	0.112	431.4	ug/L	155	Standard
>	**Ga**	71	35.0	24.7				mg/L	27	Standard
	Rb	85	366.7	3.9				ug/L	52	Standard
	Y	89	680184.2	0.5				ug/L	610565	Standard
>	**Rh**	103	8.3	34.6				ug/L	10	Standard
	Mo	98	118.5	36.8	**0.0151**	0.011	69.9	ug/L	29	Standard
	Ag	107	118.3	11.3	**-0.0037**	0.001	30.4	ug/L	112	Standard
	Cd	111	8.5	36.8	**0.0014**	0.001	64.3	mg/L	3	Standard
	Cd	114	47.7	45.6	**-0.0043**	0.002	57.6	ug/L	27	Standard
>	**In**	115	1041285.9	0.9				ug/L	919955	Standard
	Sn	118	1078.4	3.1	**0.0192**	0.004	18.4	ug/L	932	Standard
	Sb	123	234.2	43.0	**0.0183**	0.015	81.6	ug/L	105	Standard
	Ba	135	183.0	1.6	**0.0215**	0.001	4.0	ug/L	29	Standard
	Ce	140	256.7	11.1				ug/L	305	Standard
>	**Tb**	159	1575028.8	1.5				ug/L	1429880	Standard
	Ho	165	28.3	10.2				ug/L	13	Standard
	Tl	203	31.3	38.1	**0.0012**	0.001	79.3	ug/L	5	Standard
	Tl	205	26.7	10.8	**-0.0023**	0.000	12.0	ug/L	5	Standard
	Pb	206	562.3	3.2	**0.0063**	0.002	29.3	ug/L	368	Standard
	Pb	207	479.3	6.7	**0.0084**	0.004	42.6	ug/L	311	Standard
	Pb	208	1492.0	5.0	**0.0077**	0.003	33.3	ug/L	939	Standard
	U	238	7.0	65.5	**-0.0021**	0.000	23.9	ug/L	3	Standard
>	**Bi**	209	724555.7	0.7				ug/L	663779	Standard

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Na	23	0.0		**-2.5666**			mg/L	0	Standard
Mg	24	131.7	15.8	**-0.0126**	0.015	121.3	mg/L	117	Standard
K	39	21.7	66.6	**-0.0121**	0.030	249.4	mg/L	18	Standard
Ca	43	58.3	39.6	**0.4658**	0.916	196.7	mg/L	42	Standard
Fe	54	280.1	1.2	**-0.0308**	0.002	7.1	mg/L	280	Standard
Fe	57	305.0	5.9	**-0.0050**	0.031	620.8	mg/L	295	Standard
> **Sc-1**	45	89409.8	2.2				mg/L	81804	Standard
Cl	35	27744.7	1.0				ug/L	23537	Standard
Kr	83	3.0	33.3				ug/L	3	Standard
Br	81	3180.3	1.1				ug/L	2400	Standard
P	31	27246.2	3.2				ug/L	22884	Standard
S	34	951.7	1.8				ug/L	877	Standard
Sr	88	131.7	4.4				ug/L	152	Standard
C	12	680.0	13.1				mg/L	623	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	21.6	24.2				mg/L	32	Standard
Ho-1	165	28.3	10.2				mg/L	13	Standard
Er	166	36.7	31.5				mg/L	23	Standard
I	127	1163.4	10.7				mg/L	1360	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		118.872	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		113.102	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.189
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.156
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 48 WG513220-03
Sample Date/Time: Tuesday, February 24, 2015 14:38:49
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	181376.2	2.2				ug/L	151539	Standard
	Be	9	106565.2	1.4	**48.5698**	1.683	3.5	ug/L	10	Standard
	Al	27	5544.4	9.4	**0.0091**	0.003	27.9	ug/L	1353	Standard
	Sc	45	87839.0	3.1				ug/L	81804	Standard
	Ti	47	42.7	9.5	**0.0132**	0.007	51.6	ug/L	33	Standard
	V	51	632662.2	2.2	**50.8617**	1.189	2.3	ug/L	3161	Standard
	Cr	52	629410.0	1.6	**51.5810**	1.657	3.2	ug/L	13150	Standard
	Cr	53	83124.1	2.3	**52.0085**	1.505	2.9	ug/L	513	Standard
	Mn	55	873653.7	1.1	**50.7793**	0.448	0.9	ug/L	1028	Standard
	Co	59	669212.9	2.5	**49.6782**	0.352	0.7	ug/L	168	Standard
	Ni	60	187002.4	1.4	**52.3250**	0.547	1.0	ug/L	47	Standard
	Cu	65	177085.2	1.0	**52.5914**	0.579	1.1	ug/L	247	Standard
	Zn	66	86626.9	0.7	**53.0857**	0.771	1.5	ug/L	269	Standard
>	**Ge**	72	664424.0	1.8				ug/L	590931	Standard
	As	75	86267.7	1.8	**50.8347**	0.365	0.7	ug/L	-178	Standard
	Se	82	8794.5	1.8	**50.1778**	0.063	0.1	ug/L	27	Standard
	Se-1	77	6069.9	0.6	**51.8214**	0.700	1.4	ug/L	155	Standard
>	**Ga**	71	43.3	24.0				mg/L	27	Standard
	Rb	85	330.0	4.0				ug/L	52	Standard
	Y	89	667707.8	1.0				ug/L	610565	Standard
>	**Rh**	103	46.7	37.6				ug/L	10	Standard
	Mo	98	1793.1	1.9	**0.4215**	0.010	2.3	ug/L	29	Standard
	Ag	107	654916.7	1.5	**50.9962**	0.677	1.3	ug/L	112	Standard
	Cd	111	182316.4	0.9	**50.7083**	0.335	0.7	mg/L	3	Standard
	Cd	114	445142.3	0.7	**51.1207**	0.514	1.0	ug/L	27	Standard
>	**In**	115	1048742.0	0.4				ug/L	919955	Standard
	Sn	118	2516.9	3.2	**0.1525**	0.006	4.2	ug/L	932	Standard
	Sb	123	372463.9	0.2	**55.0136**	0.142	0.3	ug/L	105	Standard
	Ba	135	199830.6	1.2	**52.0390**	0.403	0.8	ug/L	29	Standard
	Ce	140	256.7	19.7				ug/L	305	Standard
>	**Tb**	159	1589598.8	1.3				ug/L	1429880	Standard
	Ho	165	15.0	33.3				ug/L	13	Standard
	Tl	203	659853.1	1.5	**50.0710**	1.016	2.0	ug/L	5	Standard
	Tl	205	560379.0	2.0	**51.0620**	0.642	1.3	ug/L	5	Standard
	Pb	206	470961.0	0.5	**50.9062**	0.518	1.0	ug/L	368	Standard
	Pb	207	410226.3	0.4	**49.3668**	0.393	0.8	ug/L	311	Standard
	Pb	208	1286405.8	1.2	**51.2846**	0.947	1.8	ug/L	939	Standard
	U	238	465295.0	1.4	**49.9031**	0.856	1.7	ug/L	3	Standard
>	**Bi**	209	727483.3	1.0				ug/L	663779	Standard

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Na	23	3.3	173.2	**1.9995**	7.909	395.5	mg/L	0	Standard
Mg	24	135.0	17.0	**-0.0080**	0.020	246.9	mg/L	117	Standard
K	39	26.7	28.6	**-0.0002**	0.016	10278.2	mg/L	18	Standard
Ca	43	48.3	41.8	**0.1189**	0.780	656.1	mg/L	42	Standard
Fe	54	276.3	8.0	**-0.0301**	0.013	43.9	mg/L	280	Standard
Fe	57	318.3	12.0	**0.0305**	0.066	216.4	mg/L	295	Standard
> **Sc-1**	45	87839.0	3.1				mg/L	81804	Standard
Cl	35	27361.4	0.9				ug/L	23537	Standard
Kr	83	5.3	21.7				ug/L	3	Standard
Br	81	3010.3	3.2				ug/L	2400	Standard
P	31	28219.6	4.5				ug/L	22884	Standard
S	34	921.7	10.1				ug/L	877	Standard
Sr	88	145.0	21.5				ug/L	152	Standard
C	12	713.4	2.9				mg/L	623	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	30.9	50.5				mg/L	32	Standard
Ho-1	165	15.0	33.3				mg/L	13	Standard
Er	166	50.0	40.0				mg/L	23	Standard
I	127	1430.1	6.0				mg/L	1360	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.689	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		112.437	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.999
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.597
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1501166206
Sample Date/Time: Tuesday, February 24, 2015 14:42:00
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	172454.5	2.2				ug/L	151539	Standard
	Be	9	12196.6	2.8	**5.8410**	0.162	2.8	ug/L	10	Standard
	Al	27	2311.8	9.7	**-0.0038**	0.001	23.1	ug/L	1353	Standard
	Sc	45	85815.9	3.7				ug/L	81804	Standard
	Ti	47	38.0	9.1	**0.0070**	0.007	98.0	ug/L	33	Standard
	V	51	119821.3	2.5	**9.6975**	0.316	3.3	ug/L	3161	Standard
	Cr	52	108731.1	0.6	**8.1968**	0.015	0.2	ug/L	13150	Standard
	Cr	53	13405.9	2.8	**8.3578**	0.201	2.4	ug/L	513	Standard
	Mn	55	390884.8	2.2	**23.3858**	0.462	2.0	ug/L	1028	Standard
	Co	59	56157.2	1.7	**4.2844**	0.053	1.2	ug/L	168	Standard
	Ni	60	80214.4	0.8	**23.1335**	0.248	1.1	ug/L	47	Standard
	Cu	65	40608.1	4.0	**12.3727**	0.439	3.6	ug/L	247	Standard
	Zn	66	40007.4	1.7	**25.1404**	0.364	1.4	ug/L	269	Standard
>	**Ge**	72	644246.1	0.7				ug/L	590931	Standard
	As	75	15969.1	2.1	**9.8097**	0.221	2.3	ug/L	-178	Standard
	Se	82	2402.6	4.3	**14.0204**	0.626	4.5	ug/L	27	Standard
	Se-1	77	1717.1	3.8	**14.1867**	0.700	4.9	ug/L	155	Standard
>	**Ga**	71	45.0	0.0				mg/L	27	Standard
	Rb	85	71.7	14.5				ug/L	52	Standard
	Y	89	669795.0	4.1				ug/L	610565	Standard
>	**Rh**	103	20.0	50.0				ug/L	10	Standard
	Mo	98	31741.9	1.0	**7.7449**	0.231	3.0	ug/L	29	Standard
	Ag	107	131088.1	1.7	**10.2686**	0.378	3.7	ug/L	112	Standard
	Cd	111	10418.3	1.5	**2.9170**	0.103	3.5	mg/L	3	Standard
	Cd	114	25664.7	2.2	**2.9588**	0.121	4.1	ug/L	27	Standard
>	**In**	115	1041961.5	2.0				ug/L	919955	Standard
	Sn	118	823.4	8.8	**-0.0049**	0.006	117.1	ug/L	932	Standard
	Sb	123	51238.6	1.7	**7.6064**	0.265	3.5	ug/L	105	Standard
	Ba	135	122897.2	2.1	**32.2209**	1.313	4.1	ug/L	29	Standard
	Ce	140	45.0	29.4				ug/L	305	Standard
>	**Tb**	159	1587116.6	0.6				ug/L	1429880	Standard
	Ho	165	20.0	75.0				ug/L	13	Standard
	Tl	203	155701.9	2.4	**11.9092**	0.139	1.2	ug/L	5	Standard
	Tl	205	130479.7	2.7	**11.9845**	0.298	2.5	ug/L	5	Standard
	Pb	206	95059.2	3.4	**10.3135**	0.208	2.0	ug/L	368	Standard
	Pb	207	78494.2	1.5	**9.4835**	0.081	0.9	ug/L	311	Standard
	Pb	208	251005.7	1.3	**10.0464**	0.035	0.3	ug/L	939	Standard
	U	238	156.0	128.0	**0.0142**	0.022	154.8	ug/L	3	Standard
>	**Bi**	209	721563.7	1.7				ug/L	663779	Standard

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Na	23	1.7	173.2	**-0.2666**	3.984	1494.3	mg/L	0	Standard
Mg	24	143.3	25.2	**0.0009**	0.030	3259.2	mg/L	117	Standard
K	39	30.0	16.7	**0.0091**	0.013	147.6	mg/L	18	Standard
Ca	43	25.0	40.0	**-0.7437**	0.407	54.7	mg/L	42	Standard
Fe	54	374.5	12.3	**0.0254**	0.020	78.0	mg/L	280	Standard
Fe	57	285.0	11.0	**-0.0197**	0.065	332.1	mg/L	295	Standard
> **Sc-1**	45	85815.9	3.7				mg/L	81804	Standard
Cl	35	27110.2	1.2				ug/L	23537	Standard
Kr	83	2.7	94.4				ug/L	3	Standard
Br	81	3037.0	6.2				ug/L	2400	Standard
P	31	25029.0	3.9				ug/L	22884	Standard
S	34	888.4	16.3				ug/L	877	Standard
Sr	88	156.7	12.9				ug/L	152	Standard
C	12	526.7	6.7				mg/L	623	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	7.9	128.5				mg/L	32	Standard
Ho-1	165	20.0	75.0				mg/L	13	Standard
Er	166	43.3	93.3				mg/L	23	Standard
I	127	758.4	11.2				mg/L	1360	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.802	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.022	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.262
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.705
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1501166206SDL WG513279-03
Sample Date/Time: Tuesday, February 24, 2015 14:45:12
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 125
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	176183.4	0.6				ug/L	151539	Standard
	Be	9	2510.2	2.5	**1.1734**	0.032	2.7	ug/L	10	Standard
	Al	27	2528.5	4.1	**-0.0031**	0.000	12.5	ug/L	1353	Standard
	Sc	45	87740.1	2.9				ug/L	81804	Standard
	Ti	47	42.7	17.7	**0.0148**	0.014	93.2	ug/L	33	Standard
	V	51	28000.5	2.9	**2.0179**	0.059	2.9	ug/L	3161	Standard
	Cr	52	34491.6	2.4	**1.7495**	0.058	3.3	ug/L	13150	Standard
	Cr	53	3170.3	6.9	**1.6916**	0.143	8.4	ug/L	513	Standard
	Mn	55	89833.9	1.1	**5.2628**	0.035	0.7	ug/L	1028	Standard
	Co	59	11640.5	0.5	**0.8665**	0.006	0.6	ug/L	168	Standard
	Ni	60	16825.0	2.0	**4.7871**	0.079	1.6	ug/L	47	Standard
	Cu	65	8782.2	2.6	**2.5866**	0.064	2.5	ug/L	247	Standard
	Zn	66	10891.9	2.0	**6.5842**	0.109	1.7	ug/L	269	Standard
>	**Ge**	72	650420.7	0.4				ug/L	590931	Standard
	As	75	3179.4	4.4	**2.0381**	0.080	3.9	ug/L	-178	Standard
	Se	82	525.9	3.4	**2.9111**	0.114	3.9	ug/L	27	Standard
	Se-1	77	482.0	2.9	**2.9927**	0.137	4.6	ug/L	155	Standard
>	**Ga**	71	38.3	41.9				mg/L	27	Standard
	Rb	85	55.0	24.1				ug/L	52	Standard
	Y	89	647610.3	1.9				ug/L	610565	Standard
>	**Rh**	103	6.7	114.6				ug/L	10	Standard
	Mo	98	6814.6	0.6	**1.6602**	0.027	1.6	ug/L	29	Standard
	Ag	107	27092.5	2.0	**2.1226**	0.064	3.0	ug/L	112	Standard
	Cd	111	2137.6	3.7	**0.6006**	0.023	3.8	mg/L	3	Standard
	Cd	114	5354.8	0.8	**0.6126**	0.010	1.6	ug/L	27	Standard
>	**In**	115	1036448.0	1.1				ug/L	919955	Standard
	Sn	118	976.7	10.1	**0.0100**	0.008	84.4	ug/L	932	Standard
	Sb	123	10801.6	1.1	**1.5985**	0.033	2.1	ug/L	105	Standard
	Ba	135	25594.3	1.9	**6.7226**	0.195	2.9	ug/L	29	Standard
	Ce	140	43.3	59.2				ug/L	305	Standard
>	**Tb**	159	1544418.4	1.9				ug/L	1429880	Standard
	Ho	165	16.7	17.3				ug/L	13	Standard
	Tl	203	32331.5	1.2	**2.4881**	0.045	1.8	ug/L	5	Standard
	Tl	205	27506.6	0.2	**2.5388**	0.016	0.6	ug/L	5	Standard
	Pb	206	20171.1	2.5	**2.1599**	0.060	2.8	ug/L	368	Standard
	Pb	207	16712.5	2.2	**1.9933**	0.054	2.7	ug/L	311	Standard
	Pb	208	53258.0	1.2	**2.1043**	0.033	1.6	ug/L	939	Standard
	U	238	11.3	70.8	**-0.0016**	0.001	54.9	ug/L	3	Standard
>	**Bi**	209	716971.0	0.7				ug/L	663779	Standard

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Na	23	3.3	86.6	**2.1970**	4.126	187.8	mg/L	0	Standard
Mg	24	160.0	23.6	**0.0105**	0.025	240.5	mg/L	117	Standard
K	39	18.3	68.6	**-0.0179**	0.028	156.5	mg/L	18	Standard
Ca	43	41.7	42.1	**-0.1241**	0.708	571.0	mg/L	42	Standard
Fe	54	302.0	24.2	**-0.0160**	0.042	263.1	mg/L	280	Standard
Fe	57	340.0	18.4	**0.0743**	0.128	172.3	mg/L	295	Standard
Sc-1	45	87740.1	2.9				mg/L	81804	Standard
Cl	35	26897.2	0.2				ug/L	23537	Standard
Kr	83	2.7	86.6				ug/L	3	Standard
Br	81	3027.0	6.8				ug/L	2400	Standard
P	31	25750.2	1.9				ug/L	22884	Standard
S	34	828.4	9.8				ug/L	877	Standard
Sr	88	150.0	12.0				ug/L	152	Standard
C	12	660.0	28.9				mg/L	623	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	15.9	93.8				mg/L	32	Standard
Ho-1	165	16.7	17.3				mg/L	13	Standard
Er	166	16.7	124.9				mg/L	23	Standard
I	127	728.4	11.2				mg/L	1360	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.262	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.067	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.663
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.014
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1502108101 WG513220-01
Sample Date/Time: Tuesday, February 24, 2015 14:48:29
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	181342.1	0.3				ug/L	151539	Standard
	Be	9	58.3	24.7	**0.0226**	0.007	29.1	ug/L	10	Standard
	Al	27	25782399.2	4.3	**106.9409**	4.843	4.5	ug/L	1353	Standard
	Sc	45	82680.1	2.9				ug/L	81804	Standard
	Ti	47	331.3	58.7	**0.5445**	0.353	64.9	ug/L	33	Standard
	V	51	4059.9	4.2	**0.0443**	0.011	25.5	ug/L	3161	Standard
	Cr	52	15865.3	1.9	**0.1688**	0.028	16.7	ug/L	13150	Standard
	Cr	53	1816.8	4.2	**0.8334**	0.060	7.2	ug/L	513	Standard
	Mn	55	604926.6	1.5	**36.2721**	0.838	2.3	ug/L	1028	Standard
	Co	59	6659.8	1.4	**0.4940**	0.011	2.3	ug/L	168	Standard
	Ni	60	14123.2	2.8	**4.0579**	0.146	3.6	ug/L	47	Standard
	Cu	65	2044.1	0.7	**0.5461**	0.001	0.2	ug/L	247	Standard
	Zn	66	8429.3	1.8	**5.0910**	0.080	1.6	ug/L	269	Standard
>	**Ge**	72	643673.3	0.9				ug/L	590931	Standard
	As	75	177.7	24.3	**0.2371**	0.026	11.0	ug/L	-178	Standard
	Se	82	199.7	8.8	**1.0158**	0.097	9.6	ug/L	27	Standard
	Se-1	77	234.0	13.4	**0.7961**	0.273	34.3	ug/L	155	Standard
>	**Ga**	71	50.0	10.0				mg/L	27	Standard
	Rb	85	17378.3	2.2				ug/L	52	Standard
	Y	89	676901.1	1.1				ug/L	610565	Standard
>	**Rh**	103	155.0	17.1				ug/L	10	Standard
	Mo	98	98.7	24.1	**0.0110**	0.006	52.8	ug/L	29	Standard
	Ag	107	141.7	9.4	**-0.0015**	0.001	70.9	ug/L	112	Standard
	Cd	111	88.5	8.2	**0.0246**	0.002	9.3	mg/L	3	Standard
	Cd	114	184.1	9.0	**0.0121**	0.002	16.9	ug/L	27	Standard
>	**In**	115	1008369.4	0.9				ug/L	919955	Standard
	Sn	118	780.0	7.1	**-0.0065**	0.005	77.7	ug/L	932	Standard
	Sb	123	205.3	26.8	**0.0149**	0.008	55.1	ug/L	105	Standard
	Ba	135	19738.2	2.0	**5.3228**	0.132	2.5	ug/L	29	Standard
	Ce	140	2605.2	6.4				ug/L	305	Standard
>	**Tb**	159	1537351.9	1.1				ug/L	1429880	Standard
	Ho	165	260.0	12.0				ug/L	13	Standard
	Tl	203	562.7	7.6	**0.0461**	0.004	8.1	ug/L	5	Standard
	Tl	205	521.7	12.8	**0.0479**	0.006	12.8	ug/L	5	Standard
	Pb	206	653.7	2.1	**0.0237**	0.002	9.2	ug/L	368	Standard
	Pb	207	567.0	3.5	**0.0262**	0.003	13.0	ug/L	311	Standard
	Pb	208	1867.4	5.9	**0.0305**	0.005	16.5	ug/L	939	Standard
	U	238	210.7	22.2	**0.0222**	0.005	23.9	ug/L	3	Standard
>	**Bi**	209	656205.1	1.4				ug/L	663779	Standard

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Na	23	20.0	50.0	**27.2229**	14.494	53.2	mg/L	0	Standard
Mg	24	107739.0	5.0	**87.4858**	2.510	2.9	mg/L	117	Standard
K	39	518.3	17.3	**1.1372**	0.187	16.4	mg/L	18	Standard
Ca	43	1103.4	4.8	**42.6946**	3.472	8.1	mg/L	42	Standard
Fe	54	370.4	11.0	**0.0315**	0.028	89.4	mg/L	280	Standard
Fe	57	556.7	22.5	**0.5504**	0.236	42.8	mg/L	295	Standard
> **Sc-1**	45	82680.1	2.9				mg/L	81804	Standard
Cl	35	47961.8	2.2				ug/L	23537	Standard
Kr	83	5.0	91.7				ug/L	3	Standard
Br	81	15664.8	2.3				ug/L	2400	Standard
P	31	29268.2	1.6				ug/L	22884	Standard
S	34	855.0	5.4				ug/L	877	Standard
Sr	88	506.7	4.9				ug/L	152	Standard
C	12	876.7	9.7				mg/L	623	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	428.7	5.1				mg/L	32	Standard
Ho-1	165	260.0	12.0				mg/L	13	Standard
Er	166	236.7	34.2				mg/L	23	Standard
I	127	12615.3	2.9				mg/L	1360	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.667	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.925	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	109.611	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.859	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1502108101 WG513220-01
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Method 6020 - Summary Report

Sample ID: L1502108101DP WG513220-04
Sample Date/Time: Tuesday, February 24, 2015 14:51:41
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	185777.3	2.0				ug/L	151539	Standard
	Be	9	25.0	34.6	**0.0071**	0.004	52.4	ug/L	10	Standard
	Al	27	23875704.9	2.0	**96.7025**	3.527	3.6	ug/L	1353	Standard
	Sc	45	80615.7	3.3				ug/L	81804	Standard
	Ti	47	106.0	10.9	**0.1292**	0.020	15.8	ug/L	33	Standard
	V	51	3945.3	2.4	**0.0301**	0.008	25.0	ug/L	3161	Standard
	Cr	52	15562.0	3.6	**0.1230**	0.044	35.9	ug/L	13150	Standard
	Cr	53	916.7	11.7	**0.2393**	0.067	28.2	ug/L	513	Standard
	Mn	55	537924.7	2.7	**31.7762**	0.805	2.5	ug/L	1028	Standard
	Co	59	5788.8	3.1	**0.4207**	0.013	3.0	ug/L	168	Standard
	Ni	60	13535.1	4.3	**3.8306**	0.154	4.0	ug/L	47	Standard
	Cu	65	2105.1	3.0	**0.5555**	0.018	3.2	ug/L	247	Standard
	Zn	66	8321.3	0.6	**4.9463**	0.037	0.7	ug/L	269	Standard
>	**Ge**	72	653069.7	0.4				ug/L	590931	Standard
	As	75	225.7	11.6	**0.2643**	0.016	6.0	ug/L	-178	Standard
	Se	82	201.0	4.6	**1.0065**	0.058	5.8	ug/L	27	Standard
	Se-1	77	199.0	5.1	**0.4547**	0.088	19.3	ug/L	155	Standard
>	**Ga**	71	61.7	12.4				mg/L	27	Standard
	Rb	85	16507.3	2.7				ug/L	52	Standard
	Y	89	681499.0	1.1				ug/L	610565	Standard
>	**Rh**	103	160.0	23.6				ug/L	10	Standard
	Mo	98	85.3	17.9	**0.0077**	0.004	49.8	ug/L	29	Standard
	Ag	107	189.0	67.1	**0.0023**	0.010	437.6	ug/L	112	Standard
	Cd	111	75.9	7.0	**0.0210**	0.001	7.0	mg/L	3	Standard
	Cd	114	223.1	12.7	**0.0169**	0.003	20.6	ug/L	27	Standard
>	**In**	115	1005482.3	0.4				ug/L	919955	Standard
	Sn	118	693.3	11.7	**-0.0147**	0.008	54.8	ug/L	932	Standard
	Sb	123	152.3	23.2	**0.0069**	0.005	77.4	ug/L	105	Standard
	Ba	135	18936.8	3.4	**5.1195**	0.159	3.1	ug/L	29	Standard
	Ce	140	1973.5	2.4				ug/L	305	Standard
>	**Tb**	159	1498042.4	2.0				ug/L	1429880	Standard
	Ho	165	286.7	21.3				ug/L	13	Standard
	Tl	203	498.3	16.8	**0.0400**	0.006	16.0	ug/L	5	Standard
	Tl	205	333.3	3.1	**0.0284**	0.001	3.6	ug/L	5	Standard
	Pb	206	660.7	13.7	**0.0231**	0.010	42.1	ug/L	368	Standard
	Pb	207	530.3	14.4	**0.0201**	0.009	45.0	ug/L	311	Standard
	Pb	208	1647.0	3.4	**0.0196**	0.001	7.5	ug/L	939	Standard
	U	238	177.7	10.5	**0.0179**	0.002	10.5	ug/L	3	Standard
>	**Bi**	209	666909.6	1.4				ug/L	663779	Standard

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Na	23	15.0	33.3	**20.3950**	7.493	36.7	mg/L	0	Standard
Mg	24	100772.4	2.0	**83.9762**	1.832	2.2	mg/L	117	Standard
K	39	378.3	1.5	**0.8384**	0.025	3.0	mg/L	18	Standard
Ca	43	1075.0	2.5	**42.6341**	2.051	4.8	mg/L	42	Standard
Fe	54	328.8	11.1	**0.0127**	0.020	160.3	mg/L	280	Standard
Fe	57	576.7	12.6	**0.6229**	0.133	21.3	mg/L	295	Standard
> **Sc-1**	45	80615.7	3.3				mg/L	81804	Standard
Cl	35	44324.2	5.0				ug/L	23537	Standard
Kr	83	4.0	43.3				ug/L	3	Standard
Br	81	17523.5	2.1				ug/L	2400	Standard
P	31	31055.3	8.7				ug/L	22884	Standard
S	34	791.7	16.1				ug/L	877	Standard
Sr	88	483.3	4.7				ug/L	152	Standard
C	12	1020.0	10.4				mg/L	623	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	393.6	19.8				mg/L	32	Standard
Ho-1	165	286.7	21.3				mg/L	13	Standard
Er	166	203.3	24.8				mg/L	23	Standard
I	127	17815.5	5.4				mg/L	1360	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		122.593	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.515	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	109.297
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.472
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: L1502108101DP WG513220-04
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Method 6020 - Summary Report

Sample ID: L1502108101S WG513220-05
Sample Date/Time: Tuesday, February 24, 2015 14:54:52
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	193046.0	2.8				ug/L	151539	Standard
	Be	9	104680.4	1.7	**44.8311**	1.602	3.6	ug/L	10	Standard
	Al	27	25113375.7	1.5	**97.9082**	3.715	3.8	ug/L	1353	Standard
	Sc	45	78756.0	4.0				ug/L	81804	Standard
	Ti	47	130.3	10.4	**0.1771**	0.025	14.2	ug/L	33	Standard
	V	51	605817.5	3.0	**50.3480**	1.653	3.3	ug/L	3161	Standard
	Cr	52	585747.6	1.7	**49.5692**	1.021	2.1	ug/L	13150	Standard
	Cr	53	77553.2	4.0	**50.1480**	2.124	4.2	ug/L	513	Standard
	Mn	55	1379535.4	2.6	**82.9492**	2.477	3.0	ug/L	1028	Standard
	Co	59	654993.2	2.2	**50.2791**	1.287	2.6	ug/L	168	Standard
	Ni	60	184231.2	1.6	**53.2947**	0.959	1.8	ug/L	47	Standard
	Cu	65	164300.4	0.7	**50.4403**	0.423	0.8	ug/L	247	Standard
	Zn	66	88171.8	1.3	**55.8712**	0.946	1.7	ug/L	269	Standard
>	**Ge**	72	642635.5	0.4				ug/L	590931	Standard
	As	75	88860.6	1.6	**54.1297**	0.946	1.7	ug/L	-178	Standard
	Se	82	9719.6	1.8	**57.3603**	1.130	2.0	ug/L	27	Standard
	Se-1	77	6294.6	0.9	**55.6476**	0.283	0.5	ug/L	155	Standard
>	**Ga**	71	73.3	28.4				mg/L	27	Standard
	Rb	85	17782.1	1.0				ug/L	52	Standard
	Y	89	703236.6	1.9				ug/L	610565	Standard
>	**Rh**	103	225.0	5.9				ug/L	10	Standard
	Mo	98	174.9	10.0	**0.0302**	0.005	15.5	ug/L	29	Standard
	Ag	107	588292.5	1.3	**47.5501**	0.470	1.0	ug/L	112	Standard
	Cd	111	177472.8	1.0	**51.2395**	0.459	0.9	mg/L	3	Standard
	Cd	114	426151.7	2.3	**50.7996**	1.093	2.2	ug/L	27	Standard
>	**In**	115	1010307.3	0.6				ug/L	919955	Standard
	Sn	118	966.7	11.4	**0.0114**	0.010	88.6	ug/L	932	Standard
	Sb	123	347440.3	2.4	**53.2676**	1.138	2.1	ug/L	105	Standard
	Ba	135	198125.3	2.0	**53.5606**	1.100	2.1	ug/L	29	Standard
	Ce	140	2151.8	0.9				ug/L	305	Standard
>	**Tb**	159	1474193.6	1.3				ug/L	1429880	Standard
	Ho	165	291.7	6.0				ug/L	13	Standard
	Tl	203	619563.1	1.5	**51.7648**	0.702	1.4	ug/L	5	Standard
	Tl	205	533491.2	1.6	**53.5300**	0.288	0.5	ug/L	5	Standard
	Pb	206	444109.7	0.9	**52.8600**	0.476	0.9	ug/L	368	Standard
	Pb	207	380970.2	1.9	**50.4805**	0.668	1.3	ug/L	311	Standard
	Pb	208	1178955.3	1.9	**51.7475**	0.472	0.9	ug/L	939	Standard
	U	238	471248.4	1.3	**55.6518**	0.676	1.2	ug/L	3	Standard
>	**Bi**	209	660685.7	1.5				ug/L	663779	Standard

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Na	23	25.0	20.0	**36.6120**	7.598	20.8	mg/L	0	Standard
Mg	24	103779.2	1.3	**88.6105**	4.389	5.0	mg/L	117	Standard
K	39	385.0	21.6	**0.8722**	0.173	19.9	mg/L	18	Standard
Ca	43	1040.0	9.1	**42.1113**	2.433	5.8	mg/L	42	Standard
Fe	54	323.6	7.3	**0.0139**	0.008	60.9	mg/L	280	Standard
Fe	57	548.3	15.7	**0.5978**	0.234	39.1	mg/L	295	Standard
> **Sc-1**	45	78756.0	4.0				mg/L	81804	Standard
Cl	35	43912.2	1.7				ug/L	23537	Standard
Kr	83	4.3	35.3				ug/L	3	Standard
Br	81	17747.1	5.1				ug/L	2400	Standard
P	31	28328.1	2.0				ug/L	22884	Standard
S	34	751.7	3.4				ug/L	877	Standard
Sr	88	551.7	10.0				ug/L	152	Standard
C	12	1203.4	8.2				mg/L	623	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	396.0	3.5				mg/L	32	Standard
Ho-1	165	291.7	6.0				mg/L	13	Standard
Er	166	223.3	22.5				mg/L	23	Standard
I	127	19644.4	6.5				mg/L	1360	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		127.390	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.750	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	109.821
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.534
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1502108101SD WG513220-06
Sample Date/Time: Tuesday, February 24, 2015 14:58:03
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	196749.1	4.4				ug/L	151539	Standard
	Be	9	105417.7	4.7	**44.3242**	2.738	6.2	ug/L	10	Standard
	Al	27	23668545.4	4.8	**90.4959**	2.920	3.2	ug/L	1353	Standard
	Sc	45	77452.6	3.7				ug/L	81804	Standard
	Ti	47	176.7	3.9	**0.2611**	0.016	6.2	ug/L	33	Standard
	V	51	586599.6	3.3	**48.5168**	1.060	2.2	ug/L	3161	Standard
	Cr	52	584327.2	1.6	**49.2233**	0.695	1.4	ug/L	13150	Standard
	Cr	53	72247.1	4.8	**46.4818**	2.078	4.5	ug/L	513	Standard
	Mn	55	1353973.8	1.9	**81.0440**	0.576	0.7	ug/L	1028	Standard
	Co	59	637974.9	2.2	**48.7549**	0.928	1.9	ug/L	168	Standard
	Ni	60	179635.1	1.6	**51.7362**	0.558	1.1	ug/L	47	Standard
	Cu	65	160119.4	3.8	**48.9367**	1.689	3.5	ug/L	247	Standard
	Zn	66	85254.6	2.8	**53.7743**	1.376	2.6	ug/L	269	Standard
>	Ge	72	645457.1	1.2				ug/L	590931	Standard
	As	75	87173.3	1.4	**52.8720**	0.475	0.9	ug/L	-178	Standard
	Se	82	9692.9	2.3	**56.9493**	1.066	1.9	ug/L	27	Standard
	Se-1	77	6128.2	1.0	**53.9031**	0.636	1.2	ug/L	155	Standard
>	Ga	71	61.7	24.8				mg/L	27	Standard
	Rb	85	17807.1	3.7				ug/L	52	Standard
	Y	89	697528.3	3.2				ug/L	610565	Standard
>	Rh	103	210.0	16.7				ug/L	10	Standard
	Mo	98	167.1	4.4	**0.0283**	0.002	6.0	ug/L	29	Standard
	Ag	107	575982.7	1.8	**46.5592**	0.728	1.6	ug/L	112	Standard
	Cd	111	175267.1	1.3	**50.6067**	0.423	0.8	mg/L	3	Standard
	Cd	114	426139.1	2.3	**50.8018**	0.983	1.9	ug/L	27	Standard
>	In	115	1010196.0	0.4				ug/L	919955	Standard
	Sn	118	860.0	8.8	**0.0012**	0.008	665.4	ug/L	932	Standard
	Sb	123	339243.0	2.6	**52.0143**	1.153	2.2	ug/L	105	Standard
	Ba	135	192678.1	0.8	**52.0916**	0.214	0.4	ug/L	29	Standard
	Ce	140	2228.5	5.5				ug/L	305	Standard
>	Tb	159	1457050.2	2.9				ug/L	1429880	Standard
	Ho	165	295.0	7.4				ug/L	13	Standard
	Tl	203	606971.9	1.7	**50.4255**	0.593	1.2	ug/L	5	Standard
	Tl	205	529711.6	2.2	**52.8571**	1.270	2.4	ug/L	5	Standard
	Pb	206	441742.7	1.6	**52.2829**	0.934	1.8	ug/L	368	Standard
	Pb	207	378636.7	2.3	**49.8885**	0.953	1.9	ug/L	311	Standard
	Pb	208	1159141.1	2.1	**50.5896**	0.543	1.1	ug/L	939	Standard
	U	238	466227.2	1.3	**54.7511**	0.881	1.6	ug/L	3	Standard
>	Bi	209	664454.5	1.9				ug/L	663779	Standard

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Na	23	20.0	25.0	**29.3251**	8.237	28.1	mg/L	0	Standard
Mg	24	96300.2	2.3	**83.5440**	2.622	3.1	mg/L	117	Standard
K	39	345.0	9.5	**0.7915**	0.059	7.5	mg/L	18	Standard
Ca	43	995.0	16.3	**40.8656**	5.650	13.8	mg/L	42	Standard
Fe	54	309.6	7.0	**0.0092**	0.018	191.4	mg/L	280	Standard
Fe	57	536.7	8.4	**0.5852**	0.066	11.3	mg/L	295	Standard
> **Sc-1**	45	77452.6	3.7				mg/L	81804	Standard
Cl	35	42198.7	1.0				ug/L	23537	Standard
Kr	83	2.7	43.3				ug/L	3	Standard
Br	81	29341.7	3.7				ug/L	2400	Standard
P	31	28226.4	7.5				ug/L	22884	Standard
S	34	775.0	10.0				ug/L	877	Standard
Sr	88	555.0	14.9				ug/L	152	Standard
C	12	1183.4	18.6				mg/L	623	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	389.9	26.8				mg/L	32	Standard
Ho-1	165	295.0	7.4				mg/L	13	Standard
Er	166	210.0	14.3				mg/L	23	Standard
I	127	12423.4	1.8				mg/L	1360	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.834	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.227	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	109.809
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.102
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1502108101PS WG513279-01
Sample Date/Time: Tuesday, February 24, 2015 15:01:15
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	194750.8	2.5				ug/L	151539	Standard
	Be	9	110684.5	1.4	**46.9752**	1.108	2.4	ug/L	10	Standard
	Al	27	23973375.5	5.0	**92.5520**	2.779	3.0	ug/L	1353	Standard
	Sc	45	77142.6	1.0				ug/L	81804	Standard
	Ti	47	192.3	19.5	**0.2864**	0.072	25.1	ug/L	33	Standard
	V	51	619199.4	2.0	**50.6897**	1.532	3.0	ug/L	3161	Standard
	Cr	52	605827.2	2.3	**50.5237**	1.719	3.4	ug/L	13150	Standard
	Cr	53	80307.7	5.6	**51.1530**	2.989	5.8	ug/L	513	Standard
	Mn	55	1412546.8	3.2	**83.6596**	3.267	3.9	ug/L	1028	Standard
	Co	59	688535.0	3.0	**52.0621**	1.976	3.8	ug/L	168	Standard
	Ni	60	192530.0	3.7	**54.8628**	2.391	4.4	ug/L	47	Standard
	Cu	65	171568.7	1.6	**51.8806**	1.072	2.1	ug/L	247	Standard
	Zn	66	91685.8	3.8	**57.2371**	2.661	4.6	ug/L	269	Standard
>	**Ge**	72	652523.9	1.1				ug/L	590931	Standard
	As	75	91330.3	3.3	**54.8020**	2.252	4.1	ug/L	-178	Standard
	Se	82	10210.4	4.1	**59.3619**	2.813	4.7	ug/L	27	Standard
	Se-1	77	6444.0	1.7	**56.1274**	1.531	2.7	ug/L	155	Standard
>	**Ga**	71	115.0	11.5				mg/L	27	Standard
	Rb	85	18024.1	3.1				ug/L	52	Standard
	Y	89	725363.5	1.7				ug/L	610565	Standard
>	**Rh**	103	220.0	12.0				ug/L	10	Standard
	Mo	98	193.2	11.8	**0.0335**	0.006	17.4	ug/L	29	Standard
	Ag	107	618538.6	0.1	**48.6611**	0.366	0.8	ug/L	112	Standard
	Cd	111	185585.0	2.9	**52.1443**	1.159	2.2	mg/L	3	Standard
	Cd	114	450628.9	3.1	**52.2775**	1.320	2.5	ug/L	27	Standard
>	**In**	115	1038047.6	0.7				ug/L	919955	Standard
	Sn	118	956.7	6.6	**0.0080**	0.006	79.5	ug/L	932	Standard
	Sb	123	329249.5	3.1	**49.1244**	1.180	2.4	ug/L	105	Standard
	Ba	135	204079.2	2.8	**53.6901**	1.147	2.1	ug/L	29	Standard
	Ce	140	2476.9	3.9				ug/L	305	Standard
>	**Tb**	159	1505100.6	1.7				ug/L	1429880	Standard
	Ho	165	251.7	24.0				ug/L	13	Standard
	Tl	203	649447.6	1.1	**53.3798**	0.745	1.4	ug/L	5	Standard
	Tl	205	564728.2	2.2	**55.7462**	1.274	2.3	ug/L	5	Standard
	Pb	206	454986.4	1.8	**53.2738**	1.024	1.9	ug/L	368	Standard
	Pb	207	406175.8	2.5	**52.9509**	1.404	2.7	ug/L	311	Standard
	Pb	208	1235737.8	2.1	**53.3640**	1.201	2.3	ug/L	939	Standard
	U	238	497514.4	2.5	**57.7989**	1.522	2.6	ug/L	3	Standard
>	**Bi**	209	671580.1	0.4				ug/L	663779	Standard

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Na	23	13.3	43.3	**18.7811**	9.326	49.7	mg/L	0	Standard
Mg	24	96089.3	5.3	**83.6320**	3.937	4.7	mg/L	117	Standard
K	39	346.7	4.6	**0.8001**	0.046	5.8	mg/L	18	Standard
Ca	43	1073.4	10.4	**44.5077**	4.640	10.4	mg/L	42	Standard
Fe	54	377.4	9.0	**0.0499**	0.020	39.2	mg/L	280	Standard
Fe	57	526.7	5.2	**0.5688**	0.053	9.3	mg/L	295	Standard
> **Sc-1**	45	77142.6	1.0				mg/L	81804	Standard
Cl	35	41889.9	2.8				ug/L	23537	Standard
Kr	83	3.0	33.3				ug/L	3	Standard
Br	81	17650.3	7.0				ug/L	2400	Standard
P	31	28162.8	3.9				ug/L	22884	Standard
S	34	775.0	2.3				ug/L	877	Standard
Sr	88	588.3	7.7				ug/L	152	Standard
C	12	1253.4	5.3				mg/L	623	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	338.2	21.0				mg/L	32	Standard
Ho-1	165	251.7	24.0				mg/L	13	Standard
Er	166	246.7	8.4				mg/L	23	Standard
I	127	12528.5	3.5				mg/L	1360	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.515	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.423	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.837
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.175
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1502108101SDL WG513279-02
Sample Date/Time: Tuesday, February 24, 2015 15:04:26
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	200314.2	2.3				ug/L	151539	Standard
	Be	9	18.3	56.8	**0.0035**	0.004	116.9	ug/L	10	Standard
	Al	27	5264026.2	2.6	**19.7649**	0.856	4.3	ug/L	1353	Standard
	Sc	45	79598.6	1.8				ug/L	81804	Standard
	Ti	47	54.7	1.1	**0.0341**	0.002	5.1	ug/L	33	Standard
	V	51	3894.2	3.7	**0.0190**	0.004	20.7	ug/L	3161	Standard
	Cr	52	15969.1	1.5	**0.1294**	0.043	33.0	ug/L	13150	Standard
	Cr	53	881.7	4.8	**0.2051**	0.027	13.4	ug/L	513	Standard
	Mn	55	136242.3	2.0	**7.8183**	0.067	0.9	ug/L	1028	Standard
	Co	59	1612.8	7.2	**0.1025**	0.005	5.3	ug/L	168	Standard
	Ni	60	3255.3	2.6	**0.8837**	0.009	1.0	ug/L	47	Standard
	Cu	65	745.7	6.7	**0.1392**	0.009	6.5	ug/L	247	Standard
	Zn	66	4169.9	3.0	**2.2895**	0.017	0.7	ug/L	269	Standard
>	**Ge**	72	667323.5	2.7				ug/L	590931	Standard
	As	75	-108.4	24.6	**0.0659**	0.015	22.6	ug/L	-178	Standard
	Se	82	78.0	11.0	**0.2800**	0.040	14.3	ug/L	27	Standard
	Se-1	77	174.3	8.8	**0.2021**	0.130	64.4	ug/L	155	Standard
>	**Ga**	71	38.3	54.3				mg/L	27	Standard
	Rb	85	3795.5	2.2				ug/L	52	Standard
	Y	89	730799.3	2.2				ug/L	610565	Standard
>	**Rh**	103	55.0	39.6				ug/L	10	Standard
	Mo	98	72.8	11.3	**0.0035**	0.002	62.4	ug/L	29	Standard
	Ag	107	209.0	15.7	**0.0030**	0.003	90.0	ug/L	112	Standard
	Cd	111	36.6	9.6	**0.0090**	0.001	12.3	mg/L	3	Standard
	Cd	114	130.7	16.8	**0.0049**	0.002	50.9	ug/L	27	Standard
>	**In**	115	1069217.1	1.5				ug/L	919955	Standard
	Sn	118	905.0	0.6	**0.0007**	0.002	236.5	ug/L	932	Standard
	Sb	123	1642.5	9.7	**0.2217**	0.026	11.5	ug/L	105	Standard
	Ba	135	4106.2	3.5	**1.0230**	0.037	3.6	ug/L	29	Standard
	Ce	140	550.0	14.5				ug/L	305	Standard
>	**Tb**	159	1523758.3	0.5				ug/L	1429880	Standard
	Ho	165	85.0	15.6				ug/L	13	Standard
	Tl	203	407.7	1.2	**0.0301**	0.001	2.7	ug/L	5	Standard
	Tl	205	341.7	22.0	**0.0268**	0.007	25.1	ug/L	5	Standard
	Pb	206	590.3	4.2	**0.0100**	0.003	26.2	ug/L	368	Standard
	Pb	207	485.7	2.1	**0.0098**	0.000	5.1	ug/L	311	Standard
	Pb	208	1567.7	1.8	**0.0113**	0.002	14.6	ug/L	939	Standard
	U	238	94.0	9.8	**0.0074**	0.001	10.9	ug/L	3	Standard
>	**Bi**	209	717513.6	1.9				ug/L	663779	Standard

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Na	23	3.3	173.2	**2.4948**	8.767	351.4	mg/L	0	Standard
Mg	24	20268.6	1.9	**17.0137**	0.419	2.5	mg/L	117	Standard
K	39	85.0	25.6	**0.1455**	0.050	34.5	mg/L	18	Standard
Ca	43	260.0	15.0	**9.1503**	1.743	19.0	mg/L	42	Standard
Fe	54	301.4	7.7	**-0.0007**	0.015	2026.0	mg/L	280	Standard
Fe	57	295.0	14.8	**0.0442**	0.088	200.3	mg/L	295	Standard
Sc-1	45	79598.6	1.8				mg/L	81804	Standard
Cl	35	31009.7	0.1				ug/L	23537	Standard
Kr	83	2.3	24.7				ug/L	3	Standard
Br	81	5764.4	3.0				ug/L	2400	Standard
P	31	25760.3	5.4				ug/L	22884	Standard
S	34	781.7	16.1				ug/L	877	Standard
Sr	88	190.0	25.1				ug/L	152	Standard
C	12	816.7	11.6				mg/L	623	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	46.5	56.9				mg/L	32	Standard
Ho-1	165	85.0	15.6				mg/L	13	Standard
Er	166	73.3	20.8				mg/L	23	Standard
I	127	3213.7	6.1				mg/L	1360	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		132.186	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		112.927	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	116.225
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	108.095
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, February 24, 2015 15:07:39
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	195739.9	1.9				ug/L	151539	Standard
	Be	9	108972.2	1.3	**46.0184**	1.468	3.2	ug/L	10	Standard
	Al	27	11226383.9	5.2	**43.1218**	1.866	4.3	ug/L	1353	Standard
	Sc	45	77958.5	2.9				ug/L	81804	Standard
	Ti	47	52510.5	2.3	**93.0175**	2.233	2.4	ug/L	33	Standard
	V	51	588791.1	4.2	**47.1085**	2.053	4.4	ug/L	3161	Standard
	Cr	52	599424.9	2.2	**48.8374**	1.181	2.4	ug/L	13150	Standard
	Cr	53	76605.0	3.8	**47.6898**	1.882	3.9	ug/L	513	Standard
	Mn	55	835062.0	1.5	**48.3235**	0.803	1.7	ug/L	1028	Standard
	Co	59	669125.9	1.2	**49.4666**	0.644	1.3	ug/L	168	Standard
	Ni	60	182505.7	1.4	**50.8466**	0.731	1.4	ug/L	47	Standard
	Cu	65	171254.3	2.1	**50.6369**	1.132	2.2	ug/L	247	Standard
	Zn	66	82557.7	2.2	**50.3570**	1.168	2.3	ug/L	269	Standard
>	Ge	72	667240.1	0.1				ug/L	590931	Standard
	As	75	88505.3	1.3	**51.9300**	0.736	1.4	ug/L	-178	Standard
	Se	82	9419.7	1.1	**53.5290**	0.656	1.2	ug/L	27	Standard
	Se-1	77	6082.2	3.2	**51.6970**	1.724	3.3	ug/L	155	Standard
>	Ga	71	80.0	27.2				mg/L	27	Standard
	Rb	85	1438.4	2.8				ug/L	52	Standard
	Y	89	712768.8	0.7				ug/L	610565	Standard
>	Rh	103	78.3	9.8				ug/L	10	Standard
	Mo	98	440576.2	1.8	**105.9032**	2.330	2.2	ug/L	29	Standard
	Ag	107	669488.1	0.7	**51.6248**	0.410	0.8	ug/L	112	Standard
	Cd	111	185097.4	2.8	**50.9795**	1.281	2.5	mg/L	3	Standard
	Cd	114	456208.0	1.0	**51.8813**	0.558	1.1	ug/L	27	Standard
>	In	115	1059087.5	1.2				ug/L	919955	Standard
	Sn	118	539458.0	2.6	**49.7316**	1.287	2.6	ug/L	932	Standard
	Sb	123	351562.0	2.0	**51.4241**	1.309	2.5	ug/L	105	Standard
	Ba	135	182735.1	0.9	**47.1230**	0.423	0.9	ug/L	29	Standard
	Ce	140	301.7	2.5				ug/L	305	Standard
>	Tb	159	1539733.0	0.7				ug/L	1429880	Standard
	Ho	165	8.3	69.3				ug/L	13	Standard
	Tl	203	653626.7	1.2	**50.1597**	1.092	2.2	ug/L	5	Standard
	Tl	205	572009.6	1.8	**52.7267**	1.724	3.3	ug/L	5	Standard
	Pb	206	468855.5	0.6	**51.2506**	0.633	1.2	ug/L	368	Standard
	Pb	207	418370.9	0.4	**50.9207**	0.961	1.9	ug/L	311	Standard
	Pb	208	1267984.2	2.3	**51.1304**	1.865	3.6	ug/L	939	Standard
	U	238	493510.0	2.3	**53.5376**	1.898	3.5	ug/L	3	Standard
>	Bi	209	719408.8	1.5				ug/L	663779	Standard

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Na	23	1.7	173.2	**-0.0053**	4.436	83641.7	mg/L	0	Standard
Mg	24	6416.4	1.8	**5.4239**	0.065	1.2	mg/L	117	Standard
K	39	1541.7	12.3	**3.7269**	0.566	15.2	mg/L	18	Standard
Ca	43	170.0	7.8	**5.5433**	0.731	13.2	mg/L	42	Standard
Fe	54	9564.6	4.8	**5.4693**	0.425	7.8	mg/L	280	Standard
Fe	57	2726.9	6.3	**5.3054**	0.445	8.4	mg/L	295	Standard
> **Sc-1**	45	77958.5	2.9				mg/L	81804	Standard
Cl	35	25349.2	5.4				ug/L	23537	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	3570.4	9.4				ug/L	2400	Standard
P	31	26052.4	2.4				ug/L	22884	Standard
S	34	908.4	13.5				ug/L	877	Standard
Sr	88	145.0	19.2				ug/L	152	Standard
C	12	883.4	8.6				mg/L	623	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	35.4	41.1				mg/L	32	Standard
Ho-1	165	8.3	69.3				mg/L	13	Standard
Er	166	26.7	57.3				mg/L	23	Standard
I	127	985.0	10.3				mg/L	1360	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	92.037		
Al	27	86.244		
Sc	45			
Ti	47	93.018		
V	51	94.217		
Cr	52	97.675		
Cr	53			
Mn	55	96.647		
Co	59	98.933		
Ni	60	101.693		
Cu	65	101.274		
Zn	66	100.714		
> Ge	72		112.913	
As	75	103.860		
Se	82	107.058		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	105.903		
Ag	107	103.250		
Cd	111	101.959		
Cd	114			
In	115		115.124	
Sn	118	99.463		
Sb	123	102.848		
Ba	135	94.246		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.319		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.261		
U	238	107.075		
Bi	209		108.381	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, February 24, 2015 15:10:51
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	191155.0	6.6				ug/L	151539	Standard
	Be	9	35.0	51.5	**0.0112**	0.008	69.4	ug/L	10	Standard
	Al	27	3995.8	83.5	**0.0018**	0.013	718.5	ug/L	1353	Standard
	Sc	45	78368.9	1.7				ug/L	81804	Standard
	Ti	47	36.0	41.5	**0.0018**	0.025	1348.5	ug/L	33	Standard
	V	51	3423.9	16.1	**-0.0138**	0.036	263.2	ug/L	3161	Standard
	Cr	52	13305.9	6.0	**-0.0711**	0.030	42.4	ug/L	13150	Standard
	Cr	53	440.0	7.5	**-0.0661**	0.022	32.9	ug/L	513	Standard
	Mn	55	1382.7	40.9	**0.0026**	0.031	1193.3	ug/L	1028	Standard
	Co	59	345.0	94.2	**0.0090**	0.023	260.2	ug/L	168	Standard
	Ni	60	96.7	46.3	**0.0037**	0.012	319.7	ug/L	47	Standard
	Cu	65	308.3	3.3	**0.0119**	0.006	53.3	ug/L	247	Standard
	Zn	66	373.7	4.6	**-0.0331**	0.005	16.4	ug/L	269	Standard
>	Ge	72	653774.8	3.9				ug/L	590931	Standard
	As	75	-229.6	19.3	**-0.0087**	0.032	370.4	ug/L	-178	Standard
	Se	82	36.4	22.5	**0.0469**	0.040	85.2	ug/L	27	Standard
	Se-1	77	148.7	13.5	**0.0111**	0.233	2105.3	ug/L	155	Standard
>	Ga	71	18.3	56.8				mg/L	27	Standard
	Rb	85	61.7	16.9				ug/L	52	Standard
	Y	89	697793.8	2.4				ug/L	610565	Standard
>	Rh	103	8.3	69.3				ug/L	10	Standard
	Mo	98	259.4	31.2	**0.0476**	0.018	37.6	ug/L	29	Standard
	Ag	107	344.7	101.6	**0.0130**	0.026	199.9	ug/L	112	Standard
	Cd	111	12.7	91.0	**0.0024**	0.003	127.7	mg/L	3	Standard
	Cd	114	50.0	74.0	**-0.0043**	0.004	94.2	ug/L	27	Standard
>	In	115	1070253.6	2.2				ug/L	919955	Standard
	Sn	118	1055.0	4.7	**0.0143**	0.005	36.3	ug/L	932	Standard
	Sb	123	487.5	51.0	**0.0536**	0.034	64.1	ug/L	105	Standard
	Ba	135	47.3	42.5	**-0.0144**	0.005	34.8	ug/L	29	Standard
	Ce	140	41.7	6.9				ug/L	305	Standard
>	Tb	159	1520497.0	2.9				ug/L	1429880	Standard
	Ho	165	16.7	96.4				ug/L	13	Standard
	Tl	203	70.3	69.8	**0.0041**	0.004	90.3	ug/L	5	Standard
	Tl	205	113.3	123.6	**0.0055**	0.013	229.9	ug/L	5	Standard
	Pb	206	547.3	49.5	**0.0043**	0.029	679.6	ug/L	368	Standard
	Pb	207	524.7	58.0	**0.0135**	0.036	269.2	ug/L	311	Standard
	Pb	208	1286.7	35.2	**-0.0009**	0.018	1914.5	ug/L	939	Standard
	U	238	98.0	137.9	**0.0076**	0.014	189.1	ug/L	3	Standard
>	Bi	209	729088.8	1.1				ug/L	663779	Standard

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Na	23	3.3	86.6	**2.6905**	4.555	169.3	mg/L	0	Standard
Mg	24	121.7	35.0	**-0.0076**	0.035	459.2	mg/L	117	Standard
K	39	35.0	42.9	**0.0271**	0.036	132.7	mg/L	18	Standard
Ca	43	46.7	27.0	**0.2681**	0.562	209.8	mg/L	42	Standard
Fe	54	281.9	4.6	**-0.0096**	0.005	50.7	mg/L	280	Standard
Fe	57	271.7	20.5	**0.0032**	0.111	3458.8	mg/L	295	Standard
> **Sc-1**	45	78368.9	1.7				mg/L	81804	Standard
Cl	35	25364.5	0.5				ug/L	23537	Standard
Kr	83	3.3	17.3				ug/L	3	Standard
Br	81	3463.7	7.1				ug/L	2400	Standard
P	31	24688.5	6.6				ug/L	22884	Standard
S	34	813.4	6.5				ug/L	877	Standard
Sr	88	146.7	13.8				ug/L	152	Standard
C	12	920.0	4.7				mg/L	623	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	25.5	44.1				mg/L	32	Standard
Ho-1	165	16.7	96.4				mg/L	13	Standard
Er	166	23.3	24.7				mg/L	23	Standard
I	127	716.7	14.8				mg/L	1360	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.635	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		116.338
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.839
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: February 25, 2015

Method 6020 - Summary Report

Sample ID: L1502108101SDL WG513279-02
Sample Date/Time: Tuesday, February 24, 2015 15:14:03
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	196195.5	1.0				ug/L	151539	Standard
	Be	9	23.3	44.6	**0.0058**	0.004	76.9	ug/L	10	Standard
	Al	27	1167470.7	2.0	**4.4622**	0.078	1.8	ug/L	1353	Standard
	Sc	45	82011.4	2.0				ug/L	81804	Standard
	Ti	47	35.7	3.2	**-0.0001**	0.002	1616.9	ug/L	33	Standard
	V	51	3583.5	5.7	**-0.0085**	0.016	189.5	ug/L	3161	Standard
	Cr	52	14373.8	1.2	**-0.0149**	0.015	101.9	ug/L	13150	Standard
	Cr	53	653.3	6.2	**0.0581**	0.025	42.3	ug/L	513	Standard
	Mn	55	32537.6	3.0	**1.7903**	0.045	2.5	ug/L	1028	Standard
	Co	59	541.0	28.9	**0.0230**	0.011	49.1	ug/L	168	Standard
	Ni	60	762.4	6.3	**0.1870**	0.012	6.3	ug/L	47	Standard
	Cu	65	443.0	7.7	**0.0486**	0.011	22.2	ug/L	247	Standard
	Zn	66	2640.2	2.7	**1.3374**	0.034	2.6	ug/L	269	Standard
>	**Ge**	72	673241.4	0.7				ug/L	590931	Standard
	As	75	-184.4	46.0	**0.0223**	0.049	219.6	ug/L	-178	Standard
	Se	82	49.7	15.1	**0.1167**	0.044	37.5	ug/L	27	Standard
	Se-1	77	164.0	13.0	**0.0987**	0.178	179.9	ug/L	155	Standard
>	**Ga**	71	21.7	13.3				mg/L	27	Standard
	Rb	85	820.0	11.6				ug/L	52	Standard
	Y	89	733374.9	2.3				ug/L	610565	Standard
>	**Rh**	103	10.0	50.0				ug/L	10	Standard
	Mo	98	131.0	29.7	**0.0174**	0.009	53.6	ug/L	29	Standard
	Ag	107	430.7	120.8	**0.0200**	0.040	199.4	ug/L	112	Standard
	Cd	111	49.2	150.9	**0.0124**	0.020	163.4	mg/L	3	Standard
	Cd	114	158.1	133.9	**0.0080**	0.024	299.4	ug/L	27	Standard
>	**In**	115	1068001.5	0.1				ug/L	919955	Standard
	Sn	118	1128.4	8.4	**0.0212**	0.009	41.2	ug/L	932	Standard
	Sb	123	255.4	47.7	**0.0205**	0.018	86.4	ug/L	105	Standard
	Ba	135	951.4	25.3	**0.2169**	0.062	28.4	ug/L	29	Standard
	Ce	140	156.7	22.4				ug/L	305	Standard
>	**Tb**	159	1562578.6	1.7				ug/L	1429880	Standard
	Ho	165	23.3	24.7				ug/L	13	Standard
	Tl	203	413.3	135.7	**0.0296**	0.042	141.2	ug/L	5	Standard
	Tl	205	118.3	59.8	**0.0058**	0.006	108.2	ug/L	5	Standard
	Pb	206	706.0	44.2	**0.0204**	0.033	162.0	ug/L	368	Standard
	Pb	207	566.7	48.2	**0.0177**	0.032	182.8	ug/L	311	Standard
	Pb	208	1437.0	17.5	**0.0043**	0.010	223.5	ug/L	939	Standard
	U	238	60.7	141.8	**0.0036**	0.009	255.1	ug/L	3	Standard
>	**Bi**	209	739025.7	1.3				ug/L	663779	Standard

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Na	23	1.7	173.2	**-0.0043**	4.438	102223.4	mg/L	0	Standard
Mg	24	4295.6	3.3	**3.4129**	0.186	5.4	mg/L	117	Standard
K	39	40.0	33.1	**0.0348**	0.029	84.0	mg/L	18	Standard
Ca	43	105.0	9.5	**2.5348**	0.321	12.6	mg/L	42	Standard
Fe	54	298.6	14.5	**-0.0072**	0.027	370.5	mg/L	280	Standard
Fe	57	268.3	15.8	**-0.0271**	0.098	362.0	mg/L	295	Standard
Sc-1	45	82011.4	2.0				mg/L	81804	Standard
Cl	35	25420.6	1.0				ug/L	23537	Standard
Kr	83	2.3	24.7				ug/L	3	Standard
Br	81	3687.1	9.4				ug/L	2400	Standard
P	31	25910.5	3.8				ug/L	22884	Standard
S	34	721.7	5.0				ug/L	877	Standard
Sr	88	151.7	13.3				ug/L	152	Standard
C	12	820.0	4.4				mg/L	623	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	41.3	36.8				mg/L	32	Standard
Ho-1	165	23.3	24.7				mg/L	13	Standard
Er	166	43.3	26.6				mg/L	23	Standard
I	127	1085.0	12.9				mg/L	1360	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		129.468	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		113.929	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		116.093
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		111.336
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1502105302
Sample Date/Time: Tuesday, February 24, 2015 15:17:15
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	211575.4	0.8				ug/L	151539	Standard
	Be	9	35.0	28.6	**0.0097**	0.004	40.3	ug/L	10	Standard
	Al	27	45674957.9	2.2	**162.3814**	3.802	2.3	ug/L	1353	Standard
	Sc	45	81373.0	1.8				ug/L	81804	Standard
	Ti	47	527.3	3.6	**0.9047**	0.052	5.8	ug/L	33	Standard
	V	51	5353.7	15.5	**0.1511**	0.066	43.7	ug/L	3161	Standard
	Cr	52	27853.3	2.7	**1.2010**	0.059	4.9	ug/L	13150	Standard
	Cr	53	11722.9	8.9	**7.2677**	0.839	11.5	ug/L	513	Standard
	Mn	55	1271310.8	1.2	**76.1536**	1.505	2.0	ug/L	1028	Standard
	Co	59	21758.3	3.2	**1.6478**	0.048	2.9	ug/L	168	Standard
	Ni	60	12041.8	0.7	**3.4488**	0.064	1.9	ug/L	47	Standard
	Cu	65	2157.8	4.7	**0.5794**	0.022	3.8	ug/L	247	Standard
	Zn	66	5854.8	4.4	**3.4452**	0.095	2.8	ug/L	269	Standard
>	**Ge**	72	645126.7	2.3				ug/L	590931	Standard
	As	75	2547.1	0.4	**1.6717**	0.037	2.2	ug/L	-178	Standard
	Se	82	893.7	3.4	**5.1093**	0.298	5.8	ug/L	27	Standard
	Se-1	77	719.0	8.2	**5.1743**	0.669	12.9	ug/L	155	Standard
>	**Ga**	71	65.0	40.0				mg/L	27	Standard
	Rb	85	77785.8	0.6				ug/L	52	Standard
	Y	89	686014.0	0.9				ug/L	610565	Standard
>	**Rh**	103	750.0	14.0				ug/L	10	Standard
	Mo	98	662.4	4.9	**0.1544**	0.011	7.4	ug/L	29	Standard
	Ag	107	183.3	47.1	**0.0018**	0.007	360.0	ug/L	112	Standard
	Cd	111	153.0	25.5	**0.0433**	0.010	23.2	mg/L	3	Standard
	Cd	114	1726.6	22.6	**0.1968**	0.041	21.0	ug/L	27	Standard
>	**In**	115	1003208.0	2.6				ug/L	919955	Standard
	Sn	118	576051.3	3.1	**56.0718**	1.037	1.8	ug/L	932	Standard
	Sb	123	344.4	7.2	**0.0366**	0.003	8.2	ug/L	105	Standard
	Ba	135	76226.7	3.4	**20.7343**	0.313	1.5	ug/L	29	Standard
	Ce	140	1280.1	11.7				ug/L	305	Standard
>	**Tb**	159	1485955.9	1.9				ug/L	1429880	Standard
	Ho	165	38.3	15.1				ug/L	13	Standard
	Tl	203	417.0	28.7	**0.0341**	0.010	29.1	ug/L	5	Standard
	Tl	205	348.3	4.6	**0.0308**	0.002	5.1	ug/L	5	Standard
	Pb	206	810.4	7.7	**0.0433**	0.007	16.8	ug/L	368	Standard
	Pb	207	723.7	9.7	**0.0480**	0.009	18.7	ug/L	311	Standard
	Pb	208	2097.4	1.6	**0.0415**	0.001	3.6	ug/L	939	Standard
	U	238	19429.1	3.1	**2.3287**	0.063	2.7	ug/L	3	Standard
>	**Bi**	209	650121.1	0.6				ug/L	663779	Standard

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Na	23	16.7	45.8	**22.8336**	12.093	53.0	mg/L	0	Standard
Mg	24	132688.7	2.6	**109.5380**	2.260	2.1	mg/L	117	Standard
K	39	361.7	5.2	**0.7901**	0.030	3.8	mg/L	18	Standard
Ca	43	963.4	8.3	**37.6692**	3.980	10.6	mg/L	42	Standard
Fe	54	409.2	16.3	**0.0562**	0.037	66.0	mg/L	280	Standard
Fe	57	561.7	7.8	**0.5816**	0.084	14.5	mg/L	295	Standard
> **Sc-1**	45	81373.0	1.8				mg/L	81804	Standard
Cl	35	31910.9	1.9				ug/L	23537	Standard
Kr	83	4.3	58.1				ug/L	3	Standard
Br	81	96540.5	5.2				ug/L	2400	Standard
P	31	41012.1	3.6				ug/L	22884	Standard
S	34	756.7	12.9				ug/L	877	Standard
Sr	88	2090.1	7.1				ug/L	152	Standard
C	12	1953.5	6.2				mg/L	623	Standard
N	14	6.7	86.6				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	61.7	38.3				mg/L	32	Standard
Ho-1	165	38.3	15.1				mg/L	13	Standard
Er	166	33.3	34.6				mg/L	23	Standard
I	127	3907114.6	4.3				mg/L	1360	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		139.617	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.171	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	109.050	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.942	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1502105302
Sample Date/Time: Tuesday, February 24, 2015 15:20:26
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	213077.5	3.8				ug/L	151539	Standard
	Be	9	60.0	123.3	**0.0199**	0.030	151.2	ug/L	10	Standard
	Al	27	1098186.4	3.2	**3.8685**	0.246	6.4	ug/L	1353	Standard
	Sc	45	84283.8	1.8				ug/L	81804	Standard
	Ti	47	50.7	16.0	**0.0243**	0.014	56.3	ug/L	33	Standard
	V	51	3825.7	1.3	**0.0042**	0.003	80.2	ug/L	3161	Standard
	Cr	52	16134.3	1.7	**0.1017**	0.021	20.9	ug/L	13150	Standard
	Cr	53	1083.4	16.4	**0.3107**	0.106	34.2	ug/L	513	Standard
	Mn	55	32674.9	4.0	**1.7575**	0.069	4.0	ug/L	1028	Standard
	Co	59	666.3	3.1	**0.0312**	0.001	4.4	ug/L	168	Standard
	Ni	60	476.3	30.2	**0.1051**	0.038	36.6	ug/L	47	Standard
	Cu	65	427.7	25.9	**0.0413**	0.031	76.1	ug/L	247	Standard
	Zn	66	2379.9	4.0	**1.1478**	0.053	4.6	ug/L	269	Standard
>	**Ge**	72	688172.9	0.2				ug/L	590931	Standard
	As	75	-176.2	15.6	**0.0293**	0.016	54.0	ug/L	-178	Standard
	Se	82	61.0	16.0	**0.1729**	0.053	30.8	ug/L	27	Standard
	Se-1	77	182.3	7.8	**0.2233**	0.116	52.1	ug/L	155	Standard
>	**Ga**	71	23.3	24.7				mg/L	27	Standard
	Rb	85	1675.1	5.5				ug/L	52	Standard
	Y	89	724835.5	2.0				ug/L	610565	Standard
>	**Rh**	103	43.3	33.3				ug/L	10	Standard
	Mo	98	96.9	10.7	**0.0085**	0.002	28.2	ug/L	29	Standard
	Ag	107	132.7	27.9	**-0.0032**	0.003	84.2	ug/L	112	Standard
	Cd	111	18.2	104.9	**0.0038**	0.005	133.3	mg/L	3	Standard
	Cd	114	57.7	64.4	**-0.0036**	0.004	113.4	ug/L	27	Standard
>	**In**	115	1102814.1	0.8				ug/L	919955	Standard
	Sn	118	1266.7	4.3	**0.0302**	0.004	13.1	ug/L	932	Standard
	Sb	123	92.8	4.7	**-0.0035**	0.001	19.8	ug/L	105	Standard
	Ba	135	1722.4	4.4	**0.4002**	0.016	3.9	ug/L	29	Standard
	Ce	140	71.7	20.1				ug/L	305	Standard
>	**Tb**	159	1582145.2	0.7				ug/L	1429880	Standard
	Ho	165	15.0	33.3				ug/L	13	Standard
	Tl	203	292.7	15.2	**0.0204**	0.003	16.7	ug/L	5	Standard
	Tl	205	326.7	55.9	**0.0243**	0.016	67.4	ug/L	5	Standard
	Pb	206	539.3	8.8	**0.0022**	0.005	242.6	ug/L	368	Standard
	Pb	207	453.0	6.9	**0.0037**	0.004	106.4	ug/L	311	Standard
	Pb	208	1448.0	7.9	**0.0043**	0.005	111.1	ug/L	939	Standard
	U	238	516.0	34.4	**0.0512**	0.019	36.9	ug/L	3	Standard
>	**Bi**	209	745879.3	0.5				ug/L	663779	Standard

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Na	23	3.3	173.2	**2.2718**	8.380	368.9	mg/L	0	Standard
Mg	24	3005.3	5.7	**2.2870**	0.153	6.7	mg/L	117	Standard
K	39	35.0	14.3	**0.0212**	0.010	47.3	mg/L	18	Standard
Ca	43	53.3	19.5	**0.3871**	0.402	103.8	mg/L	42	Standard
Fe	54	304.6	13.2	**-0.0090**	0.019	213.6	mg/L	280	Standard
Fe	57	285.0	7.0	**-0.0095**	0.050	527.1	mg/L	295	Standard
> **Sc-1**	45	84283.8	1.8				mg/L	81804	Standard
Cl	35	29894.1	2.2				ug/L	23537	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	5867.8	11.1				ug/L	2400	Standard
P	31	27403.3	10.9				ug/L	22884	Standard
S	34	893.4	9.2				ug/L	877	Standard
Sr	88	176.7	11.8				ug/L	152	Standard
C	12	873.4	22.9				mg/L	623	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	25.9	56.2				mg/L	32	Standard
Ho-1	165	15.0	33.3				mg/L	13	Standard
Er	166	16.7	91.7				mg/L	23	Standard
I	127	103648.9	9.7				mg/L	1360	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		140.609	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		116.456	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		119.877
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		112.369
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1502105304
Sample Date/Time: Tuesday, February 24, 2015 15:23:38
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	209619.0	2.5				ug/L	151539	Standard
	Be	9	60.0	30.0	**0.0196**	0.007	35.8	ug/L	10	Standard
	Al	27	50934025.9	0.4	**182.8472**	5.027	2.7	ug/L	1353	Standard
	Sc	45	82041.6	2.7				ug/L	81804	Standard
	Ti	47	591.3	10.9	**1.0369**	0.121	11.7	ug/L	33	Standard
	V	51	4415.3	4.9	**0.0784**	0.017	21.8	ug/L	3161	Standard
	Cr	52	16415.2	1.7	**0.2333**	0.029	12.4	ug/L	13150	Standard
	Cr	53	10340.2	2.2	**6.4537**	0.172	2.7	ug/L	513	Standard
	Mn	55	3605028.9	2.7	**219.1067**	6.268	2.9	ug/L	1028	Standard
	Co	59	24449.7	3.4	**1.8801**	0.069	3.7	ug/L	168	Standard
	Ni	60	9408.3	3.8	**2.7272**	0.105	3.9	ug/L	47	Standard
	Cu	65	2524.5	2.6	**0.7028**	0.024	3.4	ug/L	247	Standard
	Zn	66	6174.9	2.7	**3.7048**	0.111	3.0	ug/L	269	Standard
>	**Ge**	72	636109.5	0.4				ug/L	590931	Standard
	As	75	4489.2	2.0	**2.8854**	0.062	2.2	ug/L	-178	Standard
	Se	82	1226.3	0.7	**7.1680**	0.077	1.1	ug/L	27	Standard
	Se-1	77	749.7	0.5	**5.5367**	0.021	0.4	ug/L	155	Standard
>	**Ga**	71	130.0	3.8				mg/L	27	Standard
	Rb	85	28991.0	1.6				ug/L	52	Standard
	Y	89	698425.4	0.9				ug/L	610565	Standard
>	**Rh**	103	686.7	12.4				ug/L	10	Standard
	Mo	98	2479.3	1.5	**0.6102**	0.011	1.7	ug/L	29	Standard
	Ag	107	245.0	12.2	**0.0068**	0.002	30.7	ug/L	112	Standard
	Cd	111	58.7	21.7	**0.0159**	0.003	21.3	mg/L	3	Standard
	Cd	114	127.7	6.2	**0.0054**	0.001	20.9	ug/L	27	Standard
>	**In**	115	1011477.8	1.6				ug/L	919955	Standard
	Sn	118	1701.8	11.6	**0.0822**	0.016	19.9	ug/L	932	Standard
	Sb	123	178.2	17.3	**0.0107**	0.004	41.9	ug/L	105	Standard
	Ba	135	77994.6	1.8	**21.0486**	0.558	2.7	ug/L	29	Standard
	Ce	140	6046.2	5.8				ug/L	305	Standard
>	**Tb**	159	1505156.5	1.6				ug/L	1429880	Standard
	Ho	165	56.7	27.0				ug/L	13	Standard
	Tl	203	583.0	0.9	**0.0482**	0.000	0.7	ug/L	5	Standard
	Tl	205	496.7	15.4	**0.0459**	0.008	17.5	ug/L	5	Standard
	Pb	206	2233.8	2.2	**0.2154**	0.005	2.5	ug/L	368	Standard
	Pb	207	1911.5	1.0	**0.2079**	0.003	1.6	ug/L	311	Standard
	Pb	208	5871.8	0.8	**0.2098**	0.004	2.1	ug/L	939	Standard
	U	238	1609.4	0.5	**0.1901**	0.003	1.3	ug/L	3	Standard
>	**Bi**	209	650761.7	0.8				ug/L	663779	Standard

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Na	23	26.7	65.8	**37.8608**	26.883	71.0	mg/L	0	Standard
Mg	24	118374.0	1.7	**96.9415**	2.300	2.4	mg/L	117	Standard
K	39	418.3	29.2	**0.9115**	0.258	28.3	mg/L	18	Standard
Ca	43	976.7	6.7	**37.8297**	2.061	5.4	mg/L	42	Standard
Fe	54	5434.3	1.4	**2.8702**	0.121	4.2	mg/L	280	Standard
Fe	57	1945.1	5.4	**3.4087**	0.260	7.6	mg/L	295	Standard
Sc-1	45	82041.6	2.7				mg/L	81804	Standard
Cl	35	33636.0	2.8				ug/L	23537	Standard
Kr	83	3.0	33.3				ug/L	3	Standard
Br	81	132974.6	2.9				ug/L	2400	Standard
P	31	39873.6	18.9				ug/L	22884	Standard
S	34	841.7	8.7				ug/L	877	Standard
Sr	88	2083.5	5.3				ug/L	152	Standard
C	12	2586.9	9.7				mg/L	623	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	7	Standard
Dy	164	100.5	43.9				mg/L	32	Standard
Ho-1	165	56.7	27.0				mg/L	13	Standard
Er	166	60.0	76.4				mg/L	23	Standard
I	127	968253.7	2.3				mg/L	1360	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		138.326	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		107.645	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	109.949
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.039
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1502105304
Sample Date/Time: Tuesday, February 24, 2015 15:26:49
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	202332.3	1.9				ug/L	151539	Standard
	Be	9	21.7	58.1	**0.0049**	0.005	108.7	ug/L	10	Standard
	Al	27	1205502.5	3.3	**4.4698**	0.202	4.5	ug/L	1353	Standard
	Sc	45	81384.7	2.2				ug/L	81804	Standard
	Ti	47	52.3	2.9	**0.0274**	0.003	12.5	ug/L	33	Standard
	V	51	3720.1	2.2	**-0.0035**	0.005	151.7	ug/L	3161	Standard
	Cr	52	15107.9	1.5	**0.0212**	0.029	138.2	ug/L	13150	Standard
	Cr	53	1088.4	11.0	**0.3148**	0.068	21.6	ug/L	513	Standard
	Mn	55	89350.0	4.5	**4.9529**	0.236	4.8	ug/L	1028	Standard
	Co	59	798.7	16.7	**0.0408**	0.010	24.8	ug/L	168	Standard
	Ni	60	385.3	7.9	**0.0808**	0.009	10.8	ug/L	47	Standard
	Cu	65	438.0	6.4	**0.0446**	0.008	18.3	ug/L	247	Standard
	Zn	66	3970.9	3.6	**2.0985**	0.088	4.2	ug/L	269	Standard
>	**Ge**	72	686846.7	0.9				ug/L	590931	Standard
	As	75	-96.8	29.3	**0.0743**	0.016	21.4	ug/L	-178	Standard
	Se	82	58.2	2.7	**0.1583**	0.010	6.3	ug/L	27	Standard
	Se-1	77	166.0	0.6	**0.0883**	0.021	23.3	ug/L	155	Standard
>	**Ga**	71	41.7	30.2				mg/L	27	Standard
	Rb	85	780.0	4.4				ug/L	52	Standard
	Y	89	725560.4	4.0				ug/L	610565	Standard
>	**Rh**	103	60.0	8.3				ug/L	10	Standard
	Mo	98	160.2	19.4	**0.0241**	0.007	30.1	ug/L	29	Standard
	Ag	107	130.7	3.1	**-0.0030**	0.000	11.7	ug/L	112	Standard
	Cd	111	6.5	84.9	**0.0007**	0.001	205.1	mg/L	3	Standard
	Cd	114	51.9	42.3	**-0.0040**	0.002	60.2	ug/L	27	Standard
>	**In**	115	1073535.4	0.7				ug/L	919955	Standard
	Sn	118	921.7	5.3	**0.0019**	0.005	271.2	ug/L	932	Standard
	Sb	123	74.5	9.0	**-0.0058**	0.001	18.0	ug/L	105	Standard
	Ba	135	1772.4	4.1	**0.4247**	0.019	4.4	ug/L	29	Standard
	Ce	140	176.7	30.3				ug/L	305	Standard
>	**Tb**	159	1534559.7	1.7				ug/L	1429880	Standard
	Ho	165	16.7	91.7				ug/L	13	Standard
	Tl	203	301.3	7.9	**0.0211**	0.001	7.0	ug/L	5	Standard
	Tl	205	295.0	29.6	**0.0216**	0.008	37.3	ug/L	5	Standard
	Pb	206	622.3	4.3	**0.0111**	0.003	23.5	ug/L	368	Standard
	Pb	207	514.3	4.3	**0.0111**	0.003	24.1	ug/L	311	Standard
	Pb	208	1729.0	14.3	**0.0154**	0.010	65.3	ug/L	939	Standard
	U	238	75.3	77.6	**0.0051**	0.006	122.3	ug/L	3	Standard
>	**Bi**	209	743660.7	1.8				ug/L	663779	Standard

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Na	23	0.0		**-2.5666**			mg/L	0	Standard
Mg	24	2756.9	1.9	**2.1671**	0.073	3.4	mg/L	117	Standard
K	39	20.0	43.3	**-0.0109**	0.021	188.5	mg/L	18	Standard
Ca	43	58.3	27.6	**0.6728**	0.681	101.2	mg/L	42	Standard
Fe	54	385.2	14.3	**0.0424**	0.027	64.5	mg/L	280	Standard
Fe	57	321.7	8.0	**0.0857**	0.046	54.0	mg/L	295	Standard
> **Sc-1**	45	81384.7	2.2				mg/L	81804	Standard
Cl	35	28574.3	0.4				ug/L	23537	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	6391.3	4.0				ug/L	2400	Standard
P	31	27722.1	5.7				ug/L	22884	Standard
S	34	890.0	12.2				ug/L	877	Standard
Sr	88	171.7	6.7				ug/L	152	Standard
C	12	820.0	5.3				mg/L	623	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	5.1	103.4				mg/L	32	Standard
Ho-1	165	16.7	91.7				mg/L	13	Standard
Er	166	33.3	45.8				mg/L	23	Standard
I	127	36308.8	10.7				mg/L	1360	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		133.518	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		116.231	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	116.694
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	112.034
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1502105306
Sample Date/Time: Tuesday, February 24, 2015 15:30:00
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	212230.2	2.9				ug/L	151539	Standard
	Be	9	36.7	55.1	**0.0103**	0.008	78.5	ug/L	10	Standard
	Al	27	34372796.6	2.6	**121.8253**	1.200	1.0	ug/L	1353	Standard
	Sc	45	81793.9	5.3				ug/L	81804	Standard
	Ti	47	660.7	2.3	**1.1406**	0.030	2.6	ug/L	33	Standard
	V	51	6169.3	6.3	**0.2161**	0.036	16.7	ug/L	3161	Standard
	Cr	52	16180.3	1.0	**0.1838**	0.026	13.9	ug/L	13150	Standard
	Cr	53	7708.6	0.5	**4.6189**	0.023	0.5	ug/L	513	Standard
	Mn	55	828360.3	3.5	**49.2660**	2.142	4.3	ug/L	1028	Standard
	Co	59	10864.2	4.0	**0.8091**	0.040	4.9	ug/L	168	Standard
	Ni	60	7548.5	2.7	**2.1385**	0.070	3.3	ug/L	47	Standard
	Cu	65	2091.8	3.5	**0.5552**	0.028	5.0	ug/L	247	Standard
	Zn	66	6669.1	3.4	**3.9358**	0.173	4.4	ug/L	269	Standard
>	**Ge**	72	649389.7	0.9				ug/L	590931	Standard
	As	75	1650.0	6.2	**1.1213**	0.055	4.9	ug/L	-178	Standard
	Se	82	691.2	1.6	**3.8838**	0.034	0.9	ug/L	27	Standard
	Se-1	77	559.7	1.4	**3.6953**	0.094	2.5	ug/L	155	Standard
>	**Ga**	71	80.0	16.5				mg/L	27	Standard
	Rb	85	5542.7	1.1				ug/L	52	Standard
	Y	89	689402.8	2.1				ug/L	610565	Standard
>	**Rh**	103	368.3	13.2				ug/L	10	Standard
	Mo	98	618.4	3.7	**0.1416**	0.006	4.2	ug/L	29	Standard
	Ag	107	130.3	11.7	**-0.0025**	0.001	56.1	ug/L	112	Standard
	Cd	111	330.8	1.5	**0.0942**	0.003	3.1	mg/L	3	Standard
	Cd	114	815.4	9.1	**0.0872**	0.010	11.4	ug/L	27	Standard
>	**In**	115	1012941.8	1.6				ug/L	919955	Standard
	Sn	118	1848.4	3.7	**0.0964**	0.008	8.4	ug/L	932	Standard
	Sb	123	269.3	3.6	**0.0247**	0.002	8.2	ug/L	105	Standard
	Ba	135	37312.9	2.1	**10.0394**	0.159	1.6	ug/L	29	Standard
	Ce	140	2081.8	8.5				ug/L	305	Standard
>	**Tb**	159	1493245.0	1.5				ug/L	1429880	Standard
	Ho	165	46.7	34.4				ug/L	13	Standard
	Tl	203	404.7	4.1	**0.0325**	0.001	4.4	ug/L	5	Standard
	Tl	205	363.3	11.0	**0.0316**	0.004	11.8	ug/L	5	Standard
	Pb	206	906.0	3.4	**0.0531**	0.003	6.4	ug/L	368	Standard
	Pb	207	746.4	8.1	**0.0494**	0.008	15.6	ug/L	311	Standard
	Pb	208	2446.4	1.7	**0.0553**	0.003	4.7	ug/L	939	Standard
	U	238	13406.3	2.8	**1.5786**	0.037	2.4	ug/L	3	Standard
>	**Bi**	209	661402.2	0.8				ug/L	663779	Standard

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Na	23	8.3	34.6	**9.8804**	3.862	39.1	mg/L	0	Standard
Mg	24	106509.8	1.2	**87.6195**	4.897	5.6	mg/L	117	Standard
K	39	236.7	10.6	**0.4964**	0.075	15.1	mg/L	18	Standard
Ca	43	760.0	10.0	**29.2241**	3.486	11.9	mg/L	42	Standard
Fe	54	331.7	8.9	**0.0121**	0.023	186.7	mg/L	280	Standard
Fe	57	486.7	5.2	**0.4245**	0.095	22.3	mg/L	295	Standard
> **Sc-1**	45	81793.9	5.3				mg/L	81804	Standard
Cl	35	32275.7	0.9				ug/L	23537	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	73189.7	0.6				ug/L	2400	Standard
P	31	42743.7	7.0				ug/L	22884	Standard
S	34	700.0	7.0				ug/L	877	Standard
Sr	88	1018.4	5.3				ug/L	152	Standard
C	12	2510.2	4.2				mg/L	623	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	92.8	27.2				mg/L	32	Standard
Ho-1	165	46.7	34.4				mg/L	13	Standard
Er	166	80.0	54.5				mg/L	23	Standard
I	127	5759033.4	2.4				mg/L	1360	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		140.049	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.893	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.108
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.642
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1502105306
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Method 6020 - Summary Report

Sample ID: L1502105306
Sample Date/Time: Tuesday, February 24, 2015 15:33:12
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	206670.3	4.7				ug/L	151539	Standard
	Be	9	13.3	108.3	**0.0015**	0.006	409.9	ug/L	10	Standard
	Al	27	840730.9	5.7	**3.0452**	0.042	1.4	ug/L	1353	Standard
	Sc	45	83016.8	0.8				ug/L	81804	Standard
	Ti	47	55.3	2.8	**0.0332**	0.003	7.7	ug/L	33	Standard
	V	51	3785.6	1.5	**0.0036**	0.005	131.5	ug/L	3161	Standard
	Cr	52	15369.1	0.8	**0.0507**	0.003	5.4	ug/L	13150	Standard
	Cr	53	848.4	3.2	**0.1724**	0.015	8.8	ug/L	513	Standard
	Mn	55	24331.5	3.0	**1.3008**	0.044	3.4	ug/L	1028	Standard
	Co	59	444.0	4.5	**0.0155**	0.002	10.5	ug/L	168	Standard
	Ni	60	336.3	4.5	**0.0681**	0.004	6.0	ug/L	47	Standard
	Cu	65	392.7	9.6	**0.0323**	0.011	34.2	ug/L	247	Standard
	Zn	66	4142.2	4.2	**2.2174**	0.108	4.9	ug/L	269	Standard
>	**Ge**	72	682215.1	0.7				ug/L	590931	Standard
	As	75	-200.1	19.4	**0.0147**	0.023	157.0	ug/L	-178	Standard
	Se	82	46.8	17.7	**0.0968**	0.045	46.1	ug/L	27	Standard
	Se-1	77	168.0	3.0	**0.1146**	0.034	29.3	ug/L	155	Standard
>	**Ga**	71	30.0	33.3				mg/L	27	Standard
	Rb	85	211.7	7.6				ug/L	52	Standard
	Y	89	713790.0	1.3				ug/L	610565	Standard
>	**Rh**	103	21.7	58.1				ug/L	10	Standard
	Mo	98	82.6	8.1	**0.0055**	0.002	34.3	ug/L	29	Standard
	Ag	107	117.3	5.7	**-0.0042**	0.000	11.6	ug/L	112	Standard
	Cd	111	11.5	5.0	**0.0021**	0.000	8.0	mg/L	3	Standard
	Cd	114	55.8	37.5	**-0.0037**	0.002	59.7	ug/L	27	Standard
>	**In**	115	1089453.9	1.6				ug/L	919955	Standard
	Sn	118	965.0	15.3	**0.0046**	0.015	314.5	ug/L	932	Standard
	Sb	123	54.5	24.7	**-0.0088**	0.002	23.2	ug/L	105	Standard
	Ba	135	890.0	6.5	**0.1967**	0.013	6.6	ug/L	29	Standard
	Ce	140	85.0	20.4				ug/L	305	Standard
>	**Tb**	159	1564336.7	2.2				ug/L	1429880	Standard
	Ho	165	10.0	50.0				ug/L	13	Standard
	Tl	203	208.0	14.0	**0.0141**	0.002	14.4	ug/L	5	Standard
	Tl	205	200.0	20.5	**0.0129**	0.003	26.2	ug/L	5	Standard
	Pb	206	532.7	1.6	**0.0011**	0.000	8.1	ug/L	368	Standard
	Pb	207	455.3	9.6	**0.0036**	0.004	122.0	ug/L	311	Standard
	Pb	208	1411.4	1.3	**0.0025**	0.002	60.1	ug/L	939	Standard
	U	238	288.7	1.4	**0.0272**	0.001	2.1	ug/L	3	Standard
>	**Bi**	209	750460.5	1.7				ug/L	663779	Standard

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Na	23	0.0		**-2.5666**			mg/L	0	Standard
Mg	24	2518.5	4.4	**1.9289**	0.105	5.5	mg/L	117	Standard
K	39	18.3	87.7	**-0.0159**	0.037	232.7	mg/L	18	Standard
Ca	43	61.7	20.4	**0.7508**	0.484	64.5	mg/L	42	Standard
Fe	54	277.2	5.4	**-0.0213**	0.009	43.5	mg/L	280	Standard
Fe	57	268.3	14.0	**-0.0355**	0.072	202.4	mg/L	295	Standard
> **Sc-1**	45	83016.8	0.8				mg/L	81804	Standard
Cl	35	30198.1	1.6				ug/L	23537	Standard
Kr	83	3.3	69.3				ug/L	3	Standard
Br	81	5314.3	9.9				ug/L	2400	Standard
P	31	28384.9	0.6				ug/L	22884	Standard
S	34	880.0	4.3				ug/L	877	Standard
Sr	88	166.7	24.2				ug/L	152	Standard
C	12	873.4	16.6				mg/L	623	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	15.5	34.1				mg/L	32	Standard
Ho-1	165	10.0	50.0				mg/L	13	Standard
Er	166	23.3	99.0				mg/L	23	Standard
I	127	47553.6	12.0				mg/L	1360	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		136.381	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		115.447	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		118.425
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		113.059
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1502105308
Sample Date/Time: Tuesday, February 24, 2015 15:36:23
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	213248.9	1.8				ug/L	151539	Standard
	Be	9	26.7	57.3	**0.0063**	0.006	94.4	ug/L	10	Standard
	Al	27	5690073.0	5.7	**20.0571**	1.096	5.5	ug/L	1353	Standard
	Sc	45	85376.6	1.2				ug/L	81804	Standard
	Ti	47	565.0	3.2	**0.9422**	0.032	3.4	ug/L	33	Standard
	V	51	32750.9	2.2	**2.3512**	0.052	2.2	ug/L	3161	Standard
	Cr	52	46255.5	1.4	**2.6705**	0.045	1.7	ug/L	13150	Standard
	Cr	53	7631.9	4.0	**4.4541**	0.188	4.2	ug/L	513	Standard
	Mn	55	85672.0	3.4	**4.9039**	0.157	3.2	ug/L	1028	Standard
	Co	59	1834.4	0.5	**0.1195**	0.001	0.8	ug/L	168	Standard
	Ni	60	6107.6	3.9	**1.6845**	0.064	3.8	ug/L	47	Standard
	Cu	65	2141.8	1.6	**0.5551**	0.012	2.1	ug/L	247	Standard
	Zn	66	5225.9	3.0	**2.9484**	0.090	3.1	ug/L	269	Standard
>	**Ge**	72	664951.7	0.3				ug/L	590931	Standard
	As	75	1069.6	5.0	**0.7575**	0.033	4.3	ug/L	-178	Standard
	Se	82	335.7	8.7	**1.7561**	0.171	9.7	ug/L	27	Standard
	Se-1	77	319.0	4.9	**1.4724**	0.129	8.7	ug/L	155	Standard
>	**Ga**	71	110.0	22.7				mg/L	27	Standard
	Rb	85	22346.5	1.4				ug/L	52	Standard
	Y	89	701072.3	2.1				ug/L	610565	Standard
>	**Rh**	103	801.7	22.0				ug/L	10	Standard
	Mo	98	15100.7	2.3	**3.6475**	0.076	2.1	ug/L	29	Standard
	Ag	107	138.7	10.6	**-0.0022**	0.001	51.9	ug/L	112	Standard
	Cd	111	83.3	13.9	**0.0221**	0.003	15.0	mg/L	3	Standard
	Cd	114	321.1	20.8	**0.0270**	0.007	27.5	ug/L	27	Standard
>	**In**	115	1049998.1	0.8				ug/L	919955	Standard
	Sn	118	10458.6	1.8	**0.8921**	0.025	2.8	ug/L	932	Standard
	Sb	123	646.4	4.1	**0.0788**	0.004	5.0	ug/L	105	Standard
	Ba	135	148020.0	1.9	**38.4978**	0.922	2.4	ug/L	29	Standard
	Ce	140	1936.8	6.2				ug/L	305	Standard
>	**Tb**	159	1491836.7	1.1				ug/L	1429880	Standard
	Ho	165	70.0	14.3				ug/L	13	Standard
	Tl	203	566.3	3.0	**0.0431**	0.001	2.1	ug/L	5	Standard
	Tl	205	483.3	1.6	**0.0407**	0.000	1.1	ug/L	5	Standard
	Pb	206	2589.6	1.7	**0.2345**	0.006	2.6	ug/L	368	Standard
	Pb	207	2275.2	3.5	**0.2334**	0.013	5.4	ug/L	311	Standard
	Pb	208	7023.6	3.1	**0.2371**	0.006	2.7	ug/L	939	Standard
	U	238	3701.5	1.4	**0.4069**	0.003	0.8	ug/L	3	Standard
>	**Bi**	209	704859.4	1.8				ug/L	663779	Standard

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Na	23	13.3	94.4	**16.7509**	18.358	109.6	mg/L	0	Standard
Mg	24	17416.7	1.7	**13.6058**	0.172	1.3	mg/L	117	Standard
K	39	313.3	16.4	**0.6435**	0.123	19.1	mg/L	18	Standard
Ca	43	1145.0	5.4	**42.8575**	2.554	6.0	mg/L	42	Standard
Fe	54	335.0	10.2	**0.0054**	0.017	320.3	mg/L	280	Standard
Fe	57	456.7	10.4	**0.3204**	0.090	28.2	mg/L	295	Standard
> **Sc-1**	45	85376.6	1.2				mg/L	81804	Standard
Cl	35	29180.1	1.8				ug/L	23537	Standard
Kr	83	3.3	69.3				ug/L	3	Standard
Br	81	31816.7	2.4				ug/L	2400	Standard
P	31	36915.0	5.4				ug/L	22884	Standard
S	34	933.4	0.3				ug/L	877	Standard
Sr	88	2286.8	4.4				ug/L	152	Standard
C	12	1943.5	1.6				mg/L	623	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	82.4	61.3				mg/L	32	Standard
Ho-1	165	70.0	14.3				mg/L	13	Standard
Er	166	90.0	11.1				mg/L	23	Standard
I	127	131691.6	1.2				mg/L	1360	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		140.722	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		112.526	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.136
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.189
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1502105308
Sample Date/Time: Tuesday, February 24, 2015 15:39:35
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	203608.0	2.9				ug/L	151539	Standard
	Be	9	16.7	17.3	**0.0028**	0.001	46.7	ug/L	10	Standard
	Al	27	139863.9	16.4	**0.5015**	0.069	13.7	ug/L	1353	Standard
	Sc	45	81907.6	3.1				ug/L	81804	Standard
	Ti	47	54.7	19.6	**0.0342**	0.017	49.4	ug/L	33	Standard
	V	51	4020.1	2.1	**0.0305**	0.006	19.2	ug/L	3161	Standard
	Cr	52	14971.7	1.8	**0.0507**	0.033	65.7	ug/L	13150	Standard
	Cr	53	821.7	9.6	**0.1688**	0.038	22.6	ug/L	513	Standard
	Mn	55	6381.4	9.8	**0.2932**	0.044	15.1	ug/L	1028	Standard
	Co	59	224.0	20.1	**0.0001**	0.004	6206.8	ug/L	168	Standard
	Ni	60	436.0	5.6	**0.0984**	0.008	7.9	ug/L	47	Standard
	Cu	65	346.0	9.5	**0.0213**	0.008	35.4	ug/L	247	Standard
	Zn	66	3084.3	2.3	**1.6318**	0.050	3.1	ug/L	269	Standard
>	**Ge**	72	664757.6	2.3				ug/L	590931	Standard
	As	75	-206.8	22.9	**0.0075**	0.030	399.2	ug/L	-178	Standard
	Se	82	39.5	39.1	**0.0605**	0.084	139.1	ug/L	27	Standard
	Se-1	77	158.3	5.7	**0.0683**	0.085	125.1	ug/L	155	Standard
>	**Ga**	71	18.3	78.7				mg/L	27	Standard
	Rb	85	515.0	0.0				ug/L	52	Standard
	Y	89	683454.9	0.5				ug/L	610565	Standard
>	**Rh**	103	28.3	36.7				ug/L	10	Standard
	Mo	98	399.3	1.5	**0.0823**	0.002	2.2	ug/L	29	Standard
	Ag	107	117.0	1.7	**-0.0039**	0.000	9.5	ug/L	112	Standard
	Cd	111	8.4	47.5	**0.0013**	0.001	83.4	mg/L	3	Standard
	Cd	114	22.5	64.1	**-0.0073**	0.002	23.6	ug/L	27	Standard
>	**In**	115	1057078.9	2.4				ug/L	919955	Standard
	Sn	118	901.7	12.5	**0.0012**	0.009	734.0	ug/L	932	Standard
	Sb	123	68.5	31.2	**-0.0065**	0.003	46.7	ug/L	105	Standard
	Ba	135	3197.7	1.8	**0.8002**	0.006	0.7	ug/L	29	Standard
	Ce	140	80.0	16.5				ug/L	305	Standard
>	**Tb**	159	1516563.1	2.2				ug/L	1429880	Standard
	Ho	165	20.0	90.1				ug/L	13	Standard
	Tl	203	86.7	27.9	**0.0053**	0.002	33.1	ug/L	5	Standard
	Tl	205	110.0	44.8	**0.0052**	0.004	83.4	ug/L	5	Standard
	Pb	206	492.7	2.6	**-0.0014**	0.001	63.2	ug/L	368	Standard
	Pb	207	396.0	5.3	**-0.0018**	0.002	136.3	ug/L	311	Standard
	Pb	208	1316.4	4.0	**0.0005**	0.002	443.7	ug/L	939	Standard
	U	238	103.3	33.2	**0.0082**	0.004	43.3	ug/L	3	Standard
>	**Bi**	209	726817.8	1.0				ug/L	663779	Standard

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Na	23	3.3	173.2	**2.5743**	8.904	345.9	mg/L	0	Standard
Mg	24	523.3	6.5	**0.3188**	0.040	12.6	mg/L	117	Standard
K	39	28.3	44.4	**0.0077**	0.028	359.8	mg/L	18	Standard
Ca	43	35.0	51.5	**-0.3069**	0.698	227.4	mg/L	42	Standard
Fe	54	276.9	2.7	**-0.0194**	0.007	33.8	mg/L	280	Standard
Fe	57	273.3	5.9	**-0.0173**	0.035	202.0	mg/L	295	Standard
Sc-1	45	81907.6	3.1				mg/L	81804	Standard
Cl	35	28997.7	0.5				ug/L	23537	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	4410.6	0.9				ug/L	2400	Standard
P	31	31782.1	14.5				ug/L	22884	Standard
S	34	918.4	4.6				ug/L	877	Standard
Sr	88	183.3	6.3				ug/L	152	Standard
C	12	756.7	3.3				mg/L	623	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	15.5	80.5				mg/L	32	Standard
Ho-1	165	20.0	90.1				mg/L	13	Standard
Er	166	23.3	89.2				mg/L	23	Standard
I	127	11817.9	3.0				mg/L	1360	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		134.360	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		112.493	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.906
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.497
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, February 24, 2015 15:42:47
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	202947.3	5.0				ug/L	151539	Standard
	Be	9	112741.4	2.5	**45.9584**	2.042	4.4	ug/L	10	Standard
	Al	27	11654570.3	2.9	**43.2324**	1.857	4.3	ug/L	1353	Standard
	Sc	45	82070.1	1.9				ug/L	81804	Standard
	Ti	47	54622.6	1.1	**96.8647**	1.460	1.5	ug/L	33	Standard
	V	51	617632.7	2.4	**49.4808**	1.238	2.5	ug/L	3161	Standard
	Cr	52	620106.3	2.0	**50.6161**	0.994	2.0	ug/L	13150	Standard
	Cr	53	79677.4	2.9	**49.6695**	1.603	3.2	ug/L	513	Standard
	Mn	55	836302.4	1.0	**48.4457**	0.546	1.1	ug/L	1028	Standard
	Co	59	673087.8	1.7	**49.8125**	0.975	2.0	ug/L	168	Standard
	Ni	60	184966.9	0.7	**51.5874**	0.554	1.1	ug/L	47	Standard
	Cu	65	175002.7	1.8	**51.8012**	1.025	2.0	ug/L	247	Standard
	Zn	66	82994.7	1.9	**50.6784**	1.056	2.1	ug/L	269	Standard
>	Ge	72	666550.9	0.5				ug/L	590931	Standard
	As	75	88430.9	1.6	**51.9421**	1.021	2.0	ug/L	-178	Standard
	Se	82	9448.0	1.5	**53.7457**	0.809	1.5	ug/L	27	Standard
	Se-1	77	6254.6	2.2	**53.2569**	1.271	2.4	ug/L	155	Standard
>	Ga	71	90.0	9.6				mg/L	27	Standard
	Rb	85	1481.7	7.7				ug/L	52	Standard
	Y	89	699946.4	1.5				ug/L	610565	Standard
>	Rh	103	73.3	43.8				ug/L	10	Standard
	Mo	98	445272.1	1.8	**105.3953**	0.706	0.7	ug/L	29	Standard
	Ag	107	666042.8	3.0	**50.5735**	1.086	2.1	ug/L	112	Standard
	Cd	111	184984.6	2.3	**50.1711**	0.441	0.9	mg/L	3	Standard
	Cd	114	458850.2	1.1	**51.3904**	0.484	0.9	ug/L	27	Standard
>	In	115	1075432.0	1.7				ug/L	919955	Standard
	Sn	118	554259.1	1.7	**50.3193**	0.338	0.7	ug/L	932	Standard
	Sb	123	355893.7	1.2	**51.2640**	0.480	0.9	ug/L	105	Standard
	Ba	135	185184.0	1.8	**47.0296**	0.734	1.6	ug/L	29	Standard
	Ce	140	316.7	7.1				ug/L	305	Standard
>	Tb	159	1541989.6	0.9				ug/L	1429880	Standard
	Ho	165	11.7	107.9				ug/L	13	Standard
	Tl	203	656611.0	1.5	**50.0838**	0.489	1.0	ug/L	5	Standard
	Tl	205	577688.5	3.1	**52.9224**	1.610	3.0	ug/L	5	Standard
	Pb	206	464609.4	1.4	**50.4827**	0.551	1.1	ug/L	368	Standard
	Pb	207	413155.6	1.0	**49.9826**	0.484	1.0	ug/L	311	Standard
	Pb	208	1271278.9	1.3	**50.9464**	0.677	1.3	ug/L	939	Standard
	U	238	492789.6	0.4	**53.1317**	0.478	0.9	ug/L	3	Standard
>	Bi	209	723629.0	0.5				ug/L	663779	Standard

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Na	23	0.0		**-2.5666**			mg/L	0	Standard
Mg	24	6934.9	2.1	**5.5703**	0.039	0.7	mg/L	117	Standard
K	39	1903.5	4.3	**4.3682**	0.121	2.8	mg/L	18	Standard
Ca	43	131.7	17.1	**3.6226**	0.976	26.9	mg/L	42	Standard
Fe	54	10059.6	0.8	**5.4573**	0.116	2.1	mg/L	280	Standard
Fe	57	2891.9	3.8	**5.3421**	0.114	2.1	mg/L	295	Standard
Sc-1	45	82070.1	1.9				mg/L	81804	Standard
Cl	35	28699.2	1.7				ug/L	23537	Standard
Kr	83	2.3	24.7				ug/L	3	Standard
Br	81	3863.8	6.5				ug/L	2400	Standard
P	31	29169.7	3.6				ug/L	22884	Standard
S	34	1055.0	11.7				ug/L	877	Standard
Sr	88	146.7	18.8				ug/L	152	Standard
C	12	860.0	11.2				mg/L	623	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	19.0	93.2				mg/L	32	Standard
Ho-1	165	11.7	107.9				mg/L	13	Standard
Er	166	20.0	86.6				mg/L	23	Standard
I	127	6936.6	5.6				mg/L	1360	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	91.917		
Al	27	86.465		
Sc	45			
Ti	47	96.865		
V	51	98.962		
Cr	52	101.232		
Cr	53			
Mn	55	96.891		
Co	59	99.625		
Ni	60	103.175		
Cu	65	103.602		
Zn	66	101.357		
Ge	72		112.797	
As	75	103.884		
Se	82	107.491		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	105.395		
Ag	107	101.147		
Cd	111	100.342		
Cd	114			
> In	115			116.901
Sn	118	100.639		
Sb	123	102.528		
Ba	135	94.059		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.168		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.893		
U	238	106.263		
> Bi	209			109.017
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, February 24, 2015 15:45:58
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	204364.0	0.6				ug/L	151539	Standard
	Be	9	35.0	37.8	**0.0102**	0.005	53.1	ug/L	10	Standard
	Al	27	2787.0	43.6	**-0.0036**	0.005	125.4	ug/L	1353	Standard
	Sc	45	84615.7	2.6				ug/L	81804	Standard
	Ti	47	39.0	5.1	**0.0072**	0.003	39.0	ug/L	33	Standard
	V	51	3195.6	2.6	**-0.0341**	0.004	12.2	ug/L	3161	Standard
	Cr	52	12978.6	1.5	**-0.1076**	0.015	14.2	ug/L	13150	Standard
	Cr	53	498.3	8.0	**-0.0315**	0.027	86.3	ug/L	513	Standard
	Mn	55	1138.7	15.7	**-0.0118**	0.011	91.2	ug/L	1028	Standard
	Co	59	293.3	54.9	**0.0054**	0.012	226.3	ug/L	168	Standard
	Ni	60	91.0	35.4	**0.0021**	0.009	436.1	ug/L	47	Standard
	Cu	65	313.7	4.9	**0.0126**	0.006	44.6	ug/L	247	Standard
	Zn	66	342.0	11.8	**-0.0549**	0.023	41.5	ug/L	269	Standard
>	Ge	72	659281.7	1.2				ug/L	590931	Standard
	As	75	-242.6	9.4	**-0.0144**	0.013	89.9	ug/L	-178	Standard
	Se	82	37.5	15.4	**0.0523**	0.036	67.9	ug/L	27	Standard
	Se-1	77	148.3	2.6	**-0.0085**	0.048	564.4	ug/L	155	Standard
>	Ga	71	15.0	66.7				mg/L	27	Standard
	Rb	85	71.7	31.5				ug/L	52	Standard
	Y	89	691843.6	4.8				ug/L	610565	Standard
>	Rh	103	15.0	33.3				ug/L	10	Standard
	Mo	98	252.4	44.2	**0.0467**	0.027	58.9	ug/L	29	Standard
	Ag	107	154.0	8.4	**-0.0012**	0.001	90.5	ug/L	112	Standard
	Cd	111	6.4	73.9	**0.0007**	0.001	182.3	mg/L	3	Standard
	Cd	114	44.6	80.7	**-0.0048**	0.004	85.1	ug/L	27	Standard
>	In	115	1064577.5	1.2				ug/L	919955	Standard
	Sn	118	1008.4	1.4	**0.0105**	0.002	22.9	ug/L	932	Standard
	Sb	123	160.4	5.7	**0.0068**	0.002	23.8	ug/L	105	Standard
	Ba	135	40.0	10.0	**-0.0162**	0.001	5.7	ug/L	29	Standard
	Ce	140	21.7	13.3				ug/L	305	Standard
>	Tb	159	1544157.0	1.0				ug/L	1429880	Standard
	Ho	165	15.0	100.0				ug/L	13	Standard
	Tl	203	55.0	12.7	**0.0029**	0.001	18.2	ug/L	5	Standard
	Tl	205	106.7	76.4	**0.0049**	0.007	150.1	ug/L	5	Standard
	Pb	206	410.0	4.9	**-0.0106**	0.002	19.4	ug/L	368	Standard
	Pb	207	349.0	7.2	**-0.0077**	0.003	40.4	ug/L	311	Standard
	Pb	208	1192.4	16.6	**-0.0048**	0.008	162.9	ug/L	939	Standard
	U	238	67.3	110.2	**0.0043**	0.008	182.2	ug/L	3	Standard
>	Bi	209	731118.5	0.2				ug/L	663779	Standard

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Na	23	1.7	173.2	**-0.0773**	4.312	5577.0	mg/L	0	Standard
Mg	24	123.3	35.0	**-0.0133**	0.036	272.9	mg/L	117	Standard
K	39	21.7	70.5	**-0.0086**	0.035	407.0	mg/L	18	Standard
Ca	43	33.3	31.2	**-0.4113**	0.376	91.3	mg/L	42	Standard
Fe	54	267.1	12.6	**-0.0294**	0.022	73.2	mg/L	280	Standard
Fe	57	310.0	19.6	**0.0398**	0.136	341.6	mg/L	295	Standard
> **Sc-1**	45	84615.7	2.6				mg/L	81804	Standard
Cl	35	28578.3	2.1				ug/L	23537	Standard
Kr	83	3.0	66.7				ug/L	3	Standard
Br	81	3413.7	0.7				ug/L	2400	Standard
P	31	27480.0	8.7				ug/L	22884	Standard
S	34	1015.0	4.7				ug/L	877	Standard
Sr	88	143.3	19.8				ug/L	152	Standard
C	12	816.7	3.7				mg/L	623	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	19.8	173.2				mg/L	32	Standard
Ho-1	165	15.0	100.0				mg/L	13	Standard
Er	166	3.3	173.2				mg/L	23	Standard
I	127	5939.5	1.3				mg/L	1360	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		111.567	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		115.721
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.145
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1502105310
Sample Date/Time: Tuesday, February 24, 2015 15:49:10
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	213966.3	3.4				ug/L	151539	Standard
	Be	9	75.0	50.3	**0.0249**	0.015	59.3	ug/L	10	Standard
	Al	27	46647985.2	2.8	**164.0038**	1.066	0.6	ug/L	1353	Standard
	Sc	45	82939.7	1.1				ug/L	81804	Standard
	Ti	47	1667.8	13.9	**3.0512**	0.424	13.9	ug/L	33	Standard
	V	51	13713.9	6.0	**0.8687**	0.066	7.6	ug/L	3161	Standard
	Cr	52	18847.7	2.1	**0.4536**	0.029	6.5	ug/L	13150	Standard
	Cr	53	11409.3	1.7	**7.1903**	0.105	1.5	ug/L	513	Standard
	Mn	55	374278.4	1.1	**22.7795**	0.165	0.7	ug/L	1028	Standard
	Co	59	4088.9	4.3	**0.3020**	0.013	4.2	ug/L	168	Standard
	Ni	60	6440.7	3.1	**1.8679**	0.052	2.8	ug/L	47	Standard
	Cu	65	2592.2	1.0	**0.7275**	0.009	1.3	ug/L	247	Standard
	Zn	66	5061.8	0.8	**3.0036**	0.033	1.1	ug/L	269	Standard
>	**Ge**	72	633240.4	0.3				ug/L	590931	Standard
	As	75	2228.5	3.3	**1.5037**	0.047	3.1	ug/L	-178	Standard
	Se	82	961.1	3.7	**5.6084**	0.230	4.1	ug/L	27	Standard
	Se-1	77	783.4	6.6	**5.8782**	0.503	8.6	ug/L	155	Standard
>	**Ga**	71	231.7	12.6				mg/L	27	Standard
	Rb	85	8981.0	2.4				ug/L	52	Standard
	Y	89	688231.8	1.8				ug/L	610565	Standard
>	**Rh**	103	448.3	7.6				ug/L	10	Standard
	Mo	98	866.1	3.1	**0.2057**	0.009	4.6	ug/L	29	Standard
	Ag	107	174.7	17.1	**0.0012**	0.002	189.5	ug/L	112	Standard
	Cd	111	137.7	10.2	**0.0389**	0.004	9.7	mg/L	3	Standard
	Cd	114	316.8	20.5	**0.0282**	0.008	29.5	ug/L	27	Standard
>	**In**	115	1004469.9	1.3				ug/L	919955	Standard
	Sn	118	1176.7	3.2	**0.0325**	0.005	16.0	ug/L	932	Standard
	Sb	123	289.0	6.8	**0.0280**	0.003	9.2	ug/L	105	Standard
	Ba	135	44744.6	1.3	**12.1465**	0.165	1.4	ug/L	29	Standard
	Ce	140	10745.5	3.1				ug/L	305	Standard
>	**Tb**	159	1484096.3	1.7				ug/L	1429880	Standard
	Ho	165	225.0	23.4				ug/L	13	Standard
	Tl	203	360.3	9.8	**0.0298**	0.002	8.3	ug/L	5	Standard
	Tl	205	343.3	14.6	**0.0308**	0.006	17.9	ug/L	5	Standard
	Pb	206	1325.7	3.9	**0.1082**	0.004	3.7	ug/L	368	Standard
	Pb	207	1110.4	3.3	**0.1024**	0.003	2.6	ug/L	311	Standard
	Pb	208	3568.5	2.7	**0.1097**	0.005	4.8	ug/L	939	Standard
	U	238	71588.1	1.7	**8.7202**	0.162	1.9	ug/L	3	Standard
>	**Bi**	209	640411.9	2.0				ug/L	663779	Standard

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Na	23	21.7	53.3	**29.7201**	17.373	58.5	mg/L	0	Standard
Mg	24	162394.1	1.7	**131.5517**	2.099	1.6	mg/L	117	Standard
K	39	150.0	8.8	**0.2872**	0.028	9.9	mg/L	18	Standard
Ca	43	813.4	5.7	**30.8659**	1.712	5.5	mg/L	42	Standard
Fe	54	481.9	10.0	**0.0920**	0.025	27.0	mg/L	280	Standard
Fe	57	586.7	7.7	**0.6111**	0.102	16.7	mg/L	295	Standard
> **Sc-1**	45	82939.7	1.1				mg/L	81804	Standard
Cl	35	34096.3	1.2				ug/L	23537	Standard
Kr	83	3.3	34.6				ug/L	3	Standard
Br	81	91596.2	2.8				ug/L	2400	Standard
P	31	38971.7	2.7				ug/L	22884	Standard
S	34	776.7	5.4				ug/L	877	Standard
Sr	88	1398.4	6.4				ug/L	152	Standard
C	12	2680.2	11.7				mg/L	623	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	7	Standard
Dy	164	323.1	3.1				mg/L	32	Standard
Ho-1	165	225.0	23.4				mg/L	13	Standard
Er	166	213.3	13.5				mg/L	23	Standard
I	127	1109897.0	1.1				mg/L	1360	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		141.195	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.160	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	109.187
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.480
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1502105310
Sample Date/Time: Tuesday, February 24, 2015 15:52:21
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	215556.5	2.6				ug/L	151539	Standard
	Be	9	18.3	31.5	**0.0031**	0.002	79.3	ug/L	10	Standard
	Al	27	1150856.8	0.8	**4.0036**	0.084	2.1	ug/L	1353	Standard
	Sc	45	83496.3	3.9				ug/L	81804	Standard
	Ti	47	67.3	12.6	**0.0554**	0.014	26.1	ug/L	33	Standard
	V	51	3927.8	2.0	**0.0187**	0.007	38.6	ug/L	3161	Standard
	Cr	52	15562.7	1.8	**0.0822**	0.002	2.3	ug/L	13150	Standard
	Cr	53	1010.0	10.3	**0.2797**	0.070	24.9	ug/L	513	Standard
	Mn	55	12583.6	1.7	**0.6436**	0.001	0.1	ug/L	1028	Standard
	Co	59	288.3	11.3	**0.0045**	0.003	60.9	ug/L	168	Standard
	Ni	60	302.3	5.0	**0.0599**	0.004	6.9	ug/L	47	Standard
	Cu	65	411.0	5.7	**0.0390**	0.005	13.5	ug/L	247	Standard
	Zn	66	3562.1	3.1	**1.8955**	0.040	2.1	ug/L	269	Standard
>	**Ge**	72	673860.1	1.6				ug/L	590931	Standard
	As	75	-178.8	20.9	**0.0254**	0.024	92.5	ug/L	-178	Standard
	Se	82	58.9	21.3	**0.1676**	0.066	39.2	ug/L	27	Standard
	Se-1	77	203.7	10.0	**0.4395**	0.158	36.0	ug/L	155	Standard
>	**Ga**	71	26.7	39.0				mg/L	27	Standard
	Rb	85	280.0	4.7				ug/L	52	Standard
	Y	89	702319.9	1.7				ug/L	610565	Standard
>	**Rh**	103	38.3	78.6				ug/L	10	Standard
	Mo	98	117.5	22.3	**0.0141**	0.007	50.0	ug/L	29	Standard
	Ag	107	130.3	8.5	**-0.0031**	0.001	20.4	ug/L	112	Standard
	Cd	111	6.2	24.7	**0.0006**	0.000	61.5	mg/L	3	Standard
	Cd	114	57.1	52.4	**-0.0034**	0.004	103.9	ug/L	27	Standard
>	**In**	115	1075386.0	2.7				ug/L	919955	Standard
	Sn	118	916.7	11.2	**0.0011**	0.008	663.2	ug/L	932	Standard
	Sb	123	59.8	13.7	**-0.0079**	0.001	17.5	ug/L	105	Standard
	Ba	135	1010.7	9.0	**0.2301**	0.017	7.5	ug/L	29	Standard
	Ce	140	288.3	2.6				ug/L	305	Standard
>	**Tb**	159	1531642.8	2.0				ug/L	1429880	Standard
	Ho	165	11.7	65.5				ug/L	13	Standard
	Tl	203	273.3	8.6	**0.0193**	0.002	8.5	ug/L	5	Standard
	Tl	205	193.3	13.3	**0.0126**	0.002	16.7	ug/L	5	Standard
	Pb	206	565.3	1.2	**0.0057**	0.001	23.3	ug/L	368	Standard
	Pb	207	490.7	2.3	**0.0089**	0.002	16.9	ug/L	311	Standard
	Pb	208	1503.7	5.8	**0.0073**	0.004	56.8	ug/L	939	Standard
	U	238	1532.7	1.8	**0.1597**	0.003	2.0	ug/L	3	Standard
>	**Bi**	209	735590.9	1.2				ug/L	663779	Standard

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Na	23	1.7	173.2	**-0.0345**	4.386	12721.9	mg/L	0	Standard
Mg	24	3633.8	4.2	**2.8149**	0.063	2.2	mg/L	117	Standard
K	39	21.7	48.0	**-0.0087**	0.023	261.1	mg/L	18	Standard
Ca	43	51.7	34.0	**0.3561**	0.751	210.9	mg/L	42	Standard
Fe	54	302.3	9.1	**-0.0081**	0.020	240.4	mg/L	280	Standard
Fe	57	305.0	7.1	**0.0370**	0.063	169.9	mg/L	295	Standard
Sc-1	45	83496.3	3.9				mg/L	81804	Standard
Cl	35	30767.9	1.4				ug/L	23537	Standard
Kr	83	2.0	100.0				ug/L	3	Standard
Br	81	5961.2	9.7				ug/L	2400	Standard
P	31	28233.3	14.5				ug/L	22884	Standard
S	34	896.7	6.9				ug/L	877	Standard
Sr	88	180.0	10.0				ug/L	152	Standard
C	12	856.7	9.4				mg/L	623	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	4.4	134.4				mg/L	32	Standard
Ho-1	165	11.7	65.5				mg/L	13	Standard
Er	166	46.7	32.7				mg/L	23	Standard
I	127	33647.7	11.5				mg/L	1360	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		142.244	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.034	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		116.896
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.819
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1502105312
Sample Date/Time: Tuesday, February 24, 2015 15:55:33
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	207056.0	3.0				ug/L	151539	Standard
	Be	9	35.0	37.8	**0.0099**	0.005	50.3	ug/L	10	Standard
	Al	27	101508329.9	3.1	**368.7745**	5.467	1.5	ug/L	1353	Standard
	Sc	45	77842.8	1.9				ug/L	81804	Standard
	Ti	47	437.7	11.9	**0.8167**	0.092	11.3	ug/L	33	Standard
	V	51	5839.4	7.3	**0.2389**	0.037	15.3	ug/L	3161	Standard
	Cr	52	22244.7	0.9	**0.9033**	0.049	5.4	ug/L	13150	Standard
	Cr	53	23049.2	2.7	**16.0500**	0.226	1.4	ug/L	513	Standard
	Mn	55	143855.2	2.1	**9.3834**	0.233	2.5	ug/L	1028	Standard
	Co	59	2781.6	2.9	**0.2168**	0.008	3.9	ug/L	168	Standard
	Ni	60	16143.6	3.4	**5.0820**	0.156	3.1	ug/L	47	Standard
	Cu	65	3071.6	1.1	**0.9508**	0.014	1.5	ug/L	247	Standard
	Zn	66	7321.8	3.6	**4.8275**	0.181	3.8	ug/L	269	Standard
>	**Ge**	72	588047.2	1.4				ug/L	590931	Standard
	As	75	4722.7	1.3	**3.2657**	0.025	0.8	ug/L	-178	Standard
	Se	82	2067.5	0.5	**13.2096**	0.205	1.6	ug/L	27	Standard
	Se-1	77	1924.5	3.8	**17.7157**	0.694	3.9	ug/L	155	Standard
>	**Ga**	71	75.0	23.1				mg/L	27	Standard
	Rb	85	13552.7	2.0				ug/L	52	Standard
	Y	89	661869.2	0.4				ug/L	610565	Standard
>	**Rh**	103	943.4	18.3				ug/L	10	Standard
	Mo	98	628.7	15.0	**0.1594**	0.026	16.1	ug/L	29	Standard
	Ag	107	203.7	5.0	**0.0050**	0.001	13.8	ug/L	112	Standard
	Cd	111	183.4	5.0	**0.0569**	0.002	3.9	mg/L	3	Standard
	Cd	114	473.4	8.5	**0.0519**	0.006	11.2	ug/L	27	Standard
>	**In**	115	923731.5	1.2				ug/L	919955	Standard
	Sn	118	930.0	3.7	**0.0164**	0.005	28.0	ug/L	932	Standard
	Sb	123	337.4	1.0	**0.0400**	0.000	0.5	ug/L	105	Standard
	Ba	135	49162.0	1.1	**14.5174**	0.193	1.3	ug/L	29	Standard
	Ce	140	533.3	10.3				ug/L	305	Standard
>	**Tb**	159	1394916.1	1.4				ug/L	1429880	Standard
	Ho	165	40.0	21.7				ug/L	13	Standard
	Tl	203	262.3	4.8	**0.0238**	0.001	5.6	ug/L	5	Standard
	Tl	205	300.0	43.8	**0.0298**	0.015	51.8	ug/L	5	Standard
	Pb	206	562.7	5.4	**0.0219**	0.004	20.3	ug/L	368	Standard
	Pb	207	487.0	2.3	**0.0243**	0.002	8.2	ug/L	311	Standard
	Pb	208	1657.4	12.9	**0.0312**	0.012	36.9	ug/L	939	Standard
	U	238	42943.5	2.3	**5.7970**	0.206	3.5	ug/L	3	Standard
>	**Bi**	209	577866.9	1.3				ug/L	663779	Standard

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Na	23	31.7	50.8	**47.3492**	24.361	51.4	mg/L	0	Standard
Mg	24	253956.5	4.3	**219.2303**	7.088	3.2	mg/L	117	Standard
K	39	411.7	20.6	**0.9496**	0.190	20.0	mg/L	18	Standard
Ca	43	2433.5	2.4	**102.1826**	2.948	2.9	mg/L	42	Standard
Fe	54	284.8	17.8	**-0.0070**	0.027	381.8	mg/L	280	Standard
Fe	57	936.7	14.8	**1.4431**	0.291	20.2	mg/L	295	Standard
> **Sc-1**	45	77842.8	1.9				mg/L	81804	Standard
Cl	35	42694.1	2.1				ug/L	23537	Standard
Kr	83	1.3	86.6				ug/L	3	Standard
Br	81	222133.4	1.7				ug/L	2400	Standard
P	31	36331.8	1.4				ug/L	22884	Standard
S	34	843.4	2.9				ug/L	877	Standard
Sr	88	2980.3	5.8				ug/L	152	Standard
C	12	1943.5	9.5				mg/L	623	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	67.4	39.0				mg/L	32	Standard
Ho-1	165	40.0	21.7				mg/L	13	Standard
Er	166	53.3	10.8				mg/L	23	Standard
I	127	907782.9	6.2				mg/L	1360	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		136.635	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.512	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.411	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	87.057	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1502105312
Sample Date/Time: Tuesday, February 24, 2015 15:58:44
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	205911.8	2.1				ug/L	151539	Standard
	Be	9	23.3	53.9	**0.0053**	0.005	92.2	ug/L	10	Standard
	Al	27	2502374.2	5.0	**9.1238**	0.271	3.0	ug/L	1353	Standard
	Sc	45	83724.3	4.1				ug/L	81804	Standard
	Ti	47	55.7	14.6	**0.0340**	0.013	37.3	ug/L	33	Standard
	V	51	3883.0	5.4	**0.0127**	0.020	154.4	ug/L	3161	Standard
	Cr	52	15971.1	0.9	**0.1053**	0.014	13.3	ug/L	13150	Standard
	Cr	53	1885.1	2.1	**0.8134**	0.038	4.6	ug/L	513	Standard
	Mn	55	8448.4	12.4	**0.4018**	0.052	13.0	ug/L	1028	Standard
	Co	59	335.0	46.0	**0.0076**	0.011	141.5	ug/L	168	Standard
	Ni	60	587.3	3.3	**0.1372**	0.003	2.1	ug/L	47	Standard
	Cu	65	517.0	7.0	**0.0688**	0.008	12.0	ug/L	247	Standard
	Zn	66	6557.8	3.4	**3.6817**	0.087	2.4	ug/L	269	Standard
>	**Ge**	72	679382.5	1.5				ug/L	590931	Standard
	As	75	-83.4	67.2	**0.0811**	0.033	40.2	ug/L	-178	Standard
	Se	82	99.3	3.7	**0.3917**	0.017	4.3	ug/L	27	Standard
	Se-1	77	221.7	3.8	**0.5799**	0.053	9.2	ug/L	155	Standard
>	**Ga**	71	25.0	34.6				mg/L	27	Standard
	Rb	85	380.0	4.7				ug/L	52	Standard
	Y	89	716712.2	0.9				ug/L	610565	Standard
>	**Rh**	103	66.7	8.7				ug/L	10	Standard
	Mo	98	172.1	45.0	**0.0274**	0.018	67.2	ug/L	29	Standard
	Ag	107	129.7	9.2	**-0.0030**	0.001	34.9	ug/L	112	Standard
	Cd	111	10.8	9.1	**0.0020**	0.000	17.0	mg/L	3	Standard
	Cd	114	36.3	6.7	**-0.0057**	0.000	3.4	ug/L	27	Standard
>	**In**	115	1061874.4	2.1				ug/L	919955	Standard
	Sn	118	820.0	2.1	**-0.0066**	0.000	6.0	ug/L	932	Standard
	Sb	123	50.4	19.0	**-0.0092**	0.001	14.7	ug/L	105	Standard
	Ba	135	1208.7	4.7	**0.2844**	0.008	2.9	ug/L	29	Standard
	Ce	140	75.0	23.1				ug/L	305	Standard
>	**Tb**	159	1517551.2	2.7				ug/L	1429880	Standard
	Ho	165	20.0	25.0				ug/L	13	Standard
	Tl	203	487.3	4.9	**0.0360**	0.002	4.6	ug/L	5	Standard
	Tl	205	471.7	34.5	**0.0384**	0.015	37.8	ug/L	5	Standard
	Pb	206	744.7	9.0	**0.0263**	0.007	25.7	ug/L	368	Standard
	Pb	207	624.7	8.5	**0.0262**	0.006	22.8	ug/L	311	Standard
	Pb	208	2112.1	11.7	**0.0326**	0.009	28.3	ug/L	939	Standard
	U	238	1078.0	11.1	**0.1134**	0.012	10.6	ug/L	3	Standard
>	**Bi**	209	723136.3	0.7				ug/L	663779	Standard

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Na	23	1.7	173.2	**-0.0222**	4.407	19860.7	mg/L	0	Standard
Mg	24	5859.5	2.5	**4.5970**	0.124	2.7	mg/L	117	Standard
K	39	28.3	56.7	**0.0064**	0.036	560.9	mg/L	18	Standard
Ca	43	83.3	17.3	**1.5813**	0.437	27.6	mg/L	42	Standard
Fe	54	271.6	8.7	**-0.0255**	0.015	59.9	mg/L	280	Standard
Fe	57	306.7	6.8	**0.0368**	0.017	45.1	mg/L	295	Standard
> **Sc-1**	45	83724.3	4.1				mg/L	81804	Standard
Cl	35	31558.2	2.5				ug/L	23537	Standard
Kr	83	2.7	43.3				ug/L	3	Standard
Br	81	9212.8	2.7				ug/L	2400	Standard
P	31	26516.6	5.4				ug/L	22884	Standard
S	34	981.7	7.9				ug/L	877	Standard
Sr	88	198.3	12.4				ug/L	152	Standard
C	12	913.4	4.4				mg/L	623	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	7	Standard
Dy	164	22.5	25.0				mg/L	32	Standard
Ho-1	165	20.0	25.0				mg/L	13	Standard
Er	166	16.7	34.6				mg/L	23	Standard
I	127	42201.1	13.6				mg/L	1360	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		135.880	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.968	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		115.427
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.942
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, February 24, 2015 16:01:56
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	194806.2	6.6				ug/L	151539	Standard
	Be	9	112778.7	4.4	**47.8833**	1.196	2.5	ug/L	10	Standard
	Al	27	11845440.0	1.7	**45.8400**	2.696	5.9	ug/L	1353	Standard
	Sc	45	81339.8	5.2				ug/L	81804	Standard
	Ti	47	53918.1	2.1	**96.8060**	2.158	2.2	ug/L	33	Standard
	V	51	600673.3	1.2	**48.7197**	0.838	1.7	ug/L	3161	Standard
	Cr	52	607595.6	0.7	**50.2060**	0.574	1.1	ug/L	13150	Standard
	Cr	53	80151.6	3.7	**50.5918**	1.844	3.6	ug/L	513	Standard
	Mn	55	822903.3	1.2	**48.2648**	0.724	1.5	ug/L	1028	Standard
	Co	59	661097.0	1.9	**49.5351**	1.032	2.1	ug/L	168	Standard
	Ni	60	182090.0	0.6	**51.4178**	0.430	0.8	ug/L	47	Standard
	Cu	65	171068.0	1.1	**51.2669**	0.636	1.2	ug/L	247	Standard
	Zn	66	82353.3	2.5	**50.9149**	1.306	2.6	ug/L	269	Standard
>	Ge	72	658339.0	0.5				ug/L	590931	Standard
	As	75	86880.1	1.0	**51.6665**	0.558	1.1	ug/L	-178	Standard
	Se	82	9287.1	1.0	**53.4900**	0.728	1.4	ug/L	27	Standard
	Se-1	77	6207.9	0.8	**53.5232**	0.242	0.5	ug/L	155	Standard
>	Ga	71	65.0	53.8				mg/L	27	Standard
	Rb	85	1433.4	10.2				ug/L	52	Standard
	Y	89	693046.8	2.8				ug/L	610565	Standard
>	Rh	103	76.7	3.8				ug/L	10	Standard
	Mo	98	438038.4	1.6	**107.1187**	2.756	2.6	ug/L	29	Standard
	Ag	107	654658.2	0.5	**51.3522**	0.403	0.8	ug/L	112	Standard
	Cd	111	185495.6	0.7	**51.9742**	0.621	1.2	mg/L	3	Standard
	Cd	114	449198.3	1.3	**51.9649**	0.653	1.3	ug/L	27	Standard
>	In	115	1041117.5	1.0				ug/L	919955	Standard
	Sn	118	537229.0	1.0	**50.3867**	1.010	2.0	ug/L	932	Standard
	Sb	123	351421.9	1.2	**52.2905**	1.001	1.9	ug/L	105	Standard
	Ba	135	184360.6	0.7	**48.3644**	0.578	1.2	ug/L	29	Standard
	Ce	140	335.0	10.4				ug/L	305	Standard
>	Tb	159	1501335.4	0.5				ug/L	1429880	Standard
	Ho	165	15.0	88.2				ug/L	13	Standard
	Tl	203	651946.7	0.6	**50.4592**	0.093	0.2	ug/L	5	Standard
	Tl	205	564179.4	3.0	**52.4432**	1.528	2.9	ug/L	5	Standard
	Pb	206	461324.8	0.9	**50.8646**	0.654	1.3	ug/L	368	Standard
	Pb	207	411446.3	1.6	**50.5065**	0.799	1.6	ug/L	311	Standard
	Pb	208	1255130.0	1.0	**51.0376**	0.523	1.0	ug/L	939	Standard
	U	238	483363.3	1.1	**52.8776**	0.346	0.7	ug/L	3	Standard
>	Bi	209	713166.9	0.6				ug/L	663779	Standard

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Na	23	3.3	86.6	**2.3702**	4.281	180.6	mg/L	0	Standard
Mg	24	6703.1	1.6	**5.4425**	0.367	6.7	mg/L	117	Standard
K	39	1748.4	5.4	**4.0518**	0.293	7.2	mg/L	18	Standard
Ca	43	151.7	13.3	**4.5204**	1.141	25.3	mg/L	42	Standard
Fe	54	9610.4	3.1	**5.2638**	0.353	6.7	mg/L	280	Standard
Fe	57	2755.3	4.1	**5.1272**	0.427	8.3	mg/L	295	Standard
Sc-1	45	81339.8	5.2				mg/L	81804	Standard
Cl	35	27539.0	3.7				ug/L	23537	Standard
Kr	83	2.0	0.0				ug/L	3	Standard
Br	81	3807.1	2.8				ug/L	2400	Standard
P	31	26636.7	2.7				ug/L	22884	Standard
S	34	998.4	0.8				ug/L	877	Standard
Sr	88	136.7	10.6				ug/L	152	Standard
C	12	826.7	8.1				mg/L	623	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	21.9	69.8				mg/L	32	Standard
Ho-1	165	15.0	88.2				mg/L	13	Standard
Er	166	30.0	0.0				mg/L	23	Standard
I	127	15112.6	10.2				mg/L	1360	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	95.767		
Al	27	91.680		
Sc	45			
Ti	47	96.806		
V	51	97.439		
Cr	52	100.412		
Cr	53			
Mn	55	96.530		
Co	59	99.070		
Ni	60	102.836		
Cu	65	102.534		
Zn	66	101.830		
Ge	72		111.407	
As	75	103.333		
Se	82	106.980		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	107.119		
Ag	107	102.704		
Cd	111	103.948		
Cd	114			
In	115			113.170
Sn	118	100.773		
Sb	123	104.581		
Ba	135	96.729		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.918		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.075		
U	238	105.755		
Bi	209			107.440
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, February 24, 2015 16:05:08
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	187970.2	4.3				ug/L	151539	Standard
	Be	9	18.3	56.8	**0.0040**	0.004	106.1	ug/L	10	Standard
	Al	27	4010.6	50.2	**0.0020**	0.007	382.1	ug/L	1353	Standard
	Sc	45	80111.3	1.9				ug/L	81804	Standard
	Ti	47	37.3	15.2	**0.0053**	0.010	180.4	ug/L	33	Standard
	V	51	3102.1	2.2	**-0.0373**	0.005	13.2	ug/L	3161	Standard
	Cr	52	12968.2	2.0	**-0.0896**	0.024	26.9	ug/L	13150	Standard
	Cr	53	656.7	4.3	**0.0759**	0.013	16.8	ug/L	513	Standard
	Mn	55	1089.4	3.3	**-0.0136**	0.001	10.8	ug/L	1028	Standard
	Co	59	198.3	8.8	**-0.0015**	0.001	77.8	ug/L	168	Standard
	Ni	60	87.0	29.0	**0.0013**	0.007	526.7	ug/L	47	Standard
	Cu	65	293.0	4.4	**0.0079**	0.003	38.5	ug/L	247	Standard
	Zn	66	358.3	4.5	**-0.0408**	0.007	17.9	ug/L	269	Standard
>	**Ge**	72	648127.3	1.4				ug/L	590931	Standard
	As	75	-182.1	15.4	**0.0196**	0.017	84.7	ug/L	-178	Standard
	Se	82	47.4	16.2	**0.1140**	0.046	40.2	ug/L	27	Standard
	Se-1	77	155.0	5.6	**0.0736**	0.081	109.8	ug/L	155	Standard
>	**Ga**	71	21.7	58.1				mg/L	27	Standard
	Rb	85	80.0	21.7				ug/L	52	Standard
	Y	89	682824.2	1.5				ug/L	610565	Standard
>	**Rh**	103	18.3	41.7				ug/L	10	Standard
	Mo	98	191.9	15.0	**0.0323**	0.007	21.3	ug/L	29	Standard
	Ag	107	164.3	24.8	**-0.0003**	0.003	959.5	ug/L	112	Standard
	Cd	111	24.0	86.5	**0.0056**	0.006	102.7	mg/L	3	Standard
	Cd	114	87.4	73.4	**0.0001**	0.007	8068.4	ug/L	27	Standard
>	**In**	115	1058937.1	0.6				ug/L	919955	Standard
	Sn	118	1090.0	4.0	**0.0186**	0.004	24.0	ug/L	932	Standard
	Sb	123	169.9	19.3	**0.0083**	0.005	57.9	ug/L	105	Standard
	Ba	135	51.7	44.6	**-0.0132**	0.006	45.0	ug/L	29	Standard
	Ce	140	16.7	17.3				ug/L	305	Standard
>	**Tb**	159	1490037.1	1.6				ug/L	1429880	Standard
	Ho	165	18.3	15.7				ug/L	13	Standard
	Tl	203	100.7	44.2	**0.0066**	0.004	53.3	ug/L	5	Standard
	Tl	205	48.3	51.0	**-0.0003**	0.002	887.9	ug/L	5	Standard
	Pb	206	408.0	8.1	**-0.0097**	0.004	40.6	ug/L	368	Standard
	Pb	207	360.3	9.8	**-0.0052**	0.005	89.9	ug/L	311	Standard
	Pb	208	1048.0	3.4	**-0.0094**	0.002	16.9	ug/L	939	Standard
	U	238	27.7	56.0	**0.0002**	0.002	899.6	ug/L	3	Standard
>	**Bi**	209	712969.9	1.0				ug/L	663779	Standard

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Na	23	1.7	173.2	**0.0035**	4.45	125539.9	mg/L	0	Standard
Mg	24	128.3	9.8	**-0.0038**	0.013	333.9	mg/L	117	Standard
K	39	26.7	10.8	**0.0055**	0.006	104.2	mg/L	18	Standard
Ca	43	38.3	39.8	**-0.1171**	0.665	568.2	mg/L	42	Standard
Fe	54	273.8	10.9	**-0.0178**	0.016	87.3	mg/L	280	Standard
Fe	57	315.0	22.4	**0.0820**	0.145	177.2	mg/L	295	Standard
> **Sc-1**	45	80111.3	1.9				mg/L	81804	Standard
Cl	35	27561.0	1.3				ug/L	23537	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	3420.4	5.8				ug/L	2400	Standard
P	31	28212.9	4.7				ug/L	22884	Standard
S	34	946.7	7.8				ug/L	877	Standard
Sr	88	163.3	30.7				ug/L	152	Standard
C	12	753.4	4.3				mg/L	623	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	5.5	210.6				mg/L	32	Standard
Ho-1	165	18.3	15.7				mg/L	13	Standard
Er	166	23.3	24.7				mg/L	23	Standard
I	127	10730.5	2.7				mg/L	1360	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.679	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		115.107
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.411
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Tuesday, February 24, 2015 16:08:20
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	190375.9	5.5				ug/L	151539	Standard
	Be	9	471.7	5.3	**0.2007**	0.003	1.5	ug/L	10	Standard
	Al	27	431.7	19.7	**-0.0122**	0.000	2.0	ug/L	1353	Standard
	Sc	45	77568.2	3.5				ug/L	81804	Standard
	Ti	47	27.3	34.0	**-0.0120**	0.017	144.8	ug/L	33	Standard
	V	51	7526.5	4.7	**0.3399**	0.025	7.4	ug/L	3161	Standard
	Cr	52	21720.9	2.0	**0.6945**	0.031	4.4	ug/L	13150	Standard
	Cr	53	1680.1	7.5	**0.7554**	0.083	11.0	ug/L	513	Standard
	Mn	55	8679.2	3.7	**0.4480**	0.013	3.0	ug/L	1028	Standard
	Co	59	5009.2	3.5	**0.3712**	0.010	2.7	ug/L	168	Standard
	Ni	60	5499.3	2.6	**1.5813**	0.023	1.4	ug/L	47	Standard
	Cu	65	3029.3	3.0	**0.8578**	0.016	1.9	ug/L	247	Standard
	Zn	66	10423.3	4.3	**6.4240**	0.203	3.2	ug/L	269	Standard
>	**Ge**	72	637209.5	1.2				ug/L	590931	Standard
	As	75	430.6	8.0	**0.3934**	0.024	6.1	ug/L	-178	Standard
	Se	82	109.8	6.4	**0.4917**	0.048	9.8	ug/L	27	Standard
	Se-1	77	193.3	1.1	**0.4472**	0.009	2.1	ug/L	155	Standard
>	**Ga**	71	36.7	20.8				mg/L	27	Standard
	Rb	85	31.7	55.5				ug/L	52	Standard
	Y	89	665170.2	1.2				ug/L	610565	Standard
>	**Rh**	103	20.0	43.3				ug/L	10	Standard
	Mo	98	67.9	33.6	**0.0028**	0.006	205.1	ug/L	29	Standard
	Ag	107	5059.5	5.0	**0.3838**	0.017	4.5	ug/L	112	Standard
	Cd	111	799.2	4.6	**0.2228**	0.009	3.8	mg/L	3	Standard
	Cd	114	1965.3	3.9	**0.2175**	0.010	4.8	ug/L	27	Standard
>	**In**	115	1041353.6	0.8				ug/L	919955	Standard
	Sn	118	861.7	6.0	**-0.0012**	0.005	425.9	ug/L	932	Standard
	Sb	123	2493.0	4.4	**0.3543**	0.014	3.8	ug/L	105	Standard
	Ba	135	2563.6	4.8	**0.6462**	0.031	4.9	ug/L	29	Standard
	Ce	140	26.7	47.2				ug/L	305	Standard
>	**Tb**	159	1523692.5	2.0				ug/L	1429880	Standard
	Ho	165	15.0	88.2				ug/L	13	Standard
	Tl	203	1036.0	1.0	**0.0786**	0.003	3.3	ug/L	5	Standard
	Tl	205	915.0	11.1	**0.0798**	0.008	9.8	ug/L	5	Standard
	Pb	206	2147.8	3.7	**0.1812**	0.005	2.8	ug/L	368	Standard
	Pb	207	1789.8	3.3	**0.1694**	0.008	4.4	ug/L	311	Standard
	Pb	208	5826.1	3.9	**0.1839**	0.004	2.1	ug/L	939	Standard
	U	238	3577.8	3.2	**0.3867**	0.006	1.4	ug/L	3	Standard
>	**Bi**	209	716548.5	2.3				ug/L	663779	Standard

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Na	23	0.0		**-2.5666**			mg/L	0	Standard
Mg	24	116.7	13.8	**-0.0107**	0.011	104.3	mg/L	117	Standard
K	39	23.3	49.5	**-0.0011**	0.027	2584.5	mg/L	18	Standard
Ca	43	36.7	67.3	**-0.1408**	1.059	751.9	mg/L	42	Standard
Fe	54	244.5	7.6	**-0.0299**	0.012	38.9	mg/L	280	Standard
Fe	57	298.3	10.1	**0.0677**	0.054	80.4	mg/L	295	Standard
> **Sc-1**	45	77568.2	3.5				mg/L	81804	Standard
Cl	35	27687.3	0.6				ug/L	23537	Standard
Kr	83	2.7	78.1				ug/L	3	Standard
Br	81	3580.4	14.7				ug/L	2400	Standard
P	31	25449.7	4.4				ug/L	22884	Standard
S	34	1005.0	8.6				ug/L	877	Standard
Sr	88	133.3	15.6				ug/L	152	Standard
C	12	763.4	14.4				mg/L	623	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	19.0	5.0				mg/L	32	Standard
Ho-1	165	15.0	88.2				mg/L	13	Standard
Er	166	20.0	100.0				mg/L	23	Standard
I	127	9514.7	1.8				mg/L	1360	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		125.628	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.831	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.196
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.950
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: QC Std 8
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2.4 General Chemistry Data

2.4.1 Method 9056

2.4.1.1 Summary Data

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-01	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	50WW13-021715	**Prep Method:**	9056	**Prep Date:**	02/21/2015 17:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/01/2014 14:10
Workgroup #:	WG513061	**Analyst:**	AED	**Run Date:**	02/22/2015 01:53
Collect Date:	02/17/2015 08:10	**Dilution:**	10	**File ID:**	I3_022115-29
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	416	J	4.00	2.00	1.00
Nitrate	14797-55-8	2.00	U,H1	4.00	2.00	1.00
Nitrite	14797-65-0	2.00	U,H1	4.00	2.00	1.00
Sulfate	14808-79-8	302	H1	20.0	10.0	5.00

H1	Sample analysis performed past holding time.
J	Estimated value ; the analyte concentration was greater than the highest standard
U,H1	Not detected; Sample analysis performed past holding time.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-01	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	50WW13-021715	**Prep Method:**	9056	**Prep Date:**	02/21/2015 17:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/01/2014 14:10
Workgroup #:	WG513061	**Analyst:**	AED	**Run Date:**	02/22/2015 02:13
Collect Date:	02/17/2015 08:10	**Dilution:**	20	**File ID:**	I3_022115-30
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	372	H1	8.00	4.00	2.00
Nitrate	14797-55-8	4.00	U	8.00	4.00	2.00
Nitrite	14797-65-0	4.00	U	8.00	4.00	2.00
Sulfate	14808-79-8	279		40.0	20.0	10.0

H1	Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-03	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	50WW14-021715	**Prep Method:**	9056	**Prep Date:**	02/21/2015 17:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/01/2014 14:10
Workgroup #:	WG513061	**Analyst:**	AED	**Run Date:**	02/22/2015 02:34
Collect Date:	02/17/2015 09:20	**Dilution:**	5	**File ID:**	I3_022115-31
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	479	J	2.00	1.00	0.500
Nitrate	14797-55-8	1.00	U,H1	2.00	1.00	0.500
Nitrite	14797-65-0	1.00	U,H1	2.00	1.00	0.500
Sulfate	14808-79-8	352	H1	10.0	5.00	2.50

H1	Sample analysis performed past holding time.
J	Estimated value ; the analyte concentration was greater than the highest standard
U,H1	Not detected; Sample analysis performed past holding time.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-03	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	50WW14-021715	**Prep Method:**	9056	**Prep Date:**	02/21/2015 17:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/01/2014 14:10
Workgroup #:	WG513061	**Analyst:**	AED	**Run Date:**	02/22/2015 02:54
Collect Date:	02/17/2015 09:20	**Dilution:**	20	**File ID:**	I3_022115-32
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	400	H1	8.00	4.00	2.00
Nitrate	14797-55-8	4.00	U	8.00	4.00	2.00
Nitrite	14797-65-0	4.00	U	8.00	4.00	2.00
Sulfate	14808-79-8	323		40.0	20.0	10.0

H1	Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-05	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	50WW11-021715	**Prep Method:**	9056	**Prep Date:**	02/21/2015 17:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/01/2014 14:10
Workgroup #:	WG513061	**Analyst:**	AED	**Run Date:**	02/22/2015 03:14
Collect Date:	02/17/2015 10:45	**Dilution:**	5	**File ID:**	I3_022115-33
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	303	J	2.00	1.00	0.500
Nitrate	14797-55-8	1.00	U,H1	2.00	1.00	0.500
Nitrite	14797-65-0	1.00	U,H1	2.00	1.00	0.500
Sulfate	14808-79-8	304	H1	10.0	5.00	2.50

H1	Sample analysis performed past holding time.
J	Estimated value ; the analyte concentration was greater than the highest standard
U,H1	Not detected; Sample analysis performed past holding time.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-05	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	50WW11-021715	**Prep Method:**	9056	**Prep Date:**	02/21/2015 17:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/01/2014 14:10
Workgroup #:	WG513061	**Analyst:**	AED	**Run Date:**	02/22/2015 03:35
Collect Date:	02/17/2015 10:45	**Dilution:**	20	**File ID:**	I3_022115-34
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	250	H1	8.00	4.00	2.00
Nitrate	14797-55-8	4.00	U	8.00	4.00	2.00
Nitrite	14797-65-0	4.00	U	8.00	4.00	2.00
Sulfate	14808-79-8	270		40.0	20.0	10.0

H1	Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-07	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	50WW06-021715	**Prep Method:**	9056	**Prep Date:**	02/21/2015 17:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/01/2014 14:10
Workgroup #:	WG513061	**Analyst:**	AED	**Run Date:**	02/22/2015 03:55
Collect Date:	02/17/2015 11:55	**Dilution:**	5	**File ID:**	I3_022115-35
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	74.7	H1	2.00	1.00	0.500
Nitrate	14797-55-8	1.00	U,H1	2.00	1.00	0.500
Nitrite	14797-65-0	1.00	U,H1	2.00	1.00	0.500
Sulfate	14808-79-8	36.2	H1	10.0	5.00	2.50

H1	Sample analysis performed past holding time.
U,H1	Not detected; Sample analysis performed past holding time.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-09	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	50WW08-021715	**Prep Method:**	9056	**Prep Date:**	02/21/2015 17:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/01/2014 14:10
Workgroup #:	WG513061	**Analyst:**	AED	**Run Date:**	02/22/2015 04:15
Collect Date:	02/17/2015 14:05	**Dilution:**	5	**File ID:**	I3_022115-36
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	445	J	2.00	1.00	0.500
Nitrate	14797-55-8	1.00	U,H1	2.00	1.00	0.500
Nitrite	14797-65-0	1.00	U,H1	2.00	1.00	0.500
Sulfate	14808-79-8	302	H1	10.0	5.00	2.50

H1	Sample analysis performed past holding time.
J	Estimated value ; the analyte concentration was greater than the highest standard
U,H1	Not detected; Sample analysis performed past holding time.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-09	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	50WW08-021715	**Prep Method:**	9056	**Prep Date:**	02/21/2015 17:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/01/2014 14:10
Workgroup #:	WG513061	**Analyst:**	AED	**Run Date:**	02/22/2015 04:36
Collect Date:	02/17/2015 14:05	**Dilution:**	20	**File ID:**	I3_022115-37
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	373	H1	8.00	4.00	2.00
Nitrate	14797-55-8	4.00	U	8.00	4.00	2.00
Nitrite	14797-65-0	4.00	U	8.00	4.00	2.00
Sulfate	14808-79-8	277		40.0	20.0	10.0

H1	Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-11	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	50WW22-021715	**Prep Method:**	9056	**Prep Date:**	02/21/2015 17:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/01/2014 14:10
Workgroup #:	WG513061	**Analyst:**	AED	**Run Date:**	02/22/2015 04:56
Collect Date:	02/17/2015 15:15	**Dilution:**	5	**File ID:**	I3_022115-38
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1530	J	2.00	1.00	0.500
Nitrate	14797-55-8	1.00	U,H1	2.00	1.00	0.500
Nitrite	14797-65-0	1.00	U,H1	2.00	1.00	0.500
Sulfate	14808-79-8	787	J	10.0	5.00	2.50

J	Estimated value ; the analyte concentration was greater than the highest standard
U,H1	Not detected; Sample analysis performed past holding time.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-11	**PrePrep Method:**	N/A	**Instrument:**	IC3
Client ID:	50WW22-021715	**Prep Method:**	9056	**Prep Date:**	02/21/2015 17:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/01/2014 14:10
Workgroup #:	WG513061	**Analyst:**	AED	**Run Date:**	02/22/2015 05:57
Collect Date:	02/17/2015 15:15	**Dilution:**	100	**File ID:**	I3_022115-41
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1040	H1	40.0	20.0	10.0
Nitrate	14797-55-8	20.0	U	40.0	20.0	10.0
Nitrite	14797-65-0	20.0	U	40.0	20.0	10.0
Sulfate	14808-79-8	601	H1	200	100	50.0

H1	Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.4.1.2 QC Summary Data

Example Calculations - Ion Chromatography

A. Methods 9056/300.0 (Quadratic with Offset)

1. Retrieve Curve Data from the ICAL Curve

c2 = the value of curve constant
c1= the curve slope
c0 = the curve offset

2. Obtain the area, y , from the instrument raw data

3. Calculate the concentration of the analyte, f(y), where:

$$f(y) = \frac{1}{2 * c_2} * \left(- c_1 \pm \sqrt{c_1^2 - 4 * c_2 * (c_0 - y)}\right)$$

Example Calculation:

Value of constant, c2, (curve):	0.0003
Value of curve constant, c1, (slope):	0.0869
Value of curve constant, c0, (offset):	-0.0103
Area of target analyte, y, (uS*min):	2.993
Calculated concentration, f(y), (mg/L):	31.1998864
or:	-40.1161215 *
Dilution factor (D):	1.00
Concentration of analyte in sample (mg/L):	31.200

* There are two possible solutions, but only one is valid.

B. Method 314.0 - Perchlorate (Linear)

Retrieve Curve Data from Linear Plot

c1 = the curve slope

Obtain the area, y , from the quantitation report

Calculate the concentration of the analyte, f(y), where:

f (y) = y / c1

Example Calculation:

Value of c1, slope:	0.0034
Area of target analyte, y:	0.083
Calculated concentration:	24.4117647
Dilution Factor:	1
Concentration in sample:	24.4117647

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC3 Dataset: 100114 IC3.SEQ
Analyst1: Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 15

Maintenance Log ID: 51930 Syringe Filter Lot#: 00180133
Eluent ID#:

Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM

Workgroups: WG494944 WG494945

Internal STD: NA Surrogate STD: NA Calibration STD STD66516 (10/01/14)

CCV STD: STD66516 LCS STD: STD66517 MS/MSD STD: STD66516

Comments: ICAL and 7 rep MDL verification (waters and soils).
All MDL's need rerun.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I3_100114-01	ELUENT	1	1		10/01/14 11:48
2	I3_100114-02	DI WATER	1	1		10/01/14 12:08
3	I3_100114-03	WG494943-01 STD \#6	1	1		10/01/14 12:28
4	I3_100114-04	WG494943-02 STD \#5	1	1		10/01/14 12:48
5	I3_100114-05	WG494943-03 STD \#4	1	1		10/01/14 13:09
6	I3_100114-06	WG494943-04 STD \#3	1	1		10/01/14 13:29
7	I3_100114-07	WG494943-05 STD \#2	1	1		10/01/14 13:49
8	I3_100114-08	WG494943-06 STD \#1	1	1		10/01/14 14:10
9	I3_100114-09	WG494943-07 ALT STD	1	1		10/01/14 14:30
10	I3_100114-10	L14100001-01 (F,CL,BR,SO4)	1	1		10/01/14 14:50
11	I3_100114-11	L14100001-02	1	1		10/01/14 15:11
12	I3_100114-12	L14100001-03	1	1		10/01/14 15:31
13	I3_100114-13	L14100001-04	1	1		10/01/14 15:52
14	I3_100114-14	L14100001-05	1	1		10/01/14 16:12
15	I3_100114-15	L14100001-06	1	1		10/01/14 16:32
16	I3_100114-16	L14100001-07	1	1		10/01/14 16:53
17	I3_100114-17	WG494946-03 ANION CCV	1	1		10/01/14 17:13
18	I3_100114-18	WG494946-04 ANION CCB	1	1		10/01/14 17:33
19	I3_100114-19	L14100001-01 (NO2,NO3)	1	1		10/01/14 17:54
20	I3_100114-20	L14100001-02	1	1		10/01/14 18:14
21	I3_100114-21	L14100001-03	1	1		10/01/14 18:34
22	I3_100114-22	L14100001-04	1	1		10/01/14 18:55
23	I3_100114-23	L14100001-05	1	1		10/01/14 19:15
24	I3_100114-24	L14100001-06	1	1		10/01/14 19:35
25	I3_100114-25	L14100001-07	1	1		10/01/14 19:56
26	I3_100114-26	WG494944-01 ANION BLANK	1	1		10/01/14 20:16
27	I3_100114-27	L-1/2 CHECK	1	1		10/01/14 20:37
28	I3_100114-28	WG494946-05 ANION CCV	1	1		10/01/14 20:57
29	I3_100114-29	WG494946-06 ANION CCB	1	1		10/01/14 21:17
30	I3_100114-30	L14100003-01 (F,CL,BR,SO4)	7	1		10/01/14 21:38
31	I3_100114-31	L14100003-02	7	1		10/01/14 21:58
32	I3_100114-32	L14100003-03	7	1		10/01/14 22:18
33	I3_100114-33	L14100003-04	7	1		10/01/14 22:39

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC3 Dataset: 100114 IC3.SEQ

Analyst1: Analyst2: NA

Method: 300/9056 SOP: IC01 Rev: 15

Maintenance Log ID: 51930 Syringe Filter Lot#: 00180133

Eluent ID#:

Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM

Workgroups: WG494944 WG494945

Internal STD: NA Surrogate STD: NA STD66516 (10/01/14)

CCV STD: STD66516 LCS STD: STD66517 STD66516

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	I3_100114-34	L14100003-05	7	1		10/01/14 22:59
35	I3_100114-35	L14100003-06	7	1		10/01/14 23:19
36	I3_100114-36	L14100003-07	7	1		10/01/14 23:40
37	I3_100114-37	WG494946-07 ANION CCV	1	1		10/02/14 00:00
38	I3_100114-38	WG494946-08 ANION CCB	1	1		10/02/14 00:20
39	I3_100114-39	L14100003-01 (NO2,NO3)	7	1		10/02/14 00:41
40	I3_100114-40	L14100003-02	7	1		10/02/14 01:01
41	I3_100114-41	L14100003-03	7	1		10/02/14 01:22
42	I3_100114-42	L14100003-04	7	1		10/02/14 01:42
43	I3_100114-43	L14100003-05	7	1		10/02/14 02:02
44	I3_100114-44	L14100003-06	7	1		10/02/14 02:23
45	I3_100114-45	L14100003-07	7	1		10/02/14 02:43
46	I3_100114-46	WG494945-01 SOIL BLANK	7	1		10/02/14 03:03
47	I3_100114-47	WG494946-09 ANION CCV	1	1		10/02/14 03:24
48	I3_100114-48	WG494946-10 ANION CCB	1	1		10/02/14 03:44
49	I3_100114-49	END	1	1		10/02/14 04:04

Comments

Seq.	Rerun	Dil.	Reason	Analytes

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC3 Dataset: 022115 IC3.SEQ
Analyst1: AED Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 16

Maintenance Log ID: 52869 Syringe Filter Lot#: 190001
Eluent ID#: RGT32875
Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
Workgroups: WG513061
Internal STD: NA Surrogate STD: NA Calibration STD
CCV STD: STD66516 LCS STD: STD66517 MS/MSD STD: STD66516

Comments: Fractions L150201053 (all) were received out of hold.
Fractions L150201053- 01,03,05,09,11 were analyzed at dilutions due to one or more target analyte being greater than 200ppm. Fraction 07 was analyzed at a dilution due to high screen results for CL>ICAL.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I3_022115-01	ELUENT	1	1		02/21/15 16:23
2	I3_022115-02	DI WATER	1	1		02/21/15 16:43
3	I3_022115-03	WG513060-01 ANION CCV	1	1		02/21/15 17:03
4	I3_022115-04	WG513060-02 ANION CCB	1	1		02/21/15 17:24
5	I3_022115-05	WG513061-01 ANION BLANK	1	1		02/21/15 17:44
6	I3_022115-06	WG513061-02 ANION LCS	1	1		02/21/15 18:04
7	I3_022115-07	L15021018-02 (SO4) RS	1	1		02/21/15 18:25
8	I3_022115-08	WG513061-04 DUP	2	1		02/21/15 18:45
9	I3_022115-09	WG513061-05 MS	2	1		02/21/15 19:05
10	I3_022115-10	WG513061-06 MSD	2	1		02/21/15 19:26
11	I3_022115-11	L15021018-03 (SO4)	2	1		02/21/15 19:46
12	I3_022115-12	L15021018-04 (SO4)	2	1		02/21/15 20:07
13	I3_022115-13	L15021018-05 (SO4)	2	1		02/21/15 20:27
14	I3_022115-14	L15021018-06 (SO4)	2	1		02/21/15 20:47
15	I3_022115-15	WG513060-03 ANION CCV	1	1		02/21/15 21:08
16	I3_022115-16	WG513060-04 ANION CCB	1	1		02/21/15 21:28
17	I3_022115-17	L15021018-07 (SO4)	2	1		02/21/15 21:48
18	I3_022115-18	L15021018-10 (SO4)	2	1		02/21/15 22:09
19	I3_022115-19	L15021018-11 (SO4)	2	1		02/21/15 22:29
20	I3_022115-20	L15021018-13 (SO4)	2	1		02/21/15 22:49
21	I3_022115-21	L15021022-01 (CL,SO4)	1	1		02/21/15 23:10
22	I3_022115-22	L15021022-02 (CL,SO4)	1	1		02/21/15 23:30
23	I3_022115-23	L15021022-02 1/10 (CL,SO4)	1	10		02/21/15 23:51
24	I3_022115-24	L15021022-03 (CL,SO4)	1	1		02/22/15 00:11
25	I3_022115-25	L15021022-04 (CL,SO4)	1	1		02/22/15 00:31
26	I3_022115-26	L15021048-01 (SO4,BR)	2	1		02/22/15 00:52
27	I3_022115-27	WG513060-05 ANION CCV	1	1		02/22/15 01:12
28	I3_022115-28	WG513060-06 ANION CCB	1	1		02/22/15 01:32
29	I3_022115-29	L15021053-01 1/10 (SO4,CL,NO3,NO2)	1	10		02/22/15 01:53
30	I3_022115-30	L15021053-01 1/20 (SO4,CL,NO3,NO2)	1	20		02/22/15 02:13
31	I3_022115-31	L15021053-03 1/5 (SO4,CL,NO3,NO2)	1	5		02/22/15 02:34
32	I3_022115-32	L15021053-03 1/20 (SO4,CL,NO3,NO2)	1	20		02/22/15 02:54

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC3 Dataset: 022115 IC3.SEQ
Analyst1: AED Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 16

Maintenance Log ID: 52869 Syringe Filter Lot#: 190001
Eluent ID#: RGT32875
Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
Workgroups: WG513061
Internal STD: NA Surrogate STD: NA
CCV STD: STD66516 LCS STD: STD66517 STD66516

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
33	I3_022115-33	L15021053-05 1/5 (SO4,CL,NO3,NO2)	1	5		02/22/15 03:14
34	I3_022115-34	L15021053-05 1/20 (SO4,CL,NO3,NO2)	1	20		02/22/15 03:35
35	I3_022115-35	L15021053-07 1/5 (SO4,CL,NO3,NO2)	1	5		02/22/15 03:55
36	I3_022115-36	L15021053-09 1/5 (SO4,CL,NO3,NO2)	1	5		02/22/15 04:15
37	I3_022115-37	L15021053-09 1/20 (SO4,CL,NO3,NO2)	1	20		02/22/15 04:36
38	I3_022115-38	L15021053-11 1/5 (SO4,CL,NO3,NO2)	1	5		02/22/15 04:56
39	I3_022115-39	WG513060-07 ANION CCV	1	1		02/22/15 05:16
40	I3_022115-40	WG513060-08 ANION CCB	1	1		02/22/15 05:37
41	I3_022115-41	L15021053-11 1/100 (SO4,CL,NO3,NO2)	1	100		02/22/15 05:57
42	I3_022115-42	WG513060-09 ANION CCV	1	1		02/22/15 06:17
43	I3_022115-43	WG513060-10 ANION CCB	1	1		02/22/15 06:38
44	I3_022115-44	END	1	1		02/22/15 06:58

Comments

Seq.	Rerun	Dil.	Reason	Analytes

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Wadei D

Microbac Laboratories Inc.

Data Checklist

Date: 01-OCT-2014
Analyst: JBK
Analyst: ALS
Method: 300/9056
Instrument: IC3
Curve Workgroup: NA
Runlog ID: 63927
Analytical Workgroups: ICAL, 10-001 MDL, 10-003 MDL

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	WG494943
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	NA
Recoveries	NA
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual Integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	X
Check for completeness	
Primary Reviewer	JBK
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer:
08-OCT-2014

Secondary Reviewer:
15-OCT-2014

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-15-2014 16:18:07

Microbac Laboratories Inc.

Data Checklist

Date: 21-FEB-2015
Analyst: AED
Analyst: NA
Method: 300/9056
Instrument: IC3
Curve Workgroup: NA
Runlog ID: 66482
Analytical Workgroups: 02-1018 02-1022 02-1048 02-1053

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	X
Special standards	NA
Blanks	X
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	NA
Manual Integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	ALS
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 23-FEB-2015

Secondary Reviewer: 24-FEB-2015

CHECKLIST1 - Modified 03/05/2008

Generated: FEB-24-2015 14:12:42

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 9056 AAB#: WG513061

Login Number: L15021053

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW13-021715	01	02/17/15					02/21/2015	4.4	2	*	02/22/15	4.8	2	*
50WW13-021715	01	02/17/15					02/21/2015	4.4	2	*	02/22/15	4.7	2	*
50WW14-021715	03	02/17/15					02/21/2015	4.3	2	*	02/22/15	4.7	2	*
50WW14-021715	03	02/17/15					02/21/2015	4.3	2	*	02/22/15	4.7	2	*
50WW11-021715	05	02/17/15					02/21/2015	4.3	2	*	02/22/15	4.7	2	*
50WW11-021715	05	02/17/15					02/21/2015	4.3	2	*	02/22/15	4.7	2	*
50WW06-021715	07	02/17/15					02/21/2015	4.2	2	*	02/22/15	4.7	2	*
50WW08-021715	09	02/17/15					02/21/2015	4.1	2	*	02/22/15	4.6	2	*
50WW08-021715	09	02/17/15					02/21/2015	4.1	2	*	02/22/15	4.6	2	*
50WW22-021715	11	02/17/15					02/21/2015	4.1	2	*	02/22/15	4.6	2	*
50WW22-021715	11	02/17/15					02/21/2015	4.1	2	*	02/22/15	4.6	2	*

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4034854
Report generated 02/24/2015 14:43

METHOD BLANK SUMMARY

Login Number: L15021053
Blank File ID: I3_022115-05
Prep Date: 02/21/15 17:00
Analyzed Date: 02/21/15 17:44
Analyst: AED

Work Group: WG513061
Blank Sample ID: WG513061-01
Instrument ID: IC3
Method: 9056

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG513061-02	I3_022115-06	02/21/15 18:04	01
DUP	WG513061-04	I3_022115-08	02/21/15 18:45	01
50WW13-021715	L15021053-01	I3_022115-29	02/22/15 01:53	DL01
50WW13-021715	L15021053-01	I3_022115-30	02/22/15 02:13	DL02
50WW14-021715	L15021053-03	I3_022115-31	02/22/15 02:34	DL01
50WW14-021715	L15021053-03	I3_022115-32	02/22/15 02:54	DL02
50WW11-021715	L15021053-05	I3_022115-33	02/22/15 03:14	DL01
50WW11-021715	L15021053-05	I3_022115-34	02/22/15 03:35	DL02
50WW06-021715	L15021053-07	I3_022115-35	02/22/15 03:55	DL01
50WW08-021715	L15021053-09	I3_022115-36	02/22/15 04:15	DL01
50WW08-021715	L15021053-09	I3_022115-37	02/22/15 04:36	DL02
50WW22-021715	L15021053-11	I3_022115-38	02/22/15 04:56	DL01
50WW22-021715	L15021053-11	I3_022115-41	02/22/15 05:57	DL02

Report Name: BLANK_SUMMARY
PDF File ID: 4034855
Report generated 02/24/2015 14:43

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15021053 Prep Date: 02/21/15 17:00 Sample ID: WG513061-01
Instrument ID: IC3 Run Date: 02/21/15 17:44 Prep Method: 9056
File ID: I3 022115-05 Analyst: AED Method: 9056
Workgroup (AAB#): WG513061 Matrix: Water Units: mg/L
Contract #: Cal ID: IC3-01-OCT-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Chloride	0.100	0.400	0.100	1	U
Nitrate	0.100	0.400	0.100	1	U
Nitrite	0.100	0.400	0.100	1	U
Sulfate	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4034856
24-FEB-2015 14:43

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15021053 Run Date: 02/21/2015 Sample ID: WG513061-02
Instrument ID: IC3 Run Time: 18:04 Prep Method: 9056
File ID: I3 022115-06 Analyst: AED Method: 9056
Workgroup (AAB#): WG513061 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD66516 Cal ID: IC3 - 01-OCT-14

Analytes	Expected	Found	% Rec	LCS Limits	Q
Chloride	8.00	8.23	103	90 - 110	
Nitrate	5.42	5.51	102	90 - 110	
Nitrite	4.87	5.06	104	90 - 110	
Sulfate	40.0	40.6	102	90 - 110	

LCS - Modified 03/06/2008
PDF File ID: 4034857
Report generated: 02/24/2015 14:44

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L15021053
Analytical Method: 9056
ICAL Workgroup: WG494943

Instrument ID: IC3
Initial Calibration Date: 01-OCT-14 14:10
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Chloride		5.731	9.16	0.99700	
Nitrate		2.313	8.88	0.99800	
Nitrite		3.164	6.19	0.99900	
Sulfate		7.485	6.67	0.99700	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4034859
Report generated 02/24/2015 14:44

Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number: L15021053
Analytical Method: 9056
Instrument ID: IC3
Initial Calibration Date: 01-OCT-14 14:10
Column ID: F

Analyte	WG494943-01			WG494943-02			WG494943-03		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	24.0	4.39330000	5.463	12.0	2.05670000	5.835	8.00	1.32150000	6.054
Nitrate	16.3	7.34240000	2.215	8.13	3.44850000	2.358	5.42	2.20020000	2.464
Nitrite	14.6	4.94760000	2.954	7.31	2.42710000	3.011	4.87	1.54570000	3.152
Sulfate	120	17.9456000	6.687	60.0	8.31390000	7.217	40.0	5.27040000	7.590

INT_CAL - Modified 03/06/2008
PDF File ID: 4034859
Report generated 02/24/2015 14:44

Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number: L15021053
Analytical Method: 9056
Instrument ID: IC3
Initial Calibration Date: 01-OCT-14 14:10
Column ID: F

Analyte	WG494943-04			WG494943-05			WG494943-06		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	4.00	0.665000000	6.015	1.00	0.162900000	6.139	0.200	0.0410000000	4.878
Nitrate	2.71	1.11940000	2.422	0.678	0.277200000	2.444	0.134	0.0676000000	1.976
Nitrite	2.44	0.784800000	3.103	0.609	0.188200000	3.235	0.122	0.0345000000	3.530
Sulfate	20.0	2.64930000	7.549	5.00	0.637800000	7.839	1.00	0.124600000	8.026

INT_CAL - Modified 03/06/2008
PDF File ID: 4034859
Report generated 02/24/2015 14:44

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15021053 Run Date: 10/01/2014 Sample ID: WG494943-07
Instrument ID: IC3 Run Time: 14:30 Method: 9056
File ID: I3 100114-09 Analyst: ALS QC Key: DOD4
ICal Workgroup: WG494943 Cal ID: IC3 - 01-OCT-14

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloride		8.00	7.92	mg/L	6.00	1.10	10	
Nitrate		5.42	5.34	mg/L	2.42	1.50	10	
Nitrite		4.87	4.79	mg/L	3.13	1.80	10	
Sulfate		40.0	39.2	mg/L	7.49	1.90	10	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4034860
Report generated 02/24/2015 14:44

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15021053
Run Date: 02/21/2015
Sample ID: WG513060-02
Instrument ID: IC3
Run Time: 17:24
Method: 9056
File ID: I3_022115-04
Analyst: AED
Units: mg/L
Workgroup (AAB#): WG513061
Cal ID: IC3 - 01-OCT-14
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4034862
Report generated 02/24/2015 14:44

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15021053
Run Date: 02/21/2015
Sample ID: WG513060-04
Instrument ID: IC3
Run Time: 21:28
Method: 9056
File ID: I3_022115-16
Analyst: AED
Units: mg/L
Workgroup (AAB#): WG513061
Cal ID: IC3 - 01-OCT-14
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4034862
Report generated 02/24/2015 14:44

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15021053
Run Date: 02/22/2015
Sample ID: WG513060-06
Instrument ID: IC3
Run Time: 01:32
Method: 9056
File ID: I3 022115-28
Analyst: AED
Units: mg/L
Workgroup (AAB#): WG513061
Cal ID: IC3 - 01-OCT-14
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4034862
Report generated 02/24/2015 14:44

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15021053
Run Date: 02/22/2015
Sample ID: WG513060-08
Instrument ID: IC3
Run Time: 05:37
Method: 9056
File ID: I3_022115-40
Analyst: AED
Units: mg/L
Workgroup (AAB#): WG513061
Cal ID: IC3 - 01-OCT-14
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4034862
Report generated 02/24/2015 14:44

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15021053
Run Date: 02/22/2015
Sample ID: WG513060-10
Instrument ID: IC3
Run Time: 06:38
Method: 9056
File ID: I3_022115-43
Analyst: AED
Units: mg/L
Workgroup (AAB#): WG513061
Cal ID: IC3 - 01-OCT-14
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4034862
Report generated 02/24/2015 14:44

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15021053 Run Date: 02/21/2015 Sample ID: WG513060-01
Instrument ID: IC3 Run Time: 17:03 Method: 9056
File ID: I3_022115-03 Analyst: AED QC Key: DOD4
Workgroup (AAB#): WG513061 Cal ID: IC3 - 01-OCT-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.07	mg/L	5.89	0.813	10	
Nitrate		5.42	5.39	mg/L	2.40	0.546	10	
Nitrite		4.87	4.79	mg/L	3.12	1.61	10	
Sulfate		40.0	39.7	mg/L	7.41	0.828	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4034861
Report generated 02/24/2015 14:44

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15021053 Run Date: 02/21/2015 Sample ID: WG513060-03
Instrument ID: IC3 Run Time: 21:08 Method: 9056
File ID: I3_022115-15 Analyst: AED QC Key: DOD4
Workgroup (AAB#): WG513061 Cal ID: IC3 - 01-OCT-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.30	mg/L	5.72	3.76	10	
Nitrate		5.42	5.57	mg/L	2.33	2.64	10	
Nitrite		4.87	5.14	mg/L	2.92	5.43	10	
Sulfate		40.0	41.0	mg/L	7.18	2.43	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4034861
Report generated 02/24/2015 14:44

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15021053 Run Date: 02/22/2015 Sample ID: WG513060-05
Instrument ID: IC3 Run Time: 01:12 Method: 9056
File ID: I3_022115-27 Analyst: AED QC Key: DOD4
Workgroup (AAB#): WG513061 Cal ID: IC3 - 01-OCT-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.29	mg/L	5.73	3.66	10	
Nitrate		5.42	5.53	mg/L	2.34	2.05	10	
Nitrite		4.87	5.12	mg/L	2.92	5.08	10	
Sulfate		40.0	41.1	mg/L	7.16	2.63	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4034861
Report generated 02/24/2015 14:44

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15021053 Run Date: 02/22/2015 Sample ID: WG513060-07
Instrument ID: IC3 Run Time: 05:16 Method: 9056
File ID: I3 022115-39 Analyst: AED QC Key: DOD4
Workgroup (AAB#): WG513061 Cal ID: IC3 - 01-OCT-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.26	mg/L	5.75	3.25	10	
Nitrate		5.42	5.55	mg/L	2.33	2.44	10	
Nitrite		4.87	5.09	mg/L	2.94	4.51	10	
Sulfate		40.0	40.8	mg/L	7.20	2.07	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4034861
Report generated 02/24/2015 14:44

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15021053
Run Date: 02/22/2015
Sample ID: WG513060-09
Instrument ID: IC3
Run Time: 06:17
Method: 9056
File ID: I3 022115-42
Analyst: AED
QC Key: DOD4
Workgroup (AAB#): WG513061
Cal ID: IC3 - 01-OCT-14
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.32	mg/L	5.71	4.05	10	
Nitrate		5.42	5.55	mg/L	2.34	2.28	10	
Nitrite		4.87	5.18	mg/L	2.89	6.33	10	
Sulfate		40.0	41.1	mg/L	7.16	2.71	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4034861
Report generated 02/24/2015 14:44

2.4.1.3 Sample Data

29 L15021053-01 1/10 (SO4,CL,NO3,NO2) 1,10 AED

Sample Name:	**L15021053-01 1/10 (SO4,CL,NO3,NO2)**	*Injection Volume:*	**5000.0**
Vial Number:	**29**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/22/2015 1:53**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

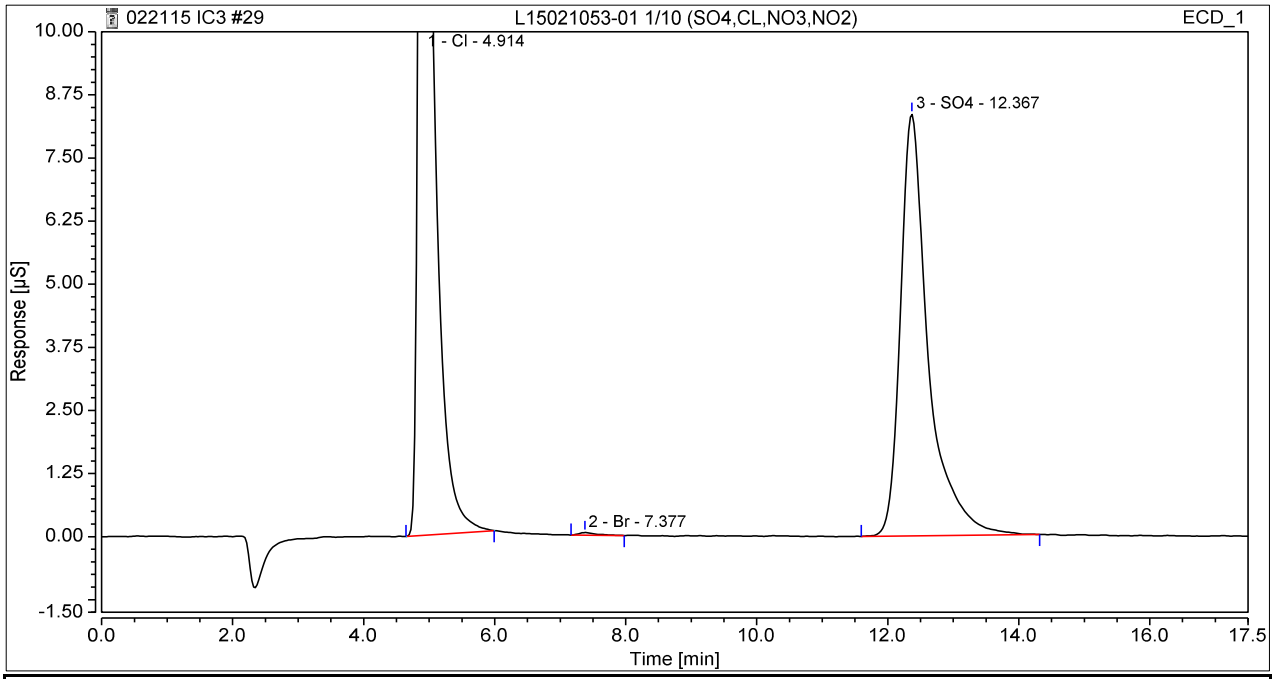

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	4.91	Cl	33.7607	6.9826	62.9	41.635	M
2	7.38	Br	0.0520	0.0159	0.1	0.243	M
3	12.37	SO4	8.3552	4.0998	36.9	30.167	M
Total:			**42.17**	**11.10**	**100**	**72.05**	

30 L15021053-01 1/20 (SO4,CL,NO3,NO2) 1,20 AED

Sample Name:	**L15021053-01 1/20 (SO4,CL,NO3,NO2)**	*Injection Volume:*	**5000.0**
Vial Number:	**30**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/22/2015 2:13**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

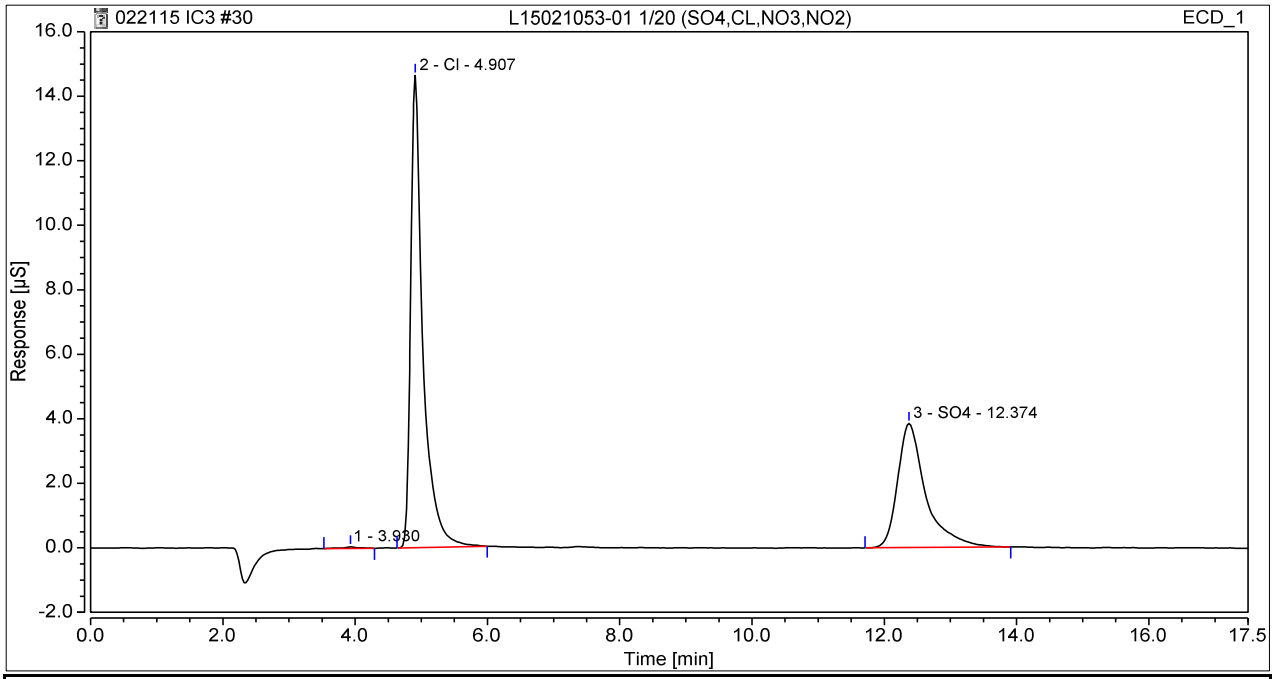

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
2	4.91	Cl	14.6438	3.1260	62.2	18.617	M
3	12.37	SO4	3.8473	1.8872	37.6	13.938	M
Total:			**18.49**	**5.01**	**100**	**32.56**	

31 L15021053-03 1/5 (SO4,CL,NO3,NO2) 1,5 AED

Sample Name:	**L15021053-03 1/5 (SO4,CL,NO3,NO2)**	*Injection Volume:*	**5000.0**
Vial Number:	**31**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/22/2015 2:34**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

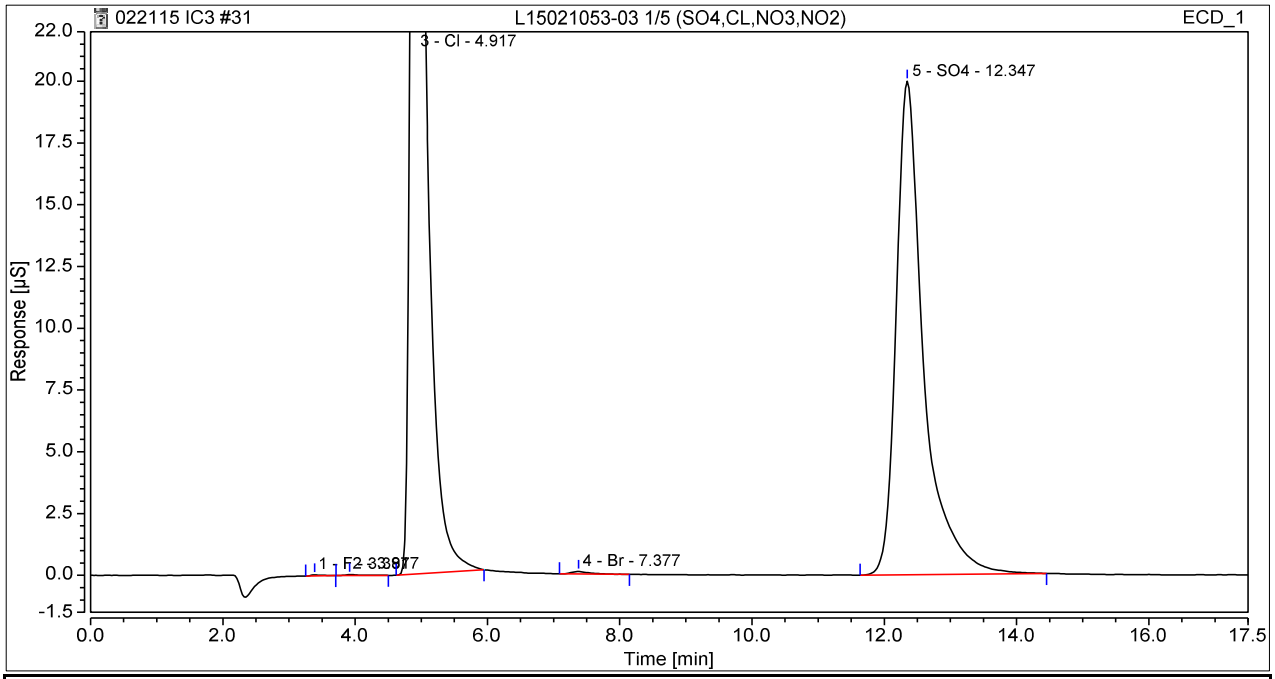

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.39	F	0.0443	0.0085	0.0	0.103	M
3	4.92	Cl	78.9312	16.0533	62.5	95.773	M
4	7.38	Br	0.1030	0.0351	0.1	0.539	M
5	12.35	SO4	19.9756	9.5717	37.3	70.303	M
Total:			**99.05**	**25.67**	**100**	**166.72**	

32 L15021053-03 1/20 (SO4,CL,NO3,NO2) 1,20 AED

Sample Name:	**L15021053-03 1/20 (SO4,CL,NO3,NO2)**	*Injection Volume:*	**5000.0**
Vial Number:	**32**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/22/2015 2:54**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

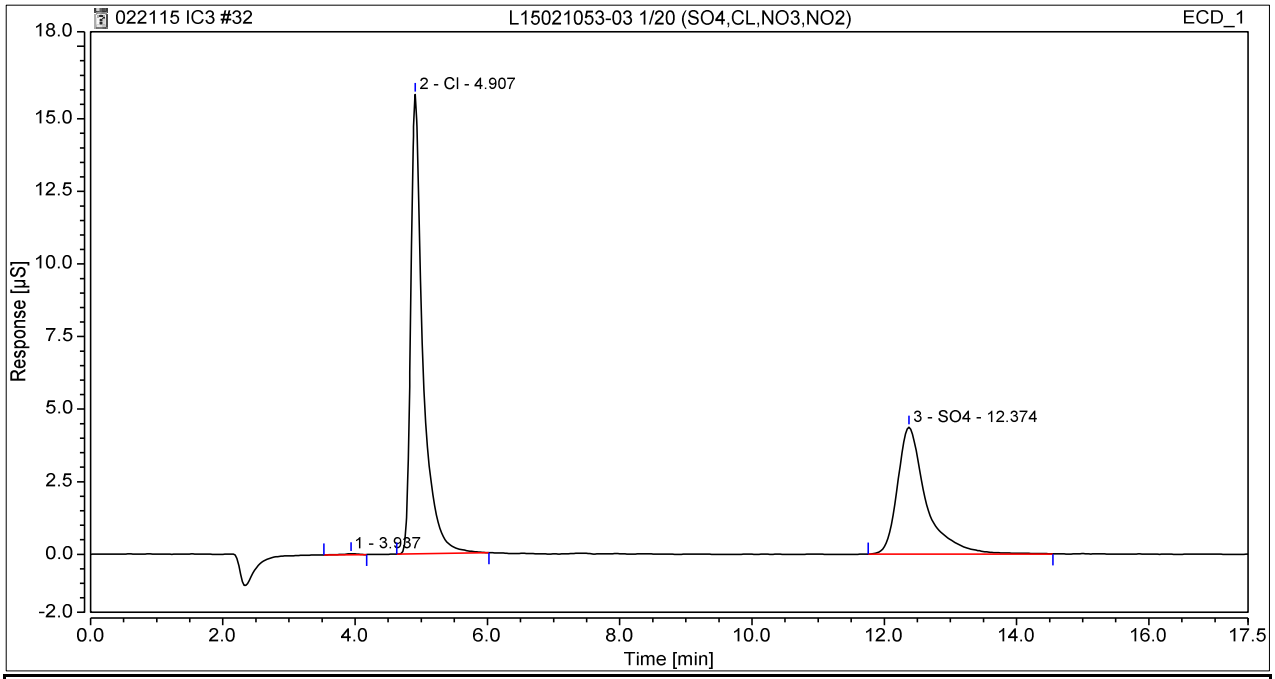

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
2	4.91	Cl	15.8262	3.3601	60.4	20.014	M
3	12.37	SO4	4.3698	2.1901	39.4	16.160	M
Total:			**20.20**	**5.55**	**100**	**36.17**	

33 L15021053-05 1/5 (SO4,CL,NO3,NO2) 1,5 AED

Sample Name:	**L15021053-05 1/5 (SO4,CL,NO3,NO2)**	*Injection Volume:*	**5000.0**
Vial Number:	**33**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/22/2015 3:14**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

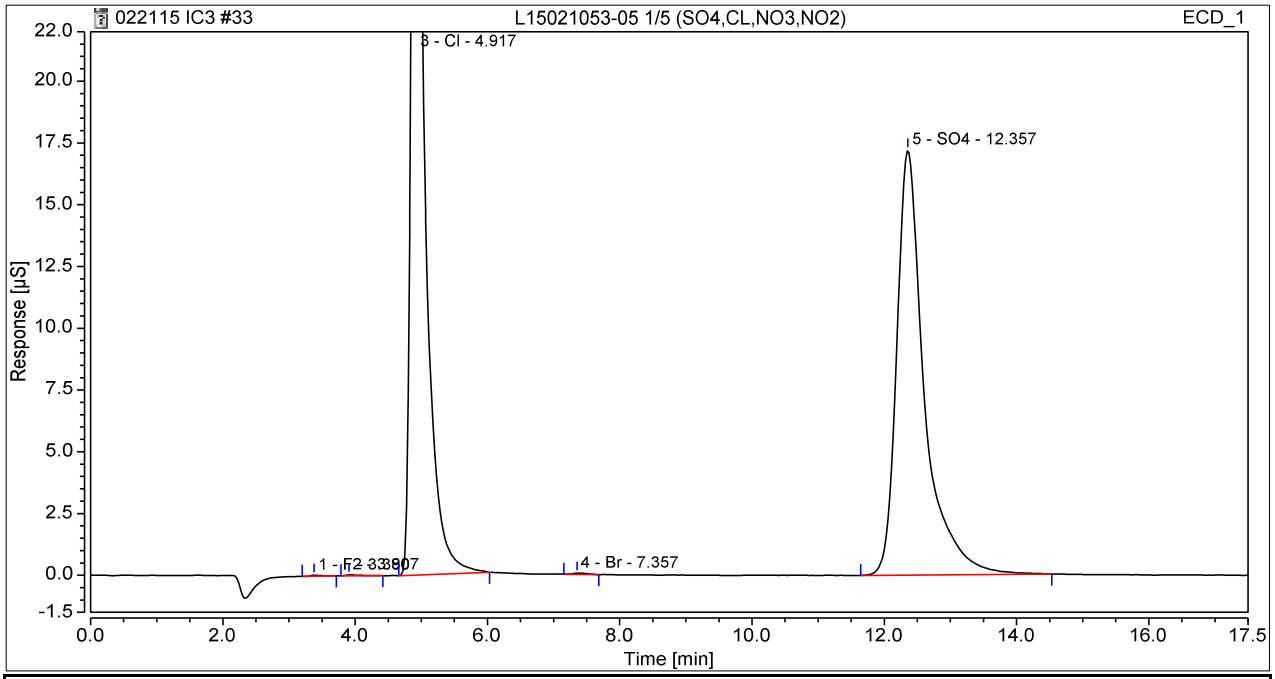

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.38	F	0.0414	0.0072	0.0	0.098	M
3	4.92	Cl	48.8234	10.1691	55.0	60.654	M
4	7.36	Br	0.0524	0.0131	0.1	0.201	M
5	12.36	SO4	17.2006	8.2758	44.8	60.798	M
Total:			**66.12**	**18.47**	**100**	**121.75**	

34 L15021053-05 1/20 (SO4,CL,NO3,NO2) 1,20 AED

Sample Name:	**L15021053-05 1/20 (SO4,CL,NO3,NO2)**	*Injection Volume:*	**5000.0**
Vial Number:	**34**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/22/2015 3:35**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

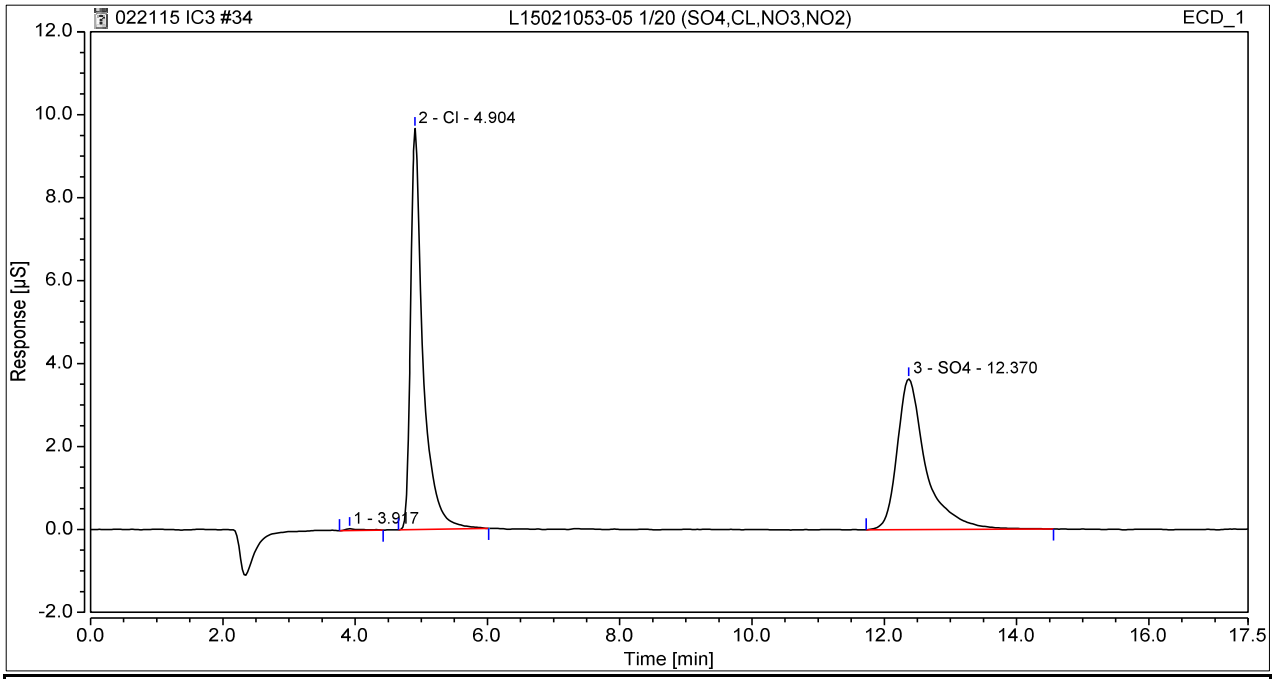

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
2	4.90	Cl	9.6683	2.1002	53.4	12.495	M
3	12.37	SO4	3.6341	1.8242	46.3	13.476	M
Total:			**13.30**	**3.92**	**100**	**25.97**	

35 L15021053-07 1/5 (SO4,CL,NO3,NO2) 1,5 AED

Sample Name:	**L15021053-07 1/5 (SO4,CL,NO3,NO2)**	*Injection Volume:*	**5000.0**
Vial Number:	**35**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/22/2015 3:55**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

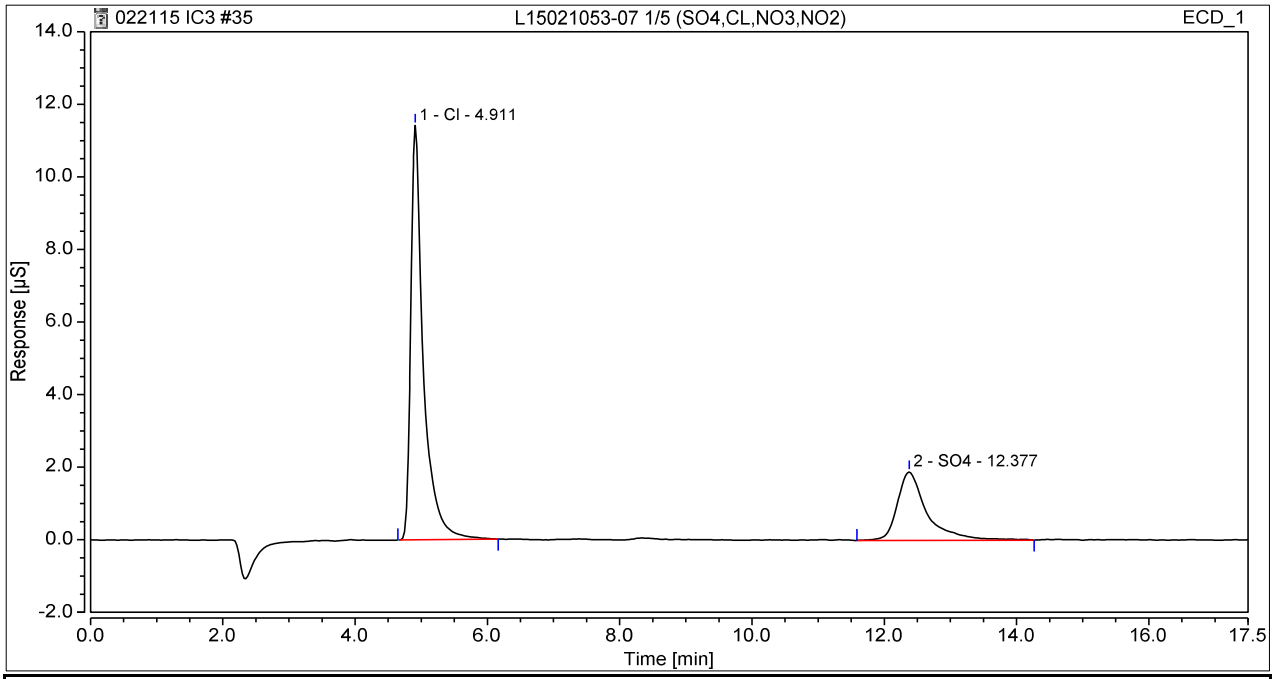

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	4.91	Cl	11.4204	2.5098	72.1	14.940	M
2	12.38	SO4	1.8808	0.9736	27.9	7.237	M
Total:			**13.30**	**3.48**	**100**	**22.18**	

36 L15021053-09 1/5 (SO4,CL,NO3,NO2) 1,5 AED

Sample Name:	**L15021053-09 1/5 (SO4,CL,NO3,NO2)**	*Injection Volume:*	**5000.0**
Vial Number:	**36**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/22/2015 4:15**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

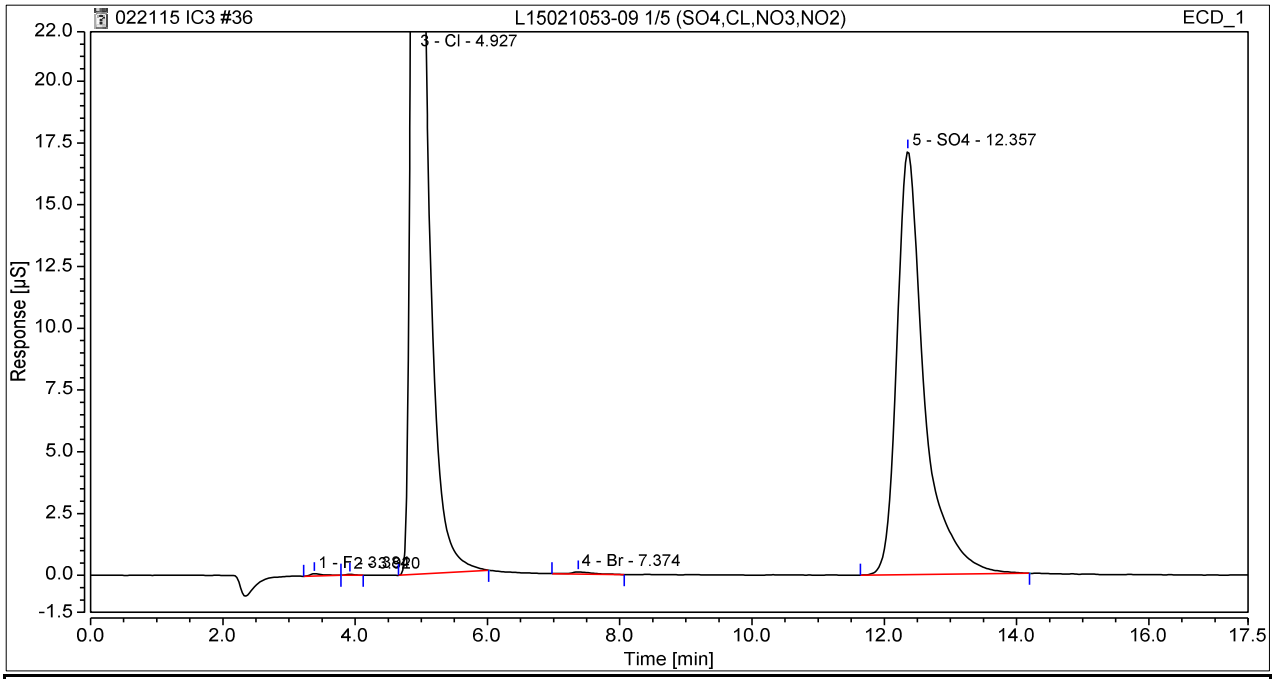

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.38	F	0.0912	0.0199	0.1	0.146	M
3	4.93	Cl	70.9855	14.9331	64.3	89.088	M
4	7.37	Br	0.0831	0.0311	0.1	0.478	M
5	12.36	SO4	17.1444	8.2275	35.4	60.444	M
Total:			**88.30**	**23.21**	**100**	**150.15**	

37 L15021053-09 1/20 (SO4,CL,NO3,NO2) 1,20 AED

Sample Name:	**L15021053-09 1/20 (SO4,CL,NO3,NO2)**	*Injection Volume:*	**5000.0**
Vial Number:	**37**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/22/2015 4:36**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

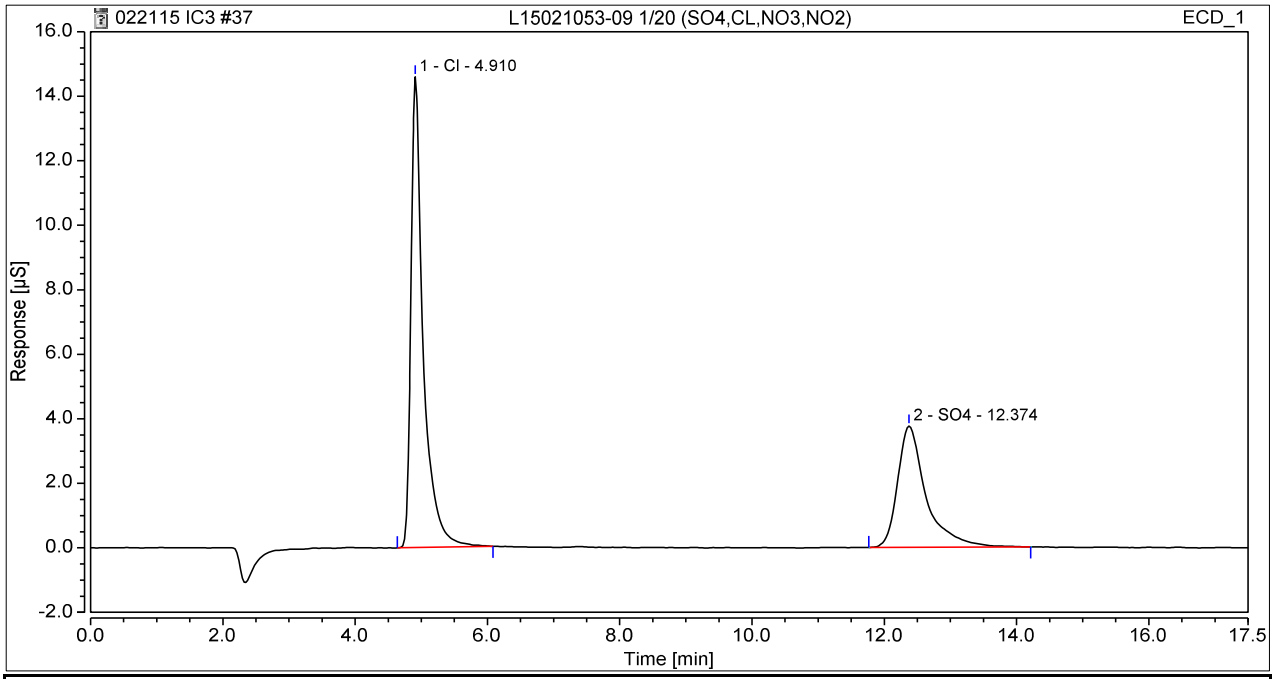

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	4.91	Cl	14.5940	3.1279	62.6	18.629	M
2	12.37	SO4	3.7624	1.8727	37.4	13.832	M
Total:			**18.36**	**5.00**	**100**	**32.46**	

38 L15021053-11 1/5 (SO4,CL,NO3,NO2) 1,5 AED

Sample Name:	**L15021053-11 1/5 (SO4,CL,NO3,NO2)**	*Injection Volume:*	**5000.0**
Vial Number:	**38**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/22/2015 4:56**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

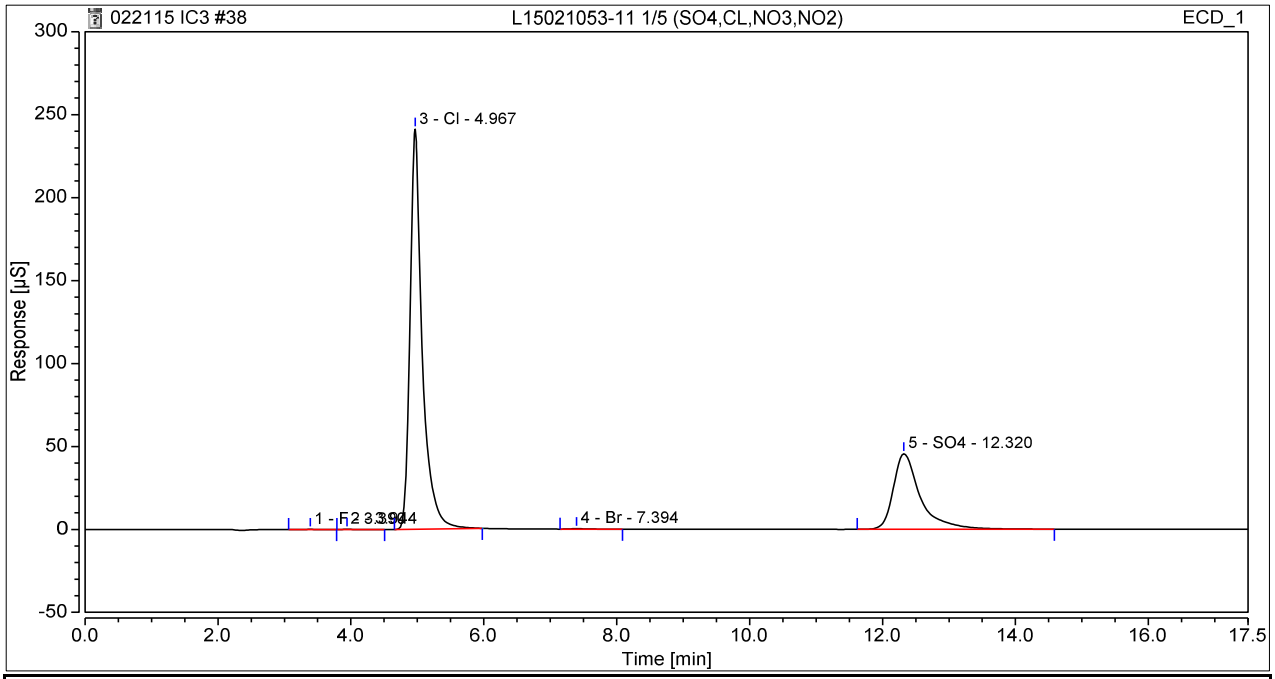

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.39	F	0.0511	0.0121	0.0	0.116	M
3	4.97	Cl	241.0890	51.1605	70.4	305.310	M
4	7.39	Br	0.2523	0.0750	0.1	1.153	M
5	12.32	SO4	45.5615	21.4569	29.5	157.480	M
Total:			**286.95**	**72.70**	**100**	**464.06**	

41 L15021053-11 1/100 (SO4,CL,NO3,NO2) 1,100 AED

Sample Name:	**L15021053-11 1/100 (SO4,CL,NO3,NO2)**	*Injection Volume:*	**5000.0**
Vial Number:	**41**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/22/2015 5:57**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

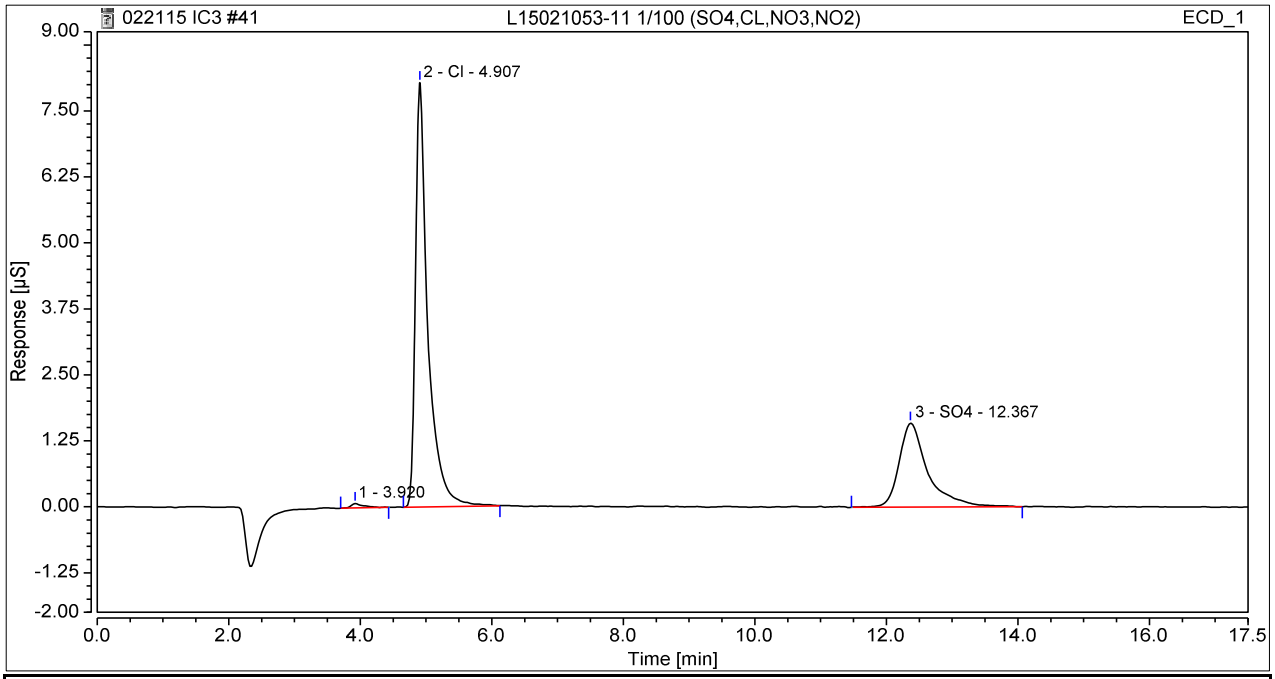

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
2	4.91	Cl	8.0422	1.7561	68.0	10.441	M
3	12.37	SO4	1.5905	0.8065	31.2	6.011	M
Total:			**9.63**	**2.56**	**99**	**16.45**	

2.4.1.4 Standards Data

3 WG494943-01 STD #6
1,1 ALS STD66516

Sample Name:	**WG494943-01 STD #6**	*Injection Volume:*	**5000.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**Calibration Standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/01/2014 12:28**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

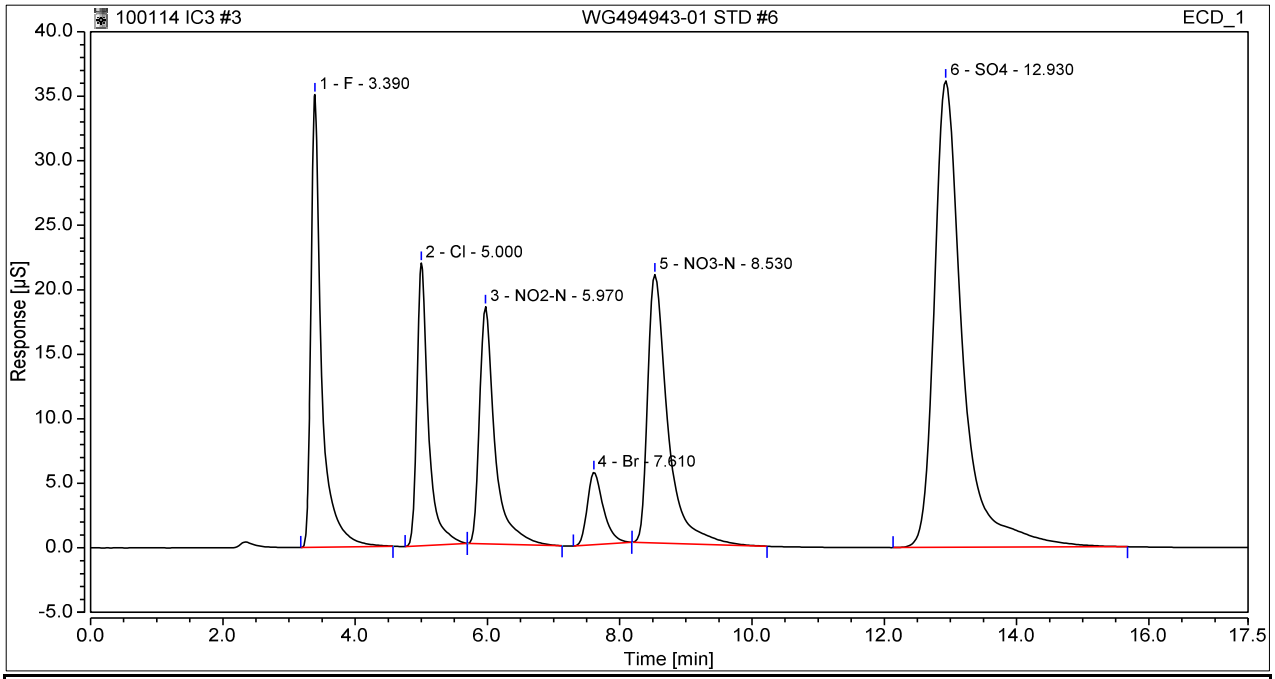

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.39	F	35.1083	6.5671	15.4	24.728	M
2	5.00	Cl	21.9002	4.3933	10.3	26.181	M
3	5.97	NO2-N	18.4030	4.9476	11.6	15.173	M
4	7.61	Br	5.6107	1.5784	3.7	24.304	M
5	8.53	NO3-N	20.7983	7.3424	17.2	17.592	M
6	12.93	SO4	36.1788	17.9456	42.0	131.725	M
Total:			**138.00**	**42.77**	**100**	**239.70**	

4 WG494943-02 STD #5
1,1 ALS STD66516

Sample Name:	**WG494943-02 STD #5**	*Injection Volume:*	**5000.0**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**Calibration Standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/01/2014 12:48**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

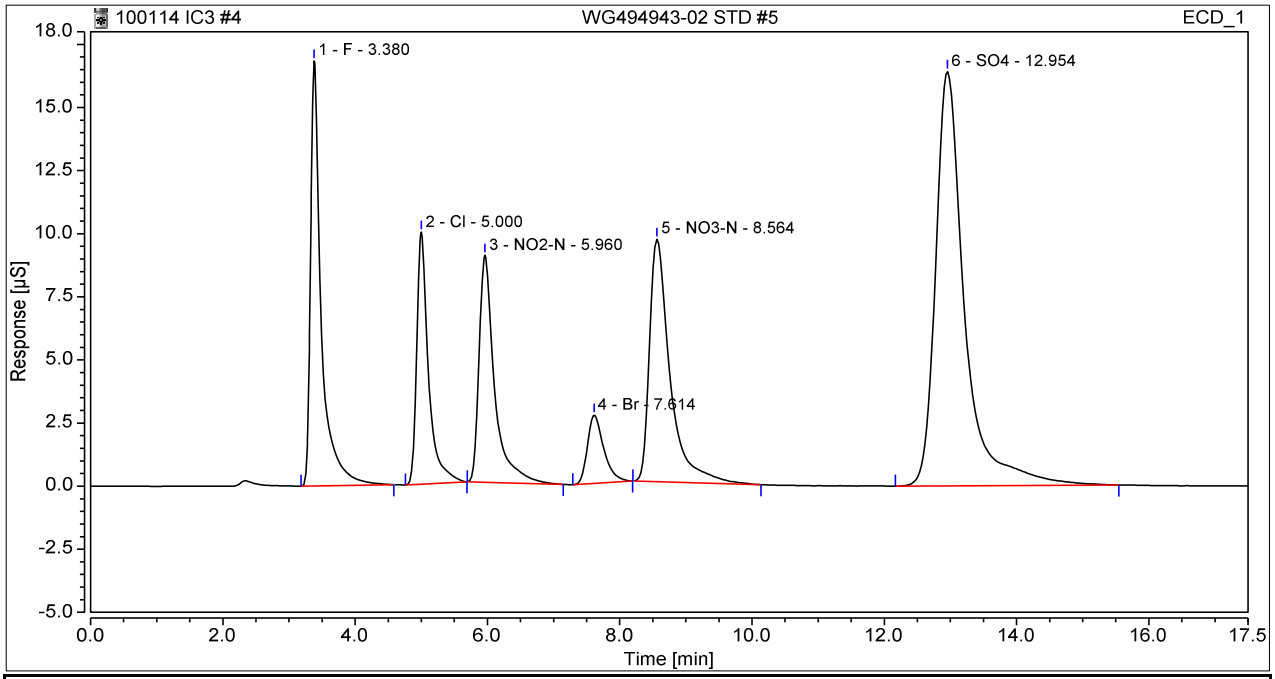

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.38	F	16.8357	3.1587	15.7	11.931	M
2	5.00	Cl	9.9819	2.0567	10.2	12.235	M
3	5.96	NO2-N	8.9912	2.4271	12.0	7.452	M
4	7.61	Br	2.7127	0.7768	3.8	11.960	M
5	8.56	NO3-N	9.6047	3.4485	17.1	8.249	M
6	12.95	SO4	16.4233	8.3139	41.2	61.077	M
Total:			**64.55**	**20.18**	**100**	**112.90**	

9056Rept/Integration

Chromeleon (c) Dionex
Version 7.2.0.3765

5 WG494943-03 STD #4
1,1 ALS STD66516

Sample Name:	**WG494943-03 STD #4**	*Injection Volume:*	**5000.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**Calibration Standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/01/2014 13:09**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

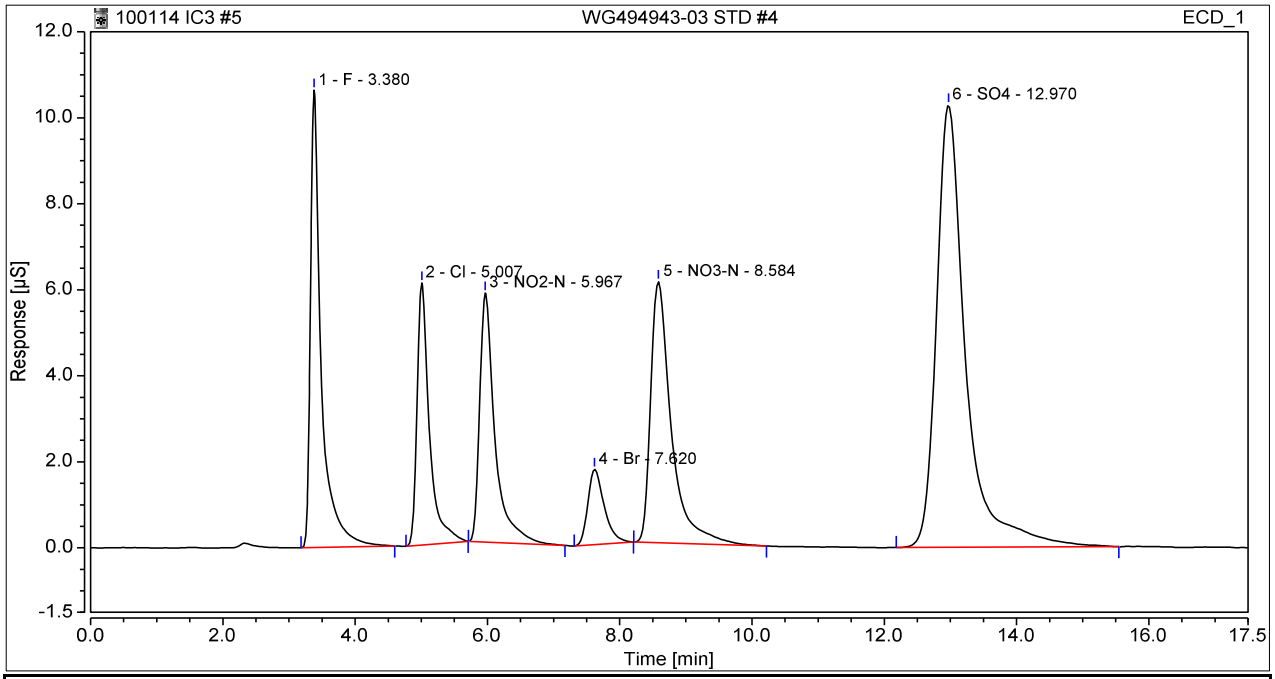

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.38	F	10.6292	2.0133	15.7	7.630	M
2	5.01	Cl	6.0951	1.3215	10.3	7.847	M
3	5.97	NO2-N	5.7939	1.5457	12.0	4.752	M
4	7.62	Br	1.7494	0.5039	3.9	7.758	M
5	8.58	NO3-N	6.0729	2.2002	17.1	5.254	M
6	12.97	SO4	10.2871	5.2704	41.0	38.753	M
Total:			**40.63**	**12.85**	**100**	**71.99**	

Sequence: 100114 IC3
Injection #5: WG494943-03 STD #4

Calibration Plot

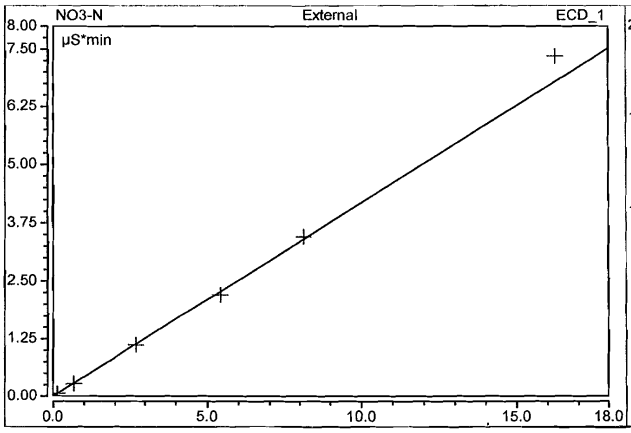

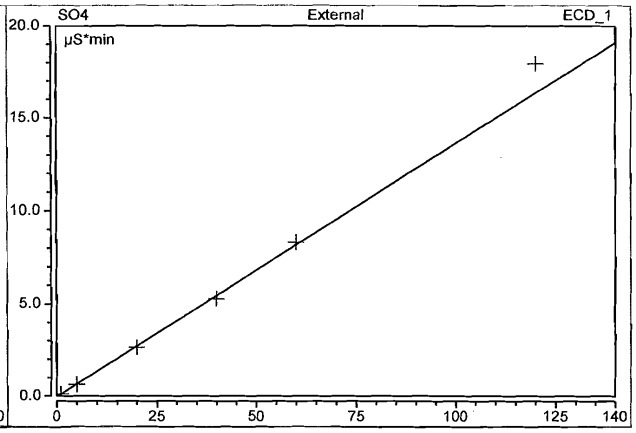

Sequence: 100114 IC3
Injection #5: WG494943-03 STD #4

Calibration

Peak No.	Peak Name	Ret.Time min	Cal.Type	Eval.Type	Number of Points	Rel.Std.Dev. %	Coeff.of Determination	C0 (Offset)	C1 (Slope)	C2 (Curve)
1	*F*	*3.380*	*Lin, WithOffset, 1/R*	*Area*	*6*	*15.1320*	*0.99843*	*-0.0189*	*0.2663*	*0.0000*
2	Cl	5.007	Lin, WithOffset, 1/R²	Area	6	10.5957	0.99688	0.0067	0.1675	0.0000
3	NO2-N	5.967	Lin, WithOffset, 1/R²	Area	6	5.5275	0.99929	-0.0054	0.3264	0.0000
4	Br	7.620	Lin, WithOffset, 1/R	Area	6	5.7102	0.99972	0.0001	0.0649	0.0000
5	NO3-N	8.584	Lin, WithOffset, 1/R²	Area	6	8.8163	0.99787	0.0104	0.4168	0.0000
6	SO4	12.970	Lin, WithOffset, 1/R²	Area	6	10.7714	0.99720	-0.0130	0.1363	0.0000
Maximum						15.1320	0.99972			
Minimum						5.5275	0.99688			

Sequence: 100114 IC3
Injection #5: WG494943-03 STD #4

Calibration Plot

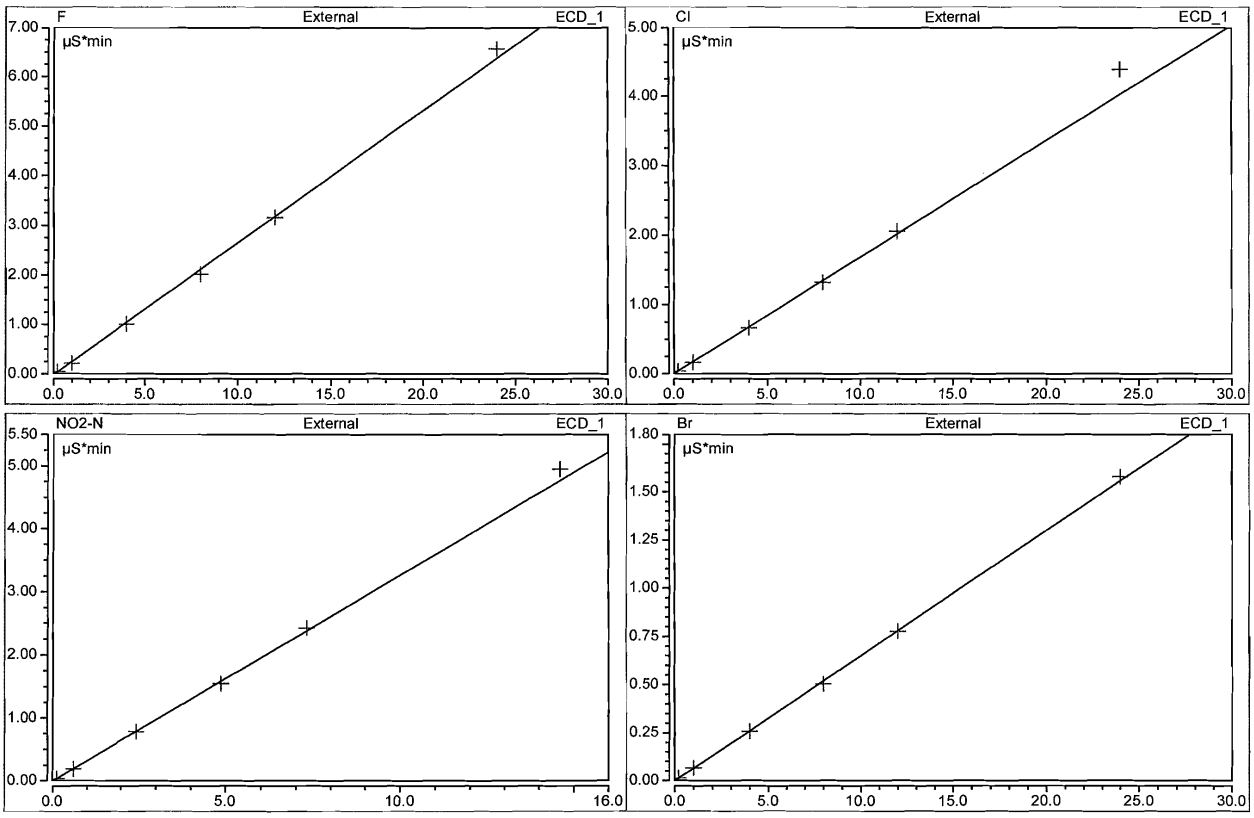

Chromeleon 7,
Version 7.2.0.3765, Thermo Fisher Scientific

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6 WG494943-04 STD #3
1,1 ALS STD66516

Sample Name:	**WG494943-04 STD #3**	*Injection Volume:*	**5000.0**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**Calibration Standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/01/2014 13:29**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

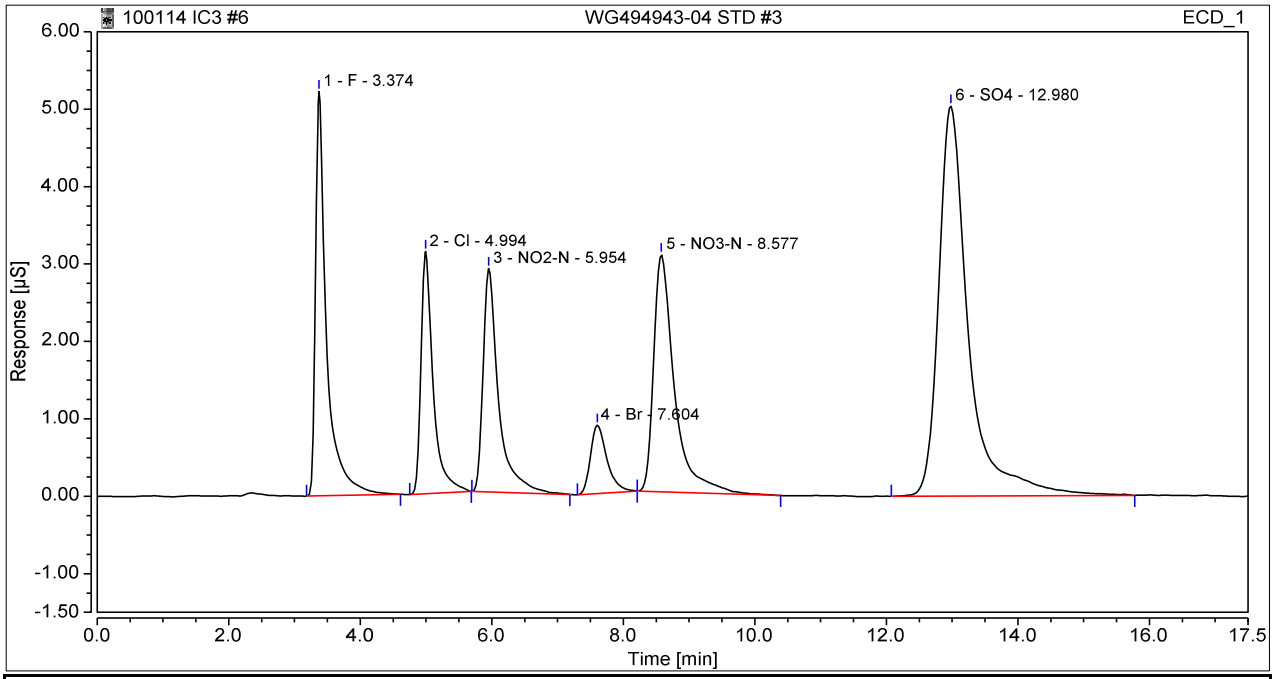

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.37	F	5.2217	1.0111	15.6	3.867	M
2	4.99	Cl	3.1310	0.6650	10.3	3.929	M
3	5.95	NO2-N	2.8877	0.7848	12.1	2.421	M
4	7.60	Br	0.8846	0.2578	4.0	3.968	M
5	8.58	NO3-N	3.0631	1.1194	17.3	2.661	M
6	12.98	SO4	5.0398	2.6493	40.8	19.528	M
Total:			**20.23**	**6.49**	**100**	**36.37**	

7 WG494943-05 STD #2
1,1 ALS STD66516

Sample Name:	**WG494943-05 STD #2**	*Injection Volume:*	**5000.0**
Vial Number:	**7**	*Channel:*	**ECD_1**
Sample Type:	**Calibration Standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/01/2014 13:49**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

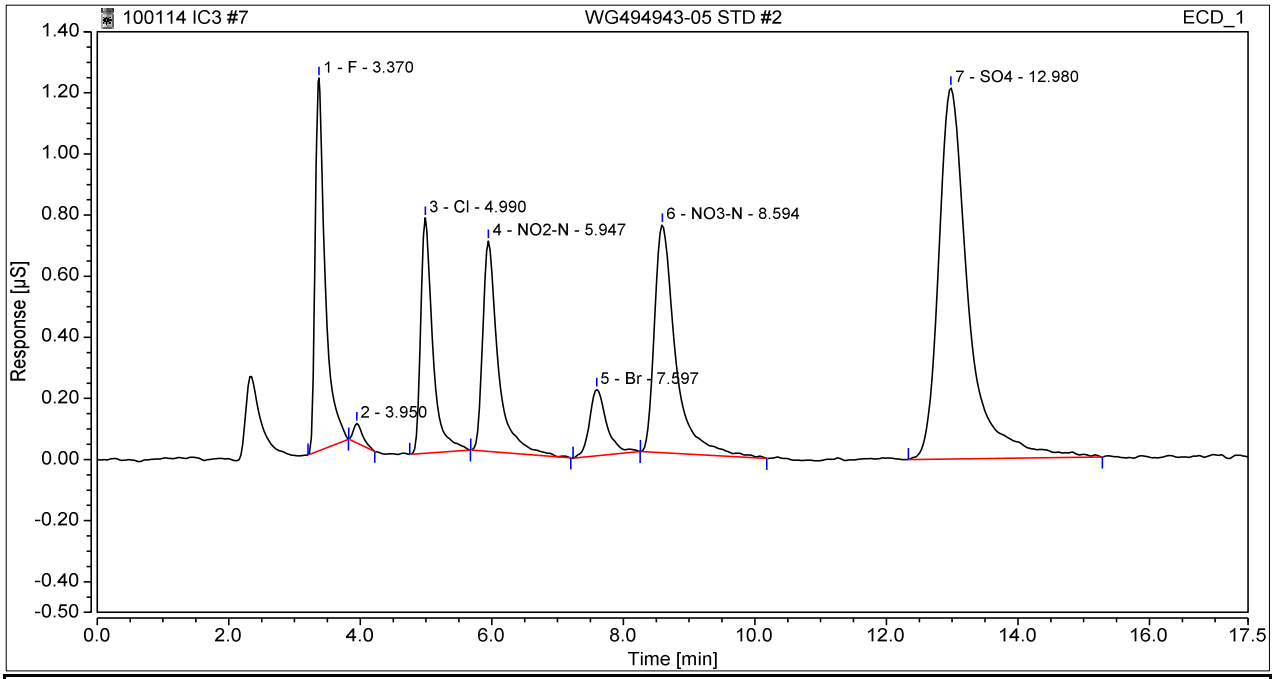

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.37	F	1.2192	0.2154	13.8	0.880	M
3	4.99	Cl	0.7701	0.1629	10.4	0.932	M
4	5.95	NO2-N	0.6881	0.1882	12.1	0.593	M
5	7.60	Br	0.2170	0.0664	4.3	1.021	M
6	8.59	NO3-N	0.7456	0.2772	17.8	0.640	M
7	12.98	SO4	1.2144	0.6378	40.9	4.774	M
Total:			**4.85**	**1.55**	**99**	**8.84**	

8 WG494943-06 STD #1
1,1 ALS STD66516

Sample Name:	**WG494943-06 STD #1**	*Injection Volume:*	**5000.0**
Vial Number:	**8**	*Channel:*	**ECD_1**
Sample Type:	**Calibration Standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/01/2014 14:10**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

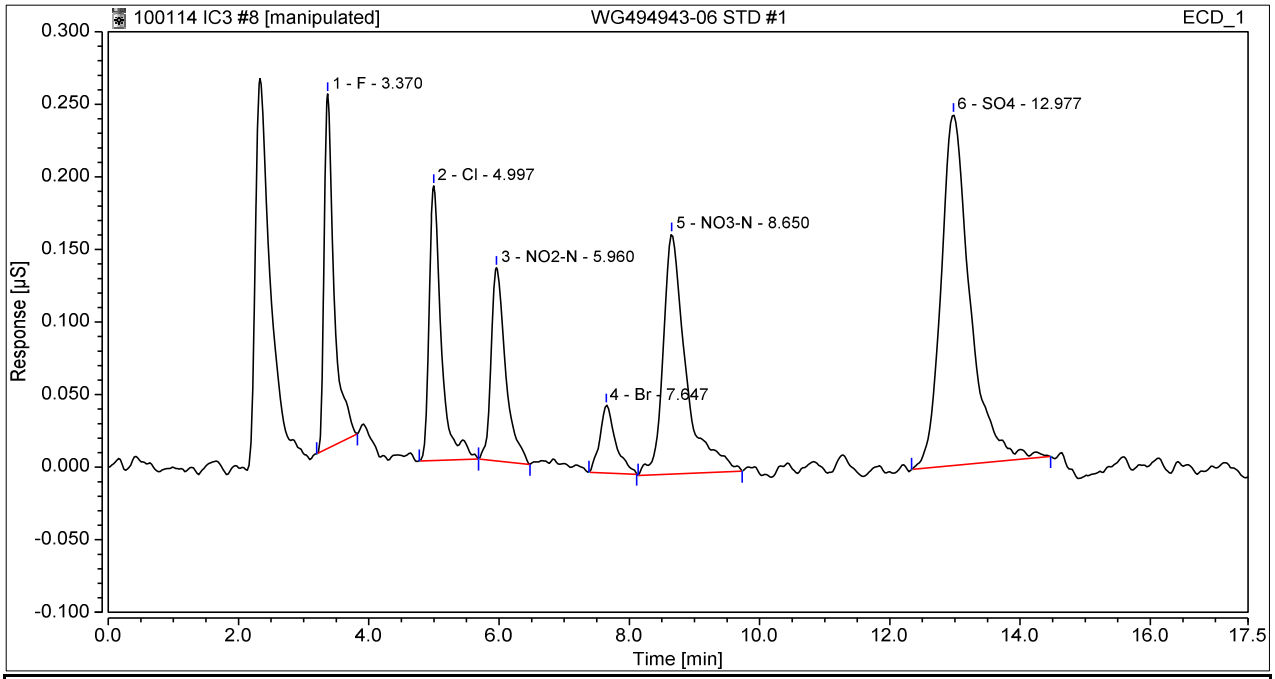

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.37	F	0.2441	0.0435	13.4	0.234	MB*
2	5.00	Cl	0.1892	0.0410	12.6	0.204	M
3	5.96	NO2-N	0.1332	0.0345	10.6	0.122	M
4	7.65	Br	0.0467	0.0132	4.1	0.202	M
5	8.65	NO3-N	0.1653	0.0676	20.9	0.137	M
6	12.98	SO4	0.2418	0.1246	38.4	1.010	M
Total:			**1.02**	**0.32**	**100**	**1.91**	

8 WG494943-06 STD #1
1,1 ALS STD66516

Sample Name:	**WG494943-06 STD #1**	*Injection Volume:*	**5000.0**
Vial Number:	**8**	*Channel:*	**ECD_1**
Sample Type:	**Calibration Standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/01/2014 14:10**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

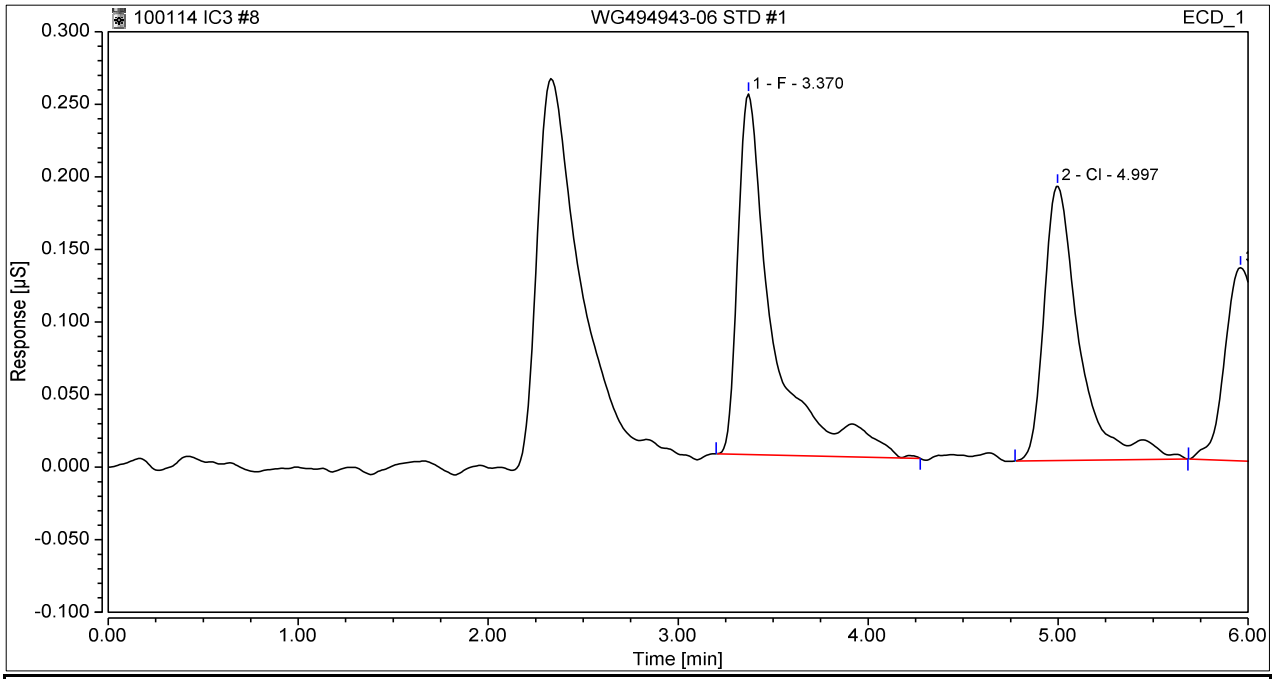

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.37	F	0.2484	0.0533	16.0	0.271	M
2	5.00	Cl	0.1892	0.0410	12.3	0.204	M
3	5.96	NO2-N	0.1332	0.0345	10.3	0.122	M
4	7.65	Br	0.0467	0.0132	4.0	0.202	M
5	8.65	NO3-N	0.1653	0.0676	20.2	0.137	M
6	12.98	SO4	0.2418	0.1246	37.3	1.010	M
Total:			**1.02**	**0.33**	**100**	**1.95**	

8 WG494943-06 STD #1
1,1 ALS STD66516

Sample Name:	**WG494943-06 STD #1**	*Injection Volume:*	**5000.0**
Vial Number:	**8**	*Channel:*	**ECD_1**
Sample Type:	**Calibration Standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/01/2014 14:10**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

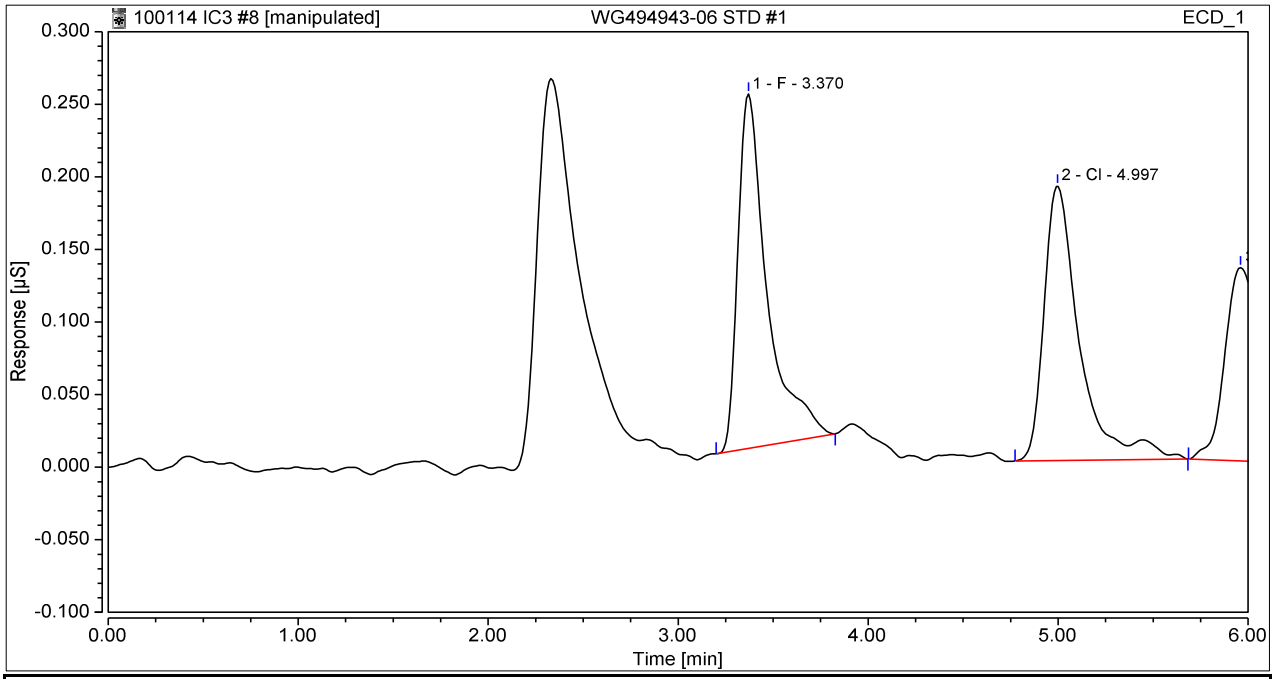

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.37	F	0.2441	0.0435	13.4	0.234	MB*
2	5.00	Cl	0.1892	0.0410	12.6	0.204	M
3	5.96	NO2-N	0.1332	0.0345	10.6	0.122	M
4	7.65	Br	0.0467	0.0132	4.1	0.202	M
5	8.65	NO3-N	0.1653	0.0676	20.9	0.137	M
6	12.98	SO4	0.2418	0.1246	38.4	1.010	M
Total:			**1.02**	**0.32**	**100**	**1.91**	

9056Rept/Integration

Analyst: 10/08/2014 14:14 Supervisor: 10/15/2014 16:15

#4 - System establishes incorrect baseline

Chromeleon (c) Dionex
Version 7.2.0.3765

9 WG494943-07 ALT STD
1,1 ALS STD 66517

Sample Name:	**WG494943-07 ALT STD**	*Injection Volume:*	**5000.0**
Vial Number:	**9**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/01/2014 14:30**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

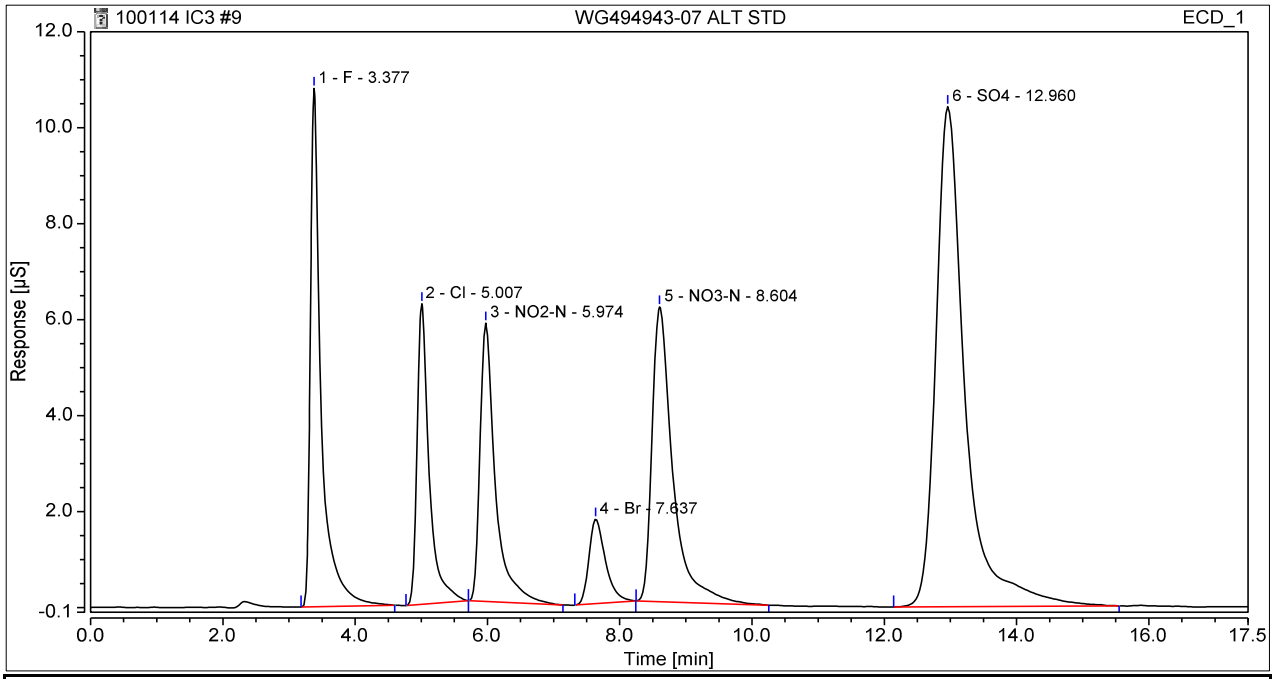

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.38	F	10.8042	2.0421	15.7	7.738	M
2	5.01	Cl	6.2662	1.3330	10.2	7.916	M
3	5.97	NO2-N	5.8008	1.5570	12.0	4.786	M
4	7.64	Br	1.7629	0.5109	3.9	7.866	M
5	8.60	NO3-N	6.1389	2.2364	17.2	5.341	M
6	12.96	SO4	10.4217	5.3378	41.0	39.248	M
Total:			**41.19**	**13.02**	**100**	**72.89**	

9 WG494943-07 ALT STD
1,1 ALS STD 66517

Sequence Details

Name:	**WG494943-07 ALT STD**	*Run Time:*	**17.50**
Vial Number:	**9**	*Injection Volume:*	**10.00**
Instrument Method:	**9056**	*Channel:*	**ECD_1**
Processing Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**10/1/2014 14:30**	*Sample Weight:*	**1.0000**

WG494943-	Actual mg/L	Recovered mg/L	% Difference	Pass/Fail
F	8.00	**7.738152714**	**-3.273091078**	**PASS**
CL	8.00	**7.916005505**	**-1.049931189**	**PASS**
NO2	4.87	**4.786413978**	**-1.716345427**	**PASS**
BR	8.00	**7.865666303**	**-1.679171217**	**PASS**
NO3	5.42	**5.340888585**	**-1.478070384**	**PASS**
SO4	40.00	**39.24765366**	**-1.880865855**	**PASS**

3 WG513060-01 ANION CCV
1,1 AED STD66516

Sample Name:	**WG513060-01 ANION CCV**	*Injection Volume:*	**5000.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/21/2015 17:03**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

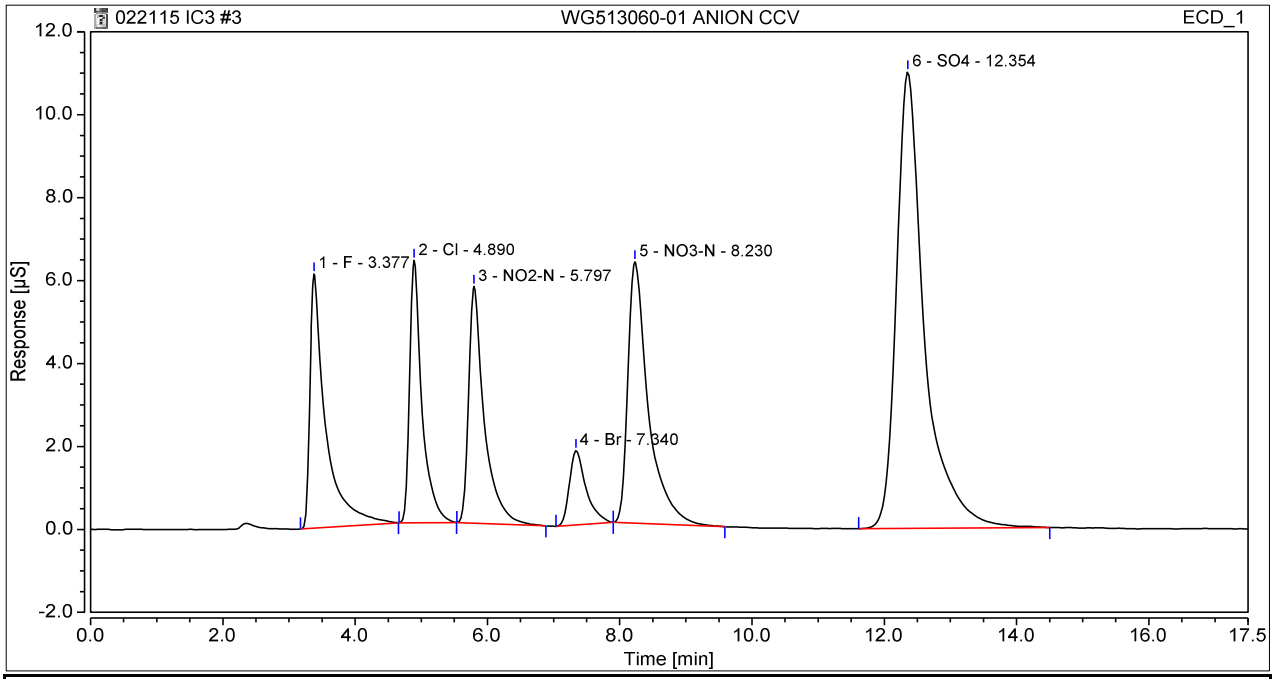

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.38	F	6.1326	1.6884	13.2	6.410	M
2	4.89	Cl	6.3265	1.3579	10.6	8.065	M
3	5.80	NO2-N	5.7059	1.5592	12.2	4.793	M
4	7.34	Br	1.7917	0.5235	4.1	8.059	M
5	8.23	NO3-N	6.2998	2.2577	17.7	5.392	M
6	12.35	SO4	11.0073	5.3952	42.2	39.669	M
Total:			**37.26**	**12.78**	**100**	**72.39**	

3 WG513060-01 ANION CCV
1,1 AED STD66516

Sequence Details

Name:	**WG513060-01 ANION CCV**	*Run Time:*	**17.50**
Vial Number:	**3**	*Injection Volume:*	**10.00**
Instrument Method:	**9056**	*Channel:*	**ECD_1**
Processing Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**2/21/2015 17:03**	*Sample Weight:*	**1.0000**

WG513060-	Actual mg/L	Recovered mg/L	% Difference	Pass/Fail
F	8.00	**6.410371077**	**-19.87036154**	**FAIL**
CL	8.00	**8.064565101**	**0.8070637651**	**PASS**
NO2	4.87	**4.793138867**	**-1.578257358**	**PASS**
BR	8.00	**8.059022719**	**0.7377839833**	**PASS**
NO3	5.42	**5.391991861**	**-0.5352055183**	**PASS**
SO4	40.00	**39.66854809**	**-0.8286297697**	**PASS**

15 WG513060-03 ANION CCV
1,1 AED STD66516

Sample Name:	**WG513060-03 ANION CCV**	*Injection Volume:*	**5000.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/21/2015 21:08**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

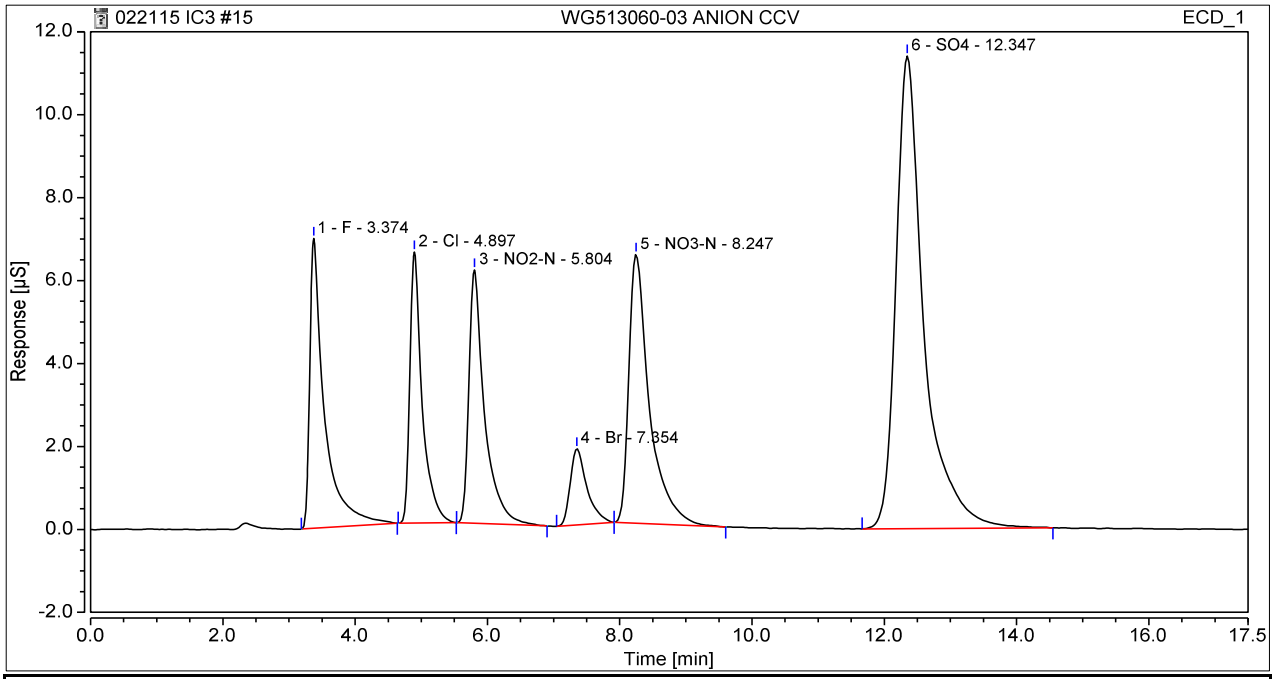

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.37	F	6.9935	1.7960	13.5	6.814	M
2	4.90	Cl	6.5313	1.3975	10.5	8.301	M
3	5.80	NO2-N	6.1060	1.6710	12.6	5.136	M
4	7.35	Br	1.8387	0.5391	4.1	8.299	M
5	8.25	NO3-N	6.4878	2.3300	17.5	5.565	M
6	12.35	SO4	11.3955	5.5729	41.9	40.972	M
Total:			**39.35**	**13.31**	**100**	**75.09**	

15 WG513060-03 ANION CCV
1,1 AED STD66516

Sequence Details

Name:	**WG513060-03 ANION CCV**	*Run Time:*	**17.50**
Vial Number:	**15**	*Injection Volume:*	**10.00**
Instrument Method:	**9056**	*Channel:*	**ECD_1**
Processing Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**2/21/2015 21:08**	*Sample Weight:*	**1.0000**

WG513060-	Actual mg/L	Recovered mg/L	% Difference	Pass/Fail
F	8.00	**6.814066816**	**-14.82416481**	**FAIL**
CL	8.00	**8.301088018**	**3.763600225**	**PASS**
NO2	4.87	**5.135665865**	**5.455151236**	**PASS**
BR	8.00	**8.299461689**	**3.743271114**	**PASS**
NO3	5.42	**5.565471513**	**2.665526064**	**PASS**
SO4	40.00	**40.97234795**	**2.430869874**	**PASS**

27 WG513060-05 ANION CCV
1,1 AED STD66516

Sample Name:	**WG513060-05 ANION CCV**	*Injection Volume:*	**5000.0**
Vial Number:	**27**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/22/2015 1:12**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

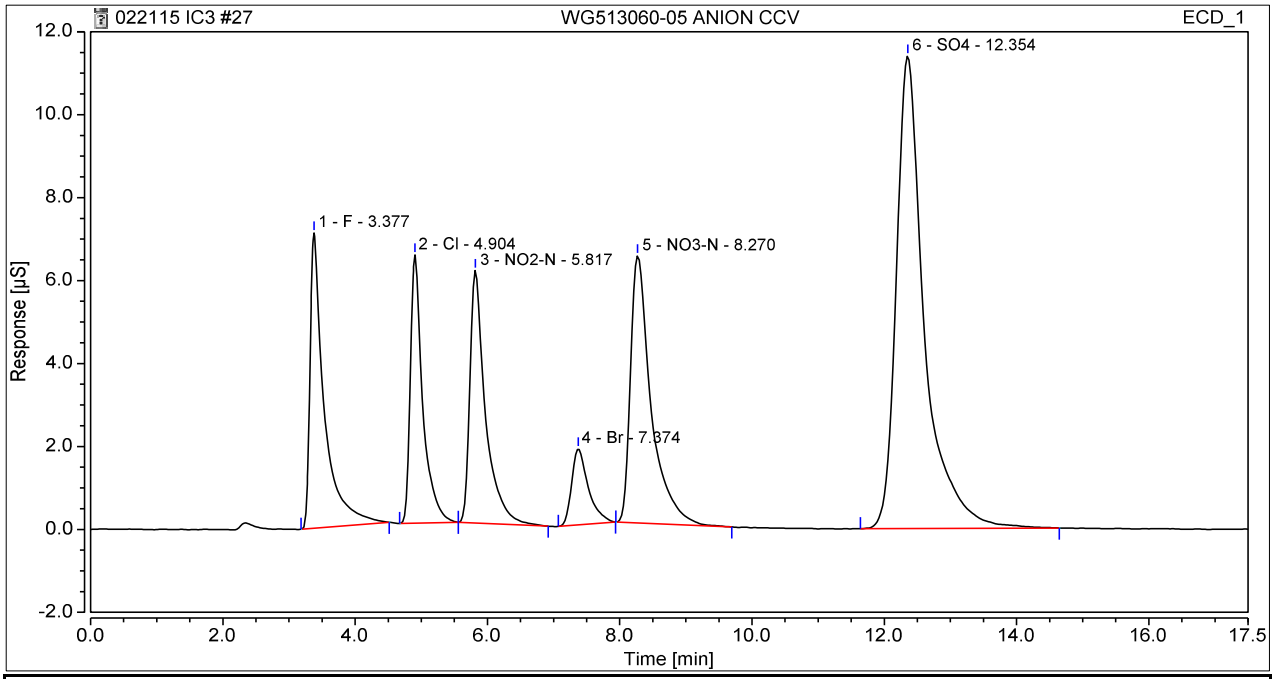

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.38	F	7.1199	1.7738	13.4	6.731	M
2	4.90	Cl	6.4688	1.3962	10.5	8.293	M
3	5.82	NO2-N	6.0920	1.6656	12.6	5.119	M
4	7.37	Br	1.8360	0.5361	4.0	8.253	M
5	8.27	NO3-N	6.4426	2.3165	17.5	5.533	M
6	12.35	SO4	11.3948	5.5836	42.1	41.051	M
Total:			**39.35**	**13.27**	**100**	**74.98**	

27 WG513060-05 ANION CCV
1,1 AED STD66516

Sequence Details

Name:	**WG513060-05 ANION CCV**	*Run Time:*	**17.50**
Vial Number:	**27**	*Injection Volume:*	**10.00**
Instrument Method:	**9056**	*Channel:*	**ECD_1**
Processing Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**2/22/2015 1:12**	*Sample Weight:*	**1.0000**

WG513060-	Actual mg/L	Recovered mg/L	% Difference	Pass/Fail
F	8.00	**6.730782335**	**-15.86522081**	**FAIL**
CL	8.00	**8.292942138**	**3.661776728**	**PASS**
NO2	4.87	**5.119118556**	**5.115370763**	**PASS**
BR	8.00	**8.253218439**	**3.16523049**	**PASS**
NO3	5.42	**5.53292202**	**2.064981923**	**PASS**
SO4	40.00	**41.05100621**	**2.627515524**	**PASS**

39 WG513060-07 ANION CCV
1,1 AED STD66516

Sample Name:	**WG513060-07 ANION CCV**	*Injection Volume:*	**5000.0**
Vial Number:	**39**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/22/2015 5:16**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

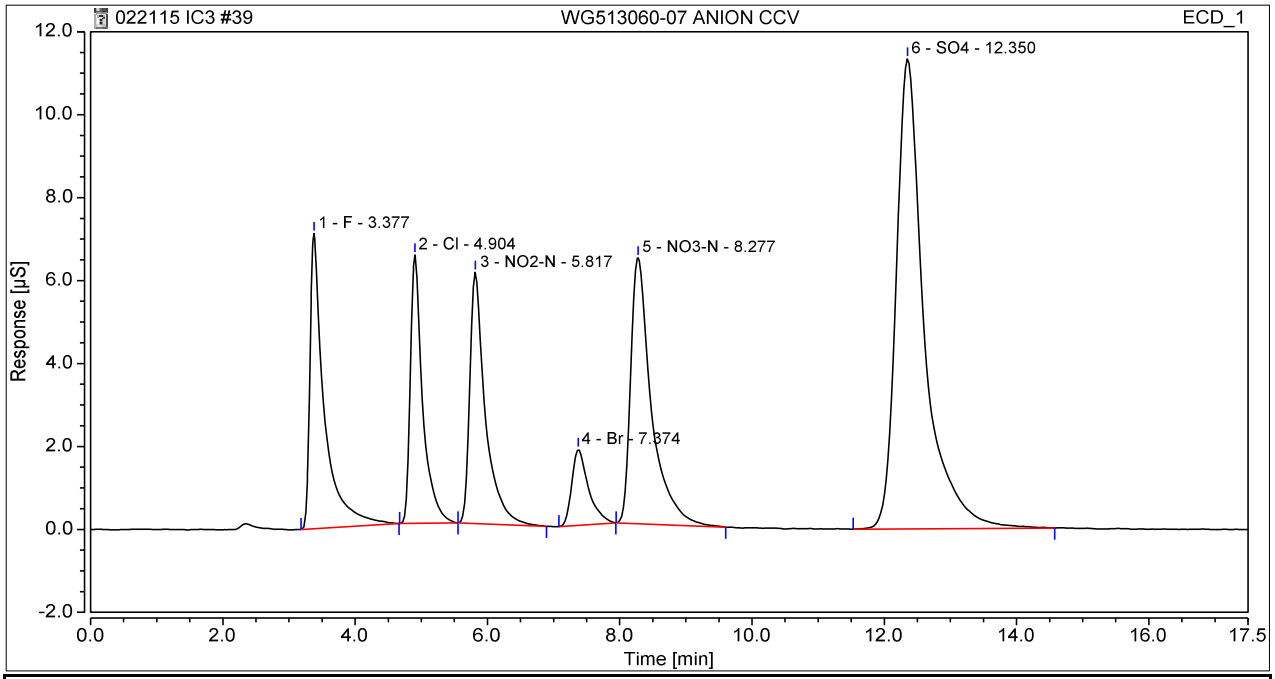

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.38	F	7.1171	1.7934	13.5	6.804	M
2	4.90	Cl	6.4736	1.3906	10.5	8.260	M
3	5.82	NO2-N	6.0573	1.6565	12.5	5.091	M
4	7.37	Br	1.8274	0.5364	4.0	8.259	M
5	8.28	NO3-N	6.4123	2.3253	17.5	5.554	M
6	12.35	SO4	11.3319	5.5533	41.9	40.828	M
Total:			**39.22**	**13.26**	**100**	**74.80**	

39 WG513060-07 ANION CCV
1,1 AED STD66516

Sequence Details

Name:	**WG513060-07 ANION CCV**	*Run Time:*	**17.50**
Vial Number:	**39**	*Injection Volume:*	**10.00**
Instrument Method:	**9056**	*Channel:*	**ECD_1**
Processing Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**2/22/2015 5:16**	*Sample Weight:*	**1.0000**

WG513060-	Actual mg/L	Recovered mg/L	% Difference	Pass/Fail
F	8.00	**6.80432915**	**-14.94588563**	**FAIL**
CL	8.00	**8.259696264**	**3.246203303**	**PASS**
NO2	4.87	**5.091075093**	**4.539529638**	**PASS**
BR	8.00	**8.258951169**	**3.236889608**	**PASS**
NO3	5.42	**5.554031704**	**2.454459476**	**PASS**
SO4	40.00	**40.8284264**	**2.071065988**	**PASS**

42 WG513060-09 ANION CCV
1,1 AED STD66516

Sample Name:	**WG513060-09 ANION CCV**	*Injection Volume:*	**5000.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/22/2015 6:17**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

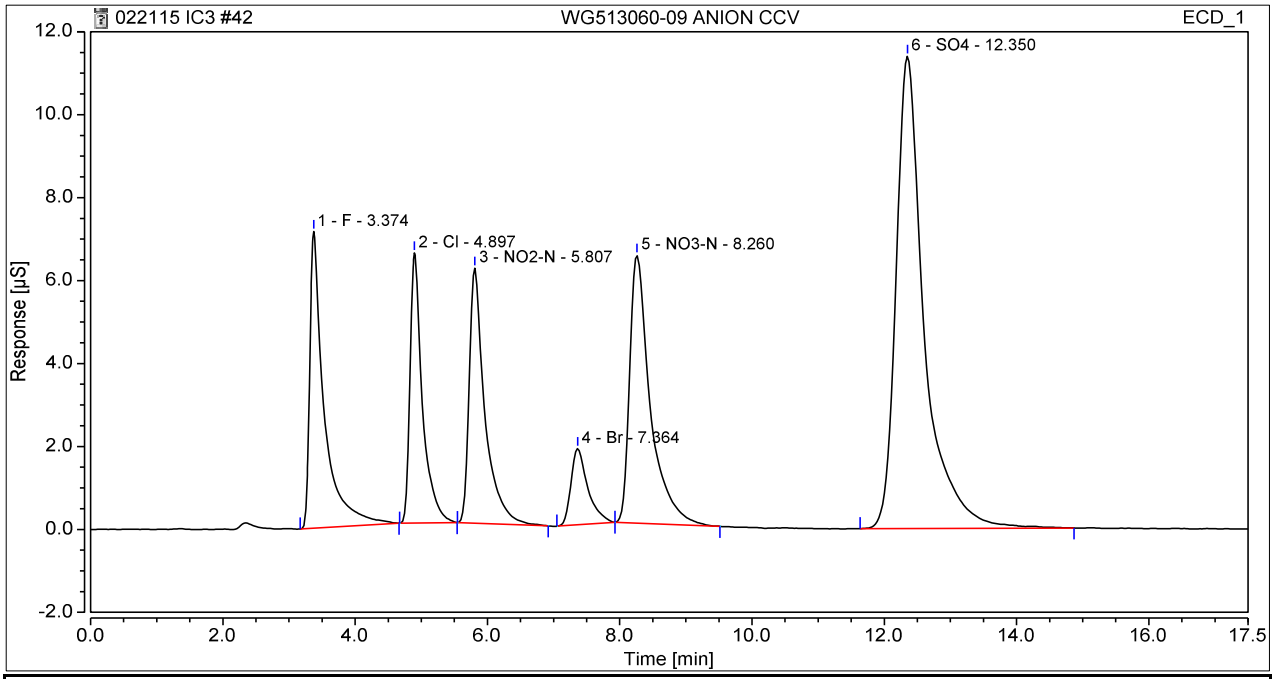

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.37	F	7.1540	1.8081	13.6	6.860	M
2	4.90	Cl	6.5119	1.4014	10.5	8.324	M
3	5.81	NO2-N	6.1492	1.6855	12.6	5.180	M
4	7.36	Br	1.8346	0.5389	4.0	8.297	M
5	8.26	NO3-N	6.4579	2.3214	17.4	5.545	M
6	12.35	SO4	11.3857	5.5880	41.9	41.083	M
Total:			**39.49**	**13.34**	**100**	**75.29**	

9056Rept/Integration

Chromeleon (c) Dionex
Version 7.2.0.3765

42 WG513060-09 ANION CCV
1,1 AED STD66516

Sequence Details

Name:	**WG513060-09 ANION CCV**	*Run Time:*	**17.50**
Vial Number:	**42**	*Injection Volume:*	**10.00**
Instrument Method:	**9056**	*Channel:*	**ECD_1**
Processing Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**2/22/2015 6:17**	*Sample Weight:*	**1.0000**

WG513060-	Actual mg/L	Recovered mg/L	% Difference	Pass/Fail
F	8.00	**6.859513735**	**-14.25607831**	**FAIL**
CL	8.00	**8.324118754**	**4.05148442**	**PASS**
NO2	4.87	**5.180165117**	**6.368893574**	**PASS**
BR	8.00	**8.297028877**	**3.712860967**	**PASS**
NO3	5.42	**5.544908294**	**2.286130885**	**PASS**
SO4	40.00	**41.08298701**	**2.70746752**	**PASS**

4 WG513060-02 ANION CCB
1,1 AED

Sample Name:	**WG513060-02 ANION CCB**	*Injection Volume:*	**5000.0**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/21/2015 17:24**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

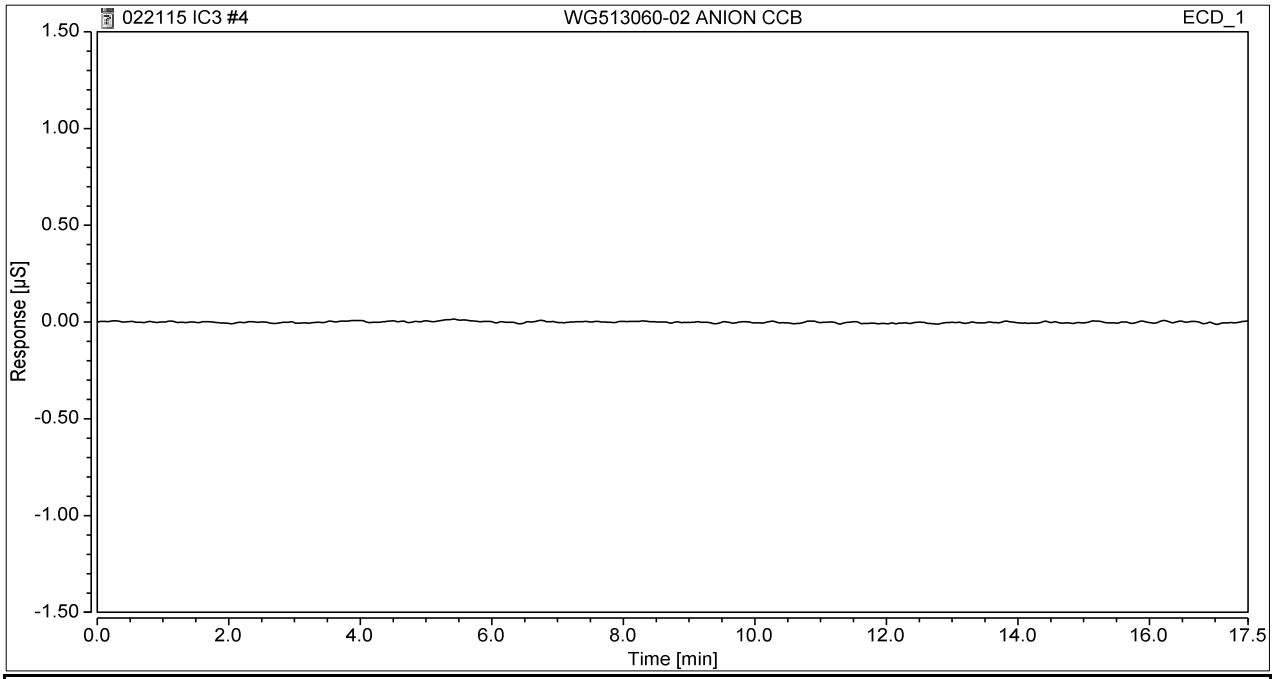

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
Total:			**0.00**	**0.00**	**0**	**0.00**	

16 WG513060-04 ANION CCB
1,1 AED

Sample Name:	**WG513060-04 ANION CCB**	*Injection Volume:*	**5000.0**
Vial Number:	**16**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/21/2015 21:28**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

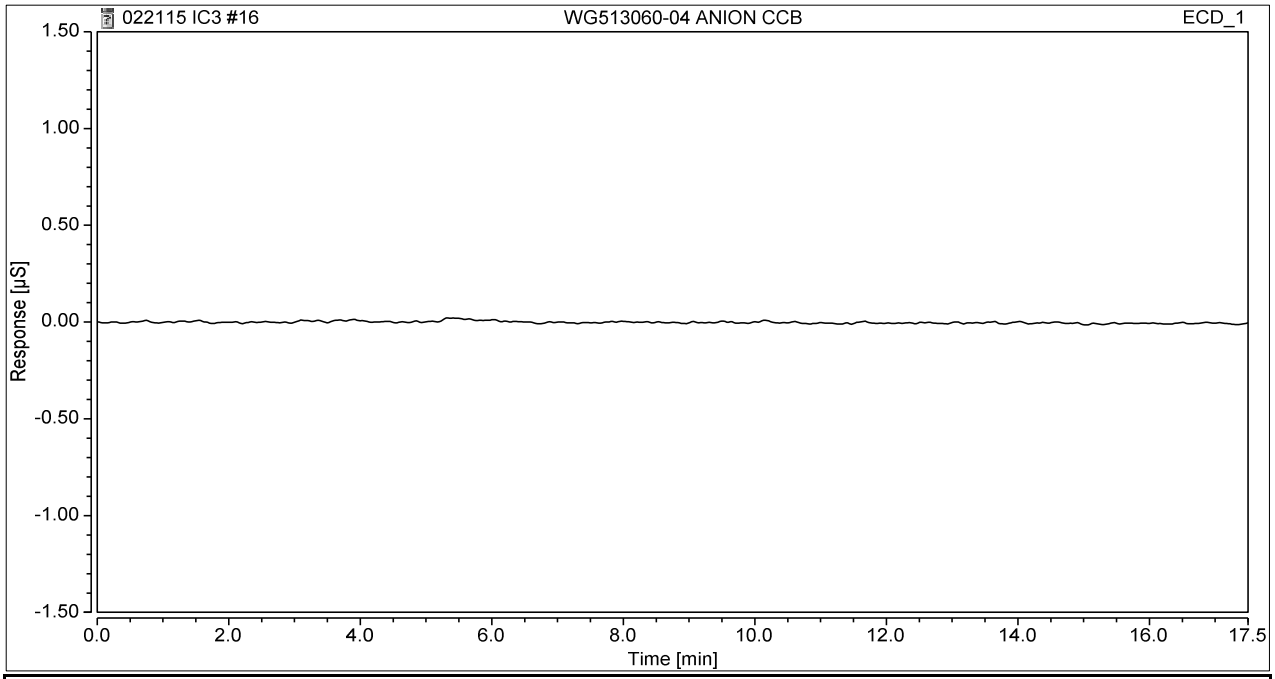

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
Total:			**0.00**	**0.00**	**0**	**0.00**	

28 WG513060-06 ANION CCB
1,1 AED

Sample Name:	**WG513060-06 ANION CCB**	*Injection Volume:*	**5000.0**
Vial Number:	**28**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/22/2015 1:32**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

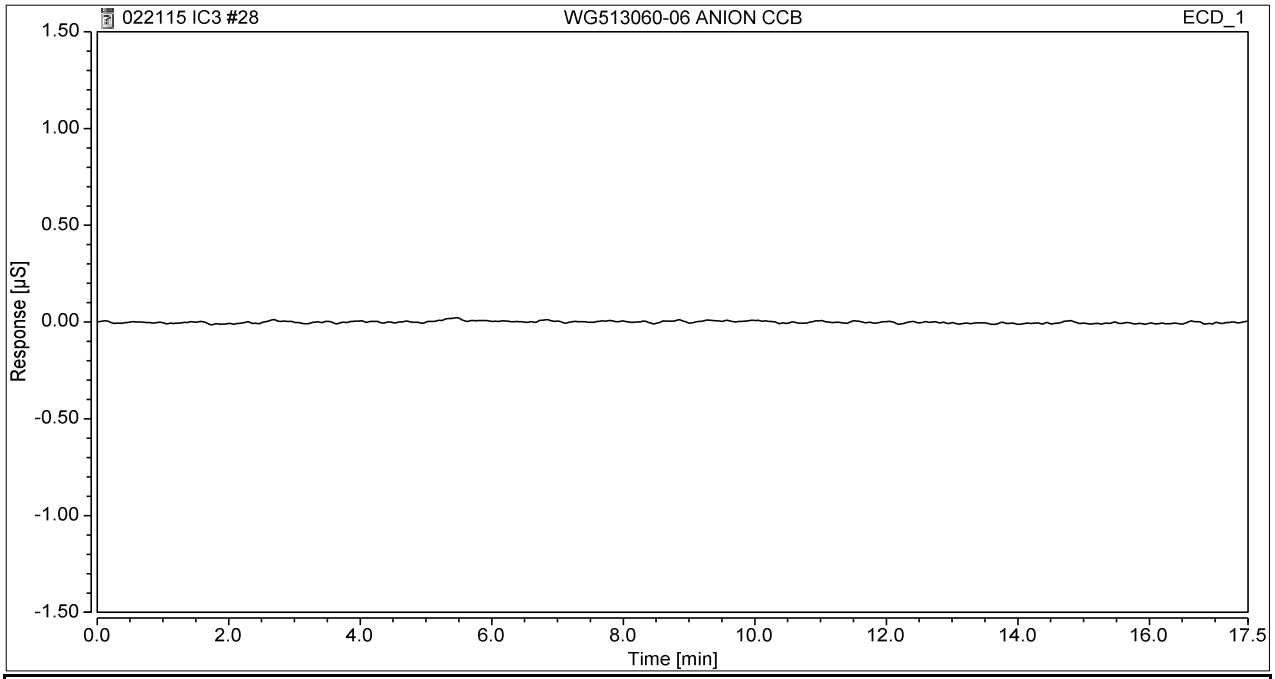

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
Total:			**0.00**	**0.00**	**0**	**0.00**	

40 WG513060-08 ANION CCB
1,1 AED

Sample Name:	**WG513060-08 ANION CCB**	*Injection Volume:*	**5000.0**
Vial Number:	**40**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/22/2015 5:37**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

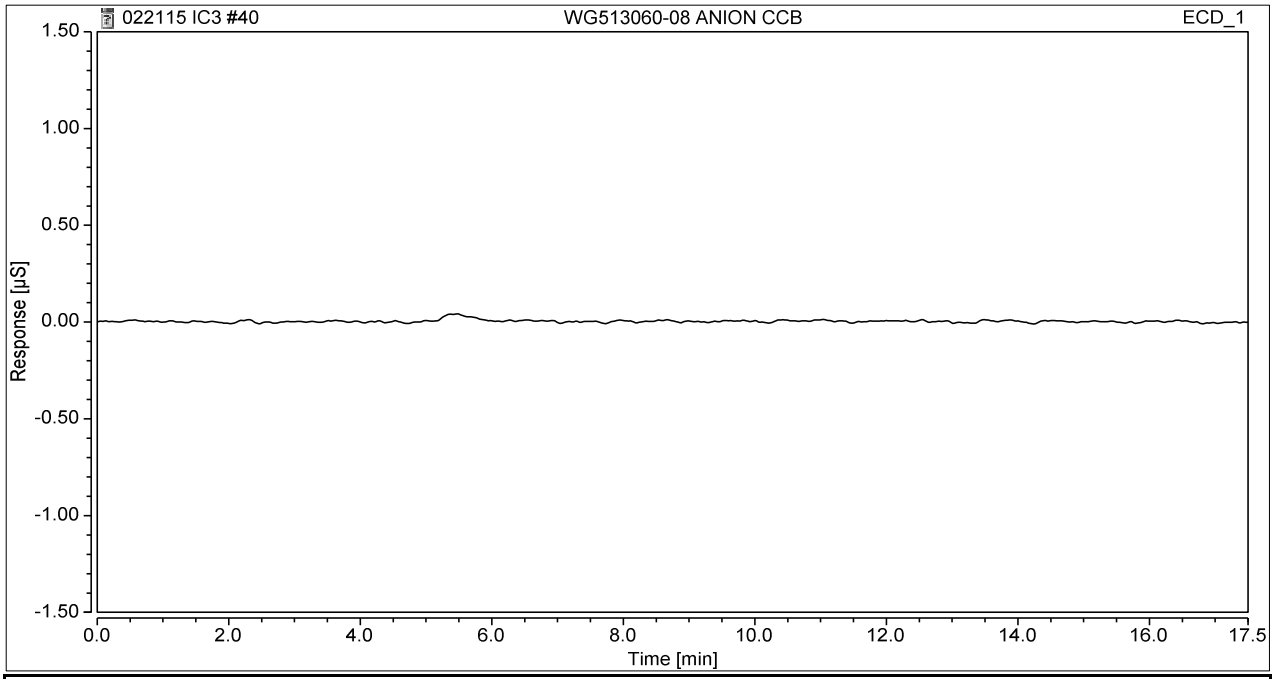

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
Total:			**0.00**	**0.00**	**0**	**0.00**	

43 WG513060-10 ANION CCB
1,1 AED

Sample Name:	**WG513060-10 ANION CCB**	*Injection Volume:*	**5000.0**
Vial Number:	**43**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/22/2015 6:38**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

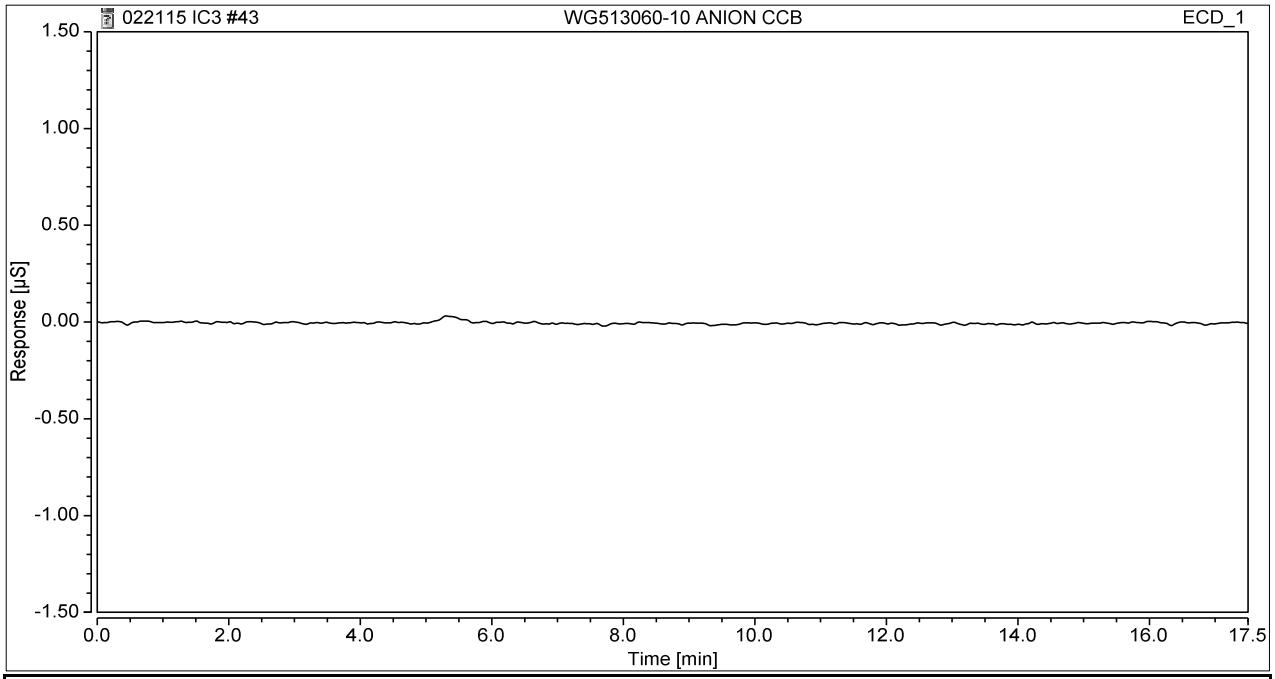

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
Total:			**0.00**	**0.00**	**0**	**0.00**	

RETENTION TIME WINDOWS

Lab Name: MICROBAC Laboratories, Inc.

Instrument ID: IC1

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	6/5/2013	6/5/2013	6/6/2013
File #	WG432976-05	WG432976-07	WG433275-01
Time	16:16	18:25	16:50

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.41	3.40	3.41	0.017
Cl	4.87	4.87	4.88	0.017
NO2-N	5.67	5.66	5.67	0.017
Br	7.01	6.99	7.02	0.046
NO3-N	7.76	7.74	7.77	0.046
SO4	13.35	13.35	13.35	0.000

Instrument ID: IC2

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	6/6/2013	6/6/2013	6/7/2013
File #	WG433163-01	WG433163-05	WG433448-01
Time	12:58	18:54	12:23

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.31	3.30	3.31	0.017
Cl	4.90	4.89	4.92	0.046
NO2-N	5.79	5.78	5.83	0.079
Br	7.34	7.31	7.43	0.187
NO3-N	8.21	8.18	8.32	0.221
SO4	13.74	13.74	13.67	0.121

Instrument ID: IC3

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	5/20/2014	5/21/2014	5/21/2014
File #	WG476910-05	WG476934-01	WG476934-03
Time	12:41	9:54	13:59

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.41	3.41	3.41	0.000
Cl	5.11	5.09	5.07	0.050
NO2-N	6.14	6.11	6.07	0.101
Br	7.90	7.84	7.75	0.220
NO3-N	8.94	8.86	8.76	0.271
SO4	13.35	13.39	13.42	0.101

2.4.1.5 Raw QC Data

5 WG513061-01 ANION BLANK
1,1 AED

Sample Name:	**WG513061-01 ANION BLANK**	*Injection Volume:*	**5000.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/21/2015 17:44**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

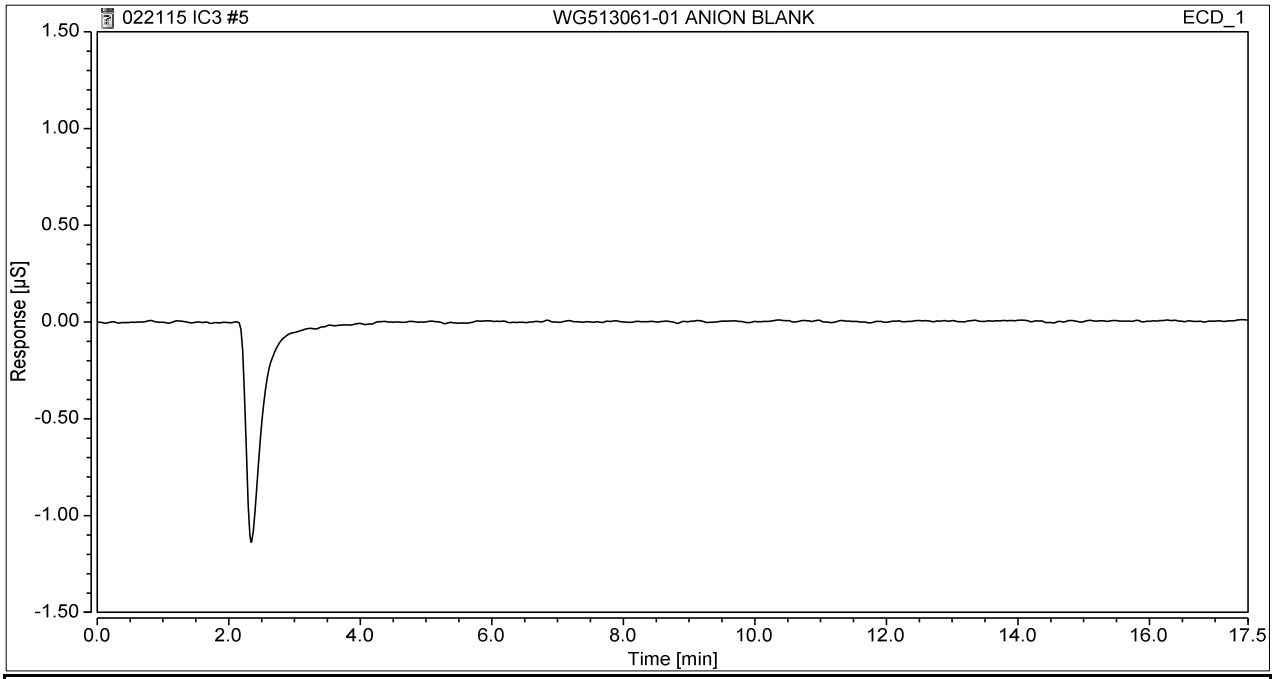

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
Total:			**0.00**	**0.00**	**0**	**0.00**	

6 WG513061-02 ANION LCS
1,1 AED

Sample Name:	**WG513061-02 ANION LCS**	*Injection Volume:*	**5000.0**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**Unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_QNT**	*Dilution Factor:*	**1.0000**
Recording Time:	**02/21/2015 18:04**	*Sample Weight:*	**1.0000**
Run Time:	**17.5**	*Sample Amount:*	**1.0000**

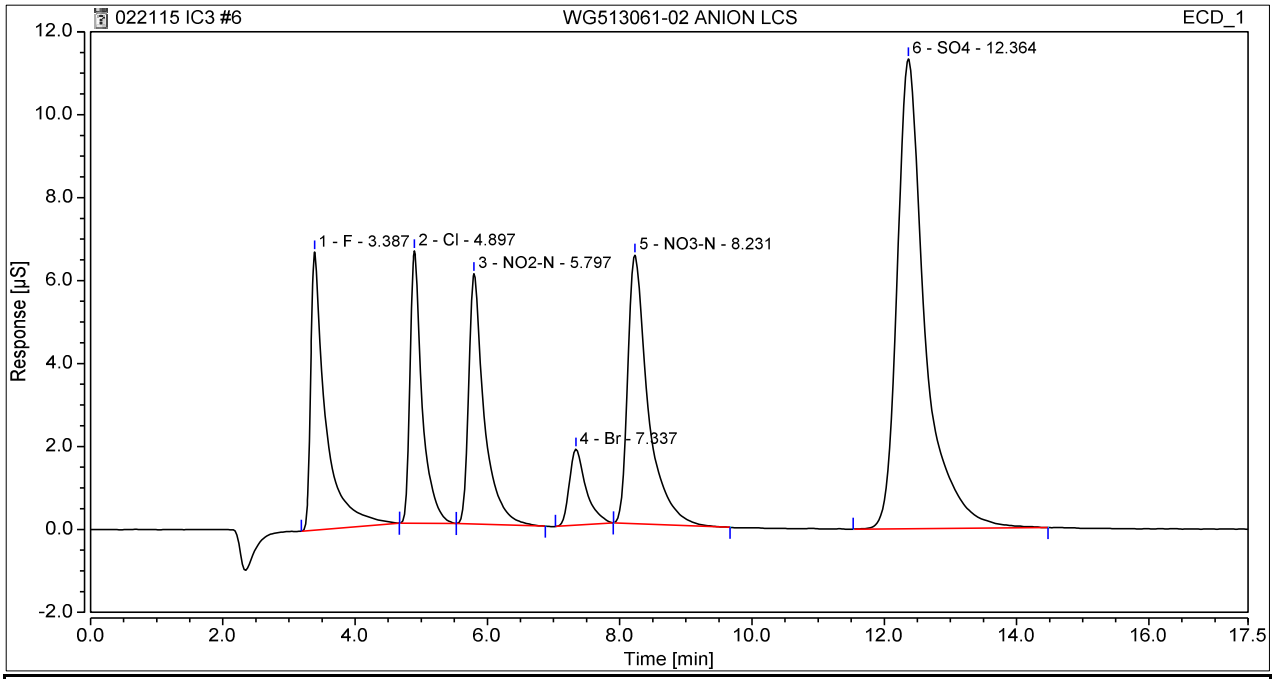

No.	Ret. Time	Peak Name	Height	Area	Rel. Area	Amount	Type
	min		µS	µS*min	%	mg/L	
1	3.39	F	6.7033	1.7689	13.4	6.713	M
2	4.90	Cl	6.5662	1.3847	10.5	8.225	M
3	5.80	NO2-N	6.0345	1.6455	12.5	5.058	M
4	7.34	Br	1.8316	0.5345	4.1	8.229	M
5	8.23	NO3-N	6.4738	2.3085	17.5	5.514	M
6	12.36	SO4	11.3287	5.5287	42.0	40.648	M
Total:			**38.94**	**13.17**	**100**	**74.39**	

9056Rept/Integration

Chromeleon (c) Dionex
Version 7.2.0.3765

2.4.2 Alkalinity Data

2.4.2.1 Summary Data

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW13-021715	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/20/2015 15:07
Workgroup #:	WG513096	**Analyst:**	TB	**Run Date:**	02/20/2015 15:13
Collect Date:	02/17/2015 08:10	**Dilution:**	2	**File ID:**	S2150220003.018
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	309		80.0	40.0	20.0

Certificate of Analysis

Sample #:	L15021053-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW14-021715	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/20/2015 15:07
Workgroup #:	WG513096	**Analyst:**	TB	**Run Date:**	02/20/2015 15:14
Collect Date:	02/17/2015 09:20	**Dilution:**	1	**File ID:**	S2150220003.019
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	262		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L15021053-05	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW11-021715	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/20/2015 15:07
Workgroup #:	WG513096	**Analyst:**	TB	**Run Date:**	02/20/2015 15:15
Collect Date:	02/17/2015 10:45	**Dilution:**	2	**File ID:**	S2150220003.020
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	307		80.0	40.0	20.0

Certificate of Analysis

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15021053-07	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW06-021715	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/20/2015 15:07
Workgroup #:	WG513096	**Analyst:**	TB	**Run Date:**	02/20/2015 15:16
Collect Date:	02/17/2015 11:55	**Dilution:**	2	**File ID:**	S2150220003.023
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	269		80.0	40.0	20.0

Certificate of Analysis

Sample #:	L15021053-09	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW08-021715	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/20/2015 15:07
Workgroup #:	WG513096	**Analyst:**	TB	**Run Date:**	02/20/2015 15:17
Collect Date:	02/17/2015 14:05	**Dilution:**	2	**File ID:**	S2150220003.024
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	443		80.0	40.0	20.0

Certificate of Analysis

Sample #:	L15021053-11	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW22-021715	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	02/20/2015 15:07
Workgroup #:	WG513096	**Analyst:**	TB	**Run Date:**	02/20/2015 15:17
Collect Date:	02/17/2015 15:15	**Dilution:**	2	**File ID:**	S2150220003.025
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	373		80.0	40.0	20.0

2.4.2.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809
Value of b from plot:	0.0004135
Absorbance of unknown from quantitation report (y):	0.31
Calculated concentration (x):	0.03964483
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	0.0396 mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796
Value of B from plot:	318.9056
Value of C from plot:	-2.2712
Absorbance of unknown from quantitation report (x):	0.1583
Calculated concentration (y):	50.7495108
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	50.75 mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 20-FEB-2015
Analyst: TB
Analyst: NA
Method: ALK
Instrument: SC2
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG512978 WG513096

Calibration/Linearity	02/20/2015
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	TB
Secondary Reviewer	DIH
Comments	

Primary Reviewer: 23-FEB-2015

Secondary Reviewer: 26-FEB-2015

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-26-2015 08:21:00

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 310.2 AAB#: WG513096

Login Number: L15021053

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW13-021715	01	02/17/15					02/20/2015	3.3	14		02/20/15	3.3	14	
50WW14-021715	03	02/17/15					02/20/2015	3.2	14		02/20/15	3.2	14	
50WW11-021715	05	02/17/15					02/20/2015	3.2	14		02/20/15	3.2	14	
50WW06-021715	07	02/17/15					02/20/2015	3.1	14		02/20/15	3.1	14	
50WW08-021715	09	02/17/15					02/20/2015	3.1	14		02/20/15	3.1	14	
50WW22-021715	11	02/17/15					02/20/2015	3	14		02/20/15	3	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4035265
Report generated 02/24/2015 08:17

METHOD BLANK SUMMARY

Login Number: L15021053
Blank File ID: S2150220003.012
Prep Date: 02/20/15 15:10
Analyzed Date: 02/20/15 15:10
Analyst: TB

Work Group: WG513096
Blank Sample ID: WG513096-01
Instrument ID: SMARTCHEM2
Method: 310.2

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG513096-02	S2150220003.013	02/20/15 15:10	01
LCS2	WG513096-03	S2150220003.014	02/20/15 15:11	01
50WW13-021715	L15021053-01	S2150220003.018	02/20/15 15:13	DL01
50WW14-021715	L15021053-03	S2150220003.019	02/20/15 15:14	01
50WW11-021715	L15021053-05	S2150220003.020	02/20/15 15:15	DL01
50WW06-021715	L15021053-07	S2150220003.023	02/20/15 15:16	DL01
50WW08-021715	L15021053-09	S2150220003.024	02/20/15 15:17	DL01
50WW22-021715	L15021053-11	S2150220003.025	02/20/15 15:17	DL01
DUP	WG513096-05	S2150220003.026	02/20/15 15:18	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4035266
Report generated 02/24/2015 08:17

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15021053 Prep Date: 02/20/15 15:10 Sample ID: WG513096-01
Instrument ID: SMARTCHEM2 Run Date: 02/20/15 15:10 Prep Method: 310.2
File ID: S2150220003.012 Analyst: TB Method: 310.2
Workgroup (AAB#): WG513096 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-20-FEB-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Alkalinity, Total (as CaCO3)	10.0	40.0	13.5	1	J

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4035267
24-FEB-2015 08:17

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15021053 Analyst: TB Prep Method: 310.2
Instrument ID: SMARTCHEM2 Matrix: Water Method: 310.2
Workgroup (AAB#): WG513096 Units: mg/L
QC Key: DOD4 Lot #: STD68978

Sample ID: WG513096-02 LCS File ID: S2150220003.013 Run Date: 02/20/2015 15:10
Sample ID: WG513096-03 LCS2 File ID: S2150220003.014 Run Date: 02/20/2015 15:11

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Alkalinity, Total (as CaCO3)	200	200	100	200	203	101	1.25	85 - 115	20	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4035268
Report generated: 02/24/2015 08:17

2.4.2.3 Raw Data

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

WORKGROUP: WG512978
513096

Daily Check

- [x] Lamp On
- [x] Probe Rinse Full
- [x] DI Water > ½ Full
- [x] Wash Solution > ½ Full
- [ ] NO3 Reagent bottle connected / purged
- [ ] NO3 pH adj to pH 5-9
- Syringe filter lot # _____

- [x] WBL Run
- [x] Reagents Full
- [x] Dilution H_2O Full
- [x] Waste Container Check

1) **Workgroup** 512978 / ~~513096~~
Plan # 20150220002
2) **Workgroup** 513096
Plan # 20150220003
3) **Workgroup** _____
Plan # _____

Instrument: SC1 [ ] SC2 [x]

	Analyte	1	2	3
		Alk		
		Dilution		
SC Prepared Curve				
Position				
1-1	ICV			
1-2	Blk			
1-3	LCS			
1-4	LCSDUP			
1-5	2-880-02	1/4		
1-6	03	1/4		
1-7	05	1/4		
1-8	06	1/4		
1-9	971-06	1/2		
1-10	08	~~1/2~~		
1-11	10	1/2		
1-12	12			
1-13	14	1/2		
1-14	1053-01	1/2		
1-15	03			
1-16	05	1/2		
1-17	07	1/2		
1-18	09	1/2		
1-19	11	1/2		
1-20	Dup	1/2		
1-21				
1-22				
2-1	ICV			
2-2	Blk			
2-3	LCS			

	Analyte	1	2	3
Position				
2-4	LCSDUP			
2-5	2-971-10			
2-6	12	1/2		
2-7	14	1/2		
2-8	1053-01	1/2		
2-9	03			
2-10	05	1/2		
2-11	07	1/2		
2-12	09	1/2		
2-13	11	1/2		
2-14	Dup	1/2		
2-15	1059-02	1/4		
2-16	03	1/4		
2-17	05	1/4		
2-18	06	1/4		
2-19	08	1/4		
2-20	09	1/4		
2-21				
2-22				
2-23				
2-24				
2-25				
2-26				
3-1				
3-2				

NOTES:
* Run NO2 std on NO3 runs
* LCSD must be run if no MS or Duplicate
*MS(10% sample): NO3, TKN, NH3, PHOS

DCN#108778

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

WORKGROUP: WG512978

Position	Analyte	1	2	3
3-3				
3-4				
3-5				
3-6				
3-7				
3-8				
3-9				
3-10				
3-11				
3-12				
3-13				
3-14				
3-15				

Position	Analyte	1	2	3
3-16				
3-17				
3-18				
3-19				
3-20				
3-21				
3-22				
3-23				
3-24				
3-25				
3-26				
3-27				
3-28				

	Chloride	EPA 325.2/SM 4500-CI E-2000
X	Nitrate-Nitrite	EPA 353.2/SM 4500-NO3 F-2000
✓	Alkalinity	EPA 310.2
	Sulfate	EPA 375.4/SM 426C (15th)/ SM4500-504 E-1997

HB 2/20/15

	Ammonia	EPA 350.1/SM 4500-NH3 B-1997
	TKN	EPA 351.2
	Phos	EPA 365.4

Analyte	A/k		Reagents
SOP & Revision	L 3102		
Curve Stock (SC made)	std 67556		32879
NO2 STD			
ICV	std 68724		
CCV	std 68725		
LCS	std 68978		
MS	Dilution		

Comments: _____

Analyst: Tom Boyle Date: 2/20/15

DCN#108778

MICROBAC (OVD)

SMARTCHEM200 INST2 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.0	0.5184	0.00		1:49:43 PM
DIL-1	RBL	0.0	0.5249	0.00		1:50:01 PM
DIL-1	RBL	0.0	0.5199	0.00		1:50:55 PM
DIL-1	Std-1	0.0	0.0040	0.00	INV	1:51:13 PM
SR5-1	Std-2	10.0	-0.0012	0.00		1:52:07 PM
SR5-2	Std-3	20.0	-0.0162	0.00		1:52:25 PM
SR5-3	Std-4	50.0	-0.0440	0.00		1:53:19 PM
SR5-4	Std-5	100.0	-0.0983	0.00		1:53:37 PM
SR5-5	Std-6	200.0	-0.2099	0.00		1:54:31 PM
SR5-6	Std-7	250.0	-0.2767	0.00		1:54:49 PM
SR5-7	Std-8	300.0	-0.3280	0.00		1:55:43 PM
ST-3	1CCV (150 mg/L)	144.7	-0.1487	96.49		1:56:01 PM
ST-2	2CCB (0 mg/L)	6.4	-0.0001	0.00		1:56:55 PM
1	ICV	248.4	-0.2686	0.00		1:57:13 PM
2	WG512978-01 BLK	4.6	0.0017	0.00	INV	1:58:07 PM
3	WG512978-02 LCS	200.5	-0.2122	0.00		1:58:25 PM
4	WG512978-03 LCSDUP	203.1	-0.2152	0.00		1:59:19 PM
5	L15020880-02 (4)	245.1	-0.2647	0.00		1:59:37 PM
6	L15020880-03 (4)	83.3	-0.0812	0.00		2:00:31 PM
7	L15020880-05 (4)	207.9	-0.2208	0.00		2:00:49 PM
8	L15020880-06 (4)	82.5	-0.0804	0.00		2:01:43 PM
9	L15020971-06 (2)	151.5	-0.1563	0.00		2:02:01 PM
10	L15020971-08	249.3	-0.2697	0.00		2:02:55 PM
ST-3	1CCV (150 mg/L)	155.3	-0.1605	103.51		2:03:13 PM
ST-2	2CCB (0 mg/L)	5.8	0.0005	0.00	INV	2:04:07 PM
11	L15020971-10 (2)	117.8	-0.1188	0.00		2:04:25 PM
12	L15020971-12	315.5	-0.3511	0.00	><,LH	2:05:19 PM
13	L15020971-14 (2)	173.7	-0.1814	0.00		2:05:37 PM
14	L15021053-01 (2)	163.1	-0.1693	0.00		2:06:31 PM
15	L15021053-03	259.8	-0.2823	0.00		2:06:49 PM
16	L15021053-05 (2)	156.9	-0.1623	0.00		2:07:43 PM
17	L15021053-07 (2)	138.0	-0.1412	0.00		2:08:01 PM

Report Date :02/20/2015 **Run Date :2/20/2015** **Operator : WESTCO** **Plan # :20150220002**

Plan Description : ALK-A2-TB/02/20/2015

MICROBAC (OVD)

SMARTCHEM200 INST2 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
18	L15021053-09 (2) TB 2/20/15	216.7	-0.2311	0.00		2:08:55 PM
19	~~L15021053-11~~ (2) Ref	185.8	-0.1952	0.00		2:09:13 PM
20	WG512978-05 (2) DUP	192.2	-0.2026	0.00		2:10:07 PM
ST-3	1CCV (150 mg/L)	158.0	-0.1636	105.34		2:10:25 PM
ST-2	2CCB (0 mg/L)	20.5	-0.0147	0.00		2:11:19 PM
21	ID 21	21.7	-0.0160	0.00		2:11:37 PM
22	ID 22	17.4	-0.0114	0.00		2:12:31 PM
23	ID 23	18.2	-0.0124	0.00		2:12:49 PM
24	ID 24	211.8	-0.2253	0.00		2:13:43 PM
25	ID 25	213.9	-0.2278	0.00		2:14:01 PM
ST-3	1CCV (150 mg/L)	156.7	-0.1621	104.45		2:14:55 PM
ST-2	2CCB (0 mg/L)	27.0	-0.0215	0.00		2:15:13 PM
12-[1/2]	L15020971-12	362.7	-0.1901	0.00	LH	2:22:53 PM
ST-3	1CCV (150 mg/L)	163.4	-0.1697	108.94		2:22:53 PM
ST-2	2CCB (0 mg/L)	31.9	-0.0266	0.00		2:23:47 PM

Report Date :02/20/2015 **Run Date :2/20/2015** **Operator : WESTCO** **Plan # :20150220002**

Plan Description : ALK-A2-TB/02/20/2015

Calibrant Report - WALK -

Calib Lot #:010104 Exp Date:6/21/2020 User:MICROBAC

Plan # : 20150220002 Description : [ALK-A2-TB/02/20/2015] Unit

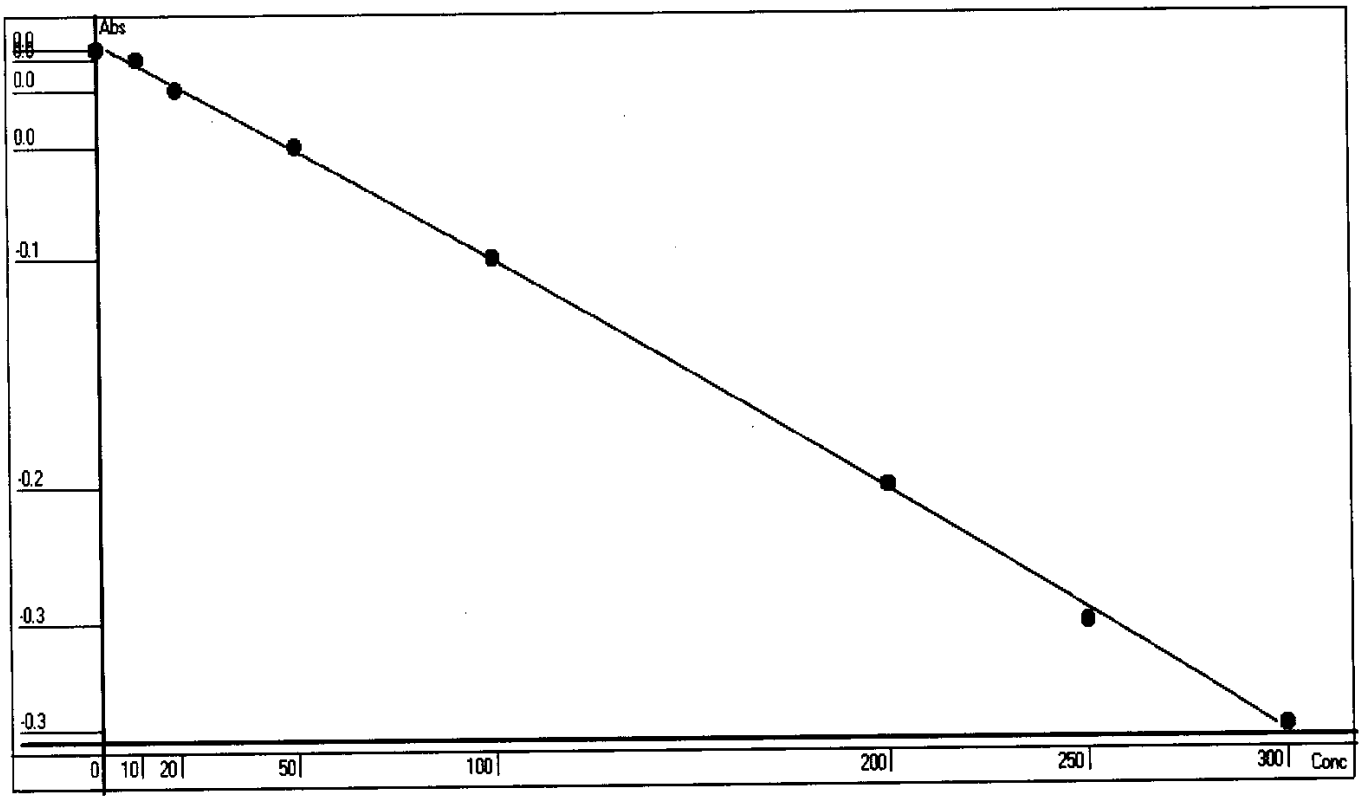

Point	OD	Conc	Recalc Conc	% Error
1	0.0039	0	2.5491	254.91
2	-0.0012	10	7.4899	-25.10
3	-0.0161	20	21.8505	9.25
4	-0.0440	50	48.4436	-3.11
5	-0.0983	100	99.0899	-0.91
6	-0.2098	200	198.4892	-0.76
7	-0.2767	250	255.1602	2.06
8	-0.3280	300	297.1083	-0.96
				RBL 0.5192 0

Conc= -248.726*Abso^2 -968.1059*Abso +6.3285 R^2=0.9994

Report Date 2/20/2015 Run Date 2/20/2015

MICROBAC (OVD)

SMARTCHEM200 INST2 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.0	0.4826	0.00		3:01:48 PM
DIL-1	RBL	0.0	0.4761	0.00		3:02:06 PM
DIL-1	RBL	0.0	0.4804	0.00		3:03:00 PM
DIL-1	Std-1	0.0	-0.0052	0.00		3:03:18 PM
SR5-1	Std-2	10.0	-0.0102	0.00		3:04:13 PM
SR5-2	Std-3	20.0	-0.0251	0.00		3:04:31 PM
SR5-3	Std-4	50.0	-0.0492	0.00		3:05:25 PM
SR5-4	Std-5	100.0	-0.1027	0.00		3:05:43 PM
SR5-5	Std-6	200.0	-0.2065	0.00		3:06:37 PM
SR5-6	Std-7	250.0	-0.2695	0.00		3:06:55 PM
SR5-7	Std-8	300.0	-0.3132	0.00		3:07:49 PM
ST-3	1CCV (150 mg/L)	152.6	-0.1580	101.72		3:08:07 PM
ST-2	2CCB (0 mg/L)	16.7	-0.0191	0.00		3:09:01 PM
1	ICV	253.3	-0.2660	0.00		3:09:19 PM
2	~~WG512978-01~~ BLK	13.5	-0.0160	0.00		3:10:13 PM
3	WG513096 ~~WG512978-02~~ LCS	200.2	-0.2085	0.00		3:10:31 PM
4	~~WG512978-03~~ LCSDUP	202.7	-0.2112	0.00		3:11:25 PM
5	TB 2/20/15 L15020971-10	217.8	-0.2274	0.00		3:11:43 PM
6	L15020971-12 (2)	170.1	-0.1765	0.00		3:12:37 PM
7	L15020971-14 (2)	173.2	-0.1797	0.00		3:12:55 PM
8	L15021053-01 (2)	154.6	-0.1601	0.00		3:13:49 PM
9	L15021053-03	261.8	-0.2753	0.00		3:14:07 PM
10	L15021053-05 (2)	153.6	-0.1591	0.00		3:15:01 PM
ST-3	1CCV (150 mg/L)	153.0	-0.1584	101.97		3:15:19 PM
ST-2	2CCB (0 mg/L)	13.9	-0.0164	0.00		3:16:13 PM
11	L15021053-07 (2)	134.5	-0.1391	0.00		3:16:31 PM
12	L15021053-09 (2)	221.5	-0.2314	0.00		3:17:25 PM
13	L15021053-11 (2)	186.7	-0.1941	0.00		3:17:43 PM
14	WG513096 ~~WG512978-05~~ (2) DUP	186.1	-0.1934	0.00		3:18:37 PM
15	ID 15 2- 1059-02 (4)	164.2	-0.1702	0.00		3:18:55 PM
16	ID 16 1059-03 (4)	109.2	-0.1129	0.00		3:19:49 PM
17	ID 17 1059-05 (4) ~~06 (4)~~	122.1	-0.1262	0.00		3:20:07 PM

TB 2/20/15

Report Date :02/20/2015 **Run Date :2/20/2015** **Operator : WESTCO** **Plan # :20150220003**

Plan Description : ALK-B2-TB/02/20/2015

MICROBAC (OVD)

SMARTCHEM200 INST2 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
18	ID 18 2-1059-06 (4)	114.2	-0.1180	0.00		3:21:01 PM
19	ID 19 1059-08 (4)	94.0	-0.0972	0.00		3:21:19 PM
20	ID 20 09 (4)	74.9	-0.0777	0.00		3:22:13 PM
ST-3	1CCV (150 mg/L)	157.6	-0.1633	105.08		3:22:31 PM
ST-2	2CCB (0 mg/L)	19.1	-0.0215	0.00		3:23:25 PM

Report Date :02/20/2015 **Run Date :2/20/2015** **Operator : WESTCO** **Plan # :20150220003**

Plan Description : ALK-B2-TB/02/20/2015

Calibrant Report - WALK -

Calib Lot #:010104 Exp Date:6/21/2020 User:MICROBAC

Plan # : 20150220003 Description : [ALK-B2-TB/02/20/2015] Unit

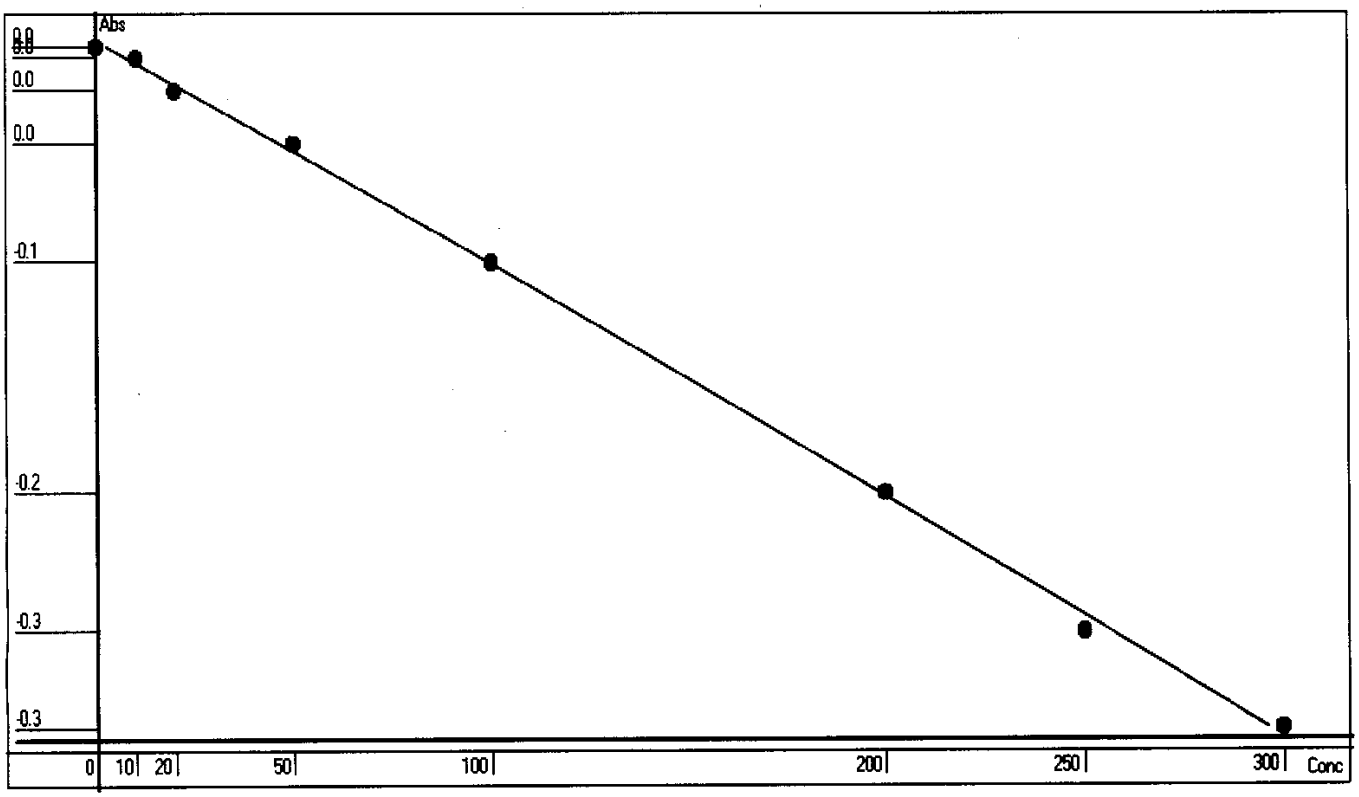

Point	OD	Conc	Recalc Conc	% Error
1	-0.0052	0	2.6667	266.67
2	-0.0102	10	7.7087	-22.91
3	-0.0251	20	22.6791	13.40
4	-0.0492	50	46.7194	-6.56
5	-0.1027	100	99.3200	-0.68
6	-0.2065	200	198.3594	-0.82
7	-0.2695	250	256.5291	2.61
8	-0.3132	300	296.0173	-1.33

Conc= -184.6979*Abso^2 -1011.245*Abso -2.5868 R^2=0.9991

RBL
0.4815
0

Report Date 2/20/2015 Run Date 2/20/2015

2.4.3 Phosphorus Data

2.4.3.1 Summary Data

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW13-021715	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	02/24/2015 09:14
Workgroup #:	WG513212	**Analyst:**	DCM	**Run Date:**	02/24/2015 09:30
Collect Date:	02/17/2015 08:10	**Dilution:**	1	**File ID:**	S2150224002.033
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW14-021715	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	02/24/2015 11:12
Workgroup #:	WG513272	**Analyst:**	DCM	**Run Date:**	02/24/2015 11:21
Collect Date:	02/17/2015 09:20	**Dilution:**	1	**File ID:**	S2150224003.021
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-05	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW11-021715	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	02/24/2015 09:14
Workgroup #:	WG513212	**Analyst:**	DCM	**Run Date:**	02/24/2015 09:31
Collect Date:	02/17/2015 10:45	**Dilution:**	1	**File ID:**	S2150224002.035
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-07	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW06-021715	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	02/26/2015 11:15
Workgroup #:	WG513563	**Analyst:**	DCM	**Run Date:**	02/26/2015 11:23
Collect Date:	02/17/2015 11:55	**Dilution:**	1	**File ID:**	SC150226002.015
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-09	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW08-021715	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	02/26/2015 11:15
Workgroup #:	WG513563	**Analyst:**	DCM	**Run Date:**	02/26/2015 11:24
Collect Date:	02/17/2015 14:05	**Dilution:**	1	**File ID:**	SC150226002.016
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.159	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-11	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW22-021715	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	02/26/2015 11:15
Workgroup #:	WG513563	**Analyst:**	DCM	**Run Date:**	02/26/2015 11:26
Collect Date:	02/17/2015 15:15	**Dilution:**	1	**File ID:**	SC150226002.017
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	1.96		0.400	0.200	0.100

2.4.3.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809
Value of b from plot:	0.0004135
Absorbance of unknown from quantitation report (y):	0.31
Calculated concentration (x):	0.03964483
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	0.0396 mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796
Value of B from plot:	318.9056
Value of C from plot:	-2.2712
Absorbance of unknown from quantitation report (x):	0.1583
Calculated concentration (y):	50.7495108
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	50.75 mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 24-FEB-2015
Analyst: DCM
Analyst: NA
Method: PHOS
Instrument: SC
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG513272 WG513212

Calibration/Linearity	02-24-2015
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DCM
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
24-FEB-2015

Secondary Reviewer:
27-FEB-2015

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-27-2015 09:30:16

Microbac Laboratories Inc.

Data Checklist

Date: 26-FEB-2015
Analyst: DCM
Analyst: NA
Method: PHOS
Instrument: SC
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG513563

Calibration/Linearity	02-26-2015
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DCM
Secondary Reviewer	SAV
Comments	

Primary Reviewer:
26-FEB-2015

Secondary Reviewer:
27-FEB-2015

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-27-2015 09:44:20

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 365.4 AAB#: WG513212

Login Number: L15021053

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW13-021715	01	02/17/15					02/24/2015	7.1	28		02/24/15	7.1	28	
50WW11-021715	05	02/17/15					02/24/2015	6.9	28		02/24/15	6.9	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4038808
Report generated 02/27/2015 09:22

Microbac Laboratories Inc.

00638429

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 365.4 AAB#: WG513272

Login Number: L15021053

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW14-021715	03	02/17/15					02/24/2015	7.1	28		02/24/15	7.1	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4038808
Report generated 02/27/2015 09:22

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 365.4 AAB#: WG513563

Login Number: L15021053

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW06-021715	07	02/17/15					02/26/2015	9	28		02/26/15	9	28	
50WW08-021715	09	02/17/15					02/26/2015	8.9	28		02/26/15	8.9	28	
50WW22-021715	11	02/17/15					02/26/2015	8.8	28		02/26/15	8.8	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4038808
Report generated 02/27/2015 09:22

METHOD BLANK SUMMARY

Login Number: L15021053
Blank File ID: SC150226002.010
Prep Date: 02/26/15 11:19
Analyzed Date: 02/26/15 11:19
Analyst: DCM

Work Group: WG513563
Blank Sample ID: WG513563-01
Instrument ID: SMARTCHEM
Method: 365.4

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG513563-02	SC150226002.011	02/26/15 11:20	01
50WW06-021715	L15021053-07	SC150226002.015	02/26/15 11:23	01
50WW08-021715	L15021053-09	SC150226002.016	02/26/15 11:24	01
50WW22-021715	L15021053-11	SC150226002.017	02/26/15 11:26	01
DUP	WG513563-04	SC150226002.021	02/26/15 11:28	01

Report Name: BLANK_SUMMARY
PDF File ID: 4038809
Report generated 02/27/2015 09:22

METHOD BLANK SUMMARY

Login Number: L15021053
Blank File ID: S2150224002.010
Prep Date: 02/24/15 09:16
Analyzed Date: 02/24/15 09:16
Analyst: DCM

Work Group: WG513212
Blank Sample ID: WG513212-01
Instrument ID: SMARTCHEM2
Method: 365.4

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG513212-02	S2150224002.011	02/24/15 09:17	01
50WW13-021715	L15021053-01	S2150224002.033	02/24/15 09:30	01
50WW11-021715	L15021053-05	S2150224002.035	02/24/15 09:31	01
DUP	WG513212-04	S2150224002.036	02/24/15 09:32	01

Report Name: BLANK_SUMMARY
PDF File ID: 4038809
Report generated 02/27/2015 09:22

METHOD BLANK SUMMARY

Login Number: L15021053
Blank File ID: S2150224003.010
Prep Date: 02/24/15 11:15
Analyzed Date: 02/24/15 11:15
Analyst: DCM

Work Group: WG513272
Blank Sample ID: WG513272-01
Instrument ID: SMARTCHEM2
Method: 365.4

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG513272-02	S2150224003.011	02/24/15 11:15	01
DUP	WG513272-04	S2150224003.017	02/24/15 11:19	01
50WW14-021715	L15021053-03	S2150224003.021	02/24/15 11:21	01

Report Name: BLANK_SUMMARY
PDF File ID: 4038809
Report generated 02/27/2015 09:22

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15021053 Prep Date: 02/26/15 11:19 Sample ID: WG513563-01
Instrument ID: SMARTCHEM Run Date: 02/26/15 11:19 Prep Method: 365.4
File ID: SC150226002.010 Analyst: DCM Method: 365.4
Workgroup (AAB#): WG513563 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-26-FEB-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Phosphorus, Total	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4038810
27-FEB-2015 09:22

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15021053 Prep Date: 02/24/15 09:16 Sample ID: WG513212-01
Instrument ID: SMARTCHEM2 Run Date: 02/24/15 09:16 Prep Method: 365.4
File ID: S2150224002.010 Analyst: DCM Method: 365.4
Workgroup (AAB#): WG513212 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-24-FEB-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Phosphorus, Total	0.100	0.400	-0.121	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4038810
27-FEB-2015 09:22

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15021053 Prep Date: 02/24/15 11:15 Sample ID: WG513272-01
Instrument ID: SMARTCHEM2 Run Date: 02/24/15 11:15 Prep Method: 365.4
File ID: S2150224003.010 Analyst: DCM Method: 365.4
Workgroup (AAB#): WG513272 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-24-FEB-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Phosphorus, Total	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4038810
27-FEB-2015 09:22

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15021053 Run Date: 02/26/2015 Sample ID: WG513563-02
Instrument ID: SMARTCHEM Run Time: 11:20 Prep Method: 365.4
File ID: SC150226002.011 Analyst: DCM Method: 365.4
Workgroup (AAB#): WG513563 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD69045 Cal ID: SMARTC-26-FEB-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Phosphorus, Total	1.00	1.04	104	70 - 130	

LCS - Modified 03/06/2008
PDF File ID: 4038811
Report generated: 02/27/2015 09:22

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15021053 Run Date: 02/24/2015 Sample ID: WG513212-02
Instrument ID: SMARTCHEM2 Run Time: 09:17 Prep Method: 365.4
File ID: S2150224002.011 Analyst: DCM Method: 365.4
Workgroup (AAB#): WG513212 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD68738 Cal ID: SMARTC-24-FEB-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Phosphorus, Total	1.00	1.06	106	70 - 130	

LCS - Modified 03/06/2008
PDF File ID: 4038811
Report generated: 02/27/2015 09:22

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15021053 Run Date: 02/24/2015 Sample ID: WG513272-02
Instrument ID: SMARTCHEM2 Run Time: 11:15 Prep Method: 365.4
File ID: S2150224003.011 Analyst: DCM Method: 365.4
Workgroup (AAB#): WG513272 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD68738 Cal ID: SMARTC-24-FEB-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Phosphorus, Total	1.00	0.976	97.6	70 - 130	

LCS - Modified 03/06/2008
PDF File ID: 4038811
Report generated: 02/27/2015 09:22

2.4.3.3 Raw Data

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

WORKGROUP: WG513212
513272

Daily Check

- [x] Lamp On
- [x] Probe Rinse Full
- [x] DI Water > ½ Full
- [x] Wash Solution > ½ Full
- [ ] NO3 Reagent bottle connected / purged
- [ ] NO3 pH adj to pH 5-9

Syringe filter lot # _____

- [x] WBL Run
- [x] Reagents Full
- [x] Dilution H_2O Full
- [x] Waste Container Check

1) **Workgroup** _____
Plan # 20150224003
2) **Workgroup** _____
Plan # 20150224003
3) **Workgroup** _____
Plan # _____

Instrument: SC1 [ ] SC2 [x]

	Analyte	1	2	3
		PHOS		
		Dilution		
SC Prepared Curve				
Position				
1-1	ICV			
1-2	BLK			
1-3	LCS			
1-4	02-985-01			
1-5	02			
1-6	03			
1-7	04			
QNS 1-8	02-985-01	12.5ml/25	* Auto	1/5 * Auto 1/5
1-9	02-996-01			
1-10	02-998-01	Auto 1/5		
1-11	02-999-01	Auto 1/5		
1-12	02-1008-01			
1-13	02-1009-01			
1-14	02			
1-15	02-904-03	1ml/250		
1-16	02-971-06			
1-17	08			
1-18	10			
1-19	12			
1-20	14			
1-21	02-1053-01			
1-22	03			
2-1	05			
2-2	DUP 02-985-01			
2-3	MS 02-985-01			

Position	Analyte	1	2	3
2-4	MS 02-985-02	1/2 * 1/10		
2-5	02-995-01	1/20 *	Auto 1/5	
2-6	02-998-01	1/10		
2-7	02-999-01	1/10 *	Auto 1/2	
2-8				
2-9				
2-10 1	ICV			
2-11 2	BLK			
2-12 3	LCS			
2-13 4	02-971-08	1/2		
2-14 5	02-1053-03	1/2		
2-15 6	02-904-03	1ml/250	* 1/2	
2-16 7	02-985-01			
2-17 8	DUP 02-985-01			
2-18 9	MS 02-985-01			
2-19 10	02-971-08			
2-20 11	02-1053-03			
2-21 12	02-904-03	1ml/250		
2-22 13	02-955-01	~~1/500~~	1/1000	
2-23		dcm 2/24/15		
2-24				
2-25				
2-26				
3-1				
3-2				

NOTES:
* Run NO2 std on NO3 runs
* LCSD must be run if no MS or Duplicate
*MS(10% sample): NO3, TKN, NH3, PHOS

DCN#108816

SMARTCHEM RUN LOG
(smartchem2, smartchem3)

WORKGROUP: WG513212

Position	Analyte	1	2	3
3-3				
3-4				
3-5				
3-6				
3-7				
3-8				
3-9				
3-10				
3-11				
3-12				
3-13				
3-14				
3-15				

Position	Analyte	1	2	3
3-16				
3-17				
3-18				
3-19				
3-20				
3-21				
3-22				
3-23				
3-24				
3-25				
3-26				
3-27				
3-28				

	Chloride	EPA 325.2/SM 4500-CI E-2000
	Nitrate-Nitrite	EPA 353.2/SM 4500-NO3 F-2000
	Alkalinity	EPA 310.2
	Sulfate	EPA 375.4/SM 426C (15th)/ SM4500-504 E-1997

	Ammonia	EPA 350.1/SM 4500-NH3 B-1997
	TKN	EPA 351.2
✓	Phos	EPA 365.4

Analyte	PHOS		Reagents
SOP & Revision	K 3654 R17		RGT 32805
Curve Stock (SC made)			RGT 32028
NO2 STD			RGT 32865
ICV	Digest		
CCV	Log		
LCS			
MS	Dilution		

Comments: _____

Analyst: David Merchle Date: 2/24/15

DCN#108816

TKN/Phosphorus Digestion Log

TKN WG:
TKN Std: Std 69003
TKN CCV: 1/2(Std 69003)
TKN ICV: Std 68889
TKN LCS: Std 68888

Phos WG:
Phos Std: Std 69003
Phos CCV: 1/2(Std 69003)
Phos ICV: Std 68886
Phos LCS: Std 68738

MS/MSD: Std 67891
Daily Dilution: 1(25)/25 = 1

Block Digester Temperature: 380 °C
Digest Reagent: RGT 32616

	Sample	Volume	TKN Dilution	Phos Dilution		Sample	Volume	TKN Dilution	Phos Dilution
1	Std		5	2	26	02-971-14			✓
2	Std		5	2	27	02-1053-01			✓
3	ICVT		2		28	03			✓
4	ICVP			1.5	29	05			✓
5	LCST		1		30	DUP02985-01		✓	✓
6	LCSP			1	31	MS02985-01		✓	✓
7	02-1059-02	1/50	✓		32	MS02985-02			✓
8	05	1/50	✓		33				
9	08	1/50	✓		34				
10	02-985-01		✓	✓	35				
11	02		✓	✓	36				
12	03		✓	✓	37				
13	04		✓	✓	38				
QNS 14	02-995-01	1/2		✓	39				
15	02-996-01			✓	40				
16	02-998-01			✓	41				
17	02-999-01			✓	42				
18	02-1008-01			✓	43				
19	02-1009-01			✓	44				
20	02			✓	45				
21	02-964-03	1/250		✓	46				
22	02-971-06			✓	47				
23	08			✓	48				
24	10			✓	49				
25	12			✓	50				

Analyst: [signature] Date: 2/23/15

MICROBAC (OVD)

SMARTCHEM200 INST2 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WTPH -Unit [mg/L] - EPA 365.4 TOTAL PHOSPHORUS

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.000	0.0447	0.00		9:09:36 AM
DIL-1	RBL	0.000	0.0448	0.00		9:09:54 AM
DIL-1	RBL	0.000	0.0428	0.00		9:10:48 AM
SR5-1	Std-1	0.010	0.0114	0.00		9:11:06 AM
SR5-2	Std-2	0.200	0.0318	0.00		9:12:00 AM
SR5-3	Std-3	0.500	0.0684	0.00		9:12:18 AM
SR5-4	Std-4	1.000	0.1312	0.00		9:13:13 AM
SR5-5	Std-5	1.500	0.1898	0.00		9:13:30 AM
ST-1	Std-6	2.000	0.2630	0.00		9:14:24 AM
ST-3	1CCV (1 mg/L)	0.999	0.1323	99.85		9:14:42 AM
ST-2	2CCB (0 mg/L)	-0.033	0.0025	0.00	><,LL	9:15:37 AM
1	ICV	1.499	0.1952	0.00		9:15:54 AM
2	WG513212-01 BLK	-0.121	-0.0085	0.00	INV,><,LL	9:16:49 AM
3	WG513212-02 LCS	1.062	0.1403	0.00		9:17:06 AM
4	L15020985-01	-0.030	0.0029	0.00	><,LL	9:18:01 AM
5	L15020985-02	-0.008	0.0058	0.00	><,LL	9:18:18 AM
6	L15020985-03	0.238	0.0367	0.00		9:19:13 AM
7	L15020985-04	0.357	0.0517	0.00		9:19:30 AM
8	L15020995-01 (2)	X 23.402	2.9483	0.00	EPL,><,LH	9:20:25 AM
9	L15020996-01	-0.002	0.0064	0.00	><,LL	9:20:42 AM
10	L15020998-01	X22.090	2.7834	0.00	EPL,><,LH	9:21:37 AM
ST-3	1CCV (1 mg/L)	0.986	0.1307	98.58		9:21:54 AM
ST-2	2CCB (0 mg/L)	-0.044	0.0012	0.00	><,LL	9:22:49 AM
11	L15020999-01	X21.415	2.6985	0.00	EPL,><,LH	9:23:06 AM
12	L15021008-01	1.232	0.1616	0.00		9:24:01 AM
13	L15021009-01	-0.147	-0.0118	0.00	INV,><,LL	9:24:19 AM
14	L15021009-02	1.369	0.1788	0.00	EPL	9:25:13 AM
15	L15020904-03 (250)	X 3.563	0.4546	0.00	EPL,><,LH	9:25:30 AM
16	L15020971-06	1.209	0.1588	0.00	EPL	9:26:25 AM
17	L15020971-08	X3.196	0.4085	0.00	EPL,><,LH	9:26:43 AM
18	L15020971-10	0.300	0.0445	0.00	EPL	9:27:37 AM
19	L15020971-12	-0.103	-0.0062	0.00	INV,><,LL	9:27:55 AM

Report Date :02/24/2015 **Run Date :2/24/2015** **Operator : WESTCO** **Plan # :20150224002**

Plan Description : PHOS-A2-DCM/02/24/2015

MICROBAC (OVD)

SMARTCHEM200 INST2 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WTPH -Unit [mg/L] - EPA 365.4 TOTAL PHOSPHORUS

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
20	L15020971-14	0.092	0.0184	0.00		9:28:49 AM
ST-3	1CCV (1 mg/L)	0.974	0.1292	97.39		9:29:07 AM
ST-2	2CCB (0 mg/L)	-0.066	-0.0016	0.00	INV,><,LL	9:30:01 AM
21	L15011053-01	0.026	0.0099	0.00	><	9:30:19 AM
22	L15021053-03	2.645	0.3392	0.00	EPL,><,LH	9:31:13 AM
23	L15021053-05	-0.113	-0.0074	0.00	INV,><,LL	9:31:31 AM
24	WG513212-04 DUP	0.321	0.0471	0.00	EPL	9:32:25 AM
25	WG513212-05 MS	-0.068	-0.0019	0.00	INV,><,LL	9:32:42 AM
26	WG513212-07 MS	-0.111	-0.0073	0.00	INV,><,LL	9:33:37 AM
27	ID 27 02-995-01 (20)	18.602	2.3449	0.00	EPL,><,LH	9:33:54 AM
28	ID 28 02-998-01 (10)	12.978	1.6381	0.00	EPL,><,LH	9:34:49 AM
29	ID 29 02-999-01 (10)	15.846	1.9985	0.00	EPL,><,LH	9:35:07 AM
30	ID 30	1.092	0.1440	0.00		9:36:01 AM
ST-3	1CCV (1 mg/L)	0.976	0.1295	97.63		9:36:19 AM
ST-2	2CCB (0 mg/L)	-0.085	-0.0040	0.00	INV,><,LL	9:37:13 AM
8-[1/2]	L15020995-01 (2)	41.609	2.6218	0.00	EPL,><,LH	9:44:53 AM
10-[1/2]	L15020998-01	7.577	0.4830	0.00	><,LH	9:46:05 AM
11-[1/2]	L15020999-01	20.432	1.2909	0.00	EPL,><,LH	9:47:17 AM
15-[1/2]	L15020904-03 (250)	0.051	0.0099	0.00	><	9:48:29 AM
17-[1/2]	L15020971-08	-0.226	-0.0074	0.00	INV,><,LL	9:49:41 AM
22-[1/2]	L15021053-03	-0.242	-0.0085	0.00	INV,><,LL	9:50:53 AM
27-[1/2]	ID 27 02-995-01 (100)	28.873	1.8214	0.00	EPL,><,LH	9:52:05 AM
28-[1/2]	ID 28 02-998-01 (10)	15.387	0.9738	0.00	><,LH	9:53:17 AM
29-[1/2]	ID 29 02-999-01 (20)	18.741	1.1846	0.00	EPL,><,LH	9:54:29 AM
ST-3	1CCV (1 mg/L)	1.003	0.1329	100.33		9:54:29 AM
ST-2	2CCB (0 mg/L)	-0.060	-0.0008	0.00	INV,><,LL	9:55:23 AM
8-[1/5]	L15020995-01 (2)(26)	33.196	0.8413	0.00	><,LH	10:03:03 AM
10-[1/5]	L15020998-01 (5)	6.962	0.1818	0.00	LH	10:04:15 AM
11-[1/5]	L15020999-01 (5)	25.857	0.6568	0.00	><,LH	10:05:27 AM
27-[1/5]	ID 27 02-995-01 (100)	ok 8.847	0.2292	0.00	LH	10:06:39 AM
28-[1/5]	ID 28 02-998-01 (10)	20.463	0.5212	0.00	><,LH	10:07:51 AM
29-[1/5]	ID 29 02-999-01 (20)	13.378	0.3431	0.00	><,LH	10:09:03 AM

Report Date :02/24/2015 **Run Date :2/24/2015** **Operator : WESTCO** **Plan # :20150224002**

Plan Description : PHOS-A2-DCM/02/24/2015

MICROBAC (OVD)

SMARTCHEM200 INST2 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WTPH -Unit [mg/L] - EPA 365.4 TOTAL PHOSPHORUS

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
ST-3	1CCV (1 mg/L)	1.005	0.1331	100.49		10:09:03 AM
ST-2	2CCB (0 mg/L)	-0.068	-0.0019	0.00	INV,><,LL	10:09:57 AM
8-[1/15]	L15020995-01 (2) (25)	X42.294	0.3612	0.00	><,LH	10:17:37 AM
11-[1/15]	L15020999-01 (5)	29.167	0.2512	0.00	LH	10:18:49 AM
28-[1/15]	ID 28 02-988-01 (10)	X20.360	0.1774	0.00	LH	10:20:01 AM
29-[1/15]	ID 29 02-989-01 (20)	X12.866	0.1146	0.00	LH	10:21:13 AM
ST-3	1CCV (1 mg/L)	0.979	0.1299	97.94		10:21:13 AM
ST-2	2CCB (0 mg/L)	-0.096	-0.0054	0.00	INV,><,LL	10:22:07 AM
8-[1/25]	L15020995-01 (2) (25)	X41.253	0.2142	0.00	LH	10:29:47 AM
ST-3	1CCV (1 mg/L)	0.990	0.1312	98.98		10:29:47 AM
ST-2	2CCB (0 mg/L)	-0.084	-0.0039	0.00	INV,><,LL	10:30:41 AM

Report Date :02/24/2015 **Run Date :2/24/2015** **Operator : WESTCO** **Plan # :20150224002**

Plan Description : PHOS-A2-DCM/02/24/2015

Calibrant Report - WTPH -

Calib Lot #:010104 Exp Date:6/18/2020 User:MICROBAC

Plan # : 20150224002 Description : [PHOS-A2-DCM/02/24/2015] Unit

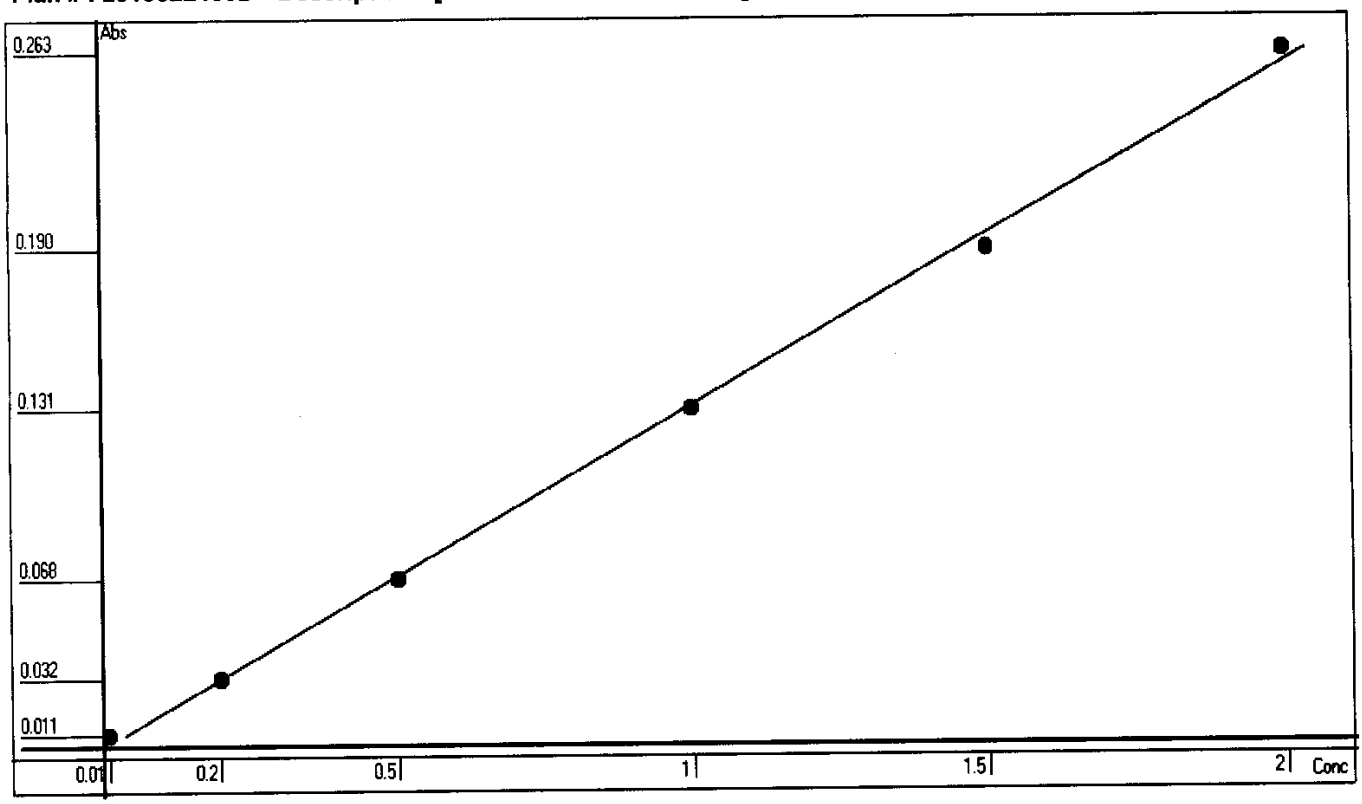

Point	OD	Conc	Recalc Conc	% Error
1	0.0114	0.01	0.0371	271.00
2	0.0318	0.2	0.1994	-0.30
3	0.0684	0.5	0.4906	-1.88
4	0.1312	1	0.9902	-0.98
5	0.1898	1.5	1.4564	-2.91
6	0.2630	2	2.0388	1.94

Conc= +7.9558*Abso -0.0536 **R^2=0.9986**

RBL
0.0448
0

Report Date 2/24/2015 Run Date 2/24/2015

MICROBAC (OVD)

SMARTCHEM200 INST2 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WTPH -Unit [mg/L] - EPA 365.4 TOTAL PHOSPHORUS

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.000	0.0386	0.00		11:07:59 AM
DIL-1	RBL	0.000	0.0376	0.00		11:08:16 AM
DIL-1	RBL	0.000	0.0379	0.00		11:09:11 AM
SR5-1	Std-1	0.010	0.0051	0.00		11:09:29 AM
SR5-2	Std-2	0.200	0.0323	0.00		11:10:23 AM
SR5-3	Std-3	0.500	0.0774	0.00		11:10:41 AM
SR5-4	Std-4	1.000	0.1477	0.00		11:11:35 AM
SR5-5	Std-5	1.500	0.2211	0.00		11:11:53 AM
ST-1	Std-6	2.000	0.2991	0.00		11:12:47 AM
ST-3	1CCV (1 mg/L)	0.991	0.1485	99.12		11:13:05 AM
ST-2	2CCB (0 mg/L)	-0.028	-0.0013	0.00	INV,><,LL	11:13:59 AM
1	ICV	1.376	0.2051	0.00		11:14:17 AM
2	WG513272-01 BLK	-0.010	0.0014	0.00	><,LL	11:15:11 AM
3	WG513272-02 LCS	0.976	0.1463	0.00		11:15:29 AM
4	L15020971-08 (2)	0.036	0.0082	0.00		11:16:23 AM
5	L15021053-03 (2)	0.010	0.0043	0.00	><	11:16:41 AM
6	L15020904-03 (250)(4)	0.437	0.0670	0.00		11:17:35 AM
7	WG513272-03 REF	0.046	0.0096	0.00		11:17:53 AM
8	WG513272-04 DUP	0.298	0.0466	0.00	EPL	11:18:47 AM
9	WG513272-05 MS	0.023	0.0062	0.00		11:19:05 AM
10	ID 10 02-971-08	0.057	0.0112	0.00		11:19:59 AM
ST-3	1CCV (1 mg/L)	0.995	0.1491	99.52		11:20:17 AM
ST-2	2CCB (0 mg/L)	-0.047	-0.0040	0.00	INV,><,LL	11:21:11 AM
11	ID 11 02-1053-03	0.041	0.0089	0.00		11:21:29 AM
12	ID 12 02-904-03 (250)	0.939	0.1408	0.00		11:22:23 AM
13	ID 13 02-995-01 (1000)	0.799	0.1202	0.00		11:22:41 AM
14	ID 14	1.002	0.1501	0.00		11:23:35 AM
ST-3	1CCV (1 mg/L)	1.001	0.1500	100.14		11:23:53 AM
ST-2	2CCB (0 mg/L)	-0.043	-0.0034	0.00	INV,><,LL	11:24:47 AM

Report Date :02/24/2015 **Run Date :2/24/2015** **Operator : WESTCO** **Plan # :20150224003**

Plan Description : PHOS-B2-DCM/02/24/2015

Calibrant Report - WTPH -

Calib Lot #:010104 Exp Date:6/18/2020 User:MICROBAC

Plan # : 20150224003 Description : [PHOS-B2-DCM/02/24/2015] Unit

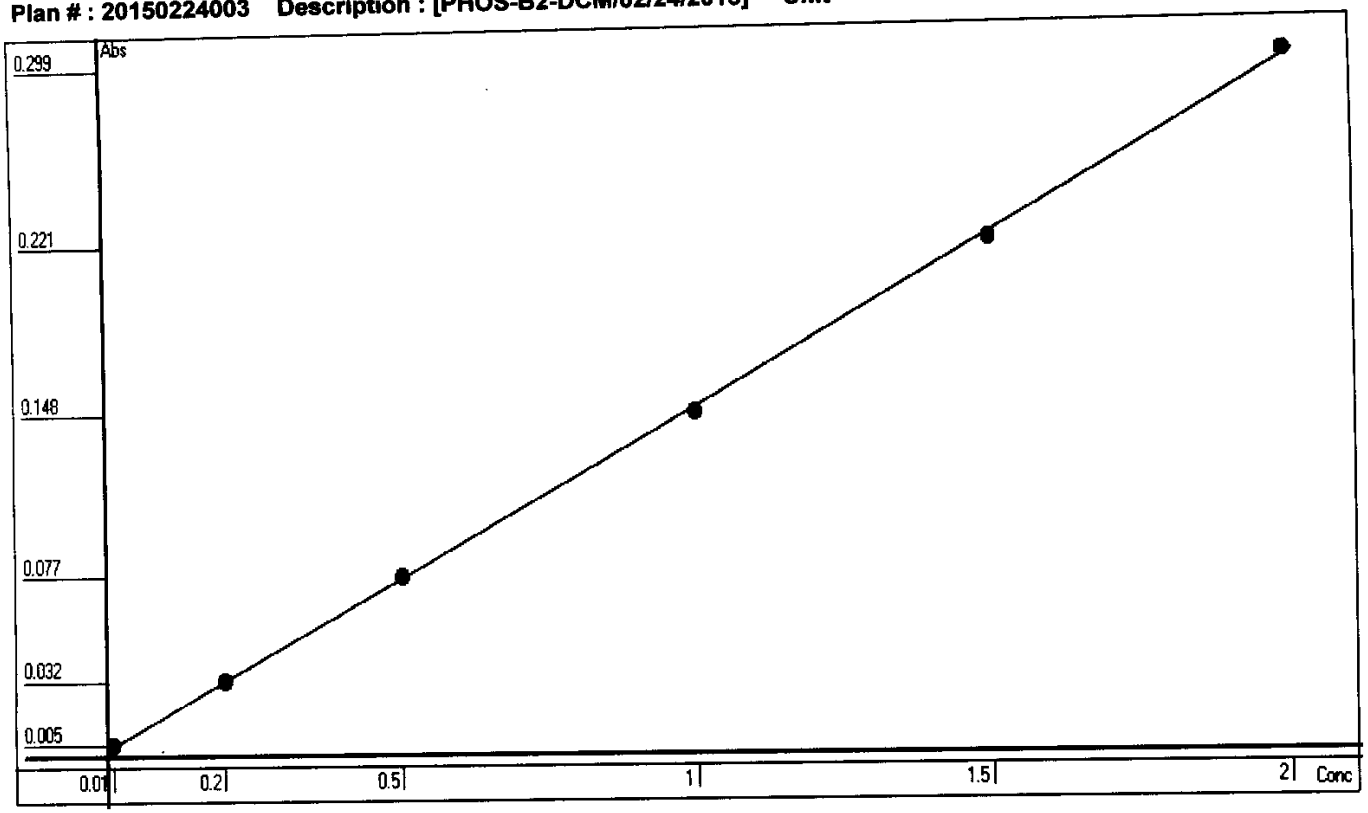

Point	OD	Conc	Recalc Conc	% Error
1	0.0051	0.01	0.0157	57.00
2	0.0322	0.2	0.2001	0.05
3	0.0773	0.5	0.5070	1.40
4	0.1477	1	0.9861	-1.39
5	0.2210	1.5	1.4849	-1.01
6	0.2991	2	2.0163	0.82

Conc= +6.8048*Abso -0.019 R^2=0.9997

RBL
0.0377
0

Report Date 2/24/2015 Run Date 2/24/2015

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

WORKGROUP: WG513563

Daily Check

- [x] Lamp On
- [x] Probe Rinse Full
- [x] DI Water > ½ Full
- [x] Wash Solution > ½ Full
- [ ] NO3 Reagent bottle connected / purged
- [ ] NO3 pH adj to pH 5-9

Syringe filter lot # _____

- [x] WBL Run
- [x] Reagents Full
- [x] Dilution H_2O Full
- [x] Waste Container Check

1) **Workgroup** _____
   Plan # 2015022602
2) **Workgroup** _____
   Plan # _____
3) **Workgroup** _____
   Plan # _____

Instrument: SC1 [x] SC2 [ ]

	Analyte	1	2	3
		PHOS		
		Dilution		
SC Prepared Curve				
Position				
1-1	ICV			
1-2	BLK			
1-3	LCS			
1-4	02-1150-01			
1-5	02-1149-01			
1-6	02			
1-7	02-1053-07			
1-8	09			
1-9	11			
1-10	02-1226-01			
1-11	DUP 02-1150-01			
1-12	MS 02-1150-01			
1-13				
1-14				
1-15				
1-16				
1-17				
1-18				
1-19				
1-20				
1-21				
1-22				
2-1				
2-2				
2-3				

	Analyte	1	2	3
Position				
2-4				
2-5				
2-6				
2-7				
2-8				
2-9				
2-10				
2-11				
2-12				
2-13				
2-14				
2-15				
2-16				
2-17				
2-18				
2-19				
2-20				
2-21				
2-22				
2-23				
2-24				
2-25				
2-26				
3-1				
3-2				

NOTES:
* Run NO2 std on NO3 runs
* LCSD must be run if no MS or Duplicate
*MS(10% sample): NO3, TKN, NH3, PHOS

DCN#108878

SMARTCHEM RUN LOG
(smartchem2, smartchem3)

WORKGROUP: WG513563

Position	Analyte	1	2	3
3-3				
3-4				
3-5				
3-6				
3-7				
3-8				
3-9				
3-10				
3-11				
3-12				
3-13				
3-14				
3-15				

Position	Analyte	1	2	3
3-16				
3-17				
3-18				
3-19				
3-20				
3-21				
3-22				
3-23				
3-24				
3-25				
3-26				
3-27				
3-28				

	Chloride	EPA 325.2/SM 4500-CI E-2000
	Nitrate-Nitrite	EPA 353.2/SM 4500-NO3 F-2000
	Alkalinity	EPA 310.2
	Sulfate	EPA 375.4/SM 426C (15th)/ SM4500-504 E-1997

	Ammonia	EPA 350.1/SM 4500-NH3 B-1997
	TKN	EPA 351.2
✓	Phos	EPA 365.4

Analyte	PHOS		Reagents
SOP & Revision	K365 4 R17		RGT 32923
Curve Stock (SC made)			RGT 32805
NO2 STD			RGT 32028
ICV	Digest		
CCV			
LCS	5ul 107		
MS	Dilution		

Comments: _____

Analyst: David Merckle Date: 2/26/15

DCN#108878

TKN/Phosphorus Digestion Log

TKN WG:
TKN Std: Std 69003
TKN CCV: 1/2(Std 69003)
TKN ICV: Std 68889
TKN LCS: Std 68858

Phos WG:
Phos Std: Std 69003
Phos CCV: 1/2(Std 69003)
Phos ICV: Std 68886
Phos LCS: Std 68845

MS/MSD: Std 67891
Daily Dilution: 1(25)/25 = 1

Block Digester Temperature: 380 °C
Digest Reagent: RGT 32883

	Sample	Volume	TKN Dilution	Phos Dilution		Sample	Volume	TKN Dilution	Phos Dilution
1	Std		5	2	26	02-1053-07			✓
2	Std		5	2	27	09			✓
3	ICVT		2		28	11			✓
4	ICVP			1.5	29	DUP 02-1150		✓	✓
5	LCST		1		30	MS 02-1150-01		✓	✓
6	LCSP			1	31	MS 02-1151-09		✓	
7	02-1146-01		✓		32	02-1226-01			✓
8	02-1150-01		✓	✓	33				
9	02-1151-01		✓		34				
10	02		✓		35				
11	03		✓		36				
12	04		✓		37				
13	05		✓		38				
14	06		✓		39				
15	07		✓		40				
16	08		✓		41				
17	09		✓		42				
18	10		✓		43				
19	11		✓		44				
20	02-1170-02	1/50	✓		45				
21	05	1/50	✓		46				
22	02-1168-01		✓		47				
23	02-1169-01		✓		48				
24	02-1149-01			✓	49				
25	02			✓	50				

Analyst: David Uerchlik Date: 2/25/15

MICROBAC (OVD)

SMARTCHEM200 INST1 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WTPH -Unit [mg/L] - EPA 365.4 TOTAL PHOSPHORUS

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.000	0.0290	0.00		11:09:15 AM
DIL-1	RBL	0.000	0.0261	0.00		11:09:32 AM
DIL-1	RBL	0.000	0.0269	0.00		11:10:27 AM
SR5-1	Std-1	0.010	0.0041	0.00		11:10:44 AM
SR5-2	Std-2	0.200	0.0330	0.00		11:12:51 AM
SR5-3	Std-3	0.500	0.0842	0.00		11:13:09 AM
SR5-4	Std-4	1.000	0.1556	0.00		11:14:03 AM
SR5-5	Std-5	1.500	0.2277	0.00		11:14:21 AM
ST-1	Std-6	2.000	0.3022	0.00		11:15:14 AM
ST-3	1CCV (1 mg/L)	1.012	0.1559	101.20		11:15:34 AM
ST-2	2CCB (0 mg/L)	0.097	0.0194	0.00		11:16:45 AM
1	ICV	1.474	0.2248	0.00		11:18:51 AM
2	WG513563-01 BLK	-0.012	0.0032	0.00	><,LL	11:19:08 AM
3	WG513563-02 LCS	1.043	0.1605	0.00		11:20:03 AM
4	L15021150-01	0.223	0.0382	0.00		11:20:21 AM
5	L15021149-01	0.003	0.0053	0.00		11:22:09 AM
6	L15021149-02	-0.035	-0.0003	0.00	INV,><,LL	11:23:03 AM
7	L15021053-07	0.029	0.0093	0.00		11:23:21 AM
8	L15021053-09	0.159	0.0287	0.00		11:24:33 AM
9	L15021053-11	1.962	0.2976	0.00	EPL	11:26:03 AM
10	L15021226-01	0.071	0.0155	0.00		11:26:21 AM
ST-3	1CCV (1 mg/L)	0.980	0.1511	97.98		11:27:15 AM
ST-2	2CCB (0 mg/L)	0.095	0.0191	0.00		11:27:33 AM
11	WG513563-04 DUP	0.188	0.0329	0.00		11:28:27 AM
12	WG513563-05 MS	1.178	0.1807	0.00		11:28:45 AM
13	ID 13	0.043	0.0113	0.00		11:29:39 AM
14	ID 14	0.996	0.1535	0.00		11:29:57 AM
15	ID 15	1.725	0.2622	0.00	EPL	11:30:51 AM
ST-3	1CCV (1 mg/L)	1.029	0.1585	102.94		11:31:09 AM
ST-2	2CCB (0 mg/L)	0.108	0.0210	0.00		11:32:03 AM

Report Date :02/26/2015 **Run Date :2/26/2015** **Operator : WESTCO** **Plan # :20150226002**

Plan Description : PHOS-A1-DCM/02/26/2015

Calibrant Report - WTPH -

Calib Lot #:010104 Exp Date:6/18/2020 User:MICROBAC

Plan # : 20150226002 Description : [PHOS-A1-DCM/02/26/2015] Unit

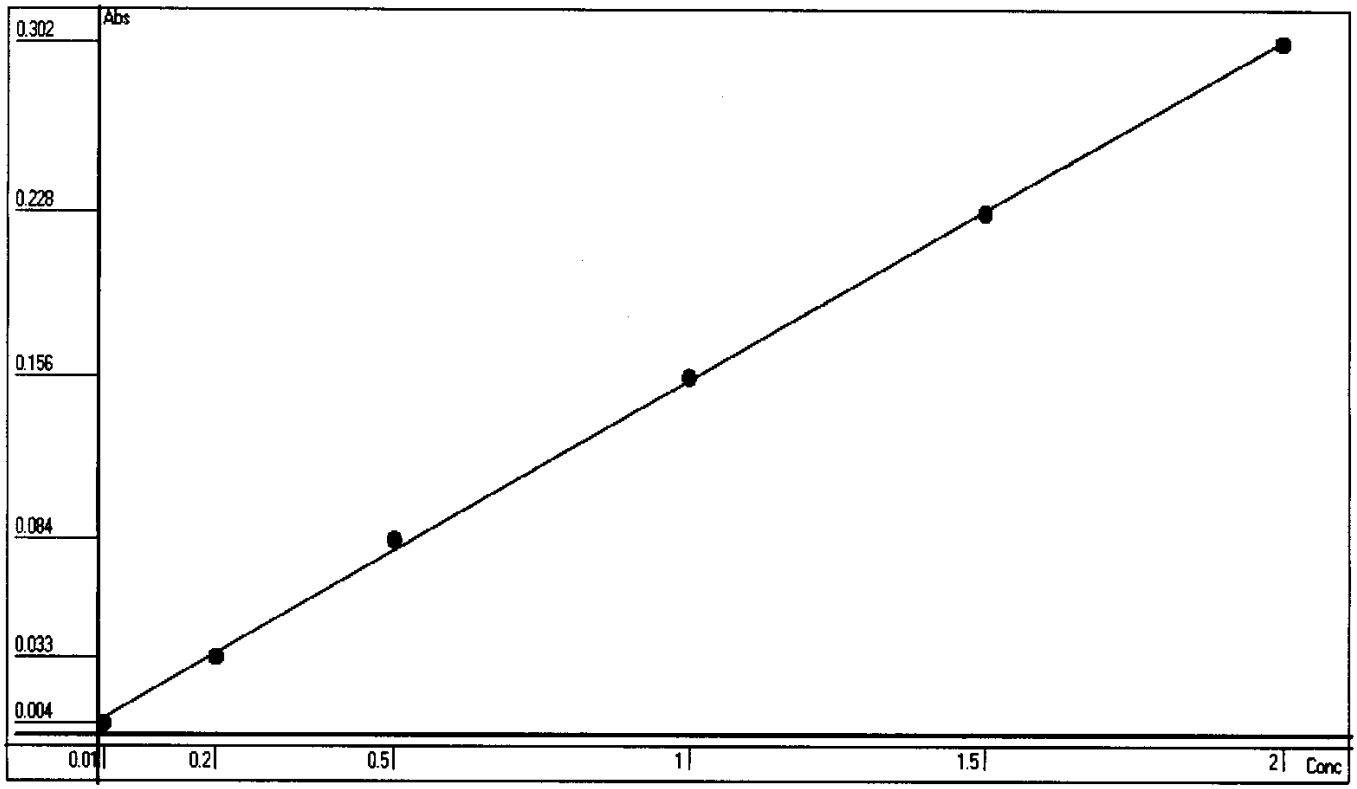

Point	OD	Conc	Recalc Conc	% Error
1	0.0041	0.01	-0.0055	-155.00
2	0.0330	0.2	0.1882	-5.90
3	0.0842	0.5	0.5314	6.28
4	0.1556	1	1.0100	1.00
5	0.2277	1.5	1.4933	-0.45
6	0.3022	2	1.9927	-0.37

Conc= +6.7031*Abso -0.033 R^2=0.9995

RBL
0.0265
0

Report Date 2/26/2015 Run Date 2/26/2015

2.4.4 Sulfide Data

2.4.4.1 Summary Data

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-01	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW13-021715	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG513077	**Analyst:**	EPT	**Run Date:**	02/23/2015 11:15
Collect Date:	02/17/2015 08:10	**Dilution:**	1	**File ID:**	ET.1502231115-09
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-03	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW14-021715	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG513077	**Analyst:**	EPT	**Run Date:**	02/23/2015 11:15
Collect Date:	02/17/2015 09:20	**Dilution:**	1	**File ID:**	ET.1502231115-10
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-05	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW11-021715	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG513077	**Analyst:**	EPT	**Run Date:**	02/23/2015 11:15
Collect Date:	02/17/2015 10:45	**Dilution:**	1	**File ID:**	ET.1502231115-11
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-07	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW06-021715	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG513077	**Analyst:**	EPT	**Run Date:**	02/23/2015 11:15
Collect Date:	02/17/2015 11:55	**Dilution:**	1	**File ID:**	ET.1502231115-12
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-09	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW08-021715	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG513077	**Analyst:**	EPT	**Run Date:**	02/23/2015 11:15
Collect Date:	02/17/2015 14:05	**Dilution:**	1	**File ID:**	ET.1502231115-13
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-11	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW22-021715	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG513077	**Analyst:**	EPT	**Run Date:**	02/23/2015 11:15
Collect Date:	02/17/2015 15:15	**Dilution:**	1	**File ID:**	ET.1502231115-14
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	0.681	J	2.00	1.00	0.500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.4.4.2 QC Summary Data

Example Total Sulfide(Liquid) Calculations

[mL Iodine * N Iodide) - (mL titrant * N titrant)] * 16000/(volume * dilution) = mg/L Sulfide

where:

mL Iodine = mL of Iodine used
N Iodine = normality of Iodine
mL titrant = mL of titrant used
N titrant = normality of titrant
16000 = factor: 1mL of 0.025 N iodine reacts with 0.4mg sulfide
volume = mL filtered of mL titrated(if not filtered)
dilution = dilution in decimal form (1/5 = 0.2)

Example Total Sulfide(Soil) Calculations

[(mL Iodine * N Iodine) - (mL titrant * N titrant)] * 16.03/weight = mg/kg sulfide

where:

mL Iodine = mL of Iodine used
N Iodine = normality of Iodine
mL titrant = normality of titrant
16.03 = 32.06 grams per 2 equivalents
weight = kg of sample used

Microbac Laboratories Inc.

Data Checklist

Date: 23-FEB-2015
Analyst: EPT
Analyst: NA
Method: SULFIDE
Instrument: BURET
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG513077

Calibration/Linearity	02/23/15
Second Source Check	
ICV/CCV (std)	
ICB/CCB	
Blank	X
LCS/LCS Dup	X
MS/MSD	
Duplicate	
Upload Results	X
Client Forms	
QC Violation Sheet	
Case Narratives	
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	
Primary Reviewer	EPT
Secondary Reviewer	SAV
Comments	

Primary Reviewer:
24-FEB-2015
Ethan Tido

Secondary Reviewer:
27-FEB-2015
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-27-2015 10:17:20

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: SM4500-S-(-2)-F- AAB#: WG513077

Login Number: L15021053

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW13-021715	01	02/17/15					02/23/2015	6.1	7		02/23/15	6.1	7	
50WW14-021715	03	02/17/15					02/23/2015	6.1	7		02/23/15	6.1	7	
50WW11-021715	05	02/17/15					02/23/2015	6	7		02/23/15	6	7	
50WW06-021715	07	02/17/15					02/23/2015	6	7		02/23/15	6	7	
50WW08-021715	09	02/17/15					02/23/2015	5.9	7		02/23/15	5.9	7	
50WW22-021715	11	02/17/15					02/23/2015	5.8	7		02/23/15	5.8	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4040592
Report generated 02/27/2015 10:06

METHOD BLANK SUMMARY

Login Number: L15021053
Blank File ID: ET.1502231115-01
Prep Date: 02/23/15 11:15
Analyzed Date: 02/23/15 11:15
Analyst: EPT

Work Group: WG513077
Blank Sample ID: WG513077-01
Instrument ID: BURET
Method: SM4500-S-(-2)-F-

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG513077-02	ET.1502231115-02	02/23/15 11:15	
LCS2	WG513077-03	ET.1502231115-03	02/23/15 11:15	
50WW13-021715	L15021053-01	ET.1502231115-09	02/23/15 11:15	
50WW14-021715	L15021053-03	ET.1502231115-10	02/23/15 11:15	
50WW11-021715	L15021053-05	ET.1502231115-11	02/23/15 11:15	
50WW06-021715	L15021053-07	ET.1502231115-12	02/23/15 11:15	
50WW08-021715	L15021053-09	ET.1502231115-13	02/23/15 11:15	
50WW22-021715	L15021053-11	ET.1502231115-14	02/23/15 11:15	

Report Name: BLANK_SUMMARY
PDF File ID: 4040593
Report generated 02/27/2015 10:06

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15021053 Prep Date: 02/23/15 11:15 Sample ID: WG513077-01
Instrument ID: BURET Run Date: 02/23/15 11:15 Prep Method: SM4500-S-(-2)-F
File ID: ET.1502231115-01 Analyst: EPT Method: SM4500-S-(-2)-F
Workgroup (AAB#): WG513077 Matrix: Water Units: mg/L
Contract #: Cal ID: BURET-

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Sulfide	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4040594
27-FEB-2015 10:06

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15021053 Analyst: EPT Prep Method: SM4500-S-(-2)-F
Instrument ID: BURET Matrix: Water Method: SM4500-S-(-2)-F
Workgroup (AAB#): WG513077 Units: mg/L
QC Key: DOD4 Lot #: STD69004

Sample ID: WG513077-02 LCS File ID: ET.1502231115-02 Run Date: 02/23/2015 11:15
Sample ID: WG513077-03 LCS2 File ID: ET.1502231115-03 Run Date: 02/23/2015 11:15

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Sulfide	22.8	23.4	103	22.8	23.4	103	0.00	85 - 115	10	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4040595
Report generated: 02/27/2015 10:06

2.4.4.3 Raw Data

SULFIDE
(sulfide1)

WORKGROUP: WG513077

Water:
EPA 376.1 / SM4500-S(-2)-F
SOP K3761 Revision #: 16

Soil:
SM846 9030B/9034
SOP K9030 Revision #: _____

Instrument: Buret

LCS: Std 69004

Iodine standardization (0.025N) COA: 17611
mL 0.025N titrant: 10.0
Volume I: 10.0 mL
Normality I: 0.0250

(0.1 N I) COA: ~~17705~~ 18088 ept 2/23/15
mL 0.025 N titrant: 8.0
Volume I: 2.0 mL
Normality I: 0.100

Stock standardization (in duplicate) 5.0 mL stock
mL I 1) 10.0 2) 10.0
N I 1) 0.100 2) 0.100
mL 0.025 titrant 1) 21.0 2) 21.0
LCS daily dilution: (5)(1520)/200 = 22.8 mg/L

1520 = stock conc (mg/L)

Titrant: T- 1484-15-03

SAMPLE	Volume Filtered mL	mL Iodine	N Iodine	0.0250 N Sodium Thiosulfate (mL)
BLANK	200	15.0	0.0250	15.0
LCS (mL)	200	15.0	0.0250	3.3
LCSDUP (mL)	200	15.0	0.0250	3.3
02-0971-06	460	15.0	0.0250	7.0
-08	480	15.0	0.0250	14.6
-10	470	15.0	0.0250	14.7
-12	480	15.0	0.0250	14.6
-14	500	15.0	0.0250	14.6
02-1053-01	510	15.0	0.0250	14.6
-03	480	15.0	0.0250	14.8
-05	480	15.0	0.0250	14.6
-07	470	15.0	0.0250	14.7
-09	490	15.0	0.0250	14.5
-11	470	15.0	0.0250	14.2

Analyst: Ethan Tidd Date/Time: 02/23/15 1115

DCN#108795

Microbac Laboratories Inc.
TITRAMETRIC REPORT

Workgroup (AAB#): WG513077
Product: EPA 376.1\9034
Analyte: Sulfide

Analyst: EPT
Run Date: 02/23/2015 11:15

SAMPLE NUMBER	Volume	Vol I	Nor I	Vol T	Nor T	Dil	Analytical	Reported	Units
WG513077-01	200.0	15	.025	15	.025	1	0	0	mg/L
WG513077-02	200.0	15	.025	3.3	.025	1	23.4	23.40	mg/L
WG513077-03	200.0	15	.025	3.3	.025	1	23.4	23.40	mg/L
L15020971-06	460.0	15	.025	7	.025	1	6.96	6.957	mg/L
L15020971-08	480.0	15	.025	14.6	.025	1	0.333	ND	mg/L
L15020971-10	470.0	15	.025	14.7	.025	1	0.255	ND	mg/L
L15020971-12	480.0	15	.025	14.6	.025	1	0.333	ND	mg/L
L15020971-14	500.0	15	.025	14.6	.025	1	0.320	ND	mg/L
L15021053-01	510.0	15	.025	14.6	.025	1	0.314	ND	mg/L
L15021053-03	480.0	15	.025	14.8	.025	1	0.167	ND	mg/L
L15021053-05	480.0	15	.025	14.6	.025	1	0.333	ND	mg/L
L15021053-07	470.0	15	.025	14.7	.025	1	0.255	ND	mg/L
L15021053-09	490.0	15	.025	14.5	.025	1	0.408	ND	mg/L
L15021053-11	470.0	15	.025	14.2	.025	1	0.681	0.6809 F	mg/L

SULFIDE_REPORT - Modified 03/06/2008

Report generated 02/25/2015 08:58

[redacted]

2.4.5 Total Organic Carbon Data

2.4.5.1 Summary Data

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15021053-01	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW13-021715	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG513146	**Analyst:**	DCM	**Run Date:**	02/24/2015 09:17
Collect Date:	02/17/2015 08:10	**Dilution:**	3	**File ID:**	TC02232015.057
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	11.0		6.00	3.00	1.50

Certificate of Analysis

Sample #:	L15021053-03	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW14-021715	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG513146	**Analyst:**	DCM	**Run Date:**	02/24/2015 04:03
Collect Date:	02/17/2015 09:20	**Dilution:**	1	**File ID:**	TC02232015.043
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	2.69		2.00	1.00	0.500

Certificate of Analysis

Sample #:	L15021053-05	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW11-021715	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG513146	**Analyst:**	DCM	**Run Date:**	02/24/2015 04:17
Collect Date:	02/17/2015 10:45	**Dilution:**	1	**File ID:**	TC02232015.044
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	3.44		2.00	1.00	0.500

Certificate of Analysis

Microbac

Lab Report #: L15021053
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15021053-07	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW06-021715	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG513146	**Analyst:**	DCM	**Run Date:**	02/24/2015 04:30
Collect Date:	02/17/2015 11:55	**Dilution:**	1	**File ID:**	TC02232015.045
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	2.93		2.00	1.00	0.500

Certificate of Analysis

Sample #:	L15021053-09	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW08-021715	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG513146	**Analyst:**	DCM	**Run Date:**	02/24/2015 09:59
Collect Date:	02/17/2015 14:05	**Dilution:**	5	**File ID:**	TC02232015.058
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	15.1		10.0	5.00	2.50

Certificate of Analysis

Sample #:	L15021053-11	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW22-021715	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG513146	**Analyst:**	DCM	**Run Date:**	02/24/2015 04:58
Collect Date:	02/17/2015 15:15	**Dilution:**	1	**File ID:**	TC02232015.047
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	2.31		2.00	1.00	0.500

2.4.5.2 QC Summary Data

Total Organic Carbon Example Calculations
(Direct Readout Parameter)

(Readout)/(dilution) = mg/L

where:

Readout = direct readout from the instrument
dilution = dilution in decimal form (ex. 1/5 dilution = 0.2)

Microbac Laboratories Inc.

Data Checklist

Date: 23-FEB-2015
Analyst: DCM
Analyst: NA
Method: TOC
Instrument: TOC-VWP
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG513145 WG513146

Calibration/Linearity	7/16/15
Second Source Check	
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	
QC Violation Sheet	
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	
Primary Reviewer	DCM
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
24-FEB-2015

Secondary Reviewer:
26-FEB-2015

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-26-2015 08:18:58

Microbac Laboratories Inc.

00638481

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 415.1 AAB#: WG513146

Login Number: L15021053

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW13-021715	01	02/17/15					02/24/2015	7	28		02/24/15	7	28	
50WW14-021715	03	02/17/15					02/24/2015	6.8	28		02/24/15	6.8	28	
50WW11-021715	05	02/17/15					02/24/2015	6.7	28		02/24/15	6.7	28	
50WW06-021715	07	02/17/15					02/24/2015	6.7	28		02/24/15	6.7	28	
50WW08-021715	09	02/17/15					02/24/2015	6.8	28		02/24/15	6.8	28	
50WW22-021715	11	02/17/15					02/24/2015	6.6	28		02/24/15	6.6	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4036975
Report generated 02/25/2015 10:33

METHOD BLANK SUMMARY

Login Number: L15021053
Blank File ID: TC02232015.032
Prep Date: 02/24/15 01:48
Analyzed Date: 02/24/15 01:48
Analyst: DCM

Work Group: WG513146
Blank Sample ID: WG513146-01
Instrument ID: TOC-VWP
Method: 415.1

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG513146-02	TC02232015.033	02/24/15 02:00	01
LCS2	WG513146-03	TC02232015.034	02/24/15 02:13	01
50WW14-021715	L15021053-03	TC02232015.043	02/24/15 04:03	01
50WW11-021715	L15021053-05	TC02232015.044	02/24/15 04:17	01
50WW06-021715	L15021053-07	TC02232015.045	02/24/15 04:30	01
50WW22-021715	L15021053-11	TC02232015.047	02/24/15 04:58	01
DUP	WG513146-05	TC02232015.048	02/24/15 05:13	01
50WW13-021715	L15021053-01	TC02232015.057	02/24/15 09:17	DL01
50WW08-021715	L15021053-09	TC02232015.058	02/24/15 09:59	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4036976
Report generated 02/25/2015 10:33

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15021053 Prep Date: 02/24/15 01:48 Sample ID: WG513146-01
Instrument ID: TOC-VWP Run Date: 02/24/15 01:48 Prep Method: 415.1
File ID: TC02232015.032 Analyst: DCM Method: 415.1
Workgroup (AAB#): WG513146 Matrix: Water Units: mg/L
Contract #: Cal ID: TOC-VW-16-JUL-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Total Organic Carbon	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4036977
25-FEB-2015 10:33

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15021053 Analyst: DCM Prep Method: 415.1
Instrument ID: TOC-VWP Matrix: Water Method: 415.1
Workgroup (AAB#): WG513146 Units: mg/L
QC Key: DOD4 Lot #: STD67086

Sample ID: WG513146-02 LCS File ID: TC02232015.033 Run Date: 02/24/2015 02:00
Sample ID: WG513146-03 LCS2 File ID: TC02232015.034 Run Date: 02/24/2015 02:13

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Total Organic Carbon	25.0	25.7	103	25.0	25.0	100	2.76	85 - 115	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4036978
Report generated: 02/25/2015 10:33

2.4.5.3 Raw Data

TC/TIC Curves wg484708

Total Organic Carbon

MAKE DAILY

CCV (TOC): _____ (5/200)(1000) = 25mg/L

LCS (TOC): _____ (5/200)(1000) = 25mg/L

CCV (TIC): see below (5/200)(1000) = 25mg/L

MS (TOC): _____

Calibration Curve Date: _____

Reagent: 30583 / 30943

☑ SM5310-C : Matrix 2 WG_____

☐ EPA 415.1/9060A(mod): Matrix 1 WG_____ SOP: K 4151 Rev. 16

WG_____ Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

☑ drain reservoir filled
☑ ASI water bottle full
☑ dilution water bottle full

☑ 3rd bottle full
☑ sufficient gas
☑ sufficient persulfate

☑ sufficient acid
☑ waste container

Position	Sample ID	Dilution	Position	Sample ID	Dilution	Position	Sample ID	Dilution
1	TC Curve		26	TC Curve		51		
2	TIC Curve		27	Std 65368		52		
3	TC ICV		28			53	see SOP	
4	TIC ICV		29	TIC Curve		54	for curve	
5			30	Std 65406		55	points	
6			31			56		
7			32			57		
8			33	TC ICV		58	ept 7/16/14	
9			34	Std 63965		59	~~5/200~~ 5/200	(1000)
10			35			60		=25mg/L
11			36	TIC ICV		61		
12			37	Std 65405		62		
13			38			63		
14	all points		39	analyzed	in	64	duplicate	
15			40			65		
16			41			66		
17			42			67		
18			43			68		
19			44			69		
20			45			70		
21			46			71		
22			47			72		
23			48			73		
24			49			74		
25			50			75		

Analyst: Ethan Todd / Deanne Hesson

Date/Time: 07/16/14 0930 + 7/17

DCN#103908

C:\TOC3201\Data\07-16-2014-DIH-CURVE.t32

	Anal	Sample Name	Result	Status	Date / Time
1	TC	TCCURVE		Completed	7/16/2014 12:06:36 PM
2	TC	TC ICV	TC:24.54mg/L	Completed	7/16/2014 1:33:15 PM
3	IC	TICCURVE		Completed	7/17/2014 12:33:06 PM
4	IC	TIC ICV	IC:25.59mg/L	Completed	7/17/2014 12:47:00 PM

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Cal. Curve

Sample Name: TCCURVE
Sample ID: Untitled
Cal. Curve: TCCURVE-07-16-2014.2014_07_16_11_05_11.cal
Status Completed

Type	Anal.
Standard	TC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	5.492	500uL	1	*******		7/16/2014 11:08:39 AM
2	4.691	500uL	1	*******		7/16/2014 11:12:03 AM

Acid Add. 0.000%
Mean Area 5.091

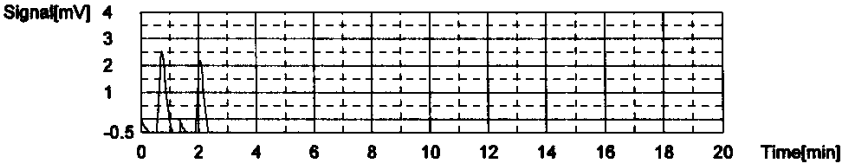

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	51.17	500uL	1	*******		7/16/2014 11:17:40 AM
2	51.30	500uL	1	*******		7/16/2014 11:21:41 AM

Acid Add. 0.000%
Mean Area 51.23

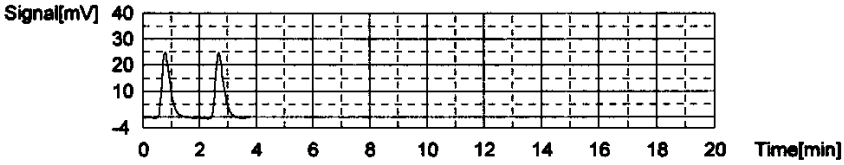

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	184.4	500uL	1	*******		7/16/2014 11:27:31 AM
2	188.1	500uL	1	*******		7/16/2014 11:31:40 AM

Acid Add. 0.000%
Mean Area 186.3

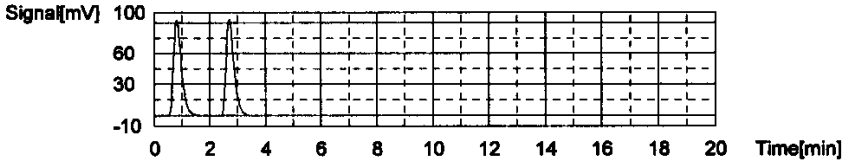

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	371.5	500uL	1	*******		7/16/2014 11:37:40 AM
2	397.8	500uL	1	*******		7/16/2014 11:42:09 AM

Acid Add. 0.000%
Mean Area 384.6

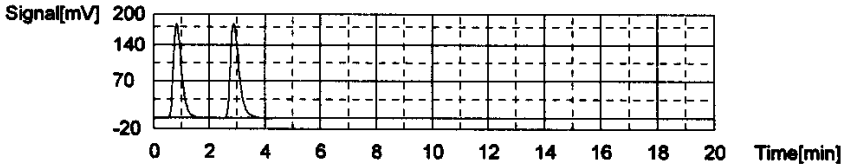

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	928.1	500uL	1	*******		7/16/2014 11:48:37 AM
2	992.4	500uL	1	*******		7/16/2014 11:53:28 AM

Acid Add. 0.000%
Mean Area 960.3

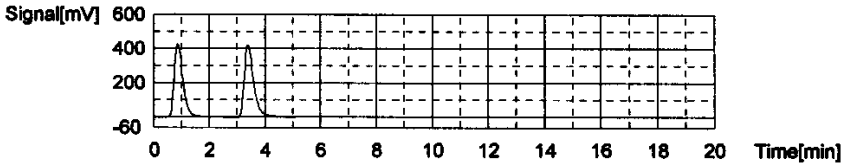

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1809	500uL	1	*******		7/16/2014 12:00:11 PM
2	2029	500uL	1	*******		7/16/2014 12:06:36 PM

Acid Add. 0.000%
Mean Area 1919

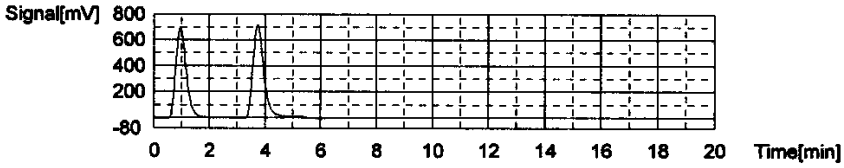

Slope: 38.27
Intercept 3.929
r^2 0.999938 ✓
Zero Shift No

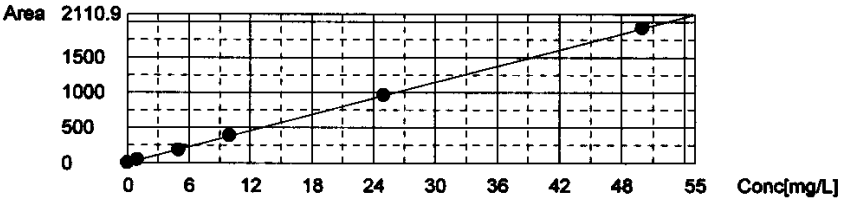

Sample

Sample Name: TC ICV
Sample ID: Untitled
Origin: TCCURVE-07-16-2014.cal
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TC	1.000	TC:24.54mg/L

= 98%

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	966.9	25.16mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/16/2014 1:28:24 PM
2	919.5	23.92mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/16/2014 1:33:15 PM

Mean Area 943.2
Mean Conc. 24.54mg/L

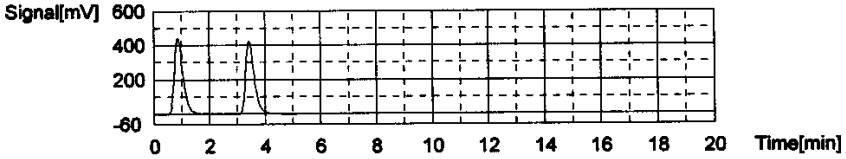

Cal. Curve

Sample Name: TICCURVE
Sample ID: Untitled
Cal. Curve: TICCURVE-A-07-17-2014.2014_07_17_11_16_59.cal
Status Completed

Type	Anal.
Standard	IC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	7.193	500uL	1	*******		7/17/2014 11:21:04 AM
2	6.644	500uL	1	*******		7/17/2014 11:25:12 AM

Acid Add. 10.00%
Mean Area 6.918

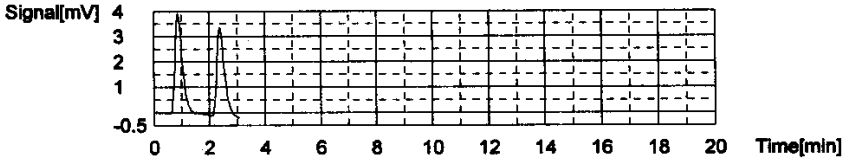

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	49.75	500uL	1	*******		7/17/2014 11:32:57 AM
2	50.58	500uL	1	*******		7/17/2014 11:37:28 AM

Acid Add. 10.00%
Mean Area 50.17

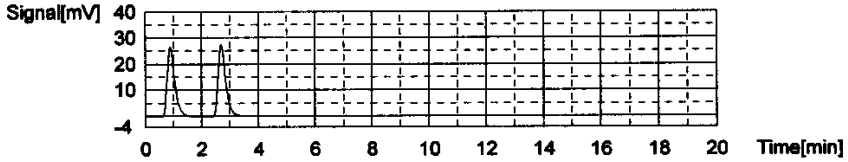

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	98.15	500uL	1	*******		7/17/2014 11:46:02 AM
2	158.0	500uL	1	*******		7/17/2014 11:50:52 AM

Acid Add. 10.00%
Mean Area 128.1

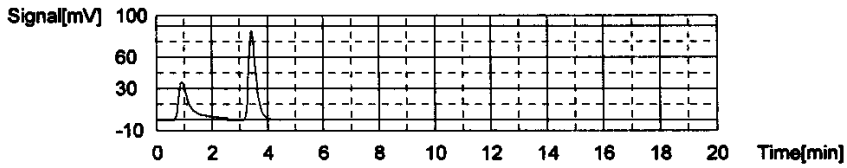

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	313.9	500uL	1	*******		7/17/2014 11:59:03 AM
2	314.5	500uL	1	*******		7/17/2014 12:04:02 PM

Acid Add. 10.00%
Mean Area 314.2

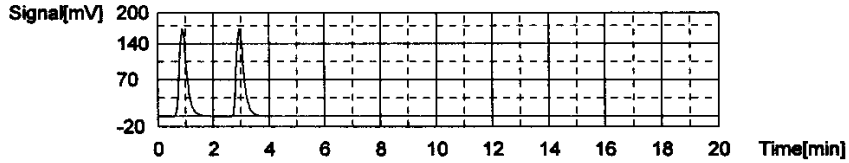

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	774.3	500uL	1	*******		7/17/2014 12:12:42 PM
2	781.8	500uL	1	*******		7/17/2014 12:17:58 PM

Acid Add. 10.00%
Mean Area 778.1

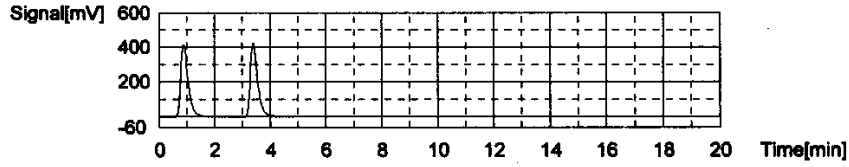

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1490	500uL	1	*******		7/17/2014 12:27:11 PM
2	1503	500uL	1	*******		7/17/2014 12:33:06 PM

Acid Add. 10.00%
Mean Area 1497

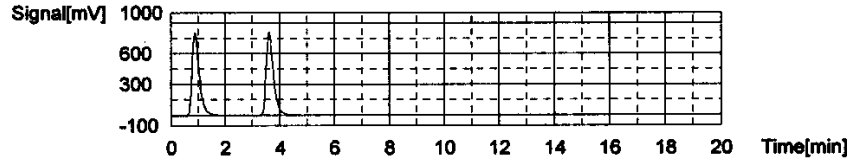

Slope: 29.95
Intercept 8.025
r^2 0.999041 ✓
Zero Shift No

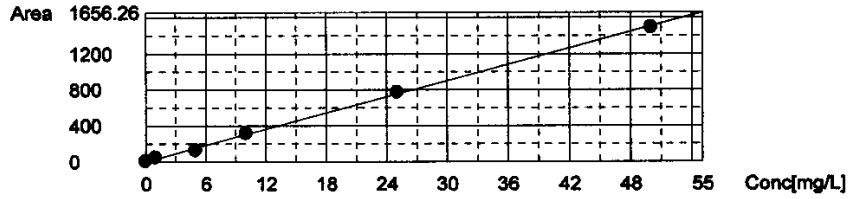

Sample

Sample Name: TIC ICV
Sample ID: Untitled
Origin: TICCURVE-A-07-17-2014.cal
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	IC	1.000	IC:25.59mg/L

=102%

1. Det

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	775.9	25.64mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/17/2014 12:41:44 PM
2	773.4	25.55mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/17/2014 12:47:00 PM

Mean Area 774.7
Mean Conc. 25.59mg/L

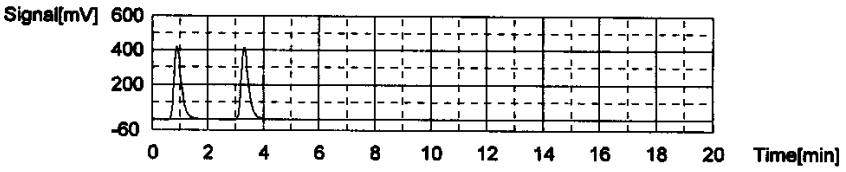

WORKGROUP: WG513145
513146

Total Organic Carbon

MAKE DAILY

CCV (TOC): Std 65368
(5/200)(1000) = 25mg/L

LCS (TOC): Std 67086 / Std 68222
(5/200)(1000) = 25mg/L

CCV (TIC): Std 68222
(5/200)(1000) = 25mg/L

MS (TOC): Std 67086
0.4 (1000) / 40 = 10

Calibration Curve Date: 7/16/15

Reagent: RGT 32645
RGT 32721

☑ SM5310-C : Matrix 2 WG 513145
☑ EPA 415.1/9060A(mod): Matrix 1 WG 513146
WG

SOP: K 4151 Rev. 17
Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

☑ drain reservoir filled
☑ ASI water bottle full
☑ dilution water bottle full
☑ 3rd bottle full
☑ sufficient gas
☑ sufficient persulfate
☑ sufficient acid
☑ waste container

Position	Sample ID	Dilution
1	TIC	
2	CCV	
3	Blk	
4	LCS	
5	LCSDUP	
6	02-960-09	
7	02-1013-01	
8	02-1064-01	1/10000
9	02-1009-01	
10	02	
11	02-1051-01	
12	02	
13	03	
14	CCV	
15	CCB	
16	02-1051-04	
17	05	
18	06	
19	07	
20	08	
21	09	
22	10	
23	11	
24	12	
25	13	

Position	Sample ID	Dilution
26	CCV	
27	CCB	
28	02-1051-14	
29	15	
30	DUP 02-1051-15	
31	MS 02-1051-15	
32	Blk	
33	LCS	
34	LCSDUP	
35	02-971-06	
36	08	
37	10	
38	CCV	
39	CCB	
40	02-971-12	1/2
41	14	1/2
42	02-1053-01	1/2
43	03	
44	05	
45	07	
46	09	
47	11	
48	DUP 02-1053-11	
49	MS 02-1053-11	
50	CCV	

Position	Sample ID	Dilution
51	CCB	
52	CCV	
53	CCB	
54	02-1064-01	1/10000
55	02-971-12	1/3
56	14	1/3
57	02-1053-01	1/3
58	09	~~1/2~~ 1/5
59	CCV	
60	CCB	
61		
62		
63		
64		
65		
66		
67		
68		
69		
70		
71		
72		
73		
74		
75		

Analyst: David Merckle

Date/Time: 2/23/15 1200

DCN#108804

C:\TOC3201\Data\02-23-2015-DCM-TOC.t32

	Analysis	Sample Name	Result	Status	Date / Time	Vial
1	TOC	TIC	TOC:0.9005mg/L TC:26.76mg/L IC:25.86mg/L	Complete	2/23/2015 12:05:20 PM	1
2	TOC	CCV	!!Error!! TOC:25.76mg/L TC:25.74mg/L IC:-0.02082mg/	Complete	2/23/2015 12:18:01 PM	2
3	TOC	WG513145-01 BLK	TOC:0.1480mg/L TC:0.1889mg/L IC:0.04096mg/L	Complete	2/23/2015 12:35:09 PM	0
4	TOC	WG513145-02 LCS	TOC:26.42mg/L TC:43.52mg/L IC:17.10mg/L	Complete	2/23/2015 3:41:59 PM	4
5	TOC	WG513145-03 LCSDUP	TOC:28.19mg/L TC:43.07mg/L IC:14.88mg/L	Complete	2/23/2015 4:39:55 PM	5
6	TOC	L15020960-09	TOC:2.392mg/L TC:7.536mg/L IC:5.144mg/L	Complete	2/23/2015 5:02:25 PM	6
7	TOC	L15021013-01	TOC:4.231mg/L TC:7.886mg/L IC:3.655mg/L	Complete	2/23/2015 5:28:17 PM	7
8	TOC		TOC:51.15mg/L TC:52.56mg/L IC:1.411mg/L	Complete	2/23/2015 5:53:54 PM	8
9	TOC	L15021009-01	TOC:0.3224mg/L TC:0.6212mg/L IC:0.2988mg/L	Complete	2/23/2015 6:13:48 PM	9
10	TOC	L15021009-02	TOC:0.4279mg/L TC:0.8653mg/L IC:0.4374mg/L	Complete	2/23/2015 6:33:57 PM	10
11	TOC	L15021051-01	TOC:16.15mg/L TC:21.46mg/L IC:5.306mg/L	Complete	2/23/2015 6:58:50 PM	11
12	TOC	L15021051-02	TOC:16.24mg/L TC:21.58mg/L IC:5.342mg/L	Complete	2/23/2015 7:23:27 PM	12
13	TOC	L15021051-03	TOC:16.04mg/L TC:20.78mg/L IC:4.735mg/L	Complete	2/23/2015 7:47:50 PM	13
14	TOC	CCV	TOC:26.26mg/L TC:26.29mg/L IC:0.02916mg/L	Complete	2/23/2015 8:00:46 PM	14
15	TOC	CCB	TOC:0.1372mg/L TC:0.1746mg/L IC:0.03737mg/L	Complete	2/23/2015 8:10:06 PM	0
16	TOC	L15021051-04	TOC:16.89mg/L TC:25.63mg/L IC:8.746mg/L	Complete	2/23/2015 8:34:32 PM	16
17	TOC	L15021051-05	TOC:16.50mg/L TC:23.55mg/L IC:7.042mg/L	Complete	2/23/2015 8:58:52 PM	17
18	TOC	L15021051-06	TOC:16.00mg/L TC:23.14mg/L IC:7.140mg/L	Complete	2/23/2015 9:22:57 PM	18
19	TOC	L15021051-07	TOC:1.620mg/L TC:7.959mg/L IC:6.339mg/L	Complete	2/23/2015 9:44:34 PM	19
20	TOC	L15021051-08	TOC:1.584mg/L TC:7.685mg/L IC:6.100mg/L	Complete	2/23/2015 10:06:08 PM	20
21	TOC	L15021051-09	TOC:1.461mg/L TC:8.533mg/L IC:7.072mg/L	Complete	2/23/2015 10:27:42 PM	21
22	TOC	L15021051-10	TOC:1.930mg/L TC:7.793mg/L IC:5.863mg/L	Complete	2/23/2015 10:50:09 PM	22
23	TOC	L15021051-11	TOC:1.772mg/L TC:6.126mg/L IC:4.354mg/L	Complete	2/23/2015 11:11:55 PM	23
24	TOC	L15021051-12	TOC:1.482mg/L TC:6.280mg/L IC:4.798mg/L	Complete	2/23/2015 11:33:24 PM	24
25	TOC	L15021051-13	TOC:15.14mg/L TC:17.94mg/L IC:2.805mg/L	Complete	2/23/2015 11:55:19 PM	25
26	TOC	CCV	TOC:26.60mg/L TC:26.63mg/L IC:0.02108mg/L	Complete	2/24/2015 12:07:59 AM	26
27	TOC	CCB	TOC:0.1398mg/L TC:0.1748mg/L IC:0.03507mg/L	Complete	2/24/2015 12:17:12 AM	0
28	TOC	L15021051-14	TOC:5.753mg/L TC:9.695mg/L IC:3.942mg/L	Complete	2/24/2015 12:38:43 AM	28
29	TOC	L15021051-15	TOC:4.887mg/L TC:8.425mg/L IC:3.538mg/L	Complete	2/24/2015 1:00:24 AM	29
30	TOC	WG513145-05 DUP	TOC:5.083mg/L TC:8.074mg/L IC:2.991mg/L	Complete	2/24/2015 1:21:43 AM	30
31	TOC	WG513145-06 MS	TOC:16.14mg/L TC:17.07mg/L IC:0.9233mg/L	Complete	2/24/2015 1:43:01 AM	31
32	TOC	WG513146-01 BLK	TOC:0.1264mg/L TC:0.1649mg/L IC:0.03847mg/L	Complete	2/24/2015 1:52:12 AM	0
33	TOC	WG513146-02 LCS	TOC:25.73mg/L TC:28.45mg/L IC:2.728mg/L	Complete	2/24/2015 2:04:58 AM	33
34	TOC	WG513146-03 LCSDUP	TOC:25.03mg/L TC:27.59mg/L IC:2.566mg/L	Complete	2/24/2015 2:17:45 AM	34
35	TOC	L15020971-06	TOC:1.742mg/L TC:31.69mg/L IC:29.95mg/L	Complete	2/24/2015 2:30:58 AM	35
36	TOC	L15020971-08	TOC:1.250mg/L TC:10.16mg/L IC:8.913mg/L	Complete	2/24/2015 2:44:10 AM	36
37	TOC	L15020971-10	TOC:1.090mg/L TC:3.540mg/L IC:2.449mg/L	Complete	2/24/2015 2:57:08 AM	37
38	TOC	CCV	TOC:25.47mg/L TC:25.49mg/L IC:0.01470mg/L	Complete	2/24/2015 3:09:37 AM	38
39	TOC	CCB	TOC:0.1224mg/L TC:0.1605mg/L IC:0.03804mg/L	Complete	2/24/2015 3:18:45 AM	0
40	TOC		TOC:1.470mg/L TC:5.465mg/L IC:3.995mg/L	Complete	2/24/2015 3:31:05 AM	40
41	TOC		TOC:0.8736mg/L TC:2.920mg/L IC:2.047mg/L	Complete	2/24/2015 3:43:16 AM	41
42	TOC		TOC:1.791mg/L TC:5.018mg/L IC:3.228mg/L	Complete	2/24/2015 3:55:42 AM	42
43	TOC	L15021053-03	TOC:2.693mg/L TC:20.15mg/L IC:17.45mg/L	Complete	2/24/2015 4:09:12 AM	43
44	TOC	L15021053-05	TOC:3.442mg/L TC:28.51mg/L IC:25.06mg/L	Complete	2/24/2015 4:23:06 AM	44
45	TOC	L15021053-07	TOC:2.931mg/L TC:12.01mg/L IC:9.077mg/L	Complete	2/24/2015 4:35:38 AM	45
46	TOC		TOC:3.022mg/L TC:52.23mg/L IC:49.21mg/L	Complete	2/24/2015 4:50:20 AM	46
47	TOC	L15021053-11	TOC:2.314mg/L TC:13.81mg/L IC:11.49mg/L	Complete	2/24/2015 5:04:00 AM	47
48	TOC	WG513146-05 DUP	TOC:2.712mg/L TC:7.926mg/L IC:5.214mg/L	Complete	2/24/2015 5:18:33 AM	48
49	TOC	WG513146-06 MS	TOC:13.49mg/L TC:16.86mg/L IC:3.368mg/L	Complete	2/24/2015 5:32:43 AM	49
50	TOC	CCV	TOC:27.47mg/L TC:27.49mg/L IC:0.01971mg/L	Complete	2/24/2015 5:46:01 AM	50
51	TOC	CCB	TOC:0.1317mg/L TC:0.1743mg/L IC:0.04264mg/L	Complete	2/24/2015 5:55:16 AM	0
52	TOC	CCV	TOC:24.66mg/L TC:24.80mg/L IC:0.1397mg/L	Complete	2/24/2015 7:32:13 AM	52
53	TOC	CCB	TOC:0.1230mg/L TC:0.1592mg/L IC:0.03617mg/L	Complete	2/24/2015 7:41:20 AM	0
54	TOC	L15021064-01 (10000)	TOC:26.49mg/L TC:26.82mg/L IC:0.3290mg/L	Complete	2/24/2015 8:03:57 AM	54
55	TOC	L15020971-12 (3)	TOC:5.729mg/L TC:35.72mg/L IC:29.99mg/L	Complete	2/24/2015 8:36:10 AM	55
56	TOC	L15020971-14 (3)	TOC:1.701mg/L TC:18.06mg/L IC:16.35mg/L	Complete	2/24/2015 8:48:53 AM	56
57	TOC	L15021053-01 (3)	TOC:3.650mg/L TC:35.25mg/L IC:31.60mg/L	Complete	2/24/2015 9:23:02 AM	57
58	TOC	L15021053-09 (5)	TOC:3.010mg/L TC:38.93mg/L IC:35.92mg/L	Complete	2/24/2015 10:05:19 AM	58
59	TOC	CCV	TOC:25.78mg/L TC:25.86mg/L IC:0.08064mg/L	Complete	2/24/2015 10:18:37 AM	59
60	TOC	CCB	TOC:0.1237mg/L TC:0.1910mg/L IC:0.06728mg/L	Complete	2/24/2015 10:27:46 AM	0

2/24/2015 10:29:20 AM

1/1

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Sample

Sample Name: TIC
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.9005mg/L TC:26.76mg/L IC:25.86mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1028	26.76mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 11:59:29 AM

Mean Area 1028
Mean Conc. 26.76mg/L

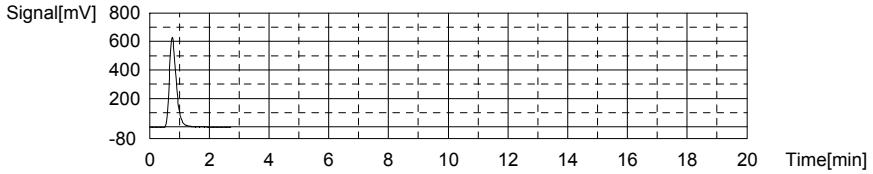

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	782.5	25.86mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 12:05:20 PM

Mean Area 782.5
Mean Conc. 25.86mg/L

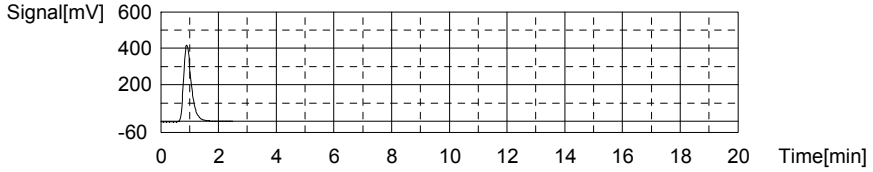

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:25.76mg/L TC:25.74mg/L IC:-0.02082mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	989.2	25.74mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 12:13:32 PM

Mean Area 989.2
Mean Conc. 25.74mg/L

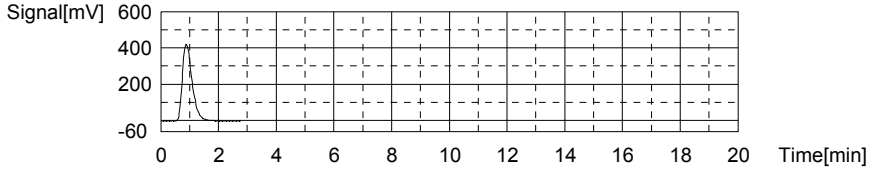

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.401	-0.02082mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 12:18:01 PM

Mean Area 7.401
Mean Conc. -0.02082mg/L

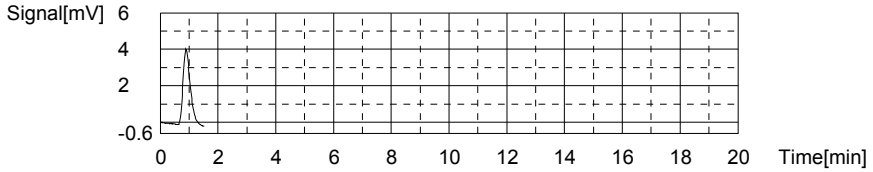

Sample

Sample Name: WG513145-01 BLK
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1480mg/L TC:0.1889mg/L IC:0.04096mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.07	0.1866mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 12:23:15 PM
2	11.25	0.1913mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 12:26:58 PM

Mean Area 11.16
Mean Conc. 0.1889mg/L

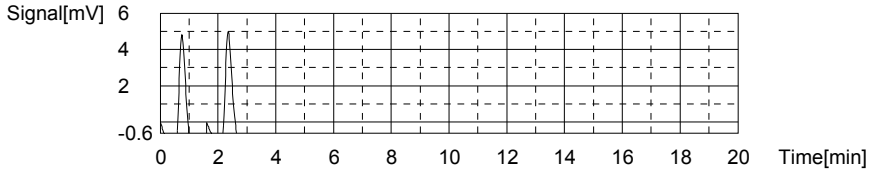

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.245	0.04074mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 12:31:04 PM
2	9.258	0.04118mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 12:35:09 PM

Mean Area 9.252
Mean Conc. 0.04096mg/L

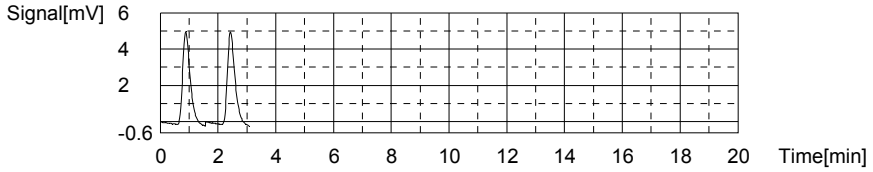

Sample

Sample Name: WG513145-02 LCS
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:26.42mg/L TC:43.52mg/L IC:17.10mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1722	44.89mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 3:22:11 PM
2	1617	42.15mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 3:29:00 PM

Mean Area 1670
Mean Conc. 43.52mg/L

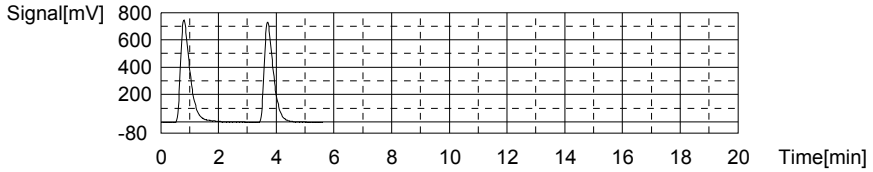

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	525.2	17.27mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 3:36:53 PM
2	515.2	16.93mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 3:41:59 PM

Mean Area 520.2
Mean Conc. 17.10mg/L

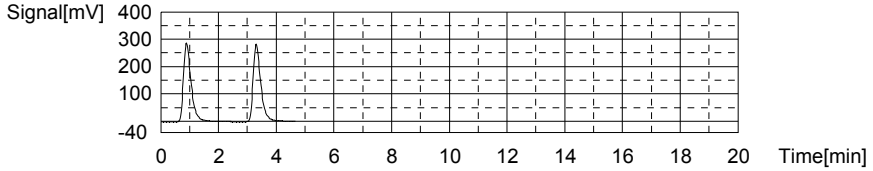

Sample

Sample Name: WG513145-03 LCSDUP
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:28.19mg/L TC:43.07mg/L IC:14.88mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1665	43.40mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 4:22:57 PM
2	1640	42.75mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 4:29:23 PM

Mean Area 1653
Mean Conc. 43.07mg/L

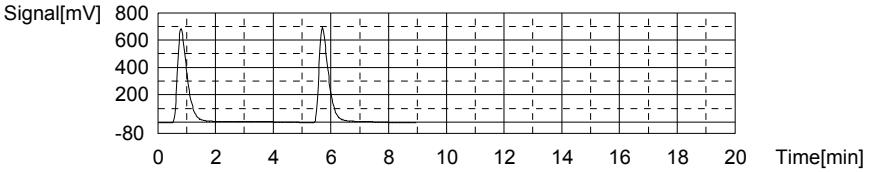

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	458.0	15.02mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 4:34:43 PM
2	449.4	14.74mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 4:39:55 PM

Mean Area 453.7
Mean Conc. 14.88mg/L

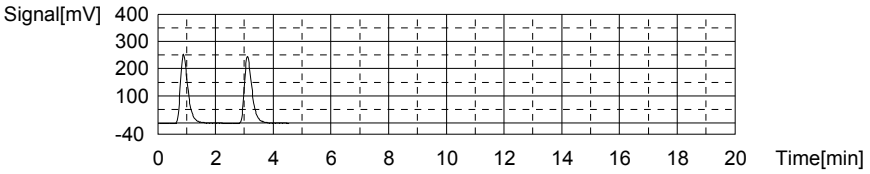

Sample

Sample Name: L15020960-09
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.392mg/L TC:7.536mg/L IC:5.144mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	293.6	7.568mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 4:47:55 PM
2	291.1	7.503mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 4:52:43 PM

Mean Area 292.4
Mean Conc. 7.536mg/L

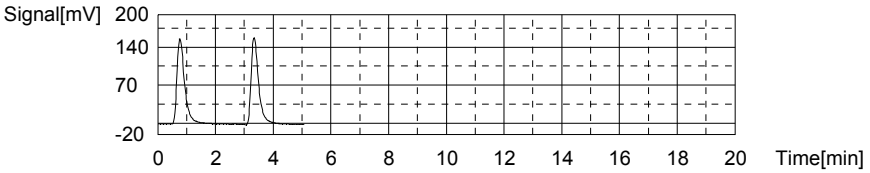

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	164.9	5.237mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 4:57:42 PM
2	159.3	5.050mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 5:02:25 PM

Mean Area 162.1
Mean Conc. 5.144mg/L

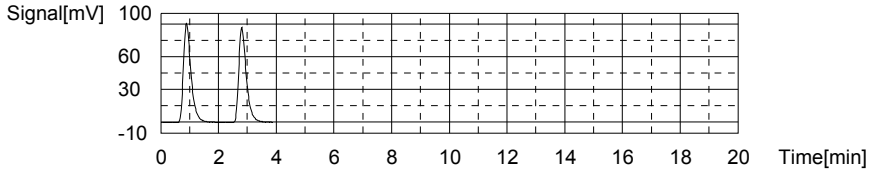

Sample

Sample Name: L150201013-01
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.231mg/L TC:7.886mg/L IC:3.655mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	303.8	7.835mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 5:11:28 PM
2	307.7	7.937mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 5:18:43 PM

Mean Area 305.8
Mean Conc. 7.886mg/L

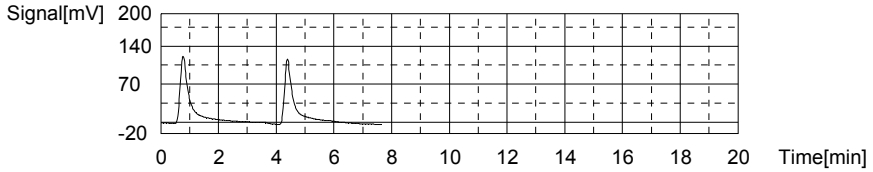

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	118.4	3.685mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 5:23:36 PM
2	116.6	3.625mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 5:28:17 PM

Mean Area 117.5
Mean Conc. 3.655mg/L

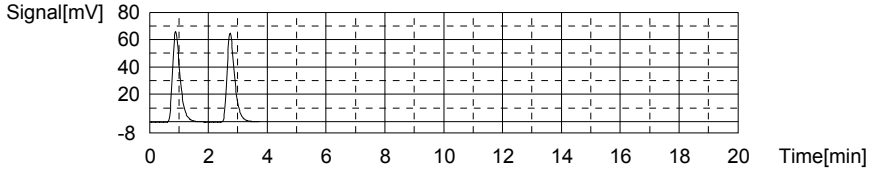

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:51.15mg/L TC:52.56mg/L IC:1.411mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2048	53.41mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 5:38:36 PM
2	1983	51.71mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 5:44:35 PM

Mean Area 2016
Mean Conc. 52.56mg/L

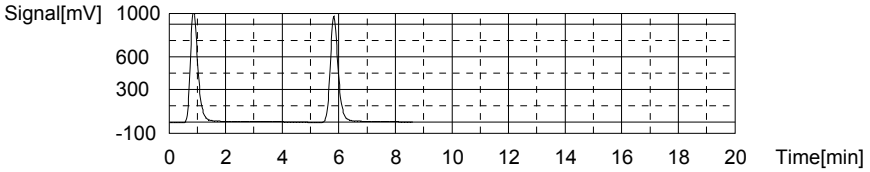

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	50.05	1.403mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 5:49:23 PM
2	50.52	1.419mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 5:53:54 PM

Mean Area 50.29
Mean Conc. 1.411mg/L

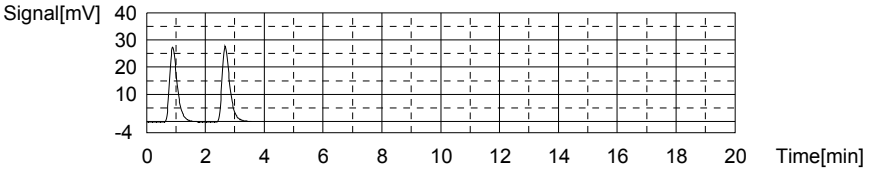

Sample

Sample Name: L15021009-01
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.3224mg/L TC:0.6212mg/L IC:0.2988mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	28.18	0.6336mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 6:00:59 PM
2	27.23	0.6088mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 6:04:54 PM

Mean Area 27.70
Mean Conc. 0.6212mg/L

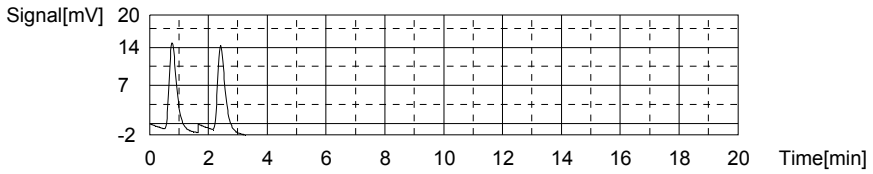

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	17.08	0.3023mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 6:09:26 PM
2	16.87	0.2953mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 6:13:48 PM

Mean Area 16.98
Mean Conc. 0.2988mg/L

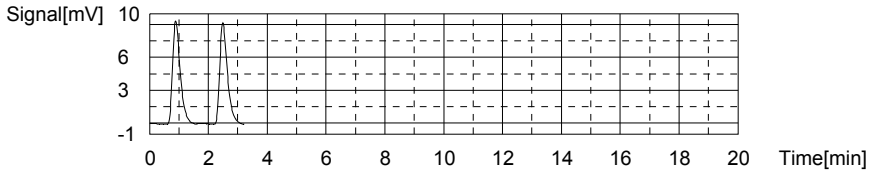

Sample

Sample Name: L15021009-02
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.4279mg/L TC:0.8653mg/L IC:0.4374mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	38.20	0.8954mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 6:20:58 PM
2	35.89	0.8351mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 6:24:58 PM

Mean Area 37.05
Mean Conc. 0.8653mg/L

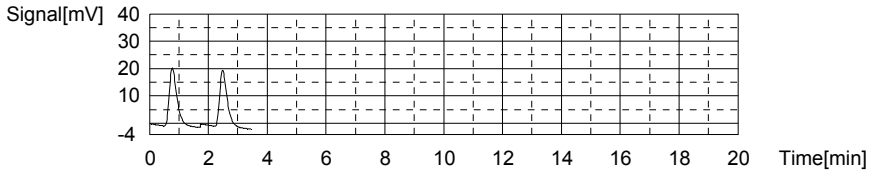

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	21.55	0.4515mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 6:29:34 PM
2	20.70	0.4232mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 6:33:57 PM

Mean Area 21.13
Mean Conc. 0.4374mg/L

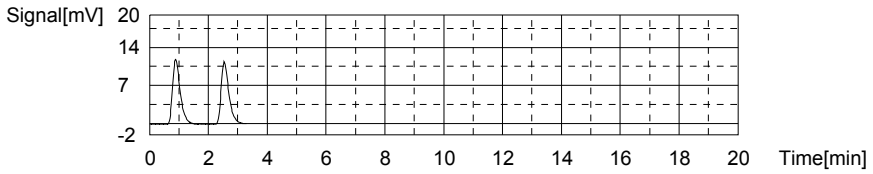

Sample

Sample Name: L15021051-01
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:16.15mg/L TC:21.46mg/L IC:5.306mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	823.4	21.41mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 6:42:37 PM
2	827.1	21.51mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 6:49:04 PM

Mean Area 825.3
Mean Conc. 21.46mg/L

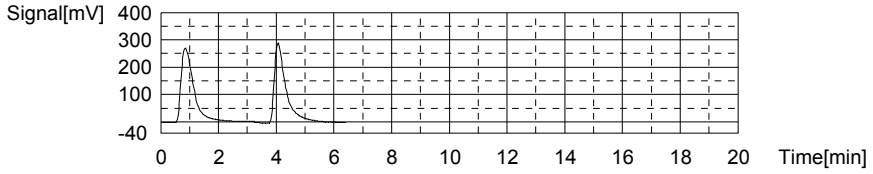

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	170.2	5.414mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 6:54:04 PM
2	163.7	5.197mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 6:58:50 PM

Mean Area 167.0
Mean Conc. 5.306mg/L

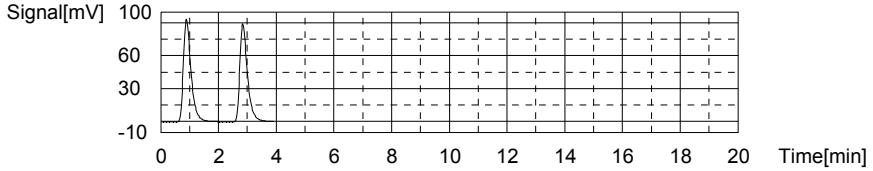

Sample

Sample Name: L15021051-02
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:16.24mg/L TC:21.58mg/L IC:5.342mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	827.9	21.53mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 7:07:20 PM
2	831.9	21.63mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 7:13:41 PM

Mean Area 829.9
Mean Conc. 21.58mg/L

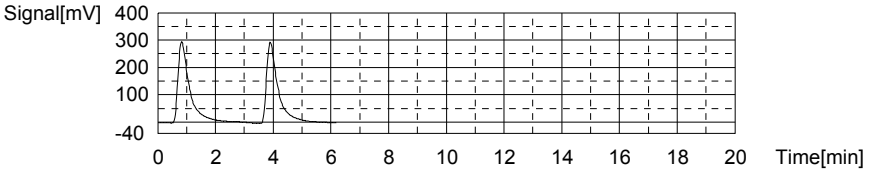

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	171.4	5.454mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 7:18:42 PM
2	164.7	5.231mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 7:23:27 PM

Mean Area 168.1
Mean Conc. 5.342mg/L

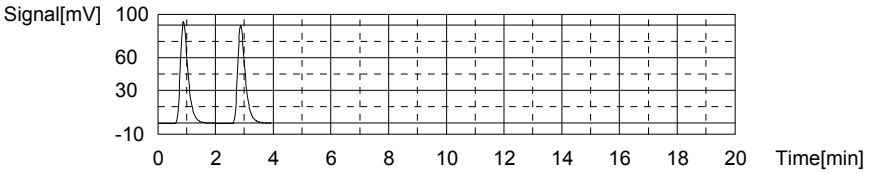

Sample

Sample Name: L15021051-03
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:16.04mg/L TC:20.78mg/L IC:4.735mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	796.7	20.71mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 7:31:45 PM
2	801.5	20.84mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 7:38:09 PM

Mean Area 799.1
Mean Conc. 20.78mg/L

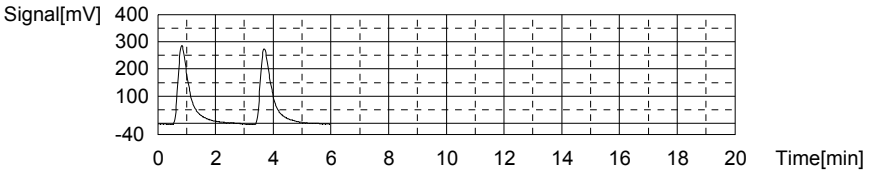

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	151.7	4.797mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 7:43:06 PM
2	148.0	4.673mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 7:47:50 PM

Mean Area 149.9
Mean Conc. 4.735mg/L

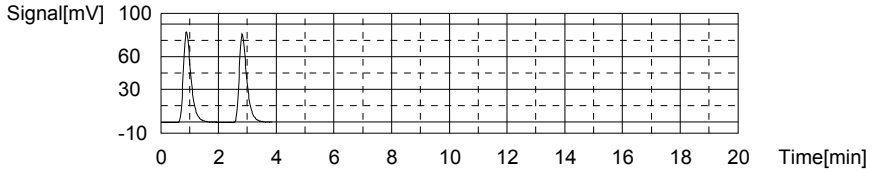

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:26.26mg/L TC:26.29mg/L IC:0.02916mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1010	26.29mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 7:56:19 PM

Mean Area 1010
Mean Conc. 26.29mg/L

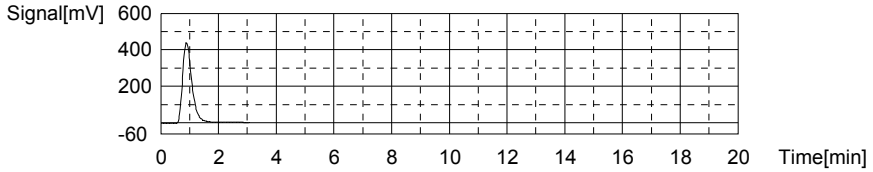

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.898	0.02916mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 8:00:46 PM

Mean Area 8.898
Mean Conc. 0.02916mg/L

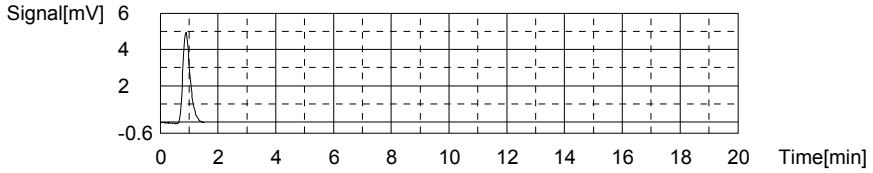

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1372mg/L TC:0.1746mg/L IC:0.03737mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.61	0.1746mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 8:06:00 PM

Mean Area 10.61
Mean Conc. 0.1746mg/L

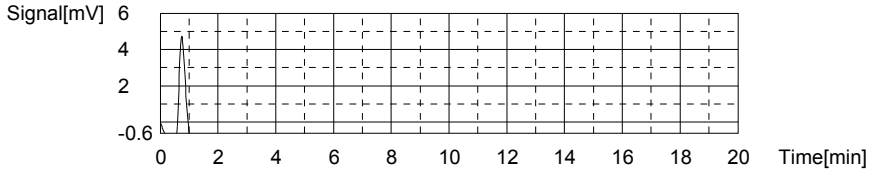

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.144	0.03737mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 8:10:06 PM

Mean Area 9.144
Mean Conc. 0.03737mg/L

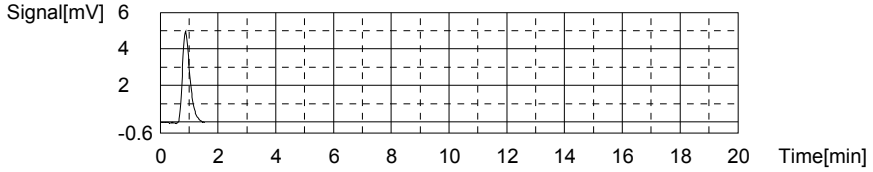

Sample

Sample Name: L15021051-04
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:16.89mg/L TC:25.63mg/L IC:8.746mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	981.0	25.53mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 8:18:42 PM
2	989.0	25.74mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 8:24:39 PM

Mean Area 985.0
Mean Conc. 25.63mg/L

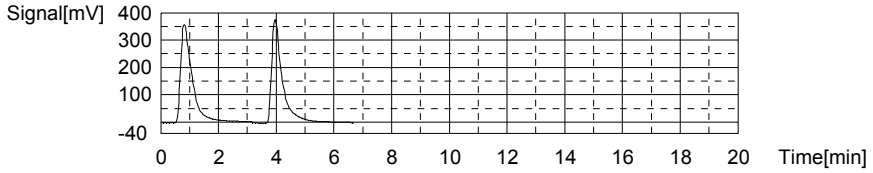

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	269.0	8.713mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 8:29:42 PM
2	271.0	8.779mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 8:34:32 PM

Mean Area 270.0
Mean Conc. 8.746mg/L

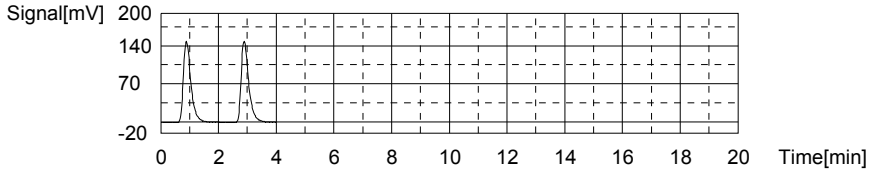

Sample

Sample Name: L15021051-05
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:16.50mg/L TC:23.55mg/L IC:7.042mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	912.1	23.73mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 8:43:31 PM
2	898.2	23.37mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 8:49:02 PM

Mean Area 905.2
Mean Conc. 23.55mg/L

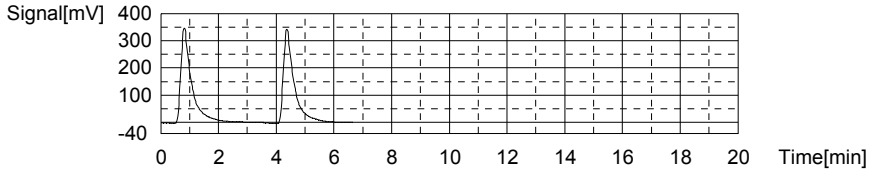

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	224.1	7.214mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 8:54:05 PM
2	213.8	6.870mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 8:58:52 PM

Mean Area 219.0
Mean Conc. 7.042mg/L

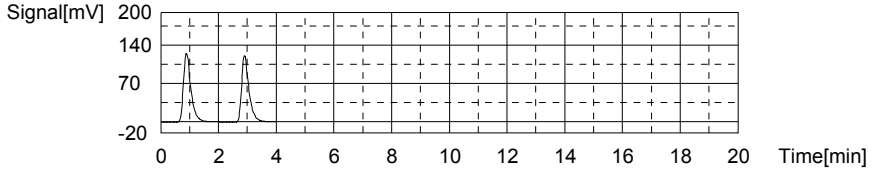

Sample

Sample Name: L15021051-06
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:16.00mg/L TC:23.14mg/L IC:7.140mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	890.8	23.17mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 9:07:26 PM
2	888.1	23.10mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 9:13:00 PM

Mean Area 889.5
Mean Conc. 23.14mg/L

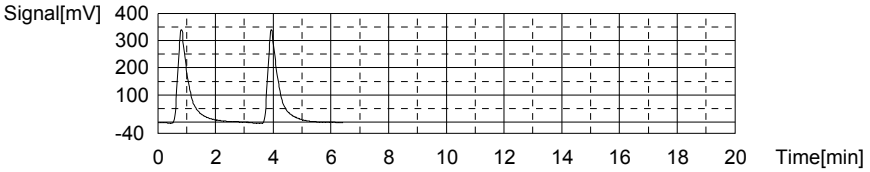

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	221.7	7.134mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 9:18:05 PM
2	222.1	7.147mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 9:22:57 PM

Mean Area 221.9
Mean Conc. 7.140mg/L

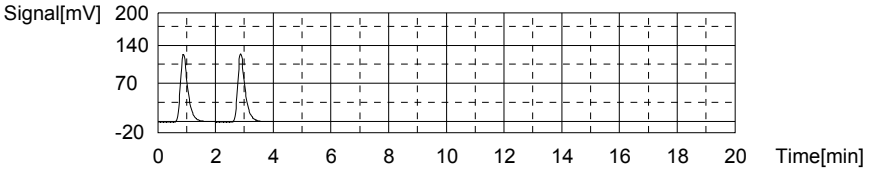

Sample

Sample Name: L15021051-07
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.620mg/L TC:7.959mg/L IC:6.339mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	300.7	7.754mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 9:30:17 PM
2	316.4	8.164mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 9:34:46 PM

Mean Area 308.6
Mean Conc. 7.959mg/L

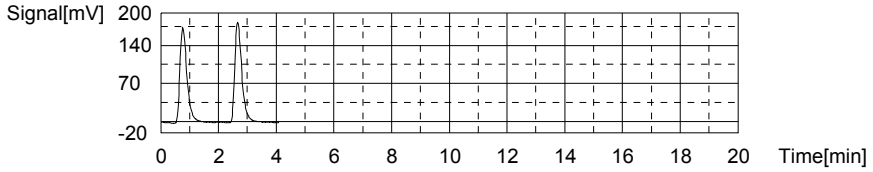

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	204.1	6.546mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 9:39:44 PM
2	191.7	6.132mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 9:44:34 PM

Mean Area 197.9
Mean Conc. 6.339mg/L

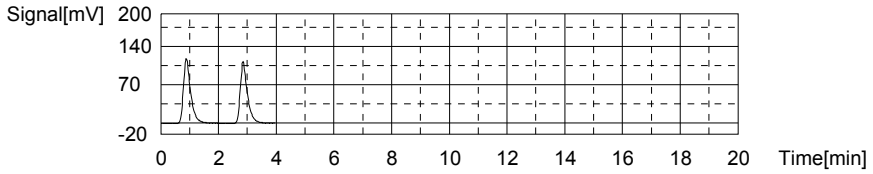

Sample

Sample Name: L15021051-08
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.584mg/L TC:7.685mg/L IC:6.100mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	292.9	7.550mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 9:52:03 PM
2	303.2	7.819mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 9:56:22 PM

Mean Area 298.1
Mean Conc. 7.685mg/L

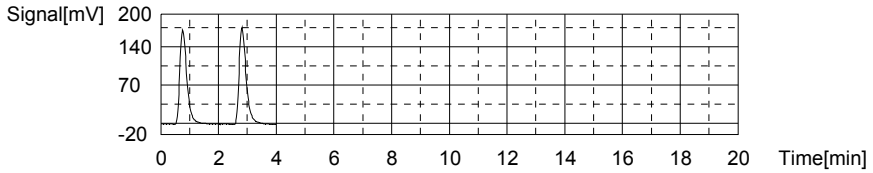

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	196.9	6.306mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 10:01:23 PM
2	184.6	5.895mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 10:06:08 PM

Mean Area 190.8
Mean Conc. 6.100mg/L

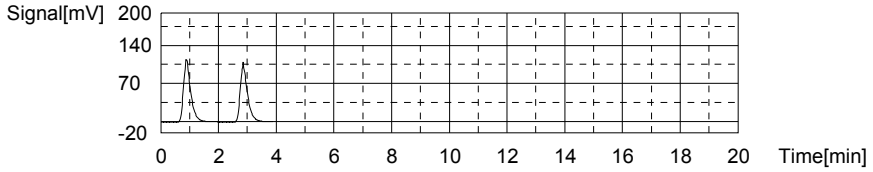

Sample

Sample Name: L15021051-09
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.461mg/L TC:8.533mg/L IC:7.072mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	328.7	8.486mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 10:13:47 PM
2	332.3	8.580mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 10:17:55 PM

Mean Area 330.5
Mean Conc. 8.533mg/L

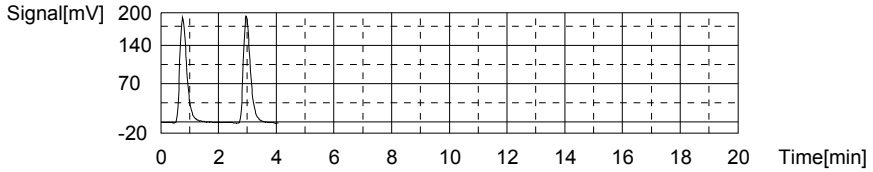

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	224.3	7.220mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 10:22:55 PM
2	215.4	6.923mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 10:27:42 PM

Mean Area 219.9
Mean Conc. 7.072mg/L

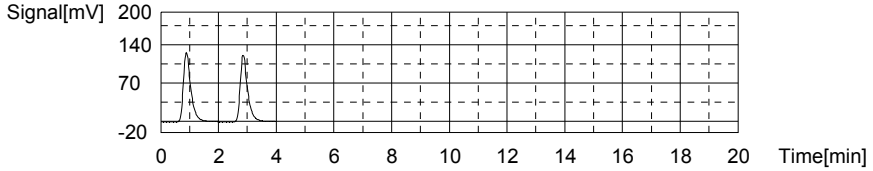

Sample

Sample Name: L15021051-10
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.930mg/L TC:7.793mg/L IC:5.863mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	301.5	7.775mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 10:35:03 PM
2	302.9	7.811mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 10:40:26 PM

Mean Area 302.2
Mean Conc. 7.793mg/L

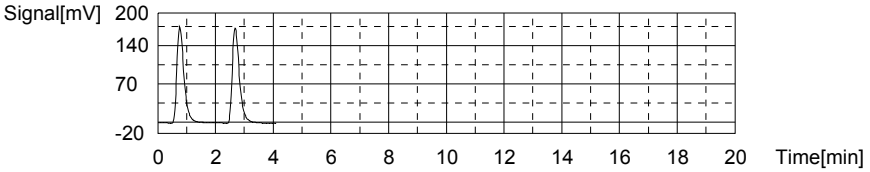

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	187.5	5.992mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 10:45:25 PM
2	179.8	5.735mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 10:50:09 PM

Mean Area 183.7
Mean Conc. 5.863mg/L

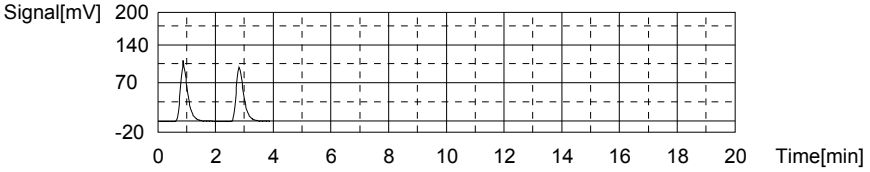

Sample

Sample Name: L15021051-11
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.772mg/L TC:6.126mg/L IC:4.354mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	241.3	6.202mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 10:57:41 PM
2	235.5	6.050mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 11:02:18 PM

Mean Area 238.4
Mean Conc. 6.126mg/L

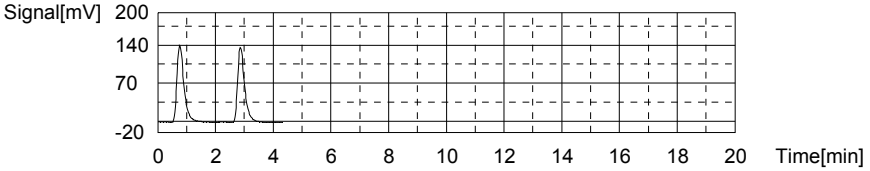

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	139.1	4.376mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 11:07:12 PM
2	137.8	4.333mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 11:11:55 PM

Mean Area 138.4
Mean Conc. 4.354mg/L

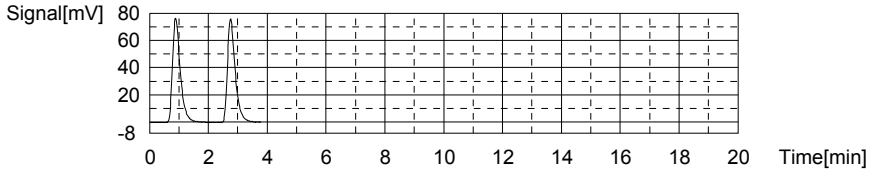

Sample

Sample Name: L15021051-12
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.482mg/L TC:6.280mg/L IC:4.798mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	247.2	6.356mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 11:19:24 PM
2	241.4	6.205mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 11:23:50 PM

Mean Area 244.3
Mean Conc. 6.280mg/L

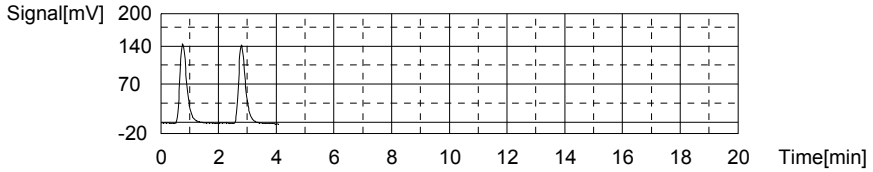

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	154.3	4.883mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 11:28:46 PM
2	149.2	4.713mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 11:33:24 PM

Mean Area 151.8
Mean Conc. 4.798mg/L

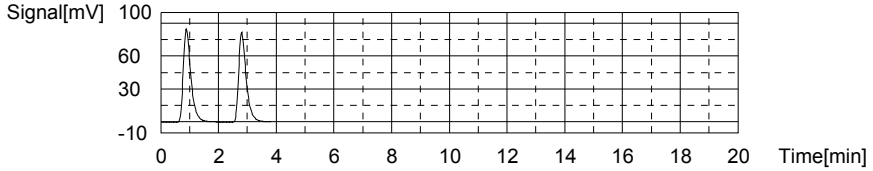

Sample

Sample Name: L15021051-13
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:15.14mg/L TC:17.94mg/L IC:2.805mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	687.0	17.85mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 11:41:17 PM
2	694.2	18.04mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/23/2015 11:45:54 PM

Mean Area 690.6
Mean Conc. 17.94mg/L

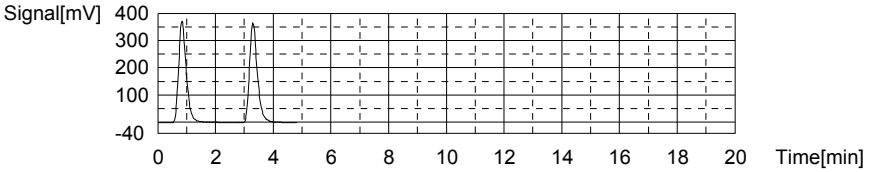

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	94.14	2.875mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 11:50:45 PM
2	89.92	2.734mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/23/2015 11:55:19 PM

Mean Area 92.03
Mean Conc. 2.805mg/L

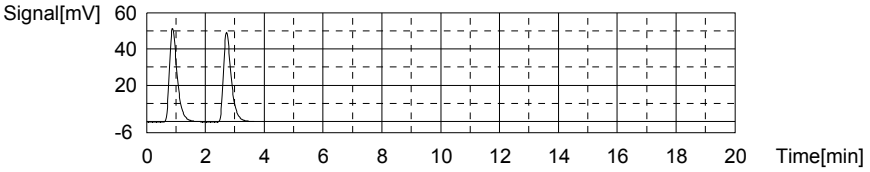

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:26.60mg/L TC:26.63mg/L IC:0.02108mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1023	26.63mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 12:03:33 AM

Mean Area 1023
Mean Conc. 26.63mg/L

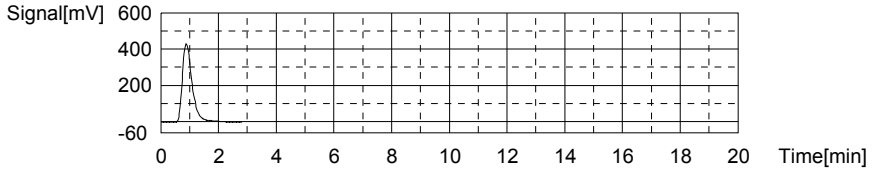

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.656	0.02108mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 12:07:59 AM

Mean Area 8.656
Mean Conc. 0.02108mg/L

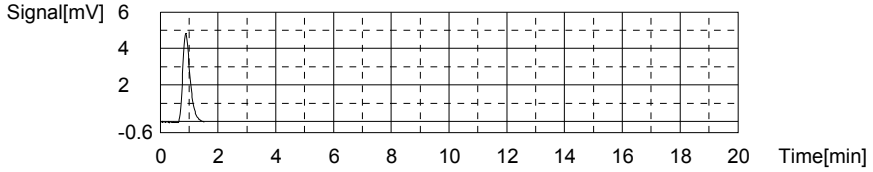

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1398mg/L TC:0.1748mg/L IC:0.03507mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.62	0.1748mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 12:13:09 AM

Mean Area 10.62
Mean Conc. 0.1748mg/L

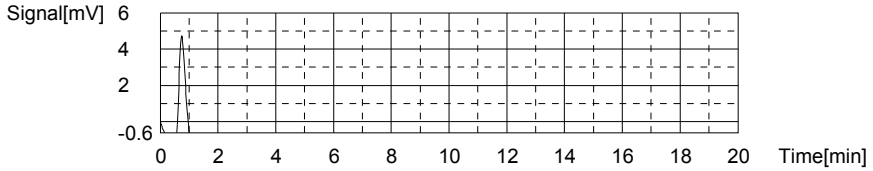

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.075	0.03507mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 12:17:12 AM

Mean Area 9.075
Mean Conc. 0.03507mg/L

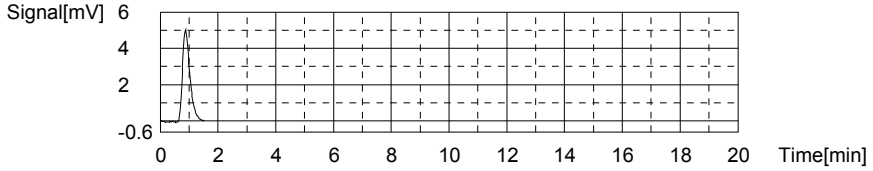

Sample

Sample Name: L15021051-14
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.753mg/L TC:9.695mg/L IC:3.942mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	375.3	9.703mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 12:24:47 AM
2	374.7	9.687mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 12:29:15 AM

Mean Area 375.0
Mean Conc. 9.695mg/L

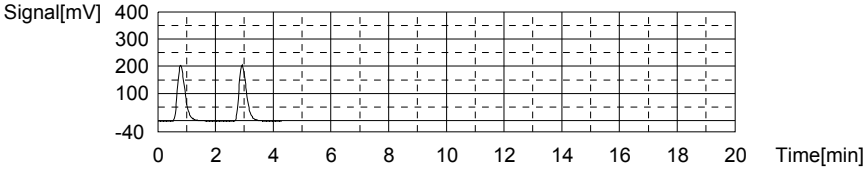

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	125.9	3.935mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 12:34:07 AM
2	126.3	3.949mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 12:38:43 AM

Mean Area 126.1
Mean Conc. 3.942mg/L

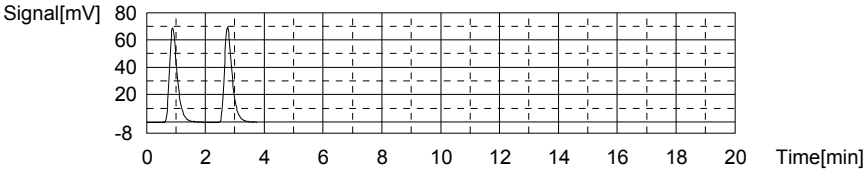

Sample

Sample Name: L15021051-15
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.887mg/L TC:8.425mg/L IC:3.538mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	322.5	8.324mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 12:46:22 AM
2	330.3	8.527mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 12:50:56 AM

Mean Area 326.4
Mean Conc. 8.425mg/L

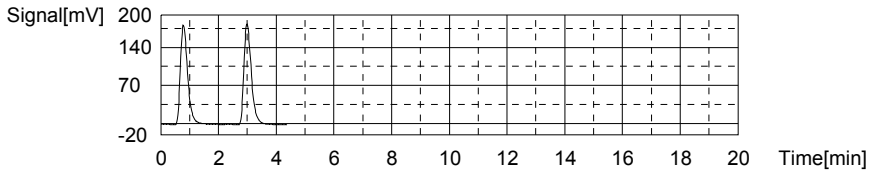

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	114.9	3.568mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 12:55:46 AM
2	113.1	3.508mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 1:00:24 AM

Mean Area 114.0
Mean Conc. 3.538mg/L

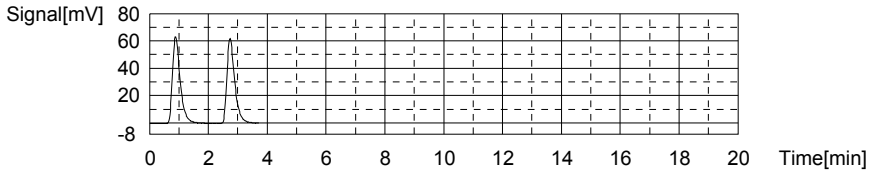

Sample

Sample Name: WG513145-05 DUP
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.083mg/L TC:8.074mg/L IC:2.991mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	314.6	8.117mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 1:07:52 AM
2	311.3	8.031mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 1:12:17 AM

Mean Area 313.0
Mean Conc. 8.074mg/L

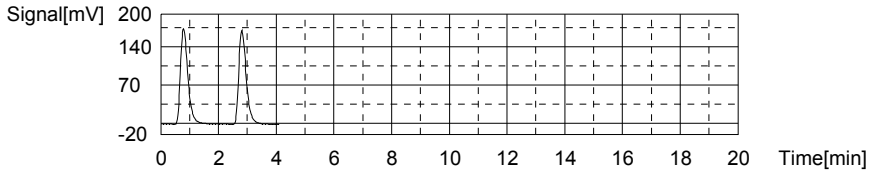

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	99.34	3.049mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 1:17:08 AM
2	95.92	2.934mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 1:21:43 AM

Mean Area 97.63
Mean Conc. 2.991mg/L

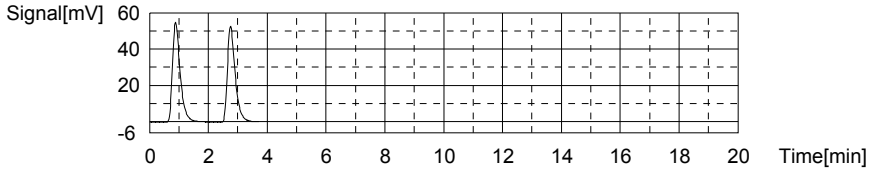

Sample

Sample Name: WG513145-06 MS
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:16.14mg/L TC:17.07mg/L IC:0.9233mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	663.3	17.23mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 1:29:34 AM
2	651.0	16.91mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 1:34:04 AM

Mean Area 657.2
Mean Conc. 17.07mg/L

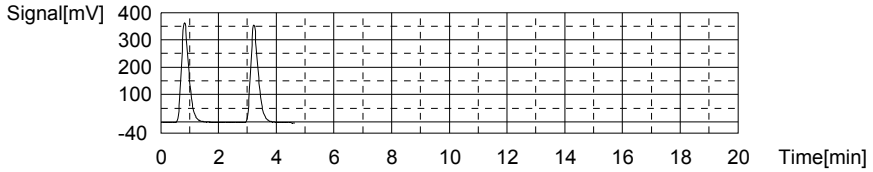

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	53.53	1.519mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 1:38:51 AM
2	17.83	0.3274mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 1:43:01 AM

Mean Area 35.68
Mean Conc. 0.9233mg/L

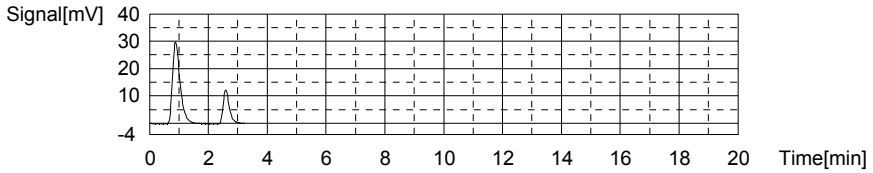

Sample

Sample Name: WG513146-01 BLK
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1264mg/L TC:0.1649mg/L IC:0.03847mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.24	0.1649mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 1:48:12 AM

Mean Area 10.24
Mean Conc. 0.1649mg/L

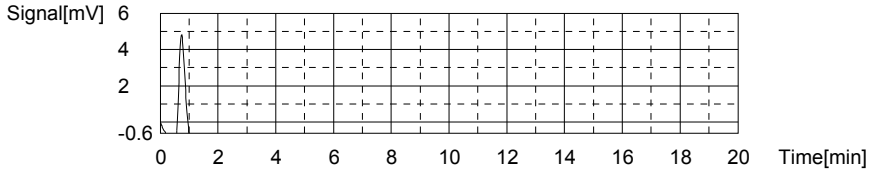

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.177	0.03847mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 1:52:12 AM

Mean Area 9.177
Mean Conc. 0.03847mg/L

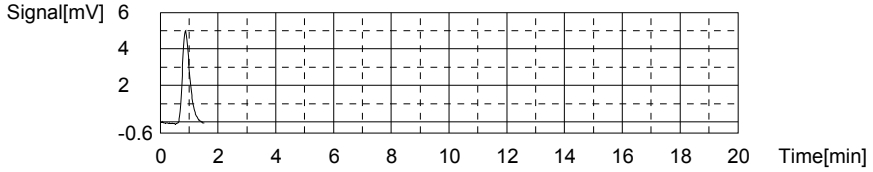

Sample

Sample Name: WG513146-02 LCS
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:25.73mg/L TC:28.45mg/L IC:2.728mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1093	28.45mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 2:00:12 AM

Mean Area 1093
Mean Conc. 28.45mg/L

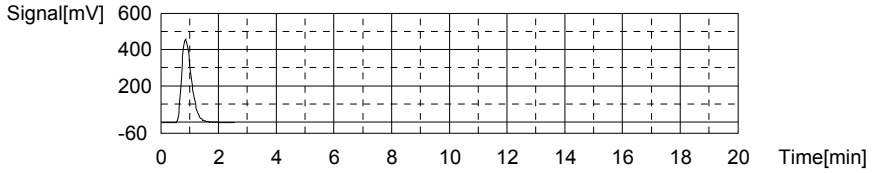

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	89.73	2.728mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 2:04:58 AM

Mean Area 89.73
Mean Conc. 2.728mg/L

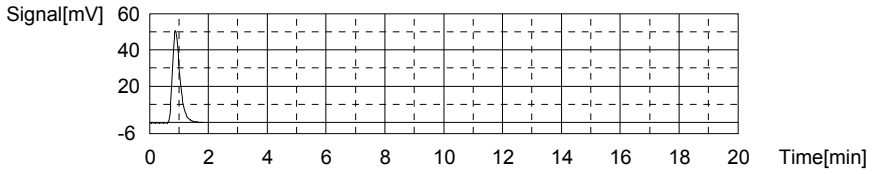

Sample

Sample Name: WG513146-03 LCSDUP
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:25.03mg/L TC:27.59mg/L IC:2.566mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1060	27.59mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 2:13:01 AM

Mean Area 1060
Mean Conc. 27.59mg/L

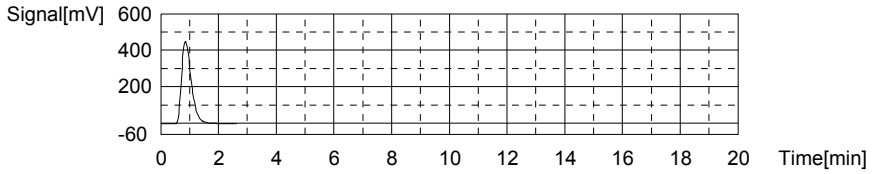

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	84.89	2.566mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 2:17:45 AM

Mean Area 84.89
Mean Conc. 2.566mg/L

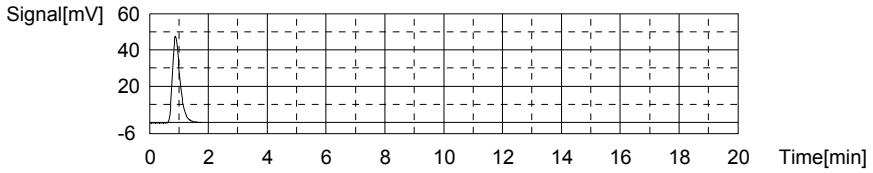

Sample

Sample Name: L15020971-06
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.742mg/L TC:31.69mg/L IC:29.95mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1217	31.69mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 2:25:14 AM

Mean Area 1217
Mean Conc. 31.69mg/L

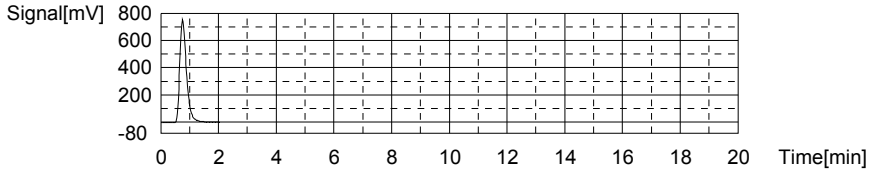

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	905.2	29.95mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 2:30:58 AM

Mean Area 905.2
Mean Conc. 29.95mg/L

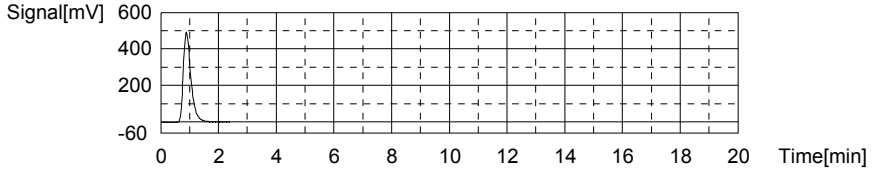

Sample

Sample Name: L15020971-08
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.250mg/L TC:10.16mg/L IC:8.913mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	392.9	10.16mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 2:39:11 AM

Mean Area 392.9
Mean Conc. 10.16mg/L

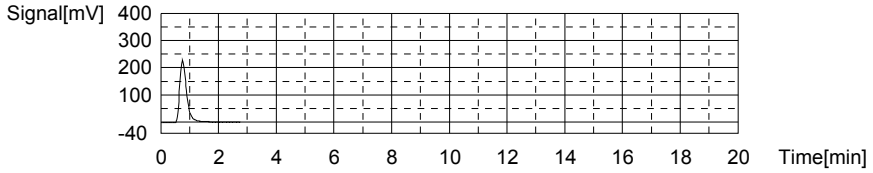

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	275.0	8.913mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 2:44:10 AM

Mean Area 275.0
Mean Conc. 8.913mg/L

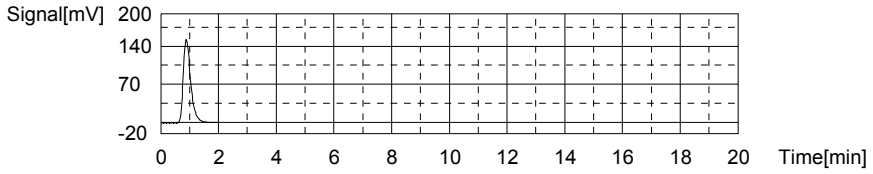

Sample

Sample Name: L15020971-10
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.090mg/L TC:3.540mg/L IC:2.449mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	139.4	3.540mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 2:52:23 AM

Mean Area 139.4
Mean Conc. 3.540mg/L

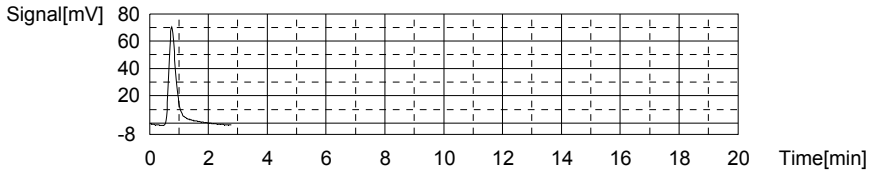

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	81.39	2.449mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 2:57:08 AM

Mean Area 81.39
Mean Conc. 2.449mg/L

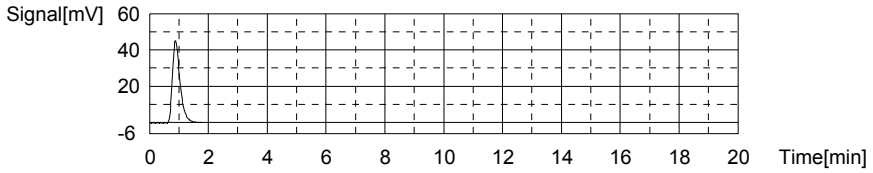

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:25.47mg/L TC:25.49mg/L IC:0.01470mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	979.5	25.49mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 3:05:10 AM

Mean Area 979.5
Mean Conc. 25.49mg/L

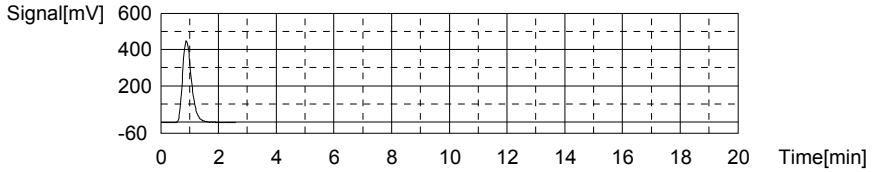

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.465	0.01470mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 3:09:37 AM

Mean Area 8.465
Mean Conc. 0.01470mg/L

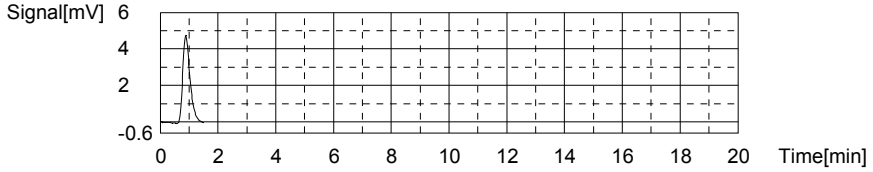

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1224mg/L TC:0.1605mg/L IC:0.03804mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.07	0.1605mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 3:14:45 AM

Mean Area 10.07
Mean Conc. 0.1605mg/L

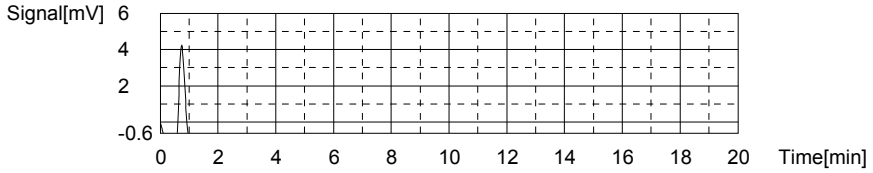

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.164	0.03804mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 3:18:45 AM

Mean Area 9.164
Mean Conc. 0.03804mg/L

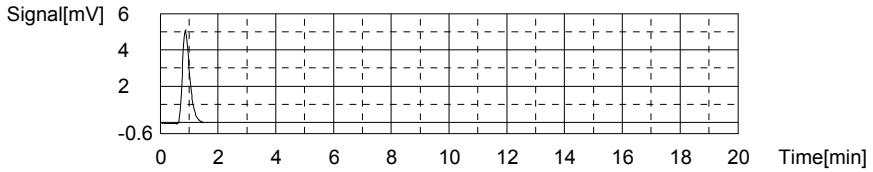

Sample

Sample Name:
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.470mg/L TC:5.465mg/L IC:3.995mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	213.1	5.465mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 3:26:12 AM

Mean Area 213.1
Mean Conc. 5.465mg/L

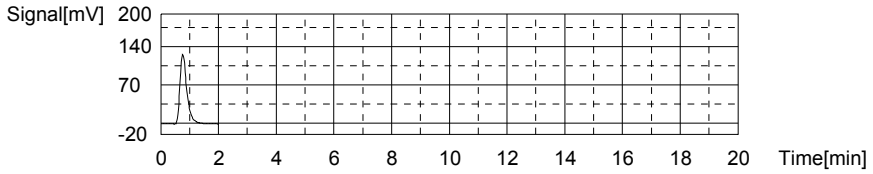

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	127.7	3.995mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 3:31:05 AM

Mean Area 127.7
Mean Conc. 3.995mg/L

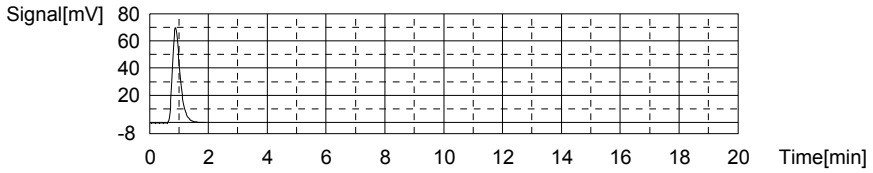

Sample

Sample Name:
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.8736mg/L TC:2.920mg/L IC:2.047mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	115.7	2.920mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 3:38:30 AM

Mean Area 115.7
Mean Conc. 2.920mg/L

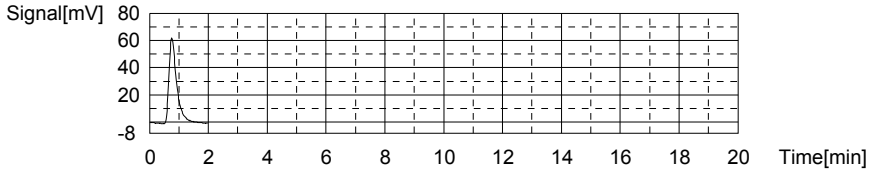

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	69.33	2.047mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 3:43:16 AM

Mean Area 69.33
Mean Conc. 2.047mg/L

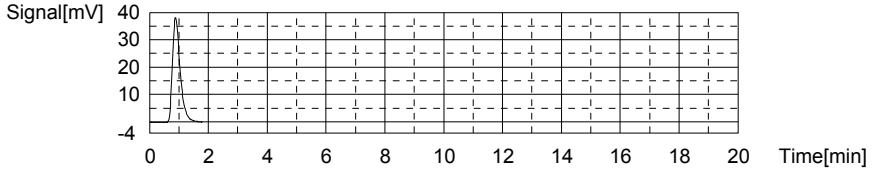

Sample

Sample Name:
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.791mg/L TC:5.018mg/L IC:3.228mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	196.0	5.018mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 3:50:53 AM

Mean Area 196.0
Mean Conc. 5.018mg/L

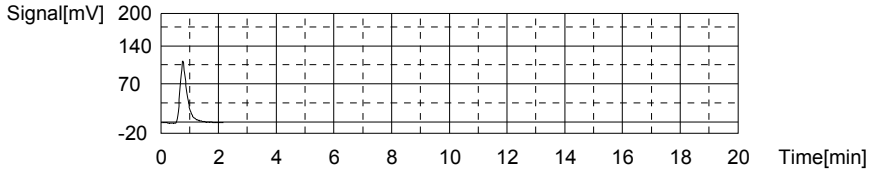

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	104.7	3.228mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 3:55:42 AM

Mean Area 104.7
Mean Conc. 3.228mg/L

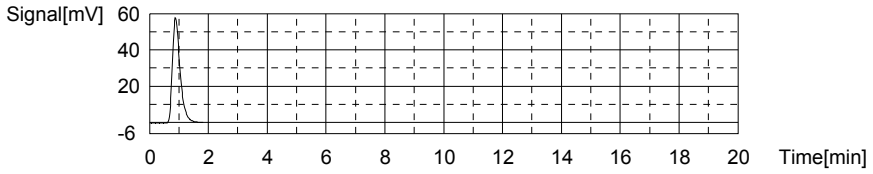

Sample

Sample Name: L15021053-03
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.693mg/L TC:20.15mg/L IC:17.45mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	775.0	20.15mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 4:03:54 AM

Mean Area 775.0
Mean Conc. 20.15mg/L

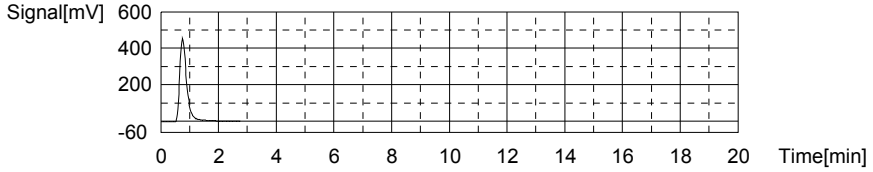

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	530.8	17.45mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 4:09:12 AM

Mean Area 530.8
Mean Conc. 17.45mg/L

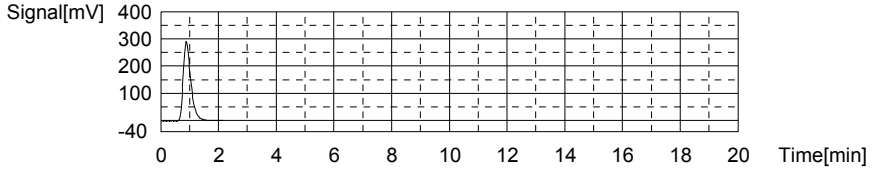

Sample

Sample Name: L15021053-05
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.442mg/L TC:28.51mg/L IC:25.06mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1095	28.51mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 4:17:30 AM

Mean Area 1095
Mean Conc. 28.51mg/L

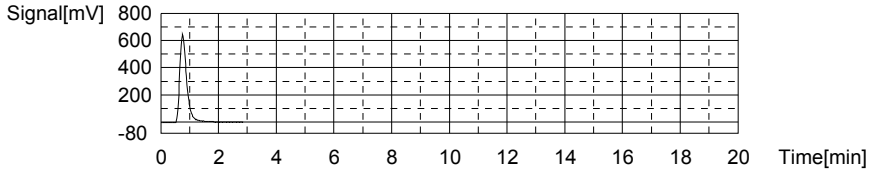

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	758.8	25.06mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 4:23:06 AM

Mean Area 758.8
Mean Conc. 25.06mg/L

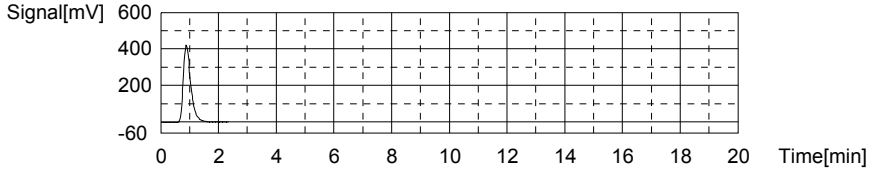

Sample

Sample Name: L15021053-07
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.931mg/L TC:12.01mg/L IC:9.077mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	463.5	12.01mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 4:30:33 AM

Mean Area 463.5
Mean Conc. 12.01mg/L

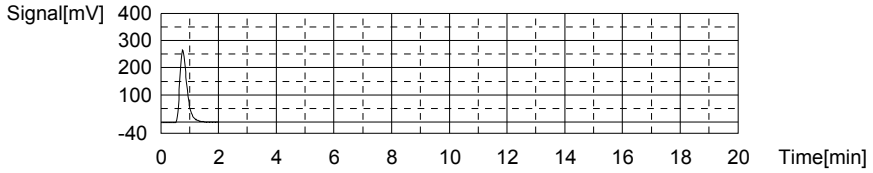

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	279.9	9.077mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 4:35:38 AM

Mean Area 279.9
Mean Conc. 9.077mg/L

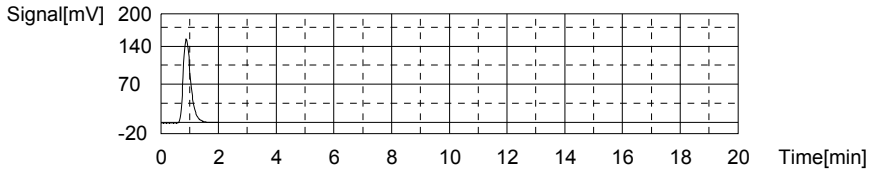

Sample

Sample Name:
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.022mg/L TC:52.23mg/L IC:49.21mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2003	52.23mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 4:44:10 AM

Mean Area 2003
Mean Conc. 52.23mg/L

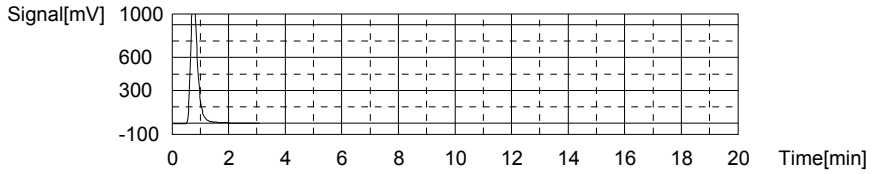

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1482	49.21mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 4:50:20 AM

Mean Area 1482
Mean Conc. 49.21mg/L

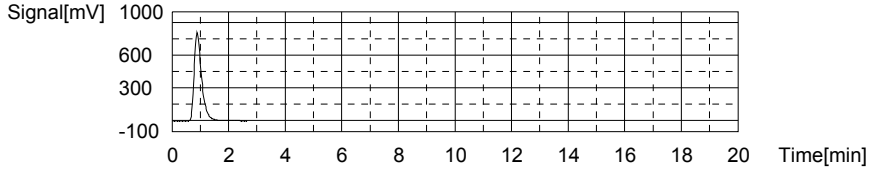

Sample

Sample Name: L15021053-11
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.314mg/L TC:13.81mg/L IC:11.49mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	532.4	13.81mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 4:58:47 AM

Mean Area 532.4
Mean Conc. 13.81mg/L

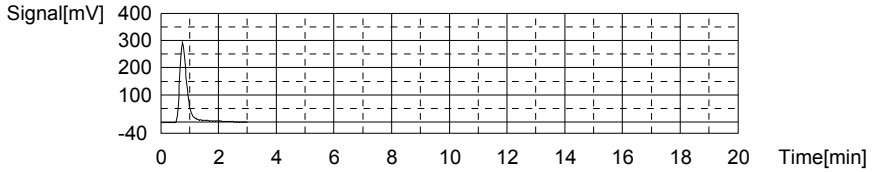

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	352.3	11.49mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 5:04:00 AM

Mean Area 352.3
Mean Conc. 11.49mg/L

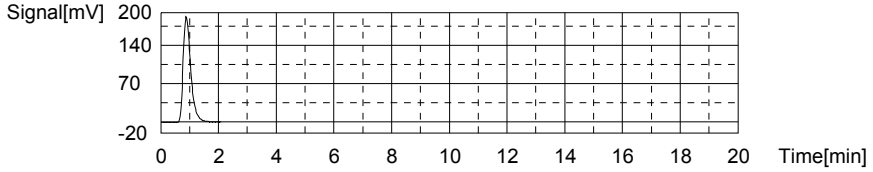

Sample

Sample Name: WG513146-05 DUP
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.712mg/L TC:7.926mg/L IC:5.214mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	307.3	7.926mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 5:13:37 AM

Mean Area 307.3
Mean Conc. 7.926mg/L

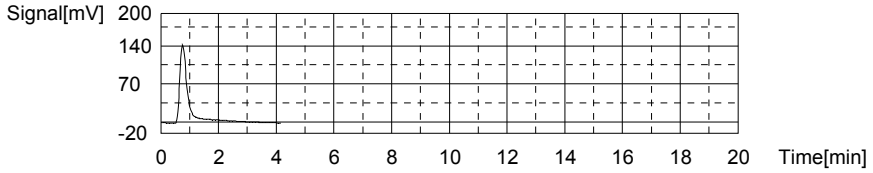

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	164.2	5.214mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 5:18:33 AM

Mean Area 164.2
Mean Conc. 5.214mg/L

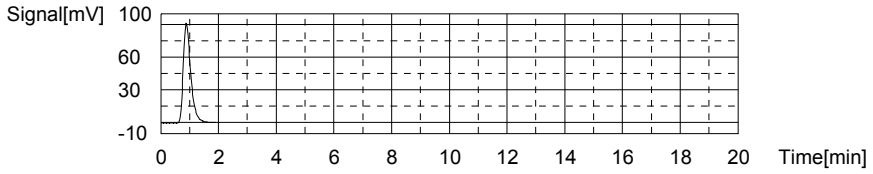

Sample

Sample Name: WG513146-06 MS
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:13.49mg/L TC:16.86mg/L IC:3.368mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	649.3	16.86mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 5:27:56 AM

Mean Area 649.3
Mean Conc. 16.86mg/L

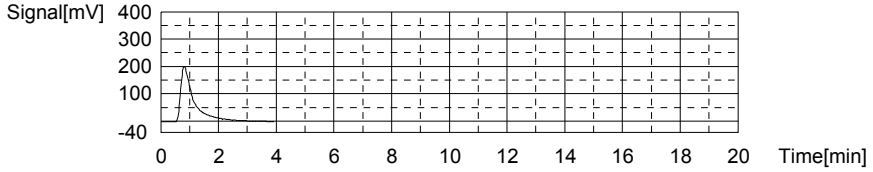

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	108.9	3.368mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 5:32:43 AM

Mean Area 108.9
Mean Conc. 3.368mg/L

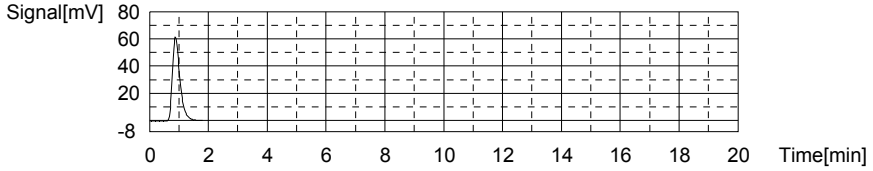

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:27.47mg/L TC:27.49mg/L IC:0.01971mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1056	27.49mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 5:41:34 AM

Mean Area 1056
Mean Conc. 27.49mg/L

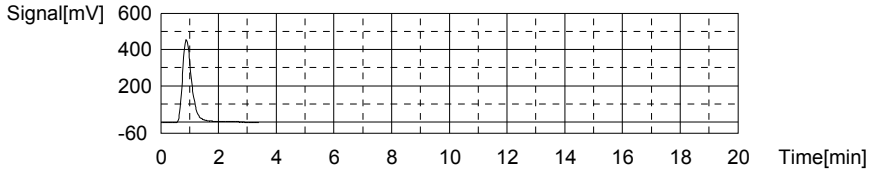

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.615	0.01971mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 5:46:01 AM

Mean Area 8.615
Mean Conc. 0.01971mg/L

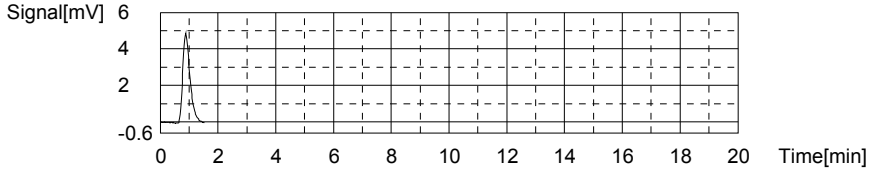

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1317mg/L TC:0.1743mg/L IC:0.04264mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.60	0.1743mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 5:51:14 AM

Mean Area 10.60
Mean Conc. 0.1743mg/L

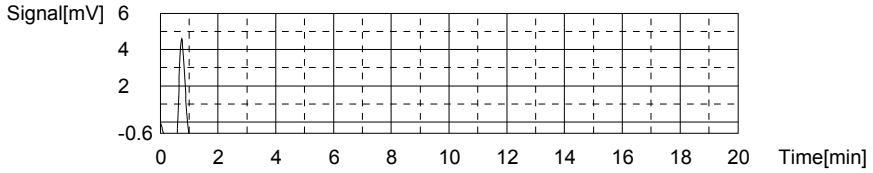

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.302	0.04264mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 5:55:16 AM

Mean Area 9.302
Mean Conc. 0.04264mg/L

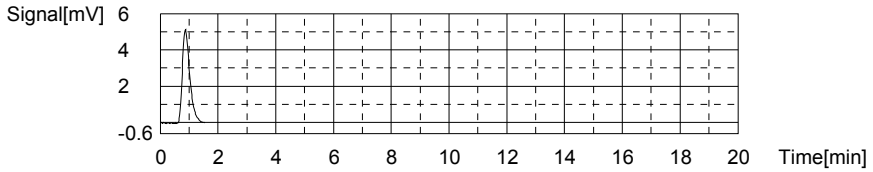

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:24.66mg/L TC:24.80mg/L IC:0.1397mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	953.2	24.80mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 7:27:45 AM

Mean Area 953.2
Mean Conc. 24.80mg/L

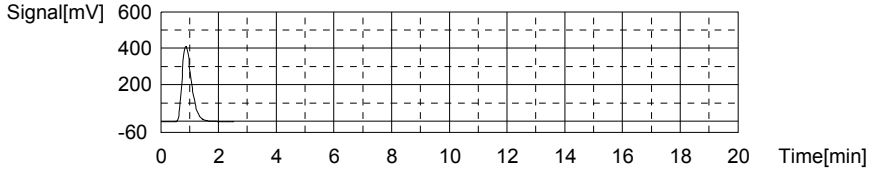

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	12.21	0.1397mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 7:32:13 AM

Mean Area 12.21
Mean Conc. 0.1397mg/L

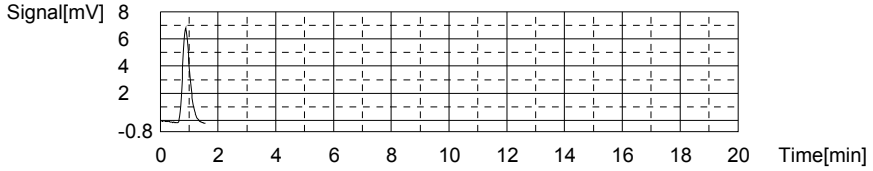

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1230mg/L TC:0.1592mg/L IC:0.03617mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.02	0.1592mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 7:37:24 AM

Mean Area 10.02
Mean Conc. 0.1592mg/L

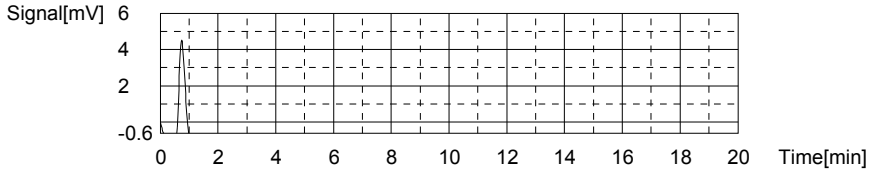

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.108	0.03617mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 7:41:20 AM

Mean Area 9.108
Mean Conc. 0.03617mg/L

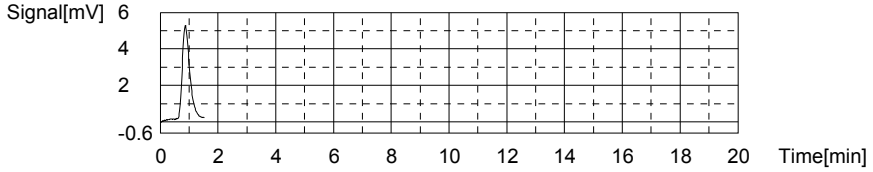

Sample

Sample Name: L15021064-01 (10000)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:26.49mg/L TC:26.82mg/L IC:0.3290mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1070	27.85mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 7:49:57 AM
2	990.7	25.78mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 7:55:08 AM

Mean Area 1030
Mean Conc. 26.82mg/L

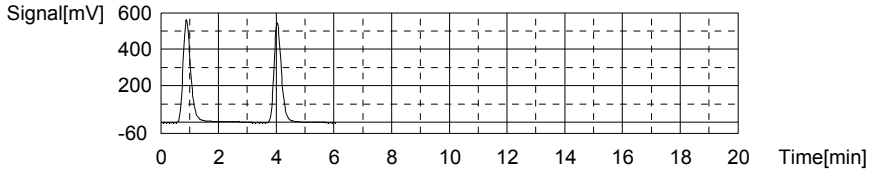

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	17.61	0.3200mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 7:59:41 AM
2	18.15	0.3380mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 8:03:57 AM

Mean Area 17.88
Mean Conc. 0.3290mg/L

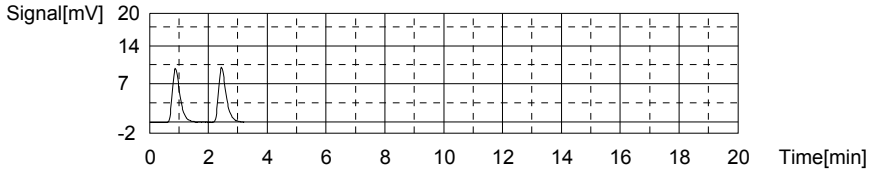

Sample

Sample Name: L15020971-12 (3)
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.729mg/L TC:35.72mg/L IC:29.99mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1371	35.72mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 8:30:22 AM

Mean Area 1371
Mean Conc. 35.72mg/L

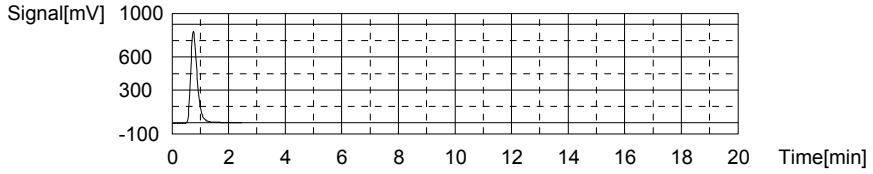

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	906.3	29.99mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 8:36:10 AM

Mean Area 906.3
Mean Conc. 29.99mg/L

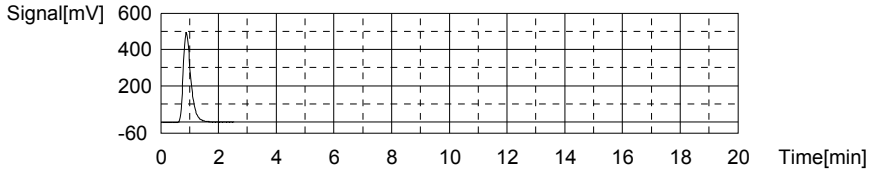

Sample

Sample Name: L15020971-14 (3)
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.701mg/L TC:18.06mg/L IC:16.35mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	695.0	18.06mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 8:43:39 AM

Mean Area 695.0
Mean Conc. 18.06mg/L

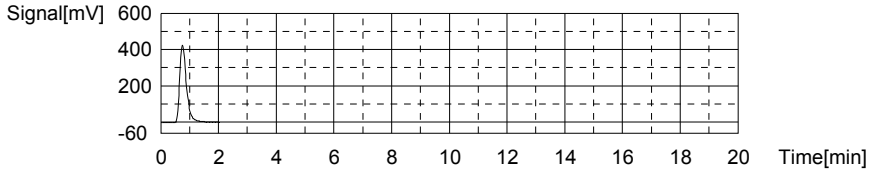

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	497.9	16.35mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 8:48:53 AM

Mean Area 497.9
Mean Conc. 16.35mg/L

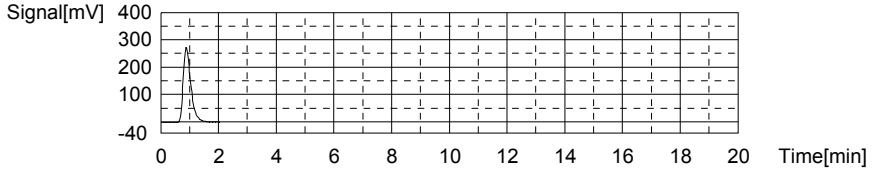

Sample

Sample Name: L15021053-01 (3)
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.650mg/L TC:35.25mg/L IC:31.60mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1353	35.25mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 9:17:35 AM

Mean Area 1353
Mean Conc. 35.25mg/L

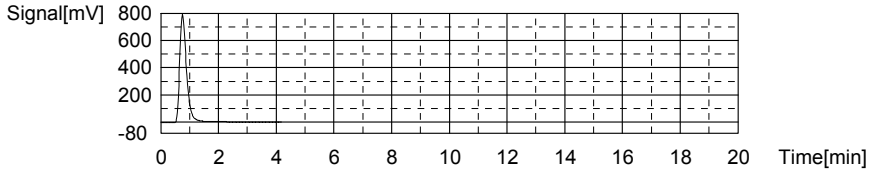

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	954.5	31.60mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 9:23:02 AM

Mean Area 954.5
Mean Conc. 31.60mg/L

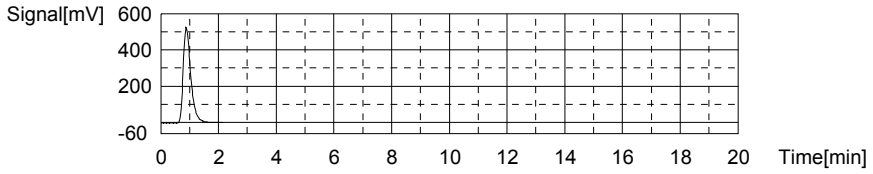

Sample

Sample Name: L15021053-09 (5)
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.010mg/L TC:38.93mg/L IC:35.92mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1494	38.93mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 9:59:17 AM

Mean Area 1494
Mean Conc. 38.93mg/L

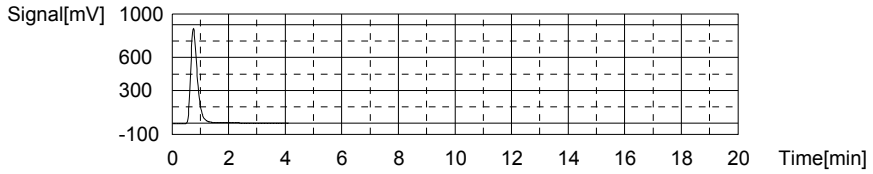

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1084	35.92mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 10:05:19 AM

Mean Area 1084
Mean Conc. 35.92mg/L

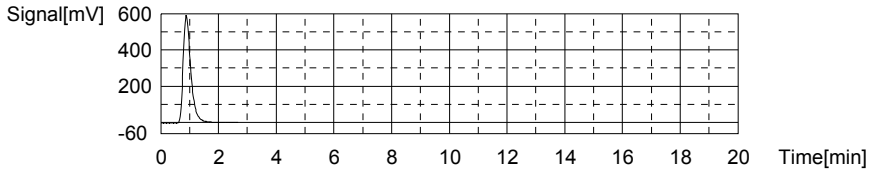

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:25.78mg/L TC:25.86mg/L IC:0.08064mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	993.8	25.86mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 10:14:05 AM

Mean Area 993.8
Mean Conc. 25.86mg/L

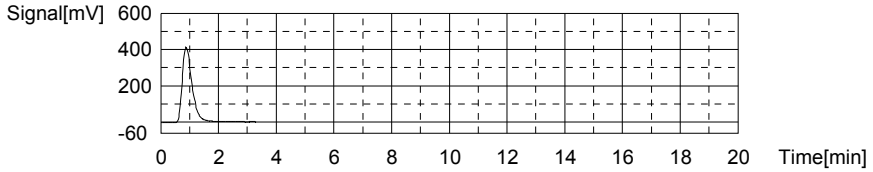

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.44	0.08064mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 10:18:37 AM

Mean Area 10.44
Mean Conc. 0.08064mg/L

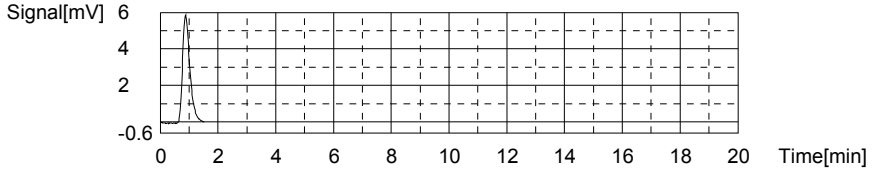

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1237mg/L TC:0.1910mg/L IC:0.06728mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.24	0.1910mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	2/24/2015 10:23:47 AM

Mean Area 11.24
Mean Conc. 0.1910mg/L

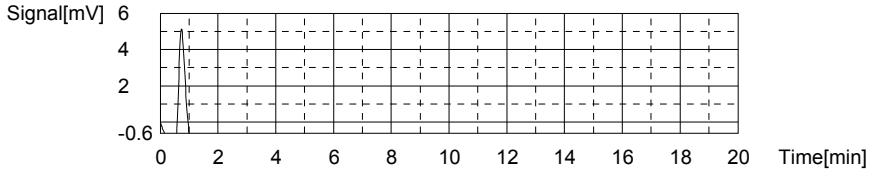

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.04	0.06728mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	2/24/2015 10:27:46 AM

Mean Area 10.04
Mean Conc. 0.06728mg/L

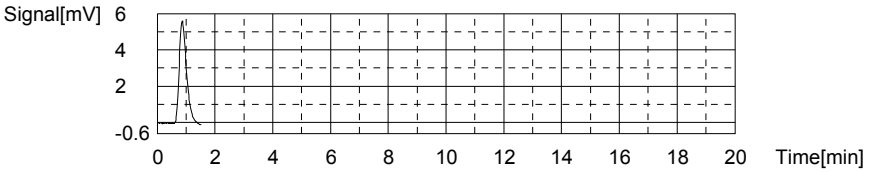

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
March 11, 2015

001 - BIO-CHEM TESTING WVDEP 220	002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental	004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES	006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES	008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND	ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE	AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED	AWE - ANDREW W. ESSIG
AZH - AFTER HOURS	BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE	BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY	CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS	CEB - CHAD E. BARNES
CJR - COURTNEY J. REXROAD	CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER	CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS	CSH - CHRIS S. HILL
DAK - DEAN A. KETELSEN	DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG	DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER	DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT	DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON	ENY - EMILY N. YOAK
EPT - ETHAN P. TIDD	ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN	JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON	JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE	JKP - JACQUELINE K. PARSONS
JLL - JOHN L. LENT	JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON	JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES	JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON	KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH	KEB - KATIE E. BARNES
KHR - KIM H. RHODES	KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON	KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS	LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF	LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA	MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON	MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING	MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY	MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON	PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE	PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB	QX - QIN XU
RAH - ROY A. HALSTEAD	REK - BOB E. KYER
RLB - BOB BUCHANAN	RM - RAYMOND MALEKE
RNP - RICK N. PETTY	RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG	SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG	SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE	TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS	VC - VICKI COLLIER
WJB - WILL J. BEASLEY	WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG	XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
March 11, 2015

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value; the analyte concentration was less than the RL/LOQ.
J,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL/MDL).
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
TIC	Library Search Compound
TNTC	Too numerous to count
TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.

Microbac Laboratories Inc.
List of Valid Qualifiers
March 11, 2015

Qualkey: DOD

TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Kathy Albertson	Project Manager: ~~Dave Wacker~~ MARK HEASTON	Mail to: Linda Raabe
Address:	158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400
	Marietta, OH 45750	Sampler (print): Scott BEESINGER	San Antonio, TX 78205
Phone:	1-800-373-4071		210-296-2000
Client:	AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205	pH:	Program:
Turn Around Time:	STANDARD		
Project Name/Location:	Longhorn		
Project Number:	60256135.0002GA		

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	PERCHLORATE	Dissolved Gases Carbon Dioxide	Nitrate/Nitrite Chloride/Sulfate	ALKALINITY	Sulfide	TOC	TOTAL Phosphorus	Dissolved Iron Dissolved Manganese	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
Site 50	50WW13-021715			2/17/15	0810		✓	W	11	✓	✓	✓	✓	✓	✓	✓							
	50WW13FF-021715			2/17/15	0810		✓	W	1									✓					
	50WW14-021715			2/17/15	0920		✓	W	11	✓	✓	✓	✓	✓	✓	✓							
	50WW14FF-021715			2/17/15	0920		✓	W	1									✓					
	50WW11-021715			2/17/15	1045		✓	W	11	✓	✓	✓	✓	✓	✓	✓							
	50WW11FF-021715			2/17/15	1045		✓	W	1									✓					
	50WW06-021715			2/17/15	1155		✓	W	11	✓	✓	✓	✓	✓	✓	✓							
	50WW06FF-021715			2/17/15	1155		✓	W	1									✓					
	50WW08-021715			2/17/15	1405		✓	W	11	✓	✓	✓	✓	✓	✓	✓							
	50WW08FF-021715			2/17/15	1405		✓	W	1									✓					
	50WW22-021715			2/17/15	1515		✓	W	11	✓	✓	✓	✓	✓	✓	✓							
	50WW22FF-021715			2/17/15	1515		✓	W	1									✓					
	Trip Blank			2/17/15			✓	W	2	✓													

Comments: STANDARD TAT

(Signature) Scott Beesinger	Date 2/17/15	Time 1550	Received by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)

Microbac OVD
Received: 02/20/2015 10:18
By: BRENDA GREGORY
221000065900
Brenda Gregory

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15021053
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 03-MAR-2015

Samplenum	Container ID	Products
L15021053-01	525551	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-FEB-2015 13:17	CLS		
2	ANALYZ	V1	ORG4	20-FEB-2015 14:37	DLW	CLS	
3	ANALYZ	ORG4	A1	10-MAR-2015 07:57	CLS	DLW	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-FEB-2015 13:17	CLS		
2	ANALYZ	V1	ORG4	20-FEB-2015 14:38	DLW	CLS	
3	ANALYZ	ORG4	A1	10-MAR-2015 07:57	CLS	DLW	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-FEB-2015 13:17	CLS		
2	ANALYZ	V1	ORG4	20-FEB-2015 14:38	DLW	CLS	
3	ANALYZ	ORG4	A1	10-MAR-2015 07:57	CLS	DLW	

Samplenum	Container ID	Products
L15021053-01	525552	RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-FEB-2015 13:17	CLS		
2	ANALYZ	V1	ORG1	20-FEB-2015 14:39	DLW	CLS	
3	STORE	ORG1	A1	04-MAR-2015 07:54	CLS	DLW	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-FEB-2015 13:17	CLS		
2	ANALYZ	V1	ORG1	20-FEB-2015 14:39	DLW	CLS	
3	STORE	ORG1	A1	04-MAR-2015 07:54	CLS	DLW	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-FEB-2015 13:17	CLS		
2	ANALYZ	V1	ORG1	20-FEB-2015 14:39	DLW	CLS	
3	STORE	ORG1	A1	04-MAR-2015 07:54	CLS	DLW	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15021053
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 03-MAR-2015

Samplenum	Container ID	Products
L15021053-01	525553	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	SEM	20-FEB-2015 13:17	CLS		
2	STORE	SEM	A1	24-FEB-2015 12:08	CLS	AED	

Samplenum	Container ID	Products
L15021053-01	525554	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-FEB-2015 13:17	CLS		
2	ANALYZ	W1	WET	20-FEB-2015 13:22	TB	BRG	
3	STORE	WET	A1	23-FEB-2015 14:08	BRG	TB	

Samplenum	Container ID	Products
L15021053-01	525555	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-FEB-2015 13:17	CLS		
2	ANALYZ	W1	SEM	25-FEB-2015 10:02	JWR	BRG	
3	STORE	SEM	A1	06-MAR-2015 13:04	BRG	JWR	

Samplenum	Container ID	Products
L15021053-01	525556	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	WET	20-FEB-2015 13:17	CLS		<2
2	STORE	WET	A1	09-MAR-2015 09:32	BRG	EPT	

Samplenum	Container ID	Products
L15021053-01	525557	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-FEB-2015 13:17	CLS		
2	ANALYZ	W1	WET	23-FEB-2015 07:59	EPT	BRG	
3	STORE	WET	A1	23-FEB-2015 15:44	BRG	EPT	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15021053
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 03-MAR-2015

Samplenum	Container ID	Products
L15021053-02	525558	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-FEB-2015 13:17	CLS		
2	PREP	W1	DIG	20-FEB-2015 13:48	ERP	BRG	
3	ANALYZ*	DIG	METALS	24-FEB-2015 11:14	BKT	ERP	
4	STORE	DIG	A1	24-FEB-2015 14:53	CLS	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L15021053-03	525559	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-FEB-2015 13:17	CLS		
2	ANALYZ	V1	ORG4	20-FEB-2015 14:38	DLW	CLS	
3	ANALYZ	ORG4	A1	10-MAR-2015 07:57	CLS	DLW	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	ORG4	20-FEB-2015 13:17	CLS		
2	ANALYZ	ORG4	A1	10-MAR-2015 07:57	CLS	DLW	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-FEB-2015 13:17	CLS		
2	ANALYZ	V1	ORG4	20-FEB-2015 14:38	DLW	CLS	
3	ANALYZ	ORG4	A1	10-MAR-2015 07:57	CLS	DLW	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15021053
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 03-MAR-2015

Samplenum	Container ID	Products
L15021053-03	525560	RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-FEB-2015 13:17	CLS		
2	ANALYZ	V1	ORG1	20-FEB-2015 14:39	DLW	CLS	
3	STORE	ORG1	A1	04-MAR-2015 07:54	CLS	DLW	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-FEB-2015 13:17	CLS		
2	ANALYZ	V1	ORG1	20-FEB-2015 14:39	DLW	CLS	
3	STORE	ORG1	A1	04-MAR-2015 07:54	CLS	DLW	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-FEB-2015 13:17	CLS		
2	ANALYZ	V1	ORG1	20-FEB-2015 14:39	DLW	CLS	
3	STORE	ORG1	A1	04-MAR-2015 07:54	CLS	DLW	

Samplenum	Container ID	Products
L15021053-03	525561	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	SEM	20-FEB-2015 13:17	CLS		
2	STORE	SEM	A1	24-FEB-2015 12:08	CLS	AED	

Samplenum	Container ID	Products
L15021053-03	525562	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-FEB-2015 13:17	CLS		
2	ANALYZ	W1	WET	20-FEB-2015 13:22	TB	BRG	
3	STORE	WET	A1	23-FEB-2015 14:09	BRG	TB	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15021053
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 03-MAR-2015

Samplenum	Container ID	Products
L15021053-03	525563	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-FEB-2015 13:17	CLS		
2	ANALYZ	W1	SEM	25-FEB-2015 10:02	JWR	BRG	
3	STORE	SEM	A1	06-MAR-2015 13:04	BRG	JWR	

Samplenum	Container ID	Products
L15021053-03	525564	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	WET	20-FEB-2015 13:17	CLS		<2
2	STORE	WET	A1	09-MAR-2015 09:32	BRG	EPT	

Samplenum	Container ID	Products
L15021053-03	525565	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-FEB-2015 13:17	CLS		
2	ANALYZ	W1	WET	23-FEB-2015 07:59	EPT	BRG	
3	STORE	WET	A1	23-FEB-2015 15:44	BRG	EPT	

Samplenum	Container ID	Products
L15021053-04	525566	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-FEB-2015 13:17	CLS		
2	PREP	W1	DIG	20-FEB-2015 13:48	ERP	BRG	
3	ANALYZ*	DIG	METALS	24-FEB-2015 11:14	BKT	ERP	
4	STORE	DIG	A1	24-FEB-2015 14:53	CLS	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15021053
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 03-MAR-2015

Samplenum	Container ID	Products
L15021053-05	525567	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-FEB-2015 13:17	CLS		
2	ANALYZ	V1	ORG4	20-FEB-2015 14:38	DLW	CLS	
3	ANALYZ	ORG4	A1	10-MAR-2015 07:57	CLS	DLW	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-FEB-2015 13:17	CLS		
2	ANALYZ	V1	ORG4	20-FEB-2015 14:38	DLW	CLS	
3	ANALYZ	ORG4	A1	10-MAR-2015 07:57	CLS	DLW	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-FEB-2015 13:17	CLS		
2	ANALYZ	V1	ORG4	20-FEB-2015 14:38	DLW	CLS	
3	ANALYZ	ORG4	A1	10-MAR-2015 07:57	CLS	DLW	

Samplenum	Container ID	Products
L15021053-05	525568	RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-FEB-2015 13:17	CLS		
2	ANALYZ	V1	ORG1	20-FEB-2015 14:39	DLW	CLS	
3	STORE	ORG1	A1	04-MAR-2015 07:54	CLS	DLW	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-FEB-2015 13:17	CLS		
2	ANALYZ	V1	ORG1	20-FEB-2015 14:39	DLW	CLS	
3	STORE	ORG1	A1	04-MAR-2015 07:54	CLS	DLW	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-FEB-2015 13:17	CLS		
2	ANALYZ	V1	ORG1	20-FEB-2015 14:39	DLW	CLS	
3	STORE	ORG1	A1	04-MAR-2015 07:54	CLS	DLW	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15021053
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 03-MAR-2015

Samplenum	Container ID	Products
L15021053-05	525569	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	SEM	20-FEB-2015 13:17	CLS		
2	STORE	SEM	A1	24-FEB-2015 12:08	CLS	AED	

Samplenum	Container ID	Products
L15021053-05	525570	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-FEB-2015 13:17	CLS		
2	ANALYZ	W1	WET	20-FEB-2015 13:22	TB	BRG	
3	STORE	WET	A1	23-FEB-2015 14:09	BRG	TB	

Samplenum	Container ID	Products
L15021053-05	525571	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-FEB-2015 13:17	CLS		
2	ANALYZ	W1	SEM	25-FEB-2015 10:02	JWR	BRG	
3	STORE	SEM	A1	06-MAR-2015 13:04	BRG	JWR	

Samplenum	Container ID	Products
L15021053-05	525572	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	WET	20-FEB-2015 13:17	CLS		<2
2	STORE	WET	A1	09-MAR-2015 09:32	BRG	EPT	

Samplenum	Container ID	Products
L15021053-05	525573	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	WET	20-FEB-2015 13:17	CLS		
2	STORE	WET	A1	23-FEB-2015 15:44	BRG	EPT	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15021053
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 03-MAR-2015

Samplenum	Container ID	Products
L15021053-06	525574	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-FEB-2015 13:17	CLS		
2	PREP	W1	DIG	20-FEB-2015 13:48	ERP	BRG	
3	ANALYZ*	DIG	METALS	24-FEB-2015 11:14	BKT	ERP	
4	STORE	DIG	A1	24-FEB-2015 14:53	CLS	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L15021053-07	525575	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-FEB-2015 13:17	CLS		
2	ANALYZ	V1	ORG4	20-FEB-2015 14:38	DLW	CLS	
3	ANALYZ	ORG4	A1	10-MAR-2015 07:57	CLS	DLW	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-FEB-2015 13:17	CLS		
2	ANALYZ	V1	ORG4	20-FEB-2015 14:38	DLW	CLS	
3	ANALYZ	ORG4	A1	10-MAR-2015 07:57	CLS	DLW	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-FEB-2015 13:17	CLS		
2	ANALYZ	V1	ORG4	20-FEB-2015 14:38	DLW	CLS	
3	ANALYZ	ORG4	A1	10-MAR-2015 07:57	CLS	DLW	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15021053
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 03-MAR-2015

Samplenum	Container ID	Products
L15021053-07	525576	RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-FEB-2015 13:17	CLS		
2	ANALYZ	V1	ORG1	20-FEB-2015 14:39	DLW	CLS	
3	STORE	ORG1	A1	04-MAR-2015 07:55	CLS	DLW	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-FEB-2015 13:17	CLS		
2	ANALYZ	V1	ORG1	20-FEB-2015 14:39	DLW	CLS	
3	STORE	ORG1	A1	04-MAR-2015 07:54	CLS	DLW	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-FEB-2015 13:17	CLS		
2	ANALYZ	V1	ORG1	20-FEB-2015 14:39	DLW	CLS	
3	STORE	ORG1	A1	04-MAR-2015 07:54	CLS	DLW	

Samplenum	Container ID	Products
L15021053-07	525577	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	SEM	20-FEB-2015 13:17	CLS		
2	STORE	SEM	A1	24-FEB-2015 12:08	CLS	AED	

Samplenum	Container ID	Products
L15021053-07	525578	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-FEB-2015 13:17	CLS		
2	ANALYZ	W1	WET	20-FEB-2015 13:22	TB	BRG	
3	STORE	WET	A1	23-FEB-2015 14:09	BRG	TB	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15021053
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 03-MAR-2015

Samplenum	Container ID	Products
L15021053-07	525579	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-FEB-2015 13:17	CLS		
2	ANALYZ	W1	SEM	25-FEB-2015 10:02	JWR	BRG	
3	STORE	SEM	A1	06-MAR-2015 13:04	BRG	JWR	

Samplenum	Container ID	Products
L15021053-07	525580	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	WET	20-FEB-2015 13:17	CLS		<2
2	STORE	WET	A1	09-MAR-2015 09:30	BRG	EPT	

Samplenum	Container ID	Products
L15021053-07	525581	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-FEB-2015 13:17	CLS		
2	ANALYZ	W1	WET	23-FEB-2015 07:59	EPT	BRG	
3	STORE	WET	A1	23-FEB-2015 15:44	BRG	EPT	

Samplenum	Container ID	Products
L15021053-08	525582	MN-MSD FE-D

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-FEB-2015 13:17	CLS		
2	PREP	W1	DIG	20-FEB-2015 13:48	ERP	BRG	
3	ANALYZ*	DIG	METALS	24-FEB-2015 11:14	BKT	ERP	
4	STORE	DIG	A1	24-FEB-2015 14:53	CLS	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15021053
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 03-MAR-2015

Samplenum	Container ID	Products
L15021053-09	525583	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-FEB-2015 13:17	CLS		
2	ANALYZ	V1	ORG4	20-FEB-2015 14:38	DLW	CLS	
3	ANALYZ	ORG4	A1	10-MAR-2015 07:57	CLS	DLW	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-FEB-2015 13:17	CLS		
2	ANALYZ	V1	ORG4	20-FEB-2015 14:38	DLW	CLS	
3	ANALYZ	ORG4	A1	10-MAR-2015 07:57	CLS	DLW	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-FEB-2015 13:17	CLS		
2	ANALYZ	V1	ORG4	20-FEB-2015 14:38	DLW	CLS	
3	ANALYZ	ORG4	A1	10-MAR-2015 07:57	CLS	DLW	

Samplenum	Container ID	Products
L15021053-09	525584	RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-FEB-2015 13:17	CLS		
2	ANALYZ	V1	ORG1	20-FEB-2015 14:39	DLW	CLS	
3	STORE	ORG1	A1	04-MAR-2015 07:55	CLS	DLW	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-FEB-2015 13:17	CLS		
2	ANALYZ	V1	ORG1	20-FEB-2015 14:39	DLW	CLS	
3	STORE	ORG1	A1	04-MAR-2015 07:55	CLS	DLW	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-FEB-2015 13:17	CLS		
2	ANALYZ	V1	ORG1	20-FEB-2015 14:39	DLW	CLS	
3	STORE	ORG1	A1	04-MAR-2015 07:55	CLS	DLW	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15021053
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 03-MAR-2015

Samplenum	Container ID	Products
L15021053-09	525585	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	SEM	20-FEB-2015 13:17	CLS		
2	STORE	SEM	A1	25-FEB-2015 10:12	BRG	AED	

Samplenum	Container ID	Products
L15021053-09	525586	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-FEB-2015 13:17	CLS		
2	ANALYZ	W1	WET	20-FEB-2015 13:22	TB	BRG	
3	STORE	WET	A1	23-FEB-2015 14:09	BRG	TB	

Samplenum	Container ID	Products
L15021053-09	525587	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-FEB-2015 13:17	CLS		
2	ANALYZ	W1	SEM	25-FEB-2015 10:02	JWR	BRG	
3	STORE	SEM	A1	06-MAR-2015 13:04	BRG	JWR	

Samplenum	Container ID	Products
L15021053-09	525588	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	WET	20-FEB-2015 13:17	CLS		<2
2	STORE	WET	A1	09-MAR-2015 09:30	BRG	EPT	

Samplenum	Container ID	Products
L15021053-09	525589	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-FEB-2015 13:17	CLS		
2	ANALYZ	W1	WET	23-FEB-2015 07:59	EPT	BRG	
3	STORE	WET	A1	23-FEB-2015 15:44	BRG	EPT	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15021053
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 03-MAR-2015

Samplenum	Container ID	Products
L15021053-10	525590	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-FEB-2015 13:17	CLS		
2	PREP	W1	DIG	20-FEB-2015 13:48	ERP	BRG	
3	ANALYZ*	DIG	METALS	24-FEB-2015 11:14	BKT	ERP	
4	STORE	DIG	A1	24-FEB-2015 14:53	CLS	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L15021053-11	525591	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-FEB-2015 13:17	CLS		
2	ANALYZ	V1	ORG4	20-FEB-2015 14:38	DLW	CLS	
3	ANALYZ	ORG4	A1	10-MAR-2015 07:57	CLS	DLW	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-FEB-2015 13:17	CLS		
2	ANALYZ	V1	ORG4	20-FEB-2015 14:38	DLW	CLS	
3	ANALYZ	ORG4	A1	10-MAR-2015 07:57	CLS	DLW	

Samplenum	Container ID	Products
L15021053-11	525592	RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-FEB-2015 13:17	CLS		
2	ANALYZ	V1	ORG1	20-FEB-2015 14:39	DLW	CLS	
3	STORE	ORG1	A1	04-MAR-2015 07:55	CLS	DLW	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-FEB-2015 13:17	CLS		
2	ANALYZ	V1	ORG1	20-FEB-2015 14:39	DLW	CLS	
3	STORE	ORG1	A1	04-MAR-2015 07:55	CLS	DLW	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-FEB-2015 13:17	CLS		
2	ANALYZ	V1	ORG1	20-FEB-2015 14:39	DLW	CLS	
3	STORE	ORG1	A1	04-MAR-2015 07:55	CLS	DLW	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15021053
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 03-MAR-2015

Samplenum	Container ID	Products
L15021053-11	525593	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	SEM	20-FEB-2015 13:17	CLS		
2	STORE	SEM	A1	25-FEB-2015 10:12	BRG	AED	

Samplenum	Container ID	Products
L15021053-11	525594	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-FEB-2015 13:17	CLS		
2	ANALYZ	W1	WET	20-FEB-2015 13:22	TB	BRG	
3	STORE	WET	A1	23-FEB-2015 14:08	BRG	TB	

Samplenum	Container ID	Products
L15021053-11	525595	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-FEB-2015 13:17	CLS		
2	ANALYZ	W1	SEM	25-FEB-2015 10:02	JWR	BRG	
3	STORE	SEM	A1	06-MAR-2015 13:04	BRG	JWR	

Samplenum	Container ID	Products
L15021053-11	525596	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	WET	20-FEB-2015 13:17	CLS		<2
2	STORE	WET	A1	09-MAR-2015 09:30	BRG	EPT	

Samplenum	Container ID	Products
L15021053-11	525597	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-FEB-2015 13:17	CLS		
2	ANALYZ	W1	WET	23-FEB-2015 07:59	EPT	BRG	
3	STORE	WET	A1	23-FEB-2015 15:44	BRG	EPT	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15021053
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 03-MAR-2015

Samplenum	Container ID	Products
L15021053-12	525598	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-FEB-2015 13:17	CLS		
2	PREP	W1	DIG	20-FEB-2015 13:48	ERP	BRG	
3	ANALYZ*	DIG	METALS	24-FEB-2015 11:14	BKT	ERP	
4	STORE	DIG	A1	24-FEB-2015 14:53	CLS	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L15021053-13	525599	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-FEB-2015 13:17	CLS		
2	ANALYZ	V1	ORG4	20-FEB-2015 14:38	DLW	CLS	
3	ANALYZ	ORG4	A1	10-MAR-2015 07:57	CLS	DLW	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-FEB-2015 13:17	CLS		
2	ANALYZ	V1	ORG4	20-FEB-2015 14:38	DLW	CLS	
3	ANALYZ	ORG4	A1	10-MAR-2015 07:57	CLS	DLW	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - May 22, 2014

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVL NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Thiodiglycol (TDG-LCMS)
Acetate (HPLC-UV)
Formate (HPLC-UV)
Acetaldehyde (HPLC-UV)
Propionaldehyde (HPLC-UV)
Fluoroborate (ISE)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVL MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam

Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL MSV0I/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVL RSKOI/GC-FID

Isobutane
n-Butane
Propane
Propylene
Propyne

OVL HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

SOLID AND HAZARDOUS CHEMICALS

OVL MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVL MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L15050604

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on May 29 2015

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L15050604
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

The following discrepancies were noted:

Discrepancy	Resolution
Sample ID: GWP1-050815 (5/8 @ 09:40). 1 out of 3 voa vials received with headspace. BRG	Please label this as the "C" vial. SLM

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00112308	H	3.0		J2317161558	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	No

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L15050604
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
GPW1A-050815	L15050604-01	05/08/2015 09:30	05/09/2015 11:07
GPW1-050815	L15050604-02	05/08/2015 09:40	05/09/2015 11:07
TRIP BLANK	L15050604-03	05/08/2015 00:01	05/09/2015 11:07

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L15050604
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.1 Narratives

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15050604
Project Name:		**Method:**	8260
Prep Batch Number(s):	523732	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-05-19 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden	Franci Bolden	Analyst I	2015-05-19 13:16:00

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15050604
Project Name:		**Method:**	8260
Prep Batch Number(s):	523732	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-05-19 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15050604
Project Name:		**Method:**	8260
Prep Batch Number(s):	523732	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-05-19 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15050604
Project Name:		**Method:**	8260
Prep Batch Number(s):	523732	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-05-19 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15050604
Project Name:		**Method:**	8260
Prep Batch Number(s):	523732	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-05-19 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15050604
Project Name:		**Method:**	8260
Prep Batch Number(s):	523732	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-05-19 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15050604
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG525192	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-05-29 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2015-05-29 16:46:36

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15050604
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG525192	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-05-29 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15050604
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG525192	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-05-29 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15050604
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG525192	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-05-29 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15050604
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG525192	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-05-29 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15050604
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG525192	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-05-29 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

1.2 Certificate of Analysis

Microbac

Lab Report #: L15050604
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15050604-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	GPW1A-050815	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/12/2015 21:08
Workgroup #:	WG523732	**Analyst:**	TMB	**Run Date:**	05/15/2015 19:13
Collect Date:	05/08/2015 09:30	**Dilution:**	1	**File ID:**	8M404680
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	2.55	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15050604
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.6	85	115	
1,2-Dichloroethane-d4	98.9	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	94.9	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15050604
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15050604-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	GPW1A-050815	**Prep Method:**	6850	**Prep Date:**	05/27/2015 14:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/27/2015 15:10
Workgroup #:	WG525192	**Analyst:**	JWR	**Run Date:**	05/27/2015 17:52
Collect Date:	05/08/2015 09:30	**Dilution:**	10	**File ID:**	1LM.LM29877
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	16.0		4.00	2.00	1.00

Certificate of Analysis

Sample #:	L15050604-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	GPW1-050815	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/12/2015 21:08
Workgroup #:	WG523732	**Analyst:**	TMB	**Run Date:**	05/15/2015 19:42
Collect Date:	05/08/2015 09:40	**Dilution:**	1	**File ID:**	8M404681
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.18	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15050604
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.389	J	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L15050604
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.0	85	115	
1,2-Dichloroethane-d4	102	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	99.5	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15050604
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15050604-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	GPW1-050815	**Prep Method:**	6850	**Prep Date:**	05/27/2015 14:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/27/2015 15:10
Workgroup #:	WG525192	**Analyst:**	JWR	**Run Date:**	05/27/2015 18:21
Collect Date:	05/08/2015 09:40	**Dilution:**	1	**File ID:**	1LM.LM29878
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.156	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15050604
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15050604-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/12/2015 21:08
Workgroup #:	WG523732	**Analyst:**	TMB	**Run Date:**	05/15/2015 13:27
Collect Date:	05/08/2015 00:01	**Dilution:**	1	**File ID:**	8M404668
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15050604
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.8	85	115	
1,2-Dichloroethane-d4	99.4	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	99.8	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15050604
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L15050604
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15050604-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	GPW1A-050815	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/12/2015 21:08
Workgroup #:	WG523732	**Analyst:**	TMB	**Run Date:**	05/15/2015 19:13
Collect Date:	05/08/2015 09:30	**Dilution:**	1	**File ID:**	8M404680
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	2.55	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15050604
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.6	85	115	
1,2-Dichloroethane-d4	98.9	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	94.9	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15050604
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15050604-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	GPW1-050815	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/12/2015 21:08
Workgroup #:	WG523732	**Analyst:**	TMB	**Run Date:**	05/15/2015 19:42
Collect Date:	05/08/2015 09:40	**Dilution:**	1	**File ID:**	8M404681
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.18	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15050604
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.389	J	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.0	85	115	
1,2-Dichloroethane-d4	102	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	99.5	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15050604
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15050604
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15050604-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/12/2015 21:08
Workgroup #:	WG523732	**Analyst:**	TMB	**Run Date:**	05/15/2015 13:27
Collect Date:	05/08/2015 00:01	**Dilution:**	1	**File ID:**	8M404668
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15050604
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.8	85	115	
1,2-Dichloroethane-d4	99.4	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	99.8	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15050604
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 100214
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 19
Method: 624 SOP: MSV10 Rev: 12
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 16
Maintenance Log ID: 51878

Internal Standard: STD66600 Surrogate Standard: STD66600
CCV: STD66818; STD66687 LCS: STD66693; STD66677 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG494714; WG494980

Comments: File # 8m400369 and 70 were skipped and not used.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M400354	RINSE	NA	1	1		10/02/14 10:24
8M400355	WG494714-01 50ng BFB STD 8260	NA	1	1	STD66476	10/02/14 11:16
8M400356	WG494714-01 50ng BFB STD 8260	NA	1	1	STD66476	10/02/14 11:33
8M400357	WG494714-01 50ng BFB STD 8260	NA	1	1	STD66476	10/02/14 11:58
8M400358	WG494714-02 5ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 12:24
8M400359	WG494714-03 20ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 12:53
8M400360	WG494714-04 50ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 13:22
8M400361	WG494714-05 100ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 13:51
8M400362	WG494714-06 200ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 14:19
8M400363	WG494714-07 300ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 14:48
8M400364	WG494714-08 400ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 15:16
8M400365	WG494714-09 500ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 15:45
8M400366	RINSE	NA	1	1		10/02/14 16:14
8M400367	WG494714-10 100ug/L ALT SRC STD A9/F	NA	1	1	STD66677	10/02/14 16:47
8M400368	WG494979-01 50ug/L CCV STD 8260	NA	1	1	STD66687	10/02/14 17:22
8M400371	WG494980-02 20ug/L LCS STD 624	NA	2	1	STD66693	10/02/14 17:51
8M400372	WG494980-03 20ug/L LCSDUP STD 624	NA	2	1	STD66693	10/02/14 18:20
8M400373	RINSE	NA	2	1		10/02/14 18:49
8M400374	WG494980-01 VBLK1002 BLANK STD 624	NA	2	1		10/02/14 19:18
8M400375	L14100004-01 LOD 826-SPE A9/FOO	NA	1	1		10/02/14 19:47
8M400376	L14100006-01 LOQ 826-SPE A9/FOO	NA	1	1		10/02/14 20:16
8M400377	L14100004-01 LOD 826-SPE	NA	1	1		10/02/14 20:45
8M400378	L14100006-01 LOQ 826-SPE	NA	1	1		10/02/14 21:14
8M400379	L14100004-01 LOD 826-SPE	NA	1	1		10/02/14 21:42
8M400380	L14100006-01 LOQ 826-SPE	NA	1	1		10/02/14 22:12
8M400381	L14100098-10 A 624-SPE	5	2	1		10/02/14 22:40
8M400382	L14100089-02 A 624-SPE	5	2	1		10/02/14 23:09
8M400383	L14100098-04 A 624-SPE	<2	2	1		10/02/14 23:38
8M400384	L14100098-05 A 624-SPE	<2	2	1		10/03/14 00:06
8M400385	L14100098-06 A 624-SPE	<2	2	1		10/03/14 00:36
8M400386	L14100098-07 A 624-SPE	<2	2	1		10/03/14 01:06
8M400387	L14100098-08 A 624-SPE	<2	2	1		10/03/14 01:34
8M400388	L14100098-09 A 624-SPE	<2	2	1		10/03/14 02:04
8M400389	L14100110-01 A 624-SPE2	<2	2	1		10/03/14 02:32

Approved: October 03, 2014

Page: 1

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Instrument Run Log

Instrument: HPMS8 Dataset: 100214
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 19
Method: 624 SOP: MSV10 Rev: 12
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 16
Maintenance Log ID: 51878

Internal Standard: STD66600 Surrogate Standard: STD66600
CCV: STD66818; STD66687 LCS: STD66693; STD66677 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG494714; WG494980

Comments: File # 8m400369 and 70 were skipped and not used.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M400390	L14100110-02 A 624-SPE1	<2	2	1		10/03/14 03:02
8M400391	RINSE	NA	1	1		10/03/14 03:30
8M400392	RINSE	NA	1	1		10/03/14 03:59

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 8M400355				
	Tune failed, DNR.			
3	X			
File ID: 8M400356				
	Tune failed, DNR.			
4				
File ID: 8M400357				
	Purged BFB.			
30	X	100	Over Calibration Range	TCE
File ID: 8M400385				
31	X	1	Carry-over contamination	
File ID: 8M400386				
	DNR.			
32	X	1	Carry-over contamination	
File ID: 8M400387				
	DNR.			
33	X	50	Over Calibration Range	TCE
File ID: 8M400388				
34	X	1	Carry-over contamination	
File ID: 8M400389				
	DNR.			

Approved: October 03, 2014

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051215
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 21
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53130

Internal Standard: STD70050 Surrogate Standard: STD70050
CCV: STD70474 LCS: STD70475 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG523161

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M404566	WG523161-01 50ng BFB STD 8260	NA	1	1	STD70032	05/12/15 08:44
8M404567	WG523161-01 50ng BFB STD 8260	NA	1	1	STD70032	05/12/15 09:01
8M404568	WG523161-01 50ng BFB STD 8260	NA	1	1	STD70032	05/12/15 09:37
8M404569	WG523161-01 50ng BFB STD 8260	NA	1	1	STD70032	05/12/15 10:02
8M404570	WG523161-01 50ng BFB STD 8260	NA	1	1	STD70032	05/12/15 10:16
8M404571	WG523161-02 50ug/L CCV STD 8260	NA	1	1	STD70341	05/12/15 10:39
8M404572	WG523161-01 50ng BFB STD 8260	NA	1	1	STD70032	05/12/15 11:07
8M404573	WG523161-02 50ug/L CCV STD 8260	NA	1	1	STD70341	05/12/15 11:30
8M404574	RINSE	NA	1	1		05/12/15 11:59
8M404575	RINSE	NA	1	1		05/12/15 13:56
8M404576	WG523161-01 50ng BFB STD 8260	NA	1	1	STD70032	05/12/15 15:38
8M404577	WG523161-01 50ng BFB STD 8260	NA	1	1	STD70032	05/12/15 15:55
8M404578	RINSE	NA	1	1		05/12/15 16:21
8M404579	WG523161-02 0.3ug/L STD 8260	NA	1	1	STD70474	05/12/15 16:50
8M404580	WG523161-03 0.4ug/L STD 8260	NA	1	1	STD70474	05/12/15 17:19
8M404581	WG523161-04 1ug/L STD 8260	NA	1	1	STD70474	05/12/15 17:48
8M404582	WG523161-05 2ug/L STD 8260	NA	1	1	STD70474	05/12/15 18:16
8M404583	WG523161-06 5ug/L STD 8260	NA	1	1	STD70474	05/12/15 18:45
8M404584	WG523161-07 20ug/L STD 8260	NA	1	1	STD70474	05/12/15 19:13
8M404585	WG523161-08 50ug/L STD 8260	NA	1	1	STD70474	05/12/15 19:42
8M404586	WG523161-09 100ug/L STD 8260	NA	1	1	STD70474	05/12/15 20:11
8M404587	WG523161-10 200ug/L STD 8260	NA	1	1	STD70474	05/12/15 20:40
8M404588	WG523161-11 300ug/L STD 8260	NA	1	1	STD70474	05/12/15 21:08
8M404589	RINSE	NA	1	1		05/12/15 21:37
8M404590	RINSE	NA	1	1		05/12/15 22:06
8M404591	WG523161-12 50ug/L ALT SRC STD 8260	NA	1	1	STD70475	05/12/15 22:34
8M404592	RINSE	NA	1	1		05/12/15 23:03
8M404593	RINSE	NA	1	1		05/12/15 23:31

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1	X			
File ID: 8M404566				

Approved: May 14, 2015

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS8	Dataset:	051215		
Analyst1:	TMB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	21
Method:	624	SOP:	MSV10	Rev:	13
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:	53130				

Internal Standard: STD70050 Surrogate Standard: STD70050

CCV: STD70474 LCS: STD70475 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG523161

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			Tune failed, DNR.	
2	X			
File ID: 8M404567				
			Tune failed, DNR. Changed the septa.	
3	X			
File ID: 8M404568				
			Tune failed, DNR.	
4				
File ID: 8M404569				
			Tune failed, DNR. Purged BFB.	
6	X			
File ID: 8M404571				
			Vc was high, DNR. Increased the voltage.	
8				
File ID: 8M404573				
			Vc was high, running a curve.	
11	X			
File ID: 8M404576				
			Tune failed, DNR.	

Approved: May 14, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051515
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 21
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53145

Internal Standard: STD70050 Surrogate Standard: STD70050
CCV: STD70474 LCS: STD70517 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG523732

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M404658	WG523731-01 50ng BFB STD 8260	NA	1	1	STD70032	05/15/15 08:57
8M404659	WG523731-01 50ng BFB STD 8260	NA	1	1	STD70032	05/15/15 09:12
8M404660	WG523731-02 50ug/L CCV STD 8260	NA	1	1	STD70474	05/15/15 09:37
8M404661	WG523731-02 50ug/L CCV STD 8260	NA	1	1	STD70474	05/15/15 10:05
8M404662	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD69937	05/15/15 10:34
8M404663	WG523732-01 VBLK0515 BLANK STD 826	NA	1	1		05/15/15 11:03
8M404664	WG523732-02 20ug/L LCS STD 8260	NA	1	1	STD70517	05/15/15 11:32
8M404665	WG523732-03 20ug/L LCSDUP STD 8260	NA	1	1	STD70517	05/15/15 12:01
8M404666	L15050482-11 A TB 826-SPE	<2	1	1		05/15/15 12:29
8M404667	L15050490-11 A TB 826-SPE	<2	1	1		05/15/15 12:58
8M404668	L15050604-03 A TB 826-LOW	<2	1	1		05/15/15 13:27
8M404669	L15050868-02 A TB 826-SPE	<2	1	1		05/15/15 13:56
8M404670	L15050482-05 A 826-SPE	<2	1	1		05/15/15 14:25
8M404671	L15050482-07 A 826-SPE	<2	1	1		05/15/15 14:54
8M404672	L15050482-09 A 826-SPE	<2	1	1		05/15/15 15:22
8M404673	L15050490-04 B 826-SPE	<2	1	1		05/15/15 15:51
8M404674	L15050490-05 A 826-SPE	<2	1	1		05/15/15 16:21
8M404675	L15050490-06 A 826-SPE	<2	1	1		05/15/15 16:50
8M404676	L15050490-07 A 826-SPE	<2	1	1		05/15/15 17:19
8M404677	L15050490-08 A 826-SPE	<2	1	1		05/15/15 17:47
8M404678	L15050490-09 A 826-SPE	<2	1	1		05/15/15 18:16
8M404679	L15050490-10 A 826-SPE	<2	1	1		05/15/15 18:44
8M404680	L15050604-01 A 826-LOW	<2	1	1		05/15/15 19:13
8M404681	L15050604-02 A 826-LOW	<2	1	1		05/15/15 19:42
8M404682	L15050868-01 A 826-SPE	<2	1	1		05/15/15 20:11
8M404683	L15050952-01 A 826-BETX	<2	1	1		05/15/15 20:40
8M404684	RINSE	NA	1	1		05/15/15 21:08
8M404685	WG523732-04 VBLK0515 BLANK STD 624	NA	2	1		05/15/15 21:38
8M404686	L15050807-03 B 624-SPE	<2	2	1		05/15/15 22:06
8M404687	CCV	NA	1	1		05/15/15 22:35
8M404688	RINSE	NA	1	1		05/15/15 23:03
8M404689	RINSE	NA	1	1		05/15/15 23:31

Approved: May 18, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS8	Dataset:	051515		
Analyst1:	TMB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	21
Method:	624	SOP:	MSV10	Rev:	13
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:	53145				

Internal Standard: STD70050 Surrogate Standard: STD70050

CCV: STD70474 LCS: STD70517 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG523732

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1	X			
File ID: 8M404658				
	Tune failed, DNR.			
3	X			
File ID: 8M404660				
	Vc was high, DNR.			
5				
File ID: 8M404662				
	Not needed. DNR.			

Approved: May 18, 2015

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Microbac Laboratories Inc.

Data Checklist

Date: 02-OCT-2014
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 63840
Analytical Workgroups: WG494714; WG494980

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
03-OCT-2014
Tiffany Bailey

Secondary Reviewer:
03-OCT-2014

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-03-2014 13:21:54

Microbac Laboratories Inc.

Data Checklist

Date: 12-MAY-2015
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 67921
Analytical Workgroups:

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
13-MAY-2015
Tiffany Bailey

Secondary Reviewer:
14-MAY-2015

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-14-2015 16:28:01

Microbac Laboratories Inc.

Data Checklist

Date: 15-MAY-2015
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 68016
Analytical Workgroups: WG523732

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
18-MAY-2015
Tiffany Bailey

Secondary Reviewer:
18-MAY-2015

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-18-2015 14:13:06

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG523732

Login Number: L15050604

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
GWP1A-050815	01	05/08/15					05/15/2015	7.4	14		05/15/15	7.4	14	
GWP1-050815	02	05/08/15					05/15/2015	7.4	14		05/15/15	7.4	14	
TRIP BLANK	03	05/08/15					05/15/2015	7.6	14		05/15/15	7.6	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4183004
Report generated 05/18/2015 16:25

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L15050604
Instrument Id: HPMS8
Workgroup (AAB#): WG523732

Method: 8260
CAL ID: HPMS8-12-MAY-15
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L15050604-01	1.00	01	98.9	99.6	94.9	101
L15050604-02	1.00	01	102	98.0	99.5	101
L15050604-03	1.00	01	99.4	98.8	99.8	101
WG523732-01	1.00	01	102	96.5	100	102
WG523732-02	1.00	01	97.3	97.4	94.0	99.1
WG523732-03	1.00	01	100	98.3	94.4	100
WG523732-04	1.00	01	102	101	93.1	102

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4183009
Report generated: 05/18/2015 16:26

METHOD BLANK SUMMARY

Login Number: L15050604
Blank File ID: 8M404663
Prep Date: 05/15/15 11:03
Analyzed Date: 05/15/15 11:03
Analyst: TMB

Work Group: WG523732
Blank Sample ID: WG523732-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG523732-02	8M404664	05/15/15 11:32	01
LCS2	WG523732-03	8M404665	05/15/15 12:01	01
TRIP BLANK	L15050604-03	8M404668	05/15/15 13:27	01
GWP1A-050815	L15050604-01	8M404680	05/15/15 19:13	01
GWP1-050815	L15050604-02	8M404681	05/15/15 19:42	01

Report Name: BLANK_SUMMARY
PDF File ID: 4184960
Report generated 05/18/2015 16:25

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L15050604 Prep Date: 05/15/15 11:03 Sample ID: WG523732-01
Instrument ID: HPMS8 Run Date: 05/15/15 11:03 Prep Method: 5030B/5030C/503
File ID: 8M404663 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG523732 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-12-MAY-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4184961
18-MAY-2015 16:25

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15050604 Prep Date: 05/15/15 11:03 Sample ID: WG523732-01
Instrument ID: HPMS8 Run Date: 05/15/15 11:03 Prep Method: 5030B/5030C/503
File ID: 8M404663 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG523732 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-12-MAY-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	96.5	85 - 115	PASS
1,2-Dichloroethane-d4	102	70 - 120	PASS
Toluene-d8	102	85 - 120	PASS
4-Bromofluorobenzene	100	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4184961
18-MAY-2015 16:25

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15050604 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG523732 Units: ug/L
QC Key: DOD4 Lot #: STD70517

Sample ID: WG523732-02 LCS File ID: 8M404664 Run Date: 05/15/2015 11:32
Sample ID: WG523732-03 LCS2 File ID: 8M404665 Run Date: 05/15/2015 12:01

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	18.8	94.2	20.0	18.9	94.5	0.341	80 - 130	30	
1,1,1-Trichloroethane	20.0	20.8	104	20.0	20.4	102	1.98	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	18.7	93.5	20.0	19.3	96.5	3.21	65 - 130	30	
1,1,2-Trichloroethane	20.0	19.1	95.4	20.0	20.4	102	6.67	75 - 125	30	
1,1-Dichloroethane	20.0	20.1	100	20.0	19.8	99.1	1.18	70 - 135	30	
1,1-Dichloroethene	20.0	19.3	96.3	20.0	18.9	94.5	1.83	70 - 130	30	
1,1-Dichloropropene	20.0	20.2	101	20.0	20.1	100	0.493	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	19.2	96.1	20.0	19.0	95.2	0.951	55 - 140	30	
1,2,3-Trichloropropane	20.0	19.9	99.7	20.0	19.5	97.5	2.23	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	18.5	92.6	20.0	18.3	91.6	1.10	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	20.4	102	20.0	20.1	100	1.59	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	20.6	103	20.0	19.8	99.1	4.05	50 - 130	30	
1,2-Dibromoethane	20.0	20.2	101	20.0	20.1	100	0.522	80 - 120	30	
1,2-Dichlorobenzene	20.0	18.2	90.8	20.0	17.6	87.9	3.19	70 - 120	30	
1,2-Dichloroethane	20.0	19.6	98.2	20.0	20.1	101	2.54	70 - 130	30	
1,2-Dichloropropane	20.0	20.8	104	20.0	19.8	99.0	4.94	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	20.4	102	20.0	20.2	101	0.964	75 - 130	30	
1,3-Dichlorobenzene	20.0	17.9	89.3	20.0	17.5	87.6	1.95	75 - 125	30	
1,3-Dichloropropane	20.0	20.1	100	20.0	20.3	101	0.944	75 - 125	30	
1,4-Dichlorobenzene	20.0	18.5	92.4	20.0	18.9	94.5	2.22	75 - 125	30	
2,2-Dichloropropane	20.0	19.9	99.5	20.0	19.9	99.5	0.0527	70 - 135	30	
2-Butanone	20.0	23.5	117	20.0	23.5	118	0.243	30 - 150	30	
2-Chlorotoluene	20.0	16.2	80.9	20.0	15.8	79.1	2.25	75 - 125	30	
2-Hexanone	20.0	20.5	102	20.0	21.0	105	2.48	55 - 130	30	
4-Chlorotoluene	20.0	20.5	103	20.0	19.7	98.6	3.98	75 - 130	30	
4-Methyl-2-pentanone	20.0	23.2	116	20.0	23.0	115	0.852	60 - 135	30	
Acetone	20.0	23.7	119	20.0	22.2	111	6.52	40 - 140	30	
Benzene	20.0	21.0	105	20.0	20.8	104	1.13	80 - 120	30	
Bromobenzene	20.0	18.5	92.7	20.0	17.6	88.0	5.19	75 - 125	30	
Bromochloromethane	20.0	19.3	96.4	20.0	19.5	97.3	0.998	65 - 130	30	
Bromodichloromethane	20.0	20.5	103	20.0	20.9	105	1.97	75 - 120	30	
Bromoform	20.0	17.1	85.3	20.0	17.7	88.4	3.61	70 - 130	30	
Bromomethane	20.0	23.7	118	20.0	24.0	120	1.18	30 - 145	30	
Carbon disulfide	20.0	20.0	100	20.0	19.4	96.9	3.19	35 - 160	30	
Carbon tetrachloride	20.0	20.3	102	20.0	19.6	97.9	3.86	65 - 140	30	
Chlorobenzene	20.0	17.9	89.4	20.0	18.6	92.9	3.92	80 - 120	30	
Chloroethane	20.0	22.5	113	20.0	22.7	114	0.839	60 - 135	30	
Chloroform	20.0	20.6	103	20.0	20.4	102	1.29	65 - 135	30	
Chloromethane	20.0	22.5	112	20.0	21.9	109	2.66	40 - 125	30	
cis-1,2-Dichloroethene	20.0	19.7	98.3	20.0	19.6	98.2	0.165	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4183005
Report generated: 05/18/2015 16:26

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15050604 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG523732 Units: ug/L
QC Key: DOD4 Lot #: STD70517

Sample ID: WG523732-02 LCS File ID: 8M404664 Run Date: 05/15/2015 11:32
Sample ID: WG523732-03 LCS2 File ID: 8M404665 Run Date: 05/15/2015 12:01

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	21.8	109	20.0	21.9	109	0.390	70 - 130	30	
Chlorodibromomethane	20.0	18.9	94.3	20.0	19.7	98.6	4.41	60 - 135	30	
Dibromomethane	20.0	20.4	102	20.0	20.4	102	0.172	75 - 125	30	
Dichlorodifluoromethane	20.0	22.9	115	20.0	22.7	114	1.07	30 - 155	30	
Ethylbenzene	20.0	18.2	90.9	20.0	18.7	93.5	2.82	75 - 125	30	
Hexachlorobutadiene	20.0	18.1	90.7	20.0	18.0	90.1	0.738	50 - 140	30	
Isopropylbenzene	20.0	18.9	94.5	20.0	19.2	95.9	1.39	75 - 125	30	
m-,p-Xylene	40.0	37.2	93.0	40.0	37.8	94.5	1.62	75 - 130	30	
Methylene chloride	20.0	20.7	104	20.0	20.7	103	0.351	55 - 140	30	
n-Butylbenzene	20.0	20.3	101	20.0	19.9	99.6	1.84	70 - 135	30	
n-Propylbenzene	20.0	18.7	93.4	20.0	18.0	89.9	3.76	70 - 130	30	
Naphthalene	20.0	20.3	102	20.0	20.1	101	1.01	55 - 140	30	
o-Xylene	20.0	17.9	89.3	20.0	17.7	88.5	0.934	80 - 120	30	
p-Isopropyltoluene	20.0	18.7	93.3	20.0	18.3	91.3	2.12	75 - 130	30	
sec-Butylbenzene	20.0	19.2	95.9	20.0	18.8	94.1	1.89	70 - 125	30	
Styrene	20.0	19.8	98.9	20.0	20.2	101	2.10	65 - 135	30	
tert-Butylbenzene	20.0	16.6	83.0	20.0	16.2	81.2	2.24	70 - 130	30	
Tetrachloroethene	20.0	18.1	90.5	20.0	18.4	91.8	1.42	45 - 150	30	
Toluene	20.0	19.9	99.5	20.0	20.1	101	1.13	75 - 120	30	
trans-1,2-Dichloroethene	20.0	20.1	101	20.0	20.0	100	0.383	60 - 140	30	
trans-1,3-Dichloropropene	20.0	18.9	94.6	20.0	19.7	98.5	4.00	55 - 140	30	
Trichloroethene	20.0	20.6	103	20.0	20.0	99.9	3.09	70 - 125	30	
Trichlorofluoromethane	20.0	20.2	101	20.0	19.7	98.3	2.56	60 - 145	30	
Vinyl chloride	20.0	23.8	119	20.0	22.7	114	4.83	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	97.3	100	70 - 120	PASS
Dibromofluoromethane	97.4	98.3	85 - 115	PASS
4-Bromofluorobenzene	94.0	94.4	75 - 120	PASS
Toluene-d8	99.1	100	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4183005
Report generated: 05/18/2015 16:26

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15050604
Instrument: HPMS8
Analyst: TMB
Workgroup: WG494714

Tune ID: WG494714-01
Run Date: 10/02/2014
Run Time: 11:58
File ID: 8M400357
Cal ID: HPMS8 - 02-OCT-14

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.7	5158	PASS
75.0	95.0	30.0	60.0	51.7	12312	PASS
95.0	95.0	100	100	100	23818	PASS
96.0	95.0	5.00	9.00	7.56	1800	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	69.7	16590	PASS
175	174	5.00	9.00	7.78	1290	PASS
176	174	95.0	101	97.3	16145	PASS
177	176	5.00	9.00	6.34	1023	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG494714-02	STD	01	10/02/2014 12:24	
WG494714-03	STD	01	10/02/2014 12:53	
WG494714-04	STD	01	10/02/2014 13:22	
WG494714-05	STD	01	10/02/2014 13:51	
WG494714-06	STD	01	10/02/2014 14:19	
WG494714-07	STD	01	10/02/2014 14:48	
WG494714-08	STD	01	10/02/2014 15:16	
WG494714-09	STD	01	10/02/2014 15:45	
WG494714-10	SSCV	01	10/02/2014 16:47	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4183007
Report generated 05/18/2015 16:26

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15050604
Instrument: HPMS8
Analyst: TMB
Workgroup: WG523161

Tune ID: WG523161-01
Run Date: 05/12/2015
Run Time: 15:55
File ID: 8M404577
Cal ID: HPMS8 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	26.3	7551	PASS
75.0	95.0	30.0	60.0	59.4	17014	PASS
95.0	95.0	100	100	100	28666	PASS
96.0	95.0	5.00	9.00	6.91	1981	PASS
173	174	0	2.00	0.480	119	PASS
174	95.0	50.0	100	86.5	24808	PASS
175	174	5.00	9.00	8.19	2031	PASS
176	174	95.0	101	95.4	23666	PASS
177	176	5.00	9.00	7.24	1714	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG523161-02	STD	01	05/12/2015 16:50	
WG523161-03	STD	01	05/12/2015 17:19	
WG523161-04	STD	01	05/12/2015 17:48	
WG523161-05	STD	01	05/12/2015 18:16	
WG523161-06	STD	01	05/12/2015 18:45	
WG523161-07	STD	01	05/12/2015 19:13	
WG523161-08	STD-CCV	01	05/12/2015 19:42	
WG523161-09	STD	01	05/12/2015 20:11	
WG523161-10	STD	01	05/12/2015 20:40	
WG523161-11	STD	01	05/12/2015 21:08	
WG523161-12	SSCV	01	05/12/2015 22:34	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4183007
Report generated 05/18/2015 16:26

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15050604
Instrument: HPMS8
Analyst: TMB
Workgroup: WG523731

Tune ID: WG523731-01
Run Date: 05/15/2015
Run Time: 09:12
File ID: 8M404659
Cal ID: HPMS8 - 12-MAY-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	25.9	6223	PASS
75.0	95.0	30.0	60.0	58.1	13940	PASS
95.0	95.0	100	100	100	24005	PASS
96.0	95.0	5.00	9.00	7.17	1722	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	71.0	17045	PASS
175	174	5.00	9.00	6.72	1146	PASS
176	174	95.0	101	97.6	16632	PASS
177	176	5.00	9.00	7.26	1207	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG523731-02	CCV	01	05/15/2015 10:05	
WG523732-01	BLANK	01	05/15/2015 11:03	
WG523732-02	LCS	01	05/15/2015 11:32	
WG523732-03	LCS2	01	05/15/2015 12:01	
L15050604-03	TRIP BLANK	01	05/15/2015 13:27	
L15050604-01	GWP1A-050815	01	05/15/2015 19:13	
L15050604-02	GWP1-050815	01	05/15/2015 19:42	
WG523732-04	BLANK2	01	05/15/2015 21:38	*

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4183007
Report generated 05/18/2015 16:26

Calibration Table Report
Method: A9FOOWTR.M
Title: A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Calibration: Fri Oct 03 12:32:07 2014
Curve: WG494714
Calibration Files

	Compound	5 8M400358.D	20 8M400359.D	50 8M400360.D	100 8M400361.D	200 8M400362.D	300 8M400363.D	400 8M400364.D	500 8M400365.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD											
T	Acetonitrile	0.015	0.015	0.015	0.016	0.017	0.016	0.015	0.016	0.016	4.015		
T	3-Chloro-1-propene	0.416	0.403	0.416	0.438	0.434	0.423	0.407	0.394	0.416	3.619		
T	2-Chloro-1,3-butadiene	0.467	0.479	0.496	0.520	0.522	0.508	0.485	0.462	0.493	4.640		
T	Ethyl Acetate	0.104	0.115	0.123	0.133	0.135	0.133	0.126	0.130	0.125	8.569		
T	Methacrylonitrile	0.062	0.065	0.072	0.077	0.080	0.080	0.077	0.081	0.074	9.397		
T	Isobutyl Alcohol			0.004	0.005	0.005	0.005	0.005	0.005	0.005	9.693		
T	1-Butanol			0.002	0.002	0.003	0.003	0.003	0.003	0.003	21.690	0.995	
T	Methyl methacrylate	0.115	0.123	0.137	0.147	0.154	0.151	0.145	0.150	0.140	10.193		
T	2-Nitropropane	0.032	0.035	0.039	0.043	0.047	0.046	0.046	0.048	0.042	14.057		
I	Chlorobenzene-d5	ISTD											
I	1,4-Dichlorobenzene-d4	ISTD											
T	Cyclohexanone			0.039	0.043	0.037	0.043	0.036	0.038	0.039	7.787		

Fri Oct 03 12:35:36 2014

Calibration Table Report
Method: 8260WT.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Calibration: Wed May 13 06:45:06 2015
Curve: WG523161
Calibration Files

	Compound	0.3 8M404579.D	0.4 8M404580.D	1 8M404581.D	2 8M404582.D	5 8M404583.D	20 8M404584.D	50 8M404585.D	100 8M404586.D	200 8M404587.D	300 8M404588.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.377	0.342	0.343	0.422	0.413	0.414	0.402	0.386	0.387	8.120		
P	Chloromethane			0.927	0.855	0.806	0.813	0.772	0.750	0.681	0.585	0.774	13.567		
C	Vinyl Chloride		0.899	0.773	0.766	0.735	0.785	0.754	0.711	0.621	0.515	0.729	14.853		
T	1,3-Butadiene				0.699	0.708	0.786	0.774	0.545	0.428	0.368	0.615	27.438		1.005
T	Bromomethane			0.093	0.095	0.114	0.140	0.167	0.187	0.213	0.220	0.154	33.064		1.000
T	Chloroethane			0.191	0.195	0.184	0.199	0.197	0.205	0.210	0.206	0.198	4.214		
T	Trichlorofluoromethane		0.485	0.424	0.436	0.436	0.458	0.456	0.468	0.474	0.482	0.458	4.832		
T	Diethyl ether			0.175	0.173	0.175	0.177	0.163	0.175		0.189	0.175	4.331		
T	Isoprene					0.291	0.328	0.345	0.349	0.355	0.368	0.339	7.996		
T	Acrolein				0.005	0.004	0.005	0.006	0.009		0.016	0.007	61.765		0.992
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.248	0.251	0.246	0.262	0.256	0.268	0.269	0.268	0.258	3.627		
T	Acetone					0.035	0.041	0.034	0.033	0.037	0.033	0.036	9.052		
C	1,1-Dichloroethene		0.463	0.416	0.442	0.398	0.434	0.442	0.451	0.456	0.452	0.439	4.731		
T	Tert-Butyl Alcohol				0.009	0.010	0.010	0.009	0.010		0.010	0.010	5.597		
T	Dimethyl Sulfide				0.247	0.222	0.255	0.260	0.261	0.274	0.274	0.256	6.964		
T	Iodomethane			0.077	0.088	0.088	0.132	0.173	0.188	0.198	0.189	0.142	36.465		0.999
T	Methyl acetate				0.120	0.134	0.127	0.123	0.123	0.133	0.131	0.127	4.336		
T	Methylene Chloride			0.232	0.249	0.239	0.243	0.249	0.256	0.267	0.268	0.250	5.171		
T	Carbon Disulfide			0.790	0.760	0.723	0.839	0.853	0.855	0.851	0.795	0.808	6.082		
T	Acrylonitrile				0.051	0.053	0.055	0.057	0.057		0.069	0.057	11.396		
T	Methyl Tert Butyl Ether			0.459	0.495	0.467	0.481	0.475	0.478	0.512	0.492	0.482	3.510		
T	trans-1,2-Dichloroethene		0.471	0.390	0.413	0.388	0.406	0.416	0.426	0.439	0.427	0.419	6.106		
T	n-Hexane					0.373	0.430	0.426	0.433	0.442	0.440	0.424	6.103		
T	Diisopropyl ether			0.925	0.939	0.970	0.966	0.910	0.930		0.865	0.929	3.857		
T	Vinyl Acetate					0.306	0.314	0.317	0.295	0.308	0.299	0.307	2.774		
P	1,1-Dichloroethane		0.473	0.490	0.518	0.483	0.515	0.517	0.524	0.527	0.509	0.506	3.812		
T	Ethyl-Tert-Butyl ether			0.710	0.717	0.754	0.757	0.708	0.736		0.721	0.729	2.801		
T	2-Butanone					0.052	0.063	0.057	0.058	0.061	0.057	0.058	6.522		
T	Propionitrile			0.018	0.017	0.019	0.019	0.017	0.019		0.020	0.019	5.338		
T	2,2-Dichloropropane		0.492	0.405	0.421	0.369	0.406	0.409	0.415	0.423	0.419	0.418	7.676		
T	cis-1,2-Dichloroethene		0.322	0.282	0.278	0.252	0.284	0.286	0.290	0.300	0.299	0.288	6.589		
C	Chloroform	0.454	0.443	0.488	0.461	0.460	0.482	0.472	0.483	0.490	0.470	0.470	3.300		
T	1-Bromopropane			0.026	0.049	0.046	0.049	0.050	0.051	0.053	0.054	0.047	18.483	0.999	
T	Bromochloromethane		0.166	0.153	0.136	0.130	0.143	0.147	0.147	0.152	0.148	0.147	7.112		
T	Tetrahydrofuran			0.039	0.038	0.039	0.041	0.037	0.038		0.042	0.039	4.342		
S	Dibromofluoromethane						0.245	0.245	0.245	0.252	0.252	0.248	1.641		
T	1,1,1-Trichloroethane		0.386	0.384	0.407	0.393	0.429	0.439	0.455	0.472	0.477	0.427	8.450		
T	Cyclohexane			0.452	0.505	0.452	0.520	0.520	0.544	0.568	0.578	0.517	9.145		
T	1,1-Dichloropropene			0.379	0.360	0.347	0.369	0.371	0.378	0.385	0.384	0.371	3.475		
T	Tert-Amyl-Methyl ether			0.517	0.511	0.548	0.549	0.516	0.540		0.564	0.535	3.832		
T	Carbon Tetrachloride		0.376	0.35	0.374	0.344	0.386	0.395	0.416	0.42	0.432	0.388	7.9058		
S	1,2-Dichloroethane-d4						0.235	0.234	0.226	0.235	0.235	0.2329	1.58451		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.36	0.324	0.315	0.334	0.334	0.33	0.338	0.354	0.345	0.3372	4.22305		
T	Benzene	1.049	0.999	1.049	1.062	0.995	1.029	1.019	1.016	0.957	0.831	1.0006	6.72085		
T	Trichloroethene		0.253	0.251	0.235	0.242	0.273	0.268	0.276	0.291	0.293	0.2647	7.84867		
T	Methylcyclohexane					0.378	0.424	0.431	0.435	0.45	0.459	0.4296	6.55883		
C	1,2-Dichloropropane		0.285	0.284	0.28	0.254	0.278	0.277	0.279	0.292	0.294	0.2803	4.12451		
T	Bromodichloromethane		0.339	0.348	0.324	0.31	0.34	0.348	0.356	0.374	0.367	0.345	5.77994		
T	1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.0011	17.6544	0.995	
T	Dibromomethane		0.147	0.106	0.134	0.123	0.133	0.13	0.132	0.141	0.142	0.132	9.16014		
T	2-Chloroethyl Vinyl Ether					0.092	0.063	0.063	0.063	0.069	0.068	0.0698	16.4535	0.997	
T	4-Methyl-2-Pentanone					0.041	0.048	0.048	0.049	0.053	0.051	0.0482	8.53113		
T	cis-1,3-Dichloropropene		0.405	0.323	0.335	0.358	0.388	0.39	0.393	0.409	0.395	0.3772	8.2344		

T	Dimethyl Disulfide					0.151	0.179	0.196	0.211	0.236	0.246	0.2031	17.4457	0.996
I	Chlorobenzene-d5	ISTD												
S	Toluene-d8						1.158	1.204	1.183	1.155	1.132	1.1666	2.3719	
C	Toluene		1.559	1.545	1.585	1.513	1.564	1.565	1.539	1.342	1.133	1.4829	10.1102	
T	Ethyl Methacrylate			0.194	0.236	0.242	0.279	0.287	0.277	0.297	0.299	0.2638	13.8744	
T	Paraldehyde											0	0	
T	trans-1,3-Dichloropropene			0.407	0.395	0.446	0.448	0.46	0.457	0.473	0.469	0.4445	6.38368	
T	1,1,2-Trichloroethane		0.229	0.224	0.213	0.22	0.236	0.233	0.233	0.239	0.246	0.2304	4.41199	
T	2-Hexanone					0.054	0.066	0.067	0.062	0.068	0.065	0.0634	8.02299	
T	1,3-Dichloropropane		0.375	0.385	0.434	0.402	0.411	0.407	0.402	0.41	0.407	0.4039	4.14111	
T	Tetrachloroethene		0.262	0.324	0.305	0.265	0.304	0.316	0.331	0.343	0.365	0.313	10.7766	
T	Dibromochloromethane		0.277	0.288	0.286	0.274	0.3	0.313	0.327	0.342	0.352	0.3066	9.30077	
T	1,2-Dibromoethane		0.197	0.183	0.211	0.217	0.227	0.23	0.23	0.242	0.243	0.2199	9.12529	
T	1-Chlorohexane		0.532	0.476	0.473	0.473	0.511	0.512	0.521	0.527	0.54	0.5072	5.23688	
P	Chlorobenzene		0.957	0.977	1.015	0.968	0.99	1.028	1.06	1.055	0.957	1.0009	4.02311	
T	1,1,1,2-Tetrachloroethane		0.34	0.306	0.325	0.323	0.343	0.366	0.404	0.465		0.3593	14.5906	
C	Ethylbenzene		0.535	0.556	0.529	0.546	0.55	0.595	0.64	0.711	0.733	0.5995	12.9604	
T	m-,p-Xylene		0.721	0.649	0.68	0.664	0.681	0.723	0.743	0.676	0.566	0.678	7.68979	
T	o-Xylene			0.602	0.621	0.637	0.667	0.678	0.701	0.723	0.73	0.67	7.0386	
T	Styrene		0.969	1.046	1.021	1.015	1.106	1.145	1.15	1.104	0.996	1.0613	6.27884	
P	Bromoform			0.106	0.138	0.145	0.163	0.171	0.18	0.199	0.209	0.1638	20.5568	0.995
T	Isopropylbenzene		1.881	1.631	1.677	1.671	1.736	1.756	1.725	1.46	1.212	1.6386	11.9341	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.491	0.493	0.49	0.461	0.463	0.464	0.463	0.483	0.467	0.475	2.92575	
S	p-Bromofluorobenzene						0.839	0.85	0.836	0.857	0.87	0.8505	1.6345	
T	1,2,3-Trichloropropane			0.091	0.152	0.125	0.133	0.127	0.129	0.138	0.134	0.1287	13.5025	
T	trans-1,4-Dichloro-2-Butene			0.152	0.135	0.147	0.156	0.169	0.154	0.186	0.163	0.1577	9.69396	
T	n-Propylbenzene		4.239	3.867	3.923	3.631	3.953	3.946	3.76	2.942		3.7826	10.1008	
T	Bromobenzene	0.878	0.687	0.721	0.666	0.693	0.747	0.743	0.773	0.803	0.8	0.7512	8.60544	
T	1,3,5-Trimethylbenzene		2.655	2.667	2.65	2.513	2.744	2.797	2.805	2.461	2.001	2.5881	9.61996	
T	2-Chlorotoluene		3.171	2.749	2.18	2.328	2.61	2.64	2.387	2.358		2.5528	12.2648	
T	4-Chlorotoluene		2.141	1.856	2.314	2.269	2.064	2.119	2.321	1.851	1.442	2.0419	13.9758	
T	a-Methylstyrene					1.27	1.457	1.528	1.558	1.57	1.46	1.4739	7.51384	
T	tert-Butylbenzene			0.589	0.508	0.516	0.551	0.566	0.587	0.626	0.661	0.5754	9.07804	
T	1,2,4-Trimethylbenzene		2.906	2.617	2.745	2.633	2.823	2.876	2.845	2.485	2.018	2.6608	10.4646	
T	sec-Butylbenzene			3.477	3.386	3.37	3.532	3.531	3.45	2.821	2.248	3.2269	14.184	
T	p-Isopropyltoluene			2.794	2.847	2.733	2.986	3	2.97	2.527	2.031	2.7358	11.9085	
T	1,3-Dichlorobenzene		1.602	1.477	1.544	1.384	1.538	1.567	1.605	1.574	1.411	1.5224	5.31773	
T	1,4-Dichlorobenzene	1.844	1.572	1.516	1.485	1.469	1.51	1.553	1.578	1.55	1.378	1.5456	7.79548	
T	n-Butylbenzene			2.729	2.794	2.736	2.906	2.923	2.888	2.449	1.956	2.6725	12.2433	
T	1,2-Dichlorobenzene	1.364	1.197	1.323	1.355	1.229	1.332	1.367	1.376	1.389	1.279	1.3211	4.95077	
T	1,2-Dibromo-3-Chloropropane				0.052	0.078	0.076	0.077	0.078	0.086	0.083	0.0758	14.5402	
T	1,2,4-Trichlorobenzene		1.028	0.83	0.936	0.907	0.982	1.025	1.059	1.127	1.064	0.9952	9.18602	
T	Hexachlorobutadiene		0.52	0.429	0.459	0.493	0.494	0.508	0.56	0.595	0.621	0.5199	11.9722	
T	Naphthalene		1.182	1.213	1.397	1.288	1.379	1.398	1.428	1.446	1.282	1.3347	7.21249	
T	1,2,3-Trichlorobenzene	0.901	0.732	0.762	0.836	0.778	0.829	0.859	0.89	0.947	0.9	0.8433	8.22754	

Wed May 13 07:00:21 2015

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15050604 Run Date: 05/12/2015 Sample ID: WG523161-12
Instrument ID: HPMS8 Run Time: 22:34 Method: 8260B
File ID: 8M404591 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG523161 Cal ID: HPMS8 - 12-MAY-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	49.2	ug/L	0.463	1.60	20	
1,1-Dichloroethene	CCC	50.0	46.8	ug/L	0.411	6.50	20	
1,2-Dichloropropane	CCC	50.0	48.6	ug/L	0.273	2.80	20	
Ethylbenzene	CCC	50.0	48.7	ug/L	0.584	2.60	20	
Toluene	CCC	50.0	50.9	ug/L	1.51	1.80	20	
Vinyl Chloride	CCC	50.0	48.0	ug/L	0.700	4.00	20	
Bromoform	SPCC	50.0	45.3	ug/L	0.177	9.30	20	
Chlorobenzene	SPCC	50.0	47.2	ug/L	0.944	5.70	20	
Chloromethane	SPCC	50.0	50.1	ug/L	0.775	0.200	20	
1,1-Dichloroethane	SPCC	50.0	48.8	ug/L	0.494	2.40	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	47.8	ug/L	0.454	4.50	20	
Acetone		50.0	56.9	ug/L	0.0406	13.7	20	
Benzene		50.0	50.3	ug/L	1.01	0.600	20	
Bromobenzene		50.0	48.1	ug/L	0.722	3.90	20	
Bromochloromethane		50.0	48.1	ug/L	0.141	3.90	20	
Bromodichloromethane		50.0	48.6	ug/L	0.335	2.90	20	
Bromomethane		50.0	49.4	ug/L	0.171	1.20	20	
2-Butanone		50.0	53.3	ug/L	0.0620	6.50	20	
n-Butylbenzene		50.0	51.8	ug/L	2.77	3.60	20	
sec-Butylbenzene		50.0	48.9	ug/L	3.16	2.20	20	
tert-Butylbenzene		50.0	45.4	ug/L	0.522	9.20	20	
Carbon Disulfide		50.0	47.0	ug/L	0.761	5.90	20	
Carbon Tetrachloride		50.0	49.2	ug/L	0.382	1.60	20	
Dibromochloromethane		50.0	49.1	ug/L	0.301	1.80	20	
Chloroethane		50.0	55.5	ug/L	0.220	10.9	20	
2-Chlorotoluene		50.0	40.9	ug/L	2.09	18.2	20	
4-Chlorotoluene		50.0	53.3	ug/L	2.18	6.70	20	
1,2-Dibromo-3-Chloropropane		50.0	52.6	ug/L	0.0797	5.20	20	
1,2-Dibromoethane		50.0	50.9	ug/L	0.224	1.70	20	
Dibromomethane		50.0	48.0	ug/L	0.127	3.90	20	
1,2-Dichlorobenzene		50.0	46.2	ug/L	1.22	7.50	20	
1,3-Dichlorobenzene		50.0	45.6	ug/L	1.39	8.80	20	
1,4-Dichlorobenzene		50.0	48.7	ug/L	1.51	2.60	20	
Dichlorodifluoromethane		50.0	56.2	ug/L	0.435	12.4	20	
1,2-Dichloroethane		50.0	48.7	ug/L	0.328	2.70	20	
cis-1,2-Dichloroethene		50.0	48.5	ug/L	0.280	2.90	20	
trans-1,2-Dichloroethene		50.0	49.8	ug/L	0.418	0.500	20	
1,3-Dichloropropane		50.0	50.8	ug/L	0.411	1.60	20	
2,2-Dichloropropane		50.0	45.8	ug/L	0.383	8.50	20	
cis-1,3-Dichloropropene		50.0	52.5	ug/L	0.396	5.00	20	
trans-1,3-Dichloropropene		50.0	49.2	ug/L	0.437	1.70	20	
1,1-Dichloropropene		50.0	47.8	ug/L	0.355	4.30	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4183006
Report generated 05/18/2015 16:26

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15050604 Run Date: 05/12/2015 Sample ID: WG523161-12
Instrument ID: HPMS8 Run Time: 22:34 Method: 8260B
File ID: 8M404591 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG523161 Cal ID: HPMS8 - 12-MAY-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	54.8	ug/L	0.0695	9.50	20	
Hexachlorobutadiene		50.0	50.4	ug/L	0.524	0.800	20	
Isopropylbenzene		50.0	47.9	ug/L	1.57	4.20	20	
p-Isopropyltoluene		50.0	48.0	ug/L	2.63	4.00	20	
4-Methyl-2-Pentanone		50.0	54.4	ug/L	0.0524	8.80	20	
Methylene Chloride		50.0	50.3	ug/L	0.252	0.600	20	
Naphthalene		50.0	51.5	ug/L	1.37	3.00	20	
n-Propylbenzene		50.0	46.3	ug/L	3.51	7.30	20	
Styrene		50.0	52.5	ug/L	1.11	5.00	20	
1,1,1,2-Tetrachloroethane		50.0	50.2	ug/L	0.361	0.400	20	
Tetrachloroethene		50.0	49.0	ug/L	0.307	2.00	20	
1,2,3-Trichlorobenzene		50.0	49.7	ug/L	0.838	0.600	20	
1,2,4-Trichlorobenzene		50.0	49.7	ug/L	0.989	0.600	20	
1,1,1-Trichloroethane		50.0	50.3	ug/L	0.430	0.600	20	
1,1,2-Trichloroethane		50.0	49.0	ug/L	0.226	2.00	20	
Trichloroethene		50.0	49.9	ug/L	0.264	0.100	20	
Trichlorofluoromethane		50.0	48.8	ug/L	0.447	2.50	20	
1,2,3-Trichloropropane		50.0	51.6	ug/L	0.133	3.20	20	
1,2,4-Trimethylbenzene		50.0	52.5	ug/L	2.79	5.00	20	
1,3,5-Trimethylbenzene		50.0	52.9	ug/L	2.74	5.70	20	
o-Xylene		50.0	46.8	ug/L	0.627	6.40	20	
m-,p-Xylene		100	99.5	ug/L	0.674	0.500	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4183006
Report generated 05/18/2015 16:26

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15050604 Run Date: 05/15/2015 Sample ID: WG523731-02
Instrument ID: HPMS8 Run Time: 10:05 Method: 8260B
File ID: 8M404661 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG523732 Cal ID: HPMS8 - 12-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	52.3	ug/L	0.492	4.63	20	
1,1-Dichloroethene	CCC	50.0	52.1	ug/L	0.457	4.11	20	
1,2-Dichloropropane	CCC	50.0	50.4	ug/L	0.282	0.766	20	
Ethylbenzene	CCC	50.0	48.5	ug/L	0.582	2.95	20	
Toluene	CCC	50.0	50.2	ug/L	1.49	0.469	20	
Vinyl Chloride	CCC	50.0	55.3	ug/L	0.806	10.6	20	
Bromoform	SPCC	50.0	47.0	ug/L	0.183	5.99	20	
Chlorobenzene	SPCC	50.0	49.4	ug/L	0.990	1.13	20	
Chloromethane	SPCC	50.0	53.6	ug/L	0.829	7.11	20	
1,1-Dichloroethane	SPCC	50.0	52.8	ug/L	0.535	5.58	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	50.8	ug/L	0.483	1.58	20	
Xylenes		150	150	ug/L	0.673	0.0120	20	
Acetone		50.0	51.2	ug/L	0.0366	2.38	20	
Benzene		50.0	52.9	ug/L	1.06	5.84	20	
Bromobenzene		50.0	47.1	ug/L	0.708	5.73	20	
Bromochloromethane		50.0	50.4	ug/L	0.148	0.858	20	
Bromodichloromethane		50.0	54.0	ug/L	0.373	7.95	20	
Bromomethane		50.0	58.2	ug/L	0.204	16.3	20	
2-Butanone		50.0	53.6	ug/L	0.0624	7.23	20	
n-Butylbenzene		50.0	50.6	ug/L	2.70	1.17	20	
sec-Butylbenzene		50.0	50.3	ug/L	3.24	0.521	20	
tert-Butylbenzene		50.0	44.9	ug/L	0.516	10.3	20	
Carbon Disulfide		50.0	55.1	ug/L	0.891	10.2	20	
Carbon Tetrachloride		50.0	54.3	ug/L	0.422	8.64	20	
Dibromochloromethane		50.0	52.2	ug/L	0.320	4.35	20	
Chloroethane		50.0	52.5	ug/L	0.208	4.96	20	
2-Chlorotoluene		50.0	42.4	ug/L	2.16	15.2	20	
4-Chlorotoluene		50.0	54.1	ug/L	2.21	8.11	20	
1,2-Dibromo-3-Chloropropane		50.0	52.0	ug/L	0.0788	3.91	20	
1,2-Dibromoethane		50.0	51.7	ug/L	0.227	3.35	20	
Dibromomethane		50.0	52.8	ug/L	0.139	5.65	20	
1,2-Dichlorobenzene		50.0	49.6	ug/L	1.31	0.847	20	
1,3-Dichlorobenzene		50.0	48.3	ug/L	1.47	3.49	20	
1,4-Dichlorobenzene		50.0	47.9	ug/L	1.48	4.18	20	
Dichlorodifluoromethane		50.0	55.2	ug/L	0.428	10.4	20	
1,2-Dichloroethane		50.0	51.2	ug/L	0.345	2.34	20	
cis-1,2-Dichloroethene		50.0	50.4	ug/L	0.291	0.886	20	
trans-1,2-Dichloroethene		50.0	50.8	ug/L	0.426	1.50	20	
1,3-Dichloropropane		50.0	48.9	ug/L	0.395	2.16	20	
2,2-Dichloropropane		50.0	52.1	ug/L	0.435	4.22	20	
cis-1,3-Dichloropropene		50.0	53.9	ug/L	0.406	7.75	20	
trans-1,3-Dichloropropene		50.0	52.0	ug/L	0.463	4.08	20	

CCV - Modified 03/05/2008
PDF File ID: 4183008
Report generated 05/18/2015 16:26

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15050604 Run Date: 05/15/2015 Sample ID: WG523731-02
Instrument ID: HPMS8 Run Time: 10:05 Method: 8260B
File ID: 8M404661 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG523732 Cal ID: HPMS8 - 12-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	51.6	ug/L	0.384	3.30	20	
2-Hexanone		50.0	50.8	ug/L	0.0645	1.60	20	
Hexachlorobutadiene		50.0	45.0	ug/L	0.468	9.99	20	
Isopropylbenzene		50.0	51.0	ug/L	1.67	1.94	20	
p-Isopropyltoluene		50.0	50.3	ug/L	2.75	0.656	20	
4-Methyl-2-Pentanone		50.0	54.6	ug/L	0.0526	9.26	20	
Methylene Chloride		50.0	51.4	ug/L	0.258	2.89	20	
Naphthalene		50.0	52.1	ug/L	1.39	4.24	20	
n-Propylbenzene		50.0	48.5	ug/L	3.67	3.02	20	
Styrene		50.0	51.6	ug/L	1.10	3.18	20	
1,1,1,2-Tetrachloroethane		50.0	50.7	ug/L	0.364	1.36	20	
Tetrachloroethene		50.0	47.8	ug/L	0.299	4.46	20	
1,2,3-Trichlorobenzene		50.0	49.2	ug/L	0.830	1.64	20	
1,2,4-Trichlorobenzene		50.0	47.9	ug/L	0.954	4.11	20	
1,1,1-Trichloroethane		50.0	53.3	ug/L	0.455	6.66	20	
1,1,2-Trichloroethane		50.0	49.4	ug/L	0.228	1.10	20	
Trichloroethene		50.0	51.5	ug/L	0.273	2.96	20	
Trichlorofluoromethane		50.0	52.5	ug/L	0.480	4.96	20	
1,2,3-Trichloropropane		50.0	50.4	ug/L	0.130	0.753	20	
1,2,4-Trimethylbenzene		50.0	49.7	ug/L	2.65	0.530	20	
1,3,5-Trimethylbenzene		50.0	50.0	ug/L	2.59	0.0292	20	
o-Xylene		50.0	49.6	ug/L	0.665	0.821	20	
m-,p-Xylene		100	100	ug/L	0.681	0.392	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4183008
Report generated 05/18/2015 16:26

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15050604
Instrument ID: HPMS8
Workgroup (AAB#): WG523732

ICAL CCV Number: WG523161-08
CAL ID: HPMS8-12-MAY-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG523161-08	NA	NA	300564	545682	779258
Upper Limit	NA	NA	601128	1091364	1558516
Lower Limit	NA	NA	150282	272841	389629
L15050604-01	1.00	01	257579	476417	637984
L15050604-02	1.00	01	249291	465547	609987
L15050604-03	1.00	01	300837	571044	755314
WG523732-01	1.00	01	313345	600745	804677
WG523732-02	1.00	01	352141	635997	840587
WG523732-03	1.00	01	368804	647952	871063

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4184962
Report generated 05/18/2015 16:26

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15050604
Instrument ID: HPMS8
Workgroup (AAB#): WG523732

ICAL CCV Number: WG523161-08
CAL ID: HPMS8-12-MAY-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG523161-08	NA	NA	17.65	14.62	10.75
Upper Limit	NA	NA	18.15	15.12	11.25
Lower Limit	NA	NA	17.15	14.12	10.25
L15050604-01	1.00	01	17.64	14.62	10.75
L15050604-02	1.00	01	17.64	14.62	10.75
L15050604-03	1.00	01	17.64	14.62	10.75
WG523732-01	1.00	01	17.64	14.62	10.75
WG523732-02	1.00	01	17.64	14.62	10.75
WG523732-03	1.00	01	17.64	14.62	10.75

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4184963
Report generated: 05/18/2015 16:26

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051515\8M404680.D Vial: 22
Acq On : 15 May 2015 19:13 Operator: TMB
Sample : L15050604-01 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 18 08:44:43 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	637984	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	476417	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	257579	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	157438	24.8970 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.60%		
43) 1,2-Dichloroethane-d4	10.35	65	147002	24.7369 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.96%		
58) Toluene-d8	12.73	98	558835	25.1366 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.56%		
80) p-Bromofluorobenzene	16.12	95	207846	23.7177 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.88%		

Target Compounds					Qvalue
3) Chloromethane	3.65	50	4609	0.2335 ug/L	99
13) Acetone	6.30	43	2327	2.5540 ug/L #	67
15) Tert-Butyl Alcohol	6.64	59	200	0.8158 ug/L #	61

(#) = qualifier out of range (m) = manual integration
8M404680.D 8260WT.M Mon May 18 08:44:43 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051515\8M404680.D Vial: 22
Acq On : 15 May 2015 19:13 Operator: TMB
Sample : L15050604-01 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 18 8:44 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

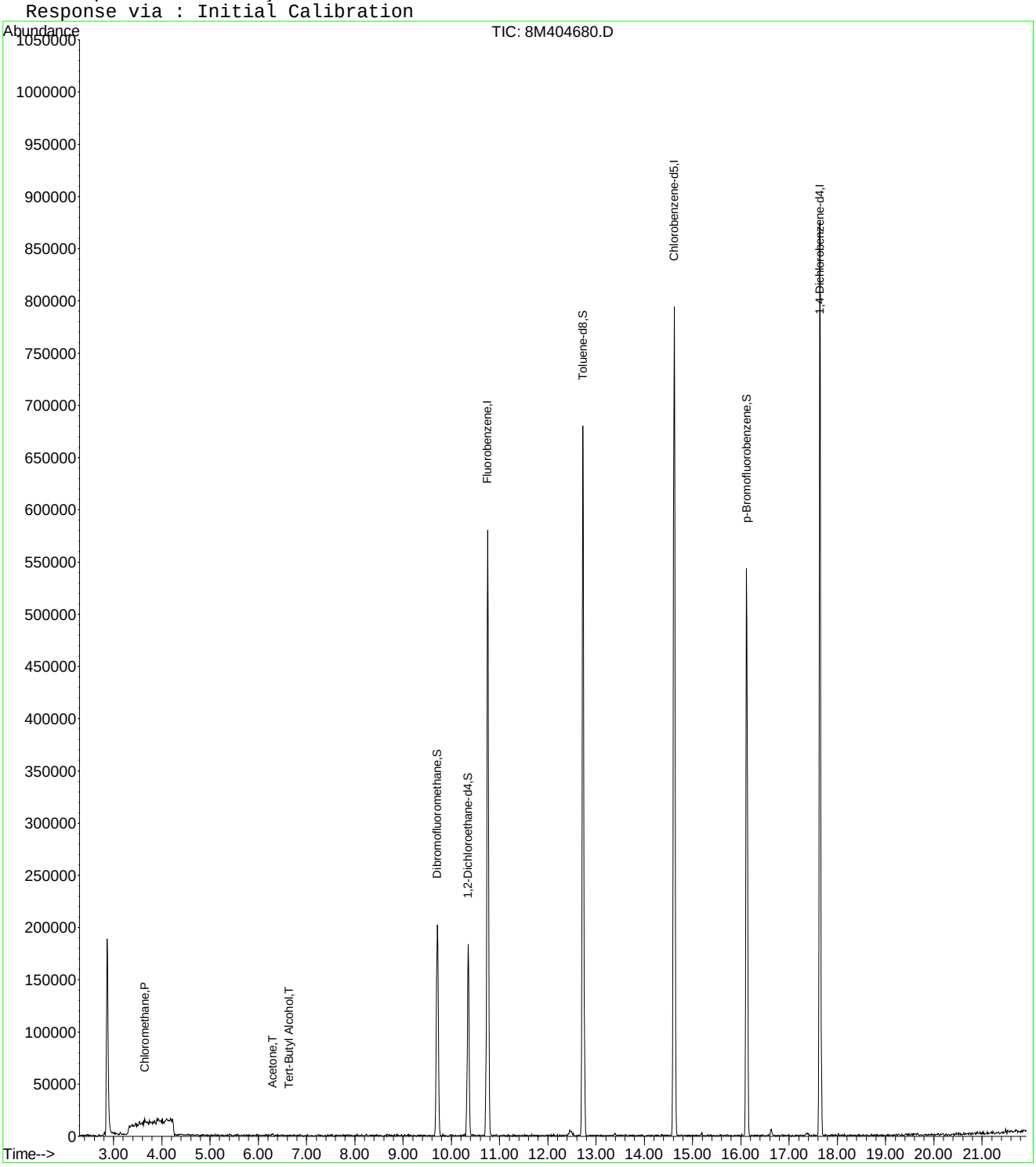

8M404680.D 8260WT.M Mon May 18 08:44:43 2015 Page 2

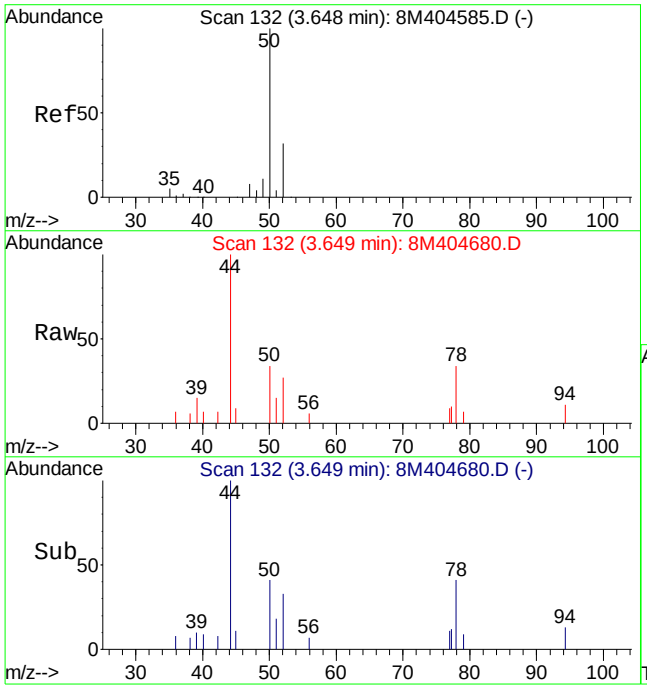

#3
Chloromethane
Concen: 0.23 ug/L
RT: 3.65 min Scan# 132
Delta R.T. -0.00 min
Lab File: 8M404680.D
Acq: 15 May 2015 19:13

Tgt Ion: 50 Resp: 4609

Ion	Ratio	Lower	Upper
50	100		
52	35.5	20.9	48.7

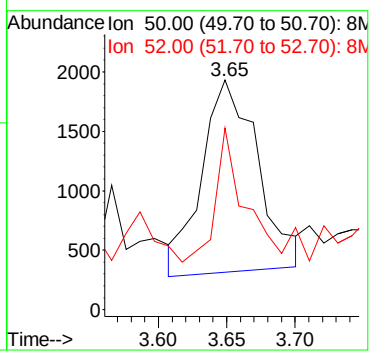

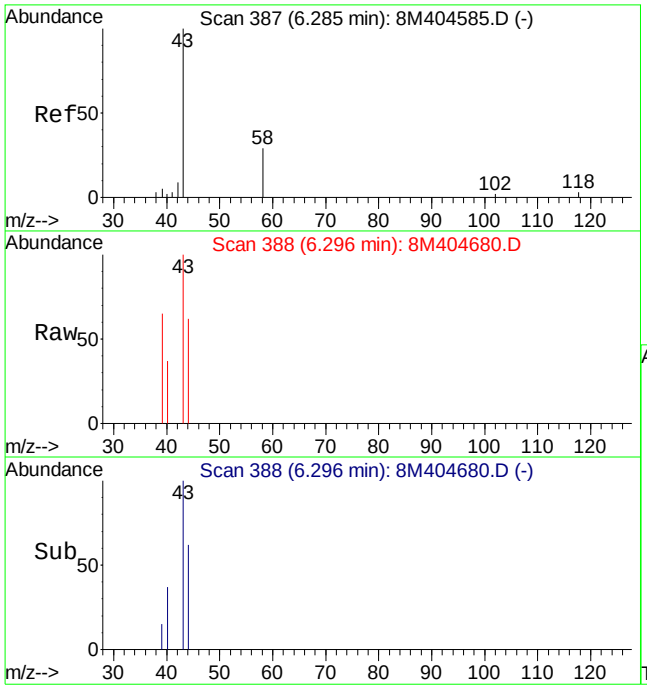

#13
Acetone
Concen: 2.55 ug/L
RT: 6.30 min Scan# 388
Delta R.T. 0.01 min
Lab File: 8M404680.D
Acq: 15 May 2015 19:13

Tgt Ion: 43 Resp: 2327

Ion	Ratio	Lower	Upper
43	100		
58	18.4	23.2	54.0#

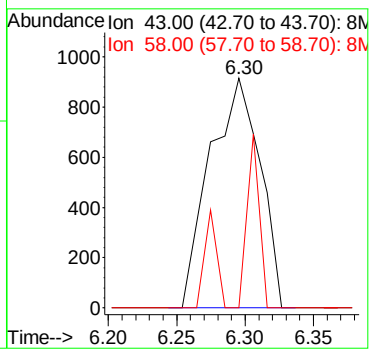

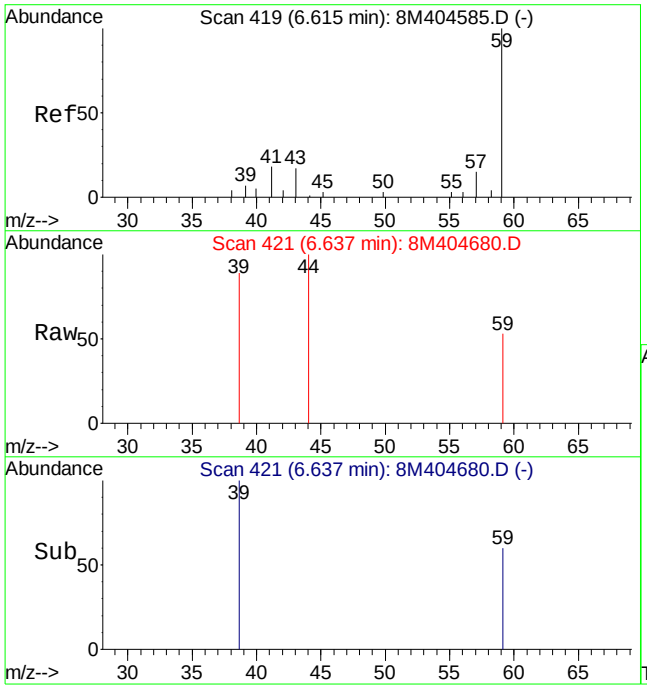

#15
Tert-Butyl Alcohol
Concen: 0.82 ug/L
RT: 6.64 min Scan# 421
Delta R.T. 0.01 min
Lab File: 8M404680.D
Acq: 15 May 2015 19:13

Tgt Ion: 59 Resp: 200

Ion	Ratio	Lower	Upper
59	100		
41	0.0	12.8	29.8#
57	0.0	6.1	14.3#

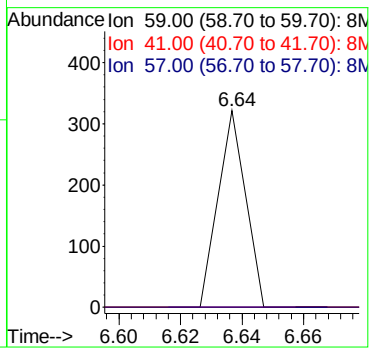

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051515\8M404681.D Vial: 23
Acq On : 15 May 2015 19:42 Operator: TMB
Sample : L15050604-02 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 18 08:44:44 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	609987	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	465547	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	249291	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	148194	24.5108 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.04%		
43) 1,2-Dichloroethane-d4	10.35	65	145568	25.6199 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.48%		
58) Toluene-d8	12.73	98	550492	25.3395 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.36%		
80) p-Bromofluorobenzene	16.12	95	211062	24.8854 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.56%		

Target Compounds					Qvalue
3) Chloromethane	3.66	50	5684	0.3012 ug/L #	58
13) Acetone	6.28	43	4509	5.1760 ug/L	82
36) Tetrahydrofuran	9.60	42	225	0.2353 ug/L #	32
56) Dimethyl Disulfide	12.74	79	208	3.0601 ug/L #	1
59) Toluene	12.83	91	10755	0.3895 ug/L	75

(#) = qualifier out of range (m) = manual integration
8M404681.D 8260WT.M Mon May 18 08:44:45 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051515\8M404681.D Vial: 23
Acq On : 15 May 2015 19:42 Operator: TMB
Sample : L15050604-02 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 18 8:44 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

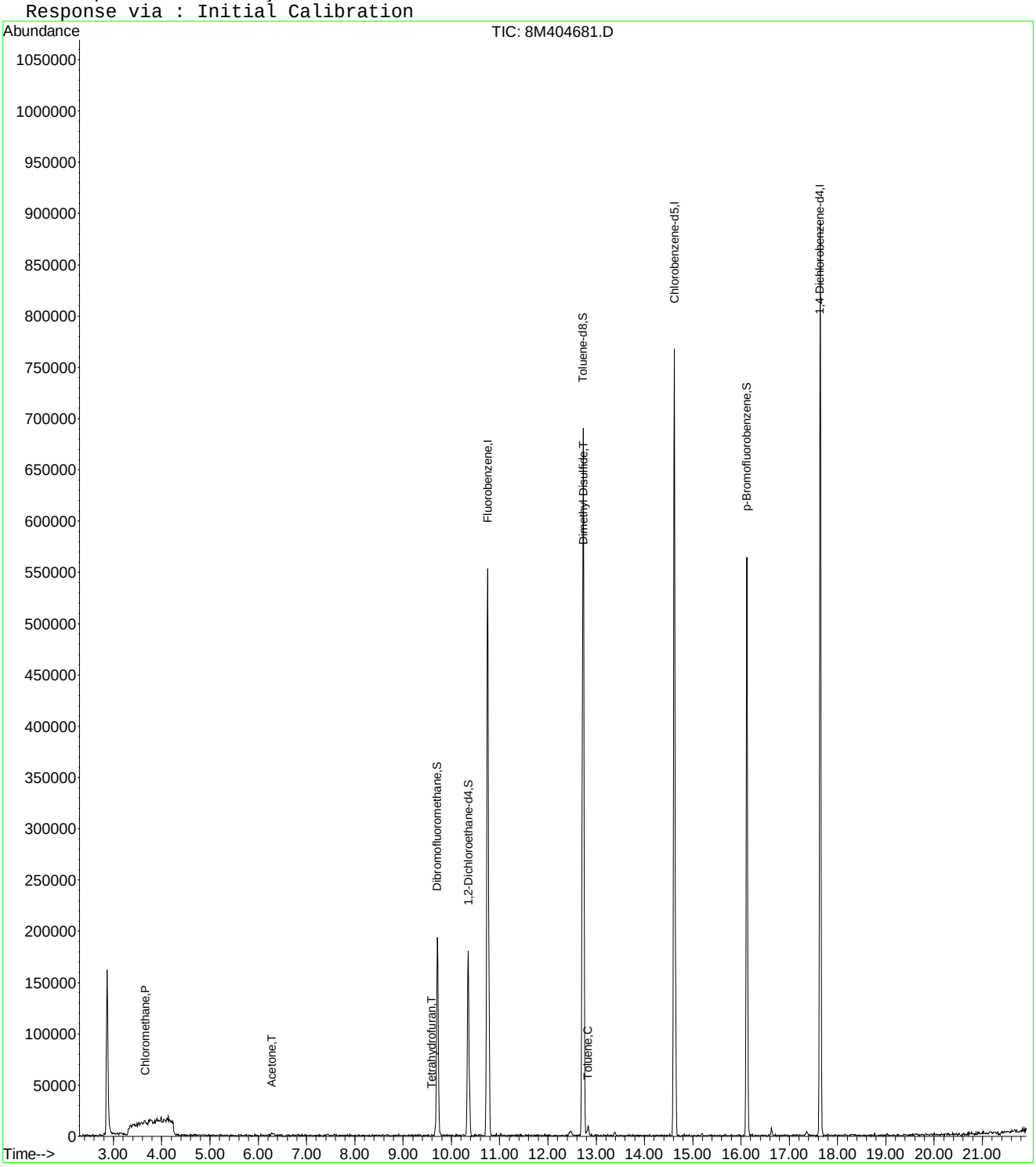

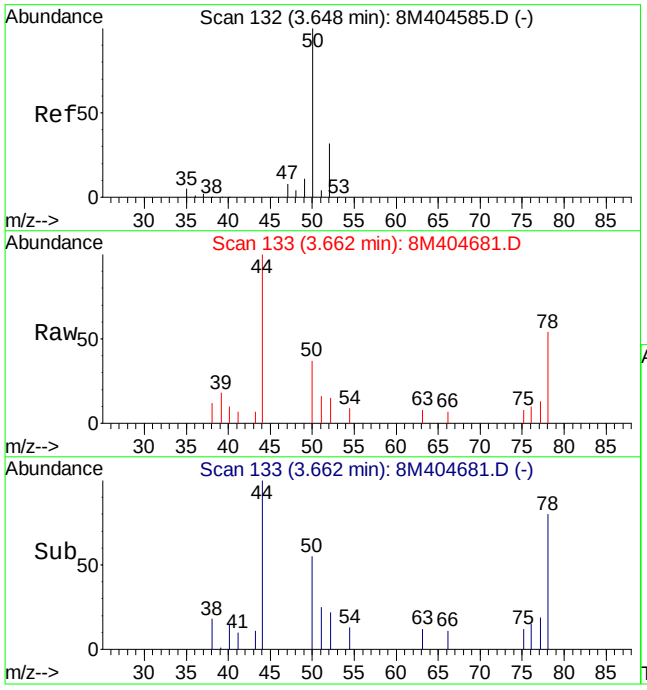

#3
Chloromethane
Concen: 0.30 ug/L
RT: 3.66 min Scan# 133
Delta R.T. 0.01 min
Lab File: 8M404681.D
Acq: 15 May 2015 19:42

Tgt Ion: 50 Resp: 5684

Ion	Ratio	Lower	Upper
50	100		
52	59.0	20.9	48.7#

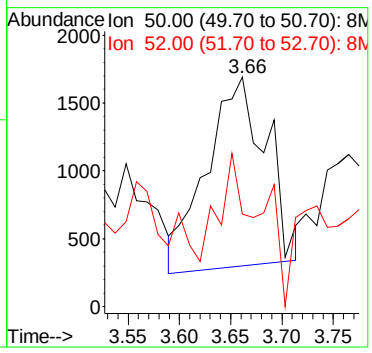

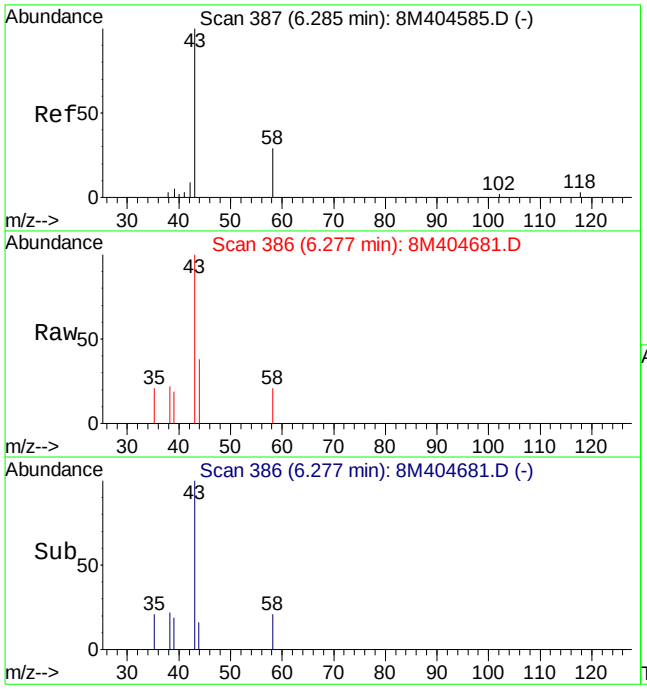

#13
Acetone
Concen: 5.18 ug/L
RT: 6.28 min Scan# 386
Delta R.T. -0.01 min
Lab File: 8M404681.D
Acq: 15 May 2015 19:42

Tgt Ion: 43 Resp: 4509

Ion	Ratio	Lower	Upper
43	100		
58	27.8	23.2	54.0

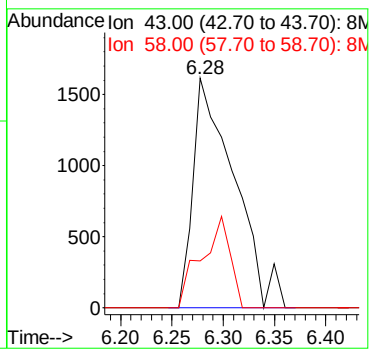

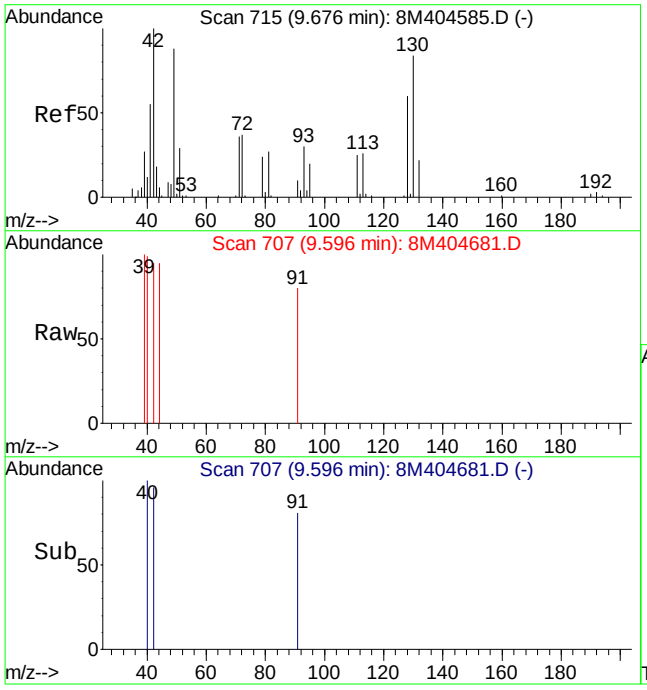

#36
Tetrahydrofuran
Concen: 0.24 ug/L
RT: 9.60 min Scan# 707
Delta R.T. -0.08 min
Lab File: 8M404681.D
Acq: 15 May 2015 19:42

Tgt Ion: 42 Resp: 225

Ion	Ratio	Lower	Upper
42	100		
72	0.0	27.5	64.3#
71	0.0	25.4	59.2#

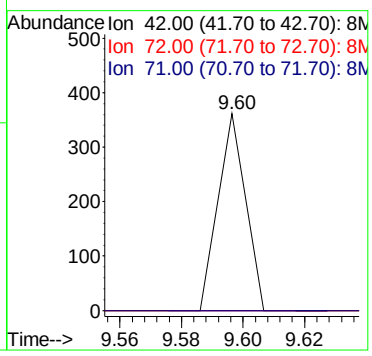

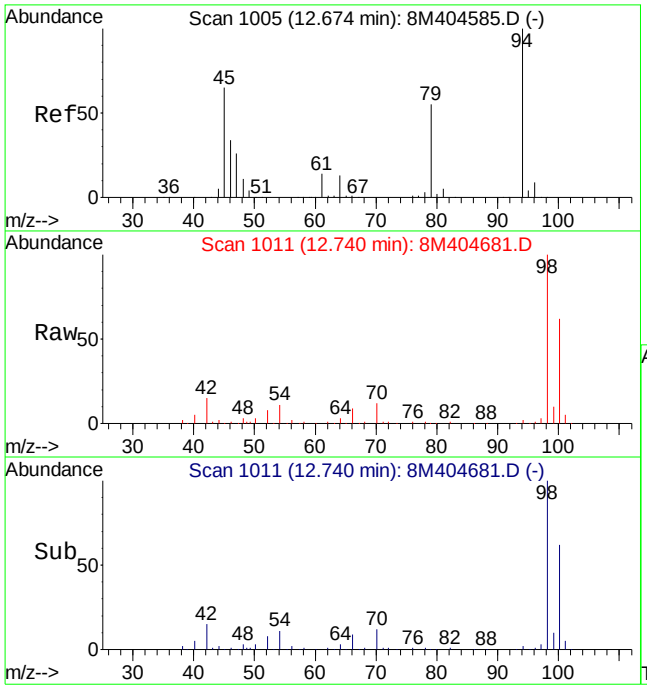

#56
Dimethyl Disulfide
Concen: 3.06 ug/L
RT: 12.74 min Scan# 1011
Delta R.T. 0.07 min
Lab File: 8M404681.D
Acq: 15 May 2015 19:42

Tgt Ion: 79 Resp: 208

Ion	Ratio	Lower	Upper
79	100		
94	7253.4	110.5	257.9#

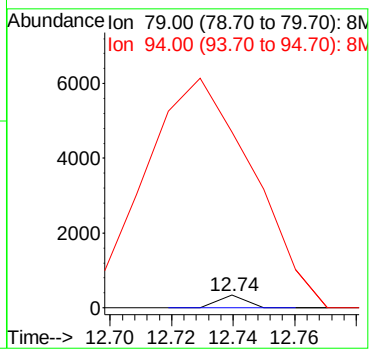

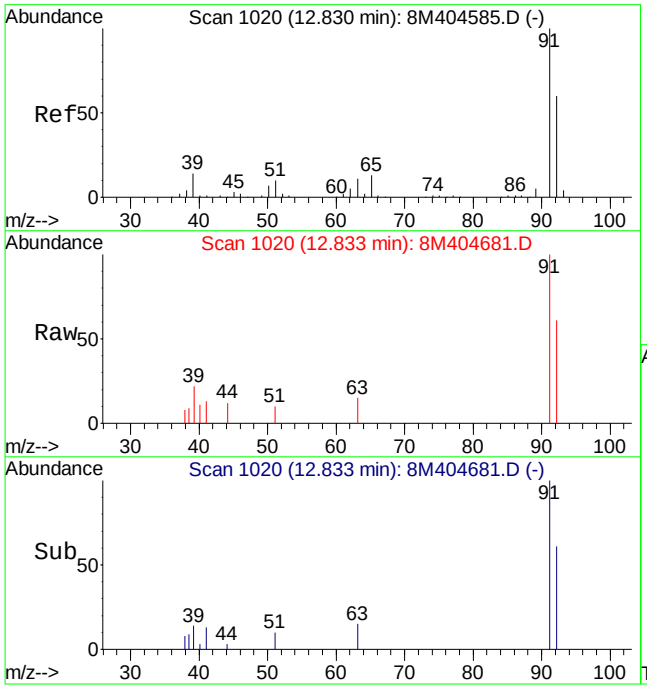

#59
Toluene
Concen: 0.39 ug/L
RT: 12.83 min Scan# 1020
Delta R.T. 0.00 min
Lab File: 8M404681.D
Acq: 15 May 2015 19:42

Tgt Ion: 91 Resp: 10755

Ion	Ratio	Lower	Upper
91	100		
92	51.8	43.7	102.1

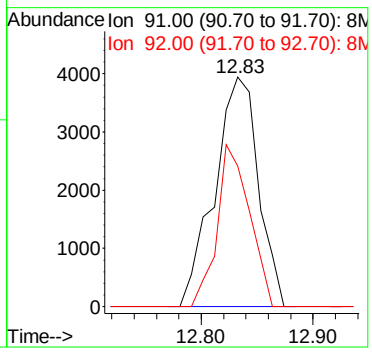

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051515\8M404668.D Vial: 10
Acq On : 15 May 2015 13:27 Operator: TMB
Sample : L15050604-03 A TB 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 18 08:44:28 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	755314	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	571044	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	300837	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	184973	24.7075 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.84%		
43) 1,2-Dichloroethane-d4	10.35	65	174822	24.8485 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.40%		
58) Toluene-d8	12.73	98	672701	25.2443 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.96%		
80) p-Bromofluorobenzene	16.12	95	255365	24.9500 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.80%		

Target Compounds					Qvalue
36) Tetrahydrofuran	9.68	42	636	0.5373 ug/L #	32
81) 1,2,3-Trichloropropane	16.13	110	202	0.1304 ug/L #	1

(#) = qualifier out of range (m) = manual integration
8M404668.D 8260WT.M Mon May 18 08:44:29 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051515\8M404668.D Vial: 10
Acq On : 15 May 2015 13:27 Operator: TMB
Sample : L15050604-03 A TB 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 18 8:44 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

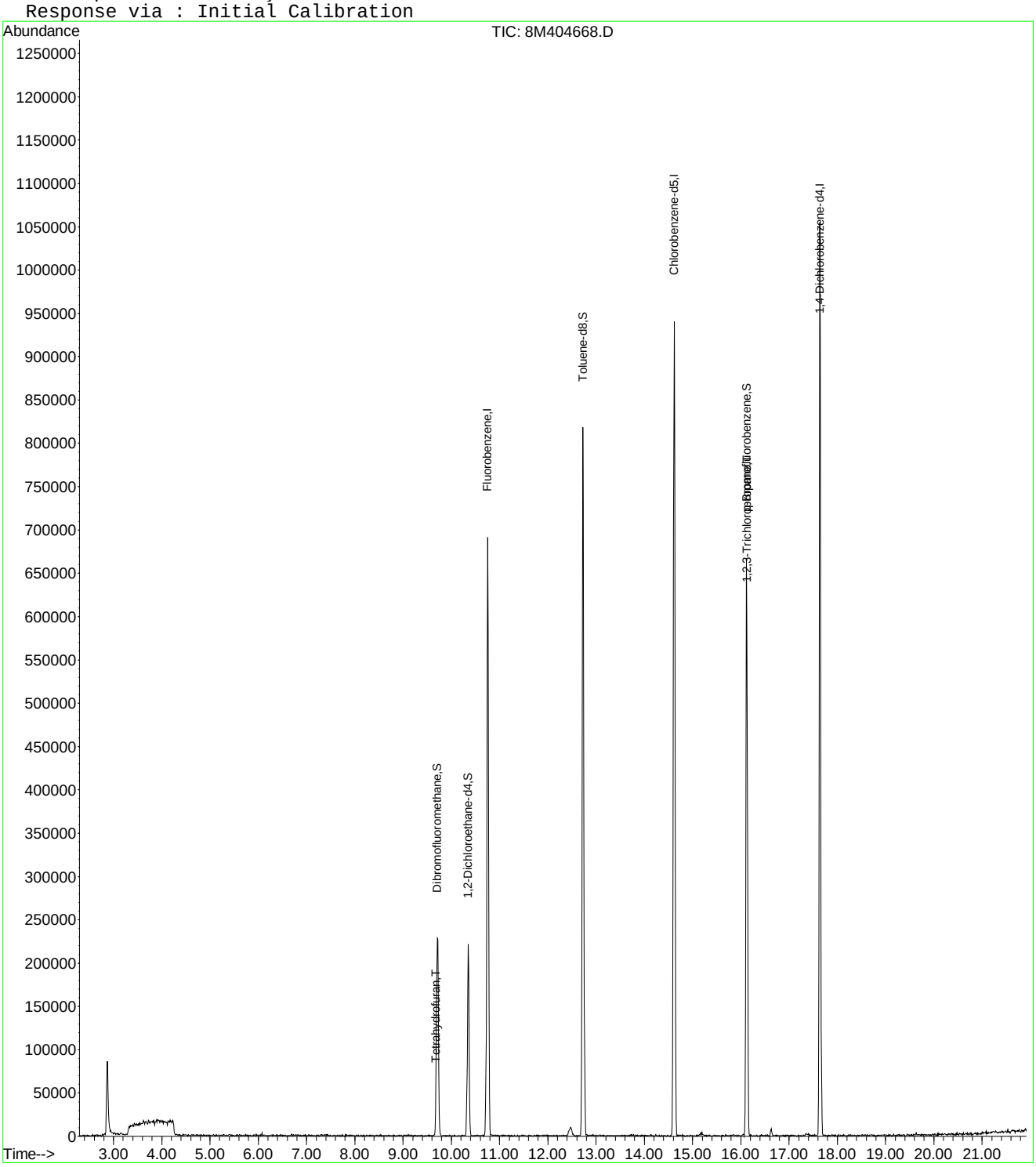

8M404668.D 8260WT.M Mon May 18 08:44:29 2015 Page 2

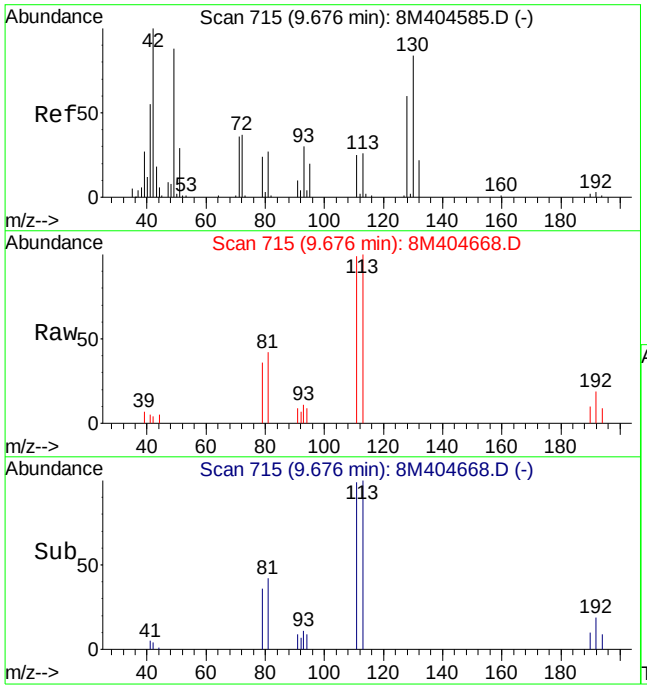

#36
Tetrahydrofuran
Concen: 0.54 ug/L
RT: 9.68 min Scan# 715
Delta R.T. -0.00 min
Lab File: 8M404668.D
Acq: 15 May 2015 13:27

Tgt Ion: 42 Resp: 636

Ion	Ratio	Lower	Upper
42	100		
72	0.0	27.5	64.3#
71	0.0	25.4	59.2#

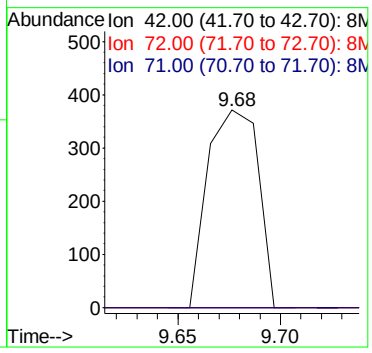

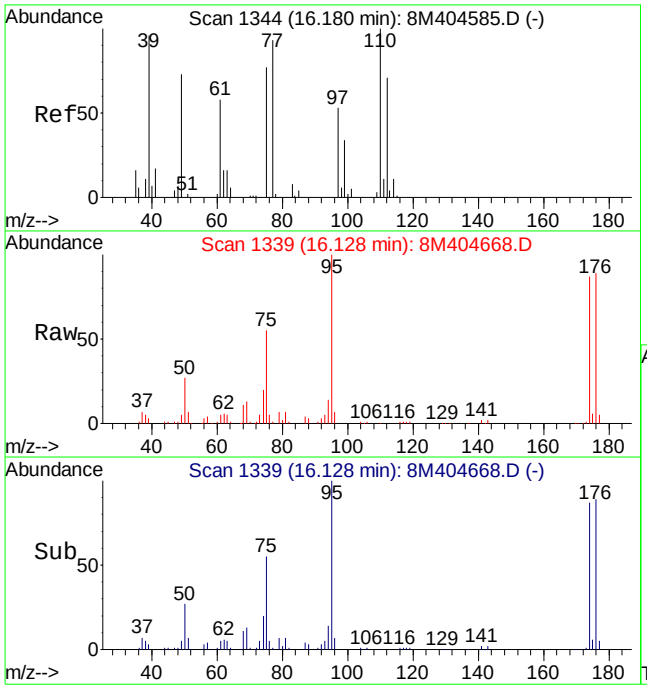

#81
1,2,3-Trichloropropane
Concen: 0.13 ug/L
RT: 16.13 min Scan# 1339
Delta R.T. -0.05 min
Lab File: 8M404668.D
Acq: 15 May 2015 13:27

Tgt Ion:110 Resp: 202

Ion	Ratio	Lower	Upper
110	100		
75	71232.7	115.6	269.6#
97	0.0	36.7	85.7#

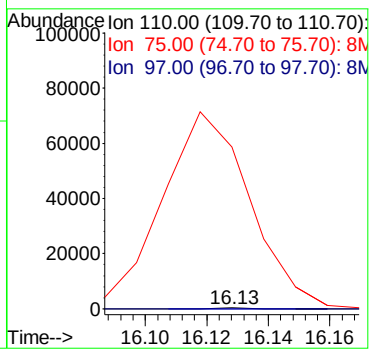

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400358.D Vial: 2
Acq On : 2 Oct 2014 12:24 Operator: TMB
Sample : WG494714-02 5ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:40 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	619208	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	544510	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	254129	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	1884	4.8234 ug/L #	23
3) 3-Chloro-1-propene	7.26	41	51461	4.9911 ug/L	88
4) 2-Chloro-1,3-butadiene	8.64	53	57885	4.7445 ug/L	89
5) Ethyl Acetate	9.28	43	12831	4.1474 ug/L	98
6) Methacrylonitrile	9.44	67	7738	4.2085 ug/L #	61
7) Isobutyl Alcohol	9.28	43	12831	104.0280 ug/L #	12
9) Methyl methacrylate	11.60	41	14247	4.0960 ug/L	83
10) 2-Nitropropane	11.94	43	3986	3.8294 ug/L	98
13) Cyclohexanone	16.03	55	1559	3.8882 ug/L #	43

(#) = qualifier out of range (m) = manual integration
8M400358.D A9FOOWTR.M Fri Oct 03 12:32:40 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400358.D Vial: 2
Acq On : 2 Oct 2014 12:24 Operator: TMB
Sample : WG494714-02 5ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

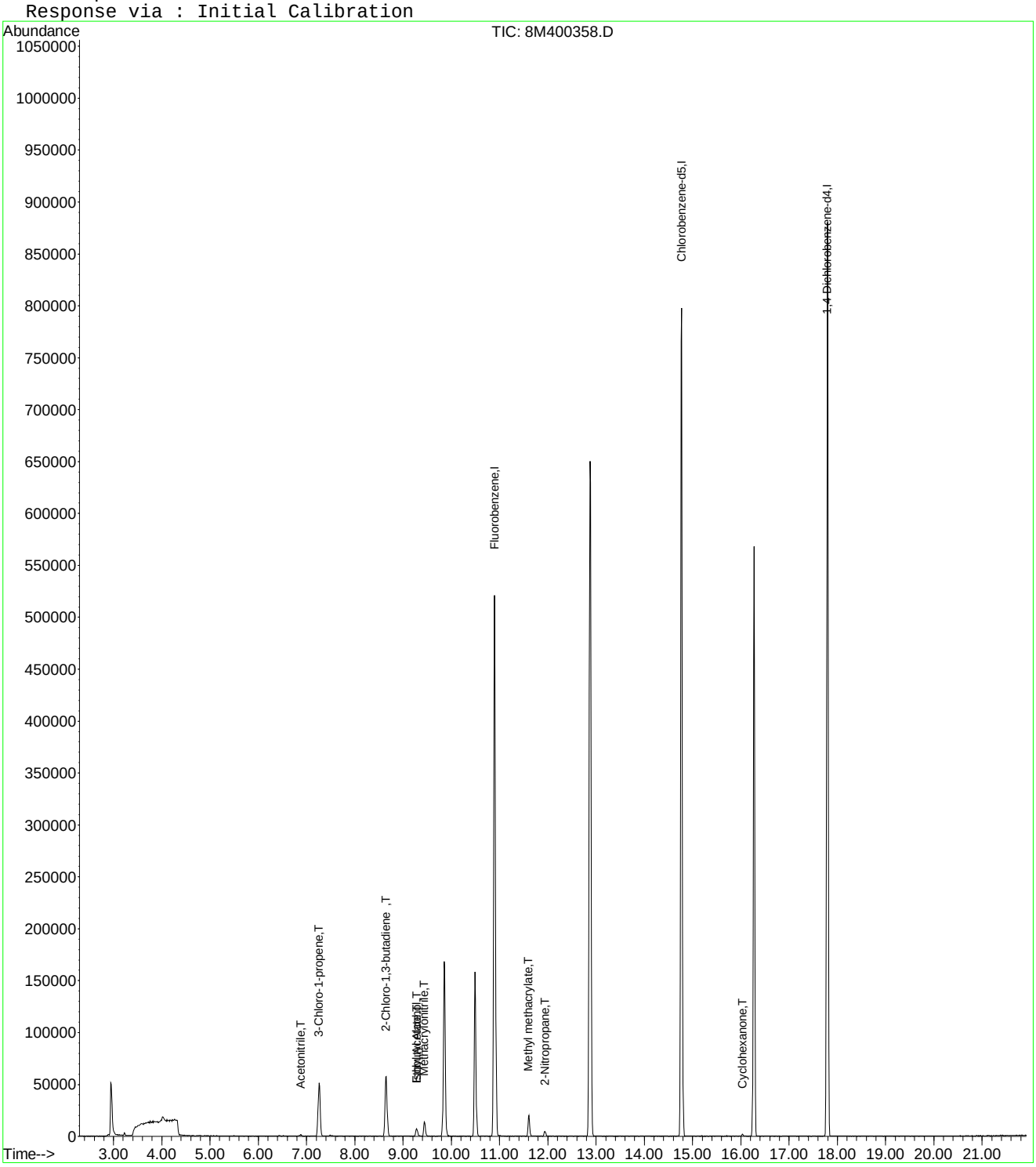

8M400358.D A9FOOWTR.M Fri Oct 03 12:32:41 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400359.D Vial: 3
Acq On : 2 Oct 2014 12:53 Operator: TMB
Sample : WG494714-03 20ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:41 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	590707	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	530005	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	246254	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	7263	19.4920 ug/L	97
3) 3-Chloro-1-propene	7.26	41	190581	19.3757 ug/L	90
4) 2-Chloro-1,3-butadiene	8.65	53	226534	19.4636 ug/L	90
5) Ethyl Acetate	9.28	43	54503	18.4670 ug/L	94
6) Methacrylonitrile	9.44	67	30898	17.6155 ug/L #	65
7) Isobutyl Alcohol	9.45	43	3143	26.7115 ug/L #	95
9) Methyl methacrylate	11.61	41	58234	17.5500 ug/L	72
10) 2-Nitropropane	11.94	43	16687	16.8050 ug/L	98
13) Cyclohexanone	16.03	55	7124	18.3357 ug/L	88

(#) = qualifier out of range (m) = manual integration
8M400359.D A9FOOWTR.M Fri Oct 03 12:32:41 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400359.D Vial: 3
Acq On : 2 Oct 2014 12:53 Operator: TMB
Sample : WG494714-03 20ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

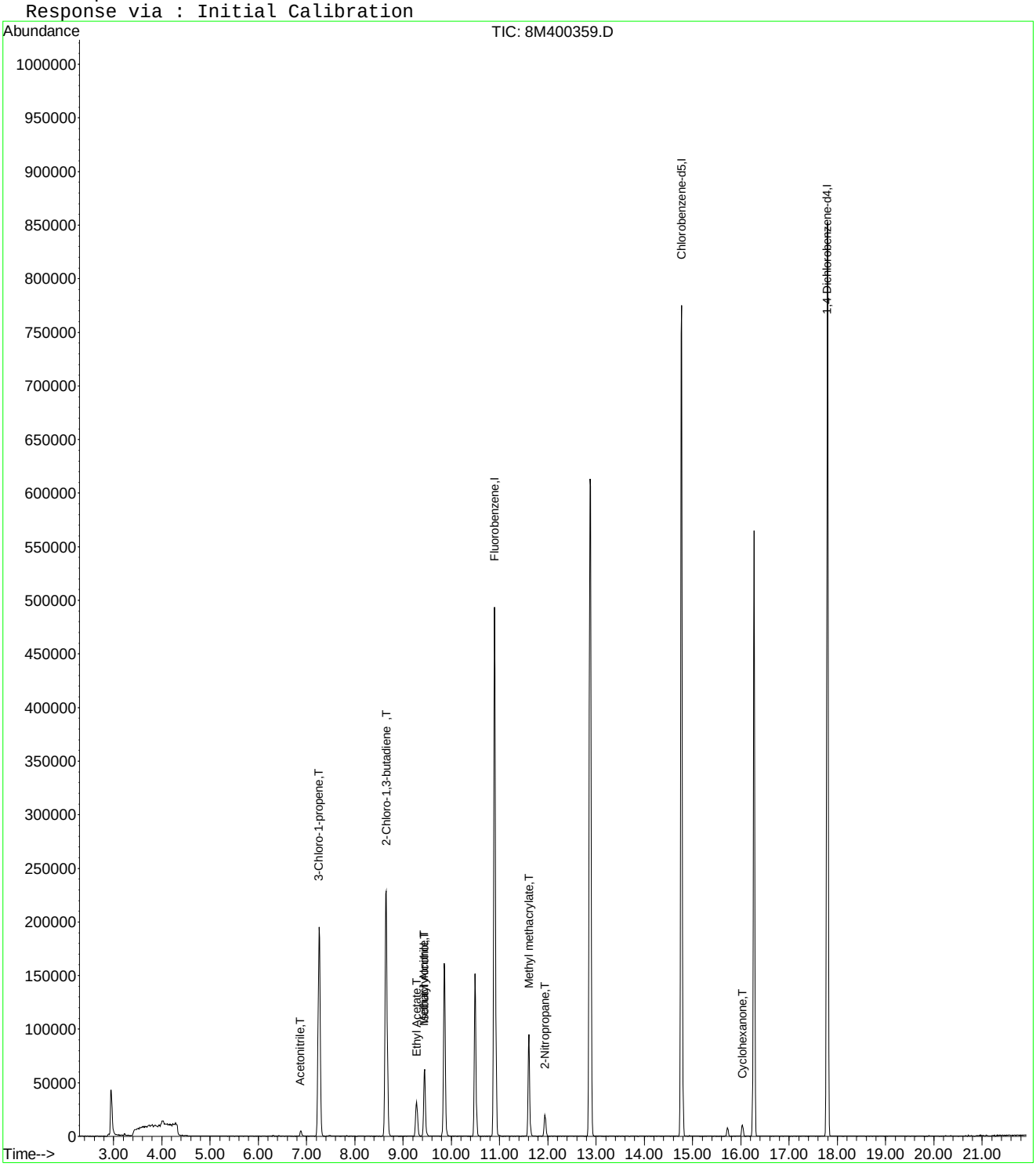

8M400359.D A9FOOWTR.M Fri Oct 03 12:32:42 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400360.D Vial: 4
Acq On : 2 Oct 2014 13:22 Operator: TMB
Sample : WG494714-04 50ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:42 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	590667	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	524443	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	249595	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	17698	47.5001 ug/L	100
3) 3-Chloro-1-propene	7.26	41	491365	49.9588 ug/L	90
4) 2-Chloro-1,3-butadiene	8.65	53	586258	50.3743 ug/L	90
5) Ethyl Acetate	9.27	43	145862	49.4250 ug/L	93
6) Methacrylonitrile	9.44	67	84924	48.4200 ug/L #	62
7) Isobutyl Alcohol	9.46	43	9563	81.2789 ug/L #	95
8) 1-Butanol	10.38	56	1895	48.4971 ug/L	87
9) Methyl methacrylate	11.61	41	161451	48.6599 ug/L	75
10) 2-Nitropropane	11.94	43	45766	46.0929 ug/L	98
13) Cyclohexanone	16.04	55	19698	50.0200 ug/L	89

(#) = qualifier out of range (m) = manual integration
8M400360.D A9FOOWTR.M Fri Oct 03 12:32:42 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400360.D Vial: 4
Acq On : 2 Oct 2014 13:22 Operator: TMB
Sample : WG494714-04 50ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

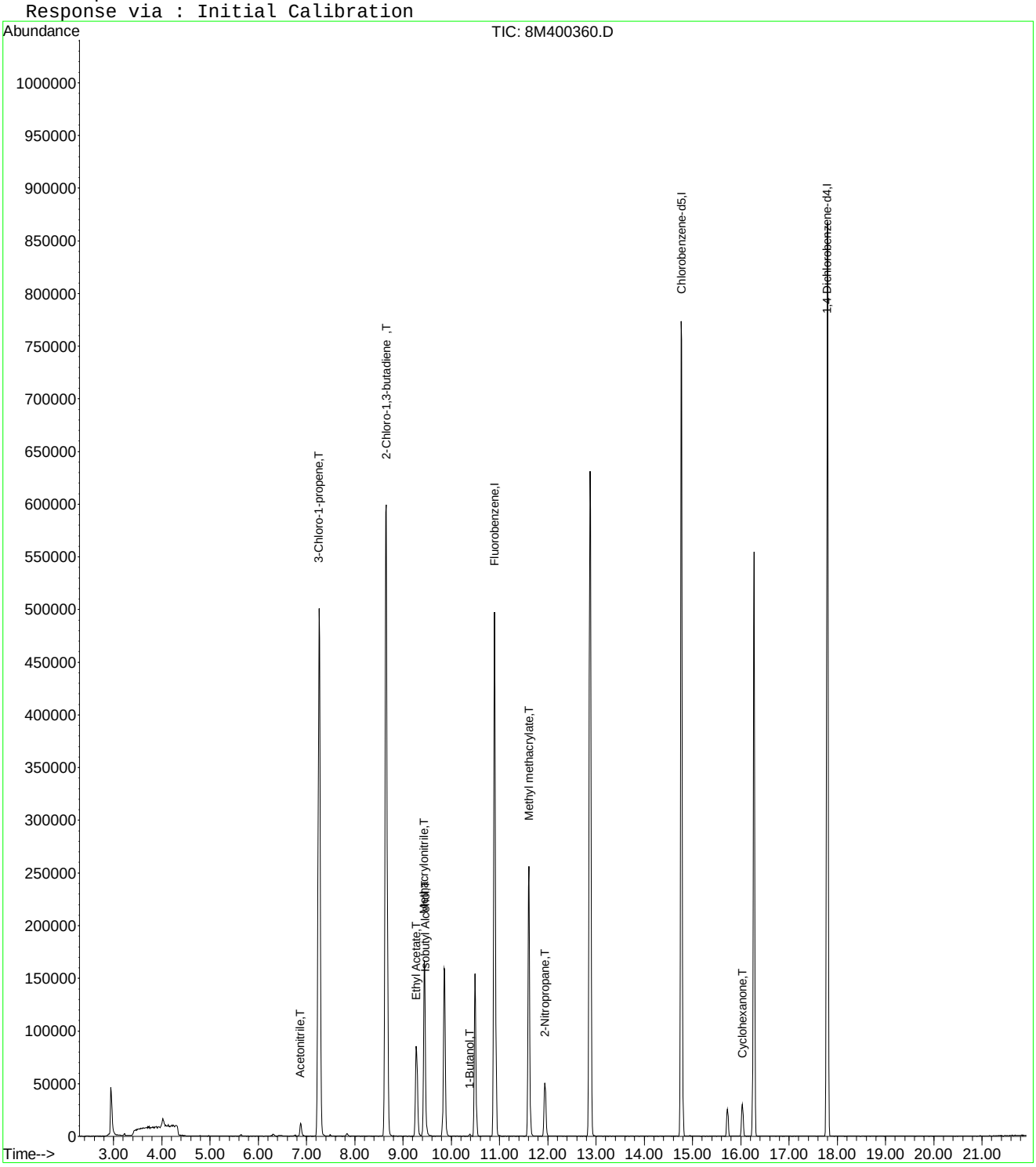

8M400360.D A9FOOWTR.M Fri Oct 03 12:32:42 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400361.D Vial: 5
Acq On : 2 Oct 2014 13:51 Operator: TMB
Sample : WG494714-05 100ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:43 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	595542	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	525736	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	251203	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	38265	101.8596 ug/L	98
3) 3-Chloro-1-propene	7.26	41	1042545	105.1315 ug/L	90
4) 2-Chloro-1,3-butadiene	8.65	53	1239135	105.6013 ug/L	88
5) Ethyl Acetate	9.27	43	315872	106.1564 ug/L	93
6) Methacrylonitrile	9.44	67	182857	103.4038 ug/L #	63
7) Isobutyl Alcohol	9.45	43	23247	195.9661 ug/L #	92
8) 1-Butanol	10.38	56	5482	96.3312 ug/L	88
9) Methyl methacrylate	11.61	41	351287	105.0082 ug/L	73
10) 2-Nitropropane	11.94	43	103249	103.1352 ug/L	99
13) Cyclohexanone	16.04	55	43523	109.8125 ug/L	88

(#) = qualifier out of range (m) = manual integration
8M400361.D A9FOOWTR.M Fri Oct 03 12:32:43 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400361.D Vial: 5
Acq On : 2 Oct 2014 13:51 Operator: TMB
Sample : WG494714-05 100ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

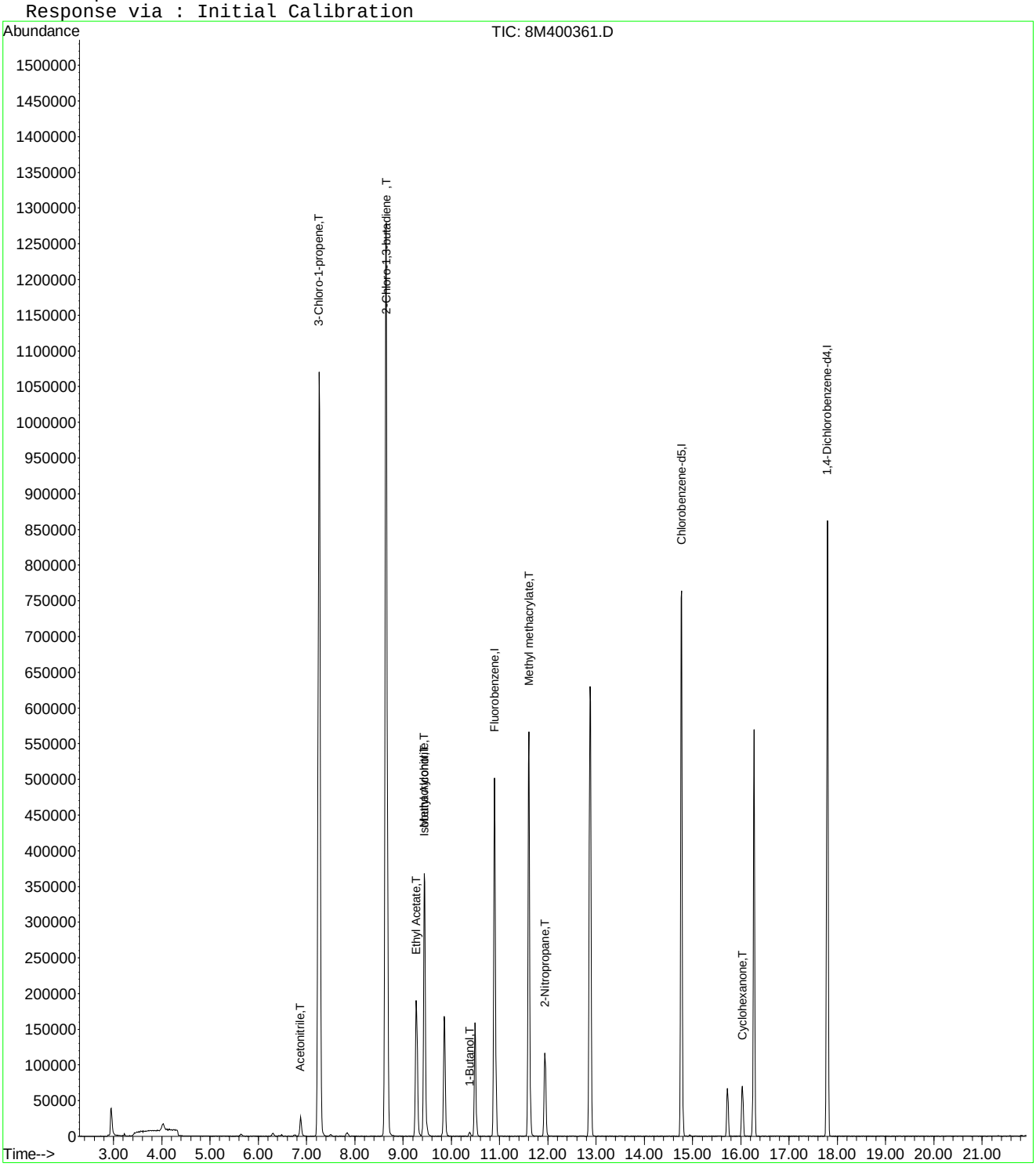

8M400361.D A9FOOWTR.M Fri Oct 03 12:32:43 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400362.D Vial: 6
Acq On : 2 Oct 2014 14:19 Operator: TMB
Sample : WG494714-06 200ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:43 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	605985	25.00 ug/L	-0.02
11) Chlorobenzene-d5	14.77	117	543073	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.80	152	256990	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	81322	212.7447 ug/L	93
3) 3-Chloro-1-propene	7.26	41	2105378	208.6501 ug/L	89
4) 2-Chloro-1,3-butadiene	8.65	53	2530154	211.9083 ug/L	84
5) Ethyl Acetate	9.28	43	654842	216.2828 ug/L	92
6) Methacrylonitrile	9.44	67	386897	215.0159 ug/L #	62
7) Isobutyl Alcohol	9.44	43	51188	424.0654 ug/L	97
8) 1-Butanol	10.37	56	13189	196.5131 ug/L	88
9) Methyl methacrylate	11.60	41	747593	219.6225 ug/L	71
10) 2-Nitropropane	11.94	43	227212	223.0503 ug/L	99
13) Cyclohexanone	16.03	55	76140	187.7821 ug/L	85

(#) = qualifier out of range (m) = manual integration
8M400362.D A9FOOWTR.M Fri Oct 03 12:32:44 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400362.D Vial: 6
Acq On : 2 Oct 2014 14:19 Operator: TMB
Sample : WG494714-06 200ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

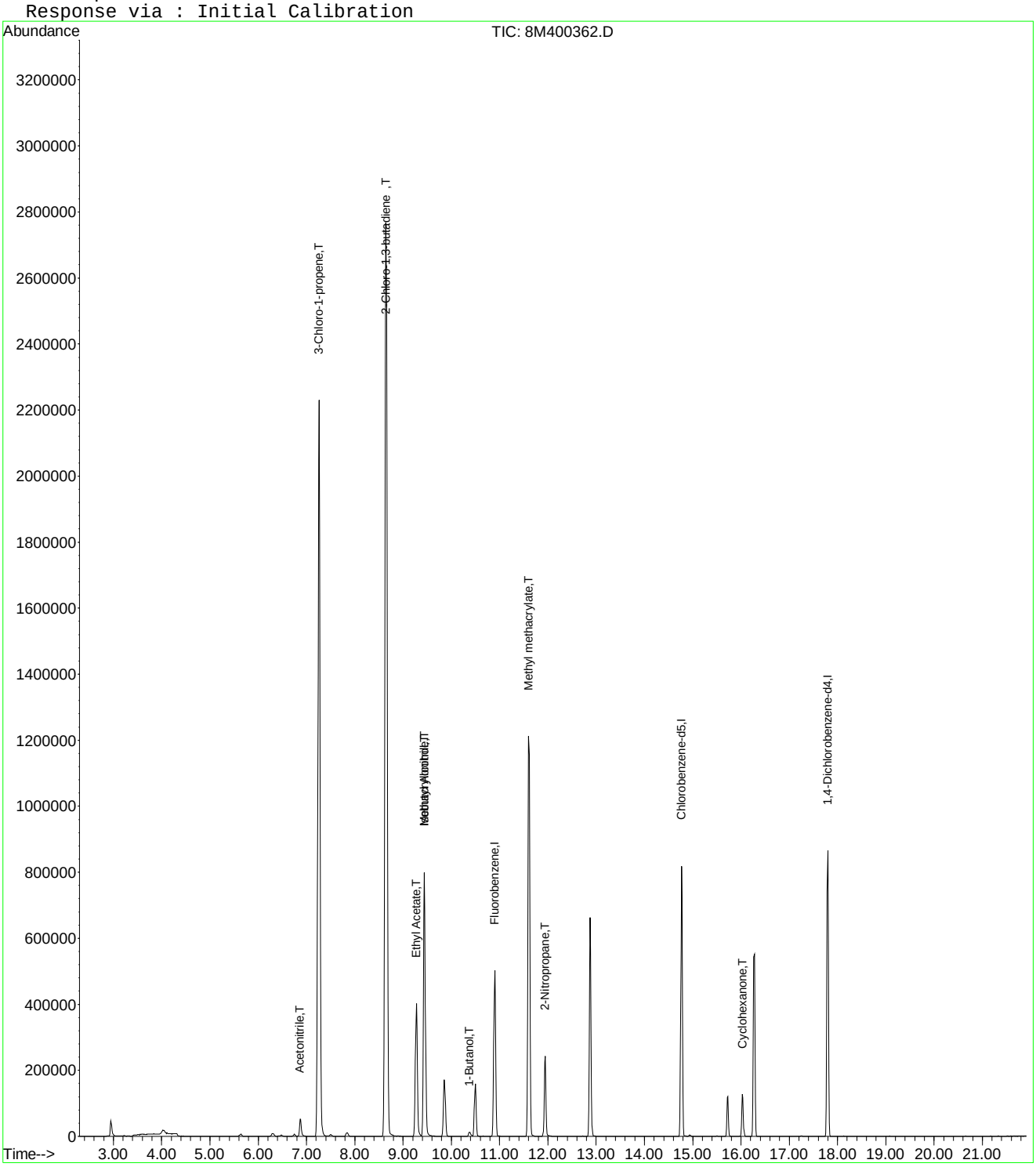

8M400362.D A9FOOWTR.M Fri Oct 03 12:32:44 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400363.D Vial: 7
Acq On : 2 Oct 2014 14:48 Operator: TMB
Sample : WG494714-07 300ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:45 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	617316	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	555877	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	259867	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	120718	310.0110 ug/L	94
3) 3-Chloro-1-propene	7.26	41	3133181	304.8093 ug/L	86
4) 2-Chloro-1,3-butadiene	8.64	53	3764580	309.5080 ug/L	79
5) Ethyl Acetate	9.27	43	984728	319.2685 ug/L	92
6) Methacrylonitrile	9.44	67	589378	321.5315 ug/L #	62
7) Isobutyl Alcohol	9.45	43	76604	622.9747 ug/L	98
8) 1-Butanol	10.37	56	23186	322.5015 ug/L	89
9) Methyl methacrylate	11.61	41	1120843	323.2293 ug/L	70
10) 2-Nitropropane	11.94	43	340074	327.7172 ug/L	99
13) Cyclohexanone	16.03	55	133635	325.9318 ug/L	85

(#) = qualifier out of range (m) = manual integration
8M400363.D A9FOOWTR.M Fri Oct 03 12:32:45 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400363.D Vial: 7
Acq On : 2 Oct 2014 14:48 Operator: TMB
Sample : WG494714-07 300ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

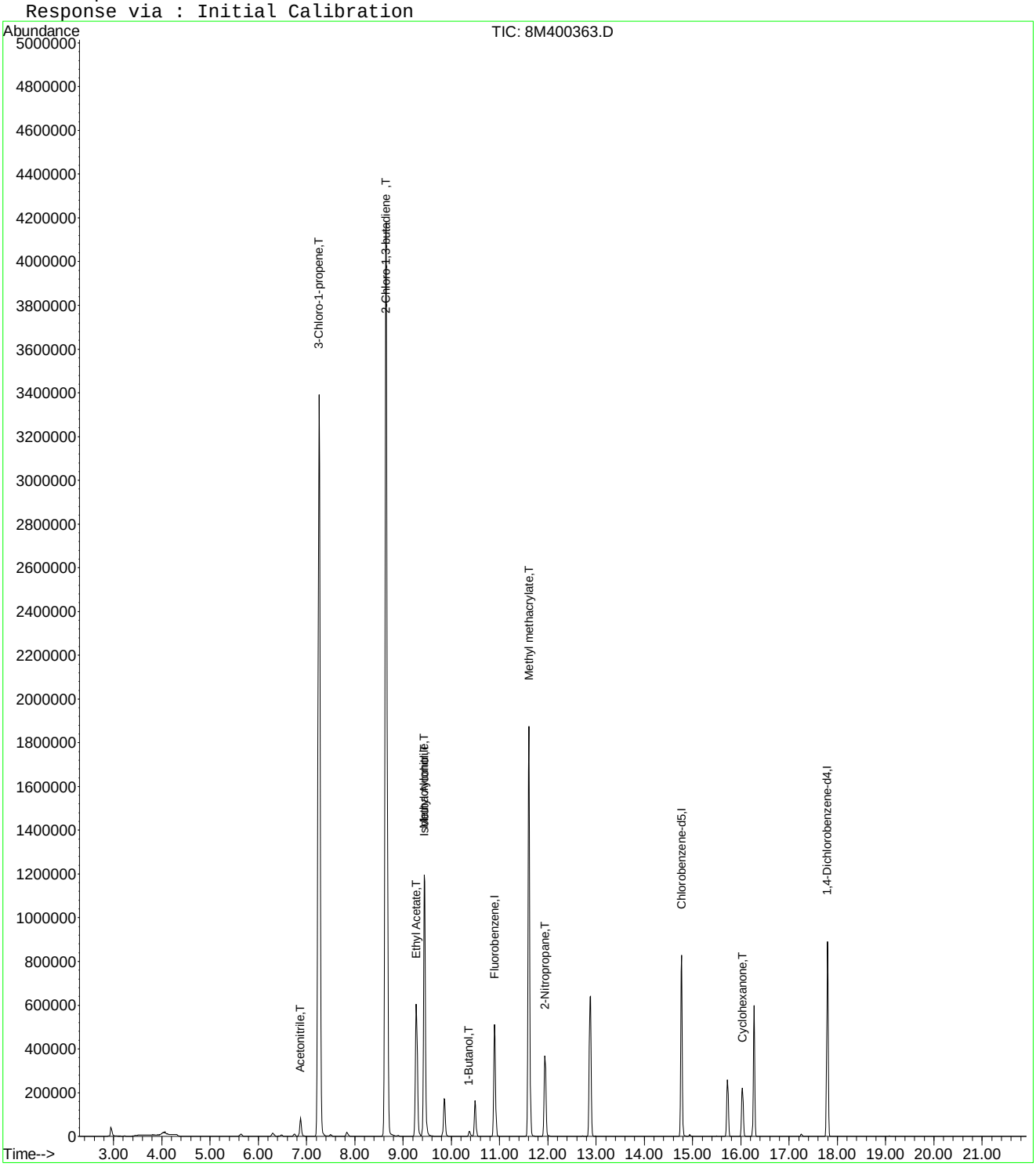

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400364.D Vial: 8
Acq On : 2 Oct 2014 15:16 Operator: TMB
Sample : WG494714-08 400ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:46 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	618926	25.00 ug/L	-0.02
11) Chlorobenzene-d5	14.77	117	559909	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.80	152	262346	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	151708	388.5818 ug/L	95
3) 3-Chloro-1-propene	7.26	41	4028272	390.8682 ug/L	83
4) 2-Chloro-1,3-butadiene	8.65	53	4802050	393.7774 ug/L	74
5) Ethyl Acetate	9.28	43	1250397	404.3491 ug/L	91
6) Methacrylonitrile	9.44	67	762998	415.1660 ug/L #	61
7) Isobutyl Alcohol	9.45	43	102436	830.8840 ug/L #	97
8) 1-Butanol	10.37	56	28243	386.8957 ug/L	89
9) Methyl methacrylate	11.60	41	1436773	413.2595 ug/L	68
10) 2-Nitropropane	11.94	43	451706	434.1607 ug/L	98
13) Cyclohexanone	16.03	55	150327	363.1785 ug/L	84

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400364.D Vial: 8
Acq On : 2 Oct 2014 15:16 Operator: TMB
Sample : WG494714-08 400ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

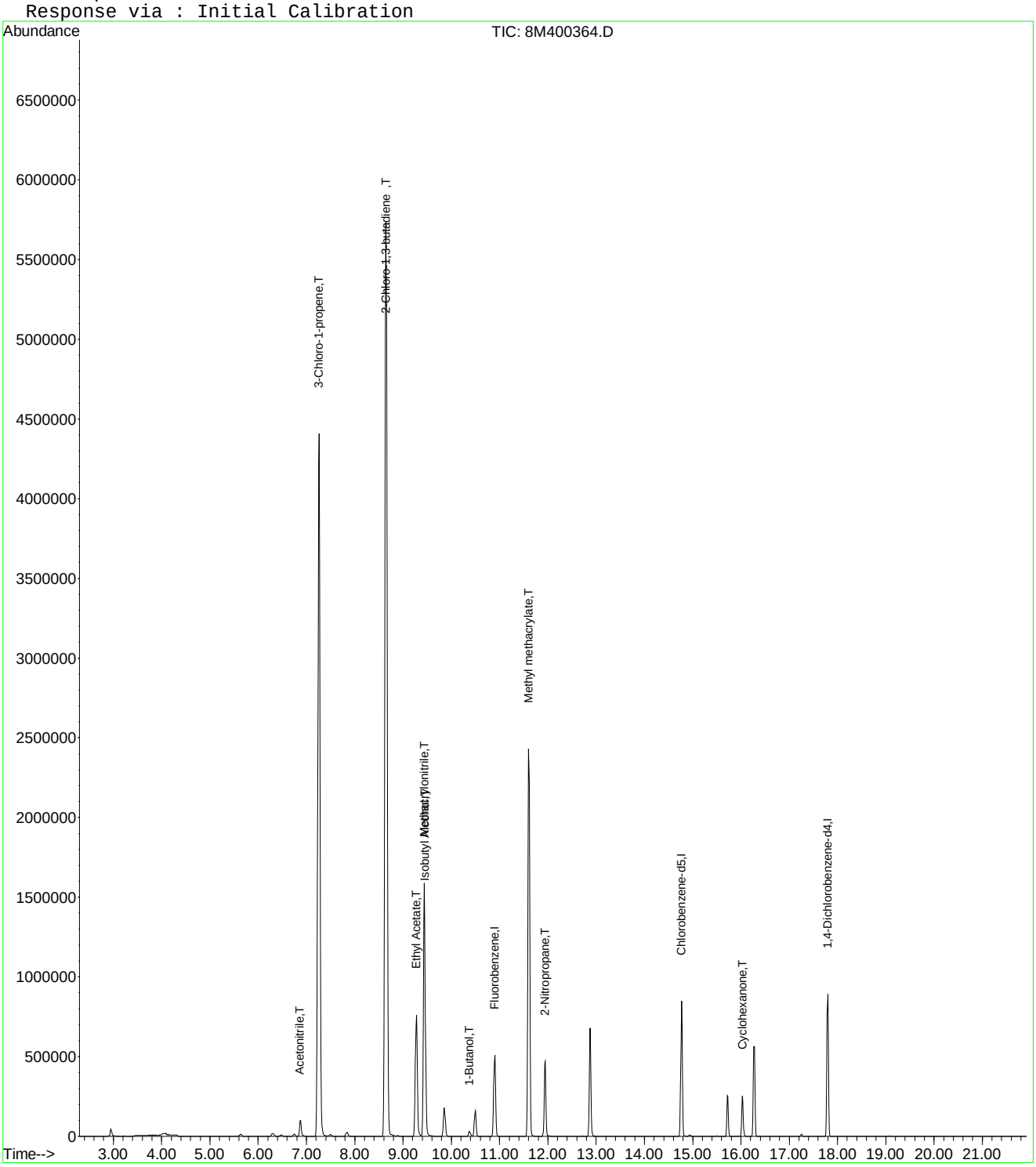

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400365.D Vial: 9
Acq On : 2 Oct 2014 15:45 Operator: TMB
Sample : WG494714-09 500ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:47 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	611679	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	574048	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	266141	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	197468	511.7830 ug/L	95
3) 3-Chloro-1-propene	7.26	41	4817953	473.0307 ug/L	79
4) 2-Chloro-1,3-butadiene	8.64	53	5656851	469.3686 ug/L	68
5) Ethyl Acetate	9.27	43	1590123	520.3008 ug/L	90
6) Methacrylonitrile	9.44	67	990168	545.1581 ug/L #	61
7) Isobutyl Alcohol	9.45	43	130410	1070.3205 ug/L	98
8) 1-Butanol	10.38	56	36529	499.2614 ug/L	87
9) Methyl methacrylate	11.61	41	1840524	535.6626 ug/L	68
10) 2-Nitropropane	11.94	43	590003	573.8046 ug/L	98
13) Cyclohexanone	16.04	55	203273	484.0894 ug/L	84

(#) = qualifier out of range (m) = manual integration
8M400365.D A9FOOWTR.M Fri Oct 03 12:32:47 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400365.D Vial: 9
Acq On : 2 Oct 2014 15:45 Operator: TMB
Sample : WG494714-09 500ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

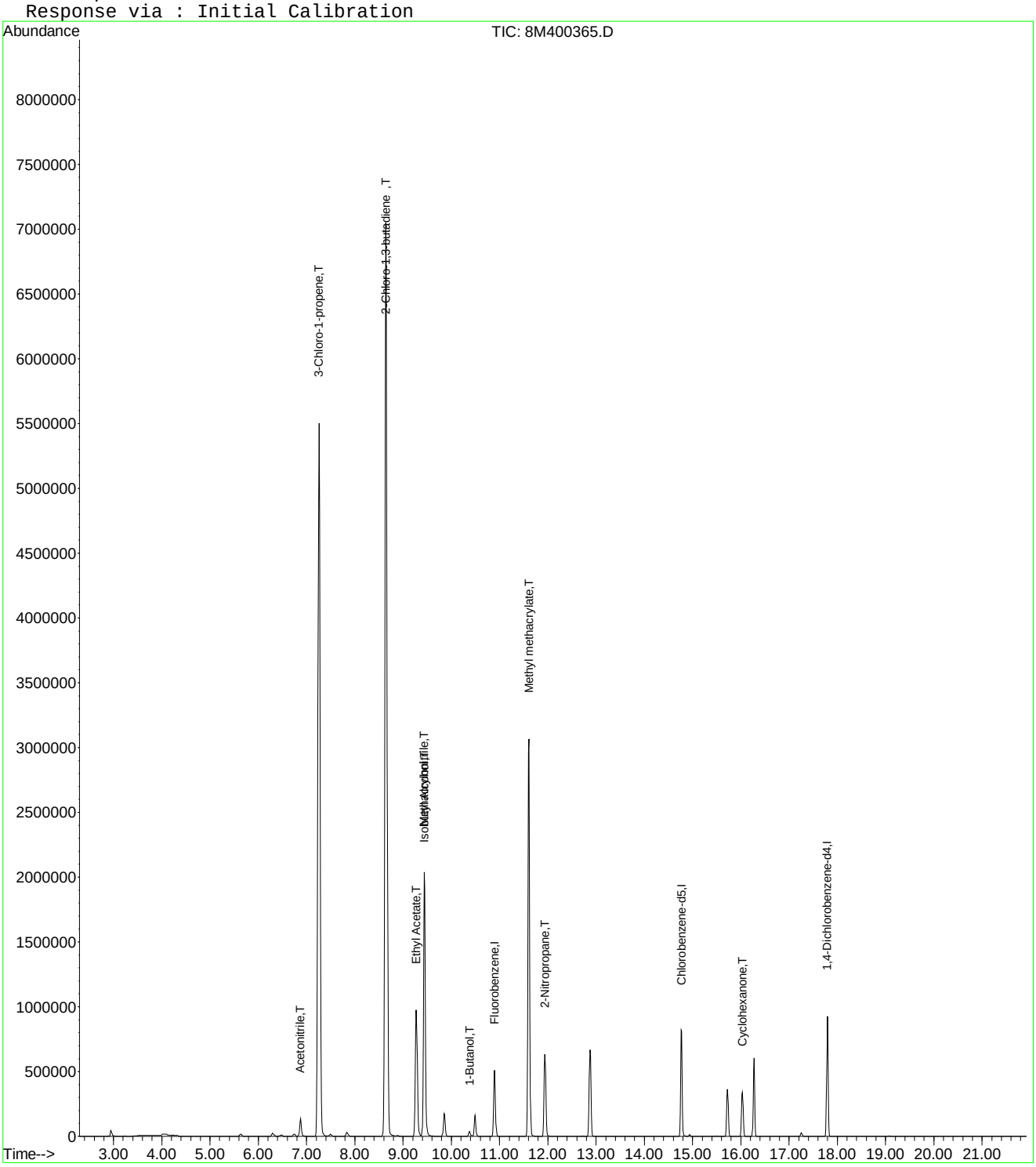

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400367.D Vial: 11
Acq On : 2 Oct 2014 16:47 Operator: TMB
Sample : WG494714-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66677 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:48 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	548066	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	508831	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	240116	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	36847	106.5815 ug/L	98
3) 3-Chloro-1-propene	7.26	41	1001386	109.7284 ug/L	90
4) 2-Chloro-1,3-butadiene	8.64	53	982184	90.9542 ug/L	89
5) Ethyl Acetate	9.27	43	328991	120.1430 ug/L	94
6) Methacrylonitrile	9.44	67	174278	107.0895 ug/L #	64
7) Isobutyl Alcohol	9.45	43	21185	194.0538 ug/L	99
8) 1-Butanol	10.39	56	5303	100.0865 ug/L	77
9) Methyl methacrylate	11.61	41	317777	103.2198 ug/L	73
10) 2-Nitropropane	11.94	43	95761	103.9416 ug/L	99
13) Cyclohexanone	16.03	55	11614	30.6562 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M400367.D A9FOOWTR.M Fri Oct 03 12:32:49 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400367.D Vial: 11
Acq On : 2 Oct 2014 16:47 Operator: TMB
Sample : WG494714-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66677 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

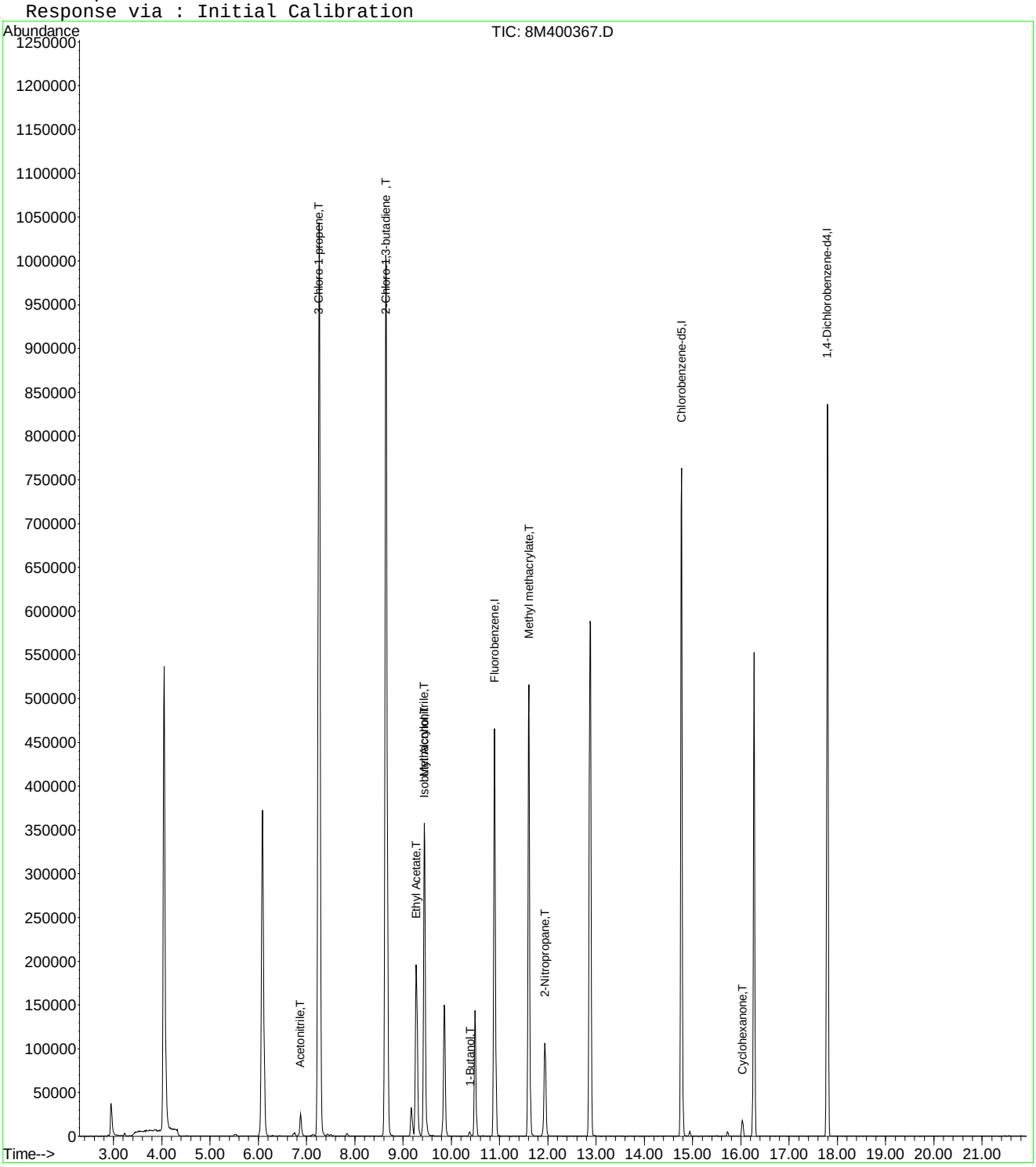

8M400367.D A9FOOWTR.M Fri Oct 03 12:32:49 2014 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\100214\8M400367.D Vial: 11
Acq On : 2 Oct 2014 16:47 Operator: TMB
Sample : WG494714-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66677 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	92	-0.03
2	T	Acetonitrile	100.0000	106.5815	-6.6	96	-0.02
3	T	3-Chloro-1-propene	100.0000	109.7284	-9.7	96	-0.03
4	T	2-Chloro-1,3-butadiene	100.0000	90.9542	9.0	79	-0.03
5	T	Ethyl Acetate	100.0000	120.1430	-20.1	104	-0.02
6	T	Methacrylonitrile	100.0000	107.0895	-7.1	95	-0.03
7	T	Isobutyl Alcohol	200.0000	194.0538	3.0	91	-0.02
8	T	1-Butanol	100.0000	100.0865	-0.1	97	0.00
9	T	Methyl methacrylate	100.0000	103.2198	-3.2	90	-0.02
10	T	2-Nitropropane	100.0000	103.9416	-3.9	93	-0.03
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	97	-0.03
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	96	-0.04
13	T	Cyclohexanone	100.0000	30.6562	69.3	27	-0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M400367.D A9FOOWTR.M Fri Oct 03 12:33:23 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404579.D Vial: 3
Acq On : 12 May 2015 16:50 Operator: TMB
Sample : WG523161-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:12 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:43:58 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	686121	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	491169	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.65	152	260131	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
80) p-Bromofluorobenzene	0.00	95	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.20	85	2048	0.1926 ug/L	86
3) Chloromethane	3.66	50	9733	0.4585 ug/L	81
4) Vinyl Chloride	3.89	62	5954	0.2976 ug/L	92
6) Bromomethane	4.78	94	888	0.9695 ug/L #	29
7) Chloroethane	4.93	64	1608	0.2954 ug/L #	61
8) Trichlorofluoromethane	5.42	101	3385	0.2695 ug/L #	80
10) Isoprene	6.00	67	2101	0.2256 ug/L #	57
12) 1,1,2-Trichloro-1,2,2-Trif	6.20	101	1894	0.2671 ug/L	56
13) Acetone	6.28	43	313	0.3194 ug/L #	36
14) 1,1-Dichloroethene	6.52	61	3506	0.2908 ug/L	76
16) Dimethyl Sulfide	6.78	62	1875	0.2667 ug/L	83
18) Methyl acetate	7.06	43	570	0.1630 ug/L #	58
19) Methylene Chloride	7.30	84	1819	0.2647 ug/L #	13
20) Carbon Disulfide	7.34	76	7144	0.3220 ug/L	89
22) Methyl Tert Butyl Ether	7.53	73	3822	0.2887 ug/L #	62
23) trans-1,2-Dichloroethene	7.74	61	3271	0.2841 ug/L	66
24) n-Hexane	7.83	57	2928	0.2515 ug/L	88
26) Vinyl Acetate	8.34	43	3028	0.3597 ug/L #	71
27) 1,1-Dichloroethane	8.37	63	5008	0.3604 ug/L #	79
29) 2-Butanone	8.93	43	453	0.2837 ug/L #	49
31) 2,2-Dichloropropane	9.14	77	3681	0.3210 ug/L	85
32) cis-1,2-Dichloroethene	9.21	96	2604	0.3293 ug/L	91
33) Chloroform	9.42	83	3741	0.2898 ug/L	89
35) Bromochloromethane	9.66	130	1064	0.2639 ug/L #	47
36) Tetrahydrofuran	9.69	42	742	0.6900 ug/L #	32
38) 1,1,1-Trichloroethane	9.96	97	3379	0.2884 ug/L	96
39) Cyclohexane	10.00	56	3808	0.2681 ug/L #	87
40) 1,1-Dichloropropene	10.14	75	2928	0.2872 ug/L #	71
42) Carbon Tetrachloride	10.29	117	2361	0.2217 ug/L	85
45) 1,2-Dichloroethane	10.47	62	2773	0.2997 ug/L	96
46) Benzene	10.50	78	8640	0.3146 ug/L	97
47) Trichloroethene	11.26	130	2342	0.3224 ug/L	94
48) Methylcyclohexane	11.34	83	3466	0.2940 ug/L	93
49) 1,2-Dichloropropane	11.48	63	1845	0.2399 ug/L	87
50) Bromodichloromethane	11.76	83	2889	0.3051 ug/L #	95
52) Dibromomethane	11.87	93	917	0.2531 ug/L #	54
53) 2-Chloroethyl Vinyl Ether	12.09	63	251	Below Cal #	1
55) cis-1,3-Dichloropropene	12.41	75	3322	0.3209 ug/L	81
56) Dimethyl Disulfide	12.66	79	1068	3.1879 ug/L	88
59) Toluene	12.83	91	9961	0.3419 ug/L	76

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404579.D Vial: 3
Acq On : 12 May 2015 16:50 Operator: TMB
Sample : WG523161-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:12 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:43:58 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
60)	Ethyl Methacrylate	12.92	69	836	0.1613 ug/L #	31
62)	trans-1,3-Dichloropropene	13.01	75	2509	0.2873 ug/L	87
63)	1,1,2-Trichloroethane	13.21	97	1152	0.2545 ug/L	100
65)	1,3-Dichloropropane	13.53	76	2228	0.2808 ug/L	87
66)	Tetrachloroethene	13.66	164	1478	0.2404 ug/L #	77
67)	Dibromochloromethane	13.91	129	2244	0.3726 ug/L	69
68)	1,2-Dibromoethane	14.17	107	698	0.1615 ug/L #	54
69)	1-Chlorohexane	14.26	91	2890	0.2900 ug/L	92
70)	Chlorobenzene	14.67	112	5841	0.2970 ug/L	96
71)	1,1,1,2-Tetrachloroethane	14.72	131	1900	0.2692 ug/L	86
72)	Ethylbenzene	14.71	106	2753	0.2337 ug/L #	1
73)	m-,p-Xylene	14.78	106	7323	0.5498 ug/L #	22
74)	o-Xylene	15.35	106	3679	0.2795 ug/L #	50
75)	Styrene	15.39	104	5769	0.2767 ug/L	99
76)	Bromoform	15.88	173	482	0.9047 ug/L #	57
77)	Isopropylbenzene	15.78	105	9462	0.2939 ug/L	87
79)	1,1,2,2-Tetrachloroethane	15.98	83	1325	0.2681 ug/L #	80
81)	1,2,3-Trichloropropane	16.18	110	215	0.1606 ug/L #	1
83)	n-Propylbenzene	16.28	91	13082	0.3324 ug/L #	66
84)	Bromobenzene	16.42	156	2742	0.3508 ug/L	85
85)	1,3,5-Trimethylbenzene	16.47	105	8035	0.2984 ug/L	91
86)	2-Chlorotoluene	16.55	91	8093	0.3047 ug/L #	59
87)	4-Chlorotoluene	16.60	91	6492	0.3056 ug/L	77
88)	a-Methylstyrene	16.87	118	3783	0.2467 ug/L	88
89)	tert-Butylbenzene	16.93	134	1688	0.2820 ug/L #	69
90)	1,2,4-Trimethylbenzene	16.99	105	8182	0.2955 ug/L	73
91)	sec-Butylbenzene	17.20	105	10759	0.3204 ug/L #	77
92)	p-Isopropyltoluene	17.37	119	7368	0.2588 ug/L	78
93)	1,3-Dichlorobenzene	17.55	146	5344	0.3374 ug/L #	72
94)	1,4-Dichlorobenzene	17.68	146	5757	0.3580 ug/L #	37
95)	n-Butylbenzene	17.89	91	8329	0.2995 ug/L	84
96)	1,2-Dichlorobenzene	18.19	146	4259	0.3098 ug/L	86
98)	1,2,4-Trichlorobenzene	20.33	180	2637	0.2546 ug/L #	71
99)	Hexachlorobutadiene	20.47	225	1581	0.2922 ug/L	88
100)	Naphthalene	20.70	128	4884	0.3517 ug/L #	72
101)	1,2,3-Trichlorobenzene	21.00	180	2811	0.3203 ug/L #	74

(#) = qualifier out of range (m) = manual integration
8M404579.D 8260WT.M Wed May 13 06:46:12 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404579.D Vial: 3
Acq On : 12 May 2015 16:50 Operator: TMB
Sample : WG523161-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

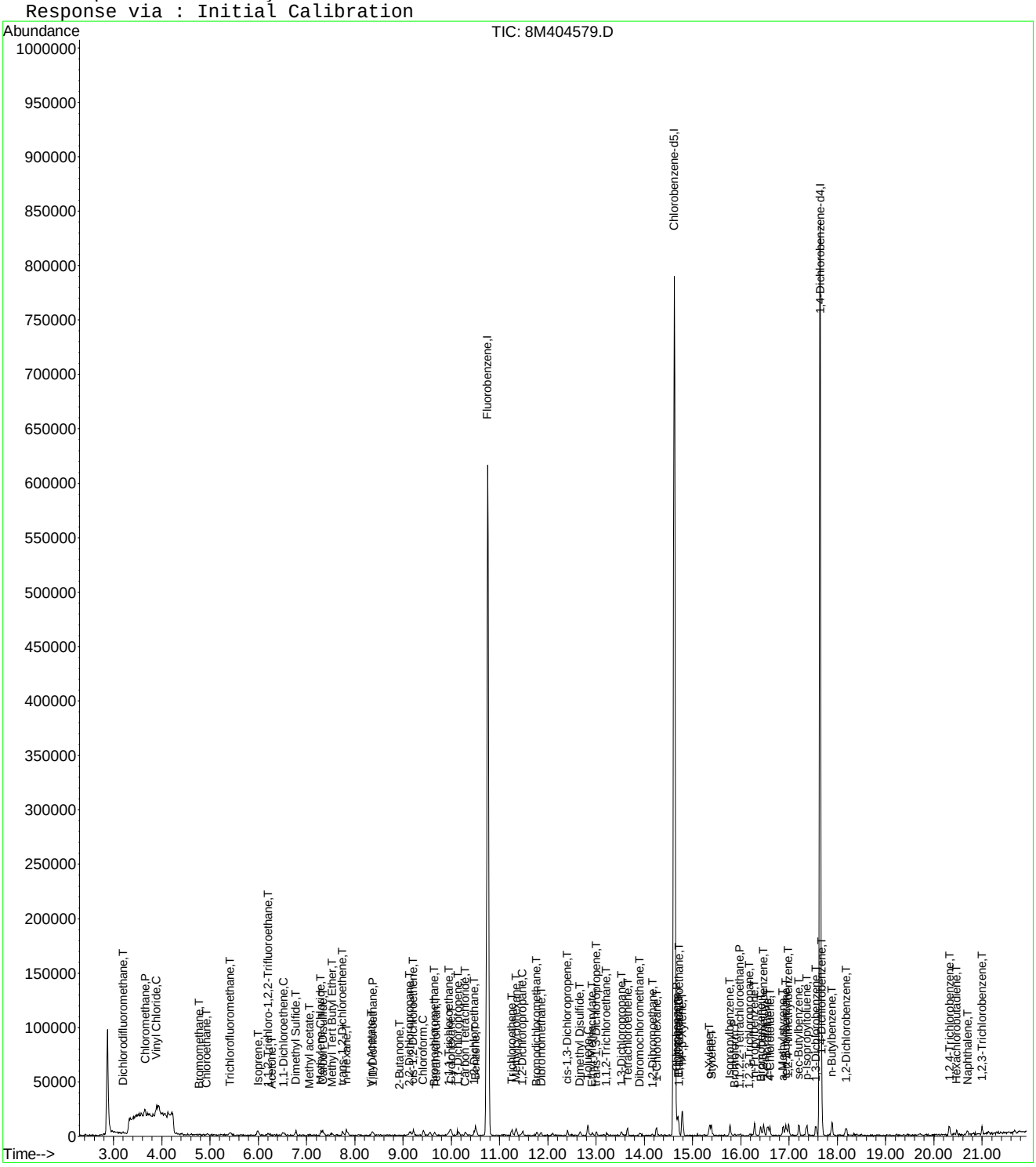

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404579.D Vial: 3
Acq On : 12 May 2015 16:50 Operator: TMB
Sample : WG523161-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.1926	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.4585	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.2976	0.0	0	0.00
5	T	1,3-Butadiene	-1.0000	0.0459	0.0	0	0.03
6	T	Bromomethane	-1.0000	0.9695	0.0	100	0.00
7	T	Chloroethane	-1.0000	0.2954	0.0	100	0.00
8	T	Trichlorofluoromethane	-1.0000	0.2695	0.0	100	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.95#
10	T	Isoprene	-1.0000	0.2256	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.18#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2671	0.0	100	0.00
13	T	Acetone	-1.0000	0.3194	0.0	100	0.00
14	C	1,1-Dichloroethene	-1.0000	0.2908	0.0	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.63#
16	T	Dimethyl Sulfide	-1.0000	0.2667	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.03#
18	T	Methyl acetate	-1.0000	0.1630	0.0	100	0.02
19	T	Methylene Chloride	-1.0000	0.2647	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.3220	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.48#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2887	0.0	100	0.02
23	T	trans-1,2-Dichloroethene	-1.0000	0.2841	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.2515	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.17#
26	T	Vinyl Acetate	-1.0000	0.3597	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.3604	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.75#
29	T	2-Butanone	-1.0000	0.2837	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.04#
31	T	2,2-Dichloropropane	-1.0000	0.3210	0.0	100	-0.01
32	T	cis-1,2-Dichloroethene	-1.0000	0.3293	0.0	100	0.00
33	C	Chloroform	0.3000	0.2898	3.4	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.55#
35	T	Bromochloromethane	-1.0000	0.2639	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.6900	0.0	0	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.71#
38	T	1,1,1-Trichloroethane	-1.0000	0.2884	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.2681	0.0	100	0.02
40	T	1,1-Dichloropropene	-1.0000	0.2872	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.26#
42	T	Carbon Tetrachloride	-1.0000	0.2217	0.0	100	-0.01
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.35#
44		Heptane	-1.0000	0.0000	0.0	0	-2.58#
45	T	1,2-Dichloroethane	-1.0000	0.2997	0.0	100	0.00
46	T	Benzene	0.3000	0.3146	-4.9	100	0.00
47	T	Trichloroethene	-1.0000	0.3224	0.0	100	0.00
48	T	Methylcyclohexane	-1.0000	0.2940	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2399	0.0	100	0.00
50	T	Bromodichloromethane	-1.0000	0.3051	0.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.77#
52	T	Dibromomethane	-1.0000	0.2531	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	-0.8060	0.0	0	0.02
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.10#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404579.D Vial: 3
Acq On : 12 May 2015 16:50 Operator: TMB
Sample : WG523161-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.3209	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	3.1879	0.0	0	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0000	0.0	0	-12.73#
59	C	Toluene	-1.0000	0.3419	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.1613	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.18#
62	T	trans-1,3-Dichloropropene	-1.0000	0.2873	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.2545	0.0	100	-0.01
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.15#
65	T	1,3-Dichloropropane	-1.0000	0.2808	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.2404	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.3726	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.1615	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.2900	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.2970	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.2692	0.0	0	0.02
72	C	Ethylbenzene	-1.0000	0.2337	0.0	100	0.00
73	T	m-,p-Xylene	-1.0000	0.5498	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.2795	0.0	100	0.00
75	T	Styrene	-1.0000	0.2767	0.0	100	0.00
76	P	Bromoform	-1.0000	0.9047	0.0	0	0.00
77	T	Isopropylbenzene	-1.0000	0.2939	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2681	0.0	100	-0.01
80	S	p-Bromofluorobenzene	-1.0000	0.0000	0.0	0	-16.12#
81	T	1,2,3-Trichloropropane	-1.0000	0.1606	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.23#
83	T	n-Propylbenzene	-1.0000	0.3324	0.0	0	0.00
84	T	Bromobenzene	0.3000	0.3508	-16.9	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.2984	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.3047	0.0	0	0.00
87	T	4-Chlorotoluene	-1.0000	0.3056	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2467	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.2820	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.2955	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3204	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.2588	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.3374	0.0	100	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.3580	-19.3	100	-0.01
95	T	n-Butylbenzene	-1.0000	0.2995	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.3098	-3.3	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.17#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.2546	0.0	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.2922	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.3517	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.3203	-6.8	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M404579.D 8260WT.M Wed May 13 06:47:16 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404580.D Vial: 4
Acq On : 12 May 2015 17:19 Operator: TMB
Sample : WG523161-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:13 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	663902	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	470309	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.65	152	244778	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
80) p-Bromofluorobenzene	0.00	95	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.19	85	3796	0.3689 ug/L	92
3) Chloromethane	3.66	50	13511	0.6578 ug/L	93
4) Vinyl Chloride	3.89	62	9546	0.4932 ug/L	94
5) 1,3-Butadiene	3.94	54	7454	0.1559 ug/L #	54
6) Bromomethane	4.79	94	656	0.9235 ug/L	68
7) Chloroethane	4.94	64	2482	0.4712 ug/L #	53
8) Trichlorofluoromethane	5.43	101	5157	0.4243 ug/L #	85
10) Isoprene	5.98	67	3614	0.4010 ug/L	80
12) 1,1,2-Trichloro-1,2,2-Trif	6.20	101	2569	0.3745 ug/L	93
13) Acetone	6.31	43	627	0.6613 ug/L #	36
14) 1,1-Dichloroethene	6.52	61	4922	0.4218 ug/L	75
16) Dimethyl Sulfide	6.77	62	2958	0.4349 ug/L	85
17) Iodomethane	7.04	142	526	1.1457 ug/L #	35
18) Methyl acetate	7.06	43	1214	0.3588 ug/L #	58
19) Methylene Chloride	7.31	84	2766	0.4160 ug/L #	41
20) Carbon Disulfide	7.34	76	8914	0.4153 ug/L	89
22) Methyl Tert Butyl Ether	7.52	73	5194	0.4055 ug/L #	70
23) trans-1,2-Dichloroethene	7.74	61	5006	0.4494 ug/L	68
24) n-Hexane	7.83	57	5343	0.4743 ug/L	96
26) Vinyl Acetate	8.34	43	3343	0.4104 ug/L #	71
27) 1,1-Dichloroethane	8.37	63	5026	0.3738 ug/L #	81
29) 2-Butanone	8.94	43	273	0.1767 ug/L #	49
31) 2,2-Dichloropropane	9.15	77	5223	0.4708 ug/L	89
32) cis-1,2-Dichloroethene	9.20	96	3418	0.4468 ug/L	89
33) Chloroform	9.43	83	4710	0.3771 ug/L	96
35) Bromochloromethane	9.64	130	1767	0.4529 ug/L	90
36) Tetrahydrofuran	9.68	42	233	0.2239 ug/L #	32
38) 1,1,1-Trichloroethane	9.96	97	4103	0.3619 ug/L	87
39) Cyclohexane	9.98	56	5465	0.3977 ug/L	96
40) 1,1-Dichloropropene	10.15	75	3687	0.3738 ug/L #	72
42) Carbon Tetrachloride	10.31	117	3996	0.3878 ug/L	87
45) 1,2-Dichloroethane	10.47	62	3824	0.4271 ug/L	84
46) Benzene	10.51	78	10613	0.3994 ug/L	93
47) Trichloroethene	11.27	130	2689	0.3826 ug/L	73
48) Methylcyclohexane	11.34	83	4479	0.3926 ug/L #	75
49) 1,2-Dichloropropane	11.48	63	3027	0.4067 ug/L #	73
50) Bromodichloromethane	11.78	83	3600	0.3929 ug/L #	89
52) Dibromomethane	11.87	93	1560	0.4451 ug/L #	61
53) 2-Chloroethyl Vinyl Ether	12.08	63	1210	Below Cal #	48
55) cis-1,3-Dichloropropene	12.41	75	4299	0.4292 ug/L	89

(#) = qualifier out of range (m) = manual integration
8M404580.D 8260WT.M Wed May 13 06:46:13 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404580.D Vial: 4
Acq On : 12 May 2015 17:19 Operator: TMB
Sample : WG523161-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:13 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
56)	Dimethyl Disulfide	12.68	79	1741	3.3001 ug/L		97
59)	Toluene	12.83	91	11735	0.4207 ug/L		81
60)	Ethyl Methacrylate	12.92	69	1520	0.3062 ug/L	#	66
62)	trans-1,3-Dichloropropene	13.01	75	3168	0.3789 ug/L		84
63)	1,1,2-Trichloroethane	13.22	97	1720	0.3969 ug/L		72
65)	1,3-Dichloropropane	13.53	76	2820	0.3712 ug/L	#	43
66)	Tetrachloroethene	13.66	164	1973	0.3351 ug/L		82
67)	Dibromochloromethane	13.92	129	2081	0.3608 ug/L		72
68)	1,2-Dibromoethane	14.17	107	1483	0.3584 ug/L		84
69)	1-Chlorohexane	14.26	91	4005	0.4197 ug/L		96
70)	Chlorobenzene	14.67	112	7203	0.3826 ug/L		90
71)	1,1,1,2-Tetrachloroethane	14.70	131	2560	0.3788 ug/L		82
72)	Ethylbenzene	14.70	106	4026	0.3570 ug/L	#	17
73)	m-,p-Xylene	14.78	106	10847	0.8505 ug/L		57
74)	o-Xylene	15.35	106	5229	0.4149 ug/L		57
75)	Styrene	15.38	104	7288	0.3650 ug/L		100
76)	Bromoform	15.89	173	942	1.0334 ug/L	#	44
77)	Isopropylbenzene	15.78	105	14152	0.4591 ug/L		77
79)	1,1,2,2-Tetrachloroethane	16.00	83	1923	0.4135 ug/L	#	91
83)	n-Propylbenzene	16.28	91	16602	0.4483 ug/L	#	67
84)	Bromobenzene	16.43	156	2690	0.3657 ug/L		88
85)	1,3,5-Trimethylbenzene	16.47	105	10398	0.4103 ug/L		80
86)	2-Chlorotoluene	16.55	91	12418	0.4968 ug/L		75
87)	4-Chlorotoluene	16.60	91	8385	0.4194 ug/L		71
88)	a-Methylstyrene	16.87	118	5253	0.3640 ug/L		98
89)	tert-Butylbenzene	16.93	134	1913	0.3396 ug/L	#	28
90)	1,2,4-Trimethylbenzene	16.99	105	11381	0.4368 ug/L		73
91)	sec-Butylbenzene	17.20	105	13195	0.4176 ug/L	#	71
92)	p-Isopropyltoluene	17.37	119	12187	0.4550 ug/L	#	73
93)	1,3-Dichlorobenzene	17.57	146	6274	0.4209 ug/L		98
94)	1,4-Dichlorobenzene	17.68	146	6156	0.4068 ug/L	#	24
95)	n-Butylbenzene	17.89	91	12345	0.4718 ug/L	#	75
96)	1,2-Dichlorobenzene	18.19	146	4688	0.3624 ug/L		93
98)	1,2,4-Trichlorobenzene	20.33	180	4027	0.4133 ug/L		90
99)	Hexachlorobutadiene	20.48	225	2038	0.4003 ug/L	#	69
100)	Naphthalene	20.69	128	4629	0.3542 ug/L	#	62
101)	1,2,3-Trichlorobenzene	21.01	180	2866	0.3471 ug/L		78

(#) = qualifier out of range (m) = manual integration
8M404580.D 8260WT.M Wed May 13 06:46:14 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404580.D Vial: 4
Acq On : 12 May 2015 17:19 Operator: TMB
Sample : WG523161-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

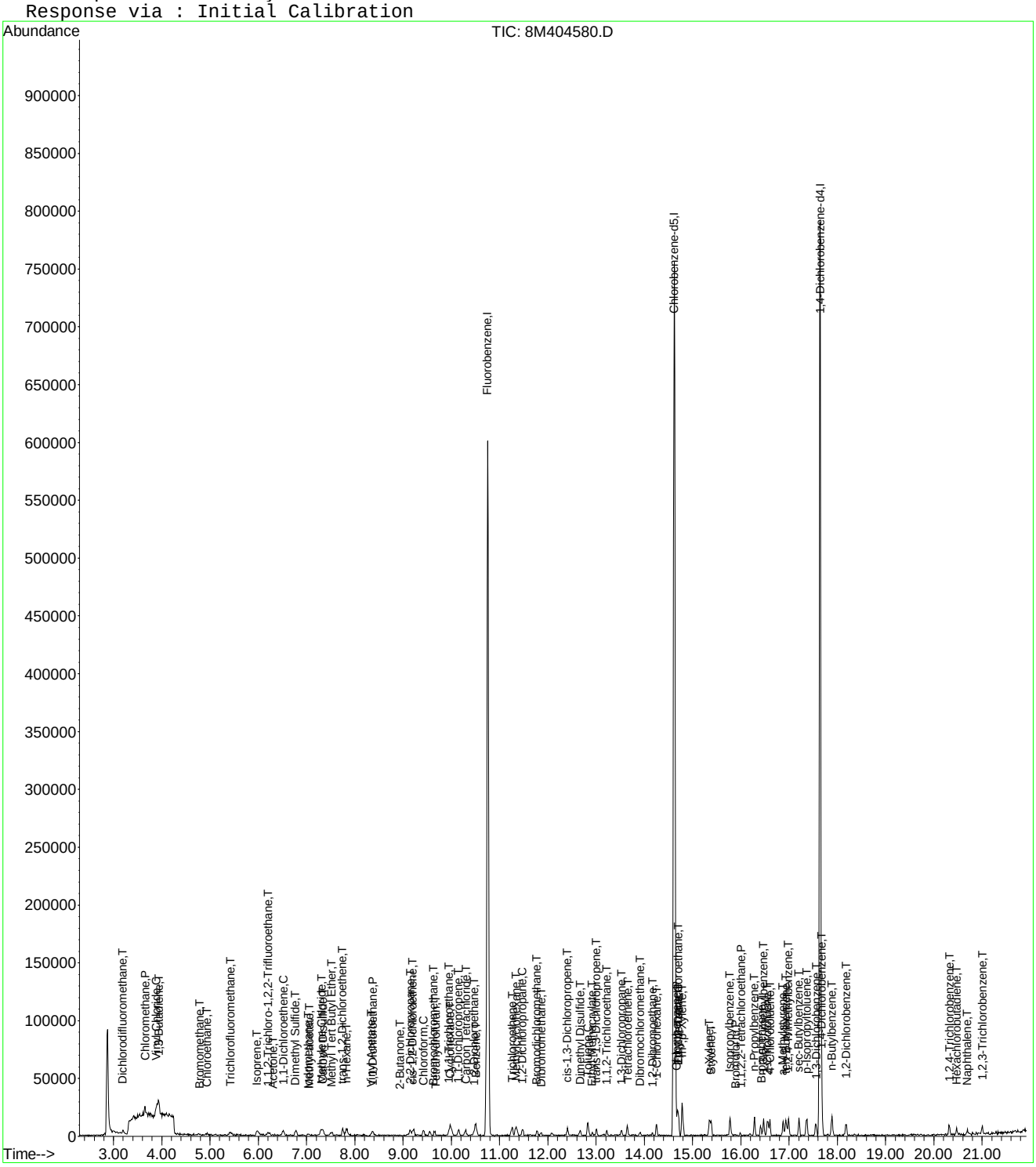

8M404580.D 8260WT.M Wed May 13 06:46:14 2015 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404580.D Vial: 4
Acq On : 12 May 2015 17:19 Operator: TMB
Sample : WG523161-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.3689	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.6578	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.4932	-23.3#	100	0.00
5	T	1,3-Butadiene	-1.0000	0.1559	0.0	0	0.03
6	T	Bromomethane	-1.0000	0.9235	0.0	100	0.02
7	T	Chloroethane	-1.0000	0.4712	0.0	100	0.00
8	T	Trichlorofluoromethane	0.4000	0.4243	-6.1	100	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.95#
10	T	Isoprene	-1.0000	0.4010	0.0	100	-0.01
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.18#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3745	0.0	100	0.00
13	T	Acetone	-1.0000	0.6613	0.0	100	0.02
14	C	1,1-Dichloroethene	0.4000	0.4218	-5.5	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.63#
16	T	Dimethyl Sulfide	-1.0000	0.4349	0.0	100	0.00
17	T	Iodomethane	-1.0000	1.1457	0.0	0	0.00
18	T	Methyl acetate	-1.0000	0.3588	0.0	100	0.02
19	T	Methylene Chloride	-1.0000	0.4160	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4153	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.48#
22	T	Methyl Tert Butyl Ether	-1.0000	0.4055	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.4494	-12.4	100	0.00
24	T	n-Hexane	-1.0000	0.4743	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.17#
26	T	Vinyl Acetate	-1.0000	0.4104	0.0	100	0.00
27	P	1,1-Dichloroethane	0.4000	0.3738	6.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.75#
29	T	2-Butanone	-1.0000	0.1767	0.0	100	0.02
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.04#
31	T	2,2-Dichloropropane	0.4000	0.4708	-17.7	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.4468	-11.7	100	-0.01
33	C	Chloroform	0.4000	0.3771	5.7	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.55#
35	T	Bromochloromethane	0.4000	0.4529	-13.2	100	-0.02
36	T	Tetrahydrofuran	-1.0000	0.2239	0.0	0	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.71#
38	T	1,1,1-Trichloroethane	0.4000	0.3619	9.5	100	0.00
39	T	Cyclohexane	-1.0000	0.3977	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.3738	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.26#
42	T	Carbon Tetrachloride	0.4000	0.3878	3.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.35#
44		Heptane	-1.0000	0.0000	0.0	0	-2.58#
45	T	1,2-Dichloroethane	0.4000	0.4271	-6.8	100	0.00
46	T	Benzene	0.4000	0.3994	0.2	100	0.00
47	T	Trichloroethene	0.4000	0.3826	4.4	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3926	0.0	100	0.00
49	C	1,2-Dichloropropane	0.4000	0.4067	-1.7	100	0.00
50	T	Bromodichloromethane	0.4000	0.3929	1.8	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.77#
52	T	Dibromomethane	0.4000	0.4451	-11.3	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	-0.2604	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.10#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404580.D Vial: 4
Acq On : 12 May 2015 17:19 Operator: TMB
Sample : WG523161-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.4292	-7.3	100	0.00
56	T	Dimethyl Disulfide	-1.0000	3.3001	0.0	0	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0000	0.0	0	-12.73#
59	C	Toluene	0.4000	0.4207	-5.2	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3062	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.18#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3789	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.3968	0.8	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.15#
65	T	1,3-Dichloropropane	0.4000	0.3712	7.2	100	0.00
66	T	Tetrachloroethene	0.4000	0.3351	16.2	100	0.00
67	T	Dibromochloromethane	0.4000	0.3608	9.8	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.3584	10.4	100	0.00
69	T	1-Chlorohexane	0.4000	0.4197	-4.9	100	0.00
70	P	Chlorobenzene	0.4000	0.3826	4.4	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3788	5.3	100	0.00
72	C	Ethylbenzene	0.4000	0.3570	10.8	100	0.00
73	T	m-,p-Xylene	0.8000	0.8505	-6.3	100	0.00
74	T	o-Xylene	-1.0000	0.4149	0.0	100	0.00
75	T	Styrene	0.4000	0.3650	8.7	100	0.00
76	P	Bromoform	-1.0000	1.0334	0.0	0	0.00
77	T	Isopropylbenzene	0.4000	0.4591	-14.8	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.4135	-3.4	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0000	0.0	0	-16.12#
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.18#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.23#
83	T	n-Propylbenzene	0.4000	0.4483	-12.1	100	0.00
84	T	Bromobenzene	0.4000	0.3657	8.6	100	0.02
85	T	1,3,5-Trimethylbenzene	0.4000	0.4103	-2.6	100	0.00
86	T	2-Chlorotoluene	0.4000	0.4968	-24.2	100	0.00
87	T	4-Chlorotoluene	0.4000	0.4194	-4.9	100	0.00
88	T	a-Methylstyrene	-1.0000	0.3640	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3396	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	0.4000	0.4369	-9.2	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.4176	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4550	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.4209	-5.2	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.4068	-1.7	100	-0.01
95	T	n-Butylbenzene	-1.0000	0.4718	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.3624	9.4	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.17#
98	T	1,2,4-Trichlorobenzene	0.4000	0.4133	-3.3	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.4003	-0.1	100	0.00
100	T	Naphthalene	0.4000	0.3542	11.4	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.3471	13.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1
8M404580.D 8260WT.M Wed May 13 06:47:27 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404581.D Vial: 5
Acq On : 12 May 2015 17:48 Operator: TMB
Sample : WG523161-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:14 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	659590	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	460400	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	243542	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.71	111	2938	0.4494 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.80%#	
43) 1,2-Dichloroethane-d4	10.35	65	2843	0.4627 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	1.84%#	
58) Toluene-d8	12.73	98	11695	0.5443 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.16%#	
80) p-Bromofluorobenzene	16.12	95	4255	0.5135 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.04%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.20	85	9953	0.9736 ug/L	87
3) Chloromethane	3.65	50	24429	1.1970 ug/L	99
4) Vinyl Chloride	3.89	62	20406	1.0612 ug/L	96
5) 1,3-Butadiene	3.94	54	17219	0.6767 ug/L	82
6) Bromomethane	4.79	94	2450	1.3331 ug/L	94
7) Chloroethane	4.94	64	5035	0.9622 ug/L	90
8) Trichlorofluoromethane	5.43	101	11177	0.9255 ug/L	98
9) Diethyl ether	5.95	59	23102	4.9898 ug/L	87
10) Isoprene	6.00	67	7629	0.8520 ug/L	76
12) 1,1,2-Trichloro-1,2,2-Trif	6.23	101	6538	0.9592 ug/L	92
13) Acetone	6.30	43	745	0.7909 ug/L #	36
14) 1,1-Dichloroethene	6.51	61	10988	0.9479 ug/L	82
15) Tert-Butyl Alcohol	6.59	59	2356	9.2949 ug/L #	61
16) Dimethyl Sulfide	6.77	62	6885	1.0188 ug/L	85
17) Iodomethane	7.02	142	2038	1.4675 ug/L	95
18) Methyl acetate	7.05	43	2929	0.8714 ug/L #	79
19) Methylene Chloride	7.30	84	6116	0.9258 ug/L #	33
20) Carbon Disulfide	7.34	76	20852	0.9778 ug/L	97
21) Acrylonitrile	7.48	53	3571	2.3817 ug/L	97
22) Methyl Tert Butyl Ether	7.53	73	12114	0.9518 ug/L	86
23) trans-1,2-Dichloroethene	7.76	61	10287	0.9296 ug/L	85
24) n-Hexane	7.84	57	10789	0.9641 ug/L	98
25) Diisopropyl ether	8.17	45	121991	4.9765 ug/L	90
26) Vinyl Acetate	8.34	43	8061	0.9960 ug/L #	78
27) 1,1-Dichloroethane	8.38	63	12933	0.9681 ug/L	91
28) Ethyl-Tert-Butyl ether	8.75	59	93602	4.8664 ug/L	91
29) 2-Butanone	8.93	43	1254	0.8171 ug/L #	49
30) Propionitrile	9.03	54	2357	4.8184 ug/L	83
31) 2,2-Dichloropropane	9.15	77	10696	0.9704 ug/L	96
32) cis-1,2-Dichloroethene	9.21	96	7441	0.9790 ug/L	62
33) Chloroform	9.42	83	12873	1.0374 ug/L	89
34) 1-Bromopropane	9.55	122	699	0.9722 ug/L	13
35) Bromochloromethane	9.66	130	4028	1.0392 ug/L	77
36) Tetrahydrofuran	9.68	42	5122	4.9547 ug/L	85
38) 1,1,1-Trichloroethane	9.95	97	10138	0.9000 ug/L	95
39) Cyclohexane	9.99	56	11930	0.8739 ug/L	89
40) 1,1-Dichloropropene	10.14	75	9993	1.0196 ug/L	92
41) Tert-Amyl-Methyl ether	10.25	73	68220	4.8322 ug/L	94
42) Carbon Tetrachloride	10.30	117	9231	0.9018 ug/L	97
45) 1,2-Dichloroethane	10.47	62	8537	0.9597 ug/L	83

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404581.D Vial: 5
Acq On : 12 May 2015 17:48 Operator: TMB
Sample : WG523161-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:14 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	10.51	78	27669	1.0481 ug/L		98
47)	Trichloroethene	11.27	130	6630	0.9494 ug/L		95
48)	Methylcyclohexane	11.34	83	9973	0.8799 ug/L		81
49)	1,2-Dichloropropane	11.48	63	7489	1.0128 ug/L		99
50)	Bromodichloromethane	11.78	83	9171	1.0074 ug/L		95
52)	Dibromomethane	11.86	93	2794	0.8023 ug/L		87
53)	2-Chloroethyl Vinyl Ether	12.08	63	2512	0.4835 ug/L	#	64
54)	4-Methyl-2-Pentanone	12.11	58	522	0.4106 ug/L	#	36
55)	cis-1,3-Dichloropropene	12.41	75	8511	0.8553 ug/L		94
56)	Dimethyl Disulfide	12.67	79	3441	3.5730 ug/L		81
59)	Toluene	12.83	91	28445	1.0416 ug/L		80
60)	Ethyl Methacrylate	12.93	69	3578	0.7364 ug/L	#	33
62)	trans-1,3-Dichloropropene	13.01	75	7499	0.9161 ug/L		93
63)	1,1,2-Trichloroethane	13.23	97	4124	0.9720 ug/L		97
64)	2-Hexanone	13.15	58	995	0.8516 ug/L	#	31
65)	1,3-Dichloropropane	13.52	76	7090	0.9532 ug/L		70
66)	Tetrachloroethene	13.66	164	5967	1.0352 ug/L		87
67)	Dibromochloromethane	13.91	129	5305	0.9396 ug/L		84
68)	1,2-Dibromoethane	14.18	107	3373	0.8328 ug/L		82
69)	1-Chlorohexane	14.26	91	8764	0.9382 ug/L		86
70)	Chlorobenzene	14.67	112	17996	0.9764 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.70	131	5637	0.8520 ug/L		99
72)	Ethylbenzene	14.69	106	10247	0.9282 ug/L	#	34
73)	m-,p-Xylene	14.79	106	23914	1.9154 ug/L	#	43
74)	o-Xylene	15.35	106	11085	0.8984 ug/L		61
75)	Styrene	15.39	104	19272	0.9860 ug/L		86
76)	Bromoform	15.88	173	1949	1.3145 ug/L		86
77)	Isopropylbenzene	15.78	105	30028	0.9951 ug/L		78
79)	1,1,2,2-Tetrachloroethane	16.00	83	4807	1.0388 ug/L	#	91
81)	1,2,3-Trichloropropane	16.18	110	889	0.7091 ug/L	#	1
82)	trans-1,4-Dichloro-2-Buten	16.23	53	1479	0.9628 ug/L	#	23
83)	n-Propylbenzene	16.29	91	37672	1.0223 ug/L	#	71
84)	Bromobenzene	16.42	156	7025	0.9600 ug/L		81
85)	1,3,5-Trimethylbenzene	16.47	105	25978	1.0304 ug/L		75
86)	2-Chlorotoluene	16.55	91	26781	1.0769 ug/L	#	69
87)	4-Chlorotoluene	16.61	91	18077	0.9088 ug/L		73
88)	a-Methylstyrene	16.87	118	11588	0.8071 ug/L		95
89)	tert-Butylbenzene	16.94	134	5736	1.0234 ug/L		92
90)	1,2,4-Trimethylbenzene	16.99	105	25492	0.9834 ug/L		75
91)	sec-Butylbenzene	17.21	105	33874	1.0776 ug/L		80
92)	p-Isopropyltoluene	17.36	119	27221	1.0214 ug/L		76
93)	1,3-Dichlorobenzene	17.56	146	14385	0.9699 ug/L		92
94)	1,4-Dichlorobenzene	17.69	146	14766	0.9807 ug/L		79
95)	n-Butylbenzene	17.89	91	26584	1.0211 ug/L		79
96)	1,2-Dichlorobenzene	18.19	146	12891	1.0017 ug/L		93
97)	1,2-Dibromo-3-Chloropropan	19.18	75	792	1.0722 ug/L	#	17
98)	1,2,4-Trichlorobenzene	20.32	180	8084	0.8338 ug/L		96
99)	Hexachlorobutadiene	20.47	225	4179	0.8251 ug/L	#	82
100)	Naphthalene	20.69	128	11817	0.9088 ug/L		91
101)	1,2,3-Trichlorobenzene	21.00	180	7425	0.9038 ug/L		93

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404581.D Vial: 5
Acq On : 12 May 2015 17:48 Operator: TMB
Sample : WG523161-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

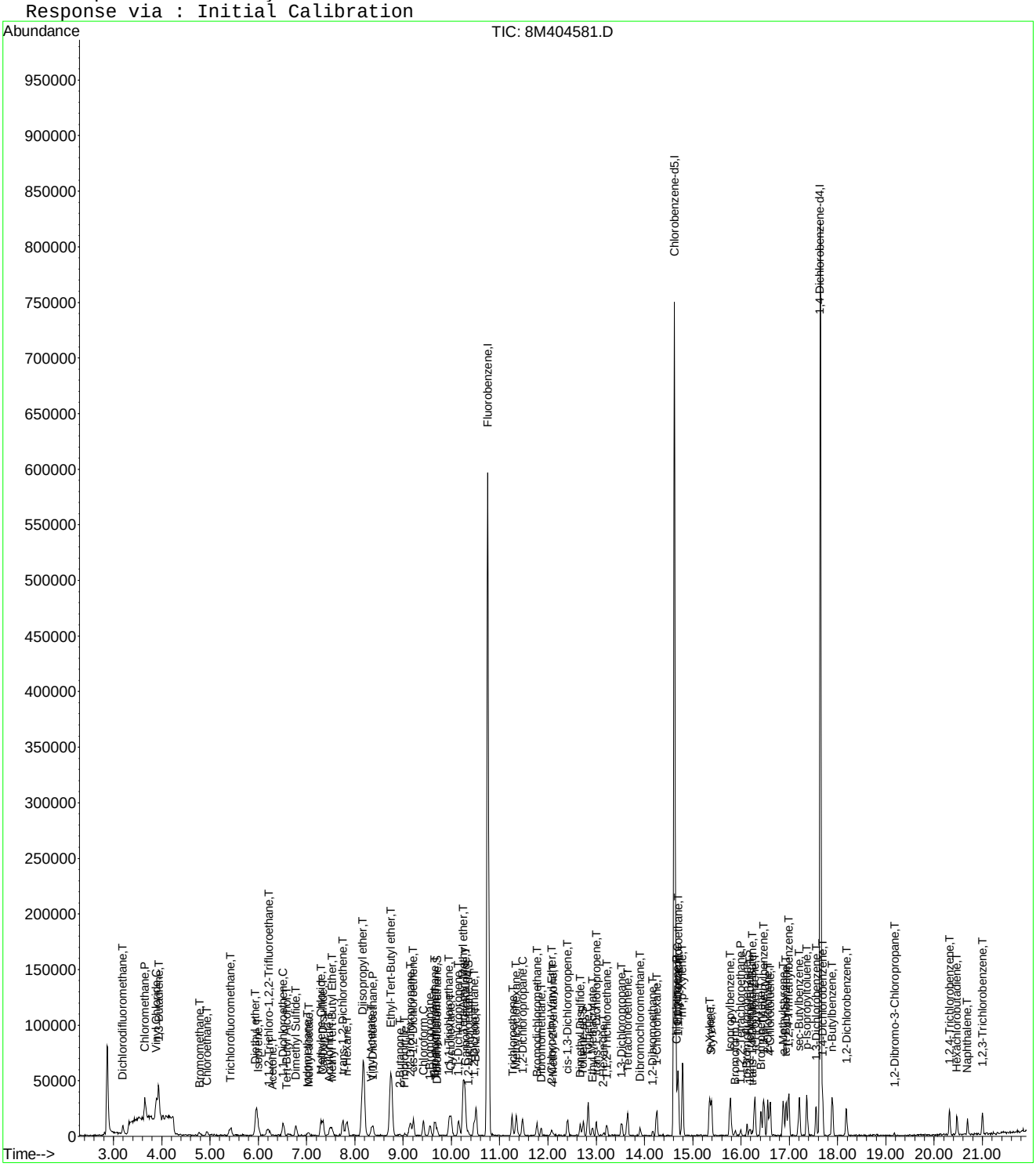

8M404581.D 8260WT.M Wed May 13 06:46:15 2015 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404581.D Vial: 5
Acq On : 12 May 2015 17:48 Operator: TMB
Sample : WG523161-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9736	2.6	100	0.00
3	P	Chloromethane	1.0000	1.1970	-19.7	100	0.00
4	C	Vinyl Chloride	1.0000	1.0612	-6.1	100	0.01
5	T	1,3-Butadiene	-1.0000	0.6767	0.0	0	0.03
6	T	Bromomethane	1.0000	1.3331	-33.3#	100	0.02
7	T	Chloroethane	1.0000	0.9622	3.8	100	0.00
8	T	Trichlorofluoromethane	1.0000	0.9255	7.4	100	0.00
9	T	Diethyl ether	5.0000	4.9898	0.2	100	0.00
10	T	Isoprene	-1.0000	0.8520	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.18#
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	0.9592	4.1	100	0.02
13	T	Acetone	-1.0000	0.7909	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	0.9479	5.2	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	9.2949	0.0	0	-0.04
16	T	Dimethyl Sulfide	-1.0000	1.0188	0.0	100	0.00
17	T	Iodomethane	1.0000	1.4675	-46.8#	100	-0.01
18	T	Methyl acetate	-1.0000	0.8714	0.0	100	0.00
19	T	Methylene Chloride	1.0000	0.9258	7.4	100	0.00
20	T	Carbon Disulfide	1.0000	0.9778	2.2	100	0.00
21	T	Acrylonitrile	-1.0000	2.3817	0.0	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9518	4.8	100	0.02
23	T	trans-1,2-Dichloroethene	1.0000	0.9296	7.0	100	0.00
24	T	n-Hexane	-1.0000	0.9641	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	4.9765	0.5	100	0.00
26	T	Vinyl Acetate	-1.0000	0.9960	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	0.9681	3.2	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.8664	2.7	100	0.00
29	T	2-Butanone	-1.0000	0.8171	0.0	100	0.00
30	T	Propionitrile	5.0000	4.8184	3.6	100	-0.01
31	T	2,2-Dichloropropane	1.0000	0.9704	3.0	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	0.9790	2.1	100	0.00
33	C	Chloroform	1.0000	1.0374	-3.7	100	0.00
34		1-Bromopropane	1.0000	0.9722	2.8	100	0.00
35	T	Bromochloromethane	1.0000	1.0392	-3.9	100	0.00
36	T	Tetrahydrofuran	5.0000	4.9547	0.9	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.4494	0.0	0	0.00
38	T	1,1,1-Trichloroethane	1.0000	0.9000	10.0	100	-0.01
39	T	Cyclohexane	1.0000	0.8739	12.6	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0196	-2.0	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	4.8322	3.4	100	-0.01
42	T	Carbon Tetrachloride	1.0000	0.9018	9.8	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.4627	0.0	0	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.58#
45	T	1,2-Dichloroethane	1.0000	0.9597	4.0	100	0.00
46	T	Benzene	1.0000	1.0481	-4.8	100	0.00
47	T	Trichloroethene	1.0000	0.9494	5.1	100	0.00
48	T	Methylcyclohexane	-1.0000	0.8799	0.0	100	0.00
49	C	1,2-Dichloropropane	1.0000	1.0128	-1.3	100	0.00
50	T	Bromodichloromethane	1.0000	1.0074	-0.7	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.77#
52	T	Dibromomethane	1.0000	0.8023	19.8	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.4835	0.0	0	0.01
54	T	4-Methyl-2-Pentanone	-1.0000	0.4106	0.0	162	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404581.D Vial: 5
Acq On : 12 May 2015 17:48 Operator: TMB
Sample : WG523161-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.8553	14.5	100	0.00
56	T	Dimethyl Disulfide	-1.0000	3.5730	0.0	0	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.5443	0.0	0	0.00
59	C	Toluene	1.0000	1.0416	-4.2	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.7364	26.4#	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.18#
62	T	trans-1,3-Dichloropropene	1.0000	0.9161	8.4	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.9720	2.8	100	0.00
64	T	2-Hexanone	-1.0000	0.8516	0.0	100	0.00
65	T	1,3-Dichloropropane	1.0000	0.9533	4.7	100	0.00
66	T	Tetrachloroethene	1.0000	1.0352	-3.5	100	0.00
67	T	Dibromochloromethane	1.0000	0.9396	6.0	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.8328	16.7	100	0.00
69	T	1-Chlorohexane	1.0000	0.9382	6.2	100	0.00
70	P	Chlorobenzene	1.0000	0.9764	2.4	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.8520	14.8	100	0.00
72	C	Ethylbenzene	1.0000	0.9282	7.2	100	-0.01
73	T	m-,p-Xylene	2.0000	1.9154	4.2	100	0.00
74	T	o-Xylene	1.0000	0.8984	10.2	100	0.00
75	T	Styrene	1.0000	0.9860	1.4	100	0.00
76	P	Bromoform	1.0000	1.3144	-31.4#	100	0.00
77	T	Isopropylbenzene	1.0000	0.9951	0.5	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	1.0388	-3.9	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5135	0.0	0	0.00
81	T	1,2,3-Trichloropropane	1.0000	0.7091	29.1#	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	1.0000	0.9628	3.7	100	0.00
83	T	n-Propylbenzene	1.0000	1.0224	-2.2	100	0.00
84	T	Bromobenzene	1.0000	0.9600	4.0	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	1.0304	-3.0	100	0.00
86	T	2-Chlorotoluene	1.0000	1.0769	-7.7	100	0.00
87	T	4-Chlorotoluene	1.0000	0.9088	9.1	100	0.00
88	T	a-Methylstyrene	-1.0000	0.8071	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	1.0234	-2.3	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	0.9835	1.7	100	0.00
91	T	sec-Butylbenzene	1.0000	1.0776	-7.8	100	0.00
92	T	p-Isopropyltoluene	1.0000	1.0214	-2.1	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	0.9699	3.0	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	0.9807	1.9	100	0.00
95	T	n-Butylbenzene	1.0000	1.0211	-2.1	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0017	-0.2	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.0722	0.0	0	0.01
98	T	1,2,4-Trichlorobenzene	1.0000	0.8338	16.6	100	0.00
99	T	Hexachlorobutadiene	1.0000	0.8251	17.5	100	0.00
100	T	Naphthalene	1.0000	0.9088	9.1	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	0.9038	9.6	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M404581.D 8260WT.M Wed May 13 06:47:37 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404582.D Vial: 6
Acq On : 12 May 2015 18:16 Operator: TMB
Sample : WG523161-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:15 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	668457	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	470511	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.65	152	251240	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.72	111	6565	0.9909 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.96%#	
43) 1,2-Dichloroethane-d4	10.35	65	6190	0.9941 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.96%#	
58) Toluene-d8	12.73	98	21782	0.9921 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	3.96%#	
80) p-Bromofluorobenzene	16.12	95	9059	1.0598 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.24%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.19	85	18273	1.7638 ug/L	99
3) Chloromethane	3.65	50	45698	2.2095 ug/L	99
4) Vinyl Chloride	3.89	62	40979	2.1027 ug/L	96
5) 1,3-Butadiene	3.94	54	37404	1.7245 ug/L	86
6) Bromomethane	4.78	94	5092	1.9188 ug/L	91
7) Chloroethane	4.93	64	10438	1.9682 ug/L	95
8) Trichlorofluoromethane	5.42	101	23291	1.9031 ug/L	96
9) Diethyl ether	5.95	59	115894	24.7000 ug/L	90
10) Isoprene	6.00	67	16844	1.8561 ug/L	82
11) Acrolein	6.20	56	1525	Below Cal	65
12) 1,1,2-Trichloro-1,2,2-Trif	6.21	101	13397	1.9395 ug/L	85
13) Acetone	6.30	43	2254	2.3611 ug/L #	52
14) 1,1-Dichloroethene	6.51	61	23611	2.0098 ug/L	83
15) Tert-Butyl Alcohol	6.63	59	12335	48.0186 ug/L	96
16) Dimethyl Sulfide	6.77	62	13216	1.9296 ug/L	76
17) Iodomethane	7.03	142	4697	2.0188 ug/L	98
18) Methyl acetate	7.04	43	6429	1.8872 ug/L #	63
19) Methylene Chloride	7.30	84	13330	1.9910 ug/L #	51
20) Carbon Disulfide	7.34	76	40646	1.8807 ug/L	94
21) Acrylonitrile	7.47	53	16949	11.1543 ug/L	75
22) Methyl Tert Butyl Ether	7.53	73	26473	2.0525 ug/L	98
23) trans-1,2-Dichloroethene	7.74	61	22069	1.9677 ug/L	86
24) n-Hexane	7.84	57	21654	1.9093 ug/L	97
25) Diisopropyl ether	8.17	45	627644	25.2643 ug/L	90
26) Vinyl Acetate	8.34	43	16025	1.9538 ug/L #	84
27) 1,1-Dichloroethane	8.37	63	27711	2.0467 ug/L	97
28) Ethyl-Tert-Butyl ether	8.75	59	479574	24.6025 ug/L	93
29) 2-Butanone	8.91	43	2904	1.8670 ug/L #	49
30) Propionitrile	9.04	54	11650	23.5000 ug/L	93
31) 2,2-Dichloropropane	9.16	77	22508	2.0150 ug/L	87
32) cis-1,2-Dichloroethene	9.21	96	14863	1.9295 ug/L	80
33) Chloroform	9.42	83	24639	1.9592 ug/L	100
34) 1-Bromopropane	9.54	122	2635	2.3365 ug/L	96
35) Bromochloromethane	9.65	130	7260	1.8482 ug/L #	61
36) Tetrahydrofuran	9.68	42	25601	24.4363 ug/L	89
38) 1,1,1-Trichloroethane	9.96	97	21783	1.9081 ug/L	98
39) Cyclohexane	9.98	56	27008	1.9521 ug/L	78
40) 1,1-Dichloropropene	10.15	75	19262	1.9393 ug/L	87
41) Tert-Amyl-Methyl ether	10.26	73	341606	23.8760 ug/L	96
42) Carbon Tetrachloride	10.30	117	19985	1.9264 ug/L	93

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404582.D Vial: 6
Acq On : 12 May 2015 18:16 Operator: TMB
Sample : WG523161-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:15 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.47	62	16851	1.8691 ug/L		92
46)	Benzene	10.50	78	56814	2.1235 ug/L		96
47)	Trichloroethene	11.26	130	12549	1.7732 ug/L		96
48)	Methylcyclohexane	11.35	83	19938	1.7357 ug/L		89
49)	1,2-Dichloropropane	11.47	63	14953	1.9954 ug/L		91
50)	Bromodichloromethane	11.78	83	17347	1.8802 ug/L		98
51)	1,4-Dioxane	11.76	88	945	73.3339 ug/L		93
52)	Dibromomethane	11.86	93	7170	2.0316 ug/L		88
53)	2-Chloroethyl Vinyl Ether	12.08	63	5523	2.1519 ug/L	#	78
54)	4-Methyl-2-Pentanone	12.11	58	2984	2.3162 ug/L	#	83
55)	cis-1,3-Dichloropropene	12.41	75	17917	1.7766 ug/L		95
56)	Dimethyl Disulfide	12.67	79	7600	4.2202 ug/L		84
59)	Toluene	12.83	91	59670	2.1381 ug/L		80
60)	Ethyl Methacrylate	12.92	69	8875	1.7872 ug/L	#	54
62)	trans-1,3-Dichloropropene	13.01	75	14883	1.7791 ug/L		97
63)	1,1,2-Trichloroethane	13.22	97	8013	1.8480 ug/L		88
64)	2-Hexanone	13.16	58	2369	1.9841 ug/L	#	38
65)	1,3-Dichloropropane	13.52	76	16337	2.1493 ug/L		83
66)	Tetrachloroethene	13.65	164	11497	1.9518 ug/L		88
67)	Dibromochloromethane	13.92	129	10779	1.8681 ug/L		99
68)	1,2-Dibromoethane	14.16	107	7938	1.9177 ug/L		100
69)	1-Chlorohexane	14.26	91	17801	1.8648 ug/L		87
70)	Chlorobenzene	14.67	112	38190	2.0274 ug/L		92
71)	1,1,1,2-Tetrachloroethane	14.70	131	12247	1.8113 ug/L		100
72)	Ethylbenzene	14.70	106	19901	1.7639 ug/L	#	18
73)	m-,p-Xylene	14.78	106	51169	4.0103 ug/L	#	48
74)	o-Xylene	15.35	106	23385	1.8546 ug/L	#	50
75)	Styrene	15.39	104	38422	1.9235 ug/L		88
76)	Bromoform	15.88	173	5191	2.1713 ug/L		94
77)	Isopropylbenzene	15.78	105	63107	2.0464 ug/L		76
79)	1,1,2,2-Tetrachloroethane	15.98	83	9845	2.0623 ug/L		98
81)	1,2,3-Trichloropropane	16.18	110	3065	2.3699 ug/L	#	30
82)	trans-1,4-Dichloro-2-Buten	16.23	53	2710	1.7101 ug/L	#	13
83)	n-Propylbenzene	16.28	91	78854	2.0744 ug/L	#	72
84)	Bromobenzene	16.42	156	13385	1.7731 ug/L		74
85)	1,3,5-Trimethylbenzene	16.47	105	53268	2.0480 ug/L		79
86)	2-Chlorotoluene	16.55	91	43814	1.7078 ug/L		82
87)	4-Chlorotoluene	16.60	91	46513	2.2667 ug/L		77
88)	a-Methylstyrene	16.87	118	25754	1.7387 ug/L		89
89)	tert-Butylbenzene	16.94	134	10204	1.7647 ug/L		42
90)	1,2,4-Trimethylbenzene	16.99	105	55177	2.0634 ug/L		70
91)	sec-Butylbenzene	17.20	105	68065	2.0989 ug/L	#	74
92)	p-Isopropyltoluene	17.36	119	57213	2.0809 ug/L		75
93)	1,3-Dichlorobenzene	17.56	146	31027	2.0280 ug/L		93
94)	1,4-Dichlorobenzene	17.69	146	29852	1.9219 ug/L		92
95)	n-Butylbenzene	17.90	91	56152	2.0908 ug/L	#	77
96)	1,2-Dichlorobenzene	18.18	146	27243	2.0520 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.18	75	1051	1.3793 ug/L		76
98)	1,2,4-Trichlorobenzene	20.32	180	18804	1.8801 ug/L		95
99)	Hexachlorobutadiene	20.47	225	9220	1.7646 ug/L		93
100)	Naphthalene	20.69	128	28078	2.0933 ug/L		91
101)	1,2,3-Trichlorobenzene	21.00	180	16807	1.9831 ug/L		94

(#) = qualifier out of range (m) = manual integration
8M404582.D 8260WT.M Wed May 13 06:46:16 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404582.D Vial: 6
Acq On : 12 May 2015 18:16 Operator: TMB
Sample : WG523161-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

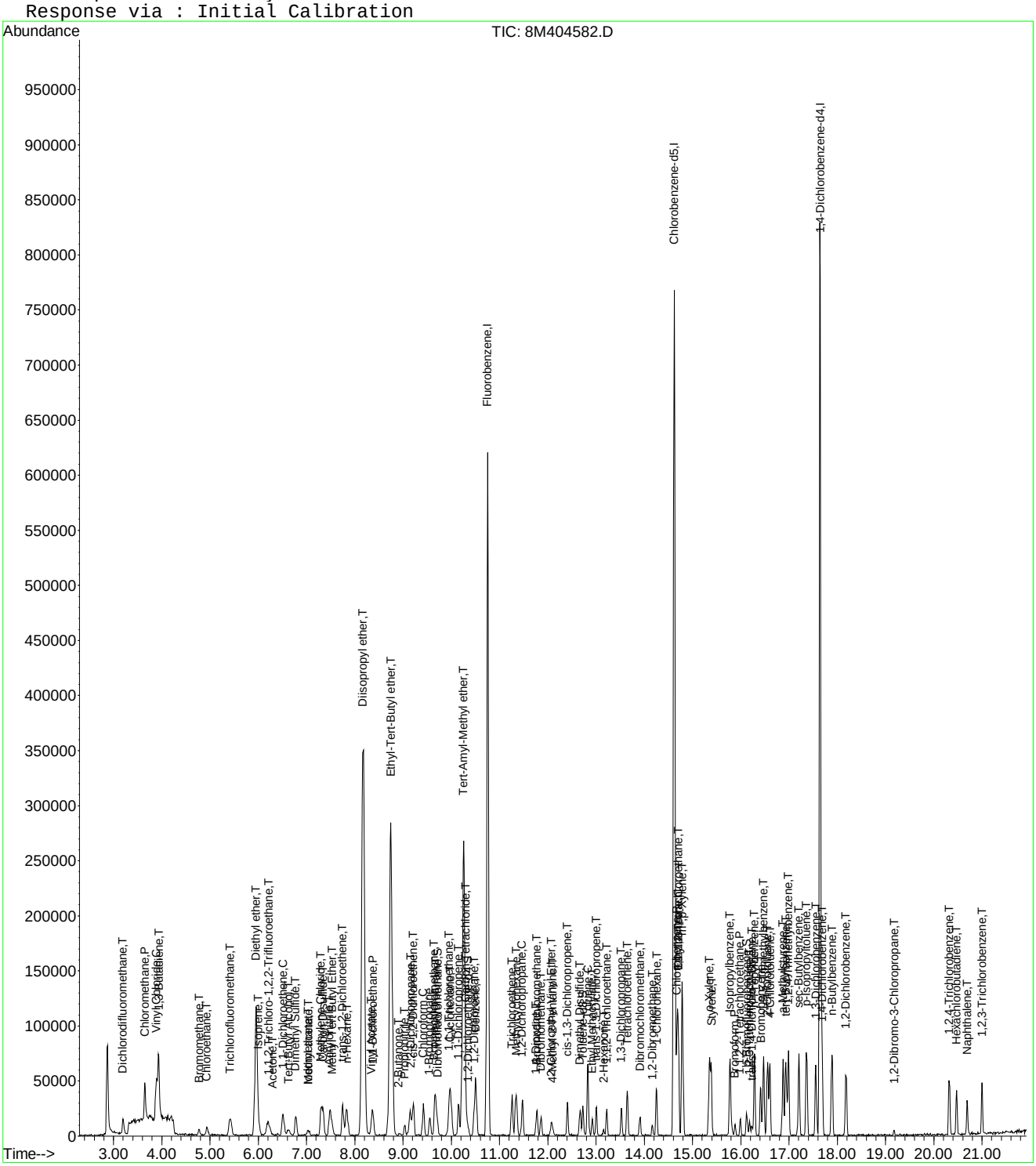

8M404582.D 8260WT.M Wed May 13 06:46:16 2015 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404582.D Vial: 6
Acq On : 12 May 2015 18:16 Operator: TMB
Sample : WG523161-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.7638	11.8	100	0.00
3	P	Chloromethane	2.0000	2.2095	-10.5	100	0.00
4	C	Vinyl Chloride	2.0000	2.1027	-5.1	100	0.00
5	T	1,3-Butadiene	2.0000	1.7245	13.8	100	0.03
6	T	Bromomethane	2.0000	1.9188	4.1	100	0.00
7	T	Chloroethane	2.0000	1.9682	1.6	100	0.00
8	T	Trichlorofluoromethane	2.0000	1.9031	4.8	100	0.00
9	T	Diethyl ether	25.0000	24.7000	1.2	100	0.00
10	T	Isoprene	-1.0000	1.8561	0.0	100	0.00
11	T	Acrolein	12.5000	-1.0000	108.0#	100	0.02
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.9395	3.0	100	0.00
13	T	Acetone	-1.0000	2.3611	0.0	100	0.00
14	C	1,1-Dichloroethene	2.0000	2.0098	-0.5	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	48.0186	4.0	100	0.00
16	T	Dimethyl Sulfide	2.0000	1.9297	3.5	100	0.00
17	T	Iodomethane	2.0000	2.0188	-0.9	100	0.00
18	T	Methyl acetate	2.0000	1.8872	5.6	100	0.00
19	T	Methylene Chloride	2.0000	1.9910	0.4	100	0.00
20	T	Carbon Disulfide	2.0000	1.8807	6.0	100	0.00
21	T	Acrylonitrile	12.5000	11.1543	10.8	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	2.0525	-2.6	100	0.02
23	T	trans-1,2-Dichloroethene	2.0000	1.9678	1.6	100	0.00
24	T	n-Hexane	-1.0000	1.9093	0.0	100	0.00
25	T	Diisopropyl ether	25.0000	25.2643	-1.1	100	0.00
26	T	Vinyl Acetate	-1.0000	1.9538	0.0	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.0467	-2.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	24.6025	1.6	100	0.00
29	T	2-Butanone	-1.0000	1.8670	0.0	100	-0.01
30	T	Propionitrile	25.0000	23.5000	6.0	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.0150	-0.7	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	1.9295	3.5	100	0.00
33	C	Chloroform	2.0000	1.9592	2.0	100	0.00
34		1-Bromopropane	2.0000	2.3365	-16.8	100	-0.01
35	T	Bromochloromethane	2.0000	1.8482	7.6	100	-0.01
36	T	Tetrahydrofuran	25.0000	24.4363	2.3	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.9909	0.0	0	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.9081	4.6	100	0.00
39	T	Cyclohexane	2.0000	1.9521	2.4	100	0.00
40	T	1,1-Dichloropropene	2.0000	1.9393	3.0	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	23.8760	4.5	100	0.00
42	T	Carbon Tetrachloride	2.0000	1.9264	3.7	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.9941	0.0	0	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.58#
45	T	1,2-Dichloroethane	2.0000	1.8691	6.5	100	0.00
46	T	Benzene	2.0000	2.1235	-6.2	100	0.00
47	T	Trichloroethene	2.0000	1.7732	11.3	100	0.00
48	T	Methylcyclohexane	-1.0000	1.7357	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	1.9954	0.2	100	0.00
50	T	Bromodichloromethane	2.0000	1.8803	6.0	100	0.00
51	T	1,4-Dioxane	-1.0000	73.3339	0.0	0	-0.01
52	T	Dibromomethane	2.0000	2.0316	-1.6	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	2.1519	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	2.3162	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404582.D Vial: 6
Acq On : 12 May 2015 18:16 Operator: TMB
Sample : WG523161-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.7766	11.2	100	0.00
56	T	Dimethyl Disulfide	-1.0000	4.2202	0.0	0	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.9921	0.0	0	0.00
59	C	Toluene	2.0000	2.1381	-6.9	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.7872	10.6	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.18#
62	T	trans-1,3-Dichloropropene	2.0000	1.7791	11.0	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.8480	7.6	100	0.00
64	T	2-Hexanone	-1.0000	1.9841	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.1493	-7.5	100	0.00
66	T	Tetrachloroethene	2.0000	1.9518	2.4	100	0.00
67	T	Dibromochloromethane	2.0000	1.8681	6.6	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.9177	4.1	100	0.00
69	T	1-Chlorohexane	2.0000	1.8647	6.8	100	0.00
70	P	Chlorobenzene	2.0000	2.0274	-1.4	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.8113	9.4	100	0.00
72	C	Ethylbenzene	2.0000	1.7639	11.8	100	0.00
73	T	m-,p-Xylene	4.0000	4.0103	-0.3	100	0.00
74	T	o-Xylene	2.0000	1.8546	7.3	100	0.00
75	T	Styrene	2.0000	1.9235	3.8	100	0.00
76	P	Bromoform	2.0000	2.1713	-8.6	100	0.00
77	T	Isopropylbenzene	2.0000	2.0464	-2.3	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	2.0623	-3.1	100	-0.01
80	S	p-Bromofluorobenzene	-1.0000	1.0598	0.0	0	0.00
81	T	1,2,3-Trichloropropane	2.0000	2.3699	-18.5	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	1.7101	14.5	100	0.00
83	T	n-Propylbenzene	2.0000	2.0744	-3.7	100	0.00
84	T	Bromobenzene	2.0000	1.7731	11.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.0480	-2.4	100	0.00
86	T	2-Chlorotoluene	2.0000	1.7078	14.6	100	0.00
87	T	4-Chlorotoluene	2.0000	2.2667	-13.3	100	0.00
88	T	a-Methylstyrene	-1.0000	1.7387	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	1.7647	11.8	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.0634	-3.2	100	0.00
91	T	sec-Butylbenzene	2.0000	2.0989	-4.9	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.0809	-4.0	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.0280	-1.4	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	1.9219	3.9	100	0.00
95	T	n-Butylbenzene	2.0000	2.0908	-4.5	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0520	-2.6	100	-0.01
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.3793	31.0#	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	1.8801	6.0	100	0.00
99	T	Hexachlorobutadiene	2.0000	1.7646	11.8	100	0.00
100	T	Naphthalene	2.0000	2.0933	-4.7	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9831	0.8	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M404582.D 8260WT.M Wed May 13 06:47:46 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404583.D Vial: 7
Acq On : 12 May 2015 18:45 Operator: TMB
Sample : WG523161-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:16 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	686040	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	475199	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	267048	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	168048	24.7134 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.84%		
43) 1,2-Dichloroethane-d4	10.35	65	161918	25.3383 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.36%		
58) Toluene-d8	12.73	98	587226	26.4814 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.92%		
80) p-Bromofluorobenzene	16.12	95	222599	24.5005 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.00%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.20	85	47127	4.4324 ug/L	96
3) Chloromethane	3.65	50	110533	5.2074 ug/L	96
4) Vinyl Chloride	3.89	62	100868	5.0431 ug/L	95
5) 1,3-Butadiene	3.93	54	97161	4.7530 ug/L	93
6) Bromomethane	4.77	94	15690	4.2002 ug/L	92
7) Chloroethane	4.93	64	25308	4.6497 ug/L #	87
8) Trichlorofluoromethane	5.42	101	59779	4.7593 ug/L	97
9) Diethyl ether	5.96	59	240712	49.9870 ug/L	88
10) Isoprene	6.00	67	39892	4.2833 ug/L	78
11) Acrolein	6.18	56	2733	26.2227 ug/L	71
12) 1,1,2-Trichloro-1,2,2-Trif	6.21	101	33786	4.7658 ug/L	88
13) Acetone	6.29	43	4839	4.9390 ug/L #	61
14) 1,1-Dichloroethene	6.51	61	54546	4.5240 ug/L	79
15) Tert-Butyl Alcohol	6.63	59	26541	100.6726 ug/L	99
16) Dimethyl Sulfide	6.78	62	30481	4.3364 ug/L	68
17) Iodomethane	7.04	142	12011	3.4856 ug/L	79
18) Methyl acetate	7.04	43	18409	5.2654 ug/L #	80
19) Methylene Chloride	7.30	84	32753	4.7667 ug/L #	49
20) Carbon Disulfide	7.34	76	99247	4.4746 ug/L	97
21) Acrylonitrile	7.48	53	36223	23.2277 ug/L	86
22) Methyl Tert Butyl Ether	7.51	73	64059	4.8393 ug/L	97
23) trans-1,2-Dichloroethene	7.76	61	53278	4.6287 ug/L	86
24) n-Hexane	7.84	57	51137	4.3934 ug/L	92
25) Diisopropyl ether	8.17	45	1331241	52.2124 ug/L	91
26) Vinyl Acetate	8.34	43	42002	4.9898 ug/L #	87
27) 1,1-Dichloroethane	8.38	63	66294	4.7710 ug/L	96
28) Ethyl-Tert-Butyl ether	8.75	59	1034994	51.7352 ug/L	91
29) 2-Butanone	8.92	43	7169	4.4910 ug/L #	71
30) Propionitrile	9.03	54	26318	51.7272 ug/L	97
31) 2,2-Dichloropropane	9.15	77	50659	4.4189 ug/L	96
32) cis-1,2-Dichloroethene	9.21	96	34547	4.3699 ug/L	68
33) Chloroform	9.42	83	63118	4.8903 ug/L	92
34) 1-Bromopropane	9.56	122	6302	4.8190 ug/L	90
35) Bromochloromethane	9.65	130	17796	4.4142 ug/L #	59
36) Tetrahydrofuran	9.68	42	54123	50.3367 ug/L	83
38) 1,1,1-Trichloroethane	9.96	97	53980	4.6072 ug/L	95
39) Cyclohexane	9.99	56	62040	4.3691 ug/L	85
40) 1,1-Dichloropropene	10.15	75	47579	4.6675 ug/L	92
41) Tert-Amyl-Methyl ether	10.26	73	751367	51.1697 ug/L	96
42) Carbon Tetrachloride	10.30	117	47176	4.4308 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M404583.D 8260WT.M Wed May 13 06:46:17 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404583.D Vial: 7
Acq On : 12 May 2015 18:45 Operator: TMB
Sample : WG523161-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:16 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.46	62	45883	4.9589 ug/L		91
46)	Benzene	10.51	78	136536	4.9724 ug/L		100
47)	Trichloroethene	11.26	130	33200	4.5710 ug/L		97
48)	Methylcyclohexane	11.34	83	51913	4.4036 ug/L		92
49)	1,2-Dichloropropane	11.48	63	34846	4.5308 ug/L		98
50)	Bromodichloromethane	11.77	83	42494	4.4879 ug/L		99
51)	1,4-Dioxane	11.76	88	2217	105.6275 ug/L		86
52)	Dibromomethane	11.86	93	16927	4.6733 ug/L		92
53)	2-Chloroethyl Vinyl Ether	12.07	63	12688	5.9847 ug/L		92
54)	4-Methyl-2-Pentanone	12.10	58	5613	4.2452 ug/L		93
55)	cis-1,3-Dichloropropene	12.41	75	49114	4.7452 ug/L		94
56)	Dimethyl Disulfide	12.67	79	20718	6.2009 ug/L		94
59)	Toluene	12.83	91	143782	5.1011 ug/L		83
60)	Ethyl Methacrylate	12.92	69	22986	4.5832 ug/L		68
62)	trans-1,3-Dichloropropene	13.01	75	42367	5.0147 ug/L		94
63)	1,1,2-Trichloroethane	13.21	97	20948	4.7835 ug/L		93
64)	2-Hexanone	13.16	58	5134	4.2573 ug/L	#	42
65)	1,3-Dichloropropane	13.52	76	38249	4.9824 ug/L		77
66)	Tetrachloroethene	13.65	164	25212	4.2379 ug/L		87
67)	Dibromochloromethane	13.92	129	26066	4.4729 ug/L		98
68)	1,2-Dibromoethane	14.17	107	20580	4.9228 ug/L		97
69)	1-Chlorohexane	14.26	91	44970	4.6644 ug/L		87
70)	Chlorobenzene	14.67	112	92011	4.8365 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.70	131	30717	4.4982 ug/L		96
72)	Ethylbenzene	14.70	106	51864	4.5516 ug/L	#	32
73)	m-,p-Xylene	14.79	106	126124	9.7872 ug/L	#	41
74)	o-Xylene	15.35	106	60560	4.7554 ug/L		61
75)	Styrene	15.39	104	96464	4.7816 ug/L		89
76)	Bromoform	15.88	173	13800	4.4404 ug/L		97
77)	Isopropylbenzene	15.78	105	158770	5.0977 ug/L		77
79)	1,1,2,2-Tetrachloroethane	16.00	83	24622	4.8524 ug/L		98
81)	1,2,3-Trichloropropane	16.18	110	6682	4.8607 ug/L		76
82)	trans-1,4-Dichloro-2-Buten	16.22	53	7861	4.6669 ug/L	#	59
83)	n-Propylbenzene	16.29	91	193929	4.7996 ug/L	#	74
84)	Bromobenzene	16.41	156	36989	4.6097 ug/L		85
85)	1,3,5-Trimethylbenzene	16.47	105	134210	4.8546 ug/L		79
86)	2-Chlorotoluene	16.55	91	124340	4.5598 ug/L		77
87)	4-Chlorotoluene	16.61	91	121177	5.5558 ug/L		73
88)	a-Methylstyrene	16.87	118	67830	4.3083 ug/L		97
89)	tert-Butylbenzene	16.94	134	27541	4.4811 ug/L		56
90)	1,2,4-Trimethylbenzene	16.99	105	140624	4.9476 ug/L		74
91)	sec-Butylbenzene	17.21	105	179981	5.2214 ug/L	#	76
92)	p-Isopropyltoluene	17.36	119	145950	4.9942 ug/L		76
93)	1,3-Dichlorobenzene	17.56	146	73899	4.5442 ug/L		95
94)	1,4-Dichlorobenzene	17.69	146	78460	4.7523 ug/L		96
95)	n-Butylbenzene	17.89	91	146124	5.1187 ug/L	#	78
96)	1,2-Dichlorobenzene	18.18	146	65645	4.6518 ug/L		97
97)	1,2-Dibromo-3-Chloropropan	19.18	75	4176	5.1559 ug/L		78
98)	1,2,4-Trichlorobenzene	20.33	180	48452	4.5577 ug/L		95
99)	Hexachlorobutadiene	20.47	225	26321	4.7392 ug/L		93
100)	Naphthalene	20.69	128	68778	4.8240 ug/L		93
101)	1,2,3-Trichlorobenzene	21.00	180	41531	4.6102 ug/L		96

(#) = qualifier out of range (m) = manual integration
8M404583.D 8260WT.M Wed May 13 06:46:17 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404583.D Vial: 7
Acq On : 12 May 2015 18:45 Operator: TMB
Sample : WG523161-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

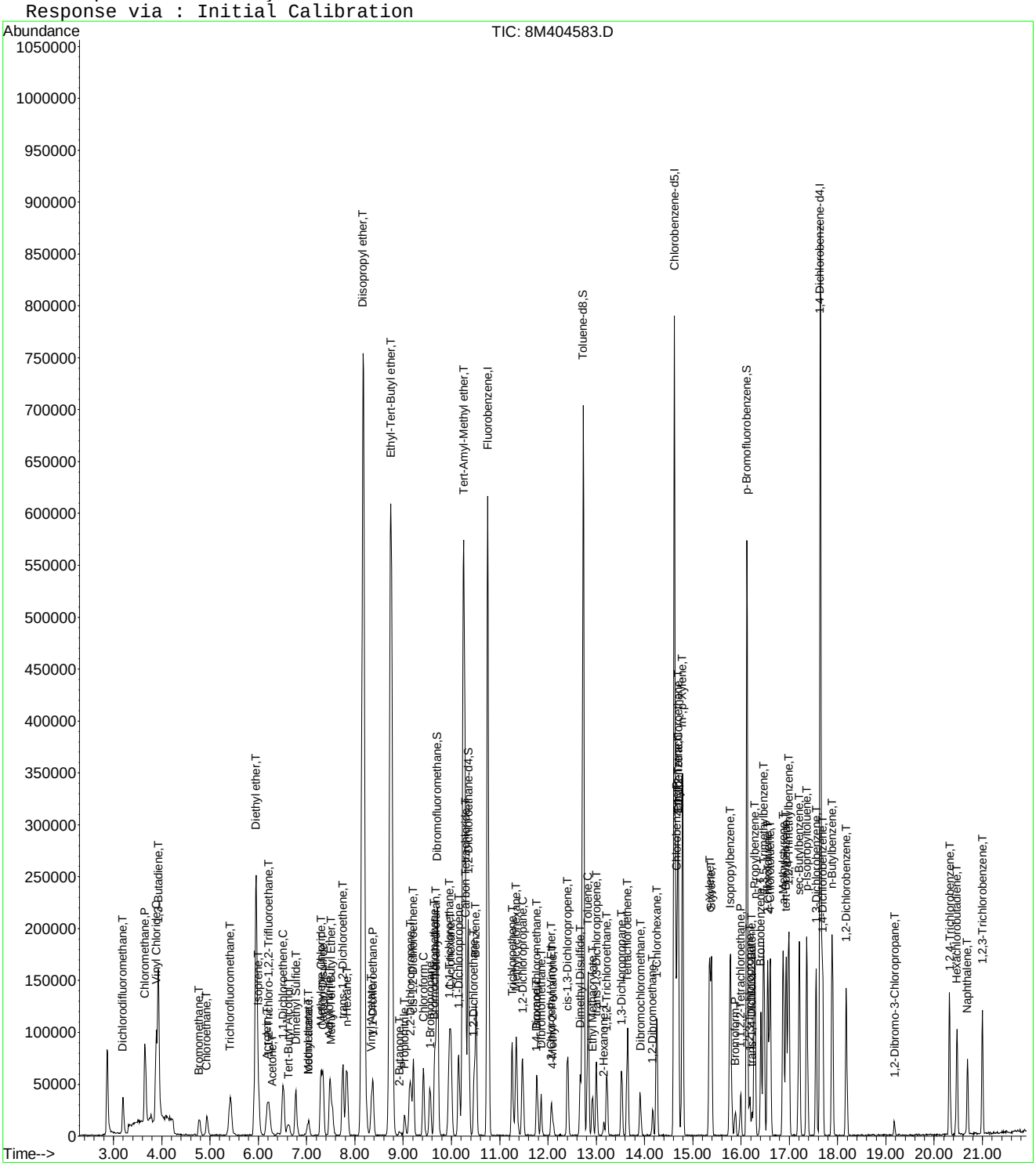

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404583.D Vial: 7
Acq On : 12 May 2015 18:45 Operator: TMB
Sample : WG523161-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.4324	11.4	100	0.00
3	P	Chloromethane	5.0000	5.2074	-4.1	100	0.00
4	C	Vinyl Chloride	5.0000	5.0431	-0.9	100	0.01
5	T	1,3-Butadiene	5.0000	4.7530	4.9	100	0.02
6	T	Bromomethane	5.0000	4.2002	16.0	100	0.00
7	T	Chloroethane	5.0000	4.6498	7.0	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.7594	4.8	100	0.00
9	T	Diethyl ether	50.0000	49.9870	0.0	100	0.01
10	T	Isoprene	5.0000	4.2833	14.3	100	0.00
11	T	Acrolein	25.0000	26.2227	-4.9	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.7658	4.7	100	0.00
13	T	Acetone	5.0000	4.9390	1.2	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.5240	9.5	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	100.6726	-0.7	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.3364	13.3	100	0.00
17	T	Iodomethane	5.0000	3.4856	30.3#	100	0.00
18	T	Methyl acetate	5.0000	5.2654	-5.3	100	0.00
19	T	Methylene Chloride	5.0000	4.7667	4.7	100	0.00
20	T	Carbon Disulfide	5.0000	4.4746	10.5	100	0.00
21	T	Acrylonitrile	25.0000	23.2277	7.1	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.8393	3.2	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.6287	7.4	100	0.00
24	T	n-Hexane	5.0000	4.3934	12.1	100	0.00
25	T	Diisopropyl ether	50.0000	52.2124	-4.4	100	0.00
26	T	Vinyl Acetate	5.0000	4.9898	0.2	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.7710	4.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	51.7352	-3.5	100	0.00
29	T	2-Butanone	5.0000	4.4910	10.2	100	0.00
30	T	Propionitrile	50.0000	51.7272	-3.5	100	-0.01
31	T	2,2-Dichloropropane	5.0000	4.4189	11.6	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.3699	12.6	100	0.00
33	C	Chloroform	5.0000	4.8903	2.2	100	0.00
34		1-Bromopropane	5.0000	4.8190	3.6	100	0.00
35	T	Bromochloromethane	5.0000	4.4142	11.7	100	-0.01
36	T	Tetrahydrofuran	50.0000	50.3367	-0.7	100	0.00
37	S	Dibromofluoromethane	-1.0000	24.7134	0.0	0	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.6072	7.9	100	0.00
39	T	Cyclohexane	5.0000	4.3691	12.6	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.6675	6.7	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	51.1696	-2.3	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.4308	11.4	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	25.3383	0.0	0	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.58#
45	T	1,2-Dichloroethane	5.0000	4.9589	0.8	100	0.00
46	T	Benzene	5.0000	4.9724	0.6	100	0.00
47	T	Trichloroethene	5.0000	4.5710	8.6	100	0.00
48	T	Methylcyclohexane	5.0000	4.4036	11.9	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.5308	9.4	100	0.00
50	T	Bromodichloromethane	5.0000	4.4879	10.2	100	0.00
51	T	1,4-Dioxane	100.0000	105.6275	-5.6	100	-0.01
52	T	Dibromomethane	5.0000	4.6733	6.5	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	5.9847	-19.7	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.2452	15.1	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404583.D Vial: 7
Acq On : 12 May 2015 18:45 Operator: TMB
Sample : WG523161-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.7452	5.1	100	0.00
56	T	Dimethyl Disulfide	5.0000	6.2009	-24.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	26.4814	0.0	0	0.00
59	C	Toluene	5.0000	5.1011	-2.0	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.5832	8.3	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.18#
62	T	trans-1,3-Dichloropropene	5.0000	5.0146	-0.3	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.7835	4.3	100	-0.01
64	T	2-Hexanone	5.0000	4.2573	14.9	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.9824	0.4	100	0.00
66	T	Tetrachloroethene	5.0000	4.2379	15.2	100	0.00
67	T	Dibromochloromethane	5.0000	4.4729	10.5	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.9228	1.5	100	0.00
69	T	1-Chlorohexane	5.0000	4.6644	6.7	100	0.00
70	P	Chlorobenzene	5.0000	4.8365	3.3	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.4982	10.0	100	0.00
72	C	Ethylbenzene	5.0000	4.5516	9.0	100	0.00
73	T	m-,p-Xylene	10.0000	9.7873	2.1	100	0.00
74	T	o-Xylene	5.0000	4.7554	4.9	100	0.00
75	T	Styrene	5.0000	4.7816	4.4	100	0.00
76	P	Bromoform	5.0000	4.4404	11.2	100	0.00
77	T	Isopropylbenzene	5.0000	5.0977	-2.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	4.8524	3.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	24.5005	0.0	0	0.00
81	T	1,2,3-Trichloropropane	5.0000	4.8607	2.8	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.6669	6.7	100	-0.01
83	T	n-Propylbenzene	5.0000	4.7996	4.0	100	0.00
84	T	Bromobenzene	5.0000	4.6097	7.8	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	4.8546	2.9	100	0.00
86	T	2-Chlorotoluene	5.0000	4.5598	8.8	100	0.00
87	T	4-Chlorotoluene	5.0000	5.5558	-11.1	100	0.00
88	T	a-Methylstyrene	5.0000	4.3083	13.8	100	0.00
89	T	tert-Butylbenzene	5.0000	4.4811	10.4	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	4.9476	1.0	100	0.00
91	T	sec-Butylbenzene	5.0000	5.2214	-4.4	100	0.00
92	T	p-Isopropyltoluene	5.0000	4.9942	0.1	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	4.5442	9.1	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	4.7523	5.0	100	0.00
95	T	n-Butylbenzene	5.0000	5.1187	-2.4	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	4.6518	7.0	100	-0.01
97	T	1,2-Dibromo-3-Chloropropane	5.0000	5.1559	-3.1	100	0.01
98	T	1,2,4-Trichlorobenzene	5.0000	4.5577	8.8	100	0.00
99	T	Hexachlorobutadiene	5.0000	4.7392	5.2	100	0.00
100	T	Naphthalene	5.0000	4.8240	3.5	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.6102	7.8	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M404583.D 8260WT.M Wed May 13 06:47:55 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404584.D Vial: 8
Acq On : 12 May 2015 19:13 Operator: TMB
Sample : WG523161-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:17 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	727593	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	518323	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.65	152	285092	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	71169	9.8685 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 39.48%#		
43) 1,2-Dichloroethane-d4	10.35	65	68318	10.0804 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 40.32%#		
58) Toluene-d8	12.73	98	240107	9.9269 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 39.72%#		
80) p-Bromofluorobenzene	16.13	95	95680	9.8645 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 39.44%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.19	85	245768	21.7949 ug/L	97
3) Chloromethane	3.65	50	473219	21.0210 ug/L	95
4) Vinyl Chloride	3.89	62	456773	21.5331 ug/L	94
5) 1,3-Butadiene	3.93	54	457261	22.6102 ug/L	96
6) Bromomethane	4.78	94	81387	17.2761 ug/L	97
7) Chloroethane	4.93	64	115752	20.0522 ug/L	90
8) Trichlorofluoromethane	5.43	101	266817	20.0296 ug/L	97
9) Diethyl ether	5.95	59	412029	80.6767 ug/L	89
10) Isoprene	5.99	67	191093	19.3462 ug/L	79
11) Acrolein	6.18	56	5561	41.8032 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.20	101	152298	20.2560 ug/L	94
13) Acetone	6.28	43	24034	23.1296 ug/L	76
14) 1,1-Dichloroethene	6.51	61	252867	19.7750 ug/L	83
15) Tert-Butyl Alcohol	6.63	59	45992	164.4892 ug/L	97
16) Dimethyl Sulfide	6.78	62	148261	19.8879 ug/L	78
17) Iodomethane	7.03	142	76927	15.7797 ug/L	78
18) Methyl acetate	7.04	43	73990	19.9541 ug/L	93
19) Methylene Chloride	7.30	84	141246	19.3823 ug/L #	49
20) Carbon Disulfide	7.34	76	488267	20.7563 ug/L	94
21) Acrylonitrile	7.47	53	63930	38.6534 ug/L	85
22) Methyl Tert Butyl Ether	7.50	73	280227	19.9606 ug/L	96
23) trans-1,2-Dichloroethene	7.75	61	236060	19.3372 ug/L	85
24) n-Hexane	7.84	57	250582	20.2991 ug/L	98
25) Diisopropyl ether	8.18	45	2248464	83.1503 ug/L	92
26) Vinyl Acetate	8.34	43	183005	20.4992 ug/L	92
27) 1,1-Dichloroethane	8.37	63	299777	20.3420 ug/L	95
28) Ethyl-Tert-Butyl ether	8.74	59	1762800	83.0830 ug/L	92
29) 2-Butanone	8.92	43	36822	21.7495 ug/L	90
30) Propionitrile	9.03	54	44813	83.0484 ug/L	97
31) 2,2-Dichloropropane	9.15	77	236580	19.4577 ug/L	99
32) cis-1,2-Dichloroethene	9.21	96	165038	19.6836 ug/L	75
33) Chloroform	9.42	83	280488	20.4908 ug/L	92
34) 1-Bromopropane	9.55	122	28284	18.8723 ug/L	97
35) Bromochloromethane	9.65	130	83271	19.4752 ug/L #	66
36) Tetrahydrofuran	9.68	42	94391	82.7740 ug/L	85
38) 1,1,1-Trichloroethane	9.95	97	249818	20.1043 ug/L	99
39) Cyclohexane	9.99	56	302464	20.0844 ug/L	85
40) 1,1-Dichloropropene	10.15	75	214768	19.8654 ug/L	93
41) Tert-Amyl-Methyl ether	10.25	73	1279207	82.1414 ug/L	97
42) Carbon Tetrachloride	10.30	117	224404	19.8726 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M404584.D 8260WT.M Wed May 13 06:46:18 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404584.D Vial: 8
Acq On : 12 May 2015 19:13 Operator: TMB
Sample : WG523161-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:17 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.47	62	194558	19.8265 ug/L		92
46)	Benzene	10.51	78	598890	20.5650 ug/L		100
47)	Trichloroethene	11.26	130	158829	20.6187 ug/L		97
48)	Methylcyclohexane	11.35	83	246700	19.7314 ug/L		89
49)	1,2-Dichloropropane	11.47	63	161651	19.8183 ug/L		99
50)	Bromodichloromethane	11.77	83	198014	19.7184 ug/L		99
51)	1,4-Dioxane	11.76	88	4731	163.7290 ug/L	#	69
52)	Dibromomethane	11.86	93	77466	20.1658 ug/L		89
53)	2-Chloroethyl Vinyl Ether	12.06	63	36919	18.0638 ug/L		91
54)	4-Methyl-2-Pentanone	12.11	58	28112	20.0473 ug/L		92
55)	cis-1,3-Dichloropropene	12.41	75	225646	20.5559 ug/L		94
56)	Dimethyl Disulfide	12.67	79	104466	18.1272 ug/L		94
59)	Toluene	12.83	91	648413	21.0904 ug/L		84
60)	Ethyl Methacrylate	12.92	69	115634	21.1382 ug/L		76
62)	trans-1,3-Dichloropropene	13.00	75	185796	20.1616 ug/L		93
63)	1,1,2-Trichloroethane	13.22	97	97920	20.4999 ug/L		98
64)	2-Hexanone	13.15	58	27272	20.7336 ug/L	#	36
65)	1,3-Dichloropropane	13.52	76	170530	20.3655 ug/L		80
66)	Tetrachloroethene	13.65	164	126104	19.4334 ug/L		90
67)	Dibromochloromethane	13.91	129	124382	19.5682 ug/L		99
68)	1,2-Dibromoethane	14.16	107	94289	20.6778 ug/L		96
69)	1-Chlorohexane	14.26	91	211868	20.1470 ug/L		86
70)	Chlorobenzene	14.67	112	410486	19.7817 ug/L		94
71)	1,1,1,2-Tetrachloroethane	14.70	131	142319	19.1072 ug/L		99
72)	Ethylbenzene	14.70	106	228219	18.3622 ug/L	#	21
73)	m-,p-Xylene	14.78	106	564794	40.1817 ug/L	#	41
74)	o-Xylene	15.35	106	276601	19.9127 ug/L		63
75)	Styrene	15.38	104	458747	20.8476 ug/L		89
76)	Bromoform	15.88	173	67444	17.1776 ug/L		99
77)	Isopropylbenzene	15.78	105	719990	21.1936 ug/L		77
79)	1,1,2,2-Tetrachloroethane	15.99	83	105532	19.4816 ug/L		100
81)	1,2,3-Trichloropropane	16.18	110	30367	20.6917 ug/L		94
82)	trans-1,4-Dichloro-2-Buten	16.23	53	35550	19.7693 ug/L		79
83)	n-Propylbenzene	16.28	91	901587	20.9015 ug/L	#	72
84)	Bromobenzene	16.42	156	170410	19.8931 ug/L		87
85)	1,3,5-Trimethylbenzene	16.47	105	625945	21.2085 ug/L		78
86)	2-Chlorotoluene	16.55	91	595181	20.4450 ug/L		80
87)	4-Chlorotoluene	16.60	91	470804	20.2195 ug/L		75
88)	a-Methylstyrene	16.87	118	332268	19.7685 ug/L		91
89)	tert-Butylbenzene	16.93	134	125558	19.1361 ug/L		58
90)	1,2,4-Trimethylbenzene	16.99	105	643764	21.2160 ug/L		74
91)	sec-Butylbenzene	17.20	105	805481	21.8888 ug/L	#	76
92)	p-Isopropyltoluene	17.37	119	680965	21.8269 ug/L		77
93)	1,3-Dichlorobenzene	17.55	146	350883	20.2110 ug/L		93
94)	1,4-Dichlorobenzene	17.69	146	344395	19.5398 ug/L		93
95)	n-Butylbenzene	17.89	91	662694	21.7450 ug/L		78
96)	1,2-Dichlorobenzene	18.18	146	303795	20.1651 ug/L		93
97)	1,2-Dibromo-3-Chloropropan	19.18	75	17277	19.9810 ug/L		77
98)	1,2,4-Trichlorobenzene	20.31	180	223937	19.7317 ug/L		96
99)	Hexachlorobutadiene	20.47	225	112729	19.0128 ug/L		94
100)	Naphthalene	20.69	128	314530	20.6645 ug/L		92
101)	1,2,3-Trichlorobenzene	21.00	180	188988	19.6510 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M404584.D 8260WT.M Wed May 13 06:46:18 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404584.D Vial: 8
Acq On : 12 May 2015 19:13 Operator: TMB
Sample : WG523161-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

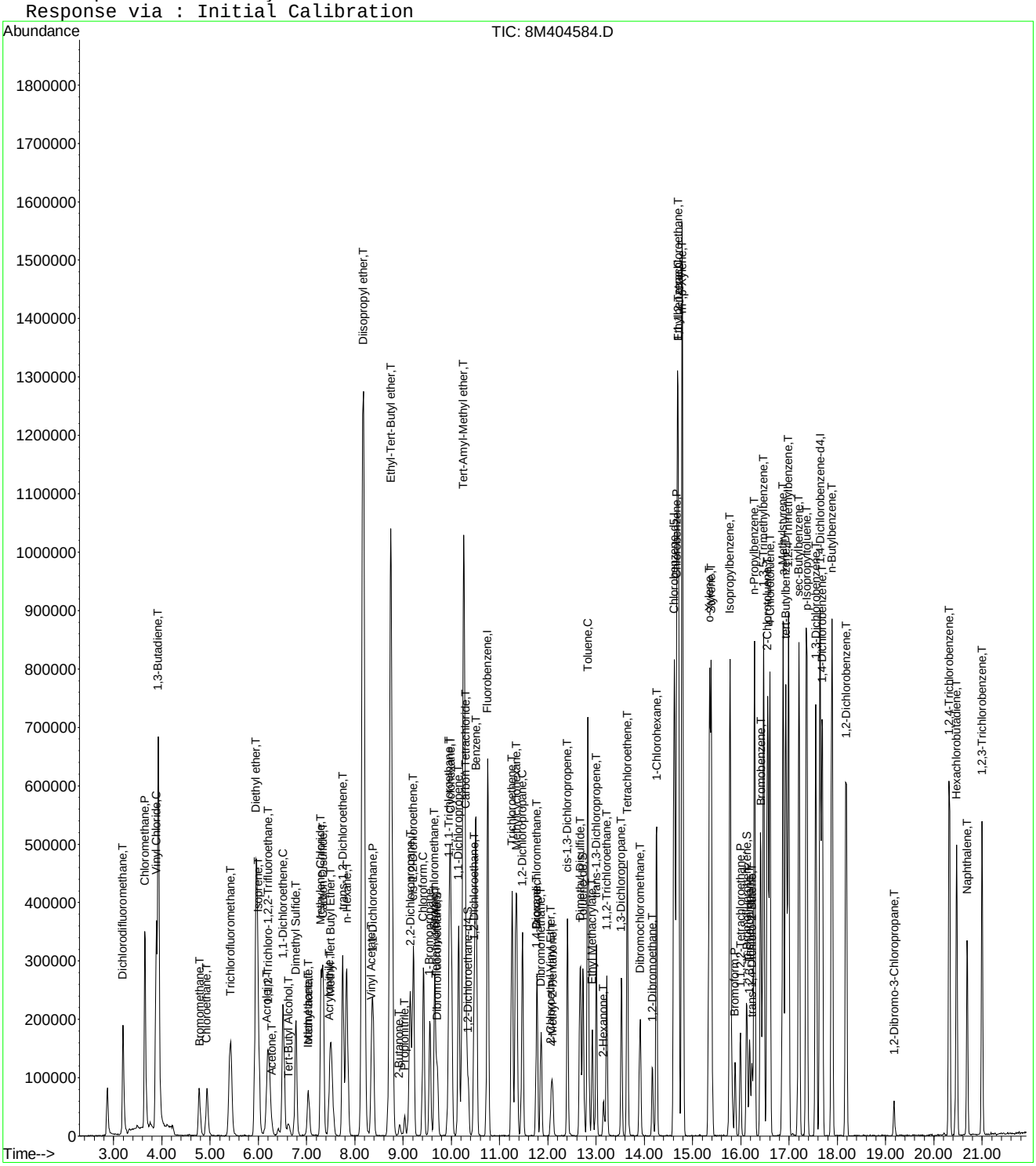

8M404584.D 8260WT.M Wed May 13 06:46:18 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404585.D Vial: 9
Acq On : 12 May 2015 19:42 Operator: TMB
Sample : WG523161-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:18 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	779258	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	545682	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.65	152	300564	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	191218	24.7569 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.04%		
43) 1,2-Dichloroethane-d4	10.35	65	182556	25.1505 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.60%		
58) Toluene-d8	12.73	98	657086	25.8044 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.20%		
80) p-Bromofluorobenzene	16.12	95	255554	24.9912 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.96%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.19	85	644248	53.3446 ug/L	99
3) Chloromethane	3.65	50	1203600	49.9206 ug/L	96
4) Vinyl Chloride	3.89	62	1175474	51.7399 ug/L	95
5) 1,3-Butadiene	3.93	54	1205454	60.0260 ug/L	99
6) Bromomethane	4.78	94	260223	48.3389 ug/L	99
7) Chloroethane	4.94	64	307028	49.6613 ug/L #	91
8) Trichlorofluoromethane	5.42	101	710092	49.7716 ug/L	98
9) Diethyl ether	5.95	59	509109	93.0762 ug/L	90
10) Isoprene	5.98	67	538313	50.8854 ug/L	80
11) Acrolein	6.19	56	9077	53.0585 ug/L	89
12) 1,1,2-Trichloro-1,2,2-Trif	6.20	101	399689	49.6350 ug/L	95
13) Acetone	6.28	43	53732	48.2817 ug/L	85
14) 1,1-Dichloroethene	6.51	61	689257	50.3284 ug/L	83
15) Tert-Butyl Alcohol	6.62	59	54364	181.5406 ug/L #	83
16) Dimethyl Sulfide	6.78	62	405835	50.8299 ug/L	79
17) Iodomethane	7.03	142	270107	48.8910 ug/L	80
18) Methyl acetate	7.04	43	191315	48.1743 ug/L	90
19) Methylene Chloride	7.30	84	388830	49.8192 ug/L #	54
20) Carbon Disulfide	7.34	76	1328711	52.7389 ug/L	96
21) Acrylonitrile	7.48	53	88115	49.7440 ug/L	94
22) Methyl Tert Butyl Ether	7.50	73	740269	49.2335 ug/L	96
23) trans-1,2-Dichloroethene	7.75	61	647880	49.5534 ug/L	85
24) n-Hexane	7.84	57	664406	50.2537 ug/L	95
25) Diisopropyl ether	8.18	45	2835089	97.8931 ug/L	92
26) Vinyl Acetate	8.34	43	494717	51.7415 ug/L	92
27) 1,1-Dichloroethane	8.37	63	805792	51.0536 ug/L	94
28) Ethyl-Tert-Butyl ether	8.75	59	2207186	97.1304 ug/L	93
29) 2-Butanone	8.92	43	89196	49.1919 ug/L	89
30) Propionitrile	9.03	54	54220	93.8197 ug/L	96
31) 2,2-Dichloropropane	9.15	77	637866	48.9836 ug/L	98
32) cis-1,2-Dichloroethene	9.21	96	446398	49.7108 ug/L	76
33) Chloroform	9.42	83	736233	50.2190 ug/L	95
34) 1-Bromopropane	9.56	122	78073	47.8976 ug/L	100
35) Bromochloromethane	9.66	130	229706	50.1611 ug/L #	70
36) Tetrahydrofuran	9.68	42	114556	93.7969 ug/L	86
38) 1,1,1-Trichloroethane	9.96	97	683447	51.3543 ug/L	97
39) Cyclohexane	9.99	56	810422	50.2462 ug/L	85
40) 1,1-Dichloropropene	10.15	75	577549	49.8796 ug/L	93
41) Tert-Amyl-Methyl ether	10.26	73	1610216	96.5412 ug/L	97
42) Carbon Tetrachloride	10.30	117	616028	50.9368 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404585.D Vial: 9
Acq On : 12 May 2015 19:42 Operator: TMB
Sample : WG523161-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:18 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.47	62	514353	48.9401	ug/L		92
46)	Benzene	10.51	78	1588546	50.9317	ug/L		98
47)	Trichloroethene	11.26	130	417289	50.5797	ug/L		97
48)	Methylcyclohexane	11.34	83	671759	50.1660	ug/L		90
49)	1,2-Dichloropropane	11.48	63	431723	49.4196	ug/L		100
50)	Bromodichloromethane	11.77	83	541835	50.3790	ug/L		96
51)	1,4-Dioxane	11.76	88	6692	200.7748	ug/L		82
52)	Dibromomethane	11.86	93	202188	49.1436	ug/L		89
53)	2-Chloroethyl Vinyl Ether	12.06	63	97536	45.9419	ug/L		94
54)	4-Methyl-2-Pentanone	12.10	58	74090	49.3322	ug/L		94
55)	cis-1,3-Dichloropropene	12.41	75	607979	51.7135	ug/L		95
56)	Dimethyl Disulfide	12.67	79	305206	44.2233	ug/L		96
59)	Toluene	12.83	91	1708453	52.7833	ug/L		84
60)	Ethyl Methacrylate	12.92	69	313437	54.4245	ug/L		74
62)	trans-1,3-Dichloropropene	13.01	75	501796	51.7221	ug/L		96
63)	1,1,2-Trichloroethane	13.22	97	254652	50.6394	ug/L		98
64)	2-Hexanone	13.16	58	72751	52.5360	ug/L	#	44
65)	1,3-Dichloropropane	13.52	76	444705	50.4460	ug/L		78
66)	Tetrachloroethene	13.65	164	345411	50.5613	ug/L		89
67)	Dibromochloromethane	13.92	129	341863	51.0864	ug/L		99
68)	1,2-Dibromoethane	14.16	107	250654	52.2130	ug/L		98
69)	1-Chlorohexane	14.26	91	558441	50.4410	ug/L		81
70)	Chlorobenzene	14.67	112	1122311	51.3735	ug/L		94
71)	1,1,1,2-Tetrachloroethane	14.70	131	399743	50.9771	ug/L		100
72)	Ethylbenzene	14.70	106	648843	49.5877	ug/L	#	32
73)	m-,p-Xylene	14.78	106	1577469	106.6006	ug/L	#	49
74)	o-Xylene	15.35	106	739767	50.5862	ug/L		62
75)	Styrene	15.38	104	1249268	53.9262	ug/L		88
76)	Bromoform	15.88	173	186775	43.9120	ug/L		98
77)	Isopropylbenzene	15.78	105	1915898	53.5687	ug/L		78
79)	1,1,2,2-Tetrachloroethane	15.99	83	278891	48.8342	ug/L		96
81)	1,2,3-Trichloropropane	16.18	110	76300	49.3137	ug/L		95
82)	trans-1,4-Dichloro-2-Buten	16.23	53	101529	53.5537	ug/L		73
83)	n-Propylbenzene	16.28	91	2371932	52.1578	ug/L	#	73
84)	Bromobenzene	16.42	156	446692	49.4611	ug/L		87
85)	1,3,5-Trimethylbenzene	16.47	105	1681429	54.0381	ug/L		79
86)	2-Chlorotoluene	16.55	91	1586959	51.7074	ug/L		79
87)	4-Chlorotoluene	16.60	91	1273589	51.8809	ug/L		76
88)	a-Methylstyrene	16.87	118	918764	51.8486	ug/L		94
89)	tert-Butylbenzene	16.93	134	340180	49.1775	ug/L		57
90)	1,2,4-Trimethylbenzene	16.99	105	1728864	54.0438	ug/L		75
91)	sec-Butylbenzene	17.20	105	2122575	54.7114	ug/L		78
92)	p-Isopropyltoluene	17.36	119	1803151	54.8210	ug/L		78
93)	1,3-Dichlorobenzene	17.55	146	941775	51.4543	ug/L		92
94)	1,4-Dichlorobenzene	17.69	146	933434	50.2338	ug/L		92
95)	n-Butylbenzene	17.89	91	1757124	54.6885	ug/L		79
96)	1,2-Dichlorobenzene	18.19	146	821672	51.7329	ug/L		94
97)	1,2-Dibromo-3-Chloropropan	19.18	75	46082	50.5509	ug/L		85
98)	1,2,4-Trichlorobenzene	20.33	180	615919	51.4767	ug/L		99
99)	Hexachlorobutadiene	20.47	225	305672	48.9007	ug/L		94
100)	Naphthalene	20.69	128	840527	52.3797	ug/L		92
101)	1,2,3-Trichlorobenzene	21.00	180	516669	50.9579	ug/L		99

(#) = qualifier out of range (m) = manual integration
8M404585.D 8260WT.M Wed May 13 06:46:19 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404585.D Vial: 9
Acq On : 12 May 2015 19:42 Operator: TMB
Sample : WG523161-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

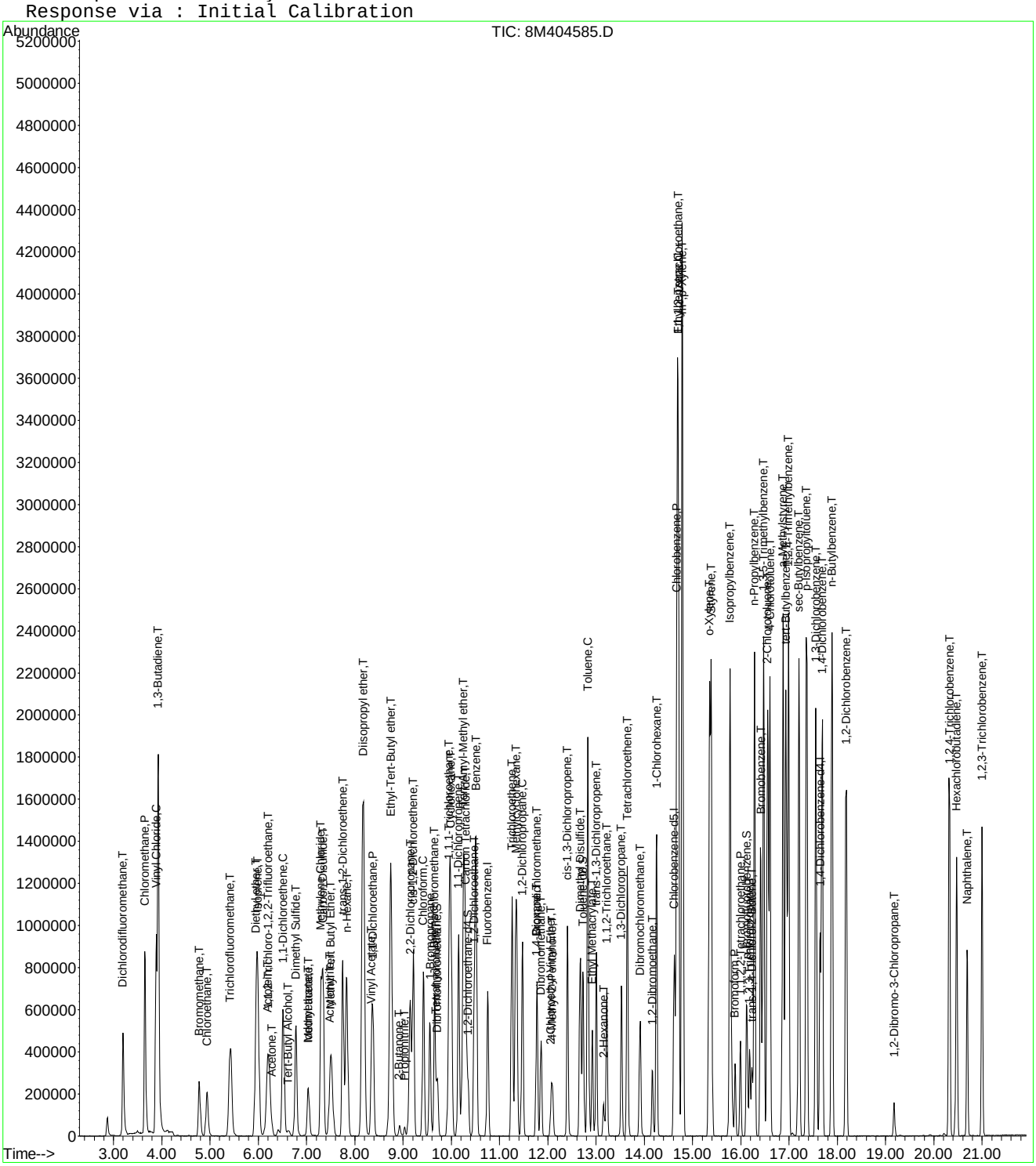

8M404585.D 8260WT.M Wed May 13 06:46:19 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404586.D Vial: 10
Acq On : 12 May 2015 20:11 Operator: TMB
Sample : WG523161-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:20 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	835793	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	592311	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	322769	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	408845	49.3524 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 197.40%#		
43) 1,2-Dichloroethane-d4	10.35	65	378235	48.5842 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 194.32%#		
58) Toluene-d8	12.73	98	1401831	50.7174 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 202.88%#		
80) p-Bromofluorobenzene	16.12	95	539730	49.1503 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 196.60%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.20	85	1383354	106.7956 ug/L	97
3) Chloromethane	3.65	50	2506665	96.9341 ug/L	98
4) Vinyl Chloride	3.88	62	2378459	97.6093 ug/L	97
5) 1,3-Butadiene	3.92	54	1821955	89.8183 ug/L	94
6) Bromomethane	4.78	94	626348	101.5627 ug/L	98
7) Chloroethane	4.93	64	685164	103.3278 ug/L	91
8) Trichlorofluoromethane	5.42	101	1565645	102.3158 ug/L	98
9) Diethyl ether	5.95	59	1168845	199.2357 ug/L	90
10) Isoprene	5.99	67	1166935	102.8460 ug/L	78
11) Acrolein	6.19	56	31264	95.9802 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.21	101	894848	103.6091 ug/L	94
13) Acetone	6.29	43	110215	92.3363 ug/L	86
14) 1,1-Dichloroethene	6.52	61	1506669	102.5728 ug/L	84
15) Tert-Butyl Alcohol	6.63	59	127964	398.4122 ug/L	99
16) Dimethyl Sulfide	6.79	62	872019	101.8306 ug/L	79
17) Iodomethane	7.03	142	628717	103.2155 ug/L	82
18) Methyl acetate	7.04	43	412223	96.7791 ug/L	90
19) Methylene Chloride	7.30	84	855087	102.1479 ug/L	57
20) Carbon Disulfide	7.34	76	2858622	105.7889 ug/L	96
21) Acrylonitrile	7.48	53	190020	100.0167 ug/L	92
22) Methyl Tert Butyl Ether	7.52	73	1596559	99.0009 ug/L	96
23) trans-1,2-Dichloroethene	7.75	61	1424677	101.5963 ug/L	84
24) n-Hexane	7.83	57	1448349	102.1387 ug/L	96
25) Diisopropyl ether	8.17	45	6219435	200.2252 ug/L	92
26) Vinyl Acetate	8.35	43	987523	96.2968 ug/L	93
27) 1,1-Dichloroethane	8.37	63	1750301	103.3947 ug/L	95
28) Ethyl-Tert-Butyl ether	8.75	59	4921546	201.9298 ug/L	94
29) 2-Butanone	8.93	43	192807	99.1412 ug/L	89
30) Propionitrile	9.04	54	125291	202.1329 ug/L	100
31) 2,2-Dichloropropane	9.15	77	1386765	99.2903 ug/L	99
32) cis-1,2-Dichloroethene	9.22	96	970632	100.7779 ug/L	77
33) Chloroform	9.42	83	1615985	102.7714 ug/L	96
34) 1-Bromopropane	9.56	122	171401	97.5487 ug/L	97
35) Bromochloromethane	9.65	130	492984	100.3714 ug/L #	70
36) Tetrahydrofuran	9.68	42	256736	195.9927 ug/L	87
38) 1,1,1-Trichloroethane	9.96	97	1521529	106.5945 ug/L	97
39) Cyclohexane	9.99	56	1818826	105.1394 ug/L	84
40) 1,1-Dichloropropene	10.15	75	1264140	101.7916 ug/L	92
41) Tert-Amyl-Methyl ether	10.26	73	3613952	202.0196 ug/L	96
42) Carbon Tetrachloride	10.30	117	1390334	107.1846 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404586.D Vial: 10
Acq On : 12 May 2015 20:11 Operator: TMB
Sample : WG523161-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:20 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.47	62	1128430	100.1062 ug/L		92
46)	Benzene	10.51	78	3395811	101.5114 ug/L		99
47)	Trichloroethene	11.26	130	922762	104.2826 ug/L		97
48)	Methylcyclohexane	11.35	83	1455920	101.3714 ug/L		89
49)	1,2-Dichloropropane	11.47	63	933784	99.6606 ug/L		100
50)	Bromodichloromethane	11.77	83	1190418	103.1964 ug/L		97
51)	1,4-Dioxane	11.77	88	15430	376.1778 ug/L		87
52)	Dibromomethane	11.86	93	440813	99.8961 ug/L		89
53)	2-Chloroethyl Vinyl Ether	12.07	63	209924	93.1404 ug/L		94
54)	4-Methyl-2-Pentanone	12.10	58	162221	100.7072 ug/L		91
55)	cis-1,3-Dichloropropene	12.41	75	1312387	104.0782 ug/L		95
56)	Dimethyl Disulfide	12.67	79	704664	91.7111 ug/L		100
59)	Toluene	12.83	91	3647044	103.8064 ug/L		85
60)	Ethyl Methacrylate	12.93	69	656031	104.9442 ug/L		72
62)	trans-1,3-Dichloropropene	13.00	75	1083873	102.9242 ug/L		96
63)	1,1,2-Trichloroethane	13.22	97	551455	101.0280 ug/L		99
64)	2-Hexanone	13.15	58	146129	97.2175 ug/L	#	75
65)	1,3-Dichloropropane	13.53	76	953196	99.6155 ug/L		79
66)	Tetrachloroethene	13.65	164	783174	105.6160 ug/L		90
67)	Dibromochloromethane	13.91	129	774593	106.6392 ug/L		98
68)	1,2-Dibromoethane	14.17	107	545217	104.6318 ug/L		99
69)	1-Chlorohexane	14.25	91	1233565	102.6499 ug/L		82
70)	Chlorobenzene	14.67	112	2511075	105.8950 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.71	131	958028	112.5543 ug/L		99
72)	Ethylbenzene	14.70	106	1517369	106.8354 ug/L	#	44
73)	m-,p-Xylene	14.79	106	3521035	219.2093 ug/L		66
74)	o-Xylene	15.35	106	1661714	104.6847 ug/L		66
75)	Styrene	15.39	104	2725004	108.3681 ug/L		91
76)	Bromoform	15.88	173	425724	91.3519 ug/L		99
77)	Isopropylbenzene	15.78	105	4087264	105.2836 ug/L		80
79)	1,1,2,2-Tetrachloroethane	15.99	83	597831	97.4794 ug/L		97
81)	1,2,3-Trichloropropane	16.18	110	166377	100.1340 ug/L		97
82)	trans-1,4-Dichloro-2-Buten	16.23	53	198733	97.6146 ug/L		83
83)	n-Propylbenzene	16.29	91	4854104	99.3965 ug/L		76
84)	Bromobenzene	16.41	156	998426	102.9478 ug/L		90
85)	1,3,5-Trimethylbenzene	16.47	105	3620860	108.3623 ug/L		82
86)	2-Chlorotoluene	16.56	91	3081622	93.5000 ug/L		82
87)	4-Chlorotoluene	16.60	91	2997134	113.6920 ug/L		78
88)	a-Methylstyrene	16.88	118	2011260	105.6931 ug/L		94
89)	tert-Butylbenzene	16.94	134	758018	102.0429 ug/L		62
90)	1,2,4-Trimethylbenzene	16.99	105	3673145	106.9222 ug/L		78
91)	sec-Butylbenzene	17.21	105	4454269	106.9145 ug/L		80
92)	p-Isopropyltoluene	17.36	119	3834274	108.5533 ug/L		81
93)	1,3-Dichlorobenzene	17.56	146	2072717	105.4531 ug/L		93
94)	1,4-Dichlorobenzene	17.68	146	2037658	102.1148 ug/L		94
95)	n-Butylbenzene	17.89	91	3728716	108.0683 ug/L		81
96)	1,2-Dichlorobenzene	18.18	146	1776025	104.1269 ug/L		94
97)	1,2-Dibromo-3-Chloropropan	19.17	75	101241	103.4188 ug/L		84
98)	1,2,4-Trichlorobenzene	20.32	180	1367029	106.3922 ug/L		99
99)	Hexachlorobutadiene	20.47	225	722376	107.6137 ug/L		95
100)	Naphthalene	20.69	128	1844011	107.0090 ug/L		94
101)	1,2,3-Trichlorobenzene	21.00	180	1148705	105.5000 ug/L		100

(#) = qualifier out of range (m) = manual integration
8M404586.D 8260WT.M Wed May 13 06:46:20 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404586.D Vial: 10
Acq On : 12 May 2015 20:11 Operator: TMB
Sample : WG523161-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

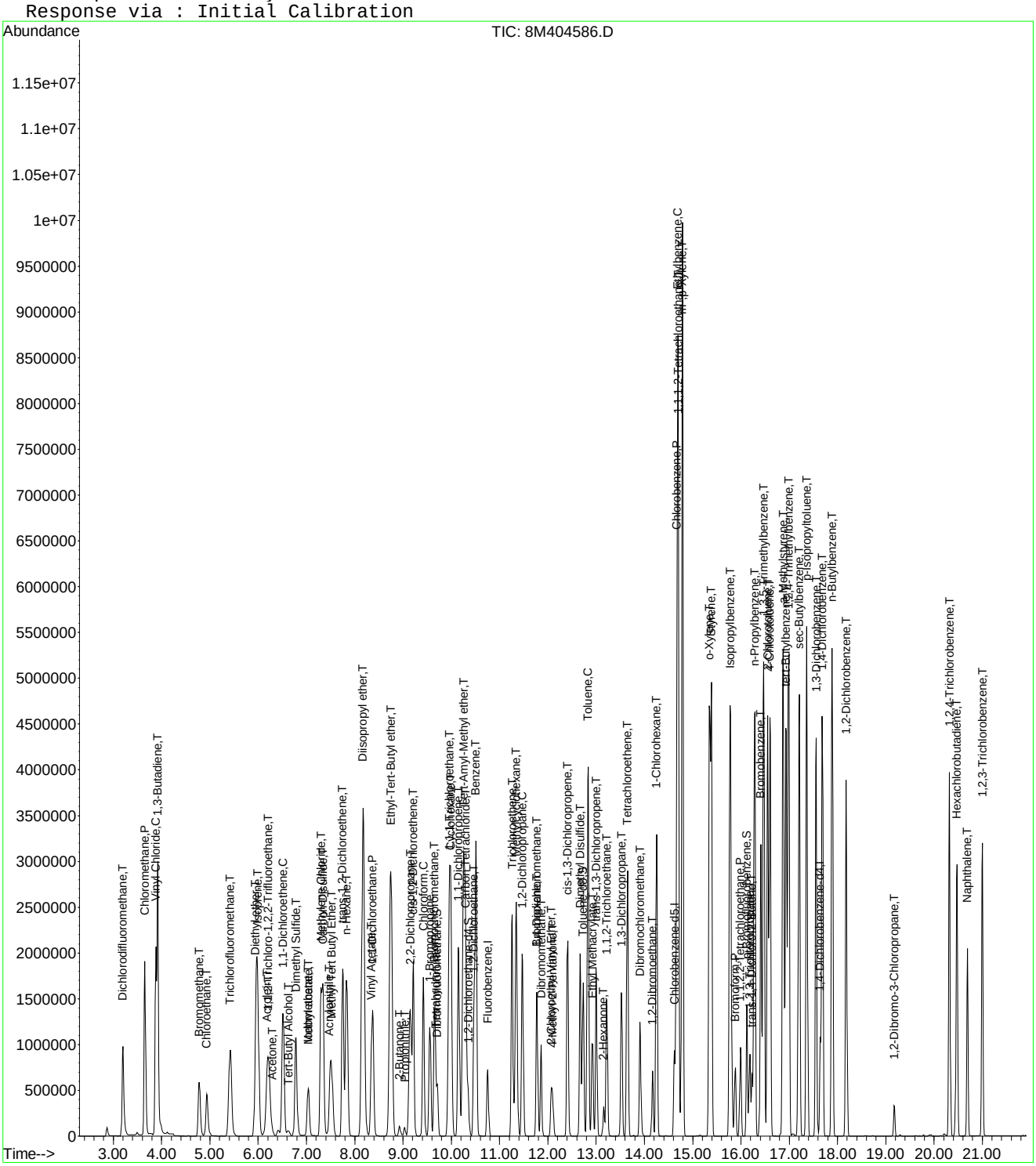

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404587.D Vial: 11
Acq On : 12 May 2015 20:40 Operator: TMB
Sample : WG523161-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:21 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	889446	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	653814	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.65	152	358038	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.71	111	897295	101.7803 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 407.12%#		
43) 1,2-Dichloroethane-d4	10.35	65	834454	100.7199 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 402.88%#		
58) Toluene-d8	12.73	98	3020686	99.0061 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 396.04%#		
80) p-Bromofluorobenzene	16.12	95	1227532	100.7731 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 403.08%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.19	85	2862202	207.6346 ug/L	100
3) Chloromethane	3.65	50	4844973	176.0559 ug/L	97
4) Vinyl Chloride	3.88	62	4418229	170.3816 ug/L	98
5) 1,3-Butadiene	3.92	54	3042896	167.5645 ug/L	93
6) Bromomethane	4.78	94	1514622	207.0087 ug/L	99
7) Chloroethane	4.93	64	1492001	211.4320 ug/L	91
8) Trichlorofluoromethane	5.42	101	3375416	207.2794 ug/L	99
10) Isoprene	5.99	67	2523633	208.9999 ug/L	79
11) Acrolein	6.19	56	215	Below Cal # 13	
12) 1,1,2-Trichloro-1,2,2-Trif	6.20	101	1910657	207.8790 ug/L	94
13) Acetone	6.29	43	266605	209.8839 ug/L	86
14) 1,1-Dichloroethene	6.51	61	3247825	207.7715 ug/L	85
15) Tert-Butyl Alcohol	6.65	59	409	1.1966 ug/L #	61
16) Dimethyl Sulfide	6.78	62	1949857	213.9608 ug/L	79
17) Iodomethane	7.03	142	1410075	209.7673 ug/L	81
18) Methyl acetate	7.04	43	947887	209.1149 ug/L	92
19) Methylene Chloride	7.30	84	1900593	213.3475 ug/L	59
20) Carbon Disulfide	7.34	76	6053547	210.5098 ug/L	97
21) Acrylonitrile	7.52	53	43757	21.6421 ug/L #	38
22) Methyl Tert Butyl Ether	7.51	73	3646249	212.4611 ug/L	95
23) trans-1,2-Dichloroethene	7.74	61	3120484	209.1042 ug/L	85
24) n-Hexane	7.83	57	3144492	208.3756 ug/L	96
26) Vinyl Acetate	8.34	43	2191703	200.8286 ug/L	92
27) 1,1-Dichloroethane	8.37	63	3753089	208.3309 ug/L	97
29) 2-Butanone	8.92	43	435590	210.4690 ug/L	87
30) Propionitrile	9.05	54	214	0.3244 ug/L #	1
31) 2,2-Dichloropropane	9.15	77	3011577	202.6176 ug/L	99
32) cis-1,2-Dichloroethene	9.21	96	2136676	208.4628 ug/L	77
33) Chloroform	9.42	83	3483917	208.2006 ug/L	97
34) 1-Bromopropane	9.56	122	375097	200.1030 ug/L	99
35) Bromochloromethane	9.66	130	1081406	206.8927 ug/L #	73
36) Tetrahydrofuran	9.68	42	1304	0.9354 ug/L #	32
38) 1,1,1-Trichloroethane	9.96	97	3356452	220.9602 ug/L	99
39) Cyclohexane	9.99	56	4044031	219.6687 ug/L	84
40) 1,1-Dichloropropene	10.15	75	2738411	207.2023 ug/L	93
42) Carbon Tetrachloride	10.30	117	2985746	216.2945 ug/L	98
45) 1,2-Dichloroethane	10.47	62	2521588	210.2034 ug/L	93
46) Benzene	10.51	78	6808887	191.2611 ug/L	93
47) Trichloroethene	11.26	130	2070517	219.8771 ug/L	97
48) Methylcyclohexane	11.34	83	3202469	209.5281 ug/L	88

(#) = qualifier out of range (m) = manual integration
8M404587.D 8260WT.M Wed May 13 06:46:21 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404587.D Vial: 11
Acq On : 12 May 2015 20:40 Operator: TMB
Sample : WG523161-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:21 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
49)	1,2-Dichloropropane	11.48	63	2078666	208.4687 ug/L	99
50)	Bromodichloromethane	11.78	83	2658161	216.5336 ug/L	97
51)	1,4-Dioxane	11.77	88	3610	120.3207 ug/L #	23
52)	Dibromomethane	11.86	93	1002659	213.5141 ug/L	90
53)	2-Chloroethyl Vinyl Ether	12.07	63	491467	206.0353 ug/L	95
54)	4-Methyl-2-Pentanone	12.10	58	378377	220.7279 ug/L	93
55)	cis-1,3-Dichloropropene	12.41	75	2907986	216.7051 ug/L	97
56)	Dimethyl Disulfide	12.68	79	1679554	201.6567 ug/L	98
59)	Toluene	12.83	91	7021493	181.0540 ug/L	94
60)	Ethyl Methacrylate	12.92	69	1552021	224.9195 ug/L	72
62)	trans-1,3-Dichloropropene	13.01	75	2472627	212.7125 ug/L	98
63)	1,1,2-Trichloroethane	13.22	97	1251523	207.7141 ug/L	99
64)	2-Hexanone	13.16	58	355605	214.3243 ug/L #	80
65)	1,3-Dichloropropane	13.52	76	2145547	203.1319 ug/L	79
66)	Tetrachloroethene	13.65	164	1796038	219.4233 ug/L	90
67)	Dibromochloromethane	13.92	129	1788944	223.1185 ug/L	99
68)	1,2-Dibromoethane	14.16	107	1265159	219.9555 ug/L	98
69)	1-Chlorohexane	14.26	91	2758216	207.9315 ug/L	79
70)	Chlorobenzene	14.67	112	5520224	210.8958 ug/L	96
71)	1,1,1,2-Tetrachloroethane	14.70	131	2433988	259.0586 ug/L	100
72)	Ethylbenzene	14.70	106	3719039	237.2193 ug/L	89
73)	m-,p-Xylene	14.79	106	7071131	398.8164 ug/L	97
74)	o-Xylene	15.35	106	3783766	215.9467 ug/L	86
75)	Styrene	15.38	104	5773777	208.0127 ug/L	99
76)	Bromoform	15.88	173	1041191	201.4528 ug/L	100
77)	Isopropylbenzene	15.78	105	7635859	178.1893 ug/L	90
79)	1,1,2,2-Tetrachloroethane	15.99	83	1382772	203.2581 ug/L	98
81)	1,2,3-Trichloropropane	16.18	110	394464	214.0220 ug/L	60
82)	trans-1,4-Dichloro-2-Buten	16.23	53	532498	235.7900 ug/L #	49
83)	n-Propylbenzene	16.28	91	8425487	155.5320 ug/L	89
84)	Bromobenzene	16.42	156	2300151	213.8061 ug/L	91
85)	1,3,5-Trimethylbenzene	16.47	105	7048923	190.1744 ug/L	92
86)	2-Chlorotoluene	16.55	91	6754472	184.7508 ug/L	88
87)	4-Chlorotoluene	16.60	91	5302382	181.3248 ug/L	88
88)	a-Methylstyrene	16.87	118	4497302	213.0558 ug/L	100
89)	tert-Butylbenzene	16.94	134	1793662	217.6740 ug/L	76
90)	1,2,4-Trimethylbenzene	16.99	105	7116862	186.7588 ug/L	91
91)	sec-Butylbenzene	17.20	105	8080340	174.8447 ug/L	91
92)	p-Isopropyltoluene	17.37	119	7238323	184.7399 ug/L	92
93)	1,3-Dichlorobenzene	17.56	146	4509634	206.8347 ug/L	99
94)	1,4-Dichlorobenzene	17.69	146	4440196	200.5960 ug/L	99
95)	n-Butylbenzene	17.89	91	7013484	183.2464 ug/L	91
96)	1,2-Dichlorobenzene	18.19	146	3977816	210.2429 ug/L	99
97)	1,2-Dibromo-3-Chloropropan	19.18	75	246654	227.1401 ug/L	82
98)	1,2,4-Trichlorobenzene	20.33	180	3226918	226.4032 ug/L	99
99)	Hexachlorobutadiene	20.47	225	1704346	228.8889 ug/L	95
100)	Naphthalene	20.69	128	4140977	216.6318 ug/L	96
101)	1,2,3-Trichlorobenzene	21.00	180	2713711	224.6831 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M404587.D 8260WT.M Wed May 13 06:46:21 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404587.D Vial: 11
Acq On : 12 May 2015 20:40 Operator: TMB
Sample : WG523161-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

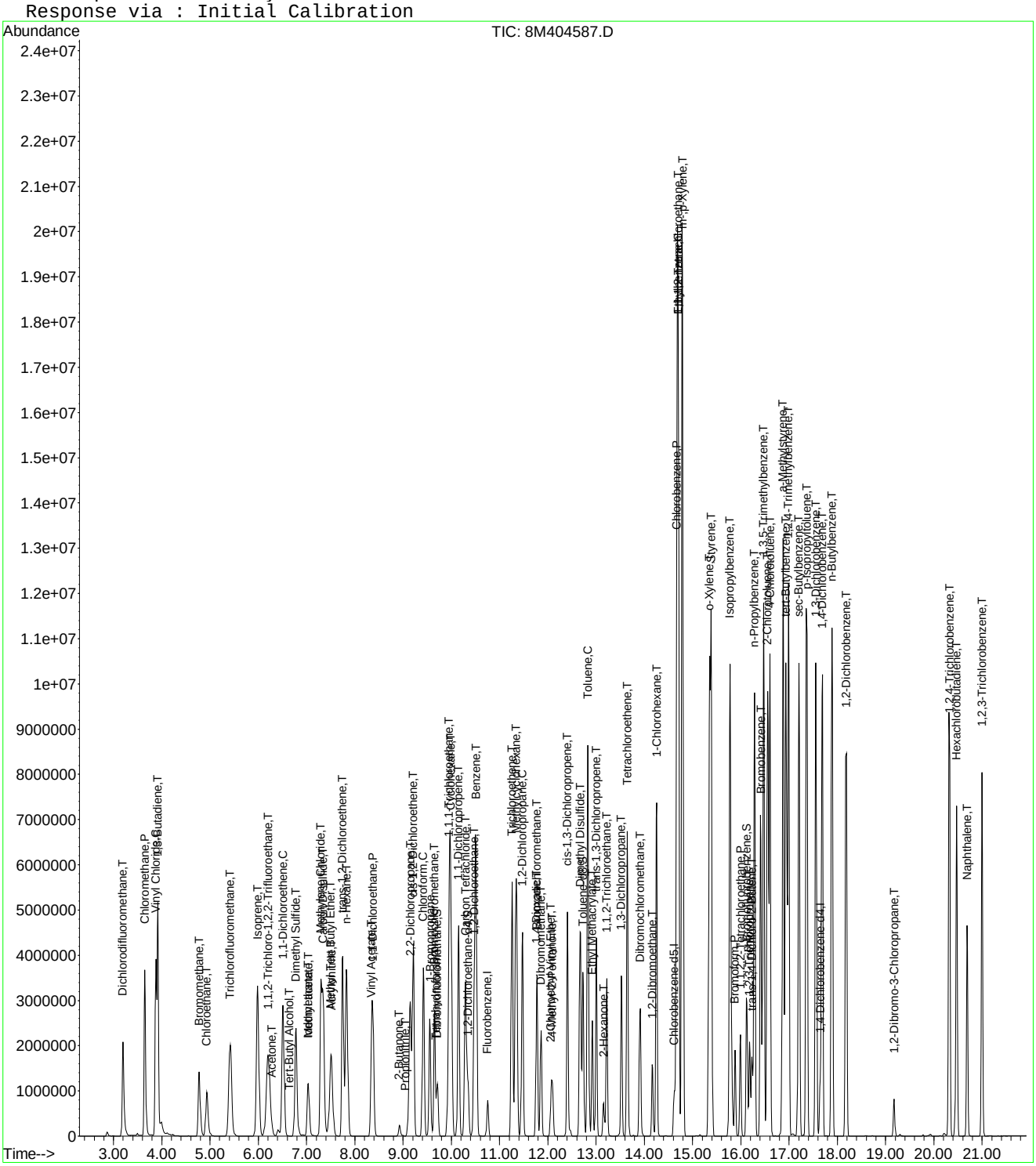

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404588.D Vial: 12
Acq On : 12 May 2015 21:08 Operator: TMB
Sample : WG523161-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:22 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	956908	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	688487	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	385083	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	1448349	152.7042 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 610.80%#		
43) 1,2-Dichloroethane-d4	10.35	65	1346423	151.0580 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 604.24%#		
58) Toluene-d8	12.73	98	4678124	145.6085 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 582.44%#		
80) p-Bromofluorobenzene	16.12	95	2010706	153.4742 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 613.88%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.20	85	4427735	298.5591 ug/L	99
3) Chloromethane	3.65	50	6722257	227.0512 ug/L	89
4) Vinyl Chloride	3.88	62	5912550	211.9331 ug/L	91
5) 1,3-Butadiene	3.91	54	4227927	Below Cal	94
6) Bromomethane	4.77	94	2527001	295.8588 ug/L	99
7) Chloroethane	4.93	64	2363039	311.2590 ug/L	92
8) Trichlorofluoromethane	5.42	101	5539478	316.1892 ug/L	99
9) Diethyl ether	5.95	59	2174019	323.6697 ug/L	91
10) Isoprene	5.99	67	4227943	325.4605 ug/L	77
11) Acrolein	6.18	56	90963	151.2625 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.21	101	3075974	311.0713 ug/L	96
13) Acetone	6.29	43	381061	278.8398 ug/L	93
14) 1,1-Dichloroethene	6.52	61	5185912	308.3670 ug/L	86
15) Tert-Butyl Alcohol	6.63	59	239538	651.4001 ug/L	99
16) Dimethyl Sulfide	6.77	62	3143641	320.6371 ug/L	79
17) Iodomethane	7.03	142	2174912	293.2570 ug/L	80
18) Methyl acetate	7.04	43	1497945	307.1664 ug/L	93
19) Methylene Chloride	7.30	84	3081232	321.4935 ug/L	64
20) Carbon Disulfide	7.34	76	9131673	295.1632 ug/L	99
21) Acrylonitrile	7.48	53	397136	182.5748 ug/L	98
22) Methyl Tert Butyl Ether	7.51	73	5644499	305.7088 ug/L	93
23) trans-1,2-Dichloroethene	7.75	61	4902610	305.3638 ug/L	87
24) n-Hexane	7.83	57	5055705	311.4064 ug/L	94
25) Diisopropyl ether	8.17	45	9927030	279.1359 ug/L	91
26) Vinyl Acetate	8.35	43	3434730	292.5404 ug/L	93
27) 1,1-Dichloroethane	8.37	63	5850225	301.8470 ug/L	99
28) Ethyl-Tert-Butyl ether	8.75	59	8274414	296.5272 ug/L	94
29) 2-Butanone	8.92	43	659119	296.0217 ug/L	90
30) Propionitrile	9.04	54	228827	322.4430 ug/L	99
31) 2,2-Dichloropropane	9.15	77	4810863	300.8539 ug/L	99
32) cis-1,2-Dichloroethene	9.21	96	3430243	311.0744 ug/L	78
33) Chloroform	9.42	83	5392781	299.5549 ug/L	100
34) 1-Bromopropane	9.56	122	616502	305.4506 ug/L	99
35) Bromochloromethane	9.66	130	1697935	301.9443 ug/L	75
36) Tetrahydrofuran	9.68	42	482439	321.6801 ug/L	86
38) 1,1,1-Trichloroethane	9.96	97	5475504	335.0480 ug/L	99
39) Cyclohexane	9.98	56	6639422	335.2226 ug/L	86
40) 1,1-Dichloropropene	10.14	75	4403988	309.7359 ug/L	95
41) Tert-Amyl-Methyl ether	10.26	73	6483836	316.5714 ug/L	95
42) Carbon Tetrachloride	10.30	117	4961684	334.0958 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404588.D Vial: 12
Acq On : 12 May 2015 21:08 Operator: TMB
Sample : WG523161-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:22 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.46	62	3965116	307.2351 ug/L		92
46)	Benzene	10.51	78	9538776	249.0534 ug/L		82
47)	Trichloroethene	11.26	130	3369408	332.5862 ug/L		96
48)	Methylcyclohexane	11.34	83	5268711	320.4137 ug/L		88
49)	1,2-Dichloropropane	11.47	63	3373652	314.4892 ug/L		98
50)	Bromodichloromethane	11.77	83	4217899	319.3667 ug/L		100
51)	1,4-Dioxane	11.77	88	30460	613.6909 ug/L		85
52)	Dibromomethane	11.86	93	1632189	323.0675 ug/L		90
53)	2-Chloroethyl Vinyl Ether	12.07	63	783687	305.8338 ug/L		95
54)	4-Methyl-2-Pentanone	12.10	58	581624	315.3728 ug/L		93
55)	cis-1,3-Dichloropropene	12.41	75	4539085	314.4087 ug/L		100
56)	Dimethyl Disulfide	12.67	79	2820560	313.0809 ug/L		93
59)	Toluene	12.83	91	9359764	229.1934 ug/L		97
60)	Ethyl Methacrylate	12.93	69	2471849	340.1809 ug/L		71
62)	trans-1,3-Dichloropropene	13.01	75	3878029	316.8138 ug/L		100
63)	1,1,2-Trichloroethane	13.23	97	2033857	320.5576 ug/L		98
64)	2-Hexanone	13.15	58	533241	305.2008 ug/L	#	81
65)	1,3-Dichloropropane	13.53	76	3365829	302.6151 ug/L		78
66)	Tetrachloroethene	13.65	164	3018572	350.2090 ug/L		90
67)	Dibromochloromethane	13.91	129	2906820	344.2828 ug/L		100
68)	1,2-Dibromoethane	14.17	107	2005124	331.0469 ug/L		99
69)	1-Chlorohexane	14.26	91	4462387	319.4608 ug/L		78
70)	Chlorobenzene	14.67	112	7907308	286.8788 ug/L		85
71)	1,1,1,2-Tetrachloroethane	14.70	131	4172914	421.7717 ug/L		99
72)	Ethylbenzene	14.70	106	6055831	366.8188 ug/L		80
73)	m-,p-Xylene	14.79	106	9345850	500.5661 ug/L		94
74)	o-Xylene	15.36	106	6029480	326.7839 ug/L		94
75)	Styrene	15.39	104	8231523	281.6232 ug/L		89
76)	Bromoform	15.88	173	1723238	316.1796 ug/L		99
77)	Isopropylbenzene	15.78	105	10012029	221.8729 ug/L		94
79)	1,1,2,2-Tetrachloroethane	16.00	83	2160112	295.2217 ug/L		98
81)	1,2,3-Trichloropropane	16.18	110	619391	312.4573 ug/L		58
82)	trans-1,4-Dichloro-2-Buten	16.23	53	753579	310.2494 ug/L	#	58
83)	n-Propylbenzene	16.29	91	10577160	181.5385 ug/L		95
84)	Bromobenzene	16.41	156	3698392	319.6329 ug/L		98
85)	1,3,5-Trimethylbenzene	16.47	105	9247035	231.9565 ug/L		96
86)	2-Chlorotoluene	16.55	91	7786851	198.0302 ug/L		86
87)	4-Chlorotoluene	16.61	91	6661327	211.7980 ug/L		97
88)	a-Methylstyrene	16.88	118	6747826	297.2213 ug/L		92
89)	tert-Butylbenzene	16.94	134	3054650	344.6689 ug/L		94
90)	1,2,4-Trimethylbenzene	16.99	105	9326416	227.5528 ug/L		94
91)	sec-Butylbenzene	17.21	105	10388453	209.0011 ug/L		95
92)	p-Isopropyltoluene	17.36	119	9384689	222.6985 ug/L		93
93)	1,3-Dichlorobenzene	17.56	146	6518770	277.9858 ug/L		91
94)	1,4-Dichlorobenzene	17.69	146	6369556	267.5495 ug/L		91
95)	n-Butylbenzene	17.89	91	9037379	219.5427 ug/L		96
96)	1,2-Dichlorobenzene	18.19	146	5908048	290.3323 ug/L		94
97)	1,2-Dibromo-3-Chloropropan	19.17	75	385147	329.7669 ug/L		85
98)	1,2,4-Trichlorobenzene	20.32	180	4917771	320.8025 ug/L		98
99)	Hexachlorobutadiene	20.47	225	2870393	358.4124 ug/L		94
100)	Naphthalene	20.69	128	5921865	288.0399 ug/L		100
101)	1,2,3-Trichlorobenzene	21.00	180	4158303	320.1088 ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404588.D Vial: 12
Acq On : 12 May 2015 21:08 Operator: TMB
Sample : WG523161-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

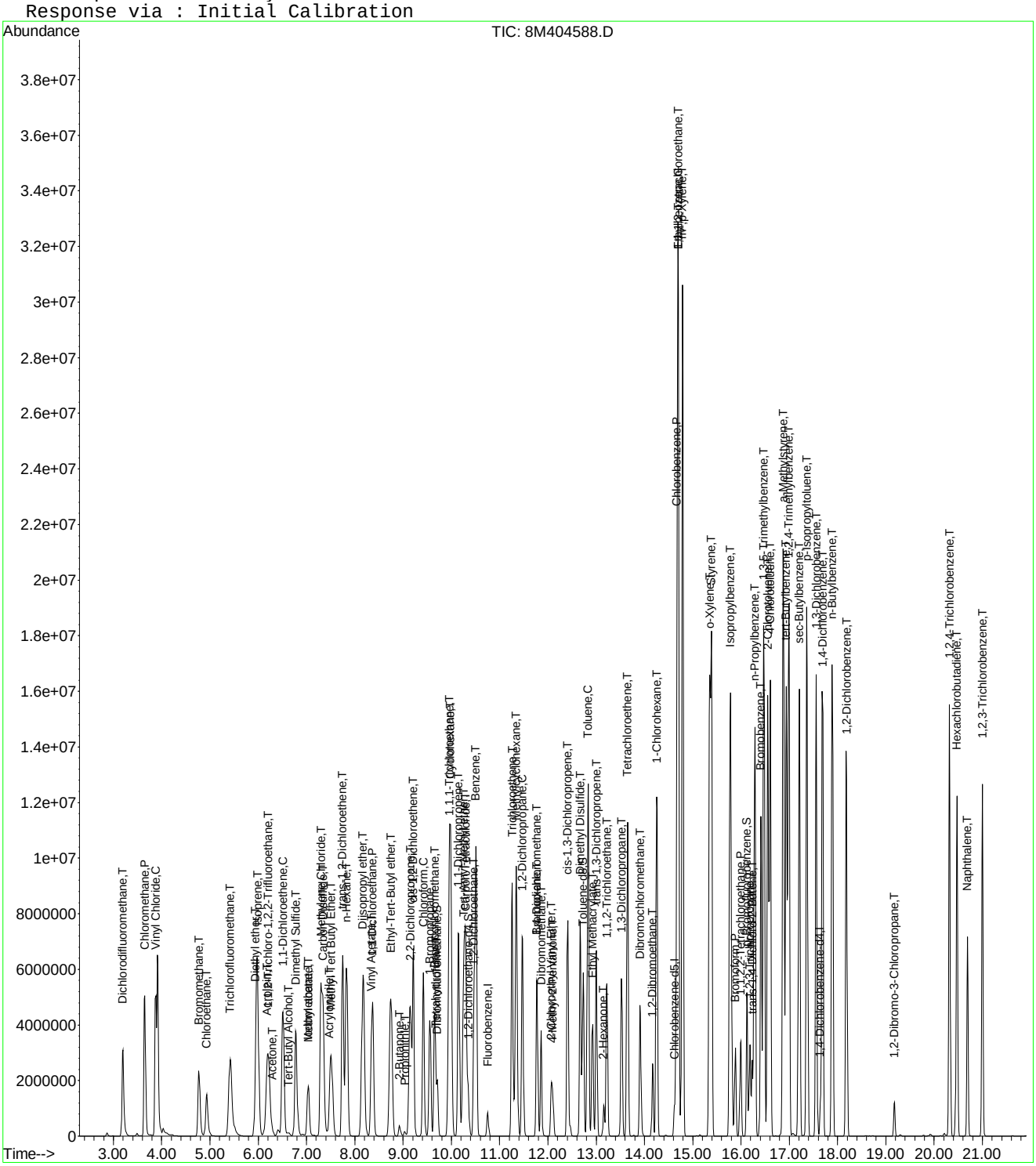
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2e+07
1.8e+07
1.6e+07
1.4e+07
1.2e+07
1e+07
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6000000
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4.00
5.00
6.00
7.00
8.00
9.00
10.00
11.00
12.00
13.00
14.00
15.00
16.00
17.00
18.00
19.00
20.00
21.00
Dichlorodifluoromethane,T
Chloromethane,P
Vinyl Chloride,C
Bromomethane,T
Chloroethane,I
Trichlorofluoromethane,T
Acetone,T
Tert-Butyl Alcohol,T
1,1-Dichloroethene,C
Dimethyl Sulfide,T
Vinyl Acetate,T
Methylene Chloride,T
Tert-Butyl Ether,I
Acrylonitrile,T
Methyl Acrylate,T
Methyl Methacrylate,T
Carbon Disulfide,C
Methyl Iodide,T
Methyl Ethyl Ketone,T
Methyl Acrylate,T
Methyl Tert-Butyl Ether,T
Methyl Methacrylate,T

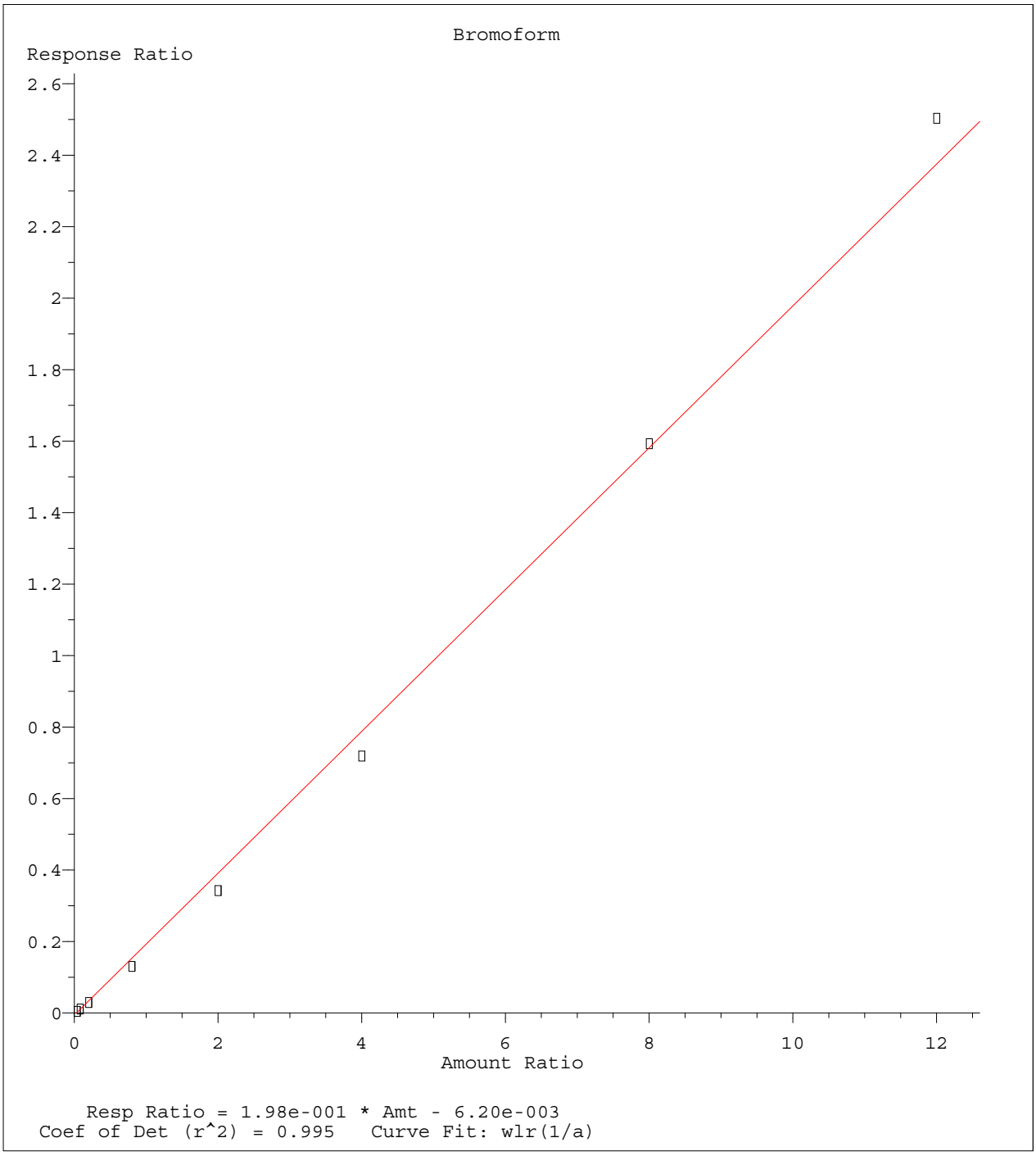

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Wed May 13 06:45:06 2015

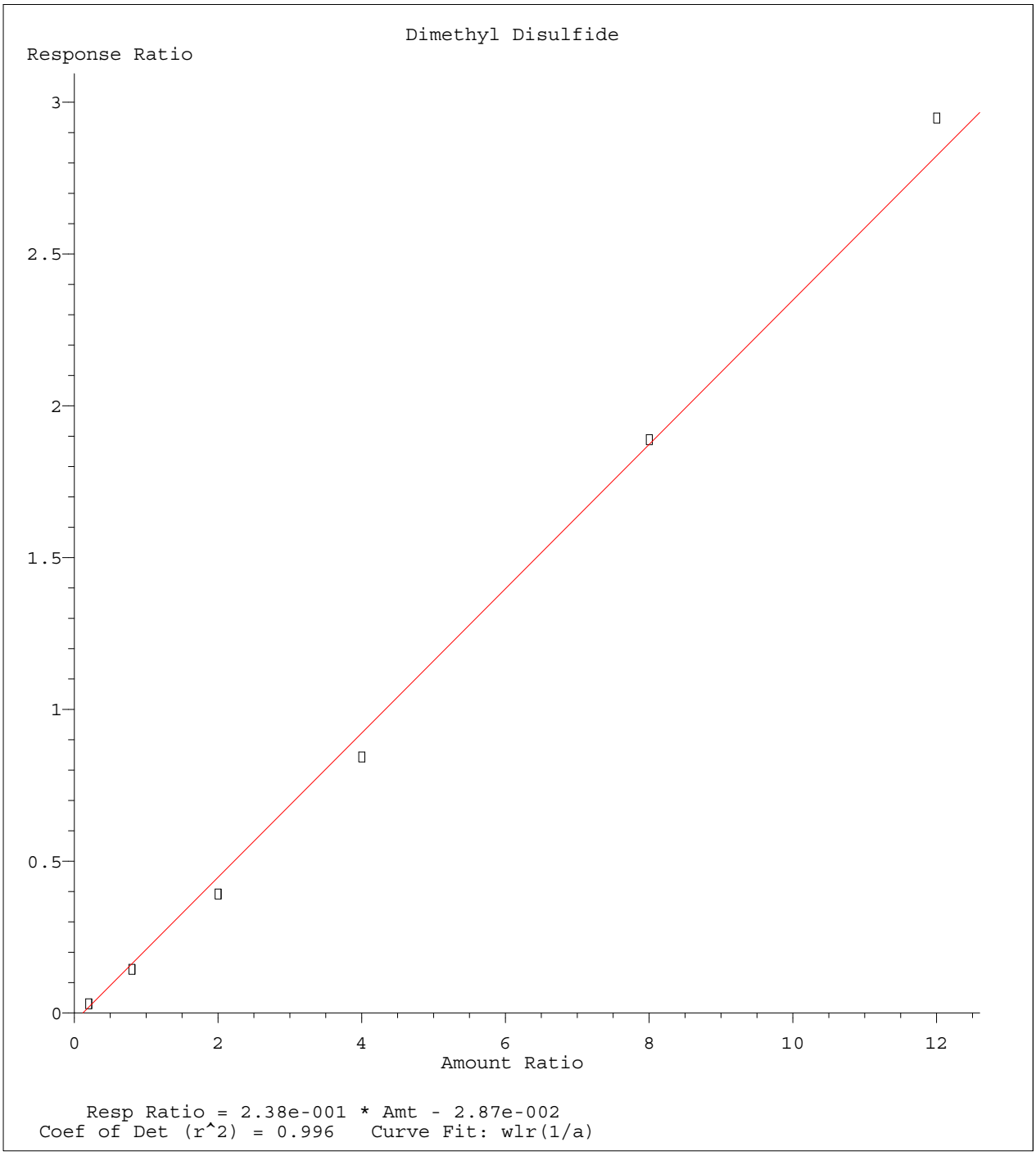

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Wed May 13 06:45:06 2015

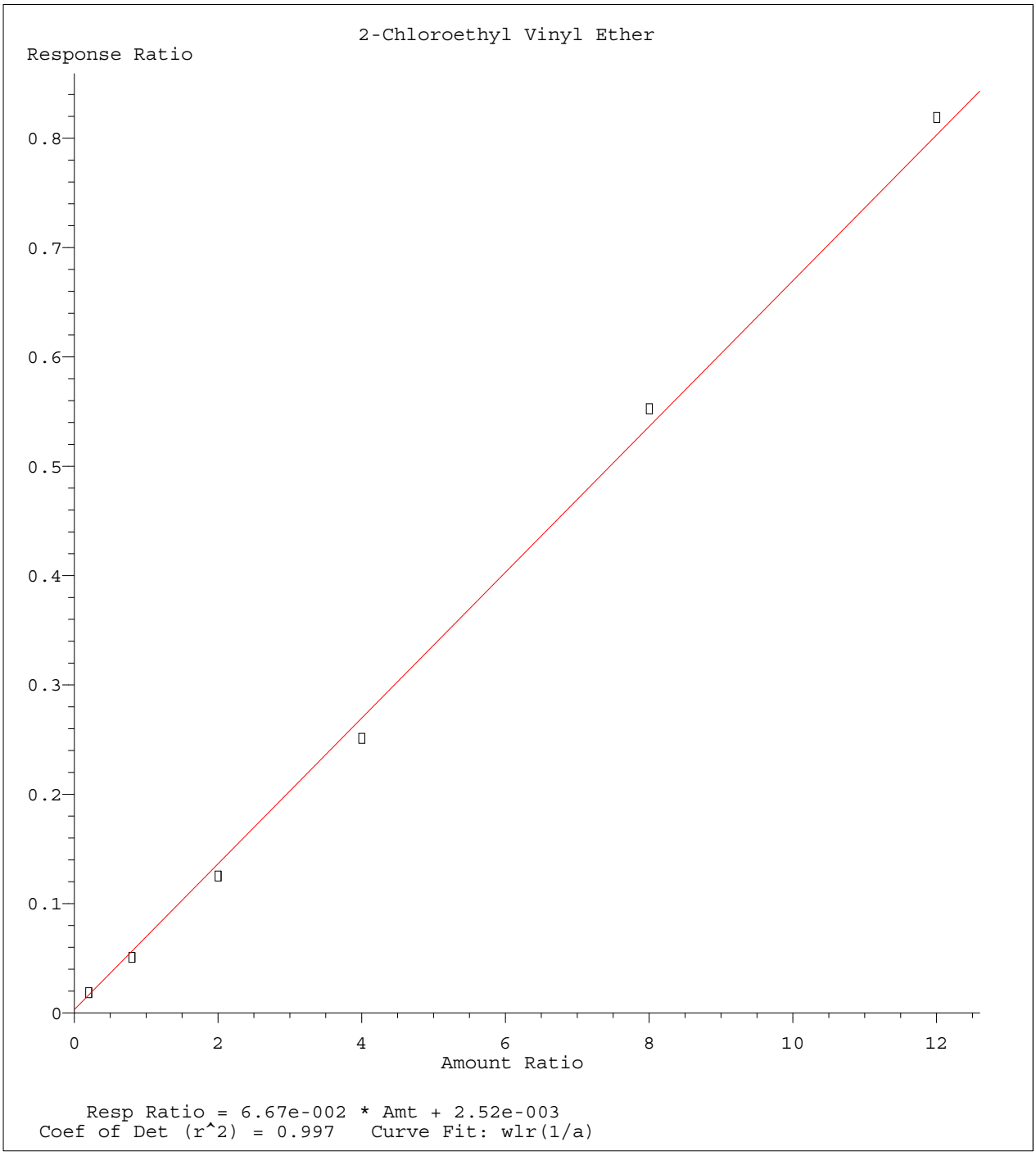

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Wed May 13 06:45:06 2015

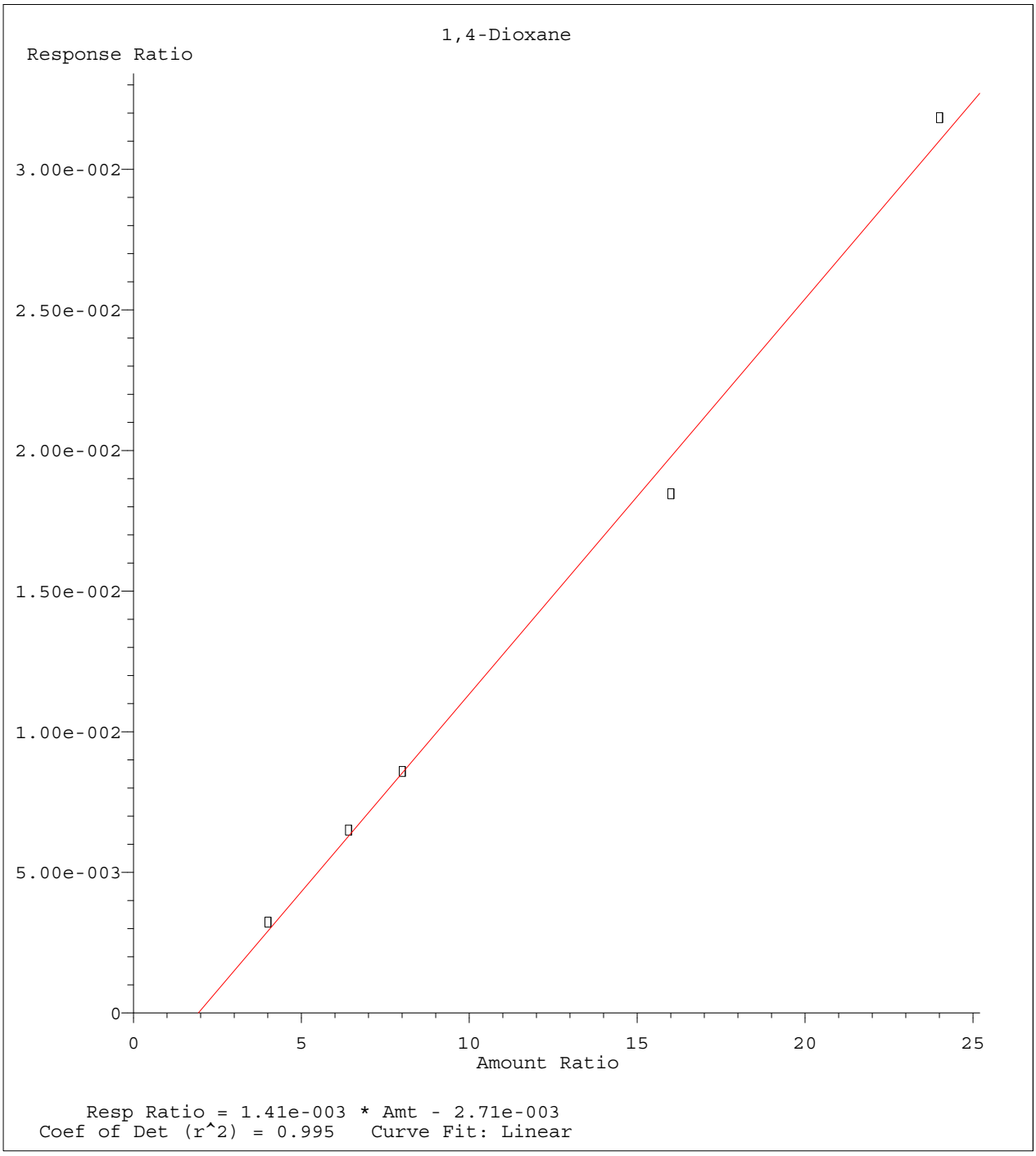

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Wed May 13 06:45:06 2015

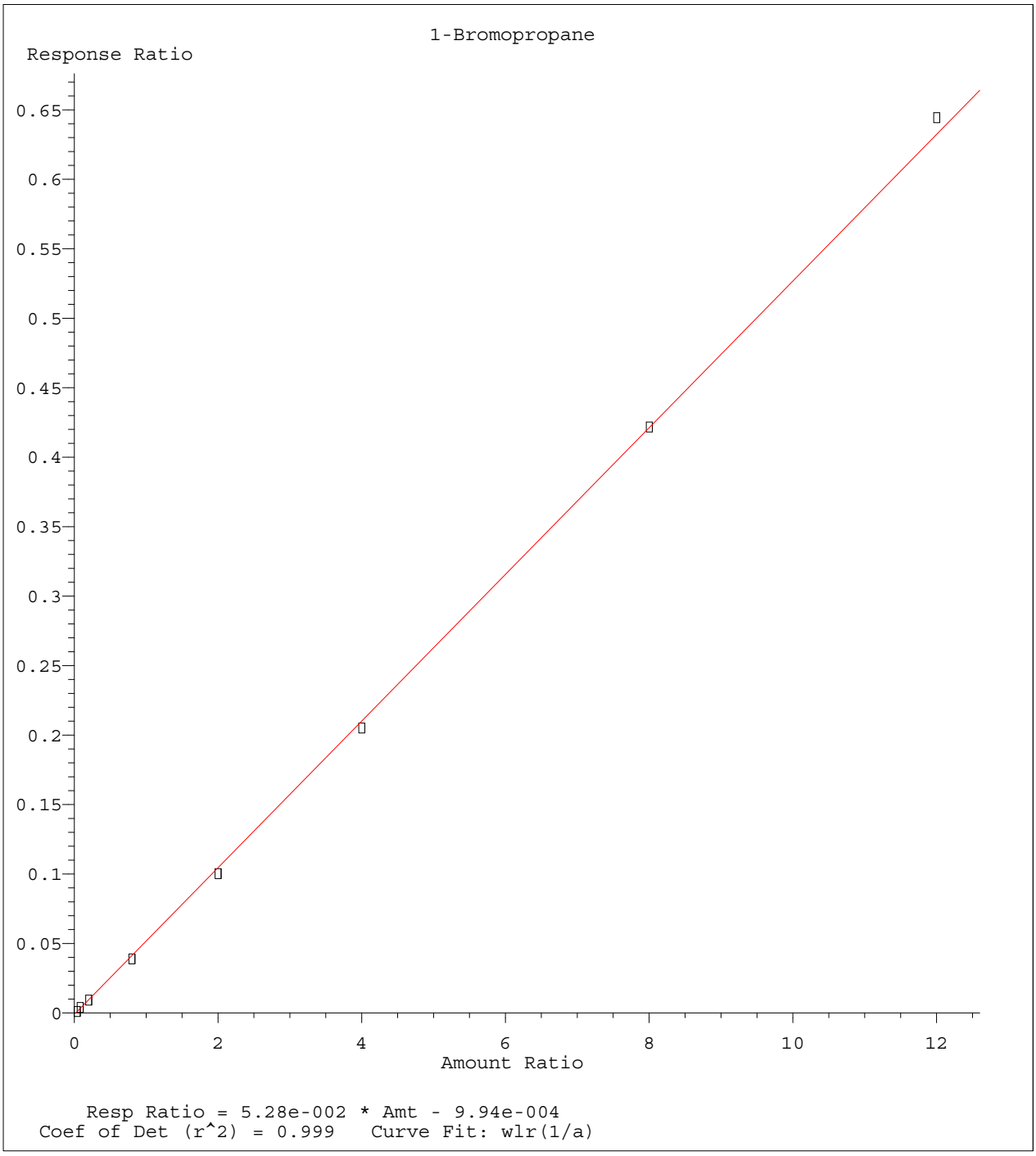

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Wed May 13 06:45:06 2015

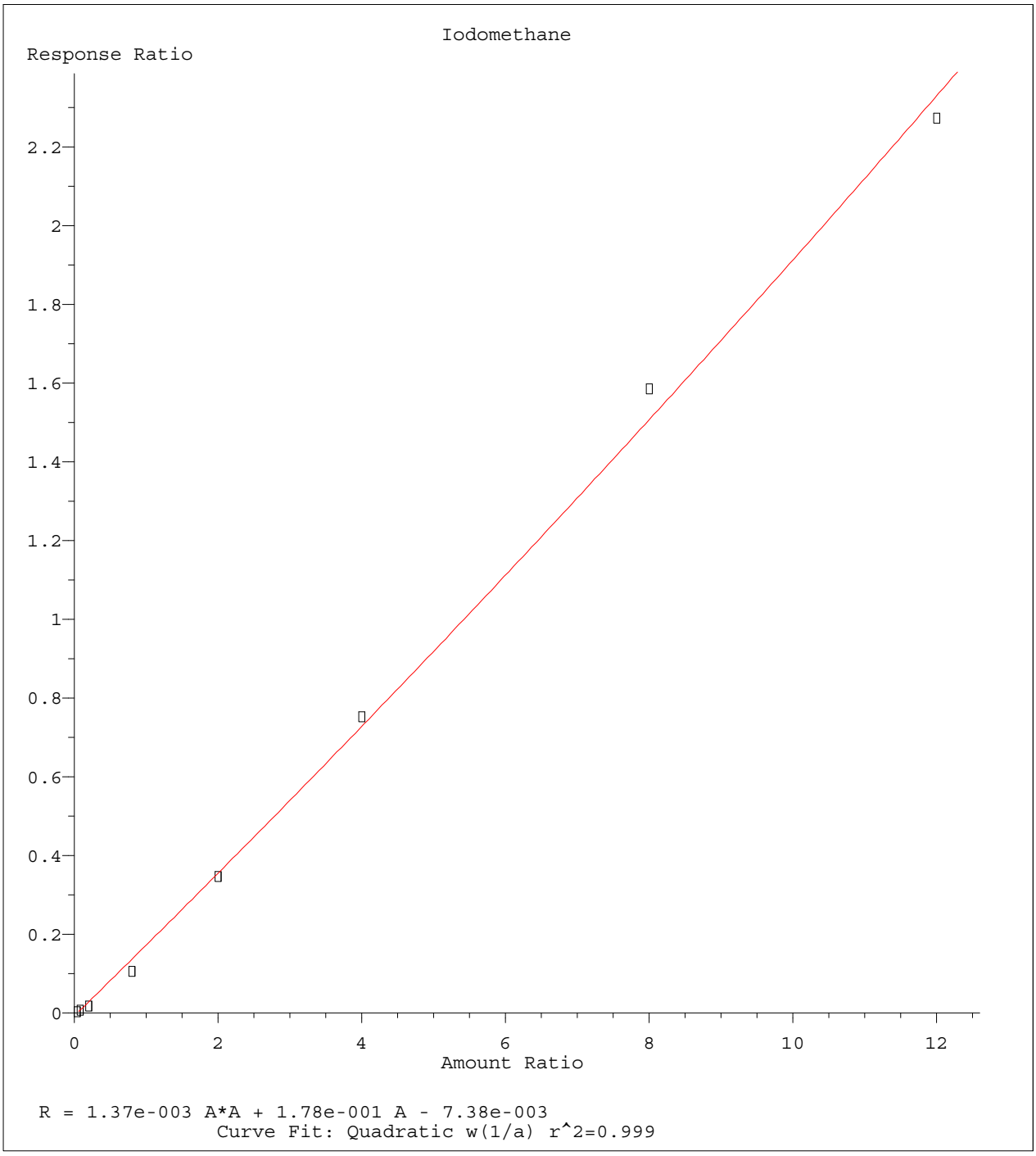

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Wed May 13 06:45:06 2015

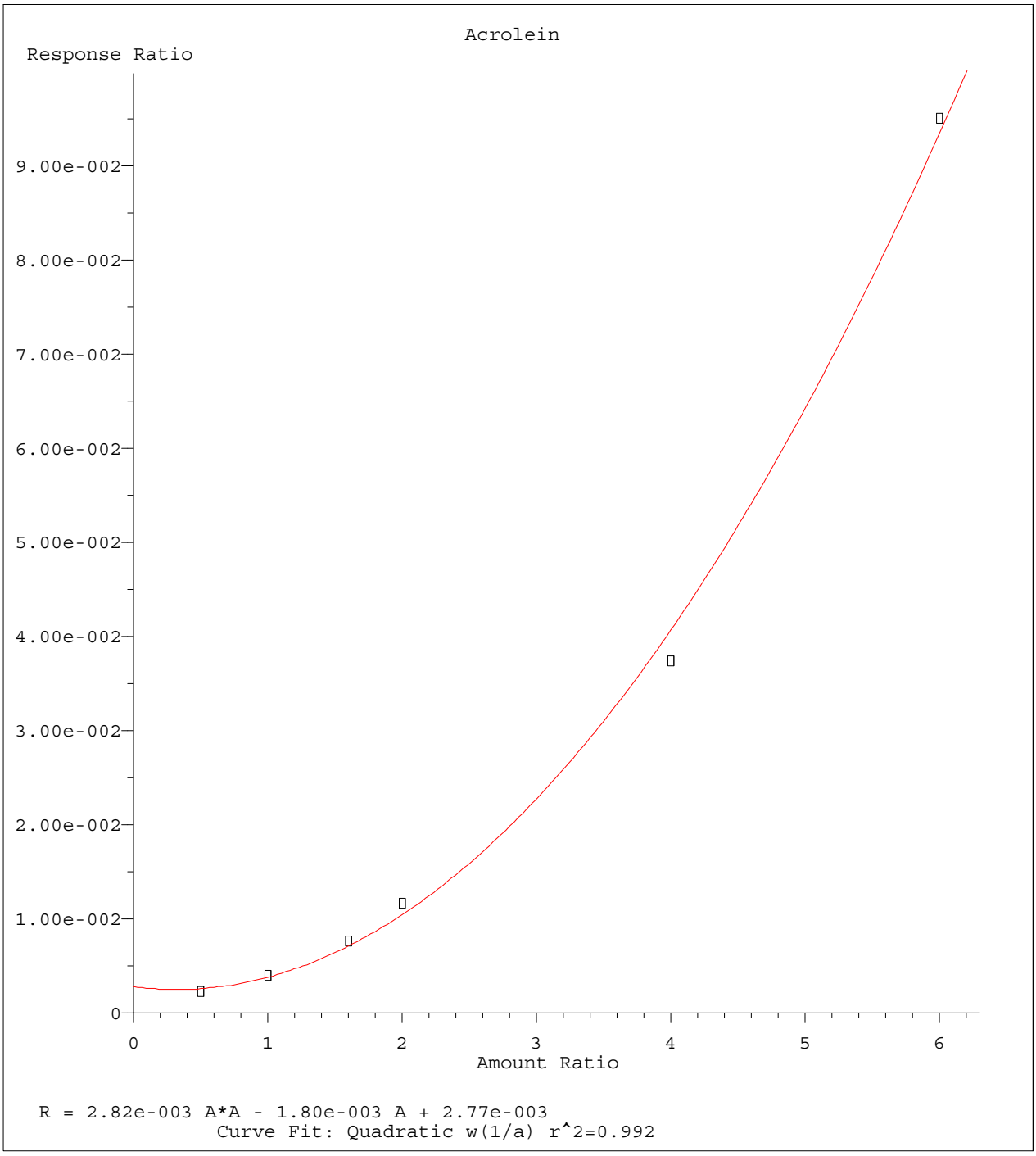

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Wed May 13 06:45:06 2015

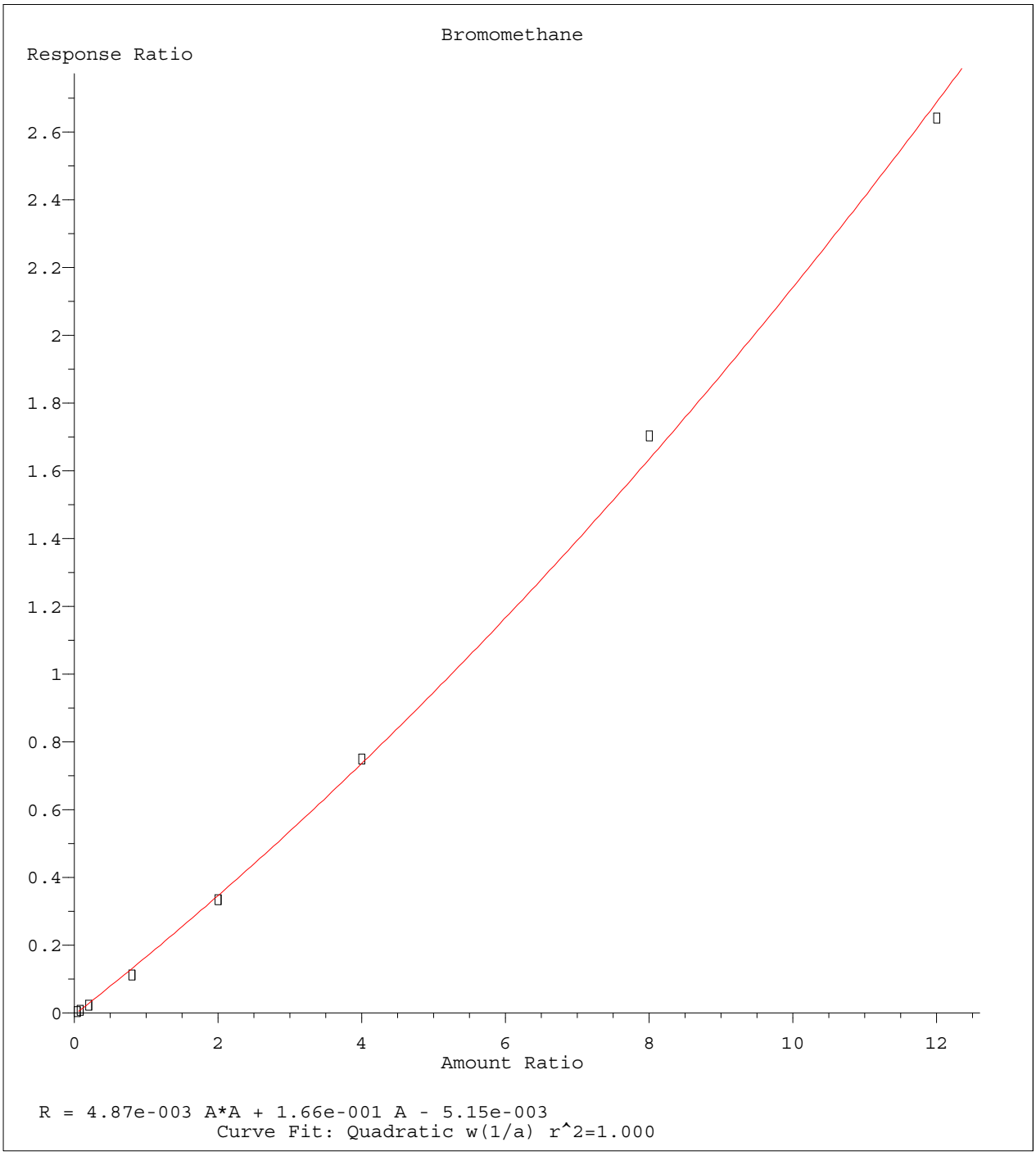

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Wed May 13 06:45:06 2015

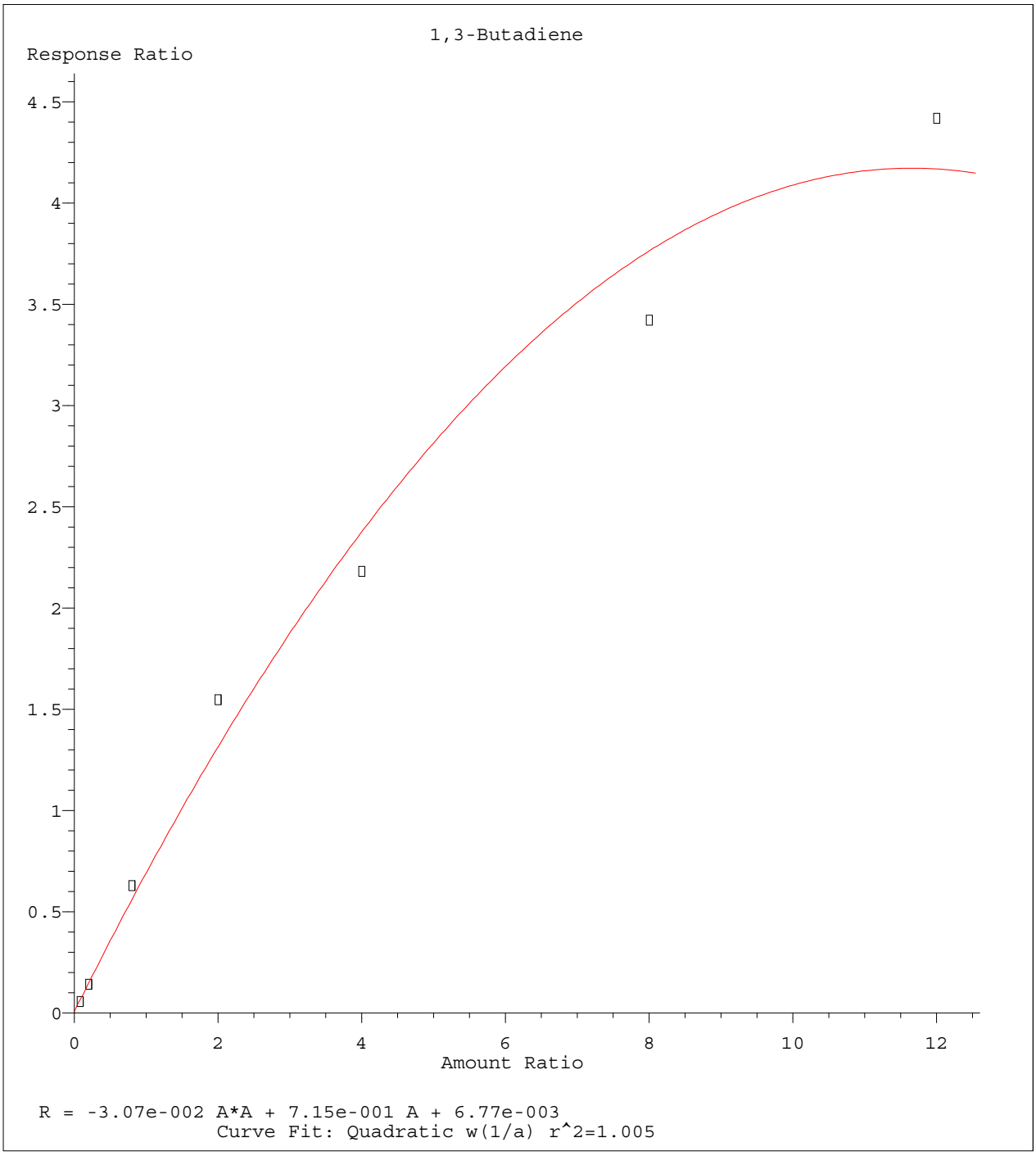

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Wed May 13 06:45:06 2015

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404591.D Vial: 15
Acq On : 12 May 2015 22:34 Operator: TMB
Sample : WG523161-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD70475 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:23 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	919308	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	650523	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.65	152	355810	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	220169	24.1626 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.64%		
43) 1,2-Dichloroethane-d4	10.35	65	208786	24.3822 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.52%		
58) Toluene-d8	12.73	98	742207	24.4497 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.80%		
80) p-Bromofluorobenzene	16.12	95	296553	24.4977 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.00%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.19	85	800374	56.1760 ug/L	98
3) Chloromethane	3.65	50	1424558	50.0839 ug/L	97
4) Vinyl Chloride	3.88	62	1286582	48.0032 ug/L	96
5) 1,3-Butadiene	3.92	54	691807	27.3545 ug/L	93
6) Bromomethane	4.78	94	314349	49.4206 ug/L	98
7) Chloroethane	4.93	64	404454	55.4535 ug/L	92
8) Trichlorofluoromethane	5.42	101	820931	48.7746 ug/L	98
9) Diethyl ether	5.94	59	587435	91.0349 ug/L	91
10) Isoprene	5.99	67	718544	57.5747 ug/L	80
11) Acrolein	6.18	56	24471	81.1360 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.20	101	455967	47.9976 ug/L	92
13) Acetone	6.29	43	74651	56.8598 ug/L	83
14) 1,1-Dichloroethene	6.51	61	755549	46.7643 ug/L	83
15) Tert-Butyl Alcohol	6.64	59	73310	207.5132 ug/L	94
16) Dimethyl Sulfide	6.77	62	630937	66.9848 ug/L	79
17) Iodomethane	7.03	142	395975	60.2995 ug/L	77
18) Methyl acetate	7.04	43	216897	46.2957 ug/L	92
19) Methylene Chloride	7.30	84	463114	50.2973 ug/L	59
20) Carbon Disulfide	7.34	76	1398233	47.0436 ug/L	95
21) Acrylonitrile	7.48	53	109604	52.4490 ug/L	91
22) Methyl Tert Butyl Ether	7.52	73	949202	53.5119 ug/L	97
23) trans-1,2-Dichloroethene	7.74	61	767654	49.7697 ug/L	85
24) n-Hexane	7.83	57	700372	44.9039 ug/L	97
25) Diisopropyl ether	8.17	45	3332814	97.5476 ug/L	93
26) Vinyl Acetate	8.34	43	617016	54.7014 ug/L	92
27) 1,1-Dichloroethane	8.37	63	908724	48.8040 ug/L	94
28) Ethyl-Tert-Butyl ether	8.75	59	2675688	99.8095 ug/L	93
29) 2-Butanone	8.92	43	113924	53.2579 ug/L	88
30) Propionitrile	9.04	54	72509	106.3523 ug/L	95
31) 2,2-Dichloropropane	9.15	77	703200	45.7742 ug/L	97
32) cis-1,2-Dichloroethene	9.21	96	514228	48.5405 ug/L	76
33) Chloroform	9.42	83	851052	49.2072 ug/L	95
34) 1-Bromopropane	9.56	122	104801	54.4355 ug/L	97
35) Bromochloromethane	9.66	130	259626	48.0577 ug/L #	73
36) Tetrahydrofuran	9.68	42	146217	101.4819 ug/L	87
38) 1,1,1-Trichloroethane	9.96	97	789635	50.2943 ug/L	97
39) Cyclohexane	9.99	56	902530	47.4323 ug/L	86
40) 1,1-Dichloropropene	10.15	75	653293	47.8258 ug/L	92
41) Tert-Amyl-Methyl ether	10.26	73	1985009	100.8814 ug/L	97
42) Carbon Tetrachloride	10.30	117	702126	49.2114 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M404591.D 8260WT.M Wed May 13 06:46:23 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404591.D Vial: 15
Acq On : 12 May 2015 22:34 Operator: TMB
Sample : WG523161-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD70475 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:23 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.47	62	603214	48.6514 ug/L		93
46)	Benzene	10.50	78	1850022	50.2789 ug/L		98
47)	Trichloroethene	11.26	130	486136	49.9479 ug/L		96
48)	Methylcyclohexane	11.34	83	749827	47.4654 ug/L		89
49)	1,2-Dichloropropane	11.48	63	501116	48.6242 ug/L		98
50)	Bromodichloromethane	11.78	83	616315	48.5742 ug/L		96
51)	1,4-Dioxane	11.77	88	7938	201.6115 ug/L		95
52)	Dibromomethane	11.86	93	233106	48.0270 ug/L		89
53)	2-Chloroethyl Vinyl Ether	12.07	63	212350	85.5819 ug/L		96
54)	4-Methyl-2-Pentanone	12.10	58	96374	54.3940 ug/L		95
55)	cis-1,3-Dichloropropene	12.41	75	728119	52.4974 ug/L		95
56)	Dimethyl Disulfide	12.66	79	376819	46.1411 ug/L		99
59)	Toluene	12.83	91	1963822	50.8947 ug/L		83
60)	Ethyl Methacrylate	12.92	69	394247	57.4235 ug/L		75
62)	trans-1,3-Dichloropropene	13.01	75	568578	49.1605 ug/L		94
63)	1,1,2-Trichloroethane	13.22	97	293758	49.0014 ug/L		97
64)	2-Hexanone	13.16	58	90401	54.7606 ug/L	#	80
65)	1,3-Dichloropropane	13.52	76	534108	50.8231 ug/L		82
66)	Tetrachloroethene	13.65	164	399242	49.0225 ug/L		92
67)	Dibromochloromethane	13.92	129	391690	49.0990 ug/L		100
68)	1,2-Dibromoethane	14.16	107	291132	50.8711 ug/L		99
69)	1-Chlorohexane	14.26	91	667237	50.5549 ug/L		84
70)	Chlorobenzene	14.67	112	1227973	47.1511 ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.70	131	469282	50.2001 ug/L		99
72)	Ethylbenzene	14.70	106	759764	48.7068 ug/L	#	33
73)	m-,p-Xylene	14.78	106	1754806	99.4729 ug/L	#	49
74)	o-Xylene	15.35	106	816052	46.8093 ug/L		63
75)	Styrene	15.38	104	1449226	52.4756 ug/L		88
76)	Bromoform	15.88	173	229962	45.3265 ug/L		98
77)	Isopropylbenzene	15.78	105	2042078	47.8947 ug/L		78
79)	1,1,2,2-Tetrachloroethane	15.99	83	322882	47.7586 ug/L		96
81)	1,2,3-Trichloropropane	16.18	110	94494	51.5901 ug/L		94
82)	trans-1,4-Dichloro-2-Buten	16.23	53	119151	53.0904 ug/L		78
83)	n-Propylbenzene	16.28	91	2494553	46.3371 ug/L	#	73
84)	Bromobenzene	16.41	156	513898	48.0675 ug/L		87
85)	1,3,5-Trimethylbenzene	16.47	105	1947168	52.8620 ug/L		80
86)	2-Chlorotoluene	16.55	91	1485272	40.8801 ug/L		89
87)	4-Chlorotoluene	16.60	91	1550170	53.3429 ug/L	#	67
88)	a-Methylstyrene	16.87	118	1093998	52.1517 ug/L		94
89)	tert-Butylbenzene	16.93	134	371781	45.4009 ug/L		58
90)	1,2,4-Trimethylbenzene	16.99	105	1987730	52.4881 ug/L		75
91)	sec-Butylbenzene	17.20	105	2246378	48.9121 ug/L		78
92)	p-Isopropyltoluene	17.36	119	1868949	47.9989 ug/L		78
93)	1,3-Dichlorobenzene	17.56	146	987544	45.5774 ug/L		92
94)	1,4-Dichlorobenzene	17.69	146	1071014	48.6885 ug/L		93
95)	n-Butylbenzene	17.89	91	1969840	51.7897 ug/L		80
96)	1,2-Dichlorobenzene	18.19	146	869480	46.2431 ug/L		93
97)	1,2-Dibromo-3-Chloropropan	19.18	75	56744	52.5819 ug/L		84
98)	1,2,4-Trichlorobenzene	20.32	180	703789	49.6876 ug/L		99
99)	Hexachlorobutadiene	20.47	225	372888	50.3914 ug/L		95
100)	Naphthalene	20.69	128	978141	51.4911 ug/L		93
101)	1,2,3-Trichlorobenzene	21.00	180	596654	49.7096 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M404591.D 8260WT.M Wed May 13 06:46:24 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404591.D Vial: 15
Acq On : 12 May 2015 22:34 Operator: TMB
Sample : WG523161-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD70475 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

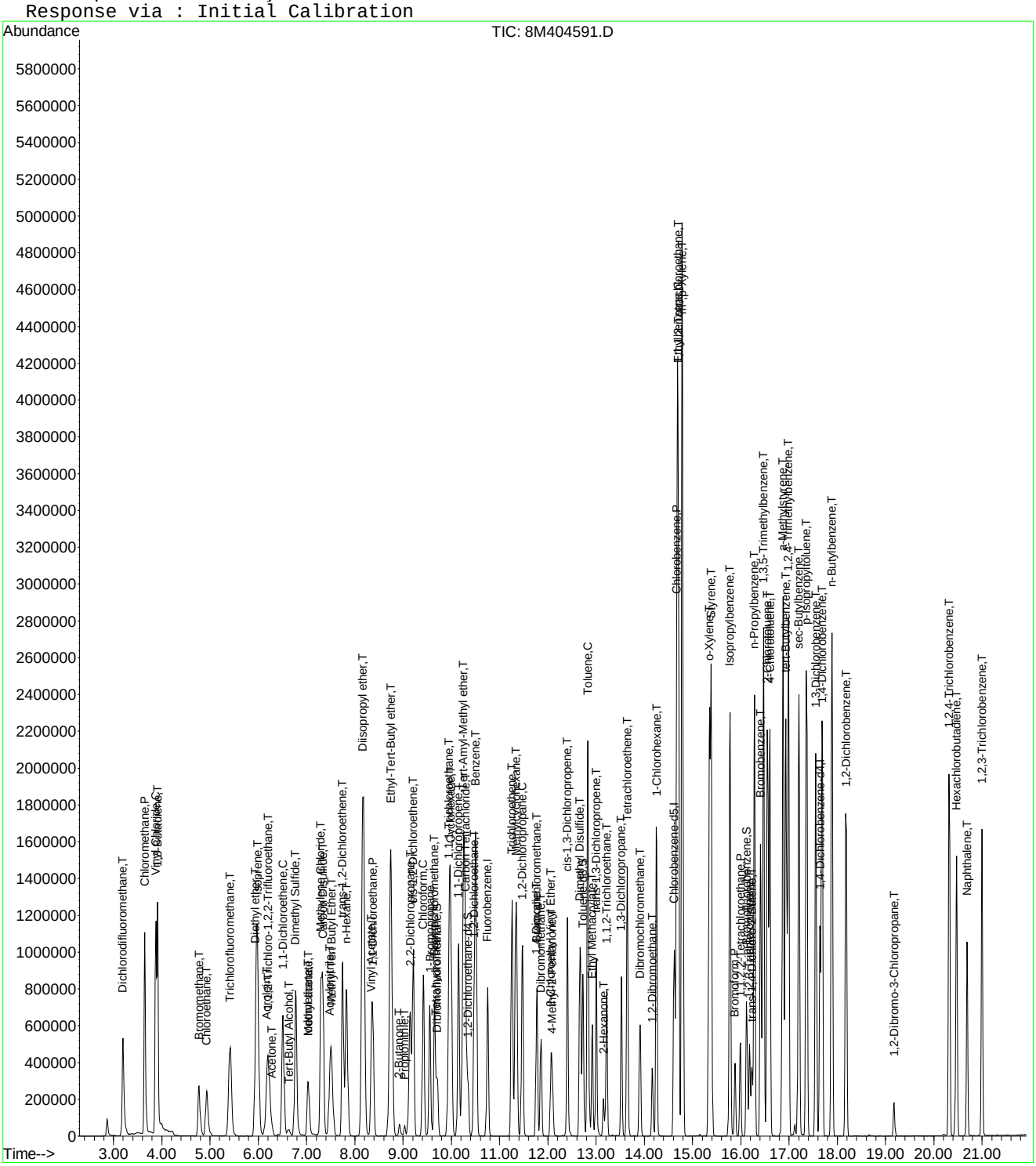

8M404591.D 8260WT.M Wed May 13 06:46:24 2015 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404591.D Vial: 15
Acq On : 12 May 2015 22:34 Operator: TMB
Sample : WG523161-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD70475 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	118	0.00
2	T	Dichlorodifluoromethane	50.0000	56.1760	-12.4	124	0.00
3	P	Chloromethane	50.0000	50.0839	-0.2	118	0.00
4	C	Vinyl Chloride	50.0000	48.0032	4.0	109	0.00
5	T	1,3-Butadiene	50.0000	27.3545	45.3#	57	0.00
6	T	Bromomethane	50.0000	49.4205	1.2	121	0.00
7	T	Chloroethane	50.0000	55.4535	-10.9	132	0.00
8	T	Trichlorofluoromethane	50.0000	48.7746	2.5	116	0.00
9	T	Diethyl ether	100.0000	91.0349	9.0	115	0.00
10	T	Isoprene	50.0000	57.5747	-15.1	133	0.00
11	T	Acrolein	50.0000	81.1360	-62.3#	270	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	47.9976	4.0	114	0.00
13	T	Acetone	50.0000	56.8598	-13.7	139	0.00
14	C	1,1-Dichloroethene	50.0000	46.7643	6.5	110	0.00
15	T	Tert-Butyl Alcohol	200.0000	207.5132	-3.8	133	0.00
16	T	Dimethyl Sulfide	50.0000	66.9848	-34.0#	155	0.00
17	T	Iodomethane	50.0000	60.2995	-20.6	147	0.00
18	T	Methyl acetate	50.0000	46.2957	7.4	113	0.00
19	T	Methylene Chloride	50.0000	50.2973	-0.6	119	0.00
20	T	Carbon Disulfide	50.0000	47.0436	5.9	105	0.00
21	T	Acrylonitrile	50.0000	52.4490	-4.9	124	0.00
22	T	Methyl Tert Butyl Ether	50.0000	53.5119	-7.0	128	0.00
23	T	trans-1,2-Dichloroethene	50.0000	49.7697	0.5	118	0.00
24	T	n-Hexane	50.0000	44.9039	10.2	105	0.00
25	T	Diisopropyl ether	100.0000	97.5476	2.5	118	0.00
26	T	Vinyl Acetate	50.0000	54.7015	-9.4	125	0.00
27	P	1,1-Dichloroethane	50.0000	48.8040	2.4	113	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	99.8095	0.2	121	0.00
29	T	2-Butanone	50.0000	53.2579	-6.5	128	0.00
30	T	Propionitrile	100.0000	106.3523	-6.4	134	0.00
31	T	2,2-Dichloropropane	50.0000	45.7742	8.5	110	0.00
32	T	cis-1,2-Dichloroethene	50.0000	48.5405	2.9	115	0.00
33	C	Chloroform	50.0000	49.2072	1.6	116	0.00
34		1-Bromopropane	50.0000	54.4355	-8.9	134	0.00
35	T	Bromochloromethane	50.0000	48.0577	3.9	113	0.00
36	T	Tetrahydrofuran	100.0000	101.4819	-1.5	128	0.00
37	S	Dibromofluoromethane	25.0000	24.1626	3.3	115	0.00
38	T	1,1,1-Trichloroethane	50.0000	50.2943	-0.6	116	0.00
39	T	Cyclohexane	50.0000	47.4323	5.1	111	0.00
40	T	1,1-Dichloropropene	50.0000	47.8258	4.3	113	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	100.8814	-0.9	123	0.00
42	T	Carbon Tetrachloride	50.0000	49.2114	1.6	114	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.3822	2.5	114	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.58#
45	T	1,2-Dichloroethane	50.0000	48.6514	2.7	117	0.00
46	T	Benzene	50.0000	50.2789	-0.6	116	0.00
47	T	Trichloroethene	50.0000	49.9479	0.1	116	0.00
48	T	Methylcyclohexane	50.0000	47.4654	5.1	112	0.00
49	C	1,2-Dichloropropane	50.0000	48.6243	2.8	116	0.00
50	T	Bromodichloromethane	50.0000	48.5742	2.9	114	0.00
51	T	1,4-Dioxane	200.0000	201.6115	-0.8	119	0.00
52	T	Dibromomethane	50.0000	48.0270	3.9	115	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	85.5819	-71.2#	218	0.00
54	T	4-Methyl-2-Pentanone	50.0000	54.3940	-8.8	130	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404591.D Vial: 15
Acq On : 12 May 2015 22:34 Operator: TMB
Sample : WG523161-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD70475 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	52.4974	-5.0	120	0.00
56	T	Dimethyl Disulfide	50.0000	46.1411	7.7	123	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	119	0.00
58	S	Toluene-d8	25.0000	24.4497	2.2	113	0.00
59	C	Toluene	50.0000	50.8947	-1.8	115	0.00
60	T	Ethyl Methacrylate	50.0000	57.4235	-14.8	126	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.18#
62	T	trans-1,3-Dichloropropene	50.0000	49.1605	1.7	113	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.0014	2.0	115	0.00
64	T	2-Hexanone	50.0000	54.7606	-9.5	124	0.00
65	T	1,3-Dichloropropane	50.0000	50.8231	-1.6	120	0.00
66	T	Tetrachloroethene	50.0000	49.0224	2.0	116	0.00
67	T	Dibromochloromethane	50.0000	49.0990	1.8	115	0.00
68	T	1,2-Dibromoethane	50.0000	50.8711	-1.7	116	0.00
69	T	1-Chlorohexane	50.0000	50.5549	-1.1	119	0.00
70	P	Chlorobenzene	50.0000	47.1511	5.7	109	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	50.2002	-0.4	117	0.00
72	C	Ethylbenzene	50.0000	48.7068	2.6	117	0.00
73	T	m-,p-Xylene	100.0000	99.4729	0.5	111	0.00
74	T	o-Xylene	50.0000	46.8093	6.4	110	0.00
75	T	Styrene	50.0000	52.4756	-5.0	116	0.00
76	P	Bromoform	50.0000	45.3265	9.3	123	0.00
77	T	Isopropylbenzene	50.0000	47.8947	4.2	107	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	118	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	47.7586	4.5	116	0.00
80	S	p-Bromofluorobenzene	25.0000	24.4977	2.0	116	0.00
81	T	1,2,3-Trichloropropane	50.0000	51.5901	-3.2	124	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	53.0904	-6.2	117	0.00
83	T	n-Propylbenzene	50.0000	46.3371	7.3	105	0.00
84	T	Bromobenzene	50.0000	48.0675	3.9	115	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	52.8620	-5.7	116	0.00
86	T	2-Chlorotoluene	50.0000	40.8801	18.2	94	0.00
87	T	4-Chlorotoluene	50.0000	53.3429	-6.7	122	0.00
88	T	a-Methylstyrene	50.0000	52.1517	-4.3	119	0.00
89	T	tert-Butylbenzene	50.0000	45.4008	9.2	109	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	52.4881	-5.0	115	0.00
91	T	sec-Butylbenzene	50.0000	48.9121	2.2	106	0.00
92	T	p-Isopropyltoluene	50.0000	47.9989	4.0	104	0.00
93	T	1,3-Dichlorobenzene	50.0000	45.5774	8.8	105	0.00
94	T	1,4-Dichlorobenzene	50.0000	48.6885	2.6	115	0.00
95	T	n-Butylbenzene	50.0000	51.7897	-3.6	112	0.00
96	T	1,2-Dichlorobenzene	50.0000	46.2431	7.5	106	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	52.5819	-5.2	123	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	49.6876	0.6	114	0.00
99	T	Hexachlorobutadiene	50.0000	50.3914	-0.8	122	0.00
100	T	Naphthalene	50.0000	51.4911	-3.0	116	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	49.7096	0.6	115	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M404591.D 8260WT.M Wed May 13 06:49:00 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051515\8M404661.D Vial: 3
Acq On : 15 May 2015 10:05 Operator: TMB
Sample : WG523731-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 15 10:27:36 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	845419	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	642016	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	365828	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.71	111	210605	25.1330 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.52%		
43) 1,2-Dichloroethane-d4	10.35	65	195736	24.8560 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.44%		
58) Toluene-d8	12.73	98	743572	24.8192 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.28%		
80) p-Bromofluorobenzene	16.12	95	291844	23.4485 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.80%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.19	85	723474	55.2166 ug/L	98
3) Chloromethane	3.65	50	1400836	53.5543 ug/L	97
4) Vinyl Chloride	3.89	62	1362892	55.2947 ug/L	96
5) 1,3-Butadiene	3.93	54	1446284	67.3551 ug/L	99
6) Bromomethane	4.78	94	344308	58.1578 ug/L	99
7) Chloroethane	4.93	64	352000	52.4798 ug/L	92
8) Trichlorofluoromethane	5.43	101	812292	52.4794 ug/L	97
9) Diethyl ether	5.95	59	607461	102.3659 ug/L	89
10) Isoprene	5.99	67	601605	52.4178 ug/L	78
11) Acrolein	6.18	56	9009	50.5489 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.20	101	454636	52.0402 ug/L	90
13) Acetone	6.29	43	61804	51.1888 ug/L	87
14) 1,1-Dichloroethene	6.51	61	773407	52.0534 ug/L	82
15) Tert-Butyl Alcohol	6.63	59	71222	219.2228 ug/L	96
16) Dimethyl Sulfide	6.78	62	459848	53.0876 ug/L	76
17) Iodomethane	7.03	142	267501	44.7747 ug/L	79
18) Methyl acetate	7.04	43	238889	55.4463 ug/L	88
19) Methylene Chloride	7.30	84	435591	51.4428 ug/L #	52
20) Carbon Disulfide	7.34	76	1506480	55.1155 ug/L	95
21) Acrylonitrile	7.49	53	106344	55.3366 ug/L	93
22) Methyl Tert Butyl Ether	7.51	73	857590	52.5727 ug/L	96
23) trans-1,2-Dichloroethene	7.75	61	719866	50.7505 ug/L	84
24) n-Hexane	7.83	57	761853	53.1148 ug/L	95
25) Diisopropyl ether	8.17	45	3372823	107.3466 ug/L	92
26) Vinyl Acetate	8.34	43	599000	57.7455 ug/L	90
27) 1,1-Dichloroethane	8.37	63	903976	52.7921 ug/L	94
28) Ethyl-Tert-Butyl ether	8.75	59	2628712	106.6273 ug/L	93
29) 2-Butanone	8.93	43	105468	53.6140 ug/L	87
30) Propionitrile	9.04	54	70824	112.9599 ug/L	99
31) 2,2-Dichloropropane	9.15	77	736211	52.1114 ug/L	97
32) cis-1,2-Dichloroethene	9.21	96	491434	50.4432 ug/L	74
33) Chloroform	9.42	83	832100	52.3163 ug/L	96
34) 1-Bromopropane	9.55	122	87516	49.4735 ug/L	99
35) Bromochloromethane	9.66	130	250539	50.4289 ug/L #	66
36) Tetrahydrofuran	9.68	42	139262	105.1024 ug/L	82
38) 1,1,1-Trichloroethane	9.96	97	769998	53.3299 ug/L	96
39) Cyclohexane	9.99	56	945010	54.0055 ug/L	83
40) 1,1-Dichloropropene	10.15	75	648804	51.6484 ug/L	91
41) Tert-Amyl-Methyl ether	10.26	73	1921556	106.1918 ug/L	98
42) Carbon Tetrachloride	10.30	117	712707	54.3189 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M404661.D 8260WT.M Fri May 15 10:27:37 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051515\8M404661.D Vial: 3
Acq On : 15 May 2015 10:05 Operator: TMB
Sample : WG523731-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 15 10:27:36 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.47	62	583463	51.1713	ug/L		91
46)	Benzene	10.51	78	1790690	52.9198	ug/L		98
47)	Trichloroethene	11.26	130	460754	51.4776	ug/L		97
48)	Methylcyclohexane	11.34	83	755122	51.9783	ug/L		88
49)	1,2-Dichloropropane	11.48	63	477506	50.3828	ug/L		99
50)	Bromodichloromethane	11.78	83	629806	53.9757	ug/L		96
51)	1,4-Dioxane	11.76	88	8642	229.8106	ug/L		83
52)	Dibromomethane	11.86	93	235778	52.8231	ug/L		87
53)	2-Chloroethyl Vinyl Ether	12.07	63	36806	15.3648	ug/L		93
54)	4-Methyl-2-Pentanone	12.10	58	89011	54.6291	ug/L		89
55)	cis-1,3-Dichloropropene	12.41	75	687181	53.8760	ug/L		95
56)	Dimethyl Disulfide	12.67	79	373054	49.4410	ug/L		98
59)	Toluene	12.83	91	1912998	50.2344	ug/L		83
60)	Ethyl Methacrylate	12.92	69	367604	54.2523	ug/L		71
62)	trans-1,3-Dichloropropene	13.01	75	594020	52.0408	ug/L		94
63)	1,1,2-Trichloroethane	13.22	97	292567	49.4494	ug/L		98
64)	2-Hexanone	13.15	58	82764	50.7988	ug/L	#	76
65)	1,3-Dichloropropane	13.52	76	507406	48.9220	ug/L		79
66)	Tetrachloroethene	13.65	164	383937	47.7678	ug/L		88
67)	Dibromochloromethane	13.91	129	410773	52.1734	ug/L		99
68)	1,2-Dibromoethane	14.16	107	291856	51.6734	ug/L		100
69)	1-Chlorohexane	14.26	91	643287	49.3861	ug/L		81
70)	Chlorobenzene	14.67	112	1270672	49.4371	ug/L		95
71)	1,1,1,2-Tetrachloroethane	14.70	131	467554	50.6780	ug/L		99
72)	Ethylbenzene	14.70	106	747009	48.5237	ug/L	#	34
73)	m-,p-Xylene	14.78	106	1747865	100.3923	ug/L	#	48
74)	o-Xylene	15.35	106	853219	49.5897	ug/L		64
75)	Styrene	15.38	104	1406106	51.5889	ug/L		88
76)	Bromoform	15.88	173	235515	47.0066	ug/L		98
77)	Isopropylbenzene	15.78	105	2144827	50.9711	ug/L		79
79)	1,1,2,2-Tetrachloroethane	15.98	83	353043	50.7899	ug/L		95
81)	1,2,3-Trichloropropane	16.18	110	94869	50.3764	ug/L		57
82)	trans-1,4-Dichloro-2-Buten	16.22	53	109866	47.6127	ug/L	#	53
83)	n-Propylbenzene	16.28	91	2684018	48.4911	ug/L	#	74
84)	Bromobenzene	16.41	156	518130	47.1362	ug/L		89
85)	1,3,5-Trimethylbenzene	16.47	105	1893050	49.9854	ug/L		80
86)	2-Chlorotoluene	16.55	91	1583832	42.3990	ug/L		81
87)	4-Chlorotoluene	16.60	91	1615086	54.0548	ug/L		76
88)	a-Methylstyrene	16.87	118	1061817	49.2315	ug/L		94
89)	tert-Butylbenzene	16.94	134	377713	44.8621	ug/L		56
90)	1,2,4-Trimethylbenzene	16.99	105	1936498	49.7350	ug/L		75
91)	sec-Butylbenzene	17.20	105	2373293	50.2605	ug/L		77
92)	p-Isopropyltoluene	17.36	119	2014809	50.3279	ug/L		78
93)	1,3-Dichlorobenzene	17.56	146	1075032	48.2565	ug/L		92
94)	1,4-Dichlorobenzene	17.68	146	1083535	47.9088	ug/L		91
95)	n-Butylbenzene	17.89	91	1978185	50.5849	ug/L		79
96)	1,2-Dichlorobenzene	18.18	146	958399	49.5764	ug/L		95
97)	1,2-Dibromo-3-Chloropropan	19.18	75	57645	51.9541	ug/L		80
98)	1,2,4-Trichlorobenzene	20.32	180	698263	47.9475	ug/L		99
99)	Hexachlorobutadiene	20.47	225	342396	45.0037	ug/L		94
100)	Naphthalene	20.69	128	1017970	52.1203	ug/L		93
101)	1,2,3-Trichlorobenzene	21.00	180	606889	49.1777	ug/L		98

(#) = qualifier out of range (m) = manual integration
8M404661.D 8260WT.M Fri May 15 10:27:37 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051515\8M404661.D Vial: 3
Acq On : 15 May 2015 10:05 Operator: TMB
Sample : WG523731-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 15 10:27 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

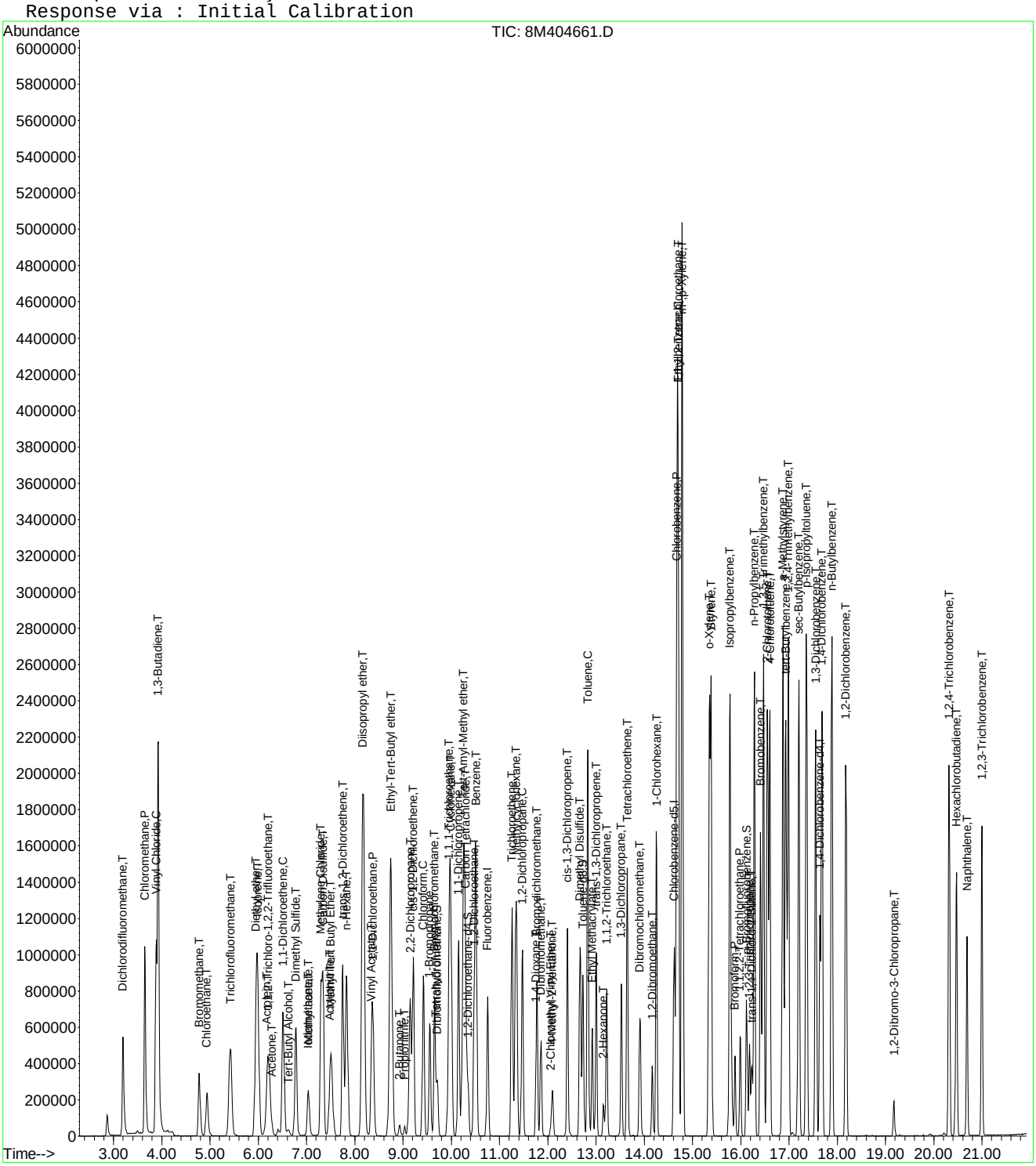

8M404661.D 8260WT.M Fri May 15 10:27:37 2015 Page 3

Continuing Calibration Area and RT check

Instrument: HPMS8
Initial cal date: 12 May 2015 19:42
CCV date: 15 May 2015 10:05
CCV Filename: 8M404661.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	779258	10.75	545682	14.62	300564	17.65
CCV	845419	10.75	642016	14.62	365828	17.64

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051515\8M404661.D Vial: 3
Acq On : 15 May 2015 10:05 Operator: TMB
Sample : WG523731-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	108	0.00
2	T	Dichlorodifluoromethane	0.3875	0.4279	-10.4	112	0.00
3	P	Chloromethane	0.7735	0.8285	-7.1	116	0.00
4	C	Vinyl Chloride	0.7289	0.8061	-10.6	116	0.00
5	T	1,3-Butadiene	0.6155	0.8554	-39.0#	120	0.02
6	T	Bromomethane	0.1537	0.2036	-32.5#	132	0.00
7	T	Chloroethane	0.1983	0.2082	-5.0	115	0.00
8	T	Trichlorofluoromethane	0.4577	0.4804	-5.0	114	0.00
9	T	Diethyl ether	0.1755	0.1796	-2.4	119	0.00
10	T	Isoprene	0.3394	0.3558	-4.8	112	0.00
11	T	Acrolein	0.0074	0.0053	27.9#	99	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2583	0.2689	-4.1	114	0.00
13	T	Acetone	0.0357	0.0365	-2.4	115	0.00
14	C	1,1-Dichloroethene	0.4394	0.4574	-4.1	112	0.00
15	T	Tert-Butyl Alcohol	0.0096	0.0105	-9.6	129	0.00
16	T	Dimethyl Sulfide	0.2561	0.2720	-6.2	113	0.00
17	T	Iodomethane	0.1417	0.1582	-11.6	99	0.00
18	T	Methyl acetate	0.1274	0.1413	-10.9	125	0.00
19	T	Methylene Chloride	0.2504	0.2576	-2.9	112	0.00
20	T	Carbon Disulfide	0.8083	0.8910	-10.2	113	0.00
21	T	Acrylonitrile	0.0568	0.0629	-10.7	121	0.00
22	T	Methyl Tert Butyl Ether	0.4824	0.5072	-5.1	116	0.00
23	T	trans-1,2-Dichloroethene	0.4194	0.4258	-1.5	111	0.00
24	T	n-Hexane	0.4242	0.4506	-6.2	115	0.00
25	T	Diisopropyl ether	0.9291	0.9974	-7.3	119	0.00
26	T	Vinyl Acetate	0.3067	0.3543	-15.5	121	0.00
27	P	1,1-Dichloroethane	0.5064	0.5346	-5.6	112	0.00
28	T	Ethyl-Tert-Butyl ether	0.7290	0.7773	-6.6	119	0.00
29	T	2-Butanone	0.0582	0.0624	-7.2	118	0.00
30	T	Propionitrile	0.0185	0.0209	-12.9	131	0.00
31	T	2,2-Dichloropropane	0.4178	0.4354	-4.2	115	0.00
32	T	cis-1,2-Dichloroethene	0.2881	0.2907	-0.9	110	0.00
33	C	Chloroform	0.4703	0.4921	-4.6	113	0.00
34		1-Bromopropane	0.0473	0.0518	-9.5	112	0.00
35	T	Bromochloromethane	0.1469	0.1482	-0.9	109	0.00
36	T	Tetrahydrofuran	0.0392	0.0412	-5.1	122	0.00
37	S	Dibromofluoromethane	0.2478	0.2491	-0.5	110	0.00
38	T	1,1,1-Trichloroethane	0.4270	0.4554	-6.7	113	0.00
39	T	Cyclohexane	0.5174	0.5589	-8.0	117	0.00
40	T	1,1-Dichloropropene	0.3715	0.3837	-3.3	112	0.00
41	T	Tert-Amyl-Methyl ether	0.5351	0.5682	-6.2	120	0.00
42	T	Carbon Tetrachloride	0.3880	0.4215	-8.6	116	0.00
43	S	1,2-Dichloroethane-d4	0.2329	0.2315	0.6	107	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.58#
45	T	1,2-Dichloroethane	0.3372	0.3451	-2.3	113	0.00
46	T	Benzene	1.0006	1.0591	-5.8	113	0.00
47	T	Trichloroethene	0.2647	0.2725	-3.0	110	0.00
48	T	Methylcyclohexane	0.4296	0.4466	-4.0	112	0.00
49	C	1,2-Dichloropropane	0.2803	0.2824	-0.8	111	0.00
50	T	Bromodichloromethane	0.3451	0.3725	-7.9	116	0.00
51	T	1,4-Dioxane	0.0011	0.0013	-18.5	129	-0.01
52	T	Dibromomethane	0.1320	0.1394	-5.6	117	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0698	0.0218	68.8#	38#	0.00
54	T	4-Methyl-2-Pentanone	0.0482	0.0526	-9.3	120	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051515\8M404661.D Vial: 3
Acq On : 15 May 2015 10:05 Operator: TMB
Sample : WG523731-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.3772	0.4064	-7.7	113	0.00
56	T	Dimethyl Disulfide	0.2031	0.2206	-8.6	122	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	118	0.00
58	S	Toluene-d8	1.1666	1.1582	0.7	113	0.00
59	C	Toluene	1.4829	1.4898	-0.5	112	0.00
60	T	Ethyl Methacrylate	0.2638	0.2863	-8.5	117	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.18#
62	T	trans-1,3-Dichloropropene	0.4445	0.4626	-4.1	118	0.00
63	T	1,1,2-Trichloroethane	0.2304	0.2279	1.1	115	0.00
64	T	2-Hexanone	0.0634	0.0645	-1.6	114	0.00
65	T	1,3-Dichloropropane	0.4039	0.3952	2.2	114	0.00
66	T	Tetrachloroethene	0.3130	0.2990	4.5	111	0.00
67	T	Dibromochloromethane	0.3066	0.3199	-4.3	120	0.00
68	T	1,2-Dibromoethane	0.2199	0.2273	-3.3	116	0.00
69	T	1-Chlorohexane	0.5072	0.5010	1.2	115	0.00
70	P	Chlorobenzene	1.0009	0.9896	1.1	113	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3593	0.3641	-1.4	117	0.00
72	C	Ethylbenzene	0.5995	0.5818	3.0	115	0.00
73	T	m-,p-Xylene	0.6780	0.6806	-0.4	111	0.00
74	T	o-Xylene	0.6700	0.6645	0.8	115	0.00
75	T	Styrene	1.0613	1.0951	-3.2	113	0.00
76	P	Bromoform	0.1638	0.1834	-12.0	126	0.00
77	T	Isopropylbenzene	1.6386	1.6704	-1.9	112	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	122	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4750	0.4825	-1.6	127	-0.01
80	S	p-Bromofluorobenzene	0.8506	0.7978	6.2	114	0.00
81	T	1,2,3-Trichloropropane	0.1287	0.1297	-0.8	124	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1577	0.1502	4.8	108	-0.01
83	T	n-Propylbenzene	3.7826	3.6684	3.0	113	0.00
84	T	Bromobenzene	0.7512	0.7082	5.7	116	0.00
85	T	1,3,5-Trimethylbenzene	2.5881	2.5873	0.0	113	0.00
86	T	2-Chlorotoluene	2.5528	2.1647	15.2	100	0.00
87	T	4-Chlorotoluene	2.0419	2.2074	-8.1	127	0.00
88	T	a-Methylstyrene	1.4739	1.4512	1.5	116	0.00
89	T	tert-Butylbenzene	0.5754	0.5162	10.3	111	0.00
90	T	1,2,4-Trimethylbenzene	2.6608	2.6467	0.5	112	0.00
91	T	sec-Butylbenzene	3.2269	3.2437	-0.5	112	0.00
92	T	p-Isopropyltoluene	2.7358	2.7538	-0.7	112	0.00
93	T	1,3-Dichlorobenzene	1.5224	1.4693	3.5	114	0.00
94	T	1,4-Dichlorobenzene	1.5456	1.4809	4.2	116	-0.01
95	T	n-Butylbenzene	2.6725	2.7037	-1.2	113	0.00
96	T	1,2-Dichlorobenzene	1.3211	1.3099	0.8	117	-0.01
97	T	1,2-Dibromo-3-Chloropropane	0.0758	0.0788	-3.9	125	0.00
98	T	1,2,4-Trichlorobenzene	0.9952	0.9544	4.1	113	0.00
99	T	Hexachlorobutadiene	0.5199	0.4680	10.0	112	0.00
100	T	Naphthalene	1.3347	1.3913	-4.2	121	0.00
101	T	1,2,3-Trichlorobenzene	0.8433	0.8295	1.6	117	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M404661.D 8260WT.M Fri May 15 10:32:24 2015 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051515\8M404661.D Vial: 3
Acq On : 15 May 2015 10:05 Operator: TMB
Sample : WG523731-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	108	0.00
2	T	Dichlorodifluoromethane	50.0000	55.2166	-10.4	112	0.00
3	P	Chloromethane	50.0000	53.5543	-7.1	116	0.00
4	C	Vinyl Chloride	50.0000	55.2947	-10.6	116	0.00
5	T	1,3-Butadiene	50.0000	67.3551	-34.7#	120	0.02
6	T	Bromomethane	50.0000	58.1578	-16.3	132	0.00
7	T	Chloroethane	50.0000	52.4798	-5.0	115	0.00
8	T	Trichlorofluoromethane	50.0000	52.4794	-5.0	114	0.00
9	T	Diethyl ether	100.0000	102.3659	-2.4	119	0.00
10	T	Isoprene	50.0000	52.4178	-4.8	112	0.00
11	T	Acrolein	50.0000	50.5489	-1.1	99	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	52.0402	-4.1	114	0.00
13	T	Acetone	50.0000	51.1888	-2.4	115	0.00
14	C	1,1-Dichloroethene	50.0000	52.0534	-4.1	112	0.00
15	T	Tert-Butyl Alcohol	200.0000	219.2228	-9.6	129	0.00
16	T	Dimethyl Sulfide	50.0000	53.0876	-6.2	113	0.00
17	T	Iodomethane	50.0000	44.7747	10.5	99	0.00
18	T	Methyl acetate	50.0000	55.4463	-10.9	125	0.00
19	T	Methylene Chloride	50.0000	51.4428	-2.9	112	0.00
20	T	Carbon Disulfide	50.0000	55.1155	-10.2	113	0.00
21	T	Acrylonitrile	50.0000	55.3366	-10.7	121	0.00
22	T	Methyl Tert Butyl Ether	50.0000	52.5727	-5.1	116	0.00
23	T	trans-1,2-Dichloroethene	50.0000	50.7505	-1.5	111	0.00
24	T	n-Hexane	50.0000	53.1148	-6.2	115	0.00
25	T	Diisopropyl ether	100.0000	107.3466	-7.3	119	0.00
26	T	Vinyl Acetate	50.0000	57.7455	-15.5	121	0.00
27	P	1,1-Dichloroethane	50.0000	52.7921	-5.6	112	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	106.6273	-6.6	119	0.00
29	T	2-Butanone	50.0000	53.6140	-7.2	118	0.00
30	T	Propionitrile	100.0000	112.9599	-13.0	131	0.00
31	T	2,2-Dichloropropane	50.0000	52.1114	-4.2	115	0.00
32	T	cis-1,2-Dichloroethene	50.0000	50.4432	-0.9	110	0.00
33	C	Chloroform	50.0000	52.3163	-4.6	113	0.00
34		1-Bromopropane	50.0000	49.4735	1.1	112	0.00
35	T	Bromochloromethane	50.0000	50.4289	-0.9	109	0.00
36	T	Tetrahydrofuran	100.0000	105.1024	-5.1	122	0.00
37	S	Dibromofluoromethane	25.0000	25.1330	-0.5	110	0.00
38	T	1,1,1-Trichloroethane	50.0000	53.3299	-6.7	113	0.00
39	T	Cyclohexane	50.0000	54.0055	-8.0	117	0.00
40	T	1,1-Dichloropropene	50.0000	51.6484	-3.3	112	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	106.1918	-6.2	120	0.00
42	T	Carbon Tetrachloride	50.0000	54.3189	-8.6	116	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.8560	0.6	107	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.58#
45	T	1,2-Dichloroethane	50.0000	51.1713	-2.3	113	0.00
46	T	Benzene	50.0000	52.9198	-5.8	113	0.00
47	T	Trichloroethene	50.0000	51.4776	-3.0	110	0.00
48	T	Methylcyclohexane	50.0000	51.9783	-4.0	112	0.00
49	C	1,2-Dichloropropane	50.0000	50.3828	-0.8	111	0.00
50	T	Bromodichloromethane	50.0000	53.9757	-8.0	116	0.00
51	T	1,4-Dioxane	200.0000	229.8106	-14.9	129	-0.01
52	T	Dibromomethane	50.0000	52.8231	-5.6	117	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	15.3648	69.3#	38	0.00
54	T	4-Methyl-2-Pentanone	50.0000	54.6291	-9.3	120	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051515\8M404661.D Vial: 3
Acq On : 15 May 2015 10:05 Operator: TMB
Sample : WG523731-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.8760	-7.8	113	0.00
56	T	Dimethyl Disulfide	50.0000	49.4410	1.1	122	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	118	0.00
58	S	Toluene-d8	25.0000	24.8192	0.7	113	0.00
59	C	Toluene	50.0000	50.2345	-0.5	112	0.00
60	T	Ethyl Methacrylate	50.0000	54.2523	-8.5	117	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.18#
62	T	trans-1,3-Dichloropropene	50.0000	52.0408	-4.1	118	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.4494	1.1	115	0.00
64	T	2-Hexanone	50.0000	50.7988	-1.6	114	0.00
65	T	1,3-Dichloropropane	50.0000	48.9220	2.2	114	0.00
66	T	Tetrachloroethene	50.0000	47.7678	4.5	111	0.00
67	T	Dibromochloromethane	50.0000	52.1734	-4.3	120	0.00
68	T	1,2-Dibromoethane	50.0000	51.6734	-3.3	116	0.00
69	T	1-Chlorohexane	50.0000	49.3861	1.2	115	0.00
70	P	Chlorobenzene	50.0000	49.4371	1.1	113	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	50.6780	-1.4	117	0.00
72	C	Ethylbenzene	50.0000	48.5237	3.0	115	0.00
73	T	m-,p-Xylene	100.0000	100.3923	-0.4	111	0.00
74	T	o-Xylene	50.0000	49.5897	0.8	115	0.00
75	T	Styrene	50.0000	51.5889	-3.2	113	0.00
76	P	Bromoform	50.0000	47.0067	6.0	126	0.00
77	T	Isopropylbenzene	50.0000	50.9711	-1.9	112	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	122	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	50.7899	-1.6	127	-0.01
80	S	p-Bromofluorobenzene	25.0000	23.4485	6.2	114	0.00
81	T	1,2,3-Trichloropropane	50.0000	50.3764	-0.8	124	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	47.6127	4.8	108	-0.01
83	T	n-Propylbenzene	50.0000	48.4911	3.0	113	0.00
84	T	Bromobenzene	50.0000	47.1362	5.7	116	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	49.9855	0.0	113	0.00
86	T	2-Chlorotoluene	50.0000	42.3991	15.2	100	0.00
87	T	4-Chlorotoluene	50.0000	54.0548	-8.1	127	0.00
88	T	a-Methylstyrene	50.0000	49.2315	1.5	116	0.00
89	T	tert-Butylbenzene	50.0000	44.8621	10.3	111	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	49.7350	0.5	112	0.00
91	T	sec-Butylbenzene	50.0000	50.2604	-0.5	112	0.00
92	T	p-Isopropyltoluene	50.0000	50.3279	-0.7	112	0.00
93	T	1,3-Dichlorobenzene	50.0000	48.2565	3.5	114	0.00
94	T	1,4-Dichlorobenzene	50.0000	47.9088	4.2	116	-0.01
95	T	n-Butylbenzene	50.0000	50.5849	-1.2	113	0.00
96	T	1,2-Dichlorobenzene	50.0000	49.5764	0.8	117	-0.01
97	T	1,2-Dibromo-3-Chloropropane	50.0000	51.9541	-3.9	125	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	47.9475	4.1	113	0.00
99	T	Hexachlorobutadiene	50.0000	45.0037	10.0	112	0.00
100	T	Naphthalene	50.0000	52.1202	-4.2	121	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	49.1777	1.6	117	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M404661.D 8260WT.M Fri May 15 10:32:25 2015 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\2\DATA\100214\8M400357.D          Vial: 3
Acq On    :  2 Oct 2014  11:58                       Operator: TMB
Sample    : WG494714-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD66476                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

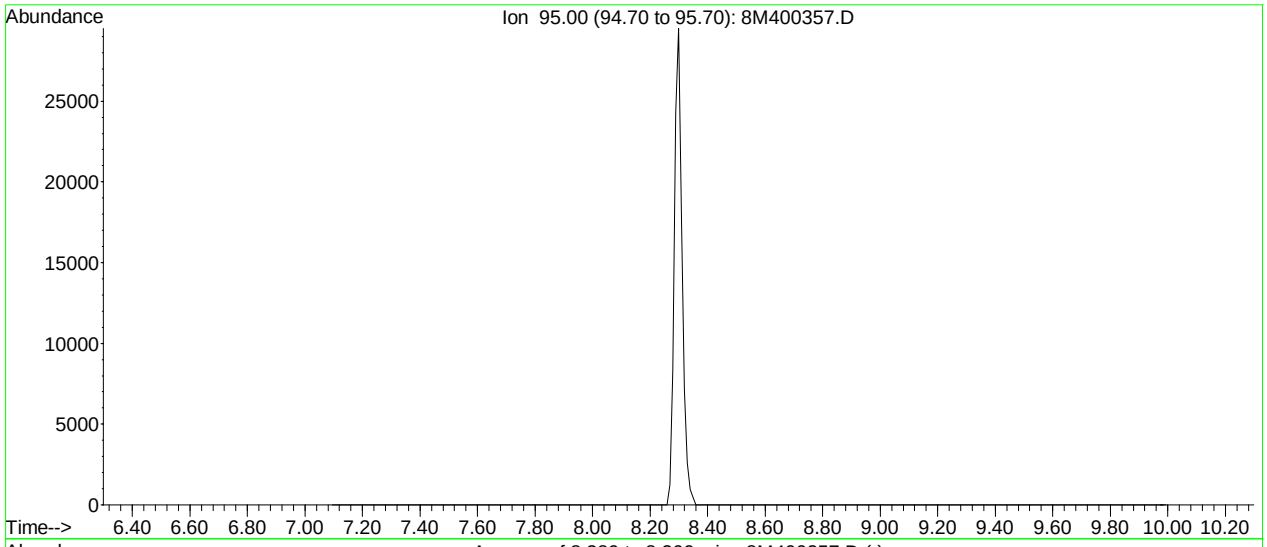

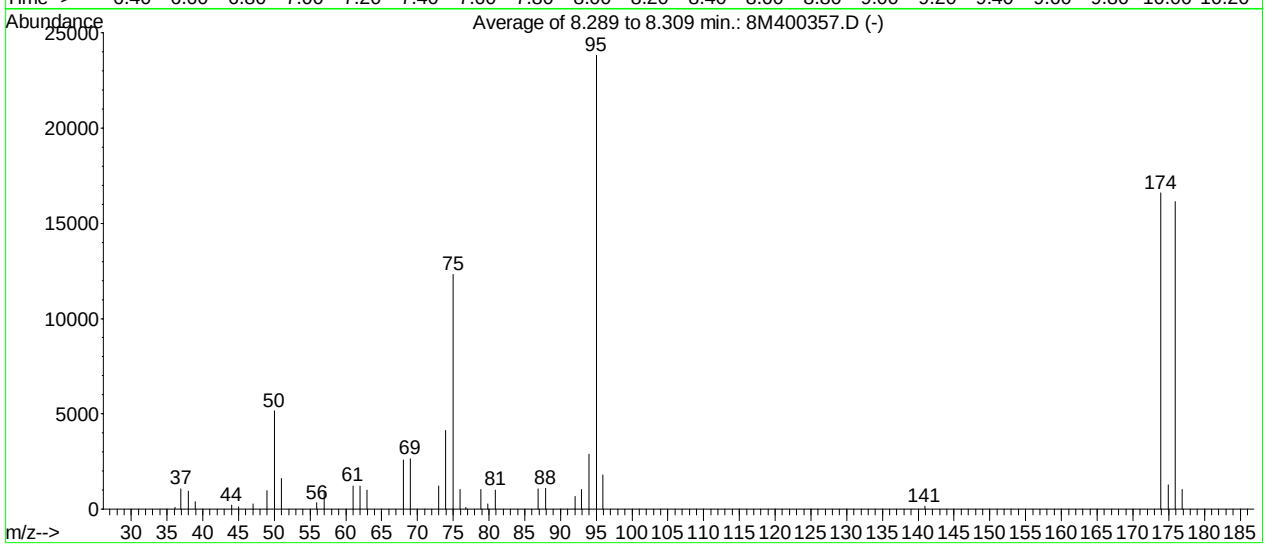

AutoFind: Scans 118, 119, 120; Background Corrected with Scan 113

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.7	5158	PASS
75	95	30	60	51.7	12312	PASS
95	95	100	100	100.0	23818	PASS
96	95	5	9	7.6	1800	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	69.7	16590	PASS
175	174	5	9	7.8	1290	PASS
176	174	95	101	97.3	16145	PASS
177	176	5	9	6.3	1023	PASS

8M400357.D BFB.M Thu Oct 02 12:09:27 2014

BFB

```
Data File : C:\MSDCHEM\2\DATA\051215\8M404577.D          Vial: 2
Acq On    : 12 May 2015  15:55                       Operator: TMB
Sample    : WG523161-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD70032                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

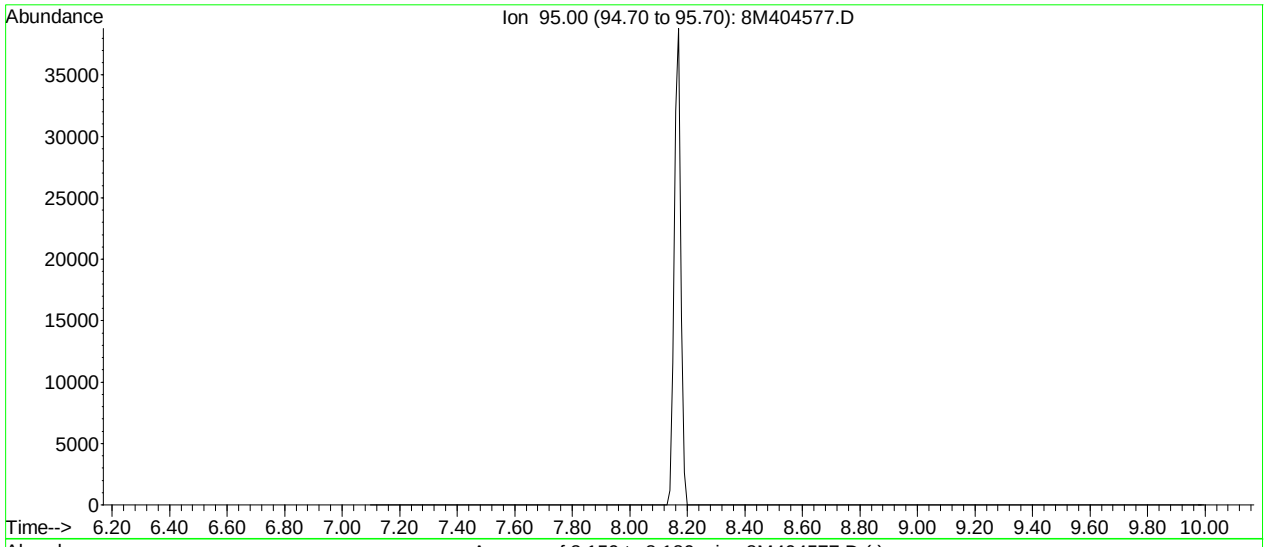

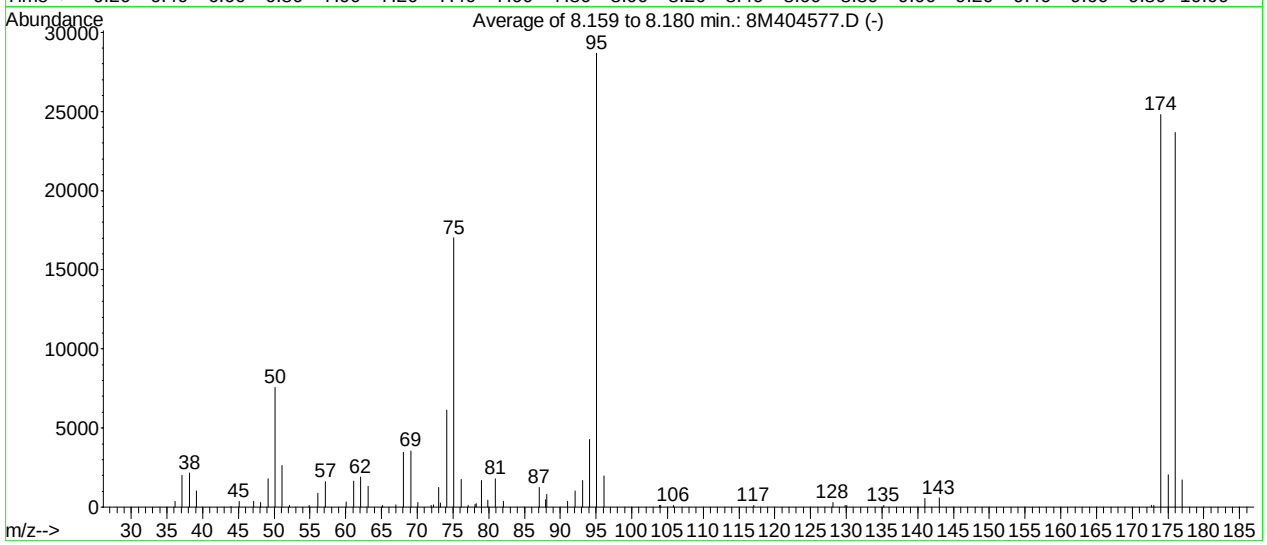

AutoFind: Scans 105, 106, 107; Background Corrected with Scan 100

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	26.3	7551	PASS
75	95	30	60	59.4	17014	PASS
95	95	100	100	100.0	28666	PASS
96	95	5	9	6.9	1981	PASS
173	174	0.00	2	0.5	119	PASS
174	95	50	100	86.5	24808	PASS
175	174	5	9	8.2	2031	PASS
176	174	95	101	95.4	23666	PASS
177	176	5	9	7.2	1714	PASS

8M404577.D BFB.M Tue May 12 16:07:11 2015

BFB

Data File : C:\MSDCHEM\2\DATA\051515\8M404659.D Vial: 2
Acq On : 15 May 2015 9:12 Operator: TMB
Sample : WG523731-01 50ng BFB STD 8260 Inst : HPMS8
Misc : 1,1 STD70032 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title : SOP:OVL MSV01

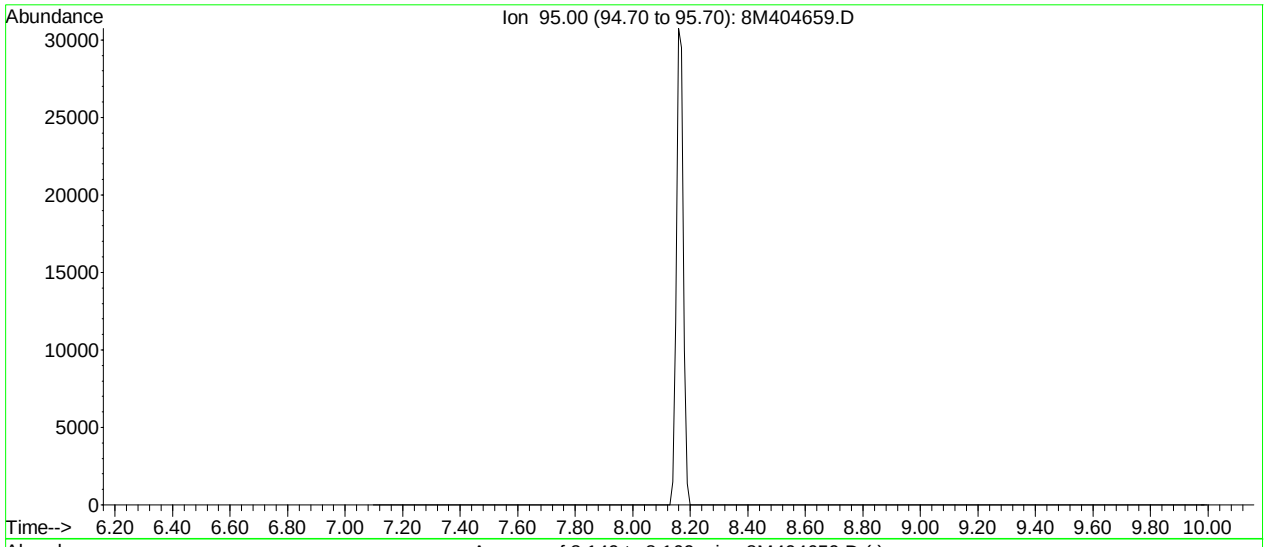

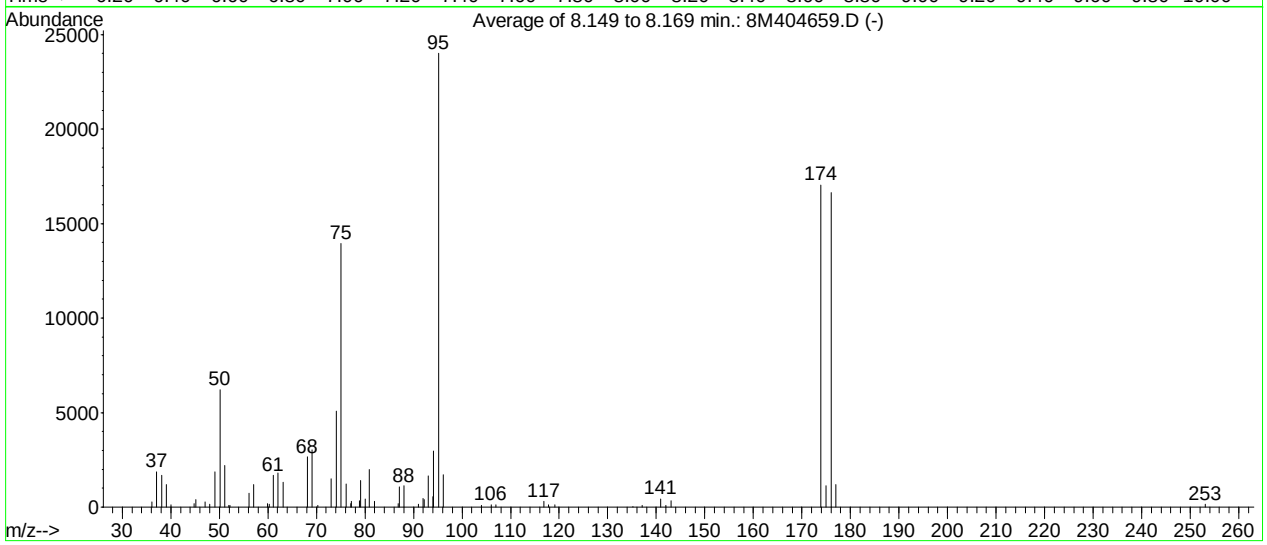

AutoFind: Scans 104, 105, 106; Background Corrected with Scan 100

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	25.9	6223	PASS
75	95	30	60	58.1	13940	PASS
95	95	100	100	100.0	24005	PASS
96	95	5	9	7.2	1722	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	71.0	17045	PASS
175	174	5	9	6.7	1146	PASS
176	174	95	101	97.6	16632	PASS
177	176	5	9	7.3	1207	PASS

8M404659.D BFB.M Fri May 15 09:23:31 2015

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051515\8M404663.D Vial: 5
Acq On : 15 May 2015 11:03 Operator: TMB
Sample : WG523732-01 VBLK0515 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 18 08:44:24 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	804677	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	600745	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	313345	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	192380	24.1205 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.48%		
43) 1,2-Dichloroethane-d4	10.35	65	190585	25.4273 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.72%		
58) Toluene-d8	12.73	98	715545	25.5245 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.08%		
80) p-Bromofluorobenzene	16.12	95	266937	25.0396 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.16%		

Target Compounds					Qvalue
5) 1,3-Butadiene	3.92	54	607	Below Cal	# 55
13) Acetone	6.31	43	219	0.1906 ug/L	# 36
19) Methylene Chloride	7.30	84	1097	0.1361 ug/L	# 52

(#) = qualifier out of range (m) = manual integration
8M404663.D 8260WT.M Mon May 18 08:44:25 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051515\8M404663.D Vial: 5
Acq On : 15 May 2015 11:03 Operator: TMB
Sample : WG523732-01 VBLK0515 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 18 8:44 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

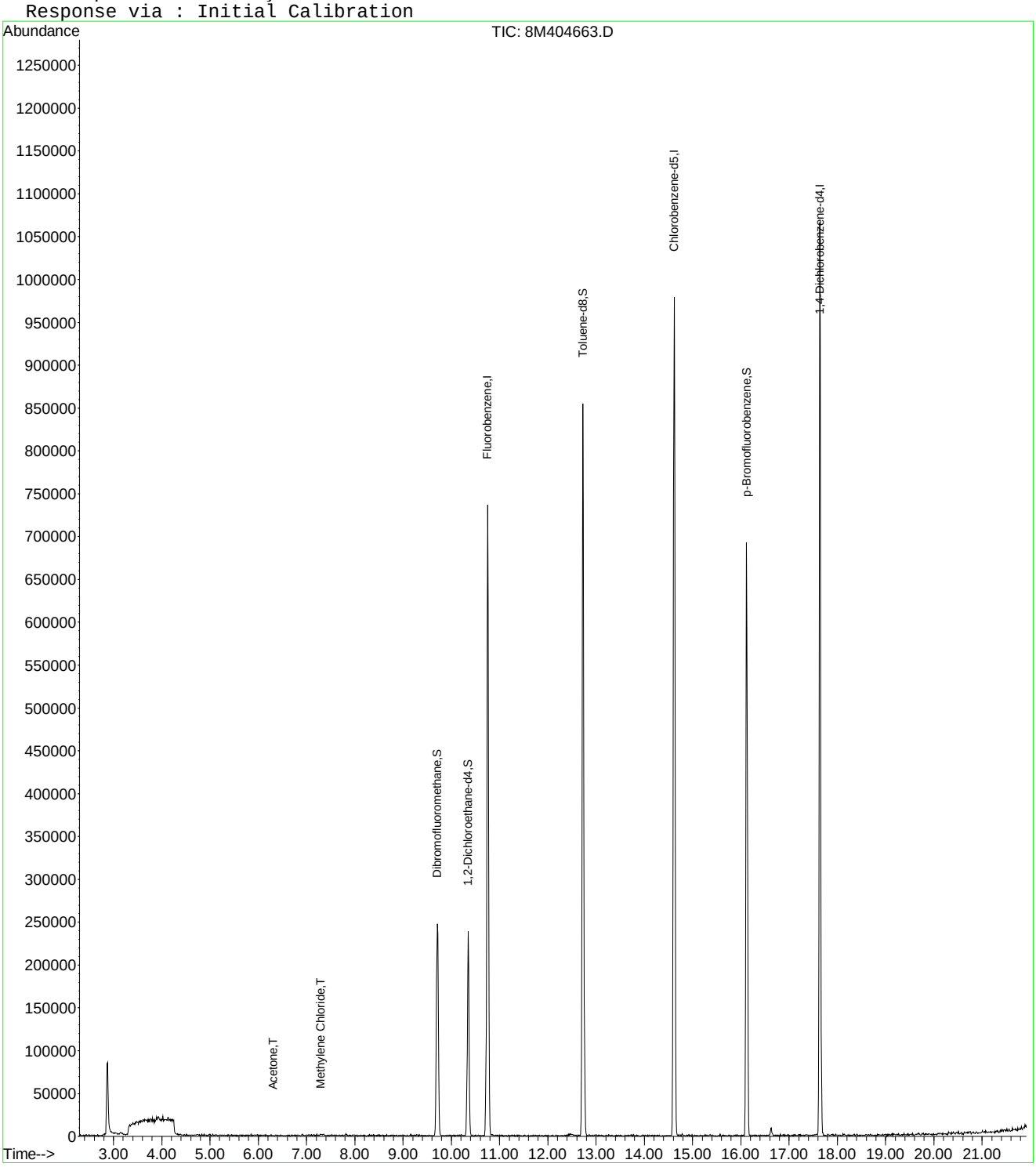

8M404663.D 8260WT.M Mon May 18 08:44:25 2015 Page 2

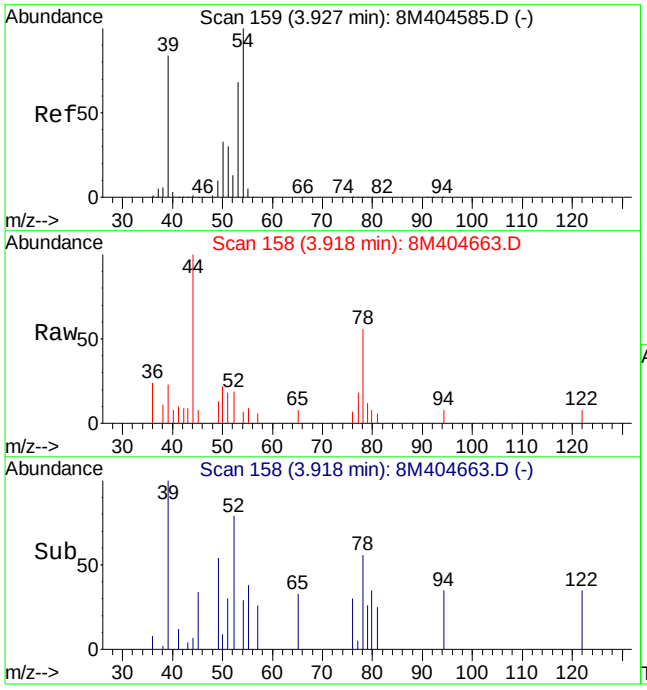

#5
1,3-Butadiene
Concen: Below Cal
RT: 3.92 min Scan# 158
Delta R.T. 0.01 min
Lab File: 8M404663.D
Acq: 15 May 2015 11:03

Tgt Ion: 54 Resp: 607

Ion	Ratio	Lower	Upper
54	100		
39	132.3	50.7	118.3#
53	38.9	40.4	94.4#

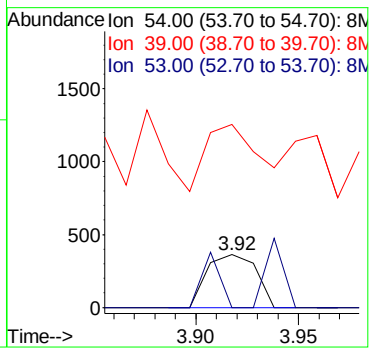

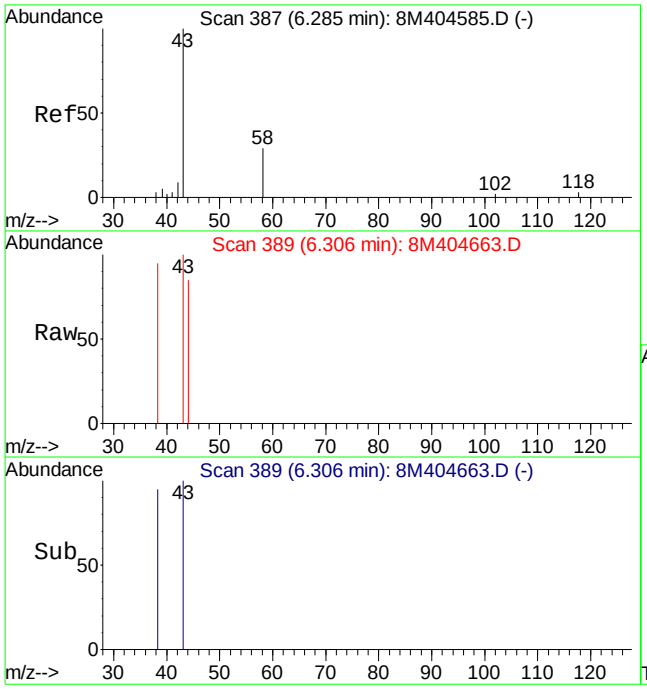

#13
Acetone
Concen: 0.19 ug/L
RT: 6.31 min Scan# 389
Delta R.T. 0.02 min
Lab File: 8M404663.D
Acq: 15 May 2015 11:03

Tgt Ion: 43 Resp: 219

Ion	Ratio	Lower	Upper
43	100		
58	0.0	23.2	54.0#

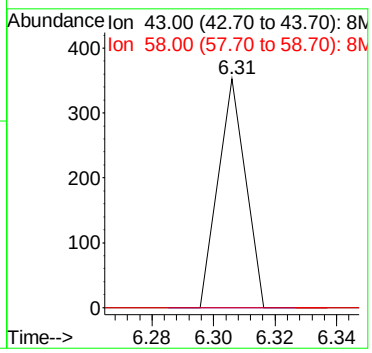

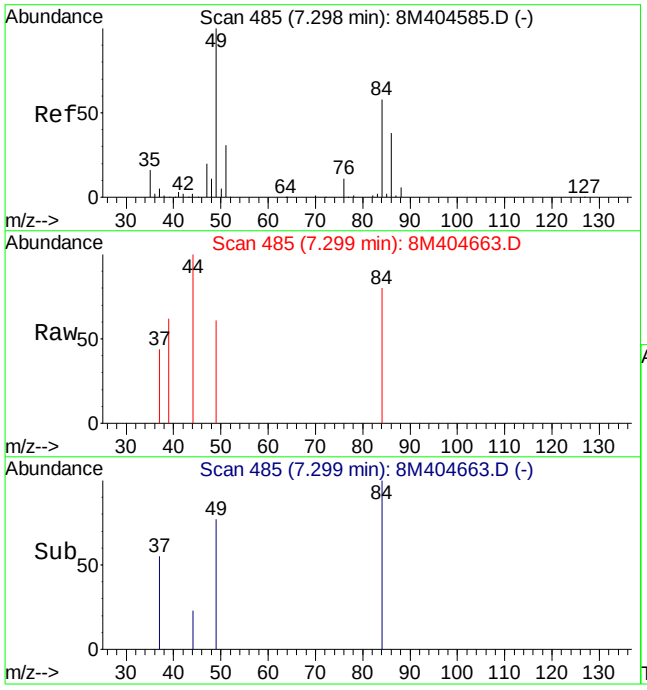

#19
Methylene Chloride
Concen: 0.14 ug/L
RT: 7.30 min Scan# 485
Delta R.T. -0.00 min
Lab File: 8M404663.D
Acq: 15 May 2015 11:03

Tgt Ion: 84 Resp: 1097

Ion	Ratio	Lower	Upper
84	100		
49	172.3	71.5	166.7#

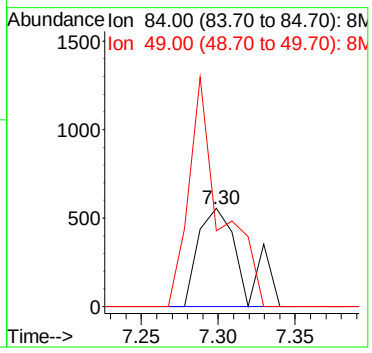

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051515\8M404685.D Vial: 27
Acq On : 15 May 2015 21:38 Operator: TMB
Sample : WG523732-04 VBLK0515 BLANK STD 624 Inst : HPMS8
Misc : 2,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 18 08:44:50 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	614221	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	471506	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	253077	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	153866	25.2735 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.08%		
43) 1,2-Dichloroethane-d4	10.35	65	145950	25.5101 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.04%		
58) Toluene-d8	12.73	98	560464	25.4725 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.88%		
80) p-Bromofluorobenzene	16.12	95	200298	23.2630 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.04%		

Target Compounds					Qvalue
5) 1,3-Butadiene	3.93	54	200	Below Cal	# 1

(#) = qualifier out of range (m) = manual integration
8M404685.D 8260WT.M Mon May 18 08:44:51 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051515\8M404685.D Vial: 27
Acq On : 15 May 2015 21:38 Operator: TMB
Sample : WG523732-04 VBLK0515 BLANK STD 624 Inst : HPMS8
Misc : 2,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 18 8:44 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

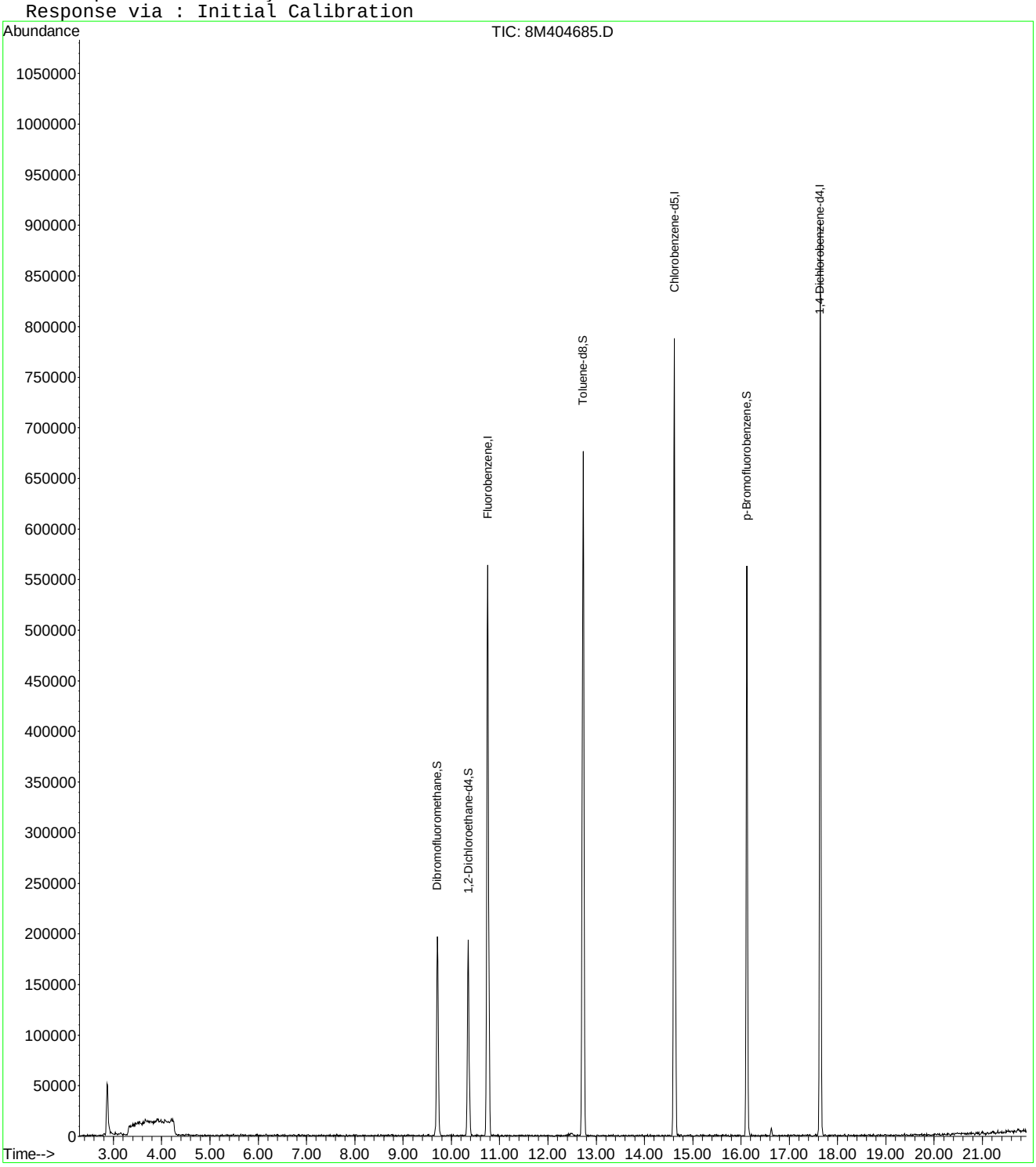

8M404685.D 8260WT.M Mon May 18 08:44:51 2015 Page 2

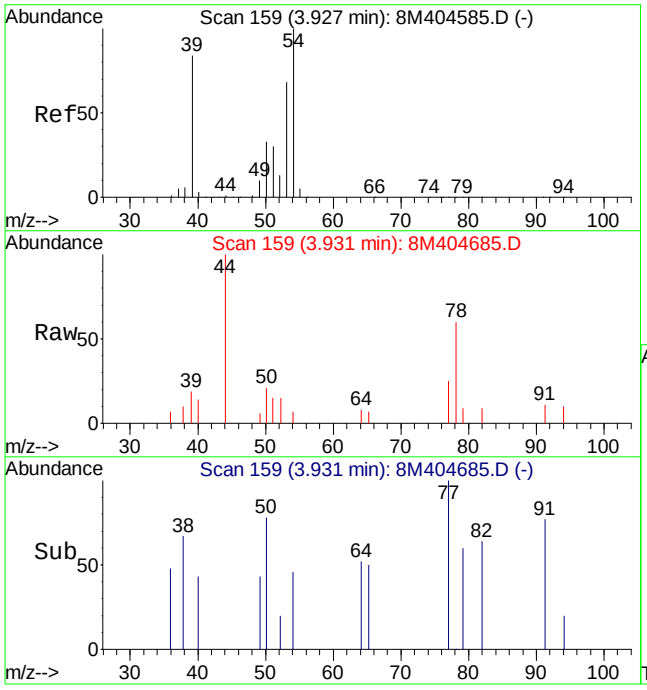

#5
1,3-Butadiene
Concen: Below Cal
RT: 3.93 min Scan# 159
Delta R.T. 0.02 min
Lab File: 8M404685.D
Acq: 15 May 2015 21:38

Tgt Ion: 54 Resp: 200

Ion	Ratio	Lower	Upper
54	100		
39	705.5	50.7	118.3#
53	334.5	40.4	94.4#

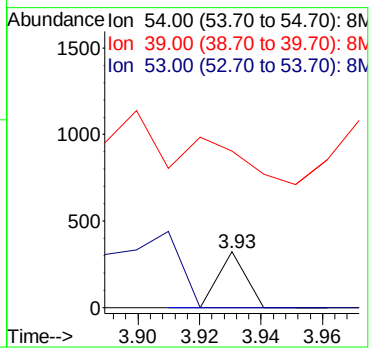

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051515\8M404664.D Vial: 6
Acq On : 15 May 2015 11:32 Operator: TMB
Sample : WG523732-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD70517 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 15 11:54:09 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	840587	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	635997	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	352141	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.71	111	202891	24.3516 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.40%		
43) 1,2-Dichloroethane-d4	10.35	65	190404	24.3179 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.28%		
58) Toluene-d8	12.73	98	734934	24.7630 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.04%		
80) p-Bromofluorobenzene	16.12	95	281587	23.5037 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.00%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.19	85	298938	22.9465 ug/L	97
3) Chloromethane	3.65	50	584388	22.4697 ug/L	96
4) Vinyl Chloride	3.88	62	584002	23.8301 ug/L	96
5) 1,3-Butadiene	3.92	54	405872	17.1471 ug/L	95
6) Bromomethane	4.77	94	131492	23.6825 ug/L	99
7) Chloroethane	4.94	64	150191	22.5207 ug/L	92
8) Trichlorofluoromethane	5.43	101	310440	20.1717 ug/L	97
9) Diethyl ether	5.95	59	599985	101.6873 ug/L	90
10) Isoprene	5.98	67	279868	24.5251 ug/L	81
11) Acrolein	6.19	56	19810	76.3538 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.20	101	168469	19.3948 ug/L	93
13) Acetone	6.28	43	28511	23.7498 ug/L	93
14) 1,1-Dichloroethene	6.51	61	284381	19.2500 ug/L	84
15) Tert-Butyl Alcohol	6.64	59	69234	214.3287 ug/L	97
16) Dimethyl Sulfide	6.78	62	242860	28.1984 ug/L	77
17) Iodomethane	7.03	142	103438	18.1834 ug/L	85
18) Methyl acetate	7.04	43	77652	18.1267 ug/L	91
19) Methylene Chloride	7.30	84	174651	20.7447 ug/L #	51
20) Carbon Disulfide	7.34	76	543514	19.9991 ug/L	94
21) Acrylonitrile	7.48	53	42091	22.0282 ug/L	95
22) Methyl Tert Butyl Ether	7.50	73	350875	21.6333 ug/L	98
23) trans-1,2-Dichloroethene	7.75	61	283777	20.1212 ug/L	84
24) n-Hexane	7.82	57	285802	20.0400 ug/L	96
25) Diisopropyl ether	8.18	45	3397727	108.7608 ug/L	92
26) Vinyl Acetate	8.34	43	263993	25.5961 ug/L	91
27) 1,1-Dichloroethane	8.37	63	341582	20.0630 ug/L	95
28) Ethyl-Tert-Butyl ether	8.75	59	2632869	107.4098 ug/L	93
29) 2-Butanone	8.93	43	45872	23.4528 ug/L	82
30) Propionitrile	9.03	54	64032	102.7142 ug/L	95
31) 2,2-Dichloropropane	9.15	77	279440	19.8934 ug/L	98
32) cis-1,2-Dichloroethene	9.21	96	190511	19.6674 ug/L	72
33) Chloroform	9.42	83	325995	20.6140 ug/L	94
34) 1-Bromopropane	9.55	122	40082	23.0427 ug/L	97
35) Bromochloromethane	9.65	130	95215	19.2752 ug/L #	68
36) Tetrahydrofuran	9.68	42	146402	111.1262 ug/L	86
38) 1,1,1-Trichloroethane	9.95	97	298522	20.7944 ug/L	95
39) Cyclohexane	9.99	56	362873	20.8567 ug/L	82
40) 1,1-Dichloropropene	10.15	75	251685	20.1507 ug/L	91
41) Tert-Amyl-Methyl ether	10.25	73	1902781	105.7587 ug/L	97
42) Carbon Tetrachloride	10.30	117	265355	20.3403 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M404664.D 8260WT.M Fri May 15 11:54:09 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051515\8M404664.D Vial: 6
Acq On : 15 May 2015 11:32 Operator: TMB
Sample : WG523732-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD70517 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 15 11:54:09 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.46	62	222685	19.6423	ug/L		92
46)	Benzene	10.51	78	706428	20.9969	ug/L		98
47)	Trichloroethene	11.26	130	183317	20.5988	ug/L		97
48)	Methylcyclohexane	11.34	83	299139	20.7094	ug/L		89
49)	1,2-Dichloropropane	11.47	63	195961	20.7952	ug/L		98
50)	Bromodichloromethane	11.77	83	238070	20.5204	ug/L		97
51)	1,4-Dioxane	11.75	88	8187	221.2388	ug/L		76
52)	Dibromomethane	11.86	93	90577	20.4093	ug/L		88
53)	2-Chloroethyl Vinyl Ether	12.06	63	80440	34.9028	ug/L		96
54)	4-Methyl-2-Pentanone	12.10	58	37646	23.2374	ug/L		89
55)	cis-1,3-Dichloropropene	12.41	75	276154	21.7753	ug/L		94
56)	Dimethyl Disulfide	12.66	79	141155	20.6882	ug/L		94
59)	Toluene	12.83	91	750656	19.8984	ug/L		83
60)	Ethyl Methacrylate	12.92	69	141106	21.0220	ug/L		73
62)	trans-1,3-Dichloropropene	13.00	75	213928	18.9191	ug/L		97
63)	1,1,2-Trichloroethane	13.22	97	111855	19.0845	ug/L		95
64)	2-Hexanone	13.16	58	33007	20.4507	ug/L	#	78
65)	1,3-Dichloropropane	13.52	76	206403	20.0889	ug/L		84
66)	Tetrachloroethene	13.65	164	144061	18.0931	ug/L		87
67)	Dibromochloromethane	13.91	129	147120	18.8629	ug/L		98
68)	1,2-Dibromoethane	14.16	107	113011	20.1981	ug/L		97
69)	1-Chlorohexane	14.25	91	258111	20.0031	ug/L		84
70)	Chlorobenzene	14.67	112	455133	17.8751	ug/L		95
71)	1,1,1,2-Tetrachloroethane	14.70	131	172157	18.8366	ug/L		99
72)	Ethylbenzene	14.70	106	277120	18.1713	ug/L	#	27
73)	m-,p-Xylene	14.78	106	641717	37.2072	ug/L	#	39
74)	o-Xylene	15.35	106	304575	17.8696	ug/L		62
75)	Styrene	15.38	104	534183	19.7842	ug/L		89
76)	Bromoform	15.88	173	82130	17.0536	ug/L		99
77)	Isopropylbenzene	15.78	105	788123	18.9068	ug/L		77
79)	1,1,2,2-Tetrachloroethane	15.99	83	125099	18.6966	ug/L		99
81)	1,2,3-Trichloropropane	16.18	110	36131	19.9317	ug/L		85
82)	trans-1,4-Dichloro-2-Buten	16.22	53	39719	17.8821	ug/L		77
83)	n-Propylbenzene	16.28	91	994759	18.6705	ug/L	#	71
84)	Bromobenzene	16.41	156	196099	18.5333	ug/L		87
85)	1,3,5-Trimethylbenzene	16.47	105	742960	20.3801	ug/L		79
86)	2-Chlorotoluene	16.55	91	581959	16.1845	ug/L		80
87)	4-Chlorotoluene	16.60	91	590098	20.5174	ug/L		74
88)	a-Methylstyrene	16.87	118	410965	19.7951	ug/L		95
89)	tert-Butylbenzene	16.93	134	134598	16.6080	ug/L		48
90)	1,2,4-Trimethylbenzene	16.99	105	764241	20.3909	ug/L		74
91)	sec-Butylbenzene	17.20	105	871820	19.1806	ug/L		77
92)	p-Isopropyltoluene	17.36	119	718985	18.6576	ug/L		77
93)	1,3-Dichlorobenzene	17.55	146	383159	17.8679	ug/L		90
94)	1,4-Dichlorobenzene	17.69	146	402415	18.4845	ug/L		95
95)	n-Butylbenzene	17.89	91	763459	20.2815	ug/L		78
96)	1,2-Dichlorobenzene	18.17	146	337904	18.1586	ug/L		93
97)	1,2-Dibromo-3-Chloropropan	19.17	75	22035	20.6315	ug/L		80
98)	1,2,4-Trichlorobenzene	20.31	180	259605	18.5191	ug/L		99
99)	Hexachlorobutadiene	20.47	225	132882	18.1445	ug/L		94
100)	Naphthalene	20.69	128	382369	20.3383	ug/L		91
101)	1,2,3-Trichlorobenzene	21.00	180	228250	19.2145	ug/L		97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051515\8M404664.D Vial: 6
Acq On : 15 May 2015 11:32 Operator: TMB
Sample : WG523732-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD70517 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 15 11:54 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

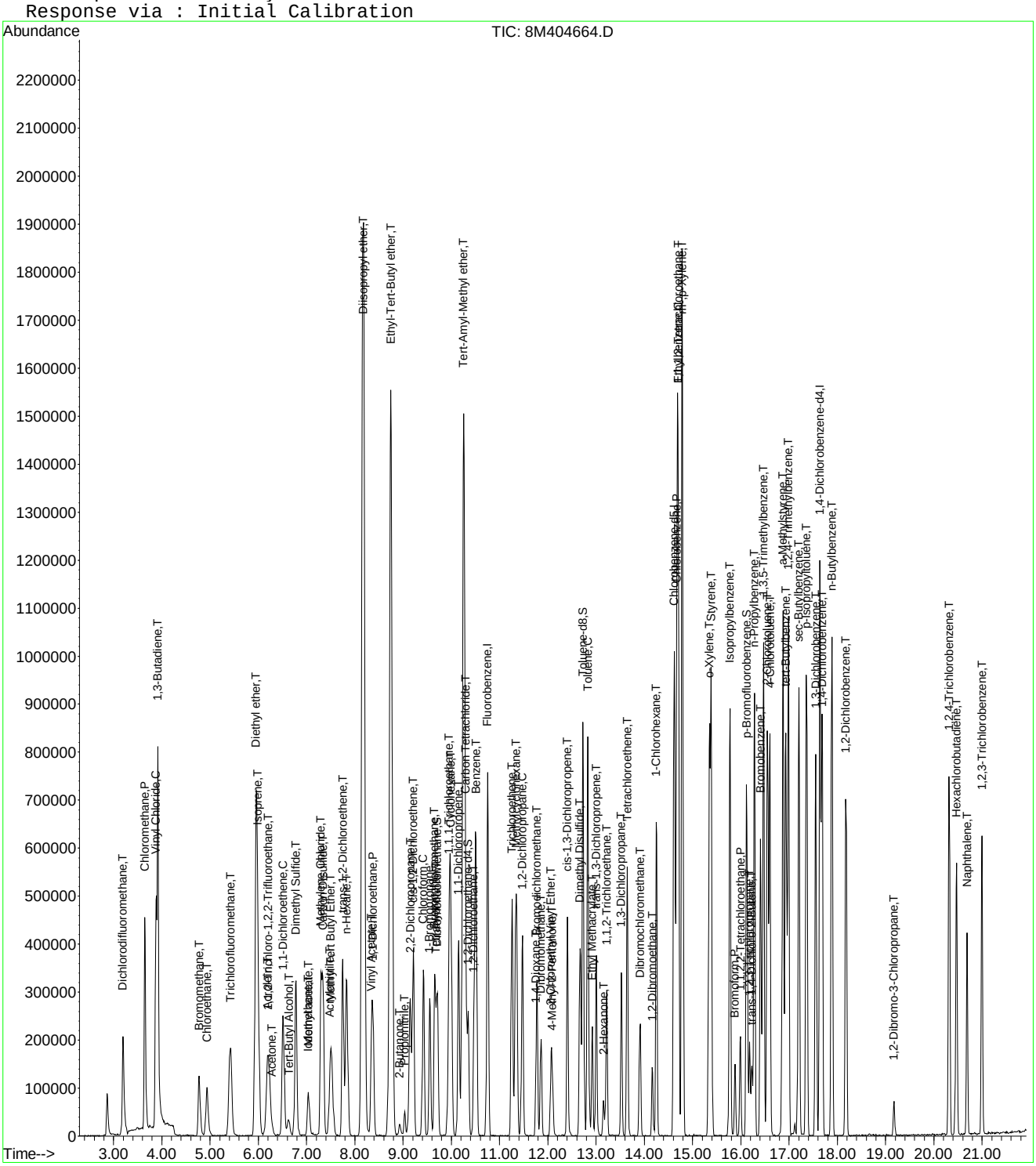

8M404664.D 8260WT.M Fri May 15 11:54:09 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051515\8M404665.D Vial: 7
Acq On : 15 May 2015 12:01 Operator: TMB
Sample : WG523732-03 20ug/L LCSDUP STD 8260 Inst : HPMS8
Misc : 1,1 STD70517 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 15 12:23:00 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	871063	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	647952	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	368804	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	212069	24.5627 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.24%		
43) 1,2-Dichloroethane-d4	10.35	65	203706	25.1065 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.44%		
58) Toluene-d8	12.73	98	756443	25.0175 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.08%		
80) p-Bromofluorobenzene	16.12	95	296268	23.6119 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.44%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.19	85	306466	22.7013 ug/L	95
3) Chloromethane	3.65	50	589663	21.8793 ug/L	95
4) Vinyl Chloride	3.88	62	576608	22.7052 ug/L	95
5) 1,3-Butadiene	3.92	54	389938	15.8432 ug/L	93
6) Bromomethane	4.78	94	137980	23.9643 ug/L	98
7) Chloroethane	4.93	64	156948	22.7105 ug/L	91
8) Trichlorofluoromethane	5.43	101	313567	19.6621 ug/L	99
9) Diethyl ether	5.95	59	618194	101.1077 ug/L	89
10) Isoprene	5.99	67	274945	23.2507 ug/L	78
11) Acrolein	6.18	56	20549	76.3925 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.19	101	178982	19.8842 ug/L	92
13) Acetone	6.29	43	27678	22.2493 ug/L	89
14) 1,1-Dichloroethene	6.51	61	289361	18.9018 ug/L	84
15) Tert-Butyl Alcohol	6.63	59	73914	220.8110 ug/L	99
16) Dimethyl Sulfide	6.78	62	245192	27.4731 ug/L	75
17) Iodomethane	7.03	142	110479	18.7071 ug/L #	73
18) Methyl acetate	7.05	43	83253	18.7542 ug/L	89
19) Methylene Chloride	7.30	84	180349	20.6720 ug/L #	56
20) Carbon Disulfide	7.34	76	545539	19.3713 ug/L	95
21) Acrylonitrile	7.48	53	44653	22.5514 ug/L	95
22) Methyl Tert Butyl Ether	7.51	73	364243	21.6718 ug/L	96
23) trans-1,2-Dichloroethene	7.74	61	292942	20.0444 ug/L	85
24) n-Hexane	7.83	57	293507	19.8603 ug/L	95
25) Diisopropyl ether	8.17	45	3454679	106.7148 ug/L	92
26) Vinyl Acetate	8.34	43	297683	27.8527 ug/L	91
27) 1,1-Dichloroethane	8.37	63	349799	19.8268 ug/L	94
28) Ethyl-Tert-Butyl ether	8.75	59	2728075	107.4000 ug/L	92
29) 2-Butanone	8.93	43	47651	23.5100 ug/L	86
30) Propionitrile	9.04	54	68866	106.6034 ug/L	97
31) 2,2-Dichloropropane	9.14	77	289724	19.9039 ug/L	97
32) cis-1,2-Dichloroethene	9.21	96	197093	19.6350 ug/L	74
33) Chloroform	9.42	83	333489	20.3501 ug/L	96
34) 1-Bromopropane	9.55	122	40970	22.7356 ug/L	99
35) Bromochloromethane	9.66	130	99657	19.4686 ug/L #	67
36) Tetrahydrofuran	9.68	42	143512	105.1213 ug/L	88
38) 1,1,1-Trichloroethane	9.96	97	303267	20.3858 ug/L	98
39) Cyclohexane	9.99	56	354481	19.6615 ug/L	85
40) 1,1-Dichloropropene	10.15	75	259527	20.0516 ug/L	90
41) Tert-Amyl-Methyl ether	10.26	73	1960040	105.1296 ug/L	97
42) Carbon Tetrachloride	10.30	117	264564	19.5701 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M404665.D 8260WT.M Fri May 15 12:23:01 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051515\8M404665.D Vial: 7
Acq On : 15 May 2015 12:01 Operator: TMB
Sample : WG523732-03 20ug/L LCSDUP STD 8260 Inst : HPMS8
Misc : 1,1 STD70517 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 15 12:23:00 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.46	62	236703	20.1483 ug/L		93
46)	Benzene	10.50	78	723845	20.7619 ug/L		97
47)	Trichloroethene	11.26	130	184175	19.9711 ug/L		96
48)	Methylcyclohexane	11.34	83	299877	20.0341 ug/L		90
49)	1,2-Dichloropropane	11.47	63	193276	19.7927 ug/L		99
50)	Bromodichloromethane	11.78	83	251604	20.9282 ug/L		95
51)	1,4-Dioxane	11.77	88	7848	208.2718 ug/L		83
52)	Dibromomethane	11.86	93	93700	20.3743 ug/L		87
53)	2-Chloroethyl Vinyl Ether	12.07	63	85776	35.9433 ug/L		96
54)	4-Methyl-2-Pentanone	12.10	58	38680	23.0403 ug/L		89
55)	cis-1,3-Dichloropropene	12.41	75	287283	21.8603 ug/L		92
56)	Dimethyl Disulfide	12.67	79	143002	20.2933 ug/L		90
59)	Toluene	12.83	91	773445	20.1242 ug/L		83
60)	Ethyl Methacrylate	12.92	69	146942	21.4875 ug/L		72
62)	trans-1,3-Dichloropropene	13.01	75	226841	19.6910 ug/L		96
63)	1,1,2-Trichloroethane	13.22	97	121826	20.4023 ug/L		97
64)	2-Hexanone	13.16	58	34471	20.9637 ug/L	#	74
65)	1,3-Dichloropropane	13.52	76	212278	20.2795 ug/L		80
66)	Tetrachloroethene	13.65	164	148863	18.3512 ug/L		86
67)	Dibromochloromethane	13.91	129	156643	19.7134 ug/L		98
68)	1,2-Dibromoethane	14.16	107	114536	20.0929 ug/L		98
69)	1-Chlorohexane	14.25	91	259953	19.7742 ug/L		83
70)	Chlorobenzene	14.67	112	482215	18.5893 ug/L		93
71)	1,1,1,2-Tetrachloroethane	14.70	131	175992	18.9010 ug/L		98
72)	Ethylbenzene	14.70	106	290413	18.6916 ug/L	#	31
73)	m-,p-Xylene	14.78	106	664470	37.8156 ug/L	#	42
74)	o-Xylene	15.34	106	307416	17.7035 ug/L		61
75)	Styrene	15.38	104	555773	20.2041 ug/L		87
76)	Bromoform	15.88	173	86897	17.6804 ug/L		98
77)	Isopropylbenzene	15.78	105	814200	19.1719 ug/L		77
79)	1,1,2,2-Tetrachloroethane	15.98	83	135288	19.3059 ug/L		97
81)	1,2,3-Trichloropropane	16.18	110	37005	19.4915 ug/L		89
82)	trans-1,4-Dichloro-2-Buten	16.22	53	42231	18.1540 ug/L		76
83)	n-Propylbenzene	16.28	91	1003417	17.9821 ug/L	#	73
84)	Bromobenzene	16.41	156	194988	17.5956 ug/L		86
85)	1,3,5-Trimethylbenzene	16.47	105	770653	20.1847 ug/L		78
86)	2-Chlorotoluene	16.55	91	595938	15.8245 ug/L		81
87)	4-Chlorotoluene	16.60	91	593933	19.7177 ug/L		77
88)	a-Methylstyrene	16.87	118	422646	19.4380 ug/L		93
89)	tert-Butylbenzene	16.94	134	137847	16.2404 ug/L		47
90)	1,2,4-Trimethylbenzene	16.99	105	787817	20.0702 ug/L		73
91)	sec-Butylbenzene	17.20	105	895984	18.8216 ug/L		77
92)	p-Isopropyltoluene	17.36	119	737180	18.2654 ug/L		79
93)	1,3-Dichlorobenzene	17.56	146	393526	17.5222 ug/L		92
94)	1,4-Dichlorobenzene	17.68	146	430912	18.8992 ug/L		91
95)	n-Butylbenzene	17.89	91	785024	19.9121 ug/L		78
96)	1,2-Dichlorobenzene	18.18	146	342787	17.5887 ug/L		93
97)	1,2-Dibromo-3-Chloropropan	19.18	75	22162	19.8129 ug/L		82
98)	1,2,4-Trichlorobenzene	20.32	180	268902	18.3156 ug/L		99
99)	Hexachlorobutadiene	20.47	225	138147	18.0112 ug/L		96
100)	Naphthalene	20.69	128	396431	20.1336 ug/L		94
101)	1,2,3-Trichlorobenzene	21.00	180	236787	19.0326 ug/L		97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051515\8M404665.D Vial: 7
Acq On : 15 May 2015 12:01 Operator: TMB
Sample : WG523732-03 20ug/L LCSDUP STD 8260 Inst : HPMS8
Misc : 1,1 STD70517 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 15 12:23 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

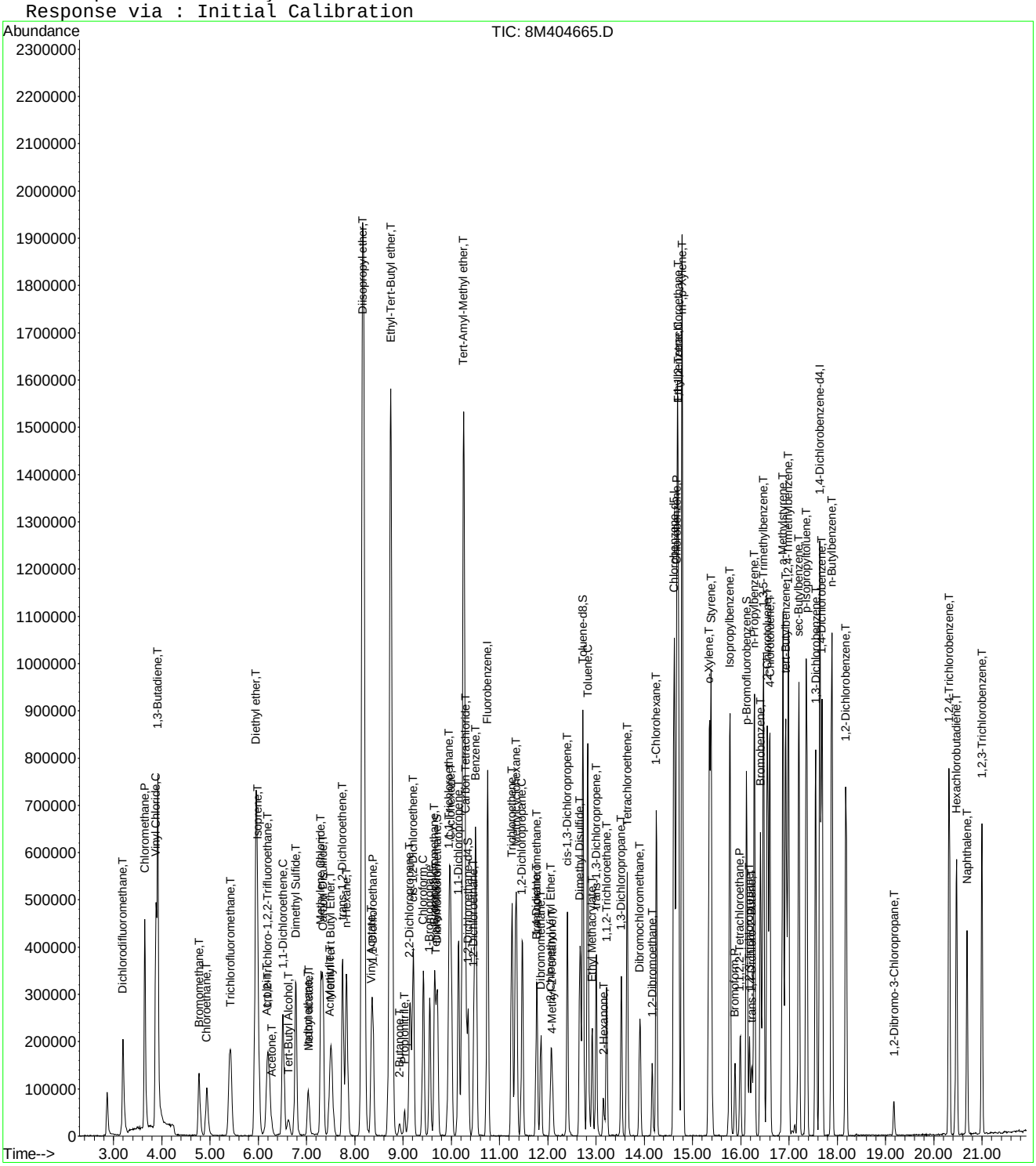

2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L15050604
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15050604-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	GPW1A-050815	**Prep Method:**	6850	**Prep Date:**	05/27/2015 14:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/27/2015 15:10
Workgroup #:	WG525192	**Analyst:**	JWR	**Run Date:**	05/27/2015 17:52
Collect Date:	05/08/2015 09:30	**Dilution:**	10	**File ID:**	1LM.LM29877
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	16.0		4.00	2.00	1.00

Certificate of Analysis

Sample #:	L15050604-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	GPW1-050815	**Prep Method:**	6850	**Prep Date:**	05/27/2015 14:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/27/2015 15:10
Workgroup #:	WG525192	**Analyst:**	JWR	**Run Date:**	05/27/2015 18:21
Collect Date:	05/08/2015 09:40	**Dilution:**	1	**File ID:**	1LM.LM29878
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.156	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15050604
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1458 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG525192-01 MCT	10,420.	
-02 Blank	0.64	
-03 LCS	0.70	
L15050604-01	33.6	
-02	33.5	
L15050605-01	113.4	
-02	155.9	
-03	177.5	
-04	199.4	
-05	98.8	
-06	345.	
-07 RS	65.5	
-08 MS	65.2	
-09 MSD	65.4	
-10	220.	
-11	59.1	
-12	48.9	
-13	58.6	
-14	60.5	
-15	236.	
-16	49.6	
-17	1.58	

Analyst: John Richards

Date/Time: 05/28/15 / 13:00

DCN#110897

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 052715_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 140701254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG525192 (waters) Analytical WG525193 (waters)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD69537 (05/27/2015)

CCV STD: STD69537 LCS STD: STD69913 MS/MSD STD: STD69913

Comments: ICAL WG525179 : Alternate Source STD69913

Samples from workorders L15050604, L15050605, L15051007, L15051146 have no historical results in our LIMS. Samples with no historical results are initially screened at a 100x dilution in order to avoid overloading the LC-analytical column and/or the MS-detector. Samples L15050604-01 and L15051146(-02,-07) were analyzed at dilutions based on their screen results from 05/26/2015.

Samples L15051303(-01,-05,-07,-09) and L15051435-01 were analyzed at dilutions based on their historical results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM29862	WG525179-01 CCB	1	1		05/27/15 12:57
2	1LM.LM29863	WG525179-02 STD (0.1 ug/L)	1	1	STD69537	05/27/15 13:16
3	1LM.LM29864	WG525179-03 STD (0.2 ug/L)	1	1	STD69537	05/27/15 13:35
4	1LM.LM29865	WG525179-04 STD (0.5 ug/L)	1	1	STD69537	05/27/15 13:54
5	1LM.LM29866	WG525179-05 STD (1.0 ug/L)	1	1	STD69537	05/27/15 14:13
6	1LM.LM29867	WG525179-06 STD (2.0 ug/L)	1	1	STD69537	05/27/15 14:32
7	1LM.LM29868	WG525179-07 STD (5.0 ug/L)	1	1	STD69537	05/27/15 14:51
8	1LM.LM29869	WG525179-08 STD (10 ug/L)	1	1	STD69537	05/27/15 15:10
9	1LM.LM29870	WG525179-09 SSCV (1.0 ug/L)	1	1	STD69913	05/27/15 15:28
10	1LM.LM29871	WG525212-01 CCB	1	1		05/27/15 15:58
11	1LM.LM29872	WG525212-02 CCV (1.0ug/L)	1	1	STD69537	05/27/15 16:17
12	1LM.LM29873	WG525192-07 MRL (0.2ug/L)	1	1	STD69537	05/27/15 16:36
13	1LM.LM29874	WG525192-01 MCT (0.2ug/L)	1	1	STD69913	05/27/15 16:55
14	1LM.LM29875	WG525192-02 BLANK	1	1		05/27/15 17:14
15	1LM.LM29876	WG525192-03 LCS (0.2ug/L)	1	1	STD69913	05/27/15 17:33
16	1LM.LM29877	L15050604-01 (10x)	1	10		05/27/15 17:52
17	1LM.LM29878	L15050604-02	1	1		05/27/15 18:21
18	1LM.LM29879	L15050605-01	1	1		05/27/15 18:40
19	1LM.LM29880	L15050605-02	1	1		05/27/15 18:59
20	1LM.LM29881	L15050605-03	1	1		05/27/15 19:18
21	1LM.LM29882	L15050605-04	1	1		05/27/15 19:37
22	1LM.LM29883	L15050605-05	1	1		05/27/15 19:56
23	1LM.LM29884	WG525212-03 CCV (1.0ug/L)	1	1	STD69537	05/27/15 20:15
24	1LM.LM29885	WG525192-08 MRL (0.2ug/L)	1	1	STD69537	05/27/15 20:34
25	1LM.LM29886	WG525212-04 CCB	1	1		05/27/15 20:53
26	1LM.LM29887	L15050605-06	1	1		05/27/15 21:12
27	1LM.LM29888	L15050605-07 RS	1	1		05/27/15 21:31
28	1LM.LM29889	L15050605-08 MS	1	1	STD69913	05/27/15 21:49
29	1LM.LM29890	L15050605-09 MSD	1	1	STD69913	05/27/15 22:08
30	1LM.LM29891	L15050605-10	1	1		05/27/15 22:27

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 052715_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 140701254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG525192 (waters) Analytical WG525193 (waters)

Internal STD: COA18071 Surrogate STD: NA STD69537 (05/27/2015)

CCV STD: STD69537 LCS STD: STD69913 STD69913

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
31	1LM.LM29892	L15050605-11	1	1		05/27/15 22:46
32	1LM.LM29893	L15050605-12	1	1		05/27/15 23:05
33	1LM.LM29894	L15050605-13	1	1		05/27/15 23:24
34	1LM.LM29895	L15050605-14	1	1		05/27/15 23:43
35	1LM.LM29896	L15050605-15	1	1		05/28/15 00:02
36	1LM.LM29897	WG525212-05 CCV (1.0ug/L)	1	1	STD69537	05/28/15 00:21
37	1LM.LM29898	WG525192-09 MRL (0.2ug/L)	1	1	STD69537	05/28/15 00:40
38	1LM.LM29899	WG525193-07 MRL (0.2ug/L)	1	1	STD69537	05/28/15 00:59
39	1LM.LM29900	WG525212-06 CCB	1	1		05/28/15 01:18
40	1LM.LM29901	L15050605-16	1	1		05/28/15 01:37
41	1LM.LM29902	L15050605-17	1	1		05/28/15 01:56
42	1LM.LM29903	WG525193-01 MCT (0.2ug/L)	1	1	STD69913	05/28/15 02:14
43	1LM.LM29904	WG525193-02 BLANK	1	1		05/28/15 02:33
44	1LM.LM29905	WG525193-03 LCS (0.2ug/L)	1	1	STD69913	05/28/15 02:52
45	1LM.LM29906	L15051007-01 REF	1	1		05/28/15 03:11
46	1LM.LM29907	L15051007-01 MS	1	1	STD69913	05/28/15 03:30
47	1LM.LM29908	L15051007-01 MSD	1	1	STD69913	05/28/15 03:49
48	1LM.LM29909	L15051007-02	1	1		05/28/15 04:08
49	1LM.LM29910	WG525212-07 CCV (1.0ug/L)	1	1	STD69537	05/28/15 04:27
50	1LM.LM29911	WG525192-10 MRL (0.2ug/L)	1	1	STD69537	05/28/15 04:46
51	1LM.LM29912	WG525193-08 MRL (0.2ug/L)	1	1	STD69537	05/28/15 05:05
52	1LM.LM29913	WG525212-08 CCB	1	1		05/28/15 05:24
53	1LM.LM29914	L15051140-01 (NR)	1	1		05/28/15 05:43
54	1LM.LM29915	L15051140-02 (NR)	1	1		05/28/15 06:02
55	1LM.LM29916	L15051141-01 (NR)	1	1		05/28/15 06:20
56	1LM.LM29917	L15051146-01 (NR)	1	1		05/28/15 06:39
57	1LM.LM29918	L15051146-02 (5x)	1	5		05/28/15 06:58
58	1LM.LM29919	L15051146-03	1	1		05/28/15 07:17
59	1LM.LM29920	L15051146-04	1	1		05/28/15 07:36
60	1LM.LM29921	L15051146-05	1	1		05/28/15 07:55
61	1LM.LM29922	L15051146-06	1	1		05/28/15 08:14
62	1LM.LM29923	L15051146-07 (10x)	1	10		05/28/15 08:33
63	1LM.LM29924	WG525212-09 CCV (1.0ug/L)	1	1	STD69537	05/28/15 08:52
64	1LM.LM29925	WG525193-09 MRL (0.2ug/L)	1	1	STD69537	05/28/15 09:11
65	1LM.LM29926	WG525212-10 CCB	1	1		05/28/15 09:30
66	1LM.LM29927	L15051303-01 (500x) (NR)	1	500		05/28/15 09:49

Page: 2 Approved: 29-MAY-15

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 052715_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 140701254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG525192 (waters) Analytical WG525193 (waters)

Internal STD: COA18071 Surrogate STD: NA STD69537 (05/27/2015)

CCV STD: STD69537 LCS STD: STD69913 STD69913

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
67	1LM.LM29928	L15051303-03	1	1		05/28/15 10:08
68	1LM.LM29929	L15051303-05 (2,000x)	1	2000		05/28/15 10:27
69	1LM.LM29930	L15051303-07 (1,000x)	1	1000		05/28/15 10:46
70	1LM.LM29931	L15051303-09 (10,000x)	1	10000		05/28/15 11:04
71	1LM.LM29932	L15051303-11 (NR)	1	1		05/28/15 11:23
72	1LM.LM29933	L15051435-01 (50x)	1	50		05/28/15 11:42
73	1LM.LM29934	L15051435-03	1	1		05/28/15 12:01
74	1LM.LM29935	WG525212-11 CCV (1.0ug/L)	1	1	STD69537	05/28/15 12:20
75	1LM.LM29936	WG525193-10 MRL (0.2ug/L)	1	1	STD69537	05/28/15 12:39
76	1LM.LM29937	WG525212-12 CCB	1	1		05/28/15 12:58
77	1LM.LM29938	L15051140-01 (RR 50x)	1	50		05/28/15 13:30
78	1LM.LM29939	L15051140-02 (RR 100x)	1	100		05/28/15 13:49
79	1LM.LM29940	L15051141-01 (RR 100x)	1	100		05/28/15 14:08
80	1LM.LM29941	L15051146-01 (RR Neat)	1	1		05/28/15 14:27
81	1LM.LM29942	L15051303-01 (RR 100x)	1	100		05/28/15 14:46
82	1LM.LM29943	L15051303-11 (RR 10x)	1	10		05/28/15 15:04
83	1LM.LM29944	WG525212-13 CCV (1.0ug/L)	1	1	STD69537	05/28/15 15:23
84	1LM.LM29945	WG525193-11 MRL (0.2ug/L)	1	1	STD69537	05/28/15 15:42
85	1LM.LM29946	WG525212-14 CCB	1	1		05/28/15 16:01

Comments

Seq.	Rerun	Dil.	Reason	Analytes
53	X	50	Over Calibration Range	
	L15051140-01 (NR) : This sample was reanalyzed at a 50x dilution on the end of this run.			
54	X	100	Over Calibration Range	
	L15051140-02 (NR) : This sample was reanalyzed at a 100x dilution on the end of this run.			
55	X	100	Over Calibration Range	
	L15051141-01 (NR) : This sample was reanalyzed at a 100x dilution on the end of this run.			
56	X	1		
	L15051146-01 (NR) : This sample was reanalyzed neat on the end of this run as a precautionary measure in order to prevent reporting any carryover that may occur from the three "over-range" samples injected prior to this sample.			
66	X	100	Analyzed too dilute	
	L15051303-01 (500x) (NR) : This sample was reanalyzed at a 100x dilution on the end of this run.			
71	X	10	Over Calibration Range	
	L15051303-11 (NR) : This sample was reanalyzed at a 10x dilution on the end of this run.			

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Wadei D

Microbac Laboratories Inc.

Data Checklist

Date: 27-MAY-2015
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG525179
Runlog ID: 68271
Analytical Workgroups: L15050604, 0605, 1007, 1140, 1141, 1146, 1303, 1435 (WATERS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 29-MAY-2015 John Richards

Secondary Reviewer: 29-MAY-2015 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-29-2015 11:32:03

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG525192

Login Number: L15050604

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
GPW1A-050815	01	05/08/15					05/27/2015	19.2	28		05/27/15	.2	28	
GPW1-050815	02	05/08/15					05/27/2015	19.2	28		05/27/15	.2	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4205340
Report generated 05/29/2015 13:17

METHOD BLANK SUMMARY

Login Number: L15050604
Blank File ID: 1LM.LM29875
Prep Date: 05/27/15 14:00
Analyzed Date: 05/27/15 17:14
Analyst: JWR

Work Group: WG525192
Blank Sample ID: WG525192-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG525192-07	1LM.LM29873	05/27/15 16:36	01
MCT	WG525192-01	1LM.LM29874	05/27/15 16:55	01
LCS	WG525192-03	1LM.LM29876	05/27/15 17:33	01
GPW1A-050815	L15050604-01	1LM.LM29877	05/27/15 17:52	DL01
GPW1-050815	L15050604-02	1LM.LM29878	05/27/15 18:21	01
QCMRL	WG525192-08	1LM.LM29885	05/27/15 20:34	01
QCMRL	WG525192-09	1LM.LM29898	05/28/15 00:40	01
QCMRL	WG525192-10	1LM.LM29911	05/28/15 04:46	01

Report Name: BLANK_SUMMARY
PDF File ID: 4205341
Report generated 05/29/2015 13:17

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15050604 Prep Date: 05/27/15 14:00 Sample ID: WG525192-02
Instrument ID: LCMS1 Run Date: 05/27/15 17:14 Prep Method: 6850
File ID: 1LM.LM29875 Analyst: JWR Method: 6850
Workgroup (AAB#): WG525192 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-27-MAY-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4205342
29-MAY-2015 13:17

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15050604 Run Date: 05/27/2015 Sample ID: WG525192-03
Instrument ID: LCMS1 Run Time: 17:33 Prep Method: 6850
File ID: 1LM.LM29876 Analyst: JWR Method: 6850
Workgroup (AAB#): WG525192 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD69913 Cal ID: LCMS1-27-MAY-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	0.200	0.204	102	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4205343
Report generated: 05/29/2015 13:17

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L15050604
Analytical Method: 6850
ICAL Workgroup: WG525179

Instrument ID: LCMS1
Initial Calibration Date: 27-MAY-15 15:10
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		0.7866	4.69	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4205345
Report generated 05/29/2015 13:17

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15050604

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 27-MAY-15 15:10

Column ID: F

Analyte	WG525179-02			WG525179-03			WG525179-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	4310.00000	0.7490	0.200	9360.00000	0.7980	0.500	23600.0000	0.7980

INT_CAL - Modified 03/06/2008
PDF File ID: 4205345
Report generated 05/29/2015 13:17

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15050604

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 27-MAY-15 15:10

Column ID: F

Analyte	WG525179-05			WG525179-06			WG525179-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	47200.0000	0.8170	2.00	90300.0000	0.7730	5.00	223000.000	0.8100

INT_CAL - Modified 03/06/2008
PDF File ID: 4205345
Report generated 05/29/2015 13:17

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15050604

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 27-MAY-15 15:10

Column ID: F

Analyte	WG525179-08		
	CONC	RESP	RF
Perchlorate	10.0	418000.000	0.7610

INT_CAL - Modified 03/06/2008

PDF File ID: 4205345

Report generated 05/29/2015 13:17

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15050604 Run Date: 05/27/2015 Sample ID: WG525179-09
Instrument ID: LCMS1 Run Time: 15:28 Method: 6850
File ID: 1LM.LM29870 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG525179 Cal ID: LCMS1 - 27-MAY-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.981	ug/L	0.767	1.90	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4205346
Report generated 05/29/2015 13:17

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15050604
Run Date: 05/27/2015
Sample ID: WG525212-01
Instrument ID: LCMS1
Run Time: 15:58
Method: 6850
File ID: 1LM.LM29871
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG525192
Cal ID: LCMS1 - 27-MAY-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4205348
Report generated 05/29/2015 13:18

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15050604
Run Date: 05/27/2015
Sample ID: WG525212-04
Instrument ID: LCMS1
Run Time: 20:53
Method: 6850
File ID: 1LM.LM29886
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG525192
Cal ID: LCMS1 - 27-MAY-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4205348
Report generated 05/29/2015 13:18

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15050604
Run Date: 05/28/2015
Sample ID: WG525212-06
Instrument ID: LCMS1
Run Time: 01:18
Method: 6850
File ID: 1LM.LM29900
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG525192
Cal ID: LCMS1 - 27-MAY-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4205348
Report generated 05/29/2015 13:18

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15050604
Run Date: 05/28/2015
Sample ID: WG525212-08
Instrument ID: LCMS1
Run Time: 05:24
Method: 6850
File ID: 1LM.LM29913
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG525192
Cal ID: LCMS1 - 27-MAY-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4205348
Report generated 05/29/2015 13:18

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15050604
Run Date: 05/27/2015
Sample ID: WG525212-02
Instrument ID: LCMS1
Run Time: 16:17
Method: 6850
File ID: 1LM.LM29872
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG525192
Cal ID: LCMS1 - 27-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	0.810	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4205347
Report generated 05/29/2015 13:18

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15050604
Run Date: 05/27/2015
Sample ID: WG525212-03
Instrument ID: LCMS1
Run Time: 20:15
Method: 6850
File ID: 1LM.LM29884
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG525192
Cal ID: LCMS1 - 27-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	0.803	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4205347
Report generated 05/29/2015 13:18

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15050604
Run Date: 05/28/2015
Sample ID: WG525212-05
Instrument ID: LCMS1
Run Time: 00:21
Method: 6850
File ID: 1LM.LM29897
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG525192
Cal ID: LCMS1 - 27-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.05	ug/L	0.819	5.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4205347
Report generated 05/29/2015 13:18

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15050604
Run Date: 05/28/2015
Sample ID: WG525212-07
Instrument ID: LCMS1
Run Time: 04:27
Method: 6850
File ID: 1LM.LM29910
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG525192
Cal ID: LCMS1 - 27-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.05	ug/L	0.817	5.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4205347
Report generated 05/29/2015 13:18

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15050604
Run Date: 05/28/2015
Sample ID: WG525212-09
Instrument ID: LCMS1
Run Time: 08:52
Method: 6850
File ID: 1LM.LM29924
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG525192
Cal ID: LCMS1 - 27-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.09	ug/L	0.852	9.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4205347
Report generated 05/29/2015 13:18

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15050604 Run Date: 05/27/2015 Sample ID: WG525192-07
Instrument ID: LCMS1 Run Time: 16:36 Prep Method: 6850
File ID: 1LM.LM29873 Analyst: JWR Method: 6850
Workgroup (AAB#): WG525192 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-27-MAY-15

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.198	99.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4205344
Report generated 05/29/2015 13:17

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15050604 Run Date: 05/27/2015 Sample ID: WG525192-08
Instrument ID: LCMS1 Run Time: 20:34 Prep Method: 6850
File ID: 1LM.LM29885 Analyst: JWR Method: 6850
Workgroup (AAB#): WG525192 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-27-MAY-15

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.210	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4205344
Report generated 05/29/2015 13:17

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15050604 Run Date: 05/28/2015 Sample ID: WG525192-09
Instrument ID: LCMS1 Run Time: 00:40 Prep Method: 6850
File ID: 1LM.LM29898 Analyst: JWR Method: 6850
Workgroup (AAB#): WG525192 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-27-MAY-15

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.210	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4205344
Report generated 05/29/2015 13:17

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15050604 Run Date: 05/28/2015 Sample ID: WG525192-10

Instrument ID: LCMS1 Run Time: 04:46 Prep Method: 6850

File ID: 1LM.LM29911 Analyst: JWR Method: 6850

Workgroup (AAB#): WG525192 Matrix: Water Units: ug/L

Contract #: Cal ID: LCMS1-27-MAY-15

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.217	109	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4205344
Report generated 05/29/2015 13:17

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L15050604
Instrument ID: LCMS1
Workgroup (AAB#): WG525192

ICAL CCV Number: WG525179-05
CAL ID: LCMS1-27-MAY-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG525179	NA	NA	287000
Upper Limit	NA	NA	430500
Lower Limit	NA	NA	143500
L15050604-01	10.0	DL01	302000
L15050604-02	1.00	01	293000
WG525192-02	1.00	01	298000
WG525192-03	1.00	01	306000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4205350
Report generated 05/29/2015 13:19

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15050604	**Prep Method:**	6850	**Samplenum:**	L15050604-01
Instrument:	LCMS1	**Prep Date:**	05/27/2015 14:00	**File ID:**	1LM.LM29877
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525192	**Analysis Date:**	05/27/2015 17:52	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	75500	28700	2.63	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15050604	**Prep Method:**	6850	**Samplenum:**	L15050604-02
Instrument:	LCMS1	**Prep Date:**	05/27/2015 14:00	**File ID:**	1LM.LM29878
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525192	**Analysis Date:**	05/27/2015 18:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	7290	2880	2.53	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15050604	**Prep Method:**		**Samplenum:**	WG525179-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29863
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525192	**Analysis Date:**	05/27/2015 13:16	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	4310	1720	2.51	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15050604	**Prep Method:**		**Samplenum:**	WG525179-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29864
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525192	**Analysis Date:**	05/27/2015 13:35	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	9360	3750	2.50	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15050604	**Prep Method:**		**Samplenum:**	WG525179-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29865
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525192	**Analysis Date:**	05/27/2015 13:54	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	23600	8730	2.70	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15050604	**Prep Method:**		**Samplenum:**	WG525179-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29866
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525192	**Analysis Date:**	05/27/2015 14:13	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	47200	17600	2.68	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15050604	**Prep Method:**		**Samplenum:**	WG525179-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29867
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525192	**Analysis Date:**	05/27/2015 14:32	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	90300	33900	2.66	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15050604	**Prep Method:**		**Samplenum:**	WG525179-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29868
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525192	**Analysis Date:**	05/27/2015 14:51	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	223000	83400	2.67	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15050604	**Prep Method:**		**Samplenum:**	WG525179-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29869
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525192	**Analysis Date:**	05/27/2015 15:10	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	418000	160000	2.61	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15050604	**Prep Method:**		**Samplenum:**	WG525179-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29870
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525192	**Analysis Date:**	05/27/2015 15:28	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	44900	16700	2.69	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15050604	**Prep Method:**	6850	**Samplenum:**	WG525192-01
Instrument:	LCMS1	**Prep Date:**	05/27/2015 14:00	**File ID:**	1LM.LM29874
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525192	**Analysis Date:**	05/27/2015 16:55	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	9720	4000	2.43	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15050604	**Prep Method:**	6850	**Samplenum:**	WG525192-02
Instrument:	LCMS1	**Prep Date:**	05/27/2015 14:00	**File ID:**	1LM.LM29875
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525192	**Analysis Date:**	05/27/2015 17:14	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15050604	**Prep Method:**	6850	**Samplenum:**	WG525192-03
Instrument:	LCMS1	**Prep Date:**	05/27/2015 14:00	**File ID:**	1LM.LM29876
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525192	**Analysis Date:**	05/27/2015 17:33	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	9920	3630	2.73	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15050604	**Prep Method:**	6850	**Samplenum:**	WG525192-07
Instrument:	LCMS1	**Prep Date:**	05/27/2015 14:00	**File ID:**	1LM.LM29873
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525192	**Analysis Date:**	05/27/2015 16:36	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	9150	3720	2.46	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15050604	**Prep Method:**	6850	**Samplenum:**	WG525192-08
Instrument:	LCMS1	**Prep Date:**	05/27/2015 14:00	**File ID:**	1LM.LM29885
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525192	**Analysis Date:**	05/27/2015 20:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	10200	3730	2.73	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15050604	**Prep Method:**	6850	**Samplenum:**	WG525192-09
Instrument:	LCMS1	**Prep Date:**	05/27/2015 14:00	**File ID:**	1LM.LM29898
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525192	**Analysis Date:**	05/28/2015 00:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	10800	3790	2.85	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15050604	**Prep Method:**	6850	**Samplenum:**	WG525192-10
Instrument:	LCMS1	**Prep Date:**	05/27/2015 14:00	**File ID:**	1LM.LM29911
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525192	**Analysis Date:**	05/28/2015 04:46	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	11800	4140	2.85	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15050604	**Prep Method:**		**Samplenum:**	WG525212-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29871
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525192	**Analysis Date:**	05/27/2015 15:58	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15050604	**Prep Method:**		**Samplenum:**	WG525212-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29872
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525192	**Analysis Date:**	05/27/2015 16:17	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	46700	17900	2.61	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15050604	**Prep Method:**		**Samplenum:**	WG525212-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29884
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525192	**Analysis Date:**	05/27/2015 20:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	49300	18300	2.69	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15050604	**Prep Method:**		**Samplenum:**	WG525212-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29886
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525192	**Analysis Date:**	05/27/2015 20:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	404	191	2.12	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15050604	**Prep Method:**		**Samplenum:**	WG525212-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29897
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525192	**Analysis Date:**	05/28/2015 00:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	53500	20800	2.57	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15050604	**Prep Method:**		**Samplenum:**	WG525212-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29900
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525192	**Analysis Date:**	05/28/2015 01:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	263	189	1.39	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15050604	**Prep Method:**		**Samplenum:**	WG525212-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29910
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525192	**Analysis Date:**	05/28/2015 04:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	55400	20900	2.65	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15050604	**Prep Method:**		**Samplenum:**	WG525212-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29913
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525192	**Analysis Date:**	05/28/2015 05:24	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	366	272	1.35	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15050604	**Prep Method:**		**Samplenum:**	WG525212-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29924
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525192	**Analysis Date:**	05/28/2015 08:52	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	55500	21100	2.63	2.3	3.8	

2.2.1.3 Sample Data

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Data File	LM29877.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/27/2015 5:52:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15050604-01 (10x)	**Injection Vial**	13.00
Data File	LM29877.wiff	**Injection Volume**	10.00
Acquisition Date	5/27/2015 5:52:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	L15050604-01	**Dilution Factor**	1.00
Sample Comment	1,10 (screened)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.020e+05	11.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.550e+04	11.10	N/A	1.60
Perchlorate conf	2.870e+04	11.10	N/A	1.61

O18LP (Internal Standard)

RT (Exp. RT): 11.10(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

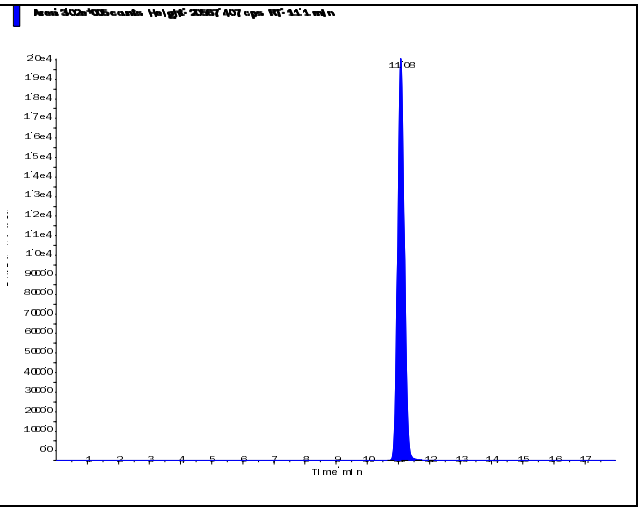

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.10 (11.10) min Calculated conc: 1.60 ng/ml Area Ratio: 0.25 Sample Type: (Unknown)	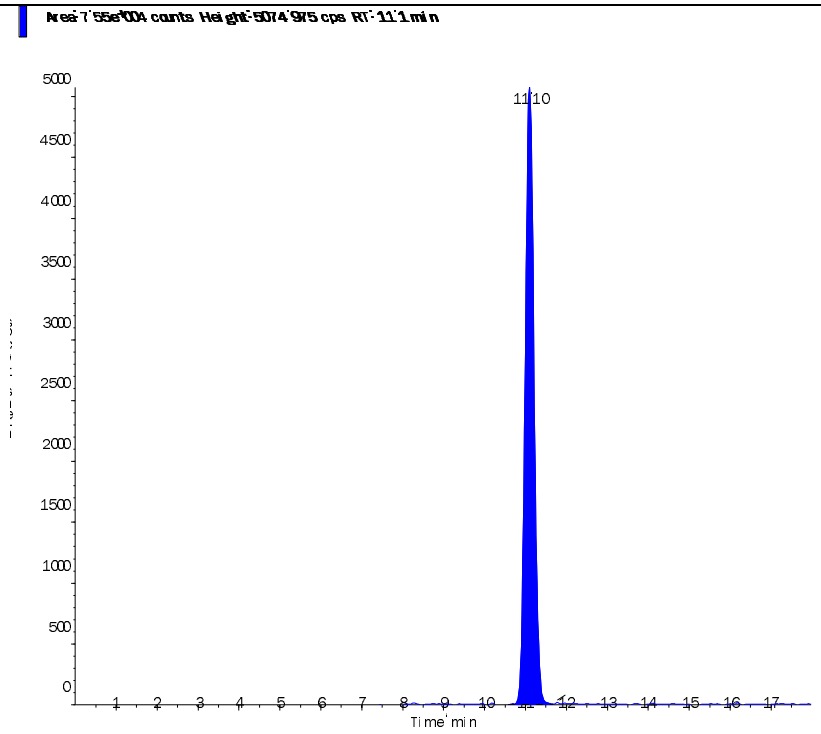
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.10 (11.10) min Calculated conc: 1.61 ng/ml Area Ratio: 0.095 Sample Type: (Unknown)	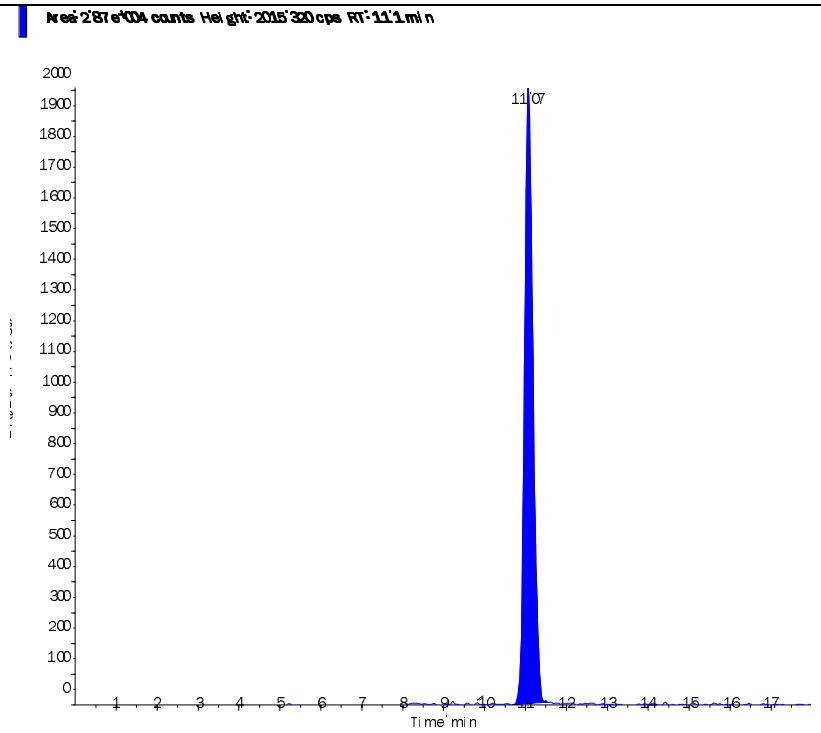

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Printed: 5/28/2015 5:01 PM

Data File	LM29878.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/27/2015 6:21:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15050604-02	**Injection Vial**	14.00
Data File	LM29878.wiff	**Injection Volume**	10.00
Acquisition Date	5/27/2015 6:21:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	L15050604-02	**Dilution Factor**	1.00
Sample Comment	1,1 (screened)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.930e+05	11.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.290e+03	11.30	N/A	0.156
Perchlorate conf	2.880e+03	11.30	N/A	0.159

O18LP (Internal Standard)

RT (Exp. RT): 11.30(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

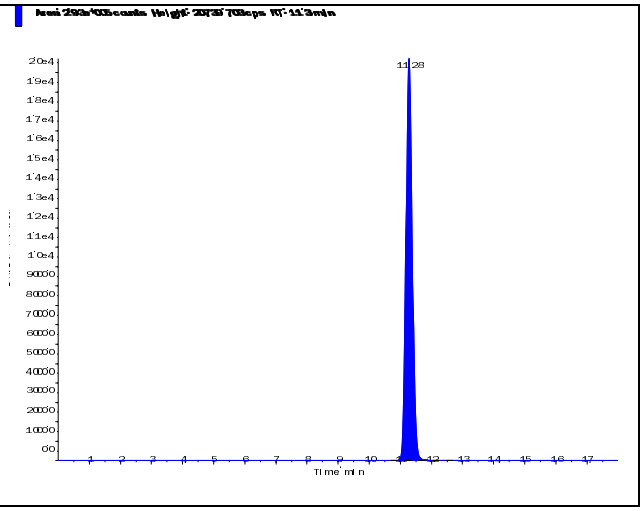

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Created with Analyst Reporter
Printed: 5/28/2015 5:01 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.30 (11.10) min Calculated conc: 0.156 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	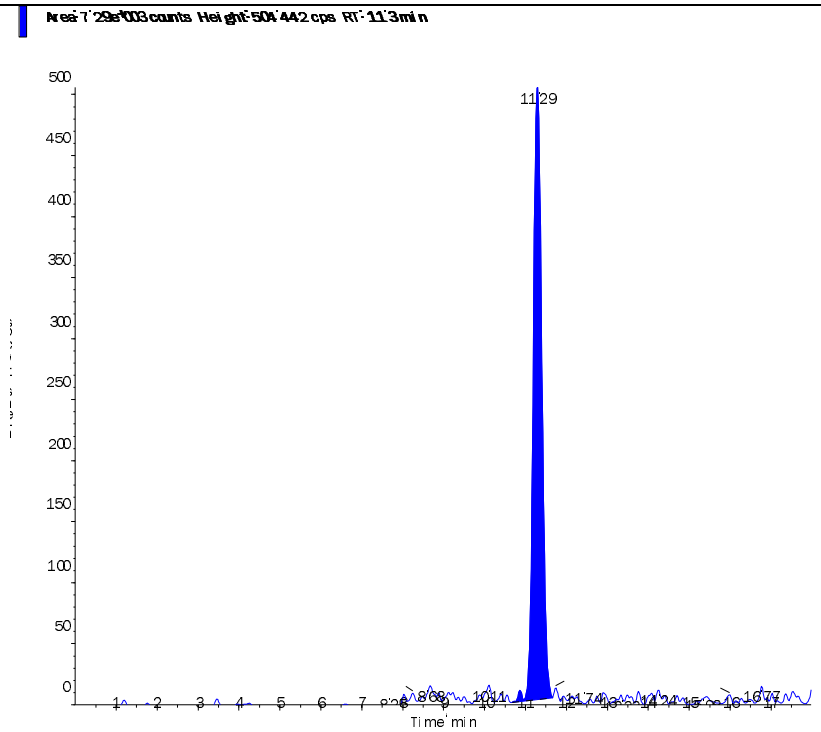
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.30 (11.10) min Calculated conc: 0.159 ng/ml Area Ratio: 0.01 Sample Type: (Unknown)	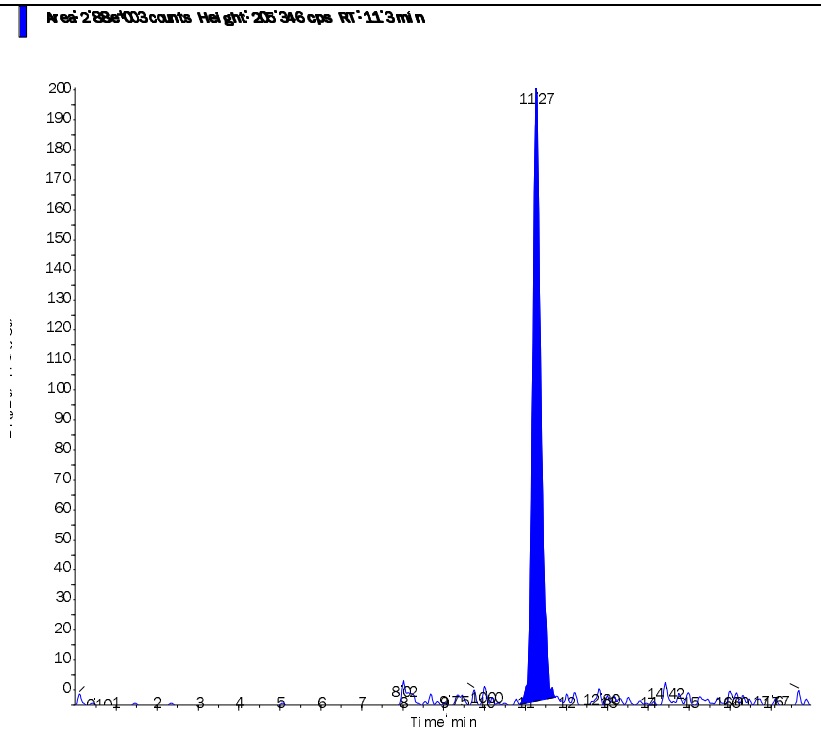

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2.2.1.4 Standards Data

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Data File	LM29862.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/27/2015 12:57:31 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525179-01 CCB	**Injection Vial**	1.00
Data File	LM29862.wiff	**Injection Volume**	10.00
Acquisition Date	5/27/2015 12:57:31 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525179-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.960e+05	11.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 11.10(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

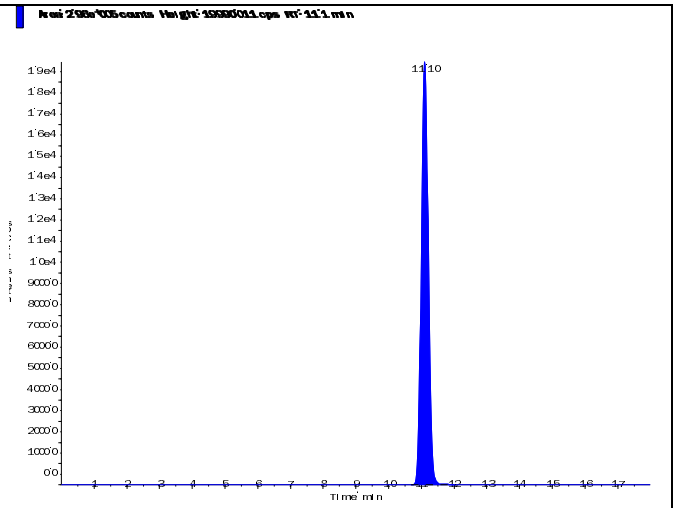

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Printed: 5/28/2015 4:55 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (11.10) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	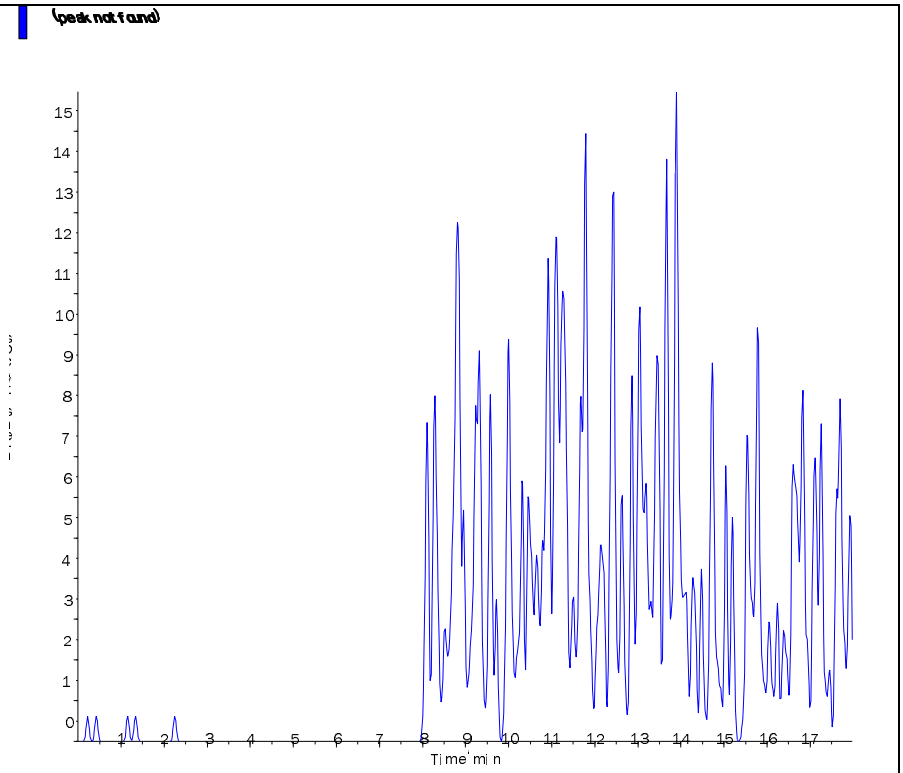
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (11.10) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	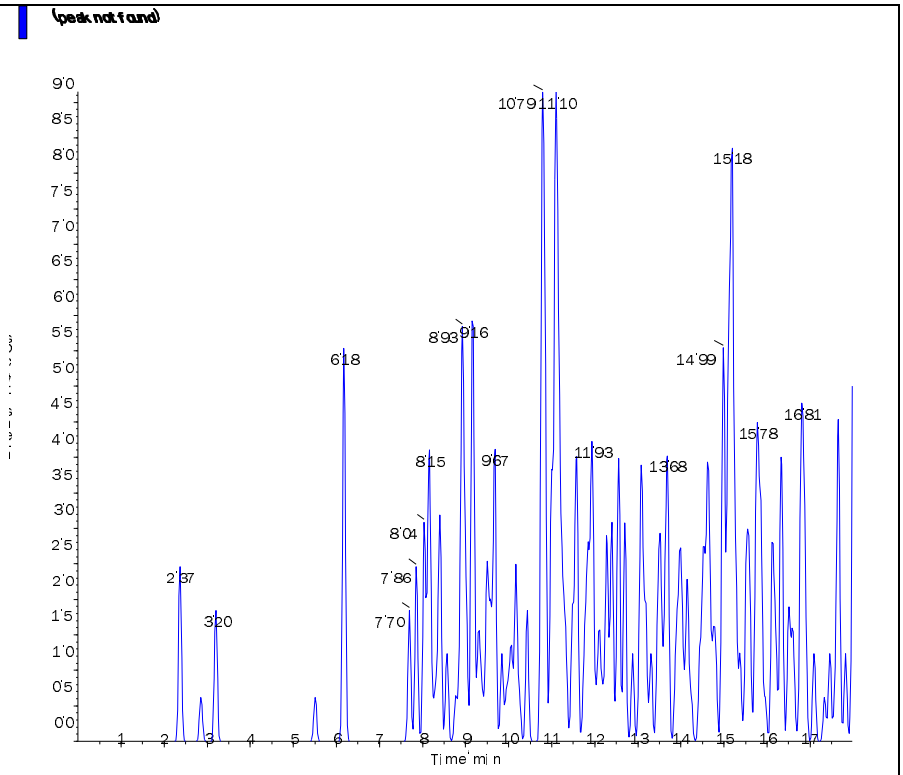

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Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM29862.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/27/2015 12:57:31 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.778 x + 0.000602 (r = 0.9995)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	92.4	N/A	N/A
0.20	1	0.20	100.5	N/A	N/A
0.50	1	0.51	101.7	N/A	N/A
1.00	1	1.05	104.6	N/A	N/A
2.00	1	1.98	99.1	N/A	N/A
5.00	1	5.20	104.0	N/A	N/A
10.00	1	9.77	97.7	N/A	N/A

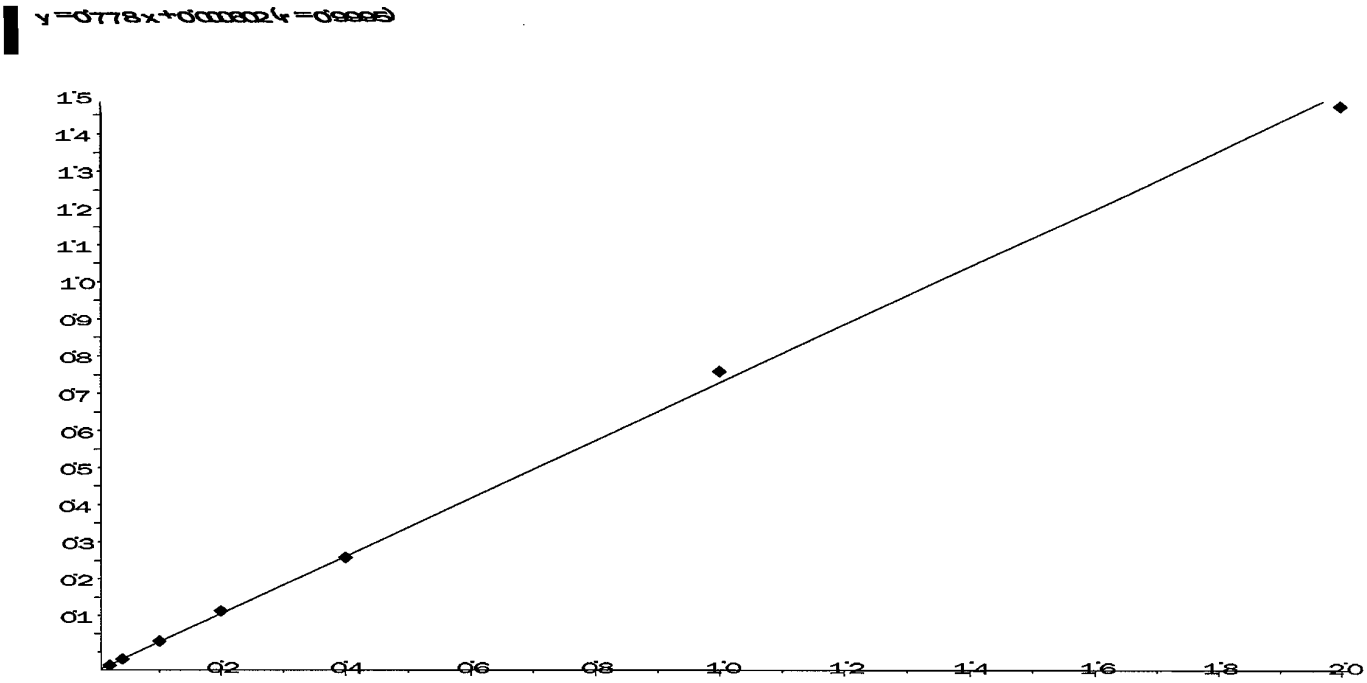

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Printed: 5/28/2015 4:54 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM29862.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/27/2015 12:57:31 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.295 x + 0.000432 (r = 0.9998)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	94.3	N/A	N/A
0.20	1	0.21	104.7	N/A	N/A
0.50	1	0.49	98.7	N/A	N/A
1.00	1	1.03	103.0	N/A	N/A
2.00	1	1.96	97.9	N/A	N/A
5.00	1	5.13	102.6	N/A	N/A
10.00	1	9.89	98.9	N/A	N/A

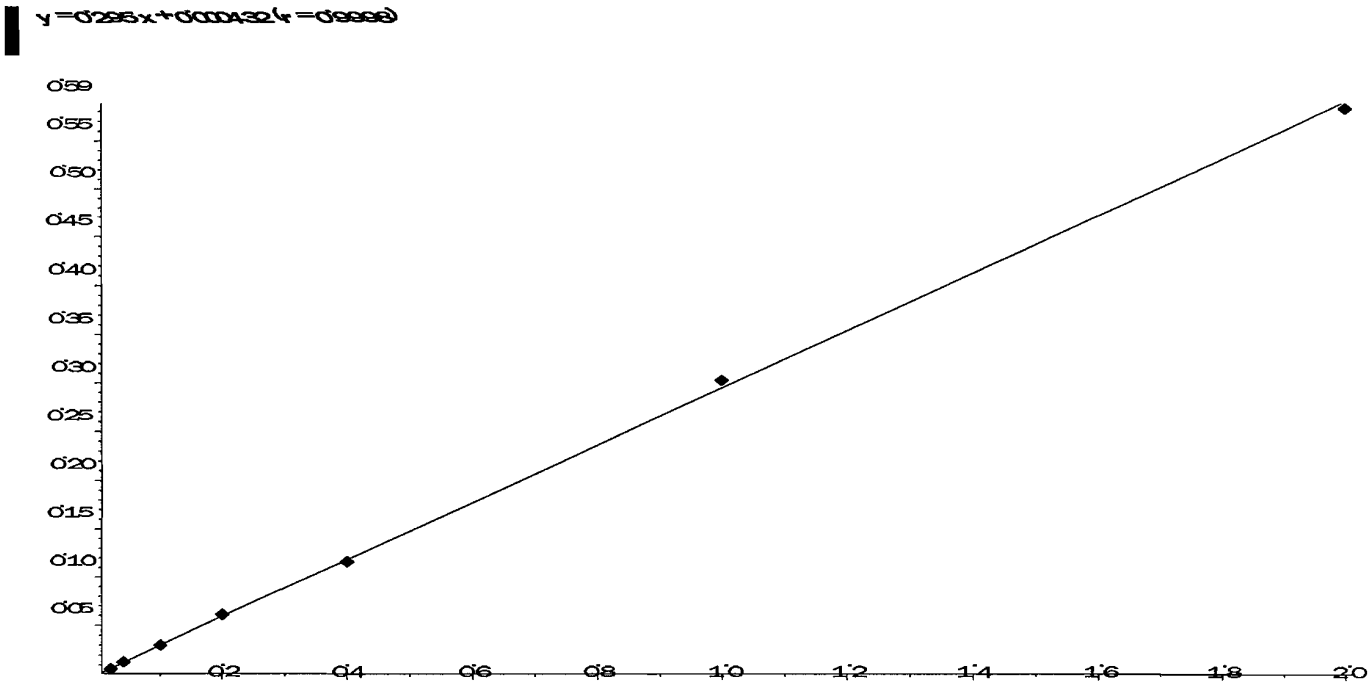

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Data File	LM29863.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/27/2015 1:16:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525179-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM29863.wiff	**Injection Volume**	10.00
Acquisition Date	5/27/2015 1:16:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525179-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.880e+05	11.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.310e+03	11.20	0.10	0.0924
Perchlorate conf	1.720e+03	11.10	0.10	0.0943

O18LP (Internal Standard)

RT (Exp. RT): 11.10(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

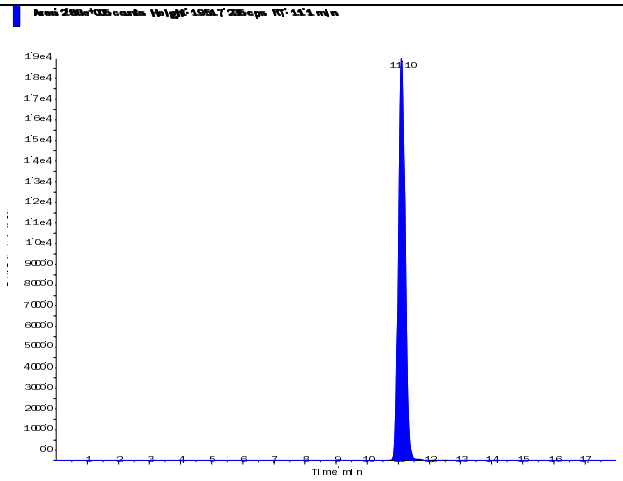

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.20 (11.10) min Calculated conc: 0.0924 ng/ml Area Ratio: 0.015 Sample Type: (Standard)	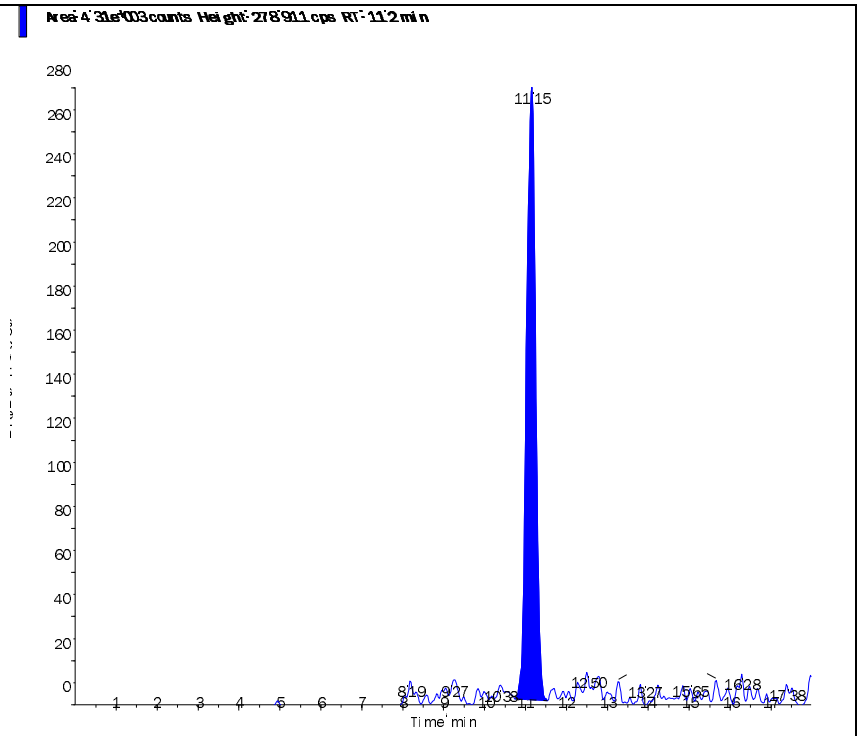
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.10 (11.10) min Calculated conc: 0.0943 ng/ml Area Ratio: 0.006 Sample Type: (Standard)	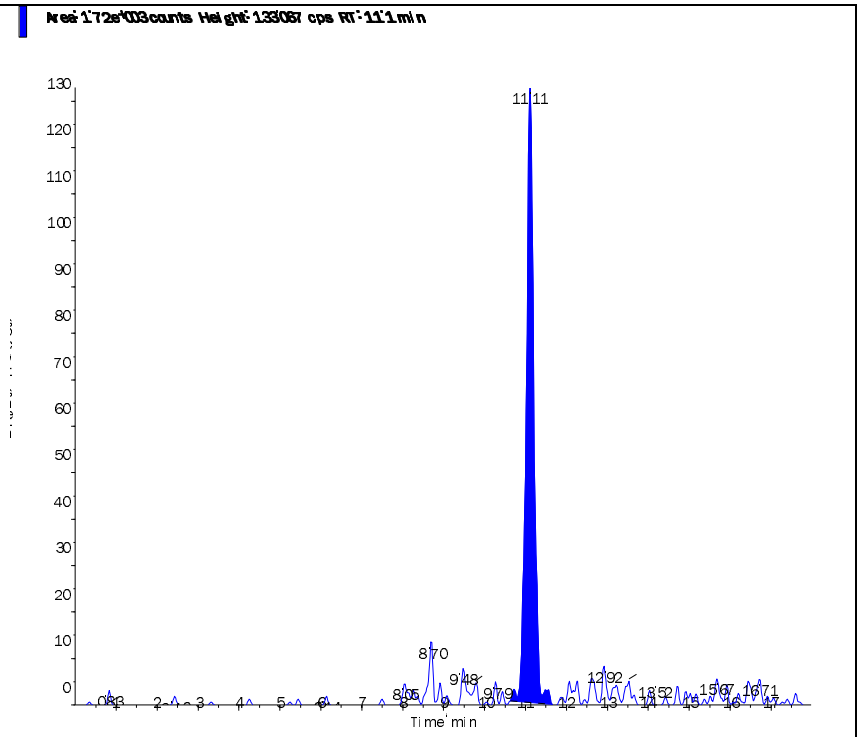

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Data File	LM29864.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/27/2015 1:35:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525179-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM29864.wiff	**Injection Volume**	10.00
Acquisition Date	5/27/2015 1:35:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525179-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.930e+05	11.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	9.360e+03	11.10	0.20	0.201
Perchlorate conf	3.750e+03	11.10	0.20	0.209

O18LP (Internal Standard)

RT (Exp. RT): 11.10(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

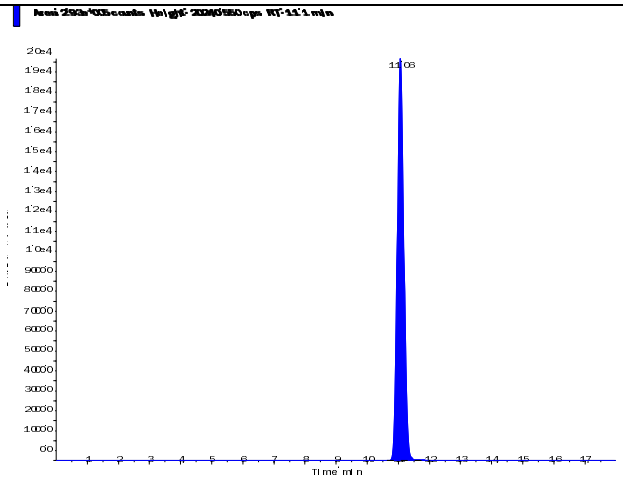

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.10 (11.10) min Calculated conc: 0.201 ng/ml Area Ratio: 0.032 Sample Type: (Standard)	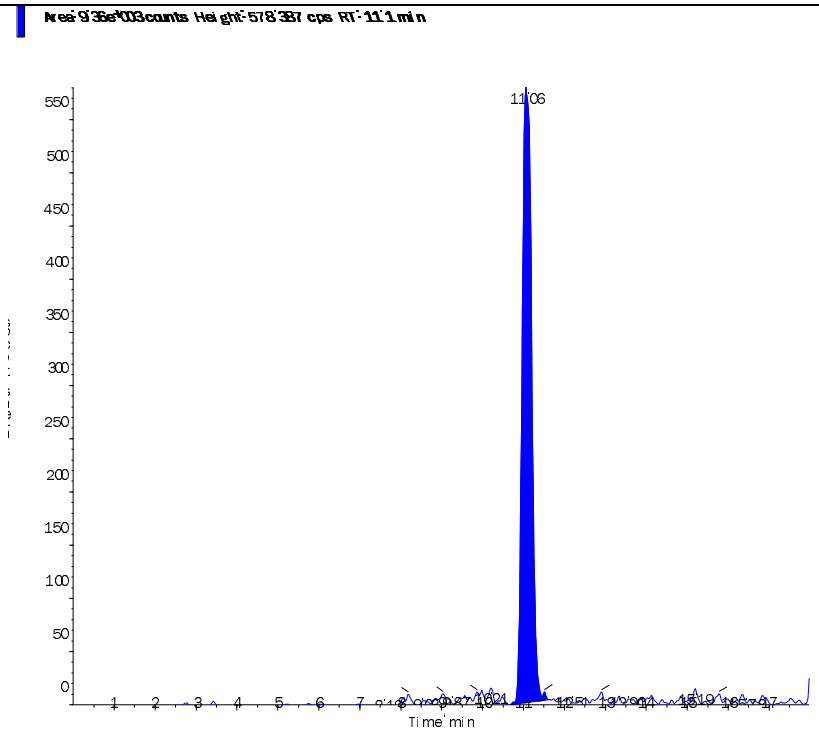
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.10 (11.10) min Calculated conc: 0.209 ng/ml Area Ratio: 0.013 Sample Type: (Standard)	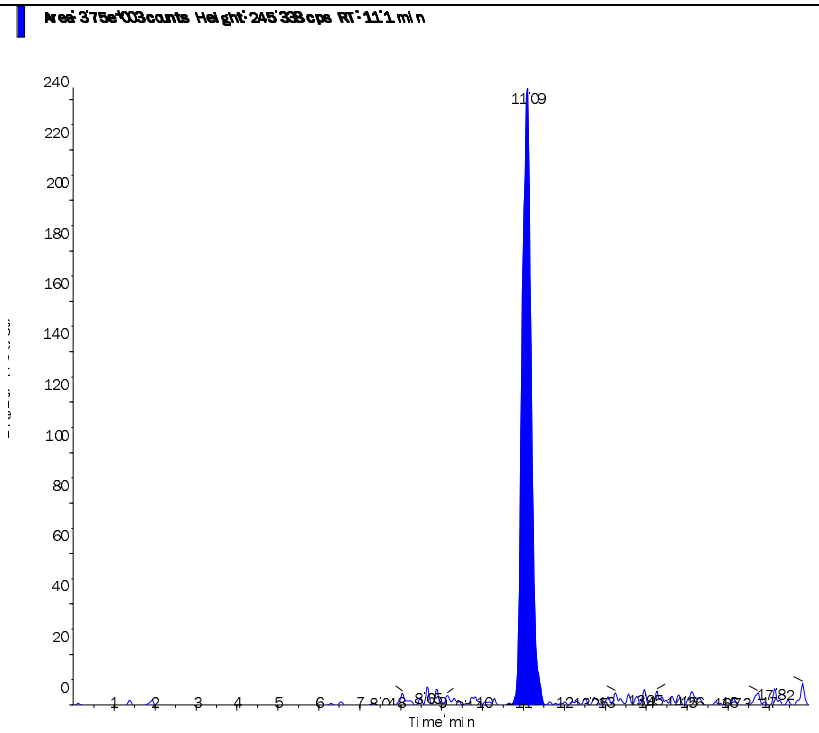

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Data File	LM29865.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/27/2015 1:54:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525179-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM29865.wiff	**Injection Volume**	10.00
Acquisition Date	5/27/2015 1:54:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525179-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.960e+05	11.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.360e+04	11.10	0.50	0.509
Perchlorate conf	8.730e+03	11.10	0.50	0.493

O18LP (Internal Standard)

RT (Exp. RT): 11.10(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

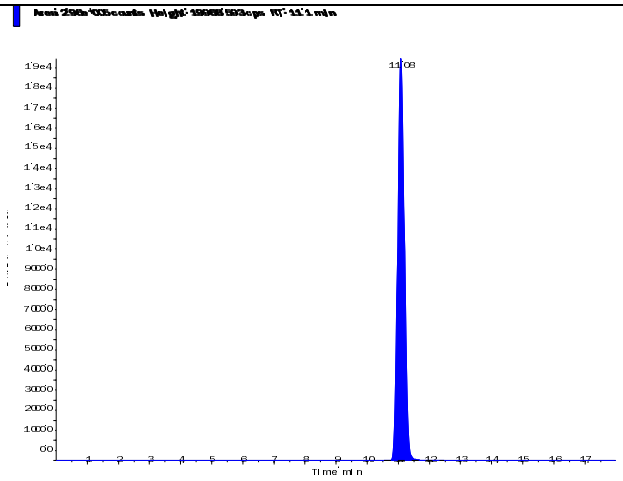

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.10 (11.10) min Calculated conc: 0.509 ng/ml Area Ratio: 0.08 Sample Type: (Standard)	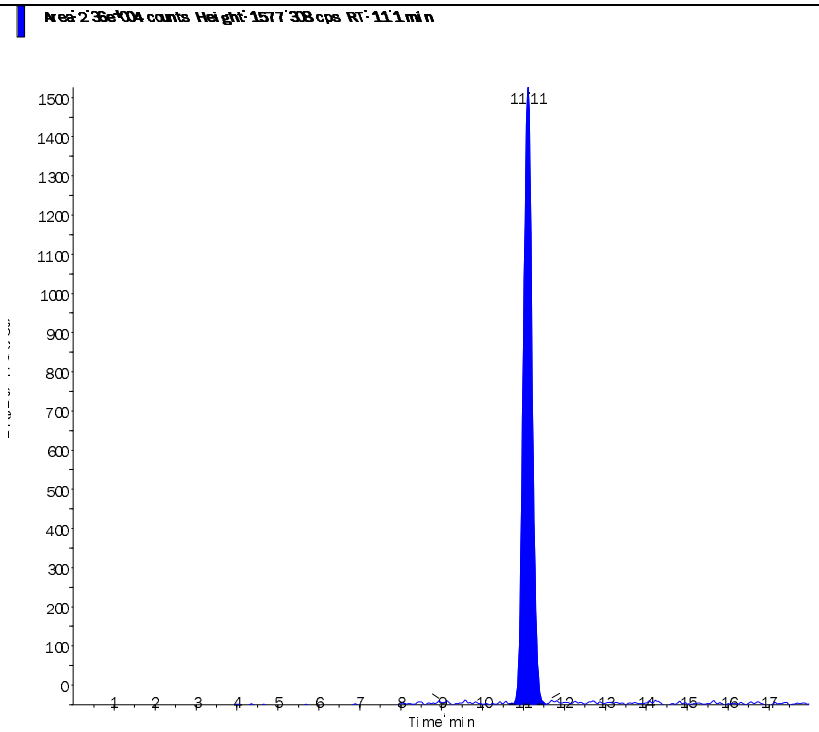
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.10 (11.10) min Calculated conc: 0.493 ng/ml Area Ratio: 0.03 Sample Type: (Standard)	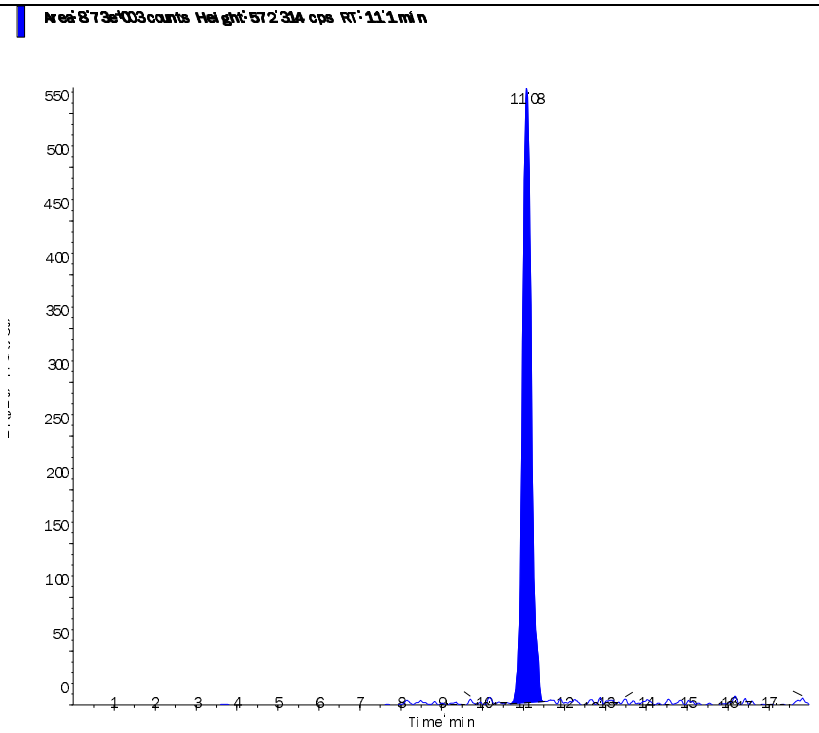

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Data File	LM29866.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/27/2015 2:13:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525179-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM29866.wiff	**Injection Volume**	10.00
Acquisition Date	5/27/2015 2:13:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525179-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.890e+05	11.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.720e+04	11.10	1.00	1.05
Perchlorate conf	1.760e+04	11.10	1.00	1.03

O18LP (Internal Standard)

RT (Exp. RT): 11.10(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

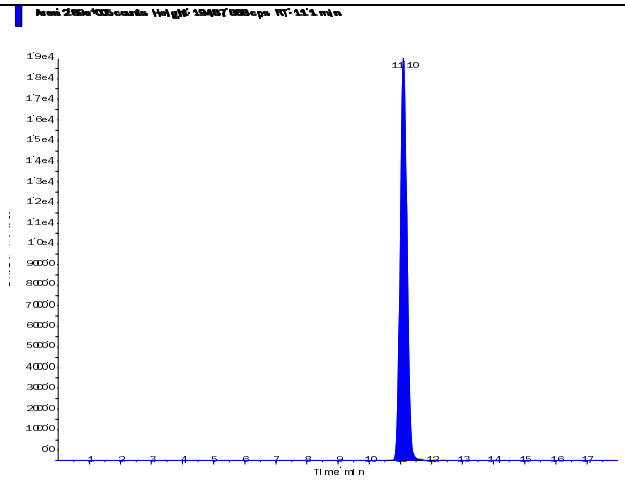

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.10 (11.10) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.163
Sample Type:	(Standard)

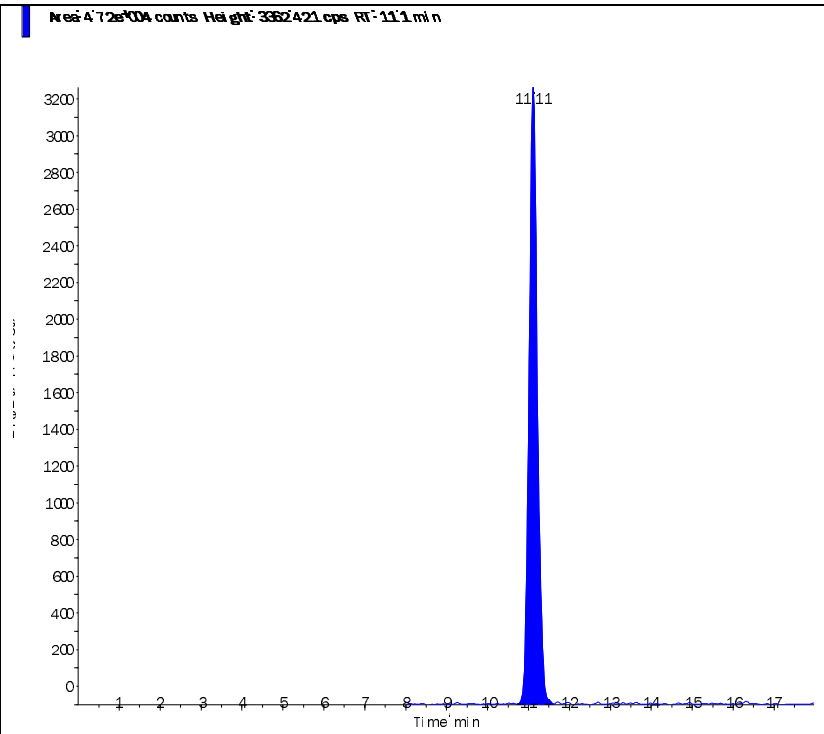

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.10 (11.10) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.061
Sample Type:	(Standard)

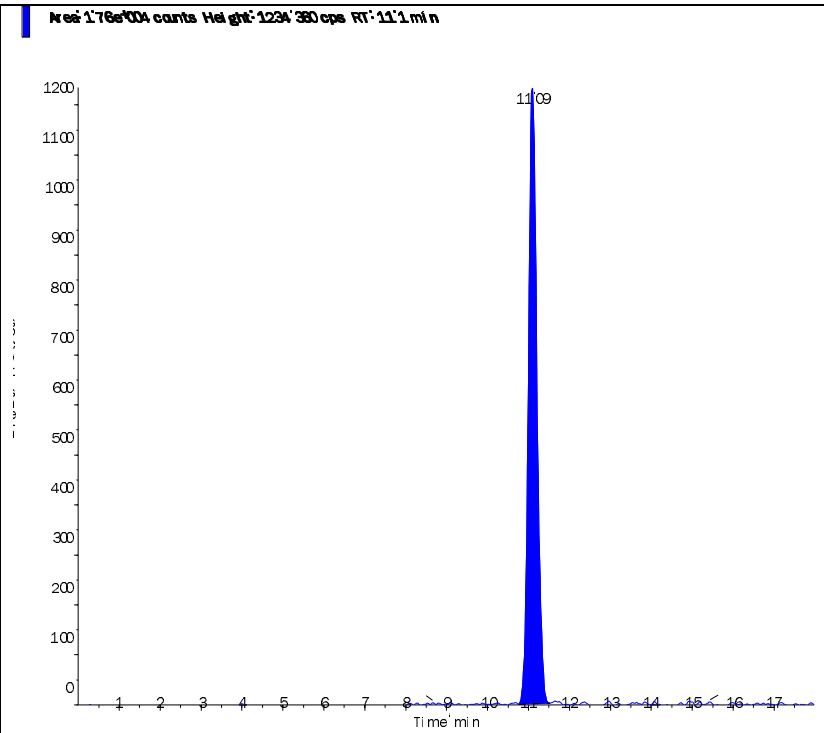

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Data File	LM29867.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/27/2015 2:32:11 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525179-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM29867.wiff	**Injection Volume**	10.00
Acquisition Date	5/27/2015 2:32:11 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525179-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.920e+05	11.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	9.030e+04	11.10	2.00	1.98
Perchlorate conf	3.390e+04	11.10	2.00	1.96

O18LP (Internal Standard)

RT (Exp. RT): 11.10(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

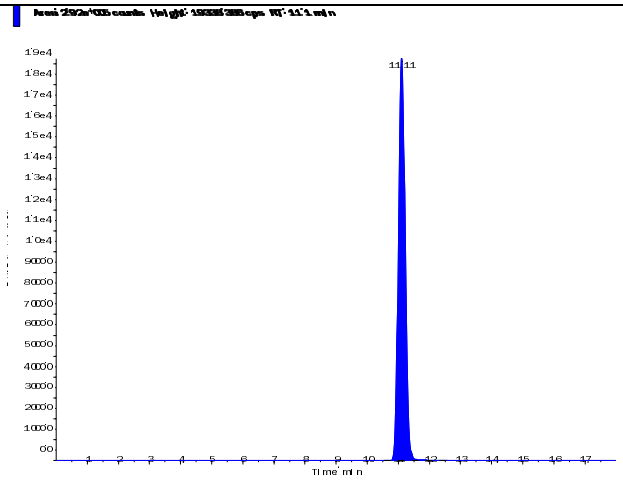

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.10 (11.10) min Calculated conc: 1.98 ng/ml Area Ratio: 0.309 Sample Type: (Standard)	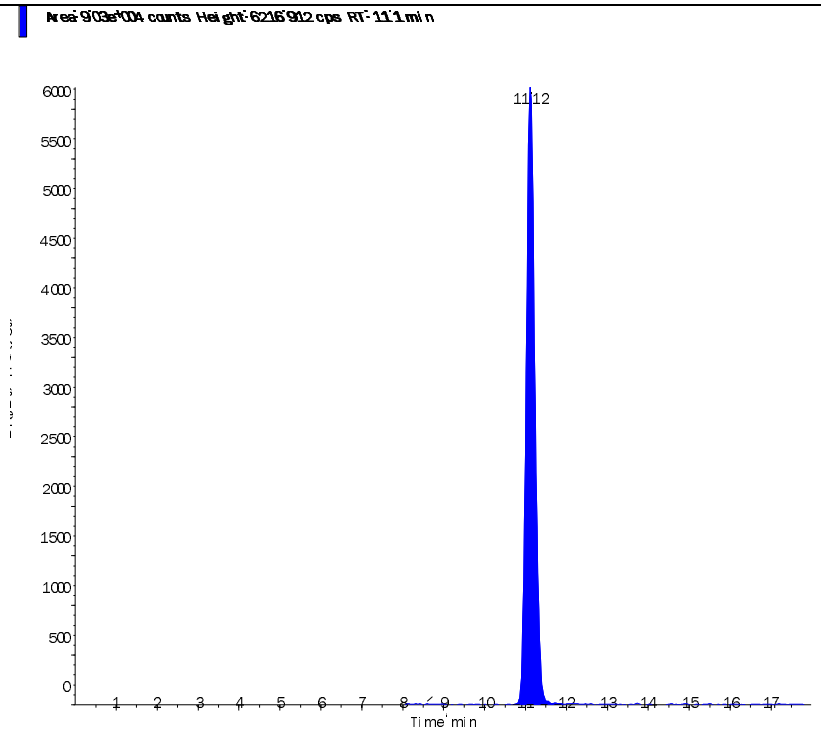
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.10 (11.10) min Calculated conc: 1.96 ng/ml Area Ratio: 0.116 Sample Type: (Standard)	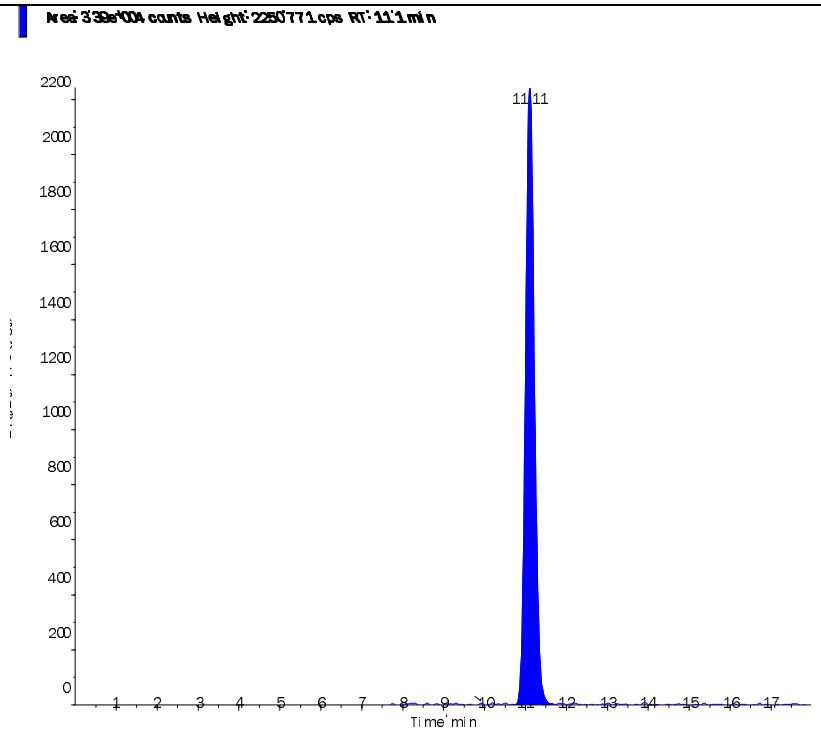

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Data File	LM29868.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/27/2015 2:51:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525179-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM29868.wiff	**Injection Volume**	10.00
Acquisition Date	5/27/2015 2:51:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525179-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.750e+05	11.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.230e+05	11.10	5.00	5.20
Perchlorate conf	8.340e+04	11.10	5.00	5.13

O18LP (Internal Standard)

RT (Exp. RT): 11.10(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

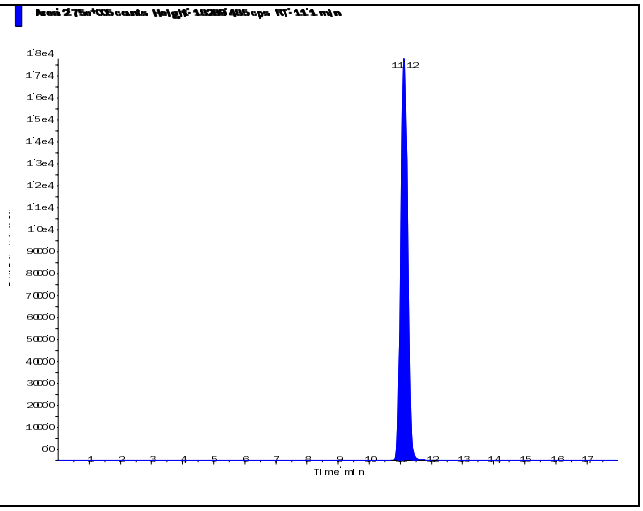

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.10 (11.10) min Calculated conc: 5.20 ng/ml Area Ratio: 0.81 Sample Type: (Standard)	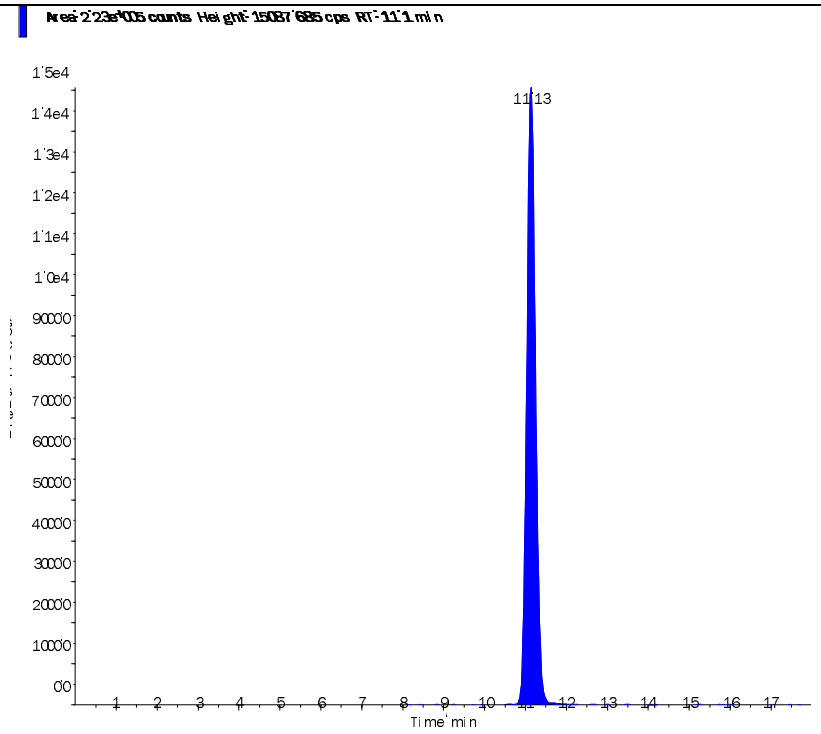
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.10 (11.10) min Calculated conc: 5.13 ng/ml Area Ratio: 0.303 Sample Type: (Standard)	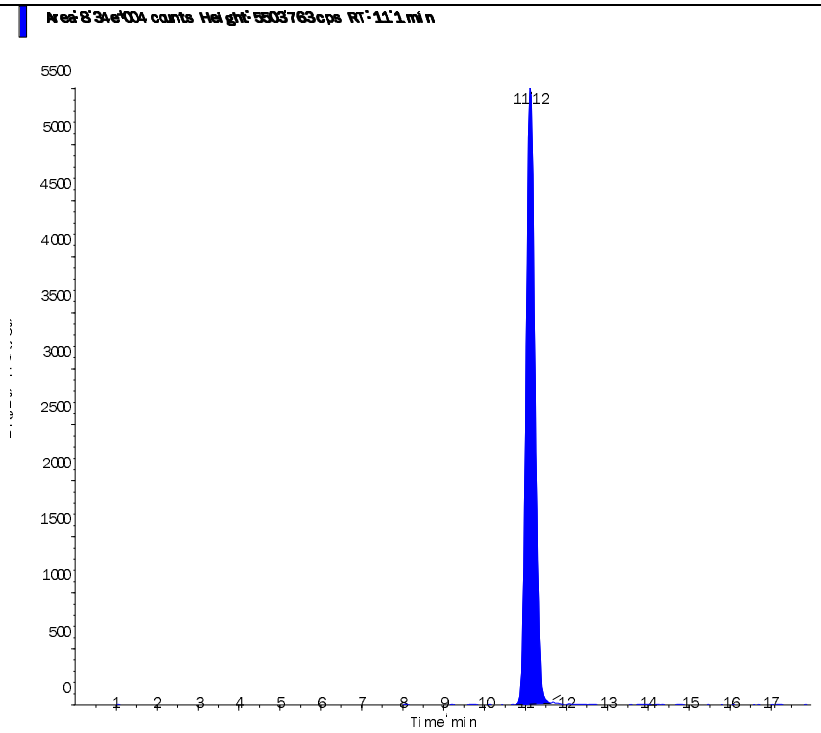

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Data File	LM29869.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/27/2015 3:10:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525179-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM29869.wiff	**Injection Volume**	10.00
Acquisition Date	5/27/2015 3:10:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525179-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.740e+05	11.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.180e+05	11.10	10.00	9.77
Perchlorate conf	1.600e+05	11.10	10.00	9.89

O18LP (Internal Standard)

RT (Exp. RT): 11.10(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

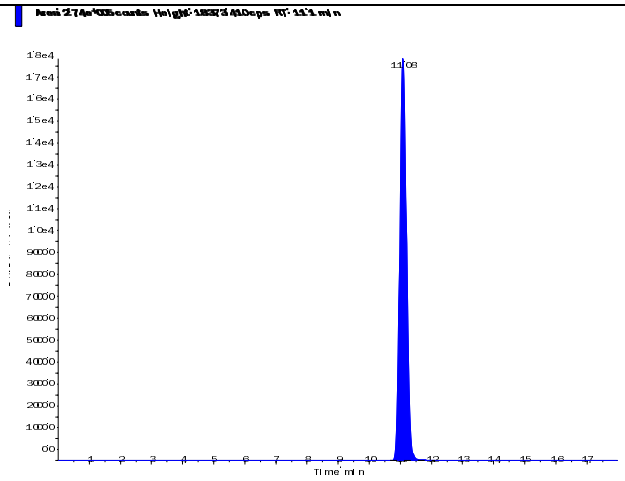

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.10 (11.10) min
Calculated conc:	9.77 ng/ml
Area Ratio:	1.522
Sample Type:	(Standard)

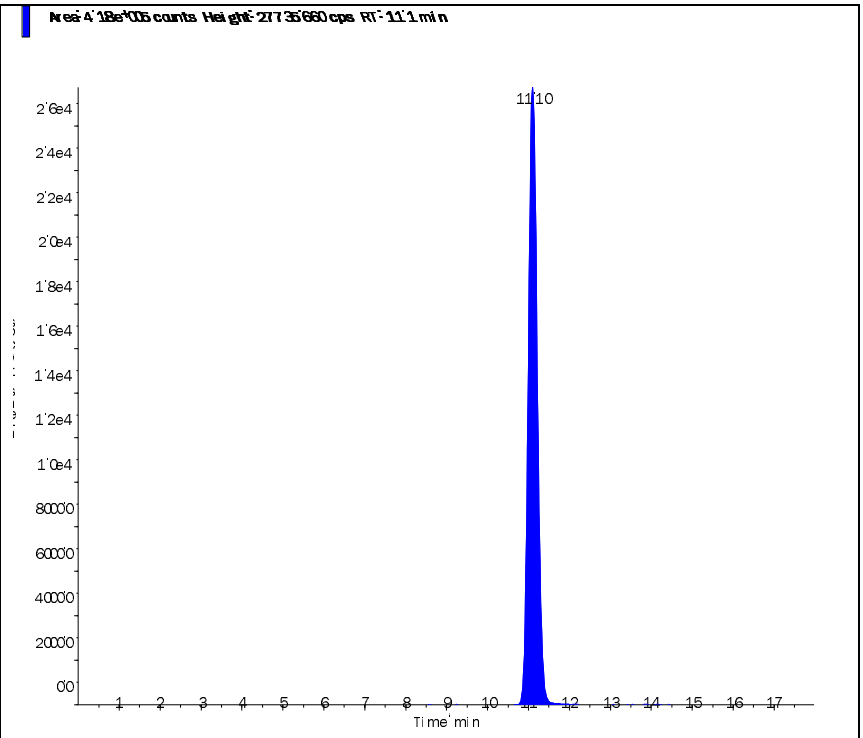

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.10 (11.10) min
Calculated conc:	9.89 ng/ml
Area Ratio:	0.583
Sample Type:	(Standard)

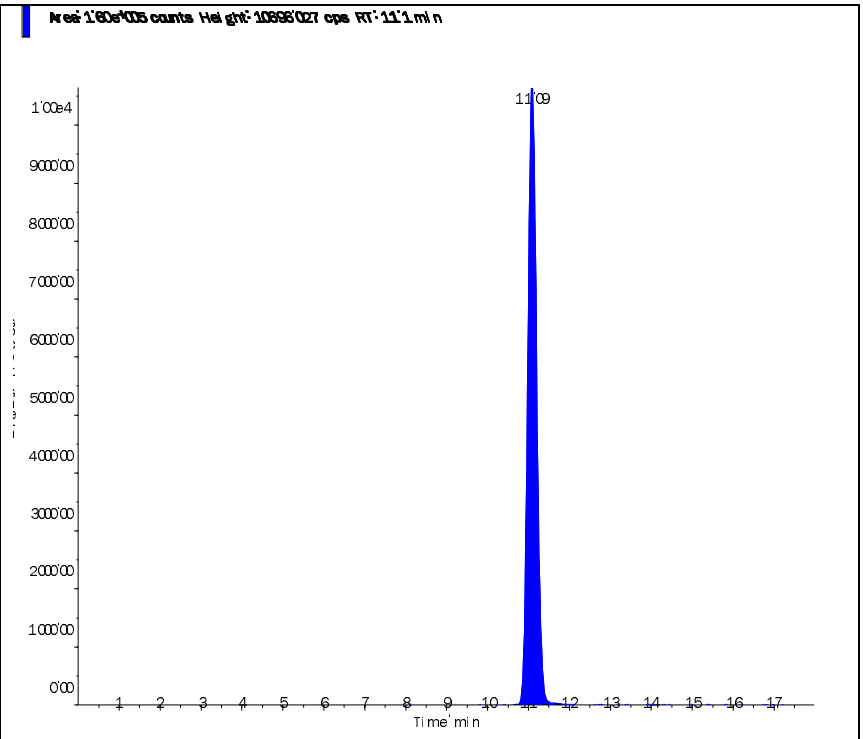

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Data File	LM29870.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/27/2015 3:28:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525179-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM29870.wiff	**Injection Volume**	10.00
Acquisition Date	5/27/2015 3:28:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525179-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD69913	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.930e+05	11.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.490e+04	11.10	1.00	0.981
Perchlorate conf	1.670e+04	11.10	1.00	0.961

O18LP (Internal Standard)

RT (Exp. RT): 11.10(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

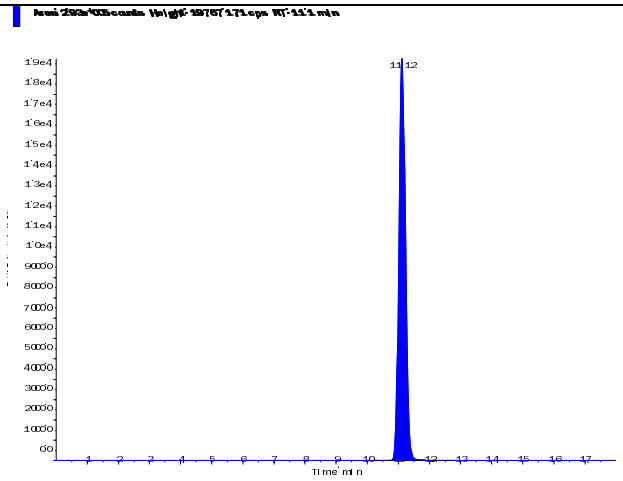

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.10 (11.10) min
Calculated conc:	0.981 ng/ml
Area Ratio:	0.153
Sample Type:	(Quality Control)

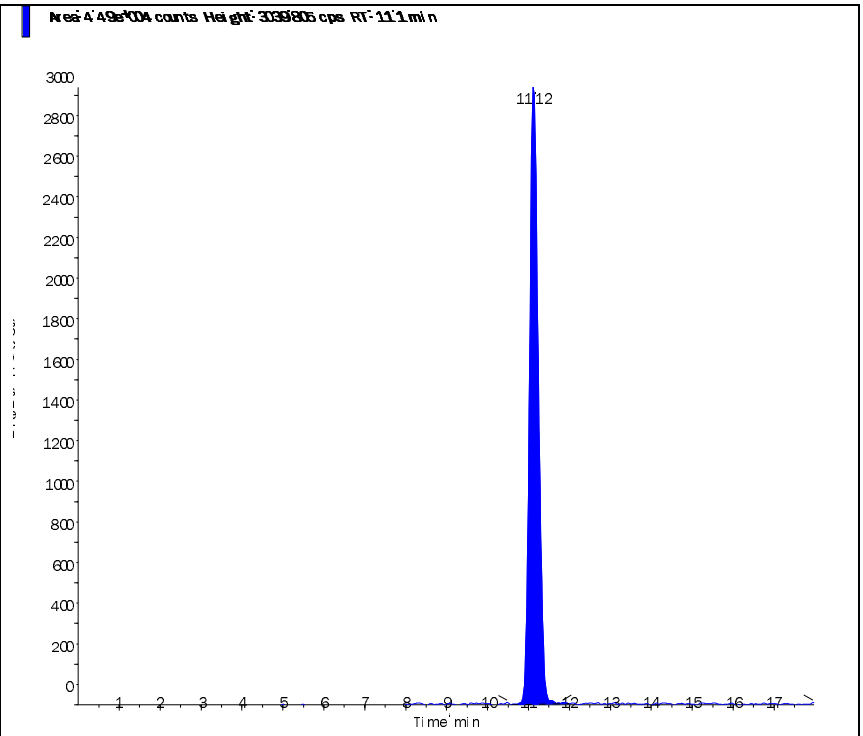

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.10 (11.10) min
Calculated conc:	0.961 ng/ml
Area Ratio:	0.057
Sample Type:	(Quality Control)

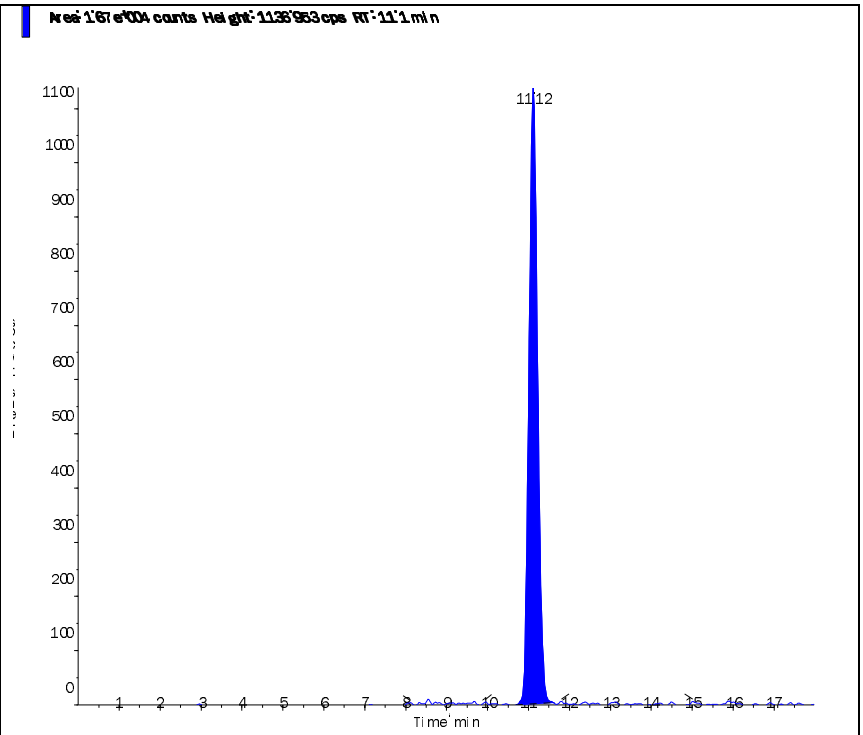

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Data File	LM29872.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/27/2015 4:17:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525212-02 CCV (1.0ug/L)	**Injection Vial**	5.00
Data File	LM29872.wiff	**Injection Volume**	10.00
Acquisition Date	5/27/2015 4:17:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525212-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.890e+05	11.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.670e+04	11.10	1.00	1.04
Perchlorate conf	1.790e+04	11.10	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 11.10(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

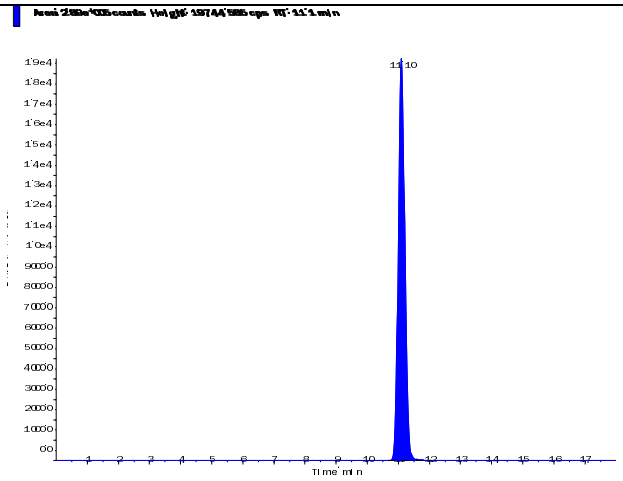

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.10 (11.10) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.162
Sample Type:	(Quality Control)

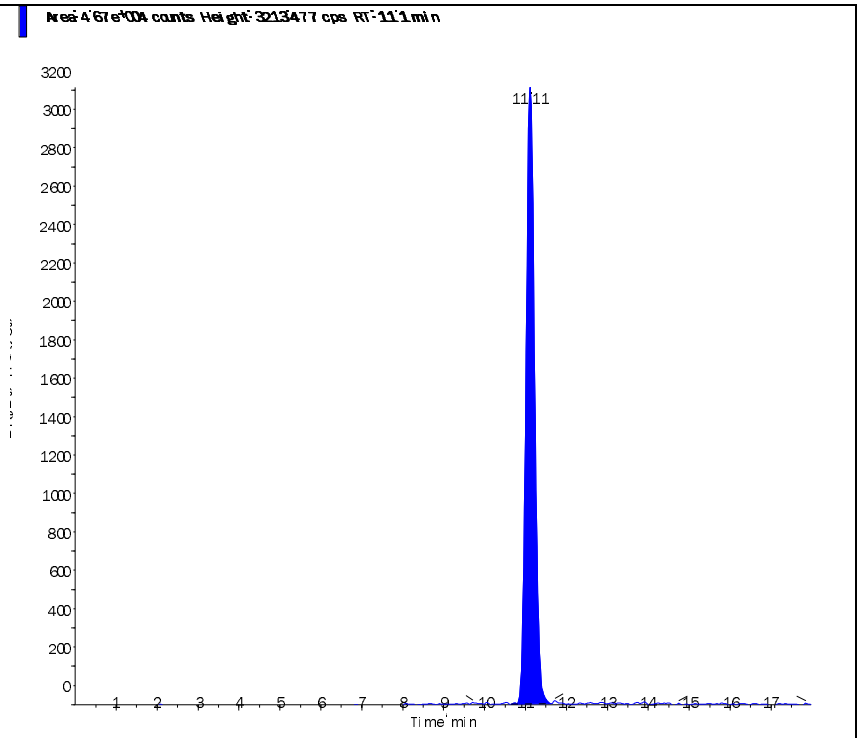

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.10 (11.10) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.062
Sample Type:	(Quality Control)

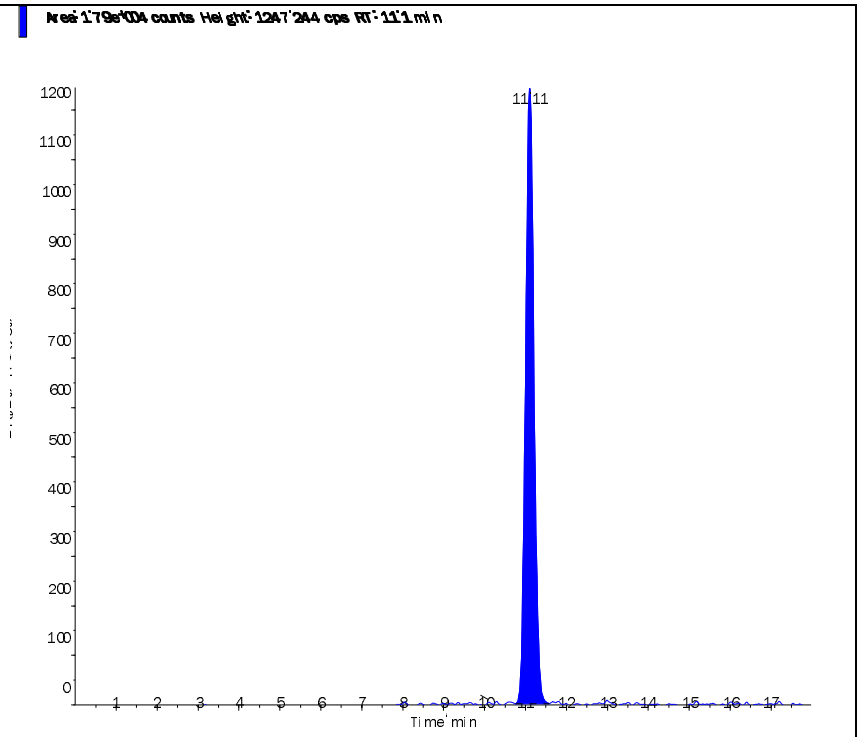

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Data File	LM29884.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/27/2015 8:15:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525212-03 CCV (1.0ug/L)	**Injection Vial**	5.00
Data File	LM29884.wiff	**Injection Volume**	10.00
Acquisition Date	5/27/2015 8:15:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525212-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.070e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.930e+04	11.10	1.00	1.03
Perchlorate conf	1.830e+04	11.00	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

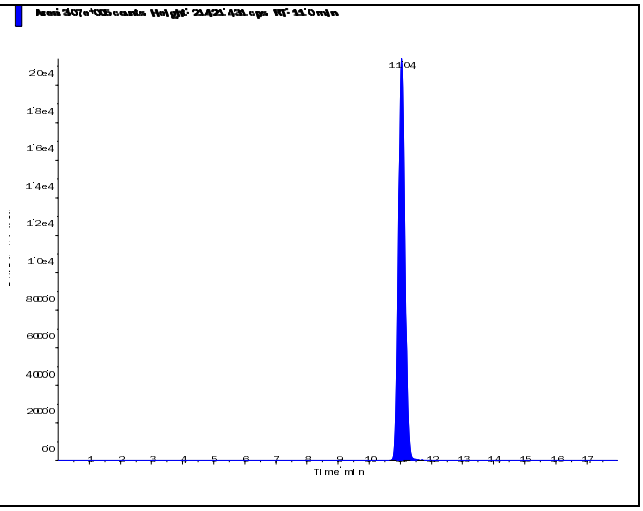

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.10 (11.10) min Calculated conc: 1.03 ng/ml Area Ratio: 0.161 Sample Type: (Quality Control)	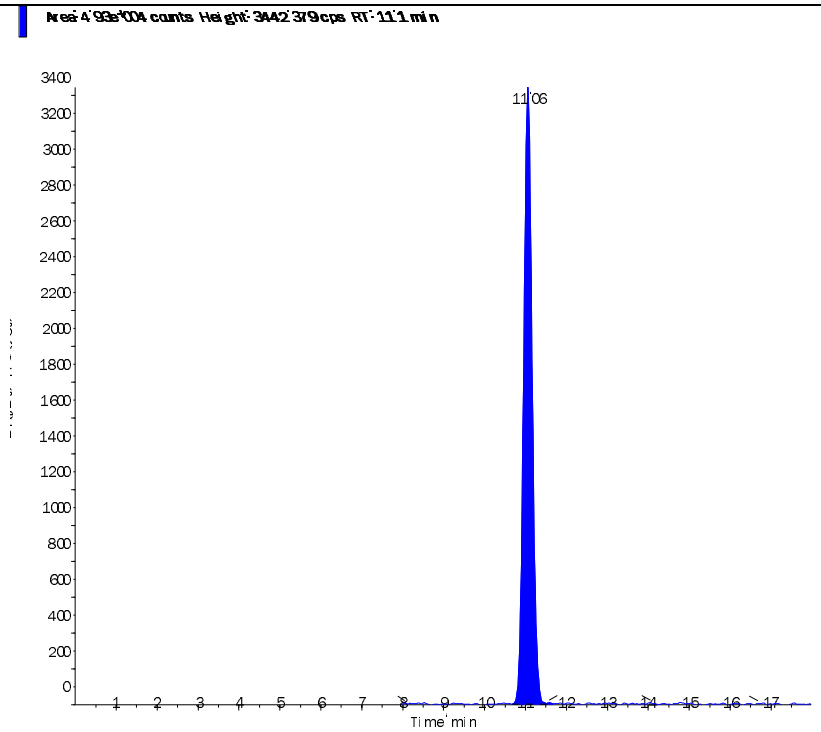
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.00 (11.10) min Calculated conc: 1.00 ng/ml Area Ratio: 0.06 Sample Type: (Quality Control)	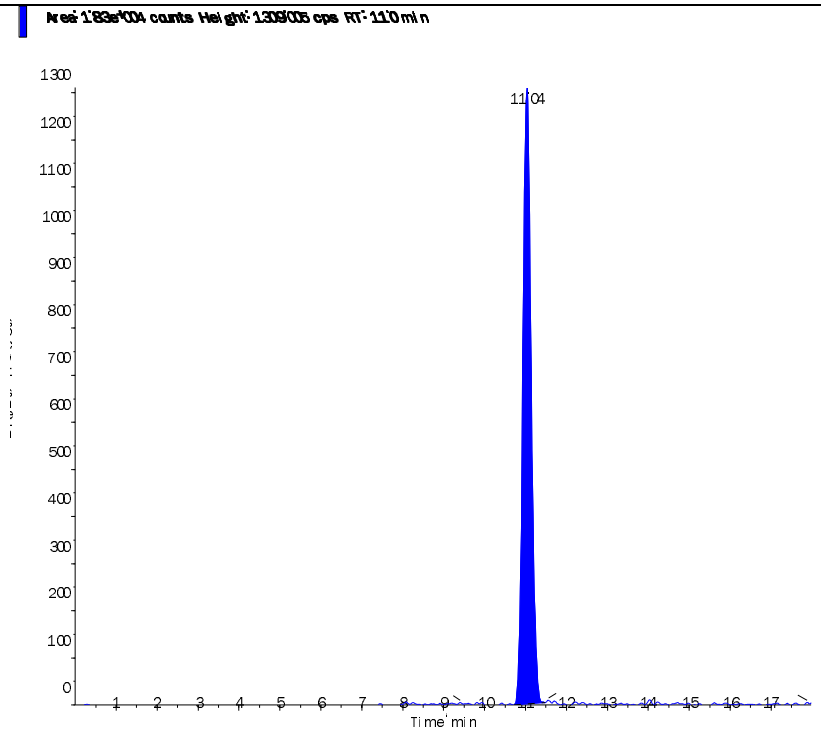

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Data File	LM29897.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 12:21:23 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525212-05 CCV (1.0ug/L)	**Injection Vial**	5.00
Data File	LM29897.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 12:21:23 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525212-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.270e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.350e+04	11.00	1.00	1.05
Perchlorate conf	2.080e+04	11.00	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

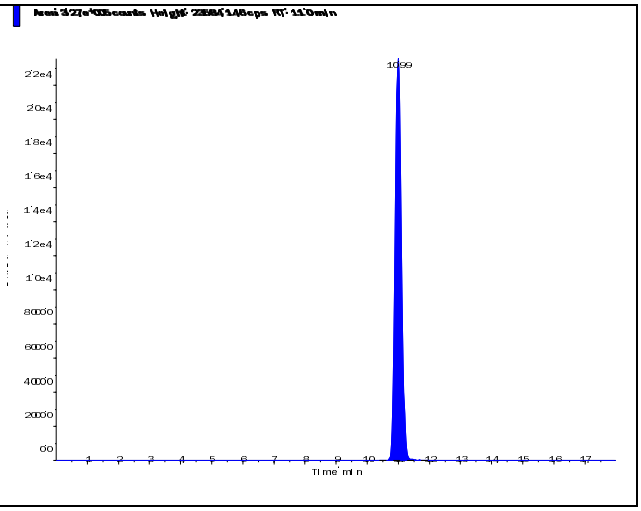

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Printed: 5/28/2015 5:07 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.00 (11.10) min Calculated conc: 1.05 ng/ml Area Ratio: 0.164 Sample Type: (Quality Control)	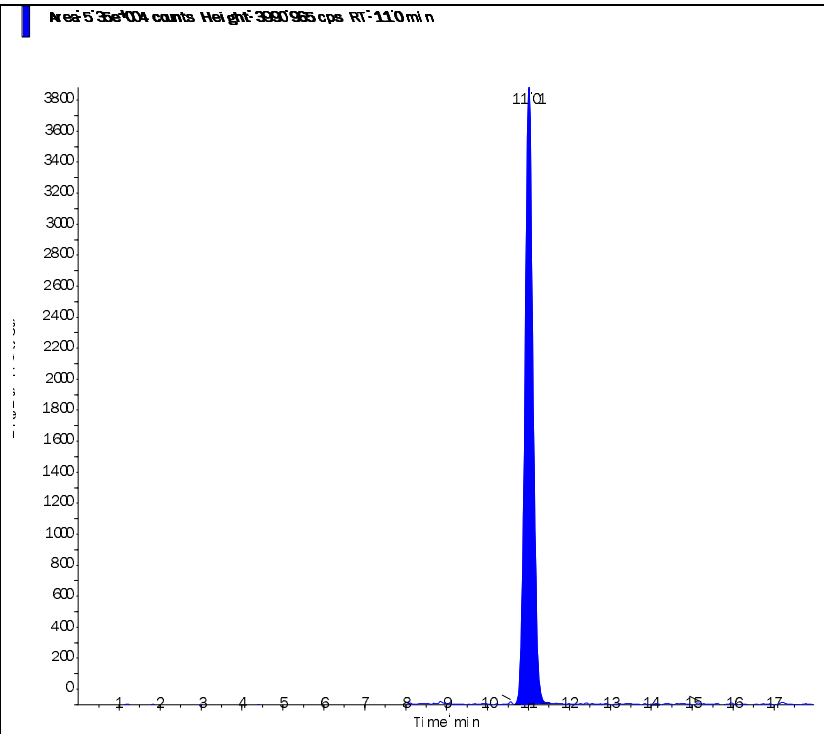
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.00 (11.10) min Calculated conc: 1.07 ng/ml Area Ratio: 0.064 Sample Type: (Quality Control)	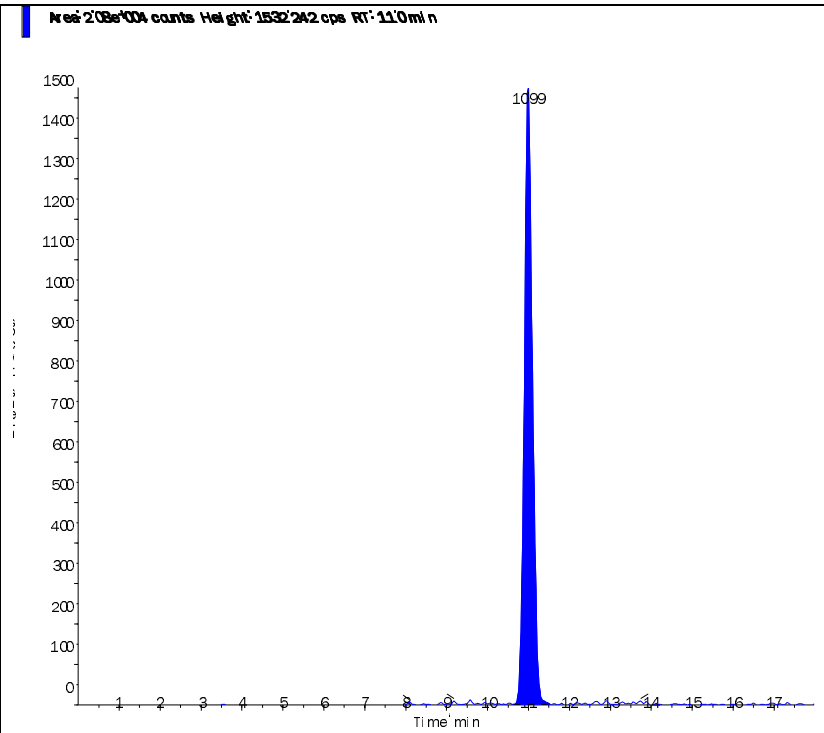

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Data File	LM29910.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 4:27:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525212-07 CCV (1.0ug/L)	**Injection Vial**	5.00
Data File	LM29910.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 4:27:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525212-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.390e+05	10.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.540e+04	10.90	1.00	1.05
Perchlorate conf	2.090e+04	10.90	1.00	1.04

O18LP (Internal Standard)

RT (Exp. RT): 10.90(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

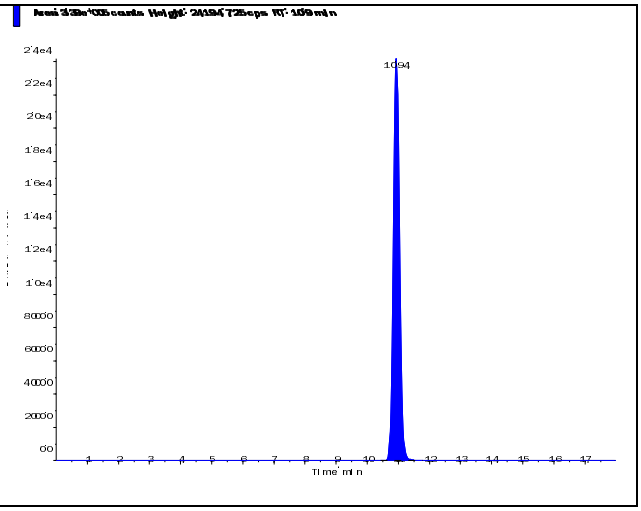

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.90 (11.10) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.163
Sample Type:	(Quality Control)

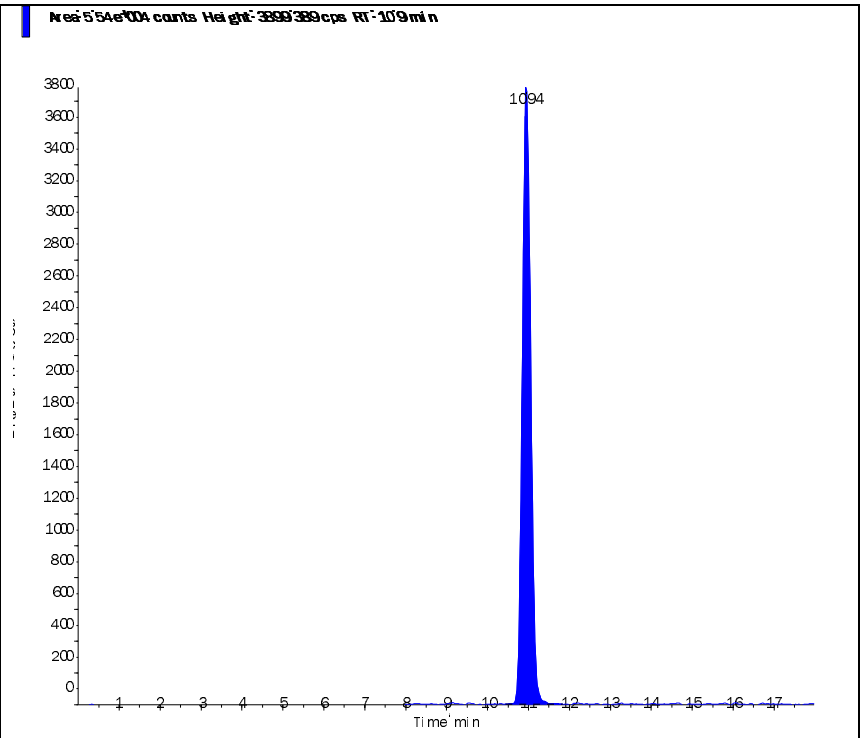

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.90 (11.10) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.062
Sample Type:	(Quality Control)

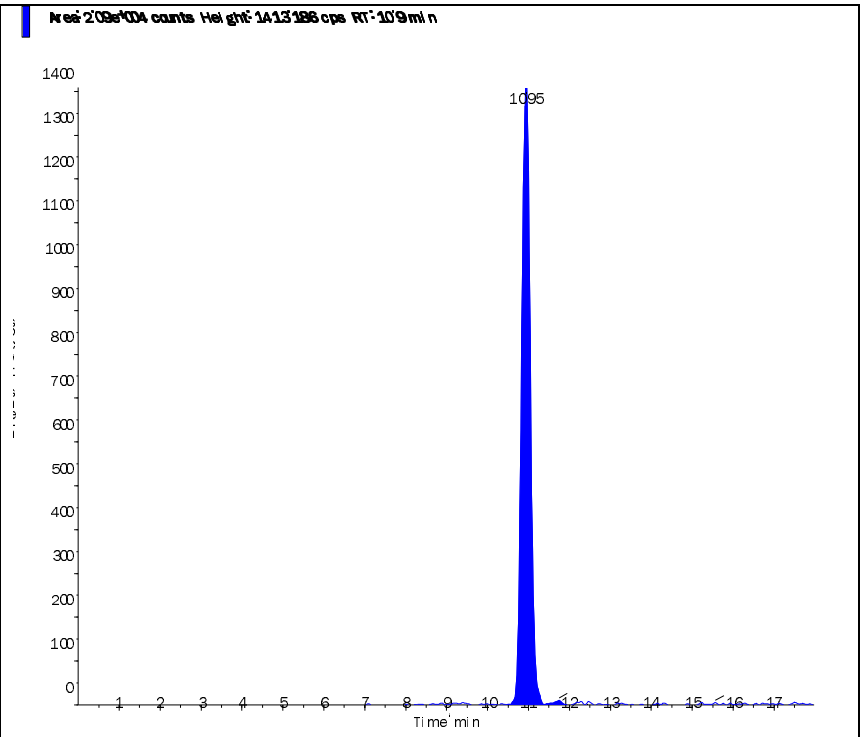

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Data File	LM29924.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 8:52:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525212-09 CCV (1.0ug/L)	**Injection Vial**	5.00
Data File	LM29924.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 8:52:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525212-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.250e+05	10.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.550e+04	10.90	1.00	1.09
Perchlorate conf	2.110e+04	10.90	1.00	1.09

O18LP (Internal Standard)

RT (Exp. RT): 10.90(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

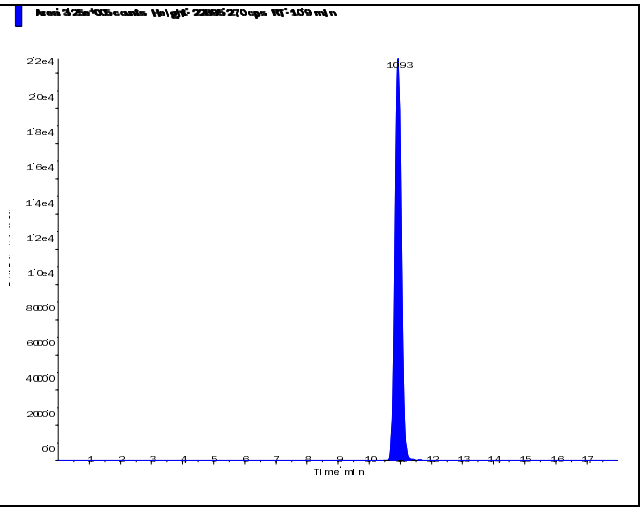

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.90 (11.10) min Calculated conc: 1.09 ng/ml Area Ratio: 0.17 Sample Type: (Quality Control)	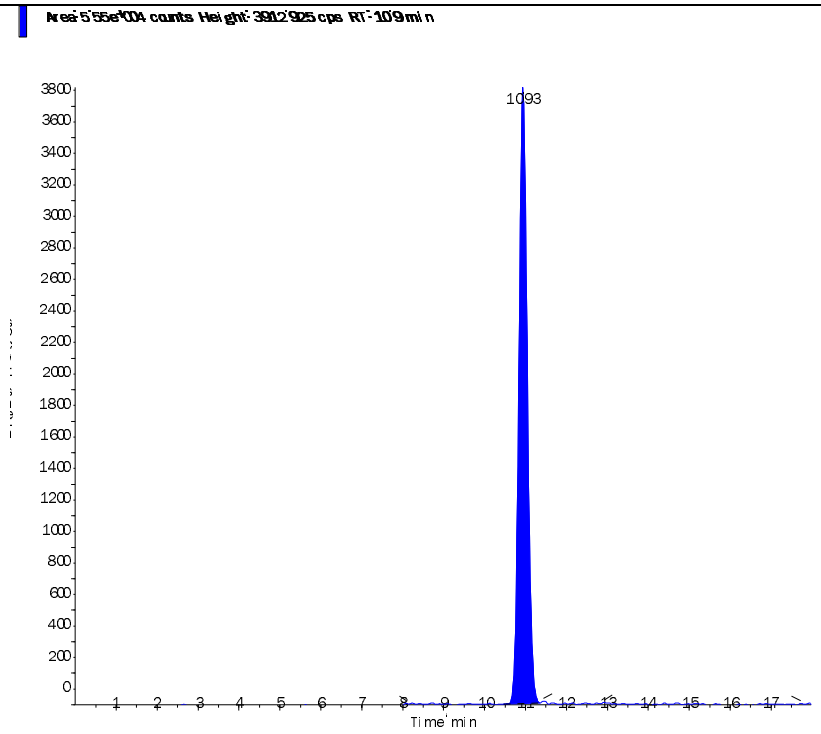
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 10.90 (11.10) min Calculated conc: 1.09 ng/ml Area Ratio: 0.065 Sample Type: (Quality Control)	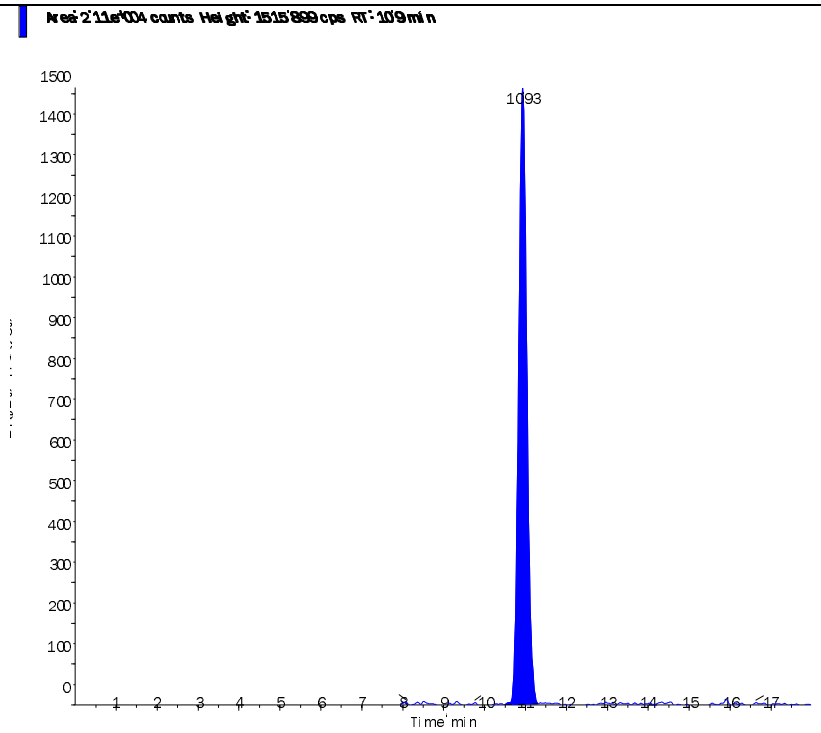

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Data File	LM29873.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/27/2015 4:36:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525192-07 MRL (0.2ug/L)	**Injection Vial**	3.00
Data File	LM29873.wiff	**Injection Volume**	10.00
Acquisition Date	5/27/2015 4:36:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525192-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.920e+05	11.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	9.150e+03	11.10	N/A	0.198
Perchlorate conf	3.720e+03	11.10	N/A	0.209

O18LP (Internal Standard)

RT (Exp. RT): 11.10(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

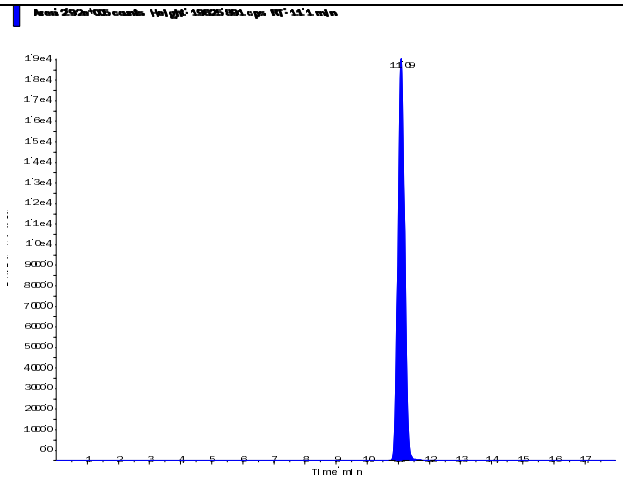

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.10 (11.10) min Calculated conc: 0.198 ng/ml Area Ratio: 0.031 Sample Type: (Unknown)	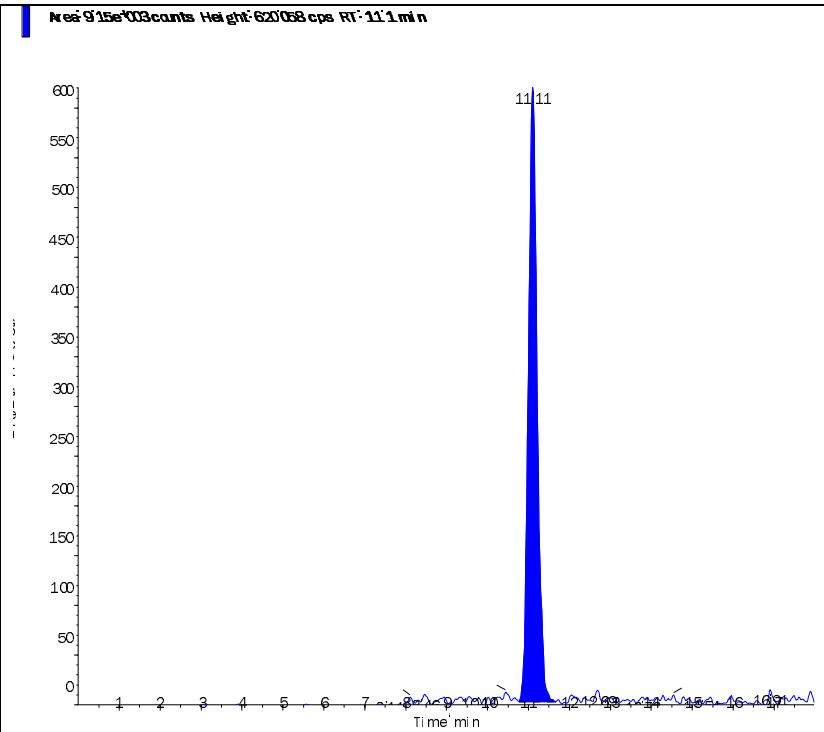
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.10 (11.10) min Calculated conc: 0.209 ng/ml Area Ratio: 0.013 Sample Type: (Unknown)	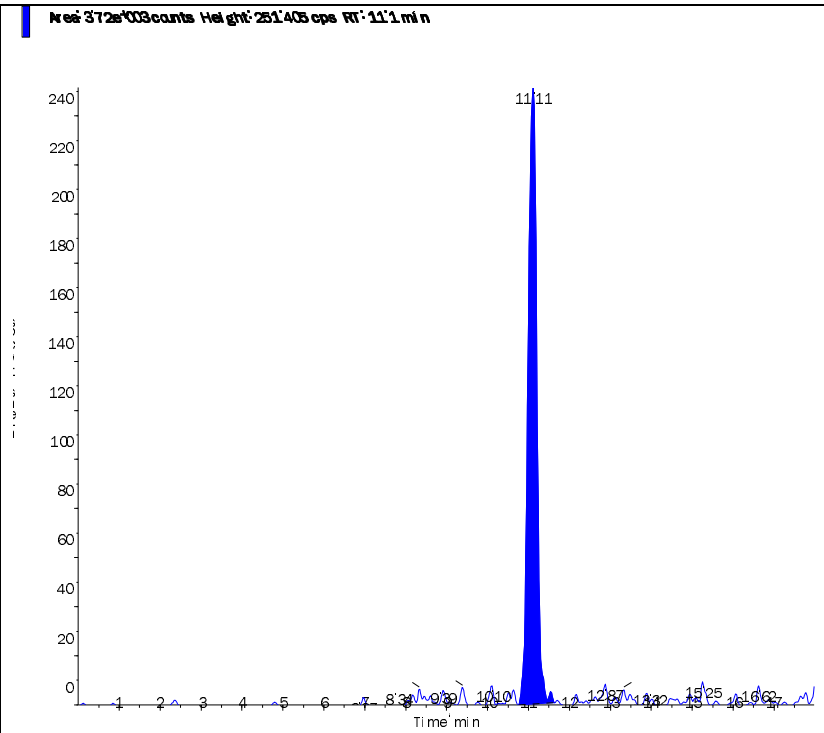

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Data File	LM29885.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/27/2015 8:34:11 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525192-08 MRL (0.2ug/L)	**Injection Vial**	3.00
Data File	LM29885.wiff	**Injection Volume**	10.00
Acquisition Date	5/27/2015 8:34:11 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525192-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.070e+05	11.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.020e+04	11.10	N/A	0.21
Perchlorate conf	3.730e+03	11.10	N/A	0.199

O18LP (Internal Standard)

RT (Exp. RT): 11.10(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

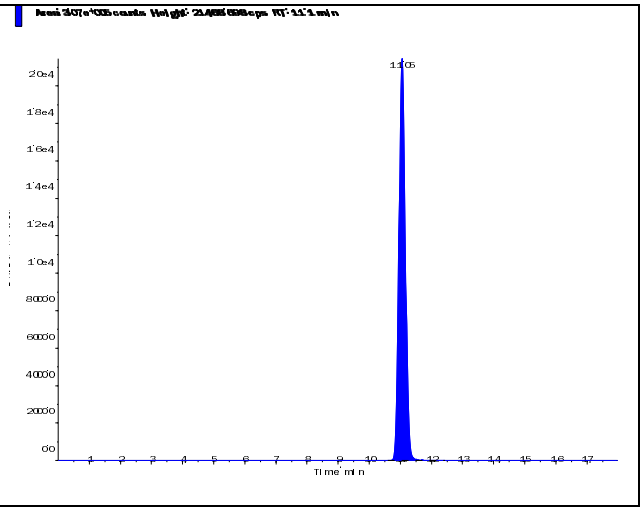

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.10 (11.10) min Calculated conc: 0.21 ng/ml Area Ratio: 0.033 Sample Type: (Unknown)	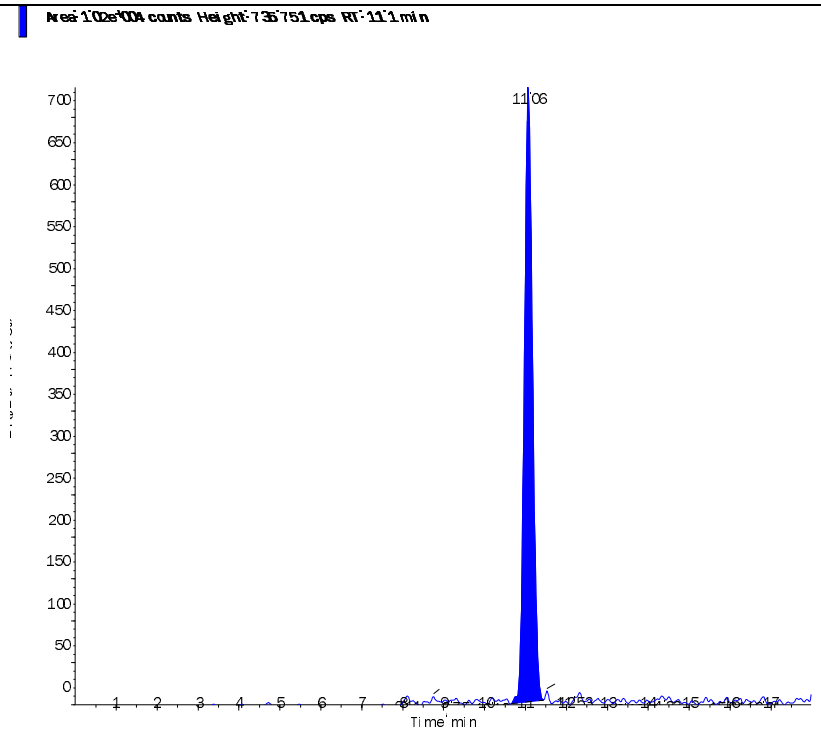
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.10 (11.10) min Calculated conc: 0.199 ng/ml Area Ratio: 0.012 Sample Type: (Unknown)	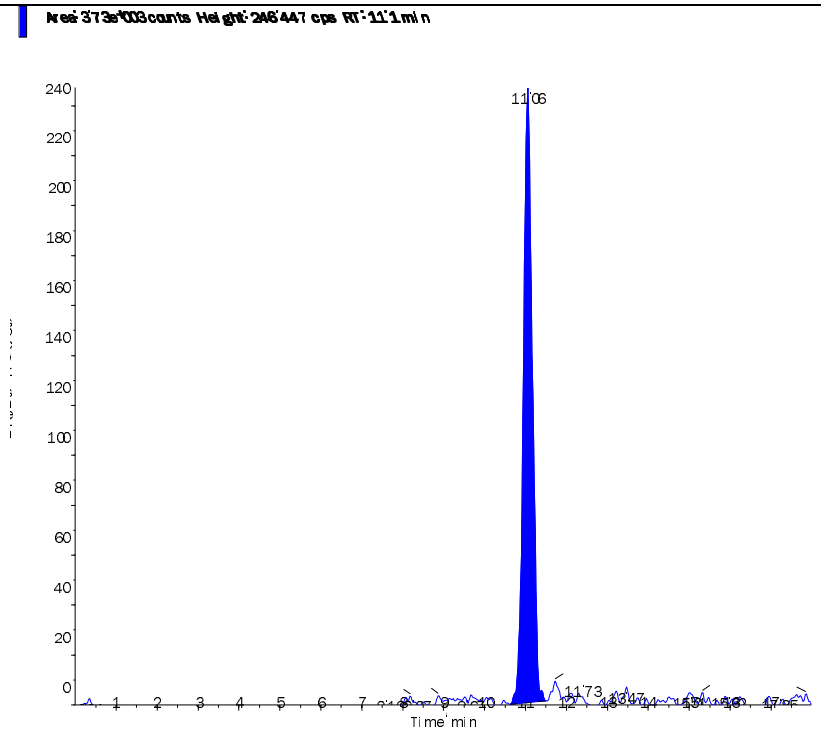

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Data File	LM29898.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 12:40:18 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525192-09 MRL (0.2ug/L)	**Injection Vial**	3.00
Data File	LM29898.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 12:40:18 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525192-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.250e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.080e+04	11.00	N/A	0.21
Perchlorate conf	3.790e+03	11.00	N/A	0.19

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

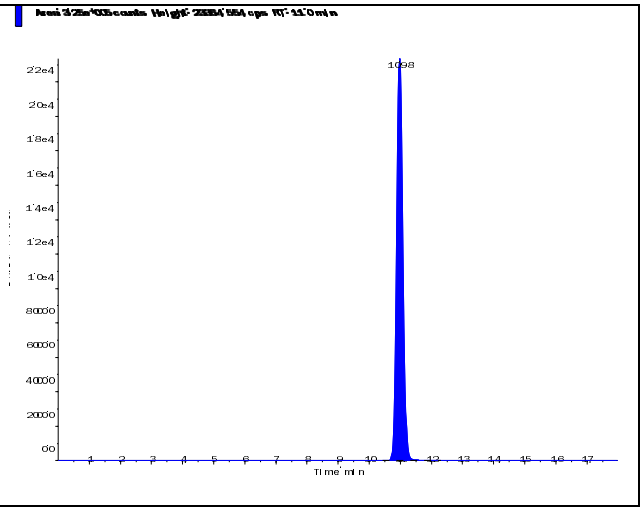

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.00 (11.10) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.033
Sample Type:	(Unknown)

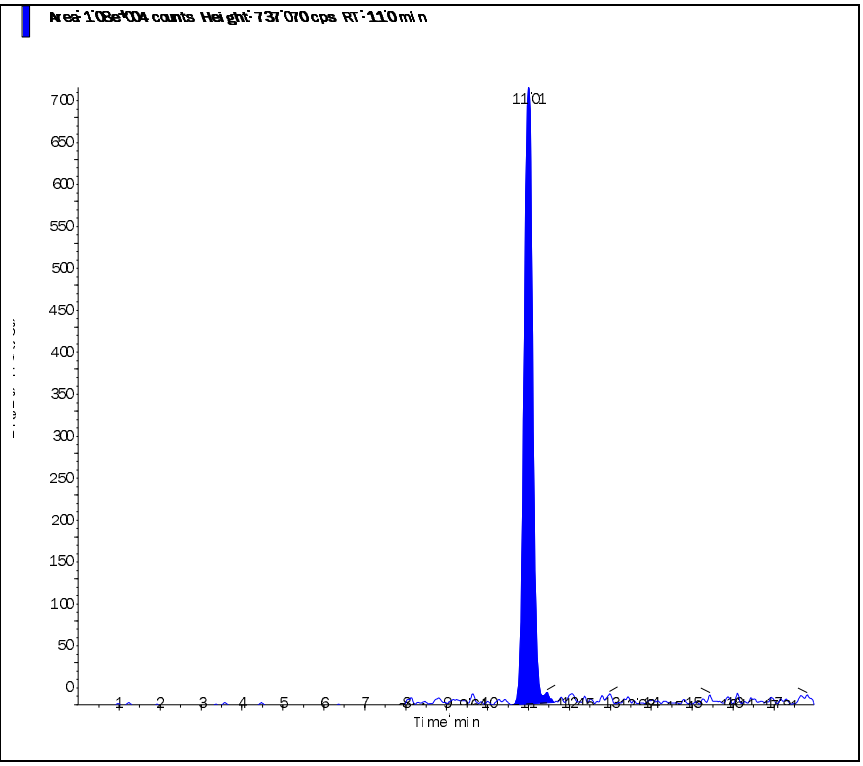

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.00 (11.10) min
Calculated conc:	0.19 ng/ml
Area Ratio:	0.012
Sample Type:	(Unknown)

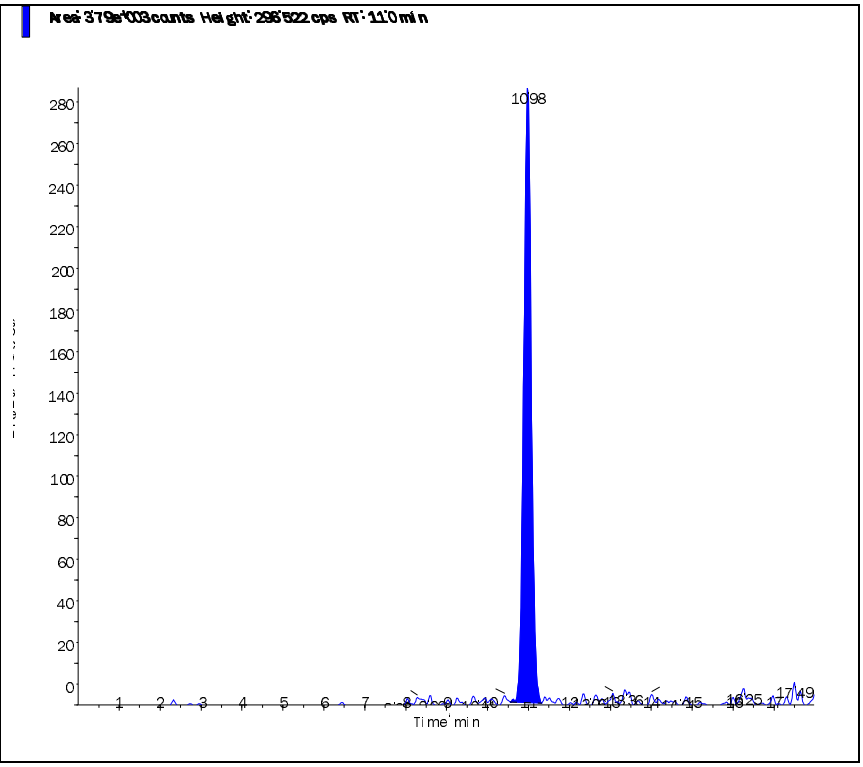

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Data File	LM29911.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 4:46:20 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525192-10 MRL (0.2ug/L)	**Injection Vial**	3.00
Data File	LM29911.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 4:46:20 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525192-10	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.440e+05	10.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.180e+04	10.90	N/A	0.217
Perchlorate conf	4.140e+03	11.00	N/A	0.197

O18LP (Internal Standard)

RT (Exp. RT): 10.90(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

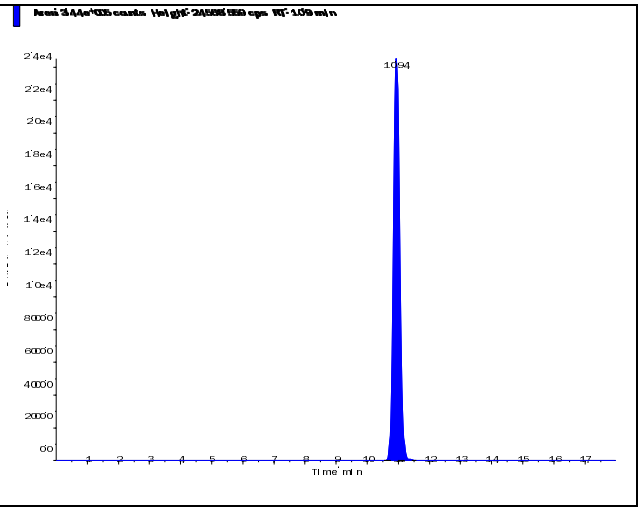

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.90 (11.10) min
Calculated conc:	0.217 ng/ml
Area Ratio:	0.034
Sample Type:	(Unknown)

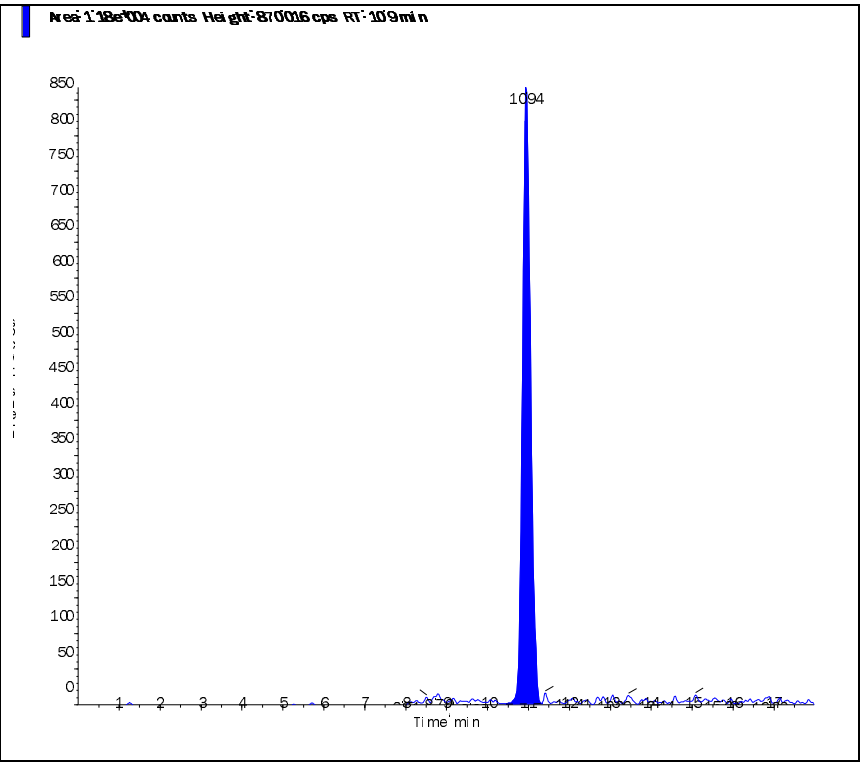

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.00 (11.10) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.012
Sample Type:	(Unknown)

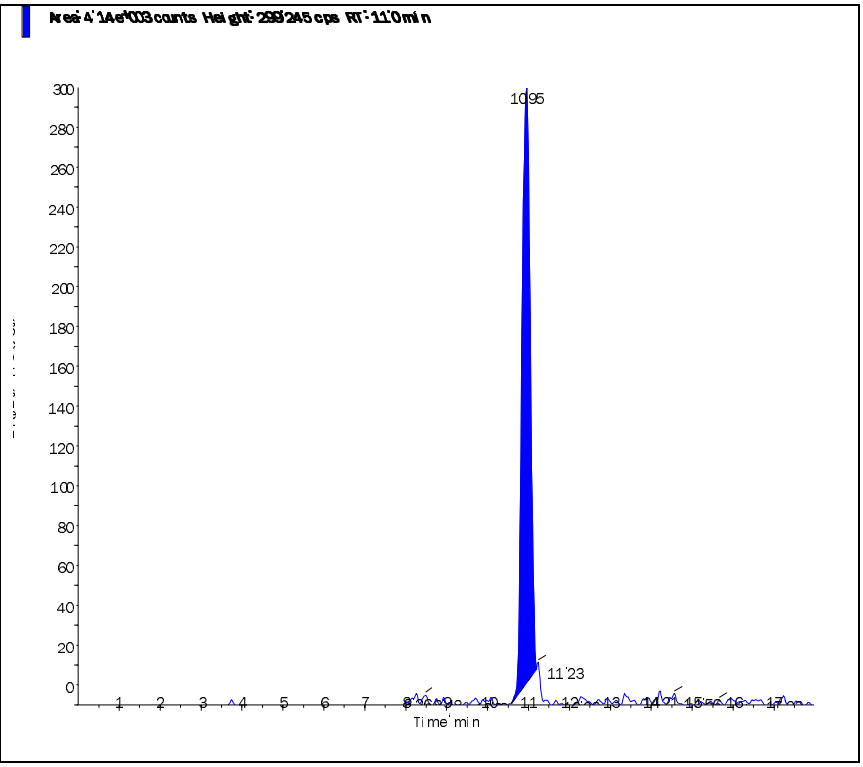

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Data File	LM29871.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/27/2015 3:58:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525212-01 CCB	**Injection Vial**	1.00
Data File	LM29871.wiff	**Injection Volume**	10.00
Acquisition Date	5/27/2015 3:58:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525212-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.010e+05	11.40	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 11.40(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

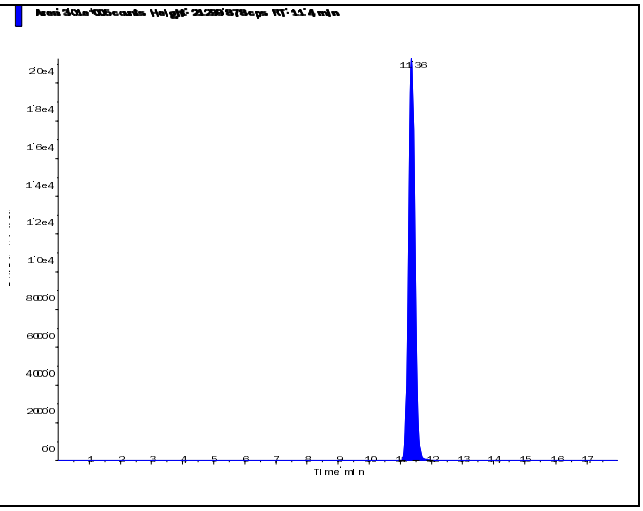

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (11.10) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	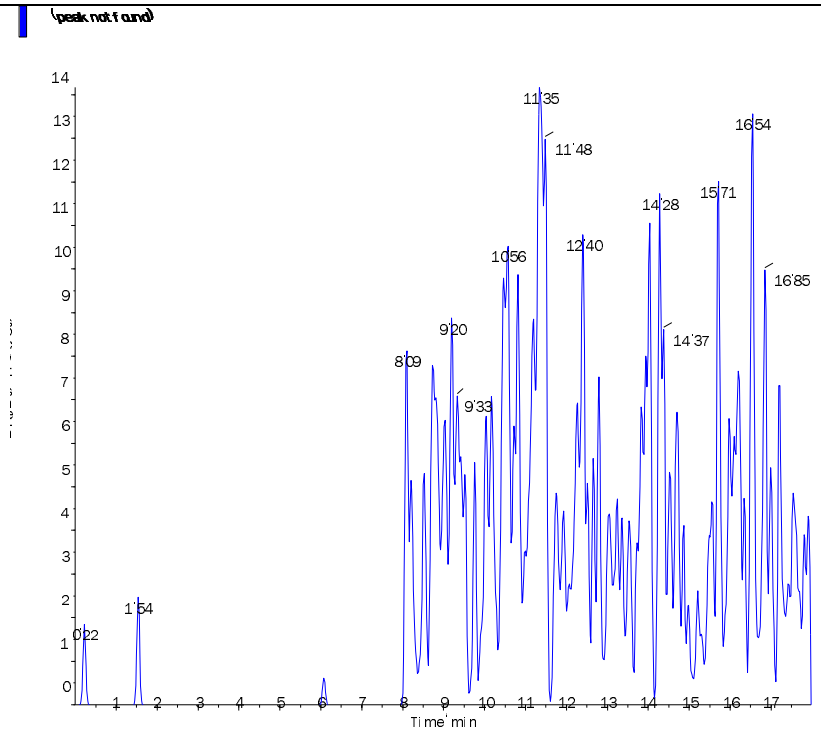
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (11.10) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	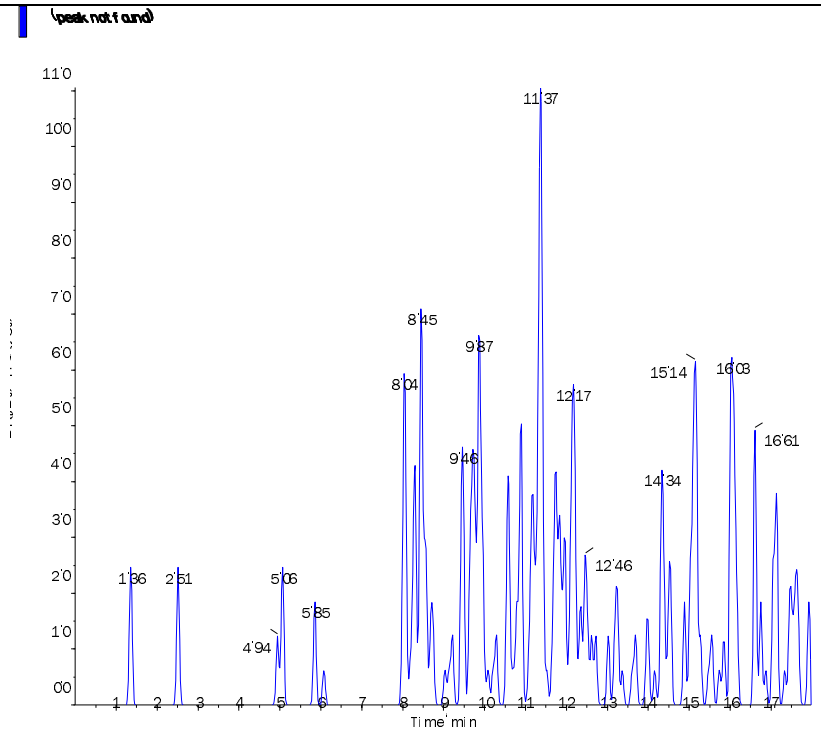

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Printed: 5/28/2015 5:03 PM

Data File	LM29886.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/27/2015 8:53:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525212-04 CCB	**Injection Vial**	1.00
Data File	LM29886.wiff	**Injection Volume**	10.00
Acquisition Date	5/27/2015 8:53:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525212-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.090e+05	11.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.040e+02	11.10	N/A	0.0045
Perchlorate conf	1.910e+02	11.10	N/A	0.0032

O18LP (Internal Standard)

RT (Exp. RT): 11.10(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

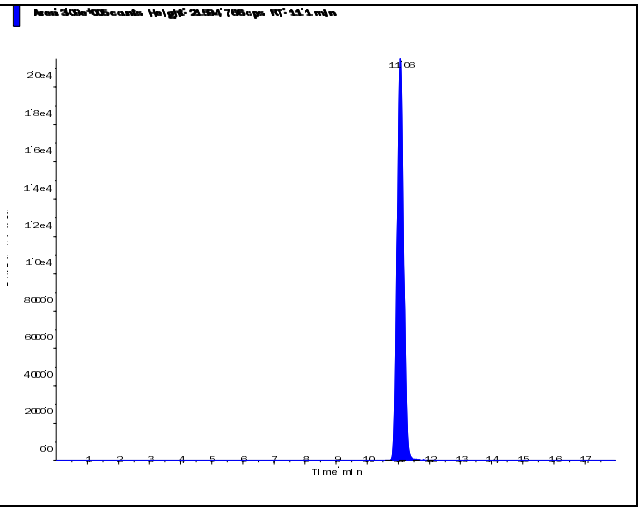

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.10 (11.10) min
Calculated conc:	0.0045 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

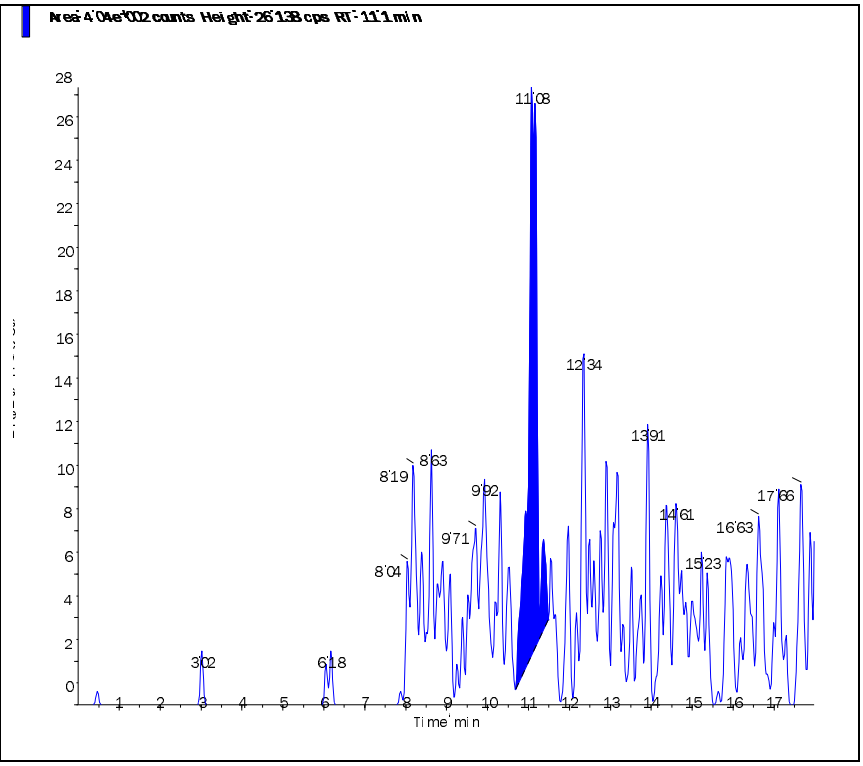

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.10 (11.10) min
Calculated conc:	0.0032 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

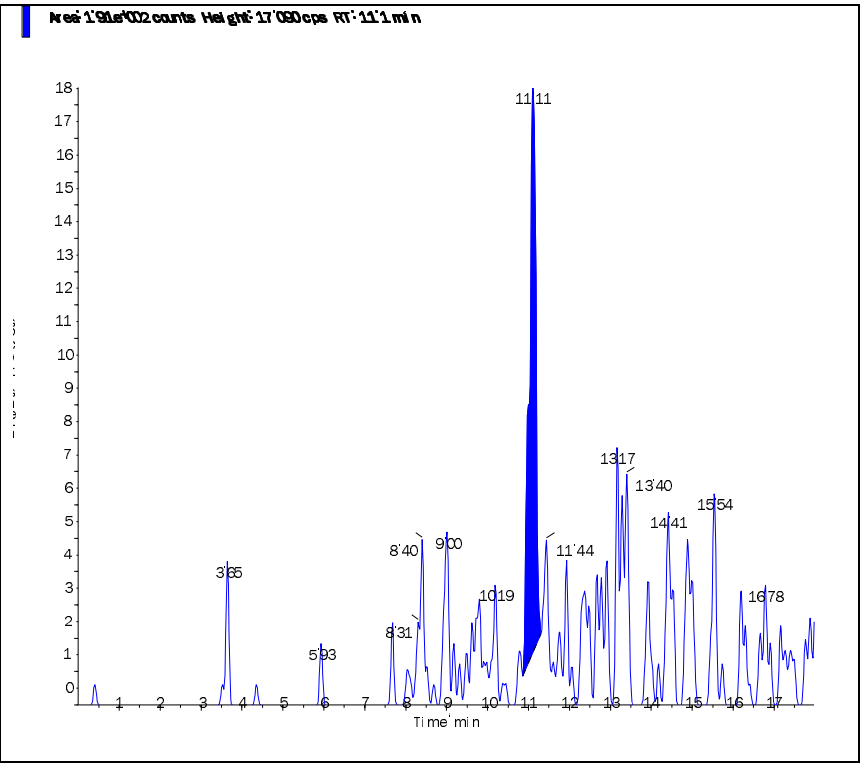

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/28/2015 5:08 PM

Data File	LM29900.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 1:18:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525212-06 CCB	**Injection Vial**	1.00
Data File	LM29900.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 1:18:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525212-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.320e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.630e+02	10.90	N/A	0.0012
Perchlorate conf	1.890e+02	11.00	N/A	0.0023

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

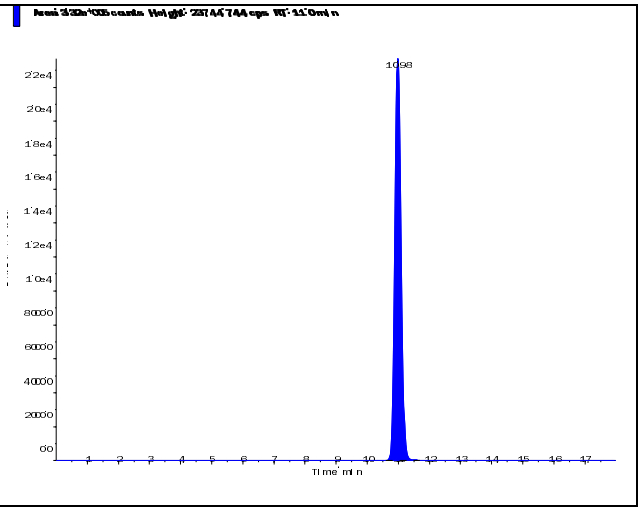

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/28/2015 5:08 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.90 (11.10) min
Calculated conc:	0.0012 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

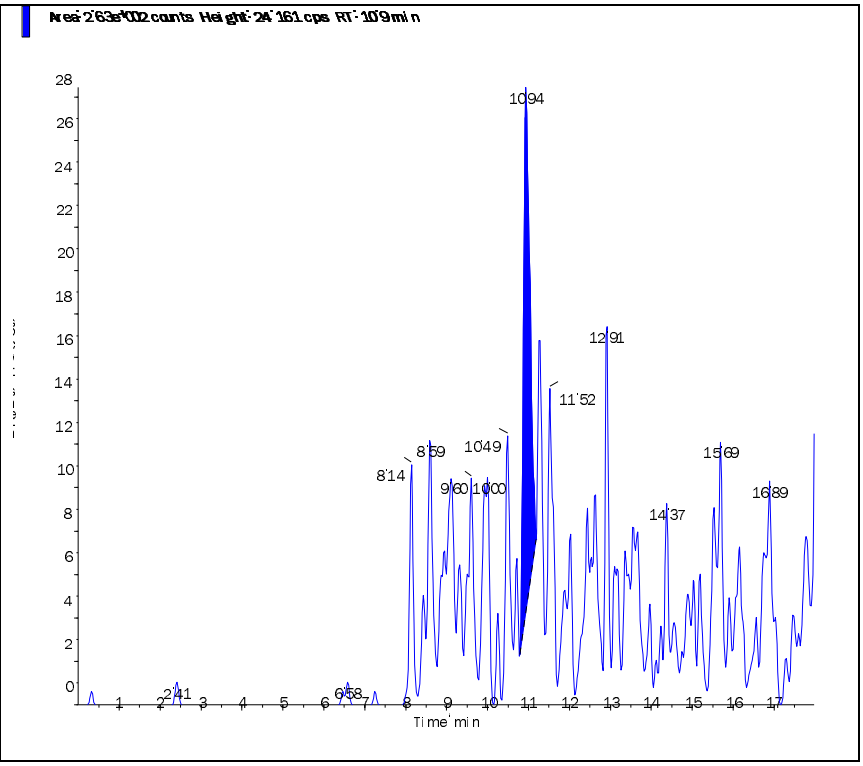

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.00 (11.10) min
Calculated conc:	0.0023 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

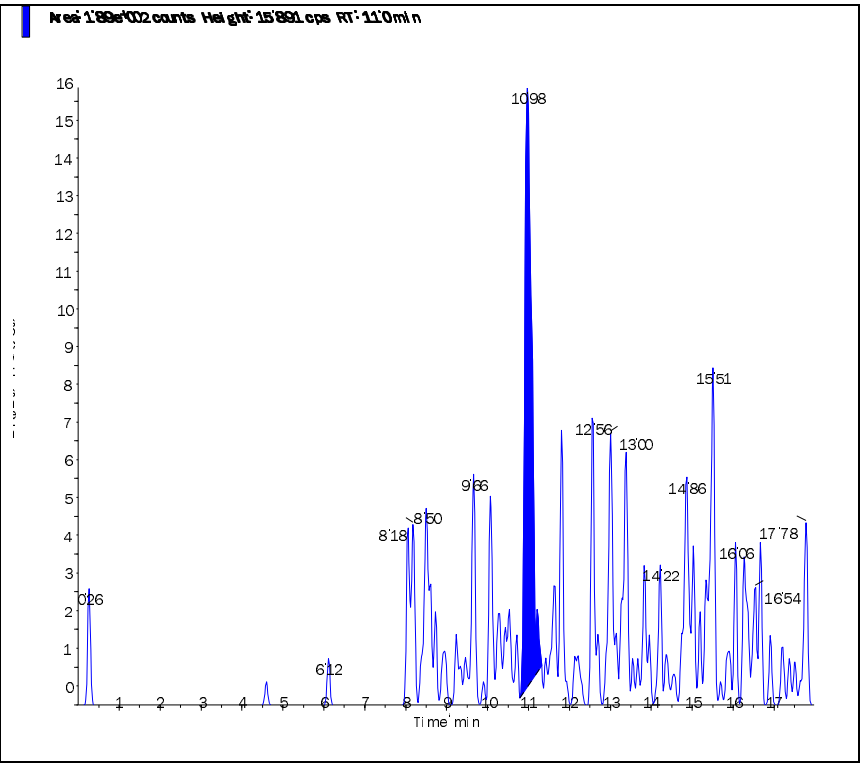

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Created with Analyst Reporter
Printed: 5/28/2015 5:12 PM

Data File	LM29913.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 5:24:11 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525212-08 CCB	**Injection Vial**	1.00
Data File	LM29913.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 5:24:11 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525212-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.570e+05	10.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.660e+02	11.00	N/A	0.0027
Perchlorate conf	2.720e+02	11.00	N/A	0.0056

O18LP (Internal Standard)

RT (Exp. RT): 10.90(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

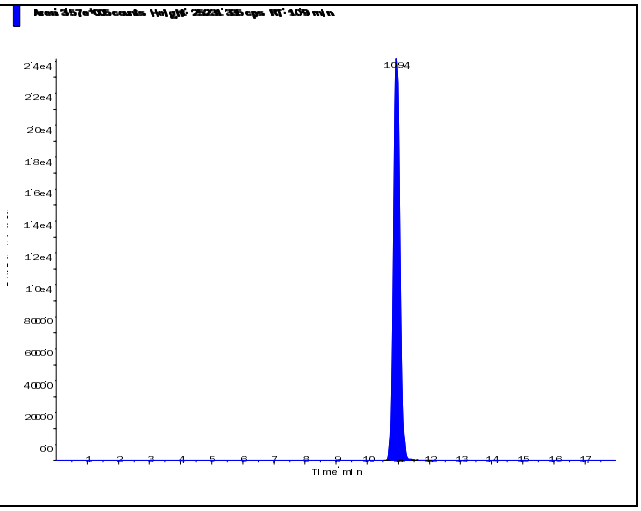

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.00 (11.10) min
Calculated conc:	0.0027 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

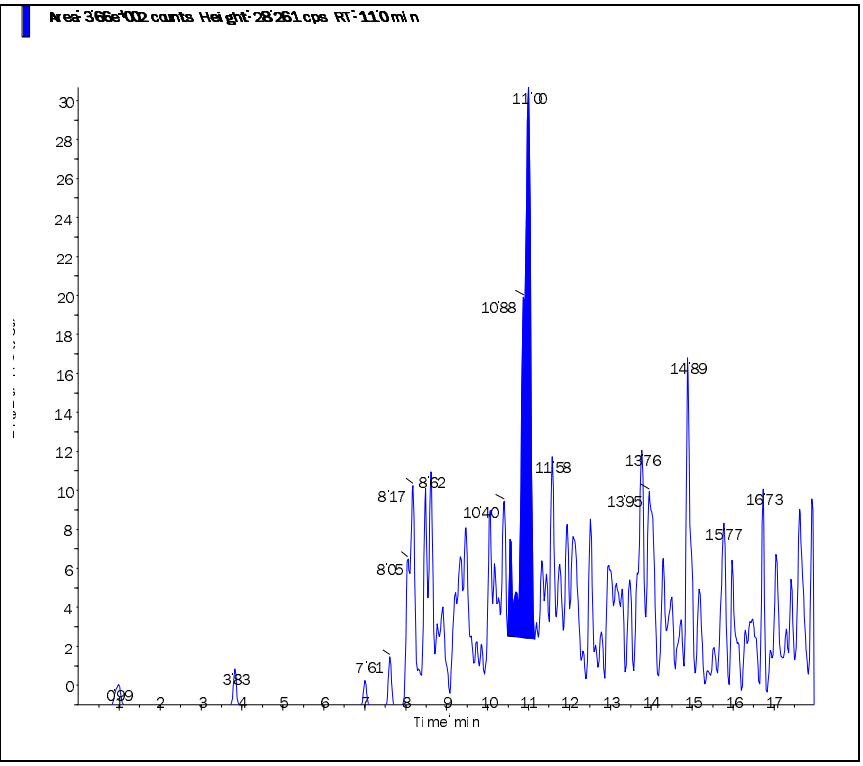

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.00 (11.10) min
Calculated conc:	0.0056 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

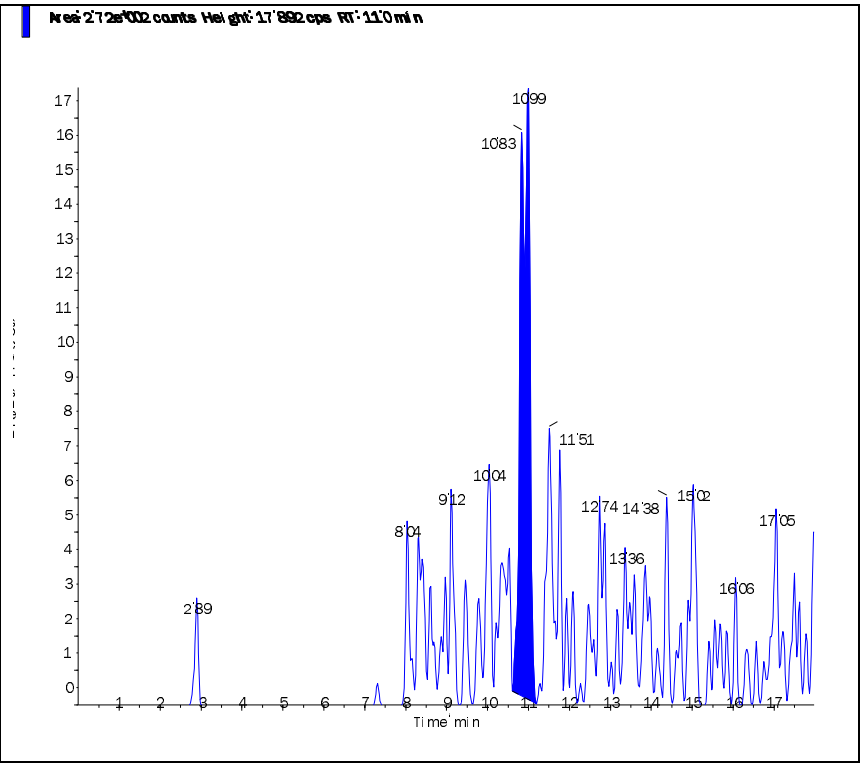

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Created with Analyst Reporter
Printed: 5/28/2015 4:59 PM

Data File	LM29874.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/27/2015 4:55:15 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525192-01 MCT (0.2ug/L)	**Injection Vial**	10.00
Data File	LM29874.wiff	**Injection Volume**	10.00
Acquisition Date	5/27/2015 4:55:15 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525192-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD69913	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.150e+05	10.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	9.720e+03	10.90	N/A	0.194
Perchlorate conf	4.000e+03	10.90	N/A	0.208

O18LP (Internal Standard)

RT (Exp. RT): 10.90(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

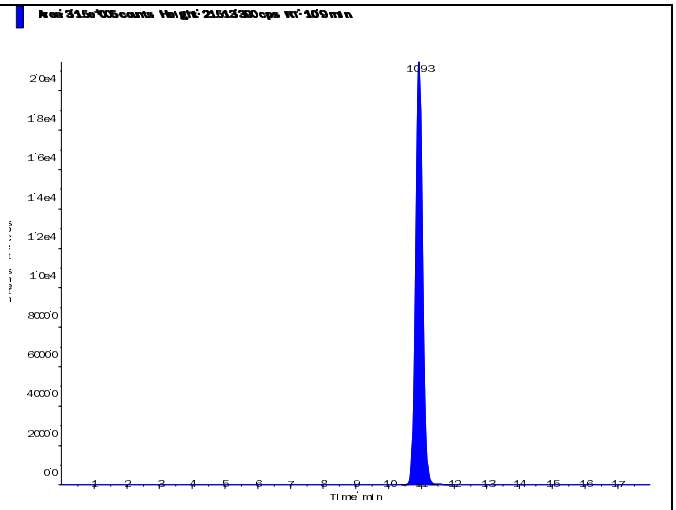

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Created with Analyst Reporter
Printed: 5/28/2015 4:59 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.90 (11.10) min Calculated conc: 0.194 ng/ml Area Ratio: 0.031 Sample Type: (Unknown)	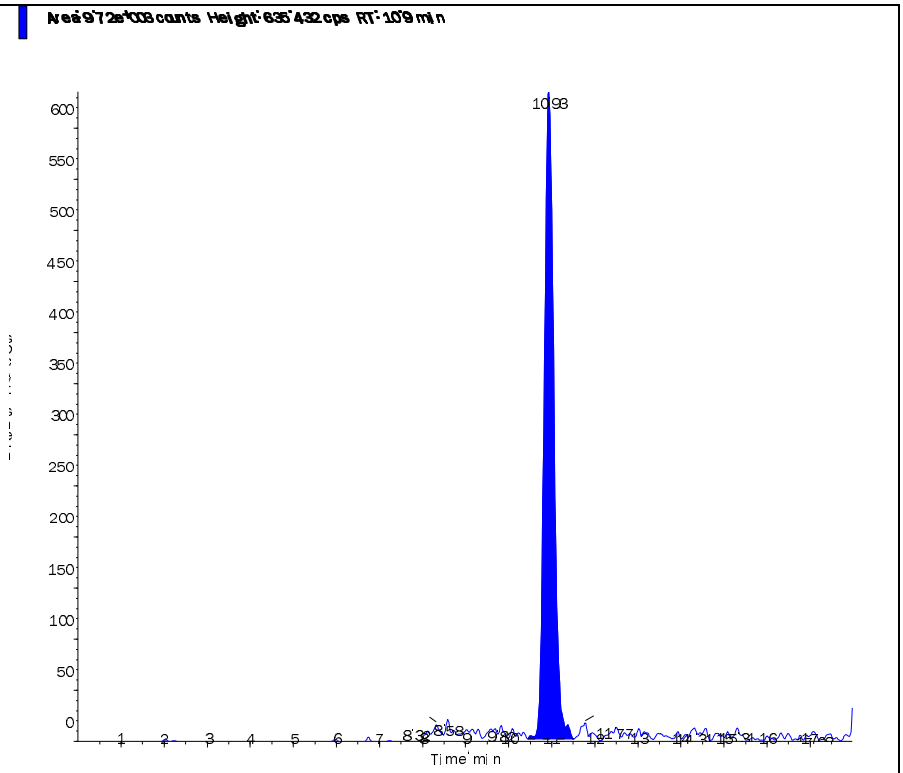
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 10.90 (11.10) min Calculated conc: 0.208 ng/ml Area Ratio: 0.013 Sample Type: (Unknown)	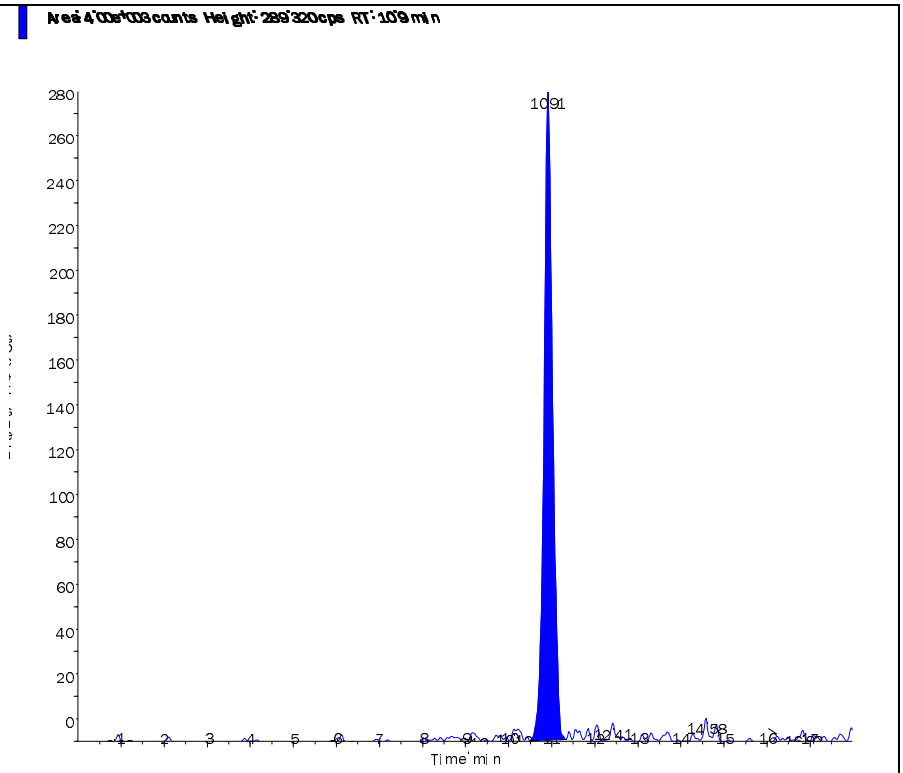

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2.2.1.5 Raw QC Data

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Created with Analyst Reporter
Printed: 5/28/2015 4:59 PM

Data File	LM29875.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/27/2015 5:14:11 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525192-02 BLANK	**Injection Vial**	11.00
Data File	LM29875.wiff	**Injection Volume**	10.00
Acquisition Date	5/27/2015 5:14:11 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525192-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.980e+05	11.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 11.10(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

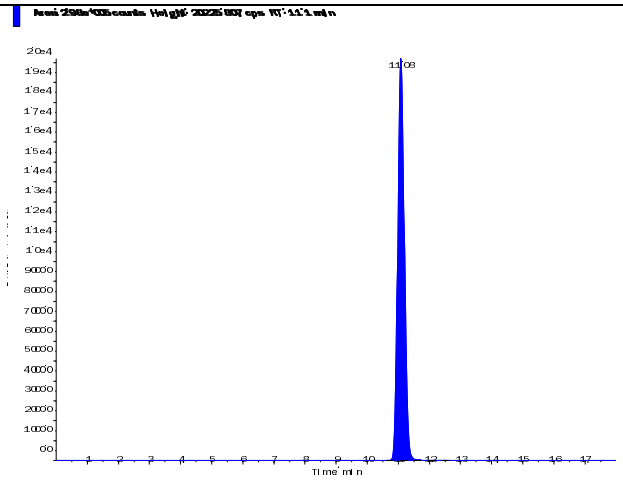

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (11.10) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

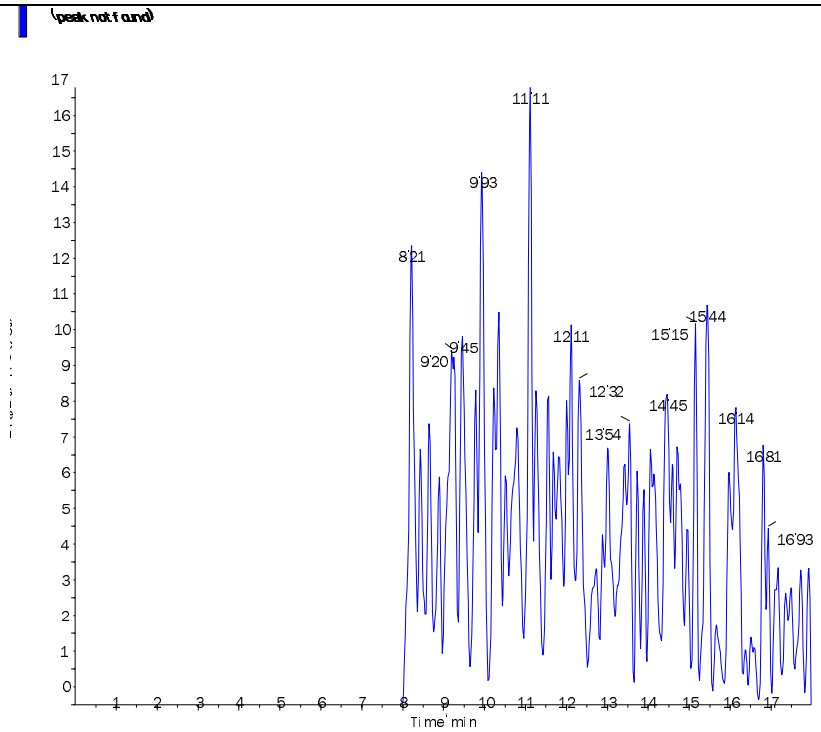

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (11.10) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

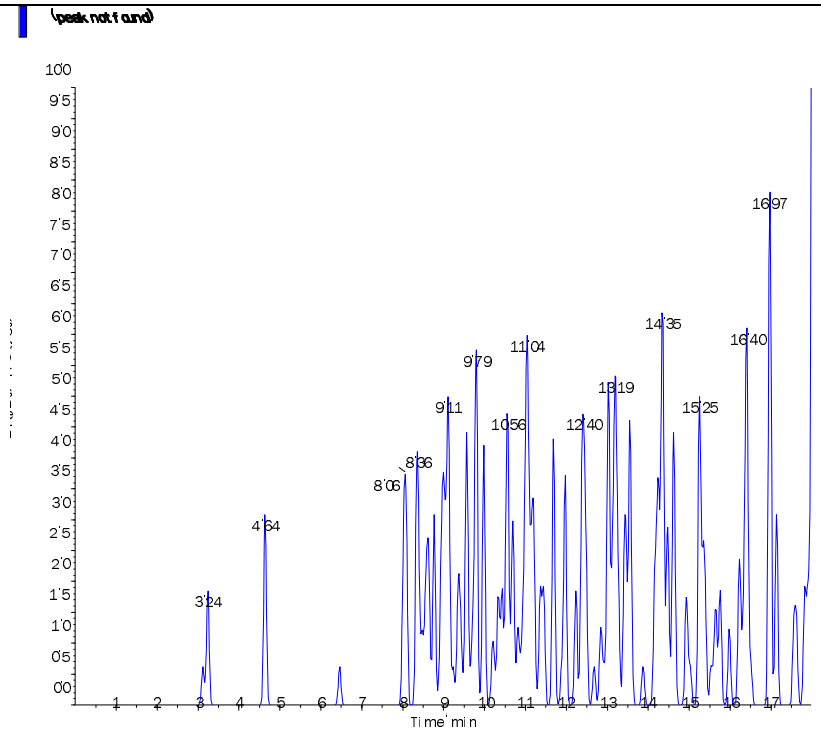

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Created with Analyst Reporter
Printed: 5/28/2015 5:00 PM

Data File	LM29876.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/27/2015 5:33:08 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525192-03 LCS (0.2ug/L)	**Injection Vial**	12.00
Data File	LM29876.wiff	**Injection Volume**	10.00
Acquisition Date	5/27/2015 5:33:08 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525192-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD69913	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.060e+05	11.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	9.920e+03	11.10	N/A	0.204
Perchlorate conf	3.630e+03	11.10	N/A	0.194

O18LP (Internal Standard)

RT (Exp. RT): 11.10(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

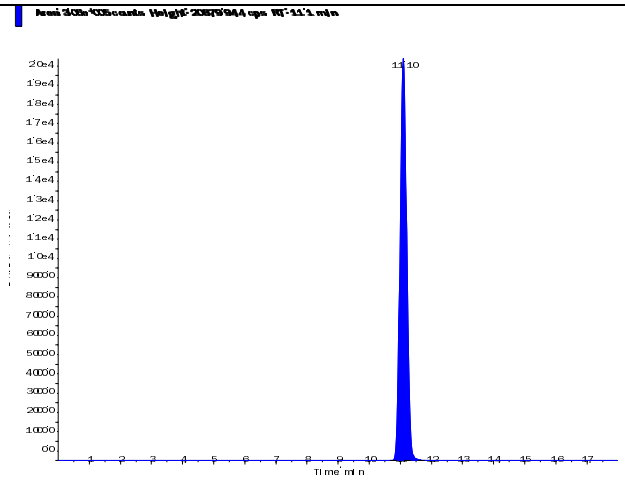

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.10 (11.10) min Calculated conc: 0.204 ng/ml Area Ratio: 0.032 Sample Type: (Unknown)	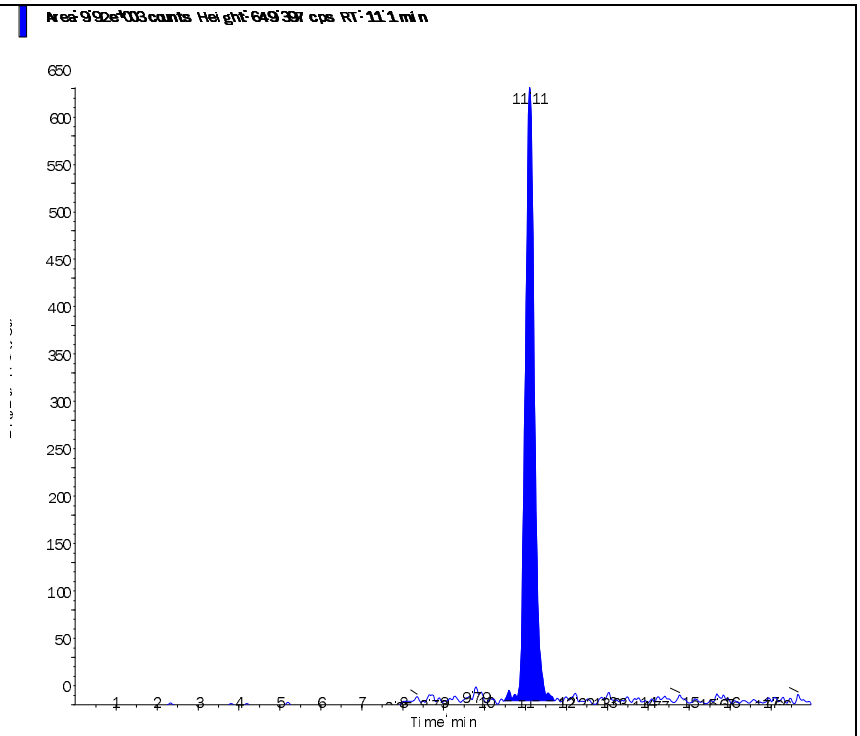
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.10 (11.10) min Calculated conc: 0.194 ng/ml Area Ratio: 0.012 Sample Type: (Unknown)	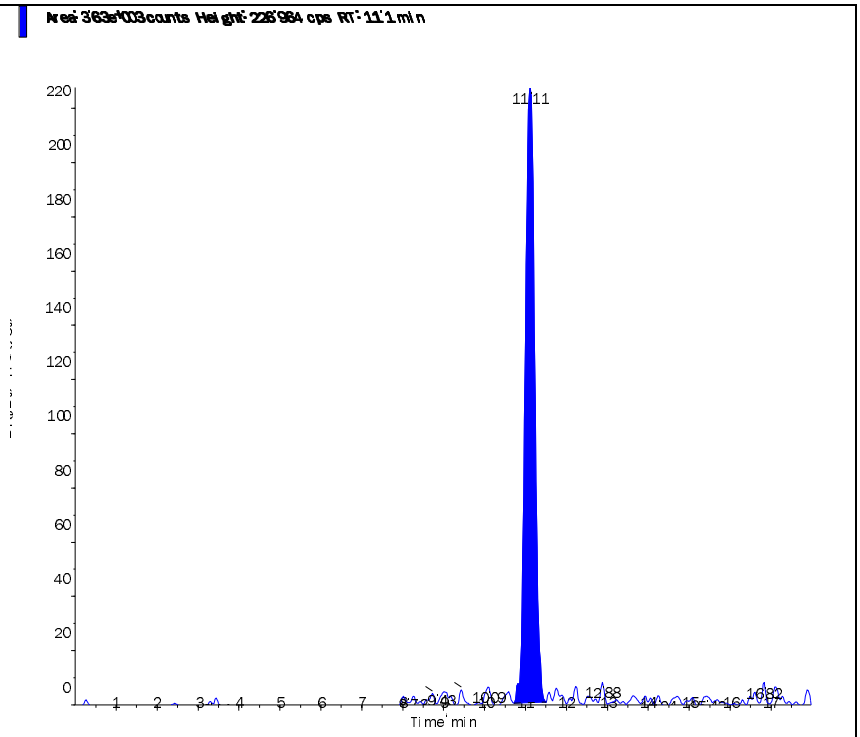

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3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
May 29, 2015

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001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK
EPT - ETHAN P. TIDD
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
May 29, 2015

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL/MDL).
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count
TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.

Microbac Laboratories Inc.
List of Valid Qualifiers
May 29, 2015

Qualkey: DOD

TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Mark Heaston
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD	pH:	
Project Name/Location:	Longhorn		
Project Number:	60256135.0002.6A		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	PARCHLORATE	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
	GWP1A-050815			5/8/15	0930		✓	W	4	✓	✓					
	GWP1-050815			5/8/15	0940		✓	W	4	✓	✓					
	TRIP BLANK															

Site 05

Comments: STANDARD TAT

Relinquished by: (Signature) Scott Beesinger	Date 5/8/15	Time 1400	Received by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)

Microbac OVD
Received: 05/09/2015 11:07
By: BRIAN OGDEN 221000069528

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15050604
Account: 2551
Project: 2551.096
Samples: 3
Due Date: 22-MAY-2015

Samplenum	Container ID	Products
L15050604-01	569238	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	11-MAY-2015 11:53	CLS		
2	ANALYZ	V1	ORG4	12-MAY-2015 07:58	AWE	CLS	
3	STORE	ORG4	A1	26-MAY-2015 07:52	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	ORG4	11-MAY-2015 11:53	CLS		
2	STORE	ORG4	A1	26-MAY-2015 07:52	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	11-MAY-2015 11:53	CLS		
2	ANALYZ	V1	ORG4	12-MAY-2015 07:58	AWE	CLS	
3	STORE	ORG4	A1	26-MAY-2015 07:52	CLS	AWE	

Samplenum	Container ID	Products
L15050604-01	569239	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	11-MAY-2015 11:53	CLS		
2	ANALYZ	W1	SEM	26-MAY-2015 09:43	JWR	CLS	
3	STORE	SEM	A1	29-MAY-2015 13:32	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15050604
Account: 2551
Project: 2551.096
Samples: 3
Due Date: 22-MAY-2015

Samplenum	Container ID	Products
L15050604-02	569240	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	11-MAY-2015 11:53	CLS		
2	ANALYZ	V1	ORG4	12-MAY-2015 07:58	AWE	CLS	
3	STORE	ORG4	A1	26-MAY-2015 07:52	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	11-MAY-2015 11:53	CLS		
2	ANALYZ	V1	ORG4	12-MAY-2015 07:58	AWE	CLS	
3	STORE	ORG4	A1	26-MAY-2015 07:52	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	11-MAY-2015 11:53	CLS		
2	ANALYZ	V1	ORG4	12-MAY-2015 07:58	AWE	CLS	
3	STORE	ORG4	A1	26-MAY-2015 07:52	CLS	AWE	

Samplenum	Container ID	Products
L15050604-02	569241	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	11-MAY-2015 11:53	CLS		
2	ANALYZ	W1	SEM	26-MAY-2015 09:43	JWR	CLS	
3	STORE	SEM	A1	29-MAY-2015 13:32	CLS	JWR	

Samplenum	Container ID	Products
L15050604-03	569242	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	11-MAY-2015 11:53	CLS		
2	ANALYZ	V1	ORG4	12-MAY-2015 07:58	AWE	CLS	
3	STORE	ORG4	A1	26-MAY-2015 07:52	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	ORG4	11-MAY-2015 11:53	CLS		
2	STORE	ORG4	A1	26-MAY-2015 07:52	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - May 26, 2015

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVL NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Formate (HPLC-UV)
Propionaldehyde (HPLC-UV)
Fluoroborate (ISE)
n-Butane (RSK175)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVL MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL MSV0I/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVL RSKOI/GC-FID

Acetylene
Propane

OVL HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVL HPLC12/HPLC/UV
Acetate

SOLID AND HAZARDOUS CHEMICALS

OVL MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVL MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide

Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L15051303

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on June 08 2015

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00112096	H	3.0		J2317161629	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
50WW13-052015	L15051303-01	05/20/2015 08:30	05/21/2015 09:41
50WW13FF-052015	L15051303-02	05/20/2015 08:30	05/21/2015 09:41
50WW14-052015	L15051303-03	05/20/2015 09:45	05/21/2015 09:41
50WW14FF-052015	L15051303-04	05/20/2015 09:45	05/21/2015 09:41
50WW11-052015	L15051303-05	05/20/2015 11:00	05/21/2015 09:41
50WW11FF-052015	L15051303-06	05/20/2015 11:00	05/21/2015 09:41
50WW06-052015	L15051303-07	05/20/2015 13:15	05/21/2015 09:41
50WW06FF-052015	L15051303-08	05/20/2015 13:15	05/21/2015 09:41
50WW12-052015	L15051303-09	05/20/2015 14:40	05/21/2015 09:41
50WW12FF-052015	L15051303-10	05/20/2015 14:40	05/21/2015 09:41
50WW23-052015	L15051303-11	05/20/2015 15:55	05/21/2015 09:41
50WW23FF-052015	L15051303-12	05/20/2015 15:55	05/21/2015 09:41
TRIP BLANK	L15051303-13	05/20/2015 00:01	05/21/2015 09:41

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L15051303
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG524936, WG525056	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-06-01 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden	Franci Bolden	Analyst I	2015-06-01 15:47:13

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG524936, WG525056	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-06-01 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG524936, WG525056	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-06-01 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		X			1
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG524936, WG525056	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-06-01 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			2
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG524936, WG525056	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-06-01 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG524936, WG525056	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-06-01 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) 2-Chlorotoluene was below the LCL in LCS2 in WG524936 on HPMS8 on 05/23/2015.
2) Bromomethane exceeded the UCL in CCV in WG524935 on HPMS8 on 05/23/2015.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	WG524756, WG524855, WG524992	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-06-01 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden	Franci Bolden	Analyst I	2015-06-01 15:58:07

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	WG524756, WG524855, WG524992	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-06-01 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	WG524756, WG524855, WG524992	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-06-01 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	WG524756, WG524855, WG524992	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-06-01 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	WG524756, WG524855, WG524992	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-06-01 00:00:00		

Method detection limit (MDL) studies					
Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	WG524756, WG524855, WG524992	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-06-01 00:00:00		

accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There were no exceptions.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG525193	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-05-29 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2015-05-29 16:53:17

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG525193	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-05-29 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG525193	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-05-29 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG525193	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-05-29 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG525193	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-05-29 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG525193	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-05-29 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG524813	**Reviewer Name:**	Maren Beery
LRC Date:	2015-06-08 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Maren Beery	Maren Beery	Metals Supervisor	2015-06-08 20:26:57

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG524813	**Reviewer Name:**	Maren Beery
LRC Date:	2015-06-08 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?			X		
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG524813	**Reviewer Name:**	Maren Beery
LRC Date:	2015-06-08 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG524813	**Reviewer Name:**	Maren Beery
LRC Date:	2015-06-08 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG524813	**Reviewer Name:**	Maren Beery
LRC Date:	2015-06-08 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG524813	**Reviewer Name:**	Maren Beery
LRC Date:	2015-06-08 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG524728	**Reviewer Name:**	Maren Beery
LRC Date:	2015-06-08 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Maren Beery	Maren Beery	Metals Supervisor	2015-06-08 20:21:41

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG524728	**Reviewer Name:**	Maren Beery
LRC Date:	2015-06-08 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG524728	**Reviewer Name:**	Maren Beery
LRC Date:	2015-06-08 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				ER#1
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG524728	**Reviewer Name:**	Maren Beery
LRC Date:	2015-06-08 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG524728	**Reviewer Name:**	Maren Beery
LRC Date:	2015-06-08 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG524728	**Reviewer Name:**	Maren Beery
LRC Date:	2015-06-08 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - Due to high levels of target analyte, client samples 02, 04, 08 and 12 were analyzed at dilutions for manganese.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG524674	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-05-21 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Adriane Steed	Adriane Steed		2015-05-22 15:17:38

RG-366/TRRP-13 May 2010 **ID:** 6377

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG524674	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-05-21 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?	X				
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG524674	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-05-21 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG524674	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-05-21 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG524674	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-05-21 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG524674	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-05-21 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. Fractions -01,-03,-05,-07,-09,-11 were analyzed at dilutions only due to their high analyte concentrations (Cl and/or SO4) which were over 200 ppm. Any sample that has a single anion load greater than 200 ppm (or a total anion load greater than 400 ppm) will be diluted in order to prevent damage to the IC from repeated overloading of the analytical column and oversaturation of the suppressor membranes.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG525233, WG525327	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-29 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-05-29 14:27:45

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG525233, WG525327	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-29 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG525233, WG525327	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-29 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG525233, WG525327	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-29 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG525233, WG525327	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-29 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG525233, WG525327	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-29 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG525144	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-29 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-05-29 14:28:43

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG525144	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-29 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG525144	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-29 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG525144	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-29 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG525144	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-29 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG525144	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-29 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	S
Prep Batch Number(s):	WG524848	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-29 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-05-29 14:26:57

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	S
Prep Batch Number(s):	WG524848	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-29 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	S
Prep Batch Number(s):	WG524848	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-29 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	S
Prep Batch Number(s):	WG524848	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-29 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	S
Prep Batch Number(s):	WG524848	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-29 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	S
Prep Batch Number(s):	WG524848	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-29 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG524525	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-29 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-05-29 14:29:26

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG524525	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-29 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG524525	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-29 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG524525	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-29 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG524525	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-29 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

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Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051303
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG524525	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-29 00:00:00		

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Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW13-052015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/12/2015 21:08
Workgroup #:	WG524936	**Analyst:**	FJB	**Run Date:**	05/24/2015 01:06
Collect Date:	05/20/2015 08:30	**Dilution:**	1	**File ID:**	8M404894
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.406	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.78		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	0.978	J	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	10.7		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.554	J	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.1	85	115	
1,2-Dichloroethane-d4	97.4	70	120	
Toluene-d8	97.7	85	120	
4-Bromofluorobenzene	96.5	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW13-052015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/12/2015 21:08
Workgroup #:	WG525056	**Analyst:**	TMB	**Run Date:**	05/26/2015 15:14
Collect Date:	05/20/2015 08:30	**Dilution:**	10	**File ID:**	8M404913
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Trichloroethene	79-01-6	433		10.0	5.00	2.50

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	99.5	70	120	
Toluene-d8	97.1	85	120	
4-Bromofluorobenzene	96.0	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-01	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW13-052015	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG524756	**Analyst:**	JDS	**Run Date:**	05/22/2015 13:33
Collect Date:	05/20/2015 08:30	**Dilution:**	1	**File ID:**	16G47572
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	121000		10000	5000	2500
Methane	74-82-8	2.71	J	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW13-052015	**Prep Method:**	6850	**Prep Date:**	05/27/2015 16:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/27/2015 15:10
Workgroup #:	WG525193	**Analyst:**	JWR	**Run Date:**	05/28/2015 14:46
Collect Date:	05/20/2015 08:30	**Dilution:**	100	**File ID:**	1LM.LM29942
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	126		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L15051303-01	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW13-052015	**Prep Method:**	9056	**Prep Date:**	05/21/2015 15:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG524674	**Analyst:**	ALS	**Run Date:**	05/21/2015 17:12
Collect Date:	05/20/2015 08:30	**Dilution:**	5	**File ID:**	I1_052115-07
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	1.00	U	2.00	1.00	0.500
Nitrite	14797-65-0	0.850	J	2.00	1.00	0.500
Sulfate	14808-79-8	319		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-01	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW13-052015	**Prep Method:**	9056	**Prep Date:**	05/21/2015 15:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG524674	**Analyst:**	ALS	**Run Date:**	05/21/2015 17:30
Collect Date:	05/20/2015 08:30	**Dilution:**	20	**File ID:**	I1_052115-08
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	360		8.00	4.00	2.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW13-052015	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	05/28/2015 08:41
Workgroup #:	WG525233	**Analyst:**	DCM	**Run Date:**	05/28/2015 08:54
Collect Date:	05/20/2015 08:30	**Dilution:**	2	**File ID:**	S2150528001.029
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	318		80.0	40.0	20.0

Certificate of Analysis

Sample #:	L15051303-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW13-052015	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	05/27/2015 08:42
Workgroup #:	WG525144	**Analyst:**	DCM	**Run Date:**	05/27/2015 08:45
Collect Date:	05/20/2015 08:30	**Dilution:**	1	**File ID:**	S2150527001.012
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.228	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-01	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW13-052015	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG524848	**Analyst:**	EPT	**Run Date:**	05/22/2015 14:50
Collect Date:	05/20/2015 08:30	**Dilution:**	1	**File ID:**	ET.1505221450-14
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-01	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW13-052015	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG524525	**Analyst:**	EPT	**Run Date:**	05/22/2015 11:58
Collect Date:	05/20/2015 08:30	**Dilution:**	3	**File ID:**	TC05212015.038
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	25.6		6.00	3.00	1.50

Certificate of Analysis

Sample #:	L15051303-02	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	50WW13FF-052015	**Prep Method:**	3015	**Prep Date:**	05/22/2015 13:10
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	05/27/2015 08:53
Workgroup #:	WG525150	**Analyst:**	KHR	**Run Date:**	05/27/2015 10:05
Collect Date:	05/20/2015 08:30	**Dilution:**	1	**File ID:**	P2.052715.100525
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.242		0.200	0.100	0.0500

Certificate of Analysis

Sample #:	L15051303-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW13FF-052015	**Prep Method:**	3015	**Prep Date:**	05/22/2015 08:55
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/05/2015 10:20
Workgroup #:	WG525403	**Analyst:**	BKT	**Run Date:**	06/05/2015 11:02
Collect Date:	05/20/2015 08:30	**Dilution:**	5	**File ID:**	NI.060515.110233
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.133		0.0200	0.0100	0.00500

Certificate of Analysis

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15051303-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW14-052015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/12/2015 21:08
Workgroup #:	WG525056	**Analyst:**	TMB	**Run Date:**	05/26/2015 17:38
Collect Date:	05/20/2015 09:45	**Dilution:**	1	**File ID:**	8M404918
Sample Tag:	02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	5.66		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	6.05		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	94.6	85	120	
4-Bromofluorobenzene	93.0	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-03	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW14-052015	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG524756	**Analyst:**	JDS	**Run Date:**	05/22/2015 13:44
Collect Date:	05/20/2015 09:45	**Dilution:**	1	**File ID:**	16G47573
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	2.21	J	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-03	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW14-052015	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG524992	**Analyst:**	JDS	**Run Date:**	05/26/2015 13:28
Collect Date:	05/20/2015 09:45	**Dilution:**	5	**File ID:**	16G47624
Sample Tag:	DL02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	416000		50000	25000	12500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW14-052015	**Prep Method:**	6850	**Prep Date:**	05/27/2015 16:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/27/2015 15:10
Workgroup #:	WG525193	**Analyst:**	JWR	**Run Date:**	05/28/2015 10:08
Collect Date:	05/20/2015 09:45	**Dilution:**	1	**File ID:**	1LM.LM29928
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.06		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15051303-03	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW14-052015	**Prep Method:**	9056	**Prep Date:**	05/21/2015 15:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG524674	**Analyst:**	ALS	**Run Date:**	05/21/2015 17:48
Collect Date:	05/20/2015 09:45	**Dilution:**	5	**File ID:**	I1_052115-09
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	1.00	U	2.00	1.00	0.500
Nitrite	14797-65-0	0.730	J	2.00	1.00	0.500
Sulfate	14808-79-8	378		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-03	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW14-052015	**Prep Method:**	9056	**Prep Date:**	05/21/2015 15:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG524674	**Analyst:**	ALS	**Run Date:**	05/21/2015 18:05
Collect Date:	05/20/2015 09:45	**Dilution:**	20	**File ID:**	I1_052115-10
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	369		8.00	4.00	2.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW14-052015	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	05/28/2015 08:41
Workgroup #:	WG525233	**Analyst:**	DCM	**Run Date:**	05/28/2015 08:55
Collect Date:	05/20/2015 09:45	**Dilution:**	1	**File ID:**	S2150528001.030
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	271		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L15051303-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW14-052015	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	05/27/2015 08:42
Workgroup #:	WG525144	**Analyst:**	DCM	**Run Date:**	05/27/2015 08:46
Collect Date:	05/20/2015 09:45	**Dilution:**	1	**File ID:**	S2150527001.013
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	1.66		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15051303-03	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW14-052015	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG524848	**Analyst:**	EPT	**Run Date:**	05/22/2015 14:50
Collect Date:	05/20/2015 09:45	**Dilution:**	1	**File ID:**	ET.1505221450-15
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-03	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW14-052015	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG524525	**Analyst:**	EPT	**Run Date:**	05/22/2015 12:24
Collect Date:	05/20/2015 09:45	**Dilution:**	5	**File ID:**	TC05212015.039
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	36.8		10.0	5.00	2.50

Certificate of Analysis

Sample #:	L15051303-04	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	50WW14FF-052015	**Prep Method:**	3015	**Prep Date:**	05/22/2015 13:10
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	05/27/2015 08:53
Workgroup #:	WG525150	**Analyst:**	KHR	**Run Date:**	05/27/2015 10:07
Collect Date:	05/20/2015 09:45	**Dilution:**	1	**File ID:**	P2.052715.100750
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	8.80		0.200	0.100	0.0500

Certificate of Analysis

Sample #:	L15051303-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW14FF-052015	**Prep Method:**	3015	**Prep Date:**	05/22/2015 08:55
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/05/2015 10:20
Workgroup #:	WG525403	**Analyst:**	BKT	**Run Date:**	06/05/2015 11:09
Collect Date:	05/20/2015 09:45	**Dilution:**	25	**File ID:**	NI.060515.110949
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.557		0.100	0.0500	0.0250

Certificate of Analysis

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15051303-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW11-052015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/12/2015 21:08
Workgroup #:	WG524936	**Analyst:**	FJB	**Run Date:**	05/24/2015 02:04
Collect Date:	05/20/2015 11:00	**Dilution:**	1	**File ID:**	8M404896
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.300	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.20		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.03	J	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	2.40		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.275	J	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	230		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	98.7	70	120	
Toluene-d8	98.7	85	120	
4-Bromofluorobenzene	94.5	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-05	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW11-052015	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG524756	**Analyst:**	JDS	**Run Date:**	05/22/2015 13:56
Collect Date:	05/20/2015 11:00	**Dilution:**	1	**File ID:**	16G47574
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	3.82	J	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-05	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW11-052015	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG524992	**Analyst:**	JDS	**Run Date:**	05/26/2015 13:40
Collect Date:	05/20/2015 11:00	**Dilution:**	5	**File ID:**	16G47625
Sample Tag:	DL02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	515000		50000	25000	12500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW11-052015	**Prep Method:**	6850	**Prep Date:**	05/27/2015 16:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/27/2015 15:10
Workgroup #:	WG525193	**Analyst:**	JWR	**Run Date:**	05/28/2015 10:27
Collect Date:	05/20/2015 11:00	**Dilution:**	2000	**File ID:**	1LM.LM29929
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1140		800	400	200

Certificate of Analysis

Sample #:	L15051303-05	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW11-052015	**Prep Method:**	9056	**Prep Date:**	05/21/2015 15:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG524674	**Analyst:**	ALS	**Run Date:**	05/21/2015 18:23
Collect Date:	05/20/2015 11:00	**Dilution:**	3	**File ID:**	I1_052115-11
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	0.600	U	1.20	0.600	0.300
Nitrite	14797-65-0	0.309	J	1.20	0.600	0.300
Sulfate	14808-79-8	305		6.00	3.00	1.50

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-05	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW11-052015	**Prep Method:**	9056	**Prep Date:**	05/21/2015 15:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG524674	**Analyst:**	ALS	**Run Date:**	05/21/2015 18:41
Collect Date:	05/20/2015 11:00	**Dilution:**	20	**File ID:**	I1_052115-12
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	230		8.00	4.00	2.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-05	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW11-052015	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	05/28/2015 08:41
Workgroup #:	WG525233	**Analyst:**	DCM	**Run Date:**	05/28/2015 08:56
Collect Date:	05/20/2015 11:00	**Dilution:**	2	**File ID:**	S2150528001.031
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	308		80.0	40.0	20.0

Certificate of Analysis

Sample #:	L15051303-05	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW11-052015	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	05/27/2015 08:42
Workgroup #:	WG525144	**Analyst:**	DCM	**Run Date:**	05/27/2015 08:46
Collect Date:	05/20/2015 11:00	**Dilution:**	1	**File ID:**	S2150527001.014
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.665		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15051303-05	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW11-052015	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG524848	**Analyst:**	EPT	**Run Date:**	05/22/2015 14:50
Collect Date:	05/20/2015 11:00	**Dilution:**	1	**File ID:**	ET.1505221450-16
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-05	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW11-052015	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG524525	**Analyst:**	EPT	**Run Date:**	05/22/2015 12:51
Collect Date:	05/20/2015 11:00	**Dilution:**	5	**File ID:**	TC05212015.040
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	64.2		10.0	5.00	2.50

Certificate of Analysis

Sample #:	L15051303-06	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	50WW11FF-052015	**Prep Method:**	3015	**Prep Date:**	05/22/2015 13:10
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	05/27/2015 08:53
Workgroup #:	WG525150	**Analyst:**	KHR	**Run Date:**	05/27/2015 10:10
Collect Date:	05/20/2015 11:00	**Dilution:**	1	**File ID:**	P2.052715.101014
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.100	U	0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW11FF-052015	**Prep Method:**	3015	**Prep Date:**	05/22/2015 08:55
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/05/2015 10:20
Workgroup #:	WG525403	**Analyst:**	BKT	**Run Date:**	06/05/2015 11:13
Collect Date:	05/20/2015 11:00	**Dilution:**	1	**File ID:**	NI.060515.111300
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.140		0.00400	0.00200	0.00100

Certificate of Analysis

Sample #:	L15051303-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW06-052015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/12/2015 21:08
Workgroup #:	WG524936	**Analyst:**	FJB	**Run Date:**	05/24/2015 02:32
Collect Date:	05/20/2015 13:15	**Dilution:**	1	**File ID:**	8M404897
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	3.59	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.637	J	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	49.1		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	99.3	70	120	
Toluene-d8	96.0	85	120	
4-Bromofluorobenzene	94.2	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-07	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW06-052015	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG524855	**Analyst:**	JDS	**Run Date:**	05/22/2015 19:10
Collect Date:	05/20/2015 13:15	**Dilution:**	1	**File ID:**	16G47601
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	244000		10000	5000	2500
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW06-052015	**Prep Method:**	6850	**Prep Date:**	05/27/2015 16:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/27/2015 15:10
Workgroup #:	WG525193	**Analyst:**	JWR	**Run Date:**	05/28/2015 10:46
Collect Date:	05/20/2015 13:15	**Dilution:**	1000	**File ID:**	1LM.LM29930
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3000		400	200	100

Certificate of Analysis

Sample #:	L15051303-07	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW06-052015	**Prep Method:**	9056	**Prep Date:**	05/21/2015 15:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG524674	**Analyst:**	ALS	**Run Date:**	05/21/2015 18:59
Collect Date:	05/20/2015 13:15	**Dilution:**	5	**File ID:**	I1_052115-13
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	1.00	U	2.00	1.00	0.500
Nitrite	14797-65-0	0.650	J	2.00	1.00	0.500
Sulfate	14808-79-8	157		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-07	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW06-052015	**Prep Method:**	9056	**Prep Date:**	05/21/2015 15:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG524674	**Analyst:**	ALS	**Run Date:**	05/21/2015 19:16
Collect Date:	05/20/2015 13:15	**Dilution:**	10	**File ID:**	I1_052115-14
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	218		4.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-07	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW06-052015	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	05/28/2015 08:41
Workgroup #:	WG525233	**Analyst:**	DCM	**Run Date:**	05/28/2015 08:57
Collect Date:	05/20/2015 13:15	**Dilution:**	1	**File ID:**	S2150528001.032
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	282		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L15051303-07	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW06-052015	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	05/27/2015 08:42
Workgroup #:	WG525144	**Analyst:**	DCM	**Run Date:**	05/27/2015 08:47
Collect Date:	05/20/2015 13:15	**Dilution:**	2	**File ID:**	S2150527001.015
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	1.29		0.800	0.400	0.200

Certificate of Analysis

Sample #:	L15051303-07	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW06-052015	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG524848	**Analyst:**	EPT	**Run Date:**	05/22/2015 14:50
Collect Date:	05/20/2015 13:15	**Dilution:**	1	**File ID:**	ET.1505221450-17
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-07	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW06-052015	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG524525	**Analyst:**	EPT	**Run Date:**	05/22/2015 13:18
Collect Date:	05/20/2015 13:15	**Dilution:**	3	**File ID:**	TC05212015.041
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	7.51		6.00	3.00	1.50

Certificate of Analysis

Sample #:	L15051303-08	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	50WW06FF-052015	**Prep Method:**	3015	**Prep Date:**	05/22/2015 13:10
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	05/27/2015 08:53
Workgroup #:	WG525150	**Analyst:**	KHR	**Run Date:**	05/27/2015 10:13
Collect Date:	05/20/2015 13:15	**Dilution:**	1	**File ID:**	P2.052715.101335
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.100	U	0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW06FF-052015	**Prep Method:**	3015	**Prep Date:**	05/22/2015 08:55
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/05/2015 10:20
Workgroup #:	WG525403	**Analyst:**	BKT	**Run Date:**	06/05/2015 11:38
Collect Date:	05/20/2015 13:15	**Dilution:**	5	**File ID:**	NI.060515.113828
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.192		0.0200	0.0100	0.00500

Certificate of Analysis

Sample #:	L15051303-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW12-052015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/12/2015 21:08
Workgroup #:	WG525056	**Analyst:**	TMB	**Run Date:**	05/26/2015 18:07
Collect Date:	05/20/2015 14:40	**Dilution:**	1	**File ID:**	8M404919
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.283	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.389	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	0.878	J	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	33.9		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	98.2	70	120	
Toluene-d8	97.3	85	120	
4-Bromofluorobenzene	95.3	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-09	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW12-052015	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG524756	**Analyst:**	JDS	**Run Date:**	05/22/2015 14:19
Collect Date:	05/20/2015 14:40	**Dilution:**	1	**File ID:**	16G47576
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	152000		10000	5000	2500
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-09	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW12-052015	**Prep Method:**	6850	**Prep Date:**	05/27/2015 16:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/27/2015 15:10
Workgroup #:	WG525193	**Analyst:**	JWR	**Run Date:**	05/28/2015 11:04
Collect Date:	05/20/2015 14:40	**Dilution:**	10000	**File ID:**	1LM.LM29931
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	59200		4000	2000	1000

Certificate of Analysis

Sample #:	L15051303-09	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW12-052015	**Prep Method:**	9056	**Prep Date:**	05/21/2015 15:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG524674	**Analyst:**	ALS	**Run Date:**	05/21/2015 20:09
Collect Date:	05/20/2015 14:40	**Dilution:**	10	**File ID:**	I1_052115-17
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	2.00	U	4.00	2.00	1.00
Nitrite	14797-65-0	2.84	J	4.00	2.00	1.00
Sulfate	14808-79-8	547		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-09	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW12-052015	**Prep Method:**	9056	**Prep Date:**	05/21/2015 15:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG524674	**Analyst:**	ALS	**Run Date:**	05/21/2015 20:27
Collect Date:	05/20/2015 14:40	**Dilution:**	100	**File ID:**	I1_052115-18
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1050		40.0	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-09	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW12-052015	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	05/28/2015 09:47
Workgroup #:	WG525327	**Analyst:**	DCM	**Run Date:**	05/28/2015 09:55
Collect Date:	05/20/2015 14:40	**Dilution:**	1	**File ID:**	S2150528002.019
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	189		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L15051303-09	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW12-052015	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	05/27/2015 08:42
Workgroup #:	WG525144	**Analyst:**	DCM	**Run Date:**	05/27/2015 08:48
Collect Date:	05/20/2015 14:40	**Dilution:**	2	**File ID:**	S2150527001.016
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	1.10		0.800	0.400	0.200

Certificate of Analysis

Sample #:	L15051303-09	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW12-052015	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG524848	**Analyst:**	EPT	**Run Date:**	05/22/2015 14:50
Collect Date:	05/20/2015 14:40	**Dilution:**	1	**File ID:**	ET.1505221450-18
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-09	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW12-052015	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG524525	**Analyst:**	EPT	**Run Date:**	05/22/2015 14:06
Collect Date:	05/20/2015 14:40	**Dilution:**	3	**File ID:**	TC05212015.044
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	5.38	J	6.00	3.00	1.50

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-10	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	50WW12FF-052015	**Prep Method:**	3015	**Prep Date:**	05/22/2015 13:10
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	05/27/2015 08:53
Workgroup #:	WG525150	**Analyst:**	KHR	**Run Date:**	05/27/2015 10:17
Collect Date:	05/20/2015 14:40	**Dilution:**	1	**File ID:**	P2.052715.101700
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.105	J	0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-10	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW12FF-052015	**Prep Method:**	3015	**Prep Date:**	05/22/2015 08:55
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/05/2015 10:20
Workgroup #:	WG525403	**Analyst:**	BKT	**Run Date:**	06/05/2015 11:41
Collect Date:	05/20/2015 14:40	**Dilution:**	1	**File ID:**	NI.060515.114140
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.107		0.00400	0.00200	0.00100

Certificate of Analysis

Sample #:	L15051303-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW23-052015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/12/2015 21:08
Workgroup #:	WG525056	**Analyst:**	TMB	**Run Date:**	05/26/2015 18:35
Collect Date:	05/20/2015 15:55	**Dilution:**	1	**File ID:**	8M404920
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	99.0	70	120	
Toluene-d8	97.1	85	120	
4-Bromofluorobenzene	95.0	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-11	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW23-052015	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG524756	**Analyst:**	JDS	**Run Date:**	05/22/2015 14:31
Collect Date:	05/20/2015 15:55	**Dilution:**	1	**File ID:**	16G47577
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-11	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW23-052015	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG524992	**Analyst:**	JDS	**Run Date:**	05/26/2015 14:04
Collect Date:	05/20/2015 15:55	**Dilution:**	5	**File ID:**	16G47627
Sample Tag:	DL02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	398000		50000	25000	12500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-11	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW23-052015	**Prep Method:**	6850	**Prep Date:**	05/27/2015 16:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/27/2015 15:10
Workgroup #:	WG525193	**Analyst:**	JWR	**Run Date:**	05/28/2015 15:04
Collect Date:	05/20/2015 15:55	**Dilution:**	10	**File ID:**	1LM.LM29943
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	23.3		4.00	2.00	1.00

Certificate of Analysis

Sample #:	L15051303-11	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW23-052015	**Prep Method:**	9056	**Prep Date:**	05/21/2015 15:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG524674	**Analyst:**	ALS	**Run Date:**	05/21/2015 20:45
Collect Date:	05/20/2015 15:55	**Dilution:**	10	**File ID:**	I1_052115-19
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	2.00	U	4.00	2.00	1.00
Nitrite	14797-65-0	3.65	J	4.00	2.00	1.00
Sulfate	14808-79-8	72.0		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-11	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW23-052015	**Prep Method:**	9056	**Prep Date:**	05/21/2015 15:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG524674	**Analyst:**	ALS	**Run Date:**	05/21/2015 21:02
Collect Date:	05/20/2015 15:55	**Dilution:**	100	**File ID:**	I1_052115-20
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1660		40.0	20.0	10.0

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-11	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW23-052015	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	05/28/2015 09:47
Workgroup #:	WG525327	**Analyst:**	DCM	**Run Date:**	05/28/2015 09:55
Collect Date:	05/20/2015 15:55	**Dilution:**	1	**File ID:**	S2150528002.020
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	206		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L15051303-11	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW23-052015	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	05/27/2015 08:42
Workgroup #:	WG525144	**Analyst:**	DCM	**Run Date:**	05/27/2015 08:49
Collect Date:	05/20/2015 15:55	**Dilution:**	1	**File ID:**	S2150527001.017
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.248	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-11	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW23-052015	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG524848	**Analyst:**	EPT	**Run Date:**	05/22/2015 14:50
Collect Date:	05/20/2015 15:55	**Dilution:**	1	**File ID:**	ET.1505221450-19
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	0.627	J	2.00	1.00	0.500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-11	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW23-052015	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG524525	**Analyst:**	EPT	**Run Date:**	05/22/2015 14:42
Collect Date:	05/20/2015 15:55	**Dilution:**	5	**File ID:**	TC05212015.045
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	22.5		10.0	5.00	2.50

Certificate of Analysis

Sample #:	L15051303-12	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	50WW23FF-052015	**Prep Method:**	3015	**Prep Date:**	05/22/2015 13:10
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	05/27/2015 08:53
Workgroup #:	WG525150	**Analyst:**	KHR	**Run Date:**	05/27/2015 10:30
Collect Date:	05/20/2015 15:55	**Dilution:**	1	**File ID:**	P2.052715.103056
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.0973	J	0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-12	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW23FF-052015	**Prep Method:**	3015	**Prep Date:**	05/22/2015 08:55
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/05/2015 10:20
Workgroup #:	WG525403	**Analyst:**	BKT	**Run Date:**	06/05/2015 11:44
Collect Date:	05/20/2015 15:55	**Dilution:**	5	**File ID:**	NI.060515.114451
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.143		0.0200	0.0100	0.00500

Certificate of Analysis

Sample #:	L15051303-13	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/12/2015 21:08
Workgroup #:	WG525056	**Analyst:**	TMB	**Run Date:**	05/26/2015 15:43
Collect Date:	05/20/2015 00:01	**Dilution:**	1	**File ID:**	8M404914
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	97.0	70	120	
Toluene-d8	95.9	85	120	
4-Bromofluorobenzene	97.2	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW13-052015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/12/2015 21:08
Workgroup #:	WG524936	**Analyst:**	FJB	**Run Date:**	05/24/2015 01:06
Collect Date:	05/20/2015 08:30	**Dilution:**	1	**File ID:**	8M404894
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.406	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.78		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	0.978	J	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	10.7		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.554	J	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	531	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.1	85	115	
1,2-Dichloroethane-d4	97.4	70	120	
Toluene-d8	97.7	85	120	
4-Bromofluorobenzene	96.5	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW13-052015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/12/2015 21:08
Workgroup #:	WG525056	**Analyst:**	TMB	**Run Date:**	05/26/2015 15:14
Collect Date:	05/20/2015 08:30	**Dilution:**	10	**File ID:**	8M404913
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	50.0	U	100	50.0	25.0
Benzene	71-43-2	2.50	U	10.0	2.50	1.25
Bromobenzene	108-86-1	2.50	U	10.0	2.50	1.25
Bromochloromethane	74-97-5	4.00	U	10.0	4.00	2.00
Bromodichloromethane	75-27-4	5.00	U	10.0	5.00	2.50
Bromoform	75-25-2	10.0	U	20.0	10.0	5.00
Bromomethane	74-83-9	10.0	U	20.0	10.0	5.00
2-Butanone	78-93-3	50.0	U	100	50.0	25.0
n-Butylbenzene	104-51-8	5.00	U	10.0	5.00	2.50
sec-Butylbenzene	135-98-8	5.00	U	10.0	5.00	2.50
tert-Butylbenzene	98-06-6	5.00	U	10.0	5.00	2.50
Carbon disulfide	75-15-0	10.0	U	20.0	10.0	5.00
Carbon tetrachloride	56-23-5	5.00	U	10.0	5.00	2.50
Chlorobenzene	108-90-7	2.50	U	10.0	2.50	1.25
Chlorodibromomethane	124-48-1	5.00	U	10.0	5.00	2.50
Chloroethane	75-00-3	10.0	U	20.0	10.0	5.00
Chloroform	67-66-3	2.50	U	10.0	2.50	1.25
Chloromethane	74-87-3	10.0	U	20.0	10.0	5.00
2-Chlorotoluene	95-49-8	2.50	U	10.0	2.50	1.25
4-Chlorotoluene	106-43-4	5.00	U	10.0	5.00	2.50
1,2-Dibromo-3-chloropropane	96-12-8	20.0	U	50.0	20.0	10.0
1,2-Dibromoethane	106-93-4	5.00	U	10.0	5.00	2.50
Dibromomethane	74-95-3	5.00	U	10.0	5.00	2.50
1,2-Dichlorobenzene	95-50-1	2.50	U	10.0	2.50	1.25
1,3-Dichlorobenzene	541-73-1	5.00	U	10.0	5.00	2.50
1,4-Dichlorobenzene	106-46-7	2.50	U	10.0	2.50	1.25
Dichlorodifluoromethane	75-71-8	5.00	U	10.0	5.00	2.50
1,1-Dichloroethane	75-34-3	2.50	U	10.0	2.50	1.25
1,2-Dichloroethane	107-06-2	5.00	U	10.0	5.00	2.50
1,1-Dichloroethene	75-35-4	10.0	U	20.0	10.0	5.00
cis-1,2-Dichloroethene	156-59-2	10.6		10.0	5.00	2.50

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Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	5.00	U	10.0	5.00	2.50
1,2-Dichloropropane	78-87-5	4.00	U	10.0	4.00	2.00
1,3-Dichloropropane	142-28-9	4.00	U	10.0	4.00	2.00
2,2-Dichloropropane	594-20-7	5.00	U	10.0	5.00	2.50
cis-1,3-Dichloropropene	10061-01-5	5.00	U	10.0	5.00	2.50
trans-1,3-Dichloropropene	10061-02-6	10.0	U	20.0	10.0	5.00
1,1-Dichloropropene	563-58-6	5.00	U	10.0	5.00	2.50
Ethylbenzene	100-41-4	5.00	U	10.0	5.00	2.50
2-Hexanone	591-78-6	50.0	U	100	50.0	25.0
Hexachlorobutadiene	87-68-3	5.00	U	10.0	5.00	2.50
Isopropylbenzene	98-82-8	5.00	U	10.0	5.00	2.50
p-Isopropyltoluene	99-87-6	5.00	U	10.0	5.00	2.50
4-Methyl-2-pentanone	108-10-1	50.0	U	100	50.0	25.0
Methylene chloride	75-09-2	5.00	U	10.0	5.00	2.50
Naphthalene	91-20-3	4.00	U	10.0	4.00	2.00
n-Propylbenzene	103-65-1	2.50	U	10.0	2.50	1.25
Styrene	100-42-5	2.50	U	10.0	2.50	1.25
1,1,1,2-Tetrachloroethane	630-20-6	5.00	U	10.0	5.00	2.50
1,1,2,2-Tetrachloroethane	79-34-5	4.00	U	10.0	4.00	2.00
Tetrachloroethene	127-18-4	5.00	U	10.0	5.00	2.50
Toluene	108-88-3	5.00	U	10.0	5.00	2.50
1,2,3-Trichlorobenzene	87-61-6	3.00	U	10.0	3.00	1.50
1,2,4-Trichlorobenzene	120-82-1	4.00	U	10.0	4.00	2.00
1,1,1-Trichloroethane	71-55-6	5.00	U	10.0	5.00	2.50
1,1,2-Trichloroethane	79-00-5	5.00	U	10.0	5.00	2.50
Trichloroethene	79-01-6	433		10.0	5.00	2.50
Trichlorofluoromethane	75-69-4	5.00	U	10.0	5.00	2.50
1,2,3-Trichloropropane	96-18-4	10.0	U	20.0	10.0	5.00
1,2,4-Trimethylbenzene	95-63-6	5.00	U	10.0	5.00	2.50
1,3,5-Trimethylbenzene	108-67-8	5.00	U	10.0	5.00	2.50
Vinyl chloride	75-01-4	5.00	U	10.0	5.00	2.50
o-Xylene	95-47-6	5.00	U	10.0	5.00	2.50
m-,p-Xylene	179601-23-1	10.0	U	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	99.5	70	120	
Toluene-d8	97.1	85	120	
4-Bromofluorobenzene	96.0	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW14-052015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/12/2015 21:08
Workgroup #:	WG525056	**Analyst:**	TMB	**Run Date:**	05/26/2015 17:38
Collect Date:	05/20/2015 09:45	**Dilution:**	1	**File ID:**	8M404918
Sample Tag:	02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	5.66		1.00	0.500	0.250

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Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	6.05		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	94.6	85	120	
4-Bromofluorobenzene	93.0	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW11-052015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/12/2015 21:08
Workgroup #:	WG524936	**Analyst:**	FJB	**Run Date:**	05/24/2015 02:04
Collect Date:	05/20/2015 11:00	**Dilution:**	1	**File ID:**	8M404896
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.300	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.20		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.03	J	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	2.40		1.00	0.500	0.250

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.275	J	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	230		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	98.7	70	120	
Toluene-d8	98.7	85	120	
4-Bromofluorobenzene	94.5	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW06-052015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/12/2015 21:08
Workgroup #:	WG524936	**Analyst:**	FJB	**Run Date:**	05/24/2015 02:32
Collect Date:	05/20/2015 13:15	**Dilution:**	1	**File ID:**	8M404897
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	3.59	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.637	J	1.00	0.500	0.250

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	49.1		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	99.3	70	120	
Toluene-d8	96.0	85	120	
4-Bromofluorobenzene	94.2	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW12-052015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/12/2015 21:08
Workgroup #:	WG525056	**Analyst:**	TMB	**Run Date:**	05/26/2015 18:07
Collect Date:	05/20/2015 14:40	**Dilution:**	1	**File ID:**	8M404919
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.283	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.389	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	0.878	J	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	33.9		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	98.2	70	120	
Toluene-d8	97.3	85	120	
4-Bromofluorobenzene	95.3	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW23-052015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/12/2015 21:08
Workgroup #:	WG525056	**Analyst:**	TMB	**Run Date:**	05/26/2015 18:35
Collect Date:	05/20/2015 15:55	**Dilution:**	1	**File ID:**	8M404920
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

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Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	99.0	70	120	
Toluene-d8	97.1	85	120	
4-Bromofluorobenzene	95.0	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-13	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/12/2015 21:08
Workgroup #:	WG525056	**Analyst:**	TMB	**Run Date:**	05/26/2015 15:43
Collect Date:	05/20/2015 00:01	**Dilution:**	1	**File ID:**	8M404914
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	97.0	70	120	
Toluene-d8	95.9	85	120	
4-Bromofluorobenzene	97.2	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

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Instrument Run Log

Instrument: HPMS8 Dataset: 100214
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 19
Method: 624 SOP: MSV10 Rev: 12
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 16
Maintenance Log ID: 51878

Internal Standard: STD66600 Surrogate Standard: STD66600
CCV: STD66818; STD66687 LCS: STD66693; STD66677 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG494714; WG494980

Comments: File # 8m400369 and 70 were skipped and not used.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M400354	RINSE	NA	1	1		10/02/14 10:24
8M400355	WG494714-01 50ng BFB STD 8260	NA	1	1	STD66476	10/02/14 11:16
8M400356	WG494714-01 50ng BFB STD 8260	NA	1	1	STD66476	10/02/14 11:33
8M400357	WG494714-01 50ng BFB STD 8260	NA	1	1	STD66476	10/02/14 11:58
8M400358	WG494714-02 5ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 12:24
8M400359	WG494714-03 20ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 12:53
8M400360	WG494714-04 50ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 13:22
8M400361	WG494714-05 100ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 13:51
8M400362	WG494714-06 200ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 14:19
8M400363	WG494714-07 300ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 14:48
8M400364	WG494714-08 400ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 15:16
8M400365	WG494714-09 500ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 15:45
8M400366	RINSE	NA	1	1		10/02/14 16:14
8M400367	WG494714-10 100ug/L ALT SRC STD A9/F	NA	1	1	STD66677	10/02/14 16:47
8M400368	WG494979-01 50ug/L CCV STD 8260	NA	1	1	STD66687	10/02/14 17:22
8M400371	WG494980-02 20ug/L LCS STD 624	NA	2	1	STD66693	10/02/14 17:51
8M400372	WG494980-03 20ug/L LCSDUP STD 624	NA	2	1	STD66693	10/02/14 18:20
8M400373	RINSE	NA	2	1		10/02/14 18:49
8M400374	WG494980-01 VBLK1002 BLANK STD 624	NA	2	1		10/02/14 19:18
8M400375	L14100004-01 LOD 826-SPE A9/FOO	NA	1	1		10/02/14 19:47
8M400376	L14100006-01 LOQ 826-SPE A9/FOO	NA	1	1		10/02/14 20:16
8M400377	L14100004-01 LOD 826-SPE	NA	1	1		10/02/14 20:45
8M400378	L14100006-01 LOQ 826-SPE	NA	1	1		10/02/14 21:14
8M400379	L14100004-01 LOD 826-SPE	NA	1	1		10/02/14 21:42
8M400380	L14100006-01 LOQ 826-SPE	NA	1	1		10/02/14 22:12
8M400381	L14100098-10 A 624-SPE	5	2	1		10/02/14 22:40
8M400382	L14100089-02 A 624-SPE	5	2	1		10/02/14 23:09
8M400383	L14100098-04 A 624-SPE	<2	2	1		10/02/14 23:38
8M400384	L14100098-05 A 624-SPE	<2	2	1		10/03/14 00:06
8M400385	L14100098-06 A 624-SPE	<2	2	1		10/03/14 00:36
8M400386	L14100098-07 A 624-SPE	<2	2	1		10/03/14 01:06
8M400387	L14100098-08 A 624-SPE	<2	2	1		10/03/14 01:34
8M400388	L14100098-09 A 624-SPE	<2	2	1		10/03/14 02:04
8M400389	L14100110-01 A 624-SPE2	<2	2	1		10/03/14 02:32

Approved: October 03, 2014

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Instrument Run Log

Instrument: HPMS8 Dataset: 100214
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 19
Method: 624 SOP: MSV10 Rev: 12
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 16
Maintenance Log ID: 51878

Internal Standard: STD66600 Surrogate Standard: STD66600
CCV: STD66818; STD66687 LCS: STD66693; STD66677 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG494714; WG494980

Comments: File # 8m400369 and 70 were skipped and not used.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M400390	L14100110-02 A 624-SPE1	<2	2	1		10/03/14 03:02
8M400391	RINSE	NA	1	1		10/03/14 03:30
8M400392	RINSE	NA	1	1		10/03/14 03:59

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 8M400355				
	Tune failed, DNR.			
3	X			
File ID: 8M400356				
	Tune failed, DNR.			
4				
File ID: 8M400357				
	Purged BFB.			
30	X	100	Over Calibration Range	TCE
File ID: 8M400385				
31	X	1	Carry-over contamination	
File ID: 8M400386				
	DNR.			
32	X	1	Carry-over contamination	
File ID: 8M400387				
	DNR.			
33	X	50	Over Calibration Range	TCE
File ID: 8M400388				
34	X	1	Carry-over contamination	
File ID: 8M400389				
	DNR.			

Approved: October 03, 2014

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Instrument Run Log

Instrument: HPMS8 Dataset: 051215
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 21
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53130

Internal Standard: STD70050 Surrogate Standard: STD70050
CCV: STD70474 LCS: STD70475 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG523161

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M404566	WG523161-01 50ng BFB STD 8260	NA	1	1	STD70032	05/12/15 08:44
8M404567	WG523161-01 50ng BFB STD 8260	NA	1	1	STD70032	05/12/15 09:01
8M404568	WG523161-01 50ng BFB STD 8260	NA	1	1	STD70032	05/12/15 09:37
8M404569	WG523161-01 50ng BFB STD 8260	NA	1	1	STD70032	05/12/15 10:02
8M404570	WG523161-01 50ng BFB STD 8260	NA	1	1	STD70032	05/12/15 10:16
8M404571	WG523161-02 50ug/L CCV STD 8260	NA	1	1	STD70341	05/12/15 10:39
8M404572	WG523161-01 50ng BFB STD 8260	NA	1	1	STD70032	05/12/15 11:07
8M404573	WG523161-02 50ug/L CCV STD 8260	NA	1	1	STD70341	05/12/15 11:30
8M404574	RINSE	NA	1	1		05/12/15 11:59
8M404575	RINSE	NA	1	1		05/12/15 13:56
8M404576	WG523161-01 50ng BFB STD 8260	NA	1	1	STD70032	05/12/15 15:38
8M404577	WG523161-01 50ng BFB STD 8260	NA	1	1	STD70032	05/12/15 15:55
8M404578	RINSE	NA	1	1		05/12/15 16:21
8M404579	WG523161-02 0.3ug/L STD 8260	NA	1	1	STD70474	05/12/15 16:50
8M404580	WG523161-03 0.4ug/L STD 8260	NA	1	1	STD70474	05/12/15 17:19
8M404581	WG523161-04 1ug/L STD 8260	NA	1	1	STD70474	05/12/15 17:48
8M404582	WG523161-05 2ug/L STD 8260	NA	1	1	STD70474	05/12/15 18:16
8M404583	WG523161-06 5ug/L STD 8260	NA	1	1	STD70474	05/12/15 18:45
8M404584	WG523161-07 20ug/L STD 8260	NA	1	1	STD70474	05/12/15 19:13
8M404585	WG523161-08 50ug/L STD 8260	NA	1	1	STD70474	05/12/15 19:42
8M404586	WG523161-09 100ug/L STD 8260	NA	1	1	STD70474	05/12/15 20:11
8M404587	WG523161-10 200ug/L STD 8260	NA	1	1	STD70474	05/12/15 20:40
8M404588	WG523161-11 300ug/L STD 8260	NA	1	1	STD70474	05/12/15 21:08
8M404589	RINSE	NA	1	1		05/12/15 21:37
8M404590	RINSE	NA	1	1		05/12/15 22:06
8M404591	WG523161-12 50ug/L ALT SRC STD 8260	NA	1	1	STD70475	05/12/15 22:34
8M404592	RINSE	NA	1	1		05/12/15 23:03
8M404593	RINSE	NA	1	1		05/12/15 23:31

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1	X			
File ID: 8M404566				

Approved: May 14, 2015

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS8	Dataset:	051215		
Analyst1:	TMB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	21
Method:	624	SOP:	MSV10	Rev:	13
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:	53130				

Internal Standard: STD70050 Surrogate Standard: STD70050

CCV: STD70474 LCS: STD70475 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG523161

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			Tune failed, DNR.	
2	X			
File ID: 8M404567				
			Tune failed, DNR. Changed the septa.	
3	X			
File ID: 8M404568				
			Tune failed, DNR.	
4				
File ID: 8M404569				
			Tune failed, DNR. Purged BFB.	
6	X			
File ID: 8M404571				
			Vc was high, DNR. Increased the voltage.	
8				
File ID: 8M404573				
			Vc was high, running a curve.	
11	X			
File ID: 8M404576				
			Tune failed, DNR.	

Approved: May 14, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 052315
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 21
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID: 53167

Internal Standard: STD70050 Surrogate Standard: STD70050
CCV: STD70656 LCS: STD70658 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG524936

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M404873	WG524935-01 BFB 50ng 8260	NA	1	1	STD70032	05/23/15 15:18
8M404874	WG524935-01 BFB 50ng 8260	NA	1	1	STD70032	05/23/15 15:33
8M404875	WG524935-01 BFB 50ng 8260	NA	1	1	STD70032	05/23/15 16:12
8M404876	WG524935-01 BFB 50ng 8260	NA	1	1	STD70032	05/23/15 16:34
8M404877	WG524935-02 50ug/L CCV 8260	NA	1	1	STD70656	05/23/15 16:57
8M404878	WG524XXX-01 100ug/L CCV A9	NA	1	1	STDXXXXX	05/23/15 17:25
8M404879	WG524936-01 VBLK0523 BLANK 8260	NA	1	1		05/23/15 17:53
8M404880	WG524936-02 20ug/L LCS 8260	NA	1	1	STD70658	05/23/15 18:22
8M404881	WG524936-03 20ug/L LCS2 8260	NA	1	1	STD70658	05/23/15 18:50
8M404882	L15051250-07 10X B 826-SPE1	<2	1	10		05/23/15 19:19
8M404883	L15051142-01 A 826-LOW	<2	1	1		05/23/15 19:48
8M404884	L15051231-06 A 826-LOW	<2	1	1		05/23/15 20:17
8M404885	L15051250-08 B 826-SPE1	<2	1	1		05/23/15 20:46
8M404886	L15051250-09 B 826-SPE1	<2	1	1		05/23/15 21:15
8M404887	L15051142-02 A 826-LOW	<2	1	1		05/23/15 21:44
8M404888	L15051142-03 A 826-LOW	<2	1	1		05/23/15 22:13
8M404889	L15051142-04 A 826-LOW	<2	1	1		05/23/15 22:42
8M404890	L15051142-05 A 826-LOW	<2	1	1		05/23/15 23:11
8M404891	L15051209-29 A 826-SPE	<2	1	1		05/23/15 23:40
8M404892	L15051231-02 A 826-LOW	<2	1	1		05/24/15 00:09
8M404893	L15051231-03 A 826-LOW	<2	1	1		05/24/15 00:38
8M404894	L15051303-01 A 826-LOW	<2	1	1		05/24/15 01:06
8M404895	L15051303-03 A 826-LOW	<2	1	1		05/24/15 01:35
8M404896	L15051303-05 A 826-LOW	<2	1	1		05/24/15 02:04
8M404897	L15051303-07 A 826-LOW	<2	1	1		05/24/15 02:32
8M404898	L15051231-01 10X A 826-LOW	<2	1	10		05/24/15 03:01
8M404899	L15051231-04 2.5X A 826-LOW	<2	1	2.5		05/24/15 03:30
8M404900	L15051231-05 2.5X A 826-LOW	<2	1	2.5		05/24/15 03:59
8M404901	CCV	NA	1	1		05/24/15 04:28
8M404902	RINSE	NA	1	1		05/24/15 04:57
8M404903	RINSE	NA	1	1		05/24/15 05:26

Comments

Approved: May 29, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 052315
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 21
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID: 53167

Internal Standard: STD70050 Surrogate Standard: STD70050
CCV: STD70656 LCS: STD70658 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG524936

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1	X			
File ID: 8M404873				
	Tune failed, DNR.			
2	X			
File ID: 8M404874				
	Tune failed, DNR.			
3	X			
File ID: 8M404875				
	Purged BFB. Tune failed, DNR. Changed the liner and o-ring.			
6				
File ID: 8M404878				
	Not needed, DNR.			
22	X	10	Over Calibration Range	TCE
File ID: 8M404894				
23	X	1	Carry-over contamination	
File ID: 8M404895				
	Possible TCE carry over. Re-analysis confirmed result not due to carry-over. This data reported.			
26	X	10	Over Calibration Range	
File ID: 8M404898				
	Possible TCE carry over. DNR.			

Approved: May 29, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 052615
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 21
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID: 53172

Internal Standard: STD70050 Surrogate Standard: STD70050
CCV: STD70656 LCS: STD70658 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG525056

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M404904	WG525055-01 50ng BFB STD 8260	NA	1	1	STD70707	05/26/15 11:11
8M404905	WG525055-01 50ng BFB STD 8260	NA	1	1	STD70707	05/26/15 11:26
8M404906	WG525055-02 50ug/L CCV STD 8260	NA	1	1	STD70656	05/26/15 11:50
8M404907	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD70547	05/26/15 12:19
8M404908	WG525056-01 VBLK0526 BLANK STD 826	NA	1	1		05/26/15 12:48
8M404909	WG525056-02 20ug/L LCS STD 8260	NA	1	1	STD70658	05/26/15 13:17
8M404910	WG525056-03 20ug/L LCSDUP STD 8260	NA	1	1	STD70658	05/26/15 13:46
8M404911	L15051143-02 A 10X 826-TC	NA	17	10		05/26/15 14:16
8M404912	L15051143-04 A 10X 826-TC	NA	17	10		05/26/15 14:45
8M404913	L15051303-01 B 10X 826-LOW D1	<2	1	10		05/26/15 15:14
8M404914	L15051303-13 TB A 826-LOW	<2	1	1		05/26/15 15:43
8M404915	L15051329-08 TB A 826-SPE	<2	1	1		05/26/15 16:12
8M404916	L15051340-03 TB A 826-SPE	<2	1	1		05/26/15 16:42
8M404917	L15051329-05 RB A 826-SPE	<2	1	1		05/26/15 17:10
8M404918	L15051303-03 B 826-LOW	<2	1	1		05/26/15 17:38
8M404919	L15051303-09 A 826-LOW	<2	1	1		05/26/15 18:07
8M404920	L15051303-11 A 826-LOW	<2	1	1		05/26/15 18:35
8M404921	L15051329-01 A 826-SPE	<2	1	1		05/26/15 19:04
8M404922	L15051329-02 A 826-SPE	<2	1	1		05/26/15 19:33
8M404923	L15051329-03 A 826-SPE	<2	1	1		05/26/15 20:02
8M404924	L15051329-04 A 826-SPE	<2	1	1		05/26/15 20:31
8M404925	L15051329-06 A 826-SPE	<2	1	1		05/26/15 21:00
8M404926	L15051231-01 B 10X 826-LOW	<2	1	10		05/26/15 21:28
8M404927	L15051329-07 A 100X 826-SPE	<2	1	100		05/26/15 21:57
8M404928	L15051340-01 A 50X 826-SPE	<2	1	50		05/26/15 22:26
8M404929	L15051340-02 A 10X 826-SPE	<2	1	10		05/26/15 22:55
8M404930	CCV	NA	1	1		05/26/15 23:24
8M404931	RINSE	NA	1	1		05/26/15 23:53
8M404932	RINSE	NA	1	1		05/27/15 00:22
8M404933	RINSE	NA	1	1		05/27/15 00:51

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Approved: May 28, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 052615
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 21
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID: 53172

Internal Standard: STD70050 Surrogate Standard: STD70050
CCV: STD70656 LCS: STD70658 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG525056

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1	X			
File ID: 8M404904				
	Tune failed, DNR.			
4				
File ID: 8M404907				
	Not needed. DNR.			
21	X	1	Surrogate standard failure	
File ID: 8M404924				
25	X	10	Analyzed too dilute	
File ID: 8M404928				
26	X	200	Over Calibration Range	TCE
File ID: 8M404929				

Approved: May 28, 2015

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Microbac Laboratories Inc.

Data Checklist

Date: 02-OCT-2014
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 63840
Analytical Workgroups: WG494714; WG494980

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
03-OCT-2014
Tiffany Bailey

Secondary Reviewer:
03-OCT-2014

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-03-2014 13:21:54

Microbac Laboratories Inc.

Data Checklist

Date: 12-MAY-2015
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 67921
Analytical Workgroups:

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
13-MAY-2015
Tiffany Bailey

Secondary Reviewer:
14-MAY-2015

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-14-2015 16:28:01

Microbac Laboratories Inc.

Data Checklist

Date: 23-MAY-2015
Analyst: FJB
Analyst: NA
Method: 8260B
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 68178
Analytical Workgroups: WG524936

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
26-MAY-2015
Tiffany Bailey

Secondary Reviewer:
29-MAY-2015
Wadei Dg

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-29-2015 08:51:25

Microbac Laboratories Inc.

Data Checklist

Date: 26-MAY-2015
Analyst: TMB
Analyst: NA
Method: 8260B
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 68202
Analytical Workgroups: WG525056

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
27-MAY-2015
Tiffany Bailey

Secondary Reviewer:
28-MAY-2015

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-28-2015 12:42:56

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG524936

Login Number: L15051303

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW13-052015	01	05/20/15					05/24/2015	3.7	14		05/24/15	3.7	14	
50WW11-052015	05	05/20/15					05/24/2015	3.6	14		05/24/15	3.6	14	
50WW06-052015	07	05/20/15					05/24/2015	3.6	14		05/24/15	3.6	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4196791
Report generated 06/01/2015 11:01

Microbac Laboratories Inc.

00639040

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG525056

Login Number: L15051303

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW13-052015	01	05/20/15					05/26/2015	6.3	14		05/26/15	6.3	14	
50WW14-052015	03	05/20/15					05/26/2015	6.3	14		05/26/15	6.3	14	
50WW12-052015	09	05/20/15					05/26/2015	6.1	14		05/26/15	6.1	14	
50WW23-052015	11	05/20/15					05/26/2015	6.1	14		05/26/15	6.1	14	
TRIP BLANK	13	05/20/15					05/26/2015	6.7	14		05/26/15	6.7	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4196791
Report generated 06/01/2015 11:01

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L15051303
Instrument Id: HPMS8
Workgroup (AAB#): WG524936

Method: 8260
CAL ID: HPMS8-12-MAY-15
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L15051303-01	1.00	01	97.4	99.1	96.5	97.7
L15051303-05	1.00	01	98.7	101	94.5	98.7
L15051303-07	1.00	01	99.3	103	94.2	96.0
WG524936-01	1.00	01	95.9	99.4	94.8	98.3
WG524936-02	1.00	01	98.3	99.5	93.1	96.2
WG524936-03	1.00	01	94.6	99.5	92.5	96.8

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4196796
Report generated: 06/01/2015 11:01

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L15051303
Instrument Id: HPMS8
Workgroup (AAB#): WG525056

Method: 8260
CAL ID: HPMS8-12-MAY-15
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L15051303-01	10.0	DL01	99.5	103	96.0	97.1
L15051303-03	1.00	02	103	104	93.0	94.6
L15051303-09	1.00	01	98.2	101	95.3	97.3
L15051303-11	1.00	01	99.0	102	95.0	97.1
L15051303-13	1.00	01	97.0	101	97.2	95.9
WG525056-01	1.00	01	96.5	99.9	95.3	97.0
WG525056-02	1.00	01	93.1	102	88.8	96.9
WG525056-03	1.00	01	96.7	104	87.5	96.7

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4196796
Report generated: 06/01/2015 11:01

METHOD BLANK SUMMARY

Login Number: L15051303
Blank File ID: 8M404879
Prep Date: 05/23/15 17:53
Analyzed Date: 05/23/15 17:53
Analyst: FJB

Work Group: WG524936
Blank Sample ID: WG524936-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG524936-02	8M404880	05/23/15 18:22	01
LCS2	WG524936-03	8M404881	05/23/15 18:50	01
50WW13-052015	L15051303-01	8M404894	05/24/15 01:06	01
50WW11-052015	L15051303-05	8M404896	05/24/15 02:04	01
50WW06-052015	L15051303-07	8M404897	05/24/15 02:32	01

Report Name: BLANK_SUMMARY
PDF File ID: 4203791
Report generated 06/01/2015 11:01

METHOD BLANK SUMMARY

Login Number: L15051303
Blank File ID: 8M404908
Prep Date: 05/26/15 12:48
Analyzed Date: 05/26/15 12:48
Analyst: TMB

Work Group: WG525056
Blank Sample ID: WG525056-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG525056-02	8M404909	05/26/15 13:17	01
LCS2	WG525056-03	8M404910	05/26/15 13:46	01
50WW13-052015	L15051303-01	8M404913	05/26/15 15:14	DL01
TRIP BLANK	L15051303-13	8M404914	05/26/15 15:43	01
50WW14-052015	L15051303-03	8M404918	05/26/15 17:38	02
50WW12-052015	L15051303-09	8M404919	05/26/15 18:07	01
50WW23-052015	L15051303-11	8M404920	05/26/15 18:35	01

Report Name: BLANK_SUMMARY
PDF File ID: 4203791
Report generated 06/01/2015 11:01

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L15051303 Prep Date: 05/23/15 17:53 Sample ID: WG524936-01
Instrument ID: HPMS8 Run Date: 05/23/15 17:53 Prep Method: 5030B/5030C/503
File ID: 8M404879 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG524936 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-12-MAY-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4203792
01-JUN-2015 11:01

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051303 Prep Date: 05/23/15 17:53 Sample ID: WG524936-01
Instrument ID: HPMS8 Run Date: 05/23/15 17:53 Prep Method: 5030B/5030C/503
File ID: 8M404879 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG524936 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-12-MAY-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	99.4	85 - 115	PASS
1,2-Dichloroethane-d4	95.9	70 - 120	PASS
Toluene-d8	98.3	85 - 120	PASS
4-Bromofluorobenzene	94.8	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4203792
01-JUN-2015 11:01

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051303 Prep Date: 05/26/15 12:48 Sample ID: WG525056-01
Instrument ID: HPMS8 Run Date: 05/26/15 12:48 Prep Method: 5030B/5030C/503
File ID: 8M404908 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG525056 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-12-MAY-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4203792
01-JUN-2015 11:01

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051303 Prep Date: 05/26/15 12:48 Sample ID: WG525056-01
Instrument ID: HPMS8 Run Date: 05/26/15 12:48 Prep Method: 5030B/5030C/503
File ID: 8M404908 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG525056 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-12-MAY-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.252	1	J
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	99.9	85 - 115	PASS
1,2-Dichloroethane-d4	96.5	70 - 120	PASS
Toluene-d8	97.0	85 - 120	PASS
4-Bromofluorobenzene	95.3	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4203792
01-JUN-2015 11:01

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051303 Analyst: FJB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG524936 Units: ug/L
QC Key: DOD4 Lot #: STD70658

Sample ID: WG524936-02 LCS File ID: 8M404880 Run Date: 05/23/2015 18:22
Sample ID: WG524936-03 LCS2 File ID: 8M404881 Run Date: 05/23/2015 18:50

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	18.5	92.3	20.0	18.0	90.2	2.30	80 - 130	30	
1,1,1-Trichloroethane	20.0	19.9	99.5	20.0	18.4	91.9	7.99	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	18.6	93.1	20.0	18.4	92.0	1.16	65 - 130	30	
1,1,2-Trichloroethane	20.0	19.1	95.5	20.0	19.0	94.8	0.665	75 - 125	30	
1,1-Dichloroethane	20.0	19.3	96.3	20.0	18.1	90.3	6.52	70 - 135	30	
1,1-Dichloroethene	20.0	17.6	88.2	20.0	16.0	80.2	9.48	70 - 130	30	
1,1-Dichloropropene	20.0	18.9	94.6	20.0	17.6	88.0	7.24	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	18.6	93.1	20.0	18.2	90.9	2.40	55 - 140	30	
1,2,3-Trichloropropane	20.0	18.5	92.3	20.0	18.8	94.0	1.79	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	18.0	90.1	20.0	18.0	90.2	0.199	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	18.7	93.5	20.0	18.2	90.8	2.95	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	19.3	96.3	20.0	20.4	102	5.66	50 - 130	30	
1,2-Dibromoethane	20.0	19.3	96.5	20.0	19.3	96.3	0.240	80 - 120	30	
1,2-Dichlorobenzene	20.0	17.4	86.9	20.0	17.1	85.7	1.35	70 - 120	30	
1,2-Dichloroethane	20.0	20.1	100	20.0	19.1	95.4	5.15	70 - 130	30	
1,2-Dichloropropane	20.0	20.8	104	20.0	19.1	95.4	8.59	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	18.7	93.7	20.0	18.0	90.2	3.76	75 - 130	30	
1,3-Dichlorobenzene	20.0	17.0	85.0	20.0	16.5	82.3	3.26	75 - 125	30	
1,3-Dichloropropane	20.0	19.5	97.4	20.0	18.4	92.1	5.63	75 - 125	30	
1,4-Dichlorobenzene	20.0	18.0	90.0	20.0	17.6	87.8	2.47	75 - 125	30	
2,2-Dichloropropane	20.0	18.8	94.1	20.0	16.8	84.0	11.4	70 - 135	30	
2-Butanone	20.0	23.4	117	20.0	21.9	110	6.36	30 - 150	30	
2-Chlorotoluene	20.0	15.9	79.5	20.0	14.5	72.4	9.33	75 - 125	30	*
2-Hexanone	20.0	20.6	103	20.0	19.9	99.6	3.42	55 - 130	30	
4-Chlorotoluene	20.0	18.1	90.5	20.0	17.9	89.4	1.20	75 - 130	30	
4-Methyl-2-pentanone	20.0	24.7	124	20.0	21.7	109	13.0	60 - 135	30	
Acetone	20.0	23.1	116	20.0	24.0	120	3.70	40 - 140	30	
Benzene	20.0	20.9	105	20.0	19.5	97.6	6.85	80 - 120	30	
Bromobenzene	20.0	17.4	86.9	20.0	17.3	86.3	0.641	75 - 125	30	
Bromochloromethane	20.0	20.4	102	20.0	20.0	99.9	1.91	65 - 130	30	
Bromodichloromethane	20.0	21.1	106	20.0	20.0	100	5.27	75 - 120	30	
Bromoform	20.0	18.5	92.4	20.0	18.6	93.0	0.566	70 - 130	30	
Bromomethane	20.0	24.7	124	20.0	23.5	118	5.00	30 - 145	30	
Carbon disulfide	20.0	18.8	94.2	20.0	17.8	88.8	5.92	35 - 160	30	
Carbon tetrachloride	20.0	20.6	103	20.0	18.3	91.7	11.5	65 - 140	30	
Chlorobenzene	20.0	17.7	88.7	20.0	16.9	84.7	4.52	80 - 120	30	
Chloroethane	20.0	21.0	105	20.0	19.7	98.5	6.19	60 - 135	30	
Chloroform	20.0	20.0	99.9	20.0	19.1	95.4	4.60	65 - 135	30	
Chloromethane	20.0	20.4	102	20.0	18.8	93.8	8.30	40 - 125	30	
cis-1,2-Dichloroethene	20.0	19.8	99.2	20.0	18.9	94.7	4.57	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4196792
Report generated: 06/01/2015 11:01

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051303 Analyst: FJB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG524936 Units: ug/L
QC Key: DOD4 Lot #: STD70658

Sample ID: WG524936-02 LCS File ID: 8M404880 Run Date: 05/23/2015 18:22
Sample ID: WG524936-03 LCS2 File ID: 8M404881 Run Date: 05/23/2015 18:50

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	22.0	110	20.0	21.1	106	4.02	70 - 130	30	
Chlorodibromomethane	20.0	19.3	96.6	20.0	19.0	95.1	1.57	60 - 135	30	
Dibromomethane	20.0	20.5	102	20.0	20.7	103	1.03	75 - 125	30	
Dichlorodifluoromethane	20.0	23.9	119	20.0	21.2	106	12.0	30 - 155	30	
Ethylbenzene	20.0	17.0	85.1	20.0	16.4	82.2	3.50	75 - 125	30	
Hexachlorobutadiene	20.0	15.5	77.3	20.0	14.1	70.6	9.00	50 - 140	30	
Isopropylbenzene	20.0	18.1	90.6	20.0	17.1	85.5	5.89	75 - 125	30	
m-,p-Xylene	40.0	36.2	90.6	40.0	33.8	84.5	6.91	75 - 130	30	
Methylene chloride	20.0	20.4	102	20.0	20.1	101	1.45	55 - 140	30	
n-Butylbenzene	20.0	18.2	91.1	20.0	16.6	83.2	9.08	70 - 135	30	
n-Propylbenzene	20.0	17.0	85.0	20.0	15.8	79.2	7.00	70 - 130	30	
Naphthalene	20.0	21.1	106	20.0	20.7	104	2.03	55 - 140	30	
o-Xylene	20.0	17.1	85.5	20.0	16.1	80.7	5.84	80 - 120	30	
p-Isopropyltoluene	20.0	17.1	85.6	20.0	16.1	80.4	6.16	75 - 130	30	
sec-Butylbenzene	20.0	17.4	87.0	20.0	16.4	81.8	6.27	70 - 125	30	
Styrene	20.0	19.4	97.0	20.0	18.7	93.5	3.60	65 - 135	30	
tert-Butylbenzene	20.0	16.1	80.5	20.0	14.8	74.0	8.41	70 - 130	30	
Tetrachloroethene	20.0	17.5	87.6	20.0	15.6	78.0	11.7	45 - 150	30	
Toluene	20.0	18.7	93.3	20.0	18.0	89.8	3.81	75 - 120	30	
trans-1,2-Dichloroethene	20.0	18.8	93.9	20.0	17.1	85.7	9.16	60 - 140	30	
trans-1,3-Dichloropropene	20.0	18.3	91.5	20.0	17.7	88.4	3.51	55 - 140	30	
Trichloroethene	20.0	20.3	101	20.0	18.9	94.7	6.66	70 - 125	30	
Trichlorofluoromethane	20.0	19.5	97.5	20.0	17.1	85.5	13.1	60 - 145	30	
Vinyl chloride	20.0	23.1	116	20.0	19.9	99.7	14.8	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	98.3	94.6	70 - 120	PASS
Dibromofluoromethane	99.5	99.5	85 - 115	PASS
4-Bromofluorobenzene	93.1	92.5	75 - 120	PASS
Toluene-d8	96.2	96.8	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4196792
Report generated: 06/01/2015 11:01

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051303 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG525056 Units: ug/L
QC Key: DOD4 Lot #: STD70658

Sample ID: WG525056-02 LCS File ID: 8M404909 Run Date: 05/26/2015 13:17
Sample ID: WG525056-03 LCS2 File ID: 8M404910 Run Date: 05/26/2015 13:46

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	19.5	97.4	20.0	19.1	95.6	1.87	80 - 130	30	
1,1,1-Trichloroethane	20.0	22.0	110	20.0	21.7	109	1.27	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	18.4	91.8	20.0	18.1	90.6	1.34	65 - 130	30	
1,1,2-Trichloroethane	20.0	20.1	100	20.0	19.3	96.6	3.95	75 - 125	30	
1,1-Dichloroethane	20.0	20.0	100	20.0	20.5	103	2.28	70 - 135	30	
1,1-Dichloroethene	20.0	19.4	97.0	20.0	19.6	98.1	1.16	70 - 130	30	
1,1-Dichloropropene	20.0	20.9	105	20.0	21.0	105	0.598	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	18.7	93.6	20.0	19.0	95.0	1.50	55 - 140	30	
1,2,3-Trichloropropane	20.0	19.2	96.0	20.0	18.2	91.1	5.26	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	18.0	89.9	20.0	18.7	93.6	4.08	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	19.0	94.9	20.0	19.2	96.0	1.19	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	18.8	94.0	20.0	18.3	91.5	2.63	50 - 130	30	
1,2-Dibromoethane	20.0	19.9	99.7	20.0	20.1	100	0.655	80 - 120	30	
1,2-Dichlorobenzene	20.0	17.9	89.4	20.0	17.8	88.8	0.679	70 - 120	30	
1,2-Dichloroethane	20.0	20.8	104	20.0	20.1	100	3.43	70 - 130	30	
1,2-Dichloropropane	20.0	21.2	106	20.0	21.0	105	0.819	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	19.2	96.1	20.0	19.4	97.2	1.21	75 - 130	30	
1,3-Dichlorobenzene	20.0	17.4	86.8	20.0	17.1	85.3	1.68	75 - 125	30	
1,3-Dichloropropane	20.0	19.7	98.7	20.0	19.6	97.8	0.886	75 - 125	30	
1,4-Dichlorobenzene	20.0	18.4	92.0	20.0	18.5	92.3	0.295	75 - 125	30	
2,2-Dichloropropane	20.0	19.9	99.6	20.0	20.8	104	4.51	70 - 135	30	
2-Butanone	20.0	23.1	115	20.0	22.0	110	4.98	30 - 150	30	
2-Chlorotoluene	20.0	16.4	82.0	20.0	16.5	82.3	0.264	75 - 125	30	
2-Hexanone	20.0	19.1	95.3	20.0	19.9	99.5	4.36	55 - 130	30	
4-Chlorotoluene	20.0	17.7	88.6	20.0	18.0	90.2	1.80	75 - 130	30	
4-Methyl-2-pentanone	20.0	23.4	117	20.0	23.1	116	1.22	60 - 135	30	
Acetone	20.0	23.1	115	20.0	24.0	120	4.01	40 - 140	30	
Benzene	20.0	22.1	110	20.0	21.8	109	1.42	80 - 120	30	
Bromobenzene	20.0	17.7	88.5	20.0	17.2	85.8	3.17	75 - 125	30	
Bromochloromethane	20.0	21.2	106	20.0	20.6	103	2.79	65 - 130	30	
Bromodichloromethane	20.0	21.2	106	20.0	21.3	106	0.434	75 - 120	30	
Bromoform	20.0	19.9	99.4	20.0	18.6	93.1	6.51	70 - 130	30	
Bromomethane	20.0	23.1	116	20.0	24.2	121	4.63	30 - 145	30	
Carbon disulfide	20.0	19.2	96.0	20.0	19.1	95.7	0.283	35 - 160	30	
Carbon tetrachloride	20.0	21.7	108	20.0	22.1	111	2.05	65 - 140	30	
Chlorobenzene	20.0	18.7	93.5	20.0	18.5	92.3	1.35	80 - 120	30	
Chloroethane	20.0	22.9	114	20.0	22.9	115	0.403	60 - 135	30	
Chloroform	20.0	21.2	106	20.0	21.5	107	1.26	65 - 135	30	
Chloromethane	20.0	21.3	106	20.0	21.5	108	1.05	40 - 125	30	
cis-1,2-Dichloroethene	20.0	20.9	104	20.0	20.6	103	1.48	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4196792
Report generated: 06/01/2015 11:01

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051303 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG525056 Units: ug/L
QC Key: DOD4 Lot #: STD70658

Sample ID: WG525056-02 LCS File ID: 8M404909 Run Date: 05/26/2015 13:17
Sample ID: WG525056-03 LCS2 File ID: 8M404910 Run Date: 05/26/2015 13:46

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	23.2	116	20.0	23.1	115	0.282	70 - 130	30	
Chlorodibromomethane	20.0	20.0	100	20.0	18.8	93.8	6.36	60 - 135	30	
Dibromomethane	20.0	21.5	108	20.0	21.9	109	1.47	75 - 125	30	
Dichlorodifluoromethane	20.0	24.3	121	20.0	26.7	134	9.42	30 - 155	30	
Ethylbenzene	20.0	18.5	92.7	20.0	19.0	94.8	2.26	75 - 125	30	
Hexachlorobutadiene	20.0	15.6	77.9	20.0	16.5	82.5	5.78	50 - 140	30	
Isopropylbenzene	20.0	19.6	97.9	20.0	19.3	96.7	1.17	75 - 125	30	
m-,p-Xylene	40.0	39.2	98.1	40.0	39.1	97.7	0.439	75 - 130	30	
Methylene chloride	20.0	22.1	111	20.0	21.5	108	2.67	55 - 140	30	
n-Butylbenzene	20.0	18.4	92.0	20.0	18.8	93.8	1.93	70 - 135	30	
n-Propylbenzene	20.0	17.0	84.9	20.0	17.5	87.4	2.89	70 - 130	30	
Naphthalene	20.0	21.3	106	20.0	20.9	104	1.90	55 - 140	30	
o-Xylene	20.0	18.4	91.9	20.0	18.3	91.6	0.333	80 - 120	30	
p-Isopropyltoluene	20.0	17.8	89.0	20.0	17.7	88.7	0.310	75 - 130	30	
sec-Butylbenzene	20.0	18.0	90.2	20.0	18.4	92.1	2.09	70 - 125	30	
Styrene	20.0	20.7	104	20.0	20.4	102	1.48	65 - 135	30	
tert-Butylbenzene	20.0	16.6	82.9	20.0	16.5	82.5	0.431	70 - 130	30	
Tetrachloroethene	20.0	19.5	97.4	20.0	19.2	95.9	1.51	45 - 150	30	
Toluene	20.0	19.9	99.5	20.0	19.8	98.9	0.588	75 - 120	30	
trans-1,2-Dichloroethene	20.0	20.6	103	20.0	19.7	98.6	4.40	60 - 140	30	
trans-1,3-Dichloropropene	20.0	19.2	96.0	20.0	18.8	93.9	2.30	55 - 140	30	
Trichloroethene	20.0	22.2	111	20.0	23.1	115	4.03	70 - 125	30	
Trichlorofluoromethane	20.0	20.5	102	20.0	21.4	107	4.33	60 - 145	30	
Vinyl chloride	20.0	23.6	118	20.0	23.2	116	1.40	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	93.1	96.7	70 - 120	PASS
Dibromofluoromethane	102	104	85 - 115	PASS
4-Bromofluorobenzene	88.8	87.5	75 - 120	PASS
Toluene-d8	96.9	96.7	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4196792
Report generated: 06/01/2015 11:01

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15051303
Instrument: HPMS8
Analyst: TMB
Workgroup: WG494714

Tune ID: WG494714-01
Run Date: 10/02/2014
Run Time: 11:58
File ID: 8M400357
Cal ID: HPMS8 - 02-OCT-14

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.7	5158	PASS
75.0	95.0	30.0	60.0	51.7	12312	PASS
95.0	95.0	100	100	100	23818	PASS
96.0	95.0	5.00	9.00	7.56	1800	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	69.7	16590	PASS
175	174	5.00	9.00	7.78	1290	PASS
176	174	95.0	101	97.3	16145	PASS
177	176	5.00	9.00	6.34	1023	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG494714-02	STD	01	10/02/2014 12:24	
WG494714-03	STD	01	10/02/2014 12:53	
WG494714-04	STD	01	10/02/2014 13:22	
WG494714-05	STD	01	10/02/2014 13:51	
WG494714-06	STD	01	10/02/2014 14:19	
WG494714-07	STD	01	10/02/2014 14:48	
WG494714-08	STD	01	10/02/2014 15:16	
WG494714-09	STD	01	10/02/2014 15:45	
WG494714-10	SSCV	01	10/02/2014 16:47	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4196794
Report generated 06/01/2015 11:01

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15051303
Instrument: HPMS8
Analyst: TMB
Workgroup: WG523161

Tune ID: WG523161-01
Run Date: 05/12/2015
Run Time: 15:55
File ID: 8M404577
Cal ID: HPMS8 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	26.3	7551	PASS
75.0	95.0	30.0	60.0	59.4	17014	PASS
95.0	95.0	100	100	100	28666	PASS
96.0	95.0	5.00	9.00	6.91	1981	PASS
173	174	0	2.00	0.480	119	PASS
174	95.0	50.0	100	86.5	24808	PASS
175	174	5.00	9.00	8.19	2031	PASS
176	174	95.0	101	95.4	23666	PASS
177	176	5.00	9.00	7.24	1714	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG523161-02	STD	01	05/12/2015 16:50	
WG523161-03	STD	01	05/12/2015 17:19	
WG523161-04	STD	01	05/12/2015 17:48	
WG523161-05	STD	01	05/12/2015 18:16	
WG523161-06	STD	01	05/12/2015 18:45	
WG523161-07	STD	01	05/12/2015 19:13	
WG523161-08	STD-CCV	01	05/12/2015 19:42	
WG523161-09	STD	01	05/12/2015 20:11	
WG523161-10	STD	01	05/12/2015 20:40	
WG523161-11	STD	01	05/12/2015 21:08	
WG523161-12	SSCV	01	05/12/2015 22:34	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4196794
Report generated 06/01/2015 11:01

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15051303
Instrument: HPMS8
Analyst: FJB
Workgroup: WG524935

Tune ID: WG524935-01
Run Date: 05/23/2015
Run Time: 16:34
File ID: 8M404876
Cal ID: HPMS8 - 12-MAY-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	26.6	11234	PASS
75.0	95.0	30.0	60.0	52.1	22062	PASS
95.0	95.0	100	100	100	42312	PASS
96.0	95.0	5.00	9.00	7.66	3241	PASS
173	174	0	2.00	0.873	335	PASS
174	95.0	50.0	100	90.7	38394	PASS
175	174	5.00	9.00	6.47	2485	PASS
176	174	95.0	101	98.0	37610	PASS
177	176	5.00	9.00	6.48	2436	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG524935-02	CCV	01	05/23/2015 16:57	
WG524936-01	BLANK	01	05/23/2015 17:53	
WG524936-02	LCS	01	05/23/2015 18:22	
WG524936-03	LCS2	01	05/23/2015 18:50	
L15051303-01	50WW13-052015	01	05/24/2015 01:06	
L15051303-05	50WW11-052015	01	05/24/2015 02:04	
L15051303-07	50WW06-052015	01	05/24/2015 02:32	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4196794
Report generated 06/01/2015 11:01

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15051303
Instrument: HPMS8
Analyst: TMB
Workgroup: WG525055

Tune ID: WG525055-01
Run Date: 05/26/2015
Run Time: 11:26
File ID: 8M404905
Cal ID: HPMS8 - 12-MAY-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	29.4	10466	PASS
75.0	95.0	30.0	60.0	56.4	20089	PASS
95.0	95.0	100	100	100	35637	PASS
96.0	95.0	5.00	9.00	8.35	2974	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	80.5	28683	PASS
175	174	5.00	9.00	8.16	2341	PASS
176	174	95.0	101	98.9	28379	PASS
177	176	5.00	9.00	6.44	1829	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG525055-02	CCV	01	05/26/2015 11:50	
WG525056-01	BLANK	01	05/26/2015 12:48	
WG525056-02	LCS	01	05/26/2015 13:17	
WG525056-03	LCS2	01	05/26/2015 13:46	
L15051303-01	50WW13-052015	DL01	05/26/2015 15:14	
L15051303-13	TRIP BLANK	01	05/26/2015 15:43	
L15051303-03	50WW14-052015	02	05/26/2015 17:38	
L15051303-09	50WW12-052015	01	05/26/2015 18:07	
L15051303-11	50WW23-052015	01	05/26/2015 18:35	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4196794
Report generated 06/01/2015 11:01

Calibration Table Report
Method: A9FOOWTR.M
Title: A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Calibration: Fri Oct 03 12:32:07 2014
Curve: WG494714
Calibration Files

	Compound	5 8M400358.D	20 8M400359.D	50 8M400360.D	100 8M400361.D	200 8M400362.D	300 8M400363.D	400 8M400364.D	500 8M400365.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD											
T	Acetonitrile	0.015	0.015	0.015	0.016	0.017	0.016	0.015	0.016	0.016	4.015		
T	3-Chloro-1-propene	0.416	0.403	0.416	0.438	0.434	0.423	0.407	0.394	0.416	3.619		
T	2-Chloro-1,3-butadiene	0.467	0.479	0.496	0.520	0.522	0.508	0.485	0.462	0.493	4.640		
T	Ethyl Acetate	0.104	0.115	0.123	0.133	0.135	0.133	0.126	0.130	0.125	8.569		
T	Methacrylonitrile	0.062	0.065	0.072	0.077	0.080	0.080	0.077	0.081	0.074	9.397		
T	Isobutyl Alcohol			0.004	0.005	0.005	0.005	0.005	0.005	0.005	9.693		
T	1-Butanol			0.002	0.002	0.003	0.003	0.003	0.003	0.003	21.690	0.995	
T	Methyl methacrylate	0.115	0.123	0.137	0.147	0.154	0.151	0.145	0.150	0.140	10.193		
T	2-Nitropropane	0.032	0.035	0.039	0.043	0.047	0.046	0.046	0.048	0.042	14.057		
I	Chlorobenzene-d5	ISTD											
I	1,4-Dichlorobenzene-d4	ISTD											
T	Cyclohexanone			0.039	0.043	0.037	0.043	0.036	0.038	0.039	7.787		

Fri Oct 03 12:35:36 2014

Calibration Table Report
Method: 8260WT.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Calibration: Wed May 13 06:45:06 2015
Curve: WG523161
Calibration Files

	Compound	0.3 8M404579.D	0.4 8M404580.D	1 8M404581.D	2 8M404582.D	5 8M404583.D	20 8M404584.D	50 8M404585.D	100 8M404586.D	200 8M404587.D	300 8M404588.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.377	0.342	0.343	0.422	0.413	0.414	0.402	0.386	0.387	8.120		
P	Chloromethane			0.927	0.855	0.806	0.813	0.772	0.750	0.681	0.585	0.774	13.567		
C	Vinyl Chloride		0.899	0.773	0.766	0.735	0.785	0.754	0.711	0.621	0.515	0.729	14.853		
T	1,3-Butadiene				0.699	0.708	0.786	0.774	0.545	0.428	0.368	0.615	27.438		1.005
T	Bromomethane			0.093	0.095	0.114	0.140	0.167	0.187	0.213	0.220	0.154	33.064		1.000
T	Chloroethane			0.191	0.195	0.184	0.199	0.197	0.205	0.210	0.206	0.198	4.214		
T	Trichlorofluoromethane		0.485	0.424	0.436	0.436	0.458	0.456	0.468	0.474	0.482	0.458	4.832		
T	Diethyl ether			0.175	0.173	0.175	0.177	0.163	0.175		0.189	0.175	4.331		
T	Isoprene					0.291	0.328	0.345	0.349	0.355	0.368	0.339	7.996		
T	Acrolein				0.005	0.004	0.005	0.006	0.009		0.016	0.007	61.765		0.992
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.248	0.251	0.246	0.262	0.256	0.268	0.269	0.268	0.258	3.627		
T	Acetone					0.035	0.041	0.034	0.033	0.037	0.033	0.036	9.052		
C	1,1-Dichloroethene		0.463	0.416	0.442	0.398	0.434	0.442	0.451	0.456	0.452	0.439	4.731		
T	Tert-Butyl Alcohol				0.009	0.010	0.010	0.009	0.010		0.010	0.010	5.597		
T	Dimethyl Sulfide				0.247	0.222	0.255	0.260	0.261	0.274	0.274	0.256	6.964		
T	Iodomethane			0.077	0.088	0.088	0.132	0.173	0.188	0.198	0.189	0.142	36.465		0.999
T	Methyl acetate				0.120	0.134	0.127	0.123	0.123	0.133	0.131	0.127	4.336		
T	Methylene Chloride			0.232	0.249	0.239	0.243	0.249	0.256	0.267	0.268	0.250	5.171		
T	Carbon Disulfide			0.790	0.760	0.723	0.839	0.853	0.855	0.851	0.795	0.808	6.082		
T	Acrylonitrile				0.051	0.053	0.055	0.057	0.057		0.069	0.057	11.396		
T	Methyl Tert Butyl Ether			0.459	0.495	0.467	0.481	0.475	0.478	0.512	0.492	0.482	3.510		
T	trans-1,2-Dichloroethene		0.471	0.390	0.413	0.388	0.406	0.416	0.426	0.439	0.427	0.419	6.106		
T	n-Hexane					0.373	0.430	0.426	0.433	0.442	0.440	0.424	6.103		
T	Diisopropyl ether			0.925	0.939	0.970	0.966	0.910	0.930		0.865	0.929	3.857		
T	Vinyl Acetate					0.306	0.314	0.317	0.295	0.308	0.299	0.307	2.774		
P	1,1-Dichloroethane		0.473	0.490	0.518	0.483	0.515	0.517	0.524	0.527	0.509	0.506	3.812		
T	Ethyl-Tert-Butyl ether			0.710	0.717	0.754	0.757	0.708	0.736		0.721	0.729	2.801		
T	2-Butanone					0.052	0.063	0.057	0.058	0.061	0.057	0.058	6.522		
T	Propionitrile			0.018	0.017	0.019	0.019	0.017	0.019		0.020	0.019	5.338		
T	2,2-Dichloropropane		0.492	0.405	0.421	0.369	0.406	0.409	0.415	0.423	0.419	0.418	7.676		
T	cis-1,2-Dichloroethene		0.322	0.282	0.278	0.252	0.284	0.286	0.290	0.300	0.299	0.288	6.589		
C	Chloroform	0.454	0.443	0.488	0.461	0.460	0.482	0.472	0.483	0.490	0.470	0.470	3.300		
T	1-Bromopropane			0.026	0.049	0.046	0.049	0.050	0.051	0.053	0.054	0.047	18.483	0.999	
T	Bromochloromethane		0.166	0.153	0.136	0.130	0.143	0.147	0.147	0.152	0.148	0.147	7.112		
T	Tetrahydrofuran			0.039	0.038	0.039	0.041	0.037	0.038		0.042	0.039	4.342		
S	Dibromofluoromethane						0.245	0.245	0.245	0.252	0.252	0.248	1.641		
T	1,1,1-Trichloroethane		0.386	0.384	0.407	0.393	0.429	0.439	0.455	0.472	0.477	0.427	8.450		
T	Cyclohexane			0.452	0.505	0.452	0.520	0.520	0.544	0.568	0.578	0.517	9.145		
T	1,1-Dichloropropene			0.379	0.360	0.347	0.369	0.371	0.378	0.385	0.384	0.371	3.475		
T	Tert-Amyl-Methyl ether			0.517	0.511	0.548	0.549	0.516	0.540		0.564	0.535	3.832		
T	Carbon Tetrachloride		0.376	0.35	0.374	0.344	0.386	0.395	0.416	0.42	0.432	0.388	7.9058		
S	1,2-Dichloroethane-d4						0.235	0.234	0.226	0.235	0.235	0.2329	1.58451		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.36	0.324	0.315	0.334	0.334	0.33	0.338	0.354	0.345	0.3372	4.22305		
T	Benzene	1.049	0.999	1.049	1.062	0.995	1.029	1.019	1.016	0.957	0.831	1.0006	6.72085		
T	Trichloroethene		0.253	0.251	0.235	0.242	0.273	0.268	0.276	0.291	0.293	0.2647	7.84867		
T	Methylcyclohexane					0.378	0.424	0.431	0.435	0.45	0.459	0.4296	6.55883		
C	1,2-Dichloropropane		0.285	0.284	0.28	0.254	0.278	0.277	0.279	0.292	0.294	0.2803	4.12451		
T	Bromodichloromethane		0.339	0.348	0.324	0.31	0.34	0.348	0.356	0.374	0.367	0.345	5.77994		
T	1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.0011	17.6544	0.995	
T	Dibromomethane		0.147	0.106	0.134	0.123	0.133	0.13	0.132	0.141	0.142	0.132	9.16014		
T	2-Chloroethyl Vinyl Ether					0.092	0.063	0.063	0.063	0.069	0.068	0.0698	16.4535	0.997	
T	4-Methyl-2-Pentanone					0.041	0.048	0.048	0.049	0.053	0.051	0.0482	8.53113		
T	cis-1,3-Dichloropropene		0.405	0.323	0.335	0.358	0.388	0.39	0.393	0.409	0.395	0.3772	8.2344		

T	Dimethyl Disulfide					0.151	0.179	0.196	0.211	0.236	0.246	0.2031	17.4457	0.996
I	Chlorobenzene-d5	ISTD												
S	Toluene-d8						1.158	1.204	1.183	1.155	1.132	1.1666	2.3719	
C	Toluene		1.559	1.545	1.585	1.513	1.564	1.565	1.539	1.342	1.133	1.4829	10.1102	
T	Ethyl Methacrylate			0.194	0.236	0.242	0.279	0.287	0.277	0.297	0.299	0.2638	13.8744	
T	Paraldehyde											0	0	
T	trans-1,3-Dichloropropene			0.407	0.395	0.446	0.448	0.46	0.457	0.473	0.469	0.4445	6.38368	
T	1,1,2-Trichloroethane		0.229	0.224	0.213	0.22	0.236	0.233	0.233	0.239	0.246	0.2304	4.41199	
T	2-Hexanone					0.054	0.066	0.067	0.062	0.068	0.065	0.0634	8.02299	
T	1,3-Dichloropropane		0.375	0.385	0.434	0.402	0.411	0.407	0.402	0.41	0.407	0.4039	4.14111	
T	Tetrachloroethene		0.262	0.324	0.305	0.265	0.304	0.316	0.331	0.343	0.365	0.313	10.7766	
T	Dibromochloromethane		0.277	0.288	0.286	0.274	0.3	0.313	0.327	0.342	0.352	0.3066	9.30077	
T	1,2-Dibromoethane		0.197	0.183	0.211	0.217	0.227	0.23	0.23	0.242	0.243	0.2199	9.12529	
T	1-Chlorohexane		0.532	0.476	0.473	0.473	0.511	0.512	0.521	0.527	0.54	0.5072	5.23688	
P	Chlorobenzene		0.957	0.977	1.015	0.968	0.99	1.028	1.06	1.055	0.957	1.0009	4.02311	
T	1,1,1,2-Tetrachloroethane		0.34	0.306	0.325	0.323	0.343	0.366	0.404	0.465		0.3593	14.5906	
C	Ethylbenzene		0.535	0.556	0.529	0.546	0.55	0.595	0.64	0.711	0.733	0.5995	12.9604	
T	m-,p-Xylene		0.721	0.649	0.68	0.664	0.681	0.723	0.743	0.676	0.566	0.678	7.68979	
T	o-Xylene			0.602	0.621	0.637	0.667	0.678	0.701	0.723	0.73	0.67	7.0386	
T	Styrene		0.969	1.046	1.021	1.015	1.106	1.145	1.15	1.104	0.996	1.0613	6.27884	
P	Bromoform			0.106	0.138	0.145	0.163	0.171	0.18	0.199	0.209	0.1638	20.5568	0.995
T	Isopropylbenzene		1.881	1.631	1.677	1.671	1.736	1.756	1.725	1.46	1.212	1.6386	11.9341	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.491	0.493	0.49	0.461	0.463	0.464	0.463	0.483	0.467	0.475	2.92575	
S	p-Bromofluorobenzene						0.839	0.85	0.836	0.857	0.87	0.8505	1.6345	
T	1,2,3-Trichloropropane			0.091	0.152	0.125	0.133	0.127	0.129	0.138	0.134	0.1287	13.5025	
T	trans-1,4-Dichloro-2-Butene			0.152	0.135	0.147	0.156	0.169	0.154	0.186	0.163	0.1577	9.69396	
T	n-Propylbenzene		4.239	3.867	3.923	3.631	3.953	3.946	3.76	2.942		3.7826	10.1008	
T	Bromobenzene	0.878	0.687	0.721	0.666	0.693	0.747	0.743	0.773	0.803	0.8	0.7512	8.60544	
T	1,3,5-Trimethylbenzene		2.655	2.667	2.65	2.513	2.744	2.797	2.805	2.461	2.001	2.5881	9.61996	
T	2-Chlorotoluene		3.171	2.749	2.18	2.328	2.61	2.64	2.387	2.358		2.5528	12.2648	
T	4-Chlorotoluene		2.141	1.856	2.314	2.269	2.064	2.119	2.321	1.851	1.442	2.0419	13.9758	
T	a-Methylstyrene					1.27	1.457	1.528	1.558	1.57	1.46	1.4739	7.51384	
T	tert-Butylbenzene			0.589	0.508	0.516	0.551	0.566	0.587	0.626	0.661	0.5754	9.07804	
T	1,2,4-Trimethylbenzene		2.906	2.617	2.745	2.633	2.823	2.876	2.845	2.485	2.018	2.6608	10.4646	
T	sec-Butylbenzene			3.477	3.386	3.37	3.532	3.531	3.45	2.821	2.248	3.2269	14.184	
T	p-Isopropyltoluene			2.794	2.847	2.733	2.986	3	2.97	2.527	2.031	2.7358	11.9085	
T	1,3-Dichlorobenzene		1.602	1.477	1.544	1.384	1.538	1.567	1.605	1.574	1.411	1.5224	5.31773	
T	1,4-Dichlorobenzene	1.844	1.572	1.516	1.485	1.469	1.51	1.553	1.578	1.55	1.378	1.5456	7.79548	
T	n-Butylbenzene			2.729	2.794	2.736	2.906	2.923	2.888	2.449	1.956	2.6725	12.2433	
T	1,2-Dichlorobenzene	1.364	1.197	1.323	1.355	1.229	1.332	1.367	1.376	1.389	1.279	1.3211	4.95077	
T	1,2-Dibromo-3-Chloropropane				0.052	0.078	0.076	0.077	0.078	0.086	0.083	0.0758	14.5402	
T	1,2,4-Trichlorobenzene		1.028	0.83	0.936	0.907	0.982	1.025	1.059	1.127	1.064	0.9952	9.18602	
T	Hexachlorobutadiene		0.52	0.429	0.459	0.493	0.494	0.508	0.56	0.595	0.621	0.5199	11.9722	
T	Naphthalene		1.182	1.213	1.397	1.288	1.379	1.398	1.428	1.446	1.282	1.3347	7.21249	
T	1,2,3-Trichlorobenzene	0.901	0.732	0.762	0.836	0.778	0.829	0.859	0.89	0.947	0.9	0.8433	8.22754	

Wed May 13 07:00:21 2015

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15051303 Run Date: 05/12/2015 Sample ID: WG523161-12
Instrument ID: HPMS8 Run Time: 22:34 Method: 8260B
File ID: 8M404591 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG523161 Cal ID: HPMS8 - 12-MAY-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	49.2	ug/L	0.463	1.60	20	
1,1-Dichloroethene	CCC	50.0	46.8	ug/L	0.411	6.50	20	
1,2-Dichloropropane	CCC	50.0	48.6	ug/L	0.273	2.80	20	
Ethylbenzene	CCC	50.0	48.7	ug/L	0.584	2.60	20	
Toluene	CCC	50.0	50.9	ug/L	1.51	1.80	20	
Vinyl Chloride	CCC	50.0	48.0	ug/L	0.700	4.00	20	
Bromoform	SPCC	50.0	45.3	ug/L	0.177	9.30	20	
Chlorobenzene	SPCC	50.0	47.2	ug/L	0.944	5.70	20	
Chloromethane	SPCC	50.0	50.1	ug/L	0.775	0.200	20	
1,1-Dichloroethane	SPCC	50.0	48.8	ug/L	0.494	2.40	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	47.8	ug/L	0.454	4.50	20	
Acetone		50.0	56.9	ug/L	0.0406	13.7	20	
Benzene		50.0	50.3	ug/L	1.01	0.600	20	
Bromobenzene		50.0	48.1	ug/L	0.722	3.90	20	
Bromochloromethane		50.0	48.1	ug/L	0.141	3.90	20	
Bromodichloromethane		50.0	48.6	ug/L	0.335	2.90	20	
Bromomethane		50.0	49.4	ug/L	0.171	1.20	20	
2-Butanone		50.0	53.3	ug/L	0.0620	6.50	20	
n-Butylbenzene		50.0	51.8	ug/L	2.77	3.60	20	
sec-Butylbenzene		50.0	48.9	ug/L	3.16	2.20	20	
tert-Butylbenzene		50.0	45.4	ug/L	0.522	9.20	20	
Carbon Disulfide		50.0	47.0	ug/L	0.761	5.90	20	
Carbon Tetrachloride		50.0	49.2	ug/L	0.382	1.60	20	
Dibromochloromethane		50.0	49.1	ug/L	0.301	1.80	20	
Chloroethane		50.0	55.5	ug/L	0.220	10.9	20	
2-Chlorotoluene		50.0	40.9	ug/L	2.09	18.2	20	
4-Chlorotoluene		50.0	53.3	ug/L	2.18	6.70	20	
1,2-Dibromo-3-Chloropropane		50.0	52.6	ug/L	0.0797	5.20	20	
1,2-Dibromoethane		50.0	50.9	ug/L	0.224	1.70	20	
Dibromomethane		50.0	48.0	ug/L	0.127	3.90	20	
1,2-Dichlorobenzene		50.0	46.2	ug/L	1.22	7.50	20	
1,3-Dichlorobenzene		50.0	45.6	ug/L	1.39	8.80	20	
1,4-Dichlorobenzene		50.0	48.7	ug/L	1.51	2.60	20	
Dichlorodifluoromethane		50.0	56.2	ug/L	0.435	12.4	20	
1,2-Dichloroethane		50.0	48.7	ug/L	0.328	2.70	20	
cis-1,2-Dichloroethene		50.0	48.5	ug/L	0.280	2.90	20	
trans-1,2-Dichloroethene		50.0	49.8	ug/L	0.418	0.500	20	
1,3-Dichloropropane		50.0	50.8	ug/L	0.411	1.60	20	
2,2-Dichloropropane		50.0	45.8	ug/L	0.383	8.50	20	
cis-1,3-Dichloropropene		50.0	52.5	ug/L	0.396	5.00	20	
trans-1,3-Dichloropropene		50.0	49.2	ug/L	0.437	1.70	20	
1,1-Dichloropropene		50.0	47.8	ug/L	0.355	4.30	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4196793
Report generated 06/01/2015 11:01

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15051303 Run Date: 05/12/2015 Sample ID: WG523161-12
Instrument ID: HPMS8 Run Time: 22:34 Method: 8260B
File ID: 8M404591 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG523161 Cal ID: HPMS8 - 12-MAY-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	54.8	ug/L	0.0695	9.50	20	
Hexachlorobutadiene		50.0	50.4	ug/L	0.524	0.800	20	
Isopropylbenzene		50.0	47.9	ug/L	1.57	4.20	20	
p-Isopropyltoluene		50.0	48.0	ug/L	2.63	4.00	20	
4-Methyl-2-Pentanone		50.0	54.4	ug/L	0.0524	8.80	20	
Methylene Chloride		50.0	50.3	ug/L	0.252	0.600	20	
Naphthalene		50.0	51.5	ug/L	1.37	3.00	20	
n-Propylbenzene		50.0	46.3	ug/L	3.51	7.30	20	
Styrene		50.0	52.5	ug/L	1.11	5.00	20	
1,1,1,2-Tetrachloroethane		50.0	50.2	ug/L	0.361	0.400	20	
Tetrachloroethene		50.0	49.0	ug/L	0.307	2.00	20	
1,2,3-Trichlorobenzene		50.0	49.7	ug/L	0.838	0.600	20	
1,2,4-Trichlorobenzene		50.0	49.7	ug/L	0.989	0.600	20	
1,1,1-Trichloroethane		50.0	50.3	ug/L	0.430	0.600	20	
1,1,2-Trichloroethane		50.0	49.0	ug/L	0.226	2.00	20	
Trichloroethene		50.0	49.9	ug/L	0.264	0.100	20	
Trichlorofluoromethane		50.0	48.8	ug/L	0.447	2.50	20	
1,2,3-Trichloropropane		50.0	51.6	ug/L	0.133	3.20	20	
1,2,4-Trimethylbenzene		50.0	52.5	ug/L	2.79	5.00	20	
1,3,5-Trimethylbenzene		50.0	52.9	ug/L	2.74	5.70	20	
o-Xylene		50.0	46.8	ug/L	0.627	6.40	20	
m-,p-Xylene		100	99.5	ug/L	0.674	0.500	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4196793
Report generated 06/01/2015 11:01

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051303 Run Date: 05/23/2015 Sample ID: WG524935-02
Instrument ID: HPMS8 Run Time: 16:57 Method: 8260B
File ID: 8M404877 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG524936 Cal ID: HPMS8 - 12-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	52.0	ug/L	0.489	4.06	20	
1,1-Dichloroethene	CCC	50.0	51.6	ug/L	0.453	3.10	20	
1,2-Dichloropropane	CCC	50.0	50.8	ug/L	0.285	1.51	20	
Ethylbenzene	CCC	50.0	46.4	ug/L	0.557	7.17	20	
Toluene	CCC	50.0	48.8	ug/L	1.45	2.31	20	
Vinyl Chloride	CCC	50.0	58.6	ug/L	0.854	17.2	20	
Bromoform	SPCC	50.0	46.1	ug/L	0.180	7.73	20	
Chlorobenzene	SPCC	50.0	48.4	ug/L	0.968	3.27	20	
Chloromethane	SPCC	50.0	53.0	ug/L	0.821	6.09	20	
1,1-Dichloroethane	SPCC	50.0	51.8	ug/L	0.525	3.67	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	42.8	ug/L	0.407	14.4	20	
Xylenes		150	149	ug/L	0.667	0.571	20	
Acetone		50.0	56.0	ug/L	0.0400	12.0	20	
Benzene		50.0	53.6	ug/L	1.07	7.13	20	
Bromobenzene		50.0	46.0	ug/L	0.691	8.00	20	
Bromochloromethane		50.0	51.0	ug/L	0.150	2.00	20	
Bromodichloromethane		50.0	53.9	ug/L	0.372	7.83	20	
Bromomethane		50.0	61.8	ug/L	0.217	23.5	20	*
2-Butanone		50.0	50.7	ug/L	0.0590	1.39	20	
n-Butylbenzene		50.0	49.8	ug/L	2.66	0.423	20	
sec-Butylbenzene		50.0	50.4	ug/L	3.25	0.744	20	
tert-Butylbenzene		50.0	45.5	ug/L	0.524	8.92	20	
Carbon Disulfide		50.0	56.8	ug/L	0.918	13.6	20	
Carbon Tetrachloride		50.0	55.9	ug/L	0.434	11.7	20	
Dibromochloromethane		50.0	49.8	ug/L	0.305	0.471	20	
Chloroethane		50.0	52.2	ug/L	0.207	4.39	20	
2-Chlorotoluene		50.0	44.1	ug/L	2.25	11.8	20	
4-Chlorotoluene		50.0	48.7	ug/L	1.99	2.67	20	
1,2-Dibromo-3-Chloropropane		50.0	49.3	ug/L	0.0747	1.48	20	
1,2-Dibromoethane		50.0	48.9	ug/L	0.215	2.13	20	
Dibromomethane		50.0	51.4	ug/L	0.136	2.82	20	
1,2-Dichlorobenzene		50.0	48.6	ug/L	1.28	2.86	20	
1,3-Dichlorobenzene		50.0	47.7	ug/L	1.45	4.62	20	
1,4-Dichlorobenzene		50.0	47.4	ug/L	1.46	5.24	20	
Dichlorodifluoromethane		50.0	56.6	ug/L	0.438	13.1	20	
1,2-Dichloroethane		50.0	48.5	ug/L	0.327	2.98	20	
cis-1,2-Dichloroethene		50.0	50.0	ug/L	0.288	0.0118	20	
trans-1,2-Dichloroethene		50.0	49.3	ug/L	0.414	1.37	20	
1,3-Dichloropropane		50.0	46.3	ug/L	0.374	7.36	20	
2,2-Dichloropropane		50.0	50.4	ug/L	0.421	0.778	20	
cis-1,3-Dichloropropene		50.0	52.5	ug/L	0.396	4.94	20	
trans-1,3-Dichloropropene		50.0	47.1	ug/L	0.419	5.70	20	

CCV - Modified 03/05/2008
PDF File ID: 4196795
Report generated 06/01/2015 11:01

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051303 Run Date: 05/23/2015 Sample ID: WG524935-02
Instrument ID: HPMS8 Run Time: 16:57 Method: 8260B
File ID: 8M404877 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG524936 Cal ID: HPMS8 - 12-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	51.6	ug/L	0.383	3.12	20	
2-Hexanone		50.0	44.4	ug/L	0.0563	11.2	20	
Hexachlorobutadiene		50.0	41.4	ug/L	0.431	17.1	20	
Isopropylbenzene		50.0	51.7	ug/L	1.70	3.49	20	
p-Isopropyltoluene		50.0	50.2	ug/L	2.75	0.429	20	
4-Methyl-2-Pentanone		50.0	51.5	ug/L	0.0496	3.00	20	
Methylene Chloride		50.0	52.1	ug/L	0.261	4.24	20	
Naphthalene		50.0	50.8	ug/L	1.36	1.66	20	
n-Propylbenzene		50.0	47.2	ug/L	3.57	5.69	20	
Styrene		50.0	50.9	ug/L	1.08	1.86	20	
1,1,1,2-Tetrachloroethane		50.0	48.9	ug/L	0.351	2.18	20	
Tetrachloroethene		50.0	48.4	ug/L	0.303	3.26	20	
1,2,3-Trichlorobenzene		50.0	47.9	ug/L	0.809	4.12	20	
1,2,4-Trichlorobenzene		50.0	48.1	ug/L	0.957	3.86	20	
1,1,1-Trichloroethane		50.0	53.1	ug/L	0.453	6.16	20	
1,1,2-Trichloroethane		50.0	46.6	ug/L	0.215	6.82	20	
Trichloroethene		50.0	54.3	ug/L	0.287	8.51	20	
Trichlorofluoromethane		50.0	52.6	ug/L	0.482	5.24	20	
1,2,3-Trichloropropane		50.0	46.0	ug/L	0.118	8.09	20	
1,2,4-Trimethylbenzene		50.0	49.0	ug/L	2.61	1.98	20	
1,3,5-Trimethylbenzene		50.0	48.5	ug/L	2.51	3.02	20	
o-Xylene		50.0	48.9	ug/L	0.655	2.21	20	
m-,p-Xylene		100	100	ug/L	0.680	0.251	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4196795
Report generated 06/01/2015 11:01

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051303 Run Date: 05/26/2015 Sample ID: WG525055-02
Instrument ID: HPMS8 Run Time: 11:50 Method: 8260B
File ID: 8M404906 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG525056 Cal ID: HPMS8 - 12-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	54.0	ug/L	0.508	8.01	20	
1,1-Dichloroethene	CCC	50.0	54.5	ug/L	0.479	9.01	20	
1,2-Dichloropropane	CCC	50.0	53.5	ug/L	0.300	6.98	20	
Ethylbenzene	CCC	50.0	49.5	ug/L	0.593	1.05	20	
Toluene	CCC	50.0	50.7	ug/L	1.51	1.49	20	
Vinyl Chloride	CCC	50.0	59.4	ug/L	0.865	18.7	20	
Bromoform	SPCC	50.0	48.2	ug/L	0.188	3.59	20	
Chlorobenzene	SPCC	50.0	50.8	ug/L	1.02	1.61	20	
Chloromethane	SPCC	50.0	54.6	ug/L	0.845	9.20	20	
1,1-Dichloroethane	SPCC	50.0	54.4	ug/L	0.551	8.89	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	43.2	ug/L	0.411	13.5	20	
Xylenes		150	153	ug/L	0.683	2.01	20	
Acetone		50.0	49.4	ug/L	0.0353	1.21	20	
Benzene		50.0	56.3	ug/L	1.13	12.7	20	
Bromobenzene		50.0	45.3	ug/L	0.681	9.38	20	
Bromochloromethane		50.0	55.3	ug/L	0.163	10.6	20	
Bromodichloromethane		50.0	56.0	ug/L	0.386	12.0	20	
Bromomethane		50.0	57.9	ug/L	0.203	15.7	20	
2-Butanone		50.0	49.3	ug/L	0.0573	1.48	20	
n-Butylbenzene		50.0	48.9	ug/L	2.61	2.29	20	
sec-Butylbenzene		50.0	49.0	ug/L	3.16	1.96	20	
tert-Butylbenzene		50.0	44.6	ug/L	0.513	10.9	20	
Carbon Disulfide		50.0	57.4	ug/L	0.927	14.7	20	
Carbon Tetrachloride		50.0	59.1	ug/L	0.459	18.3	20	
Dibromochloromethane		50.0	52.4	ug/L	0.321	4.75	20	
Chloroethane		50.0	55.7	ug/L	0.221	11.5	20	
2-Chlorotoluene		50.0	42.4	ug/L	2.17	15.1	20	
4-Chlorotoluene		50.0	52.1	ug/L	2.13	4.15	20	
1,2-Dibromo-3-Chloropropane		50.0	46.5	ug/L	0.0705	7.00	20	
1,2-Dibromoethane		50.0	51.7	ug/L	0.227	3.34	20	
Dibromomethane		50.0	53.6	ug/L	0.142	7.24	20	
1,2-Dichlorobenzene		50.0	48.2	ug/L	1.27	3.62	20	
1,3-Dichlorobenzene		50.0	48.2	ug/L	1.47	3.56	20	
1,4-Dichlorobenzene		50.0	46.3	ug/L	1.43	7.31	20	
Dichlorodifluoromethane		50.0	57.1	ug/L	0.443	14.3	20	
1,2-Dichloroethane		50.0	51.5	ug/L	0.347	3.01	20	
cis-1,2-Dichloroethene		50.0	53.9	ug/L	0.311	7.88	20	
trans-1,2-Dichloroethene		50.0	52.3	ug/L	0.439	4.57	20	
1,3-Dichloropropane		50.0	47.5	ug/L	0.384	4.93	20	
2,2-Dichloropropane		50.0	54.1	ug/L	0.452	8.15	20	
cis-1,3-Dichloropropene		50.0	56.3	ug/L	0.425	12.6	20	
trans-1,3-Dichloropropene		50.0	49.1	ug/L	0.437	1.75	20	

CCV - Modified 03/05/2008
PDF File ID: 4196795
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051303 Run Date: 05/26/2015 Sample ID: WG525055-02
Instrument ID: HPMS8 Run Time: 11:50 Method: 8260B
File ID: 8M404906 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG525056 Cal ID: HPMS8 - 12-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	55.0	ug/L	0.409	10.1	20	
2-Hexanone		50.0	47.0	ug/L	0.0596	6.02	20	
Hexachlorobutadiene		50.0	41.9	ug/L	0.436	16.1	20	
Isopropylbenzene		50.0	53.3	ug/L	1.75	6.60	20	
p-Isopropyltoluene		50.0	49.7	ug/L	2.72	0.574	20	
4-Methyl-2-Pentanone		50.0	55.2	ug/L	0.0532	10.3	20	
Methylene Chloride		50.0	55.6	ug/L	0.278	11.2	20	
Naphthalene		50.0	49.6	ug/L	1.32	0.840	20	
n-Propylbenzene		50.0	46.7	ug/L	3.53	6.64	20	
Styrene		50.0	52.7	ug/L	1.12	5.50	20	
1,1,1,2-Tetrachloroethane		50.0	51.3	ug/L	0.369	2.68	20	
Tetrachloroethene		50.0	50.7	ug/L	0.318	1.48	20	
1,2,3-Trichlorobenzene		50.0	47.2	ug/L	0.797	5.51	20	
1,2,4-Trichlorobenzene		50.0	47.4	ug/L	0.943	5.30	20	
1,1,1-Trichloroethane		50.0	56.5	ug/L	0.483	13.0	20	
1,1,2-Trichloroethane		50.0	49.3	ug/L	0.227	1.43	20	
Trichloroethene		50.0	57.3	ug/L	0.303	14.6	20	
Trichlorofluoromethane		50.0	55.7	ug/L	0.510	11.5	20	
1,2,3-Trichloropropane		50.0	43.8	ug/L	0.113	12.5	20	
1,2,4-Trimethylbenzene		50.0	48.6	ug/L	2.59	2.71	20	
1,3,5-Trimethylbenzene		50.0	48.2	ug/L	2.50	3.60	20	
o-Xylene		50.0	49.7	ug/L	0.666	0.577	20	
m-,p-Xylene		100	103	ug/L	0.700	3.31	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4196795
Report generated 06/01/2015 11:01

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15051303
Instrument ID: HPMS8
Workgroup (AAB#): WG524936

ICAL CCV Number: WG523161-08
CAL ID: HPMS8-12-MAY-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG523161-08	NA	NA	300564	545682	779258
Upper Limit	NA	NA	601128	1091364	1558516
Lower Limit	NA	NA	150282	272841	389629
L15051303-01	1.00	01	261416	498390	629064
L15051303-05	1.00	01	268781	487956	613334
L15051303-07	1.00	01	263947	492431	609321
WG524936-01	1.00	01	292737	546576	689774
WG524936-02	1.00	01	334709	581225	715700
WG524936-03	1.00	01	346374	614188	764250

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4203793
Report generated 06/01/2015 11:01

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15051303
Instrument ID: HPMS8
Workgroup (AAB#): WG525056

ICAL CCV Number: WG523161-08
CAL ID: HPMS8-12-MAY-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG523161-08	NA	NA	300564	545682	779258
Upper Limit	NA	NA	601128	1091364	1558516
Lower Limit	NA	NA	150282	272841	389629
L15051303-01	10.0	DL01	295740	552952	674736
L15051303-03	1.00	02	287141	525715	635047
L15051303-09	1.00	01	280709	512825	639751
L15051303-11	1.00	01	277144	506022	623100
L15051303-13	1.00	01	284643	534572	661576
WG525056-01	1.00	01	303161	574760	711532
WG525056-02	1.00	01	353506	581966	721452
WG525056-03	1.00	01	366436	613510	756341

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4203793
Report generated 06/01/2015 11:01

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15051303
Instrument ID: HPMS8
Workgroup (AAB#): WG524936

ICAL CCV Number: WG523161-08
CAL ID: HPMS8-12-MAY-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG523161-08	NA	NA	17.65	14.62	10.75
Upper Limit	NA	NA	18.15	15.12	11.25
Lower Limit	NA	NA	17.15	14.12	10.25
L15051303-01	1.00	01	17.64	14.62	10.75
L15051303-05	1.00	01	17.64	14.62	10.75
L15051303-07	1.00	01	17.64	14.62	10.75
WG524936-01	1.00	01	17.64	14.62	10.75
WG524936-02	1.00	01	17.64	14.62	10.75
WG524936-03	1.00	01	17.64	14.62	10.75

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4203794
Report generated: 06/01/2015 11:01

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15051303
Instrument ID: HPMS8
Workgroup (AAB#): WG525056

ICAL CCV Number: WG523161-08
CAL ID: HPMS8-12-MAY-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG523161-08	NA	NA	17.65	14.62	10.75
Upper Limit	NA	NA	18.15	15.12	11.25
Lower Limit	NA	NA	17.15	14.12	10.25
L15051303-01	10.0	DL01	17.64	14.62	10.75
L15051303-03	1.00	02	17.64	14.62	10.75
L15051303-09	1.00	01	17.64	14.62	10.75
L15051303-11	1.00	01	17.64	14.62	10.75
L15051303-13	1.00	01	17.64	14.62	10.75
WG525056-01	1.00	01	17.64	14.62	10.75
WG525056-02	1.00	01	17.64	14.62	10.75
WG525056-03	1.00	01	17.64	14.62	10.75

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4203794
Report generated: 06/01/2015 11:01

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052315\8M404894.D Vial: 19
Acq On : 24 May 2015 1:06 Operator: FJB
Sample : L15051303-01 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 26 08:18:41 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	629064	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	498390	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	261416	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	154464	24.7731 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.08%		
43) 1,2-Dichloroethane-d4	10.35	65	142646	24.3443 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.36%		
58) Toluene-d8	12.73	98	567802	24.4140 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.64%		
80) p-Bromofluorobenzene	16.12	95	214547	24.1230 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.48%		

Target Compounds

					Qvalue
3) Chloromethane	3.65	50	5430	0.2790 ug/L	80
4) Vinyl Chloride	3.89	62	2637	0.1438 ug/L #	69
12) 1,1,2-Trichloro-1,2,2-Trif	6.21	101	3339	0.5137 ug/L	91
13) Acetone	6.31	43	1740	1.9368 ug/L #	36
14) 1,1-Dichloroethene	6.52	61	10807	0.9775 ug/L	75
23) trans-1,2-Dichloroethene	7.74	61	2369	0.2245 ug/L	76
27) 1,1-Dichloroethane	8.37	63	5177	0.4063 ug/L #	84
32) cis-1,2-Dichloroethene	9.21	96	77614	10.7067 ug/L	96
39) Cyclohexane	9.99	56	3982	0.3058 ug/L #	87
45) 1,2-Dichloroethane	10.46	62	15084	1.7779 ug/L	97
47) Trichloroethene	11.26	130	3538488	531.3048 ug/L	96
48) Methylcyclohexane	11.26	83	57564	5.3252 ug/L #	1
66) Tetrachloroethene	13.66	164	3454	0.5536 ug/L #	65

(#) = qualifier out of range (m) = manual integration
8M404894.D 8260WT.M Tue May 26 08:18:42 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052315\8M404894.D Vial: 19
Acq On : 24 May 2015 1:06 Operator: FJB
Sample : L15051303-01 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 26 8:18 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

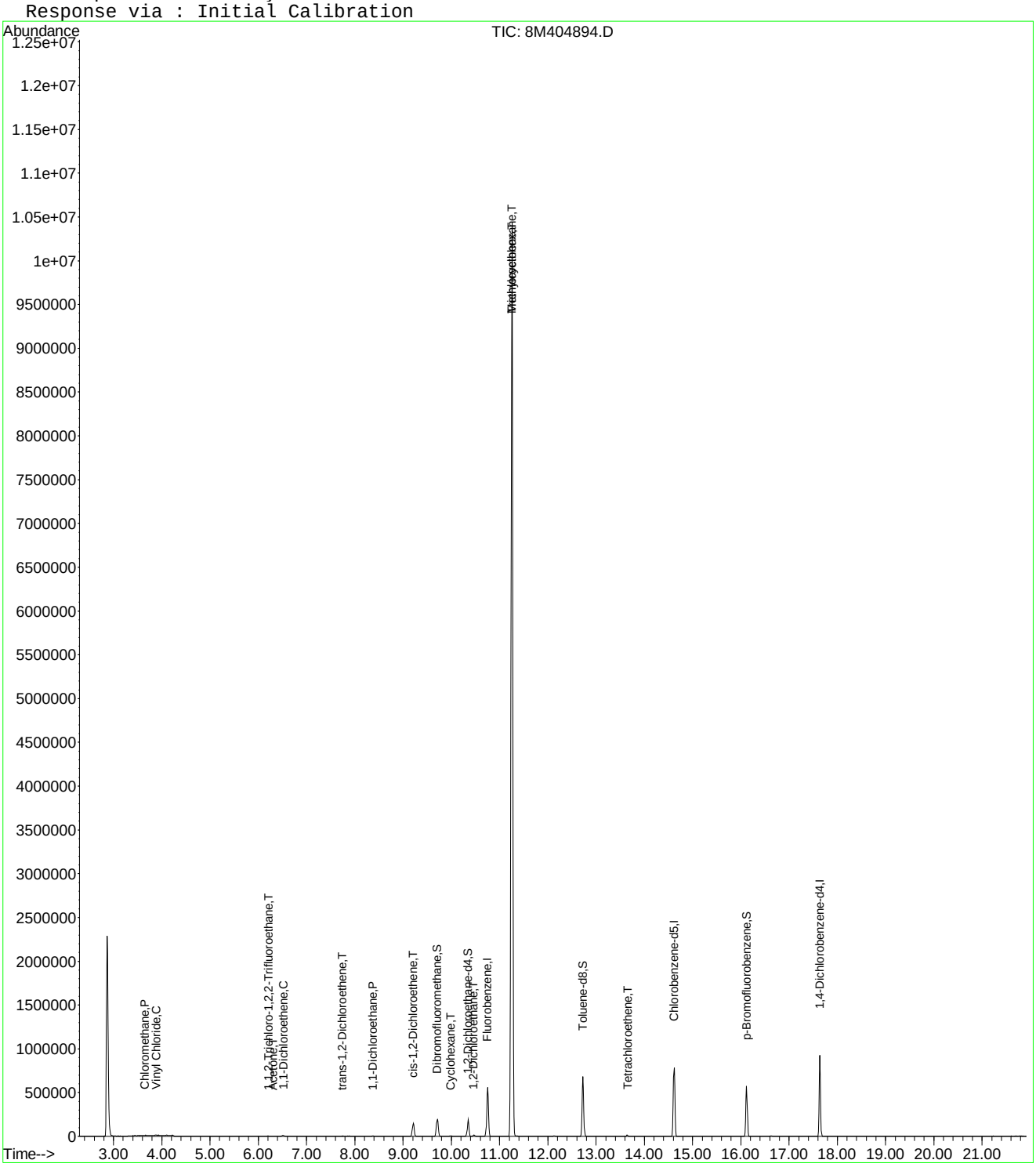

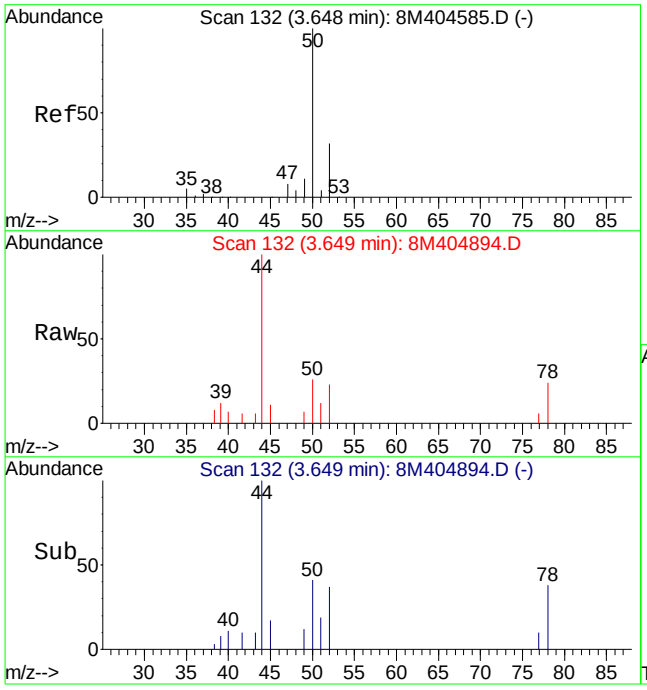

#3
Chloromethane
Concen: 0.28 ug/L
RT: 3.65 min Scan# 132
Delta R.T. -0.00 min
Lab File: 8M404894.D
Acq: 24 May 2015 1:06

Tgt Ion: 50 Resp: 5430

Ion	Ratio	Lower	Upper
50	100		
52	46.4	20.9	48.7

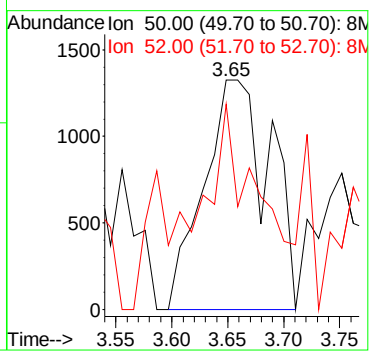

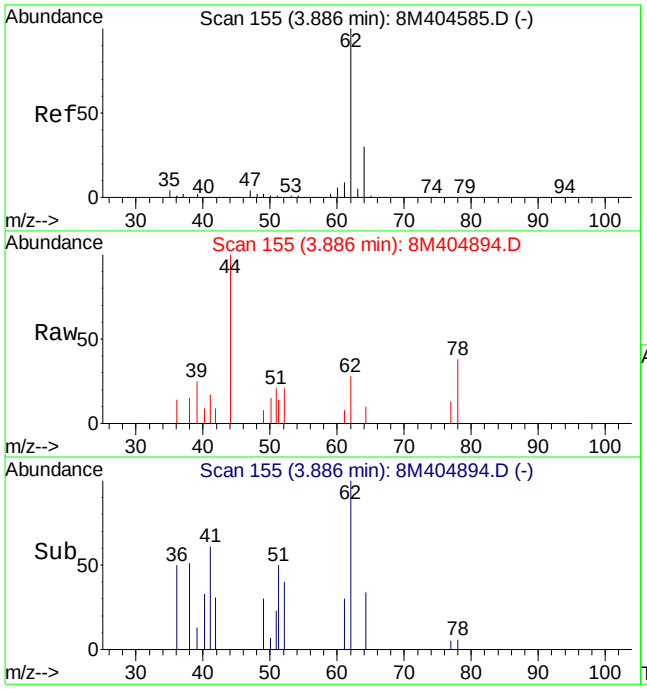

#4
Vinyl Chloride
Concen: 0.14 ug/L
RT: 3.89 min Scan# 155
Delta R.T. 0.01 min
Lab File: 8M404894.D
Acq: 24 May 2015 1:06

Tgt Ion: 62 Resp: 2637

Ion	Ratio	Lower	Upper
62	100		
64	16.0	20.4	47.6#

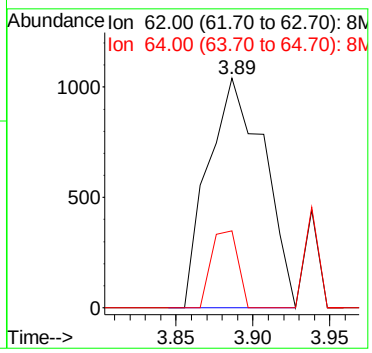

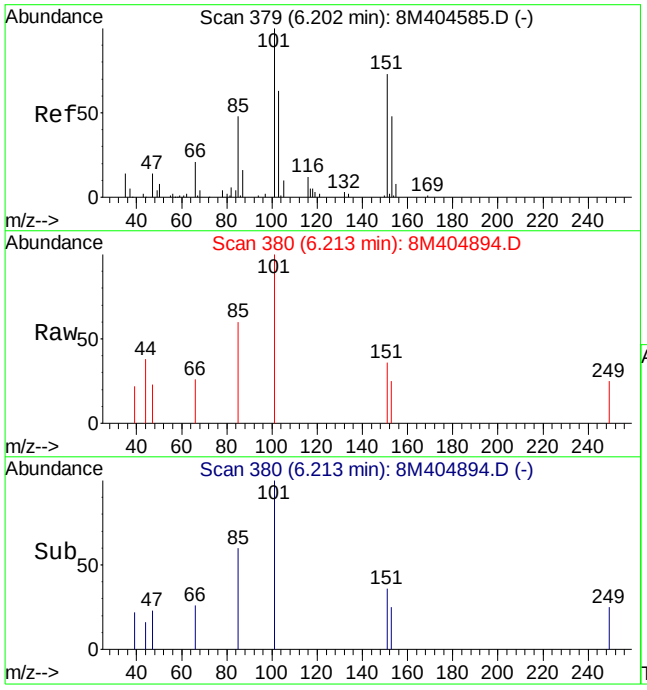

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 0.51 ug/L
RT: 6.21 min Scan# 380
Delta R.T. 0.01 min
Lab File: 8M404894.D
Acq: 24 May 2015 1:06

Tgt Ion:101 Resp: 3339

Ion	Ratio	Lower	Upper
101	100		
151	73.3	40.9	120.9

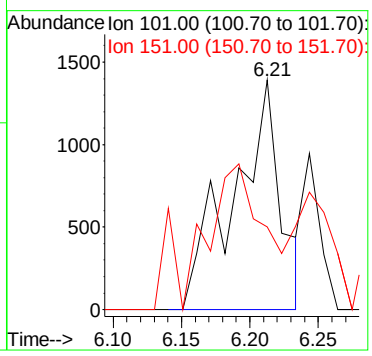

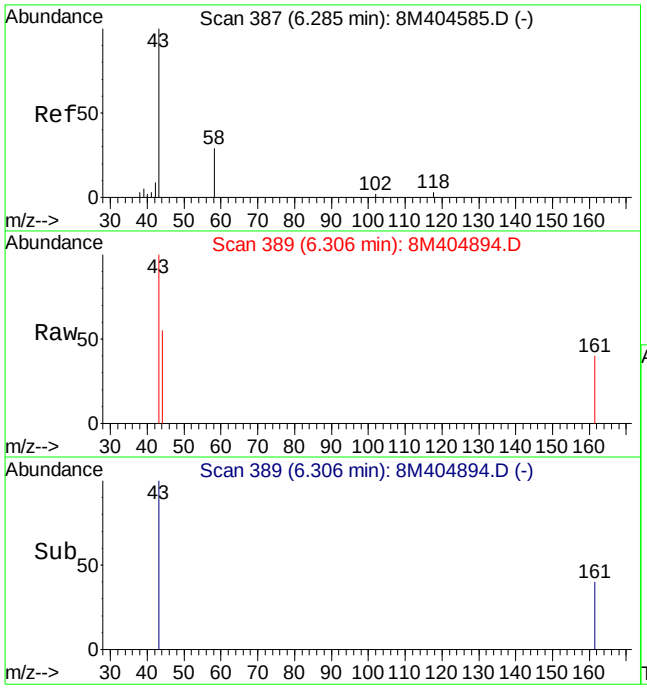

#13
Acetone
Concen: 1.94 ug/L
RT: 6.31 min Scan# 389
Delta R.T. 0.02 min
Lab File: 8M404894.D
Acq: 24 May 2015 1:06

Tgt Ion: 43 Resp: 1740

Ion	Ratio	Lower	Upper
43	100		
58	0.0	23.2	54.0#

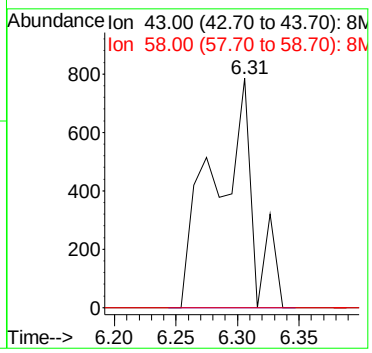

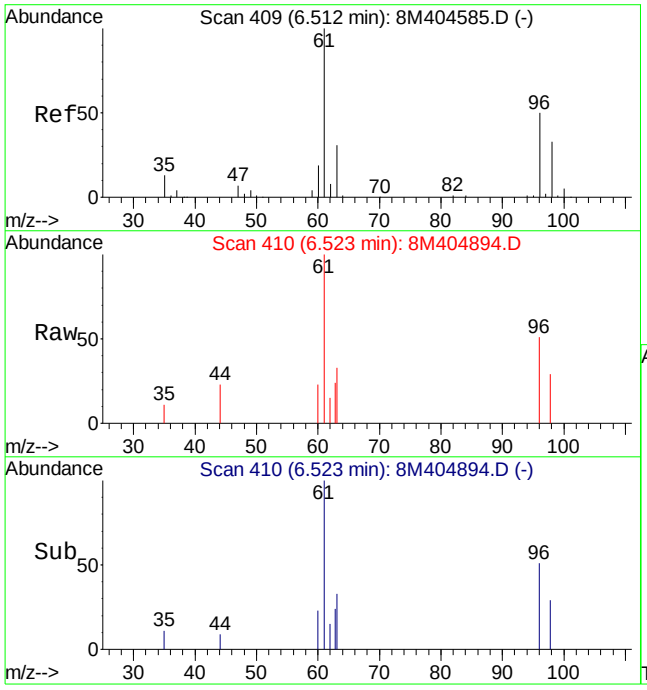

#14
1,1-Dichloroethene
Concen: 0.98 ug/L
RT: 6.52 min Scan# 410
Delta R.T. 0.01 min
Lab File: 8M404894.D
Acq: 24 May 2015 1:06

Tgt Ion: 61 Resp: 10807

Ion	Ratio	Lower	Upper
61	100		
96	45.4	39.1	91.3

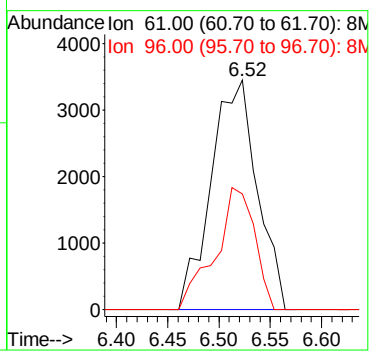

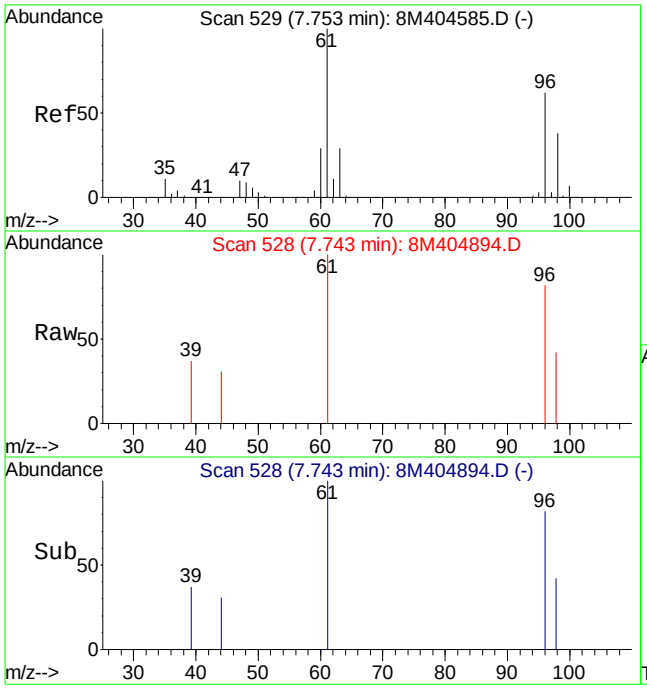

#23
trans-1,2-Dichloroethene
Concen: 0.22 ug/L
RT: 7.74 min Scan# 528
Delta R.T. -0.00 min
Lab File: 8M404894.D
Acq: 24 May 2015 1:06

Tgt Ion: 61 Resp: 2369

Ion	Ratio	Lower	Upper
61	100		
96	54.5	44.8	104.6

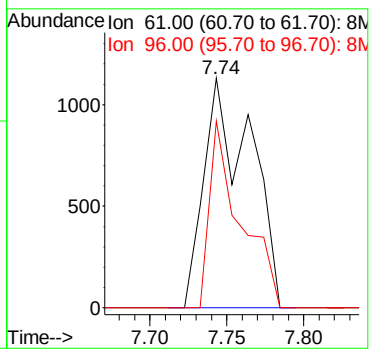

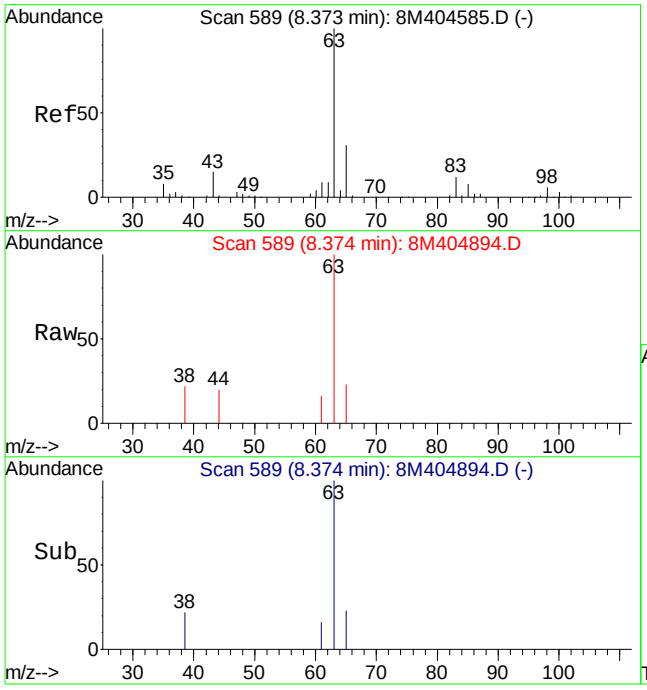

#27
1,1-Dichloroethane
Concen: 0.41 ug/L
RT: 8.37 min Scan# 589
Delta R.T. 0.01 min
Lab File: 8M404894.D
Acq: 24 May 2015 1:06

Tgt Ion: 63 Resp: 5177

Ion	Ratio	Lower	Upper
63	100		
65	26.9	20.7	48.3
83	4.7	8.6	20.2#

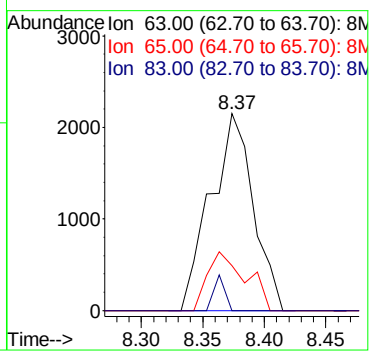

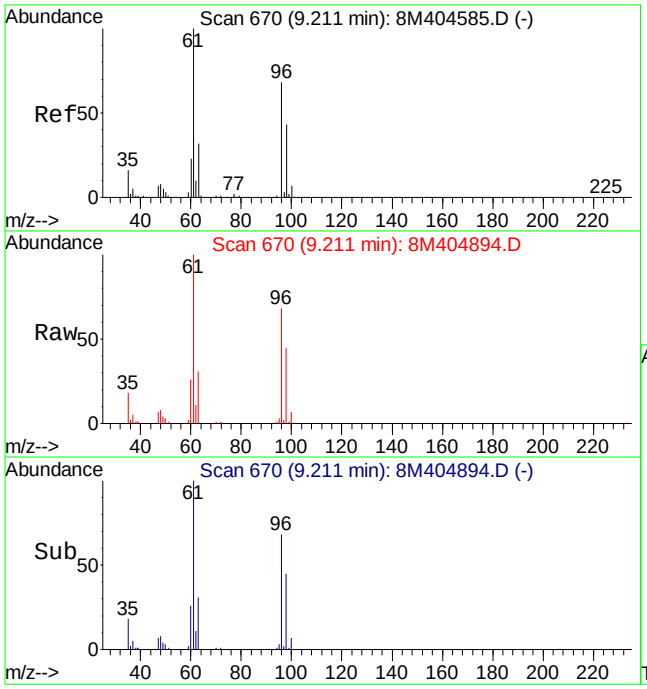

#32
cis-1,2-Dichloroethene
Concen: 10.71 ug/L
RT: 9.21 min Scan# 670
Delta R.T. -0.00 min
Lab File: 8M404894.D
Acq: 24 May 2015 1:06

Tgt Ion: 96 Resp: 77614

Ion	Ratio	Lower	Upper
96	100		
61	144.3	84.0	196.0

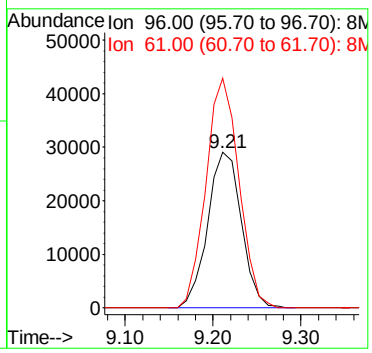

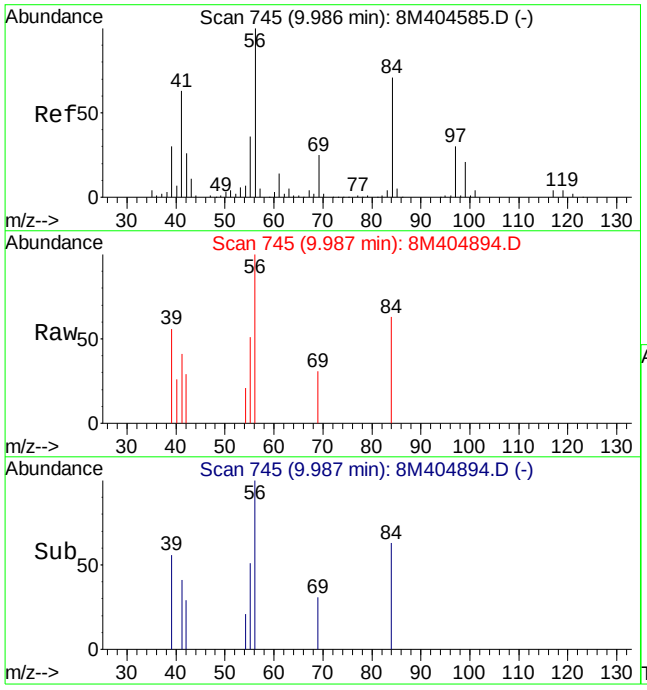

#39
Cyclohexane
Concen: 0.31 ug/L
RT: 9.99 min Scan# 745
Delta R.T. 0.01 min
Lab File: 8M404894.D
Acq: 24 May 2015 1:06

Tgt Ion: 56 Resp: 3982

Ion	Ratio	Lower	Upper
56	100		
84	85.0	52.7	123.1
69	12.1	20.3	47.5#

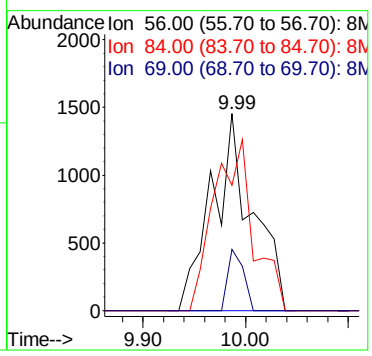

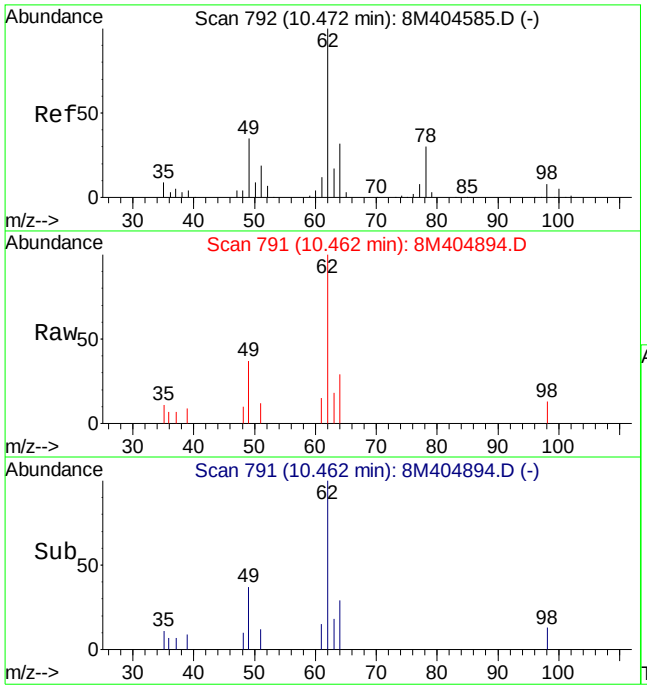

#45
1,2-Dichloroethane
Concen: 1.78 ug/L
RT: 10.46 min Scan# 791
Delta R.T. -0.00 min
Lab File: 8M404894.D
Acq: 24 May 2015 1:06

Tgt Ion: 62 Resp: 15084

Ion	Ratio	Lower	Upper
62	100		
64	30.5	20.5	47.9
49	36.0	21.8	51.0

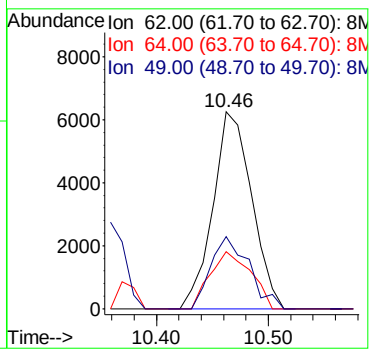

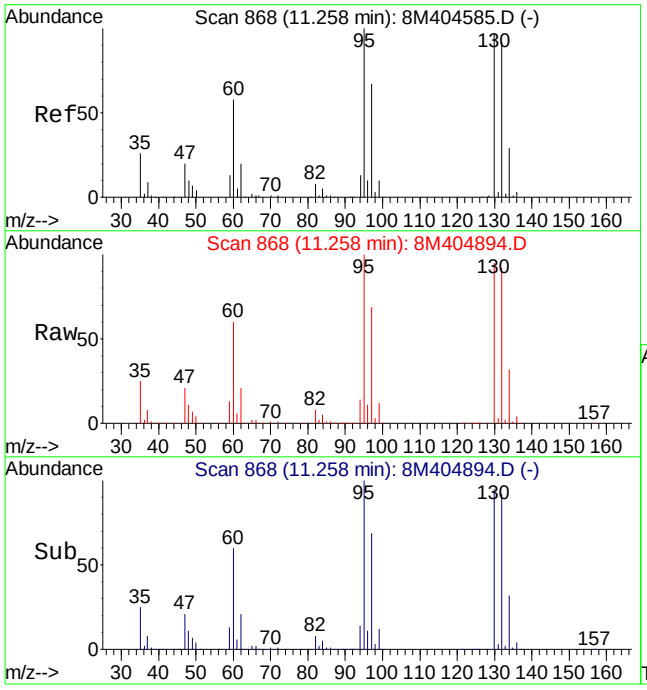

#47
Trichloroethene
Concen: 531.30 ug/L
RT: 11.26 min Scan# 868
Delta R.T. -0.00 min
Lab File: 8M404894.D
Acq: 24 May 2015 1:06

Tgt Ion:130 Resp: 3538488

Ion	Ratio	Lower	Upper
130	100		
132	95.9	58.3	135.9
95	106.2	59.2	138.2

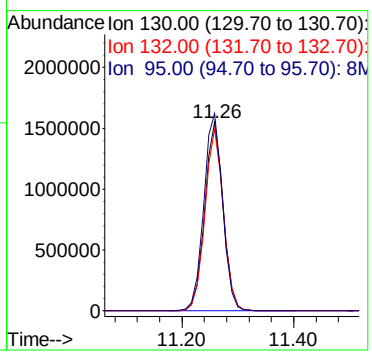

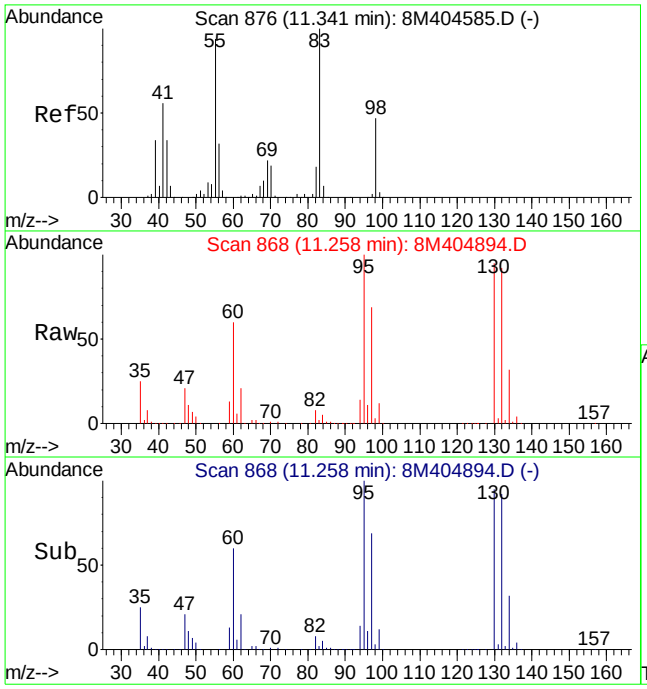

#48
Methylcyclohexane
Concen: 5.33 ug/L
RT: 11.26 min Scan# 868
Delta R.T. -0.09 min
Lab File: 8M404894.D
Acq: 24 May 2015 1:06

Tgt Ion: 83 Resp: 57564

Ion	Ratio	Lower	Upper
83	100		
55	0.0	47.4	110.6#
98	189.2	29.9	69.7#

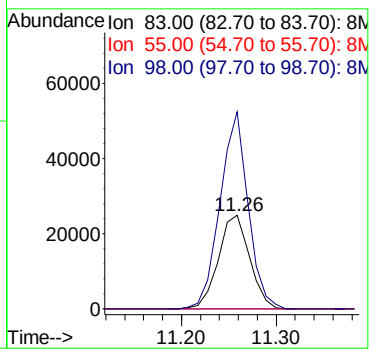

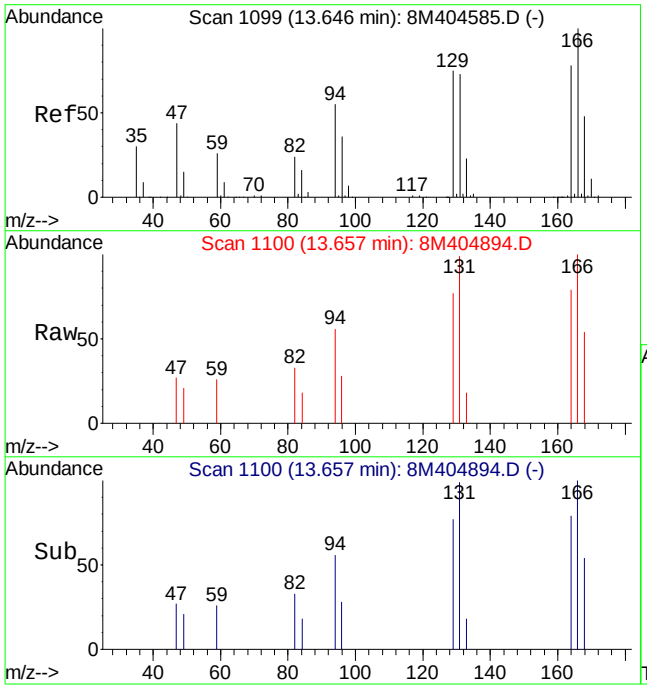

#66
Tetrachloroethene
Concen: 0.55 ug/L
RT: 13.66 min Scan# 1100
Delta R.T. 0.01 min
Lab File: 8M404894.D
Acq: 24 May 2015 1:06

Tgt Ion:164 Resp: 3454

Ion	Ratio	Lower	Upper
164	100		
129	107.0	52.6	122.6
94	93.4	31.2	72.8#

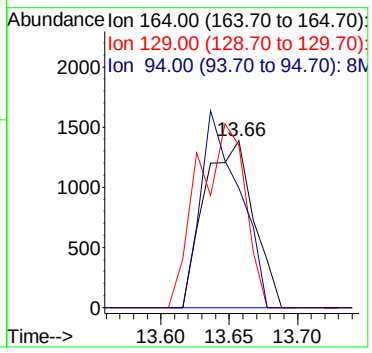

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052615\8M404913.D Vial: 9
Acq On : 26 May 2015 15:14 Operator: TMB
Sample : L15051303-01 B 10X 826-LOW D1 Inst : HPMS8
Misc : 1,10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 27 08:49:04 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	674736	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	552952	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	295740	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	171415	25.6308 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.52%		
43) 1,2-Dichloroethane-d4	10.35	65	156305	24.8697 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.48%		
58) Toluene-d8	12.73	98	626509	24.2801 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.12%		
80) p-Bromofluorobenzene	16.12	95	241554	24.0074 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.04%		

Target Compounds

					Qvalue
3) Chloromethane	3.73	50	2635	0.1262 ug/L #	31
5) 1,3-Butadiene	3.93	54	202	Below Cal #	1
32) cis-1,2-Dichloroethene	9.22	96	8244	1.0603 ug/L	97
36) Tetrahydrofuran	9.68	42	430	0.4066 ug/L #	32
45) 1,2-Dichloroethane	10.46	62	2233	0.2454 ug/L #	66
47) Trichloroethene	11.26	130	309529	43.3300 ug/L	97
48) Methylcyclohexane	11.25	83	4403	0.3797 ug/L #	1

(#) = qualifier out of range (m) = manual integration
8M404913.D 8260WT.M Wed May 27 08:49:04 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052615\8M404913.D Vial: 9
Acq On : 26 May 2015 15:14 Operator: TMB
Sample : L15051303-01 B 10X 826-LOW D1 Inst : HPMS8
Misc : 1,10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 27 8:49 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

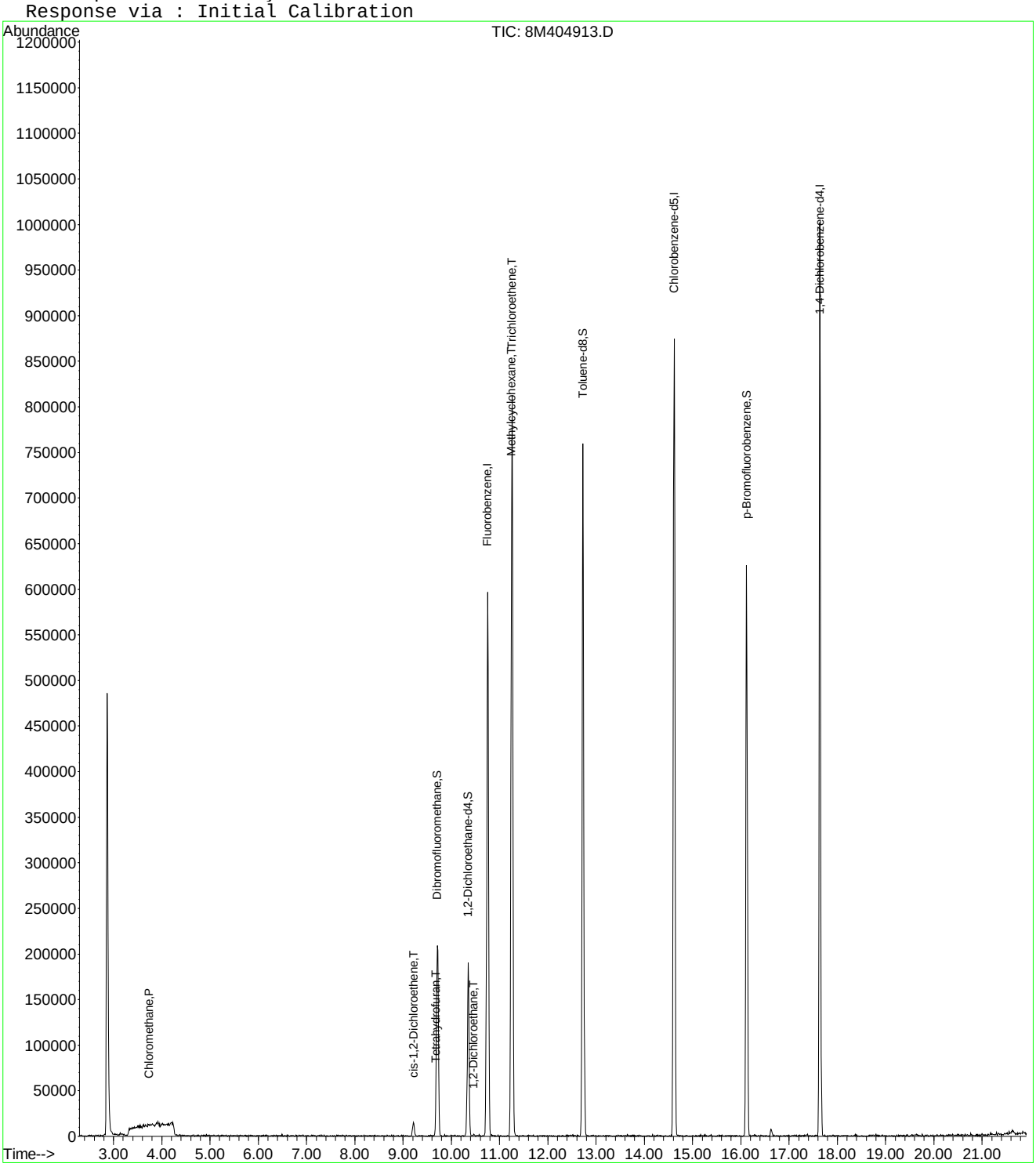

8M404913.D 8260WT.M Wed May 27 08:49:04 2015 Page 2

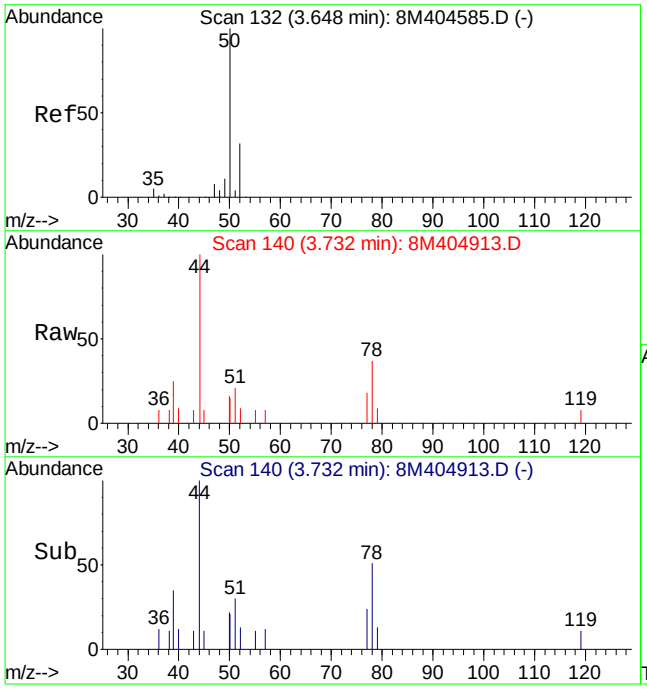

#3
Chloromethane
Concen: 0.13 ug/L
RT: 3.73 min Scan# 140
Delta R.T. 0.08 min
Lab File: 8M404913.D
Acq: 26 May 2015 15:14

Tgt Ion: 50 Resp: 2635

Ion	Ratio	Lower	Upper
50	100		
52	74.8	20.9	48.7#

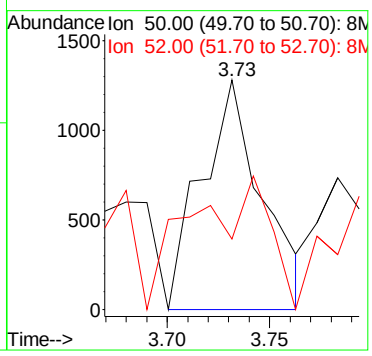

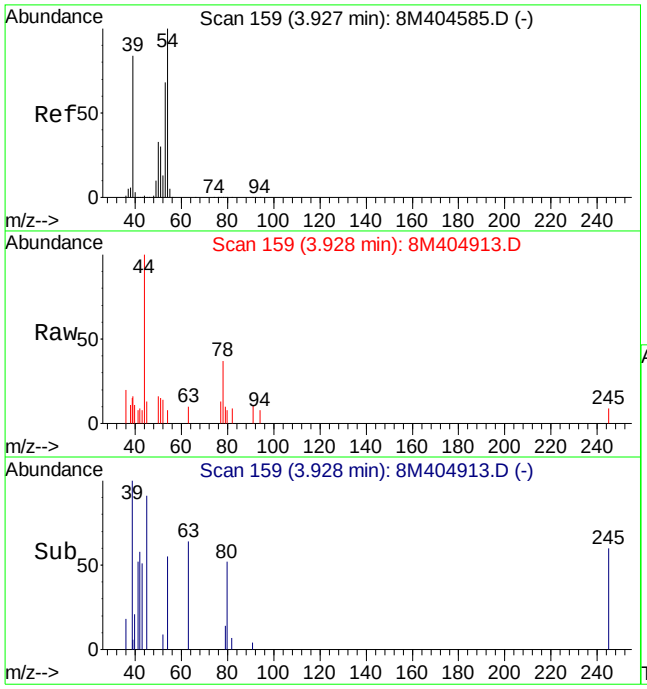

#5
1,3-Butadiene
Concen: Below Cal
RT: 3.93 min Scan# 159
Delta R.T. 0.02 min
Lab File: 8M404913.D
Acq: 26 May 2015 15:14

Tgt Ion: 54 Resp: 202

Ion	Ratio	Lower	Upper
54	100		
39	447.5	50.7	118.3#
53	0.0	40.4	94.4#

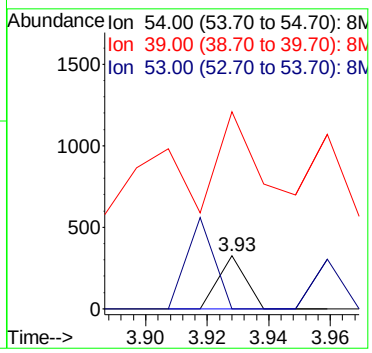

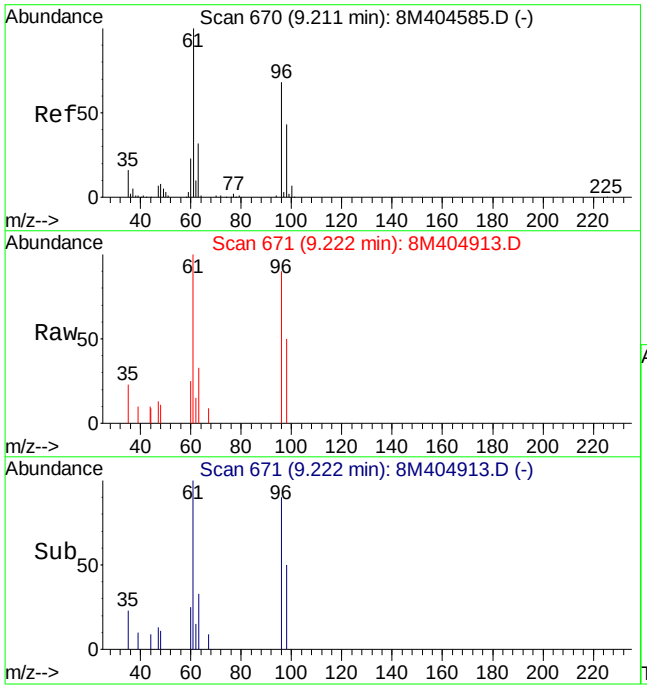

#32
cis-1,2-Dichloroethene
Concen: 1.06 ug/L
RT: 9.22 min Scan# 671
Delta R.T. 0.01 min
Lab File: 8M404913.D
Acq: 26 May 2015 15:14

Tgt Ion: 96 Resp: 8244

Ion	Ratio	Lower	Upper
96	100		
61	135.8	84.0	196.0

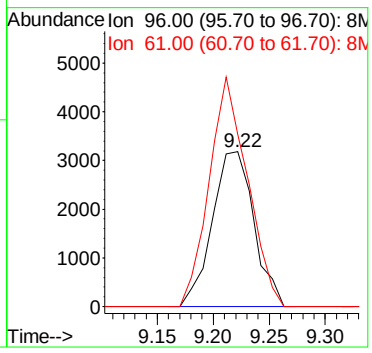

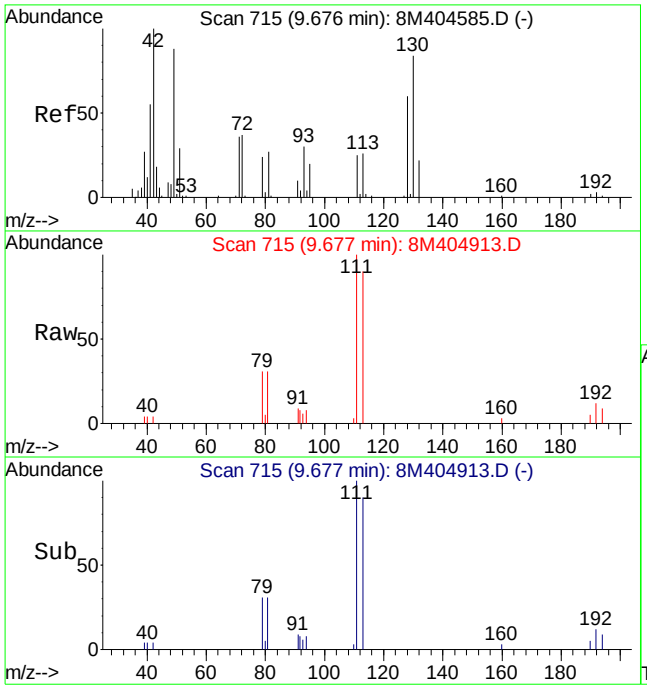

#36
Tetrahydrofuran
Concen: 0.41 ug/L
RT: 9.68 min Scan# 715
Delta R.T. -0.00 min
Lab File: 8M404913.D
Acq: 26 May 2015 15:14

Tgt Ion: 42 Resp: 430

Ion	Ratio	Lower	Upper
42	100		
72	0.0	27.5	64.3#
71	0.0	25.4	59.2#

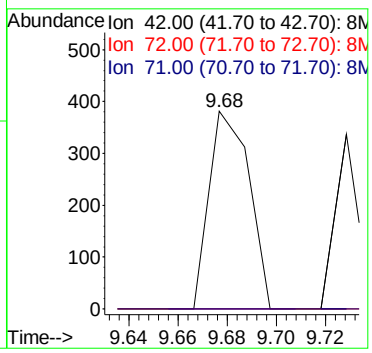

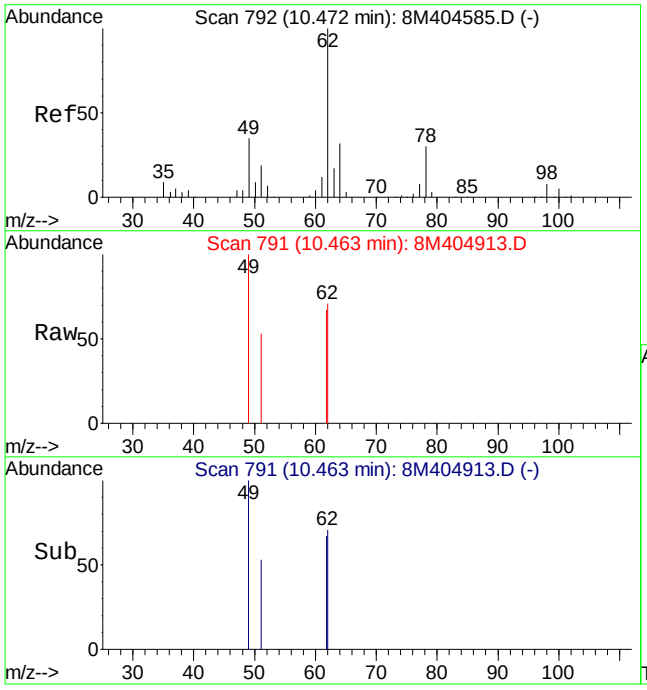

#45
1,2-Dichloroethane
Concen: 0.25 ug/L
RT: 10.46 min Scan# 791
Delta R.T. -0.00 min
Lab File: 8M404913.D
Acq: 26 May 2015 15:14

Tgt Ion: 62 Resp: 2233

Ion	Ratio	Lower	Upper
62	100		
64	0.0	20.5	47.9#
49	30.6	21.8	51.0

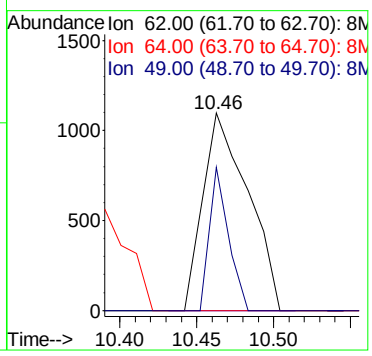

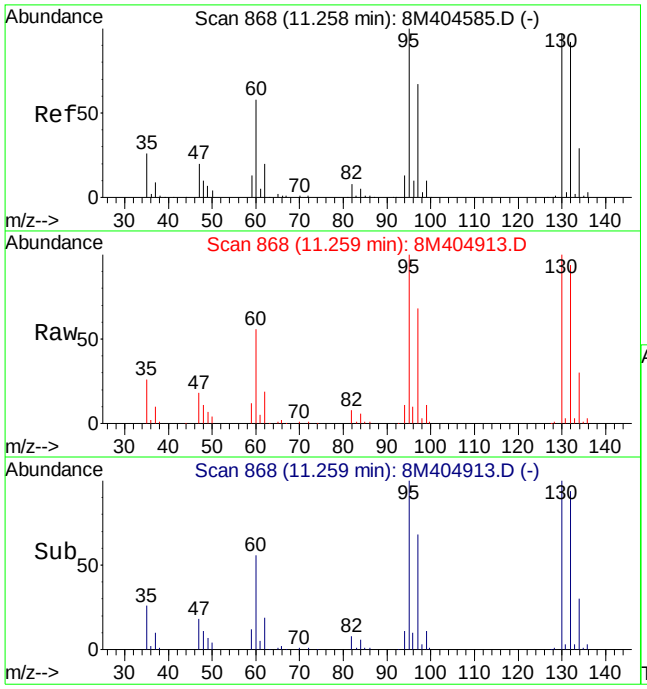

#47
Trichloroethene
Concen: 43.33 ug/L
RT: 11.26 min Scan# 868
Delta R.T. -0.00 min
Lab File: 8M404913.D
Acq: 26 May 2015 15:14

Tgt Ion:130 Resp: 309529

Ion	Ratio	Lower	Upper
130	100		
132	93.0	58.3	135.9
95	100.9	59.2	138.2

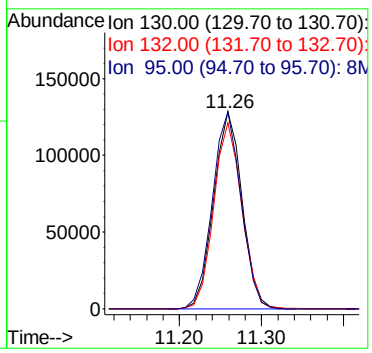

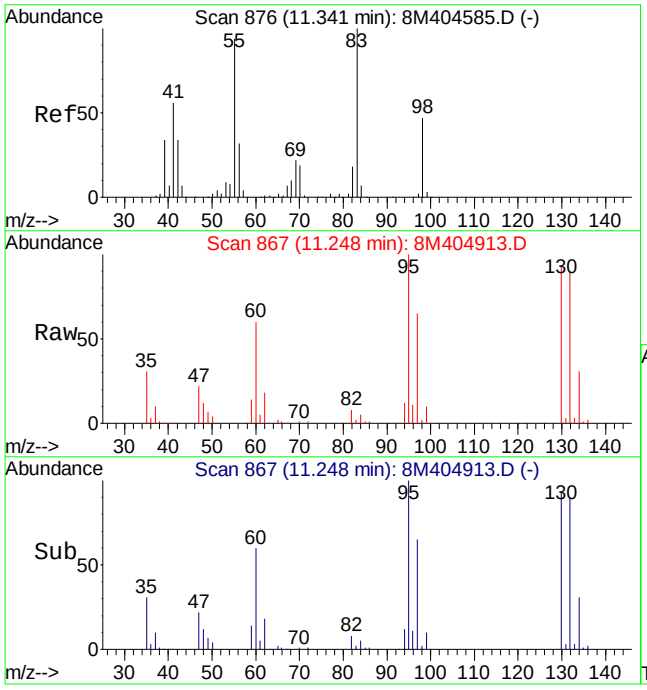

#48
Methylcyclohexane
Concen: 0.38 ug/L
RT: 11.25 min Scan# 867
Delta R.T. -0.10 min
Lab File: 8M404913.D
Acq: 26 May 2015 15:14

Tgt Ion: 83 Resp: 4403

Ion	Ratio	Lower	Upper
83	100		
55	0.0	47.4	110.6#
98	197.8	29.9	69.7#

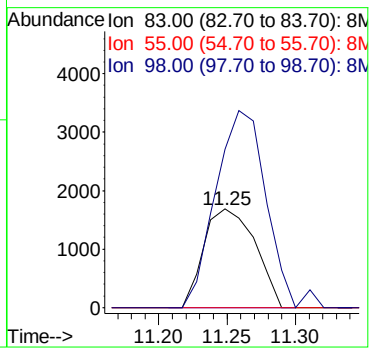

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052615\8M404918.D Vial: 14
Acq On : 26 May 2015 17:38 Operator: TMB
Sample : L15051303-03 B 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 27 08:49:11 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	635047	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	525715	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	287141	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	163623	25.9948 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.96%		
43) 1,2-Dichloroethane-d4	10.35	65	152873	25.8438 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.36%		
58) Toluene-d8	12.73	98	580412	23.6590 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 94.64%		
80) p-Bromofluorobenzene	16.12	95	227102	23.2470 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.00%		

Target Compounds					Qvalue
3) Chloromethane	3.65	50	3579	0.1822 ug/L #	1
13) Acetone	6.30	43	494	0.5447 ug/L #	36
15) Tert-Butyl Alcohol	6.59	59	200	0.8195 ug/L #	61
32) cis-1,2-Dichloroethene	9.21	96	41428	5.6611 ug/L	99
47) Trichloroethene	11.26	130	40677	6.0501 ug/L	90

(#) = qualifier out of range (m) = manual integration
8M404918.D 8260WT.M Wed May 27 08:49:11 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052615\8M404918.D Vial: 14
Acq On : 26 May 2015 17:38 Operator: TMB
Sample : L15051303-03 B 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 27 8:49 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

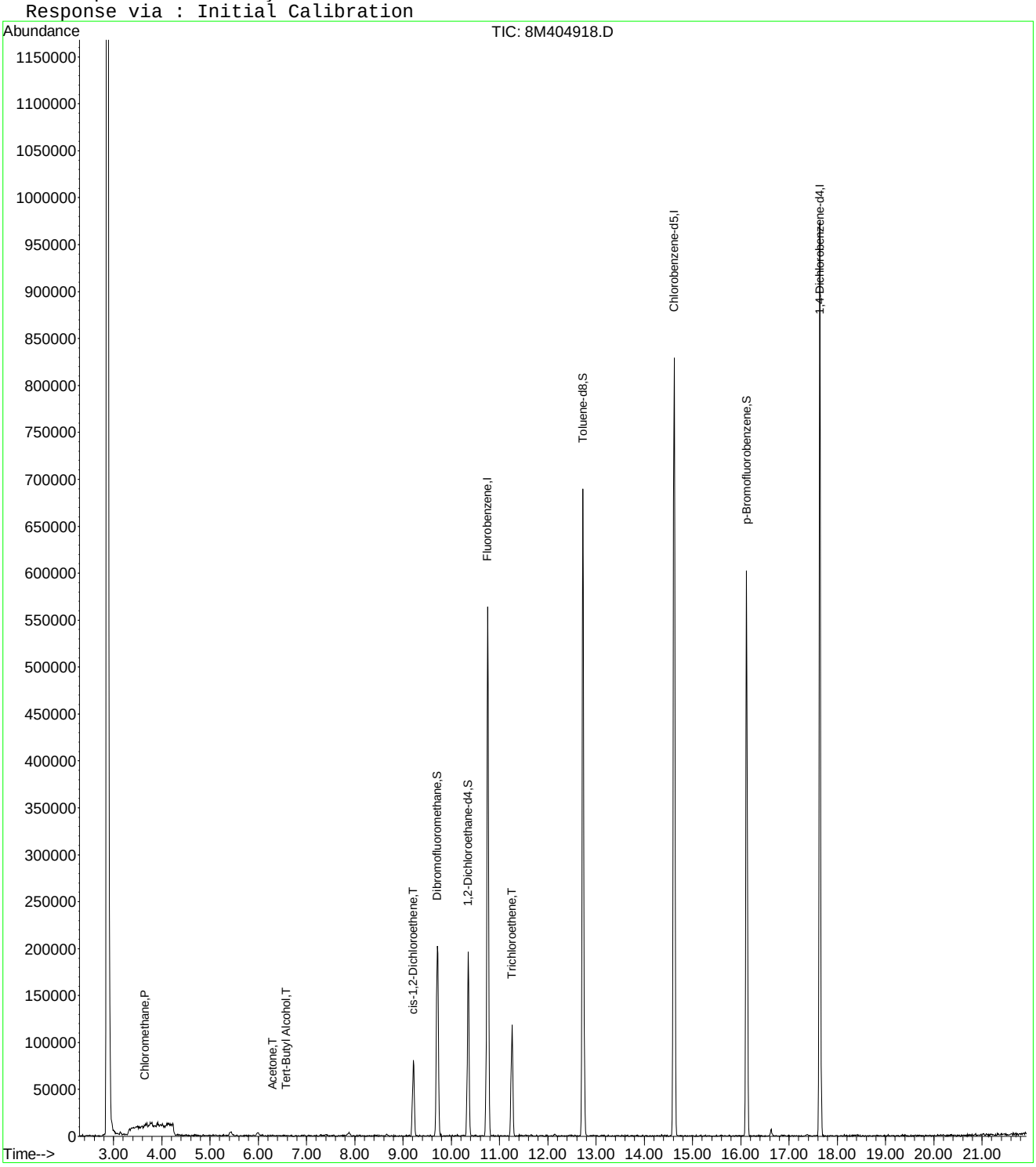

8M404918.D 8260WT.M Wed May 27 08:49:11 2015 Page 2

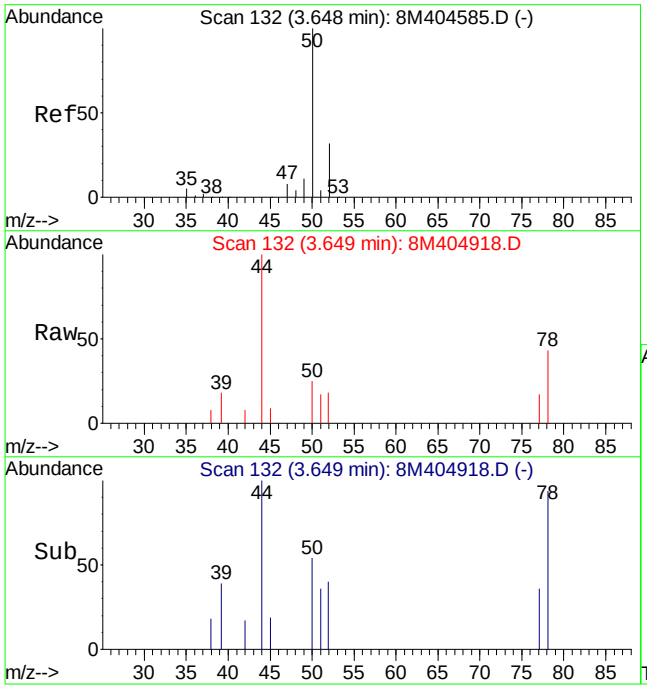

#3
Chloromethane
Concen: 0.18 ug/L
RT: 3.65 min Scan# 132
Delta R.T. -0.00 min
Lab File: 8M404918.D
Acq: 26 May 2015 17:38

Tgt Ion: 50 Resp: 3579

Ion	Ratio	Lower	Upper
50	100		
52	134.3	20.9	48.7#

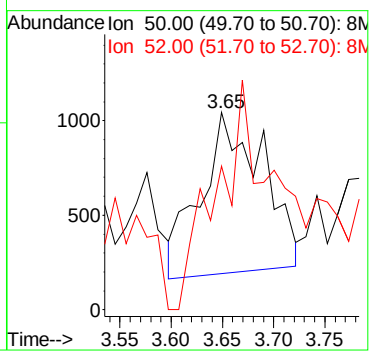

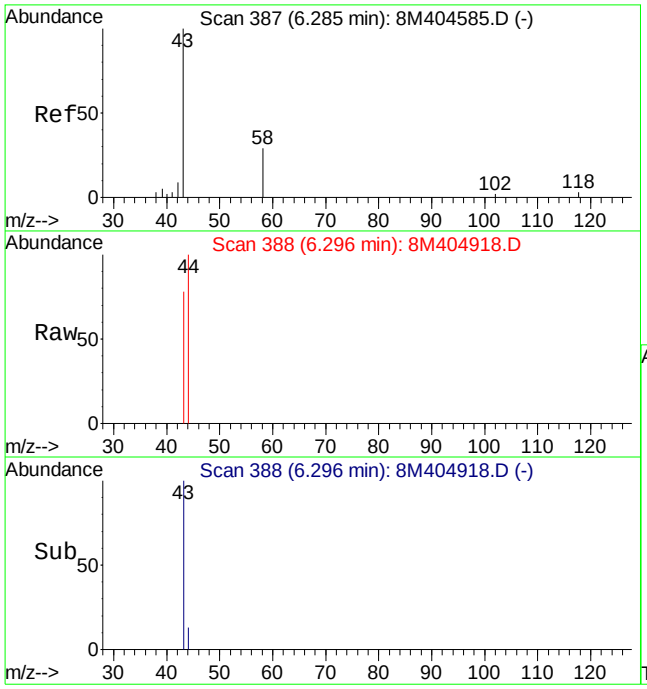

#13
Acetone
Concen: 0.54 ug/L
RT: 6.30 min Scan# 388
Delta R.T. 0.01 min
Lab File: 8M404918.D
Acq: 26 May 2015 17:38

Tgt Ion: 43 Resp: 494

Ion	Ratio	Lower	Upper
43	100		
58	0.0	23.2	54.0#

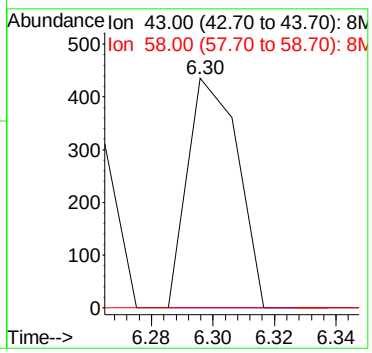

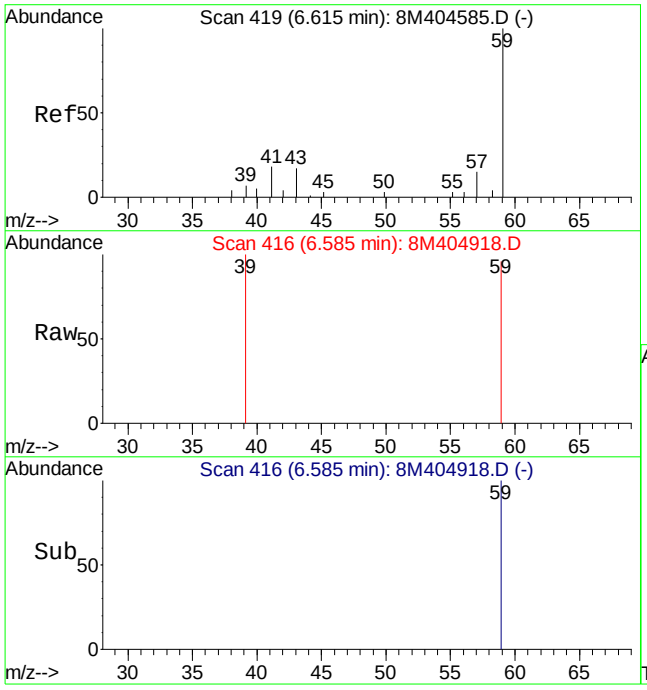

#15
Tert-Butyl Alcohol
Concen: 0.82 ug/L
RT: 6.59 min Scan# 416
Delta R.T. -0.04 min
Lab File: 8M404918.D
Acq: 26 May 2015 17:38

Tgt Ion: 59 Resp: 200

Ion	Ratio	Lower	Upper
59	100		
41	0.0	12.8	29.8#
57	0.0	6.1	14.3#

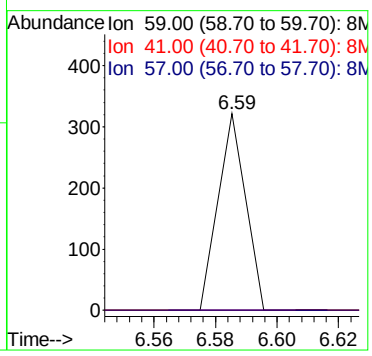

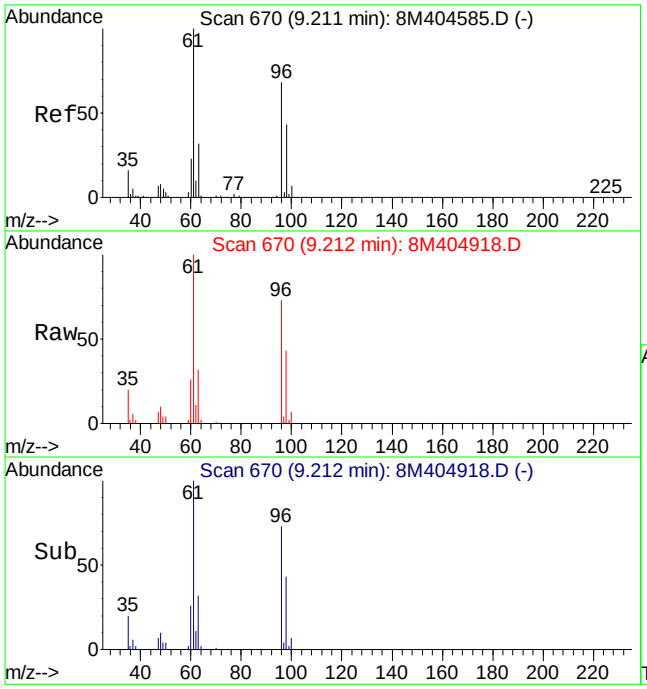

#32
cis-1,2-Dichloroethene
Concen: 5.66 ug/L
RT: 9.21 min Scan# 670
Delta R.T. -0.00 min
Lab File: 8M404918.D
Acq: 26 May 2015 17:38

Tgt Ion: 96 Resp: 41428

Ion	Ratio	Lower	Upper
96	100		
61	141.5	84.0	196.0

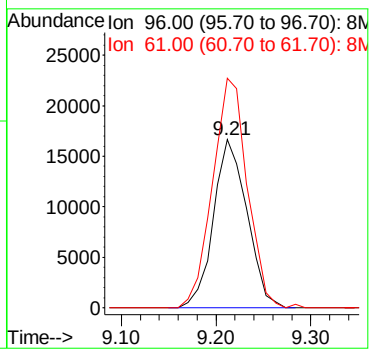

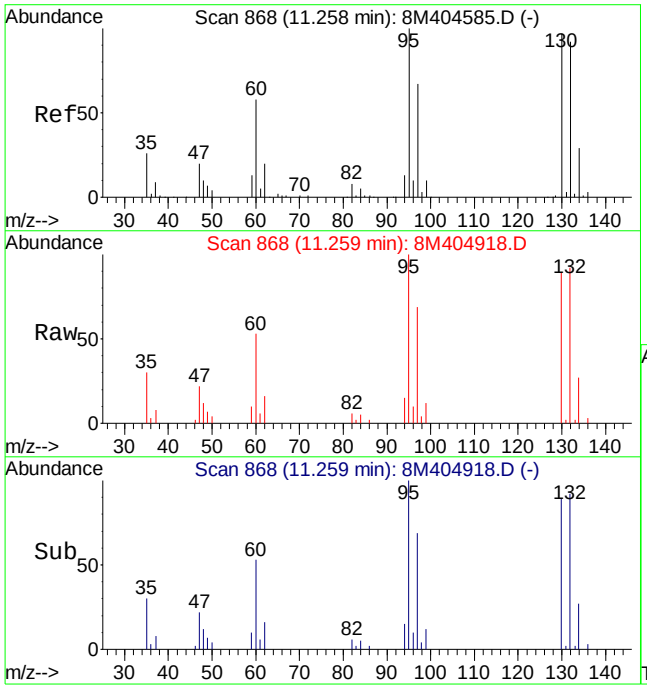

#47
Trichloroethene
Concen: 6.05 ug/L
RT: 11.26 min Scan# 868
Delta R.T. -0.00 min
Lab File: 8M404918.D
Acq: 26 May 2015 17:38

Tgt Ion:130 Resp: 40677

Ion	Ratio	Lower	Upper
130	100		
132	105.3	58.3	135.9
95	109.8	59.2	138.2

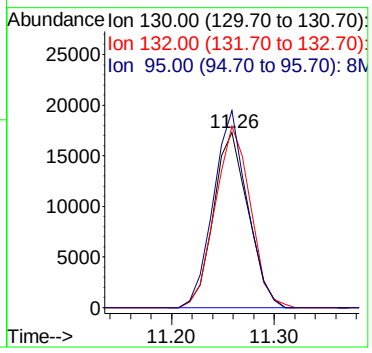

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052315\8M404896.D Vial: 21
Acq On : 24 May 2015 2:04 Operator: FJB
Sample : L15051303-05 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 26 08:18:45 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	613334	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	487956	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	268781	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	154143	25.3556 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.44%		
43) 1,2-Dichloroethane-d4	10.35	65	141022	24.6844 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.72%		
58) Toluene-d8	12.73	98	562008	24.6816 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.72%		
80) p-Bromofluorobenzene	16.12	95	216026	23.6237 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.48%		

Target Compounds

					Qvalue
3) Chloromethane	3.64	50	3164	0.1667 ug/L #	47
4) Vinyl Chloride	3.88	62	2150	0.1202 ug/L #	73
6) Bromomethane	4.71	94	201	0.8242 ug/L #	2
13) Acetone	6.27	43	1115	1.2729 ug/L #	68
14) 1,1-Dichloroethene	6.51	61	11105	1.0302 ug/L	80
17) Iodomethane	7.03	142	293	1.1017 ug/L #	35
27) 1,1-Dichloroethane	8.36	63	3722	0.2996 ug/L #	76
32) cis-1,2-Dichloroethene	9.21	96	16998	2.4050 ug/L	89
45) 1,2-Dichloroethane	10.47	62	9952	1.2031 ug/L	94
47) Trichloroethene	11.26	130	1491825	229.7427 ug/L	96
48) Methylcyclohexane	11.25	83	22707	2.1545 ug/L #	1
56) Dimethyl Disulfide	12.73	79	241	3.0655 ug/L #	1
66) Tetrachloroethene	13.65	164	1681	0.2752 ug/L	80

(#) = qualifier out of range (m) = manual integration
8M404896.D 8260WT.M Tue May 26 08:18:45 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052315\8M404896.D Vial: 21
Acq On : 24 May 2015 2:04 Operator: FJB
Sample : L15051303-05 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 26 8:18 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

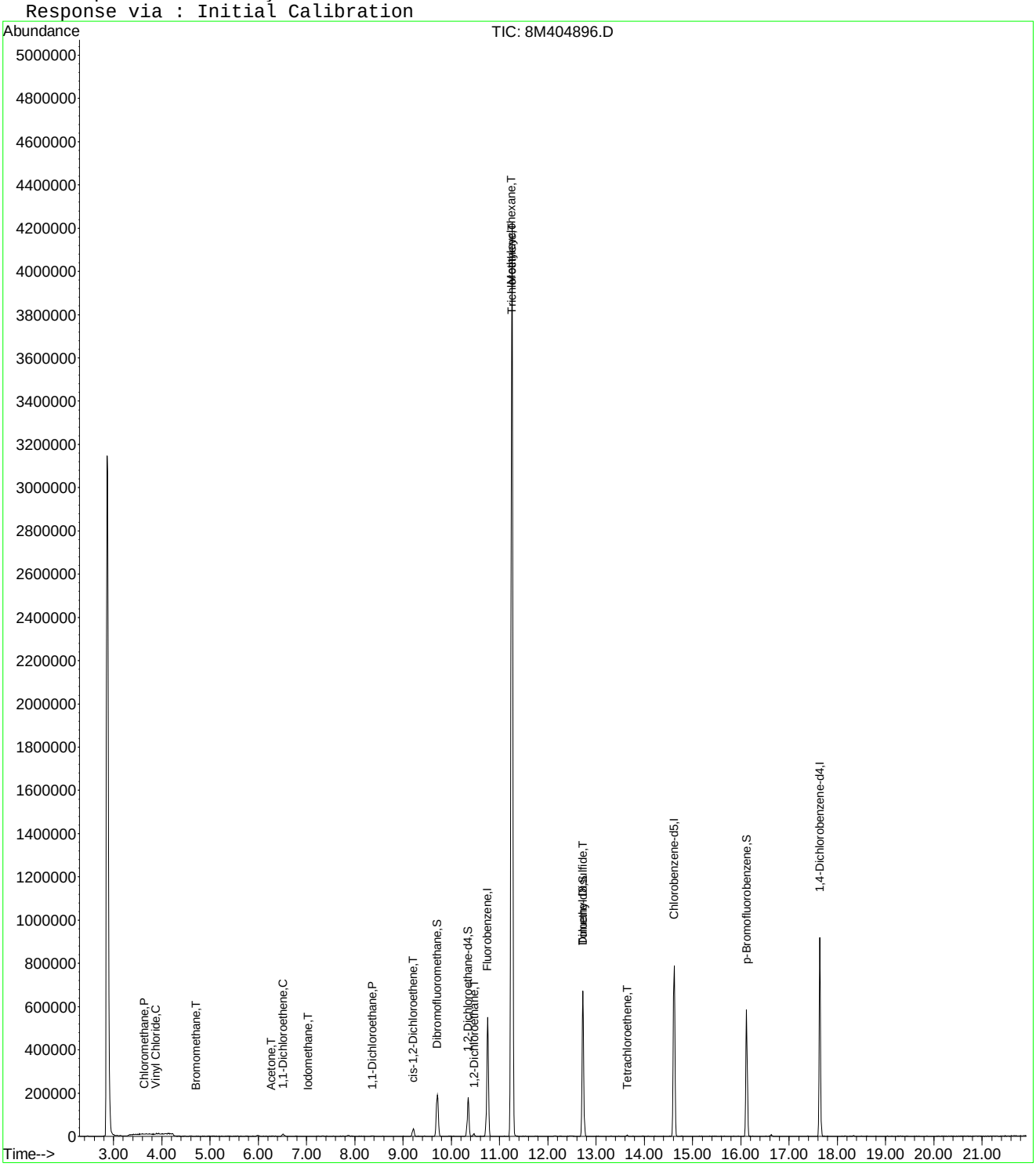

8M404896.D 8260WT.M Tue May 26 08:18:45 2015 Page 2

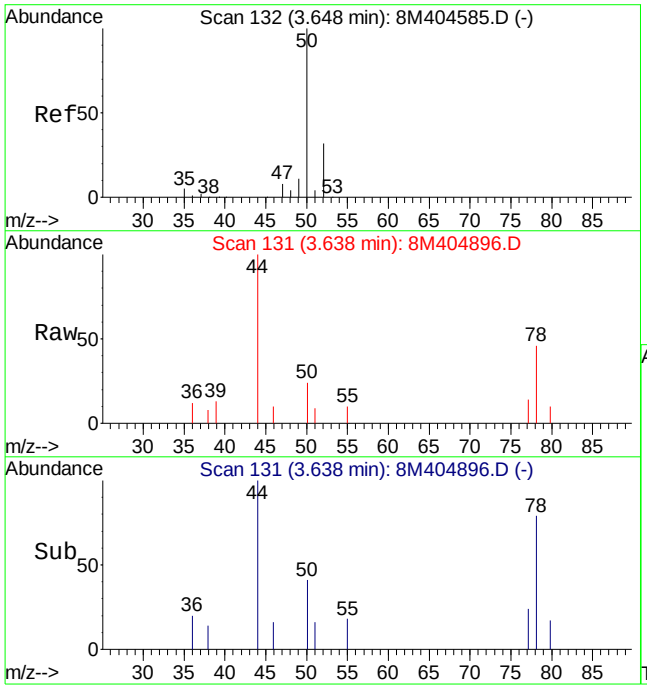

#3
Chloromethane
Concen: 0.17 ug/L
RT: 3.64 min Scan# 131
Delta R.T. -0.01 min
Lab File: 8M404896.D
Acq: 24 May 2015 2:04

Tgt Ion: 50 Resp: 3164

Ion	Ratio	Lower	Upper
50	100		
52	65.6	20.9	48.7#

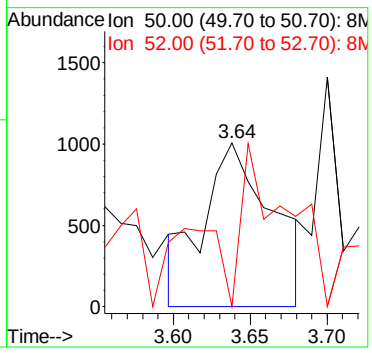

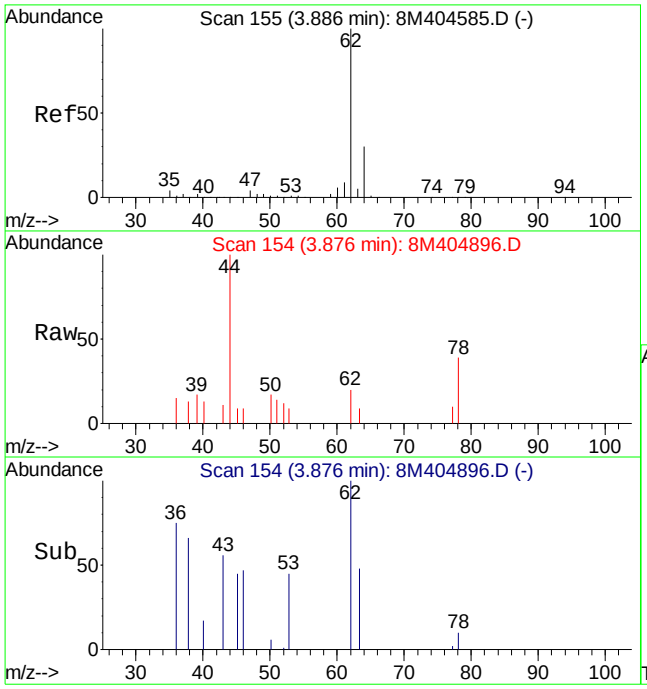

#4
Vinyl Chloride
Concen: 0.12 ug/L
RT: 3.88 min Scan# 154
Delta R.T. -0.00 min
Lab File: 8M404896.D
Acq: 24 May 2015 2:04

Tgt Ion: 62 Resp: 2150

Ion	Ratio	Lower	Upper
62	100		
64	18.3	20.4	47.6#

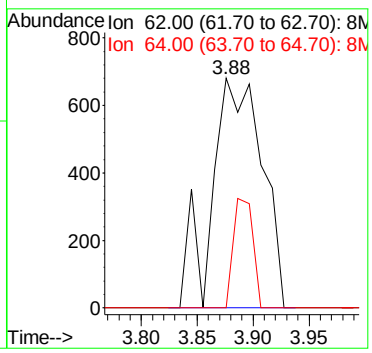

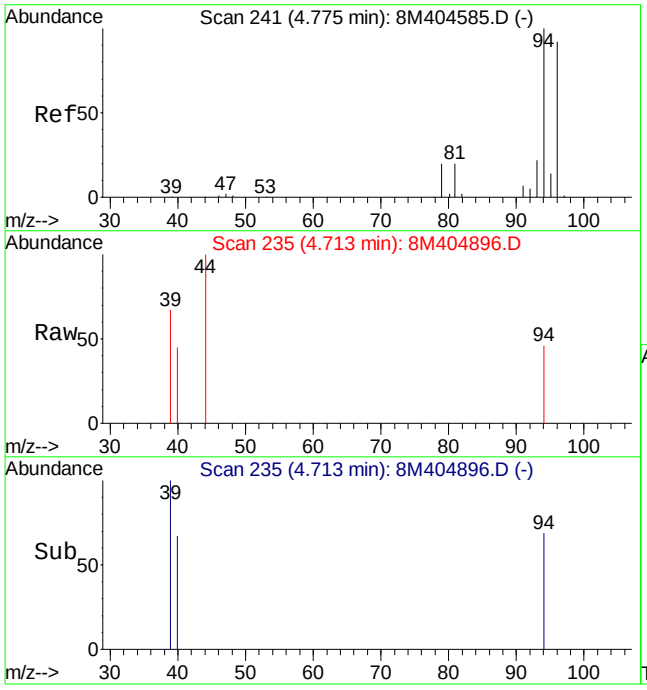

#6
Bromomethane
Concen: 0.82 ug/L
RT: 4.71 min Scan# 235
Delta R.T. -0.05 min
Lab File: 8M404896.D
Acq: 24 May 2015 2:04

Tgt Ion: 94 Resp: 201

Ion	Ratio	Lower	Upper
94	100		
96	0.0	56.9	132.7#

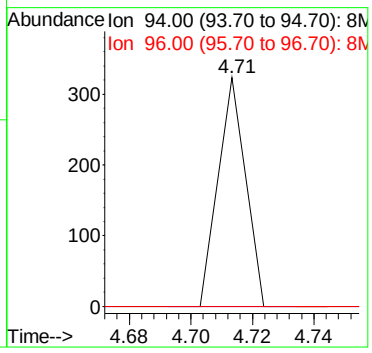

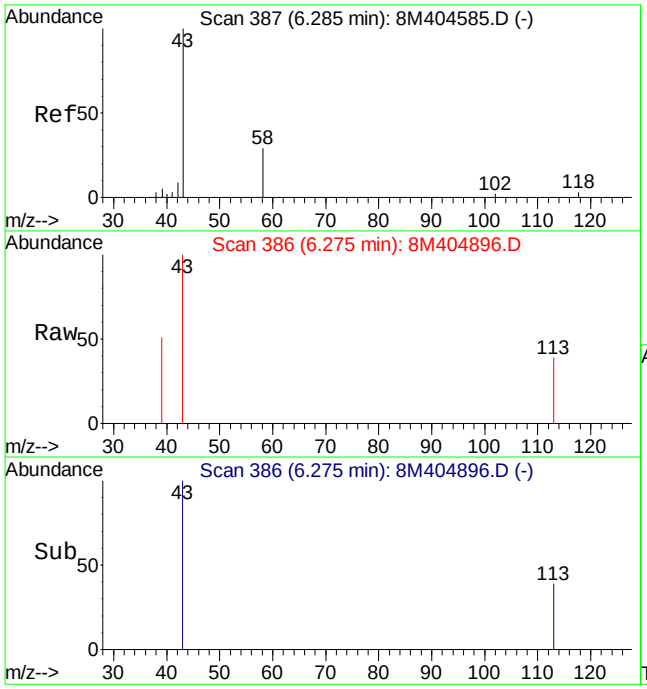

#13
Acetone
Concen: 1.27 ug/L
RT: 6.27 min Scan# 386
Delta R.T. -0.01 min
Lab File: 8M404896.D
Acq: 24 May 2015 2:04

Tgt Ion: 43 Resp: 1115

Ion	Ratio	Lower	Upper
43	100		
58	19.5	23.2	54.0#

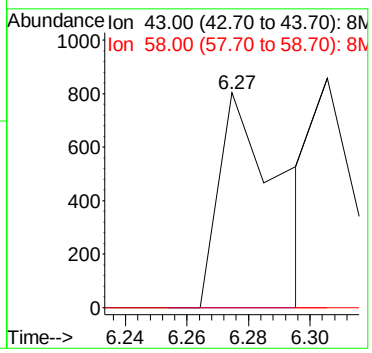

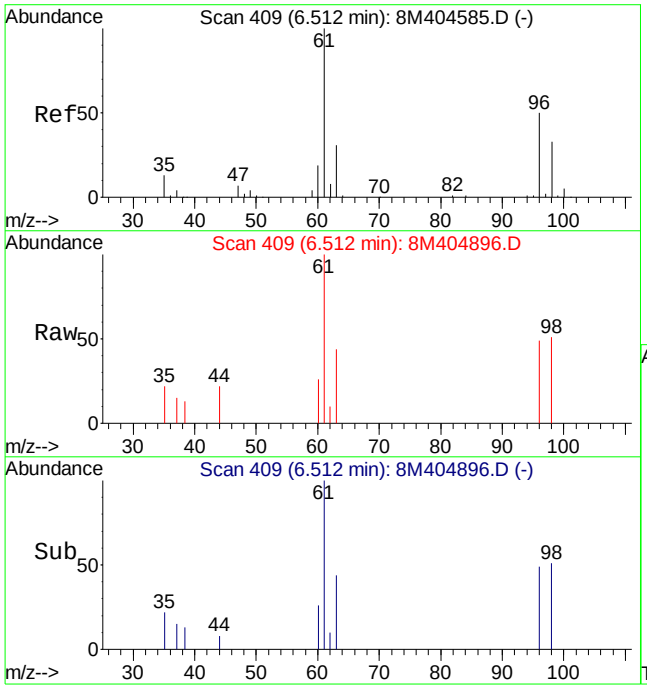

#14
1,1-Dichloroethene
Concen: 1.03 ug/L
RT: 6.51 min Scan# 409
Delta R.T. -0.00 min
Lab File: 8M404896.D
Acq: 24 May 2015 2:04

Tgt Ion: 61 Resp: 11105

Ion	Ratio	Lower	Upper
61	100		
96	49.8	39.1	91.3

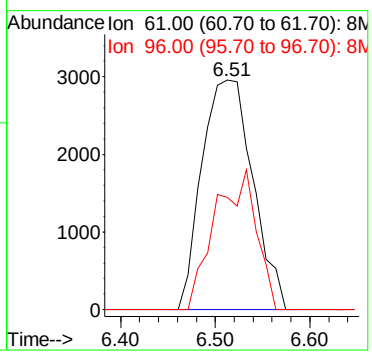

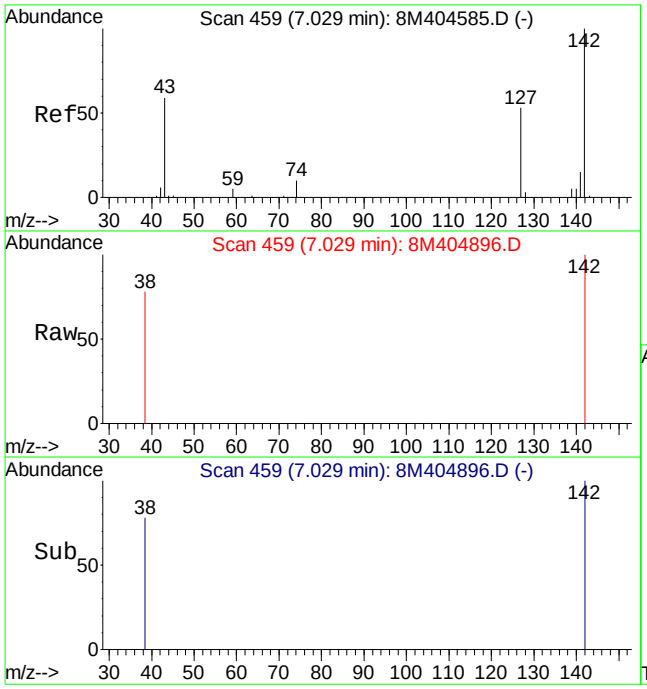

#17
Iodomethane
Concen: 1.10 ug/L
RT: 7.03 min Scan# 459
Delta R.T. -0.00 min
Lab File: 8M404896.D
Acq: 24 May 2015 2:04

Tgt Ion:142 Resp: 293

Ion	Ratio	Lower	Upper
142	100		
127	0.0	23.9	55.7#

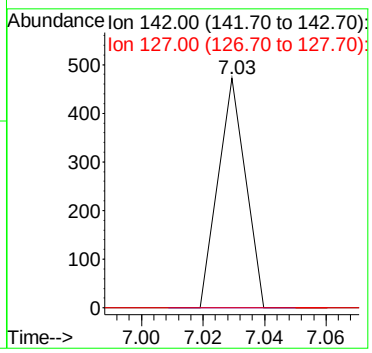

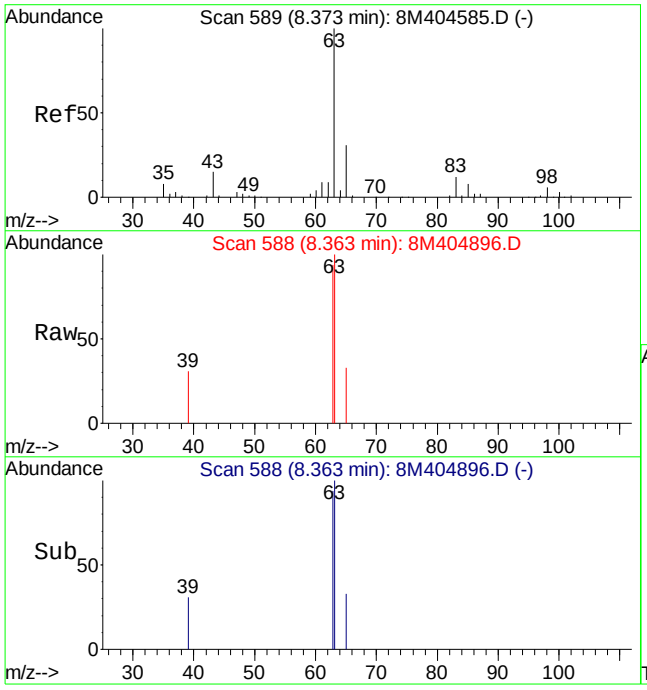

#27
1,1-Dichloroethane
Concen: 0.30 ug/L
RT: 8.36 min Scan# 588
Delta R.T. -0.00 min
Lab File: 8M404896.D
Acq: 24 May 2015 2:04

Tgt Ion: 63 Resp: 3722

Ion	Ratio	Lower	Upper
63	100		
65	20.4	20.7	48.3#
83	5.7	8.6	20.2#

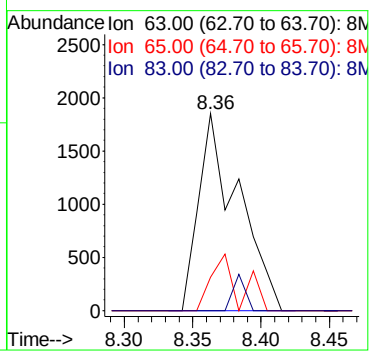

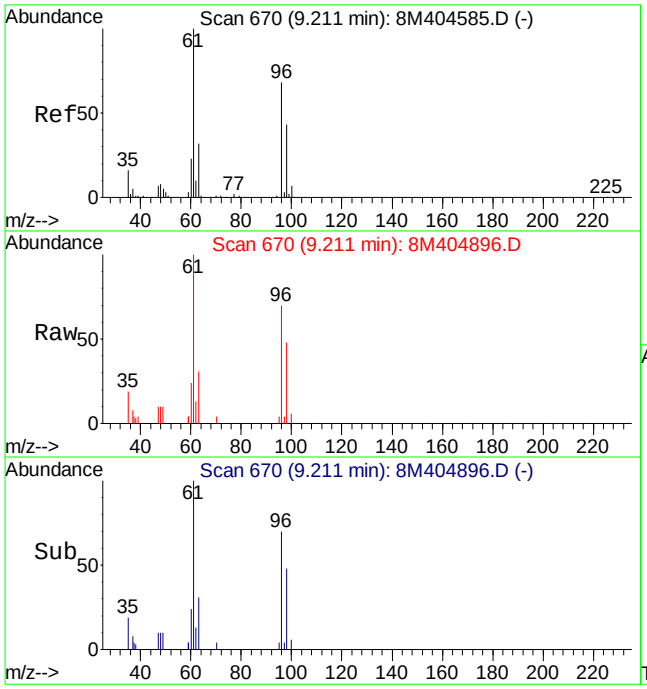

#32
cis-1,2-Dichloroethene
Concen: 2.40 ug/L
RT: 9.21 min Scan# 670
Delta R.T. -0.00 min
Lab File: 8M404896.D
Acq: 24 May 2015 2:04

Tgt Ion: 96 Resp: 16998

Ion	Ratio	Lower	Upper
96	100		
61	153.5	84.0	196.0

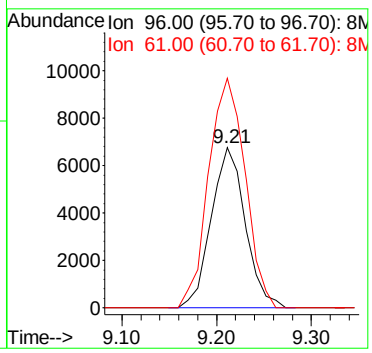

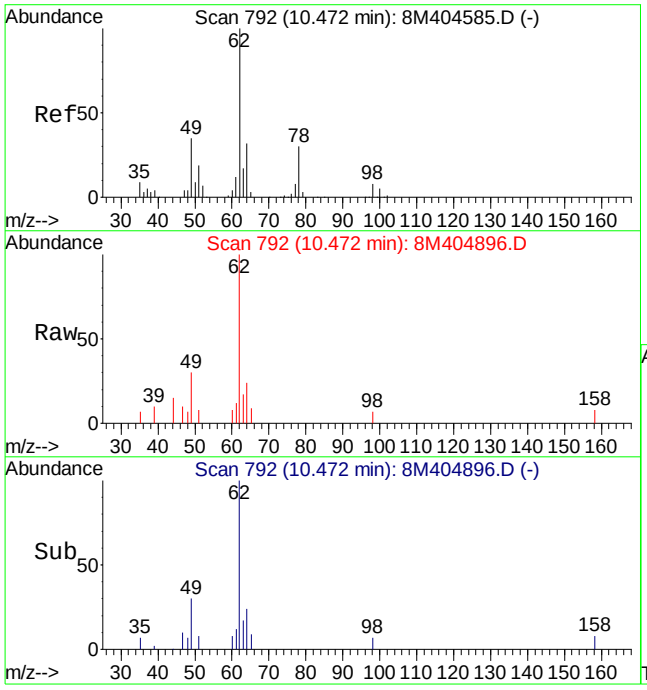

#45
1,2-Dichloroethane
Concen: 1.20 ug/L
RT: 10.47 min Scan# 792
Delta R.T. 0.01 min
Lab File: 8M404896.D
Acq: 24 May 2015 2:04

Tgt Ion: 62 Resp: 9952

Ion	Ratio	Lower	Upper
62	100		
64	30.5	20.5	47.9
49	33.6	21.8	51.0

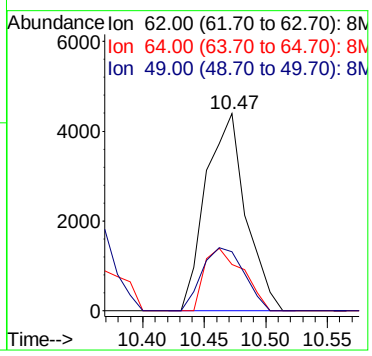

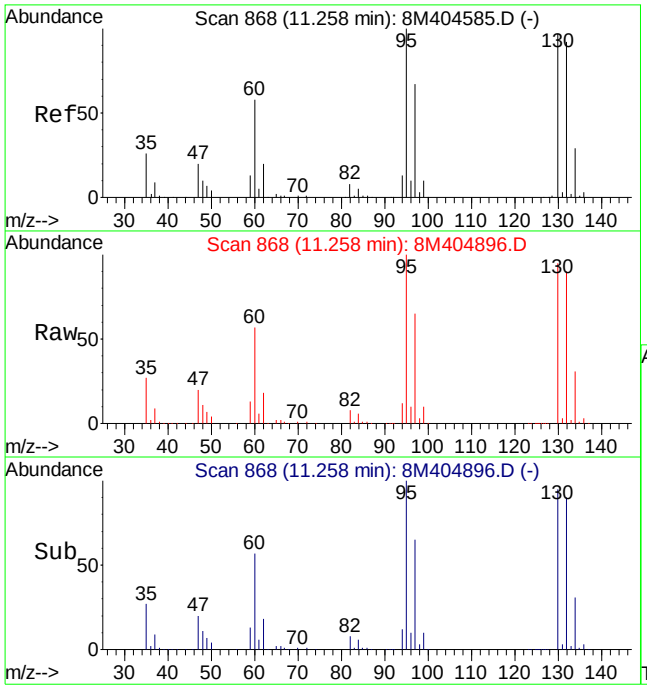

#47
Trichloroethene
Concen: 229.74 ug/L
RT: 11.26 min Scan# 868
Delta R.T. -0.00 min
Lab File: 8M404896.D
Acq: 24 May 2015 2:04

Tgt Ion:130 Resp: 1491825

Ion	Ratio	Lower	Upper
130	100		
132	96.0	58.3	135.9
95	105.7	59.2	138.2

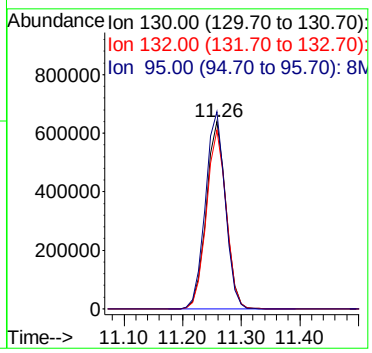

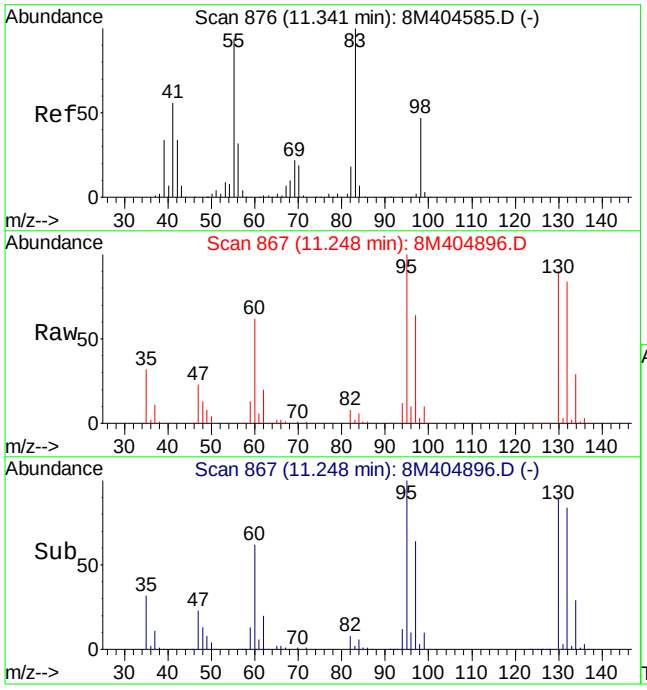

#48
Methylcyclohexane
Concen: 2.15 ug/L
RT: 11.25 min Scan# 867
Delta R.T. -0.10 min
Lab File: 8M404896.D
Acq: 24 May 2015 2:04

Tgt Ion: 83 Resp: 22707

Ion	Ratio	Lower	Upper
83	100		
55	0.0	47.4	110.6#
98	193.7	29.9	69.7#

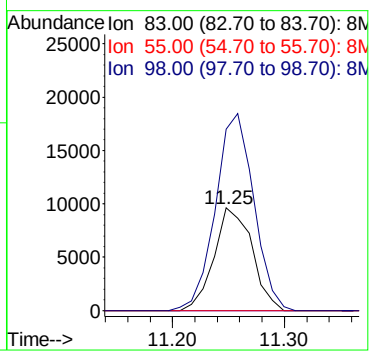

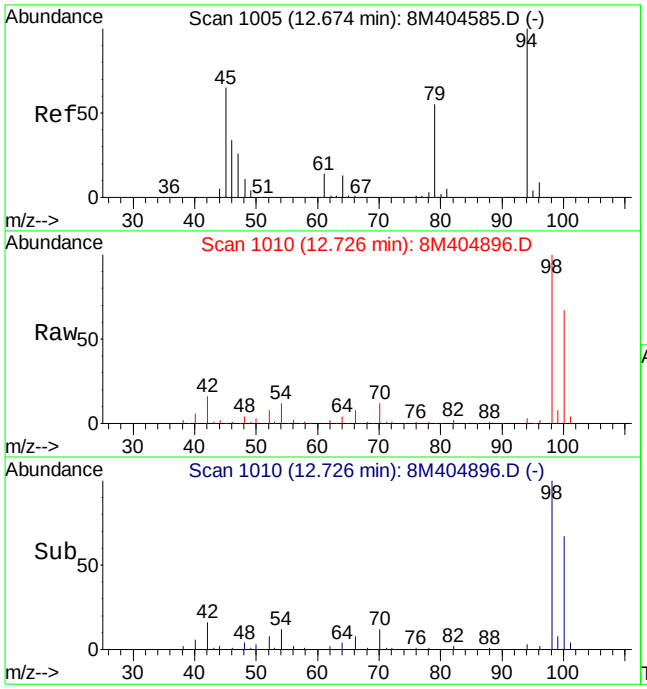

#56
Dimethyl Disulfide
Concen: 3.07 ug/L
RT: 12.73 min Scan# 1010
Delta R.T. 0.06 min
Lab File: 8M404896.D
Acq: 24 May 2015 2:04

Tgt Ion: 79 Resp: 241

Ion	Ratio	Lower	Upper
79	100		
94	5988.8	110.5	257.9#

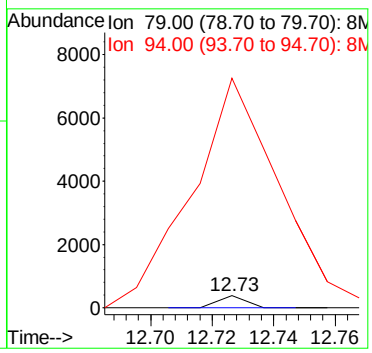

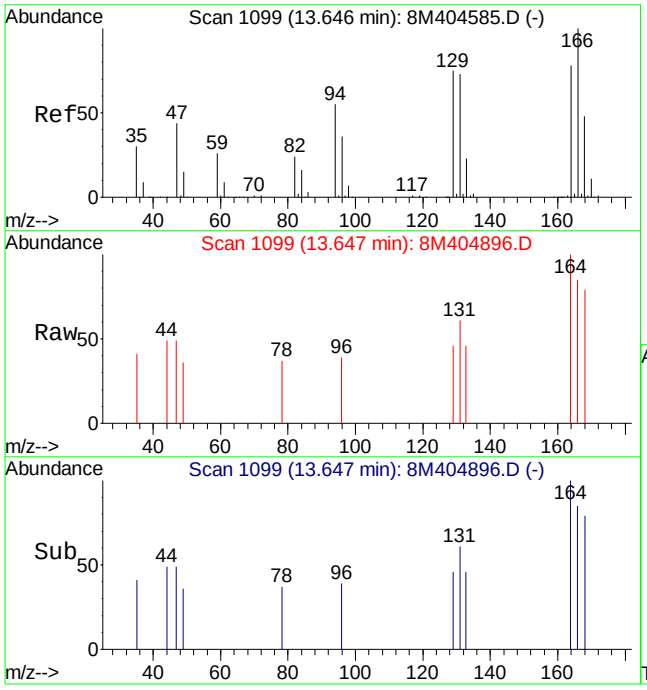

#66
Tetrachloroethene
Concen: 0.28 ug/L
RT: 13.65 min Scan# 1099
Delta R.T. -0.00 min
Lab File: 8M404896.D
Acq: 24 May 2015 2:04

Tgt Ion:164 Resp: 1681

Ion	Ratio	Lower	Upper
164	100		
129	60.6	52.6	122.6
94	48.2	31.2	72.8

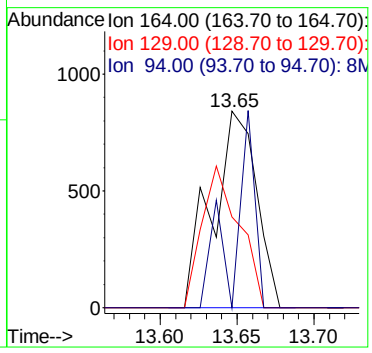

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052315\8M404897.D Vial: 22
Acq On : 24 May 2015 2:32 Operator: FJB
Sample : L15051303-07 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 26 08:18:47 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	609321	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	492431	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	263947	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	155869	25.8084 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.24%		
43) 1,2-Dichloroethane-d4	10.34	65	140884	24.8226 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.28%		
58) Toluene-d8	12.73	98	551488	23.9995 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.00%		
80) p-Bromofluorobenzene	16.12	95	211417	23.5431 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.16%		

Target Compounds

					Qvalue
3) Chloromethane	3.66	50	3572	0.1895 ug/L #	14
13) Acetone	6.29	43	3123	3.5889 ug/L	83
14) 1,1-Dichloroethene	6.53	61	2053	0.1917 ug/L #	61
29) 2-Butanone	8.92	43	201	0.1418 ug/L #	49
32) cis-1,2-Dichloroethene	9.21	96	4471	0.6367 ug/L	91
45) 1,2-Dichloroethane	10.46	62	1201	0.1461 ug/L #	39
47) Trichloroethene	11.26	130	316861	49.1183 ug/L	97
48) Methylcyclohexane	11.26	83	4360	0.4164 ug/L #	1
53) 2-Chloroethyl Vinyl Ether	12.10	63	212	Below Cal #	48

(#) = qualifier out of range (m) = manual integration
8M404897.D 8260WT.M Tue May 26 08:18:47 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052315\8M404897.D Vial: 22
Acq On : 24 May 2015 2:32 Operator: FJB
Sample : L15051303-07 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 26 8:18 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

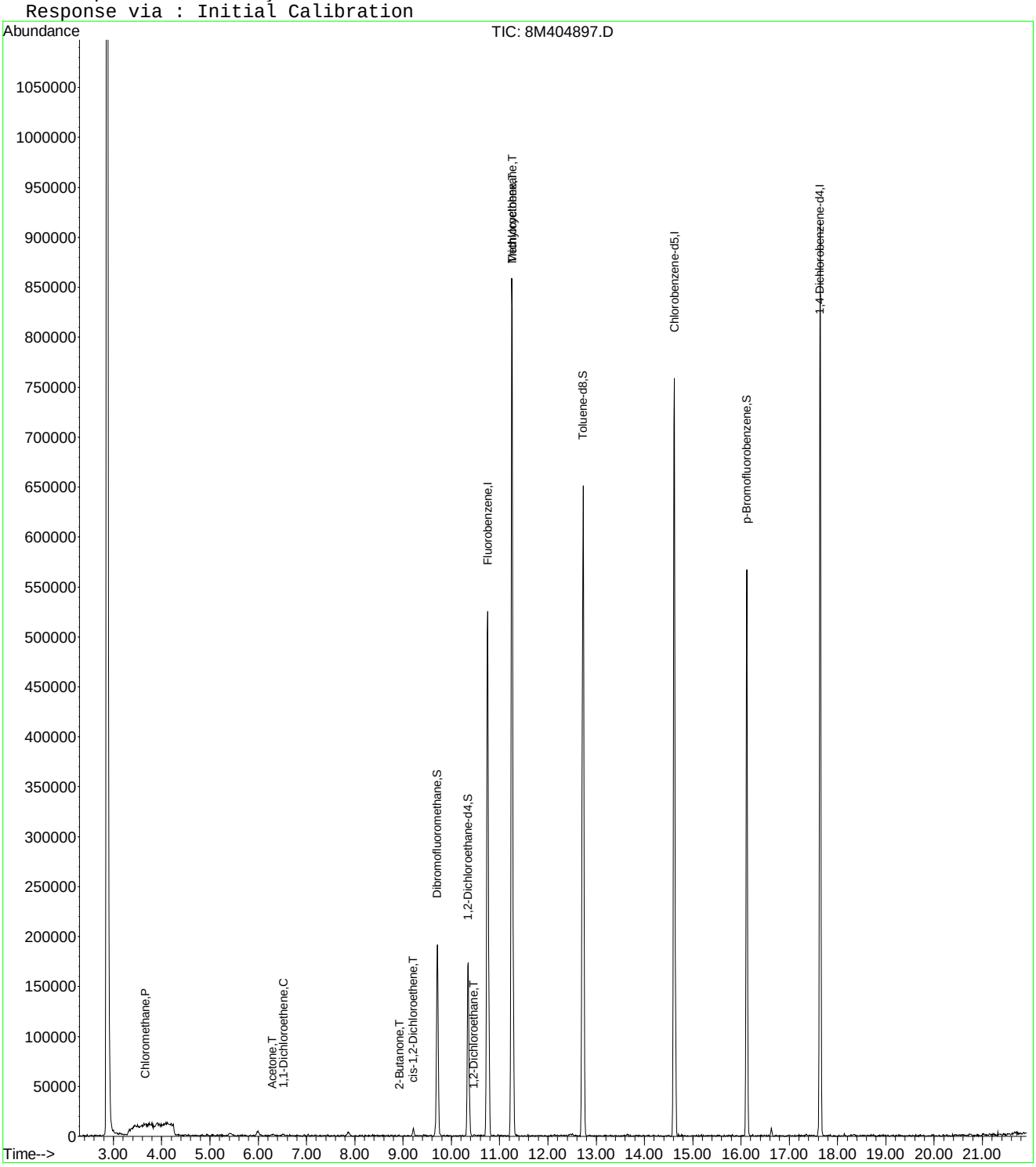

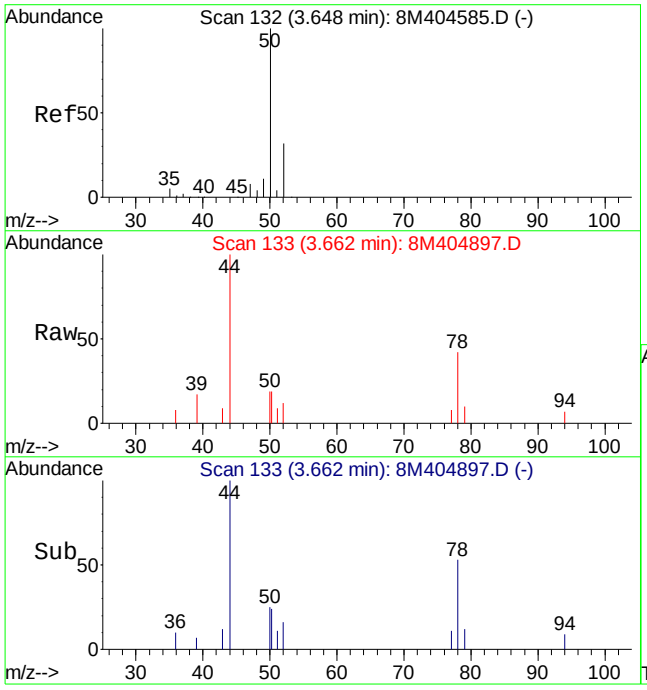

#3
Chloromethane
Concen: 0.19 ug/L
RT: 3.66 min Scan# 133
Delta R.T. 0.01 min
Lab File: 8M404897.D
Acq: 24 May 2015 2:32

Tgt Ion: 50 Resp: 3572

Ion	Ratio	Lower	Upper
50	100		
52	84.8	20.9	48.7#

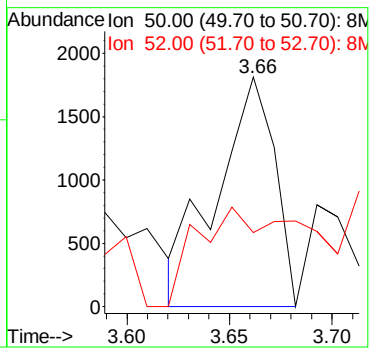

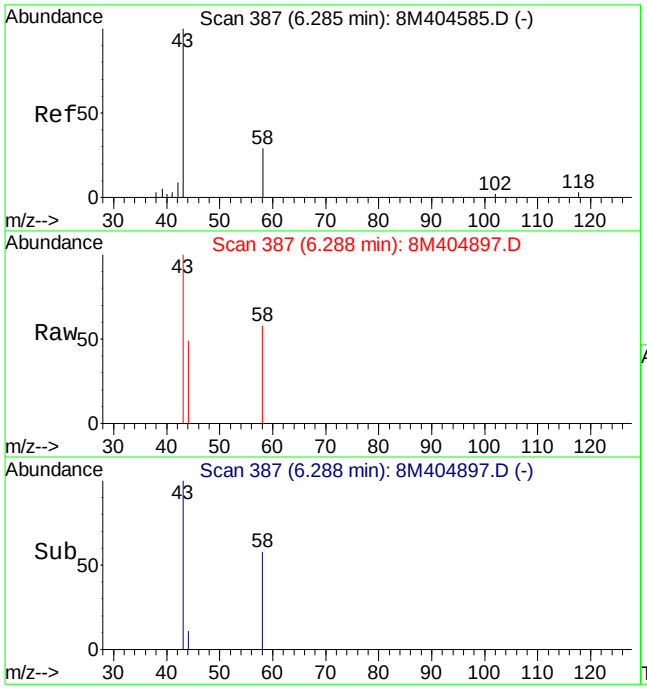

#13
Acetone
Concen: 3.59 ug/L
RT: 6.29 min Scan# 387
Delta R.T. -0.00 min
Lab File: 8M404897.D
Acq: 24 May 2015 2:32

Tgt Ion: 43 Resp: 3123

Ion	Ratio	Lower	Upper
43	100		
58	28.2	23.2	54.0

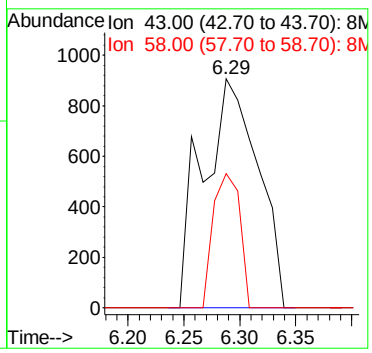

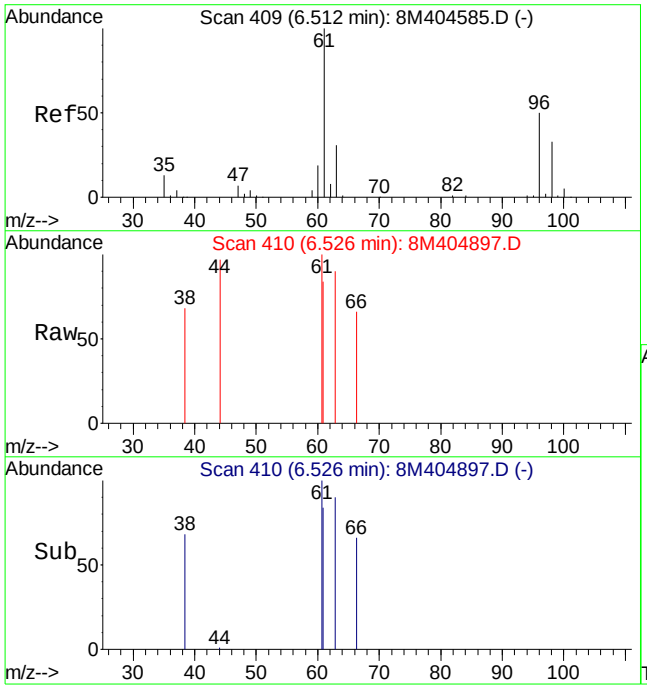

#14
1,1-Dichloroethene
Concen: 0.19 ug/L
RT: 6.53 min Scan# 410
Delta R.T. 0.01 min
Lab File: 8M404897.D
Acq: 24 May 2015 2:32

Tgt Ion: 61 Resp: 2053

Ion	Ratio	Lower	Upper
61	100		
96	34.6	39.1	91.3#

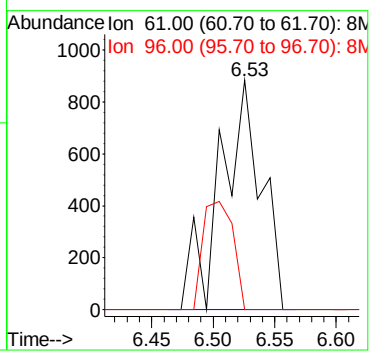

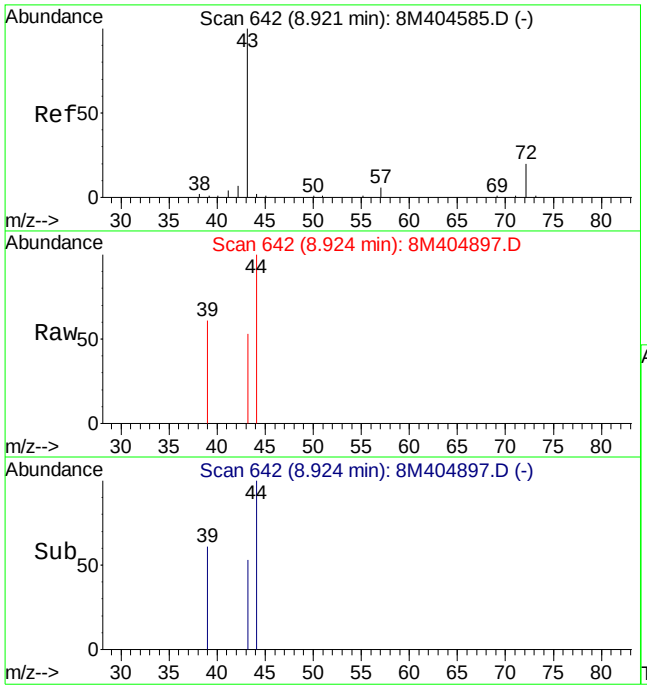

#29
2-Butanone
Concen: 0.14 ug/L
RT: 8.92 min Scan# 642
Delta R.T. -0.00 min
Lab File: 8M404897.D
Acq: 24 May 2015 2:32

Tgt Ion: 43 Resp: 201

Ion	Ratio	Lower	Upper
43	100		
72	0.0	15.7	36.7#

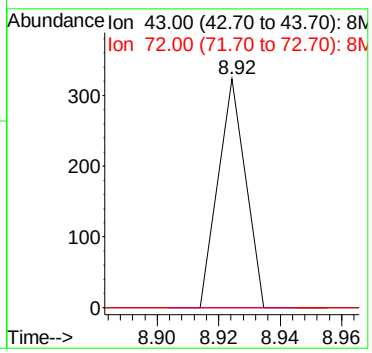

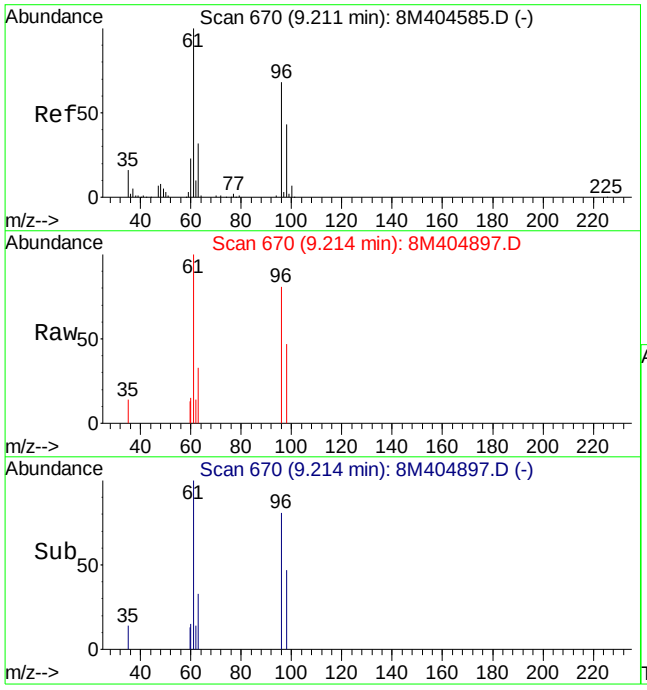

#32
cis-1,2-Dichloroethene
Concen: 0.64 ug/L
RT: 9.21 min Scan# 670
Delta R.T. -0.00 min
Lab File: 8M404897.D
Acq: 24 May 2015 2:32

Tgt Ion: 96 Resp: 4471

Ion	Ratio	Lower	Upper
96	100		
61	129.3	84.0	196.0

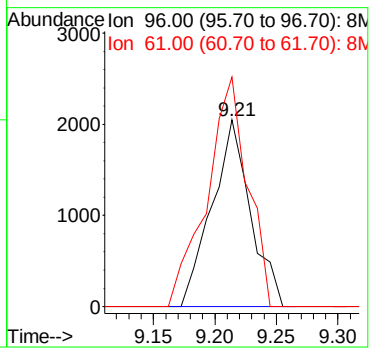

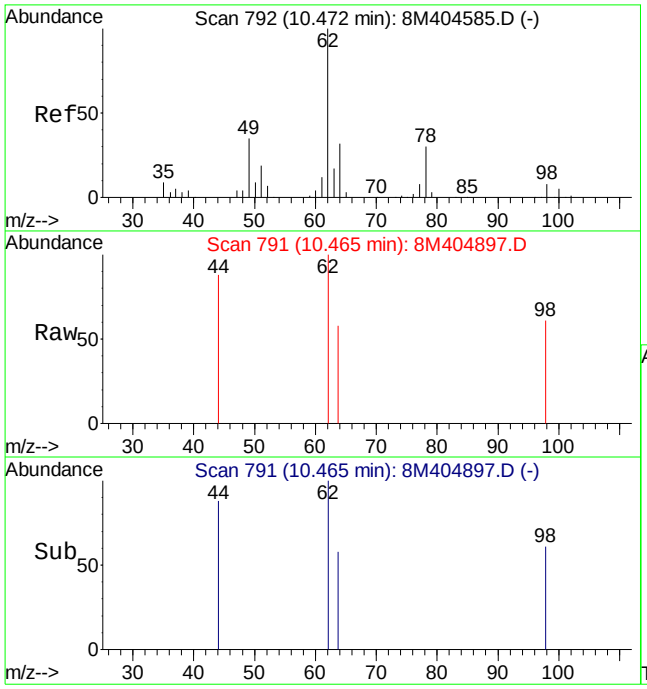

#45
1,2-Dichloroethane
Concen: 0.15 ug/L
RT: 10.46 min Scan# 791
Delta R.T. -0.00 min
Lab File: 8M404897.D
Acq: 24 May 2015 2:32

Tgt Ion: 62 Resp: 1201

Ion	Ratio	Lower	Upper
62	100		
64	0.0	20.5	47.9#
49	0.0	21.8	51.0#

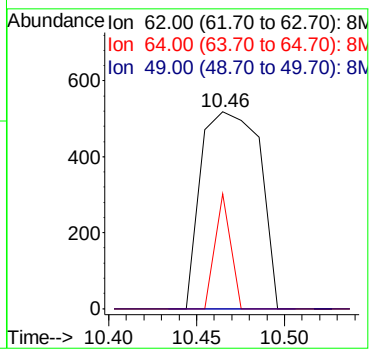

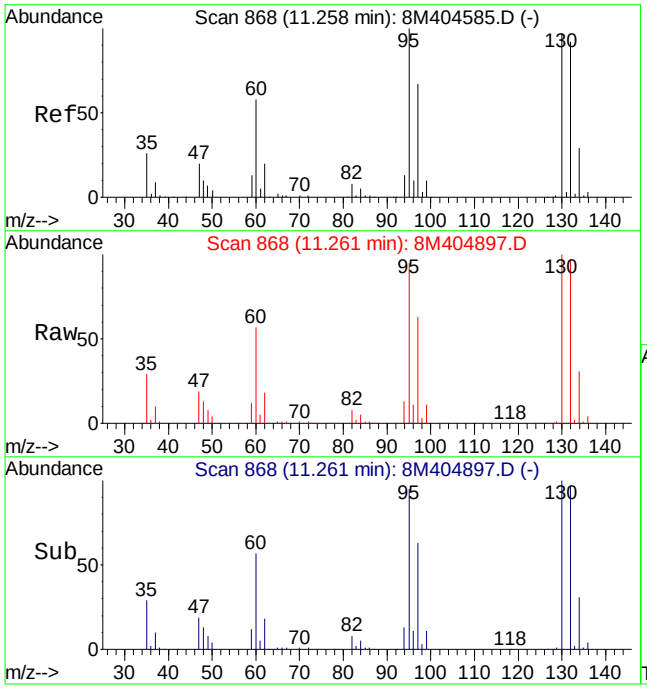

#47
Trichloroethene
Concen: 49.12 ug/L
RT: 11.26 min Scan# 868
Delta R.T. -0.00 min
Lab File: 8M404897.D
Acq: 24 May 2015 2:32

Tgt Ion:130 Resp: 316861

Ion	Ratio	Lower	Upper
130	100		
132	98.4	58.3	135.9
95	103.9	59.2	138.2

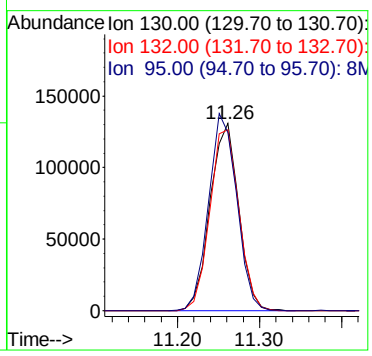

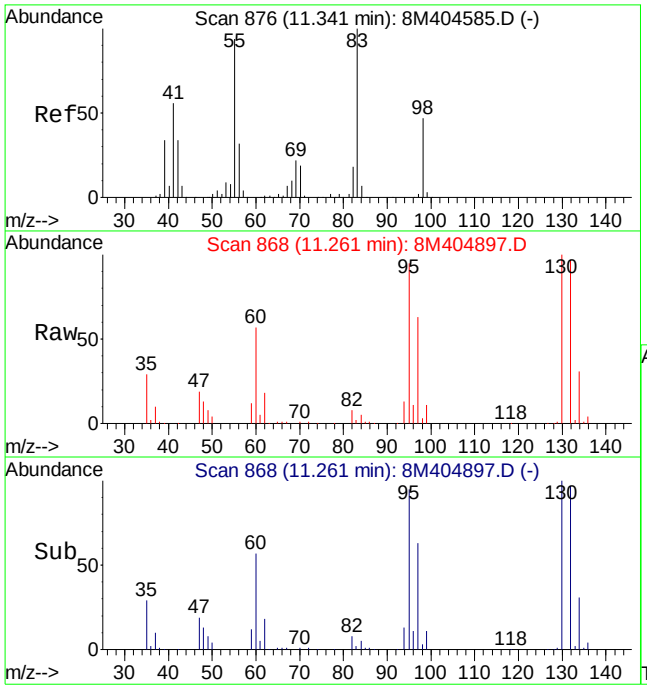

#48
Methylcyclohexane
Concen: 0.42 ug/L
RT: 11.26 min Scan# 868
Delta R.T. -0.08 min
Lab File: 8M404897.D
Acq: 24 May 2015 2:32

Tgt Ion: 83 Resp: 4360

Ion	Ratio	Lower	Upper
83	100		
55	0.0	47.4	110.6#
98	219.4	29.9	69.7#

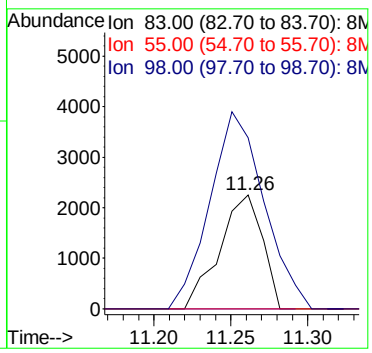

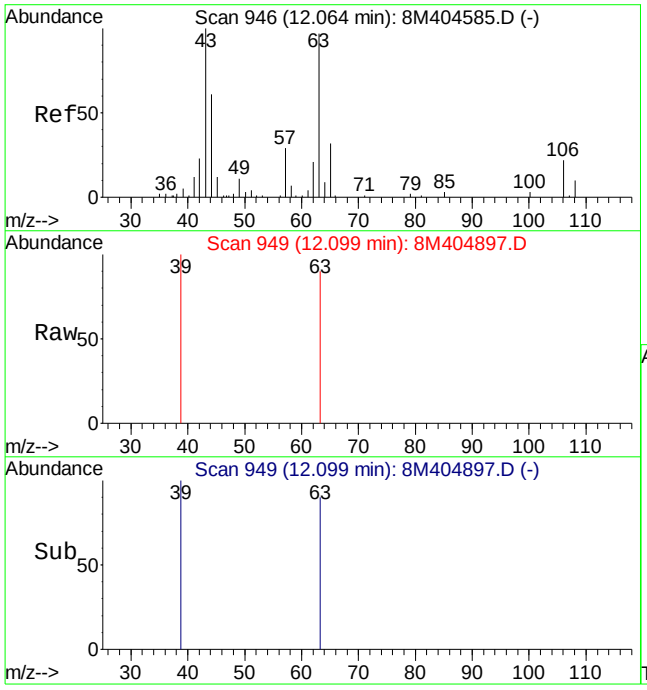

#53
2-Chloroethyl Vinyl Ether
Concen: Below Cal
RT: 12.10 min Scan# 949
Delta R.T. 0.03 min
Lab File: 8M404897.D
Acq: 24 May 2015 2:32

Tgt Ion: 63 Resp: 212

Ion	Ratio	Lower	Upper
63	100		
106	0.0	16.2	37.8#

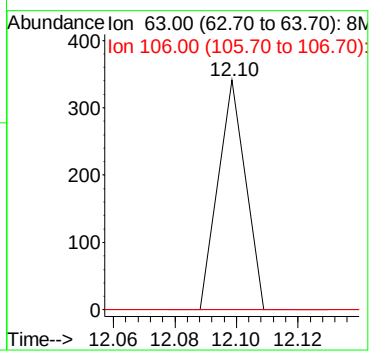

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052615\8M404919.D Vial: 15
Acq On : 26 May 2015 18:07 Operator: TMB
Sample : L15051303-09 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 27 08:49:12 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	639751	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	512825	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	280709	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.72	111	159886	25.2143 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.84%		
43) 1,2-Dichloroethane-d4	10.35	65	146251	24.5426 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.16%		
58) Toluene-d8	12.73	98	581952	24.3180 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.28%		
80) p-Bromofluorobenzene	16.12	95	227570	23.8287 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.32%		

Target Compounds

					Qvalue
3) Chloromethane	3.65	50	4328	0.2187 ug/L #	17
13) Acetone	6.29	43	956	1.0464 ug/L #	36
14) 1,1-Dichloroethene	6.52	61	9868	0.8777 ug/L	86
27) 1,1-Dichloroethane	8.39	63	3664	0.2828 ug/L #	73
45) 1,2-Dichloroethane	10.47	62	3354	0.3887 ug/L	94
47) Trichloroethene	11.26	130	229539	33.8896 ug/L	98
48) Methylcyclohexane	11.26	83	4074	0.3706 ug/L #	1
81) 1,2,3-Trichloropropane	16.12	110	206	0.1426 ug/L #	1

(#) = qualifier out of range (m) = manual integration
8M404919.D 8260WT.M Wed May 27 08:49:12 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052615\8M404919.D Vial: 15
Acq On : 26 May 2015 18:07 Operator: TMB
Sample : L15051303-09 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 27 8:49 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

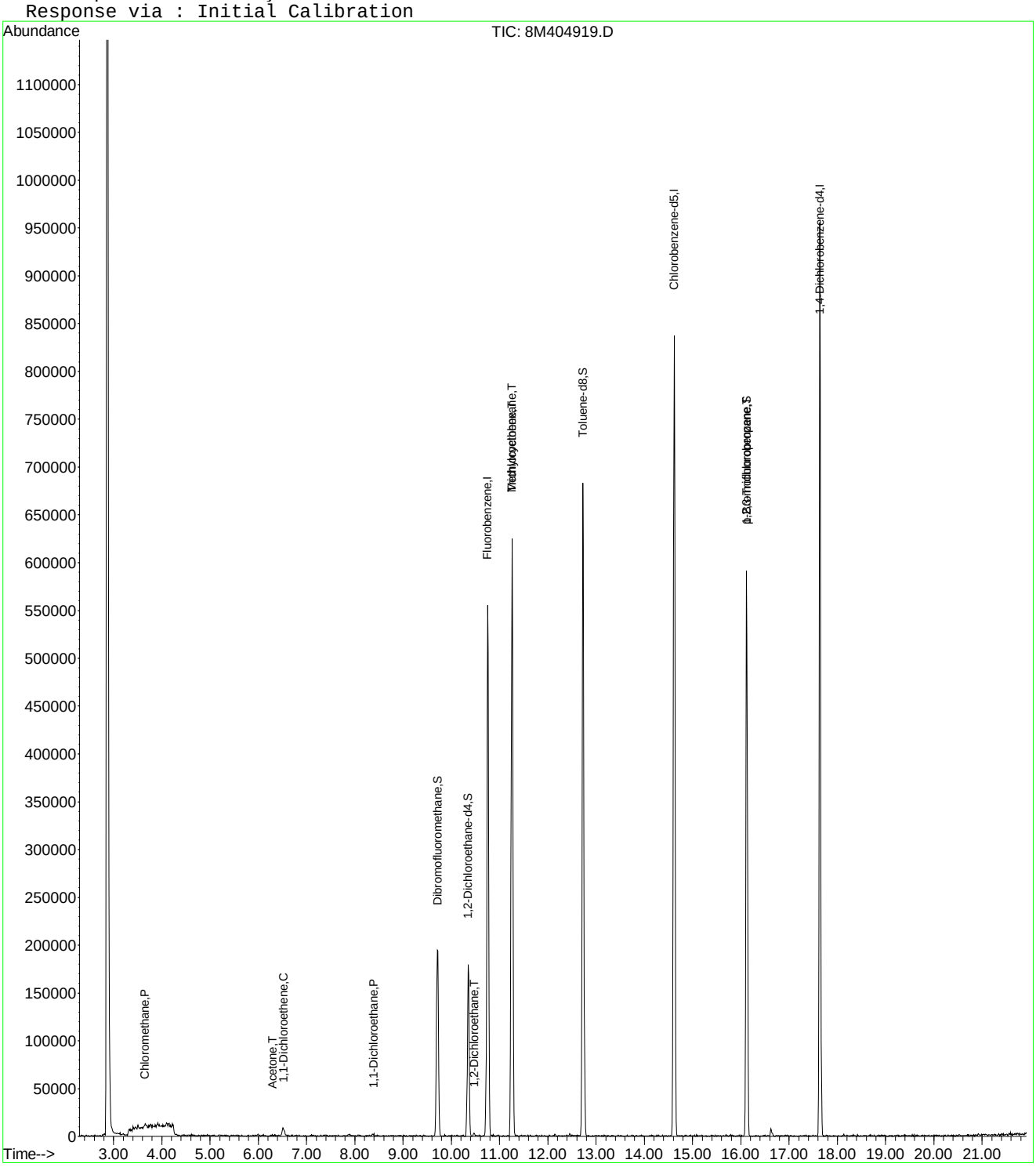

8M404919.D 8260WT.M Wed May 27 08:49:13 2015 Page 2

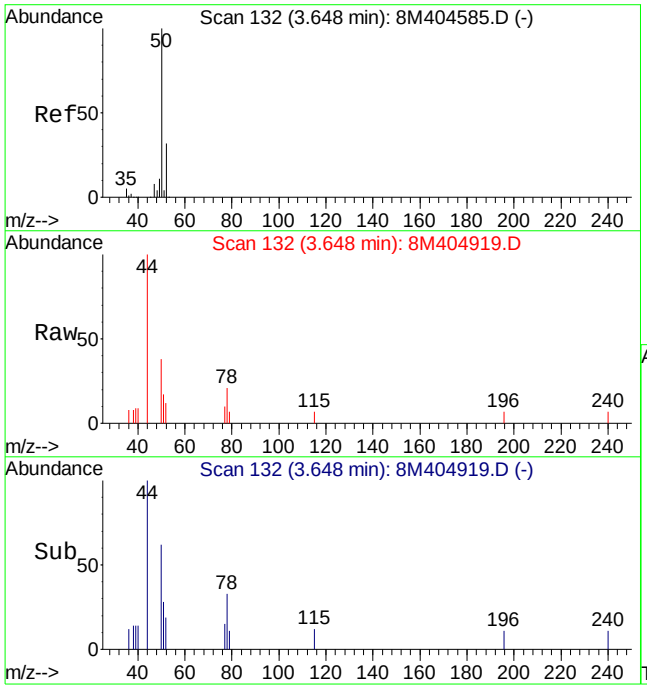

#3
Chloromethane
Concen: 0.22 ug/L
RT: 3.65 min Scan# 132
Delta R.T. -0.00 min
Lab File: 8M404919.D
Acq: 26 May 2015 18:07

Tgt Ion: 50 Resp: 4328

Ion	Ratio	Lower	Upper
50	100		
52	83.1	20.9	48.7#

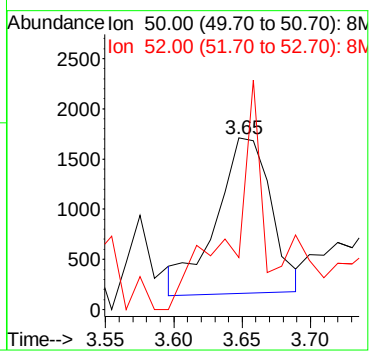

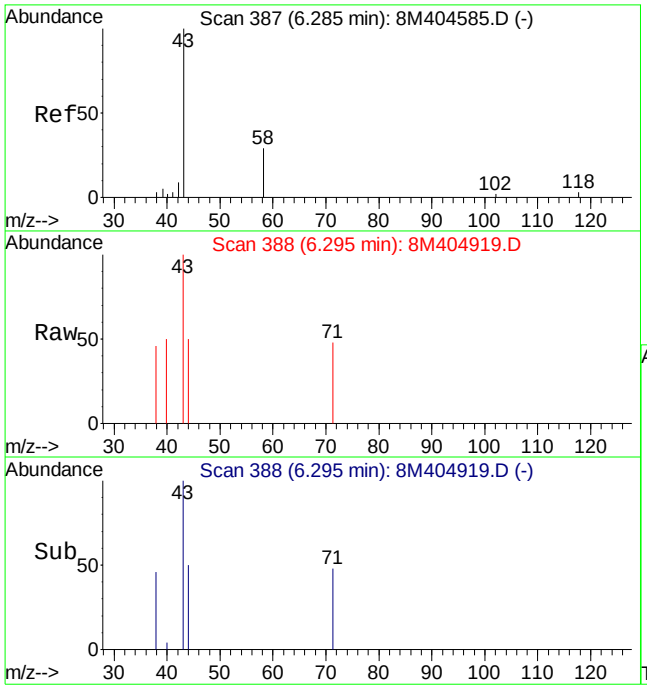

#13
Acetone
Concen: 1.05 ug/L
RT: 6.29 min Scan# 388
Delta R.T. 0.01 min
Lab File: 8M404919.D
Acq: 26 May 2015 18:07

Tgt Ion: 43 Resp: 956

Ion	Ratio	Lower	Upper
43	100		
58	0.0	23.2	54.0#

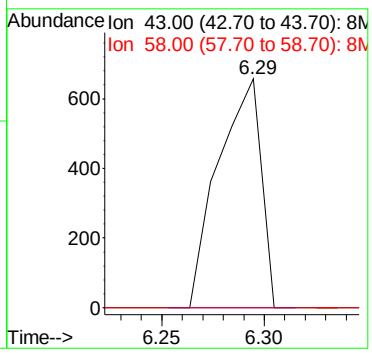

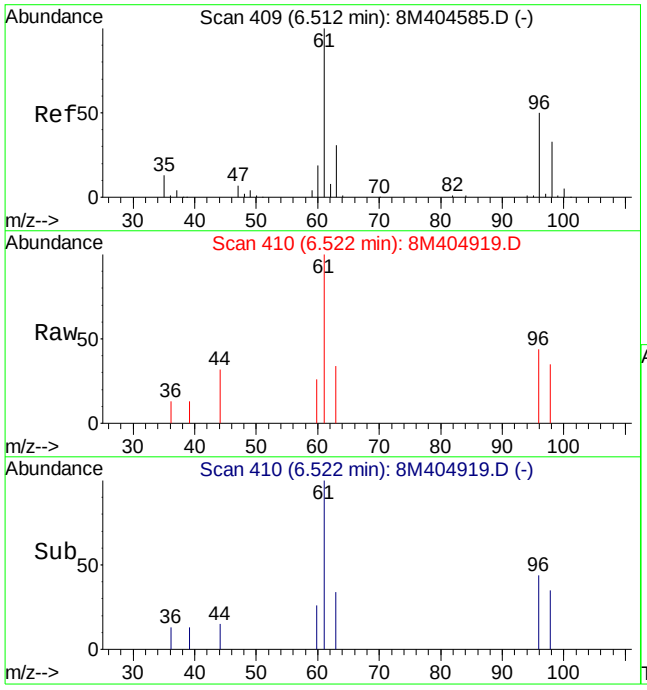

#14
1,1-Dichloroethene
Concen: 0.88 ug/L
RT: 6.52 min Scan# 410
Delta R.T. 0.01 min
Lab File: 8M404919.D
Acq: 26 May 2015 18:07

Tgt Ion: 61 Resp: 9868

Ion	Ratio	Lower	Upper
61	100		
96	53.9	39.1	91.3

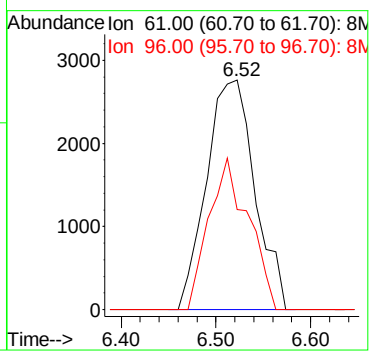

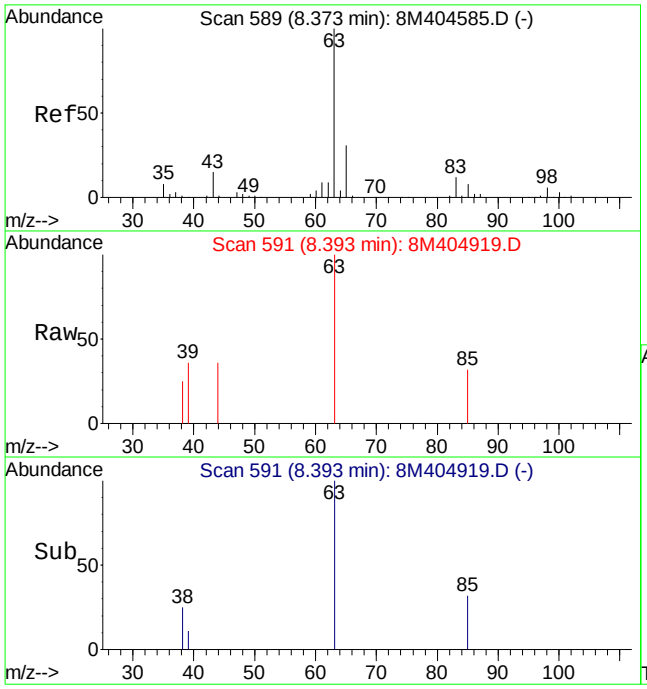

#27
1,1-Dichloroethane
Concen: 0.28 ug/L
RT: 8.39 min Scan# 591
Delta R.T. 0.03 min
Lab File: 8M404919.D
Acq: 26 May 2015 18:07

Tgt Ion: 63 Resp: 3664

Ion	Ratio	Lower	Upper
63	100		
65	21.0	20.7	48.3
83	0.0	8.6	20.2#

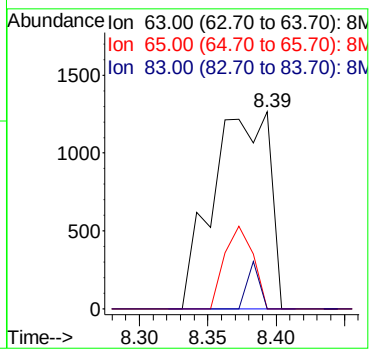

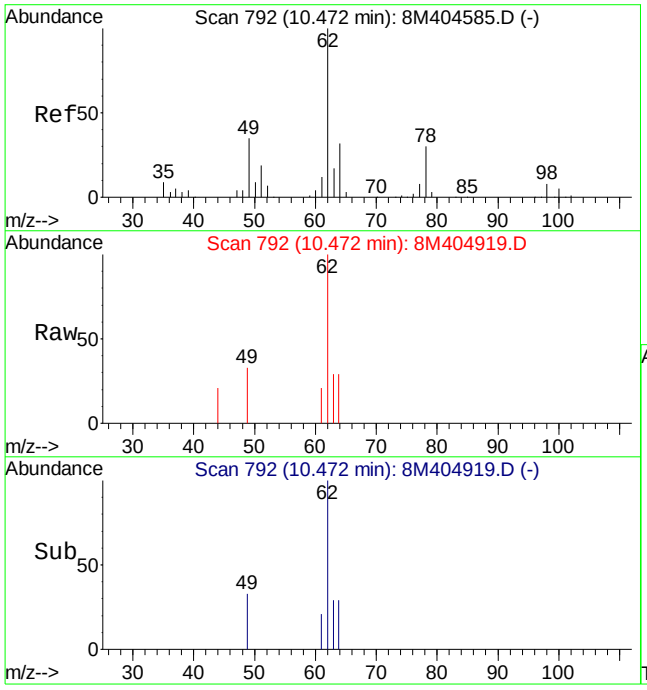

#45
1,2-Dichloroethane
Concen: 0.39 ug/L
RT: 10.47 min Scan# 792
Delta R.T. 0.01 min
Lab File: 8M404919.D
Acq: 26 May 2015 18:07

Tgt Ion: 62 Resp: 3354

Ion	Ratio	Lower	Upper
62	100		
64	39.4	20.5	47.9
49	38.2	21.8	51.0

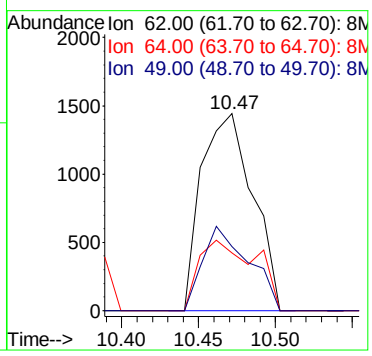

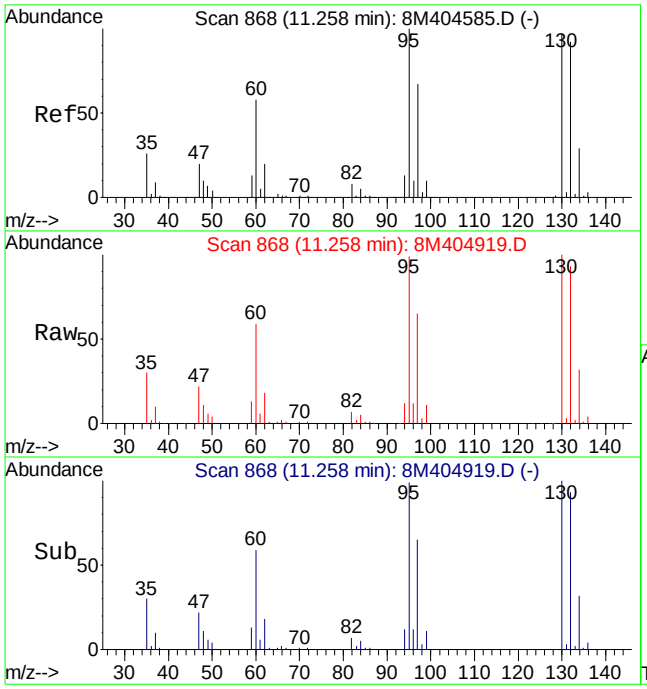

#47
Trichloroethene
Concen: 33.89 ug/L
RT: 11.26 min Scan# 868
Delta R.T. -0.00 min
Lab File: 8M404919.D
Acq: 26 May 2015 18:07

Tgt Ion:130 Resp: 229539

Ion	Ratio	Lower	Upper
130	100		
132	96.3	58.3	135.9
95	102.6	59.2	138.2

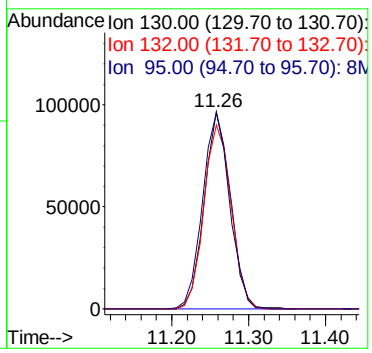

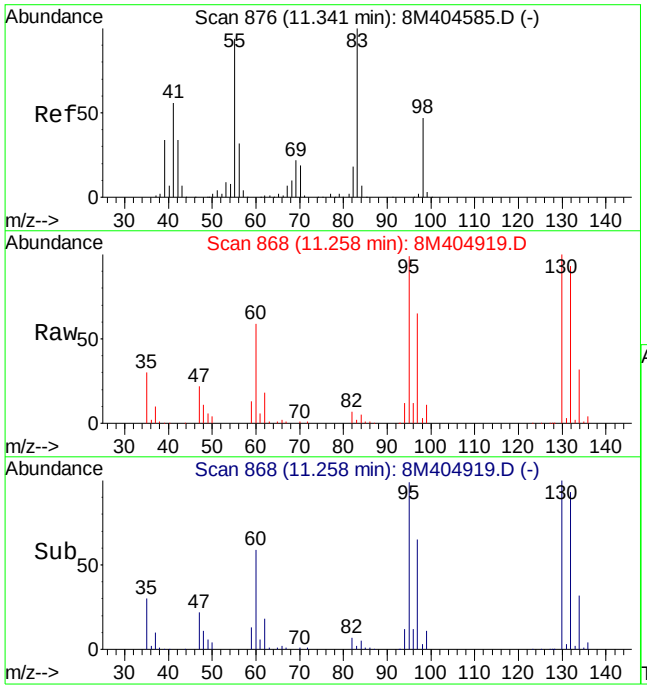

#48
Methylcyclohexane
Concen: 0.37 ug/L
RT: 11.26 min Scan# 868
Delta R.T. -0.09 min
Lab File: 8M404919.D
Acq: 26 May 2015 18:07

Tgt Ion: 83 Resp: 4074

Ion	Ratio	Lower	Upper
83	100		
55	0.0	47.4	110.6#
98	159.1	29.9	69.7#

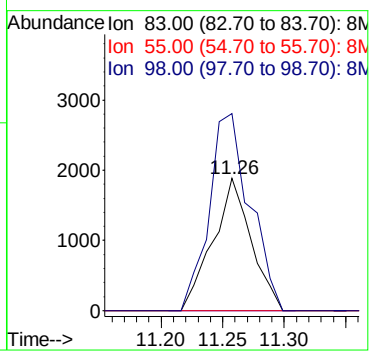

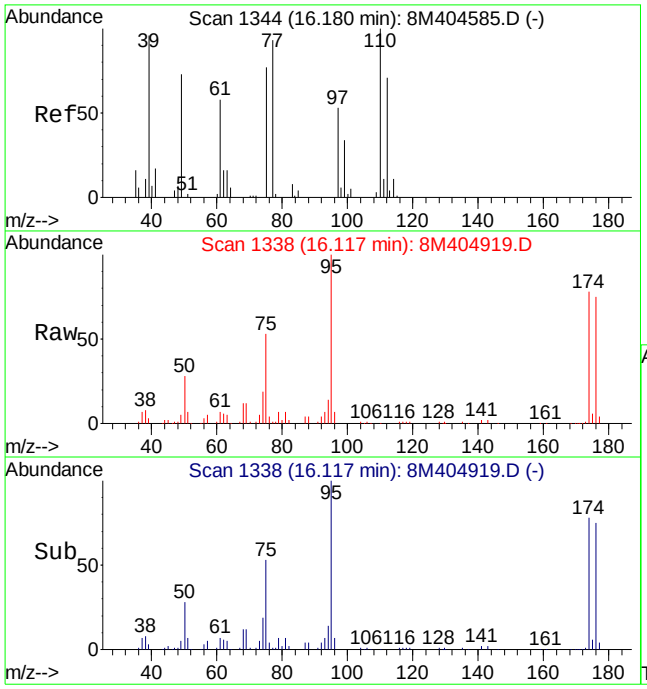

#81
1,2,3-Trichloropropane
Concen: 0.14 ug/L
RT: 16.12 min Scan# 1338
Delta R.T. -0.07 min
Lab File: 8M404919.D
Acq: 26 May 2015 18:07

Tgt Ion:110 Resp: 206

Ion	Ratio	Lower	Upper
110	100		
75	59957.8	115.6	269.6#
97	0.0	36.7	85.7#

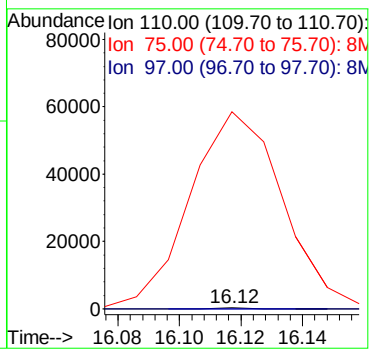

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052615\8M404920.D Vial: 16
Acq On : 26 May 2015 18:35 Operator: TMB
Sample : L15051303-11 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 27 08:49:13 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	623100	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	506022	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	277144	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	157888	25.5646 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.24%		
43) 1,2-Dichloroethane-d4	10.35	65	143632	24.7472 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.00%		
58) Toluene-d8	12.73	98	573149	24.2722 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.08%		
80) p-Bromofluorobenzene	16.12	95	223941	23.7503 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.00%		

Target Compounds					Qvalue
13) Acetone	6.28	43	663	0.7451 ug/L #	36
36) Tetrahydrofuran	9.61	42	205	0.2099 ug/L #	32
56) Dimethyl Disulfide	12.73	79	216	3.0607 ug/L #	1

(#) = qualifier out of range (m) = manual integration
8M404920.D 8260WT.M Wed May 27 08:49:14 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052615\8M404920.D Vial: 16
Acq On : 26 May 2015 18:35 Operator: TMB
Sample : L15051303-11 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 27 8:49 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

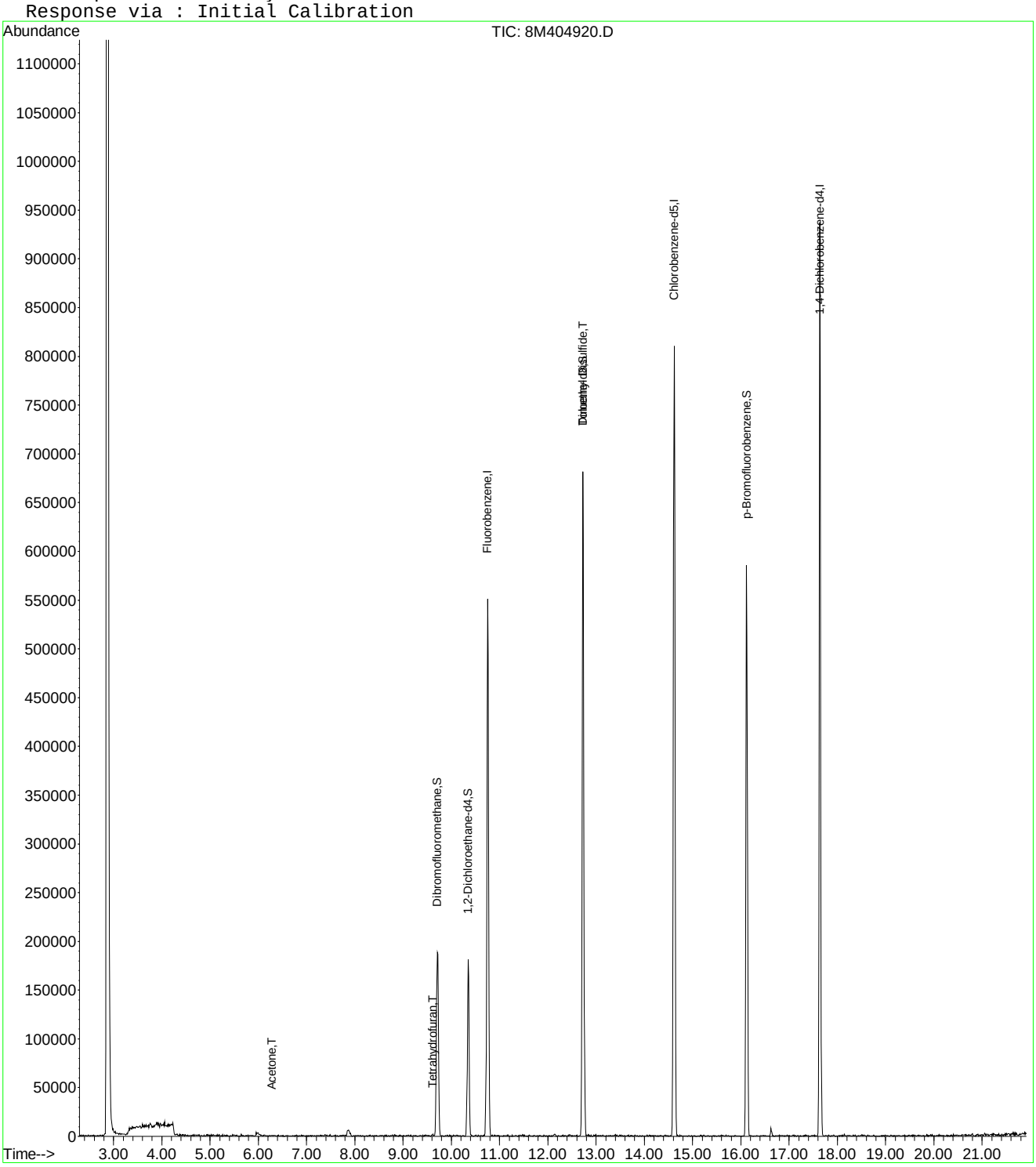

8M404920.D 8260WT.M Wed May 27 08:49:14 2015 Page 2

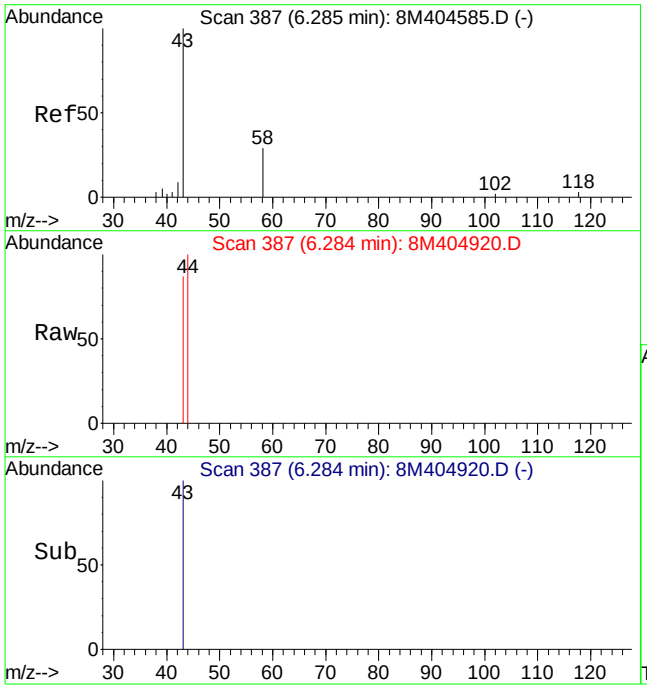

#13
Acetone
Concen: 0.75 ug/L
RT: 6.28 min Scan# 387
Delta R.T. -0.00 min
Lab File: 8M404920.D
Acq: 26 May 2015 18:35

Tgt Ion: 43 Resp: 663

Ion	Ratio	Lower	Upper
43	100		
58	0.0	23.2	54.0#

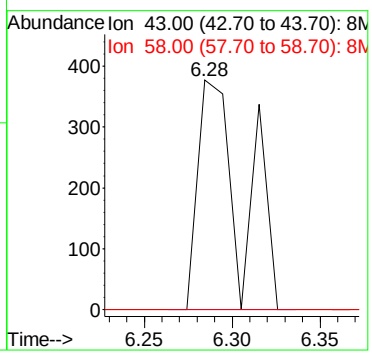

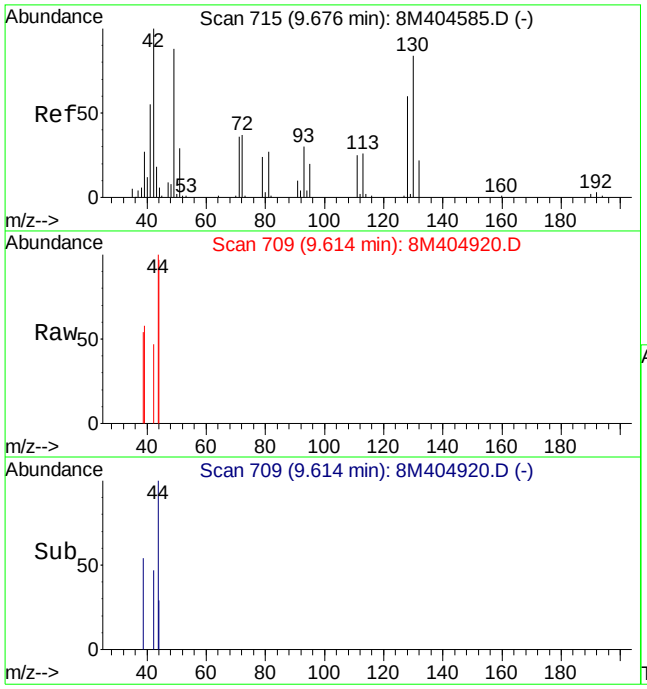

#36
Tetrahydrofuran
Concen: 0.21 ug/L
RT: 9.61 min Scan# 709
Delta R.T. -0.07 min
Lab File: 8M404920.D
Acq: 26 May 2015 18:35

Tgt Ion: 42 Resp: 205

Ion	Ratio	Lower	Upper
42	100		
72	0.0	27.5	64.3#
71	0.0	25.4	59.2#

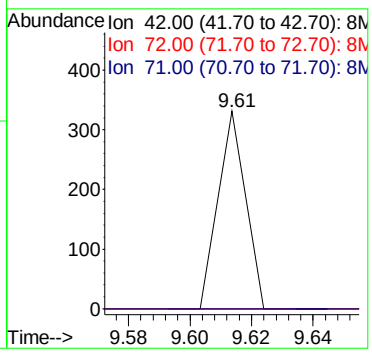

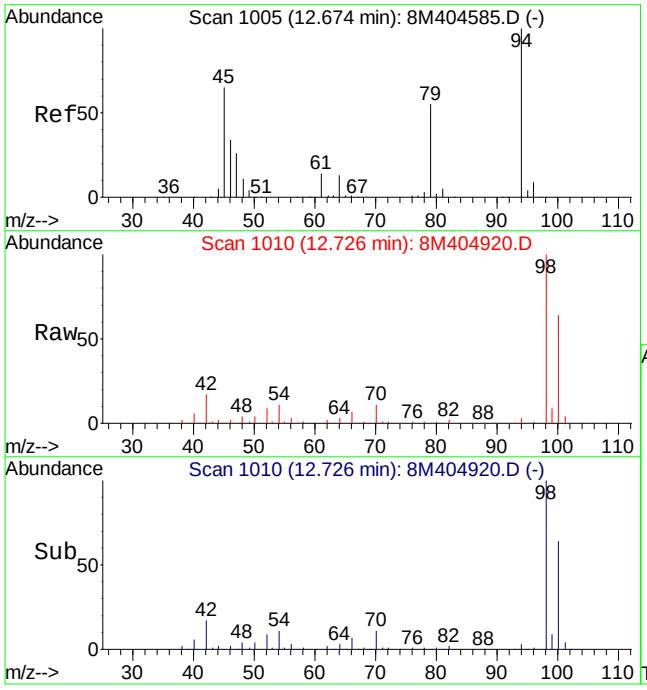

#56
Dimethyl Disulfide
Concen: 3.06 ug/L
RT: 12.73 min Scan# 1010
Delta R.T. 0.06 min
Lab File: 8M404920.D
Acq: 26 May 2015 18:35

Tgt Ion: 79 Resp: 216

Ion	Ratio	Lower	Upper
79	100		
94	7602.8	110.5	257.9#

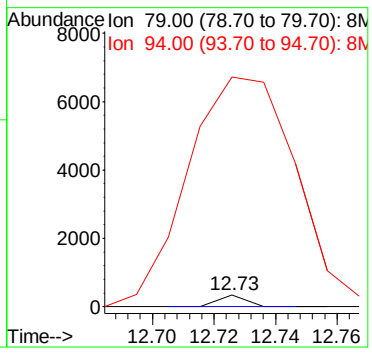

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052615\8M404914.D Vial: 10
Acq On : 26 May 2015 15:43 Operator: TMB
Sample : L15051303-13 TB A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 27 08:49:05 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	661576	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	534572	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	284643	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	165009	25.1638 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.64%		
43) 1,2-Dichloroethane-d4	10.35	65	149495	24.2594 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.04%		
58) Toluene-d8	12.73	98	598046	23.9739 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 95.88%		
80) p-Bromofluorobenzene	16.12	95	235317	24.2993 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.20%		

Target Compounds					Qvalue
3) Chloromethane	3.66	50	4216	0.2060 ug/L #	71
5) 1,3-Butadiene	3.91	54	220	Below Cal #	1
13) Acetone	6.31	43	262	0.2773 ug/L #	36
36) Tetrahydrofuran	9.68	42	514	0.4957 ug/L #	32

(#) = qualifier out of range (m) = manual integration
8M404914.D 8260WT.M Wed May 27 08:49:06 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052615\8M404914.D Vial: 10
Acq On : 26 May 2015 15:43 Operator: TMB
Sample : L15051303-13 TB A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 27 8:49 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

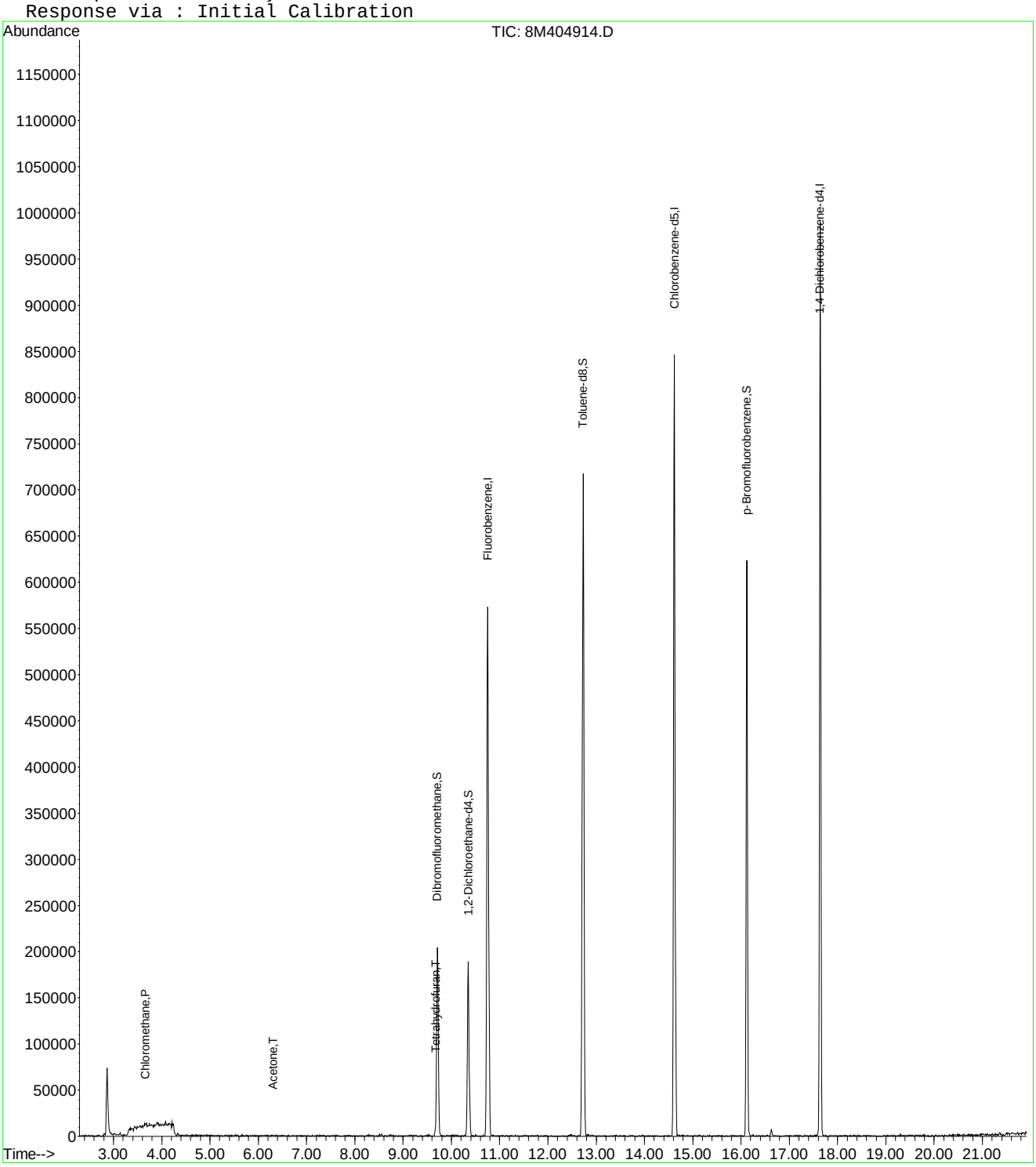

8M404914.D 8260WT.M Wed May 27 08:49:06 2015 Page 2

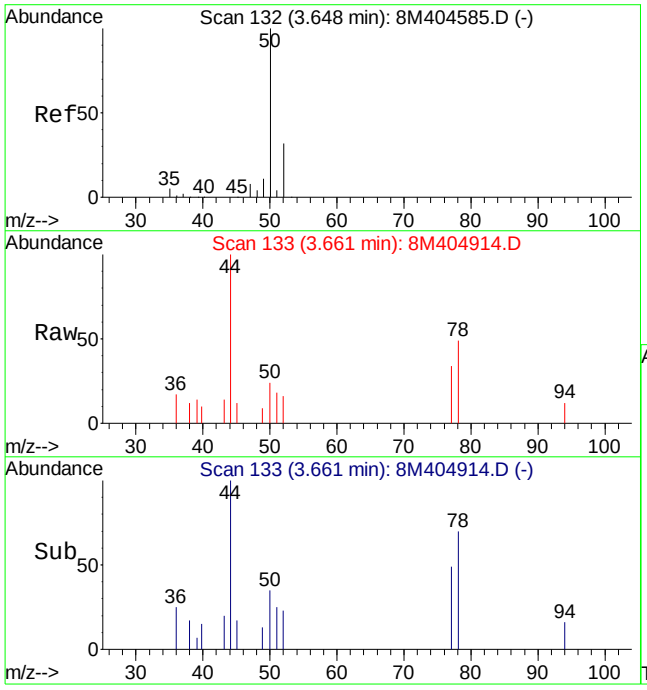

#3
Chloromethane
Concen: 0.21 ug/L
RT: 3.66 min Scan# 133
Delta R.T. 0.01 min
Lab File: 8M404914.D
Acq: 26 May 2015 15:43

Tgt Ion: 50 Resp: 4216

Ion	Ratio	Lower	Upper
50	100		
52	18.2	20.9	48.7#

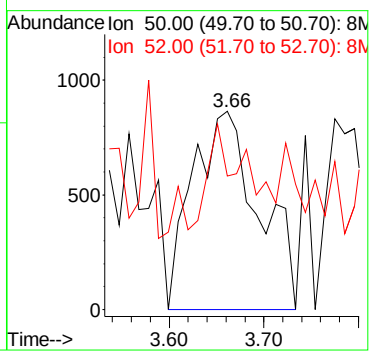

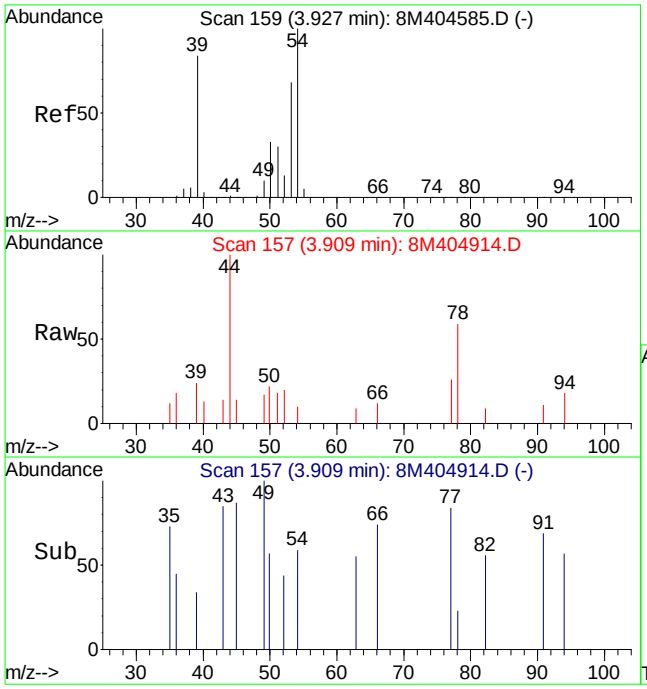

#5
1,3-Butadiene
Concen: Below Cal
RT: 3.91 min Scan# 157
Delta R.T. 0.00 min
Lab File: 8M404914.D
Acq: 26 May 2015 15:43

Tgt Ion: 54 Resp: 220

Ion	Ratio	Lower	Upper
54	100		
39	601.8	50.7	118.3#
53	0.0	40.4	94.4#

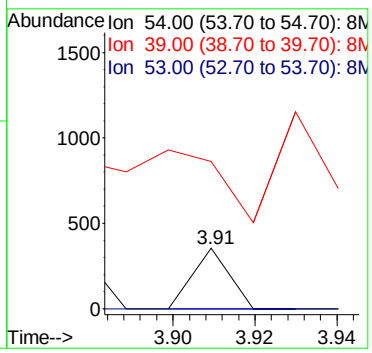

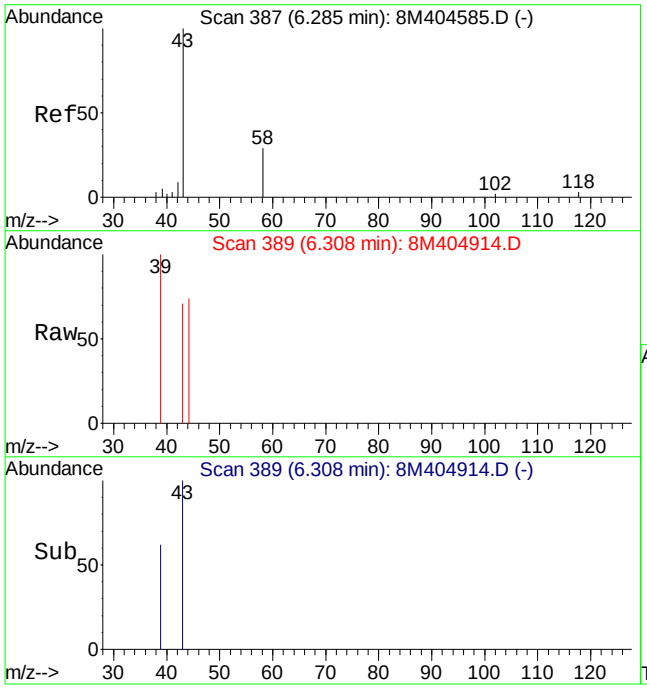

#13
Acetone
Concen: 0.28 ug/L
RT: 6.31 min Scan# 389
Delta R.T. 0.02 min
Lab File: 8M404914.D
Acq: 26 May 2015 15:43

Tgt Ion: 43 Resp: 262

Ion	Ratio	Lower	Upper
43	100		
58	0.0	23.2	54.0#

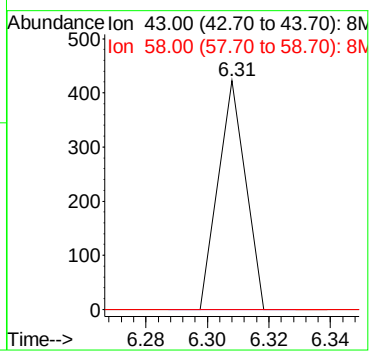

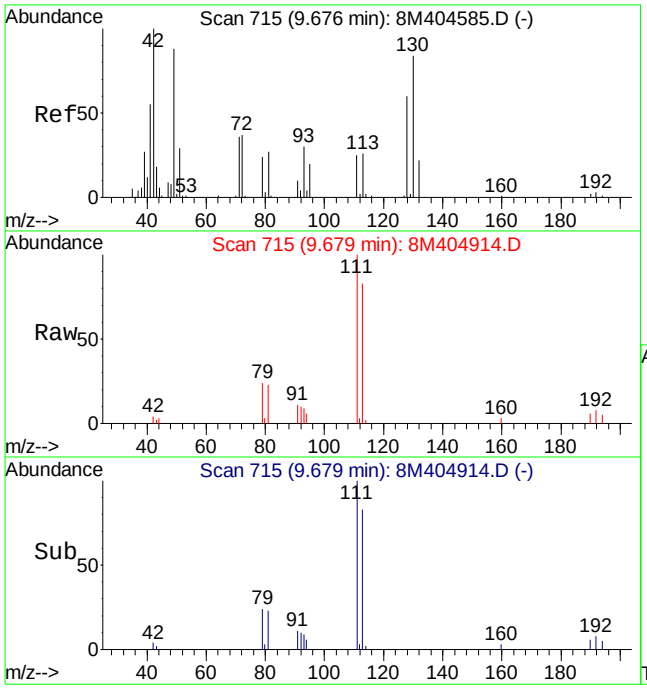

#36
Tetrahydrofuran
Concen: 0.50 ug/L
RT: 9.68 min Scan# 715
Delta R.T. -0.00 min
Lab File: 8M404914.D
Acq: 26 May 2015 15:43

Tgt Ion: 42 Resp: 514

Ion	Ratio	Lower	Upper
42	100		
72	0.0	27.5	64.3#
71	0.0	25.4	59.2#

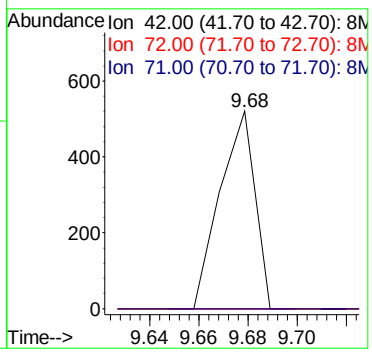

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400358.D Vial: 2
Acq On : 2 Oct 2014 12:24 Operator: TMB
Sample : WG494714-02 5ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:40 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	619208	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	544510	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	254129	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	1884	4.8234 ug/L #	23
3) 3-Chloro-1-propene	7.26	41	51461	4.9911 ug/L	88
4) 2-Chloro-1,3-butadiene	8.64	53	57885	4.7445 ug/L	89
5) Ethyl Acetate	9.28	43	12831	4.1474 ug/L	98
6) Methacrylonitrile	9.44	67	7738	4.2085 ug/L #	61
7) Isobutyl Alcohol	9.28	43	12831	104.0280 ug/L #	12
9) Methyl methacrylate	11.60	41	14247	4.0960 ug/L	83
10) 2-Nitropropane	11.94	43	3986	3.8294 ug/L	98
13) Cyclohexanone	16.03	55	1559	3.8882 ug/L #	43

(#) = qualifier out of range (m) = manual integration
8M400358.D A9FOOWTR.M Fri Oct 03 12:32:40 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400358.D Vial: 2
Acq On : 2 Oct 2014 12:24 Operator: TMB
Sample : WG494714-02 5ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

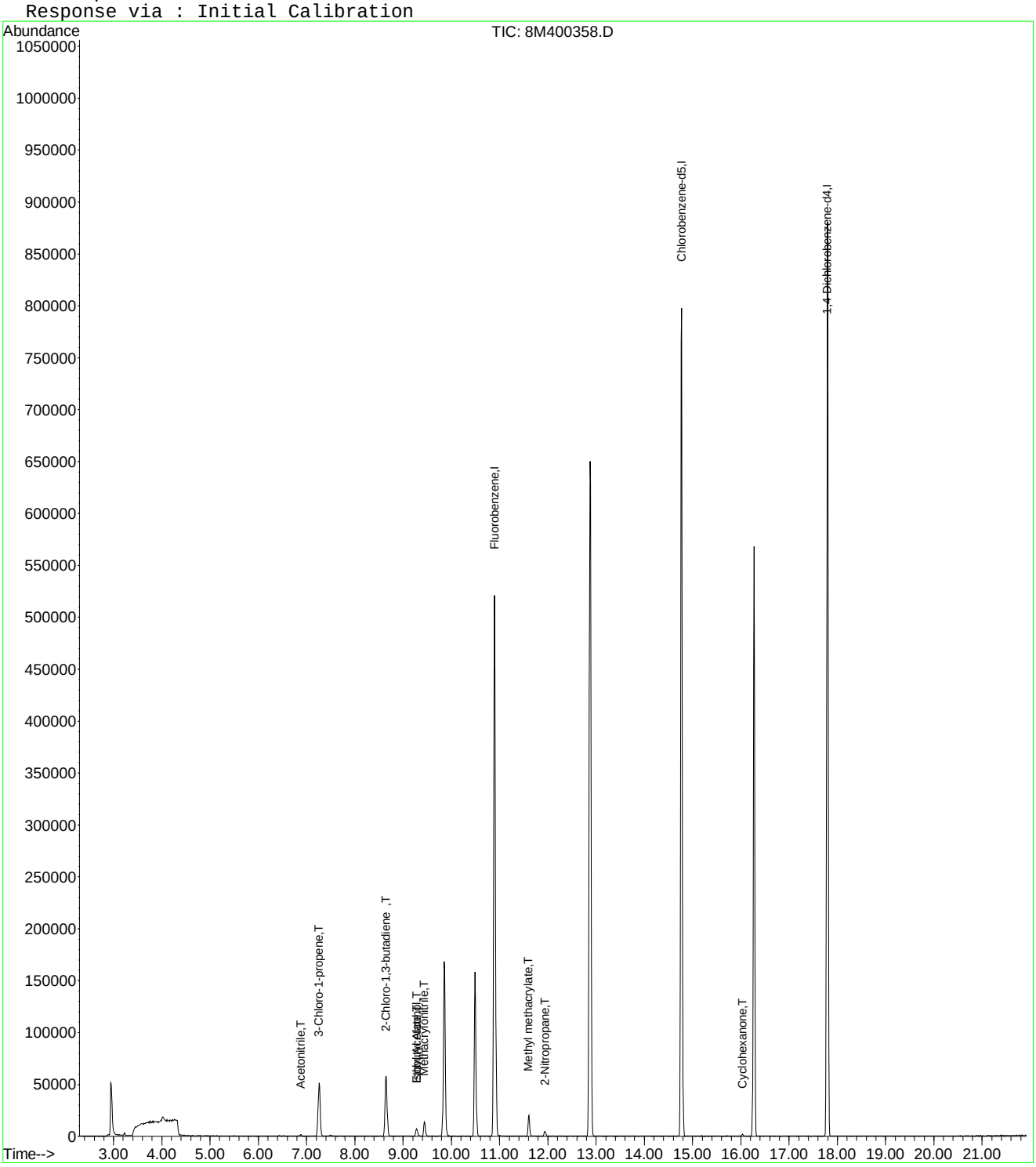

8M400358.D A9FOOWTR.M Fri Oct 03 12:32:41 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400359.D Vial: 3
Acq On : 2 Oct 2014 12:53 Operator: TMB
Sample : WG494714-03 20ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:41 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	590707	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	530005	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	246254	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	7263	19.4920 ug/L	97
3) 3-Chloro-1-propene	7.26	41	190581	19.3757 ug/L	90
4) 2-Chloro-1,3-butadiene	8.65	53	226534	19.4636 ug/L	90
5) Ethyl Acetate	9.28	43	54503	18.4670 ug/L	94
6) Methacrylonitrile	9.44	67	30898	17.6155 ug/L #	65
7) Isobutyl Alcohol	9.45	43	3143	26.7115 ug/L #	95
9) Methyl methacrylate	11.61	41	58234	17.5500 ug/L	72
10) 2-Nitropropane	11.94	43	16687	16.8050 ug/L	98
13) Cyclohexanone	16.03	55	7124	18.3357 ug/L	88

(#) = qualifier out of range (m) = manual integration
8M400359.D A9FOOWTR.M Fri Oct 03 12:32:41 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400359.D Vial: 3
Acq On : 2 Oct 2014 12:53 Operator: TMB
Sample : WG494714-03 20ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

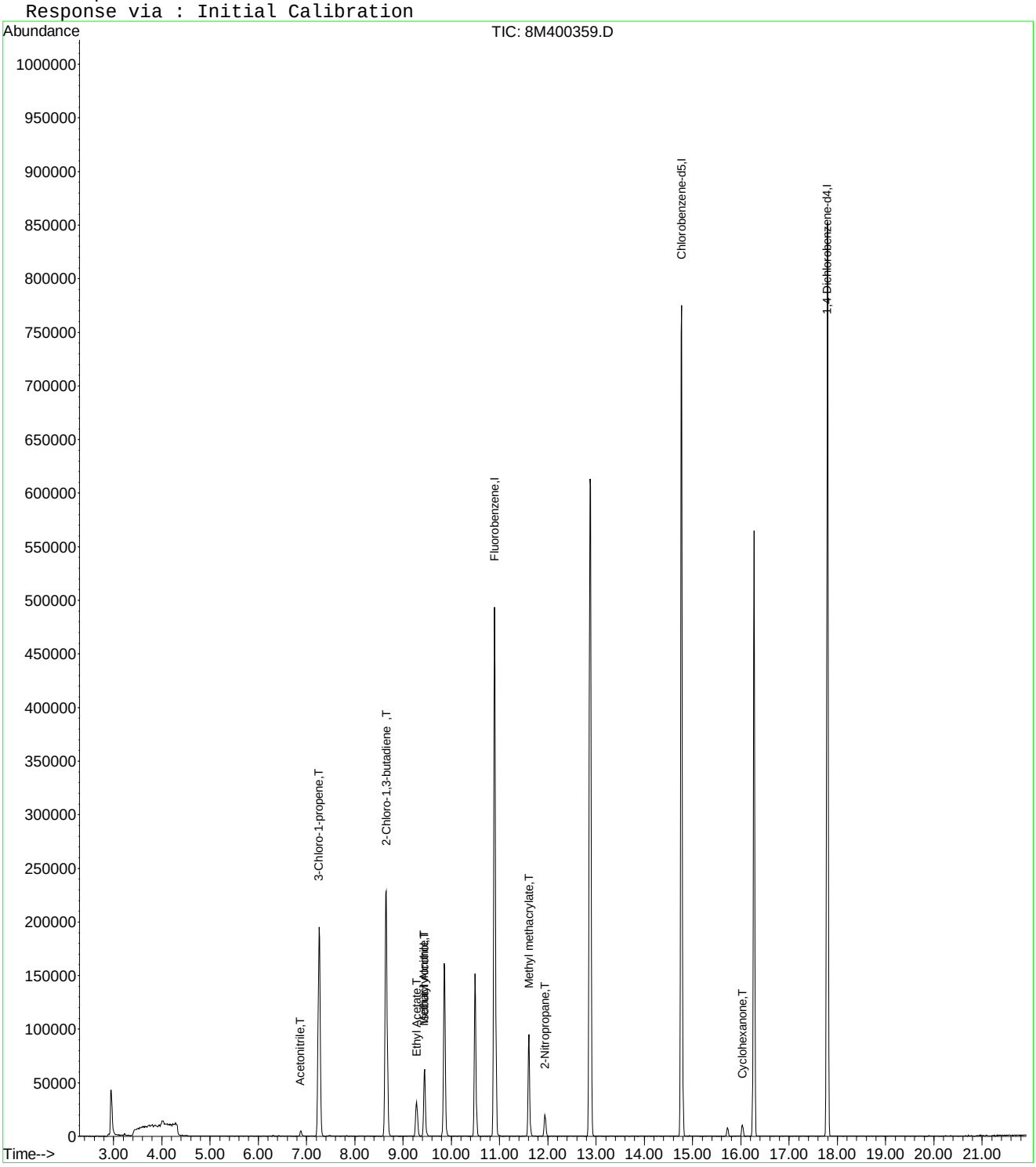

8M400359.D A9FOOWTR.M Fri Oct 03 12:32:42 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400360.D Vial: 4
Acq On : 2 Oct 2014 13:22 Operator: TMB
Sample : WG494714-04 50ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:42 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	590667	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	524443	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	249595	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	17698	47.5001 ug/L	100
3) 3-Chloro-1-propene	7.26	41	491365	49.9588 ug/L	90
4) 2-Chloro-1,3-butadiene	8.65	53	586258	50.3743 ug/L	90
5) Ethyl Acetate	9.27	43	145862	49.4250 ug/L	93
6) Methacrylonitrile	9.44	67	84924	48.4200 ug/L #	62
7) Isobutyl Alcohol	9.46	43	9563	81.2789 ug/L #	95
8) 1-Butanol	10.38	56	1895	48.4971 ug/L	87
9) Methyl methacrylate	11.61	41	161451	48.6599 ug/L	75
10) 2-Nitropropane	11.94	43	45766	46.0929 ug/L	98
13) Cyclohexanone	16.04	55	19698	50.0200 ug/L	89

(#) = qualifier out of range (m) = manual integration
8M400360.D A9FOOWTR.M Fri Oct 03 12:32:42 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400360.D Vial: 4
Acq On : 2 Oct 2014 13:22 Operator: TMB
Sample : WG494714-04 50ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

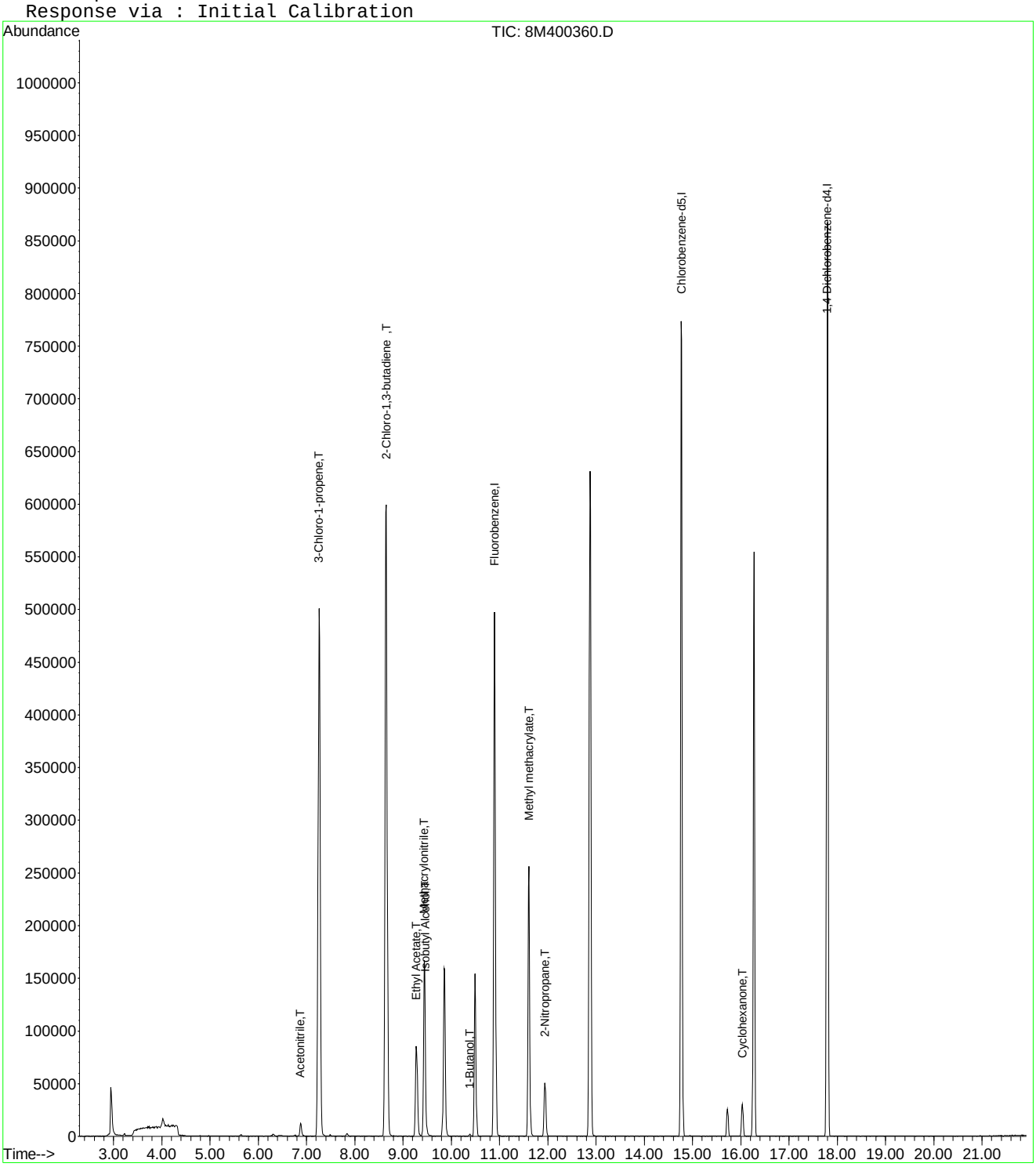

8M400360.D A9FOOWTR.M Fri Oct 03 12:32:42 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400361.D Vial: 5
Acq On : 2 Oct 2014 13:51 Operator: TMB
Sample : WG494714-05 100ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:43 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	595542	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	525736	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	251203	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	38265	101.8596 ug/L	98
3) 3-Chloro-1-propene	7.26	41	1042545	105.1315 ug/L	90
4) 2-Chloro-1,3-butadiene	8.65	53	1239135	105.6013 ug/L	88
5) Ethyl Acetate	9.27	43	315872	106.1564 ug/L	93
6) Methacrylonitrile	9.44	67	182857	103.4038 ug/L #	63
7) Isobutyl Alcohol	9.45	43	23247	195.9661 ug/L #	92
8) 1-Butanol	10.38	56	5482	96.3312 ug/L	88
9) Methyl methacrylate	11.61	41	351287	105.0082 ug/L	73
10) 2-Nitropropane	11.94	43	103249	103.1352 ug/L	99
13) Cyclohexanone	16.04	55	43523	109.8125 ug/L	88

(#) = qualifier out of range (m) = manual integration
8M400361.D A9FOOWTR.M Fri Oct 03 12:32:43 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400361.D Vial: 5
Acq On : 2 Oct 2014 13:51 Operator: TMB
Sample : WG494714-05 100ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

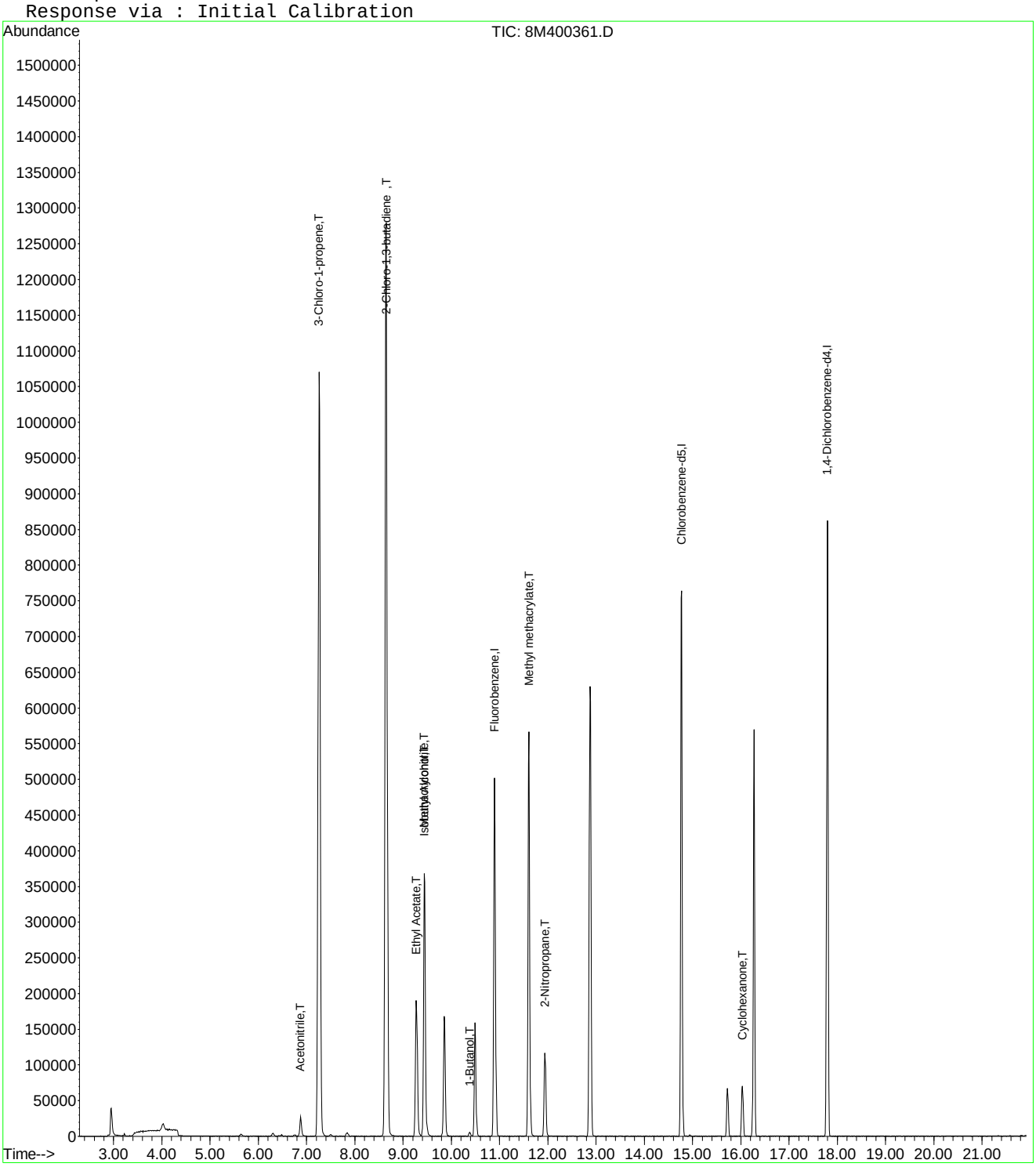

8M400361.D A9FOOWTR.M Fri Oct 03 12:32:43 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400362.D Vial: 6
Acq On : 2 Oct 2014 14:19 Operator: TMB
Sample : WG494714-06 200ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:43 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	605985	25.00 ug/L	-0.02
11) Chlorobenzene-d5	14.77	117	543073	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.80	152	256990	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	81322	212.7447 ug/L	93
3) 3-Chloro-1-propene	7.26	41	2105378	208.6501 ug/L	89
4) 2-Chloro-1,3-butadiene	8.65	53	2530154	211.9083 ug/L	84
5) Ethyl Acetate	9.28	43	654842	216.2828 ug/L	92
6) Methacrylonitrile	9.44	67	386897	215.0159 ug/L #	62
7) Isobutyl Alcohol	9.44	43	51188	424.0654 ug/L	97
8) 1-Butanol	10.37	56	13189	196.5131 ug/L	88
9) Methyl methacrylate	11.60	41	747593	219.6225 ug/L	71
10) 2-Nitropropane	11.94	43	227212	223.0503 ug/L	99
13) Cyclohexanone	16.03	55	76140	187.7821 ug/L	85

(#) = qualifier out of range (m) = manual integration
8M400362.D A9FOOWTR.M Fri Oct 03 12:32:44 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400362.D Vial: 6
Acq On : 2 Oct 2014 14:19 Operator: TMB
Sample : WG494714-06 200ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

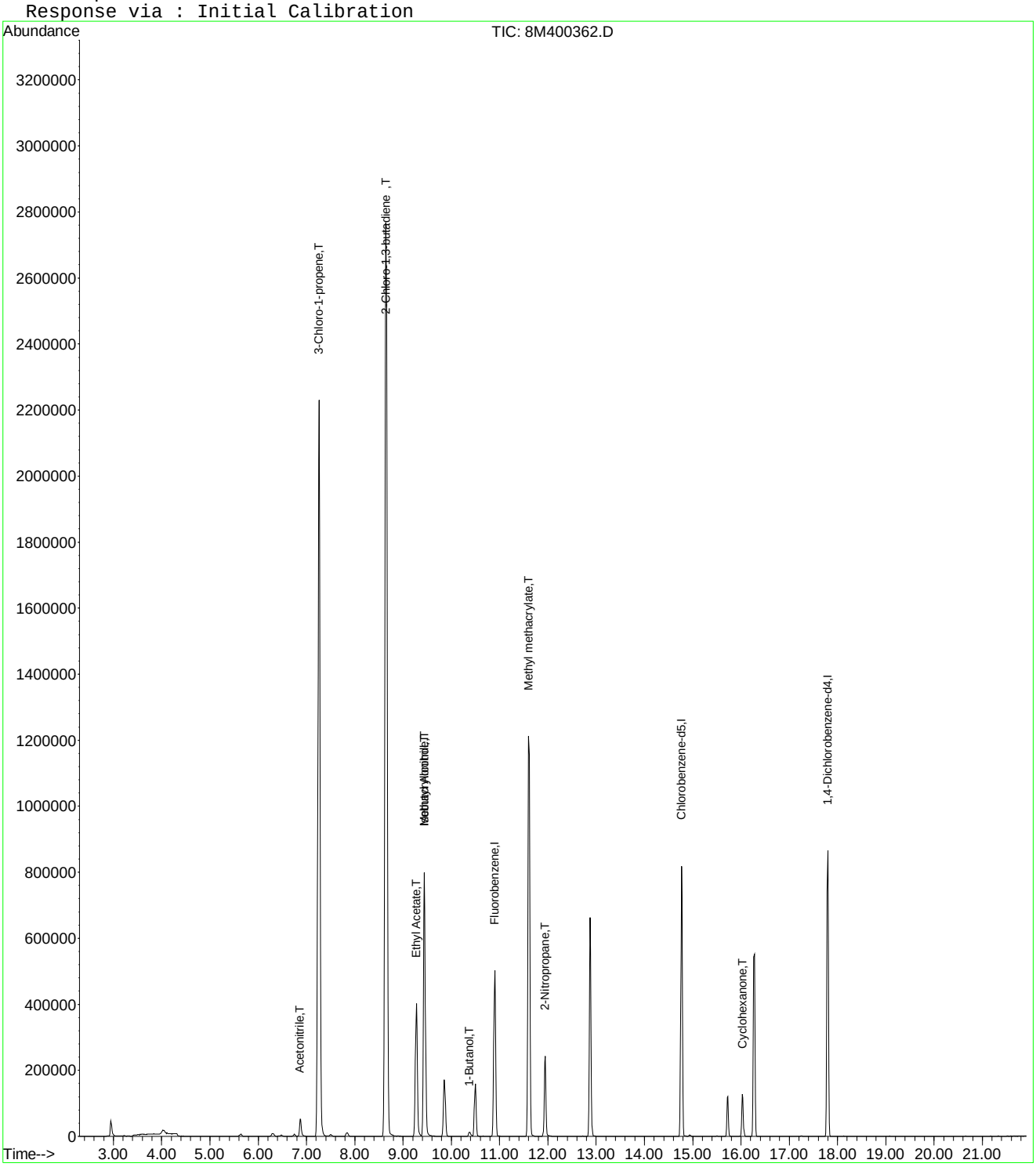

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400363.D Vial: 7
Acq On : 2 Oct 2014 14:48 Operator: TMB
Sample : WG494714-07 300ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:45 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	617316	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	555877	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	259867	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	120718	310.0110 ug/L	94
3) 3-Chloro-1-propene	7.26	41	3133181	304.8093 ug/L	86
4) 2-Chloro-1,3-butadiene	8.64	53	3764580	309.5080 ug/L	79
5) Ethyl Acetate	9.27	43	984728	319.2685 ug/L	92
6) Methacrylonitrile	9.44	67	589378	321.5315 ug/L #	62
7) Isobutyl Alcohol	9.45	43	76604	622.9747 ug/L	98
8) 1-Butanol	10.37	56	23186	322.5015 ug/L	89
9) Methyl methacrylate	11.61	41	1120843	323.2293 ug/L	70
10) 2-Nitropropane	11.94	43	340074	327.7172 ug/L	99
13) Cyclohexanone	16.03	55	133635	325.9318 ug/L	85

(#) = qualifier out of range (m) = manual integration
8M400363.D A9FOOWTR.M Fri Oct 03 12:32:45 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400363.D Vial: 7
Acq On : 2 Oct 2014 14:48 Operator: TMB
Sample : WG494714-07 300ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

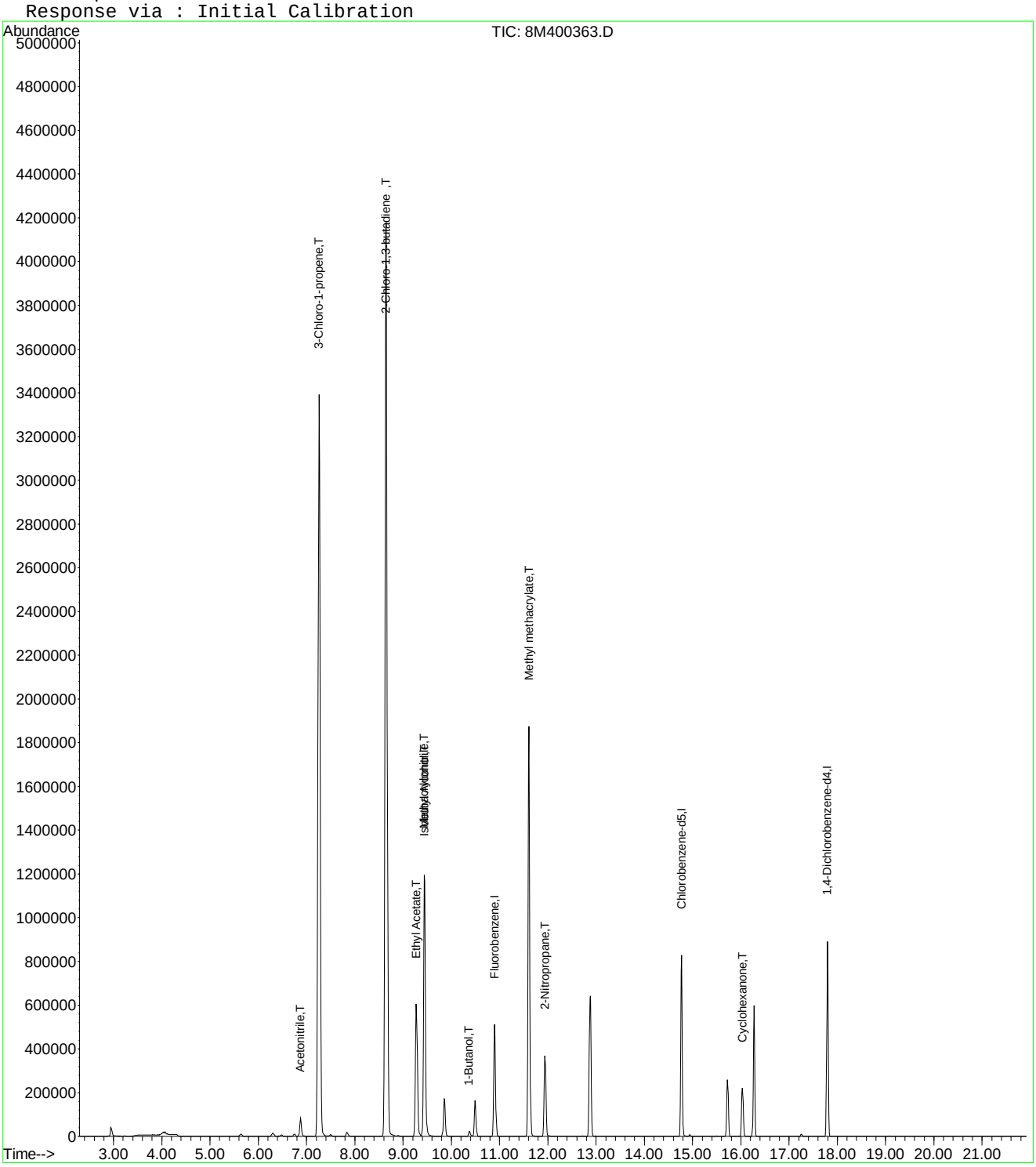

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400364.D Vial: 8
Acq On : 2 Oct 2014 15:16 Operator: TMB
Sample : WG494714-08 400ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:46 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	618926	25.00 ug/L	-0.02
11) Chlorobenzene-d5	14.77	117	559909	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.80	152	262346	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	151708	388.5818 ug/L	95
3) 3-Chloro-1-propene	7.26	41	4028272	390.8682 ug/L	83
4) 2-Chloro-1,3-butadiene	8.65	53	4802050	393.7774 ug/L	74
5) Ethyl Acetate	9.28	43	1250397	404.3491 ug/L	91
6) Methacrylonitrile	9.44	67	762998	415.1660 ug/L #	61
7) Isobutyl Alcohol	9.45	43	102436	830.8840 ug/L #	97
8) 1-Butanol	10.37	56	28243	386.8957 ug/L	89
9) Methyl methacrylate	11.60	41	1436773	413.2595 ug/L	68
10) 2-Nitropropane	11.94	43	451706	434.1607 ug/L	98
13) Cyclohexanone	16.03	55	150327	363.1785 ug/L	84

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400364.D Vial: 8
Acq On : 2 Oct 2014 15:16 Operator: TMB
Sample : WG494714-08 400ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

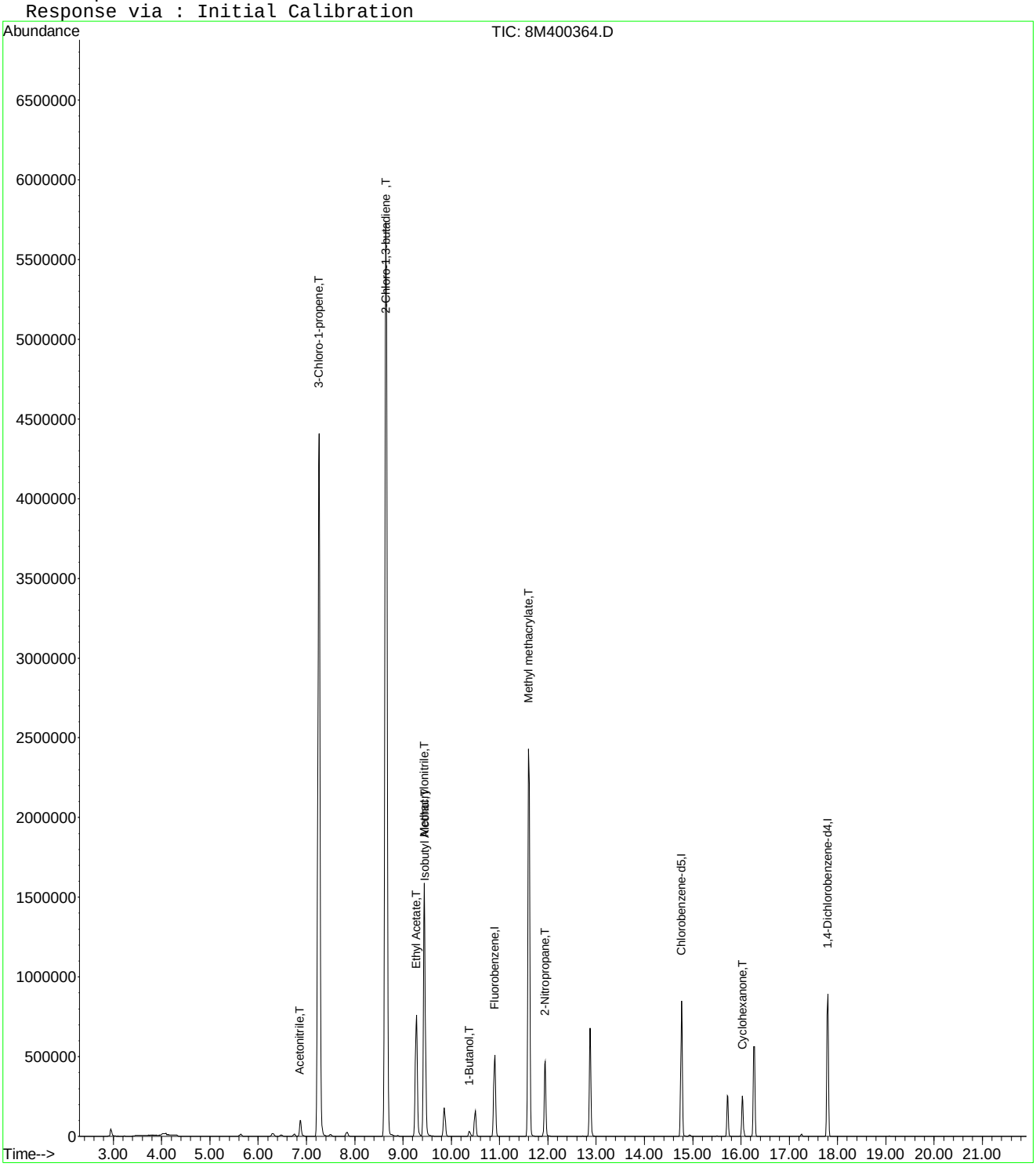

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400365.D Vial: 9
Acq On : 2 Oct 2014 15:45 Operator: TMB
Sample : WG494714-09 500ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:47 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	611679	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	574048	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	266141	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	197468	511.7830 ug/L	95
3) 3-Chloro-1-propene	7.26	41	4817953	473.0307 ug/L	79
4) 2-Chloro-1,3-butadiene	8.64	53	5656851	469.3686 ug/L	68
5) Ethyl Acetate	9.27	43	1590123	520.3008 ug/L	90
6) Methacrylonitrile	9.44	67	990168	545.1581 ug/L #	61
7) Isobutyl Alcohol	9.45	43	130410	1070.3205 ug/L	98
8) 1-Butanol	10.38	56	36529	499.2614 ug/L	87
9) Methyl methacrylate	11.61	41	1840524	535.6626 ug/L	68
10) 2-Nitropropane	11.94	43	590003	573.8046 ug/L	98
13) Cyclohexanone	16.04	55	203273	484.0894 ug/L	84

(#) = qualifier out of range (m) = manual integration
8M400365.D A9FOOWTR.M Fri Oct 03 12:32:47 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400365.D Vial: 9
Acq On : 2 Oct 2014 15:45 Operator: TMB
Sample : WG494714-09 500ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

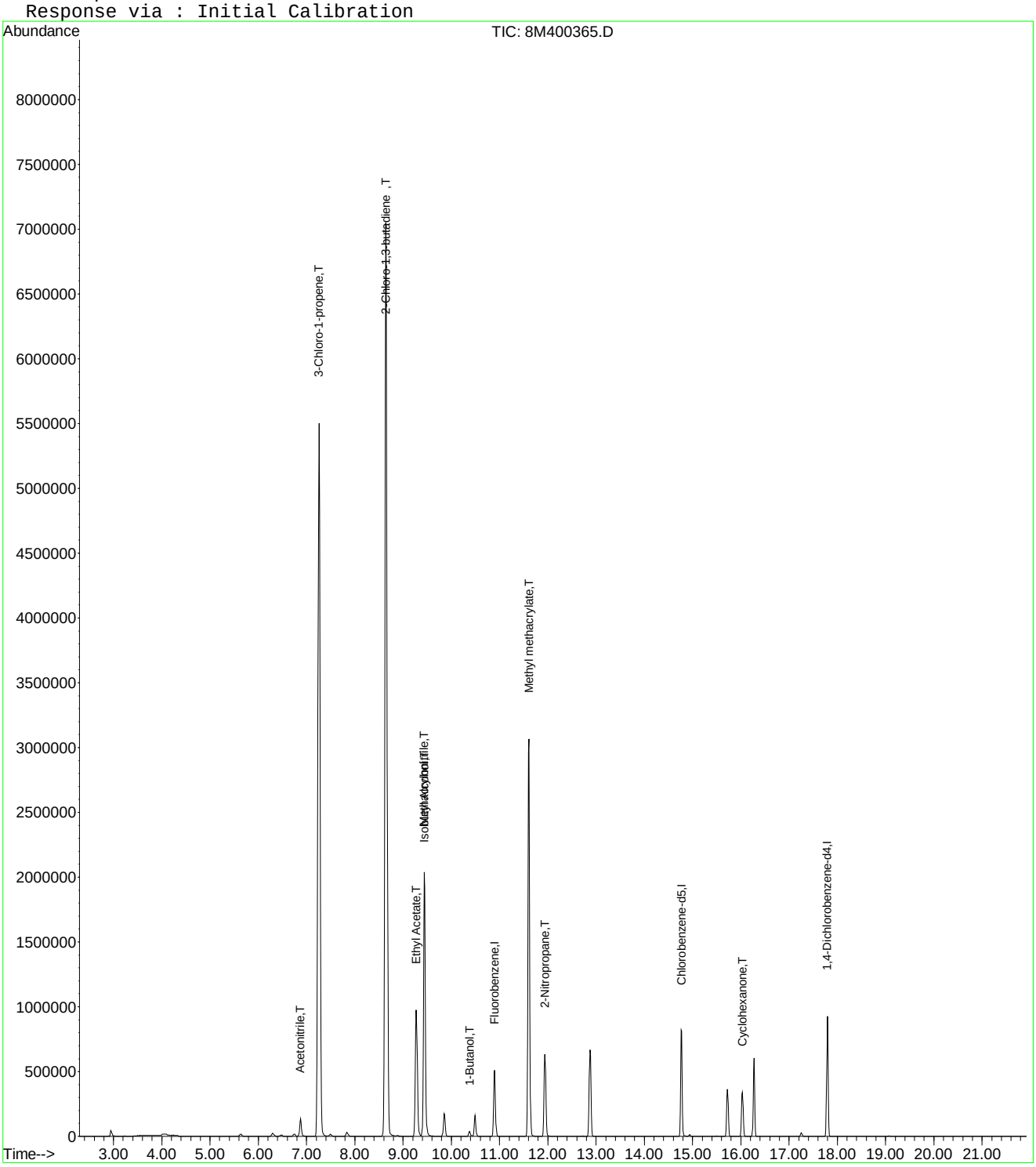

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400367.D Vial: 11
Acq On : 2 Oct 2014 16:47 Operator: TMB
Sample : WG494714-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66677 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:48 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	548066	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	508831	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	240116	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	36847	106.5815 ug/L	98
3) 3-Chloro-1-propene	7.26	41	1001386	109.7284 ug/L	90
4) 2-Chloro-1,3-butadiene	8.64	53	982184	90.9542 ug/L	89
5) Ethyl Acetate	9.27	43	328991	120.1430 ug/L	94
6) Methacrylonitrile	9.44	67	174278	107.0895 ug/L #	64
7) Isobutyl Alcohol	9.45	43	21185	194.0538 ug/L	99
8) 1-Butanol	10.39	56	5303	100.0865 ug/L	77
9) Methyl methacrylate	11.61	41	317777	103.2198 ug/L	73
10) 2-Nitropropane	11.94	43	95761	103.9416 ug/L	99
13) Cyclohexanone	16.03	55	11614	30.6562 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M400367.D A9FOOWTR.M Fri Oct 03 12:32:49 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400367.D Vial: 11
Acq On : 2 Oct 2014 16:47 Operator: TMB
Sample : WG494714-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66677 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

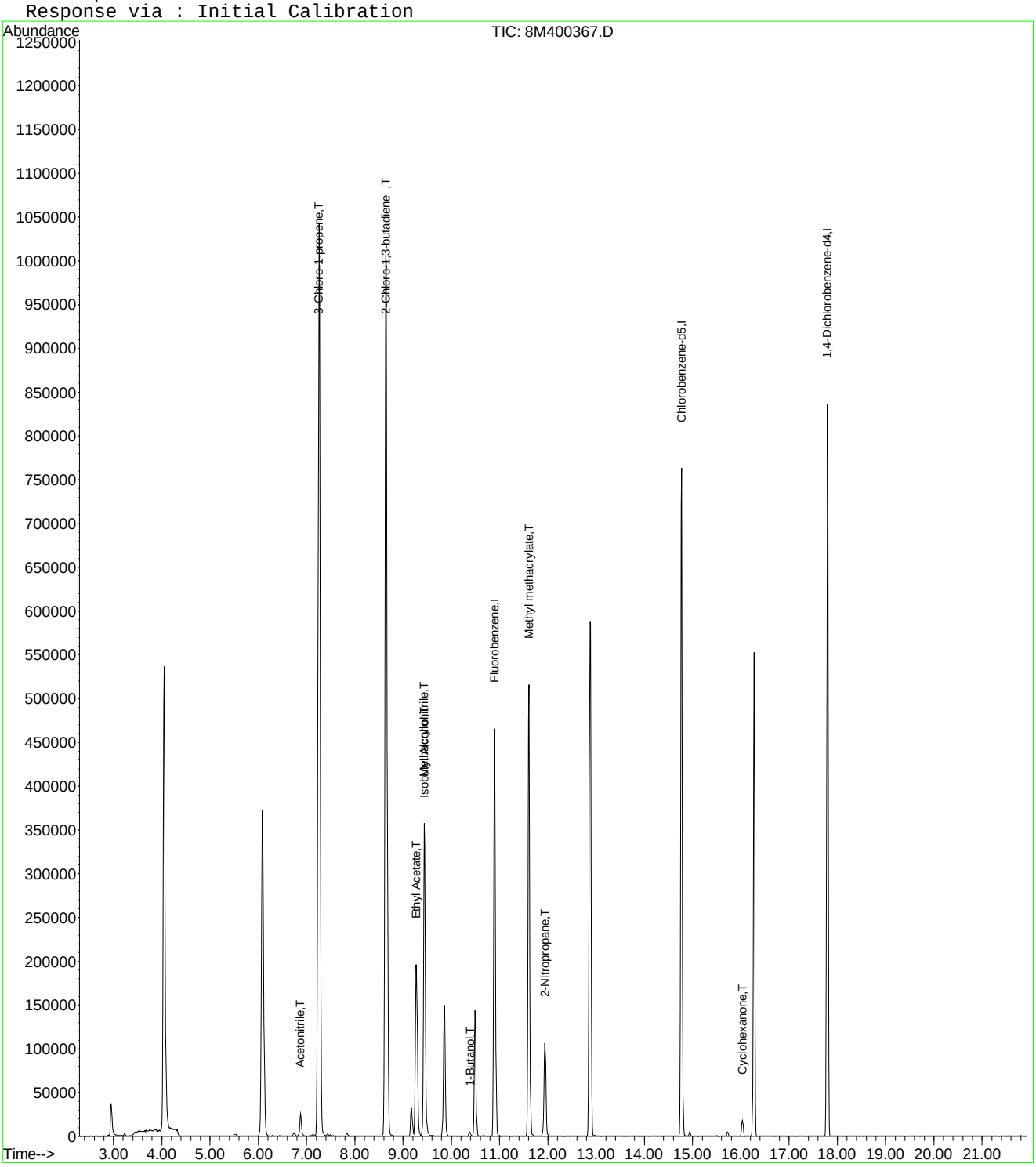

8M400367.D A9FOOWTR.M Fri Oct 03 12:32:49 2014 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\100214\8M400367.D Vial: 11
Acq On : 2 Oct 2014 16:47 Operator: TMB
Sample : WG494714-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66677 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	92	-0.03
2	T	Acetonitrile	100.0000	106.5815	-6.6	96	-0.02
3	T	3-Chloro-1-propene	100.0000	109.7284	-9.7	96	-0.03
4	T	2-Chloro-1,3-butadiene	100.0000	90.9542	9.0	79	-0.03
5	T	Ethyl Acetate	100.0000	120.1430	-20.1	104	-0.02
6	T	Methacrylonitrile	100.0000	107.0895	-7.1	95	-0.03
7	T	Isobutyl Alcohol	200.0000	194.0538	3.0	91	-0.02
8	T	1-Butanol	100.0000	100.0865	-0.1	97	0.00
9	T	Methyl methacrylate	100.0000	103.2198	-3.2	90	-0.02
10	T	2-Nitropropane	100.0000	103.9416	-3.9	93	-0.03
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	97	-0.03
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	96	-0.04
13	T	Cyclohexanone	100.0000	30.6562	69.3	27	-0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M400367.D A9FOOWTR.M Fri Oct 03 12:33:23 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404579.D Vial: 3
Acq On : 12 May 2015 16:50 Operator: TMB
Sample : WG523161-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:12 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:43:58 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	686121	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	491169	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.65	152	260131	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
80) p-Bromofluorobenzene	0.00	95	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.20	85	2048	0.1926 ug/L	86
3) Chloromethane	3.66	50	9733	0.4585 ug/L	81
4) Vinyl Chloride	3.89	62	5954	0.2976 ug/L	92
6) Bromomethane	4.78	94	888	0.9695 ug/L #	29
7) Chloroethane	4.93	64	1608	0.2954 ug/L #	61
8) Trichlorofluoromethane	5.42	101	3385	0.2695 ug/L #	80
10) Isoprene	6.00	67	2101	0.2256 ug/L #	57
12) 1,1,2-Trichloro-1,2,2-Trif	6.20	101	1894	0.2671 ug/L	56
13) Acetone	6.28	43	313	0.3194 ug/L #	36
14) 1,1-Dichloroethene	6.52	61	3506	0.2908 ug/L	76
16) Dimethyl Sulfide	6.78	62	1875	0.2667 ug/L	83
18) Methyl acetate	7.06	43	570	0.1630 ug/L #	58
19) Methylene Chloride	7.30	84	1819	0.2647 ug/L #	13
20) Carbon Disulfide	7.34	76	7144	0.3220 ug/L	89
22) Methyl Tert Butyl Ether	7.53	73	3822	0.2887 ug/L #	62
23) trans-1,2-Dichloroethene	7.74	61	3271	0.2841 ug/L	66
24) n-Hexane	7.83	57	2928	0.2515 ug/L	88
26) Vinyl Acetate	8.34	43	3028	0.3597 ug/L #	71
27) 1,1-Dichloroethane	8.37	63	5008	0.3604 ug/L #	79
29) 2-Butanone	8.93	43	453	0.2837 ug/L #	49
31) 2,2-Dichloropropane	9.14	77	3681	0.3210 ug/L	85
32) cis-1,2-Dichloroethene	9.21	96	2604	0.3293 ug/L	91
33) Chloroform	9.42	83	3741	0.2898 ug/L	89
35) Bromochloromethane	9.66	130	1064	0.2639 ug/L #	47
36) Tetrahydrofuran	9.69	42	742	0.6900 ug/L #	32
38) 1,1,1-Trichloroethane	9.96	97	3379	0.2884 ug/L	96
39) Cyclohexane	10.00	56	3808	0.2681 ug/L #	87
40) 1,1-Dichloropropene	10.14	75	2928	0.2872 ug/L #	71
42) Carbon Tetrachloride	10.29	117	2361	0.2217 ug/L	85
45) 1,2-Dichloroethane	10.47	62	2773	0.2997 ug/L	96
46) Benzene	10.50	78	8640	0.3146 ug/L	97
47) Trichloroethene	11.26	130	2342	0.3224 ug/L	94
48) Methylcyclohexane	11.34	83	3466	0.2940 ug/L	93
49) 1,2-Dichloropropane	11.48	63	1845	0.2399 ug/L	87
50) Bromodichloromethane	11.76	83	2889	0.3051 ug/L #	95
52) Dibromomethane	11.87	93	917	0.2531 ug/L #	54
53) 2-Chloroethyl Vinyl Ether	12.09	63	251	Below Cal #	1
55) cis-1,3-Dichloropropene	12.41	75	3322	0.3209 ug/L	81
56) Dimethyl Disulfide	12.66	79	1068	3.1879 ug/L	88
59) Toluene	12.83	91	9961	0.3419 ug/L	76

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404579.D Vial: 3
Acq On : 12 May 2015 16:50 Operator: TMB
Sample : WG523161-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:12 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:43:58 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
60)	Ethyl Methacrylate	12.92	69	836	0.1613 ug/L #	31
62)	trans-1,3-Dichloropropene	13.01	75	2509	0.2873 ug/L	87
63)	1,1,2-Trichloroethane	13.21	97	1152	0.2545 ug/L	100
65)	1,3-Dichloropropane	13.53	76	2228	0.2808 ug/L	87
66)	Tetrachloroethene	13.66	164	1478	0.2404 ug/L #	77
67)	Dibromochloromethane	13.91	129	2244	0.3726 ug/L	69
68)	1,2-Dibromoethane	14.17	107	698	0.1615 ug/L #	54
69)	1-Chlorohexane	14.26	91	2890	0.2900 ug/L	92
70)	Chlorobenzene	14.67	112	5841	0.2970 ug/L	96
71)	1,1,1,2-Tetrachloroethane	14.72	131	1900	0.2692 ug/L	86
72)	Ethylbenzene	14.71	106	2753	0.2337 ug/L #	1
73)	m-,p-Xylene	14.78	106	7323	0.5498 ug/L #	22
74)	o-Xylene	15.35	106	3679	0.2795 ug/L #	50
75)	Styrene	15.39	104	5769	0.2767 ug/L	99
76)	Bromoform	15.88	173	482	0.9047 ug/L #	57
77)	Isopropylbenzene	15.78	105	9462	0.2939 ug/L	87
79)	1,1,2,2-Tetrachloroethane	15.98	83	1325	0.2681 ug/L #	80
81)	1,2,3-Trichloropropane	16.18	110	215	0.1606 ug/L #	1
83)	n-Propylbenzene	16.28	91	13082	0.3324 ug/L #	66
84)	Bromobenzene	16.42	156	2742	0.3508 ug/L	85
85)	1,3,5-Trimethylbenzene	16.47	105	8035	0.2984 ug/L	91
86)	2-Chlorotoluene	16.55	91	8093	0.3047 ug/L #	59
87)	4-Chlorotoluene	16.60	91	6492	0.3056 ug/L	77
88)	a-Methylstyrene	16.87	118	3783	0.2467 ug/L	88
89)	tert-Butylbenzene	16.93	134	1688	0.2820 ug/L #	69
90)	1,2,4-Trimethylbenzene	16.99	105	8182	0.2955 ug/L	73
91)	sec-Butylbenzene	17.20	105	10759	0.3204 ug/L #	77
92)	p-Isopropyltoluene	17.37	119	7368	0.2588 ug/L	78
93)	1,3-Dichlorobenzene	17.55	146	5344	0.3374 ug/L #	72
94)	1,4-Dichlorobenzene	17.68	146	5757	0.3580 ug/L #	37
95)	n-Butylbenzene	17.89	91	8329	0.2995 ug/L	84
96)	1,2-Dichlorobenzene	18.19	146	4259	0.3098 ug/L	86
98)	1,2,4-Trichlorobenzene	20.33	180	2637	0.2546 ug/L #	71
99)	Hexachlorobutadiene	20.47	225	1581	0.2922 ug/L	88
100)	Naphthalene	20.70	128	4884	0.3517 ug/L #	72
101)	1,2,3-Trichlorobenzene	21.00	180	2811	0.3203 ug/L #	74

(#) = qualifier out of range (m) = manual integration
8M404579.D 8260WT.M Wed May 13 06:46:12 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404579.D Vial: 3
Acq On : 12 May 2015 16:50 Operator: TMB
Sample : WG523161-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

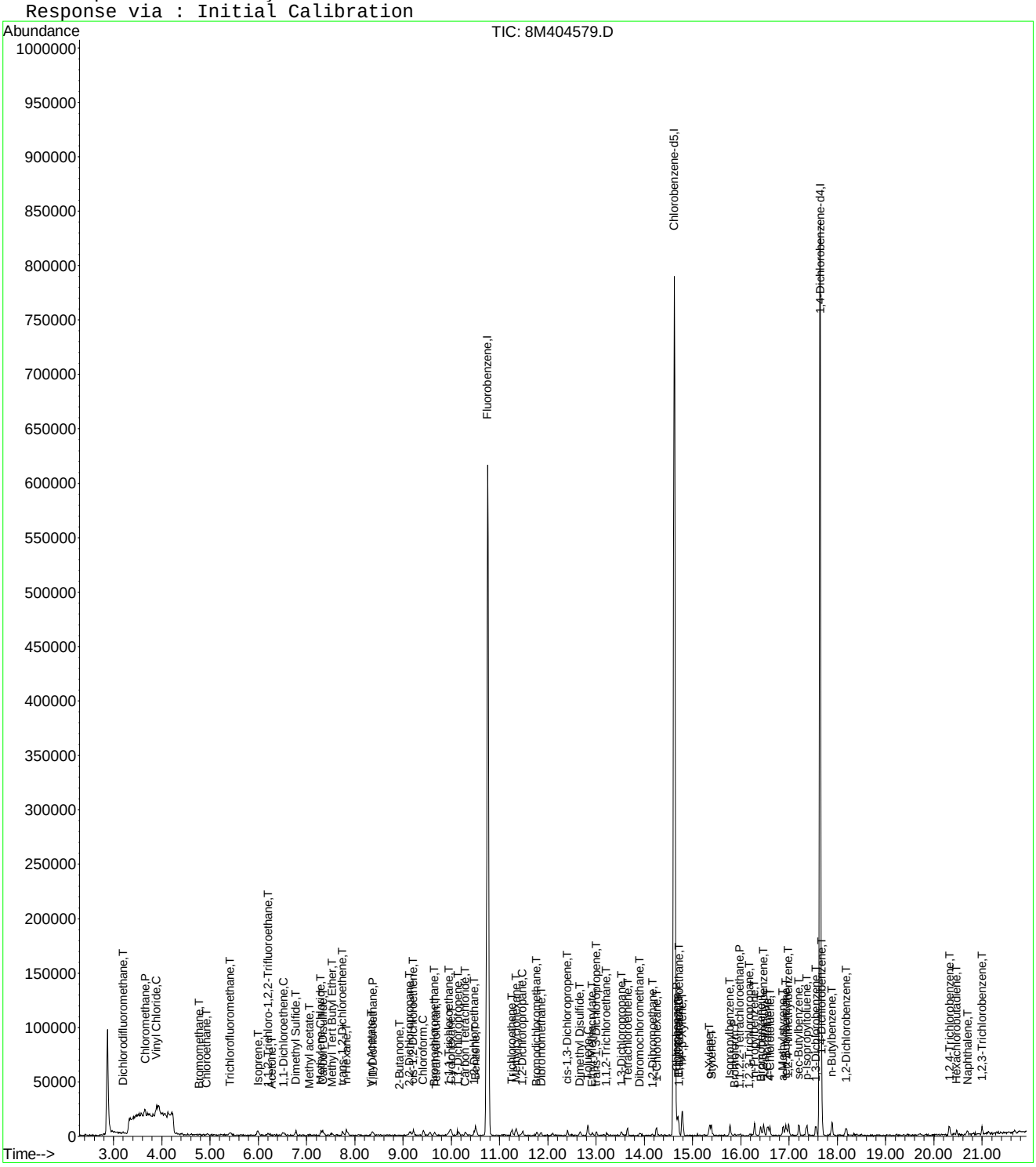

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404579.D Vial: 3
Acq On : 12 May 2015 16:50 Operator: TMB
Sample : WG523161-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.1926	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.4585	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.2976	0.0	0	0.00
5	T	1,3-Butadiene	-1.0000	0.0459	0.0	0	0.03
6	T	Bromomethane	-1.0000	0.9695	0.0	100	0.00
7	T	Chloroethane	-1.0000	0.2954	0.0	100	0.00
8	T	Trichlorofluoromethane	-1.0000	0.2695	0.0	100	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.95#
10	T	Isoprene	-1.0000	0.2256	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.18#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2671	0.0	100	0.00
13	T	Acetone	-1.0000	0.3194	0.0	100	0.00
14	C	1,1-Dichloroethene	-1.0000	0.2908	0.0	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.63#
16	T	Dimethyl Sulfide	-1.0000	0.2667	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.03#
18	T	Methyl acetate	-1.0000	0.1630	0.0	100	0.02
19	T	Methylene Chloride	-1.0000	0.2647	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.3220	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.48#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2887	0.0	100	0.02
23	T	trans-1,2-Dichloroethene	-1.0000	0.2841	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.2515	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.17#
26	T	Vinyl Acetate	-1.0000	0.3597	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.3604	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.75#
29	T	2-Butanone	-1.0000	0.2837	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.04#
31	T	2,2-Dichloropropane	-1.0000	0.3210	0.0	100	-0.01
32	T	cis-1,2-Dichloroethene	-1.0000	0.3293	0.0	100	0.00
33	C	Chloroform	0.3000	0.2898	3.4	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.55#
35	T	Bromochloromethane	-1.0000	0.2639	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.6900	0.0	0	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.71#
38	T	1,1,1-Trichloroethane	-1.0000	0.2884	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.2681	0.0	100	0.02
40	T	1,1-Dichloropropene	-1.0000	0.2872	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.26#
42	T	Carbon Tetrachloride	-1.0000	0.2217	0.0	100	-0.01
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.35#
44		Heptane	-1.0000	0.0000	0.0	0	-2.58#
45	T	1,2-Dichloroethane	-1.0000	0.2997	0.0	100	0.00
46	T	Benzene	0.3000	0.3146	-4.9	100	0.00
47	T	Trichloroethene	-1.0000	0.3224	0.0	100	0.00
48	T	Methylcyclohexane	-1.0000	0.2940	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2399	0.0	100	0.00
50	T	Bromodichloromethane	-1.0000	0.3051	0.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.77#
52	T	Dibromomethane	-1.0000	0.2531	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	-0.8060	0.0	0	0.02
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.10#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404579.D Vial: 3
Acq On : 12 May 2015 16:50 Operator: TMB
Sample : WG523161-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.3209	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	3.1879	0.0	0	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0000	0.0	0	-12.73#
59	C	Toluene	-1.0000	0.3419	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.1613	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.18#
62	T	trans-1,3-Dichloropropene	-1.0000	0.2873	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.2545	0.0	100	-0.01
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.15#
65	T	1,3-Dichloropropane	-1.0000	0.2808	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.2404	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.3726	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.1615	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.2900	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.2970	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.2692	0.0	0	0.02
72	C	Ethylbenzene	-1.0000	0.2337	0.0	100	0.00
73	T	m-,p-Xylene	-1.0000	0.5498	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.2795	0.0	100	0.00
75	T	Styrene	-1.0000	0.2767	0.0	100	0.00
76	P	Bromoform	-1.0000	0.9047	0.0	0	0.00
77	T	Isopropylbenzene	-1.0000	0.2939	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2681	0.0	100	-0.01
80	S	p-Bromofluorobenzene	-1.0000	0.0000	0.0	0	-16.12#
81	T	1,2,3-Trichloropropane	-1.0000	0.1606	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.23#
83	T	n-Propylbenzene	-1.0000	0.3324	0.0	0	0.00
84	T	Bromobenzene	0.3000	0.3508	-16.9	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.2984	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.3047	0.0	0	0.00
87	T	4-Chlorotoluene	-1.0000	0.3056	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2467	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.2820	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.2955	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3204	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.2588	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.3374	0.0	100	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.3580	-19.3	100	-0.01
95	T	n-Butylbenzene	-1.0000	0.2995	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.3098	-3.3	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.17#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.2546	0.0	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.2922	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.3517	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.3203	-6.8	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M404579.D 8260WT.M Wed May 13 06:47:16 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404580.D Vial: 4
Acq On : 12 May 2015 17:19 Operator: TMB
Sample : WG523161-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:13 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	663902	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	470309	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.65	152	244778	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
80) p-Bromofluorobenzene	0.00	95	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.19	85	3796	0.3689 ug/L	92
3) Chloromethane	3.66	50	13511	0.6578 ug/L	93
4) Vinyl Chloride	3.89	62	9546	0.4932 ug/L	94
5) 1,3-Butadiene	3.94	54	7454	0.1559 ug/L #	54
6) Bromomethane	4.79	94	656	0.9235 ug/L	68
7) Chloroethane	4.94	64	2482	0.4712 ug/L #	53
8) Trichlorofluoromethane	5.43	101	5157	0.4243 ug/L #	85
10) Isoprene	5.98	67	3614	0.4010 ug/L	80
12) 1,1,2-Trichloro-1,2,2-Trif	6.20	101	2569	0.3745 ug/L	93
13) Acetone	6.31	43	627	0.6613 ug/L #	36
14) 1,1-Dichloroethene	6.52	61	4922	0.4218 ug/L	75
16) Dimethyl Sulfide	6.77	62	2958	0.4349 ug/L	85
17) Iodomethane	7.04	142	526	1.1457 ug/L #	35
18) Methyl acetate	7.06	43	1214	0.3588 ug/L #	58
19) Methylene Chloride	7.31	84	2766	0.4160 ug/L #	41
20) Carbon Disulfide	7.34	76	8914	0.4153 ug/L	89
22) Methyl Tert Butyl Ether	7.52	73	5194	0.4055 ug/L #	70
23) trans-1,2-Dichloroethene	7.74	61	5006	0.4494 ug/L	68
24) n-Hexane	7.83	57	5343	0.4743 ug/L	96
26) Vinyl Acetate	8.34	43	3343	0.4104 ug/L #	71
27) 1,1-Dichloroethane	8.37	63	5026	0.3738 ug/L #	81
29) 2-Butanone	8.94	43	273	0.1767 ug/L #	49
31) 2,2-Dichloropropane	9.15	77	5223	0.4708 ug/L	89
32) cis-1,2-Dichloroethene	9.20	96	3418	0.4468 ug/L	89
33) Chloroform	9.43	83	4710	0.3771 ug/L	96
35) Bromochloromethane	9.64	130	1767	0.4529 ug/L	90
36) Tetrahydrofuran	9.68	42	233	0.2239 ug/L #	32
38) 1,1,1-Trichloroethane	9.96	97	4103	0.3619 ug/L	87
39) Cyclohexane	9.98	56	5465	0.3977 ug/L	96
40) 1,1-Dichloropropene	10.15	75	3687	0.3738 ug/L #	72
42) Carbon Tetrachloride	10.31	117	3996	0.3878 ug/L	87
45) 1,2-Dichloroethane	10.47	62	3824	0.4271 ug/L	84
46) Benzene	10.51	78	10613	0.3994 ug/L	93
47) Trichloroethene	11.27	130	2689	0.3826 ug/L	73
48) Methylcyclohexane	11.34	83	4479	0.3926 ug/L #	75
49) 1,2-Dichloropropane	11.48	63	3027	0.4067 ug/L #	73
50) Bromodichloromethane	11.78	83	3600	0.3929 ug/L #	89
52) Dibromomethane	11.87	93	1560	0.4451 ug/L #	61
53) 2-Chloroethyl Vinyl Ether	12.08	63	1210	Below Cal #	48
55) cis-1,3-Dichloropropene	12.41	75	4299	0.4292 ug/L	89

(#) = qualifier out of range (m) = manual integration
8M404580.D 8260WT.M Wed May 13 06:46:13 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404580.D Vial: 4
Acq On : 12 May 2015 17:19 Operator: TMB
Sample : WG523161-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:13 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
56)	Dimethyl Disulfide	12.68	79	1741	3.3001 ug/L		97
59)	Toluene	12.83	91	11735	0.4207 ug/L		81
60)	Ethyl Methacrylate	12.92	69	1520	0.3062 ug/L	#	66
62)	trans-1,3-Dichloropropene	13.01	75	3168	0.3789 ug/L		84
63)	1,1,2-Trichloroethane	13.22	97	1720	0.3969 ug/L		72
65)	1,3-Dichloropropane	13.53	76	2820	0.3712 ug/L	#	43
66)	Tetrachloroethene	13.66	164	1973	0.3351 ug/L		82
67)	Dibromochloromethane	13.92	129	2081	0.3608 ug/L		72
68)	1,2-Dibromoethane	14.17	107	1483	0.3584 ug/L		84
69)	1-Chlorohexane	14.26	91	4005	0.4197 ug/L		96
70)	Chlorobenzene	14.67	112	7203	0.3826 ug/L		90
71)	1,1,1,2-Tetrachloroethane	14.70	131	2560	0.3788 ug/L		82
72)	Ethylbenzene	14.70	106	4026	0.3570 ug/L	#	17
73)	m-,p-Xylene	14.78	106	10847	0.8505 ug/L		57
74)	o-Xylene	15.35	106	5229	0.4149 ug/L		57
75)	Styrene	15.38	104	7288	0.3650 ug/L		100
76)	Bromoform	15.89	173	942	1.0334 ug/L	#	44
77)	Isopropylbenzene	15.78	105	14152	0.4591 ug/L		77
79)	1,1,2,2-Tetrachloroethane	16.00	83	1923	0.4135 ug/L	#	91
83)	n-Propylbenzene	16.28	91	16602	0.4483 ug/L	#	67
84)	Bromobenzene	16.43	156	2690	0.3657 ug/L		88
85)	1,3,5-Trimethylbenzene	16.47	105	10398	0.4103 ug/L		80
86)	2-Chlorotoluene	16.55	91	12418	0.4968 ug/L		75
87)	4-Chlorotoluene	16.60	91	8385	0.4194 ug/L		71
88)	a-Methylstyrene	16.87	118	5253	0.3640 ug/L		98
89)	tert-Butylbenzene	16.93	134	1913	0.3396 ug/L	#	28
90)	1,2,4-Trimethylbenzene	16.99	105	11381	0.4368 ug/L		73
91)	sec-Butylbenzene	17.20	105	13195	0.4176 ug/L	#	71
92)	p-Isopropyltoluene	17.37	119	12187	0.4550 ug/L	#	73
93)	1,3-Dichlorobenzene	17.57	146	6274	0.4209 ug/L		98
94)	1,4-Dichlorobenzene	17.68	146	6156	0.4068 ug/L	#	24
95)	n-Butylbenzene	17.89	91	12345	0.4718 ug/L	#	75
96)	1,2-Dichlorobenzene	18.19	146	4688	0.3624 ug/L		93
98)	1,2,4-Trichlorobenzene	20.33	180	4027	0.4133 ug/L		90
99)	Hexachlorobutadiene	20.48	225	2038	0.4003 ug/L	#	69
100)	Naphthalene	20.69	128	4629	0.3542 ug/L	#	62
101)	1,2,3-Trichlorobenzene	21.01	180	2866	0.3471 ug/L		78

(#) = qualifier out of range (m) = manual integration
8M404580.D 8260WT.M Wed May 13 06:46:14 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404580.D Vial: 4
Acq On : 12 May 2015 17:19 Operator: TMB
Sample : WG523161-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

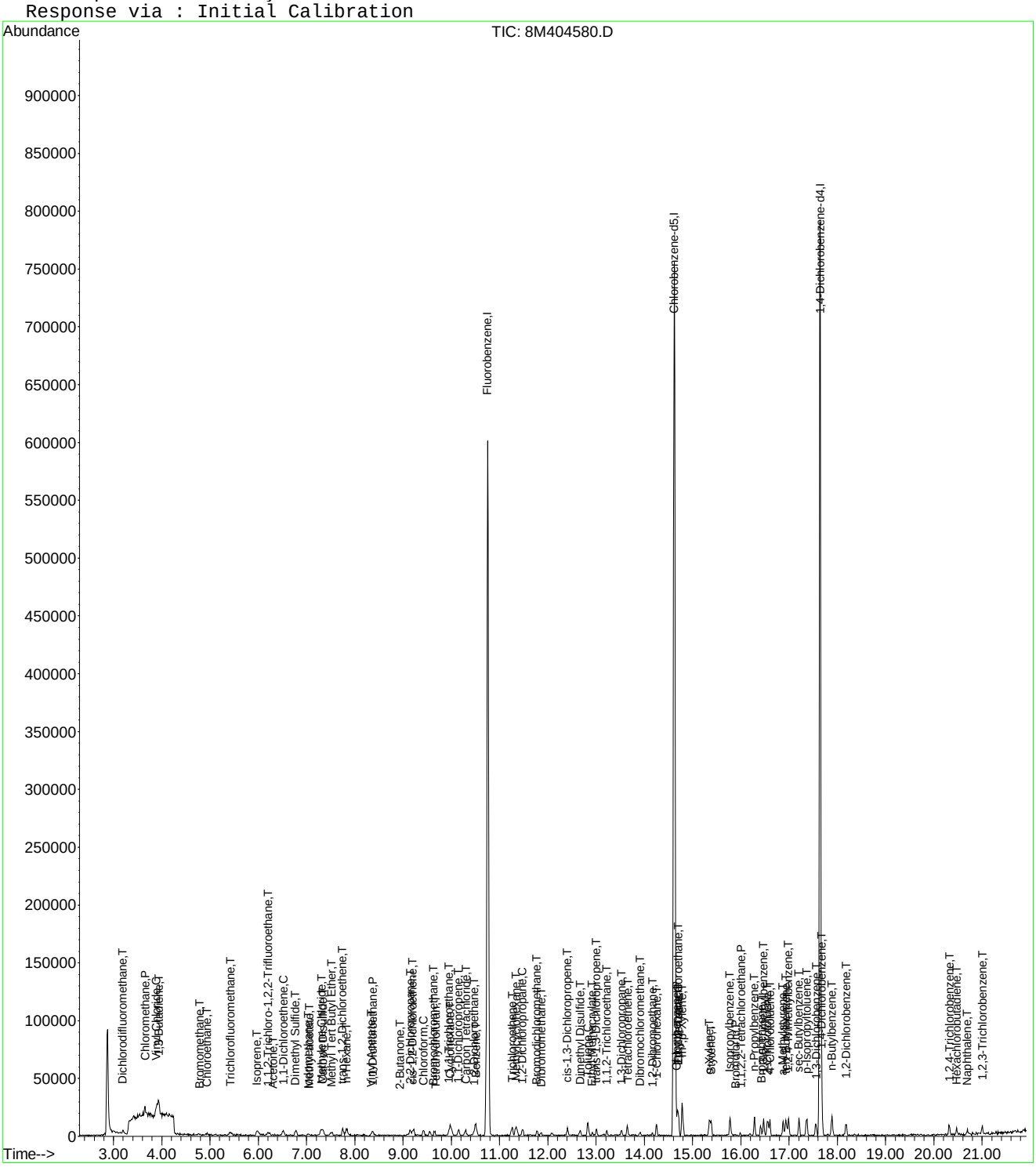

8M404580.D 8260WT.M Wed May 13 06:46:14 2015 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404580.D Vial: 4
Acq On : 12 May 2015 17:19 Operator: TMB
Sample : WG523161-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.3689	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.6578	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.4932	-23.3#	100	0.00
5	T	1,3-Butadiene	-1.0000	0.1559	0.0	0	0.03
6	T	Bromomethane	-1.0000	0.9235	0.0	100	0.02
7	T	Chloroethane	-1.0000	0.4712	0.0	100	0.00
8	T	Trichlorofluoromethane	0.4000	0.4243	-6.1	100	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.95#
10	T	Isoprene	-1.0000	0.4010	0.0	100	-0.01
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.18#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3745	0.0	100	0.00
13	T	Acetone	-1.0000	0.6613	0.0	100	0.02
14	C	1,1-Dichloroethene	0.4000	0.4218	-5.5	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.63#
16	T	Dimethyl Sulfide	-1.0000	0.4349	0.0	100	0.00
17	T	Iodomethane	-1.0000	1.1457	0.0	0	0.00
18	T	Methyl acetate	-1.0000	0.3588	0.0	100	0.02
19	T	Methylene Chloride	-1.0000	0.4160	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4153	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.48#
22	T	Methyl Tert Butyl Ether	-1.0000	0.4055	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.4494	-12.4	100	0.00
24	T	n-Hexane	-1.0000	0.4743	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.17#
26	T	Vinyl Acetate	-1.0000	0.4104	0.0	100	0.00
27	P	1,1-Dichloroethane	0.4000	0.3738	6.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.75#
29	T	2-Butanone	-1.0000	0.1767	0.0	100	0.02
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.04#
31	T	2,2-Dichloropropane	0.4000	0.4708	-17.7	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.4468	-11.7	100	-0.01
33	C	Chloroform	0.4000	0.3771	5.7	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.55#
35	T	Bromochloromethane	0.4000	0.4529	-13.2	100	-0.02
36	T	Tetrahydrofuran	-1.0000	0.2239	0.0	0	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.71#
38	T	1,1,1-Trichloroethane	0.4000	0.3619	9.5	100	0.00
39	T	Cyclohexane	-1.0000	0.3977	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.3738	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.26#
42	T	Carbon Tetrachloride	0.4000	0.3878	3.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.35#
44		Heptane	-1.0000	0.0000	0.0	0	-2.58#
45	T	1,2-Dichloroethane	0.4000	0.4271	-6.8	100	0.00
46	T	Benzene	0.4000	0.3994	0.2	100	0.00
47	T	Trichloroethene	0.4000	0.3826	4.4	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3926	0.0	100	0.00
49	C	1,2-Dichloropropane	0.4000	0.4067	-1.7	100	0.00
50	T	Bromodichloromethane	0.4000	0.3929	1.8	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.77#
52	T	Dibromomethane	0.4000	0.4451	-11.3	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	-0.2604	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.10#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404580.D Vial: 4
Acq On : 12 May 2015 17:19 Operator: TMB
Sample : WG523161-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.4292	-7.3	100	0.00
56	T	Dimethyl Disulfide	-1.0000	3.3001	0.0	0	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0000	0.0	0	-12.73#
59	C	Toluene	0.4000	0.4207	-5.2	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3062	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.18#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3789	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.3968	0.8	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.15#
65	T	1,3-Dichloropropane	0.4000	0.3712	7.2	100	0.00
66	T	Tetrachloroethene	0.4000	0.3351	16.2	100	0.00
67	T	Dibromochloromethane	0.4000	0.3608	9.8	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.3584	10.4	100	0.00
69	T	1-Chlorohexane	0.4000	0.4197	-4.9	100	0.00
70	P	Chlorobenzene	0.4000	0.3826	4.4	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3788	5.3	100	0.00
72	C	Ethylbenzene	0.4000	0.3570	10.8	100	0.00
73	T	m-,p-Xylene	0.8000	0.8505	-6.3	100	0.00
74	T	o-Xylene	-1.0000	0.4149	0.0	100	0.00
75	T	Styrene	0.4000	0.3650	8.7	100	0.00
76	P	Bromoform	-1.0000	1.0334	0.0	0	0.00
77	T	Isopropylbenzene	0.4000	0.4591	-14.8	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.4135	-3.4	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0000	0.0	0	-16.12#
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.18#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.23#
83	T	n-Propylbenzene	0.4000	0.4483	-12.1	100	0.00
84	T	Bromobenzene	0.4000	0.3657	8.6	100	0.02
85	T	1,3,5-Trimethylbenzene	0.4000	0.4103	-2.6	100	0.00
86	T	2-Chlorotoluene	0.4000	0.4968	-24.2	100	0.00
87	T	4-Chlorotoluene	0.4000	0.4194	-4.9	100	0.00
88	T	a-Methylstyrene	-1.0000	0.3640	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3396	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	0.4000	0.4369	-9.2	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.4176	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4550	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.4209	-5.2	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.4068	-1.7	100	-0.01
95	T	n-Butylbenzene	-1.0000	0.4718	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.3624	9.4	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.17#
98	T	1,2,4-Trichlorobenzene	0.4000	0.4133	-3.3	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.4003	-0.1	100	0.00
100	T	Naphthalene	0.4000	0.3542	11.4	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.3471	13.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1
8M404580.D 8260WT.M Wed May 13 06:47:27 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404581.D Vial: 5
Acq On : 12 May 2015 17:48 Operator: TMB
Sample : WG523161-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:14 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	659590	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	460400	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	243542	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.71	111	2938	0.4494 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.80%#	
43) 1,2-Dichloroethane-d4	10.35	65	2843	0.4627 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	1.84%#	
58) Toluene-d8	12.73	98	11695	0.5443 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.16%#	
80) p-Bromofluorobenzene	16.12	95	4255	0.5135 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.04%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.20	85	9953	0.9736 ug/L	87
3) Chloromethane	3.65	50	24429	1.1970 ug/L	99
4) Vinyl Chloride	3.89	62	20406	1.0612 ug/L	96
5) 1,3-Butadiene	3.94	54	17219	0.6767 ug/L	82
6) Bromomethane	4.79	94	2450	1.3331 ug/L	94
7) Chloroethane	4.94	64	5035	0.9622 ug/L	90
8) Trichlorofluoromethane	5.43	101	11177	0.9255 ug/L	98
9) Diethyl ether	5.95	59	23102	4.9898 ug/L	87
10) Isoprene	6.00	67	7629	0.8520 ug/L	76
12) 1,1,2-Trichloro-1,2,2-Trif	6.23	101	6538	0.9592 ug/L	92
13) Acetone	6.30	43	745	0.7909 ug/L #	36
14) 1,1-Dichloroethene	6.51	61	10988	0.9479 ug/L	82
15) Tert-Butyl Alcohol	6.59	59	2356	9.2949 ug/L #	61
16) Dimethyl Sulfide	6.77	62	6885	1.0188 ug/L	85
17) Iodomethane	7.02	142	2038	1.4675 ug/L	95
18) Methyl acetate	7.05	43	2929	0.8714 ug/L #	79
19) Methylene Chloride	7.30	84	6116	0.9258 ug/L #	33
20) Carbon Disulfide	7.34	76	20852	0.9778 ug/L	97
21) Acrylonitrile	7.48	53	3571	2.3817 ug/L	97
22) Methyl Tert Butyl Ether	7.53	73	12114	0.9518 ug/L	86
23) trans-1,2-Dichloroethene	7.76	61	10287	0.9296 ug/L	85
24) n-Hexane	7.84	57	10789	0.9641 ug/L	98
25) Diisopropyl ether	8.17	45	121991	4.9765 ug/L	90
26) Vinyl Acetate	8.34	43	8061	0.9960 ug/L #	78
27) 1,1-Dichloroethane	8.38	63	12933	0.9681 ug/L	91
28) Ethyl-Tert-Butyl ether	8.75	59	93602	4.8664 ug/L	91
29) 2-Butanone	8.93	43	1254	0.8171 ug/L #	49
30) Propionitrile	9.03	54	2357	4.8184 ug/L	83
31) 2,2-Dichloropropane	9.15	77	10696	0.9704 ug/L	96
32) cis-1,2-Dichloroethene	9.21	96	7441	0.9790 ug/L	62
33) Chloroform	9.42	83	12873	1.0374 ug/L	89
34) 1-Bromopropane	9.55	122	699	0.9722 ug/L	13
35) Bromochloromethane	9.66	130	4028	1.0392 ug/L	77
36) Tetrahydrofuran	9.68	42	5122	4.9547 ug/L	85
38) 1,1,1-Trichloroethane	9.95	97	10138	0.9000 ug/L	95
39) Cyclohexane	9.99	56	11930	0.8739 ug/L	89
40) 1,1-Dichloropropene	10.14	75	9993	1.0196 ug/L	92
41) Tert-Amyl-Methyl ether	10.25	73	68220	4.8322 ug/L	94
42) Carbon Tetrachloride	10.30	117	9231	0.9018 ug/L	97
45) 1,2-Dichloroethane	10.47	62	8537	0.9597 ug/L	83

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404581.D Vial: 5
Acq On : 12 May 2015 17:48 Operator: TMB
Sample : WG523161-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:14 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	10.51	78	27669	1.0481 ug/L		98
47)	Trichloroethene	11.27	130	6630	0.9494 ug/L		95
48)	Methylcyclohexane	11.34	83	9973	0.8799 ug/L		81
49)	1,2-Dichloropropane	11.48	63	7489	1.0128 ug/L		99
50)	Bromodichloromethane	11.78	83	9171	1.0074 ug/L		95
52)	Dibromomethane	11.86	93	2794	0.8023 ug/L		87
53)	2-Chloroethyl Vinyl Ether	12.08	63	2512	0.4835 ug/L	#	64
54)	4-Methyl-2-Pentanone	12.11	58	522	0.4106 ug/L	#	36
55)	cis-1,3-Dichloropropene	12.41	75	8511	0.8553 ug/L		94
56)	Dimethyl Disulfide	12.67	79	3441	3.5730 ug/L		81
59)	Toluene	12.83	91	28445	1.0416 ug/L		80
60)	Ethyl Methacrylate	12.93	69	3578	0.7364 ug/L	#	33
62)	trans-1,3-Dichloropropene	13.01	75	7499	0.9161 ug/L		93
63)	1,1,2-Trichloroethane	13.23	97	4124	0.9720 ug/L		97
64)	2-Hexanone	13.15	58	995	0.8516 ug/L	#	31
65)	1,3-Dichloropropane	13.52	76	7090	0.9532 ug/L		70
66)	Tetrachloroethene	13.66	164	5967	1.0352 ug/L		87
67)	Dibromochloromethane	13.91	129	5305	0.9396 ug/L		84
68)	1,2-Dibromoethane	14.18	107	3373	0.8328 ug/L		82
69)	1-Chlorohexane	14.26	91	8764	0.9382 ug/L		86
70)	Chlorobenzene	14.67	112	17996	0.9764 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.70	131	5637	0.8520 ug/L		99
72)	Ethylbenzene	14.69	106	10247	0.9282 ug/L	#	34
73)	m-,p-Xylene	14.79	106	23914	1.9154 ug/L	#	43
74)	o-Xylene	15.35	106	11085	0.8984 ug/L		61
75)	Styrene	15.39	104	19272	0.9860 ug/L		86
76)	Bromoform	15.88	173	1949	1.3145 ug/L		86
77)	Isopropylbenzene	15.78	105	30028	0.9951 ug/L		78
79)	1,1,2,2-Tetrachloroethane	16.00	83	4807	1.0388 ug/L	#	91
81)	1,2,3-Trichloropropane	16.18	110	889	0.7091 ug/L	#	1
82)	trans-1,4-Dichloro-2-Buten	16.23	53	1479	0.9628 ug/L	#	23
83)	n-Propylbenzene	16.29	91	37672	1.0223 ug/L	#	71
84)	Bromobenzene	16.42	156	7025	0.9600 ug/L		81
85)	1,3,5-Trimethylbenzene	16.47	105	25978	1.0304 ug/L		75
86)	2-Chlorotoluene	16.55	91	26781	1.0769 ug/L	#	69
87)	4-Chlorotoluene	16.61	91	18077	0.9088 ug/L		73
88)	a-Methylstyrene	16.87	118	11588	0.8071 ug/L		95
89)	tert-Butylbenzene	16.94	134	5736	1.0234 ug/L		92
90)	1,2,4-Trimethylbenzene	16.99	105	25492	0.9834 ug/L		75
91)	sec-Butylbenzene	17.21	105	33874	1.0776 ug/L		80
92)	p-Isopropyltoluene	17.36	119	27221	1.0214 ug/L		76
93)	1,3-Dichlorobenzene	17.56	146	14385	0.9699 ug/L		92
94)	1,4-Dichlorobenzene	17.69	146	14766	0.9807 ug/L		79
95)	n-Butylbenzene	17.89	91	26584	1.0211 ug/L		79
96)	1,2-Dichlorobenzene	18.19	146	12891	1.0017 ug/L		93
97)	1,2-Dibromo-3-Chloropropan	19.18	75	792	1.0722 ug/L	#	17
98)	1,2,4-Trichlorobenzene	20.32	180	8084	0.8338 ug/L		96
99)	Hexachlorobutadiene	20.47	225	4179	0.8251 ug/L	#	82
100)	Naphthalene	20.69	128	11817	0.9088 ug/L		91
101)	1,2,3-Trichlorobenzene	21.00	180	7425	0.9038 ug/L		93

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404581.D Vial: 5
Acq On : 12 May 2015 17:48 Operator: TMB
Sample : WG523161-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

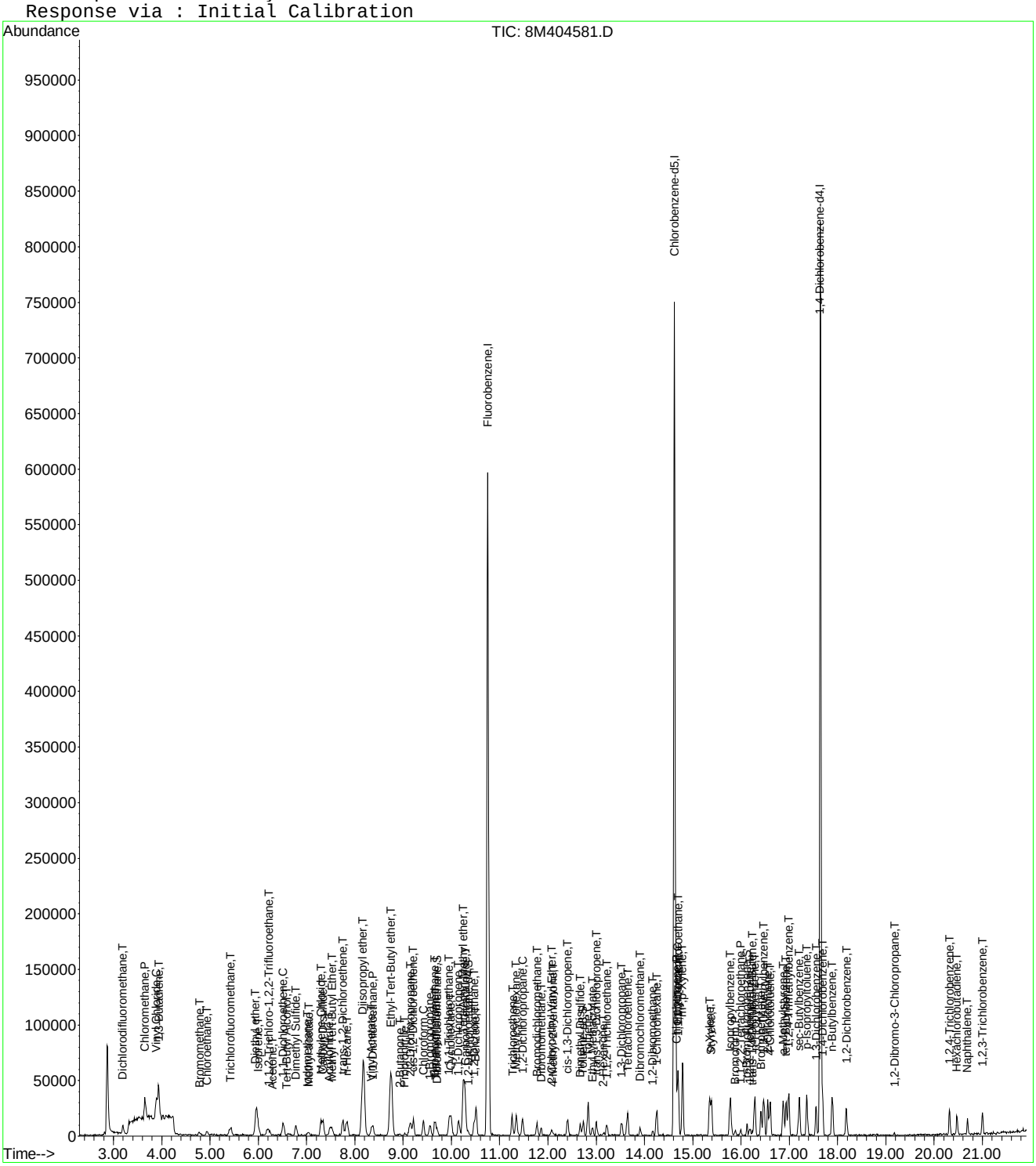

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404581.D Vial: 5
Acq On : 12 May 2015 17:48 Operator: TMB
Sample : WG523161-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9736	2.6	100	0.00
3	P	Chloromethane	1.0000	1.1970	-19.7	100	0.00
4	C	Vinyl Chloride	1.0000	1.0612	-6.1	100	0.01
5	T	1,3-Butadiene	-1.0000	0.6767	0.0	0	0.03
6	T	Bromomethane	1.0000	1.3331	-33.3#	100	0.02
7	T	Chloroethane	1.0000	0.9622	3.8	100	0.00
8	T	Trichlorofluoromethane	1.0000	0.9255	7.4	100	0.00
9	T	Diethyl ether	5.0000	4.9898	0.2	100	0.00
10	T	Isoprene	-1.0000	0.8520	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.18#
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	0.9592	4.1	100	0.02
13	T	Acetone	-1.0000	0.7909	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	0.9479	5.2	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	9.2949	0.0	0	-0.04
16	T	Dimethyl Sulfide	-1.0000	1.0188	0.0	100	0.00
17	T	Iodomethane	1.0000	1.4675	-46.8#	100	-0.01
18	T	Methyl acetate	-1.0000	0.8714	0.0	100	0.00
19	T	Methylene Chloride	1.0000	0.9258	7.4	100	0.00
20	T	Carbon Disulfide	1.0000	0.9778	2.2	100	0.00
21	T	Acrylonitrile	-1.0000	2.3817	0.0	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9518	4.8	100	0.02
23	T	trans-1,2-Dichloroethene	1.0000	0.9296	7.0	100	0.00
24	T	n-Hexane	-1.0000	0.9641	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	4.9765	0.5	100	0.00
26	T	Vinyl Acetate	-1.0000	0.9960	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	0.9681	3.2	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.8664	2.7	100	0.00
29	T	2-Butanone	-1.0000	0.8171	0.0	100	0.00
30	T	Propionitrile	5.0000	4.8184	3.6	100	-0.01
31	T	2,2-Dichloropropane	1.0000	0.9704	3.0	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	0.9790	2.1	100	0.00
33	C	Chloroform	1.0000	1.0374	-3.7	100	0.00
34		1-Bromopropane	1.0000	0.9722	2.8	100	0.00
35	T	Bromochloromethane	1.0000	1.0392	-3.9	100	0.00
36	T	Tetrahydrofuran	5.0000	4.9547	0.9	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.4494	0.0	0	0.00
38	T	1,1,1-Trichloroethane	1.0000	0.9000	10.0	100	-0.01
39	T	Cyclohexane	1.0000	0.8739	12.6	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0196	-2.0	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	4.8322	3.4	100	-0.01
42	T	Carbon Tetrachloride	1.0000	0.9018	9.8	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.4627	0.0	0	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.58#
45	T	1,2-Dichloroethane	1.0000	0.9597	4.0	100	0.00
46	T	Benzene	1.0000	1.0481	-4.8	100	0.00
47	T	Trichloroethene	1.0000	0.9494	5.1	100	0.00
48	T	Methylcyclohexane	-1.0000	0.8799	0.0	100	0.00
49	C	1,2-Dichloropropane	1.0000	1.0128	-1.3	100	0.00
50	T	Bromodichloromethane	1.0000	1.0074	-0.7	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.77#
52	T	Dibromomethane	1.0000	0.8023	19.8	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.4835	0.0	0	0.01
54	T	4-Methyl-2-Pentanone	-1.0000	0.4106	0.0	162	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404581.D Vial: 5
Acq On : 12 May 2015 17:48 Operator: TMB
Sample : WG523161-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.8553	14.5	100	0.00
56	T	Dimethyl Disulfide	-1.0000	3.5730	0.0	0	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.5443	0.0	0	0.00
59	C	Toluene	1.0000	1.0416	-4.2	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.7364	26.4#	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.18#
62	T	trans-1,3-Dichloropropene	1.0000	0.9161	8.4	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.9720	2.8	100	0.00
64	T	2-Hexanone	-1.0000	0.8516	0.0	100	0.00
65	T	1,3-Dichloropropane	1.0000	0.9533	4.7	100	0.00
66	T	Tetrachloroethene	1.0000	1.0352	-3.5	100	0.00
67	T	Dibromochloromethane	1.0000	0.9396	6.0	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.8328	16.7	100	0.00
69	T	1-Chlorohexane	1.0000	0.9382	6.2	100	0.00
70	P	Chlorobenzene	1.0000	0.9764	2.4	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.8520	14.8	100	0.00
72	C	Ethylbenzene	1.0000	0.9282	7.2	100	-0.01
73	T	m-,p-Xylene	2.0000	1.9154	4.2	100	0.00
74	T	o-Xylene	1.0000	0.8984	10.2	100	0.00
75	T	Styrene	1.0000	0.9860	1.4	100	0.00
76	P	Bromoform	1.0000	1.3144	-31.4#	100	0.00
77	T	Isopropylbenzene	1.0000	0.9951	0.5	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	1.0388	-3.9	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5135	0.0	0	0.00
81	T	1,2,3-Trichloropropane	1.0000	0.7091	29.1#	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	1.0000	0.9628	3.7	100	0.00
83	T	n-Propylbenzene	1.0000	1.0224	-2.2	100	0.00
84	T	Bromobenzene	1.0000	0.9600	4.0	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	1.0304	-3.0	100	0.00
86	T	2-Chlorotoluene	1.0000	1.0769	-7.7	100	0.00
87	T	4-Chlorotoluene	1.0000	0.9088	9.1	100	0.00
88	T	a-Methylstyrene	-1.0000	0.8071	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	1.0234	-2.3	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	0.9835	1.7	100	0.00
91	T	sec-Butylbenzene	1.0000	1.0776	-7.8	100	0.00
92	T	p-Isopropyltoluene	1.0000	1.0214	-2.1	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	0.9699	3.0	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	0.9807	1.9	100	0.00
95	T	n-Butylbenzene	1.0000	1.0211	-2.1	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0017	-0.2	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.0722	0.0	0	0.01
98	T	1,2,4-Trichlorobenzene	1.0000	0.8338	16.6	100	0.00
99	T	Hexachlorobutadiene	1.0000	0.8251	17.5	100	0.00
100	T	Naphthalene	1.0000	0.9088	9.1	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	0.9038	9.6	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M404581.D 8260WT.M Wed May 13 06:47:37 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404582.D Vial: 6
Acq On : 12 May 2015 18:16 Operator: TMB
Sample : WG523161-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:15 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	668457	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	470511	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.65	152	251240	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.72	111	6565	0.9909 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.96%#	
43) 1,2-Dichloroethane-d4	10.35	65	6190	0.9941 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.96%#	
58) Toluene-d8	12.73	98	21782	0.9921 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	3.96%#	
80) p-Bromofluorobenzene	16.12	95	9059	1.0598 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.24%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.19	85	18273	1.7638 ug/L	99
3) Chloromethane	3.65	50	45698	2.2095 ug/L	99
4) Vinyl Chloride	3.89	62	40979	2.1027 ug/L	96
5) 1,3-Butadiene	3.94	54	37404	1.7245 ug/L	86
6) Bromomethane	4.78	94	5092	1.9188 ug/L	91
7) Chloroethane	4.93	64	10438	1.9682 ug/L	95
8) Trichlorofluoromethane	5.42	101	23291	1.9031 ug/L	96
9) Diethyl ether	5.95	59	115894	24.7000 ug/L	90
10) Isoprene	6.00	67	16844	1.8561 ug/L	82
11) Acrolein	6.20	56	1525	Below Cal	65
12) 1,1,2-Trichloro-1,2,2-Trif	6.21	101	13397	1.9395 ug/L	85
13) Acetone	6.30	43	2254	2.3611 ug/L #	52
14) 1,1-Dichloroethene	6.51	61	23611	2.0098 ug/L	83
15) Tert-Butyl Alcohol	6.63	59	12335	48.0186 ug/L	96
16) Dimethyl Sulfide	6.77	62	13216	1.9296 ug/L	76
17) Iodomethane	7.03	142	4697	2.0188 ug/L	98
18) Methyl acetate	7.04	43	6429	1.8872 ug/L #	63
19) Methylene Chloride	7.30	84	13330	1.9910 ug/L #	51
20) Carbon Disulfide	7.34	76	40646	1.8807 ug/L	94
21) Acrylonitrile	7.47	53	16949	11.1543 ug/L	75
22) Methyl Tert Butyl Ether	7.53	73	26473	2.0525 ug/L	98
23) trans-1,2-Dichloroethene	7.74	61	22069	1.9677 ug/L	86
24) n-Hexane	7.84	57	21654	1.9093 ug/L	97
25) Diisopropyl ether	8.17	45	627644	25.2643 ug/L	90
26) Vinyl Acetate	8.34	43	16025	1.9538 ug/L #	84
27) 1,1-Dichloroethane	8.37	63	27711	2.0467 ug/L	97
28) Ethyl-Tert-Butyl ether	8.75	59	479574	24.6025 ug/L	93
29) 2-Butanone	8.91	43	2904	1.8670 ug/L #	49
30) Propionitrile	9.04	54	11650	23.5000 ug/L	93
31) 2,2-Dichloropropane	9.16	77	22508	2.0150 ug/L	87
32) cis-1,2-Dichloroethene	9.21	96	14863	1.9295 ug/L	80
33) Chloroform	9.42	83	24639	1.9592 ug/L	100
34) 1-Bromopropane	9.54	122	2635	2.3365 ug/L	96
35) Bromochloromethane	9.65	130	7260	1.8482 ug/L #	61
36) Tetrahydrofuran	9.68	42	25601	24.4363 ug/L	89
38) 1,1,1-Trichloroethane	9.96	97	21783	1.9081 ug/L	98
39) Cyclohexane	9.98	56	27008	1.9521 ug/L	78
40) 1,1-Dichloropropene	10.15	75	19262	1.9393 ug/L	87
41) Tert-Amyl-Methyl ether	10.26	73	341606	23.8760 ug/L	96
42) Carbon Tetrachloride	10.30	117	19985	1.9264 ug/L	93

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404582.D Vial: 6
Acq On : 12 May 2015 18:16 Operator: TMB
Sample : WG523161-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:15 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.47	62	16851	1.8691 ug/L		92
46)	Benzene	10.50	78	56814	2.1235 ug/L		96
47)	Trichloroethene	11.26	130	12549	1.7732 ug/L		96
48)	Methylcyclohexane	11.35	83	19938	1.7357 ug/L		89
49)	1,2-Dichloropropane	11.47	63	14953	1.9954 ug/L		91
50)	Bromodichloromethane	11.78	83	17347	1.8802 ug/L		98
51)	1,4-Dioxane	11.76	88	945	73.3339 ug/L		93
52)	Dibromomethane	11.86	93	7170	2.0316 ug/L		88
53)	2-Chloroethyl Vinyl Ether	12.08	63	5523	2.1519 ug/L	#	78
54)	4-Methyl-2-Pentanone	12.11	58	2984	2.3162 ug/L	#	83
55)	cis-1,3-Dichloropropene	12.41	75	17917	1.7766 ug/L		95
56)	Dimethyl Disulfide	12.67	79	7600	4.2202 ug/L		84
59)	Toluene	12.83	91	59670	2.1381 ug/L		80
60)	Ethyl Methacrylate	12.92	69	8875	1.7872 ug/L	#	54
62)	trans-1,3-Dichloropropene	13.01	75	14883	1.7791 ug/L		97
63)	1,1,2-Trichloroethane	13.22	97	8013	1.8480 ug/L		88
64)	2-Hexanone	13.16	58	2369	1.9841 ug/L	#	38
65)	1,3-Dichloropropane	13.52	76	16337	2.1493 ug/L		83
66)	Tetrachloroethene	13.65	164	11497	1.9518 ug/L		88
67)	Dibromochloromethane	13.92	129	10779	1.8681 ug/L		99
68)	1,2-Dibromoethane	14.16	107	7938	1.9177 ug/L		100
69)	1-Chlorohexane	14.26	91	17801	1.8648 ug/L		87
70)	Chlorobenzene	14.67	112	38190	2.0274 ug/L		92
71)	1,1,1,2-Tetrachloroethane	14.70	131	12247	1.8113 ug/L		100
72)	Ethylbenzene	14.70	106	19901	1.7639 ug/L	#	18
73)	m-,p-Xylene	14.78	106	51169	4.0103 ug/L	#	48
74)	o-Xylene	15.35	106	23385	1.8546 ug/L	#	50
75)	Styrene	15.39	104	38422	1.9235 ug/L		88
76)	Bromoform	15.88	173	5191	2.1713 ug/L		94
77)	Isopropylbenzene	15.78	105	63107	2.0464 ug/L		76
79)	1,1,2,2-Tetrachloroethane	15.98	83	9845	2.0623 ug/L		98
81)	1,2,3-Trichloropropane	16.18	110	3065	2.3699 ug/L	#	30
82)	trans-1,4-Dichloro-2-Buten	16.23	53	2710	1.7101 ug/L	#	13
83)	n-Propylbenzene	16.28	91	78854	2.0744 ug/L	#	72
84)	Bromobenzene	16.42	156	13385	1.7731 ug/L		74
85)	1,3,5-Trimethylbenzene	16.47	105	53268	2.0480 ug/L		79
86)	2-Chlorotoluene	16.55	91	43814	1.7078 ug/L		82
87)	4-Chlorotoluene	16.60	91	46513	2.2667 ug/L		77
88)	a-Methylstyrene	16.87	118	25754	1.7387 ug/L		89
89)	tert-Butylbenzene	16.94	134	10204	1.7647 ug/L		42
90)	1,2,4-Trimethylbenzene	16.99	105	55177	2.0634 ug/L		70
91)	sec-Butylbenzene	17.20	105	68065	2.0989 ug/L	#	74
92)	p-Isopropyltoluene	17.36	119	57213	2.0809 ug/L		75
93)	1,3-Dichlorobenzene	17.56	146	31027	2.0280 ug/L		93
94)	1,4-Dichlorobenzene	17.69	146	29852	1.9219 ug/L		92
95)	n-Butylbenzene	17.90	91	56152	2.0908 ug/L	#	77
96)	1,2-Dichlorobenzene	18.18	146	27243	2.0520 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.18	75	1051	1.3793 ug/L		76
98)	1,2,4-Trichlorobenzene	20.32	180	18804	1.8801 ug/L		95
99)	Hexachlorobutadiene	20.47	225	9220	1.7646 ug/L		93
100)	Naphthalene	20.69	128	28078	2.0933 ug/L		91
101)	1,2,3-Trichlorobenzene	21.00	180	16807	1.9831 ug/L		94

(#) = qualifier out of range (m) = manual integration
8M404582.D 8260WT.M Wed May 13 06:46:16 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404582.D Vial: 6
Acq On : 12 May 2015 18:16 Operator: TMB
Sample : WG523161-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

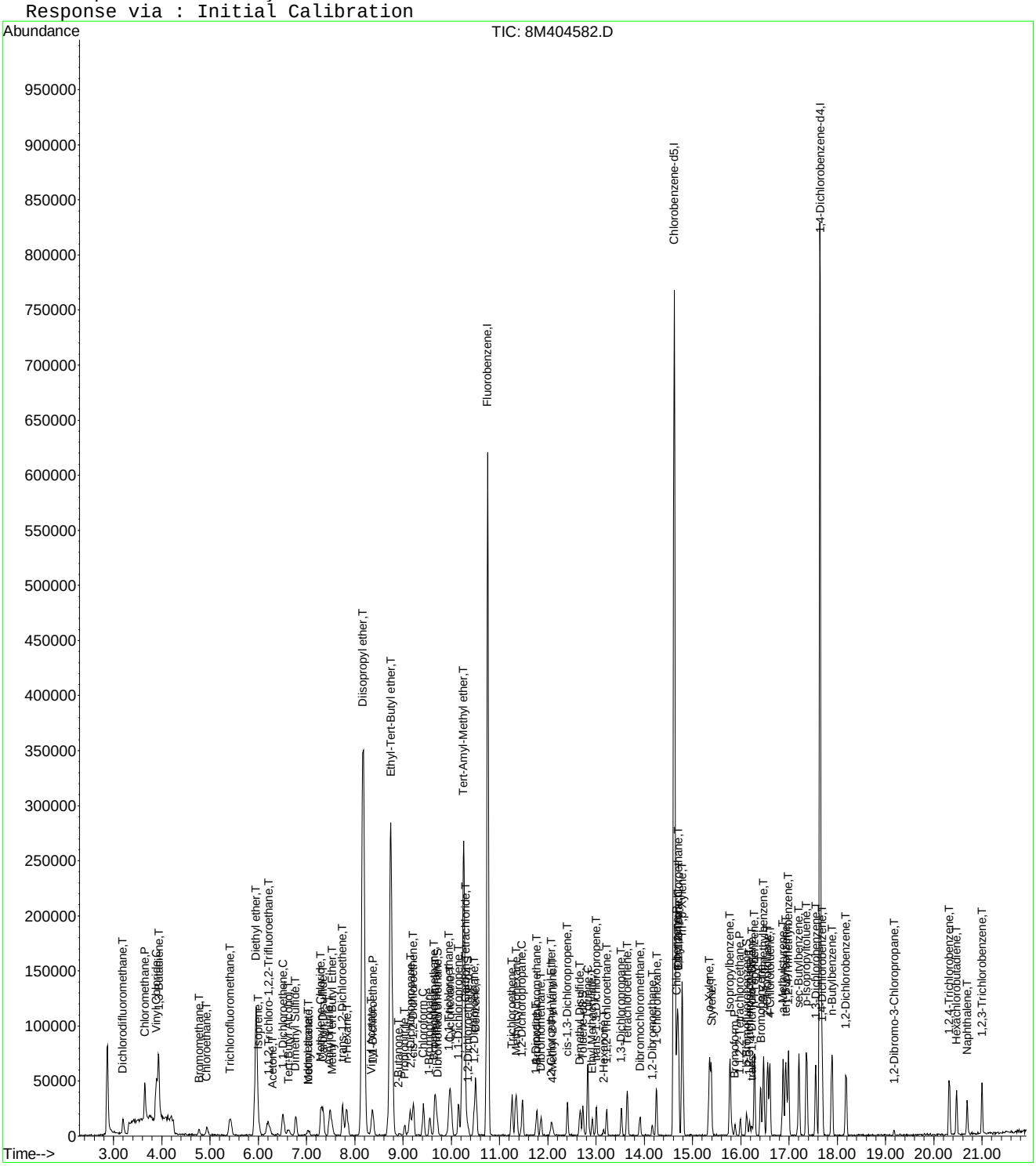

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404582.D Vial: 6
Acq On : 12 May 2015 18:16 Operator: TMB
Sample : WG523161-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.7638	11.8	100	0.00
3	P	Chloromethane	2.0000	2.2095	-10.5	100	0.00
4	C	Vinyl Chloride	2.0000	2.1027	-5.1	100	0.00
5	T	1,3-Butadiene	2.0000	1.7245	13.8	100	0.03
6	T	Bromomethane	2.0000	1.9188	4.1	100	0.00
7	T	Chloroethane	2.0000	1.9682	1.6	100	0.00
8	T	Trichlorofluoromethane	2.0000	1.9031	4.8	100	0.00
9	T	Diethyl ether	25.0000	24.7000	1.2	100	0.00
10	T	Isoprene	-1.0000	1.8561	0.0	100	0.00
11	T	Acrolein	12.5000	-1.0000	108.0#	100	0.02
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.9395	3.0	100	0.00
13	T	Acetone	-1.0000	2.3611	0.0	100	0.00
14	C	1,1-Dichloroethene	2.0000	2.0098	-0.5	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	48.0186	4.0	100	0.00
16	T	Dimethyl Sulfide	2.0000	1.9297	3.5	100	0.00
17	T	Iodomethane	2.0000	2.0188	-0.9	100	0.00
18	T	Methyl acetate	2.0000	1.8872	5.6	100	0.00
19	T	Methylene Chloride	2.0000	1.9910	0.4	100	0.00
20	T	Carbon Disulfide	2.0000	1.8807	6.0	100	0.00
21	T	Acrylonitrile	12.5000	11.1543	10.8	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	2.0525	-2.6	100	0.02
23	T	trans-1,2-Dichloroethene	2.0000	1.9678	1.6	100	0.00
24	T	n-Hexane	-1.0000	1.9093	0.0	100	0.00
25	T	Diisopropyl ether	25.0000	25.2643	-1.1	100	0.00
26	T	Vinyl Acetate	-1.0000	1.9538	0.0	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.0467	-2.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	24.6025	1.6	100	0.00
29	T	2-Butanone	-1.0000	1.8670	0.0	100	-0.01
30	T	Propionitrile	25.0000	23.5000	6.0	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.0150	-0.7	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	1.9295	3.5	100	0.00
33	C	Chloroform	2.0000	1.9592	2.0	100	0.00
34		1-Bromopropane	2.0000	2.3365	-16.8	100	-0.01
35	T	Bromochloromethane	2.0000	1.8482	7.6	100	-0.01
36	T	Tetrahydrofuran	25.0000	24.4363	2.3	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.9909	0.0	0	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.9081	4.6	100	0.00
39	T	Cyclohexane	2.0000	1.9521	2.4	100	0.00
40	T	1,1-Dichloropropene	2.0000	1.9393	3.0	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	23.8760	4.5	100	0.00
42	T	Carbon Tetrachloride	2.0000	1.9264	3.7	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.9941	0.0	0	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.58#
45	T	1,2-Dichloroethane	2.0000	1.8691	6.5	100	0.00
46	T	Benzene	2.0000	2.1235	-6.2	100	0.00
47	T	Trichloroethene	2.0000	1.7732	11.3	100	0.00
48	T	Methylcyclohexane	-1.0000	1.7357	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	1.9954	0.2	100	0.00
50	T	Bromodichloromethane	2.0000	1.8803	6.0	100	0.00
51	T	1,4-Dioxane	-1.0000	73.3339	0.0	0	-0.01
52	T	Dibromomethane	2.0000	2.0316	-1.6	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	2.1519	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	2.3162	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404582.D Vial: 6
Acq On : 12 May 2015 18:16 Operator: TMB
Sample : WG523161-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.7766	11.2	100	0.00
56	T	Dimethyl Disulfide	-1.0000	4.2202	0.0	0	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.9921	0.0	0	0.00
59	C	Toluene	2.0000	2.1381	-6.9	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.7872	10.6	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.18#
62	T	trans-1,3-Dichloropropene	2.0000	1.7791	11.0	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.8480	7.6	100	0.00
64	T	2-Hexanone	-1.0000	1.9841	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.1493	-7.5	100	0.00
66	T	Tetrachloroethene	2.0000	1.9518	2.4	100	0.00
67	T	Dibromochloromethane	2.0000	1.8681	6.6	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.9177	4.1	100	0.00
69	T	1-Chlorohexane	2.0000	1.8647	6.8	100	0.00
70	P	Chlorobenzene	2.0000	2.0274	-1.4	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.8113	9.4	100	0.00
72	C	Ethylbenzene	2.0000	1.7639	11.8	100	0.00
73	T	m-,p-Xylene	4.0000	4.0103	-0.3	100	0.00
74	T	o-Xylene	2.0000	1.8546	7.3	100	0.00
75	T	Styrene	2.0000	1.9235	3.8	100	0.00
76	P	Bromoform	2.0000	2.1713	-8.6	100	0.00
77	T	Isopropylbenzene	2.0000	2.0464	-2.3	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	2.0623	-3.1	100	-0.01
80	S	p-Bromofluorobenzene	-1.0000	1.0598	0.0	0	0.00
81	T	1,2,3-Trichloropropane	2.0000	2.3699	-18.5	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	1.7101	14.5	100	0.00
83	T	n-Propylbenzene	2.0000	2.0744	-3.7	100	0.00
84	T	Bromobenzene	2.0000	1.7731	11.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.0480	-2.4	100	0.00
86	T	2-Chlorotoluene	2.0000	1.7078	14.6	100	0.00
87	T	4-Chlorotoluene	2.0000	2.2667	-13.3	100	0.00
88	T	a-Methylstyrene	-1.0000	1.7387	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	1.7647	11.8	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.0634	-3.2	100	0.00
91	T	sec-Butylbenzene	2.0000	2.0989	-4.9	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.0809	-4.0	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.0280	-1.4	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	1.9219	3.9	100	0.00
95	T	n-Butylbenzene	2.0000	2.0908	-4.5	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0520	-2.6	100	-0.01
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.3793	31.0#	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	1.8801	6.0	100	0.00
99	T	Hexachlorobutadiene	2.0000	1.7646	11.8	100	0.00
100	T	Naphthalene	2.0000	2.0933	-4.7	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9831	0.8	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M404582.D 8260WT.M Wed May 13 06:47:46 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404583.D Vial: 7
Acq On : 12 May 2015 18:45 Operator: TMB
Sample : WG523161-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:16 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	686040	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	475199	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	267048	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	168048	24.7134 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.84%		
43) 1,2-Dichloroethane-d4	10.35	65	161918	25.3383 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.36%		
58) Toluene-d8	12.73	98	587226	26.4814 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.92%		
80) p-Bromofluorobenzene	16.12	95	222599	24.5005 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.00%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.20	85	47127	4.4324 ug/L	96
3) Chloromethane	3.65	50	110533	5.2074 ug/L	96
4) Vinyl Chloride	3.89	62	100868	5.0431 ug/L	95
5) 1,3-Butadiene	3.93	54	97161	4.7530 ug/L	93
6) Bromomethane	4.77	94	15690	4.2002 ug/L	92
7) Chloroethane	4.93	64	25308	4.6497 ug/L #	87
8) Trichlorofluoromethane	5.42	101	59779	4.7593 ug/L	97
9) Diethyl ether	5.96	59	240712	49.9870 ug/L	88
10) Isoprene	6.00	67	39892	4.2833 ug/L	78
11) Acrolein	6.18	56	2733	26.2227 ug/L	71
12) 1,1,2-Trichloro-1,2,2-Trif	6.21	101	33786	4.7658 ug/L	88
13) Acetone	6.29	43	4839	4.9390 ug/L #	61
14) 1,1-Dichloroethene	6.51	61	54546	4.5240 ug/L	79
15) Tert-Butyl Alcohol	6.63	59	26541	100.6726 ug/L	99
16) Dimethyl Sulfide	6.78	62	30481	4.3364 ug/L	68
17) Iodomethane	7.04	142	12011	3.4856 ug/L	79
18) Methyl acetate	7.04	43	18409	5.2654 ug/L #	80
19) Methylene Chloride	7.30	84	32753	4.7667 ug/L #	49
20) Carbon Disulfide	7.34	76	99247	4.4746 ug/L	97
21) Acrylonitrile	7.48	53	36223	23.2277 ug/L	86
22) Methyl Tert Butyl Ether	7.51	73	64059	4.8393 ug/L	97
23) trans-1,2-Dichloroethene	7.76	61	53278	4.6287 ug/L	86
24) n-Hexane	7.84	57	51137	4.3934 ug/L	92
25) Diisopropyl ether	8.17	45	1331241	52.2124 ug/L	91
26) Vinyl Acetate	8.34	43	42002	4.9898 ug/L #	87
27) 1,1-Dichloroethane	8.38	63	66294	4.7710 ug/L	96
28) Ethyl-Tert-Butyl ether	8.75	59	1034994	51.7352 ug/L	91
29) 2-Butanone	8.92	43	7169	4.4910 ug/L #	71
30) Propionitrile	9.03	54	26318	51.7272 ug/L	97
31) 2,2-Dichloropropane	9.15	77	50659	4.4189 ug/L	96
32) cis-1,2-Dichloroethene	9.21	96	34547	4.3699 ug/L	68
33) Chloroform	9.42	83	63118	4.8903 ug/L	92
34) 1-Bromopropane	9.56	122	6302	4.8190 ug/L	90
35) Bromochloromethane	9.65	130	17796	4.4142 ug/L #	59
36) Tetrahydrofuran	9.68	42	54123	50.3367 ug/L	83
38) 1,1,1-Trichloroethane	9.96	97	53980	4.6072 ug/L	95
39) Cyclohexane	9.99	56	62040	4.3691 ug/L	85
40) 1,1-Dichloropropene	10.15	75	47579	4.6675 ug/L	92
41) Tert-Amyl-Methyl ether	10.26	73	751367	51.1697 ug/L	96
42) Carbon Tetrachloride	10.30	117	47176	4.4308 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M404583.D 8260WT.M Wed May 13 06:46:17 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404583.D Vial: 7
Acq On : 12 May 2015 18:45 Operator: TMB
Sample : WG523161-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:16 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.46	62	45883	4.9589	ug/L		91
46)	Benzene	10.51	78	136536	4.9724	ug/L		100
47)	Trichloroethene	11.26	130	33200	4.5710	ug/L		97
48)	Methylcyclohexane	11.34	83	51913	4.4036	ug/L		92
49)	1,2-Dichloropropane	11.48	63	34846	4.5308	ug/L		98
50)	Bromodichloromethane	11.77	83	42494	4.4879	ug/L		99
51)	1,4-Dioxane	11.76	88	2217	105.6275	ug/L		86
52)	Dibromomethane	11.86	93	16927	4.6733	ug/L		92
53)	2-Chloroethyl Vinyl Ether	12.07	63	12688	5.9847	ug/L		92
54)	4-Methyl-2-Pentanone	12.10	58	5613	4.2452	ug/L		93
55)	cis-1,3-Dichloropropene	12.41	75	49114	4.7452	ug/L		94
56)	Dimethyl Disulfide	12.67	79	20718	6.2009	ug/L		94
59)	Toluene	12.83	91	143782	5.1011	ug/L		83
60)	Ethyl Methacrylate	12.92	69	22986	4.5832	ug/L		68
62)	trans-1,3-Dichloropropene	13.01	75	42367	5.0147	ug/L		94
63)	1,1,2-Trichloroethane	13.21	97	20948	4.7835	ug/L		93
64)	2-Hexanone	13.16	58	5134	4.2573	ug/L	#	42
65)	1,3-Dichloropropane	13.52	76	38249	4.9824	ug/L		77
66)	Tetrachloroethene	13.65	164	25212	4.2379	ug/L		87
67)	Dibromochloromethane	13.92	129	26066	4.4729	ug/L		98
68)	1,2-Dibromoethane	14.17	107	20580	4.9228	ug/L		97
69)	1-Chlorohexane	14.26	91	44970	4.6644	ug/L		87
70)	Chlorobenzene	14.67	112	92011	4.8365	ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.70	131	30717	4.4982	ug/L		96
72)	Ethylbenzene	14.70	106	51864	4.5516	ug/L	#	32
73)	m-,p-Xylene	14.79	106	126124	9.7872	ug/L	#	41
74)	o-Xylene	15.35	106	60560	4.7554	ug/L		61
75)	Styrene	15.39	104	96464	4.7816	ug/L		89
76)	Bromoform	15.88	173	13800	4.4404	ug/L		97
77)	Isopropylbenzene	15.78	105	158770	5.0977	ug/L		77
79)	1,1,2,2-Tetrachloroethane	16.00	83	24622	4.8524	ug/L		98
81)	1,2,3-Trichloropropane	16.18	110	6682	4.8607	ug/L		76
82)	trans-1,4-Dichloro-2-Buten	16.22	53	7861	4.6669	ug/L	#	59
83)	n-Propylbenzene	16.29	91	193929	4.7996	ug/L	#	74
84)	Bromobenzene	16.41	156	36989	4.6097	ug/L		85
85)	1,3,5-Trimethylbenzene	16.47	105	134210	4.8546	ug/L		79
86)	2-Chlorotoluene	16.55	91	124340	4.5598	ug/L		77
87)	4-Chlorotoluene	16.61	91	121177	5.5558	ug/L		73
88)	a-Methylstyrene	16.87	118	67830	4.3083	ug/L		97
89)	tert-Butylbenzene	16.94	134	27541	4.4811	ug/L		56
90)	1,2,4-Trimethylbenzene	16.99	105	140624	4.9476	ug/L		74
91)	sec-Butylbenzene	17.21	105	179981	5.2214	ug/L	#	76
92)	p-Isopropyltoluene	17.36	119	145950	4.9942	ug/L		76
93)	1,3-Dichlorobenzene	17.56	146	73899	4.5442	ug/L		95
94)	1,4-Dichlorobenzene	17.69	146	78460	4.7523	ug/L		96
95)	n-Butylbenzene	17.89	91	146124	5.1187	ug/L	#	78
96)	1,2-Dichlorobenzene	18.18	146	65645	4.6518	ug/L		97
97)	1,2-Dibromo-3-Chloropropan	19.18	75	4176	5.1559	ug/L		78
98)	1,2,4-Trichlorobenzene	20.33	180	48452	4.5577	ug/L		95
99)	Hexachlorobutadiene	20.47	225	26321	4.7392	ug/L		93
100)	Naphthalene	20.69	128	68778	4.8240	ug/L		93
101)	1,2,3-Trichlorobenzene	21.00	180	41531	4.6102	ug/L		96

(#) = qualifier out of range (m) = manual integration
8M404583.D 8260WT.M Wed May 13 06:46:17 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404583.D Vial: 7
Acq On : 12 May 2015 18:45 Operator: TMB
Sample : WG523161-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

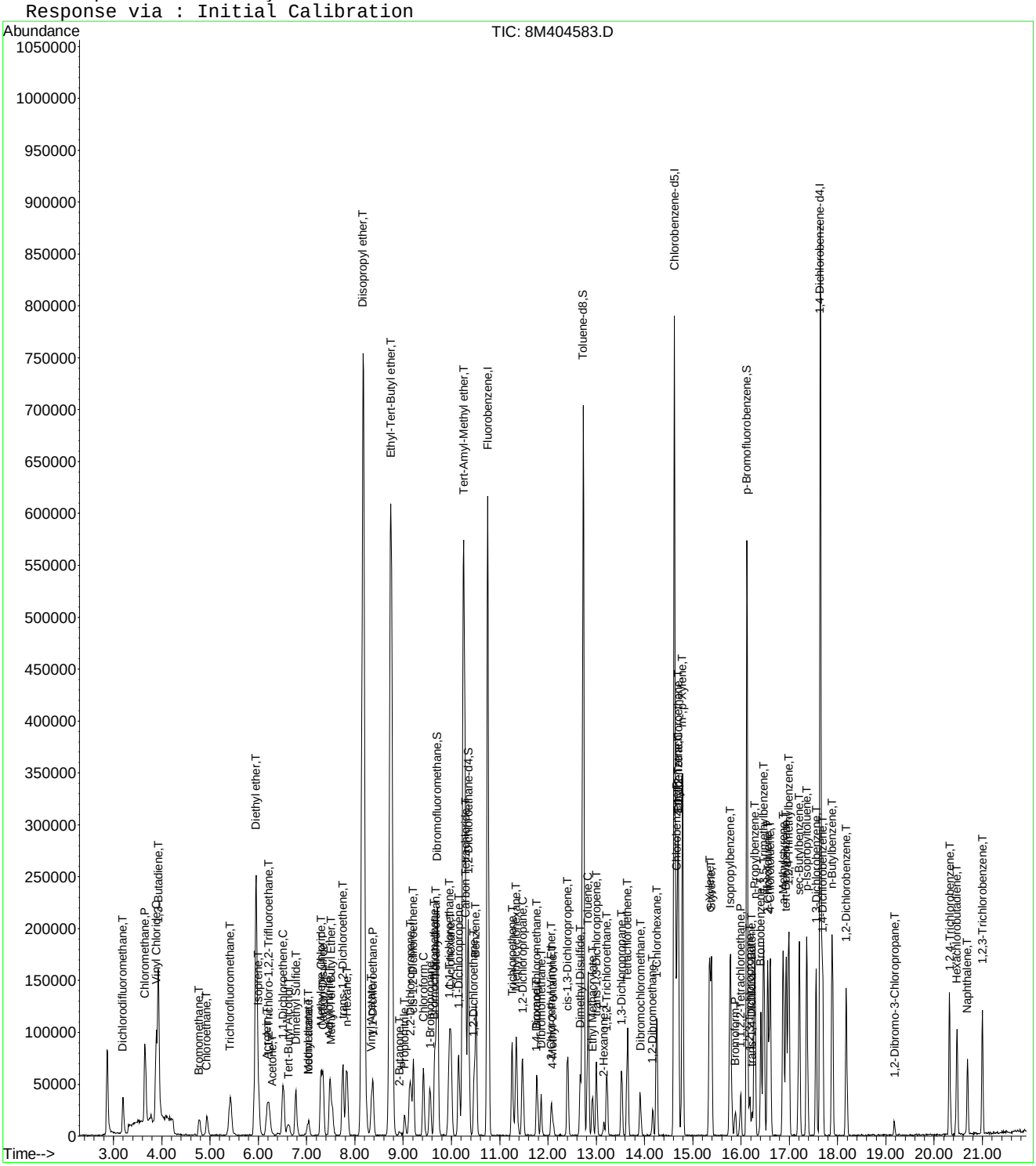

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404583.D Vial: 7
Acq On : 12 May 2015 18:45 Operator: TMB
Sample : WG523161-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.4324	11.4	100	0.00
3	P	Chloromethane	5.0000	5.2074	-4.1	100	0.00
4	C	Vinyl Chloride	5.0000	5.0431	-0.9	100	0.01
5	T	1,3-Butadiene	5.0000	4.7530	4.9	100	0.02
6	T	Bromomethane	5.0000	4.2002	16.0	100	0.00
7	T	Chloroethane	5.0000	4.6498	7.0	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.7594	4.8	100	0.00
9	T	Diethyl ether	50.0000	49.9870	0.0	100	0.01
10	T	Isoprene	5.0000	4.2833	14.3	100	0.00
11	T	Acrolein	25.0000	26.2227	-4.9	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.7658	4.7	100	0.00
13	T	Acetone	5.0000	4.9390	1.2	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.5240	9.5	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	100.6726	-0.7	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.3364	13.3	100	0.00
17	T	Iodomethane	5.0000	3.4856	30.3#	100	0.00
18	T	Methyl acetate	5.0000	5.2654	-5.3	100	0.00
19	T	Methylene Chloride	5.0000	4.7667	4.7	100	0.00
20	T	Carbon Disulfide	5.0000	4.4746	10.5	100	0.00
21	T	Acrylonitrile	25.0000	23.2277	7.1	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.8393	3.2	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.6287	7.4	100	0.00
24	T	n-Hexane	5.0000	4.3934	12.1	100	0.00
25	T	Diisopropyl ether	50.0000	52.2124	-4.4	100	0.00
26	T	Vinyl Acetate	5.0000	4.9898	0.2	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.7710	4.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	51.7352	-3.5	100	0.00
29	T	2-Butanone	5.0000	4.4910	10.2	100	0.00
30	T	Propionitrile	50.0000	51.7272	-3.5	100	-0.01
31	T	2,2-Dichloropropane	5.0000	4.4189	11.6	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.3699	12.6	100	0.00
33	C	Chloroform	5.0000	4.8903	2.2	100	0.00
34		1-Bromopropane	5.0000	4.8190	3.6	100	0.00
35	T	Bromochloromethane	5.0000	4.4142	11.7	100	-0.01
36	T	Tetrahydrofuran	50.0000	50.3367	-0.7	100	0.00
37	S	Dibromofluoromethane	-1.0000	24.7134	0.0	0	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.6072	7.9	100	0.00
39	T	Cyclohexane	5.0000	4.3691	12.6	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.6675	6.7	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	51.1696	-2.3	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.4308	11.4	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	25.3383	0.0	0	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.58#
45	T	1,2-Dichloroethane	5.0000	4.9589	0.8	100	0.00
46	T	Benzene	5.0000	4.9724	0.6	100	0.00
47	T	Trichloroethene	5.0000	4.5710	8.6	100	0.00
48	T	Methylcyclohexane	5.0000	4.4036	11.9	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.5308	9.4	100	0.00
50	T	Bromodichloromethane	5.0000	4.4879	10.2	100	0.00
51	T	1,4-Dioxane	100.0000	105.6275	-5.6	100	-0.01
52	T	Dibromomethane	5.0000	4.6733	6.5	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	5.9847	-19.7	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.2452	15.1	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404583.D Vial: 7
Acq On : 12 May 2015 18:45 Operator: TMB
Sample : WG523161-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.7452	5.1	100	0.00
56	T	Dimethyl Disulfide	5.0000	6.2009	-24.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	26.4814	0.0	0	0.00
59	C	Toluene	5.0000	5.1011	-2.0	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.5832	8.3	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.18#
62	T	trans-1,3-Dichloropropene	5.0000	5.0146	-0.3	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.7835	4.3	100	-0.01
64	T	2-Hexanone	5.0000	4.2573	14.9	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.9824	0.4	100	0.00
66	T	Tetrachloroethene	5.0000	4.2379	15.2	100	0.00
67	T	Dibromochloromethane	5.0000	4.4729	10.5	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.9228	1.5	100	0.00
69	T	1-Chlorohexane	5.0000	4.6644	6.7	100	0.00
70	P	Chlorobenzene	5.0000	4.8365	3.3	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.4982	10.0	100	0.00
72	C	Ethylbenzene	5.0000	4.5516	9.0	100	0.00
73	T	m-,p-Xylene	10.0000	9.7873	2.1	100	0.00
74	T	o-Xylene	5.0000	4.7554	4.9	100	0.00
75	T	Styrene	5.0000	4.7816	4.4	100	0.00
76	P	Bromoform	5.0000	4.4404	11.2	100	0.00
77	T	Isopropylbenzene	5.0000	5.0977	-2.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	4.8524	3.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	24.5005	0.0	0	0.00
81	T	1,2,3-Trichloropropane	5.0000	4.8607	2.8	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.6669	6.7	100	-0.01
83	T	n-Propylbenzene	5.0000	4.7996	4.0	100	0.00
84	T	Bromobenzene	5.0000	4.6097	7.8	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	4.8546	2.9	100	0.00
86	T	2-Chlorotoluene	5.0000	4.5598	8.8	100	0.00
87	T	4-Chlorotoluene	5.0000	5.5558	-11.1	100	0.00
88	T	a-Methylstyrene	5.0000	4.3083	13.8	100	0.00
89	T	tert-Butylbenzene	5.0000	4.4811	10.4	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	4.9476	1.0	100	0.00
91	T	sec-Butylbenzene	5.0000	5.2214	-4.4	100	0.00
92	T	p-Isopropyltoluene	5.0000	4.9942	0.1	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	4.5442	9.1	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	4.7523	5.0	100	0.00
95	T	n-Butylbenzene	5.0000	5.1187	-2.4	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	4.6518	7.0	100	-0.01
97	T	1,2-Dibromo-3-Chloropropane	5.0000	5.1559	-3.1	100	0.01
98	T	1,2,4-Trichlorobenzene	5.0000	4.5577	8.8	100	0.00
99	T	Hexachlorobutadiene	5.0000	4.7392	5.2	100	0.00
100	T	Naphthalene	5.0000	4.8240	3.5	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.6102	7.8	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M404583.D 8260WT.M Wed May 13 06:47:55 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404584.D Vial: 8
Acq On : 12 May 2015 19:13 Operator: TMB
Sample : WG523161-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:17 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	727593	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	518323	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.65	152	285092	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	71169	9.8685 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 39.48%#		
43) 1,2-Dichloroethane-d4	10.35	65	68318	10.0804 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 40.32%#		
58) Toluene-d8	12.73	98	240107	9.9269 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 39.72%#		
80) p-Bromofluorobenzene	16.13	95	95680	9.8645 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 39.44%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.19	85	245768	21.7949 ug/L	97
3) Chloromethane	3.65	50	473219	21.0210 ug/L	95
4) Vinyl Chloride	3.89	62	456773	21.5331 ug/L	94
5) 1,3-Butadiene	3.93	54	457261	22.6102 ug/L	96
6) Bromomethane	4.78	94	81387	17.2761 ug/L	97
7) Chloroethane	4.93	64	115752	20.0522 ug/L	90
8) Trichlorofluoromethane	5.43	101	266817	20.0296 ug/L	97
9) Diethyl ether	5.95	59	412029	80.6767 ug/L	89
10) Isoprene	5.99	67	191093	19.3462 ug/L	79
11) Acrolein	6.18	56	5561	41.8032 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.20	101	152298	20.2560 ug/L	94
13) Acetone	6.28	43	24034	23.1296 ug/L	76
14) 1,1-Dichloroethene	6.51	61	252867	19.7750 ug/L	83
15) Tert-Butyl Alcohol	6.63	59	45992	164.4892 ug/L	97
16) Dimethyl Sulfide	6.78	62	148261	19.8879 ug/L	78
17) Iodomethane	7.03	142	76927	15.7797 ug/L	78
18) Methyl acetate	7.04	43	73990	19.9541 ug/L	93
19) Methylene Chloride	7.30	84	141246	19.3823 ug/L #	49
20) Carbon Disulfide	7.34	76	488267	20.7563 ug/L	94
21) Acrylonitrile	7.47	53	63930	38.6534 ug/L	85
22) Methyl Tert Butyl Ether	7.50	73	280227	19.9606 ug/L	96
23) trans-1,2-Dichloroethene	7.75	61	236060	19.3372 ug/L	85
24) n-Hexane	7.84	57	250582	20.2991 ug/L	98
25) Diisopropyl ether	8.18	45	2248464	83.1503 ug/L	92
26) Vinyl Acetate	8.34	43	183005	20.4992 ug/L	92
27) 1,1-Dichloroethane	8.37	63	299777	20.3420 ug/L	95
28) Ethyl-Tert-Butyl ether	8.74	59	1762800	83.0830 ug/L	92
29) 2-Butanone	8.92	43	36822	21.7495 ug/L	90
30) Propionitrile	9.03	54	44813	83.0484 ug/L	97
31) 2,2-Dichloropropane	9.15	77	236580	19.4577 ug/L	99
32) cis-1,2-Dichloroethene	9.21	96	165038	19.6836 ug/L	75
33) Chloroform	9.42	83	280488	20.4908 ug/L	92
34) 1-Bromopropane	9.55	122	28284	18.8723 ug/L	97
35) Bromochloromethane	9.65	130	83271	19.4752 ug/L #	66
36) Tetrahydrofuran	9.68	42	94391	82.7740 ug/L	85
38) 1,1,1-Trichloroethane	9.95	97	249818	20.1043 ug/L	99
39) Cyclohexane	9.99	56	302464	20.0844 ug/L	85
40) 1,1-Dichloropropene	10.15	75	214768	19.8654 ug/L	93
41) Tert-Amyl-Methyl ether	10.25	73	1279207	82.1414 ug/L	97
42) Carbon Tetrachloride	10.30	117	224404	19.8726 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M404584.D 8260WT.M Wed May 13 06:46:18 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404584.D Vial: 8
Acq On : 12 May 2015 19:13 Operator: TMB
Sample : WG523161-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:17 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.47	62	194558	19.8265 ug/L		92
46)	Benzene	10.51	78	598890	20.5650 ug/L		100
47)	Trichloroethene	11.26	130	158829	20.6187 ug/L		97
48)	Methylcyclohexane	11.35	83	246700	19.7314 ug/L		89
49)	1,2-Dichloropropane	11.47	63	161651	19.8183 ug/L		99
50)	Bromodichloromethane	11.77	83	198014	19.7184 ug/L		99
51)	1,4-Dioxane	11.76	88	4731	163.7290 ug/L	#	69
52)	Dibromomethane	11.86	93	77466	20.1658 ug/L		89
53)	2-Chloroethyl Vinyl Ether	12.06	63	36919	18.0638 ug/L		91
54)	4-Methyl-2-Pentanone	12.11	58	28112	20.0473 ug/L		92
55)	cis-1,3-Dichloropropene	12.41	75	225646	20.5559 ug/L		94
56)	Dimethyl Disulfide	12.67	79	104466	18.1272 ug/L		94
59)	Toluene	12.83	91	648413	21.0904 ug/L		84
60)	Ethyl Methacrylate	12.92	69	115634	21.1382 ug/L		76
62)	trans-1,3-Dichloropropene	13.00	75	185796	20.1616 ug/L		93
63)	1,1,2-Trichloroethane	13.22	97	97920	20.4999 ug/L		98
64)	2-Hexanone	13.15	58	27272	20.7336 ug/L	#	36
65)	1,3-Dichloropropane	13.52	76	170530	20.3655 ug/L		80
66)	Tetrachloroethene	13.65	164	126104	19.4334 ug/L		90
67)	Dibromochloromethane	13.91	129	124382	19.5682 ug/L		99
68)	1,2-Dibromoethane	14.16	107	94289	20.6778 ug/L		96
69)	1-Chlorohexane	14.26	91	211868	20.1470 ug/L		86
70)	Chlorobenzene	14.67	112	410486	19.7817 ug/L		94
71)	1,1,1,2-Tetrachloroethane	14.70	131	142319	19.1072 ug/L		99
72)	Ethylbenzene	14.70	106	228219	18.3622 ug/L	#	21
73)	m-,p-Xylene	14.78	106	564794	40.1817 ug/L	#	41
74)	o-Xylene	15.35	106	276601	19.9127 ug/L		63
75)	Styrene	15.38	104	458747	20.8476 ug/L		89
76)	Bromoform	15.88	173	67444	17.1776 ug/L		99
77)	Isopropylbenzene	15.78	105	719990	21.1936 ug/L		77
79)	1,1,2,2-Tetrachloroethane	15.99	83	105532	19.4816 ug/L		100
81)	1,2,3-Trichloropropane	16.18	110	30367	20.6917 ug/L		94
82)	trans-1,4-Dichloro-2-Buten	16.23	53	35550	19.7693 ug/L		79
83)	n-Propylbenzene	16.28	91	901587	20.9015 ug/L	#	72
84)	Bromobenzene	16.42	156	170410	19.8931 ug/L		87
85)	1,3,5-Trimethylbenzene	16.47	105	625945	21.2085 ug/L		78
86)	2-Chlorotoluene	16.55	91	595181	20.4450 ug/L		80
87)	4-Chlorotoluene	16.60	91	470804	20.2195 ug/L		75
88)	a-Methylstyrene	16.87	118	332268	19.7685 ug/L		91
89)	tert-Butylbenzene	16.93	134	125558	19.1361 ug/L		58
90)	1,2,4-Trimethylbenzene	16.99	105	643764	21.2160 ug/L		74
91)	sec-Butylbenzene	17.20	105	805481	21.8888 ug/L	#	76
92)	p-Isopropyltoluene	17.37	119	680965	21.8269 ug/L		77
93)	1,3-Dichlorobenzene	17.55	146	350883	20.2110 ug/L		93
94)	1,4-Dichlorobenzene	17.69	146	344395	19.5398 ug/L		93
95)	n-Butylbenzene	17.89	91	662694	21.7450 ug/L		78
96)	1,2-Dichlorobenzene	18.18	146	303795	20.1651 ug/L		93
97)	1,2-Dibromo-3-Chloropropan	19.18	75	17277	19.9810 ug/L		77
98)	1,2,4-Trichlorobenzene	20.31	180	223937	19.7317 ug/L		96
99)	Hexachlorobutadiene	20.47	225	112729	19.0128 ug/L		94
100)	Naphthalene	20.69	128	314530	20.6645 ug/L		92
101)	1,2,3-Trichlorobenzene	21.00	180	188988	19.6510 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M404584.D 8260WT.M Wed May 13 06:46:18 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404584.D Vial: 8
Acq On : 12 May 2015 19:13 Operator: TMB
Sample : WG523161-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

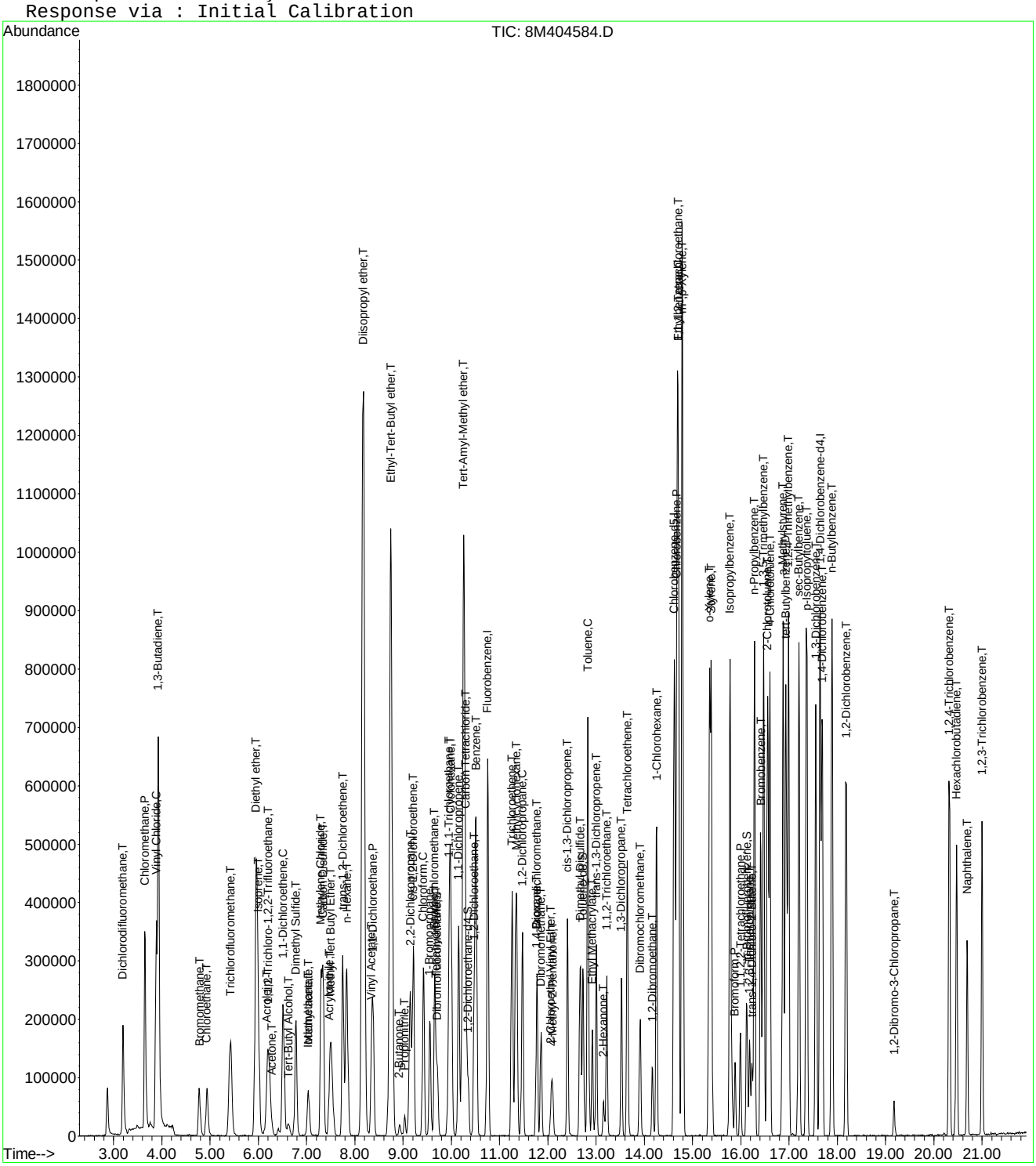

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404585.D Vial: 9
Acq On : 12 May 2015 19:42 Operator: TMB
Sample : WG523161-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:18 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	779258	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	545682	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.65	152	300564	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	191218	24.7569 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.04%		
43) 1,2-Dichloroethane-d4	10.35	65	182556	25.1505 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.60%		
58) Toluene-d8	12.73	98	657086	25.8044 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.20%		
80) p-Bromofluorobenzene	16.12	95	255554	24.9912 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.96%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.19	85	644248	53.3446 ug/L	99
3) Chloromethane	3.65	50	1203600	49.9206 ug/L	96
4) Vinyl Chloride	3.89	62	1175474	51.7399 ug/L	95
5) 1,3-Butadiene	3.93	54	1205454	60.0260 ug/L	99
6) Bromomethane	4.78	94	260223	48.3389 ug/L	99
7) Chloroethane	4.94	64	307028	49.6613 ug/L #	91
8) Trichlorofluoromethane	5.42	101	710092	49.7716 ug/L	98
9) Diethyl ether	5.95	59	509109	93.0762 ug/L	90
10) Isoprene	5.98	67	538313	50.8854 ug/L	80
11) Acrolein	6.19	56	9077	53.0585 ug/L	89
12) 1,1,2-Trichloro-1,2,2-Trif	6.20	101	399689	49.6350 ug/L	95
13) Acetone	6.28	43	53732	48.2817 ug/L	85
14) 1,1-Dichloroethene	6.51	61	689257	50.3284 ug/L	83
15) Tert-Butyl Alcohol	6.62	59	54364	181.5406 ug/L #	83
16) Dimethyl Sulfide	6.78	62	405835	50.8299 ug/L	79
17) Iodomethane	7.03	142	270107	48.8910 ug/L	80
18) Methyl acetate	7.04	43	191315	48.1743 ug/L	90
19) Methylene Chloride	7.30	84	388830	49.8192 ug/L #	54
20) Carbon Disulfide	7.34	76	1328711	52.7389 ug/L	96
21) Acrylonitrile	7.48	53	88115	49.7440 ug/L	94
22) Methyl Tert Butyl Ether	7.50	73	740269	49.2335 ug/L	96
23) trans-1,2-Dichloroethene	7.75	61	647880	49.5534 ug/L	85
24) n-Hexane	7.84	57	664406	50.2537 ug/L	95
25) Diisopropyl ether	8.18	45	2835089	97.8931 ug/L	92
26) Vinyl Acetate	8.34	43	494717	51.7415 ug/L	92
27) 1,1-Dichloroethane	8.37	63	805792	51.0536 ug/L	94
28) Ethyl-Tert-Butyl ether	8.75	59	2207186	97.1304 ug/L	93
29) 2-Butanone	8.92	43	89196	49.1919 ug/L	89
30) Propionitrile	9.03	54	54220	93.8197 ug/L	96
31) 2,2-Dichloropropane	9.15	77	637866	48.9836 ug/L	98
32) cis-1,2-Dichloroethene	9.21	96	446398	49.7108 ug/L	76
33) Chloroform	9.42	83	736233	50.2190 ug/L	95
34) 1-Bromopropane	9.56	122	78073	47.8976 ug/L	100
35) Bromochloromethane	9.66	130	229706	50.1611 ug/L #	70
36) Tetrahydrofuran	9.68	42	114556	93.7969 ug/L	86
38) 1,1,1-Trichloroethane	9.96	97	683447	51.3543 ug/L	97
39) Cyclohexane	9.99	56	810422	50.2462 ug/L	85
40) 1,1-Dichloropropene	10.15	75	577549	49.8796 ug/L	93
41) Tert-Amyl-Methyl ether	10.26	73	1610216	96.5412 ug/L	97
42) Carbon Tetrachloride	10.30	117	616028	50.9368 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404585.D Vial: 9
Acq On : 12 May 2015 19:42 Operator: TMB
Sample : WG523161-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:18 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.47	62	514353	48.9401	ug/L		92
46)	Benzene	10.51	78	1588546	50.9317	ug/L		98
47)	Trichloroethene	11.26	130	417289	50.5797	ug/L		97
48)	Methylcyclohexane	11.34	83	671759	50.1660	ug/L		90
49)	1,2-Dichloropropane	11.48	63	431723	49.4196	ug/L		100
50)	Bromodichloromethane	11.77	83	541835	50.3790	ug/L		96
51)	1,4-Dioxane	11.76	88	6692	200.7748	ug/L		82
52)	Dibromomethane	11.86	93	202188	49.1436	ug/L		89
53)	2-Chloroethyl Vinyl Ether	12.06	63	97536	45.9419	ug/L		94
54)	4-Methyl-2-Pentanone	12.10	58	74090	49.3322	ug/L		94
55)	cis-1,3-Dichloropropene	12.41	75	607979	51.7135	ug/L		95
56)	Dimethyl Disulfide	12.67	79	305206	44.2233	ug/L		96
59)	Toluene	12.83	91	1708453	52.7833	ug/L		84
60)	Ethyl Methacrylate	12.92	69	313437	54.4245	ug/L		74
62)	trans-1,3-Dichloropropene	13.01	75	501796	51.7221	ug/L		96
63)	1,1,2-Trichloroethane	13.22	97	254652	50.6394	ug/L		98
64)	2-Hexanone	13.16	58	72751	52.5360	ug/L	#	44
65)	1,3-Dichloropropane	13.52	76	444705	50.4460	ug/L		78
66)	Tetrachloroethene	13.65	164	345411	50.5613	ug/L		89
67)	Dibromochloromethane	13.92	129	341863	51.0864	ug/L		99
68)	1,2-Dibromoethane	14.16	107	250654	52.2130	ug/L		98
69)	1-Chlorohexane	14.26	91	558441	50.4410	ug/L		81
70)	Chlorobenzene	14.67	112	1122311	51.3735	ug/L		94
71)	1,1,1,2-Tetrachloroethane	14.70	131	399743	50.9771	ug/L		100
72)	Ethylbenzene	14.70	106	648843	49.5877	ug/L	#	32
73)	m-,p-Xylene	14.78	106	1577469	106.6006	ug/L	#	49
74)	o-Xylene	15.35	106	739767	50.5862	ug/L		62
75)	Styrene	15.38	104	1249268	53.9262	ug/L		88
76)	Bromoform	15.88	173	186775	43.9120	ug/L		98
77)	Isopropylbenzene	15.78	105	1915898	53.5687	ug/L		78
79)	1,1,2,2-Tetrachloroethane	15.99	83	278891	48.8342	ug/L		96
81)	1,2,3-Trichloropropane	16.18	110	76300	49.3137	ug/L		95
82)	trans-1,4-Dichloro-2-Buten	16.23	53	101529	53.5537	ug/L		73
83)	n-Propylbenzene	16.28	91	2371932	52.1578	ug/L	#	73
84)	Bromobenzene	16.42	156	446692	49.4611	ug/L		87
85)	1,3,5-Trimethylbenzene	16.47	105	1681429	54.0381	ug/L		79
86)	2-Chlorotoluene	16.55	91	1586959	51.7074	ug/L		79
87)	4-Chlorotoluene	16.60	91	1273589	51.8809	ug/L		76
88)	a-Methylstyrene	16.87	118	918764	51.8486	ug/L		94
89)	tert-Butylbenzene	16.93	134	340180	49.1775	ug/L		57
90)	1,2,4-Trimethylbenzene	16.99	105	1728864	54.0438	ug/L		75
91)	sec-Butylbenzene	17.20	105	2122575	54.7114	ug/L		78
92)	p-Isopropyltoluene	17.36	119	1803151	54.8210	ug/L		78
93)	1,3-Dichlorobenzene	17.55	146	941775	51.4543	ug/L		92
94)	1,4-Dichlorobenzene	17.69	146	933434	50.2338	ug/L		92
95)	n-Butylbenzene	17.89	91	1757124	54.6885	ug/L		79
96)	1,2-Dichlorobenzene	18.19	146	821672	51.7329	ug/L		94
97)	1,2-Dibromo-3-Chloropropan	19.18	75	46082	50.5509	ug/L		85
98)	1,2,4-Trichlorobenzene	20.33	180	615919	51.4767	ug/L		99
99)	Hexachlorobutadiene	20.47	225	305672	48.9007	ug/L		94
100)	Naphthalene	20.69	128	840527	52.3797	ug/L		92
101)	1,2,3-Trichlorobenzene	21.00	180	516669	50.9579	ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404585.D Vial: 9
Acq On : 12 May 2015 19:42 Operator: TMB
Sample : WG523161-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

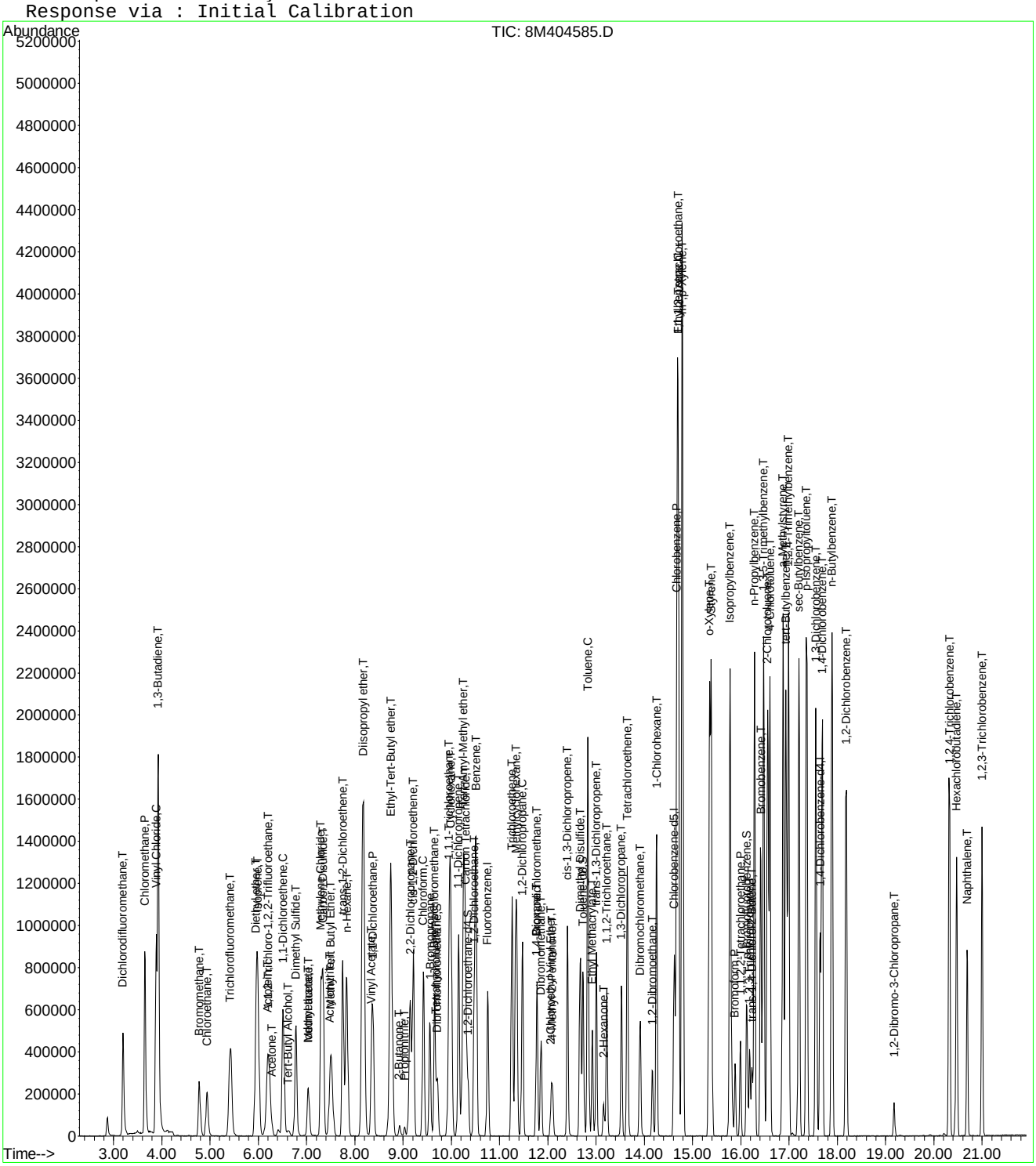

8M404585.D 8260WT.M Wed May 13 06:46:19 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404586.D Vial: 10
Acq On : 12 May 2015 20:11 Operator: TMB
Sample : WG523161-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:20 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	835793	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	592311	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	322769	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	408845	49.3524 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 197.40%#		
43) 1,2-Dichloroethane-d4	10.35	65	378235	48.5842 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 194.32%#		
58) Toluene-d8	12.73	98	1401831	50.7174 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 202.88%#		
80) p-Bromofluorobenzene	16.12	95	539730	49.1503 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 196.60%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.20	85	1383354	106.7956 ug/L	97
3) Chloromethane	3.65	50	2506665	96.9341 ug/L	98
4) Vinyl Chloride	3.88	62	2378459	97.6093 ug/L	97
5) 1,3-Butadiene	3.92	54	1821955	89.8183 ug/L	94
6) Bromomethane	4.78	94	626348	101.5627 ug/L	98
7) Chloroethane	4.93	64	685164	103.3278 ug/L	91
8) Trichlorofluoromethane	5.42	101	1565645	102.3158 ug/L	98
9) Diethyl ether	5.95	59	1168845	199.2357 ug/L	90
10) Isoprene	5.99	67	1166935	102.8460 ug/L	78
11) Acrolein	6.19	56	31264	95.9802 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.21	101	894848	103.6091 ug/L	94
13) Acetone	6.29	43	110215	92.3363 ug/L	86
14) 1,1-Dichloroethene	6.52	61	1506669	102.5728 ug/L	84
15) Tert-Butyl Alcohol	6.63	59	127964	398.4122 ug/L	99
16) Dimethyl Sulfide	6.79	62	872019	101.8306 ug/L	79
17) Iodomethane	7.03	142	628717	103.2155 ug/L	82
18) Methyl acetate	7.04	43	412223	96.7791 ug/L	90
19) Methylene Chloride	7.30	84	855087	102.1479 ug/L	57
20) Carbon Disulfide	7.34	76	2858622	105.7889 ug/L	96
21) Acrylonitrile	7.48	53	190020	100.0167 ug/L	92
22) Methyl Tert Butyl Ether	7.52	73	1596559	99.0009 ug/L	96
23) trans-1,2-Dichloroethene	7.75	61	1424677	101.5963 ug/L	84
24) n-Hexane	7.83	57	1448349	102.1387 ug/L	96
25) Diisopropyl ether	8.17	45	6219435	200.2252 ug/L	92
26) Vinyl Acetate	8.35	43	987523	96.2968 ug/L	93
27) 1,1-Dichloroethane	8.37	63	1750301	103.3947 ug/L	95
28) Ethyl-Tert-Butyl ether	8.75	59	4921546	201.9298 ug/L	94
29) 2-Butanone	8.93	43	192807	99.1412 ug/L	89
30) Propionitrile	9.04	54	125291	202.1329 ug/L	100
31) 2,2-Dichloropropane	9.15	77	1386765	99.2903 ug/L	99
32) cis-1,2-Dichloroethene	9.22	96	970632	100.7779 ug/L	77
33) Chloroform	9.42	83	1615985	102.7714 ug/L	96
34) 1-Bromopropane	9.56	122	171401	97.5487 ug/L	97
35) Bromochloromethane	9.65	130	492984	100.3714 ug/L #	70
36) Tetrahydrofuran	9.68	42	256736	195.9927 ug/L	87
38) 1,1,1-Trichloroethane	9.96	97	1521529	106.5945 ug/L	97
39) Cyclohexane	9.99	56	1818826	105.1394 ug/L	84
40) 1,1-Dichloropropene	10.15	75	1264140	101.7916 ug/L	92
41) Tert-Amyl-Methyl ether	10.26	73	3613952	202.0196 ug/L	96
42) Carbon Tetrachloride	10.30	117	1390334	107.1846 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404586.D Vial: 10
Acq On : 12 May 2015 20:11 Operator: TMB
Sample : WG523161-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:20 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.47	62	1128430	100.1062 ug/L		92
46)	Benzene	10.51	78	3395811	101.5114 ug/L		99
47)	Trichloroethene	11.26	130	922762	104.2826 ug/L		97
48)	Methylcyclohexane	11.35	83	1455920	101.3714 ug/L		89
49)	1,2-Dichloropropane	11.47	63	933784	99.6606 ug/L		100
50)	Bromodichloromethane	11.77	83	1190418	103.1964 ug/L		97
51)	1,4-Dioxane	11.77	88	15430	376.1778 ug/L		87
52)	Dibromomethane	11.86	93	440813	99.8961 ug/L		89
53)	2-Chloroethyl Vinyl Ether	12.07	63	209924	93.1404 ug/L		94
54)	4-Methyl-2-Pentanone	12.10	58	162221	100.7072 ug/L		91
55)	cis-1,3-Dichloropropene	12.41	75	1312387	104.0782 ug/L		95
56)	Dimethyl Disulfide	12.67	79	704664	91.7111 ug/L		100
59)	Toluene	12.83	91	3647044	103.8064 ug/L		85
60)	Ethyl Methacrylate	12.93	69	656031	104.9442 ug/L		72
62)	trans-1,3-Dichloropropene	13.00	75	1083873	102.9242 ug/L		96
63)	1,1,2-Trichloroethane	13.22	97	551455	101.0280 ug/L		99
64)	2-Hexanone	13.15	58	146129	97.2175 ug/L	#	75
65)	1,3-Dichloropropane	13.53	76	953196	99.6155 ug/L		79
66)	Tetrachloroethene	13.65	164	783174	105.6160 ug/L		90
67)	Dibromochloromethane	13.91	129	774593	106.6392 ug/L		98
68)	1,2-Dibromoethane	14.17	107	545217	104.6318 ug/L		99
69)	1-Chlorohexane	14.25	91	1233565	102.6499 ug/L		82
70)	Chlorobenzene	14.67	112	2511075	105.8950 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.71	131	958028	112.5543 ug/L		99
72)	Ethylbenzene	14.70	106	1517369	106.8354 ug/L	#	44
73)	m-,p-Xylene	14.79	106	3521035	219.2093 ug/L		66
74)	o-Xylene	15.35	106	1661714	104.6847 ug/L		66
75)	Styrene	15.39	104	2725004	108.3681 ug/L		91
76)	Bromoform	15.88	173	425724	91.3519 ug/L		99
77)	Isopropylbenzene	15.78	105	4087264	105.2836 ug/L		80
79)	1,1,2,2-Tetrachloroethane	15.99	83	597831	97.4794 ug/L		97
81)	1,2,3-Trichloropropane	16.18	110	166377	100.1340 ug/L		97
82)	trans-1,4-Dichloro-2-Buten	16.23	53	198733	97.6146 ug/L		83
83)	n-Propylbenzene	16.29	91	4854104	99.3965 ug/L		76
84)	Bromobenzene	16.41	156	998426	102.9478 ug/L		90
85)	1,3,5-Trimethylbenzene	16.47	105	3620860	108.3623 ug/L		82
86)	2-Chlorotoluene	16.56	91	3081622	93.5000 ug/L		82
87)	4-Chlorotoluene	16.60	91	2997134	113.6920 ug/L		78
88)	a-Methylstyrene	16.88	118	2011260	105.6931 ug/L		94
89)	tert-Butylbenzene	16.94	134	758018	102.0429 ug/L		62
90)	1,2,4-Trimethylbenzene	16.99	105	3673145	106.9222 ug/L		78
91)	sec-Butylbenzene	17.21	105	4454269	106.9145 ug/L		80
92)	p-Isopropyltoluene	17.36	119	3834274	108.5533 ug/L		81
93)	1,3-Dichlorobenzene	17.56	146	2072717	105.4531 ug/L		93
94)	1,4-Dichlorobenzene	17.68	146	2037658	102.1148 ug/L		94
95)	n-Butylbenzene	17.89	91	3728716	108.0683 ug/L		81
96)	1,2-Dichlorobenzene	18.18	146	1776025	104.1269 ug/L		94
97)	1,2-Dibromo-3-Chloropropan	19.17	75	101241	103.4188 ug/L		84
98)	1,2,4-Trichlorobenzene	20.32	180	1367029	106.3922 ug/L		99
99)	Hexachlorobutadiene	20.47	225	722376	107.6137 ug/L		95
100)	Naphthalene	20.69	128	1844011	107.0090 ug/L		94
101)	1,2,3-Trichlorobenzene	21.00	180	1148705	105.5000 ug/L		100

(#) = qualifier out of range (m) = manual integration
8M404586.D 8260WT.M Wed May 13 06:46:20 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404586.D Vial: 10
Acq On : 12 May 2015 20:11 Operator: TMB
Sample : WG523161-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

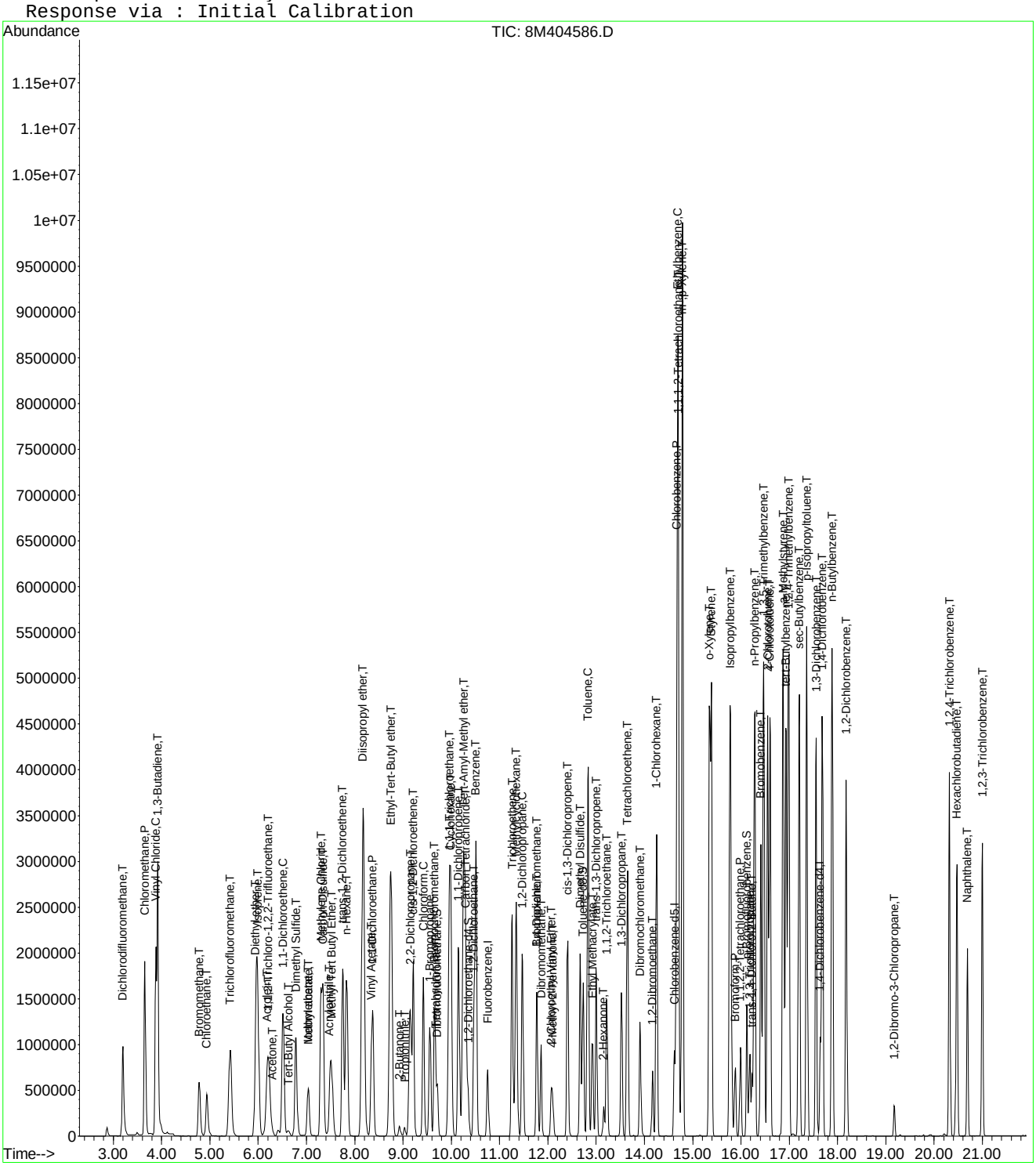

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404587.D Vial: 11
Acq On : 12 May 2015 20:40 Operator: TMB
Sample : WG523161-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:21 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	889446	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	653814	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.65	152	358038	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.71	111	897295	101.7803 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 407.12%#		
43) 1,2-Dichloroethane-d4	10.35	65	834454	100.7199 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 402.88%#		
58) Toluene-d8	12.73	98	3020686	99.0061 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 396.04%#		
80) p-Bromofluorobenzene	16.12	95	1227532	100.7731 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 403.08%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.19	85	2862202	207.6346 ug/L	100
3) Chloromethane	3.65	50	4844973	176.0559 ug/L	97
4) Vinyl Chloride	3.88	62	4418229	170.3816 ug/L	98
5) 1,3-Butadiene	3.92	54	3042896	167.5645 ug/L	93
6) Bromomethane	4.78	94	1514622	207.0087 ug/L	99
7) Chloroethane	4.93	64	1492001	211.4320 ug/L	91
8) Trichlorofluoromethane	5.42	101	3375416	207.2794 ug/L	99
10) Isoprene	5.99	67	2523633	208.9999 ug/L	79
11) Acrolein	6.19	56	215	Below Cal # 13	
12) 1,1,2-Trichloro-1,2,2-Trif	6.20	101	1910657	207.8790 ug/L	94
13) Acetone	6.29	43	266605	209.8839 ug/L	86
14) 1,1-Dichloroethene	6.51	61	3247825	207.7715 ug/L	85
15) Tert-Butyl Alcohol	6.65	59	409	1.1966 ug/L #	61
16) Dimethyl Sulfide	6.78	62	1949857	213.9608 ug/L	79
17) Iodomethane	7.03	142	1410075	209.7673 ug/L	81
18) Methyl acetate	7.04	43	947887	209.1149 ug/L	92
19) Methylene Chloride	7.30	84	1900593	213.3475 ug/L	59
20) Carbon Disulfide	7.34	76	6053547	210.5098 ug/L	97
21) Acrylonitrile	7.52	53	43757	21.6421 ug/L #	38
22) Methyl Tert Butyl Ether	7.51	73	3646249	212.4611 ug/L	95
23) trans-1,2-Dichloroethene	7.74	61	3120484	209.1042 ug/L	85
24) n-Hexane	7.83	57	3144492	208.3756 ug/L	96
26) Vinyl Acetate	8.34	43	2191703	200.8286 ug/L	92
27) 1,1-Dichloroethane	8.37	63	3753089	208.3309 ug/L	97
29) 2-Butanone	8.92	43	435590	210.4690 ug/L	87
30) Propionitrile	9.05	54	214	0.3244 ug/L #	1
31) 2,2-Dichloropropane	9.15	77	3011577	202.6176 ug/L	99
32) cis-1,2-Dichloroethene	9.21	96	2136676	208.4628 ug/L	77
33) Chloroform	9.42	83	3483917	208.2006 ug/L	97
34) 1-Bromopropane	9.56	122	375097	200.1030 ug/L	99
35) Bromochloromethane	9.66	130	1081406	206.8927 ug/L #	73
36) Tetrahydrofuran	9.68	42	1304	0.9354 ug/L #	32
38) 1,1,1-Trichloroethane	9.96	97	3356452	220.9602 ug/L	99
39) Cyclohexane	9.99	56	4044031	219.6687 ug/L	84
40) 1,1-Dichloropropene	10.15	75	2738411	207.2023 ug/L	93
42) Carbon Tetrachloride	10.30	117	2985746	216.2945 ug/L	98
45) 1,2-Dichloroethane	10.47	62	2521588	210.2034 ug/L	93
46) Benzene	10.51	78	6808887	191.2611 ug/L	93
47) Trichloroethene	11.26	130	2070517	219.8771 ug/L	97
48) Methylcyclohexane	11.34	83	3202469	209.5281 ug/L	88

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404587.D Vial: 11
Acq On : 12 May 2015 20:40 Operator: TMB
Sample : WG523161-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:21 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
49)	1,2-Dichloropropane	11.48	63	2078666	208.4687 ug/L		99
50)	Bromodichloromethane	11.78	83	2658161	216.5336 ug/L		97
51)	1,4-Dioxane	11.77	88	3610	120.3207 ug/L	#	23
52)	Dibromomethane	11.86	93	1002659	213.5141 ug/L		90
53)	2-Chloroethyl Vinyl Ether	12.07	63	491467	206.0353 ug/L		95
54)	4-Methyl-2-Pentanone	12.10	58	378377	220.7279 ug/L		93
55)	cis-1,3-Dichloropropene	12.41	75	2907986	216.7051 ug/L		97
56)	Dimethyl Disulfide	12.68	79	1679554	201.6567 ug/L		98
59)	Toluene	12.83	91	7021493	181.0540 ug/L		94
60)	Ethyl Methacrylate	12.92	69	1552021	224.9195 ug/L		72
62)	trans-1,3-Dichloropropene	13.01	75	2472627	212.7125 ug/L		98
63)	1,1,2-Trichloroethane	13.22	97	1251523	207.7141 ug/L		99
64)	2-Hexanone	13.16	58	355605	214.3243 ug/L	#	80
65)	1,3-Dichloropropane	13.52	76	2145547	203.1319 ug/L		79
66)	Tetrachloroethene	13.65	164	1796038	219.4233 ug/L		90
67)	Dibromochloromethane	13.92	129	1788944	223.1185 ug/L		99
68)	1,2-Dibromoethane	14.16	107	1265159	219.9555 ug/L		98
69)	1-Chlorohexane	14.26	91	2758216	207.9315 ug/L		79
70)	Chlorobenzene	14.67	112	5520224	210.8958 ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.70	131	2433988	259.0586 ug/L		100
72)	Ethylbenzene	14.70	106	3719039	237.2193 ug/L		89
73)	m-,p-Xylene	14.79	106	7071131	398.8164 ug/L		97
74)	o-Xylene	15.35	106	3783766	215.9467 ug/L		86
75)	Styrene	15.38	104	5773777	208.0127 ug/L		99
76)	Bromoform	15.88	173	1041191	201.4528 ug/L		100
77)	Isopropylbenzene	15.78	105	7635859	178.1893 ug/L		90
79)	1,1,2,2-Tetrachloroethane	15.99	83	1382772	203.2581 ug/L		98
81)	1,2,3-Trichloropropane	16.18	110	394464	214.0220 ug/L		60
82)	trans-1,4-Dichloro-2-Buten	16.23	53	532498	235.7900 ug/L	#	49
83)	n-Propylbenzene	16.28	91	8425487	155.5320 ug/L		89
84)	Bromobenzene	16.42	156	2300151	213.8061 ug/L		91
85)	1,3,5-Trimethylbenzene	16.47	105	7048923	190.1744 ug/L		92
86)	2-Chlorotoluene	16.55	91	6754472	184.7508 ug/L		88
87)	4-Chlorotoluene	16.60	91	5302382	181.3248 ug/L		88
88)	a-Methylstyrene	16.87	118	4497302	213.0558 ug/L		100
89)	tert-Butylbenzene	16.94	134	1793662	217.6740 ug/L		76
90)	1,2,4-Trimethylbenzene	16.99	105	7116862	186.7588 ug/L		91
91)	sec-Butylbenzene	17.20	105	8080340	174.8447 ug/L		91
92)	p-Isopropyltoluene	17.37	119	7238323	184.7399 ug/L		92
93)	1,3-Dichlorobenzene	17.56	146	4509634	206.8347 ug/L		99
94)	1,4-Dichlorobenzene	17.69	146	4440196	200.5960 ug/L		99
95)	n-Butylbenzene	17.89	91	7013484	183.2464 ug/L		91
96)	1,2-Dichlorobenzene	18.19	146	3977816	210.2429 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.18	75	246654	227.1401 ug/L		82
98)	1,2,4-Trichlorobenzene	20.33	180	3226918	226.4032 ug/L		99
99)	Hexachlorobutadiene	20.47	225	1704346	228.8889 ug/L		95
100)	Naphthalene	20.69	128	4140977	216.6318 ug/L		96
101)	1,2,3-Trichlorobenzene	21.00	180	2713711	224.6831 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M404587.D 8260WT.M Wed May 13 06:46:21 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404587.D Vial: 11
Acq On : 12 May 2015 20:40 Operator: TMB
Sample : WG523161-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

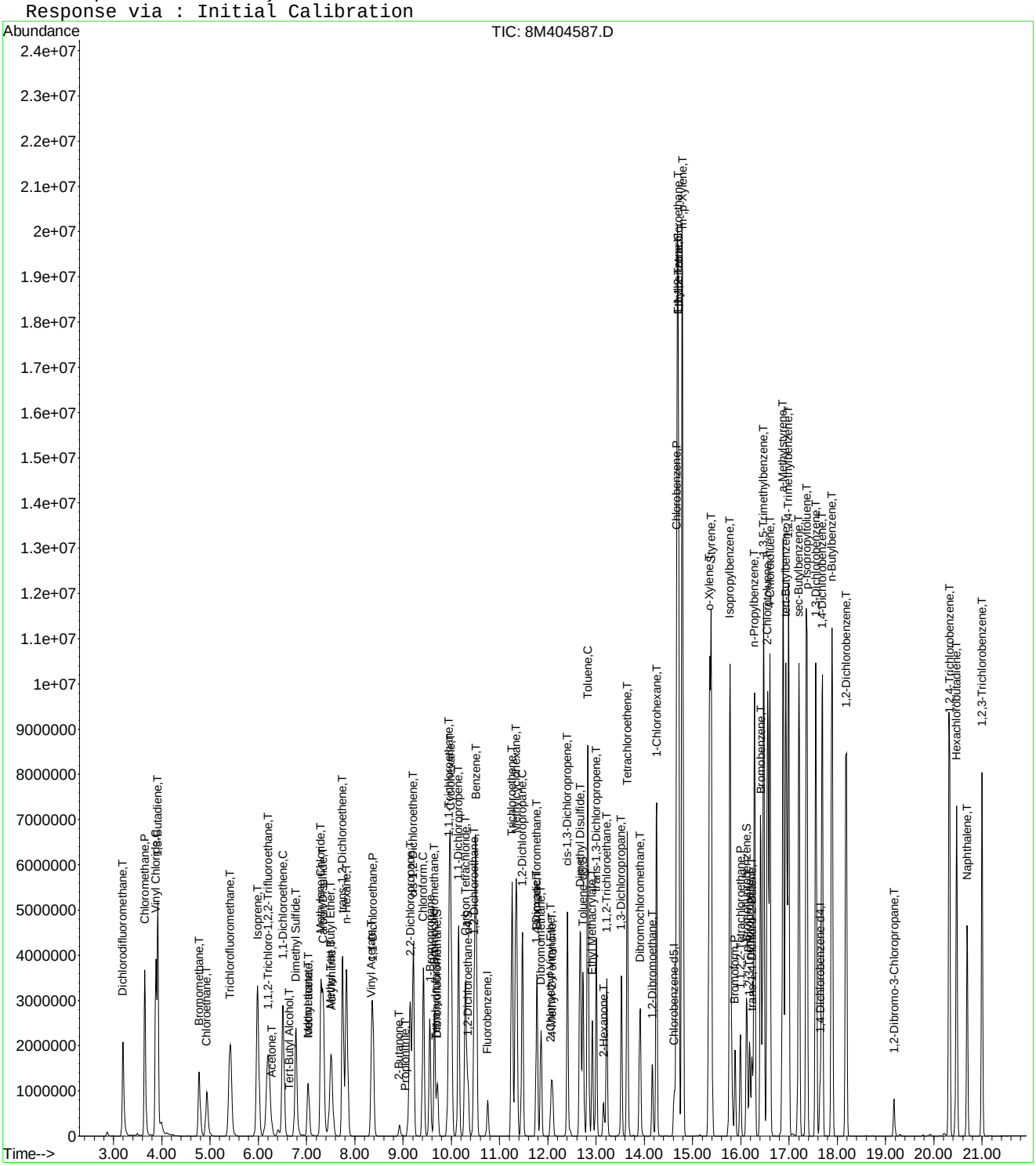

8M404587.D 8260WT.M Wed May 13 06:46:22 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404588.D Vial: 12
Acq On : 12 May 2015 21:08 Operator: TMB
Sample : WG523161-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:22 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	956908	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	688487	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	385083	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	1448349	152.7042 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 610.80%#		
43) 1,2-Dichloroethane-d4	10.35	65	1346423	151.0580 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 604.24%#		
58) Toluene-d8	12.73	98	4678124	145.6085 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 582.44%#		
80) p-Bromofluorobenzene	16.12	95	2010706	153.4742 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 613.88%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.20	85	4427735	298.5591 ug/L	99
3) Chloromethane	3.65	50	6722257	227.0512 ug/L	89
4) Vinyl Chloride	3.88	62	5912550	211.9331 ug/L	91
5) 1,3-Butadiene	3.91	54	4227927	Below Cal	94
6) Bromomethane	4.77	94	2527001	295.8588 ug/L	99
7) Chloroethane	4.93	64	2363039	311.2590 ug/L	92
8) Trichlorofluoromethane	5.42	101	5539478	316.1892 ug/L	99
9) Diethyl ether	5.95	59	2174019	323.6697 ug/L	91
10) Isoprene	5.99	67	4227943	325.4605 ug/L	77
11) Acrolein	6.18	56	90963	151.2625 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.21	101	3075974	311.0713 ug/L	96
13) Acetone	6.29	43	381061	278.8398 ug/L	93
14) 1,1-Dichloroethene	6.52	61	5185912	308.3670 ug/L	86
15) Tert-Butyl Alcohol	6.63	59	239538	651.4001 ug/L	99
16) Dimethyl Sulfide	6.77	62	3143641	320.6371 ug/L	79
17) Iodomethane	7.03	142	2174912	293.2570 ug/L	80
18) Methyl acetate	7.04	43	1497945	307.1664 ug/L	93
19) Methylene Chloride	7.30	84	3081232	321.4935 ug/L	64
20) Carbon Disulfide	7.34	76	9131673	295.1632 ug/L	99
21) Acrylonitrile	7.48	53	397136	182.5748 ug/L	98
22) Methyl Tert Butyl Ether	7.51	73	5644499	305.7088 ug/L	93
23) trans-1,2-Dichloroethene	7.75	61	4902610	305.3638 ug/L	87
24) n-Hexane	7.83	57	5055705	311.4064 ug/L	94
25) Diisopropyl ether	8.17	45	9927030	279.1359 ug/L	91
26) Vinyl Acetate	8.35	43	3434730	292.5404 ug/L	93
27) 1,1-Dichloroethane	8.37	63	5850225	301.8470 ug/L	99
28) Ethyl-Tert-Butyl ether	8.75	59	8274414	296.5272 ug/L	94
29) 2-Butanone	8.92	43	659119	296.0217 ug/L	90
30) Propionitrile	9.04	54	228827	322.4430 ug/L	99
31) 2,2-Dichloropropane	9.15	77	4810863	300.8539 ug/L	99
32) cis-1,2-Dichloroethene	9.21	96	3430243	311.0744 ug/L	78
33) Chloroform	9.42	83	5392781	299.5549 ug/L	100
34) 1-Bromopropane	9.56	122	616502	305.4506 ug/L	99
35) Bromochloromethane	9.66	130	1697935	301.9443 ug/L	75
36) Tetrahydrofuran	9.68	42	482439	321.6801 ug/L	86
38) 1,1,1-Trichloroethane	9.96	97	5475504	335.0480 ug/L	99
39) Cyclohexane	9.98	56	6639422	335.2226 ug/L	86
40) 1,1-Dichloropropene	10.14	75	4403988	309.7359 ug/L	95
41) Tert-Amyl-Methyl ether	10.26	73	6483836	316.5714 ug/L	95
42) Carbon Tetrachloride	10.30	117	4961684	334.0958 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404588.D Vial: 12
Acq On : 12 May 2015 21:08 Operator: TMB
Sample : WG523161-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:22 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.46	62	3965116	307.2351 ug/L		92
46)	Benzene	10.51	78	9538776	249.0534 ug/L		82
47)	Trichloroethene	11.26	130	3369408	332.5862 ug/L		96
48)	Methylcyclohexane	11.34	83	5268711	320.4137 ug/L		88
49)	1,2-Dichloropropane	11.47	63	3373652	314.4892 ug/L		98
50)	Bromodichloromethane	11.77	83	4217899	319.3667 ug/L		100
51)	1,4-Dioxane	11.77	88	30460	613.6909 ug/L		85
52)	Dibromomethane	11.86	93	1632189	323.0675 ug/L		90
53)	2-Chloroethyl Vinyl Ether	12.07	63	783687	305.8338 ug/L		95
54)	4-Methyl-2-Pentanone	12.10	58	581624	315.3728 ug/L		93
55)	cis-1,3-Dichloropropene	12.41	75	4539085	314.4087 ug/L		100
56)	Dimethyl Disulfide	12.67	79	2820560	313.0809 ug/L		93
59)	Toluene	12.83	91	9359764	229.1934 ug/L		97
60)	Ethyl Methacrylate	12.93	69	2471849	340.1809 ug/L		71
62)	trans-1,3-Dichloropropene	13.01	75	3878029	316.8138 ug/L		100
63)	1,1,2-Trichloroethane	13.23	97	2033857	320.5576 ug/L		98
64)	2-Hexanone	13.15	58	533241	305.2008 ug/L	#	81
65)	1,3-Dichloropropane	13.53	76	3365829	302.6151 ug/L		78
66)	Tetrachloroethene	13.65	164	3018572	350.2090 ug/L		90
67)	Dibromochloromethane	13.91	129	2906820	344.2828 ug/L		100
68)	1,2-Dibromoethane	14.17	107	2005124	331.0469 ug/L		99
69)	1-Chlorohexane	14.26	91	4462387	319.4608 ug/L		78
70)	Chlorobenzene	14.67	112	7907308	286.8788 ug/L		85
71)	1,1,1,2-Tetrachloroethane	14.70	131	4172914	421.7717 ug/L		99
72)	Ethylbenzene	14.70	106	6055831	366.8188 ug/L		80
73)	m-,p-Xylene	14.79	106	9345850	500.5661 ug/L		94
74)	o-Xylene	15.36	106	6029480	326.7839 ug/L		94
75)	Styrene	15.39	104	8231523	281.6232 ug/L		89
76)	Bromoform	15.88	173	1723238	316.1796 ug/L		99
77)	Isopropylbenzene	15.78	105	10012029	221.8729 ug/L		94
79)	1,1,2,2-Tetrachloroethane	16.00	83	2160112	295.2217 ug/L		98
81)	1,2,3-Trichloropropane	16.18	110	619391	312.4573 ug/L		58
82)	trans-1,4-Dichloro-2-Buten	16.23	53	753579	310.2494 ug/L	#	58
83)	n-Propylbenzene	16.29	91	10577160	181.5385 ug/L		95
84)	Bromobenzene	16.41	156	3698392	319.6329 ug/L		98
85)	1,3,5-Trimethylbenzene	16.47	105	9247035	231.9565 ug/L		96
86)	2-Chlorotoluene	16.55	91	7786851	198.0302 ug/L		86
87)	4-Chlorotoluene	16.61	91	6661327	211.7980 ug/L		97
88)	a-Methylstyrene	16.88	118	6747826	297.2213 ug/L		92
89)	tert-Butylbenzene	16.94	134	3054650	344.6689 ug/L		94
90)	1,2,4-Trimethylbenzene	16.99	105	9326416	227.5528 ug/L		94
91)	sec-Butylbenzene	17.21	105	10388453	209.0011 ug/L		95
92)	p-Isopropyltoluene	17.36	119	9384689	222.6985 ug/L		93
93)	1,3-Dichlorobenzene	17.56	146	6518770	277.9858 ug/L		91
94)	1,4-Dichlorobenzene	17.69	146	6369556	267.5495 ug/L		91
95)	n-Butylbenzene	17.89	91	9037379	219.5427 ug/L		96
96)	1,2-Dichlorobenzene	18.19	146	5908048	290.3323 ug/L		94
97)	1,2-Dibromo-3-Chloropropan	19.17	75	385147	329.7669 ug/L		85
98)	1,2,4-Trichlorobenzene	20.32	180	4917771	320.8025 ug/L		98
99)	Hexachlorobutadiene	20.47	225	2870393	358.4124 ug/L		94
100)	Naphthalene	20.69	128	5921865	288.0399 ug/L		100
101)	1,2,3-Trichlorobenzene	21.00	180	4158303	320.1088 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M404588.D 8260WT.M Wed May 13 06:46:22 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404588.D Vial: 12
Acq On : 12 May 2015 21:08 Operator: TMB
Sample : WG523161-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

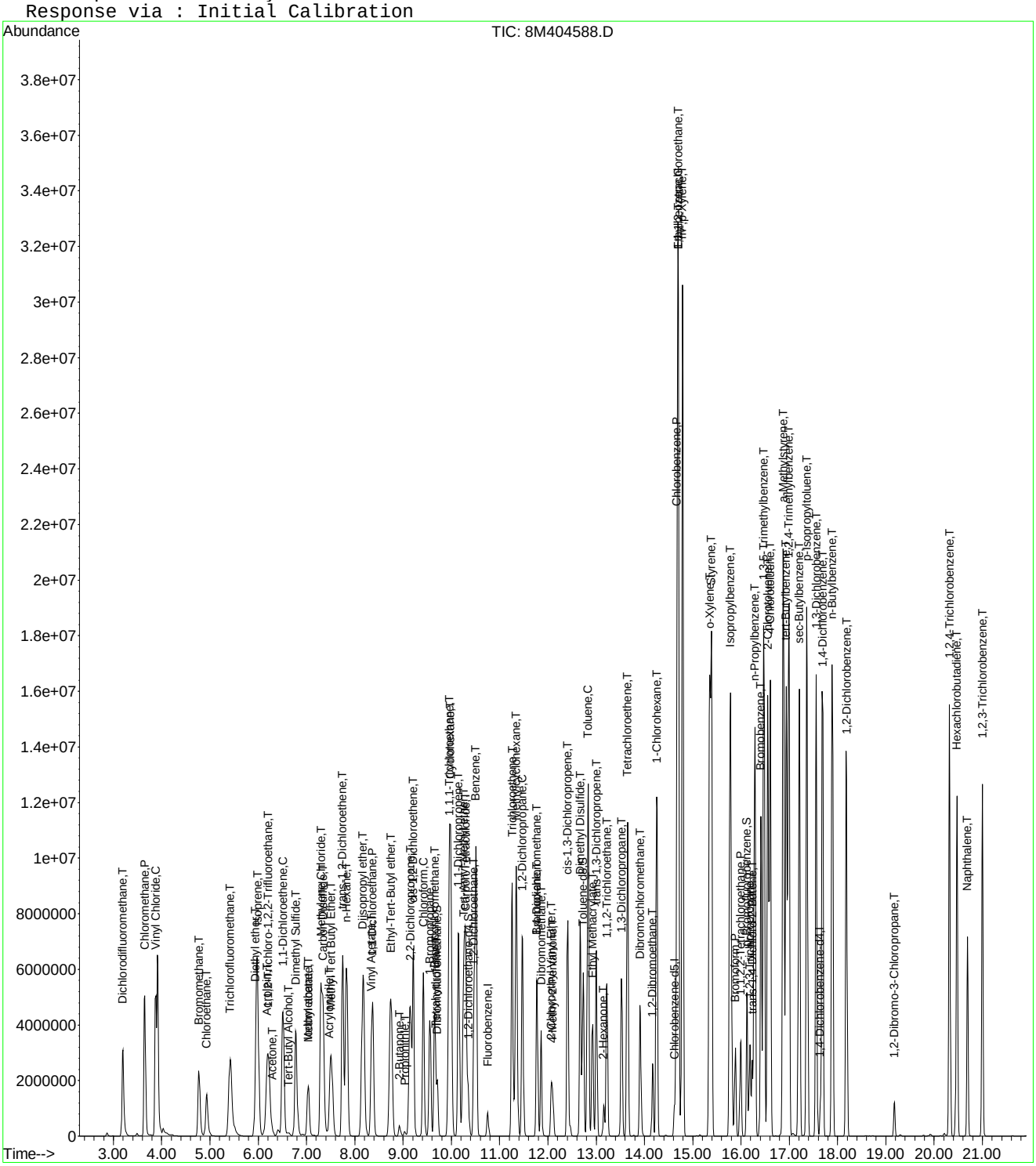

8M404588.D 8260WT.M Wed May 13 06:46:23 2015 Page 3

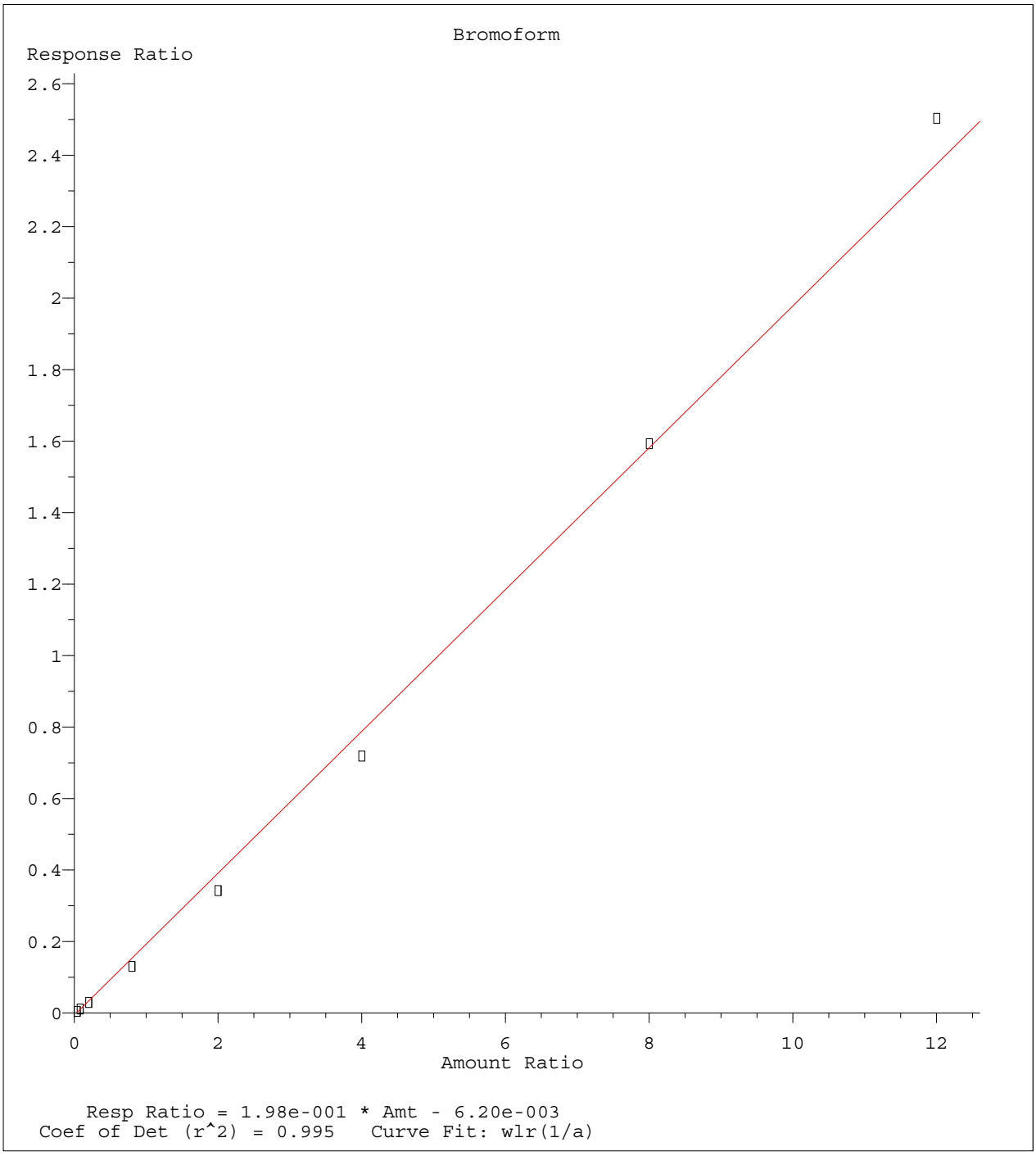

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Wed May 13 06:45:06 2015

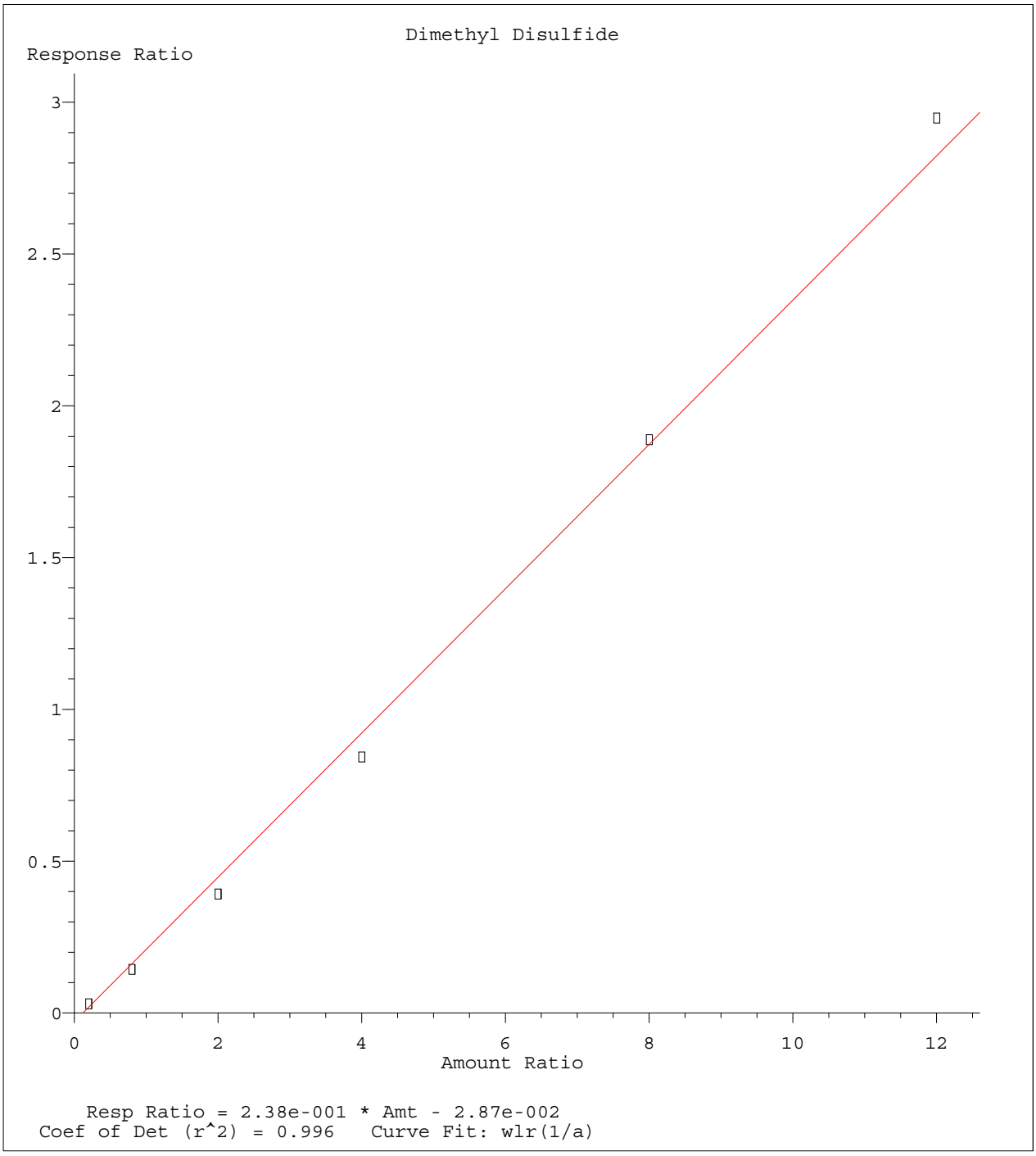

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Wed May 13 06:45:06 2015

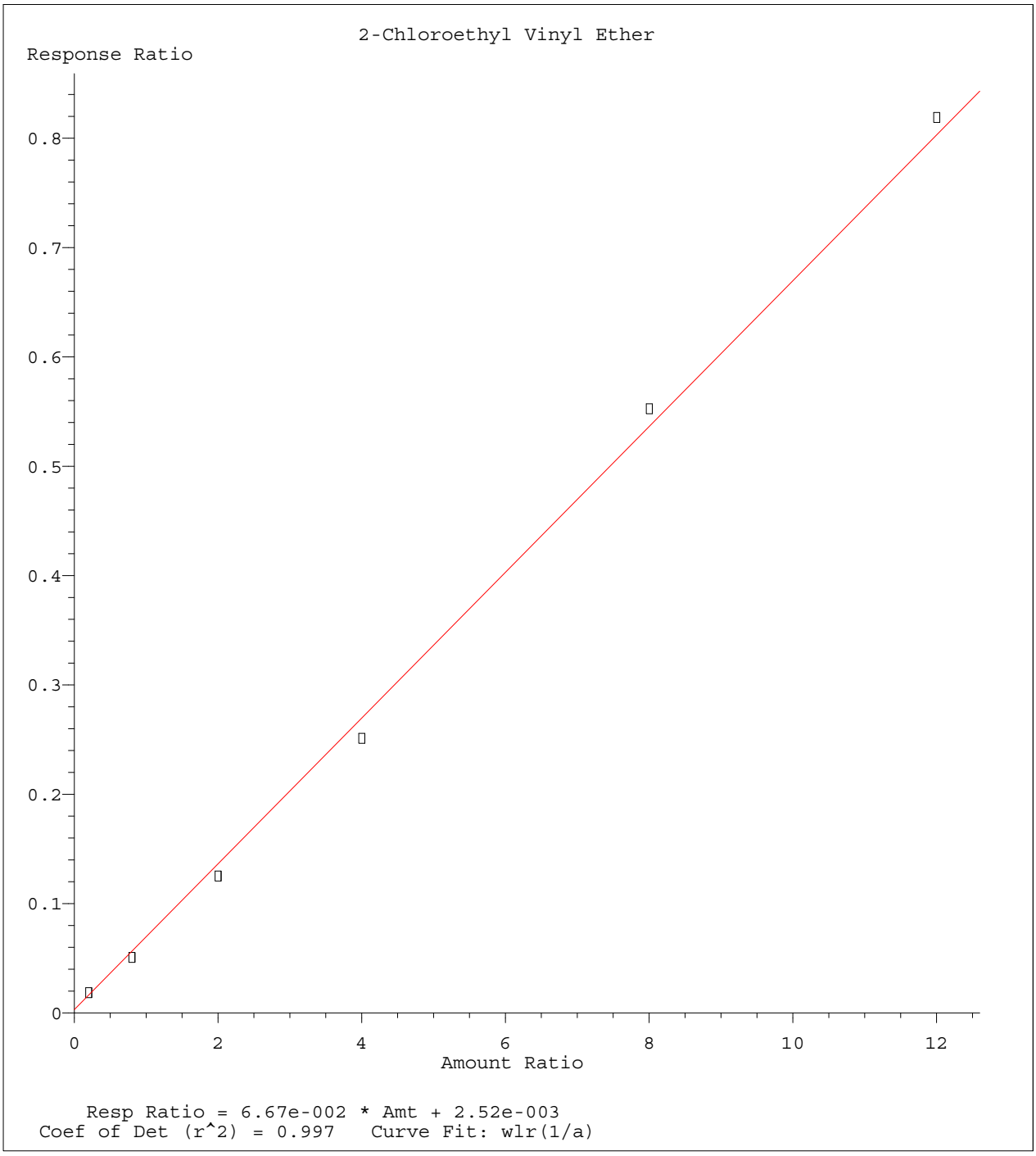

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Wed May 13 06:45:06 2015

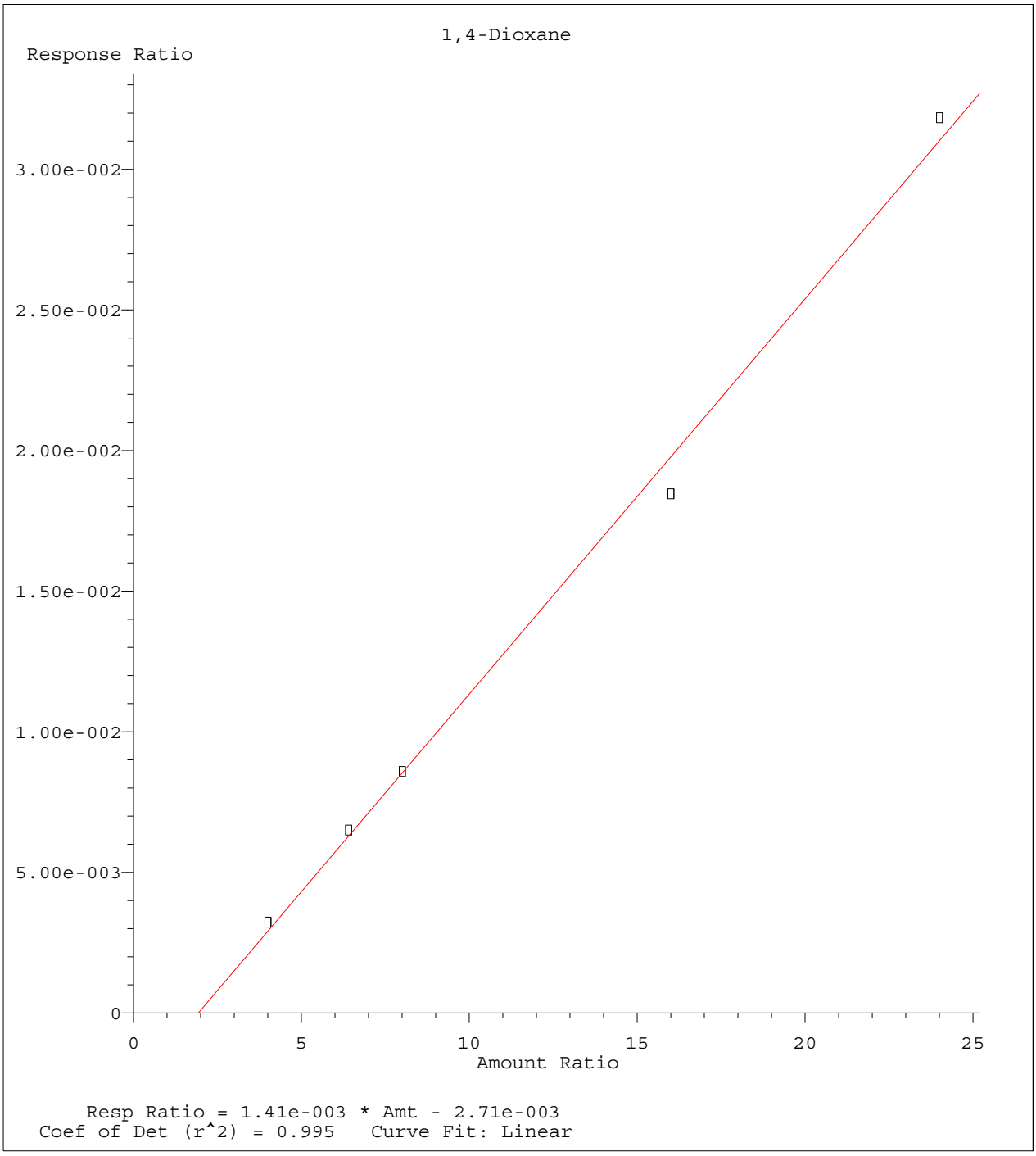

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Wed May 13 06:45:06 2015

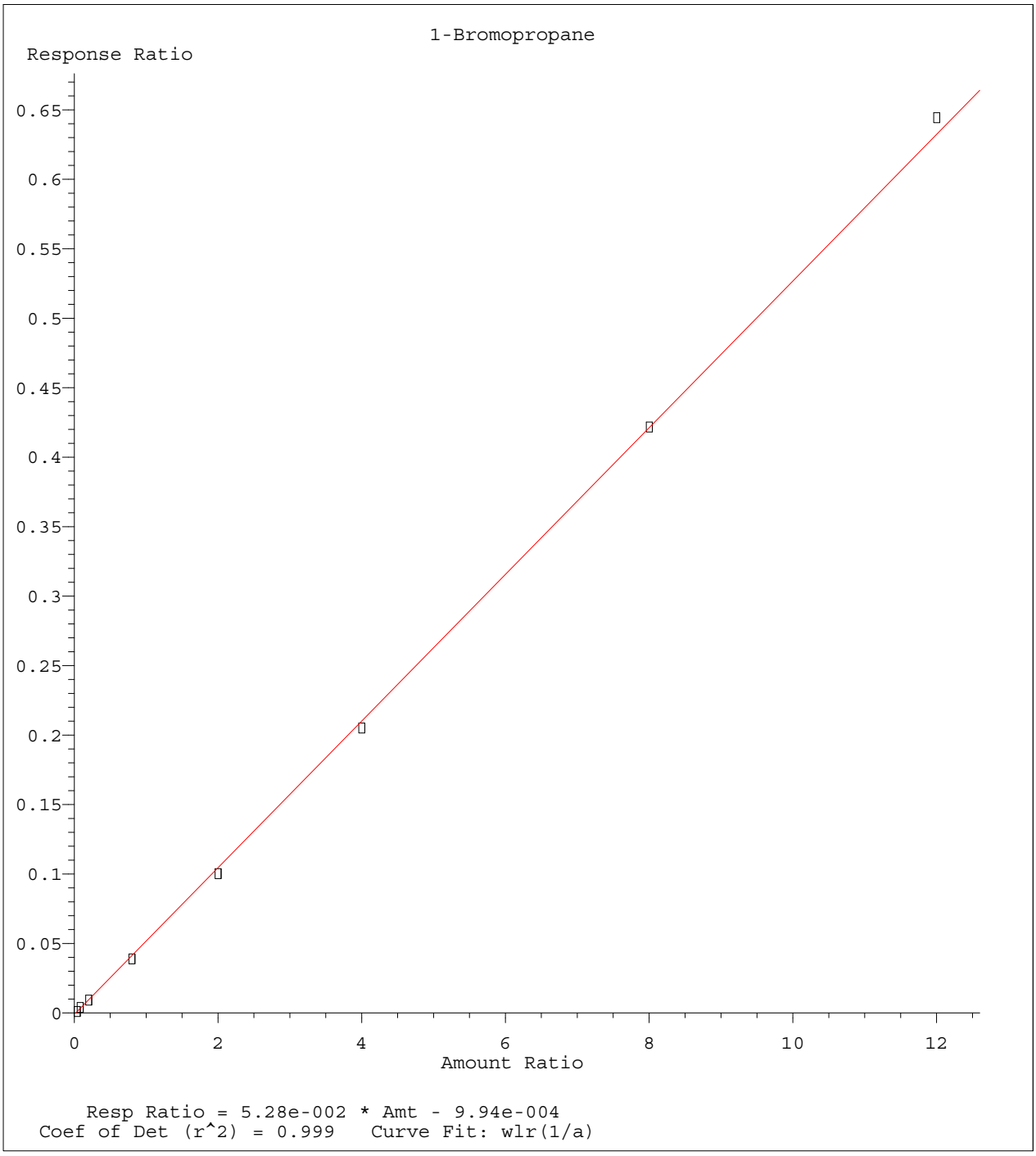

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Wed May 13 06:45:06 2015

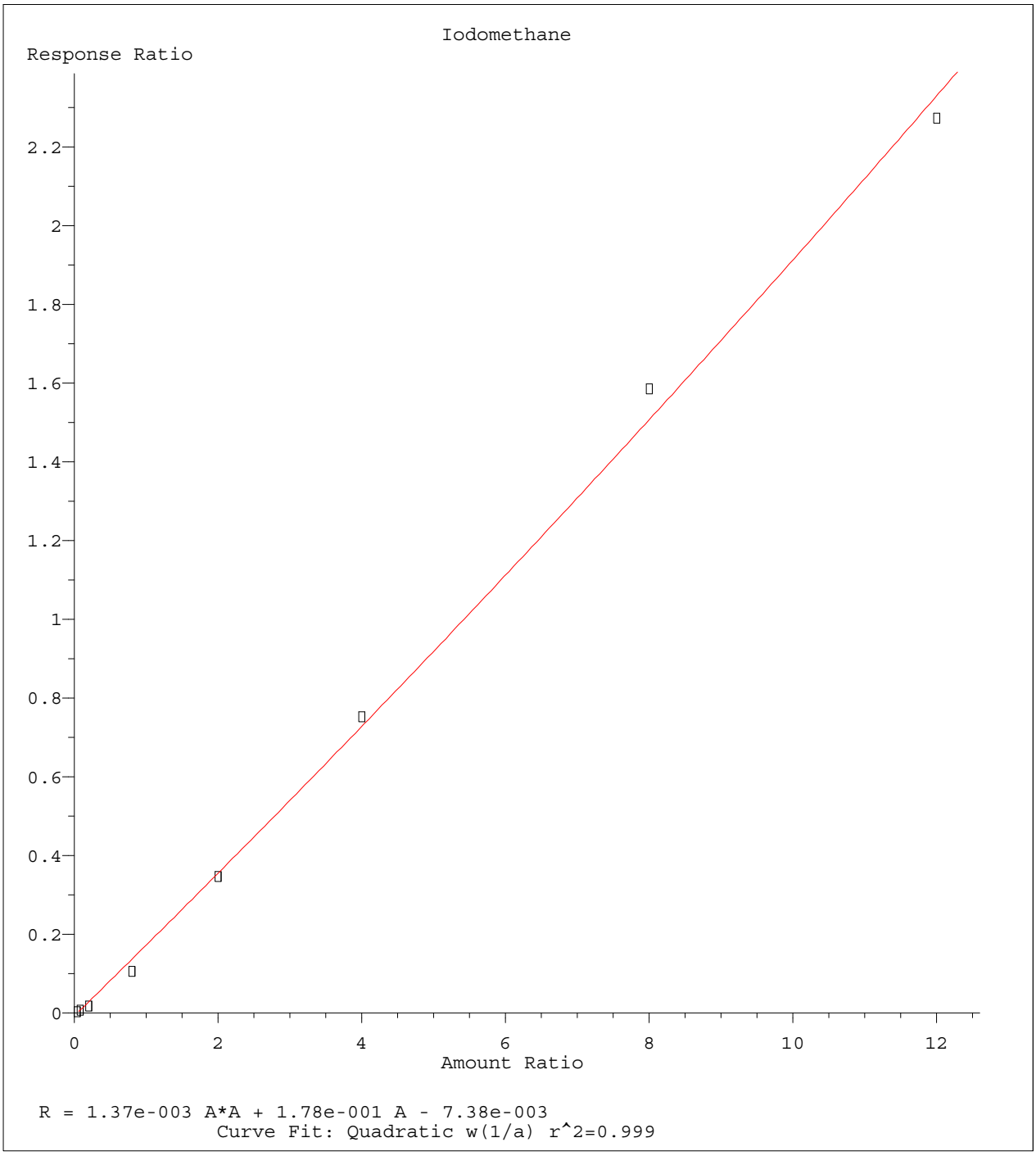

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Wed May 13 06:45:06 2015

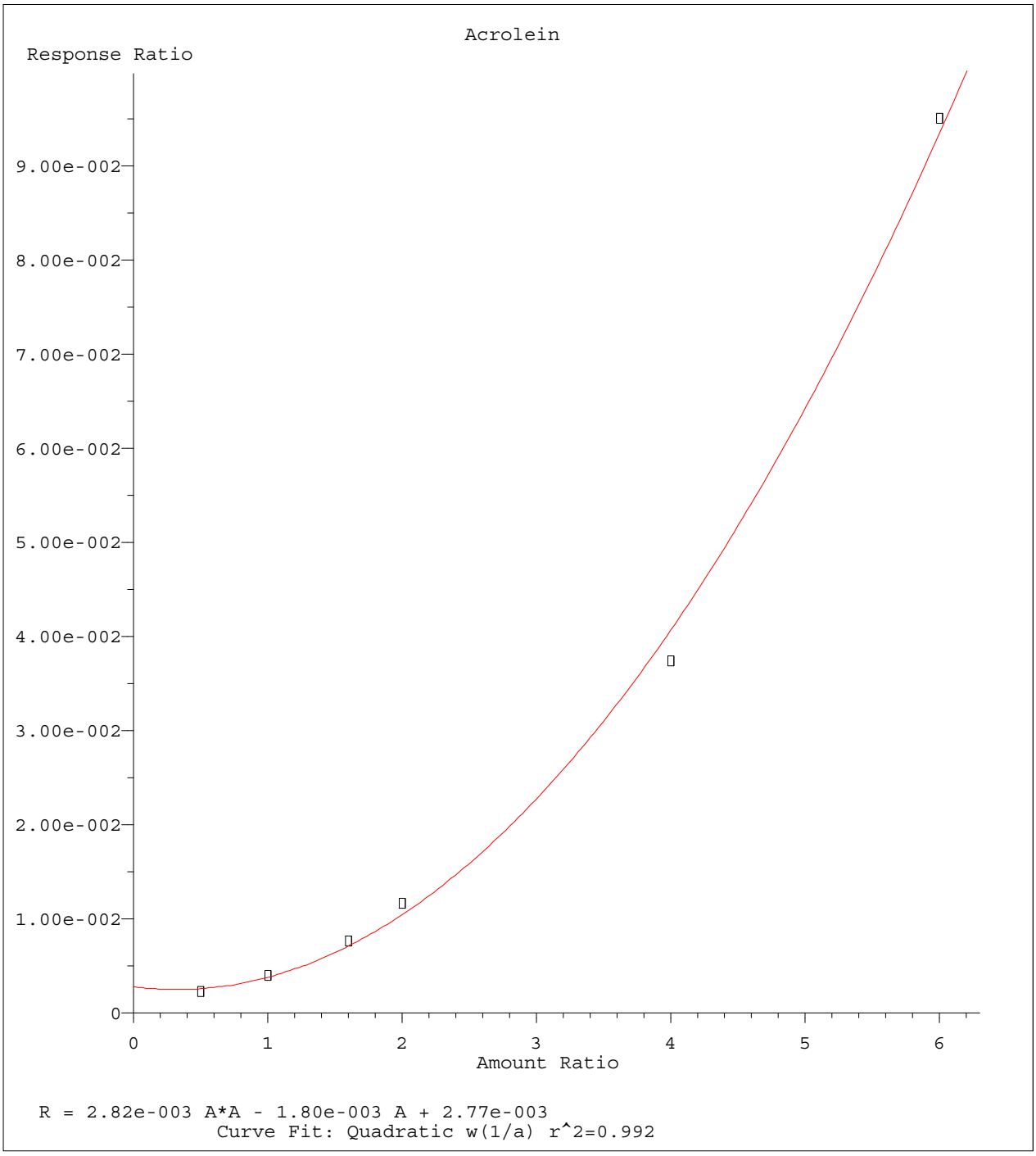

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Wed May 13 06:45:06 2015

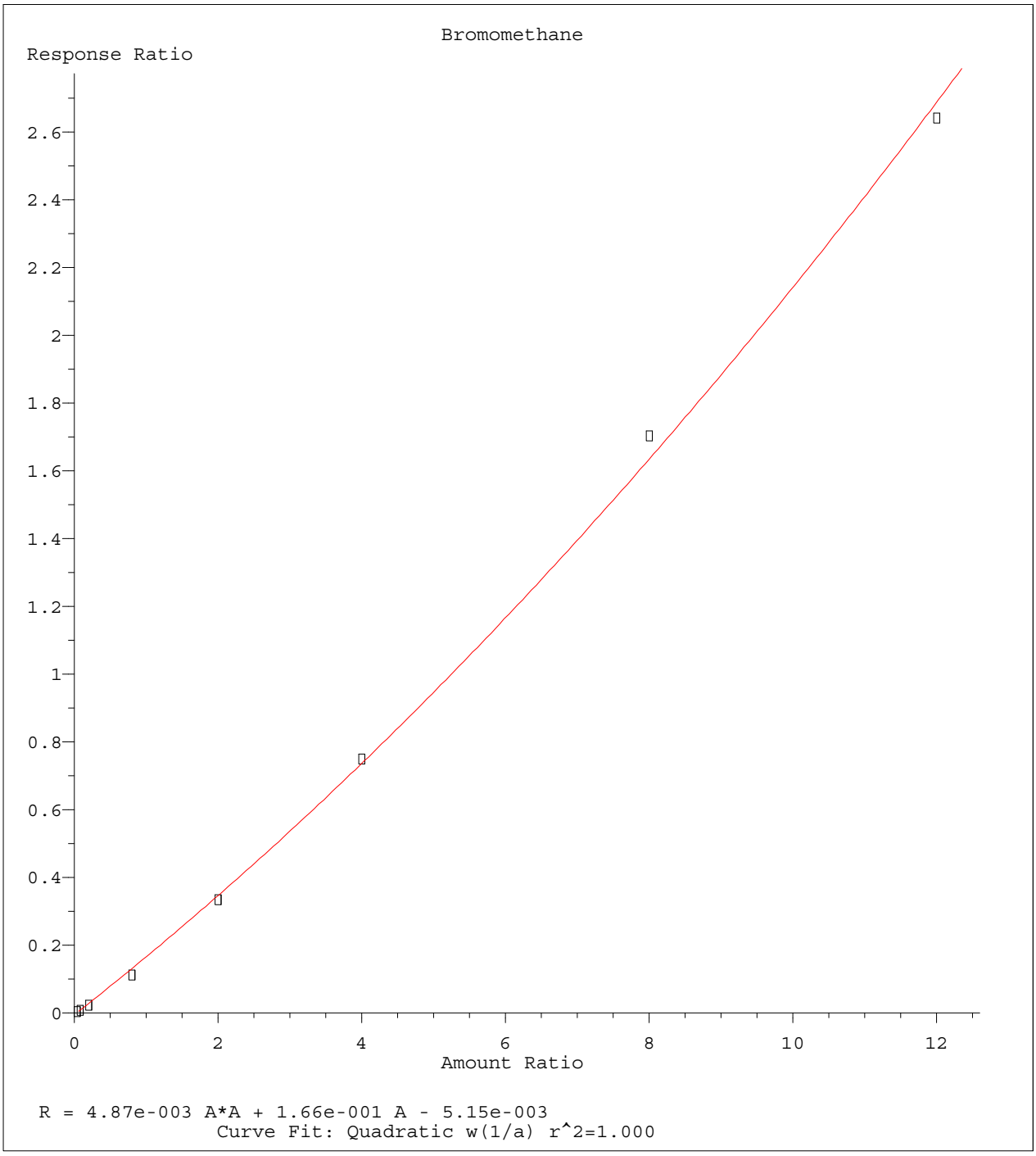

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Wed May 13 06:45:06 2015

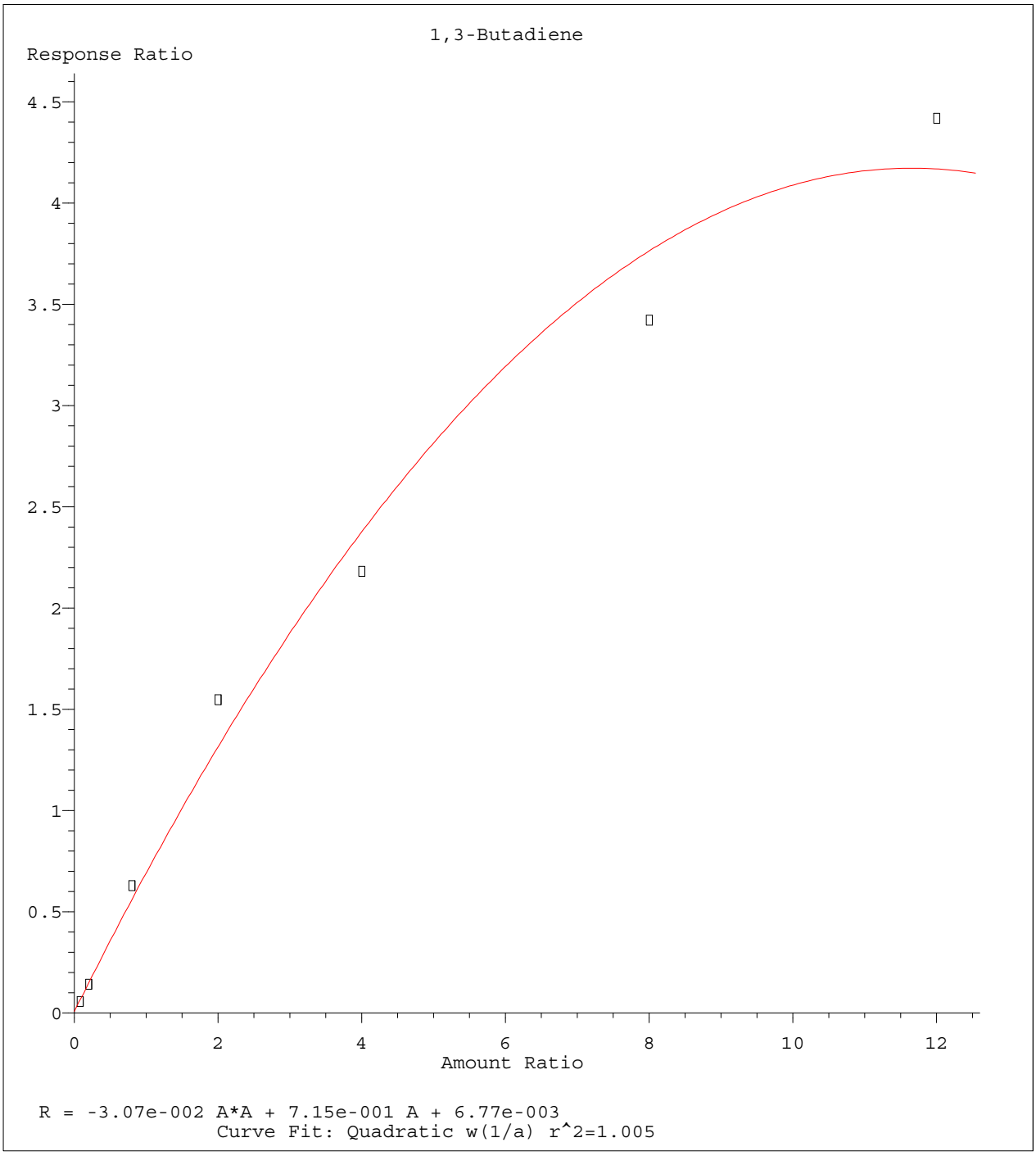

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Wed May 13 06:45:06 2015

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404591.D Vial: 15
Acq On : 12 May 2015 22:34 Operator: TMB
Sample : WG523161-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD70475 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:23 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	919308	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	650523	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.65	152	355810	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	220169	24.1626 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.64%		
43) 1,2-Dichloroethane-d4	10.35	65	208786	24.3822 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.52%		
58) Toluene-d8	12.73	98	742207	24.4497 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.80%		
80) p-Bromofluorobenzene	16.12	95	296553	24.4977 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.00%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.19	85	800374	56.1760 ug/L	98
3) Chloromethane	3.65	50	1424558	50.0839 ug/L	97
4) Vinyl Chloride	3.88	62	1286582	48.0032 ug/L	96
5) 1,3-Butadiene	3.92	54	691807	27.3545 ug/L	93
6) Bromomethane	4.78	94	314349	49.4206 ug/L	98
7) Chloroethane	4.93	64	404454	55.4535 ug/L	92
8) Trichlorofluoromethane	5.42	101	820931	48.7746 ug/L	98
9) Diethyl ether	5.94	59	587435	91.0349 ug/L	91
10) Isoprene	5.99	67	718544	57.5747 ug/L	80
11) Acrolein	6.18	56	24471	81.1360 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.20	101	455967	47.9976 ug/L	92
13) Acetone	6.29	43	74651	56.8598 ug/L	83
14) 1,1-Dichloroethene	6.51	61	755549	46.7643 ug/L	83
15) Tert-Butyl Alcohol	6.64	59	73310	207.5132 ug/L	94
16) Dimethyl Sulfide	6.77	62	630937	66.9848 ug/L	79
17) Iodomethane	7.03	142	395975	60.2995 ug/L	77
18) Methyl acetate	7.04	43	216897	46.2957 ug/L	92
19) Methylene Chloride	7.30	84	463114	50.2973 ug/L	59
20) Carbon Disulfide	7.34	76	1398233	47.0436 ug/L	95
21) Acrylonitrile	7.48	53	109604	52.4490 ug/L	91
22) Methyl Tert Butyl Ether	7.52	73	949202	53.5119 ug/L	97
23) trans-1,2-Dichloroethene	7.74	61	767654	49.7697 ug/L	85
24) n-Hexane	7.83	57	700372	44.9039 ug/L	97
25) Diisopropyl ether	8.17	45	3332814	97.5476 ug/L	93
26) Vinyl Acetate	8.34	43	617016	54.7014 ug/L	92
27) 1,1-Dichloroethane	8.37	63	908724	48.8040 ug/L	94
28) Ethyl-Tert-Butyl ether	8.75	59	2675688	99.8095 ug/L	93
29) 2-Butanone	8.92	43	113924	53.2579 ug/L	88
30) Propionitrile	9.04	54	72509	106.3523 ug/L	95
31) 2,2-Dichloropropane	9.15	77	703200	45.7742 ug/L	97
32) cis-1,2-Dichloroethene	9.21	96	514228	48.5405 ug/L	76
33) Chloroform	9.42	83	851052	49.2072 ug/L	95
34) 1-Bromopropane	9.56	122	104801	54.4355 ug/L	97
35) Bromochloromethane	9.66	130	259626	48.0577 ug/L #	73
36) Tetrahydrofuran	9.68	42	146217	101.4819 ug/L	87
38) 1,1,1-Trichloroethane	9.96	97	789635	50.2943 ug/L	97
39) Cyclohexane	9.99	56	902530	47.4323 ug/L	86
40) 1,1-Dichloropropene	10.15	75	653293	47.8258 ug/L	92
41) Tert-Amyl-Methyl ether	10.26	73	1985009	100.8814 ug/L	97
42) Carbon Tetrachloride	10.30	117	702126	49.2114 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404591.D Vial: 15
Acq On : 12 May 2015 22:34 Operator: TMB
Sample : WG523161-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD70475 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:23 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.47	62	603214	48.6514 ug/L		93
46)	Benzene	10.50	78	1850022	50.2789 ug/L		98
47)	Trichloroethene	11.26	130	486136	49.9479 ug/L		96
48)	Methylcyclohexane	11.34	83	749827	47.4654 ug/L		89
49)	1,2-Dichloropropane	11.48	63	501116	48.6242 ug/L		98
50)	Bromodichloromethane	11.78	83	616315	48.5742 ug/L		96
51)	1,4-Dioxane	11.77	88	7938	201.6115 ug/L		95
52)	Dibromomethane	11.86	93	233106	48.0270 ug/L		89
53)	2-Chloroethyl Vinyl Ether	12.07	63	212350	85.5819 ug/L		96
54)	4-Methyl-2-Pentanone	12.10	58	96374	54.3940 ug/L		95
55)	cis-1,3-Dichloropropene	12.41	75	728119	52.4974 ug/L		95
56)	Dimethyl Disulfide	12.66	79	376819	46.1411 ug/L		99
59)	Toluene	12.83	91	1963822	50.8947 ug/L		83
60)	Ethyl Methacrylate	12.92	69	394247	57.4235 ug/L		75
62)	trans-1,3-Dichloropropene	13.01	75	568578	49.1605 ug/L		94
63)	1,1,2-Trichloroethane	13.22	97	293758	49.0014 ug/L		97
64)	2-Hexanone	13.16	58	90401	54.7606 ug/L	#	80
65)	1,3-Dichloropropane	13.52	76	534108	50.8231 ug/L		82
66)	Tetrachloroethene	13.65	164	399242	49.0225 ug/L		92
67)	Dibromochloromethane	13.92	129	391690	49.0990 ug/L		100
68)	1,2-Dibromoethane	14.16	107	291132	50.8711 ug/L		99
69)	1-Chlorohexane	14.26	91	667237	50.5549 ug/L		84
70)	Chlorobenzene	14.67	112	1227973	47.1511 ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.70	131	469282	50.2001 ug/L		99
72)	Ethylbenzene	14.70	106	759764	48.7068 ug/L	#	33
73)	m-,p-Xylene	14.78	106	1754806	99.4729 ug/L	#	49
74)	o-Xylene	15.35	106	816052	46.8093 ug/L		63
75)	Styrene	15.38	104	1449226	52.4756 ug/L		88
76)	Bromoform	15.88	173	229962	45.3265 ug/L		98
77)	Isopropylbenzene	15.78	105	2042078	47.8947 ug/L		78
79)	1,1,2,2-Tetrachloroethane	15.99	83	322882	47.7586 ug/L		96
81)	1,2,3-Trichloropropane	16.18	110	94494	51.5901 ug/L		94
82)	trans-1,4-Dichloro-2-Buten	16.23	53	119151	53.0904 ug/L		78
83)	n-Propylbenzene	16.28	91	2494553	46.3371 ug/L	#	73
84)	Bromobenzene	16.41	156	513898	48.0675 ug/L		87
85)	1,3,5-Trimethylbenzene	16.47	105	1947168	52.8620 ug/L		80
86)	2-Chlorotoluene	16.55	91	1485272	40.8801 ug/L		89
87)	4-Chlorotoluene	16.60	91	1550170	53.3429 ug/L	#	67
88)	a-Methylstyrene	16.87	118	1093998	52.1517 ug/L		94
89)	tert-Butylbenzene	16.93	134	371781	45.4009 ug/L		58
90)	1,2,4-Trimethylbenzene	16.99	105	1987730	52.4881 ug/L		75
91)	sec-Butylbenzene	17.20	105	2246378	48.9121 ug/L		78
92)	p-Isopropyltoluene	17.36	119	1868949	47.9989 ug/L		78
93)	1,3-Dichlorobenzene	17.56	146	987544	45.5774 ug/L		92
94)	1,4-Dichlorobenzene	17.69	146	1071014	48.6885 ug/L		93
95)	n-Butylbenzene	17.89	91	1969840	51.7897 ug/L		80
96)	1,2-Dichlorobenzene	18.19	146	869480	46.2431 ug/L		93
97)	1,2-Dibromo-3-Chloropropan	19.18	75	56744	52.5819 ug/L		84
98)	1,2,4-Trichlorobenzene	20.32	180	703789	49.6876 ug/L		99
99)	Hexachlorobutadiene	20.47	225	372888	50.3914 ug/L		95
100)	Naphthalene	20.69	128	978141	51.4911 ug/L		93
101)	1,2,3-Trichlorobenzene	21.00	180	596654	49.7096 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M404591.D 8260WT.M Wed May 13 06:46:24 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404591.D Vial: 15
Acq On : 12 May 2015 22:34 Operator: TMB
Sample : WG523161-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD70475 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

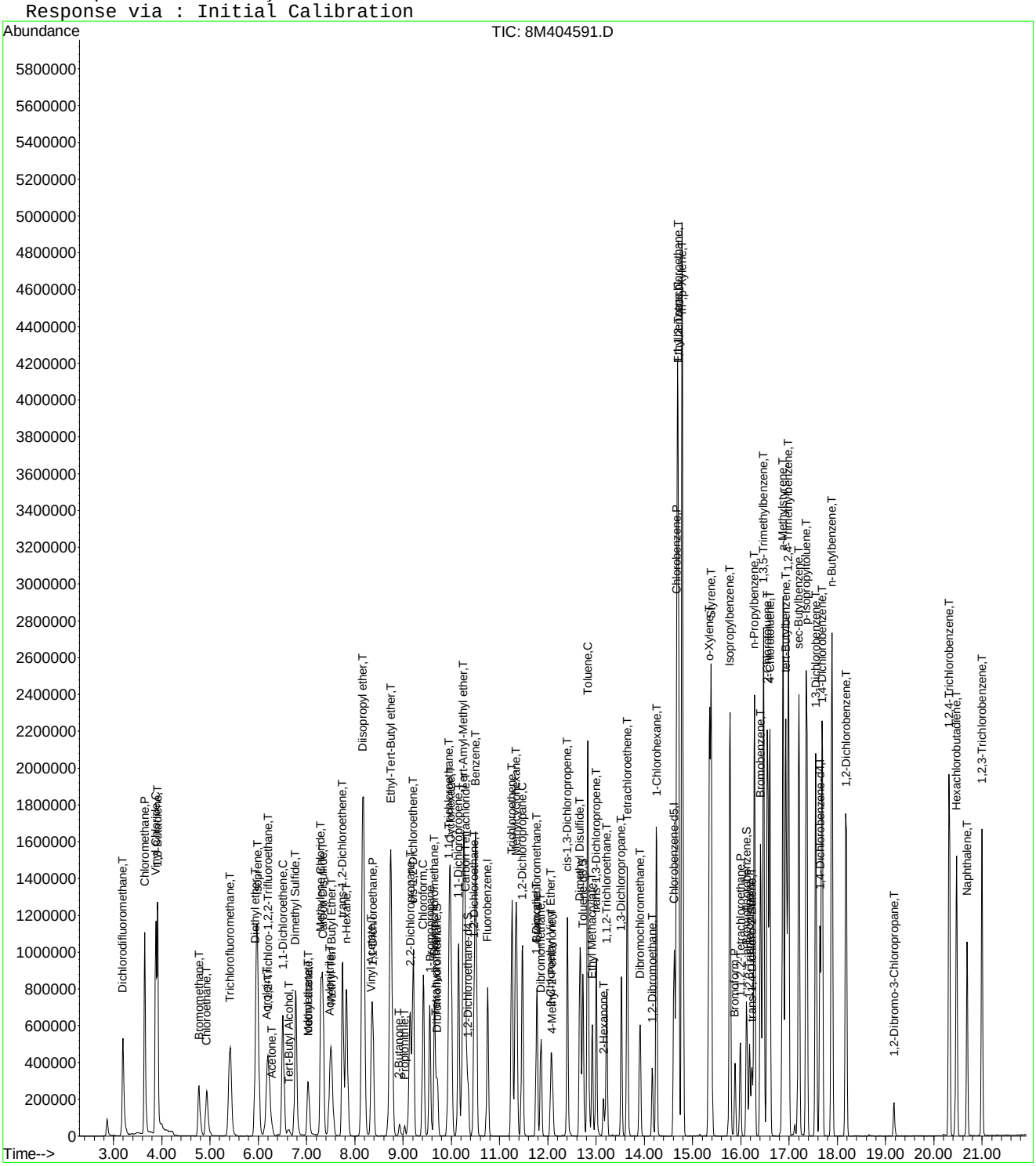

8M404591.D 8260WT.M Wed May 13 06:46:24 2015 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404591.D Vial: 15
Acq On : 12 May 2015 22:34 Operator: TMB
Sample : WG523161-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD70475 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	118	0.00
2	T	Dichlorodifluoromethane	50.0000	56.1760	-12.4	124	0.00
3	P	Chloromethane	50.0000	50.0839	-0.2	118	0.00
4	C	Vinyl Chloride	50.0000	48.0032	4.0	109	0.00
5	T	1,3-Butadiene	50.0000	27.3545	45.3#	57	0.00
6	T	Bromomethane	50.0000	49.4205	1.2	121	0.00
7	T	Chloroethane	50.0000	55.4535	-10.9	132	0.00
8	T	Trichlorofluoromethane	50.0000	48.7746	2.5	116	0.00
9	T	Diethyl ether	100.0000	91.0349	9.0	115	0.00
10	T	Isoprene	50.0000	57.5747	-15.1	133	0.00
11	T	Acrolein	50.0000	81.1360	-62.3#	270	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	47.9976	4.0	114	0.00
13	T	Acetone	50.0000	56.8598	-13.7	139	0.00
14	C	1,1-Dichloroethene	50.0000	46.7643	6.5	110	0.00
15	T	Tert-Butyl Alcohol	200.0000	207.5132	-3.8	133	0.00
16	T	Dimethyl Sulfide	50.0000	66.9848	-34.0#	155	0.00
17	T	Iodomethane	50.0000	60.2995	-20.6	147	0.00
18	T	Methyl acetate	50.0000	46.2957	7.4	113	0.00
19	T	Methylene Chloride	50.0000	50.2973	-0.6	119	0.00
20	T	Carbon Disulfide	50.0000	47.0436	5.9	105	0.00
21	T	Acrylonitrile	50.0000	52.4490	-4.9	124	0.00
22	T	Methyl Tert Butyl Ether	50.0000	53.5119	-7.0	128	0.00
23	T	trans-1,2-Dichloroethene	50.0000	49.7697	0.5	118	0.00
24	T	n-Hexane	50.0000	44.9039	10.2	105	0.00
25	T	Diisopropyl ether	100.0000	97.5476	2.5	118	0.00
26	T	Vinyl Acetate	50.0000	54.7015	-9.4	125	0.00
27	P	1,1-Dichloroethane	50.0000	48.8040	2.4	113	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	99.8095	0.2	121	0.00
29	T	2-Butanone	50.0000	53.2579	-6.5	128	0.00
30	T	Propionitrile	100.0000	106.3523	-6.4	134	0.00
31	T	2,2-Dichloropropane	50.0000	45.7742	8.5	110	0.00
32	T	cis-1,2-Dichloroethene	50.0000	48.5405	2.9	115	0.00
33	C	Chloroform	50.0000	49.2072	1.6	116	0.00
34		1-Bromopropane	50.0000	54.4355	-8.9	134	0.00
35	T	Bromochloromethane	50.0000	48.0577	3.9	113	0.00
36	T	Tetrahydrofuran	100.0000	101.4819	-1.5	128	0.00
37	S	Dibromofluoromethane	25.0000	24.1626	3.3	115	0.00
38	T	1,1,1-Trichloroethane	50.0000	50.2943	-0.6	116	0.00
39	T	Cyclohexane	50.0000	47.4323	5.1	111	0.00
40	T	1,1-Dichloropropene	50.0000	47.8258	4.3	113	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	100.8814	-0.9	123	0.00
42	T	Carbon Tetrachloride	50.0000	49.2114	1.6	114	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.3822	2.5	114	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.58#
45	T	1,2-Dichloroethane	50.0000	48.6514	2.7	117	0.00
46	T	Benzene	50.0000	50.2789	-0.6	116	0.00
47	T	Trichloroethene	50.0000	49.9479	0.1	116	0.00
48	T	Methylcyclohexane	50.0000	47.4654	5.1	112	0.00
49	C	1,2-Dichloropropane	50.0000	48.6243	2.8	116	0.00
50	T	Bromodichloromethane	50.0000	48.5742	2.9	114	0.00
51	T	1,4-Dioxane	200.0000	201.6115	-0.8	119	0.00
52	T	Dibromomethane	50.0000	48.0270	3.9	115	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	85.5819	-71.2#	218	0.00
54	T	4-Methyl-2-Pentanone	50.0000	54.3940	-8.8	130	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404591.D Vial: 15
Acq On : 12 May 2015 22:34 Operator: TMB
Sample : WG523161-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD70475 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	52.4974	-5.0	120	0.00
56	T	Dimethyl Disulfide	50.0000	46.1411	7.7	123	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	119	0.00
58	S	Toluene-d8	25.0000	24.4497	2.2	113	0.00
59	C	Toluene	50.0000	50.8947	-1.8	115	0.00
60	T	Ethyl Methacrylate	50.0000	57.4235	-14.8	126	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.18#
62	T	trans-1,3-Dichloropropene	50.0000	49.1605	1.7	113	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.0014	2.0	115	0.00
64	T	2-Hexanone	50.0000	54.7606	-9.5	124	0.00
65	T	1,3-Dichloropropane	50.0000	50.8231	-1.6	120	0.00
66	T	Tetrachloroethene	50.0000	49.0224	2.0	116	0.00
67	T	Dibromochloromethane	50.0000	49.0990	1.8	115	0.00
68	T	1,2-Dibromoethane	50.0000	50.8711	-1.7	116	0.00
69	T	1-Chlorohexane	50.0000	50.5549	-1.1	119	0.00
70	P	Chlorobenzene	50.0000	47.1511	5.7	109	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	50.2002	-0.4	117	0.00
72	C	Ethylbenzene	50.0000	48.7068	2.6	117	0.00
73	T	m-,p-Xylene	100.0000	99.4729	0.5	111	0.00
74	T	o-Xylene	50.0000	46.8093	6.4	110	0.00
75	T	Styrene	50.0000	52.4756	-5.0	116	0.00
76	P	Bromoform	50.0000	45.3265	9.3	123	0.00
77	T	Isopropylbenzene	50.0000	47.8947	4.2	107	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	118	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	47.7586	4.5	116	0.00
80	S	p-Bromofluorobenzene	25.0000	24.4977	2.0	116	0.00
81	T	1,2,3-Trichloropropane	50.0000	51.5901	-3.2	124	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	53.0904	-6.2	117	0.00
83	T	n-Propylbenzene	50.0000	46.3371	7.3	105	0.00
84	T	Bromobenzene	50.0000	48.0675	3.9	115	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	52.8620	-5.7	116	0.00
86	T	2-Chlorotoluene	50.0000	40.8801	18.2	94	0.00
87	T	4-Chlorotoluene	50.0000	53.3429	-6.7	122	0.00
88	T	a-Methylstyrene	50.0000	52.1517	-4.3	119	0.00
89	T	tert-Butylbenzene	50.0000	45.4008	9.2	109	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	52.4881	-5.0	115	0.00
91	T	sec-Butylbenzene	50.0000	48.9121	2.2	106	0.00
92	T	p-Isopropyltoluene	50.0000	47.9989	4.0	104	0.00
93	T	1,3-Dichlorobenzene	50.0000	45.5774	8.8	105	0.00
94	T	1,4-Dichlorobenzene	50.0000	48.6885	2.6	115	0.00
95	T	n-Butylbenzene	50.0000	51.7897	-3.6	112	0.00
96	T	1,2-Dichlorobenzene	50.0000	46.2431	7.5	106	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	52.5819	-5.2	123	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	49.6876	0.6	114	0.00
99	T	Hexachlorobutadiene	50.0000	50.3914	-0.8	122	0.00
100	T	Naphthalene	50.0000	51.4911	-3.0	116	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	49.7096	0.6	115	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M404591.D 8260WT.M Wed May 13 06:49:00 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052315\8M404877.D Vial: 2
Acq On : 23 May 2015 16:57 Operator: FJB
Sample : WG524935-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD70656 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 23 17:19:07 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	701522	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	566818	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	334436	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	167946	24.1533 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.60%		
43) 1,2-Dichloroethane-d4	10.35	65	152255	23.3004 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 93.20%		
58) Toluene-d8	12.73	98	632073	23.8965 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 95.60%		
80) p-Bromofluorobenzene	16.12	95	251183	22.0759 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 88.32%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.20	85	615043	56.5696 ug/L	97
3) Chloromethane	3.65	50	1151308	53.0431 ug/L	96
4) Vinyl Chloride	3.88	62	1198239	58.5863 ug/L	96
5) 1,3-Butadiene	3.92	54	1346020	77.0220 ug/L	96
6) Bromomethane	4.78	94	304789	61.7505 ug/L	99
7) Chloroethane	4.93	64	290497	52.1941 ug/L	91
8) Trichlorofluoromethane	5.42	101	675862	52.6217 ug/L	99
9) Diethyl ether	5.95	59	446865	90.7494 ug/L	89
10) Isoprene	5.99	67	493948	51.8656 ug/L	78
11) Acrolein	6.19	56	12159	65.3599 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.20	101	381609	52.6411 ug/L	93
13) Acetone	6.28	43	56108	56.0033 ug/L	87
14) 1,1-Dichloroethene	6.52	61	635579	51.5515 ug/L	84
15) Tert-Butyl Alcohol	6.62	59	50938	188.9488 ug/L	93
16) Dimethyl Sulfide	6.77	62	367379	51.1121 ug/L	78
17) Iodomethane	7.03	142	153421	31.3898 ug/L	80
18) Methyl acetate	7.04	43	181187	50.6797 ug/L	90
19) Methylene Chloride	7.29	84	366210	52.1203 ug/L #	54
20) Carbon Disulfide	7.33	76	1287846	56.7812 ug/L	94
21) Acrylonitrile	7.48	53	75758	47.5071 ug/L	94
22) Methyl Tert Butyl Ether	7.51	73	622735	46.0060 ug/L	95
23) trans-1,2-Dichloroethene	7.75	61	580464	49.3167 ug/L	87
24) n-Hexane	7.83	57	626691	52.6536 ug/L	95
25) Diisopropyl ether	8.17	45	2612217	100.1924 ug/L	91
26) Vinyl Acetate	8.34	43	387721	45.0445 ug/L	92
27) 1,1-Dichloroethane	8.37	63	736502	51.8343 ug/L	94
28) Ethyl-Tert-Butyl ether	8.74	59	1945169	95.0853 ug/L	94
29) 2-Butanone	8.93	43	82748	50.6928 ug/L	90
30) Propionitrile	9.03	54	49494	95.1321 ug/L	94
31) 2,2-Dichloropropane	9.14	77	590708	50.3888 ug/L	97
32) cis-1,2-Dichloroethene	9.21	96	404253	50.0059 ug/L	77
33) Chloroform	9.42	83	686699	52.0306 ug/L	95
34) 1-Bromopropane	9.56	122	71561	48.7589 ug/L	98
35) Bromochloromethane	9.65	130	210243	50.9984 ug/L #	73
36) Tetrahydrofuran	9.67	42	138263	125.7525 ug/L	84
38) 1,1,1-Trichloroethane	9.96	97	635960	53.0813 ug/L	99
39) Cyclohexane	9.98	56	778652	53.6260 ug/L	84
40) 1,1-Dichloropropene	10.15	75	537435	51.5585 ug/L	93
41) Tert-Amyl-Methyl ether	10.25	73	1406865	93.6960 ug/L	97
42) Carbon Tetrachloride	10.29	117	608302	55.8715 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052315\8M404877.D Vial: 2
Acq On : 23 May 2015 16:57 Operator: FJB
Sample : WG524935-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD70656 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 23 17:19:07 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.47	62	458978	48.5105 ug/L		90
46)	Benzene	10.51	78	1503968	53.5633 ug/L		98
47)	Trichloroethene	11.26	130	402947	54.2535 ug/L		98
48)	Methylcyclohexane	11.34	83	632674	52.4826 ug/L		90
49)	1,2-Dichloropropane	11.47	63	399155	50.7547 ug/L		100
50)	Bromodichloromethane	11.77	83	522000	53.9129 ug/L		95
51)	1,4-Dioxane	11.76	88	7342	234.1391 ug/L		81
52)	Dibromomethane	11.85	93	190419	51.4117 ug/L		87
53)	2-Chloroethyl Vinyl Ether	12.07	63	125401	66.0161 ug/L		94
54)	4-Methyl-2-Pentanone	12.10	58	69631	51.5007 ug/L		90
55)	cis-1,3-Dichloropropene	12.40	75	555324	52.4688 ug/L		95
56)	Dimethyl Disulfide	12.67	79	307065	49.0673 ug/L		96
59)	Toluene	12.82	91	1642238	48.8456 ug/L		83
60)	Ethyl Methacrylate	12.92	69	279443	46.7125 ug/L		70
62)	trans-1,3-Dichloropropene	13.00	75	475133	47.1477 ug/L		94
63)	1,1,2-Trichloroethane	13.22	97	243370	46.5913 ug/L		100
64)	2-Hexanone	13.15	58	63853	44.3911 ug/L	#	74
65)	1,3-Dichloropropane	13.53	76	424144	46.3195 ug/L		80
66)	Tetrachloroethene	13.65	164	343245	48.3707 ug/L		90
67)	Dibromochloromethane	13.91	129	345915	49.7644 ug/L		97
68)	1,2-Dibromoethane	14.17	107	244017	48.9351 ug/L		98
69)	1-Chlorohexane	14.25	91	562029	48.8721 ug/L		85
70)	Chlorobenzene	14.66	112	1097542	48.3663 ug/L		92
71)	1,1,1,2-Tetrachloroethane	14.69	131	398392	48.9103 ug/L		100
72)	Ethylbenzene	14.69	106	630832	46.4134 ug/L	#	34
73)	m-,p-Xylene	14.79	106	1540973	100.2512 ug/L	#	49
74)	o-Xylene	15.35	106	742699	48.8929 ug/L		65
75)	Styrene	15.39	104	1225519	50.9284 ug/L		87
76)	Bromoform	15.88	173	204017	46.1368 ug/L		99
77)	Isopropylbenzene	15.77	105	1922281	51.7430 ug/L		78
79)	1,1,2,2-Tetrachloroethane	15.99	83	271875	42.7841 ug/L		98
81)	1,2,3-Trichloropropane	16.18	110	79118	45.9560 ug/L		92
82)	trans-1,4-Dichloro-2-Buten	16.22	53	90513	42.9076 ug/L		79
83)	n-Propylbenzene	16.28	91	2386031	47.1538 ug/L	#	73
84)	Bromobenzene	16.41	156	462273	46.0022 ug/L		92
85)	1,3,5-Trimethylbenzene	16.46	105	1678859	48.4908 ug/L		81
86)	2-Chlorotoluene	16.56	91	1506128	44.1035 ug/L		82
87)	4-Chlorotoluene	16.60	91	1329280	48.6652 ug/L		77
88)	a-Methylstyrene	16.87	118	918729	46.5956 ug/L		93
89)	tert-Butylbenzene	16.93	134	350518	45.5399 ug/L		61
90)	1,2,4-Trimethylbenzene	16.98	105	1744589	49.0119 ug/L		77
91)	sec-Butylbenzene	17.20	105	2174453	50.3720 ug/L		78
92)	p-Isopropyltoluene	17.36	119	1837772	50.2147 ug/L		79
93)	1,3-Dichlorobenzene	17.55	146	971203	47.6879 ug/L		92
94)	1,4-Dichlorobenzene	17.68	146	979674	47.3825 ug/L		90
95)	n-Butylbenzene	17.89	91	1779958	49.7883 ug/L		79
96)	1,2-Dichlorobenzene	18.18	146	858330	48.5676 ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.17	75	49966	49.2602 ug/L		80
98)	1,2,4-Trichlorobenzene	20.32	180	639989	48.0710 ug/L		97
99)	Hexachlorobutadiene	20.47	225	288257	41.4441 ug/L		94
100)	Naphthalene	20.69	128	907614	50.8319 ug/L		93
101)	1,2,3-Trichlorobenzene	21.00	180	540844	47.9397 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M404877.D 8260WT.M Sat May 23 17:19:07 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052315\8M404877.D Vial: 2
Acq On : 23 May 2015 16:57 Operator: FJB
Sample : WG524935-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD70656 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 23 17:19 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

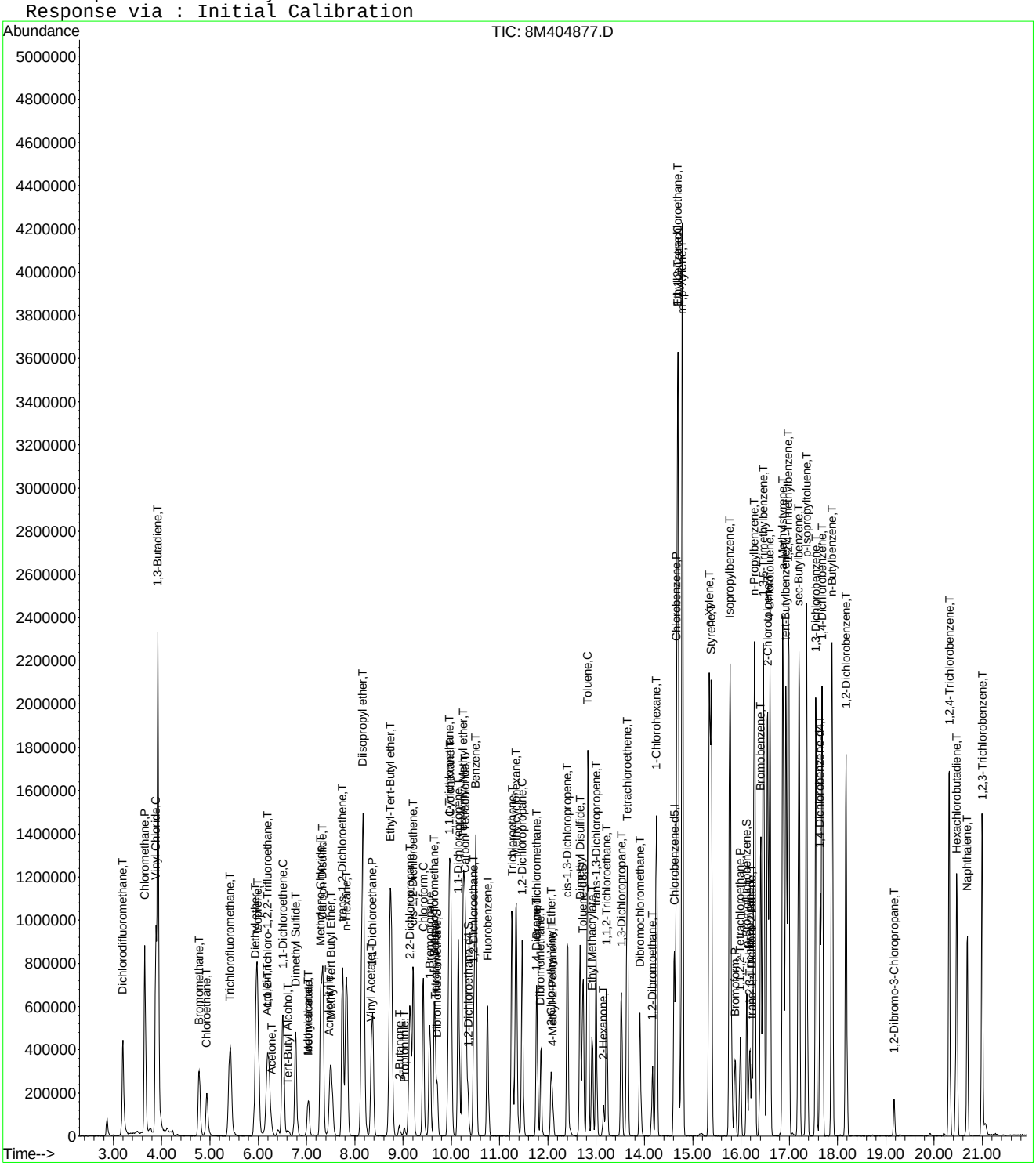

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\052315\8M404877.D Vial: 2
Acq On : 23 May 2015 16:57 Operator: FJB
Sample : WG524935-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD70656 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	90	0.00
2	T	Dichlorodifluoromethane	0.3875	0.4384	-13.1	95	0.00
3	P	Chloromethane	0.7735	0.8206	-6.1	96	0.00
4	C	Vinyl Chloride	0.7289	0.8540	-17.2	102	0.00
5	T	1,3-Butadiene	0.6155	0.9594	-55.9#	112	0.01
6	T	Bromomethane	0.1537	0.2172	-41.3#	117	0.01
7	T	Chloroethane	0.1983	0.2071	-4.4	95	0.00
8	T	Trichlorofluoromethane	0.4577	0.4817	-5.2	95	0.00
9	T	Diethyl ether	0.1755	0.1593	9.2	88	0.00
10	T	Isoprene	0.3394	0.3520	-3.7	92	0.00
11	T	Acrolein	0.0074	0.0087	-17.3	134	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2583	0.2720	-5.3	95	0.00
13	T	Acetone	0.0357	0.0400	-12.0	104	0.00
14	C	1,1-Dichloroethene	0.4394	0.4530	-3.1	92	0.00
15	T	Tert-Butyl Alcohol	0.0096	0.0091	5.5	92	0.00
16	T	Dimethyl Sulfide	0.2561	0.2618	-2.2	91	0.00
17	T	Iodomethane	0.1417	0.1094	22.8	57	0.00
18	T	Methyl acetate	0.1274	0.1291	-1.4	95	0.00
19	T	Methylene Chloride	0.2504	0.2610	-4.2	94	0.00
20	T	Carbon Disulfide	0.8083	0.9179	-13.6	97	0.00
21	T	Acrylonitrile	0.0568	0.0540	5.0	86	0.00
22	T	Methyl Tert Butyl Ether	0.4824	0.4439	8.0	84	0.00
23	T	trans-1,2-Dichloroethene	0.4194	0.4137	1.4	90	0.00
24	T	n-Hexane	0.4242	0.4467	-5.3	94	0.00
25	T	Diisopropyl ether	0.9291	0.9309	-0.2	92	0.00
26	T	Vinyl Acetate	0.3067	0.2763	9.9	78	0.00
27	P	1,1-Dichloroethane	0.5064	0.5249	-3.7	91	0.00
28	T	Ethyl-Tert-Butyl ether	0.7290	0.6932	4.9	88	0.00
29	T	2-Butanone	0.0582	0.0590	-1.4	93	0.00
30	T	Propionitrile	0.0185	0.0176	4.9	91	0.00
31	T	2,2-Dichloropropane	0.4178	0.4210	-0.8	93	0.00
32	T	cis-1,2-Dichloroethene	0.2881	0.2881	-0.0	91	0.00
33	C	Chloroform	0.4703	0.4894	-4.1	93	0.00
34		1-Bromopropane	0.0473	0.0510	-7.9	92	0.00
35	T	Bromochloromethane	0.1469	0.1499	-2.0	92	0.00
36	T	Tetrahydrofuran	0.0392	0.0493	-25.8#	121	0.00
37	S	Dibromofluoromethane	0.2478	0.2394	3.4	88	0.00
38	T	1,1,1-Trichloroethane	0.4270	0.4533	-6.2	93	0.00
39	T	Cyclohexane	0.5174	0.5550	-7.3	96	0.00
40	T	1,1-Dichloropropene	0.3715	0.3831	-3.1	93	0.00
41	T	Tert-Amyl-Methyl ether	0.5351	0.5014	6.3	88	0.00
42	T	Carbon Tetrachloride	0.3880	0.4336	-11.7	99	0.00
43	S	1,2-Dichloroethane-d4	0.2329	0.2170	6.8	83	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.58#
45	T	1,2-Dichloroethane	0.3372	0.3271	3.0	89	0.00
46	T	Benzene	1.0006	1.0719	-7.1	95	0.00
47	T	Trichloroethene	0.2647	0.2872	-8.5	97	0.00
48	T	Methylcyclohexane	0.4296	0.4509	-5.0	94	0.00
49	C	1,2-Dichloropropane	0.2803	0.2845	-1.5	92	0.00
50	T	Bromodichloromethane	0.3451	0.3720	-7.8	96	0.00
51	T	1,4-Dioxane	0.0011	0.0013	-21.3	110	0.00
52	T	Dibromomethane	0.1320	0.1357	-2.8	94	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0698	0.0894	-28.1#	129	0.00
54	T	4-Methyl-2-Pentanone	0.0482	0.0496	-3.0	94	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\052315\8M404877.D Vial: 2
Acq On : 23 May 2015 16:57 Operator: FJB
Sample : WG524935-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD70656 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.3772	0.3958	-4.9	91	0.00
56	T	Dimethyl Disulfide	0.2031	0.2189	-7.7	101	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	104	0.00
58	S	Toluene-d8	1.1666	1.1151	4.4	96	0.00
59	C	Toluene	1.4829	1.4487	2.3	96	0.00
60	T	Ethyl Methacrylate	0.2638	0.2465	6.6	89	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.18#
62	T	trans-1,3-Dichloropropene	0.4445	0.4191	5.7	95	0.00
63	T	1,1,2-Trichloroethane	0.2304	0.2147	6.8	96	0.00
64	T	2-Hexanone	0.0634	0.0563	11.2	88	0.00
65	T	1,3-Dichloropropane	0.4039	0.3741	7.4	95	0.00
66	T	Tetrachloroethene	0.3130	0.3028	3.3	99	0.00
67	T	Dibromochloromethane	0.3066	0.3051	0.5	101	0.00
68	T	1,2-Dibromoethane	0.2199	0.2153	2.1	97	0.00
69	T	1-Chlorohexane	0.5072	0.4958	2.3	101	0.00
70	P	Chlorobenzene	1.0009	0.9682	3.3	98	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3593	0.3514	2.2	100	0.00
72	C	Ethylbenzene	0.5995	0.5565	7.2	97	0.00
73	T	m-,p-Xylene	0.6780	0.6797	-0.3	98	0.00
74	T	o-Xylene	0.6700	0.6552	2.2	100	0.00
75	T	Styrene	1.0613	1.0811	-1.9	98	0.00
76	P	Bromoform	0.1638	0.1800	-9.9	109	0.00
77	T	Isopropylbenzene	1.6386	1.6957	-3.5	100	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	111	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4750	0.4065	14.4	97	0.00
80	S	p-Bromofluorobenzene	0.8506	0.7511	11.7	98	0.00
81	T	1,2,3-Trichloropropane	0.1287	0.1183	8.1	104	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1577	0.1353	14.2	89	0.00
83	T	n-Propylbenzene	3.7826	3.5673	5.7	101	0.00
84	T	Bromobenzene	0.7512	0.6911	8.0	103	0.00
85	T	1,3,5-Trimethylbenzene	2.5881	2.5100	3.0	100	0.00
86	T	2-Chlorotoluene	2.5528	2.2517	11.8	95	0.00
87	T	4-Chlorotoluene	2.0419	1.9873	2.7	104	0.00
88	T	a-Methylstyrene	1.4739	1.3736	6.8	100	0.00
89	T	tert-Butylbenzene	0.5754	0.5240	8.9	103	0.00
90	T	1,2,4-Trimethylbenzene	2.6608	2.6083	2.0	101	0.00
91	T	sec-Butylbenzene	3.2269	3.2509	-0.7	102	0.00
92	T	p-Isopropyltoluene	2.7358	2.7476	-0.4	102	0.00
93	T	1,3-Dichlorobenzene	1.5224	1.4520	4.6	103	0.00
94	T	1,4-Dichlorobenzene	1.5456	1.4647	5.2	105	0.00
95	T	n-Butylbenzene	2.6725	2.6611	0.4	101	0.00
96	T	1,2-Dichlorobenzene	1.3211	1.2833	2.9	104	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.0758	0.0747	1.5	108	0.00
98	T	1,2,4-Trichlorobenzene	0.9952	0.9568	3.9	104	0.00
99	T	Hexachlorobutadiene	0.5199	0.4310	17.1	94	0.00
100	T	Naphthalene	1.3347	1.3569	-1.7	108	0.00
101	T	1,2,3-Trichlorobenzene	0.8433	0.8086	4.1	105	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M404877.D 8260WT.M Sat May 23 17:24:24 2015 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\052315\8M404877.D Vial: 2
Acq On : 23 May 2015 16:57 Operator: FJB
Sample : WG524935-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD70656 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	90	0.00
2	T	Dichlorodifluoromethane	50.0000	56.5696	-13.1	95	0.00
3	P	Chloromethane	50.0000	53.0431	-6.1	96	0.00
4	C	Vinyl Chloride	50.0000	58.5863	-17.2	102	0.00
5	T	1,3-Butadiene	50.0000	77.0220	-54.0#	112	0.01
6	T	Bromomethane	50.0000	61.7505	-23.5	117	0.01
7	T	Chloroethane	50.0000	52.1941	-4.4	95	0.00
8	T	Trichlorofluoromethane	50.0000	52.6217	-5.2	95	0.00
9	T	Diethyl ether	100.0000	90.7494	9.3	88	0.00
10	T	Isoprene	50.0000	51.8656	-3.7	92	0.00
11	T	Acrolein	50.0000	65.3599	-30.7#	134	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	52.6411	-5.3	95	0.00
13	T	Acetone	50.0000	56.0033	-12.0	104	0.00
14	C	1,1-Dichloroethene	50.0000	51.5515	-3.1	92	0.00
15	T	Tert-Butyl Alcohol	200.0000	188.9488	5.5	92	0.00
16	T	Dimethyl Sulfide	50.0000	51.1121	-2.2	91	0.00
17	T	Iodomethane	50.0000	31.3898	37.2#	57	0.00
18	T	Methyl acetate	50.0000	50.6797	-1.4	95	0.00
19	T	Methylene Chloride	50.0000	52.1203	-4.2	94	0.00
20	T	Carbon Disulfide	50.0000	56.7812	-13.6	97	0.00
21	T	Acrylonitrile	50.0000	47.5072	5.0	86	0.00
22	T	Methyl Tert Butyl Ether	50.0000	46.0060	8.0	84	0.00
23	T	trans-1,2-Dichloroethene	50.0000	49.3167	1.4	90	0.00
24	T	n-Hexane	50.0000	52.6536	-5.3	94	0.00
25	T	Diisopropyl ether	100.0000	100.1924	-0.2	92	0.00
26	T	Vinyl Acetate	50.0000	45.0445	9.9	78	0.00
27	P	1,1-Dichloroethane	50.0000	51.8343	-3.7	91	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	95.0853	4.9	88	0.00
29	T	2-Butanone	50.0000	50.6928	-1.4	93	0.00
30	T	Propionitrile	100.0000	95.1321	4.9	91	0.00
31	T	2,2-Dichloropropane	50.0000	50.3888	-0.8	93	0.00
32	T	cis-1,2-Dichloroethene	50.0000	50.0059	-0.0	91	0.00
33	C	Chloroform	50.0000	52.0306	-4.1	93	0.00
34		1-Bromopropane	50.0000	48.7589	2.5	92	0.00
35	T	Bromochloromethane	50.0000	50.9984	-2.0	92	0.00
36	T	Tetrahydrofuran	100.0000	125.7525	-25.8#	121	0.00
37	S	Dibromofluoromethane	25.0000	24.1533	3.4	88	0.00
38	T	1,1,1-Trichloroethane	50.0000	53.0813	-6.2	93	0.00
39	T	Cyclohexane	50.0000	53.6260	-7.3	96	0.00
40	T	1,1-Dichloropropene	50.0000	51.5585	-3.1	93	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	93.6960	6.3	88	0.00
42	T	Carbon Tetrachloride	50.0000	55.8715	-11.7	99	0.00
43	S	1,2-Dichloroethane-d4	25.0000	23.3004	6.8	83	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.58#
45	T	1,2-Dichloroethane	50.0000	48.5105	3.0	89	0.00
46	T	Benzene	50.0000	53.5633	-7.1	95	0.00
47	T	Trichloroethene	50.0000	54.2535	-8.5	97	0.00
48	T	Methylcyclohexane	50.0000	52.4826	-5.0	94	0.00
49	C	1,2-Dichloropropane	50.0000	50.7547	-1.5	92	0.00
50	T	Bromodichloromethane	50.0000	53.9129	-7.8	96	0.00
51	T	1,4-Dioxane	200.0000	234.1391	-17.1	110	0.00
52	T	Dibromomethane	50.0000	51.4117	-2.8	94	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	66.0161	-32.0#	129	0.00
54	T	4-Methyl-2-Pentanone	50.0000	51.5007	-3.0	94	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\052315\8M404877.D Vial: 2
Acq On : 23 May 2015 16:57 Operator: FJB
Sample : WG524935-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD70656 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	52.4689	-4.9	91	0.00
56	T	Dimethyl Disulfide	50.0000	49.0673	1.9	101	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	104	0.00
58	S	Toluene-d8	25.0000	23.8965	4.4	96	0.00
59	C	Toluene	50.0000	48.8456	2.3	96	0.00
60	T	Ethyl Methacrylate	50.0000	46.7125	6.6	89	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.18#
62	T	trans-1,3-Dichloropropene	50.0000	47.1477	5.7	95	0.00
63	T	1,1,2-Trichloroethane	50.0000	46.5913	6.8	96	0.00
64	T	2-Hexanone	50.0000	44.3911	11.2	88	0.00
65	T	1,3-Dichloropropane	50.0000	46.3195	7.4	95	0.00
66	T	Tetrachloroethene	50.0000	48.3707	3.3	99	0.00
67	T	Dibromochloromethane	50.0000	49.7644	0.5	101	0.00
68	T	1,2-Dibromoethane	50.0000	48.9351	2.1	97	0.00
69	T	1-Chlorohexane	50.0000	48.8721	2.3	101	0.00
70	P	Chlorobenzene	50.0000	48.3663	3.3	98	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	48.9104	2.2	100	0.00
72	C	Ethylbenzene	50.0000	46.4134	7.2	97	0.00
73	T	m-,p-Xylene	100.0000	100.2512	-0.3	98	0.00
74	T	o-Xylene	50.0000	48.8929	2.2	100	0.00
75	T	Styrene	50.0000	50.9284	-1.9	98	0.00
76	P	Bromoform	50.0000	46.1368	7.7	109	0.00
77	T	Isopropylbenzene	50.0000	51.7430	-3.5	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	111	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	42.7841	14.4	97	0.00
80	S	p-Bromofluorobenzene	25.0000	22.0759	11.7	98	0.00
81	T	1,2,3-Trichloropropane	50.0000	45.9560	8.1	104	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	42.9076	14.2	89	0.00
83	T	n-Propylbenzene	50.0000	47.1538	5.7	101	0.00
84	T	Bromobenzene	50.0000	46.0022	8.0	103	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	48.4908	3.0	100	0.00
86	T	2-Chlorotoluene	50.0000	44.1035	11.8	95	0.00
87	T	4-Chlorotoluene	50.0000	48.6652	2.7	104	0.00
88	T	a-Methylstyrene	50.0000	46.5956	6.8	100	0.00
89	T	tert-Butylbenzene	50.0000	45.5399	8.9	103	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	49.0119	2.0	101	0.00
91	T	sec-Butylbenzene	50.0000	50.3720	-0.7	102	0.00
92	T	p-Isopropyltoluene	50.0000	50.2146	-0.4	102	0.00
93	T	1,3-Dichlorobenzene	50.0000	47.6879	4.6	103	0.00
94	T	1,4-Dichlorobenzene	50.0000	47.3825	5.2	105	0.00
95	T	n-Butylbenzene	50.0000	49.7883	0.4	101	0.00
96	T	1,2-Dichlorobenzene	50.0000	48.5676	2.9	104	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	49.2602	1.5	108	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	48.0710	3.9	104	0.00
99	T	Hexachlorobutadiene	50.0000	41.4441	17.1	94	0.00
100	T	Naphthalene	50.0000	50.8319	-1.7	108	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	47.9397	4.1	105	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M404877.D 8260WT.M Sat May 23 17:24:25 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052615\8M404906.D Vial: 2
Acq On : 26 May 2015 11:50 Operator: TMB
Sample : WG525055-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD70656 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 26 12:12:31 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	760558	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	615965	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	374943	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	191414	25.3916 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.56%		
43) 1,2-Dichloroethane-d4	10.35	65	168698	23.8128 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 95.24%		
58) Toluene-d8	12.73	98	686387	23.8794 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 95.52%		
80) p-Bromofluorobenzene	16.12	95	281702	22.0834 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 88.32%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.19	85	673577	57.1444 ug/L	97
3) Chloromethane	3.65	50	1284846	54.6006 ug/L	95
4) Vinyl Chloride	3.89	62	1316166	59.3571 ug/L	95
5) 1,3-Butadiene	3.93	54	1390539	72.7677 ug/L	98
6) Bromomethane	4.77	94	308065	57.8645 ug/L	99
7) Chloroethane	4.94	64	336304	55.7341 ug/L	91
8) Trichlorofluoromethane	5.42	101	776262	55.7474 ug/L	99
9) Diethyl ether	5.95	59	494434	92.6158 ug/L	90
10) Isoprene	5.98	67	539092	52.2120 ug/L	78
11) Acrolein	6.19	56	10097	56.8978 ug/L	91
12) 1,1,2-Trichloro-1,2,2-Trif	6.21	101	449498	57.1930 ug/L	93
13) Acetone	6.28	43	53652	49.3951 ug/L	91
14) 1,1-Dichloroethene	6.51	61	728553	54.5057 ug/L	84
15) Tert-Butyl Alcohol	6.62	59	62476	213.7590 ug/L	97
16) Dimethyl Sulfide	6.78	62	417299	53.5508 ug/L	78
17) Iodomethane	7.04	142	223266	41.6534 ug/L	84
18) Methyl acetate	7.04	43	208316	53.7450 ug/L	90
19) Methylene Chloride	7.30	84	423368	55.5781 ug/L #	54
20) Carbon Disulfide	7.34	76	1410756	57.3722 ug/L	95
21) Acrylonitrile	7.48	53	88720	51.3170 ug/L	95
22) Methyl Tert Butyl Ether	7.51	73	744128	50.7070 ug/L	94
23) trans-1,2-Dichloroethene	7.75	61	667189	52.2850 ug/L	86
24) n-Hexane	7.82	57	688670	53.3697 ug/L	94
25) Diisopropyl ether	8.17	45	2890468	102.2592 ug/L	92
26) Vinyl Acetate	8.34	43	428447	45.9122 ug/L	93
27) 1,1-Dichloroethane	8.37	63	838736	54.4474 ug/L	95
28) Ethyl-Tert-Butyl ether	8.75	59	2201967	99.2832 ug/L	94
29) 2-Butanone	8.92	43	87175	49.2594 ug/L	87
30) Propionitrile	9.03	54	58671	104.0177 ug/L	99
31) 2,2-Dichloropropane	9.15	77	687274	54.0755 ug/L	99
32) cis-1,2-Dichloroethene	9.21	96	472769	53.9419 ug/L	79
33) Chloroform	9.42	83	772760	54.0065 ug/L	96
34) 1-Bromopropane	9.56	122	76495	48.0816 ug/L	92
35) Bromochloromethane	9.66	130	247165	55.3007 ug/L	74
36) Tetrahydrofuran	9.68	42	249656	209.4410 ug/L	85
38) 1,1,1-Trichloroethane	9.95	97	734197	56.5241 ug/L	97
39) Cyclohexane	9.99	56	843028	53.5529 ug/L	86
40) 1,1-Dichloropropene	10.15	75	622058	55.0445 ug/L	93
41) Tert-Amyl-Methyl ether	10.25	73	1636427	100.5250 ug/L	97
42) Carbon Tetrachloride	10.30	117	697962	59.1305 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M404906.D 8260WT.M Tue May 26 12:12:32 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052615\8M404906.D Vial: 2
Acq On : 26 May 2015 11:50 Operator: TMB
Sample : WG525055-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD70656 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 26 12:12:31 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.46	62	528324	51.5054	ug/L		91
46)	Benzene	10.50	78	1715338	56.3492	ug/L		98
47)	Trichloroethene	11.26	130	461281	57.2867	ug/L		98
48)	Methylcyclohexane	11.34	83	689079	52.7246	ug/L		91
49)	1,2-Dichloropropane	11.47	63	456084	53.4919	ug/L		100
50)	Bromodichloromethane	11.77	83	587778	55.9944	ug/L		95
51)	1,4-Dioxane	11.75	88	9474	269.5050	ug/L		92
52)	Dibromomethane	11.86	93	215303	53.6180	ug/L		89
53)	2-Chloroethyl Vinyl Ether	12.06	63	166477	81.0490	ug/L		96
54)	4-Methyl-2-Pentanone	12.10	58	80868	55.1692	ug/L		89
55)	cis-1,3-Dichloropropene	12.41	75	646160	56.3124	ug/L		93
56)	Dimethyl Disulfide	12.66	79	330648	48.7551	ug/L		95
59)	Toluene	12.83	91	1854015	50.7446	ug/L		85
60)	Ethyl Methacrylate	12.92	69	321229	49.4131	ug/L		74
62)	trans-1,3-Dichloropropene	13.01	75	537979	49.1245	ug/L		95
63)	1,1,2-Trichloroethane	13.22	97	279759	49.2844	ug/L		99
64)	2-Hexanone	13.16	58	73454	46.9913	ug/L	#	78
65)	1,3-Dichloropropane	13.52	76	473022	47.5357	ug/L		82
66)	Tetrachloroethene	13.65	164	391269	50.7389	ug/L		89
67)	Dibromochloromethane	13.91	129	395636	52.3760	ug/L		98
68)	1,2-Dibromoethane	14.16	107	279983	51.6678	ug/L		98
69)	1-Chlorohexane	14.26	91	598538	47.8941	ug/L		82
70)	Chlorobenzene	14.67	112	1252829	50.8044	ug/L		90
71)	1,1,1,2-Tetrachloroethane	14.70	131	454462	51.3423	ug/L		98
72)	Ethylbenzene	14.70	106	730757	49.4755	ug/L	#	37
73)	m-,p-Xylene	14.78	106	1725688	103.3105	ug/L	#	50
74)	o-Xylene	15.35	106	820606	49.7113	ug/L		62
75)	Styrene	15.38	104	1379374	52.7485	ug/L		87
76)	Bromoform	15.88	173	231824	48.2066	ug/L		98
77)	Isopropylbenzene	15.78	105	2151804	53.2997	ug/L		79
79)	1,1,2,2-Tetrachloroethane	15.98	83	308018	43.2352	ug/L		99
81)	1,2,3-Trichloropropane	16.18	110	84476	43.7671	ug/L		89
82)	trans-1,4-Dichloro-2-Buten	16.23	53	110890	46.8882	ug/L		79
83)	n-Propylbenzene	16.28	91	2648101	46.6792	ug/L	#	74
84)	Bromobenzene	16.41	156	510459	45.3094	ug/L		94
85)	1,3,5-Trimethylbenzene	16.47	105	1871012	48.2025	ug/L		81
86)	2-Chlorotoluene	16.55	91	1624961	42.4426	ug/L		81
87)	4-Chlorotoluene	16.60	91	1594673	52.0741	ug/L		77
88)	a-Methylstyrene	16.87	118	1034303	46.7900	ug/L		91
89)	tert-Butylbenzene	16.93	134	384546	44.5634	ug/L		61
90)	1,2,4-Trimethylbenzene	16.99	105	1941255	48.6451	ug/L		76
91)	sec-Butylbenzene	17.20	105	2372505	49.0223	ug/L		78
92)	p-Isopropyltoluene	17.36	119	2039778	49.7129	ug/L		79
93)	1,3-Dichlorobenzene	17.55	146	1101035	48.2222	ug/L		92
94)	1,4-Dichlorobenzene	17.68	146	1074341	46.3475	ug/L		91
95)	n-Butylbenzene	17.89	91	1958137	48.8550	ug/L		80
96)	1,2-Dichlorobenzene	18.17	146	954794	48.1892	ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.18	75	52879	46.5000	ug/L		89
98)	1,2,4-Trichlorobenzene	20.32	180	706743	47.3500	ug/L		99
99)	Hexachlorobutadiene	20.47	225	326960	41.9300	ug/L		94
100)	Naphthalene	20.69	128	992487	49.5802	ug/L		93
101)	1,2,3-Trichlorobenzene	21.00	180	597576	47.2459	ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052615\8M404906.D Vial: 2
Acq On : 26 May 2015 11:50 Operator: TMB
Sample : WG525055-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD70656 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 26 12:12 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

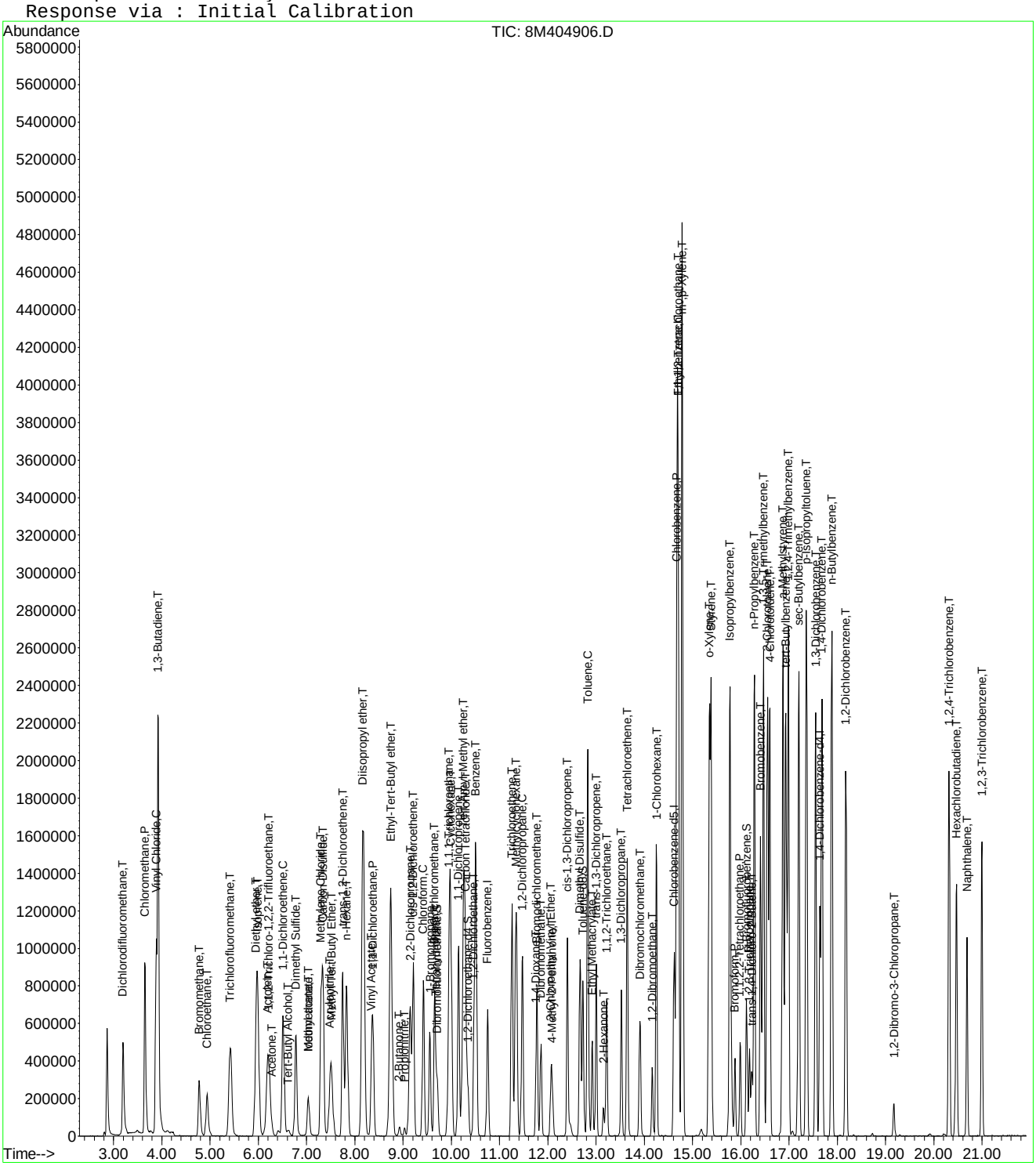

8M404906.D 8260WT.M Tue May 26 12:12:32 2015 Page 3

Continuing Calibration Area and RT check

Instrument: HPMS8
Initial cal date: 12 May 2015 19:42
CCV date: 26 May 2015 11:50
CCV Filename: 8M404906.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	779258	10.75	545682	14.62	300564	17.65
CCV	760558	10.75	615965	14.62	374943	17.64

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\052615\8M404906.D Vial: 2
Acq On : 26 May 2015 11:50 Operator: TMB
Sample : WG525055-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD70656 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	98	0.00
2	T	Dichlorodifluoromethane	0.3875	0.4428	-14.3	105	0.00
3	P	Chloromethane	0.7735	0.8447	-9.2	107	0.00
4	C	Vinyl Chloride	0.7289	0.8653	-18.7	112	0.00
5	T	1,3-Butadiene	0.6155	0.9142	-48.5#	115	0.02
6	T	Bromomethane	0.1537	0.2025	-31.8#	118	0.00
7	T	Chloroethane	0.1983	0.2211	-11.5	110	0.00
8	T	Trichlorofluoromethane	0.4577	0.5103	-11.5	109	0.00
9	T	Diethyl ether	0.1755	0.1625	7.4	97	0.00
10	T	Isoprene	0.3394	0.3544	-4.4	100	0.00
11	T	Acrolein	0.0074	0.0066	10.1	111	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2583	0.2955	-14.4	112	0.00
13	T	Acetone	0.0357	0.0353	1.2	100	0.00
14	C	1,1-Dichloroethene	0.4394	0.4790	-9.0	106	0.00
15	T	Tert-Butyl Alcohol	0.0096	0.0103	-6.9	113	-0.01
16	T	Dimethyl Sulfide	0.2561	0.2743	-7.1	103	0.00
17	T	Iodomethane	0.1417	0.1468	-3.6	83	0.00
18	T	Methyl acetate	0.1274	0.1369	-7.5	109	0.00
19	T	Methylene Chloride	0.2504	0.2783	-11.2	109	0.00
20	T	Carbon Disulfide	0.8083	0.9275	-14.7	106	0.00
21	T	Acrylonitrile	0.0568	0.0583	-2.6	101	0.00
22	T	Methyl Tert Butyl Ether	0.4824	0.4892	-1.4	101	0.00
23	T	trans-1,2-Dichloroethene	0.4194	0.4386	-4.6	103	0.00
24	T	n-Hexane	0.4242	0.4527	-6.7	104	0.00
25	T	Diisopropyl ether	0.9291	0.9501	-2.3	102	0.00
26	T	Vinyl Acetate	0.3067	0.2817	8.2	87	0.00
27	P	1,1-Dichloroethane	0.5064	0.5514	-8.9	104	0.00
28	T	Ethyl-Tert-Butyl ether	0.7290	0.7238	0.7	100	0.00
29	T	2-Butanone	0.0582	0.0573	1.5	98	0.00
30	T	Propionitrile	0.0185	0.0193	-4.0	108	0.00
31	T	2,2-Dichloropropane	0.4178	0.4518	-8.2	108	0.00
32	T	cis-1,2-Dichloroethene	0.2881	0.3108	-7.9	106	0.00
33	C	Chloroform	0.4703	0.5080	-8.0	105	0.00
34		1-Bromopropane	0.0473	0.0503	-6.4	98	0.00
35	T	Bromochloromethane	0.1469	0.1625	-10.6	108	0.00
36	T	Tetrahydrofuran	0.0392	0.0821	-109.4#	218#	0.00
37	S	Dibromofluoromethane	0.2478	0.2517	-1.6	100	0.00
38	T	1,1,1-Trichloroethane	0.4270	0.4827	-13.0	107	0.00
39	T	Cyclohexane	0.5174	0.5542	-7.1	104	0.00
40	T	1,1-Dichloropropene	0.3715	0.4089	-10.1	108	0.00
41	T	Tert-Amyl-Methyl ether	0.5351	0.5379	-0.5	102	0.00
42	T	Carbon Tetrachloride	0.3880	0.4588	-18.3	113	0.00
43	S	1,2-Dichloroethane-d4	0.2329	0.2218	4.7	92	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.58#
45	T	1,2-Dichloroethane	0.3372	0.3473	-3.0	103	0.00
46	T	Benzene	1.0006	1.1277	-12.7	108	0.00
47	T	Trichloroethene	0.2647	0.3033	-14.6	111	0.00
48	T	Methylcyclohexane	0.4296	0.4530	-5.4	103	0.00
49	C	1,2-Dichloropropane	0.2803	0.2998	-7.0	106	0.00
50	T	Bromodichloromethane	0.3451	0.3864	-12.0	108	0.00
51	T	1,4-Dioxane	0.0011	0.0016	-44.4#	142	-0.01
52	T	Dibromomethane	0.1320	0.1415	-7.2	106	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0698	0.1094	-56.9#	171#	0.00
54	T	4-Methyl-2-Pentanone	0.0482	0.0532	-10.3	109	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\052615\8M404906.D Vial: 2
Acq On : 26 May 2015 11:50 Operator: TMB
Sample : WG525055-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD70656 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.3772	0.4248	-12.6	106	0.00
56	T	Dimethyl Disulfide	0.2031	0.2174	-7.0	108	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	113	0.00
58	S	Toluene-d8	1.1666	1.1143	4.5	104	0.00
59	C	Toluene	1.4829	1.5050	-1.5	109	0.00
60	T	Ethyl Methacrylate	0.2638	0.2607	1.2	102	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.18#
62	T	trans-1,3-Dichloropropene	0.4445	0.4367	1.8	107	0.00
63	T	1,1,2-Trichloroethane	0.2304	0.2271	1.4	110	0.00
64	T	2-Hexanone	0.0634	0.0596	6.0	101	0.00
65	T	1,3-Dichloropropane	0.4039	0.3840	4.9	106	0.00
66	T	Tetrachloroethene	0.3130	0.3176	-1.5	113	0.00
67	T	Dibromochloromethane	0.3066	0.3211	-4.8	116	0.00
68	T	1,2-Dibromoethane	0.2199	0.2273	-3.3	112	0.00
69	T	1-Chlorohexane	0.5072	0.4859	4.2	107	0.00
70	P	Chlorobenzene	1.0009	1.0170	-1.6	112	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3593	0.3689	-2.7	114	0.00
72	C	Ethylbenzene	0.5995	0.5932	1.0	113	0.00
73	T	m-,p-Xylene	0.6780	0.7004	-3.3	109	0.00
74	T	o-Xylene	0.6700	0.6661	0.6	111	0.00
75	T	Styrene	1.0613	1.1197	-5.5	110	0.00
76	P	Bromoform	0.1638	0.1882	-14.9	124	0.00
77	T	Isopropylbenzene	1.6386	1.7467	-6.6	112	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	125	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4750	0.4108	13.5	110	-0.01
80	S	p-Bromofluorobenzene	0.8506	0.7513	11.7	110	0.00
81	T	1,2,3-Trichloropropane	0.1287	0.1127	12.5	111	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1577	0.1479	6.2	109	0.00
83	T	n-Propylbenzene	3.7826	3.5313	6.6	112	0.00
84	T	Bromobenzene	0.7512	0.6807	9.4	114	0.00
85	T	1,3,5-Trimethylbenzene	2.5881	2.4951	3.6	111	0.00
86	T	2-Chlorotoluene	2.5528	2.1669	15.1	102	0.00
87	T	4-Chlorotoluene	2.0419	2.1265	-4.1	125	0.00
88	T	a-Methylstyrene	1.4739	1.3793	6.4	113	0.00
89	T	tert-Butylbenzene	0.5754	0.5128	10.9	113	0.00
90	T	1,2,4-Trimethylbenzene	2.6608	2.5887	2.7	112	0.00
91	T	sec-Butylbenzene	3.2269	3.1638	2.0	112	0.00
92	T	p-Isopropyltoluene	2.7358	2.7201	0.6	113	0.00
93	T	1,3-Dichlorobenzene	1.5224	1.4683	3.6	117	0.00
94	T	1,4-Dichlorobenzene	1.5456	1.4327	7.3	115	-0.01
95	T	n-Butylbenzene	2.6725	2.6113	2.3	111	0.00
96	T	1,2-Dichlorobenzene	1.3211	1.2733	3.6	116	-0.01
97	T	1,2-Dibromo-3-Chloropropane	0.0758	0.0705	7.0	115	0.00
98	T	1,2,4-Trichlorobenzene	0.9952	0.9425	5.3	115	0.00
99	T	Hexachlorobutadiene	0.5199	0.4360	16.1	107	0.00
100	T	Naphthalene	1.3347	1.3235	0.8	118	0.00
101	T	1,2,3-Trichlorobenzene	0.8433	0.7969	5.5	116	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M404906.D 8260WT.M Tue May 26 12:17:57 2015 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\052615\8M404906.D Vial: 2
Acq On : 26 May 2015 11:50 Operator: TMB
Sample : WG525055-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD70656 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	98	0.00
2	T	Dichlorodifluoromethane	50.0000	57.1444	-14.3	105	0.00
3	P	Chloromethane	50.0000	54.6006	-9.2	107	0.00
4	C	Vinyl Chloride	50.0000	59.3571	-18.7	112	0.00
5	T	1,3-Butadiene	50.0000	72.7677	-45.5#	115	0.02
6	T	Bromomethane	50.0000	57.8645	-15.7	118	0.00
7	T	Chloroethane	50.0000	55.7341	-11.5	110	0.00
8	T	Trichlorofluoromethane	50.0000	55.7474	-11.5	109	0.00
9	T	Diethyl ether	100.0000	92.6158	7.4	97	0.00
10	T	Isoprene	50.0000	52.2120	-4.4	100	0.00
11	T	Acrolein	50.0000	56.8978	-13.8	111	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	57.1930	-14.4	112	0.00
13	T	Acetone	50.0000	49.3951	1.2	100	0.00
14	C	1,1-Dichloroethene	50.0000	54.5057	-9.0	106	0.00
15	T	Tert-Butyl Alcohol	200.0000	213.7590	-6.9	113	-0.01
16	T	Dimethyl Sulfide	50.0000	53.5508	-7.1	103	0.00
17	T	Iodomethane	50.0000	41.6534	16.7	83	0.00
18	T	Methyl acetate	50.0000	53.7450	-7.5	109	0.00
19	T	Methylene Chloride	50.0000	55.5781	-11.2	109	0.00
20	T	Carbon Disulfide	50.0000	57.3722	-14.7	106	0.00
21	T	Acrylonitrile	50.0000	51.3170	-2.6	101	0.00
22	T	Methyl Tert Butyl Ether	50.0000	50.7070	-1.4	101	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.2850	-4.6	103	0.00
24	T	n-Hexane	50.0000	53.3697	-6.7	104	0.00
25	T	Diisopropyl ether	100.0000	102.2592	-2.3	102	0.00
26	T	Vinyl Acetate	50.0000	45.9122	8.2	87	0.00
27	P	1,1-Dichloroethane	50.0000	54.4474	-8.9	104	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	99.2832	0.7	100	0.00
29	T	2-Butanone	50.0000	49.2594	1.5	98	0.00
30	T	Propionitrile	100.0000	104.0177	-4.0	108	0.00
31	T	2,2-Dichloropropane	50.0000	54.0755	-8.2	108	0.00
32	T	cis-1,2-Dichloroethene	50.0000	53.9419	-7.9	106	0.00
33	C	Chloroform	50.0000	54.0065	-8.0	105	0.00
34		1-Bromopropane	50.0000	48.0816	3.8	98	0.00
35	T	Bromochloromethane	50.0000	55.3007	-10.6	108	0.00
36	T	Tetrahydrofuran	100.0000	209.4409	-109.4#	218	0.00
37	S	Dibromofluoromethane	25.0000	25.3915	-1.6	100	0.00
38	T	1,1,1-Trichloroethane	50.0000	56.5241	-13.0	107	0.00
39	T	Cyclohexane	50.0000	53.5529	-7.1	104	0.00
40	T	1,1-Dichloropropene	50.0000	55.0445	-10.1	108	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	100.5250	-0.5	102	0.00
42	T	Carbon Tetrachloride	50.0000	59.1305	-18.3	113	0.00
43	S	1,2-Dichloroethane-d4	25.0000	23.8128	4.7	92	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.58#
45	T	1,2-Dichloroethane	50.0000	51.5054	-3.0	103	0.00
46	T	Benzene	50.0000	56.3492	-12.7	108	0.00
47	T	Trichloroethene	50.0000	57.2867	-14.6	111	0.00
48	T	Methylcyclohexane	50.0000	52.7246	-5.4	103	0.00
49	C	1,2-Dichloropropane	50.0000	53.4919	-7.0	106	0.00
50	T	Bromodichloromethane	50.0000	55.9944	-12.0	108	0.00
51	T	1,4-Dioxane	200.0000	269.5050	-34.8#	142	-0.01
52	T	Dibromomethane	50.0000	53.6180	-7.2	106	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	81.0490	-62.1#	171	0.00
54	T	4-Methyl-2-Pentanone	50.0000	55.1692	-10.3	109	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\052615\8M404906.D Vial: 2
Acq On : 26 May 2015 11:50 Operator: TMB
Sample : WG525055-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD70656 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	56.3124	-12.6	106	0.00
56	T	Dimethyl Disulfide	50.0000	48.7551	2.5	108	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	113	0.00
58	S	Toluene-d8	25.0000	23.8794	4.5	104	0.00
59	C	Toluene	50.0000	50.7446	-1.5	109	0.00
60	T	Ethyl Methacrylate	50.0000	49.4131	1.2	102	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.18#
62	T	trans-1,3-Dichloropropene	50.0000	49.1245	1.8	107	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.2844	1.4	110	0.00
64	T	2-Hexanone	50.0000	46.9913	6.0	101	0.00
65	T	1,3-Dichloropropane	50.0000	47.5357	4.9	106	0.00
66	T	Tetrachloroethene	50.0000	50.7389	-1.5	113	0.00
67	T	Dibromochloromethane	50.0000	52.3760	-4.8	116	0.00
68	T	1,2-Dibromoethane	50.0000	51.6678	-3.3	112	0.00
69	T	1-Chlorohexane	50.0000	47.8941	4.2	107	0.00
70	P	Chlorobenzene	50.0000	50.8044	-1.6	112	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	51.3423	-2.7	114	0.00
72	C	Ethylbenzene	50.0000	49.4755	1.0	113	0.00
73	T	m-,p-Xylene	100.0000	103.3105	-3.3	109	0.00
74	T	o-Xylene	50.0000	49.7113	0.6	111	0.00
75	T	Styrene	50.0000	52.7485	-5.5	110	0.00
76	P	Bromoform	50.0000	48.2066	3.6	124	0.00
77	T	Isopropylbenzene	50.0000	53.2997	-6.6	112	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	125	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	43.2352	13.5	110	-0.01
80	S	p-Bromofluorobenzene	25.0000	22.0834	11.7	110	0.00
81	T	1,2,3-Trichloropropane	50.0000	43.7671	12.5	111	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	46.8882	6.2	109	0.00
83	T	n-Propylbenzene	50.0000	46.6792	6.6	112	0.00
84	T	Bromobenzene	50.0000	45.3094	9.4	114	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	48.2025	3.6	111	0.00
86	T	2-Chlorotoluene	50.0000	42.4426	15.1	102	0.00
87	T	4-Chlorotoluene	50.0000	52.0741	-4.1	125	0.00
88	T	a-Methylstyrene	50.0000	46.7900	6.4	113	0.00
89	T	tert-Butylbenzene	50.0000	44.5634	10.9	113	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	48.6451	2.7	112	0.00
91	T	sec-Butylbenzene	50.0000	49.0223	2.0	112	0.00
92	T	p-Isopropyltoluene	50.0000	49.7129	0.6	113	0.00
93	T	1,3-Dichlorobenzene	50.0000	48.2222	3.6	117	0.00
94	T	1,4-Dichlorobenzene	50.0000	46.3475	7.3	115	-0.01
95	T	n-Butylbenzene	50.0000	48.8550	2.3	111	0.00
96	T	1,2-Dichlorobenzene	50.0000	48.1893	3.6	116	-0.01
97	T	1,2-Dibromo-3-Chloropropane	50.0000	46.5000	7.0	115	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	47.3500	5.3	115	0.00
99	T	Hexachlorobutadiene	50.0000	41.9301	16.1	107	0.00
100	T	Naphthalene	50.0000	49.5802	0.8	118	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	47.2459	5.5	116	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\2\DATA\100214\8M400357.D          Vial: 3
Acq On    :  2 Oct 2014  11:58                       Operator: TMB
Sample    : WG494714-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD66476                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
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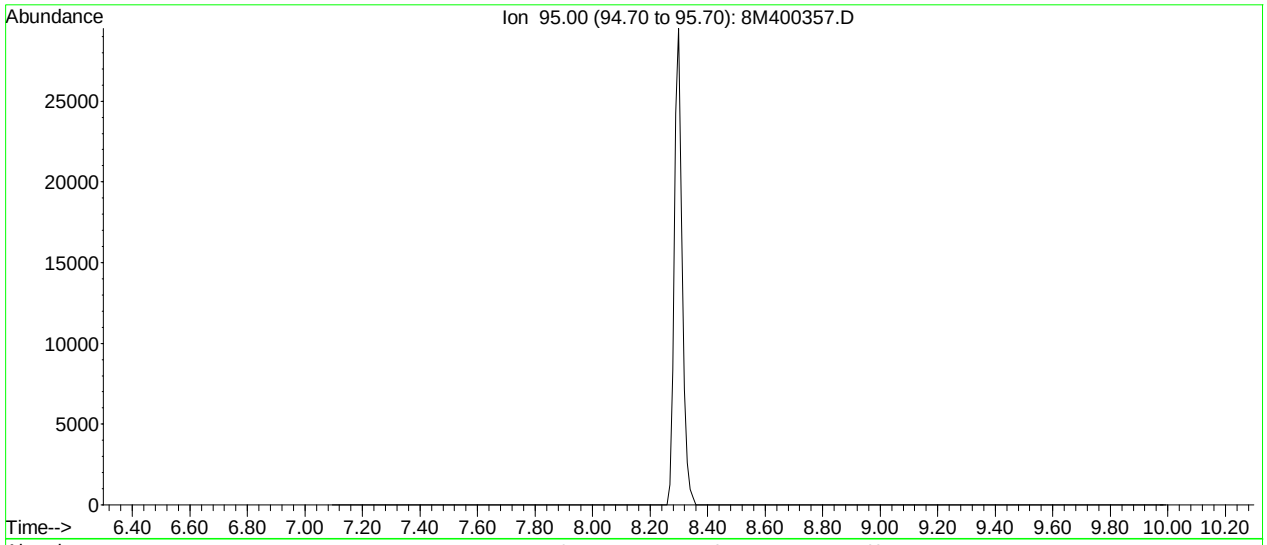

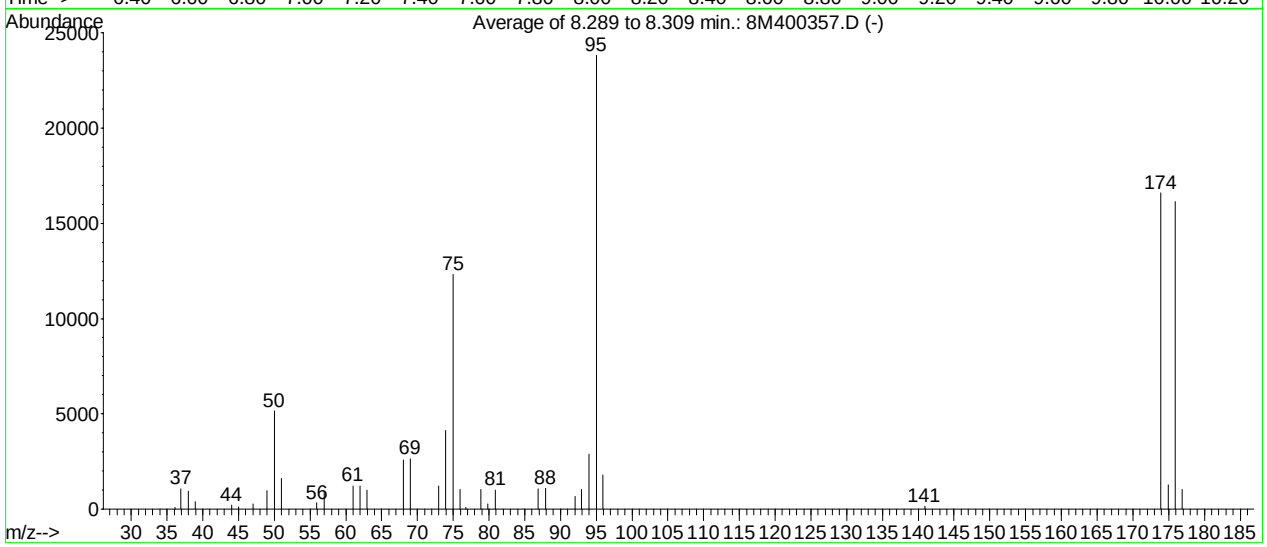

AutoFind: Scans 118, 119, 120; Background Corrected with Scan 113

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.7	5158	PASS
75	95	30	60	51.7	12312	PASS
95	95	100	100	100.0	23818	PASS
96	95	5	9	7.6	1800	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	69.7	16590	PASS
175	174	5	9	7.8	1290	PASS
176	174	95	101	97.3	16145	PASS
177	176	5	9	6.3	1023	PASS

8M400357.D BFB.M Thu Oct 02 12:09:27 2014

BFB

```
Data File : C:\MSDCHEM\2\DATA\051215\8M404577.D          Vial: 2
Acq On    : 12 May 2015  15:55                       Operator: TMB
Sample    : WG523161-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD70032                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
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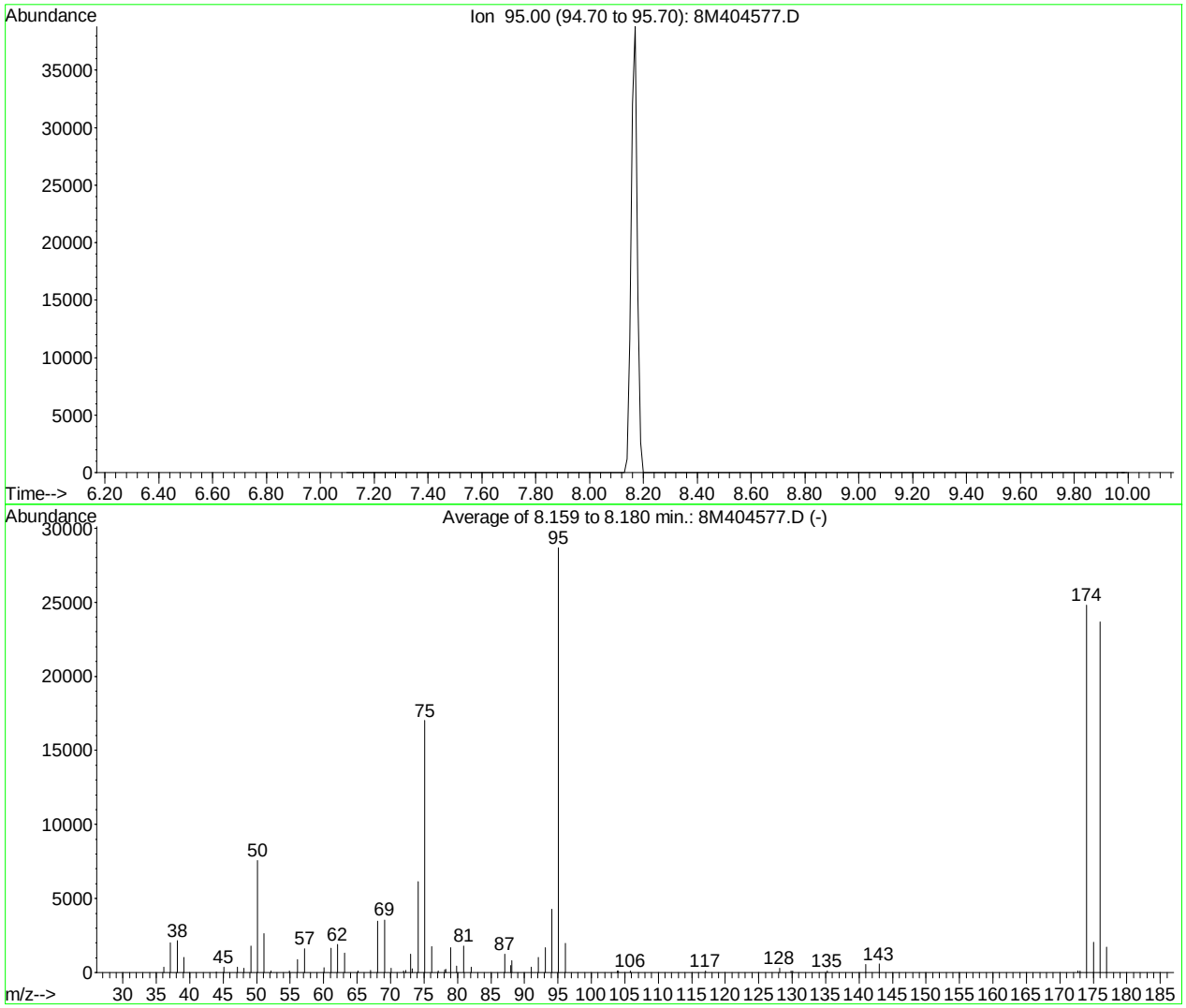

AutoFind: Scans 105, 106, 107; Background Corrected with Scan 100

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	26.3	7551	PASS
75	95	30	60	59.4	17014	PASS
95	95	100	100	100.0	28666	PASS
96	95	5	9	6.9	1981	PASS
173	174	0.00	2	0.5	119	PASS
174	95	50	100	86.5	24808	PASS
175	174	5	9	8.2	2031	PASS
176	174	95	101	95.4	23666	PASS
177	176	5	9	7.2	1714	PASS

8M404577.D BFB.M Tue May 12 16:07:11 2015

BFB

```
Data File : C:\MSDCHEM\2\DATA\052315\8M404876.D          Vial: 1
Acq On    : 23 May 2015  16:34                       Operator: FJB
Sample    : WG524935-01 BFB 50ng 8260                Inst    : HPMS8
Misc      : 1,1 STD70032                             Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title     : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
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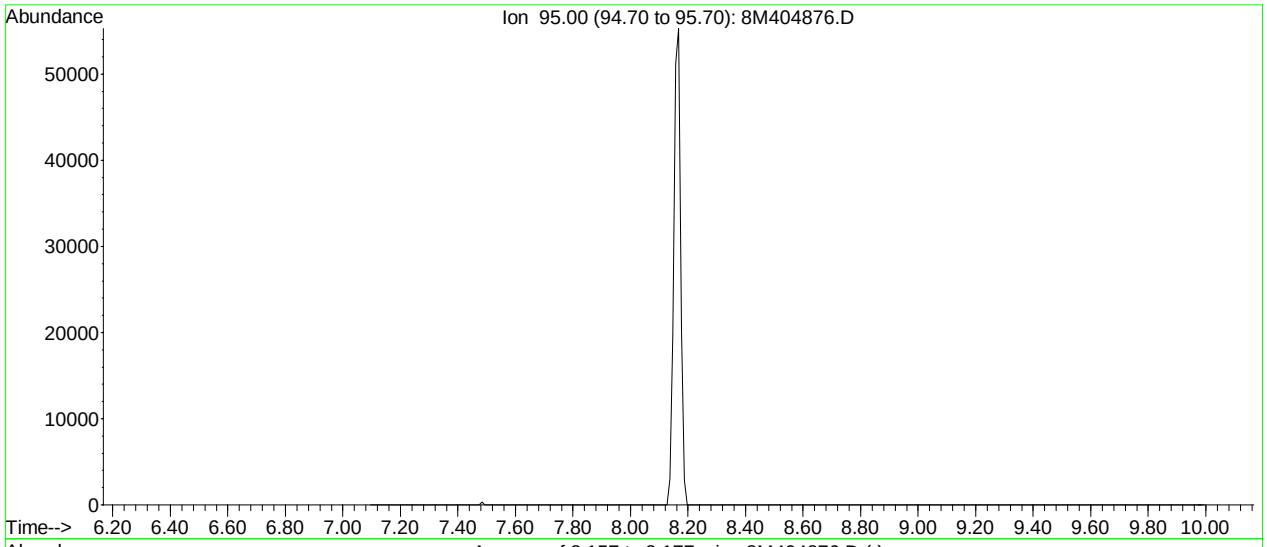

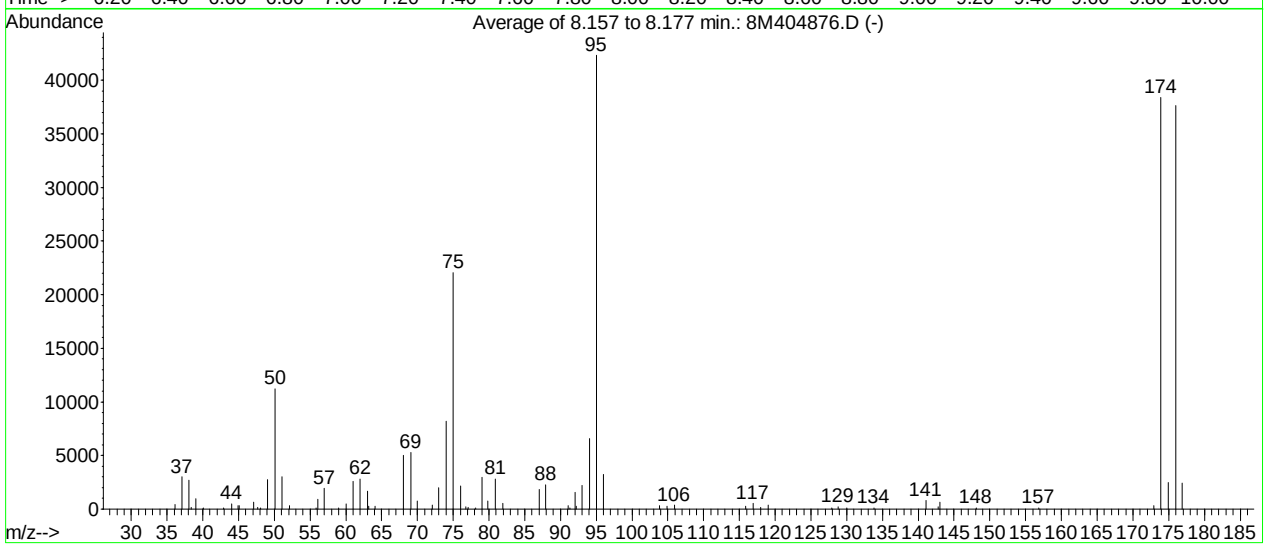

AutoFind: Scans 105, 106, 107; Background Corrected with Scan 100

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	26.6	11234	PASS
75	95	30	60	52.1	22062	PASS
95	95	100	100	100.0	42312	PASS
96	95	5	9	7.7	3241	PASS
173	174	0.00	2	0.9	335	PASS
174	95	50	100	90.7	38394	PASS
175	174	5	9	6.5	2485	PASS
176	174	95	101	98.0	37610	PASS
177	176	5	9	6.5	2436	PASS

8M404876.D 8260WT.M Sat May 23 17:24:17 2015

BFB

Data File : C:\MSDCHEM\2\DATA\052615\8M404905.D Vial: 2
Acq On : 26 May 2015 11:26 Operator: TMB
Sample : WG525055-01 50ng BFB STD 8260 Inst : HPMS8
Misc : 1,1 STD70707 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title : SOP:OVL MSV01

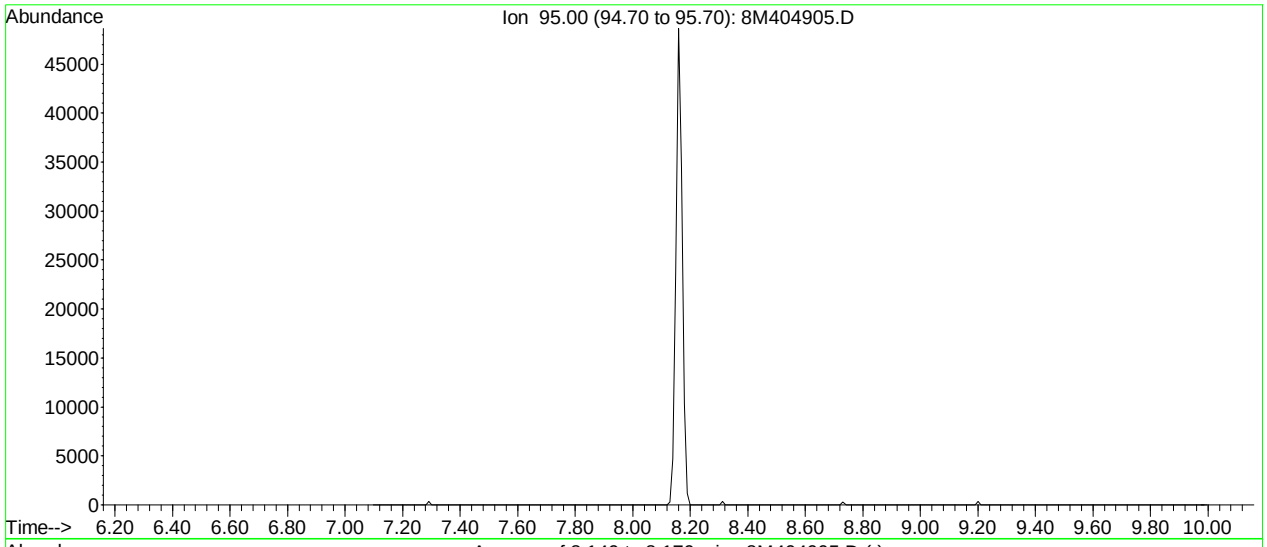

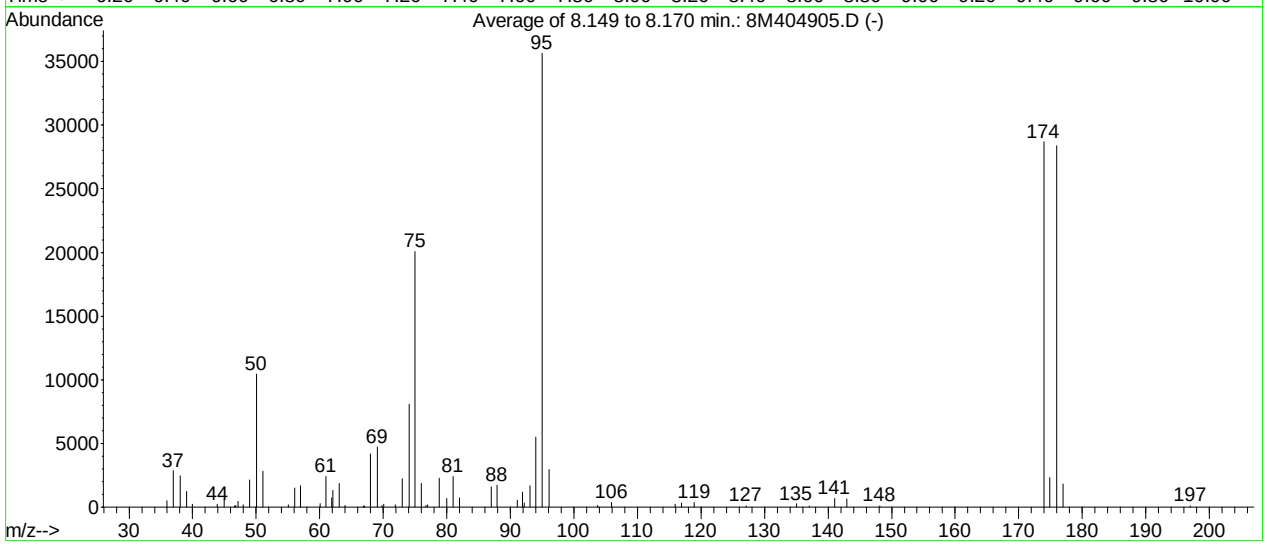

AutoFind: Scans 104, 105, 106; Background Corrected with Scan 99

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	29.4	10466	PASS
75	95	30	60	56.4	20089	PASS
95	95	100	100	100.0	35637	PASS
96	95	5	9	8.3	2974	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	80.5	28683	PASS
175	174	5	9	8.2	2341	PASS
176	174	95	101	98.9	28379	PASS
177	176	5	9	6.4	1829	PASS

8M404905.D BFB.M Tue May 26 11:41:17 2015

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052315\8M404879.D Vial: 4
Acq On : 23 May 2015 17:53 Operator: FJB
Sample : WG524936-01 VBLK0523 BLANK 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 26 08:18:21 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	689774	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	546576	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	292737	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	169850	24.8432 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.36%		
43) 1,2-Dichloroethane-d4	10.35	65	154075	23.9805 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 95.92%		
58) Toluene-d8	12.73	98	626549	24.5649 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.24%		
80) p-Bromofluorobenzene	16.12	95	236140	23.7101 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.84%		

Target Compounds

					Qvalue
5) 1,3-Butadiene	3.93	54	375	Below Cal #	58
13) Acetone	6.28	43	592	0.6010 ug/L #	36
56) Dimethyl Disulfide	12.74	79	202	3.0550 ug/L #	1
81) 1,2,3-Trichloropropane	16.12	110	398	0.2641 ug/L #	1
97) 1,2-Dibromo-3-Chloropropan	19.25	75	222	0.2500 ug/L #	1

(#) = qualifier out of range (m) = manual integration
8M404879.D 8260WT.M Tue May 26 08:18:21 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052315\8M404879.D Vial: 4
Acq On : 23 May 2015 17:53 Operator: FJB
Sample : WG524936-01 VBLK0523 BLANK 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 26 8:18 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

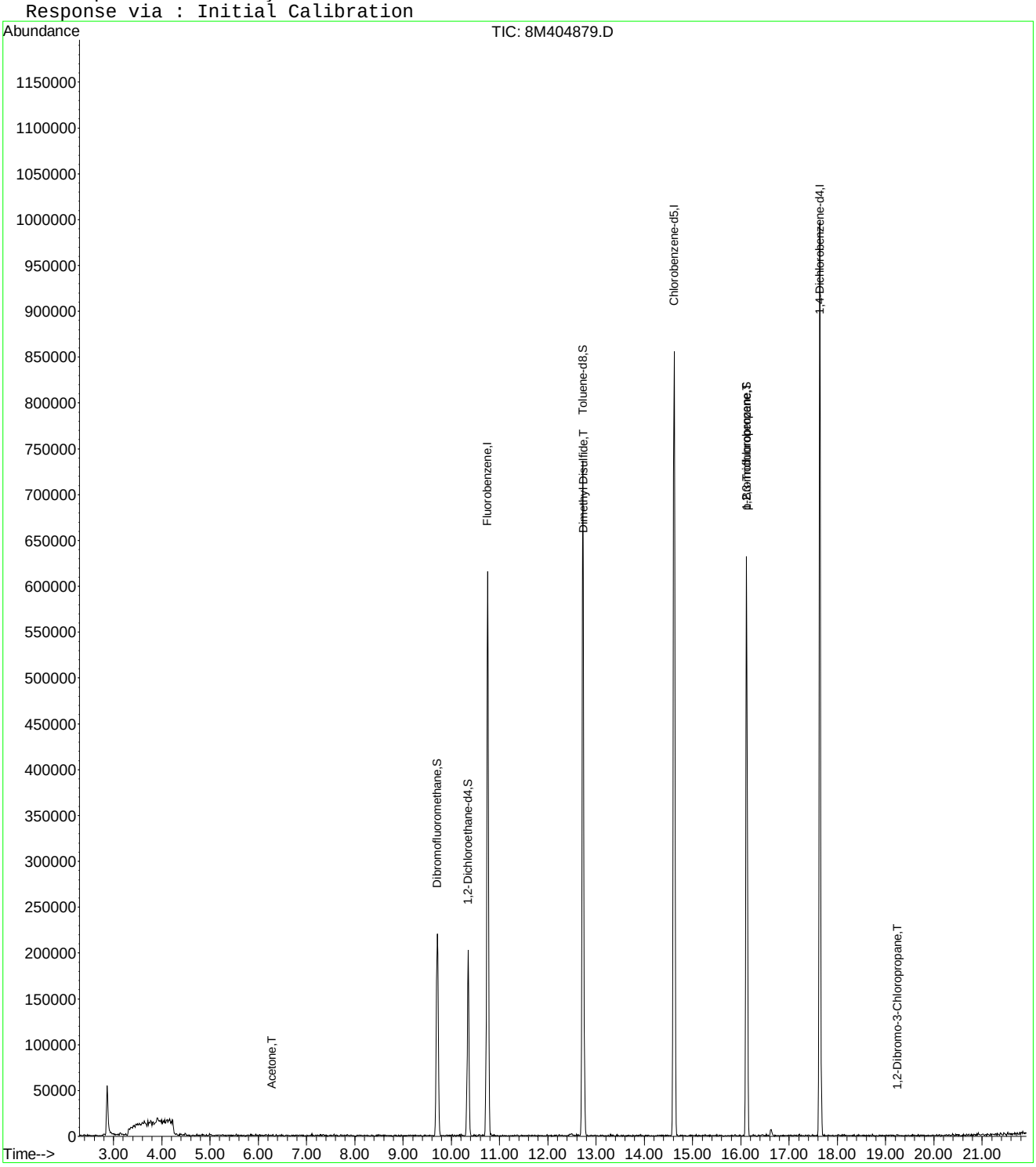

8M404879.D 8260WT.M Tue May 26 08:18:21 2015 Page 2

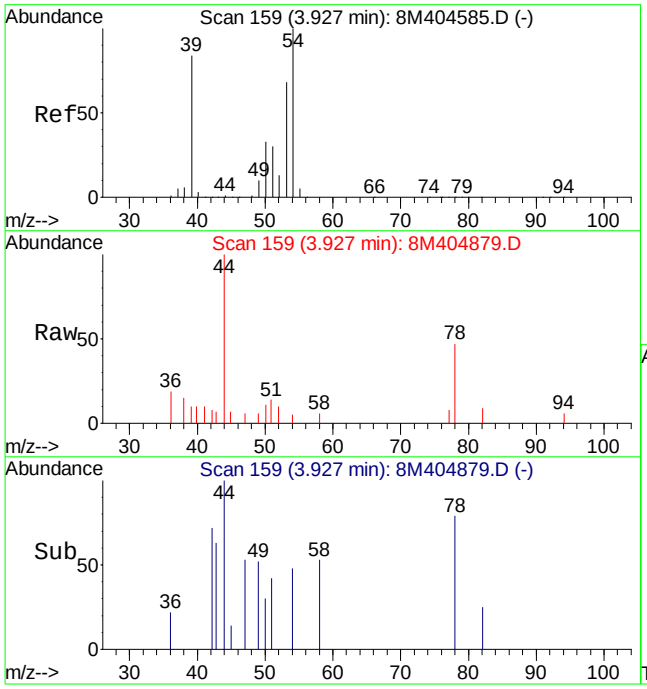

#5
1,3-Butadiene
Concen: Below Cal
RT: 3.93 min Scan# 159
Delta R.T. 0.02 min
Lab File: 8M404879.D
Acq: 23 May 2015 17:53

Tgt Ion: 54 Resp: 375

Ion	Ratio	Lower	Upper
54	100		
39	151.2	50.7	118.3#
53	65.6	40.4	94.4

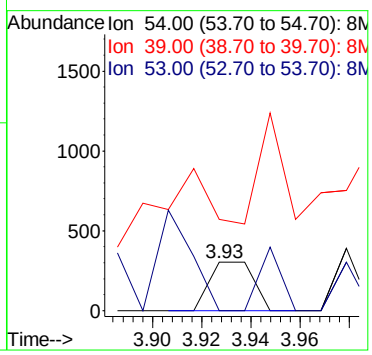

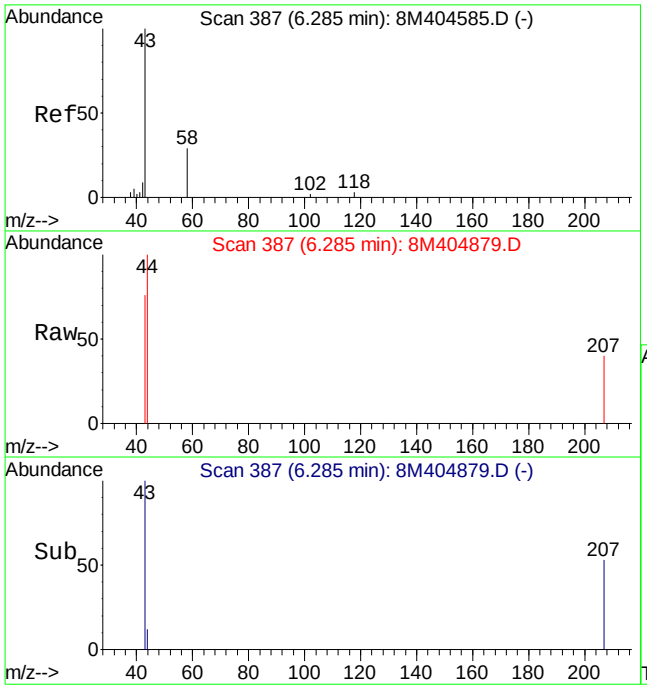

#13
Acetone
Concen: 0.60 ug/L
RT: 6.28 min Scan# 387
Delta R.T. -0.00 min
Lab File: 8M404879.D
Acq: 23 May 2015 17:53

Tgt Ion: 43 Resp: 592

Ion	Ratio	Lower	Upper
43	100		
58	0.0	23.2	54.0#

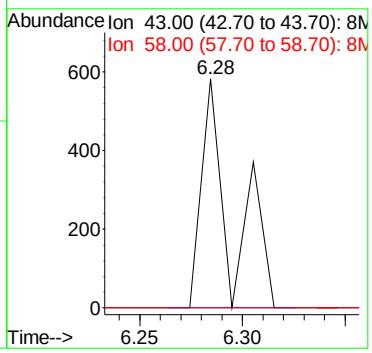

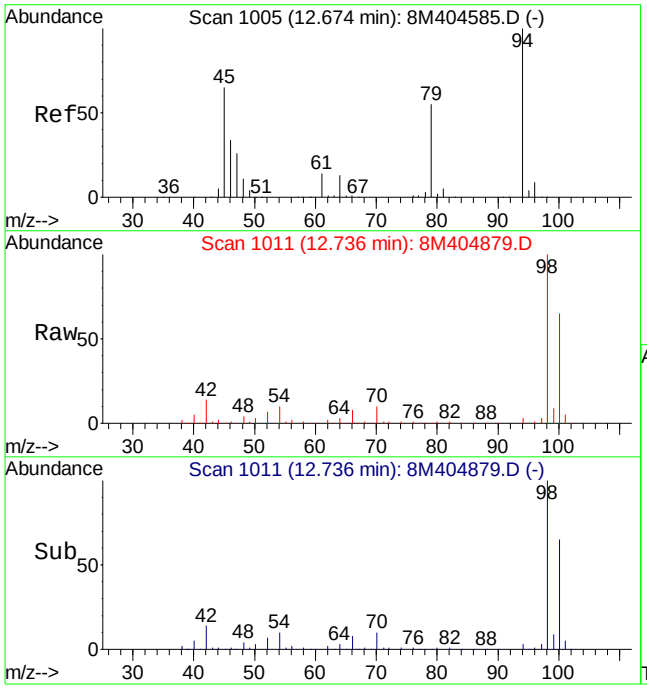

#56
Dimethyl Disulfide
Concen: 3.06 ug/L
RT: 12.74 min Scan# 1011
Delta R.T. 0.07 min
Lab File: 8M404879.D
Acq: 23 May 2015 17:53

Tgt Ion: 79 Resp: 202

Ion	Ratio	Lower	Upper
79	100		
94	8469.8	110.5	257.9#

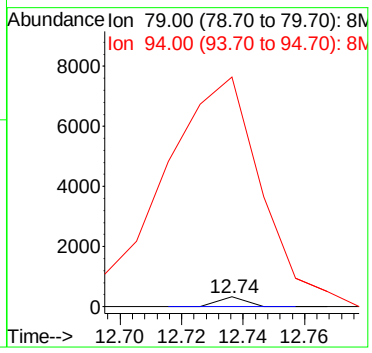

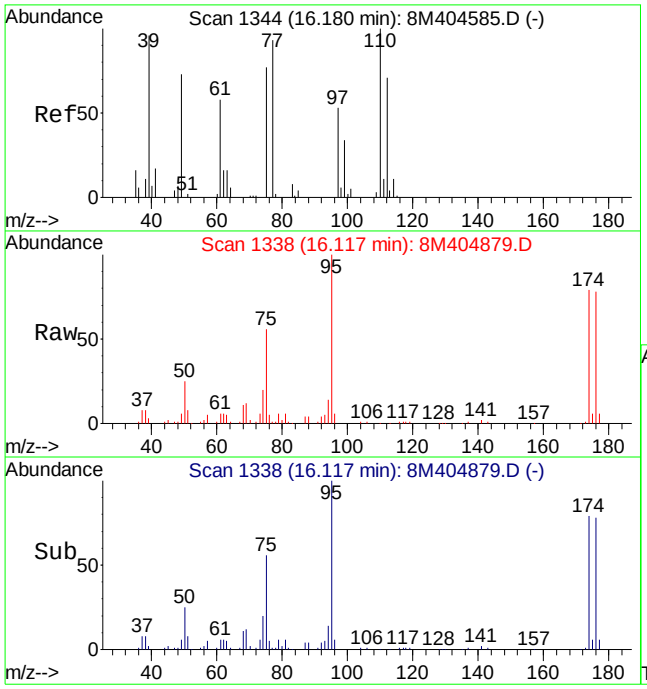

#81
1,2,3-Trichloropropane
Concen: 0.26 ug/L
RT: 16.12 min Scan# 1338
Delta R.T. -0.07 min
Lab File: 8M404879.D
Acq: 23 May 2015 17:53

Tgt Ion:110 Resp: 398

Ion	Ratio	Lower	Upper
110	100		
75	33570.6	115.6	269.6#
97	52.5	36.7	85.7

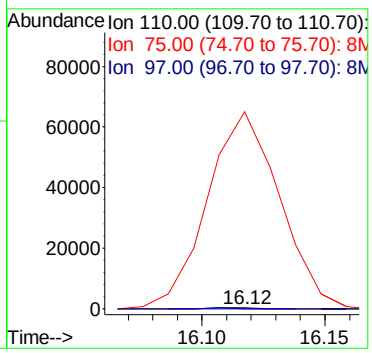

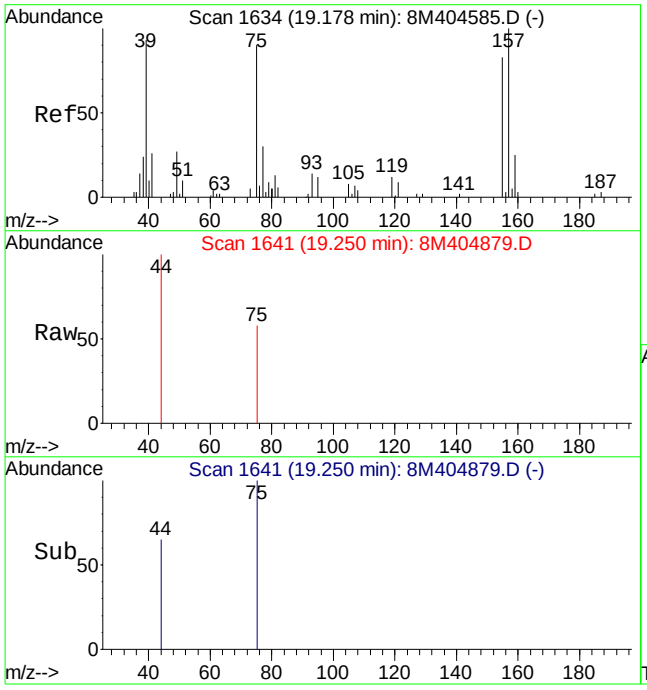

#97
1,2-Dibromo-3-Chloropropane
Concen: 0.25 ug/L
RT: 19.25 min Scan# 1641
Delta R.T. 0.08 min
Lab File: 8M404879.D
Acq: 23 May 2015 17:53

Tgt Ion: 75 Resp: 222

Ion	Ratio	Lower	Upper
75	100		
157	0.0	74.8	174.6#

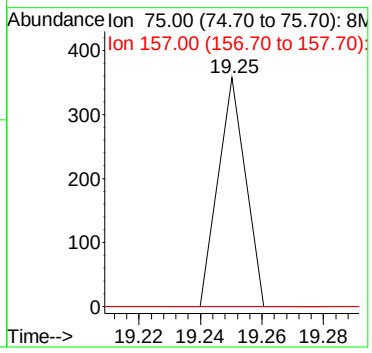

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052615\8M404908.D Vial: 4
Acq On : 26 May 2015 12:48 Operator: TMB
Sample : WG525056-01 VBLK0526 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 27 08:48:59 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	711532	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	574760	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	303161	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	176215	24.9860 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.96%		
43) 1,2-Dichloroethane-d4	10.35	65	159812	24.1128 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.44%		
58) Toluene-d8	12.73	98	650102	24.2385 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.96%		
80) p-Bromofluorobenzene	16.12	95	245758	23.8273 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.32%		

Target Compounds

					Qvalue
13) Acetone	6.28	43	248	0.2441 ug/L #	36
19) Methylene Chloride	7.32	84	1795	0.2519 ug/L	73
36) Tetrahydrofuran	9.68	42	211	0.1892 ug/L #	32
56) Dimethyl Disulfide	12.72	79	259	3.0625 ug/L #	1

(#) = qualifier out of range (m) = manual integration
8M404908.D 8260WT.M Wed May 27 08:49:00 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052615\8M404908.D Vial: 4
Acq On : 26 May 2015 12:48 Operator: TMB
Sample : WG525056-01 VBLK0526 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 27 8:48 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

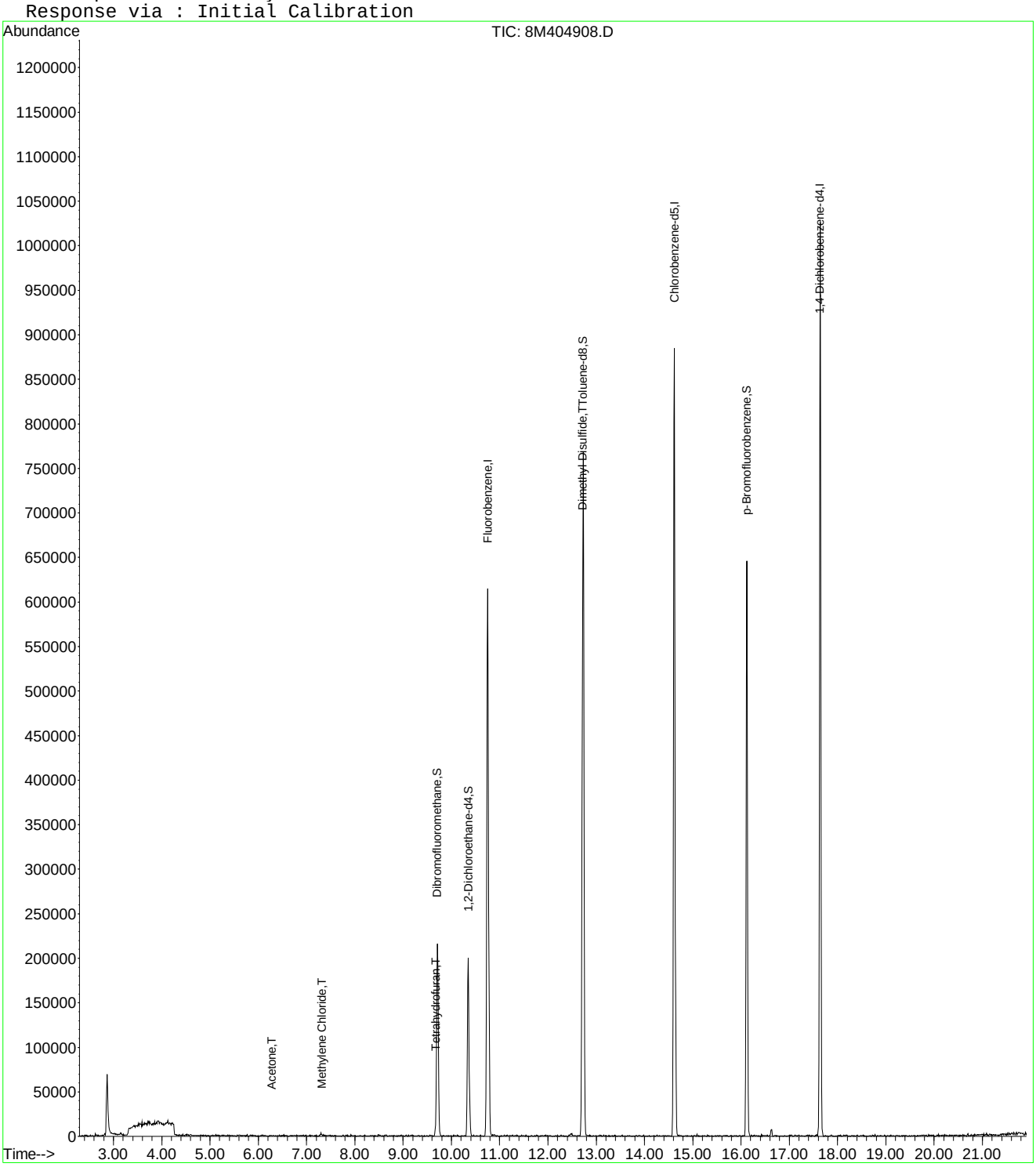

8M404908.D 8260WT.M Wed May 27 08:49:00 2015 Page 2

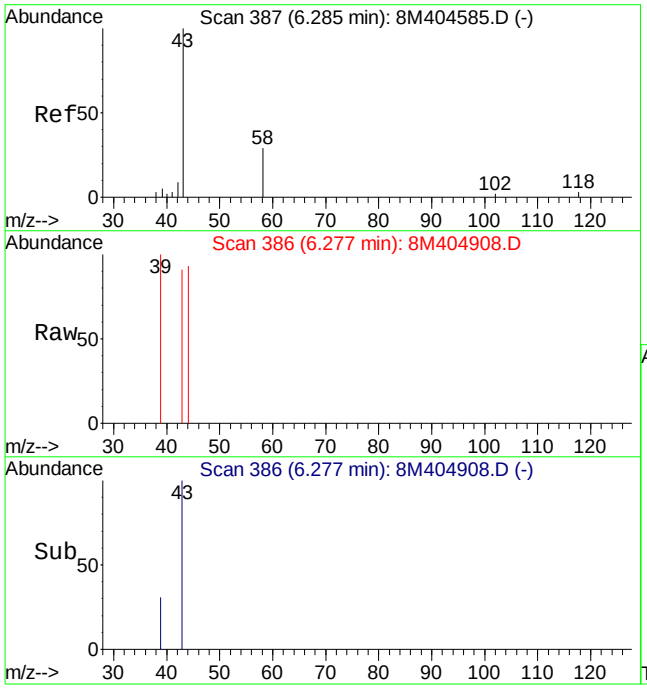

#13
Acetone
Concen: 0.24 ug/L
RT: 6.28 min Scan# 386
Delta R.T. -0.01 min
Lab File: 8M404908.D
Acq: 26 May 2015 12:48

Tgt Ion: 43 Resp: 248

Ion	Ratio	Lower	Upper
43	100		
58	0.0	23.2	54.0#

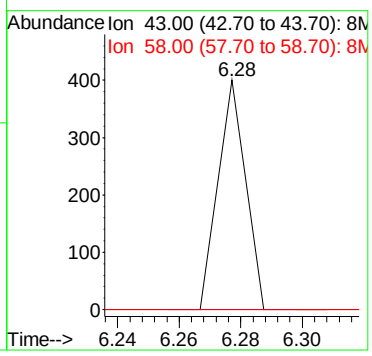

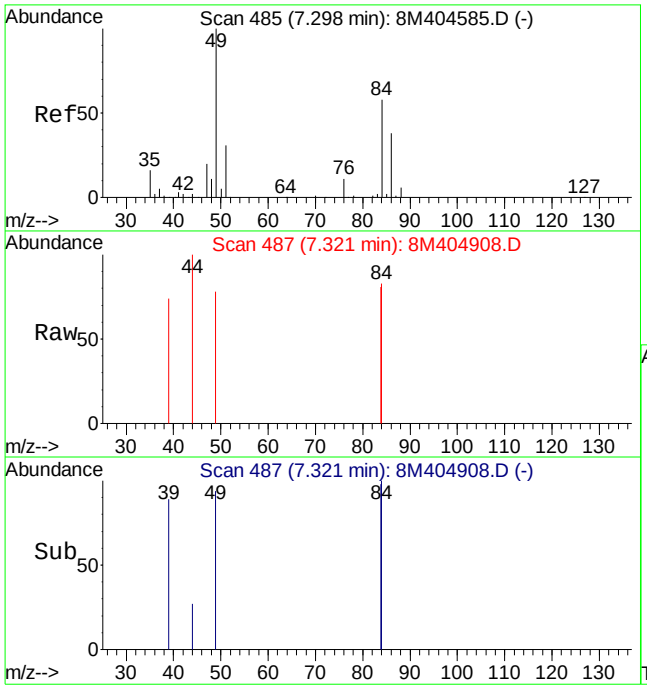

#19
Methylene Chloride
Concen: 0.25 ug/L
RT: 7.32 min Scan# 487
Delta R.T. 0.02 min
Lab File: 8M404908.D
Acq: 26 May 2015 12:48

Tgt Ion: 84 Resp: 1795

Ion	Ratio	Lower	Upper
84	100		
49	89.5	71.5	166.7

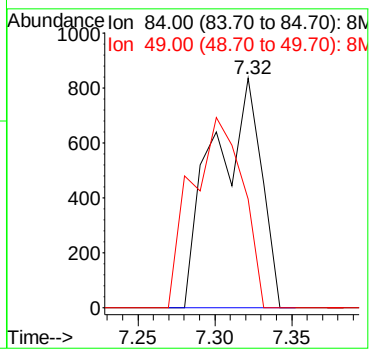

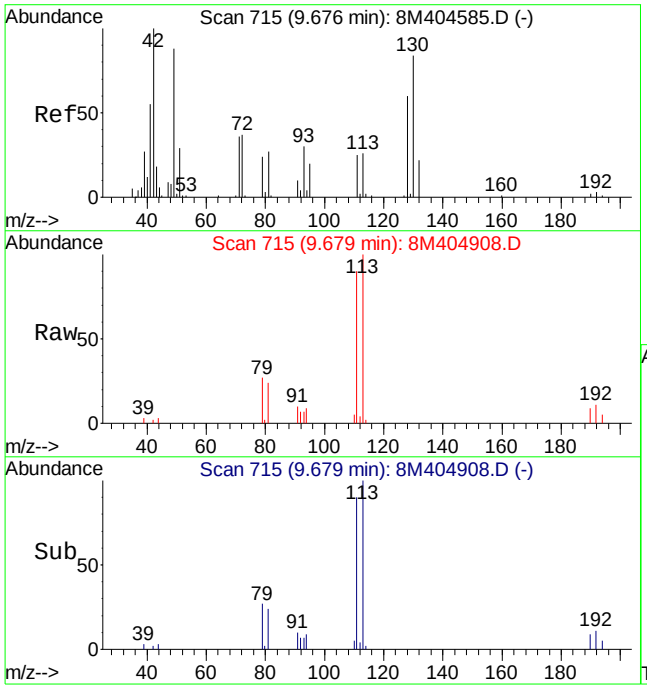

#36
Tetrahydrofuran
Concen: 0.19 ug/L
RT: 9.68 min Scan# 715
Delta R.T. -0.00 min
Lab File: 8M404908.D
Acq: 26 May 2015 12:48

Tgt Ion: 42 Resp: 211

Ion	Ratio	Lower	Upper
42	100		
72	0.0	27.5	64.3#
71	0.0	25.4	59.2#

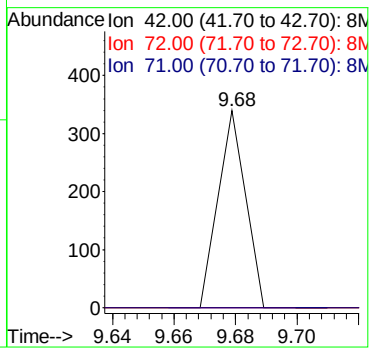

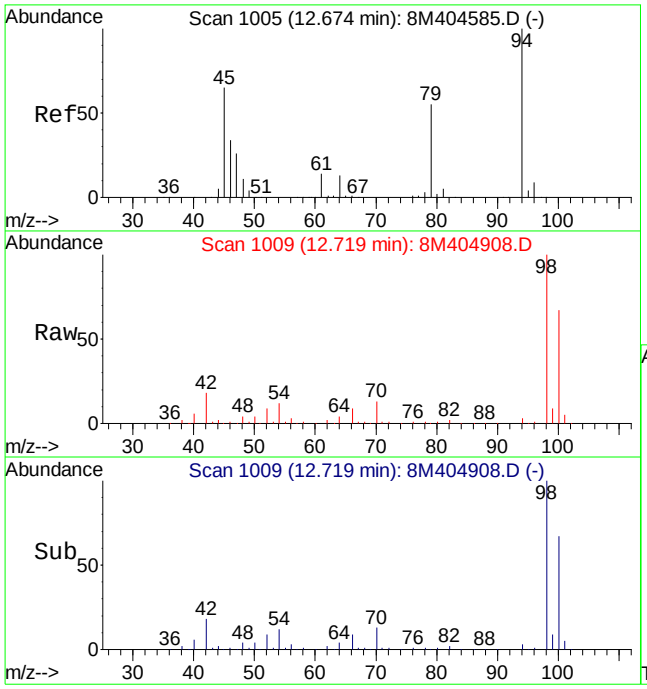

#56
Dimethyl Disulfide
Concen: 3.06 ug/L
RT: 12.72 min Scan# 1009
Delta R.T. 0.05 min
Lab File: 8M404908.D
Acq: 26 May 2015 12:48

Tgt Ion: 79 Resp: 259

Ion	Ratio	Lower	Upper
79	100		
94	6471.0	110.5	257.9#

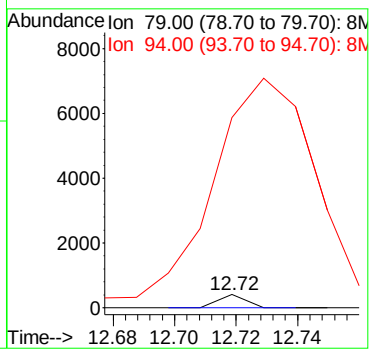

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052315\8M404880.D Vial: 5
Acq On : 23 May 2015 18:22 Operator: FJB
Sample : WG524936-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD70658 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 23 18:44:08 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	715700	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	581225	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	334709	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.71	111	176420	24.8694 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.48%		
43) 1,2-Dichloroethane-d4	10.35	65	163762	24.5649 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.24%		
58) Toluene-d8	12.73	98	652213	24.0467 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.20%		
80) p-Bromofluorobenzene	16.12	95	265178	23.2869 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.16%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.19	85	264927	23.8844 ug/L	100
3) Chloromethane	3.65	50	451345	20.3825 ug/L	96
4) Vinyl Chloride	3.88	62	482539	23.1257 ug/L	95
5) 1,3-Butadiene	3.92	54	355631	17.6697 ug/L	95
6) Bromomethane	4.78	94	117296	24.7460 ug/L	99
7) Chloroethane	4.93	64	119025	20.9618 ug/L	90
8) Trichlorofluoromethane	5.42	101	255593	19.5059 ug/L	98
9) Diethyl ether	5.94	59	495342	98.6014 ug/L	89
10) Isoprene	5.99	67	218600	22.4988 ug/L	80
11) Acrolein	6.18	56	32241	105.1331 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.19	101	142392	19.2532 ug/L	94
13) Acetone	6.29	43	23625	23.1138 ug/L	84
14) 1,1-Dichloroethene	6.51	61	221881	17.6401 ug/L	86
15) Tert-Butyl Alcohol	6.63	59	48779	177.3558 ug/L	95
16) Dimethyl Sulfide	6.78	62	199452	27.1993 ug/L	77
17) Iodomethane	7.04	142	72184	15.1034 ug/L	84
18) Methyl acetate	7.04	43	67174	18.4170 ug/L	91
19) Methylene Chloride	7.30	84	146342	20.4153 ug/L #	56
20) Carbon Disulfide	7.34	76	436116	18.8475 ug/L	96
21) Acrylonitrile	7.47	53	34392	21.1397 ug/L	95
22) Methyl Tert Butyl Ether	7.52	73	287611	20.8270 ug/L	96
23) trans-1,2-Dichloroethene	7.74	61	225503	18.7794 ug/L	88
24) n-Hexane	7.83	57	216373	17.8192 ug/L	93
25) Diisopropyl ether	8.17	45	2841430	106.8249 ug/L	91
26) Vinyl Acetate	8.34	43	222713	25.3617 ug/L	91
27) 1,1-Dichloroethane	8.37	63	279300	19.2675 ug/L	94
28) Ethyl-Tert-Butyl ether	8.75	59	2214797	106.1208 ug/L	93
29) 2-Butanone	8.92	43	38911	23.3653 ug/L	86
30) Propionitrile	9.03	54	56180	105.8441 ug/L	99
31) 2,2-Dichloropropane	9.14	77	225166	18.8267 ug/L	98
32) cis-1,2-Dichloroethene	9.21	96	163584	19.8344 ug/L	80
33) Chloroform	9.42	83	269059	19.9825 ug/L	96
34) 1-Bromopropane	9.56	122	32958	22.2696 ug/L	99
35) Bromochloromethane	9.65	130	85670	20.3692 ug/L #	71
36) Tetrahydrofuran	9.67	42	119503	106.5368 ug/L	85
38) 1,1,1-Trichloroethane	9.96	97	243313	19.9062 ug/L	99
39) Cyclohexane	9.99	56	286368	19.3316 ug/L	86
40) 1,1-Dichloropropene	10.15	75	201250	18.9243 ug/L	97
41) Tert-Amyl-Methyl ether	10.26	73	1630333	106.4278 ug/L	97
42) Carbon Tetrachloride	10.29	117	228616	20.5820 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M404880.D 8260WT.M Sat May 23 18:44:08 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052315\8M404880.D Vial: 5
Acq On : 23 May 2015 18:22 Operator: FJB
Sample : WG524936-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD70658 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 23 18:44:08 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.46	62	193980	20.0961 ug/L		91
46)	Benzene	10.50	78	598768	20.9025 ug/L		98
47)	Trichloroethene	11.26	130	153457	20.2524 ug/L		97
48)	Methylcyclohexane	11.34	83	241871	19.6666 ug/L		90
49)	1,2-Dichloropropane	11.48	63	166834	20.7936 ug/L		97
50)	Bromodichloromethane	11.77	83	208714	21.1293 ug/L		95
51)	1,4-Dioxane	11.76	88	5107	174.9812 ug/L		85
52)	Dibromomethane	11.86	93	77413	20.4869 ug/L		90
53)	2-Chloroethyl Vinyl Ether	12.07	63	57807	29.3121 ug/L		92
54)	4-Methyl-2-Pentanone	12.10	58	34123	24.7382 ug/L		88
55)	cis-1,3-Dichloropropene	12.41	75	237613	22.0057 ug/L		96
56)	Dimethyl Disulfide	12.67	79	127190	21.7180 ug/L		90
59)	Toluene	12.83	91	643426	18.6632 ug/L		84
60)	Ethyl Methacrylate	12.91	69	128180	20.8958 ug/L		74
62)	trans-1,3-Dichloropropene	13.01	75	189133	18.3026 ug/L		96
63)	1,1,2-Trichloroethane	13.21	97	102260	19.0916 ug/L		100
64)	2-Hexanone	13.15	58	30399	20.6098 ug/L	#	83
65)	1,3-Dichloropropane	13.52	76	183004	19.4899 ug/L		83
66)	Tetrachloroethene	13.65	164	127513	17.5239 ug/L		89
67)	Dibromochloromethane	13.91	129	137673	19.3151 ug/L		98
68)	1,2-Dibromoethane	14.16	107	98682	19.2991 ug/L		99
69)	1-Chlorohexane	14.25	91	213052	18.0671 ug/L		85
70)	Chlorobenzene	14.67	112	412627	17.7329 ug/L		91
71)	1,1,1,2-Tetrachloroethane	14.70	131	154137	18.4542 ug/L		97
72)	Ethylbenzene	14.69	106	237335	17.0291 ug/L	#	27
73)	m-,p-Xylene	14.78	106	571226	36.2412 ug/L	#	45
74)	o-Xylene	15.34	106	266495	17.1089 ug/L		62
75)	Styrene	15.38	104	478564	19.3946 ug/L		84
76)	Bromoform	15.88	173	81667	18.4867 ug/L		98
77)	Isopropylbenzene	15.77	105	690611	18.1287 ug/L		78
79)	1,1,2,2-Tetrachloroethane	15.98	83	118396	18.6164 ug/L		97
81)	1,2,3-Trichloropropane	16.18	110	31806	18.4596 ug/L		87
82)	trans-1,4-Dichloro-2-Buten	16.23	53	40364	19.1189 ug/L		69
83)	n-Propylbenzene	16.27	91	860738	16.9964 ug/L	#	72
84)	Bromobenzene	16.41	156	174715	17.3722 ug/L		90
85)	1,3,5-Trimethylbenzene	16.47	105	649351	18.7400 ug/L		80
86)	2-Chlorotoluene	16.55	91	543448	15.9006 ug/L		80
87)	4-Chlorotoluene	16.59	91	494918	18.1043 ug/L		77
88)	a-Methylstyrene	16.87	118	368681	18.6833 ug/L		90
89)	tert-Butylbenzene	16.94	134	123991	16.0960 ug/L		61
90)	1,2,4-Trimethylbenzene	16.99	105	665997	18.6950 ug/L		76
91)	sec-Butylbenzene	17.20	105	752125	17.4090 ug/L	#	76
92)	p-Isopropyltoluene	17.36	119	626761	17.1114 ug/L		76
93)	1,3-Dichlorobenzene	17.56	146	346411	16.9956 ug/L		91
94)	1,4-Dichlorobenzene	17.68	146	372431	17.9981 ug/L		93
95)	n-Butylbenzene	17.89	91	652122	18.2260 ug/L		78
96)	1,2-Dichlorobenzene	18.18	146	307382	17.3787 ug/L		93
97)	1,2-Dibromo-3-Chloropropan	19.17	75	19553	19.2611 ug/L		74
98)	1,2,4-Trichlorobenzene	20.32	180	240016	18.0134 ug/L		98
99)	Hexachlorobutadiene	20.47	225	107619	15.4603 ug/L		95
100)	Naphthalene	20.69	128	377722	21.1375 ug/L		92
101)	1,2,3-Trichlorobenzene	21.00	180	210210	18.6175 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M404880.D 8260WT.M Sat May 23 18:44:08 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052315\8M404880.D Vial: 5
Acq On : 23 May 2015 18:22 Operator: FJB
Sample : WG524936-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD70658 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 23 18:44 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

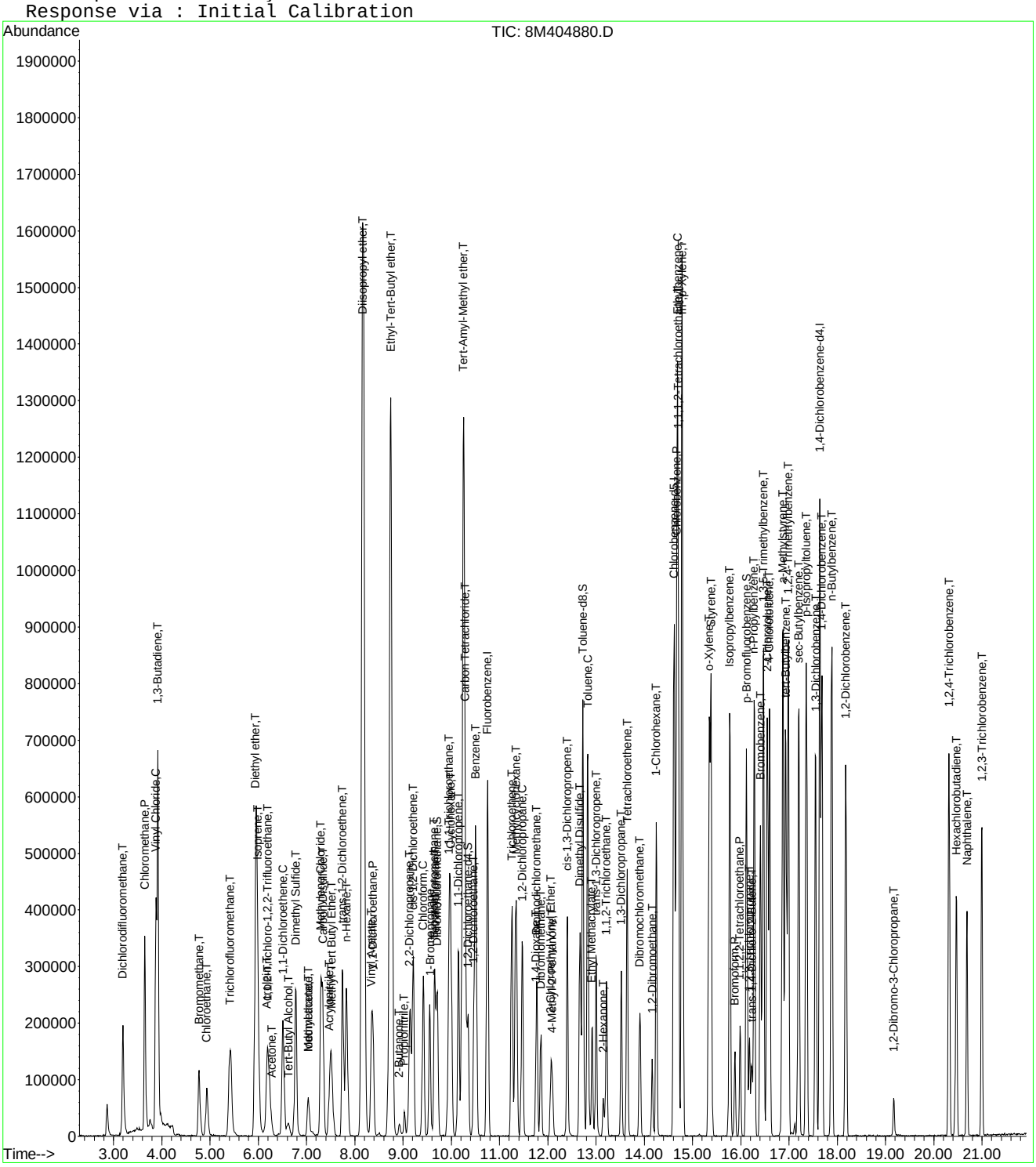

8M404880.D 8260WT.M Sat May 23 18:44:08 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052615\8M404909.D Vial: 5
Acq On : 26 May 2015 13:17 Operator: TMB
Sample : WG525056-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD70658 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 26 13:39:14 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	721452	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	581966	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	353506	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	181844	25.4296 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.72%		
43) 1,2-Dichloroethane-d4	10.35	65	156334	23.2637 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 93.04%		
58) Toluene-d8	12.73	98	657857	24.2239 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.88%		
80) p-Bromofluorobenzene	16.12	95	266856	22.1882 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 88.76%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.20	85	271685	24.2984 ug/L	97
3) Chloromethane	3.65	50	475222	21.2896 ug/L	97
4) Vinyl Chloride	3.88	62	495421	23.5538 ug/L	94
5) 1,3-Butadiene	3.92	54	355362	17.5084 ug/L	96
6) Bromomethane	4.78	94	110138	23.1446 ug/L	97
7) Chloroethane	4.94	64	130828	22.8567 ug/L	90
8) Trichlorofluoromethane	5.43	101	270148	20.4523 ug/L	98
9) Diethyl ether	5.95	59	508351	100.3842 ug/L	90
10) Isoprene	6.00	67	221266	22.5916 ug/L	78
11) Acrolein	6.20	56	28034	97.7903 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.21	101	152746	20.4885 ug/L	94
13) Acetone	6.29	43	23776	23.0761 ug/L	88
14) 1,1-Dichloroethene	6.52	61	245956	19.3983 ug/L	85
15) Tert-Butyl Alcohol	6.62	59	53807	194.0774 ug/L	95
16) Dimethyl Sulfide	6.78	62	195237	26.4123 ug/L	73
17) Iodomethane	7.03	142	83354	17.1408 ug/L	81
18) Methyl acetate	7.05	43	62571	17.0182 ug/L	95
19) Methylene Chloride	7.30	84	159862	22.1236 ug/L	60
20) Carbon Disulfide	7.34	76	447833	19.1995 ug/L	94
21) Acrylonitrile	7.49	53	34430	20.9943 ug/L	92
22) Methyl Tert Butyl Ether	7.52	73	294495	21.1555 ug/L	96
23) trans-1,2-Dichloroethene	7.76	61	249448	20.6079 ug/L	85
24) n-Hexane	7.83	57	223463	18.2564 ug/L	94
25) Diisopropyl ether	8.17	45	2822495	105.2670 ug/L	92
26) Vinyl Acetate	8.35	43	217599	24.5818 ug/L	91
27) 1,1-Dichloroethane	8.38	63	292814	20.0387 ug/L	95
28) Ethyl-Tert-Butyl ether	8.75	59	2222528	105.6422 ug/L	94
29) 2-Butanone	8.92	43	38773	23.0968 ug/L	90
30) Propionitrile	9.04	54	56387	105.3871 ug/L	97
31) 2,2-Dichloropropane	9.15	77	240128	19.9177 ug/L	98
32) cis-1,2-Dichloroethene	9.21	96	173580	20.8786 ug/L	80
33) Chloroform	9.42	83	287616	21.1904 ug/L	96
34) 1-Bromopropane	9.57	122	34875	23.3536 ug/L	99
35) Bromochloromethane	9.66	130	89921	21.2095 ug/L	73
36) Tetrahydrofuran	9.68	42	117277	103.7188 ug/L	84
38) 1,1,1-Trichloroethane	9.96	97	270942	21.9898 ug/L	94
39) Cyclohexane	9.99	56	294150	19.6986 ug/L	84
40) 1,1-Dichloropropene	10.16	75	224207	20.9150 ug/L	94
41) Tert-Amyl-Methyl ether	10.26	73	1644661	106.5071 ug/L	98
42) Carbon Tetrachloride	10.30	117	242575	21.6646 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M404909.D 8260WT.M Tue May 26 13:39:14 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052615\8M404909.D Vial: 5
Acq On : 26 May 2015 13:17 Operator: TMB
Sample : WG525056-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD70658 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 26 13:39:14 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.47	62	202132	20.7736	ug/L		91
46)	Benzene	10.51	78	638113	22.0984	ug/L		98
47)	Trichloroethene	11.26	130	169220	22.1547	ug/L		97
48)	Methylcyclohexane	11.34	83	248418	20.0379	ug/L		92
49)	1,2-Dichloropropane	11.47	63	171542	21.2099	ug/L		100
50)	Bromodichloromethane	11.78	83	210874	21.1777	ug/L		96
51)	1,4-Dioxane	11.76	88	6677	212.6288	ug/L		91
52)	Dibromomethane	11.86	93	82073	21.5470	ug/L		91
53)	2-Chloroethyl Vinyl Ether	12.07	63	69588	35.1877	ug/L		93
54)	4-Methyl-2-Pentanone	12.10	58	32585	23.4349	ug/L		93
55)	cis-1,3-Dichloropropene	12.41	75	252030	23.1548	ug/L		95
56)	Dimethyl Disulfide	12.67	79	121186	20.6936	ug/L		87
59)	Toluene	12.83	91	687005	19.9019	ug/L		84
60)	Ethyl Methacrylate	12.93	69	125406	20.4176	ug/L		76
62)	trans-1,3-Dichloropropene	13.00	75	198754	19.2091	ug/L		95
63)	1,1,2-Trichloroethane	13.22	97	107785	20.0975	ug/L		98
64)	2-Hexanone	13.16	58	28147	19.0587	ug/L		69
65)	1,3-Dichloropropane	13.53	76	185529	19.7337	ug/L		82
66)	Tetrachloroethene	13.65	164	141894	19.4755	ug/L		93
67)	Dibromochloromethane	13.91	129	142705	19.9956	ug/L		100
68)	1,2-Dibromoethane	14.17	107	102137	19.9494	ug/L		97
69)	1-Chlorohexane	14.25	91	224930	19.0500	ug/L		86
70)	Chlorobenzene	14.67	112	435718	18.7014	ug/L		92
71)	1,1,1,2-Tetrachloroethane	14.69	131	162877	19.4758	ug/L		100
72)	Ethylbenzene	14.69	106	258594	18.5308	ug/L	#	28
73)	m-,p-Xylene	14.79	106	619241	39.2374	ug/L	#	46
74)	o-Xylene	15.35	106	286566	18.3740	ug/L		62
75)	Styrene	15.39	104	512135	20.7286	ug/L		84
76)	Bromoform	15.88	173	88202	19.8791	ug/L		95
77)	Isopropylbenzene	15.77	105	746674	19.5754	ug/L		78
79)	1,1,2,2-Tetrachloroethane	15.99	83	123343	18.3630	ug/L		94
81)	1,2,3-Trichloropropane	16.18	110	34938	19.1991	ug/L		84
82)	trans-1,4-Dichloro-2-Buten	16.22	53	34905	15.6541	ug/L		88
83)	n-Propylbenzene	16.28	91	907983	16.9760	ug/L	#	72
84)	Bromobenzene	16.41	156	188058	17.7047	ug/L		91
85)	1,3,5-Trimethylbenzene	16.46	105	703057	19.2111	ug/L		80
86)	2-Chlorotoluene	16.56	91	592334	16.4094	ug/L		80
87)	4-Chlorotoluene	16.60	91	511675	17.7220	ug/L		77
88)	a-Methylstyrene	16.87	118	384229	18.4359	ug/L		90
89)	tert-Butylbenzene	16.93	134	134827	16.5720	ug/L		58
90)	1,2,4-Trimethylbenzene	16.98	105	713782	18.9710	ug/L		76
91)	sec-Butylbenzene	17.20	105	823460	18.0467	ug/L		77
92)	p-Isopropyltoluene	17.36	119	688663	17.8017	ug/L		77
93)	1,3-Dichlorobenzene	17.55	146	373537	17.3519	ug/L		90
94)	1,4-Dichlorobenzene	17.68	146	402188	18.4027	ug/L		92
95)	n-Butylbenzene	17.89	91	695049	18.3929	ug/L		80
96)	1,2-Dichlorobenzene	18.18	146	333850	17.8715	ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.17	75	20152	18.7956	ug/L		84
98)	1,2,4-Trichlorobenzene	20.32	180	252933	17.9735	ug/L		99
99)	Hexachlorobutadiene	20.46	225	114554	15.5815	ug/L		94
100)	Naphthalene	20.69	128	401999	21.2999	ug/L		92
101)	1,2,3-Trichlorobenzene	21.00	180	223225	18.7190	ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052615\8M404909.D Vial: 5
Acq On : 26 May 2015 13:17 Operator: TMB
Sample : WG525056-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD70658 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 26 13:39 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

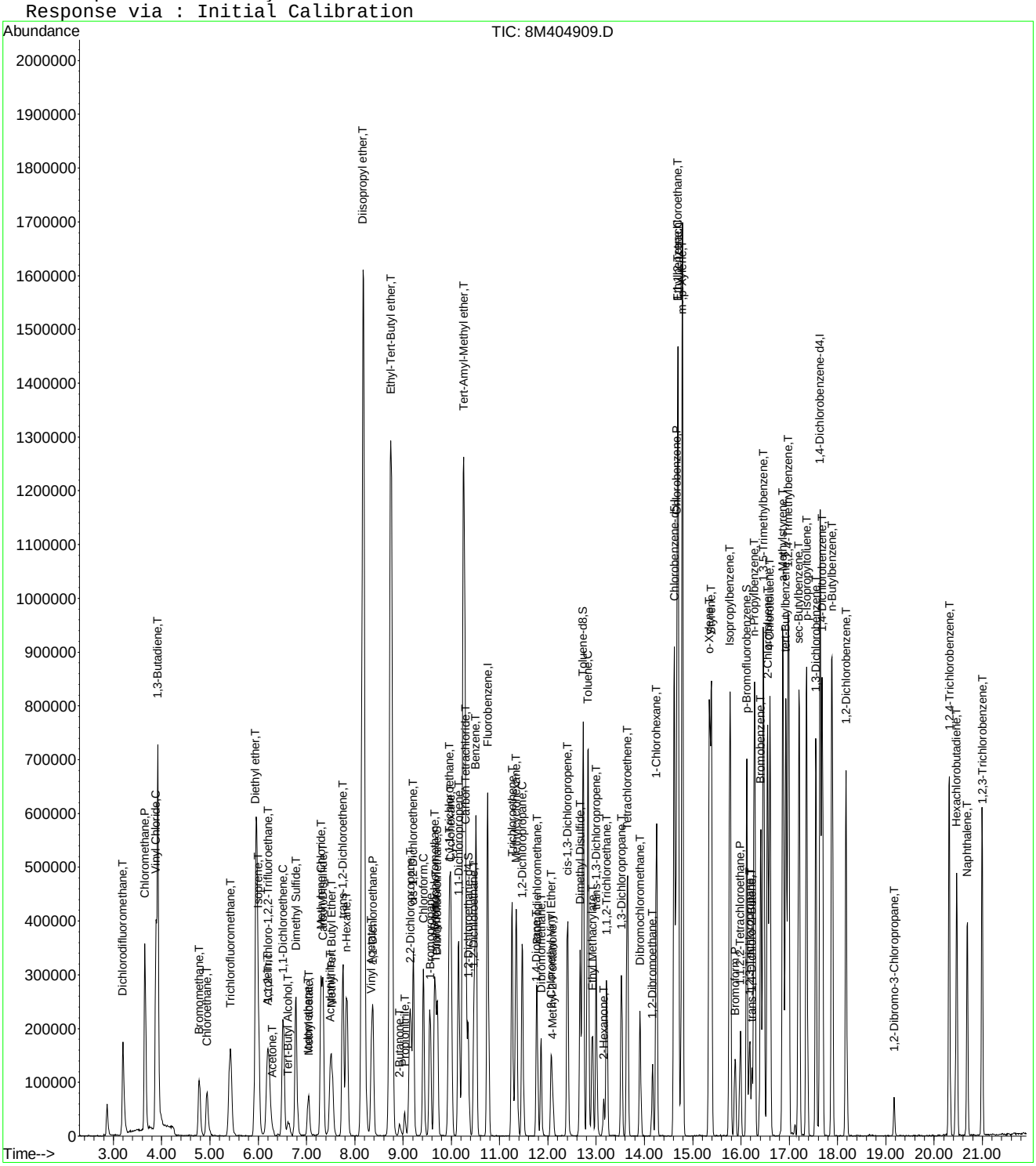

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052315\8M404881.D Vial: 6
Acq On : 23 May 2015 18:50 Operator: FJB
Sample : WG524936-03 20ug/L LCS2 8260 Inst : HPMS8
Misc : 1,1 STD70658 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 23 19:12:31 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	764250	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	614188	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	346374	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	188522	24.8871 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.56%		
43) 1,2-Dichloroethane-d4	10.35	65	168427	23.6597 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.64%		
58) Toluene-d8	12.73	98	693931	24.2117 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.84%		
80) p-Bromofluorobenzene	16.12	95	272372	23.1131 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.44%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.19	85	250935	21.1858 ug/L	98
3) Chloromethane	3.65	50	443554	18.7581 ug/L	96
4) Vinyl Chloride	3.87	62	444352	19.9428 ug/L	94
5) 1,3-Butadiene	3.92	54	314455	14.5081 ug/L	94
6) Bromomethane	4.77	94	118785	23.5395 ug/L	99
7) Chloroethane	4.93	64	119473	19.7041 ug/L	92
8) Trichlorofluoromethane	5.42	101	239297	17.1021 ug/L	98
9) Diethyl ether	5.95	59	512399	95.5172 ug/L	90
10) Isoprene	5.98	67	215724	20.7923 ug/L	82
11) Acrolein	6.18	56	38174	110.5749 ug/L	88
12) 1,1,2-Trichloro-1,2,2-Trif	6.21	101	136333	17.2629 ug/L	94
13) Acetone	6.28	43	26179	23.9855 ug/L	86
14) 1,1-Dichloroethene	6.51	61	215498	16.0443 ug/L	84
15) Tert-Butyl Alcohol	6.61	59	52706	179.4602 ug/L	97
16) Dimethyl Sulfide	6.77	62	207807	26.5385 ug/L	80
17) Iodomethane	7.04	142	85405	16.6155 ug/L	84
18) Methyl acetate	7.04	43	66933	17.1851 ug/L	91
19) Methylene Chloride	7.30	84	154019	20.1213 ug/L #	56
20) Carbon Disulfide	7.34	76	438905	17.7630 ug/L	95
21) Acrylonitrile	7.48	53	37001	21.2985 ug/L	94
22) Methyl Tert Butyl Ether	7.51	73	307912	20.8806 ug/L	96
23) trans-1,2-Dichloroethene	7.75	61	219698	17.1337 ug/L	87
24) n-Hexane	7.82	57	219811	16.9524 ug/L	96
25) Diisopropyl ether	8.18	45	2886011	101.6083 ug/L	92
26) Vinyl Acetate	8.34	43	237555	25.3333 ug/L	91
27) 1,1-Dichloroethane	8.37	63	279406	18.0503 ug/L	94
28) Ethyl-Tert-Butyl ether	8.74	59	2270479	101.8778 ug/L	93
29) 2-Butanone	8.92	43	38990	21.9254 ug/L	86
30) Propionitrile	9.02	54	57947	102.2378 ug/L	100
31) 2,2-Dichloropropane	9.15	77	214450	16.7917 ug/L	98
32) cis-1,2-Dichloroethene	9.21	96	166875	18.9481 ug/L	84
33) Chloroform	9.42	83	274401	19.0846 ug/L	97
34) 1-Bromopropane	9.56	122	34431	21.7971 ug/L	94
35) Bromochloromethane	9.65	130	89749	19.9834 ug/L	74
36) Tetrahydrofuran	9.68	42	126880	105.9277 ug/L	85
38) 1,1,1-Trichloroethane	9.95	97	239850	18.3763 ug/L	96
39) Cyclohexane	9.98	56	289221	18.2838 ug/L	84
40) 1,1-Dichloropropene	10.14	75	199891	17.6025 ug/L	92
41) Tert-Amyl-Methyl ether	10.25	73	1694523	103.5910 ug/L	98
42) Carbon Tetrachloride	10.29	117	217539	18.3406 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052315\8M404881.D Vial: 6
Acq On : 23 May 2015 18:50 Operator: FJB
Sample : WG524936-03 20ug/L LCS2 8260 Inst : HPMS8
Misc : 1,1 STD70658 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 23 19:12:31 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.46	62	196748	19.0880 ug/L		92
46)	Benzene	10.51	78	597053	19.5185 ug/L		98
47)	Trichloroethene	11.26	130	153299	18.9463 ug/L		97
48)	Methylcyclohexane	11.34	83	240305	18.2980 ug/L		90
49)	1,2-Dichloropropane	11.47	63	163476	19.0807 ug/L		98
50)	Bromodichloromethane	11.77	83	211429	20.0444 ug/L		96
51)	1,4-Dioxane	11.75	88	6379	196.4951 ug/L		86
52)	Dibromomethane	11.86	93	83518	20.6984 ug/L		87
53)	2-Chloroethyl Vinyl Ether	12.06	63	59071	28.0096 ug/L		96
54)	4-Methyl-2-Pentanone	12.09	58	32003	21.7274 ug/L		93
55)	cis-1,3-Dichloropropene	12.41	75	243741	21.1392 ug/L		95
56)	Dimethyl Disulfide	12.66	79	128756	20.7460 ug/L		88
59)	Toluene	12.83	91	654499	17.9656 ug/L		83
60)	Ethyl Methacrylate	12.92	69	132317	20.4126 ug/L		77
62)	trans-1,3-Dichloropropene	13.00	75	192968	17.6715 ug/L		96
63)	1,1,2-Trichloroethane	13.22	97	107343	18.9650 ug/L		99
64)	2-Hexanone	13.15	58	31042	19.9162 ug/L	#	44
65)	1,3-Dichloropropane	13.52	76	182786	18.4220 ug/L		82
66)	Tetrachloroethene	13.65	164	119882	15.5910 ug/L		87
67)	Dibromochloromethane	13.91	129	143214	19.0142 ug/L		99
68)	1,2-Dibromoethane	14.16	107	104029	19.2529 ug/L		97
69)	1-Chlorohexane	14.26	91	221904	17.8078 ug/L		91
70)	Chlorobenzene	14.67	112	416773	16.9498 ug/L		91
71)	1,1,1,2-Tetrachloroethane	14.70	131	159181	18.0353 ug/L		97
72)	Ethylbenzene	14.70	106	242161	16.4428 ug/L	#	30
73)	m-,p-Xylene	14.78	106	563277	33.8189 ug/L	#	47
74)	o-Xylene	15.34	106	265624	16.1377 ug/L		62
75)	Styrene	15.38	104	487812	18.7083 ug/L		84
76)	Bromoform	15.88	173	86810	18.5916 ug/L		95
77)	Isopropylbenzene	15.78	105	687997	17.0908 ug/L		75
79)	1,1,2,2-Tetrachloroethane	15.99	83	121106	18.4012 ug/L		99
81)	1,2,3-Trichloropropane	16.18	110	33509	18.7930 ug/L		61
82)	trans-1,4-Dichloro-2-Buten	16.22	53	39238	17.9597 ug/L	#	46
83)	n-Propylbenzene	16.28	91	830468	15.8464 ug/L	#	74
84)	Bromobenzene	16.41	156	179649	17.2613 ug/L		92
85)	1,3,5-Trimethylbenzene	16.47	105	647181	18.0484 ug/L		79
86)	2-Chlorotoluene	16.55	91	512275	14.4838 ug/L		82
87)	4-Chlorotoluene	16.59	91	506048	17.8880 ug/L		76
88)	a-Methylstyrene	16.87	118	373608	18.2954 ug/L		92
89)	tert-Butylbenzene	16.93	134	117951	14.7962 ug/L		55
90)	1,2,4-Trimethylbenzene	16.99	105	669141	18.1507 ug/L		73
91)	sec-Butylbenzene	17.20	105	731026	16.3508 ug/L		77
92)	p-Isopropyltoluene	17.36	119	609823	16.0883 ug/L		78
93)	1,3-Dichlorobenzene	17.55	146	346993	16.4508 ug/L		89
94)	1,4-Dichlorobenzene	17.68	146	375993	17.5584 ug/L		89
95)	n-Butylbenzene	17.88	91	616225	16.6427 ug/L		79
96)	1,2-Dichlorobenzene	18.17	146	313832	17.1458 ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.17	75	21412	20.3820 ug/L		90
98)	1,2,4-Trichlorobenzene	20.31	180	248875	18.0493 ug/L		99
99)	Hexachlorobutadiene	20.47	225	101776	14.1285 ug/L		95
100)	Naphthalene	20.69	128	383036	20.7130 ug/L		93
101)	1,2,3-Trichlorobenzene	21.00	180	212374	18.1757 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M404881.D 8260WT.M Sat May 23 19:12:31 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052315\8M404881.D Vial: 6
Acq On : 23 May 2015 18:50 Operator: FJB
Sample : WG524936-03 20ug/L LCS2 8260 Inst : HPMS8
Misc : 1,1 STD70658 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 23 19:12 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

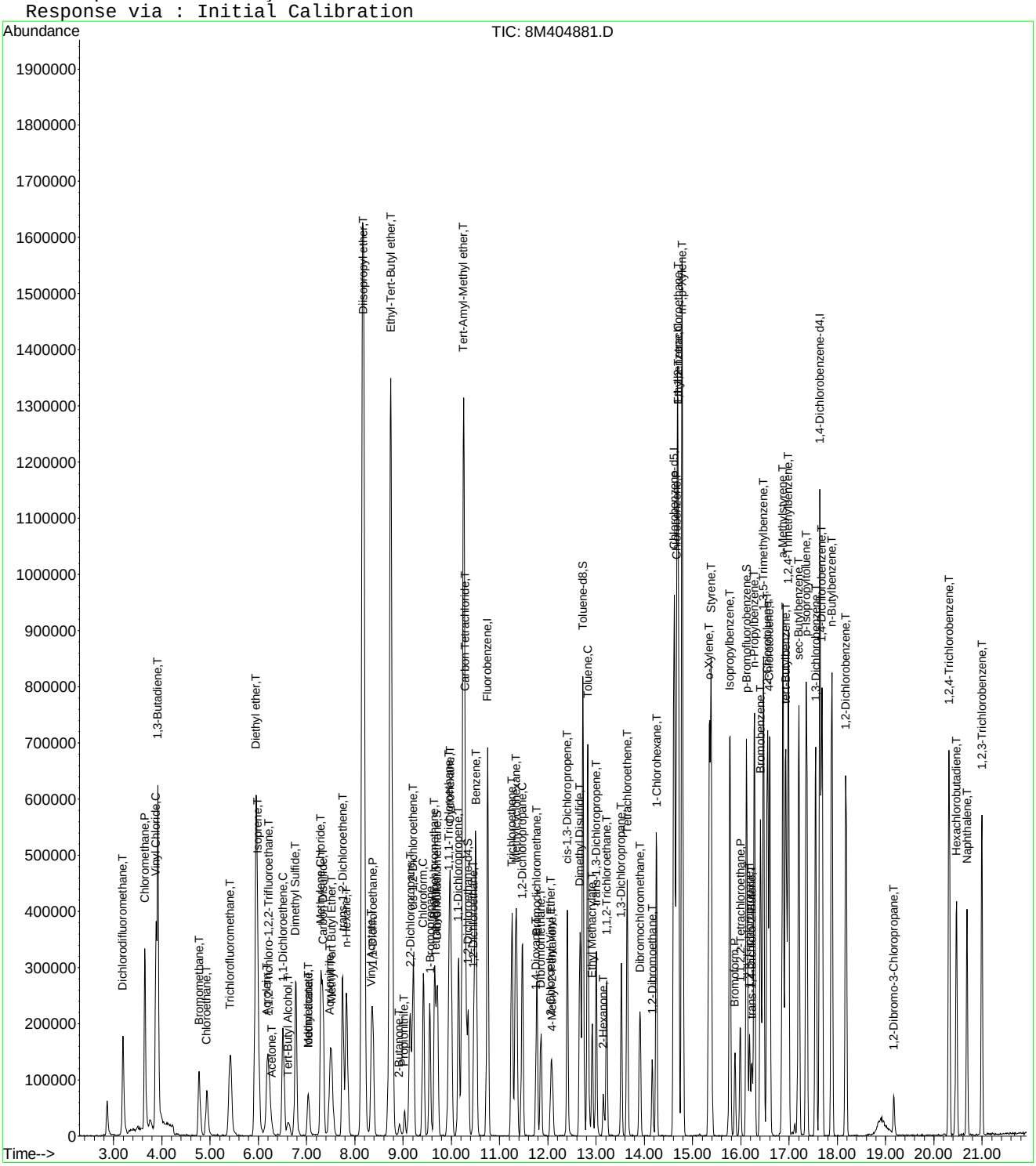

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052615\8M404910.D Vial: 6
Acq On : 26 May 2015 13:46 Operator: TMB
Sample : WG525056-03 20ug/L LCSDUP STD 8260 Inst : HPMS8
Misc : 1,1 STD70658 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 26 14:08:42 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	756341	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	613510	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	366436	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	195557	26.0858 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.36%		
43) 1,2-Dichloroethane-d4	10.35	65	170395	24.1864 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.76%		
58) Toluene-d8	12.73	98	692273	24.1806 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.72%		
80) p-Bromofluorobenzene	16.12	95	272686	21.8729 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 87.48%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.20	85	312995	26.7017 ug/L	97
3) Chloromethane	3.65	50	503482	21.5152 ug/L	96
4) Vinyl Chloride	3.88	62	512159	23.2264 ug/L	94
5) 1,3-Butadiene	3.92	54	360459	16.9146 ug/L	96
6) Bromomethane	4.78	94	121278	24.2415 ug/L	97
7) Chloroethane	4.94	64	137708	22.9489 ug/L	91
8) Trichlorofluoromethane	5.42	101	295740	21.3570 ug/L	98
9) Diethyl ether	5.95	59	522765	98.4686 ug/L	91
10) Isoprene	6.00	67	240975	23.4690 ug/L	83
11) Acrolein	6.18	56	33812	104.7403 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.20	101	166884	21.3523 ug/L	98
13) Acetone	6.30	43	25947	24.0215 ug/L	79
14) 1,1-Dichloroethene	6.51	61	260868	19.6253 ug/L	83
15) Tert-Butyl Alcohol	6.62	59	59725	205.4859 ug/L	97
16) Dimethyl Sulfide	6.78	62	208812	26.9457 ug/L	78
17) Iodomethane	7.03	142	102503	19.9113 ug/L	88
18) Methyl acetate	7.04	43	70034	18.1693 ug/L	90
19) Methylene Chloride	7.30	84	163176	21.5405 ug/L #	55
20) Carbon Disulfide	7.34	76	468162	19.1452 ug/L	96
21) Acrylonitrile	7.48	53	34520	20.0782 ug/L	88
22) Methyl Tert Butyl Ether	7.51	73	309106	21.1808 ug/L	97
23) trans-1,2-Dichloroethene	7.75	61	250242	19.7198 ug/L	91
24) n-Hexane	7.83	57	253311	19.7402 ug/L	99
25) Diisopropyl ether	8.17	45	2960779	105.3307 ug/L	92
26) Vinyl Acetate	8.35	43	240911	25.9599 ug/L	94
27) 1,1-Dichloroethane	8.37	63	314069	20.5018 ug/L	94
28) Ethyl-Tert-Butyl ether	8.75	59	2327056	105.5083 ug/L	94
29) 2-Butanone	8.92	43	38673	21.9746 ug/L	85
30) Propionitrile	9.04	54	58280	103.9005 ug/L	97
31) 2,2-Dichloropropane	9.15	77	263360	20.8370 ug/L	99
32) cis-1,2-Dichloroethene	9.21	96	179303	20.5721 ug/L	78
33) Chloroform	9.42	83	305337	21.4583 ug/L	92
34) 1-Bromopropane	9.55	122	37359	23.8527 ug/L	97
35) Bromochloromethane	9.65	130	91674	20.6255 ug/L #	71
36) Tetrahydrofuran	9.68	42	130137	109.7830 ug/L	85
38) 1,1,1-Trichloroethane	9.95	97	280450	21.7116 ug/L	97
39) Cyclohexane	9.99	56	312046	19.9331 ug/L	85
40) 1,1-Dichloropropene	10.15	75	236459	21.0404 ug/L	93
41) Tert-Amyl-Methyl ether	10.26	73	1740605	107.5208 ug/L	98
42) Carbon Tetrachloride	10.30	117	259561	22.1123 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052615\8M404910.D Vial: 6
Acq On : 26 May 2015 13:46 Operator: TMB
Sample : WG525056-03 20ug/L LCSDUP STD 8260 Inst : HPMS8
Misc : 1,1 STD70658 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 26 14:08:42 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.46	62	204755	20.0725 ug/L		91
46)	Benzene	10.51	78	659521	21.7862 ug/L		98
47)	Trichloroethene	11.26	130	184700	23.0659 ug/L		97
48)	Methylcyclohexane	11.34	83	267413	20.5751 ug/L		92
49)	1,2-Dichloropropane	11.47	63	178371	21.0369 ug/L		99
50)	Bromodichloromethane	11.78	83	222033	21.2698 ug/L		97
51)	1,4-Dioxane	11.77	88	6025	189.7311 ug/L		78
52)	Dibromomethane	11.86	93	87315	21.8657 ug/L		88
53)	2-Chloroethyl Vinyl Ether	12.07	63	68831	33.1461 ug/L		94
54)	4-Methyl-2-Pentanone	12.10	58	33745	23.1496 ug/L		94
55)	cis-1,3-Dichloropropene	12.41	75	263475	23.0897 ug/L		92
56)	Dimethyl Disulfide	12.67	79	126221	20.5788 ug/L		88
59)	Toluene	12.82	91	719998	19.7853 ug/L		82
60)	Ethyl Methacrylate	12.93	69	132314	20.4347 ug/L		73
62)	trans-1,3-Dichloropropene	13.00	75	204765	18.7725 ug/L		94
63)	1,1,2-Trichloroethane	13.21	97	109224	19.3187 ug/L		97
64)	2-Hexanone	13.15	58	30994	19.9074 ug/L	#	42
65)	1,3-Dichloropropane	13.53	76	193860	19.5596 ug/L		82
66)	Tetrachloroethene	13.65	164	147339	19.1830 ug/L		91
67)	Dibromochloromethane	13.91	129	141161	18.7623 ug/L		96
68)	1,2-Dibromoethane	14.17	107	108381	20.0805 ug/L		98
69)	1-Chlorohexane	14.25	91	243154	19.5347 ug/L		90
70)	Chlorobenzene	14.67	112	453190	18.4512 ug/L		92
71)	1,1,1,2-Tetrachloroethane	14.69	131	168524	19.1150 ug/L		97
72)	Ethylbenzene	14.69	106	278840	18.9543 ug/L	#	37
73)	m-,p-Xylene	14.79	106	649943	39.0654 ug/L	#	48
74)	o-Xylene	15.34	106	301095	18.3130 ug/L		65
75)	Styrene	15.39	104	531973	20.4245 ug/L		85
76)	Bromoform	15.88	173	86880	18.6257 ug/L		98
77)	Isopropylbenzene	15.77	105	777975	19.3474 ug/L		78
79)	1,1,2,2-Tetrachloroethane	15.99	83	126158	18.1194 ug/L		99
81)	1,2,3-Trichloropropane	16.18	110	34359	18.2147 ug/L	#	1
82)	trans-1,4-Dichloro-2-Buten	16.22	53	41440	17.9291 ug/L	#	29
83)	n-Propylbenzene	16.28	91	968799	17.4739 ug/L	#	74
84)	Bromobenzene	16.41	156	188846	17.1515 ug/L		90
85)	1,3,5-Trimethylbenzene	16.47	105	737641	19.4449 ug/L		79
86)	2-Chlorotoluene	16.55	91	615623	16.4528 ug/L		79
87)	4-Chlorotoluene	16.60	91	540012	18.0435 ug/L		77
88)	a-Methylstyrene	16.88	118	383029	17.7298 ug/L		92
89)	tert-Butylbenzene	16.93	134	139157	16.5007 ug/L		59
90)	1,2,4-Trimethylbenzene	16.98	105	748720	19.1974 ug/L		74
91)	sec-Butylbenzene	17.20	105	871614	18.4280 ug/L	#	76
92)	p-Isopropyltoluene	17.36	119	711641	17.7466 ug/L		78
93)	1,3-Dichlorobenzene	17.56	146	380732	17.0621 ug/L		91
94)	1,4-Dichlorobenzene	17.68	146	418129	18.4570 ug/L		90
95)	n-Butylbenzene	17.89	91	734512	18.7513 ug/L		79
96)	1,2-Dichlorobenzene	18.18	146	343718	17.7505 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.17	75	20346	18.3069 ug/L		83
98)	1,2,4-Trichlorobenzene	20.32	180	273105	18.7221 ug/L		97
99)	Hexachlorobutadiene	20.47	225	125814	16.5092 ug/L		94
100)	Naphthalene	20.69	128	408849	20.8984 ug/L		95
101)	1,2,3-Trichlorobenzene	21.00	180	234894	19.0025 ug/L		97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052615\8M404910.D Vial: 6
Acq On : 26 May 2015 13:46 Operator: TMB
Sample : WG525056-03 20ug/L LCSDUP STD 8260 Inst : HPMS8
Misc : 1,1 STD70658 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 26 14:08 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

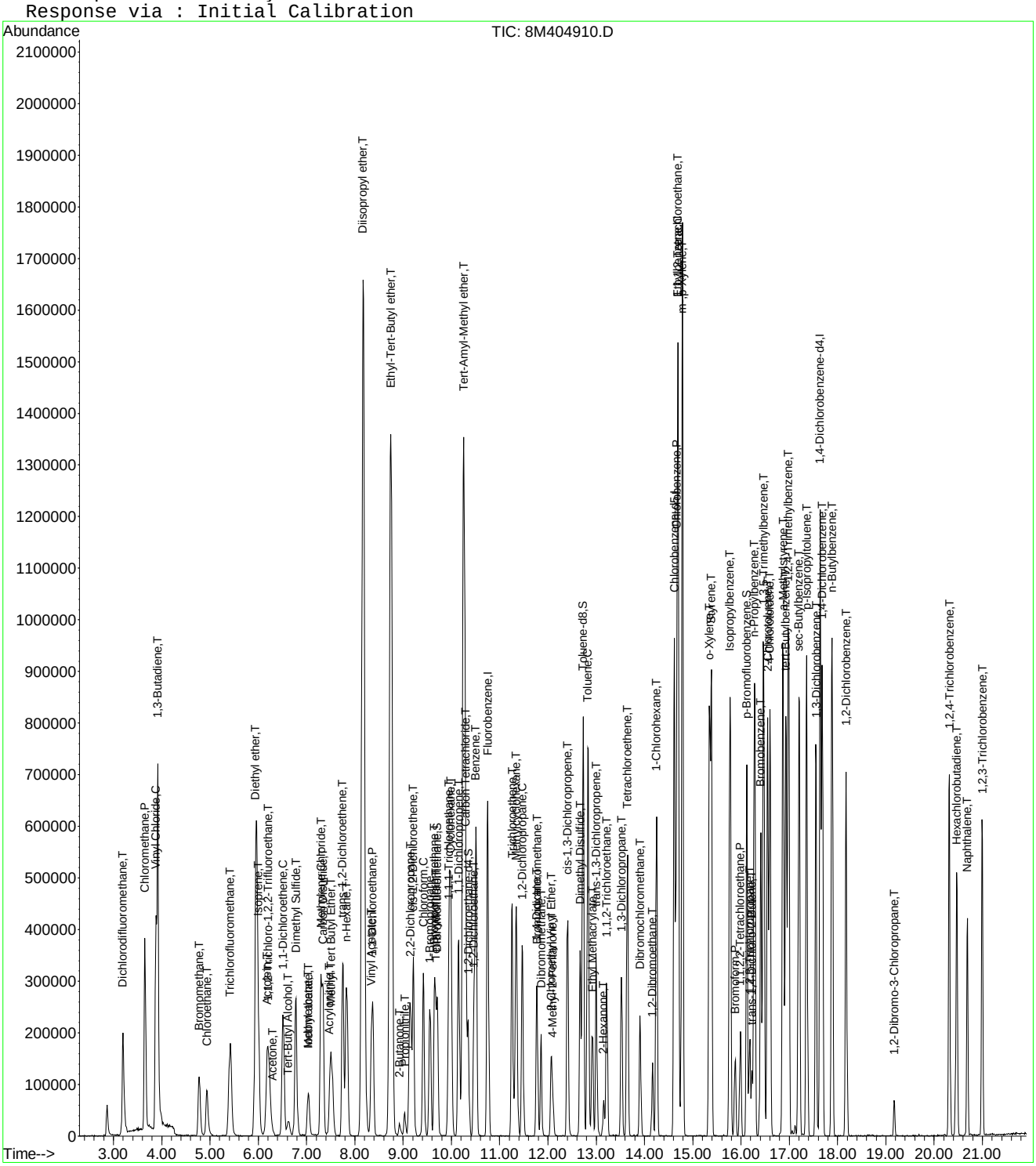

8M404910.D 8260WT.M Tue May 26 14:08:43 2015 Page 3

2.1.2 RSK 175

2.1.2.1 Summary Data

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-01	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW13-052015	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG524756	**Analyst:**	JDS	**Run Date:**	05/22/2015 13:33
Collect Date:	05/20/2015 08:30	**Dilution:**	1	**File ID:**	16G47572
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	121000		10000	5000	2500
Methane	74-82-8	2.71	J	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-03	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW14-052015	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG524756	**Analyst:**	JDS	**Run Date:**	05/22/2015 13:44
Collect Date:	05/20/2015 09:45	**Dilution:**	1	**File ID:**	16G47573
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	391000	J	10000	5000	2500
Methane	74-82-8	2.21	J	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-03	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW14-052015	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG524992	**Analyst:**	JDS	**Run Date:**	05/26/2015 13:28
Collect Date:	05/20/2015 09:45	**Dilution:**	5	**File ID:**	16G47624
Sample Tag:	DL02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	416000		50000	25000	12500
Methane	74-82-8	10.0	U	25.0	10.0	5.00
ethene	74-85-1	10.0	U	25.0	10.0	5.00
ethane	74-84-0	10.0	U	25.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-05	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW11-052015	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG524756	**Analyst:**	JDS	**Run Date:**	05/22/2015 13:56
Collect Date:	05/20/2015 11:00	**Dilution:**	1	**File ID:**	16G47574
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	508000	J	10000	5000	2500
Methane	74-82-8	3.82	J	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-05	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW11-052015	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG524992	**Analyst:**	JDS	**Run Date:**	05/26/2015 13:40
Collect Date:	05/20/2015 11:00	**Dilution:**	5	**File ID:**	16G47625
Sample Tag:	DL02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	515000		50000	25000	12500
Methane	74-82-8	10.0	U	25.0	10.0	5.00
ethene	74-85-1	10.0	U	25.0	10.0	5.00
ethane	74-84-0	10.0	U	25.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-07	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW06-052015	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG524855	**Analyst:**	JDS	**Run Date:**	05/22/2015 19:10
Collect Date:	05/20/2015 13:15	**Dilution:**	1	**File ID:**	16G47601
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	244000		10000	5000	2500
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-09	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW12-052015	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG524756	**Analyst:**	JDS	**Run Date:**	05/22/2015 14:19
Collect Date:	05/20/2015 14:40	**Dilution:**	1	**File ID:**	16G47576
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	152000		10000	5000	2500
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-11	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW23-052015	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG524756	**Analyst:**	JDS	**Run Date:**	05/22/2015 14:31
Collect Date:	05/20/2015 15:55	**Dilution:**	1	**File ID:**	16G47577
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	417000	J	10000	5000	2500
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-11	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW23-052015	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG524992	**Analyst:**	JDS	**Run Date:**	05/26/2015 14:04
Collect Date:	05/20/2015 15:55	**Dilution:**	5	**File ID:**	16G47627
Sample Tag:	DL02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	398000		50000	25000	12500
Methane	74-82-8	10.0	U	25.0	10.0	5.00
ethene	74-85-1	10.0	U	25.0	10.0	5.00
ethane	74-84-0	10.0	U	25.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.2.2 QC Summary Data

RSK-175 - Example Calculation for Methane

1.0 Linear Calibration Models

Option A - Average RF Method

ICAL_x	ICAL_r		RF
1.67	19901		11917
6.67	69174		10371
16.7	176923		10594
66.7	685135		10272
133	1324853		9961
300	2845104		9484
		Average RF:	**10433**

Where:
ICAL_x = the ICAL concentration
ICAL_r = the ICAL response (area)
RF = calibration factor = ICAL_r / ICAL_x

Option B - Agilent Linear Regression Constant

ICAL_x	ICAL_r	[ICAL_r}^2	[ICAL-x][ICAL-r]
1.67	19901	396049801	33235
6.67	69174	4785042276	461391
16.7	176923	31301747929	2954614
66.7	685135	4.6941E+11	45698505
133	1324853	1.75524E+12	176205449
300	2845104	8.09462E+12	853531200
Summation:		**1.03557E+13**	**1078884393**

Agilent Linear Regression Constant : **9598.567853**
(1.03557E+13)/1078884393)

2.0 Calculate the concentration in extract, Cx

Where:

y = area response of methane from quant report	**1157414**
a = average RF (or Agilent regression constant)	**10433.00**
Cx = y/a	**110.9377935**

3.0 Calculate the concentration in sample

Cs = Cx (MW/Tf) (HS/S) (DF)

Where:

Cx = Concentration in extract	**110.9377935**	umol/mol
MW = molecular weight of analyte	**16.04**	ug/umol
TF = temperature factor = (22.4)(313/273)	**25.68**	L/mol
HS = headspace volume	**0.015**	L
S = sample volume remaining after headspace removal	**0.00547**	L
DF = dilution factor	**2**	
Cs = calculated sample concentration	**380.034301**	ug/L

RSK-175 - Example Calculation for Carbon Dioxide

ICAL Plot - Quadratic Regression (y = Ax^2 + Bx +C)

Ax^2 + Bx + (C - y) = 0

Step 1 - Calculate the concentration in extract, Cx

Data from quadratic regression plot:		
Value of A from plot:	**0.916**	
Value of B from plot:	**1540**	
Value of C from plot:	**0**	
Response for methane from quantitation report (y):	**8763828**	
Value of C - y	**-8763828**	
Solving for Cx using the quadratic formula:		
Root 1 - Computed Cx1:	**2364.716284**	umol/mol
Root 2 - Computed Cx2:	**-4045.938991**	

Step 2 - Calculate the concentration in sample

Cs = Cx (MW/Tf) (HS/S) (DF)

Where:

Cx = Concentration in extract :	**2364.716284**	umol/mol
MW = molecular weight of analyte:	**44.0**	ug/umol
TF = temperature factor = (22.4)(313/273):	**25.68**	L/mol
HS = initial headspace volume (extraction log):	**0.015**	L
S = final volume (extraction log):	**0.00547**	L
DF = dilution factor:	**10**	
Cs = calculated sample concentration:	**111106.798**	ug/L

Other Notes:

Temperature of headspace = 40 C = 313 K

Analyte	**MW (g/mol)**
Methane	16.04
Ethane	30.07
Ethene	28.05
Propane	44.1
Carbon Dioxide	44.0

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 030315
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG514119

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G46874	RINSE	NA	1	1		03/03/15 14:05
16G46875	WG514119-01 0.67umol/mol STD RSK175	NA	1	1	STD67276	03/03/15 14:17
16G46876	WG514119-02 1.67umol/mol STD RSK175	NA	1	1	STD67276	03/03/15 14:30
16G46877	WG514119-03 33.3umol/mol STD RSK175	NA	1	1	STD67276	03/03/15 14:42
16G46878	WG514119-04 66.7umol/mol STD RSK175	NA	1	1	STD67274	03/03/15 14:53
16G46879	WG514119-05 133umol/mol STD RSK175	NA	1	1	STD67274	03/03/15 15:05
16G46880	WG514119-06 333umol/mol STD RSK175	NA	1	1	STD67274	03/03/15 15:17
16G46881	WG514119-07 533umol/mol STD RSK175	NA	1	1	STD67274	03/03/15 15:29
16G46882	RINSE	NA	1	1		03/03/15 15:41
16G46883	WG514119-08 133umol/mol ALT SRC STD	NA	1	1	STD68250	03/03/15 16:14
16G46884	WG514119-08 133umol/mol ALT SRC STD	NA	1	1	STD68250	03/03/15 17:10

Comments

Seq.	Rerun	Dil.	Reason	Analytes
10	X			
File ID: 16G46883				
	Wrong vial taken up by HT3 autosampler			

Approved: March 11, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 052215
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG524756 WG524855

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G47568	WG524755-01 133umol/mol CCV RSK175	NA	1	1	STD67274	05/22/15 09:59
16G47569	WG524756-01 BLANK RSK175	NA	1	1		05/22/15 10:32
16G47570	WG524756-02 67umol/mol LCS RSK175	NA	1	1	STD68250	05/22/15 10:44
16G47571	WG524756-03 67umol/mol LCS2 RSK175	NA	1	1	STD68250	05/22/15 10:56
16G47572	L15051303-01 A RSK175	6	1	1		05/22/15 13:33
16G47573	L15051303-03 A RSK175	6	1	1		05/22/15 13:44
16G47574	L15051303-05 A RSK175	6	1	1		05/22/15 13:56
16G47575	L15051303-07 A RSK175	6	1	1		05/22/15 14:07
16G47576	L15051303-09 A RSK175	6	1	1		05/22/15 14:19
16G47577	L15051303-11 A RSK175	6	1	1		05/22/15 14:31
16G47578	L15051289-01 A RSK175	<2	1	1		05/22/15 14:42
16G47579	WG524755-02 133umol/mol CCV RSK175	NA	1	1	STD67274	05/22/15 14:54
16G47580	L15051289-02 A RSK175	<2	1	1		05/22/15 15:06
16G47581	L15051289-03 A RSK175	<2	1	1		05/22/15 15:17
16G47582	L15051289-04 A RSK175	<2	1	1		05/22/15 15:29
16G47583	L15051290-01 A RSK175	<2	1	1		05/22/15 15:41
16G47584	L15051292-01 A RSK175	<2	1	1		05/22/15 15:52
16G47585	L15051292-02 A RSK175	<2	1	1		05/22/15 16:04
16G47586	L15051292-03 A RSK175	<2	1	1		05/22/15 16:16
16G47587	L15051292-04 A RSK175	<2	1	1		05/22/15 16:27
16G47588	L15051313-01 B (1of 2) RSK175	<2	1	1		05/22/15 16:39
16G47589	L15051314-01 A RSK175	5	1	1		05/22/15 16:51
16G47590	WG524755-03 133umol/mol CCV RSK175	NA	1	1	STD67274	05/22/15 17:02
16G47591	L15051318-01 B (1of 2) RSK175	5	1	1		05/22/15 17:14
16G47592	L15051320-01 A RSK175	6	1	1		05/22/15 17:26
16G47593	L15051322-01 A RSK175	5	1	1		05/22/15 17:37
16G47594	WG524755-04 133umol/mol CCV RSK175	NA	1	1	STD67274	05/22/15 17:49
16G47595	WG524855-01 BLANK RSK175	NA	1	1		05/22/15 18:00
16G47596	WG524855-02 67umol/mol LCS RSK175	NA	1	1	STD68250	05/22/15 18:12
16G47597	WG524855-03 67umol/mol LCS2 RSK175	NA	1	1	STD68250	05/22/15 18:23
16G47598	L15051303-03 B D1 5X RSK175	6	1	5		05/22/15 18:35
16G47599	L15051303-05 B D1 5X RSK175	6	1	5		05/22/15 18:46
16G47600	L15051303-11 B D1 5X RSK175	6	1	5		05/22/15 18:58
16G47601	L15051303-07 B A1 RSK175	6	1	1		05/22/15 19:10

Approved: May 28, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 052215
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG524756 WG524855

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G47602	L15051448-01 A RSK175	6	1	1		05/22/15 19:21
16G47603	L15051449-01 A RSK175	5	1	1		05/22/15 19:33
16G47604	L15051450-01 A RSK175	6	1	1		05/22/15 19:45
16G47605	WG524755-05 133umol/mol CCV RSK175	NA	1	1	STD67274	05/22/15 19:57
16G47606	L15051452-01 A RSK175	NA	1	1		05/22/15 20:08
16G47609	L15051452-01 A RSK175	6	1	1		05/22/15 20:43
16G47610	L15051453-01 A RSK175	6	1	1		05/22/15 20:54
16G47611	L15051455-01 A RSK175	6	1	1		05/22/15 21:06
16G47612	L15051456-01 A RSK175	6	1	1		05/22/15 21:17
16G47613	L15051458-01 A RSK175	6	1	1		05/22/15 21:29
16G47614	L15051461-01 A RSK175	6	1	1		05/22/15 21:40
16G47615	L15051462-01 A RSK175	6	1	1		05/22/15 21:52
16G47616	L15051464-01 A RSK175	7	1	1		05/22/15 22:03
16G47617	WG524755-06 133umol/mol CCV RSK175	NA	1	1	STD67274	05/22/15 22:15

Comments

Seq.	Rerun	Dil.	Reason	Analytes
5				
File ID: 16G47572				
	received with small amnt. headspace			
6	X	5	Over Calibration Range	CO2
File ID: 16G47573				
	received with small amnt. headspace			
7	X	5	Over Calibration Range	CO2
File ID: 16G47574				
	received with small amnt. headspace			
8	X	1	Carry-over contamination	CO2
File ID: 16G47575				
	received with small amnt. headspace			
9				
File ID: 16G47576				
	received with small amnt. headspace			
10	X	5	Over Calibration Range	CO2
File ID: 16G47577				
	received with small amnt. headspace			

Approved: May 28, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 052215
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG524756 WG524855

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
21				
File ID: 16G47588				
	vial B used because vial A dropped on floor			
24				
File ID: 16G47591				
	vial B used because vial A dropped on floor			
31	X	5	Check Standard Failure	CO2
File ID: 16G47598				
	received with small amnt. headspace			
32	X	5	Check Standard Failure	CO2
File ID: 16G47599				
	received with small amnt. headspace			
33	X	5	Check Standard Failure	CO2
File ID: 16G47600				
	received with small amnt. headspace			
34	X	1	Check Standard Failure	CO2
File ID: 16G47601				
	received with small amnt. headspace			
37	X	50	Over Calibration Range	m, ethane
File ID: 16G47604				
39				
File ID: 16G47606				
	NO VIAL PRESENT			
40	X	20	Over Calibration Range	m
File ID: 16G47609				
	poss. ethane C/O from previous sample			
41	X		Carry-over contamination	m
File ID: 16G47610				
43	X	5	Over Calibration Range	m
File ID: 16G47612				
44	X		Carry-over contamination	m
File ID: 16G47613				

Approved: May 28, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 052615
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG524992 WG524993

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G47618	WG524991-01 133umol/mol CCV RSK175	NA	1	1	STD67274	05/26/15 09:26
16G47619	WG524992-01 BLANK RSK175	NA	1	1		05/26/15 09:43
16G47620	WG524992-02 67umol/mol LCS RSK175	NA	1	1	STD68250	05/26/15 09:54
16G47621	WG524992-03 67umol/mol LCS2 RSK175	NA	1	1	STD68250	05/26/15 10:06
16G47622	L15051450-01 B D1 50X RSK175	6	1	50		05/26/15 13:05
16G47623	L15051452-01 B D1 20X RSK175	<2	1	20		05/26/15 13:17
16G47624	L15051303-03 C 00 5X RSK175	6	1	5		05/26/15 13:28
16G47625	L15051303-05 C 00 5X RSK175	6	1	5		05/26/15 13:40
16G47626	L15051303-07 C 00 5X RSK175	6	1	5		05/26/15 13:52
16G47627	L15051303-11 C 00 5X RSK175	6	1	5		05/26/15 14:04
16G47628	L15051456-01 B D1 5X RSK175	6	1	5		05/26/15 14:16
16G47629	WG524991-02 133umol/mol CCV RSK175	NA	1	1	STD67274	05/26/15 14:28
16G47630	L15051453-01 B A1 RSK175	7	1	1		05/26/15 14:39
16G47631	L15051458-01 B A1 RSK175	7	1	1		05/26/15 14:51
16G47632	L15051435-01 A RSK175	7	1	1		05/26/15 15:03
16G47633	L15051435-03 A RSK175	7	1	1		05/26/15 15:15
16G47634	L15051402-01 A RSK175	<2	1	1		05/26/15 15:26
16G47635	L15051403-01 A RSK175	<2	1	1		05/26/15 15:37
16G47636	L15051405-01 A RSK175	<2	1	1		05/26/15 15:49
16G47637	L15051405-02 A RSK175	<2	1	1		05/26/15 16:02
16G47638	L15051407-01 A RSK175	<2	1	1		05/26/15 16:13
16G47639	L15051407-02 A RSK175	<2	1	1		05/26/15 16:24
16G47640	WG524991-03 133umol/mol CCV RSK175	NA	1	1	STD657274	05/26/15 16:36
16G47641	L15051407-03 A RSK175	<2	1	1		05/26/15 16:48
16G47642	L15051407-04 A RSK175	<2	1	1		05/26/15 16:59
16G47643	L15051407-05 A RSK175	<2	1	1		05/26/15 17:11
16G47644	WG524991-04 133umol/mol CCV RSK175	NA	1	1	STD67274	05/26/15 17:23
16G47645	WG524993-01 BLANK RSK175	NA	1	1		05/26/15 17:35
16G47646	WG524993-02 67umol/mol LCS RSK175	NA	1	1	STD68250	05/26/15 17:46
16G47647	WG524993-03 67umol/mol LCS2 RSK175	NA	1	1	STD68250	05/26/15 17:58
16G47648	L15051409-01 A RSK175	<2	1	1		05/26/15 18:09
16G47649	L15051413-01 A RSK175	<2	1	1		05/26/15 18:21
16G47650	L15051413-02 A RSK175	<2	1	1		05/26/15 18:34
16G47651	L15051429-01 A RSK175	<2	1	1		05/26/15 18:46

Approved: May 28, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 052615
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG524992 WG524993

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G47652	L15051429-04 A RSK175	7	1	1		05/26/15 18:57
16G47653	L15051429-05 A RSK175	<2	1	1		05/26/15 19:09
16G47654	WG524991-05 133umol/mol CCV RSK175	NA	1	1	STD67274	05/26/15 19:20

Comments

Seq.	Rerun	Dil.	Reason	Analytes
9 File ID: 16G47626				
sample mistakenly ran as 5x when it was meant to be ran as a 1x for CO2 carryover. Dilution run still matches up with original run and 2nd run				
15 File ID: 16G47632	X	5	Over Calibration Range	CO2
16 File ID: 16G47633	X		Carry-over contamination	CO2

Approved: May 28, 2015

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Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B202656

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG514119-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-04	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-05	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-06	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-07	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-08	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B206590

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG524755-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG524755-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG524755-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051289-02	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051289-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051292-02	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051313-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051314-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051322-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051303-09	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051289-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051292-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051290-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051318-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051320-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051289-04	15	mL	15	mL					5.47	mL	5.47	mL	40
WG524756-02	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L15051303-07	15	mL	15	mL					5.47	mL	5.47	mL	40
WG524756-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051303-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051292-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051292-04	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051303-11	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051303-05	15	mL	15	mL					5.47	mL	5.47	mL	40
WG524756-03	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L15051303-03	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B206588

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG524755-04	15	mL	15	mL					5.47	mL	5.47	mL	40
WG524755-05	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051461-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051303-07	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051456-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG524855-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG524855-02	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L15051303-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051303-11	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051464-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051453-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051462-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG524855-03	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L15051303-05	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051455-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051448-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051449-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051458-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051450-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051452-01	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B206729

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG524991-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG524991-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG524991-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG524991-04	15	mL	15	mL					5.47	mL	5.47	mL	40
WG524991-05	15	mL	15	mL					5.47	mL	5.47	mL	40
WG524992-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051303-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051435-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051403-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG524993-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051452-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051303-07	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051405-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG524993-03	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L15051303-05	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051303-11	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051456-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051435-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051407-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051407-05	15	mL	15	mL					5.47	mL	5.47	mL	40
WG524993-02	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L15051409-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051429-04	15	mL	15	mL					5.47	mL	5.47	mL	40
WG524992-02	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L15051413-02	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051407-04	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051429-05	15	mL	15	mL					5.47	mL	5.47	mL	40
WG524992-03	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L15051458-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051405-02	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051407-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051413-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051407-02	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051402-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051429-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051450-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051453-01	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAR-2015
Analyst: JDS
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 66688
Analytical Workgroups: WG514119

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	NA
Project/Client Specific Requirements	NA
Special Standards	NA
Blanks	NA
TCL's	NA
Surrogates	NA
LCS (Laboratory Control Sample)	NA
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	NA
Surrogates	NA
Calculations & Correct Factors	NA
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
06-MAR-2015

Secondary Reviewer:
11-MAR-2015

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-11-2015 12:34:12

Microbac Laboratories Inc.

Data Checklist

Date: 22-MAY-2015
Analyst: JDS
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 68171
Analytical Workgroups: WG524756 WG524855

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	NA
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	X
Surrogates	NA
Calculations & Correct Factors	NA
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	NA
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
26-MAY-2015

Secondary Reviewer:
28-MAY-2015

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-28-2015 19:56:12

Microbac Laboratories Inc.

Data Checklist

Date: 26-MAY-2015
Analyst: JDS
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 68219
Analytical Workgroups: WG524992 WG524993

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	NA
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	X
Surrogates	NA
Calculations & Correct Factors	NA
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	NA
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
28-MAY-2015

Secondary Reviewer:
28-MAY-2015

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-28-2015 20:21:54

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: RSK175 AAB#: WG524756

Login Number: L15051303

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW13-052015	01	05/20/15					05/22/2015	2.2	7		05/22/15	2.2	7	
50WW14-052015	03	05/20/15					05/22/2015	2.2	7		05/22/15	2.2	7	
50WW11-052015	05	05/20/15					05/22/2015	2.1	7		05/22/15	2.1	7	
50WW12-052015	09	05/20/15					05/22/2015	2	7		05/22/15	2	7	
50WW23-052015	11	05/20/15					05/22/2015	1.9	7		05/22/15	1.9	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4197442
Report generated 06/01/2015 11:01

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: RSK175 AAB#: WG524855

Login Number: L15051303

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW06-052015	07	05/20/15					05/22/2015	2.2	7		05/22/15	2.2	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4197442
Report generated 06/01/2015 11:01

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: RSK175 AAB#: WG524992

Login Number: L15051303

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW14-052015	03	05/20/15					05/26/2015	6.2	7		05/26/15	6.2	7	
50WW11-052015	05	05/20/15					05/26/2015	6.1	7		05/26/15	6.1	7	
50WW23-052015	11	05/20/15					05/26/2015	5.9	7		05/26/15	5.9	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4197442
Report generated 06/01/2015 11:01

METHOD BLANK SUMMARY

Login Number: L15051303
Blank File ID: 16G47569
Prep Date: 05/22/15 10:32
Analyzed Date: 05/22/15 10:32
Analyst: JDS

Work Group: WG524756
Blank Sample ID: WG524756-01
Instrument ID: HP16
Method: RSK175

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG524756-02	16G47570	05/22/15 10:44	01
LCS2	WG524756-03	16G47571	05/22/15 10:56	01
50WW13-052015	L15051303-01	16G47572	05/22/15 13:33	01
50WW14-052015	L15051303-03	16G47573	05/22/15 13:44	01
50WW11-052015	L15051303-05	16G47574	05/22/15 13:56	01
50WW12-052015	L15051303-09	16G47576	05/22/15 14:19	01
50WW23-052015	L15051303-11	16G47577	05/22/15 14:31	01

Report Name: BLANK_SUMMARY
PDF File ID: 4197443
Report generated 06/01/2015 11:01

METHOD BLANK SUMMARY

Login Number: L15051303
Blank File ID: 16G47595
Prep Date: 05/22/15 18:00
Analyzed Date: 05/22/15 18:00
Analyst: JDS

Work Group: WG524855
Blank Sample ID: WG524855-01
Instrument ID: HP16
Method: RSK175

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG524855-02	16G47596	05/22/15 18:12	01
LCS2	WG524855-03	16G47597	05/22/15 18:23	01
50WW06-052015	L15051303-07	16G47601	05/22/15 19:10	01

Report Name: BLANK_SUMMARY
PDF File ID: 4197443
Report generated 06/01/2015 11:01

METHOD BLANK SUMMARY

Login Number: L15051303
Blank File ID: 16G47619
Prep Date: 05/26/15 09:43
Analyzed Date: 05/26/15 09:43
Analyst: JDS

Work Group: WG524992
Blank Sample ID: WG524992-01
Instrument ID: HP16
Method: RSK175

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG524992-02	16G47620	05/26/15 09:54	01
LCS2	WG524992-03	16G47621	05/26/15 10:06	01
50WW14-052015	L15051303-03	16G47624	05/26/15 13:28	DL02
50WW11-052015	L15051303-05	16G47625	05/26/15 13:40	DL02
50WW23-052015	L15051303-11	16G47627	05/26/15 14:04	DL02

Report Name: BLANK_SUMMARY
PDF File ID: 4197443
Report generated 06/01/2015 11:01

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051303 Prep Date: 05/22/15 10:32 Sample ID: WG524756-01
Instrument ID: HP16 Run Date: 05/22/15 10:32 Prep Method: 5021
File ID: 16G47569 Analyst: JDS Method: RSK175
Workgroup (AAB#): WG524756 Matrix: Water Units: ug/L
Contract #: Cal ID: HP16 - 03-MAR-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Carbon Dioxide	2500	10000	2500	1	U
Methane	1.00	5.00	1.00	1	U
ethene	1.00	5.00	1.00	1	U
ethane	1.00	5.00	1.00	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4197444
01-JUN-2015 11:01

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051303 Prep Date: 05/22/15 18:00 Sample ID: WG524855-01
Instrument ID: HP16 Run Date: 05/22/15 18:00 Prep Method: 5021
File ID: 16G47595 Analyst: JDS Method: RSK175
Workgroup (AAB#): WG524855 Matrix: Water Units: ug/L
Contract #: Cal ID: HP16 - 03-MAR-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Carbon Dioxide	2500	10000	2500	1	U
Methane	1.00	5.00	1.00	1	U
ethene	1.00	5.00	1.00	1	U
ethane	1.00	5.00	1.00	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4197444
01-JUN-2015 11:01

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051303 Prep Date: 05/26/15 09:43 Sample ID: WG524992-01
Instrument ID: HP16 Run Date: 05/26/15 09:43 Prep Method: 5021
File ID: 16G47619 Analyst: JDS Method: RSK175
Workgroup (AAB#): WG524992 Matrix: Water Units: ug/L
Contract #: Cal ID: HP16 - 03-MAR-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Carbon Dioxide	2500	10000	2500	1	U
Methane	1.00	5.00	1.00	1	U
ethene	1.00	5.00	1.00	1	U
ethane	1.00	5.00	1.00	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4197444
01-JUN-2015 11:01

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051303 Analyst: JDS Prep Method: 5021
Instrument ID: HP16 Matrix: Water Method: RSK175
Workgroup (AAB#): WG524855 Units: ug/L
QC Key: DOD4 Lot #: STD68250

Sample ID: WG524855-02 LCS File ID: 16G47596 Run Date: 05/22/2015 18:12
Sample ID: WG524855-03 LCS2 File ID: 16G47597 Run Date: 05/22/2015 18:23

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Methane	114	117	102	114	111	96.8	5.29	85 - 115	20	
ethene	200	202	101	200	190	94.9	6.28	85 - 115	20	
ethane	214	210	98.2	214	197	92.1	6.35	85 - 115	20	
Carbon Dioxide	31300	23500	75.1	31300	25800	82.4	9.21	10 - 200	40	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4197445
Report generated: 06/01/2015 11:01

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051303 Analyst: JDS Prep Method: 5021
Instrument ID: HP16 Matrix: Water Method: RSK175
Workgroup (AAB#): WG524756 Units: ug/L
QC Key: DOD4 Lot #: STD68250

Sample ID: WG524756-02 LCS File ID: 16G47570 Run Date: 05/22/2015 10:44
Sample ID: WG524756-03 LCS2 File ID: 16G47571 Run Date: 05/22/2015 10:56

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Methane	114	112	98.2	114	114	99.5	1.34	85 - 115	20	
ethene	200	196	98.1	200	199	99.8	1.77	85 - 115	20	
ethane	214	203	94.8	214	207	96.7	1.99	85 - 115	20	
Carbon Dioxide	31300	30100	96.2	31300	29100	93.0	3.37	10 - 200	40	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4197445
Report generated: 06/01/2015 11:01

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051303 Analyst: JDS Prep Method: 5021
Instrument ID: HP16 Matrix: Water Method: RSK175
Workgroup (AAB#): WG524992 Units: ug/L
QC Key: DOD4 Lot #: STD68250

Sample ID: WG524992-02 LCS File ID: 16G47620 Run Date: 05/26/2015 09:54
Sample ID: WG524992-03 LCS2 File ID: 16G47621 Run Date: 05/26/2015 10:06

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Methane	114	109	95.7	114	107	93.7	2.14	85 - 115	20	
ethene	200	188	94.4	200	184	92.2	2.32	85 - 115	20	
ethane	214	195	91.1	214	191	89.2	2.11	85 - 115	20	
Carbon Dioxide	31300	30900	98.6	31300	29600	94.4	4.29	10 - 200	40	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4197445
Report generated: 06/01/2015 11:01

Calibration Table Report
Method: RSKEXT1.M
Title: RSK175 HP16 (SOP: OVL RSK01) 030315
Last Calibration: Fri Mar 06 11:52:33 2015
Curve:WG514119
Calibration Files

		0.67	1.67	33.3	66.7	133	333	533			
		16G46875.	16G46876.	16G46877.	16G46878.	16G46879.	16G46880.	16G46881.D			
	Compound								Avg	%RSD	Linear
T	methane		442542.3	201716.7	175611.6	187516.9	186065.3	188702.9	230359.0	45.3	0.999
T	ethene		322209.5	334124.6	295911.1	313430.8	319356.4	318282.1	317219.0	3.9	
T	acetylene		316851.9	343603.6	313507.6	354933.8	357109.5	344601.6	338435.0	5.6	
T	ethane	381661.4	339569.9	346403.4	312338.4	328333.4	335709.7	335266.3	339897.0	6.3	
T	propane	528069.3	481580.8	518227.1	469331.7	483950.9	500133.6	493547.4	496406.0	4.2	
T	n-butane	686564.3	616037.4	680754.9	613926.5	634552.4	659898.4	646188.9	648275.0	4.5	
	Signal #2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
T	carbon dioxide		3977.4	5604.2	5581.8	6054.5	6060.7	5810.7	5514.9	14.2	

Fri Mar 06 11:59:12 2015

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15051303 Run Date: 03/03/2015 Sample ID: WG514119-08
Instrument ID: HP16 Run Time: 17:10 Method: RSK175
File ID: 16G46884 Analyst: JDS QC Key: DOD4
ICal Workgroup: WG514119 Cal ID: HP16 - 03-MAR-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
carbon dioxide		62500	65100	ug/L	5740	4.10	15	
methane		228	236	ug/L	195000	3.50	15	
ethene		398	407	ug/L	324000	2.20	15	
ethane		427	423	ug/L	337000	0.900	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4197446
Report generated 06/01/2015 11:01

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051303 Run Date: 05/22/2015 Sample ID: WG524755-01
Instrument ID: HP16 Run Time: 09:59 Method: RSK175
File ID: 16G47568 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG524756 Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62500	63300	ug/L	5590	1.28	15	
methane		228	204	ug/L	169000	10.6	15	
ethene		398	355	ug/L	283000	10.8	15	
ethane		427	372	ug/L	296000	12.8	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4197447
Report generated 06/01/2015 11:01

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051303 Run Date: 05/22/2015 Sample ID: WG524755-02
Instrument ID: HP16 Run Time: 14:54 Method: RSK175
File ID: 16G47579 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG524756 Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62500	62300	ug/L	5500	0.259	15	
methane		228	212	ug/L	175000	7.07	15	
ethene		398	368	ug/L	293000	7.61	15	
ethane		427	387	ug/L	308000	9.34	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4197447
Report generated 06/01/2015 11:01

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051303 Run Date: 05/22/2015 Sample ID: WG524755-04
Instrument ID: HP16 Run Time: 17:49 Method: RSK175
File ID: 16G47594 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG524855 Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62500	61100	ug/L	5390	2.20	15	
methane		228	214	ug/L	177000	6.22	15	
ethene		398	368	ug/L	293000	7.58	15	
ethane		427	387	ug/L	308000	9.24	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4197447
Report generated 06/01/2015 11:01

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051303
Run Date: 05/26/2015
Sample ID: WG524991-01
Instrument ID: HP16
Run Time: 09:26
Method: RSK175
File ID: 16G47618
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG524992
Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62500	65200	ug/L	5760	4.38	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4197447
Report generated 06/01/2015 11:01

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051303
Run Date: 05/26/2015
Sample ID: WG524991-02
Instrument ID: HP16
Run Time: 14:28
Method: RSK175
File ID: 16G47629
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG524992
Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62500	64500	ug/L	5690	3.20	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4197447
Report generated 06/01/2015 11:01

2.1.2.3 Sample Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\052215\16G47572.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDchem\1\DATA\052215\16G47572.D\TCD2B.CH
Acq On : 22 May 2015 13:33 Operator: JDS
Sample : L15051303-01 A RSK175 Inst : HP16
Misc : 1,1 received with small amnt. headspace Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 22 13:39:25 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	702972	1.579	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	141664369	25687.680	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47572.D RSKEXT1.M Fri May 22 13:39:25 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\052215\16G47572.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDchem\1\DATA\052215\16G47572.D\TCD2B.CH
Acq On : 22 May 2015 13:33 Operator: JDS
Sample : L15051303-01 A RSK175 Inst : HP16
Misc : 1,1 received with small amnt. headspace Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 22 13:39 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

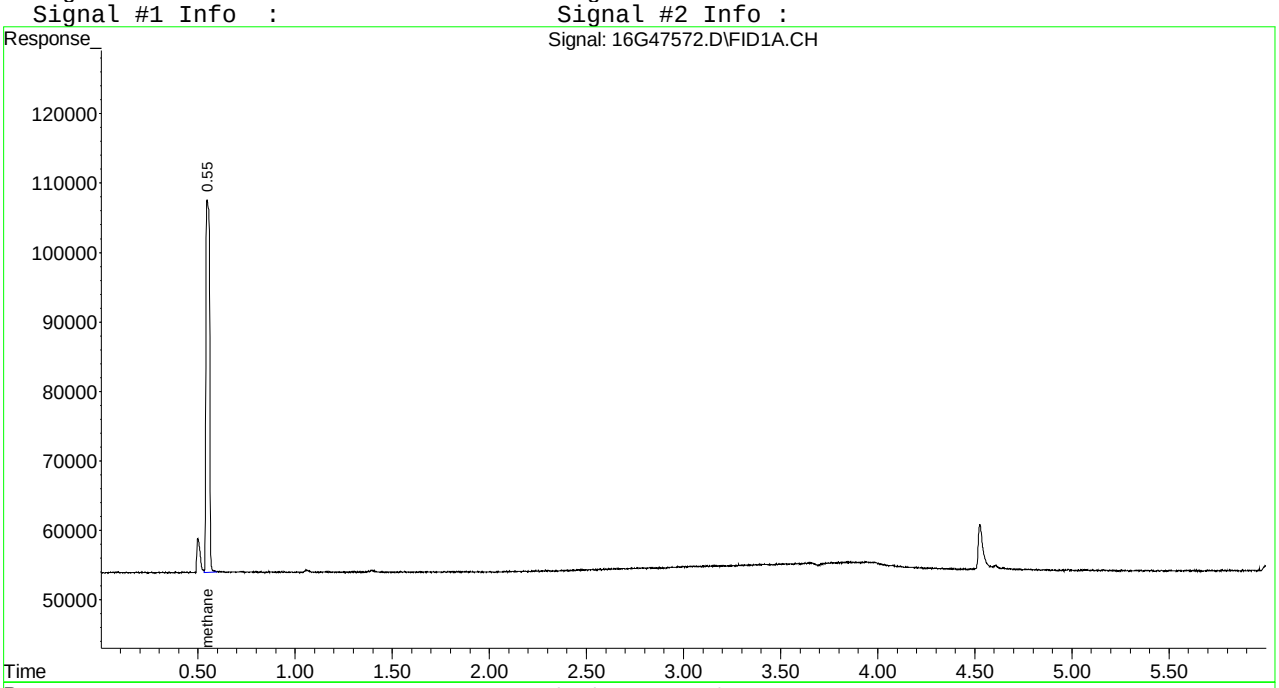

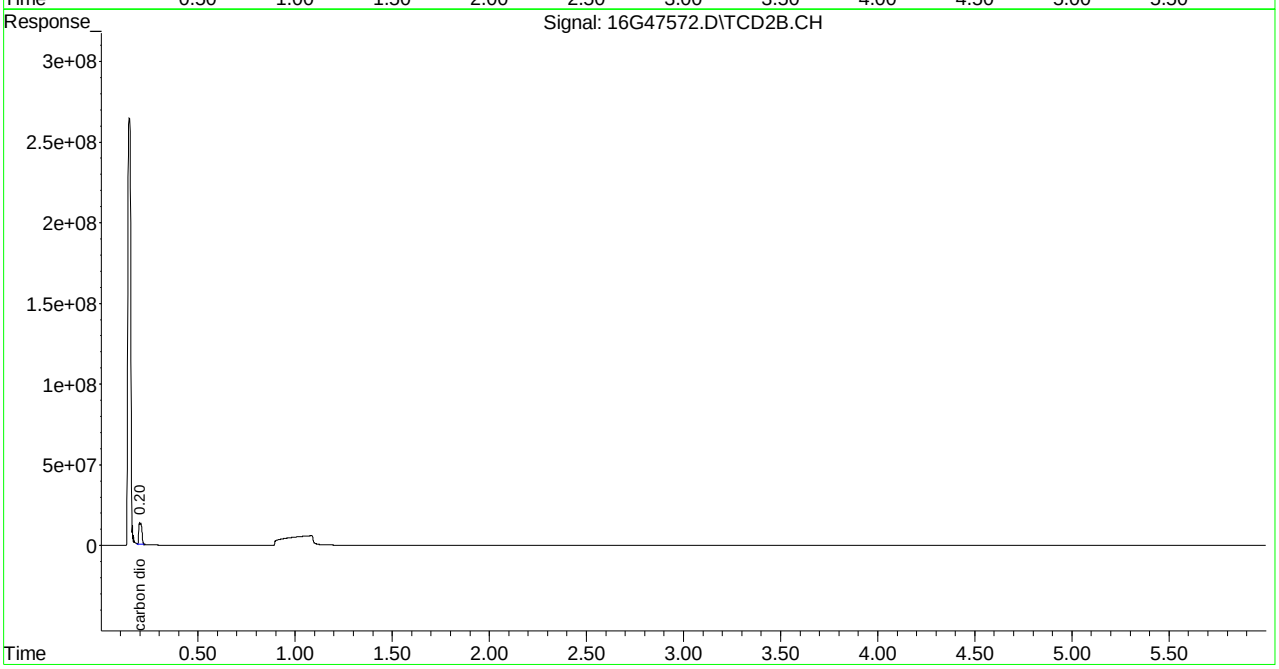

Quantitation Report (Not Reviewed)

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Signal #1 : C:\MSDchem\1\DATA\052215\16G47573.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDchem\1\DATA\052215\16G47573.D\TCD2B.CH
Acq On    : 22 May 2015  13:44                      Operator: JDS
Sample    : L15051303-03 A RSK175                   Inst    : HP16
Misc      : 1,1 received with small amnt. headspace  Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: May 22 13:50:46 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                   Signal #2 Phase:
Signal #1 Info  :                   Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	649575	1.291	umol/
2) T	ethene	1.06	20082	0.063	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.40	15507	0.046	umol/
5) T	propane	3.83	9741	0.020	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	458534738	83145.067	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\052215\16G47573.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDchem\1\DATA\052215\16G47573.D\TCD2B.CH
Acq On : 22 May 2015 13:44 Operator: JDS
Sample : L15051303-03 A RSK175 Inst : HP16
Misc : 1,1 received with small amnt. headspace Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 22 13:50 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

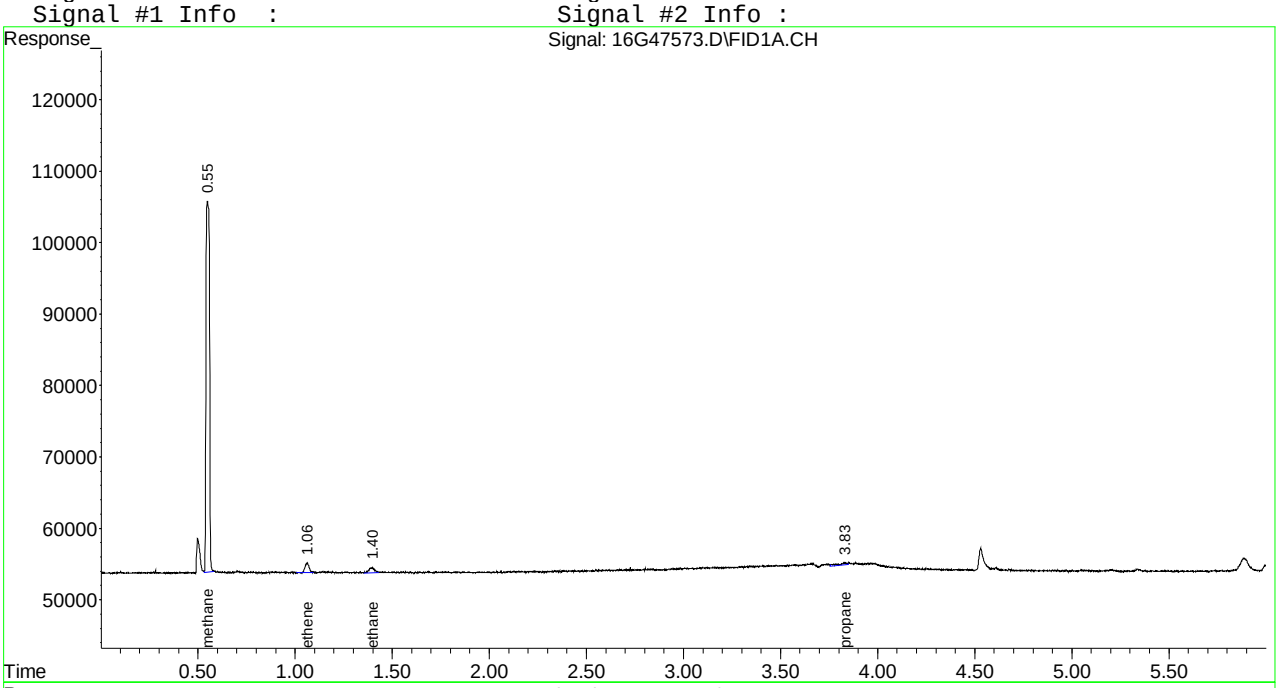

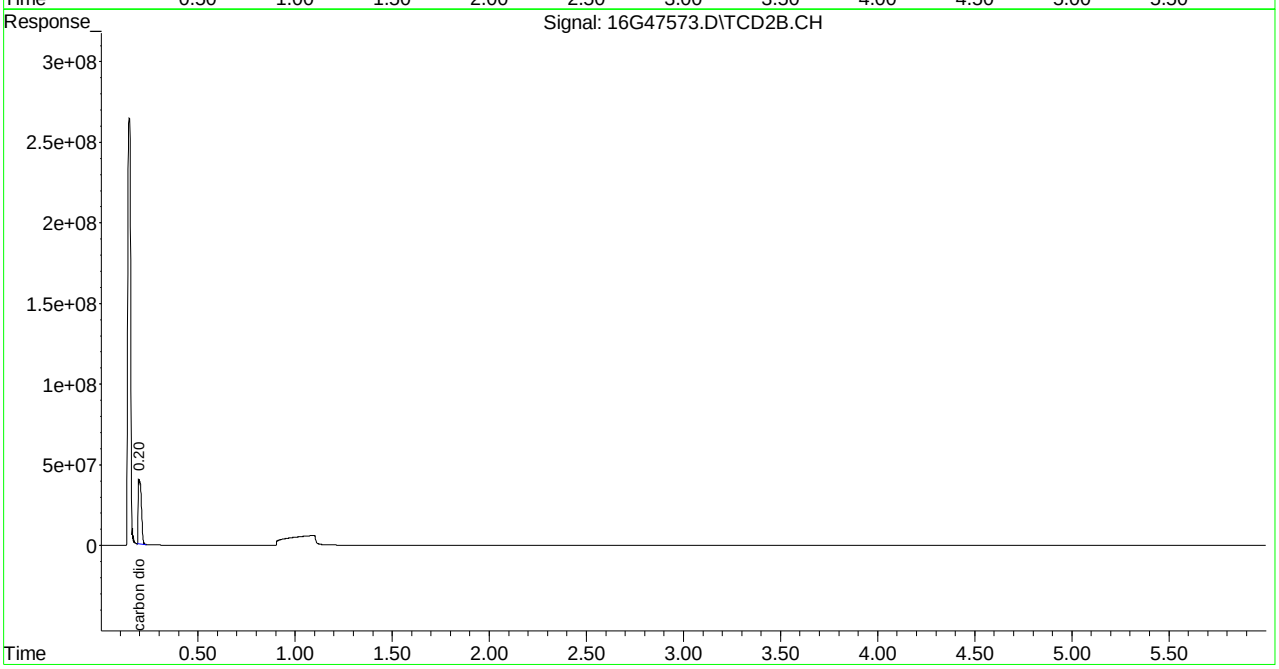

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDchem\1\DATA\052615\16G47624.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDchem\1\DATA\052615\16G47624.D\TCD2B.CH
Acq On    : 26 May 2015  13:28                        Operator: JDS
Sample    : L15051303-03 C 00 5X RSK175               Inst    : HP16
Misc      : 1,5                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: May 26 13:34:42 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	390491	N.D.	umol/
2) T	ethene	1.06	6491	0.020	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.39	8647	0.025	umol/
5) T	propane	3.83	3086	0.006	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	97734552	17721.985	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

16G47624.D RSKEXT1.M Tue May 26 13:34:42 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\052615\16G47624.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDchem\1\DATA\052615\16G47624.D\TCD2B.CH
Acq On : 26 May 2015 13:28 Operator: JDS
Sample : L15051303-03 C 00 5X RSK175 Inst : HP16
Misc : 1,5 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 26 13:34 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

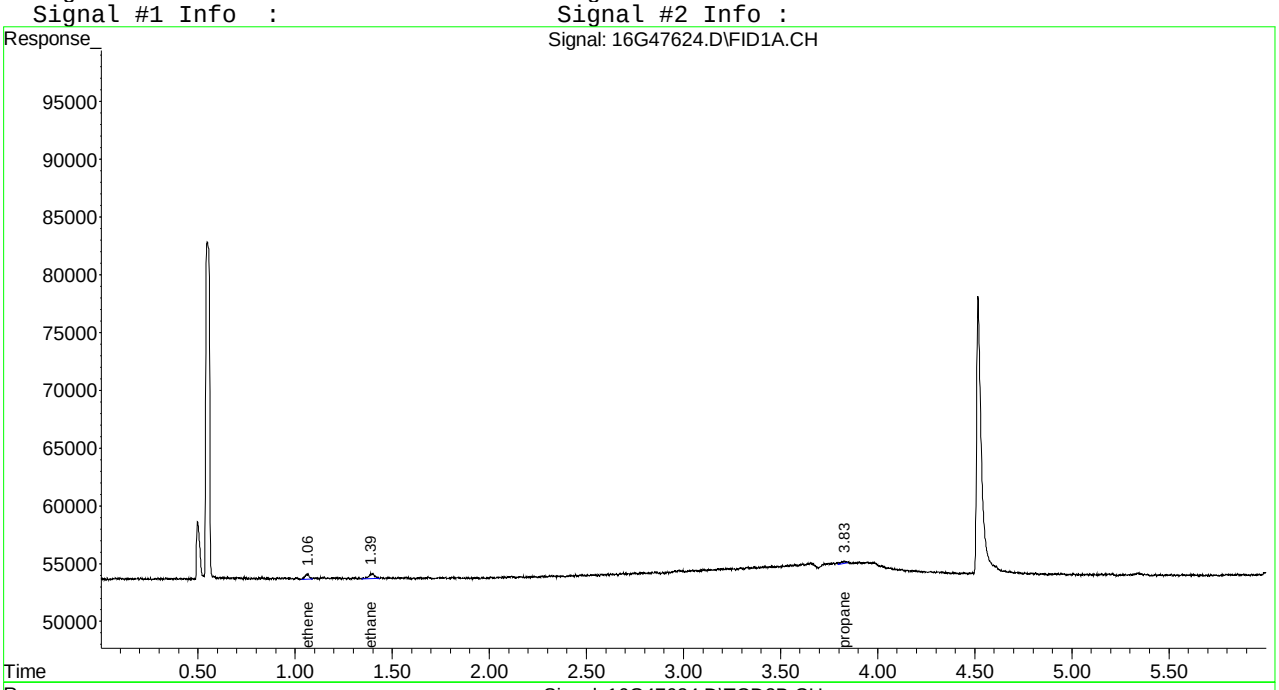

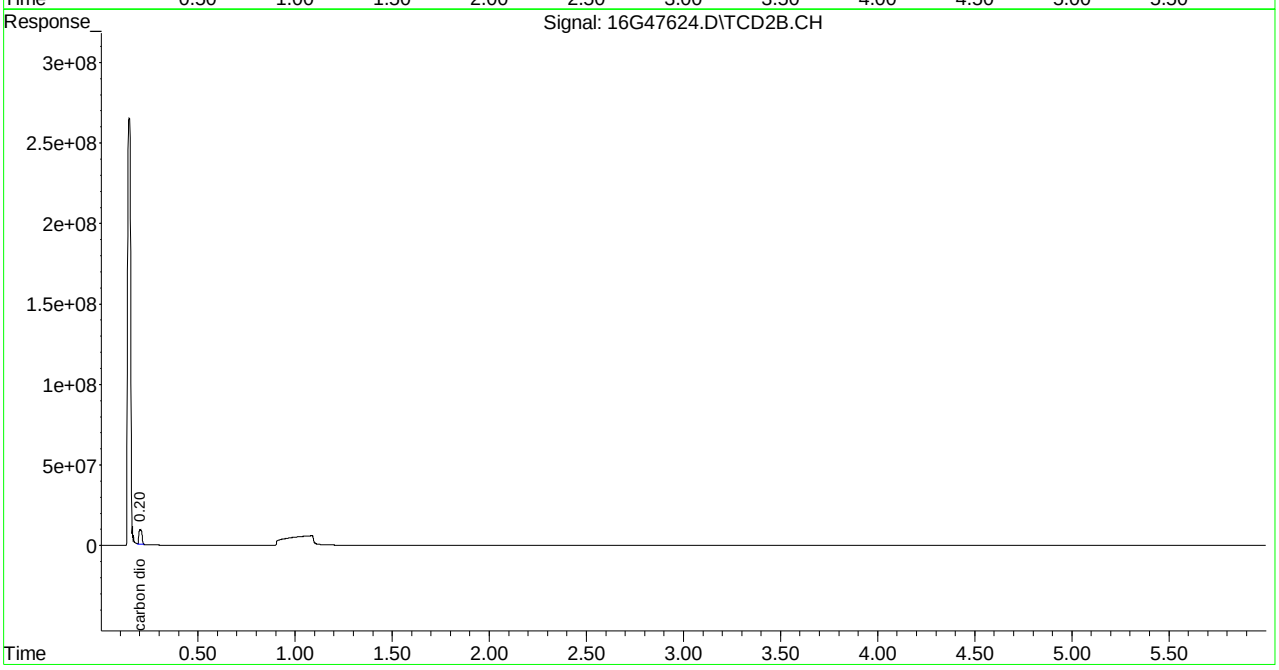

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\052215\16G47574.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDchem\1\DATA\052215\16G47574.D\TCD2B.CH
Acq On : 22 May 2015 13:56 Operator: JDS
Sample : L15051303-05 A RSK175 Inst : HP16
Misc : 1,1 received with small amnt. headspace Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 22 14:03:09 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	824370	2.233	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.40	13065	0.038	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	595821665	108038.995	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47574.D RSKEXT1.M Fri May 22 14:03:09 2015 Page 1

```
Signal #1 : C:\MSDchem\1\DATA\052215\16G47574.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDchem\1\DATA\052215\16G47574.D\TCD2B.CH
Acq On    : 22 May 2015  13:56                        Operator: JDS
Sample    : L15051303-05 A RSK175                     Inst    : HP16
Misc      : 1,1 received with small amnt. headspace   Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: May 22 14:03 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

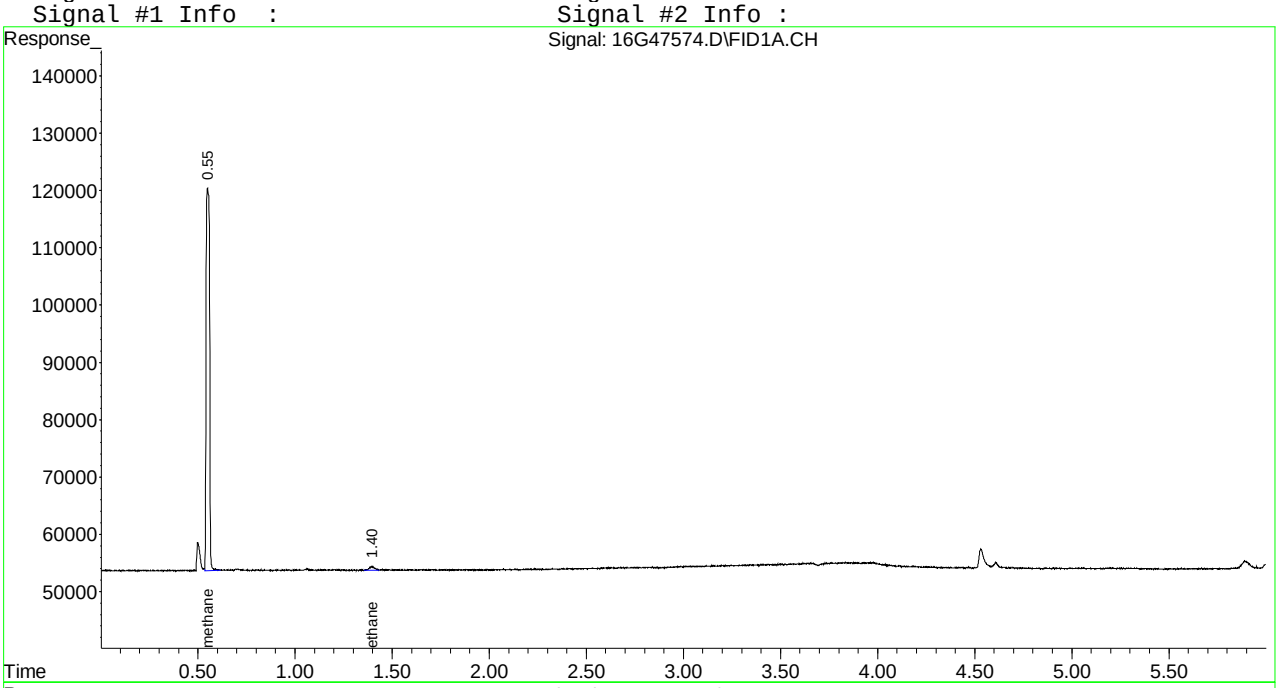

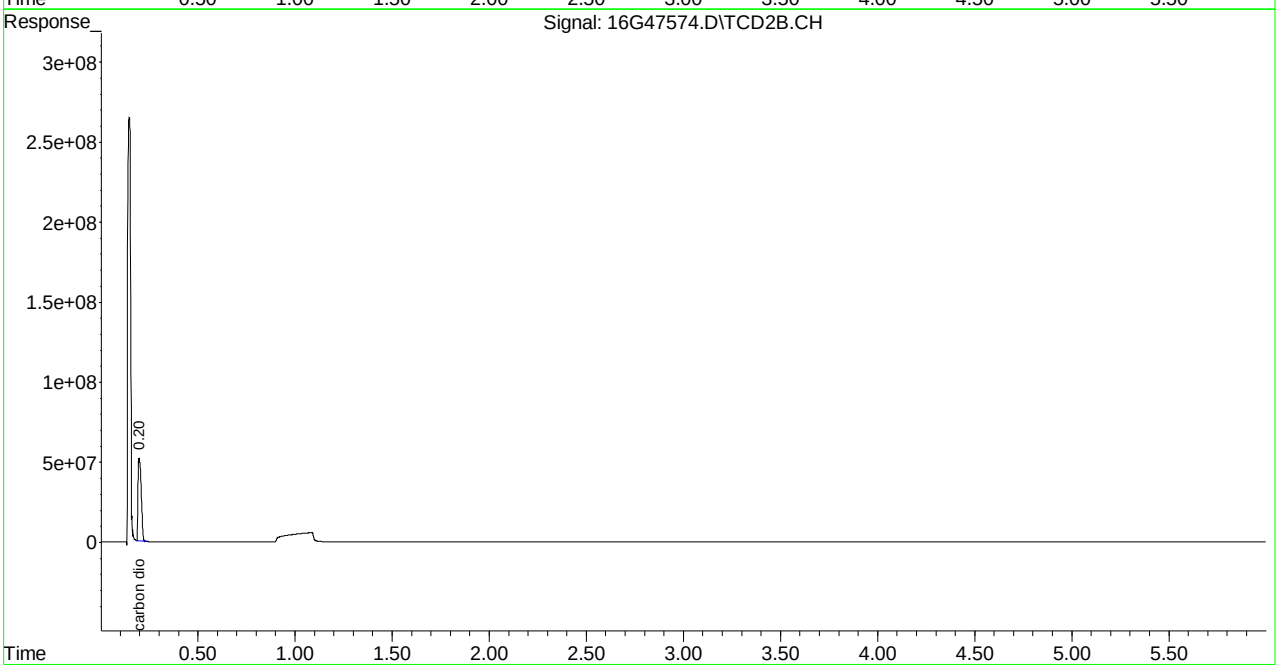

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDchem\1\DATA\052615\16G47625.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDchem\1\DATA\052615\16G47625.D\TCD2B.CH
Acq On    : 26 May 2015  13:40                        Operator: JDS
Sample    : L15051303-05 C 00 5X RSK175               Inst    : HP16
Misc      : 1,5                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: May 26 13:46:43 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	435356	0.136	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	120942483	21930.227	umol/

Signal #1 : C:\MSDchem\1\DATA\052615\16G47625.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDchem\1\DATA\052615\16G47625.D\TCD2B.CH
Acq On : 26 May 2015 13:40 Operator: JDS
Sample : L15051303-05 C 00 5X RSK175 Inst : HP16
Misc : 1,5 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 26 13:46 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

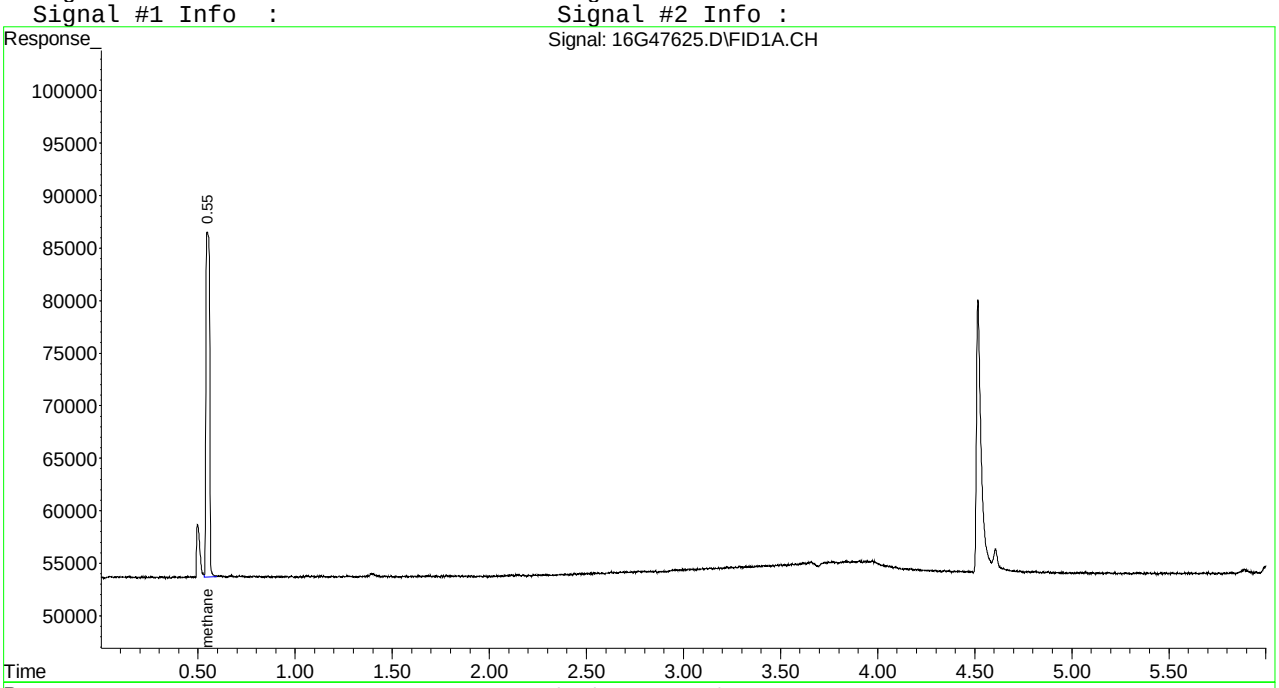

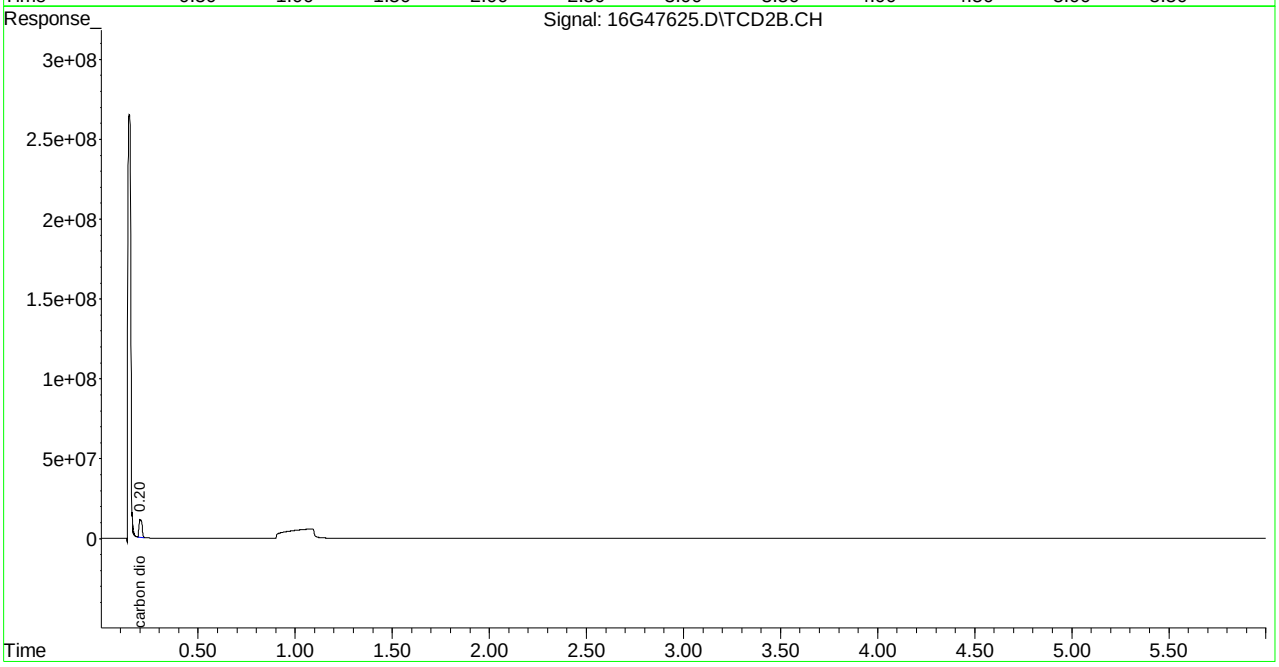

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDchem\1\DATA\052215\16G47601.D\FID1A.CH Vial: 34
Signal #2 : C:\MSDchem\1\DATA\052215\16G47601.D\TCD2B.CH
Acq On    : 22 May 2015  19:10                      Operator: JDS
Sample    : L15051303-07 B A1 RSK175                Inst    : HP16
Misc      : 1,1 received with small amnt. headspace  Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: May 22 19:16:19 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                   Signal #2 Phase:
Signal #1 Info  :                   Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	434718	0.133	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.40	15031	0.044	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	286896371	52022.270	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

16G47601.D RSKEXT1.M Fri May 22 19:16:19 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\052215\16G47601.D\FID1A.CH Vial: 34
Signal #2 : C:\MSDchem\1\DATA\052215\16G47601.D\TCD2B.CH
Acq On : 22 May 2015 19:10 Operator: JDS
Sample : L15051303-07 B A1 RSK175 Inst : HP16
Misc : 1,1 received with small amnt. headspace Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 22 19:16 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

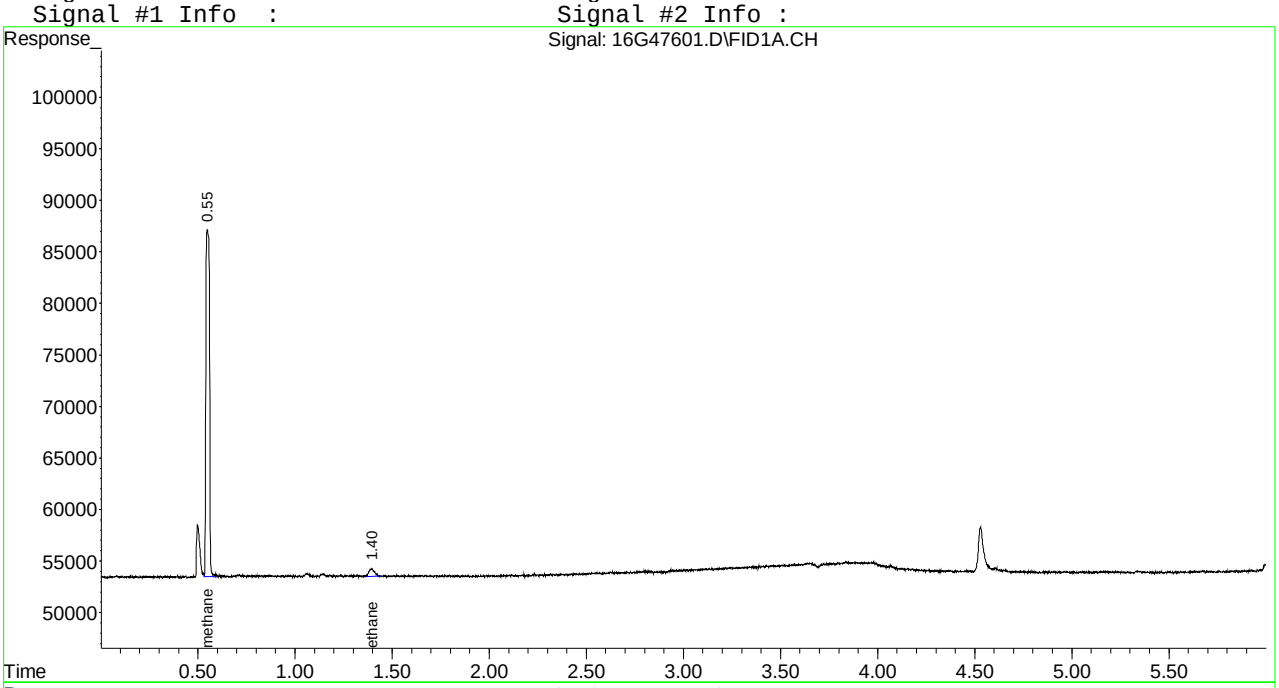

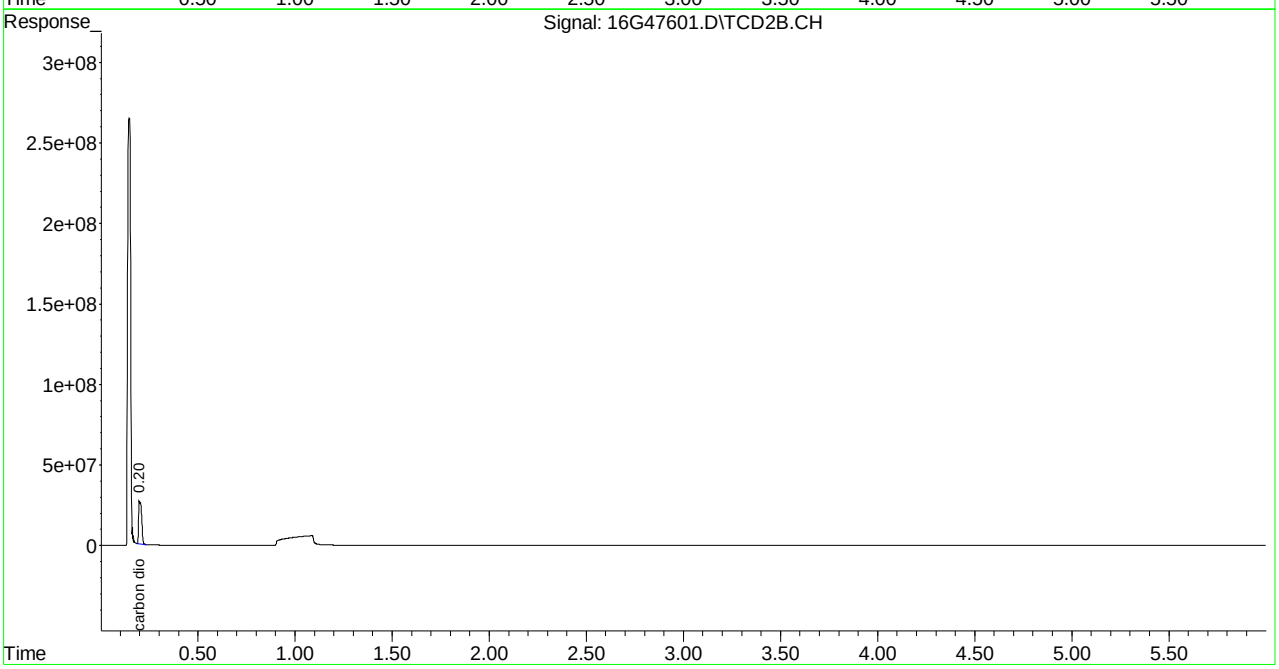

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\052215\16G47576.D\FID1A.CH Vial: 9
Signal #2 : C:\MSDCHEM\1\DATA\052215\16G47576.D\TCD2B.CH
Acq On : 22 May 2015 14:19 Operator: JDS
Sample : L15051303-09 A RSK175 Inst : HP16
Misc : 1,1 received with small amnt. headspace Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 22 14:25:53 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	443507	0.180	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	178954626	32449.438	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47576.D RSKEXT1.M Fri May 22 14:37:38 2015 Page 1

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\052215\16G47576.D\FID1A.CH Vial: 9
Signal #2 : C:\MSDCHEM\1\DATA\052215\16G47576.D\TCD2B.CH
Acq On    : 22 May 2015  14:19                      Operator: JDS
Sample    : L15051303-09 A RSK175                   Inst    : HP16
Misc      : 1,1 received with small amnt. headspace Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: May 22 14:25 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

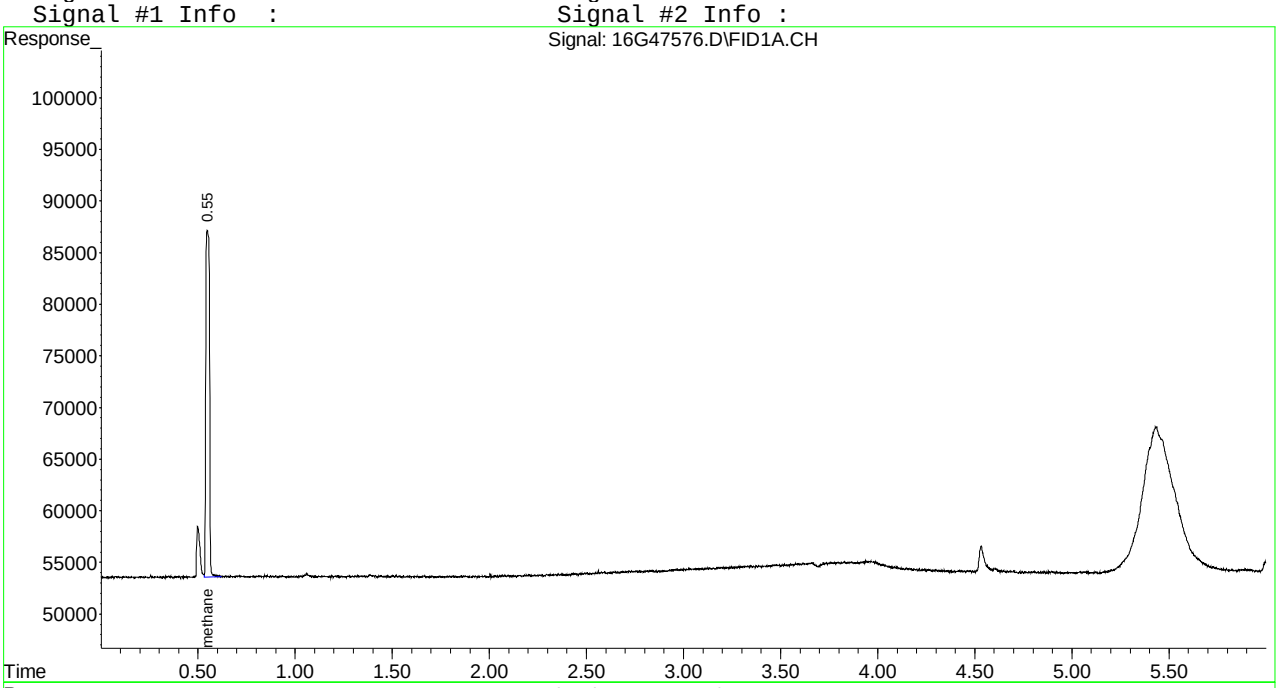

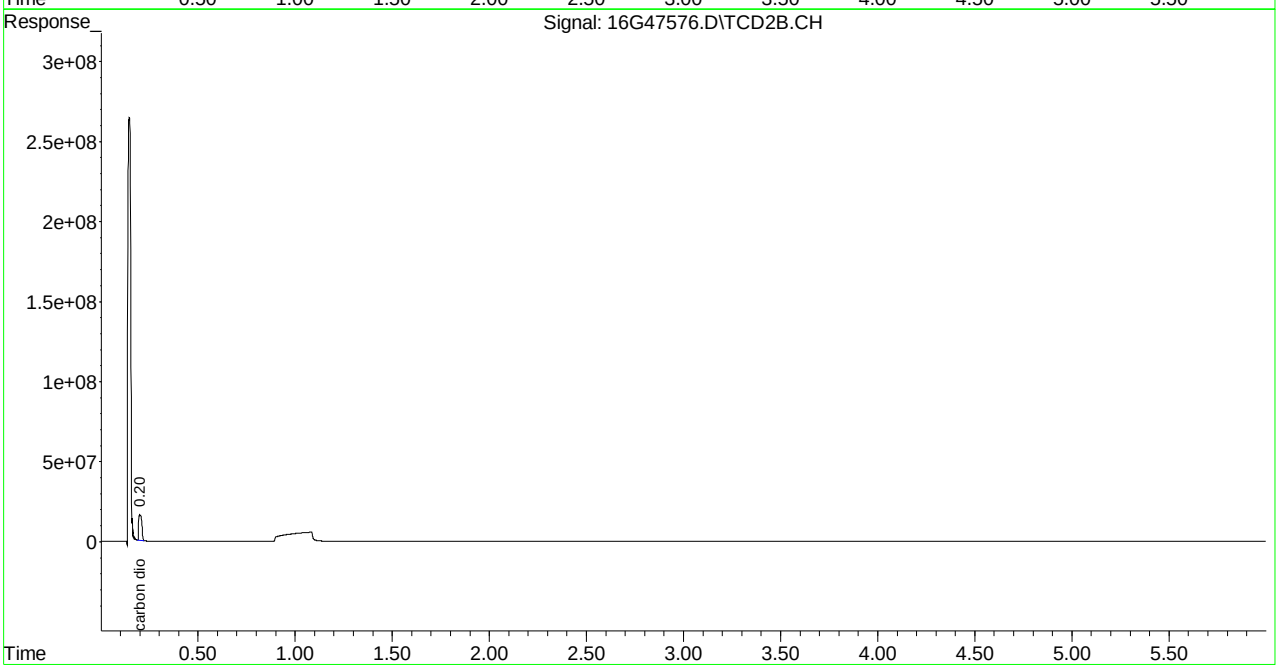

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\052215\16G47577.D\FID1A.CH Vial: 10
Signal #2 : C:\MSDCHEM\1\DATA\052215\16G47577.D\TCD2B.CH
Acq On    : 22 May 2015  14:31                      Operator: JDS
Sample    : L15051303-11 A RSK175                   Inst    : HP16
Misc      : 1,1 received with small amnt. headspace  Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: May 22 14:37:19 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                   Signal #2 Phase:
Signal #1 Info  :                   Signal #2 Info :
```

Compound	R.T.	Response	Conc	Units
Target Compounds				
1) T methane	0.55	281594	N.D.	umol/
2) T ethene	0.00	0	N.D.	umol/
3) T acetylene	0.00	0	N.D.	umol/
4) T ethane	0.00	0	N.D.	umol/
5) T propane	0.00	0	N.D.	umol/
6) T n-butane	0.00	0	N.D.	umol/
8) T carbon dioxide	0.20	489620952	88781.860	umol/

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\052215\16G47577.D\FID1A.CH Vial: 10
Signal #2 : C:\MSDCHEM\1\DATA\052215\16G47577.D\TCD2B.CH
Acq On    : 22 May 2015  14:31                      Operator: JDS
Sample    : L15051303-11 A RSK175                   Inst    : HP16
Misc      : 1,1 received with small amnt. headspace Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: May 22 14:37 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

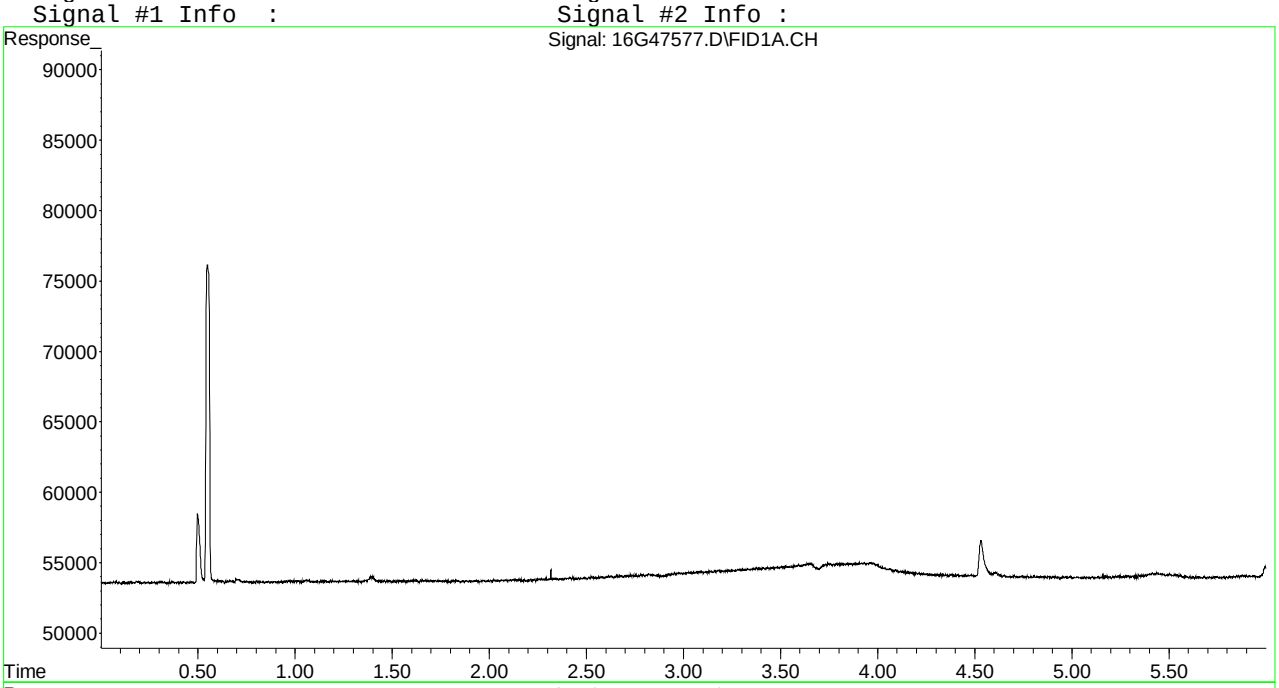

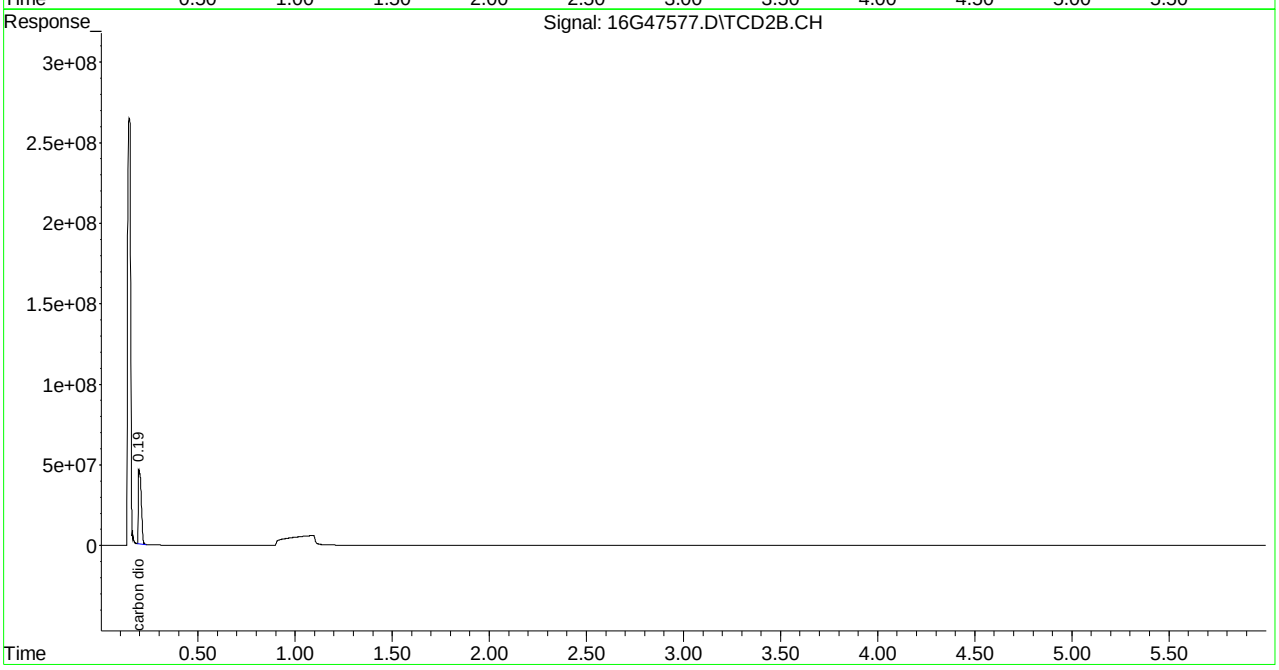

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\052615\16G47627.D\FID1A.CH Vial: 10
Signal #2 : C:\MSDCHEM\1\DATA\052615\16G47627.D\TCD2B.CH
Acq On    : 26 May 2015  14:04                        Operator: JDS
Sample    : L15051303-11 C 00 5X RSK175               Inst    : HP16
Misc      : 1,5 rec. w/ small amnt. headspace         Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: May 26 14:10:38 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	313011	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	93369254	16930.436	umol/

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\052615\16G47627.D\FID1A.CH Vial: 10
Signal #2 : C:\MSDCHEM\1\DATA\052615\16G47627.D\TCD2B.CH
Acq On    : 26 May 2015  14:04                        Operator: JDS
Sample    : L15051303-11 C 00 5X RSK175               Inst    : HP16
Misc      : 1,5 rec. w/ small amnt. headspace         Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: May 26 14:10 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

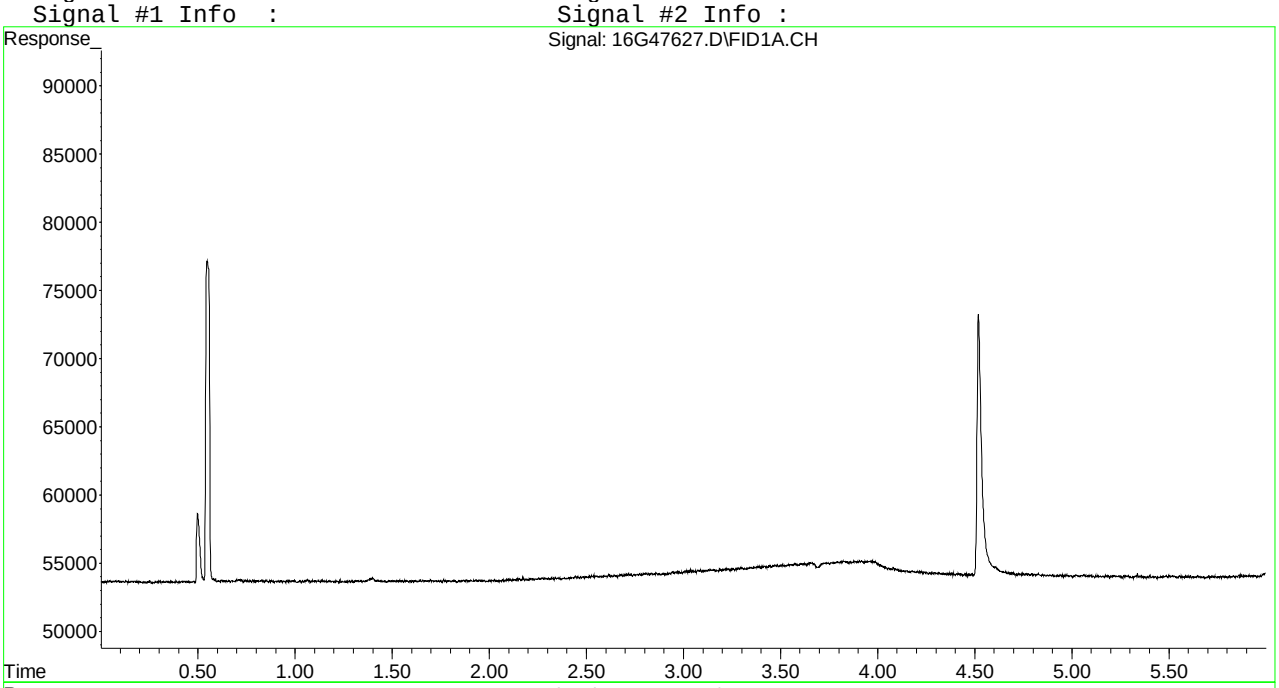

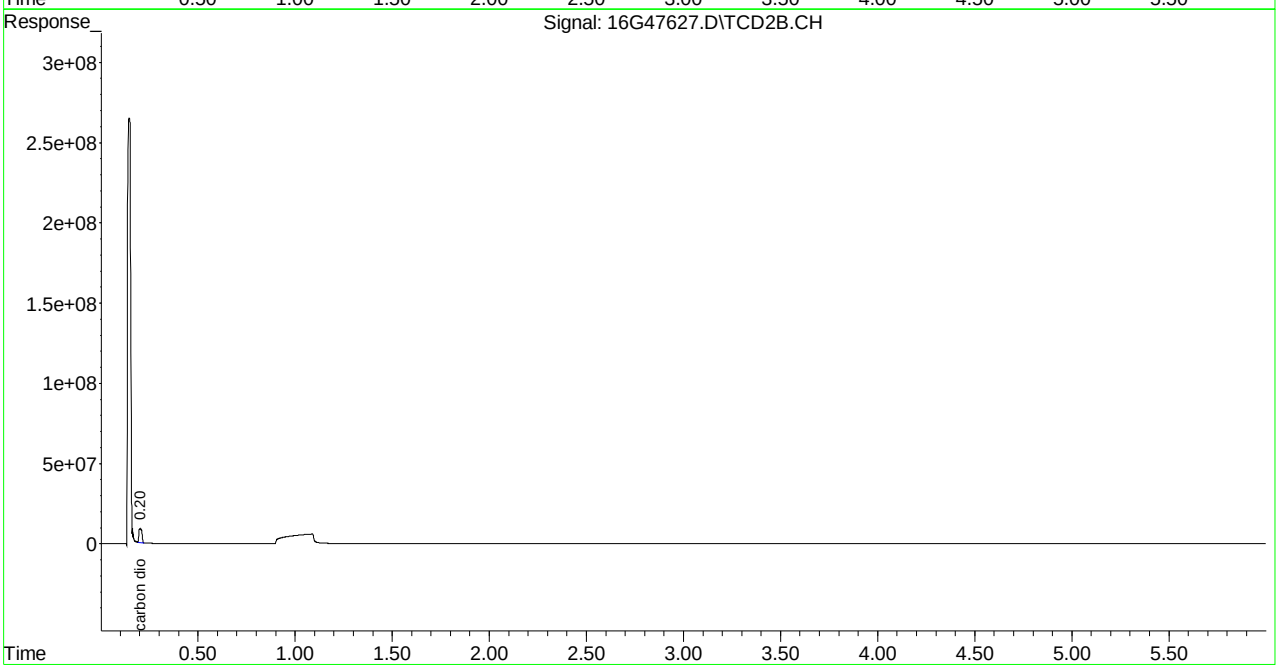

2.1.2.4 Standards Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46875.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46875.D\TCD2B.CH
Acq On : 03 Mar 2015 14:17 Operator: JDS
Sample : WG514119-01 0.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:54:08 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	566979	0.846	umol/
2) T	ethene	1.06	233416	0.736	umol/
3) T	acetylene	1.14	213812	0.632	umol/
4) T	ethane	1.39	254568	0.749	umol/
5) T	propane	3.83	352222	0.710	umol/
6) T	n-butane	5.34	457938	0.706	umol/
8) T	carbon dioxide	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46875.D RSKEXT1.M Fri Mar 06 11:56:43 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46875.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46875.D\TCD2B.CH
Acq On : 03 Mar 2015 14:17 Operator: JDS
Sample : WG514119-01 0.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:54 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

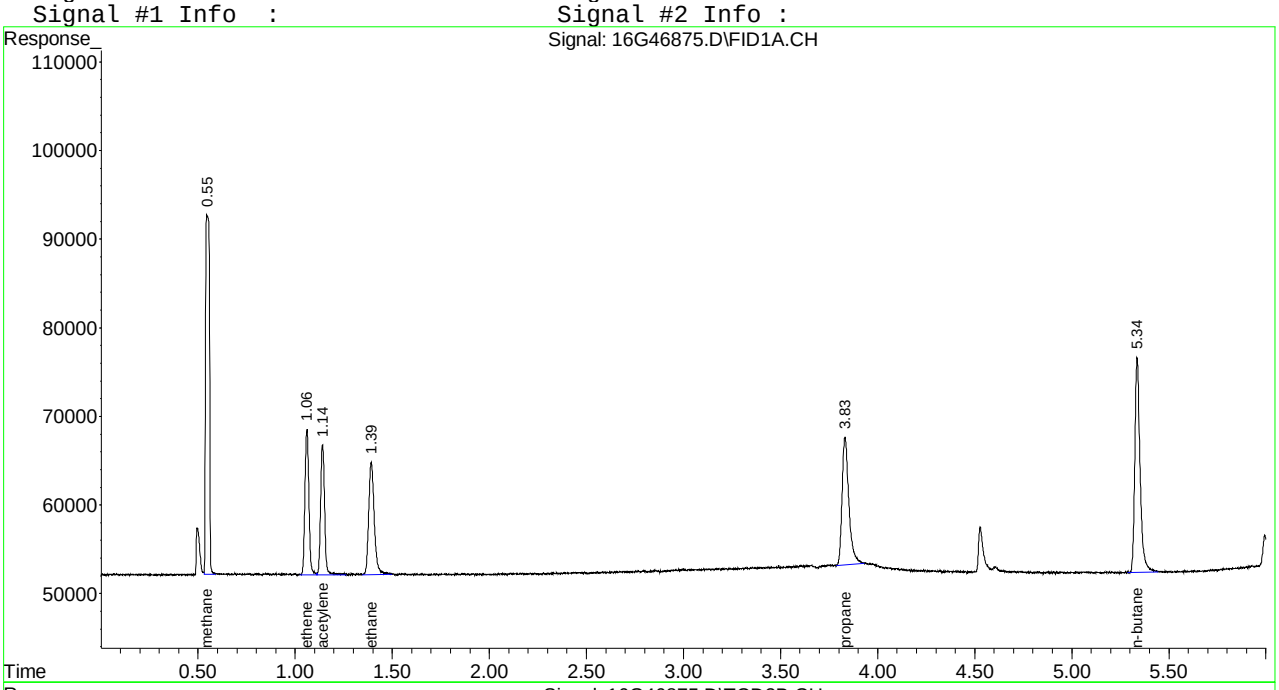

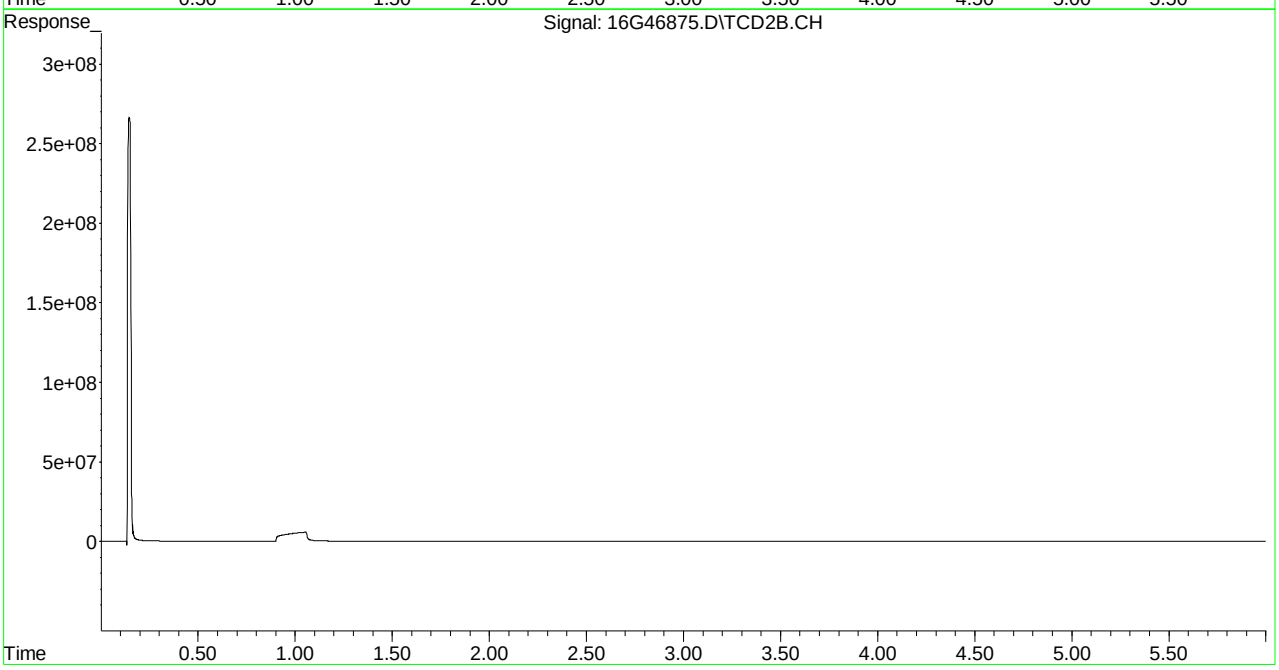

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46875.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46875.D\TCD2B.CH
Acq On : 03 Mar 2015 14:17 Operator: JDS
Sample : WG514119-01 0.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	-1.000	0.846	0.0	0	0.00
2	T	ethene	-1.000	0.736	0.0	100	0.00
3	T	acetylene	-1.000	0.632	0.0	100	0.00
4	T	ethane	0.667	0.749	-12.3	100	0.00
5	T	propane	0.667	0.710	-6.4	100	0.00
6	T	n-butane	0.667	0.706	-5.8	100	0.00

Signal #2

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46875.D RSKEXT1.M Fri Mar 06 11:55:53 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46875.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46875.D\TCD2B.CH
Acq On    : 03 Mar 2015  14:17                        Operator: JDS
Sample    : WG514119-01 0.67umol/mol STD RSK175       Inst    : HP16
Misc      : 1,1 STD67276                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%
```

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
	Signal #2					
8 T	carbon dioxide	-1.000	0.000	0.0	0	-0.21

```
---------------------------------------------------------------------------
(#) = Out of Range            SPCC's out = 0  CCC's out = 0
16G46875.D  RSKEXT1.M      Fri Mar 06 11:55:53 2015                    Page 2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46876.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46876.D\TCD2B.CH
Acq On : 03 Mar 2015 14:30 Operator: JDS
Sample : WG514119-02 1.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:08 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	739046	1.773	umol/
2) T	ethene	1.06	538090	1.696	umol/
3) T	acetylene	1.14	529143	1.564	umol/
4) T	ethane	1.39	567082	1.668	umol/
5) T	propane	3.83	804240	1.620	umol/
6) T	n-butane	5.34	1028782	1.587	umol/
8) T	carbon dioxide	0.20	7954783	1442.423	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46876.D RSKEXT1.M Fri Mar 06 11:57:08 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46876.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46876.D\TCD2B.CH
Acq On : 03 Mar 2015 14:30 Operator: JDS
Sample : WG514119-02 1.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

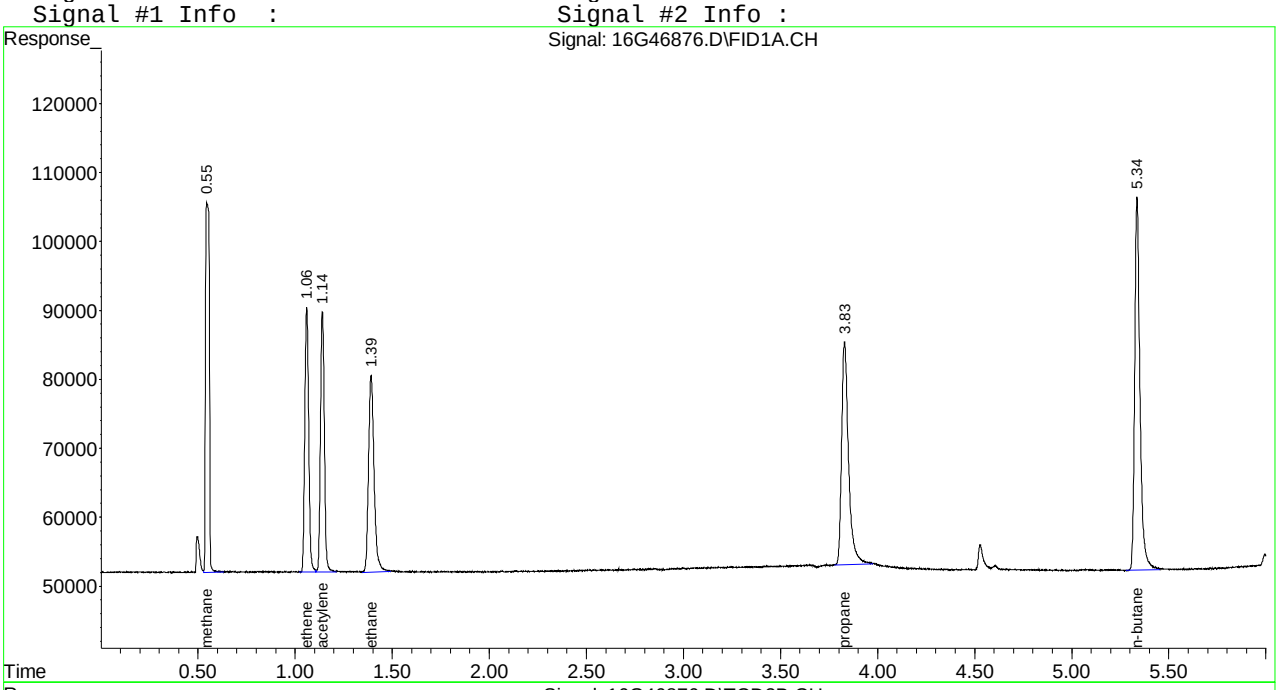

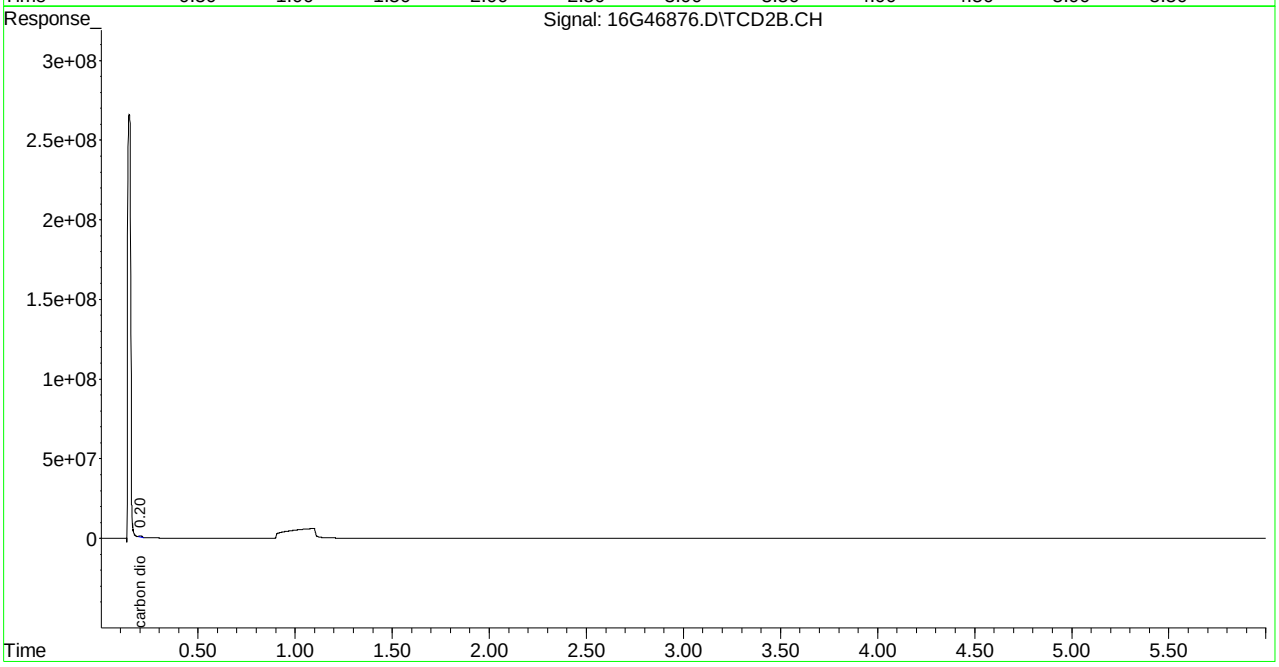

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46876.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46876.D\TCD2B.CH
Acq On : 03 Mar 2015 14:30 Operator: JDS
Sample : WG514119-02 1.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	1.670	1.773	-6.2	100	0.00
2	T	ethene	1.670	1.696	-1.6	100	0.00
3	T	acetylene	1.670	1.564	6.3	100	0.00
4	T	ethane	1.670	1.668	0.1	100	0.00
5	T	propane	1.670	1.620	3.0	100	0.00
6	T	n-butane	1.670	1.587	5.0	100	0.00

Signal #2

8	T	carbon dioxide	2000.000	1442.423	27.9#	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46876.D RSKEXT1.M Fri Mar 06 11:52:49 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46876.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46876.D\TCD2B.CH
Acq On    : 03 Mar 2015  14:30                        Operator: JDS
Sample    : WG514119-02 1.67umol/mol STD RSK175       Inst    : HP16
Misc      : 1,1 STD67276                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46877.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46877.D\TCD2B.CH
Acq On : 03 Mar 2015 14:42 Operator: JDS
Sample : WG514119-03 33.3umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:10 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	6717167	33.998	umol/
2) T	ethene	1.06	11126351	35.075	umol/
3) T	acetylene	1.14	11442001	33.809	umol/
4) T	ethane	1.39	11535235	33.937	umol/
5) T	propane	3.83	17256964	34.764	umol/
6) T	n-butane	5.34	22669140	34.968	umol/
8) T	carbon dioxide	0.20	18661832	3383.908	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46877.D RSKEXT1.M Fri Mar 06 11:57:10 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46877.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46877.D\TCD2B.CH
Acq On : 03 Mar 2015 14:42 Operator: JDS
Sample : WG514119-03 33.3umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

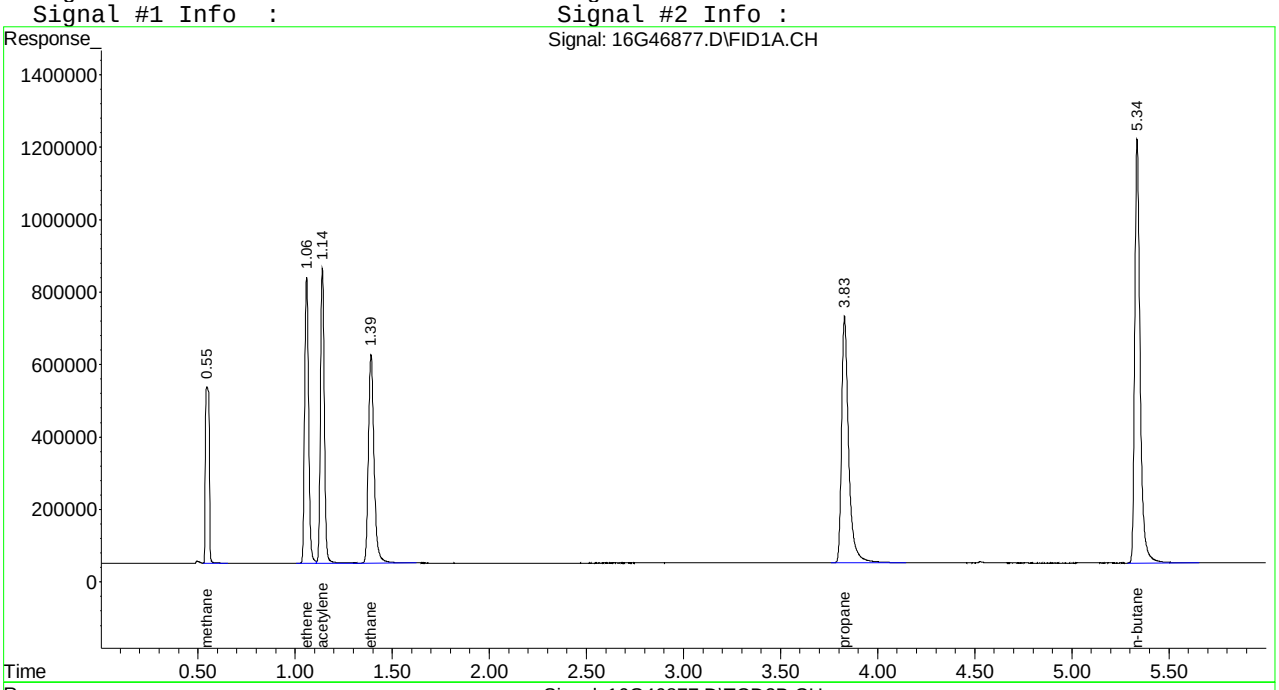

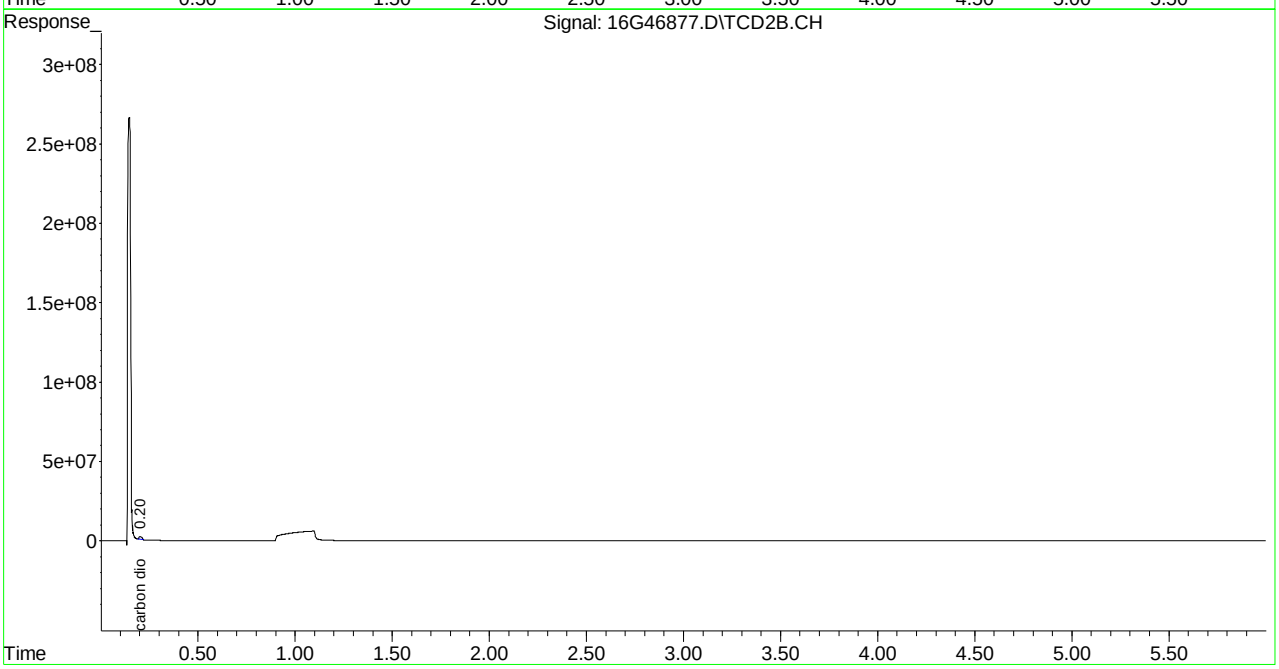

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46878.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46878.D\TCD2B.CH
Acq On    : 03 Mar 2015  14:53                        Operator: JDS
Sample    : WG514119-04 66.7umol/mol STD RSK175       Inst    : HP16
Misc      : 1,1 STD67274                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:11 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	11713293	60.930	umol/
2) T	ethene	1.06	19737271	62.220	umol/
3) T	acetylene	1.14	20910957	61.787	umol/
4) T	ethane	1.39	20832969	61.292	umol/
5) T	propane	3.83	31304425	63.062	umol/
6) T	n-butane	5.33	40948894	63.166	umol/
8) T	carbon dioxide	0.20	37230879	6750.991	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

16G46878.D RSKEXT1.M Fri Mar 06 11:57:11 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46878.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46878.D\TCD2B.CH
Acq On : 03 Mar 2015 14:53 Operator: JDS
Sample : WG514119-04 66.7umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

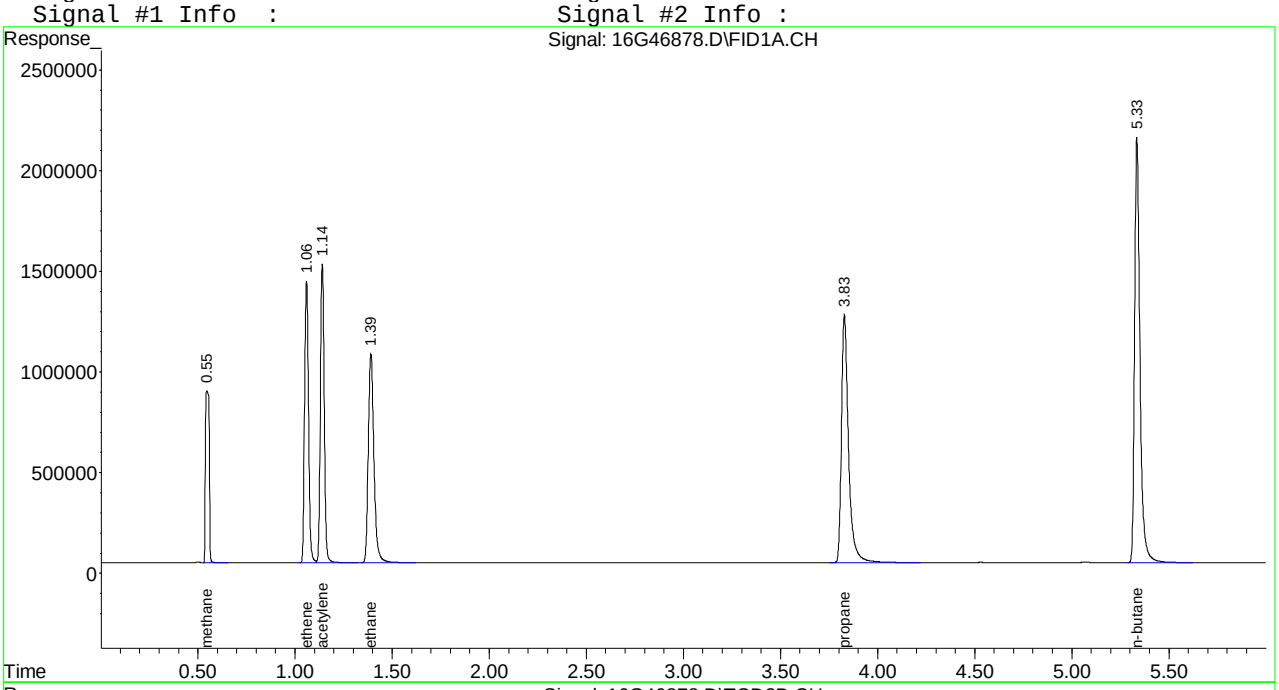

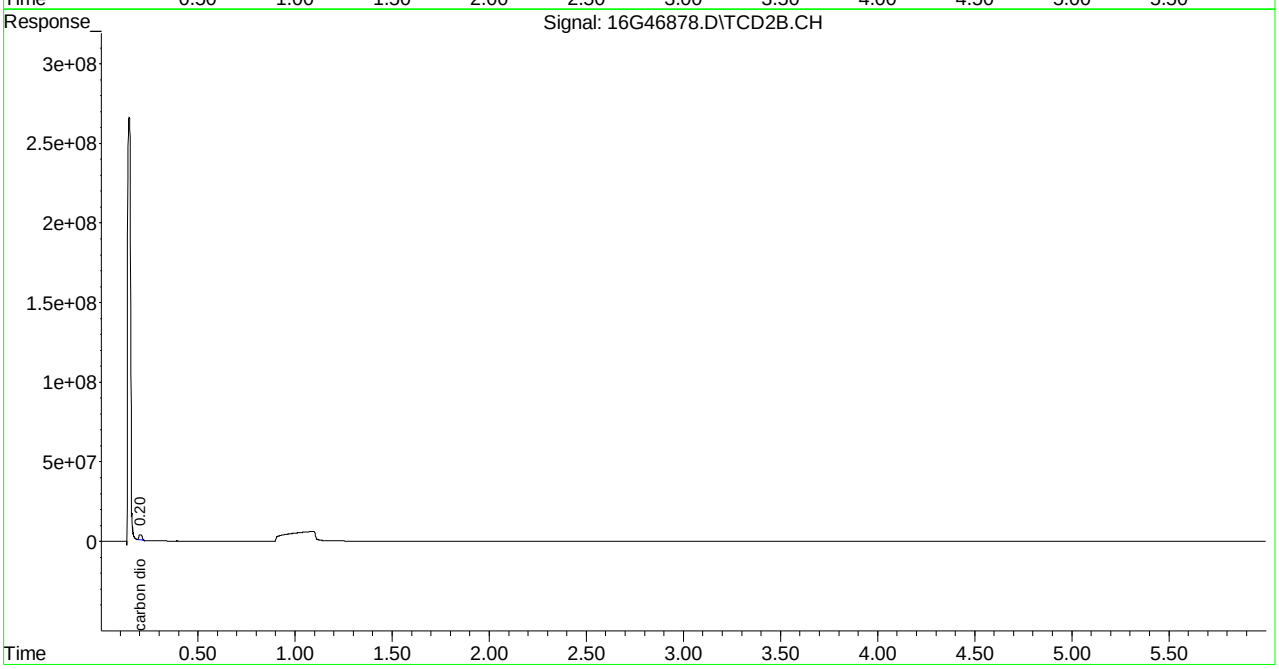

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46879.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46879.D\TCD2B.CH
Acq On : 03 Mar 2015 15:05 Operator: JDS
Sample : WG514119-05 133umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:11 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	24939741	132.227	umol/
2) T	ethene	1.06	41686300	131.412	umol/
3) T	acetylene	1.14	47206199	139.484	umol/
4) T	ethane	1.39	43668346	128.475	umol/
5) T	propane	3.83	64365472	129.663	umol/
6) T	n-butane	5.33	84395468	130.185	umol/
8) T	carbon dioxide	0.20	80524699	14601.362	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46879.D RSKEXT1.M Fri Mar 06 11:57:12 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46879.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46879.D\TCD2B.CH
Acq On : 03 Mar 2015 15:05 Operator: JDS
Sample : WG514119-05 133umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

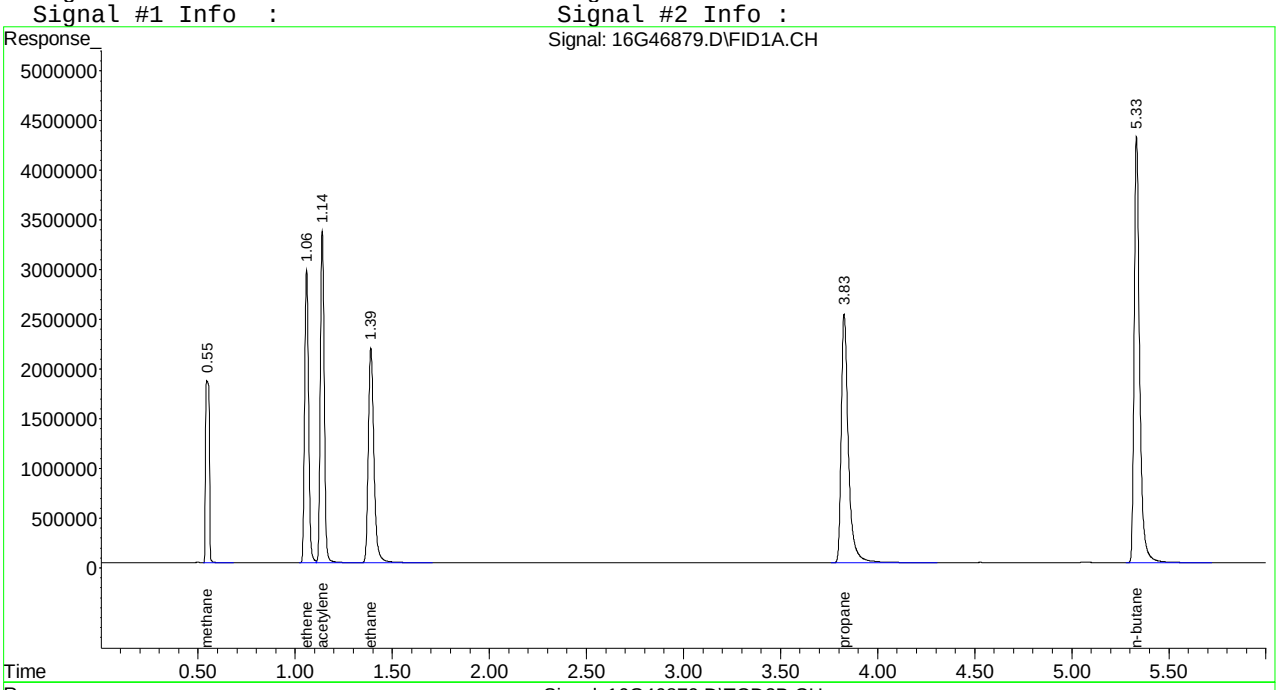

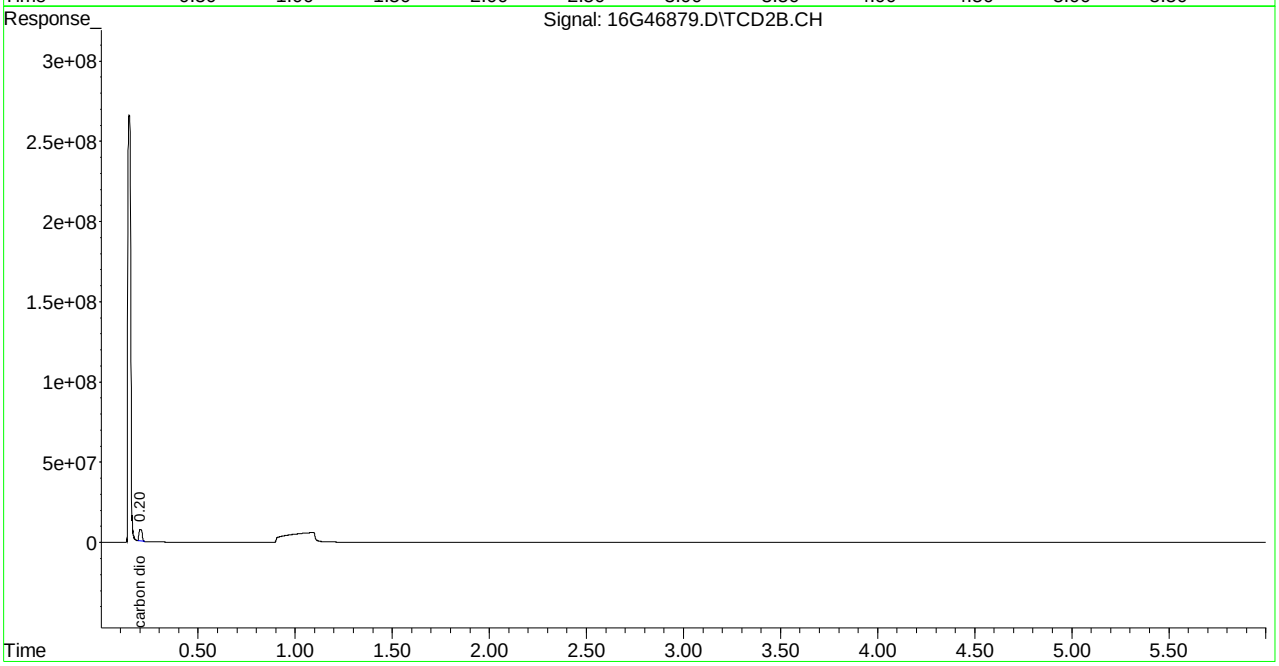

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46880.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46880.D\TCD2B.CH
Acq On : 03 Mar 2015 15:17 Operator: JDS
Sample : WG514119-06 333umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:12 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	61959752	331.783	umol/
2) T	ethene	1.06	106345688	335.244	umol/
3) T	acetylene	1.14	118917475	351.375	umol/
4) T	ethane	1.39	111791323	328.897	umol/
5) T	propane	3.83	166544491	335.501	umol/
6) T	n-butane	5.33	219746160	338.971	umol/
8) T	carbon dioxide	0.20	201820251	36595.610	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46880.D RSKEXT1.M Fri Mar 06 11:57:12 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46880.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46880.D\TCD2B.CH
Acq On : 03 Mar 2015 15:17 Operator: JDS
Sample : WG514119-06 333umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

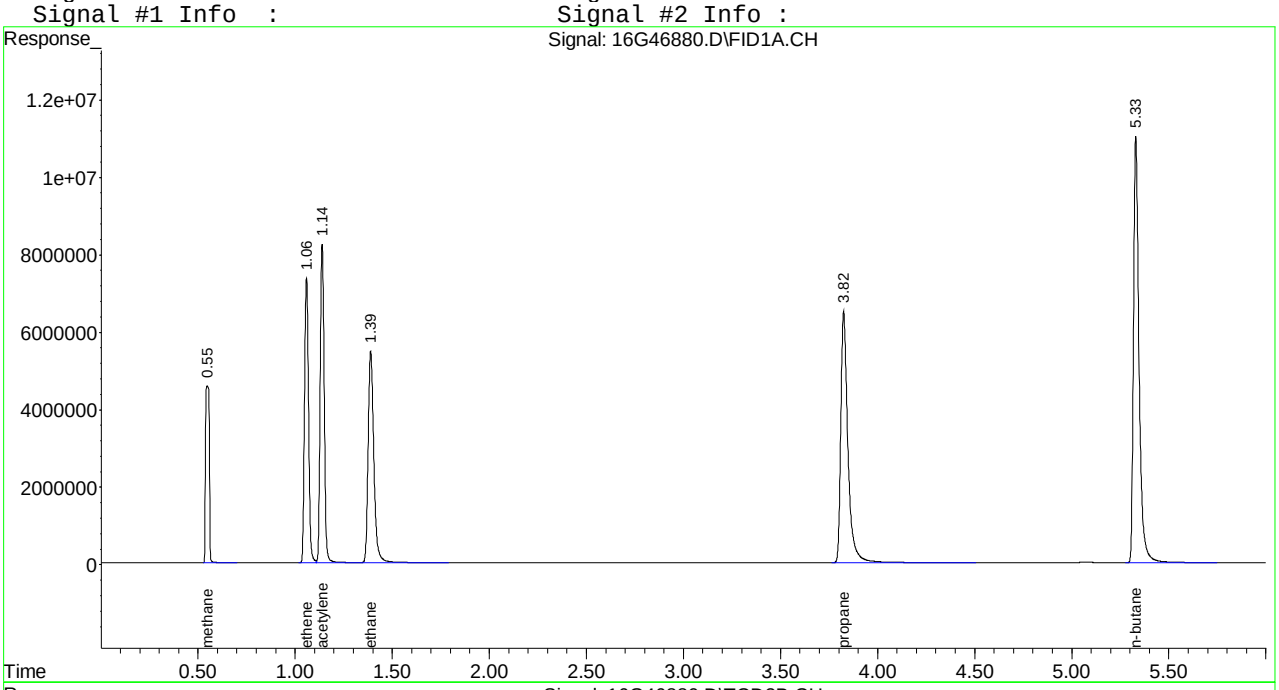

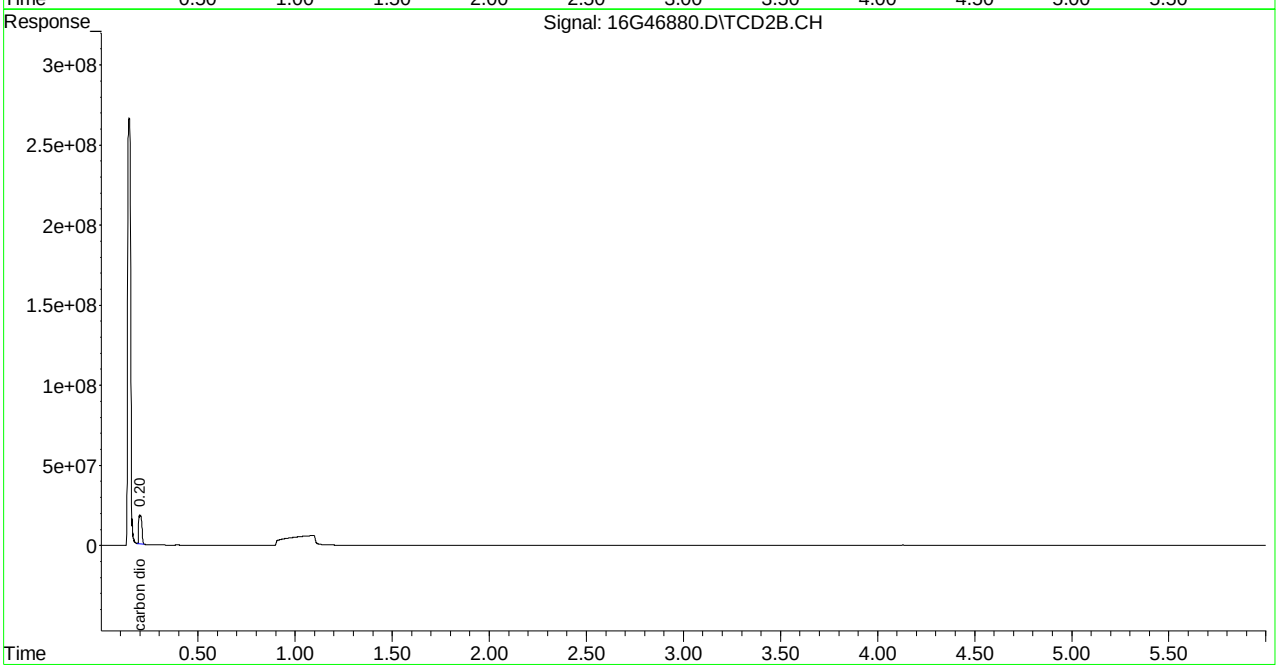

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46881.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46881.D\TCD2B.CH
Acq On    : 03 Mar 2015  15:29                        Operator: JDS
Sample    : WG514119-07 533umol/mol STD RSK175        Inst    : HP16
Misc      : 1,1 STD67274                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:13 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	100578633	539.958	umol/
2) T	ethene	1.06	169644372	534.786	umol/
3) T	acetylene	1.14	183672662	542.712	umol/
4) T	ethane	1.39	178696917	525.738	umol/
5) T	propane	3.82	263060772	529.931	umol/
6) T	n-butane	5.33	344418707	531.285	umol/
8) T	carbon dioxide	0.20	309711021	56159.199	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46881.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46881.D\TCD2B.CH
Acq On : 03 Mar 2015 15:29 Operator: JDS
Sample : WG514119-07 533umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

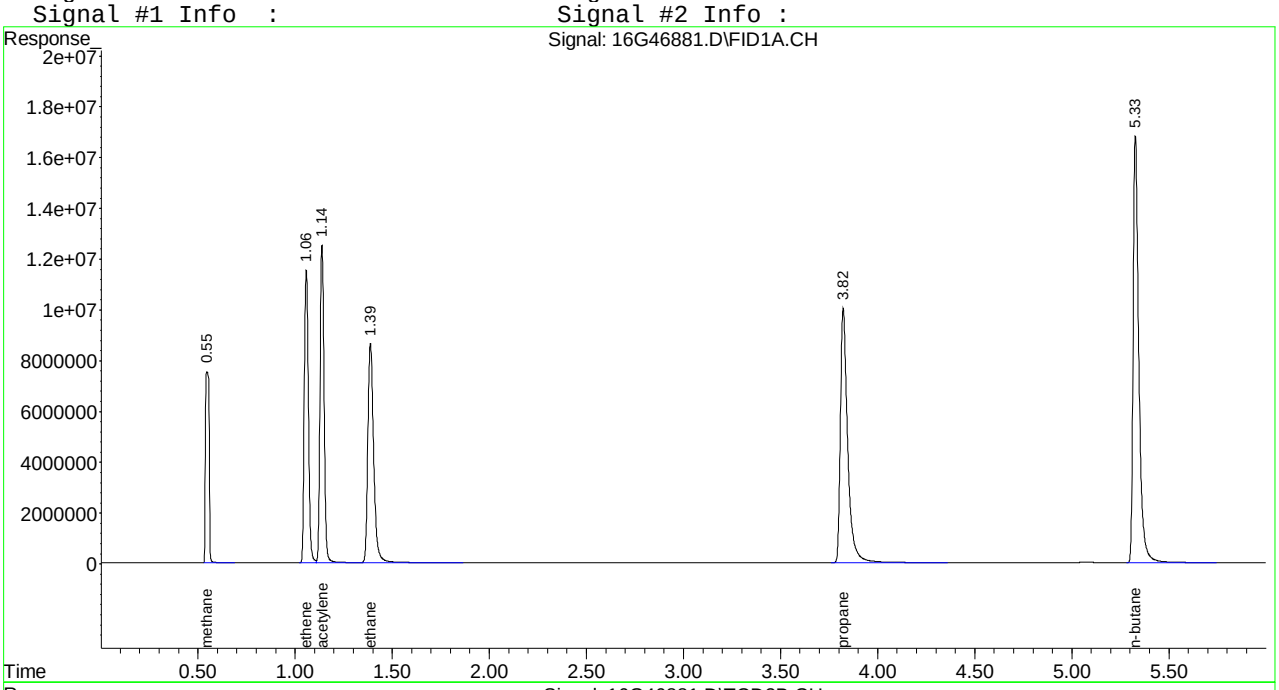

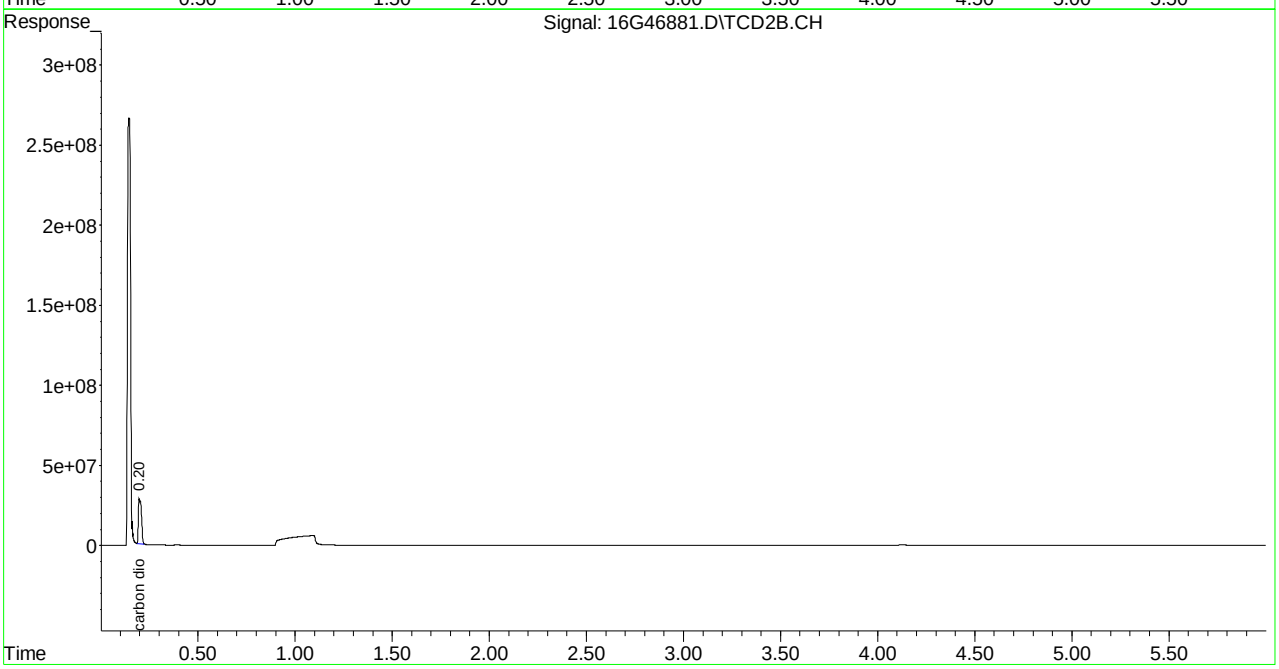

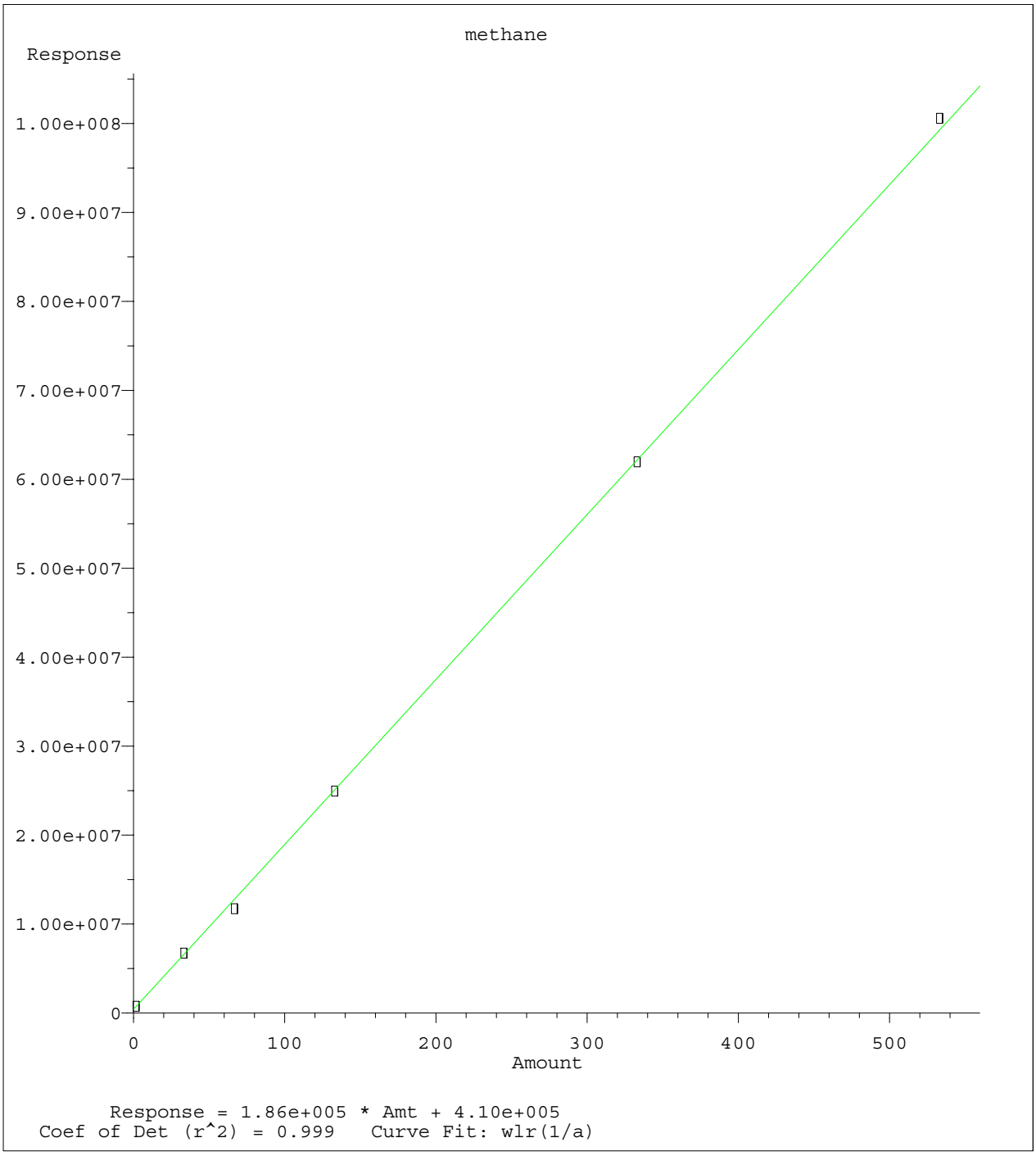

Method Name: C:\MSDCHEM\1\METHODS\RSKEXT1.M
Calibration Table Last Updated: Fri Mar 06 11:52:33 2015

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46884.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46884.D\TCD2B.CH
Acq On : 03 Mar 2015 17:10 Operator: JDS
Sample : WG514119-08 133umol/mol ALT SRC STD RSK1 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:58:49 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	25936090	137.598	umol/
2) T	ethene	1.06	43111404	135.904	umol/
3) T	acetylene	1.14	47098795	139.167	umol/
4) T	ethane	1.39	44778091	131.740	umol/
5) T	propane	3.83	64822008	130.583	umol/
6) T	n-butane	5.33	82856392	127.811	umol/
8) T	carbon dioxide	0.20	76359751	13846.141	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46884.D RSKEXT1.M Fri Mar 06 11:58:49 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46884.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46884.D\TCD2B.CH
Acq On : 03 Mar 2015 17:10 Operator: JDS
Sample : WG514119-08 133umol/mol ALT SRC STD RSK1 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:58 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

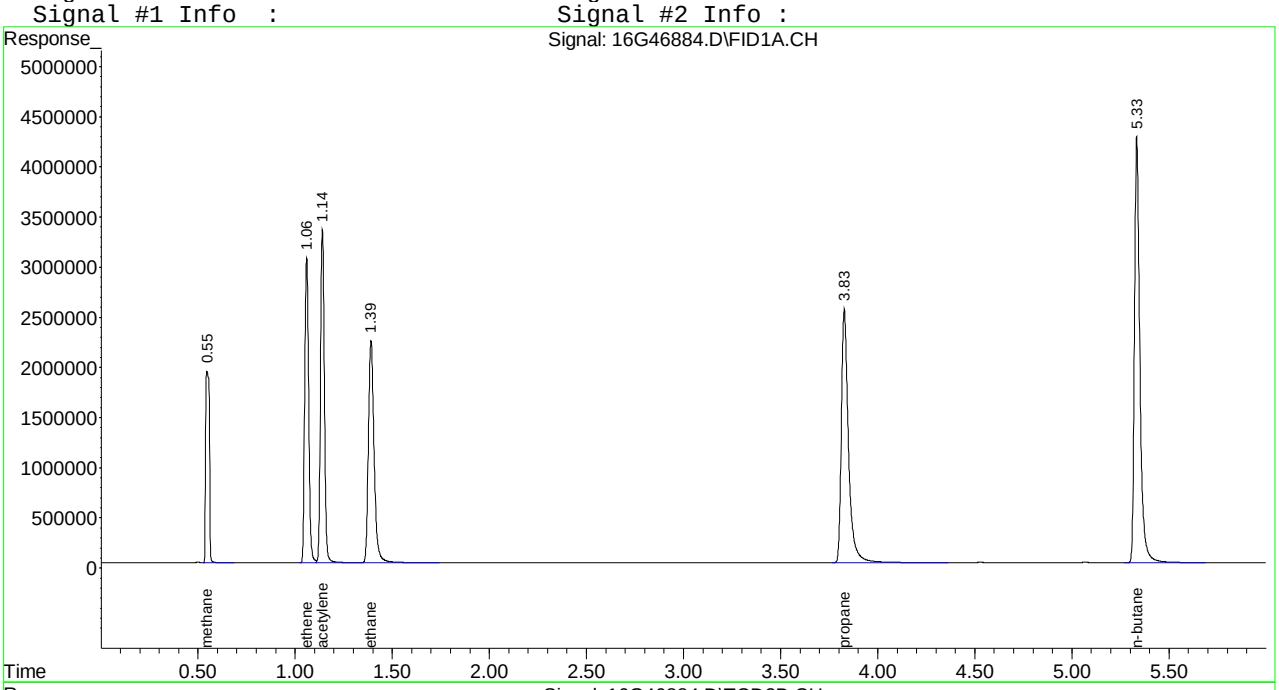

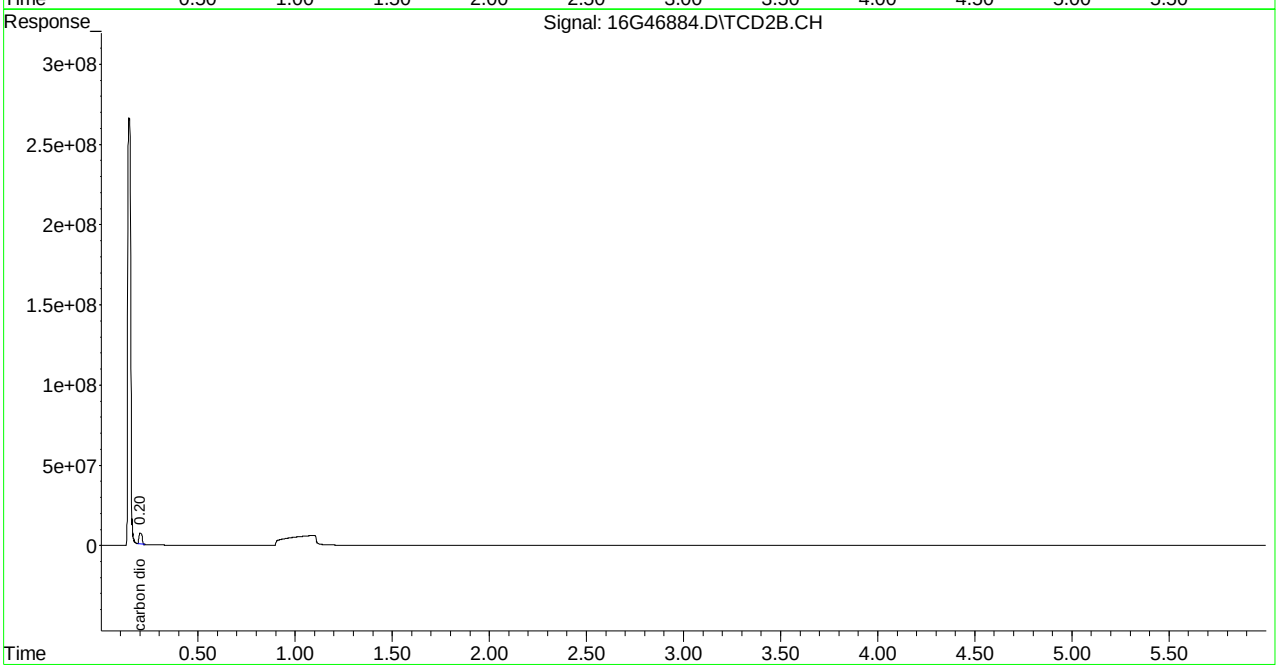

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46884.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46884.D\TCD2B.CH
Acq On : 03 Mar 2015 17:10 Operator: JDS
Sample : WG514119-08 133umol/mol ALT SRC STD RSK1 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	137.598	-3.5	104	0.00
2	T	ethene	133.000	135.904	-2.2	103	0.00
3	T	acetylene	133.000	139.167	-4.6	100	0.00
4	T	ethane	133.000	131.740	0.9	103	0.00
5	T	propane	133.000	130.583	1.8	101	0.00
6	T	n-butane	133.000	127.811	3.9	98	0.00

Signal #2

8	T	carbon dioxide	13300.000	13846.141	-4.1	95	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46884.D RSKEXT1.M Fri Mar 06 11:59:02 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46884.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46884.D\TCD2B.CH
Acq On    : 03 Mar 2015  17:10                        Operator: JDS
Sample    : WG514119-08 133umol/mol ALT SRC STD RSK1 Inst    : HP16
Misc      : 1,1 STD68250                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\052215\16G47568.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDchem\1\DATA\052215\16G47568.D\TCD2B.CH
Acq On : 22 May 2015 9:59 Operator: JDS
Sample : WG524755-01 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 22 10:05:08 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	22468174	118.904	umol/
2) T	ethene	1.05	37634152	118.638	umol/
3) T	acetylene	1.13	41564750	122.815	umol/
4) T	ethane	1.38	39426584	115.996	umol/
5) T	propane	3.83	57959226	116.758	umol/
6) T	n-butane	5.34	75549879	116.540	umol/
8) T	carbon dioxide	0.20	74286955	13470.286	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47568.D RSKEXT1.M Fri May 22 10:05:08 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\052215\16G47568.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDchem\1\DATA\052215\16G47568.D\TCD2B.CH
Acq On : 22 May 2015 9:59 Operator: JDS
Sample : WG524755-01 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 22 10:05 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

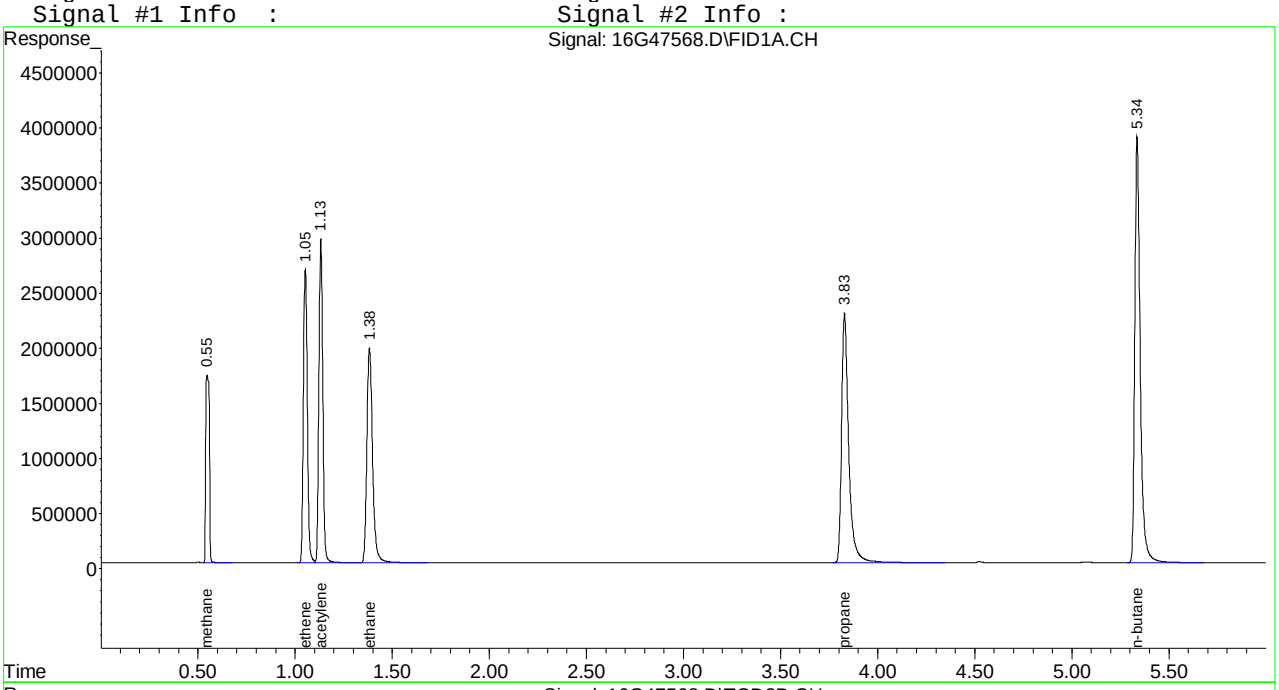

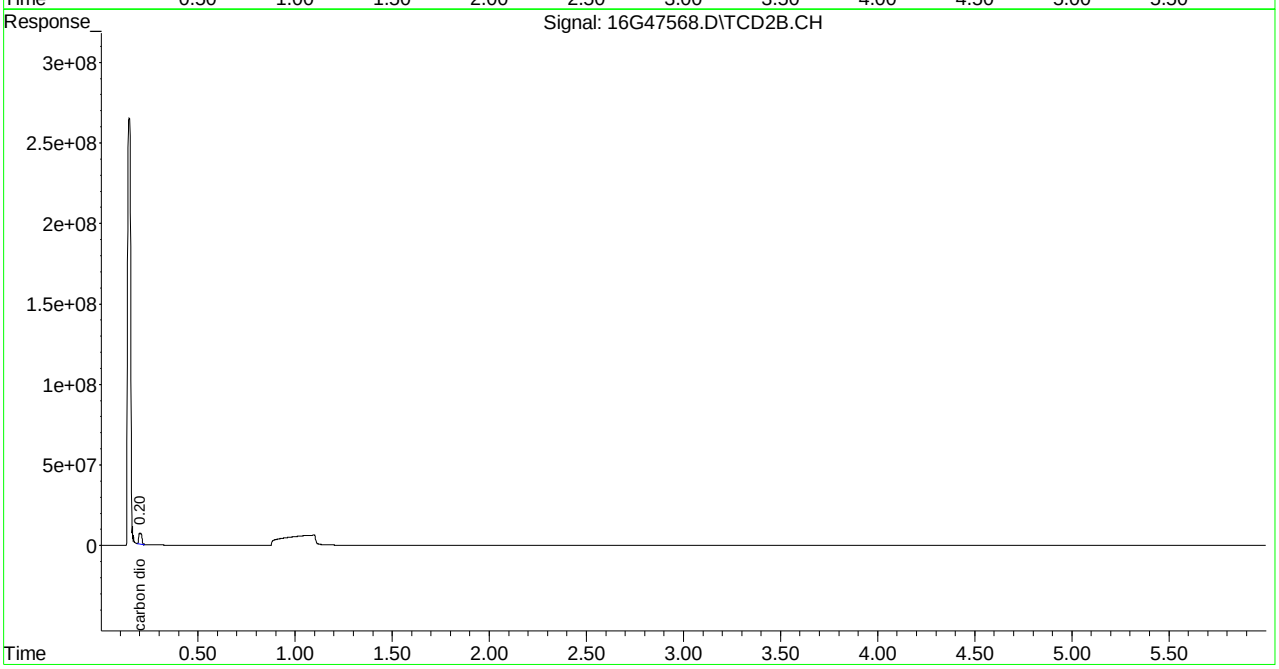

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\052215\16G47568.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\052215\16G47568.D\TCD2B.CH
Acq On : 22 May 2015 9:59 Operator: JDS
Sample : WG524755-01 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	118.904	10.6	90	0.00
2	T	ethene	133.000	118.638	10.8	90	0.00
3	T	acetylene	133.000	122.815	7.7	88	0.00
4	T	ethane	133.000	115.996	12.8	90	0.00
5	T	propane	133.000	116.758	12.2	90	0.00
6	T	n-butane	133.000	116.540	12.4	90	0.00

Signal #2

8	T	carbon dioxide	13300.000	13470.286	-1.3	92	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G47568.D RSKEXT1.M Sat May 23 13:28:33 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\052215\16G47568.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\052215\16G47568.D\TCD2B.CH
Acq On    : 22 May 2015   9:59                        Operator: JDS
Sample    : WG524755-01 133umol/mol CCV RSK175        Inst    : HP16
Misc      : 1,1 STD67274                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\052215\16G47579.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\052215\16G47579.D\TCD2B.CH
Acq On : 22 May 2015 14:54 Operator: JDS
Sample : WG524755-02 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 22 15:00:07 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	23339774	123.602	umol/
2) T	ethene	1.06	38981281	122.884	umol/
3) T	acetylene	1.14	41417338	122.379	umol/
4) T	ethane	1.39	40986279	120.584	umol/
5) T	propane	3.83	60205902	121.284	umol/
6) T	n-butane	5.34	79111088	122.033	umol/
8) T	carbon dioxide	0.20	73158205	13265.612	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47579.D RSKEXT1.M Fri May 22 15:00:07 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\052215\16G47579.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\052215\16G47579.D\TCD2B.CH
Acq On : 22 May 2015 14:54 Operator: JDS
Sample : WG524755-02 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 22 15:00 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

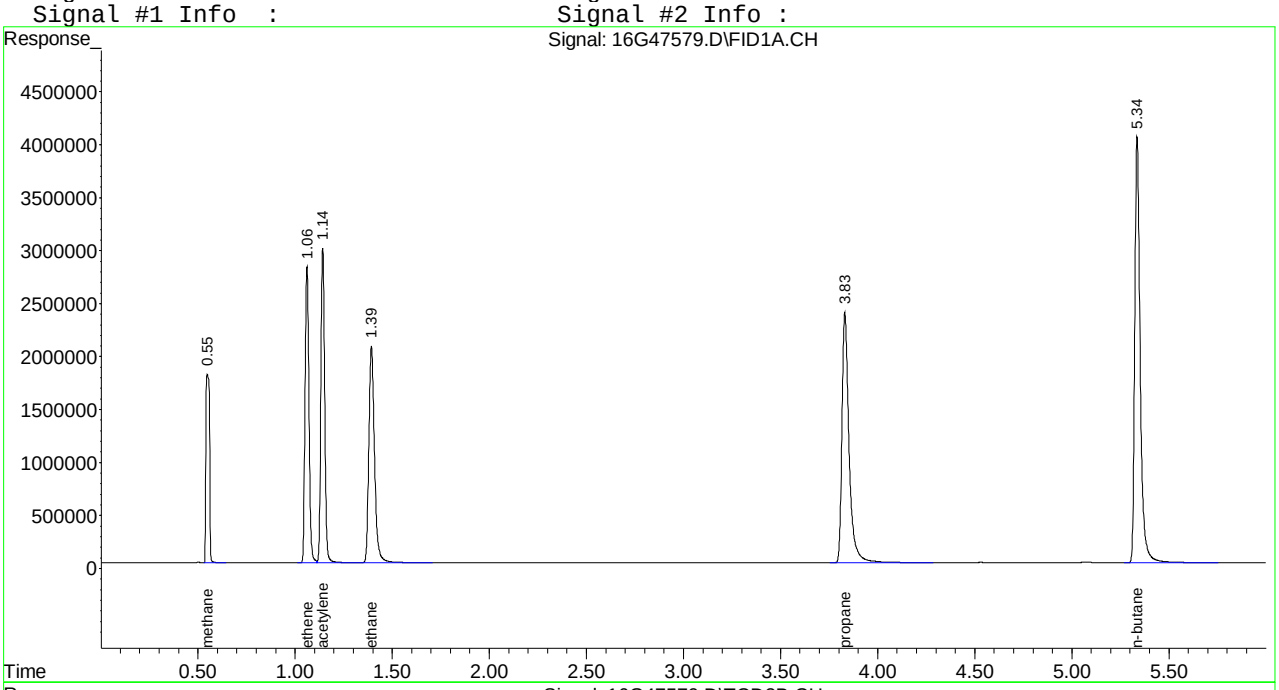

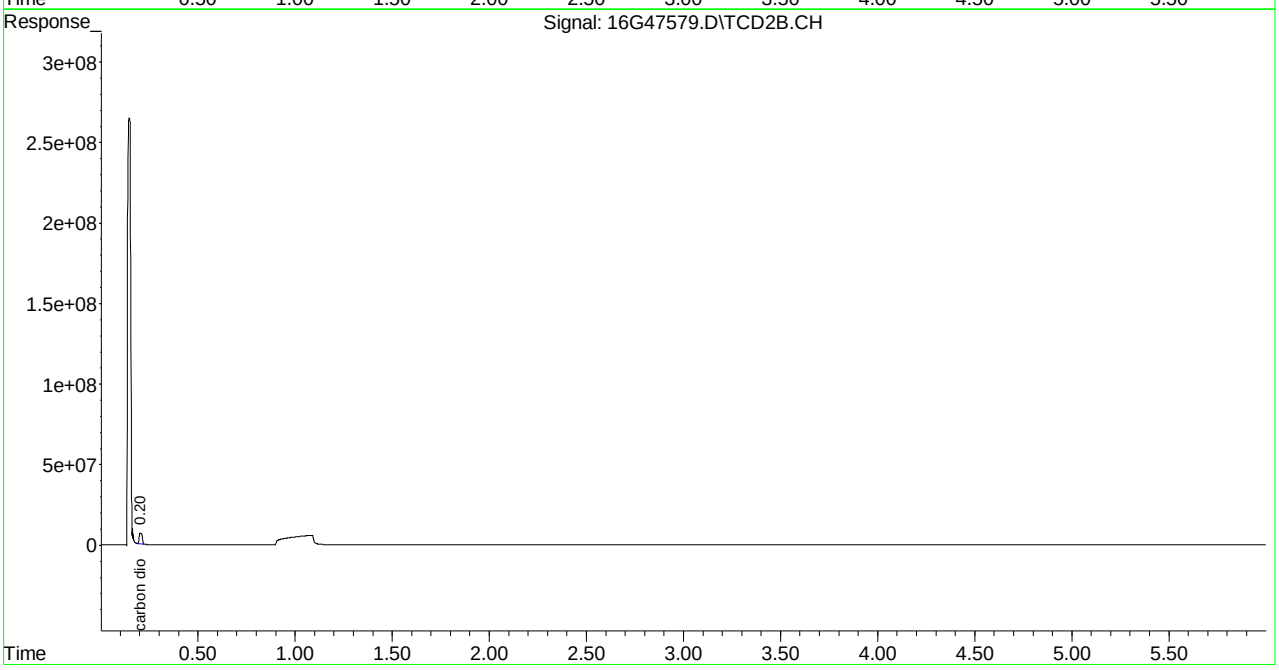

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\052215\16G47579.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\052215\16G47579.D\TCD2B.CH
Acq On : 22 May 2015 14:54 Operator: JDS
Sample : WG524755-02 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	123.602	7.1	94	0.00
2	T	ethene	133.000	122.884	7.6	94	0.00
3	T	acetylene	133.000	122.379	8.0	88	0.00
4	T	ethane	133.000	120.584	9.3	94	0.00
5	T	propane	133.000	121.284	8.8	94	0.00
6	T	n-butane	133.000	122.033	8.2	94	0.00

Signal #2

8	T	carbon dioxide	13300.000	13265.612	0.3	91	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G47579.D RSKEXT1.M Sat May 23 13:28:41 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\052215\16G47579.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\052215\16G47579.D\TCD2B.CH
Acq On    : 22 May 2015  14:54                      Operator: JDS
Sample    : WG524755-02 133umol/mol CCV RSK175      Inst    : HP16
Misc      : 1,1 STD67274                            Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDchem\1\DATA\052215\16G47594.D\FID1A.CH Vial: 27
Signal #2 : C:\MSDchem\1\DATA\052215\16G47594.D\TCD2B.CH
Acq On    : 22 May 2015  17:49                        Operator: JDS
Sample    : WG524755-04 133umol/mol CCV RSK175        Inst    : HP16
Misc      : 1,1 STD67274                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: May 22 17:55:14 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	23549641	124.734	umol/
2) T	ethene	1.06	38990357	122.913	umol/
3) T	acetylene	1.14	40662296	120.148	umol/
4) T	ethane	1.39	41027550	120.706	umol/
5) T	propane	3.83	60201463	121.275	umol/
6) T	n-butane	5.34	78514637	121.113	umol/
8) T	carbon dioxide	0.20	71733220	13007.223	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

16G47594.D RSKEXT1.M Fri May 22 17:55:14 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\052215\16G47594.D\FID1A.CH Vial: 27
Signal #2 : C:\MSDchem\1\DATA\052215\16G47594.D\TCD2B.CH
Acq On : 22 May 2015 17:49 Operator: JDS
Sample : WG524755-04 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 22 17:55 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

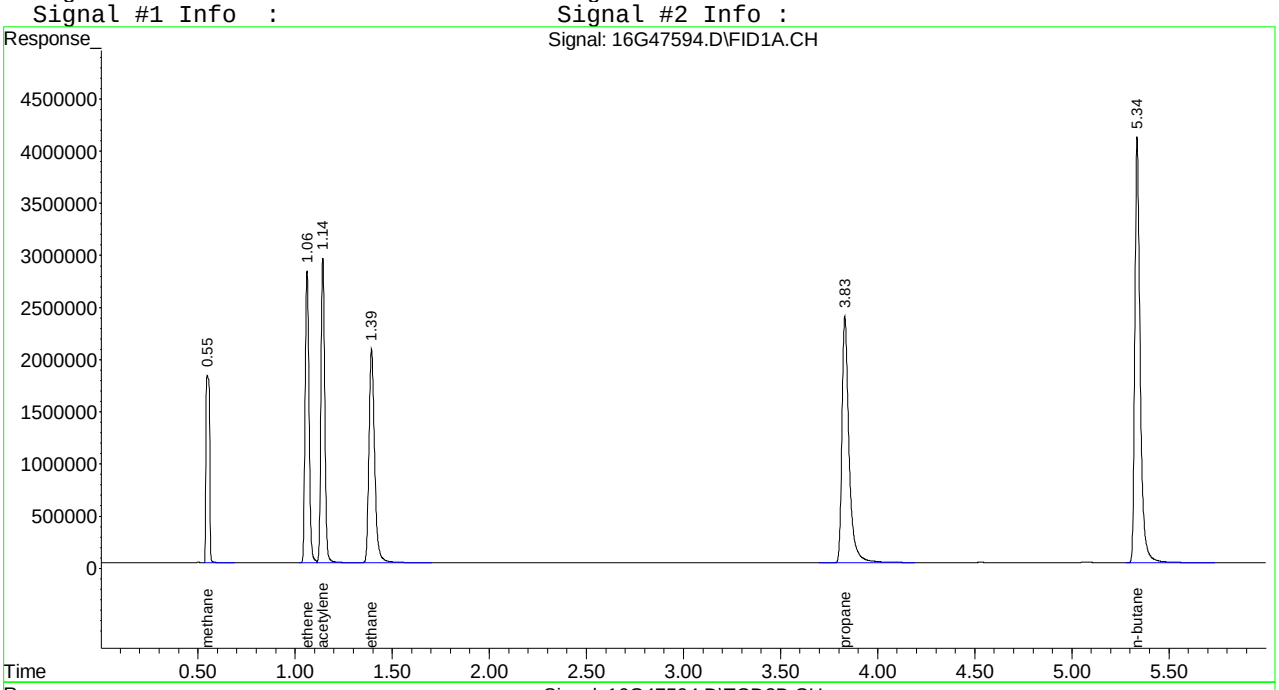

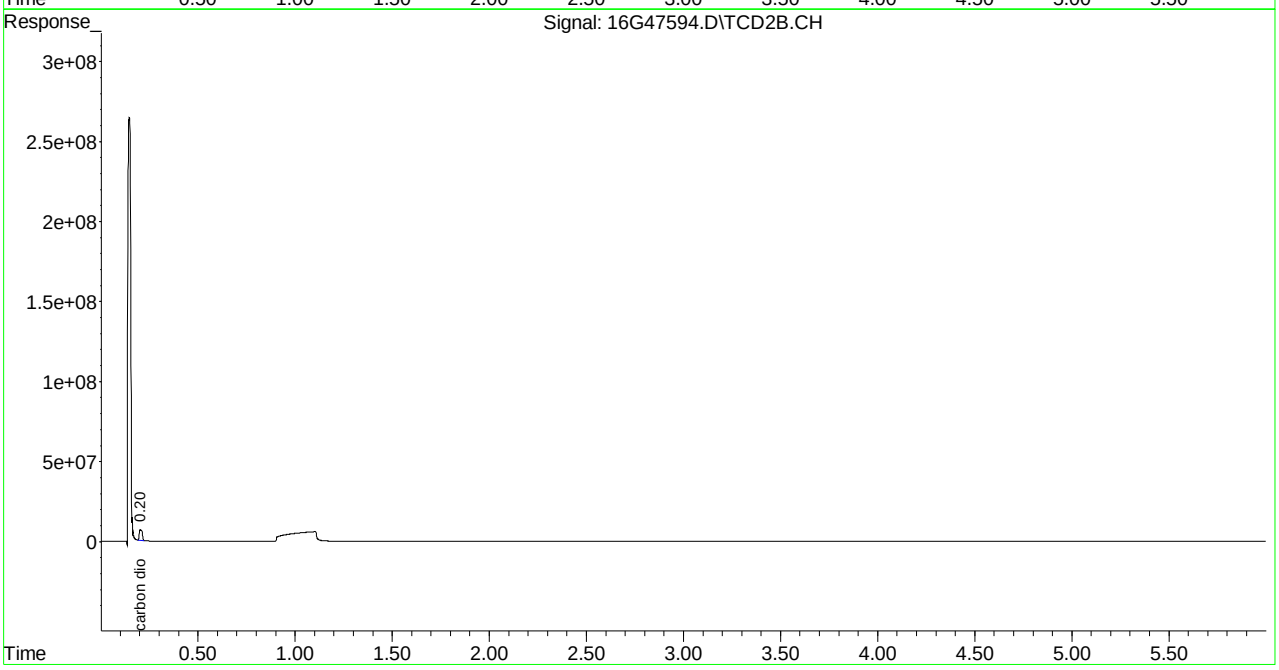

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\052215\16G47594.D\FID1A.CH Vial: 27
Signal #2 : C:\MSDCHEM\1\DATA\052215\16G47594.D\TCD2B.CH
Acq On : 22 May 2015 17:49 Operator: JDS
Sample : WG524755-04 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	124.734	6.2	94	0.00
2	T	ethene	133.000	122.913	7.6	94	0.00
3	T	acetylene	133.000	120.148	9.7	86	0.00
4	T	ethane	133.000	120.706	9.2	94	0.00
5	T	propane	133.000	121.275	8.8	94	0.00
6	T	n-butane	133.000	121.113	8.9	93	0.00

Signal #2

8	T	carbon dioxide	13300.000	13007.223	2.2	89	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G47594.D RSKEXT1.M Sat May 23 13:28:59 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\052215\16G47594.D\FID1A.CH Vial: 27
Signal #2 : C:\MSDCHEM\1\DATA\052215\16G47594.D\TCD2B.CH
Acq On    : 22 May 2015  17:49                      Operator: JDS
Sample    : WG524755-04 133umol/mol CCV RSK175      Inst    : HP16
Misc      : 1,1 STD67274                            Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\052215\16G47605.D\FID1A.CH Vial: 38
Signal #2 : C:\MSDchem\1\DATA\052215\16G47605.D\TCD2B.CH
Acq On : 22 May 2015 19:57 Operator: JDS
Sample : WG524755-05 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 22 20:03:26 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	23661197	125.335	umol/
2) T	ethene	1.06	38235612	120.534	umol/
3) T	acetylene	1.14	37149013	109.767	umol/
4) T	ethane	1.40	40510697	119.185	umol/
5) T	propane	3.83	58690304	118.230	umol/
6) T	n-butane	5.34	74780373	115.353	umol/
8) T	carbon dioxide	0.20	62090219	11258.679	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47605.D RSKEXT1.M Fri May 22 20:03:26 2015 Page 1

Signal #1 : C:\MSDchem\1\DATA\052215\16G47605.D\FID1A.CH Vial: 38
Signal #2 : C:\MSDchem\1\DATA\052215\16G47605.D\TCD2B.CH
Acq On : 22 May 2015 19:57 Operator: JDS
Sample : WG524755-05 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 22 20:03 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

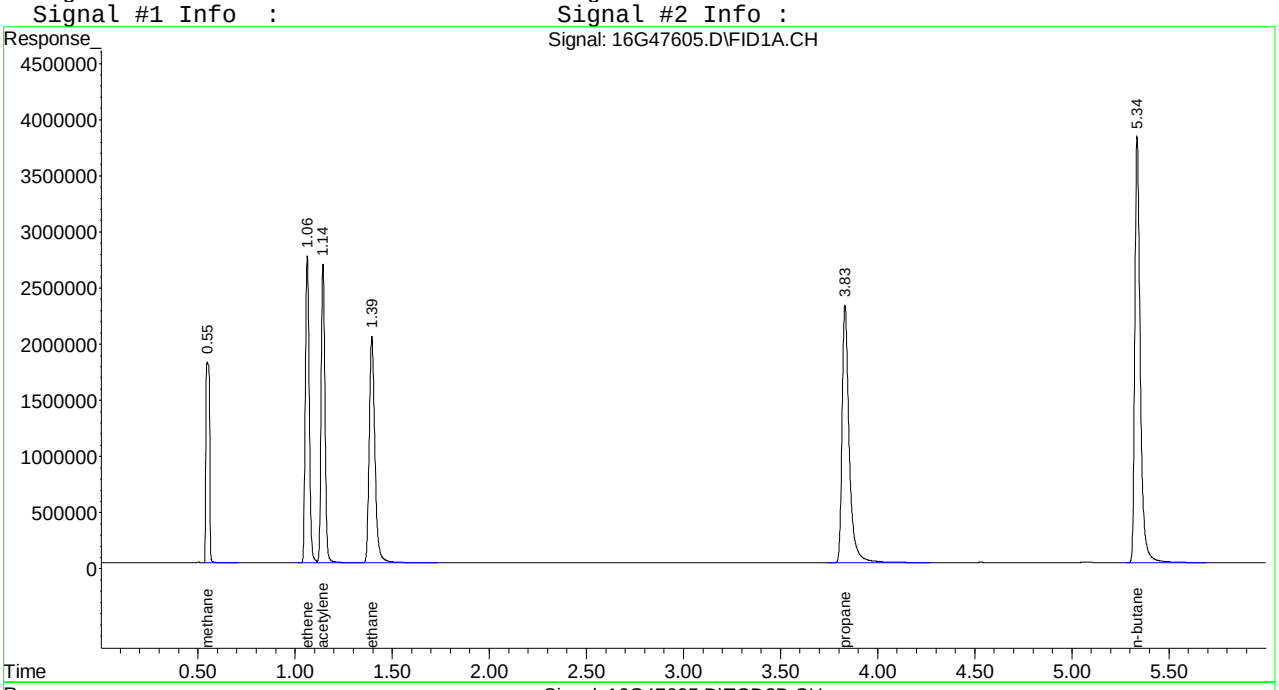

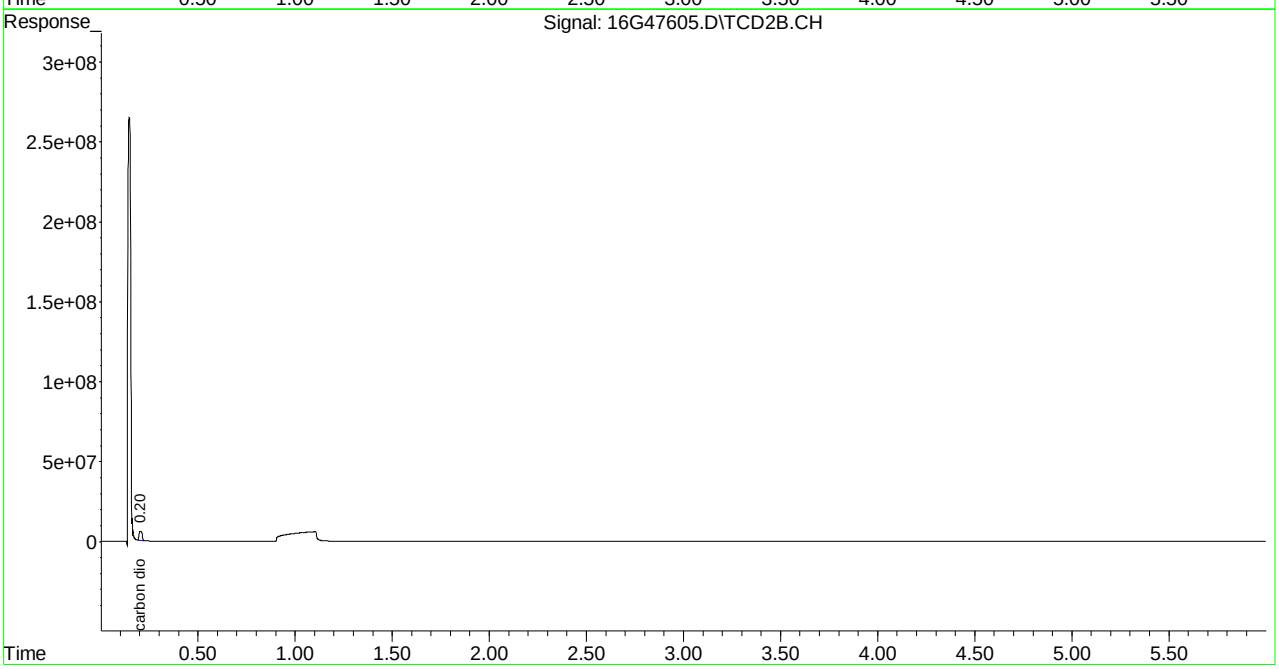

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\052215\16G47605.D\FID1A.CH Vial: 38
Signal #2 : C:\MSDCHEM\1\DATA\052215\16G47605.D\TCD2B.CH
Acq On : 22 May 2015 19:57 Operator: JDS
Sample : WG524755-05 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	125.335	5.8	95	0.00
2	T	ethene	133.000	120.534	9.4	92	0.00
3	T	acetylene	133.000	109.767	17.5#	79	0.00
4	T	ethane	133.000	119.185	10.4	93	0.00
5	T	propane	133.000	118.230	11.1	91	0.00
6	T	n-butane	133.000	115.353	13.3	89	0.00

Signal #2

8	T	carbon dioxide	13300.000	11258.679	15.3#	77	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G47605.D RSKEXT1.M Sat May 23 13:29:07 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\052215\16G47605.D\FID1A.CH Vial: 38
Signal #2 : C:\MSDCHEM\1\DATA\052215\16G47605.D\TCD2B.CH
Acq On    : 22 May 2015  19:57                      Operator: JDS
Sample    : WG524755-05 133umol/mol CCV RSK175      Inst    : HP16
Misc      : 1,1 STD67274                            Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDchem\1\DATA\052615\16G47618.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDchem\1\DATA\052615\16G47618.D\TCD2B.CH
Acq On    : 26 May 2015   9:26                        Operator: JDS
Sample    : WG524991-01 133umol/mol CCV RSK175        Inst    : HP16
Misc      : 1,1 STD67274                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: May 26 09:32:42 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	23926711	126.766	umol/
2) T	ethene	1.06	39692415	125.126	umol/
3) T	acetylene	1.14	44420594	131.253	umol/
4) T	ethane	1.39	41485541	122.053	umol/
5) T	propane	3.83	60456767	121.789	umol/
6) T	n-butane	5.34	78565704	121.192	umol/
8) T	carbon dioxide	0.20	76563215	13883.035	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\052615\16G47618.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDchem\1\DATA\052615\16G47618.D\TCD2B.CH
Acq On : 26 May 2015 9:26 Operator: JDS
Sample : WG524991-01 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 26 9:32 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

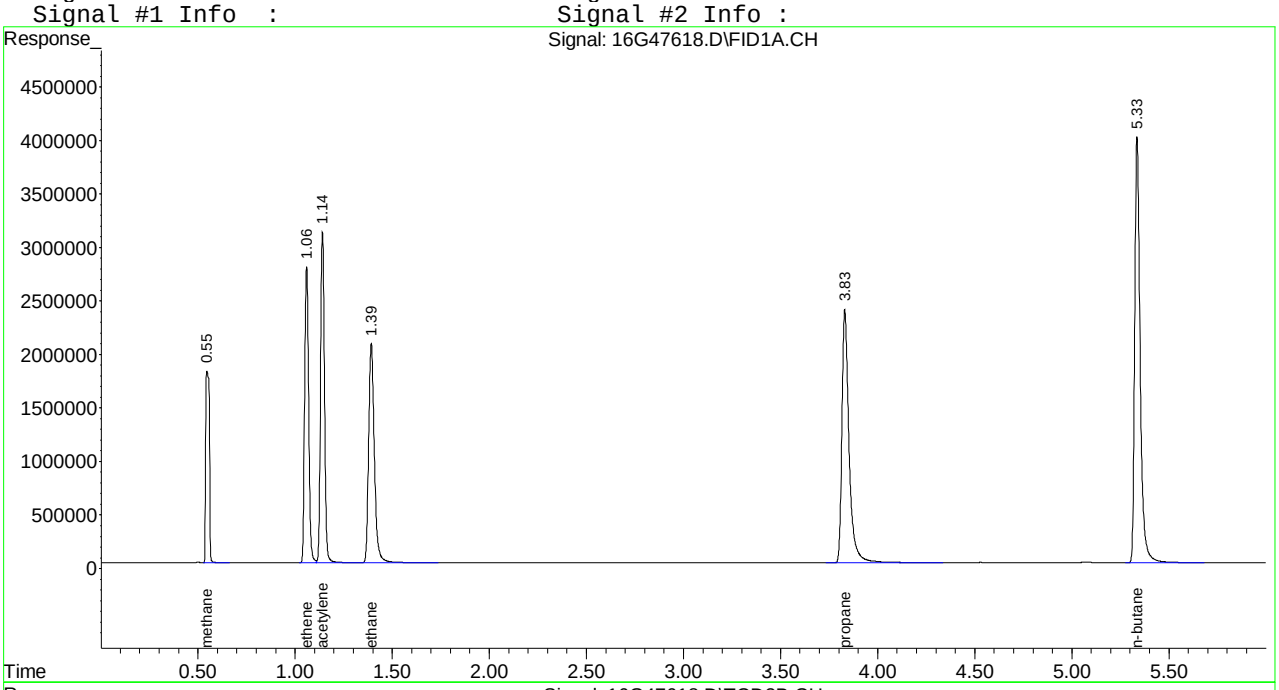

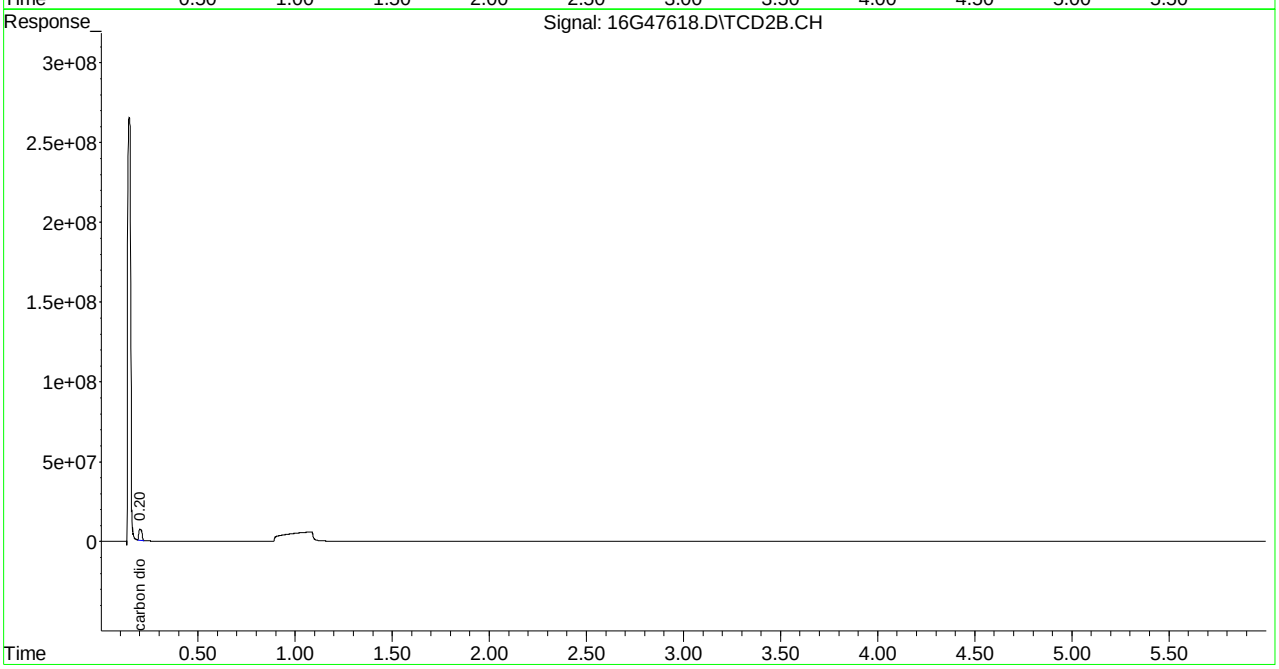

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\052615\16G47618.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\052615\16G47618.D\TCD2B.CH
Acq On : 26 May 2015 9:26 Operator: JDS
Sample : WG524991-01 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	126.766	4.7	96	0.00
2	T	ethene	133.000	125.126	5.9	95	0.00
3	T	acetylene	133.000	131.253	1.3	94	0.00
4	T	ethane	133.000	122.053	8.2	95	0.00
5	T	propane	133.000	121.789	8.4	94	0.00
6	T	n-butane	133.000	121.192	8.9	93	0.00

Signal #2

8	T	carbon dioxide	13300.000	13883.035	-4.4	95	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G47618.D RSKEXT1.M Wed May 27 09:05:25 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\052615\16G47618.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\052615\16G47618.D\TCD2B.CH
Acq On    : 26 May 2015   9:26                        Operator: JDS
Sample    : WG524991-01 133umol/mol CCV RSK175        Inst    : HP16
Misc      : 1,1 STD67274                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\052615\16G47629.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\052615\16G47629.D\TCD2B.CH
Acq On : 26 May 2015 14:28 Operator: JDS
Sample : WG524991-02 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 26 14:34:09 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	23950128	126.893	umol/
2) T	ethene	1.06	40071384	126.321	umol/
3) T	acetylene	1.14	44119070	130.362	umol/
4) T	ethane	1.39	41987682	123.530	umol/
5) T	propane	3.83	61873361	124.643	umol/
6) T	n-butane	5.34	81350056	125.487	umol/
8) T	carbon dioxide	0.20	75697353	13726.030	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47629.D RSKEXT1.M Tue May 26 14:34:09 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\052615\16G47629.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\052615\16G47629.D\TCD2B.CH
Acq On : 26 May 2015 14:28 Operator: JDS
Sample : WG524991-02 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 26 14:34 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

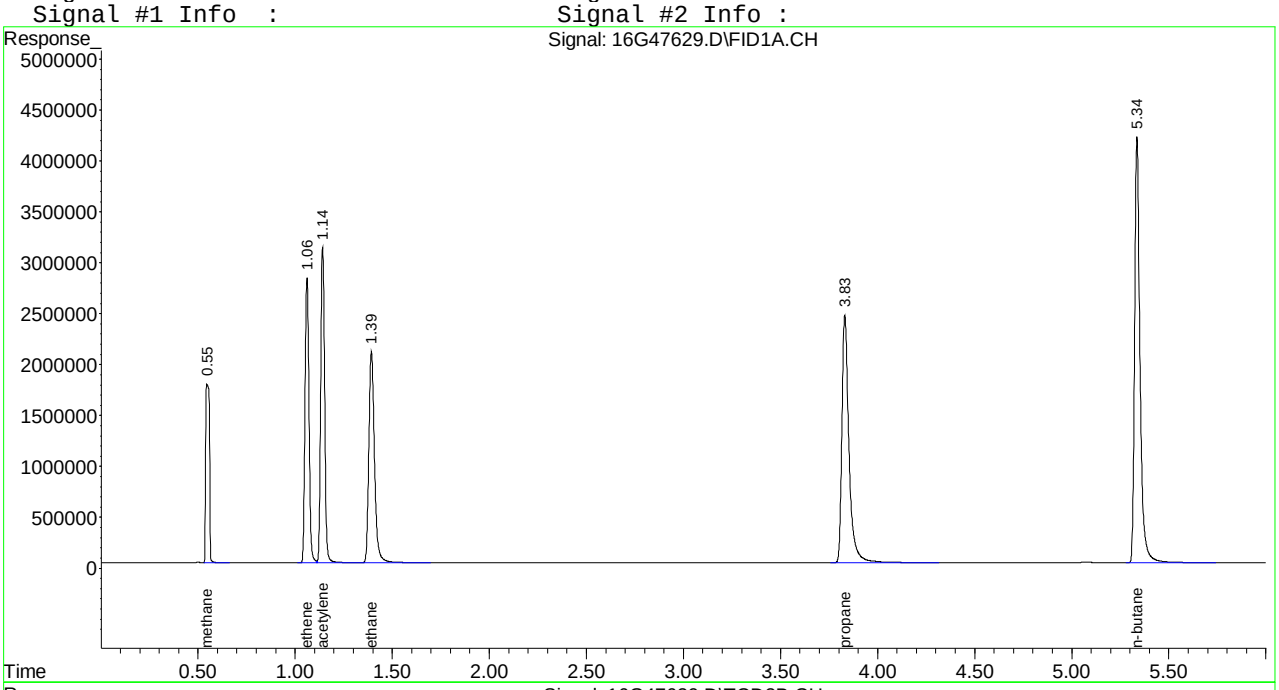

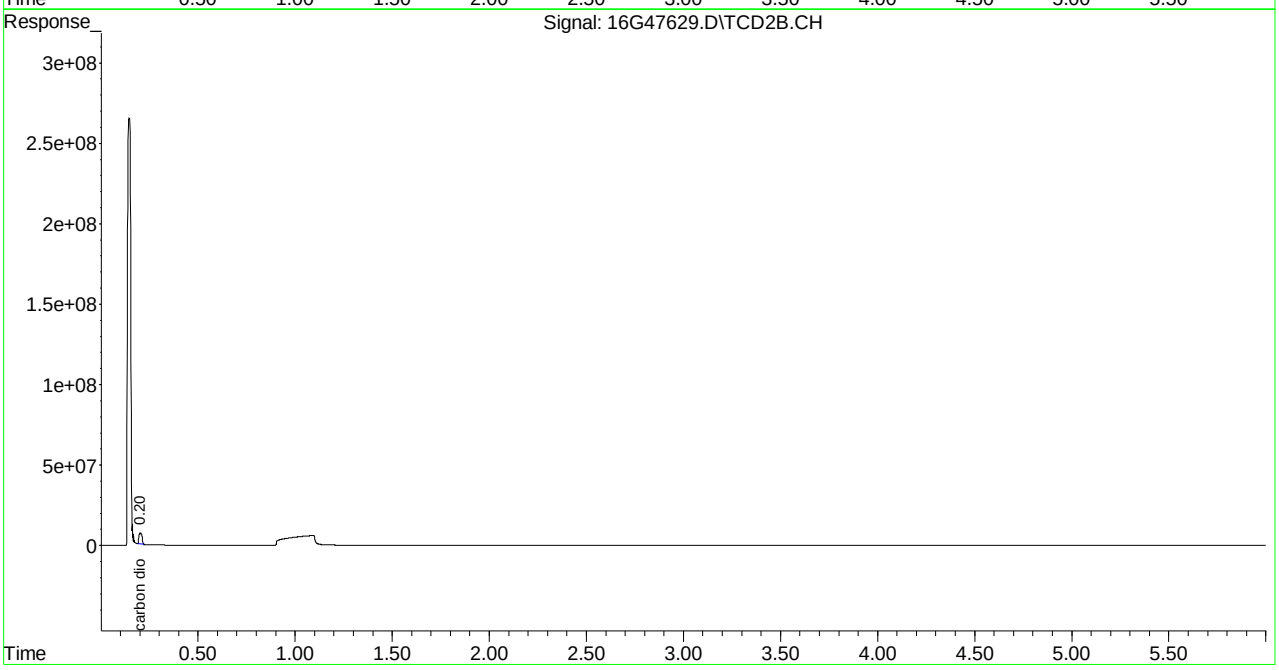

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\052615\16G47629.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\052615\16G47629.D\TCD2B.CH
Acq On : 26 May 2015 14:28 Operator: JDS
Sample : WG524991-02 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	126.893	4.6	96	0.00
2	T	ethene	133.000	126.321	5.0	96	0.00
3	T	acetylene	133.000	130.362	2.0	93	0.00
4	T	ethane	133.000	123.530	7.1	96	0.00
5	T	propane	133.000	124.643	6.3	96	0.00
6	T	n-butane	133.000	125.487	5.6	96	0.00

Signal #2

8	T	carbon dioxide	13300.000	13726.030	-3.2	94	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G47629.D RSKEXT1.M Wed May 27 09:05:32 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\052615\16G47629.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\052615\16G47629.D\TCD2B.CH
Acq On    : 26 May 2015  14:28                        Operator: JDS
Sample    : WG524991-02 133umol/mol CCV RSK175        Inst    : HP16
Misc      : 1,1 STD67274                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Microbac Laboratories Inc.
Daily Retention Time Window Determination

Login #: L15051303 **Run Date:** 05/22/2015 **Sample ID:** WG524755-01
Instrument: HP16 **Run Time:** 09:59 **Method:** RSK175
Workgroup (AAB#): WG524756 **File ID:** 16G47568

RT Standard	Analysis Date	File ID	Analyst
WG507817-01	01/13/2015	16G46159	JDS
WG507448-01	01/09/2015	16G46148	JDS
WG507013-01	01/06/2015	16G46125	JDS

Analyte	RT #1	RT #2	RT #3	STD	Lower	Upper
METHANE	.54	.55	.55	.55	0.520	0.580
ETHENE	1.06	1.06	1.06	1.05	1.020	1.080
ETHANE	1.39	1.39	1.39	1.38	1.350	1.410
PROPANE	3.82	3.83	3.83	3.83	3.800	3.860
N-BUTANE	5.33	5.34	5.34	5.34	5.310	5.370
CARBON DIOXIDE	.2	.2	.2	.2	0.170	0.230
ACETYLENE	1.14	1.14	1.14	1.13	1.100	1.160

RT_WIN - Modified 01/06/2010
PDF File ID: 4203249
Report generated 06/01/2015 11:01

Microbac Laboratories Inc.
Daily Retention Time Window Determination

Login #: L15051303 **Run Date:** 05/22/2015 **Sample ID:** WG524755-04
Instrument: HP16 **Run Time:** 17:49 **Method:** RSK175
Workgroup (AAB#): WG524855 **File ID:** 16G47594

RT Standard	Analysis Date	File ID	Analyst
WG507817-01	01/13/2015	16G46159	JDS
WG507448-01	01/09/2015	16G46148	JDS
WG507013-01	01/06/2015	16G46125	JDS

Analyte	RT #1	RT #2	RT #3	STD	Lower	Upper
METHANE	.54	.55	.55	.55	0.520	0.580
ETHENE	1.06	1.06	1.06	1.06	1.030	1.090
ETHANE	1.39	1.39	1.39	1.39	1.360	1.420
PROPANE	3.82	3.83	3.83	3.83	3.800	3.860
N-BUTANE	5.33	5.34	5.34	5.34	5.310	5.370
CARBON DIOXIDE	.2	.2	.2	.2	0.170	0.230
ACETYLENE	1.14	1.14	1.14	1.14	1.110	1.170

RT_WIN - Modified 01/06/2010
PDF File ID: 4203249
Report generated 06/01/2015 11:01

Microbac Laboratories Inc.
Daily Retention Time Window Determination

Login #: L15051303 **Run Date:** 05/26/2015 **Sample ID:** WG524991-01
Instrument: HP16 **Run Time:** 09:26 **Method:** RSK175
Workgroup (AAB#): WG524992 **File ID:** 16G47618

RT Standard	Analysis Date	File ID	Analyst
WG507817-01	01/13/2015	16G46159	JDS
WG507448-01	01/09/2015	16G46148	JDS
WG507013-01	01/06/2015	16G46125	JDS

Analyte	RT #1	RT #2	RT #3	STD	Lower	Upper
METHANE	.54	.55	.55	.55	0.520	0.580
ETHENE	1.06	1.06	1.06	1.06	1.030	1.090
ETHANE	1.39	1.39	1.39	1.39	1.360	1.420
PROPANE	3.82	3.83	3.83	3.83	3.800	3.860
N-BUTANE	5.33	5.34	5.34	5.34	5.310	5.370
CARBON DIOXIDE	.2	.2	.2	.2	0.170	0.230
ACETYLENE	1.14	1.14	1.14	1.14	1.110	1.170

RT_WIN - Modified 01/06/2010
PDF File ID: 4203249
Report generated 06/01/2015 11:01

2.1.2.5 Raw QC Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\052215\16G47569.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\052215\16G47569.D\TCD2B.CH
Acq On : 22 May 2015 10:32 Operator: JDS
Sample : WG524756-01 BLANK RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 22 10:38:55 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	358501	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	3.83	8869	0.018	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47569.D RSKEXT1.M Fri May 22 11:00:39 2015 Page 1

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\052215\16G47569.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\052215\16G47569.D\TCD2B.CH
Acq On    : 22 May 2015  10:32                        Operator: JDS
Sample    : WG524756-01 BLANK RSK175                  Inst    : HP16
Misc      : 1,1                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: May 22 10:38 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

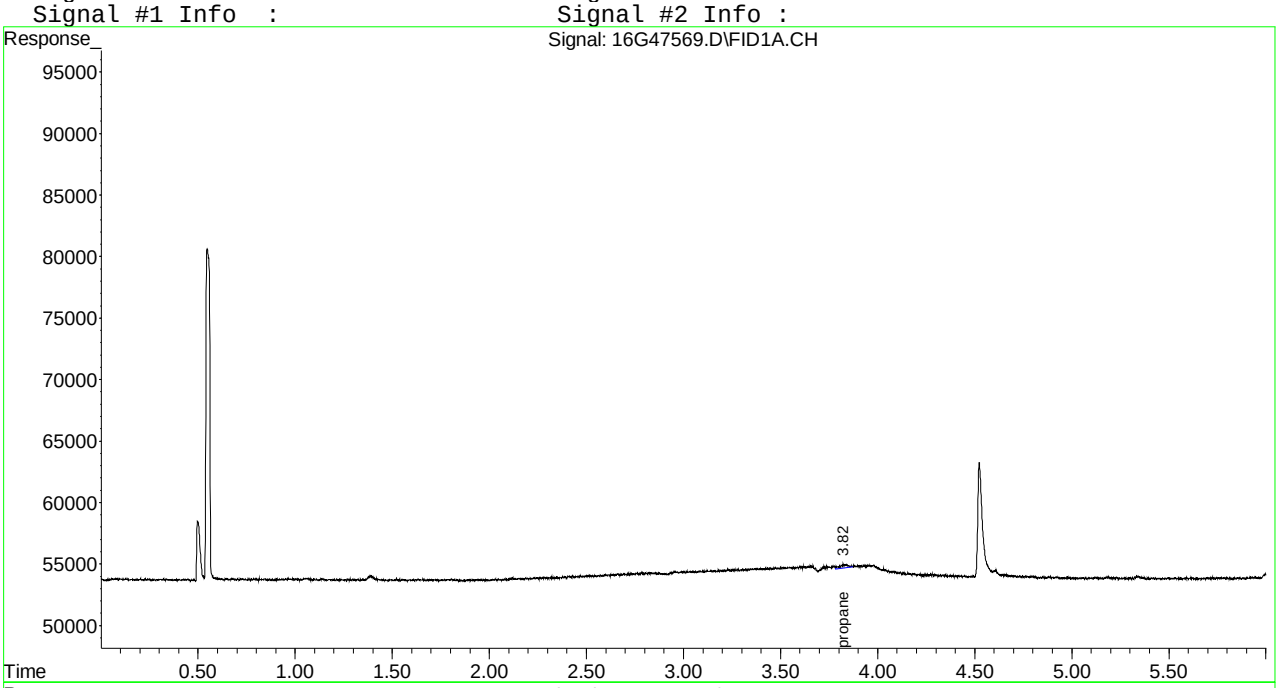

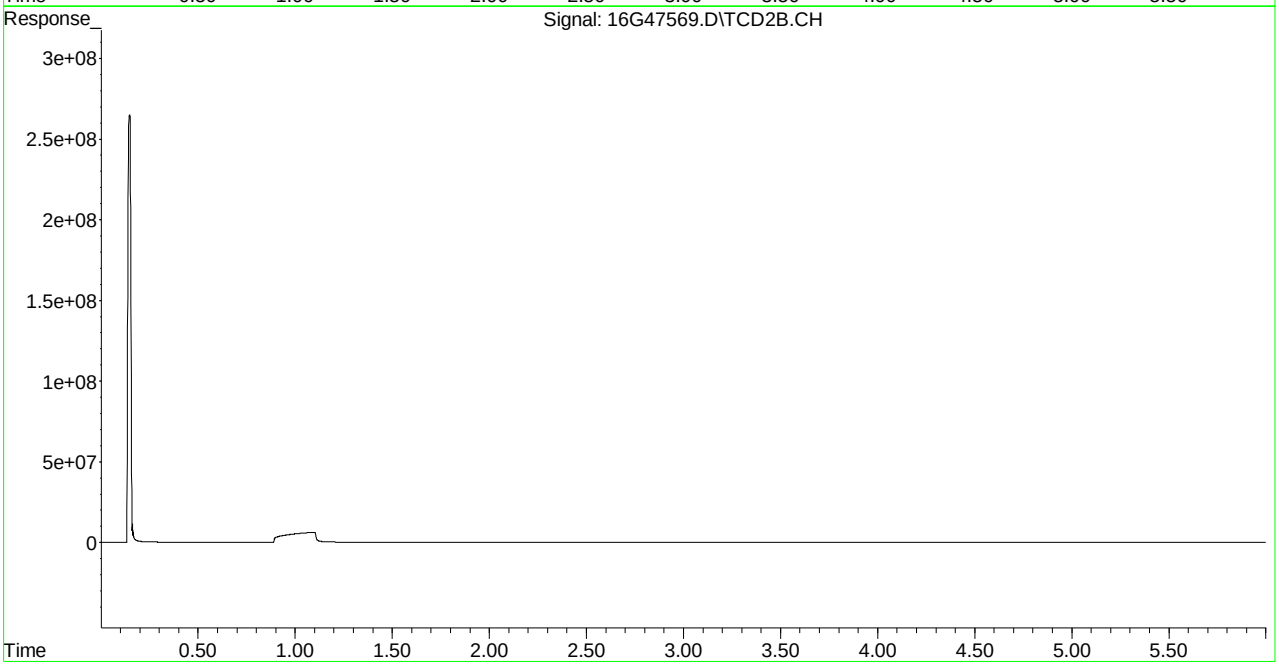

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\052215\16G47595.D\FID1A.CH Vial: 28
Signal #2 : C:\MSDCHEM\1\DATA\052215\16G47595.D\TCD2B.CH
Acq On : 22 May 2015 18:00 Operator: JDS
Sample : WG524855-01 BLANK RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 22 18:06:51 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	321952	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	1.15	7051	0.021	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	5.34	8903	0.014	umol/
8) T	carbon dioxide	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47595.D RSKEXT1.M Sat May 23 13:03:05 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\052215\16G47595.D\FID1A.CH Vial: 28
Signal #2 : C:\MSDCHEM\1\DATA\052215\16G47595.D\TCD2B.CH
Acq On : 22 May 2015 18:00 Operator: JDS
Sample : WG524855-01 BLANK RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 22 18:06 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

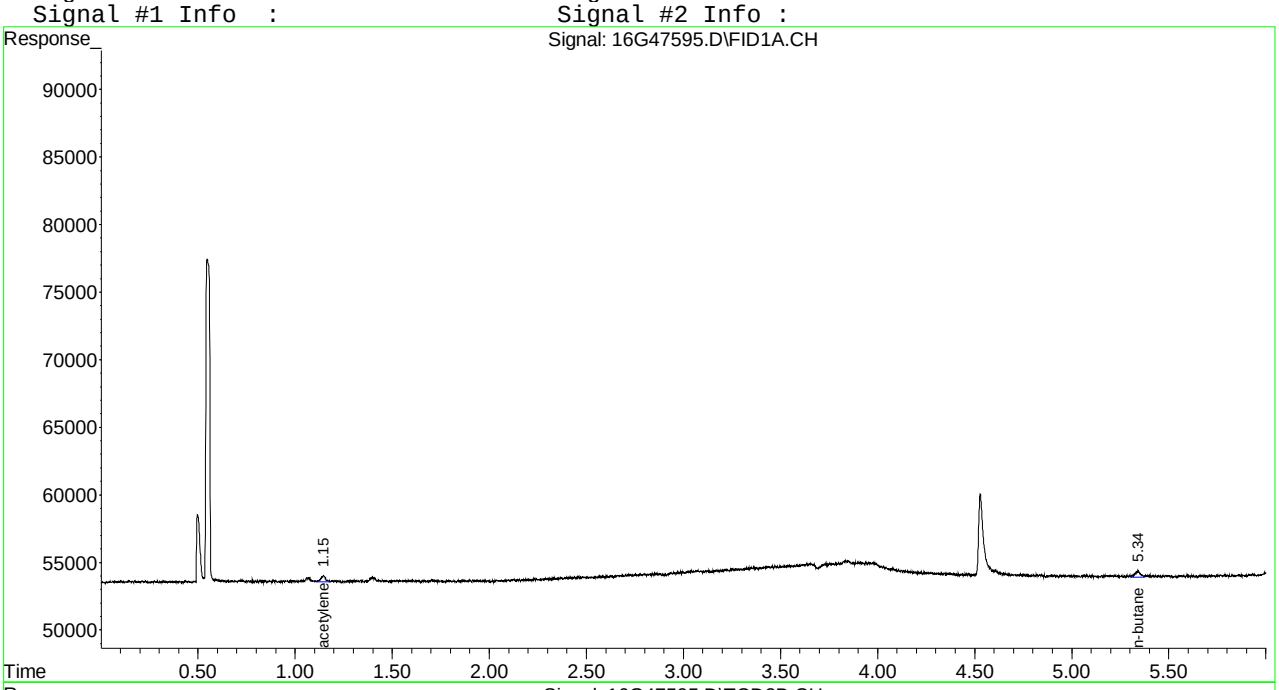

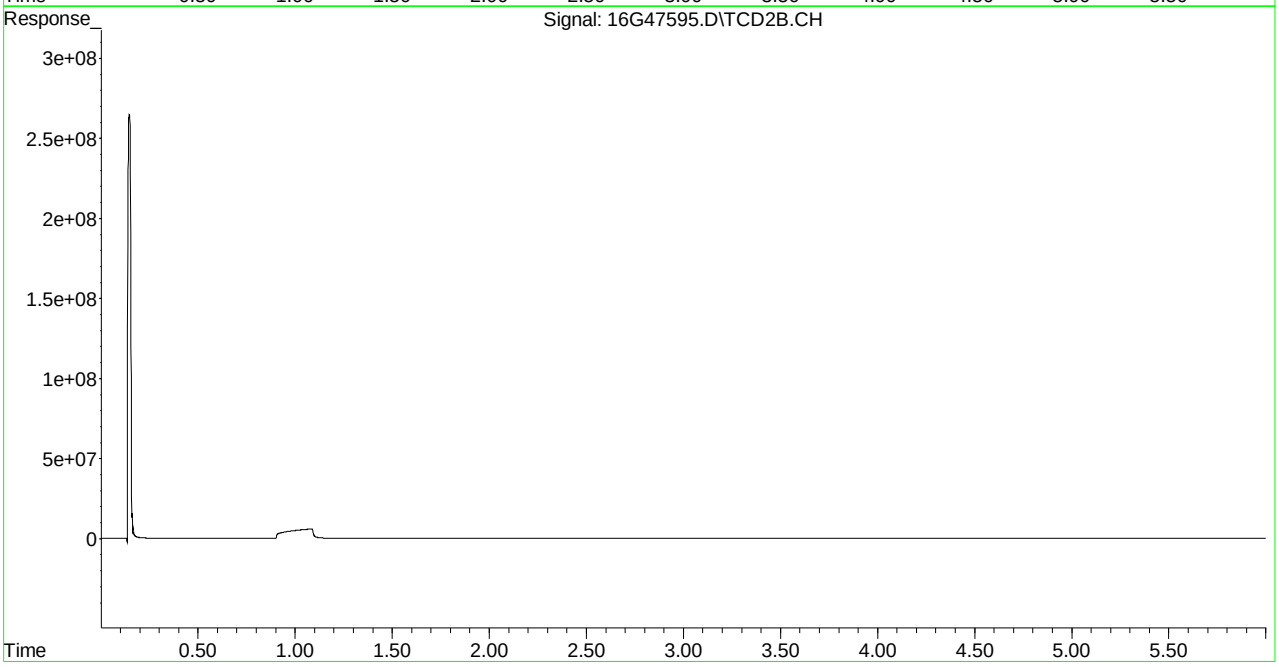

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\052615\16G47619.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\052615\16G47619.D\TCD2B.CH
Acq On : 26 May 2015 9:43 Operator: JDS
Sample : WG524992-01 BLANK RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 26 09:49:35 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	365329	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.39	12022	0.035	umol/
5) T	propane	3.83	5935	0.012	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47619.D RSKEXT1.M Tue May 26 10:00:25 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\052615\16G47619.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\052615\16G47619.D\TCD2B.CH
Acq On : 26 May 2015 9:43 Operator: JDS
Sample : WG524992-01 BLANK RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 26 9:49 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

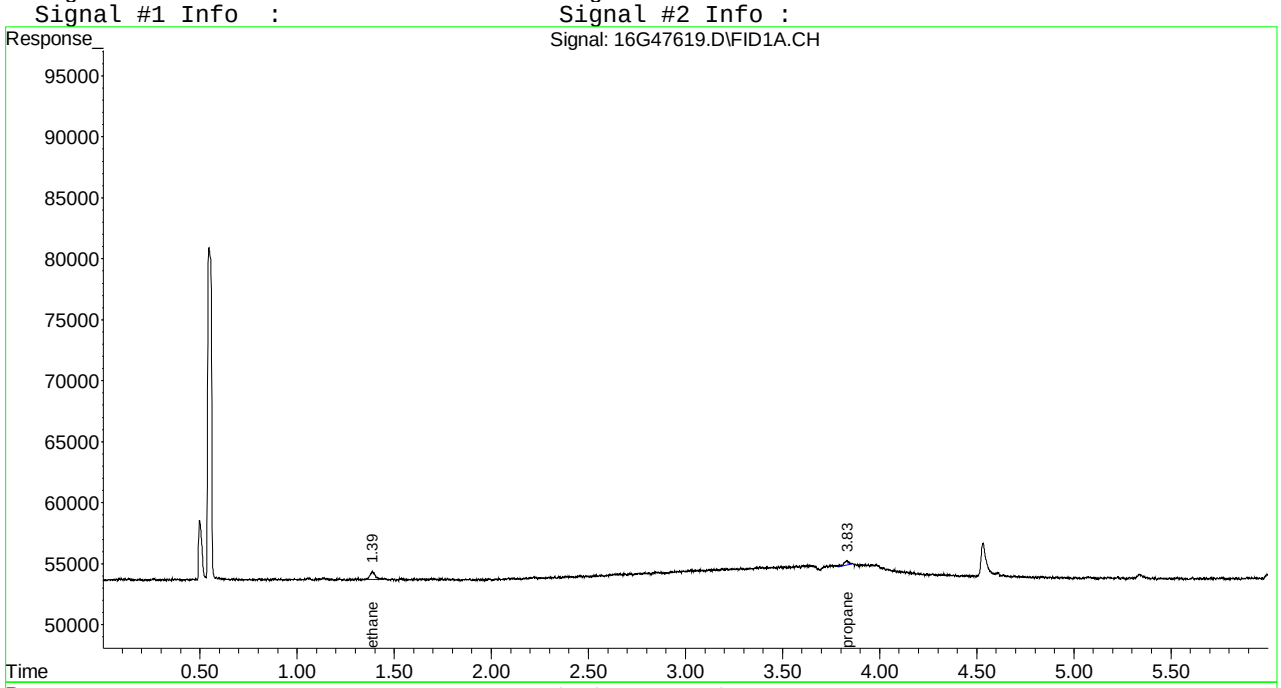

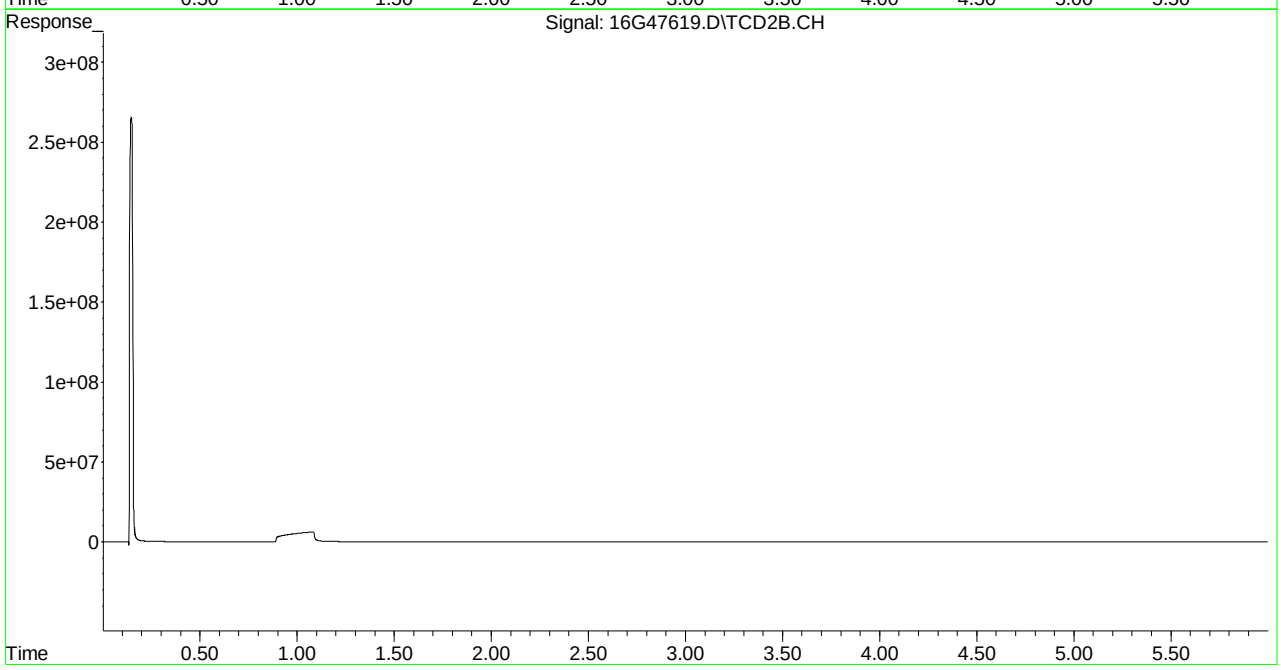

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\052215\16G47570.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDchem\1\DATA\052215\16G47570.D\TCD2B.CH
Acq On : 22 May 2015 10:44 Operator: JDS
Sample : WG524756-02 67umol/mol LCS RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 22 10:50:55 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	12551680	65.449	umol/
2) T	ethene	1.06	20738863	65.377	umol/
3) T	acetylene	1.14	22130422	65.391	umol/
4) T	ethane	1.39	21488969	63.222	umol/
5) T	propane	3.83	31268482	62.990	umol/
6) T	n-butane	5.34	39976078	61.665	umol/
8) T	carbon dioxide	0.20	35368719	6413.330	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47570.D RSKEXT1.M Fri May 22 10:50:55 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\052215\16G47570.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDchem\1\DATA\052215\16G47570.D\TCD2B.CH
Acq On : 22 May 2015 10:44 Operator: JDS
Sample : WG524756-02 67umol/mol LCS RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 22 10:50 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

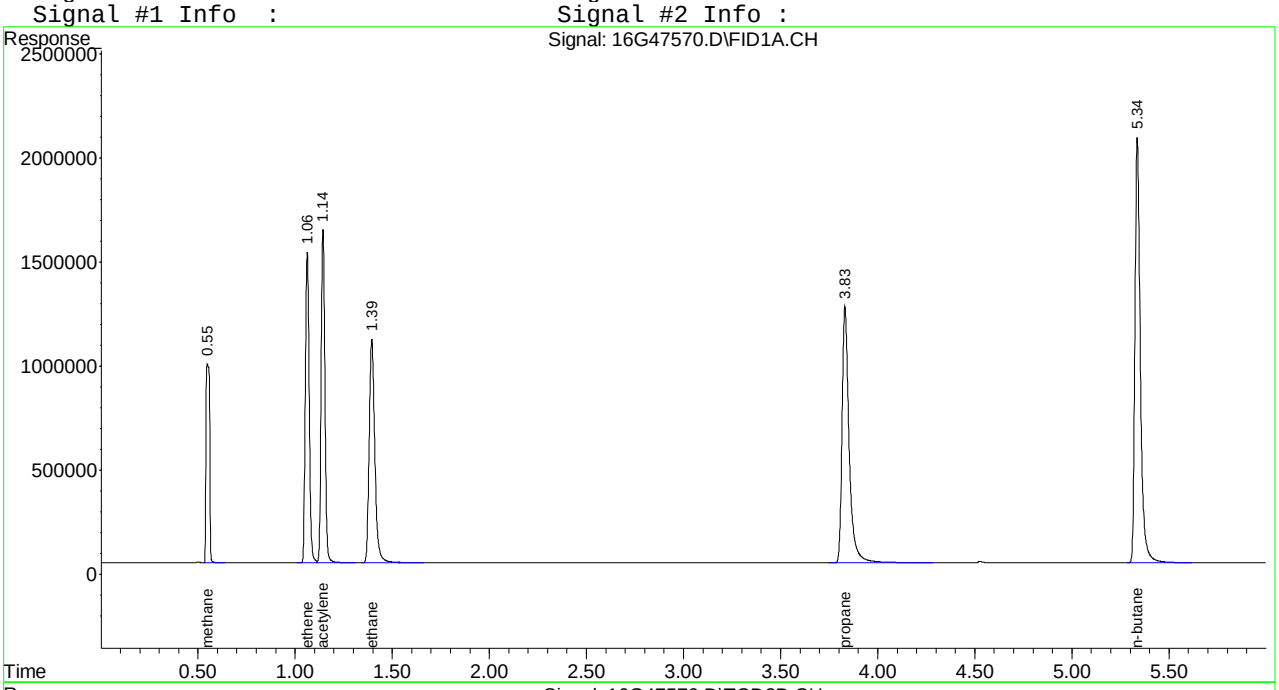

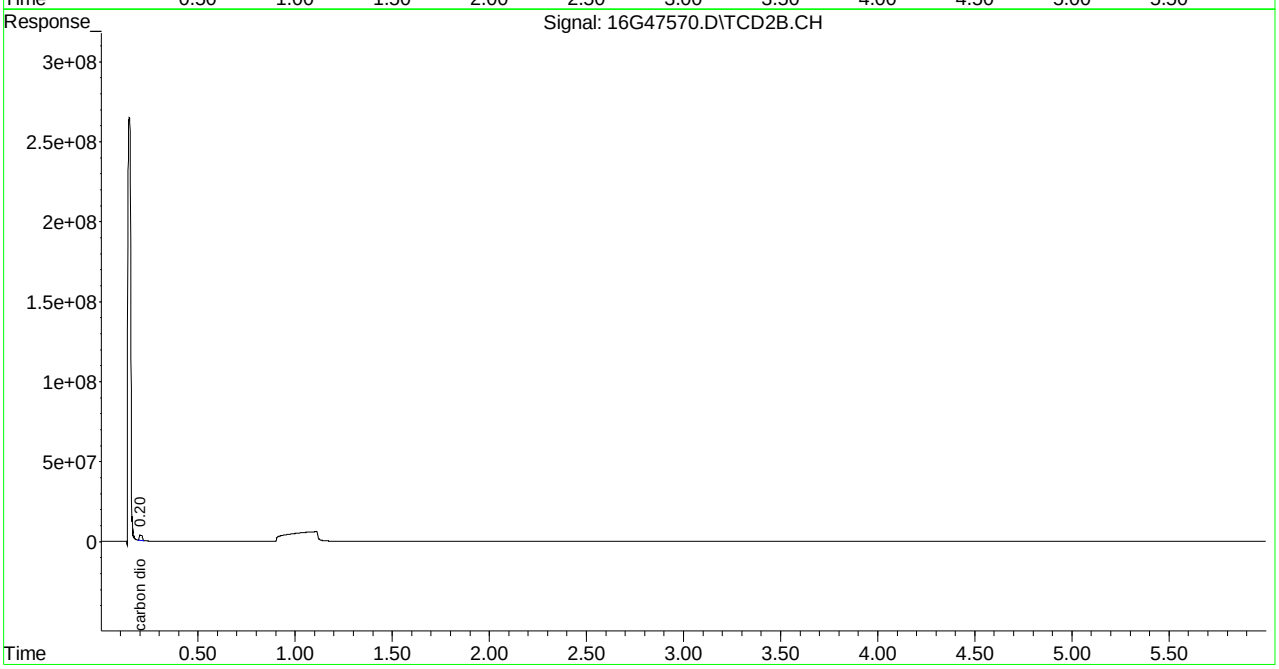

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\052215\16G47596.D\FID1A.CH Vial: 29
Signal #2 : C:\MSDchem\1\DATA\052215\16G47596.D\TCD2B.CH
Acq On : 22 May 2015 18:12 Operator: JDS
Sample : WG524855-02 67umol/mol LCS RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 22 18:18:17 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	13033931	68.049	umol/
2) T	ethene	1.06	21373374	67.377	umol/
3) T	acetylene	1.14	21271633	62.853	umol/
4) T	ethane	1.40	22241249	65.435	umol/
5) T	propane	3.83	31952199	64.367	umol/
6) T	n-butane	5.34	39938597	61.608	umol/
8) T	carbon dioxide	0.20	27629188	5009.938	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47596.D RSKEXT1.M Fri May 22 18:18:17 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\052215\16G47596.D\FID1A.CH Vial: 29
Signal #2 : C:\MSDchem\1\DATA\052215\16G47596.D\TCD2B.CH
Acq On : 22 May 2015 18:12 Operator: JDS
Sample : WG524855-02 67umol/mol LCS RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 22 18:18 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

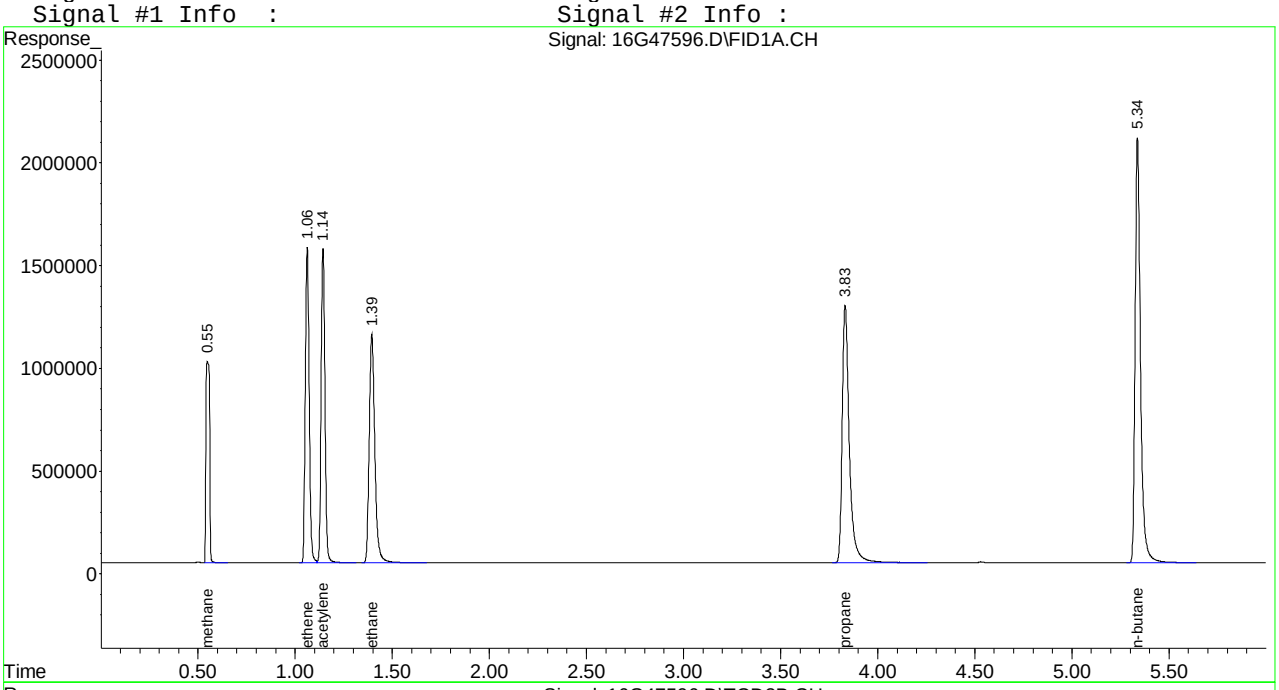

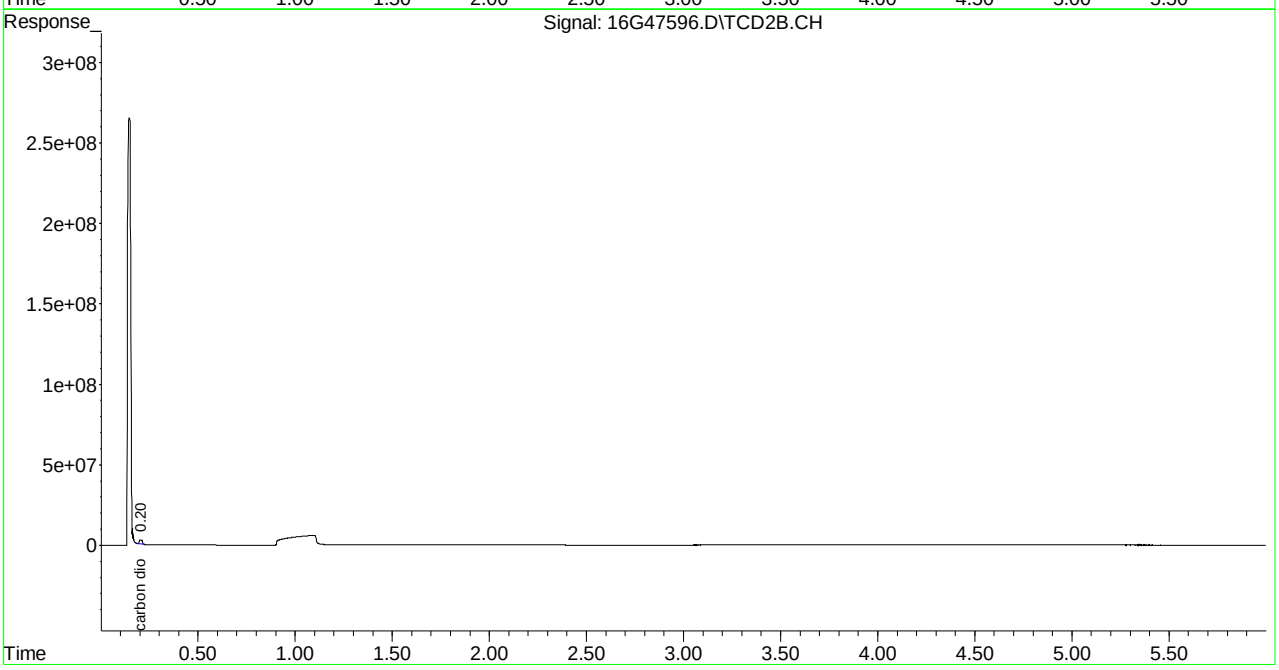

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDchem\1\DATA\052615\16G47620.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDchem\1\DATA\052615\16G47620.D\TCD2B.CH
Acq On    : 26 May 2015   9:54                        Operator: JDS
Sample    : WG524992-02 67umol/mol LCS RSK175         Inst    : HP16
Misc      : 1,1 STD68250                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: May 26 10:01:00 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	12249191	63.819	umol/
2) T	ethene	1.06	19952756	62.899	umol/
3) T	acetylene	1.14	21223933	62.712	umol/
4) T	ethane	1.39	20635643	60.711	umol/
5) T	propane	3.83	29750418	59.932	umol/
6) T	n-butane	5.34	38249248	59.002	umol/
8) T	carbon dioxide	0.20	36238521	6571.049	umol/

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\052615\16G47620.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDchem\1\DATA\052615\16G47620.D\TCD2B.CH
Acq On : 26 May 2015 9:54 Operator: JDS
Sample : WG524992-02 67umol/mol LCS RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 26 10:01 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

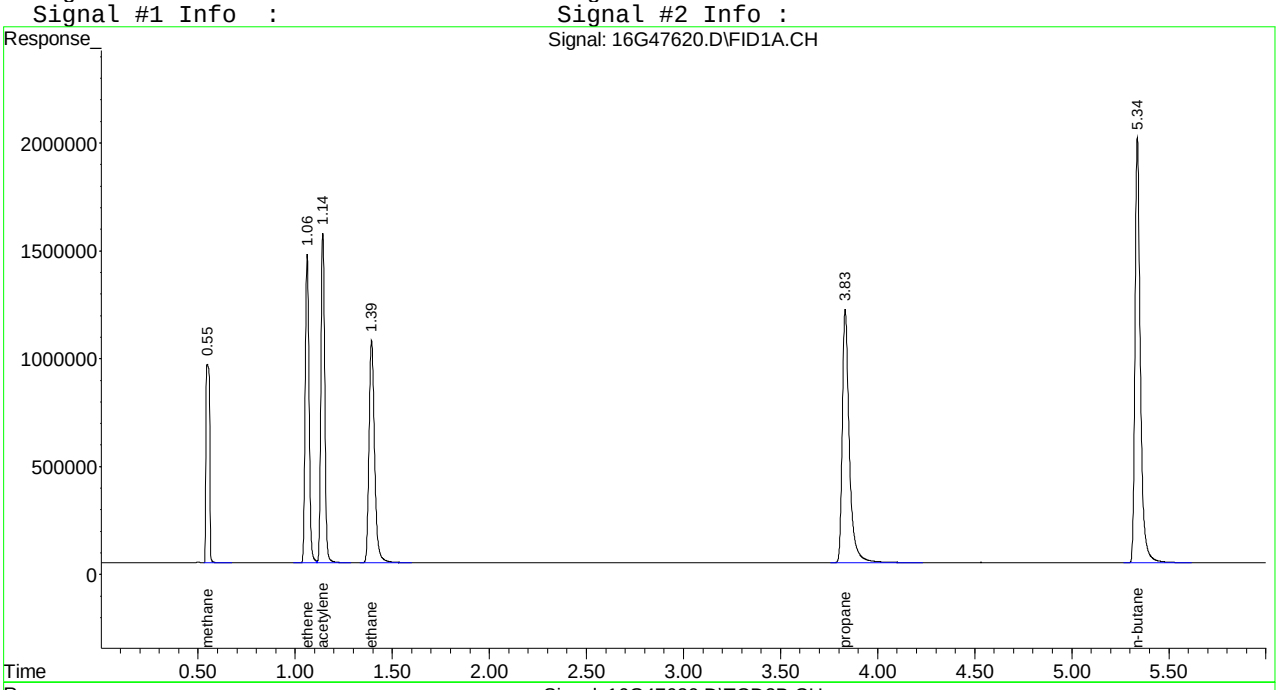

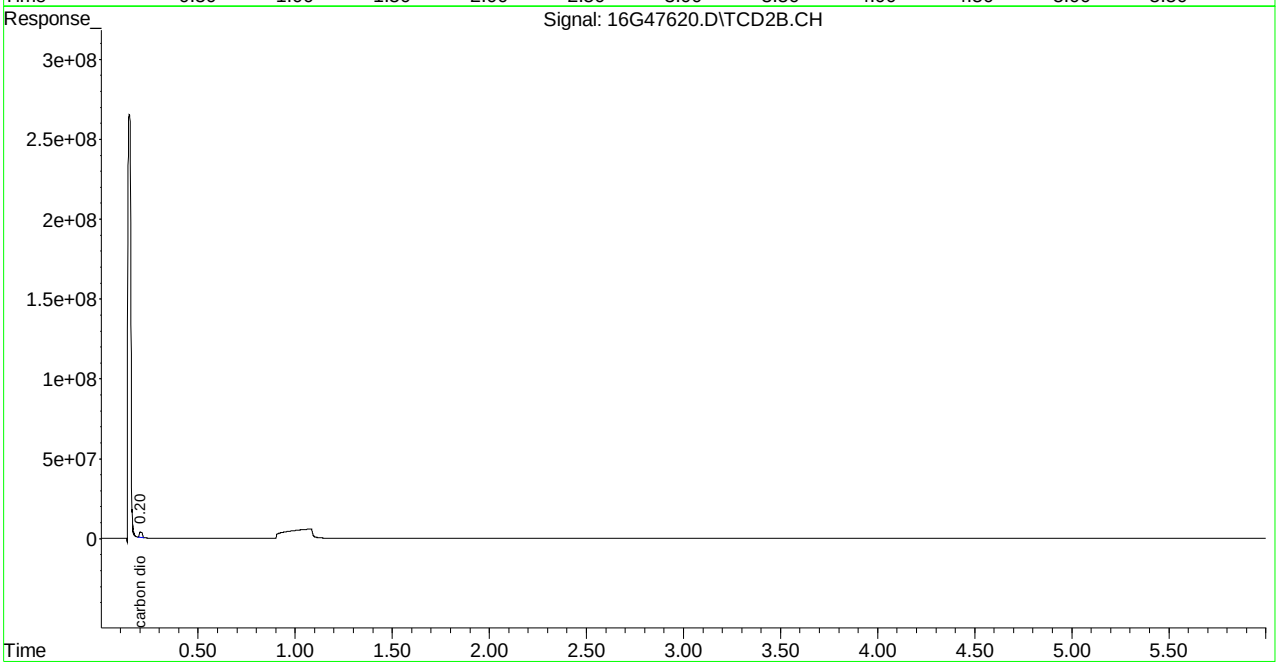

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\052215\16G47571.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDchem\1\DATA\052215\16G47571.D\TCD2B.CH
Acq On : 22 May 2015 10:56 Operator: JDS
Sample : WG524756-03 67umol/mol LCS2 RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 22 11:02:55 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	12715720	66.334	umol/
2) T	ethene	1.06	21109469	66.545	umol/
3) T	acetylene	1.14	21907163	64.731	umol/
4) T	ethane	1.39	21919434	64.488	umol/
5) T	propane	3.83	31945756	64.354	umol/
6) T	n-butane	5.34	41154552	63.483	umol/
8) T	carbon dioxide	0.20	34195441	6200.582	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47571.D RSKEXT1.M Fri May 22 11:02:55 2015 Page 1

Signal #1 : C:\MSDchem\1\DATA\052215\16G47571.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDchem\1\DATA\052215\16G47571.D\TCD2B.CH
Acq On : 22 May 2015 10:56 Operator: JDS
Sample : WG524756-03 67umol/mol LCS2 RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 22 11:02 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

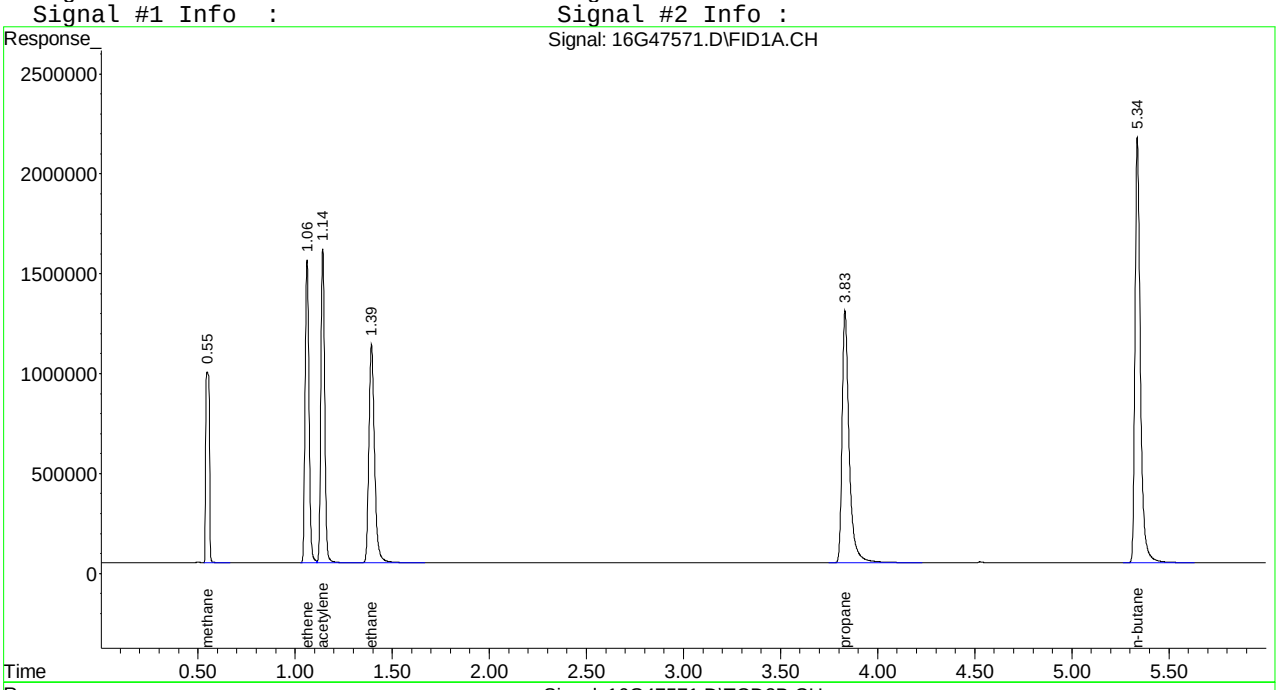

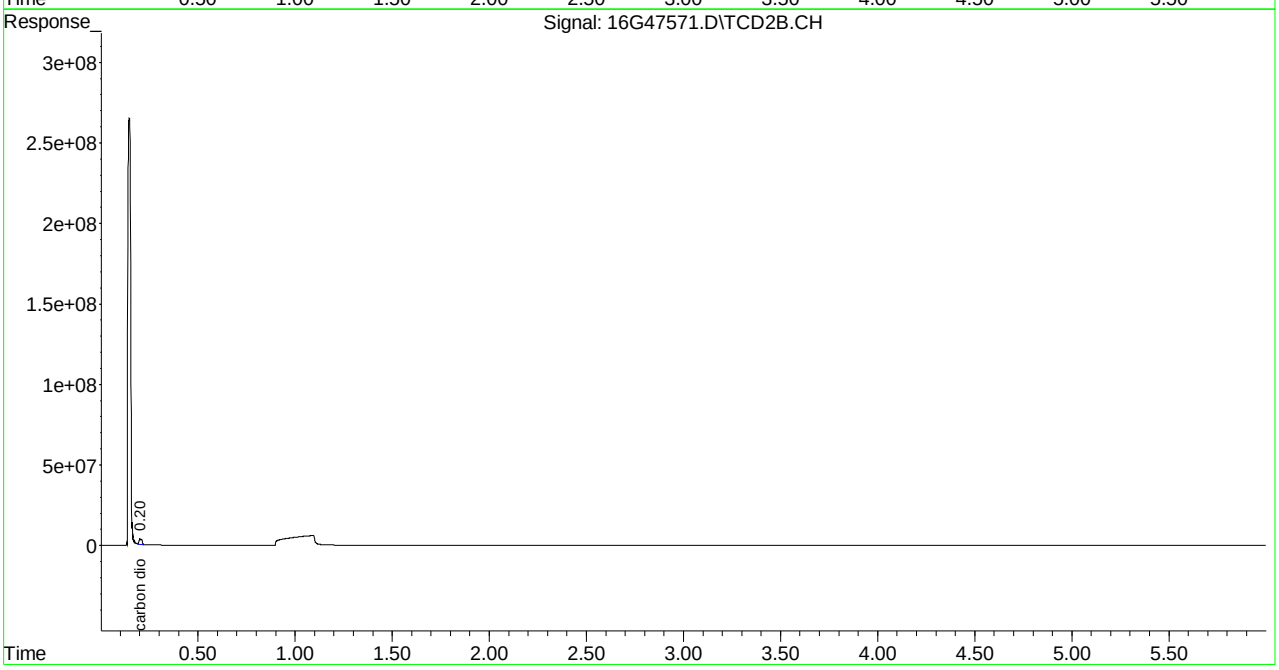

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\052215\16G47597.D\FID1A.CH Vial: 30
Signal #2 : C:\MSDchem\1\DATA\052215\16G47597.D\TCD2B.CH
Acq On : 22 May 2015 18:23 Operator: JDS
Sample : WG524855-03 67umol/mol LCS2 RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 22 18:30:00 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	12383360	64.542	umol/
2) T	ethene	1.06	20072586	63.277	umol/
3) T	acetylene	1.14	19643608	58.043	umol/
4) T	ethane	1.40	20872252	61.407	umol/
5) T	propane	3.83	29856710	60.146	umol/
6) T	n-butane	5.34	37287581	57.518	umol/
8) T	carbon dioxide	0.20	30295248	5493.369	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47597.D RSKEXT1.M Fri May 22 18:30:00 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\052215\16G47597.D\FID1A.CH Vial: 30
Signal #2 : C:\MSDchem\1\DATA\052215\16G47597.D\TCD2B.CH
Acq On : 22 May 2015 18:23 Operator: JDS
Sample : WG524855-03 67umol/mol LCS2 RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 22 18:30 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

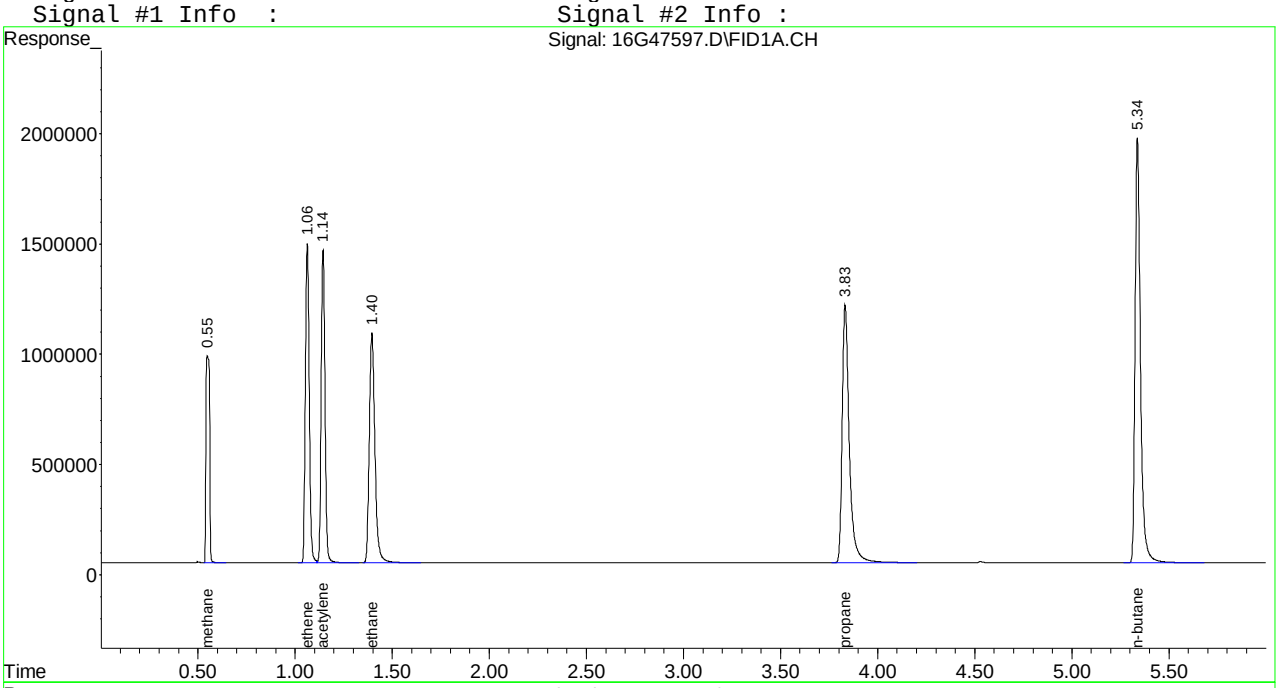

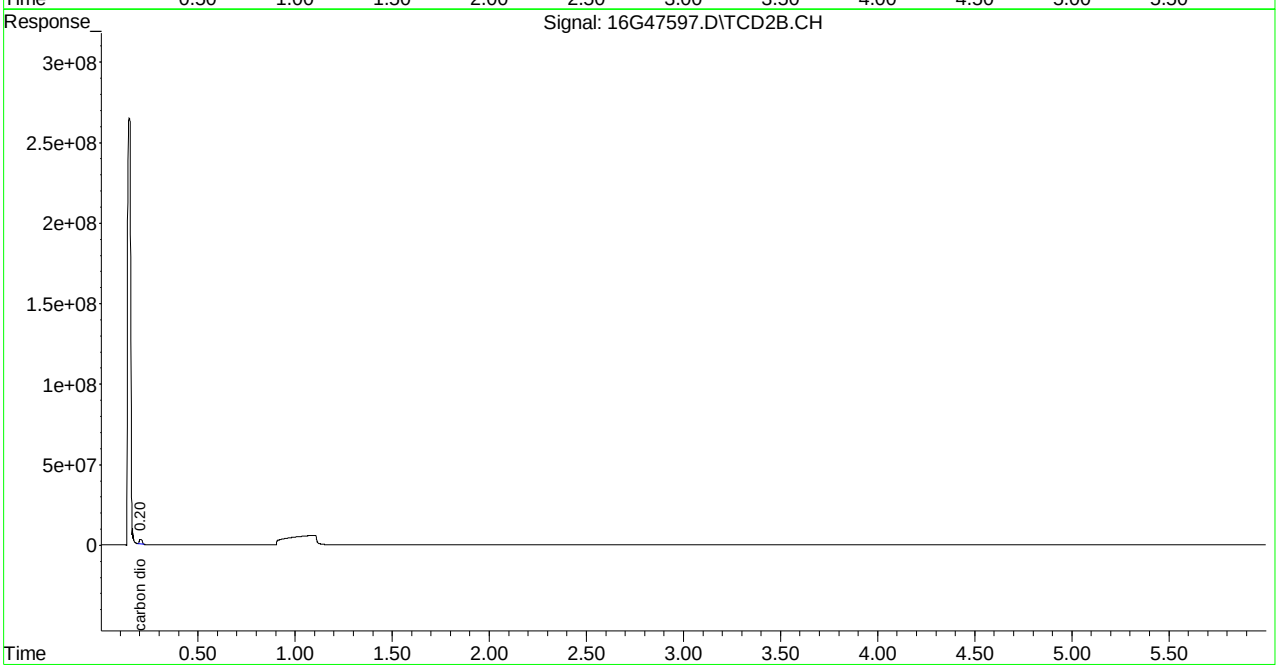

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\052615\16G47621.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDchem\1\DATA\052615\16G47621.D\TCD2B.CH
Acq On : 26 May 2015 10:06 Operator: JDS
Sample : WG524992-03 67umol/mol LCS2 RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 26 10:12:50 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	11998243	62.466	umol/
2) T	ethene	1.06	19495962	61.459	umol/
3) T	acetylene	1.14	20188280	59.652	umol/
4) T	ethane	1.39	20202845	59.438	umol/
5) T	propane	3.83	29196543	58.816	umol/
6) T	n-butane	5.34	36971498	57.031	umol/
8) T	carbon dioxide	0.20	34717507	6295.247	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47621.D RSKEXT1.M Tue May 26 10:12:50 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\052615\16G47621.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDchem\1\DATA\052615\16G47621.D\TCD2B.CH
Acq On : 26 May 2015 10:06 Operator: JDS
Sample : WG524992-03 67umol/mol LCS2 RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 26 10:12 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

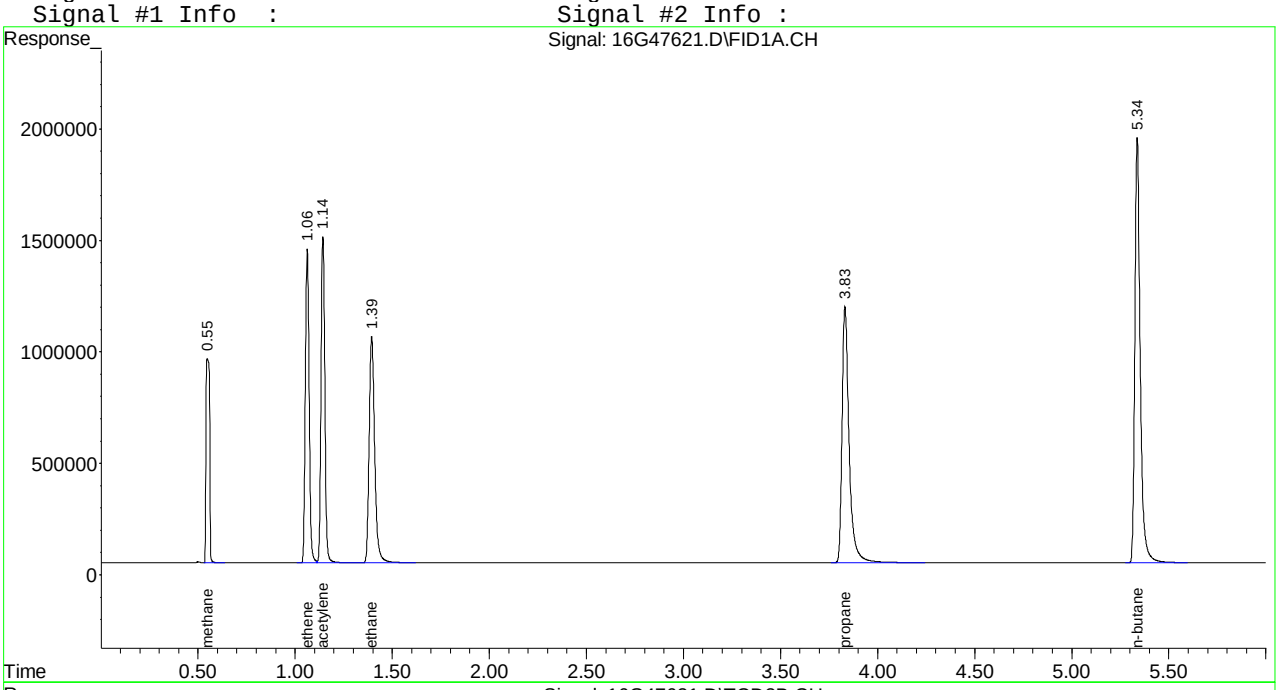

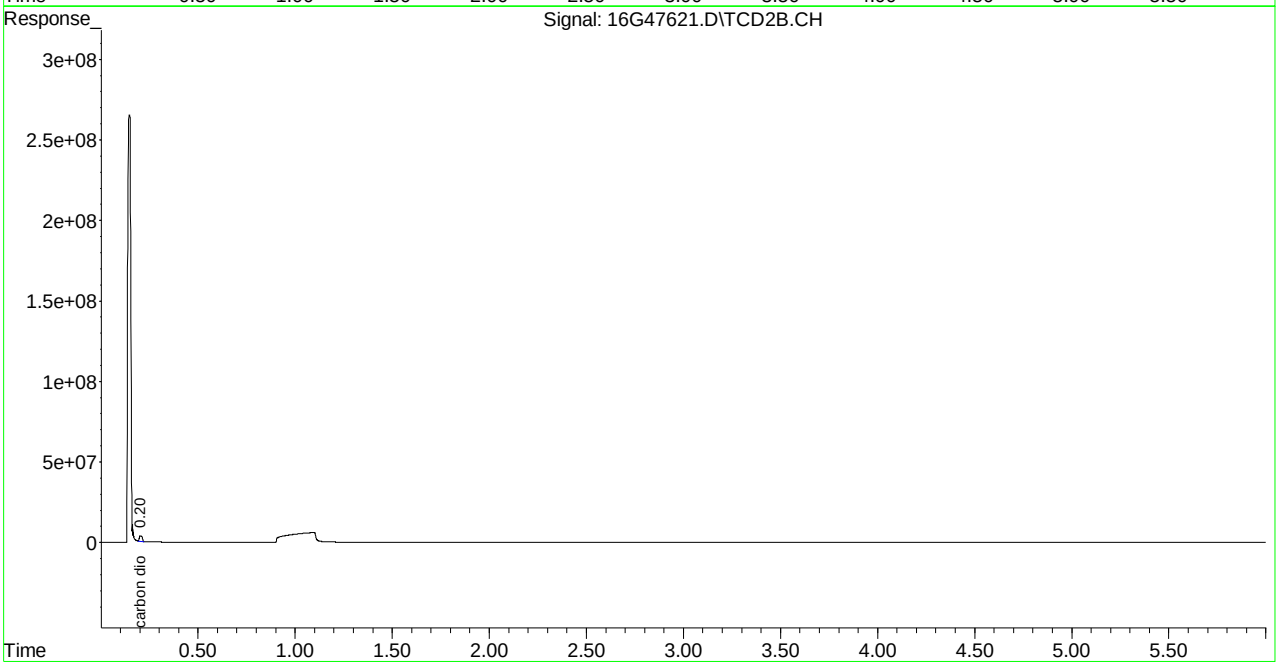

2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW13-052015	**Prep Method:**	6850	**Prep Date:**	05/27/2015 16:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/27/2015 15:10
Workgroup #:	WG525193	**Analyst:**	JWR	**Run Date:**	05/28/2015 14:46
Collect Date:	05/20/2015 08:30	**Dilution:**	100	**File ID:**	1LM.LM29942
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	126		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L15051303-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW14-052015	**Prep Method:**	6850	**Prep Date:**	05/27/2015 16:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/27/2015 15:10
Workgroup #:	WG525193	**Analyst:**	JWR	**Run Date:**	05/28/2015 10:08
Collect Date:	05/20/2015 09:45	**Dilution:**	1	**File ID:**	1LM.LM29928
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.06		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15051303-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW11-052015	**Prep Method:**	6850	**Prep Date:**	05/27/2015 16:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/27/2015 15:10
Workgroup #:	WG525193	**Analyst:**	JWR	**Run Date:**	05/28/2015 10:27
Collect Date:	05/20/2015 11:00	**Dilution:**	2000	**File ID:**	1LM.LM29929
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1140		800	400	200

Certificate of Analysis

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15051303-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW06-052015	**Prep Method:**	6850	**Prep Date:**	05/27/2015 16:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/27/2015 15:10
Workgroup #:	WG525193	**Analyst:**	JWR	**Run Date:**	05/28/2015 10:46
Collect Date:	05/20/2015 13:15	**Dilution:**	1000	**File ID:**	1LM.LM29930
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3000		400	200	100

Certificate of Analysis

Sample #:	L15051303-09	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW12-052015	**Prep Method:**	6850	**Prep Date:**	05/27/2015 16:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/27/2015 15:10
Workgroup #:	WG525193	**Analyst:**	JWR	**Run Date:**	05/28/2015 11:04
Collect Date:	05/20/2015 14:40	**Dilution:**	10000	**File ID:**	1LM.LM29931
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	59200		4000	2000	1000

Certificate of Analysis

Sample #:	L15051303-11	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW23-052015	**Prep Method:**	6850	**Prep Date:**	05/27/2015 16:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/27/2015 15:10
Workgroup #:	WG525193	**Analyst:**	JWR	**Run Date:**	05/28/2015 15:04
Collect Date:	05/20/2015 15:55	**Dilution:**	10	**File ID:**	1LM.LM29943
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	23.3		4.00	2.00	1.00

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1446 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG525193-01 MCT	10,330.	
-02 Blank	0.40	
-03 LCS	0.53	
L15051007-01	989.	
-02	169.2	
L15051140-01	185.1	
-02	186.2	
L15051141-01	185.8	
L15051146-01	98.8	
-02	73.6	
-03	80.2	
-04	97.9	
-05	141.4	
-06	116.9	
-07	54.4	
L15051303-01	2,540.	
-03	2,540.	
-05	1,740.	
-07	1,444.	
-09	5,130.	
-11	6,220.	
L15051435-01	2,660.	
-03	4,440.	

Analyst: John Richards

Date/Time: 05/28/15 / 13:30

DCN#110898

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 052715_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 140701254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG525192 (waters) Analytical WG525193 (waters)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD69537 (05/27/2015)

CCV STD: STD69537 LCS STD: STD69913 MS/MSD STD: STD69913

Comments: ICAL WG525179 : Alternate Source STD69913

Samples from workorders L15050604, L15050605, L15051007, L15051146 have no historical results in our LIMS. Samples with no historical results are initially screened at a 100x dilution in order to avoid overloading the LC-analytical column and/or the MS-detector. Samples L15050604-01 and L15051146(-02,-07) were analyzed at dilutions based on their screen results from 05/26/2015.

Samples L15051303(-01,-05,-07,-09) and L15051435-01 were analyzed at dilutions based on their historical results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM29862	WG525179-01 CCB	1	1		05/27/15 12:57
2	1LM.LM29863	WG525179-02 STD (0.1 ug/L)	1	1	STD69537	05/27/15 13:16
3	1LM.LM29864	WG525179-03 STD (0.2 ug/L)	1	1	STD69537	05/27/15 13:35
4	1LM.LM29865	WG525179-04 STD (0.5 ug/L)	1	1	STD69537	05/27/15 13:54
5	1LM.LM29866	WG525179-05 STD (1.0 ug/L)	1	1	STD69537	05/27/15 14:13
6	1LM.LM29867	WG525179-06 STD (2.0 ug/L)	1	1	STD69537	05/27/15 14:32
7	1LM.LM29868	WG525179-07 STD (5.0 ug/L)	1	1	STD69537	05/27/15 14:51
8	1LM.LM29869	WG525179-08 STD (10 ug/L)	1	1	STD69537	05/27/15 15:10
9	1LM.LM29870	WG525179-09 SSCV (1.0 ug/L)	1	1	STD69913	05/27/15 15:28
10	1LM.LM29871	WG525212-01 CCB	1	1		05/27/15 15:58
11	1LM.LM29872	WG525212-02 CCV (1.0ug/L)	1	1	STD69537	05/27/15 16:17
12	1LM.LM29873	WG525192-07 MRL (0.2ug/L)	1	1	STD69537	05/27/15 16:36
13	1LM.LM29874	WG525192-01 MCT (0.2ug/L)	1	1	STD69913	05/27/15 16:55
14	1LM.LM29875	WG525192-02 BLANK	1	1		05/27/15 17:14
15	1LM.LM29876	WG525192-03 LCS (0.2ug/L)	1	1	STD69913	05/27/15 17:33
16	1LM.LM29877	L15050604-01 (10x)	1	10		05/27/15 17:52
17	1LM.LM29878	L15050604-02	1	1		05/27/15 18:21
18	1LM.LM29879	L15050605-01	1	1		05/27/15 18:40
19	1LM.LM29880	L15050605-02	1	1		05/27/15 18:59
20	1LM.LM29881	L15050605-03	1	1		05/27/15 19:18
21	1LM.LM29882	L15050605-04	1	1		05/27/15 19:37
22	1LM.LM29883	L15050605-05	1	1		05/27/15 19:56
23	1LM.LM29884	WG525212-03 CCV (1.0ug/L)	1	1	STD69537	05/27/15 20:15
24	1LM.LM29885	WG525192-08 MRL (0.2ug/L)	1	1	STD69537	05/27/15 20:34
25	1LM.LM29886	WG525212-04 CCB	1	1		05/27/15 20:53
26	1LM.LM29887	L15050605-06	1	1		05/27/15 21:12
27	1LM.LM29888	L15050605-07 RS	1	1		05/27/15 21:31
28	1LM.LM29889	L15050605-08 MS	1	1	STD69913	05/27/15 21:49
29	1LM.LM29890	L15050605-09 MSD	1	1	STD69913	05/27/15 22:08
30	1LM.LM29891	L15050605-10	1	1		05/27/15 22:27

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 052715_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 140701254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG525192 (waters) Analytical WG525193 (waters)

Internal STD: COA18071 Surrogate STD: NA STD69537 (05/27/2015)

CCV STD: STD69537 LCS STD: STD69913 STD69913

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
31	1LM.LM29892	L15050605-11	1	1		05/27/15 22:46
32	1LM.LM29893	L15050605-12	1	1		05/27/15 23:05
33	1LM.LM29894	L15050605-13	1	1		05/27/15 23:24
34	1LM.LM29895	L15050605-14	1	1		05/27/15 23:43
35	1LM.LM29896	L15050605-15	1	1		05/28/15 00:02
36	1LM.LM29897	WG525212-05 CCV (1.0ug/L)	1	1	STD69537	05/28/15 00:21
37	1LM.LM29898	WG525192-09 MRL (0.2ug/L)	1	1	STD69537	05/28/15 00:40
38	1LM.LM29899	WG525193-07 MRL (0.2ug/L)	1	1	STD69537	05/28/15 00:59
39	1LM.LM29900	WG525212-06 CCB	1	1		05/28/15 01:18
40	1LM.LM29901	L15050605-16	1	1		05/28/15 01:37
41	1LM.LM29902	L15050605-17	1	1		05/28/15 01:56
42	1LM.LM29903	WG525193-01 MCT (0.2ug/L)	1	1	STD69913	05/28/15 02:14
43	1LM.LM29904	WG525193-02 BLANK	1	1		05/28/15 02:33
44	1LM.LM29905	WG525193-03 LCS (0.2ug/L)	1	1	STD69913	05/28/15 02:52
45	1LM.LM29906	L15051007-01 REF	1	1		05/28/15 03:11
46	1LM.LM29907	L15051007-01 MS	1	1	STD69913	05/28/15 03:30
47	1LM.LM29908	L15051007-01 MSD	1	1	STD69913	05/28/15 03:49
48	1LM.LM29909	L15051007-02	1	1		05/28/15 04:08
49	1LM.LM29910	WG525212-07 CCV (1.0ug/L)	1	1	STD69537	05/28/15 04:27
50	1LM.LM29911	WG525192-10 MRL (0.2ug/L)	1	1	STD69537	05/28/15 04:46
51	1LM.LM29912	WG525193-08 MRL (0.2ug/L)	1	1	STD69537	05/28/15 05:05
52	1LM.LM29913	WG525212-08 CCB	1	1		05/28/15 05:24
53	1LM.LM29914	L15051140-01 (NR)	1	1		05/28/15 05:43
54	1LM.LM29915	L15051140-02 (NR)	1	1		05/28/15 06:02
55	1LM.LM29916	L15051141-01 (NR)	1	1		05/28/15 06:20
56	1LM.LM29917	L15051146-01 (NR)	1	1		05/28/15 06:39
57	1LM.LM29918	L15051146-02 (5x)	1	5		05/28/15 06:58
58	1LM.LM29919	L15051146-03	1	1		05/28/15 07:17
59	1LM.LM29920	L15051146-04	1	1		05/28/15 07:36
60	1LM.LM29921	L15051146-05	1	1		05/28/15 07:55
61	1LM.LM29922	L15051146-06	1	1		05/28/15 08:14
62	1LM.LM29923	L15051146-07 (10x)	1	10		05/28/15 08:33
63	1LM.LM29924	WG525212-09 CCV (1.0ug/L)	1	1	STD69537	05/28/15 08:52
64	1LM.LM29925	WG525193-09 MRL (0.2ug/L)	1	1	STD69537	05/28/15 09:11
65	1LM.LM29926	WG525212-10 CCB	1	1		05/28/15 09:30
66	1LM.LM29927	L15051303-01 (500x) (NR)	1	500		05/28/15 09:49

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 052715_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 140701254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG525192 (waters) Analytical WG525193 (waters)

Internal STD: COA18071 Surrogate STD: NA STD69537 (05/27/2015)

CCV STD: STD69537 LCS STD: STD69913 STD69913

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
67	1LM.LM29928	L15051303-03	1	1		05/28/15 10:08
68	1LM.LM29929	L15051303-05 (2,000x)	1	2000		05/28/15 10:27
69	1LM.LM29930	L15051303-07 (1,000x)	1	1000		05/28/15 10:46
70	1LM.LM29931	L15051303-09 (10,000x)	1	10000		05/28/15 11:04
71	1LM.LM29932	L15051303-11 (NR)	1	1		05/28/15 11:23
72	1LM.LM29933	L15051435-01 (50x)	1	50		05/28/15 11:42
73	1LM.LM29934	L15051435-03	1	1		05/28/15 12:01
74	1LM.LM29935	WG525212-11 CCV (1.0ug/L)	1	1	STD69537	05/28/15 12:20
75	1LM.LM29936	WG525193-10 MRL (0.2ug/L)	1	1	STD69537	05/28/15 12:39
76	1LM.LM29937	WG525212-12 CCB	1	1		05/28/15 12:58
77	1LM.LM29938	L15051140-01 (RR 50x)	1	50		05/28/15 13:30
78	1LM.LM29939	L15051140-02 (RR 100x)	1	100		05/28/15 13:49
79	1LM.LM29940	L15051141-01 (RR 100x)	1	100		05/28/15 14:08
80	1LM.LM29941	L15051146-01 (RR Neat)	1	1		05/28/15 14:27
81	1LM.LM29942	L15051303-01 (RR 100x)	1	100		05/28/15 14:46
82	1LM.LM29943	L15051303-11 (RR 10x)	1	10		05/28/15 15:04
83	1LM.LM29944	WG525212-13 CCV (1.0ug/L)	1	1	STD69537	05/28/15 15:23
84	1LM.LM29945	WG525193-11 MRL (0.2ug/L)	1	1	STD69537	05/28/15 15:42
85	1LM.LM29946	WG525212-14 CCB	1	1		05/28/15 16:01

Comments

Seq.	Rerun	Dil.	Reason	Analytes
53	X	50	Over Calibration Range	
	L15051140-01 (NR) : This sample was reanalyzed at a 50x dilution on the end of this run.			
54	X	100	Over Calibration Range	
	L15051140-02 (NR) : This sample was reanalyzed at a 100x dilution on the end of this run.			
55	X	100	Over Calibration Range	
	L15051141-01 (NR) : This sample was reanalyzed at a 100x dilution on the end of this run.			
56	X	1		
	L15051146-01 (NR) : This sample was reanalyzed neat on the end of this run as a precautionary measure in order to prevent reporting any carryover that may occur from the three "over-range" samples injected prior to this sample.			
66	X	100	Analyzed too dilute	
	L15051303-01 (500x) (NR) : This sample was reanalyzed at a 100x dilution on the end of this run.			
71	X	10	Over Calibration Range	
	L15051303-11 (NR) : This sample was reanalyzed at a 10x dilution on the end of this run.			

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Microbac Laboratories Inc.

Data Checklist

Date: 27-MAY-2015
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG525179
Runlog ID: 68271
Analytical Workgroups: L15050604, 0605, 1007, 1140, 1141, 1146, 1303, 1435 (WATERS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 29-MAY-2015 John Richards

Secondary Reviewer: 29-MAY-2015 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-29-2015 11:32:03

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG525193

Login Number: L15051303

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW13-052015	01	05/20/15					05/27/2015	7.3	28		05/28/15	.9	28	
50WW14-052015	03	05/20/15					05/27/2015	7.3	28		05/28/15	.7	28	
50WW11-052015	05	05/20/15					05/27/2015	7.2	28		05/28/15	.7	28	
50WW06-052015	07	05/20/15					05/27/2015	7.1	28		05/28/15	.8	28	
50WW12-052015	09	05/20/15					05/27/2015	7.1	28		05/28/15	.8	28	
50WW23-052015	11	05/20/15					05/27/2015	7	28		05/28/15	.9	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4205476
Report generated 05/29/2015 13:29

METHOD BLANK SUMMARY

Login Number: L15051303
Blank File ID: 1LM.LM29904
Prep Date: 05/27/15 16:30
Analyzed Date: 05/28/15 02:33
Analyst: JWR

Work Group: WG525193
Blank Sample ID: WG525193-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG525193-07	1LM.LM29899	05/28/15 00:59	01
MCT	WG525193-01	1LM.LM29903	05/28/15 02:14	01
LCS	WG525193-03	1LM.LM29905	05/28/15 02:52	01
QCMRL	WG525193-08	1LM.LM29912	05/28/15 05:05	01
QCMRL	WG525193-09	1LM.LM29925	05/28/15 09:11	01
50WW14-052015	L15051303-03	1LM.LM29928	05/28/15 10:08	01
50WW11-052015	L15051303-05	1LM.LM29929	05/28/15 10:27	DL01
50WW06-052015	L15051303-07	1LM.LM29930	05/28/15 10:46	DL01
50WW12-052015	L15051303-09	1LM.LM29931	05/28/15 11:04	DL01
QCMRL	WG525193-10	1LM.LM29936	05/28/15 12:39	01
50WW13-052015	L15051303-01	1LM.LM29942	05/28/15 14:46	DL01
50WW23-052015	L15051303-11	1LM.LM29943	05/28/15 15:04	DL01
QCMRL	WG525193-11	1LM.LM29945	05/28/15 15:42	01

Report Name: BLANK_SUMMARY
PDF File ID: 4205477
Report generated 05/29/2015 13:29

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051303 Prep Date: 05/27/15 16:30 Sample ID: WG525193-02
Instrument ID: LCMS1 Run Date: 05/28/15 02:33 Prep Method: 6850
File ID: 1LM.LM29904 Analyst: JWR Method: 6850
Workgroup (AAB#): WG525193 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-27-MAY-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4205478
29-MAY-2015 13:29

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051303 Run Date: 05/28/2015 Sample ID: WG525193-03
Instrument ID: LCMS1 Run Time: 02:52 Prep Method: 6850
File ID: 1LM.LM29905 Analyst: JWR Method: 6850
Workgroup (AAB#): WG525193 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD69913 Cal ID: LCMS1-27-MAY-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	0.200	0.200	100	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4205479
Report generated: 05/29/2015 13:29

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L15051303
Analytical Method: 6850
ICAL Workgroup: WG525179

Instrument ID: LCMS1
Initial Calibration Date: 27-MAY-15 15:10
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		0.7866	4.69	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4205742
Report generated 05/29/2015 13:29

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15051303

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 27-MAY-15 15:10

Column ID: F

Analyte	WG525179-02			WG525179-03			WG525179-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	4310.00000	0.7490	0.200	9360.00000	0.7980	0.500	23600.0000	0.7980

INT_CAL - Modified 03/06/2008
PDF File ID: 4205742
Report generated 05/29/2015 13:29

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15051303
Analytical Method: 6850

Instrument ID: LCMS1
Initial Calibration Date: 27-MAY-15 15:10
Column ID: F

Analyte	WG525179-05			WG525179-06			WG525179-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	47200.0000	0.8170	2.00	90300.0000	0.7730	5.00	223000.000	0.8100

INT_CAL - Modified 03/06/2008
PDF File ID: 4205742
Report generated 05/29/2015 13:29

Login Number: L15051303
Analytical Method: 6850
Instrument ID: LCMS1
Initial Calibration Date: 27-MAY-15 15:10
Column ID: F

Analyte	WG525179-08		
	CONC	RESP	RF
Perchlorate	10.0	418000.000	0.7610

INT_CAL - Modified 03/06/2008
PDF File ID: 4205742
Report generated 05/29/2015 13:29

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15051303 Run Date: 05/27/2015 Sample ID: WG525179-09
Instrument ID: LCMS1 Run Time: 15:28 Method: 6850
File ID: 1LM.LM29870 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG525179 Cal ID: LCMS1 - 27-MAY-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.981	ug/L	0.767	1.90	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4205743
Report generated 05/29/2015 13:29

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051303
Run Date: 05/27/2015
Sample ID: WG525212-04
Instrument ID: LCMS1
Run Time: 20:53
Method: 6850
File ID: 1LM.LM29886
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG525193
Cal ID: LCMS1 - 27-MAY-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4205482
Report generated 05/29/2015 13:30

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051303
Run Date: 05/28/2015
Sample ID: WG525212-06
Instrument ID: LCMS1
Run Time: 01:18
Method: 6850
File ID: 1LM.LM29900
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG525193
Cal ID: LCMS1 - 27-MAY-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4205482
Report generated 05/29/2015 13:30

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051303
Run Date: 05/28/2015
Sample ID: WG525212-08
Instrument ID: LCMS1
Run Time: 05:24
Method: 6850
File ID: 1LM.LM29913
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG525193
Cal ID: LCMS1 - 27-MAY-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4205482
Report generated 05/29/2015 13:30

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051303
Run Date: 05/28/2015
Sample ID: WG525212-10
Instrument ID: LCMS1
Run Time: 09:30
Method: 6850
File ID: 1LM.LM29926
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG525193
Cal ID: LCMS1 - 27-MAY-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4205482
Report generated 05/29/2015 13:30

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051303
Run Date: 05/28/2015
Sample ID: WG525212-12
Instrument ID: LCMS1
Run Time: 12:58
Method: 6850
File ID: 1LM.LM29937
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG525193
Cal ID: LCMS1 - 27-MAY-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4205482
Report generated 05/29/2015 13:30

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051303
Run Date: 05/28/2015
Sample ID: WG525212-14
Instrument ID: LCMS1
Run Time: 16:01
Method: 6850
File ID: 1LM.LM29946
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG525193
Cal ID: LCMS1 - 27-MAY-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4205482
Report generated 05/29/2015 13:30

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051303
Run Date: 05/28/2015
Sample ID: WG525212-05
Instrument ID: LCMS1
Run Time: 00:21
Method: 6850
File ID: 1LM.LM29897
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG525193
Cal ID: LCMS1 - 27-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.05	ug/L	0.819	5.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4205481
Report generated 05/29/2015 13:29

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051303
Run Date: 05/28/2015
Sample ID: WG525212-07
Instrument ID: LCMS1
Run Time: 04:27
Method: 6850
File ID: 1LM.LM29910
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG525193
Cal ID: LCMS1 - 27-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.05	ug/L	0.817	5.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4205481
Report generated 05/29/2015 13:29

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051303
Run Date: 05/28/2015
Sample ID: WG525212-09
Instrument ID: LCMS1
Run Time: 08:52
Method: 6850
File ID: 1LM.LM29924
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG525193
Cal ID: LCMS1 - 27-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.09	ug/L	0.852	9.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4205481
Report generated 05/29/2015 13:29

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051303
Run Date: 05/28/2015
Sample ID: WG525212-11
Instrument ID: LCMS1
Run Time: 12:20
Method: 6850
File ID: 1LM.LM29935
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG525193
Cal ID: LCMS1 - 27-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.06	ug/L	0.832	6.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4205481
Report generated 05/29/2015 13:29

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051303
Run Date: 05/28/2015
Sample ID: WG525212-13
Instrument ID: LCMS1
Run Time: 15:23
Method: 6850
File ID: 1LM.LM29944
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG525193
Cal ID: LCMS1 - 27-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.08	ug/L	0.845	8.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4205481
Report generated 05/29/2015 13:29

Login Number: L15051303 Run Date: 05/28/2015 Sample ID: WG525193-07
Instrument ID: LCMS1 Run Time: 00:59 Prep Method: 6850
File ID: 1LM.LM29899 Analyst: JWR Method: 6850
Workgroup (AAB#): WG525193 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-27-MAY-15

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.222	111	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4205480
Report generated 05/29/2015 13:29

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15051303 Run Date: 05/28/2015 Sample ID: WG525193-08
Instrument ID: LCMS1 Run Time: 05:05 Prep Method: 6850
File ID: 1LM.LM29912 Analyst: JWR Method: 6850
Workgroup (AAB#): WG525193 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-27-MAY-15

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.219	110	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4205480
Report generated 05/29/2015 13:29

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15051303 Run Date: 05/28/2015 Sample ID: WG525193-09
Instrument ID: LCMS1 Run Time: 09:11 Prep Method: 6850
File ID: 1LM.LM29925 Analyst: JWR Method: 6850
Workgroup (AAB#): WG525193 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-27-MAY-15

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.221	111	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4205480
Report generated 05/29/2015 13:29

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15051303 Run Date: 05/28/2015 Sample ID: WG525193-10
Instrument ID: LCMS1 Run Time: 12:39 Prep Method: 6850
File ID: 1LM.LM29936 Analyst: JWR Method: 6850
Workgroup (AAB#): WG525193 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-27-MAY-15

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.212	106	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4205480
Report generated 05/29/2015 13:29

Login Number: L15051303 Run Date: 05/28/2015 Sample ID: WG525193-11
Instrument ID: LCMS1 Run Time: 15:42 Prep Method: 6850
File ID: 1LM.LM29945 Analyst: JWR Method: 6850
Workgroup (AAB#): WG525193 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-27-MAY-15

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.208	104	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4205480
Report generated 05/29/2015 13:29

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L15051303
Instrument ID: LCMS1
Workgroup (AAB#): WG525193

ICAL CCV Number: WG525179-05
CAL ID: LCMS1-27-MAY-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG525179	NA	NA	287000
Upper Limit	NA	NA	430500
Lower Limit	NA	NA	143500
L15051303-01	100	DL01	339000
L15051303-03	1.00	01	328000
L15051303-05	2000	DL01	340000
L15051303-07	1000	DL01	330000
L15051303-09	10000	DL01	319000
L15051303-11	10.0	DL01	332000
WG525193-02	1.00	01	352000
WG525193-03	1.00	01	331000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4205483
Report generated 05/29/2015 13:30

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051303	**Prep Method:**	6850	**Samplenum:**	L15051303-01
Instrument:	LCMS1	**Prep Date:**	05/27/2015 16:30	**File ID:**	1LM.LM29942
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/28/2015 14:46	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	66700	24100	2.77	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051303	**Prep Method:**	6850	**Samplenum:**	L15051303-03
Instrument:	LCMS1	**Prep Date:**	05/27/2015 16:30	**File ID:**	1LM.LM29928
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/28/2015 10:08	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	106000	41000	2.59	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051303	**Prep Method:**	6850	**Samplenum:**	L15051303-05
Instrument:	LCMS1	**Prep Date:**	05/27/2015 16:30	**File ID:**	1LM.LM29929
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/28/2015 10:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	30300	11900	2.55	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051303	**Prep Method:**	6850	**Samplenum:**	L15051303-07
Instrument:	LCMS1	**Prep Date:**	05/27/2015 16:30	**File ID:**	1LM.LM29930
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/28/2015 10:46	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	154000	59500	2.59	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051303	**Prep Method:**	6850	**Samplenum:**	L15051303-09
Instrument:	LCMS1	**Prep Date:**	05/27/2015 16:30	**File ID:**	1LM.LM29931
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/28/2015 11:04	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	294000	113000	2.60	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051303	**Prep Method:**	6850	**Samplenum:**	L15051303-11
Instrument:	LCMS1	**Prep Date:**	05/27/2015 16:30	**File ID:**	1LM.LM29943
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/28/2015 15:04	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	121000	46900	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051303	**Prep Method:**		**Samplenum:**	WG525179-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29863
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/27/2015 13:16	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	4310	1720	2.51	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051303	**Prep Method:**		**Samplenum:**	WG525179-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29864
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/27/2015 13:35	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	9360	3750	2.50	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051303	**Prep Method:**		**Samplenum:**	WG525179-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29865
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/27/2015 13:54	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	23600	8730	2.70	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051303	**Prep Method:**		**Samplenum:**	WG525179-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29866
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/27/2015 14:13	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	47200	17600	2.68	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051303	**Prep Method:**		**Samplenum:**	WG525179-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29867
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/27/2015 14:32	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	90300	33900	2.66	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051303	**Prep Method:**		**Samplenum:**	WG525179-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29868
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/27/2015 14:51	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	223000	83400	2.67	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051303	**Prep Method:**		**Samplenum:**	WG525179-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29869
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/27/2015 15:10	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	418000	160000	2.61	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051303	**Prep Method:**		**Samplenum:**	WG525179-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29870
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/27/2015 15:28	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	44900	16700	2.69	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051303	**Prep Method:**	6850	**Samplenum:**	WG525193-01
Instrument:	LCMS1	**Prep Date:**	05/27/2015 16:30	**File ID:**	1LM.LM29903
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/28/2015 02:14	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	11300	4540	2.49	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051303	**Prep Method:**	6850	**Samplenum:**	WG525193-02
Instrument:	LCMS1	**Prep Date:**	05/27/2015 16:30	**File ID:**	1LM.LM29904
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/28/2015 02:33	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051303	**Prep Method:**	6850	**Samplenum:**	WG525193-03
Instrument:	LCMS1	**Prep Date:**	05/27/2015 16:30	**File ID:**	1LM.LM29905
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/28/2015 02:52	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	10500	4160	2.52	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051303	**Prep Method:**	6850	**Samplenum:**	WG525193-07
Instrument:	LCMS1	**Prep Date:**	05/27/2015 16:30	**File ID:**	1LM.LM29899
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/28/2015 00:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	11600	4300	2.70	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051303	**Prep Method:**	6850	**Samplenum:**	WG525193-08
Instrument:	LCMS1	**Prep Date:**	05/27/2015 16:30	**File ID:**	1LM.LM29912
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/28/2015 05:05	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	12000	4810	2.49	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051303	**Prep Method:**	6850	**Samplenum:**	WG525193-09
Instrument:	LCMS1	**Prep Date:**	05/27/2015 16:30	**File ID:**	1LM.LM29925
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/28/2015 09:11	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	11400	4590	2.48	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051303	**Prep Method:**	6850	**Samplenum:**	WG525193-10
Instrument:	LCMS1	**Prep Date:**	05/27/2015 16:30	**File ID:**	1LM.LM29936
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/28/2015 12:39	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	11700	4310	2.71	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051303	**Prep Method:**	6850	**Samplenum:**	WG525193-11
Instrument:	LCMS1	**Prep Date:**	05/27/2015 16:30	**File ID:**	1LM.LM29945
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/28/2015 15:42	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	11200	4390	2.55	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051303	**Prep Method:**		**Samplenum:**	WG525212-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29886
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/27/2015 20:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	404	191	2.12	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051303	**Prep Method:**		**Samplenum:**	WG525212-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29897
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/28/2015 00:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	53500	20800	2.57	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051303	**Prep Method:**		**Samplenum:**	WG525212-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29900
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/28/2015 01:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	263	189	1.39	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051303	**Prep Method:**		**Samplenum:**	WG525212-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29910
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/28/2015 04:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	55400	20900	2.65	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051303	**Prep Method:**		**Samplenum:**	WG525212-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29913
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/28/2015 05:24	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	366	272	1.35	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051303	**Prep Method:**		**Samplenum:**	WG525212-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29924
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/28/2015 08:52	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	55500	21100	2.63	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051303	**Prep Method:**		**Samplenum:**	WG525212-10
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29926
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/28/2015 09:30	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	118	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051303	**Prep Method:**		**Samplenum:**	WG525212-11
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29935
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/28/2015 12:20	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	58500	21300	2.75	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051303	**Prep Method:**		**Samplenum:**	WG525212-12
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29937
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/28/2015 12:58	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	514	169	3.04	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051303	**Prep Method:**		**Samplenum:**	WG525212-13
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29944
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/28/2015 15:23	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	58400	22000	2.65	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051303	**Prep Method:**		**Samplenum:**	WG525212-14
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29946
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/28/2015 16:01	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	615	121	5.08	2.3	3.8	*

2.2.1.3 Sample Data

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Data File	LM29942.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 2:46:02 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15051303-01 (RR 100x)	**Injection Vial**	60.00
Data File	LM29942.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 2:46:02 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	L15051303-01	**Dilution Factor**	1.00
Sample Comment	1,100.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.390e+05	10.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	6.670e+04	10.90	N/A	1.26
Perchlorate conf	2.410e+04	10.90	N/A	1.20

O18LP (Internal Standard)

RT (Exp. RT): 10.90(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

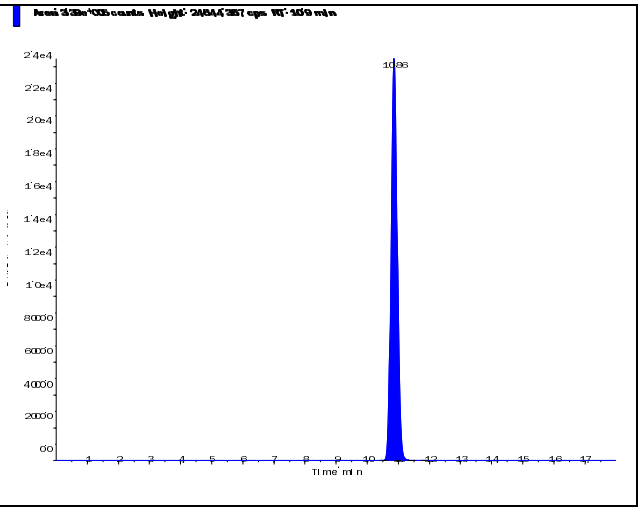

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.90 (11.10) min
Calculated conc:	1.26 ng/ml
Area Ratio:	0.197
Sample Type:	(Unknown)

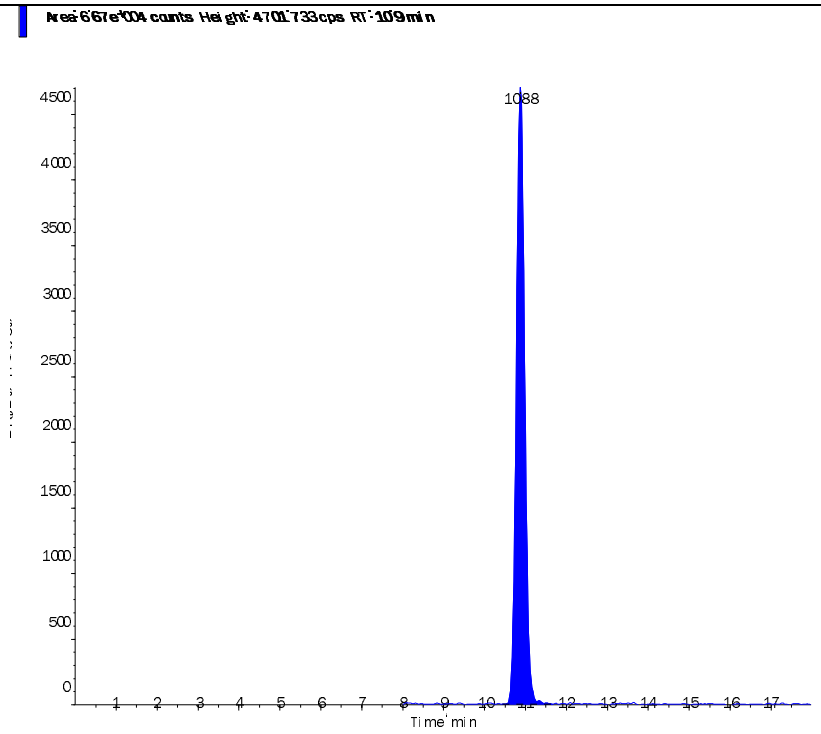

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.90 (11.10) min
Calculated conc:	1.20 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

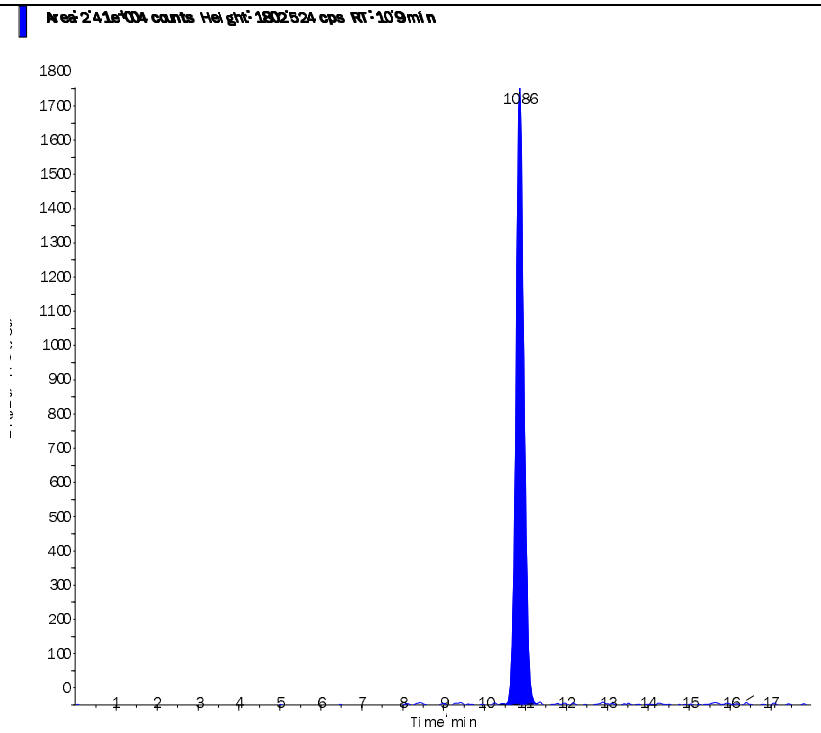

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Data File	LM29928.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 10:08:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15051303-03	**Injection Vial**	50.00
Data File	LM29928.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 10:08:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	L15051303-03	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.280e+05	10.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.060e+05	10.80	N/A	2.06
Perchlorate conf	4.100e+04	10.80	N/A	2.11

O18LP (Internal Standard)

RT (Exp. RT): 10.80(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

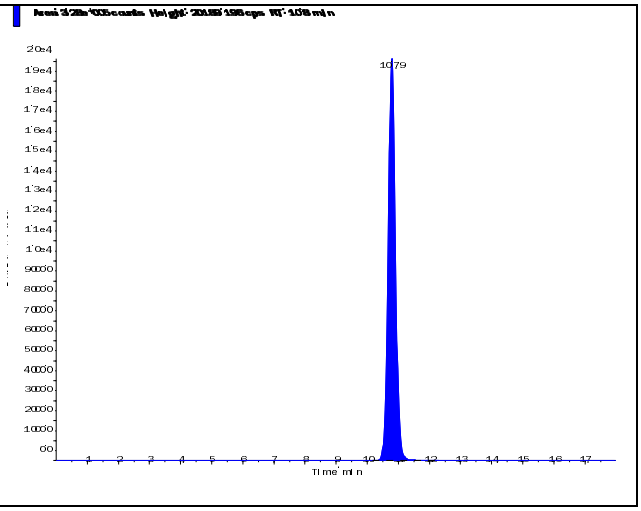

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.80 (11.10) min
Calculated conc:	2.06 ng/ml
Area Ratio:	0.322
Sample Type:	(Unknown)

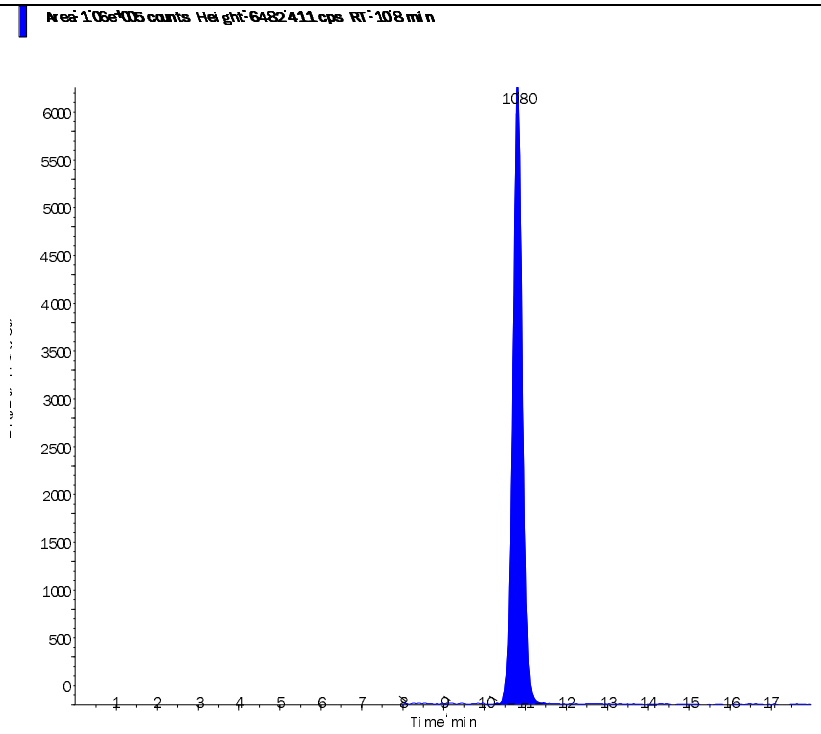

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.80 (11.10) min
Calculated conc:	2.11 ng/ml
Area Ratio:	0.125
Sample Type:	(Unknown)

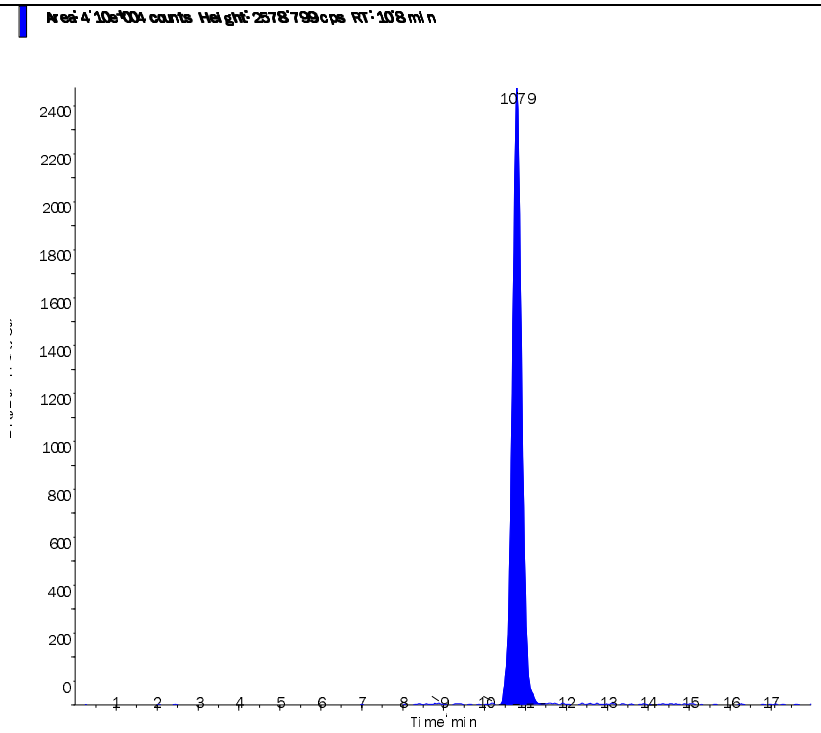

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Data File	LM29929.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 10:27:05 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15051303-05 (2,000x)	**Injection Vial**	51.00
Data File	LM29929.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 10:27:05 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	L15051303-05	**Dilution Factor**	1.00
Sample Comment	1,2000 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.400e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.030e+04	11.00	N/A	0.57
Perchlorate conf	1.190e+04	11.00	N/A	0.588

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

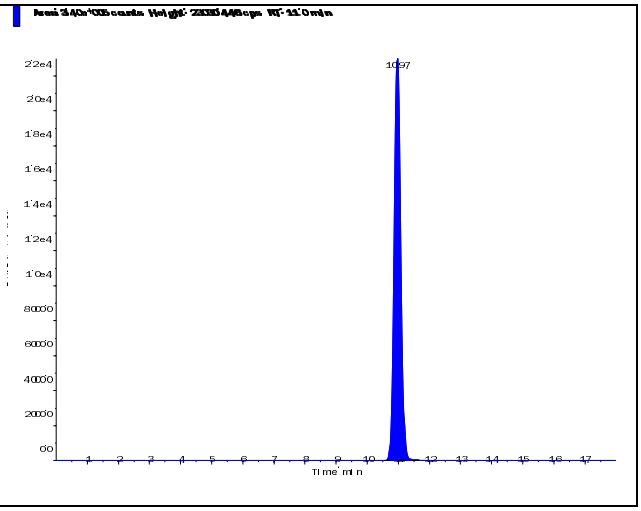

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.00 (11.10) min Calculated conc: 0.57 ng/ml Area Ratio: 0.089 Sample Type: (Unknown)	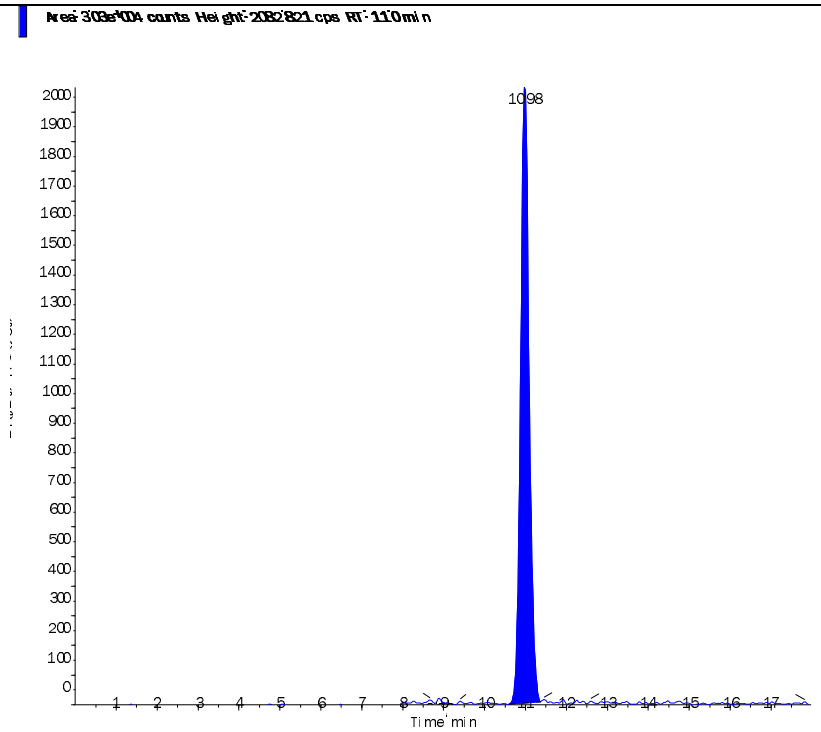
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.00 (11.10) min Calculated conc: 0.588 ng/ml Area Ratio: 0.035 Sample Type: (Unknown)	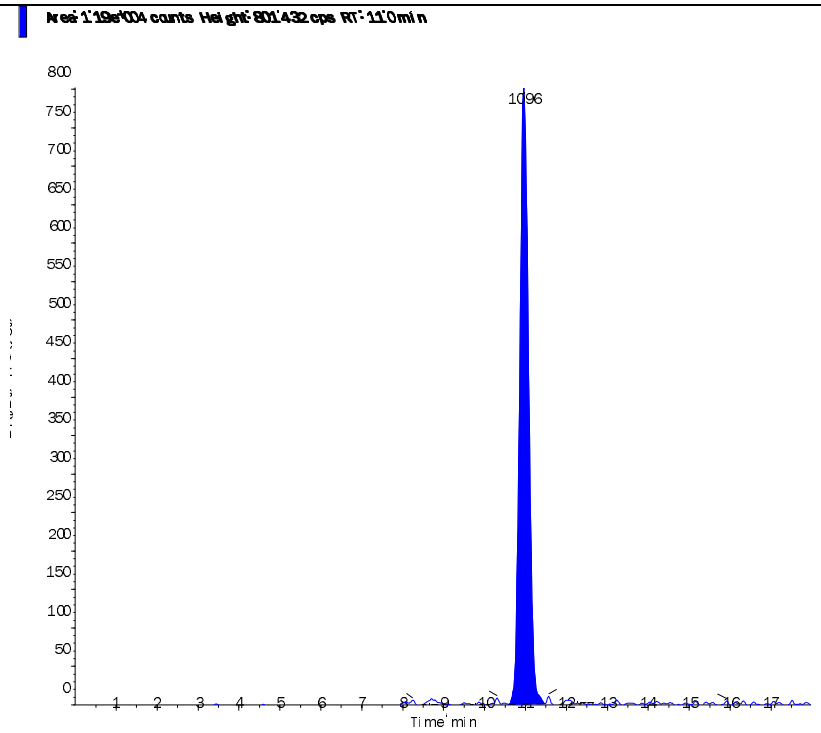

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Data File	LM29930.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 10:46:01 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15051303-07 (1,000x)	**Injection Vial**	52.00
Data File	LM29930.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 10:46:01 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	L15051303-07	**Dilution Factor**	1.00
Sample Comment	1,1000 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.300e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.540e+05	11.00	N/A	3.00
Perchlorate conf	5.950e+04	11.00	N/A	3.05

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

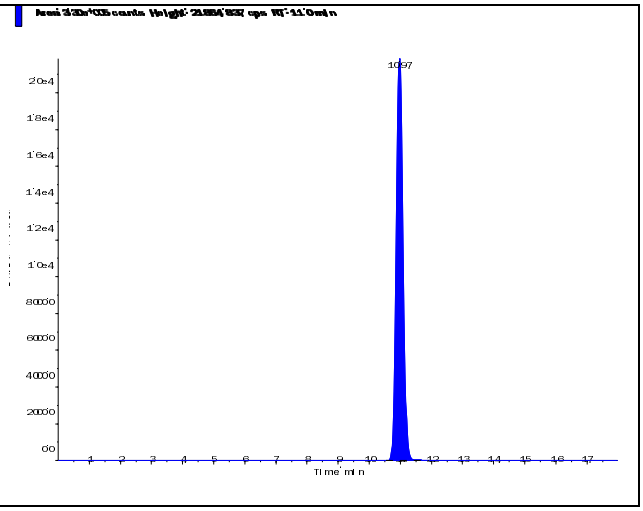

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.00 (11.10) min Calculated conc: 3.00 ng/ml Area Ratio: 0.467 Sample Type: (Unknown)	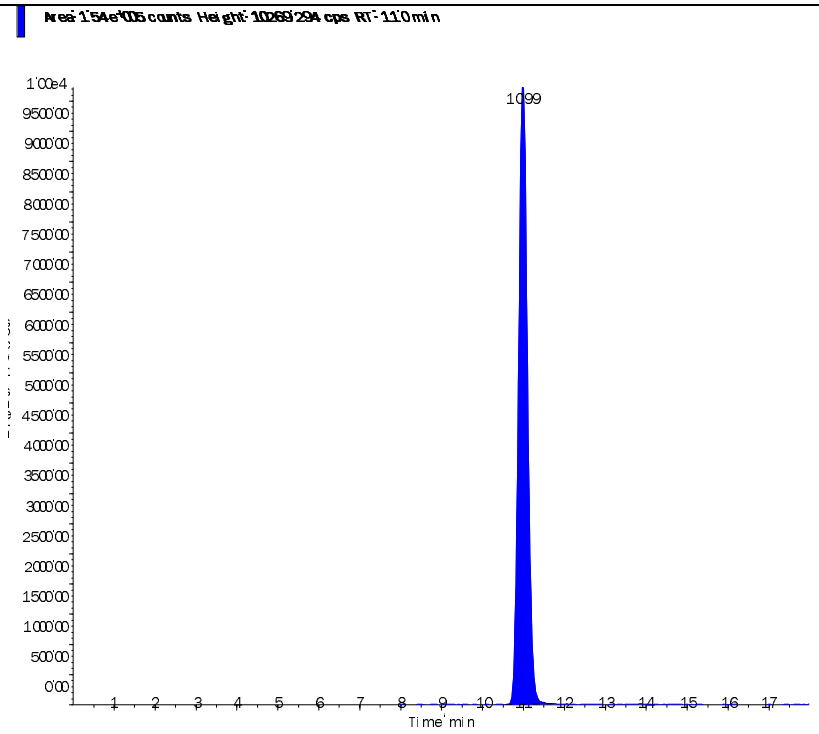
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.00 (11.10) min Calculated conc: 3.05 ng/ml Area Ratio: 0.18 Sample Type: (Unknown)	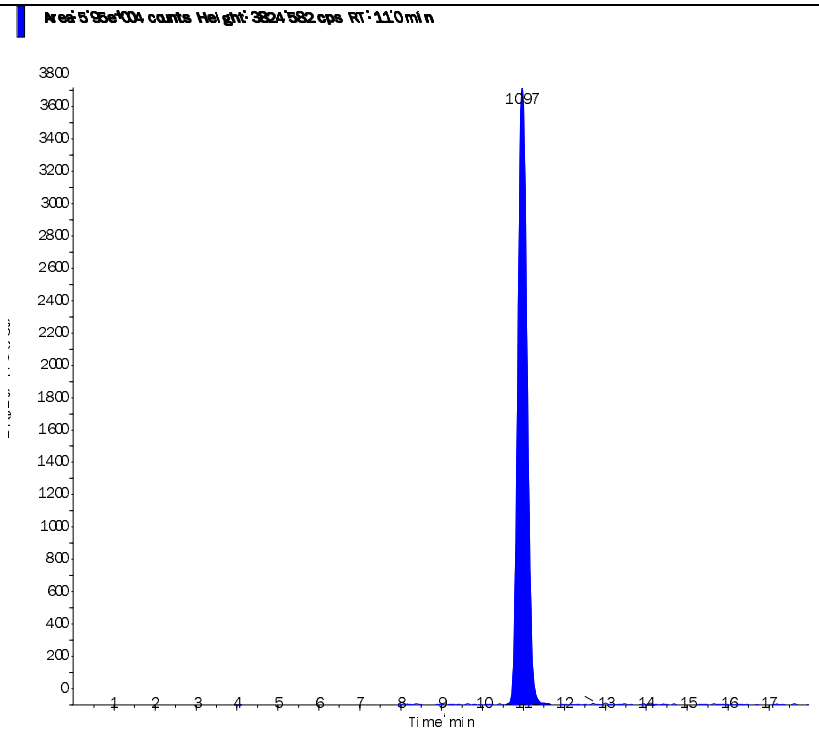

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Data File	LM29931.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 11:04:53 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15051303-09 (10,000x)	**Injection Vial**	53.00
Data File	LM29931.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 11:04:53 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	L15051303-09	**Dilution Factor**	1.00
Sample Comment	1,10000 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.190e+05	10.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.940e+05	10.90	N/A	5.92
Perchlorate conf	1.130e+05	10.90	N/A	5.99

O18LP (Internal Standard)

RT (Exp. RT): 10.90(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

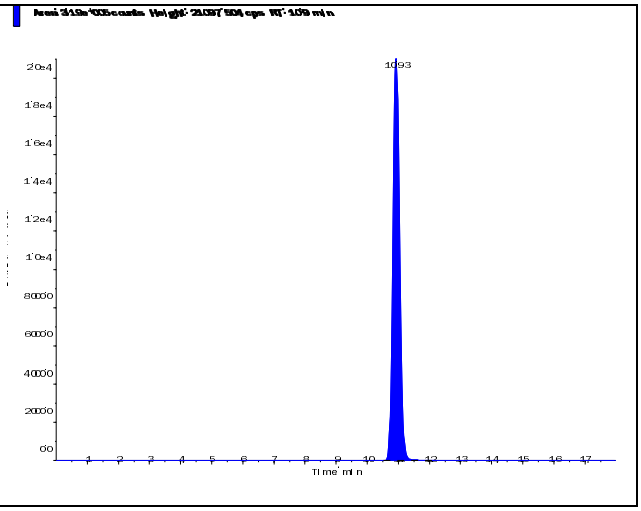

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.90 (11.10) min Calculated conc: 5.92 ng/ml Area Ratio: 0.922 Sample Type: (Unknown)	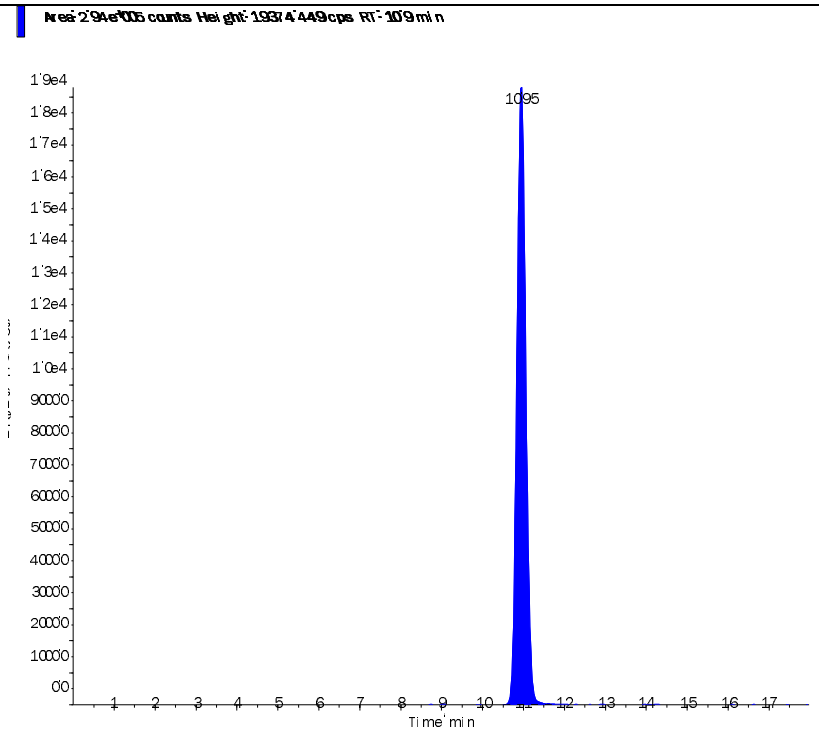
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 10.90 (11.10) min Calculated conc: 5.99 ng/ml Area Ratio: 0.353 Sample Type: (Unknown)	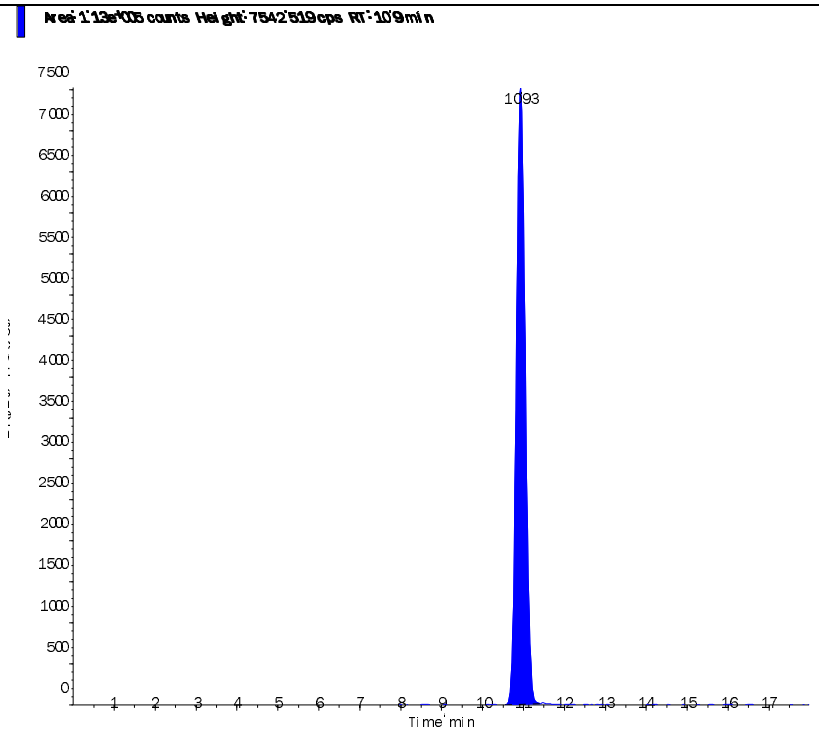

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Data File	LM29943.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 3:04:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15051303-11 (RR 10x)	**Injection Vial**	61.00
Data File	LM29943.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 3:04:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	L15051303-11	**Dilution Factor**	1.00
Sample Comment	110.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.320e+05	10.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.210e+05	10.70	N/A	2.33
Perchlorate conf	4.690e+04	10.70	N/A	2.39

O18LP (Internal Standard)

RT (Exp. RT): 10.70(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

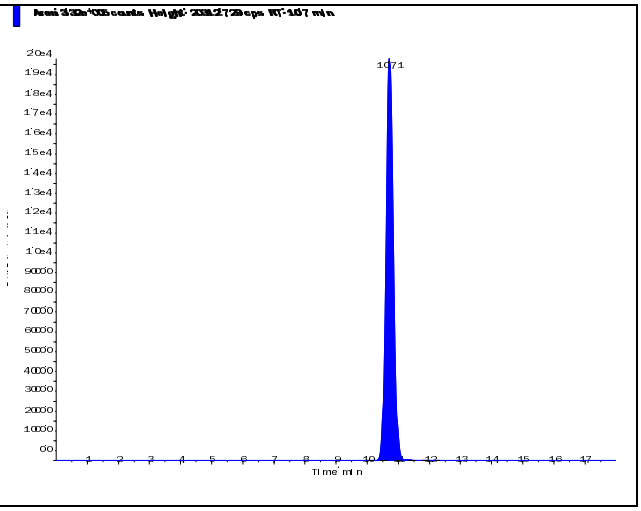

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.70 (11.10) min
Calculated conc:	2.33 ng/ml
Area Ratio:	0.364
Sample Type:	(Unknown)

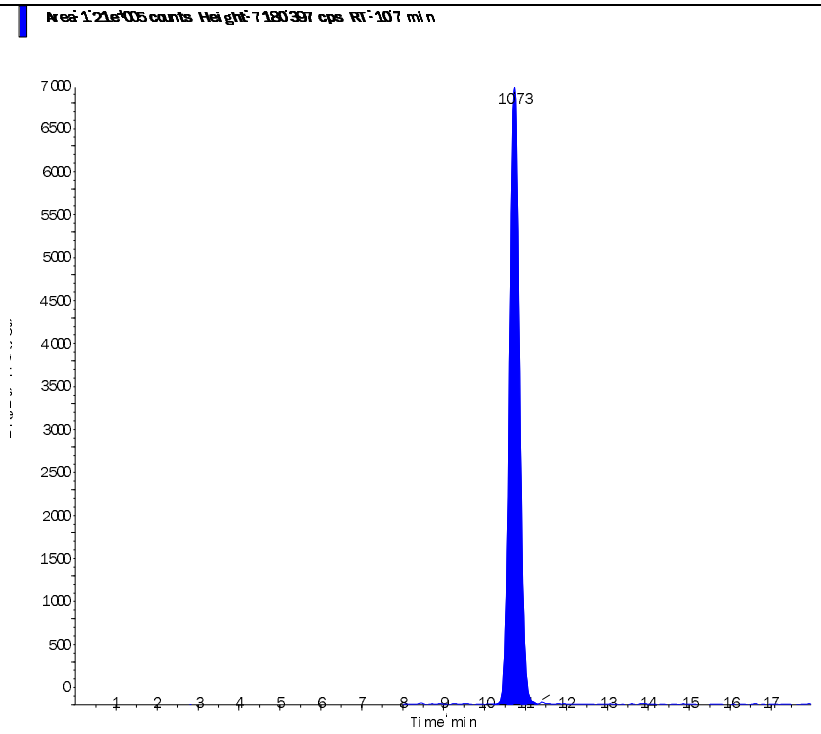

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.70 (11.10) min
Calculated conc:	2.39 ng/ml
Area Ratio:	0.141
Sample Type:	(Unknown)

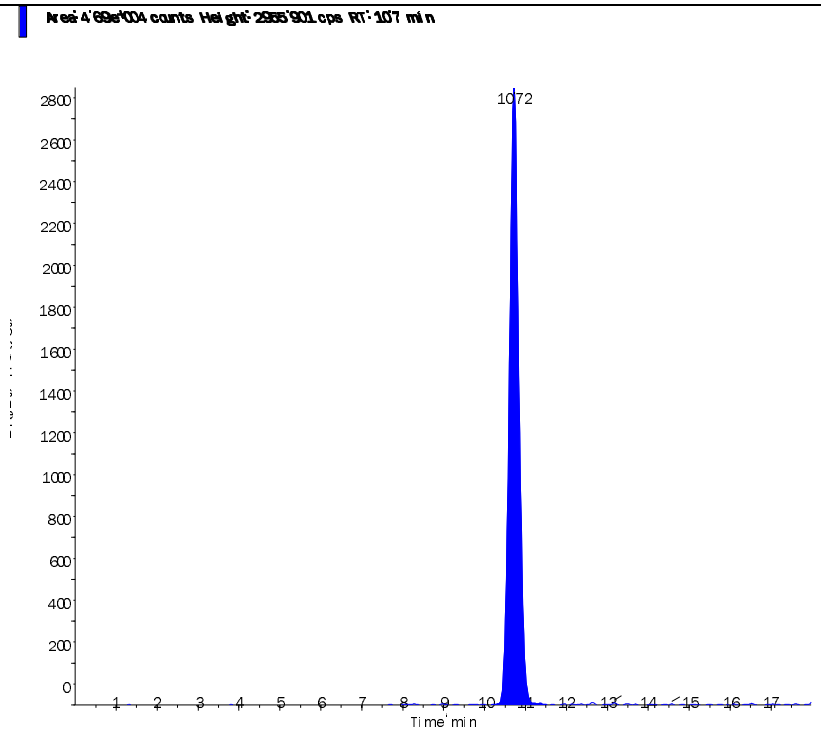

2.2.1.4 Standards Data

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Printed: 5/28/2015 4:55 PM

Data File	LM29862.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/27/2015 12:57:31 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525179-01 CCB	**Injection Vial**	1.00
Data File	LM29862.wiff	**Injection Volume**	10.00
Acquisition Date	5/27/2015 12:57:31 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525179-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.960e+05	11.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 11.10(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

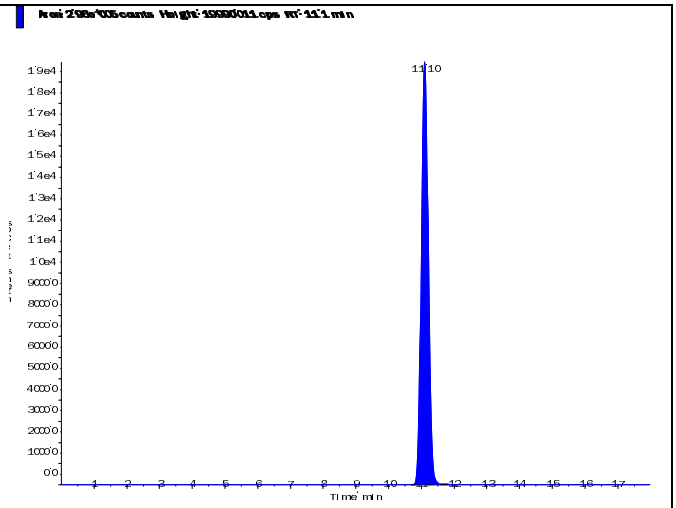

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Printed: 5/28/2015 4:55 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (11.10) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	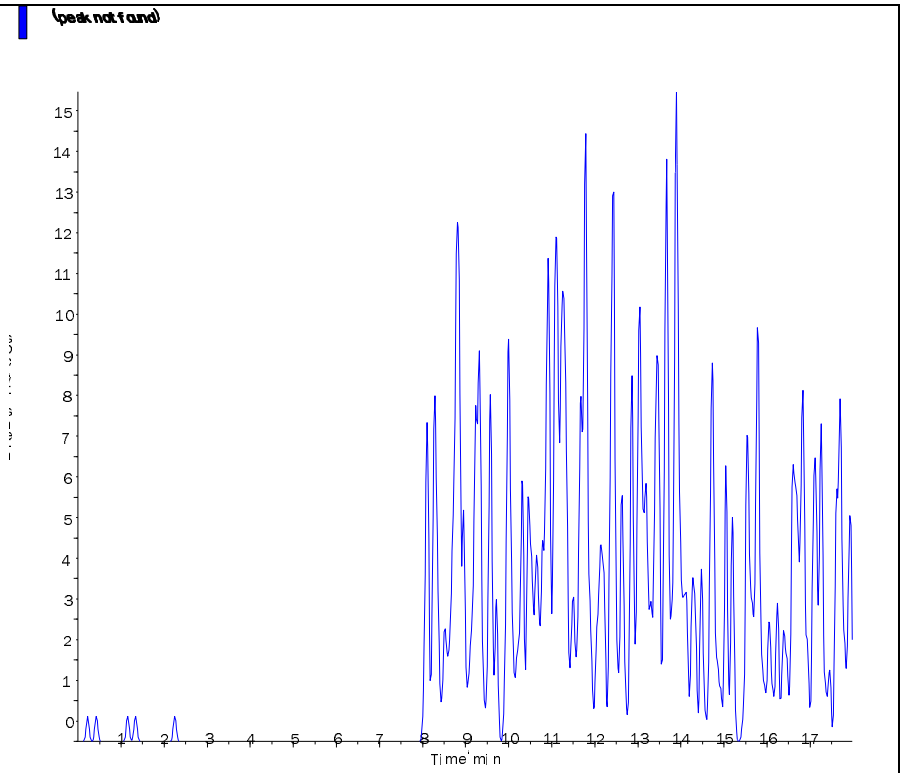
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (11.10) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	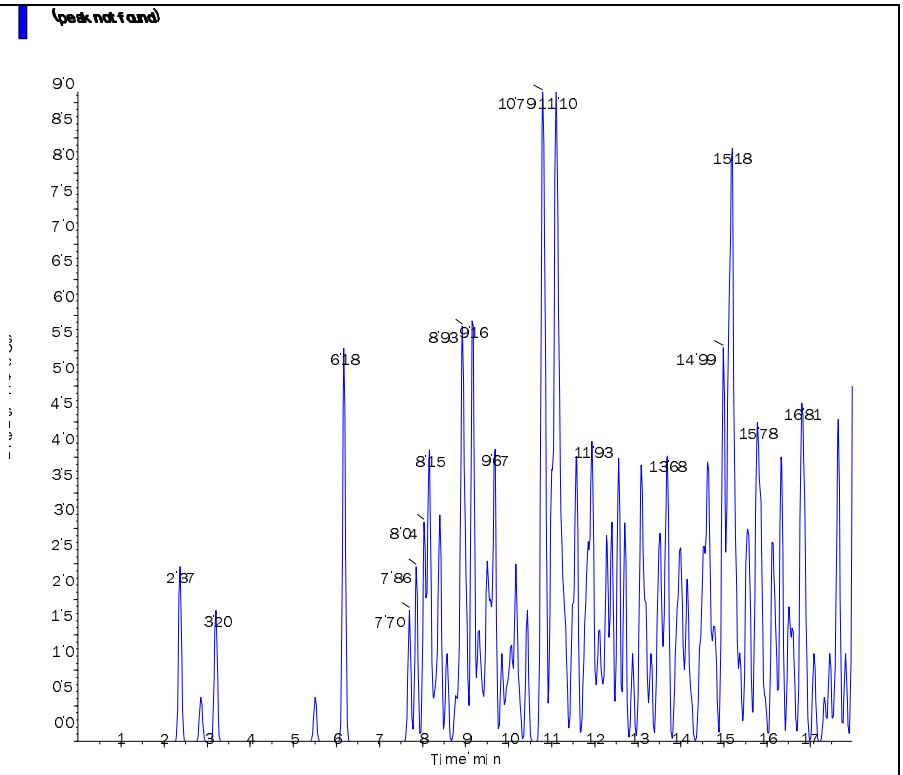

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Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM29862.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/27/2015 12:57:31 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.778 x + 0.000602 (r = 0.9995)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	92.4	N/A	N/A
0.20	1	0.20	100.5	N/A	N/A
0.50	1	0.51	101.7	N/A	N/A
1.00	1	1.05	104.6	N/A	N/A
2.00	1	1.98	99.1	N/A	N/A
5.00	1	5.20	104.0	N/A	N/A
10.00	1	9.77	97.7	N/A	N/A

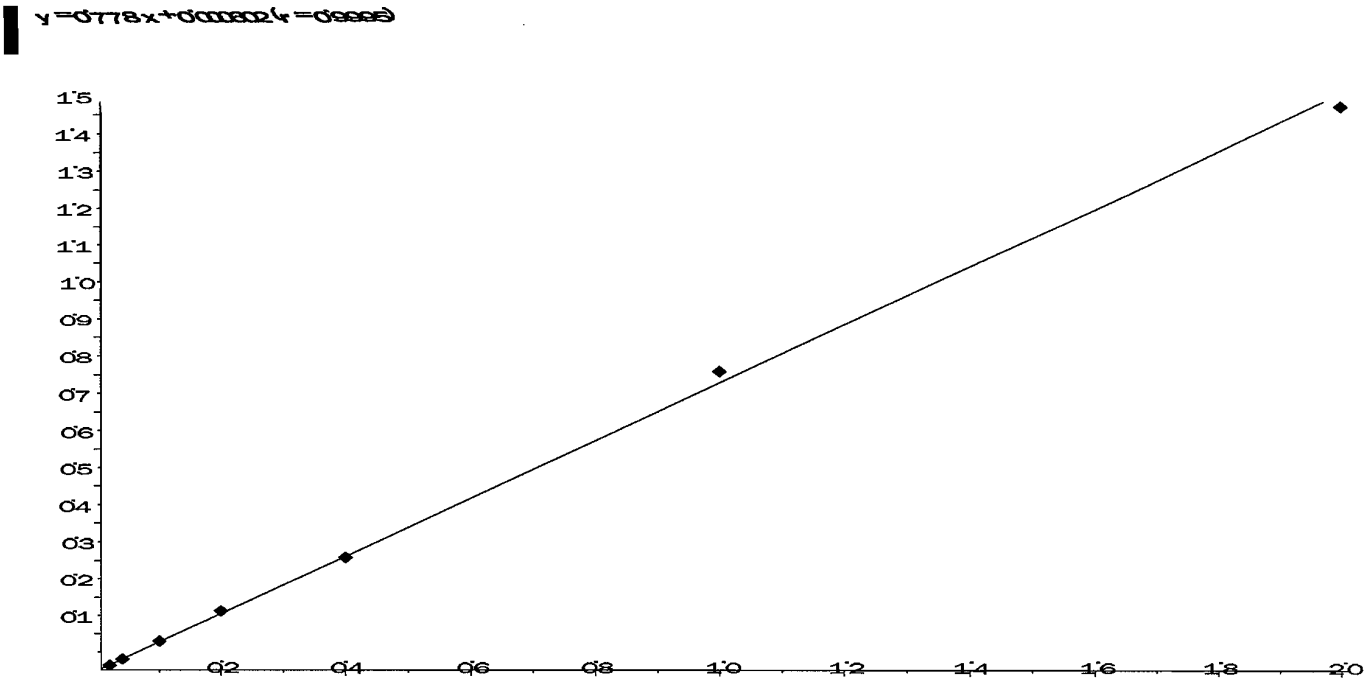

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Created with Analyst Reporter
Printed: 5/28/2015 4:54 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM29862.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/27/2015 12:57:31 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.295 x + 0.000432 (r = 0.9998)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	94.3	N/A	N/A
0.20	1	0.21	104.7	N/A	N/A
0.50	1	0.49	98.7	N/A	N/A
1.00	1	1.03	103.0	N/A	N/A
2.00	1	1.96	97.9	N/A	N/A
5.00	1	5.13	102.6	N/A	N/A
10.00	1	9.89	98.9	N/A	N/A

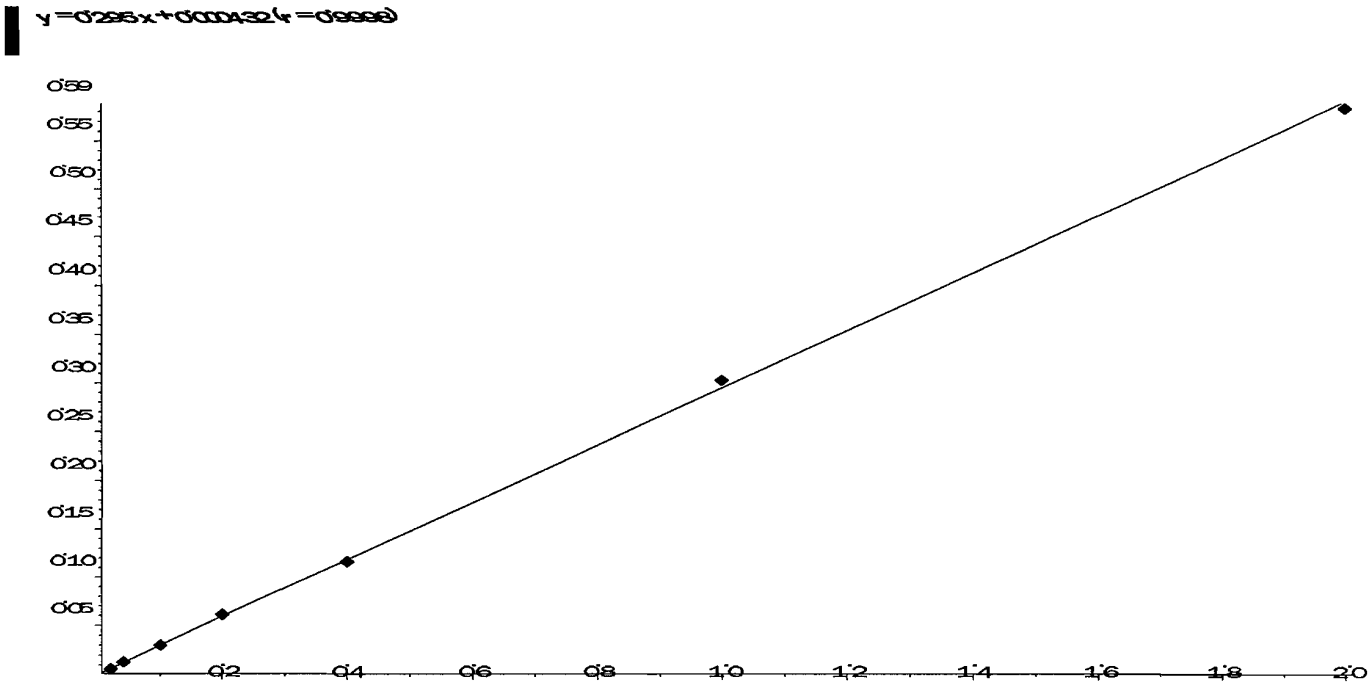

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Printed: 5/28/2015 4:56 PM

Data File	LM29863.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/27/2015 1:16:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525179-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM29863.wiff	**Injection Volume**	10.00
Acquisition Date	5/27/2015 1:16:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525179-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.880e+05	11.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.310e+03	11.20	0.10	0.0924
Perchlorate conf	1.720e+03	11.10	0.10	0.0943

O18LP (Internal Standard)

RT (Exp. RT): 11.10(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

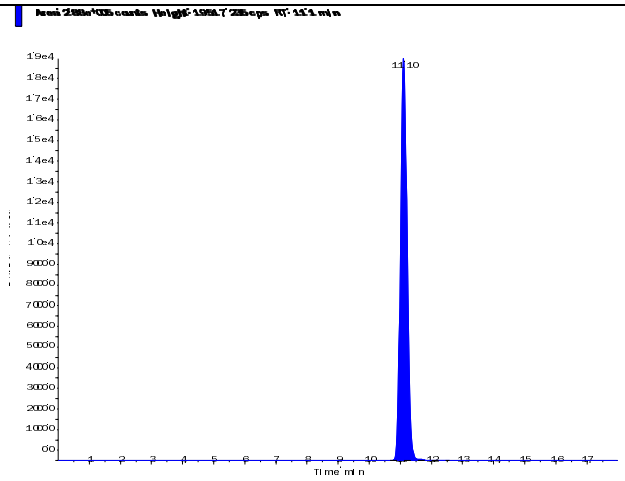

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.20 (11.10) min Calculated conc: 0.0924 ng/ml Area Ratio: 0.015 Sample Type: (Standard)	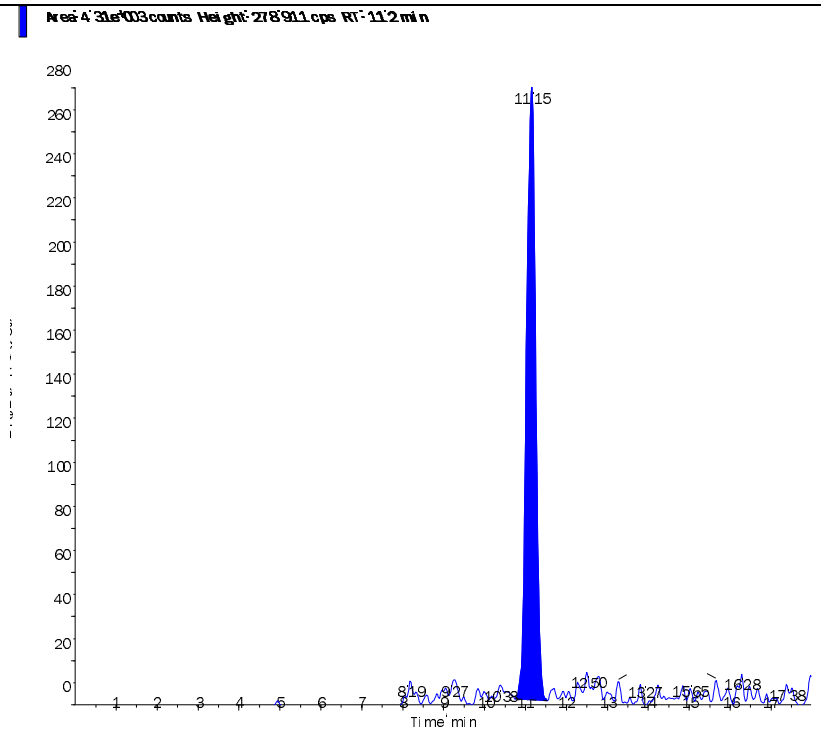
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.10 (11.10) min Calculated conc: 0.0943 ng/ml Area Ratio: 0.006 Sample Type: (Standard)	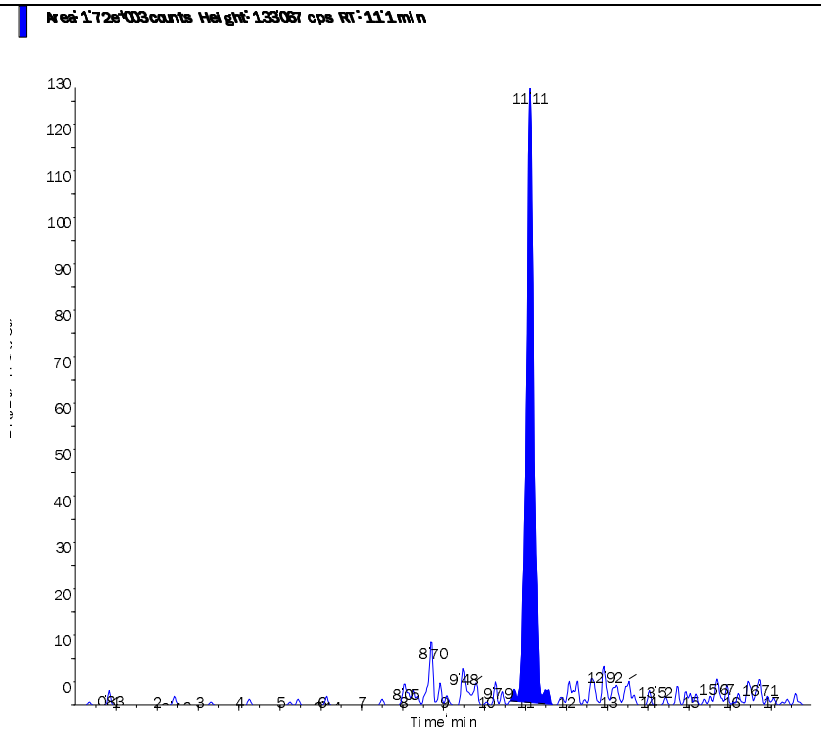

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Data File	LM29864.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/27/2015 1:35:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525179-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM29864.wiff	**Injection Volume**	10.00
Acquisition Date	5/27/2015 1:35:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525179-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.930e+05	11.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	9.360e+03	11.10	0.20	0.201
Perchlorate conf	3.750e+03	11.10	0.20	0.209

O18LP (Internal Standard)

RT (Exp. RT): 11.10(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

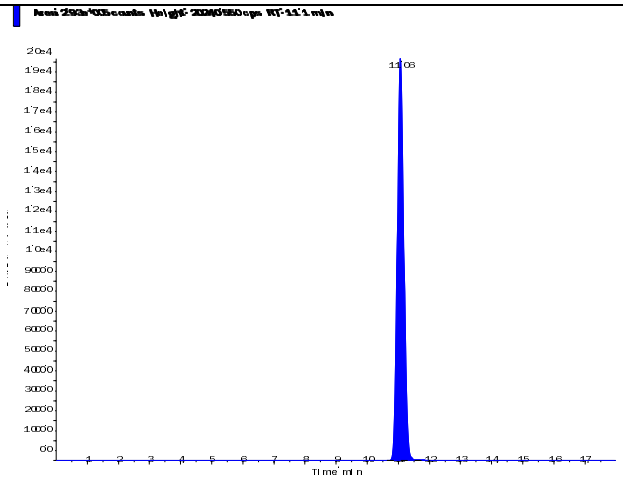

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.10 (11.10) min Calculated conc: 0.201 ng/ml Area Ratio: 0.032 Sample Type: (Standard)	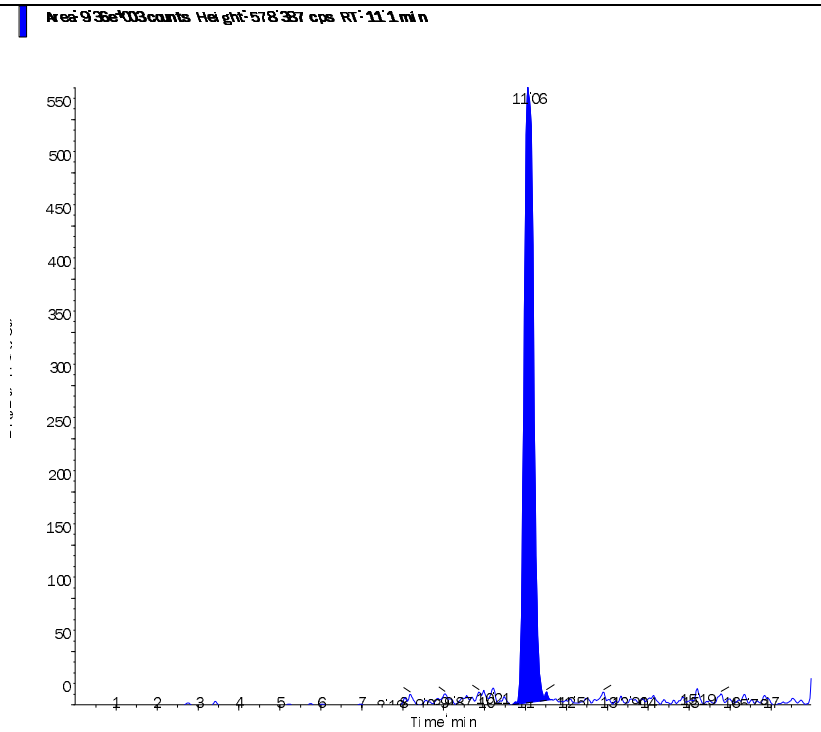
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.10 (11.10) min Calculated conc: 0.209 ng/ml Area Ratio: 0.013 Sample Type: (Standard)	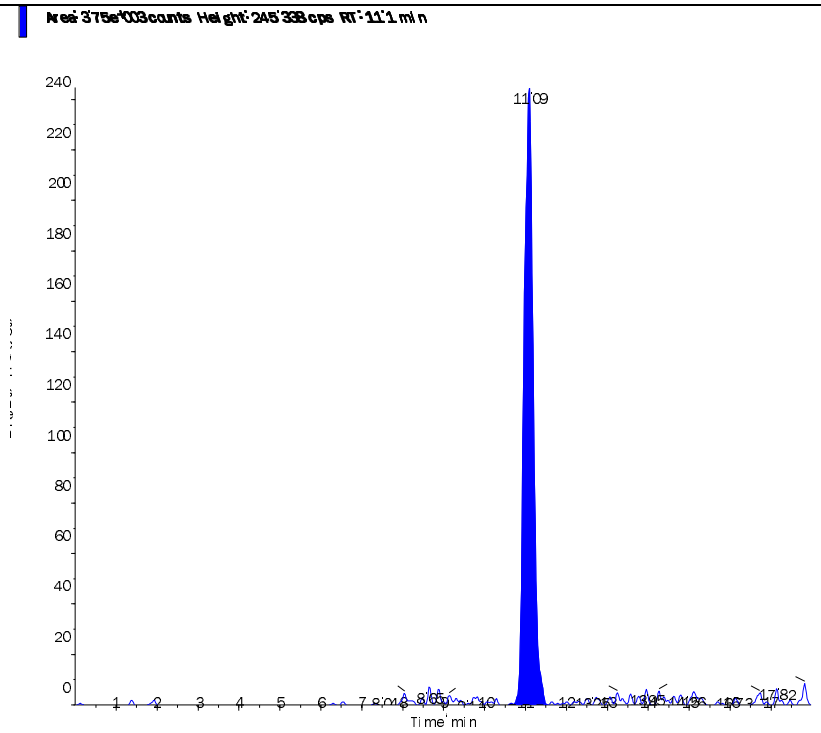

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Data File	LM29865.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/27/2015 1:54:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525179-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM29865.wiff	**Injection Volume**	10.00
Acquisition Date	5/27/2015 1:54:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525179-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.960e+05	11.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.360e+04	11.10	0.50	0.509
Perchlorate conf	8.730e+03	11.10	0.50	0.493

O18LP (Internal Standard)

RT (Exp. RT): 11.10(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

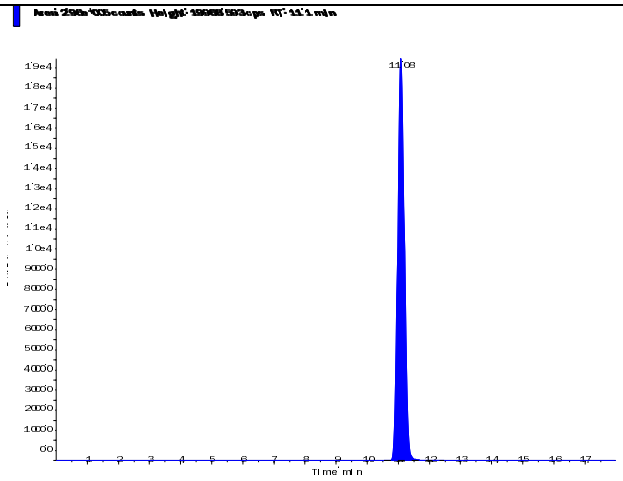

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.10 (11.10) min Calculated conc: 0.509 ng/ml Area Ratio: 0.08 Sample Type: (Standard)	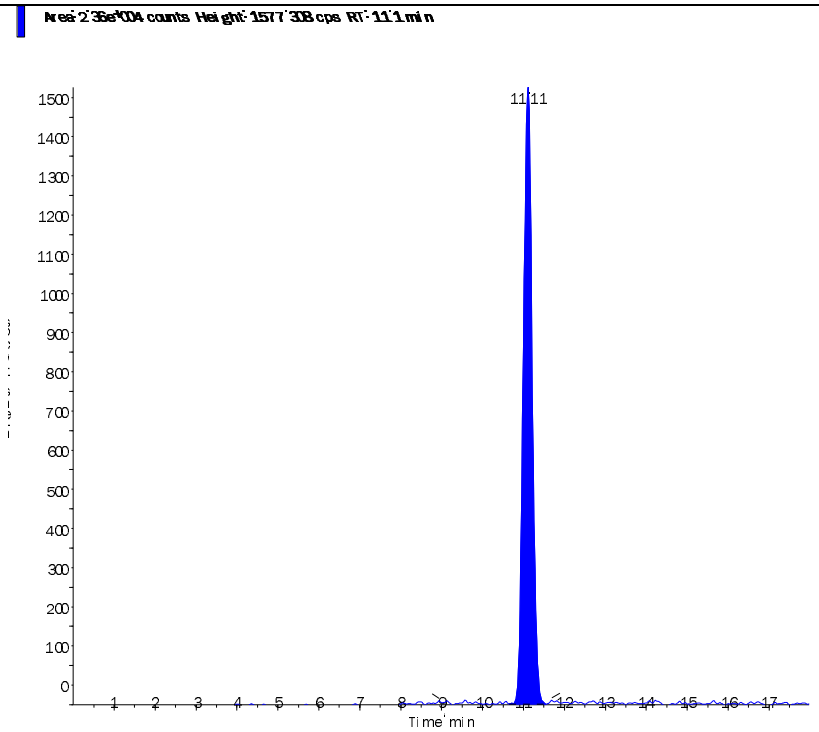
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.10 (11.10) min Calculated conc: 0.493 ng/ml Area Ratio: 0.03 Sample Type: (Standard)	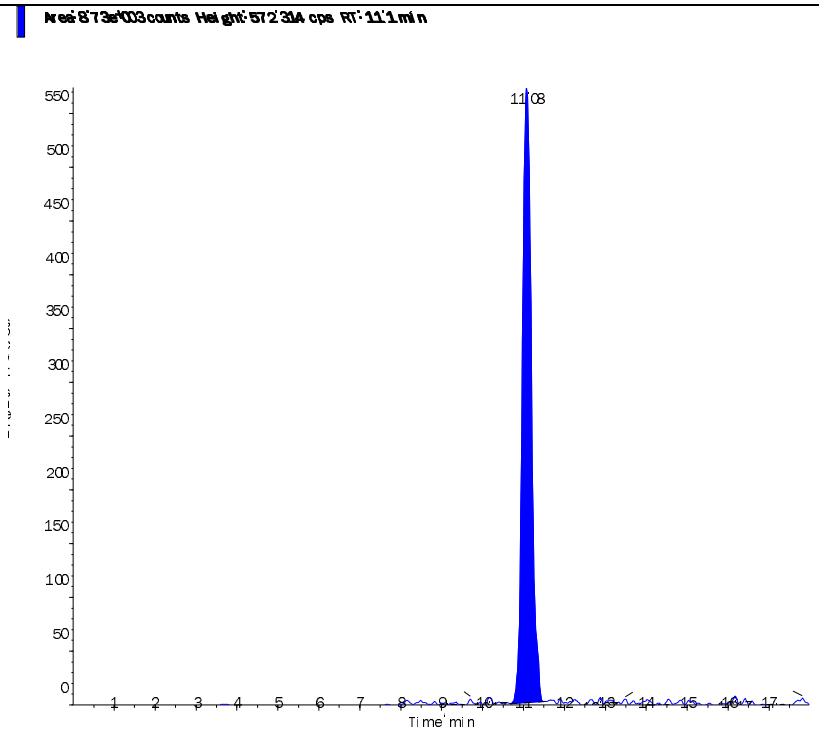

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Data File	LM29866.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/27/2015 2:13:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525179-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM29866.wiff	**Injection Volume**	10.00
Acquisition Date	5/27/2015 2:13:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525179-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.890e+05	11.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.720e+04	11.10	1.00	1.05
Perchlorate conf	1.760e+04	11.10	1.00	1.03

O18LP (Internal Standard)

RT (Exp. RT): 11.10(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

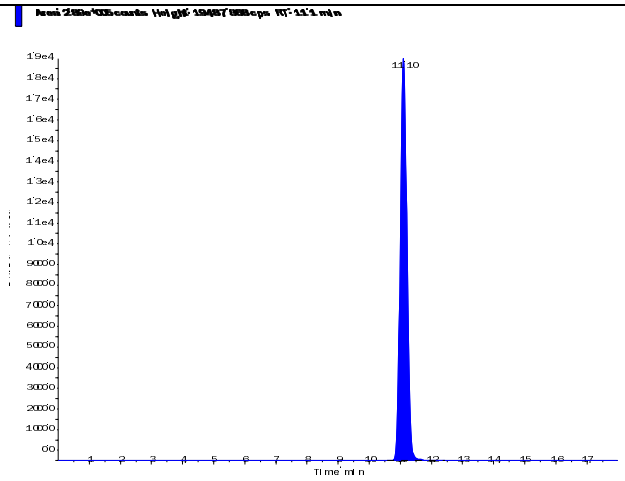

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.10 (11.10) min Calculated conc: 1.05 ng/ml Area Ratio: 0.163 Sample Type: (Standard)	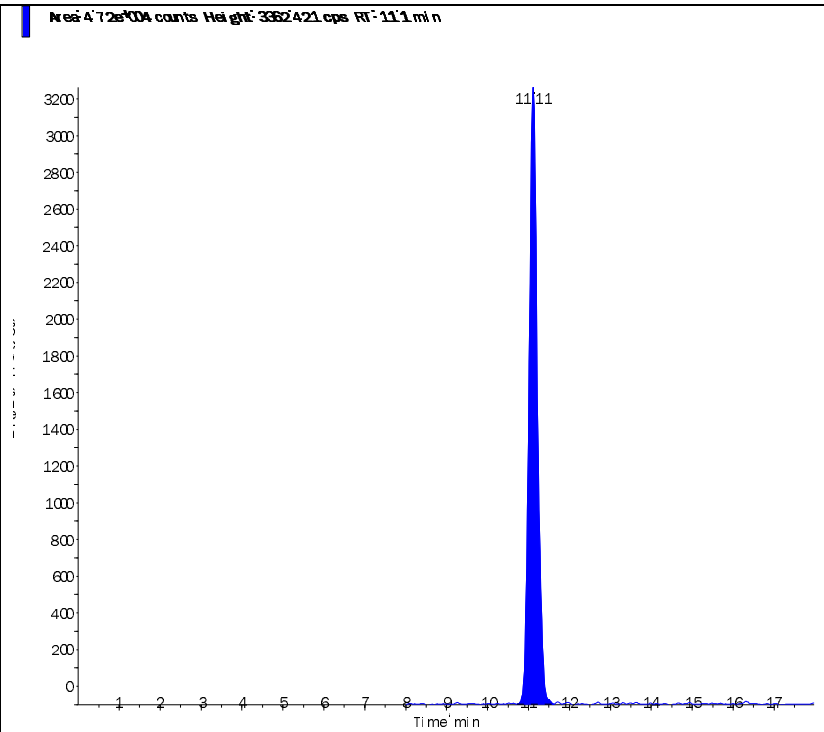
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.10 (11.10) min Calculated conc: 1.03 ng/ml Area Ratio: 0.061 Sample Type: (Standard)	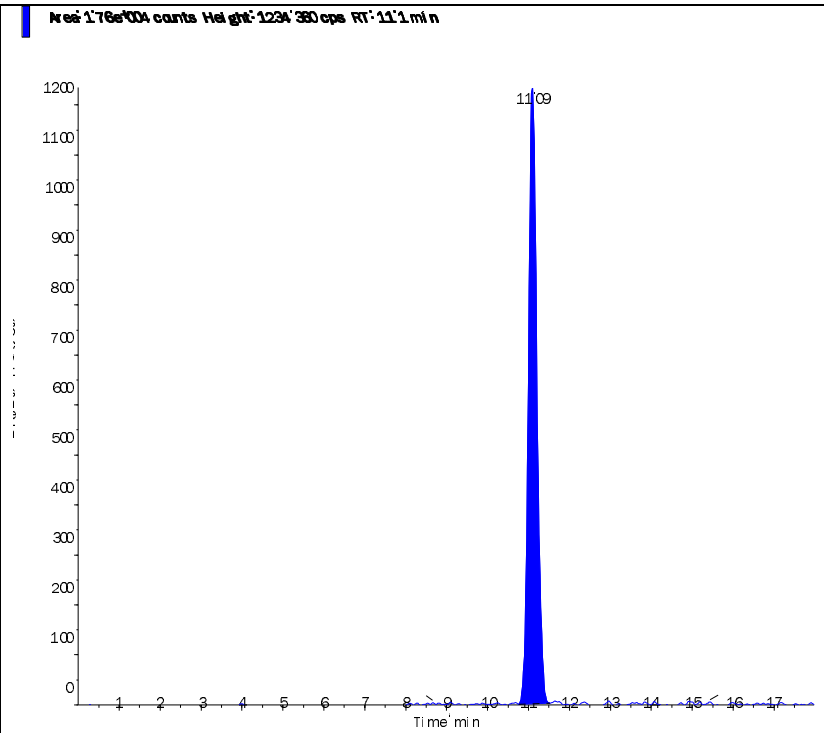

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Data File	LM29867.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/27/2015 2:32:11 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525179-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM29867.wiff	**Injection Volume**	10.00
Acquisition Date	5/27/2015 2:32:11 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525179-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.920e+05	11.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	9.030e+04	11.10	2.00	1.98
Perchlorate conf	3.390e+04	11.10	2.00	1.96

O18LP (Internal Standard)

RT (Exp. RT): 11.10(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

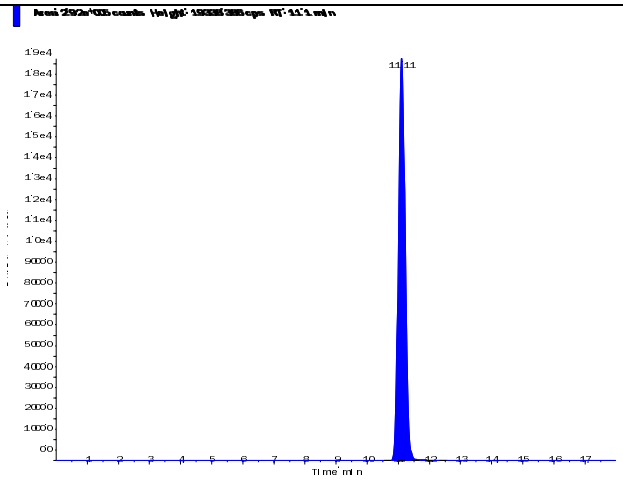

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.10 (11.10) min
Calculated conc:	1.98 ng/ml
Area Ratio:	0.309
Sample Type:	(Standard)

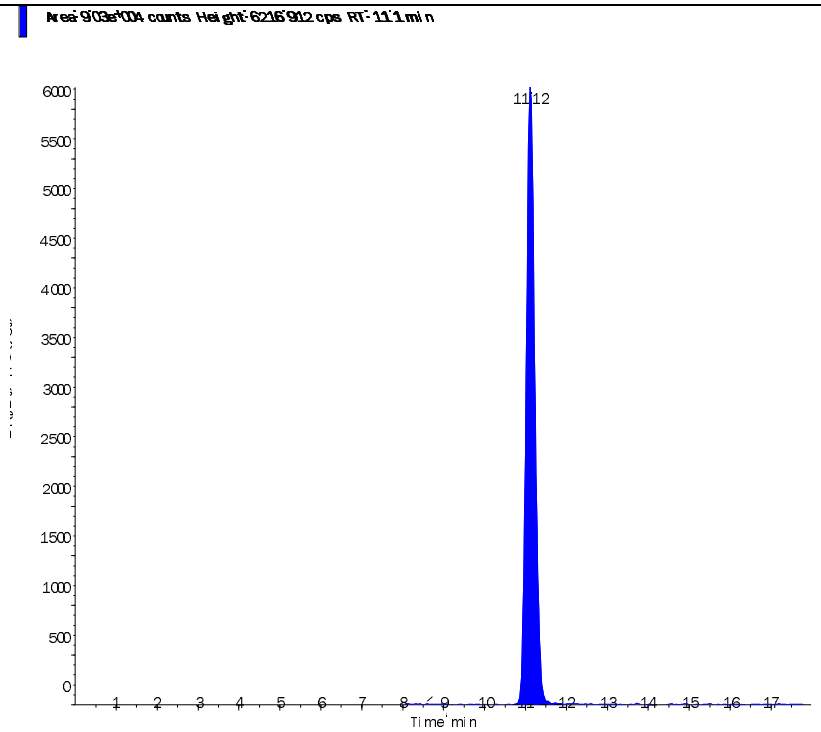

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.10 (11.10) min
Calculated conc:	1.96 ng/ml
Area Ratio:	0.116
Sample Type:	(Standard)

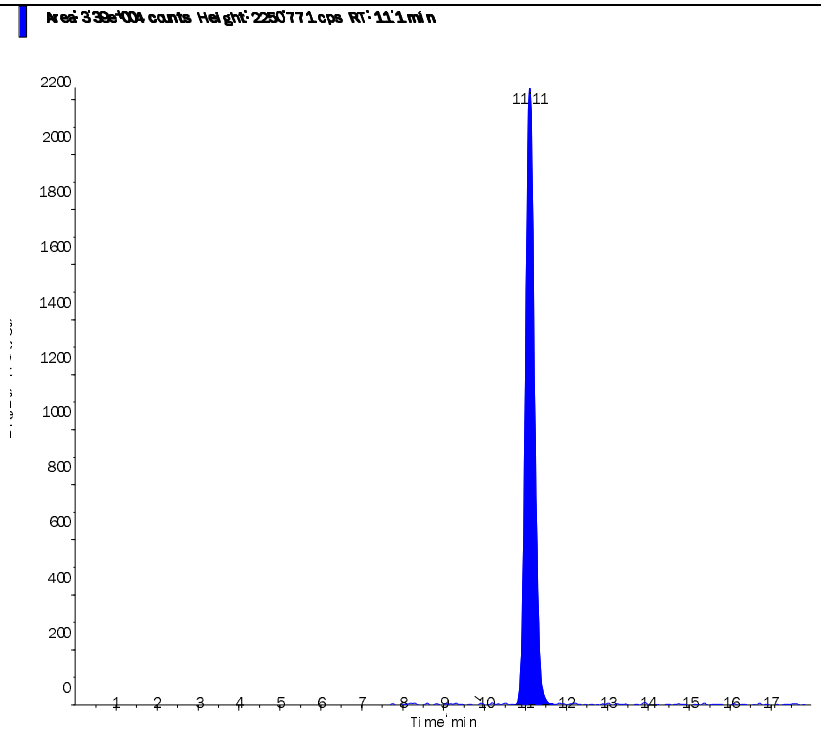

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Data File	LM29868.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/27/2015 2:51:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525179-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM29868.wiff	**Injection Volume**	10.00
Acquisition Date	5/27/2015 2:51:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525179-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.750e+05	11.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.230e+05	11.10	5.00	5.20
Perchlorate conf	8.340e+04	11.10	5.00	5.13

O18LP (Internal Standard)

RT (Exp. RT): 11.10(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

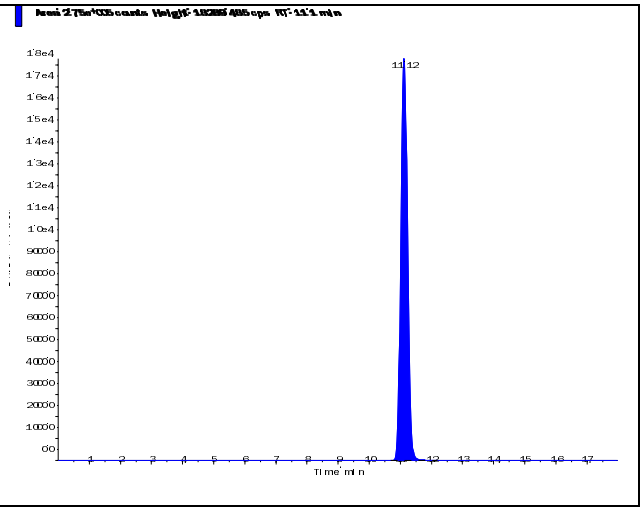

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.10 (11.10) min Calculated conc: 5.20 ng/ml Area Ratio: 0.81 Sample Type: (Standard)	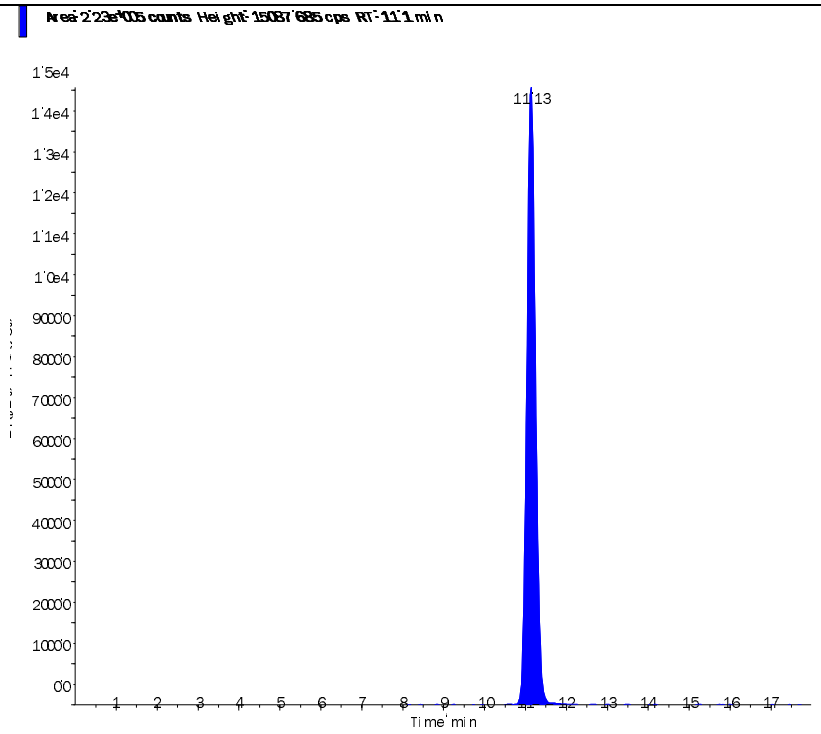
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.10 (11.10) min Calculated conc: 5.13 ng/ml Area Ratio: 0.303 Sample Type: (Standard)	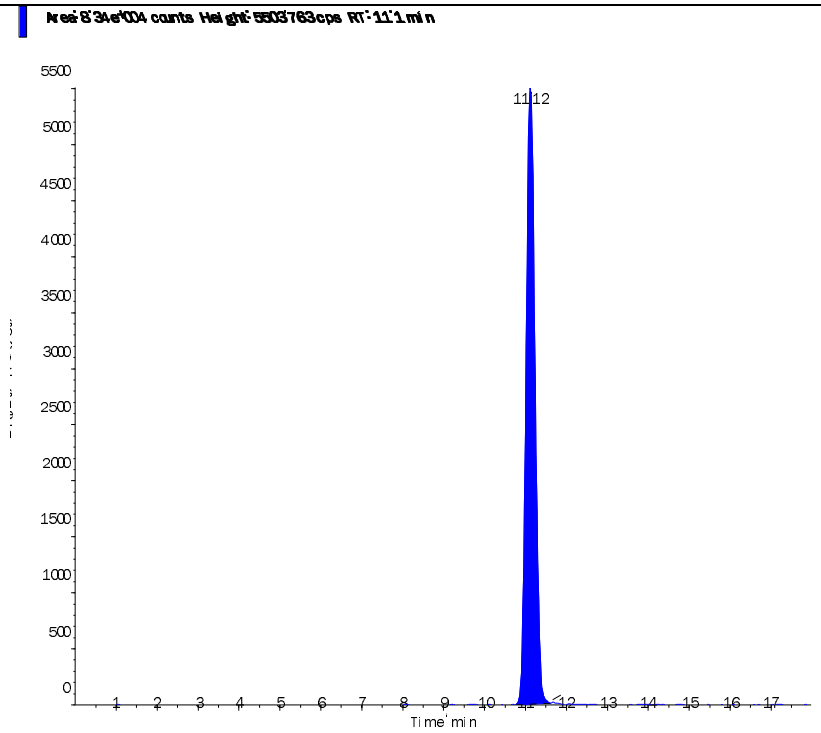

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Data File	LM29869.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/27/2015 3:10:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525179-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM29869.wiff	**Injection Volume**	10.00
Acquisition Date	5/27/2015 3:10:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525179-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.740e+05	11.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.180e+05	11.10	10.00	9.77
Perchlorate conf	1.600e+05	11.10	10.00	9.89

O18LP (Internal Standard)

RT (Exp. RT): 11.10(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

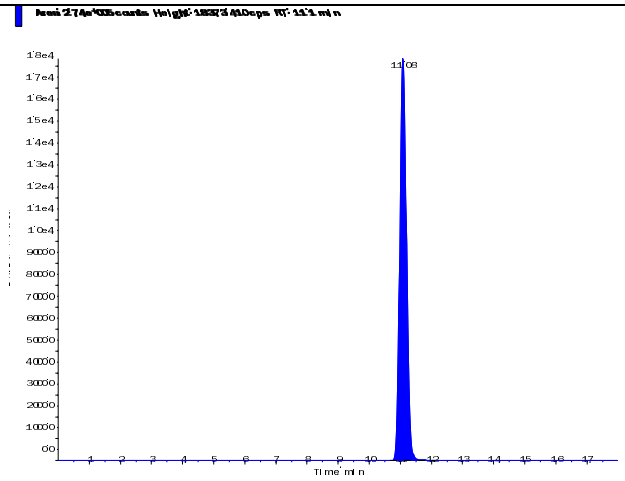

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.10 (11.10) min Calculated conc: 9.77 ng/ml Area Ratio: 1.522 Sample Type: (Standard)	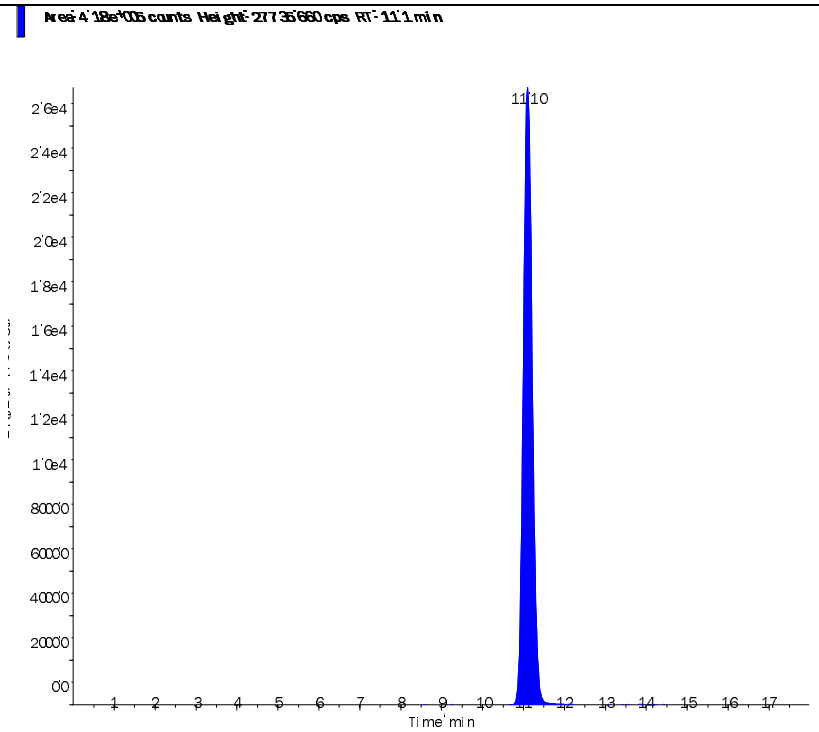
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.10 (11.10) min Calculated conc: 9.89 ng/ml Area Ratio: 0.583 Sample Type: (Standard)	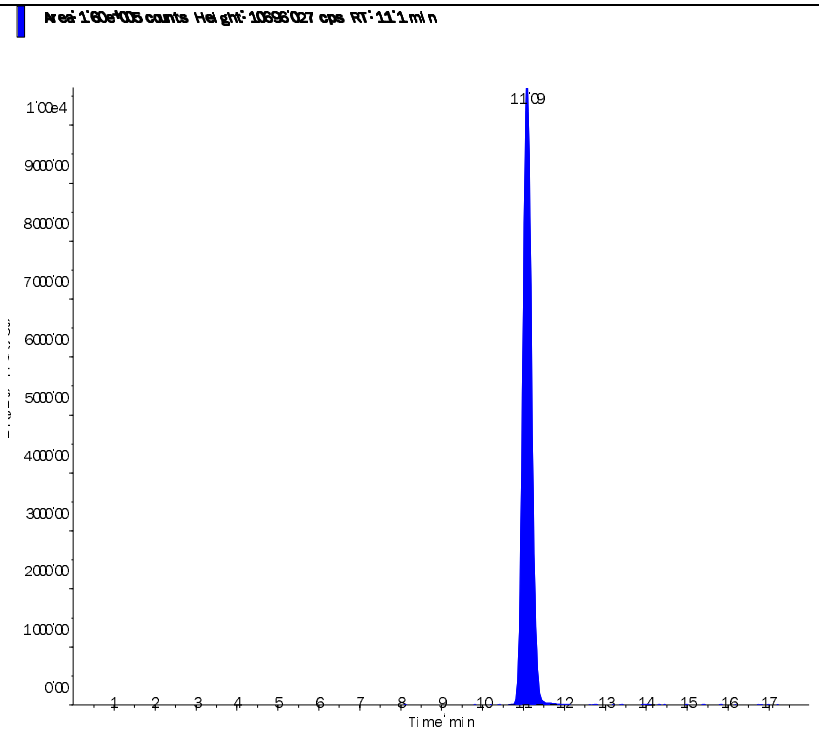

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Data File	LM29870.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/27/2015 3:28:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525179-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM29870.wiff	**Injection Volume**	10.00
Acquisition Date	5/27/2015 3:28:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525179-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD69913	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.930e+05	11.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.490e+04	11.10	1.00	0.981
Perchlorate conf	1.670e+04	11.10	1.00	0.961

O18LP (Internal Standard)

RT (Exp. RT): 11.10(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

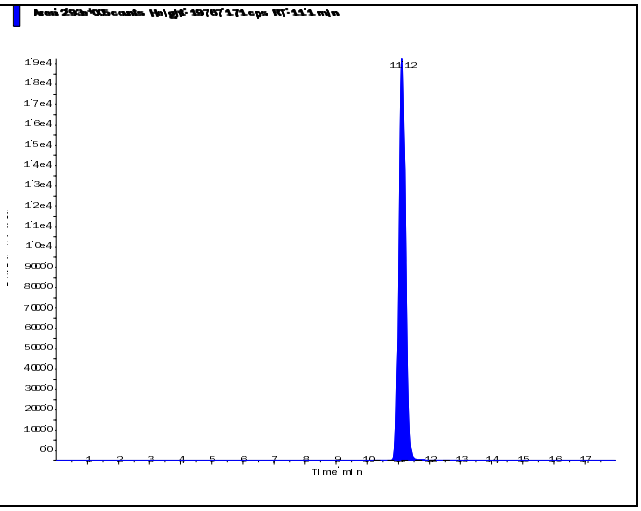

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.10 (11.10) min
Calculated conc:	0.981 ng/ml
Area Ratio:	0.153
Sample Type:	(Quality Control)

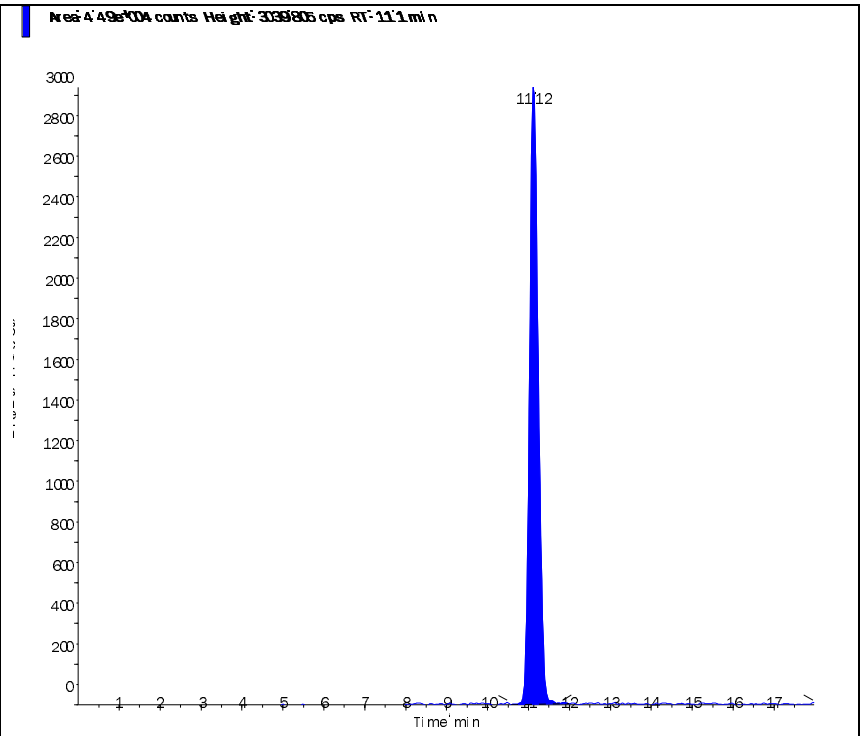

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.10 (11.10) min
Calculated conc:	0.961 ng/ml
Area Ratio:	0.057
Sample Type:	(Quality Control)

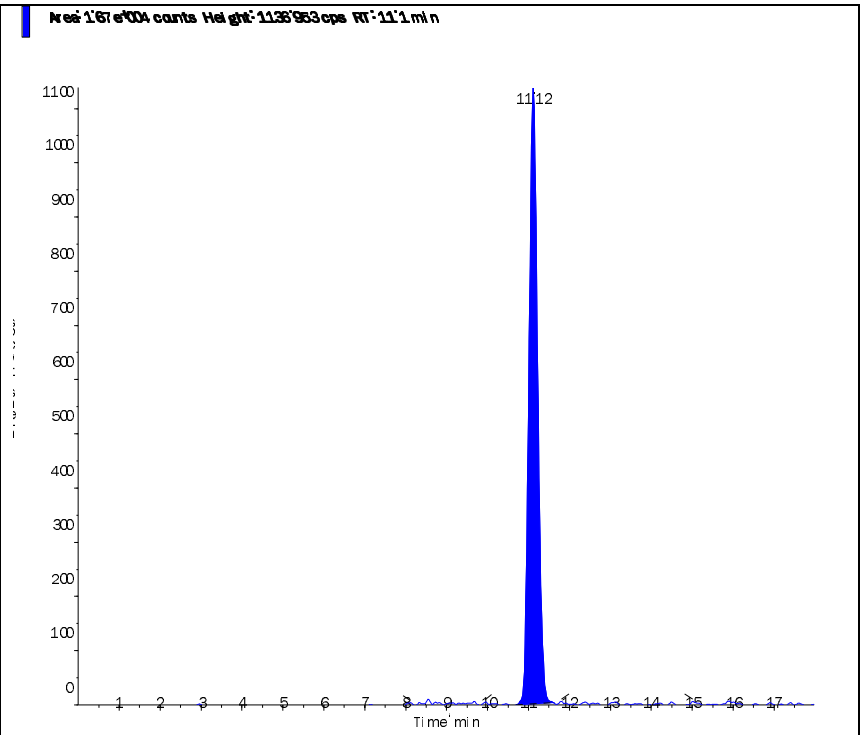

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Data File	LM29897.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 12:21:23 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525212-05 CCV (1.0ug/L)	**Injection Vial**	5.00
Data File	LM29897.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 12:21:23 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525212-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.270e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.350e+04	11.00	1.00	1.05
Perchlorate conf	2.080e+04	11.00	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

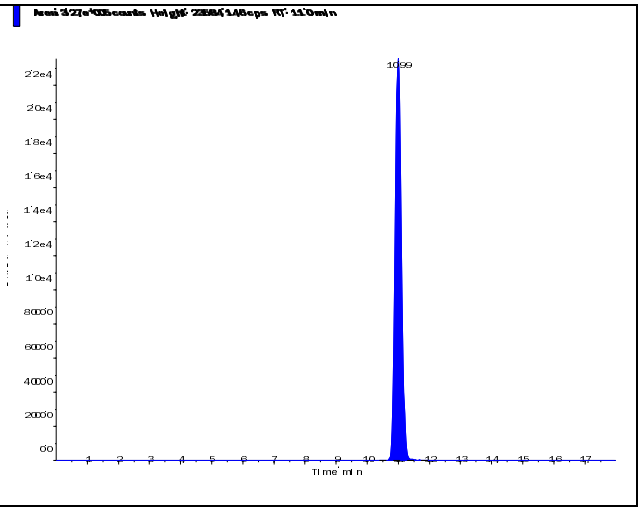

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.00 (11.10) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.164
Sample Type:	(Quality Control)

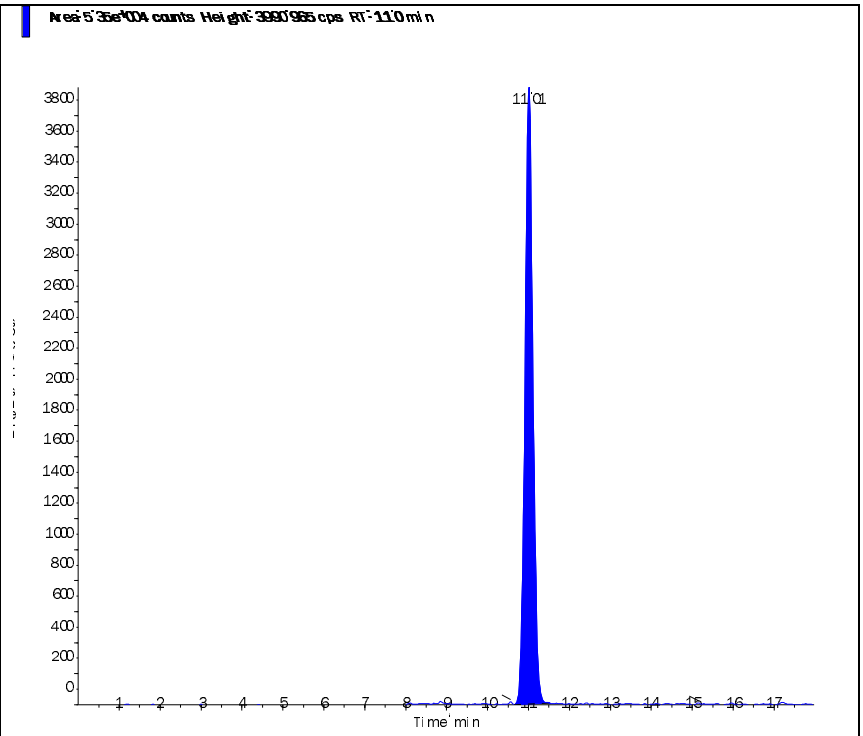

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.00 (11.10) min
Calculated conc:	1.07 ng/ml
Area Ratio:	0.064
Sample Type:	(Quality Control)

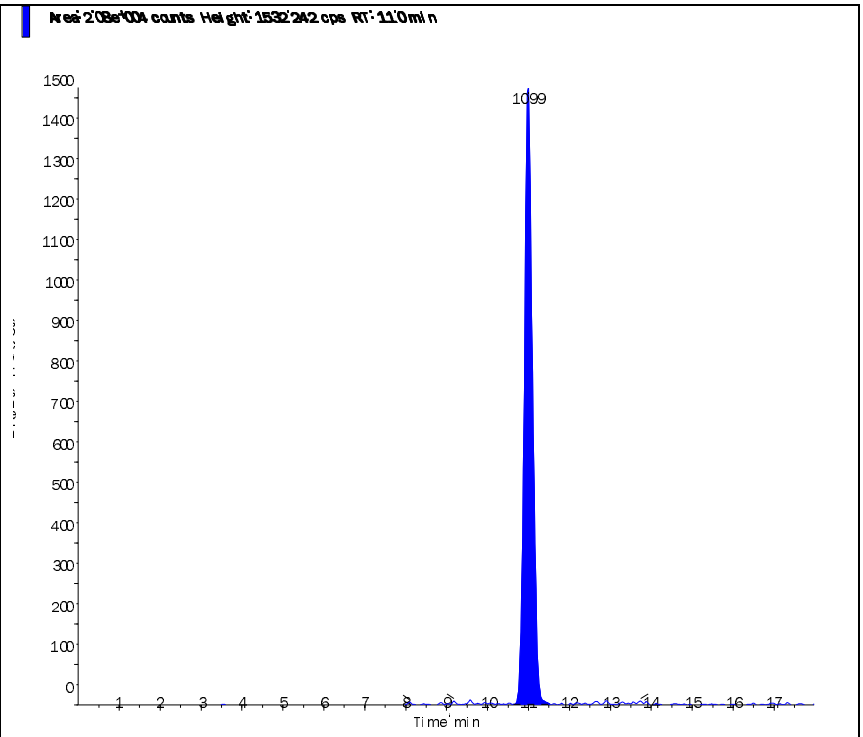

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Data File	LM29910.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 4:27:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525212-07 CCV (1.0ug/L)	**Injection Vial**	5.00
Data File	LM29910.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 4:27:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525212-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.390e+05	10.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.540e+04	10.90	1.00	1.05
Perchlorate conf	2.090e+04	10.90	1.00	1.04

O18LP (Internal Standard)

RT (Exp. RT): 10.90(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

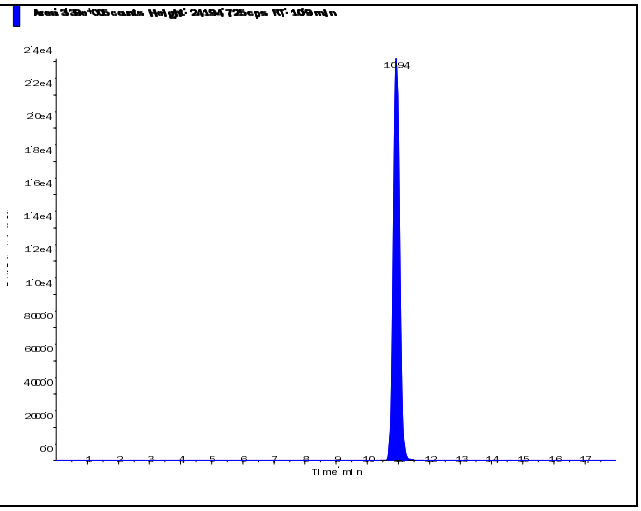

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.90 (11.10) min Calculated conc: 1.05 ng/ml Area Ratio: 0.163 Sample Type: (Quality Control)	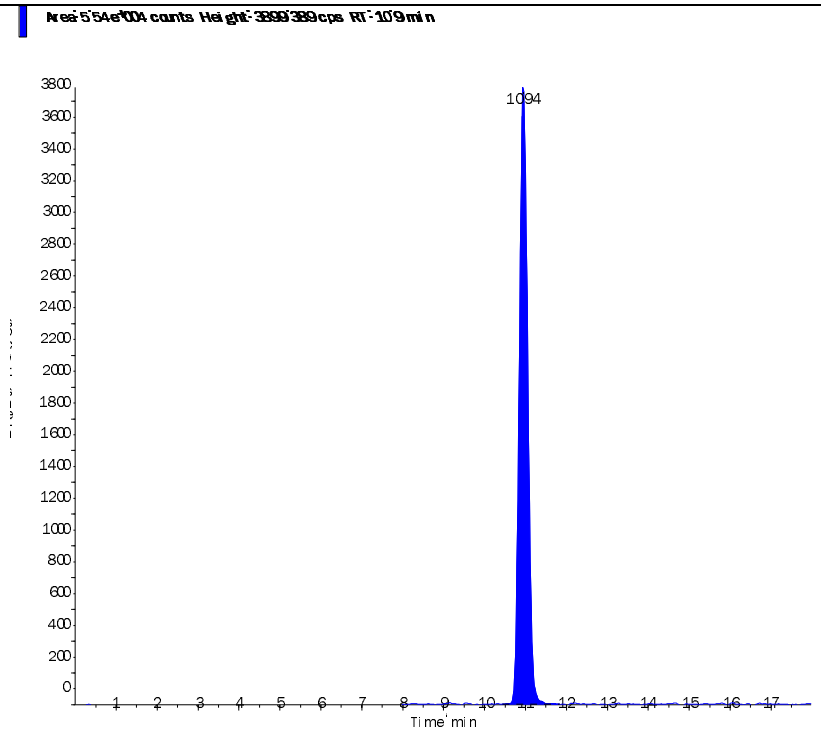
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 10.90 (11.10) min Calculated conc: 1.04 ng/ml Area Ratio: 0.062 Sample Type: (Quality Control)	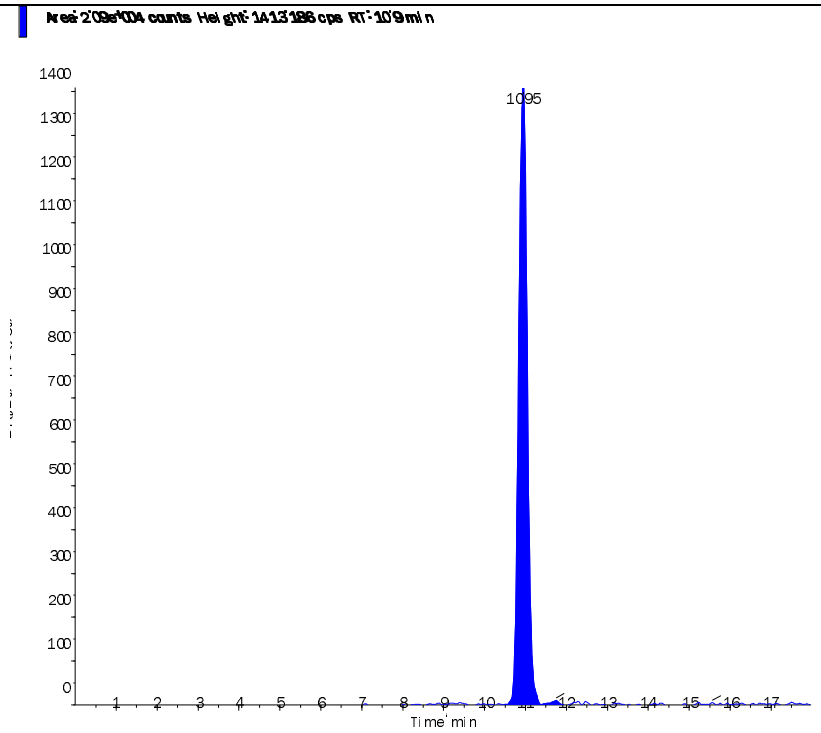

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Data File	LM29924.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 8:52:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525212-09 CCV (1.0ug/L)	**Injection Vial**	5.00
Data File	LM29924.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 8:52:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525212-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.250e+05	10.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.550e+04	10.90	1.00	1.09
Perchlorate conf	2.110e+04	10.90	1.00	1.09

O18LP (Internal Standard)

RT (Exp. RT): 10.90(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

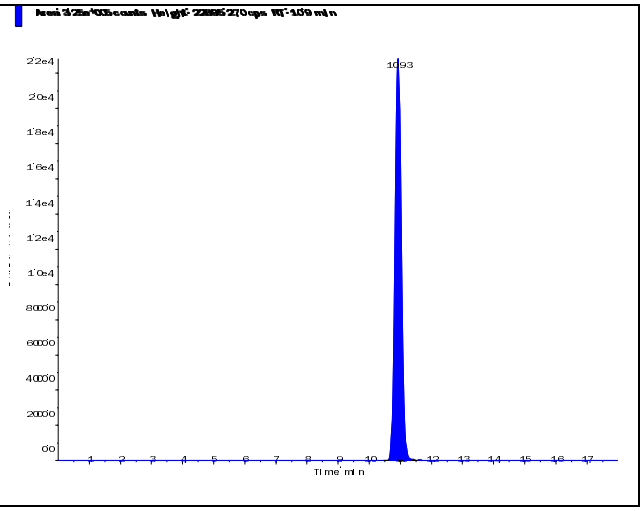

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.90 (11.10) min
Calculated conc:	1.09 ng/ml
Area Ratio:	0.17
Sample Type:	(Quality Control)

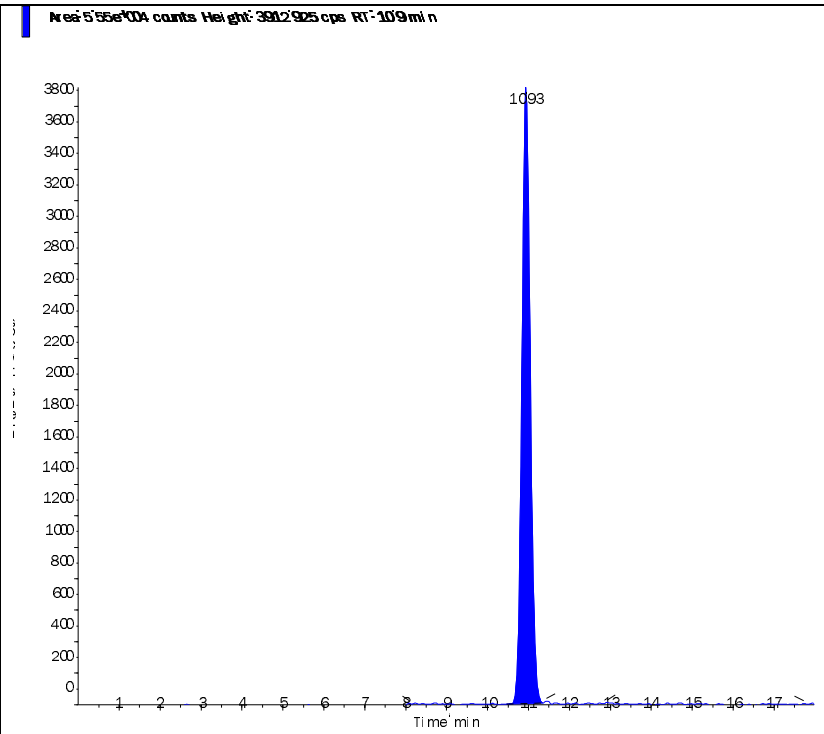

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.90 (11.10) min
Calculated conc:	1.09 ng/ml
Area Ratio:	0.065
Sample Type:	(Quality Control)

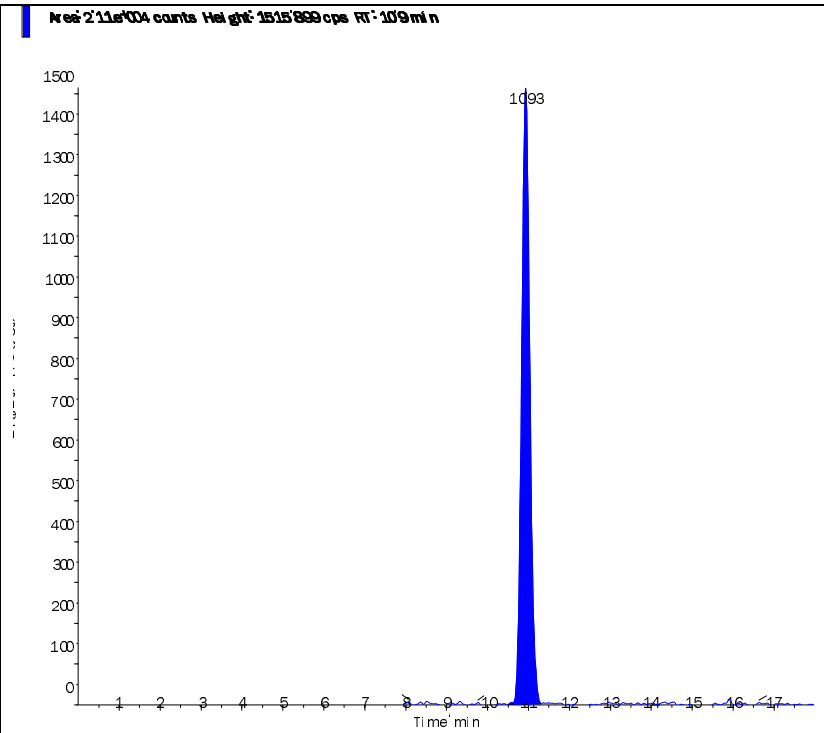

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Data File	LM29935.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 12:20:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525212-11 CCV (1.0ug/L)	**Injection Vial**	5.00
Data File	LM29935.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 12:20:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525212-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.510e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.850e+04	11.00	1.00	1.06
Perchlorate conf	2.130e+04	11.00	1.00	1.02

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

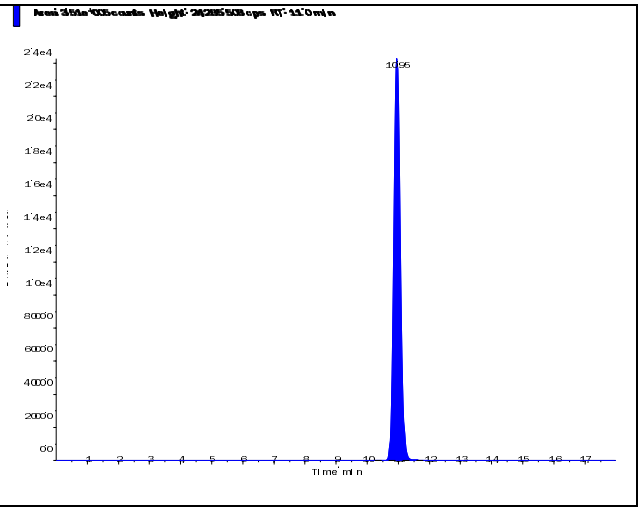

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.00 (11.10) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.166
Sample Type:	(Quality Control)

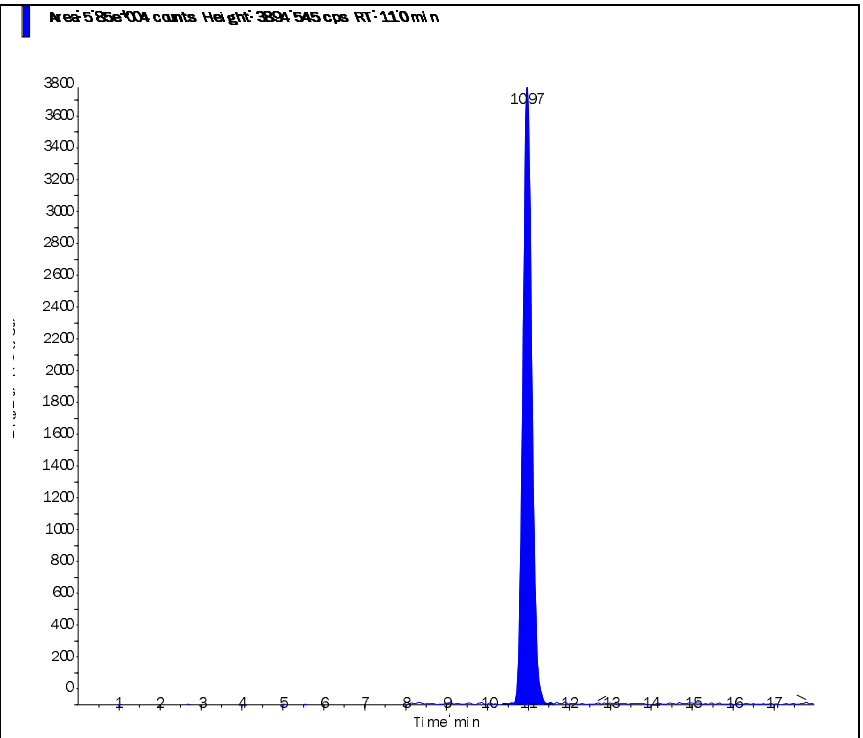

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.00 (11.10) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.061
Sample Type:	(Quality Control)

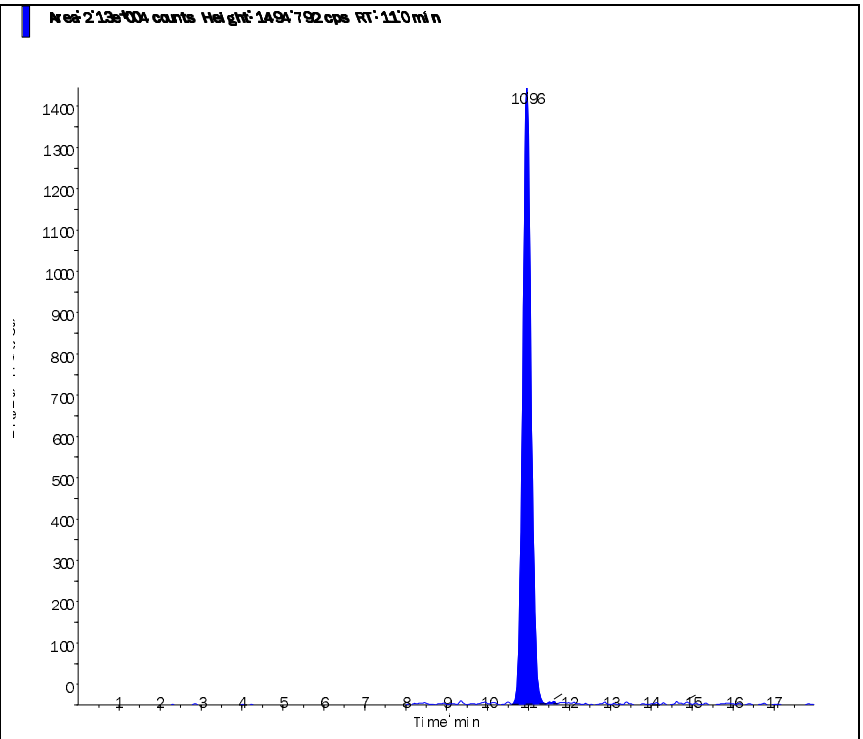

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Data File	LM29944.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 3:23:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525212-13 CCV (1.0ug/L)	**Injection Vial**	5.00
Data File	LM29944.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 3:23:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525212-13	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.460e+05	10.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.840e+04	10.90	1.00	1.08
Perchlorate conf	2.200e+04	10.90	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 10.90(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

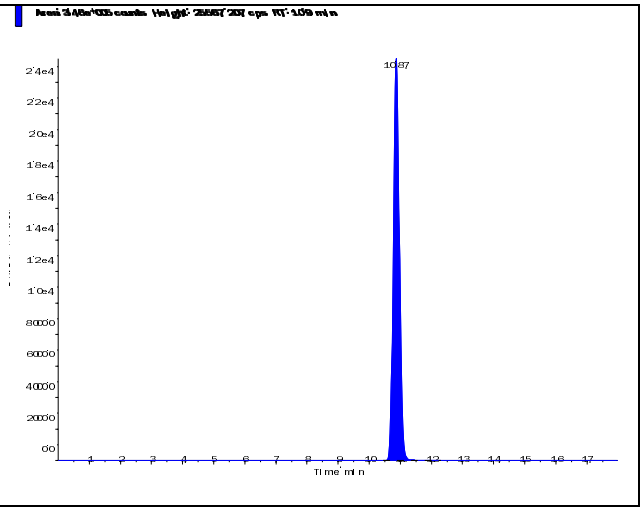

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.90 (11.10) min
Calculated conc:	1.08 ng/ml
Area Ratio:	0.169
Sample Type:	(Quality Control)

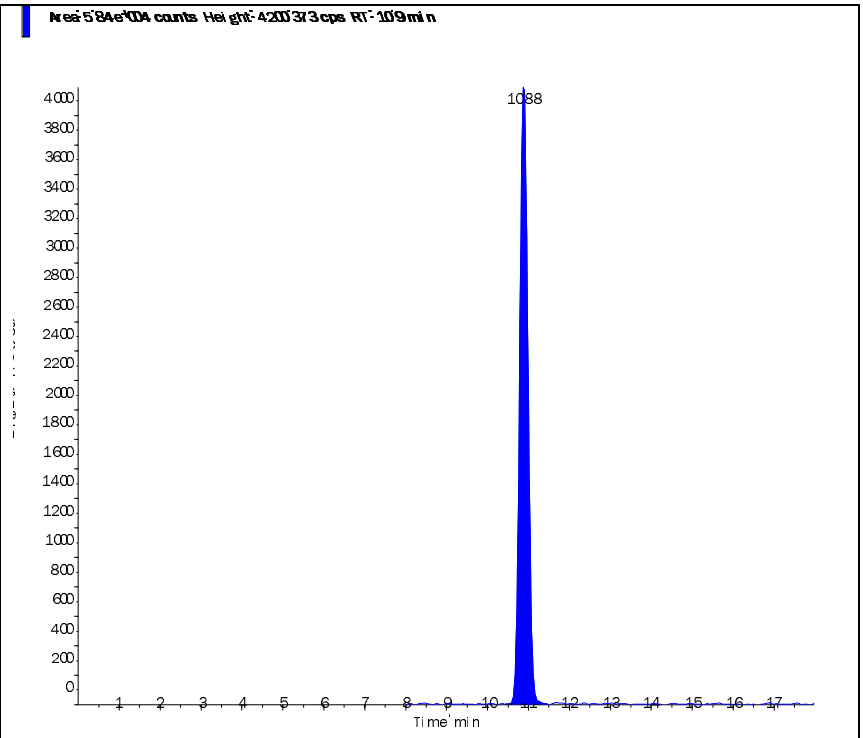

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.90 (11.10) min
Calculated conc:	1.07 ng/ml
Area Ratio:	0.064
Sample Type:	(Quality Control)

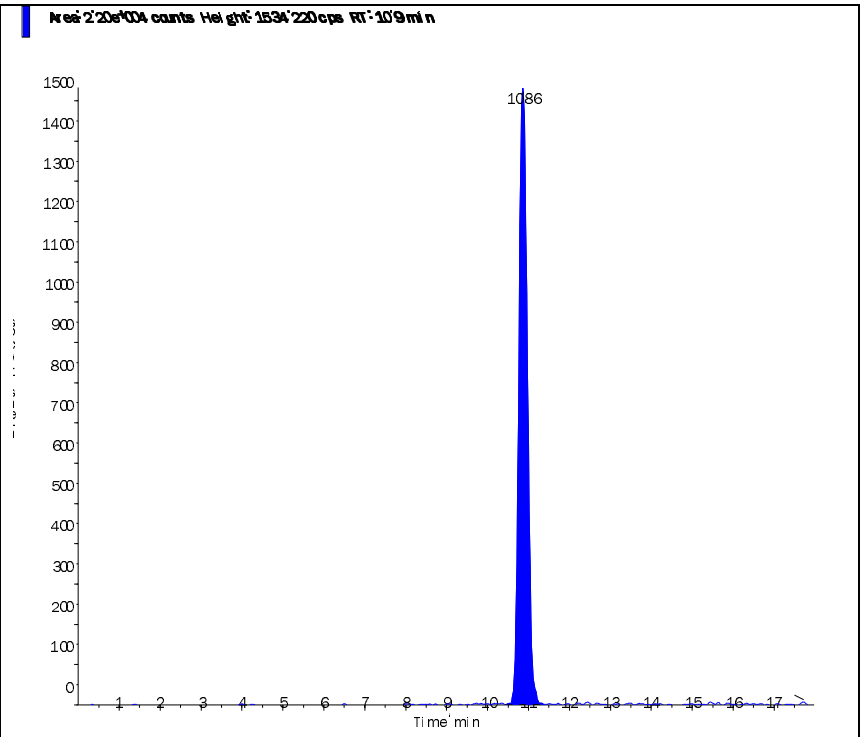

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Printed: 5/28/2015 5:07 PM

Data File	LM29899.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 12:59:14 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525193-07 MRL (0.2ug/L)	**Injection Vial**	3.00
Data File	LM29899.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 12:59:14 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525193-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.300e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.160e+04	11.00	N/A	0.222
Perchlorate conf	4.300e+03	11.00	N/A	0.214

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

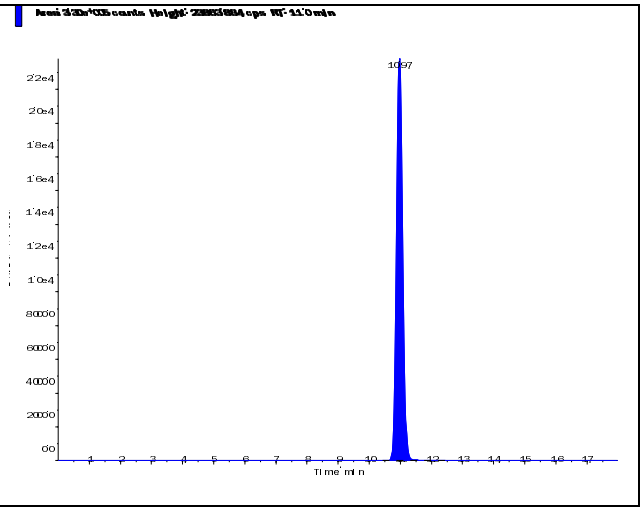

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Printed: 5/28/2015 5:07 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.00 (11.10) min Calculated conc: 0.222 ng/ml Area Ratio: 0.035 Sample Type: (Unknown)	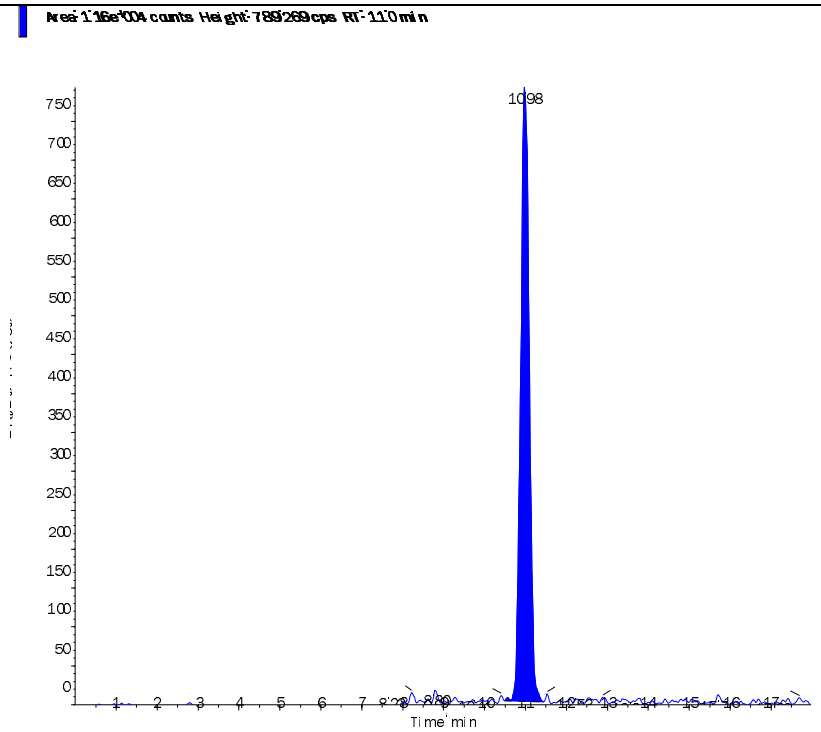
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.00 (11.10) min Calculated conc: 0.214 ng/ml Area Ratio: 0.013 Sample Type: (Unknown)	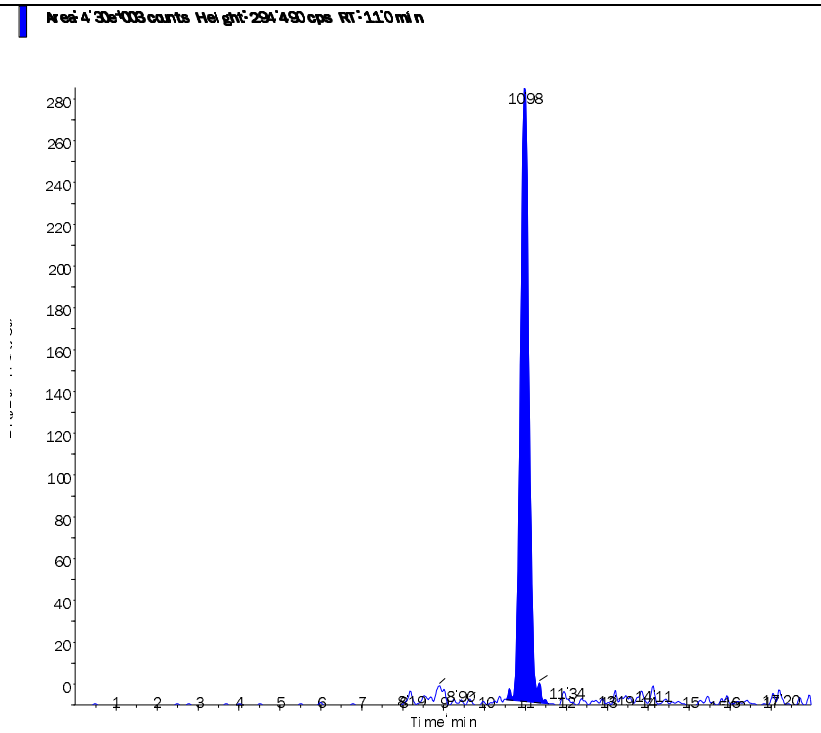

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Created with Analyst Reporter
Printed: 5/28/2015 5:12 PM

Data File	LM29912.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 5:05:16 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525193-08 MRL (0.2ug/L)	**Injection Vial**	3.00
Data File	LM29912.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 5:05:16 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525193-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.470e+05	10.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.200e+04	11.00	N/A	0.219
Perchlorate conf	4.810e+03	10.90	N/A	0.227

O18LP (Internal Standard)

RT (Exp. RT): 10.90(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

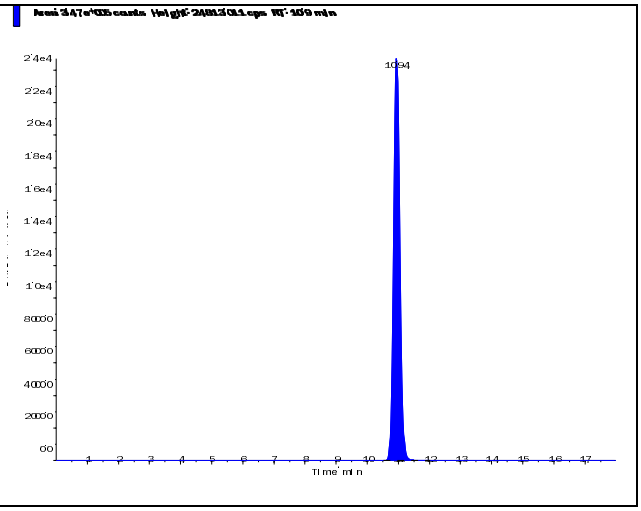

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.00 (11.10) min Calculated conc: 0.219 ng/ml Area Ratio: 0.035 Sample Type: (Unknown)	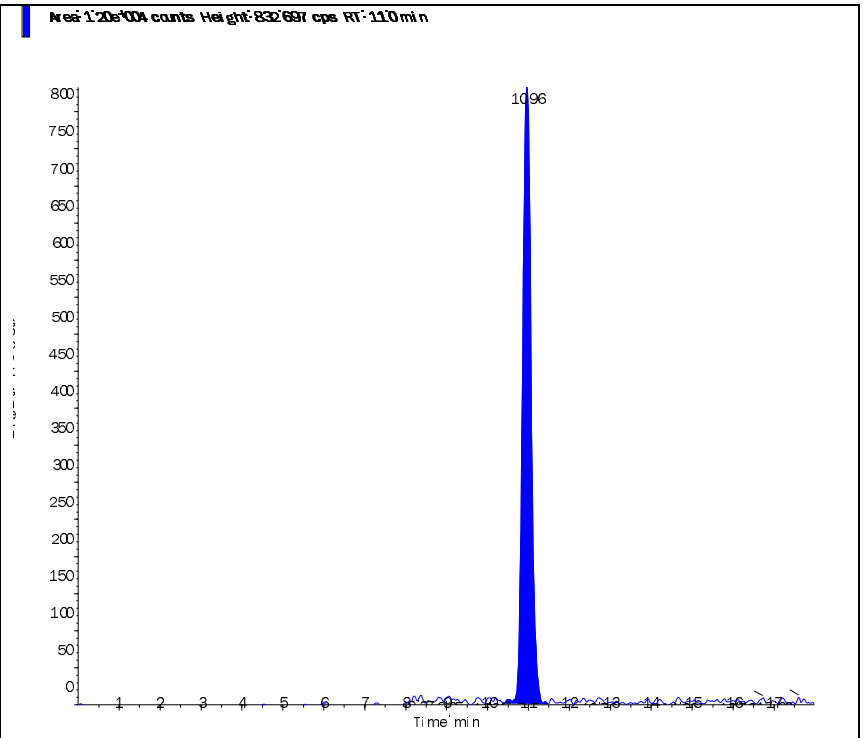
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 10.90 (11.10) min Calculated conc: 0.227 ng/ml Area Ratio: 0.014 Sample Type: (Unknown)	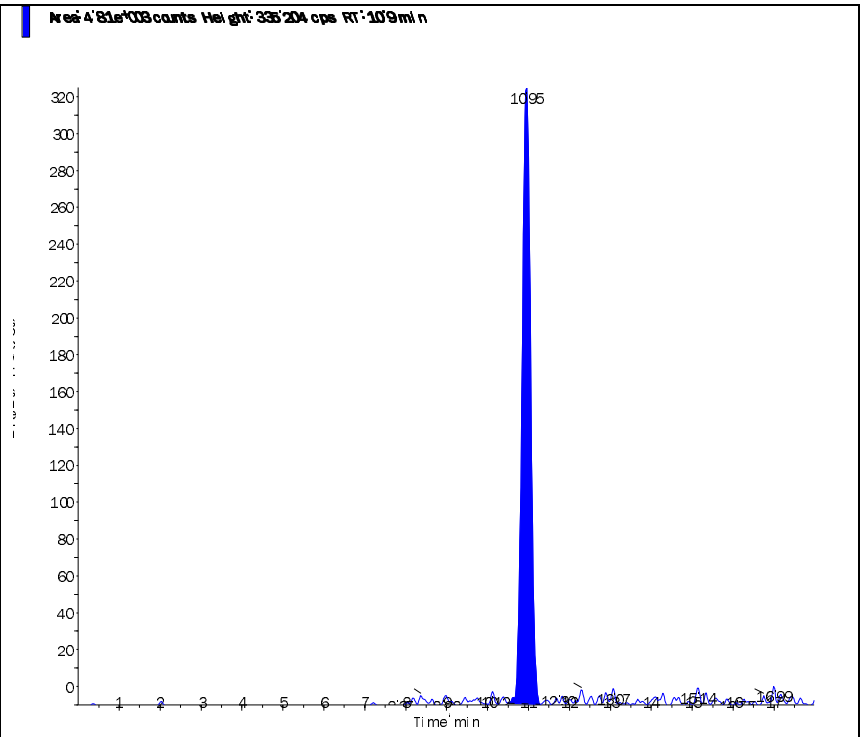

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Printed: 5/28/2015 5:16 PM

Data File	LM29925.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 9:11:22 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525193-09 MRL (0.2ug/L)	**Injection Vial**	3.00
Data File	LM29925.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 9:11:22 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525193-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.260e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.140e+04	11.00	N/A	0.221
Perchlorate conf	4.590e+03	10.90	N/A	0.232

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

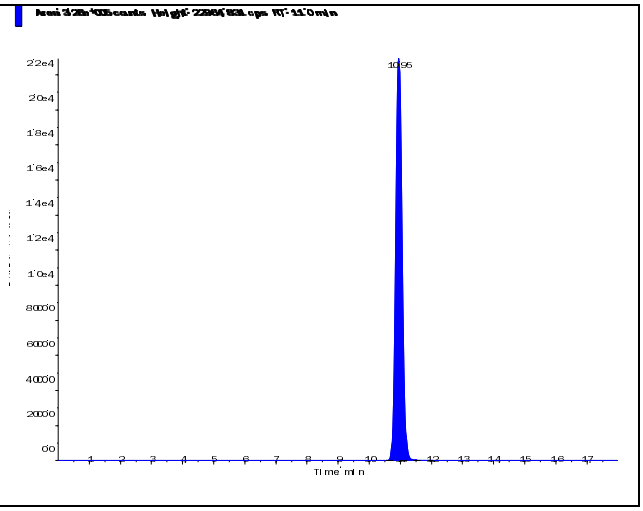

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.00 (11.10) min
Calculated conc:	0.221 ng/ml
Area Ratio:	0.035
Sample Type:	(Unknown)

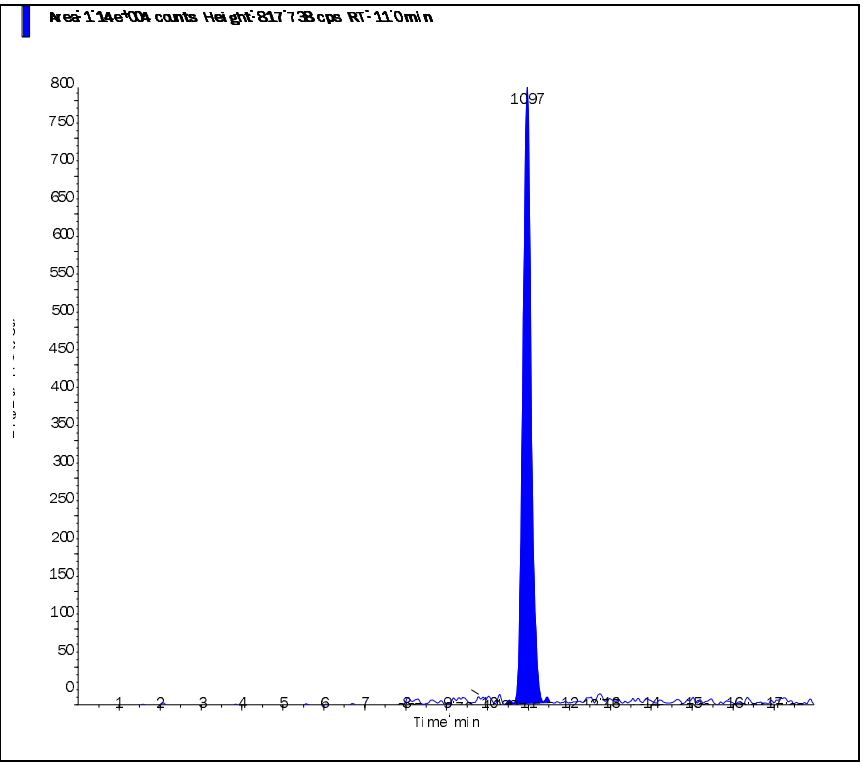

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.90 (11.10) min
Calculated conc:	0.232 ng/ml
Area Ratio:	0.014
Sample Type:	(Unknown)

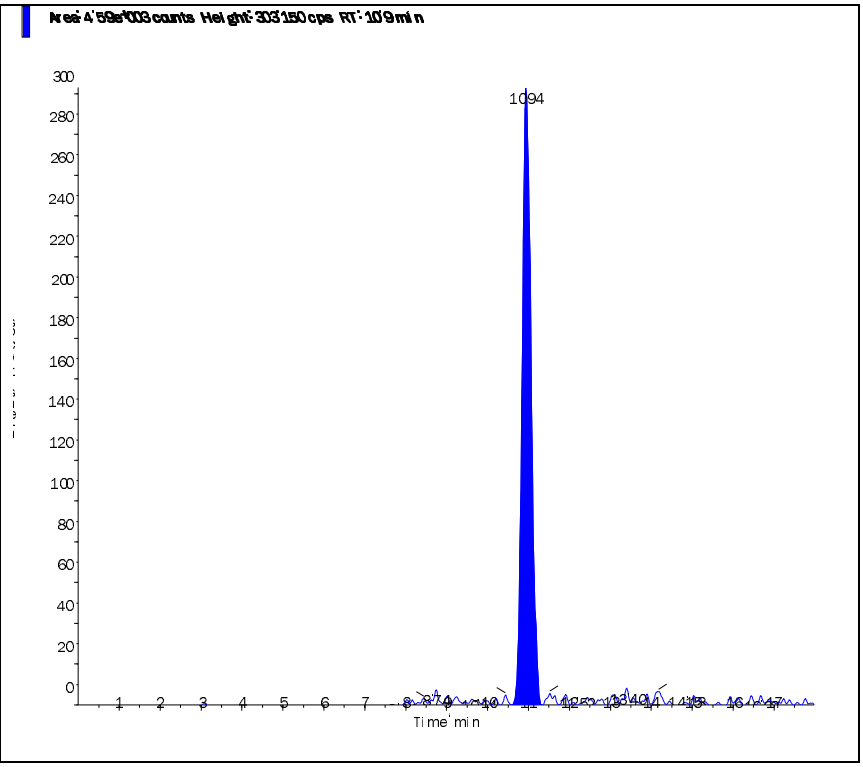

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Data File	LM29936.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 12:39:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525193-10 MRL (0.2ug/L)	**Injection Vial**	3.00
Data File	LM29936.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 12:39:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525193-10	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.480e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.170e+04	11.00	N/A	0.212
Perchlorate conf	4.310e+03	10.90	N/A	0.203

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

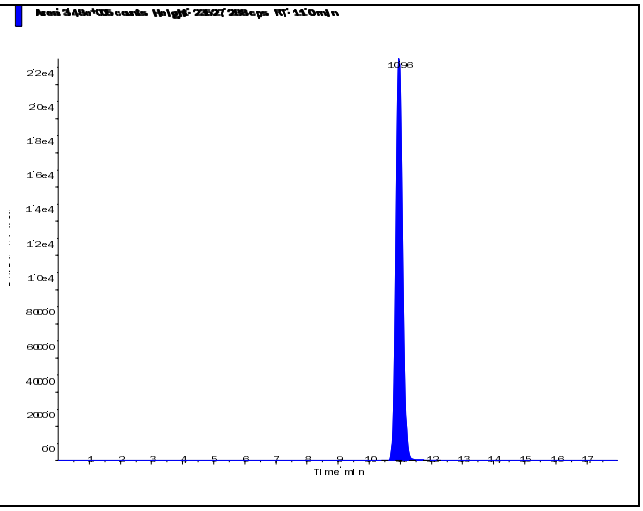

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.00 (11.10) min Calculated conc: 0.212 ng/ml Area Ratio: 0.034 Sample Type: (Unknown)	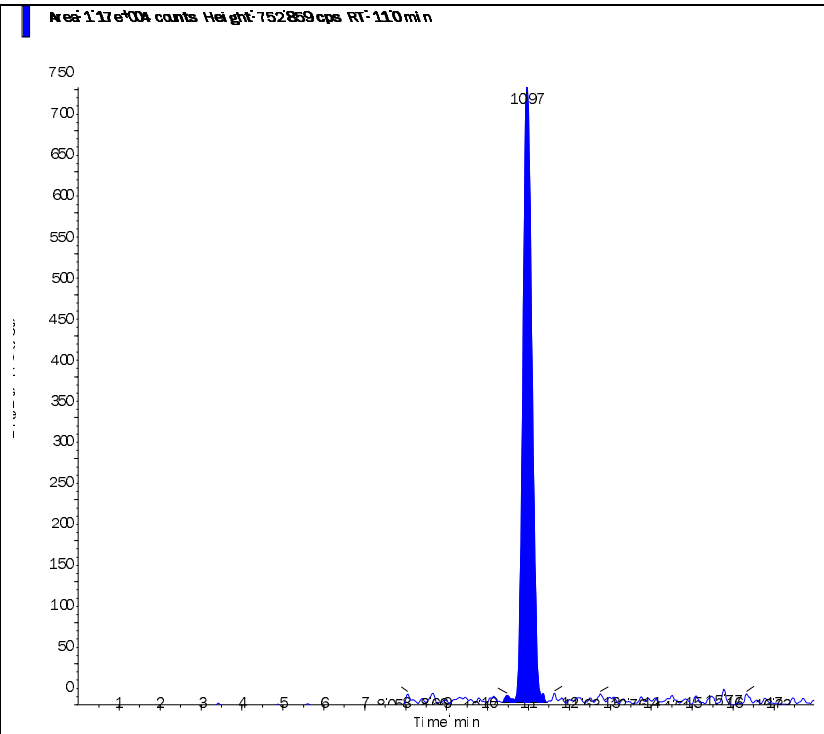
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 10.90 (11.10) min Calculated conc: 0.203 ng/ml Area Ratio: 0.012 Sample Type: (Unknown)	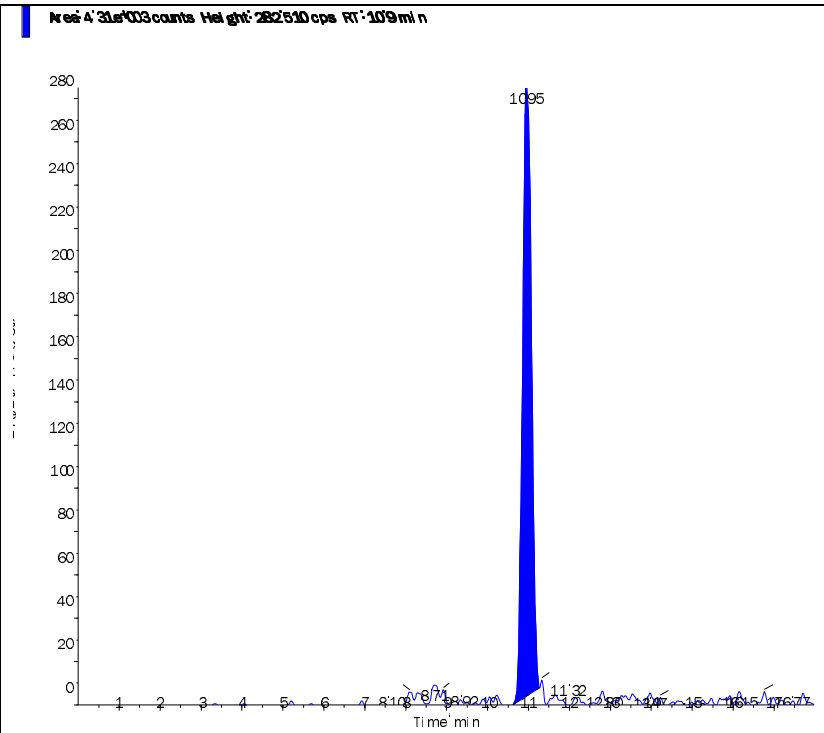

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Printed: 5/28/2015 5:22 PM

Data File	LM29945.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 3:42:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525193-11 MRL (0.2ug/L)	**Injection Vial**	3.00
Data File	LM29945.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 3:42:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525193-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.390e+05	10.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.120e+04	10.90	N/A	0.208
Perchlorate conf	4.390e+03	10.90	N/A	0.212

O18LP (Internal Standard)

RT (Exp. RT): 10.90(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

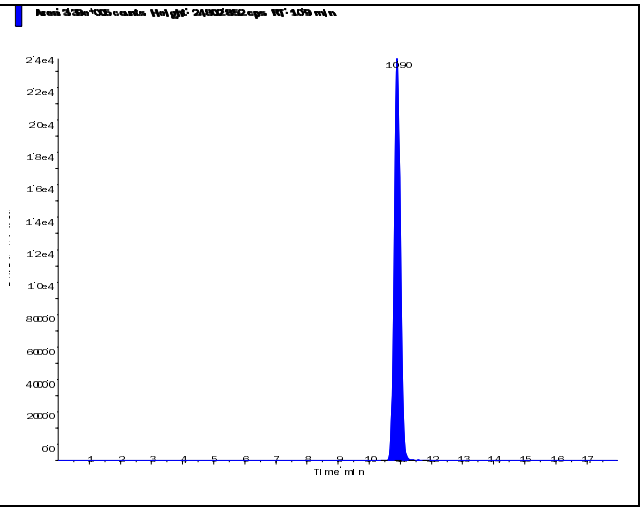

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.90 (11.10) min
Calculated conc:	0.208 ng/ml
Area Ratio:	0.033
Sample Type:	(Unknown)

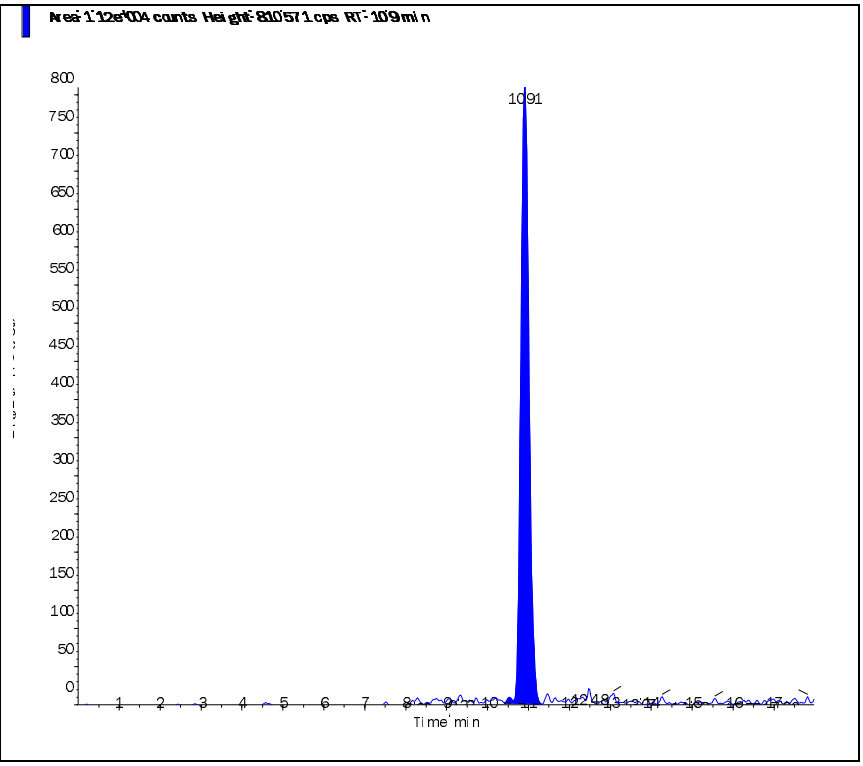

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.90 (11.10) min
Calculated conc:	0.212 ng/ml
Area Ratio:	0.013
Sample Type:	(Unknown)

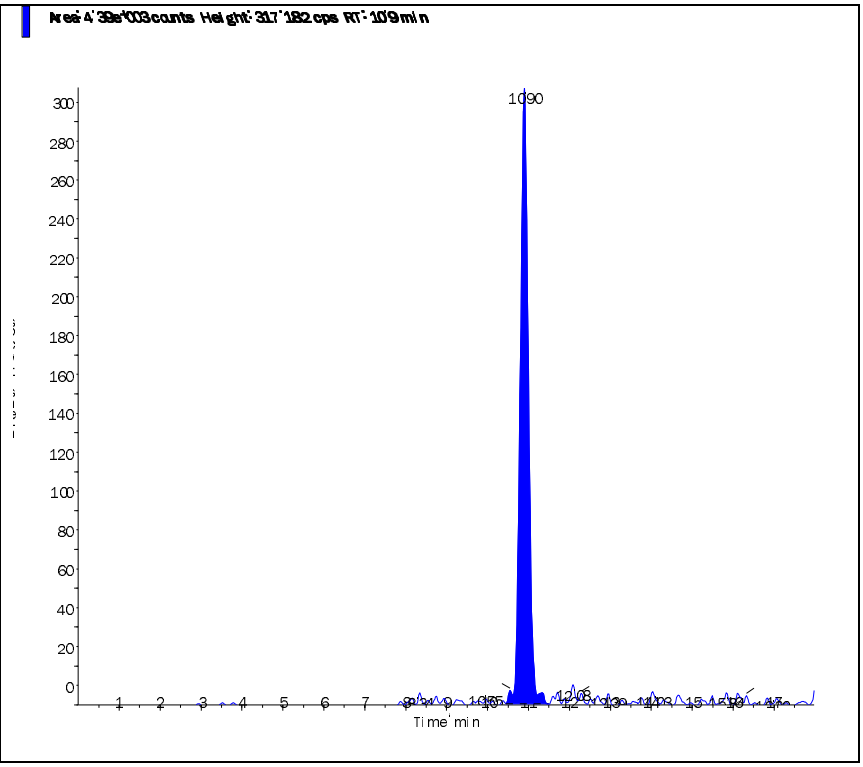

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Data File	LM29886.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/27/2015 8:53:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525212-04 CCB	**Injection Vial**	1.00
Data File	LM29886.wiff	**Injection Volume**	10.00
Acquisition Date	5/27/2015 8:53:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525212-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.090e+05	11.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.040e+02	11.10	N/A	0.0045
Perchlorate conf	1.910e+02	11.10	N/A	0.0032

O18LP (Internal Standard)

RT (Exp. RT): 11.10(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

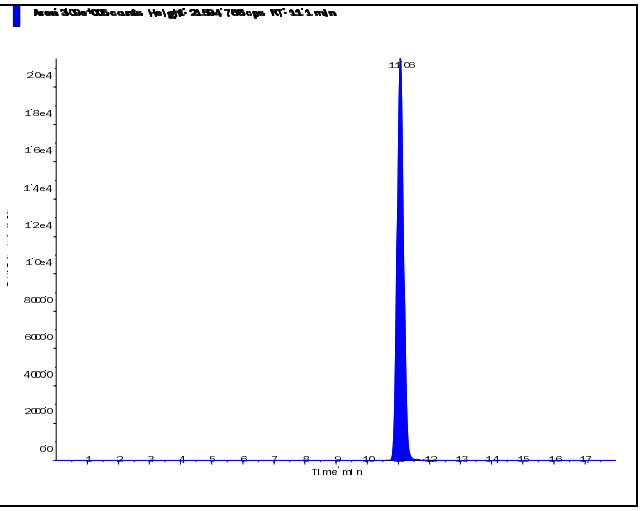

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.10 (11.10) min
Calculated conc:	0.0045 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

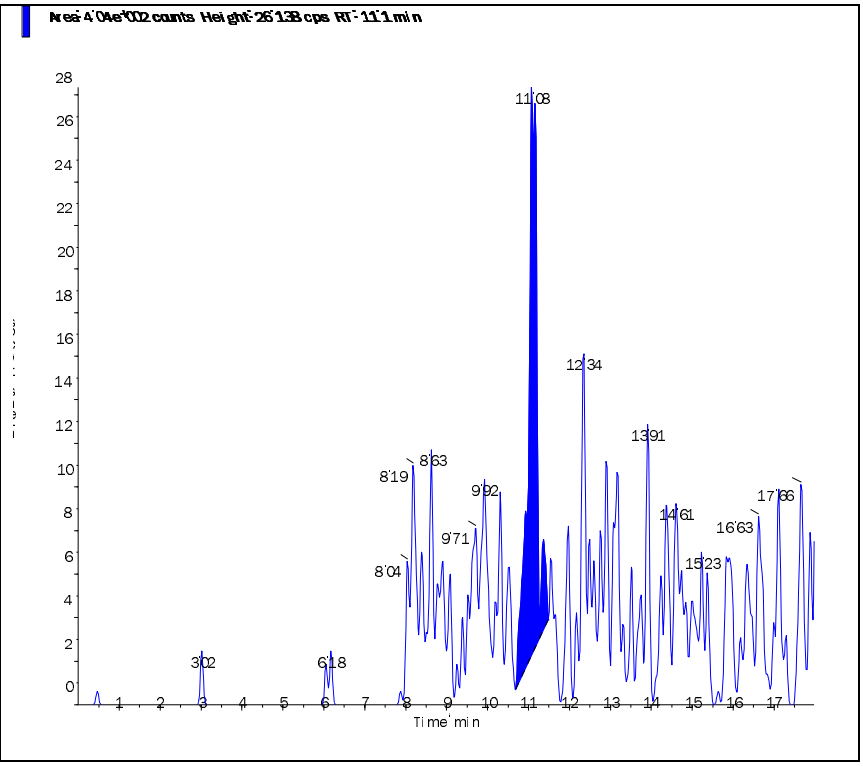

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.10 (11.10) min
Calculated conc:	0.0032 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

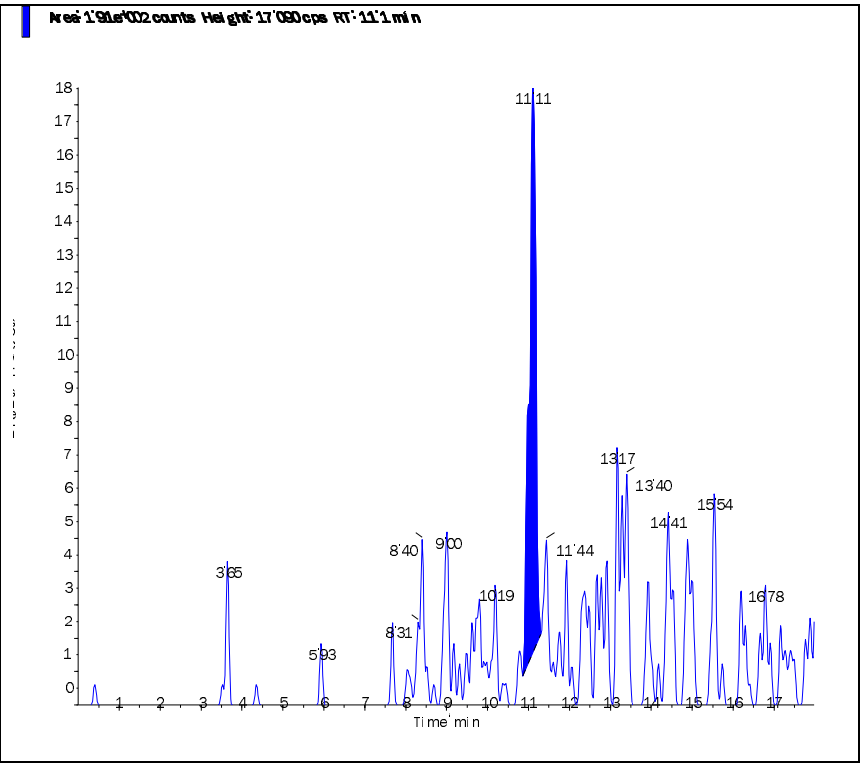

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Data File	LM29900.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 1:18:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525212-06 CCB	**Injection Vial**	1.00
Data File	LM29900.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 1:18:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525212-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.320e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.630e+02	10.90	N/A	0.0012
Perchlorate conf	1.890e+02	11.00	N/A	0.0023

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

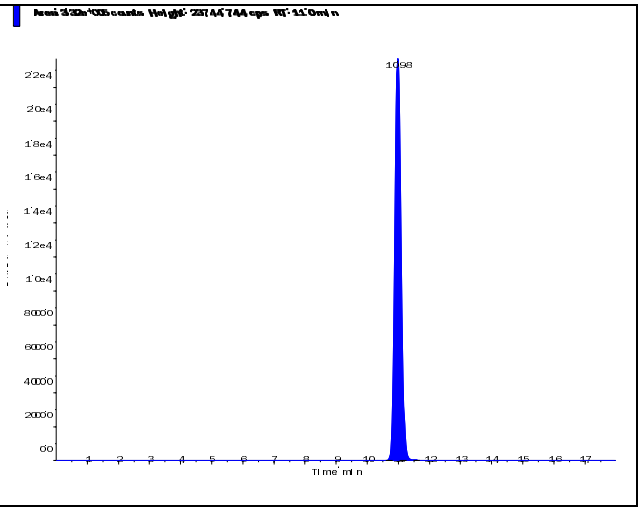

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.90 (11.10) min
Calculated conc:	0.0012 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

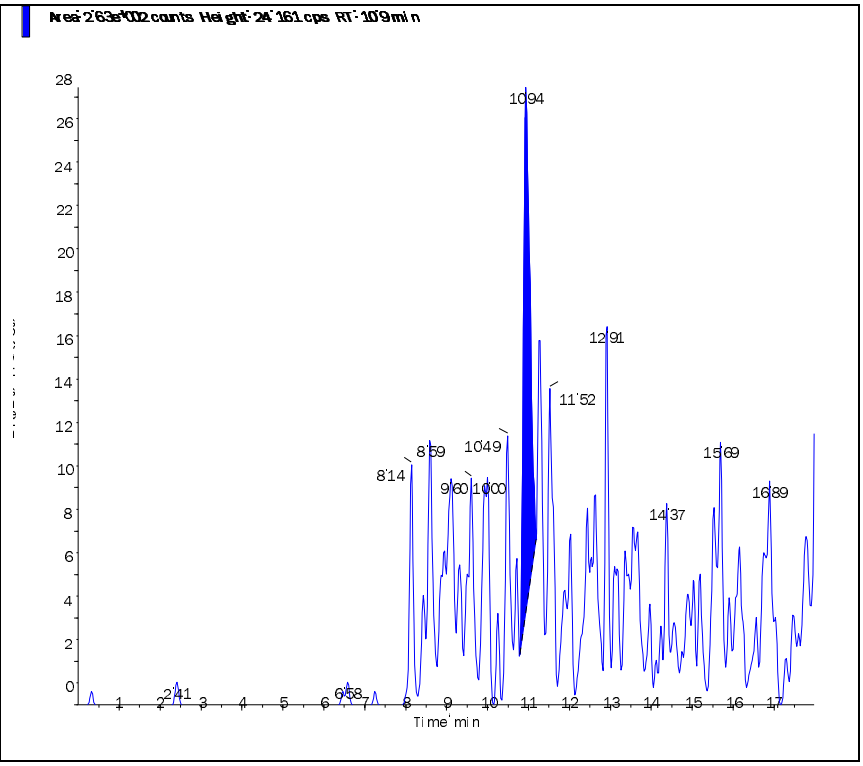

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.00 (11.10) min
Calculated conc:	0.0023 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

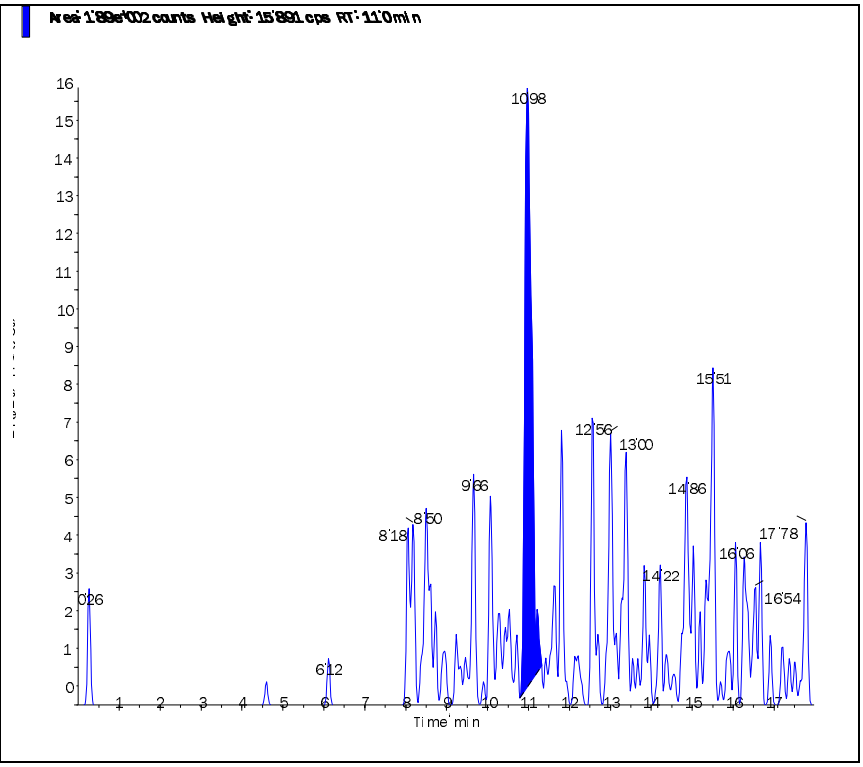

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Data File	LM29913.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 5:24:11 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525212-08 CCB	**Injection Vial**	1.00
Data File	LM29913.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 5:24:11 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525212-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.570e+05	10.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.660e+02	11.00	N/A	0.0027
Perchlorate conf	2.720e+02	11.00	N/A	0.0056

O18LP (Internal Standard)

RT (Exp. RT): 10.90(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

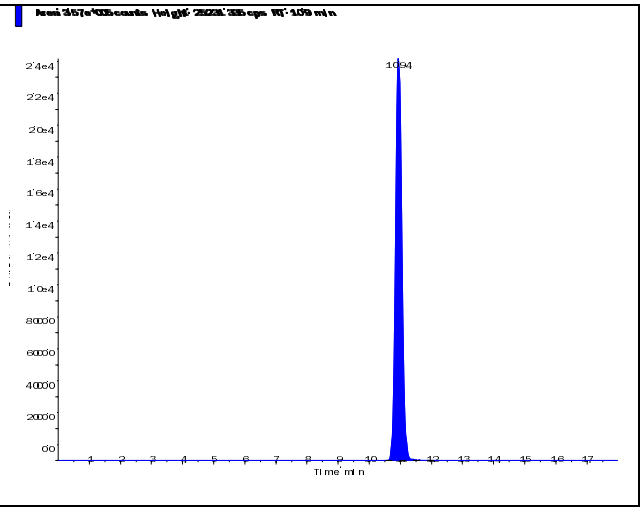

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.00 (11.10) min
Calculated conc:	0.0027 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

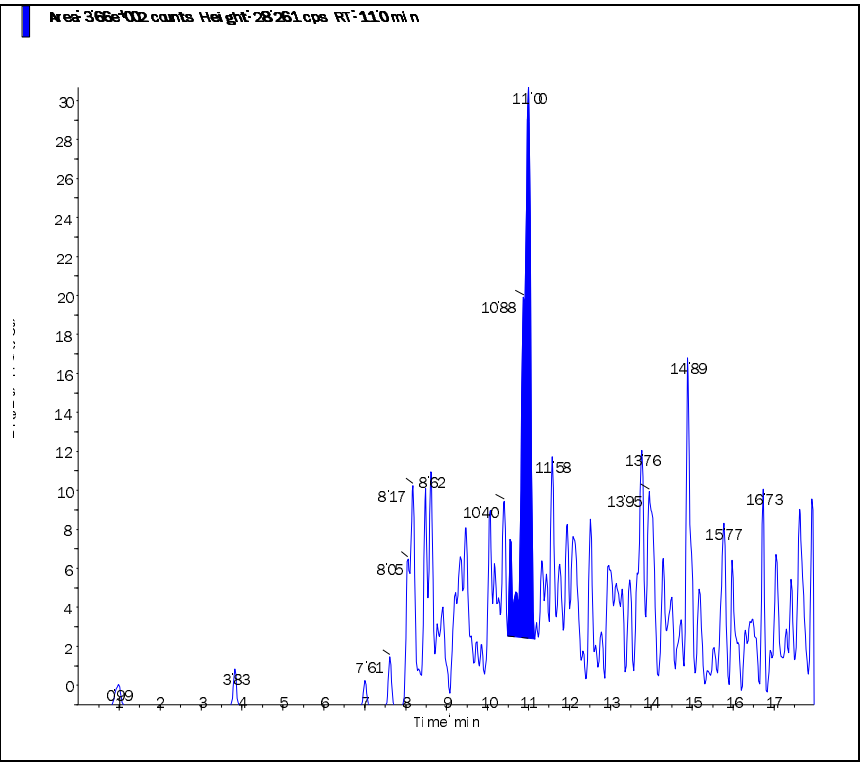

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.00 (11.10) min
Calculated conc:	0.0056 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

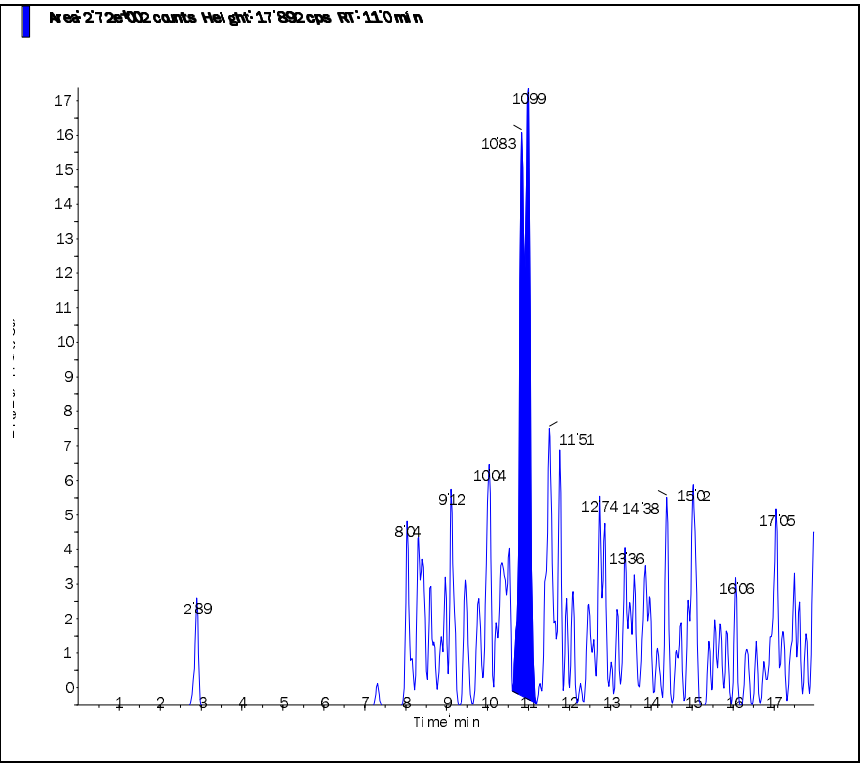

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Created with Analyst Reporter
Printed: 5/28/2015 5:16 PM

Data File	LM29926.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 9:30:17 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525212-10 CCB	**Injection Vial**	1.00
Data File	LM29926.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 9:30:17 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525212-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.430e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	1.180e+02	11.00	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

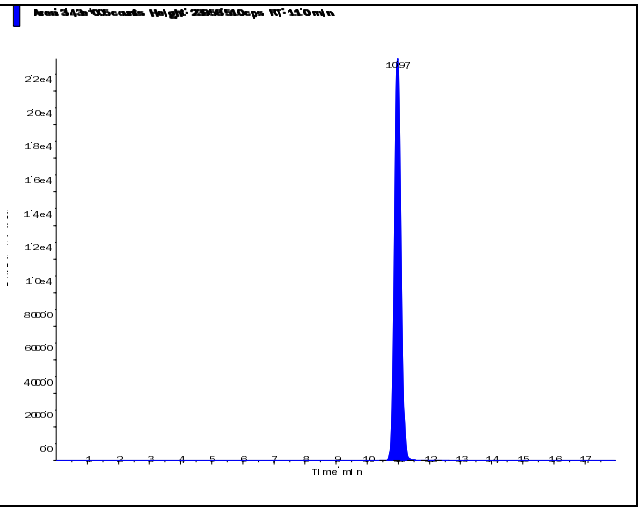

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/28/2015 5:16 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (11.10) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	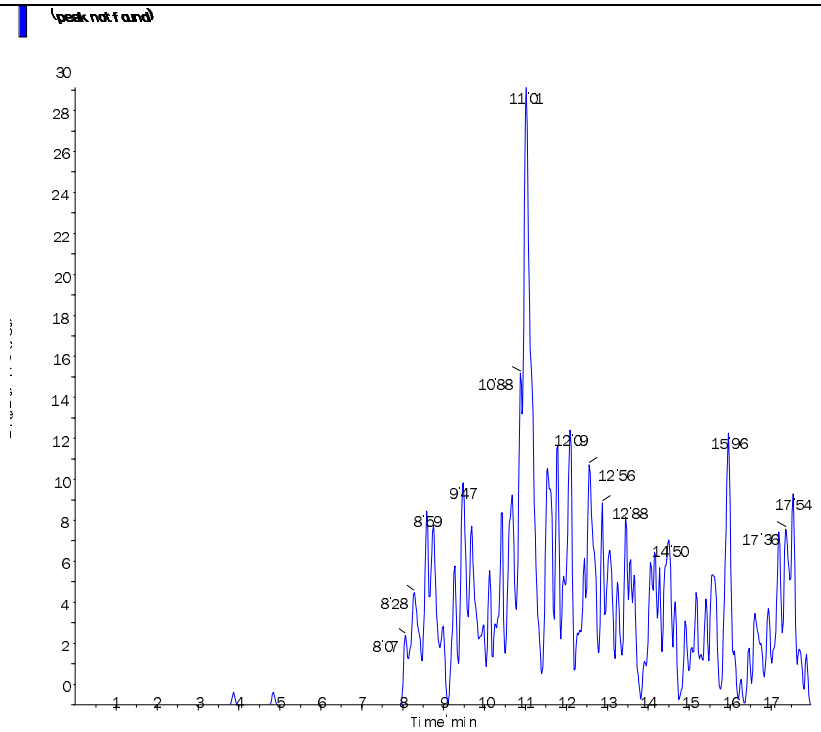
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.00 (11.10) min Calculated conc: < 0 ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	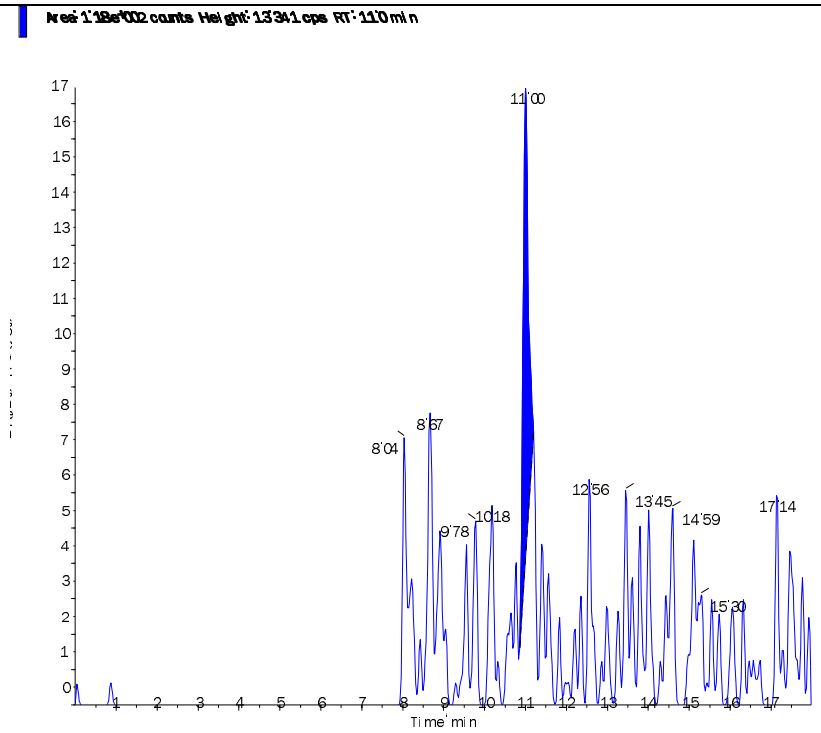

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/28/2015 5:20 PM

Data File	LM29937.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 12:58:27 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525212-12 CCB	**Injection Vial**	1.00
Data File	LM29937.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 12:58:27 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525212-12	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.450e+05	10.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.140e+02	10.90	N/A	0.0057
Perchlorate conf	1.690e+02	11.00	N/A	0.001

O18LP (Internal Standard)

RT (Exp. RT): 10.90(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

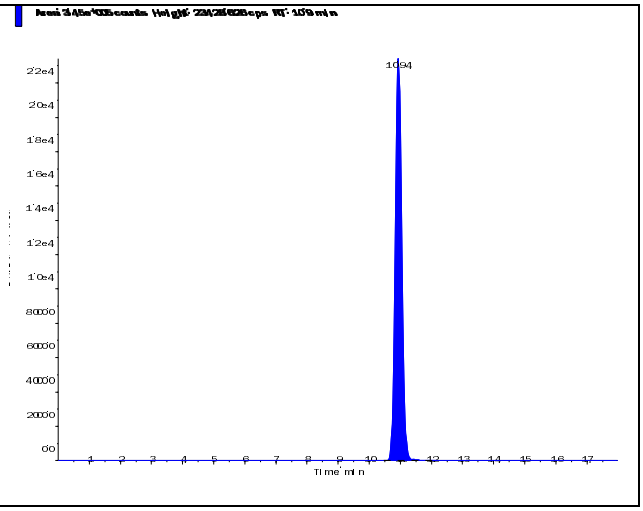

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.90 (11.10) min Calculated conc: 0.0057 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	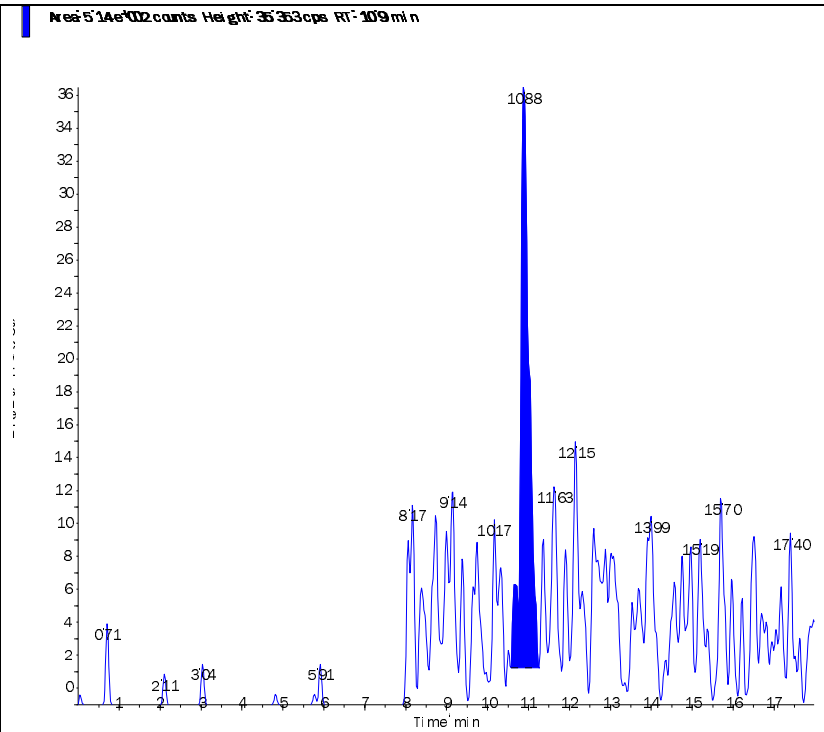
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.00 (11.10) min Calculated conc: 0.001 ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	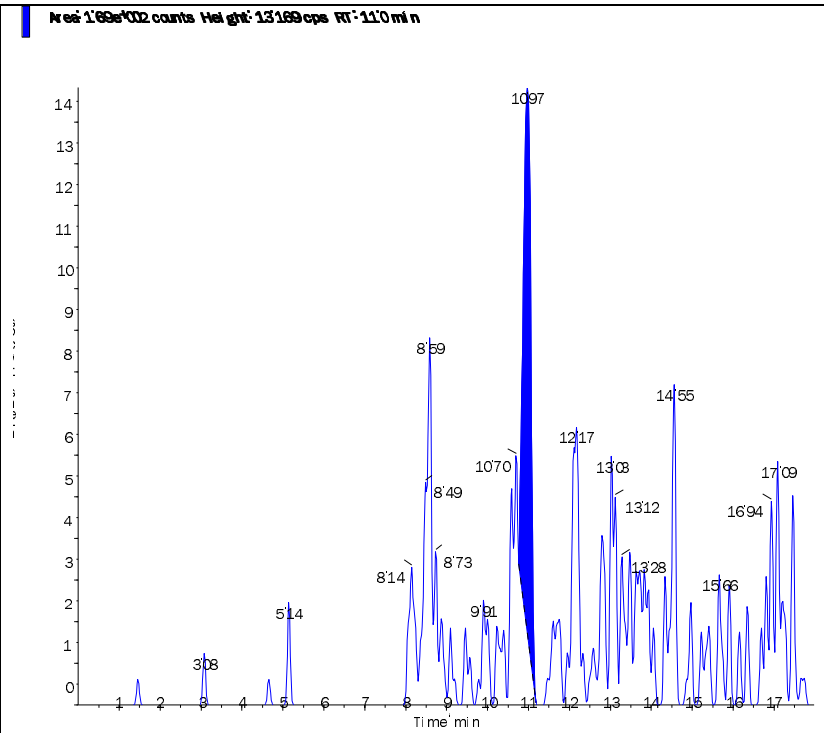

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Created with Analyst Reporter
Printed: 5/28/2015 5:22 PM

Data File	LM29946.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 4:01:44 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525212-14 CCB	**Injection Vial**	1.00
Data File	LM29946.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 4:01:44 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525212-14	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.470e+05	10.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	6.150e+02	10.90	N/A	0.0075
Perchlorate conf	1.210e+02	10.90	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 10.90(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

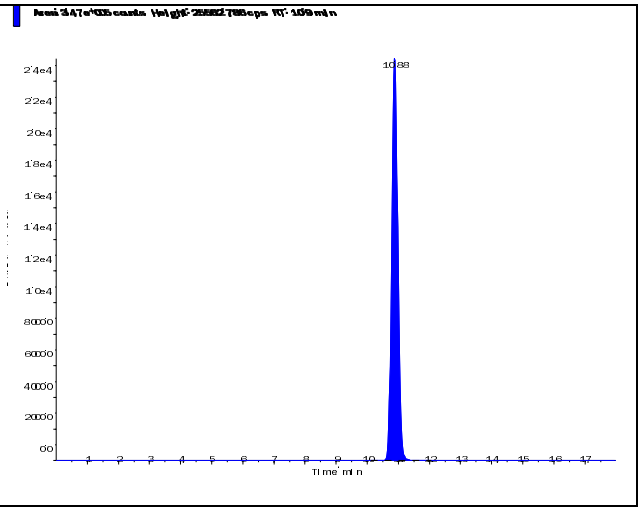

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.90 (11.10) min
Calculated conc:	0.0075 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

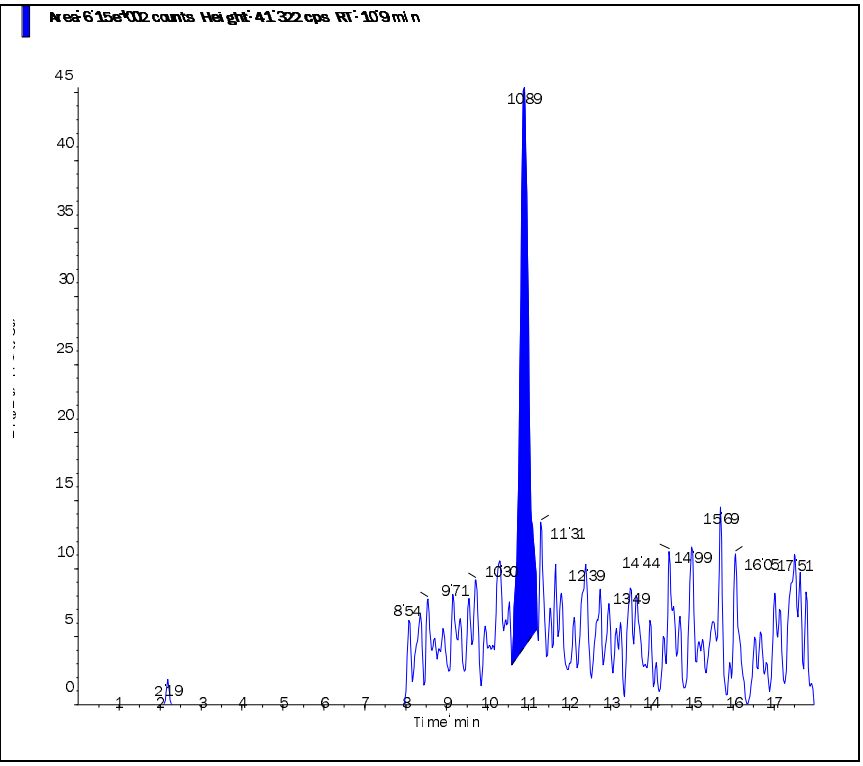

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.90 (11.10) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

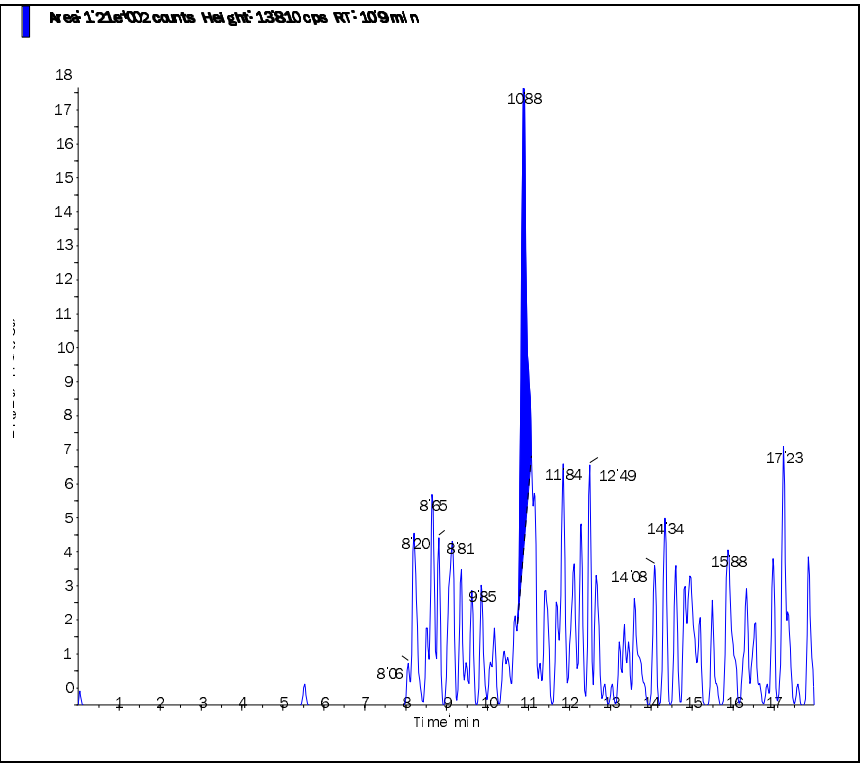

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Data File	LM29903.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 2:14:54 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525193-01 MCT (0.2ug/L)	**Injection Vial**	32.00
Data File	LM29903.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 2:14:54 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525193-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD69913	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.460e+05	10.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.130e+04	10.80	N/A	0.205
Perchlorate conf	4.540e+03	10.70	N/A	0.215

O18LP (Internal Standard)

RT (Exp. RT): 10.70(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

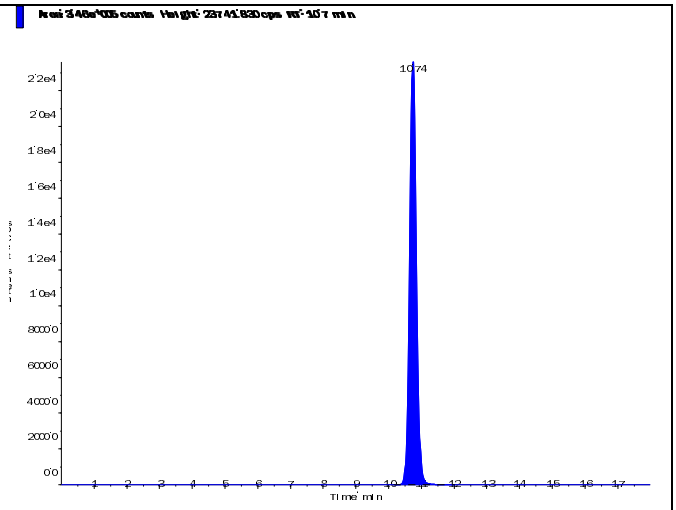

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.80 (11.10) min
Calculated conc:	0.205 ng/ml
Area Ratio:	0.033
Sample Type:	(Unknown)

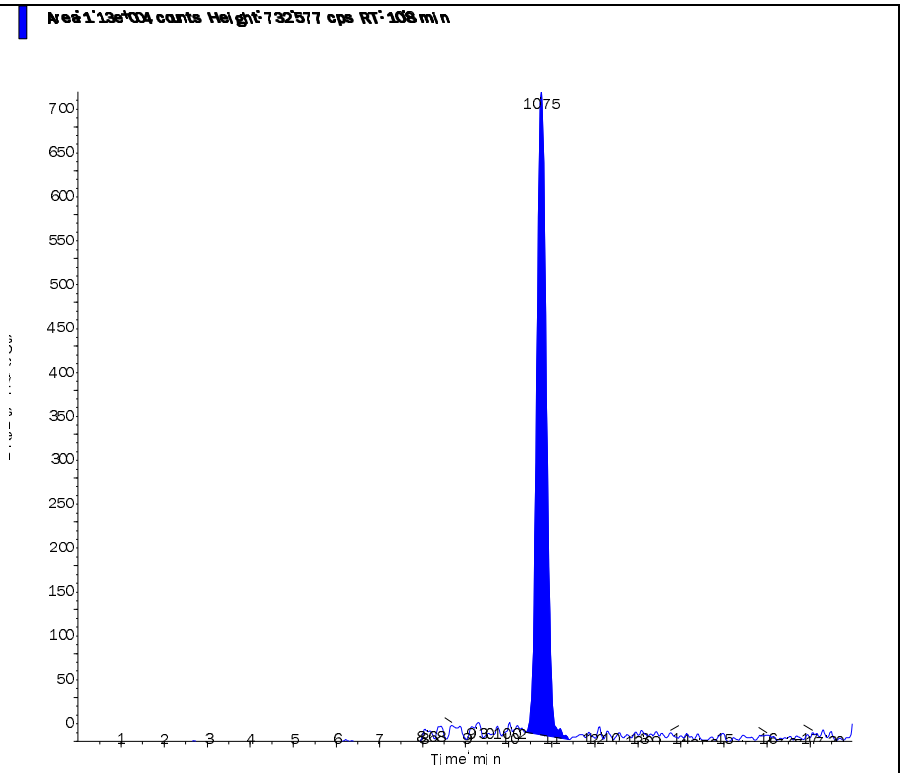

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.70 (11.10) min
Calculated conc:	0.215 ng/ml
Area Ratio:	0.013
Sample Type:	(Unknown)

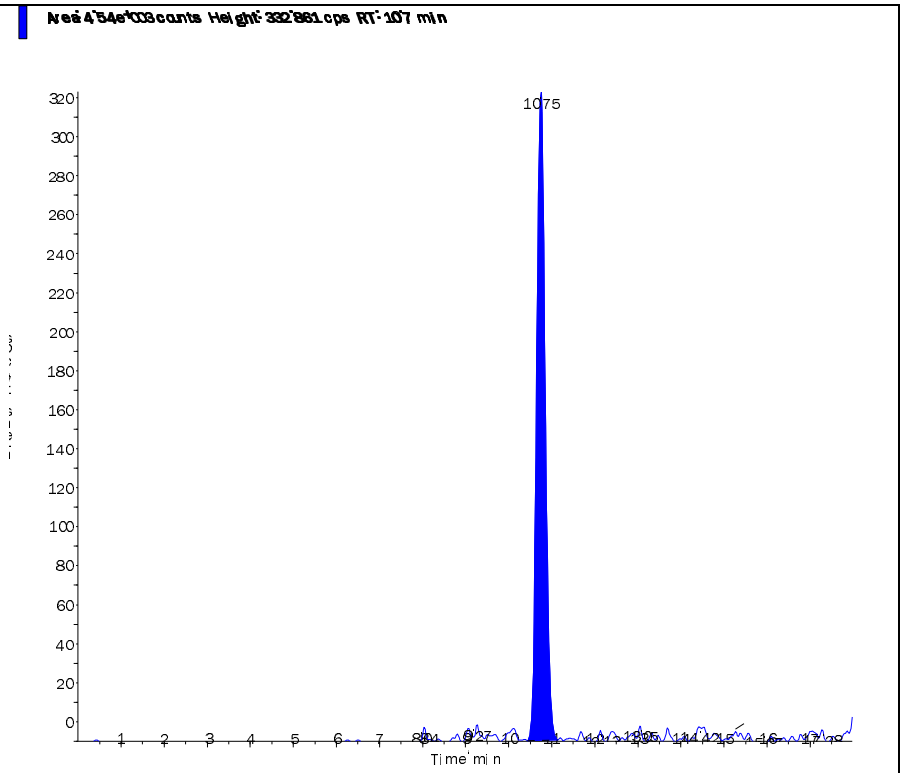

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2.2.1.5 Raw QC Data

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Created with Analyst Reporter
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Data File	LM29904.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 2:33:50 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525193-02 BLANK	**Injection Vial**	33.00
Data File	LM29904.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 2:33:50 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525193-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.520e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

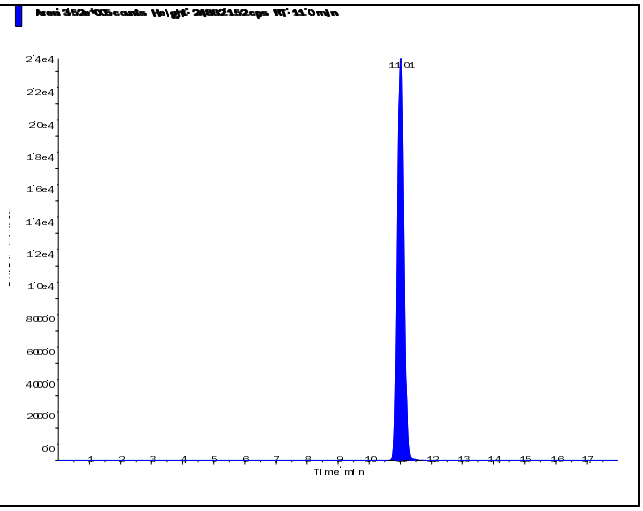

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Created with Analyst Reporter
Printed: 5/28/2015 5:09 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (11.10) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	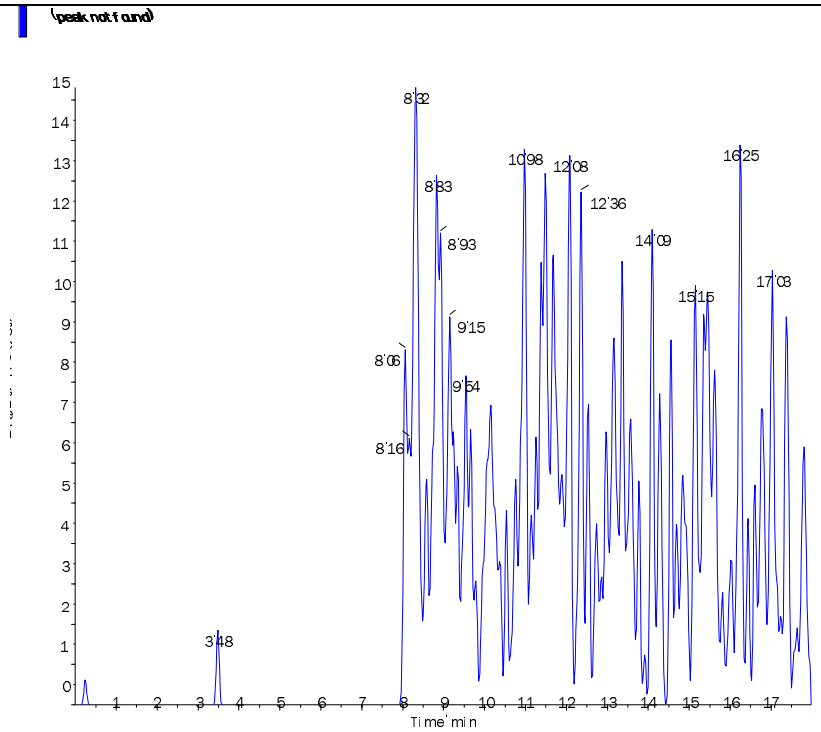
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (11.10) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	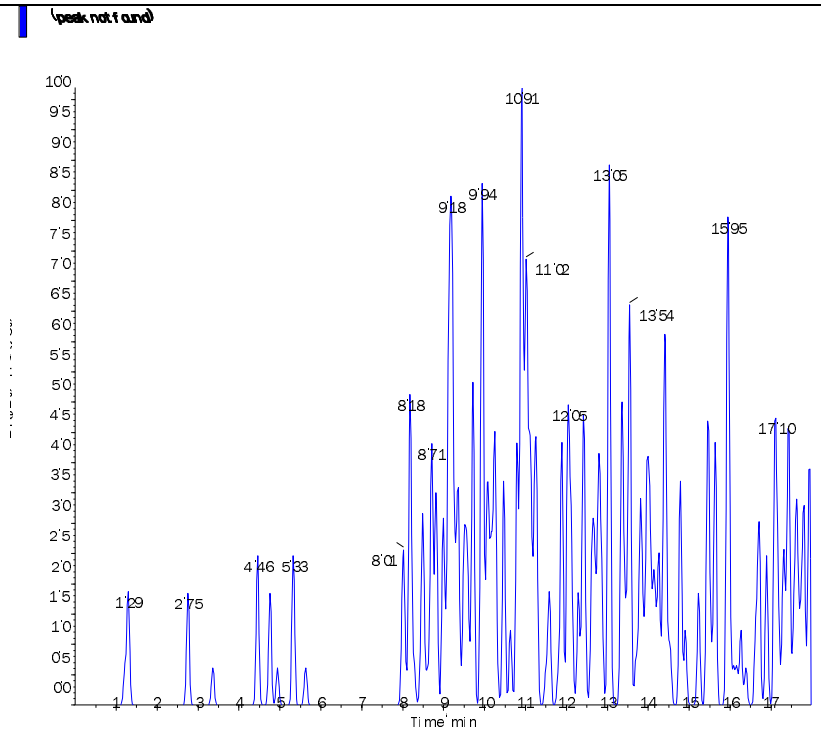

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Created with Analyst Reporter
Printed: 5/28/2015 5:09 PM

Data File	LM29905.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 2:52:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525193-03 LCS (0.2ug/L)	**Injection Vial**	34.00
Data File	LM29905.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 2:52:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525193-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD69913	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.310e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.050e+04	11.00	N/A	0.20
Perchlorate conf	4.160e+03	11.00	N/A	0.206

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

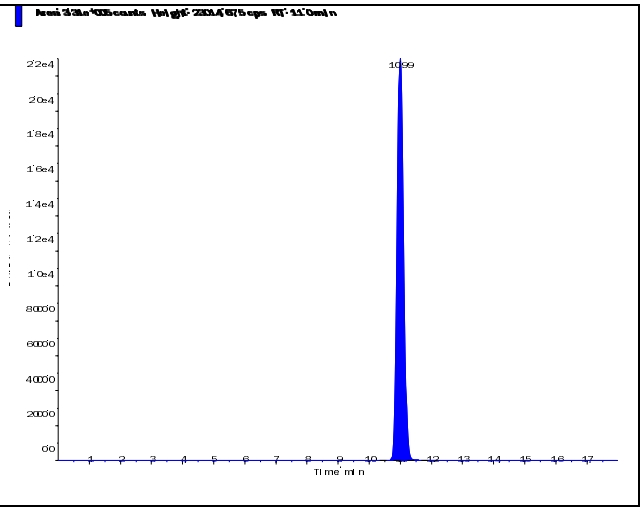

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Printed: 5/28/2015 5:09 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.00 (11.10) min Calculated conc: 0.20 ng/ml Area Ratio: 0.032 Sample Type: (Unknown)	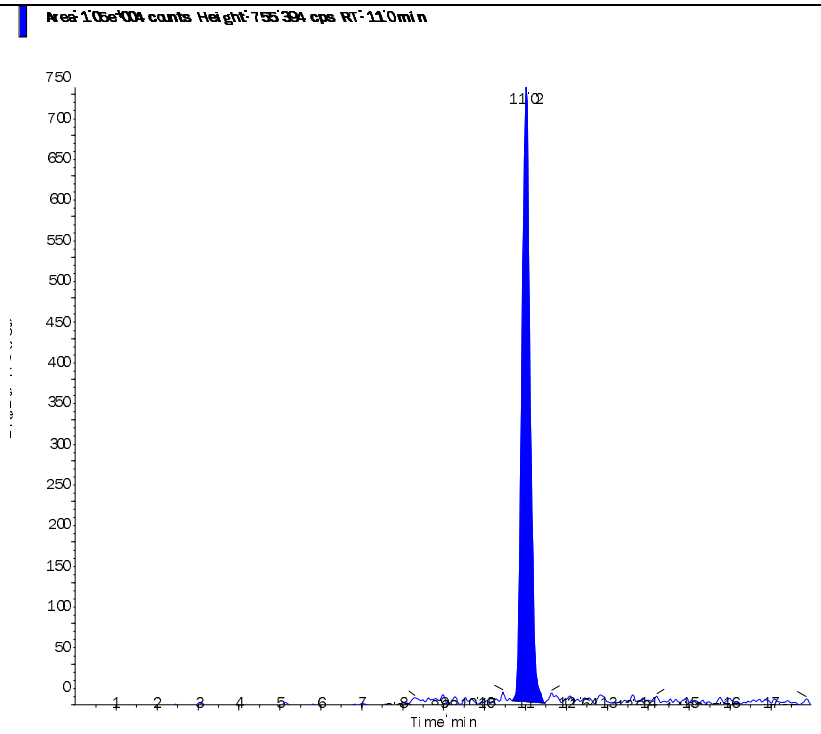
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.00 (11.10) min Calculated conc: 0.206 ng/ml Area Ratio: 0.013 Sample Type: (Unknown)	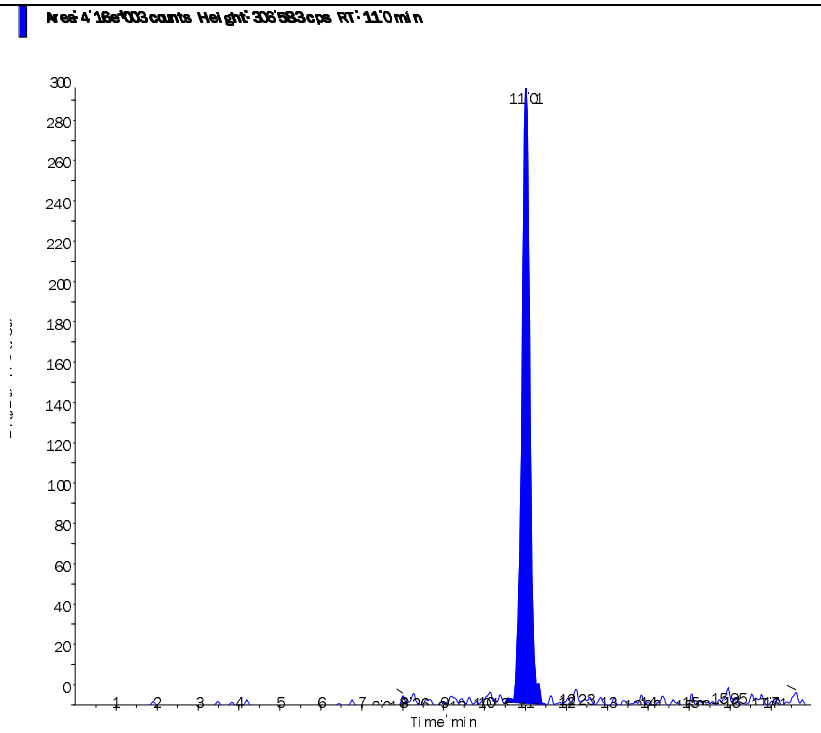

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2.3 Metals Data

2.3.1 Metals I C P Data

2.3.1.1 Summary Data

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-02	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	50WW13FF-052015	**Prep Method:**	3015	**Prep Date:**	05/22/2015 13:10
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	05/27/2015 08:53
Workgroup #:	WG525150	**Analyst:**	KHR	**Run Date:**	05/27/2015 10:05
Collect Date:	05/20/2015 08:30	**Dilution:**	1	**File ID:**	P2.052715.100525
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.242		0.200	0.100	0.0500

Certificate of Analysis

Sample #:	L15051303-04	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	50WW14FF-052015	**Prep Method:**	3015	**Prep Date:**	05/22/2015 13:10
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	05/27/2015 08:53
Workgroup #:	WG525150	**Analyst:**	KHR	**Run Date:**	05/27/2015 10:07
Collect Date:	05/20/2015 09:45	**Dilution:**	1	**File ID:**	P2.052715.100750
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	8.80		0.200	0.100	0.0500

Certificate of Analysis

Sample #:	L15051303-06	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	50WW11FF-052015	**Prep Method:**	3015	**Prep Date:**	05/22/2015 13:10
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	05/27/2015 08:53
Workgroup #:	WG525150	**Analyst:**	KHR	**Run Date:**	05/27/2015 10:10
Collect Date:	05/20/2015 11:00	**Dilution:**	1	**File ID:**	P2.052715.101014
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.100	U	0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-08	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	50WW06FF-052015	**Prep Method:**	3015	**Prep Date:**	05/22/2015 13:10
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	05/27/2015 08:53
Workgroup #:	WG525150	**Analyst:**	KHR	**Run Date:**	05/27/2015 10:13
Collect Date:	05/20/2015 13:15	**Dilution:**	1	**File ID:**	P2.052715.101335
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.100	U	0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-10	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	50WW12FF-052015	**Prep Method:**	3015	**Prep Date:**	05/22/2015 13:10
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	05/27/2015 08:53
Workgroup #:	WG525150	**Analyst:**	KHR	**Run Date:**	05/27/2015 10:17
Collect Date:	05/20/2015 14:40	**Dilution:**	1	**File ID:**	P2.052715.101700
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.105	J	0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-12	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	50WW23FF-052015	**Prep Method:**	3015	**Prep Date:**	05/22/2015 13:10
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	05/27/2015 08:53
Workgroup #:	WG525150	**Analyst:**	KHR	**Run Date:**	05/27/2015 10:30
Collect Date:	05/20/2015 15:55	**Dilution:**	1	**File ID:**	P2.052715.103056
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.0973	J	0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.3.1.2 QC Summary Data

Example 6010 Calculations
Perkin Elmer Optima 4300 DV

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG524813
Analyst: JJS
Spike Analyst: JJS
Run Date: 05/22/2015 13:10
Method: 3015
Balance: BAL019
Instrument: MW-4
Instrument Start: 05/22/2015 13:10

SOP: ME407 Revison 17
Spike Solution: STD70570
Spike Witness: ERP
HNO3 Lot #: COA18221
HCL Lot #: COA18196
ICP Filters- fisher-Lot# RGT32945
40 & 50 ML. DIGESTION TU COA18222

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG524813-02	BLANK	1	40 mL	50 mL	205.922 g	206.005 g		
2	WG524637-01	FBLK	17	5 mL	50 mL	204.561 g	204.629 g		
3	WG524813-03	LCS	1	40 mL	50 mL	210.399 g	210.487 g	5 mL	
4	L15051303-02	SAMP	1	40 mL	50 mL	203.603 g	203.687 g		06/01/15
5	L15051303-04	SAMP	1	40 mL	50 mL	202.645 g	202.734 g		06/01/15
6	L15051303-06	SAMP	1	40 mL	50 mL	203.033 g	203.101 g		06/01/15
7	L15051303-08	SAMP	1	40 mL	50 mL	205.91 g	205.985 g		06/01/15
8	L15051303-10	SAMP	1	40 mL	50 mL	205.142 g	205.214 g		06/01/15
9	L15051303-12	SAMP	1	40 mL	50 mL	204.47 g	204.536 g		06/01/15
10	L15051308-01	SAMP	17	5 mL	50 mL	205.45 g	205.525 g		05/28/15
11	L15051323-01	SAMP	17	5 mL	50 mL	205.647 g	202.559 g*		05/28/15
12	WG524813-01	REF	1	40 mL	50 mL	205.305 g	205.368 g		
13	L15051333-04	RS02	1	40 mL	50 mL	205.305 g	205.368 g		06/04/15
14	WG524813-04	MS	1	40 mL	50 mL	209.439 g	209.493 g	5 mL	
15	L15051333-05	MS02	1	40 mL	50 mL	209.439 g	209.493 g	5 mL	06/04/15
16	WG524813-05	MSD	1	40 mL	50 mL	209.436 g	209.501 g	5 mL	
17	L15051333-06	SD02	1	40 mL	50 mL	209.436 g	209.501 g	5 mL	06/04/15
18	L15051333-11	SAMP	1	40 mL	50 mL	203.855 g	203.931 g		06/04/15
19	L15051333-14	SAMP	1	40 mL	50 mL	204.393 g	204.462 g		06/04/15
20	L15051333-17	SAMP	1	40 mL	50 mL	206.412 g	206.48 g		06/04/15
21	L15051333-20	SAMP	1	40 mL	50 mL	203.407 g	203.469 g		06/04/15
22	L15051333-23	SAMP	1	40 mL	50 mL	202.58 g	202.642 g		06/04/15
23	L15051333-26	SAMP	1	40 mL	50 mL	203.637 g	203.697 g		06/04/15
24	L15051333-29	SAMP	1	40 mL	50 mL	204.44 g	204.49 g		06/04/15
25	L15051387-01	SAMP	1	40 mL	50 mL	205.62 g	205.694 g		06/01/15
26	L15051389-01	SAMP	1	40 mL	50 mL	203.344 g	203.411 g		06/01/15
27	L15051389-02	SAMP	1	40 mL	50 mL	203.052 g	203.098 g		06/01/15

L15051323-01	lost weight due to matrix

Analyst: John J. Ste. Marie

Reviewer: Vecha Collins

MW_DIG - Modified 09/30/2009
PDF ID: 4194735
Report generated: 05/22/2015 14:03

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: PE-ICP2 Dataset: 052715HR.CSV

Analyst1: KHR Analyst2: N/A

Method: 6010/200.7 SOP: ME600E Rev: 18

Maintenance Log ID:

Calibration Std: STD70488 ICV Std: STD70489 Post Spike: STD70196

ICSA: STD70342 ICSAB: STD70522 Int. Std: RGT33135

CCV: STD70732 LLCCV: STD70488 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 525150, 525152, 525234, 525249, 525235

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	P2.052715.084045	WG525267-01	Calibration Point		1		05/27/15 08:40
2	P2.052715.084407	WG525267-02	Calibration Point		1		05/27/15 08:44
3	P2.052715.084726	WG525267-03	Calibration Point		1		05/27/15 08:47
4	P2.052715.085048	WG525267-04	Calibration Point		1		05/27/15 08:50
5	P2.052715.085312	WG525267-05	Calibration Point		1		05/27/15 08:53
6	P2.052715.085537	WG525267-06	Initial Calibration Verification		1		05/27/15 08:55
7	P2.052715.085803	WG525267-07	Initial Calib Blank		1		05/27/15 08:58
8	P2.052715.090124	WG525267-08	Low Level Initial Calibration V		1		05/27/15 09:01
9	P2.052715.090348	WG525267-09	Interference Check		1		05/27/15 09:03
10	P2.052715.090611	WG525267-10	Interference Check		1		05/27/15 09:06
11	P2.052715.090834	WG525267-11	CCV		1		05/27/15 09:08
12	P2.052715.091102	WG525267-12	CCB		1		05/27/15 09:11
13	P2.052715.095617	WG524813-02	Method/Prep Blank	40/50	1		05/27/15 09:56
14	P2.052715.095939	WG524813-03	Laboratory Control S	40/50	1		05/27/15 09:59
15	P2.052715.100202	WG524637-01	Fluid Blank		1		05/27/15 10:02
16	P2.052715.100525	L15051303-02	50WW13FF-052015	40/50	1		05/27/15 10:05
17	P2.052715.100750	L15051303-04	50WW14FF-052015	40/50	1		05/27/15 10:07
18	P2.052715.101014	L15051303-06	50WW11FF-052015	40/50	1		05/27/15 10:10
19	P2.052715.101335	L15051303-08	50WW06FF-052015	40/50	1		05/27/15 10:13
20	P2.052715.101700	L15051303-10	50WW12FF-052015	40/50	1		05/27/15 10:17
21	P2.052715.101925	WG525150-01	Post Digestion Spike		1	L15051303-10	05/27/15 10:19
22	P2.052715.102148	WG525150-02	Serial Dilution		5	L15051303-10	05/27/15 10:21
23	P2.052715.102507	WG525267-13	CCV		1		05/27/15 10:25
24	P2.052715.102732	WG525267-14	CCB		1		05/27/15 10:27
25	P2.052715.103056	L15051303-12	50WW23FF-052015	40/50	1		05/27/15 10:30
26	P2.052715.103323	L15051308-01	A44986	5/50	1		05/27/15 10:33
27	P2.052715.103547	L15051323-01	GT150008	5/50	1		05/27/15 10:35
28	P2.052715.103909	WG524813-01	Reference Sample		1	L15051333-04	05/27/15 10:39
29	P2.052715.104231	WG524813-04	Matrix Spike	40/50	1	L15051333-04	05/27/15 10:42
30	P2.052715.104456	WG524813-05	Matrix Spike Duplica	40/50	1	L15051333-04	05/27/15 10:44
31	P2.052715.104719	L15051333-11	MW2E-309-14	40/50	1		05/27/15 10:47
32	P2.052715.104947	L15051333-14	MW4B-309-14	40/50	1		05/27/15 10:49
33	P2.052715.105212	L15051333-17	MW4B2-309-14	40/50	1		05/27/15 10:52
34	P2.052715.105437	L15051333-20	MW5A-309-14	40/50	1		05/27/15 10:54

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Instrument Run Log

Instrument: PE-ICP2 Dataset: 052715HR.CSV
Analyst1: KHR Analyst2: N/A
Method: 6010/200.7 SOP: ME600E Rev: 18
Maintenance Log ID:

Calibration Std: STD70488 ICV Std: STD70489 Post Spike: STD70196
ICSA: STD70342 ICSAB: STD70522 Int. Std: RGT33135
CCV: STD70732 LLCCV: STD70488 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 525150, 525152, 525234, 525249, 525235

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	P2.052715.105759	WG525267-15	CCV		1		05/27/15 10:57
36	P2.052715.110024	WG525267-16	CCB		1		05/27/15 11:00
37	P2.052715.110345	L15051333-23	OW1B-309-14	40/50	1		05/27/15 11:03
38	P2.052715.110609	L15051333-26	OW2A-309-14	40/50	1		05/27/15 11:06
39	P2.052715.110930	L15051333-29	OW3A-309-14	40/50	1		05/27/15 11:09
40	P2.052715.111251	L15051387-01	15-11-14 W1	40/50	1		05/27/15 11:12
41	P2.052715.111513	L15051389-01	1801-150 S1	40/50	1		05/27/15 11:15
42	P2.052715.111735	L15051389-02	1801-150 S2	40/50	1		05/27/15 11:17
43	P2.052715.111959	WG525267-17	CCV		1		05/27/15 11:19
44	P2.052715.112223	WG525267-18	CCB		1		05/27/15 11:22
45	P2.052715.112544	WG525267-19	Low Level Continuing Calibra		1		05/27/15 11:25
46	P2.052715.112928	WG525046-02	Method/Prep Blank	40/50	1		05/27/15 11:29
47	P2.052715.113251	WG525046-03	Laboratory Control S	40/50	1		05/27/15 11:32
48	P2.052715.113518	L15051525-01	DW-345-3	40/50	1		05/27/15 11:35
49	P2.052715.113838	L15051526-01	DW-12-1	40/50	1		05/27/15 11:38
50	P2.052715.114101	WG525046-01	Reference Sample		1	L15051526-02	05/27/15 11:41
51	P2.052715.114421	WG525046-04	Matrix Spike	40/50	1	L15051526-02	05/27/15 11:44
52	P2.052715.114644	WG525046-05	Matrix Spike Duplica	40/50	1	L15051526-02	05/27/15 11:46
53	P2.052715.114907	L15051407-01	21054000 DS-3	40/50	1		05/27/15 11:49
54	P2.052715.115129	WG525152-01	Post Digestion Spike		1	L15051407-01	05/27/15 11:51
55	P2.052715.115352	WG525152-02	Serial Dilution		5	L15051407-01	05/27/15 11:53
56	P2.052715.115714	WG525267-20	CCV		1		05/27/15 11:57
57	P2.052715.115939	WG525267-21	CCB		1		05/27/15 11:59
58	P2.052715.120303	L15051407-02	21054000 P-1	40/50	1		05/27/15 12:03
59	P2.052715.120525	L15051407-03	21054000 DS-2	40/50	1		05/27/15 12:05
60	P2.052715.120749	L15051407-04	21054000 DS-1	40/50	1		05/27/15 12:07
61	P2.052715.121109	L15051407-05	21054000 DW-1	40/50	1		05/27/15 12:11
62	P2.052715.121331	L15051409-01	21055000 DS-1	40/50	1		05/27/15 12:13
63	P2.052715.121651	L15051413-01	51177000 DS-1	40/50	1		05/27/15 12:16
64	P2.052715.122011	L15051413-02	51177000 DS-2	40/50	1		05/27/15 12:20
65	P2.052715.122331	L15051457-01	FT002MW0204-005	40/50	1		05/27/15 12:23
66	P2.052715.122554	L15051460-01	SS007MWN751-005	40/50	1		05/27/15 12:25
67	P2.052715.122917	L15051460-02	SS007MWN750-005	40/50	1		05/27/15 12:29
68	P2.052715.123240	WG525267-22	CCV		1		05/27/15 12:32

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Instrument Run Log

Instrument: PE-ICP2 Dataset: 052715HR.CSV
Analyst1: KHR Analyst2: N/A
Method: 6010/200.7 SOP: ME600E Rev: 18
Maintenance Log ID:

Calibration Std: STD70488 ICV Std: STD70489 Post Spike: STD70196
ICSA: STD70342 ICSAB: STD70522 Int. Std: RGT33135
CCV: STD70732 LLCCV: STD70488 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 525150, 525152, 525234, 525249, 525235

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	P2.052715.123505	WG525267-23	CCB		1		05/27/15 12:35
70	P2.052715.123826	L15051460-03	SS007MWOB16-005	40/50	1		05/27/15 12:38
71	P2.052715.124149	L15051460-04	SS007MWOB16-005 DUP	40/50	1		05/27/15 12:41
72	P2.052715.124512	L15051460-05	SS007MWOB18-005	40/50	1		05/27/15 12:45
73	P2.052715.124735	L15051512-01	40574-01	40/50	1		05/27/15 12:47
74	P2.052715.124957	L15051513-01	59-9-9.3 W1	40/50	1		05/27/15 12:49
75	P2.052715.125317	L15051514-01	1235-B01-WQ-W0002	40/50	1		05/27/15 12:53
76	P2.052715.125639	WG525267-24	CCV		1		05/27/15 12:56
77	P2.052715.125904	WG525267-25	CCB		1		05/27/15 12:59
78	P2.052715.131933	WG525038-03	Method/Prep Blank	40/50	1		05/27/15 13:19
79	P2.052715.132256	WG525038-04	Laboratory Control S	40/50	1		05/27/15 13:22
80	P2.052715.132522	L15051523-01	DW-345	40/50	1		05/27/15 13:25
81	P2.052715.132749	L15051523-02	DW-345-2	40/50	1		05/27/15 13:27
82	P2.052715.133108	L15051386-01	27-10-8 RW1 (T)	40/50	1		05/27/15 13:31
83	P2.052715.133431	L15051386-02	27-10-8 RW1 (T)	40/50	1		05/27/15 13:34
84	P2.052715.133654	L15051386-03	27-10-8 RW1 (U)	40/50	1		05/27/15 13:36
85	P2.052715.133916	L15051386-04	27-10-8 RW1 (U)	40/50	1		05/27/15 13:39
86	P2.052715.134138	WG525234-01	Post Digestion Spike		1	L15051386-04	05/27/15 13:41
87	P2.052715.134401	WG525234-02	Serial Dilution		5	L15051386-04	05/27/15 13:44
88	P2.052715.134721	WG525267-26	CCV		1		05/27/15 13:47
89	P2.052715.134949	WG525267-27	CCB		1		05/27/15 13:49
90	P2.052715.135310	L15051388-01	1804-226 W1	40/50	1		05/27/15 13:53
91	P2.052715.135534	L15051391-01	1804-103 W1	40/50	1		05/27/15 13:55
92	P2.052715.135757	L15051391-02	1804-111 P1	40/50	1		05/27/15 13:57
93	P2.052715.140022	L15051393-02	TW16S	40/50	1		05/27/15 14:00
94	P2.052715.140246	L15051393-03	TW16S	40/50	1		05/27/15 14:02
95	P2.052715.140610	WG525038-01	Reference Sample		1	L15051393-04	05/27/15 14:06
96	P2.052715.140833	WG525038-02	Reference Sample		1	L15051393-05	05/27/15 14:08
97	P2.052715.141057	WG525038-05	Matrix Spike	40/50	1	L15051393-04	05/27/15 14:10
98	P2.052715.141321	WG525038-07	Matrix Spike	40/50	1	L15051393-05	05/27/15 14:13
99	P2.052715.141545	WG525038-06	Matrix Spike Duplica	40/50	1	L15051393-04	05/27/15 14:15
100	P2.052715.141809	WG525267-28	CCV		1		05/27/15 14:18
101	P2.052715.142034	WG525267-29	CCB		1		05/27/15 14:20
102	P2.052715.142355	WG525038-08	Matrix Spike Duplica	40/50	1	L15051393-05	05/27/15 14:23

Page: 3 Approved: May 28, 2015

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Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: PE-ICP2 Dataset: 052715HR.CSV
Analyst1: KHR Analyst2: N/A
Method: 6010/200.7 SOP: ME600E Rev: 18
Maintenance Log ID:

Calibration Std: STD70488 ICV Std: STD70489 Post Spike: STD70196
ICSA: STD70342 ICSAB: STD70522 Int. Std: RGT33135
CCV: STD70732 LLCCV: STD70488 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 525150, 525152, 525234, 525249, 525235

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	P2.052715.142619	L15051393-10	TW11S	40/50	1		05/27/15 14:26
104	P2.052715.142843	L15051393-11	TW11S	40/50	1		05/27/15 14:28
105	P2.052715.143203	L15051393-12	EQ RINSE 2	40/50	1		05/27/15 14:32
106	P2.052715.143525	L15051402-01	51152001 W-1	40/50	1		05/27/15 14:35
107	P2.052715.143750	L15051403-01	21061000 P-1	40/50	1		05/27/15 14:37
108	P2.052715.144014	WG525267-30	CCV		1		05/27/15 14:40
109	P2.052715.144239	WG525267-31	CCB		1		05/27/15 14:42
110	P2.052715.145324	WG525230-02	Method/Prep Blank	40/50	1		05/27/15 14:53
111	P2.052715.145646	WG525230-03	Laboratory Control S	40/50	1		05/27/15 14:56
112	P2.052715.145910	WG525064-01	Fluid Blank 1		1		05/27/15 14:59
113	P2.052715.150233	WG525064-02	Fluid Blank 2		1		05/27/15 15:02
114	P2.052715.150555	L15051349-01	15E1150-01	5/50	1		05/27/15 15:05
115	P2.052715.150918	L15051353-01	15E1152-01	5/50	1		05/27/15 15:09
116	P2.052715.151143	L15051428-01	60500-SSP0001-SSP0001	5/50	1		05/27/15 15:11
117	P2.052715.151503	L15051428-03	60500-SSP0002-SSP0002	5/50	1		05/27/15 15:15
118	P2.052715.151823	WG525249-01	Post Digestion Spike		1	L15051428-03	05/27/15 15:18
119	P2.052715.152047	WG525249-02	Serial Dilution		5	L15051428-03	05/27/15 15:20
120	P2.052715.152407	WG525267-32	CCV		1		05/27/15 15:24
121	P2.052715.152632	WG525267-33	CCB		1		05/27/15 15:26
122	P2.052715.152953	L15051546-01	SS007MWOB21-005	40/50	1		05/27/15 15:29
123	P2.052715.153217	L15051546-02	SS007MWOB04-005	40/50	1		05/27/15 15:32
124	P2.052715.153537	WG525230-01	Reference Sample		1	L15051546-03	05/27/15 15:35
125	P2.052715.153901	WG525230-04	Matrix Spike	40/50	1	L15051546-03	05/27/15 15:39
126	P2.052715.154126	WG525230-05	Matrix Spike Duplica	40/50	1	L15051546-03	05/27/15 15:41
127	P2.052715.154351	L15051546-06	SS007MWOB13-005	40/50	1		05/27/15 15:43
128	P2.052715.154616	L15051546-07	SS007MWN752-005	40/50	1		05/27/15 15:46
129	P2.052715.154941	L15051546-08	SS007MWOB19-005	40/50	1		05/27/15 15:49
130	P2.052715.155204	L15051546-09	SS007MWN748-005	40/50	1		05/27/15 15:52
131	P2.052715.155529	WG525267-34	CCV		1		05/27/15 15:55
132	P2.052715.155754	WG525267-35	CCB		1		05/27/15 15:57
133	P2.052715.160115	L15051546-10	SS007MWN752-005 DUP	40/50	1		05/27/15 16:01
134	P2.052715.160439	L15051546-11	FQC-RB052115CC-01	40/50	1		05/27/15 16:04
135	P2.052715.160801	L15051557-01	15E1230-01	5/50	1		05/27/15 16:08
136	P2.052715.161155	WG525267-36	CCV		1		05/27/15 16:11

Page: 4 Approved: May 28, 2015

Maren Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: PE-ICP2 Dataset: 052715HR.CSV

Analyst1: KHR Analyst2: N/A

Method: 6010/200.7 SOP: ME600E Rev: 18

Maintenance Log ID:

Calibration Std: STD70488 ICV Std: STD70489 Post Spike: STD70196

ICSA: STD70342 ICSAB: STD70522 Int. Std: RGT33135

CCV: STD70732 LLCCV: STD70488 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 525150, 525152, 525234, 525249, 525235

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	P2.052715.161420	WG525267-37	CCB		1		05/27/15 16:14
138	P2.052715.161741	WG525082-02	Method/Prep Blank	40/50	1		05/27/15 16:17
139	P2.052715.162103	WG525082-03	Laboratory Control S	40/50	1		05/27/15 16:21
140	P2.052715.162326	L15051405-01	21052000 DS-1	40/50	1		05/27/15 16:23
141	P2.052715.162548	L15051405-02	21052000 DW-1	40/50	1		05/27/15 16:25
142	P2.052715.162810	L15051435-02	50WW08FF-052115	40/50	1		05/27/15 16:28
143	P2.052715.163134	L15051435-04	50WW22FF-052115	40/50	1		05/27/15 16:31
144	P2.052715.163458	L15051463-01	ST008MW0812-005	40/50	1		05/27/15 16:34
145	P2.052715.163819	L15051463-02	ST008MW0809-005	40/50	1		05/27/15 16:38
146	P2.052715.164042	WG525235-01	Post Digestion Spike		1	L15051463-02	05/27/15 16:40
147	P2.052715.164306	WG525235-02	Serial Dilution		5	L15051463-02	05/27/15 16:43
148	P2.052715.164529	WG525267-38	CCV		1		05/27/15 16:45
149	P2.052715.164759	WG525267-39	CCB		1		05/27/15 16:47
150	P2.052715.165120	L15051463-03	ST008MW0816-005	40/50	1		05/27/15 16:51
151	P2.052715.165343	WG525082-01	Reference Sample		1	L15051463-04	05/27/15 16:53
152	P2.052715.165619	WG525082-04	Matrix Spike	40/50	1	L15051463-04	05/27/15 16:56
153	P2.052715.165849	WG525082-05	Matrix Spike Duplica	40/50	1	L15051463-04	05/27/15 16:58
154	P2.052715.170121	L15051463-07	FQC-RB05201501-CB	40/50	1		05/27/15 17:01
155	P2.052715.170444	L15051477-01	FT02PTS-EFFLUENT-20MA	40/50	1		05/27/15 17:04
156	P2.052715.170803	L15051477-02	FT02PTS-INTERMEDIATE-2	40/50	1		05/27/15 17:08
157	P2.052715.171122	L15051477-03	FT02PTS-INFLUENT-20MAY	40/50	1		05/27/15 17:11
158	P2.052715.171344	L15051502-01	COZART SEEP 1	40/50	1		05/27/15 17:13
159	P2.052715.171605	L15051502-02	COZART BASIN	40/50	1		05/27/15 17:16
160	P2.052715.171828	WG525267-40	CCV		1		05/27/15 17:18
161	P2.052715.172053	WG525267-41	CCB		1		05/27/15 17:20
162	P2.052715.172417	L15051508-01	6-10-19 W1	40/50	1		05/27/15 17:24
163	P2.052715.172737	L15051508-02	6-10-19.01 W1	40/50	1		05/27/15 17:27
164	P2.052715.173057	L15051508-03	6-10-19.01 S1	40/50	1		05/27/15 17:30
165	P2.052715.173320	L15051508-04	27-3-4.01 S1	40/50	1		05/27/15 17:33
166	P2.052715.173640	L15051508-05	59-10-1.12 W1	40/50	1		05/27/15 17:36
167	P2.052715.173903	L15051508-06	59-10-1.12 W1	40/50	1		05/27/15 17:39
168	P2.052715.174223	WG525267-42	CCV		1		05/27/15 17:42
169	P2.052715.174448	WG525267-43	CCB		1		05/27/15 17:44
170	P2.052715.174811	WG525267-44	Low Level Continuing Calibra		1		05/27/15 17:48

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Maren Berry

Microbac Laboratories Inc.

Instrument Run Log

Instrument: PE-ICP2 Dataset: 052715HR.CSV

Analyst1: KHR Analyst2: N/A

Method: 6010/200.7 SOP: ME600E Rev: 18

Maintenance Log ID:

Calibration Std: STD70488 ICV Std: STD70489 Post Spike: STD70196

ICSA: STD70342 ICSAB: STD70522 Int. Std: RGT33135

CCV: STD70732 LLCCV: STD70488 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 525150, 525152, 525234, 525249, 525235

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
171	P2.052715.175036	WG525206-02	Method/Prep Blank		1		05/27/15 17:50
172	P2.052715.175358	WG525206-03	Laboratory Control S		1		05/27/15 17:53
173	P2.052715.175622	L15051504-01	SL21		1		05/27/15 17:56
174	P2.052715.175847	L15051504-02	SL21		1		05/27/15 17:58
175	P2.052715.180209	L15051504-03	TW14D		1		05/27/15 18:02
176	P2.052715.180434	L15051504-04	TW14D		1		05/27/15 18:04
177	P2.052715.180756	L15051529-01	ST008MW0805-005		1		05/27/15 18:07
178	P2.052715.181118	L15051530-01	LF003MW0309-005		1		05/27/15 18:11
179	P2.052715.181342	WG525252-01	Post Digestion Spike		1	L15051530-01	05/27/15 18:13
180	P2.052715.181608	WG525252-02	Serial Dilution		5	L15051530-01	05/27/15 18:16
181	P2.052715.181832	WG525267-45	CCV		1		05/27/15 18:18
182	P2.052715.182057	WG525267-46	CCB		1		05/27/15 18:20
183	P2.052715.182321	L15051532-01	DP005MW0509-005		1		05/27/15 18:23
184	P2.052715.182547	L15051533-01	ST008MW0818-005		1		05/27/15 18:25
185	P2.052715.182812	L15051535-01	FT002MW0205-005		1		05/27/15 18:28
186	P2.052715.183038	L15051538-01	DP005MW0507-005		1		05/27/15 18:30
187	P2.052715.183301	L15051543-01	SS007MW0704-005		1		05/27/15 18:33
188	P2.052715.183525	L15051543-02	SS007MW0704-005 DUP		1		05/27/15 18:35
189	P2.052715.183749	L15051544-01	SS007MWOB05-005		1		05/27/15 18:37
190	P2.052715.184014	L15051544-02	SS007MWOB05-005 DUP		1		05/27/15 18:40
191	P2.052715.184239	WG525267-47	CCV		1		05/27/15 18:42
192	P2.052715.184507	WG525267-48	CCB		1		05/27/15 18:45
193	P2.052715.184830	L15051570-02	PZ-89-1		1		05/27/15 18:48
194	P2.052715.185054	L15051570-03	PZ-89-1		1		05/27/15 18:50
195	P2.052715.185321	L15051570-04	TW62S		1		05/27/15 18:53
196	P2.052715.185546	L15051570-05	TW62S		1		05/27/15 18:55
197	P2.052715.185811	L15051544-03	SS007MWOB02-005		1	WG525206-01	05/27/15 18:58
198	P2.052715.190039	L15051544-04	SS007MWOB02-005 MS		1	WG525206-04	05/27/15 19:00
199	P2.052715.190304	L15051544-05	SS007MWOB02-005 MSD		1	WG525206-05	05/27/15 19:03
200	P2.052715.190529	WG525267-49	CCV		1		05/27/15 19:05
201	P2.052715.190754	WG525267-50	CCB		1		05/27/15 19:07

Page: 6 Approved: May 28, 2015

Maren Berry

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 27-MAY-2015
Analyst: KHR
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: PE-ICP2
Curve Workgroup: 525267
Runlog ID: 68224
Analytical Workgroups: 525150, 525152, 525234, 525249, 525235

Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	1502
Level 3	
Level 4	1303, 1457, 1460, 1514, 1393, 1428
Add'l Level 4	1546, 1435, 1463, 1477
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	KHR
Secondary Reviewer	MMB
Comments	

Primary Reviewer: 28-MAY-2015 Kim H. Rhoden

Secondary Reviewer: 28-MAY-2015 Maren Berry

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-28-2015 14:05:49

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010C

AAB#: WG525150

Login Number: L15051303

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW13FF-052015	02	05/20/15					05/22/2015	2.2	180		05/27/15	7.1	180	
50WW14FF-052015	04	05/20/15					05/22/2015	2.1	180		05/27/15	7	180	
50WW11FF-052015	06	05/20/15					05/22/2015	2.1	180		05/27/15	7	180	
50WW06FF-052015	08	05/20/15					05/22/2015	2	180		05/27/15	6.9	180	
50WW12FF-052015	10	05/20/15					05/22/2015	1.9	180		05/27/15	6.8	180	
50WW23FF-052015	12	05/20/15					05/22/2015	1.9	180		05/27/15	6.8	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4201095
Report generated 05/27/2015 15:08

METHOD BLANK SUMMARY

Login Number: L15051303
Blank File ID: P2.052715.095617
Prep Date: 05/22/15 13:10
Analyzed Date: 05/27/15 09:56
Analyst: KHR

Work Group: WG525150
Blank Sample ID: WG524813-02
Instrument ID: PE-ICP2
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG524813-03	P2.052715.095939	05/27/15 09:59	01
50WW13FF-052015	L15051303-02	P2.052715.100525	05/27/15 10:05	01
50WW14FF-052015	L15051303-04	P2.052715.100750	05/27/15 10:07	01
50WW11FF-052015	L15051303-06	P2.052715.101014	05/27/15 10:10	01
50WW06FF-052015	L15051303-08	P2.052715.101335	05/27/15 10:13	01
50WW12FF-052015	L15051303-10	P2.052715.101700	05/27/15 10:17	01
50WW23FF-052015	L15051303-12	P2.052715.103056	05/27/15 10:30	01

Report Name: BLANK_SUMMARY
PDF File ID: 4201096
Report generated 05/27/2015 15:09

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051303 Prep Date: 05/22/15 13:10 Sample ID: WG524813-02
Instrument ID: PE-ICP2 Run Date: 05/27/15 09:56 Prep Method: 3015
File ID: P2.052715.095617 Analyst: KHR Method: 6010C
Workgroup (AAB#): WG525150 Matrix: Water Units: mg/L
Contract #: Cal ID: PE-ICP - 27-MAY-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Iron, Dissolved	0.0500	0.200	0.0500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4201097
27-MAY-2015 15:09

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051303 Run Date: 05/27/2015 Sample ID: WG524813-03
Instrument ID: PE-ICP2 Run Time: 09:59 Prep Method: 3015
File ID: P2.052715.095939 Analyst: KHR Method: 6010C
Workgroup (AAB#): WG525150 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD70570 Cal ID: PE-ICP-27-MAY-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Iron, Dissolved	2.50	2.55	102	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4201098
Report generated: 05/27/2015 15:09

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L15051303 Cal ID: PE-ICP2- Worknum: WG525150
Instrument ID: PE-ICP2 Contract #: Method: 6010C
Parent ID: WG524813-01 File ID: P2.052715.103909 Dil: 1 Matrix: WATER
Sample ID: WG524813-04 MS File ID: P2.052715.104231 Dil: 1 Units: mg/L
Sample ID: WG524813-05 MSD File ID: P2.052715.104456 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Iron	ND	2.50	3.25	130	2.50	2.81	112	14.7	80 - 120	20	*

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4201099
Report generated 05/27/2015 15:09

Microbac Laboratories Inc.
Serial Dilution Report

Login: L15051303 **Worknum:** WG525150
Instrument: PE-ICP2 **Method:** 6010C
Serial Dil: WG525150-02 **File ID:** P2.052715.102148 **Dil:** 5 **Units:** mg/L
Sample: L15051303-10 **File ID:** P2.052715.101700 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Iron	0.0841	F	ND	U		

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 50 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 50 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4201093
05/27/2015 15:09

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L15051303 **Worknum:** WG525150
Instrument ID: PE-ICP2 **Method:** 6010C
Post Spike ID: WG525150-01 **File ID:** P2.052715.101925 **Dil:** 1 **Units:** mg/L
Sample ID: L15051303-10 **File ID:** P2.052715.101700 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
IRON	2.04		0.0841	F	2	98.4	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4201094
Report generated: 05/27/2015 15:09

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L15051303	Workgroup (AAB#):	WG525150
Analytical Method:	6010C	Instrument ID:	PE-ICP2
ICAL Worknum:	WG525267	Initial Calibration Date:	27-MAY-2015 08:53

	WG525267-01		WG525267-02		WG525267-03		WG525267-04		WG525267-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
IRON	0	15.8	.04	195	.08	373	4	23100	8	46600	.99999	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4201102
Report generated: 27-MAY-2015 15:09

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L15051303
Instrument ID: PE-ICP2
File ID: P2.052715.085803
Workgroup (AAB#): WG525150
Matrix: WATER

Run Date: 05/27/2015
Run Time: 08:58
Analyst: KHR
Cal ID: PE-ICP2 - 27-MAY-15

Sample ID: WG525267-07
Method: 6010C
Units: mg/L

Analytes	MDL	RDL	Concentration	Qualifier
IRON	.04	.16	.04	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4201104
Report generated 05/27/2015 15:09

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051303
Run Date: 05/27/2015
Sample ID: WG525267-12
Instrument ID: PE-ICP2
Run Time: 09:11
Method: 6010C
File ID: P2.052715.091102
Analyst: KHR
Units: mg/L
Workgroup (AAB#): WG525150
Cal ID: PE-ICP - 27-MAY-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4201107
Report generated 05/27/2015 15:10

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051303
Run Date: 05/27/2015
Sample ID: WG525267-14
Instrument ID: PE-ICP2
Run Time: 10:27
Method: 6010C
File ID: P2.052715.102732
Analyst: KHR
Units: mg/L
Workgroup (AAB#): WG525150
Cal ID: PE-ICP - 27-MAY-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4201107
Report generated 05/27/2015 15:10

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051303
Run Date: 05/27/2015
Sample ID: WG525267-16
Instrument ID: PE-ICP2
Run Time: 11:00
Method: 6010C
File ID: P2.052715.110024
Analyst: KHR
Units: mg/L
Workgroup (AAB#): WG525150
Cal ID: PE-ICP - 27-MAY-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4201107
Report generated 05/27/2015 15:10

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L15051303
Run Date: 05/27/2015
Sample ID: WG525267-06
Instrument ID: PE-ICP2
Run Time: 08:55
Method: 6010C
File ID: P2.052715.085537
Analyst: KHR
Units: mg/L
Workgroup (AAB#): WG525150
Cal ID: PE-ICP - 27-MAY-15
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Iron		4	4.10	103	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4201103
Report generated 05/27/2015 15:09

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051303
Run Date: 05/27/2015
Sample ID: WG525267-11
Instrument ID: PE-ICP2
Run Time: 09:08
Method: 6010C
File ID: P2.052715.090834
Analyst: KHR
QC Key: DOD4
Workgroup (AAB#): WG525150
Cal ID: PE-ICP - 27-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.08	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4201106
Report generated 05/27/2015 15:10

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051303
Run Date: 05/27/2015
Sample ID: WG525267-13
Instrument ID: PE-ICP2
Run Time: 10:25
Method: 6010C
File ID: P2.052715.102507
Analyst: KHR
QC Key: DOD4
Workgroup (AAB#): WG525150
Cal ID: PE-ICP - 27-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	3.97	mg/L	99.2	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4201106
Report generated 05/27/2015 15:10

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051303
Run Date: 05/27/2015
Sample ID: WG525267-15
Instrument ID: PE-ICP2
Run Time: 10:57
Method: 6010C
File ID: P2.052715.105759
Analyst: KHR
QC Key: DOD4
Workgroup (AAB#): WG525150
Cal ID: PE-ICP - 27-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.02	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4201106
Report generated 05/27/2015 15:10

Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15051303
Run Date: 05/27/2015
Sample ID: WG525267-08
Instrument ID: PE-ICP2
Run Time: 09:01
Method: 6010C
File ID: P2.052715.090124
Analyst: KHR
QC Key: DOD4
Workgroup (AAB#): WG525150
Cal ID: PE-ICP - 27-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		0.160	0.165	mg/L	103	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4201108
Report generated 05/27/2015 15:10

Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15051303
Run Date: 05/27/2015
Sample ID: WG525267-19
Instrument ID: PE-ICP2
Run Time: 11:25
Method: 6010C
File ID: P2.052715.112544
Analyst: KHR
QC Key: DOD4
Workgroup (AAB#): WG525150
Cal ID: PE-ICP - 27-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		0.160	0.165	mg/L	103	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4201108
Report generated 05/27/2015 15:10

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L15051303
Instrument ID: PE-ICP2
Sol. A : WG525267-09 **File ID:** P2.052715.090348
Sol. AB : WG525267-10 **File ID:** P2.052715.090611

Workgroup (AAB#): WG525150
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Iron	100	101	101	100	98.4	98.4	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4201105
Report generated 05/27/2015 15:09

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15051303 **Date:** 01/02/2015
Insturment ID: PE-ICP2 **Method:** 6010C

Analyte	Wave Length	AG	AL	AS	B	BA
ALUMINUM	396.15	0	0	0.206	0	0
ANTIMONY	206.84	0	0	-0.740	0	0
ARSENIC	188.98	0	0.0709	0	0	0
BARIUM	233.53	0	0	0	0	0
BERYLLIUM	234.86	0	0	0	0	0
BORON	249.68	0	0	0	0	0
CADMIUM	228.80	0	0	5.00	0	0
CALCIUM	227.55	0	0	0	0	0
CHROMIUM	267.72	0	0	0	0	0
COBALT	228.62	0	0	0	0	0.337
COPPER	327.39	0	0	0	0	0
IRON	239.56	0	0	0	0	0
LEAD	220.35	0	-0.160	0	0	0
LITHIUM	670.78	0	0	0	0	0
MAGNESIUM	279.08	0	0	0	0	0
MANGANESE	257.61	0	0	0	0	0
MOLYBDENUM	202.03	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
POTASSIUM	766.49	0	0	0	0	0
SELENIUM	196.03	0	-0.0380	0	0	0
SILICON	251.61	0	0	0	0	0
SILVER	328.07	0	0	0	0	0
SODIUM	589.59	0	0	0	0	0
STRONTIUM	407.77	0	0	0	0	0
THALLIUM	190.80	0	0.000100	0	0	0
TIN	189.93	0	0	0	0	0
TITANIUM	334.94	0	0	0	0	0
VANADIUM	290.88	0	0	0.200	0	0.0400
ZINC	206.20	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4201101
Report generated: 05/27/2015 15:08

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15051303 **Date:** 01/02/2015
Insturment ID: PE-ICP2 **Method:** 6010C

Analyte	Wave Length	BE	CA	CD	CO	CR
ALUMINUM	396.15	0	0	0	0	0
ANTIMONY	206.84	0	0	0	0.730	8.46
ARSENIC	188.98	0	-0.0220	0	0	-0.490
BARIUM	233.53	0	0	0	-0.192	0
BERYLLIUM	234.86	0	0	0	0	-0.0220
BORON	249.68	0	0	24.1	5.90	1.50
CADMIUM	228.80	0	0	0	-3.64	0
CALCIUM	227.55	0	0	0	0	0
CHROMIUM	267.72	0	0	0	0	0
COBALT	228.62	0	0	0	0	-0.200
COPPER	327.39	0	0	0	0.280	-0.0400
IRON	239.56	0	0	0	2.77	0
LEAD	220.35	0	0	0	0.462	0.0550
LITHIUM	670.78	0	0	0	0	0
MAGNESIUM	279.08	0	0	0	0	0
MANGANESE	257.61	0	0	0	0	0
MOLYBDENUM	202.03	0	0	0	0	0
NICKEL	231.60	0	0	0	1.05	0
POTASSIUM	766.49	0	0	0	0	0
SELENIUM	196.03	0	0	0	-0.250	0
SILICON	251.61	0	0	0	0	0
SILVER	328.07	0	0	0	0	0
SODIUM	589.59	0	0	0	0	0
STRONTIUM	407.77	0	0.0319	0	0	0
THALLIUM	190.80	0	0	0	1.00	0
TIN	189.93	0	0	0	0	0
TITANIUM	334.94	0	-0.150	0	0	0.297
VANADIUM	290.88	0	0	0	0	0
ZINC	206.20	0	0	0	0	-8.16

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4201101
Report generated: 05/27/2015 15:08

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15051303 **Date:** 01/02/2015
Insturment ID: PE-ICP2 **Method:** 6010C

Analyte	Wave Length	CU	FE	K	LI	MG
ALUMINUM	396.15	0	-0.119	0	0	0
ANTIMONY	206.84	0	-0.0366	0	0	0
ARSENIC	188.98	0	-0.250	0	0	0
BARIUM	233.53	0	0.0703	0	0	0
BERYLLIUM	234.86	0	0.224	0	0	0
BORON	249.68	0	-3.19	0	0	0
CADMIUM	228.80	0	0.00436	0	0	0
CALCIUM	227.55	0	0	0	0	0
CHROMIUM	267.72	0	0.0292	0	0	0
COBALT	228.62	0	0.0262	0	0	0
COPPER	327.39	0	-0.0434	0	0.154	0
IRON	239.56	0	0	0	0	0.0200
LEAD	220.35	0	0.0327	0	0	0
LITHIUM	670.78	0	0	0	0	0
MAGNESIUM	279.08	0	0.540	0	0	0
MANGANESE	257.61	0	-0.0240	0	0	0
MOLYBDENUM	202.03	0	-0.0159	0	0	0
NICKEL	231.60	0	0	0	0	0
POTASSIUM	766.49	0	0	0	0	0
SELENIUM	196.03	0	-0.253	0	0	0
SILICON	251.61	0	0	0	0	0
SILVER	328.07	0.0710	-0.421	0	0	0
SODIUM	589.59	0	0	0	0	0
STRONTIUM	407.77	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.93	0	0	0	0	0
TITANIUM	334.94	0	0	0	0	0
VANADIUM	290.88	0	-0.0729	0	0	0.0260
ZINC	206.20	-0.200	0.00660	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4201101
Report generated: 05/27/2015 15:08

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15051303 **Date:** 01/02/2015
Insturment ID: PE-ICP2 **Method:** 6010C

Analyte	Wave Length	MN	MO	NA	NI	PB
ALUMINUM	396.15	0	69.0	0	0	0
ANTIMONY	206.84	0	-1.46	0	-0.745	0
ARSENIC	188.98	0	5.34	0	0	0
BARIUM	233.53	0	-0.750	0	0	0
BERYLLIUM	234.86	-0.100	-0.376	0	-0.00970	0
BORON	249.68	0	-1.00	0	0	0
CADMIUM	228.80	0	0.0420	0	-0.0400	0
CALCIUM	227.55	0	-10.0	0	-150	0
CHROMIUM	267.72	0	0.170	0	0	0
COBALT	228.62	0	-1.80	0	0.129	0
COPPER	327.39	0	-0.0774	0	0.150	0
IRON	239.56	0	0	0	0	0
LEAD	220.35	0.600	-0.500	0	-0.190	0
LITHIUM	670.78	0	0	0	0	0
MAGNESIUM	279.08	0	0	0	0	0
MANGANESE	257.61	0	-0.0200	0	0	0
MOLYBDENUM	202.03	-0.209	0	0	0	0
NICKEL	231.60	0	0	0	0	0
POTASSIUM	766.49	0	0	1.00	0	0
SELENIUM	196.03	0.300	0	0	-0.376	0
SILICON	251.61	0	11.1	0	0	0
SILVER	328.07	0.130	0	0	0	0
SODIUM	589.59	0	0	0	0	0
STRONTIUM	407.77	0	0	0	0	0
THALLIUM	190.80	1.00	0.00100	0	0	0
TIN	189.93	0	0	0	0	0
TITANIUM	334.94	0	0	0	0	0
VANADIUM	290.88	0	0.178	0	0	0
ZINC	206.20	0	0	0	-0.200	-0.100

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4201101
Report generated: 05/27/2015 15:08

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15051303 **Date:** 01/02/2015
Insturment ID: PE-ICP2 **Method:** 6010C

Analyte	Wave Length	SB	SE	SI	SN	SR
ALUMINUM	396.15	0	0	0	0	0
ANTIMONY	206.84	0	0	0	0	0
ARSENIC	188.98	0	0	0	0	0
BARIUM	233.53	0	0	0	0	0
BERYLLIUM	234.86	0	0	0	0	0
BORON	249.68	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	227.55	0	0	0	0	0
CHROMIUM	267.72	0	0	0	0	0
COBALT	228.62	0	0	0	0	0
COPPER	327.39	0	0.0700	0	0	0
IRON	239.56	0	0	0	0	0
LEAD	220.35	-0.0100	0	0	0	0
LITHIUM	670.78	0	0	0	0	0
MAGNESIUM	279.08	0	0	0	0	0
MANGANESE	257.61	0	0	0	0	0
MOLYBDENUM	202.03	0	0	0	0	0
NICKEL	231.60	-0.0500	0	0	0	0
POTASSIUM	766.49	0	0	0	0	0
SELENIUM	196.03	0	0	0	0	0
SILICON	251.61	0	0	0	0	0
SILVER	328.07	0	0	0	0	0.200
SODIUM	589.59	0	0	0	0	0
STRONTIUM	407.77	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.93	0	0	0	0	0
TITANIUM	334.94	0	0	0	0	0
VANADIUM	290.88	0	0	0	0	0
ZINC	206.20	-0.300	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4201101
Report generated: 05/27/2015 15:08

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15051303 **Date:** 01/02/2015
Insturment ID: PE-ICP2 **Method:** 6010C

Analyte	Wave Length	TI	TL	V	ZN
ALUMINUM	396.15	0	0	0	0
ANTIMONY	206.84	0	0	-0.920	0
ARSENIC	188.98	0	0	0.0990	0
BARIUM	233.53	0	0	0.360	0
BERYLLIUM	234.86	0	0	0	0
BORON	249.68	0	0	0	0
CADMIUM	228.80	0	0	0.0800	0
CALCIUM	227.55	0	0	0	0
CHROMIUM	267.72	0	0	-0.567	-0.0400
COBALT	228.62	2.21	0	0	0
COPPER	327.39	-1.05	0	-0.440	-0.0600
IRON	239.56	0	0	0	0
LEAD	220.35	0	0	-0.224	0
LITHIUM	670.78	0	0	0	0
MAGNESIUM	279.08	0	0	0	0
MANGANESE	257.61	0	0	0.00100	0
MOLYBDENUM	202.03	0	0	-0.480	0
NICKEL	231.60	0	0.400	0	0
POTASSIUM	766.49	0	0	0	0
SELENIUM	196.03	-0.220	0	-0.100	0
SILICON	251.61	0	0	0	0
SILVER	328.07	0	0	-2.05	0
SODIUM	589.59	0	0	0	0
STRONTIUM	407.77	0	0	0	0
THALLIUM	190.80	-8.00	0	-2.76	0
TIN	189.93	0	0	0	0
TITANIUM	334.94	0	0	0	0
VANADIUM	290.88	0	0	0	0
ZINC	206.20	0	0	-0.100	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4201101
Report generated: 05/27/2015 15:08

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L15051303 **Date:** 05/01/2015
Insturment ID: PE-ICP2 **Method:** 6010C

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	630.0
Antimony	10.00	45.0
Arsenic	10.00	36.0
Barium	10.00	72.0
Beryllium	10.00	4.5
Boron	10.00	45.0
Cadmium	10.00	4.5
Calcium	10.00	900.0
Chromium	10.00	45.0
Cobalt	10.00	45.0
Copper	10.00	90.0
Iron	10.00	900.0
Lead	10.00	162.0
Lithium	10.00	0.9
Magnesium	10.00	900.0
Manganese	10.00	18.0
Molybdenum	10.00	45.0
Nickel	10.00	90.0
Phosphorus	10.00	72.0
Potassium	10.00	90.0
Selenium	10.00	45.0
Silicon	10.00	22.5
Silver	10.00	1.8
Sodium	10.00	180.0
Strontium	10.00	4.5
Thallium	10.00	9.0
Tin	10.00	45.0
Titanium	10.00	18.0
Vanadium	10.00	90.0
Zinc	10.00	45.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4201100
Report generated: 05/27/2015 15:08

2.3.1.3 Raw Data

==========

Reprocessing Begun
Logged In Analyst: peicp2 **Technique: ICP Continuous**

Results Data Set (original): 052215H4R
Results Library (original): C:\pe\peicp2\Results\results2.mdb
Results Data Set (reprocessed): 052715HR
Results Library (reprocessed): C:\pe\peicp2\Results\results2.mdb

==========

Sequence No.: 1 **Autosampler Location: 1**
Sample ID: S0 **Date Collected: 5/27/2015 8:40:45 AM**
Analyst: **Data Type: Reprocessed on 5/27/2015 9:48:28 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: S0

Analyte	Back Pressure	Flow
All	233.0 kPa	0.40 L/min

Mean Data: S0

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Calib Conc.	Units
Y 371.029	3353707.5	26114.49	0.78%		
YRADIAL	205277.2	4629.07	2.26%		
Ga 417.206	1551868.6	10698.68	0.69%		
GaRADIAL	49951.8	1141.15	2.28%		
Ag 328.068†	410.9	158.13	38.48%	[0.00]	mg/L
Al 396.153†	-66.5	13.56	20.38%	[0.00]	mg/L
As 188.979†	17.1	5.33	31.17%	[0.00]	mg/L
Ba 233.527†	61.5	15.72	25.58%	[0.00]	mg/L
Be 234.861†	-138.5	13.16	9.50%	[0.00]	mg/L
B 249.677†	6872.6	275.21	4.00%	[0.00]	mg/L
Ca 227.546†	3.8	15.65	416.40%	[0.00]	mg/L
Cd 228.802†	10.7	4.44	41.62%	[0.00]	mg/L
Co 228.616†	-8.4	6.38	76.39%	[0.00]	mg/L
Cr 267.716†	257.0	64.29	25.02%	[0.00]	mg/L
Cu 327.393†	558.5	239.76	42.93%	[0.00]	mg/L
Fe 239.562†	15.8	3.16	20.00%	[0.00]	mg/L
Mg 279.077†	99.8	13.36	13.38%	[0.00]	mg/L
Mn 257.610†	13.5	8.70	64.63%	[0.00]	mg/L
Mo 202.031†	30.7	10.61	34.50%	[0.00]	mg/L
Ni 231.604†	-27.1	17.57	64.73%	[0.00]	mg/L
Pb 220.353†	-60.5	5.93	9.80%	[0.00]	mg/L
Sb 206.836†	19.3	9.45	48.88%	[0.00]	mg/L
Se 196.026†	-5.4	3.87	71.79%	[0.00]	mg/L
Si 251.611†	635461.7	1968.27	0.31%	[0.00]	mg/L
Sn 189.927†	84.3	3.31	3.92%	[0.00]	mg/L
Ti 334.940†	2580.6	116.82	4.53%	[0.00]	mg/L
Tl 190.801†	-35.5	7.02	19.74%	[0.00]	mg/L
V 290.880†	9236.0	190.23	2.06%	[0.00]	mg/L
Zn 206.200†	282.9	12.08	4.27%	[0.00]	mg/L
K 766.490†	184.7	154.30	83.53%	[0.00]	mg/L
Na 589.592†	1673.4	164.47	9.83%	[0.00]	mg/L
Sr 407.771†	-907.1	83.22	9.17%	[0.00]	mg/L
Li 670.784†	-14.3	82.81	579.74%	[0.00]	mg/L
P 214.914†	-21.7	9.70	44.72%	[0.00]	mg/L

==========

Sequence No.: 2 **Autosampler Location: 2**
Sample ID: S1 **Date Collected: 5/27/2015 8:44:07 AM**
Analyst: **Data Type: Reprocessed on 5/27/2015 9:48:30 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: S1

Approved: May 28, 2015
Lynn H. Rhoden

Analyte	Back Pressure	Flow
All	233.0 kPa	0.40 L/min

Mean Data: S1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	3378060.0	43235.57	1.28%		
YRADIAL	208120.5	2950.06	1.42%		
Ga 417.206	1559664.5	21098.77	1.35%		
GaRADIAL	50588.8	663.05	1.31%		
Ag 328.068†	994.3	238.11	23.95%	[0.0032]	mg/L
Al 396.153†	225.2	12.50	5.55%	[0.08]	mg/L
Ba 233.527†	464.8	23.27	5.01%	[0.008]	mg/L
Be 234.861†	195.7	23.67	12.10%	[0.0004]	mg/L
Cd 228.802†	2.3	5.78	251.79%	[0.0004]	mg/L
Co 228.616†	24.3	3.48	14.34%	[0.0016]	mg/L
Cr 267.716†	643.4	32.35	5.03%	[0.004]	mg/L
Cu 327.393†	837.6	68.29	8.15%	[0.004]	mg/L
Fe 239.562†	194.8	1.91	0.98%	[0.032]	mg/L
Mg 279.077†	244.4	8.20	3.36%	[0.08]	mg/L
Mn 257.610†	2745.6	39.02	1.42%	[0.004]	mg/L
Mo 202.031†	80.2	10.54	13.14%	[0.008]	mg/L
Ni 231.604†	115.6	17.37	15.03%	[0.004]	mg/L
Pb 220.353†	18.4	12.17	66.02%	[0.004]	mg/L
Sb 206.836†	8.9	2.23	25.12%	[0.0096]	mg/L
Si 251.611†	-1986.4	2925.75	147.29%	[0.04]	mg/L
Standard intensity and concentration values are not in the same order.					
Sn 189.927†	43.9	21.64	49.34%	[0.008]	mg/L
Ti 334.940†	7294.6	95.26	1.31%	[0.008]	mg/L
V 290.880†	1102.2	210.84	19.13%	[0.008]	mg/L
Zn 206.200†	225.0	0.74	0.33%	[0.008]	mg/L
K 766.490†	594.2	99.80	16.79%	[0.4]	mg/L
Na 589.592†	3141.1	103.69	3.30%	[0.4]	mg/L
Sr 407.771†	6742.8	96.07	1.42%	[0.008]	mg/L
Li 670.784†	386.5	46.07	11.92%	[0.008]	mg/L
P 214.914†	45.1	4.99	11.07%	[0.08]	mg/L

Sequence No.: 3 **Autosampler Location: 3**
Sample ID: S2 **Date Collected: 5/27/2015 8:47:26 AM**
Analyst: **Data Type: Reprocessed on 5/27/2015 9:48:30 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: S2

Analyte	Back Pressure	Flow
All	234.0 kPa	0.40 L/min

Mean Data: S2

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	3406616.5	12479.13	0.37%		
YRADIAL	208715.1	2407.70	1.15%		
Ga 417.206	1562657.9	13005.25	0.83%		
GaRADIAL	50849.0	663.77	1.31%		
Ag 328.068†	2064.8	394.61	19.11%	[0.0064]	mg/L
Al 396.153†	482.7	4.65	0.96%	[0.16]	mg/L
As 188.979†	4.5	11.94	262.86%	[0.0064]	mg/L
Ba 233.527†	951.6	13.13	1.38%	[0.016]	mg/L
Be 234.861†	370.6	11.59	3.13%	[0.0008]	mg/L
B 249.677†	372.6	33.00	8.86%	[0.008]	mg/L
Ca 227.546†	10.8	3.50	32.36%	[0.16]	mg/L
Cd 228.802†	12.5	4.89	39.15%	[0.0008]	mg/L
Co 228.616†	48.5	4.58	9.45%	[0.0032]	mg/L
Cr 267.716†	1189.2	62.25	5.23%	[0.008]	mg/L
Cu 327.393†	1801.5	16.19	0.90%	[0.008]	mg/L
Fe 239.562†	372.7	9.66	2.59%	[0.064]	mg/L
Mg 279.077†	462.0	12.50	2.71%	[0.16]	mg/L

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Mn 257.610†	5393.7	37.47	0.69%	[0.008]	mg/L
Mo 202.031†	167.8	13.22	7.88%	[0.016]	mg/L
Ni 231.604†	253.9	14.87	5.86%	[0.008]	mg/L
Pb 220.353†	32.0	6.75	21.06%	[0.008]	mg/L
Sb 206.836†	21.2	7.52	35.51%	[0.0192]	mg/L
Se 196.026†	1.3	11.33	862.26%	[0.0062]	mg/L
Si 251.611†	3826.9	5997.83	156.73%	[0.08]	mg/L
Standard intensity and concentration values are not in the same order.					
Sn 189.927†	87.8	6.62	7.54%	[0.016]	mg/L
Ti 334.940†	14885.0	114.99	0.77%	[0.016]	mg/L
Tl 190.801†	8.8	2.82	32.12%	[0.008]	mg/L
V 290.880†	2983.3	35.87	1.20%	[0.016]	mg/L
Zn 206.200†	479.2	5.85	1.22%	[0.016]	mg/L
K 766.490†	1168.6	49.15	4.21%	[0.8]	mg/L
Na 589.592†	6172.3	126.55	2.05%	[0.8]	mg/L
Sr 407.771†	13441.6	145.65	1.08%	[0.016]	mg/L
Li 670.784†	513.4	58.83	11.46%	[0.016]	mg/L
P 214.914†	107.2	12.83	11.97%	[0.16]	mg/L

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Sequence No.: 4 **Autosampler Location: 4**
Sample ID: S3 **Date Collected: 5/27/2015 8:50:48 AM**
Analyst: **Data Type: Reprocessed on 5/27/2015 9:48:31 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: S3

Analyte	Back Pressure	Flow
All	233.0 kPa	0.40 L/min

Mean Data: S3

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	3181448.7	38269.06	1.20%		
YRADIAL	199353.2	1639.04	0.82%		
Ga 417.206	1346016.7	22922.91	1.70%		
GaRADIAL	46936.4	228.05	0.49%		
Ag 328.068†	131970.0	829.45	0.63%	[0.40]	mg/L
Al 396.153†	28903.5	181.91	0.63%	[10.00]	mg/L
As 188.979†	629.2	14.04	2.23%	[0.40]	mg/L
Ba 233.527†	57883.6	439.88	0.76%	[1.00]	mg/L
Be 234.861†	26766.4	328.92	1.23%	[0.05]	mg/L
B 249.677†	34262.9	341.54	1.00%	[0.50]	mg/L
Ca 227.546†	777.5	20.04	2.58%	[10.00]	mg/L
Cd 228.802†	812.3	13.93	1.71%	[0.05]	mg/L
Co 228.616†	2895.4	48.51	1.68%	[0.20]	mg/L
Cr 267.716†	68000.3	250.55	0.37%	[0.50]	mg/L
Cu 327.393†	104767.7	847.60	0.81%	[0.50]	mg/L
Fe 239.562†	23085.8	142.41	0.62%	[4.00]	mg/L
Mg 279.077†	27148.4	129.48	0.48%	[10.00]	mg/L
Mn 257.610†	319963.2	2091.46	0.65%	[0.50]	mg/L
Mo 202.031†	10509.1	166.40	1.58%	[1.00]	mg/L
Ni 231.604†	16152.3	245.85	1.52%	[0.50]	mg/L
Pb 220.353†	2256.7	47.70	2.11%	[0.50]	mg/L
Sb 206.836†	1363.3	21.05	1.54%	[1.20]	mg/L
Se 196.026†	249.7	4.34	1.74%	[0.40]	mg/L
Si 251.611†	122387.8	980.52	0.80%	[5.00]	mg/L
Standard intensity and concentration values are not in the same order.					
Sn 189.927†	5996.5	100.58	1.68%	[1.00]	mg/L
Ti 334.940†	917599.0	3563.81	0.39%	[1.00]	mg/L
Tl 190.801†	612.6	11.04	1.80%	[0.50]	mg/L
V 290.880†	187464.9	668.65	0.36%	[1.00]	mg/L
Zn 206.200†	29611.5	458.85	1.55%	[1.00]	mg/L
K 766.490†	78395.8	525.38	0.67%	[50.00]	mg/L
Na 589.592†	398101.6	7582.27	1.90%	[50.00]	mg/L
Sr 407.771†	805988.2	17278.35	2.14%	[1.00]	mg/L
Li 670.784†	38904.9	410.55	1.06%	[1.00]	mg/L
P 214.914†	6369.5	102.87	1.62%	[10]	mg/L

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Sequence No.: 5
Sample ID: S4
Analyst:
Logged In Analyst (Original) : peicp2
Initial Sample Wt:
Dilution:

Autosampler Location: 5
Date Collected: 5/27/2015 8:53:12 AM
Data Type: Reprocessed on 5/27/2015 9:48:32 AM

Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: S4

Analyte	Back Pressure	Flow
All	233.0 kPa	0.40 L/min

Mean Data: S4

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	3135357.1	55103.27	1.76%		
YRADIAL	195573.7	2480.45	1.27%		
Ga 417.206	1285776.1	22564.84	1.75%		
GaRADIAL	46821.5	497.32	1.06%		
Ag 328.068†	274096.6	1281.31	0.47%	[0.80]	mg/L
Al 396.153†	56926.0	274.60	0.48%	[20.00]	mg/L
As 188.979†	1328.7	18.55	1.40%	[0.80]	mg/L
Ba 233.527†	115681.5	577.87	0.50%	[2.00]	mg/L
Be 234.861†	55245.5	348.15	0.63%	[0.10]	mg/L
B 249.677†	71165.9	1048.94	1.47%	[1.00]	mg/L
Ca 227.546†	1594.5	31.23	1.96%	[20.00]	mg/L
Cd 228.802†	1662.8	28.27	1.70%	[0.10]	mg/L
Co 228.616†	5671.6	86.57	1.53%	[0.40]	mg/L
Cr 267.716†	135947.9	980.21	0.72%	[1.00]	mg/L
Cu 327.393†	216915.8	1432.54	0.66%	[1.00]	mg/L
Fe 239.562†	46604.5	353.72	0.76%	[8.00]	mg/L
Mg 279.077†	53962.4	374.25	0.69%	[20.00]	mg/L
Mn 257.610†	638003.8	4198.86	0.66%	[1.00]	mg/L
Mo 202.031†	21009.8	314.83	1.50%	[2.00]	mg/L
Ni 231.604†	31862.5	485.40	1.52%	[1.00]	mg/L
Pb 220.353†	4466.8	55.34	1.24%	[1.00]	mg/L
Sb 206.836†	2792.1	46.05	1.65%	[2.40]	mg/L
Se 196.026†	514.7	14.52	2.82%	[0.80]	mg/L
Si 251.611†	193842.0	3042.52	1.57%	[10.00]	mg/L
Standard intensity and concentration values are not in the same order.					
Sn 189.927†	11801.8	182.00	1.54%	[2.00]	mg/L
Ti 334.940†	1860021.3	8178.96	0.44%	[2.00]	mg/L
Tl 190.801†	1201.9	12.15	1.01%	[1.00]	mg/L
V 290.880†	378339.7	2079.96	0.55%	[2.00]	mg/L
Zn 206.200†	57115.3	419.59	0.73%	[2.00]	mg/L
K 766.490†	155271.7	894.18	0.58%	[100.00]	mg/L
Na 589.592†	773934.0	14743.92	1.91%	[100.00]	mg/L
Sr 407.771†	1611862.5	28364.76	1.76%	[2.00]	mg/L
Li 670.784†	76096.5	220.45	0.29%	[2.00]	mg/L
P 214.914†	12757.0	204.24	1.60%	[20]	mg/L

Calibration Summary

Analyte	Stds.	Equation	Intercept	Slope	Curvature	Corr. Coef.	Reslope
Ag 328.068	4	Lin, Calc Int	-704.9	341100	0.00000	0.999839	
Al 396.153	4	Lin, Calc Int	62.6	2851	0.00000	0.999972	
As 188.979	3	Wt. Lin	-5.9	1628	0.00000	0.999686	
Ba 233.527	4	Lin, Calc Int	14.2	57840	0.00000	1.000000	
Be 234.861	4	Lin, Calc Int	-136.9	550700	0.00000	0.999889	
B 249.677	3	Lin, Calc Int	-329.5	71030	0.00000	0.999826	
Ca 227.546	3	Lin, Calc Int	-4.5	79.60	0.00000	0.999922	
Cd 228.802	4	Lin, Calc Int	-4.0	16600	0.00000	0.999941	
Co 228.616	4	Lin, Calc Int	8.9	14210	0.00000	0.999949	
Cr 267.716	4	Lin, Calc Int	66.3	135900	0.00000	1.000000	
Cu 327.393	4	Lin, Calc Int	-448.7	216000	0.00000	0.999861	
Fe 239.562	4	Lin, Calc Int	-24.4	5818	0.00000	0.999990	
Mg 279.077	4	Lin, Calc Int	39.2	2699	0.00000	0.999996	
Mn 257.610	4	Lin, Calc Int	271.0	638100	0.00000	0.999999	
Mo 202.031	4	Lin, Calc Int	-0.8	10510	0.00000	1.000000	

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Ni 231.604	4	Lin, Calc Int	23.5	31920	0.00000	0.999977
Pb 220.353	4	Lin, Calc Int	1.9	4474	0.00000	0.999986
Sb 206.836	4	Lin, Calc Int	-5.2	1160	0.00000	0.999937
Se 196.026	3	Wt. Lin	-2.6	638.8	0.00000	0.999921
Si 251.611	4	Lin, Calc Int	3018.2	20040	0.00000	0.992198
Sn 189.927	4	Lin, Calc Int	8.8	5915	0.00000	0.999968
Ti 334.940	4	Lin, Calc Int	-1591.1	928500	0.00000	0.999979
Tl 190.801	3	Lin, Calc Int	1.7	1204	0.00000	0.999948
V 290.880	4	Lin, Calc Int	-355.1	189000	0.00000	0.999991
Zn 206.200	4	Lin, Calc Int	137.2	28690	0.00000	0.999841
K 766.490	4	Non Lin, Calc Int	-45.7	1584	-0.31241	1.000000
Na 589.592	4	Non Lin, Calc Int	-168.6	8190	-4.48484	1.000000
Sr 407.771	4	Lin, Calc Int	270.5	805800	0.00000	1.000000
Li 670.784	4	Lin, Calc Int	102.7	38160	0.00000	0.999938
P 214.914	4	Lin, Calc Int	-1.4	637.8	0.00000	1.000000

Sequence No.: 6
Sample ID: ICV
Analyst:
Logged In Analyst (Original) : peicp2
Initial Sample Wt:
Dilution:

Autosampler Location: 11
Date Collected: 5/27/2015 8:55:37 AM
Data Type: Reprocessed on 5/27/2015 9:48:33 AM

Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ICV

Analyte	Back Pressure	Flow
All	233.0 kPa	0.40 L/min

Mean Data: ICV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3164649.0						19724.55	0.62%
YRADIAL	197868.2						3631.65	1.84%
Ga 417.206	1326830.7						10403.25	0.78%
GaRADIAL	46259.3						850.27	1.84%
Ag 328.068†	136984.8	0.407	mg/L	0.0027	0.407	mg/L	0.0027	0.67%
QC value within limits for Ag 328.068 Recovery = 101.82%								
Al 396.153†	29631.9	10.3	mg/L	0.11	10.3	mg/L	0.11	1.08%
QC value within limits for Al 396.153 Recovery = 103.31%								
As 188.979†	650.1	0.399	mg/L	0.0015	0.399	mg/L	0.0015	0.39%
QC value within limits for As 188.979 Recovery = 99.64%								
Ba 233.527†	59269.0	1.02	mg/L	0.008	1.02	mg/L	0.008	0.80%
QC value within limits for Ba 233.527 Recovery = 102.47%								
Be 234.861†	27340.5	0.0493	mg/L	0.00028	0.0493	mg/L	0.00028	0.58%
QC value within limits for Be 234.861 Recovery = 98.59%								
B 249.677†	27850.4	0.410	mg/L	0.0018	0.410	mg/L	0.0018	0.44%
QC value less than the lower limit for B 249.677 Recovery = 82.03%								
Ca 227.546†	798.2	10.2	mg/L	0.02	10.2	mg/L	0.02	0.24%
QC value within limits for Ca 227.546 Recovery = 101.54%								
Cd 228.802†	826.5	0.0487	mg/L	0.00068	0.0487	mg/L	0.00068	1.40%
QC value within limits for Cd 228.802 Recovery = 97.31%								
Co 228.616†	2901.5	0.203	mg/L	0.0016	0.203	mg/L	0.0016	0.79%
QC value within limits for Co 228.616 Recovery = 101.35%								
Cr 267.716†	69054.0	0.508	mg/L	0.0044	0.508	mg/L	0.0044	0.86%
QC value within limits for Cr 267.716 Recovery = 101.61%								
Cu 327.393†	107003.8	0.499	mg/L	0.0038	0.499	mg/L	0.0038	0.76%
QC value within limits for Cu 327.393 Recovery = 99.89%								
Fe 239.562†	23864.4	4.10	mg/L	0.044	4.10	mg/L	0.044	1.06%
QC value within limits for Fe 239.562 Recovery = 102.62%								
Mg 279.077†	27287.9	10.1	mg/L	0.09	10.1	mg/L	0.09	0.85%
QC value within limits for Mg 279.077 Recovery = 100.93%								
Mn 257.610†	318065.5	0.498	mg/L	0.0057	0.498	mg/L	0.0057	1.14%
QC value within limits for Mn 257.610 Recovery = 99.64%								
Mo 202.031†	10411.4	0.992	mg/L	0.0100	0.992	mg/L	0.0100	1.01%
QC value within limits for Mo 202.031 Recovery = 99.16%								
Ni 231.604†	15937.0	0.498	mg/L	0.0055	0.498	mg/L	0.0055	1.11%
QC value within limits for Ni 231.604 Recovery = 99.63%								
Pb 220.353†	2221.3	0.498	mg/L	0.0018	0.498	mg/L	0.0018	0.37%
QC value within limits for Pb 220.353 Recovery = 99.70%								
Sb 206.836†	1380.3	1.19	mg/L	0.014	1.19	mg/L	0.014	1.17%

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   QC value within limits for Sb 206.836  Recovery = 99.39%
Se 196.026†              265.7       0.422 mg/L        0.0106       0.422 mg/L        0.0106   2.51%
   QC value greater than the upper limit for Se 196.026  Recovery = 105.46%
Si 251.611†          -174965.3      -8.89 mg/L         0.079       -8.89 mg/L         0.079   0.89%
   QC value less than the lower limit for Si 251.611  Recovery = -177.86%
Sn 189.927†             6064.9        1.02 mg/L         0.009        1.02 mg/L         0.009   0.88%
   QC value within limits for Sn 189.927  Recovery = 102.39%
Ti 334.940†           929170.5        1.00 mg/L         0.010        1.00 mg/L         0.010   0.96%
   QC value within limits for Ti 334.940  Recovery = 100.29%
Tl 190.801†              604.1       0.510 mg/L        0.0136       0.510 mg/L        0.0136   2.67%
   QC value within limits for Tl 190.801  Recovery = 102.04%
V 290.880†            191655.9        1.02 mg/L         0.012        1.02 mg/L         0.012   1.15%
   QC value within limits for V 290.880  Recovery = 101.59%
Zn 206.200†            29875.9        1.04 mg/L         0.010        1.04 mg/L         0.010   0.95%
   QC value within limits for Zn 206.200  Recovery = 104.19%
K 766.490†             79299.5        50.5 mg/L          0.44        50.5 mg/L          0.44   0.86%
   QC value within limits for K 766.490  Recovery = 101.07%
Na 589.592†           398642.1        50.1 mg/L          1.36        50.1 mg/L          1.36   2.71%
   QC value within limits for Na 589.592  Recovery = 100.14%
Sr 407.771†           808076.0        1.00 mg/L         0.017        1.00 mg/L         0.017   1.73%
   QC value within limits for Sr 407.771  Recovery = 100.22%
Li 670.784†            39584.7        1.03 mg/L         0.006        1.03 mg/L         0.006   0.62%
   QC value within limits for Li 670.784  Recovery = 103.47%
P 214.914†              6469.9        10.1 mg/L          0.12        10.1 mg/L          0.12   1.18%
   QC value within limits for P 214.914  Recovery = 101.47%
QC Failed.  Continue with analysis.

==========================================================================================
Sequence No.: 7                                    Autosampler Location: 1
Sample ID: ICB                                     Date Collected: 5/27/2015 8:58:03 AM
Analyst:                                           Data Type: Reprocessed on 5/27/2015 9:48:35 AM
Logged In Analyst (Original) : peicp2
Initial Sample Wt:                                 Initial Sample Vol:
Dilution:                                          Sample Prep Vol:

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Nebulizer Parameters: ICB
Analyte                 Back Pressure    Flow
All                    233.0 kPa         0.40 L/min

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Mean Data: ICB
                   Mean Corrected         Calib.                          Sample
Analyte               Intensity     Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029            3362313.5                                                    36680.45   1.09%
YRADIAL               211366.9                                                     3171.03   1.50%
Ga 417.206           1564571.0                                                    12392.27   0.79%
GaRADIAL               51405.8                                                      954.78   1.86%
Ag 328.068†              205.6     0.00267 mg/L      0.000884     0.00267 mg/L      0.000884  33.07%
   QC value within limits for Ag 328.068  Recovery = Not calculated
Al 396.153†               -0.6     -0.0222 mg/L       0.00401     -0.0222 mg/L       0.00401  18.05%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†               -6.3    -0.00025 mg/L      0.002318    -0.00025 mg/L      0.002318 940.64%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†                2.7    -0.00020 mg/L      0.000155    -0.00020 mg/L      0.000155  78.26%
   QC value within limits for Ba 233.527  Recovery = Not calculated
Be 234.861†              -16.8     0.00022 mg/L      0.000049     0.00022 mg/L      0.000049  22.44%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†               -80.9     0.00351 mg/L      0.003242     0.00351 mg/L      0.003242  92.46%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†               -0.8      0.0462 mg/L       0.05440      0.0462 mg/L       0.05440 117.87%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†                3.8     0.00047 mg/L      0.000202     0.00047 mg/L      0.000202  43.18%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†                4.7    -0.00029 mg/L      0.000539    -0.00029 mg/L      0.000539 182.62%
   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†               79.5     0.00010 mg/L      0.000274     0.00010 mg/L      0.000274 280.55%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†              -59.9     0.00180 mg/L      0.001424     0.00180 mg/L      0.001424  78.95%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†               -1.1     0.00401 mg/L      0.002313     0.00401 mg/L      0.002313  57.74%
   QC value within limits for Fe 239.562  Recovery = Not calculated
```

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Mg 279.077†	9.5	-0.0110	mg/L	0.00550	-0.0110	mg/L	0.00550	49.95%
QC value within limits for Mg 279.077 Recovery = Not calculated								
Mn 257.610†	5.3	-0.00042	mg/L	0.000029	-0.00042	mg/L	0.000029	6.93%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	7.8	0.00082	mg/L	0.000838	0.00082	mg/L	0.000838	102.77%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	-9.5	-0.00103	mg/L	0.000408	-0.00103	mg/L	0.000408	39.48%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	-6.5	-0.00189	mg/L	0.003988	-0.00189	mg/L	0.003988	210.76%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	-0.2	0.00425	mg/L	0.002447	0.00425	mg/L	0.002447	57.63%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	5.3	0.0125	mg/L	0.00817	0.0125	mg/L	0.00817	65.27%
QC value within limits for Se 196.026 Recovery = Not calculated								
Si 251.611†	-4906.9	-0.396	mg/L	0.0761	-0.396	mg/L	0.0761	19.25%
QC value within limits for Si 251.611 Recovery = Not calculated								
Sn 189.927†	8.4	-0.00007	mg/L	0.001996	-0.00007	mg/L	0.001996	>999.9%
QC value within limits for Sn 189.927 Recovery = Not calculated								
Ti 334.940†	380.0	0.00213	mg/L	0.000167	0.00213	mg/L	0.000167	7.87%
QC value within limits for Ti 334.940 Recovery = Not calculated								
Tl 190.801†	8.2	0.00540	mg/L	0.001942	0.00540	mg/L	0.001942	35.98%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 290.880†	-69.8	0.00151	mg/L	0.001206	0.00151	mg/L	0.001206	79.86%
QC value within limits for V 290.880 Recovery = Not calculated								
Zn 206.200†	14.0	-0.00429	mg/L	0.000226	-0.00429	mg/L	0.000226	5.27%
QC value within limits for Zn 206.200 Recovery = Not calculated								
K 766.490†	150.4	0.124	mg/L	0.0363	0.124	mg/L	0.0363	29.31%
QC value within limits for K 766.490 Recovery = Not calculated								
Na 589.592†	-98.3	0.00859	mg/L	0.012501	0.00859	mg/L	0.012501	145.45%
QC value within limits for Na 589.592 Recovery = Not calculated								
Sr 407.771†	144.8	-0.00016	mg/L	0.000098	-0.00016	mg/L	0.000098	62.20%
QC value within limits for Sr 407.771 Recovery = Not calculated								
Li 670.784†	72.5	-0.00079	mg/L	0.000196	-0.00079	mg/L	0.000196	24.75%
QC value within limits for Li 670.784 Recovery = Not calculated								
P 214.914†	2.5	0.00608	mg/L	0.002000	0.00608	mg/L	0.002000	32.92%
QC value within limits for P 214.914 Recovery = Not calculated								

All analyte(s) passed QC.

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Sequence No.: 8 **Autosampler Location: 14**
Sample ID: LLICV **Date Collected: 5/27/2015 9:01:24 AM**
Analyst: KHR **Data Type: Reprocessed on 5/27/2015 9:48:36 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: LLICV

Analyte	Back Pressure	Flow
All	233.0 kPa	0.40 L/min

Mean Data: LLICV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3348326.0						24561.57	0.73%
YRADIAL	209375.6						4430.40	2.12%
Ga 417.206	1530258.2						11320.20	0.74%
GaRADIAL	50324.9						1168.06	2.32%
Ag 328.068†	5427.1	0.0181	mg/L	0.00147	0.0181	mg/L	0.00147	8.12%
Al 396.153†	1178.8	0.390	mg/L	0.0382	0.390	mg/L	0.0382	9.79%
As 188.979†	17.1	0.0139	mg/L	0.00573	0.0139	mg/L	0.00573	41.09%
Ba 233.527†	2453.0	0.0422	mg/L	0.00038	0.0422	mg/L	0.00038	0.90%
Be 234.861†	1017.9	0.00207	mg/L	0.000029	0.00207	mg/L	0.000029	1.40%
B 249.677†	1152.7	0.0214	mg/L	0.00275	0.0214	mg/L	0.00275	12.85%
Ca 227.546†	25.4	0.379	mg/L	0.1220	0.379	mg/L	0.1220	32.22%
Cd 228.802†	30.1	0.00201	mg/L	0.000348	0.00201	mg/L	0.000348	17.32%
Co 228.616†	114.7	0.00740	mg/L	0.000058	0.00740	mg/L	0.000058	0.78%
Cr 267.716†	2748.4	0.0198	mg/L	0.00056	0.0198	mg/L	0.00056	2.83%
Cu 327.393†	4314.8	0.0221	mg/L	0.00122	0.0221	mg/L	0.00122	5.50%
Fe 239.562†	936.0	0.165	mg/L	0.0081	0.165	mg/L	0.0081	4.90%
Mg 279.077†	1142.4	0.409	mg/L	0.0179	0.409	mg/L	0.0179	4.37%

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Mn 257.610†	13800.0	0.0212 mg/L	0.00066	0.0212 mg/L	0.00066	3.12%
Mo 202.031†	421.9	0.0403 mg/L	0.00084	0.0403 mg/L	0.00084	2.09%
Ni 231.604†	685.4	0.0207 mg/L	0.00013	0.0207 mg/L	0.00013	0.63%
Pb 220.353†	89.8	0.0197 mg/L	0.00269	0.0197 mg/L	0.00269	13.65%
Sb 206.836†	50.5	0.0479 mg/L	0.00803	0.0479 mg/L	0.00803	16.75%
Se 196.026†	9.9	0.0196 mg/L	0.01270	0.0196 mg/L	0.01270	64.64%
Si 251.611†	4945.1	0.0957 mg/L	0.05597	0.0957 mg/L	0.05597	58.48%
Sn 189.927†	239.6	0.0390 mg/L	0.00044	0.0390 mg/L	0.00044	1.13%
Ti 334.940†	37692.4	0.0423 mg/L	0.00084	0.0423 mg/L	0.00084	1.98%
Tl 190.801†	19.3	0.0150 mg/L	0.00788	0.0150 mg/L	0.00788	52.51%
V 290.880†	7552.4	0.0418 mg/L	0.00147	0.0418 mg/L	0.00147	3.52%
Zn 206.200†	1280.4	0.0401 mg/L	0.00055	0.0401 mg/L	0.00055	1.37%
K 766.490†	3105.6	1.99 mg/L	0.060	1.99 mg/L	0.060	3.02%
Na 589.592†	16556.6	2.04 mg/L	0.007	2.04 mg/L	0.007	0.36%
Sr 407.771†	33553.7	0.0413 mg/L	0.00021	0.0413 mg/L	0.00021	0.52%
Li 670.784†	1565.6	0.0383 mg/L	0.00428	0.0383 mg/L	0.00428	11.17%
P 214.914†	241.5	0.381 mg/L	0.0053	0.381 mg/L	0.0053	1.38%

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Sequence No.: 9 **Autosampler Location: 12**
Sample ID: ICSA **Date Collected: 5/27/2015 9:03:48 AM**
Analyst: **Data Type: Reprocessed on 5/27/2015 9:48:37 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: ICSA

Analyte	Back Pressure	Flow
All	233.0 kPa	0.40 L/min

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3001108.1						36082.13	1.20%
YRADIAL	186808.6						2420.30	1.30%
Ga 417.206	1264184.8						11820.51	0.94%
GaRADIAL	45991.7						536.92	1.17%
Ag 328.068†	-15660.7	0.00256	mg/L	0.000948	0.00256	mg/L	0.000948	36.96%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	715901.6	251	mg/L	3.4	251	mg/L	3.4	1.35%
QC value within limits for Al 396.153 Recovery = 100.43%								
As 188.979†	-40.2	0.00002	mg/L	0.004725	0.00002	mg/L	0.004725	>999.9%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	285.8	0.00137	mg/L	0.000197	0.00137	mg/L	0.000197	14.39%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 234.861†	14267.7	0.00058	mg/L	0.000132	0.00058	mg/L	0.000132	22.80%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	-22437.8	0.0714	mg/L	0.00180	0.0714	mg/L	0.00180	2.52%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	23035.1	289	mg/L	2.2	289	mg/L	2.2	0.75%
QC value within limits for Ca 227.546 Recovery = 115.78%								
Cd 228.802†	3.5	0.00052	mg/L	0.000403	0.00052	mg/L	0.000403	77.66%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	8.2	-0.00264	mg/L	0.000220	-0.00264	mg/L	0.000220	8.33%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	358.7	-0.00060	mg/L	0.000247	-0.00060	mg/L	0.000247	41.50%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	-3576.2	0.00000	mg/L	0.001530	0.00000	mg/L	0.001530	>999.9%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	585943.9	101	mg/L	0.5	101	mg/L	0.5	0.51%
QC value within limits for Fe 239.562 Recovery = 100.70%								
Mg 279.077†	676577.6	251	mg/L	1.5	251	mg/L	1.5	0.58%
QC value within limits for Mg 279.077 Recovery = 100.24%								
Mn 257.610†	160.6	0.00224	mg/L	0.000119	0.00224	mg/L	0.000119	5.30%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	35.1	0.00168	mg/L	0.001248	0.00168	mg/L	0.001248	74.09%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	-29.3	-0.00164	mg/L	0.000840	-0.00164	mg/L	0.000840	51.19%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	-236.0	-0.00526	mg/L	0.004242	-0.00526	mg/L	0.004242	80.58%

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   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†              -10.5    -0.00095 mg/L      0.004559    -0.00095 mg/L      0.004559 477.58%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†              -22.8     0.00002 mg/L      0.005889     0.00002 mg/L      0.005889 >999.9%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†          -318051.6       -16.0 mg/L          0.07       -16.0 mg/L          0.07   0.41%
   QC value less than the lower limit for Si 251.611  Recovery = Not calculated
Sn 189.927†              -56.1     -0.0110 mg/L       0.00219     -0.0110 mg/L       0.00219  19.93%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†           -18826.3     0.00002 mg/L      0.000250     0.00002 mg/L      0.000250 >999.9%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†              -31.5     -0.0278 mg/L       0.00864     -0.0278 mg/L       0.00864  31.03%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†             -2555.9     0.00118 mg/L      0.001784     0.00118 mg/L      0.001784 151.06%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†             -131.5     0.00000 mg/L      0.000811     0.00000 mg/L      0.000811 >999.9%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†               123.5       0.107 mg/L        0.0979       0.107 mg/L        0.0979  91.71%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†              545.7      0.0872 mg/L       0.01002      0.0872 mg/L       0.01002  11.49%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†             1930.6    -0.00717 mg/L      0.000250    -0.00717 mg/L      0.000250   3.49%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†              251.4     0.00390 mg/L      0.001037     0.00390 mg/L      0.001037  26.62%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†                54.0      0.0868 mg/L       0.01650      0.0868 mg/L       0.01650  19.00%
   QC value within limits for P 214.914  Recovery = Not calculated
QC Failed.  Continue with analysis.

==================================================================================================
Sequence No.: 10                                    Autosampler Location: 13
Sample ID: ICSAB                                    Date Collected: 5/27/2015 9:06:11 AM
Analyst:                                            Data Type: Reprocessed on 5/27/2015 9:48:38 AM
Logged In Analyst (Original) : peicp2
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

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Nebulizer Parameters: ICSAB
Analyte                 Back Pressure    Flow
All                    233.0 kPa         0.40 L/min

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Mean Data: ICSAB
                   Mean Corrected         Calib.                          Sample
Analyte               Intensity     Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029            2996212.6                                                    19624.12   0.65%
YRADIAL               189767.8                                                     1037.37   0.55%
Ga 417.206           1263369.7                                                     9836.50   0.78%
GaRADIAL               46264.3                                                       86.41   0.19%
Ag 328.068†           163019.1       0.526 mg/L        0.0022       0.526 mg/L        0.0022   0.43%
   QC value within limits for Ag 328.068  Recovery = 105.15%
Al 396.153†           705583.4         247 mg/L           3.7         247 mg/L           3.7   1.50%
   QC value within limits for Al 396.153  Recovery = 98.98%
As 188.979†              359.6       0.245 mg/L        0.0083       0.245 mg/L        0.0083   3.40%
   QC value within limits for As 188.979  Recovery = 98.07%
Ba 233.527†            15428.0       0.263 mg/L        0.0011       0.263 mg/L        0.0011   0.42%
   QC value within limits for Ba 233.527  Recovery = 105.27%
Be 234.861†           150735.7       0.249 mg/L        0.0011       0.249 mg/L        0.0011   0.42%
   QC value within limits for Be 234.861  Recovery = 99.61%
B 249.677†            -23103.8      0.0406 mg/L       0.00956      0.0406 mg/L       0.00956  23.55%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†            22682.9         285 mg/L           1.7         285 mg/L           1.7   0.59%
   QC value within limits for Ca 227.546  Recovery = 114.03%
Cd 228.802†             7562.4       0.456 mg/L        0.0018       0.456 mg/L        0.0018   0.39%
   QC value within limits for Cd 228.802  Recovery = 91.11%
Co 228.616†             3419.6       0.237 mg/L        0.0005       0.237 mg/L        0.0005   0.23%
   QC value within limits for Co 228.616  Recovery = 94.94%
Cr 267.716†            34525.6       0.251 mg/L        0.0009       0.251 mg/L        0.0009   0.37%
   QC value within limits for Cr 267.716  Recovery = 100.43%
Cu 327.393†            51607.4       0.255 mg/L        0.0008       0.255 mg/L        0.0008   0.32%
   QC value within limits for Cu 327.393  Recovery = 102.07%
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Fe 239.562†          572571.8        98.4 mg/L          1.37        98.4 mg/L          1.37   1.39%
   QC value within limits for Fe 239.562  Recovery = 98.41%
Mg 279.077†          662463.4         245 mg/L           3.9         245 mg/L           3.9   1.60%
   QC value within limits for Mg 279.077  Recovery = 98.15%
Mn 257.610†          156520.7       0.247 mg/L        0.0014       0.247 mg/L        0.0014   0.55%
   QC value within limits for Mn 257.610  Recovery = 98.90%
Mo 202.031†              12.0    -0.00030 mg/L      0.001738    -0.00030 mg/L      0.001738 574.99%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†           15059.6       0.471 mg/L        0.0011       0.471 mg/L        0.0011   0.23%
   QC value within limits for Ni 231.604  Recovery = 94.12%
Pb 220.353†            1976.3       0.488 mg/L        0.0064       0.488 mg/L        0.0064   1.31%
   QC value within limits for Pb 220.353  Recovery = 97.69%
Sb 206.836†             562.7       0.491 mg/L        0.0041       0.491 mg/L        0.0041   0.84%
   QC value within limits for Sb 206.836  Recovery = 98.27%
Se 196.026†             129.0       0.237 mg/L        0.0303       0.237 mg/L        0.0303  12.77%
   QC value within limits for Se 196.026  Recovery = 94.99%
Si 251.611†         -321629.1       -16.2 mg/L          0.11       -16.2 mg/L          0.11   0.70%
   QC value less than the lower limit for Si 251.611  Recovery = Not calculated
Sn 189.927†             -56.2     -0.0110 mg/L       0.00260     -0.0110 mg/L       0.00260  23.71%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†          -18377.9     0.00014 mg/L      0.000280     0.00014 mg/L      0.000280 195.28%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†             576.1       0.477 mg/L        0.0082       0.477 mg/L        0.0082   1.73%
   QC value within limits for Tl 190.801  Recovery = 95.38%
V 290.880†           46224.4       0.259 mg/L        0.0015       0.259 mg/L        0.0015   0.60%
   QC value within limits for V 290.880  Recovery = 103.54%
Zn 206.200†          14056.4       0.497 mg/L        0.0029       0.497 mg/L        0.0029   0.58%
   QC value within limits for Zn 206.200  Recovery = 99.36%
K 766.490†            8850.2        5.62 mg/L         0.114        5.62 mg/L         0.114   2.03%
   QC value within limits for K 766.490  Recovery = 112.31%
Na 589.592†          42951.6        5.28 mg/L         0.090        5.28 mg/L         0.090   1.71%
   QC value within limits for Na 589.592  Recovery = 105.61%
Sr 407.771†           1897.8    -0.00707 mg/L      0.000100    -0.00707 mg/L      0.000100   1.41%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†             202.9     0.00262 mg/L      0.004058     0.00262 mg/L      0.004058 154.65%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†             -117.2      -0.182 mg/L        0.0086      -0.182 mg/L        0.0086   4.75%
   QC value within limits for P 214.914  Recovery = Not calculated
QC Failed.  Continue with analysis.

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Sequence No.: 11                                    Autosampler Location: 6
Sample ID: CCV                                      Date Collected: 5/27/2015 9:08:34 AM
Analyst:                                            Data Type: Reprocessed on 5/27/2015 9:48:38 AM
Logged In Analyst (Original) : peicp2
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

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Nebulizer Parameters: CCV
Analyte                 Back Pressure    Flow
All                     232.0 kPa        0.40 L/min

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Mean Data: CCV
                   Mean Corrected        Calib.                          Sample
Analyte               Intensity     Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029            3223207.8                                                    17754.75   0.55%
YRADIAL               201576.9                                                     3001.65   1.49%
Ga 417.206           1348048.0                                                     2940.77   0.22%
GaRADIAL               47401.8                                                      638.70   1.35%
Ag 328.068†           135722.4       0.404 mg/L        0.0022       0.404 mg/L        0.0022   0.56%
   QC value within limits for Ag 328.068  Recovery = 100.89%
Al 396.153†            29431.4        10.3 mg/L          0.08        10.3 mg/L          0.08   0.81%
   QC value within limits for Al 396.153  Recovery = 102.61%
As 188.979†              644.1       0.395 mg/L        0.0060       0.395 mg/L        0.0060   1.51%
   QC value within limits for As 188.979  Recovery = 98.71%
Ba 233.527†            58376.3        1.01 mg/L         0.008        1.01 mg/L         0.008   0.80%
   QC value within limits for Ba 233.527  Recovery = 100.93%
Be 234.861†            27451.8      0.0495 mg/L       0.00026      0.0495 mg/L       0.00026   0.52%
   QC value within limits for Be 234.861  Recovery = 99.01%
B 249.677†             26797.3       0.395 mg/L        0.0038       0.395 mg/L        0.0038   0.96%
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   QC value less than the lower limit for B 249.677  Recovery = 79.05%
Ca 227.546†              765.5        9.74 mg/L         0.186        9.74 mg/L         0.186   1.91%
   QC value within limits for Ca 227.546  Recovery = 97.43%
Cd 228.802†              827.6      0.0487 mg/L       0.00034      0.0487 mg/L       0.00034   0.69%
   QC value within limits for Cd 228.802  Recovery = 97.47%
Co 228.616†             2889.7       0.202 mg/L        0.0013       0.202 mg/L        0.0013   0.62%
   QC value within limits for Co 228.616  Recovery = 100.94%
Cr 267.716†            68368.7       0.503 mg/L        0.0067       0.503 mg/L        0.0067   1.34%
   QC value within limits for Cr 267.716  Recovery = 100.60%
Cu 327.393†           106699.0       0.498 mg/L        0.0047       0.498 mg/L        0.0047   0.94%
   QC value within limits for Cu 327.393  Recovery = 99.60%
Fe 239.562†            23744.0        4.08 mg/L         0.010        4.08 mg/L         0.010   0.25%
   QC value within limits for Fe 239.562  Recovery = 102.11%
Mg 279.077†            27469.8        10.2 mg/L          0.05        10.2 mg/L          0.05   0.45%
   QC value within limits for Mg 279.077  Recovery = 101.61%
Mn 257.610†           322331.3       0.505 mg/L        0.0040       0.505 mg/L        0.0040   0.80%
   QC value within limits for Mn 257.610  Recovery = 100.97%
Mo 202.031†            10470.8       0.997 mg/L        0.0087       0.997 mg/L        0.0087   0.87%
   QC value within limits for Mo 202.031  Recovery = 99.72%
Ni 231.604†            16079.9       0.503 mg/L        0.0032       0.503 mg/L        0.0032   0.64%
   QC value within limits for Ni 231.604  Recovery = 100.53%
Pb 220.353†             2250.6       0.505 mg/L        0.0047       0.505 mg/L        0.0047   0.93%
   QC value within limits for Pb 220.353  Recovery = 101.00%
Sb 206.836†             1364.4        1.18 mg/L         0.006        1.18 mg/L         0.006   0.51%
   QC value within limits for Sb 206.836  Recovery = 98.24%
Se 196.026†              249.8       0.397 mg/L        0.0093       0.397 mg/L        0.0093   2.34%
   QC value within limits for Se 196.026  Recovery = 99.25%
Si 251.611†          -171862.8       -8.74 mg/L         0.202       -8.74 mg/L         0.202   2.31%
   QC value less than the lower limit for Si 251.611  Recovery = -174.77%
Sn 189.927†             5911.6       0.998 mg/L        0.0055       0.998 mg/L        0.0055   0.55%
   QC value within limits for Sn 189.927  Recovery = 99.80%
Ti 334.940†           926417.2       1.000 mg/L        0.0087       1.000 mg/L        0.0087   0.87%
   QC value within limits for Ti 334.940  Recovery = 100.00%
Tl 190.801†              600.2       0.507 mg/L        0.0073       0.507 mg/L        0.0073   1.43%
   QC value within limits for Tl 190.801  Recovery = 101.38%
V 290.880†            189141.7        1.00 mg/L         0.011        1.00 mg/L         0.011   1.13%
   QC value within limits for V 290.880  Recovery = 100.26%
Zn 206.200†            29271.2        1.02 mg/L         0.007        1.02 mg/L         0.007   0.70%
   QC value within limits for Zn 206.200  Recovery = 102.08%
K 766.490†             79180.8        50.5 mg/L          0.17        50.5 mg/L          0.17   0.34%
   QC value within limits for K 766.490  Recovery = 100.91%
Na 589.592†           397626.4        49.9 mg/L          0.72        49.9 mg/L          0.72   1.44%
   QC value within limits for Na 589.592  Recovery = 99.88%
Sr 407.771†           810730.3        1.01 mg/L         0.011        1.01 mg/L         0.011   1.12%
   QC value within limits for Sr 407.771  Recovery = 100.55%
Li 670.784†            39335.6        1.03 mg/L         0.005        1.03 mg/L         0.005   0.49%
   QC value within limits for Li 670.784  Recovery = 102.82%
P 214.914†              6344.5        9.95 mg/L         0.091        9.95 mg/L         0.091   0.92%
   QC value within limits for P 214.914  Recovery = 99.50%
QC Failed.  Continue with analysis.

==========================================================================================
Sequence No.: 12                                    Autosampler Location: 1
Sample ID: CCB                                      Date Collected: 5/27/2015 9:11:02 AM
Analyst:                                            Data Type: Reprocessed on 5/27/2015 9:48:39 AM
Logged In Analyst (Original) : peicp2
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

------------------------------------------------------------------------------------------
Nebulizer Parameters: CCB
Analyte                  Back Pressure     Flow
All                       232.0 kPa        0.40 L/min

------------------------------------------------------------------------------------------
Mean Data: CCB
                   Mean Corrected        Calib.                          Sample
Analyte               Intensity     Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029            3390438.6                                                     55006.43   1.62%
YRADIAL               211836.0                                                      2786.13   1.32%
Ga 417.206           1564393.3                                                     26663.58   1.70%
GaRADIAL               51409.6                                                       569.69   1.11%
```

Approved: May 28, 2015

Lynn H. Rhoden

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Ag 328.068†              424.3     0.00331 mg/L      0.000428     0.00331 mg/L      0.000428  12.92%
   QC value within limits for Ag 328.068  Recovery = Not calculated
Al 396.153†               16.9     -0.0161 mg/L       0.00087     -0.0161 mg/L       0.00087   5.42%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†              -10.3    -0.00275 mg/L      0.005910    -0.00275 mg/L      0.005910 215.25%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†                4.2    -0.00017 mg/L      0.000275    -0.00017 mg/L      0.000275 160.22%
   QC value within limits for Ba 233.527  Recovery = Not calculated
Be 234.861†              -16.2     0.00022 mg/L      0.000034     0.00022 mg/L      0.000034  15.53%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†              -266.5     0.00090 mg/L      0.003389     0.00090 mg/L      0.003389 374.83%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†               -6.8     -0.0290 mg/L       0.23305     -0.0290 mg/L       0.23305 804.04%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†                2.2     0.00039 mg/L      0.000499     0.00039 mg/L      0.000499 129.22%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†               -3.4    -0.00087 mg/L      0.000460    -0.00087 mg/L      0.000460  52.86%
   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†               73.1     0.00005 mg/L      0.000590     0.00005 mg/L      0.000590 >999.9%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†              -93.4     0.00165 mg/L      0.000205     0.00165 mg/L      0.000205  12.43%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†                5.4     0.00512 mg/L      0.002423     0.00512 mg/L      0.002423  47.37%
   QC value within limits for Fe 239.562  Recovery = Not calculated
Mg 279.077†               10.3     -0.0107 mg/L       0.00501     -0.0107 mg/L       0.00501  46.68%
   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†               38.4    -0.00036 mg/L      0.000022    -0.00036 mg/L      0.000022   6.08%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†               10.0     0.00103 mg/L      0.000900     0.00103 mg/L      0.000900  87.60%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†                5.7    -0.00055 mg/L      0.000794    -0.00055 mg/L      0.000794 143.66%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†               -6.4    -0.00186 mg/L      0.003764    -0.00186 mg/L      0.003764 201.89%
   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†               -3.5     0.00142 mg/L      0.001945     0.00142 mg/L      0.001945 136.55%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†                3.1     0.00901 mg/L      0.010513     0.00901 mg/L      0.010513 116.74%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†            -2076.0      -0.254 mg/L        0.1465      -0.254 mg/L        0.1465  57.64%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†               -5.7    -0.00246 mg/L      0.000628    -0.00246 mg/L      0.000628  25.55%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†              261.9     0.00199 mg/L      0.000064     0.00199 mg/L      0.000064   3.20%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†               -6.2    -0.00657 mg/L      0.002355    -0.00657 mg/L      0.002355  35.84%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†              -147.3     0.00110 mg/L      0.001021     0.00110 mg/L      0.001021  92.74%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†                2.6    -0.00469 mg/L      0.000314    -0.00469 mg/L      0.000314   6.69%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†                85.5      0.0828 mg/L       0.01139      0.0828 mg/L       0.01139  13.76%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†               43.1      0.0259 mg/L       0.01340      0.0259 mg/L       0.01340  51.81%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†              133.9    -0.00017 mg/L      0.000124    -0.00017 mg/L      0.000124  73.70%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†              -75.6    -0.00467 mg/L      0.000238    -0.00467 mg/L      0.000238   5.09%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†                 0.5     0.00302 mg/L      0.006136     0.00302 mg/L      0.006136 202.92%
   QC value within limits for P 214.914  Recovery = Not calculated
All analyte(s) passed QC.
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Approved: May 28, 2015

Lynn H. Rhoden

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Analysis Begun

Start Time: 5/27/2015 9:56:16 AM **Plasma On Time: 5/27/2015 6:39:13 AM**
Logged In Analyst: peicp2 **Technique: ICP Continuous**
Spectrometer Model: Optima 4300 DV, S/N 077N4011401 **Autosampler Model: Cetac**

Sample Information File: C:\pe\peicp2\Sample Information\MONDAY1.sif
Batch ID:
Results Data Set: 052715HR
Results Library: C:\pe\peicp2\Results\results2.mdb

==========

Sequence No.: 1 **Autosampler Location: 15**
Sample ID: PBW 1A WG524813-02 **Date Collected: 5/27/2015 9:56:17 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: PBW 1A WG524813-02

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: PBW 1A WG524813-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3419531.8						57166.55	1.67%
YRADIAL	211564.0						3051.14	1.44%
Ga 417.206	1550910.2						26944.95	1.74%
GaRADIAL	50406.1						801.43	1.59%
Ag 328.068†	123.1	0.00243	mg/L	0.000681	0.00243	mg/L	0.000681	27.98%
Al 396.153†	5.9	-0.0200	mg/L	0.00339	-0.0200	mg/L	0.00339	17.02%
As 188.979†	-9.1	-0.00196	mg/L	0.005180	-0.00196	mg/L	0.005180	264.13%
Ba 233.527†	-8.5	-0.00039	mg/L	0.000078	-0.00039	mg/L	0.000078	19.84%
Be 234.861†	-86.3	0.00009	mg/L	0.000030	0.00009	mg/L	0.000030	32.89%
B 249.677†	7581.6	0.111	mg/L	0.0024	0.111	mg/L	0.0024	2.18%
Ca 227.546†	-16.8	-0.155	mg/L	0.0642	-0.155	mg/L	0.0642	41.33%
Cd 228.802†	-1.1	0.00018	mg/L	0.000122	0.00018	mg/L	0.000122	68.81%
Co 228.616†	-8.3	-0.00121	mg/L	0.000411	-0.00121	mg/L	0.000411	33.90%
Cr 267.716†	115.3	0.00036	mg/L	0.000160	0.00036	mg/L	0.000160	44.31%
Cu 327.393†	-272.7	0.00082	mg/L	0.000415	0.00082	mg/L	0.000415	50.73%
Fe 239.562†	8.1	0.00558	mg/L	0.002104	0.00558	mg/L	0.002104	37.70%
Mg 279.077†	16.0	-0.00862	mg/L	0.002562	-0.00862	mg/L	0.002562	29.73%
Mn 257.610†	174.1	-0.00015	mg/L	0.000034	-0.00015	mg/L	0.000034	22.23%
Mo 202.031†	15.1	0.00151	mg/L	0.000474	0.00151	mg/L	0.000474	31.44%
Ni 231.604†	-2.8	-0.00082	mg/L	0.000262	-0.00082	mg/L	0.000262	31.87%
Pb 220.353†	-18.8	-0.00463	mg/L	0.002722	-0.00463	mg/L	0.002722	58.80%
Sb 206.836†	-0.6	0.00397	mg/L	0.004507	0.00397	mg/L	0.004507	113.60%
Se 196.026†	6.7	0.0146	mg/L	0.01333	0.0146	mg/L	0.01333	91.30%
Si 251.611†	-313565.1	-15.8	mg/L	0.51	-15.8	mg/L	0.51	3.21%
Sn 189.927†	-32.0	-0.00690	mg/L	0.000456	-0.00690	mg/L	0.000456	6.61%
Ti 334.940†	442.7	0.00218	mg/L	0.000076	0.00218	mg/L	0.000076	3.48%
Tl 190.801†	-1.8	-0.00289	mg/L	0.004737	-0.00289	mg/L	0.004737	163.75%
V 290.880†	-128.9	0.00120	mg/L	0.001564	0.00120	mg/L	0.001564	130.60%
Zn 206.200†	-161.2	-0.0104	mg/L	0.00020	-0.0104	mg/L	0.00020	1.95%
K 766.490†	-48.2	-0.00156	mg/L	0.072933	-0.00156	mg/L	0.072933	>999.9%
Na 589.592†	-247.0	-0.00957	mg/L	0.030775	-0.00957	mg/L	0.030775	321.61%
Sr 407.771†	106.0	-0.00020	mg/L	0.000117	-0.00020	mg/L	0.000117	58.53%
Li 670.784†	-120.7	-0.00586	mg/L	0.002073	-0.00586	mg/L	0.002073	35.40%
P 214.914†	0.3	0.00268	mg/L	0.013744	0.00268	mg/L	0.013744	512.55%

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Sequence No.: 2 **Autosampler Location: 16**
Sample ID: LCSW 1A WG524813-03 **Date Collected: 5/27/2015 9:59:39 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Approved: May 28, 2015

Kym H. Rhoden

Nebulizer Parameters: LCSW 1A WG524813-03

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: LCSW 1A WG524813-03

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3300819.2						74418.75	2.25%
YRADIAL	201830.8						1001.83	0.50%
Ga 417.206	1398879.7						26938.99	1.93%
GaRADIAL	47131.7						180.88	0.38%
Ag 328.068†	67043.6	0.200	mg/L	0.0030	0.200	mg/L	0.0030	1.49%
Al 396.153†	14806.2	5.15	mg/L	0.012	5.15	mg/L	0.012	0.23%
As 188.979†	307.1	0.190	mg/L	0.0074	0.190	mg/L	0.0074	3.89%
Ba 233.527†	29751.6	0.514	mg/L	0.0161	0.514	mg/L	0.0161	3.13%
Be 234.861†	13015.0	0.0236	mg/L	0.00066	0.0236	mg/L	0.00066	2.81%
B 249.677†	66282.7	0.944	mg/L	0.0116	0.944	mg/L	0.0116	1.23%
Ca 227.546†	369.3	4.73	mg/L	0.258	4.73	mg/L	0.258	5.46%
Cd 228.802†	400.5	0.0237	mg/L	0.00080	0.0237	mg/L	0.00080	3.38%
Co 228.616†	1431.0	0.0997	mg/L	0.00298	0.0997	mg/L	0.00298	2.99%
Cr 267.716†	34547.3	0.254	mg/L	0.0003	0.254	mg/L	0.0003	0.14%
Cu 327.393†	52774.9	0.247	mg/L	0.0007	0.247	mg/L	0.0007	0.29%
Fe 239.562†	11843.2	2.04	mg/L	0.017	2.04	mg/L	0.017	0.85%
Mg 279.077†	13559.4	5.01	mg/L	0.045	5.01	mg/L	0.045	0.89%
Mn 257.610†	160343.3	0.251	mg/L	0.0019	0.251	mg/L	0.0019	0.75%
Mo 202.031†	5238.0	0.499	mg/L	0.0157	0.499	mg/L	0.0157	3.15%
Ni 231.604†	7769.2	0.242	mg/L	0.0076	0.242	mg/L	0.0076	3.14%
Pb 220.353†	1112.3	0.249	mg/L	0.0085	0.249	mg/L	0.0085	3.41%
Sb 206.836†	662.1	0.574	mg/L	0.0182	0.574	mg/L	0.0182	3.16%
Se 196.026†	122.1	0.196	mg/L	0.0068	0.196	mg/L	0.0068	3.44%
Si 251.611†	-210495.6	-10.7	mg/L	0.16	-10.7	mg/L	0.16	1.47%
Sn 189.927†	2940.6	0.496	mg/L	0.0144	0.496	mg/L	0.0144	2.90%
Ti 334.940†	462565.1	0.500	mg/L	0.0029	0.500	mg/L	0.0029	0.58%
Tl 190.801†	300.6	0.253	mg/L	0.0062	0.253	mg/L	0.0062	2.46%
V 290.880†	94582.8	0.502	mg/L	0.0034	0.502	mg/L	0.0034	0.67%
Zn 206.200†	14335.5	0.498	mg/L	0.0154	0.498	mg/L	0.0154	3.09%
K 766.490†	39352.6	25.0	mg/L	0.24	25.0	mg/L	0.24	0.96%
Na 589.592†	202629.2	25.1	mg/L	0.35	25.1	mg/L	0.35	1.38%
Sr 407.771†	407826.6	0.506	mg/L	0.0094	0.506	mg/L	0.0094	1.87%
Li 670.784†	19875.8	0.518	mg/L	0.0019	0.518	mg/L	0.0019	0.38%
P 214.914†	3078.0	4.83	mg/L	0.174	4.83	mg/L	0.174	3.61%

Sequence No.: 3
Sample ID: FBLK WG524637-01
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 17
Date Collected: 5/27/2015 10:02:02 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: FBLK WG524637-01

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: FBLK WG524637-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3268242.4						9260.27	0.28%
YRADIAL	196074.5						2862.39	1.46%
Ga 417.206	1341533.7						2571.73	0.19%
GaRADIAL	45370.8						589.14	1.30%
Ag 328.068†	-175.1	0.00156	mg/L	0.000069	0.00156	mg/L	0.000069	4.43%
Al 396.153†	2.7	-0.0211	mg/L	0.00194	-0.0211	mg/L	0.00194	9.23%
As 188.979†	-7.1	-0.00076	mg/L	0.001584	-0.00076	mg/L	0.001584	207.17%
Ba 233.527†	-0.9	-0.00026	mg/L	0.000076	-0.00026	mg/L	0.000076	29.10%
Be 234.861†	-120.6	0.00003	mg/L	0.000035	0.00003	mg/L	0.000035	121.81%
B 249.677†	8887.8	0.130	mg/L	0.0002	0.130	mg/L	0.0002	0.13%
Ca 227.546†	-13.3	-0.111	mg/L	0.0636	-0.111	mg/L	0.0636	57.01%
Cd 228.802†	0.4	0.00026	mg/L	0.000223	0.00026	mg/L	0.000223	85.41%
Co 228.616†	-6.3	-0.00107	mg/L	0.000846	-0.00107	mg/L	0.000846	78.90%

Approved: May 28, 2015

Kym H. Rhoden

Cr 267.716†	190.8	0.00092	mg/L	0.001791	0.00092	mg/L	0.001791 195.35%
Cu 327.393†	-967.6	-0.00240	mg/L	0.001758	-0.00240	mg/L	0.001758 73.30%
Fe 239.562†	10.8	0.00605	mg/L	0.000826	0.00605	mg/L	0.000826 13.64%
Mg 279.077†	52.7	0.00498	mg/L	0.009477	0.00498	mg/L	0.009477 190.30%
Mn 257.610†	78.8	-0.00030	mg/L	0.000047	-0.00030	mg/L	0.000047 15.53%
Mo 202.031†	10.1	0.00104	mg/L	0.000589	0.00104	mg/L	0.000589 56.64%
Ni 231.604†	-24.0	-0.00148	mg/L	0.000324	-0.00148	mg/L	0.000324 21.87%
Pb 220.353†	-11.6	-0.00303	mg/L	0.004645	-0.00303	mg/L	0.004645 153.12%
Sb 206.836†	5.8	0.00948	mg/L	0.003741	0.00948	mg/L	0.003741 39.47%
Se 196.026†	7.5	0.0159	mg/L	0.00445	0.0159	mg/L	0.00445 27.95%
Si 251.611†	-271834.6	-13.7	mg/L	0.01	-13.7	mg/L	0.01 0.09%
Sn 189.927†	-37.2	-0.00778	mg/L	0.002320	-0.00778	mg/L	0.002320 29.82%
Ti 334.940†	635.2	0.00239	mg/L	0.000312	0.00239	mg/L	0.000312 13.05%
Tl 190.801†	-8.3	-0.00828	mg/L	0.001671	-0.00828	mg/L	0.001671 20.18%
V 290.880†	117.2	0.00250	mg/L	0.000803	0.00250	mg/L	0.000803 32.13%
Zn 206.200†	-92.4	-0.00799	mg/L	0.000075	-0.00799	mg/L	0.000075 0.94%
K 766.490†	-120.8	-0.190	mg/L	0.0490	-0.190	mg/L	0.0490 25.83%
Na 589.592†	1074240.9	142	mg/L	1.5	142	mg/L	1.5 1.07%
Sr 407.771†	220.0	-0.00006	mg/L	0.000124	-0.00006	mg/L	0.000124 209.81%
Li 670.784†	-56.7	-0.00418	mg/L	0.005352	-0.00418	mg/L	0.005352 128.05%
P 214.914†	5.8	0.0113	mg/L	0.01655	0.0113	mg/L	0.01655 146.78%

Sequence No.: 4
Sample ID: L1505130302
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 18
Date Collected: 5/27/2015 10:05:25 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505130302

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505130302

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3063137.9						14042.01	0.46%
YRADIAL	191856.3						1287.76	0.67%
Ga 417.206	1253518.0						4572.55	0.36%
GaRADIAL	45530.2						388.86	0.85%
Ag 328.068†	1416.7	0.00603	mg/L	0.000500	0.00603	mg/L	0.000500	8.28%
Al 396.153†	44.1	-0.00681	mg/L	0.031902	-0.00681	mg/L	0.031902	468.49%
As 188.979†	-27.6	-0.0110	mg/L	0.00312	-0.0110	mg/L	0.00312	28.41%
Ba 233.527†	1846.0	0.0317	mg/L	0.00021	0.0317	mg/L	0.00021	0.67%
Be 234.861†	-83.0	0.00006	mg/L	0.000030	0.00006	mg/L	0.000030	47.59%
B 249.677†	354.8	0.0104	mg/L	0.00177	0.0104	mg/L	0.00177	17.07%
Ca 227.546†	8480.8	107	mg/L	0.5	107	mg/L	0.5	0.44%
Cd 228.802†	13.7	0.00113	mg/L	0.000231	0.00113	mg/L	0.000231	20.47%
Co 228.616†	2.1	-0.00047	mg/L	0.000780	-0.00047	mg/L	0.000780	167.57%
Cr 267.716†	376.9	0.00228	mg/L	0.000294	0.00228	mg/L	0.000294	12.91%
Cu 327.393†	-940.4	-0.00227	mg/L	0.000321	-0.00227	mg/L	0.000321	14.16%
Fe 239.562†	1107.7	0.194	mg/L	0.0070	0.194	mg/L	0.0070	3.62%
Mg 279.077†	121922.9	45.2	mg/L	0.21	45.2	mg/L	0.21	0.47%
Mn 257.610†	66231.9	0.103	mg/L	0.0019	0.103	mg/L	0.0019	1.88%
Mo 202.031†	90.9	0.00874	mg/L	0.002053	0.00874	mg/L	0.002053	23.49%
Ni 231.604†	118.9	0.00300	mg/L	0.000720	0.00300	mg/L	0.000720	24.02%
Pb 220.353†	38.3	0.00806	mg/L	0.003406	0.00806	mg/L	0.003406	42.27%
Sb 206.836†	1.2	0.00550	mg/L	0.006545	0.00550	mg/L	0.006545	118.90%
Se 196.026†	-5.7	-0.00479	mg/L	0.009062	-0.00479	mg/L	0.009062	189.28%
Si 251.611†	248432.8	12.2	mg/L	0.37	12.2	mg/L	0.37	3.00%
Sn 189.927†	-45.8	-0.00924	mg/L	0.002641	-0.00924	mg/L	0.002641	28.59%
Ti 334.940†	-6683.3	0.00136	mg/L	0.000146	0.00136	mg/L	0.000146	10.73%
Tl 190.801†	-29.7	-0.0263	mg/L	0.00489	-0.0263	mg/L	0.00489	18.61%
V 290.880†	-1447.1	-0.00691	mg/L	0.000011	-0.00691	mg/L	0.000011	0.16%
Zn 206.200†	-36.3	-0.00601	mg/L	0.000084	-0.00601	mg/L	0.000084	1.41%
K 766.490†	2033.6	1.07	mg/L	0.078	1.07	mg/L	0.078	7.31%
Na 589.592†	1729072.2	244	mg/L	0.4	244	mg/L	0.4	0.18%
Sr 407.771†	1014543.1	1.26	mg/L	0.005	1.26	mg/L	0.005	0.37%
Li 670.784†	2396.3	0.0601	mg/L	0.00540	0.0601	mg/L	0.00540	8.99%
P 214.914†	32.1	0.0524	mg/L	0.02107	0.0524	mg/L	0.02107	40.18%

Approved: May 28, 2015

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Sequence No.: 5 **Autosampler Location: 19**
Sample ID: L1505130304 **Date Collected: 5/27/2015 10:07:50 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505130304

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505130304

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3112505.6						60932.00	1.96%
YRADIAL	195716.3						2649.89	1.35%
Ga 417.206	1270375.7						21051.17	1.66%
GaRADIAL	45797.6						675.88	1.48%
Ag 328.068†	180.0	0.00538	mg/L	0.000381	0.00538	mg/L	0.000381	7.08%
Al 396.153†	160.8	0.0349	mg/L	0.07553	0.0349	mg/L	0.07553	216.48%
As 188.979†	-17.3	-0.00287	mg/L	0.002414	-0.00287	mg/L	0.002414	84.14%
Ba 233.527†	2658.1	0.0455	mg/L	0.00132	0.0455	mg/L	0.00132	2.91%
Be 234.861†	1040.3	0.00040	mg/L	0.000102	0.00040	mg/L	0.000102	25.57%
B 249.677†	-1139.5	0.0153	mg/L	0.00184	0.0153	mg/L	0.00184	12.01%
Ca 227.546†	8802.0	111	mg/L	2.5	111	mg/L	2.5	2.23%
Cd 228.802†	3.8	0.00051	mg/L	0.000578	0.00051	mg/L	0.000578	113.47%
Co 228.616†	40.6	0.00206	mg/L	0.000469	0.00206	mg/L	0.000469	22.75%
Cr 267.716†	356.3	0.00194	mg/L	0.000316	0.00194	mg/L	0.000316	16.30%
Cu 327.393†	-905.2	-0.00112	mg/L	0.000380	-0.00112	mg/L	0.000380	33.95%
Fe 239.562†	40924.4	7.04	mg/L	0.047	7.04	mg/L	0.047	0.67%
Mg 279.077†	134146.6	49.7	mg/L	0.04	49.7	mg/L	0.04	0.09%
Mn 257.610†	283299.7	0.444	mg/L	0.0075	0.444	mg/L	0.0075	1.69%
Mo 202.031†	102.5	0.00980	mg/L	0.000843	0.00980	mg/L	0.000843	8.60%
Ni 231.604†	67.6	0.00139	mg/L	0.000322	0.00139	mg/L	0.000322	23.22%
Pb 220.353†	34.9	0.00688	mg/L	0.000557	0.00688	mg/L	0.000557	8.10%
Sb 206.836†	-3.4	0.00173	mg/L	0.004607	0.00173	mg/L	0.004607	266.08%
Se 196.026†	-6.3	-0.00658	mg/L	0.007248	-0.00658	mg/L	0.007248	110.11%
Si 251.611†	117783.7	5.73	mg/L	0.169	5.73	mg/L	0.169	2.94%
Sn 189.927†	-48.3	-0.00966	mg/L	0.002202	-0.00966	mg/L	0.002202	22.80%
Ti 334.940†	-6980.6	0.00130	mg/L	0.000301	0.00130	mg/L	0.000301	23.23%
Tl 190.801†	-16.3	-0.0155	mg/L	0.00276	-0.0155	mg/L	0.00276	17.82%
V 290.880†	-1925.4	-0.00825	mg/L	0.001564	-0.00825	mg/L	0.001564	18.96%
Zn 206.200†	-52.1	-0.00593	mg/L	0.000359	-0.00593	mg/L	0.000359	6.06%
K 766.490†	6800.2	4.10	mg/L	0.063	4.10	mg/L	0.063	1.53%
Na 589.592†	1596974.2	222	mg/L	3.9	222	mg/L	3.9	1.77%
Sr 407.771†	1529104.9	1.89	mg/L	0.017	1.89	mg/L	0.017	0.92%
Li 670.784†	2264.5	0.0567	mg/L	0.00330	0.0567	mg/L	0.00330	5.83%
P 214.914†	23.4	0.0389	mg/L	0.00620	0.0389	mg/L	0.00620	15.92%

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Sequence No.: 6 **Autosampler Location: 20**
Sample ID: L1505130306 **Date Collected: 5/27/2015 10:10:14 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505130306

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505130306

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3097679.4						29202.48	0.94%
YRADIAL	195783.6						2544.88	1.30%
Ga 417.206	1276057.5						14099.80	1.10%
GaRADIAL	45961.8						770.25	1.68%

Approved: May 28, 2015

Ag 328.068†	1098.8	0.00511	mg/L	0.000231	0.00511	mg/L	0.000231	4.51%
Al 396.153†	9.4	-0.0190	mg/L	0.00207	-0.0190	mg/L	0.00207	10.93%
As 188.979†	-26.7	-0.0111	mg/L	0.00288	-0.0111	mg/L	0.00288	25.90%
Ba 233.527†	1267.1	0.0217	mg/L	0.00018	0.0217	mg/L	0.00018	0.83%
Be 234.861†	-111.4	0.00005	mg/L	0.000039	0.00005	mg/L	0.000039	76.36%
B 249.677†	247.2	0.00824	mg/L	0.000944	0.00824	mg/L	0.000944	11.45%
Ca 227.546†	6043.6	76.0	mg/L	0.90	76.0	mg/L	0.90	1.19%
Cd 228.802†	6.0	0.00067	mg/L	0.000377	0.00067	mg/L	0.000377	56.46%
Co 228.616†	9.7	0.00007	mg/L	0.000459	0.00007	mg/L	0.000459	664.05%
Cr 267.716†	275.4	0.00153	mg/L	0.000185	0.00153	mg/L	0.000185	12.04%
Cu 327.393†	-940.7	-0.00229	mg/L	0.002364	-0.00229	mg/L	0.002364	103.42%
Fe 239.562†	182.0	0.0348	mg/L	0.00052	0.0348	mg/L	0.00052	1.50%
Mg 279.077†	87394.2	32.4	mg/L	0.18	32.4	mg/L	0.18	0.57%
Mn 257.610†	68198.2	0.106	mg/L	0.0008	0.106	mg/L	0.0008	0.70%
Mo 202.031†	83.6	0.00805	mg/L	0.000332	0.00805	mg/L	0.000332	4.12%
Ni 231.604†	41.7	0.00058	mg/L	0.000321	0.00058	mg/L	0.000321	55.49%
Pb 220.353†	22.2	0.00446	mg/L	0.002176	0.00446	mg/L	0.002176	48.76%
Sb 206.836†	2.0	0.00614	mg/L	0.003676	0.00614	mg/L	0.003676	59.92%
Se 196.026†	-5.9	-0.00514	mg/L	0.010745	-0.00514	mg/L	0.010745	209.19%
Si 251.611†	209563.9	10.3	mg/L	0.29	10.3	mg/L	0.29	2.78%
Sn 189.927†	-55.3	-0.0108	mg/L	0.00361	-0.0108	mg/L	0.00361	33.37%
Ti 334.940†	-4918.1	0.00129	mg/L	0.000236	0.00129	mg/L	0.000236	18.22%
Tl 190.801†	-21.9	-0.0198	mg/L	0.00539	-0.0198	mg/L	0.00539	27.22%
V 290.880†	-1070.2	-0.00462	mg/L	0.001438	-0.00462	mg/L	0.001438	31.13%
Zn 206.200†	-119.6	-0.00894	mg/L	0.000249	-0.00894	mg/L	0.000249	2.78%
K 766.490†	1932.8	1.05	mg/L	0.096	1.05	mg/L	0.096	9.14%
Na 589.592†	1470330.5	202	mg/L	2.5	202	mg/L	2.5	1.25%
Sr 407.771†	697796.9	0.863	mg/L	0.0120	0.863	mg/L	0.0120	1.39%
Li 670.784†	2061.1	0.0513	mg/L	0.00565	0.0513	mg/L	0.00565	11.01%
P 214.914†	31.7	0.0518	mg/L	0.01459	0.0518	mg/L	0.01459	28.16%

Sequence No.: 7
Sample ID: L1505130308
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 21
Date Collected: 5/27/2015 10:13:35 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505130308

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505130308

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3143733.9						19542.58	0.62%
YRADIAL	203720.4						3488.27	1.71%
Ga 417.206	1313382.1						3681.69	0.28%
GaRADIAL	48380.6						631.14	1.30%
Ag 328.068†	1705.7	0.00643	mg/L	0.000448	0.00643	mg/L	0.000448	6.97%
Al 396.153†	-28.8	-0.0327	mg/L	0.00832	-0.0327	mg/L	0.00832	25.42%
As 188.979†	-40.3	-0.0185	mg/L	0.00637	-0.0185	mg/L	0.00637	34.41%
Ba 233.527†	8483.5	0.146	mg/L	0.0008	0.146	mg/L	0.0008	0.52%
Be 234.861†	-119.3	0.00005	mg/L	0.000062	0.00005	mg/L	0.000062	122.32%
B 249.677†	293.9	0.00880	mg/L	0.000378	0.00880	mg/L	0.000378	4.30%
Ca 227.546†	9886.4	124	mg/L	0.3	124	mg/L	0.3	0.22%
Cd 228.802†	5.3	0.00066	mg/L	0.000675	0.00066	mg/L	0.000675	102.05%
Co 228.616†	-1.5	-0.00074	mg/L	0.000434	-0.00074	mg/L	0.000434	59.02%
Cr 267.716†	689.4	0.00458	mg/L	0.000229	0.00458	mg/L	0.000229	4.99%
Cu 327.393†	-408.1	0.00018	mg/L	0.001249	0.00018	mg/L	0.001249	702.30%
Fe 239.562†	16.3	0.00656	mg/L	0.000776	0.00656	mg/L	0.000776	11.83%
Mg 279.077†	57899.8	21.4	mg/L	0.25	21.4	mg/L	0.25	1.17%
Mn 257.610†	88967.2	0.139	mg/L	0.0009	0.139	mg/L	0.0009	0.63%
Mo 202.031†	173.3	0.0166	mg/L	0.00091	0.0166	mg/L	0.00091	5.51%
Ni 231.604†	116.0	0.00291	mg/L	0.000376	0.00291	mg/L	0.000376	12.91%
Pb 220.353†	23.2	0.00466	mg/L	0.001958	0.00466	mg/L	0.001958	41.99%
Sb 206.836†	-1.6	0.00303	mg/L	0.005232	0.00303	mg/L	0.005232	172.80%
Se 196.026†	-8.9	-0.00992	mg/L	0.003153	-0.00992	mg/L	0.003153	31.80%
Si 251.611†	42817.0	1.99	mg/L	0.097	1.99	mg/L	0.097	4.90%
Sn 189.927†	-18.2	-0.00457	mg/L	0.000648	-0.00457	mg/L	0.000648	14.17%

Approved: May 28, 2015

Kym H. Rhoden

Ti 334.940†	-8404.0	0.00064	mg/L	0.000090	0.00064	mg/L	0.000090 14.12%
Tl 190.801†	-32.3	-0.0285	mg/L	0.00123	-0.0285	mg/L	0.00123 4.31%
V 290.880†	-239.0	0.00005	mg/L	0.000380	0.00005	mg/L	0.000380 708.14%
Zn 206.200†	60.5	-0.00263	mg/L	0.000227	-0.00263	mg/L	0.000227 8.62%
K 766.490†	3477.3	2.12	mg/L	0.057	2.12	mg/L	0.057 2.67%
Na 589.592†	795782.5	103	mg/L	1.8	103	mg/L	1.8 1.73%
Sr 407.771†	2499133.1	3.10	mg/L	0.078	3.10	mg/L	0.078 2.52%
Li 670.784†	1478.3	0.0361	mg/L	0.00019	0.0361	mg/L	0.00019 0.52%
P 214.914†	13.3	0.0231	mg/L	0.02442	0.0231	mg/L	0.02442 105.86%

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Sequence No.: 8 **Autosampler Location: 22**
Sample ID: L1505130310 **Date Collected: 5/27/2015 10:17:00 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505130310

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505130310

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3044401.1						30552.75	1.00%
YRADIAL	190295.6						1061.98	0.56%
Ga 417.206	1217559.8						12423.34	1.02%
GaRADIAL	45225.4						113.48	0.25%
Ag 328.068†	4119.7	0.0135	mg/L	0.00083	0.0135	mg/L	0.00083	6.16%
Al 396.153†	41.5	-0.00783	mg/L	0.029627	-0.00783	mg/L	0.029627	378.21%
As 188.979†	-34.1	-0.00989	mg/L	0.007604	-0.00989	mg/L	0.007604	76.87%
Ba 233.527†	1817.1	0.0312	mg/L	0.00061	0.0312	mg/L	0.00061	1.97%
Be 234.861†	-64.0	0.00012	mg/L	0.000024	0.00012	mg/L	0.000024	19.29%
B 249.677†	1181.1	0.0216	mg/L	0.00146	0.0216	mg/L	0.00146	6.79%
Ca 227.546†	27062.0	340	mg/L	4.6	340	mg/L	4.6	1.34%
Cd 228.802†	19.9	0.00153	mg/L	0.000602	0.00153	mg/L	0.000602	39.43%
Co 228.616†	18.5	0.00073	mg/L	0.000354	0.00073	mg/L	0.000354	48.76%
Cr 267.716†	517.3	0.00331	mg/L	0.000445	0.00331	mg/L	0.000445	13.46%
Cu 327.393†	-816.1	-0.00173	mg/L	0.000982	-0.00173	mg/L	0.000982	56.93%
Fe 239.562†	479.4	0.0841	mg/L	0.00742	0.0841	mg/L	0.00742	8.82%
Mg 279.077†	332624.6	123	mg/L	1.9	123	mg/L	1.9	1.54%
Mn 257.610†	51191.4	0.0798	mg/L	0.00042	0.0798	mg/L	0.00042	0.53%
Mo 202.031†	111.9	0.0107	mg/L	0.00152	0.0107	mg/L	0.00152	14.13%
Ni 231.604†	261.5	0.00747	mg/L	0.000162	0.00747	mg/L	0.000162	2.17%
Pb 220.353†	51.0	0.0109	mg/L	0.00410	0.0109	mg/L	0.00410	37.51%
Sb 206.836†	-9.0	-0.00333	mg/L	0.005374	-0.00333	mg/L	0.005374	161.34%
Se 196.026†	-17.7	-0.0237	mg/L	0.01277	-0.0237	mg/L	0.01277	53.93%
Si 251.611†	310398.3	15.3	mg/L	0.30	15.3	mg/L	0.30	1.98%
Sn 189.927†	-77.2	-0.0145	mg/L	0.00388	-0.0145	mg/L	0.00388	26.70%
Ti 334.940†	-19916.2	0.00209	mg/L	0.000216	0.00209	mg/L	0.000216	10.34%
Tl 190.801†	-32.9	-0.0290	mg/L	0.00446	-0.0290	mg/L	0.00446	15.38%
V 290.880†	-2623.9	-0.0152	mg/L	0.00213	-0.0152	mg/L	0.00213	14.06%
Zn 206.200†	-38.7	-0.00610	mg/L	0.000178	-0.00610	mg/L	0.000178	2.91%
K 766.490†	3819.3	2.10	mg/L	0.089	2.10	mg/L	0.089	4.24%
Na 589.592†	2282952.2	343	mg/L	5.2	343	mg/L	5.2	1.51%
Sr 407.771†	2430877.1	3.01	mg/L	0.055	3.01	mg/L	0.055	1.83%
Li 670.784†	2974.5	0.0753	mg/L	0.00456	0.0753	mg/L	0.00456	6.06%
P 214.914†	30.0	0.0493	mg/L	0.01755	0.0493	mg/L	0.01755	35.64%

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Sequence No.: 9 **Autosampler Location: 23**
Sample ID: L1505130310PS WG525150-01 **Date Collected: 5/27/2015 10:19:25 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505130310PS WG525150-01

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Approved: May 28, 2015

Mean Data: L1505130310PS WG525150-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	2977615.3						29853.91	1.00%
YRADIAL	188924.2						4071.48	2.16%
Ga 417.206	1203672.8						16949.84	1.41%
GaRADIAL	44780.6						1037.51	2.32%
Ag 328.068†	76046.8	0.226	mg/L	0.0042	0.226	mg/L	0.0042	1.87%
Al 396.153†	14198.0	4.94	mg/L	0.059	4.94	mg/L	0.059	1.19%
As 188.979†	297.8	0.191	mg/L	0.0121	0.191	mg/L	0.0121	6.31%
Ba 233.527†	31276.5	0.541	mg/L	0.0108	0.541	mg/L	0.0108	1.99%
Be 234.861†	14196.4	0.0257	mg/L	0.00049	0.0257	mg/L	0.00049	1.92%
B 249.677†	64421.6	0.918	mg/L	0.0222	0.918	mg/L	0.0222	2.41%
Ca 227.546†	24919.0	313	mg/L	6.1	313	mg/L	6.1	1.95%
Cd 228.802†	440.2	0.0261	mg/L	0.00070	0.0261	mg/L	0.00070	2.68%
Co 228.616†	1390.7	0.0969	mg/L	0.00142	0.0969	mg/L	0.00142	1.47%
Cr 267.716†	34129.3	0.251	mg/L	0.0041	0.251	mg/L	0.0041	1.62%
Cu 327.393†	54165.4	0.254	mg/L	0.0013	0.254	mg/L	0.0013	0.52%
Fe 239.562†	11881.5	2.04	mg/L	0.031	2.04	mg/L	0.031	1.53%
Mg 279.077†	311126.2	115	mg/L	1.2	115	mg/L	1.2	1.04%
Mn 257.610†	202036.0	0.316	mg/L	0.0048	0.316	mg/L	0.0048	1.53%
Mo 202.031†	5436.4	0.518	mg/L	0.0099	0.518	mg/L	0.0099	1.91%
Ni 231.604†	7654.8	0.239	mg/L	0.0045	0.239	mg/L	0.0045	1.87%
Pb 220.353†	1130.1	0.253	mg/L	0.0072	0.253	mg/L	0.0072	2.83%
Sb 206.836†	723.8	0.628	mg/L	0.0172	0.628	mg/L	0.0172	2.75%
Se 196.026†	111.0	0.179	mg/L	0.0181	0.179	mg/L	0.0181	10.15%
Si 251.611†	323049.6	16.0	mg/L	0.28	16.0	mg/L	0.28	1.74%
Sn 189.927†	2894.7	0.488	mg/L	0.0065	0.488	mg/L	0.0065	1.34%
Ti 334.940†	445317.7	0.501	mg/L	0.0053	0.501	mg/L	0.0053	1.07%
Tl 190.801†	254.3	0.214	mg/L	0.0081	0.214	mg/L	0.0081	3.78%
V 290.880†	93565.2	0.494	mg/L	0.0070	0.494	mg/L	0.0070	1.42%
Zn 206.200†	14159.6	0.491	mg/L	0.0098	0.491	mg/L	0.0098	1.99%
K 766.490†	43676.7	27.4	mg/L	0.36	27.4	mg/L	0.36	1.31%
Na 589.592†	2214766.3	330	mg/L	4.2	330	mg/L	4.2	1.28%
Sr 407.771†	2536507.8	3.14	mg/L	0.038	3.14	mg/L	0.038	1.22%
Li 670.784†	21961.5	0.573	mg/L	0.0007	0.573	mg/L	0.0007	0.13%
P 214.914†	3336.9	5.23	mg/L	0.098	5.23	mg/L	0.098	1.88%

Sequence No.: 10 **Autosampler Location: 24**
Sample ID: L1505130310DL WG525150-02 **Date Collected: 5/27/2015 10:21:48 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505130310DL WG525150-02

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505130310DL WG525150-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3178612.9						52960.92	1.67%
YRADIAL	197861.1						2490.51	1.26%
Ga 417.206	1366103.0						23947.55	1.75%
GaRADIAL	47711.7						349.90	0.73%
Ag 328.068†	1076.9	0.00510	mg/L	0.000474	0.00510	mg/L	0.000474	9.30%
Al 396.153†	-2.0	-0.0228	mg/L	0.00844	-0.0228	mg/L	0.00844	36.98%
As 188.979†	-13.4	-0.00323	mg/L	0.005291	-0.00323	mg/L	0.005291	163.63%
Ba 233.527†	378.2	0.00630	mg/L	0.000197	0.00630	mg/L	0.000197	3.12%
Be 234.861†	-11.9	0.00022	mg/L	0.000039	0.00022	mg/L	0.000039	17.25%
B 249.677†	1906.8	0.0316	mg/L	0.00122	0.0316	mg/L	0.00122	3.86%
Ca 227.546†	5083.0	63.9	mg/L	0.66	63.9	mg/L	0.66	1.03%
Cd 228.802†	-1.2	0.00019	mg/L	0.000179	0.00019	mg/L	0.000179	95.96%
Co 228.616†	0.5	-0.00058	mg/L	0.001514	-0.00058	mg/L	0.001514	262.78%
Cr 267.716†	203.0	0.00100	mg/L	0.000205	0.00100	mg/L	0.000205	20.45%
Cu 327.393†	-517.9	-0.00032	mg/L	0.001489	-0.00032	mg/L	0.001489	458.66%
Fe 239.562†	104.5	0.0216	mg/L	0.00087	0.0216	mg/L	0.00087	4.01%

Approved: May 28, 2015

Kym H. Rhoden

Mg 279.077†	70102.9	26.0	mg/L	0.56	26.0	mg/L	0.56	2.15%
Mn 257.610†	10786.4	0.0165	mg/L	0.00017	0.0165	mg/L	0.00017	1.04%
Mo 202.031†	43.4	0.00421	mg/L	0.000820	0.00421	mg/L	0.000820	19.48%
Ni 231.604†	37.6	0.00045	mg/L	0.000031	0.00045	mg/L	0.000031	7.01%
Pb 220.353†	17.3	0.00342	mg/L	0.002849	0.00342	mg/L	0.002849	83.33%
Sb 206.836†	-1.9	0.00280	mg/L	0.006810	0.00280	mg/L	0.006810	243.29%
Se 196.026†	-8.1	-0.00850	mg/L	0.005444	-0.00850	mg/L	0.005444	64.05%
Si 251.611†	165303.3	8.10	mg/L	0.075	8.10	mg/L	0.075	0.93%
Sn 189.927†	-59.4	-0.0115	mg/L	0.00153	-0.0115	mg/L	0.00153	13.26%
Ti 334.940†	-4405.6	0.00107	mg/L	0.000445	0.00107	mg/L	0.000445	41.52%
Tl 190.801†	-12.1	-0.0116	mg/L	0.00886	-0.0116	mg/L	0.00886	76.58%
V 290.880†	-1121.4	-0.00472	mg/L	0.001780	-0.00472	mg/L	0.001780	37.67%
Zn 206.200†	-120.1	-0.00896	mg/L	0.000418	-0.00896	mg/L	0.000418	4.66%
K 766.490†	787.1	0.467	mg/L	0.0473	0.467	mg/L	0.0473	10.13%
Na 589.592†	467201.0	59.0	mg/L	0.77	59.0	mg/L	0.77	1.30%
Sr 407.771†	501238.1	0.620	mg/L	0.0057	0.620	mg/L	0.0057	0.92%
Li 670.784†	803.7	0.0184	mg/L	0.00393	0.0184	mg/L	0.00393	21.37%
P 214.914†	11.8	0.0207	mg/L	0.02021	0.0207	mg/L	0.02021	97.58%

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Sequence No.: 11 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 5/27/2015 10:25:07 AM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3139912.3						34628.58	1.10%
YRADIAL	196805.9						2125.77	1.08%
Ga 417.206	1319341.4						10092.73	0.76%
GaRADIAL	46015.9						424.70	0.92%
Ag 328.068†	132874.8	0.395	mg/L	0.0068	0.395	mg/L	0.0068	1.71%
QC value within limits for Ag 328.068 Recovery = 98.78%								
Al 396.153†	29016.9	10.1	mg/L	0.09	10.1	mg/L	0.09	0.92%
QC value within limits for Al 396.153 Recovery = 101.15%								
As 188.979†	643.1	0.394	mg/L	0.0063	0.394	mg/L	0.0063	1.59%
QC value within limits for As 188.979 Recovery = 98.55%								
Ba 233.527†	57958.0	1.00	mg/L	0.013	1.00	mg/L	0.013	1.33%
QC value within limits for Ba 233.527 Recovery = 100.21%								
Be 234.861†	26928.8	0.0486	mg/L	0.00058	0.0486	mg/L	0.00058	1.20%
QC value within limits for Be 234.861 Recovery = 97.16%								
B 249.677†	26192.2	0.386	mg/L	0.0092	0.386	mg/L	0.0092	2.38%
QC value less than the lower limit for B 249.677 Recovery = 77.26%								
Ca 227.546†	779.1	9.91	mg/L	0.133	9.91	mg/L	0.133	1.35%
QC value within limits for Ca 227.546 Recovery = 99.14%								
Cd 228.802†	823.6	0.0485	mg/L	0.00098	0.0485	mg/L	0.00098	2.03%
QC value within limits for Cd 228.802 Recovery = 96.99%								
Co 228.616†	2870.3	0.201	mg/L	0.0017	0.201	mg/L	0.0017	0.84%
QC value within limits for Co 228.616 Recovery = 100.26%								
Cr 267.716†	67833.3	0.499	mg/L	0.0057	0.499	mg/L	0.0057	1.15%
QC value within limits for Cr 267.716 Recovery = 99.81%								
Cu 327.393†	104998.1	0.490	mg/L	0.0086	0.490	mg/L	0.0086	1.76%
QC value within limits for Cu 327.393 Recovery = 98.02%								
Fe 239.562†	23077.4	3.97	mg/L	0.013	3.97	mg/L	0.013	0.34%
QC value within limits for Fe 239.562 Recovery = 99.24%								
Mg 279.077†	27091.8	10.0	mg/L	0.08	10.0	mg/L	0.08	0.77%
QC value within limits for Mg 279.077 Recovery = 100.21%								
Mn 257.610†	319607.4	0.501	mg/L	0.0073	0.501	mg/L	0.0073	1.47%
QC value within limits for Mn 257.610 Recovery = 100.12%								
Mo 202.031†	10413.8	0.992	mg/L	0.0135	0.992	mg/L	0.0135	1.36%
QC value within limits for Mo 202.031 Recovery = 99.18%								
Ni 231.604†	16005.7	0.500	mg/L	0.0064	0.500	mg/L	0.0064	1.27%
QC value within limits for Ni 231.604 Recovery = 100.06%								
Pb 220.353†	2243.7	0.503	mg/L	0.0048	0.503	mg/L	0.0048	0.96%

Approved: May 28, 2015

Kym H. Rhoden

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   QC value within limits for Pb 220.353  Recovery = 100.69%
Sb 206.836†            1351.9        1.17 mg/L        0.026        1.17 mg/L        0.026   2.22%
   QC value within limits for Sb 206.836  Recovery = 97.35%
Se 196.026†             252.7       0.401 mg/L       0.0157       0.401 mg/L       0.0157   3.92%
   QC value within limits for Se 196.026  Recovery = 100.35%
Si 251.611†         -172614.3       -8.78 mg/L        0.105       -8.78 mg/L        0.105   1.20%
   QC value less than the lower limit for Si 251.611  Recovery = -175.52%
Sn 189.927†            5884.3       0.993 mg/L       0.0114       0.993 mg/L       0.0114   1.15%
   QC value within limits for Sn 189.927  Recovery = 99.34%
Ti 334.940†          919069.8       0.992 mg/L       0.0122       0.992 mg/L       0.0122   1.23%
   QC value within limits for Ti 334.940  Recovery = 99.21%
Tl 190.801†              603.3       0.509 mg/L       0.0208       0.509 mg/L       0.0208   4.08%
   QC value within limits for Tl 190.801  Recovery = 101.88%
V 290.880†           187454.6       0.994 mg/L       0.0125       0.994 mg/L       0.0125   1.26%
   QC value within limits for V 290.880  Recovery = 99.37%
Zn 206.200†           29155.4        1.02 mg/L        0.014        1.02 mg/L        0.014   1.33%
   QC value within limits for Zn 206.200  Recovery = 101.67%
K 766.490†            77941.0        49.7 mg/L         0.32        49.7 mg/L         0.32   0.64%
   QC value within limits for K 766.490  Recovery = 99.32%
Na 589.592†          394804.1        49.6 mg/L         0.92        49.6 mg/L         0.92   1.86%
   QC value within limits for Na 589.592  Recovery = 99.15%
Sr 407.771†          801912.7       0.995 mg/L       0.0159       0.995 mg/L       0.0159   1.60%
   QC value within limits for Sr 407.771  Recovery = 99.45%
Li 670.784†           38704.2        1.01 mg/L        0.007        1.01 mg/L        0.007   0.69%
   QC value within limits for Li 670.784  Recovery = 101.16%
P 214.914†             6321.7        9.91 mg/L        0.125        9.91 mg/L        0.125   1.26%
   QC value within limits for P 214.914  Recovery = 99.15%
QC Failed.  Continue with analysis.

==========================================================================================
Sequence No.: 12                                    Autosampler Location: 1
Sample ID: CCB                                      Date Collected: 5/27/2015 10:27:32 AM
Analyst:                                            Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

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Nebulizer Parameters: CCB
Analyte                 Back Pressure     Flow
All                     231.0 kPa         0.40 L/min

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Mean Data: CCB
                   Mean Corrected         Calib.                          Sample
Analyte               Intensity      Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029           3460412.4                                                      22677.58   0.66%
YRADIAL              211456.1                                                       2570.44   1.22%
Ga 417.206          1594326.3                                                       2989.72   0.19%
GaRADIAL              51304.5                                                        507.42   0.99%
Ag 328.068†              24.2     0.00214 mg/L      0.000715     0.00214 mg/L      0.000715  33.38%
   QC value within limits for Ag 328.068  Recovery = Not calculated
Al 396.153†              21.3     -0.0145 mg/L       0.00198     -0.0145 mg/L       0.00198  13.70%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†              -8.6    -0.00169 mg/L      0.000847    -0.00169 mg/L      0.000847  50.06%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†             -13.3    -0.00048 mg/L      0.000142    -0.00048 mg/L      0.000142  29.74%
   QC value within limits for Ba 233.527  Recovery = Not calculated
Be 234.861†             -12.3     0.00022 mg/L      0.000007     0.00022 mg/L      0.000007   3.29%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†              -180.8     0.00212 mg/L      0.001361     0.00212 mg/L      0.001361  64.11%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†              -9.8     -0.0668 mg/L       0.12438     -0.0668 mg/L       0.12438 186.21%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†              -4.3    -0.00001 mg/L      0.000355    -0.00001 mg/L      0.000355 >999.9%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†              -7.3    -0.00114 mg/L      0.000838    -0.00114 mg/L      0.000838  73.18%
   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†              13.4    -0.00039 mg/L      0.000950    -0.00039 mg/L      0.000950 244.15%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†              60.1     0.00236 mg/L      0.000722     0.00236 mg/L      0.000722  30.60%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†               6.8     0.00536 mg/L      0.002157     0.00536 mg/L      0.002157  40.25%
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Approved: May 28, 2015

Lynn H. Rhoden

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   QC value within limits for Fe 239.562  Recovery = Not calculated
Mg 279.077†              10.6     -0.0106 mg/L       0.01092     -0.0106 mg/L       0.01092 103.02%
   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†               7.3    -0.00041 mg/L      0.000012    -0.00041 mg/L      0.000012   2.97%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†              -1.1    -0.00003 mg/L      0.000217    -0.00003 mg/L      0.000217 759.41%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†               4.2    -0.00060 mg/L      0.000248    -0.00060 mg/L      0.000248  41.10%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†              -5.5    -0.00166 mg/L      0.001142    -0.00166 mg/L      0.001142  68.85%
   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†              -4.4     0.00068 mg/L      0.003453     0.00068 mg/L      0.003453 511.03%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†               4.2      0.0107 mg/L       0.00533      0.0107 mg/L       0.00533  49.70%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†            2154.5     -0.0431 mg/L       0.27685     -0.0431 mg/L       0.27685 642.36%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†             -17.9    -0.00451 mg/L      0.001094    -0.00451 mg/L      0.001094  24.24%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†             340.2     0.00208 mg/L      0.000303     0.00208 mg/L      0.000303  14.60%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†               2.7     0.00083 mg/L      0.006048     0.00083 mg/L      0.006048 731.25%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†             -257.3     0.00052 mg/L      0.001373     0.00052 mg/L      0.001373 264.50%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†               4.1    -0.00464 mg/L      0.000162    -0.00464 mg/L      0.000162   3.49%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†              124.4       0.107 mg/L        0.0655       0.107 mg/L        0.0655  61.06%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†             326.4      0.0605 mg/L       0.03006      0.0605 mg/L       0.03006  49.73%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†             223.6    -0.00006 mg/L      0.000038    -0.00006 mg/L      0.000038  66.90%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†             -98.1    -0.00526 mg/L      0.006905    -0.00526 mg/L      0.006905 131.19%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†                1.6     0.00468 mg/L      0.014145     0.00468 mg/L      0.014145 302.39%
   QC value within limits for P 214.914  Recovery = Not calculated
All analyte(s) passed QC.

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**Sequence No.: 13**                                  **Autosampler Location: 25**
**Sample ID: L1505130312**                            **Date Collected: 5/27/2015 10:30:56 AM**
**Analyst: KHR**                                      **Data Type: Original**
**Initial Sample Wt:**                                **Initial Sample Vol:**
**Dilution:**                                         **Sample Prep Vol:**

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**Nebulizer Parameters: L1505130312**
**Analyte                 Back Pressure    Flow**
All                     230.0 kPa        0.40 L/min

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**Mean Data: L1505130312**
                    Mean Corrected        Calib.                          Sample
**Analyte              Intensity     Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD**
Y 371.029            2977124.2                                                      34843.78   1.17%
YRADIAL               193031.0                                                       2856.57   1.48%
Ga 417.206           1182099.1                                                      13110.61   1.11%
GaRADIAL               44944.5                                                        451.67   1.00%
Ag 328.068†             5020.6      0.0161 mg/L       0.00067      0.0161 mg/L       0.00067   4.15%
Al 396.153†              -41.5     -0.0369 mg/L       0.07445     -0.0369 mg/L       0.07445 201.78%
As 188.979†              -45.6     -0.0152 mg/L       0.01095     -0.0152 mg/L       0.01095  71.99%
Ba 233.527†            31472.1       0.544 mg/L        0.0098       0.544 mg/L        0.0098   1.81%
Be 234.861†              -71.8     0.00011 mg/L      0.000009     0.00011 mg/L      0.000009   8.26%
B 249.677†               195.8     0.00768 mg/L      0.000981     0.00768 mg/L      0.000981  12.78%
Ca 227.546†            33277.6         418 mg/L           5.1         418 mg/L           5.1   1.22%
Cd 228.802†               17.5     0.00142 mg/L      0.000325     0.00142 mg/L      0.000325  22.92%
Co 228.616†                3.6    -0.00048 mg/L      0.000364    -0.00048 mg/L      0.000364  75.25%
Cr 267.716†              634.2     0.00417 mg/L      0.000341     0.00417 mg/L      0.000341   8.18%
Cu 327.393†             -865.9    -0.00196 mg/L      0.001043    -0.00196 mg/L      0.001043  53.12%
Fe 239.562†              444.0      0.0778 mg/L       0.00165      0.0778 mg/L       0.00165   2.12%
Mg 279.077†           362542.1         134 mg/L           1.0         134 mg/L           1.0   0.72%
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Approved: May 28, 2015

Lynn H. Rhoden

Mn 257.610†	65446.0	0.102	mg/L	0.0004	0.102	mg/L	0.0004	0.38%
Mo 202.031†	99.6	0.00956	mg/L	0.000190	0.00956	mg/L	0.000190	1.99%
Ni 231.604†	374.1	0.0110	mg/L	0.00087	0.0110	mg/L	0.00087	7.87%
Pb 220.353†	53.5	0.0115	mg/L	0.00425	0.0115	mg/L	0.00425	37.08%
Sb 206.836†	9.3	0.0124	mg/L	0.00723	0.0124	mg/L	0.00723	58.13%
Se 196.026†	-29.1	-0.0414	mg/L	0.01928	-0.0414	mg/L	0.01928	46.58%
Si 251.611†	290569.2	14.3	mg/L	0.28	14.3	mg/L	0.28	1.92%
Sn 189.927†	-80.6	-0.0151	mg/L	0.00334	-0.0151	mg/L	0.00334	22.12%
Ti 334.940†	-24277.5	0.00241	mg/L	0.000086	0.00241	mg/L	0.000086	3.59%
Tl 190.801†	-48.2	-0.0418	mg/L	0.00818	-0.0418	mg/L	0.00818	19.58%
V 290.880†	-2735.4	-0.0161	mg/L	0.00302	-0.0161	mg/L	0.00302	18.78%
Zn 206.200†	154.3	0.00064	mg/L	0.000189	0.00064	mg/L	0.000189	29.44%
K 766.490†	6318.1	3.66	mg/L	0.140	3.66	mg/L	0.140	3.81%
Na 589.592†	2351948.4	357	mg/L	9.5	357	mg/L	9.5	2.66%
Sr 407.771†	2896281.2	3.58	mg/L	0.083	3.58	mg/L	0.083	2.31%
Li 670.784†	3688.4	0.0940	mg/L	0.00086	0.0940	mg/L	0.00086	0.92%
P 214.914†	30.4	0.0498	mg/L	0.00184	0.0498	mg/L	0.00184	3.70%

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Sequence No.: 14 **Autosampler Location: 26**
Sample ID: L1505130801 **Date Collected: 5/27/2015 10:33:23 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505130801

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505130801

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3227384.3						39629.93	1.23%
YRADIAL	200656.5						4545.84	2.27%
Ga 417.206	1319483.9						11178.14	0.85%
GaRADIAL	45857.6						356.18	0.78%
Ag 328.068†	-23.8	0.00262	mg/L	0.000867	0.00262	mg/L	0.000867	33.10%
Al 396.153†	344.9	0.0991	mg/L	0.03204	0.0991	mg/L	0.03204	32.34%
As 188.979†	-8.5	-0.00125	mg/L	0.001600	-0.00125	mg/L	0.001600	128.24%
Ba 233.527†	1363.5	0.0233	mg/L	0.00081	0.0233	mg/L	0.00081	3.48%
Be 234.861†	83.2	0.00006	mg/L	0.000026	0.00006	mg/L	0.000026	40.86%
B 249.677†	9217.6	0.139	mg/L	0.0034	0.139	mg/L	0.0034	2.43%
Ca 227.546†	39.9	0.558	mg/L	0.1028	0.558	mg/L	0.1028	18.42%
Cd 228.802†	13.9	0.00108	mg/L	0.000289	0.00108	mg/L	0.000289	26.64%
Co 228.616†	4.8	-0.00032	mg/L	0.000183	-0.00032	mg/L	0.000183	57.57%
Cr 267.716†	8722.5	0.0638	mg/L	0.00156	0.0638	mg/L	0.00156	2.44%
Cu 327.393†	-532.7	0.00006	mg/L	0.001294	0.00006	mg/L	0.001294	>999.9%
Fe 239.562†	7795.5	1.34	mg/L	0.033	1.34	mg/L	0.033	2.44%
Mg 279.077†	341.4	0.111	mg/L	0.0319	0.111	mg/L	0.0319	28.70%
Mn 257.610†	18245.8	0.0282	mg/L	0.00065	0.0282	mg/L	0.00065	2.30%
Mo 202.031†	13.1	0.00131	mg/L	0.000839	0.00131	mg/L	0.000839	64.14%
Ni 231.604†	92.1	0.00215	mg/L	0.000532	0.00215	mg/L	0.000532	24.72%
Pb 220.353†	1642.0	0.367	mg/L	0.0166	0.367	mg/L	0.0166	4.52%
Sb 206.836†	-0.9	0.00323	mg/L	0.005080	0.00323	mg/L	0.005080	157.44%
Se 196.026†	0.1	0.00414	mg/L	0.016845	0.00414	mg/L	0.016845	406.55%
Si 251.611†	-254343.1	-12.8	mg/L	0.29	-12.8	mg/L	0.29	2.27%
Sn 189.927†	-37.7	-0.00787	mg/L	0.000979	-0.00787	mg/L	0.000979	12.44%
Ti 334.940†	601.3	0.00238	mg/L	0.000068	0.00238	mg/L	0.000068	2.84%
Tl 190.801†	-2.7	-0.00365	mg/L	0.005684	-0.00365	mg/L	0.005684	155.77%
V 290.880†	517.6	0.00487	mg/L	0.001133	0.00487	mg/L	0.001133	23.25%
Zn 206.200†	117270.8	4.08	mg/L	0.085	4.08	mg/L	0.085	2.09%
K 766.490†	293.4	0.0709	mg/L	0.03941	0.0709	mg/L	0.03941	55.61%
Na 589.592†	1080400.3	143	mg/L	3.4	143	mg/L	3.4	2.39%
Sr 407.771†	14755.4	0.0180	mg/L	0.00048	0.0180	mg/L	0.00048	2.68%
Li 670.784†	-179.4	-0.00739	mg/L	0.002610	-0.00739	mg/L	0.002610	35.29%
P 214.914†	-4.9	-0.00547	mg/L	0.005244	-0.00547	mg/L	0.005244	95.79%

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Sequence No.: 15 **Autosampler Location: 27**
Sample ID: L1505132301 **Date Collected: 5/27/2015 10:35:47 AM**

Approved: May 28, 2015
Kym H. Rhoden

Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505132301

Analyte	Back Pressure	Flow
All	230.0 kPa	0.40 L/min

Mean Data: L1505132301

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3288050.2						41832.22	1.27%
YRADIAL	207001.0						3250.55	1.57%
Ga 417.206	1346404.4						19174.02	1.42%
GaRADIAL	48615.7						784.58	1.61%
Ag 328.068†	172.2	0.00255	mg/L	0.000965	0.00255	mg/L	0.000965	37.90%
Al 396.153†	99.5	-0.00615	mg/L	0.009909	-0.00615	mg/L	0.009909	161.21%
As 188.979†	-24.9	-0.0142	mg/L	0.00320	-0.0142	mg/L	0.00320	22.51%
Ba 233.527†	43.5	0.00087	mg/L	0.000290	0.00087	mg/L	0.000290	33.49%
Be 234.861†	-38.6	0.00034	mg/L	0.000035	0.00034	mg/L	0.000035	10.11%
B 249.677†	389562.0	5.49	mg/L	0.023	5.49	mg/L	0.023	0.41%
Ca 227.546†	20.8	0.322	mg/L	0.1778	0.322	mg/L	0.1778	55.13%
Cd 228.802†	0.6	0.00032	mg/L	0.000691	0.00032	mg/L	0.000691	219.05%
Co 228.616†	1.6	0.00034	mg/L	0.000282	0.00034	mg/L	0.000282	83.07%
Cr 267.716†	153.7	0.00056	mg/L	0.001316	0.00056	mg/L	0.001316	233.94%
Cu 327.393†	122047.4	0.567	mg/L	0.0046	0.567	mg/L	0.0046	0.82%
Fe 239.562†	332.4	0.0613	mg/L	0.00128	0.0613	mg/L	0.00128	2.09%
Mg 279.077†	134.4	0.0352	mg/L	0.00526	0.0352	mg/L	0.00526	14.94%
Mn 257.610†	1988.9	0.00270	mg/L	0.000061	0.00270	mg/L	0.000061	2.26%
Mo 202.031†	5011.7	0.477	mg/L	0.0078	0.477	mg/L	0.0078	1.63%
Ni 231.604†	129.4	0.00332	mg/L	0.000220	0.00332	mg/L	0.000220	6.62%
Pb 220.353†	132.5	0.0294	mg/L	0.00579	0.0294	mg/L	0.00579	19.67%
Sb 206.836†	6.0	0.0103	mg/L	0.00709	0.0103	mg/L	0.00709	68.92%
Se 196.026†	-11.3	-0.0135	mg/L	0.00292	-0.0135	mg/L	0.00292	21.67%
Si 251.611†	101630.9	4.92	mg/L	0.080	4.92	mg/L	0.080	1.63%
Sn 189.927†	0.6	-0.00138	mg/L	0.000239	-0.00138	mg/L	0.000239	17.33%
Ti 334.940†	96.5	0.00184	mg/L	0.000177	0.00184	mg/L	0.000177	9.61%
Tl 190.801†	-11.0	-0.0106	mg/L	0.00293	-0.0106	mg/L	0.00293	27.71%
V 290.880†	-1481.0	-0.00603	mg/L	0.000965	-0.00603	mg/L	0.000965	16.01%
Zn 206.200†	3773.2	0.127	mg/L	0.0025	0.127	mg/L	0.0025	1.95%
K 766.490†	73853.1	47.0	mg/L	0.43	47.0	mg/L	0.43	0.92%
Na 589.592†	420751.5	52.9	mg/L	0.21	52.9	mg/L	0.21	0.40%
Sr 407.771†	1385.1	0.00137	mg/L	0.000020	0.00137	mg/L	0.000020	1.43%
Li 670.784†	196.0	0.00244	mg/L	0.001562	0.00244	mg/L	0.001562	63.91%
P 214.914†	1562.3	2.45	mg/L	0.042	2.45	mg/L	0.042	1.72%

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Sequence No.: 16 **Autosampler Location: 28**
Sample ID: L1505133304 WG524813-01 **Date Collected: 5/27/2015 10:39:09 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505133304 WG524813-01

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505133304 WG524813-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3426924.9						65768.38	1.92%
YRADIAL	207463.0						5930.46	2.86%
Ga 417.206	1518870.7						23965.54	1.58%
GaRADIAL	49428.7						1290.04	2.61%
Ag 328.068†	105.1	0.00239	mg/L	0.000475	0.00239	mg/L	0.000475	19.90%
Al 396.153†	50.6	-0.00427	mg/L	0.011500	-0.00427	mg/L	0.011500	269.50%
As 188.979†	-7.7	-0.00113	mg/L	0.001934	-0.00113	mg/L	0.001934	171.74%
Ba 233.527†	712.0	0.0121	mg/L	0.00048	0.0121	mg/L	0.00048	4.01%

Approved: May 28, 2015

Kym H. Rhoden

Be 234.861†	-107.9	0.00005	mg/L	0.000058	0.00005	mg/L	0.000058	119.88%
B 249.677†	557.7	0.0126	mg/L	0.00636	0.0126	mg/L	0.00636	50.54%
Ca 227.546†	26.2	0.386	mg/L	0.0643	0.386	mg/L	0.0643	16.67%
Cd 228.802†	0.3	0.00026	mg/L	0.000552	0.00026	mg/L	0.000552	209.78%
Co 228.616†	2.1	-0.00048	mg/L	0.000509	-0.00048	mg/L	0.000509	105.19%
Cr 267.716†	131.2	0.00048	mg/L	0.001118	0.00048	mg/L	0.001118	234.42%
Cu 327.393†	-424.3	0.00012	mg/L	0.000825	0.00012	mg/L	0.000825	687.99%
Fe 239.562†	121.4	0.0250	mg/L	0.00094	0.0250	mg/L	0.00094	3.75%
Mg 279.077†	890.7	0.315	mg/L	0.0070	0.315	mg/L	0.0070	2.23%
Mn 257.610†	8336.0	0.0126	mg/L	0.00022	0.0126	mg/L	0.00022	1.75%
Mo 202.031†	15.3	0.00153	mg/L	0.001143	0.00153	mg/L	0.001143	74.72%
Ni 231.604†	16.0	-0.00024	mg/L	0.000087	-0.00024	mg/L	0.000087	36.76%
Pb 220.353†	-13.9	-0.00354	mg/L	0.002459	-0.00354	mg/L	0.002459	69.44%
Sb 206.836†	-4.1	0.00091	mg/L	0.002922	0.00091	mg/L	0.002922	321.14%
Se 196.026†	-3.7	-0.00163	mg/L	0.012884	-0.00163	mg/L	0.012884	791.51%
Si 251.611†	-263626.3	-13.3	mg/L	0.32	-13.3	mg/L	0.32	2.39%
Sn 189.927†	-47.0	-0.00943	mg/L	0.001496	-0.00943	mg/L	0.001496	15.86%
Ti 334.940†	585.0	0.00237	mg/L	0.000054	0.00237	mg/L	0.000054	2.27%
Tl 190.801†	1.9	0.00011	mg/L	0.001581	0.00011	mg/L	0.001581	>999.9%
V 290.880†	-129.3	0.00119	mg/L	0.001007	0.00119	mg/L	0.001007	84.64%
Zn 206.200†	-105.8	-0.00847	mg/L	0.000247	-0.00847	mg/L	0.000247	2.92%
K 766.490†	620.0	0.418	mg/L	0.0572	0.418	mg/L	0.0572	13.67%
Na 589.592†	14358.5	1.78	mg/L	0.039	1.78	mg/L	0.039	2.18%
Sr 407.771†	2642.0	0.00293	mg/L	0.000068	0.00293	mg/L	0.000068	2.31%
Li 670.784†	23.3	-0.00208	mg/L	0.002609	-0.00208	mg/L	0.002609	125.30%
P 214.914†	2.0	0.00536	mg/L	0.005464	0.00536	mg/L	0.005464	102.01%

Sequence No.: 17
Sample ID: L1505133305MS WG524813-04
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 29
Date Collected: 5/27/2015 10:42:31 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505133305MS WG524813-04

Analyte	Back Pressure	Flow
All	230.0 kPa	0.40 L/min

Mean Data: L1505133305MS WG524813-04

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3224785.0						23810.16	0.74%
YRADIAL	198802.4						1167.77	0.59%
Ga 417.206	1344401.6						6367.29	0.47%
GaRADIAL	46161.2						222.93	0.48%
Ag 328.068†	71504.8	0.214	mg/L	0.0033	0.214	mg/L	0.0033	1.53%
Al 396.153†	15932.8	5.55	mg/L	0.020	5.55	mg/L	0.020	0.36%
As 188.979†	307.7	0.191	mg/L	0.0041	0.191	mg/L	0.0041	2.13%
Ba 233.527†	31083.4	0.537	mg/L	0.0060	0.537	mg/L	0.0060	1.12%
Be 234.861†	13740.7	0.0248	mg/L	0.00040	0.0248	mg/L	0.00040	1.60%
B 249.677†	58737.7	0.840	mg/L	0.0086	0.840	mg/L	0.0086	1.03%
Ca 227.546†	422.4	5.40	mg/L	0.011	5.40	mg/L	0.011	0.21%
Cd 228.802†	418.3	0.0248	mg/L	0.00022	0.0248	mg/L	0.00022	0.87%
Co 228.616†	1459.9	0.102	mg/L	0.0016	0.102	mg/L	0.0016	1.54%
Cr 267.716†	35797.1	0.263	mg/L	0.0021	0.263	mg/L	0.0021	0.81%
Cu 327.393†	56224.0	0.263	mg/L	0.0035	0.263	mg/L	0.0035	1.34%
Fe 239.562†	15115.1	2.60	mg/L	0.019	2.60	mg/L	0.019	0.74%
Mg 279.077†	14916.0	5.51	mg/L	0.009	5.51	mg/L	0.009	0.16%
Mn 257.610†	179564.2	0.281	mg/L	0.0041	0.281	mg/L	0.0041	1.46%
Mo 202.031†	5321.4	0.507	mg/L	0.0083	0.507	mg/L	0.0083	1.64%
Ni 231.604†	8079.8	0.252	mg/L	0.0037	0.252	mg/L	0.0037	1.47%
Pb 220.353†	1113.1	0.250	mg/L	0.0040	0.250	mg/L	0.0040	1.61%
Sb 206.836†	683.3	0.593	mg/L	0.0035	0.593	mg/L	0.0035	0.59%
Se 196.026†	124.9	0.201	mg/L	0.0080	0.201	mg/L	0.0080	4.01%
Si 251.611†	-138402.6	-7.06	mg/L	0.472	-7.06	mg/L	0.472	6.68%
Sn 189.927†	2961.0	0.499	mg/L	0.0097	0.499	mg/L	0.0097	1.95%
Ti 334.940†	466460.2	0.504	mg/L	0.0038	0.504	mg/L	0.0038	0.75%
Tl 190.801†	298.5	0.252	mg/L	0.0051	0.252	mg/L	0.0051	2.02%
V 290.880†	99382.6	0.528	mg/L	0.0097	0.528	mg/L	0.0097	1.84%
Zn 206.200†	14687.7	0.510	mg/L	0.0091	0.510	mg/L	0.0091	1.78%

Approved: May 28, 2015

K 766.490†	40975.9	26.0	mg/L	0.10	26.0	mg/L	0.10	0.38%
Na 589.592†	222495.7	27.6	mg/L	0.24	27.6	mg/L	0.24	0.87%
Sr 407.771†	422525.9	0.524	mg/L	0.0028	0.524	mg/L	0.0028	0.53%
Li 670.784†	20706.9	0.540	mg/L	0.0030	0.540	mg/L	0.0030	0.55%
P 214.914†	3099.1	4.86	mg/L	0.077	4.86	mg/L	0.077	1.58%

Sequence No.: 18 **Autosampler Location: 30**
Sample ID: L1505133306SD WG524813-05 **Date Collected: 5/27/2015 10:44:56 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505133306SD WG524813-05

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505133306SD WG524813-05

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3242799.3						50109.38	1.55%
YRADIAL	203040.7						2393.08	1.18%
Ga 417.206	1362450.2						17639.93	1.29%
GaRADIAL	47109.1						772.05	1.64%
Ag 328.068†	66568.0	0.199	mg/L	0.0012	0.199	mg/L	0.0012	0.61%
Al 396.153†	15187.8	5.29	mg/L	0.100	5.29	mg/L	0.100	1.89%
As 188.979†	295.2	0.183	mg/L	0.0046	0.183	mg/L	0.0046	2.50%
Ba 233.527†	30496.2	0.527	mg/L	0.0115	0.527	mg/L	0.0115	2.18%
Be 234.861†	13176.2	0.0238	mg/L	0.00043	0.0238	mg/L	0.00043	1.80%
B 249.677†	55588.2	0.795	mg/L	0.0057	0.795	mg/L	0.0057	0.72%
Ca 227.546†	420.1	5.37	mg/L	0.171	5.37	mg/L	0.171	3.19%
Cd 228.802†	392.7	0.0233	mg/L	0.00021	0.0233	mg/L	0.00021	0.92%
Co 228.616†	1420.2	0.0989	mg/L	0.00204	0.0989	mg/L	0.00204	2.06%
Cr 267.716†	34015.9	0.250	mg/L	0.0019	0.250	mg/L	0.0019	0.77%
Cu 327.393†	52624.3	0.247	mg/L	0.0014	0.247	mg/L	0.0014	0.56%
Fe 239.562†	13038.6	2.24	mg/L	0.020	2.24	mg/L	0.020	0.89%
Mg 279.077†	14418.4	5.33	mg/L	0.085	5.33	mg/L	0.085	1.60%
Mn 257.610†	169217.9	0.265	mg/L	0.0024	0.265	mg/L	0.0024	0.92%
Mo 202.031†	5144.1	0.490	mg/L	0.0101	0.490	mg/L	0.0101	2.07%
Ni 231.604†	7754.0	0.242	mg/L	0.0054	0.242	mg/L	0.0054	2.24%
Pb 220.353†	1097.7	0.246	mg/L	0.0065	0.246	mg/L	0.0065	2.64%
Sb 206.836†	652.7	0.566	mg/L	0.0102	0.566	mg/L	0.0102	1.79%
Se 196.026†	120.4	0.193	mg/L	0.0112	0.193	mg/L	0.0112	5.79%
Si 251.611†	-166363.7	-8.46	mg/L	0.166	-8.46	mg/L	0.166	1.96%
Sn 189.927†	2883.5	0.486	mg/L	0.0100	0.486	mg/L	0.0100	2.07%
Ti 334.940†	456321.2	0.493	mg/L	0.0039	0.493	mg/L	0.0039	0.79%
Tl 190.801†	296.7	0.250	mg/L	0.0139	0.250	mg/L	0.0139	5.56%
V 290.880†	93228.6	0.495	mg/L	0.0058	0.495	mg/L	0.0058	1.17%
Zn 206.200†	14050.3	0.488	mg/L	0.0108	0.488	mg/L	0.0108	2.22%
K 766.490†	39726.6	25.2	mg/L	0.51	25.2	mg/L	0.51	2.04%
Na 589.592†	216973.7	26.9	mg/L	1.19	26.9	mg/L	1.19	4.41%
Sr 407.771†	410830.9	0.509	mg/L	0.0184	0.509	mg/L	0.0184	3.61%
Li 670.784†	20037.3	0.522	mg/L	0.0064	0.522	mg/L	0.0064	1.22%
P 214.914†	3010.6	4.72	mg/L	0.095	4.72	mg/L	0.095	2.02%

Sequence No.: 19 **Autosampler Location: 31**
Sample ID: L1505133311 **Date Collected: 5/27/2015 10:47:19 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505133311

Analyte	Back Pressure	Flow
All	230.0 kPa	0.40 L/min

Mean Data: L1505133311

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD

Approved: May 28, 2015

Kym H. Rhoden

Method: 200.7-6010-3015 ASX **Page 15** **Date: 5/27/2015 10:52:10 AM**

Analyte	Intensity	Conc.	Units	Std.Dev.	Conc.	Units	Std.Dev.	RSD
Y 371.029	3374791.9						45032.51	1.33%
YRADIAL	206595.9						1156.00	0.56%
Ga 417.206	1504907.2						13101.87	0.87%
GaRADIAL	48998.2						251.27	0.51%
Ag 328.068†	-292.2	0.00150	mg/L	0.000358	0.00150	mg/L	0.000358	23.95%
Al 396.153†	415.2	0.124	mg/L	0.0214	0.124	mg/L	0.0214	17.27%
As 188.979†	-7.4	-0.00077	mg/L	0.006749	-0.00077	mg/L	0.006749	877.15%
Ba 233.527†	824.6	0.0140	mg/L	0.00029	0.0140	mg/L	0.00029	2.07%
Be 234.861†	-2.8	0.00009	mg/L	0.000034	0.00009	mg/L	0.000034	39.68%
B 249.677†	-851.1	-0.00497	mg/L	0.000334	-0.00497	mg/L	0.000334	6.72%
Ca 227.546†	49.1	0.673	mg/L	0.0890	0.673	mg/L	0.0890	13.22%
Cd 228.802†	3.1	0.00043	mg/L	0.000354	0.00043	mg/L	0.000354	82.81%
Co 228.616†	-1.1	-0.00073	mg/L	0.000698	-0.00073	mg/L	0.000698	95.70%
Cr 267.716†	219.0	0.00111	mg/L	0.000478	0.00111	mg/L	0.000478	43.17%
Cu 327.393†	-661.5	-0.00089	mg/L	0.000237	-0.00089	mg/L	0.000237	26.54%
Fe 239.562†	3614.6	0.625	mg/L	0.0224	0.625	mg/L	0.0224	3.59%
Mg 279.077†	1315.5	0.473	mg/L	0.0362	0.473	mg/L	0.0362	7.66%
Mn 257.610†	8871.7	0.0135	mg/L	0.00018	0.0135	mg/L	0.00018	1.33%
Mo 202.031†	19.9	0.00196	mg/L	0.000333	0.00196	mg/L	0.000333	16.97%
Ni 231.604†	16.8	-0.00021	mg/L	0.000404	-0.00021	mg/L	0.000404	195.36%
Pb 220.353†	-20.0	-0.00492	mg/L	0.000732	-0.00492	mg/L	0.000732	14.88%
Sb 206.836†	-1.4	0.00330	mg/L	0.007431	0.00330	mg/L	0.007431	225.04%
Se 196.026†	3.7	0.00983	mg/L	0.004116	0.00983	mg/L	0.004116	41.89%
Si 251.611†	-219130.0	-11.1	mg/L	0.15	-11.1	mg/L	0.15	1.38%
Sn 189.927†	-48.0	-0.00960	mg/L	0.001579	-0.00960	mg/L	0.001579	16.45%
Ti 334.940†	1282.1	0.00314	mg/L	0.000334	0.00314	mg/L	0.000334	10.64%
Tl 190.801†	-2.6	-0.00361	mg/L	0.014228	-0.00361	mg/L	0.014228	394.11%
V 290.880†	-222.7	0.00081	mg/L	0.000926	0.00081	mg/L	0.000926	114.67%
Zn 206.200†	-49.3	-0.00643	mg/L	0.000455	-0.00643	mg/L	0.000455	7.07%
K 766.490†	656.3	0.442	mg/L	0.0611	0.442	mg/L	0.0611	13.83%
Na 589.592†	11429.3	1.42	mg/L	0.012	1.42	mg/L	0.012	0.84%
Sr 407.771†	4881.5	0.00570	mg/L	0.000094	0.00570	mg/L	0.000094	1.64%
Li 670.784†	12.5	-0.00237	mg/L	0.008889	-0.00237	mg/L	0.008889	375.66%
P 214.914†	1.7	0.00486	mg/L	0.010059	0.00486	mg/L	0.010059	207.15%

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Sequence No.: 20 **Autosampler Location: 32**
Sample ID: L1505133314 **Date Collected: 5/27/2015 10:49:47 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505133314

Analyte	Back Pressure	Flow
All	230.0 kPa	0.40 L/min

Mean Data: L1505133314

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3394393.0						30572.13	0.90%
YRADIAL	206347.3						5944.96	2.88%
Ga 417.206	1521456.9						9413.66	0.62%
GaRADIAL	49174.4						1123.04	2.28%
Ag 328.068†	43.7	0.00248	mg/L	0.001017	0.00248	mg/L	0.001017	41.05%
Al 396.153†	836.1	0.271	mg/L	0.0272	0.271	mg/L	0.0272	10.03%
As 188.979†	0.3	0.00396	mg/L	0.001312	0.00396	mg/L	0.001312	33.17%
Ba 233.527†	477.1	0.00798	mg/L	0.000114	0.00798	mg/L	0.000114	1.43%
Be 234.861†	-6.7	0.00008	mg/L	0.000028	0.00008	mg/L	0.000028	34.27%
B 249.677†	-1960.2	-0.0206	mg/L	0.00302	-0.0206	mg/L	0.00302	14.63%
Ca 227.546†	45.5	0.628	mg/L	0.0926	0.628	mg/L	0.0926	14.75%
Cd 228.802†	2.8	0.00039	mg/L	0.000078	0.00039	mg/L	0.000078	20.32%
Co 228.616†	-5.7	-0.00105	mg/L	0.000209	-0.00105	mg/L	0.000209	19.92%
Cr 267.716†	357.3	0.00213	mg/L	0.001361	0.00213	mg/L	0.001361	64.05%
Cu 327.393†	-509.7	-0.00019	mg/L	0.000604	-0.00019	mg/L	0.000604	316.54%
Fe 239.562†	3558.0	0.616	mg/L	0.0176	0.616	mg/L	0.0176	2.86%
Mg 279.077†	2202.4	0.801	mg/L	0.0219	0.801	mg/L	0.0219	2.74%
Mn 257.610†	14260.0	0.0219	mg/L	0.00014	0.0219	mg/L	0.00014	0.66%
Mo 202.031†	15.9	0.00158	mg/L	0.001395	0.00158	mg/L	0.001395	88.03%
Ni 231.604†	83.1	0.00187	mg/L	0.000413	0.00187	mg/L	0.000413	22.07%

Approved: May 28, 2015

Pb 220.353†	0.6	-0.00027	mg/L	0.001638	-0.00027	mg/L	0.001638	596.42%
Sb 206.836†	0.7	0.00505	mg/L	0.007429	0.00505	mg/L	0.007429	147.24%
Se 196.026†	4.3	0.0109	mg/L	0.02298	0.0109	mg/L	0.02298	210.69%
Si 251.611†	-244836.4	-12.4	mg/L	0.22	-12.4	mg/L	0.22	1.75%
Sn 189.927†	-43.6	-0.00886	mg/L	0.001355	-0.00886	mg/L	0.001355	15.29%
Ti 334.940†	1207.2	0.00305	mg/L	0.000297	0.00305	mg/L	0.000297	9.73%
Tl 190.801†	-3.0	-0.00393	mg/L	0.003653	-0.00393	mg/L	0.003653	92.96%
V 290.880†	-91.1	0.00149	mg/L	0.001194	0.00149	mg/L	0.001194	80.04%
Zn 206.200†	41.6	-0.00325	mg/L	0.000184	-0.00325	mg/L	0.000184	5.65%
K 766.490†	314.6	0.226	mg/L	0.1039	0.226	mg/L	0.1039	45.97%
Na 589.592†	10707.9	1.33	mg/L	0.017	1.33	mg/L	0.017	1.27%
Sr 407.771†	4704.4	0.00548	mg/L	0.000190	0.00548	mg/L	0.000190	3.47%
Li 670.784†	40.2	-0.00164	mg/L	0.001374	-0.00164	mg/L	0.001374	83.86%
P 214.914†	-3.2	-0.00282	mg/L	0.000707	-0.00282	mg/L	0.000707	25.10%

Sequence No.: 21
Sample ID: L1505133317
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 33
Date Collected: 5/27/2015 10:52:12 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505133317

Analyte	Back Pressure	Flow
All	230.0 kPa	0.40 L/min

Mean Data: L1505133317

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3336929.4						105726.70	3.17%
YRADIAL	210515.1						6689.35	3.18%
Ga 417.206	1500221.6						47982.50	3.20%
GaRADIAL	48498.2						639.15	1.32%
Ag 328.068†	-264.8	0.00182	mg/L	0.000836	0.00182	mg/L	0.000836	46.05%
Al 396.153†	1557.4	0.524	mg/L	0.0099	0.524	mg/L	0.0099	1.89%
As 188.979†	-14.4	-0.00499	mg/L	0.006468	-0.00499	mg/L	0.006468	129.58%
Ba 233.527†	592.7	0.00997	mg/L	0.000268	0.00997	mg/L	0.000268	2.69%
Be 234.861†	89.5	0.00012	mg/L	0.000011	0.00012	mg/L	0.000011	9.15%
B 249.677†	-2257.6	-0.0228	mg/L	0.00320	-0.0228	mg/L	0.00320	14.04%
Ca 227.546†	50.5	0.691	mg/L	0.1590	0.691	mg/L	0.1590	23.02%
Cd 228.802†	5.0	0.00057	mg/L	0.000425	0.00057	mg/L	0.000425	75.14%
Co 228.616†	8.4	-0.00007	mg/L	0.000549	-0.00007	mg/L	0.000549	812.88%
Cr 267.716†	476.0	0.00298	mg/L	0.001580	0.00298	mg/L	0.001580	52.94%
Cu 327.393†	-352.2	0.00062	mg/L	0.000477	0.00062	mg/L	0.000477	77.48%
Fe 239.562†	6650.7	1.15	mg/L	0.038	1.15	mg/L	0.038	3.32%
Mg 279.077†	2451.4	0.893	mg/L	0.0292	0.893	mg/L	0.0292	3.27%
Mn 257.610†	23059.6	0.0357	mg/L	0.00071	0.0357	mg/L	0.00071	1.98%
Mo 202.031†	29.5	0.00287	mg/L	0.000834	0.00287	mg/L	0.000834	29.06%
Ni 231.604†	103.5	0.00251	mg/L	0.000585	0.00251	mg/L	0.000585	23.33%
Pb 220.353†	-7.4	-0.00203	mg/L	0.004515	-0.00203	mg/L	0.004515	221.94%
Sb 206.836†	3.8	0.00773	mg/L	0.006061	0.00773	mg/L	0.006061	78.37%
Se 196.026†	11.0	0.0213	mg/L	0.01446	0.0213	mg/L	0.01446	67.97%
Si 251.611†	-237888.7	-12.0	mg/L	0.46	-12.0	mg/L	0.46	3.80%
Sn 189.927†	-41.2	-0.00846	mg/L	0.001272	-0.00846	mg/L	0.001272	15.04%
Ti 334.940†	1698.5	0.00359	mg/L	0.000126	0.00359	mg/L	0.000126	3.52%
Tl 190.801†	-5.8	-0.00625	mg/L	0.002155	-0.00625	mg/L	0.002155	34.47%
V 290.880†	-84.0	0.00163	mg/L	0.000970	0.00163	mg/L	0.000970	59.46%
Zn 206.200†	104.4	-0.00101	mg/L	0.000354	-0.00101	mg/L	0.000354	35.06%
K 766.490†	409.2	0.286	mg/L	0.0091	0.286	mg/L	0.0091	3.19%
Na 589.592†	10730.7	1.33	mg/L	0.011	1.33	mg/L	0.011	0.80%
Sr 407.771†	4649.6	0.00541	mg/L	0.000172	0.00541	mg/L	0.000172	3.19%
Li 670.784†	-25.0	-0.00335	mg/L	0.004170	-0.00335	mg/L	0.004170	124.50%
P 214.914†	5.9	0.0114	mg/L	0.00600	0.0114	mg/L	0.00600	52.56%

Sequence No.: 22
Sample ID: L1505133320
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 34
Date Collected: 5/27/2015 10:54:37 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Approved: May 28, 2015

Nebulizer Parameters: L1505133320

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505133320

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3396383.2						32981.90	0.97%
YRADIAL	208172.1						1280.68	0.62%
Ga 417.206	1519975.5						22375.46	1.47%
GaRADIAL	49699.5						404.23	0.81%
Ag 328.068†	182.3	0.00262	mg/L	0.000261	0.00262	mg/L	0.000261	9.97%
Al 396.153†	173.2	0.0387	mg/L	0.00061	0.0387	mg/L	0.00061	1.58%
As 188.979†	-10.3	-0.00269	mg/L	0.002580	-0.00269	mg/L	0.002580	95.88%
Ba 233.527†	289.0	0.00475	mg/L	0.000070	0.00475	mg/L	0.000070	1.47%
Be 234.861†	-109.6	0.00004	mg/L	0.000016	0.00004	mg/L	0.000016	38.21%
B 249.677†	-1969.2	-0.0229	mg/L	0.00093	-0.0229	mg/L	0.00093	4.06%
Ca 227.546†	52.7	0.718	mg/L	0.0883	0.718	mg/L	0.0883	12.30%
Cd 228.802†	0.7	0.00029	mg/L	0.000183	0.00029	mg/L	0.000183	62.95%
Co 228.616†	-7.6	-0.00116	mg/L	0.000729	-0.00116	mg/L	0.000729	62.61%
Cr 267.716†	28.5	-0.00028	mg/L	0.001057	-0.00028	mg/L	0.001057	378.15%
Cu 327.393†	-619.7	-0.00078	mg/L	0.001108	-0.00078	mg/L	0.001108	141.10%
Fe 239.562†	202.4	0.0390	mg/L	0.00056	0.0390	mg/L	0.00056	1.43%
Mg 279.077†	2170.3	0.790	mg/L	0.0115	0.790	mg/L	0.0115	1.46%
Mn 257.610†	3259.7	0.00468	mg/L	0.000047	0.00468	mg/L	0.000047	1.01%
Mo 202.031†	21.7	0.00214	mg/L	0.000489	0.00214	mg/L	0.000489	22.88%
Ni 231.604†	32.7	0.00029	mg/L	0.000238	0.00029	mg/L	0.000238	81.80%
Pb 220.353†	-10.5	-0.00276	mg/L	0.002357	-0.00276	mg/L	0.002357	85.24%
Sb 206.836†	1.3	0.00560	mg/L	0.004511	0.00560	mg/L	0.004511	80.50%
Se 196.026†	7.6	0.0160	mg/L	0.01524	0.0160	mg/L	0.01524	95.18%
Si 251.611†	-254286.7	-12.8	mg/L	0.29	-12.8	mg/L	0.29	2.29%
Sn 189.927†	-44.7	-0.00905	mg/L	0.001142	-0.00905	mg/L	0.001142	12.61%
Ti 334.940†	400.5	0.00219	mg/L	0.000180	0.00219	mg/L	0.000180	8.23%
Tl 190.801†	-3.9	-0.00467	mg/L	0.002111	-0.00467	mg/L	0.002111	45.21%
V 290.880†	-394.0	-0.00022	mg/L	0.001207	-0.00022	mg/L	0.001207	551.40%
Zn 206.200†	-62.3	-0.00695	mg/L	0.000127	-0.00695	mg/L	0.000127	1.82%
K 766.490†	367.4	0.259	mg/L	0.0954	0.259	mg/L	0.0954	36.80%
Na 589.592†	11781.5	1.46	mg/L	0.033	1.46	mg/L	0.033	2.29%
Sr 407.771†	5148.6	0.00603	mg/L	0.000275	0.00603	mg/L	0.000275	4.57%
Li 670.784†	81.1	-0.00057	mg/L	0.003327	-0.00057	mg/L	0.003327	587.85%
P 214.914†	1.8	0.00503	mg/L	0.006531	0.00503	mg/L	0.006531	129.90%

Sequence No.: 23
Sample ID: CCV
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 6
Date Collected: 5/27/2015 10:57:59 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3207294.9						48461.56	1.51%
YRADIAL	197425.2						3550.54	1.80%
Ga 417.206	1338269.0						17805.30	1.33%
GaRADIAL	46420.0						886.10	1.91%
Ag 328.068†	134790.0	0.401	mg/L	0.0024	0.401	mg/L	0.0024	0.60%
QC value within limits for Ag 328.068 Recovery = 100.19%								
Al 396.153†	29490.0	10.3	mg/L	0.10	10.3	mg/L	0.10	0.93%
QC value within limits for Al 396.153 Recovery = 102.82%								
As 188.979†	632.0	0.387	mg/L	0.0111	0.387	mg/L	0.0111	2.87%
QC value within limits for As 188.979 Recovery = 96.86%								
Ba 233.527†	58111.1	1.00	mg/L	0.009	1.00	mg/L	0.009	0.88%

Approved: May 28, 2015

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   QC value within limits for Ba 233.527  Recovery = 100.47%
Be 234.861†            26759.8      0.0483 mg/L       0.00042      0.0483 mg/L       0.00042   0.87%
   QC value within limits for Be 234.861  Recovery = 96.51%
B 249.677†             26776.8       0.395 mg/L        0.0007       0.395 mg/L        0.0007   0.17%
   QC value less than the lower limit for B 249.677  Recovery = 78.95%
Ca 227.546†              783.1        9.96 mg/L         0.254        9.96 mg/L         0.254   2.55%
   QC value within limits for Ca 227.546  Recovery = 99.64%
Cd 228.802†              815.3      0.0480 mg/L       0.00116      0.0480 mg/L       0.00116   2.41%
   QC value within limits for Cd 228.802  Recovery = 96.06%
Co 228.616†             2870.8       0.201 mg/L        0.0043       0.201 mg/L        0.0043   2.12%
   QC value within limits for Co 228.616  Recovery = 100.27%
Cr 267.716†            68199.1       0.502 mg/L        0.0036       0.502 mg/L        0.0036   0.71%
   QC value within limits for Cr 267.716  Recovery = 100.35%
Cu 327.393†           106548.0       0.497 mg/L        0.0043       0.497 mg/L        0.0043   0.87%
   QC value within limits for Cu 327.393  Recovery = 99.46%
Fe 239.562†            23394.3        4.02 mg/L         0.043        4.02 mg/L         0.043   1.07%
   QC value within limits for Fe 239.562  Recovery = 100.60%
Mg 279.077†            27325.5        10.1 mg/L          0.09        10.1 mg/L          0.09   0.94%
   QC value within limits for Mg 279.077  Recovery = 101.07%
Mn 257.610†           320919.4       0.503 mg/L        0.0041       0.503 mg/L        0.0041   0.81%
   QC value within limits for Mn 257.610  Recovery = 100.53%
Mo 202.031†            10358.6       0.987 mg/L        0.0206       0.987 mg/L        0.0206   2.09%
   QC value within limits for Mo 202.031  Recovery = 98.65%
Ni 231.604†            15918.3       0.498 mg/L        0.0103       0.498 mg/L        0.0103   2.07%
   QC value within limits for Ni 231.604  Recovery = 99.51%
Pb 220.353†             2220.2       0.498 mg/L        0.0142       0.498 mg/L        0.0142   2.85%
   QC value within limits for Pb 220.353  Recovery = 99.64%
Sb 206.836†             1358.5        1.17 mg/L         0.026        1.17 mg/L         0.026   2.25%
   QC value within limits for Sb 206.836  Recovery = 97.82%
Se 196.026†              255.8       0.406 mg/L        0.0198       0.406 mg/L        0.0198   4.88%
   QC value within limits for Se 196.026  Recovery = 101.58%
Si 251.611†          -171333.1       -8.71 mg/L         0.175       -8.71 mg/L         0.175   2.01%
   QC value less than the lower limit for Si 251.611  Recovery = -174.24%
Sn 189.927†             5877.3       0.992 mg/L        0.0252       0.992 mg/L        0.0252   2.54%
   QC value within limits for Sn 189.927  Recovery = 99.22%
Ti 334.940†           924079.5       0.997 mg/L        0.0059       0.997 mg/L        0.0059   0.60%
   QC value within limits for Ti 334.940  Recovery = 99.74%
Tl 190.801†              597.7       0.505 mg/L        0.0085       0.505 mg/L        0.0085   1.69%
   QC value within limits for Tl 190.801  Recovery = 100.97%
V 290.880†            188418.4       0.999 mg/L        0.0067       0.999 mg/L        0.0067   0.67%
   QC value within limits for V 290.880  Recovery = 99.88%
Zn 206.200†            28990.1        1.01 mg/L         0.022        1.01 mg/L         0.022   2.16%
   QC value within limits for Zn 206.200  Recovery = 101.10%
K 766.490†             79071.2        50.4 mg/L          0.52        50.4 mg/L          0.52   1.04%
   QC value within limits for K 766.490  Recovery = 100.77%
Na 589.592†           406994.3        51.2 mg/L          0.99        51.2 mg/L          0.99   1.93%
   QC value within limits for Na 589.592  Recovery = 102.30%
Sr 407.771†           826494.8        1.03 mg/L         0.015        1.03 mg/L         0.015   1.43%
   QC value within limits for Sr 407.771  Recovery = 102.51%
Li 670.784†            39194.6        1.02 mg/L         0.012        1.02 mg/L         0.012   1.16%
   QC value within limits for Li 670.784  Recovery = 102.45%
P 214.914†              6288.7        9.86 mg/L         0.208        9.86 mg/L         0.208   2.11%
   QC value within limits for P 214.914  Recovery = 98.63%
QC Failed.  Continue with analysis.

==========================================================================================
Sequence No.: 24                                    Autosampler Location: 1
Sample ID: CCB                                      Date Collected: 5/27/2015 11:00:24 AM
Analyst:                                            Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

------------------------------------------------------------------------------------------
Nebulizer Parameters: CCB
Analyte                  Back Pressure    Flow
All                     231.0 kPa         0.40 L/min

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Mean Data: CCB
                   Mean Corrected         Calib.                          Sample
Analyte               Intensity     Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029            3382007.7                                                     35260.74   1.04%
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Approved: May 28, 2015

Lynn H. Rhoden

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YRADIAL              208970.3                                                    3339.49   1.60%
Ga 417.206          1561255.3                                                   19087.97   1.22%
GaRADIAL              50411.3                                                     772.38   1.53%
Ag 328.068†              58.1     0.00224 mg/L      0.001312     0.00224 mg/L      0.001312  58.58%
   QC value within limits for Ag 328.068  Recovery = Not calculated
Al 396.153†              -4.1     -0.0234 mg/L       0.00797     -0.0234 mg/L       0.00797  34.01%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†              -5.4     0.00030 mg/L      0.002385     0.00030 mg/L      0.002385 807.43%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†              -9.4    -0.00041 mg/L      0.000225    -0.00041 mg/L      0.000225  55.24%
   QC value within limits for Ba 233.527  Recovery = Not calculated
Be 234.861†             -15.8     0.00022 mg/L      0.000046     0.00022 mg/L      0.000046  20.97%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†             -116.9     0.00301 mg/L      0.001871     0.00301 mg/L      0.001871  62.07%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†               1.2      0.0710 mg/L       0.10165      0.0710 mg/L       0.10165 143.21%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†               1.3     0.00031 mg/L      0.000257     0.00031 mg/L      0.000257  81.90%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†             -12.4    -0.00150 mg/L      0.000889    -0.00150 mg/L      0.000889  59.25%
   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†             -23.1    -0.00066 mg/L      0.000622    -0.00066 mg/L      0.000622  94.48%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†            -143.9     0.00141 mg/L      0.000285     0.00141 mg/L      0.000285  20.18%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†               1.3     0.00442 mg/L      0.001596     0.00442 mg/L      0.001596  36.11%
   QC value within limits for Fe 239.562  Recovery = Not calculated
Mg 279.077†              28.4    -0.00402 mg/L      0.008000    -0.00402 mg/L      0.008000 199.04%
   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†              -9.4    -0.00044 mg/L      0.000034    -0.00044 mg/L      0.000034   7.78%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†               6.4     0.00068 mg/L      0.000716     0.00068 mg/L      0.000716 105.36%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†               2.6    -0.00065 mg/L      0.000482    -0.00065 mg/L      0.000482  74.00%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†              -2.3    -0.00095 mg/L      0.005240    -0.00095 mg/L      0.005240 550.90%
   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†               3.4     0.00736 mg/L      0.003489     0.00736 mg/L      0.003489  47.38%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†              -1.0     0.00265 mg/L      0.006924     0.00265 mg/L      0.006924 261.43%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†            6763.4       0.187 mg/L        0.2224       0.187 mg/L        0.2224 118.99%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†             -18.2    -0.00457 mg/L      0.001832    -0.00457 mg/L      0.001832  40.13%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†             275.5     0.00202 mg/L      0.000292     0.00202 mg/L      0.000292  14.51%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†              -3.0    -0.00389 mg/L      0.004421    -0.00389 mg/L      0.004421 113.68%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†             -320.1     0.00019 mg/L      0.000498     0.00019 mg/L      0.000498 267.69%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†               8.7    -0.00448 mg/L      0.000198    -0.00448 mg/L      0.000198   4.42%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†               19.9      0.0414 mg/L       0.03772      0.0414 mg/L       0.03772  91.13%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†             127.7      0.0362 mg/L       0.00519      0.0362 mg/L       0.00519  14.34%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†             196.4    -0.00009 mg/L      0.000092    -0.00009 mg/L      0.000092  97.90%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†               8.9    -0.00246 mg/L      0.001870    -0.00246 mg/L      0.001870  76.06%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†                5.4      0.0106 mg/L       0.00761      0.0106 mg/L       0.00761  71.65%
   QC value within limits for P 214.914  Recovery = Not calculated
All analyte(s) passed QC.
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Sequence No.: 25 **Autosampler Location: 35**
Sample ID: L1505133323 **Date Collected: 5/27/2015 11:03:45 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Approved: May 28, 2015

Lynn H. Rhoden

Nebulizer Parameters: L1505133323

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505133323

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3439691.2						21159.80	0.62%
YRADIAL	205459.6						4109.86	2.00%
Ga 417.206	1543205.9						14494.77	0.94%
GaRADIAL	48205.5						1352.60	2.81%
Ag 328.068†	-134.3	0.00201	mg/L	0.000209	0.00201	mg/L	0.000209	10.40%
Al 396.153†	1087.6	0.359	mg/L	0.0063	0.359	mg/L	0.0063	1.74%
As 188.979†	-3.8	0.00147	mg/L	0.000731	0.00147	mg/L	0.000731	49.65%
Ba 233.527†	530.2	0.00890	mg/L	0.000099	0.00890	mg/L	0.000099	1.12%
Be 234.861†	34.3	0.00013	mg/L	0.000067	0.00013	mg/L	0.000067	52.21%
B 249.677†	-2342.0	-0.0256	mg/L	0.00169	-0.0256	mg/L	0.00169	6.63%
Ca 227.546†	43.0	0.596	mg/L	0.0316	0.596	mg/L	0.0316	5.30%
Cd 228.802†	4.6	0.00051	mg/L	0.000314	0.00051	mg/L	0.000314	61.54%
Co 228.616†	-0.1	-0.00066	mg/L	0.000668	-0.00066	mg/L	0.000668	101.79%
Cr 267.716†	466.2	0.00292	mg/L	0.000325	0.00292	mg/L	0.000325	11.11%
Cu 327.393†	-646.4	-0.00081	mg/L	0.001623	-0.00081	mg/L	0.001623	201.39%
Fe 239.562†	4238.3	0.733	mg/L	0.0407	0.733	mg/L	0.0407	5.56%
Mg 279.077†	2160.3	0.785	mg/L	0.0676	0.785	mg/L	0.0676	8.61%
Mn 257.610†	16852.7	0.0260	mg/L	0.00029	0.0260	mg/L	0.00029	1.11%
Mo 202.031†	14.4	0.00143	mg/L	0.000674	0.00143	mg/L	0.000674	47.01%
Ni 231.604†	79.5	0.00176	mg/L	0.000412	0.00176	mg/L	0.000412	23.45%
Pb 220.353†	-9.6	-0.00254	mg/L	0.002524	-0.00254	mg/L	0.002524	99.20%
Sb 206.836†	-0.1	0.00436	mg/L	0.002217	0.00436	mg/L	0.002217	50.89%
Se 196.026†	2.4	0.00785	mg/L	0.014985	0.00785	mg/L	0.014985	190.95%
Si 251.611†	-249401.6	-12.6	mg/L	0.22	-12.6	mg/L	0.22	1.73%
Sn 189.927†	-40.0	-0.00824	mg/L	0.000396	-0.00824	mg/L	0.000396	4.80%
Ti 334.940†	1418.3	0.00328	mg/L	0.000451	0.00328	mg/L	0.000451	13.76%
Tl 190.801†	-6.7	-0.00697	mg/L	0.004098	-0.00697	mg/L	0.004098	58.80%
V 290.880†	-248.5	0.00068	mg/L	0.001206	0.00068	mg/L	0.001206	176.54%
Zn 206.200†	-3.5	-0.00481	mg/L	0.000255	-0.00481	mg/L	0.000255	5.31%
K 766.490†	295.6	0.214	mg/L	0.0654	0.214	mg/L	0.0654	30.53%
Na 589.592†	10173.3	1.26	mg/L	0.026	1.26	mg/L	0.026	2.03%
Sr 407.771†	4605.0	0.00536	mg/L	0.000258	0.00536	mg/L	0.000258	4.82%
Li 670.784†	-155.3	-0.00676	mg/L	0.004044	-0.00676	mg/L	0.004044	59.78%
P 214.914†	4.7	0.00957	mg/L	0.017351	0.00957	mg/L	0.017351	181.24%

Sequence No.: 26
Sample ID: L1505133326
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 36
Date Collected: 5/27/2015 11:06:09 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505133326

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505133326

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3437859.4						39522.24	1.15%
YRADIAL	209945.5						2824.80	1.35%
Ga 417.206	1545386.7						14172.06	0.92%
GaRADIAL	50039.1						847.60	1.69%
Ag 328.068†	203.5	0.00267	mg/L	0.000701	0.00267	mg/L	0.000701	26.24%
Al 396.153†	11.9	-0.0179	mg/L	0.00535	-0.0179	mg/L	0.00535	29.96%
As 188.979†	-3.2	0.00164	mg/L	0.001521	0.00164	mg/L	0.001521	93.01%
Ba 233.527†	56.2	0.00073	mg/L	0.000280	0.00073	mg/L	0.000280	38.45%
Be 234.861†	-88.3	0.00009	mg/L	0.000033	0.00009	mg/L	0.000033	37.69%
B 249.677†	-2102.9	-0.0249	mg/L	0.00187	-0.0249	mg/L	0.00187	7.52%
Ca 227.546†	-16.3	-0.149	mg/L	0.1026	-0.149	mg/L	0.1026	68.83%
Cd 228.802†	-4.6	-0.00005	mg/L	0.000303	-0.00005	mg/L	0.000303	598.51%

Approved: May 28, 2015

Co 228.616†	-6.5	-0.00108	mg/L	0.000374	-0.00108	mg/L	0.000374	34.53%
Cr 267.716†	67.0	0.00000	mg/L	0.000066	0.00000	mg/L	0.000066	>999.9%
Cu 327.393†	-589.0	-0.00065	mg/L	0.001093	-0.00065	mg/L	0.001093	169.42%
Fe 239.562†	28.8	0.00914	mg/L	0.001297	0.00914	mg/L	0.001297	14.18%
Mg 279.077†	36.8	-0.00090	mg/L	0.003746	-0.00090	mg/L	0.003746	414.95%
Mn 257.610†	80.7	-0.00030	mg/L	0.000015	-0.00030	mg/L	0.000015	4.93%
Mo 202.031†	12.5	0.00126	mg/L	0.001271	0.00126	mg/L	0.001271	100.81%
Ni 231.604†	9.2	-0.00045	mg/L	0.000729	-0.00045	mg/L	0.000729	162.07%
Pb 220.353†	-7.8	-0.00218	mg/L	0.001697	-0.00218	mg/L	0.001697	77.88%
Sb 206.836†	-3.3	0.00157	mg/L	0.004833	0.00157	mg/L	0.004833	308.12%
Se 196.026†	-1.6	0.00170	mg/L	0.019344	0.00170	mg/L	0.019344	>999.9%
Si 251.611†	-345110.2	-17.4	mg/L	0.09	-17.4	mg/L	0.09	0.52%
Sn 189.927†	17.9	0.00154	mg/L	0.002192	0.00154	mg/L	0.002192	141.98%
Ti 334.940†	436.6	0.00217	mg/L	0.000425	0.00217	mg/L	0.000425	19.55%
Tl 190.801†	7.0	0.00442	mg/L	0.002859	0.00442	mg/L	0.002859	64.75%
V 290.880†	-126.6	0.00121	mg/L	0.000951	0.00121	mg/L	0.000951	78.60%
Zn 206.200†	-115.8	-0.00882	mg/L	0.000292	-0.00882	mg/L	0.000292	3.31%
K 766.490†	-6.1	0.0239	mg/L	0.03291	0.0239	mg/L	0.03291	137.68%
Na 589.592†	8767.7	1.09	mg/L	0.007	1.09	mg/L	0.007	0.61%
Sr 407.771†	358.7	0.00011	mg/L	0.000048	0.00011	mg/L	0.000048	42.30%
Li 670.784†	-3.9	-0.00280	mg/L	0.002263	-0.00280	mg/L	0.002263	80.94%
P 214.914†	4.5	0.00923	mg/L	0.005322	0.00923	mg/L	0.005322	57.66%

Sequence No.: 27
Sample ID: L1505133329
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 37
Date Collected: 5/27/2015 11:09:30 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505133329

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505133329

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3455605.8						60826.24	1.76%
YRADIAL	209020.1						3711.54	1.78%
Ga 417.206	1540582.6						21828.86	1.42%
GaRADIAL	49859.7						704.22	1.41%
Ag 328.068†	330.4	0.00304	mg/L	0.000263	0.00304	mg/L	0.000263	8.66%
Al 396.153†	-10.7	-0.0258	mg/L	0.00579	-0.0258	mg/L	0.00579	22.46%
As 188.979†	-7.0	-0.00068	mg/L	0.003109	-0.00068	mg/L	0.003109	460.27%
Ba 233.527†	40.9	0.00046	mg/L	0.000146	0.00046	mg/L	0.000146	31.64%
Be 234.861†	-96.6	0.00007	mg/L	0.000028	0.00007	mg/L	0.000028	39.02%
B 249.677†	-2419.9	-0.0294	mg/L	0.00269	-0.0294	mg/L	0.00269	9.14%
Ca 227.546†	-0.4	0.0508	mg/L	0.08933	0.0508	mg/L	0.08933	175.87%
Cd 228.802†	-1.6	0.00015	mg/L	0.000352	0.00015	mg/L	0.000352	240.95%
Co 228.616†	4.0	-0.00035	mg/L	0.000248	-0.00035	mg/L	0.000248	71.80%
Cr 267.716†	112.7	0.00034	mg/L	0.000724	0.00034	mg/L	0.000724	212.79%
Cu 327.393†	-470.2	-0.00010	mg/L	0.000546	-0.00010	mg/L	0.000546	561.01%
Fe 239.562†	-0.2	0.00416	mg/L	0.000479	0.00416	mg/L	0.000479	11.50%
Mg 279.077†	31.7	-0.00281	mg/L	0.002923	-0.00281	mg/L	0.002923	104.15%
Mn 257.610†	139.5	-0.00021	mg/L	0.000017	-0.00021	mg/L	0.000017	8.16%
Mo 202.031†	9.0	0.00093	mg/L	0.000564	0.00093	mg/L	0.000564	60.71%
Ni 231.604†	-16.5	-0.00125	mg/L	0.000525	-0.00125	mg/L	0.000525	41.98%
Pb 220.353†	1.5	-0.00010	mg/L	0.000334	-0.00010	mg/L	0.000334	333.71%
Sb 206.836†	0.4	0.00480	mg/L	0.003643	0.00480	mg/L	0.003643	75.91%
Se 196.026†	2.2	0.00759	mg/L	0.006487	0.00759	mg/L	0.006487	85.51%
Si 251.611†	-349043.7	-17.6	mg/L	0.27	-17.6	mg/L	0.27	1.53%
Sn 189.927†	-44.4	-0.00900	mg/L	0.001252	-0.00900	mg/L	0.001252	13.92%
Ti 334.940†	273.5	0.00201	mg/L	0.000293	0.00201	mg/L	0.000293	14.55%
Tl 190.801†	-3.7	-0.00450	mg/L	0.006295	-0.00450	mg/L	0.006295	139.93%
V 290.880†	-436.5	-0.00043	mg/L	0.000757	-0.00043	mg/L	0.000757	176.20%
Zn 206.200†	-113.4	-0.00873	mg/L	0.000183	-0.00873	mg/L	0.000183	2.10%
K 766.490†	57.7	0.0641	mg/L	0.06827	0.0641	mg/L	0.06827	106.43%
Na 589.592†	9029.9	1.12	mg/L	0.017	1.12	mg/L	0.017	1.53%
Sr 407.771†	459.6	0.00023	mg/L	0.000020	0.00023	mg/L	0.000020	8.68%
Li 670.784†	0.2	-0.00269	mg/L	0.003922	-0.00269	mg/L	0.003922	146.00%

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P 214.914†	-3.9	-0.00402 mg/L	0.010496	-0.00402 mg/L	0.010496	261.32%

Sequence No.: 28 **Autosampler Location: 38**
Sample ID: L1505138701 **Date Collected: 5/27/2015 11:12:51 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505138701

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505138701

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3264200.7						12895.69	0.40%
YRADIAL	206512.7						737.60	0.36%
Ga 417.206	1388288.6						4656.14	0.34%
GaRADIAL	48725.6						41.09	0.08%
Ag 328.068†	1366.9	0.00737	mg/L	0.001249	0.00737	mg/L	0.001249	16.94%
Al 396.153†	2116.7	0.720	mg/L	0.0087	0.720	mg/L	0.0087	1.21%
As 188.979†	-29.2	-0.0104	mg/L	0.00283	-0.0104	mg/L	0.00283	27.17%
Ba 233.527†	3754.2	0.0646	mg/L	0.00091	0.0646	mg/L	0.00091	1.41%
Be 234.861†	329.1	0.00010	mg/L	0.000135	0.00010	mg/L	0.000135	136.82%
B 249.677†	-1768.0	-0.00897	mg/L	0.000904	-0.00897	mg/L	0.000904	10.08%
Ca 227.546†	11690.2	147	mg/L	2.0	147	mg/L	2.0	1.36%
Cd 228.802†	6.2	0.00069	mg/L	0.000168	0.00069	mg/L	0.000168	24.45%
Co 228.616†	7.4	-0.00019	mg/L	0.000863	-0.00019	mg/L	0.000863	450.59%
Cr 267.716†	3065.6	0.0220	mg/L	0.00044	0.0220	mg/L	0.00044	2.01%
Cu 327.393†	12514.6	0.0604	mg/L	0.00122	0.0604	mg/L	0.00122	2.01%
Fe 239.562†	17314.1	2.98	mg/L	0.036	2.98	mg/L	0.036	1.22%
Mg 279.077†	43068.2	15.9	mg/L	0.15	15.9	mg/L	0.15	0.94%
Mn 257.610†	39566.9	0.0617	mg/L	0.00080	0.0617	mg/L	0.00080	1.29%
Mo 202.031†	69.9	0.00669	mg/L	0.000868	0.00669	mg/L	0.000868	12.97%
Ni 231.604†	659.1	0.0199	mg/L	0.00070	0.0199	mg/L	0.00070	3.50%
Pb 220.353†	63.0	0.0137	mg/L	0.00223	0.0137	mg/L	0.00223	16.28%
Sb 206.836†	-1.0	0.00353	mg/L	0.002263	0.00353	mg/L	0.002263	64.12%
Se 196.026†	-3.1	-0.00085	mg/L	0.014078	-0.00085	mg/L	0.014078	>999.9%
Si 251.611†	-186570.0	-9.46	mg/L	0.087	-9.46	mg/L	0.087	0.92%
Sn 189.927†	-70.8	-0.0135	mg/L	0.00367	-0.0135	mg/L	0.00367	27.28%
Ti 334.940†	-2288.5	0.00867	mg/L	0.000142	0.00867	mg/L	0.000142	1.64%
Tl 190.801†	-27.0	-0.0239	mg/L	0.00415	-0.0239	mg/L	0.00415	17.34%
V 290.880†	-741.8	-0.00189	mg/L	0.001362	-0.00189	mg/L	0.001362	72.12%
Zn 206.200†	349.1	0.00786	mg/L	0.000704	0.00786	mg/L	0.000704	8.96%
K 766.490†	2670.3	1.70	mg/L	0.055	1.70	mg/L	0.055	3.22%
Na 589.592†	99161.4	12.2	mg/L	0.10	12.2	mg/L	0.10	0.78%
Sr 407.771†	225387.4	0.275	mg/L	0.0097	0.275	mg/L	0.0097	3.53%
Li 670.784†	20.6	-0.00215	mg/L	0.005871	-0.00215	mg/L	0.005871	272.77%
P 214.914†	49.5	0.0798	mg/L	0.01000	0.0798	mg/L	0.01000	12.53%

Sequence No.: 29 **Autosampler Location: 39**
Sample ID: L1505138901 **Date Collected: 5/27/2015 11:15:13 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505138901

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505138901

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3324547.0						5381.28	0.16%
YRADIAL	206958.2						1727.67	0.83%
Ga 417.206	1460417.3						9876.74	0.68%

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GaRADIAL	49257.8					105.05	0.21%
Ag 328.068†	638.0	0.00399	mg/L	0.000532	0.00399 mg/L	0.000532	13.33%
Al 396.153†	342.0	0.0978	mg/L	0.02997	0.0978 mg/L	0.02997	30.63%
As 188.979†	-19.7	-0.00756	mg/L	0.007355	-0.00756 mg/L	0.007355	97.29%
Ba 233.527†	3244.1	0.0558	mg/L	0.00024	0.0558 mg/L	0.00024	0.42%
Be 234.861†	-59.3	0.00010	mg/L	0.000050	0.00010 mg/L	0.000050	50.85%
B 249.677†	-1084.2	-0.00993	mg/L	0.000707	-0.00993 mg/L	0.000707	7.13%
Ca 227.546†	3257.4	41.0	mg/L	0.29	41.0 mg/L	0.29	0.70%
Cd 228.802†	-2.2	0.00014	mg/L	0.000184	0.00014 mg/L	0.000184	127.45%
Co 228.616†	-8.9	-0.00127	mg/L	0.000603	-0.00127 mg/L	0.000603	47.49%
Cr 267.716†	178.0	0.00082	mg/L	0.000170	0.00082 mg/L	0.000170	20.89%
Cu 327.393†	-783.7	-0.00152	mg/L	0.001105	-0.00152 mg/L	0.001105	72.56%
Fe 239.562†	1030.5	0.181	mg/L	0.0117	0.181 mg/L	0.0117	6.48%
Mg 279.077†	13618.0	5.03	mg/L	0.111	5.03 mg/L	0.111	2.22%
Mn 257.610†	11635.5	0.0178	mg/L	0.00007	0.0178 mg/L	0.00007	0.40%
Mo 202.031†	43.1	0.00418	mg/L	0.000643	0.00418 mg/L	0.000643	15.39%
Ni 231.604†	-14.8	-0.00120	mg/L	0.000440	-0.00120 mg/L	0.000440	36.84%
Pb 220.353†	13.4	0.00258	mg/L	0.001312	0.00258 mg/L	0.001312	50.93%
Sb 206.836†	1.5	0.00574	mg/L	0.003201	0.00574 mg/L	0.003201	55.79%
Se 196.026†	-4.8	-0.00332	mg/L	0.015203	-0.00332 mg/L	0.015203	457.60%
Si 251.611†	-254116.5	-12.8	mg/L	0.09	-12.8 mg/L	0.09	0.71%
Sn 189.927†	-50.7	-0.0101	mg/L	0.00302	-0.0101 mg/L	0.00302	30.00%
Ti 334.940†	-872.8	0.00340	mg/L	0.000276	0.00340 mg/L	0.000276	8.11%
Tl 190.801†	-10.8	-0.0104	mg/L	0.00270	-0.0104 mg/L	0.00270	25.87%
V 290.880†	-448.1	-0.00059	mg/L	0.001043	-0.00059 mg/L	0.001043	176.94%
Zn 206.200†	6.3	-0.00454	mg/L	0.000263	-0.00454 mg/L	0.000263	5.79%
K 766.490†	3508.4	2.24	mg/L	0.052	2.24 mg/L	0.052	2.31%
Na 589.592†	59231.0	7.28	mg/L	0.051	7.28 mg/L	0.051	0.70%
Sr 407.771†	102684.2	0.126	mg/L	0.0005	0.126 mg/L	0.0005	0.36%
Li 670.784†	-111.6	-0.00562	mg/L	0.001908	-0.00562 mg/L	0.001908	33.97%
P 214.914†	30.2	0.0496	mg/L	0.01401	0.0496 mg/L	0.01401	28.26%

Sequence No.: 30 **Autosampler Location: 40**
Sample ID: L1505138902 **Date Collected: 5/27/2015 11:17:35 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505138902

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505138902

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3327079.7						58502.38	1.76%
YRADIAL	204442.6						4680.78	2.29%
Ga 417.206	1488837.0						21703.30	1.46%
GaRADIAL	48692.4						1152.05	2.37%
Ag 328.068†	238.9	0.00290	mg/L	0.000496	0.00290	mg/L	0.000496	17.11%
Al 396.153†	505.7	0.155	mg/L	0.0302	0.155	mg/L	0.0302	19.44%
As 188.979†	-14.0	-0.00463	mg/L	0.001464	-0.00463	mg/L	0.001464	31.61%
Ba 233.527†	1831.5	0.0314	mg/L	0.00087	0.0314	mg/L	0.00087	2.78%
Be 234.861†	-58.5	0.00006	mg/L	0.000017	0.00006	mg/L	0.000017	27.12%
B 249.677†	-1340.5	-0.0130	mg/L	0.00167	-0.0130	mg/L	0.00167	12.77%
Ca 227.546†	1167.4	14.7	mg/L	0.32	14.7	mg/L	0.32	2.15%
Cd 228.802†	4.8	0.00055	mg/L	0.000155	0.00055	mg/L	0.000155	27.91%
Co 228.616†	-4.1	-0.00094	mg/L	0.000408	-0.00094	mg/L	0.000408	43.35%
Cr 267.716†	130.1	0.00046	mg/L	0.000803	0.00046	mg/L	0.000803	173.92%
Cu 327.393†	6523.8	0.0323	mg/L	0.00146	0.0323	mg/L	0.00146	4.51%
Fe 239.562†	1800.9	0.314	mg/L	0.0051	0.314	mg/L	0.0051	1.63%
Mg 279.077†	6258.8	2.30	mg/L	0.115	2.30	mg/L	0.115	5.00%
Mn 257.610†	2719.2	0.00384	mg/L	0.000065	0.00384	mg/L	0.000065	1.70%
Mo 202.031†	22.3	0.00220	mg/L	0.000274	0.00220	mg/L	0.000274	12.48%
Ni 231.604†	8.5	-0.00047	mg/L	0.000433	-0.00047	mg/L	0.000433	93.11%
Pb 220.353†	7.8	0.00132	mg/L	0.004998	0.00132	mg/L	0.004998	378.16%
Sb 206.836†	1.1	0.00544	mg/L	0.003019	0.00544	mg/L	0.003019	55.55%
Se 196.026†	-4.7	-0.00324	mg/L	0.013123	-0.00324	mg/L	0.013123	405.25%
Si 251.611†	-249597.1	-12.6	mg/L	0.20	-12.6	mg/L	0.20	1.60%

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Sn 189.927†	-54.9	-0.0108 mg/L	0.00214	-0.0108 mg/L	0.00214	19.85%
Ti 334.940†	2309.3	0.00515 mg/L	0.000176	0.00515 mg/L	0.000176	3.43%
Tl 190.801†	-6.7	-0.00698 mg/L	0.004100	-0.00698 mg/L	0.004100	58.76%
V 290.880†	-177.8	0.00094 mg/L	0.001144	0.00094 mg/L	0.001144	122.08%
Zn 206.200†	693.3	0.0194 mg/L	0.00053	0.0194 mg/L	0.00053	2.72%
K 766.490†	1653.7	1.07 mg/L	0.087	1.07 mg/L	0.087	8.13%
Na 589.592†	14769.0	1.83 mg/L	0.020	1.83 mg/L	0.020	1.11%
Sr 407.771†	42593.8	0.0521 mg/L	0.00065	0.0521 mg/L	0.00065	1.25%
Li 670.784†	42.6	-0.00158 mg/L	0.002548	-0.00158 mg/L	0.002548	161.56%
P 214.914†	-13.0	-0.0182 mg/L	0.01359	-0.0182 mg/L	0.01359	74.89%

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Sequence No.: 31 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 5/27/2015 11:19:59 AM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3199368.1						72392.11	2.26%
YRADIAL	200621.6						2540.43	1.27%
Ga 417.206	1331705.1						31942.41	2.40%
GaRADIAL	47058.3						510.23	1.08%
Ag 328.068†	132645.4	0.394	mg/L	0.0042	0.394	mg/L	0.0042	1.07%
QC value within limits for Ag 328.068 Recovery = 98.61%								
Al 396.153†	28894.0	10.1	mg/L	0.06	10.1	mg/L	0.06	0.55%
QC value within limits for Al 396.153 Recovery = 100.73%								
As 188.979†	630.7	0.387	mg/L	0.0062	0.387	mg/L	0.0062	1.60%
QC value within limits for As 188.979 Recovery = 96.67%								
Ba 233.527†	57055.3	0.986	mg/L	0.0122	0.986	mg/L	0.0122	1.24%
QC value within limits for Ba 233.527 Recovery = 98.65%								
Be 234.861†	26747.1	0.0482	mg/L	0.00111	0.0482	mg/L	0.00111	2.29%
QC value within limits for Be 234.861 Recovery = 96.48%								
B 249.677†	26166.5	0.386	mg/L	0.0080	0.386	mg/L	0.0080	2.07%
QC value less than the lower limit for B 249.677 Recovery = 77.21%								
Ca 227.546†	756.3	9.63	mg/L	0.068	9.63	mg/L	0.068	0.70%
QC value within limits for Ca 227.546 Recovery = 96.27%								
Cd 228.802†	820.8	0.0484	mg/L	0.00108	0.0484	mg/L	0.00108	2.23%
QC value within limits for Cd 228.802 Recovery = 96.72%								
Co 228.616†	2847.4	0.199	mg/L	0.0031	0.199	mg/L	0.0031	1.56%
QC value within limits for Co 228.616 Recovery = 99.47%								
Cr 267.716†	66598.1	0.490	mg/L	0.0048	0.490	mg/L	0.0048	0.99%
QC value within limits for Cr 267.716 Recovery = 97.99%								
Cu 327.393†	104628.5	0.488	mg/L	0.0073	0.488	mg/L	0.0073	1.49%
QC value within limits for Cu 327.393 Recovery = 97.68%								
Fe 239.562†	23219.3	3.99	mg/L	0.042	3.99	mg/L	0.042	1.04%
QC value within limits for Fe 239.562 Recovery = 99.85%								
Mg 279.077†	26905.8	9.95	mg/L	0.038	9.95	mg/L	0.038	0.38%
QC value within limits for Mg 279.077 Recovery = 99.52%								
Mn 257.610†	315741.1	0.495	mg/L	0.0062	0.495	mg/L	0.0062	1.25%
QC value within limits for Mn 257.610 Recovery = 98.91%								
Mo 202.031†	10356.0	0.986	mg/L	0.0168	0.986	mg/L	0.0168	1.70%
QC value within limits for Mo 202.031 Recovery = 98.63%								
Ni 231.604†	15863.3	0.496	mg/L	0.0066	0.496	mg/L	0.0066	1.34%
QC value within limits for Ni 231.604 Recovery = 99.17%								
Pb 220.353†	2227.7	0.500	mg/L	0.0093	0.500	mg/L	0.0093	1.86%
QC value within limits for Pb 220.353 Recovery = 99.97%								
Sb 206.836†	1357.9	1.17	mg/L	0.018	1.17	mg/L	0.018	1.51%
QC value within limits for Sb 206.836 Recovery = 97.78%								
Se 196.026†	255.0	0.405	mg/L	0.0116	0.405	mg/L	0.0116	2.86%
QC value within limits for Se 196.026 Recovery = 101.28%								
Si 251.611†	-174297.3	-8.86	mg/L	0.005	-8.86	mg/L	0.005	0.06%
QC value less than the lower limit for Si 251.611 Recovery = -177.20%								
Sn 189.927†	5852.9	0.988	mg/L	0.0129	0.988	mg/L	0.0129	1.31%

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   QC value within limits for Sn 189.927  Recovery = 98.81%
Ti 334.940†          907998.3       0.980 mg/L        0.0109       0.980 mg/L        0.0109   1.11%
   QC value within limits for Ti 334.940  Recovery = 98.01%
Tl 190.801†             600.5       0.507 mg/L        0.0050       0.507 mg/L        0.0050   0.99%
   QC value within limits for Tl 190.801  Recovery = 101.39%
V 290.880†           184493.8       0.978 mg/L        0.0132       0.978 mg/L        0.0132   1.35%
   QC value within limits for V 290.880  Recovery = 97.80%
Zn 206.200†           28897.7        1.01 mg/L         0.016        1.01 mg/L         0.016   1.55%
   QC value within limits for Zn 206.200  Recovery = 100.77%
K 766.490†            77861.8        49.6 mg/L          0.07        49.6 mg/L          0.07   0.14%
   QC value within limits for K 766.490  Recovery = 99.21%
Na 589.592†          395823.4        49.7 mg/L          0.26        49.7 mg/L          0.26   0.53%
   QC value within limits for Na 589.592  Recovery = 99.41%
Sr 407.771†          800970.5       0.993 mg/L        0.0067       0.993 mg/L        0.0067   0.68%
   QC value within limits for Sr 407.771  Recovery = 99.34%
Li 670.784†           38688.5        1.01 mg/L         0.002        1.01 mg/L         0.002   0.22%
   QC value within limits for Li 670.784  Recovery = 101.12%
P 214.914†             6230.5        9.77 mg/L         0.130        9.77 mg/L         0.130   1.33%
   QC value within limits for P 214.914  Recovery = 97.72%
QC Failed.  Continue with analysis.

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Sequence No.: 32                                    Autosampler Location: 1
Sample ID: CCB                                      Date Collected: 5/27/2015 11:22:23 AM
Analyst:                                            Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

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Nebulizer Parameters: CCB
Analyte                 Back Pressure    Flow
All                     232.0 kPa        0.40 L/min

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Mean Data: CCB
                   Mean Corrected        Calib.                          Sample
Analyte               Intensity     Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029           3411059.2                                                      31204.53   0.91%
YRADIAL              213099.6                                                       3804.59   1.79%
Ga 417.206          1551852.7                                                       9250.33   0.60%
GaRADIAL              51668.6                                                       1000.65   1.94%
Ag 328.068†              -4.3     0.00206 mg/L      0.000163     0.00206 mg/L      0.000163   7.91%
   QC value within limits for Ag 328.068  Recovery = Not calculated
Al 396.153†              -6.9     -0.0244 mg/L       0.00417     -0.0244 mg/L       0.00417  17.09%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†              -7.2    -0.00079 mg/L      0.003607    -0.00079 mg/L      0.003607 457.73%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†               5.6    -0.00015 mg/L      0.000099    -0.00015 mg/L      0.000099  66.83%
   QC value within limits for Ba 233.527  Recovery = Not calculated
Be 234.861†             -23.0     0.00021 mg/L      0.000062     0.00021 mg/L      0.000062  30.32%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†             -127.9     0.00285 mg/L      0.003955     0.00285 mg/L      0.003955 138.53%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†              -3.7     0.00932 mg/L      0.130316     0.00932 mg/L      0.130316 >999.9%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†              -2.2     0.00011 mg/L      0.000429     0.00011 mg/L      0.000429 394.77%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†              -2.5    -0.00081 mg/L      0.000605    -0.00081 mg/L      0.000605  74.86%
   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†              14.4    -0.00038 mg/L      0.000219    -0.00038 mg/L      0.000219  57.22%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†             -43.4     0.00188 mg/L      0.000595     0.00188 mg/L      0.000595  31.65%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†              -2.9     0.00370 mg/L      0.001121     0.00370 mg/L      0.001121  30.29%
   QC value within limits for Fe 239.562  Recovery = Not calculated
Mg 279.077†              11.1     -0.0104 mg/L       0.00280     -0.0104 mg/L       0.00280  26.83%
   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†              19.4    -0.00039 mg/L      0.000046    -0.00039 mg/L      0.000046  11.70%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†               0.6     0.00013 mg/L      0.000387     0.00013 mg/L      0.000387 288.75%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†             -11.3    -0.00109 mg/L      0.000091    -0.00109 mg/L      0.000091   8.39%
```

Approved: May 28, 2015

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QC value within limits for Ni 231.604 Recovery = Not calculated
Pb 220.353† -4.3 -0.00140 mg/L 0.003053 -0.00140 mg/L 0.003053 218.47%
QC value within limits for Pb 220.353 Recovery = Not calculated
Sb 206.836† 1.1 0.00537 mg/L 0.005092 0.00537 mg/L 0.005092 94.83%
QC value within limits for Sb 206.836 Recovery = Not calculated
Se 196.026† 7.4 0.0158 mg/L 0.00450 0.0158 mg/L 0.00450 28.57%
QC value within limits for Se 196.026 Recovery = Not calculated
Si 251.611† 4769.2 0.0874 mg/L 0.35191 0.0874 mg/L 0.35191 402.72%
QC value within limits for Si 251.611 Recovery = Not calculated
Sn 189.927† -14.1 -0.00387 mg/L 0.002004 -0.00387 mg/L 0.002004 51.77%
QC value within limits for Sn 189.927 Recovery = Not calculated
Ti 334.940† 231.5 0.00196 mg/L 0.000083 0.00196 mg/L 0.000083 4.24%
QC value within limits for Ti 334.940 Recovery = Not calculated
Tl 190.801† 0.8 -0.00075 mg/L 0.002810 -0.00075 mg/L 0.002810 372.23%
QC value within limits for Tl 190.801 Recovery = Not calculated
V 290.880† -327.5 0.00015 mg/L 0.001113 0.00015 mg/L 0.001113 757.27%
QC value within limits for V 290.880 Recovery = Not calculated
Zn 206.200† -1.1 -0.00482 mg/L 0.000495 -0.00482 mg/L 0.000495 10.26%
QC value within limits for Zn 206.200 Recovery = Not calculated
K 766.490† 44.8 0.0570 mg/L 0.03658 0.0570 mg/L 0.03658 64.13%
QC value within limits for K 766.490 Recovery = Not calculated
Na 589.592† 225.0 0.0481 mg/L 0.01845 0.0481 mg/L 0.01845 38.39%
QC value within limits for Na 589.592 Recovery = Not calculated
Sr 407.771† 87.9 -0.00023 mg/L 0.000034 -0.00023 mg/L 0.000034 14.99%
QC value within limits for Sr 407.771 Recovery = Not calculated
Li 670.784† 0.4 -0.00268 mg/L 0.003438 -0.00268 mg/L 0.003438 128.23%
QC value within limits for Li 670.784 Recovery = Not calculated
P 214.914† -6.2 -0.00762 mg/L 0.013679 -0.00762 mg/L 0.013679 179.51%
QC value within limits for P 214.914 Recovery = Not calculated
All analyte(s) passed QC.

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Sequence No.: 33 **Autosampler Location: 41**
Sample ID: LLCCV **Date Collected: 5/27/2015 11:25:44 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: LLCCV

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: LLCCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3340172.7						47045.50	1.41%
YRADIAL	210744.8						4201.07	1.99%
Ga 417.206	1517547.7						24577.91	1.62%
GaRADIAL	50541.4						1026.12	2.03%
Ag 328.068†	5255.1	0.0176	mg/L	0.00026	0.0176	mg/L	0.00026	1.45%
Al 396.153†	1247.7	0.414	mg/L	0.0568	0.414	mg/L	0.0568	13.72%
As 188.979†	19.8	0.0156	mg/L	0.00746	0.0156	mg/L	0.00746	47.77%
Ba 233.527†	2412.4	0.0415	mg/L	0.00094	0.0415	mg/L	0.00094	2.26%
Be 234.861†	1031.1	0.00210	mg/L	0.000075	0.00210	mg/L	0.000075	3.56%
B 249.677†	1010.1	0.0194	mg/L	0.00190	0.0194	mg/L	0.00190	9.79%
Ca 227.546†	28.2	0.413	mg/L	0.0787	0.413	mg/L	0.0787	19.06%
Cd 228.802†	32.8	0.00216	mg/L	0.000388	0.00216	mg/L	0.000388	17.96%
Co 228.616†	112.5	0.00725	mg/L	0.000037	0.00725	mg/L	0.000037	0.51%
Cr 267.716†	2865.6	0.0206	mg/L	0.00061	0.0206	mg/L	0.00061	2.95%
Cu 327.393†	3876.4	0.0201	mg/L	0.00071	0.0201	mg/L	0.00071	3.52%
Fe 239.562†	934.9	0.165	mg/L	0.0019	0.165	mg/L	0.0019	1.18%
Mg 279.077†	1187.8	0.425	mg/L	0.0214	0.425	mg/L	0.0214	5.03%
Mn 257.610†	13366.5	0.0205	mg/L	0.00040	0.0205	mg/L	0.00040	1.95%
Mo 202.031†	408.9	0.0390	mg/L	0.00013	0.0390	mg/L	0.00013	0.34%
Ni 231.604†	663.9	0.0200	mg/L	0.00087	0.0200	mg/L	0.00087	4.36%
Pb 220.353†	81.5	0.0179	mg/L	0.00110	0.0179	mg/L	0.00110	6.13%
Sb 206.836†	50.0	0.0475	mg/L	0.00364	0.0475	mg/L	0.00364	7.67%
Se 196.026†	18.1	0.0326	mg/L	0.01128	0.0326	mg/L	0.01128	34.59%
Si 251.611†	1423.4	-0.0800	mg/L	0.15645	-0.0800	mg/L	0.15645	195.51%
Sn 189.927†	218.1	0.0354	mg/L	0.00145	0.0354	mg/L	0.00145	4.11%

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Kym H. Rhoden

Ti 334.940†	36333.9	0.0409 mg/L	0.00054	0.0409 mg/L	0.00054	1.32%
Tl 190.801†	24.6	0.0194 mg/L	0.00118	0.0194 mg/L	0.00118	6.07%
V 290.880†	7090.7	0.0394 mg/L	0.00186	0.0394 mg/L	0.00186	4.72%
Zn 206.200†	1239.5	0.0386 mg/L	0.00100	0.0386 mg/L	0.00100	2.59%
K 766.490†	3050.6	1.95 mg/L	0.016	1.95 mg/L	0.016	0.82%
Na 589.592†	16544.2	2.04 mg/L	0.028	2.04 mg/L	0.028	1.38%
Sr 407.771†	32997.4	0.0406 mg/L	0.00058	0.0406 mg/L	0.00058	1.44%
Li 670.784†	1652.3	0.0406 mg/L	0.00233	0.0406 mg/L	0.00233	5.73%
P 214.914†	246.0	0.388 mg/L	0.0032	0.388 mg/L	0.0032	0.83%

Approved: May 28, 2015

Lynn H. Rhoden

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Analysis Begun

Start Time: 5/27/2015 11:29:27 AM **Plasma On Time: 5/27/2015 6:39:13 AM**
Logged In Analyst: peicp2 **Technique: ICP Continuous**
Spectrometer Model: Optima 4300 DV, S/N 077N4011401 **Autosampler Model: Cetac**

Sample Information File: C:\pe\peicp2\Sample Information\MONDAY1.sif
Batch ID:
Results Data Set: 052715HR
Results Library: C:\pe\peicp2\Results\results2.mdb

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Method Loaded
Method Name: 200.7-6010-3015 ASX **Method Last Saved: 5/27/2015 9:59:38 AM**
IEC File: PLUS-P.iec **SMF File:**
Method Description: STANDARD

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Sequence No.: 1 **Autosampler Location: 42**
Sample ID: PBW 76 WG525046-02 **Date Collected: 5/27/2015 11:29:28 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: PBW 76 WG525046-02

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: PBW 76 WG525046-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3416014.0						67671.38	1.98%
YRADIAL	211548.6						3707.48	1.75%
Ga 417.206	1544523.3						22603.87	1.46%
GaRADIAL	50616.9						582.03	1.15%
Ag 328.068†	-294.4	0.00121	mg/L	0.000392	0.00121	mg/L	0.000392	32.41%
Al 396.153†	10.6	-0.0183	mg/L	0.00623	-0.0183	mg/L	0.00623	34.06%
As 188.979†	-12.9	-0.00430	mg/L	0.002985	-0.00430	mg/L	0.002985	69.43%
Ba 233.527†	-17.9	-0.00055	mg/L	0.000246	-0.00055	mg/L	0.000246	44.42%
Be 234.861†	-73.3	0.00011	mg/L	0.000021	0.00011	mg/L	0.000021	18.32%
B 249.677†	9955.2	0.145	mg/L	0.0052	0.145	mg/L	0.0052	3.58%
Ca 227.546†	-9.4	-0.0616	mg/L	0.27060	-0.0616	mg/L	0.27060	439.59%
Cd 228.802†	3.4	0.00046	mg/L	0.000301	0.00046	mg/L	0.000301	64.94%
Co 228.616†	-1.9	-0.00076	mg/L	0.000784	-0.00076	mg/L	0.000784	102.72%
Cr 267.716†	113.5	0.00035	mg/L	0.000354	0.00035	mg/L	0.000354	102.16%
Cu 327.393†	-586.4	-0.00063	mg/L	0.000682	-0.00063	mg/L	0.000682	107.62%
Fe 239.562†	18.9	0.00744	mg/L	0.001713	0.00744	mg/L	0.001713	23.04%
Mg 279.077†	22.0	-0.00640	mg/L	0.006994	-0.00640	mg/L	0.006994	109.33%
Mn 257.610†	4.5	-0.00042	mg/L	0.000010	-0.00042	mg/L	0.000010	2.46%
Mo 202.031†	10.6	0.00108	mg/L	0.000544	0.00108	mg/L	0.000544	50.27%
Ni 231.604†	-36.9	-0.00189	mg/L	0.000229	-0.00189	mg/L	0.000229	12.11%
Pb 220.353†	0.5	-0.00032	mg/L	0.003445	-0.00032	mg/L	0.003445	>999.9%
Sb 206.836†	2.1	0.00622	mg/L	0.002344	0.00622	mg/L	0.002344	37.66%
Se 196.026†	3.9	0.0103	mg/L	0.00655	0.0103	mg/L	0.00655	63.69%
Si 251.611†	-155810.1	-7.93	mg/L	0.325	-7.93	mg/L	0.325	4.10%
Sn 189.927†	-53.1	-0.0105	mg/L	0.00050	-0.0105	mg/L	0.00050	4.75%
Ti 334.940†	302.2	0.00203	mg/L	0.000477	0.00203	mg/L	0.000477	23.43%
Tl 190.801†	3.7	0.00162	mg/L	0.004377	0.00162	mg/L	0.004377	269.95%
V 290.880†	-241.2	0.00060	mg/L	0.001795	0.00060	mg/L	0.001795	296.90%
Zn 206.200†	-132.2	-0.00939	mg/L	0.000041	-0.00939	mg/L	0.000041	0.44%
K 766.490†	11.0	0.0357	mg/L	0.07463	0.0357	mg/L	0.07463	208.80%
Na 589.592†	-38.0	0.0160	mg/L	0.02401	0.0160	mg/L	0.02401	150.45%
Sr 407.771†	358.9	0.00011	mg/L	0.000115	0.00011	mg/L	0.000115	103.29%
Li 670.784†	-183.6	-0.00751	mg/L	0.004155	-0.00751	mg/L	0.004155	55.35%
P 214.914†	-6.5	-0.00804	mg/L	0.017160	-0.00804	mg/L	0.017160	213.51%

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Sequence No.: 2 **Autosampler Location: 43**

Approved: May 28, 2015

Kym H. Rhoden

Sample ID: LCSW 76 WG525046-03
Analyst: KHR
Initial Sample Wt:
Dilution:

Date Collected: 5/27/2015 11:32:51 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: LCSW 76 WG525046-03

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: LCSW 76 WG525046-03

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3303700.3						4228.55	0.13%
YRADIAL	204704.6						1145.19	0.56%
Ga 417.206	1398712.3						8473.96	0.61%
GaRADIAL	47753.7						218.64	0.46%
Ag 328.068†	65645.3	0.196	mg/L	0.0008	0.196	mg/L	0.0008	0.39%
Al 396.153†	14597.3	5.08	mg/L	0.072	5.08	mg/L	0.072	1.41%
As 188.979†	301.7	0.187	mg/L	0.0055	0.187	mg/L	0.0055	2.94%
Ba 233.527†	29207.0	0.505	mg/L	0.0044	0.505	mg/L	0.0044	0.87%
Be 234.861†	12816.8	0.0232	mg/L	0.00009	0.0232	mg/L	0.00009	0.38%
B 249.677†	67188.1	0.957	mg/L	0.0088	0.957	mg/L	0.0088	0.91%
Ca 227.546†	361.2	4.63	mg/L	0.145	4.63	mg/L	0.145	3.14%
Cd 228.802†	384.1	0.0227	mg/L	0.00020	0.0227	mg/L	0.00020	0.89%
Co 228.616†	1399.1	0.0974	mg/L	0.00048	0.0974	mg/L	0.00048	0.49%
Cr 267.716†	33957.1	0.250	mg/L	0.0015	0.250	mg/L	0.0015	0.60%
Cu 327.393†	51624.9	0.242	mg/L	0.0018	0.242	mg/L	0.0018	0.73%
Fe 239.562†	11721.2	2.02	mg/L	0.012	2.02	mg/L	0.012	0.60%
Mg 279.077†	13612.4	5.03	mg/L	0.020	5.03	mg/L	0.020	0.39%
Mn 257.610†	157664.3	0.247	mg/L	0.0004	0.247	mg/L	0.0004	0.16%
Mo 202.031†	5063.0	0.482	mg/L	0.0011	0.482	mg/L	0.0011	0.24%
Ni 231.604†	7612.3	0.238	mg/L	0.0018	0.238	mg/L	0.0018	0.75%
Pb 220.353†	1074.3	0.241	mg/L	0.0036	0.241	mg/L	0.0036	1.49%
Sb 206.836†	644.1	0.559	mg/L	0.0058	0.559	mg/L	0.0058	1.04%
Se 196.026†	122.2	0.196	mg/L	0.0109	0.196	mg/L	0.0109	5.58%
Si 251.611†	-62779.2	-3.29	mg/L	0.365	-3.29	mg/L	0.365	11.11%
Sn 189.927†	2860.1	0.482	mg/L	0.0032	0.482	mg/L	0.0032	0.67%
Ti 334.940†	454278.3	0.491	mg/L	0.0013	0.491	mg/L	0.0013	0.26%
Tl 190.801†	299.4	0.252	mg/L	0.0104	0.252	mg/L	0.0104	4.11%
V 290.880†	92816.3	0.493	mg/L	0.0022	0.493	mg/L	0.0022	0.44%
Zn 206.200†	13874.8	0.481	mg/L	0.0028	0.481	mg/L	0.0028	0.58%
K 766.490†	38758.5	24.6	mg/L	0.06	24.6	mg/L	0.06	0.23%
Na 589.592†	197535.1	24.5	mg/L	0.36	24.5	mg/L	0.36	1.47%
Sr 407.771†	394010.1	0.488	mg/L	0.0091	0.488	mg/L	0.0091	1.85%
Li 670.784†	19885.2	0.518	mg/L	0.0040	0.518	mg/L	0.0040	0.77%
P 214.914†	2975.3	4.67	mg/L	0.036	4.67	mg/L	0.036	0.78%

Sequence No.: 3
Sample ID: L1505152501
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 44
Date Collected: 5/27/2015 11:35:18 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505152501

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505152501

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3317348.3						31310.77	0.94%
YRADIAL	204292.6						4042.65	1.98%
Ga 417.206	1421974.2						17768.71	1.25%
GaRADIAL	49104.6						1104.28	2.25%
Ag 328.068†	458.5	0.00339	mg/L	0.000469	0.00339	mg/L	0.000469	13.82%
Al 396.153†	126.3	0.0221	mg/L	0.00889	0.0221	mg/L	0.00889	40.26%
As 188.979†	-29.1	-0.0130	mg/L	0.00297	-0.0130	mg/L	0.00297	22.91%

Approved: May 28, 2015

Kym H. Rhoden

Ba 233.527†	2640.9	0.0454	mg/L	0.00026	0.0454	mg/L	0.00026	0.57%
Be 234.861†	-96.4	0.00006	mg/L	0.000038	0.00006	mg/L	0.000038	65.09%
B 249.677†	2951.5	0.0465	mg/L	0.00207	0.0465	mg/L	0.00207	4.44%
Ca 227.546†	4598.9	57.8	mg/L	0.61	57.8	mg/L	0.61	1.06%
Cd 228.802†	1.1	0.00038	mg/L	0.000593	0.00038	mg/L	0.000593	157.19%
Co 228.616†	4.5	-0.00031	mg/L	0.000310	-0.00031	mg/L	0.000310	99.21%
Cr 267.716†	222.8	0.00115	mg/L	0.000060	0.00115	mg/L	0.000060	5.26%
Cu 327.393†	-336.7	0.00053	mg/L	0.001023	0.00053	mg/L	0.001023	194.56%
Fe 239.562†	464.7	0.0837	mg/L	0.00108	0.0837	mg/L	0.00108	1.29%
Mg 279.077†	45833.3	17.0	mg/L	0.24	17.0	mg/L	0.24	1.41%
Mn 257.610†	26651.4	0.0413	mg/L	0.00046	0.0413	mg/L	0.00046	1.11%
Mo 202.031†	71.1	0.00684	mg/L	0.001354	0.00684	mg/L	0.001354	19.79%
Ni 231.604†	9.6	-0.00043	mg/L	0.000310	-0.00043	mg/L	0.000310	72.23%
Pb 220.353†	26.8	0.00554	mg/L	0.002081	0.00554	mg/L	0.002081	37.58%
Sb 206.836†	2.2	0.00637	mg/L	0.002459	0.00637	mg/L	0.002459	38.62%
Se 196.026†	-2.6	0.00000	mg/L	0.001187	0.00000	mg/L	0.001187	>999.9%
Si 251.611†	-317722.2	-16.0	mg/L	0.05	-16.0	mg/L	0.05	0.28%
Sn 189.927†	-65.1	-0.0125	mg/L	0.00088	-0.0125	mg/L	0.00088	7.02%
Ti 334.940†	-3267.9	0.00191	mg/L	0.000162	0.00191	mg/L	0.000162	8.48%
Tl 190.801†	-13.2	-0.0125	mg/L	0.00949	-0.0125	mg/L	0.00949	75.93%
V 290.880†	-1139.2	-0.00457	mg/L	0.001133	-0.00457	mg/L	0.001133	24.78%
Zn 206.200†	45.9	-0.00316	mg/L	0.000389	-0.00316	mg/L	0.000389	12.29%
K 766.490†	4742.2	3.00	mg/L	0.156	3.00	mg/L	0.156	5.21%
Na 589.592†	212598.6	26.4	mg/L	0.25	26.4	mg/L	0.25	0.94%
Sr 407.771†	178720.6	0.220	mg/L	0.0030	0.220	mg/L	0.0030	1.37%
Li 670.784†	501.3	0.0104	mg/L	0.00505	0.0104	mg/L	0.00505	48.33%
P 214.914†	21.8	0.0364	mg/L	0.01303	0.0364	mg/L	0.01303	35.76%

Sequence No.: 4
Sample ID: L1505152601
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 45
Date Collected: 5/27/2015 11:38:38 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505152601

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505152601

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3336452.2						39594.17	1.19%
YRADIAL	202868.9						2000.75	0.99%
Ga 417.206	1422468.1						19758.58	1.39%
GaRADIAL	48722.0						406.65	0.83%
Ag 328.068†	1045.5	0.00514	mg/L	0.001263	0.00514	mg/L	0.001263	24.59%
Al 396.153†	50.7	-0.00449	mg/L	0.002177	-0.00449	mg/L	0.002177	48.54%
As 188.979†	-19.9	-0.00745	mg/L	0.004030	-0.00745	mg/L	0.004030	54.09%
Ba 233.527†	3958.5	0.0682	mg/L	0.00099	0.0682	mg/L	0.00099	1.46%
Be 234.861†	-101.5	0.00004	mg/L	0.000034	0.00004	mg/L	0.000034	86.69%
B 249.677†	2515.3	0.0405	mg/L	0.00143	0.0405	mg/L	0.00143	3.52%
Ca 227.546†	4119.0	51.8	mg/L	0.89	51.8	mg/L	0.89	1.72%
Cd 228.802†	2.1	0.00041	mg/L	0.000084	0.00041	mg/L	0.000084	20.63%
Co 228.616†	4.8	-0.00029	mg/L	0.001167	-0.00029	mg/L	0.001167	398.68%
Cr 267.716†	307.6	0.00177	mg/L	0.000150	0.00177	mg/L	0.000150	8.50%
Cu 327.393†	-641.4	-0.00088	mg/L	0.001393	-0.00088	mg/L	0.001393	158.58%
Fe 239.562†	685.9	0.122	mg/L	0.0064	0.122	mg/L	0.0064	5.27%
Mg 279.077†	43068.8	15.9	mg/L	0.26	15.9	mg/L	0.26	1.63%
Mn 257.610†	17425.5	0.0269	mg/L	0.00043	0.0269	mg/L	0.00043	1.60%
Mo 202.031†	79.3	0.00762	mg/L	0.000717	0.00762	mg/L	0.000717	9.40%
Ni 231.604†	37.5	0.00045	mg/L	0.000377	0.00045	mg/L	0.000377	84.62%
Pb 220.353†	46.4	0.00993	mg/L	0.000328	0.00993	mg/L	0.000328	3.31%
Sb 206.836†	-1.6	0.00302	mg/L	0.002843	0.00302	mg/L	0.002843	93.98%
Se 196.026†	-2.6	0.00012	mg/L	0.020299	0.00012	mg/L	0.020299	>999.9%
Si 251.611†	-306016.1	-15.4	mg/L	0.15	-15.4	mg/L	0.15	0.98%
Sn 189.927†	-65.5	-0.0126	mg/L	0.00178	-0.0126	mg/L	0.00178	14.19%
Ti 334.940†	-3448.5	0.00132	mg/L	0.000112	0.00132	mg/L	0.000112	8.44%
Tl 190.801†	-18.9	-0.0172	mg/L	0.00420	-0.0172	mg/L	0.00420	24.48%
V 290.880†	-906.2	-0.00331	mg/L	0.001743	-0.00331	mg/L	0.001743	52.68%

Approved: May 28, 2015

Zn 206.200†	-74.6	-0.00736	mg/L	0.000318	-0.00736	mg/L	0.000318 4.32%
K 766.490†	4044.4	2.56	mg/L	0.065	2.56	mg/L	0.065 2.54%
Na 589.592†	191731.4	23.7	mg/L	0.16	23.7	mg/L	0.16 0.69%
Sr 407.771†	169948.1	0.209	mg/L	0.0034	0.209	mg/L	0.0034 1.61%
Li 670.784†	248.7	0.00383	mg/L	0.005481	0.00383	mg/L	0.005481 143.27%
P 214.914†	29.2	0.0479	mg/L	0.00960	0.0479	mg/L	0.00960 20.04%

Sequence No.: 5 **Autosampler Location: 46**
Sample ID: L1505152602 WG525046-01 **Date Collected: 5/27/2015 11:41:01 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505152602 WG525046-01

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505152602 WG525046-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3257983.7						60876.60	1.87%
YRADIAL	207397.7						2531.18	1.22%
Ga 417.206	1402104.1						25125.22	1.79%
GaRADIAL	50021.5						501.85	1.00%
Ag 328.068†	771.6	0.00430	mg/L	0.000764	0.00430	mg/L	0.000764	17.76%
Al 396.153†	15.4	-0.0168	mg/L	0.00400	-0.0168	mg/L	0.00400	23.75%
As 188.979†	-25.2	-0.0107	mg/L	0.00564	-0.0107	mg/L	0.00564	52.65%
Ba 233.527†	5840.2	0.101	mg/L	0.0016	0.101	mg/L	0.0016	1.62%
Be 234.861†	-122.8	0.00002	mg/L	0.000079	0.00002	mg/L	0.000079	494.37%
B 249.677†	2337.6	0.0378	mg/L	0.00265	0.0378	mg/L	0.00265	7.01%
Ca 227.546†	4279.4	53.8	mg/L	1.24	53.8	mg/L	1.24	2.30%
Cd 228.802†	-0.7	0.00026	mg/L	0.000331	0.00026	mg/L	0.000331	129.40%
Co 228.616†	0.3	-0.00062	mg/L	0.000162	-0.00062	mg/L	0.000162	26.01%
Cr 267.716†	302.2	0.00173	mg/L	0.000145	0.00173	mg/L	0.000145	8.36%
Cu 327.393†	-388.0	0.00028	mg/L	0.000799	0.00028	mg/L	0.000799	281.71%
Fe 239.562†	295.0	0.0546	mg/L	0.00173	0.0546	mg/L	0.00173	3.18%
Mg 279.077†	42594.7	15.8	mg/L	0.18	15.8	mg/L	0.18	1.12%
Mn 257.610†	10712.6	0.0164	mg/L	0.00033	0.0164	mg/L	0.00033	2.00%
Mo 202.031†	70.9	0.00682	mg/L	0.001612	0.00682	mg/L	0.001612	23.64%
Ni 231.604†	15.7	-0.00024	mg/L	0.000838	-0.00024	mg/L	0.000838	349.94%
Pb 220.353†	41.0	0.00872	mg/L	0.003644	0.00872	mg/L	0.003644	41.79%
Sb 206.836†	-1.3	0.00333	mg/L	0.005507	0.00333	mg/L	0.005507	165.26%
Se 196.026†	1.9	0.00718	mg/L	0.015143	0.00718	mg/L	0.015143	210.92%
Si 251.611†	-320111.5	-16.1	mg/L	0.02	-16.1	mg/L	0.02	0.13%
Sn 189.927†	-64.4	-0.0124	mg/L	0.00092	-0.0124	mg/L	0.00092	7.48%
Ti 334.940†	-3958.7	0.00090	mg/L	0.000412	0.00090	mg/L	0.000412	45.49%
Tl 190.801†	-9.3	-0.00919	mg/L	0.006580	-0.00919	mg/L	0.006580	71.57%
V 290.880†	-1065.7	-0.00416	mg/L	0.000482	-0.00416	mg/L	0.000482	11.59%
Zn 206.200†	-89.9	-0.00790	mg/L	0.000565	-0.00790	mg/L	0.000565	7.16%
K 766.490†	4198.0	2.66	mg/L	0.072	2.66	mg/L	0.072	2.71%
Na 589.592†	194961.2	24.1	mg/L	0.24	24.1	mg/L	0.24	0.98%
Sr 407.771†	174163.7	0.214	mg/L	0.0023	0.214	mg/L	0.0023	1.05%
Li 670.784†	264.2	0.00423	mg/L	0.003339	0.00423	mg/L	0.003339	78.90%
P 214.914†	15.4	0.0263	mg/L	0.00700	0.0263	mg/L	0.00700	26.61%

Sequence No.: 6 **Autosampler Location: 47**
Sample ID: L1505152602MS WG525046-04 **Date Collected: 5/27/2015 11:44:21 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505152602MS WG525046-04

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505152602MS WG525046-04

Approved: May 28, 2015

Kym H. Rhoden

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3282519.9						44414.90	1.35%
YRADIAL	207600.6						1333.13	0.64%
Ga 417.206	1372117.0						18771.97	1.37%
GaRADIAL	48809.3						373.52	0.77%
Ag 328.068†	65930.4	0.197	mg/L	0.0019	0.197	mg/L	0.0019	0.94%
Al 396.153†	14292.5	4.97	mg/L	0.045	4.97	mg/L	0.045	0.91%
As 188.979†	290.8	0.181	mg/L	0.0082	0.181	mg/L	0.0082	4.51%
Ba 233.527†	33331.2	0.576	mg/L	0.0037	0.576	mg/L	0.0037	0.64%
Be 234.861†	12826.0	0.0232	mg/L	0.00037	0.0232	mg/L	0.00037	1.61%
B 249.677†	58489.3	0.835	mg/L	0.0020	0.835	mg/L	0.0020	0.24%
Ca 227.546†	4586.2	57.7	mg/L	0.58	57.7	mg/L	0.58	1.00%
Cd 228.802†	382.2	0.0226	mg/L	0.00003	0.0226	mg/L	0.00003	0.15%
Co 228.616†	1340.8	0.0933	mg/L	0.00079	0.0933	mg/L	0.00079	0.85%
Cr 267.716†	32875.4	0.242	mg/L	0.0024	0.242	mg/L	0.0024	1.00%
Cu 327.393†	50333.0	0.236	mg/L	0.0011	0.236	mg/L	0.0011	0.47%
Fe 239.562†	11614.8	2.00	mg/L	0.029	2.00	mg/L	0.029	1.43%
Mg 279.077†	54968.4	20.3	mg/L	0.35	20.3	mg/L	0.35	1.74%
Mn 257.610†	161810.4	0.253	mg/L	0.0020	0.253	mg/L	0.0020	0.77%
Mo 202.031†	5117.3	0.487	mg/L	0.0048	0.487	mg/L	0.0048	0.99%
Ni 231.604†	7291.3	0.228	mg/L	0.0023	0.228	mg/L	0.0023	1.01%
Pb 220.353†	1080.7	0.242	mg/L	0.0010	0.242	mg/L	0.0010	0.41%
Sb 206.836†	646.9	0.561	mg/L	0.0142	0.561	mg/L	0.0142	2.54%
Se 196.026†	115.0	0.185	mg/L	0.0052	0.185	mg/L	0.0052	2.79%
Si 251.611†	-243461.8	-12.3	mg/L	0.24	-12.3	mg/L	0.24	1.97%
Sn 189.927†	2779.7	0.468	mg/L	0.0049	0.468	mg/L	0.0049	1.05%
Ti 334.940†	440893.8	0.480	mg/L	0.0038	0.480	mg/L	0.0038	0.79%
Tl 190.801†	272.2	0.229	mg/L	0.0064	0.229	mg/L	0.0064	2.78%
V 290.880†	90357.0	0.480	mg/L	0.0067	0.480	mg/L	0.0067	1.40%
Zn 206.200†	13470.0	0.467	mg/L	0.0058	0.467	mg/L	0.0058	1.25%
K 766.490†	42401.8	26.9	mg/L	0.39	26.9	mg/L	0.39	1.46%
Na 589.592†	378418.4	47.5	mg/L	0.94	47.5	mg/L	0.94	1.97%
Sr 407.771†	550452.4	0.681	mg/L	0.0134	0.681	mg/L	0.0134	1.96%
Li 670.784†	19344.9	0.504	mg/L	0.0057	0.504	mg/L	0.0057	1.13%
P 214.914†	3020.3	4.74	mg/L	0.050	4.74	mg/L	0.050	1.07%

Sequence No.: 7
Sample ID: L1505152602SD WG525046-05
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 48
Date Collected: 5/27/2015 11:46:44 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505152602SD WG525046-05

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505152602SD WG525046-05

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3258049.6						19387.80	0.60%
YRADIAL	207517.8						3325.57	1.60%
Ga 417.206	1361996.4						8356.10	0.61%
GaRADIAL	48749.1						970.62	1.99%
Ag 328.068†	66927.9	0.200	mg/L	0.0002	0.200	mg/L	0.0002	0.11%
Al 396.153†	14342.5	4.99	mg/L	0.098	4.99	mg/L	0.098	1.97%
As 188.979†	293.0	0.183	mg/L	0.0044	0.183	mg/L	0.0044	2.39%
Ba 233.527†	34123.8	0.590	mg/L	0.0048	0.590	mg/L	0.0048	0.81%
Be 234.861†	13008.4	0.0236	mg/L	0.00031	0.0236	mg/L	0.00031	1.34%
B 249.677†	60336.1	0.861	mg/L	0.0026	0.861	mg/L	0.0026	0.31%
Ca 227.546†	4669.7	58.8	mg/L	0.74	58.8	mg/L	0.74	1.26%
Cd 228.802†	389.8	0.0231	mg/L	0.00107	0.0231	mg/L	0.00107	4.63%
Co 228.616†	1357.1	0.0944	mg/L	0.00190	0.0944	mg/L	0.00190	2.01%
Cr 267.716†	33543.2	0.247	mg/L	0.0019	0.247	mg/L	0.0019	0.78%
Cu 327.393†	51758.3	0.243	mg/L	0.0023	0.243	mg/L	0.0023	0.95%
Fe 239.562†	11847.3	2.04	mg/L	0.024	2.04	mg/L	0.024	1.16%
Mg 279.077†	55573.8	20.6	mg/L	0.25	20.6	mg/L	0.25	1.24%
Mn 257.610†	164240.3	0.257	mg/L	0.0016	0.257	mg/L	0.0016	0.63%
Mo 202.031†	5193.7	0.495	mg/L	0.0067	0.495	mg/L	0.0067	1.35%

Approved: May 28, 2015
Kym H. Rhoden

Ni 231.604†	7393.0	0.231 mg/L	0.0036	0.231 mg/L	0.0036	1.56%
Pb 220.353†	1084.0	0.243 mg/L	0.0043	0.243 mg/L	0.0043	1.75%
Sb 206.836†	658.7	0.571 mg/L	0.0100	0.571 mg/L	0.0100	1.76%
Se 196.026†	120.2	0.193 mg/L	0.0065	0.193 mg/L	0.0065	3.35%
Si 251.611†	-243383.8	-12.3 mg/L	0.09	-12.3 mg/L	0.09	0.75%
Sn 189.927†	2848.8	0.480 mg/L	0.0080	0.480 mg/L	0.0080	1.67%
Ti 334.940†	448811.9	0.489 mg/L	0.0027	0.489 mg/L	0.0027	0.55%
Tl 190.801†	277.5	0.234 mg/L	0.0075	0.234 mg/L	0.0075	3.23%
V 290.880†	92191.6	0.489 mg/L	0.0048	0.489 mg/L	0.0048	0.98%
Zn 206.200†	13665.1	0.474 mg/L	0.0075	0.474 mg/L	0.0075	1.59%
K 766.490†	42458.3	26.9 mg/L	0.53	26.9 mg/L	0.53	1.97%
Na 589.592†	391423.9	49.1 mg/L	1.24	49.1 mg/L	1.24	2.53%
Sr 407.771†	568064.5	0.703 mg/L	0.0104	0.703 mg/L	0.0104	1.48%
Li 670.784†	19426.2	0.506 mg/L	0.0062	0.506 mg/L	0.0062	1.23%
P 214.914†	3067.7	4.81 mg/L	0.088	4.81 mg/L	0.088	1.82%

Sequence No.: 8 **Autosampler Location: 49**
Sample ID: L1505140701 **Date Collected: 5/27/2015 11:49:07 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505140701

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505140701

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3298333.8						36198.14	1.10%
YRADIAL	208790.4						3055.17	1.46%
Ga 417.206	1456202.5						15751.85	1.08%
GaRADIAL	50912.0						534.13	1.05%
Ag 328.068†	935.8	0.00489	mg/L	0.000756	0.00489	mg/L	0.000756	15.45%
Al 396.153†	140.8	0.0272	mg/L	0.03662	0.0272	mg/L	0.03662	134.81%
As 188.979†	-23.0	-0.00911	mg/L	0.000842	-0.00911	mg/L	0.000842	9.24%
Ba 233.527†	2551.7	0.0439	mg/L	0.00075	0.0439	mg/L	0.00075	1.72%
Be 234.861†	-42.9	0.00011	mg/L	0.000051	0.00011	mg/L	0.000051	46.11%
B 249.677†	10.1	0.00578	mg/L	0.001504	0.00578	mg/L	0.001504	26.01%
Ca 227.546†	5019.9	63.1	mg/L	0.77	63.1	mg/L	0.77	1.23%
Cd 228.802†	0.1	0.00030	mg/L	0.000032	0.00030	mg/L	0.000032	10.90%
Co 228.616†	5.9	-0.00022	mg/L	0.000484	-0.00022	mg/L	0.000484	224.98%
Cr 267.716†	208.5	0.00104	mg/L	0.000196	0.00104	mg/L	0.000196	18.91%
Cu 327.393†	-773.2	-0.00147	mg/L	0.000915	-0.00147	mg/L	0.000915	62.24%
Fe 239.562†	1507.5	0.263	mg/L	0.0069	0.263	mg/L	0.0069	2.63%
Mg 279.077†	22193.5	8.21	mg/L	0.276	8.21	mg/L	0.276	3.37%
Mn 257.610†	19261.2	0.0298	mg/L	0.00042	0.0298	mg/L	0.00042	1.40%
Mo 202.031†	73.2	0.00704	mg/L	0.001449	0.00704	mg/L	0.001449	20.57%
Ni 231.604†	78.5	0.00173	mg/L	0.000281	0.00173	mg/L	0.000281	16.25%
Pb 220.353†	38.1	0.00806	mg/L	0.002081	0.00806	mg/L	0.002081	25.82%
Sb 206.836†	2.4	0.00654	mg/L	0.009876	0.00654	mg/L	0.009876	150.93%
Se 196.026†	1.1	0.00579	mg/L	0.007065	0.00579	mg/L	0.007065	122.07%
Si 251.611†	-193984.5	-9.83	mg/L	0.069	-9.83	mg/L	0.069	0.70%
Sn 189.927†	-48.2	-0.00963	mg/L	0.001185	-0.00963	mg/L	0.001185	12.30%
Ti 334.940†	-4189.1	0.00125	mg/L	0.000267	0.00125	mg/L	0.000267	21.33%
Tl 190.801†	-11.4	-0.0110	mg/L	0.00451	-0.0110	mg/L	0.00451	40.96%
V 290.880†	-643.1	-0.00169	mg/L	0.000234	-0.00169	mg/L	0.000234	13.84%
Zn 206.200†	-70.3	-0.00720	mg/L	0.000281	-0.00720	mg/L	0.000281	3.90%
K 766.490†	909.2	0.600	mg/L	0.1132	0.600	mg/L	0.1132	18.88%
Na 589.592†	23237.2	2.86	mg/L	0.033	2.86	mg/L	0.033	1.16%
Sr 407.771†	127390.3	0.156	mg/L	0.0019	0.156	mg/L	0.0019	1.21%
Li 670.784†	319.3	0.00567	mg/L	0.002318	0.00567	mg/L	0.002318	40.86%
P 214.914†	10.5	0.0186	mg/L	0.01772	0.0186	mg/L	0.01772	95.38%

Sequence No.: 9 **Autosampler Location: 50**
Sample ID: L1505140701PS WG525152-01 **Date Collected: 5/27/2015 11:51:29 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**

Approved: May 28, 2015

Dilution: Sample Prep Vol:

Nebulizer Parameters: L1505140701PS WG525152-01

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505140701PS WG525152-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3267029.4						26966.37	0.83%
YRADIAL	205404.2						4802.96	2.34%
Ga 417.206	1381183.5						14031.20	1.02%
GaRADIAL	48389.1						663.88	1.37%
Ag 328.068†	66640.1	0.199	mg/L	0.0011	0.199	mg/L	0.0011	0.57%
Al 396.153†	14354.3	4.99	mg/L	0.025	4.99	mg/L	0.025	0.49%
As 188.979†	278.9	0.174	mg/L	0.0046	0.174	mg/L	0.0046	2.63%
Ba 233.527†	31775.1	0.549	mg/L	0.0046	0.549	mg/L	0.0046	0.84%
Be 234.861†	13086.6	0.0237	mg/L	0.00029	0.0237	mg/L	0.00029	1.23%
B 249.677†	57387.8	0.820	mg/L	0.0021	0.820	mg/L	0.0021	0.25%
Ca 227.546†	5060.2	63.7	mg/L	0.72	63.7	mg/L	0.72	1.13%
Cd 228.802†	397.2	0.0236	mg/L	0.00045	0.0236	mg/L	0.00045	1.89%
Co 228.616†	1380.0	0.0961	mg/L	0.00062	0.0961	mg/L	0.00062	0.64%
Cr 267.716†	33608.2	0.247	mg/L	0.0014	0.247	mg/L	0.0014	0.57%
Cu 327.393†	50605.4	0.237	mg/L	0.0019	0.237	mg/L	0.0019	0.82%
Fe 239.562†	12919.6	2.22	mg/L	0.030	2.22	mg/L	0.030	1.36%
Mg 279.077†	33110.6	12.3	mg/L	0.12	12.3	mg/L	0.12	0.94%
Mn 257.610†	171066.8	0.268	mg/L	0.0007	0.268	mg/L	0.0007	0.27%
Mo 202.031†	5216.2	0.497	mg/L	0.0045	0.497	mg/L	0.0045	0.91%
Ni 231.604†	7542.3	0.235	mg/L	0.0022	0.235	mg/L	0.0022	0.92%
Pb 220.353†	1099.7	0.247	mg/L	0.0078	0.247	mg/L	0.0078	3.17%
Sb 206.836†	655.9	0.569	mg/L	0.0026	0.569	mg/L	0.0026	0.45%
Se 196.026†	119.2	0.192	mg/L	0.0103	0.192	mg/L	0.0103	5.36%
Si 251.611†	-106684.3	-5.48	mg/L	0.209	-5.48	mg/L	0.209	3.81%
Sn 189.927†	2866.8	0.483	mg/L	0.0074	0.483	mg/L	0.0074	1.54%
Ti 334.940†	450337.3	0.491	mg/L	0.0023	0.491	mg/L	0.0023	0.47%
Tl 190.801†	281.2	0.237	mg/L	0.0031	0.237	mg/L	0.0031	1.29%
V 290.880†	93431.9	0.496	mg/L	0.0017	0.496	mg/L	0.0017	0.35%
Zn 206.200†	13885.2	0.482	mg/L	0.0054	0.482	mg/L	0.0054	1.11%
K 766.490†	39489.5	25.0	mg/L	0.28	25.0	mg/L	0.28	1.11%
Na 589.592†	218358.9	27.1	mg/L	0.28	27.1	mg/L	0.28	1.05%
Sr 407.771†	513422.3	0.635	mg/L	0.0098	0.635	mg/L	0.0098	1.54%
Li 670.784†	19688.2	0.513	mg/L	0.0038	0.513	mg/L	0.0038	0.74%
P 214.914†	3091.3	4.85	mg/L	0.050	4.85	mg/L	0.050	1.03%

Sequence No.: 10 **Autosampler Location: 51**
Sample ID: L1505140701DL WG525152-02 **Date Collected: 5/27/2015 11:53:52 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505140701DL WG525152-02

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505140701DL WG525152-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3496619.8						41219.81	1.18%
YRADIAL	215843.7						6462.10	2.99%
Ga 417.206	1591188.2						17593.36	1.11%
GaRADIAL	52408.6						1129.48	2.16%
Ag 328.068†	11.1	0.00212	mg/L	0.000828	0.00212	mg/L	0.000828	39.12%
Al 396.153†	17.3	-0.0159	mg/L	0.00780	-0.0159	mg/L	0.00780	48.96%
As 188.979†	-7.2	-0.00054	mg/L	0.004852	-0.00054	mg/L	0.004852	899.82%
Ba 233.527†	496.0	0.00833	mg/L	0.000188	0.00833	mg/L	0.000188	2.25%
Be 234.861†	-0.9	0.00023	mg/L	0.000035	0.00023	mg/L	0.000035	14.84%
B 249.677†	634.5	0.0138	mg/L	0.00180	0.0138	mg/L	0.00180	13.04%

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Ca 227.546†	966.6	12.2	mg/L	0.30	12.2	mg/L	0.30	2.47%
Cd 228.802†	4.4	0.00051	mg/L	0.000958	0.00051	mg/L	0.000958	189.07%
Co 228.616†	0.5	-0.00059	mg/L	0.000530	-0.00059	mg/L	0.000530	89.69%
Cr 267.716†	22.2	-0.00033	mg/L	0.001330	-0.00033	mg/L	0.001330	406.34%
Cu 327.393†	-557.8	-0.00050	mg/L	0.001192	-0.00050	mg/L	0.001192	239.79%
Fe 239.562†	310.1	0.0575	mg/L	0.00248	0.0575	mg/L	0.00248	4.32%
Mg 279.077†	4829.0	1.77	mg/L	0.049	1.77	mg/L	0.049	2.78%
Mn 257.610†	3726.8	0.00542	mg/L	0.000169	0.00542	mg/L	0.000169	3.12%
Mo 202.031†	15.0	0.00150	mg/L	0.000380	0.00150	mg/L	0.000380	25.38%
Ni 231.604†	3.3	-0.00063	mg/L	0.000419	-0.00063	mg/L	0.000419	66.68%
Pb 220.353†	15.4	0.00300	mg/L	0.000609	0.00300	mg/L	0.000609	20.33%
Sb 206.836†	-1.5	0.00317	mg/L	0.004287	0.00317	mg/L	0.004287	135.20%
Se 196.026†	4.6	0.0113	mg/L	0.00839	0.0113	mg/L	0.00839	74.41%
Si 251.611†	16959.6	0.696	mg/L	0.1512	0.696	mg/L	0.1512	21.73%
Sn 189.927†	-48.4	-0.00967	mg/L	0.000983	-0.00967	mg/L	0.000983	10.17%
Ti 334.940†	-787.4	0.00165	mg/L	0.000419	0.00165	mg/L	0.000419	25.43%
Tl 190.801†	-4.0	-0.00476	mg/L	0.008440	-0.00476	mg/L	0.008440	177.17%
V 290.880†	-561.7	-0.00113	mg/L	0.000463	-0.00113	mg/L	0.000463	41.00%
Zn 206.200†	-118.5	-0.00891	mg/L	0.000311	-0.00891	mg/L	0.000311	3.49%
K 766.490†	212.7	0.162	mg/L	0.0710	0.162	mg/L	0.0710	43.68%
Na 589.592†	4757.4	0.602	mg/L	0.0171	0.602	mg/L	0.0171	2.84%
Sr 407.771†	26502.6	0.0322	mg/L	0.00051	0.0322	mg/L	0.00051	1.60%
Li 670.784†	51.6	-0.00134	mg/L	0.002746	-0.00134	mg/L	0.002746	205.09%
P 214.914†	2.9	0.00669	mg/L	0.005377	0.00669	mg/L	0.005377	80.37%

Sequence No.: 11 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 5/27/2015 11:57:14 AM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	233.0 kPa	0.40 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3163612.3						21551.37	0.68%
YRADIAL	201835.7						2973.39	1.47%
Ga 417.206	1308289.3						10205.25	0.78%
GaRADIAL	46980.4						910.39	1.94%
Ag 328.068†	131921.6	0.392	mg/L	0.0043	0.392	mg/L	0.0043	1.10%
QC value within limits for Ag 328.068 Recovery = 98.06%								
Al 396.153†	28487.2	9.93	mg/L	0.162	9.93	mg/L	0.162	1.64%
QC value within limits for Al 396.153 Recovery = 99.30%								
As 188.979†	636.2	0.390	mg/L	0.0094	0.390	mg/L	0.0094	2.41%
QC value within limits for As 188.979 Recovery = 97.51%								
Ba 233.527†	56381.7	0.975	mg/L	0.0102	0.975	mg/L	0.0102	1.05%
QC value within limits for Ba 233.527 Recovery = 97.48%								
Be 234.861†	26455.1	0.0477	mg/L	0.00039	0.0477	mg/L	0.00039	0.81%
QC value within limits for Be 234.861 Recovery = 95.46%								
B 249.677†	26275.9	0.387	mg/L	0.0035	0.387	mg/L	0.0035	0.90%
QC value less than the lower limit for B 249.677 Recovery = 77.45%								
Ca 227.546†	781.6	9.94	mg/L	0.299	9.94	mg/L	0.299	3.01%
QC value within limits for Ca 227.546 Recovery = 99.45%								
Cd 228.802†	825.1	0.0486	mg/L	0.00048	0.0486	mg/L	0.00048	0.98%
QC value within limits for Cd 228.802 Recovery = 97.20%								
Co 228.616†	2839.8	0.198	mg/L	0.0023	0.198	mg/L	0.0023	1.18%
QC value within limits for Co 228.616 Recovery = 99.21%								
Cr 267.716†	65993.8	0.486	mg/L	0.0043	0.486	mg/L	0.0043	0.89%
QC value within limits for Cr 267.716 Recovery = 97.10%								
Cu 327.393†	103399.4	0.483	mg/L	0.0057	0.483	mg/L	0.0057	1.17%
QC value within limits for Cu 327.393 Recovery = 96.53%								
Fe 239.562†	22722.5	3.91	mg/L	0.040	3.91	mg/L	0.040	1.03%
QC value within limits for Fe 239.562 Recovery = 97.72%								
Mg 279.077†	26376.2	9.76	mg/L	0.076	9.76	mg/L	0.076	0.78%
QC value within limits for Mg 279.077 Recovery = 97.56%								
Mn 257.610†	311469.7	0.488	mg/L	0.0036	0.488	mg/L	0.0036	0.75%

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   QC value within limits for Mn 257.610  Recovery = 97.57%
Mo 202.031†            10314.0       0.982 mg/L        0.0129       0.982 mg/L        0.0129   1.31%
   QC value within limits for Mo 202.031  Recovery = 98.23%
Ni 231.604†            15817.6       0.494 mg/L        0.0063       0.494 mg/L        0.0063   1.27%
   QC value within limits for Ni 231.604  Recovery = 98.88%
Pb 220.353†             2216.5       0.497 mg/L        0.0095       0.497 mg/L        0.0095   1.92%
   QC value within limits for Pb 220.353  Recovery = 99.46%
Sb 206.836†             1371.9        1.19 mg/L         0.012        1.19 mg/L         0.012   1.02%
   QC value within limits for Sb 206.836  Recovery = 98.79%
Se 196.026†              257.1       0.408 mg/L        0.0220       0.408 mg/L        0.0220   5.40%
   QC value within limits for Se 196.026  Recovery = 102.06%
Si 251.611†          -172349.7       -8.76 mg/L         0.122       -8.76 mg/L         0.122   1.39%
   QC value less than the lower limit for Si 251.611  Recovery = -175.25%
Sn 189.927†             5830.8       0.984 mg/L        0.0125       0.984 mg/L        0.0125   1.27%
   QC value within limits for Sn 189.927  Recovery = 98.43%
Ti 334.940†           897905.8       0.969 mg/L        0.0069       0.969 mg/L        0.0069   0.71%
   QC value within limits for Ti 334.940  Recovery = 96.93%
Tl 190.801†              593.3       0.501 mg/L        0.0135       0.501 mg/L        0.0135   2.70%
   QC value within limits for Tl 190.801  Recovery = 100.18%
V 290.880†            182279.4       0.966 mg/L        0.0050       0.966 mg/L        0.0050   0.52%
   QC value within limits for V 290.880  Recovery = 96.63%
Zn 206.200†            28853.6        1.01 mg/L         0.013        1.01 mg/L         0.013   1.34%
   QC value within limits for Zn 206.200  Recovery = 100.61%
K 766.490†             77049.0        49.1 mg/L          0.62        49.1 mg/L          0.62   1.27%
   QC value within limits for K 766.490  Recovery = 98.17%
Na 589.592†           393964.6        49.5 mg/L          1.14        49.5 mg/L          1.14   2.30%
   QC value within limits for Na 589.592  Recovery = 98.93%
Sr 407.771†           783894.2       0.972 mg/L        0.0224       0.972 mg/L        0.0224   2.31%
   QC value within limits for Sr 407.771  Recovery = 97.22%
Li 670.784†            38117.5       0.996 mg/L        0.0123       0.996 mg/L        0.0123   1.24%
   QC value within limits for Li 670.784  Recovery = 99.63%
P 214.914†              6226.7        9.77 mg/L         0.129        9.77 mg/L         0.129   1.32%
   QC value within limits for P 214.914  Recovery = 97.66%
QC Failed.  Continue with analysis.

==============================================================================================
Sequence No.: 12                                    Autosampler Location: 1
Sample ID: CCB                                      Date Collected: 5/27/2015 11:59:39 AM
Analyst:                                            Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

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Nebulizer Parameters: CCB
Analyte                  Back Pressure    Flow
All                      232.0 kPa        0.40 L/min

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Mean Data: CCB
                   Mean Corrected        Calib.                          Sample
Analyte               Intensity     Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029            3460519.5                                                    31353.43   0.91%
YRADIAL               213581.5                                                      350.08   0.16%
Ga 417.206           1574896.1                                                     9763.94   0.62%
GaRADIAL               51754.9                                                       88.52   0.17%
Ag 328.068†               55.2     0.00223 mg/L      0.000120     0.00223 mg/L      0.000120   5.36%
   QC value within limits for Ag 328.068  Recovery = Not calculated
Al 396.153†               -3.7     -0.0233 mg/L       0.00561     -0.0233 mg/L       0.00561  24.08%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†               -0.1     0.00356 mg/L      0.001562     0.00356 mg/L      0.001562  43.91%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†               -3.0    -0.00030 mg/L      0.000218    -0.00030 mg/L      0.000218  73.39%
   QC value within limits for Ba 233.527  Recovery = Not calculated
Be 234.861†                4.8     0.00026 mg/L      0.000041     0.00026 mg/L      0.000041  15.83%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†              -131.3     0.00281 mg/L      0.001716     0.00281 mg/L      0.001716  61.07%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†               -9.6     -0.0649 mg/L       0.12881     -0.0649 mg/L       0.12881 198.46%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†               -2.6     0.00006 mg/L      0.000392     0.00006 mg/L      0.000392 638.45%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†               -3.3    -0.00086 mg/L      0.000126    -0.00086 mg/L      0.000126  14.66%
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Lynn H. Rhoden

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   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†                70.1     0.00003 mg/L      0.000489     0.00003 mg/L      0.000489 >999.9%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†               -21.6     0.00198 mg/L      0.001674     0.00198 mg/L      0.001674  84.51%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†                -0.6     0.00409 mg/L      0.000975     0.00409 mg/L      0.000975  23.87%
   QC value within limits for Fe 239.562  Recovery = Not calculated
Mg 279.077†                 5.6     -0.0125 mg/L       0.00262     -0.0125 mg/L       0.00262  21.02%
   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†               -21.4    -0.00046 mg/L      0.000034    -0.00046 mg/L      0.000034   7.33%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†                 8.2     0.00086 mg/L      0.000534     0.00086 mg/L      0.000534  62.27%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†                -5.0    -0.00089 mg/L      0.000224    -0.00089 mg/L      0.000224  25.19%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†                -6.1    -0.00181 mg/L      0.000831    -0.00181 mg/L      0.000831  45.97%
   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†                 1.9     0.00611 mg/L      0.004285     0.00611 mg/L      0.004285  70.18%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†                 1.8     0.00702 mg/L      0.002034     0.00702 mg/L      0.002034  28.97%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†              4171.1      0.0575 mg/L       0.17011      0.0575 mg/L       0.17011 295.72%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†               -19.0    -0.00470 mg/L      0.000740    -0.00470 mg/L      0.000740  15.75%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†               344.2     0.00208 mg/L      0.000269     0.00208 mg/L      0.000269  12.94%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†                -1.1    -0.00237 mg/L      0.004172    -0.00237 mg/L      0.004172 176.10%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†               -389.4    -0.00018 mg/L      0.000483    -0.00018 mg/L      0.000483 266.80%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†                 1.7    -0.00472 mg/L      0.000318    -0.00472 mg/L      0.000318   6.73%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†                 66.7      0.0709 mg/L       0.08232      0.0709 mg/L       0.08232 116.12%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†                62.8      0.0283 mg/L       0.02989      0.0283 mg/L       0.02989 105.76%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†                79.2    -0.00024 mg/L      0.000035    -0.00024 mg/L      0.000035  14.66%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†               -71.6    -0.00457 mg/L      0.003160    -0.00457 mg/L      0.003160  69.17%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†                  3.5     0.00763 mg/L      0.013202     0.00763 mg/L      0.013202 172.98%
   QC value within limits for P 214.914  Recovery = Not calculated
All analyte(s) passed QC.

==========================================================================================
Sequence No.: 13                                    Autosampler Location: 52
Sample ID: L1505140702                              Date Collected: 5/27/2015 12:03:03 PM
Analyst: KHR                                        Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

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Nebulizer Parameters: L1505140702
Analyte                 Back Pressure    Flow
All                    232.0 kPa        0.40 L/min

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Mean Data: L1505140702
                   Mean Corrected         Calib.                          Sample
Analyte               Intensity     Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029            3394930.9                                                     4333.53   0.13%
YRADIAL               210913.9                                                     2311.18   1.10%
Ga 417.206           1471973.9                                                     7114.48   0.48%
GaRADIAL               49999.5                                                      965.15   1.93%
Ag 328.068†              868.7     0.00488 mg/L      0.000499     0.00488 mg/L      0.000499  10.23%
Al 396.153†             1533.1       0.516 mg/L        0.0084       0.516 mg/L        0.0084   1.62%
As 188.979†              -25.3     -0.0102 mg/L       0.00520     -0.0102 mg/L       0.00520  50.89%
Ba 233.527†             2208.5      0.0379 mg/L       0.00020      0.0379 mg/L       0.00020   0.52%
Be 234.861†               27.8     0.00011 mg/L      0.000030     0.00011 mg/L      0.000030  27.80%
B 249.677†              -619.5    -0.00092 mg/L      0.001315    -0.00092 mg/L      0.001315 143.22%
Ca 227.546†             5645.0        71.0 mg/L          0.27        71.0 mg/L          0.27   0.37%
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Approved: May 28, 2015

Kym H. Rhoden

Cd 228.802†	-1.2	0.00023	mg/L	0.000058	0.00023	mg/L	0.000058	25.53%
Co 228.616†	2.9	-0.00046	mg/L	0.000969	-0.00046	mg/L	0.000969	209.66%
Cr 267.716†	316.4	0.00182	mg/L	0.000085	0.00182	mg/L	0.000085	4.70%
Cu 327.393†	-573.8	-0.00045	mg/L	0.001070	-0.00045	mg/L	0.001070	235.96%
Fe 239.562†	4819.9	0.832	mg/L	0.0139	0.832	mg/L	0.0139	1.67%
Mg 279.077†	62449.5	23.1	mg/L	0.55	23.1	mg/L	0.55	2.37%
Mn 257.610†	116587.7	0.182	mg/L	0.0015	0.182	mg/L	0.0015	0.80%
Mo 202.031†	50.6	0.00491	mg/L	0.000584	0.00491	mg/L	0.000584	11.89%
Ni 231.604†	54.1	0.00097	mg/L	0.000456	0.00097	mg/L	0.000456	47.16%
Pb 220.353†	45.0	0.00960	mg/L	0.002952	0.00960	mg/L	0.002952	30.75%
Sb 206.836†	-1.7	0.00301	mg/L	0.003150	0.00301	mg/L	0.003150	104.72%
Se 196.026†	-0.7	0.00300	mg/L	0.005034	0.00300	mg/L	0.005034	167.85%
Si 251.611†	-295371.2	-14.9	mg/L	0.19	-14.9	mg/L	0.19	1.28%
Sn 189.927†	-53.2	-0.0105	mg/L	0.00106	-0.0105	mg/L	0.00106	10.11%
Ti 334.940†	3868.9	0.0104	mg/L	0.00010	0.0104	mg/L	0.00010	0.92%
Tl 190.801†	-18.4	-0.0169	mg/L	0.00349	-0.0169	mg/L	0.00349	20.69%
V 290.880†	-1013.1	-0.00392	mg/L	0.001262	-0.00392	mg/L	0.001262	32.17%
Zn 206.200†	292.2	0.00550	mg/L	0.000402	0.00550	mg/L	0.000402	7.31%
K 766.490†	3015.5	1.93	mg/L	0.043	1.93	mg/L	0.043	2.22%
Na 589.592†	42970.2	5.28	mg/L	0.125	5.28	mg/L	0.125	2.37%
Sr 407.771†	351268.6	0.433	mg/L	0.0063	0.433	mg/L	0.0063	1.46%
Li 670.784†	-71.0	-0.00455	mg/L	0.002242	-0.00455	mg/L	0.002242	49.24%
P 214.914†	26.8	0.0442	mg/L	0.01331	0.0442	mg/L	0.01331	30.16%

Sequence No.: 14 **Autosampler Location: 53**
Sample ID: L1505140703 **Date Collected: 5/27/2015 12:05:25 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505140703

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505140703

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3170366.3						34974.21	1.10%
YRADIAL	203337.9						3999.83	1.97%
Ga 417.206	1314956.2						8433.90	0.64%
GaRADIAL	48128.4						757.51	1.57%
Ag 328.068†	1618.6	0.0118	mg/L	0.00012	0.0118	mg/L	0.00012	1.00%
Al 396.153†	532.8	0.166	mg/L	0.0166	0.166	mg/L	0.0166	9.97%
As 188.979†	-37.0	-0.00868	mg/L	0.006246	-0.00868	mg/L	0.006246	71.95%
Ba 233.527†	1012.1	0.0168	mg/L	0.00032	0.0168	mg/L	0.00032	1.90%
Be 234.861†	1786.9	0.00056	mg/L	0.000458	0.00056	mg/L	0.000458	81.31%
B 249.677†	76.9	0.0562	mg/L	0.00484	0.0562	mg/L	0.00484	8.63%
Ca 227.546†	25998.4	327	mg/L	3.3	327	mg/L	3.3	1.02%
Cd 228.802†	6.1	0.00074	mg/L	0.000260	0.00074	mg/L	0.000260	35.10%
Co 228.616†	163.0	0.0106	mg/L	0.00052	0.0106	mg/L	0.00052	4.97%
Cr 267.716†	515.0	0.00293	mg/L	0.000068	0.00293	mg/L	0.000068	2.33%
Cu 327.393†	-1949.0	-0.00507	mg/L	0.000654	-0.00507	mg/L	0.000654	12.91%
Fe 239.562†	77304.7	13.3	mg/L	0.10	13.3	mg/L	0.10	0.76%
Mg 279.077†	246386.6	91.3	mg/L	0.36	91.3	mg/L	0.36	0.40%
Mn 257.610†	2817612.4	4.42	mg/L	0.057	4.42	mg/L	0.057	1.29%
Mo 202.031†	91.9	0.00951	mg/L	0.001115	0.00951	mg/L	0.001115	11.72%
Ni 231.604†	310.3	0.00899	mg/L	0.000242	0.00899	mg/L	0.000242	2.69%
Pb 220.353†	46.1	0.00681	mg/L	0.003285	0.00681	mg/L	0.003285	48.24%
Sb 206.836†	-6.4	-0.00065	mg/L	0.005714	-0.00065	mg/L	0.005714	874.76%
Se 196.026†	-16.2	-0.0238	mg/L	0.00808	-0.0238	mg/L	0.00808	33.97%
Si 251.611†	-165562.8	-8.41	mg/L	0.148	-8.41	mg/L	0.148	1.76%
Sn 189.927†	-65.0	-0.0125	mg/L	0.00087	-0.0125	mg/L	0.00087	6.94%
Ti 334.940†	-21190.3	-0.00014	mg/L	0.000555	-0.00014	mg/L	0.000555	404.60%
Tl 190.801†	-40.6	-0.0397	mg/L	0.00823	-0.0397	mg/L	0.00823	20.71%
V 290.880†	-2752.3	-0.0125	mg/L	0.00165	-0.0125	mg/L	0.00165	13.23%
Zn 206.200†	171.7	0.00246	mg/L	0.000417	0.00246	mg/L	0.000417	16.93%
K 766.490†	3956.9	2.51	mg/L	0.017	2.51	mg/L	0.017	0.70%
Na 589.592†	169773.3	21.0	mg/L	0.11	21.0	mg/L	0.11	0.52%
Sr 407.771†	2104406.0	2.60	mg/L	0.018	2.60	mg/L	0.018	0.71%

Approved: May 28, 2015

Kym H. Rhoden

Li 670.784†	1192.6	0.0286	mg/L	0.00168	0.0286	mg/L	0.00168	5.89%
P 214.914†	12.6	0.0219	mg/L	0.00504	0.0219	mg/L	0.00504	23.04%

Sequence No.: 15 **Autosampler Location: 54**
Sample ID: L1505140704 **Date Collected: 5/27/2015 12:07:49 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505140704

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505140704

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3304787.3						18509.31	0.56%
YRADIAL	209740.8						3461.27	1.65%
Ga 417.206	1430002.4						8856.77	0.62%
GaRADIAL	50612.4						951.40	1.88%
Ag 328.068†	1497.1	0.00634	mg/L	0.000497	0.00634	mg/L	0.000497	7.85%
Al 396.153†	35.0	-0.00999	mg/L	0.002678	-0.00999	mg/L	0.002678	26.81%
As 188.979†	-34.8	-0.0155	mg/L	0.00354	-0.0155	mg/L	0.00354	22.87%
Ba 233.527†	2233.9	0.0384	mg/L	0.00008	0.0384	mg/L	0.00008	0.22%
Be 234.861†	-91.8	0.00008	mg/L	0.000042	0.00008	mg/L	0.000042	52.58%
B 249.677†	-555.5	-0.00309	mg/L	0.000641	-0.00309	mg/L	0.000641	20.71%
Ca 227.546†	8388.5	105	mg/L	0.1	105	mg/L	0.1	0.11%
Cd 228.802†	-1.9	0.00021	mg/L	0.000481	0.00021	mg/L	0.000481	228.31%
Co 228.616†	1.3	-0.00052	mg/L	0.000896	-0.00052	mg/L	0.000896	172.04%
Cr 267.716†	268.9	0.00148	mg/L	0.000114	0.00148	mg/L	0.000114	7.69%
Cu 327.393†	-825.6	-0.00175	mg/L	0.001473	-0.00175	mg/L	0.001473	83.96%
Fe 239.562†	100.4	0.0208	mg/L	0.00167	0.0208	mg/L	0.00167	7.99%
Mg 279.077†	82432.2	30.5	mg/L	0.11	30.5	mg/L	0.11	0.36%
Mn 257.610†	1753.0	0.00232	mg/L	0.000048	0.00232	mg/L	0.000048	2.08%
Mo 202.031†	79.0	0.00759	mg/L	0.000765	0.00759	mg/L	0.000765	10.09%
Ni 231.604†	-8.6	-0.00100	mg/L	0.000424	-0.00100	mg/L	0.000424	42.49%
Pb 220.353†	39.1	0.00831	mg/L	0.002723	0.00831	mg/L	0.002723	32.76%
Sb 206.836†	-4.4	0.00062	mg/L	0.000496	0.00062	mg/L	0.000496	80.04%
Se 196.026†	-4.7	-0.00315	mg/L	0.005764	-0.00315	mg/L	0.005764	182.84%
Si 251.611†	-172193.7	-8.74	mg/L	0.049	-8.74	mg/L	0.049	0.56%
Sn 189.927†	-74.3	-0.0140	mg/L	0.00163	-0.0140	mg/L	0.00163	11.58%
Ti 334.940†	-7385.7	0.00053	mg/L	0.000360	0.00053	mg/L	0.000360	68.21%
Tl 190.801†	-18.6	-0.0170	mg/L	0.00247	-0.0170	mg/L	0.00247	14.59%
V 290.880†	-1871.3	-0.00881	mg/L	0.001165	-0.00881	mg/L	0.001165	13.23%
Zn 206.200†	-152.8	-0.0101	mg/L	0.00041	-0.0101	mg/L	0.00041	4.03%
K 766.490†	1649.2	1.07	mg/L	0.069	1.07	mg/L	0.069	6.51%
Na 589.592†	39050.6	4.80	mg/L	0.020	4.80	mg/L	0.020	0.41%
Sr 407.771†	442303.6	0.545	mg/L	0.0010	0.545	mg/L	0.0010	0.18%
Li 670.784†	694.1	0.0155	mg/L	0.00297	0.0155	mg/L	0.00297	19.18%
P 214.914†	18.3	0.0309	mg/L	0.01173	0.0309	mg/L	0.01173	37.96%

Sequence No.: 16 **Autosampler Location: 55**
Sample ID: L1505140705 **Date Collected: 5/27/2015 12:11:09 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505140705

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505140705

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3391653.8						11938.17	0.35%
YRADIAL	210257.1						3124.36	1.49%

Approved: May 28, 2015

Kym H. Rhoden

Ga 417.206	1491001.8							3066.45	0.21%
GaRADIAL	49918.7							437.36	0.88%
Ag 328.068†	110.9	0.00246	mg/L	0.000356	0.00246	mg/L	0.000356		14.49%
Al 396.153†	534.6	0.165	mg/L	0.0271	0.165	mg/L	0.0271		16.39%
As 188.979†	-12.0	-0.00333	mg/L	0.001112	-0.00333	mg/L	0.001112		33.45%
Ba 233.527†	2249.5	0.0386	mg/L	0.00019	0.0386	mg/L	0.00019		0.49%
Be 234.861†	-58.9	0.00010	mg/L	0.000097	0.00010	mg/L	0.000097		100.29%
B 249.677†	-559.7	-0.00254	mg/L	0.000420	-0.00254	mg/L	0.000420		16.56%
Ca 227.546†	1586.2	20.0	mg/L	0.17	20.0	mg/L	0.17		0.87%
Cd 228.802†	2.5	0.00041	mg/L	0.000283	0.00041	mg/L	0.000283		69.13%
Co 228.616†	5.1	-0.00029	mg/L	0.000094	-0.00029	mg/L	0.000094		32.97%
Cr 267.716†	163.0	0.00071	mg/L	0.000175	0.00071	mg/L	0.000175		24.85%
Cu 327.393†	-447.4	0.00004	mg/L	0.000331	0.00004	mg/L	0.000331		911.81%
Fe 239.562†	1058.8	0.186	mg/L	0.0119	0.186	mg/L	0.0119		6.42%
Mg 279.077†	12671.9	4.68	mg/L	0.212	4.68	mg/L	0.212		4.54%
Mn 257.610†	4524.5	0.00667	mg/L	0.000026	0.00667	mg/L	0.000026		0.40%
Mo 202.031†	37.9	0.00368	mg/L	0.000632	0.00368	mg/L	0.000632		17.15%
Ni 231.604†	37.2	0.00043	mg/L	0.000274	0.00043	mg/L	0.000274		63.20%
Pb 220.353†	7.0	0.00115	mg/L	0.003458	0.00115	mg/L	0.003458		300.52%
Sb 206.836†	3.8	0.00769	mg/L	0.001304	0.00769	mg/L	0.001304		16.95%
Se 196.026†	4.5	0.0112	mg/L	0.00794	0.0112	mg/L	0.00794		71.03%
Si 251.611†	-242304.2	-12.2	mg/L	0.12	-12.2	mg/L	0.12		0.96%
Sn 189.927†	-47.5	-0.00951	mg/L	0.002232	-0.00951	mg/L	0.002232		23.47%
Ti 334.940†	1839.0	0.00498	mg/L	0.000459	0.00498	mg/L	0.000459		9.22%
Tl 190.801†	-12.3	-0.0117	mg/L	0.00210	-0.0117	mg/L	0.00210		17.98%
V 290.880†	-516.0	-0.00094	mg/L	0.000710	-0.00094	mg/L	0.000710		75.64%
Zn 206.200†	166.5	0.00105	mg/L	0.000459	0.00105	mg/L	0.000459		43.89%
K 766.490†	2024.9	1.30	mg/L	0.062	1.30	mg/L	0.062		4.80%
Na 589.592†	47396.2	5.83	mg/L	0.045	5.83	mg/L	0.045		0.78%
Sr 407.771†	63540.0	0.0779	mg/L	0.00070	0.0779	mg/L	0.00070		0.90%
Li 670.784†	15.6	-0.00228	mg/L	0.001985	-0.00228	mg/L	0.001985		86.97%
P 214.914†	38.7	0.0629	mg/L	0.02000	0.0629	mg/L	0.02000		31.81%

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Sequence No.: 17 **Autosampler Location: 56**
Sample ID: L1505140901 **Date Collected: 5/27/2015 12:13:31 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505140901

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505140901

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3290939.6						25804.86	0.78%
YRADIAL	208421.6						2302.55	1.10%
Ga 417.206	1424513.9						9916.50	0.70%
GaRADIAL	50149.4						434.99	0.87%
Ag 328.068†	1049.5	0.00503	mg/L	0.000446	0.00503	mg/L	0.000446	8.86%
Al 396.153†	73.5	0.00352	mg/L	0.006597	0.00352	mg/L	0.006597	187.48%
As 188.979†	-26.8	-0.0112	mg/L	0.00685	-0.0112	mg/L	0.00685	61.26%
Ba 233.527†	3193.8	0.0550	mg/L	0.00036	0.0550	mg/L	0.00036	0.65%
Be 234.861†	-104.1	0.00006	mg/L	0.000029	0.00006	mg/L	0.000029	51.53%
B 249.677†	-839.1	-0.00708	mg/L	0.000603	-0.00708	mg/L	0.000603	8.51%
Ca 227.546†	6215.4	78.1	mg/L	0.43	78.1	mg/L	0.43	0.56%
Cd 228.802†	8.0	0.00078	mg/L	0.000198	0.00078	mg/L	0.000198	25.35%
Co 228.616†	0.8	-0.00057	mg/L	0.000806	-0.00057	mg/L	0.000806	141.65%
Cr 267.716†	274.5	0.00153	mg/L	0.000155	0.00153	mg/L	0.000155	10.17%
Cu 327.393†	-863.2	-0.00192	mg/L	0.002006	-0.00192	mg/L	0.002006	104.28%
Fe 239.562†	129.9	0.0260	mg/L	0.00057	0.0260	mg/L	0.00057	2.21%
Mg 279.077†	74707.1	27.7	mg/L	0.41	27.7	mg/L	0.41	1.47%
Mn 257.610†	906.4	0.00100	mg/L	0.000039	0.00100	mg/L	0.000039	3.89%
Mo 202.031†	73.4	0.00705	mg/L	0.001195	0.00705	mg/L	0.001195	16.95%
Ni 231.604†	-25.3	-0.00152	mg/L	0.001039	-0.00152	mg/L	0.001039	68.42%
Pb 220.353†	33.8	0.00713	mg/L	0.001290	0.00713	mg/L	0.001290	18.09%
Sb 206.836†	-1.1	0.00349	mg/L	0.004789	0.00349	mg/L	0.004789	137.14%
Se 196.026†	0.5	0.00494	mg/L	0.018977	0.00494	mg/L	0.018977	384.46%

Approved: May 28, 2015

Si 251.611†	-186019.5	-9.43	mg/L	0.023	-9.43	mg/L	0.023	0.24%
Sn 189.927†	-62.9	-0.0121	mg/L	0.00099	-0.0121	mg/L	0.00099	8.19%
Ti 334.940†	-5240.3	0.00109	mg/L	0.000159	0.00109	mg/L	0.000159	14.65%
Tl 190.801†	-25.0	-0.0222	mg/L	0.00249	-0.0222	mg/L	0.00249	11.18%
V 290.880†	-1561.7	-0.00710	mg/L	0.001155	-0.00710	mg/L	0.001155	16.27%
Zn 206.200†	-75.6	-0.00740	mg/L	0.000462	-0.00740	mg/L	0.000462	6.24%
K 766.490†	894.1	0.589	mg/L	0.0727	0.589	mg/L	0.0727	12.34%
Na 589.592†	36859.7	4.53	mg/L	0.077	4.53	mg/L	0.077	1.70%
Sr 407.771†	447880.1	0.553	mg/L	0.0107	0.553	mg/L	0.0107	1.93%
Li 670.784†	522.6	0.0110	mg/L	0.00298	0.0110	mg/L	0.00298	27.07%
P 214.914†	-1.7	-0.00057	mg/L	0.007358	-0.00057	mg/L	0.007358	>999.9%

Sequence No.: 18 **Autosampler Location: 57**
Sample ID: L1505141301 **Date Collected: 5/27/2015 12:16:51 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505141301

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505141301

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3355828.0						10773.87	0.32%
YRADIAL	207024.2						855.22	0.41%
Ga 417.206	1475815.7						12364.87	0.84%
GaRADIAL	50522.2						166.48	0.33%
Ag 328.068†	724.5	0.00420	mg/L	0.000673	0.00420	mg/L	0.000673	16.04%
Al 396.153†	309.8	0.0865	mg/L	0.00607	0.0865	mg/L	0.00607	7.01%
As 188.979†	-25.8	-0.0111	mg/L	0.00340	-0.0111	mg/L	0.00340	30.52%
Ba 233.527†	4750.0	0.0819	mg/L	0.00025	0.0819	mg/L	0.00025	0.30%
Be 234.861†	-110.7	0.00002	mg/L	0.000052	0.00002	mg/L	0.000052	215.61%
B 249.677†	-1208.1	-0.0120	mg/L	0.00094	-0.0120	mg/L	0.00094	7.81%
Ca 227.546†	3979.7	50.1	mg/L	0.43	50.1	mg/L	0.43	0.87%
Cd 228.802†	-0.6	0.00026	mg/L	0.000598	0.00026	mg/L	0.000598	229.23%
Co 228.616†	-10.6	-0.00139	mg/L	0.000990	-0.00139	mg/L	0.000990	70.97%
Cr 267.716†	206.1	0.00103	mg/L	0.000300	0.00103	mg/L	0.000300	29.27%
Cu 327.393†	373.9	0.00382	mg/L	0.001699	0.00382	mg/L	0.001699	44.42%
Fe 239.562†	575.2	0.103	mg/L	0.0016	0.103	mg/L	0.0016	1.55%
Mg 279.077†	20927.5	7.74	mg/L	0.132	7.74	mg/L	0.132	1.71%
Mn 257.610†	3453.1	0.00499	mg/L	0.000068	0.00499	mg/L	0.000068	1.36%
Mo 202.031†	54.3	0.00524	mg/L	0.001427	0.00524	mg/L	0.001427	27.23%
Ni 231.604†	2.3	-0.00066	mg/L	0.000388	-0.00066	mg/L	0.000388	59.06%
Pb 220.353†	21.0	0.00428	mg/L	0.002184	0.00428	mg/L	0.002184	51.08%
Sb 206.836†	9.6	0.0127	mg/L	0.01445	0.0127	mg/L	0.01445	113.80%
Se 196.026†	0.5	0.00499	mg/L	0.004329	0.00499	mg/L	0.004329	86.76%
Si 251.611†	-223044.6	-11.3	mg/L	0.22	-11.3	mg/L	0.22	1.91%
Sn 189.927†	-60.9	-0.0118	mg/L	0.00138	-0.0118	mg/L	0.00138	11.75%
Ti 334.940†	-1526.1	0.00328	mg/L	0.000450	0.00328	mg/L	0.000450	13.71%
Tl 190.801†	-11.8	-0.0112	mg/L	0.00499	-0.0112	mg/L	0.00499	44.43%
V 290.880†	-686.7	-0.00194	mg/L	0.000457	-0.00194	mg/L	0.000457	23.59%
Zn 206.200†	832.8	0.0243	mg/L	0.00030	0.0243	mg/L	0.00030	1.22%
K 766.490†	1057.9	0.695	mg/L	0.0552	0.695	mg/L	0.0552	7.94%
Na 589.592†	17159.4	2.12	mg/L	0.047	2.12	mg/L	0.047	2.23%
Sr 407.771†	135718.2	0.166	mg/L	0.0017	0.166	mg/L	0.0017	1.02%
Li 670.784†	102.7	0.00000	mg/L	0.003680	0.00000	mg/L	0.003680	>999.9%
P 214.914†	0.8	0.00335	mg/L	0.008829	0.00335	mg/L	0.008829	263.34%

Sequence No.: 19 **Autosampler Location: 58**
Sample ID: L1505141302 **Date Collected: 5/27/2015 12:20:11 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505141302

Approved: May 28, 2015
Kym H. Rhoden

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505141302

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3325329.5						33370.04	1.00%
YRADIAL	208176.7						4285.40	2.06%
Ga 417.206	1444143.2						19218.04	1.33%
GaRADIAL	50340.6						797.94	1.59%
Ag 328.068†	786.3	0.00436	mg/L	0.000608	0.00436	mg/L	0.000608	13.96%
Al 396.153†	163.7	0.0352	mg/L	0.00455	0.0352	mg/L	0.00455	12.92%
As 188.979†	-22.9	-0.00922	mg/L	0.004380	-0.00922	mg/L	0.004380	47.51%
Ba 233.527†	3426.8	0.0590	mg/L	0.00069	0.0590	mg/L	0.00069	1.17%
Be 234.861†	-71.7	0.00011	mg/L	0.000014	0.00011	mg/L	0.000014	12.64%
B 249.677†	-314.8	0.00039	mg/L	0.001598	0.00039	mg/L	0.001598	408.61%
Ca 227.546†	4560.2	57.3	mg/L	0.59	57.3	mg/L	0.59	1.04%
Cd 228.802†	-0.6	0.00025	mg/L	0.000126	0.00025	mg/L	0.000126	49.49%
Co 228.616†	-7.3	-0.00115	mg/L	0.000446	-0.00115	mg/L	0.000446	38.81%
Cr 267.716†	182.0	0.00085	mg/L	0.000065	0.00085	mg/L	0.000065	7.68%
Cu 327.393†	-580.3	-0.00060	mg/L	0.000870	-0.00060	mg/L	0.000870	143.97%
Fe 239.562†	248.9	0.0468	mg/L	0.00060	0.0468	mg/L	0.00060	1.29%
Mg 279.077†	21123.6	7.81	mg/L	0.126	7.81	mg/L	0.126	1.61%
Mn 257.610†	2998.7	0.00428	mg/L	0.000056	0.00428	mg/L	0.000056	1.31%
Mo 202.031†	54.7	0.00528	mg/L	0.000894	0.00528	mg/L	0.000894	16.94%
Ni 231.604†	2.4	-0.00065	mg/L	0.000386	-0.00065	mg/L	0.000386	59.18%
Pb 220.353†	16.9	0.00335	mg/L	0.003684	0.00335	mg/L	0.003684	110.12%
Sb 206.836†	-2.5	0.00228	mg/L	0.001414	0.00228	mg/L	0.001414	62.14%
Se 196.026†	0.5	0.00489	mg/L	0.007612	0.00489	mg/L	0.007612	155.53%
Si 251.611†	-220556.6	-11.2	mg/L	0.13	-11.2	mg/L	0.13	1.19%
Sn 189.927†	-64.8	-0.0124	mg/L	0.00056	-0.0124	mg/L	0.00056	4.48%
Ti 334.940†	-2130.0	0.00310	mg/L	0.001172	0.00310	mg/L	0.001172	37.78%
Tl 190.801†	-24.5	-0.0218	mg/L	0.00200	-0.0218	mg/L	0.00200	9.18%
V 290.880†	-693.4	-0.00198	mg/L	0.000565	-0.00198	mg/L	0.000565	28.49%
Zn 206.200†	-145.4	-0.00984	mg/L	0.000405	-0.00984	mg/L	0.000405	4.12%
K 766.490†	1730.7	1.12	mg/L	0.051	1.12	mg/L	0.051	4.61%
Na 589.592†	51048.3	6.28	mg/L	0.020	6.28	mg/L	0.020	0.32%
Sr 407.771†	120436.7	0.147	mg/L	0.0012	0.147	mg/L	0.0012	0.83%
Li 670.784†	128.5	0.00067	mg/L	0.002453	0.00067	mg/L	0.002453	363.64%
P 214.914†	68.6	0.110	mg/L	0.0091	0.110	mg/L	0.0091	8.34%

Sequence No.: 20
Sample ID: L1505145701
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 59
Date Collected: 5/27/2015 12:23:31 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505145701

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505145701

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3185741.7						11920.79	0.37%
YRADIAL	206874.9						1326.49	0.64%
Ga 417.206	1277184.1						6843.39	0.54%
GaRADIAL	48017.7						528.36	1.10%
Ag 328.068†	987.0	0.00504	mg/L	0.001469	0.00504	mg/L	0.001469	29.18%
Al 396.153†	118.0	0.0191	mg/L	0.02270	0.0191	mg/L	0.02270	118.89%
As 188.979†	-14.5	-0.00407	mg/L	0.001051	-0.00407	mg/L	0.001051	25.84%
Ba 233.527†	6241.1	0.108	mg/L	0.0010	0.108	mg/L	0.0010	0.94%
Be 234.861†	-46.3	0.00010	mg/L	0.000091	0.00010	mg/L	0.000091	88.15%
B 249.677†	17880.5	0.257	mg/L	0.0087	0.257	mg/L	0.0087	3.38%
Ca 227.546†	4360.8	54.8	mg/L	0.40	54.8	mg/L	0.40	0.73%
Cd 228.802†	6.9	0.00068	mg/L	0.000107	0.00068	mg/L	0.000107	15.61%
Co 228.616†	7.7	-0.00011	mg/L	0.001095	-0.00011	mg/L	0.001095	955.58%
Cr 267.716†	293.1	0.00166	mg/L	0.000205	0.00166	mg/L	0.000205	12.34%

Approved: May 28, 2015

Cu 327.393†	-763.7	-0.00141	mg/L	0.000880	-0.00141	mg/L	0.000880	62.30%
Fe 239.562†	1687.9	0.294	mg/L	0.0089	0.294	mg/L	0.0089	3.03%
Mg 279.077†	77554.9	28.7	mg/L	0.06	28.7	mg/L	0.06	0.20%
Mn 257.610†	61869.7	0.0965	mg/L	0.00260	0.0965	mg/L	0.00260	2.70%
Mo 202.031†	96.1	0.00924	mg/L	0.002441	0.00924	mg/L	0.002441	26.42%
Ni 231.604†	-16.9	-0.00126	mg/L	0.000279	-0.00126	mg/L	0.000279	22.20%
Pb 220.353†	15.9	0.00306	mg/L	0.000639	0.00306	mg/L	0.000639	20.87%
Sb 206.836†	-2.1	0.00264	mg/L	0.003601	0.00264	mg/L	0.003601	136.30%
Se 196.026†	-15.8	-0.0207	mg/L	0.01443	-0.0207	mg/L	0.01443	69.81%
Si 251.611†	-22077.7	-1.25	mg/L	0.255	-1.25	mg/L	0.255	20.39%
Sn 189.927†	-47.3	-0.00949	mg/L	0.002592	-0.00949	mg/L	0.002592	27.32%
Ti 334.940†	-1100.6	0.00405	mg/L	0.000426	0.00405	mg/L	0.000426	10.52%
Tl 190.801†	-15.9	-0.0147	mg/L	0.00698	-0.0147	mg/L	0.00698	47.42%
V 290.880†	-103.6	0.00064	mg/L	0.000354	0.00064	mg/L	0.000354	55.75%
Zn 206.200†	550.2	0.0144	mg/L	0.00029	0.0144	mg/L	0.00029	2.00%
K 766.490†	1552.6	0.699	mg/L	0.0690	0.699	mg/L	0.0690	9.87%
Na 589.592†	2106392.5	310	mg/L	3.3	310	mg/L	3.3	1.07%
Sr 407.771†	200488.3	0.247	mg/L	0.0012	0.247	mg/L	0.0012	0.47%
Li 670.784†	397.0	0.00771	mg/L	0.002329	0.00771	mg/L	0.002329	30.21%
P 214.914†	28.5	0.0468	mg/L	0.00614	0.0468	mg/L	0.00614	13.11%

Sequence No.: 21
Sample ID: L1505146001
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 60
Date Collected: 5/27/2015 12:25:54 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505146001

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505146001

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3061875.4						9089.75	0.30%
YRADIAL	192652.1						3001.40	1.56%
Ga 417.206	1198885.7						7245.19	0.60%
GaRADIAL	45715.9						598.54	1.31%
Ag 328.068†	1697.6	0.00670	mg/L	0.000903	0.00670	mg/L	0.000903	13.48%
Al 396.153†	343.7	0.0979	mg/L	0.00395	0.0979	mg/L	0.00395	4.03%
As 188.979†	-15.6	-0.00287	mg/L	0.009663	-0.00287	mg/L	0.009663	337.23%
Ba 233.527†	902.6	0.0154	mg/L	0.00042	0.0154	mg/L	0.00042	2.75%
Be 234.861†	-143.4	-0.00003	mg/L	0.000054	-0.00003	mg/L	0.000054	181.03%
B 249.677†	46148.5	0.655	mg/L	0.0040	0.655	mg/L	0.0040	0.60%
Ca 227.546†	11560.0	145	mg/L	0.9	145	mg/L	0.9	0.62%
Cd 228.802†	-0.6	0.00023	mg/L	0.000512	0.00023	mg/L	0.000512	219.87%
Co 228.616†	1.1	-0.00052	mg/L	0.001244	-0.00052	mg/L	0.001244	241.13%
Cr 267.716†	810.5	0.00547	mg/L	0.000055	0.00547	mg/L	0.000055	1.01%
Cu 327.393†	-1455.0	-0.00466	mg/L	0.001819	-0.00466	mg/L	0.001819	39.02%
Fe 239.562†	533.3	0.0942	mg/L	0.00159	0.0942	mg/L	0.00159	1.68%
Mg 279.077†	221424.9	82.0	mg/L	0.56	82.0	mg/L	0.56	0.69%
Mn 257.610†	1743.3	0.00231	mg/L	0.000025	0.00231	mg/L	0.000025	1.07%
Mo 202.031†	167.6	0.0160	mg/L	0.00083	0.0160	mg/L	0.00083	5.15%
Ni 231.604†	-0.6	-0.00074	mg/L	0.001351	-0.00074	mg/L	0.001351	181.97%
Pb 220.353†	40.2	0.00857	mg/L	0.001375	0.00857	mg/L	0.001375	16.04%
Sb 206.836†	-2.7	0.00210	mg/L	0.010007	0.00210	mg/L	0.010007	475.92%
Se 196.026†	7.2	0.0155	mg/L	0.02492	0.0155	mg/L	0.02492	161.08%
Si 251.611†	-44231.5	-2.36	mg/L	0.174	-2.36	mg/L	0.174	7.40%
Sn 189.927†	-78.2	-0.0147	mg/L	0.00167	-0.0147	mg/L	0.00167	11.34%
Ti 334.940†	-6323.7	0.00423	mg/L	0.000293	0.00423	mg/L	0.000293	6.92%
Tl 190.801†	-37.6	-0.0327	mg/L	0.00686	-0.0327	mg/L	0.00686	21.01%
V 290.880†	-1340.7	-0.00733	mg/L	0.001397	-0.00733	mg/L	0.001397	19.05%
Zn 206.200†	-135.7	-0.00946	mg/L	0.000357	-0.00946	mg/L	0.000357	3.77%
K 766.490†	4707.8	2.09	mg/L	0.070	2.09	mg/L	0.070	3.37%
Na 589.592†	3885115.1	913	mg/L	0.0	913	mg/L	0.0	0.00%
Sr 407.771†	1534803.8	1.90	mg/L	0.056	1.90	mg/L	0.056	2.94%
Li 670.784†	2174.9	0.0543	mg/L	0.00419	0.0543	mg/L	0.00419	7.72%
P 214.914†	12.8	0.0222	mg/L	0.01711	0.0222	mg/L	0.01711	77.20%

Approved: May 28, 2015

Sequence No.: 22 **Autosampler Location: 61**
Sample ID: L1505146002 **Date Collected: 5/27/2015 12:29:17 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505146002

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505146002

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3057849.0						26882.84	0.88%
YRADIAL	198422.7						1989.37	1.00%
Ga 417.206	1205757.7						17211.20	1.43%
GaRADIAL	47227.4						199.73	0.42%
Ag 328.068†	1775.7	0.00702	mg/L	0.000624	0.00702	mg/L	0.000624	8.88%
Al 396.153†	5.2	-0.0206	mg/L	0.00284	-0.0206	mg/L	0.00284	13.84%
As 188.979†	-21.2	-0.00681	mg/L	0.004846	-0.00681	mg/L	0.004846	71.15%
Ba 233.527†	1253.5	0.0214	mg/L	0.00039	0.0214	mg/L	0.00039	1.82%
Be 234.861†	-136.5	0.00000	mg/L	0.000032	0.00000	mg/L	0.000032	>999.9%
B 249.677†	31968.3	0.455	mg/L	0.0012	0.455	mg/L	0.0012	0.26%
Ca 227.546†	9630.1	121	mg/L	1.0	121	mg/L	1.0	0.82%
Cd 228.802†	7.6	0.00074	mg/L	0.000324	0.00074	mg/L	0.000324	43.79%
Co 228.616†	0.1	-0.00059	mg/L	0.000312	-0.00059	mg/L	0.000312	52.78%
Cr 267.716†	864.1	0.00587	mg/L	0.000254	0.00587	mg/L	0.000254	4.33%
Cu 327.393†	-1324.1	-0.00406	mg/L	0.002561	-0.00406	mg/L	0.002561	63.08%
Fe 239.562†	84.6	0.0173	mg/L	0.00126	0.0173	mg/L	0.00126	7.26%
Mg 279.077†	188258.8	69.7	mg/L	0.98	69.7	mg/L	0.98	1.40%
Mn 257.610†	543.2	0.00043	mg/L	0.000037	0.00043	mg/L	0.000037	8.67%
Mo 202.031†	102.6	0.00985	mg/L	0.000269	0.00985	mg/L	0.000269	2.73%
Ni 231.604†	45.9	0.00071	mg/L	0.000358	0.00071	mg/L	0.000358	50.42%
Pb 220.353†	38.3	0.00814	mg/L	0.004965	0.00814	mg/L	0.004965	60.99%
Sb 206.836†	-2.9	0.00194	mg/L	0.007362	0.00194	mg/L	0.007362	379.24%
Se 196.026†	9.6	0.0192	mg/L	0.00515	0.0192	mg/L	0.00515	26.87%
Si 251.611†	8881.5	0.292	mg/L	0.1309	0.292	mg/L	0.1309	44.77%
Sn 189.927†	-61.6	-0.0119	mg/L	0.00167	-0.0119	mg/L	0.00167	14.04%
Ti 334.940†	-7370.9	0.00154	mg/L	0.000100	0.00154	mg/L	0.000100	6.48%
Tl 190.801†	-26.3	-0.0233	mg/L	0.00666	-0.0233	mg/L	0.00666	28.58%
V 290.880†	1320.1	0.00705	mg/L	0.001196	0.00705	mg/L	0.001196	16.97%
Zn 206.200†	-153.3	-0.0101	mg/L	0.00041	-0.0101	mg/L	0.00041	4.08%
K 766.490†	4983.2	2.63	mg/L	0.067	2.63	mg/L	0.067	2.53%
Na 589.592†	3132230.0	546	mg/L	14.7	546	mg/L	14.7	2.69%
Sr 407.771†	1114189.2	1.38	mg/L	0.009	1.38	mg/L	0.009	0.68%
Li 670.784†	1615.0	0.0396	mg/L	0.00067	0.0396	mg/L	0.00067	1.70%
P 214.914†	6.7	0.0127	mg/L	0.00910	0.0127	mg/L	0.00910	71.51%

Sequence No.: 23 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 5/27/2015 12:32:40 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3265796.0						45627.09	1.40%
YRADIAL	206682.9						4556.49	2.20%
Ga 417.206	1343114.5						15324.38	1.14%
GaRADIAL	48275.2						1194.15	2.47%
Ag 328.068†	133993.3	0.398	mg/L	0.0021	0.398	mg/L	0.0021	0.53%

Approved: May 28, 2015

Kym H. Rhoden

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   QC value within limits for Ag 328.068  Recovery = 99.59%
Al 396.153†            28137.6        9.81 mg/L         0.089        9.81 mg/L         0.089   0.91%
   QC value within limits for Al 396.153  Recovery = 98.08%
As 188.979†              627.2       0.385 mg/L        0.0076       0.385 mg/L        0.0076   1.99%
   QC value within limits for As 188.979  Recovery = 96.17%
Ba 233.527†            56762.7       0.981 mg/L        0.0114       0.981 mg/L        0.0114   1.16%
   QC value within limits for Ba 233.527  Recovery = 98.14%
Be 234.861†            26739.5      0.0482 mg/L       0.00026      0.0482 mg/L       0.00026   0.54%
   QC value within limits for Be 234.861  Recovery = 96.46%
B 249.677†             26948.3       0.397 mg/L        0.0051       0.397 mg/L        0.0051   1.28%
   QC value less than the lower limit for B 249.677  Recovery = 79.38%
Ca 227.546†              764.6        9.73 mg/L         0.128        9.73 mg/L         0.128   1.31%
   QC value within limits for Ca 227.546  Recovery = 97.30%
Cd 228.802†              806.2      0.0475 mg/L       0.00044      0.0475 mg/L       0.00044   0.93%
   QC value within limits for Cd 228.802  Recovery = 94.95%
Co 228.616†             2780.7       0.194 mg/L        0.0029       0.194 mg/L        0.0029   1.52%
   QC value within limits for Co 228.616  Recovery = 97.09%
Cr 267.716†            66518.0       0.489 mg/L        0.0025       0.489 mg/L        0.0025   0.51%
   QC value within limits for Cr 267.716  Recovery = 97.88%
Cu 327.393†           105164.7       0.491 mg/L        0.0022       0.491 mg/L        0.0022   0.45%
   QC value within limits for Cu 327.393  Recovery = 98.17%
Fe 239.562†            22914.9        3.94 mg/L         0.018        3.94 mg/L         0.018   0.45%
   QC value within limits for Fe 239.562  Recovery = 98.54%
Mg 279.077†            26578.0        9.83 mg/L         0.045        9.83 mg/L         0.045   0.45%
   QC value within limits for Mg 279.077  Recovery = 98.30%
Mn 257.610†           315224.7       0.494 mg/L        0.0049       0.494 mg/L        0.0049   0.99%
   QC value within limits for Mn 257.610  Recovery = 98.74%
Mo 202.031†            10032.2       0.955 mg/L        0.0122       0.955 mg/L        0.0122   1.28%
   QC value within limits for Mo 202.031  Recovery = 95.55%
Ni 231.604†            15474.6       0.484 mg/L        0.0059       0.484 mg/L        0.0059   1.22%
   QC value within limits for Ni 231.604  Recovery = 96.74%
Pb 220.353†             2165.0       0.486 mg/L        0.0059       0.486 mg/L        0.0059   1.21%
   QC value within limits for Pb 220.353  Recovery = 97.15%
Sb 206.836†             1334.8        1.15 mg/L         0.008        1.15 mg/L         0.008   0.72%
   QC value within limits for Sb 206.836  Recovery = 96.12%
Se 196.026†              255.9       0.406 mg/L        0.0250       0.406 mg/L        0.0250   6.15%
   QC value within limits for Se 196.026  Recovery = 101.60%
Si 251.611†          -166648.2       -8.48 mg/L         0.192       -8.48 mg/L         0.192   2.26%
   QC value less than the lower limit for Si 251.611  Recovery = -169.55%
Sn 189.927†             5693.0       0.961 mg/L        0.0111       0.961 mg/L        0.0111   1.15%
   QC value within limits for Sn 189.927  Recovery = 96.10%
Ti 334.940†           909063.8       0.981 mg/L        0.0091       0.981 mg/L        0.0091   0.92%
   QC value within limits for Ti 334.940  Recovery = 98.13%
Tl 190.801†              588.8       0.497 mg/L        0.0127       0.497 mg/L        0.0127   2.56%
   QC value within limits for Tl 190.801  Recovery = 99.45%
V 290.880†            185144.5       0.981 mg/L        0.0098       0.981 mg/L        0.0098   1.00%
   QC value within limits for V 290.880  Recovery = 98.15%
Zn 206.200†            28072.3       0.979 mg/L        0.0121       0.979 mg/L        0.0121   1.24%
   QC value within limits for Zn 206.200  Recovery = 97.89%
K 766.490†             76417.0        48.7 mg/L          0.41        48.7 mg/L          0.41   0.85%
   QC value within limits for K 766.490  Recovery = 97.36%
Na 589.592†           388676.1        48.8 mg/L          1.64        48.8 mg/L          1.64   3.36%
   QC value within limits for Na 589.592  Recovery = 97.57%
Sr 407.771†           776171.4       0.963 mg/L        0.0325       0.963 mg/L        0.0325   3.38%
   QC value within limits for Sr 407.771  Recovery = 96.26%
Li 670.784†            37917.5       0.991 mg/L        0.0135       0.991 mg/L        0.0135   1.36%
   QC value within limits for Li 670.784  Recovery = 99.10%
P 214.914†              6093.2        9.56 mg/L         0.140        9.56 mg/L         0.140   1.46%
   QC value within limits for P 214.914  Recovery = 95.56%
QC Failed.  Continue with analysis.

==========================================================================================
Sequence No.: 24                                  Autosampler Location: 1
Sample ID: CCB                                    Date Collected: 5/27/2015 12:35:05 PM
Analyst:                                          Data Type: Original
Initial Sample Wt:                                Initial Sample Vol:
Dilution:                                         Sample Prep Vol:

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Nebulizer Parameters: CCB
Analyte                  Back Pressure    Flow
All                    232.0 kPa         0.40 L/min
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Approved: May 28, 2015

Lynn H. Rhoden

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3416252.2						54066.69	1.58%
YRADIAL	219123.4						2255.81	1.03%
Ga 417.206	1549536.3						25073.54	1.62%
GaRADIAL	52423.9						603.72	1.15%
Ag 328.068†	132.4	0.00246	mg/L	0.000942	0.00246	mg/L	0.000942	38.32%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	19.6	-0.0151	mg/L	0.00905	-0.0151	mg/L	0.00905	59.77%
QC value within limits for Al 396.153 Recovery = Not calculated								
As 188.979†	0.2	0.00375	mg/L	0.004843	0.00375	mg/L	0.004843	129.09%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	-4.0	-0.00031	mg/L	0.000172	-0.00031	mg/L	0.000172	54.72%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 234.861†	-6.9	0.00024	mg/L	0.000034	0.00024	mg/L	0.000034	14.39%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	281.7	0.00863	mg/L	0.002192	0.00863	mg/L	0.002192	25.38%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	-5.5	-0.0132	mg/L	0.16883	-0.0132	mg/L	0.16883	>999.9%
QC value within limits for Ca 227.546 Recovery = Not calculated								
Cd 228.802†	-6.5	-0.00017	mg/L	0.000217	-0.00017	mg/L	0.000217	125.56%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	-7.0	-0.00112	mg/L	0.000672	-0.00112	mg/L	0.000672	59.87%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	1.8	-0.00048	mg/L	0.001304	-0.00048	mg/L	0.001304	274.45%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	40.8	0.00227	mg/L	0.000913	0.00227	mg/L	0.000913	40.22%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	3.0	0.00470	mg/L	0.001880	0.00470	mg/L	0.001880	39.99%
QC value within limits for Fe 239.562 Recovery = Not calculated								
Mg 279.077†	23.0	-0.00602	mg/L	0.007742	-0.00602	mg/L	0.007742	128.63%
QC value within limits for Mg 279.077 Recovery = Not calculated								
Mn 257.610†	10.3	-0.00041	mg/L	0.000019	-0.00041	mg/L	0.000019	4.58%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	8.8	0.00091	mg/L	0.000484	0.00091	mg/L	0.000484	53.08%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	3.0	-0.00064	mg/L	0.000096	-0.00064	mg/L	0.000096	15.06%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	-7.4	-0.00209	mg/L	0.002698	-0.00209	mg/L	0.002698	129.07%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	-1.5	0.00316	mg/L	0.002970	0.00316	mg/L	0.002970	93.98%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	4.7	0.0115	mg/L	0.01325	0.0115	mg/L	0.01325	114.92%
QC value within limits for Se 196.026 Recovery = Not calculated								
Si 251.611†	3382.7	0.0182	mg/L	0.06489	0.0182	mg/L	0.06489	356.86%
QC value within limits for Si 251.611 Recovery = Not calculated								
Sn 189.927†	-22.6	-0.00530	mg/L	0.001047	-0.00530	mg/L	0.001047	19.74%
QC value within limits for Sn 189.927 Recovery = Not calculated								
Ti 334.940†	25.4	0.00174	mg/L	0.000189	0.00174	mg/L	0.000189	10.86%
QC value within limits for Ti 334.940 Recovery = Not calculated								
Tl 190.801†	-3.6	-0.00441	mg/L	0.003981	-0.00441	mg/L	0.003981	90.27%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 290.880†	-221.2	0.00071	mg/L	0.001499	0.00071	mg/L	0.001499	211.55%
QC value within limits for V 290.880 Recovery = Not calculated								
Zn 206.200†	-7.8	-0.00506	mg/L	0.000487	-0.00506	mg/L	0.000487	9.64%
QC value within limits for Zn 206.200 Recovery = Not calculated								
K 766.490†	10.8	0.0356	mg/L	0.06559	0.0356	mg/L	0.06559	184.44%
QC value within limits for K 766.490 Recovery = Not calculated								
Na 589.592†	464.6	0.0773	mg/L	0.01170	0.0773	mg/L	0.01170	15.13%
QC value within limits for Na 589.592 Recovery = Not calculated								
Sr 407.771†	87.1	-0.00023	mg/L	0.000075	-0.00023	mg/L	0.000075	33.17%
QC value within limits for Sr 407.771 Recovery = Not calculated								
Li 670.784†	29.2	-0.00193	mg/L	0.004562	-0.00193	mg/L	0.004562	236.77%
QC value within limits for Li 670.784 Recovery = Not calculated								
P 214.914†	2.7	0.00633	mg/L	0.002050	0.00633	mg/L	0.002050	32.39%
QC value within limits for P 214.914 Recovery = Not calculated								

All analyte(s) passed QC.

Approved: May 28, 2015

Kym H. Rhoden

Sequence No.: 25 **Autosampler Location: 62**
Sample ID: L1505146003 **Date Collected: 5/27/2015 12:38:26 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505146003

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505146003

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3152785.0						47928.42	1.52%
YRADIAL	201093.1						3001.33	1.49%
Ga 417.206	1258864.6						16018.09	1.27%
GaRADIAL	47416.3						555.51	1.17%
Ag 328.068†	1231.2	0.00565	mg/L	0.001493	0.00565	mg/L	0.001493	26.43%
Al 396.153†	82.1	0.00654	mg/L	0.005370	0.00654	mg/L	0.005370	82.10%
As 188.979†	-27.0	-0.0113	mg/L	0.00806	-0.0113	mg/L	0.00806	71.12%
Ba 233.527†	1183.5	0.0202	mg/L	0.00023	0.0202	mg/L	0.00023	1.12%
Be 234.861†	-124.4	0.00002	mg/L	0.000048	0.00002	mg/L	0.000048	235.93%
B 249.677†	4156.3	0.0632	mg/L	0.00132	0.0632	mg/L	0.00132	2.09%
Ca 227.546†	5990.2	75.3	mg/L	0.94	75.3	mg/L	0.94	1.24%
Cd 228.802†	8.2	0.00080	mg/L	0.000261	0.00080	mg/L	0.000261	32.78%
Co 228.616†	0.6	-0.00057	mg/L	0.000054	-0.00057	mg/L	0.000054	9.46%
Cr 267.716†	481.7	0.00306	mg/L	0.000065	0.00306	mg/L	0.000065	2.14%
Cu 327.393†	-1049.7	-0.00278	mg/L	0.000870	-0.00278	mg/L	0.000870	31.27%
Fe 239.562†	101.6	0.0213	mg/L	0.00177	0.0213	mg/L	0.00177	8.34%
Mg 279.077†	50070.4	18.5	mg/L	0.14	18.5	mg/L	0.14	0.75%
Mn 257.610†	393.9	0.00019	mg/L	0.000040	0.00019	mg/L	0.000040	20.51%
Mo 202.031†	79.6	0.00765	mg/L	0.000866	0.00765	mg/L	0.000866	11.31%
Ni 231.604†	-17.4	-0.00127	mg/L	0.000695	-0.00127	mg/L	0.000695	54.67%
Pb 220.353†	5.7	0.00086	mg/L	0.001364	0.00086	mg/L	0.001364	159.06%
Sb 206.836†	-0.9	0.00369	mg/L	0.010731	0.00369	mg/L	0.010731	291.00%
Se 196.026†	1.2	0.00597	mg/L	0.004540	0.00597	mg/L	0.004540	76.01%
Si 251.611†	-91632.6	-4.72	mg/L	0.065	-4.72	mg/L	0.065	1.38%
Sn 189.927†	-65.0	-0.0125	mg/L	0.00276	-0.0125	mg/L	0.00276	22.15%
Ti 334.940†	-3957.8	0.00228	mg/L	0.000209	0.00228	mg/L	0.000209	9.16%
Tl 190.801†	-27.4	-0.0242	mg/L	0.00649	-0.0242	mg/L	0.00649	26.85%
V 290.880†	850.9	0.00590	mg/L	0.000566	0.00590	mg/L	0.000566	9.60%
Zn 206.200†	-110.1	-0.00859	mg/L	0.000339	-0.00859	mg/L	0.000339	3.95%
K 766.490†	1203.9	0.494	mg/L	0.0669	0.494	mg/L	0.0669	13.53%
Na 589.592†	2024160.0	295	mg/L	3.1	295	mg/L	3.1	1.05%
Sr 407.771†	209658.3	0.257	mg/L	0.0025	0.257	mg/L	0.0025	0.98%
Li 670.784†	638.0	0.0140	mg/L	0.00196	0.0140	mg/L	0.00196	13.99%
P 214.914†	9.5	0.0170	mg/L	0.01834	0.0170	mg/L	0.01834	107.87%

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Sequence No.: 26 **Autosampler Location: 63**
Sample ID: L1505146004 **Date Collected: 5/27/2015 12:41:49 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505146004

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505146004

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3133755.7						29422.46	0.94%
YRADIAL	197062.4						1694.96	0.86%
Ga 417.206	1248920.9						11385.95	0.91%
GaRADIAL	46681.1						455.52	0.98%
Ag 328.068†	1049.9	0.00512	mg/L	0.001424	0.00512	mg/L	0.001424	27.81%
Al 396.153†	116.9	0.0187	mg/L	0.00293	0.0187	mg/L	0.00293	15.66%

Approved: May 28, 2015

Kym H. Rhoden

As 188.979†	-26.8	-0.0112 mg/L	0.00380	-0.0112 mg/L	0.00380	33.94%
Ba 233.527†	1189.5	0.0203 mg/L	0.00042	0.0203 mg/L	0.00042	2.07%
Be 234.861†	-98.1	0.00007 mg/L	0.000022	0.00007 mg/L	0.000022	33.54%
B 249.677†	3847.4	0.0589 mg/L	0.00097	0.0589 mg/L	0.00097	1.65%
Ca 227.546†	6056.5	76.1 mg/L	0.32	76.1 mg/L	0.32	0.42%
Cd 228.802†	6.2	0.00067 mg/L	0.000436	0.00067 mg/L	0.000436	64.62%
Co 228.616†	-2.4	-0.00078 mg/L	0.000786	-0.00078 mg/L	0.000786	100.92%
Cr 267.716†	508.6	0.00326 mg/L	0.000035	0.00326 mg/L	0.000035	1.06%
Cu 327.393†	-701.2	-0.00116 mg/L	0.001639	-0.00116 mg/L	0.001639	140.71%
Fe 239.562†	156.9	0.0308 mg/L	0.00226	0.0308 mg/L	0.00226	7.33%
Mg 279.077†	51008.5	18.9 mg/L	0.16	18.9 mg/L	0.16	0.87%
Mn 257.610†	553.2	0.00044 mg/L	0.000055	0.00044 mg/L	0.000055	12.42%
Mo 202.031†	87.7	0.00842 mg/L	0.000943	0.00842 mg/L	0.000943	11.19%
Ni 231.604†	-13.9	-0.00116 mg/L	0.000546	-0.00116 mg/L	0.000546	47.01%
Pb 220.353†	31.1	0.00653 mg/L	0.003485	0.00653 mg/L	0.003485	53.40%
Sb 206.836†	7.8	0.0111 mg/L	0.00696	0.0111 mg/L	0.00696	62.48%
Se 196.026†	-7.7	-0.00792 mg/L	0.016654	-0.00792 mg/L	0.016654	210.27%
Si 251.611†	-92678.5	-4.78 mg/L	0.139	-4.78 mg/L	0.139	2.91%
Sn 189.927†	-42.7	-0.00871 mg/L	0.000861	-0.00871 mg/L	0.000861	9.88%
Ti 334.940†	-4263.5	0.00201 mg/L	0.000413	0.00201 mg/L	0.000413	20.56%
Tl 190.801†	-25.3	-0.0225 mg/L	0.00221	-0.0225 mg/L	0.00221	9.82%
V 290.880†	880.2	0.00605 mg/L	0.001633	0.00605 mg/L	0.001633	27.00%
Zn 206.200†	-87.9	-0.00781 mg/L	0.000198	-0.00781 mg/L	0.000198	2.54%
K 766.490†	1210.5	0.484 mg/L	0.0730	0.484 mg/L	0.0730	15.07%
Na 589.592†	2099595.6	309 mg/L	5.6	309 mg/L	5.6	1.82%
Sr 407.771†	215187.4	0.264 mg/L	0.0005	0.264 mg/L	0.0005	0.20%
Li 670.784†	488.1	0.0101 mg/L	0.00037	0.0101 mg/L	0.00037	3.65%
P 214.914†	15.0	0.0257 mg/L	0.02301	0.0257 mg/L	0.02301	89.53%

Sequence No.: 27 **Autosampler Location: 64**
Sample ID: L1505146005 **Date Collected: 5/27/2015 12:45:12 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505146005

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505146005

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3311020.0						10877.72	0.33%
YRADIAL	204647.1						1903.06	0.93%
Ga 417.206	1357786.7						8009.38	0.59%
GaRADIAL	47853.6						589.18	1.23%
Ag 328.068†	589.8	0.00384	mg/L	0.000750	0.00384	mg/L	0.000750	19.54%
Al 396.153†	600.5	0.188	mg/L	0.0222	0.188	mg/L	0.0222	11.79%
As 188.979†	-18.6	-0.00690	mg/L	0.004032	-0.00690	mg/L	0.004032	58.46%
Ba 233.527†	1375.3	0.0235	mg/L	0.00016	0.0235	mg/L	0.00016	0.69%
Be 234.861†	-77.6	0.00008	mg/L	0.000009	0.00008	mg/L	0.000009	11.83%
B 249.677†	5986.1	0.0894	mg/L	0.00322	0.0894	mg/L	0.00322	3.60%
Ca 227.546†	3320.3	41.8	mg/L	0.12	41.8	mg/L	0.12	0.29%
Cd 228.802†	2.5	0.00042	mg/L	0.000319	0.00042	mg/L	0.000319	75.22%
Co 228.616†	-1.6	-0.00074	mg/L	0.000450	-0.00074	mg/L	0.000450	60.43%
Cr 267.716†	466.6	0.00295	mg/L	0.000223	0.00295	mg/L	0.000223	7.56%
Cu 327.393†	-723.3	-0.00125	mg/L	0.001110	-0.00125	mg/L	0.001110	89.08%
Fe 239.562†	737.0	0.131	mg/L	0.0111	0.131	mg/L	0.0111	8.50%
Mg 279.077†	14075.5	5.20	mg/L	0.145	5.20	mg/L	0.145	2.79%
Mn 257.610†	1156.5	0.00139	mg/L	0.000024	0.00139	mg/L	0.000024	1.74%
Mo 202.031†	64.5	0.00622	mg/L	0.000295	0.00622	mg/L	0.000295	4.75%
Ni 231.604†	0.3	-0.00072	mg/L	0.000325	-0.00072	mg/L	0.000325	45.24%
Pb 220.353†	18.6	0.00376	mg/L	0.002061	0.00376	mg/L	0.002061	54.83%
Sb 206.836†	7.5	0.0109	mg/L	0.00986	0.0109	mg/L	0.00986	90.16%
Se 196.026†	1.5	0.00656	mg/L	0.007557	0.00656	mg/L	0.007557	115.19%
Si 251.611†	-10158.1	-0.658	mg/L	0.3440	-0.658	mg/L	0.3440	52.30%
Sn 189.927†	-62.5	-0.0121	mg/L	0.00243	-0.0121	mg/L	0.00243	20.13%
Ti 334.940†	2386.3	0.00696	mg/L	0.000758	0.00696	mg/L	0.000758	10.89%
Tl 190.801†	-20.9	-0.0187	mg/L	0.00531	-0.0187	mg/L	0.00531	28.34%

Approved: May 28, 2015

V 290.880†	1314.9	0.00872	mg/L	0.001961	0.00872	mg/L	0.001961	22.48%
Zn 206.200†	-132.3	-0.00935	mg/L	0.000051	-0.00935	mg/L	0.000051	0.55%
K 766.490†	2563.0	1.53	mg/L	0.082	1.53	mg/L	0.082	5.32%
Na 589.592†	875817.5	114	mg/L	0.3	114	mg/L	0.3	0.28%
Sr 407.771†	135506.5	0.166	mg/L	0.0011	0.166	mg/L	0.0011	0.66%
Li 670.784†	581.9	0.0126	mg/L	0.00333	0.0126	mg/L	0.00333	26.55%
P 214.914†	71.1	0.114	mg/L	0.0085	0.114	mg/L	0.0085	7.47%

Sequence No.: 28 **Autosampler Location: 65**
Sample ID: L1505151201 **Date Collected: 5/27/2015 12:47:35 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505151201

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505151201

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3399095.6						36815.65	1.08%
YRADIAL	215696.4						6081.83	2.82%
Ga 417.206	1494006.8						17626.26	1.18%
GaRADIAL	50933.2						1453.04	2.85%
Ag 328.068†	610.5	0.00394	mg/L	0.001365	0.00394	mg/L	0.001365	34.69%
Al 396.153†	554.0	0.172	mg/L	0.0166	0.172	mg/L	0.0166	9.62%
As 188.979†	-15.8	-0.00548	mg/L	0.004459	-0.00548	mg/L	0.004459	81.38%
Ba 233.527†	1665.9	0.0286	mg/L	0.00044	0.0286	mg/L	0.00044	1.54%
Be 234.861†	-74.2	0.00006	mg/L	0.000023	0.00006	mg/L	0.000023	36.97%
B 249.677†	-989.2	-0.00844	mg/L	0.001060	-0.00844	mg/L	0.001060	12.55%
Ca 227.546†	2203.0	27.7	mg/L	0.43	27.7	mg/L	0.43	1.55%
Cd 228.802†	6.5	0.00066	mg/L	0.000888	0.00066	mg/L	0.000888	135.41%
Co 228.616†	-10.9	-0.00141	mg/L	0.000286	-0.00141	mg/L	0.000286	20.28%
Cr 267.716†	146.0	0.00058	mg/L	0.000227	0.00058	mg/L	0.000227	39.16%
Cu 327.393†	-727.9	-0.00126	mg/L	0.000524	-0.00126	mg/L	0.000524	41.70%
Fe 239.562†	1271.9	0.223	mg/L	0.0118	0.223	mg/L	0.0118	5.32%
Mg 279.077†	9384.5	3.46	mg/L	0.130	3.46	mg/L	0.130	3.74%
Mn 257.610†	19099.6	0.0295	mg/L	0.00040	0.0295	mg/L	0.00040	1.37%
Mo 202.031†	35.4	0.00345	mg/L	0.001590	0.00345	mg/L	0.001590	46.16%
Ni 231.604†	-11.5	-0.00109	mg/L	0.000677	-0.00109	mg/L	0.000677	62.03%
Pb 220.353†	12.7	0.00242	mg/L	0.004034	0.00242	mg/L	0.004034	166.70%
Sb 206.836†	-5.6	-0.00035	mg/L	0.006562	-0.00035	mg/L	0.006562	>999.9%
Se 196.026†	-2.0	0.00094	mg/L	0.013102	0.00094	mg/L	0.013102	>999.9%
Si 251.611†	-263370.0	-13.3	mg/L	0.15	-13.3	mg/L	0.15	1.13%
Sn 189.927†	-69.7	-0.0133	mg/L	0.00267	-0.0133	mg/L	0.00267	20.14%
Ti 334.940†	2447.4	0.00613	mg/L	0.000170	0.00613	mg/L	0.000170	2.78%
Tl 190.801†	-14.8	-0.0137	mg/L	0.00439	-0.0137	mg/L	0.00439	32.01%
V 290.880†	-508.6	-0.00086	mg/L	0.000668	-0.00086	mg/L	0.000668	77.73%
Zn 206.200†	-152.0	-0.0101	mg/L	0.00021	-0.0101	mg/L	0.00021	2.06%
K 766.490†	1110.0	0.727	mg/L	0.0341	0.727	mg/L	0.0341	4.69%
Na 589.592†	22847.9	2.81	mg/L	0.040	2.81	mg/L	0.040	1.42%
Sr 407.771†	68296.7	0.0835	mg/L	0.00100	0.0835	mg/L	0.00100	1.19%
Li 670.784†	-42.1	-0.00379	mg/L	0.002811	-0.00379	mg/L	0.002811	74.07%
P 214.914†	18.4	0.0310	mg/L	0.00675	0.0310	mg/L	0.00675	21.77%

Sequence No.: 29 **Autosampler Location: 66**
Sample ID: L1505151301 **Date Collected: 5/27/2015 12:49:57 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505151301

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Approved: May 28, 2015

Kym H. Rhoden

Mean Data: L1505151301

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3308118.1						24485.18	0.74%
YRADIAL	207497.1						4093.75	1.97%
Ga 417.206	1424405.2						11102.25	0.78%
GaRADIAL	50012.1						889.25	1.78%
Ag 328.068†	943.0	0.00481	mg/L	0.001387	0.00481	mg/L	0.001387	28.85%
Al 396.153†	31.5	-0.0112	mg/L	0.00185	-0.0112	mg/L	0.00185	16.56%
As 188.979†	-27.1	-0.0117	mg/L	0.00546	-0.0117	mg/L	0.00546	46.88%
Ba 233.527†	4299.0	0.0741	mg/L	0.00018	0.0741	mg/L	0.00018	0.25%
Be 234.861†	-98.7	0.00006	mg/L	0.000015	0.00006	mg/L	0.000015	24.42%
B 249.677†	-1257.5	-0.0129	mg/L	0.00050	-0.0129	mg/L	0.00050	3.85%
Ca 227.546†	5084.5	63.9	mg/L	0.40	63.9	mg/L	0.40	0.62%
Cd 228.802†	-1.9	0.00019	mg/L	0.000375	0.00019	mg/L	0.000375	195.62%
Co 228.616†	5.3	-0.00026	mg/L	0.000715	-0.00026	mg/L	0.000715	277.13%
Cr 267.716†	204.7	0.00102	mg/L	0.000199	0.00102	mg/L	0.000199	19.58%
Cu 327.393†	-145.4	0.00141	mg/L	0.001571	0.00141	mg/L	0.001571	111.63%
Fe 239.562†	246.6	0.0465	mg/L	0.00062	0.0465	mg/L	0.00062	1.34%
Mg 279.077†	13237.1	4.89	mg/L	0.065	4.89	mg/L	0.065	1.34%
Mn 257.610†	1275.9	0.00158	mg/L	0.000023	0.00158	mg/L	0.000023	1.47%
Mo 202.031†	65.6	0.00631	mg/L	0.000565	0.00631	mg/L	0.000565	8.94%
Ni 231.604†	21.0	-0.00007	mg/L	0.000202	-0.00007	mg/L	0.000202	291.95%
Pb 220.353†	27.4	0.00569	mg/L	0.001429	0.00569	mg/L	0.001429	25.11%
Sb 206.836†	0.6	0.00495	mg/L	0.002560	0.00495	mg/L	0.002560	51.77%
Se 196.026†	-5.3	-0.00412	mg/L	0.024133	-0.00412	mg/L	0.024133	585.11%
Si 251.611†	-208301.9	-10.5	mg/L	0.14	-10.5	mg/L	0.14	1.34%
Sn 189.927†	-69.9	-0.0133	mg/L	0.00196	-0.0133	mg/L	0.00196	14.73%
Ti 334.940†	-4250.4	0.00124	mg/L	0.000290	0.00124	mg/L	0.000290	23.41%
Tl 190.801†	-19.7	-0.0178	mg/L	0.01036	-0.0178	mg/L	0.01036	58.09%
V 290.880†	-476.4	-0.00076	mg/L	0.001087	-0.00076	mg/L	0.001087	142.74%
Zn 206.200†	-49.4	-0.00649	mg/L	0.000298	-0.00649	mg/L	0.000298	4.60%
K 766.490†	1157.9	0.751	mg/L	0.0419	0.751	mg/L	0.0419	5.58%
Na 589.592†	73217.7	9.01	mg/L	0.058	9.01	mg/L	0.058	0.64%
Sr 407.771†	173354.8	0.213	mg/L	0.0015	0.213	mg/L	0.0015	0.73%
Li 670.784†	228.0	0.00328	mg/L	0.005299	0.00328	mg/L	0.005299	161.36%
P 214.914†	-6.3	-0.00766	mg/L	0.008124	-0.00766	mg/L	0.008124	106.12%

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Sequence No.: 30 **Autosampler Location: 67**
Sample ID: L1505151401 **Date Collected: 5/27/2015 12:53:17 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505151401

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505151401

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3476241.4						23741.03	0.68%
YRADIAL	216711.2						2605.90	1.20%
Ga 417.206	1544926.1						10787.40	0.70%
GaRADIAL	51815.7						669.68	1.29%
Ag 328.068†	79.1	0.00230	mg/L	0.000870	0.00230	mg/L	0.000870	37.78%
Al 396.153†	102.5	0.0140	mg/L	0.00927	0.0140	mg/L	0.00927	66.31%
As 188.979†	-5.6	0.00019	mg/L	0.003919	0.00019	mg/L	0.003919	>999.9%
Ba 233.527†	71.0	0.00098	mg/L	0.000235	0.00098	mg/L	0.000235	23.93%
Be 234.861†	-84.5	0.00009	mg/L	0.000039	0.00009	mg/L	0.000039	41.42%
B 249.677†	-1978.8	-0.0232	mg/L	0.00132	-0.0232	mg/L	0.00132	5.69%
Ca 227.546†	0.1	0.0576	mg/L	0.08673	0.0576	mg/L	0.08673	150.62%
Cd 228.802†	3.6	0.00045	mg/L	0.000263	0.00045	mg/L	0.000263	58.14%
Co 228.616†	-8.4	-0.00122	mg/L	0.000629	-0.00122	mg/L	0.000629	51.47%
Cr 267.716†	-62.6	-0.00095	mg/L	0.000685	-0.00095	mg/L	0.000685	72.19%
Cu 327.393†	-528.1	-0.00036	mg/L	0.001095	-0.00036	mg/L	0.001095	300.23%
Fe 239.562†	20.8	0.00777	mg/L	0.001088	0.00777	mg/L	0.001088	14.00%
Mg 279.077†	45.4	0.00226	mg/L	0.010763	0.00226	mg/L	0.010763	475.75%
Mn 257.610†	77.3	-0.00030	mg/L	0.000041	-0.00030	mg/L	0.000041	13.63%

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Mo 202.031†	2.9	0.00035	mg/L	0.000294	0.00035	mg/L	0.000294	85.15%
Ni 231.604†	5.7	-0.00055	mg/L	0.000478	-0.00055	mg/L	0.000478	86.16%
Pb 220.353†	-6.7	-0.00194	mg/L	0.000901	-0.00194	mg/L	0.000901	46.54%
Sb 206.836†	-0.3	0.00423	mg/L	0.007459	0.00423	mg/L	0.007459	176.25%
Se 196.026†	7.9	0.0166	mg/L	0.00559	0.0166	mg/L	0.00559	33.77%
Si 251.611†	-345628.1	-17.4	mg/L	0.17	-17.4	mg/L	0.17	0.98%
Sn 189.927†	-52.0	-0.0103	mg/L	0.00112	-0.0103	mg/L	0.00112	10.92%
Ti 334.940†	365.3	0.00211	mg/L	0.000020	0.00211	mg/L	0.000020	0.96%
Tl 190.801†	0.3	-0.00120	mg/L	0.007265	-0.00120	mg/L	0.007265	606.83%
V 290.880†	-291.3	0.00034	mg/L	0.002128	0.00034	mg/L	0.002128	628.51%
Zn 206.200†	-18.9	-0.00545	mg/L	0.000252	-0.00545	mg/L	0.000252	4.62%
K 766.490†	38.1	0.0528	mg/L	0.04268	0.0528	mg/L	0.04268	80.79%
Na 589.592†	582.3	0.0917	mg/L	0.01322	0.0917	mg/L	0.01322	14.41%
Sr 407.771†	126.2	-0.00018	mg/L	0.000128	-0.00018	mg/L	0.000128	70.49%
Li 670.784†	34.7	-0.00178	mg/L	0.001614	-0.00178	mg/L	0.001614	90.46%
P 214.914†	1.4	0.00429	mg/L	0.007990	0.00429	mg/L	0.007990	186.15%

Sequence No.: 31 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 5/27/2015 12:56:39 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3224505.2						27133.04	0.84%
YRADIAL	202235.3						520.56	0.26%
Ga 417.206	1328168.7						16033.15	1.21%
GaRADIAL	47207.1						284.13	0.60%
Ag 328.068†	131675.5	0.392	mg/L	0.0012	0.392	mg/L	0.0012	0.30%
QC value within limits for Ag 328.068 Recovery = 97.88%								
Al 396.153†	28439.5	9.91	mg/L	0.038	9.91	mg/L	0.038	0.38%
QC value within limits for Al 396.153 Recovery = 99.15%								
As 188.979†	619.5	0.380	mg/L	0.0036	0.380	mg/L	0.0036	0.95%
QC value within limits for As 188.979 Recovery = 95.00%								
Ba 233.527†	55976.2	0.968	mg/L	0.0074	0.968	mg/L	0.0074	0.76%
QC value within limits for Ba 233.527 Recovery = 96.78%								
Be 234.861†	26189.0	0.0472	mg/L	0.00023	0.0472	mg/L	0.00023	0.49%
QC value within limits for Be 234.861 Recovery = 94.46%								
B 249.677†	25867.9	0.382	mg/L	0.0053	0.382	mg/L	0.0053	1.39%
QC value less than the lower limit for B 249.677 Recovery = 76.31%								
Ca 227.546†	752.1	9.57	mg/L	0.245	9.57	mg/L	0.245	2.56%
QC value within limits for Ca 227.546 Recovery = 95.72%								
Cd 228.802†	797.4	0.0470	mg/L	0.00078	0.0470	mg/L	0.00078	1.66%
QC value within limits for Cd 228.802 Recovery = 93.91%								
Co 228.616†	2746.5	0.192	mg/L	0.0013	0.192	mg/L	0.0013	0.66%
QC value within limits for Co 228.616 Recovery = 95.90%								
Cr 267.716†	65847.3	0.484	mg/L	0.0030	0.484	mg/L	0.0030	0.62%
QC value within limits for Cr 267.716 Recovery = 96.89%								
Cu 327.393†	103752.3	0.484	mg/L	0.0028	0.484	mg/L	0.0028	0.59%
QC value within limits for Cu 327.393 Recovery = 96.86%								
Fe 239.562†	22706.4	3.91	mg/L	0.018	3.91	mg/L	0.018	0.47%
QC value within limits for Fe 239.562 Recovery = 97.65%								
Mg 279.077†	26500.5	9.80	mg/L	0.047	9.80	mg/L	0.047	0.48%
QC value within limits for Mg 279.077 Recovery = 98.02%								
Mn 257.610†	309854.9	0.485	mg/L	0.0027	0.485	mg/L	0.0027	0.55%
QC value within limits for Mn 257.610 Recovery = 97.06%								
Mo 202.031†	9882.6	0.941	mg/L	0.0043	0.941	mg/L	0.0043	0.46%
QC value within limits for Mo 202.031 Recovery = 94.12%								
Ni 231.604†	15280.1	0.478	mg/L	0.0024	0.478	mg/L	0.0024	0.50%
QC value within limits for Ni 231.604 Recovery = 95.52%								
Pb 220.353†	2130.2	0.478	mg/L	0.0022	0.478	mg/L	0.0022	0.47%
QC value within limits for Pb 220.353 Recovery = 95.60%								
Sb 206.836†	1311.0	1.13	mg/L	0.002	1.13	mg/L	0.002	0.14%

Approved: May 28, 2015

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   QC value within limits for Sb 206.836  Recovery = 94.42%
Se 196.026†              243.3       0.387 mg/L        0.0132       0.387 mg/L        0.0132   3.42%
   QC value within limits for Se 196.026  Recovery = 96.66%
Si 251.611†          -169897.7       -8.64 mg/L         0.179       -8.64 mg/L         0.179   2.07%
   QC value less than the lower limit for Si 251.611  Recovery = -172.79%
Sn 189.927†             5601.9       0.946 mg/L        0.0027       0.946 mg/L        0.0027   0.28%
   QC value within limits for Sn 189.927  Recovery = 94.56%
Ti 334.940†           895190.7       0.966 mg/L        0.0036       0.966 mg/L        0.0036   0.37%
   QC value within limits for Ti 334.940  Recovery = 96.63%
Tl 190.801†              568.7       0.480 mg/L        0.0053       0.480 mg/L        0.0053   1.09%
   QC value within limits for Tl 190.801  Recovery = 96.08%
V 290.880†            182301.8       0.966 mg/L        0.0059       0.966 mg/L        0.0059   0.61%
   QC value within limits for V 290.880  Recovery = 96.64%
Zn 206.200†            27646.4       0.964 mg/L        0.0001       0.964 mg/L        0.0001   0.01%
   QC value within limits for Zn 206.200  Recovery = 96.40%
K 766.490†             75837.5        48.3 mg/L          0.05        48.3 mg/L          0.05   0.11%
   QC value within limits for K 766.490  Recovery = 96.61%
Na 589.592†           398108.8        50.0 mg/L          0.75        50.0 mg/L          0.75   1.50%
   QC value within limits for Na 589.592  Recovery = 100.00%
Sr 407.771†           795989.6       0.987 mg/L        0.0113       0.987 mg/L        0.0113   1.14%
   QC value within limits for Sr 407.771  Recovery = 98.72%
Li 670.784†            37760.4       0.987 mg/L        0.0031       0.987 mg/L        0.0031   0.31%
   QC value within limits for Li 670.784  Recovery = 98.69%
P 214.914†              5988.5        9.39 mg/L         0.014        9.39 mg/L         0.014   0.15%
   QC value within limits for P 214.914  Recovery = 93.92%
QC Failed.  Continue with analysis.

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Sequence No.: 32                                    Autosampler Location: 1
Sample ID: CCB                                      Date Collected: 5/27/2015 12:59:04 PM
Analyst:                                            Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

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Nebulizer Parameters: CCB
Analyte                 Back Pressure    Flow
All                     232.0 kPa        0.40 L/min

------------------------------------------------------------------------------------------
Mean Data: CCB
                   Mean Corrected        Calib.                          Sample
Analyte               Intensity     Conc. Units     Std.Dev.     Conc. Units     Std.Dev.   RSD
Y 371.029            3449763.9                                                  56907.01   1.65%
YRADIAL               210659.9                                                   3643.68   1.73%
Ga 417.206           1563026.0                                                  27505.81   1.76%
GaRADIAL               51024.5                                                    784.99   1.54%
Ag 328.068†              116.1     0.00241 mg/L      0.000218     0.00241 mg/L      0.000218   9.07%
   QC value within limits for Ag 328.068  Recovery = Not calculated
Al 396.153†               -6.4     -0.0242 mg/L       0.00212     -0.0242 mg/L       0.00212   8.76%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†               -5.4     0.00032 mg/L      0.006218     0.00032 mg/L      0.006218 >999.9%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†               -2.8    -0.00029 mg/L      0.000211    -0.00029 mg/L      0.000211  71.66%
   QC value within limits for Ba 233.527  Recovery = Not calculated
Be 234.861†              -21.9     0.00021 mg/L      0.000034     0.00021 mg/L      0.000034  16.54%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†               -64.5     0.00374 mg/L      0.003145     0.00374 mg/L      0.003145  84.13%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†                6.2       0.134 mg/L        0.1898       0.134 mg/L        0.1898 141.73%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†                2.3     0.00038 mg/L      0.000154     0.00038 mg/L      0.000154  40.90%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†               -0.7    -0.00068 mg/L      0.000447    -0.00068 mg/L      0.000447  66.04%
   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†              -13.6    -0.00059 mg/L      0.000596    -0.00059 mg/L      0.000596 101.24%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†             -225.4     0.00104 mg/L      0.000894     0.00104 mg/L      0.000894  86.26%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†               -6.7     0.00304 mg/L      0.001255     0.00304 mg/L      0.001255  41.23%
   QC value within limits for Fe 239.562  Recovery = Not calculated
Mg 279.077†               14.1    -0.00932 mg/L      0.008584    -0.00932 mg/L      0.008584  92.11%
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Lynn H. Rhoden

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   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†                7.0    -0.00041 mg/L      0.000038    -0.00041 mg/L      0.000038   9.21%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†                2.8     0.00034 mg/L      0.001014     0.00034 mg/L      0.001014 300.08%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†               -6.9    -0.00095 mg/L      0.000360    -0.00095 mg/L      0.000360  37.77%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†              -14.0    -0.00356 mg/L      0.000716    -0.00356 mg/L      0.000716  20.08%
   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†               -0.8     0.00378 mg/L      0.002187     0.00378 mg/L      0.002187  57.89%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†                5.9      0.0134 mg/L       0.01186      0.0134 mg/L       0.01186  88.43%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†             8419.2       0.270 mg/L        0.2197       0.270 mg/L        0.2197  81.51%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†              -21.6    -0.00514 mg/L      0.000554    -0.00514 mg/L      0.000554  10.78%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†              297.9     0.00204 mg/L      0.000166     0.00204 mg/L      0.000166   8.12%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†                4.9     0.00261 mg/L      0.002439     0.00261 mg/L      0.002439  93.41%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†              -369.8    -0.00008 mg/L      0.001378    -0.00008 mg/L      0.001378 >999.9%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†                1.3    -0.00474 mg/L      0.000111    -0.00474 mg/L      0.000111   2.35%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†                15.1      0.0383 mg/L       0.02559      0.0383 mg/L       0.02559  66.80%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†              201.3      0.0452 mg/L       0.02429      0.0452 mg/L       0.02429  53.77%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†              172.8    -0.00013 mg/L      0.000170    -0.00013 mg/L      0.000170 135.19%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†               33.6    -0.00181 mg/L      0.001487    -0.00181 mg/L      0.001487  82.09%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†                -0.6     0.00117 mg/L      0.005929     0.00117 mg/L      0.005929 508.45%
   QC value within limits for P 214.914  Recovery = Not calculated
All analyte(s) passed QC.
```

Approved: May 28, 2015

Lynn H. Rhoden

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Analysis Begun

Start Time: 5/27/2015 1:19:31 PM **Plasma On Time: 5/27/2015 6:39:13 AM**
Logged In Analyst: peicp2 **Technique: ICP Continuous**
Spectrometer Model: Optima 4300 DV, S/N 077N4011401 **Autosampler Model: Cetac**

Sample Information File: C:\pe\peicp2\Sample Information\MONDAY1.sif
Batch ID:
Results Data Set: 052715HR
Results Library: C:\pe\peicp2\Results\results2.mdb

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Sequence No.: 1 **Autosampler Location: 68**
Sample ID: PBW 81 WG525038-03 **Date Collected: 5/27/2015 1:19:33 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: PBW 81 WG525038-03

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: PBW 81 WG525038-03

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3514029.9						7730.17	0.22%
YRADIAL	210508.3						4373.74	2.08%
Ga 417.206	1563411.5						14606.60	0.93%
GaRADIAL	50337.8						603.03	1.20%
Ag 328.068†	72.7	0.00228	mg/L	0.001233	0.00228	mg/L	0.001233	54.03%
Al 396.153†	38.7	-0.00840	mg/L	0.004375	-0.00840	mg/L	0.004375	52.09%
As 188.979†	-11.3	-0.00331	mg/L	0.003164	-0.00331	mg/L	0.003164	95.74%
Ba 233.527†	-10.7	-0.00043	mg/L	0.000099	-0.00043	mg/L	0.000099	23.08%
Be 234.861†	-87.3	0.00009	mg/L	0.000055	0.00009	mg/L	0.000055	62.49%
B 249.677†	18291.6	0.262	mg/L	0.0039	0.262	mg/L	0.0039	1.50%
Ca 227.546†	-4.9	-0.00494	mg/L	0.112300	-0.00494	mg/L	0.112300	>999.9%
Cd 228.802†	1.3	0.00033	mg/L	0.000436	0.00033	mg/L	0.000436	130.85%
Co 228.616†	-5.1	-0.00099	mg/L	0.000965	-0.00099	mg/L	0.000965	97.78%
Cr 267.716†	264.2	0.00146	mg/L	0.001473	0.00146	mg/L	0.001473	101.23%
Cu 327.393†	-560.1	-0.00051	mg/L	0.000971	-0.00051	mg/L	0.000971	189.52%
Fe 239.562†	30.6	0.00946	mg/L	0.001518	0.00946	mg/L	0.001518	16.05%
Mg 279.077†	18.3	-0.00776	mg/L	0.001846	-0.00776	mg/L	0.001846	23.80%
Mn 257.610†	374.2	0.00016	mg/L	0.000014	0.00016	mg/L	0.000014	8.80%
Mo 202.031†	0.9	0.00016	mg/L	0.000463	0.00016	mg/L	0.000463	289.88%
Ni 231.604†	5.2	-0.00057	mg/L	0.000141	-0.00057	mg/L	0.000141	24.59%
Pb 220.353†	3.5	0.00034	mg/L	0.000846	0.00034	mg/L	0.000846	251.04%
Sb 206.836†	1.7	0.00588	mg/L	0.002759	0.00588	mg/L	0.002759	46.90%
Se 196.026†	5.1	0.0122	mg/L	0.00810	0.0122	mg/L	0.00810	66.46%
Si 251.611†	-206946.3	-10.5	mg/L	0.24	-10.5	mg/L	0.24	2.31%
Sn 189.927†	-42.4	-0.00865	mg/L	0.001173	-0.00865	mg/L	0.001173	13.56%
Ti 334.940†	134.7	0.00186	mg/L	0.000378	0.00186	mg/L	0.000378	20.37%
Tl 190.801†	4.2	0.00202	mg/L	0.002515	0.00202	mg/L	0.002515	124.57%
V 290.880†	-453.6	-0.00052	mg/L	0.000836	-0.00052	mg/L	0.000836	161.25%
Zn 206.200†	-119.8	-0.00895	mg/L	0.000351	-0.00895	mg/L	0.000351	3.93%
K 766.490†	18.3	0.0403	mg/L	0.06488	0.0403	mg/L	0.06488	160.91%
Na 589.592†	329.0	0.0608	mg/L	0.01459	0.0608	mg/L	0.01459	24.02%
Sr 407.771†	681.7	0.00051	mg/L	0.000039	0.00051	mg/L	0.000039	7.68%
Li 670.784†	-159.3	-0.00687	mg/L	0.001441	-0.00687	mg/L	0.001441	20.99%
P 214.914†	-5.3	-0.00617	mg/L	0.012828	-0.00617	mg/L	0.012828	207.85%

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Sequence No.: 2 **Autosampler Location: 69**
Sample ID: LCSW 81 WG525038-04 **Date Collected: 5/27/2015 1:22:56 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Approved: May 28, 2015

Kym H. Rhoden

Nebulizer Parameters: LCSW 81 WG525038-04

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: LCSW 81 WG525038-04

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3282434.7						100549.57	3.06%
YRADIAL	208970.8						974.06	0.47%
Ga 417.206	1377289.1						37429.54	2.72%
GaRADIAL	48469.8						175.87	0.36%
Ag 328.068†	66739.6	0.199	mg/L	0.0086	0.199	mg/L	0.0086	4.32%
Al 396.153†	14148.2	4.92	mg/L	0.036	4.92	mg/L	0.036	0.73%
As 188.979†	301.7	0.187	mg/L	0.0089	0.187	mg/L	0.0089	4.75%
Ba 233.527†	28067.0	0.485	mg/L	0.0190	0.485	mg/L	0.0190	3.92%
Be 234.861†	12700.2	0.0230	mg/L	0.00073	0.0230	mg/L	0.00073	3.16%
B 249.677†	74751.8	1.06	mg/L	0.046	1.06	mg/L	0.046	4.37%
Ca 227.546†	364.6	4.67	mg/L	0.182	4.67	mg/L	0.182	3.89%
Cd 228.802†	389.8	0.0231	mg/L	0.00163	0.0231	mg/L	0.00163	7.05%
Co 228.616†	1387.0	0.0966	mg/L	0.00442	0.0966	mg/L	0.00442	4.57%
Cr 267.716†	33134.4	0.244	mg/L	0.0098	0.244	mg/L	0.0098	4.03%
Cu 327.393†	51969.2	0.244	mg/L	0.0091	0.244	mg/L	0.0091	3.74%
Fe 239.562†	11367.5	1.96	mg/L	0.005	1.96	mg/L	0.005	0.25%
Mg 279.077†	13032.6	4.81	mg/L	0.025	4.81	mg/L	0.025	0.53%
Mn 257.610†	155284.6	0.243	mg/L	0.0104	0.243	mg/L	0.0104	4.29%
Mo 202.031†	5070.7	0.483	mg/L	0.0196	0.483	mg/L	0.0196	4.05%
Ni 231.604†	7698.2	0.240	mg/L	0.0101	0.240	mg/L	0.0101	4.19%
Pb 220.353†	1065.8	0.239	mg/L	0.0093	0.239	mg/L	0.0093	3.90%
Sb 206.836†	650.3	0.564	mg/L	0.0158	0.564	mg/L	0.0158	2.81%
Se 196.026†	125.3	0.201	mg/L	0.0218	0.201	mg/L	0.0218	10.86%
Si 251.611†	-106894.3	-5.49	mg/L	0.597	-5.49	mg/L	0.597	10.88%
Sn 189.927†	2855.7	0.481	mg/L	0.0191	0.481	mg/L	0.0191	3.97%
Ti 334.940†	444765.8	0.481	mg/L	0.0051	0.481	mg/L	0.0051	1.06%
Tl 190.801†	293.8	0.247	mg/L	0.0116	0.247	mg/L	0.0116	4.70%
V 290.880†	92102.6	0.489	mg/L	0.0220	0.489	mg/L	0.0220	4.50%
Zn 206.200†	13520.1	0.469	mg/L	0.0209	0.469	mg/L	0.0209	4.46%
K 766.490†	37731.1	23.9	mg/L	0.17	23.9	mg/L	0.17	0.70%
Na 589.592†	193335.6	23.9	mg/L	0.16	23.9	mg/L	0.16	0.69%
Sr 407.771†	381148.6	0.473	mg/L	0.0022	0.473	mg/L	0.0022	0.46%
Li 670.784†	19129.3	0.499	mg/L	0.0032	0.499	mg/L	0.0032	0.63%
P 214.914†	2989.3	4.69	mg/L	0.198	4.69	mg/L	0.198	4.21%

Sequence No.: 3
Sample ID: L1505152301
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 70
Date Collected: 5/27/2015 1:25:22 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505152301

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505152301

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3294570.4						8199.66	0.25%
YRADIAL	208873.9						6519.50	3.12%
Ga 417.206	1403397.5						4612.53	0.33%
GaRADIAL	49904.8						1563.39	3.13%
Ag 328.068†	751.8	0.00430	mg/L	0.001608	0.00430	mg/L	0.001608	37.42%
Al 396.153†	227.5	0.0576	mg/L	0.03371	0.0576	mg/L	0.03371	58.56%
As 188.979†	-15.5	-0.00480	mg/L	0.006115	-0.00480	mg/L	0.006115	127.43%
Ba 233.527†	3801.4	0.0655	mg/L	0.00056	0.0655	mg/L	0.00056	0.86%
Be 234.861†	-85.5	0.00006	mg/L	0.000025	0.00006	mg/L	0.000025	45.25%
B 249.677†	4961.6	0.0752	mg/L	0.00286	0.0752	mg/L	0.00286	3.81%
Ca 227.546†	4063.9	51.1	mg/L	0.74	51.1	mg/L	0.74	1.45%
Cd 228.802†	-2.7	0.00011	mg/L	0.000448	0.00011	mg/L	0.000448	422.67%
Co 228.616†	2.6	-0.00046	mg/L	0.000833	-0.00046	mg/L	0.000833	182.90%

Approved: May 28, 2015

Kym H. Rhoden

Cr 267.716†	280.4	0.00157	mg/L	0.000138	0.00157	mg/L	0.000138	8.82%
Cu 327.393†	-485.9	-0.00015	mg/L	0.001777	-0.00015	mg/L	0.001777	>999.9%
Fe 239.562†	1031.5	0.181	mg/L	0.0035	0.181	mg/L	0.0035	1.94%
Mg 279.077†	41535.8	15.4	mg/L	0.31	15.4	mg/L	0.31	2.03%
Mn 257.610†	39280.8	0.0611	mg/L	0.00044	0.0611	mg/L	0.00044	0.72%
Mo 202.031†	70.3	0.00678	mg/L	0.000168	0.00678	mg/L	0.000168	2.48%
Ni 231.604†	40.9	0.00055	mg/L	0.000822	0.00055	mg/L	0.000822	149.00%
Pb 220.353†	48.3	0.0103	mg/L	0.00142	0.0103	mg/L	0.00142	13.68%
Sb 206.836†	0.8	0.00517	mg/L	0.005578	0.00517	mg/L	0.005578	107.79%
Se 196.026†	-2.6	0.00010	mg/L	0.004862	0.00010	mg/L	0.004862	>999.9%
Si 251.611†	-307384.9	-15.5	mg/L	0.16	-15.5	mg/L	0.16	1.03%
Sn 189.927†	-65.3	-0.0125	mg/L	0.00127	-0.0125	mg/L	0.00127	10.11%
Ti 334.940†	-2538.0	0.00226	mg/L	0.000880	0.00226	mg/L	0.000880	38.91%
Tl 190.801†	-18.0	-0.0165	mg/L	0.00544	-0.0165	mg/L	0.00544	33.03%
V 290.880†	-985.4	-0.00370	mg/L	0.001354	-0.00370	mg/L	0.001354	36.57%
Zn 206.200†	-30.5	-0.00582	mg/L	0.000501	-0.00582	mg/L	0.000501	8.61%
K 766.490†	4672.1	2.96	mg/L	0.161	2.96	mg/L	0.161	5.44%
Na 589.592†	186739.8	23.1	mg/L	0.41	23.1	mg/L	0.41	1.79%
Sr 407.771†	168460.2	0.207	mg/L	0.0029	0.207	mg/L	0.0029	1.40%
Li 670.784†	186.9	0.00221	mg/L	0.001327	0.00221	mg/L	0.001327	60.15%
P 214.914†	44.2	0.0715	mg/L	0.00924	0.0715	mg/L	0.00924	12.92%

Sequence No.: 4
Sample ID: L1505152302
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 71
Date Collected: 5/27/2015 1:27:49 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505152302

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505152302

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3302516.7						26151.45	0.79%
YRADIAL	210920.2						5165.46	2.45%
Ga 417.206	1404938.4						4296.08	0.31%
GaRADIAL	50495.1						1121.34	2.22%
Ag 328.068†	824.4	0.00447	mg/L	0.000712	0.00447	mg/L	0.000712	15.93%
Al 396.153†	55.2	-0.00285	mg/L	0.004683	-0.00285	mg/L	0.004683	164.54%
As 188.979†	-21.6	-0.00847	mg/L	0.007350	-0.00847	mg/L	0.007350	86.82%
Ba 233.527†	4040.9	0.0696	mg/L	0.00102	0.0696	mg/L	0.00102	1.47%
Be 234.861†	-93.2	0.00006	mg/L	0.000049	0.00006	mg/L	0.000049	78.03%
B 249.677†	2653.1	0.0423	mg/L	0.00108	0.0423	mg/L	0.00108	2.56%
Ca 227.546†	4294.4	54.0	mg/L	0.38	54.0	mg/L	0.38	0.70%
Cd 228.802†	6.3	0.00067	mg/L	0.000231	0.00067	mg/L	0.000231	34.68%
Co 228.616†	8.5	-0.00004	mg/L	0.000622	-0.00004	mg/L	0.000622	>999.9%
Cr 267.716†	236.5	0.00125	mg/L	0.000249	0.00125	mg/L	0.000249	19.96%
Cu 327.393†	-447.4	0.00001	mg/L	0.001047	0.00001	mg/L	0.001047	>999.9%
Fe 239.562†	456.1	0.0823	mg/L	0.00042	0.0823	mg/L	0.00042	0.51%
Mg 279.077†	41490.0	15.4	mg/L	0.19	15.4	mg/L	0.19	1.21%
Mn 257.610†	15485.2	0.0238	mg/L	0.00018	0.0238	mg/L	0.00018	0.75%
Mo 202.031†	68.0	0.00655	mg/L	0.000970	0.00655	mg/L	0.000970	14.81%
Ni 231.604†	22.1	-0.00004	mg/L	0.000644	-0.00004	mg/L	0.000644	>999.9%
Pb 220.353†	16.6	0.00326	mg/L	0.001262	0.00326	mg/L	0.001262	38.70%
Sb 206.836†	-4.5	0.00058	mg/L	0.005542	0.00058	mg/L	0.005542	952.62%
Se 196.026†	0.2	0.00448	mg/L	0.007839	0.00448	mg/L	0.007839	175.00%
Si 251.611†	-316480.6	-15.9	mg/L	0.10	-15.9	mg/L	0.10	0.62%
Sn 189.927†	-64.4	-0.0124	mg/L	0.00119	-0.0124	mg/L	0.00119	9.65%
Ti 334.940†	-3271.3	0.00166	mg/L	0.000264	0.00166	mg/L	0.000264	15.93%
Tl 190.801†	-15.6	-0.0145	mg/L	0.00610	-0.0145	mg/L	0.00610	42.17%
V 290.880†	-1147.7	-0.00458	mg/L	0.000426	-0.00458	mg/L	0.000426	9.30%
Zn 206.200†	-132.1	-0.00937	mg/L	0.000446	-0.00937	mg/L	0.000446	4.76%
K 766.490†	3756.2	2.38	mg/L	0.078	2.38	mg/L	0.078	3.27%
Na 589.592†	203418.1	25.2	mg/L	0.13	25.2	mg/L	0.13	0.51%
Sr 407.771†	170156.6	0.209	mg/L	0.0014	0.209	mg/L	0.0014	0.66%
Li 670.784†	60.5	-0.00111	mg/L	0.002206	-0.00111	mg/L	0.002206	199.27%
P 214.914†	14.5	0.0249	mg/L	0.01998	0.0249	mg/L	0.01998	80.21%

Approved: May 28, 2015

Kym H. Rhoden

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Sequence No.: 5 **Autosampler Location: 72**
Sample ID: L1505138601 **Date Collected: 5/27/2015 1:31:08 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505138601

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505138601

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3276393.3						19244.72	0.59%
YRADIAL	200112.5						3857.91	1.93%
Ga 417.206	1347871.9						14241.16	1.06%
GaRADIAL	46852.4						994.01	2.12%
Ag 328.068†	207.0	0.00269	mg/L	0.001363	0.00269	mg/L	0.001363	50.63%
Al 396.153†	143.1	0.0282	mg/L	0.00553	0.0282	mg/L	0.00553	19.63%
As 188.979†	-17.8	-0.00734	mg/L	0.004647	-0.00734	mg/L	0.004647	63.30%
Ba 233.527†	75.3	0.00106	mg/L	0.000177	0.00106	mg/L	0.000177	16.73%
Be 234.861†	-116.2	0.00003	mg/L	0.000037	0.00003	mg/L	0.000037	129.49%
B 249.677†	2005.0	0.0330	mg/L	0.00226	0.0330	mg/L	0.00226	6.86%
Ca 227.546†	22.6	0.340	mg/L	0.0887	0.340	mg/L	0.0887	26.07%
Cd 228.802†	3.8	0.00050	mg/L	0.000334	0.00050	mg/L	0.000334	66.52%
Co 228.616†	-4.3	-0.00093	mg/L	0.000324	-0.00093	mg/L	0.000324	34.71%
Cr 267.716†	265.6	0.00147	mg/L	0.001083	0.00147	mg/L	0.001083	73.80%
Cu 327.393†	4655.3	0.0236	mg/L	0.00137	0.0236	mg/L	0.00137	5.80%
Fe 239.562†	198.2	0.0383	mg/L	0.00317	0.0383	mg/L	0.00317	8.30%
Mg 279.077†	370.0	0.123	mg/L	0.0028	0.123	mg/L	0.0028	2.30%
Mn 257.610†	2768.0	0.00391	mg/L	0.000187	0.00391	mg/L	0.000187	4.78%
Mo 202.031†	12.0	0.00121	mg/L	0.000923	0.00121	mg/L	0.000923	76.12%
Ni 231.604†	-0.5	-0.00075	mg/L	0.000751	-0.00075	mg/L	0.000751	100.36%
Pb 220.353†	-5.9	-0.00174	mg/L	0.002360	-0.00174	mg/L	0.002360	135.70%
Sb 206.836†	-2.1	0.00263	mg/L	0.000864	0.00263	mg/L	0.000864	32.87%
Se 196.026†	1.5	0.00653	mg/L	0.009792	0.00653	mg/L	0.009792	150.04%
Si 251.611†	-150145.4	-7.64	mg/L	0.223	-7.64	mg/L	0.223	2.92%
Sn 189.927†	-42.3	-0.00863	mg/L	0.001103	-0.00863	mg/L	0.001103	12.77%
Ti 334.940†	603.9	0.00239	mg/L	0.000157	0.00239	mg/L	0.000157	6.59%
Tl 190.801†	1.2	-0.00047	mg/L	0.006111	-0.00047	mg/L	0.006111	>999.9%
V 290.880†	-10.8	0.00183	mg/L	0.000667	0.00183	mg/L	0.000667	36.49%
Zn 206.200†	445.5	0.0108	mg/L	0.00049	0.0108	mg/L	0.00049	4.52%
K 766.490†	341.5	0.140	mg/L	0.0503	0.140	mg/L	0.0503	35.81%
Na 589.592†	802877.0	104	mg/L	0.9	104	mg/L	0.9	0.84%
Sr 407.771†	2530.9	0.00279	mg/L	0.000170	0.00279	mg/L	0.000170	6.09%
Li 670.784†	-21.8	-0.00326	mg/L	0.003216	-0.00326	mg/L	0.003216	98.52%
P 214.914†	-16.4	-0.0236	mg/L	0.00630	-0.0236	mg/L	0.00630	26.68%

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Sequence No.: 6 **Autosampler Location: 73**
Sample ID: L1505138602 **Date Collected: 5/27/2015 1:34:31 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505138602

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505138602

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2895149.6						16804.28	0.58%
YRADIAL	203540.8						3765.37	1.85%
Ga 417.206	1274098.7						17650.80	1.39%
GaRADIAL	46104.9						961.30	2.09%

Approved: May 28, 2015

Ag 328.068†	-152.9	0.00166	mg/L	0.000932	0.00166	mg/L	0.000932	56.03%
Al 396.153†	9.0	-0.0190	mg/L	0.02871	-0.0190	mg/L	0.02871	151.33%
As 188.979†	-2.2	0.00226	mg/L	0.010241	0.00226	mg/L	0.010241	452.32%
Ba 233.527†	116.6	0.00177	mg/L	0.000105	0.00177	mg/L	0.000105	5.95%
Be 234.861†	28.7	0.00030	mg/L	0.000015	0.00030	mg/L	0.000015	5.02%
B 249.677†	6693.2	0.0989	mg/L	0.00508	0.0989	mg/L	0.00508	5.13%
Ca 227.546†	17.1	0.270	mg/L	0.3301	0.270	mg/L	0.3301	122.11%
Cd 228.802†	-4.2	-0.00003	mg/L	0.000088	-0.00003	mg/L	0.000088	316.20%
Co 228.616†	0.3	-0.00061	mg/L	0.000908	-0.00061	mg/L	0.000908	149.76%
Cr 267.716†	377.8	0.00230	mg/L	0.000102	0.00230	mg/L	0.000102	4.44%
Cu 327.393†	3428.5	0.0180	mg/L	0.00164	0.0180	mg/L	0.00164	9.12%
Fe 239.562†	47.7	0.0124	mg/L	0.01392	0.0124	mg/L	0.01392	112.36%
Mg 279.077†	174.4	0.0501	mg/L	0.01856	0.0501	mg/L	0.01856	37.07%
Mn 257.610†	265.5	-0.00001	mg/L	0.000026	-0.00001	mg/L	0.000026	315.41%
Mo 202.031†	39.2	0.00381	mg/L	0.001093	0.00381	mg/L	0.001093	28.65%
Ni 231.604†	-15.0	-0.00119	mg/L	0.000718	-0.00119	mg/L	0.000718	60.12%
Pb 220.353†	-65.9	-0.0152	mg/L	0.00418	-0.0152	mg/L	0.00418	27.57%
Sb 206.836†	8.3	0.0116	mg/L	0.00692	0.0116	mg/L	0.00692	59.64%
Se 196.026†	-3.3	-0.00109	mg/L	0.008114	-0.00109	mg/L	0.008114	744.72%
Si 251.611†	-109034.6	-5.59	mg/L	0.284	-5.59	mg/L	0.284	5.08%
Sn 189.927†	8.6	-0.00003	mg/L	0.002706	-0.00003	mg/L	0.002706	>999.9%
Ti 334.940†	2278.1	0.00418	mg/L	0.000402	0.00418	mg/L	0.000402	9.61%
Tl 190.801†	-30.8	-0.0270	mg/L	0.00544	-0.0270	mg/L	0.00544	20.17%
V 290.880†	3400.9	0.0199	mg/L	0.00005	0.0199	mg/L	0.00005	0.25%
Zn 206.200†	1195.6	0.0369	mg/L	0.00079	0.0369	mg/L	0.00079	2.14%
K 766.490†	434.6	0.195	mg/L	0.0470	0.195	mg/L	0.0470	24.16%
Na 589.592†	835358.5	108	mg/L	0.7	108	mg/L	0.7	0.69%
Sr 407.771†	1872.2	0.00198	mg/L	0.000068	0.00198	mg/L	0.000068	3.44%
Li 670.784†	142.6	0.00104	mg/L	0.003283	0.00104	mg/L	0.003283	314.28%
P 214.914†	-9.0	-0.0120	mg/L	0.01491	-0.0120	mg/L	0.01491	124.35%

Sequence No.: 7
Sample ID: L1505138603
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 74
Date Collected: 5/27/2015 1:36:54 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505138603

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505138603

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2943817.0						23221.71	0.79%
YRADIAL	187245.0						5418.94	2.89%
Ga 417.206	1395922.5						13659.10	0.98%
GaRADIAL	43519.7						1041.87	2.39%
Ag 328.068†	916.2	0.00474	mg/L	0.001122	0.00474	mg/L	0.001122	23.65%
Al 396.153†	115.7	0.0182	mg/L	0.02656	0.0182	mg/L	0.02656	145.56%
As 188.979†	-16.3	-0.00504	mg/L	0.007633	-0.00504	mg/L	0.007633	151.31%
Ba 233.527†	12024.5	0.208	mg/L	0.0014	0.208	mg/L	0.0014	0.68%
Be 234.861†	74.0	0.00038	mg/L	0.000011	0.00038	mg/L	0.000011	2.81%
B 249.677†	5841.7	0.0870	mg/L	0.00555	0.0870	mg/L	0.00555	6.38%
Ca 227.546†	4989.1	62.7	mg/L	0.47	62.7	mg/L	0.47	0.76%
Cd 228.802†	-1.3	0.00019	mg/L	0.000533	0.00019	mg/L	0.000533	287.70%
Co 228.616†	-12.8	-0.00158	mg/L	0.000885	-0.00158	mg/L	0.000885	56.07%
Cr 267.716†	390.8	0.00239	mg/L	0.000266	0.00239	mg/L	0.000266	11.13%
Cu 327.393†	-1055.6	-0.00280	mg/L	0.001604	-0.00280	mg/L	0.001604	57.29%
Fe 239.562†	173.3	0.0337	mg/L	0.00549	0.0337	mg/L	0.00549	16.29%
Mg 279.077†	36471.3	13.5	mg/L	0.47	13.5	mg/L	0.47	3.45%
Mn 257.610†	9089.5	0.0138	mg/L	0.00010	0.0138	mg/L	0.00010	0.75%
Mo 202.031†	91.6	0.00880	mg/L	0.001043	0.00880	mg/L	0.001043	11.85%
Ni 231.604†	15.2	-0.00024	mg/L	0.000974	-0.00024	mg/L	0.000974	398.20%
Pb 220.353†	-20.8	-0.00507	mg/L	0.002063	-0.00507	mg/L	0.002063	40.69%
Sb 206.836†	-2.9	0.00197	mg/L	0.006551	0.00197	mg/L	0.006551	333.01%
Se 196.026†	-5.1	-0.00380	mg/L	0.008869	-0.00380	mg/L	0.008869	233.52%
Si 251.611†	-161383.3	-8.20	mg/L	0.273	-8.20	mg/L	0.273	3.33%
Sn 189.927†	45.5	0.00621	mg/L	0.002245	0.00621	mg/L	0.002245	36.18%

Approved: May 28, 2015

Kym H. Rhoden

Ti 334.940†	-2642.2	0.00289	mg/L	0.000505	0.00289	mg/L	0.000505 17.46%
Tl 190.801†	-43.1	-0.0372	mg/L	0.00386	-0.0372	mg/L	0.00386 10.38%
V 290.880†	2065.4	0.0125	mg/L	0.00071	0.0125	mg/L	0.00071 5.69%
Zn 206.200†	-16.4	-0.00533	mg/L	0.000066	-0.00533	mg/L	0.000066 1.24%
K 766.490†	1528.7	0.984	mg/L	0.0593	0.984	mg/L	0.0593 6.03%
Na 589.592†	78553.8	9.66	mg/L	0.016	9.66	mg/L	0.016 0.17%
Sr 407.771†	196423.9	0.241	mg/L	0.0016	0.241	mg/L	0.0016 0.67%
Li 670.784†	169.6	0.00175	mg/L	0.004362	0.00175	mg/L	0.004362 248.74%
P 214.914†	5.3	0.0104	mg/L	0.00848	0.0104	mg/L	0.00848 81.48%

Sequence No.: 8 **Autosampler Location: 75**
Sample ID: L1505138604 **Date Collected: 5/27/2015 1:39:16 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505138604

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505138604

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3034579.7						32658.54	1.08%
YRADIAL	189074.0						369.57	0.20%
Ga 417.206	1416484.2						17721.55	1.25%
GaRADIAL	44730.8						191.14	0.43%
Ag 328.068†	971.2	0.00488	mg/L	0.001015	0.00488	mg/L	0.001015	20.80%
Al 396.153†	-30.3	-0.0329	mg/L	0.02953	-0.0329	mg/L	0.02953	89.80%
As 188.979†	-19.9	-0.00715	mg/L	0.001386	-0.00715	mg/L	0.001386	19.38%
Ba 233.527†	12501.4	0.216	mg/L	0.0020	0.216	mg/L	0.0020	0.90%
Be 234.861†	12.0	0.00027	mg/L	0.000059	0.00027	mg/L	0.000059	21.97%
B 249.677†	4312.7	0.0654	mg/L	0.00420	0.0654	mg/L	0.00420	6.43%
Ca 227.546†	5333.4	67.1	mg/L	0.61	67.1	mg/L	0.61	0.91%
Cd 228.802†	-3.5	0.00007	mg/L	0.000200	0.00007	mg/L	0.000200	283.22%
Co 228.616†	5.1	-0.00032	mg/L	0.000254	-0.00032	mg/L	0.000254	78.59%
Cr 267.716†	332.4	0.00196	mg/L	0.000453	0.00196	mg/L	0.000453	23.12%
Cu 327.393†	-844.7	-0.00183	mg/L	0.001543	-0.00183	mg/L	0.001543	84.36%
Fe 239.562†	94.2	0.0201	mg/L	0.01321	0.0201	mg/L	0.01321	65.62%
Mg 279.077†	34768.8	12.9	mg/L	0.07	12.9	mg/L	0.07	0.52%
Mn 257.610†	11950.8	0.0183	mg/L	0.00016	0.0183	mg/L	0.00016	0.88%
Mo 202.031†	82.1	0.00789	mg/L	0.000380	0.00789	mg/L	0.000380	4.81%
Ni 231.604†	30.9	0.00024	mg/L	0.000318	0.00024	mg/L	0.000318	130.66%
Pb 220.353†	9.2	0.00162	mg/L	0.002831	0.00162	mg/L	0.002831	174.58%
Sb 206.836†	-1.9	0.00278	mg/L	0.006452	0.00278	mg/L	0.006452	231.90%
Se 196.026†	-3.8	-0.00176	mg/L	0.013516	-0.00176	mg/L	0.013516	766.92%
Si 251.611†	-176101.3	-8.94	mg/L	0.173	-8.94	mg/L	0.173	1.94%
Sn 189.927†	28.5	0.00333	mg/L	0.004384	0.00333	mg/L	0.004384	131.68%
Ti 334.940†	-3623.5	0.00212	mg/L	0.000264	0.00212	mg/L	0.000264	12.46%
Tl 190.801†	-35.8	-0.0312	mg/L	0.00426	-0.0312	mg/L	0.00426	13.66%
V 290.880†	1131.8	0.00753	mg/L	0.000618	0.00753	mg/L	0.000618	8.21%
Zn 206.200†	86.2	-0.00176	mg/L	0.000674	-0.00176	mg/L	0.000674	38.29%
K 766.490†	2029.7	1.30	mg/L	0.044	1.30	mg/L	0.044	3.40%
Na 589.592†	89550.1	11.0	mg/L	0.03	11.0	mg/L	0.03	0.25%
Sr 407.771†	226416.3	0.279	mg/L	0.0009	0.279	mg/L	0.0009	0.34%
Li 670.784†	127.3	0.00064	mg/L	0.001460	0.00064	mg/L	0.001460	226.61%
P 214.914†	2.5	0.00611	mg/L	0.007124	0.00611	mg/L	0.007124	116.51%

Sequence No.: 9 **Autosampler Location: 76**
Sample ID: L1505138604PS WG525234-01 **Date Collected: 5/27/2015 1:41:38 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505138604PS WG525234-01

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Approved: May 28, 2015

Mean Data: L1505138604PS WG525234-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3018847.9						57127.99	1.89%
YRADIAL	193897.4						756.11	0.39%
Ga 417.206	1347301.6						19673.93	1.46%
GaRADIAL	45812.0						475.08	1.04%
Ag 328.068†	65748.0	0.197	mg/L	0.0012	0.197	mg/L	0.0012	0.60%
Al 396.153†	13743.3	4.78	mg/L	0.101	4.78	mg/L	0.101	2.10%
As 188.979†	308.5	0.192	mg/L	0.0032	0.192	mg/L	0.0032	1.65%
Ba 233.527†	39879.1	0.689	mg/L	0.0045	0.689	mg/L	0.0045	0.65%
Be 234.861†	13126.4	0.0238	mg/L	0.00019	0.0238	mg/L	0.00019	0.79%
B 249.677†	63153.6	0.901	mg/L	0.0103	0.901	mg/L	0.0103	1.14%
Ca 227.546†	5311.7	66.8	mg/L	0.47	66.8	mg/L	0.47	0.70%
Cd 228.802†	389.7	0.0231	mg/L	0.00044	0.0231	mg/L	0.00044	1.89%
Co 228.616†	1457.7	0.102	mg/L	0.0011	0.102	mg/L	0.0011	1.08%
Cr 267.716†	34923.1	0.257	mg/L	0.0007	0.257	mg/L	0.0007	0.26%
Cu 327.393†	49806.8	0.234	mg/L	0.0032	0.234	mg/L	0.0032	1.38%
Fe 239.562†	12207.0	2.10	mg/L	0.021	2.10	mg/L	0.021	0.98%
Mg 279.077†	42848.7	15.9	mg/L	0.16	15.9	mg/L	0.16	0.99%
Mn 257.610†	170414.7	0.267	mg/L	0.0008	0.267	mg/L	0.0008	0.32%
Mo 202.031†	5383.7	0.513	mg/L	0.0068	0.513	mg/L	0.0068	1.32%
Ni 231.604†	8082.7	0.252	mg/L	0.0028	0.252	mg/L	0.0028	1.13%
Pb 220.353†	1192.6	0.267	mg/L	0.0051	0.267	mg/L	0.0051	1.90%
Sb 206.836†	651.1	0.565	mg/L	0.0049	0.565	mg/L	0.0049	0.86%
Se 196.026†	118.3	0.190	mg/L	0.0102	0.190	mg/L	0.0102	5.36%
Si 251.611†	-107586.7	-5.53	mg/L	0.166	-5.53	mg/L	0.166	3.00%
Sn 189.927†	3419.6	0.577	mg/L	0.0039	0.577	mg/L	0.0039	0.68%
Ti 334.940†	453273.8	0.494	mg/L	0.0008	0.494	mg/L	0.0008	0.17%
Tl 190.801†	289.6	0.244	mg/L	0.0075	0.244	mg/L	0.0075	3.07%
V 290.880†	97282.0	0.516	mg/L	0.0012	0.516	mg/L	0.0012	0.23%
Zn 206.200†	15884.6	0.552	mg/L	0.0102	0.552	mg/L	0.0102	1.85%
K 766.490†	40062.5	25.4	mg/L	0.30	25.4	mg/L	0.30	1.19%
Na 589.592†	268705.5	33.4	mg/L	0.04	33.4	mg/L	0.04	0.13%
Sr 407.771†	578106.3	0.715	mg/L	0.0100	0.715	mg/L	0.0100	1.40%
Li 670.784†	18953.3	0.494	mg/L	0.0096	0.494	mg/L	0.0096	1.94%
P 214.914†	3436.3	5.39	mg/L	0.110	5.39	mg/L	0.110	2.03%

Sequence No.: 10 **Autosampler Location: 77**
Sample ID: L1505138604DL WG525234-02 **Date Collected: 5/27/2015 1:44:01 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505138604DL WG525234-02

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505138604DL WG525234-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3312085.0						12992.95	0.39%
YRADIAL	204512.2						4725.61	2.31%
Ga 417.206	1554746.0						3039.93	0.20%
GaRADIAL	49732.2						897.37	1.80%
Ag 328.068†	289.8	0.00291	mg/L	0.000455	0.00291	mg/L	0.000455	15.62%
Al 396.153†	-5.8	-0.0241	mg/L	0.00390	-0.0241	mg/L	0.00390	16.19%
As 188.979†	-11.5	-0.00319	mg/L	0.005522	-0.00319	mg/L	0.005522	172.97%
Ba 233.527†	2417.5	0.0416	mg/L	0.00033	0.0416	mg/L	0.00033	0.80%
Be 234.861†	-3.4	0.00024	mg/L	0.000022	0.00024	mg/L	0.000022	9.18%
B 249.677†	4128.5	0.0628	mg/L	0.00263	0.0628	mg/L	0.00263	4.20%
Ca 227.546†	1078.4	13.6	mg/L	0.24	13.6	mg/L	0.24	1.77%
Cd 228.802†	0.5	0.00028	mg/L	0.000233	0.00028	mg/L	0.000233	82.55%
Co 228.616†	-6.6	-0.00110	mg/L	0.000324	-0.00110	mg/L	0.000324	29.45%
Cr 267.716†	87.8	0.00016	mg/L	0.000102	0.00016	mg/L	0.000102	64.38%
Cu 327.393†	-601.6	-0.00070	mg/L	0.001819	-0.00070	mg/L	0.001819	258.18%
Fe 239.562†	15.3	0.00677	mg/L	0.000775	0.00677	mg/L	0.000775	11.45%

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Mg 279.077†	6630.2	2.44	mg/L	0.053	2.44	mg/L	0.053	2.18%
Mn 257.610†	2315.3	0.00320	mg/L	0.000021	0.00320	mg/L	0.000021	0.66%
Mo 202.031†	25.5	0.00250	mg/L	0.001510	0.00250	mg/L	0.001510	60.42%
Ni 231.604†	-3.1	-0.00083	mg/L	0.000473	-0.00083	mg/L	0.000473	57.04%
Pb 220.353†	-6.8	-0.00195	mg/L	0.003621	-0.00195	mg/L	0.003621	185.40%
Sb 206.836†	0.5	0.00485	mg/L	0.007767	0.00485	mg/L	0.007767	160.07%
Se 196.026†	2.5	0.00808	mg/L	0.007495	0.00808	mg/L	0.007495	92.72%
Si 251.611†	9919.0	0.344	mg/L	0.0322	0.344	mg/L	0.0322	9.34%
Sn 189.927†	108.6	0.0169	mg/L	0.00397	0.0169	mg/L	0.00397	23.55%
Ti 334.940†	-847.9	0.00167	mg/L	0.000048	0.00167	mg/L	0.000048	2.85%
Tl 190.801†	-4.1	-0.00486	mg/L	0.004498	-0.00486	mg/L	0.004498	92.56%
V 290.880†	54.0	0.00210	mg/L	0.000381	0.00210	mg/L	0.000381	18.15%
Zn 206.200†	-74.7	-0.00738	mg/L	0.000413	-0.00738	mg/L	0.000413	5.59%
K 766.490†	328.4	0.234	mg/L	0.0710	0.234	mg/L	0.0710	30.36%
Na 589.592†	18119.9	2.24	mg/L	0.026	2.24	mg/L	0.026	1.17%
Sr 407.771†	48171.9	0.0590	mg/L	0.00133	0.0590	mg/L	0.00133	2.25%
Li 670.784†	-41.1	-0.00377	mg/L	0.003107	-0.00377	mg/L	0.003107	82.40%
P 214.914†	-7.1	-0.00898	mg/L	0.002809	-0.00898	mg/L	0.002809	31.27%

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Sequence No.: 11 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 5/27/2015 1:47:21 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3226772.1						43962.96	1.36%
YRADIAL	202316.8						1523.85	0.75%
Ga 417.206	1379074.0						18604.76	1.35%
GaRADIAL	47803.4						41.47	0.09%
Ag 328.068†	130480.4	0.388	mg/L	0.0020	0.388	mg/L	0.0020	0.52%
QC value within limits for Ag 328.068 Recovery = 97.04%								
Al 396.153†	28502.8	9.94	mg/L	0.097	9.94	mg/L	0.097	0.97%
QC value within limits for Al 396.153 Recovery = 99.36%								
As 188.979†	627.8	0.385	mg/L	0.0064	0.385	mg/L	0.0064	1.66%
QC value within limits for As 188.979 Recovery = 96.23%								
Ba 233.527†	56681.2	0.980	mg/L	0.0052	0.980	mg/L	0.0052	0.53%
QC value within limits for Ba 233.527 Recovery = 98.00%								
Be 234.861†	26081.2	0.0470	mg/L	0.00035	0.0470	mg/L	0.00035	0.74%
QC value within limits for Be 234.861 Recovery = 94.01%								
B 249.677†	29131.1	0.428	mg/L	0.0061	0.428	mg/L	0.0061	1.42%
QC value less than the lower limit for B 249.677 Recovery = 85.63%								
Ca 227.546†	734.2	9.35	mg/L	0.241	9.35	mg/L	0.241	2.57%
QC value within limits for Ca 227.546 Recovery = 93.48%								
Cd 228.802†	787.1	0.0463	mg/L	0.00033	0.0463	mg/L	0.00033	0.72%
QC value within limits for Cd 228.802 Recovery = 92.66%								
Co 228.616†	2825.0	0.197	mg/L	0.0028	0.197	mg/L	0.0028	1.41%
QC value within limits for Co 228.616 Recovery = 98.67%								
Cr 267.716†	67385.0	0.496	mg/L	0.0013	0.496	mg/L	0.0013	0.26%
QC value within limits for Cr 267.716 Recovery = 99.15%								
Cu 327.393†	102790.9	0.480	mg/L	0.0023	0.480	mg/L	0.0023	0.47%
QC value within limits for Cu 327.393 Recovery = 95.98%								
Fe 239.562†	23725.0	4.08	mg/L	0.038	4.08	mg/L	0.038	0.94%
QC value within limits for Fe 239.562 Recovery = 102.02%								
Mg 279.077†	27744.4	10.3	mg/L	0.08	10.3	mg/L	0.08	0.79%
QC value within limits for Mg 279.077 Recovery = 102.62%								
Mn 257.610†	316522.2	0.496	mg/L	0.0019	0.496	mg/L	0.0019	0.38%
QC value within limits for Mn 257.610 Recovery = 99.15%								
Mo 202.031†	10228.5	0.974	mg/L	0.0114	0.974	mg/L	0.0114	1.17%
QC value within limits for Mo 202.031 Recovery = 97.41%								
Ni 231.604†	15786.4	0.493	mg/L	0.0050	0.493	mg/L	0.0050	1.01%
QC value within limits for Ni 231.604 Recovery = 98.69%								
Pb 220.353†	2221.0	0.498	mg/L	0.0078	0.498	mg/L	0.0078	1.57%

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   QC value within limits for Pb 220.353  Recovery = 99.66%
Sb 206.836†            1311.0        1.13 mg/L        0.011        1.13 mg/L        0.011   1.00%
   QC value within limits for Sb 206.836  Recovery = 94.41%
Se 196.026†             249.9       0.397 mg/L       0.0097       0.397 mg/L       0.0097   2.46%
   QC value within limits for Se 196.026  Recovery = 99.24%
Si 251.611†         -183874.5       -9.34 mg/L        0.130       -9.34 mg/L        0.130   1.39%
   QC value less than the lower limit for Si 251.611  Recovery = -186.75%
Sn 189.927†            5978.2        1.01 mg/L        0.012        1.01 mg/L        0.012   1.23%
   QC value within limits for Sn 189.927  Recovery = 100.93%
Ti 334.940†          909170.0       0.981 mg/L       0.0030       0.981 mg/L       0.0030   0.30%
   QC value within limits for Ti 334.940  Recovery = 98.14%
Tl 190.801†             595.6       0.503 mg/L       0.0074       0.503 mg/L       0.0074   1.47%
   QC value within limits for Tl 190.801  Recovery = 100.58%
V 290.880†           186218.2       0.987 mg/L       0.0036       0.987 mg/L       0.0036   0.36%
   QC value within limits for V 290.880  Recovery = 98.72%
Zn 206.200†           29010.0        1.01 mg/L        0.010        1.01 mg/L        0.010   0.99%
   QC value within limits for Zn 206.200  Recovery = 101.16%
K 766.490†            77484.5        49.4 mg/L         0.29        49.4 mg/L         0.29   0.58%
   QC value within limits for K 766.490  Recovery = 98.73%
Na 589.592†          401158.3        50.4 mg/L         1.48        50.4 mg/L         1.48   2.94%
   QC value within limits for Na 589.592  Recovery = 100.79%
Sr 407.771†          807873.3        1.00 mg/L        0.041        1.00 mg/L        0.041   4.12%
   QC value within limits for Sr 407.771  Recovery = 100.20%
Li 670.784†           38642.3        1.01 mg/L        0.008        1.01 mg/L        0.008   0.81%
   QC value within limits for Li 670.784  Recovery = 101.00%
P 214.914†             6274.4        9.84 mg/L        0.120        9.84 mg/L        0.120   1.22%
   QC value within limits for P 214.914  Recovery = 98.40%
QC Failed.  Continue with analysis.

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Sequence No.: 12                                   Autosampler Location: 1
Sample ID: CCB                                     Date Collected: 5/27/2015 1:49:49 PM
Analyst:                                           Data Type: Original
Initial Sample Wt:                                 Initial Sample Vol:
Dilution:                                          Sample Prep Vol:

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Nebulizer Parameters: CCB
Analyte                 Back Pressure     Flow
All                     231.0 kPa         0.40 L/min

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Mean Data: CCB
                   Mean Corrected         Calib.                          Sample
Analyte               Intensity      Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029           3461045.4                                                      20462.16   0.59%
YRADIAL              216270.1                                                       1057.28   0.49%
Ga 417.206          1612417.7                                                       6990.04   0.43%
GaRADIAL              52669.1                                                        571.57   1.09%
Ag 328.068†               9.5     0.00210 mg/L      0.000380     0.00210 mg/L      0.000380  18.14%
   QC value within limits for Ag 328.068  Recovery = Not calculated
Al 396.153†             -14.4     -0.0270 mg/L       0.00808     -0.0270 mg/L       0.00808  29.89%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†              -3.8     0.00127 mg/L      0.002394     0.00127 mg/L      0.002394 188.27%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†               2.1    -0.00021 mg/L      0.000359    -0.00021 mg/L      0.000359 172.66%
   QC value within limits for Ba 233.527  Recovery = Not calculated
Be 234.861†             -12.8     0.00022 mg/L      0.000030     0.00022 mg/L      0.000030  13.23%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†             1271.6      0.0226 mg/L       0.00296      0.0226 mg/L       0.00296  13.10%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†              -7.8     -0.0421 mg/L       0.06748     -0.0421 mg/L       0.06748 160.43%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†              -0.5     0.00020 mg/L      0.000142     0.00020 mg/L      0.000142  70.71%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†               4.3    -0.00033 mg/L      0.000432    -0.00033 mg/L      0.000432 132.29%
   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†              60.2    -0.00005 mg/L      0.000497    -0.00005 mg/L      0.000497 >999.9%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†            -167.7     0.00130 mg/L      0.000087     0.00130 mg/L      0.000087   6.65%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†              14.6     0.00670 mg/L      0.001574     0.00670 mg/L      0.001574  23.48%
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   QC value within limits for Fe 239.562  Recovery = Not calculated
Mg 279.077†              16.2    -0.00852 mg/L      0.004751    -0.00852 mg/L      0.004751  55.74%
   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†             -17.0    -0.00045 mg/L      0.000019    -0.00045 mg/L      0.000019   4.26%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†               8.1     0.00084 mg/L      0.000807     0.00084 mg/L      0.000807  96.12%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†              -2.6    -0.00082 mg/L      0.000399    -0.00082 mg/L      0.000399  48.85%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†              -2.8    -0.00107 mg/L      0.005259    -0.00107 mg/L      0.005259 492.18%
   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†              -7.0    -0.00161 mg/L      0.002928    -0.00161 mg/L      0.002928 181.87%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†               3.1     0.00903 mg/L      0.014187     0.00903 mg/L      0.014187 157.18%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†           -19793.0       -1.14 mg/L         0.180       -1.14 mg/L         0.180  15.78%
   QC value less than the lower limit for Si 251.611  Recovery = Not calculated
Sn 189.927†              38.4     0.00500 mg/L      0.001665     0.00500 mg/L      0.001665  33.31%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†              81.5     0.00180 mg/L      0.000335     0.00180 mg/L      0.000335  18.61%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†               3.6     0.00159 mg/L      0.006380     0.00159 mg/L      0.006380 400.66%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†             -435.9    -0.00043 mg/L      0.000444    -0.00043 mg/L      0.000444 104.00%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†               1.4    -0.00473 mg/L      0.000438    -0.00473 mg/L      0.000438   9.26%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†              -22.7      0.0145 mg/L       0.07210      0.0145 mg/L       0.07210 498.74%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†             157.3      0.0398 mg/L       0.01226      0.0398 mg/L       0.01226  30.80%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†             189.2    -0.00010 mg/L      0.000149    -0.00010 mg/L      0.000149 149.33%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†            -100.4    -0.00533 mg/L      0.002948    -0.00533 mg/L      0.002948  55.36%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†                3.7     0.00790 mg/L      0.001518     0.00790 mg/L      0.001518  19.22%
   QC value within limits for P 214.914  Recovery = Not calculated
QC Failed.  Continue with analysis.

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**Sequence No.: 13**                                  **Autosampler Location: 78**
**Sample ID: L1505138801**                            **Date Collected: 5/27/2015 1:53:10 PM**
**Analyst: KHR**                                      **Data Type: Original**
**Initial Sample Wt:**                                **Initial Sample Vol:**
**Dilution:**                                         **Sample Prep Vol:**

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**Nebulizer Parameters: L1505138801**
**Analyte**                **Back Pressure**    **Flow**
All                      231.0 kPa         0.40 L/min

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**Mean Data: L1505138801**
                      **Mean Corrected**        **Calib.**                          **Sample**
**Analyte**              **Intensity**     **Conc. Units**      **Std.Dev.**      **Conc. Units**      **Std.Dev.**   **RSD**
Y 371.029              3308522.6                                                                    31179.51   0.94%
YRADIAL                 205724.8                                                                     4184.15   2.03%
Ga 417.206             1400724.5                                                                    11394.34   0.81%
GaRADIAL                 48078.1                                                                      907.79   1.89%
Ag 328.068†                434.8     0.00323 mg/L      0.000139     0.00323 mg/L      0.000139   4.30%
Al 396.153†                 74.5     0.00402 mg/L      0.034077     0.00402 mg/L      0.034077 847.42%
As 188.979†                -21.0    -0.00849 mg/L      0.005428    -0.00849 mg/L      0.005428  63.97%
Ba 233.527†            126851.3        2.19 mg/L         0.018        2.19 mg/L         0.018   0.83%
Be 234.861†                -85.6     0.00007 mg/L      0.000032     0.00007 mg/L      0.000032  43.19%
B 249.677†               4536.1      0.0689 mg/L       0.00220      0.0689 mg/L       0.00220   3.19%
Ca 227.546†              2931.1        36.9 mg/L          0.46        36.9 mg/L          0.46   1.26%
Cd 228.802†                 9.8     0.00087 mg/L      0.000425     0.00087 mg/L      0.000425  48.73%
Co 228.616†                -5.0    -0.00171 mg/L      0.000264    -0.00171 mg/L      0.000264  15.42%
Cr 267.716†               174.5     0.00080 mg/L      0.000454     0.00080 mg/L      0.000454  57.05%
Cu 327.393†              1981.4      0.0113 mg/L       0.00076      0.0113 mg/L       0.00076   6.77%
Fe 239.562†               567.0       0.101 mg/L        0.0045       0.101 mg/L        0.0045   4.39%
Mg 279.077†             20765.4        7.68 mg/L         0.090        7.68 mg/L         0.090   1.17%
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Mn 257.610†	36479.7	0.0568	mg/L	0.00066	0.0568	mg/L	0.00066	1.16%
Mo 202.031†	35.8	0.00349	mg/L	0.000272	0.00349	mg/L	0.000272	7.78%
Ni 231.604†	37.8	0.00045	mg/L	0.000453	0.00045	mg/L	0.000453	100.25%
Pb 220.353†	16.1	0.00313	mg/L	0.001371	0.00313	mg/L	0.001371	43.86%
Sb 206.836†	-0.4	0.00414	mg/L	0.008732	0.00414	mg/L	0.008732	210.95%
Se 196.026†	-3.0	-0.00052	mg/L	0.029667	-0.00052	mg/L	0.029667	>999.9%
Si 251.611†	-146435.3	-7.46	mg/L	0.142	-7.46	mg/L	0.142	1.90%
Sn 189.927†	-26.4	-0.00596	mg/L	0.002657	-0.00596	mg/L	0.002657	44.59%
Ti 334.940†	-2640.2	0.00124	mg/L	0.000288	0.00124	mg/L	0.000288	23.30%
Tl 190.801†	-8.3	-0.00838	mg/L	0.003910	-0.00838	mg/L	0.003910	46.68%
V 290.880†	-440.8	-0.00072	mg/L	0.000752	-0.00072	mg/L	0.000752	104.39%
Zn 206.200†	2652.1	0.0877	mg/L	0.00151	0.0877	mg/L	0.00151	1.72%
K 766.490†	1940.5	1.18	mg/L	0.058	1.18	mg/L	0.058	4.95%
Na 589.592†	581590.7	74.0	mg/L	0.75	74.0	mg/L	0.75	1.02%
Sr 407.771†	591060.8	0.732	mg/L	0.0053	0.732	mg/L	0.0053	0.73%
Li 670.784†	462.9	0.00944	mg/L	0.004490	0.00944	mg/L	0.004490	47.57%
P 214.914†	0.1	0.00231	mg/L	0.016624	0.00231	mg/L	0.016624	718.89%

Sequence No.: 14 **Autosampler Location: 79**
Sample ID: L1505139101 **Date Collected: 5/27/2015 1:55:34 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505139101

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505139101

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3305486.8						39694.75	1.20%
YRADIAL	205131.7						1580.56	0.77%
Ga 417.206	1422940.5						24156.52	1.70%
GaRADIAL	49407.7						380.07	0.77%
Ag 328.068†	715.2	0.00425	mg/L	0.000606	0.00425	mg/L	0.000606	14.25%
Al 396.153†	76.9	0.00483	mg/L	0.008402	0.00483	mg/L	0.008402	174.02%
As 188.979†	-21.3	-0.00817	mg/L	0.008093	-0.00817	mg/L	0.008093	99.12%
Ba 233.527†	7719.3	0.133	mg/L	0.0021	0.133	mg/L	0.0021	1.60%
Be 234.861†	-43.0	0.00007	mg/L	0.000023	0.00007	mg/L	0.000023	33.63%
B 249.677†	2401.9	0.0403	mg/L	0.00235	0.0403	mg/L	0.00235	5.84%
Ca 227.546†	4476.6	56.3	mg/L	1.43	56.3	mg/L	1.43	2.54%
Cd 228.802†	-1.6	0.00019	mg/L	0.000128	0.00019	mg/L	0.000128	68.39%
Co 228.616†	-3.0	-0.00087	mg/L	0.000427	-0.00087	mg/L	0.000427	48.92%
Cr 267.716†	229.7	0.00119	mg/L	0.000090	0.00119	mg/L	0.000090	7.55%
Cu 327.393†	-783.0	-0.00148	mg/L	0.000354	-0.00148	mg/L	0.000354	23.86%
Fe 239.562†	2786.5	0.483	mg/L	0.0143	0.483	mg/L	0.0143	2.97%
Mg 279.077†	28675.0	10.6	mg/L	0.34	10.6	mg/L	0.34	3.16%
Mn 257.610†	124795.5	0.195	mg/L	0.0027	0.195	mg/L	0.0027	1.39%
Mo 202.031†	62.8	0.00609	mg/L	0.000418	0.00609	mg/L	0.000418	6.87%
Ni 231.604†	-21.5	-0.00140	mg/L	0.000530	-0.00140	mg/L	0.000530	37.78%
Pb 220.353†	30.6	0.00628	mg/L	0.004139	0.00628	mg/L	0.004139	65.89%
Sb 206.836†	-1.6	0.00311	mg/L	0.003559	0.00311	mg/L	0.003559	114.60%
Se 196.026†	3.7	0.00989	mg/L	0.004816	0.00989	mg/L	0.004816	48.70%
Si 251.611†	-182115.3	-9.24	mg/L	0.032	-9.24	mg/L	0.032	0.34%
Sn 189.927†	-20.4	-0.00494	mg/L	0.001062	-0.00494	mg/L	0.001062	21.52%
Ti 334.940†	-4157.0	0.00085	mg/L	0.000286	0.00085	mg/L	0.000286	33.61%
Tl 190.801†	-14.2	-0.0135	mg/L	0.01246	-0.0135	mg/L	0.01246	92.36%
V 290.880†	-415.8	-0.00051	mg/L	0.001616	-0.00051	mg/L	0.001616	317.59%
Zn 206.200†	277.8	0.00496	mg/L	0.000418	0.00496	mg/L	0.000418	8.44%
K 766.490†	1703.3	1.08	mg/L	0.096	1.08	mg/L	0.096	8.92%
Na 589.592†	226922.2	28.2	mg/L	0.50	28.2	mg/L	0.50	1.79%
Sr 407.771†	435213.6	0.538	mg/L	0.0113	0.538	mg/L	0.0113	2.09%
Li 670.784†	485.2	0.0100	mg/L	0.00252	0.0100	mg/L	0.00252	25.14%
P 214.914†	-6.6	-0.00819	mg/L	0.017377	-0.00819	mg/L	0.017377	212.20%

Sequence No.: 15 **Autosampler Location: 80**
Sample ID: L1505139102 **Date Collected: 5/27/2015 1:57:57 PM**

Approved: May 28, 2015

Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505139102

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505139102

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3456946.9						49179.12	1.42%
YRADIAL	217569.6						2282.86	1.05%
Ga 417.206	1557405.2						20562.88	1.32%
GaRADIAL	49848.4						452.44	0.91%
Ag 328.068†	467.8	0.00372	mg/L	0.000765	0.00372	mg/L	0.000765	20.56%
Al 396.153†	519.7	0.160	mg/L	0.0102	0.160	mg/L	0.0102	6.37%
As 188.979†	-11.9	-0.00299	mg/L	0.001238	-0.00299	mg/L	0.001238	41.45%
Ba 233.527†	1751.0	0.0300	mg/L	0.00028	0.0300	mg/L	0.00028	0.94%
Be 234.861†	-0.5	0.00009	mg/L	0.000058	0.00009	mg/L	0.000058	63.05%
B 249.677†	451.4	0.0138	mg/L	0.00347	0.0138	mg/L	0.00347	25.18%
Ca 227.546†	1965.1	24.7	mg/L	0.16	24.7	mg/L	0.16	0.65%
Cd 228.802†	1.7	0.00036	mg/L	0.000289	0.00036	mg/L	0.000289	80.66%
Co 228.616†	-0.7	-0.00071	mg/L	0.000477	-0.00071	mg/L	0.000477	67.12%
Cr 267.716†	47.4	-0.00016	mg/L	0.000551	-0.00016	mg/L	0.000551	345.48%
Cu 327.393†	-903.3	-0.00199	mg/L	0.001098	-0.00199	mg/L	0.001098	55.05%
Fe 239.562†	4229.6	0.731	mg/L	0.0174	0.731	mg/L	0.0174	2.38%
Mg 279.077†	11373.4	4.20	mg/L	0.118	4.20	mg/L	0.118	2.81%
Mn 257.610†	181290.0	0.284	mg/L	0.0003	0.284	mg/L	0.0003	0.12%
Mo 202.031†	36.3	0.00358	mg/L	0.000444	0.00358	mg/L	0.000444	12.42%
Ni 231.604†	-0.9	-0.00076	mg/L	0.001044	-0.00076	mg/L	0.001044	137.26%
Pb 220.353†	5.7	0.00068	mg/L	0.002315	0.00068	mg/L	0.002315	338.23%
Sb 206.836†	-8.5	-0.00286	mg/L	0.000871	-0.00286	mg/L	0.000871	30.43%
Se 196.026†	3.4	0.00937	mg/L	0.001792	0.00937	mg/L	0.001792	19.13%
Si 251.611†	-255410.9	-12.9	mg/L	0.16	-12.9	mg/L	0.16	1.25%
Sn 189.927†	-43.5	-0.00884	mg/L	0.001322	-0.00884	mg/L	0.001322	14.96%
Ti 334.940†	2749.2	0.00626	mg/L	0.003263	0.00626	mg/L	0.003263	52.10%
Tl 190.801†	-10.2	-0.0102	mg/L	0.00997	-0.0102	mg/L	0.00997	98.00%
V 290.880†	-166.8	0.00103	mg/L	0.001850	0.00103	mg/L	0.001850	180.28%
Zn 206.200†	-152.7	-0.0100	mg/L	0.00049	-0.0100	mg/L	0.00049	4.93%
K 766.490†	978.6	0.644	mg/L	0.0488	0.644	mg/L	0.0488	7.58%
Na 589.592†	23694.9	2.92	mg/L	0.045	2.92	mg/L	0.045	1.55%
Sr 407.771†	76037.2	0.0932	mg/L	0.00062	0.0932	mg/L	0.00062	0.66%
Li 670.784†	-31.8	-0.00352	mg/L	0.005662	-0.00352	mg/L	0.005662	160.65%
P 214.914†	16.0	0.0272	mg/L	0.00456	0.0272	mg/L	0.00456	16.73%

Sequence No.: 16 **Autosampler Location: 81**
Sample ID: L1505139302 **Date Collected: 5/27/2015 2:00:22 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505139302

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505139302

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3328157.4						48524.50	1.46%
YRADIAL	211287.0						5006.11	2.37%
Ga 417.206	1442936.1						17527.40	1.21%
GaRADIAL	49956.8						1179.22	2.36%
Ag 328.068†	696.3	0.00491	mg/L	0.000805	0.00491	mg/L	0.000805	16.38%
Al 396.153†	2965.4	1.02	mg/L	0.037	1.02	mg/L	0.037	3.67%
As 188.979†	-20.4	-0.00633	mg/L	0.005941	-0.00633	mg/L	0.005941	93.81%
Ba 233.527†	4047.0	0.0697	mg/L	0.00048	0.0697	mg/L	0.00048	0.70%

Approved: May 28, 2015

Be 234.861†	190.7	0.00015	mg/L	0.000057	0.00015	mg/L	0.000057	37.49%
B 249.677†	10440.9	0.158	mg/L	0.0003	0.158	mg/L	0.0003	0.22%
Ca 227.546†	6359.8	80.0	mg/L	0.47	80.0	mg/L	0.47	0.59%
Cd 228.802†	1.6	0.00038	mg/L	0.000057	0.00038	mg/L	0.000057	15.05%
Co 228.616†	1.9	-0.00041	mg/L	0.000665	-0.00041	mg/L	0.000665	163.04%
Cr 267.716†	116728.6	0.859	mg/L	0.0028	0.859	mg/L	0.0028	0.33%
Cu 327.393†	-365.1	0.00071	mg/L	0.000900	0.00071	mg/L	0.000900	126.29%
Fe 239.562†	11204.2	1.93	mg/L	0.013	1.93	mg/L	0.013	0.70%
Mg 279.077†	58724.6	21.7	mg/L	0.28	21.7	mg/L	0.28	1.28%
Mn 257.610†	163981.5	0.257	mg/L	0.0015	0.257	mg/L	0.0015	0.59%
Mo 202.031†	71.0	0.00685	mg/L	0.001305	0.00685	mg/L	0.001305	19.04%
Ni 231.604†	85.4	0.00195	mg/L	0.000709	0.00195	mg/L	0.000709	36.38%
Pb 220.353†	41.6	0.00881	mg/L	0.001944	0.00881	mg/L	0.001944	22.08%
Sb 206.836†	17.0	0.0119	mg/L	0.00836	0.0119	mg/L	0.00836	70.31%
Se 196.026†	-0.9	0.00258	mg/L	0.003233	0.00258	mg/L	0.003233	125.45%
Si 251.611†	-182722.7	-9.27	mg/L	0.095	-9.27	mg/L	0.095	1.02%
Sn 189.927†	-44.7	-0.00904	mg/L	0.000270	-0.00904	mg/L	0.000270	2.98%
Ti 334.940†	10002.9	0.0174	mg/L	0.00002	0.0174	mg/L	0.00002	0.12%
Tl 190.801†	-21.3	-0.0193	mg/L	0.00318	-0.0193	mg/L	0.00318	16.52%
V 290.880†	-874.7	-0.00295	mg/L	0.000380	-0.00295	mg/L	0.000380	12.90%
Zn 206.200†	644.3	0.0249	mg/L	0.00027	0.0249	mg/L	0.00027	1.10%
K 766.490†	4507.4	2.85	mg/L	0.005	2.85	mg/L	0.005	0.18%
Na 589.592†	199208.1	24.7	mg/L	0.67	24.7	mg/L	0.67	2.70%
Sr 407.771†	184044.3	0.226	mg/L	0.0054	0.226	mg/L	0.0054	2.38%
Li 670.784†	70.8	-0.00084	mg/L	0.002755	-0.00084	mg/L	0.002755	328.80%
P 214.914†	41.7	0.0676	mg/L	0.02811	0.0676	mg/L	0.02811	41.60%

Sequence No.: 17
Sample ID: L1505139303
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 82
Date Collected: 5/27/2015 2:02:46 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505139303

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505139303

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3380927.8						50785.99	1.50%
YRADIAL	214447.5						1326.84	0.62%
Ga 417.206	1471802.2						22919.92	1.56%
GaRADIAL	51571.7						455.68	0.88%
Ag 328.068†	1174.3	0.00546	mg/L	0.000912	0.00546	mg/L	0.000912	16.71%
Al 396.153†	-1.2	-0.0226	mg/L	0.01046	-0.0226	mg/L	0.01046	46.25%
As 188.979†	-28.6	-0.0118	mg/L	0.00173	-0.0118	mg/L	0.00173	14.59%
Ba 233.527†	2744.3	0.0472	mg/L	0.00122	0.0472	mg/L	0.00122	2.58%
Be 234.861†	-108.0	0.00007	mg/L	0.000024	0.00007	mg/L	0.000024	34.32%
B 249.677†	11199.4	0.161	mg/L	0.0012	0.161	mg/L	0.0012	0.77%
Ca 227.546†	6329.4	79.6	mg/L	1.63	79.6	mg/L	1.63	2.05%
Cd 228.802†	-2.3	0.00017	mg/L	0.000158	0.00017	mg/L	0.000158	93.13%
Co 228.616†	-1.2	-0.00054	mg/L	0.001152	-0.00054	mg/L	0.001152	213.13%
Cr 267.716†	111812.1	0.822	mg/L	0.0060	0.822	mg/L	0.0060	0.73%
Cu 327.393†	-1006.9	-0.00256	mg/L	0.000510	-0.00256	mg/L	0.000510	19.94%
Fe 239.562†	39.3	0.0105	mg/L	0.00130	0.0105	mg/L	0.00130	12.31%
Mg 279.077†	56877.9	21.1	mg/L	0.11	21.1	mg/L	0.11	0.53%
Mn 257.610†	1022.5	0.00118	mg/L	0.000033	0.00118	mg/L	0.000033	2.77%
Mo 202.031†	60.7	0.00584	mg/L	0.001202	0.00584	mg/L	0.001202	20.56%
Ni 231.604†	-7.8	-0.00097	mg/L	0.000372	-0.00097	mg/L	0.000372	38.31%
Pb 220.353†	29.4	0.00608	mg/L	0.001450	0.00608	mg/L	0.001450	23.85%
Sb 206.836†	12.9	0.00858	mg/L	0.005547	0.00858	mg/L	0.005547	64.62%
Se 196.026†	-5.2	-0.00404	mg/L	0.006481	-0.00404	mg/L	0.006481	160.34%
Si 251.611†	-221225.6	-11.2	mg/L	0.07	-11.2	mg/L	0.07	0.60%
Sn 189.927†	-54.4	-0.0107	mg/L	0.00180	-0.0107	mg/L	0.00180	16.86%
Ti 334.940†	-5619.8	0.00053	mg/L	0.000154	0.00053	mg/L	0.000154	29.29%
Tl 190.801†	-20.0	-0.0181	mg/L	0.00310	-0.0181	mg/L	0.00310	17.13%
V 290.880†	-1560.3	-0.00692	mg/L	0.000685	-0.00692	mg/L	0.000685	9.90%
Zn 206.200†	-199.4	-0.00502	mg/L	0.000330	-0.00502	mg/L	0.000330	6.58%

Approved: May 28, 2015

K 766.490†	3973.9	2.51	mg/L	0.038	2.51	mg/L	0.038	1.51%
Na 589.592†	195731.6	24.2	mg/L	0.21	24.2	mg/L	0.21	0.85%
Sr 407.771†	179788.8	0.220	mg/L	0.0018	0.220	mg/L	0.0018	0.83%
Li 670.784†	186.3	0.00219	mg/L	0.000222	0.00219	mg/L	0.000222	10.12%
P 214.914†	2.5	0.00604	mg/L	0.007087	0.00604	mg/L	0.007087	117.31%

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Sequence No.: 18 **Autosampler Location: 83**
Sample ID: L1505139304 WG525038-01 **Date Collected: 5/27/2015 2:06:10 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505139304 WG525038-01

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505139304 WG525038-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3195796.8						19169.64	0.60%
YRADIAL	204897.8						2649.40	1.29%
Ga 417.206	1324744.4						11079.16	0.84%
GaRADIAL	48101.0						1284.84	2.67%
Ag 328.068†	3227.5	0.0117	mg/L	0.00092	0.0117	mg/L	0.00092	7.89%
Al 396.153†	210.1	0.0514	mg/L	0.02910	0.0514	mg/L	0.02910	56.61%
As 188.979†	-32.2	-0.0103	mg/L	0.00741	-0.0103	mg/L	0.00741	71.97%
Ba 233.527†	988.4	0.0168	mg/L	0.00040	0.0168	mg/L	0.00040	2.38%
Be 234.861†	-80.4	0.00000	mg/L	0.000059	0.00000	mg/L	0.000059	>999.9%
B 249.677†	291852.1	4.12	mg/L	0.055	4.12	mg/L	0.055	1.33%
Ca 227.546†	20631.1	259	mg/L	2.2	259	mg/L	2.2	0.84%
Cd 228.802†	4.6	0.00061	mg/L	0.000420	0.00061	mg/L	0.000420	68.97%
Co 228.616†	40.3	0.00224	mg/L	0.000334	0.00224	mg/L	0.000334	14.95%
Cr 267.716†	658.5	0.00433	mg/L	0.000489	0.00433	mg/L	0.000489	11.29%
Cu 327.393†	-1305.1	-0.00395	mg/L	0.000428	-0.00395	mg/L	0.000428	10.83%
Fe 239.562†	4272.0	0.737	mg/L	0.0244	0.737	mg/L	0.0244	3.32%
Mg 279.077†	240955.8	89.3	mg/L	0.44	89.3	mg/L	0.44	0.49%
Mn 257.610†	529968.2	0.830	mg/L	0.0094	0.830	mg/L	0.0094	1.13%
Mo 202.031†	101.7	0.00991	mg/L	0.001351	0.00991	mg/L	0.001351	13.63%
Ni 231.604†	29.2	0.00019	mg/L	0.000756	0.00019	mg/L	0.000756	405.32%
Pb 220.353†	42.4	0.00854	mg/L	0.001681	0.00854	mg/L	0.001681	19.68%
Sb 206.836†	-9.8	-0.00404	mg/L	0.002609	-0.00404	mg/L	0.002609	64.63%
Se 196.026†	-18.5	-0.0251	mg/L	0.01338	-0.0251	mg/L	0.01338	53.39%
Si 251.611†	-85150.7	-4.40	mg/L	0.093	-4.40	mg/L	0.093	2.11%
Sn 189.927†	-65.3	-0.0125	mg/L	0.00137	-0.0125	mg/L	0.00137	10.90%
Ti 334.940†	-15515.7	0.00165	mg/L	0.000387	0.00165	mg/L	0.000387	23.55%
Tl 190.801†	-29.2	-0.0267	mg/L	0.00360	-0.0267	mg/L	0.00360	13.51%
V 290.880†	-2758.1	-0.0149	mg/L	0.00097	-0.0149	mg/L	0.00097	6.50%
Zn 206.200†	-128.6	-0.00916	mg/L	0.000249	-0.00916	mg/L	0.000249	2.71%
K 766.490†	3659.7	2.20	mg/L	0.069	2.20	mg/L	0.069	3.16%
Na 589.592†	1058425.7	140	mg/L	5.4	140	mg/L	5.4	3.85%
Sr 407.771†	273369.8	0.331	mg/L	0.0005	0.331	mg/L	0.0005	0.16%
Li 670.784†	16876.1	0.440	mg/L	0.0104	0.440	mg/L	0.0104	2.36%
P 214.914†	18.4	0.0311	mg/L	0.00714	0.0311	mg/L	0.00714	22.96%

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Sequence No.: 19 **Autosampler Location: 84**
Sample ID: L1505139305 WG525038-02 **Date Collected: 5/27/2015 2:08:33 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505139305 WG525038-02

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505139305 WG525038-02

Analyte	Mean Corrected	Calib.	Sample

Approved: May 28, 2015

Kym H. Rhoden

Analyte	Intensity	Conc.	Units	Std.Dev.	Conc.	Units	Std.Dev.	RSD
Y 371.029	3202165.5						64828.24	2.02%
YRADIAL	205065.4						3146.78	1.53%
Ga 417.206	1320057.2						26069.16	1.97%
GaRADIAL	48423.2						653.66	1.35%
Ag 328.068†	3023.6	0.0110	mg/L	0.00057	0.0110	mg/L	0.00057	5.23%
Al 396.153†	37.0	-0.00931	mg/L	0.019738	-0.00931	mg/L	0.019738	212.02%
As 188.979†	-37.8	-0.0138	mg/L	0.00587	-0.0138	mg/L	0.00587	42.67%
Ba 233.527†	776.4	0.0132	mg/L	0.00054	0.0132	mg/L	0.00054	4.10%
Be 234.861†	-81.1	0.00005	mg/L	0.000057	0.00005	mg/L	0.000057	106.01%
B 249.677†	294387.6	4.15	mg/L	0.044	4.15	mg/L	0.044	1.07%
Ca 227.546†	20778.1	261	mg/L	4.5	261	mg/L	4.5	1.71%
Cd 228.802†	16.1	0.00131	mg/L	0.000493	0.00131	mg/L	0.000493	37.63%
Co 228.616†	16.2	0.00055	mg/L	0.000410	0.00055	mg/L	0.000410	74.43%
Cr 267.716†	477.3	0.00300	mg/L	0.000314	0.00300	mg/L	0.000314	10.47%
Cu 327.393†	-1506.3	-0.00491	mg/L	0.000698	-0.00491	mg/L	0.000698	14.21%
Fe 239.562†	2975.9	0.514	mg/L	0.0167	0.514	mg/L	0.0167	3.25%
Mg 279.077†	236516.3	87.6	mg/L	0.79	87.6	mg/L	0.79	0.91%
Mn 257.610†	509495.1	0.798	mg/L	0.0089	0.798	mg/L	0.0089	1.12%
Mo 202.031†	95.6	0.00933	mg/L	0.001521	0.00933	mg/L	0.001521	16.31%
Ni 231.604†	15.3	-0.00025	mg/L	0.000697	-0.00025	mg/L	0.000697	283.01%
Pb 220.353†	44.1	0.00894	mg/L	0.002959	0.00894	mg/L	0.002959	33.11%
Sb 206.836†	-3.0	0.00189	mg/L	0.011990	0.00189	mg/L	0.011990	635.32%
Se 196.026†	-10.3	-0.0122	mg/L	0.00616	-0.0122	mg/L	0.00616	50.32%
Si 251.611†	-86430.9	-4.46	mg/L	0.197	-4.46	mg/L	0.197	4.41%
Sn 189.927†	-56.6	-0.0111	mg/L	0.00306	-0.0111	mg/L	0.00306	27.64%
Ti 334.940†	-16606.0	0.00059	mg/L	0.000201	0.00059	mg/L	0.000201	34.15%
Tl 190.801†	-27.2	-0.0250	mg/L	0.00186	-0.0250	mg/L	0.00186	7.47%
V 290.880†	-2891.6	-0.0156	mg/L	0.00256	-0.0156	mg/L	0.00256	16.41%
Zn 206.200†	-134.4	-0.00940	mg/L	0.000316	-0.00940	mg/L	0.000316	3.36%
K 766.490†	3424.2	2.05	mg/L	0.084	2.05	mg/L	0.084	4.07%
Na 589.592†	1038203.7	137	mg/L	1.1	137	mg/L	1.1	0.84%
Sr 407.771†	268461.2	0.325	mg/L	0.0027	0.325	mg/L	0.0027	0.82%
Li 670.784†	16679.5	0.434	mg/L	0.0070	0.434	mg/L	0.0070	1.61%
P 214.914†	21.4	0.0358	mg/L	0.01585	0.0358	mg/L	0.01585	44.33%

Sequence No.: 20
Sample ID: L1505139306MS WG525038-05
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 85
Date Collected: 5/27/2015 2:10:57 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505139306MS WG525038-05

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505139306MS WG525038-05

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3140902.3						34982.50	1.11%
YRADIAL	208238.8						3632.68	1.74%
Ga 417.206	1289283.5						13168.66	1.02%
GaRADIAL	49178.7						823.11	1.67%
Ag 328.068†	70724.7	0.211	mg/L	0.0010	0.211	mg/L	0.0010	0.45%
Al 396.153†	14174.6	4.93	mg/L	0.046	4.93	mg/L	0.046	0.93%
As 188.979†	289.8	0.186	mg/L	0.0103	0.186	mg/L	0.0103	5.55%
Ba 233.527†	29371.5	0.508	mg/L	0.0058	0.508	mg/L	0.0058	1.14%
Be 234.861†	13215.8	0.0238	mg/L	0.00028	0.0238	mg/L	0.00028	1.16%
B 249.677†	369871.1	5.22	mg/L	0.007	5.22	mg/L	0.007	0.13%
Ca 227.546†	22254.0	280	mg/L	2.8	280	mg/L	2.8	1.01%
Cd 228.802†	399.1	0.0237	mg/L	0.00071	0.0237	mg/L	0.00071	3.01%
Co 228.616†	1325.5	0.0923	mg/L	0.00233	0.0923	mg/L	0.00233	2.52%
Cr 267.716†	32640.5	0.240	mg/L	0.0005	0.240	mg/L	0.0005	0.22%
Cu 327.393†	50799.6	0.238	mg/L	0.0014	0.238	mg/L	0.0014	0.58%
Fe 239.562†	16116.0	2.77	mg/L	0.031	2.77	mg/L	0.031	1.10%
Mg 279.077†	266319.5	98.7	mg/L	0.86	98.7	mg/L	0.86	0.87%
Mn 257.610†	731002.0	1.15	mg/L	0.001	1.15	mg/L	0.001	0.13%
Mo 202.031†	5140.8	0.490	mg/L	0.0048	0.490	mg/L	0.0048	0.98%
Ni 231.604†	7134.5	0.223	mg/L	0.0030	0.223	mg/L	0.0030	1.34%

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Pb 220.353†	1078.7	0.241 mg/L	0.0012	0.241 mg/L	0.0012	0.48%
Sb 206.836†	666.1	0.578 mg/L	0.0070	0.578 mg/L	0.0070	1.22%
Se 196.026†	103.8	0.167 mg/L	0.0326	0.167 mg/L	0.0326	19.52%
Si 251.611†	-11995.4	-0.755 mg/L	0.1535	-0.755 mg/L	0.1535	20.34%
Sn 189.927†	2774.4	0.468 mg/L	0.0047	0.468 mg/L	0.0047	1.02%
Ti 334.940†	429179.2	0.482 mg/L	0.0012	0.482 mg/L	0.0012	0.25%
Tl 190.801†	251.8	0.211 mg/L	0.0110	0.211 mg/L	0.0110	5.20%
V 290.880†	88783.8	0.469 mg/L	0.0027	0.469 mg/L	0.0027	0.58%
Zn 206.200†	13288.8	0.461 mg/L	0.0052	0.461 mg/L	0.0052	1.12%
K 766.490†	42132.1	26.6 mg/L	0.13	26.6 mg/L	0.13	0.48%
Na 589.592†	1259055.6	170 mg/L	4.3	170 mg/L	4.3	2.51%
Sr 407.771†	662219.6	0.813 mg/L	0.0218	0.813 mg/L	0.0218	2.68%
Li 670.784†	36114.7	0.944 mg/L	0.0086	0.944 mg/L	0.0086	0.91%
P 214.914†	3139.1	4.92 mg/L	0.081	4.92 mg/L	0.081	1.64%

Sequence No.: 21
Sample ID: L1505139307MS WG525038-07
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 86
Date Collected: 5/27/2015 2:13:21 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505139307MS WG525038-07

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505139307MS WG525038-07

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3161321.3						19656.72	0.62%
YRADIAL	209205.7						780.70	0.37%
Ga 417.206	1299733.9						9962.46	0.77%
GaRADIAL	49598.5						271.63	0.55%
Ag 328.068†	72286.6	0.216	mg/L	0.0006	0.216	mg/L	0.0006	0.29%
Al 396.153†	14124.6	4.91	mg/L	0.034	4.91	mg/L	0.034	0.69%
As 188.979†	295.8	0.189	mg/L	0.0139	0.189	mg/L	0.0139	7.32%
Ba 233.527†	29625.9	0.512	mg/L	0.0043	0.512	mg/L	0.0043	0.85%
Be 234.861†	13424.6	0.0243	mg/L	0.00027	0.0243	mg/L	0.00027	1.09%
B 249.677†	366232.7	5.17	mg/L	0.030	5.17	mg/L	0.030	0.59%
Ca 227.546†	21887.8	275	mg/L	2.9	275	mg/L	2.9	1.05%
Cd 228.802†	417.4	0.0248	mg/L	0.00044	0.0248	mg/L	0.00044	1.78%
Co 228.616†	1357.1	0.0945	mg/L	0.00039	0.0945	mg/L	0.00039	0.41%
Cr 267.716†	33334.8	0.245	mg/L	0.0017	0.245	mg/L	0.0017	0.69%
Cu 327.393†	52152.3	0.244	mg/L	0.0008	0.244	mg/L	0.0008	0.33%
Fe 239.562†	14382.0	2.47	mg/L	0.027	2.47	mg/L	0.027	1.11%
Mg 279.077†	264371.7	97.9	mg/L	0.49	97.9	mg/L	0.49	0.50%
Mn 257.610†	668742.4	1.05	mg/L	0.002	1.05	mg/L	0.002	0.20%
Mo 202.031†	5235.3	0.499	mg/L	0.0048	0.499	mg/L	0.0048	0.96%
Ni 231.604†	7271.7	0.227	mg/L	0.0012	0.227	mg/L	0.0012	0.51%
Pb 220.353†	1093.3	0.245	mg/L	0.0018	0.245	mg/L	0.0018	0.75%
Sb 206.836†	682.5	0.592	mg/L	0.0018	0.592	mg/L	0.0018	0.31%
Se 196.026†	116.3	0.187	mg/L	0.0155	0.187	mg/L	0.0155	8.32%
Si 251.611†	-18530.4	-1.08	mg/L	0.059	-1.08	mg/L	0.059	5.50%
Sn 189.927†	2805.1	0.473	mg/L	0.0043	0.473	mg/L	0.0043	0.92%
Ti 334.940†	438172.6	0.491	mg/L	0.0016	0.491	mg/L	0.0016	0.32%
Tl 190.801†	241.7	0.203	mg/L	0.0105	0.203	mg/L	0.0105	5.17%
V 290.880†	91684.0	0.485	mg/L	0.0025	0.485	mg/L	0.0025	0.52%
Zn 206.200†	13495.9	0.468	mg/L	0.0037	0.468	mg/L	0.0037	0.79%
K 766.490†	43008.0	27.1	mg/L	0.21	27.1	mg/L	0.21	0.76%
Na 589.592†	1267520.0	171	mg/L	3.5	171	mg/L	3.5	2.04%
Sr 407.771†	687890.0	0.845	mg/L	0.0126	0.845	mg/L	0.0126	1.50%
Li 670.784†	36590.1	0.956	mg/L	0.0050	0.956	mg/L	0.0050	0.52%
P 214.914†	3185.8	5.00	mg/L	0.057	5.00	mg/L	0.057	1.13%

Sequence No.: 22
Sample ID: L1505139308SD WG525038-06
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 87
Date Collected: 5/27/2015 2:15:45 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Approved: May 28, 2015

Nebulizer Parameters: L1505139308SD WG525038-06

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505139308SD WG525038-06

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3127594.6						15409.71	0.49%
YRADIAL	205865.7						1217.94	0.59%
Ga 417.206	1289692.6						11759.14	0.91%
GaRADIAL	48694.5						283.32	0.58%
Ag 328.068†	70957.2	0.212	mg/L	0.0025	0.212	mg/L	0.0025	1.18%
Al 396.153†	14463.6	5.03	mg/L	0.025	5.03	mg/L	0.025	0.49%
As 188.979†	279.4	0.179	mg/L	0.0111	0.179	mg/L	0.0111	6.22%
Ba 233.527†	29817.9	0.515	mg/L	0.0025	0.515	mg/L	0.0025	0.48%
Be 234.861†	13371.3	0.0241	mg/L	0.00025	0.0241	mg/L	0.00025	1.05%
B 249.677†	370766.9	5.23	mg/L	0.026	5.23	mg/L	0.026	0.50%
Ca 227.546†	22328.6	281	mg/L	2.6	281	mg/L	2.6	0.93%
Cd 228.802†	407.9	0.0242	mg/L	0.00026	0.0242	mg/L	0.00026	1.07%
Co 228.616†	1359.5	0.0947	mg/L	0.00122	0.0947	mg/L	0.00122	1.29%
Cr 267.716†	33187.0	0.244	mg/L	0.0021	0.244	mg/L	0.0021	0.85%
Cu 327.393†	51368.2	0.241	mg/L	0.0020	0.241	mg/L	0.0020	0.82%
Fe 239.562†	16242.1	2.79	mg/L	0.026	2.79	mg/L	0.026	0.94%
Mg 279.077†	267594.0	99.1	mg/L	1.25	99.1	mg/L	1.25	1.26%
Mn 257.610†	737659.5	1.16	mg/L	0.002	1.16	mg/L	0.002	0.14%
Mo 202.031†	5215.1	0.497	mg/L	0.0045	0.497	mg/L	0.0045	0.91%
Ni 231.604†	7254.0	0.226	mg/L	0.0012	0.226	mg/L	0.0012	0.53%
Pb 220.353†	1089.9	0.244	mg/L	0.0036	0.244	mg/L	0.0036	1.48%
Sb 206.836†	670.1	0.581	mg/L	0.0105	0.581	mg/L	0.0105	1.81%
Se 196.026†	113.0	0.182	mg/L	0.0093	0.182	mg/L	0.0093	5.13%
Si 251.611†	-10516.9	-0.681	mg/L	0.2558	-0.681	mg/L	0.2558	37.56%
Sn 189.927†	2811.6	0.474	mg/L	0.0020	0.474	mg/L	0.0020	0.42%
Ti 334.940†	435977.6	0.489	mg/L	0.0020	0.489	mg/L	0.0020	0.40%
Tl 190.801†	241.2	0.203	mg/L	0.0071	0.203	mg/L	0.0071	3.53%
V 290.880†	90581.2	0.479	mg/L	0.0032	0.479	mg/L	0.0032	0.66%
Zn 206.200†	13466.4	0.467	mg/L	0.0026	0.467	mg/L	0.0026	0.56%
K 766.490†	42857.8	27.1	mg/L	0.20	27.1	mg/L	0.20	0.75%
Na 589.592†	1273369.2	172	mg/L	1.5	172	mg/L	1.5	0.86%
Sr 407.771†	681283.8	0.836	mg/L	0.0081	0.836	mg/L	0.0081	0.97%
Li 670.784†	36670.1	0.958	mg/L	0.0081	0.958	mg/L	0.0081	0.84%
P 214.914†	3173.2	4.98	mg/L	0.033	4.98	mg/L	0.033	0.66%

Sequence No.: 23
Sample ID: CCV
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 6
Date Collected: 5/27/2015 2:18:09 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3278186.8						35755.29	1.09%
YRADIAL	206760.9						1366.42	0.66%
Ga 417.206	1374140.6						17808.14	1.30%
GaRADIAL	48310.8						416.03	0.86%
Ag 328.068†	132213.5	0.393	mg/L	0.0053	0.393	mg/L	0.0053	1.35%
QC value within limits for Ag 328.068 Recovery = 98.29%								
Al 396.153†	28756.3	10.0	mg/L	0.10	10.0	mg/L	0.10	0.96%
QC value within limits for Al 396.153 Recovery = 100.26%								
As 188.979†	600.1	0.368	mg/L	0.0011	0.368	mg/L	0.0011	0.30%
QC value within limits for As 188.979 Recovery = 92.01%								
Ba 233.527†	56395.5	0.975	mg/L	0.0172	0.975	mg/L	0.0172	1.77%

Approved: May 28, 2015

QC value within limits for Ba 233.527 Recovery = 97.50%

Be 234.861†	26222.1	0.0473 mg/L	0.00080	0.0473 mg/L	0.00080	1.69%
QC value within limits for Be 234.861 Recovery = 94.55%						
B 249.677†	33212.4	0.485 mg/L	0.0135	0.485 mg/L	0.0135	2.78%
QC value within limits for B 249.677 Recovery = 97.05%						
Ca 227.546†	747.4	9.51 mg/L	0.133	9.51 mg/L	0.133	1.40%
QC value within limits for Ca 227.546 Recovery = 95.13%						
Cd 228.802†	787.4	0.0464 mg/L	0.00150	0.0464 mg/L	0.00150	3.24%
QC value within limits for Cd 228.802 Recovery = 92.84%						
Co 228.616†	2762.0	0.193 mg/L	0.0021	0.193 mg/L	0.0021	1.11%
QC value within limits for Co 228.616 Recovery = 96.43%						
Cr 267.716†	66902.0	0.492 mg/L	0.0061	0.492 mg/L	0.0061	1.24%
QC value within limits for Cr 267.716 Recovery = 98.44%						
Cu 327.393†	104417.1	0.487 mg/L	0.0071	0.487 mg/L	0.0071	1.46%
QC value within limits for Cu 327.393 Recovery = 97.48%						
Fe 239.562†	23153.2	3.98 mg/L	0.073	3.98 mg/L	0.073	1.83%
QC value within limits for Fe 239.562 Recovery = 99.57%						
Mg 279.077†	26967.3	9.97 mg/L	0.155	9.97 mg/L	0.155	1.55%
QC value within limits for Mg 279.077 Recovery = 99.75%						
Mn 257.610†	313994.0	0.492 mg/L	0.0085	0.492 mg/L	0.0085	1.73%
QC value within limits for Mn 257.610 Recovery = 98.36%						
Mo 202.031†	9940.0	0.947 mg/L	0.0085	0.947 mg/L	0.0085	0.90%
QC value within limits for Mo 202.031 Recovery = 94.67%						
Ni 231.604†	15361.9	0.480 mg/L	0.0033	0.480 mg/L	0.0033	0.68%
QC value within limits for Ni 231.604 Recovery = 96.03%						
Pb 220.353†	2155.5	0.484 mg/L	0.0064	0.484 mg/L	0.0064	1.32%
QC value within limits for Pb 220.353 Recovery = 96.74%						
Sb 206.836†	1302.6	1.13 mg/L	0.015	1.13 mg/L	0.015	1.32%
QC value within limits for Sb 206.836 Recovery = 93.81%						
Se 196.026†	244.0	0.388 mg/L	0.0016	0.388 mg/L	0.0016	0.42%
QC value within limits for Se 196.026 Recovery = 96.94%						
Si 251.611†	-178234.4	-9.06 mg/L	0.061	-9.06 mg/L	0.061	0.68%
QC value less than the lower limit for Si 251.611 Recovery = -181.12%						
Sn 189.927†	5639.8	0.952 mg/L	0.0078	0.952 mg/L	0.0078	0.82%
QC value within limits for Sn 189.927 Recovery = 95.20%						
Ti 334.940†	907356.4	0.979 mg/L	0.0152	0.979 mg/L	0.0152	1.55%
QC value within limits for Ti 334.940 Recovery = 97.94%						
Tl 190.801†	580.2	0.490 mg/L	0.0052	0.490 mg/L	0.0052	1.07%
QC value within limits for Tl 190.801 Recovery = 98.02%						
V 290.880†	184134.5	0.976 mg/L	0.0157	0.976 mg/L	0.0157	1.61%
QC value within limits for V 290.880 Recovery = 97.61%						
Zn 206.200†	27809.2	0.970 mg/L	0.0094	0.970 mg/L	0.0094	0.97%
QC value within limits for Zn 206.200 Recovery = 96.97%						
K 766.490†	77258.1	49.2 mg/L	0.61	49.2 mg/L	0.61	1.23%
QC value within limits for K 766.490 Recovery = 98.44%						
Na 589.592†	391172.6	49.1 mg/L	0.51	49.1 mg/L	0.51	1.04%
QC value within limits for Na 589.592 Recovery = 98.21%						
Sr 407.771†	786095.0	0.975 mg/L	0.0080	0.975 mg/L	0.0080	0.82%
QC value within limits for Sr 407.771 Recovery = 97.49%						
Li 670.784†	38546.1	1.01 mg/L	0.016	1.01 mg/L	0.016	1.59%
QC value within limits for Li 670.784 Recovery = 100.75%						
P 214.914†	6034.7	9.46 mg/L	0.073	9.46 mg/L	0.073	0.77%
QC value within limits for P 214.914 Recovery = 94.65%						

QC Failed. Continue with analysis.

Sequence No.: 24 **Autosampler Location: 1**
Sample ID: CCB **Date Collected: 5/27/2015 2:20:34 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCB

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3465042.3						32078.69	0.93%

Approved: May 28, 2015

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YRADIAL              218175.9                                                    6097.59   2.79%
Ga 417.206          1596151.4                                                   14826.61   0.93%
GaRADIAL              52931.4                                                    1387.79   2.62%
Ag 328.068†             -41.4     0.00195 mg/L      0.001020     0.00195 mg/L      0.001020  52.34%
   QC value within limits for Ag 328.068  Recovery = Not calculated
Al 396.153†               7.9     -0.0192 mg/L       0.00704     -0.0192 mg/L       0.00704  36.67%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†               3.7     0.00588 mg/L      0.001497     0.00588 mg/L      0.001497  25.44%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†               6.5    -0.00013 mg/L      0.000095    -0.00013 mg/L      0.000095  71.39%
   QC value within limits for Ba 233.527  Recovery = Not calculated
Be 234.861†             -23.2     0.00021 mg/L      0.000038     0.00021 mg/L      0.000038  18.53%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†             1488.9      0.0256 mg/L       0.00135      0.0256 mg/L       0.00135   5.27%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†              -1.2      0.0408 mg/L       0.14695      0.0408 mg/L       0.14695 360.00%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†               0.2     0.00022 mg/L      0.000104     0.00022 mg/L      0.000104  46.73%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†               2.1    -0.00048 mg/L      0.000111    -0.00048 mg/L      0.000111  22.97%
   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†             168.2     0.00075 mg/L      0.000698     0.00075 mg/L      0.000698  93.12%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†             -310.7     0.00064 mg/L      0.001045     0.00064 mg/L      0.001045 162.80%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†               5.5     0.00514 mg/L      0.001286     0.00514 mg/L      0.001286  25.01%
   QC value within limits for Fe 239.562  Recovery = Not calculated
Mg 279.077†              38.5    -0.00026 mg/L      0.010738    -0.00026 mg/L      0.010738 >999.9%
   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†              17.8    -0.00040 mg/L      0.000019    -0.00040 mg/L      0.000019   4.84%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†               1.4     0.00021 mg/L      0.000220     0.00021 mg/L      0.000220 104.74%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†              -2.5    -0.00081 mg/L      0.000285    -0.00081 mg/L      0.000285  35.13%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†              -5.5    -0.00167 mg/L      0.002217    -0.00167 mg/L      0.002217 133.04%
   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†               1.0     0.00531 mg/L      0.003502     0.00531 mg/L      0.003502  66.01%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†               0.6     0.00506 mg/L      0.006504     0.00506 mg/L      0.006504 128.67%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†            -3829.3      -0.342 mg/L        0.0448      -0.342 mg/L        0.0448  13.11%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†              -8.9    -0.00299 mg/L      0.000438    -0.00299 mg/L      0.000438  14.64%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†             223.1     0.00196 mg/L      0.000241     0.00196 mg/L      0.000241  12.30%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†              -3.6    -0.00444 mg/L      0.005387    -0.00444 mg/L      0.005387 121.29%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†             -280.4     0.00040 mg/L      0.001357     0.00040 mg/L      0.001357 343.56%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†               8.0    -0.00449 mg/L      0.000214    -0.00449 mg/L      0.000214   4.76%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†              -79.4     -0.0213 mg/L       0.05832     -0.0213 mg/L       0.05832 273.28%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†             406.9      0.0703 mg/L       0.01826      0.0703 mg/L       0.01826  25.98%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†             263.8    -0.00001 mg/L      0.000102    -0.00001 mg/L      0.000102 >999.9%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†              58.8    -0.00115 mg/L      0.000530    -0.00115 mg/L      0.000530  46.02%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†                4.9     0.00982 mg/L      0.010484     0.00982 mg/L      0.010484 106.78%
   QC value within limits for P 214.914  Recovery = Not calculated
All analyte(s) passed QC.
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Sequence No.: 25 **Autosampler Location: 88**
Sample ID: L1505139309SD WG525038-08 **Date Collected: 5/27/2015 2:23:55 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Approved: May 28, 2015

Kym H. Rhoden

Nebulizer Parameters: L1505139309SD WG525038-08

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505139309SD WG525038-08

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3214394.0						13635.27	0.42%
YRADIAL	214455.4						1492.91	0.70%
Ga 417.206	1325905.6						5213.14	0.39%
GaRADIAL	50686.8						236.94	0.47%
Ag 328.068†	72703.4	0.217	mg/L	0.0029	0.217	mg/L	0.0029	1.36%
Al 396.153†	14181.7	4.93	mg/L	0.008	4.93	mg/L	0.008	0.17%
As 188.979†	287.8	0.184	mg/L	0.0052	0.184	mg/L	0.0052	2.82%
Ba 233.527†	29527.2	0.510	mg/L	0.0078	0.510	mg/L	0.0078	1.53%
Be 234.861†	13368.0	0.0242	mg/L	0.00053	0.0242	mg/L	0.00053	2.19%
B 249.677†	369239.3	5.21	mg/L	0.090	5.21	mg/L	0.090	1.73%
Ca 227.546†	21953.5	276	mg/L	3.5	276	mg/L	3.5	1.28%
Cd 228.802†	409.4	0.0243	mg/L	0.00022	0.0243	mg/L	0.00022	0.92%
Co 228.616†	1342.8	0.0935	mg/L	0.00166	0.0935	mg/L	0.00166	1.77%
Cr 267.716†	33634.9	0.247	mg/L	0.0028	0.247	mg/L	0.0028	1.14%
Cu 327.393†	52122.4	0.244	mg/L	0.0031	0.244	mg/L	0.0031	1.28%
Fe 239.562†	14500.2	2.49	mg/L	0.008	2.49	mg/L	0.008	0.31%
Mg 279.077†	267647.4	99.1	mg/L	0.06	99.1	mg/L	0.06	0.06%
Mn 257.610†	689251.1	1.08	mg/L	0.010	1.08	mg/L	0.010	0.89%
Mo 202.031†	5202.8	0.496	mg/L	0.0078	0.496	mg/L	0.0078	1.57%
Ni 231.604†	7263.5	0.227	mg/L	0.0035	0.227	mg/L	0.0035	1.56%
Pb 220.353†	1084.1	0.243	mg/L	0.0030	0.243	mg/L	0.0030	1.22%
Sb 206.836†	667.0	0.579	mg/L	0.0030	0.579	mg/L	0.0030	0.52%
Se 196.026†	105.8	0.170	mg/L	0.0217	0.170	mg/L	0.0217	12.72%
Si 251.611†	-13201.5	-0.815	mg/L	0.1937	-0.815	mg/L	0.1937	23.76%
Sn 189.927†	2857.6	0.482	mg/L	0.0104	0.482	mg/L	0.0104	2.16%
Ti 334.940†	442385.2	0.496	mg/L	0.0033	0.496	mg/L	0.0033	0.67%
Tl 190.801†	253.2	0.213	mg/L	0.0025	0.213	mg/L	0.0025	1.16%
V 290.880†	92506.2	0.489	mg/L	0.0026	0.489	mg/L	0.0026	0.53%
Zn 206.200†	13479.9	0.468	mg/L	0.0095	0.468	mg/L	0.0095	2.02%
K 766.490†	43191.3	27.3	mg/L	0.08	27.3	mg/L	0.08	0.29%
Na 589.592†	1262890.9	170	mg/L	5.0	170	mg/L	5.0	2.95%
Sr 407.771†	678368.9	0.833	mg/L	0.0221	0.833	mg/L	0.0221	2.65%
Li 670.784†	37154.5	0.971	mg/L	0.0047	0.971	mg/L	0.0047	0.48%
P 214.914†	3183.5	4.99	mg/L	0.101	4.99	mg/L	0.101	2.02%

Sequence No.: 26
Sample ID: L1505139310
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 89
Date Collected: 5/27/2015 2:26:19 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505139310

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505139310

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3279696.0						21589.60	0.66%
YRADIAL	208627.4						2470.21	1.18%
Ga 417.206	1383389.3						7239.54	0.52%
GaRADIAL	49752.2						664.20	1.34%
Ag 328.068†	-2046.8	0.00394	mg/L	0.000655	0.00394	mg/L	0.000655	16.63%
Al 396.153†	23682.9	8.29	mg/L	0.050	8.29	mg/L	0.050	0.60%
As 188.979†	-19.7	-0.00203	mg/L	0.007810	-0.00203	mg/L	0.007810	383.93%
Ba 233.527†	14410.9	0.248	mg/L	0.0011	0.248	mg/L	0.0011	0.46%
Be 234.861†	2637.7	0.00074	mg/L	0.000249	0.00074	mg/L	0.000249	33.45%
B 249.677†	29477.8	0.486	mg/L	0.0019	0.486	mg/L	0.0019	0.40%
Ca 227.546†	8321.2	105	mg/L	0.9	105	mg/L	0.9	0.90%
Cd 228.802†	12.9	0.00108	mg/L	0.000463	0.00108	mg/L	0.000463	42.95%

Approved: May 28, 2015

Kym H. Rhoden

Co 228.616†	101.2	0.00579	mg/L	0.000972	0.00579	mg/L	0.000972	16.80%
Cr 267.716†	31956.1	0.234	mg/L	0.0038	0.234	mg/L	0.0038	1.62%
Cu 327.393†	3194.1	0.0195	mg/L	0.00074	0.0195	mg/L	0.00074	3.81%
Fe 239.562†	102401.2	17.6	mg/L	0.16	17.6	mg/L	0.16	0.91%
Mg 279.077†	79313.2	29.4	mg/L	0.18	29.4	mg/L	0.18	0.62%
Mn 257.610†	1073317.4	1.68	mg/L	0.030	1.68	mg/L	0.030	1.78%
Mo 202.031†	84.3	0.00816	mg/L	0.000994	0.00816	mg/L	0.000994	12.18%
Ni 231.604†	485.6	0.0145	mg/L	0.00033	0.0145	mg/L	0.00033	2.25%
Pb 220.353†	83.3	0.0183	mg/L	0.00201	0.0183	mg/L	0.00201	10.99%
Sb 206.836†	1.7	0.00458	mg/L	0.006003	0.00458	mg/L	0.006003	130.94%
Se 196.026†	-5.0	-0.00453	mg/L	0.007854	-0.00453	mg/L	0.007854	173.19%
Si 251.611†	175809.6	8.62	mg/L	0.469	8.62	mg/L	0.469	5.44%
Sn 189.927†	-56.3	-0.0110	mg/L	0.00121	-0.0110	mg/L	0.00121	11.00%
Ti 334.940†	93953.8	0.110	mg/L	0.0017	0.110	mg/L	0.0017	1.57%
Tl 190.801†	-17.4	-0.0167	mg/L	0.00283	-0.0167	mg/L	0.00283	16.97%
V 290.880†	2089.2	0.0155	mg/L	0.00101	0.0155	mg/L	0.00101	6.48%
Zn 206.200†	3053.7	0.105	mg/L	0.0013	0.105	mg/L	0.0013	1.22%
K 766.490†	6688.2	4.20	mg/L	0.031	4.20	mg/L	0.031	0.73%
Na 589.592†	404925.7	50.9	mg/L	1.34	50.9	mg/L	1.34	2.63%
Sr 407.771†	215298.7	0.264	mg/L	0.0025	0.264	mg/L	0.0025	0.96%
Li 670.784†	609.9	0.0133	mg/L	0.00213	0.0133	mg/L	0.00213	16.01%
P 214.914†	260.1	0.410	mg/L	0.0021	0.410	mg/L	0.0021	0.51%

Sequence No.: 27 **Autosampler Location: 90**
Sample ID: L1505139311 **Date Collected: 5/27/2015 2:28:43 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505139311

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505139311

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3278945.1						31611.30	0.96%
YRADIAL	207372.0						4646.37	2.24%
Ga 417.206	1400151.0						13095.18	0.94%
GaRADIAL	49865.7						747.55	1.50%
Ag 328.068†	1158.7	0.00541	mg/L	0.000399	0.00541	mg/L	0.000399	7.38%
Al 396.153†	70.2	0.00237	mg/L	0.001195	0.00237	mg/L	0.001195	50.37%
As 188.979†	-20.1	-0.00646	mg/L	0.001853	-0.00646	mg/L	0.001853	28.68%
Ba 233.527†	3290.1	0.0566	mg/L	0.00047	0.0566	mg/L	0.00047	0.84%
Be 234.861†	-123.2	0.00003	mg/L	0.000024	0.00003	mg/L	0.000024	91.89%
B 249.677†	28747.5	0.409	mg/L	0.0037	0.409	mg/L	0.0037	0.91%
Ca 227.546†	7984.6	100	mg/L	0.3	100	mg/L	0.3	0.26%
Cd 228.802†	2.3	0.00042	mg/L	0.000317	0.00042	mg/L	0.000317	75.76%
Co 228.616†	-8.5	-0.00117	mg/L	0.000569	-0.00117	mg/L	0.000569	48.52%
Cr 267.716†	32602.4	0.239	mg/L	0.0013	0.239	mg/L	0.0013	0.55%
Cu 327.393†	-1020.9	-0.00264	mg/L	0.000214	-0.00264	mg/L	0.000214	8.09%
Fe 239.562†	129.3	0.0259	mg/L	0.00103	0.0259	mg/L	0.00103	3.97%
Mg 279.077†	73940.2	27.4	mg/L	0.30	27.4	mg/L	0.30	1.08%
Mn 257.610†	842.5	0.00090	mg/L	0.000049	0.00090	mg/L	0.000049	5.42%
Mo 202.031†	69.4	0.00668	mg/L	0.000822	0.00668	mg/L	0.000822	12.31%
Ni 231.604†	-0.6	-0.00075	mg/L	0.000138	-0.00075	mg/L	0.000138	18.47%
Pb 220.353†	45.1	0.00963	mg/L	0.003205	0.00963	mg/L	0.003205	33.27%
Sb 206.836†	2.8	0.00487	mg/L	0.005980	0.00487	mg/L	0.005980	122.90%
Se 196.026†	-7.0	-0.00678	mg/L	0.007491	-0.00678	mg/L	0.007491	110.56%
Si 251.611†	-189158.4	-9.59	mg/L	0.114	-9.59	mg/L	0.114	1.18%
Sn 189.927†	-65.9	-0.0126	mg/L	0.00215	-0.0126	mg/L	0.00215	16.99%
Ti 334.940†	-6829.3	0.00073	mg/L	0.000356	0.00073	mg/L	0.000356	48.66%
Tl 190.801†	-16.8	-0.0154	mg/L	0.00296	-0.0154	mg/L	0.00296	19.18%
V 290.880†	-1398.2	-0.00623	mg/L	0.000573	-0.00623	mg/L	0.000573	9.20%
Zn 206.200†	-163.0	-0.00851	mg/L	0.000152	-0.00851	mg/L	0.000152	1.79%
K 766.490†	3831.1	2.40	mg/L	0.065	2.40	mg/L	0.065	2.72%
Na 589.592†	399593.7	50.2	mg/L	0.38	50.2	mg/L	0.38	0.75%
Sr 407.771†	206668.3	0.253	mg/L	0.0029	0.253	mg/L	0.0029	1.13%
Li 670.784†	406.7	0.00797	mg/L	0.003935	0.00797	mg/L	0.003935	49.40%

Approved: May 28, 2015

P 214.914†	6.0	0.0116	mg/L	0.00872	0.0116	mg/L	0.00872 75.46%

Sequence No.: 28 **Autosampler Location: 91**
Sample ID: L1505139312 **Date Collected: 5/27/2015 2:32:03 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505139312

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505139312

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3560660.6						38958.90	1.09%
YRADIAL	221353.4						1791.88	0.81%
Ga 417.206	1606633.3						12765.24	0.79%
GaRADIAL	52811.5						288.24	0.55%
Ag 328.068†	205.9	0.00268	mg/L	0.000540	0.00268	mg/L	0.000540	20.16%
Al 396.153†	29.1	-0.0118	mg/L	0.00755	-0.0118	mg/L	0.00755	64.20%
As 188.979†	-10.3	-0.00272	mg/L	0.002819	-0.00272	mg/L	0.002819	103.69%
Ba 233.527†	7.5	-0.00012	mg/L	0.000037	-0.00012	mg/L	0.000037	31.58%
Be 234.861†	-77.0	0.00011	mg/L	0.000016	0.00011	mg/L	0.000016	15.33%
B 249.677†	-460.3	-0.00181	mg/L	0.002374	-0.00181	mg/L	0.002374	131.47%
Ca 227.546†	-4.1	0.00445	mg/L	0.131701	0.00445	mg/L	0.131701	>999.9%
Cd 228.802†	3.4	0.00045	mg/L	0.000459	0.00045	mg/L	0.000459	101.60%
Co 228.616†	-10.7	-0.00138	mg/L	0.000599	-0.00138	mg/L	0.000599	43.41%
Cr 267.716†	77.4	0.00008	mg/L	0.000314	0.00008	mg/L	0.000314	382.74%
Cu 327.393†	-566.4	-0.00054	mg/L	0.000480	-0.00054	mg/L	0.000480	88.75%
Fe 239.562†	33.1	0.00988	mg/L	0.001313	0.00988	mg/L	0.001313	13.29%
Mg 279.077†	52.8	0.00500	mg/L	0.004589	0.00500	mg/L	0.004589	91.71%
Mn 257.610†	375.8	0.00016	mg/L	0.000019	0.00016	mg/L	0.000019	11.74%
Mo 202.031†	2.4	0.00031	mg/L	0.000722	0.00031	mg/L	0.000722	235.58%
Ni 231.604†	-8.7	-0.00100	mg/L	0.000237	-0.00100	mg/L	0.000237	23.57%
Pb 220.353†	-3.9	-0.00131	mg/L	0.004268	-0.00131	mg/L	0.004268	325.22%
Sb 206.836†	4.1	0.00802	mg/L	0.001699	0.00802	mg/L	0.001699	21.20%
Se 196.026†	6.6	0.0144	mg/L	0.00563	0.0144	mg/L	0.00563	39.08%
Si 251.611†	-351674.3	-17.7	mg/L	0.29	-17.7	mg/L	0.29	1.64%
Sn 189.927†	-31.4	-0.00680	mg/L	0.002277	-0.00680	mg/L	0.002277	33.49%
Ti 334.940†	211.6	0.00194	mg/L	0.000312	0.00194	mg/L	0.000312	16.07%
Tl 190.801†	-5.9	-0.00633	mg/L	0.002401	-0.00633	mg/L	0.002401	37.90%
V 290.880†	-166.5	0.00100	mg/L	0.001019	0.00100	mg/L	0.001019	101.90%
Zn 206.200†	-133.8	-0.00944	mg/L	0.000225	-0.00944	mg/L	0.000225	2.39%
K 766.490†	-47.5	-0.00122	mg/L	0.068594	-0.00122	mg/L	0.068594	>999.9%
Na 589.592†	726.3	0.109	mg/L	0.0223	0.109	mg/L	0.0223	20.42%
Sr 407.771†	264.3	-0.00001	mg/L	0.000079	-0.00001	mg/L	0.000079	>999.9%
Li 670.784†	-169.8	-0.00714	mg/L	0.000593	-0.00714	mg/L	0.000593	8.30%
P 214.914†	-0.3	0.00175	mg/L	0.008204	0.00175	mg/L	0.008204	469.20%

Sequence No.: 29 **Autosampler Location: 92**
Sample ID: L1505140201 **Date Collected: 5/27/2015 2:35:25 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505140201

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505140201

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3244308.4						49583.81	1.53%
YRADIAL	208222.3						5733.01	2.75%
Ga 417.206	1341985.0						19086.27	1.42%

Approved: May 28, 2015

Kym H. Rhoden

GaRADIAL	49282.0					1475.58	2.99%
Ag 328.068†	839.6	0.00437	mg/L	0.000402	0.00437 mg/L	0.000402	9.22%
Al 396.153†	1.7	-0.0216	mg/L	0.01631	-0.0216 mg/L	0.01631	75.53%
As 188.979†	-19.7	-0.00705	mg/L	0.002643	-0.00705 mg/L	0.002643	37.49%
Ba 233.527†	1406.9	0.0241	mg/L	0.00038	0.0241 mg/L	0.00038	1.58%
Be 234.861†	-3.7	0.00011	mg/L	0.000026	0.00011 mg/L	0.000026	23.95%
B 249.677†	14630.9	0.213	mg/L	0.0038	0.213 mg/L	0.0038	1.77%
Ca 227.546†	4767.7	60.0	mg/L	0.92	60.0 mg/L	0.92	1.53%
Cd 228.802†	4.2	0.00053	mg/L	0.000191	0.00053 mg/L	0.000191	35.83%
Co 228.616†	-7.4	-0.00115	mg/L	0.000563	-0.00115 mg/L	0.000563	49.06%
Cr 267.716†	261.7	0.00142	mg/L	0.000323	0.00142 mg/L	0.000323	22.79%
Cu 327.393†	138.4	0.00280	mg/L	0.000209	0.00280 mg/L	0.000209	7.47%
Fe 239.562†	3502.8	0.606	mg/L	0.0116	0.606 mg/L	0.0116	1.91%
Mg 279.077†	70689.2	26.2	mg/L	0.11	26.2 mg/L	0.11	0.41%
Mn 257.610†	113505.8	0.177	mg/L	0.0016	0.177 mg/L	0.0016	0.88%
Mo 202.031†	81.8	0.00789	mg/L	0.000909	0.00789 mg/L	0.000909	11.53%
Ni 231.604†	10.3	-0.00040	mg/L	0.000372	-0.00040 mg/L	0.000372	92.15%
Pb 220.353†	25.5	0.00513	mg/L	0.003554	0.00513 mg/L	0.003554	69.29%
Sb 206.836†	-2.1	0.00262	mg/L	0.004157	0.00262 mg/L	0.004157	158.96%
Se 196.026†	-0.6	0.00303	mg/L	0.007138	0.00303 mg/L	0.007138	235.64%
Si 251.611†	-231238.5	-11.7	mg/L	0.15	-11.7 mg/L	0.15	1.27%
Sn 189.927†	-55.6	-0.0109	mg/L	0.00119	-0.0109 mg/L	0.00119	10.97%
Ti 334.940†	-4313.4	0.00092	mg/L	0.000569	0.00092 mg/L	0.000569	62.05%
Tl 190.801†	-20.9	-0.0190	mg/L	0.00675	-0.0190 mg/L	0.00675	35.49%
V 290.880†	-840.0	-0.00313	mg/L	0.000517	-0.00313 mg/L	0.000517	16.53%
Zn 206.200†	-41.9	-0.00617	mg/L	0.000048	-0.00617 mg/L	0.000048	0.78%
K 766.490†	3606.2	2.14	mg/L	0.040	2.14 mg/L	0.040	1.88%
Na 589.592†	1261821.7	170	mg/L	1.4	170 mg/L	1.4	0.85%
Sr 407.771†	1659449.5	2.06	mg/L	0.013	2.06 mg/L	0.013	0.64%
Li 670.784†	696.3	0.0156	mg/L	0.00312	0.0156 mg/L	0.00312	20.07%
P 214.914†	-6.1	-0.00743	mg/L	0.015683	-0.00743 mg/L	0.015683	211.07%

Sequence No.: 30 **Autosampler Location: 93**
Sample ID: L1505140301 **Date Collected: 5/27/2015 2:37:50 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505140301

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505140301

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3330721.2						76786.60	2.31%
YRADIAL	210112.3						2371.02	1.13%
Ga 417.206	1453384.2						22382.76	1.54%
GaRADIAL	49997.7						679.53	1.36%
Ag 328.068†	1067.4	0.00502	mg/L	0.001283	0.00502	mg/L	0.001283	25.56%
Al 396.153†	569.7	0.178	mg/L	0.0226	0.178	mg/L	0.0226	12.73%
As 188.979†	-33.0	-0.0146	mg/L	0.00474	-0.0146	mg/L	0.00474	32.44%
Ba 233.527†	3124.2	0.0538	mg/L	0.00105	0.0538	mg/L	0.00105	1.95%
Be 234.861†	-99.7	0.00003	mg/L	0.000009	0.00003	mg/L	0.000009	27.86%
B 249.677†	4048.3	0.0625	mg/L	0.00034	0.0625	mg/L	0.00034	0.54%
Ca 227.546†	7285.3	91.6	mg/L	0.92	91.6	mg/L	0.92	1.00%
Cd 228.802†	-2.3	0.00018	mg/L	0.000187	0.00018	mg/L	0.000187	101.69%
Co 228.616†	-2.8	-0.00083	mg/L	0.000696	-0.00083	mg/L	0.000696	83.72%
Cr 267.716†	344.6	0.00204	mg/L	0.000063	0.00204	mg/L	0.000063	3.08%
Cu 327.393†	-859.9	-0.00188	mg/L	0.001785	-0.00188	mg/L	0.001785	95.11%
Fe 239.562†	1275.8	0.223	mg/L	0.0021	0.223	mg/L	0.0021	0.94%
Mg 279.077†	85927.0	31.8	mg/L	0.43	31.8	mg/L	0.43	1.36%
Mn 257.610†	126017.0	0.197	mg/L	0.0004	0.197	mg/L	0.0004	0.22%
Mo 202.031†	61.4	0.00595	mg/L	0.001656	0.00595	mg/L	0.001656	27.84%
Ni 231.604†	33.4	0.00032	mg/L	0.000420	0.00032	mg/L	0.000420	131.10%
Pb 220.353†	34.7	0.00724	mg/L	0.002027	0.00724	mg/L	0.002027	28.00%
Sb 206.836†	1.1	0.00540	mg/L	0.003157	0.00540	mg/L	0.003157	58.51%
Se 196.026†	-5.8	-0.00502	mg/L	0.012521	-0.00502	mg/L	0.012521	249.35%
Si 251.611†	-260270.3	-13.1	mg/L	0.17	-13.1	mg/L	0.17	1.29%

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Sn 189.927†	-63.1	-0.0122	mg/L	0.00368	-0.0122	mg/L	0.00368	30.25%
Ti 334.940†	-4546.7	0.00270	mg/L	0.000525	0.00270	mg/L	0.000525	19.46%
Tl 190.801†	-26.1	-0.0234	mg/L	0.00355	-0.0234	mg/L	0.00355	15.20%
V 290.880†	-1514.3	-0.00692	mg/L	0.001102	-0.00692	mg/L	0.001102	15.94%
Zn 206.200†	-148.1	-0.00991	mg/L	0.000902	-0.00991	mg/L	0.000902	9.10%
K 766.490†	3535.6	2.25	mg/L	0.020	2.25	mg/L	0.020	0.88%
Na 589.592†	94850.0	11.7	mg/L	0.12	11.7	mg/L	0.12	1.04%
Sr 407.771†	963500.0	1.19	mg/L	0.016	1.19	mg/L	0.016	1.34%
Li 670.784†	89.2	-0.00036	mg/L	0.003362	-0.00036	mg/L	0.003362	947.14%
P 214.914†	7.8	0.0144	mg/L	0.00697	0.0144	mg/L	0.00697	48.59%

Sequence No.: 31
Sample ID: CCV
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 6
Date Collected: 5/27/2015 2:40:14 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3249825.8						42392.73	1.30%
YRADIAL	207417.8						1390.98	0.67%
Ga 417.206	1366679.8						11771.69	0.86%
GaRADIAL	48756.2						728.97	1.50%
Ag 328.068†	133283.7	0.396	mg/L	0.0040	0.396	mg/L	0.0040	1.01%
QC value within limits for Ag 328.068 Recovery = 99.10%								
Al 396.153†	29386.1	10.2	mg/L	0.09	10.2	mg/L	0.09	0.89%
QC value within limits for Al 396.153 Recovery = 102.46%								
As 188.979†	615.1	0.377	mg/L	0.0070	0.377	mg/L	0.0070	1.87%
QC value within limits for As 188.979 Recovery = 94.32%								
Ba 233.527†	57215.9	0.989	mg/L	0.0062	0.989	mg/L	0.0062	0.62%
QC value within limits for Ba 233.527 Recovery = 98.92%								
Be 234.861†	26812.5	0.0483	mg/L	0.00039	0.0483	mg/L	0.00039	0.80%
QC value within limits for Be 234.861 Recovery = 96.64%								
B 249.677†	26570.0	0.392	mg/L	0.0024	0.392	mg/L	0.0024	0.62%
QC value less than the lower limit for B 249.677 Recovery = 78.44%								
Ca 227.546†	755.2	9.61	mg/L	0.149	9.61	mg/L	0.149	1.55%
QC value within limits for Ca 227.546 Recovery = 96.12%								
Cd 228.802†	794.6	0.0468	mg/L	0.00030	0.0468	mg/L	0.00030	0.64%
QC value within limits for Cd 228.802 Recovery = 93.64%								
Co 228.616†	2799.5	0.195	mg/L	0.0017	0.195	mg/L	0.0017	0.86%
QC value within limits for Co 228.616 Recovery = 97.74%								
Cr 267.716†	67778.3	0.499	mg/L	0.0013	0.499	mg/L	0.0013	0.26%
QC value within limits for Cr 267.716 Recovery = 99.73%								
Cu 327.393†	105475.4	0.492	mg/L	0.0041	0.492	mg/L	0.0041	0.84%
QC value within limits for Cu 327.393 Recovery = 98.47%								
Fe 239.562†	23916.3	4.11	mg/L	0.027	4.11	mg/L	0.027	0.66%
QC value within limits for Fe 239.562 Recovery = 102.85%								
Mg 279.077†	27760.1	10.3	mg/L	0.04	10.3	mg/L	0.04	0.40%
QC value within limits for Mg 279.077 Recovery = 102.68%								
Mn 257.610†	318944.1	0.500	mg/L	0.0025	0.500	mg/L	0.0025	0.50%
QC value within limits for Mn 257.610 Recovery = 99.91%								
Mo 202.031†	10056.1	0.958	mg/L	0.0056	0.958	mg/L	0.0056	0.58%
QC value within limits for Mo 202.031 Recovery = 95.77%								
Ni 231.604†	15585.8	0.487	mg/L	0.0044	0.487	mg/L	0.0044	0.90%
QC value within limits for Ni 231.604 Recovery = 97.43%								
Pb 220.353†	2169.6	0.487	mg/L	0.0046	0.487	mg/L	0.0046	0.94%
QC value within limits for Pb 220.353 Recovery = 97.37%								
Sb 206.836†	1308.9	1.13	mg/L	0.003	1.13	mg/L	0.003	0.22%
QC value within limits for Sb 206.836 Recovery = 94.26%								
Se 196.026†	250.9	0.399	mg/L	0.0074	0.399	mg/L	0.0074	1.86%
QC value within limits for Se 196.026 Recovery = 99.65%								
Si 251.611†	-178550.8	-9.07	mg/L	0.318	-9.07	mg/L	0.318	3.50%
QC value less than the lower limit for Si 251.611 Recovery = -181.43%								
Sn 189.927†	5718.7	0.965	mg/L	0.0083	0.965	mg/L	0.0083	0.86%

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   QC value within limits for Sn 189.927  Recovery = 96.54%
Ti 334.940†          921293.5       0.994 mg/L        0.0054       0.994 mg/L        0.0054   0.54%
   QC value within limits for Ti 334.940  Recovery = 99.44%
Tl 190.801†             583.2       0.493 mg/L        0.0093       0.493 mg/L        0.0093   1.89%
   QC value within limits for Tl 190.801  Recovery = 98.54%
V 290.880†           187016.8       0.991 mg/L        0.0074       0.991 mg/L        0.0074   0.74%
   QC value within limits for V 290.880  Recovery = 99.14%
Zn 206.200†           28160.0       0.982 mg/L        0.0076       0.982 mg/L        0.0076   0.77%
   QC value within limits for Zn 206.200  Recovery = 98.20%
K 766.490†            78382.4        49.9 mg/L          0.61        49.9 mg/L          0.61   1.22%
   QC value within limits for K 766.490  Recovery = 99.88%
Na 589.592†          400346.6        50.3 mg/L          0.96        50.3 mg/L          0.96   1.91%
   QC value within limits for Na 589.592  Recovery = 100.58%
Sr 407.771†          812020.1        1.01 mg/L         0.007        1.01 mg/L         0.007   0.72%
   QC value within limits for Sr 407.771  Recovery = 100.71%
Li 670.784†           39456.7        1.03 mg/L         0.021        1.03 mg/L         0.021   2.02%
   QC value within limits for Li 670.784  Recovery = 103.14%
P 214.914†             6118.9        9.60 mg/L         0.051        9.60 mg/L         0.051   0.53%
   QC value within limits for P 214.914  Recovery = 95.97%
QC Failed.  Continue with analysis.

==========================================================================================================
Sequence No.: 32                                    Autosampler Location: 1
Sample ID: CCB                                      Date Collected: 5/27/2015 2:42:39 PM
Analyst:                                            Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

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Nebulizer Parameters: CCB
Analyte                  Back Pressure    Flow
All                     231.0 kPa         0.40 L/min

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Mean Data: CCB
                   Mean Corrected         Calib.                          Sample
Analyte               Intensity     Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029            3491395.4                                                    31717.45   0.91%
YRADIAL               218151.5                                                     2668.06   1.22%
Ga 417.206           1607692.0                                                     8494.80   0.53%
GaRADIAL               52808.6                                                      563.22   1.07%
Ag 328.068†               89.9     0.00233 mg/L      0.000540     0.00233 mg/L      0.000540  23.16%
   QC value within limits for Ag 328.068  Recovery = Not calculated
Al 396.153†               15.6     -0.0165 mg/L       0.00349     -0.0165 mg/L       0.00349  21.11%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†               -7.0    -0.00071 mg/L      0.002450    -0.00071 mg/L      0.002450 347.38%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†               -5.7    -0.00034 mg/L      0.000187    -0.00034 mg/L      0.000187  54.26%
   QC value within limits for Ba 233.527  Recovery = Not calculated
Be 234.861†                0.7     0.00025 mg/L      0.000069     0.00025 mg/L      0.000069  27.57%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†               -79.3     0.00355 mg/L      0.002158     0.00355 mg/L      0.002158  60.87%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†               -0.8      0.0455 mg/L       0.03934      0.0455 mg/L       0.03934  86.48%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†               -4.2    -0.00002 mg/L      0.000466    -0.00002 mg/L      0.000466 >999.9%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†               -7.1    -0.00112 mg/L      0.000129    -0.00112 mg/L      0.000129  11.44%
   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†              110.8     0.00033 mg/L      0.001075     0.00033 mg/L      0.001075 328.64%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†             -273.4     0.00081 mg/L      0.000558     0.00081 mg/L      0.000558  68.45%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†                0.1     0.00421 mg/L      0.001046     0.00421 mg/L      0.001046  24.82%
   QC value within limits for Fe 239.562  Recovery = Not calculated
Mg 279.077†               52.0     0.00473 mg/L      0.007479     0.00473 mg/L      0.007479 158.05%
   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†               24.5    -0.00039 mg/L      0.000033    -0.00039 mg/L      0.000033   8.43%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†               10.2     0.00104 mg/L      0.000441     0.00104 mg/L      0.000441  42.27%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†               -1.1    -0.00077 mg/L      0.000523    -0.00077 mg/L      0.000523  68.22%
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   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†                11.2     0.00206 mg/L      0.002456     0.00206 mg/L      0.002456 119.12%
   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†                -4.8     0.00033 mg/L      0.003541     0.00033 mg/L      0.003541 >999.9%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†                 0.8     0.00532 mg/L      0.006573     0.00532 mg/L      0.006573 123.50%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†            -6463.3      -0.473 mg/L        0.2656      -0.473 mg/L        0.2656  56.13%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†              -23.4    -0.00545 mg/L      0.001006    -0.00545 mg/L      0.001006  18.48%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†              207.0     0.00194 mg/L      0.000241     0.00194 mg/L      0.000241  12.42%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†               -3.7    -0.00452 mg/L      0.000675    -0.00452 mg/L      0.000675  14.93%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†               -351.1     0.00002 mg/L      0.000669     0.00002 mg/L      0.000669 >999.9%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†               -4.7    -0.00494 mg/L      0.000456    -0.00494 mg/L      0.000456   9.22%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†               -36.9     0.00550 mg/L      0.060309     0.00550 mg/L      0.060309 >999.9%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†              278.1      0.0546 mg/L       0.01185      0.0546 mg/L       0.01185  21.73%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†              173.5    -0.00012 mg/L      0.000210    -0.00012 mg/L      0.000210 172.22%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†               48.6    -0.00142 mg/L      0.002764    -0.00142 mg/L      0.002764 194.70%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†                -2.7    -0.00205 mg/L      0.018309    -0.00205 mg/L      0.018309 892.12%
   QC value within limits for P 214.914  Recovery = Not calculated
All analyte(s) passed QC.
```

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Analysis Begun

Start Time: 5/27/2015 2:53:21 PM **Plasma On Time: 5/27/2015 6:39:13 AM**
Logged In Analyst: peicp2 **Technique: ICP Continuous**
Spectrometer Model: Optima 4300 DV, S/N 077N4011401 **Autosampler Model: Cetac**

Sample Information File: C:\pe\peicp2\Sample Information\MONDAY1.sif
Batch ID:
Results Data Set: 052715HR
Results Library: C:\pe\peicp2\Results\results2.mdb

==========

Method Loaded
Method Name: 200.7-6010-3015 ASX **Method Last Saved: 5/27/2015 11:32:50 AM**
IEC File: PLUS-P.iec **SMF File:**
Method Description: STANDARD

==========

Sequence No.: 1 **Autosampler Location: 121**
Sample ID: PBW ZB WG525230-02 **Date Collected: 5/27/2015 2:53:24 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: PBW ZB WG525230-02

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: PBW ZB WG525230-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3461512.5						24775.57	0.72%
YRADIAL	216848.6						1948.17	0.90%
Ga 417.206	1577413.7						10502.26	0.67%
GaRADIAL	52240.2						856.88	1.64%
Ag 328.068†	-43.3	0.00195	mg/L	0.000795	0.00195	mg/L	0.000795	40.83%
Al 396.153†	13.9	-0.0171	mg/L	0.00208	-0.0171	mg/L	0.00208	12.13%
As 188.979†	-8.7	-0.00173	mg/L	0.000477	-0.00173	mg/L	0.000477	27.64%
Ba 233.527†	-1.3	-0.00027	mg/L	0.000062	-0.00027	mg/L	0.000062	23.17%
Be 234.861†	-56.7	0.00014	mg/L	0.000019	0.00014	mg/L	0.000019	13.00%
B 249.677†	-412.8	-0.00113	mg/L	0.001561	-0.00113	mg/L	0.001561	138.43%
Ca 227.546†	-4.3	0.00175	mg/L	0.303264	0.00175	mg/L	0.303264	>999.9%
Cd 228.802†	-2.3	0.00011	mg/L	0.000001	0.00011	mg/L	0.000001	0.49%
Co 228.616†	-1.5	-0.00073	mg/L	0.000952	-0.00073	mg/L	0.000952	129.91%
Cr 267.716†	77.6	0.00008	mg/L	0.000300	0.00008	mg/L	0.000300	362.40%
Cu 327.393†	-419.8	0.00014	mg/L	0.000809	0.00014	mg/L	0.000809	590.93%
Fe 239.562†	39.5	0.0110	mg/L	0.00056	0.0110	mg/L	0.00056	5.06%
Mg 279.077†	19.4	-0.00736	mg/L	0.003486	-0.00736	mg/L	0.003486	47.38%
Mn 257.610†	30.4	-0.00038	mg/L	0.000029	-0.00038	mg/L	0.000029	7.75%
Mo 202.031†	5.8	0.00063	mg/L	0.000245	0.00063	mg/L	0.000245	38.96%
Ni 231.604†	-9.7	-0.00104	mg/L	0.000394	-0.00104	mg/L	0.000394	37.97%
Pb 220.353†	-4.1	-0.00136	mg/L	0.000942	-0.00136	mg/L	0.000942	69.20%
Sb 206.836†	-6.6	-0.00122	mg/L	0.009301	-0.00122	mg/L	0.009301	762.28%
Se 196.026†	10.5	0.0206	mg/L	0.00533	0.0206	mg/L	0.00533	25.86%
Si 251.611†	-171057.0	-8.69	mg/L	0.282	-8.69	mg/L	0.282	3.25%
Sn 189.927†	-45.9	-0.00924	mg/L	0.001841	-0.00924	mg/L	0.001841	19.92%
Ti 334.940†	170.5	0.00190	mg/L	0.000184	0.00190	mg/L	0.000184	9.68%
Tl 190.801†	-2.4	-0.00343	mg/L	0.001677	-0.00343	mg/L	0.001677	48.82%
V 290.880†	-144.9	0.00111	mg/L	0.000847	0.00111	mg/L	0.000847	76.04%
Zn 206.200†	-162.0	-0.0104	mg/L	0.00018	-0.0104	mg/L	0.00018	1.73%
K 766.490†	32.2	0.0491	mg/L	0.06768	0.0491	mg/L	0.06768	137.72%
Na 589.592†	120.4	0.0353	mg/L	0.00604	0.0353	mg/L	0.00604	17.10%
Sr 407.771†	239.9	-0.00004	mg/L	0.000075	-0.00004	mg/L	0.000075	196.31%
Li 670.784†	9.7	-0.00244	mg/L	0.002726	-0.00244	mg/L	0.002726	111.81%
P 214.914†	5.7	0.0111	mg/L	0.00613	0.0111	mg/L	0.00613	55.23%

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Sequence No.: 2 **Autosampler Location: 122**

Approved: May 28, 2015

Lynn H. Rhoden

Sample ID: LCSW ZB WG525230-03
Analyst: KHR
Initial Sample Wt:
Dilution:

Date Collected: 5/27/2015 2:56:46 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: LCSW ZB WG525230-03

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: LCSW ZB WG525230-03

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3296185.8						20661.74	0.63%
YRADIAL	211385.6						3037.26	1.44%
Ga 417.206	1390682.8						8430.37	0.61%
GaRADIAL	49343.3						385.52	0.78%
Ag 328.068†	65238.0	0.195	mg/L	0.0010	0.195	mg/L	0.0010	0.50%
Al 396.153†	14431.1	5.02	mg/L	0.014	5.02	mg/L	0.014	0.28%
As 188.979†	278.2	0.172	mg/L	0.0061	0.172	mg/L	0.0061	3.57%
Ba 233.527†	28828.7	0.498	mg/L	0.0019	0.498	mg/L	0.0019	0.38%
Be 234.861†	12736.3	0.0231	mg/L	0.00006	0.0231	mg/L	0.00006	0.25%
B 249.677†	56191.8	0.802	mg/L	0.0065	0.802	mg/L	0.0065	0.81%
Ca 227.546†	356.6	4.57	mg/L	0.034	4.57	mg/L	0.034	0.75%
Cd 228.802†	382.7	0.0227	mg/L	0.00050	0.0227	mg/L	0.00050	2.20%
Co 228.616†	1376.6	0.0958	mg/L	0.00129	0.0958	mg/L	0.00129	1.35%
Cr 267.716†	33122.2	0.243	mg/L	0.0022	0.243	mg/L	0.0022	0.91%
Cu 327.393†	50746.4	0.238	mg/L	0.0006	0.238	mg/L	0.0006	0.26%
Fe 239.562†	11715.5	2.02	mg/L	0.013	2.02	mg/L	0.013	0.64%
Mg 279.077†	13365.1	4.94	mg/L	0.042	4.94	mg/L	0.042	0.85%
Mn 257.610†	154400.9	0.242	mg/L	0.0014	0.242	mg/L	0.0014	0.57%
Mo 202.031†	4967.1	0.473	mg/L	0.0015	0.473	mg/L	0.0015	0.31%
Ni 231.604†	7534.2	0.235	mg/L	0.0007	0.235	mg/L	0.0007	0.29%
Pb 220.353†	1056.3	0.237	mg/L	0.0040	0.237	mg/L	0.0040	1.70%
Sb 206.836†	632.8	0.549	mg/L	0.0006	0.549	mg/L	0.0006	0.12%
Se 196.026†	114.8	0.185	mg/L	0.0064	0.185	mg/L	0.0064	3.46%
Si 251.611†	-87735.7	-4.53	mg/L	0.058	-4.53	mg/L	0.058	1.28%
Sn 189.927†	2809.6	0.474	mg/L	0.0036	0.474	mg/L	0.0036	0.75%
Ti 334.940†	445105.2	0.481	mg/L	0.0029	0.481	mg/L	0.0029	0.59%
Tl 190.801†	289.5	0.244	mg/L	0.0071	0.244	mg/L	0.0071	2.90%
V 290.880†	91039.5	0.484	mg/L	0.0047	0.484	mg/L	0.0047	0.97%
Zn 206.200†	13629.8	0.473	mg/L	0.0034	0.473	mg/L	0.0034	0.72%
K 766.490†	37949.2	24.1	mg/L	0.17	24.1	mg/L	0.17	0.72%
Na 589.592†	195817.8	24.3	mg/L	0.30	24.3	mg/L	0.30	1.25%
Sr 407.771†	395017.4	0.490	mg/L	0.0065	0.490	mg/L	0.0065	1.32%
Li 670.784†	19618.3	0.511	mg/L	0.0083	0.511	mg/L	0.0083	1.62%
P 214.914†	2938.5	4.61	mg/L	0.028	4.61	mg/L	0.028	0.60%

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Sequence No.: 3
Sample ID: FBLK1 WG525064-01
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 123
Date Collected: 5/27/2015 2:59:10 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: FBLK1 WG525064-01

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: FBLK1 WG525064-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3254848.0						36808.06	1.13%
YRADIAL	208104.5						2969.80	1.43%
Ga 417.206	1351388.5						11854.27	0.88%
GaRADIAL	48250.6						812.37	1.68%
Ag 328.068†	407.6	0.00327	mg/L	0.001008	0.00327	mg/L	0.001008	30.84%
Al 396.153†	-2.1	-0.0227	mg/L	0.00877	-0.0227	mg/L	0.00877	38.59%
As 188.979†	-8.5	-0.00160	mg/L	0.005219	-0.00160	mg/L	0.005219	325.82%

Approved: May 28, 2015

Kym H. Rhoden

Ba 233.527†	-0.3	-0.00025	mg/L	0.000136	-0.00025	mg/L	0.000136	54.29%
Be 234.861†	-100.6	0.00006	mg/L	0.000057	0.00006	mg/L	0.000057	89.07%
B 249.677†	826.5	0.0163	mg/L	0.00314	0.0163	mg/L	0.00314	19.28%
Ca 227.546†	-10.8	-0.0795	mg/L	0.17328	-0.0795	mg/L	0.17328	218.03%
Cd 228.802†	3.0	0.00043	mg/L	0.000366	0.00043	mg/L	0.000366	85.99%
Co 228.616†	-5.9	-0.00105	mg/L	0.000994	-0.00105	mg/L	0.000994	95.07%
Cr 267.716†	172.7	0.00078	mg/L	0.002013	0.00078	mg/L	0.002013	256.98%
Cu 327.393†	-509.4	-0.00028	mg/L	0.001607	-0.00028	mg/L	0.001607	578.96%
Fe 239.562†	18.8	0.00743	mg/L	0.002186	0.00743	mg/L	0.002186	29.42%
Mg 279.077†	24.7	-0.00541	mg/L	0.007849	-0.00541	mg/L	0.007849	145.14%
Mn 257.610†	40.6	-0.00036	mg/L	0.000033	-0.00036	mg/L	0.000033	9.18%
Mo 202.031†	8.9	0.00092	mg/L	0.001215	0.00092	mg/L	0.001215	132.41%
Ni 231.604†	-16.6	-0.00125	mg/L	0.000326	-0.00125	mg/L	0.000326	26.06%
Pb 220.353†	-25.8	-0.00621	mg/L	0.001360	-0.00621	mg/L	0.001360	21.91%
Sb 206.836†	-6.2	-0.00090	mg/L	0.003209	-0.00090	mg/L	0.003209	358.17%
Se 196.026†	8.5	0.0175	mg/L	0.00852	0.0175	mg/L	0.00852	48.63%
Si 251.611†	-126655.2	-6.47	mg/L	0.488	-6.47	mg/L	0.488	7.54%
Sn 189.927†	-28.9	-0.00638	mg/L	0.000656	-0.00638	mg/L	0.000656	10.30%
Ti 334.940†	241.2	0.00197	mg/L	0.000422	0.00197	mg/L	0.000422	21.43%
Tl 190.801†	-3.7	-0.00448	mg/L	0.004661	-0.00448	mg/L	0.004661	104.09%
V 290.880†	102.0	0.00242	mg/L	0.001195	0.00242	mg/L	0.001195	49.37%
Zn 206.200†	-100.1	-0.00827	mg/L	0.000137	-0.00827	mg/L	0.000137	1.66%
K 766.490†	25.3	-0.0897	mg/L	0.09247	-0.0897	mg/L	0.09247	103.12%
Na 589.592†	1019954.6	134	mg/L	0.8	134	mg/L	0.8	0.59%
Sr 407.771†	334.2	0.00008	mg/L	0.000116	0.00008	mg/L	0.000116	141.71%
Li 670.784†	-0.8	-0.00271	mg/L	0.004279	-0.00271	mg/L	0.004279	157.71%
P 214.914†	2.6	0.00618	mg/L	0.020422	0.00618	mg/L	0.020422	330.26%

Sequence No.: 4 **Autosampler Location: 124**
Sample ID: FBLK2 WG525064-02 **Date Collected: 5/27/2015 3:02:33 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: FBLK2 WG525064-02

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: FBLK2 WG525064-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3489024.8						45852.33	1.31%
YRADIAL	218822.7						7047.66	3.22%
Ga 417.206	1591809.2						18091.11	1.14%
GaRADIAL	52383.3						1688.15	3.22%
Ag 328.068†	-238.0	0.00137	mg/L	0.000412	0.00137	mg/L	0.000412	30.13%
Al 396.153†	5.3	-0.0202	mg/L	0.00407	-0.0202	mg/L	0.00407	20.14%
As 188.979†	-9.6	-0.00228	mg/L	0.003955	-0.00228	mg/L	0.003955	173.41%
Ba 233.527†	-6.7	-0.00036	mg/L	0.000239	-0.00036	mg/L	0.000239	66.63%
Be 234.861†	-107.9	0.00005	mg/L	0.000068	0.00005	mg/L	0.000068	130.08%
B 249.677†	-906.2	-0.00810	mg/L	0.001125	-0.00810	mg/L	0.001125	13.89%
Ca 227.546†	-17.9	-0.169	mg/L	0.0932	-0.169	mg/L	0.0932	55.13%
Cd 228.802†	2.6	0.00040	mg/L	0.000197	0.00040	mg/L	0.000197	48.99%
Co 228.616†	-12.7	-0.00152	mg/L	0.000365	-0.00152	mg/L	0.000365	24.08%
Cr 267.716†	71.6	0.00004	mg/L	0.001705	0.00004	mg/L	0.001705	>999.9%
Cu 327.393†	-639.8	-0.00088	mg/L	0.001436	-0.00088	mg/L	0.001436	162.85%
Fe 239.562†	3.2	0.00475	mg/L	0.001652	0.00475	mg/L	0.001652	34.77%
Mg 279.077†	15.7	-0.00872	mg/L	0.005076	-0.00872	mg/L	0.005076	58.18%
Mn 257.610†	51.7	-0.00034	mg/L	0.000015	-0.00034	mg/L	0.000015	4.39%
Mo 202.031†	21.8	0.00215	mg/L	0.000796	0.00215	mg/L	0.000796	36.97%
Ni 231.604†	-9.3	-0.00103	mg/L	0.000587	-0.00103	mg/L	0.000587	57.19%
Pb 220.353†	-6.1	-0.00180	mg/L	0.000043	-0.00180	mg/L	0.000043	2.41%
Sb 206.836†	-1.1	0.00353	mg/L	0.005282	0.00353	mg/L	0.005282	149.52%
Se 196.026†	-0.6	0.00319	mg/L	0.004150	0.00319	mg/L	0.004150	130.25%
Si 251.611†	-210699.7	-10.7	mg/L	0.08	-10.7	mg/L	0.08	0.71%
Sn 189.927†	-43.4	-0.00883	mg/L	0.001388	-0.00883	mg/L	0.001388	15.72%
Ti 334.940†	-39.5	0.00166	mg/L	0.000238	0.00166	mg/L	0.000238	14.32%
Tl 190.801†	-1.2	-0.00246	mg/L	0.003418	-0.00246	mg/L	0.003418	138.74%
V 290.880†	-619.2	-0.00140	mg/L	0.001548	-0.00140	mg/L	0.001548	110.85%

Approved: May 28, 2015

Kym H. Rhoden

Zn 206.200†	-96.1	-0.00813 mg/L	0.000282	-0.00813 mg/L	0.000282	3.46%
K 766.490†	50.6	0.0607 mg/L	0.01555	0.0607 mg/L	0.01555	25.62%
Na 589.592†	589.4	0.0926 mg/L	0.01565	0.0926 mg/L	0.01565	16.91%
Sr 407.771†	165.2	-0.00013 mg/L	0.000138	-0.00013 mg/L	0.000138	110.11%
Li 670.784†	-103.3	-0.00540 mg/L	0.002310	-0.00540 mg/L	0.002310	42.79%
P 214.914†	-1.3	0.00020 mg/L	0.017577	0.00020 mg/L	0.017577	>999.9%

Sequence No.: 5 **Autosampler Location: 125**
Sample ID: L1505134901 **Date Collected: 5/27/2015 3:05:55 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505134901

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505134901

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3267505.3						54773.19	1.68%
YRADIAL	210139.3						3612.77	1.72%
Ga 417.206	1347935.0						21067.51	1.56%
GaRADIAL	48689.3						576.31	1.18%
Ag 328.068†	239.1	0.00272	mg/L	0.000703	0.00272	mg/L	0.000703	25.86%
Al 396.153†	22.6	-0.0141	mg/L	0.01218	-0.0141	mg/L	0.01218	86.34%
As 188.979†	-5.9	0.00002	mg/L	0.003908	0.00002	mg/L	0.003908	>999.9%
Ba 233.527†	457.7	0.00767	mg/L	0.000397	0.00767	mg/L	0.000397	5.18%
Be 234.861†	-132.3	0.00005	mg/L	0.000048	0.00005	mg/L	0.000048	87.89%
B 249.677†	1177.7	0.0213	mg/L	0.00083	0.0213	mg/L	0.00083	3.87%
Ca 227.546†	138.2	1.79	mg/L	0.215	1.79	mg/L	0.215	11.98%
Cd 228.802†	4.8	0.00053	mg/L	0.000094	0.00053	mg/L	0.000094	17.67%
Co 228.616†	38.0	0.00204	mg/L	0.000635	0.00204	mg/L	0.000635	31.09%
Cr 267.716†	224.2	0.00117	mg/L	0.001484	0.00117	mg/L	0.001484	127.33%
Cu 327.393†	2662.0	0.0144	mg/L	0.00131	0.0144	mg/L	0.00131	9.11%
Fe 239.562†	140.3	0.0283	mg/L	0.00203	0.0283	mg/L	0.00203	7.19%
Mg 279.077†	4177.3	1.53	mg/L	0.022	1.53	mg/L	0.022	1.45%
Mn 257.610†	334351.9	0.524	mg/L	0.0086	0.524	mg/L	0.0086	1.64%
Mo 202.031†	12.4	0.00136	mg/L	0.000767	0.00136	mg/L	0.000767	56.28%
Ni 231.604†	88.4	0.00203	mg/L	0.000243	0.00203	mg/L	0.000243	11.97%
Pb 220.353†	-5.3	-0.00193	mg/L	0.003544	-0.00193	mg/L	0.003544	183.90%
Sb 206.836†	4.8	0.00856	mg/L	0.008035	0.00856	mg/L	0.008035	93.85%
Se 196.026†	4.9	0.0117	mg/L	0.00674	0.0117	mg/L	0.00674	57.77%
Si 251.611†	-137979.2	-7.04	mg/L	0.446	-7.04	mg/L	0.446	6.33%
Sn 189.927†	-41.3	-0.00846	mg/L	0.003564	-0.00846	mg/L	0.003564	42.12%
Ti 334.940†	139.3	0.00198	mg/L	0.000320	0.00198	mg/L	0.000320	16.19%
Tl 190.801†	-5.1	-0.00618	mg/L	0.003771	-0.00618	mg/L	0.003771	61.03%
V 290.880†	379.9	0.00385	mg/L	0.001386	0.00385	mg/L	0.001386	35.97%
Zn 206.200†	1828.8	0.0590	mg/L	0.00112	0.0590	mg/L	0.00112	1.89%
K 766.490†	677.2	0.328	mg/L	0.1102	0.328	mg/L	0.1102	33.64%
Na 589.592†	979166.9	129	mg/L	1.0	129	mg/L	1.0	0.79%
Sr 407.771†	9690.2	0.0116	mg/L	0.00021	0.0116	mg/L	0.00021	1.84%
Li 670.784†	-93.7	-0.00515	mg/L	0.005307	-0.00515	mg/L	0.005307	103.09%
P 214.914†	410.9	0.646	mg/L	0.0201	0.646	mg/L	0.0201	3.12%

Sequence No.: 6 **Autosampler Location: 126**
Sample ID: L1505135301 **Date Collected: 5/27/2015 3:09:18 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505135301

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505135301

Approved: May 28, 2015
Kym H. Rhoden

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3347259.6						66019.81	1.97%
YRADIAL	212026.3						408.94	0.19%
Ga 417.206	1386597.5						26940.84	1.94%
GaRADIAL	49036.5						1475.47	3.01%
Ag 328.068†	328.6	0.00347	mg/L	0.001234	0.00347	mg/L	0.001234	35.55%
Al 396.153†	166.6	0.0365	mg/L	0.01729	0.0365	mg/L	0.01729	47.36%
As 188.979†	-13.9	-0.00447	mg/L	0.006887	-0.00447	mg/L	0.006887	154.23%
Ba 233.527†	402.4	0.00668	mg/L	0.000138	0.00668	mg/L	0.000138	2.07%
Be 234.861†	20.6	0.00006	mg/L	0.000099	0.00006	mg/L	0.000099	176.56%
B 249.677†	2644.9	0.0461	mg/L	0.00449	0.0461	mg/L	0.00449	9.74%
Ca 227.546†	765.9	9.68	mg/L	0.235	9.68	mg/L	0.235	2.43%
Cd 228.802†	-4.9	-0.00002	mg/L	0.000766	-0.00002	mg/L	0.000766	>999.9%
Co 228.616†	35.4	0.00183	mg/L	0.000549	0.00183	mg/L	0.000549	29.94%
Cr 267.716†	121.4	0.00038	mg/L	0.000719	0.00038	mg/L	0.000719	189.40%
Cu 327.393†	-690.5	-0.00095	mg/L	0.001501	-0.00095	mg/L	0.001501	157.45%
Fe 239.562†	6392.8	1.10	mg/L	0.044	1.10	mg/L	0.044	3.99%
Mg 279.077†	7218.4	2.66	mg/L	0.088	2.66	mg/L	0.088	3.29%
Mn 257.610†	314786.3	0.493	mg/L	0.0154	0.493	mg/L	0.0154	3.12%
Mo 202.031†	22.6	0.00231	mg/L	0.000217	0.00231	mg/L	0.000217	9.41%
Ni 231.604†	79.3	0.00175	mg/L	0.000336	0.00175	mg/L	0.000336	19.20%
Pb 220.353†	0.2	-0.00072	mg/L	0.001867	-0.00072	mg/L	0.001867	259.53%
Sb 206.836†	0.9	0.00530	mg/L	0.005351	0.00530	mg/L	0.005351	100.92%
Se 196.026†	6.0	0.0134	mg/L	0.00856	0.0134	mg/L	0.00856	64.07%
Si 251.611†	-133122.1	-6.79	mg/L	0.473	-6.79	mg/L	0.473	6.96%
Sn 189.927†	-43.1	-0.00878	mg/L	0.000440	-0.00878	mg/L	0.000440	5.01%
Ti 334.940†	-213.0	0.00211	mg/L	0.000142	0.00211	mg/L	0.000142	6.76%
Tl 190.801†	-7.9	-0.00847	mg/L	0.001641	-0.00847	mg/L	0.001641	19.38%
V 290.880†	144.6	0.00279	mg/L	0.000854	0.00279	mg/L	0.000854	30.66%
Zn 206.200†	2549.6	0.0842	mg/L	0.00221	0.0842	mg/L	0.00221	2.63%
K 766.490†	320.1	0.101	mg/L	0.0946	0.101	mg/L	0.0946	93.33%
Na 589.592†	985590.6	130	mg/L	5.0	130	mg/L	5.0	3.82%
Sr 407.771†	29950.4	0.0365	mg/L	0.00034	0.0365	mg/L	0.00034	0.92%
Li 670.784†	-177.6	-0.00735	mg/L	0.000276	-0.00735	mg/L	0.000276	3.76%
P 214.914†	1104.6	1.73	mg/L	0.011	1.73	mg/L	0.011	0.66%

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Sequence No.: 7
Sample ID: L1505142801
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 127
Date Collected: 5/27/2015 3:11:43 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505142801

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505142801

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3282081.7						57584.59	1.75%
YRADIAL	211520.8						2141.51	1.01%
Ga 417.206	1409755.7						17355.34	1.23%
GaRADIAL	50943.5						408.72	0.80%
Ag 328.068†	2759.9	0.0101	mg/L	0.00049	0.0101	mg/L	0.00049	4.84%
Al 396.153†	-31.4	-0.0333	mg/L	0.00278	-0.0333	mg/L	0.00278	8.34%
As 188.979†	-43.1	-0.0182	mg/L	0.00621	-0.0182	mg/L	0.00621	34.09%
Ba 233.527†	1704.7	0.0292	mg/L	0.00035	0.0292	mg/L	0.00035	1.19%
Be 234.861†	-97.3	0.00009	mg/L	0.000049	0.00009	mg/L	0.000049	57.52%
B 249.677†	1297.4	0.0228	mg/L	0.00081	0.0228	mg/L	0.00081	3.55%
Ca 227.546†	16965.0	213	mg/L	1.4	213	mg/L	1.4	0.66%
Cd 228.802†	63.3	0.00417	mg/L	0.000812	0.00417	mg/L	0.000812	19.45%
Co 228.616†	37.9	0.00207	mg/L	0.000372	0.00207	mg/L	0.000372	17.92%
Cr 267.716†	252.1	0.00137	mg/L	0.000141	0.00137	mg/L	0.000141	10.25%
Cu 327.393†	60944.2	0.284	mg/L	0.0048	0.284	mg/L	0.0048	1.67%
Fe 239.562†	9.6	0.00578	mg/L	0.000566	0.00578	mg/L	0.000566	9.80%
Mg 279.077†	6759.7	2.49	mg/L	0.029	2.49	mg/L	0.029	1.17%
Mn 257.610†	79741.1	0.125	mg/L	0.0004	0.125	mg/L	0.0004	0.35%
Mo 202.031†	77.4	0.00746	mg/L	0.000541	0.00746	mg/L	0.000541	7.24%

Approved: May 28, 2015
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Ni 231.604†	116.7	0.00293	mg/L	0.000267	0.00293	mg/L	0.000267	9.12%
Pb 220.353†	109.2	0.0239	mg/L	0.00213	0.0239	mg/L	0.00213	8.92%
Sb 206.836†	-7.7	-0.00224	mg/L	0.007979	-0.00224	mg/L	0.007979	355.84%
Se 196.026†	-14.0	-0.0178	mg/L	0.01170	-0.0178	mg/L	0.01170	65.87%
Si 251.611†	-155957.9	-7.93	mg/L	0.147	-7.93	mg/L	0.147	1.86%
Sn 189.927†	-88.3	-0.0164	mg/L	0.00077	-0.0164	mg/L	0.00077	4.68%
Ti 334.940†	-14920.9	-0.00067	mg/L	0.000270	-0.00067	mg/L	0.000270	40.32%
Tl 190.801†	-32.5	-0.0286	mg/L	0.00744	-0.0286	mg/L	0.00744	25.98%
V 290.880†	-94.4	0.00132	mg/L	0.002198	0.00132	mg/L	0.002198	166.82%
Zn 206.200†	4275.5	0.144	mg/L	0.0016	0.144	mg/L	0.0016	1.08%
K 766.490†	1547.7	1.00	mg/L	0.035	1.00	mg/L	0.035	3.48%
Na 589.592†	19598.0	2.42	mg/L	0.015	2.42	mg/L	0.015	0.61%
Sr 407.771†	274825.9	0.334	mg/L	0.0013	0.334	mg/L	0.0013	0.40%
Li 670.784†	148.7	0.00120	mg/L	0.003771	0.00120	mg/L	0.003771	313.36%
P 214.914†	-168.8	-0.262	mg/L	0.0139	-0.262	mg/L	0.0139	5.30%

Sequence No.: 8 **Autosampler Location: 128**
Sample ID: L1505142803 **Date Collected: 5/27/2015 3:15:03 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505142803

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505142803

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3329847.5						70612.74	2.12%
YRADIAL	215515.9						4763.11	2.21%
Ga 417.206	1429244.6						31634.98	2.21%
GaRADIAL	51546.3						768.29	1.49%
Ag 328.068†	2276.9	0.00865	mg/L	0.000918	0.00865	mg/L	0.000918	10.60%
Al 396.153†	-2.8	-0.0232	mg/L	0.00153	-0.0232	mg/L	0.00153	6.59%
As 188.979†	-31.8	-0.0126	mg/L	0.00816	-0.0126	mg/L	0.00816	64.68%
Ba 233.527†	5266.6	0.0908	mg/L	0.00150	0.0908	mg/L	0.00150	1.65%
Be 234.861†	-84.2	0.00011	mg/L	0.000054	0.00011	mg/L	0.000054	48.82%
B 249.677†	2430.7	0.0389	mg/L	0.00229	0.0389	mg/L	0.00229	5.89%
Ca 227.546†	12095.9	152	mg/L	2.9	152	mg/L	2.9	1.91%
Cd 228.802†	20.6	0.00156	mg/L	0.000744	0.00156	mg/L	0.000744	47.79%
Co 228.616†	-12.1	-0.00148	mg/L	0.000771	-0.00148	mg/L	0.000771	52.30%
Cr 267.716†	200.8	0.00099	mg/L	0.000414	0.00099	mg/L	0.000414	41.82%
Cu 327.393†	4359.2	0.0223	mg/L	0.00122	0.0223	mg/L	0.00122	5.49%
Fe 239.562†	12.2	0.00624	mg/L	0.001164	0.00624	mg/L	0.001164	18.64%
Mg 279.077†	5988.7	2.20	mg/L	0.046	2.20	mg/L	0.046	2.09%
Mn 257.610†	94950.7	0.148	mg/L	0.0013	0.148	mg/L	0.0013	0.85%
Mo 202.031†	65.9	0.00638	mg/L	0.000314	0.00638	mg/L	0.000314	4.93%
Ni 231.604†	16.8	-0.00020	mg/L	0.000150	-0.00020	mg/L	0.000150	76.08%
Pb 220.353†	44.8	0.00949	mg/L	0.006247	0.00949	mg/L	0.006247	65.84%
Sb 206.836†	0.7	0.00506	mg/L	0.003417	0.00506	mg/L	0.003417	67.46%
Se 196.026†	-14.1	-0.0179	mg/L	0.01135	-0.0179	mg/L	0.01135	63.34%
Si 251.611†	-146201.2	-7.45	mg/L	0.197	-7.45	mg/L	0.197	2.65%
Sn 189.927†	-83.0	-0.0155	mg/L	0.00224	-0.0155	mg/L	0.00224	14.40%
Ti 334.940†	-10938.9	-0.00031	mg/L	0.000394	-0.00031	mg/L	0.000394	127.61%
Tl 190.801†	-34.2	-0.0300	mg/L	0.00077	-0.0300	mg/L	0.00077	2.55%
V 290.880†	-32.3	0.00165	mg/L	0.001286	0.00165	mg/L	0.001286	77.94%
Zn 206.200†	720.9	0.0204	mg/L	0.00055	0.0204	mg/L	0.00055	2.72%
K 766.490†	2023.3	1.30	mg/L	0.065	1.30	mg/L	0.065	5.02%
Na 589.592†	56531.0	6.95	mg/L	0.065	6.95	mg/L	0.065	0.94%
Sr 407.771†	295775.0	0.362	mg/L	0.0034	0.362	mg/L	0.0034	0.93%
Li 670.784†	474.8	0.00975	mg/L	0.005863	0.00975	mg/L	0.005863	60.13%
P 214.914†	462.7	0.728	mg/L	0.0118	0.728	mg/L	0.0118	1.62%

Sequence No.: 9 **Autosampler Location: 129**
Sample ID: L1505142803PS WG525249-01 **Date Collected: 5/27/2015 3:18:23 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**

Approved: May 28, 2015
Kym H. Rhoden

Dilution: Sample Prep Vol:

Nebulizer Parameters: L1505142803PS WG525249-01

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505142803PS WG525249-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3313660.6						12251.32	0.37%
YRADIAL	212147.2						698.99	0.33%
Ga 417.206	1396042.6						5531.92	0.40%
GaRADIAL	49891.5						184.51	0.37%
Ag 328.068†	68678.5	0.205	mg/L	0.0012	0.205	mg/L	0.0012	0.58%
Al 396.153†	14512.2	5.05	mg/L	0.086	5.05	mg/L	0.086	1.70%
As 188.979†	269.5	0.170	mg/L	0.0040	0.170	mg/L	0.0040	2.34%
Ba 233.527†	32696.2	0.565	mg/L	0.0024	0.565	mg/L	0.0024	0.43%
Be 234.861†	13269.9	0.0241	mg/L	0.00005	0.0241	mg/L	0.00005	0.21%
B 249.677†	60168.5	0.858	mg/L	0.0067	0.858	mg/L	0.0067	0.78%
Ca 227.546†	11431.8	144	mg/L	0.7	144	mg/L	0.7	0.46%
Cd 228.802†	403.3	0.0240	mg/L	0.00015	0.0240	mg/L	0.00015	0.61%
Co 228.616†	1360.0	0.0947	mg/L	0.00047	0.0947	mg/L	0.00047	0.50%
Cr 267.716†	33677.1	0.248	mg/L	0.0008	0.248	mg/L	0.0008	0.34%
Cu 327.393†	56010.3	0.262	mg/L	0.0032	0.262	mg/L	0.0032	1.23%
Fe 239.562†	11714.4	2.02	mg/L	0.024	2.02	mg/L	0.024	1.18%
Mg 279.077†	18616.7	6.88	mg/L	0.076	6.88	mg/L	0.076	1.11%
Mn 257.610†	238873.3	0.374	mg/L	0.0030	0.374	mg/L	0.0030	0.80%
Mo 202.031†	5129.9	0.489	mg/L	0.0013	0.489	mg/L	0.0013	0.27%
Ni 231.604†	7423.8	0.232	mg/L	0.0009	0.232	mg/L	0.0009	0.40%
Pb 220.353†	1121.3	0.251	mg/L	0.0019	0.251	mg/L	0.0019	0.76%
Sb 206.836†	641.8	0.557	mg/L	0.0040	0.557	mg/L	0.0040	0.72%
Se 196.026†	115.1	0.185	mg/L	0.0040	0.185	mg/L	0.0040	2.18%
Si 251.611†	-70748.5	-3.69	mg/L	0.187	-3.69	mg/L	0.187	5.08%
Sn 189.927†	2791.3	0.470	mg/L	0.0026	0.470	mg/L	0.0026	0.56%
Ti 334.940†	444422.7	0.490	mg/L	0.0032	0.490	mg/L	0.0032	0.66%
Tl 190.801†	264.5	0.223	mg/L	0.0008	0.223	mg/L	0.0008	0.35%
V 290.880†	93752.4	0.498	mg/L	0.0065	0.498	mg/L	0.0065	1.30%
Zn 206.200†	14429.4	0.501	mg/L	0.0011	0.501	mg/L	0.0011	0.21%
K 766.490†	40884.9	25.9	mg/L	0.12	25.9	mg/L	0.12	0.45%
Na 589.592†	252140.9	31.3	mg/L	0.16	31.3	mg/L	0.16	0.50%
Sr 407.771†	677340.4	0.836	mg/L	0.0065	0.836	mg/L	0.0065	0.78%
Li 670.784†	20044.0	0.523	mg/L	0.0065	0.523	mg/L	0.0065	1.25%
P 214.914†	3528.0	5.53	mg/L	0.013	5.53	mg/L	0.013	0.24%

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Sequence No.: 10 **Autosampler Location: 130**
Sample ID: L1505142803DL WG525249-02 **Date Collected: 5/27/2015 3:20:47 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505142803DL WG525249-02

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505142803DL WG525249-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3373943.3						35026.74	1.04%
YRADIAL	217651.2						504.41	0.23%
Ga 417.206	1543642.9						24390.25	1.58%
GaRADIAL	52531.0						289.56	0.55%
Ag 328.068†	138.3	0.00246	mg/L	0.001039	0.00246	mg/L	0.001039	42.31%
Al 396.153†	1.4	-0.0216	mg/L	0.00481	-0.0216	mg/L	0.00481	22.28%
As 188.979†	-13.4	-0.00399	mg/L	0.001456	-0.00399	mg/L	0.001456	36.50%
Ba 233.527†	1084.6	0.0185	mg/L	0.00015	0.0185	mg/L	0.00015	0.81%
Be 234.861†	-18.8	0.00022	mg/L	0.000018	0.00022	mg/L	0.000018	8.42%
B 249.677†	1565.8	0.0267	mg/L	0.00294	0.0267	mg/L	0.00294	11.01%

Approved: May 28, 2015

Kym H. Rhoden

Ca 227.546†	2308.2	29.1	mg/L	0.41	29.1	mg/L	0.41	1.39%
Cd 228.802†	2.4	0.00040	mg/L	0.000788	0.00040	mg/L	0.000788	195.25%
Co 228.616†	-5.7	-0.00103	mg/L	0.000711	-0.00103	mg/L	0.000711	69.15%
Cr 267.716†	87.7	0.00016	mg/L	0.000132	0.00016	mg/L	0.000132	83.60%
Cu 327.393†	70.3	0.00240	mg/L	0.000514	0.00240	mg/L	0.000514	21.41%
Fe 239.562†	-3.0	0.00368	mg/L	0.001617	0.00368	mg/L	0.001617	44.00%
Mg 279.077†	1317.6	0.474	mg/L	0.0048	0.474	mg/L	0.0048	1.01%
Mn 257.610†	20547.7	0.0318	mg/L	0.00048	0.0318	mg/L	0.00048	1.52%
Mo 202.031†	25.0	0.00246	mg/L	0.000921	0.00246	mg/L	0.000921	37.40%
Ni 231.604†	-12.2	-0.00111	mg/L	0.000428	-0.00111	mg/L	0.000428	38.42%
Pb 220.353†	26.8	0.00554	mg/L	0.002351	0.00554	mg/L	0.002351	42.46%
Sb 206.836†	-1.8	0.00288	mg/L	0.003186	0.00288	mg/L	0.003186	110.58%
Se 196.026†	3.4	0.00942	mg/L	0.011398	0.00942	mg/L	0.011398	121.00%
Si 251.611†	24596.4	1.08	mg/L	0.184	1.08	mg/L	0.184	17.06%
Sn 189.927†	-51.3	-0.0102	mg/L	0.00114	-0.0102	mg/L	0.00114	11.24%
Ti 334.940†	-2641.2	0.00073	mg/L	0.000441	0.00073	mg/L	0.000441	60.09%
Tl 190.801†	-11.5	-0.0110	mg/L	0.00340	-0.0110	mg/L	0.00340	30.83%
V 290.880†	-271.7	0.00043	mg/L	0.000813	0.00043	mg/L	0.000813	189.61%
Zn 206.200†	81.1	-0.00195	mg/L	0.000193	-0.00195	mg/L	0.000193	9.86%
K 766.490†	468.8	0.323	mg/L	0.0330	0.323	mg/L	0.0330	10.20%
Na 589.592†	11374.6	1.41	mg/L	0.011	1.41	mg/L	0.011	0.75%
Sr 407.771†	61394.2	0.0749	mg/L	0.00060	0.0749	mg/L	0.00060	0.80%
Li 670.784†	118.2	0.00040	mg/L	0.001778	0.00040	mg/L	0.001778	439.57%
P 214.914†	93.2	0.148	mg/L	0.0129	0.148	mg/L	0.0129	8.70%

Sequence No.: 11 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 5/27/2015 3:24:07 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3255028.0						21390.66	0.66%
YRADIAL	212743.9						2206.43	1.04%
Ga 417.206	1359590.0						11115.19	0.82%
GaRADIAL	49509.2						485.02	0.98%
Ag 328.068†	131773.0	0.392	mg/L	0.0044	0.392	mg/L	0.0044	1.11%
QC value within limits for Ag 328.068 Recovery = 97.97%								
Al 396.153†	28803.6	10.0	mg/L	0.14	10.0	mg/L	0.14	1.42%
QC value within limits for Al 396.153 Recovery = 100.42%								
As 188.979†	620.1	0.380	mg/L	0.0017	0.380	mg/L	0.0017	0.45%
QC value within limits for As 188.979 Recovery = 95.08%								
Ba 233.527†	56427.1	0.976	mg/L	0.0083	0.976	mg/L	0.0083	0.85%
QC value within limits for Ba 233.527 Recovery = 97.56%								
Be 234.861†	26177.0	0.0472	mg/L	0.00081	0.0472	mg/L	0.00081	1.72%
QC value within limits for Be 234.861 Recovery = 94.38%								
B 249.677†	25925.6	0.383	mg/L	0.0034	0.383	mg/L	0.0034	0.90%
QC value less than the lower limit for B 249.677 Recovery = 76.56%								
Ca 227.546†	763.8	9.72	mg/L	0.350	9.72	mg/L	0.350	3.60%
QC value within limits for Ca 227.546 Recovery = 97.21%								
Cd 228.802†	806.9	0.0475	mg/L	0.00086	0.0475	mg/L	0.00086	1.81%
QC value within limits for Cd 228.802 Recovery = 95.09%								
Co 228.616†	2821.6	0.197	mg/L	0.0008	0.197	mg/L	0.0008	0.41%
QC value within limits for Co 228.616 Recovery = 98.55%								
Cr 267.716†	66512.8	0.489	mg/L	0.0029	0.489	mg/L	0.0029	0.60%
QC value within limits for Cr 267.716 Recovery = 97.87%								
Cu 327.393†	103848.2	0.485	mg/L	0.0064	0.485	mg/L	0.0064	1.32%
QC value within limits for Cu 327.393 Recovery = 96.95%								
Fe 239.562†	23369.0	4.02	mg/L	0.061	4.02	mg/L	0.061	1.51%
QC value within limits for Fe 239.562 Recovery = 100.50%								
Mg 279.077†	27346.7	10.1	mg/L	0.09	10.1	mg/L	0.09	0.87%
QC value within limits for Mg 279.077 Recovery = 101.15%								
Mn 257.610†	313636.5	0.491	mg/L	0.0049	0.491	mg/L	0.0049	1.00%

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   QC value within limits for Mn 257.610  Recovery = 98.25%
Mo 202.031†            10111.9       0.963 mg/L        0.0076       0.963 mg/L        0.0076   0.79%
   QC value within limits for Mo 202.031  Recovery = 96.30%
Ni 231.604†            15666.3       0.490 mg/L        0.0042       0.490 mg/L        0.0042   0.87%
   QC value within limits for Ni 231.604  Recovery = 97.94%
Pb 220.353†             2194.6       0.492 mg/L        0.0033       0.492 mg/L        0.0033   0.67%
   QC value within limits for Pb 220.353  Recovery = 98.49%
Sb 206.836†             1326.7        1.15 mg/L         0.015        1.15 mg/L         0.015   1.29%
   QC value within limits for Sb 206.836  Recovery = 95.54%
Se 196.026†              251.0       0.399 mg/L        0.0036       0.399 mg/L        0.0036   0.91%
   QC value within limits for Se 196.026  Recovery = 99.69%
Si 251.611†          -177172.9       -9.00 mg/L         0.216       -9.00 mg/L         0.216   2.40%
   QC value less than the lower limit for Si 251.611  Recovery = -180.06%
Sn 189.927†             5749.6       0.971 mg/L        0.0073       0.971 mg/L        0.0073   0.76%
   QC value within limits for Sn 189.927  Recovery = 97.06%
Ti 334.940†           905086.9       0.977 mg/L        0.0081       0.977 mg/L        0.0081   0.83%
   QC value within limits for Ti 334.940  Recovery = 97.70%
Tl 190.801†              588.4       0.497 mg/L        0.0069       0.497 mg/L        0.0069   1.39%
   QC value within limits for Tl 190.801  Recovery = 99.37%
V 290.880†            183818.7       0.974 mg/L        0.0102       0.974 mg/L        0.0102   1.04%
   QC value within limits for V 290.880  Recovery = 97.45%
Zn 206.200†            28407.6       0.991 mg/L        0.0083       0.991 mg/L        0.0083   0.83%
   QC value within limits for Zn 206.200  Recovery = 99.06%
K 766.490†             77281.7        49.2 mg/L          0.68        49.2 mg/L          0.68   1.38%
   QC value within limits for K 766.490  Recovery = 98.47%
Na 589.592†           392942.9        49.3 mg/L          0.49        49.3 mg/L          0.49   1.00%
   QC value within limits for Na 589.592  Recovery = 98.67%
Sr 407.771†           787001.9       0.976 mg/L        0.0078       0.976 mg/L        0.0078   0.80%
   QC value within limits for Sr 407.771  Recovery = 97.61%
Li 670.784†            38801.2        1.01 mg/L         0.017        1.01 mg/L         0.017   1.67%
   QC value within limits for Li 670.784  Recovery = 101.42%
P 214.914†              6180.3        9.69 mg/L         0.045        9.69 mg/L         0.045   0.46%
   QC value within limits for P 214.914  Recovery = 96.93%
QC Failed.  Continue with analysis.

==========================================================================================================
Sequence No.: 12                                    Autosampler Location: 1
Sample ID: CCB                                      Date Collected: 5/27/2015 3:26:32 PM
Analyst:                                            Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

----------------------------------------------------------------------------------------------------------
Nebulizer Parameters: CCB
Analyte                  Back Pressure     Flow
All                      231.0 kPa         0.40 L/min

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Mean Data: CCB
                    Mean Corrected          Calib.                          Sample
Analyte                Intensity      Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029            3441460.5                                                        26819.82   0.78%
YRADIAL               220924.5                                                          679.82   0.31%
Ga 417.206           1582380.6                                                         8919.33   0.56%
GaRADIAL               53504.6                                                          708.00   1.32%
Ag 328.068†             -143.3     0.00165 mg/L      0.000266     0.00165 mg/L      0.000266  16.16%
   QC value within limits for Ag 328.068  Recovery = Not calculated
Al 396.153†               13.6     -0.0172 mg/L       0.00428     -0.0172 mg/L       0.00428  24.86%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†               -7.9    -0.00126 mg/L      0.004464    -0.00126 mg/L      0.004464 354.18%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†               -9.8    -0.00041 mg/L      0.000103    -0.00041 mg/L      0.000103  24.81%
   QC value within limits for Ba 233.527  Recovery = Not calculated
Be 234.861†              -18.4     0.00021 mg/L      0.000054     0.00021 mg/L      0.000054  25.22%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†               -270.9     0.00084 mg/L      0.001593     0.00084 mg/L      0.001593 189.53%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†               -6.1     -0.0204 mg/L       0.14306     -0.0204 mg/L       0.14306 702.72%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†               -0.9     0.00019 mg/L      0.000084     0.00019 mg/L      0.000084  44.18%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†               -8.7    -0.00124 mg/L      0.000274    -0.00124 mg/L      0.000274  22.01%
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   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†              -12.5    -0.00058 mg/L      0.001403    -0.00058 mg/L      0.001403 241.60%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†             -305.7     0.00066 mg/L      0.000827     0.00066 mg/L      0.000827 124.52%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†               -8.2     0.00279 mg/L      0.000323     0.00279 mg/L      0.000323  11.58%
   QC value within limits for Fe 239.562  Recovery = Not calculated
Mg 279.077†               23.0    -0.00601 mg/L      0.010118    -0.00601 mg/L      0.010118 168.27%
   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†               26.3    -0.00038 mg/L      0.000065    -0.00038 mg/L      0.000065  16.96%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†                3.8     0.00043 mg/L      0.000640     0.00043 mg/L      0.000640 148.30%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†              -14.8    -0.00120 mg/L      0.000608    -0.00120 mg/L      0.000608  50.82%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†                2.3     0.00007 mg/L      0.004726     0.00007 mg/L      0.004726 >999.9%
   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†               -0.3     0.00423 mg/L      0.005359     0.00423 mg/L      0.005359 126.55%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†                5.0      0.0120 mg/L       0.00623      0.0120 mg/L       0.00623  52.14%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†            -3600.1      -0.330 mg/L        0.0941      -0.330 mg/L        0.0941  28.49%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†              -19.6    -0.00479 mg/L      0.001021    -0.00479 mg/L      0.001021  21.31%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†              209.0     0.00194 mg/L      0.000245     0.00194 mg/L      0.000245  12.66%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†                0.8    -0.00076 mg/L      0.008949    -0.00076 mg/L      0.008949 >999.9%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†              -554.5    -0.00105 mg/L      0.001344    -0.00105 mg/L      0.001344 127.52%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†               -4.0    -0.00493 mg/L      0.000287    -0.00493 mg/L      0.000287   5.82%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†                35.7      0.0514 mg/L       0.03528      0.0514 mg/L       0.03528  68.71%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†              -85.8      0.0101 mg/L       0.02416      0.0101 mg/L       0.02416 238.77%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†              149.5    -0.00015 mg/L      0.000124    -0.00015 mg/L      0.000124  82.68%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†              -69.4    -0.00451 mg/L      0.001183    -0.00451 mg/L      0.001183  26.24%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†                -3.0    -0.00252 mg/L      0.005185    -0.00252 mg/L      0.005185 205.34%
   QC value within limits for P 214.914  Recovery = Not calculated
All analyte(s) passed QC.

==========================================================================================
Sequence No.: 13                                    Autosampler Location: 131
Sample ID: L1505154601                              Date Collected: 5/27/2015 3:29:53 PM
Analyst: KHR                                        Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

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Nebulizer Parameters: L1505154601
Analyte                 Back Pressure    Flow
All                    232.0 kPa        0.40 L/min

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Mean Data: L1505154601
                   Mean Corrected         Calib.                          Sample
Analyte               Intensity     Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029            3217289.6                                                    74069.32   2.30%
YRADIAL               210786.9                                                     2890.24   1.37%
Ga 417.206           1303517.5                                                    22837.32   1.75%
GaRADIAL               48928.9                                                      885.95   1.81%
Ag 328.068†             1175.9     0.00659 mg/L      0.000301     0.00659 mg/L      0.000301   4.56%
Al 396.153†              569.9       0.178 mg/L        0.0197       0.178 mg/L        0.0197  11.06%
As 188.979†               -8.8     0.00157 mg/L      0.009720     0.00157 mg/L      0.009720 617.61%
Ba 233.527†             9533.1       0.164 mg/L        0.0042       0.164 mg/L        0.0042   2.58%
Be 234.861†              314.8     0.00020 mg/L      0.000046     0.00020 mg/L      0.000046  23.38%
B 249.677†             10935.5       0.169 mg/L        0.0032       0.169 mg/L        0.0032   1.92%
Ca 227.546†             9864.1         124 mg/L           2.5         124 mg/L           2.5   2.04%
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Cd 228.802†	7.8	0.00072	mg/L	0.000754	0.00072	mg/L	0.000754	105.23%
Co 228.616†	7.7	-0.00018	mg/L	0.001095	-0.00018	mg/L	0.001095	606.03%
Cr 267.716†	334.3	0.00189	mg/L	0.000162	0.00189	mg/L	0.000162	8.55%
Cu 327.393†	715.1	0.00579	mg/L	0.000390	0.00579	mg/L	0.000390	6.74%
Fe 239.562†	16343.4	2.81	mg/L	0.052	2.81	mg/L	0.052	1.84%
Mg 279.077†	94397.5	35.0	mg/L	0.49	35.0	mg/L	0.49	1.40%
Mn 257.610†	544923.5	0.854	mg/L	0.0062	0.854	mg/L	0.0062	0.73%
Mo 202.031†	119.0	0.0115	mg/L	0.00096	0.0115	mg/L	0.00096	8.29%
Ni 231.604†	81.1	0.00181	mg/L	0.000612	0.00181	mg/L	0.000612	33.74%
Pb 220.353†	40.8	0.00814	mg/L	0.002089	0.00814	mg/L	0.002089	25.68%
Sb 206.836†	1.8	0.00608	mg/L	0.001985	0.00608	mg/L	0.001985	32.68%
Se 196.026†	-16.7	-0.0225	mg/L	0.00853	-0.0225	mg/L	0.00853	37.82%
Si 251.611†	-25963.2	-1.45	mg/L	0.253	-1.45	mg/L	0.253	17.47%
Sn 189.927†	-44.3	-0.00898	mg/L	0.000879	-0.00898	mg/L	0.000879	9.80%
Ti 334.940†	-5238.5	0.00403	mg/L	0.000437	0.00403	mg/L	0.000437	10.83%
Tl 190.801†	-23.8	-0.0221	mg/L	0.01143	-0.0221	mg/L	0.01143	51.66%
V 290.880†	-757.3	-0.00250	mg/L	0.000879	-0.00250	mg/L	0.000879	35.10%
Zn 206.200†	-91.1	-0.00768	mg/L	0.000631	-0.00768	mg/L	0.000631	8.21%
K 766.490†	804.7	0.281	mg/L	0.0526	0.281	mg/L	0.0526	18.71%
Na 589.592†	1799037.7	255	mg/L	5.4	255	mg/L	5.4	2.10%
Sr 407.771†	420381.5	0.517	mg/L	0.0078	0.517	mg/L	0.0078	1.51%
Li 670.784†	483.4	0.00998	mg/L	0.005645	0.00998	mg/L	0.005645	56.59%
P 214.914†	187.9	0.297	mg/L	0.0168	0.297	mg/L	0.0168	5.67%

Sequence No.: 14 **Autosampler Location: 132**
Sample ID: L1505154602 **Date Collected: 5/27/2015 3:32:17 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505154602

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505154602

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3355181.0						62403.62	1.86%
YRADIAL	210679.4						3800.43	1.80%
Ga 417.206	1454405.7						29313.90	2.02%
GaRADIAL	50486.3						746.88	1.48%
Ag 328.068†	591.0	0.00377	mg/L	0.000622	0.00377	mg/L	0.000622	16.48%
Al 396.153†	216.2	0.0536	mg/L	0.00821	0.0536	mg/L	0.00821	15.31%
As 188.979†	-11.5	-0.00273	mg/L	0.001655	-0.00273	mg/L	0.001655	60.61%
Ba 233.527†	2667.9	0.0459	mg/L	0.00105	0.0459	mg/L	0.00105	2.29%
Be 234.861†	-80.2	0.00009	mg/L	0.000047	0.00009	mg/L	0.000047	52.14%
B 249.677†	1867.5	0.0312	mg/L	0.00272	0.0312	mg/L	0.00272	8.73%
Ca 227.546†	2764.7	34.8	mg/L	0.42	34.8	mg/L	0.42	1.22%
Cd 228.802†	-0.8	0.00021	mg/L	0.000476	0.00021	mg/L	0.000476	227.55%
Co 228.616†	-0.3	-0.00065	mg/L	0.000709	-0.00065	mg/L	0.000709	108.56%
Cr 267.716†	271.0	0.00150	mg/L	0.000091	0.00150	mg/L	0.000091	6.08%
Cu 327.393†	-740.7	-0.00134	mg/L	0.001343	-0.00134	mg/L	0.001343	100.07%
Fe 239.562†	321.3	0.0590	mg/L	0.00272	0.0590	mg/L	0.00272	4.61%
Mg 279.077†	58726.3	21.7	mg/L	0.34	21.7	mg/L	0.34	1.57%
Mn 257.610†	1045.4	0.00122	mg/L	0.000023	0.00122	mg/L	0.000023	1.93%
Mo 202.031†	62.4	0.00601	mg/L	0.000867	0.00601	mg/L	0.000867	14.43%
Ni 231.604†	-17.2	-0.00127	mg/L	0.000229	-0.00127	mg/L	0.000229	18.05%
Pb 220.353†	9.5	0.00170	mg/L	0.001033	0.00170	mg/L	0.001033	60.72%
Sb 206.836†	0.5	0.00486	mg/L	0.009642	0.00486	mg/L	0.009642	198.46%
Se 196.026†	-4.2	-0.00250	mg/L	0.012219	-0.00250	mg/L	0.012219	488.30%
Si 251.611†	-180628.1	-9.16	mg/L	0.206	-9.16	mg/L	0.206	2.25%
Sn 189.927†	-56.6	-0.0111	mg/L	0.00094	-0.0111	mg/L	0.00094	8.46%
Ti 334.940†	-247.1	0.00368	mg/L	0.000209	0.00368	mg/L	0.000209	5.68%
Tl 190.801†	-6.7	-0.00702	mg/L	0.001856	-0.00702	mg/L	0.001856	26.45%
V 290.880†	-547.3	-0.00157	mg/L	0.000558	-0.00157	mg/L	0.000558	35.47%
Zn 206.200†	-58.2	-0.00679	mg/L	0.000098	-0.00679	mg/L	0.000098	1.44%
K 766.490†	960.3	0.615	mg/L	0.0833	0.615	mg/L	0.0833	13.55%
Na 589.592†	163154.4	20.2	mg/L	0.28	20.2	mg/L	0.28	1.41%
Sr 407.771†	203084.6	0.251	mg/L	0.0034	0.251	mg/L	0.0034	1.34%

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Li 670.784†	68.1	-0.00091	mg/L	0.003464	-0.00091	mg/L	0.003464	381.75%
P 214.914†	33.7	0.0550	mg/L	0.00294	0.0550	mg/L	0.00294	5.34%

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Sequence No.: 15 **Autosampler Location: 133**
Sample ID: L1505154603 WG525230-01 **Date Collected: 5/27/2015 3:35:37 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505154603 WG525230-01

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505154603 WG525230-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3223836.3						50432.61	1.56%
YRADIAL	205036.8						2142.75	1.05%
Ga 417.206	1294102.5						22700.79	1.75%
GaRADIAL	48960.6						648.30	1.32%
Ag 328.068†	1488.3	0.00636	mg/L	0.000245	0.00636	mg/L	0.000245	3.85%
Al 396.153†	119.0	0.0195	mg/L	0.00926	0.0195	mg/L	0.00926	47.56%
As 188.979†	-20.6	-0.00666	mg/L	0.003039	-0.00666	mg/L	0.003039	45.63%
Ba 233.527†	1134.4	0.0194	mg/L	0.00041	0.0194	mg/L	0.00041	2.14%
Be 234.861†	-118.4	0.00003	mg/L	0.000038	0.00003	mg/L	0.000038	138.33%
B 249.677†	5205.9	0.0780	mg/L	0.00169	0.0780	mg/L	0.00169	2.16%
Ca 227.546†	8610.7	108	mg/L	1.7	108	mg/L	1.7	1.60%
Cd 228.802†	12.6	0.00104	mg/L	0.000424	0.00104	mg/L	0.000424	40.81%
Co 228.616†	-2.8	-0.00081	mg/L	0.000659	-0.00081	mg/L	0.000659	81.72%
Cr 267.716†	600.8	0.00393	mg/L	0.000027	0.00393	mg/L	0.000027	0.69%
Cu 327.393†	-864.2	-0.00193	mg/L	0.002083	-0.00193	mg/L	0.002083	108.20%
Fe 239.562†	189.2	0.0361	mg/L	0.00338	0.0361	mg/L	0.00338	9.36%
Mg 279.077†	82585.8	30.6	mg/L	0.20	30.6	mg/L	0.20	0.66%
Mn 257.610†	561.9	0.00046	mg/L	0.000008	0.00046	mg/L	0.000008	1.68%
Mo 202.031†	76.5	0.00735	mg/L	0.000938	0.00735	mg/L	0.000938	12.75%
Ni 231.604†	-16.0	-0.00123	mg/L	0.000350	-0.00123	mg/L	0.000350	28.51%
Pb 220.353†	34.3	0.00724	mg/L	0.000964	0.00724	mg/L	0.000964	13.30%
Sb 206.836†	8.9	0.0121	mg/L	0.00646	0.0121	mg/L	0.00646	53.48%
Se 196.026†	3.4	0.00952	mg/L	0.005087	0.00952	mg/L	0.005087	53.41%
Si 251.611†	-70455.9	-3.67	mg/L	0.079	-3.67	mg/L	0.079	2.15%
Sn 189.927†	-60.7	-0.0117	mg/L	0.00159	-0.0117	mg/L	0.00159	13.51%
Ti 334.940†	-6241.8	0.00194	mg/L	0.000413	0.00194	mg/L	0.000413	21.28%
Tl 190.801†	-23.4	-0.0209	mg/L	0.00162	-0.0209	mg/L	0.00162	7.72%
V 290.880†	129.0	0.00177	mg/L	0.001025	0.00177	mg/L	0.001025	57.85%
Zn 206.200†	-86.0	-0.00774	mg/L	0.000114	-0.00774	mg/L	0.000114	1.47%
K 766.490†	1721.5	0.722	mg/L	0.0175	0.722	mg/L	0.0175	2.42%
Na 589.592†	2526642.7	393	mg/L	5.5	393	mg/L	5.5	1.41%
Sr 407.771†	382849.2	0.471	mg/L	0.0029	0.471	mg/L	0.0029	0.62%
Li 670.784†	796.5	0.0182	mg/L	0.00371	0.0182	mg/L	0.00371	20.38%
P 214.914†	19.4	0.0326	mg/L	0.00900	0.0326	mg/L	0.00900	27.64%

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Sequence No.: 16 **Autosampler Location: 134**
Sample ID: L1505154604MS WG525230-04 **Date Collected: 5/27/2015 3:39:01 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505154604MS WG525230-04

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505154604MS WG525230-04

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3149705.7						23036.14	0.73%
YRADIAL	206504.8						422.57	0.20%

Approved: May 28, 2015

Lynn H. Rhoden

Ga 417.206	1265255.9					9873.05	0.78%
GaRADIAL	48188.2					114.56	0.24%
Ag 328.068†	70495.7	0.210	mg/L	0.0015	0.210 mg/L	0.0015	0.73%
Al 396.153†	13867.3	4.82	mg/L	0.023	4.82 mg/L	0.023	0.48%
As 188.979†	296.2	0.186	mg/L	0.0061	0.186 mg/L	0.0061	3.29%
Ba 233.527†	28999.1	0.501	mg/L	0.0054	0.501 mg/L	0.0054	1.08%
Be 234.861†	13382.4	0.0243	mg/L	0.00021	0.0243 mg/L	0.00021	0.89%
B 249.677†	66189.0	0.943	mg/L	0.0100	0.943 mg/L	0.0100	1.06%
Ca 227.546†	9005.1	113	mg/L	1.2	113 mg/L	1.2	1.02%
Cd 228.802†	402.6	0.0239	mg/L	0.00052	0.0239 mg/L	0.00052	2.17%
Co 228.616†	1329.2	0.0925	mg/L	0.00128	0.0925 mg/L	0.00128	1.38%
Cr 267.716†	33183.3	0.244	mg/L	0.0025	0.244 mg/L	0.0025	1.02%
Cu 327.393†	53189.0	0.249	mg/L	0.0033	0.249 mg/L	0.0033	1.31%
Fe 239.562†	11477.3	1.98	mg/L	0.015	1.98 mg/L	0.015	0.74%
Mg 279.077†	93987.8	34.8	mg/L	0.09	34.8 mg/L	0.09	0.26%
Mn 257.610†	151217.9	0.237	mg/L	0.0019	0.237 mg/L	0.0019	0.79%
Mo 202.031†	5038.6	0.480	mg/L	0.0034	0.480 mg/L	0.0034	0.70%
Ni 231.604†	7216.7	0.225	mg/L	0.0018	0.225 mg/L	0.0018	0.80%
Pb 220.353†	1035.7	0.232	mg/L	0.0067	0.232 mg/L	0.0067	2.90%
Sb 206.836†	670.8	0.582	mg/L	0.0094	0.582 mg/L	0.0094	1.62%
Se 196.026†	124.2	0.199	mg/L	0.0143	0.199 mg/L	0.0143	7.16%
Si 251.611†	-8302.6	-0.570	mg/L	0.1619	-0.570 mg/L	0.1619	28.39%
Sn 189.927†	2740.5	0.462	mg/L	0.0066	0.462 mg/L	0.0066	1.43%
Ti 334.940†	440569.9	0.483	mg/L	0.0034	0.483 mg/L	0.0034	0.71%
Tl 190.801†	249.9	0.211	mg/L	0.0078	0.211 mg/L	0.0078	3.68%
V 290.880†	92695.7	0.492	mg/L	0.0042	0.492 mg/L	0.0042	0.85%
Zn 206.200†	13377.3	0.464	mg/L	0.0047	0.464 mg/L	0.0047	1.01%
K 766.490†	39867.2	24.9	mg/L	0.11	24.9 mg/L	0.11	0.43%
Na 589.592†	2699284.0	432	mg/L	4.3	432 mg/L	4.3	1.00%
Sr 407.771†	748383.4	0.925	mg/L	0.0039	0.925 mg/L	0.0039	0.42%
Li 670.784†	19523.6	0.509	mg/L	0.0022	0.509 mg/L	0.0022	0.43%
P 214.914†	3091.1	4.85	mg/L	0.066	4.85 mg/L	0.066	1.37%

Sequence No.: 17 **Autosampler Location: 135**
Sample ID: L1505154605SD WG525230-05 **Date Collected: 5/27/2015 3:41:26 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505154605SD WG525230-05

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505154605SD WG525230-05

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3078933.6						36556.91	1.19%
YRADIAL	205366.4						2116.28	1.03%
Ga 417.206	1237712.3						10630.77	0.86%
GaRADIAL	48102.6						431.79	0.90%
Ag 328.068†	70724.0	0.211	mg/L	0.0011	0.211	mg/L	0.0011	0.50%
Al 396.153†	14395.0	5.01	mg/L	0.021	5.01	mg/L	0.021	0.42%
As 188.979†	301.2	0.189	mg/L	0.0052	0.189	mg/L	0.0052	2.78%
Ba 233.527†	29621.9	0.512	mg/L	0.0073	0.512	mg/L	0.0073	1.42%
Be 234.861†	13645.2	0.0247	mg/L	0.00025	0.0247	mg/L	0.00025	1.00%
B 249.677†	66582.4	0.949	mg/L	0.0083	0.949	mg/L	0.0083	0.88%
Ca 227.546†	9049.4	114	mg/L	1.1	114	mg/L	1.1	0.98%
Cd 228.802†	420.4	0.0249	mg/L	0.00038	0.0249	mg/L	0.00038	1.52%
Co 228.616†	1346.8	0.0937	mg/L	0.00177	0.0937	mg/L	0.00177	1.89%
Cr 267.716†	33132.7	0.244	mg/L	0.0012	0.244	mg/L	0.0012	0.48%
Cu 327.393†	53512.6	0.251	mg/L	0.0003	0.251	mg/L	0.0003	0.13%
Fe 239.562†	11954.4	2.06	mg/L	0.045	2.06	mg/L	0.045	2.20%
Mg 279.077†	94037.8	34.8	mg/L	0.31	34.8	mg/L	0.31	0.90%
Mn 257.610†	152581.9	0.239	mg/L	0.0013	0.239	mg/L	0.0013	0.53%
Mo 202.031†	5112.3	0.487	mg/L	0.0072	0.487	mg/L	0.0072	1.47%
Ni 231.604†	7361.6	0.230	mg/L	0.0027	0.230	mg/L	0.0027	1.16%
Pb 220.353†	1078.1	0.242	mg/L	0.0027	0.242	mg/L	0.0027	1.11%
Sb 206.836†	683.6	0.593	mg/L	0.0065	0.593	mg/L	0.0065	1.10%
Se 196.026†	120.4	0.193	mg/L	0.0104	0.193	mg/L	0.0104	5.40%

Approved: May 28, 2015

Si 251.611†	-4897.1	-0.400	mg/L	0.1857	-0.400	mg/L	0.1857	46.38%
Sn 189.927†	2790.2	0.470	mg/L	0.0057	0.470	mg/L	0.0057	1.22%
Ti 334.940†	446232.8	0.490	mg/L	0.0024	0.490	mg/L	0.0024	0.49%
Tl 190.801†	250.8	0.212	mg/L	0.0112	0.212	mg/L	0.0112	5.28%
V 290.880†	93485.6	0.496	mg/L	0.0019	0.496	mg/L	0.0019	0.38%
Zn 206.200†	13616.9	0.472	mg/L	0.0070	0.472	mg/L	0.0070	1.49%
K 766.490†	40438.0	25.2	mg/L	0.23	25.2	mg/L	0.23	0.93%
Na 589.592†	2717015.9	436	mg/L	7.1	436	mg/L	7.1	1.62%
Sr 407.771†	769436.8	0.951	mg/L	0.0172	0.951	mg/L	0.0172	1.80%
Li 670.784†	19671.9	0.513	mg/L	0.0108	0.513	mg/L	0.0108	2.10%
P 214.914†	3152.3	4.94	mg/L	0.090	4.94	mg/L	0.090	1.82%

Sequence No.: 18 **Autosampler Location: 136**
Sample ID: L1505154606 **Date Collected: 5/27/2015 3:43:51 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505154606

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505154606

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3253001.1						36838.33	1.13%
YRADIAL	205483.4						1155.49	0.56%
Ga 417.206	1333923.9						9940.10	0.75%
GaRADIAL	48261.1						81.59	0.17%
Ag 328.068†	650.0	0.00403	mg/L	0.000774	0.00403	mg/L	0.000774	19.19%
Al 396.153†	596.0	0.187	mg/L	0.0223	0.187	mg/L	0.0223	11.96%
As 188.979†	-9.5	-0.00152	mg/L	0.004637	-0.00152	mg/L	0.004637	305.08%
Ba 233.527†	1744.7	0.0299	mg/L	0.00050	0.0299	mg/L	0.00050	1.66%
Be 234.861†	-91.1	0.00005	mg/L	0.000046	0.00005	mg/L	0.000046	89.18%
B 249.677†	10792.9	0.157	mg/L	0.0047	0.157	mg/L	0.0047	3.02%
Ca 227.546†	2691.9	33.9	mg/L	0.44	33.9	mg/L	0.44	1.31%
Cd 228.802†	6.0	0.00061	mg/L	0.000268	0.00061	mg/L	0.000268	43.84%
Co 228.616†	0.2	-0.00063	mg/L	0.000539	-0.00063	mg/L	0.000539	85.90%
Cr 267.716†	507.2	0.00325	mg/L	0.000128	0.00325	mg/L	0.000128	3.95%
Cu 327.393†	-101.2	0.00164	mg/L	0.000340	0.00164	mg/L	0.000340	20.72%
Fe 239.562†	757.0	0.134	mg/L	0.0004	0.134	mg/L	0.0004	0.33%
Mg 279.077†	40426.0	15.0	mg/L	0.34	15.0	mg/L	0.34	2.27%
Mn 257.610†	966.8	0.00109	mg/L	0.000051	0.00109	mg/L	0.000051	4.67%
Mo 202.031†	76.7	0.00738	mg/L	0.001124	0.00738	mg/L	0.001124	15.22%
Ni 231.604†	5.6	-0.00055	mg/L	0.000487	-0.00055	mg/L	0.000487	87.93%
Pb 220.353†	18.6	0.00376	mg/L	0.002584	0.00376	mg/L	0.002584	68.79%
Sb 206.836†	-5.0	0.00013	mg/L	0.002935	0.00013	mg/L	0.002935	>999.9%
Se 196.026†	0.6	0.00515	mg/L	0.007117	0.00515	mg/L	0.007117	138.16%
Si 251.611†	-84891.5	-4.39	mg/L	0.215	-4.39	mg/L	0.215	4.90%
Sn 189.927†	-44.6	-0.00902	mg/L	0.002765	-0.00902	mg/L	0.002765	30.64%
Ti 334.940†	4410.4	0.00864	mg/L	0.000427	0.00864	mg/L	0.000427	4.94%
Tl 190.801†	-19.5	-0.0175	mg/L	0.00312	-0.0175	mg/L	0.00312	17.82%
V 290.880†	2789.7	0.0163	mg/L	0.00197	0.0163	mg/L	0.00197	12.12%
Zn 206.200†	51.5	-0.00295	mg/L	0.000230	-0.00295	mg/L	0.000230	7.81%
K 766.490†	836.2	0.358	mg/L	0.0931	0.358	mg/L	0.0931	25.98%
Na 589.592†	1447709.2	198	mg/L	2.0	198	mg/L	2.0	1.01%
Sr 407.771†	149007.5	0.184	mg/L	0.0010	0.184	mg/L	0.0010	0.56%
Li 670.784†	451.5	0.00914	mg/L	0.003099	0.00914	mg/L	0.003099	33.91%
P 214.914†	59.1	0.0949	mg/L	0.01761	0.0949	mg/L	0.01761	18.56%

Sequence No.: 19 **Autosampler Location: 137**
Sample ID: L1505154607 **Date Collected: 5/27/2015 3:46:16 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505154607

Approved: May 28, 2015

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505154607

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3184456.2						45529.41	1.43%
YRADIAL	204704.5						2826.90	1.38%
Ga 417.206	1287188.4						19202.92	1.49%
GaRADIAL	48529.9						707.49	1.46%
Ag 328.068†	1326.6	0.00577	mg/L	0.000697	0.00577	mg/L	0.000697	12.07%
Al 396.153†	86.3	0.00792	mg/L	0.003709	0.00792	mg/L	0.003709	46.84%
As 188.979†	-18.1	-0.00520	mg/L	0.005247	-0.00520	mg/L	0.005247	100.85%
Ba 233.527†	3162.0	0.0544	mg/L	0.00094	0.0544	mg/L	0.00094	1.73%
Be 234.861†	-134.0	0.00000	mg/L	0.000067	0.00000	mg/L	0.000067	>999.9%
B 249.677†	20289.7	0.290	mg/L	0.0024	0.290	mg/L	0.0024	0.84%
Ca 227.546†	8418.2	106	mg/L	1.9	106	mg/L	1.9	1.81%
Cd 228.802†	10.2	0.00089	mg/L	0.000553	0.00089	mg/L	0.000553	62.21%
Co 228.616†	3.6	-0.00036	mg/L	0.000467	-0.00036	mg/L	0.000467	129.34%
Cr 267.716†	478.6	0.00303	mg/L	0.000373	0.00303	mg/L	0.000373	12.31%
Cu 327.393†	-824.0	-0.00174	mg/L	0.001178	-0.00174	mg/L	0.001178	67.66%
Fe 239.562†	216.6	0.0403	mg/L	0.00033	0.0403	mg/L	0.00033	0.82%
Mg 279.077†	147485.5	54.6	mg/L	0.51	54.6	mg/L	0.51	0.94%
Mn 257.610†	1357.7	0.00170	mg/L	0.000026	0.00170	mg/L	0.000026	1.51%
Mo 202.031†	99.7	0.00957	mg/L	0.000907	0.00957	mg/L	0.000907	9.48%
Ni 231.604†	20.1	-0.00010	mg/L	0.000389	-0.00010	mg/L	0.000389	404.37%
Pb 220.353†	26.4	0.00547	mg/L	0.001927	0.00547	mg/L	0.001927	35.22%
Sb 206.836†	-1.6	0.00303	mg/L	0.005389	0.00303	mg/L	0.005389	177.89%
Se 196.026†	-2.8	-0.00023	mg/L	0.010530	-0.00023	mg/L	0.010530	>999.9%
Si 251.611†	-16990.5	-0.999	mg/L	0.1044	-0.999	mg/L	0.1044	10.46%
Sn 189.927†	-66.6	-0.0128	mg/L	0.00199	-0.0128	mg/L	0.00199	15.63%
Ti 334.940†	-5840.3	0.00222	mg/L	0.000068	0.00222	mg/L	0.000068	3.08%
Tl 190.801†	-30.8	-0.0270	mg/L	0.00219	-0.0270	mg/L	0.00219	8.12%
V 290.880†	-158.8	-0.00038	mg/L	0.001532	-0.00038	mg/L	0.001532	406.87%
Zn 206.200†	-33.2	-0.00591	mg/L	0.000545	-0.00591	mg/L	0.000545	9.21%
K 766.490†	3627.7	2.01	mg/L	0.055	2.01	mg/L	0.055	2.74%
Na 589.592†	2122252.6	313	mg/L	2.6	313	mg/L	2.6	0.84%
Sr 407.771†	819547.7	1.01	mg/L	0.004	1.01	mg/L	0.004	0.40%
Li 670.784†	1498.5	0.0366	mg/L	0.00152	0.0366	mg/L	0.00152	4.16%
P 214.914†	8.5	0.0155	mg/L	0.00174	0.0155	mg/L	0.00174	11.18%

Sequence No.: 20
Sample ID: L1505154608
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 138
Date Collected: 5/27/2015 3:49:41 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505154608

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505154608

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3279860.7						9769.01	0.30%
YRADIAL	206636.7						1533.57	0.74%
Ga 417.206	1388353.5						5107.73	0.37%
GaRADIAL	49300.0						354.16	0.72%
Ag 328.068†	621.0	0.00395	mg/L	0.000149	0.00395	mg/L	0.000149	3.78%
Al 396.153†	915.6	0.299	mg/L	0.0302	0.299	mg/L	0.0302	10.09%
As 188.979†	-17.2	-0.00598	mg/L	0.006875	-0.00598	mg/L	0.006875	114.95%
Ba 233.527†	3008.0	0.0518	mg/L	0.00022	0.0518	mg/L	0.00022	0.43%
Be 234.861†	-65.3	0.00009	mg/L	0.000026	0.00009	mg/L	0.000026	30.14%
B 249.677†	2333.1	0.0382	mg/L	0.00175	0.0382	mg/L	0.00175	4.57%
Ca 227.546†	3532.7	44.4	mg/L	0.32	44.4	mg/L	0.32	0.71%
Cd 228.802†	6.4	0.00066	mg/L	0.000399	0.00066	mg/L	0.000399	60.74%
Co 228.616†	-6.5	-0.00111	mg/L	0.000934	-0.00111	mg/L	0.000934	83.88%
Cr 267.716†	248.1	0.00134	mg/L	0.000247	0.00134	mg/L	0.000247	18.51%

Approved: May 28, 2015

Cu 327.393†	-517.7	-0.00028	mg/L	0.000398	-0.00028	mg/L	0.000398	142.33%
Fe 239.562†	1038.8	0.182	mg/L	0.0107	0.182	mg/L	0.0107	5.87%
Mg 279.077†	34109.4	12.6	mg/L	0.25	12.6	mg/L	0.25	2.00%
Mn 257.610†	1095.4	0.00130	mg/L	0.000012	0.00130	mg/L	0.000012	0.94%
Mo 202.031†	65.1	0.00627	mg/L	0.000585	0.00627	mg/L	0.000585	9.33%
Ni 231.604†	2.3	-0.00066	mg/L	0.000175	-0.00066	mg/L	0.000175	26.42%
Pb 220.353†	16.6	0.00333	mg/L	0.005779	0.00333	mg/L	0.005779	173.37%
Sb 206.836†	2.3	0.00648	mg/L	0.004970	0.00648	mg/L	0.004970	76.66%
Se 196.026†	-4.0	-0.00212	mg/L	0.002683	-0.00212	mg/L	0.002683	126.69%
Si 251.611†	-53179.4	-2.80	mg/L	0.144	-2.80	mg/L	0.144	5.15%
Sn 189.927†	-61.3	-0.0119	mg/L	0.00220	-0.0119	mg/L	0.00220	18.53%
Ti 334.940†	7607.9	0.0128	mg/L	0.00036	0.0128	mg/L	0.00036	2.78%
Tl 190.801†	1.6	0.00002	mg/L	0.010176	0.00002	mg/L	0.010176	>999.9%
V 290.880†	1158.2	0.00771	mg/L	0.001047	0.00771	mg/L	0.001047	13.58%
Zn 206.200†	-63.5	-0.00697	mg/L	0.000305	-0.00697	mg/L	0.000305	4.37%
K 766.490†	3663.2	2.28	mg/L	0.044	2.28	mg/L	0.044	1.95%
Na 589.592†	497584.9	62.9	mg/L	0.95	62.9	mg/L	0.95	1.51%
Sr 407.771†	169545.1	0.209	mg/L	0.0033	0.209	mg/L	0.0033	1.59%
Li 670.784†	419.3	0.00830	mg/L	0.001536	0.00830	mg/L	0.001536	18.51%
P 214.914†	209.1	0.330	mg/L	0.0198	0.330	mg/L	0.0198	6.01%

Sequence No.: 21
Sample ID: L1505154609
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 139
Date Collected: 5/27/2015 3:52:04 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505154609

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505154609

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3171232.6						50411.09	1.59%
YRADIAL	205886.6						3914.87	1.90%
Ga 417.206	1274344.3						13673.89	1.07%
GaRADIAL	49016.4						808.76	1.65%
Ag 328.068†	480.0	0.00342	mg/L	0.000233	0.00342	mg/L	0.000233	6.81%
Al 396.153†	11.5	-0.0183	mg/L	0.00458	-0.0183	mg/L	0.00458	25.06%
As 188.979†	-3.7	0.00251	mg/L	0.000600	0.00251	mg/L	0.000600	23.90%
Ba 233.527†	929.2	0.0158	mg/L	0.00044	0.0158	mg/L	0.00044	2.80%
Be 234.861†	-151.8	-0.00003	mg/L	0.000046	-0.00003	mg/L	0.000046	164.87%
B 249.677†	13121.6	0.189	mg/L	0.0018	0.189	mg/L	0.0018	0.96%
Ca 227.546†	4407.9	55.4	mg/L	0.64	55.4	mg/L	0.64	1.16%
Cd 228.802†	4.4	0.00050	mg/L	0.000583	0.00050	mg/L	0.000583	117.26%
Co 228.616†	7.1	-0.00011	mg/L	0.000209	-0.00011	mg/L	0.000209	183.90%
Cr 267.716†	558.1	0.00363	mg/L	0.000125	0.00363	mg/L	0.000125	3.45%
Cu 327.393†	-928.0	-0.00221	mg/L	0.001185	-0.00221	mg/L	0.001185	53.53%
Fe 239.562†	76.9	0.0168	mg/L	0.00544	0.0168	mg/L	0.00544	32.30%
Mg 279.077†	77467.5	28.7	mg/L	0.29	28.7	mg/L	0.29	1.01%
Mn 257.610†	403.5	0.00021	mg/L	0.000030	0.00021	mg/L	0.000030	14.26%
Mo 202.031†	91.2	0.00876	mg/L	0.001535	0.00876	mg/L	0.001535	17.53%
Ni 231.604†	1.4	-0.00069	mg/L	0.000041	-0.00069	mg/L	0.000041	5.96%
Pb 220.353†	1.0	-0.00022	mg/L	0.002882	-0.00022	mg/L	0.002882	>999.9%
Sb 206.836†	2.8	0.00690	mg/L	0.006768	0.00690	mg/L	0.006768	98.13%
Se 196.026†	2.7	0.00834	mg/L	0.025062	0.00834	mg/L	0.025062	300.61%
Si 251.611†	50210.1	2.35	mg/L	0.073	2.35	mg/L	0.073	3.10%
Sn 189.927†	-65.4	-0.0125	mg/L	0.00234	-0.0125	mg/L	0.00234	18.66%
Ti 334.940†	-2896.5	0.00215	mg/L	0.000210	0.00215	mg/L	0.000210	9.76%
Tl 190.801†	-13.8	-0.0129	mg/L	0.00713	-0.0129	mg/L	0.00713	55.28%
V 290.880†	2971.4	0.0169	mg/L	0.00097	0.0169	mg/L	0.00097	5.74%
Zn 206.200†	-111.8	-0.00864	mg/L	0.000339	-0.00864	mg/L	0.000339	3.92%
K 766.490†	2334.0	1.14	mg/L	0.062	1.14	mg/L	0.062	5.45%
Na 589.592†	2378517.8	362	mg/L	11.3	362	mg/L	11.3	3.11%
Sr 407.771†	399525.0	0.494	mg/L	0.0115	0.494	mg/L	0.0115	2.33%
Li 670.784†	1006.3	0.0237	mg/L	0.00326	0.0237	mg/L	0.00326	13.79%
P 214.914†	12.5	0.0218	mg/L	0.01413	0.0218	mg/L	0.01413	64.83%

Approved: May 28, 2015

Sequence No.: 22
Sample ID: CCV
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 6
Date Collected: 5/27/2015 3:55:29 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3193805.8						49118.01	1.54%
YRADIAL	206946.7						2882.97	1.39%
Ga 417.206	1341033.3						19423.06	1.45%
GaRADIAL	48480.7						365.86	0.75%
Ag 328.068†	132839.0	0.395	mg/L	0.0015	0.395	mg/L	0.0015	0.38%
QC value within limits for Ag 328.068 Recovery = 98.76%								
Al 396.153†	28899.2	10.1	mg/L	0.10	10.1	mg/L	0.10	1.01%
QC value within limits for Al 396.153 Recovery = 100.76%								
As 188.979†	616.4	0.378	mg/L	0.0147	0.378	mg/L	0.0147	3.88%
QC value within limits for As 188.979 Recovery = 94.51%								
Ba 233.527†	56822.7	0.982	mg/L	0.0058	0.982	mg/L	0.0058	0.59%
QC value within limits for Ba 233.527 Recovery = 98.24%								
Be 234.861†	26472.1	0.0477	mg/L	0.00020	0.0477	mg/L	0.00020	0.42%
QC value within limits for Be 234.861 Recovery = 95.43%								
B 249.677†	26091.6	0.385	mg/L	0.0018	0.385	mg/L	0.0018	0.48%
QC value less than the lower limit for B 249.677 Recovery = 77.06%								
Ca 227.546†	751.2	9.56	mg/L	0.292	9.56	mg/L	0.292	3.05%
QC value within limits for Ca 227.546 Recovery = 95.62%								
Cd 228.802†	794.2	0.0468	mg/L	0.00096	0.0468	mg/L	0.00096	2.05%
QC value within limits for Cd 228.802 Recovery = 93.57%								
Co 228.616†	2800.5	0.196	mg/L	0.0046	0.196	mg/L	0.0046	2.37%
QC value within limits for Co 228.616 Recovery = 97.78%								
Cr 267.716†	67169.4	0.494	mg/L	0.0006	0.494	mg/L	0.0006	0.11%
QC value within limits for Cr 267.716 Recovery = 98.83%								
Cu 327.393†	104382.1	0.487	mg/L	0.0018	0.487	mg/L	0.0018	0.37%
QC value within limits for Cu 327.393 Recovery = 97.45%								
Fe 239.562†	23607.4	4.06	mg/L	0.027	4.06	mg/L	0.027	0.65%
QC value within limits for Fe 239.562 Recovery = 101.52%								
Mg 279.077†	27460.4	10.2	mg/L	0.07	10.2	mg/L	0.07	0.72%
QC value within limits for Mg 279.077 Recovery = 101.57%								
Mn 257.610†	317010.8	0.497	mg/L	0.0019	0.497	mg/L	0.0019	0.38%
QC value within limits for Mn 257.610 Recovery = 99.30%								
Mo 202.031†	10028.5	0.955	mg/L	0.0227	0.955	mg/L	0.0227	2.38%
QC value within limits for Mo 202.031 Recovery = 95.51%								
Ni 231.604†	15662.3	0.490	mg/L	0.0123	0.490	mg/L	0.0123	2.51%
QC value within limits for Ni 231.604 Recovery = 97.91%								
Pb 220.353†	2181.3	0.489	mg/L	0.0131	0.489	mg/L	0.0131	2.68%
QC value within limits for Pb 220.353 Recovery = 97.89%								
Sb 206.836†	1302.3	1.13	mg/L	0.026	1.13	mg/L	0.026	2.34%
QC value within limits for Sb 206.836 Recovery = 93.78%								
Se 196.026†	256.9	0.408	mg/L	0.0358	0.408	mg/L	0.0358	8.78%
QC value within limits for Se 196.026 Recovery = 101.98%								
Si 251.611†	-177954.4	-9.04	mg/L	0.105	-9.04	mg/L	0.105	1.16%
QC value less than the lower limit for Si 251.611 Recovery = -180.84%								
Sn 189.927†	5709.8	0.964	mg/L	0.0250	0.964	mg/L	0.0250	2.59%
QC value within limits for Sn 189.927 Recovery = 96.39%								
Ti 334.940†	915496.7	0.988	mg/L	0.0036	0.988	mg/L	0.0036	0.36%
QC value within limits for Ti 334.940 Recovery = 98.82%								
Tl 190.801†	588.1	0.497	mg/L	0.0180	0.497	mg/L	0.0180	3.62%
QC value within limits for Tl 190.801 Recovery = 99.36%								
V 290.880†	186086.6	0.986	mg/L	0.0058	0.986	mg/L	0.0058	0.59%
QC value within limits for V 290.880 Recovery = 98.65%								
Zn 206.200†	28116.9	0.980	mg/L	0.0233	0.980	mg/L	0.0233	2.37%
QC value within limits for Zn 206.200 Recovery = 98.05%								
K 766.490†	77725.0	49.5	mg/L	0.49	49.5	mg/L	0.49	0.99%
QC value within limits for K 766.490 Recovery = 99.04%								

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Na 589.592†          397577.6        49.9 mg/L          0.46        49.9 mg/L          0.46   0.93%
   QC value within limits for Na 589.592  Recovery = 99.87%
Sr 407.771†          802838.4       0.996 mg/L        0.0160       0.996 mg/L        0.0160   1.61%
   QC value within limits for Sr 407.771  Recovery = 99.57%
Li 670.784†           38956.1        1.02 mg/L         0.012        1.02 mg/L         0.012   1.15%
   QC value within limits for Li 670.784  Recovery = 101.82%
P 214.914†             6121.1        9.60 mg/L         0.227        9.60 mg/L         0.227   2.36%
   QC value within limits for P 214.914  Recovery = 96.00%
QC Failed.  Continue with analysis.
```

Sequence No.: 23 **Autosampler Location: 1**
Sample ID: CCB **Date Collected: 5/27/2015 3:57:54 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCB

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3407472.4						38052.23	1.12%
YRADIAL	216219.9						2132.27	0.99%
Ga 417.206	1563970.5						19398.41	1.24%
GaRADIAL	52408.7						407.26	0.78%
Ag 328.068†	308.4	0.00297	mg/L	0.000576	0.00297	mg/L	0.000576	19.38%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	2.9	-0.0210	mg/L	0.00731	-0.0210	mg/L	0.00731	34.84%
QC value within limits for Al 396.153 Recovery = Not calculated								
As 188.979†	-4.7	0.00070	mg/L	0.002184	0.00070	mg/L	0.002184	309.99%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	-16.1	-0.00052	mg/L	0.000128	-0.00052	mg/L	0.000128	24.56%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 234.861†	-17.0	0.00022	mg/L	0.000010	0.00022	mg/L	0.000010	4.72%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	61.7	0.00552	mg/L	0.002891	0.00552	mg/L	0.002891	52.37%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	-9.0	-0.0564	mg/L	0.08156	-0.0564	mg/L	0.08156	144.68%
QC value within limits for Ca 227.546 Recovery = Not calculated								
Cd 228.802†	-1.1	0.00017	mg/L	0.000468	0.00017	mg/L	0.000468	279.75%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	3.3	-0.00039	mg/L	0.000461	-0.00039	mg/L	0.000461	117.40%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	-31.9	-0.00072	mg/L	0.000449	-0.00072	mg/L	0.000449	62.06%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	-29.0	0.00195	mg/L	0.000175	0.00195	mg/L	0.000175	8.99%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	-5.1	0.00331	mg/L	0.001420	0.00331	mg/L	0.001420	42.84%
QC value within limits for Fe 239.562 Recovery = Not calculated								
Mg 279.077†	23.7	-0.00576	mg/L	0.004352	-0.00576	mg/L	0.004352	75.52%
QC value within limits for Mg 279.077 Recovery = Not calculated								
Mn 257.610†	29.2	-0.00038	mg/L	0.000047	-0.00038	mg/L	0.000047	12.48%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	9.7	0.00100	mg/L	0.000655	0.00100	mg/L	0.000655	65.45%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	-8.7	-0.00101	mg/L	0.000188	-0.00101	mg/L	0.000188	18.64%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	21.0	0.00426	mg/L	0.002776	0.00426	mg/L	0.002776	65.20%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	5.3	0.00899	mg/L	0.003593	0.00899	mg/L	0.003593	39.96%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	0.8	0.00546	mg/L	0.003109	0.00546	mg/L	0.003109	56.89%
QC value within limits for Se 196.026 Recovery = Not calculated								
Si 251.611†	-308.7	-0.166	mg/L	0.0271	-0.166	mg/L	0.0271	16.30%
QC value within limits for Si 251.611 Recovery = Not calculated								
Sn 189.927†	-24.7	-0.00566	mg/L	0.001363	-0.00566	mg/L	0.001363	24.08%
QC value within limits for Sn 189.927 Recovery = Not calculated								

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Ti 334.940†	109.9	0.00183 mg/L	0.000151	0.00183 mg/L	0.000151	8.28%
QC value within limits for Ti 334.940 Recovery = Not calculated						
Tl 190.801†	4.0	0.00188 mg/L	0.003595	0.00188 mg/L	0.003595	191.67%
QC value within limits for Tl 190.801 Recovery = Not calculated						
V 290.880†	-322.5	0.00017 mg/L	0.000437	0.00017 mg/L	0.000437	253.04%
QC value within limits for V 290.880 Recovery = Not calculated						
Zn 206.200†	-4.5	-0.00494 mg/L	0.000220	-0.00494 mg/L	0.000220	4.45%
QC value within limits for Zn 206.200 Recovery = Not calculated						
K 766.490†	11.1	0.0358 mg/L	0.04211	0.0358 mg/L	0.04211	117.76%
QC value within limits for K 766.490 Recovery = Not calculated						
Na 589.592†	556.6	0.0886 mg/L	0.02875	0.0886 mg/L	0.02875	32.46%
QC value within limits for Na 589.592 Recovery = Not calculated						
Sr 407.771†	127.8	-0.00018 mg/L	0.000043	-0.00018 mg/L	0.000043	24.64%
QC value within limits for Sr 407.771 Recovery = Not calculated						
Li 670.784†	-104.1	-0.00542 mg/L	0.001442	-0.00542 mg/L	0.001442	26.62%
QC value within limits for Li 670.784 Recovery = Not calculated						
P 214.914†	-5.0	-0.00569 mg/L	0.010685	-0.00569 mg/L	0.010685	187.81%
QC value within limits for P 214.914 Recovery = Not calculated						

All analyte(s) passed QC.

Sequence No.: 24 **Autosampler Location: 140**
Sample ID: L1505154610 **Date Collected: 5/27/2015 4:01:15 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505154610

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505154610

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3168644.1						44622.79	1.41%
YRADIAL	203383.5						2950.89	1.45%
Ga 417.206	1281592.7						18018.35	1.41%
GaRADIAL	48286.9						444.92	0.92%
Ag 328.068†	1225.7	0.00548	mg/L	0.000544	0.00548	mg/L	0.000544	9.93%
Al 396.153†	60.8	-0.00106	mg/L	0.007623	-0.00106	mg/L	0.007623	719.17%
As 188.979†	-20.7	-0.00697	mg/L	0.004827	-0.00697	mg/L	0.004827	69.25%
Ba 233.527†	2987.8	0.0514	mg/L	0.00068	0.0514	mg/L	0.00068	1.32%
Be 234.861†	-115.2	0.00004	mg/L	0.000015	0.00004	mg/L	0.000015	41.47%
B 249.677†	19042.9	0.273	mg/L	0.0017	0.273	mg/L	0.0017	0.62%
Ca 227.546†	7963.1	100	mg/L	0.9	100	mg/L	0.9	0.86%
Cd 228.802†	8.3	0.00079	mg/L	0.000323	0.00079	mg/L	0.000323	41.15%
Co 228.616†	-0.9	-0.00068	mg/L	0.000438	-0.00068	mg/L	0.000438	64.76%
Cr 267.716†	467.4	0.00295	mg/L	0.000148	0.00295	mg/L	0.000148	5.03%
Cu 327.393†	-784.5	-0.00156	mg/L	0.001481	-0.00156	mg/L	0.001481	95.01%
Fe 239.562†	148.2	0.0286	mg/L	0.00081	0.0286	mg/L	0.00081	2.82%
Mg 279.077†	138990.3	51.5	mg/L	0.44	51.5	mg/L	0.44	0.86%
Mn 257.610†	1104.3	0.00131	mg/L	0.000019	0.00131	mg/L	0.000019	1.43%
Mo 202.031†	105.9	0.0102	mg/L	0.00095	0.0102	mg/L	0.00095	9.36%
Ni 231.604†	-2.1	-0.00079	mg/L	0.000409	-0.00079	mg/L	0.000409	51.77%
Pb 220.353†	36.1	0.00763	mg/L	0.003835	0.00763	mg/L	0.003835	50.24%
Sb 206.836†	-1.4	0.00319	mg/L	0.007223	0.00319	mg/L	0.007223	226.43%
Se 196.026†	-1.7	0.00146	mg/L	0.008653	0.00146	mg/L	0.008653	594.04%
Si 251.611†	-24422.9	-1.37	mg/L	0.039	-1.37	mg/L	0.039	2.86%
Sn 189.927†	-60.0	-0.0116	mg/L	0.00179	-0.0116	mg/L	0.00179	15.35%
Ti 334.940†	-5782.2	0.00191	mg/L	0.000333	0.00191	mg/L	0.000333	17.43%
Tl 190.801†	-27.9	-0.0246	mg/L	0.00251	-0.0246	mg/L	0.00251	10.18%
V 290.880†	-119.5	-0.00009	mg/L	0.002417	-0.00009	mg/L	0.002417	>999.9%
Zn 206.200†	25.7	-0.00386	mg/L	0.000068	-0.00386	mg/L	0.000068	1.75%
K 766.490†	3287.0	1.81	mg/L	0.060	1.81	mg/L	0.060	3.30%
Na 589.592†	2021458.8	294	mg/L	10.6	294	mg/L	10.6	3.59%
Sr 407.771†	777406.2	0.961	mg/L	0.0346	0.961	mg/L	0.0346	3.60%
Li 670.784†	1399.8	0.0340	mg/L	0.00305	0.0340	mg/L	0.00305	8.99%
P 214.914†	0.3	0.00265	mg/L	0.018601	0.00265	mg/L	0.018601	702.63%

Approved: May 28, 2015

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Sequence No.: 25
Sample ID: L1505154611
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 141
Date Collected: 5/27/2015 4:04:39 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505154611

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505154611

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3491783.9						55491.30	1.59%
YRADIAL	218938.4						5285.37	2.41%
Ga 417.206	1574791.8						22928.46	1.46%
GaRADIAL	52536.1						1085.73	2.07%
Ag 328.068†	7.7	0.00210	mg/L	0.000298	0.00210	mg/L	0.000298	14.24%
Al 396.153†	42.5	-0.00708	mg/L	0.003800	-0.00708	mg/L	0.003800	53.65%
As 188.979†	-9.7	-0.00236	mg/L	0.005604	-0.00236	mg/L	0.005604	237.49%
Ba 233.527†	11.6	-0.00004	mg/L	0.000031	-0.00004	mg/L	0.000031	72.11%
Be 234.861†	-104.3	0.00005	mg/L	0.000010	0.00005	mg/L	0.000010	18.16%
B 249.677†	-3429.9	-0.0436	mg/L	0.00174	-0.0436	mg/L	0.00174	3.99%
Ca 227.546†	-5.6	-0.0146	mg/L	0.03443	-0.0146	mg/L	0.03443	235.10%
Cd 228.802†	0.4	0.00027	mg/L	0.000324	0.00027	mg/L	0.000324	118.23%
Co 228.616†	-2.5	-0.00081	mg/L	0.000332	-0.00081	mg/L	0.000332	41.15%
Cr 267.716†	489.2	0.00311	mg/L	0.001261	0.00311	mg/L	0.001261	40.53%
Cu 327.393†	-393.2	0.00026	mg/L	0.000937	0.00026	mg/L	0.000937	359.00%
Fe 239.562†	88.0	0.0193	mg/L	0.00138	0.0193	mg/L	0.00138	7.13%
Mg 279.077†	56.8	0.00648	mg/L	0.005159	0.00648	mg/L	0.005159	79.67%
Mn 257.610†	534.4	0.00041	mg/L	0.000011	0.00041	mg/L	0.000011	2.61%
Mo 202.031†	8.5	0.00088	mg/L	0.001503	0.00088	mg/L	0.001503	169.95%
Ni 231.604†	31.1	0.00024	mg/L	0.000334	0.00024	mg/L	0.000334	138.41%
Pb 220.353†	-8.6	-0.00235	mg/L	0.001957	-0.00235	mg/L	0.001957	83.41%
Sb 206.836†	-6.1	-0.00086	mg/L	0.004765	-0.00086	mg/L	0.004765	552.86%
Se 196.026†	5.8	0.0132	mg/L	0.00241	0.0132	mg/L	0.00241	18.27%
Si 251.611†	-347088.0	-17.5	mg/L	0.16	-17.5	mg/L	0.16	0.92%
Sn 189.927†	-41.4	-0.00849	mg/L	0.000766	-0.00849	mg/L	0.000766	9.03%
Ti 334.940†	427.1	0.00217	mg/L	0.000305	0.00217	mg/L	0.000305	14.03%
Tl 190.801†	-0.9	-0.00219	mg/L	0.002269	-0.00219	mg/L	0.002269	103.53%
V 290.880†	-503.9	-0.00078	mg/L	0.002527	-0.00078	mg/L	0.002527	322.69%
Zn 206.200†	-118.0	-0.00887	mg/L	0.000296	-0.00887	mg/L	0.000296	3.33%
K 766.490†	170.1	0.136	mg/L	0.0421	0.136	mg/L	0.0421	31.01%
Na 589.592†	3249.6	0.417	mg/L	0.0168	0.417	mg/L	0.0168	4.03%
Sr 407.771†	417.1	0.00018	mg/L	0.000113	0.00018	mg/L	0.000113	62.16%
Li 670.784†	-12.7	-0.00303	mg/L	0.005280	-0.00303	mg/L	0.005280	174.51%
P 214.914†	-4.0	-0.00404	mg/L	0.017304	-0.00404	mg/L	0.017304	428.56%

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Sequence No.: 26
Sample ID: L1505155701
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 142
Date Collected: 5/27/2015 4:08:01 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505155701

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505155701

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3295767.7						24524.61	0.74%
YRADIAL	210174.8						2023.92	0.96%
Ga 417.206	1350443.0						4474.12	0.33%
GaRADIAL	48479.9						732.21	1.51%
Ag 328.068†	109.2	0.00238	mg/L	0.000675	0.00238	mg/L	0.000675	28.42%
Al 396.153†	31.2	-0.0111	mg/L	0.00495	-0.0111	mg/L	0.00495	44.45%

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As 188.979†	-15.9	-0.00600	mg/L	0.005345	-0.00600	mg/L	0.005345	89.02%
Ba 233.527†	1090.9	0.0186	mg/L	0.00015	0.0186	mg/L	0.00015	0.78%
Be 234.861†	-82.9	0.00011	mg/L	0.000012	0.00011	mg/L	0.000012	10.98%
B 249.677†	1365.1	0.0239	mg/L	0.00489	0.0239	mg/L	0.00489	20.51%
Ca 227.546†	670.9	8.49	mg/L	0.036	8.49	mg/L	0.036	0.42%
Cd 228.802†	8.4	0.00081	mg/L	0.000745	0.00081	mg/L	0.000745	92.35%
Co 228.616†	115.9	0.00752	mg/L	0.000735	0.00752	mg/L	0.000735	9.77%
Cr 267.716†	47.4	-0.00014	mg/L	0.001100	-0.00014	mg/L	0.001100	812.23%
Cu 327.393†	-294.6	0.00072	mg/L	0.000698	0.00072	mg/L	0.000698	96.92%
Fe 239.562†	78.7	0.0177	mg/L	0.00118	0.0177	mg/L	0.00118	6.68%
Mg 279.077†	2223.7	0.809	mg/L	0.0248	0.809	mg/L	0.0248	3.06%
Mn 257.610†	96866.9	0.151	mg/L	0.0029	0.151	mg/L	0.0029	1.93%
Mo 202.031†	30.8	0.00303	mg/L	0.000627	0.00303	mg/L	0.000627	20.65%
Ni 231.604†	263.2	0.00750	mg/L	0.000891	0.00750	mg/L	0.000891	11.88%
Pb 220.353†	6.5	0.00092	mg/L	0.001281	0.00092	mg/L	0.001281	139.19%
Sb 206.836†	2.5	0.00660	mg/L	0.005240	0.00660	mg/L	0.005240	79.43%
Se 196.026†	0.2	0.00444	mg/L	0.008775	0.00444	mg/L	0.008775	197.57%
Si 251.611†	-106774.0	-5.48	mg/L	0.279	-5.48	mg/L	0.279	5.09%
Sn 189.927†	-44.0	-0.00893	mg/L	0.000400	-0.00893	mg/L	0.000400	4.48%
Ti 334.940†	-195.2	0.00205	mg/L	0.000181	0.00205	mg/L	0.000181	8.83%
Tl 190.801†	1.8	-0.00012	mg/L	0.006663	-0.00012	mg/L	0.006663	>999.9%
V 290.880†	92.1	0.00235	mg/L	0.000407	0.00235	mg/L	0.000407	17.36%
Zn 206.200†	2336.9	0.0767	mg/L	0.00096	0.0767	mg/L	0.00096	1.26%
K 766.490†	121.5	-0.0324	mg/L	0.01503	-0.0324	mg/L	0.01503	46.37%
Na 589.592†	1044033.1	138	mg/L	2.4	138	mg/L	2.4	1.72%
Sr 407.771†	16732.1	0.0202	mg/L	0.00028	0.0202	mg/L	0.00028	1.41%
Li 670.784†	-124.5	-0.00596	mg/L	0.002024	-0.00596	mg/L	0.002024	33.98%
P 214.914†	5.7	0.0112	mg/L	0.01342	0.0112	mg/L	0.01342	120.13%

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Sequence No.: 27 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 5/27/2015 4:11:55 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3244907.4						28335.40	0.87%
YRADIAL	206305.1						6495.48	3.15%
Ga 417.206	1356698.9						9865.45	0.73%
GaRADIAL	48046.3						1324.81	2.76%
Ag 328.068†	132688.8	0.395	mg/L	0.0032	0.395	mg/L	0.0032	0.80%
QC value within limits for Ag 328.068 Recovery = 98.65%								
Al 396.153†	28956.6	10.1	mg/L	0.09	10.1	mg/L	0.09	0.85%
QC value within limits for Al 396.153 Recovery = 100.97%								
As 188.979†	603.4	0.370	mg/L	0.0063	0.370	mg/L	0.0063	1.72%
QC value within limits for As 188.979 Recovery = 92.54%								
Ba 233.527†	56227.1	0.972	mg/L	0.0088	0.972	mg/L	0.0088	0.90%
QC value within limits for Ba 233.527 Recovery = 97.21%								
Be 234.861†	26219.1	0.0472	mg/L	0.00011	0.0472	mg/L	0.00011	0.24%
QC value within limits for Be 234.861 Recovery = 94.49%								
B 249.677†	25866.8	0.382	mg/L	0.0046	0.382	mg/L	0.0046	1.20%
QC value less than the lower limit for B 249.677 Recovery = 76.42%								
Ca 227.546†	734.3	9.35	mg/L	0.259	9.35	mg/L	0.259	2.77%
QC value within limits for Ca 227.546 Recovery = 93.49%								
Cd 228.802†	788.6	0.0465	mg/L	0.00047	0.0465	mg/L	0.00047	1.02%
QC value within limits for Cd 228.802 Recovery = 92.96%								
Co 228.616†	2759.2	0.193	mg/L	0.0021	0.193	mg/L	0.0021	1.07%
QC value within limits for Co 228.616 Recovery = 96.32%								
Cr 267.716†	66664.2	0.490	mg/L	0.0031	0.490	mg/L	0.0031	0.63%
QC value within limits for Cr 267.716 Recovery = 98.09%								
Cu 327.393†	104221.7	0.487	mg/L	0.0039	0.487	mg/L	0.0039	0.81%
QC value within limits for Cu 327.393 Recovery = 97.30%								
Fe 239.562†	23594.7	4.06	mg/L	0.024	4.06	mg/L	0.024	0.60%

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   QC value within limits for Fe 239.562  Recovery = 101.47%
Mg 279.077†            27378.1        10.1 mg/L          0.07        10.1 mg/L          0.07   0.71%
   QC value within limits for Mg 279.077  Recovery = 101.27%
Mn 257.610†           314887.5       0.493 mg/L        0.0050       0.493 mg/L        0.0050   1.02%
   QC value within limits for Mn 257.610  Recovery = 98.64%
Mo 202.031†             9802.5       0.934 mg/L        0.0085       0.934 mg/L        0.0085   0.91%
   QC value within limits for Mo 202.031  Recovery = 93.36%
Ni 231.604†            15357.5       0.480 mg/L        0.0040       0.480 mg/L        0.0040   0.82%
   QC value within limits for Ni 231.604  Recovery = 96.00%
Pb 220.353†             2144.6       0.481 mg/L        0.0048       0.481 mg/L        0.0048   1.00%
   QC value within limits for Pb 220.353  Recovery = 96.25%
Sb 206.836†             1286.2        1.11 mg/L         0.007        1.11 mg/L         0.007   0.63%
   QC value within limits for Sb 206.836  Recovery = 92.63%
Se 196.026†              238.5       0.379 mg/L        0.0044       0.379 mg/L        0.0044   1.16%
   QC value within limits for Se 196.026  Recovery = 94.79%
Si 251.611†          -176403.3       -8.96 mg/L         0.115       -8.96 mg/L         0.115   1.28%
   QC value less than the lower limit for Si 251.611  Recovery = -179.29%
Sn 189.927†             5590.8       0.944 mg/L        0.0089       0.944 mg/L        0.0089   0.94%
   QC value within limits for Sn 189.927  Recovery = 94.38%
Ti 334.940†           910053.4       0.982 mg/L        0.0093       0.982 mg/L        0.0093   0.95%
   QC value within limits for Ti 334.940  Recovery = 98.23%
Tl 190.801†              582.4       0.492 mg/L        0.0088       0.492 mg/L        0.0088   1.78%
   QC value within limits for Tl 190.801  Recovery = 98.40%
V 290.880†            185347.4       0.983 mg/L        0.0090       0.983 mg/L        0.0090   0.91%
   QC value within limits for V 290.880  Recovery = 98.26%
Zn 206.200†            27473.3       0.958 mg/L        0.0090       0.958 mg/L        0.0090   0.94%
   QC value within limits for Zn 206.200  Recovery = 95.80%
K 766.490†             77864.0        49.6 mg/L          0.17        49.6 mg/L          0.17   0.34%
   QC value within limits for K 766.490  Recovery = 99.22%
Na 589.592†           394170.3        49.5 mg/L          1.00        49.5 mg/L          1.00   2.01%
   QC value within limits for Na 589.592  Recovery = 98.99%
Sr 407.771†           787931.5       0.977 mg/L        0.0249       0.977 mg/L        0.0249   2.55%
   QC value within limits for Sr 407.771  Recovery = 97.72%
Li 670.784†            38944.3        1.02 mg/L         0.001        1.02 mg/L         0.001   0.14%
   QC value within limits for Li 670.784  Recovery = 101.79%
P 214.914†              5985.7        9.39 mg/L         0.092        9.39 mg/L         0.092   0.98%
   QC value within limits for P 214.914  Recovery = 93.88%
QC Failed.  Continue with analysis.

==========================================================================================
Sequence No.: 28                                    Autosampler Location: 1
Sample ID: CCB                                      Date Collected: 5/27/2015 4:14:20 PM
Analyst:                                            Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

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Nebulizer Parameters: CCB
Analyte                  Back Pressure    Flow
All                     231.0 kPa        0.40 L/min

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Mean Data: CCB
                    Mean Corrected         Calib.                          Sample
Analyte                Intensity      Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029            3426374.8                                                       82010.10   2.39%
YRADIAL               219273.7                                                        8906.20   4.06%
Ga 417.206           1574556.2                                                       23301.81   1.48%
GaRADIAL               52942.2                                                        2092.72   3.95%
Ag 328.068†               -8.7     0.00204 mg/L      0.000315     0.00204 mg/L      0.000315  15.43%
   QC value within limits for Ag 328.068  Recovery = Not calculated
Al 396.153†                6.1     -0.0198 mg/L       0.00238     -0.0198 mg/L       0.00238  12.02%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†                0.6     0.00398 mg/L      0.004200     0.00398 mg/L      0.004200 105.65%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†               -7.2    -0.00037 mg/L      0.000148    -0.00037 mg/L      0.000148  40.05%
   QC value within limits for Ba 233.527  Recovery = Not calculated
Be 234.861†              -15.8     0.00022 mg/L      0.000040     0.00022 mg/L      0.000040  18.51%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†               -164.9     0.00234 mg/L      0.003870     0.00234 mg/L      0.003870 165.26%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†               -0.4      0.0509 mg/L       0.07411      0.0509 mg/L       0.07411 145.74%
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   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†                -3.4     0.00001 mg/L      0.000328     0.00001 mg/L      0.000328 >999.9%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†                 1.4    -0.00053 mg/L      0.000472    -0.00053 mg/L      0.000472  89.35%
   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†                21.6    -0.00033 mg/L      0.001093    -0.00033 mg/L      0.001093 331.72%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†              -288.8     0.00074 mg/L      0.000594     0.00074 mg/L      0.000594  79.93%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†                 9.1     0.00575 mg/L      0.000579     0.00575 mg/L      0.000579  10.07%
   QC value within limits for Fe 239.562  Recovery = Not calculated
Mg 279.077†                21.7    -0.00651 mg/L      0.007236    -0.00651 mg/L      0.007236 111.22%
   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†                19.0    -0.00039 mg/L      0.000013    -0.00039 mg/L      0.000013   3.38%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†                 1.0     0.00016 mg/L      0.000391     0.00016 mg/L      0.000391 238.04%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†                 3.6    -0.00062 mg/L      0.000538    -0.00062 mg/L      0.000538  86.36%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†                13.7     0.00263 mg/L      0.003404     0.00263 mg/L      0.003404 129.46%
   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†                -2.6     0.00224 mg/L      0.003215     0.00224 mg/L      0.003215 143.61%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†                 3.9      0.0103 mg/L       0.01068      0.0103 mg/L       0.01068 103.51%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†             -6950.9      -0.498 mg/L        0.3967      -0.498 mg/L        0.3967  79.73%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†               -21.3    -0.00508 mg/L      0.000538    -0.00508 mg/L      0.000538  10.59%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†               344.3     0.00209 mg/L      0.000478     0.00209 mg/L      0.000478  22.91%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†                 4.5     0.00235 mg/L      0.001755     0.00235 mg/L      0.001755  74.77%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†               -359.2    -0.00002 mg/L      0.001130    -0.00002 mg/L      0.001130 >999.9%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†                 0.1    -0.00478 mg/L      0.000209    -0.00478 mg/L      0.000209   4.38%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†                -16.7      0.0182 mg/L       0.04352      0.0182 mg/L       0.04352 238.79%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†               597.4      0.0935 mg/L       0.00174      0.0935 mg/L       0.00174   1.86%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†               143.1    -0.00016 mg/L      0.000073    -0.00016 mg/L      0.000073  45.46%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†               -18.3    -0.00317 mg/L      0.000363    -0.00317 mg/L      0.000363  11.46%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†                  0.9     0.00351 mg/L      0.008404     0.00351 mg/L      0.008404 239.22%
   QC value within limits for P 214.914  Recovery = Not calculated
All analyte(s) passed QC.

==================================================================================================
Sequence No.: 29                                    Autosampler Location: 94
Sample ID: PBW A6 WG525082-02                       Date Collected: 5/27/2015 4:17:41 PM
Analyst: KHR                                        Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

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Nebulizer Parameters: PBW A6 WG525082-02
Analyte                  Back Pressure    Flow
All                     231.0 kPa         0.40 L/min

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Mean Data: PBW A6 WG525082-02
                   Mean Corrected         Calib.                            Sample
Analyte               Intensity     Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029            3441515.3                                                    32062.02   0.93%
YRADIAL               217813.7                                                     2405.77   1.10%
Ga 417.206           1562079.9                                                     7184.39   0.46%
GaRADIAL               52158.7                                                      634.28   1.22%
Ag 328.068†                1.0     0.00207 mg/L      0.000281     0.00207 mg/L      0.000281  13.54%
Al 396.153†               44.5    -0.00641 mg/L      0.006488    -0.00641 mg/L      0.006488 101.22%
As 188.979†              -13.0    -0.00435 mg/L      0.004774    -0.00435 mg/L      0.004774 109.64%
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Ba 233.527†	-6.6	-0.00036	mg/L	0.000241	-0.00036	mg/L	0.000241	67.15%
Be 234.861†	-80.3	0.00010	mg/L	0.000016	0.00010	mg/L	0.000016	15.57%
B 249.677†	8846.1	0.129	mg/L	0.0075	0.129	mg/L	0.0075	5.78%
Ca 227.546†	-2.8	0.0205	mg/L	0.21647	0.0205	mg/L	0.21647	>999.9%
Cd 228.802†	1.1	0.00032	mg/L	0.000207	0.00032	mg/L	0.000207	64.03%
Co 228.616†	-4.0	-0.00091	mg/L	0.000549	-0.00091	mg/L	0.000549	60.54%
Cr 267.716†	24.3	-0.00031	mg/L	0.000867	-0.00031	mg/L	0.000867	280.37%
Cu 327.393†	-387.9	0.00028	mg/L	0.001184	0.00028	mg/L	0.001184	416.34%
Fe 239.562†	1.1	0.00438	mg/L	0.002290	0.00438	mg/L	0.002290	52.29%
Mg 279.077†	15.0	-0.00899	mg/L	0.003267	-0.00899	mg/L	0.003267	36.33%
Mn 257.610†	7.3	-0.00041	mg/L	0.000031	-0.00041	mg/L	0.000031	7.55%
Mo 202.031†	10.0	0.00103	mg/L	0.000505	0.00103	mg/L	0.000505	49.09%
Ni 231.604†	-4.8	-0.00088	mg/L	0.000415	-0.00088	mg/L	0.000415	47.00%
Pb 220.353†	-15.7	-0.00394	mg/L	0.001503	-0.00394	mg/L	0.001503	38.20%
Sb 206.836†	-2.1	0.00263	mg/L	0.005545	0.00263	mg/L	0.005545	210.65%
Se 196.026†	1.3	0.00613	mg/L	0.005902	0.00613	mg/L	0.005902	96.36%
Si 251.611†	-134978.4	-6.89	mg/L	0.807	-6.89	mg/L	0.807	11.72%
Sn 189.927†	-41.6	-0.00852	mg/L	0.000413	-0.00852	mg/L	0.000413	4.84%
Ti 334.940†	166.6	0.00189	mg/L	0.000080	0.00189	mg/L	0.000080	4.21%
Tl 190.801†	0.1	-0.00136	mg/L	0.004505	-0.00136	mg/L	0.004505	330.57%
V 290.880†	-169.9	0.00098	mg/L	0.001343	0.00098	mg/L	0.001343	136.91%
Zn 206.200†	-148.6	-0.00996	mg/L	0.000408	-0.00996	mg/L	0.000408	4.09%
K 766.490†	5.7	0.0323	mg/L	0.10540	0.0323	mg/L	0.10540	325.85%
Na 589.592†	700.9	0.106	mg/L	0.0102	0.106	mg/L	0.0102	9.65%
Sr 407.771†	536.9	0.00033	mg/L	0.000103	0.00033	mg/L	0.000103	31.26%
Li 670.784†	-20.8	-0.00324	mg/L	0.002924	-0.00324	mg/L	0.002924	90.35%
P 214.914†	-5.3	-0.00619	mg/L	0.003067	-0.00619	mg/L	0.003067	49.54%

Sequence No.: 30 **Autosampler Location: 95**
Sample ID: LCSW A6 WG525082-03 **Date Collected: 5/27/2015 4:21:03 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: LCSW A6 WG525082-03

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: LCSW A6 WG525082-03

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3336665.2						37249.62	1.12%
YRADIAL	211361.8						5201.43	2.46%
Ga 417.206	1412548.9						16423.93	1.16%
GaRADIAL	49083.6						1244.50	2.54%
Ag 328.068†	64508.4	0.193	mg/L	0.0021	0.193	mg/L	0.0021	1.11%
Al 396.153†	14468.0	5.03	mg/L	0.120	5.03	mg/L	0.120	2.39%
As 188.979†	281.3	0.174	mg/L	0.0071	0.174	mg/L	0.0071	4.06%
Ba 233.527†	28419.8	0.491	mg/L	0.0092	0.491	mg/L	0.0092	1.87%
Be 234.861†	12484.8	0.0226	mg/L	0.00034	0.0226	mg/L	0.00034	1.50%
B 249.677†	64545.1	0.920	mg/L	0.0109	0.920	mg/L	0.0109	1.18%
Ca 227.546†	350.0	4.49	mg/L	0.126	4.49	mg/L	0.126	2.81%
Cd 228.802†	373.4	0.0222	mg/L	0.00034	0.0222	mg/L	0.00034	1.53%
Co 228.616†	1356.5	0.0944	mg/L	0.00201	0.0944	mg/L	0.00201	2.13%
Cr 267.716†	32902.6	0.242	mg/L	0.0045	0.242	mg/L	0.0045	1.87%
Cu 327.393†	50608.0	0.237	mg/L	0.0029	0.237	mg/L	0.0029	1.24%
Fe 239.562†	11798.3	2.03	mg/L	0.067	2.03	mg/L	0.067	3.28%
Mg 279.077†	13634.3	5.04	mg/L	0.087	5.04	mg/L	0.087	1.74%
Mn 257.610†	153870.6	0.241	mg/L	0.0036	0.241	mg/L	0.0036	1.49%
Mo 202.031†	4810.8	0.458	mg/L	0.0087	0.458	mg/L	0.0087	1.89%
Ni 231.604†	7411.4	0.231	mg/L	0.0033	0.231	mg/L	0.0033	1.44%
Pb 220.353†	1029.3	0.231	mg/L	0.0017	0.231	mg/L	0.0017	0.75%
Sb 206.836†	610.9	0.530	mg/L	0.0072	0.530	mg/L	0.0072	1.35%
Se 196.026†	118.3	0.190	mg/L	0.0079	0.190	mg/L	0.0079	4.17%
Si 251.611†	-58143.2	-3.06	mg/L	0.099	-3.06	mg/L	0.099	3.25%
Sn 189.927†	2730.1	0.460	mg/L	0.0065	0.460	mg/L	0.0065	1.41%
Ti 334.940†	445518.7	0.482	mg/L	0.0065	0.482	mg/L	0.0065	1.36%
Tl 190.801†	282.6	0.238	mg/L	0.0077	0.238	mg/L	0.0077	3.23%
V 290.880†	90737.6	0.482	mg/L	0.0060	0.482	mg/L	0.0060	1.25%

Approved: May 28, 2015

Zn 206.200†	13210.3	0.458	mg/L	0.0080	0.458	mg/L	0.0080	1.74%
K 766.490†	38109.8	24.2	mg/L	0.44	24.2	mg/L	0.44	1.81%
Na 589.592†	201582.8	25.0	mg/L	0.55	25.0	mg/L	0.55	2.21%
Sr 407.771†	398977.1	0.495	mg/L	0.0135	0.495	mg/L	0.0135	2.72%
Li 670.784†	19635.7	0.512	mg/L	0.0137	0.512	mg/L	0.0137	2.68%
P 214.914†	2864.0	4.49	mg/L	0.089	4.49	mg/L	0.089	1.98%

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Sequence No.: 31 **Autosampler Location: 96**
Sample ID: L1505140501 **Date Collected: 5/27/2015 4:23:26 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505140501

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505140501

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3356060.1						12870.22	0.38%
YRADIAL	216848.8						1409.88	0.65%
Ga 417.206	1472545.0						2845.63	0.19%
GaRADIAL	52392.6						378.39	0.72%
Ag 328.068†	962.3	0.00490	mg/L	0.001084	0.00490	mg/L	0.001084	22.12%
Al 396.153†	47.3	-0.00559	mg/L	0.047539	-0.00559	mg/L	0.047539	850.26%
As 188.979†	-19.1	-0.00687	mg/L	0.001555	-0.00687	mg/L	0.001555	22.63%
Ba 233.527†	6106.0	0.105	mg/L	0.0004	0.105	mg/L	0.0004	0.39%
Be 234.861†	-95.9	0.00004	mg/L	0.000036	0.00004	mg/L	0.000036	88.90%
B 249.677†	-897.4	-0.00744	mg/L	0.002391	-0.00744	mg/L	0.002391	32.15%
Ca 227.546†	4493.4	56.5	mg/L	0.05	56.5	mg/L	0.05	0.09%
Cd 228.802†	-1.9	0.00016	mg/L	0.000340	0.00016	mg/L	0.000340	209.07%
Co 228.616†	-2.8	-0.00084	mg/L	0.000075	-0.00084	mg/L	0.000075	8.91%
Cr 267.716†	206.9	0.00103	mg/L	0.000257	0.00103	mg/L	0.000257	25.01%
Cu 327.393†	880.5	0.00617	mg/L	0.000932	0.00617	mg/L	0.000932	15.10%
Fe 239.562†	821.5	0.145	mg/L	0.0070	0.145	mg/L	0.0070	4.85%
Mg 279.077†	31903.2	11.8	mg/L	0.30	11.8	mg/L	0.30	2.52%
Mn 257.610†	2577.6	0.00362	mg/L	0.000031	0.00362	mg/L	0.000031	0.84%
Mo 202.031†	63.3	0.00610	mg/L	0.000908	0.00610	mg/L	0.000908	14.90%
Ni 231.604†	7.9	-0.00048	mg/L	0.000707	-0.00048	mg/L	0.000707	146.45%
Pb 220.353†	25.5	0.00525	mg/L	0.002154	0.00525	mg/L	0.002154	41.02%
Sb 206.836†	-6.7	-0.00135	mg/L	0.002584	-0.00135	mg/L	0.002584	192.01%
Se 196.026†	-1.1	0.00246	mg/L	0.002861	0.00246	mg/L	0.002861	116.15%
Si 251.611†	-176741.7	-8.97	mg/L	0.022	-8.97	mg/L	0.022	0.24%
Sn 189.927†	-58.1	-0.0113	mg/L	0.00115	-0.0113	mg/L	0.00115	10.13%
Ti 334.940†	-3894.1	0.00115	mg/L	0.000527	0.00115	mg/L	0.000527	45.94%
Tl 190.801†	-15.6	-0.0144	mg/L	0.00047	-0.0144	mg/L	0.00047	3.24%
V 290.880†	-857.7	-0.00294	mg/L	0.001649	-0.00294	mg/L	0.001649	56.06%
Zn 206.200†	324.2	0.00654	mg/L	0.000249	0.00654	mg/L	0.000249	3.81%
K 766.490†	2164.5	1.39	mg/L	0.099	1.39	mg/L	0.099	7.12%
Na 589.592†	36729.6	4.52	mg/L	0.022	4.52	mg/L	0.022	0.48%
Sr 407.771†	186646.5	0.229	mg/L	0.0022	0.229	mg/L	0.0022	0.95%
Li 670.784†	251.6	0.00390	mg/L	0.000321	0.00390	mg/L	0.000321	8.23%
P 214.914†	-4.4	-0.00465	mg/L	0.012281	-0.00465	mg/L	0.012281	264.17%

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Sequence No.: 32 **Autosampler Location: 97**
Sample ID: L1505140502 **Date Collected: 5/27/2015 4:25:48 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505140502

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505140502

Approved: May 28, 2015

Lynn H. Rhoden

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3381159.8						22903.72	0.68%
YRADIAL	212780.4						5761.88	2.71%
Ga 417.206	1458015.6						12478.08	0.86%
GaRADIAL	50991.5						1331.42	2.61%
Ag 328.068†	829.0	0.00450	mg/L	0.001105	0.00450	mg/L	0.001105	24.54%
Al 396.153†	166.4	0.0362	mg/L	0.01894	0.0362	mg/L	0.01894	52.31%
As 188.979†	-26.5	-0.0113	mg/L	0.00218	-0.0113	mg/L	0.00218	19.32%
Ba 233.527†	2346.0	0.0403	mg/L	0.00039	0.0403	mg/L	0.00039	0.97%
Be 234.861†	-75.4	0.00008	mg/L	0.000043	0.00008	mg/L	0.000043	53.23%
B 249.677†	-972.8	-0.00852	mg/L	0.000875	-0.00852	mg/L	0.000875	10.27%
Ca 227.546†	4948.9	62.2	mg/L	0.50	62.2	mg/L	0.50	0.80%
Cd 228.802†	7.4	0.00075	mg/L	0.000189	0.00075	mg/L	0.000189	25.32%
Co 228.616†	-7.0	-0.00112	mg/L	0.000623	-0.00112	mg/L	0.000623	55.50%
Cr 267.716†	233.7	0.00123	mg/L	0.000105	0.00123	mg/L	0.000105	8.57%
Cu 327.393†	-312.5	0.00065	mg/L	0.001109	0.00065	mg/L	0.001109	169.95%
Fe 239.562†	807.0	0.142	mg/L	0.0040	0.142	mg/L	0.0040	2.83%
Mg 279.077†	64153.9	23.8	mg/L	0.86	23.8	mg/L	0.86	3.61%
Mn 257.610†	20689.2	0.0320	mg/L	0.00033	0.0320	mg/L	0.00033	1.03%
Mo 202.031†	51.5	0.00498	mg/L	0.000936	0.00498	mg/L	0.000936	18.80%
Ni 231.604†	-2.4	-0.00081	mg/L	0.000455	-0.00081	mg/L	0.000455	56.35%
Pb 220.353†	31.8	0.00667	mg/L	0.000330	0.00667	mg/L	0.000330	4.95%
Sb 206.836†	2.1	0.00622	mg/L	0.006425	0.00622	mg/L	0.006425	103.24%
Se 196.026†	-4.7	-0.00318	mg/L	0.001535	-0.00318	mg/L	0.001535	48.20%
Si 251.611†	-253289.7	-12.8	mg/L	0.14	-12.8	mg/L	0.14	1.09%
Sn 189.927†	-64.9	-0.0125	mg/L	0.00037	-0.0125	mg/L	0.00037	2.98%
Ti 334.940†	-3721.3	0.00170	mg/L	0.000426	0.00170	mg/L	0.000426	25.07%
Tl 190.801†	-10.9	-0.0106	mg/L	0.00105	-0.0106	mg/L	0.00105	9.91%
V 290.880†	-1417.8	-0.00621	mg/L	0.000713	-0.00621	mg/L	0.000713	11.47%
Zn 206.200†	2506.6	0.0826	mg/L	0.00096	0.0826	mg/L	0.00096	1.16%
K 766.490†	1752.4	1.12	mg/L	0.076	1.12	mg/L	0.076	6.82%
Na 589.592†	154844.9	19.1	mg/L	0.32	19.1	mg/L	0.32	1.69%
Sr 407.771†	178620.5	0.219	mg/L	0.0043	0.219	mg/L	0.0043	1.95%
Li 670.784†	105.5	0.00007	mg/L	0.002413	0.00007	mg/L	0.002413	>999.9%
P 214.914†	32.8	0.0536	mg/L	0.00980	0.0536	mg/L	0.00980	18.29%

Sequence No.: 33
Sample ID: L1505143502
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 98
Date Collected: 5/27/2015 4:28:10 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505143502

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505143502

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3170419.8						72279.58	2.28%
YRADIAL	207255.0						1222.49	0.59%
Ga 417.206	1291124.2						28008.14	2.17%
GaRADIAL	49442.8						448.31	0.91%
Ag 328.068†	1022.0	0.00483	mg/L	0.000500	0.00483	mg/L	0.000500	10.35%
Al 396.153†	-9.5	-0.0255	mg/L	0.00728	-0.0255	mg/L	0.00728	28.50%
As 188.979†	-17.8	-0.00557	mg/L	0.009960	-0.00557	mg/L	0.009960	178.88%
Ba 233.527†	1464.9	0.0251	mg/L	0.00068	0.0251	mg/L	0.00068	2.73%
Be 234.861†	-125.9	0.00002	mg/L	0.000012	0.00002	mg/L	0.000012	50.20%
B 249.677†	-797.2	-0.00656	mg/L	0.002275	-0.00656	mg/L	0.002275	34.68%
Ca 227.546†	6392.8	80.4	mg/L	2.08	80.4	mg/L	2.08	2.59%
Cd 228.802†	0.8	0.00032	mg/L	0.000625	0.00032	mg/L	0.000625	193.35%
Co 228.616†	-6.0	-0.00104	mg/L	0.001170	-0.00104	mg/L	0.001170	112.76%
Cr 267.716†	297.8	0.00170	mg/L	0.000074	0.00170	mg/L	0.000074	4.35%
Cu 327.393†	-603.6	-0.00073	mg/L	0.001006	-0.00073	mg/L	0.001006	137.32%
Fe 239.562†	7.3	0.00459	mg/L	0.001739	0.00459	mg/L	0.001739	37.85%
Mg 279.077†	114681.9	42.5	mg/L	0.58	42.5	mg/L	0.58	1.37%
Mn 257.610†	20019.1	0.0310	mg/L	0.00081	0.0310	mg/L	0.00081	2.61%
Mo 202.031†	64.5	0.00622	mg/L	0.001007	0.00622	mg/L	0.001007	16.20%

Approved: May 28, 2015

Ni 231.604†	17.1	-0.00019	mg/L	0.000726	-0.00019	mg/L	0.000726	379.19%
Pb 220.353†	30.3	0.00632	mg/L	0.001839	0.00632	mg/L	0.001839	29.10%
Sb 206.836†	1.7	0.00594	mg/L	0.001701	0.00594	mg/L	0.001701	28.64%
Se 196.026†	-1.7	0.00140	mg/L	0.010796	0.00140	mg/L	0.010796	773.61%
Si 251.611†	209703.3	10.3	mg/L	0.32	10.3	mg/L	0.32	3.09%
Sn 189.927†	-69.9	-0.0133	mg/L	0.00123	-0.0133	mg/L	0.00123	9.27%
Ti 334.940†	-5585.0	0.00086	mg/L	0.000120	0.00086	mg/L	0.000120	14.04%
Tl 190.801†	-25.3	-0.0225	mg/L	0.00572	-0.0225	mg/L	0.00572	25.42%
V 290.880†	-1255.4	-0.00587	mg/L	0.000214	-0.00587	mg/L	0.000214	3.65%
Zn 206.200†	-43.7	-0.00629	mg/L	0.000467	-0.00629	mg/L	0.000467	7.42%
K 766.490†	1696.7	0.805	mg/L	0.1045	0.805	mg/L	0.1045	12.97%
Na 589.592†	2023939.7	295	mg/L	5.9	295	mg/L	5.9	2.00%
Sr 407.771†	899867.8	1.11	mg/L	0.014	1.11	mg/L	0.014	1.25%
Li 670.784†	2510.2	0.0631	mg/L	0.00438	0.0631	mg/L	0.00438	6.94%
P 214.914†	48.7	0.0785	mg/L	0.01341	0.0785	mg/L	0.01341	17.08%

Sequence No.: 34 **Autosampler Location: 99**
Sample ID: L1505143504 **Date Collected: 5/27/2015 4:31:34 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505143504

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505143504

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3118895.4						8001.04	0.26%
YRADIAL	201149.8						3981.86	1.98%
Ga 417.206	1250673.5						7469.55	0.60%
GaRADIAL	48196.0						905.52	1.88%
Ag 328.068†	2582.0	0.00916	mg/L	0.000486	0.00916	mg/L	0.000486	5.30%
Al 396.153†	-66.8	-0.0457	mg/L	0.00398	-0.0457	mg/L	0.00398	8.72%
As 188.979†	-34.5	-0.0127	mg/L	0.00555	-0.0127	mg/L	0.00555	43.61%
Ba 233.527†	1789.2	0.0307	mg/L	0.00076	0.0307	mg/L	0.00076	2.49%
Be 234.861†	-145.9	-0.00001	mg/L	0.000113	-0.00001	mg/L	0.000113	923.58%
B 249.677†	4234.5	0.0643	mg/L	0.00216	0.0643	mg/L	0.00216	3.36%
Ca 227.546†	17745.0	223	mg/L	2.9	223	mg/L	2.9	1.29%
Cd 228.802†	11.4	0.00101	mg/L	0.000545	0.00101	mg/L	0.000545	53.85%
Co 228.616†	-4.9	-0.00093	mg/L	0.000534	-0.00093	mg/L	0.000534	57.34%
Cr 267.716†	908.0	0.00619	mg/L	0.000102	0.00619	mg/L	0.000102	1.65%
Cu 327.393†	-880.6	-0.00203	mg/L	0.002418	-0.00203	mg/L	0.002418	119.20%
Fe 239.562†	39.5	0.00949	mg/L	0.001129	0.00949	mg/L	0.001129	11.90%
Mg 279.077†	201359.7	74.6	mg/L	0.25	74.6	mg/L	0.25	0.33%
Mn 257.610†	23402.7	0.0363	mg/L	0.00028	0.0363	mg/L	0.00028	0.76%
Mo 202.031†	83.9	0.00806	mg/L	0.000785	0.00806	mg/L	0.000785	9.74%
Ni 231.604†	30.8	0.00024	mg/L	0.000453	0.00024	mg/L	0.000453	186.80%
Pb 220.353†	36.4	0.00767	mg/L	0.000717	0.00767	mg/L	0.000717	9.35%
Sb 206.836†	-9.7	-0.00396	mg/L	0.005402	-0.00396	mg/L	0.005402	136.47%
Se 196.026†	-15.5	-0.0201	mg/L	0.00050	-0.0201	mg/L	0.00050	2.50%
Si 251.611†	179696.5	8.82	mg/L	0.285	8.82	mg/L	0.285	3.23%
Sn 189.927†	-82.1	-0.0154	mg/L	0.00359	-0.0154	mg/L	0.00359	23.39%
Ti 334.940†	-14620.7	0.00028	mg/L	0.000420	0.00028	mg/L	0.000420	149.40%
Tl 190.801†	-38.2	-0.0333	mg/L	0.01026	-0.0333	mg/L	0.01026	30.78%
V 290.880†	-2222.6	-0.0118	mg/L	0.00132	-0.0118	mg/L	0.00132	11.16%
Zn 206.200†	-48.1	-0.00641	mg/L	0.000474	-0.00641	mg/L	0.000474	7.40%
K 766.490†	6462.7	3.71	mg/L	0.075	3.71	mg/L	0.075	2.03%
Na 589.592†	2570494.8	403	mg/L	14.8	403	mg/L	14.8	3.69%
Sr 407.771†	1830342.4	2.26	mg/L	0.043	2.26	mg/L	0.043	1.91%
Li 670.784†	3449.1	0.0877	mg/L	0.00231	0.0877	mg/L	0.00231	2.63%
P 214.914†	38.8	0.0630	mg/L	0.02625	0.0630	mg/L	0.02625	41.66%

Sequence No.: 35 **Autosampler Location: 100**
Sample ID: L1505146301 **Date Collected: 5/27/2015 4:34:58 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**

Approved: May 28, 2015

Dilution: Sample Prep Vol:

Nebulizer Parameters: L1505146301

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505146301

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3251875.8						4023.33	0.12%
YRADIAL	207039.9						3434.30	1.66%
Ga 417.206	1356351.8						4886.89	0.36%
GaRADIAL	48425.2						937.87	1.94%
Ag 328.068†	353.6	0.00300	mg/L	0.000545	0.00300	mg/L	0.000545	18.16%
Al 396.153†	29.5	-0.0119	mg/L	0.00445	-0.0119	mg/L	0.00445	37.46%
As 188.979†	-13.6	-0.00369	mg/L	0.004163	-0.00369	mg/L	0.004163	112.90%
Ba 233.527†	8902.0	0.154	mg/L	0.0007	0.154	mg/L	0.0007	0.44%
Be 234.861†	-155.5	0.00000	mg/L	0.000015	0.00000	mg/L	0.000015	>999.9%
B 249.677†	12907.9	0.186	mg/L	0.0035	0.186	mg/L	0.0035	1.87%
Ca 227.546†	3815.6	48.0	mg/L	0.18	48.0	mg/L	0.18	0.37%
Cd 228.802†	6.0	0.00062	mg/L	0.000375	0.00062	mg/L	0.000375	60.37%
Co 228.616†	5.9	-0.00025	mg/L	0.000739	-0.00025	mg/L	0.000739	300.40%
Cr 267.716†	245.7	0.00132	mg/L	0.000199	0.00132	mg/L	0.000199	15.12%
Cu 327.393†	-676.1	-0.00105	mg/L	0.001903	-0.00105	mg/L	0.001903	180.79%
Fe 239.562†	82.0	0.0177	mg/L	0.00090	0.0177	mg/L	0.00090	5.08%
Mg 279.077†	75049.4	27.8	mg/L	0.19	27.8	mg/L	0.19	0.69%
Mn 257.610†	229274.7	0.359	mg/L	0.0032	0.359	mg/L	0.0032	0.90%
Mo 202.031†	67.9	0.00661	mg/L	0.000457	0.00661	mg/L	0.000457	6.91%
Ni 231.604†	76.5	0.00167	mg/L	0.000496	0.00167	mg/L	0.000496	29.74%
Pb 220.353†	6.5	0.00082	mg/L	0.002974	0.00082	mg/L	0.002974	364.42%
Sb 206.836†	-4.6	0.00052	mg/L	0.004614	0.00052	mg/L	0.004614	881.09%
Se 196.026†	-6.6	-0.00630	mg/L	0.000359	-0.00630	mg/L	0.000359	5.69%
Si 251.611†	-99104.6	-5.10	mg/L	0.153	-5.10	mg/L	0.153	3.00%
Sn 189.927†	-62.4	-0.0120	mg/L	0.00179	-0.0120	mg/L	0.00179	14.86%
Ti 334.940†	-3123.6	0.00143	mg/L	0.000072	0.00143	mg/L	0.000072	5.00%
Tl 190.801†	-17.5	-0.0164	mg/L	0.00481	-0.0164	mg/L	0.00481	29.37%
V 290.880†	-597.7	-0.00201	mg/L	0.000282	-0.00201	mg/L	0.000282	14.06%
Zn 206.200†	-42.1	-0.00624	mg/L	0.000276	-0.00624	mg/L	0.000276	4.43%
K 766.490†	2537.7	1.55	mg/L	0.043	1.55	mg/L	0.043	2.78%
Na 589.592†	629559.2	80.4	mg/L	0.45	80.4	mg/L	0.45	0.55%
Sr 407.771†	249977.2	0.308	mg/L	0.0006	0.308	mg/L	0.0006	0.19%
Li 670.784†	248.2	0.00381	mg/L	0.001975	0.00381	mg/L	0.001975	51.82%
P 214.914†	18.9	0.0318	mg/L	0.00745	0.0318	mg/L	0.00745	23.44%

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Sequence No.: 36 **Autosampler Location: 101**
Sample ID: L1505146302 **Date Collected: 5/27/2015 4:38:19 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505146302

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505146302

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3301503.1						37674.16	1.14%
YRADIAL	214999.5						6033.89	2.81%
Ga 417.206	1378302.1						12818.11	0.93%
GaRADIAL	49881.7						1419.16	2.85%
Ag 328.068†	-239.4	0.00380	mg/L	0.000198	0.00380	mg/L	0.000198	5.20%
Al 396.153†	194.5	0.0466	mg/L	0.01909	0.0466	mg/L	0.01909	40.94%
As 188.979†	-15.4	-0.00325	mg/L	0.003481	-0.00325	mg/L	0.003481	107.05%
Ba 233.527†	18879.6	0.326	mg/L	0.0031	0.326	mg/L	0.0031	0.94%
Be 234.861†	662.1	0.00007	mg/L	0.000211	0.00007	mg/L	0.000211	314.55%
B 249.677†	8255.8	0.142	mg/L	0.0029	0.142	mg/L	0.0029	2.04%

Approved: May 28, 2015

Ca 227.546†	4391.6	55.2	mg/L	0.74	55.2	mg/L	0.74	1.35%
Cd 228.802†	12.9	0.00104	mg/L	0.000183	0.00104	mg/L	0.000183	17.58%
Co 228.616†	3.9	-0.00059	mg/L	0.000162	-0.00059	mg/L	0.000162	27.54%
Cr 267.716†	244.3	0.00115	mg/L	0.000145	0.00115	mg/L	0.000145	12.57%
Cu 327.393†	-805.3	-0.00084	mg/L	0.000905	-0.00084	mg/L	0.000905	107.38%
Fe 239.562†	32827.6	5.65	mg/L	0.057	5.65	mg/L	0.057	1.02%
Mg 279.077†	100327.3	37.2	mg/L	0.18	37.2	mg/L	0.18	0.49%
Mn 257.610†	302637.3	0.474	mg/L	0.0044	0.474	mg/L	0.0044	0.92%
Mo 202.031†	73.8	0.00710	mg/L	0.001246	0.00710	mg/L	0.001246	17.55%
Ni 231.604†	0.7	-0.00071	mg/L	0.000666	-0.00071	mg/L	0.000666	93.64%
Pb 220.353†	19.7	0.00351	mg/L	0.002839	0.00351	mg/L	0.002839	80.86%
Sb 206.836†	-4.5	0.00076	mg/L	0.001720	0.00076	mg/L	0.001720	227.00%
Se 196.026†	-9.2	-0.0109	mg/L	0.01124	-0.0109	mg/L	0.01124	102.70%
Si 251.611†	-47026.4	-2.50	mg/L	0.181	-2.50	mg/L	0.181	7.24%
Sn 189.927†	-65.6	-0.0126	mg/L	0.00220	-0.0126	mg/L	0.00220	17.53%
Ti 334.940†	-3853.2	0.00111	mg/L	0.000314	0.00111	mg/L	0.000314	28.35%
Tl 190.801†	-9.2	-0.00957	mg/L	0.005303	-0.00957	mg/L	0.005303	55.43%
V 290.880†	-1917.2	-0.00816	mg/L	0.001400	-0.00816	mg/L	0.001400	17.16%
Zn 206.200†	30.0	-0.00320	mg/L	0.000741	-0.00320	mg/L	0.000741	23.14%
K 766.490†	404.2	0.229	mg/L	0.1283	0.229	mg/L	0.1283	56.10%
Na 589.592†	438117.2	55.2	mg/L	2.02	55.2	mg/L	2.02	3.66%
Sr 407.771†	343710.6	0.424	mg/L	0.0149	0.424	mg/L	0.0149	3.50%
Li 670.784†	223.4	0.00316	mg/L	0.000452	0.00316	mg/L	0.000452	14.29%
P 214.914†	15.2	0.0260	mg/L	0.00590	0.0260	mg/L	0.00590	22.69%

Sequence No.: 37
Sample ID: L1505146302PS WG525235-01
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 102
Date Collected: 5/27/2015 4:40:42 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505146302PS WG525235-01

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505146302PS WG525235-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3288184.5						37309.83	1.13%
YRADIAL	212273.7						1219.38	0.57%
Ga 417.206	1359380.9						14079.80	1.04%
GaRADIAL	50392.9						228.83	0.45%
Ag 328.068†	66315.8	0.200	mg/L	0.0024	0.200	mg/L	0.0024	1.22%
Al 396.153†	14288.3	4.97	mg/L	0.082	4.97	mg/L	0.082	1.65%
As 188.979†	283.3	0.178	mg/L	0.0086	0.178	mg/L	0.0086	4.81%
Ba 233.527†	43728.6	0.756	mg/L	0.0147	0.756	mg/L	0.0147	1.94%
Be 234.861†	13536.9	0.0233	mg/L	0.00057	0.0233	mg/L	0.00057	2.45%
B 249.677†	64949.4	0.945	mg/L	0.0176	0.945	mg/L	0.0176	1.86%
Ca 227.546†	4311.8	54.3	mg/L	0.82	54.3	mg/L	0.82	1.51%
Cd 228.802†	385.6	0.0229	mg/L	0.00027	0.0229	mg/L	0.00027	1.19%
Co 228.616†	1314.6	0.0912	mg/L	0.00200	0.0912	mg/L	0.00200	2.19%
Cr 267.716†	32627.9	0.240	mg/L	0.0053	0.240	mg/L	0.0053	2.20%
Cu 327.393†	50470.5	0.237	mg/L	0.0046	0.237	mg/L	0.0046	1.95%
Fe 239.562†	41596.4	7.15	mg/L	0.077	7.15	mg/L	0.077	1.07%
Mg 279.077†	104457.3	38.7	mg/L	0.47	38.7	mg/L	0.47	1.21%
Mn 257.610†	417073.3	0.653	mg/L	0.0144	0.653	mg/L	0.0144	2.21%
Mo 202.031†	4924.2	0.469	mg/L	0.0095	0.469	mg/L	0.0095	2.03%
Ni 231.604†	7163.8	0.224	mg/L	0.0042	0.224	mg/L	0.0042	1.86%
Pb 220.353†	1047.8	0.235	mg/L	0.0038	0.235	mg/L	0.0038	1.63%
Sb 206.836†	634.8	0.551	mg/L	0.0067	0.551	mg/L	0.0067	1.21%
Se 196.026†	113.6	0.182	mg/L	0.0149	0.182	mg/L	0.0149	8.20%
Si 251.611†	3400.1	0.0139	mg/L	0.39812	0.0139	mg/L	0.39812	>999.9%
Sn 189.927†	2692.2	0.454	mg/L	0.0098	0.454	mg/L	0.0098	2.16%
Ti 334.940†	442108.1	0.481	mg/L	0.0106	0.481	mg/L	0.0106	2.20%
Tl 190.801†	263.3	0.222	mg/L	0.0008	0.222	mg/L	0.0008	0.35%
V 290.880†	89806.0	0.477	mg/L	0.0126	0.477	mg/L	0.0126	2.64%
Zn 206.200†	13183.2	0.458	mg/L	0.0103	0.458	mg/L	0.0103	2.24%
K 766.490†	38784.2	24.6	mg/L	0.39	24.6	mg/L	0.39	1.57%
Na 589.592†	576322.4	73.3	mg/L	1.59	73.3	mg/L	1.59	2.17%

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Sr 407.771†	713966.0	0.884 mg/L	0.0204	0.884 mg/L	0.0204	2.31%
Li 670.784†	19629.0	0.512 mg/L	0.0076	0.512 mg/L	0.0076	1.49%
P 214.914†	2954.7	4.64 mg/L	0.081	4.64 mg/L	0.081	1.74%

Sequence No.: 38 **Autosampler Location: 103**
Sample ID: L1505146302DL WG525235-02 **Date Collected: 5/27/2015 4:43:06 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505146302DL WG525235-02

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505146302DL WG525235-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3462534.2						39231.98	1.13%
YRADIAL	221620.8						4681.35	2.11%
Ga 417.206	1535394.8						15592.14	1.02%
GaRADIAL	51204.3						505.54	0.99%
Ag 328.068†	-12.0	0.00253	mg/L	0.000172	0.00253	mg/L	0.000172	6.79%
Al 396.153†	43.5	-0.00665	mg/L	0.045533	-0.00665	mg/L	0.045533	684.43%
As 188.979†	-15.3	-0.00524	mg/L	0.004099	-0.00524	mg/L	0.004099	78.20%
Ba 233.527†	3803.4	0.0655	mg/L	0.00063	0.0655	mg/L	0.00063	0.96%
Be 234.861†	132.3	0.00020	mg/L	0.000027	0.00020	mg/L	0.000027	13.51%
B 249.677†	2904.4	0.0500	mg/L	0.00117	0.0500	mg/L	0.00117	2.35%
Ca 227.546†	845.2	10.7	mg/L	0.10	10.7	mg/L	0.10	0.96%
Cd 228.802†	2.6	0.00042	mg/L	0.000508	0.00042	mg/L	0.000508	120.44%
Co 228.616†	-1.8	-0.00081	mg/L	0.000795	-0.00081	mg/L	0.000795	98.72%
Cr 267.716†	91.7	0.00015	mg/L	0.000096	0.00015	mg/L	0.000096	63.08%
Cu 327.393†	-443.1	0.00019	mg/L	0.001317	0.00019	mg/L	0.001317	682.91%
Fe 239.562†	6770.0	1.17	mg/L	0.025	1.17	mg/L	0.025	2.12%
Mg 279.077†	21044.1	7.78	mg/L	0.234	7.78	mg/L	0.234	3.00%
Mn 257.610†	62938.0	0.0982	mg/L	0.00073	0.0982	mg/L	0.00073	0.75%
Mo 202.031†	19.4	0.00192	mg/L	0.001279	0.00192	mg/L	0.001279	66.59%
Ni 231.604†	16.6	-0.00021	mg/L	0.000601	-0.00021	mg/L	0.000601	282.14%
Pb 220.353†	16.1	0.00306	mg/L	0.002003	0.00306	mg/L	0.002003	65.50%
Sb 206.836†	-0.2	0.00435	mg/L	0.002215	0.00435	mg/L	0.002215	50.95%
Se 196.026†	9.4	0.0188	mg/L	0.00818	0.0188	mg/L	0.00818	43.62%
Si 251.611†	64184.0	3.05	mg/L	0.047	3.05	mg/L	0.047	1.55%
Sn 189.927†	-50.5	-0.0100	mg/L	0.00198	-0.0100	mg/L	0.00198	19.77%
Ti 334.940†	-1062.0	0.00126	mg/L	0.000336	0.00126	mg/L	0.000336	26.80%
Tl 190.801†	-2.1	-0.00328	mg/L	0.004648	-0.00328	mg/L	0.004648	141.53%
V 290.880†	-907.7	-0.00290	mg/L	0.001166	-0.00290	mg/L	0.001166	40.14%
Zn 206.200†	-105.7	-0.00836	mg/L	0.000358	-0.00836	mg/L	0.000358	4.28%
K 766.490†	-15.3	0.00752	mg/L	0.008574	0.00752	mg/L	0.008574	114.02%
Na 589.592†	94614.7	11.6	mg/L	0.34	11.6	mg/L	0.34	2.96%
Sr 407.771†	72535.9	0.0893	mg/L	0.00040	0.0893	mg/L	0.00040	0.44%
Li 670.784†	-82.7	-0.00486	mg/L	0.005506	-0.00486	mg/L	0.005506	113.31%
P 214.914†	8.0	0.0148	mg/L	0.01329	0.0148	mg/L	0.01329	90.06%

Sequence No.: 39 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 5/27/2015 4:45:29 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3256463.6						69216.67	2.13%

Approved: May 28, 2015

Kym H. Rhoden

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YRADIAL              215535.0                                                    2700.77   1.25%
Ga 417.206          1355503.2                                                   19018.53   1.40%
GaRADIAL              50276.8                                                     764.35   1.52%
Ag 328.068†          131778.4       0.392 mg/L        0.0005       0.392 mg/L        0.0005   0.12%
   QC value within limits for Ag 328.068  Recovery = 97.97%
Al 396.153†           28577.3        9.96 mg/L         0.163        9.96 mg/L         0.163   1.64%
   QC value within limits for Al 396.153  Recovery = 99.64%
As 188.979†             607.1       0.372 mg/L        0.0122       0.372 mg/L        0.0122   3.28%
   QC value within limits for As 188.979  Recovery = 93.11%
Ba 233.527†           55810.6       0.965 mg/L        0.0089       0.965 mg/L        0.0089   0.92%
   QC value within limits for Ba 233.527  Recovery = 96.49%
Be 234.861†           26051.9      0.0470 mg/L       0.00024      0.0470 mg/L       0.00024   0.51%
   QC value within limits for Be 234.861  Recovery = 93.92%
B 249.677†            26176.8       0.386 mg/L        0.0021       0.386 mg/L        0.0021   0.55%
   QC value less than the lower limit for B 249.677  Recovery = 77.23%
Ca 227.546†             738.8        9.40 mg/L         0.093        9.40 mg/L         0.093   0.99%
   QC value within limits for Ca 227.546  Recovery = 94.04%
Cd 228.802†             793.4      0.0468 mg/L       0.00083      0.0468 mg/L       0.00083   1.77%
   QC value within limits for Cd 228.802  Recovery = 93.51%
Co 228.616†            2737.2       0.191 mg/L        0.0037       0.191 mg/L        0.0037   1.95%
   QC value within limits for Co 228.616  Recovery = 95.55%
Cr 267.716†           66005.7       0.486 mg/L        0.0036       0.486 mg/L        0.0036   0.75%
   QC value within limits for Cr 267.716  Recovery = 97.12%
Cu 327.393†          103481.0       0.483 mg/L        0.0021       0.483 mg/L        0.0021   0.44%
   QC value within limits for Cu 327.393  Recovery = 96.61%
Fe 239.562†           23112.5        3.98 mg/L         0.088        3.98 mg/L         0.088   2.20%
   QC value within limits for Fe 239.562  Recovery = 99.39%
Mg 279.077†           27170.5        10.0 mg/L          0.19        10.0 mg/L          0.19   1.85%
   QC value within limits for Mg 279.077  Recovery = 100.50%
Mn 257.610†          311543.7       0.488 mg/L        0.0030       0.488 mg/L        0.0030   0.62%
   QC value within limits for Mn 257.610  Recovery = 97.59%
Mo 202.031†            9752.7       0.929 mg/L        0.0195       0.929 mg/L        0.0195   2.10%
   QC value within limits for Mo 202.031  Recovery = 92.89%
Ni 231.604†           15352.8       0.480 mg/L        0.0095       0.480 mg/L        0.0095   1.98%
   QC value within limits for Ni 231.604  Recovery = 95.97%
Pb 220.353†            2143.1       0.481 mg/L        0.0108       0.481 mg/L        0.0108   2.24%
   QC value within limits for Pb 220.353  Recovery = 96.18%
Sb 206.836†            1283.3        1.11 mg/L         0.015        1.11 mg/L         0.015   1.39%
   QC value within limits for Sb 206.836  Recovery = 92.42%
Se 196.026†             259.3       0.412 mg/L        0.0041       0.412 mg/L        0.0041   1.00%
   QC value within limits for Se 196.026  Recovery = 102.94%
Si 251.611†         -176340.6       -8.96 mg/L         0.288       -8.96 mg/L         0.288   3.21%
   QC value less than the lower limit for Si 251.611  Recovery = -179.22%
Sn 189.927†            5588.7       0.943 mg/L        0.0177       0.943 mg/L        0.0177   1.88%
   QC value within limits for Sn 189.927  Recovery = 94.34%
Ti 334.940†          900788.4       0.972 mg/L        0.0049       0.972 mg/L        0.0049   0.50%
   QC value within limits for Ti 334.940  Recovery = 97.23%
Tl 190.801†             572.9       0.484 mg/L        0.0083       0.484 mg/L        0.0083   1.71%
   QC value within limits for Tl 190.801  Recovery = 96.80%
V 290.880†           182833.8       0.969 mg/L        0.0067       0.969 mg/L        0.0067   0.69%
   QC value within limits for V 290.880  Recovery = 96.93%
Zn 206.200†           27435.7       0.957 mg/L        0.0180       0.957 mg/L        0.0180   1.88%
   QC value within limits for Zn 206.200  Recovery = 95.66%
K 766.490†            76353.8        48.6 mg/L          0.63        48.6 mg/L          0.63   1.29%
   QC value within limits for K 766.490  Recovery = 97.28%
Na 589.592†          383033.7        48.1 mg/L          0.89        48.1 mg/L          0.89   1.85%
   QC value within limits for Na 589.592  Recovery = 96.11%
Sr 407.771†          775090.5       0.961 mg/L        0.0187       0.961 mg/L        0.0187   1.95%
   QC value within limits for Sr 407.771  Recovery = 96.13%
Li 670.784†           38404.5        1.00 mg/L         0.009        1.00 mg/L         0.009   0.89%
   QC value within limits for Li 670.784  Recovery = 100.38%
P 214.914†             5984.8        9.39 mg/L         0.194        9.39 mg/L         0.194   2.06%
   QC value within limits for P 214.914  Recovery = 93.86%
QC Failed.  Continue with analysis.

==========================================================================================
```

Sequence No.: 40 **Autosampler Location: 1**
Sample ID: CCB **Date Collected: 5/27/2015 4:47:59 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Approved: May 28, 2015

Nebulizer Parameters: CCB

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3485834.0						20650.94	0.59%
YRADIAL	216715.6						5248.75	2.42%
Ga 417.206	1588054.6						13401.09	0.84%
GaRADIAL	52507.3						1351.07	2.57%
Ag 328.068†	-51.0	0.00192	mg/L	0.000159	0.00192	mg/L	0.000159	8.29%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	-6.9	-0.0245	mg/L	0.01134	-0.0245	mg/L	0.01134	46.37%
QC value within limits for Al 396.153 Recovery = Not calculated								
As 188.979†	-9.9	-0.00249	mg/L	0.004543	-0.00249	mg/L	0.004543	182.18%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	-13.9	-0.00048	mg/L	0.000133	-0.00048	mg/L	0.000133	27.47%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 234.861†	-7.9	0.00023	mg/L	0.000038	0.00023	mg/L	0.000038	16.30%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	77.5	0.00576	mg/L	0.001911	0.00576	mg/L	0.001911	33.19%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	-3.0	0.0179	mg/L	0.09372	0.0179	mg/L	0.09372	523.93%
QC value within limits for Ca 227.546 Recovery = Not calculated								
Cd 228.802†	-0.0	0.00025	mg/L	0.000153	0.00025	mg/L	0.000153	62.18%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	-7.7	-0.00117	mg/L	0.000686	-0.00117	mg/L	0.000686	58.74%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	-7.7	-0.00055	mg/L	0.000362	-0.00055	mg/L	0.000362	66.30%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	50.0	0.00231	mg/L	0.000388	0.00231	mg/L	0.000388	16.80%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	13.9	0.00658	mg/L	0.001427	0.00658	mg/L	0.001427	21.69%
QC value within limits for Fe 239.562 Recovery = Not calculated								
Mg 279.077†	25.0	-0.00529	mg/L	0.006013	-0.00529	mg/L	0.006013	113.62%
QC value within limits for Mg 279.077 Recovery = Not calculated								
Mn 257.610†	13.6	-0.00040	mg/L	0.000013	-0.00040	mg/L	0.000013	3.33%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	14.1	0.00141	mg/L	0.000942	0.00141	mg/L	0.000942	66.69%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	-15.5	-0.00122	mg/L	0.000264	-0.00122	mg/L	0.000264	21.65%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	-6.3	-0.00184	mg/L	0.002028	-0.00184	mg/L	0.002028	110.08%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	6.4	0.00993	mg/L	0.001613	0.00993	mg/L	0.001613	16.24%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	3.9	0.0103	mg/L	0.01576	0.0103	mg/L	0.01576	153.36%
QC value within limits for Se 196.026 Recovery = Not calculated								
Si 251.611†	685.7	-0.116	mg/L	0.2524	-0.116	mg/L	0.2524	216.80%
QC value within limits for Si 251.611 Recovery = Not calculated								
Sn 189.927†	-29.2	-0.00642	mg/L	0.000749	-0.00642	mg/L	0.000749	11.67%
QC value within limits for Sn 189.927 Recovery = Not calculated								
Ti 334.940†	326.3	0.00207	mg/L	0.000247	0.00207	mg/L	0.000247	11.93%
QC value within limits for Ti 334.940 Recovery = Not calculated								
Tl 190.801†	0.9	-0.00072	mg/L	0.002680	-0.00072	mg/L	0.002680	373.08%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 290.880†	-440.4	-0.00045	mg/L	0.001240	-0.00045	mg/L	0.001240	275.91%
QC value within limits for V 290.880 Recovery = Not calculated								
Zn 206.200†	-14.6	-0.00529	mg/L	0.000141	-0.00529	mg/L	0.000141	2.66%
QC value within limits for Zn 206.200 Recovery = Not calculated								
K 766.490†	-46.9	-0.00085	mg/L	0.013473	-0.00085	mg/L	0.013473	>999.9%
QC value within limits for K 766.490 Recovery = Not calculated								
Na 589.592†	500.0	0.0817	mg/L	0.01373	0.0817	mg/L	0.01373	16.82%
QC value within limits for Na 589.592 Recovery = Not calculated								
Sr 407.771†	207.3	-0.00008	mg/L	0.000172	-0.00008	mg/L	0.000172	218.37%
QC value within limits for Sr 407.771 Recovery = Not calculated								
Li 670.784†	-39.4	-0.00372	mg/L	0.002383	-0.00372	mg/L	0.002383	63.99%
QC value within limits for Li 670.784 Recovery = Not calculated								
P 214.914†	-2.6	-0.00195	mg/L	0.005025	-0.00195	mg/L	0.005025	257.80%

Approved: May 28, 2015

Lynn H. Rhoden

QC value within limits for P 214.914 Recovery = Not calculated
All analyte(s) passed QC.

Sequence No.: 41 **Autosampler Location: 104**
Sample ID: L1505146303 **Date Collected: 5/27/2015 4:51:20 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505146303

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505146303

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3326870.6						37658.09	1.13%
YRADIAL	213456.2						2601.37	1.22%
Ga 417.206	1403824.1						16212.94	1.15%
GaRADIAL	48809.1						712.13	1.46%
Ag 328.068†	346.9	0.00326	mg/L	0.000782	0.00326	mg/L	0.000782	23.98%
Al 396.153†	182.0	0.0417	mg/L	0.01520	0.0417	mg/L	0.01520	36.41%
As 188.979†	-19.7	-0.00714	mg/L	0.007578	-0.00714	mg/L	0.007578	106.08%
Ba 233.527†	7390.4	0.128	mg/L	0.0016	0.128	mg/L	0.0016	1.28%
Be 234.861†	-32.7	0.00007	mg/L	0.000011	0.00007	mg/L	0.000011	14.76%
B 249.677†	8189.9	0.122	mg/L	0.0026	0.122	mg/L	0.0026	2.11%
Ca 227.546†	4437.5	55.8	mg/L	0.71	55.8	mg/L	0.71	1.27%
Cd 228.802†	-0.8	0.00023	mg/L	0.000343	0.00023	mg/L	0.000343	146.72%
Co 228.616†	3.2	-0.00045	mg/L	0.000577	-0.00045	mg/L	0.000577	129.59%
Cr 267.716†	276.5	0.00153	mg/L	0.000174	0.00153	mg/L	0.000174	11.37%
Cu 327.393†	-316.2	0.00071	mg/L	0.001130	0.00071	mg/L	0.001130	159.94%
Fe 239.562†	3841.6	0.664	mg/L	0.0082	0.664	mg/L	0.0082	1.23%
Mg 279.077†	57952.9	21.5	mg/L	0.37	21.5	mg/L	0.37	1.72%
Mn 257.610†	313497.8	0.491	mg/L	0.0025	0.491	mg/L	0.0025	0.51%
Mo 202.031†	53.2	0.00523	mg/L	0.000253	0.00523	mg/L	0.000253	4.84%
Ni 231.604†	6.6	-0.00052	mg/L	0.000406	-0.00052	mg/L	0.000406	77.78%
Pb 220.353†	13.2	0.00221	mg/L	0.001356	0.00221	mg/L	0.001356	61.27%
Sb 206.836†	2.1	0.00628	mg/L	0.002250	0.00628	mg/L	0.002250	35.81%
Se 196.026†	-4.3	-0.00272	mg/L	0.013346	-0.00272	mg/L	0.013346	490.22%
Si 251.611†	-113733.8	-5.83	mg/L	0.147	-5.83	mg/L	0.147	2.53%
Sn 189.927†	-58.9	-0.0114	mg/L	0.00164	-0.0114	mg/L	0.00164	14.34%
Ti 334.940†	-3217.8	0.00183	mg/L	0.000227	0.00183	mg/L	0.000227	12.39%
Tl 190.801†	-16.5	-0.0157	mg/L	0.00184	-0.0157	mg/L	0.00184	11.78%
V 290.880†	-937.0	-0.00351	mg/L	0.000500	-0.00351	mg/L	0.000500	14.23%
Zn 206.200†	122.4	-0.00044	mg/L	0.000389	-0.00044	mg/L	0.000389	88.18%
K 766.490†	1749.8	1.08	mg/L	0.055	1.08	mg/L	0.055	5.07%
Na 589.592†	446020.9	56.2	mg/L	0.30	56.2	mg/L	0.30	0.53%
Sr 407.771†	245024.9	0.302	mg/L	0.0020	0.302	mg/L	0.0020	0.65%
Li 670.784†	170.4	0.00177	mg/L	0.002613	0.00177	mg/L	0.002613	147.37%
P 214.914†	29.8	0.0488	mg/L	0.01185	0.0488	mg/L	0.01185	24.26%

Sequence No.: 42 **Autosampler Location: 105**
Sample ID: L1505146304 WG525082-01 **Date Collected: 5/27/2015 4:53:43 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505146304 WG525082-01

Analyte	Back Pressure	Flow
All	230.0 kPa	0.40 L/min

Mean Data: L1505146304 WG525082-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2969463.7						49612.05	1.67%
YRADIAL	199722.9						4159.80	2.08%

Approved: May 28, 2015

Ga 417.206	1148839.2							12015.19	1.05%
GaRADIAL	46873.8							626.40	1.34%
Ag 328.068†	5816.3	0.0177	mg/L	0.00014	0.0177	mg/L		0.00014	0.82%
Al 396.153†	191.8	0.0443	mg/L	0.02488	0.0443	mg/L		0.02488	56.14%
As 188.979†	-24.9	-0.00079	mg/L	0.005782	-0.00079	mg/L		0.005782	733.82%
Ba 233.527†	1164.5	0.0199	mg/L	0.00058	0.0199	mg/L		0.00058	2.90%
Be 234.861†	-124.7	0.00002	mg/L	0.000050	0.00002	mg/L		0.000050	223.33%
B 249.677†	100112.5	1.41	mg/L	0.025	1.41	mg/L		0.025	1.75%
Ca 227.546†	39884.3	501	mg/L	7.6	501	mg/L		7.6	1.51%
Cd 228.802†	2.6	0.00045	mg/L	0.000417	0.00045	mg/L		0.000417	92.50%
Co 228.616†	1.1	-0.00045	mg/L	0.000522	-0.00045	mg/L		0.000522	115.34%
Cr 267.716†	585.7	0.00382	mg/L	0.000097	0.00382	mg/L		0.000097	2.54%
Cu 327.393†	-2321.1	-0.00869	mg/L	0.001520	-0.00869	mg/L		0.001520	17.49%
Fe 239.562†	566.4	0.0996	mg/L	0.00197	0.0996	mg/L		0.00197	1.97%
Mg 279.077†	266657.8	98.8	mg/L	0.54	98.8	mg/L		0.54	0.55%
Mn 257.610†	107283.6	0.168	mg/L	0.0032	0.168	mg/L		0.0032	1.89%
Mo 202.031†	257.6	0.0246	mg/L	0.00126	0.0246	mg/L		0.00126	5.11%
Ni 231.604†	10.7	-0.00039	mg/L	0.000081	-0.00039	mg/L		0.000081	20.93%
Pb 220.353†	55.2	0.0118	mg/L	0.00322	0.0118	mg/L		0.00322	27.25%
Sb 206.836†	-6.9	-0.00147	mg/L	0.007584	-0.00147	mg/L		0.007584	515.02%
Se 196.026†	21.0	0.0369	mg/L	0.00749	0.0369	mg/L		0.00749	20.31%
Si 251.611†	-99181.4	-5.10	mg/L	0.218	-5.10	mg/L		0.218	4.28%
Sn 189.927†	-93.0	-0.0172	mg/L	0.00345	-0.0172	mg/L		0.00345	20.05%
Ti 334.940†	-27128.4	0.00467	mg/L	0.000780	0.00467	mg/L		0.000780	16.70%
Tl 190.801†	-46.1	-0.0401	mg/L	0.00692	-0.0401	mg/L		0.00692	17.27%
V 290.880†	305.6	0.00094	mg/L	0.002940	0.00094	mg/L		0.002940	311.72%
Zn 206.200†	-131.1	-0.00931	mg/L	0.000541	-0.00931	mg/L		0.000541	5.81%
K 766.490†	5914.2	2.85	mg/L	0.044	2.85	mg/L		0.044	1.53%
Na 589.592†	6502751.4	913	mg/L	0.0	913	mg/L		0.0	0.00%
Sr 407.771†	5751589.5	7.12	mg/L	0.181	7.12	mg/L		0.181	2.55%
Li 670.784†	2877.7	0.0727	mg/L	0.00384	0.0727	mg/L		0.00384	5.28%
P 214.914†	12.8	0.0222	mg/L	0.01768	0.0222	mg/L		0.01768	79.69%

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Sequence No.: 43 **Autosampler Location: 106**
Sample ID: L1505146305MS WG525082-04 **Date Collected: 5/27/2015 4:56:19 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505146305MS WG525082-04

Analyte	**Back Pressure**	**Flow**
All	231.0 kPa	0.40 L/min

Mean Data: L1505146305MS WG525082-04

Analyte	**Mean Corrected Intensity**	**Calib. Conc.**	**Units**	**Std.Dev.**	**Sample Conc.**	**Units**	**Std.Dev.**	**RSD**
Y 371.029	2958024.9						16161.20	0.55%
YRADIAL	203947.7						1054.69	0.52%
Ga 417.206	1144439.0						2100.73	0.18%
GaRADIAL	48089.9						206.23	0.43%
Ag 328.068†	81428.4	0.241	mg/L	0.0010	0.241	mg/L	0.0010	0.41%
Al 396.153†	14035.9	4.88	mg/L	0.044	4.88	mg/L	0.044	0.91%
As 188.979†	315.1	0.206	mg/L	0.0152	0.206	mg/L	0.0152	7.37%
Ba 233.527†	29446.9	0.509	mg/L	0.0050	0.509	mg/L	0.0050	0.98%
Be 234.861†	14208.0	0.0258	mg/L	0.00013	0.0258	mg/L	0.00013	0.50%
B 249.677†	167971.7	2.38	mg/L	0.011	2.38	mg/L	0.011	0.47%
Ca 227.546†	39713.7	499	mg/L	4.0	499	mg/L	4.0	0.81%
Cd 228.802†	435.6	0.0258	mg/L	0.00018	0.0258	mg/L	0.00018	0.72%
Co 228.616†	1327.2	0.0924	mg/L	0.00115	0.0924	mg/L	0.00115	1.24%
Cr 267.716†	33031.1	0.243	mg/L	0.0011	0.243	mg/L	0.0011	0.43%
Cu 327.393†	55093.3	0.258	mg/L	0.0018	0.258	mg/L	0.0018	0.68%
Fe 239.562†	11686.7	2.01	mg/L	0.008	2.01	mg/L	0.008	0.38%
Mg 279.077†	283422.1	105	mg/L	0.4	105	mg/L	0.4	0.39%
Mn 257.610†	247933.2	0.388	mg/L	0.0025	0.388	mg/L	0.0025	0.63%
Mo 202.031†	5216.4	0.497	mg/L	0.0017	0.497	mg/L	0.0017	0.34%
Ni 231.604†	7246.3	0.226	mg/L	0.0023	0.226	mg/L	0.0023	1.01%
Pb 220.353†	1057.8	0.237	mg/L	0.0072	0.237	mg/L	0.0072	3.04%
Sb 206.836†	705.5	0.612	mg/L	0.0048	0.612	mg/L	0.0048	0.78%
Se 196.026†	164.9	0.263	mg/L	0.0080	0.263	mg/L	0.0080	3.05%

Approved: May 28, 2015

Si 251.611†	-34477.2	-1.88 mg/L	0.187	-1.88 mg/L	0.187	9.97%
Sn 189.927†	2685.8	0.453 mg/L	0.0029	0.453 mg/L	0.0029	0.64%
Ti 334.940†	430988.5	0.498 mg/L	0.0030	0.498 mg/L	0.0030	0.60%
Tl 190.801†	225.8	0.191 mg/L	0.0106	0.191 mg/L	0.0106	5.53%
V 290.880†	95129.1	0.503 mg/L	0.0004	0.503 mg/L	0.0004	0.08%
Zn 206.200†	13175.3	0.457 mg/L	0.0031	0.457 mg/L	0.0031	0.67%
K 766.490†	46475.0	28.6 mg/L	0.20	28.6 mg/L	0.20	0.71%
Na 589.592†	6551281.6	913 mg/L	0.0	913 mg/L	0.0	0.00%
Sr 407.771†	6031529.0	7.47 mg/L	0.031	7.47 mg/L	0.031	0.42%
Li 670.784†	22558.9	0.589 mg/L	0.0061	0.589 mg/L	0.0061	1.04%
P 214.914†	3226.6	5.06 mg/L	0.020	5.06 mg/L	0.020	0.39%

Sequence No.: 44 **Autosampler Location: 107**
Sample ID: L1505146306SD WG525082-05 **Date Collected: 5/27/2015 4:58:49 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505146306SD WG525082-05

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505146306SD WG525082-05

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2941106.2						52492.78	1.78%
YRADIAL	198420.4						4024.72	2.03%
Ga 417.206	1140332.1						20896.49	1.83%
GaRADIAL	46712.8						722.55	1.55%
Ag 328.068†	78489.1	0.232	mg/L	0.0034	0.232	mg/L	0.0034	1.46%
Al 396.153†	14060.5	4.89	mg/L	0.059	4.89	mg/L	0.059	1.20%
As 188.979†	291.1	0.191	mg/L	0.0075	0.191	mg/L	0.0075	3.90%
Ba 233.527†	28854.0	0.499	mg/L	0.0092	0.499	mg/L	0.0092	1.85%
Be 234.861†	13961.5	0.0253	mg/L	0.00037	0.0253	mg/L	0.00037	1.45%
B 249.677†	163909.5	2.32	mg/L	0.033	2.32	mg/L	0.033	1.40%
Ca 227.546†	39476.1	496	mg/L	7.3	496	mg/L	7.3	1.48%
Cd 228.802†	428.0	0.0254	mg/L	0.00016	0.0254	mg/L	0.00016	0.64%
Co 228.616†	1306.9	0.0910	mg/L	0.00260	0.0910	mg/L	0.00260	2.86%
Cr 267.716†	32119.4	0.236	mg/L	0.0041	0.236	mg/L	0.0041	1.72%
Cu 327.393†	53236.8	0.249	mg/L	0.0015	0.249	mg/L	0.0015	0.58%
Fe 239.562†	11754.5	2.02	mg/L	0.048	2.02	mg/L	0.048	2.37%
Mg 279.077†	283200.2	105	mg/L	1.6	105	mg/L	1.6	1.54%
Mn 257.610†	248290.0	0.389	mg/L	0.0049	0.389	mg/L	0.0049	1.26%
Mo 202.031†	5102.8	0.486	mg/L	0.0086	0.486	mg/L	0.0086	1.76%
Ni 231.604†	7108.6	0.222	mg/L	0.0029	0.222	mg/L	0.0029	1.29%
Pb 220.353†	1047.0	0.235	mg/L	0.0076	0.235	mg/L	0.0076	3.25%
Sb 206.836†	686.8	0.596	mg/L	0.0158	0.596	mg/L	0.0158	2.65%
Se 196.026†	160.1	0.256	mg/L	0.0096	0.256	mg/L	0.0096	3.77%
Si 251.611†	-38432.0	-2.07	mg/L	0.182	-2.07	mg/L	0.182	8.77%
Sn 189.927†	2625.5	0.442	mg/L	0.0073	0.442	mg/L	0.0073	1.66%
Ti 334.940†	418259.8	0.484	mg/L	0.0050	0.484	mg/L	0.0050	1.04%
Tl 190.801†	229.7	0.194	mg/L	0.0122	0.194	mg/L	0.0122	6.29%
V 290.880†	92216.5	0.487	mg/L	0.0058	0.487	mg/L	0.0058	1.18%
Zn 206.200†	12884.3	0.447	mg/L	0.0076	0.447	mg/L	0.0076	1.71%
K 766.490†	46502.3	28.6	mg/L	0.46	28.6	mg/L	0.46	1.60%
Na 589.592†	6658561.8	913	mg/L	0.0	913	mg/L	0.0	0.00%
Sr 407.771†	6193625.4	7.67	mg/L	0.100	7.67	mg/L	0.100	1.30%
Li 670.784†	22562.0	0.589	mg/L	0.0075	0.589	mg/L	0.0075	1.28%
P 214.914†	3144.9	4.93	mg/L	0.090	4.93	mg/L	0.090	1.82%

Sequence No.: 45 **Autosampler Location: 108**
Sample ID: L1505146307 **Date Collected: 5/27/2015 5:01:21 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505146307

Approved: May 28, 2015

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505146307

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3556870.9						49186.12	1.38%
YRADIAL	223554.1						2004.77	0.90%
Ga 417.206	1593030.0						19743.09	1.24%
GaRADIAL	53457.6						339.84	0.64%
Ag 328.068†	204.1	0.00267	mg/L	0.000661	0.00267	mg/L	0.000661	24.80%
Al 396.153†	3.6	-0.0207	mg/L	0.00364	-0.0207	mg/L	0.00364	17.57%
As 188.979†	-4.9	0.00063	mg/L	0.000431	0.00063	mg/L	0.000431	68.55%
Ba 233.527†	13.8	-0.00001	mg/L	0.000154	-0.00001	mg/L	0.000154	>999.9%
Be 234.861†	-62.4	0.00013	mg/L	0.000009	0.00013	mg/L	0.000009	6.96%
B 249.677†	-1327.5	-0.0140	mg/L	0.00293	-0.0140	mg/L	0.00293	20.92%
Ca 227.546†	-2.4	0.0254	mg/L	0.20338	0.0254	mg/L	0.20338	801.07%
Cd 228.802†	0.6	0.00027	mg/L	0.000559	0.00027	mg/L	0.000559	206.31%
Co 228.616†	-7.3	-0.00114	mg/L	0.000921	-0.00114	mg/L	0.000921	80.86%
Cr 267.716†	51.5	-0.00011	mg/L	0.001188	-0.00011	mg/L	0.001188	>999.9%
Cu 327.393†	-457.2	-0.00004	mg/L	0.000479	-0.00004	mg/L	0.000479	>999.9%
Fe 239.562†	29.4	0.00924	mg/L	0.001415	0.00924	mg/L	0.001415	15.32%
Mg 279.077†	84.9	0.0169	mg/L	0.00366	0.0169	mg/L	0.00366	21.67%
Mn 257.610†	251.0	-0.00003	mg/L	0.000006	-0.00003	mg/L	0.000006	20.59%
Mo 202.031†	3.6	0.00041	mg/L	0.000586	0.00041	mg/L	0.000586	142.13%
Ni 231.604†	-13.8	-0.00117	mg/L	0.000189	-0.00117	mg/L	0.000189	16.20%
Pb 220.353†	0.0	-0.00043	mg/L	0.001081	-0.00043	mg/L	0.001081	249.92%
Sb 206.836†	0.9	0.00527	mg/L	0.007074	0.00527	mg/L	0.007074	134.31%
Se 196.026†	6.5	0.0144	mg/L	0.00400	0.0144	mg/L	0.00400	27.82%
Si 251.611†	-333760.1	-16.8	mg/L	0.08	-16.8	mg/L	0.08	0.48%
Sn 189.927†	-38.7	-0.00804	mg/L	0.000712	-0.00804	mg/L	0.000712	8.86%
Ti 334.940†	164.0	0.00189	mg/L	0.000235	0.00189	mg/L	0.000235	12.42%
Tl 190.801†	-1.5	-0.00269	mg/L	0.001993	-0.00269	mg/L	0.001993	74.05%
V 290.880†	-556.9	-0.00107	mg/L	0.000761	-0.00107	mg/L	0.000761	71.38%
Zn 206.200†	-153.4	-0.0101	mg/L	0.00027	-0.0101	mg/L	0.00027	2.69%
K 766.490†	34.2	0.0497	mg/L	0.04101	0.0497	mg/L	0.04101	82.47%
Na 589.592†	5432.6	0.684	mg/L	0.0307	0.684	mg/L	0.0307	4.48%
Sr 407.771†	980.1	0.00088	mg/L	0.000224	0.00088	mg/L	0.000224	25.50%
Li 670.784†	-37.9	-0.00369	mg/L	0.002899	-0.00369	mg/L	0.002899	78.63%
P 214.914†	4.6	0.00931	mg/L	0.007950	0.00931	mg/L	0.007950	85.36%

Sequence No.: 46
Sample ID: L1505147701
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 109
Date Collected: 5/27/2015 5:04:44 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505147701

Analyte	Back Pressure	Flow
All	230.0 kPa	0.40 L/min

Mean Data: L1505147701

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3402852.1						39546.16	1.16%
YRADIAL	219491.0						3482.85	1.59%
Ga 417.206	1506490.2						16896.63	1.12%
GaRADIAL	52355.6						821.69	1.57%
Ag 328.068†	598.3	0.00381	mg/L	0.000855	0.00381	mg/L	0.000855	22.44%
Al 396.153†	83.0	0.00700	mg/L	0.010583	0.00700	mg/L	0.010583	151.28%
As 188.979†	-19.2	-0.00748	mg/L	0.002923	-0.00748	mg/L	0.002923	39.06%
Ba 233.527†	462.1	0.00775	mg/L	0.000203	0.00775	mg/L	0.000203	2.62%
Be 234.861†	-114.9	0.00004	mg/L	0.000019	0.00004	mg/L	0.000019	48.38%
B 249.677†	-1716.1	-0.0195	mg/L	0.00090	-0.0195	mg/L	0.00090	4.62%
Ca 227.546†	2658.2	33.5	mg/L	0.64	33.5	mg/L	0.64	1.92%
Cd 228.802†	2.8	0.00045	mg/L	0.000256	0.00045	mg/L	0.000256	57.35%
Co 228.616†	-3.1	-0.00084	mg/L	0.000555	-0.00084	mg/L	0.000555	66.28%
Cr 267.716†	157.3	0.00067	mg/L	0.000261	0.00067	mg/L	0.000261	39.13%

Approved: May 28, 2015

Cu 327.393†	-631.5	-0.00085	mg/L	0.000683	-0.00085	mg/L	0.000683 80.61%
Fe 239.562†	21.2	0.00773	mg/L	0.000471	0.00773	mg/L	0.000471 6.10%
Mg 279.077†	14982.5	5.54	mg/L	0.117	5.54	mg/L	0.117 2.10%
Mn 257.610†	2301.0	0.00318	mg/L	0.000040	0.00318	mg/L	0.000040 1.25%
Mo 202.031†	42.3	0.00409	mg/L	0.001321	0.00409	mg/L	0.001321 32.27%
Ni 231.604†	7.1	-0.00051	mg/L	0.000300	-0.00051	mg/L	0.000300 59.13%
Pb 220.353†	27.4	0.00569	mg/L	0.001546	0.00569	mg/L	0.001546 27.17%
Sb 206.836†	0.1	0.00452	mg/L	0.006270	0.00452	mg/L	0.006270 138.76%
Se 196.026†	-1.9	0.00118	mg/L	0.010465	0.00118	mg/L	0.010465 887.75%
Si 251.611†	-268188.8	-13.5	mg/L	0.12	-13.5	mg/L	0.12 0.88%
Sn 189.927†	-49.5	-0.00986	mg/L	0.000473	-0.00986	mg/L	0.000473 4.80%
Ti 334.940†	-2383.2	0.00129	mg/L	0.000066	0.00129	mg/L	0.000066 5.06%
Tl 190.801†	-11.8	-0.0113	mg/L	0.01010	-0.0113	mg/L	0.01010 89.70%
V 290.880†	-823.5	-0.00262	mg/L	0.000134	-0.00262	mg/L	0.000134 5.12%
Zn 206.200†	-103.0	-0.00837	mg/L	0.000437	-0.00837	mg/L	0.000437 5.22%
K 766.490†	669.1	0.449	mg/L	0.0804	0.449	mg/L	0.0804 17.90%
Na 589.592†	15229.4	1.88	mg/L	0.007	1.88	mg/L	0.007 0.38%
Sr 407.771†	29463.2	0.0352	mg/L	0.00014	0.0352	mg/L	0.00014 0.39%
Li 670.784†	35.9	-0.00175	mg/L	0.004260	-0.00175	mg/L	0.004260 243.24%
P 214.914†	12.8	0.0223	mg/L	0.00630	0.0223	mg/L	0.00630 28.31%

Sequence No.: 47
Sample ID: L1505147702
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 110
Date Collected: 5/27/2015 5:08:03 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505147702

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505147702

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3423831.9						51453.17	1.50%
YRADIAL	214983.1						2172.07	1.01%
Ga 417.206	1519755.9						24382.95	1.60%
GaRADIAL	51248.3						201.49	0.39%
Ag 328.068†	579.0	0.00377	mg/L	0.000751	0.00377	mg/L	0.000751	19.93%
Al 396.153†	92.3	0.0102	mg/L	0.00451	0.0102	mg/L	0.00451	44.20%
As 188.979†	-18.8	-0.00725	mg/L	0.004158	-0.00725	mg/L	0.004158	57.32%
Ba 233.527†	408.4	0.00682	mg/L	0.000249	0.00682	mg/L	0.000249	3.66%
Be 234.861†	-103.8	0.00006	mg/L	0.000018	0.00006	mg/L	0.000018	31.64%
B 249.677†	-1879.6	-0.0217	mg/L	0.00176	-0.0217	mg/L	0.00176	8.10%
Ca 227.546†	2585.1	32.5	mg/L	0.66	32.5	mg/L	0.66	2.04%
Cd 228.802†	-1.6	0.00018	mg/L	0.000612	0.00018	mg/L	0.000612	342.69%
Co 228.616†	-8.1	-0.00118	mg/L	0.000469	-0.00118	mg/L	0.000469	39.61%
Cr 267.716†	155.3	0.00065	mg/L	0.000070	0.00065	mg/L	0.000070	10.69%
Cu 327.393†	-558.4	-0.00051	mg/L	0.000904	-0.00051	mg/L	0.000904	178.87%
Fe 239.562†	118.9	0.0245	mg/L	0.00147	0.0245	mg/L	0.00147	6.02%
Mg 279.077†	15213.0	5.62	mg/L	0.052	5.62	mg/L	0.052	0.92%
Mn 257.610†	3755.1	0.00546	mg/L	0.000110	0.00546	mg/L	0.000110	2.02%
Mo 202.031†	48.6	0.00470	mg/L	0.000574	0.00470	mg/L	0.000574	12.21%
Ni 231.604†	8.1	-0.00048	mg/L	0.000360	-0.00048	mg/L	0.000360	75.19%
Pb 220.353†	21.0	0.00426	mg/L	0.001484	0.00426	mg/L	0.001484	34.86%
Sb 206.836†	3.8	0.00771	mg/L	0.001621	0.00771	mg/L	0.001621	21.04%
Se 196.026†	2.3	0.00771	mg/L	0.007919	0.00771	mg/L	0.007919	102.74%
Si 251.611†	-269226.7	-13.6	mg/L	0.11	-13.6	mg/L	0.11	0.82%
Sn 189.927†	-56.2	-0.0110	mg/L	0.00086	-0.0110	mg/L	0.00086	7.87%
Ti 334.940†	-2352.2	0.00127	mg/L	0.000404	0.00127	mg/L	0.000404	31.81%
Tl 190.801†	-6.4	-0.00680	mg/L	0.005460	-0.00680	mg/L	0.005460	80.30%
V 290.880†	-525.9	-0.00104	mg/L	0.000376	-0.00104	mg/L	0.000376	36.03%
Zn 206.200†	160.3	0.00082	mg/L	0.000757	0.00082	mg/L	0.000757	92.75%
K 766.490†	575.7	0.390	mg/L	0.0761	0.390	mg/L	0.0761	19.51%
Na 589.592†	15112.9	1.87	mg/L	0.020	1.87	mg/L	0.020	1.10%
Sr 407.771†	28864.4	0.0344	mg/L	0.00036	0.0344	mg/L	0.00036	1.04%
Li 670.784†	45.3	-0.00150	mg/L	0.000459	-0.00150	mg/L	0.000459	30.50%
P 214.914†	-3.2	-0.00278	mg/L	0.010335	-0.00278	mg/L	0.010335	371.38%

Approved: May 28, 2015

Sequence No.: 48 **Autosampler Location: 111**
Sample ID: L1505147703 **Date Collected: 5/27/2015 5:11:22 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505147703

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505147703

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3374415.8						52109.86	1.54%
YRADIAL	218355.0						4476.18	2.05%
Ga 417.206	1504315.8						19780.45	1.31%
GaRADIAL	51886.4						1232.75	2.38%
Ag 328.068†	510.9	0.00360	mg/L	0.000732	0.00360	mg/L	0.000732	20.33%
Al 396.153†	42.9	-0.00707	mg/L	0.041593	-0.00707	mg/L	0.041593	588.34%
As 188.979†	-18.3	-0.00689	mg/L	0.002695	-0.00689	mg/L	0.002695	39.10%
Ba 233.527†	375.3	0.00624	mg/L	0.000298	0.00624	mg/L	0.000298	4.77%
Be 234.861†	-97.4	0.00005	mg/L	0.000023	0.00005	mg/L	0.000023	47.99%
B 249.677†	-2037.1	-0.0236	mg/L	0.00098	-0.0236	mg/L	0.00098	4.15%
Ca 227.546†	2650.5	33.4	mg/L	0.50	33.4	mg/L	0.50	1.50%
Cd 228.802†	4.4	0.00054	mg/L	0.000222	0.00054	mg/L	0.000222	41.13%
Co 228.616†	-1.6	-0.00074	mg/L	0.000464	-0.00074	mg/L	0.000464	63.14%
Cr 267.716†	138.7	0.00053	mg/L	0.000066	0.00053	mg/L	0.000066	12.45%
Cu 327.393†	-748.1	-0.00137	mg/L	0.000917	-0.00137	mg/L	0.000917	66.79%
Fe 239.562†	582.3	0.104	mg/L	0.0028	0.104	mg/L	0.0028	2.66%
Mg 279.077†	15285.3	5.65	mg/L	0.205	5.65	mg/L	0.205	3.64%
Mn 257.610†	8394.4	0.0127	mg/L	0.00020	0.0127	mg/L	0.00020	1.54%
Mo 202.031†	45.0	0.00435	mg/L	0.000909	0.00435	mg/L	0.000909	20.89%
Ni 231.604†	-16.3	-0.00124	mg/L	0.000438	-0.00124	mg/L	0.000438	35.39%
Pb 220.353†	5.1	0.00069	mg/L	0.001443	0.00069	mg/L	0.001443	210.39%
Sb 206.836†	-4.5	0.00060	mg/L	0.004167	0.00060	mg/L	0.004167	691.65%
Se 196.026†	4.9	0.0118	mg/L	0.00131	0.0118	mg/L	0.00131	11.08%
Si 251.611†	-275068.1	-13.9	mg/L	0.09	-13.9	mg/L	0.09	0.67%
Sn 189.927†	-52.7	-0.0104	mg/L	0.00129	-0.0104	mg/L	0.00129	12.39%
Ti 334.940†	-2510.1	0.00115	mg/L	0.000178	0.00115	mg/L	0.000178	15.46%
Tl 190.801†	-17.8	-0.0162	mg/L	0.00099	-0.0162	mg/L	0.00099	6.09%
V 290.880†	-547.4	-0.00114	mg/L	0.000915	-0.00114	mg/L	0.000915	80.01%
Zn 206.200†	-146.1	-0.00986	mg/L	0.000263	-0.00986	mg/L	0.000263	2.67%
K 766.490†	507.0	0.347	mg/L	0.0570	0.347	mg/L	0.0570	16.42%
Na 589.592†	14887.4	1.84	mg/L	0.037	1.84	mg/L	0.037	2.02%
Sr 407.771†	28607.1	0.0341	mg/L	0.00030	0.0341	mg/L	0.00030	0.88%
Li 670.784†	-75.8	-0.00468	mg/L	0.001677	-0.00468	mg/L	0.001677	35.83%
P 214.914†	-0.9	0.00080	mg/L	0.015286	0.00080	mg/L	0.015286	>999.9%

Sequence No.: 49 **Autosampler Location: 112**
Sample ID: L1505150201 **Date Collected: 5/27/2015 5:13:44 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505150201

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505150201

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3402664.8						38011.12	1.12%
YRADIAL	216961.3						4047.80	1.87%
Ga 417.206	1503006.7						11069.04	0.74%
GaRADIAL	51196.3						1006.47	1.97%
Ag 328.068†	-370.3	0.00179	mg/L	0.000820	0.00179	mg/L	0.000820	45.71%

Approved: May 28, 2015

Kym H. Rhoden

Al 396.153†	3756.3	1.30	mg/L	0.023	1.30	mg/L	0.023	1.81%
As 188.979†	-5.0	0.00104	mg/L	0.005048	0.00104	mg/L	0.005048	486.87%
Ba 233.527†	2877.2	0.0494	mg/L	0.00060	0.0494	mg/L	0.00060	1.21%
Be 234.861†	147.1	0.00007	mg/L	0.000072	0.00007	mg/L	0.000072	105.15%
B 249.677†	10571.5	0.160	mg/L	0.0031	0.160	mg/L	0.0031	1.96%
Ca 227.546†	322.2	4.10	mg/L	0.042	4.10	mg/L	0.042	1.02%
Cd 228.802†	-5.4	-0.00008	mg/L	0.000418	-0.00008	mg/L	0.000418	548.46%
Co 228.616†	53.8	0.00306	mg/L	0.000824	0.00306	mg/L	0.000824	26.89%
Cr 267.716†	287.5	0.00158	mg/L	0.000836	0.00158	mg/L	0.000836	52.85%
Cu 327.393†	94.3	0.00279	mg/L	0.000670	0.00279	mg/L	0.000670	23.98%
Fe 239.562†	10596.0	1.83	mg/L	0.028	1.83	mg/L	0.028	1.55%
Mg 279.077†	8869.8	3.27	mg/L	0.039	3.27	mg/L	0.039	1.20%
Mn 257.610†	103134.0	0.161	mg/L	0.0027	0.161	mg/L	0.0027	1.66%
Mo 202.031†	10.0	0.00103	mg/L	0.000874	0.00103	mg/L	0.000874	84.75%
Ni 231.604†	198.2	0.00547	mg/L	0.000205	0.00547	mg/L	0.000205	3.75%
Pb 220.353†	-13.2	-0.00327	mg/L	0.001394	-0.00327	mg/L	0.001394	42.67%
Sb 206.836†	3.1	0.00714	mg/L	0.001435	0.00714	mg/L	0.001435	20.09%
Se 196.026†	4.9	0.0118	mg/L	0.00223	0.0118	mg/L	0.00223	18.86%
Si 251.611†	-185395.7	-9.40	mg/L	0.457	-9.40	mg/L	0.457	4.86%
Sn 189.927†	-46.0	-0.00927	mg/L	0.001348	-0.00927	mg/L	0.001348	14.55%
Ti 334.940†	12182.3	0.0151	mg/L	0.00045	0.0151	mg/L	0.00045	3.00%
Tl 190.801†	3.9	0.00178	mg/L	0.003152	0.00178	mg/L	0.003152	177.03%
V 290.880†	116.2	0.00276	mg/L	0.000798	0.00276	mg/L	0.000798	28.94%
Zn 206.200†	1875.7	0.0608	mg/L	0.00099	0.0608	mg/L	0.00099	1.62%
K 766.490†	2061.1	1.33	mg/L	0.134	1.33	mg/L	0.134	10.10%
Na 589.592†	20182.5	2.49	mg/L	0.032	2.49	mg/L	0.032	1.30%
Sr 407.771†	48916.2	0.0602	mg/L	0.00020	0.0602	mg/L	0.00020	0.34%
Li 670.784†	105.9	0.00008	mg/L	0.000746	0.00008	mg/L	0.000746	907.78%
P 214.914†	29.5	0.0484	mg/L	0.01098	0.0484	mg/L	0.01098	22.68%

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Sequence No.: 50 **Autosampler Location: 113**
Sample ID: L1505150202 **Date Collected: 5/27/2015 5:16:05 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505150202

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505150202

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3394005.0						3758.63	0.11%
YRADIAL	217435.0						2950.65	1.36%
Ga 417.206	1446221.1						5052.84	0.35%
GaRADIAL	49828.3						676.72	1.36%
Ag 328.068†	767.4	0.00436	mg/L	0.000616	0.00436	mg/L	0.000616	14.14%
Al 396.153†	574.2	0.179	mg/L	0.0023	0.179	mg/L	0.0023	1.27%
As 188.979†	-17.3	-0.00618	mg/L	0.000950	-0.00618	mg/L	0.000950	15.36%
Ba 233.527†	2264.8	0.0389	mg/L	0.00017	0.0389	mg/L	0.00017	0.45%
Be 234.861†	-59.8	0.00013	mg/L	0.000055	0.00013	mg/L	0.000055	41.84%
B 249.677†	149016.4	2.10	mg/L	0.027	2.10	mg/L	0.027	1.30%
Ca 227.546†	2622.6	33.0	mg/L	0.04	33.0	mg/L	0.04	0.11%
Cd 228.802†	-2.0	0.00015	mg/L	0.000095	0.00015	mg/L	0.000095	62.69%
Co 228.616†	-2.4	-0.00082	mg/L	0.000280	-0.00082	mg/L	0.000280	34.11%
Cr 267.716†	252.1	0.00135	mg/L	0.000109	0.00135	mg/L	0.000109	8.07%
Cu 327.393†	-620.5	-0.00071	mg/L	0.001326	-0.00071	mg/L	0.001326	185.55%
Fe 239.562†	3187.8	0.552	mg/L	0.0158	0.552	mg/L	0.0158	2.87%
Mg 279.077†	35010.8	13.0	mg/L	0.22	13.0	mg/L	0.22	1.67%
Mn 257.610†	834420.9	1.31	mg/L	0.011	1.31	mg/L	0.011	0.87%
Mo 202.031†	42.5	0.00438	mg/L	0.000862	0.00438	mg/L	0.000862	19.65%
Ni 231.604†	58.2	0.00109	mg/L	0.000781	0.00109	mg/L	0.000781	71.41%
Pb 220.353†	30.9	0.00571	mg/L	0.004439	0.00571	mg/L	0.004439	77.68%
Sb 206.836†	1.8	0.00604	mg/L	0.001810	0.00604	mg/L	0.001810	29.96%
Se 196.026†	-1.1	0.00202	mg/L	0.001965	0.00202	mg/L	0.001965	97.09%
Si 251.611†	-199771.1	-10.1	mg/L	0.13	-10.1	mg/L	0.13	1.25%
Sn 189.927†	-64.8	-0.0124	mg/L	0.00247	-0.0124	mg/L	0.00247	19.86%
Ti 334.940†	970.4	0.00488	mg/L	0.000481	0.00488	mg/L	0.000481	9.86%

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Tl 190.801†	-15.9	-0.0159 mg/L	0.00324	-0.0159 mg/L	0.00324	20.40%
V 290.880†	-1142.1	-0.00439 mg/L	0.000384	-0.00439 mg/L	0.000384	8.74%
Zn 206.200†	-144.1	-0.00974 mg/L	0.000193	-0.00974 mg/L	0.000193	1.98%
K 766.490†	4778.7	3.02 mg/L	0.046	3.02 mg/L	0.046	1.51%
Na 589.592†	179790.1	22.2 mg/L	0.15	22.2 mg/L	0.15	0.67%
Sr 407.771†	145502.7	0.179 mg/L	0.0024	0.179 mg/L	0.0024	1.32%
Li 670.784†	-68.5	-0.00449 mg/L	0.002112	-0.00449 mg/L	0.002112	47.07%
P 214.914†	6.3	0.0120 mg/L	0.00496	0.0120 mg/L	0.00496	41.42%

Sequence No.: 51 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 5/27/2015 5:18:28 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	230.0 kPa	0.40 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3273462.3						36939.64	1.13%
YRADIAL	208795.6						1815.20	0.87%
Ga 417.206	1360128.0						16144.21	1.19%
GaRADIAL	48610.8						636.02	1.31%
Ag 328.068†	131892.2	0.392	mg/L	0.0025	0.392	mg/L	0.0025	0.63%
QC value within limits for Ag 328.068 Recovery = 98.06%								
Al 396.153†	28867.8	10.1	mg/L	0.08	10.1	mg/L	0.08	0.77%
QC value within limits for Al 396.153 Recovery = 100.66%								
As 188.979†	594.9	0.365	mg/L	0.0026	0.365	mg/L	0.0026	0.72%
QC value within limits for As 188.979 Recovery = 91.27%								
Ba 233.527†	55733.5	0.964	mg/L	0.0064	0.964	mg/L	0.0064	0.66%
QC value within limits for Ba 233.527 Recovery = 96.36%								
Be 234.861†	26179.2	0.0472	mg/L	0.00026	0.0472	mg/L	0.00026	0.56%
QC value within limits for Be 234.861 Recovery = 94.33%								
B 249.677†	28378.4	0.417	mg/L	0.0028	0.417	mg/L	0.0028	0.68%
QC value less than the lower limit for B 249.677 Recovery = 83.49%								
Ca 227.546†	739.5	9.41	mg/L	0.062	9.41	mg/L	0.062	0.66%
QC value within limits for Ca 227.546 Recovery = 94.13%								
Cd 228.802†	779.8	0.0460	mg/L	0.00042	0.0460	mg/L	0.00042	0.90%
QC value within limits for Cd 228.802 Recovery = 91.94%								
Co 228.616†	2734.0	0.191	mg/L	0.0010	0.191	mg/L	0.0010	0.51%
QC value within limits for Co 228.616 Recovery = 95.42%								
Cr 267.716†	66295.7	0.488	mg/L	0.0017	0.488	mg/L	0.0017	0.34%
QC value within limits for Cr 267.716 Recovery = 97.55%								
Cu 327.393†	103812.4	0.485	mg/L	0.0005	0.485	mg/L	0.0005	0.11%
QC value within limits for Cu 327.393 Recovery = 96.92%								
Fe 239.562†	23576.3	4.06	mg/L	0.068	4.06	mg/L	0.068	1.67%
QC value within limits for Fe 239.562 Recovery = 101.39%								
Mg 279.077†	27358.6	10.1	mg/L	0.12	10.1	mg/L	0.12	1.23%
QC value within limits for Mg 279.077 Recovery = 101.19%								
Mn 257.610†	312442.7	0.489	mg/L	0.0031	0.489	mg/L	0.0031	0.63%
QC value within limits for Mn 257.610 Recovery = 97.87%								
Mo 202.031†	9628.9	0.917	mg/L	0.0049	0.917	mg/L	0.0049	0.54%
QC value within limits for Mo 202.031 Recovery = 91.71%								
Ni 231.604†	15234.3	0.476	mg/L	0.0033	0.476	mg/L	0.0033	0.69%
QC value within limits for Ni 231.604 Recovery = 95.23%								
Pb 220.353†	2109.6	0.473	mg/L	0.0055	0.473	mg/L	0.0055	1.17%
QC value within limits for Pb 220.353 Recovery = 94.68%								
Sb 206.836†	1278.1	1.10	mg/L	0.003	1.10	mg/L	0.003	0.23%
QC value within limits for Sb 206.836 Recovery = 92.05%								
Se 196.026†	244.4	0.388	mg/L	0.0087	0.388	mg/L	0.0087	2.25%
QC value within limits for Se 196.026 Recovery = 97.12%								
Si 251.611†	-176125.4	-8.95	mg/L	0.199	-8.95	mg/L	0.199	2.23%
QC value less than the lower limit for Si 251.611 Recovery = -179.00%								
Sn 189.927†	5497.5	0.928	mg/L	0.0101	0.928	mg/L	0.0101	1.09%
QC value within limits for Sn 189.927 Recovery = 92.80%								
Ti 334.940†	905875.5	0.978	mg/L	0.0052	0.978	mg/L	0.0052	0.53%

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   QC value within limits for Ti 334.940  Recovery = 97.78%
Tl 190.801†              574.8       0.486 mg/L        0.0051       0.486 mg/L        0.0051   1.05%
   QC value within limits for Tl 190.801  Recovery = 97.12%
V 290.880†            183436.5       0.972 mg/L        0.0079       0.972 mg/L        0.0079   0.82%
   QC value within limits for V 290.880  Recovery = 97.25%
Zn 206.200†            27064.1       0.944 mg/L        0.0055       0.944 mg/L        0.0055   0.58%
   QC value within limits for Zn 206.200  Recovery = 94.37%
K 766.490†             76607.5        48.8 mg/L         0.66        48.8 mg/L          0.66   1.35%
   QC value within limits for K 766.490  Recovery = 97.60%
Na 589.592†           402388.0        50.6 mg/L         0.81        50.6 mg/L          0.81   1.61%
   QC value within limits for Na 589.592  Recovery = 101.11%
Sr 407.771†           809269.0        1.00 mg/L        0.012        1.00 mg/L         0.012   1.18%
   QC value within limits for Sr 407.771  Recovery = 100.37%
Li 670.784†            38686.8        1.01 mg/L        0.014        1.01 mg/L         0.014   1.38%
   QC value within limits for Li 670.784  Recovery = 101.12%
P 214.914†              5918.1        9.28 mg/L        0.050        9.28 mg/L         0.050   0.54%
   QC value within limits for P 214.914  Recovery = 92.82%
QC Failed.  Continue with analysis.

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Sequence No.: 52                                    Autosampler Location: 1
Sample ID: CCB                                      Date Collected: 5/27/2015 5:20:53 PM
Analyst:                                            Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

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Nebulizer Parameters: CCB
Analyte                 Back Pressure    Flow
All                     231.0 kPa        0.40 L/min

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Mean Data: CCB
                   Mean Corrected         Calib.                          Sample
Analyte               Intensity     Conc. Units     Std.Dev.     Conc. Units     Std.Dev.   RSD
Y 371.029            3511601.7                                                  16602.98   0.47%
YRADIAL               218681.5                                                   3826.67   1.75%
Ga 417.206           1591593.4                                                   8212.45   0.52%
GaRADIAL               52951.1                                                    879.67   1.66%
Ag 328.068†              -62.9     0.00188 mg/L      0.001493     0.00188 mg/L      0.001493  79.38%
   QC value within limits for Ag 328.068  Recovery = Not calculated
Al 396.153†               15.1     -0.0167 mg/L       0.00412     -0.0167 mg/L       0.00412  24.70%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†               -6.2    -0.00022 mg/L      0.000377    -0.00022 mg/L      0.000377 173.64%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†               -2.0    -0.00028 mg/L      0.000131    -0.00028 mg/L      0.000131  47.02%
   QC value within limits for Ba 233.527  Recovery = Not calculated
Be 234.861†              -22.1     0.00021 mg/L      0.000028     0.00021 mg/L      0.000028  13.30%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†               646.9      0.0138 mg/L       0.00195      0.0138 mg/L       0.00195  14.15%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†                0.0      0.0562 mg/L       0.04932      0.0562 mg/L       0.04932  87.73%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†               -4.4    -0.00002 mg/L      0.000268    -0.00002 mg/L      0.000268 >999.9%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†               -1.8    -0.00076 mg/L      0.000290    -0.00076 mg/L      0.000290  38.37%
   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†               87.5     0.00015 mg/L      0.001090     0.00015 mg/L      0.001090 705.17%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†              -96.1     0.00163 mg/L      0.001037     0.00163 mg/L      0.001037  63.42%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†                2.4     0.00460 mg/L      0.001777     0.00460 mg/L      0.001777  38.58%
   QC value within limits for Fe 239.562  Recovery = Not calculated
Mg 279.077†               36.4    -0.00105 mg/L      0.003623    -0.00105 mg/L      0.003623 344.64%
   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†               47.6    -0.00035 mg/L      0.000028    -0.00035 mg/L      0.000028   7.95%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†                4.5     0.00050 mg/L      0.000826     0.00050 mg/L      0.000826 166.07%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†                2.3    -0.00066 mg/L      0.000096    -0.00066 mg/L      0.000096  14.57%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†                0.4    -0.00036 mg/L      0.003265    -0.00036 mg/L      0.003265 918.60%
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   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†                -2.0     0.00269 mg/L      0.006649     0.00269 mg/L      0.006649 246.81%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†                -0.2     0.00376 mg/L      0.009690     0.00376 mg/L      0.009690 257.88%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†            -3843.1      -0.342 mg/L        0.1065      -0.342 mg/L        0.1065  31.09%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†              -12.2    -0.00356 mg/L      0.000611    -0.00356 mg/L      0.000611  17.18%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†               35.3     0.00176 mg/L      0.000192     0.00176 mg/L      0.000192  10.95%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†                1.5    -0.00020 mg/L      0.003248    -0.00020 mg/L      0.003248 >999.9%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†              -635.0    -0.00148 mg/L      0.000179    -0.00148 mg/L      0.000179  12.08%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†              -23.6    -0.00560 mg/L      0.000117    -0.00560 mg/L      0.000117   2.09%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†               103.5      0.0941 mg/L       0.04716      0.0941 mg/L       0.04716  50.12%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†              775.5       0.115 mg/L        0.0178       0.115 mg/L        0.0178  15.46%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†              188.8    -0.00010 mg/L      0.000145    -0.00010 mg/L      0.000145 140.17%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†              -28.2    -0.00343 mg/L      0.002073    -0.00343 mg/L      0.002073  60.38%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†                4.1     0.00867 mg/L      0.001433     0.00867 mg/L      0.001433  16.54%
   QC value within limits for P 214.914  Recovery = Not calculated
All analyte(s) passed QC.

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Sequence No.: 53                                    Autosampler Location: 114
Sample ID: L1505150801                              Date Collected: 5/27/2015 5:24:17 PM
Analyst: KHR                                        Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

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Nebulizer Parameters: L1505150801
Analyte                  Back Pressure     Flow
All                     230.0 kPa         0.40 L/min

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Mean Data: L1505150801
                   Mean Corrected          Calib.                          Sample
Analyte               Intensity      Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029            3374247.8                                                      22848.05   0.68%
YRADIAL               216362.0                                                       5759.58   2.66%
Ga 417.206           1452225.5                                                      11344.32   0.78%
GaRADIAL               52059.2                                                       1146.82   2.20%
Ag 328.068†              995.8     0.00493 mg/L      0.000346     0.00493 mg/L      0.000346   7.00%
Al 396.153†              -15.0     -0.0275 mg/L       0.00511     -0.0275 mg/L       0.00511  18.59%
As 188.979†              -28.1     -0.0118 mg/L       0.00610     -0.0118 mg/L       0.00610  51.55%
Ba 233.527†             2816.4      0.0485 mg/L       0.00055      0.0485 mg/L       0.00055   1.14%
Be 234.861†             -121.2     0.00003 mg/L      0.000017     0.00003 mg/L      0.000017  62.77%
B 249.677†              -415.1    -0.00111 mg/L      0.000289    -0.00111 mg/L      0.000289  26.15%
Ca 227.546†             6746.3        84.8 mg/L          0.95        84.8 mg/L          0.95   1.12%
Cd 228.802†                1.8     0.00042 mg/L      0.000081     0.00042 mg/L      0.000081  19.31%
Co 228.616†               -2.3    -0.00078 mg/L      0.000632    -0.00078 mg/L      0.000632  80.84%
Cr 267.716†              226.6     0.00118 mg/L      0.000040     0.00118 mg/L      0.000040   3.42%
Cu 327.393†            -1130.1    -0.00316 mg/L      0.001832    -0.00316 mg/L      0.001832  58.00%
Fe 239.562†              125.1      0.0254 mg/L       0.00193      0.0254 mg/L       0.00193   7.60%
Mg 279.077†            45255.2        16.8 mg/L          0.02        16.8 mg/L          0.02   0.11%
Mn 257.610†            20628.7      0.0319 mg/L       0.00024      0.0319 mg/L       0.00024   0.75%
Mo 202.031†               69.8     0.00672 mg/L      0.000686     0.00672 mg/L      0.000686  10.22%
Ni 231.604†              -12.4    -0.00112 mg/L      0.000421    -0.00112 mg/L      0.000421  37.70%
Pb 220.353†               49.7      0.0107 mg/L       0.00191      0.0107 mg/L       0.00191  17.93%
Sb 206.836†               -8.2    -0.00264 mg/L      0.004719    -0.00264 mg/L      0.004719 178.99%
Se 196.026†               -2.5     0.00018 mg/L      0.004034     0.00018 mg/L      0.004034 >999.9%
Si 251.611†          -200552.3       -10.2 mg/L          0.09       -10.2 mg/L          0.09   0.85%
Sn 189.927†              -31.9    -0.00689 mg/L      0.000953    -0.00689 mg/L      0.000953  13.84%
Ti 334.940†            -6305.0     0.00037 mg/L      0.000230     0.00037 mg/L      0.000230  62.64%
Tl 190.801†              -13.9     -0.0131 mg/L       0.01221     -0.0131 mg/L       0.01221  93.30%
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Approved: May 28, 2015

Kym H. Rhoden

V 290.880†	-1079.5	-0.00426	mg/L	0.000850	-0.00426	mg/L	0.000850	19.94%
Zn 206.200†	-93.8	-0.00804	mg/L	0.000439	-0.00804	mg/L	0.000439	5.46%
K 766.490†	2338.2	1.49	mg/L	0.013	1.49	mg/L	0.013	0.87%
Na 589.592†	129443.6	16.0	mg/L	0.07	16.0	mg/L	0.07	0.45%
Sr 407.771†	208682.0	0.256	mg/L	0.0010	0.256	mg/L	0.0010	0.40%
Li 670.784†	332.3	0.00602	mg/L	0.003974	0.00602	mg/L	0.003974	66.06%
P 214.914†	0.7	0.00327	mg/L	0.011027	0.00327	mg/L	0.011027	336.84%

Sequence No.: 54 **Autosampler Location: 115**
Sample ID: L1505150802 **Date Collected: 5/27/2015 5:27:37 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505150802

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505150802

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3360191.2						22893.32	0.68%
YRADIAL	215708.5						4298.94	1.99%
Ga 417.206	1466135.6						15635.69	1.07%
GaRADIAL	51870.8						903.24	1.74%
Ag 328.068†	948.1	0.00480	mg/L	0.001763	0.00480	mg/L	0.001763	36.74%
Al 396.153†	-3.1	-0.0232	mg/L	0.00480	-0.0232	mg/L	0.00480	20.67%
As 188.979†	-34.8	-0.0163	mg/L	0.00050	-0.0163	mg/L	0.00050	3.10%
Ba 233.527†	4888.3	0.0843	mg/L	0.00100	0.0843	mg/L	0.00100	1.18%
Be 234.861†	-106.1	0.00006	mg/L	0.000039	0.00006	mg/L	0.000039	71.45%
B 249.677†	-1639.4	-0.0184	mg/L	0.00048	-0.0184	mg/L	0.00048	2.63%
Ca 227.546†	5432.1	68.3	mg/L	1.07	68.3	mg/L	1.07	1.57%
Cd 228.802†	3.5	0.00054	mg/L	0.000451	0.00054	mg/L	0.000451	83.54%
Co 228.616†	-4.4	-0.00095	mg/L	0.000293	-0.00095	mg/L	0.000293	30.90%
Cr 267.716†	187.7	0.00089	mg/L	0.000143	0.00089	mg/L	0.000143	15.99%
Cu 327.393†	-256.4	0.00089	mg/L	0.001163	0.00089	mg/L	0.001163	130.83%
Fe 239.562†	36.1	0.0102	mg/L	0.00134	0.0102	mg/L	0.00134	13.16%
Mg 279.077†	29917.0	11.1	mg/L	0.12	11.1	mg/L	0.12	1.06%
Mn 257.610†	175.3	-0.00015	mg/L	0.000010	-0.00015	mg/L	0.000010	6.56%
Mo 202.031†	50.9	0.00491	mg/L	0.000831	0.00491	mg/L	0.000831	16.91%
Ni 231.604†	-19.1	-0.00133	mg/L	0.000749	-0.00133	mg/L	0.000749	56.40%
Pb 220.353†	27.9	0.00581	mg/L	0.000311	0.00581	mg/L	0.000311	5.35%
Sb 206.836†	-2.5	0.00230	mg/L	0.006268	0.00230	mg/L	0.006268	272.34%
Se 196.026†	-13.0	-0.0162	mg/L	0.01286	-0.0162	mg/L	0.01286	79.35%
Si 251.611†	-203711.7	-10.3	mg/L	0.16	-10.3	mg/L	0.16	1.54%
Sn 189.927†	-74.3	-0.0141	mg/L	0.00174	-0.0141	mg/L	0.00174	12.36%
Ti 334.940†	-5293.1	0.00040	mg/L	0.000073	0.00040	mg/L	0.000073	18.38%
Tl 190.801†	-14.1	-0.0131	mg/L	0.00315	-0.0131	mg/L	0.00315	23.99%
V 290.880†	-612.5	-0.00165	mg/L	0.000673	-0.00165	mg/L	0.000673	40.83%
Zn 206.200†	482.9	0.0121	mg/L	0.00029	0.0121	mg/L	0.00029	2.41%
K 766.490†	1183.9	0.772	mg/L	0.1162	0.772	mg/L	0.1162	15.05%
Na 589.592†	33537.2	4.13	mg/L	0.055	4.13	mg/L	0.055	1.34%
Sr 407.771†	193014.2	0.237	mg/L	0.0037	0.237	mg/L	0.0037	1.56%
Li 670.784†	283.2	0.00473	mg/L	0.003165	0.00473	mg/L	0.003165	66.90%
P 214.914†	-0.9	0.00079	mg/L	0.010955	0.00079	mg/L	0.010955	>999.9%

Sequence No.: 55 **Autosampler Location: 116**
Sample ID: L1505150803 **Date Collected: 5/27/2015 5:30:57 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505150803

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Approved: May 28, 2015

Kym H. Rhoden

Mean Data: L1505150803

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3397268.8						31083.81	0.91%
YRADIAL	216583.9						4599.53	2.12%
Ga 417.206	1490687.9						13326.66	0.89%
GaRADIAL	51263.3						1274.95	2.49%
Ag 328.068†	829.6	0.00454	mg/L	0.000107	0.00454	mg/L	0.000107	2.35%
Al 396.153†	590.3	0.185	mg/L	0.0191	0.185	mg/L	0.0191	10.33%
As 188.979†	-23.1	-0.00950	mg/L	0.001307	-0.00950	mg/L	0.001307	13.76%
Ba 233.527†	3250.7	0.0560	mg/L	0.00080	0.0560	mg/L	0.00080	1.44%
Be 234.861†	-58.6	0.00010	mg/L	0.000084	0.00010	mg/L	0.000084	80.63%
B 249.677†	-1457.4	-0.0153	mg/L	0.00044	-0.0153	mg/L	0.00044	2.85%
Ca 227.546†	3923.9	49.4	mg/L	0.59	49.4	mg/L	0.59	1.19%
Cd 228.802†	5.2	0.00061	mg/L	0.000343	0.00061	mg/L	0.000343	56.52%
Co 228.616†	1.9	-0.00051	mg/L	0.000646	-0.00051	mg/L	0.000646	127.44%
Cr 267.716†	190.8	0.00091	mg/L	0.000014	0.00091	mg/L	0.000014	1.55%
Cu 327.393†	-1112.8	-0.00305	mg/L	0.000777	-0.00305	mg/L	0.000777	25.46%
Fe 239.562†	903.8	0.159	mg/L	0.0059	0.159	mg/L	0.0059	3.72%
Mg 279.077†	14434.4	5.33	mg/L	0.075	5.33	mg/L	0.075	1.40%
Mn 257.610†	3564.8	0.00517	mg/L	0.000074	0.00517	mg/L	0.000074	1.43%
Mo 202.031†	46.9	0.00454	mg/L	0.001845	0.00454	mg/L	0.001845	40.68%
Ni 231.604†	-3.1	-0.00083	mg/L	0.000538	-0.00083	mg/L	0.000538	64.78%
Pb 220.353†	34.5	0.00731	mg/L	0.001006	0.00731	mg/L	0.001006	13.76%
Sb 206.836†	-9.0	-0.00327	mg/L	0.009592	-0.00327	mg/L	0.009592	293.41%
Se 196.026†	2.7	0.00832	mg/L	0.014343	0.00832	mg/L	0.014343	172.33%
Si 251.611†	-216771.9	-11.0	mg/L	0.06	-11.0	mg/L	0.06	0.59%
Sn 189.927†	-75.1	-0.0142	mg/L	0.00103	-0.0142	mg/L	0.00103	7.25%
Ti 334.940†	-742.7	0.00408	mg/L	0.000507	0.00408	mg/L	0.000507	12.43%
Tl 190.801†	-10.3	-0.00997	mg/L	0.003906	-0.00997	mg/L	0.003906	39.18%
V 290.880†	-453.7	-0.00063	mg/L	0.001607	-0.00063	mg/L	0.001607	254.72%
Zn 206.200†	-164.7	-0.0105	mg/L	0.00022	-0.0105	mg/L	0.00022	2.08%
K 766.490†	874.3	0.577	mg/L	0.0372	0.577	mg/L	0.0372	6.44%
Na 589.592†	30341.2	3.73	mg/L	0.052	3.73	mg/L	0.052	1.39%
Sr 407.771†	108079.3	0.132	mg/L	0.0022	0.132	mg/L	0.0022	1.69%
Li 670.784†	123.3	0.00054	mg/L	0.003637	0.00054	mg/L	0.003637	673.78%
P 214.914†	9.3	0.0168	mg/L	0.01149	0.0168	mg/L	0.01149	68.35%

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Sequence No.: 56 **Autosampler Location: 117**
Sample ID: L1505150804 **Date Collected: 5/27/2015 5:33:20 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505150804

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505150804

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3335108.2						12288.04	0.37%
YRADIAL	212724.3						2819.57	1.33%
Ga 417.206	1438899.4						1860.32	0.13%
GaRADIAL	51133.7						965.01	1.89%
Ag 328.068†	838.3	0.00447	mg/L	0.000547	0.00447	mg/L	0.000547	12.24%
Al 396.153†	24.7	-0.0136	mg/L	0.00560	-0.0136	mg/L	0.00560	41.26%
As 188.979†	-25.7	-0.0106	mg/L	0.00210	-0.0106	mg/L	0.00210	19.76%
Ba 233.527†	5703.7	0.0984	mg/L	0.00032	0.0984	mg/L	0.00032	0.33%
Be 234.861†	-99.5	0.00006	mg/L	0.000053	0.00006	mg/L	0.000053	81.85%
B 249.677†	-1512.7	-0.0166	mg/L	0.00031	-0.0166	mg/L	0.00031	1.85%
Ca 227.546†	5820.6	73.2	mg/L	0.53	73.2	mg/L	0.53	0.72%
Cd 228.802†	2.6	0.00045	mg/L	0.000286	0.00045	mg/L	0.000286	62.97%
Co 228.616†	-2.2	-0.00080	mg/L	0.000507	-0.00080	mg/L	0.000507	63.73%
Cr 267.716†	179.1	0.00083	mg/L	0.000277	0.00083	mg/L	0.000277	33.49%
Cu 327.393†	-553.0	-0.00048	mg/L	0.000442	-0.00048	mg/L	0.000442	91.26%
Fe 239.562†	125.9	0.0257	mg/L	0.00188	0.0257	mg/L	0.00188	7.32%
Mg 279.077†	23148.6	8.56	mg/L	0.086	8.56	mg/L	0.086	1.01%
Mn 257.610†	5294.2	0.00787	mg/L	0.000023	0.00787	mg/L	0.000023	0.29%

Approved: May 28, 2015

Kym H. Rhoden

Mo 202.031†	69.0	0.00664	mg/L	0.000885	0.00664	mg/L	0.000885	13.33%
Ni 231.604†	-8.6	-0.00100	mg/L	0.000957	-0.00100	mg/L	0.000957	95.77%
Pb 220.353†	27.6	0.00574	mg/L	0.002759	0.00574	mg/L	0.002759	48.10%
Sb 206.836†	-2.2	0.00254	mg/L	0.004098	0.00254	mg/L	0.004098	161.09%
Se 196.026†	-3.0	-0.00050	mg/L	0.008711	-0.00050	mg/L	0.008711	>999.9%
Si 251.611†	-198180.1	-10.0	mg/L	0.12	-10.0	mg/L	0.12	1.19%
Sn 189.927†	-67.6	-0.0129	mg/L	0.00189	-0.0129	mg/L	0.00189	14.60%
Ti 334.940†	-5005.4	0.00102	mg/L	0.000252	0.00102	mg/L	0.000252	24.71%
Tl 190.801†	-16.8	-0.0154	mg/L	0.00496	-0.0154	mg/L	0.00496	32.18%
V 290.880†	-729.9	-0.00220	mg/L	0.000435	-0.00220	mg/L	0.000435	19.76%
Zn 206.200†	-148.9	-0.00996	mg/L	0.000126	-0.00996	mg/L	0.000126	1.26%
K 766.490†	1145.0	0.740	mg/L	0.0923	0.740	mg/L	0.0923	12.48%
Na 589.592†	97984.1	12.1	mg/L	0.10	12.1	mg/L	0.10	0.80%
Sr 407.771†	240834.5	0.296	mg/L	0.0028	0.296	mg/L	0.0028	0.94%
Li 670.784†	290.7	0.00493	mg/L	0.003443	0.00493	mg/L	0.003443	69.89%
P 214.914†	2.9	0.00672	mg/L	0.007658	0.00672	mg/L	0.007658	113.94%

Sequence No.: 57 **Autosampler Location: 118**
Sample ID: L1505150805 **Date Collected: 5/27/2015 5:36:40 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505150805

Analyte	Back Pressure	Flow
All	230.0 kPa	0.40 L/min

Mean Data: L1505150805

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3341125.4						54054.88	1.62%
YRADIAL	210821.5						3236.27	1.54%
Ga 417.206	1401755.9						19710.27	1.41%
GaRADIAL	48601.5						466.42	0.96%
Ag 328.068†	1215.3	0.00605	mg/L	0.000805	0.00605	mg/L	0.000805	13.30%
Al 396.153†	726.5	0.233	mg/L	0.0458	0.233	mg/L	0.0458	19.68%
As 188.979†	-20.9	-0.00690	mg/L	0.005852	-0.00690	mg/L	0.005852	84.84%
Ba 233.527†	7742.2	0.134	mg/L	0.0021	0.134	mg/L	0.0021	1.57%
Be 234.861†	56.0	0.00009	mg/L	0.000018	0.00009	mg/L	0.000018	20.17%
B 249.677†	-1185.4	-0.00747	mg/L	0.001386	-0.00747	mg/L	0.001386	18.57%
Ca 227.546†	7531.6	94.7	mg/L	1.28	94.7	mg/L	1.28	1.35%
Cd 228.802†	-0.2	0.00027	mg/L	0.000402	0.00027	mg/L	0.000402	147.47%
Co 228.616†	9.5	-0.00001	mg/L	0.000136	-0.00001	mg/L	0.000136	958.15%
Cr 267.716†	268.8	0.00149	mg/L	0.000053	0.00149	mg/L	0.000053	3.57%
Cu 327.393†	4193.7	0.0217	mg/L	0.00151	0.0217	mg/L	0.00151	6.93%
Fe 239.562†	6994.8	1.21	mg/L	0.026	1.21	mg/L	0.026	2.13%
Mg 279.077†	26976.2	9.98	mg/L	0.227	9.98	mg/L	0.227	2.28%
Mn 257.610†	287116.5	0.450	mg/L	0.0022	0.450	mg/L	0.0022	0.49%
Mo 202.031†	61.6	0.00601	mg/L	0.000928	0.00601	mg/L	0.000928	15.44%
Ni 231.604†	36.4	0.00041	mg/L	0.000344	0.00041	mg/L	0.000344	83.19%
Pb 220.353†	113.6	0.0247	mg/L	0.00259	0.0247	mg/L	0.00259	10.48%
Sb 206.836†	-0.8	0.00381	mg/L	0.001637	0.00381	mg/L	0.001637	42.94%
Se 196.026†	-2.7	-0.00027	mg/L	0.012214	-0.00027	mg/L	0.012214	>999.9%
Si 251.611†	-186545.9	-9.46	mg/L	0.025	-9.46	mg/L	0.025	0.26%
Sn 189.927†	-75.1	-0.0142	mg/L	0.00254	-0.0142	mg/L	0.00254	17.94%
Ti 334.940†	-3852.0	0.00364	mg/L	0.000458	0.00364	mg/L	0.000458	12.58%
Tl 190.801†	-24.0	-0.0218	mg/L	0.00245	-0.0218	mg/L	0.00245	11.23%
V 290.880†	-506.7	-0.00083	mg/L	0.000321	-0.00083	mg/L	0.000321	38.44%
Zn 206.200†	23690.9	0.821	mg/L	0.0157	0.821	mg/L	0.0157	1.92%
K 766.490†	4533.8	2.84	mg/L	0.051	2.84	mg/L	0.051	1.78%
Na 589.592†	380088.1	47.7	mg/L	1.05	47.7	mg/L	1.05	2.20%
Sr 407.771†	281051.9	0.345	mg/L	0.0019	0.345	mg/L	0.0019	0.54%
Li 670.784†	219.3	0.00305	mg/L	0.005937	0.00305	mg/L	0.005937	194.36%
P 214.914†	29.9	0.0490	mg/L	0.01539	0.0490	mg/L	0.01539	31.39%

Sequence No.: 58 **Autosampler Location: 119**
Sample ID: L1505150806 **Date Collected: 5/27/2015 5:39:03 PM**
Analyst: KHR **Data Type: Original**

Approved: May 28, 2015
Lynn H. Rhoden

Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505150806

Analyte	Back Pressure	Flow
All	230.0 kPa	0.40 L/min

Mean Data: L1505150806

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3281642.3						54154.80	1.65%
YRADIAL	211621.3						3437.35	1.62%
Ga 417.206	1372371.9						20313.97	1.48%
GaRADIAL	50449.4						839.34	1.66%
Ag 328.068†	1218.6	0.00556	mg/L	0.000884	0.00556	mg/L	0.000884	15.89%
Al 396.153†	-38.6	-0.0358	mg/L	0.00281	-0.0358	mg/L	0.00281	7.85%
As 188.979†	-32.4	-0.0142	mg/L	0.00569	-0.0142	mg/L	0.00569	40.15%
Ba 233.527†	6821.7	0.118	mg/L	0.0011	0.118	mg/L	0.0011	0.94%
Be 234.861†	-122.7	0.00003	mg/L	0.000020	0.00003	mg/L	0.000020	68.19%
B 249.677†	-853.4	-0.00736	mg/L	0.000331	-0.00736	mg/L	0.000331	4.50%
Ca 227.546†	7686.4	96.6	mg/L	0.75	96.6	mg/L	0.75	0.78%
Cd 228.802†	6.4	0.00070	mg/L	0.000678	0.00070	mg/L	0.000678	96.37%
Co 228.616†	-3.3	-0.00087	mg/L	0.000742	-0.00087	mg/L	0.000742	84.89%
Cr 267.716†	218.4	0.00114	mg/L	0.000232	0.00114	mg/L	0.000232	20.39%
Cu 327.393†	-353.1	0.00047	mg/L	0.001030	0.00047	mg/L	0.001030	220.08%
Fe 239.562†	13.4	0.00629	mg/L	0.000421	0.00629	mg/L	0.000421	6.69%
Mg 279.077†	28480.1	10.5	mg/L	0.31	10.5	mg/L	0.31	2.90%
Mn 257.610†	17337.9	0.0267	mg/L	0.00026	0.0267	mg/L	0.00026	0.98%
Mo 202.031†	65.3	0.00630	mg/L	0.001604	0.00630	mg/L	0.001604	25.46%
Ni 231.604†	8.7	-0.00045	mg/L	0.000546	-0.00045	mg/L	0.000546	120.62%
Pb 220.353†	42.5	0.00904	mg/L	0.002897	0.00904	mg/L	0.002897	32.05%
Sb 206.836†	-3.8	0.00118	mg/L	0.002962	0.00118	mg/L	0.002962	250.25%
Se 196.026†	-8.7	-0.00947	mg/L	0.007484	-0.00947	mg/L	0.007484	79.02%
Si 251.611†	-198104.7	-10.0	mg/L	0.14	-10.0	mg/L	0.14	1.41%
Sn 189.927†	-67.4	-0.0129	mg/L	0.00354	-0.0129	mg/L	0.00354	27.51%
Ti 334.940†	-7055.4	0.00032	mg/L	0.000388	0.00032	mg/L	0.000388	122.23%
Tl 190.801†	-29.7	-0.0262	mg/L	0.00394	-0.0262	mg/L	0.00394	15.06%
V 290.880†	-723.3	-0.00222	mg/L	0.000945	-0.00222	mg/L	0.000945	42.51%
Zn 206.200†	15140.7	0.523	mg/L	0.0048	0.523	mg/L	0.0048	0.92%
K 766.490†	4632.5	2.91	mg/L	0.030	2.91	mg/L	0.030	1.02%
Na 589.592†	378477.7	47.5	mg/L	1.07	47.5	mg/L	1.07	2.26%
Sr 407.771†	286632.7	0.352	mg/L	0.0077	0.352	mg/L	0.0077	2.18%
Li 670.784†	468.1	0.00958	mg/L	0.003666	0.00958	mg/L	0.003666	38.28%
P 214.914†	11.7	0.0205	mg/L	0.01286	0.0205	mg/L	0.01286	62.80%

Sequence No.: 59 **Autosampler Location: 7**
Sample ID: CCV **Date Collected: 5/27/2015 5:42:23 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3263462.7						32707.94	1.00%
YRADIAL	211718.5						1822.63	0.86%
Ga 417.206	1351899.6						14085.48	1.04%
GaRADIAL	49370.0						330.14	0.67%
Ag 328.068†	132564.5	0.394	mg/L	0.0046	0.394	mg/L	0.0046	1.17%
QC value within limits for Ag 328.068 Recovery = 98.55%								
Al 396.153†	28709.3	10.0	mg/L	0.08	10.0	mg/L	0.08	0.76%
QC value within limits for Al 396.153 Recovery = 100.11%								
As 188.979†	595.3	0.365	mg/L	0.0104	0.365	mg/L	0.0104	2.84%

Approved: May 28, 2015

Lynn H. Rhoden

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   QC value within limits for As 188.979  Recovery = 91.32%
Ba 233.527†            55697.1       0.963 mg/L        0.0033       0.963 mg/L        0.0033   0.34%
   QC value within limits for Ba 233.527  Recovery = 96.29%
Be 234.861†            26556.2      0.0479 mg/L       0.00038      0.0479 mg/L       0.00038   0.79%
   QC value within limits for Be 234.861  Recovery = 95.72%
B 249.677†             26801.4       0.395 mg/L        0.0092       0.395 mg/L        0.0092   2.33%
   QC value less than the lower limit for B 249.677  Recovery = 79.02%
Ca 227.546†              747.3        9.51 mg/L         0.028        9.51 mg/L         0.028   0.30%
   QC value within limits for Ca 227.546  Recovery = 95.10%
Cd 228.802†              783.9      0.0462 mg/L       0.00073      0.0462 mg/L       0.00073   1.59%
   QC value within limits for Cd 228.802  Recovery = 92.43%
Co 228.616†             2724.4       0.190 mg/L        0.0018       0.190 mg/L        0.0018   0.95%
   QC value within limits for Co 228.616  Recovery = 95.08%
Cr 267.716†            66497.7       0.489 mg/L        0.0041       0.489 mg/L        0.0041   0.84%
   QC value within limits for Cr 267.716  Recovery = 97.85%
Cu 327.393†           104880.5       0.490 mg/L        0.0044       0.490 mg/L        0.0044   0.90%
   QC value within limits for Cu 327.393  Recovery = 97.91%
Fe 239.562†            23341.3        4.02 mg/L         0.038        4.02 mg/L         0.038   0.94%
   QC value within limits for Fe 239.562  Recovery = 100.38%
Mg 279.077†            27097.3        10.0 mg/L          0.17        10.0 mg/L          0.17   1.67%
   QC value within limits for Mg 279.077  Recovery = 100.23%
Mn 257.610†           313709.2       0.491 mg/L        0.0034       0.491 mg/L        0.0034   0.68%
   QC value within limits for Mn 257.610  Recovery = 98.27%
Mo 202.031†             9599.4       0.914 mg/L        0.0086       0.914 mg/L        0.0086   0.94%
   QC value within limits for Mo 202.031  Recovery = 91.43%
Ni 231.604†            15208.2       0.475 mg/L        0.0049       0.475 mg/L        0.0049   1.03%
   QC value within limits for Ni 231.604  Recovery = 95.07%
Pb 220.353†             2107.4       0.473 mg/L        0.0060       0.473 mg/L        0.0060   1.28%
   QC value within limits for Pb 220.353  Recovery = 94.58%
Sb 206.836†             1261.5        1.09 mg/L         0.018        1.09 mg/L         0.018   1.61%
   QC value within limits for Sb 206.836  Recovery = 90.85%
Se 196.026†              239.9       0.381 mg/L        0.0190       0.381 mg/L        0.0190   4.98%
   QC value within limits for Se 196.026  Recovery = 95.36%
Si 251.611†           -88564.7       -4.58 mg/L         0.098       -4.58 mg/L         0.098   2.13%
   QC value less than the lower limit for Si 251.611  Recovery = -91.61%
Sn 189.927†             5481.4       0.925 mg/L        0.0088       0.925 mg/L        0.0088   0.96%
   QC value within limits for Sn 189.927  Recovery = 92.53%
Ti 334.940†           907472.0       0.980 mg/L        0.0046       0.980 mg/L        0.0046   0.47%
   QC value within limits for Ti 334.940  Recovery = 97.95%
Tl 190.801†              581.3       0.491 mg/L        0.0033       0.491 mg/L        0.0033   0.68%
   QC value within limits for Tl 190.801  Recovery = 98.21%
V 290.880†            184087.3       0.976 mg/L        0.0060       0.976 mg/L        0.0060   0.62%
   QC value within limits for V 290.880  Recovery = 97.59%
Zn 206.200†            26992.7       0.941 mg/L        0.0107       0.941 mg/L        0.0107   1.13%
   QC value within limits for Zn 206.200  Recovery = 94.12%
K 766.490†             76241.3        48.6 mg/L          0.59        48.6 mg/L          0.59   1.21%
   QC value within limits for K 766.490  Recovery = 97.13%
Na 589.592†           395509.6        49.7 mg/L          0.07        49.7 mg/L          0.07   0.15%
   QC value within limits for Na 589.592  Recovery = 99.33%
Sr 407.771†           804148.6       0.997 mg/L        0.0058       0.997 mg/L        0.0058   0.58%
   QC value within limits for Sr 407.771  Recovery = 99.73%
Li 670.784†            38566.2        1.01 mg/L         0.013        1.01 mg/L         0.013   1.32%
   QC value within limits for Li 670.784  Recovery = 100.80%
P 214.914†              5891.4        9.24 mg/L         0.076        9.24 mg/L         0.076   0.82%
   QC value within limits for P 214.914  Recovery = 92.40%
QC Failed.  Continue with analysis.

==========================================================================================
Sequence No.: 60                                    Autosampler Location: 8
Sample ID: CCB                                      Date Collected: 5/27/2015 5:44:48 PM
Analyst:                                            Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

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Nebulizer Parameters: CCB
Analyte                 Back Pressure    Flow
All                    231.0 kPa         0.40 L/min

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Mean Data: CCB
                  Mean Corrected         Calib.                        Sample
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Approved: May 28, 2015

Analyte	Intensity	Conc. Units	Std.Dev.	Conc. Units	Std.Dev.	RSD
Y 371.029	3442500.2				45621.74	1.33%
YRADIAL	220905.9				2265.87	1.03%
Ga 417.206	1558921.8				17533.68	1.12%
GaRADIAL	53446.0				562.29	1.05%
Ag 328.068†	416.8	0.00329 mg/L	0.000771	0.00329 mg/L	0.000771	23.42%
QC value within limits for Ag 328.068 Recovery = Not calculated						
Al 396.153†	-11.7	-0.0261 mg/L	0.00379	-0.0261 mg/L	0.00379	14.51%
QC value within limits for Al 396.153 Recovery = Not calculated						
As 188.979†	-3.9	0.00124 mg/L	0.003567	0.00124 mg/L	0.003567	288.38%
QC value within limits for As 188.979 Recovery = Not calculated						
Ba 233.527†	-4.5	-0.00032 mg/L	0.000140	-0.00032 mg/L	0.000140	43.36%
QC value within limits for Ba 233.527 Recovery = Not calculated						
Be 234.861†	-4.2	0.00024 mg/L	0.000024	0.00024 mg/L	0.000024	9.78%
QC value within limits for Be 234.861 Recovery = Not calculated						
B 249.677†	-54.8	0.00388 mg/L	0.003308	0.00388 mg/L	0.003308	85.28%
QC value within limits for B 249.677 Recovery = Not calculated						
Ca 227.546†	-12.6	-0.102 mg/L	0.1412	-0.102 mg/L	0.1412	137.90%
QC value within limits for Ca 227.546 Recovery = Not calculated						
Cd 228.802†	3.3	0.00043 mg/L	0.000449	0.00043 mg/L	0.000449	103.84%
QC value within limits for Cd 228.802 Recovery = Not calculated						
Co 228.616†	-5.0	-0.00098 mg/L	0.000706	-0.00098 mg/L	0.000706	71.82%
QC value within limits for Co 228.616 Recovery = Not calculated						
Cr 267.716†	36.9	-0.00022 mg/L	0.000812	-0.00022 mg/L	0.000812	374.04%
QC value within limits for Cr 267.716 Recovery = Not calculated						
Cu 327.393†	-237.8	0.00098 mg/L	0.000990	0.00098 mg/L	0.000990	101.06%
QC value within limits for Cu 327.393 Recovery = Not calculated						
Fe 239.562†	-2.7	0.00372 mg/L	0.000465	0.00372 mg/L	0.000465	12.48%
QC value within limits for Fe 239.562 Recovery = Not calculated						
Mg 279.077†	9.0	-0.0112 mg/L	0.00085	-0.0112 mg/L	0.00085	7.55%
QC value within limits for Mg 279.077 Recovery = Not calculated						
Mn 257.610†	-27.1	-0.00047 mg/L	0.000019	-0.00047 mg/L	0.000019	4.06%
QC value within limits for Mn 257.610 Recovery = Not calculated						
Mo 202.031†	9.1	0.00094 mg/L	0.000204	0.00094 mg/L	0.000204	21.68%
QC value within limits for Mo 202.031 Recovery = Not calculated						
Ni 231.604†	-4.9	-0.00089 mg/L	0.000391	-0.00089 mg/L	0.000391	43.96%
QC value within limits for Ni 231.604 Recovery = Not calculated						
Pb 220.353†	4.8	0.00063 mg/L	0.002410	0.00063 mg/L	0.002410	385.38%
QC value within limits for Pb 220.353 Recovery = Not calculated						
Sb 206.836†	1.7	0.00589 mg/L	0.003509	0.00589 mg/L	0.003509	59.59%
QC value within limits for Sb 206.836 Recovery = Not calculated						
Se 196.026†	1.8	0.00700 mg/L	0.007995	0.00700 mg/L	0.007995	114.17%
QC value within limits for Se 196.026 Recovery = Not calculated						
Si 251.611†	-2037.2	-0.252 mg/L	0.4534	-0.252 mg/L	0.4534	179.71%
QC value within limits for Si 251.611 Recovery = Not calculated						
Sn 189.927†	-25.2	-0.00574 mg/L	0.000708	-0.00574 mg/L	0.000708	12.34%
QC value within limits for Sn 189.927 Recovery = Not calculated						
Ti 334.940†	75.7	0.00179 mg/L	0.000168	0.00179 mg/L	0.000168	9.37%
QC value within limits for Ti 334.940 Recovery = Not calculated						
Tl 190.801†	4.6	0.00241 mg/L	0.002286	0.00241 mg/L	0.002286	94.69%
QC value within limits for Tl 190.801 Recovery = Not calculated						
V 290.880†	-332.9	0.00012 mg/L	0.000572	0.00012 mg/L	0.000572	485.12%
QC value within limits for V 290.880 Recovery = Not calculated						
Zn 206.200†	-21.7	-0.00554 mg/L	0.000148	-0.00554 mg/L	0.000148	2.68%
QC value within limits for Zn 206.200 Recovery = Not calculated						
K 766.490†	-10.5	0.0221 mg/L	0.00953	0.0221 mg/L	0.00953	43.08%
QC value within limits for K 766.490 Recovery = Not calculated						
Na 589.592†	372.6	0.0661 mg/L	0.00629	0.0661 mg/L	0.00629	9.51%
QC value within limits for Na 589.592 Recovery = Not calculated						
Sr 407.771†	137.8	-0.00016 mg/L	0.000086	-0.00016 mg/L	0.000086	53.53%
QC value within limits for Sr 407.771 Recovery = Not calculated						
Li 670.784†	-113.3	-0.00566 mg/L	0.004179	-0.00566 mg/L	0.004179	73.82%
QC value within limits for Li 670.784 Recovery = Not calculated						
P 214.914†	5.7	0.0110 mg/L	0.00865	0.0110 mg/L	0.00865	78.35%
QC value within limits for P 214.914 Recovery = Not calculated						

All analyte(s) passed QC.

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Sequence No.: 61
Sample ID: LLCCV
Analyst: KHR
Initial Sample Wt:

Autosampler Location: 120
Date Collected: 5/27/2015 5:48:11 PM
Data Type: Original
Initial Sample Vol:

Approved: May 28, 2015

Kym H. Rhoden

Dilution: **Sample Prep Vol:**

Nebulizer Parameters: LLCCV

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: LLCCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3435496.2						66640.68	1.94%
YRADIAL	221639.3						4403.04	1.99%
Ga 417.206	1533251.6						29006.49	1.89%
GaRADIAL	53091.9						999.84	1.88%
Ag 328.068†	5024.5	0.0169	mg/L	0.00065	0.0169	mg/L	0.00065	3.81%
Al 396.153†	1181.4	0.391	mg/L	0.0185	0.391	mg/L	0.0185	4.73%
As 188.979†	14.7	0.0125	mg/L	0.00087	0.0125	mg/L	0.00087	6.95%
Ba 233.527†	2299.5	0.0395	mg/L	0.00069	0.0395	mg/L	0.00069	1.74%
Be 234.861†	982.5	0.00201	mg/L	0.000014	0.00201	mg/L	0.000014	0.71%
B 249.677†	1018.2	0.0195	mg/L	0.00301	0.0195	mg/L	0.00301	15.41%
Ca 227.546†	31.3	0.452	mg/L	0.0788	0.452	mg/L	0.0788	17.46%
Cd 228.802†	31.8	0.00212	mg/L	0.000240	0.00212	mg/L	0.000240	11.34%
Co 228.616†	121.9	0.00791	mg/L	0.000059	0.00791	mg/L	0.000059	0.75%
Cr 267.716†	2730.7	0.0196	mg/L	0.00115	0.0196	mg/L	0.00115	5.84%
Cu 327.393†	3975.6	0.0206	mg/L	0.00236	0.0206	mg/L	0.00236	11.47%
Fe 239.562†	977.9	0.172	mg/L	0.0056	0.172	mg/L	0.0056	3.27%
Mg 279.077†	1141.3	0.408	mg/L	0.0049	0.408	mg/L	0.0049	1.20%
Mn 257.610†	13111.5	0.0201	mg/L	0.00029	0.0201	mg/L	0.00029	1.42%
Mo 202.031†	382.9	0.0365	mg/L	0.00033	0.0365	mg/L	0.00033	0.91%
Ni 231.604†	624.2	0.0188	mg/L	0.00027	0.0188	mg/L	0.00027	1.43%
Pb 220.353†	84.9	0.0186	mg/L	0.00068	0.0186	mg/L	0.00068	3.65%
Sb 206.836†	48.2	0.0460	mg/L	0.00493	0.0460	mg/L	0.00493	10.72%
Se 196.026†	15.3	0.0282	mg/L	0.00903	0.0282	mg/L	0.00903	32.07%
Si 251.611†	6786.6	0.188	mg/L	0.0669	0.188	mg/L	0.0669	35.63%
Sn 189.927†	200.6	0.0324	mg/L	0.00079	0.0324	mg/L	0.00079	2.43%
Ti 334.940†	36016.9	0.0405	mg/L	0.00068	0.0405	mg/L	0.00068	1.68%
Tl 190.801†	22.1	0.0173	mg/L	0.00505	0.0173	mg/L	0.00505	29.22%
V 290.880†	6855.4	0.0382	mg/L	0.00115	0.0382	mg/L	0.00115	3.02%
Zn 206.200†	1152.1	0.0356	mg/L	0.00073	0.0356	mg/L	0.00073	2.04%
K 766.490†	2831.5	1.81	mg/L	0.086	1.81	mg/L	0.086	4.75%
Na 589.592†	16532.9	2.04	mg/L	0.025	2.04	mg/L	0.025	1.21%
Sr 407.771†	32518.3	0.0400	mg/L	0.00028	0.0400	mg/L	0.00028	0.71%
Li 670.784†	1679.3	0.0413	mg/L	0.00227	0.0413	mg/L	0.00227	5.49%
P 214.914†	226.1	0.357	mg/L	0.0068	0.357	mg/L	0.0068	1.90%

Sequence No.: 62 **Autosampler Location: 143**
Sample ID: PBW 43 WG525206-02 **Date Collected: 5/27/2015 5:50:36 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: PBW 43 WG525206-02

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: PBW 43 WG525206-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3480359.9						42011.47	1.21%
YRADIAL	220657.6						3833.38	1.74%
Ga 417.206	1557605.2						6963.76	0.45%
GaRADIAL	52986.7						499.29	0.94%
Ag 328.068†	-75.2	0.00185	mg/L	0.000864	0.00185	mg/L	0.000864	46.73%
Al 396.153†	3.7	-0.0207	mg/L	0.00251	-0.0207	mg/L	0.00251	12.17%
As 188.979†	-14.5	-0.00529	mg/L	0.002168	-0.00529	mg/L	0.002168	40.97%
Ba 233.527†	-12.4	-0.00046	mg/L	0.000125	-0.00046	mg/L	0.000125	27.10%
Be 234.861†	-98.4	0.00007	mg/L	0.000035	0.00007	mg/L	0.000035	51.23%
B 249.677†	4500.6	0.0680	mg/L	0.00464	0.0680	mg/L	0.00464	6.82%

Approved: May 28, 2015

Ca 227.546†	-2.6	0.0236	mg/L	0.05020	0.0236	mg/L	0.05020 212.84%
Cd 228.802†	-0.0	0.00026	mg/L	0.000421	0.00026	mg/L	0.000421 158.92%
Co 228.616†	5.3	-0.00026	mg/L	0.000343	-0.00026	mg/L	0.000343 133.66%
Cr 267.716†	48.6	-0.00013	mg/L	0.000993	-0.00013	mg/L	0.000993 762.20%
Cu 327.393†	-531.8	-0.00038	mg/L	0.000899	-0.00038	mg/L	0.000899 234.98%
Fe 239.562†	4.9	0.00504	mg/L	0.000668	0.00504	mg/L	0.000668 13.27%
Mg 279.077†	12.8	-0.00980	mg/L	0.010024	-0.00980	mg/L	0.010024 102.26%
Mn 257.610†	44.5	-0.00035	mg/L	0.000063	-0.00035	mg/L	0.000063 17.86%
Mo 202.031†	-0.4	0.00003	mg/L	0.000994	0.00003	mg/L	0.000994 >999.9%
Ni 231.604†	-14.5	-0.00119	mg/L	0.000224	-0.00119	mg/L	0.000224 18.82%
Pb 220.353†	0.7	-0.00029	mg/L	0.003495	-0.00029	mg/L	0.003495 >999.9%
Sb 206.836†	-3.3	0.00163	mg/L	0.000233	0.00163	mg/L	0.000233 14.25%
Se 196.026†	4.9	0.0118	mg/L	0.00127	0.0118	mg/L	0.00127 10.72%
Si 251.611†	-128520.7	-6.56	mg/L	0.733	-6.56	mg/L	0.733 11.16%
Sn 189.927†	-46.8	-0.00941	mg/L	0.001383	-0.00941	mg/L	0.001383 14.70%
Ti 334.940†	273.8	0.00201	mg/L	0.000322	0.00201	mg/L	0.000322 16.00%
Tl 190.801†	1.5	-0.00016	mg/L	0.005312	-0.00016	mg/L	0.005312 >999.9%
V 290.880†	-268.5	0.00046	mg/L	0.001975	0.00046	mg/L	0.001975 429.13%
Zn 206.200†	-121.2	-0.00901	mg/L	0.000469	-0.00901	mg/L	0.000469 5.20%
K 766.490†	-19.0	0.0167	mg/L	0.05473	0.0167	mg/L	0.05473 327.21%
Na 589.592†	608.9	0.0950	mg/L	0.02434	0.0950	mg/L	0.02434 25.64%
Sr 407.771†	229.3	-0.00005	mg/L	0.000077	-0.00005	mg/L	0.000077 147.25%
Li 670.784†	35.8	-0.00175	mg/L	0.004384	-0.00175	mg/L	0.004384 249.98%
P 214.914†	-9.2	-0.0123	mg/L	0.01549	-0.0123	mg/L	0.01549 126.03%

Sequence No.: 63
Sample ID: LCSW 43 WG525206-03
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 144
Date Collected: 5/27/2015 5:53:58 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: LCSW 43 WG525206-03

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: LCSW 43 WG525206-03

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3302463.3						19924.92	0.60%
YRADIAL	212824.4						2137.98	1.00%
Ga 417.206	1387712.2						10314.10	0.74%
GaRADIAL	49486.1						478.29	0.97%
Ag 328.068†	66730.8	0.200	mg/L	0.0004	0.200	mg/L	0.0004	0.19%
Al 396.153†	14973.8	5.21	mg/L	0.068	5.21	mg/L	0.068	1.30%
As 188.979†	281.2	0.174	mg/L	0.0033	0.174	mg/L	0.0033	1.90%
Ba 233.527†	29019.8	0.502	mg/L	0.0050	0.502	mg/L	0.0050	0.99%
Be 234.861†	12861.8	0.0233	mg/L	0.00023	0.0233	mg/L	0.00023	0.98%
B 249.677†	62574.0	0.892	mg/L	0.0134	0.892	mg/L	0.0134	1.50%
Ca 227.546†	362.5	4.64	mg/L	0.143	4.64	mg/L	0.143	3.08%
Cd 228.802†	378.1	0.0224	mg/L	0.00040	0.0224	mg/L	0.00040	1.79%
Co 228.616†	1393.8	0.0970	mg/L	0.00117	0.0970	mg/L	0.00117	1.21%
Cr 267.716†	34083.5	0.251	mg/L	0.0009	0.251	mg/L	0.0009	0.36%
Cu 327.393†	52638.0	0.247	mg/L	0.0009	0.247	mg/L	0.0009	0.35%
Fe 239.562†	12052.8	2.08	mg/L	0.057	2.08	mg/L	0.057	2.73%
Mg 279.077†	13988.0	5.17	mg/L	0.143	5.17	mg/L	0.143	2.76%
Mn 257.610†	158955.0	0.249	mg/L	0.0010	0.249	mg/L	0.0010	0.42%
Mo 202.031†	4845.7	0.462	mg/L	0.0050	0.462	mg/L	0.0050	1.09%
Ni 231.604†	7568.6	0.236	mg/L	0.0024	0.236	mg/L	0.0024	1.00%
Pb 220.353†	1055.1	0.237	mg/L	0.0010	0.237	mg/L	0.0010	0.43%
Sb 206.836†	619.1	0.537	mg/L	0.0036	0.537	mg/L	0.0036	0.66%
Se 196.026†	121.8	0.196	mg/L	0.0073	0.196	mg/L	0.0073	3.72%
Si 251.611†	-43666.8	-2.33	mg/L	0.097	-2.33	mg/L	0.097	4.16%
Sn 189.927†	2745.2	0.463	mg/L	0.0045	0.463	mg/L	0.0045	0.97%
Ti 334.940†	461456.2	0.499	mg/L	0.0010	0.499	mg/L	0.0010	0.20%
Tl 190.801†	291.7	0.246	mg/L	0.0028	0.246	mg/L	0.0028	1.14%
V 290.880†	93951.7	0.499	mg/L	0.0011	0.499	mg/L	0.0011	0.23%
Zn 206.200†	13411.7	0.465	mg/L	0.0060	0.465	mg/L	0.0060	1.28%
K 766.490†	39159.1	24.8	mg/L	0.20	24.8	mg/L	0.20	0.82%
Na 589.592†	201862.2	25.0	mg/L	0.63	25.0	mg/L	0.63	2.52%

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Sr 407.771†	404731.1	0.502 mg/L	0.0132	0.502 mg/L	0.0132	2.63%
Li 670.784†	20209.2	0.527 mg/L	0.0040	0.527 mg/L	0.0040	0.76%
P 214.914†	2886.5	4.53 mg/L	0.049	4.53 mg/L	0.049	1.08%

Sequence No.: 64 **Autosampler Location: 145**
Sample ID: L1505150401 **Date Collected: 5/27/2015 5:56:22 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505150401

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505150401

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3148028.9						27640.12	0.88%
YRADIAL	203325.3						1980.22	0.97%
Ga 417.206	1281247.6						14084.21	1.10%
GaRADIAL	47745.6						203.90	0.43%
Ag 328.068†	4457.0	0.0149	mg/L	0.00056	0.0149	mg/L	0.00056	3.77%
Al 396.153†	187.2	0.0434	mg/L	0.01575	0.0434	mg/L	0.01575	36.32%
As 188.979†	-47.2	-0.0182	mg/L	0.00332	-0.0182	mg/L	0.00332	18.27%
Ba 233.527†	724.9	0.0123	mg/L	0.00053	0.0123	mg/L	0.00053	4.33%
Be 234.861†	-128.6	0.00013	mg/L	0.000025	0.00013	mg/L	0.000025	19.30%
B 249.677†	379977.8	5.35	mg/L	0.035	5.35	mg/L	0.035	0.65%
Ca 227.546†	26023.8	327	mg/L	2.3	327	mg/L	2.3	0.72%
Cd 228.802†	3.8	0.00061	mg/L	0.000216	0.00061	mg/L	0.000216	35.64%
Co 228.616†	42.2	0.00239	mg/L	0.000490	0.00239	mg/L	0.000490	20.49%
Cr 267.716†	520.0	0.00332	mg/L	0.000120	0.00332	mg/L	0.000120	3.60%
Cu 327.393†	-1460.8	-0.00476	mg/L	0.001849	-0.00476	mg/L	0.001849	38.87%
Fe 239.562†	1212.7	0.210	mg/L	0.0020	0.210	mg/L	0.0020	0.93%
Mg 279.077†	288194.5	107	mg/L	0.7	107	mg/L	0.7	0.64%
Mn 257.610†	1045797.0	1.64	mg/L	0.019	1.64	mg/L	0.019	1.14%
Mo 202.031†	91.7	0.00913	mg/L	0.000984	0.00913	mg/L	0.000984	10.78%
Ni 231.604†	39.2	0.00050	mg/L	0.000490	0.00050	mg/L	0.000490	97.37%
Pb 220.353†	53.5	0.0106	mg/L	0.00297	0.0106	mg/L	0.00297	28.13%
Sb 206.836†	-4.5	0.00049	mg/L	0.001243	0.00049	mg/L	0.001243	253.11%
Se 196.026†	-10.8	-0.0133	mg/L	0.00919	-0.0133	mg/L	0.00919	68.88%
Si 251.611†	-81171.5	-4.20	mg/L	0.083	-4.20	mg/L	0.083	1.97%
Sn 189.927†	-83.0	-0.0155	mg/L	0.00218	-0.0155	mg/L	0.00218	14.02%
Ti 334.940†	-18978.2	0.00227	mg/L	0.001114	0.00227	mg/L	0.001114	49.16%
Tl 190.801†	-40.9	-0.0372	mg/L	0.01173	-0.0372	mg/L	0.01173	31.51%
V 290.880†	-2772.2	-0.0155	mg/L	0.00218	-0.0155	mg/L	0.00218	14.03%
Zn 206.200†	-124.9	-0.00909	mg/L	0.000319	-0.00909	mg/L	0.000319	3.51%
K 766.490†	3357.4	2.02	mg/L	0.080	2.02	mg/L	0.080	3.95%
Na 589.592†	955065.5	125	mg/L	0.3	125	mg/L	0.3	0.22%
Sr 407.771†	316663.8	0.382	mg/L	0.0024	0.382	mg/L	0.0024	0.64%
Li 670.784†	19238.6	0.501	mg/L	0.0059	0.501	mg/L	0.0059	1.19%
P 214.914†	29.1	0.0478	mg/L	0.00445	0.0478	mg/L	0.00445	9.31%

Sequence No.: 65 **Autosampler Location: 146**
Sample ID: L1505150402 **Date Collected: 5/27/2015 5:58:47 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505150402

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505150402

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3177662.4						13737.61	0.43%

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Kym H. Rhoden

YRADIAL	209071.4					3187.10	1.52%
Ga 417.206	1289692.8					9998.25	0.78%
GaRADIAL	49332.6					787.02	1.60%
Ag 328.068†	4199.1	0.0141	mg/L	0.00044	0.0141 mg/L	0.00044	3.09%
Al 396.153†	-65.8	-0.0453	mg/L	0.00337	-0.0453 mg/L	0.00337	7.42%
As 188.979†	-43.9	-0.0162	mg/L	0.00505	-0.0162 mg/L	0.00505	31.17%
Ba 233.527†	541.2	0.00912	mg/L	0.000105	0.00912 mg/L	0.000105	1.16%
Be 234.861†	-171.4	0.00009	mg/L	0.000030	0.00009 mg/L	0.000030	33.51%
B 249.677†	388400.7	5.47	mg/L	0.022	5.47 mg/L	0.022	0.40%
Ca 227.546†	26058.9	327	mg/L	1.4	327 mg/L	1.4	0.44%
Cd 228.802†	4.0	0.00061	mg/L	0.000197	0.00061 mg/L	0.000197	32.61%
Co 228.616†	39.8	0.00224	mg/L	0.000554	0.00224 mg/L	0.000554	24.78%
Cr 267.716†	497.5	0.00316	mg/L	0.000422	0.00316 mg/L	0.000422	13.33%
Cu 327.393†	-1400.6	-0.00451	mg/L	0.002669	-0.00451 mg/L	0.002669	59.15%
Fe 239.562†	8.9	0.00359	mg/L	0.001441	0.00359 mg/L	0.001441	40.18%
Mg 279.077†	288085.4	107	mg/L	1.2	107 mg/L	1.2	1.16%
Mn 257.610†	962043.7	1.51	mg/L	0.013	1.51 mg/L	0.013	0.89%
Mo 202.031†	81.5	0.00814	mg/L	0.000111	0.00814 mg/L	0.000111	1.36%
Ni 231.604†	32.8	0.00030	mg/L	0.000492	0.00030 mg/L	0.000492	162.86%
Pb 220.353†	51.8	0.0102	mg/L	0.00256	0.0102 mg/L	0.00256	24.98%
Sb 206.836†	-8.8	-0.00315	mg/L	0.003727	-0.00315 mg/L	0.003727	118.40%
Se 196.026†	-8.6	-0.00974	mg/L	0.006894	-0.00974 mg/L	0.006894	70.75%
Si 251.611†	-89916.8	-4.64	mg/L	0.114	-4.64 mg/L	0.114	2.45%
Sn 189.927†	-94.2	-0.0174	mg/L	0.00267	-0.0174 mg/L	0.00267	15.34%
Ti 334.940†	-21507.4	-0.00043	mg/L	0.000568	-0.00043 mg/L	0.000568	132.08%
Tl 190.801†	-37.8	-0.0346	mg/L	0.00294	-0.0346 mg/L	0.00294	8.51%
V 290.880†	-3155.2	-0.0176	mg/L	0.00155	-0.0176 mg/L	0.00155	8.83%
Zn 206.200†	-67.6	-0.00712	mg/L	0.000529	-0.00712 mg/L	0.000529	7.43%
K 766.490†	3412.2	2.06	mg/L	0.105	2.06 mg/L	0.105	5.09%
Na 589.592†	953665.1	125	mg/L	1.6	125 mg/L	1.6	1.29%
Sr 407.771†	317716.8	0.384	mg/L	0.0051	0.384 mg/L	0.0051	1.33%
Li 670.784†	19239.5	0.502	mg/L	0.0097	0.502 mg/L	0.0097	1.94%
P 214.914†	20.5	0.0342	mg/L	0.02626	0.0342 mg/L	0.02626	76.69%

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Sequence No.: 66
Sample ID: L1505150403
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 147
Date Collected: 5/27/2015 6:02:09 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505150403

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505150403

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3146122.2						38326.15	1.22%
YRADIAL	208675.8						1466.20	0.70%
Ga 417.206	1276736.7						9692.20	0.76%
GaRADIAL	48861.6						329.32	0.67%
Ag 328.068†	4336.9	0.0145	mg/L	0.00128	0.0145	mg/L	0.00128	8.81%
Al 396.153†	158.9	0.0335	mg/L	0.04087	0.0335	mg/L	0.04087	122.16%
As 188.979†	-44.4	-0.0163	mg/L	0.01406	-0.0163	mg/L	0.01406	86.26%
Ba 233.527†	688.6	0.0117	mg/L	0.00023	0.0117	mg/L	0.00023	1.95%
Be 234.861†	-131.3	0.00014	mg/L	0.000049	0.00014	mg/L	0.000049	35.85%
B 249.677†	395511.3	5.57	mg/L	0.019	5.57	mg/L	0.019	0.34%
Ca 227.546†	26525.4	333	mg/L	3.9	333	mg/L	3.9	1.16%
Cd 228.802†	3.6	0.00058	mg/L	0.000073	0.00058	mg/L	0.000073	12.47%
Co 228.616†	35.5	0.00192	mg/L	0.000861	0.00192	mg/L	0.000861	44.89%
Cr 267.716†	580.9	0.00377	mg/L	0.000104	0.00377	mg/L	0.000104	2.75%
Cu 327.393†	-1686.4	-0.00581	mg/L	0.000827	-0.00581	mg/L	0.000827	14.23%
Fe 239.562†	916.5	0.160	mg/L	0.0046	0.160	mg/L	0.0046	2.87%
Mg 279.077†	293669.0	109	mg/L	0.9	109	mg/L	0.9	0.82%
Mn 257.610†	1055900.4	1.65	mg/L	0.008	1.65	mg/L	0.008	0.49%
Mo 202.031†	83.4	0.00835	mg/L	0.000321	0.00835	mg/L	0.000321	3.85%
Ni 231.604†	52.5	0.00092	mg/L	0.000696	0.00092	mg/L	0.000696	75.65%
Pb 220.353†	53.4	0.0105	mg/L	0.00348	0.0105	mg/L	0.00348	33.09%
Sb 206.836†	-3.1	0.00175	mg/L	0.006569	0.00175	mg/L	0.006569	375.64%

Approved: May 28, 2015

Se 196.026†	-11.0	-0.0137	mg/L	0.00769	-0.0137	mg/L	0.00769	56.35%
Si 251.611†	-85352.8	-4.41	mg/L	0.180	-4.41	mg/L	0.180	4.09%
Sn 189.927†	-73.6	-0.0139	mg/L	0.00190	-0.0139	mg/L	0.00190	13.62%
Ti 334.940†	-19038.4	0.00261	mg/L	0.000828	0.00261	mg/L	0.000828	31.80%
Tl 190.801†	-38.8	-0.0355	mg/L	0.00946	-0.0355	mg/L	0.00946	26.65%
V 290.880†	-2756.5	-0.0155	mg/L	0.00158	-0.0155	mg/L	0.00158	10.19%
Zn 206.200†	-151.2	-0.0100	mg/L	0.00032	-0.0100	mg/L	0.00032	3.21%
K 766.490†	3333.0	2.01	mg/L	0.048	2.01	mg/L	0.048	2.41%
Na 589.592†	967196.4	127	mg/L	1.3	127	mg/L	1.3	1.02%
Sr 407.771†	320548.9	0.387	mg/L	0.0033	0.387	mg/L	0.0033	0.85%
Li 670.784†	19394.3	0.506	mg/L	0.0059	0.506	mg/L	0.0059	1.17%
P 214.914†	21.4	0.0358	mg/L	0.01383	0.0358	mg/L	0.01383	38.62%

Sequence No.: 67 **Autosampler Location: 148**
Sample ID: L1505150404 **Date Collected: 5/27/2015 6:04:34 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505150404

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505150404

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3157788.8						41273.13	1.31%
YRADIAL	205376.9						5562.49	2.71%
Ga 417.206	1278559.8						22650.12	1.77%
GaRADIAL	48634.0						1115.55	2.29%
Ag 328.068†	4364.0	0.0145	mg/L	0.00074	0.0145	mg/L	0.00074	5.12%
Al 396.153†	-81.2	-0.0508	mg/L	0.00469	-0.0508	mg/L	0.00469	9.23%
As 188.979†	-38.9	-0.0126	mg/L	0.00610	-0.0126	mg/L	0.00610	48.41%
Ba 233.527†	582.4	0.00984	mg/L	0.000176	0.00984	mg/L	0.000176	1.79%
Be 234.861†	-174.5	0.00010	mg/L	0.000065	0.00010	mg/L	0.000065	68.18%
B 249.677†	417287.6	5.88	mg/L	0.070	5.88	mg/L	0.070	1.19%
Ca 227.546†	27914.4	351	mg/L	8.0	351	mg/L	8.0	2.27%
Cd 228.802†	13.1	0.00114	mg/L	0.000468	0.00114	mg/L	0.000468	41.11%
Co 228.616†	39.7	0.00223	mg/L	0.000571	0.00223	mg/L	0.000571	25.62%
Cr 267.716†	523.5	0.00335	mg/L	0.000313	0.00335	mg/L	0.000313	9.34%
Cu 327.393†	-1825.1	-0.00648	mg/L	0.000561	-0.00648	mg/L	0.000561	8.66%
Fe 239.562†	-0.3	0.00189	mg/L	0.000806	0.00189	mg/L	0.000806	42.68%
Mg 279.077†	303719.6	113	mg/L	1.4	113	mg/L	1.4	1.28%
Mn 257.610†	1033177.2	1.62	mg/L	0.013	1.62	mg/L	0.013	0.83%
Mo 202.031†	90.3	0.00900	mg/L	0.000583	0.00900	mg/L	0.000583	6.48%
Ni 231.604†	27.7	0.00014	mg/L	0.000699	0.00014	mg/L	0.000699	494.12%
Pb 220.353†	35.8	0.00659	mg/L	0.003106	0.00659	mg/L	0.003106	47.16%
Sb 206.836†	-9.6	-0.00391	mg/L	0.004094	-0.00391	mg/L	0.004094	104.82%
Se 196.026†	-15.1	-0.0201	mg/L	0.01374	-0.0201	mg/L	0.01374	68.45%
Si 251.611†	-90720.5	-4.68	mg/L	0.169	-4.68	mg/L	0.169	3.60%
Sn 189.927†	-84.1	-0.0157	mg/L	0.00268	-0.0157	mg/L	0.00268	17.05%
Ti 334.940†	-22775.6	-0.00030	mg/L	0.000715	-0.00030	mg/L	0.000715	238.86%
Tl 190.801†	-39.1	-0.0358	mg/L	0.00040	-0.0358	mg/L	0.00040	1.13%
V 290.880†	-3143.5	-0.0177	mg/L	0.00142	-0.0177	mg/L	0.00142	8.06%
Zn 206.200†	-134.8	-0.00946	mg/L	0.000251	-0.00946	mg/L	0.000251	2.65%
K 766.490†	3680.2	2.22	mg/L	0.054	2.22	mg/L	0.054	2.45%
Na 589.592†	1004154.6	132	mg/L	1.2	132	mg/L	1.2	0.92%
Sr 407.771†	337287.9	0.407	mg/L	0.0086	0.407	mg/L	0.0086	2.11%
Li 670.784†	20294.7	0.529	mg/L	0.0046	0.529	mg/L	0.0046	0.86%
P 214.914†	39.1	0.0635	mg/L	0.00634	0.0635	mg/L	0.00634	9.98%

Sequence No.: 68 **Autosampler Location: 149**
Sample ID: L1505152901 **Date Collected: 5/27/2015 6:07:56 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Approved: May 28, 2015

Kym H. Rhoden

Nebulizer Parameters: L1505152901

Analyte	Back Pressure	Flow
All	230.0 kPa	0.40 L/min

Mean Data: L1505152901

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3253871.5						41501.28	1.28%
YRADIAL	210121.8						1270.58	0.60%
Ga 417.206	1339581.1						18488.85	1.38%
GaRADIAL	49057.5						513.31	1.05%
Ag 328.068†	1247.9	0.00560	mg/L	0.000252	0.00560	mg/L	0.000252	4.50%
Al 396.153†	-12.1	-0.0265	mg/L	0.00295	-0.0265	mg/L	0.00295	11.14%
As 188.979†	-19.5	-0.00678	mg/L	0.004094	-0.00678	mg/L	0.004094	60.38%
Ba 233.527†	4516.9	0.0779	mg/L	0.00106	0.0779	mg/L	0.00106	1.36%
Be 234.861†	-152.3	-0.00002	mg/L	0.000030	-0.00002	mg/L	0.000030	136.01%
B 249.677†	26669.6	0.380	mg/L	0.0118	0.380	mg/L	0.0118	3.10%
Ca 227.546†	5744.6	72.2	mg/L	1.11	72.2	mg/L	1.11	1.53%
Cd 228.802†	0.2	0.00029	mg/L	0.000602	0.00029	mg/L	0.000602	207.16%
Co 228.616†	-4.6	-0.00095	mg/L	0.000915	-0.00095	mg/L	0.000915	96.06%
Cr 267.716†	393.4	0.00240	mg/L	0.000223	0.00240	mg/L	0.000223	9.27%
Cu 327.393†	-832.5	-0.00178	mg/L	0.001433	-0.00178	mg/L	0.001433	80.43%
Fe 239.562†	14.7	0.00576	mg/L	0.002725	0.00576	mg/L	0.002725	47.35%
Mg 279.077†	129354.3	47.9	mg/L	0.38	47.9	mg/L	0.38	0.79%
Mn 257.610†	33539.6	0.0521	mg/L	0.00059	0.0521	mg/L	0.00059	1.13%
Mo 202.031†	66.4	0.00640	mg/L	0.001141	0.00640	mg/L	0.001141	17.82%
Ni 231.604†	23.5	0.00001	mg/L	0.001069	0.00001	mg/L	0.001069	>999.9%
Pb 220.353†	27.2	0.00560	mg/L	0.004444	0.00560	mg/L	0.004444	79.32%
Sb 206.836†	-6.5	-0.00121	mg/L	0.005219	-0.00121	mg/L	0.005219	432.13%
Se 196.026†	-6.1	-0.00541	mg/L	0.014799	-0.00541	mg/L	0.014799	273.35%
Si 251.611†	-78363.9	-4.06	mg/L	0.076	-4.06	mg/L	0.076	1.86%
Sn 189.927†	-67.9	-0.0130	mg/L	0.00193	-0.0130	mg/L	0.00193	14.90%
Ti 334.940†	-5048.2	0.00091	mg/L	0.000140	0.00091	mg/L	0.000140	15.33%
Tl 190.801†	-21.1	-0.0190	mg/L	0.00124	-0.0190	mg/L	0.00124	6.51%
V 290.880†	-1070.6	-0.00503	mg/L	0.001203	-0.00503	mg/L	0.001203	23.90%
Zn 206.200†	-133.9	-0.00943	mg/L	0.000381	-0.00943	mg/L	0.000381	4.04%
K 766.490†	860.5	0.483	mg/L	0.0808	0.483	mg/L	0.0808	16.73%
Na 589.592†	694044.8	89.1	mg/L	0.99	89.1	mg/L	0.99	1.11%
Sr 407.771†	460674.5	0.569	mg/L	0.0041	0.569	mg/L	0.0041	0.72%
Li 670.784†	280.6	0.00466	mg/L	0.002348	0.00466	mg/L	0.002348	50.38%
P 214.914†	2.4	0.00587	mg/L	0.011161	0.00587	mg/L	0.011161	190.13%

Sequence No.: 69
Sample ID: L1505153001
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 150
Date Collected: 5/27/2015 6:11:18 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505153001

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505153001

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3349938.7						31279.11	0.93%
YRADIAL	224481.0						2764.25	1.23%
Ga 417.206	1356462.3						3807.64	0.28%
GaRADIAL	51453.1						562.96	1.09%
Ag 328.068†	523.8	0.00482	mg/L	0.000321	0.00482	mg/L	0.000321	6.66%
Al 396.153†	175.6	0.0397	mg/L	0.03574	0.0397	mg/L	0.03574	90.03%
As 188.979†	-16.6	-0.00408	mg/L	0.001458	-0.00408	mg/L	0.001458	35.76%
Ba 233.527†	13401.7	0.231	mg/L	0.0028	0.231	mg/L	0.0028	1.21%
Be 234.861†	249.6	-0.00001	mg/L	0.000288	-0.00001	mg/L	0.000288	>999.9%
B 249.677†	10452.8	0.163	mg/L	0.0067	0.163	mg/L	0.0067	4.10%
Ca 227.546†	6459.4	81.2	mg/L	0.81	81.2	mg/L	0.81	0.99%
Cd 228.802†	8.8	0.00080	mg/L	0.000417	0.00080	mg/L	0.000417	51.96%
Co 228.616†	4.0	-0.00048	mg/L	0.000484	-0.00048	mg/L	0.000484	101.23%

Approved: May 28, 2015

Cr 267.716†	284.2	0.00152	mg/L	0.000163	0.00152	mg/L	0.000163	10.74%
Cu 327.393†	-508.5	0.00015	mg/L	0.000821	0.00015	mg/L	0.000821	538.84%
Fe 239.562†	17579.6	3.02	mg/L	0.041	3.02	mg/L	0.041	1.34%
Mg 279.077†	105857.2	39.2	mg/L	0.63	39.2	mg/L	0.63	1.60%
Mn 257.610†	349300.6	0.547	mg/L	0.0066	0.547	mg/L	0.0066	1.21%
Mo 202.031†	70.2	0.00681	mg/L	0.000676	0.00681	mg/L	0.000676	9.92%
Ni 231.604†	-13.1	-0.00114	mg/L	0.000454	-0.00114	mg/L	0.000454	39.92%
Pb 220.353†	466.7	0.103	mg/L	0.0018	0.103	mg/L	0.0018	1.73%
Sb 206.836†	-5.0	0.00022	mg/L	0.004468	0.00022	mg/L	0.004468	>999.9%
Se 196.026†	-3.5	-0.00178	mg/L	0.013054	-0.00178	mg/L	0.013054	734.61%
Si 251.611†	-54525.9	-2.87	mg/L	0.268	-2.87	mg/L	0.268	9.33%
Sn 189.927†	-62.3	-0.0120	mg/L	0.00078	-0.0120	mg/L	0.00078	6.51%
Ti 334.940†	-5498.7	0.00100	mg/L	0.000323	0.00100	mg/L	0.000323	32.11%
Tl 190.801†	-28.1	-0.0254	mg/L	0.00681	-0.0254	mg/L	0.00681	26.83%
V 290.880†	-1192.7	-0.00488	mg/L	0.001089	-0.00488	mg/L	0.001089	22.32%
Zn 206.200†	-67.2	-0.00682	mg/L	0.000300	-0.00682	mg/L	0.000300	4.40%
K 766.490†	496.7	0.165	mg/L	0.0901	0.165	mg/L	0.0901	54.63%
Na 589.592†	1311344.7	177	mg/L	2.1	177	mg/L	2.1	1.16%
Sr 407.771†	386613.1	0.477	mg/L	0.0087	0.477	mg/L	0.0087	1.83%
Li 670.784†	185.9	0.00218	mg/L	0.003378	0.00218	mg/L	0.003378	154.95%
P 214.914†	6.7	0.0126	mg/L	0.01089	0.0126	mg/L	0.01089	86.17%

Sequence No.: 70
Sample ID: L1505153001PS WG525252-01
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 151
Date Collected: 5/27/2015 6:13:42 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505153001PS WG525252-01

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505153001PS WG525252-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3369267.9						50378.20	1.50%
YRADIAL	229813.1						2664.29	1.16%
Ga 417.206	1403892.0						12531.02	0.89%
GaRADIAL	53544.4						488.34	0.91%
Ag 328.068†	68321.8	0.205	mg/L	0.0019	0.205	mg/L	0.0019	0.90%
Al 396.153†	13954.6	4.85	mg/L	0.023	4.85	mg/L	0.023	0.47%
As 188.979†	319.6	0.200	mg/L	0.0071	0.200	mg/L	0.0071	3.53%
Ba 233.527†	40088.5	0.693	mg/L	0.0041	0.693	mg/L	0.0041	0.59%
Be 234.861†	13919.5	0.0246	mg/L	0.00015	0.0246	mg/L	0.00015	0.61%
B 249.677†	67565.0	0.973	mg/L	0.0044	0.973	mg/L	0.0044	0.45%
Ca 227.546†	5960.0	75.0	mg/L	0.69	75.0	mg/L	0.69	0.92%
Cd 228.802†	414.0	0.0245	mg/L	0.00040	0.0245	mg/L	0.00040	1.65%
Co 228.616†	1402.3	0.0975	mg/L	0.00194	0.0975	mg/L	0.00194	1.99%
Cr 267.716†	33899.2	0.249	mg/L	0.0036	0.249	mg/L	0.0036	1.45%
Cu 327.393†	51468.2	0.242	mg/L	0.0026	0.242	mg/L	0.0026	1.07%
Fe 239.562†	28050.4	4.82	mg/L	0.075	4.82	mg/L	0.075	1.56%
Mg 279.077†	116002.3	43.0	mg/L	0.62	43.0	mg/L	0.62	1.45%
Mn 257.610†	480672.3	0.753	mg/L	0.0093	0.753	mg/L	0.0093	1.24%
Mo 202.031†	4998.5	0.476	mg/L	0.0094	0.476	mg/L	0.0094	1.97%
Ni 231.604†	7694.8	0.240	mg/L	0.0051	0.240	mg/L	0.0051	2.11%
Pb 220.353†	1524.7	0.341	mg/L	0.0019	0.341	mg/L	0.0019	0.57%
Sb 206.836†	666.6	0.578	mg/L	0.0156	0.578	mg/L	0.0156	2.69%
Se 196.026†	122.8	0.197	mg/L	0.0176	0.197	mg/L	0.0176	8.92%
Si 251.611†	4830.3	0.0852	mg/L	0.08448	0.0852	mg/L	0.08448	99.21%
Sn 189.927†	2835.4	0.478	mg/L	0.0101	0.478	mg/L	0.0101	2.10%
Ti 334.940†	447544.3	0.488	mg/L	0.0049	0.488	mg/L	0.0049	1.01%
Tl 190.801†	271.9	0.229	mg/L	0.0066	0.229	mg/L	0.0066	2.88%
V 290.880†	94086.3	0.499	mg/L	0.0052	0.499	mg/L	0.0052	1.05%
Zn 206.200†	14380.9	0.499	mg/L	0.0121	0.499	mg/L	0.0121	2.43%
K 766.490†	38771.2	24.4	mg/L	0.28	24.4	mg/L	0.28	1.13%
Na 589.592†	1374884.2	187	mg/L	3.4	187	mg/L	3.4	1.83%
Sr 407.771†	736667.0	0.912	mg/L	0.0112	0.912	mg/L	0.0112	1.23%
Li 670.784†	19698.2	0.514	mg/L	0.0047	0.514	mg/L	0.0047	0.92%
P 214.914†	3281.7	5.15	mg/L	0.113	5.15	mg/L	0.113	2.20%

Approved: May 28, 2015

Kym H. Rhoden

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Sequence No.: 71 **Autosampler Location: 152**
Sample ID: L1505153001DL WG525252-02 **Date Collected: 5/27/2015 6:16:08 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505153001DL WG525252-02

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505153001DL WG525252-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3012916.0						29845.60	0.99%
YRADIAL	226939.9						2510.95	1.11%
Ga 417.206	1400958.8						17178.08	1.23%
GaRADIAL	52478.2						601.32	1.15%
Ag 328.068†	386.5	0.00354	mg/L	0.001137	0.00354	mg/L	0.001137	32.07%
Al 396.153†	91.5	0.0101	mg/L	0.03009	0.0101	mg/L	0.03009	298.79%
As 188.979†	4.2	0.00666	mg/L	0.003674	0.00666	mg/L	0.003674	55.14%
Ba 233.527†	3087.4	0.0531	mg/L	0.00129	0.0531	mg/L	0.00129	2.44%
Be 234.861†	208.4	0.00045	mg/L	0.000051	0.00045	mg/L	0.000051	11.36%
B 249.677†	12711.2	0.186	mg/L	0.0249	0.186	mg/L	0.0249	13.37%
Ca 227.546†	1136.6	14.3	mg/L	0.23	14.3	mg/L	0.23	1.63%
Cd 228.802†	-3.2	0.00002	mg/L	0.000545	0.00002	mg/L	0.000545	>999.9%
Co 228.616†	7.0	-0.00017	mg/L	0.000193	-0.00017	mg/L	0.000193	112.76%
Cr 267.716†	364.8	0.00219	mg/L	0.000214	0.00219	mg/L	0.000214	9.77%
Cu 327.393†	-580.9	-0.00049	mg/L	0.001550	-0.00049	mg/L	0.001550	313.64%
Fe 239.562†	4348.9	0.751	mg/L	0.0262	0.751	mg/L	0.0262	3.48%
Mg 279.077†	31292.9	11.6	mg/L	0.28	11.6	mg/L	0.28	2.45%
Mn 257.610†	80928.0	0.126	mg/L	0.0014	0.126	mg/L	0.0014	1.13%
Mo 202.031†	39.4	0.00384	mg/L	0.002086	0.00384	mg/L	0.002086	54.25%
Ni 231.604†	-12.2	-0.00111	mg/L	0.000336	-0.00111	mg/L	0.000336	30.24%
Pb 220.353†	62.8	0.0135	mg/L	0.00326	0.0135	mg/L	0.00326	24.14%
Sb 206.836†	0.9	0.00527	mg/L	0.007488	0.00527	mg/L	0.007488	142.05%
Se 196.026†	-0.9	0.00257	mg/L	0.002310	0.00257	mg/L	0.002310	90.07%
Si 251.611†	148326.8	7.25	mg/L	0.411	7.25	mg/L	0.411	5.67%
Sn 189.927†	2.1	-0.00113	mg/L	0.000546	-0.00113	mg/L	0.000546	48.23%
Ti 334.940†	522.1	0.00320	mg/L	0.000251	0.00320	mg/L	0.000251	7.87%
Tl 190.801†	-23.2	-0.0207	mg/L	0.01379	-0.0207	mg/L	0.01379	66.53%
V 290.880†	2823.7	0.0167	mg/L	0.00243	0.0167	mg/L	0.00243	14.60%
Zn 206.200†	-48.4	-0.00638	mg/L	0.000978	-0.00638	mg/L	0.000978	15.33%
K 766.490†	-143.8	-0.0974	mg/L	0.05371	-0.0974	mg/L	0.05371	55.16%
Na 589.592†	284672.1	35.5	mg/L	0.38	35.5	mg/L	0.38	1.06%
Sr 407.771†	76931.7	0.0947	mg/L	0.00048	0.0947	mg/L	0.00048	0.51%
Li 670.784†	197.3	0.00248	mg/L	0.001117	0.00248	mg/L	0.001117	45.05%
P 214.914†	8.4	0.0153	mg/L	0.03590	0.0153	mg/L	0.03590	234.27%

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Sequence No.: 72 **Autosampler Location: 7**
Sample ID: CCV **Date Collected: 5/27/2015 6:18:32 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2964463.4						17730.30	0.60%
YRADIAL	194771.1						3973.47	2.04%
Ga 417.206	1347029.4						5978.18	0.44%
GaRADIAL	44800.3						1090.80	2.43%

Approved: May 28, 2015

Kym H. Rhoden

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Ag 328.068†           128869.5       0.384 mg/L        0.0013       0.384 mg/L        0.0013   0.34%
   QC value within limits for Ag 328.068  Recovery = 95.95%
Al 396.153†            28129.4        9.80 mg/L         0.131        9.80 mg/L         0.131   1.33%
   QC value within limits for Al 396.153  Recovery = 98.04%
As 188.979†              677.3       0.415 mg/L        0.0032       0.415 mg/L        0.0032   0.78%
   QC value within limits for As 188.979  Recovery = 103.84%
Ba 233.527†            59362.5        1.03 mg/L         0.006        1.03 mg/L         0.006   0.58%
   QC value within limits for Ba 233.527  Recovery = 102.63%
Be 234.861†            27367.2      0.0492 mg/L       0.00065      0.0492 mg/L       0.00065   1.32%
   QC value within limits for Be 234.861  Recovery = 98.49%
B 249.677†             39029.9       0.569 mg/L        0.0067       0.569 mg/L        0.0067   1.18%
   QC value greater than the upper limit for B 249.677  Recovery = 113.79%
Ca 227.546†              630.7        8.05 mg/L         0.350        8.05 mg/L         0.350   4.35%
   QC value less than the lower limit for Ca 227.546  Recovery = 80.55%
Cd 228.802†              801.9      0.0471 mg/L       0.00071      0.0471 mg/L       0.00071   1.51%
   QC value within limits for Cd 228.802  Recovery = 94.26%
Co 228.616†             3084.8       0.216 mg/L        0.0027       0.216 mg/L        0.0027   1.27%
   QC value within limits for Co 228.616  Recovery = 107.78%
Cr 267.716†            72653.9       0.535 mg/L        0.0018       0.535 mg/L        0.0018   0.34%
   QC value within limits for Cr 267.716  Recovery = 106.91%
Cu 327.393†           100397.3       0.469 mg/L        0.0022       0.469 mg/L        0.0022   0.46%
   QC value within limits for Cu 327.393  Recovery = 93.79%
Fe 239.562†            26191.0        4.50 mg/L         0.024        4.50 mg/L         0.024   0.54%
   QC value greater than the upper limit for Fe 239.562  Recovery = 112.62%
Mg 279.077†            32877.9        12.2 mg/L          0.10        12.2 mg/L          0.10   0.83%
   QC value greater than the upper limit for Mg 279.077  Recovery = 121.64%
Mn 257.610†           339033.5       0.531 mg/L        0.0025       0.531 mg/L        0.0025   0.47%
   QC value within limits for Mn 257.610  Recovery = 106.21%
Mo 202.031†            10444.8       0.995 mg/L        0.0104       0.995 mg/L        0.0104   1.04%
   QC value within limits for Mo 202.031  Recovery = 99.48%
Ni 231.604†            17488.3       0.547 mg/L        0.0066       0.547 mg/L        0.0066   1.21%
   QC value within limits for Ni 231.604  Recovery = 109.34%
Pb 220.353†             2491.5       0.559 mg/L        0.0067       0.559 mg/L        0.0067   1.19%
   QC value greater than the upper limit for Pb 220.353  Recovery = 111.75%
Sb 206.836†             1288.5        1.11 mg/L         0.009        1.11 mg/L         0.009   0.79%
   QC value within limits for Sb 206.836  Recovery = 92.78%
Se 196.026†              276.9       0.439 mg/L        0.0031       0.439 mg/L        0.0031   0.72%
   QC value within limits for Se 196.026  Recovery = 109.79%
Si 251.611†           -76469.2       -3.98 mg/L         0.302       -3.98 mg/L         0.302   7.58%
   QC value less than the lower limit for Si 251.611  Recovery = -79.56%
Sn 189.927†             6523.5        1.10 mg/L         0.015        1.10 mg/L         0.015   1.34%
   QC value greater than the upper limit for Sn 189.927  Recovery = 110.14%
Ti 334.940†           940830.2        1.02 mg/L         0.005        1.02 mg/L         0.005   0.46%
   QC value within limits for Ti 334.940  Recovery = 101.54%
Tl 190.801†              636.1       0.537 mg/L        0.0078       0.537 mg/L        0.0078   1.46%
   QC value within limits for Tl 190.801  Recovery = 107.40%
V 290.880†            200566.0        1.06 mg/L         0.007        1.06 mg/L         0.007   0.62%
   QC value within limits for V 290.880  Recovery = 106.31%
Zn 206.200†            34106.2        1.19 mg/L         0.021        1.19 mg/L         0.021   1.73%
   QC value greater than the upper limit for Zn 206.200  Recovery = 118.97%
K 766.490†             77810.8        49.6 mg/L          0.59        49.6 mg/L          0.59   1.18%
   QC value within limits for K 766.490  Recovery = 99.15%
Na 589.592†           393274.6        49.4 mg/L          0.81        49.4 mg/L          0.81   1.64%
   QC value within limits for Na 589.592  Recovery = 98.76%
Sr 407.771†           740901.5       0.919 mg/L        0.0114       0.919 mg/L        0.0114   1.24%
   QC value within limits for Sr 407.771  Recovery = 91.89%
Li 670.784†            37839.2       0.989 mg/L        0.0132       0.989 mg/L        0.0132   1.33%
   QC value within limits for Li 670.784  Recovery = 98.90%
P 214.914†              7417.2        11.6 mg/L          0.21        11.6 mg/L          0.21   1.81%
   QC value greater than the upper limit for P 214.914  Recovery = 116.32%
QC Failed.  Continue with analysis.

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Sequence No.: 73                                    Autosampler Location: 8
Sample ID: CCB                                      Date Collected: 5/27/2015 6:20:57 PM
Analyst:                                            Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

------------------------------------------------------------------------------------------
Nebulizer Parameters: CCB
Analyte                 Back Pressure    Flow
```

Approved: May 28, 2015

Lynn H. Rhoden

All 230.0 kPa 0.40 L/min

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3162394.7						30355.06	0.96%
YRADIAL	205394.2						1127.95	0.55%
Ga 417.206	1534908.9						13063.91	0.85%
GaRADIAL	48249.2						174.95	0.36%
Ag 328.068†	106.0	0.00240	mg/L	0.000826	0.00240	mg/L	0.000826	34.43%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	-17.7	-0.0282	mg/L	0.05323	-0.0282	mg/L	0.05323	188.66%
QC value within limits for Al 396.153 Recovery = Not calculated								
As 188.979†	7.4	0.00817	mg/L	0.002102	0.00817	mg/L	0.002102	25.74%
QC value greater than the upper limit for As 188.979 Recovery = Not calculated								
Ba 233.527†	14.0	-0.00001	mg/L	0.000341	-0.00001	mg/L	0.000341	>999.9%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 234.861†	42.6	0.00032	mg/L	0.000037	0.00032	mg/L	0.000037	11.51%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	7874.3	0.116	mg/L	0.0044	0.116	mg/L	0.0044	3.82%
QC value greater than the upper limit for B 249.677 Recovery = Not calculated								
Ca 227.546†	-8.0	-0.0445	mg/L	0.16843	-0.0445	mg/L	0.16843	378.42%
QC value within limits for Ca 227.546 Recovery = Not calculated								
Cd 228.802†	0.5	0.00023	mg/L	0.000141	0.00023	mg/L	0.000141	62.55%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	0.3	-0.00061	mg/L	0.000685	-0.00061	mg/L	0.000685	112.26%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	143.7	0.00057	mg/L	0.000106	0.00057	mg/L	0.000106	18.40%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	-283.9	0.00077	mg/L	0.001218	0.00077	mg/L	0.001218	158.02%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	16.0	0.00694	mg/L	0.003890	0.00694	mg/L	0.003890	56.08%
QC value within limits for Fe 239.562 Recovery = Not calculated								
Mg 279.077†	154.0	0.0425	mg/L	0.07578	0.0425	mg/L	0.07578	178.17%
QC value within limits for Mg 279.077 Recovery = Not calculated								
Mn 257.610†	-45.3	-0.00050	mg/L	0.000067	-0.00050	mg/L	0.000067	13.60%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	11.5	0.00117	mg/L	0.001233	0.00117	mg/L	0.001233	105.29%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	-0.0	-0.00073	mg/L	0.000277	-0.00073	mg/L	0.000277	37.82%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	-33.2	-0.00785	mg/L	0.003608	-0.00785	mg/L	0.003608	45.95%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	3.1	0.00714	mg/L	0.005510	0.00714	mg/L	0.005510	77.21%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	11.8	0.0225	mg/L	0.00940	0.0225	mg/L	0.00940	41.68%
QC value greater than the upper limit for Se 196.026 Recovery = Not calculated								
Si 251.611†	570.4	-0.122	mg/L	0.1861	-0.122	mg/L	0.1861	152.34%
QC value within limits for Si 251.611 Recovery = Not calculated								
Sn 189.927†	132.6	0.0209	mg/L	0.00811	0.0209	mg/L	0.00811	38.73%
QC value within limits for Sn 189.927 Recovery = Not calculated								
Ti 334.940†	1342.4	0.00316	mg/L	0.000325	0.00316	mg/L	0.000325	10.29%
QC value within limits for Ti 334.940 Recovery = Not calculated								
Tl 190.801†	-8.5	-0.00843	mg/L	0.008240	-0.00843	mg/L	0.008240	97.72%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 290.880†	1465.2	0.00963	mg/L	0.001280	0.00963	mg/L	0.001280	13.29%
QC value greater than the upper limit for V 290.880 Recovery = Not calculated								
Zn 206.200†	11.6	-0.00437	mg/L	0.000231	-0.00437	mg/L	0.000231	5.29%
QC value within limits for Zn 206.200 Recovery = Not calculated								
K 766.490†	-19.4	0.0166	mg/L	0.08473	0.0166	mg/L	0.08473	511.02%
QC value within limits for K 766.490 Recovery = Not calculated								
Na 589.592†	80.1	0.0304	mg/L	0.01007	0.0304	mg/L	0.01007	33.15%
QC value within limits for Na 589.592 Recovery = Not calculated								
Sr 407.771†	34.6	-0.00029	mg/L	0.000097	-0.00029	mg/L	0.000097	33.26%
QC value within limits for Sr 407.771 Recovery = Not calculated								
Li 670.784†	-96.1	-0.00521	mg/L	0.001486	-0.00521	mg/L	0.001486	28.51%
QC value within limits for Li 670.784 Recovery = Not calculated								
P 214.914†	-2.4	-0.00160	mg/L	0.007830	-0.00160	mg/L	0.007830	490.69%
QC value within limits for P 214.914 Recovery = Not calculated								

QC Failed. Continue with analysis.

Approved: May 28, 2015

Lynn H. Rhoden

Sequence No.: 74 **Autosampler Location: 153**
Sample ID: L1505153201 **Date Collected: 5/27/2015 6:23:21 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505153201

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505153201

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3023975.8						50927.65	1.68%
YRADIAL	199363.8						771.53	0.39%
Ga 417.206	1268036.1						22867.41	1.80%
GaRADIAL	47083.1						531.73	1.13%
Ag 328.068†	2538.7	0.00893	mg/L	0.000518	0.00893	mg/L	0.000518	5.80%
Al 396.153†	98.9	0.0122	mg/L	0.07372	0.0122	mg/L	0.07372	601.93%
As 188.979†	-27.2	-0.00886	mg/L	0.008225	-0.00886	mg/L	0.008225	92.83%
Ba 233.527†	531.6	0.00895	mg/L	0.000142	0.00895	mg/L	0.000142	1.59%
Be 234.861†	-90.5	0.00008	mg/L	0.000118	0.00008	mg/L	0.000118	143.24%
B 249.677†	39333.5	0.558	mg/L	0.0075	0.558	mg/L	0.0075	1.34%
Ca 227.546†	15590.8	196	mg/L	4.6	196	mg/L	4.6	2.35%
Cd 228.802†	17.0	0.00132	mg/L	0.000794	0.00132	mg/L	0.000794	60.02%
Co 228.616†	-2.4	-0.00075	mg/L	0.000639	-0.00075	mg/L	0.000639	85.04%
Cr 267.716†	929.8	0.00636	mg/L	0.000095	0.00636	mg/L	0.000095	1.50%
Cu 327.393†	-1720.7	-0.00590	mg/L	0.001260	-0.00590	mg/L	0.001260	21.37%
Fe 239.562†	133.1	0.0251	mg/L	0.01563	0.0251	mg/L	0.01563	62.24%
Mg 279.077†	266183.0	98.6	mg/L	0.38	98.6	mg/L	0.38	0.39%
Mn 257.610†	421.6	0.00024	mg/L	0.000012	0.00024	mg/L	0.000012	5.19%
Mo 202.031†	124.6	0.0119	mg/L	0.00050	0.0119	mg/L	0.00050	4.23%
Ni 231.604†	4.7	-0.00057	mg/L	0.000324	-0.00057	mg/L	0.000324	56.45%
Pb 220.353†	34.1	0.00721	mg/L	0.000799	0.00721	mg/L	0.000799	11.09%
Sb 206.836†	-5.2	-0.00009	mg/L	0.013154	-0.00009	mg/L	0.013154	>999.9%
Se 196.026†	9.7	0.0193	mg/L	0.00203	0.0193	mg/L	0.00203	10.52%
Si 251.611†	26355.6	1.16	mg/L	0.266	1.16	mg/L	0.266	22.87%
Sn 189.927†	256.9	0.0419	mg/L	0.00265	0.0419	mg/L	0.00265	6.32%
Ti 334.940†	-12230.3	0.00112	mg/L	0.000079	0.00112	mg/L	0.000079	7.06%
Tl 190.801†	-40.1	-0.0348	mg/L	0.01227	-0.0348	mg/L	0.01227	35.23%
V 290.880†	2104.0	0.0104	mg/L	0.00111	0.0104	mg/L	0.00111	10.59%
Zn 206.200†	-132.4	-0.00934	mg/L	0.000267	-0.00934	mg/L	0.000267	2.85%
K 766.490†	2989.5	1.64	mg/L	0.024	1.64	mg/L	0.024	1.45%
Na 589.592†	1898923.6	273	mg/L	3.5	273	mg/L	3.5	1.27%
Sr 407.771†	2501781.0	3.10	mg/L	0.016	3.10	mg/L	0.016	0.50%
Li 670.784†	1584.0	0.0388	mg/L	0.00148	0.0388	mg/L	0.00148	3.80%
P 214.914†	0.1	0.00235	mg/L	0.010090	0.00235	mg/L	0.010090	428.74%

Sequence No.: 75 **Autosampler Location: 154**
Sample ID: L1505153301 **Date Collected: 5/27/2015 6:25:47 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505153301

Analyte	Back Pressure	Flow
All	230.0 kPa	0.40 L/min

Mean Data: L1505153301

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3160797.5						10718.09	0.34%
YRADIAL	202616.8						1179.41	0.58%
Ga 417.206	1332228.8						4391.97	0.33%
GaRADIAL	47669.8						130.68	0.27%
Ag 328.068†	923.0	0.00477	mg/L	0.000527	0.00477	mg/L	0.000527	11.05%

Approved: May 28, 2015

Kym H. Rhoden

Al 396.153†	271.6	0.0730	mg/L	0.04487	0.0730	mg/L	0.04487	61.43%
As 188.979†	-17.7	-0.00603	mg/L	0.001894	-0.00603	mg/L	0.001894	31.44%
Ba 233.527†	1762.8	0.0302	mg/L	0.00015	0.0302	mg/L	0.00015	0.49%
Be 234.861†	-67.3	0.00011	mg/L	0.000027	0.00011	mg/L	0.000027	25.41%
B 249.677†	19013.5	0.273	mg/L	0.0108	0.273	mg/L	0.0108	3.96%
Ca 227.546†	4471.3	56.2	mg/L	0.15	56.2	mg/L	0.15	0.26%
Cd 228.802†	14.9	0.00117	mg/L	0.000672	0.00117	mg/L	0.000672	57.51%
Co 228.616†	-2.1	-0.00078	mg/L	0.000468	-0.00078	mg/L	0.000468	60.35%
Cr 267.716†	593.4	0.00388	mg/L	0.000272	0.00388	mg/L	0.000272	7.00%
Cu 327.393†	-781.3	-0.00152	mg/L	0.001725	-0.00152	mg/L	0.001725	113.27%
Fe 239.562†	514.6	0.0921	mg/L	0.01300	0.0921	mg/L	0.01300	14.12%
Mg 279.077†	78274.4	29.0	mg/L	0.57	29.0	mg/L	0.57	1.96%
Mn 257.610†	3768.9	0.00548	mg/L	0.000028	0.00548	mg/L	0.000028	0.51%
Mo 202.031†	71.6	0.00689	mg/L	0.000605	0.00689	mg/L	0.000605	8.77%
Ni 231.604†	34.5	0.00035	mg/L	0.000368	0.00035	mg/L	0.000368	104.48%
Pb 220.353†	19.9	0.00402	mg/L	0.005425	0.00402	mg/L	0.005425	134.86%
Sb 206.836†	0.9	0.00521	mg/L	0.003771	0.00521	mg/L	0.003771	72.42%
Se 196.026†	0.9	0.00558	mg/L	0.021476	0.00558	mg/L	0.021476	385.07%
Si 251.611†	125818.9	6.13	mg/L	0.269	6.13	mg/L	0.269	4.39%
Sn 189.927†	155.4	0.0248	mg/L	0.00337	0.0248	mg/L	0.00337	13.61%
Ti 334.940†	-1577.8	0.00362	mg/L	0.000797	0.00362	mg/L	0.000797	22.01%
Tl 190.801†	-18.7	-0.0170	mg/L	0.00524	-0.0170	mg/L	0.00524	30.88%
V 290.880†	2475.7	0.0142	mg/L	0.00164	0.0142	mg/L	0.00164	11.49%
Zn 206.200†	-95.4	-0.00807	mg/L	0.000185	-0.00807	mg/L	0.000185	2.30%
K 766.490†	1567.9	0.796	mg/L	0.0711	0.796	mg/L	0.0711	8.93%
Na 589.592†	1600414.5	223	mg/L	5.3	223	mg/L	5.3	2.39%
Sr 407.771†	312204.9	0.385	mg/L	0.0054	0.385	mg/L	0.0054	1.39%
Li 670.784†	792.4	0.0181	mg/L	0.00327	0.0181	mg/L	0.00327	18.06%
P 214.914†	6.2	0.0119	mg/L	0.00929	0.0119	mg/L	0.00929	78.37%

Sequence No.: 76
Sample ID: L1505153501
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 155
Date Collected: 5/27/2015 6:28:12 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505153501

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505153501

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3198346.4						9631.71	0.30%
YRADIAL	206133.1						1625.95	0.79%
Ga 417.206	1304362.2						7739.83	0.59%
GaRADIAL	48550.9						308.99	0.64%
Ag 328.068†	434.2	0.00339	mg/L	0.000953	0.00339	mg/L	0.000953	28.08%
Al 396.153†	-15.7	-0.0277	mg/L	0.02083	-0.0277	mg/L	0.02083	75.20%
As 188.979†	-23.7	-0.00988	mg/L	0.004841	-0.00988	mg/L	0.004841	49.00%
Ba 233.527†	10964.1	0.189	mg/L	0.0019	0.189	mg/L	0.0019	0.98%
Be 234.861†	-85.5	0.00005	mg/L	0.000022	0.00005	mg/L	0.000022	44.85%
B 249.677†	9714.1	0.142	mg/L	0.0064	0.142	mg/L	0.0064	4.48%
Ca 227.546†	3777.0	47.5	mg/L	0.68	47.5	mg/L	0.68	1.43%
Cd 228.802†	5.9	0.00064	mg/L	0.000433	0.00064	mg/L	0.000433	67.13%
Co 228.616†	-1.5	-0.00078	mg/L	0.000710	-0.00078	mg/L	0.000710	90.49%
Cr 267.716†	299.0	0.00171	mg/L	0.000168	0.00171	mg/L	0.000168	9.85%
Cu 327.393†	-684.0	-0.00106	mg/L	0.000961	-0.00106	mg/L	0.000961	90.55%
Fe 239.562†	1165.0	0.204	mg/L	0.0018	0.204	mg/L	0.0018	0.90%
Mg 279.077†	74096.7	27.4	mg/L	0.40	27.4	mg/L	0.40	1.46%
Mn 257.610†	33647.2	0.0523	mg/L	0.00062	0.0523	mg/L	0.00062	1.19%
Mo 202.031†	70.8	0.00682	mg/L	0.000974	0.00682	mg/L	0.000974	14.28%
Ni 231.604†	-4.8	-0.00088	mg/L	0.001049	-0.00088	mg/L	0.001049	119.28%
Pb 220.353†	22.1	0.00446	mg/L	0.001416	0.00446	mg/L	0.001416	31.76%
Sb 206.836†	1.2	0.00552	mg/L	0.003047	0.00552	mg/L	0.003047	55.20%
Se 196.026†	8.4	0.0173	mg/L	0.02111	0.0173	mg/L	0.02111	122.00%
Si 251.611†	-13571.7	-0.828	mg/L	0.2784	-0.828	mg/L	0.2784	33.63%
Sn 189.927†	59.5	0.00857	mg/L	0.001572	0.00857	mg/L	0.001572	18.35%
Ti 334.940†	-2690.9	0.00186	mg/L	0.000211	0.00186	mg/L	0.000211	11.33%

Approved: May 28, 2015

Tl 190.801†	-12.0	-0.0115	mg/L	0.00718	-0.0115	mg/L	0.00718	62.62%
V 290.880†	565.4	0.00419	mg/L	0.001527	0.00419	mg/L	0.001527	36.45%
Zn 206.200†	-102.0	-0.00830	mg/L	0.000098	-0.00830	mg/L	0.000098	1.19%
K 766.490†	903.7	0.180	mg/L	0.1067	0.180	mg/L	0.1067	59.43%
Na 589.592†	2647008.9	420	mg/L	8.2	420	mg/L	8.2	1.96%
Sr 407.771†	176342.2	0.217	mg/L	0.0031	0.217	mg/L	0.0031	1.42%
Li 670.784†	418.8	0.00828	mg/L	0.002063	0.00828	mg/L	0.002063	24.91%
P 214.914†	7.3	0.0136	mg/L	0.00630	0.0136	mg/L	0.00630	46.42%

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Sequence No.: 77 **Autosampler Location: 156**
Sample ID: L1505153801 **Date Collected: 5/27/2015 6:30:38 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505153801

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505153801

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3372933.6						28936.14	0.86%
YRADIAL	219636.6						3443.53	1.57%
Ga 417.206	1487130.5						14146.71	0.95%
GaRADIAL	52338.8						1052.06	2.01%
Ag 328.068†	660.4	0.00445	mg/L	0.000461	0.00445	mg/L	0.000461	10.36%
Al 396.153†	447.6	0.135	mg/L	0.0364	0.135	mg/L	0.0364	26.96%
As 188.979†	-22.9	-0.00880	mg/L	0.003669	-0.00880	mg/L	0.003669	41.71%
Ba 233.527†	8593.1	0.148	mg/L	0.0017	0.148	mg/L	0.0017	1.16%
Be 234.861†	85.2	0.00011	mg/L	0.000036	0.00011	mg/L	0.000036	32.96%
B 249.677†	5917.9	0.0925	mg/L	0.00325	0.0925	mg/L	0.00325	3.52%
Ca 227.546†	5025.7	63.2	mg/L	0.94	63.2	mg/L	0.94	1.49%
Cd 228.802†	2.7	0.00045	mg/L	0.000177	0.00045	mg/L	0.000177	38.87%
Co 228.616†	-1.6	-0.00081	mg/L	0.000718	-0.00081	mg/L	0.000718	88.85%
Cr 267.716†	338.7	0.00197	mg/L	0.000218	0.00197	mg/L	0.000218	11.08%
Cu 327.393†	-763.5	-0.00129	mg/L	0.001732	-0.00129	mg/L	0.001732	134.61%
Fe 239.562†	6962.1	1.20	mg/L	0.028	1.20	mg/L	0.028	2.35%
Mg 279.077†	97257.2	36.0	mg/L	0.49	36.0	mg/L	0.49	1.37%
Mn 257.610†	54257.8	0.0846	mg/L	0.00135	0.0846	mg/L	0.00135	1.59%
Mo 202.031†	63.0	0.00606	mg/L	0.000417	0.00606	mg/L	0.000417	6.89%
Ni 231.604†	5.0	-0.00057	mg/L	0.000253	-0.00057	mg/L	0.000253	44.24%
Pb 220.353†	26.7	0.00549	mg/L	0.001375	0.00549	mg/L	0.001375	25.07%
Sb 206.836†	-7.2	-0.00175	mg/L	0.004219	-0.00175	mg/L	0.004219	241.69%
Se 196.026†	-2.5	0.00012	mg/L	0.005850	0.00012	mg/L	0.005850	>999.9%
Si 251.611†	-133480.5	-6.81	mg/L	0.070	-6.81	mg/L	0.070	1.03%
Sn 189.927†	-16.1	-0.00421	mg/L	0.001792	-0.00421	mg/L	0.001792	42.60%
Ti 334.940†	-2266.8	0.00333	mg/L	0.000227	0.00333	mg/L	0.000227	6.82%
Tl 190.801†	-19.7	-0.0179	mg/L	0.00852	-0.0179	mg/L	0.00852	47.49%
V 290.880†	-1089.2	-0.00459	mg/L	0.001473	-0.00459	mg/L	0.001473	32.06%
Zn 206.200†	-152.2	-0.00996	mg/L	0.000187	-0.00996	mg/L	0.000187	1.88%
K 766.490†	1372.6	0.885	mg/L	0.0492	0.885	mg/L	0.0492	5.56%
Na 589.592†	83678.1	10.3	mg/L	0.10	10.3	mg/L	0.10	1.01%
Sr 407.771†	361085.8	0.446	mg/L	0.0024	0.446	mg/L	0.0024	0.53%
Li 670.784†	98.7	-0.00011	mg/L	0.000508	-0.00011	mg/L	0.000508	479.18%
P 214.914†	36.5	0.0593	mg/L	0.01263	0.0593	mg/L	0.01263	21.28%

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Sequence No.: 78 **Autosampler Location: 157**
Sample ID: L1505154301 **Date Collected: 5/27/2015 6:33:01 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505154301

Analyte	Back Pressure	Flow
All	230.0 kPa	0.40 L/min

Approved: May 28, 2015

Lynn H. Rhoden

Mean Data: L1505154301

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3209990.1						17212.25	0.54%
YRADIAL	215385.3						2633.80	1.22%
Ga 417.206	1346532.6						2824.35	0.21%
GaRADIAL	50530.1						459.01	0.91%
Ag 328.068†	72.3	0.00403	mg/L	0.000417	0.00403	mg/L	0.000417	10.34%
Al 396.153†	278.3	0.0759	mg/L	0.01478	0.0759	mg/L	0.01478	19.48%
As 188.979†	3.5	0.00797	mg/L	0.003309	0.00797	mg/L	0.003309	41.53%
Ba 233.527†	16318.2	0.282	mg/L	0.0017	0.282	mg/L	0.0017	0.62%
Be 234.861†	498.6	0.00016	mg/L	0.000209	0.00016	mg/L	0.000209	129.47%
B 249.677†	10436.6	0.167	mg/L	0.0051	0.167	mg/L	0.0051	3.06%
Ca 227.546†	4287.7	53.9	mg/L	0.62	53.9	mg/L	0.62	1.14%
Cd 228.802†	8.2	0.00070	mg/L	0.000049	0.00070	mg/L	0.000049	7.01%
Co 228.616†	-2.2	-0.00097	mg/L	0.000643	-0.00097	mg/L	0.000643	66.26%
Cr 267.716†	273.1	0.00141	mg/L	0.000089	0.00141	mg/L	0.000089	6.33%
Cu 327.393†	-756.0	-0.00084	mg/L	0.000852	-0.00084	mg/L	0.000852	101.88%
Fe 239.562†	23781.3	4.09	mg/L	0.045	4.09	mg/L	0.045	1.09%
Mg 279.077†	84230.1	31.2	mg/L	0.39	31.2	mg/L	0.39	1.24%
Mn 257.610†	282495.7	0.442	mg/L	0.0041	0.442	mg/L	0.0041	0.92%
Mo 202.031†	58.8	0.00569	mg/L	0.000369	0.00569	mg/L	0.000369	6.48%
Ni 231.604†	-3.6	-0.00084	mg/L	0.000163	-0.00084	mg/L	0.000163	19.44%
Pb 220.353†	19.4	0.00351	mg/L	0.003859	0.00351	mg/L	0.003859	109.79%
Sb 206.836†	-8.8	-0.00299	mg/L	0.002680	-0.00299	mg/L	0.002680	89.54%
Se 196.026†	-3.3	-0.00162	mg/L	0.005222	-0.00162	mg/L	0.005222	322.89%
Si 251.611†	-71365.8	-3.71	mg/L	0.186	-3.71	mg/L	0.186	5.01%
Sn 189.927†	-22.1	-0.00522	mg/L	0.000909	-0.00522	mg/L	0.000909	17.40%
Ti 334.940†	-3239.2	0.00169	mg/L	0.000269	0.00169	mg/L	0.000269	15.96%
Tl 190.801†	-21.3	-0.0196	mg/L	0.00444	-0.0196	mg/L	0.00444	22.67%
V 290.880†	-792.0	-0.00235	mg/L	0.002370	-0.00235	mg/L	0.002370	100.83%
Zn 206.200†	-87.3	-0.00743	mg/L	0.000250	-0.00743	mg/L	0.000250	3.36%
K 766.490†	640.1	0.292	mg/L	0.0113	0.292	mg/L	0.0113	3.89%
Na 589.592†	1066888.1	141	mg/L	2.8	141	mg/L	2.8	1.99%
Sr 407.771†	300232.7	0.371	mg/L	0.0091	0.371	mg/L	0.0091	2.44%
Li 670.784†	217.0	0.00300	mg/L	0.002496	0.00300	mg/L	0.002496	83.33%
P 214.914†	57.0	0.0915	mg/L	0.01851	0.0915	mg/L	0.01851	20.23%

Sequence No.: 79
Sample ID: L1505154302
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 158
Date Collected: 5/27/2015 6:35:25 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505154302

Analyte	Back Pressure	Flow
All	230.0 kPa	0.40 L/min

Mean Data: L1505154302

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3250509.9						9820.83	0.30%
YRADIAL	213367.6						2994.81	1.40%
Ga 417.206	1359777.0						5153.14	0.38%
GaRADIAL	49841.0						471.48	0.95%
Ag 328.068†	-114.3	0.00349	mg/L	0.000524	0.00349	mg/L	0.000524	15.01%
Al 396.153†	333.7	0.0953	mg/L	0.02345	0.0953	mg/L	0.02345	24.62%
As 188.979†	-4.7	0.00288	mg/L	0.007155	0.00288	mg/L	0.007155	248.37%
Ba 233.527†	16253.9	0.281	mg/L	0.0007	0.281	mg/L	0.0007	0.25%
Be 234.861†	518.8	0.00019	mg/L	0.000741	0.00019	mg/L	0.000741	381.55%
B 249.677†	9345.8	0.152	mg/L	0.0030	0.152	mg/L	0.0030	1.95%
Ca 227.546†	4283.2	53.9	mg/L	0.10	53.9	mg/L	0.10	0.19%
Cd 228.802†	4.2	0.00049	mg/L	0.000012	0.00049	mg/L	0.000012	2.39%
Co 228.616†	3.5	-0.00057	mg/L	0.000444	-0.00057	mg/L	0.000444	78.16%
Cr 267.716†	253.3	0.00126	mg/L	0.000177	0.00126	mg/L	0.000177	14.05%
Cu 327.393†	-1139.3	-0.00261	mg/L	0.000932	-0.00261	mg/L	0.000932	35.75%
Fe 239.562†	23897.2	4.11	mg/L	0.040	4.11	mg/L	0.040	0.97%
Mg 279.077†	84782.2	31.4	mg/L	0.19	31.4	mg/L	0.19	0.60%

Approved: May 28, 2015

Kym H. Rhoden

Mn 257.610†	287654.5	0.450	mg/L	0.0021	0.450	mg/L	0.0021	0.47%
Mo 202.031†	76.1	0.00734	mg/L	0.000839	0.00734	mg/L	0.000839	11.43%
Ni 231.604†	18.1	-0.00016	mg/L	0.000306	-0.00016	mg/L	0.000306	189.69%
Pb 220.353†	25.1	0.00480	mg/L	0.002150	0.00480	mg/L	0.002150	44.75%
Sb 206.836†	-4.2	0.00094	mg/L	0.008151	0.00094	mg/L	0.008151	868.48%
Se 196.026†	-4.2	-0.00298	mg/L	0.002136	-0.00298	mg/L	0.002136	71.62%
Si 251.611†	-63798.1	-3.33	mg/L	0.309	-3.33	mg/L	0.309	9.25%
Sn 189.927†	-28.1	-0.00625	mg/L	0.002394	-0.00625	mg/L	0.002394	38.33%
Ti 334.940†	-2902.8	0.00205	mg/L	0.000630	0.00205	mg/L	0.000630	30.80%
Tl 190.801†	-16.9	-0.0160	mg/L	0.00754	-0.0160	mg/L	0.00754	47.26%
V 290.880†	-756.5	-0.00216	mg/L	0.001530	-0.00216	mg/L	0.001530	70.73%
Zn 206.200†	-102.1	-0.00795	mg/L	0.000114	-0.00795	mg/L	0.000114	1.44%
K 766.490†	746.1	0.357	mg/L	0.0165	0.357	mg/L	0.0165	4.61%
Na 589.592†	1079419.7	143	mg/L	3.7	143	mg/L	3.7	2.56%
Sr 407.771†	303902.9	0.375	mg/L	0.0087	0.375	mg/L	0.0087	2.32%
Li 670.784†	337.8	0.00616	mg/L	0.000946	0.00616	mg/L	0.000946	15.37%
P 214.914†	58.4	0.0938	mg/L	0.02716	0.0938	mg/L	0.02716	28.95%

Sequence No.: 80 **Autosampler Location: 159**
Sample ID: L1505154401 **Date Collected: 5/27/2015 6:37:49 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505154401

Analyte	Back Pressure	Flow
All	230.0 kPa	0.40 L/min

Mean Data: L1505154401

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3243732.2						39958.92	1.23%
YRADIAL	210646.7						1007.03	0.48%
Ga 417.206	1323402.9						21220.91	1.60%
GaRADIAL	49631.2						139.45	0.28%
Ag 328.068†	758.9	0.00430	mg/L	0.000071	0.00430	mg/L	0.000071	1.65%
Al 396.153†	327.7	0.0927	mg/L	0.04518	0.0927	mg/L	0.04518	48.72%
As 188.979†	-14.9	-0.00437	mg/L	0.002152	-0.00437	mg/L	0.002152	49.19%
Ba 233.527†	990.1	0.0169	mg/L	0.00034	0.0169	mg/L	0.00034	2.03%
Be 234.861†	-86.8	0.00007	mg/L	0.000071	0.00007	mg/L	0.000071	95.41%
B 249.677†	5054.3	0.0761	mg/L	0.00326	0.0761	mg/L	0.00326	4.28%
Ca 227.546†	4274.8	53.8	mg/L	0.83	53.8	mg/L	0.83	1.54%
Cd 228.802†	4.5	0.00054	mg/L	0.000504	0.00054	mg/L	0.000504	93.84%
Co 228.616†	-7.6	-0.00116	mg/L	0.000544	-0.00116	mg/L	0.000544	46.96%
Cr 267.716†	441.4	0.00276	mg/L	0.000095	0.00276	mg/L	0.000095	3.45%
Cu 327.393†	-854.3	-0.00186	mg/L	0.001198	-0.00186	mg/L	0.001198	64.31%
Fe 239.562†	425.2	0.0770	mg/L	0.00017	0.0770	mg/L	0.00017	0.22%
Mg 279.077†	42694.4	15.8	mg/L	0.23	15.8	mg/L	0.23	1.47%
Mn 257.610†	1855.2	0.00248	mg/L	0.000039	0.00248	mg/L	0.000039	1.55%
Mo 202.031†	58.4	0.00564	mg/L	0.001391	0.00564	mg/L	0.001391	24.67%
Ni 231.604†	0.7	-0.00071	mg/L	0.000489	-0.00071	mg/L	0.000489	69.23%
Pb 220.353†	19.9	0.00404	mg/L	0.003400	0.00404	mg/L	0.003400	84.12%
Sb 206.836†	0.2	0.00459	mg/L	0.007379	0.00459	mg/L	0.007379	160.92%
Se 196.026†	-3.7	-0.00169	mg/L	0.014118	-0.00169	mg/L	0.014118	835.80%
Si 251.611†	-98619.7	-5.07	mg/L	0.196	-5.07	mg/L	0.196	3.86%
Sn 189.927†	-40.6	-0.00834	mg/L	0.002323	-0.00834	mg/L	0.002323	27.83%
Ti 334.940†	-699.7	0.00441	mg/L	0.001101	0.00441	mg/L	0.001101	24.97%
Tl 190.801†	-12.9	-0.0121	mg/L	0.00701	-0.0121	mg/L	0.00701	57.91%
V 290.880†	1084.8	0.00722	mg/L	0.000556	0.00722	mg/L	0.000556	7.70%
Zn 206.200†	-107.8	-0.00851	mg/L	0.000369	-0.00851	mg/L	0.000369	4.34%
K 766.490†	916.4	0.317	mg/L	0.0363	0.317	mg/L	0.0363	11.46%
Na 589.592†	2000182.0	290	mg/L	2.8	290	mg/L	2.8	0.96%
Sr 407.771†	166077.7	0.204	mg/L	0.0017	0.204	mg/L	0.0017	0.85%
Li 670.784†	330.9	0.00598	mg/L	0.004397	0.00598	mg/L	0.004397	73.53%
P 214.914†	13.0	0.0226	mg/L	0.00454	0.0226	mg/L	0.00454	20.12%

Sequence No.: 81 **Autosampler Location: 160**
Sample ID: L1505154402 **Date Collected: 5/27/2015 6:40:14 PM**

Approved: May 28, 2015

Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505154402

Analyte	Back Pressure	Flow
All	230.0 kPa	0.40 L/min

Mean Data: L1505154402

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3222166.0						85779.90	2.66%
YRADIAL	215327.2						2552.36	1.19%
Ga 417.206	1311054.7						31519.31	2.40%
GaRADIAL	50597.3						487.46	0.96%
Ag 328.068†	574.8	0.00376	mg/L	0.001685	0.00376	mg/L	0.001685	44.78%
Al 396.153†	282.1	0.0767	mg/L	0.01677	0.0767	mg/L	0.01677	21.85%
As 188.979†	-22.1	-0.00878	mg/L	0.000836	-0.00878	mg/L	0.000836	9.52%
Ba 233.527†	1009.7	0.0172	mg/L	0.00050	0.0172	mg/L	0.00050	2.91%
Be 234.861†	-140.3	-0.00002	mg/L	0.000065	-0.00002	mg/L	0.000065	281.53%
B 249.677†	4769.9	0.0721	mg/L	0.00168	0.0721	mg/L	0.00168	2.33%
Ca 227.546†	4314.1	54.3	mg/L	0.93	54.3	mg/L	0.93	1.72%
Cd 228.802†	2.1	0.00041	mg/L	0.000287	0.00041	mg/L	0.000287	69.69%
Co 228.616†	-9.3	-0.00127	mg/L	0.000427	-0.00127	mg/L	0.000427	33.53%
Cr 267.716†	411.6	0.00254	mg/L	0.000254	0.00254	mg/L	0.000254	10.00%
Cu 327.393†	-848.6	-0.00184	mg/L	0.000338	-0.00184	mg/L	0.000338	18.42%
Fe 239.562†	433.0	0.0783	mg/L	0.00258	0.0783	mg/L	0.00258	3.30%
Mg 279.077†	42646.1	15.8	mg/L	0.15	15.8	mg/L	0.15	0.96%
Mn 257.610†	1837.8	0.00246	mg/L	0.000042	0.00246	mg/L	0.000042	1.70%
Mo 202.031†	70.6	0.00679	mg/L	0.001172	0.00679	mg/L	0.001172	17.25%
Ni 231.604†	-5.3	-0.00089	mg/L	0.000791	-0.00089	mg/L	0.000791	88.56%
Pb 220.353†	21.4	0.00436	mg/L	0.003154	0.00436	mg/L	0.003154	72.29%
Sb 206.836†	2.7	0.00681	mg/L	0.006702	0.00681	mg/L	0.006702	98.45%
Se 196.026†	-3.2	-0.00089	mg/L	0.006820	-0.00089	mg/L	0.006820	764.72%
Si 251.611†	-99787.5	-5.13	mg/L	0.279	-5.13	mg/L	0.279	5.44%
Sn 189.927†	-46.0	-0.00927	mg/L	0.002421	-0.00927	mg/L	0.002421	26.12%
Ti 334.940†	-1307.5	0.00379	mg/L	0.000587	0.00379	mg/L	0.000587	15.51%
Tl 190.801†	-17.5	-0.0160	mg/L	0.00697	-0.0160	mg/L	0.00697	43.62%
V 290.880†	1191.0	0.00778	mg/L	0.002137	0.00778	mg/L	0.002137	27.46%
Zn 206.200†	44.2	-0.00321	mg/L	0.000199	-0.00321	mg/L	0.000199	6.19%
K 766.490†	918.7	0.317	mg/L	0.0231	0.317	mg/L	0.0231	7.28%
Na 589.592†	2006602.7	292	mg/L	2.5	292	mg/L	2.5	0.87%
Sr 407.771†	165244.5	0.203	mg/L	0.0010	0.203	mg/L	0.0010	0.51%
Li 670.784†	439.3	0.00882	mg/L	0.002428	0.00882	mg/L	0.002428	27.53%
P 214.914†	21.8	0.0363	mg/L	0.00681	0.0363	mg/L	0.00681	18.77%

Sequence No.: 82 **Autosampler Location: 7**
Sample ID: CCV **Date Collected: 5/27/2015 6:42:39 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3245988.3						67018.62	2.06%
YRADIAL	213641.9						2885.23	1.35%
Ga 417.206	1369085.1						35249.38	2.57%
GaRADIAL	49886.6						230.67	0.46%
Ag 328.068†	129442.1	0.385	mg/L	0.0060	0.385	mg/L	0.0060	1.55%
QC value within limits for Ag 328.068 Recovery = 96.25%								
Al 396.153†	28256.0	9.85	mg/L	0.096	9.85	mg/L	0.096	0.97%
QC value within limits for Al 396.153 Recovery = 98.52%								

Approved: May 28, 2015

Lynn H. Rhoden

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As 188.979†              581.3       0.357 mg/L        0.0119       0.357 mg/L        0.0119   3.34%
   QC value less than the lower limit for As 188.979  Recovery = 89.20%
Ba 233.527†            54593.4       0.944 mg/L        0.0108       0.944 mg/L        0.0108   1.14%
   QC value within limits for Ba 233.527  Recovery = 94.38%
Be 234.861†            25438.9      0.0458 mg/L       0.00056      0.0458 mg/L       0.00056   1.21%
   QC value within limits for Be 234.861  Recovery = 91.68%
B 249.677†             27132.5       0.400 mg/L        0.0120       0.400 mg/L        0.0120   3.01%
   QC value less than the lower limit for B 249.677  Recovery = 79.92%
Ca 227.546†              721.4        9.19 mg/L         0.269        9.19 mg/L         0.269   2.93%
   QC value within limits for Ca 227.546  Recovery = 91.86%
Cd 228.802†              766.1      0.0452 mg/L       0.00143      0.0452 mg/L       0.00143   3.16%
   QC value within limits for Cd 228.802  Recovery = 90.36%
Co 228.616†             2704.9       0.189 mg/L        0.0047       0.189 mg/L        0.0047   2.47%
   QC value within limits for Co 228.616  Recovery = 94.40%
Cr 267.716†            65429.3       0.481 mg/L        0.0052       0.481 mg/L        0.0052   1.09%
   QC value within limits for Cr 267.716  Recovery = 96.27%
Cu 327.393†           102309.5       0.478 mg/L        0.0079       0.478 mg/L        0.0079   1.65%
   QC value within limits for Cu 327.393  Recovery = 95.52%
Fe 239.562†            23043.0        3.96 mg/L         0.040        3.96 mg/L         0.040   1.01%
   QC value within limits for Fe 239.562  Recovery = 99.10%
Mg 279.077†            26855.1        9.93 mg/L         0.074        9.93 mg/L         0.074   0.75%
   QC value within limits for Mg 279.077  Recovery = 99.33%
Mn 257.610†           308356.9       0.483 mg/L        0.0057       0.483 mg/L        0.0057   1.17%
   QC value within limits for Mn 257.610  Recovery = 96.59%
Mo 202.031†             9426.0       0.898 mg/L        0.0177       0.898 mg/L        0.0177   1.98%
   QC value less than the lower limit for Mo 202.031  Recovery = 89.77%
Ni 231.604†            15138.0       0.473 mg/L        0.0103       0.473 mg/L        0.0103   2.19%
   QC value within limits for Ni 231.604  Recovery = 94.63%
Pb 220.353†             2078.1       0.466 mg/L        0.0108       0.466 mg/L        0.0108   2.31%
   QC value within limits for Pb 220.353  Recovery = 93.26%
Sb 206.836†             1224.5        1.06 mg/L         0.029        1.06 mg/L         0.029   2.71%
   QC value less than the lower limit for Sb 206.836  Recovery = 88.20%
Se 196.026†              241.4       0.384 mg/L        0.0179       0.384 mg/L        0.0179   4.68%
   QC value within limits for Se 196.026  Recovery = 95.92%
Si 251.611†          -102927.2       -5.30 mg/L         0.155       -5.30 mg/L         0.155   2.93%
   QC value less than the lower limit for Si 251.611  Recovery = -105.94%
Sn 189.927†             5420.0       0.915 mg/L        0.0210       0.915 mg/L        0.0210   2.30%
   QC value within limits for Sn 189.927  Recovery = 91.49%
Ti 334.940†           893431.2       0.964 mg/L        0.0113       0.964 mg/L        0.0113   1.18%
   QC value within limits for Ti 334.940  Recovery = 96.44%
Tl 190.801†              564.5       0.477 mg/L        0.0108       0.477 mg/L        0.0108   2.27%
   QC value within limits for Tl 190.801  Recovery = 95.38%
V 290.880†            180974.0       0.959 mg/L        0.0135       0.959 mg/L        0.0135   1.41%
   QC value within limits for V 290.880  Recovery = 95.94%
Zn 206.200†            26501.7       0.924 mg/L        0.0187       0.924 mg/L        0.0187   2.02%
   QC value within limits for Zn 206.200  Recovery = 92.40%
K 766.490†             75382.2        48.0 mg/L          0.31        48.0 mg/L          0.31   0.65%
   QC value within limits for K 766.490  Recovery = 96.02%
Na 589.592†           392286.6        49.3 mg/L          0.62        49.3 mg/L          0.62   1.26%
   QC value within limits for Na 589.592  Recovery = 98.50%
Sr 407.771†           791341.4       0.981 mg/L        0.0280       0.981 mg/L        0.0280   2.86%
   QC value within limits for Sr 407.771  Recovery = 98.15%
Li 670.784†            38310.8        1.00 mg/L         0.005        1.00 mg/L         0.005   0.52%
   QC value within limits for Li 670.784  Recovery = 100.13%
P 214.914†              5821.4        9.13 mg/L         0.183        9.13 mg/L         0.183   2.00%
   QC value within limits for P 214.914  Recovery = 91.30%
QC Failed.  Continue with analysis.

==========================================================================================
Sequence No.: 83                                    Autosampler Location: 8
Sample ID: CCB                                      Date Collected: 5/27/2015 6:45:07 PM
Analyst:                                            Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

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Nebulizer Parameters: CCB
Analyte                 Back Pressure    Flow
All                     230.0 kPa        0.40 L/min

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Mean Data: CCB
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Approved: May 28, 2015

Lynn H. Rhoden

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3461158.8						17915.87	0.52%
YRADIAL	227625.6						2882.32	1.27%
Ga 417.206	1596844.1						5697.62	0.36%
GaRADIAL	55103.2						580.83	1.05%
Ag 328.068†	-246.0	0.00135	mg/L	0.000498	0.00135	mg/L	0.000498	36.93%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	-3.6	-0.0233	mg/L	0.00380	-0.0233	mg/L	0.00380	16.35%
QC value within limits for Al 396.153 Recovery = Not calculated								
As 188.979†	-7.2	-0.00079	mg/L	0.002203	-0.00079	mg/L	0.002203	277.75%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	-5.6	-0.00034	mg/L	0.000113	-0.00034	mg/L	0.000113	33.14%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 234.861†	-31.4	0.00019	mg/L	0.000058	0.00019	mg/L	0.000058	30.39%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	589.6	0.0130	mg/L	0.00284	0.0130	mg/L	0.00284	21.94%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	-6.5	-0.0261	mg/L	0.09448	-0.0261	mg/L	0.09448	361.34%
QC value within limits for Ca 227.546 Recovery = Not calculated								
Cd 228.802†	-3.1	0.00005	mg/L	0.000259	0.00005	mg/L	0.000259	484.88%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	-11.9	-0.00147	mg/L	0.000752	-0.00147	mg/L	0.000752	51.36%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	-11.7	-0.00057	mg/L	0.000510	-0.00057	mg/L	0.000510	88.95%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	-152.5	0.00137	mg/L	0.001226	0.00137	mg/L	0.001226	89.16%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	0.4	0.00426	mg/L	0.000940	0.00426	mg/L	0.000940	22.05%
QC value within limits for Fe 239.562 Recovery = Not calculated								
Mg 279.077†	15.3	-0.00889	mg/L	0.003815	-0.00889	mg/L	0.003815	42.93%
QC value within limits for Mg 279.077 Recovery = Not calculated								
Mn 257.610†	22.4	-0.00039	mg/L	0.000024	-0.00039	mg/L	0.000024	6.07%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	5.0	0.00055	mg/L	0.000864	0.00055	mg/L	0.000864	158.16%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	-0.8	-0.00076	mg/L	0.000216	-0.00076	mg/L	0.000216	28.51%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	-1.4	-0.00075	mg/L	0.000299	-0.00075	mg/L	0.000299	39.98%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	1.6	0.00585	mg/L	0.002422	0.00585	mg/L	0.002422	41.43%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	6.6	0.0145	mg/L	0.00584	0.0145	mg/L	0.00584	40.35%
QC value within limits for Se 196.026 Recovery = Not calculated								
Si 251.611†	-15599.9	-0.929	mg/L	0.1229	-0.929	mg/L	0.1229	13.22%
QC value less than the lower limit for Si 251.611 Recovery = Not calculated								
Sn 189.927†	-14.7	-0.00397	mg/L	0.001706	-0.00397	mg/L	0.001706	42.91%
QC value within limits for Sn 189.927 Recovery = Not calculated								
Ti 334.940†	316.9	0.00205	mg/L	0.000150	0.00205	mg/L	0.000150	7.31%
QC value within limits for Ti 334.940 Recovery = Not calculated								
Tl 190.801†	1.1	-0.00049	mg/L	0.003804	-0.00049	mg/L	0.003804	769.20%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 290.880†	-143.6	0.00112	mg/L	0.000383	0.00112	mg/L	0.000383	34.25%
QC value within limits for V 290.880 Recovery = Not calculated								
Zn 206.200†	-19.9	-0.00548	mg/L	0.000288	-0.00548	mg/L	0.000288	5.26%
QC value within limits for Zn 206.200 Recovery = Not calculated								
K 766.490†	52.9	0.0621	mg/L	0.03083	0.0621	mg/L	0.03083	49.64%
QC value within limits for K 766.490 Recovery = Not calculated								
Na 589.592†	822.8	0.121	mg/L	0.0220	0.121	mg/L	0.0220	18.17%
QC value within limits for Na 589.592 Recovery = Not calculated								
Sr 407.771†	211.6	-0.00007	mg/L	0.000089	-0.00007	mg/L	0.000089	123.62%
QC value within limits for Sr 407.771 Recovery = Not calculated								
Li 670.784†	-29.4	-0.00346	mg/L	0.003371	-0.00346	mg/L	0.003371	97.36%
QC value within limits for Li 670.784 Recovery = Not calculated								
P 214.914†	-5.1	-0.00588	mg/L	0.007095	-0.00588	mg/L	0.007095	120.74%
QC value within limits for P 214.914 Recovery = Not calculated								

QC Failed. Continue with analysis.

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Sequence No.: 84 **Autosampler Location: 164**
Sample ID: L1505157002 **Date Collected: 5/27/2015 6:48:30 PM**
Analyst: KHR **Data Type: Original**

Approved: May 28, 2015

Initial Sample Wt: Initial Sample Vol:
Dilution: Sample Prep Vol:

Nebulizer Parameters: L1505157002

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505157002

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3378915.2						25784.53	0.76%
YRADIAL	225110.1						3043.75	1.35%
Ga 417.206	1476996.5						3793.86	0.26%
GaRADIAL	54011.1						765.65	1.42%
Ag 328.068†	-1357.5	0.00417	mg/L	0.000682	0.00417	mg/L	0.000682	16.38%
Al 396.153†	8598.2	3.00	mg/L	0.016	3.00	mg/L	0.016	0.53%
As 188.979†	-4.4	0.00635	mg/L	0.007361	0.00635	mg/L	0.007361	116.00%
Ba 233.527†	13474.7	0.232	mg/L	0.0023	0.232	mg/L	0.0023	0.98%
Be 234.861†	1922.4	0.00063	mg/L	0.000071	0.00063	mg/L	0.000071	11.32%
B 249.677†	-3819.1	0.0106	mg/L	0.00070	0.0106	mg/L	0.00070	6.60%
Ca 227.546†	6099.7	76.7	mg/L	0.22	76.7	mg/L	0.22	0.29%
Cd 228.802†	10.3	0.00087	mg/L	0.000464	0.00087	mg/L	0.000464	53.48%
Co 228.616†	83.0	0.00464	mg/L	0.000148	0.00464	mg/L	0.000148	3.18%
Cr 267.716†	1222.0	0.00808	mg/L	0.000180	0.00808	mg/L	0.000180	2.23%
Cu 327.393†	591.0	0.00713	mg/L	0.001693	0.00713	mg/L	0.001693	23.75%
Fe 239.562†	91527.8	15.7	mg/L	0.15	15.7	mg/L	0.15	0.94%
Mg 279.077†	61673.1	22.8	mg/L	0.20	22.8	mg/L	0.20	0.87%
Mn 257.610†	5632130.6	8.83	mg/L	0.026	8.83	mg/L	0.026	0.30%
Mo 202.031†	67.6	0.00809	mg/L	0.001143	0.00809	mg/L	0.001143	14.13%
Ni 231.604†	275.6	0.00790	mg/L	0.000249	0.00790	mg/L	0.000249	3.16%
Pb 220.353†	67.2	0.00940	mg/L	0.004678	0.00940	mg/L	0.004678	49.77%
Sb 206.836†	-2.4	0.00287	mg/L	0.002521	0.00287	mg/L	0.002521	87.81%
Se 196.026†	-6.9	-0.0103	mg/L	0.00806	-0.0103	mg/L	0.00806	77.98%
Si 251.611†	37180.4	1.70	mg/L	0.368	1.70	mg/L	0.368	21.58%
Sn 189.927†	-55.6	-0.0109	mg/L	0.00174	-0.0109	mg/L	0.00174	15.94%
Ti 334.940†	38981.7	0.0486	mg/L	0.00019	0.0486	mg/L	0.00019	0.40%
Tl 190.801†	-28.7	-0.0338	mg/L	0.00439	-0.0338	mg/L	0.00439	13.00%
V 290.880†	465.0	0.00675	mg/L	0.001588	0.00675	mg/L	0.001588	23.50%
Zn 206.200†	1022.8	0.0324	mg/L	0.00017	0.0324	mg/L	0.00017	0.53%
K 766.490†	1780.4	1.13	mg/L	0.051	1.13	mg/L	0.051	4.54%
Na 589.592†	164744.6	20.4	mg/L	0.12	20.4	mg/L	0.12	0.58%
Sr 407.771†	157543.0	0.193	mg/L	0.0006	0.193	mg/L	0.0006	0.32%
Li 670.784†	273.8	0.00448	mg/L	0.002949	0.00448	mg/L	0.002949	65.78%
P 214.914†	224.0	0.353	mg/L	0.0058	0.353	mg/L	0.0058	1.65%

Sequence No.: 85 **Autosampler Location: 165**
Sample ID: L1505157003 **Date Collected: 5/27/2015 6:50:54 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505157003

Analyte	Back Pressure	Flow
All	230.0 kPa	0.40 L/min

Mean Data: L1505157003

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3306333.9						3231.23	0.10%
YRADIAL	222997.1						1439.47	0.65%
Ga 417.206	1425250.5						2026.00	0.14%
GaRADIAL	52487.7						364.91	0.70%
Ag 328.068†	-232.3	0.00444	mg/L	0.000640	0.00444	mg/L	0.000640	14.42%
Al 396.153†	140.4	0.0279	mg/L	0.03818	0.0279	mg/L	0.03818	136.65%
As 188.979†	-7.0	0.00300	mg/L	0.005374	0.00300	mg/L	0.005374	179.15%
Ba 233.527†	11397.8	0.197	mg/L	0.0009	0.197	mg/L	0.0009	0.45%
Be 234.861†	752.6	0.00004	mg/L	0.000026	0.00004	mg/L	0.000026	60.96%

Approved: May 28, 2015
Kym H. Rhoden

B 249.677†	-2578.1	-0.00119	mg/L	0.000711	-0.00119	mg/L	0.000711	59.70%
Ca 227.546†	6283.3	79.0	mg/L	0.12	79.0	mg/L	0.12	0.15%
Cd 228.802†	5.7	0.00059	mg/L	0.000269	0.00059	mg/L	0.000269	45.57%
Co 228.616†	28.9	0.00115	mg/L	0.000592	0.00115	mg/L	0.000592	51.28%
Cr 267.716†	406.7	0.00228	mg/L	0.000301	0.00228	mg/L	0.000301	13.20%
Cu 327.393†	-546.1	0.00070	mg/L	0.000445	0.00070	mg/L	0.000445	63.84%
Fe 239.562†	46650.1	8.02	mg/L	0.117	8.02	mg/L	0.117	1.46%
Mg 279.077†	60305.0	22.3	mg/L	0.31	22.3	mg/L	0.31	1.37%
Mn 257.610†	2951246.8	4.63	mg/L	0.051	4.63	mg/L	0.051	1.11%
Mo 202.031†	72.4	0.00779	mg/L	0.000535	0.00779	mg/L	0.000535	6.86%
Ni 231.604†	26.0	0.00009	mg/L	0.000338	0.00009	mg/L	0.000338	389.63%
Pb 220.353†	34.5	0.00425	mg/L	0.003251	0.00425	mg/L	0.003251	76.47%
Sb 206.836†	0.1	0.00484	mg/L	0.005514	0.00484	mg/L	0.005514	113.85%
Se 196.026†	2.7	0.00618	mg/L	0.008110	0.00618	mg/L	0.008110	131.31%
Si 251.611†	-93041.2	-4.79	mg/L	0.174	-4.79	mg/L	0.174	3.62%
Sn 189.927†	-55.6	-0.0109	mg/L	0.00032	-0.0109	mg/L	0.00032	2.97%
Ti 334.940†	-5693.2	0.00065	mg/L	0.000654	0.00065	mg/L	0.000654	100.16%
Tl 190.801†	-28.7	-0.0299	mg/L	0.00228	-0.0299	mg/L	0.00228	7.63%
V 290.880†	-974.0	-0.00232	mg/L	0.001547	-0.00232	mg/L	0.001547	66.58%
Zn 206.200†	-36.6	-0.00529	mg/L	0.000438	-0.00529	mg/L	0.000438	8.27%
K 766.490†	704.0	0.452	mg/L	0.0251	0.452	mg/L	0.0251	5.56%
Na 589.592†	170126.4	21.0	mg/L	0.48	21.0	mg/L	0.48	2.29%
Sr 407.771†	157939.7	0.193	mg/L	0.0040	0.193	mg/L	0.0040	2.09%
Li 670.784†	64.6	-0.00100	mg/L	0.002219	-0.00100	mg/L	0.002219	221.95%
P 214.914†	115.6	0.184	mg/L	0.0143	0.184	mg/L	0.0143	7.80%

Sequence No.: 86
Sample ID: L1505157004
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 166
Date Collected: 5/27/2015 6:53:21 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505157004

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505157004

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3183777.4						18741.50	0.59%
YRADIAL	211821.6						2800.08	1.32%
Ga 417.206	1323361.3						9043.05	0.68%
GaRADIAL	50309.4						652.66	1.30%
Ag 328.068†	902.2	0.00785	mg/L	0.001043	0.00785	mg/L	0.001043	13.29%
Al 396.153†	11585.8	4.04	mg/L	0.012	4.04	mg/L	0.012	0.30%
As 188.979†	-23.2	-0.00469	mg/L	0.008258	-0.00469	mg/L	0.008258	176.23%
Ba 233.527†	5981.7	0.103	mg/L	0.0010	0.103	mg/L	0.0010	0.98%
Be 234.861†	1028.4	0.00056	mg/L	0.000224	0.00056	mg/L	0.000224	40.26%
B 249.677†	70804.7	1.03	mg/L	0.013	1.03	mg/L	0.013	1.24%
Ca 227.546†	12449.5	156	mg/L	1.6	156	mg/L	1.6	1.01%
Cd 228.802†	19.9	0.00151	mg/L	0.000546	0.00151	mg/L	0.000546	36.26%
Co 228.616†	68.2	0.00402	mg/L	0.000222	0.00402	mg/L	0.000222	5.53%
Cr 267.716†	136563.8	1.00	mg/L	0.007	1.00	mg/L	0.007	0.66%
Cu 327.393†	837.3	0.00729	mg/L	0.002828	0.00729	mg/L	0.002828	38.78%
Fe 239.562†	51158.3	8.80	mg/L	0.091	8.80	mg/L	0.091	1.04%
Mg 279.077†	117991.8	43.7	mg/L	0.26	43.7	mg/L	0.26	0.59%
Mn 257.610†	4149222.9	6.50	mg/L	0.052	6.50	mg/L	0.052	0.80%
Mo 202.031†	81.1	0.00901	mg/L	0.001500	0.00901	mg/L	0.001500	16.65%
Ni 231.604†	475.3	0.0142	mg/L	0.00076	0.0142	mg/L	0.00076	5.36%
Pb 220.353†	66.2	0.0109	mg/L	0.00530	0.0109	mg/L	0.00530	48.41%
Sb 206.836†	21.6	0.0149	mg/L	0.00507	0.0149	mg/L	0.00507	33.94%
Se 196.026†	-8.7	-0.0116	mg/L	0.00039	-0.0116	mg/L	0.00039	3.36%
Si 251.611†	99622.2	4.82	mg/L	0.071	4.82	mg/L	0.071	1.46%
Sn 189.927†	-72.4	-0.0137	mg/L	0.00297	-0.0137	mg/L	0.00297	21.62%
Ti 334.940†	41589.9	0.0563	mg/L	0.00056	0.0563	mg/L	0.00056	1.00%
Tl 190.801†	-39.0	-0.0399	mg/L	0.01204	-0.0399	mg/L	0.01204	30.16%
V 290.880†	-67.0	0.00207	mg/L	0.000263	0.00207	mg/L	0.000263	12.70%
Zn 206.200†	923.4	0.0364	mg/L	0.00072	0.0364	mg/L	0.00072	1.98%
K 766.490†	8558.4	5.31	mg/L	0.073	5.31	mg/L	0.073	1.38%

Approved: May 28, 2015

Na 589.592†	948524.7	124	mg/L	2.0	124	mg/L	2.0	1.60%
Sr 407.771†	290008.7	0.355	mg/L	0.0039	0.355	mg/L	0.0039	1.11%
Li 670.784†	4647.6	0.119	mg/L	0.0009	0.119	mg/L	0.0009	0.79%
P 214.914†	114.0	0.181	mg/L	0.0107	0.181	mg/L	0.0107	5.92%

Sequence No.: 87 **Autosampler Location: 167**
Sample ID: L1505157005 **Date Collected: 5/27/2015 6:55:46 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505157005

Analyte	Back Pressure	Flow
All	230.0 kPa	0.40 L/min

Mean Data: L1505157005

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3258513.8						54517.67	1.67%
YRADIAL	212953.0						2857.10	1.34%
Ga 417.206	1350609.1						24273.21	1.80%
GaRADIAL	49928.9						581.97	1.17%
Ag 328.068†	2185.6	0.00833	mg/L	0.000735	0.00833	mg/L	0.000735	8.83%
Al 396.153†	343.0	0.0980	mg/L	0.02528	0.0980	mg/L	0.02528	25.79%
As 188.979†	-31.4	-0.0119	mg/L	0.00558	-0.0119	mg/L	0.00558	46.79%
Ba 233.527†	2207.3	0.0379	mg/L	0.00042	0.0379	mg/L	0.00042	1.10%
Be 234.861†	-137.8	0.00006	mg/L	0.000024	0.00006	mg/L	0.000024	37.52%
B 249.677†	77931.9	1.10	mg/L	0.012	1.10	mg/L	0.012	1.08%
Ca 227.546†	12502.1	157	mg/L	2.3	157	mg/L	2.3	1.47%
Cd 228.802†	1.6	0.00041	mg/L	0.000157	0.00041	mg/L	0.000157	38.05%
Co 228.616†	2.1	-0.00033	mg/L	0.000360	-0.00033	mg/L	0.000360	108.98%
Cr 267.716†	90540.1	0.666	mg/L	0.0060	0.666	mg/L	0.0060	0.89%
Cu 327.393†	-1089.4	-0.00296	mg/L	0.001845	-0.00296	mg/L	0.001845	62.37%
Fe 239.562†	447.1	0.0802	mg/L	0.00944	0.0802	mg/L	0.00944	11.77%
Mg 279.077†	118516.1	43.9	mg/L	0.20	43.9	mg/L	0.20	0.47%
Mn 257.610†	438019.9	0.686	mg/L	0.0045	0.686	mg/L	0.0045	0.66%
Mo 202.031†	72.8	0.00714	mg/L	0.001299	0.00714	mg/L	0.001299	18.19%
Ni 231.604†	63.1	0.00125	mg/L	0.000981	0.00125	mg/L	0.000981	78.31%
Pb 220.353†	52.4	0.0109	mg/L	0.00388	0.0109	mg/L	0.00388	35.76%
Sb 206.836†	7.3	0.00514	mg/L	0.002738	0.00514	mg/L	0.002738	53.22%
Se 196.026†	-8.8	-0.00982	mg/L	0.021038	-0.00982	mg/L	0.021038	214.29%
Si 251.611†	-87250.9	-4.50	mg/L	0.085	-4.50	mg/L	0.085	1.89%
Sn 189.927†	-61.4	-0.0119	mg/L	0.00220	-0.0119	mg/L	0.00220	18.53%
Ti 334.940†	-8589.9	0.00235	mg/L	0.000594	0.00235	mg/L	0.000594	25.27%
Tl 190.801†	-34.0	-0.0304	mg/L	0.00386	-0.0304	mg/L	0.00386	12.68%
V 290.880†	-2109.6	-0.0104	mg/L	0.00163	-0.0104	mg/L	0.00163	15.69%
Zn 206.200†	-66.8	-0.00167	mg/L	0.000377	-0.00167	mg/L	0.000377	22.61%
K 766.490†	7340.6	4.53	mg/L	0.060	4.53	mg/L	0.060	1.32%
Na 589.592†	1034386.4	137	mg/L	1.4	137	mg/L	1.4	1.01%
Sr 407.771†	305595.8	0.374	mg/L	0.0046	0.374	mg/L	0.0046	1.22%
Li 670.784†	4663.3	0.120	mg/L	0.0033	0.120	mg/L	0.0033	2.80%
P 214.914†	21.3	0.0356	mg/L	0.01100	0.0356	mg/L	0.01100	30.92%

Sequence No.: 88 **Autosampler Location: 161**
Sample ID: L1505154403 WG525206-01 **Date Collected: 5/27/2015 6:58:11 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505154403 WG525206-01

Analyte	Back Pressure	Flow
All	230.0 kPa	0.40 L/min

Mean Data: L1505154403 WG525206-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD

Approved: May 28, 2015

Y 371.029	3275503.6					27275.56	0.83%
YRADIAL	214286.8					3191.53	1.49%
Ga 417.206	1330630.3					14565.06	1.09%
GaRADIAL	49377.4					510.04	1.03%
Ag 328.068†	733.8	0.00430	mg/L	0.000647	0.00430 mg/L	0.000647	15.03%
Al 396.153†	14.0	-0.0172	mg/L	0.02680	-0.0172 mg/L	0.02680	155.48%
As 188.979†	-19.6	-0.00735	mg/L	0.004837	-0.00735 mg/L	0.004837	65.79%
Ba 233.527†	6757.4	0.117	mg/L	0.0013	0.117 mg/L	0.0013	1.08%
Be 234.861†	-63.9	0.00006	mg/L	0.000027	0.00006 mg/L	0.000027	48.74%
B 249.677†	10069.0	0.148	mg/L	0.0012	0.148 mg/L	0.0012	0.83%
Ca 227.546†	3612.7	45.4	mg/L	0.43	45.4 mg/L	0.43	0.94%
Cd 228.802†	10.8	0.00093	mg/L	0.000500	0.00093 mg/L	0.000500	53.83%
Co 228.616†	0.2	-0.00065	mg/L	0.000423	-0.00065 mg/L	0.000423	65.12%
Cr 267.716†	372.4	0.00224	mg/L	0.000436	0.00224 mg/L	0.000436	19.49%
Cu 327.393†	-759.8	-0.00139	mg/L	0.001373	-0.00139 mg/L	0.001373	99.06%
Fe 239.562†	2320.1	0.402	mg/L	0.0029	0.402 mg/L	0.0029	0.72%
Mg 279.077†	67056.8	24.8	mg/L	0.16	24.8 mg/L	0.16	0.64%
Mn 257.610†	151733.9	0.237	mg/L	0.0029	0.237 mg/L	0.0029	1.23%
Mo 202.031†	55.9	0.00543	mg/L	0.000951	0.00543 mg/L	0.000951	17.50%
Ni 231.604†	-4.8	-0.00088	mg/L	0.000701	-0.00088 mg/L	0.000701	79.55%
Pb 220.353†	23.3	0.00462	mg/L	0.001771	0.00462 mg/L	0.001771	38.35%
Sb 206.836†	9.2	0.0123	mg/L	0.00228	0.0123 mg/L	0.00228	18.44%
Se 196.026†	1.9	0.00696	mg/L	0.011723	0.00696 mg/L	0.011723	168.53%
Si 251.611†	-45334.2	-2.41	mg/L	0.044	-2.41 mg/L	0.044	1.83%
Sn 189.927†	-42.2	-0.00862	mg/L	0.001130	-0.00862 mg/L	0.001130	13.10%
Ti 334.940†	-2843.2	0.00157	mg/L	0.000214	0.00157 mg/L	0.000214	13.66%
Tl 190.801†	-6.9	-0.00746	mg/L	0.001986	-0.00746 mg/L	0.001986	26.60%
V 290.880†	-1108.3	-0.00456	mg/L	0.001220	-0.00456 mg/L	0.001220	26.78%
Zn 206.200†	-106.3	-0.00843	mg/L	0.000213	-0.00843 mg/L	0.000213	2.52%
K 766.490†	410.4	0.0646	mg/L	0.05688	0.0646 mg/L	0.05688	88.09%
Na 589.592†	1604820.5	223	mg/L	1.6	223 mg/L	1.6	0.73%
Sr 407.771†	245667.2	0.303	mg/L	0.0007	0.303 mg/L	0.0007	0.22%
Li 670.784†	261.5	0.00416	mg/L	0.001876	0.00416 mg/L	0.001876	45.09%
P 214.914†	-5.9	-0.00701	mg/L	0.009765	-0.00701 mg/L	0.009765	139.34%

Sequence No.: 89 **Autosampler Location: 162**
Sample ID: L1505154404MS WG525206-04 **Date Collected: 5/27/2015 7:00:39 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505154404MS WG525206-04

Analyte	Back Pressure	Flow
All	230.0 kPa	0.40 L/min

Mean Data: L1505154404MS WG525206-04

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3254195.8						53101.15	1.63%
YRADIAL	215726.2						5549.47	2.57%
Ga 417.206	1313797.8						21877.00	1.67%
GaRADIAL	50056.9						1170.64	2.34%
Ag 328.068†	70835.7	0.212	mg/L	0.0012	0.212	mg/L	0.0012	0.55%
Al 396.153†	14473.0	5.04	mg/L	0.084	5.04	mg/L	0.084	1.68%
As 188.979†	295.7	0.184	mg/L	0.0088	0.184	mg/L	0.0088	4.78%
Ba 233.527†	34125.1	0.590	mg/L	0.0064	0.590	mg/L	0.0064	1.08%
Be 234.861†	13482.1	0.0244	mg/L	0.00042	0.0244	mg/L	0.00042	1.71%
B 249.677†	69924.4	0.997	mg/L	0.0138	0.997	mg/L	0.0138	1.38%
Ca 227.546†	3952.7	49.7	mg/L	1.11	49.7	mg/L	1.11	2.24%
Cd 228.802†	410.3	0.0243	mg/L	0.00044	0.0243	mg/L	0.00044	1.83%
Co 228.616†	1338.8	0.0931	mg/L	0.00205	0.0931	mg/L	0.00205	2.20%
Cr 267.716†	33445.7	0.246	mg/L	0.0040	0.246	mg/L	0.0040	1.63%
Cu 327.393†	53759.8	0.252	mg/L	0.0010	0.252	mg/L	0.0010	0.40%
Fe 239.562†	13825.0	2.38	mg/L	0.033	2.38	mg/L	0.033	1.38%
Mg 279.077†	79328.0	29.4	mg/L	0.16	29.4	mg/L	0.16	0.54%
Mn 257.610†	301847.2	0.473	mg/L	0.0042	0.473	mg/L	0.0042	0.89%
Mo 202.031†	4878.0	0.465	mg/L	0.0085	0.465	mg/L	0.0085	1.83%
Ni 231.604†	7314.1	0.228	mg/L	0.0046	0.228	mg/L	0.0046	2.01%
Pb 220.353†	1055.7	0.237	mg/L	0.0036	0.237	mg/L	0.0036	1.54%

Approved: May 28, 2015

Sb 206.836†	648.7	0.563 mg/L	0.0106	0.563 mg/L	0.0106	1.89%
Se 196.026†	132.9	0.213 mg/L	0.0029	0.213 mg/L	0.0029	1.35%
Si 251.611†	9923.5	0.339 mg/L	0.0525	0.339 mg/L	0.0525	15.47%
Sn 189.927†	2698.2	0.455 mg/L	0.0067	0.455 mg/L	0.0067	1.48%
Ti 334.940†	453514.6	0.493 mg/L	0.0044	0.493 mg/L	0.0044	0.89%
Tl 190.801†	265.9	0.224 mg/L	0.0049	0.224 mg/L	0.0049	2.18%
V 290.880†	93421.3	0.496 mg/L	0.0042	0.496 mg/L	0.0042	0.85%
Zn 206.200†	13093.7	0.454 mg/L	0.0078	0.454 mg/L	0.0078	1.72%
K 766.490†	39674.5	24.9 mg/L	0.07	24.9 mg/L	0.07	0.29%
Na 589.592†	1741692.1	246 mg/L	8.4	246 mg/L	8.4	3.42%
Sr 407.771†	639620.5	0.792 mg/L	0.0255	0.792 mg/L	0.0255	3.23%
Li 670.784†	19767.4	0.515 mg/L	0.0072	0.515 mg/L	0.0072	1.40%
P 214.914†	3012.0	4.73 mg/L	0.085	4.73 mg/L	0.085	1.80%

Sequence No.: 90 **Autosampler Location: 163**
Sample ID: L1505154405SD WG525206-05 **Date Collected: 5/27/2015 7:03:04 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505154405SD WG525206-05

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505154405SD WG525206-05

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3200464.1						34978.72	1.09%
YRADIAL	215987.4						342.03	0.16%
Ga 417.206	1297312.1						11676.88	0.90%
GaRADIAL	49679.4						89.32	0.18%
Ag 328.068†	68691.0	0.205	mg/L	0.0012	0.205	mg/L	0.0012	0.56%
Al 396.153†	14223.2	4.95	mg/L	0.029	4.95	mg/L	0.029	0.59%
As 188.979†	280.0	0.175	mg/L	0.0051	0.175	mg/L	0.0051	2.93%
Ba 233.527†	34857.1	0.602	mg/L	0.0088	0.602	mg/L	0.0088	1.45%
Be 234.861†	13221.1	0.0239	mg/L	0.00038	0.0239	mg/L	0.00038	1.57%
B 249.677†	68564.1	0.978	mg/L	0.0087	0.978	mg/L	0.0087	0.89%
Ca 227.546†	3993.7	50.3	mg/L	0.88	50.3	mg/L	0.88	1.75%
Cd 228.802†	393.7	0.0234	mg/L	0.00071	0.0234	mg/L	0.00071	3.05%
Co 228.616†	1297.5	0.0902	mg/L	0.00195	0.0902	mg/L	0.00195	2.17%
Cr 267.716†	32812.3	0.241	mg/L	0.0025	0.241	mg/L	0.0025	1.05%
Cu 327.393†	52106.5	0.244	mg/L	0.0014	0.244	mg/L	0.0014	0.59%
Fe 239.562†	13831.6	2.38	mg/L	0.026	2.38	mg/L	0.026	1.08%
Mg 279.077†	79928.3	29.6	mg/L	0.09	29.6	mg/L	0.09	0.31%
Mn 257.610†	298670.9	0.468	mg/L	0.0027	0.468	mg/L	0.0027	0.57%
Mo 202.031†	4777.4	0.455	mg/L	0.0075	0.455	mg/L	0.0075	1.65%
Ni 231.604†	7180.8	0.224	mg/L	0.0046	0.224	mg/L	0.0046	2.07%
Pb 220.353†	1038.8	0.233	mg/L	0.0038	0.233	mg/L	0.0038	1.63%
Sb 206.836†	633.5	0.550	mg/L	0.0079	0.550	mg/L	0.0079	1.43%
Se 196.026†	114.3	0.184	mg/L	0.0188	0.184	mg/L	0.0188	10.21%
Si 251.611†	5979.2	0.143	mg/L	0.2144	0.143	mg/L	0.2144	150.23%
Sn 189.927†	2640.8	0.445	mg/L	0.0087	0.445	mg/L	0.0087	1.96%
Ti 334.940†	443873.2	0.483	mg/L	0.0041	0.483	mg/L	0.0041	0.86%
Tl 190.801†	252.5	0.213	mg/L	0.0047	0.213	mg/L	0.0047	2.20%
V 290.880†	91383.6	0.485	mg/L	0.0037	0.485	mg/L	0.0037	0.76%
Zn 206.200†	12831.8	0.445	mg/L	0.0083	0.445	mg/L	0.0083	1.87%
K 766.490†	39160.3	24.6	mg/L	0.16	24.6	mg/L	0.16	0.66%
Na 589.592†	1775244.1	251	mg/L	2.6	251	mg/L	2.6	1.03%
Sr 407.771†	636862.9	0.788	mg/L	0.0018	0.788	mg/L	0.0018	0.22%
Li 670.784†	19550.5	0.510	mg/L	0.0047	0.510	mg/L	0.0047	0.91%
P 214.914†	2937.7	4.61	mg/L	0.112	4.61	mg/L	0.112	2.44%

Sequence No.: 91 **Autosampler Location: 7**
Sample ID: CCV **Date Collected: 5/27/2015 7:05:29 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Approved: May 28, 2015

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	230.0 kPa	0.40 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3225223.5						14318.26	0.44%
YRADIAL	212465.2						801.44	0.38%
Ga 417.206	1358496.5						7876.35	0.58%
GaRADIAL	49585.6						259.13	0.52%
Ag 328.068†	130988.1	0.390	mg/L	0.0006	0.390	mg/L	0.0006	0.15%
QC value within limits for Ag 328.068 Recovery = 97.39%								
Al 396.153†	28830.8	10.1	mg/L	0.02	10.1	mg/L	0.02	0.23%
QC value within limits for Al 396.153 Recovery = 100.54%								
As 188.979†	593.9	0.364	mg/L	0.0034	0.364	mg/L	0.0034	0.95%
QC value within limits for As 188.979 Recovery = 91.12%								
Ba 233.527†	55364.6	0.957	mg/L	0.0039	0.957	mg/L	0.0039	0.41%
QC value within limits for Ba 233.527 Recovery = 95.72%								
Be 234.861†	25593.8	0.0461	mg/L	0.00029	0.0461	mg/L	0.00029	0.64%
QC value within limits for Be 234.861 Recovery = 92.22%								
B 249.677†	27764.0	0.409	mg/L	0.0043	0.409	mg/L	0.0043	1.05%
QC value less than the lower limit for B 249.677 Recovery = 81.73%								
Ca 227.546†	728.0	9.27	mg/L	0.098	9.27	mg/L	0.098	1.06%
QC value within limits for Ca 227.546 Recovery = 92.69%								
Cd 228.802†	771.0	0.0454	mg/L	0.00038	0.0454	mg/L	0.00038	0.84%
QC value within limits for Cd 228.802 Recovery = 90.88%								
Co 228.616†	2724.7	0.190	mg/L	0.0015	0.190	mg/L	0.0015	0.80%
QC value within limits for Co 228.616 Recovery = 95.09%								
Cr 267.716†	66385.2	0.488	mg/L	0.0015	0.488	mg/L	0.0015	0.30%
QC value within limits for Cr 267.716 Recovery = 97.68%								
Cu 327.393†	103562.4	0.483	mg/L	0.0033	0.483	mg/L	0.0033	0.68%
QC value within limits for Cu 327.393 Recovery = 96.69%								
Fe 239.562†	23299.5	4.01	mg/L	0.020	4.01	mg/L	0.020	0.49%
QC value within limits for Fe 239.562 Recovery = 100.20%								
Mg 279.077†	27286.1	10.1	mg/L	0.07	10.1	mg/L	0.07	0.65%
QC value within limits for Mg 279.077 Recovery = 100.93%								
Mn 257.610†	311718.8	0.488	mg/L	0.0009	0.488	mg/L	0.0009	0.19%
QC value within limits for Mn 257.610 Recovery = 97.65%								
Mo 202.031†	9506.3	0.905	mg/L	0.0036	0.905	mg/L	0.0036	0.40%
QC value within limits for Mo 202.031 Recovery = 90.54%								
Ni 231.604†	15319.6	0.479	mg/L	0.0033	0.479	mg/L	0.0033	0.68%
QC value within limits for Ni 231.604 Recovery = 95.77%								
Pb 220.353†	2099.4	0.471	mg/L	0.0064	0.471	mg/L	0.0064	1.36%
QC value within limits for Pb 220.353 Recovery = 94.23%								
Sb 206.836†	1238.7	1.07	mg/L	0.006	1.07	mg/L	0.006	0.58%
QC value less than the lower limit for Sb 206.836 Recovery = 89.21%								
Se 196.026†	249.5	0.396	mg/L	0.0127	0.396	mg/L	0.0127	3.19%
QC value within limits for Se 196.026 Recovery = 99.12%								
Si 251.611†	-100726.8	-5.19	mg/L	0.201	-5.19	mg/L	0.201	3.87%
QC value less than the lower limit for Si 251.611 Recovery = -103.75%								
Sn 189.927†	5466.6	0.923	mg/L	0.0061	0.923	mg/L	0.0061	0.66%
QC value within limits for Sn 189.927 Recovery = 92.28%								
Ti 334.940†	904873.6	0.977	mg/L	0.0024	0.977	mg/L	0.0024	0.25%
QC value within limits for Ti 334.940 Recovery = 97.67%								
Tl 190.801†	562.4	0.475	mg/L	0.0065	0.475	mg/L	0.0065	1.38%
QC value within limits for Tl 190.801 Recovery = 95.05%								
V 290.880†	183458.0	0.973	mg/L	0.0071	0.973	mg/L	0.0071	0.73%
QC value within limits for V 290.880 Recovery = 97.26%								
Zn 206.200†	26751.0	0.933	mg/L	0.0055	0.933	mg/L	0.0055	0.59%
QC value within limits for Zn 206.200 Recovery = 93.28%								
K 766.490†	76468.8	48.7	mg/L	0.29	48.7	mg/L	0.29	0.59%
QC value within limits for K 766.490 Recovery = 97.42%								
Na 589.592†	395327.2	49.6	mg/L	0.33	49.6	mg/L	0.33	0.67%
QC value within limits for Na 589.592 Recovery = 99.28%								
Sr 407.771†	798290.8	0.990	mg/L	0.0064	0.990	mg/L	0.0064	0.65%
QC value within limits for Sr 407.771 Recovery = 99.01%								
Li 670.784†	38977.0	1.02	mg/L	0.005	1.02	mg/L	0.005	0.52%
QC value within limits for Li 670.784 Recovery = 101.88%								
P 214.914†	5895.1	9.25	mg/L	0.057	9.25	mg/L	0.057	0.62%

Approved: May 28, 2015

Lynn H. Rhoden

QC value within limits for P 214.914 Recovery = 92.46%
QC Failed. Continue with analysis.

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Sequence No.: 92 **Autosampler Location: 8**
Sample ID: CCB **Date Collected: 5/27/2015 7:07:54 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCB

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3463437.2						52439.23	1.51%
YRADIAL	222222.8						3181.38	1.43%
Ga 417.206	1603138.0						24777.69	1.55%
GaRADIAL	53826.1						697.09	1.30%
Ag 328.068†	312.0	0.00298	mg/L	0.001171	0.00298	mg/L	0.001171	39.27%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	2.3	-0.0212	mg/L	0.00345	-0.0212	mg/L	0.00345	16.30%
QC value within limits for Al 396.153 Recovery = Not calculated								
As 188.979†	-8.1	-0.00137	mg/L	0.001713	-0.00137	mg/L	0.001713	125.17%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	-9.2	-0.00040	mg/L	0.000253	-0.00040	mg/L	0.000253	62.70%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 234.861†	-16.3	0.00022	mg/L	0.000032	0.00022	mg/L	0.000032	14.60%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	153.3	0.00682	mg/L	0.002145	0.00682	mg/L	0.002145	31.47%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	-10.2	-0.0715	mg/L	0.13853	-0.0715	mg/L	0.13853	193.69%
QC value within limits for Ca 227.546 Recovery = Not calculated								
Cd 228.802†	-1.1	0.00018	mg/L	0.000533	0.00018	mg/L	0.000533	297.55%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	4.0	-0.00035	mg/L	0.000524	-0.00035	mg/L	0.000524	151.36%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	85.9	0.00014	mg/L	0.000025	0.00014	mg/L	0.000025	17.64%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	-277.3	0.00079	mg/L	0.001707	0.00079	mg/L	0.001707	214.97%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	10.7	0.00603	mg/L	0.000756	0.00603	mg/L	0.000756	12.54%
QC value within limits for Fe 239.562 Recovery = Not calculated								
Mg 279.077†	21.4	-0.00662	mg/L	0.008948	-0.00662	mg/L	0.008948	135.09%
QC value within limits for Mg 279.077 Recovery = Not calculated								
Mn 257.610†	79.9	-0.00030	mg/L	0.000040	-0.00030	mg/L	0.000040	13.35%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	2.7	0.00033	mg/L	0.001264	0.00033	mg/L	0.001264	383.40%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	1.9	-0.00068	mg/L	0.000312	-0.00068	mg/L	0.000312	46.19%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	2.7	0.00017	mg/L	0.002312	0.00017	mg/L	0.002312	>999.9%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	-1.7	0.00298	mg/L	0.007738	0.00298	mg/L	0.007738	259.92%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	15.5	0.0283	mg/L	0.01128	0.0283	mg/L	0.01128	39.78%
QC value greater than the upper limit for Se 196.026 Recovery = Not calculated								
Si 251.611†	-14637.1	-0.881	mg/L	0.0561	-0.881	mg/L	0.0561	6.37%
QC value less than the lower limit for Si 251.611 Recovery = Not calculated								
Sn 189.927†	-8.5	-0.00292	mg/L	0.001502	-0.00292	mg/L	0.001502	51.42%
QC value within limits for Sn 189.927 Recovery = Not calculated								
Ti 334.940†	-140.8	0.00156	mg/L	0.000272	0.00156	mg/L	0.000272	17.45%
QC value within limits for Ti 334.940 Recovery = Not calculated								
Tl 190.801†	3.8	0.00170	mg/L	0.005700	0.00170	mg/L	0.005700	336.26%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 290.880†	-430.1	-0.00040	mg/L	0.001457	-0.00040	mg/L	0.001457	368.33%
QC value within limits for V 290.880 Recovery = Not calculated								
Zn 206.200†	-22.0	-0.00555	mg/L	0.000195	-0.00555	mg/L	0.000195	3.52%

Approved: May 28, 2015

QC value within limits for Zn 206.200 Recovery = Not calculated

K 766.490†	47.1	0.0584 mg/L	0.05314	0.0584 mg/L	0.05314	90.91%

QC value within limits for K 766.490 Recovery = Not calculated

Na 589.592†	862.2	0.126 mg/L	0.0243	0.126 mg/L	0.0243	19.31%

QC value within limits for Na 589.592 Recovery = Not calculated

Sr 407.771†	186.2	-0.00010 mg/L	0.000087	-0.00010 mg/L	0.000087	84.77%

QC value within limits for Sr 407.771 Recovery = Not calculated

Li 670.784†	25.7	-0.00202 mg/L	0.002767	-0.00202 mg/L	0.002767	137.13%

QC value within limits for Li 670.784 Recovery = Not calculated

P 214.914†	2.8	0.00659 mg/L	0.007451	0.00659 mg/L	0.007451	113.03%

QC value within limits for P 214.914 Recovery = Not calculated

QC Failed. Continue with analysis.

==========

Sequence No.: 93 **Autosampler Location: 164**
Sample ID: BLK **Date Collected: 5/27/2015 7:11:17 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: BLK

Analyte	Back Pressure	Flow
All	230.0 kPa	0.40 L/min

Mean Data: BLK

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	6456253.7						574824.78	8.90%
YRADIAL	410905.3						30687.74	7.47%
Ga 417.206	2893816.8						269583.27	9.32%
GaRADIAL	97116.4						7277.50	7.49%
Ag 328.068†	-217.3	0.00132	mg/L	0.001003	0.00132	mg/L	0.001003	76.07%
Al 396.153†	97.5	0.0122	mg/L	0.01310	0.0122	mg/L	0.01310	107.11%
As 188.979†	-13.0	-0.00419	mg/L	0.000919	-0.00419	mg/L	0.000919	21.94%
Ba 233.527†	1331.7	0.0228	mg/L	0.00280	0.0228	mg/L	0.00280	12.29%
Be 234.861†	320.3	0.00088	mg/L	0.000285	0.00088	mg/L	0.000285	32.39%
B 249.677†	-4155.6	-0.0537	mg/L	0.00511	-0.0537	mg/L	0.00511	9.52%
Ca 227.546†	592.9	7.50	mg/L	0.850	7.50	mg/L	0.850	11.33%
Cd 228.802†	-3.1	0.00007	mg/L	0.000097	0.00007	mg/L	0.000097	131.31%
Co 228.616†	3.2	-0.00043	mg/L	0.000487	-0.00043	mg/L	0.000487	114.52%
Cr 267.716†	64.3	-0.00003	mg/L	0.000036	-0.00003	mg/L	0.000036	118.61%
Cu 327.393†	-386.4	0.00029	mg/L	0.000641	0.00029	mg/L	0.000641	220.32%
Fe 239.562†	248.5	0.0469	mg/L	0.03839	0.0469	mg/L	0.03839	81.85%
Mg 279.077†	86.7	0.0176	mg/L	0.05670	0.0176	mg/L	0.05670	322.67%
Mn 257.610†	396250.1	0.621	mg/L	0.6255	0.621	mg/L	0.6255	100.79%
Mo 202.031†	-3.0	-0.00010	mg/L	0.000443	-0.00010	mg/L	0.000443	464.96%
Ni 231.604†	31.5	0.00025	mg/L	0.000220	0.00025	mg/L	0.000220	88.53%
Pb 220.353†	30.3	0.00597	mg/L	0.001701	0.00597	mg/L	0.001701	28.50%
Sb 206.836†	-9.0	-0.00332	mg/L	0.002648	-0.00332	mg/L	0.002648	79.76%
Se 196.026†	5.4	0.0123	mg/L	0.00340	0.0123	mg/L	0.00340	27.55%
Si 251.611†	-352596.7	-17.7	mg/L	2.09	-17.7	mg/L	2.09	11.80%
Sn 189.927†	-60.3	-0.0117	mg/L	0.00047	-0.0117	mg/L	0.00047	4.05%
Ti 334.940†	5412.0	0.00802	mg/L	0.003592	0.00802	mg/L	0.003592	44.77%
Tl 190.801†	14.6	0.0100	mg/L	0.00197	0.0100	mg/L	0.00197	19.65%
V 290.880†	-5090.7	-0.0250	mg/L	0.00277	-0.0250	mg/L	0.00277	11.08%
Zn 206.200†	-92.4	-0.00800	mg/L	0.000167	-0.00800	mg/L	0.000167	2.09%
K 766.490†	-146.8	-0.0640	mg/L	0.03342	-0.0640	mg/L	0.03342	52.22%
Na 589.592†	1377.1	0.189	mg/L	0.3514	0.189	mg/L	0.3514	186.12%
Sr 407.771†	1809.4	0.00167	mg/L	0.003161	0.00167	mg/L	0.003161	189.25%
Li 670.784†	39.6	-0.00165	mg/L	0.001660	-0.00165	mg/L	0.001660	100.37%
P 214.914†	28.0	0.0461	mg/L	0.01274	0.0461	mg/L	0.01274	27.61%

==========

Sequence No.: 94 **Autosampler Location: 165**
Sample ID: BLK **Date Collected: 5/27/2015 7:13:44 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Approved: May 28, 2015

Lynn H. Rhoden

2.3.2 Metals ICP-MS Data

2.3.2.1 Summary Data

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW13FF-052015	**Prep Method:**	3015	**Prep Date:**	05/22/2015 08:55
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/05/2015 10:20
Workgroup #:	WG525403	**Analyst:**	BKT	**Run Date:**	06/05/2015 11:02
Collect Date:	05/20/2015 08:30	**Dilution:**	5	**File ID:**	NI.060515.110233
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.133		0.0200	0.0100	0.00500

Certificate of Analysis

Sample #:	L15051303-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW14FF-052015	**Prep Method:**	3015	**Prep Date:**	05/22/2015 08:55
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/05/2015 10:20
Workgroup #:	WG525403	**Analyst:**	BKT	**Run Date:**	06/05/2015 11:09
Collect Date:	05/20/2015 09:45	**Dilution:**	25	**File ID:**	NI.060515.110949
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.557		0.100	0.0500	0.0250

Certificate of Analysis

Sample #:	L15051303-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW11FF-052015	**Prep Method:**	3015	**Prep Date:**	05/22/2015 08:55
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/05/2015 10:20
Workgroup #:	WG525403	**Analyst:**	BKT	**Run Date:**	06/05/2015 11:13
Collect Date:	05/20/2015 11:00	**Dilution:**	1	**File ID:**	NI.060515.111300
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.140		0.00400	0.00200	0.00100

Certificate of Analysis

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15051303-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW06FF-052015	**Prep Method:**	3015	**Prep Date:**	05/22/2015 08:55
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/05/2015 10:20
Workgroup #:	WG525403	**Analyst:**	BKT	**Run Date:**	06/05/2015 11:38
Collect Date:	05/20/2015 13:15	**Dilution:**	5	**File ID:**	NI.060515.113828
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.192		0.0200	0.0100	0.00500

Certificate of Analysis

Sample #:	L15051303-10	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW12FF-052015	**Prep Method:**	3015	**Prep Date:**	05/22/2015 08:55
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/05/2015 10:20
Workgroup #:	WG525403	**Analyst:**	BKT	**Run Date:**	06/05/2015 11:41
Collect Date:	05/20/2015 14:40	**Dilution:**	1	**File ID:**	NI.060515.114140
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.107		0.00400	0.00200	0.00100

Certificate of Analysis

Sample #:	L15051303-12	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW23FF-052015	**Prep Method:**	3015	**Prep Date:**	05/22/2015 08:55
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/05/2015 10:20
Workgroup #:	WG525403	**Analyst:**	BKT	**Run Date:**	06/05/2015 11:44
Collect Date:	05/20/2015 15:55	**Dilution:**	5	**File ID:**	NI.060515.114451
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.143		0.0200	0.0100	0.00500

2.3.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer NexION 300X

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	100
Vi = Initial volume	40
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/L)	0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	200
Vi = Initial volume	0.5
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/kg)	40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	40
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	50

50 ug/kg = 0.050 mg/kg

Perkin Elmer NexION ICP/MS

STANDARDS KEY

QC Std 1 - ICV
QC Std 2 - ICB
QC Std 3 - LLICV
QC Std 4 - ICSA
QC Std 5 - ICSAB
QC Std 6 - CCV
QC Std 7 - CCB
QC Std 8 - LLCCV

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.00005	0.05	0.1
Sb	10	0	0.00005	0.05	0.1
As	10	0	0.00005	0.05	0.1
Ba	10	0	0.00005	0.05	0.1
Be	10	0	0.00005	0.05	0.1
Ca	1000	0	0.005	5	10
Cd	10	0	0.0005	0.05	0.1
Cr	10	0	0.0005	0.05	0.1
Co	10	0	0.0005	0.05	0.1
Cu	10	0	0.0005	0.05	0.1
Fe	1000	0	0.005	5	10
Pb	10	0	0.00005	0.05	0.1
Mg	1000	0	0.005	5	10
Mn	10	0	0.00005	0.05	0.1
Ni	10	0	0.00005	0.05	0.1
K	1000	0	0.005	5	10
Se	10	0	0.00005	0.05	0.1
Ag	10	0	0.00005	0.05	0.1
Na	1000	0	0.005	5	10
Tl	10	0	0.00005	0.05	0.1
V	10	0	0.00005	0.05	0.1
U	1000	0	0.00005	0.05	0.1
Zn	10	0	0.00005	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG524728
Analyst: VC
Spike Analyst: VC
Run Date: 05/22/2015 08:55
Method: 3015
Balance: BAL016
Instrument: MW-3
Instrument Start: 05/22/2015 08:59

SOP: ME407 Revison 17
Spike Solution: STD68313
Spike Witness: ERP
HNO3 Lot #: COA18221
40 & 50 ML. DIGESTION TU COA18222
MS Filters- fisher-Lot#r RGT32947

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG524728-02	BLANK	1	20 mL	50 mL	180.637 g	180.627 g		
2	WG524728-03	LCS	1	20 mL	50 mL	184.306 g	184.297 g	.25 mL	
3	L15051303-02	SAMP	1	20 mL	50 mL	182.598 g	182.574 g		06/01/15
4	L15051303-04	SAMP	1	20 mL	50 mL	184.253 g	184.22 g		06/01/15
5	L15051303-06	SAMP	1	20 mL	50 mL	182.483 g	182.465 g		06/01/15
6	L15051303-08	SAMP	1	20 mL	50 mL	183.319 g	183.303 g		06/01/15
7	L15051303-10	SAMP	1	20 mL	50 mL	182.567 g	182.558 g		06/01/15
8	L15051303-12	SAMP	1	20 mL	50 mL	182.674 g	182.664 g		06/01/15
9	L15051312-01	SAMP	1	20 mL	50 mL	183.438 g	183.417 g		05/29/15
10	L15051312-02	SAMP	1	20 mL	50 mL	184.28 g	184.26 g		05/29/15
11	L15051315-01	SAMP	1	20 mL	50 mL	181.34 g	181.299 g		05/29/15
12	L15051315-02	SAMP	1	20 mL	50 mL	180.639 g	180.621 g		05/29/15
13	L15051329-01	SAMP	1	20 mL	50 mL	181.311 g	181.289 g		05/29/15
14	L15051329-02	SAMP	1	20 mL	50 mL	182.186 g	182.164 g		05/29/15
15	L15051329-03	SAMP	1	20 mL	50 mL	181.174 g	181.159 g		05/29/15
16	L15051329-04	SAMP	1	20 mL	50 mL	182.474 g	182.449 g		05/29/15
17	L15051329-05	SAMP	1	20 mL	50 mL	184.244 g	184.223 g		05/29/15
18	L15051329-06	SAMP	1	20 mL	50 mL	182.528 g	182.505 g		05/29/15
19	L15051329-07	SAMP	1	20 mL	50 mL	179.831 g	179.808 g		05/29/15
20	L15051340-01	SAMP	1	20 mL	50 mL	185.242 g	185.217 g		05/29/15
21	WG524728-01	REF	1	20 mL	50 mL	183.576 g	183.553 g		
22	L15051340-02	SAMP	1	20 mL	50 mL	183.576 g	183.553 g		05/29/15
23	WG524728-04	MS	1	20 mL	50 mL	182.965 g	182.946 g	.25 mL	
24	WG524728-05	MSD	1	20 mL	50 mL	183.824 g	183.816 g	.25 mL	

Analyst: Vicki Collins

Reviewer: Erin Potter

MW_DIG - Modified 09/30/2009
PDF ID: 4193196
Report generated: 05/22/2015 09:59

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 060515A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 1
Maintenance Log ID:

Calibration Std: STD70733 ICV Std: STD70798 Post Spike: STD69341
ICSA: STD70878 ICSAB: STD70321 Int. Std: RGT31676
CCV: STD70886 LLCCV: STD70320 Tuning Sol : STD69491
Stannous : Hydroxylamine :

Workgroups: 525403,525539,525408,526515,526532

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.060515.100810	Blank	Blank		1		06/05/15 10:08
2	NI.060515.101121	WG526504-01	Calibration Point		1		06/05/15 10:11
3	NI.060515.101433	WG526504-02	Calibration Point		1		06/05/15 10:14
4	NI.060515.101744	WG526504-03	Calibration Point		1		06/05/15 10:17
5	NI.060515.102056	WG526504-04	Calibration Point		1		06/05/15 10:20
6	NI.060515.102409	WG526504-05	Initial Calibration Verification		1		06/05/15 10:24
7	NI.060515.102722	WG526504-06	Initial Calib Blank		1		06/05/15 10:27
8	NI.060515.103035	WG526504-07	Low Level Initial Calibration V		1		06/05/15 10:30
9	NI.060515.103347	WG526504-08	Interference Check		1		06/05/15 10:33
10	NI.060515.103658	WG526504-09	Interference Check		1		06/05/15 10:36
11	NI.060515.104011	WG526504-10	CCV		1		06/05/15 10:40
12	NI.060515.104323	WG526504-11	CCB		1		06/05/15 10:43
13	NI.060515.104635	WG524728-02	Method/Prep Blank	20/50	1		06/05/15 10:46
14	NI.060515.104947	WG524728-03	Laboratory Control S	20/50	1		06/05/15 10:49
15	NI.060515.105258	WG524728-01	Reference Sample		1	L15051340-02	06/05/15 10:52
16	NI.060515.105610	WG524728-04	Matrix Spike	20/50	1	L15051340-02	06/05/15 10:56
17	NI.060515.105920	WG524728-05	Matrix Spike Duplica	20/50	1	L15051340-02	06/05/15 10:59
18	NI.060515.110233	L15051303-02	50WW13FF-052015	20/50	5		06/05/15 11:02
19	NI.060515.110949	L15051303-04	50WW14FF-052015	20/50	25		06/05/15 11:09
20	NI.060515.111300	L15051303-06	50WW11FF-052015	20/50	1		06/05/15 11:13
21	NI.060515.111611	WG525403-05	Post Digestion Spike		1	L15051303-06	06/05/15 11:16
22	NI.060515.112228	WG525403-06	Serial Dilution		5	L15051303-06	06/05/15 11:22
23	NI.060515.112541	WG526504-12	CCV		1		06/05/15 11:25
24	NI.060515.112852	WG526504-13	CCB		1		06/05/15 11:28
25	NI.060515.113205	L15051544-02	SS007MWOB05-005 DUP	20/50	1		06/05/15 11:32
26	NI.060515.113517	WG525403-06	Serial Dilution		25	L15051303-06	06/05/15 11:35
27	NI.060515.113828	L15051303-08	50WW06FF-052015	20/50	5		06/05/15 11:38
28	NI.060515.114140	L15051303-10	50WW12FF-052015	20/50	1		06/05/15 11:41
29	NI.060515.114451	L15051303-12	50WW23FF-052015	20/50	5		06/05/15 11:44
30	NI.060515.114802	L15051579-02	5051535-02	20/50	50		06/05/15 11:48
31	NI.060515.115114	L15051564-10	TW58R	20/50	1		06/05/15 11:51
32	NI.060515.115426	WG525408-05	Post Digestion Spike		1	L15051564-10	06/05/15 11:54
33	NI.060515.115737	WG525408-06	Serial Dilution		5	L15051564-10	06/05/15 11:57
34	NI.060515.120048	WG525408-06	Serial Dilution		25	L15051564-10	06/05/15 12:00

Page: 1 Approved: June 08, 2015

Maren Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 060515A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 1
Maintenance Log ID:

Calibration Std: STD70733 ICV Std: STD70798 Post Spike: STD69341
ICSA: STD70878 ICSAB: STD70321 Int. Std: RGT31676
CCV: STD70886 LLCCV: STD70320 Tuning Sol : STD69491
Stannous : Hydroxylamine :

Workgroups: 525403,525539,525408,526515,526532

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.060515.120401	WG526504-14	CCV		1		06/05/15 12:04
36	NI.060515.120712	WG526504-15	CCB		1		06/05/15 12:07
37	NI.060515.121026	WG526504-16	Low Level Continuing Calibra		1		06/05/15 12:10
38	NI.060515.130230	WG526504-17	CCV		1		06/05/15 13:02
39	NI.060515.130918	WG526504-18	CCB		1		06/05/15 13:09
40	NI.060515.131504	WG526450-03	Method/Prep Blank	20/50	1		06/05/15 13:15
41	NI.060515.131815	WG526450-04	Laboratory Control S	20/50	1		06/05/15 13:18
42	NI.060515.132126	WG526450-01	Reference Sample		1	L15060233-15	06/05/15 13:21
43	NI.060515.132438	WG526450-05	Duplicate	20/50	1	L15060233-15	06/05/15 13:24
44	NI.060515.132749	WG526450-06	Matrix Spike	20/50	1	L15060233-15	06/05/15 13:27
45	NI.060515.133101	L15051548-01	5051529-01	20/50	1		06/05/15 13:31
46	NI.060515.133413	L15051549-01	5051530-01	20/50	1		06/05/15 13:34
47	NI.060515.133724	L15051587-01	15E1261-01	20/50	1		06/05/15 13:37
48	NI.060515.134035	WG526515-01	Post Digestion Spike		1	L15051587-01	06/05/15 13:40
49	NI.060515.134346	WG526515-02	Serial Dilution		5	L15051587-01	06/05/15 13:43
50	NI.060515.134659	WG526504-19	CCV		1		06/05/15 13:46
51	NI.060515.135010	WG526504-20	CCB		1		06/05/15 13:50
52	NI.060515.135322	WG526515-02	Serial Dilution		25	L15051587-01	06/05/15 13:53
53	NI.060515.135634	L15060233-01	1517517-01	20/50	1		06/05/15 13:56
54	NI.060515.135946	L15060233-02	1517517-01	20/50	1		06/05/15 13:59
55	NI.060515.140257	L15060233-04	1517517-02	20/50	1		06/05/15 14:02
56	NI.060515.140609	L15060233-05	1517517-02	20/50	1		06/05/15 14:06
57	NI.060515.140921	L15060233-07	1517517-03	20/50	1		06/05/15 14:09
58	NI.060515.141233	L15060233-08	1517517-03	20/50	1		06/05/15 14:12
59	NI.060515.141544	L15060233-10	1517517-04	20/50	100		06/05/15 14:15
60	NI.060515.141856	L15060233-11	1517517-04	20/50	1		06/05/15 14:18
61	NI.060515.142207	L15060233-14	1517517-08	20/50	1		06/05/15 14:22
62	NI.060515.142520	WG526504-21	CCV		1		06/05/15 14:25
63	NI.060515.142831	WG526504-22	CCB		1		06/05/15 14:28
64	NI.060515.143144	L15060243-01	1519080-01	20/50	1		06/05/15 14:31
65	NI.060515.143455	L15060245-01	1517346-01	20/50	1		06/05/15 14:34
66	NI.060515.143806	L15060247-01	1502380-01	20/50	1		06/05/15 14:38
67	NI.060515.144118	WG526450-02	Reference Sample		1	L15060247-02	06/05/15 14:41
68	NI.060515.144430	WG526450-07	Matrix Spike	20/50	1	L15060247-02	06/05/15 14:44

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Maren Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 060515A.REP

Analyst1: BKT Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 1

Maintenance Log ID:

Calibration Std: STD70733 ICV Std: STD70798 Post Spike: STD69341

ICSA: STD70878 ICSAB: STD70321 Int. Std: RGT31676

CCV: STD70886 LLCCV: STD70320 Tuning Sol : STD69491

Stannous : Hydroxylamine :

Workgroups: 525403,525539,525408,526515,526532

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.060515.144743	WG526504-23	CCV		1		06/05/15 14:47
70	NI.060515.145054	WG526504-24	CCB		1		06/05/15 14:50
71	NI.060515.150324	WG526291-02	Method/Prep Blank	20/50	1		06/05/15 15:03
72	NI.060515.150635	WG526291-03	Laboratory Control S	20/50	1		06/05/15 15:06
73	NI.060515.150945	WG526291-01	Reference Sample		1	L15060200-01	06/05/15 15:09
74	NI.060515.151257	WG526291-05	Duplicate	20/50	1	L15060200-01	06/05/15 15:12
75	NI.060515.151608	WG526291-06	Matrix Spike	20/50	1	L15060200-01	06/05/15 15:16
76	NI.060515.151920	WG526291-07	Matrix Spike Duplica	20/50	1	L15060200-01	06/05/15 15:19
77	NI.060515.152231	L15060191-01	OUTFALL 002 COMP	20/50	1		06/05/15 15:22
78	NI.060515.152542	L15060191-03	OUTFALL 003 COMP	20/50	1		06/05/15 15:25
79	NI.060515.152853	WG526532-01	Post Digestion Spike		1	L15060191-03	06/05/15 15:28
80	NI.060515.153204	WG526532-02	Serial Dilution		5	L15060191-03	06/05/15 15:32
81	NI.060515.153517	WG526504-25	CCV		1		06/05/15 15:35
82	NI.060515.153829	WG526504-26	CCB		1		06/05/15 15:38
83	NI.060515.154142	WG526532-02	Serial Dilution		25	L15060191-03	06/05/15 15:41
84	NI.060515.154454	L15060189-04	OUTFALL 203	20/50	1000		06/05/15 15:44
85	NI.060515.154804	L15060192-13	LRA08	20/50	1		06/05/15 15:48
86	NI.060515.155116	WG526291-04	Filter Blank		1		06/05/15 15:51
87	NI.060515.155430	WG526504-27	CCV		1		06/05/15 15:54
88	NI.060515.155742	WG526504-28	CCB		1		06/05/15 15:57

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Maren Berry

Microbac Laboratories Inc.

Data Checklist

Date: 05-JUN-2015
Analyst: BKT
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 526504
Runlog ID: 68428
Analytical Workgroups: 525403,525539,525408,526515,526532

Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	
Client Forms	X
Level X	
Level 3	
Level 4	1303,1544,1564
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BKT
Secondary Reviewer	MMB
Comments	

Primary Reviewer: 05-JUN-2015

Secondary Reviewer: 08-JUN-2015

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-08-2015 12:13:49

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG525403

Login Number: L15051303

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW13FF-052015	02	05/20/15					05/22/2015	2	180		06/05/15	16.1	180	
50WW14FF-052015	04	05/20/15					05/22/2015	2	180		06/05/15	16.1	180	
50WW11FF-052015	06	05/20/15					05/22/2015	1.9	180		06/05/15	16	180	
50WW06FF-052015	08	05/20/15					05/22/2015	1.8	180		06/05/15	15.9	180	
50WW12FF-052015	10	05/20/15					05/22/2015	1.8	180		06/05/15	15.9	180	
50WW23FF-052015	12	05/20/15					05/22/2015	1.7	180		06/05/15	15.8	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4208680
Report generated 06/05/2015 12:29

METHOD BLANK SUMMARY

Login Number: L15051303
Blank File ID: NI.060515.104635
Prep Date: 05/22/15 08:55
Analyzed Date: 06/05/15 10:46
Analyst: BKT

Work Group: WG525403
Blank Sample ID: WG524728-02
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG524728-03	NI.052815.134429	05/28/15 13:44	01
LCS	WG524728-03	NI.060515.104947	06/05/15 10:49	03
50WW13FF-052015	L15051303-02	NI.060515.110233	06/05/15 11:02	DL01
50WW14FF-052015	L15051303-04	NI.060515.110949	06/05/15 11:09	DL02
50WW11FF-052015	L15051303-06	NI.060515.111300	06/05/15 11:13	02
50WW06FF-052015	L15051303-08	NI.060515.113828	06/05/15 11:38	DL01
50WW12FF-052015	L15051303-10	NI.060515.114140	06/05/15 11:41	02
50WW23FF-052015	L15051303-12	NI.060515.114451	06/05/15 11:44	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4208681
Report generated 06/05/2015 12:29

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051303 Prep Date: 05/22/15 08:55 Sample ID: WG524728-02
Instrument ID: ICP-MS2 Run Date: 06/05/15 10:46 Prep Method: 3015
File ID: NI.060515.104635 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG525403 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-05-JUN-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Manganese, Dissolved	0.00100	0.00400	0.00100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4208682
05-JUN-2015 12:29

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051303 Run Date: 06/05/2015 Sample ID: WG524728-03
Instrument ID: ICP-MS2 Run Time: 10:49 Prep Method: 3015
File ID: NI.060515.104947 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG525403 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD68313 Cal ID: ICP-MS-05-JUN-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Manganese, Dissolved	0.125	0.135	108	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4208683
Report generated: 06/05/2015 12:29

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L15051303 Cal ID: ICP-MS2- Worknum: WG525403
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG524728-01 File ID: NI.060515.105258 Dil: 1 Matrix: WATER
Sample ID: WG524728-04 MS File ID: NI.060515.105610 Dil: 1 Units: mg/L
Sample ID: WG524728-05 MSD File ID: NI.060515.105920 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Manganese	0.00757	0.125	0.139	105	0.125	0.138	104	0.958	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4208695
Report generated 06/05/2015 12:29

Microbac Laboratories Inc.
Serial Dilution Report

Login: L15051303 **Worknum:** WG525403
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG525403-06 **File ID:** NI.060515.112228 **Dil:** 5 **Units:** ug/L
Sample: L15051303-06 **File ID:** NI.060515.111300 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Manganese	56.2		56.5		0.53	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4208678
06/05/2015 12:29

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L15051303 **Worknum:** WG525403
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG525403-05 **File ID:** NI.060515.111611 **Dil:** 1 **Units:** ug/L
Sample ID: L15051303-06 **File ID:** NI.060515.111300 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MANGANESE	107		56.2		50	102.1	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4208694
Report generated: 06/05/2015 12:29

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L15051303	Workgroup (AAB#):	WG525403
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG526504	Initial Calibration Date:	05-JUN-2015 10:20

	WG526504-01		WG526504-02		WG526504-03		WG526504-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
MANGANESE	0	755	.4	1670	50	622000	100	1230000	.999838	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4208687
Report generated: 05-JUN-2015 12:29

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L15051303
Instrument ID: ICP-MS2
File ID: NI.060515.102722
Workgroup (AAB#): WG525403
Matrix: WATER

Run Date: 06/05/2015
Run Time: 10:27
Analyst: BKT
Cal ID: ICP-MS2 - 05-JUN-15

Sample ID: WG526504-06
Method: 6020A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
MANGANESE	.4	1.6	.4	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4208700
Report generated 06/05/2015 12:29

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051303
Run Date: 06/05/2015
Sample ID: WG526504-11
Instrument ID: ICP-MS2
Run Time: 10:43
Method: 6020A
File ID: NI.060515.104323
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG525403
Cal ID: ICP-MS - 05-JUN-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4208692
Report generated 06/05/2015 12:29

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051303
Run Date: 06/05/2015
Sample ID: WG526504-13
Instrument ID: ICP-MS2
Run Time: 11:28
Method: 6020A
File ID: NI.060515.112852
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG525403
Cal ID: ICP-MS - 05-JUN-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4208692
Report generated 06/05/2015 12:29

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051303
Run Date: 06/05/2015
Sample ID: WG526504-15
Instrument ID: ICP-MS2
Run Time: 12:07
Method: 6020A
File ID: NI.060515.120712
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG525403
Cal ID: ICP-MS - 05-JUN-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4208692
Report generated 06/05/2015 12:29

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L15051303
Run Date: 06/05/2015
Sample ID: WG526504-05
Instrument ID: ICP-MS2
Run Time: 10:24
Method: 6020A
File ID: NI.060515.102409
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG525403
Cal ID: ICP-MS - 05-JUN-15
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Manganese		50	50.9	102	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4208688
Report generated 06/05/2015 12:29

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051303
Run Date: 06/05/2015
Sample ID: WG526504-10
Instrument ID: ICP-MS2
Run Time: 10:40
Method: 6020A
File ID: NI.060515.104011
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG525403
Cal ID: ICP-MS - 05-JUN-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0500	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4208691
Report generated 06/05/2015 12:29

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051303
Run Date: 06/05/2015
Sample ID: WG526504-12
Instrument ID: ICP-MS2
Run Time: 11:25
Method: 6020A
File ID: NI.060515.112541
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG525403
Cal ID: ICP-MS - 05-JUN-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0525	mg/L	105	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4208691
Report generated 06/05/2015 12:29

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051303
Run Date: 06/05/2015
Sample ID: WG526504-14
Instrument ID: ICP-MS2
Run Time: 12:04
Method: 6020A
File ID: NI.060515.120401
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG525403
Cal ID: ICP-MS - 05-JUN-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0516	mg/L	103	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4208691
Report generated 06/05/2015 12:29

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15051303
Run Date: 06/05/2015
Sample ID: WG526504-07
Instrument ID: ICP-MS2
Run Time: 10:30
Method: 6020A
File ID: NI.060515.103035
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG525403
Cal ID: ICP-MS - 05-JUN-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.500	0.490	ug/L	98.1	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4208693
Report generated 06/05/2015 12:29

Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15051303
Run Date: 06/05/2015
Sample ID: WG526504-16
Instrument ID: ICP-MS2
Run Time: 12:10
Method: 6020A
File ID: NI.060515.121026
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG525403
Cal ID: ICP-MS - 05-JUN-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.500	0.485	ug/L	97.0	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4208693
Report generated 06/05/2015 12:29

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L15051303
Instrument ID: ICP-MS2
Sol. A : WG526504-08 **File ID:** NI.060515.103347
Sol. AB : WG526504-09 **File ID:** NI.060515.103658

Workgroup (AAB#): WG525403
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Manganese	NS	0.0949	NS	100	101	101	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4208704
Report generated 06/05/2015 12:29

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L15051303 **Analytical Method:** 6020
Analytical Workgroup: WG525403 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 05-JUN-2015 10:11

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L15051303-02	SAMP	05-JUN-2015 11:02	99.7	103.785	100.615
L15051303-04	SAMP	05-JUN-2015 11:09	99.038	102.312	98.488
L15051303-06	SAMP	05-JUN-2015 11:13	96.162	102.775	99.107
L15051303-08	SAMP	05-JUN-2015 11:38	83.987	84.191	83.011
L15051303-10	SAMP	05-JUN-2015 11:41	80.612	85.335	86.601
L15051303-12	SAMP	05-JUN-2015 11:44	83.734	86.531	85.862
WG524728-02	BLANK	05-JUN-2015 10:46	106.68	109.945	106.735
WG524728-03	LCS	05-JUN-2015 10:49	107.149	109.065	106.849
WG525403-05	PSPK	05-JUN-2015 11:16	95.017	101.091	97.934
WG525403-06	SERIAL	05-JUN-2015 11:22	92.481	95.728	92.484
WG526504-05	ICV	05-JUN-2015 10:24	103.768	105.28	106.493
WG526504-06	ICB	05-JUN-2015 10:27	103.754	104.576	103.919
WG526504-07	LLICV	05-JUN-2015 10:30	99.018	100.282	98.269
WG526504-08	ICS	05-JUN-2015 10:33	101.63	104.487	106.117
WG526504-09	ICS	05-JUN-2015 10:36	102.404	105.436	107.563
WG526504-10	CCV	05-JUN-2015 10:40	104.071	106.202	106.397
WG526504-11	CCB	05-JUN-2015 10:43	107.016	108.508	105.961
WG526504-12	CCV	05-JUN-2015 11:25	90.82	93.052	92.375
WG526504-13	CCB	05-JUN-2015 11:28	89.733	90.222	89.005
WG526504-14	CCV	05-JUN-2015 12:04	94.269	95.821	95.177
WG526504-15	CCB	05-JUN-2015 12:07	97.462	98.115	96.173
WG526504-16	LLCCV	05-JUN-2015 12:10	98.19	99.064	96.792

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4208696
Report generated: 06/05/2015 12:29

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L15051303 **Date:** 04/07/2015
Insturment ID: ICP-MS2 **Method:** 6020A

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Uranium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4208685
Report generated: 06/05/2015 12:29

2.3.2.3 Raw Data

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Friday, June 05, 2015 09:40:20

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1323	2025	0.682	
Mg	23.985	23.975	4505	2019	0.702	
Co	58.933	58.975	11696	2022	0.679	
In	114.904	114.875	22861	2027	0.689	
U	238.050	238.075	47462	2042	0.674	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	8.639
5.575	3.485
5.625	2.733
5.675	1.385
5.725	1.567
5.775	2.637
5.825	1.813
5.875	1.251
5.925	1.126
5.975	1.776
6.025	1.316
6.075	2.429
6.125	1.917
6.175	1.371
6.225	2.348
6.275	4.821
6.325	44.605
6.375	94.786
6.425	46.566
6.475	40.074
6.525	16.667
6.575	7.208
6.625	2.208
6.675	1.746
6.725	1.834
6.775	1.016
6.825	0.962

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6.875	0.807
6.925	1.431
6.975	1.067
7.025	1.455
7.075	1.300
7.125	1.427
7.175	0.716
7.225	1.097
7.275	0.982
7.325	1.459
7.375	22.387
7.425	75.454
7.475	32.439
7.525	56.689
7.575	42.633
7.625	34.401
7.675	71.148
7.725	51.602
7.775	33.535
7.825	23.570
7.875	34.401
7.925	30.619
7.975	47.128
8.025	50.000
8.075	62.361
8.125	63.191
8.175	69.722
8.225	72.436
8.275	79.057
8.325	71.261
8.375	79.057
8.425	81.312
8.475	47.507
22.525	223.607
22.575	79.057
22.625	44.605
22.675	35.355
22.725	48.922
22.775	50.461
22.825	57.810
22.875	57.045
22.925	39.087
22.975	53.363
23.025	17.275
23.075	52.859
23.125	20.328
23.175	67.536

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23.225	46.566
23.275	34.233
23.325	37.500
23.375	29.235
23.425	7.309
23.475	6.234
23.525	2.721
23.575	1.785
23.625	0.548
23.675	1.134
23.725	1.141
23.775	1.323
23.825	0.846
23.875	0.734
23.925	0.758
23.975	1.120
24.025	0.921
24.075	1.054
24.125	1.121
24.175	1.036
24.225	0.940
24.275	4.406
24.325	40.497
24.375	31.672
24.425	33.273
24.475	5.360
24.525	3.116
24.575	1.811
24.625	2.046
24.675	2.537
24.725	2.184
24.775	1.364
24.825	0.843
24.875	1.143
24.925	0.911
24.975	1.133
25.025	1.428
25.075	2.014
25.125	0.926
25.175	1.947
25.225	3.656
25.275	28.260
25.325	72.436
25.375	31.672
25.425	31.651
25.475	17.330
57.525	9.623

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57.575	3.303
57.625	3.898
57.675	3.487
57.725	2.263
57.775	1.833
57.825	1.920
57.875	2.370
57.925	1.560
57.975	1.862
58.025	1.627
58.075	1.809
58.125	2.135
58.175	2.084
58.225	1.724
58.275	12.942
58.325	48.290
58.375	62.828
58.425	62.361
58.475	6.081
58.525	7.348
58.575	3.636
58.625	3.626
58.675	1.195
58.725	3.174
58.775	0.963
58.825	1.536
58.875	2.040
58.925	1.771
58.975	1.213
59.025	1.755
59.075	1.740
59.125	1.825
59.175	1.963
59.225	4.102
59.275	14.425
59.325	57.601
59.375	61.237
59.425	69.722
59.475	48.914
59.525	23.921
59.575	9.156
59.625	3.175
59.675	6.575
59.725	5.411
59.775	3.177
59.825	1.674
59.875	2.420

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59.925	3.131
59.975	3.157
60.025	3.338
60.075	5.036
60.125	6.829
60.175	2.188
60.225	6.205
60.275	19.837
60.325	82.402
60.375	43.853
60.425	64.438
60.475	55.902
113.525	15.010
113.575	4.003
113.625	3.735
113.675	2.441
113.725	2.205
113.775	2.634
113.825	3.169
113.875	0.902
113.925	4.076
113.975	2.551
114.025	4.109
114.075	1.919
114.125	5.045
114.175	3.589
114.225	6.592
114.275	15.526
114.325	50.619
114.375	40.781
114.425	9.823
114.475	1.787
114.525	2.949
114.575	1.679
114.625	1.625
114.675	1.657
114.725	1.637
114.775	1.772
114.825	0.963
114.875	0.759
114.925	1.034
114.975	1.049
115.025	1.272
115.075	1.735
115.125	2.073
115.175	1.085
115.225	3.250

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115.275	14.143
115.325	34.233
115.375	59.266
115.425	66.296
115.475	25.979
115.525	14.494
115.575	5.878
115.625	3.791
115.675	7.997
115.725	6.299
115.775	4.502
115.825	5.483
115.875	0.942
115.925	5.664
115.975	4.256
116.025	5.025
116.075	5.468
116.125	6.741
116.175	10.770
116.225	15.589
116.275	50.799
116.325	86.402
116.375	34.312
116.425	92.628
116.475	20.328
236.525	
236.575	26.726
236.625	20.601
236.675	22.822
236.725	24.549
236.775	31.566
236.825	34.233
236.875	19.444
236.925	48.636
236.975	19.325
237.025	50.437
237.075	33.500
237.125	33.535
237.175	27.217
237.225	47.931
237.275	17.568
237.325	24.845
237.375	42.127
237.425	23.570
237.475	21.812
237.525	46.663
237.575	16.194

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237.625	13.149
237.675	4.946
237.725	5.224
237.775	3.417
237.825	1.355
237.875	1.893
237.925	1.204
237.975	1.203
238.025	1.574
238.075	1.175
238.125	1.618
238.175	1.887
238.225	1.457
238.275	1.513
238.325	0.588
238.375	4.105
238.425	5.815
238.475	5.680
238.525	10.389
238.575	26.504
238.625	50.437
238.675	39.370
238.725	23.565
238.775	11.785
238.825	44.445
238.875	23.452
238.925	27.808
238.975	22.667
239.025	25.951
239.075	35.315
239.125	21.858
239.175	20.328
239.225	33.248
239.275	41.211
239.325	18.708
239.375	26.702
239.425	44.445
239.475	24.686

Approved: June 05, 2015

SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 6/5/2015 9:45:21 AM
End Time: 6/5/2015 9:47:43 AM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 5972.71
        Obtained Intensity (Mg 23.985): 226849.28
        Obtained Intensity (In 114.904): 77486.85
        Obtained Intensity (U 238.05): 52230.48
        Obtained Intensity (Bkgd 220): 0.27
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.025 (=3635.24 / 145863.05)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.011 (=1544.08 / 145863.05)
```

Report Date/Time: Friday, June 05, 2015 09:47:43
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Approved: June 05, 2015

SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 6/5/2015 9:45:21 AM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 5972.71
                Obtained Intensity (Mg 23.985): 226849.28
                Obtained Intensity (In 114.904): 77486.85
                Obtained Intensity (U 238.05): 52230.48
                Obtained Intensity (Bkgd 220): 0.27
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.025 (=3635.24 / 145863.05)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.011 (=1544.08 / 145863.05)
[Passed]  Optimum value(s): N/A

End Time: 6/5/2015 9:47:43 AM
```


Approved: June 05, 2015

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Friday, June 05, 2015 10:08:10
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	205676.4	4.0				ug/L		Standard
	Be	9	13.3	78.1				ug/L		Standard
	Al	27	498.3	11.6				ug/L		Standard
	Sc	45	108013.7	0.7				ug/L		Standard
	Ti	47	18.0	5.6				ug/L		Standard
	V	51	906.6	4.1				ug/L		Standard
	Cr	52	4635.4	0.9				ug/L		Standard
	Cr	53	255.0	7.1				ug/L		Standard
	Mn	55	746.4	1.4				ug/L		Standard
	Co	59	40.3	29.6				ug/L		Standard
	Ni	60	237.0	8.8				ug/L		Standard
	Cu	65	307.7	3.4				ug/L		Standard
	Zn	66	600.7	1.4				ug/L		Standard
>	Ge	72	774356.2	1.9				ug/L		Standard
	As	75	-42.4	65.7				ug/L		Standard
	Se	82	15.5	24.9				ug/L		Standard
	Se-1	77	43.3	21.4				ug/L		Standard
>	Ga	71	30.0	0.0				mg/L		Standard
	Rb	85	15.0	57.7				ug/L		Standard
	Y	89	919916.2	1.3				ug/L		Standard
>	Rh	103	3.3	86.6				ug/L		Standard
	Mo	98	11.6	26.8				ug/L		Standard
	Ag	107	83.7	9.0				ug/L		Standard
	Cd	111	2.0	50.7				mg/L		Standard
	Cd	114	1.9	361.2				ug/L		Standard
>	In	115	707917.1	0.7				ug/L		Standard
	Sn	118	550.0	15.1				ug/L		Standard
	Sb	123	63.6	13.7				ug/L		Standard
	Ba	135	7.7	39.8				ug/L		Standard
	Ce	140	21.7	81.0				ug/L		Standard
>	Tb	159	944784.3	2.2				ug/L		Standard
	Ho	165	8.3	91.7				ug/L		Standard
	Tl	203	4.7	65.5				ug/L		Standard
	Tl	205	3.3	173.2				ug/L		Standard
	Pb	206	196.7	5.9				ug/L		Standard
	Pb	207	179.7	5.7				ug/L		Standard
	Pb	208	760.7	2.0				ug/L		Standard
	U	238	0.3	173.2				ug/L		Standard
>	Bi	209	628211.6	1.1				ug/L		Standard

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	Na	23	0.0		mg/L	Standard
	Mg	24	11.7	49.5	mg/L	Standard
	K	39	6.7	43.3	mg/L	Standard
	Ca	43	30.0	50.0	mg/L	Standard
	Fe	54	241.1	11.7	mg/L	Standard
	Fe	57	36.7	15.7	mg/L	Standard
>	**Sc-1**	45	108013.7	0.7	mg/L	Standard
	Cl	35	13720.2	1.6	ug/L	Standard
	Kr	83	0.0		ug/L	Standard
	Br	81	750.0	12.9	ug/L	Standard
	P	31	15372.8	2.4	ug/L	Standard
	S	34	970.0	5.7	ug/L	Standard
	Sr	88	5.0	100.0	ug/L	Standard
	C	12	40.0	43.3	mg/L	Standard
	N	14	0.0		mg/L	Standard
	Hg	202	0.0		mg/L	Standard
	Dy	164	2.5	173.2	mg/L	Standard
	Ho-1	165	8.3	91.7	mg/L	Standard
	Er	166	16.7	173.2	mg/L	Standard
	I	127	138.3	18.5	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Blank
Report Date/Time: Friday, June 05, 2015 10:10:27
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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Friday, June 05, 2015 10:11:21
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	215422.4	1.1				ug/L	205676	Standard
	Be	9	16.7	62.4				ug/L	13	Standard
	Al	27	543.3	6.3				ug/L	498	Standard
	Sc	45	113016.9	3.2				ug/L	108014	Standard
	Ti	47	13.0	20.4				ug/L	18	Standard
	V	51	948.4	4.9				ug/L	907	Standard
	Cr	52	4844.4	1.4				ug/L	4635	Standard
	Cr	53	266.7	13.8				ug/L	255	Standard
	Mn	55	755.0	2.3				ug/L	746	Standard
	Co	59	36.3	10.4				ug/L	40	Standard
	Ni	60	233.7	8.3				ug/L	237	Standard
	Cu	65	343.0	3.8				ug/L	308	Standard
	Zn	66	658.7	1.9				ug/L	601	Standard
>	**Ge**	72	806552.0	1.6				ug/L	774356	Standard
	As	75	-32.0	135.6				ug/L	-42	Standard
	Se	82	22.5	31.0				ug/L	16	Standard
	Se-1	77	39.7	10.2				ug/L	43	Standard
>	**Ga**	71	13.3	57.3				mg/L	30	Standard
	Rb	85	13.3	57.3				ug/L	15	Standard
	Y	89	967573.9	1.0				ug/L	919916	Standard
>	**Rh**	103	1.7	173.2				ug/L	3	Standard
	Mo	98	7.3	91.2				ug/L	12	Standard
	Ag	107	81.7	6.3				ug/L	84	Standard
	Cd	111	1.3	115.6				mg/L	2	Standard
	Cd	114	-6.2	71.1				ug/L	2	Standard
>	**In**	115	731783.5	1.7				ug/L	707917	Standard
	Sn	118	543.3	10.7				ug/L	550	Standard
	Sb	123	24.3	20.7				ug/L	64	Standard
	Ba	135	14.0	31.1				ug/L	8	Standard
	Ce	140	10.0	100.0				ug/L	22	Standard
>	**Tb**	159	978577.7	1.9				ug/L	944784	Standard
	Ho	165	8.3	91.7				ug/L	8	Standard
	Tl	203	1.3	43.3				ug/L	5	Standard
	Tl	205	3.3	86.6				ug/L	3	Standard
	Pb	206	199.0	9.3				ug/L	197	Standard
	Pb	207	185.0	5.7				ug/L	180	Standard
	Pb	208	784.7	7.9				ug/L	761	Standard
	U	238	1.3	43.3				ug/L	0	Standard
>	**Bi**	209	649225.5	1.8				ug/L	628212	Standard

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	Na	23	0.0		mg/L	0	Standard
	Mg	24	16.7	105.4	mg/L	12	Standard
	K	39	5.0	100.0	mg/L	7	Standard
	Ca	43	11.7	65.5	mg/L	30	Standard
	Fe	54	284.3	12.7	mg/L	241	Standard
	Fe	57	23.3	12.4	mg/L	37	Standard
>	**Sc-1**	45	113016.9	3.2	mg/L	108014	Standard
	Cl	35	13916.4	1.4	ug/L	13720	Standard
	Kr	83	0.3	173.2	ug/L	0	Standard
	Br	81	753.4	5.0	ug/L	750	Standard
	P	31	15618.0	1.3	ug/L	15373	Standard
	S	34	1060.0	10.9	ug/L	970	Standard
	Sr	88	6.7	43.3	ug/L	5	Standard
	C	12	43.3	35.3	mg/L	40	Standard
	N	14	3.3	173.2	mg/L	0	Standard
	Hg	202	0.0		mg/L	0	Standard
	Dy	164	9.5	5.0	mg/L	3	Standard
	Ho-1	165	8.3	91.7	mg/L	8	Standard
	Er	166	10.0	100.0	mg/L	17	Standard
	I	127	113.3	14.2	mg/L	138	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 1
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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Friday, June 05, 2015 10:14:33
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	209534.9	3.3				ug/L	205676	Standard
	Be	9	60.0	36.3				ug/L	13	Standard
	Al	27	4790.8	2.3				ug/L	498	Standard
	Sc	45	110305.3	2.7				ug/L	108014	Standard
	Ti	47	46.7	11.8				ug/L	18	Standard
	V	51	1250.0	0.7				ug/L	907	Standard
	Cr	52	5138.5	0.3				ug/L	4635	Standard
	Cr	53	298.3	4.2				ug/L	255	Standard
	Mn	55	1667.1	0.9				ug/L	746	Standard
	Co	59	425.3	2.0				ug/L	40	Standard
	Ni	60	383.7	2.6				ug/L	237	Standard
	Cu	65	467.7	5.1				ug/L	308	Standard
	Zn	66	789.7	2.0				ug/L	601	Standard
>	**Ge**	72	796567.7	2.9				ug/L	774356	Standard
	As	75	45.9	12.5				ug/L	-42	Standard
	Se	82	32.9	9.8				ug/L	16	Standard
	Se-1	77	46.7	16.1				ug/L	43	Standard
>	**Ga**	71	13.3	21.7				mg/L	30	Standard
	Rb	85	18.3	31.5				ug/L	15	Standard
	Y	89	943602.3	2.4				ug/L	919916	Standard
>	**Rh**	103	3.3	86.6				ug/L	3	Standard
	Mo	98	299.7	2.5				ug/L	12	Standard
	Ag	107	377.3	4.2				ug/L	84	Standard
	Cd	111	67.3	6.2				mg/L	2	Standard
	Cd	114	161.2	30.3				ug/L	2	Standard
>	**In**	115	717262.0	2.7				ug/L	707917	Standard
	Sn	118	701.7	16.7				ug/L	550	Standard
	Sb	123	183.3	9.0				ug/L	64	Standard
	Ba	135	58.3	6.0				ug/L	8	Standard
	Ce	140	11.7	65.5				ug/L	22	Standard
>	**Tb**	159	961492.0	2.5				ug/L	944784	Standard
	Ho	165	16.7	96.4				ug/L	8	Standard
	Tl	203	267.7	1.1				ug/L	5	Standard
	Tl	205	268.3	5.7				ug/L	3	Standard
	Pb	206	384.3	2.3				ug/L	197	Standard
	Pb	207	335.3	4.5				ug/L	180	Standard
	Pb	208	1427.4	2.2				ug/L	761	Standard
	U	238	251.0	10.8				ug/L	0	Standard
>	**Bi**	209	640841.7	2.6				ug/L	628212	Standard

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	Na	23	0.0		mg/L	0	Standard
	Mg	24	21.7	35.3	mg/L	12	Standard
	K	39	6.7	86.6	mg/L	7	Standard
	Ca	43	18.3	78.7	mg/L	30	Standard
	Fe	54	328.0	7.7	mg/L	241	Standard
	Fe	57	51.7	29.6	mg/L	37	Standard
>	**Sc-1**	45	110305.3	2.7	mg/L	108014	Standard
	Cl	35	13944.4	1.8	ug/L	13720	Standard
	Kr	83	0.0		ug/L	0	Standard
	Br	81	713.4	22.5	ug/L	750	Standard
	P	31	15449.5	2.5	ug/L	15373	Standard
	S	34	976.7	6.7	ug/L	970	Standard
	Sr	88	10.0	100.0	ug/L	5	Standard
	C	12	63.3	81.0	mg/L	40	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	0.0		mg/L	0	Standard
	Dy	164	18.7	52.1	mg/L	3	Standard
	Ho-1	165	16.7	96.4	mg/L	8	Standard
	Er	166	26.7	21.7	mg/L	17	Standard
	I	127	160.0	14.3	mg/L	138	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 2
Report Date/Time: Friday, June 05, 2015 10:16:50
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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Friday, June 05, 2015 10:17:44
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	204611.0	2.1				ug/L	205676	Standard
	Be	9	51688.0	1.0	**50.0000**	0.564	1.1	ug/L	13	Standard
	Al	27	2955203.1	1.0	**50.0000**	1.572	3.1	ug/L	498	Standard
	Sc	45	109873.8	2.6				ug/L	108014	Standard
	Ti	47	31010.0	0.7	**100.0000**	0.780	0.8	ug/L	18	Standard
	V	51	332872.0	0.7	**50.0000**	0.629	1.3	ug/L	907	Standard
	Cr	52	364734.2	0.1	**50.0000**	0.521	1.0	ug/L	4635	Standard
	Cr	53	52676.4	1.7	**50.0000**	0.833	1.7	ug/L	255	Standard
	Mn	55	621633.6	0.4	**50.0000**	0.639	1.3	ug/L	746	Standard
	Co	59	377321.4	1.0	**50.0000**	0.579	1.2	ug/L	40	Standard
	Ni	60	119415.1	0.7	**50.0000**	0.304	0.6	ug/L	237	Standard
	Cu	65	121728.0	0.6	**50.0000**	0.592	1.2	ug/L	308	Standard
	Zn	66	74010.3	0.5	**50.0000**	0.534	1.1	ug/L	601	Standard
>	**Ge**	72	779502.4	0.9				ug/L	774356	Standard
	As	75	67594.4	1.5	**50.0000**	0.582	1.2	ug/L	-42	Standard
	Se	82	6069.4	0.9	**50.0000**	0.490	1.0	ug/L	16	Standard
	Se-1	77	4815.8	1.5	**50.0000**	0.774	1.5	ug/L	43	Standard
>	**Ga**	71	65.0	30.8				mg/L	30	Standard
	Rb	85	900.0	7.3				ug/L	15	Standard
	Y	89	938066.7	1.3				ug/L	919916	Standard
>	**Rh**	103	20.0	0.0				ug/L	3	Standard
	Mo	98	281765.4	0.3	**100.0000**	1.781	1.8	ug/L	12	Standard
	Ag	107	294290.0	0.8	**50.0000**	0.616	1.2	ug/L	84	Standard
	Cd	111	66932.8	1.0	**50.0000**	1.130	2.3	mg/L	2	Standard
	Cd	114	160058.7	0.9	**50.0000**	0.916	1.8	ug/L	2	Standard
>	**In**	115	726850.1	2.0				ug/L	707917	Standard
	Sn	118	206067.2	2.0	**50.0000**	1.824	3.6	ug/L	550	Standard
	Sb	123	157716.1	0.3	**50.0000**	0.944	1.9	ug/L	64	Standard
	Ba	135	48507.5	1.0	**50.0000**	0.898	1.8	ug/L	8	Standard
	Ce	140	25.0	20.0				ug/L	22	Standard
>	**Tb**	159	968164.9	2.5				ug/L	944784	Standard
	Ho	165	11.7	107.9				ug/L	8	Standard
	Tl	203	246066.5	0.9	**50.0000**	0.591	1.2	ug/L	5	Standard
	Tl	205	255625.6	2.0	**50.0000**	1.860	3.7	ug/L	3	Standard
	Pb	206	158969.6	0.2	**50.0000**	1.004	2.0	ug/L	197	Standard
	Pb	207	144539.5	0.5	**50.0000**	0.702	1.4	ug/L	180	Standard
	Pb	208	604744.3	0.1	**50.0000**	0.899	1.8	ug/L	761	Standard
	U	238	245252.3	0.5	**50.0000**	1.096	2.2	ug/L	0	Standard
>	**Bi**	209	629495.9	1.8				ug/L	628212	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	1875.1	4.4	**5.0000**	0.187	3.7	mg/L	12	Standard
K	39	340.0	20.6	**5.0000**	0.936	18.7	mg/L	7	Standard
Ca	43	73.3	15.7	**5.0000**	1.182	23.6	mg/L	30	Standard
Fe	54	12486.5	1.4	**5.0000**	0.106	2.1	mg/L	241	Standard
Fe	57	3768.8	6.2	**5.0000**	0.393	7.9	mg/L	37	Standard
> **Sc-1**	45	109873.8	2.6				mg/L	108014	Standard
Cl	35	14300.1	0.5				ug/L	13720	Standard
Kr	83	0.7	86.6				ug/L	0	Standard
Br	81	790.0	8.3				ug/L	750	Standard
P	31	16378.8	1.3				ug/L	15373	Standard
S	34	1126.7	5.1				ug/L	970	Standard
Sr	88	6.7	86.6				ug/L	5	Standard
C	12	66.7	48.2				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	5.4	109.8				mg/L	3	Standard
Ho-1	165	11.7	107.9				mg/L	8	Standard
Er	166	26.7	21.7				mg/L	17	Standard
I	127	163.3	17.7				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 3
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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Friday, June 05, 2015 10:20:56
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	209226.6	1.6				ug/L	205676	Standard
	Be	9	103192.0	1.8	**98.8056**	2.970	3.0	ug/L	13	Standard
	Al	27	5634333.2	1.4	**96.4888**	0.274	0.3	ug/L	498	Standard
	Sc	45	113241.6	0.6				ug/L	108014	Standard
	Ti	47	62127.5	0.6	**197.9757**	0.503	0.3	ug/L	18	Standard
	V	51	660190.6	0.9	**98.5348**	0.744	0.8	ug/L	907	Standard
	Cr	52	714502.4	0.7	**98.1631**	1.037	1.1	ug/L	4635	Standard
	Cr	53	102470.3	0.4	**97.6132**	0.412	0.4	ug/L	255	Standard
	Mn	55	1225377.7	1.4	**98.2016**	0.999	1.0	ug/L	746	Standard
	Co	59	745405.2	1.2	**98.2772**	1.205	1.2	ug/L	40	Standard
	Ni	60	234828.4	0.2	**98.0987**	0.594	0.6	ug/L	237	Standard
	Cu	65	238099.7	0.9	**97.8433**	0.820	0.8	ug/L	308	Standard
	Zn	66	146535.9	0.6	**98.6164**	0.906	0.9	ug/L	601	Standard
>	**Ge**	72	796982.7	0.4				ug/L	774356	Standard
	As	75	134301.3	0.7	**98.5543**	0.379	0.4	ug/L	-42	Standard
	Se	82	12155.7	1.4	**99.0658**	1.257	1.3	ug/L	16	Standard
	Se-1	77	9570.4	1.3	**98.7784**	0.931	0.9	ug/L	43	Standard
>	**Ga**	71	46.7	6.2				mg/L	30	Standard
	Rb	85	1593.4	5.0				ug/L	15	Standard
	Y	89	953612.1	2.1				ug/L	919916	Standard
>	**Rh**	103	33.3	67.6				ug/L	3	Standard
	Mo	98	560186.0	0.3	**196.4942**	2.020	1.0	ug/L	12	Standard
	Ag	107	576751.0	0.5	**97.5381**	0.737	0.8	ug/L	84	Standard
	Cd	111	134020.5	1.3	**98.5947**	0.219	0.2	mg/L	2	Standard
	Cd	114	321775.2	1.1	**98.7985**	0.140	0.1	ug/L	2	Standard
>	**In**	115	748242.6	1.2				ug/L	707917	Standard
	Sn	118	405086.9	2.1	**97.7320**	2.571	2.6	ug/L	550	Standard
	Sb	123	312158.1	0.8	**98.0234**	0.815	0.8	ug/L	64	Standard
	Ba	135	96689.2	0.8	**98.3800**	0.950	1.0	ug/L	8	Standard
	Ce	140	58.3	9.9				ug/L	22	Standard
>	**Tb**	159	1008504.9	1.1				ug/L	944784	Standard
	Ho	165	10.0					ug/L	8	Standard
	Tl	203	484554.7	0.6	**98.6369**	0.777	0.8	ug/L	5	Standard
	Tl	205	499614.5	1.2	**98.2454**	1.254	1.3	ug/L	3	Standard
	Pb	206	312686.6	0.5	**98.6056**	0.566	0.6	ug/L	197	Standard
	Pb	207	285703.4	1.0	**98.8508**	0.167	0.2	ug/L	180	Standard
	Pb	208	1182762.8	0.5	**98.3215**	0.680	0.7	ug/L	761	Standard
	U	238	484412.9	0.5	**98.7796**	0.620	0.6	ug/L	0	Standard
>	**Bi**	209	636915.6	1.1				ug/L	628212	Standard

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Na	23	1.7	173.2	**19.9850**	34.606	173.2	mg/L	0	Standard
Mg	24	3562.1	2.9	**9.6161**	0.280	2.9	mg/L	12	Standard
K	39	650.0	12.7	**9.6790**	1.253	12.9	mg/L	7	Standard
Ca	43	86.7	26.0	**7.4657**	2.505	33.6	mg/L	30	Standard
Fe	54	23323.7	1.2	**9.5643**	0.158	1.7	mg/L	241	Standard
Fe	57	7265.1	5.1	**9.6892**	0.449	4.6	mg/L	37	Standard
Sc-1	45	113241.6	0.6				mg/L	108014	Standard
Cl	35	14659.8	1.9				ug/L	13720	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	746.7	7.6				ug/L	750	Standard
P	31	16672.5	1.2				ug/L	15373	Standard
S	34	1245.1	4.4				ug/L	970	Standard
Sr	88	3.3	173.2				ug/L	5	Standard
C	12	33.3	17.3				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.2	111.3				mg/L	3	Standard
Ho-1	165	10.0					mg/L	8	Standard
Er	166	16.7	34.6				mg/L	17	Standard
I	127	195.0	24.7				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998
Corr. Coef.	Ca	43	Correlation coefficient < 0.998

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Friday, June 05, 2015 10:24:09
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	214481.2	2.2				ug/L	205676	Standard
	Be	9	53651.5	1.4	**50.1030**	0.683	1.4	ug/L	13	Standard
	Al	27	3073322.9	3.2	**51.3185**	0.491	1.0	ug/L	498	Standard
	Sc	45	115865.1	3.8				ug/L	108014	Standard
	Ti	47	33520.7	1.4	**104.4042**	0.275	0.3	ug/L	18	Standard
	V	51	352235.7	0.4	**51.3352**	0.588	1.1	ug/L	907	Standard
	Cr	52	383401.0	0.4	**51.1864**	0.779	1.5	ug/L	4635	Standard
	Cr	53	55250.6	1.6	**51.3464**	0.914	1.8	ug/L	255	Standard
	Mn	55	649938.8	1.1	**50.8837**	0.432	0.8	ug/L	746	Standard
	Co	59	397230.3	0.9	**51.2014**	0.599	1.2	ug/L	40	Standard
	Ni	60	124949.5	1.3	**50.9757**	0.203	0.4	ug/L	237	Standard
	Cu	65	135219.4	1.2	**54.2601**	0.181	0.3	ug/L	308	Standard
	Zn	66	108532.3	0.8	**71.2761**	0.711	1.0	ug/L	601	Standard
>	**Ge**	72	815238.4	1.5				ug/L	774356	Standard
	As	75	71286.7	0.7	**51.1539**	0.514	1.0	ug/L	-42	Standard
	Se	82	6391.1	2.1	**50.8135**	0.805	1.6	ug/L	16	Standard
	Se-1	77	5130.2	1.1	**51.5615**	0.368	0.7	ug/L	43	Standard
>	**Ga**	71	90.0	25.5				mg/L	30	Standard
	Rb	85	886.7	13.6				ug/L	15	Standard
	Y	89	986446.2	2.7				ug/L	919916	Standard
>	**Rh**	103	15.0	88.2				ug/L	3	Standard
	Mo	98	303586.8	0.8	**105.7073**	1.842	1.7	ug/L	12	Standard
	Ag	107	306891.9	1.3	**51.5157**	1.060	2.1	ug/L	84	Standard
	Cd	111	69481.6	1.1	**50.7429**	0.648	1.3	mg/L	2	Standard
	Cd	114	168341.3	0.9	**51.3123**	0.767	1.5	ug/L	2	Standard
>	**In**	115	753880.9	2.4				ug/L	707917	Standard
	Sn	118	220873.3	0.8	**52.8405**	1.052	2.0	ug/L	550	Standard
	Sb	123	160505.9	0.4	**50.0337**	1.036	2.1	ug/L	64	Standard
	Ba	135	50675.9	1.1	**51.1781**	0.648	1.3	ug/L	8	Standard
	Ce	140	118.3	39.9				ug/L	22	Standard
>	**Tb**	159	1018478.3	3.9				ug/L	944784	Standard
	Ho	165	13.3	94.4				ug/L	8	Standard
	Tl	203	256583.8	1.1	**51.0348**	0.565	1.1	ug/L	5	Standard
	Tl	205	263373.0	1.6	**50.6042**	0.655	1.3	ug/L	3	Standard
	Pb	206	163877.8	0.6	**50.4673**	0.830	1.6	ug/L	197	Standard
	Pb	207	149987.4	0.5	**50.6844**	1.001	2.0	ug/L	180	Standard
	Pb	208	625586.7	0.9	**50.7837**	0.626	1.2	ug/L	761	Standard
	U	238	251588.6	0.6	**50.1341**	0.852	1.7	ug/L	0	Standard
>	**Bi**	209	651884.9	2.2				ug/L	628212	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	2088.5	4.9	**5.4889**	0.250	4.6	mg/L	12	Standard
K	39	311.7	18.2	**4.4706**	0.691	15.4	mg/L	7	Standard
Ca	43	83.3	29.6	**6.9143**	2.731	39.5	mg/L	30	Standard
Fe	54	12428.6	1.8	**4.9217**	0.238	4.8	mg/L	241	Standard
Fe	57	4087.2	4.6	**5.3085**	0.428	8.1	mg/L	37	Standard
Sc-1	45	115865.1	3.8				mg/L	108014	Standard
Cl	35	15100.9	0.4				ug/L	13720	Standard
Kr	83	0.7	86.6				ug/L	0	Standard
Br	81	816.7	12.5				ug/L	750	Standard
P	31	18099.2	5.5				ug/L	15373	Standard
S	34	1211.7	4.9				ug/L	970	Standard
Sr	88	13.3	21.7				ug/L	5	Standard
C	12	86.7	6.7				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	13.0	179.6				mg/L	3	Standard
Ho-1	165	13.3	94.4				mg/L	8	Standard
Er	166	6.7	173.2				mg/L	17	Standard
I	127	183.3	23.8				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	100.206		
Al	27	102.637		
Sc	45			
Ti	47	104.404		
V	51	102.670		
Cr	52	102.373		
Cr	53			
Mn	55	101.767		
Co	59	102.403		
Ni	60	101.951		
Cu	65	108.520		
Zn	66	142.552		
Ge	72		105.280	
As	75	102.308		
Se	82	101.627		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	105.707		
Ag	107	103.031		
Cd	111	101.486		
Cd	114			
In	115		106.493	
Sn	118	105.681		
Sb	123	100.067		
Ba	135	102.356		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.070		
Tl	205			
Pb	206	100.935		
Pb	207	101.369		
Pb	208	101.567		
U	238	100.268		
Bi	209		103.768	
Na	23	0.100		
Mg	24	109.779		
K	39	89.411		
Ca	43	138.286		
Fe	54	98.434		
Fe	57	106.171		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Zn	66	
QC Std 1	Na	23	
QC Std 1	K	39	

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QC Std 1	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Friday, June 05, 2015 10:27:22
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	212485.2	2.5				ug/L	205676	Standard
	Be	9	33.3	82.6	**0.0239**	0.025	106.7	ug/L	13	Standard
	Al	27	1465.1	80.5	**-0.0074**	0.020	262.2	ug/L	498	Standard
	Sc	45	113245.0	1.0				ug/L	108014	Standard
	Ti	47	18.3	49.5	**0.0089**	0.028	316.9	ug/L	18	Standard
	V	51	828.5	15.0	**-0.0154**	0.015	100.3	ug/L	907	Standard
	Cr	52	4512.7	1.9	**-0.0469**	0.023	49.0	ug/L	4635	Standard
	Cr	53	295.0	8.5	**0.0416**	0.017	41.4	ug/L	255	Standard
	Mn	55	804.0	5.9	**-0.0204**	0.002	11.9	ug/L	746	Standard
	Co	59	73.7	31.1	**0.0034**	0.003	84.3	ug/L	40	Standard
	Ni	60	252.3	21.6	**-0.0069**	0.022	316.4	ug/L	237	Standard
	Cu	65	435.3	15.5	**0.0338**	0.026	77.6	ug/L	308	Standard
	Zn	66	676.3	9.9	**-0.0349**	0.038	108.1	ug/L	601	Standard
>	**Ge**	72	809789.1	2.6				ug/L	774356	Standard
	As	75	-40.2	81.1	**-0.0131**	0.024	183.8	ug/L	-42	Standard
	Se	82	13.9	28.9	**-0.1081**	0.030	28.2	ug/L	16	Standard
	Se-1	77	46.0	17.3	**0.0342**	0.075	218.6	ug/L	43	Standard
>	**Ga**	71	31.7	9.1				mg/L	30	Standard
	Rb	85	21.7	48.0				ug/L	15	Standard
	Y	89	959706.3	3.2				ug/L	919916	Standard
>	**Rh**	103	0.0					ug/L	3	Standard
	Mo	98	93.6	34.3	**0.0236**	0.011	46.9	ug/L	12	Standard
	Ag	107	145.7	37.1	**0.0084**	0.009	107.3	ug/L	84	Standard
	Cd	111	11.8	131.1	**0.0071**	0.011	161.0	mg/L	2	Standard
	Cd	114	27.1	159.0	**0.0070**	0.013	190.9	ug/L	2	Standard
>	**In**	115	735659.0	1.3				ug/L	707917	Standard
	Sn	118	668.3	3.4	**0.0377**	0.003	9.2	ug/L	550	Standard
	Sb	123	441.0	13.9	**0.1306**	0.018	13.6	ug/L	64	Standard
	Ba	135	20.7	65.0	**0.0094**	0.014	144.6	ug/L	8	Standard
	Ce	140	23.3	118.0				ug/L	22	Standard
>	**Tb**	159	972822.6	1.0				ug/L	944784	Standard
	Ho	165	13.3	21.7				ug/L	8	Standard
	Tl	203	40.0	103.9	**0.0038**	0.008	218.3	ug/L	5	Standard
	Tl	205	16.7	45.8	**0.0007**	0.001	197.8	ug/L	3	Standard
	Pb	206	230.0	13.6	**0.0003**	0.009	2683.4	ug/L	197	Standard
	Pb	207	200.7	13.8	**0.0024**	0.009	357.1	ug/L	180	Standard
	Pb	208	864.3	2.7	**0.0022**	0.001	38.7	ug/L	761	Standard
	U	238	24.7	103.1	**0.0039**	0.005	128.1	ug/L	0	Standard
>	**Bi**	209	651795.0	1.7				ug/L	628212	Standard

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Na	23	1.7	173.2	**19.6642**	34.051	173.2	mg/L	0	Standard
Mg	24	11.7	24.7	**-0.0234**	0.008	34.0	mg/L	12	Standard
K	39	6.7	86.6	**0.0034**	0.086	2535.5	mg/L	7	Standard
Ca	43	21.7	35.3	**0.3186**	0.815	255.7	mg/L	30	Standard
Fe	54	344.3	8.7	**0.0080**	0.013	161.6	mg/L	241	Standard
Fe	57	16.7	45.8	**-0.0441**	0.010	23.6	mg/L	37	Standard
Sc-1	45	113245.0	1.0				mg/L	108014	Standard
Cl	35	15263.7	2.3				ug/L	13720	Standard
Kr	83	1.0	173.2				ug/L	0	Standard
Br	81	743.4	16.2				ug/L	750	Standard
P	31	16834.4	3.0				ug/L	15373	Standard
S	34	1211.7	4.7				ug/L	970	Standard
Sr	88	10.0	50.0				ug/L	5	Standard
C	12	53.3	21.7				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	13.2	117.5				mg/L	3	Standard
Ho-1	165	13.3	21.7				mg/L	8	Standard
Er	166	3.3	173.2				mg/L	17	Standard
I	127	120.0	18.2				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		104.576	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.919
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.754
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Na	23	
QC Std 2	Ca	43	

Sample ID: QC Std 2
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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Friday, June 05, 2015 10:30:35
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	205187.0	2.0				ug/L	205676	Standard
	Be	9	251.7	11.3	**0.2384**	0.030	12.5	ug/L	13	Standard
	Al	27	498.3	3.1	**-0.0233**	0.000	1.9	ug/L	498	Standard
	Sc	45	108628.2	2.6				ug/L	108014	Standard
	Ti	47	13.0	13.3	**-0.0062**	0.005	84.8	ug/L	18	Standard
	V	51	3456.2	1.4	**0.3932**	0.008	1.9	ug/L	907	Standard
	Cr	52	10114.4	2.5	**0.7748**	0.058	7.5	ug/L	4635	Standard
	Cr	53	1130.0	7.1	**0.8715**	0.064	7.4	ug/L	255	Standard
	Mn	55	6974.3	2.1	**0.4904**	0.017	3.6	ug/L	746	Standard
	Co	59	3052.3	2.7	**0.4071**	0.017	4.1	ug/L	40	Standard
	Ni	60	3970.9	2.0	**1.5942**	0.056	3.5	ug/L	237	Standard
	Cu	65	2442.2	2.1	**0.8894**	0.037	4.1	ug/L	308	Standard
	Zn	66	10663.1	1.6	**6.9184**	0.218	3.1	ug/L	601	Standard
>	**Ge**	72	776542.8	1.5				ug/L	774356	Standard
	As	75	502.9	7.1	**0.3948**	0.024	6.0	ug/L	-42	Standard
	Se	82	68.5	10.2	**0.3549**	0.060	17.0	ug/L	16	Standard
	Se-1	77	80.0	3.3	**0.4165**	0.017	4.1	ug/L	43	Standard
>	**Ga**	71	23.3	75.3				mg/L	30	Standard
	Rb	85	31.7	39.7				ug/L	15	Standard
	Y	89	920290.0	3.7				ug/L	919916	Standard
>	**Rh**	103	1.7	173.2				ug/L	3	Standard
	Mo	98	34.6	16.0	**0.0033**	0.002	68.8	ug/L	12	Standard
	Ag	107	2389.9	1.2	**0.4182**	0.004	0.9	ug/L	84	Standard
	Cd	111	327.0	1.6	**0.2572**	0.008	3.3	mg/L	2	Standard
	Cd	114	748.9	7.6	**0.2460**	0.020	8.2	ug/L	2	Standard
>	**In**	115	695660.2	1.7				ug/L	707917	Standard
	Sn	118	726.7	4.9	**0.0625**	0.011	18.0	ug/L	550	Standard
	Sb	123	1339.6	3.8	**0.4422**	0.010	2.2	ug/L	64	Standard
	Ba	135	696.0	5.3	**0.7498**	0.035	4.7	ug/L	8	Standard
	Ce	140	46.7	6.2				ug/L	22	Standard
>	**Tb**	159	934390.7	2.8				ug/L	944784	Standard
	Ho	165	3.3	173.2				ug/L	8	Standard
	Tl	203	408.7	2.0	**0.0810**	0.003	3.8	ug/L	5	Standard
	Tl	205	453.3	7.7	**0.0888**	0.008	8.6	ug/L	3	Standard
	Pb	206	856.7	1.3	**0.2063**	0.004	2.1	ug/L	197	Standard
	Pb	207	744.4	2.2	**0.1985**	0.006	3.2	ug/L	180	Standard
	Pb	208	3252.5	2.6	**0.2090**	0.005	2.4	ug/L	761	Standard
	U	238	2002.1	2.6	**0.4170**	0.008	1.9	ug/L	0	Standard
>	**Bi**	209	622043.5	1.6				ug/L	628212	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	18.3	31.5	**-0.0032**	0.016	514.4	mg/L	12	Standard
K	39	3.3	173.2	**-0.0442**	0.090	204.4	mg/L	7	Standard
Ca	43	20.0	25.0	**0.2244**	0.513	228.4	mg/L	30	Standard
Fe	54	296.8	12.8	**-0.0065**	0.017	269.1	mg/L	241	Standard
Fe	57	28.3	27.0	**-0.0266**	0.012	43.9	mg/L	37	Standard
Sc-1	45	108628.2	2.6				mg/L	108014	Standard
Cl	35	14631.7	2.2				ug/L	13720	Standard
Kr	83	1.0	100.0				ug/L	0	Standard
Br	81	803.4	10.4				ug/L	750	Standard
P	31	16944.5	2.2				ug/L	15373	Standard
S	34	1206.7	5.3				ug/L	970	Standard
Sr	88	6.7	86.6				ug/L	5	Standard
C	12	50.0	40.0				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.8	104.1				mg/L	3	Standard
Ho-1	165	3.3	173.2				mg/L	8	Standard
Er	166	3.3	173.2				mg/L	17	Standard
I	127	145.0	31.0				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	119.216		
Al	27	-2.332		
Sc	45			
Ti	47			
V	51	98.296		
Cr	52	96.850		
Cr	53			
Mn	55	98.085		
Co	59	101.768		
Ni	60	99.636		
Cu	65	111.171		
Zn	66	110.694		
Ge	72		100.282	
As	75	98.697		
Se	82	88.726		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	104.542		
Cd	111	107.148		
Cd	114			
> In	115		98.269	
Sn	118			
Sb	123	110.556		
Ba	135	99.969		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.300		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.499		
U	238	104.256		
> Bi	209		99.018	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Friday, June 05, 2015 10:33:47
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	213618.9	1.4				ug/L	205676	Standard
	Be	9	35.0	28.6	**0.0255**	0.010	38.4	ug/L	13	Standard
	Al	27	3054781.6	1.1	**51.2234**	0.184	0.4	ug/L	498	Standard
	Sc	45	113434.8	1.7				ug/L	108014	Standard
	Ti	47	36899.9	1.3	**115.8072**	1.624	1.4	ug/L	18	Standard
	V	51	145.3	44.6	**-0.1157**	0.009	8.2	ug/L	907	Standard
	Cr	52	6077.2	2.6	**0.1665**	0.025	14.9	ug/L	4635	Standard
	Cr	53	2775.3	3.5	**2.3749**	0.084	3.5	ug/L	255	Standard
	Mn	55	2262.2	0.9	**0.0949**	0.002	2.3	ug/L	746	Standard
	Co	59	209.3	6.5	**0.0211**	0.002	8.7	ug/L	40	Standard
	Ni	60	1561.1	2.7	**0.5324**	0.018	3.3	ug/L	237	Standard
	Cu	65	1096.7	0.7	**0.3021**	0.006	2.1	ug/L	308	Standard
	Zn	66	2913.3	0.9	**1.4560**	0.010	0.7	ug/L	601	Standard
>	Ge	72	809104.6	0.7				ug/L	774356	Standard
	As	75	-41.4	127.7	**-0.0137**	0.038	280.1	ug/L	-42	Standard
	Se	82	16.8	19.3	**-0.0842**	0.027	31.8	ug/L	16	Standard
	Se-1	77	363.0	3.7	**3.2718**	0.115	3.5	ug/L	43	Standard
>	Ga	71	165.0	16.0				mg/L	30	Standard
	Rb	85	873.4	9.2				ug/L	15	Standard
	Y	89	977506.2	0.8				ug/L	919916	Standard
>	Rh	103	0.0					ug/L	3	Standard
	Mo	98	295040.0	0.9	**103.0915**	2.459	2.4	ug/L	12	Standard
	Ag	107	111.7	3.6	**0.0022**	0.001	39.0	ug/L	84	Standard
	Cd	111	-21.8	11.8	**-0.0176**	0.002	10.7	mg/L	2	Standard
	Cd	114	768.1	9.6	**0.2333**	0.019	8.2	ug/L	2	Standard
>	In	115	751223.0	1.6				ug/L	707917	Standard
	Sn	118	1066.7	10.4	**0.1303**	0.028	21.3	ug/L	550	Standard
	Sb	123	103.0	5.9	**0.0221**	0.002	10.8	ug/L	64	Standard
	Ba	135	97.0	9.2	**0.0864**	0.008	9.0	ug/L	8	Standard
	Ce	140	61.7	26.1				ug/L	22	Standard
>	Tb	159	1009567.2	1.4				ug/L	944784	Standard
	Ho	165	6.7	86.6				ug/L	8	Standard
	Tl	203	217.3	14.4	**0.0400**	0.006	16.1	ug/L	5	Standard
	Tl	205	220.0	29.8	**0.0407**	0.013	32.1	ug/L	3	Standard
	Pb	206	380.3	4.4	**0.0492**	0.006	11.6	ug/L	197	Standard
	Pb	207	345.3	5.3	**0.0538**	0.006	10.3	ug/L	180	Standard
	Pb	208	1385.7	4.6	**0.0470**	0.005	10.8	ug/L	761	Standard
	U	238	5.3	39.0	**0.0001**	0.000	411.2	ug/L	0	Standard
>	Bi	209	638450.6	0.7				ug/L	628212	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4750.7	2.1	**12.8205**	0.062	0.5	mg/L	12	Standard
K	39	340.0	12.6	**5.0049**	0.611	12.2	mg/L	7	Standard
Ca	43	143.3	20.4	**13.6515**	3.144	23.0	mg/L	30	Standard
Fe	54	30920.6	2.9	**12.6998**	0.213	1.7	mg/L	241	Standard
Fe	57	9909.9	2.5	**13.2236**	0.458	3.5	mg/L	37	Standard
> **Sc-1**	45	113434.8	1.7				mg/L	108014	Standard
Cl	35	14234.7	1.6				ug/L	13720	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	766.7	16.1				ug/L	750	Standard
P	31	16247.0	3.9				ug/L	15373	Standard
S	34	1008.4	4.0				ug/L	970	Standard
Sr	88	3.3	173.2				ug/L	5	Standard
C	12	113.3	13.5				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	16.7	34.6				mg/L	3	Standard
Ho-1	165	6.7	86.6				mg/L	8	Standard
Er	166	0.0					mg/L	17	Standard
I	127	100.0	10.0				mg/L	138	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27	1.024		
	Sc	45			
	Ti	47	115.807		
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		104.487	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	103.091		
Ag	107			
Cd	111			
Cd	114			
> In	115			106.117
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209			101.630
Na	23	0.040		
Mg	24	256.411		
K	39	100.098		
Ca	43	91.010		
Fe	54	101.598		
Fe	57	105.789		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Friday, June 05, 2015 10:36:58
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	215411.2	2.8				ug/L	205676	Standard
	Be	9	107114.2	3.3	**99.5989**	2.498	2.5	ug/L	13	Standard
	Al	27	3134540.6	0.4	**52.1489**	1.456	2.8	ug/L	498	Standard
	Sc	45	113233.2	0.9				ug/L	108014	Standard
	Ti	47	37554.2	1.4	**116.8269**	1.869	1.6	ug/L	18	Standard
	V	51	698696.9	0.9	**101.8327**	1.876	1.8	ug/L	907	Standard
	Cr	52	754435.5	1.3	**101.2249**	1.879	1.9	ug/L	4635	Standard
	Cr	53	108347.8	2.5	**100.7993**	3.454	3.4	ug/L	255	Standard
	Mn	55	1288648.8	0.4	**100.8571**	2.422	2.4	ug/L	746	Standard
	Co	59	783889.6	0.7	**100.9259**	2.315	2.3	ug/L	40	Standard
	Ni	60	243237.7	0.9	**99.2325**	2.635	2.7	ug/L	237	Standard
	Cu	65	250069.5	1.7	**100.3424**	2.045	2.0	ug/L	308	Standard
	Zn	66	154547.3	1.0	**101.5756**	2.122	2.1	ug/L	601	Standard
>	**Ge**	72	816452.5	2.7				ug/L	774356	Standard
	As	75	143472.2	0.7	**102.8098**	2.030	2.0	ug/L	-42	Standard
	Se	82	12713.4	0.4	**101.1869**	2.320	2.3	ug/L	16	Standard
	Se-1	77	10315.5	0.5	**103.9948**	2.232	2.1	ug/L	43	Standard
>	**Ga**	71	233.3	18.2				mg/L	30	Standard
	Rb	85	866.7	4.3				ug/L	15	Standard
	Y	89	971929.8	1.9				ug/L	919916	Standard
>	**Rh**	103	20.0	50.0				ug/L	3	Standard
	Mo	98	304279.0	1.5	**104.8711**	1.154	1.1	ug/L	12	Standard
	Ag	107	561209.4	2.6	**93.2968**	3.830	4.1	ug/L	84	Standard
	Cd	111	141232.2	1.6	**102.1037**	1.188	1.2	mg/L	2	Standard
	Cd	114	333952.6	1.1	**100.7714**	1.669	1.7	ug/L	2	Standard
>	**In**	115	761459.4	1.7				ug/L	707917	Standard
	Sn	118	810.0	4.5	**0.0659**	0.009	13.7	ug/L	550	Standard
	Sb	123	323373.8	0.8	**99.7911**	1.289	1.3	ug/L	64	Standard
	Ba	135	102196.9	1.2	**102.1851**	1.398	1.4	ug/L	8	Standard
	Ce	140	38.3	52.7				ug/L	22	Standard
>	**Tb**	159	1015309.7	1.9				ug/L	944784	Standard
	Ho	165	8.3	34.6				ug/L	8	Standard
	Tl	203	500146.6	1.5	**100.8109**	1.159	1.2	ug/L	5	Standard
	Tl	205	520036.3	1.1	**101.2757**	2.460	2.4	ug/L	3	Standard
	Pb	206	320589.8	1.1	**100.1120**	1.424	1.4	ug/L	197	Standard
	Pb	207	294139.5	0.9	**100.7838**	1.563	1.6	ug/L	180	Standard
	Pb	208	1221137.6	0.4	**100.5317**	2.018	2.0	ug/L	761	Standard
	U	238	502849.8	0.0	**101.5545**	2.428	2.4	ug/L	0	Standard
>	**Bi**	209	643311.2	2.4				ug/L	628212	Standard

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Na	23	3.3	173.2	**39.8617**	69.034	173.2	mg/L	0	Standard
Mg	24	4685.7	2.3	**12.6667**	0.193	1.5	mg/L	12	Standard
K	39	375.0	11.4	**5.5455**	0.672	12.1	mg/L	7	Standard
Ca	43	165.0	25.9	**16.0386**	4.515	28.1	mg/L	30	Standard
Fe	54	31898.1	1.7	**13.1302**	0.180	1.4	mg/L	241	Standard
Fe	57	10018.3	3.1	**13.3886**	0.370	2.8	mg/L	37	Standard
Sc-1	45	113233.2	0.9				mg/L	108014	Standard
Cl	35	13746.2	2.9				ug/L	13720	Standard
Kr	83	1.0	100.0				ug/L	0	Standard
Br	81	806.7	11.7				ug/L	750	Standard
P	31	15165.9	2.2				ug/L	15373	Standard
S	34	1093.4	4.5				ug/L	970	Standard
Sr	88	8.3	91.7				ug/L	5	Standard
C	12	116.7	9.9				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	16.0	72.9				mg/L	3	Standard
Ho-1	165	8.3	34.6				mg/L	8	Standard
Er	166	13.3	43.3				mg/L	17	Standard
I	127	176.7	4.3				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	99.599		
Al	27	1.043		
Sc	45			
Ti	47	116.827		
V	51	101.833		
Cr	52	101.225		
Cr	53			
Mn	55	100.857		
Co	59	100.926		
Ni	60	99.233		
Cu	65	100.342		
Zn	66	101.576		
> Ge	72		105.436	
As	75	102.810		
Se	82	101.187		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	104.871		
Ag	107	93.297		
Cd	111	102.104		
Cd	114			
In	115		107.563	
Sn	118			
Sb	123	99.791		
Ba	135	102.185		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.811		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.532		
U	238	101.554		
Bi	209		102.404	
Na	23	318.893		
Mg	24	253.333		
K	39	110.910		
Ca	43	106.924		
Fe	54	105.042		
Fe	57	107.109		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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QC Std 5	Ca	43

Sample ID: QC Std 5
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, June 05, 2015 10:40:11
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	218671.9	1.4				ug/L	205676	Standard
	Be	9	52823.6	3.0	**48.3693**	0.822	1.7	ug/L	13	Standard
	Al	27	3127494.3	1.4	**51.2302**	0.390	0.8	ug/L	498	Standard
	Sc	45	115716.9	0.5				ug/L	108014	Standard
	Ti	47	32222.2	1.9	**99.4918**	2.392	2.4	ug/L	18	Standard
	V	51	344574.4	1.7	**49.7737**	0.940	1.9	ug/L	907	Standard
	Cr	52	382022.0	1.3	**50.5452**	0.813	1.6	ug/L	4635	Standard
	Cr	53	53517.7	2.0	**49.2930**	1.169	2.4	ug/L	255	Standard
	Mn	55	644496.0	0.2	**50.0155**	0.309	0.6	ug/L	746	Standard
	Co	59	397375.9	0.4	**50.7713**	0.414	0.8	ug/L	40	Standard
	Ni	60	122297.6	0.5	**49.4570**	0.431	0.9	ug/L	237	Standard
	Cu	65	126217.9	0.6	**50.1976**	0.574	1.1	ug/L	308	Standard
	Zn	66	76672.2	0.2	**49.7661**	0.202	0.4	ug/L	601	Standard
>	Ge	72	822385.1	0.5				ug/L	774356	Standard
	As	75	70918.5	1.1	**50.4455**	0.792	1.6	ug/L	-42	Standard
	Se	82	6348.1	1.8	**50.0292**	0.894	1.8	ug/L	16	Standard
	Se-1	77	5039.2	0.9	**50.1930**	0.485	1.0	ug/L	43	Standard
>	Ga	71	50.0	20.0				mg/L	30	Standard
	Rb	85	768.4	6.7				ug/L	15	Standard
	Y	89	987510.2	0.1				ug/L	919916	Standard
>	Rh	103	25.0	20.0				ug/L	3	Standard
	Mo	98	292251.4	0.7	**101.8239**	0.633	0.6	ug/L	12	Standard
	Ag	107	301614.5	0.6	**50.6617**	0.394	0.8	ug/L	84	Standard
	Cd	111	68167.9	0.3	**49.8187**	0.249	0.5	mg/L	2	Standard
	Cd	114	162230.7	0.7	**49.4829**	0.377	0.8	ug/L	2	Standard
>	In	115	753199.3	0.2				ug/L	707917	Standard
	Sn	118	199408.8	1.3	**47.7230**	0.711	1.5	ug/L	550	Standard
	Sb	123	158976.9	0.8	**49.5862**	0.501	1.0	ug/L	64	Standard
	Ba	135	49468.6	1.0	**49.9945**	0.622	1.2	ug/L	8	Standard
	Ce	140	23.3	44.6				ug/L	22	Standard
>	Tb	159	1011524.9	0.5				ug/L	944784	Standard
	Ho	165	6.7	114.6				ug/L	8	Standard
	Tl	203	249959.2	1.2	**49.5663**	0.700	1.4	ug/L	5	Standard
	Tl	205	262396.5	2.0	**50.2608**	0.688	1.4	ug/L	3	Standard
	Pb	206	160908.6	0.5	**49.3980**	0.522	1.1	ug/L	197	Standard
	Pb	207	147632.8	0.7	**49.7301**	0.456	0.9	ug/L	180	Standard
	Pb	208	617960.6	0.8	**50.0087**	0.145	0.3	ug/L	761	Standard
	U	238	250934.6	0.3	**49.8484**	0.448	0.9	ug/L	0	Standard
>	Bi	209	653786.3	0.7				ug/L	628212	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	1821.8	0.8	**4.7854**	0.062	1.3	mg/L	12	Standard
K	39	310.0	4.3	**4.4653**	0.194	4.3	mg/L	7	Standard
Ca	43	58.3	47.2	**4.2198**	2.973	70.4	mg/L	30	Standard
Fe	54	12964.5	4.3	**5.1400**	0.199	3.9	mg/L	241	Standard
Fe	57	3918.8	3.9	**5.0837**	0.190	3.7	mg/L	37	Standard
> **Sc-1**	45	115716.9	0.5				mg/L	108014	Standard
Cl	35	14331.4	1.8				ug/L	13720	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	883.4	7.5				ug/L	750	Standard
P	31	17196.4	2.8				ug/L	15373	Standard
S	34	1158.4	5.9				ug/L	970	Standard
Sr	88	5.0	0.0				ug/L	5	Standard
C	12	66.7	37.7				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	-0.3	173.2				mg/L	3	Standard
Ho-1	165	6.7	114.6				mg/L	8	Standard
Er	166	6.7	173.2				mg/L	17	Standard
I	127	191.7	15.3				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	96.739		
Al	27	102.460		
Sc	45			
Ti	47	99.492		
V	51	99.547		
Cr	52	101.090		
Cr	53			
Mn	55	100.031		
Co	59	101.543		
Ni	60	98.914		
Cu	65	100.395		
Zn	66	99.532		
> Ge	72		106.202	
As	75	100.891		
Se	82	100.058		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.824		
Ag	107	101.323		
Cd	111	99.637		
Cd	114			
In	115			106.397
Sn	118	95.446		
Sb	123	99.172		
Ba	135	99.989		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.133		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.017		
U	238	99.697		
Bi	209			104.071
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, June 05, 2015 10:43:23
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	224222.9	3.0				ug/L	205676	Standard
	Be	9	20.0	50.0	**0.0106**	0.010	89.3	ug/L	13	Standard
	Al	27	605.0	9.1	**-0.0223**	0.001	5.3	ug/L	498	Standard
	Sc	45	118746.9	0.6				ug/L	108014	Standard
	Ti	47	15.7	18.4	**-0.0013**	0.009	700.7	ug/L	18	Standard
	V	51	898.5	3.8	**-0.0096**	0.006	58.3	ug/L	907	Standard
	Cr	52	4836.8	4.7	**-0.0270**	0.026	95.2	ug/L	4635	Standard
	Cr	53	355.0	8.6	**0.0859**	0.022	25.1	ug/L	255	Standard
	Mn	55	858.0	7.8	**-0.0185**	0.006	30.5	ug/L	746	Standard
	Co	59	81.3	63.3	**0.0041**	0.006	159.0	ug/L	40	Standard
	Ni	60	234.3	4.7	**-0.0178**	0.003	15.6	ug/L	237	Standard
	Cu	65	399.0	2.5	**0.0133**	0.004	29.9	ug/L	308	Standard
	Zn	66	708.3	3.2	**-0.0303**	0.012	39.8	ug/L	601	Standard
>	**Ge**	72	840235.7	2.1				ug/L	774356	Standard
	As	75	-44.6	32.9	**-0.0150**	0.011	72.2	ug/L	-42	Standard
	Se	82	18.8	8.7	**-0.0737**	0.011	14.5	ug/L	16	Standard
	Se-1	77	40.7	22.0	**-0.0336**	0.096	285.0	ug/L	43	Standard
>	**Ga**	71	21.7	35.3				mg/L	30	Standard
	Rb	85	26.7	10.8				ug/L	15	Standard
	Y	89	998356.0	2.9				ug/L	919916	Standard
>	**Rh**	103	3.3	86.6				ug/L	3	Standard
	Mo	98	117.6	35.2	**0.0315**	0.015	47.1	ug/L	12	Standard
	Ag	107	189.7	39.9	**0.0155**	0.013	83.9	ug/L	84	Standard
	Cd	111	4.9	54.0	**0.0019**	0.002	101.7	mg/L	2	Standard
	Cd	114	12.4	84.1	**0.0024**	0.003	135.4	ug/L	2	Standard
>	**In**	115	750117.4	2.6				ug/L	707917	Standard
	Sn	118	593.3	4.3	**0.0167**	0.009	54.9	ug/L	550	Standard
	Sb	123	565.3	8.0	**0.1672**	0.019	11.1	ug/L	64	Standard
	Ba	135	25.0	31.2	**0.0135**	0.008	59.5	ug/L	8	Standard
	Ce	140	11.7	24.7				ug/L	22	Standard
>	**Tb**	159	997812.7	3.6				ug/L	944784	Standard
	Ho	165	15.0	0.0				ug/L	8	Standard
	Tl	203	79.3	81.7	**0.0112**	0.012	111.8	ug/L	5	Standard
	Tl	205	30.0	28.9	**0.0031**	0.002	51.5	ug/L	3	Standard
	Pb	206	281.0	22.9	**0.0135**	0.019	143.6	ug/L	197	Standard
	Pb	207	214.0	25.2	**0.0049**	0.018	369.3	ug/L	180	Standard
	Pb	208	898.0	9.8	**0.0028**	0.007	265.2	ug/L	761	Standard
	U	238	19.7	67.7	**0.0028**	0.003	91.0	ug/L	0	Standard
>	**Bi**	209	672289.9	2.8				ug/L	628212	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	13.3	78.1	**-0.0205**	0.027	131.1	mg/L	12	Standard
K	39	3.3	86.6	**-0.0486**	0.041	85.2	mg/L	7	Standard
Ca	43	15.0	57.7	**-0.4848**	0.908	187.3	mg/L	30	Standard
Fe	54	264.4	24.6	**-0.0303**	0.026	86.6	mg/L	241	Standard
Fe	57	33.3	22.9	**-0.0238**	0.010	40.1	mg/L	37	Standard
> **Sc-1**	45	118746.9	0.6				mg/L	108014	Standard
Cl	35	14547.0	2.1				ug/L	13720	Standard
Kr	83	1.0	100.0				ug/L	0	Standard
Br	81	850.0	10.3				ug/L	750	Standard
P	31	16700.9	3.1				ug/L	15373	Standard
S	34	1080.0	16.4				ug/L	970	Standard
Sr	88	8.3	91.7				ug/L	5	Standard
C	12	53.3	28.6				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.3	126.2				mg/L	3	Standard
Ho-1	165	15.0	0.0				mg/L	8	Standard
Er	166	6.7	86.6				mg/L	17	Standard
I	127	131.7	28.0				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.508	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.961
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.016
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW 94 WG524728-02
Sample Date/Time: Friday, June 05, 2015 10:46:35
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	228599.9	0.2				ug/L	205676	Standard
	Be	9	26.7	28.6	**0.0159**	0.007	41.7	ug/L	13	Standard
	Al	27	16086.9	5.6	**0.2202**	0.014	6.3	ug/L	498	Standard
	Sc	45	118741.9	1.5				ug/L	108014	Standard
	Ti	47	46.0	22.1	**0.0888**	0.032	35.7	ug/L	18	Standard
	V	51	965.9	14.0	**-0.0018**	0.020	1089.0	ug/L	907	Standard
	Cr	52	5376.0	1.0	**0.0347**	0.017	47.6	ug/L	4635	Standard
	Cr	53	368.3	11.3	**0.0941**	0.040	43.0	ug/L	255	Standard
	Mn	55	5211.6	4.2	**0.3076**	0.021	6.7	ug/L	746	Standard
	Co	59	155.0	106.2	**0.0131**	0.021	156.7	ug/L	40	Standard
	Ni	60	676.3	2.8	**0.1541**	0.004	2.8	ug/L	237	Standard
	Cu	65	1285.1	3.6	**0.3528**	0.025	7.0	ug/L	308	Standard
	Zn	66	3497.7	3.5	**1.7294**	0.058	3.4	ug/L	601	Standard
>	**Ge**	72	851363.0	1.4				ug/L	774356	Standard
	As	75	-32.4	26.3	**-0.0061**	0.006	92.3	ug/L	-42	Standard
	Se	82	19.5	12.0	**-0.0699**	0.020	28.5	ug/L	16	Standard
	Se-1	77	46.0	10.0	**0.0118**	0.044	372.3	ug/L	43	Standard
>	**Ga**	71	40.0	33.1				mg/L	30	Standard
	Rb	85	221.7	13.2				ug/L	15	Standard
	Y	89	999974.1	3.2				ug/L	919916	Standard
>	**Rh**	103	3.3	173.2				ug/L	3	Standard
	Mo	98	105.0	103.3	**0.0271**	0.039	142.2	ug/L	12	Standard
	Ag	107	103.0	10.3	**0.0006**	0.002	311.5	ug/L	84	Standard
	Cd	111	6.2	119.7	**0.0029**	0.006	188.9	mg/L	2	Standard
	Cd	114	13.9	38.2	**0.0028**	0.002	59.0	ug/L	2	Standard
>	**In**	115	755594.5	2.0				ug/L	707917	Standard
	Sn	118	663.3	5.5	**0.0323**	0.010	30.8	ug/L	550	Standard
	Sb	123	237.7	11.1	**0.0638**	0.009	14.1	ug/L	64	Standard
	Ba	135	129.7	15.7	**0.1186**	0.018	15.1	ug/L	8	Standard
	Ce	140	70.0	0.0				ug/L	22	Standard
>	**Tb**	159	1014364.8	1.2				ug/L	944784	Standard
	Ho	165	10.0	86.6				ug/L	8	Standard
	Tl	203	18.0	48.4	**-0.0007**	0.002	250.7	ug/L	5	Standard
	Tl	205	40.0	142.0	**0.0051**	0.011	211.1	ug/L	3	Standard
	Pb	206	331.7	2.5	**0.0289**	0.002	7.4	ug/L	197	Standard
	Pb	207	281.3	4.2	**0.0272**	0.005	18.4	ug/L	180	Standard
	Pb	208	1354.4	21.6	**0.0392**	0.024	60.8	ug/L	761	Standard
	U	238	55.0	154.4	**0.0098**	0.017	170.1	ug/L	0	Standard
>	**Bi**	209	670174.6	1.3				ug/L	628212	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	43.3	24.0	**0.0569**	0.025	44.1	mg/L	12	Standard
K	39	10.0	86.6	**0.0476**	0.126	264.3	mg/L	7	Standard
Ca	43	20.0	25.0	**0.0343**	0.495	1443.1	mg/L	30	Standard
Fe	54	377.6	14.1	**0.0145**	0.021	145.7	mg/L	241	Standard
Fe	57	38.3	27.2	**-0.0173**	0.014	78.5	mg/L	37	Standard
> **Sc-1**	45	118741.9	1.5				mg/L	108014	Standard
Cl	35	14258.0	0.4				ug/L	13720	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	1186.7	8.4				ug/L	750	Standard
P	31	18054.1	4.2				ug/L	15373	Standard
S	34	1020.0	2.1				ug/L	970	Standard
Sr	88	10.0	86.6				ug/L	5	Standard
C	12	103.3	31.1				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.1	255.0				mg/L	3	Standard
Ho-1	165	10.0	86.6				mg/L	8	Standard
Er	166	26.7	57.3				mg/L	17	Standard
I	127	428.3	10.5				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.145	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.945	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: PBW 94 WG524728-02
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.735
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.680
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 94 WG524728-03
Sample Date/Time: Friday, June 05, 2015 10:49:47
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	227946.1	2.8				ug/L	205676	Standard
	Be	9	57989.1	1.8	**50.9567**	0.545	1.1	ug/L	13	Standard
	Al	27	22493.4	2.7	**0.3218**	0.011	3.3	ug/L	498	Standard
	Sc	45	118578.9	1.2				ug/L	108014	Standard
	Ti	47	63.3	39.6	**0.1419**	0.076	53.5	ug/L	18	Standard
	V	51	381482.2	0.3	**53.6688**	0.342	0.6	ug/L	907	Standard
	Cr	52	420113.8	0.6	**54.1727**	0.531	1.0	ug/L	4635	Standard
	Cr	53	59225.5	0.7	**53.1341**	0.504	0.9	ug/L	255	Standard
	Mn	55	714790.7	0.6	**54.0205**	0.258	0.5	ug/L	746	Standard
	Co	59	434925.6	0.9	**54.1102**	0.547	1.0	ug/L	40	Standard
	Ni	60	133126.6	0.4	**52.4294**	0.380	0.7	ug/L	237	Standard
	Cu	65	139099.9	0.5	**53.8785**	0.461	0.9	ug/L	308	Standard
	Zn	66	85824.7	0.1	**54.2883**	0.257	0.5	ug/L	601	Standard
>	**Ge**	72	844551.9	0.4				ug/L	774356	Standard
	As	75	75096.1	1.0	**52.0112**	0.325	0.6	ug/L	-42	Standard
	Se	82	6624.9	1.4	**50.8443**	0.760	1.5	ug/L	16	Standard
	Se-1	77	5276.9	0.4	**51.1902**	0.325	0.6	ug/L	43	Standard
>	**Ga**	71	53.3	65.8				mg/L	30	Standard
	Rb	85	186.7	31.0				ug/L	15	Standard
	Y	89	1006277.5	0.7				ug/L	919916	Standard
>	**Rh**	103	15.0	66.7				ug/L	3	Standard
	Mo	98	81.6	17.9	**0.0186**	0.005	27.0	ug/L	12	Standard
	Ag	107	320619.9	0.6	**53.6280**	0.527	1.0	ug/L	84	Standard
	Cd	111	70997.5	1.0	**51.6660**	0.335	0.6	mg/L	2	Standard
	Cd	114	170125.5	1.2	**51.6701**	0.420	0.8	ug/L	2	Standard
>	**In**	115	756399.4	0.4				ug/L	707917	Standard
	Sn	118	668.3	10.9	**0.0333**	0.018	53.9	ug/L	550	Standard
	Sb	123	173970.0	0.5	**54.0344**	0.480	0.9	ug/L	64	Standard
	Ba	135	52033.9	0.7	**52.3651**	0.514	1.0	ug/L	8	Standard
	Ce	140	80.0	16.5				ug/L	22	Standard
>	**Tb**	159	1008133.4	0.7				ug/L	944784	Standard
	Ho	165	13.3	57.3				ug/L	8	Standard
	Tl	203	271703.2	0.6	**52.3293**	0.245	0.5	ug/L	5	Standard
	Tl	205	280804.0	2.2	**52.2467**	1.249	2.4	ug/L	3	Standard
	Pb	206	178876.4	1.1	**53.3394**	0.391	0.7	ug/L	197	Standard
	Pb	207	155754.5	0.3	**50.9599**	0.244	0.5	ug/L	180	Standard
	Pb	208	668502.1	0.5	**52.5487**	0.177	0.3	ug/L	761	Standard
	U	238	267317.9	0.7	**51.5776**	0.606	1.2	ug/L	0	Standard
>	**Bi**	209	673125.5	0.7				ug/L	628212	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	43.3	24.0	**0.0572**	0.026	46.0	mg/L	12	Standard
K	39	3.3	86.6	**-0.0483**	0.042	86.2	mg/L	7	Standard
Ca	43	28.3	20.4	**0.9203**	0.644	70.0	mg/L	30	Standard
Fe	54	337.8	9.7	**-0.0010**	0.013	1287.5	mg/L	241	Standard
Fe	57	30.0	16.7	**-0.0280**	0.007	24.3	mg/L	37	Standard
> **Sc-1**	45	118578.9	1.2				mg/L	108014	Standard
Cl	35	14306.1	0.7				ug/L	13720	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	913.4	20.7				ug/L	750	Standard
P	31	18691.5	2.5				ug/L	15373	Standard
S	34	1046.7	8.5				ug/L	970	Standard
Sr	88	8.3	91.7				ug/L	5	Standard
C	12	86.7	35.3				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.4	90.1				mg/L	3	Standard
Ho-1	165	13.3	57.3				mg/L	8	Standard
Er	166	20.0	86.6				mg/L	17	Standard
I	127	448.3	12.4				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.828	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.065	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.849
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.149
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1505134002 WG524728-01
Sample Date/Time: Friday, June 05, 2015 10:52:58
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	217671.0	1.7				ug/L	205676	Standard
	Be	9	33.3	48.2	**0.0234**	0.015	64.7	ug/L	13	Standard
	Al	27	7845054.5	2.6	**129.1638**	3.781	2.9	ug/L	498	Standard
	Sc	45	117352.9	2.8				ug/L	108014	Standard
	Ti	47	360.7	5.7	**1.0734**	0.039	3.6	ug/L	18	Standard
	V	51	58328.5	1.1	**8.3778**	0.101	1.2	ug/L	907	Standard
	Cr	52	10037.3	1.8	**0.6944**	0.018	2.6	ug/L	4635	Standard
	Cr	53	2952.0	3.1	**2.5191**	0.137	5.4	ug/L	255	Standard
	Mn	55	39713.7	2.1	**3.0271**	0.029	1.0	ug/L	746	Standard
	Co	59	699.7	7.0	**0.0839**	0.005	5.5	ug/L	40	Standard
	Ni	60	3041.6	4.2	**1.1312**	0.029	2.6	ug/L	237	Standard
	Cu	65	3397.7	1.7	**1.2237**	0.049	4.0	ug/L	308	Standard
	Zn	66	5730.4	0.5	**3.3008**	0.066	2.0	ug/L	601	Standard
>	**Ge**	72	816119.2	2.2				ug/L	774356	Standard
	As	75	2671.3	0.5	**1.9309**	0.052	2.7	ug/L	-42	Standard
	Se	82	314.8	4.5	**2.2938**	0.161	7.0	ug/L	16	Standard
	Se-1	77	472.0	6.6	**4.3496**	0.408	9.4	ug/L	43	Standard
>	**Ga**	71	101.7	10.2				mg/L	30	Standard
	Rb	85	2985.3	4.3				ug/L	15	Standard
	Y	89	960558.7	2.0				ug/L	919916	Standard
>	**Rh**	103	60.0	14.4				ug/L	3	Standard
	Mo	98	440.9	1.6	**0.1521**	0.002	1.1	ug/L	12	Standard
	Ag	107	163.0	22.3	**0.0122**	0.006	49.4	ug/L	84	Standard
	Cd	111	39.1	9.0	**0.0285**	0.003	10.2	mg/L	2	Standard
	Cd	114	90.1	0.2	**0.0276**	0.000	1.6	ug/L	2	Standard
>	**In**	115	715038.8	1.5				ug/L	707917	Standard
	Sn	118	680.0	16.6	**0.0453**	0.027	59.0	ug/L	550	Standard
	Sb	123	262.3	8.8	**0.0760**	0.006	8.3	ug/L	64	Standard
	Ba	135	15281.7	2.1	**16.2596**	0.174	1.1	ug/L	8	Standard
	Ce	140	1180.0	2.5				ug/L	22	Standard
>	**Tb**	159	968855.7	1.5				ug/L	944784	Standard
	Ho	165	28.3	20.4				ug/L	8	Standard
	Tl	203	104.7	31.1	**0.0177**	0.007	37.6	ug/L	5	Standard
	Tl	205	106.7	39.9	**0.0191**	0.008	44.2	ug/L	3	Standard
	Pb	206	459.3	7.3	**0.0788**	0.010	12.7	ug/L	197	Standard
	Pb	207	382.3	7.8	**0.0710**	0.010	14.4	ug/L	180	Standard
	Pb	208	1683.7	6.0	**0.0763**	0.008	9.9	ug/L	761	Standard
	U	238	10874.2	1.4	**2.2837**	0.033	1.4	ug/L	0	Standard
>	**Bi**	209	618163.3	0.8				ug/L	628212	Standard

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Na	23	1.7	173.2	**18.6316**	32.262	173.2	mg/L	0	Standard
Mg	24	38849.8	2.0	**101.7401**	0.786	0.8	mg/L	12	Standard
K	39	26.7	75.8	**0.2948**	0.305	103.5	mg/L	7	Standard
Ca	43	245.0	5.4	**23.9472**	2.092	8.7	mg/L	30	Standard
Fe	54	448.9	14.5	**0.0449**	0.025	56.3	mg/L	241	Standard
Fe	57	125.0	13.9	**0.0953**	0.020	20.5	mg/L	37	Standard
> **Sc-1**	45	117352.9	2.8				mg/L	108014	Standard
Cl	35	15842.3	1.9				ug/L	13720	Standard
Kr	83	1.0	100.0				ug/L	0	Standard
Br	81	9259.5	4.3				ug/L	750	Standard
P	31	21575.5	11.9				ug/L	15373	Standard
S	34	1060.0	4.1				ug/L	970	Standard
Sr	88	775.0	5.2				ug/L	5	Standard
C	12	100.0	26.5				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	35.9	59.1				mg/L	3	Standard
Ho-1	165	28.3	20.4				mg/L	8	Standard
Er	166	16.7	69.3				mg/L	17	Standard
I	127	66413.6	1.6				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.832	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.393	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.006	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.400	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1505134002S WG524728-04
Sample Date/Time: Friday, June 05, 2015 10:56:10
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	219583.1	0.7				ug/L	205676	Standard
	Be	9	56344.6	2.1	**51.3839**	0.707	1.4	ug/L	13	Standard
	Al	27	7374498.1	3.0	**120.3250**	2.790	2.3	ug/L	498	Standard
	Sc	45	118869.7	2.8				ug/L	108014	Standard
	Ti	47	407.3	6.5	**1.2151**	0.093	7.6	ug/L	18	Standard
	V	51	419848.1	0.9	**60.9213**	0.933	1.5	ug/L	907	Standard
	Cr	52	400839.6	1.0	**53.2845**	0.979	1.8	ug/L	4635	Standard
	Cr	53	59469.8	1.8	**55.0180**	1.026	1.9	ug/L	255	Standard
	Mn	55	713406.0	0.6	**55.5934**	0.494	0.9	ug/L	746	Standard
	Co	59	401946.8	0.6	**51.5631**	0.825	1.6	ug/L	40	Standard
	Ni	60	126105.4	1.9	**51.2034**	1.016	2.0	ug/L	237	Standard
	Cu	65	129976.5	1.1	**51.9045**	0.850	1.6	ug/L	308	Standard
	Zn	66	84617.0	1.2	**55.1937**	0.635	1.1	ug/L	601	Standard
>	**Ge**	72	819142.8	1.0				ug/L	774356	Standard
	As	75	77646.6	0.7	**55.4519**	0.939	1.7	ug/L	-42	Standard
	Se	82	6833.3	1.2	**54.0921**	1.202	2.2	ug/L	16	Standard
	Se-1	77	5589.4	2.1	**55.9440**	1.175	2.1	ug/L	43	Standard
>	**Ga**	71	133.3	2.2				mg/L	30	Standard
	Rb	85	2942.0	2.7				ug/L	15	Standard
	Y	89	982629.4	0.2				ug/L	919916	Standard
>	**Rh**	103	70.0	14.3				ug/L	3	Standard
	Mo	98	464.5	3.6	**0.1586**	0.005	3.3	ug/L	12	Standard
	Ag	107	285295.7	0.8	**49.8447**	0.212	0.4	ug/L	84	Standard
	Cd	111	68205.2	0.8	**51.8483**	0.282	0.5	mg/L	2	Standard
	Cd	114	164333.8	0.6	**52.1379**	0.168	0.3	ug/L	2	Standard
>	**In**	115	724108.4	0.5				ug/L	707917	Standard
	Sn	118	726.7	13.7	**0.0550**	0.025	46.2	ug/L	550	Standard
	Sb	123	170821.6	0.6	**55.4218**	0.183	0.3	ug/L	64	Standard
	Ba	135	63542.6	1.2	**66.8013**	0.743	1.1	ug/L	8	Standard
	Ce	140	1198.4	4.4				ug/L	22	Standard
>	**Tb**	159	985894.2	2.4				ug/L	944784	Standard
	Ho	165	35.0	37.8				ug/L	8	Standard
	Tl	203	250018.1	1.0	**52.0408**	0.520	1.0	ug/L	5	Standard
	Tl	205	263229.0	1.7	**52.9338**	1.240	2.3	ug/L	3	Standard
	Pb	206	166397.1	0.8	**53.6313**	1.043	1.9	ug/L	197	Standard
	Pb	207	144994.6	1.4	**51.2696**	0.665	1.3	ug/L	180	Standard
	Pb	208	618439.9	1.1	**52.5414**	0.843	1.6	ug/L	761	Standard
	U	238	266895.0	1.8	**55.6590**	1.453	2.6	ug/L	0	Standard
>	**Bi**	209	622866.4	1.4				ug/L	628212	Standard

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Na	23	1.7	173.2	**18.7190**	32.414	173.2	mg/L	0	Standard
Mg	24	36276.7	0.2	**93.8239**	2.790	3.0	mg/L	12	Standard
K	39	21.7	13.3	**0.2149**	0.051	23.6	mg/L	7	Standard
Ca	43	246.7	10.4	**23.7601**	2.669	11.2	mg/L	30	Standard
Fe	54	412.7	2.8	**0.0284**	0.009	30.1	mg/L	241	Standard
Fe	57	170.0	11.8	**0.1515**	0.031	20.4	mg/L	37	Standard
> **Sc-1**	45	118869.7	2.8				mg/L	108014	Standard
Cl	35	16204.0	1.2				ug/L	13720	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	11354.3	1.5				ug/L	750	Standard
P	31	20470.5	6.1				ug/L	15373	Standard
S	34	1038.4	5.8				ug/L	970	Standard
Sr	88	700.0	2.6				ug/L	5	Standard
C	12	133.3	31.2				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	40.6	34.4				mg/L	3	Standard
Ho-1	165	35.0	37.8				mg/L	8	Standard
Er	166	56.7	50.9				mg/L	17	Standard
I	127	51754.9	0.6				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.761	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.784	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.287	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.149	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1505134002SD WG524728-05
Sample Date/Time: Friday, June 05, 2015 10:59:20
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	203491.2	4.9				ug/L	205676	Standard
	Be	9	53370.5	0.8	**52.5961**	2.224	4.2	ug/L	13	Standard
	Al	27	7484804.6	2.4	**131.9070**	3.290	2.5	ug/L	498	Standard
	Sc	45	110923.0	2.1				ug/L	108014	Standard
	Ti	47	327.7	11.9	**1.0347**	0.127	12.2	ug/L	18	Standard
	V	51	397952.8	1.3	**61.5683**	0.787	1.3	ug/L	907	Standard
	Cr	52	377862.7	1.4	**53.5542**	0.241	0.5	ug/L	4635	Standard
	Cr	53	55966.5	1.4	**55.2047**	0.204	0.4	ug/L	255	Standard
	Mn	55	662699.5	0.6	**55.0634**	0.554	1.0	ug/L	746	Standard
	Co	59	370276.0	0.8	**50.6462**	0.718	1.4	ug/L	40	Standard
	Ni	60	117722.2	0.3	**50.9667**	0.381	0.7	ug/L	237	Standard
	Cu	65	120686.1	0.6	**51.3843**	0.446	0.9	ug/L	308	Standard
	Zn	66	79229.6	1.3	**55.1015**	0.429	0.8	ug/L	601	Standard
>	**Ge**	72	768241.3	1.1				ug/L	774356	Standard
	As	75	73472.2	0.8	**55.9422**	0.286	0.5	ug/L	-42	Standard
	Se	82	6455.3	1.2	**54.4803**	0.516	0.9	ug/L	16	Standard
	Se-1	77	5216.9	1.5	**55.6725**	0.661	1.2	ug/L	43	Standard
>	**Ga**	71	118.3	20.0				mg/L	30	Standard
	Rb	85	2871.9	7.1				ug/L	15	Standard
	Y	89	918362.2	0.6				ug/L	919916	Standard
>	**Rh**	103	78.3	14.7				ug/L	3	Standard
	Mo	98	427.8	4.3	**0.1540**	0.006	4.2	ug/L	12	Standard
	Ag	107	267304.3	0.6	**49.3238**	0.212	0.4	ug/L	84	Standard
	Cd	111	64477.3	0.7	**51.7661**	0.227	0.4	mg/L	2	Standard
	Cd	114	156097.6	0.8	**52.3049**	0.196	0.4	ug/L	2	Standard
>	**In**	115	685613.4	0.4				ug/L	707917	Standard
	Sn	118	1471.7	6.7	**0.2616**	0.026	10.1	ug/L	550	Standard
	Sb	123	161766.5	0.2	**55.4313**	0.271	0.5	ug/L	64	Standard
	Ba	135	61285.4	0.6	**68.0454**	0.241	0.4	ug/L	8	Standard
	Ce	140	1131.7	12.5				ug/L	22	Standard
>	**Tb**	159	930051.9	0.5				ug/L	944784	Standard
	Ho	165	23.3	12.4				ug/L	8	Standard
	Tl	203	235434.1	0.6	**52.0005**	0.255	0.5	ug/L	5	Standard
	Tl	205	242121.1	1.4	**51.6658**	1.157	2.2	ug/L	3	Standard
	Pb	206	155845.8	1.3	**53.2931**	0.412	0.8	ug/L	197	Standard
	Pb	207	136513.6	0.8	**51.2203**	0.077	0.1	ug/L	180	Standard
	Pb	208	573892.3	0.9	**51.7359**	0.781	1.5	ug/L	761	Standard
	U	238	252238.4	0.9	**55.8134**	0.797	1.4	ug/L	0	Standard
>	**Bi**	209	586967.4	0.9				ug/L	628212	Standard

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Na	23	5.0	100.0	**61.7615**	62.223	100.7	mg/L	0	Standard
Mg	24	37691.8	2.6	**104.4102**	0.515	0.5	mg/L	12	Standard
K	39	18.3	31.5	**0.1841**	0.083	45.0	mg/L	7	Standard
Ca	43	213.3	11.6	**21.8344**	2.336	10.7	mg/L	30	Standard
Fe	54	345.4	6.1	**0.0113**	0.006	56.2	mg/L	241	Standard
Fe	57	181.7	12.4	**0.1823**	0.026	14.1	mg/L	37	Standard
> **Sc-1**	45	110923.0	2.1				mg/L	108014	Standard
Cl	35	14742.5	1.2				ug/L	13720	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	8996.0	7.6				ug/L	750	Standard
P	31	20258.6	9.5				ug/L	15373	Standard
S	34	900.0	4.5				ug/L	970	Standard
Sr	88	716.7	16.1				ug/L	5	Standard
C	12	206.7	36.6				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	38.7	27.7				mg/L	3	Standard
Ho-1	165	23.3	12.4				mg/L	8	Standard
Er	166	26.7	57.3				mg/L	17	Standard
I	127	77947.0	5.0				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.938	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.210	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.849
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.435
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1505130302
Sample Date/Time: Friday, June 05, 2015 11:02:33
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	213762.5	1.3				ug/L	205676	Standard
	Be	9	58.3	51.7	**0.0471**	0.028	58.7	ug/L	13	Standard
	Al	27	2755984.7	1.6	**46.1865**	1.213	2.6	ug/L	498	Standard
	Sc	45	112318.2	2.2				ug/L	108014	Standard
	Ti	47	78.7	21.5	**0.2006**	0.057	28.6	ug/L	18	Standard
	V	51	933.7	11.1	**0.0017**	0.019	1121.0	ug/L	907	Standard
	Cr	52	5678.7	2.3	**0.1174**	0.002	1.9	ug/L	4635	Standard
	Cr	53	1496.7	5.1	**1.1831**	0.094	7.9	ug/L	255	Standard
	Mn	55	134707.8	0.2	**10.6349**	0.231	2.2	ug/L	746	Standard
	Co	59	919.7	6.3	**0.1141**	0.006	5.0	ug/L	40	Standard
	Ni	60	2166.5	6.7	**0.7876**	0.050	6.3	ug/L	237	Standard
	Cu	65	1394.7	2.0	**0.4268**	0.012	2.9	ug/L	308	Standard
	Zn	66	3747.8	1.2	**2.0293**	0.036	1.8	ug/L	601	Standard
>	**Ge**	72	803665.1	2.3				ug/L	774356	Standard
	As	75	450.9	8.6	**0.3441**	0.025	7.1	ug/L	-42	Standard
	Se	82	156.8	16.7	**1.0523**	0.221	21.0	ug/L	16	Standard
	Se-1	77	185.0	4.7	**1.4670**	0.063	4.3	ug/L	43	Standard
>	**Ga**	71	25.0	20.0				mg/L	30	Standard
	Rb	85	1141.7	2.0				ug/L	15	Standard
	Y	89	940089.5	2.3				ug/L	919916	Standard
>	**Rh**	103	56.7	28.4				ug/L	3	Standard
	Mo	98	75.1	16.2	**0.0179**	0.004	22.8	ug/L	12	Standard
	Ag	107	135.3	39.5	**0.0074**	0.009	125.8	ug/L	84	Standard
	Cd	111	23.2	95.7	**0.0162**	0.017	104.8	mg/L	2	Standard
	Cd	114	79.1	86.8	**0.0239**	0.022	91.6	ug/L	2	Standard
>	**In**	115	712267.7	2.1				ug/L	707917	Standard
	Sn	118	593.3	0.5	**0.0242**	0.003	10.5	ug/L	550	Standard
	Sb	123	110.3	24.3	**0.0262**	0.009	33.3	ug/L	64	Standard
	Ba	135	2957.6	3.1	**3.1496**	0.064	2.0	ug/L	8	Standard
	Ce	140	101.7	11.4				ug/L	22	Standard
>	**Tb**	159	957136.6	1.1				ug/L	944784	Standard
	Ho	165	16.7	34.6				ug/L	8	Standard
	Tl	203	126.3	50.8	**0.0220**	0.013	60.1	ug/L	5	Standard
	Tl	205	116.7	17.3	**0.0209**	0.004	19.1	ug/L	3	Standard
	Pb	206	327.0	8.8	**0.0345**	0.011	32.2	ug/L	197	Standard
	Pb	207	282.7	8.9	**0.0341**	0.008	24.4	ug/L	180	Standard
	Pb	208	1176.0	3.4	**0.0315**	0.003	9.0	ug/L	761	Standard
	U	238	2392.2	4.2	**0.4950**	0.016	3.2	ug/L	0	Standard
>	**Bi**	209	626326.1	2.5				ug/L	628212	Standard

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Na	23	1.7	173.2	**20.2860**	35.128	173.2	mg/L	0	Standard
Mg	24	8050.5	0.7	**21.9891**	0.540	2.5	mg/L	12	Standard
K	39	11.7	24.7	**0.0808**	0.046	56.8	mg/L	7	Standard
Ca	43	100.0	37.7	**9.0107**	4.202	46.6	mg/L	30	Standard
Fe	54	362.5	13.7	**0.0171**	0.023	136.9	mg/L	241	Standard
Fe	57	120.0	26.0	**0.0959**	0.042	43.6	mg/L	37	Standard
> **Sc-1**	45	112318.2	2.2				mg/L	108014	Standard
Cl	35	14481.6	0.2				ug/L	13720	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	11471.0	5.8				ug/L	750	Standard
P	31	17196.4	1.4				ug/L	15373	Standard
S	34	950.0	7.6				ug/L	970	Standard
Sr	88	670.0	3.0				ug/L	5	Standard
C	12	70.0	14.3				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	12.5	45.3				mg/L	3	Standard
Ho-1	165	16.7	34.6				mg/L	8	Standard
Er	166	16.7	91.7				mg/L	17	Standard
I	127	136274.0	3.9				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.931	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.785	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.615
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.700
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1505130304
Sample Date/Time: Friday, June 05, 2015 11:09:49
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	214013.1	2.4				ug/L	205676	Standard
	Be	9	25.0	52.9	**0.0161**	0.013	78.0	ug/L	13	Standard
	Al	27	836978.3	2.2	**13.9897**	0.421	3.0	ug/L	498	Standard
	Sc	45	110654.4	2.5				ug/L	108014	Standard
	Ti	47	25.3	9.9	**0.0326**	0.008	25.0	ug/L	18	Standard
	V	51	1095.6	2.5	**0.0277**	0.003	12.6	ug/L	907	Standard
	Cr	52	5236.6	1.1	**0.0671**	0.008	12.0	ug/L	4635	Standard
	Cr	53	621.7	8.8	**0.3618**	0.053	14.5	ug/L	255	Standard
	Mn	55	111404.4	1.0	**8.9051**	0.056	0.6	ug/L	746	Standard
	Co	59	637.0	10.6	**0.0784**	0.009	11.9	ug/L	40	Standard
	Ni	60	651.3	6.7	**0.1633**	0.018	10.8	ug/L	237	Standard
	Cu	65	512.7	7.0	**0.0697**	0.014	20.7	ug/L	308	Standard
	Zn	66	2596.6	3.0	**1.2818**	0.054	4.2	ug/L	601	Standard
>	**Ge**	72	792259.1	0.4				ug/L	774356	Standard
	As	75	95.5	24.3	**0.0866**	0.017	19.5	ug/L	-42	Standard
	Se	82	43.3	7.9	**0.1361**	0.029	21.5	ug/L	16	Standard
	Se-1	77	61.3	13.3	**0.2051**	0.085	41.5	ug/L	43	Standard
>	**Ga**	71	38.3	32.8				mg/L	30	Standard
	Rb	85	1348.4	6.5				ug/L	15	Standard
	Y	89	930644.2	2.1				ug/L	919916	Standard
>	**Rh**	103	13.3	21.7				ug/L	3	Standard
	Mo	98	59.2	31.7	**0.0125**	0.007	55.9	ug/L	12	Standard
	Ag	107	96.0	25.7	**0.0008**	0.004	560.8	ug/L	84	Standard
	Cd	111	3.2	46.3	**0.0009**	0.001	127.2	mg/L	2	Standard
	Cd	114	-0.5	677.8	**-0.0016**	0.001	69.6	ug/L	2	Standard
>	**In**	115	697216.8	2.0				ug/L	707917	Standard
	Sn	118	515.0	4.2	**0.0071**	0.004	61.0	ug/L	550	Standard
	Sb	123	93.2	19.6	**0.0212**	0.006	26.6	ug/L	64	Standard
	Ba	135	866.7	4.3	**0.9345**	0.035	3.7	ug/L	8	Standard
	Ce	140	78.3	18.4				ug/L	22	Standard
>	**Tb**	159	938176.4	1.6				ug/L	944784	Standard
	Ho	165	16.7	75.5				ug/L	8	Standard
	Tl	203	54.3	16.7	**0.0071**	0.002	25.1	ug/L	5	Standard
	Tl	205	98.3	28.9	**0.0173**	0.006	32.1	ug/L	3	Standard
	Pb	206	256.3	14.4	**0.0123**	0.012	96.0	ug/L	197	Standard
	Pb	207	226.7	3.5	**0.0149**	0.004	24.6	ug/L	180	Standard
	Pb	208	964.3	4.0	**0.0141**	0.003	19.2	ug/L	761	Standard
	U	238	68.7	42.3	**0.0134**	0.006	45.2	ug/L	0	Standard
>	**Bi**	209	622165.2	1.1				ug/L	628212	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	1431.7	5.6	**3.9210**	0.129	3.3	mg/L	12	Standard
K	39	13.3	21.7	**0.1093**	0.048	43.6	mg/L	7	Standard
Ca	43	26.7	21.7	**0.9451**	0.673	71.2	mg/L	30	Standard
Fe	54	607.6	7.4	**0.1232**	0.013	10.8	mg/L	241	Standard
Fe	57	165.0	6.1	**0.1602**	0.008	5.3	mg/L	37	Standard
> **Sc-1**	45	110654.4	2.5				mg/L	108014	Standard
Cl	35	13656.8	0.7				ug/L	13720	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	2713.6	8.5				ug/L	750	Standard
P	31	16133.6	3.9				ug/L	15373	Standard
S	34	931.7	1.6				ug/L	970	Standard
Sr	88	238.3	8.5				ug/L	5	Standard
C	12	113.3	33.4				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	13.0	119.4				mg/L	3	Standard
Ho-1	165	16.7	75.5				mg/L	8	Standard
Er	166	6.7	86.6				mg/L	17	Standard
I	127	14975.8	6.5				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.053	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.312	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.488
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.038
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1505130306
Sample Date/Time: Friday, June 05, 2015 11:13:00
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	221587.2	1.7				ug/L	205676	Standard
	Be	9	33.3	48.2	**0.0229**	0.015	65.2	ug/L	13	Standard
	Al	27	9696303.1	2.4	**156.8513**	5.427	3.5	ug/L	498	Standard
	Sc	45	114615.3	2.0				ug/L	108014	Standard
	Ti	47	274.0	5.5	**0.8255**	0.030	3.7	ug/L	18	Standard
	V	51	1590.6	10.4	**0.1010**	0.023	22.6	ug/L	907	Standard
	Cr	52	6382.3	2.1	**0.2226**	0.016	7.3	ug/L	4635	Standard
	Cr	53	3933.8	7.1	**3.5255**	0.235	6.7	ug/L	255	Standard
	Mn	55	700271.3	1.3	**56.1725**	0.501	0.9	ug/L	746	Standard
	Co	59	6149.9	0.5	**0.8062**	0.021	2.6	ug/L	40	Standard
	Ni	60	5815.8	4.4	**2.3251**	0.096	4.1	ug/L	237	Standard
	Cu	65	4231.9	4.5	**1.6011**	0.048	3.0	ug/L	308	Standard
	Zn	66	7584.6	1.9	**4.6523**	0.061	1.3	ug/L	601	Standard
>	**Ge**	72	795845.9	2.1				ug/L	774356	Standard
	As	75	1464.0	0.3	**1.0922**	0.024	2.2	ug/L	-42	Standard
	Se	82	533.0	2.2	**4.1419**	0.134	3.2	ug/L	16	Standard
	Se-1	77	460.0	13.1	**4.3402**	0.608	14.0	ug/L	43	Standard
>	**Ga**	71	73.3	23.9				mg/L	30	Standard
	Rb	85	2708.6	7.5				ug/L	15	Standard
	Y	89	931019.5	2.9				ug/L	919916	Standard
>	**Rh**	103	240.0	2.1				ug/L	3	Standard
	Mo	98	310.9	2.0	**0.1066**	0.004	3.9	ug/L	12	Standard
	Ag	107	83.7	8.5	**-0.0015**	0.001	71.8	ug/L	84	Standard
	Cd	111	119.9	6.7	**0.0924**	0.007	7.4	mg/L	2	Standard
	Cd	114	300.6	21.3	**0.0973**	0.022	22.9	ug/L	2	Standard
>	**In**	115	701594.2	1.7				ug/L	707917	Standard
	Sn	118	786.7	4.1	**0.0764**	0.011	14.9	ug/L	550	Standard
	Sb	123	161.5	4.1	**0.0439**	0.002	4.3	ug/L	64	Standard
	Ba	135	10051.0	0.2	**10.8977**	0.198	1.8	ug/L	8	Standard
	Ce	140	306.7	2.5				ug/L	22	Standard
>	**Tb**	159	959266.5	2.4				ug/L	944784	Standard
	Ho	165	13.3	43.3				ug/L	8	Standard
	Tl	203	101.3	9.4	**0.0176**	0.002	12.6	ug/L	5	Standard
	Tl	205	96.7	15.8	**0.0176**	0.003	16.9	ug/L	3	Standard
	Pb	206	377.0	8.8	**0.0549**	0.012	21.2	ug/L	197	Standard
	Pb	207	354.7	3.8	**0.0640**	0.004	5.7	ug/L	180	Standard
	Pb	208	1383.7	5.6	**0.0533**	0.005	9.2	ug/L	761	Standard
	U	238	6144.2	2.9	**1.3198**	0.021	1.6	ug/L	0	Standard
>	**Bi**	209	604102.0	1.8				ug/L	628212	Standard

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Na	23	3.3	86.6	**39.5202**	34.238	86.6	mg/L	0	Standard
Mg	24	33358.4	1.2	**89.4371**	0.740	0.8	mg/L	12	Standard
K	39	61.7	32.8	**0.8181**	0.290	35.5	mg/L	7	Standard
Ca	43	350.0	14.1	**36.0028**	6.147	17.1	mg/L	30	Standard
Fe	54	344.1	16.5	**0.0065**	0.026	407.6	mg/L	241	Standard
Fe	57	221.7	12.4	**0.2272**	0.031	13.7	mg/L	37	Standard
> **Sc-1**	45	114615.3	2.0				mg/L	108014	Standard
Cl	35	16273.4	1.1				ug/L	13720	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	40006.1	4.2				ug/L	750	Standard
P	31	22989.1	0.2				ug/L	15373	Standard
S	34	893.4	4.0				ug/L	970	Standard
Sr	88	2431.9	6.7				ug/L	5	Standard
C	12	186.7	16.4				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	16.0	93.1				mg/L	3	Standard
Ho-1	165	13.3	43.3				mg/L	8	Standard
Er	166	13.3	114.6				mg/L	17	Standard
I	127	698684.1	4.0				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.736	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.775	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.107
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.162
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1505130306PS WG525403-05
Sample Date/Time: Friday, June 05, 2015 11:16:11
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	215123.2	1.1				ug/L	205676	Standard
	Be	9	53910.7	0.7	**50.1931**	0.878	1.8	ug/L	13	Standard
	Al	27	9488340.8	1.4	**158.0559**	1.854	1.2	ug/L	498	Standard
	Sc	45	113958.6	0.8				ug/L	108014	Standard
	Ti	47	247.0	6.3	**0.7524**	0.033	4.4	ug/L	18	Standard
	V	51	349729.0	1.3	**53.1020**	1.633	3.1	ug/L	907	Standard
	Cr	52	379508.1	0.4	**52.7956**	1.208	2.3	ug/L	4635	Standard
	Cr	53	55811.0	2.9	**54.0234**	1.060	2.0	ug/L	255	Standard
	Mn	55	1313764.8	0.5	**107.2287**	1.848	1.7	ug/L	746	Standard
	Co	59	387351.7	0.8	**52.0094**	1.286	2.5	ug/L	40	Standard
	Ni	60	123303.7	0.5	**52.4110**	1.428	2.7	ug/L	237	Standard
	Cu	65	125569.6	1.1	**52.4776**	0.582	1.1	ug/L	308	Standard
	Zn	66	82655.2	0.4	**56.4420**	1.140	2.0	ug/L	601	Standard
>	**Ge**	72	782805.2	2.2				ug/L	774356	Standard
	As	75	73305.9	0.5	**54.7900**	0.981	1.8	ug/L	-42	Standard
	Se	82	6898.4	0.8	**57.1606**	1.041	1.8	ug/L	16	Standard
	Se-1	77	5414.3	2.1	**56.7250**	1.474	2.6	ug/L	43	Standard
>	**Ga**	71	91.7	30.0				mg/L	30	Standard
	Rb	85	2641.9	3.4				ug/L	15	Standard
	Y	89	932415.9	1.1				ug/L	919916	Standard
>	**Rh**	103	215.0	4.7				ug/L	3	Standard
	Mo	98	314.3	13.8	**0.1091**	0.015	13.5	ug/L	12	Standard
	Ag	107	277352.7	1.0	**50.6211**	1.117	2.2	ug/L	84	Standard
	Cd	111	65742.6	0.7	**52.2047**	0.859	1.6	mg/L	2	Standard
	Cd	114	158258.4	0.7	**52.4451**	0.343	0.7	ug/L	2	Standard
>	**In**	115	693289.7	1.3				ug/L	707917	Standard
	Sn	118	773.4	2.6	**0.0752**	0.007	9.5	ug/L	550	Standard
	Sb	123	159504.0	0.5	**54.0557**	0.706	1.3	ug/L	64	Standard
	Ba	135	57807.7	0.1	**63.4805**	0.890	1.4	ug/L	8	Standard
	Ce	140	268.3	12.1				ug/L	22	Standard
>	**Tb**	159	945324.3	1.6				ug/L	944784	Standard
	Ho	165	28.3	10.2				ug/L	8	Standard
	Tl	203	240983.0	0.7	**52.3414**	0.347	0.7	ug/L	5	Standard
	Tl	205	248406.5	0.7	**52.1209**	0.389	0.7	ug/L	3	Standard
	Pb	206	156537.5	0.7	**52.6414**	0.521	1.0	ug/L	197	Standard
	Pb	207	143669.3	0.3	**53.0167**	0.837	1.6	ug/L	180	Standard
	Pb	208	582126.5	0.3	**51.6057**	0.654	1.3	ug/L	761	Standard
	U	238	254524.1	0.8	**55.3814**	0.569	1.0	ug/L	0	Standard
>	**Bi**	209	596907.0	1.3				ug/L	628212	Standard

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Na	23	1.7	173.2	**19.5850**	33.914	173.2	mg/L	0	Standard
Mg	24	32561.6	1.1	**87.7920**	0.407	0.5	mg/L	12	Standard
K	39	48.3	29.9	**0.6262**	0.218	34.9	mg/L	7	Standard
Ca	43	365.0	19.2	**37.7904**	7.744	20.5	mg/L	30	Standard
Fe	54	342.1	2.2	**0.0062**	0.004	61.4	mg/L	241	Standard
Fe	57	225.0	9.7	**0.2337**	0.028	11.8	mg/L	37	Standard
> **Sc-1**	45	113958.6	0.8				mg/L	108014	Standard
Cl	35	15670.8	1.6				ug/L	13720	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	37914.0	1.2				ug/L	750	Standard
P	31	23126.0	7.3				ug/L	15373	Standard
S	34	845.0	7.3				ug/L	970	Standard
Sr	88	2285.2	2.4				ug/L	5	Standard
C	12	166.7	48.5				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	28.9	34.6				mg/L	3	Standard
Ho-1	165	28.3	10.2				mg/L	8	Standard
Er	166	23.3	24.7				mg/L	17	Standard
I	127	703971.2	4.4				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.593	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.091	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.934
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.017
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1505130306SDL WG525403-06
Sample Date/Time: Friday, June 05, 2015 11:22:28
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	199950.9	1.4				ug/L	205676	Standard
	Be	9	15.0	0.0	**0.0076**	0.000	2.8	ug/L	13	Standard
	Al	27	1824873.7	1.3	**32.6810**	0.417	1.3	ug/L	498	Standard
	Sc	45	102213.6	1.0				ug/L	108014	Standard
	Ti	47	50.0	6.9	**0.1227**	0.012	9.5	ug/L	18	Standard
	V	51	1074.2	17.8	**0.0357**	0.032	88.6	ug/L	907	Standard
	Cr	52	5286.9	1.5	**0.1248**	0.017	14.0	ug/L	4635	Standard
	Cr	53	1351.7	6.5	**1.1520**	0.080	6.9	ug/L	255	Standard
	Mn	55	131934.0	1.1	**11.2938**	0.037	0.3	ug/L	746	Standard
	Co	59	1226.0	3.0	**0.1677**	0.006	3.8	ug/L	40	Standard
	Ni	60	1361.4	3.0	**0.5014**	0.016	3.2	ug/L	237	Standard
	Cu	65	1054.4	1.6	**0.3240**	0.005	1.4	ug/L	308	Standard
	Zn	66	3024.0	1.7	**1.7142**	0.049	2.9	ug/L	601	Standard
>	**Ge**	72	741273.3	0.7				ug/L	774356	Standard
	As	75	238.3	15.5	**0.2043**	0.030	14.7	ug/L	-42	Standard
	Se	82	111.8	5.6	**0.7622**	0.062	8.1	ug/L	16	Standard
	Se-1	77	145.3	3.8	**1.1852**	0.055	4.6	ug/L	43	Standard
>	**Ga**	71	53.3	23.6				mg/L	30	Standard
	Rb	85	553.3	13.2				ug/L	15	Standard
	Y	89	863831.6	2.7				ug/L	919916	Standard
>	**Rh**	103	38.3	19.9				ug/L	3	Standard
	Mo	98	70.9	5.6	**0.0187**	0.002	8.3	ug/L	12	Standard
	Ag	107	481.7	19.3	**0.0764**	0.017	22.4	ug/L	84	Standard
	Cd	111	30.6	13.2	**0.0241**	0.004	14.8	mg/L	2	Standard
	Cd	114	74.7	19.3	**0.0248**	0.005	21.1	ug/L	2	Standard
>	**In**	115	654707.1	1.0				ug/L	707917	Standard
	Sn	118	510.0	17.7	**0.0143**	0.024	170.4	ug/L	550	Standard
	Sb	123	249.9	6.6	**0.0795**	0.006	7.2	ug/L	64	Standard
	Ba	135	1948.1	2.0	**2.2540**	0.064	2.8	ug/L	8	Standard
	Ce	140	63.3	16.4				ug/L	22	Standard
>	**Tb**	159	881802.1	1.3				ug/L	944784	Standard
	Ho	165	16.7	69.3				ug/L	8	Standard
	Tl	203	89.0	13.2	**0.0157**	0.003	17.5	ug/L	5	Standard
	Tl	205	71.7	42.1	**0.0130**	0.007	50.9	ug/L	3	Standard
	Pb	206	258.7	8.0	**0.0190**	0.008	42.4	ug/L	197	Standard
	Pb	207	240.7	19.2	**0.0260**	0.018	70.4	ug/L	180	Standard
	Pb	208	1005.3	7.5	**0.0237**	0.007	31.0	ug/L	761	Standard
	U	238	1176.4	4.8	**0.2621**	0.014	5.4	ug/L	0	Standard
>	**Bi**	209	580976.8	1.0				ug/L	628212	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	6283.0	4.6	**18.8391**	0.690	3.7	mg/L	12	Standard
K	39	15.0	57.7	**0.1540**	0.145	94.3	mg/L	7	Standard
Ca	43	70.0	7.1	**6.4615**	0.609	9.4	mg/L	30	Standard
Fe	54	296.1	7.7	**0.0012**	0.010	887.5	mg/L	241	Standard
Fe	57	55.0	41.7	**0.0153**	0.034	220.2	mg/L	37	Standard
> **Sc-1**	45	102213.6	1.0				mg/L	108014	Standard
Cl	35	13069.6	1.6				ug/L	13720	Standard
Kr	83	0.7	86.6				ug/L	0	Standard
Br	81	7988.8	7.9				ug/L	750	Standard
P	31	15754.9	3.8				ug/L	15373	Standard
S	34	791.7	6.7				ug/L	970	Standard
Sr	88	458.3	18.6				ug/L	5	Standard
C	12	113.3	13.5				mg/L	40	Standard
N	14	6.7	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.0	107.3				mg/L	3	Standard
Ho-1	165	16.7	69.3				mg/L	8	Standard
Er	166	13.3	114.6				mg/L	17	Standard
I	127	136441.5	6.2				mg/L	138	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		97.216	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.728	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		92.484
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		92.481
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1505130306SDL WG525403-06
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, June 05, 2015 11:25:41
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	191864.0	1.5				ug/L	205676	Standard
	Be	9	49194.8	2.3	**51.3445**	0.387	0.8	ug/L	13	Standard
	Al	27	2833248.3	1.5	**52.8948**	0.154	0.3	ug/L	498	Standard
	Sc	45	100160.0	1.5				ug/L	108014	Standard
	Ti	47	29554.5	1.6	**104.1464**	1.512	1.5	ug/L	18	Standard
	V	51	318705.8	2.1	**52.5507**	1.108	2.1	ug/L	907	Standard
	Cr	52	351821.2	2.3	**53.1614**	1.254	2.4	ug/L	4635	Standard
	Cr	53	50494.1	3.4	**53.1079**	2.267	4.3	ug/L	255	Standard
	Mn	55	592225.9	1.9	**52.4568**	0.858	1.6	ug/L	746	Standard
	Co	59	359722.7	1.0	**52.4577**	0.759	1.4	ug/L	40	Standard
	Ni	60	112809.8	1.5	**52.0733**	0.835	1.6	ug/L	237	Standard
	Cu	65	115650.1	1.9	**52.4985**	0.821	1.6	ug/L	308	Standard
	Zn	66	71273.9	1.8	**52.8302**	0.941	1.8	ug/L	601	Standard
>	**Ge**	72	720554.7	0.8				ug/L	774356	Standard
	As	75	65972.0	1.6	**53.5547**	0.721	1.3	ug/L	-42	Standard
	Se	82	5856.1	1.7	**52.6869**	0.893	1.7	ug/L	16	Standard
	Se-1	77	4590.7	1.2	**52.2035**	0.197	0.4	ug/L	43	Standard
>	**Ga**	71	75.0	20.0				mg/L	30	Standard
	Rb	85	781.7	2.2				ug/L	15	Standard
	Y	89	853958.6	1.0				ug/L	919916	Standard
>	**Rh**	103	13.3	78.1				ug/L	3	Standard
	Mo	98	266095.3	0.8	**106.7860**	1.139	1.1	ug/L	12	Standard
	Ag	107	276393.3	1.0	**53.4744**	0.731	1.4	ug/L	84	Standard
	Cd	111	63354.6	1.2	**53.3308**	0.852	1.6	mg/L	2	Standard
	Cd	114	151295.0	1.5	**53.1540**	0.978	1.8	ug/L	2	Standard
>	**In**	115	653940.5	0.4				ug/L	707917	Standard
	Sn	118	184332.9	0.8	**50.8185**	0.417	0.8	ug/L	550	Standard
	Sb	123	148289.3	1.0	**53.2751**	0.737	1.4	ug/L	64	Standard
	Ba	135	46081.0	1.4	**53.6421**	0.970	1.8	ug/L	8	Standard
	Ce	140	30.0	28.9				ug/L	22	Standard
>	**Tb**	159	870279.4	0.2				ug/L	944784	Standard
	Ho	165	8.3	173.2				ug/L	8	Standard
	Tl	203	234948.8	1.2	**53.3856**	0.559	1.0	ug/L	5	Standard
	Tl	205	239591.3	1.1	**52.5908**	0.522	1.0	ug/L	3	Standard
	Pb	206	150629.6	2.2	**52.9912**	1.069	2.0	ug/L	197	Standard
	Pb	207	137305.2	2.3	**53.0014**	1.131	2.1	ug/L	180	Standard
	Pb	208	566381.1	1.7	**52.5251**	0.854	1.6	ug/L	761	Standard
	U	238	234528.5	1.7	**53.3842**	0.822	1.5	ug/L	0	Standard
>	**Bi**	209	570541.9	0.2				ug/L	628212	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	1791.8	5.7	**5.4465**	0.342	6.3	mg/L	12	Standard
K	39	325.0	5.3	**5.4308**	0.335	6.2	mg/L	7	Standard
Ca	43	53.3	14.3	**4.5698**	0.974	21.3	mg/L	30	Standard
Fe	54	11686.6	4.2	**5.3600**	0.242	4.5	mg/L	241	Standard
Fe	57	3628.8	6.2	**5.4428**	0.317	5.8	mg/L	37	Standard
> **Sc-1**	45	100160.0	1.5				mg/L	108014	Standard
Cl	35	13176.4	2.5				ug/L	13720	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	710.0	4.2				ug/L	750	Standard
P	31	15779.9	3.3				ug/L	15373	Standard
S	34	1011.7	9.8				ug/L	970	Standard
Sr	88	11.7	49.5				ug/L	5	Standard
C	12	66.7	60.6				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.4	101.9				mg/L	3	Standard
Ho-1	165	8.3	173.2				mg/L	8	Standard
Er	166	13.3	114.6				mg/L	17	Standard
I	127	3453.8	30.3				mg/L	138	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	102.689		
	Al	27	105.790		
	Sc	45			
	Ti	47	104.146		
	V	51	105.101		
	Cr	52	106.323		
	Cr	53			
	Mn	55	104.914		
	Co	59	104.915		
	Ni	60	104.147		
	Cu	65	104.997		
	Zn	66	105.660		
>	Ge	72		93.052	
	As	75	107.109		
	Se	82	105.374		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	106.786		
Ag	107	106.949		
Cd	111	106.662		
Cd	114			
In	115			92.375
Sn	118	101.637		
Sb	123	106.550		
Ba	135	107.284		
Ce	140			
Tb	159			
Ho	165			
Tl	203	106.771		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.050		
U	238	106.768		
Bi	209			90.820
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, June 05, 2015 11:28:52
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	187592.6	1.2				ug/L	205676	Standard
	Be	9	41.7	56.7	**0.0373**	0.026	68.6	ug/L	13	Standard
	Al	27	1201.7	78.1	**-0.0090**	0.018	200.6	ug/L	498	Standard
	Sc	45	96546.8	3.1				ug/L	108014	Standard
	Ti	47	19.3	33.3	**0.0214**	0.023	105.3	ug/L	18	Standard
	V	51	763.7	3.5	**-0.0068**	0.003	38.1	ug/L	907	Standard
	Cr	52	4101.9	2.8	**-0.0144**	0.010	67.4	ug/L	4635	Standard
	Cr	53	303.3	16.9	**0.0957**	0.062	64.3	ug/L	255	Standard
	Mn	55	907.4	18.4	**-0.0009**	0.014	1602.3	ug/L	746	Standard
	Co	59	115.0	95.8	**0.0111**	0.016	147.4	ug/L	40	Standard
	Ni	60	316.3	8.3	**0.0401**	0.010	26.0	ug/L	237	Standard
	Cu	65	325.7	11.2	**0.0103**	0.015	147.7	ug/L	308	Standard
	Zn	66	646.0	8.5	**0.0134**	0.036	267.8	ug/L	601	Standard
>	**Ge**	72	698638.4	1.6				ug/L	774356	Standard
	As	75	-26.4	76.3	**-0.0058**	0.017	287.4	ug/L	-42	Standard
	Se	82	21.8	19.1	**-0.0161**	0.042	263.0	ug/L	16	Standard
	Se-1	77	38.0	11.5	**0.0147**	0.049	333.1	ug/L	43	Standard
>	**Ga**	71	26.7	28.6				mg/L	30	Standard
	Rb	85	15.0	100.0				ug/L	15	Standard
	Y	89	827343.2	1.9				ug/L	919916	Standard
>	**Rh**	103	0.0					ug/L	3	Standard
	Mo	98	69.3	24.6	**0.0191**	0.007	35.9	ug/L	12	Standard
	Ag	107	111.7	9.8	**0.0058**	0.002	34.1	ug/L	84	Standard
	Cd	111	3.9	76.7	**0.0017**	0.003	148.1	mg/L	2	Standard
	Cd	114	12.0	105.5	**0.0030**	0.005	154.5	ug/L	2	Standard
>	**In**	115	630082.2	1.7				ug/L	707917	Standard
	Sn	118	483.3	15.7	**0.0125**	0.024	194.3	ug/L	550	Standard
	Sb	123	387.3	16.2	**0.1346**	0.026	19.4	ug/L	64	Standard
	Ba	135	12.7	29.9	**0.0034**	0.004	128.4	ug/L	8	Standard
	Ce	140	0.0					ug/L	22	Standard
>	**Tb**	159	841784.8	1.8				ug/L	944784	Standard
	Ho	165	10.0	86.6				ug/L	8	Standard
	Tl	203	14.0	55.8	**-0.0010**	0.002	180.1	ug/L	5	Standard
	Tl	205	60.0	137.2	**0.0107**	0.018	168.0	ug/L	3	Standard
	Pb	206	203.7	6.7	**0.0021**	0.006	272.7	ug/L	197	Standard
	Pb	207	164.7	9.1	**-0.0009**	0.007	725.3	ug/L	180	Standard
	Pb	208	828.3	23.4	**0.0097**	0.017	176.4	ug/L	761	Standard
	U	238	48.3	142.8	**0.0100**	0.016	156.1	ug/L	0	Standard
>	**Bi**	209	563710.1	1.5				ug/L	628212	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	25.0	34.6	**0.0245**	0.027	110.3	mg/L	12	Standard
K	39	8.3	34.6	**0.0514**	0.054	104.5	mg/L	7	Standard
Ca	43	30.0	66.7	**1.7586**	2.472	140.6	mg/L	30	Standard
Fe	54	272.7	4.0	**-0.0020**	0.009	454.5	mg/L	241	Standard
Fe	57	25.0	60.0	**-0.0269**	0.024	87.7	mg/L	37	Standard
Sc-1	45	96546.8	3.1				mg/L	108014	Standard
Cl	35	13307.8	2.3				ug/L	13720	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	760.0	7.3				ug/L	750	Standard
P	31	14885.6	0.9				ug/L	15373	Standard
S	34	1020.0	3.9				ug/L	970	Standard
Sr	88	13.3	94.4				ug/L	5	Standard
C	12	76.7	32.8				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.0	94.0				mg/L	3	Standard
Ho-1	165	10.0	86.6				mg/L	8	Standard
Er	166	13.3	43.3				mg/L	17	Standard
I	127	1765.1	22.5				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		90.222	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.005
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		89.733
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1505154402
Sample Date/Time: Friday, June 05, 2015 11:32:05
Number of Replicates: 3
Autosampler Position: 359
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	192096.8	0.7				ug/L	205676	Standard
	Be	9	15.0	57.7	**0.0082**	0.009	109.5	ug/L	13	Standard
	Al	27	4214165.5	0.8	**78.5994**	0.955	1.2	ug/L	498	Standard
	Sc	45	102812.8	2.5				ug/L	108014	Standard
	Ti	47	385.0	7.5	**1.2941**	0.098	7.6	ug/L	18	Standard
	V	51	27899.3	2.6	**4.4266**	0.141	3.2	ug/L	907	Standard
	Cr	52	10723.1	1.4	**0.9614**	0.012	1.3	ug/L	4635	Standard
	Cr	53	2982.0	5.5	**2.8805**	0.168	5.8	ug/L	255	Standard
	Mn	55	16688.9	1.1	**1.3810**	0.011	0.8	ug/L	746	Standard
	Co	59	530.3	1.5	**0.0704**	0.001	1.3	ug/L	40	Standard
	Ni	60	2368.2	1.6	**0.9731**	0.018	1.8	ug/L	237	Standard
	Cu	65	4522.0	2.9	**1.8940**	0.057	3.0	ug/L	308	Standard
	Zn	66	5642.7	1.5	**3.6913**	0.065	1.8	ug/L	601	Standard
>	**Ge**	72	728298.1	0.8				ug/L	774356	Standard
	As	75	1293.6	6.8	**1.0550**	0.074	7.1	ug/L	-42	Standard
	Se	82	655.4	2.2	**5.6387**	0.112	2.0	ug/L	16	Standard
	Se-1	77	589.0	2.4	**6.2471**	0.117	1.9	ug/L	43	Standard
>	**Ga**	71	106.7	18.9				mg/L	30	Standard
	Rb	85	1428.4	5.1				ug/L	15	Standard
	Y	89	858846.5	0.8				ug/L	919916	Standard
>	**Rh**	103	53.3	28.6				ug/L	3	Standard
	Mo	98	678.7	0.8	**0.2710**	0.003	1.1	ug/L	12	Standard
	Ag	107	111.7	13.0	**0.0056**	0.003	50.2	ug/L	84	Standard
	Cd	111	36.4	23.6	**0.0299**	0.007	24.7	mg/L	2	Standard
	Cd	114	77.9	12.2	**0.0268**	0.004	13.8	ug/L	2	Standard
>	**In**	115	634577.1	0.9				ug/L	707917	Standard
	Sn	118	823.4	5.1	**0.1081**	0.011	10.2	ug/L	550	Standard
	Sb	123	221.0	12.0	**0.0717**	0.010	14.4	ug/L	64	Standard
	Ba	135	8733.2	1.2	**10.4666**	0.135	1.3	ug/L	8	Standard
	Ce	140	1050.0	7.5				ug/L	22	Standard
>	**Tb**	159	871715.8	1.2				ug/L	944784	Standard
	Ho	165	40.0					ug/L	8	Standard
	Tl	203	88.0	11.9	**0.0165**	0.003	15.8	ug/L	5	Standard
	Tl	205	58.3	27.6	**0.0108**	0.004	35.1	ug/L	3	Standard
	Pb	206	456.3	4.5	**0.0955**	0.005	5.5	ug/L	197	Standard
	Pb	207	402.7	6.8	**0.0954**	0.012	12.5	ug/L	180	Standard
	Pb	208	1644.0	1.4	**0.0897**	0.005	5.3	ug/L	761	Standard
	U	238	18559.0	0.9	**4.3637**	0.082	1.9	ug/L	0	Standard
>	**Bi**	209	552327.5	1.6				ug/L	628212	Standard

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Na	23	5.0	100.0	**64.7990**	63.867	98.6	mg/L	0	Standard
Mg	24	44012.2	2.4	**131.6538**	6.055	4.6	mg/L	12	Standard
K	39	36.7	7.9	**0.5103**	0.032	6.3	mg/L	7	Standard
Ca	43	245.0	31.7	**27.4649**	8.747	31.8	mg/L	30	Standard
Fe	54	437.2	11.4	**0.0651**	0.024	36.7	mg/L	241	Standard
Fe	57	183.3	23.8	**0.2059**	0.070	34.1	mg/L	37	Standard
> **Sc-1**	45	102812.8	2.5				mg/L	108014	Standard
Cl	35	14906.0	1.7				ug/L	13720	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	19379.1	1.6				ug/L	750	Standard
P	31	20370.4	1.1				ug/L	15373	Standard
S	34	975.0	2.9				ug/L	970	Standard
Sr	88	568.3	8.2				ug/L	5	Standard
C	12	193.3	26.5				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	28.6	62.2				mg/L	3	Standard
Ho-1	165	40.0					mg/L	8	Standard
Er	166	30.0	88.2				mg/L	17	Standard
I	127	12011.4	5.8				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.398	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.052	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1505154402
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.640
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.921
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1505154402
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Method 6020 - Summary Report

Sample ID: L1505130306SDL WG525403-06
Sample Date/Time: Friday, June 05, 2015 11:35:17
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	192279.9	3.3				ug/L	205676	Standard
	Be	9	16.7	17.3	**0.0099**	0.003	25.3	ug/L	13	Standard
	Al	27	521843.4	1.0	**9.7009**	0.267	2.7	ug/L	498	Standard
	Sc	45	100166.8	2.2				ug/L	108014	Standard
	Ti	47	21.7	20.8	**0.0276**	0.015	55.2	ug/L	18	Standard
	V	51	942.5	13.1	**0.0186**	0.019	101.4	ug/L	907	Standard
	Cr	52	4656.0	3.3	**0.0502**	0.018	35.8	ug/L	4635	Standard
	Cr	53	598.3	12.1	**0.3956**	0.070	17.6	ug/L	255	Standard
	Mn	55	27268.2	0.5	**2.3340**	0.034	1.5	ug/L	746	Standard
	Co	59	298.0	25.9	**0.0373**	0.011	29.2	ug/L	40	Standard
	Ni	60	522.7	1.8	**0.1310**	0.007	5.4	ug/L	237	Standard
	Cu	65	518.7	7.6	**0.0934**	0.017	17.7	ug/L	308	Standard
	Zn	66	2341.8	1.5	**1.2662**	0.041	3.2	ug/L	601	Standard
>	**Ge**	72	721016.2	1.2				ug/L	774356	Standard
	As	75	17.1	62.9	**0.0300**	0.009	28.7	ug/L	-42	Standard
	Se	82	33.5	29.3	**0.0825**	0.086	104.4	ug/L	16	Standard
	Se-1	77	59.0	6.8	**0.2419**	0.053	22.0	ug/L	43	Standard
>	**Ga**	71	26.7	28.6				mg/L	30	Standard
	Rb	85	140.0	25.8				ug/L	15	Standard
	Y	89	843718.8	0.5				ug/L	919916	Standard
>	**Rh**	103	6.7	86.6				ug/L	3	Standard
	Mo	98	52.0	75.4	**0.0114**	0.016	140.7	ug/L	12	Standard
	Ag	107	70.3	8.6	**-0.0029**	0.001	40.4	ug/L	84	Standard
	Cd	111	5.3	28.8	**0.0028**	0.001	46.2	mg/L	2	Standard
	Cd	114	14.6	105.7	**0.0038**	0.006	144.8	ug/L	2	Standard
>	**In**	115	646820.8	0.6				ug/L	707917	Standard
	Sn	118	448.3	2.8	**-0.0011**	0.004	364.2	ug/L	550	Standard
	Sb	123	89.5	1.7	**0.0224**	0.001	2.3	ug/L	64	Standard
	Ba	135	407.0	6.1	**0.4673**	0.031	6.6	ug/L	8	Standard
	Ce	140	15.0	66.7				ug/L	22	Standard
>	**Tb**	159	863936.5	0.4				ug/L	944784	Standard
	Ho	165	13.3	94.4				ug/L	8	Standard
	Tl	203	33.0	18.2	**0.0032**	0.001	39.4	ug/L	5	Standard
	Tl	205	46.7	55.0	**0.0077**	0.006	72.8	ug/L	3	Standard
	Pb	206	219.0	8.0	**0.0056**	0.005	96.4	ug/L	197	Standard
	Pb	207	183.3	6.3	**0.0045**	0.004	86.3	ug/L	180	Standard
	Pb	208	861.0	11.6	**0.0109**	0.009	84.9	ug/L	761	Standard
	U	238	233.3	19.0	**0.0515**	0.010	19.6	ug/L	0	Standard
>	**Bi**	209	578006.4	1.0				ug/L	628212	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	1331.7	9.6	**4.0384**	0.465	11.5	mg/L	12	Standard
K	39	6.7	114.6	**0.0186**	0.134	718.8	mg/L	7	Standard
Ca	43	20.0	66.1	**0.4391**	1.672	380.8	mg/L	30	Standard
Fe	54	271.0	17.2	**-0.0075**	0.024	325.1	mg/L	241	Standard
Fe	57	41.7	30.2	**-0.0030**	0.020	692.5	mg/L	37	Standard
> **Sc-1**	45	100166.8	2.2				mg/L	108014	Standard
Cl	35	13158.4	1.5				ug/L	13720	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	1986.8	7.1				ug/L	750	Standard
P	31	14713.8	1.5				ug/L	15373	Standard
S	34	1001.7	4.6				ug/L	970	Standard
Sr	88	105.0	25.2				ug/L	5	Standard
C	12	80.0	25.0				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	10.0					mg/L	3	Standard
Ho-1	165	13.3	94.4				mg/L	8	Standard
Er	166	0.0					mg/L	17	Standard
I	127	27077.5	5.0				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.487	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.112	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.370
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.008
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 05, 2015

Method 6020 - Summary Report

Sample ID: L1505130308
Sample Date/Time: Friday, June 05, 2015 11:38:28
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	176856.3	1.0				ug/L	205676	Standard
	Be	9	11.7	24.7	**0.0058**	0.003	55.3	ug/L	13	Standard
	Al	27	1627092.6	0.7	**32.9437**	0.290	0.9	ug/L	498	Standard
	Sc	45	90655.4	1.6				ug/L	108014	Standard
	Ti	47	41.0	19.0	**0.1113**	0.032	28.6	ug/L	18	Standard
	V	51	2434.1	4.8	**0.3079**	0.025	8.0	ug/L	907	Standard
	Cr	52	6067.5	1.2	**0.3645**	0.017	4.6	ug/L	4635	Standard
	Cr	53	1395.1	1.1	**1.3934**	0.031	2.3	ug/L	255	Standard
	Mn	55	157546.6	1.2	**15.3652**	0.058	0.4	ug/L	746	Standard
	Co	59	562.7	3.7	**0.0846**	0.004	4.7	ug/L	40	Standard
	Ni	60	1999.8	1.1	**0.9119**	0.022	2.4	ug/L	237	Standard
	Cu	65	1273.4	4.5	**0.4980**	0.021	4.2	ug/L	308	Standard
	Zn	66	3362.7	1.5	**2.2954**	0.002	0.1	ug/L	601	Standard
>	**Ge**	72	651935.4	1.6				ug/L	774356	Standard
	As	75	219.2	10.2	**0.2129**	0.022	10.3	ug/L	-42	Standard
	Se	82	93.4	7.5	**0.7143**	0.083	11.6	ug/L	16	Standard
	Se-1	77	122.7	7.6	**1.1191**	0.095	8.5	ug/L	43	Standard
>	**Ga**	71	23.3	53.9				mg/L	30	Standard
	Rb	85	2818.6	0.8				ug/L	15	Standard
	Y	89	764927.3	2.7				ug/L	919916	Standard
>	**Rh**	103	115.0	7.5				ug/L	3	Standard
	Mo	98	2073.0	1.9	**0.9161**	0.019	2.0	ug/L	12	Standard
	Ag	107	59.0	15.3	**-0.0039**	0.002	48.7	ug/L	84	Standard
	Cd	111	48.4	5.9	**0.0437**	0.002	5.3	mg/L	2	Standard
	Cd	114	121.3	10.6	**0.0461**	0.005	11.4	ug/L	2	Standard
>	**In**	115	587648.4	0.9				ug/L	707917	Standard
	Sn	118	510.0	4.5	**0.0304**	0.007	21.7	ug/L	550	Standard
	Sb	123	104.7	13.2	**0.0317**	0.006	18.3	ug/L	64	Standard
	Ba	135	12150.5	0.4	**15.7317**	0.181	1.2	ug/L	8	Standard
	Ce	140	63.3	25.4				ug/L	22	Standard
>	**Tb**	159	790295.3	0.3				ug/L	944784	Standard
	Ho	165	11.7	24.7				ug/L	8	Standard
	Tl	203	63.0	9.7	**0.0113**	0.002	14.2	ug/L	5	Standard
	Tl	205	58.3	26.2	**0.0113**	0.003	30.2	ug/L	3	Standard
	Pb	206	263.7	7.2	**0.0299**	0.008	26.1	ug/L	197	Standard
	Pb	207	223.0	3.2	**0.0278**	0.002	6.6	ug/L	180	Standard
	Pb	208	961.3	3.6	**0.0286**	0.005	17.7	ug/L	761	Standard
	U	238	363.7	6.6	**0.0885**	0.005	5.1	ug/L	0	Standard
>	**Bi**	209	527614.5	1.6				ug/L	628212	Standard

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Na	23	5.0	100.0	**74.2797**	74.816	100.7	mg/L	0	Standard
Mg	24	3242.0	5.4	**10.9384**	0.528	4.8	mg/L	12	Standard
K	39	26.7	10.8	**0.4047**	0.057	14.0	mg/L	7	Standard
Ca	43	93.3	22.3	**10.7512**	2.889	26.9	mg/L	30	Standard
Fe	54	219.0	3.7	**-0.0214**	0.005	23.2	mg/L	241	Standard
Fe	57	81.7	24.7	**0.0702**	0.032	45.4	mg/L	37	Standard
Sc-1	45	90655.4	1.6				mg/L	108014	Standard
Cl	35	12546.5	0.7				ug/L	13720	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	6184.6	3.5				ug/L	750	Standard
P	31	14375.1	1.1				ug/L	15373	Standard
S	34	883.4	7.4				ug/L	970	Standard
Sr	88	1400.1	11.7				ug/L	5	Standard
C	12	36.7	41.7				mg/L	40	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.5	89.9				mg/L	3	Standard
Ho-1	165	11.7	24.7				mg/L	8	Standard
Er	166	16.7	34.6				mg/L	17	Standard
I	127	39987.7	3.4				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		85.988	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		84.191	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		83.011
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		83.987
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 05, 2015

Method 6020 - Summary Report

Sample ID: L1505130310
Sample Date/Time: Friday, June 05, 2015 11:41:40
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	195905.1	4.6				ug/L	205676	Standard
	Be	9	58.3	30.1	**0.0527**	0.020	38.4	ug/L	13	Standard
	Al	27	32330494.1	4.6	**591.6008**	15.238	2.6	ug/L	498	Standard
	Sc	45	99120.1	3.5				ug/L	108014	Standard
	Ti	47	365.0	1.7	**1.3562**	0.057	4.2	ug/L	18	Standard
	V	51	-598.0	84.5	**-0.2424**	0.087	35.9	ug/L	907	Standard
	Cr	52	7163.7	8.2	**0.5322**	0.043	8.1	ug/L	4635	Standard
	Cr	53	14335.2	10.0	**16.2462**	0.902	5.6	ug/L	255	Standard
	Mn	55	442689.6	4.7	**42.7429**	0.336	0.8	ug/L	746	Standard
	Co	59	5618.7	4.5	**0.8875**	0.005	0.6	ug/L	40	Standard
	Ni	60	19239.6	7.7	**9.5845**	0.307	3.2	ug/L	237	Standard
	Cu	65	7791.0	3.0	**3.7266**	0.068	1.8	ug/L	308	Standard
	Zn	66	6986.9	3.7	**5.2160**	0.063	1.2	ug/L	601	Standard
>	**Ge**	72	660795.8	4.7				ug/L	774356	Standard
	As	75	3565.2	4.0	**3.1720**	0.042	1.3	ug/L	-42	Standard
	Se	82	1441.1	6.0	**13.9710**	0.227	1.6	ug/L	16	Standard
	Se-1	77	2034.1	6.8	**24.9889**	0.881	3.5	ug/L	43	Standard
>	**Ga**	71	98.3	15.5				mg/L	30	Standard
	Rb	85	3997.2	6.1				ug/L	15	Standard
	Y	89	799313.6	4.7				ug/L	919916	Standard
>	**Rh**	103	546.7	8.3				ug/L	3	Standard
	Mo	98	105.4	16.7	**0.0353**	0.007	18.5	ug/L	12	Standard
	Ag	107	83.0	15.0	**0.0005**	0.003	505.3	ug/L	84	Standard
	Cd	111	140.9	1.9	**0.1249**	0.005	4.3	mg/L	2	Standard
	Cd	114	323.3	13.7	**0.1199**	0.018	14.6	ug/L	2	Standard
>	**In**	115	613064.5	3.6				ug/L	707917	Standard
	Sn	118	560.0	17.2	**0.0387**	0.027	70.8	ug/L	550	Standard
	Sb	123	133.9	8.3	**0.0412**	0.004	10.4	ug/L	64	Standard
	Ba	135	13005.9	3.6	**16.1415**	0.221	1.4	ug/L	8	Standard
	Ce	140	1045.0	6.3				ug/L	22	Standard
>	**Tb**	159	830373.6	3.9				ug/L	944784	Standard
	Ho	165	45.0	29.4				ug/L	8	Standard
	Tl	203	83.7	6.8	**0.0172**	0.001	8.0	ug/L	5	Standard
	Tl	205	81.7	31.4	**0.0177**	0.006	35.2	ug/L	3	Standard
	Pb	206	429.7	0.6	**0.1000**	0.004	3.9	ug/L	197	Standard
	Pb	207	357.0	4.1	**0.0900**	0.004	4.1	ug/L	180	Standard
	Pb	208	1533.7	4.6	**0.0924**	0.004	4.0	ug/L	761	Standard
	U	238	2574.2	5.2	**0.6589**	0.020	3.1	ug/L	0	Standard
>	**Bi**	209	506414.0	2.4				ug/L	628212	Standard

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Na	23	6.7	43.3	**90.8599**	39.101	43.0	mg/L	0	Standard
Mg	24	46698.6	3.8	**144.7905**	1.594	1.1	mg/L	12	Standard
K	39	80.0	33.1	**1.2715**	0.413	32.5	mg/L	7	Standard
Ca	43	1151.7	12.1	**142.2874**	14.136	9.9	mg/L	30	Standard
Fe	54	347.4	18.4	**0.0294**	0.026	89.5	mg/L	241	Standard
Fe	57	731.7	9.1	**1.0548**	0.064	6.1	mg/L	37	Standard
> **Sc-1**	45	99120.1	3.5				mg/L	108014	Standard
Cl	35	19128.1	3.3				ug/L	13720	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	118872.1	5.5				ug/L	750	Standard
P	31	20465.5	2.9				ug/L	15373	Standard
S	34	911.7	6.2				ug/L	970	Standard
Sr	88	6207.9	5.9				ug/L	5	Standard
C	12	110.0	41.7				mg/L	40	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	58.6	33.7				mg/L	3	Standard
Ho-1	165	45.0	29.4				mg/L	8	Standard
Er	166	30.0	33.3				mg/L	17	Standard
I	127	70931.2	7.0				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.249	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		85.335	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		86.601
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		80.612
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1505130312
Sample Date/Time: Friday, June 05, 2015 11:44:51
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	186941.0	4.5				ug/L	205676	Standard
	Be	9	25.0	20.0	**0.0193**	0.005	23.8	ug/L	13	Standard
	Al	27	7477134.5	4.1	**143.3395**	0.984	0.7	ug/L	498	Standard
	Sc	45	94822.7	3.8				ug/L	108014	Standard
	Ti	47	62.0	9.8	**0.1862**	0.018	9.8	ug/L	18	Standard
	V	51	7.0	3679.8	**-0.1353**	0.046	34.0	ug/L	907	Standard
	Cr	52	6837.2	3.5	**0.4632**	0.018	3.9	ug/L	4635	Standard
	Cr	53	6774.8	1.8	**7.4603**	0.058	0.8	ug/L	255	Standard
	Mn	55	121020.8	3.6	**11.4602**	0.130	1.1	ug/L	746	Standard
	Co	59	794.0	5.5	**0.1183**	0.004	3.4	ug/L	40	Standard
	Ni	60	5835.1	3.9	**2.7912**	0.041	1.5	ug/L	237	Standard
	Cu	65	2570.2	3.9	**1.1155**	0.029	2.6	ug/L	308	Standard
	Zn	66	4776.1	0.9	**3.3582**	0.066	2.0	ug/L	601	Standard
>	**Ge**	72	670056.4	2.6				ug/L	774356	Standard
	As	75	955.0	14.8	**0.8490**	0.115	13.5	ug/L	-42	Standard
	Se	82	417.5	6.1	**3.8358**	0.206	5.4	ug/L	16	Standard
	Se-1	77	833.4	2.8	**9.8506**	0.551	5.6	ug/L	43	Standard
>	**Ga**	71	48.3	15.8				mg/L	30	Standard
	Rb	85	3058.6	8.3				ug/L	15	Standard
	Y	89	794899.1	2.1				ug/L	919916	Standard
>	**Rh**	103	163.3	9.4				ug/L	3	Standard
	Mo	98	48.8	24.3	**0.0113**	0.005	41.6	ug/L	12	Standard
	Ag	107	129.7	8.9	**0.0104**	0.003	29.1	ug/L	84	Standard
	Cd	111	32.6	25.0	**0.0280**	0.008	29.1	mg/L	2	Standard
	Cd	114	83.5	21.3	**0.0302**	0.007	23.0	ug/L	2	Standard
>	**In**	115	607834.4	2.3				ug/L	707917	Standard
	Sn	118	553.3	16.3	**0.0382**	0.027	71.7	ug/L	550	Standard
	Sb	123	75.3	3.3	**0.0190**	0.000	2.1	ug/L	64	Standard
	Ba	135	45392.6	2.3	**56.8470**	0.231	0.4	ug/L	8	Standard
	Ce	140	123.3	36.8				ug/L	22	Standard
>	**Tb**	159	814642.7	2.4				ug/L	944784	Standard
	Ho	165	11.7	24.7				ug/L	8	Standard
	Tl	203	70.0	6.2	**0.0131**	0.001	6.6	ug/L	5	Standard
	Tl	205	81.7	27.6	**0.0170**	0.005	31.1	ug/L	3	Standard
	Pb	206	377.7	7.2	**0.0737**	0.009	12.3	ug/L	197	Standard
	Pb	207	306.3	4.8	**0.0630**	0.006	9.8	ug/L	180	Standard
	Pb	208	1359.4	2.5	**0.0689**	0.002	2.7	ug/L	761	Standard
	U	238	719.0	4.7	**0.1765**	0.006	3.5	ug/L	0	Standard
>	**Bi**	209	526029.2	1.4				ug/L	628212	Standard

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Na	23	3.3	86.6	**48.4454**	41.975	86.6	mg/L	0	Standard
Mg	24	9631.4	2.8	**31.1841**	0.562	1.8	mg/L	12	Standard
K	39	21.7	48.0	**0.2976**	0.199	67.0	mg/L	7	Standard
Ca	43	281.7	13.6	**34.7973**	3.671	10.6	mg/L	30	Standard
Fe	54	259.1	15.9	**-0.0069**	0.016	229.2	mg/L	241	Standard
Fe	57	165.0	9.1	**0.1987**	0.030	15.0	mg/L	37	Standard
> **Sc-1**	45	94822.7	3.8				mg/L	108014	Standard
Cl	35	14581.7	2.8				ug/L	13720	Standard
Kr	83	0.7	173.2				ug/L	0	Standard
Br	81	30888.1	2.4				ug/L	750	Standard
P	31	15187.6	4.8				ug/L	15373	Standard
S	34	991.7	5.9				ug/L	970	Standard
Sr	88	1598.4	12.1				ug/L	5	Standard
C	12	80.0	0.0				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	15.5	33.7				mg/L	3	Standard
Ho-1	165	11.7	24.7				mg/L	8	Standard
Er	166	23.3	65.5				mg/L	17	Standard
I	127	16125.2	1.4				mg/L	138	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		90.891	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		86.531	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	85.862
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	83.734
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1505157902
Sample Date/Time: Friday, June 05, 2015 11:48:02
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	195738.8	7.1				ug/L	205676	Standard
	Be	9	23.3	44.6	**0.0165**	0.011	65.5	ug/L	13	Standard
	Al	27	12526657.2	7.9	**229.2584**	1.756	0.8	ug/L	498	Standard
	Sc	45	100030.7	8.5				ug/L	108014	Standard
	Ti	47	21.7	16.2	**0.0285**	0.011	38.6	ug/L	18	Standard
	V	51	897.8	12.3	**0.0125**	0.006	48.4	ug/L	907	Standard
	Cr	52	7419.2	10.4	**0.4830**	0.031	6.4	ug/L	4635	Standard
	Cr	53	3710.5	2.8	**3.7332**	0.229	6.1	ug/L	255	Standard
	Mn	55	2997446.6	7.5	**268.4940**	2.865	1.1	ug/L	746	Standard
	Co	59	4417.0	7.6	**0.6444**	0.011	1.7	ug/L	40	Standard
	Ni	60	23957.0	8.1	**11.0780**	0.040	0.4	ug/L	237	Standard
	Cu	65	1247.1	12.2	**0.4293**	0.022	5.1	ug/L	308	Standard
	Zn	66	6407.4	7.5	**4.3558**	0.054	1.2	ug/L	601	Standard
>	**Ge**	72	713805.7	8.4				ug/L	774356	Standard
	As	75	612.2	12.4	**0.5179**	0.051	9.9	ug/L	-42	Standard
	Se	82	478.2	9.2	**4.1398**	0.047	1.1	ug/L	16	Standard
	Se-1	77	547.7	8.9	**5.9070**	0.265	4.5	ug/L	43	Standard
>	**Ga**	71	100.0	13.2				mg/L	30	Standard
	Rb	85	2626.9	3.3				ug/L	15	Standard
	Y	89	845453.2	8.5				ug/L	919916	Standard
>	**Rh**	103	43.3	37.1				ug/L	3	Standard
	Mo	98	2734.7	4.7	**1.0999**	0.034	3.1	ug/L	12	Standard
	Ag	107	67.0	21.7	**-0.0036**	0.002	65.6	ug/L	84	Standard
	Cd	111	538.5	7.8	**0.4560**	0.006	1.2	mg/L	2	Standard
	Cd	114	1344.7	12.6	**0.4754**	0.047	10.0	ug/L	2	Standard
>	**In**	115	647593.0	7.2				ug/L	707917	Standard
	Sn	118	571.7	10.5	**0.0329**	0.006	17.6	ug/L	550	Standard
	Sb	123	186.0	3.5	**0.0576**	0.006	10.7	ug/L	64	Standard
	Ba	135	820.7	10.5	**0.9515**	0.033	3.4	ug/L	8	Standard
	Ce	140	13.3	57.3				ug/L	22	Standard
>	**Tb**	159	865269.2	7.7				ug/L	944784	Standard
	Ho	165	5.0	100.0				ug/L	8	Standard
	Tl	203	373.0	7.5	**0.0811**	0.001	1.4	ug/L	5	Standard
	Tl	205	403.3	6.2	**0.0868**	0.007	8.2	ug/L	3	Standard
	Pb	206	354.7	9.5	**0.0550**	0.002	4.0	ug/L	197	Standard
	Pb	207	317.3	8.8	**0.0579**	0.002	2.7	ug/L	180	Standard
	Pb	208	1262.4	7.1	**0.0500**	0.003	6.7	ug/L	761	Standard
	U	238	8533.4	7.2	**1.9534**	0.033	1.7	ug/L	0	Standard
>	**Bi**	209	567250.7	7.8				ug/L	628212	Standard

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Na	23	1.7	173.2	**22.8269**	39.529	173.2	mg/L	0	Standard
Mg	24	1438.4	5.5	**4.3750**	0.202	4.6	mg/L	12	Standard
K	39	23.3	24.7	**0.2976**	0.065	21.9	mg/L	7	Standard
Ca	43	88.3	40.2	**8.7400**	3.617	41.4	mg/L	30	Standard
Fe	54	294.2	13.2	**0.0048**	0.028	589.0	mg/L	241	Standard
Fe	57	70.0	44.6	**0.0380**	0.041	107.3	mg/L	37	Standard
> **Sc-1**	45	100030.7	8.5				mg/L	108014	Standard
Cl	35	16310.2	9.0				ug/L	13720	Standard
Kr	83	1.0	0.0				ug/L	0	Standard
Br	81	20113.4	5.8				ug/L	750	Standard
P	31	14258.4	2.4				ug/L	15373	Standard
S	34	876.7	8.7				ug/L	970	Standard
Sr	88	483.3	9.8				ug/L	5	Standard
C	12	76.7	61.6				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	13.2	86.6				mg/L	3	Standard
Ho-1	165	5.0	100.0				mg/L	8	Standard
Er	166	3.3	173.2				mg/L	17	Standard
I	127	92806.7	9.3				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.168	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.181	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	91.479
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	90.296
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1505156411
Sample Date/Time: Friday, June 05, 2015 11:51:14
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	208172.7	2.8				ug/L	205676	Standard
	Be	9	31.7	18.2	**0.0231**	0.006	24.5	ug/L	13	Standard
	Al	27	10086221.1	3.1	**173.6128**	0.744	0.4	ug/L	498	Standard
	Sc	45	107979.0	4.7				ug/L	108014	Standard
	Ti	47	290.3	10.3	**0.9201**	0.077	8.4	ug/L	18	Standard
	V	51	59.0	349.7	**-0.1284**	0.032	24.7	ug/L	907	Standard
	Cr	52	6158.3	10.1	**0.2300**	0.065	28.2	ug/L	4635	Standard
	Cr	53	5332.6	10.2	**5.0957**	0.425	8.3	ug/L	255	Standard
	Mn	55	5783616.2	3.4	**486.0167**	1.790	0.4	ug/L	746	Standard
	Co	59	3109.7	4.5	**0.4234**	0.005	1.3	ug/L	40	Standard
	Ni	60	7346.8	9.7	**3.1045**	0.206	6.6	ug/L	237	Standard
	Cu	65	3457.1	2.8	**1.3486**	0.025	1.9	ug/L	308	Standard
	Zn	66	5484.0	3.7	**3.4014**	0.044	1.3	ug/L	601	Standard
>	**Ge**	72	760574.1	3.3				ug/L	774356	Standard
	As	75	10322.1	4.1	**7.9510**	0.085	1.1	ug/L	-42	Standard
	Se	82	187.8	8.4	**1.3887**	0.142	10.2	ug/L	16	Standard
	Se-1	77	613.7	7.9	**6.2261**	0.324	5.2	ug/L	43	Standard
>	**Ga**	71	161.7	6.4				mg/L	30	Standard
	Rb	85	1733.4	6.7				ug/L	15	Standard
	Y	89	906375.7	3.7				ug/L	919916	Standard
>	**Rh**	103	53.3	28.6				ug/L	3	Standard
	Mo	98	1705.2	2.2	**0.6539**	0.006	0.8	ug/L	12	Standard
	Ag	107	71.3	4.0	**-0.0032**	0.000	9.2	ug/L	84	Standard
	Cd	111	25.0	16.6	**0.0187**	0.003	17.7	mg/L	2	Standard
	Cd	114	76.0	26.9	**0.0246**	0.008	30.8	ug/L	2	Standard
>	**In**	115	674445.3	2.9				ug/L	707917	Standard
	Sn	118	955.0	6.9	**0.1294**	0.014	10.8	ug/L	550	Standard
	Sb	123	241.3	7.0	**0.0739**	0.004	5.1	ug/L	64	Standard
	Ba	135	77979.6	2.2	**88.0306**	0.666	0.8	ug/L	8	Standard
	Ce	140	140.0	21.7				ug/L	22	Standard
>	**Tb**	159	916899.6	2.8				ug/L	944784	Standard
	Ho	165	8.3	34.6				ug/L	8	Standard
	Tl	203	60.0	4.4	**0.0091**	0.001	7.5	ug/L	5	Standard
	Tl	205	71.7	16.1	**0.0129**	0.003	22.4	ug/L	3	Standard
	Pb	206	367.7	3.8	**0.0559**	0.004	7.7	ug/L	197	Standard
	Pb	207	298.0	10.0	**0.0468**	0.009	18.2	ug/L	180	Standard
	Pb	208	1318.4	3.0	**0.0515**	0.005	10.0	ug/L	761	Standard
	U	238	214.7	14.0	**0.0467**	0.006	13.6	ug/L	0	Standard
>	**Bi**	209	584680.3	2.6				ug/L	628212	Standard

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Na	23	10.0		**125.2994**	5.952	4.8	mg/L	0	Standard
Mg	24	26361.3	4.0	**75.0376**	1.992	2.7	mg/L	12	Standard
K	39	31.7	24.1	**0.4065**	0.142	35.0	mg/L	7	Standard
Ca	43	706.7	10.6	**79.1914**	4.895	6.2	mg/L	30	Standard
Fe	54	5363.8	4.7	**2.2039**	0.002	0.1	mg/L	241	Standard
Fe	57	1946.8	5.0	**2.6753**	0.027	1.0	mg/L	37	Standard
> **Sc-1**	45	107979.0	4.7				mg/L	108014	Standard
Cl	35	17697.7	4.8				ug/L	13720	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	13782.9	3.4				ug/L	750	Standard
P	31	19746.2	3.7				ug/L	15373	Standard
S	34	966.7	5.8				ug/L	970	Standard
Sr	88	570.0	10.3				ug/L	5	Standard
C	12	146.7	15.7				mg/L	40	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.5	5.0				mg/L	3	Standard
Ho-1	165	8.3	34.6				mg/L	8	Standard
Er	166	10.0	100.0				mg/L	17	Standard
I	127	146875.9	4.1				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.214	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.220	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.272
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.071
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1505156410PS WG525408-05
Sample Date/Time: Friday, June 05, 2015 11:54:26
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	206859.3	1.1				ug/L	205676	Standard
	Be	9	52599.5	1.1	**50.9226**	0.291	0.6	ug/L	13	Standard
	Al	27	10147510.4	1.7	**175.7831**	1.642	0.9	ug/L	498	Standard
	Sc	45	108671.8	2.5				ug/L	108014	Standard
	Ti	47	299.0	4.6	**0.9588**	0.063	6.6	ug/L	18	Standard
	V	51	335262.8	0.9	**52.8011**	0.696	1.3	ug/L	907	Standard
	Cr	52	362447.1	0.9	**52.2973**	0.435	0.8	ug/L	4635	Standard
	Cr	53	56736.0	0.6	**57.0036**	0.939	1.6	ug/L	255	Standard
	Mn	55	6363620.5	1.9	**539.0971**	2.991	0.6	ug/L	746	Standard
	Co	59	371093.5	1.5	**51.6814**	0.359	0.7	ug/L	40	Standard
	Ni	60	120587.0	0.4	**53.1697**	0.751	1.4	ug/L	237	Standard
	Cu	65	118857.8	1.4	**51.5305**	0.531	1.0	ug/L	308	Standard
	Zn	66	77924.9	1.1	**55.1905**	0.845	1.5	ug/L	601	Standard
>	**Ge**	72	754476.1	1.7				ug/L	774356	Standard
	As	75	80107.8	1.4	**62.1113**	1.027	1.7	ug/L	-42	Standard
	Se	82	6356.0	0.8	**54.6342**	1.260	2.3	ug/L	16	Standard
	Se-1	77	5349.9	2.1	**58.1636**	1.598	2.7	ug/L	43	Standard
>	**Ga**	71	171.7	27.1				mg/L	30	Standard
	Rb	85	1715.1	9.5				ug/L	15	Standard
	Y	89	910744.5	1.9				ug/L	919916	Standard
>	**Rh**	103	53.3	19.5				ug/L	3	Standard
	Mo	98	1740.0	0.2	**0.6742**	0.014	2.1	ug/L	12	Standard
	Ag	107	266108.0	1.0	**50.4142**	0.528	1.0	ug/L	84	Standard
	Cd	111	63338.0	0.3	**52.2136**	0.849	1.6	mg/L	2	Standard
	Cd	114	151254.3	1.5	**52.0318**	0.241	0.5	ug/L	2	Standard
>	**In**	115	667866.8	1.9				ug/L	707917	Standard
	Sn	118	641.7	5.7	**0.0473**	0.011	22.4	ug/L	550	Standard
	Sb	123	152674.3	0.9	**53.7161**	1.010	1.9	ug/L	64	Standard
	Ba	135	123943.6	0.9	**141.3046**	1.704	1.2	ug/L	8	Standard
	Ce	140	140.0	12.9				ug/L	22	Standard
>	**Tb**	159	912071.2	1.4				ug/L	944784	Standard
	Ho	165	15.0	33.3				ug/L	8	Standard
	Tl	203	233831.4	1.3	**52.2709**	0.178	0.3	ug/L	5	Standard
	Tl	205	244360.2	1.9	**52.7735**	1.155	2.2	ug/L	3	Standard
	Pb	206	151195.7	0.8	**52.3317**	0.491	0.9	ug/L	197	Standard
	Pb	207	138018.8	1.3	**52.4144**	0.335	0.6	ug/L	180	Standard
	Pb	208	569958.5	0.7	**52.0039**	0.537	1.0	ug/L	761	Standard
	U	238	245164.3	0.9	**54.9047**	0.527	1.0	ug/L	0	Standard
>	**Bi**	209	579961.1	1.6				ug/L	628212	Standard

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Na	23	3.3	86.6	**41.8508**	36.258	86.6	mg/L	0	Standard
Mg	24	26149.2	2.4	**73.9364**	1.477	2.0	mg/L	12	Standard
K	39	28.3	27.0	**0.3485**	0.123	35.2	mg/L	7	Standard
Ca	43	706.7	16.8	**78.6656**	12.100	15.4	mg/L	30	Standard
Fe	54	5649.2	4.3	**2.3121**	0.057	2.5	mg/L	241	Standard
Fe	57	2085.1	3.3	**2.8528**	0.120	4.2	mg/L	37	Standard
> **Sc-1**	45	108671.8	2.5				mg/L	108014	Standard
Cl	35	17562.2	0.3				ug/L	13720	Standard
Kr	83	1.0	100.0				ug/L	0	Standard
Br	81	13883.0	1.7				ug/L	750	Standard
P	31	21473.6	9.4				ug/L	15373	Standard
S	34	1113.4	9.0				ug/L	970	Standard
Sr	88	565.0	6.9				ug/L	5	Standard
C	12	153.3	43.4				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	24.9	90.0				mg/L	3	Standard
Ho-1	165	15.0	33.3				mg/L	8	Standard
Er	166	36.7	56.8				mg/L	17	Standard
I	127	145802.2	3.9				mg/L	138	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		100.575	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.433	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1505156410PS WG525408-05
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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.343
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	92.319
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1505156410SDL WG525408-06
Sample Date/Time: Friday, June 05, 2015 11:57:37
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	207824.7	2.9				ug/L	205676	Standard
	Be	9	31.7	24.1	**0.0232**	0.008	34.0	ug/L	13	Standard
	Al	27	2069335.5	1.7	**35.6640**	0.442	1.2	ug/L	498	Standard
	Sc	45	104610.2	3.7				ug/L	108014	Standard
	Ti	47	87.7	27.4	**0.2423**	0.084	34.7	ug/L	18	Standard
	V	51	628.3	18.7	**-0.0397**	0.016	39.9	ug/L	907	Standard
	Cr	52	5011.8	3.2	**0.0586**	0.013	22.7	ug/L	4635	Standard
	Cr	53	1575.1	0.8	**1.3284**	0.071	5.3	ug/L	255	Standard
	Mn	55	1213618.2	2.0	**101.0569**	1.763	1.7	ug/L	746	Standard
	Co	59	697.0	7.7	**0.0892**	0.004	4.2	ug/L	40	Standard
	Ni	60	1733.1	2.4	**0.6423**	0.012	1.9	ug/L	237	Standard
	Cu	65	1108.0	5.3	**0.3313**	0.025	7.6	ug/L	308	Standard
	Zn	66	2925.9	1.0	**1.5718**	0.058	3.7	ug/L	601	Standard
>	**Ge**	72	767408.2	3.8				ug/L	774356	Standard
	As	75	2073.1	2.1	**1.5967**	0.038	2.4	ug/L	-42	Standard
	Se	82	57.8	13.5	**0.2722**	0.078	28.5	ug/L	16	Standard
	Se-1	77	159.0	9.3	**1.2828**	0.219	17.0	ug/L	43	Standard
>	**Ga**	71	121.7	9.5				mg/L	30	Standard
	Rb	85	393.3	7.0				ug/L	15	Standard
	Y	89	890457.8	3.8				ug/L	919916	Standard
>	**Rh**	103	6.7	114.6				ug/L	3	Standard
	Mo	98	353.3	4.2	**0.1266**	0.008	6.2	ug/L	12	Standard
	Ag	107	127.0	23.3	**0.0069**	0.005	72.0	ug/L	84	Standard
	Cd	111	18.8	88.3	**0.0134**	0.013	96.7	mg/L	2	Standard
	Cd	114	61.2	62.4	**0.0191**	0.012	64.6	ug/L	2	Standard
>	**In**	115	680518.8	2.5				ug/L	707917	Standard
	Sn	118	515.0	4.2	**0.0104**	0.007	70.2	ug/L	550	Standard
	Sb	123	442.3	19.2	**0.1430**	0.032	22.7	ug/L	64	Standard
	Ba	135	15983.8	2.4	**17.8724**	0.266	1.5	ug/L	8	Standard
	Ce	140	55.0	50.6				ug/L	22	Standard
>	**Tb**	159	923135.5	3.5				ug/L	944784	Standard
	Ho	165	8.3	91.7				ug/L	8	Standard
	Tl	203	88.0	30.9	**0.0147**	0.005	35.1	ug/L	5	Standard
	Tl	205	68.3	33.8	**0.0117**	0.004	36.3	ug/L	3	Standard
	Pb	206	314.0	9.5	**0.0343**	0.009	26.0	ug/L	197	Standard
	Pb	207	247.7	15.0	**0.0252**	0.011	43.0	ug/L	180	Standard
	Pb	208	1134.3	10.4	**0.0318**	0.007	23.4	ug/L	761	Standard
	U	238	57.7	28.7	**0.0114**	0.003	28.0	ug/L	0	Standard
>	**Bi**	209	601615.1	3.5				ug/L	628212	Standard

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Na	23	3.3	86.6	**42.8671**	37.189	86.8	mg/L	0	Standard
Mg	24	5244.2	4.9	**15.3534**	0.196	1.3	mg/L	12	Standard
K	39	11.7	65.5	**0.0906**	0.116	128.0	mg/L	7	Standard
Ca	43	135.0	0.0	**14.0081**	0.583	4.2	mg/L	30	Standard
Fe	54	1369.5	5.4	**0.4813**	0.026	5.4	mg/L	241	Standard
Fe	57	405.0	3.3	**0.5224**	0.003	0.5	mg/L	37	Standard
> **Sc-1**	45	104610.2	3.7				mg/L	108014	Standard
Cl	35	14763.2	2.9				ug/L	13720	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	3213.7	7.8				ug/L	750	Standard
P	31	16632.5	4.5				ug/L	15373	Standard
S	34	1050.0	7.3				ug/L	970	Standard
Sr	88	138.3	34.7				ug/L	5	Standard
C	12	93.3	6.2				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.5	86.7				mg/L	3	Standard
Ho-1	165	8.3	91.7				mg/L	8	Standard
Er	166	3.3	173.2				mg/L	17	Standard
I	127	31674.8	2.1				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.045	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.103	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.130
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.766
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1505156410SDL WG525408-06
Sample Date/Time: Friday, June 05, 2015 12:00:48
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	216592.5	1.9				ug/L	205676	Standard
	Be	9	25.0	52.9	**0.0156**	0.012	76.9	ug/L	13	Standard
	Al	27	627000.9	1.7	**10.3463**	0.281	2.7	ug/L	498	Standard
	Sc	45	110721.4	0.7				ug/L	108014	Standard
	Ti	47	22.7	6.7	**0.0214**	0.004	21.0	ug/L	18	Standard
	V	51	872.2	1.6	**-0.0107**	0.002	16.7	ug/L	907	Standard
	Cr	52	5177.6	0.7	**0.0326**	0.007	22.1	ug/L	4635	Standard
	Cr	53	775.0	11.8	**0.4820**	0.085	17.6	ug/L	255	Standard
	Mn	55	258216.8	0.8	**19.9918**	0.108	0.5	ug/L	746	Standard
	Co	59	187.3	5.3	**0.0178**	0.001	6.6	ug/L	40	Standard
	Ni	60	680.0	2.5	**0.1649**	0.006	3.6	ug/L	237	Standard
	Cu	65	560.7	1.6	**0.0812**	0.004	4.4	ug/L	308	Standard
	Zn	66	3297.0	2.1	**1.6765**	0.039	2.3	ug/L	601	Standard
>	**Ge**	72	822226.3	0.4				ug/L	774356	Standard
	As	75	390.5	1.0	**0.2939**	0.003	0.9	ug/L	-42	Standard
	Se	82	25.3	13.7	**-0.0188**	0.028	146.6	ug/L	16	Standard
	Se-1	77	69.0	6.6	**0.2588**	0.047	18.1	ug/L	43	Standard
>	**Ga**	71	75.0	46.7				mg/L	30	Standard
	Rb	85	105.0	33.3				ug/L	15	Standard
	Y	89	950237.9	2.3				ug/L	919916	Standard
>	**Rh**	103	0.0					ug/L	3	Standard
	Mo	98	79.6	15.8	**0.0193**	0.005	23.7	ug/L	12	Standard
	Ag	107	89.0	18.6	**-0.0009**	0.003	303.6	ug/L	84	Standard
	Cd	111	5.5	72.9	**0.0026**	0.003	119.6	mg/L	2	Standard
	Cd	114	16.0	136.8	**0.0037**	0.007	188.4	ug/L	2	Standard
>	**In**	115	718434.6	0.2				ug/L	707917	Standard
	Sn	118	585.0	10.4	**0.0207**	0.015	73.1	ug/L	550	Standard
	Sb	123	139.3	9.6	**0.0354**	0.004	12.1	ug/L	64	Standard
	Ba	135	3384.7	3.1	**3.5751**	0.110	3.1	ug/L	8	Standard
	Ce	140	28.3	27.0				ug/L	22	Standard
>	**Tb**	159	954992.2	0.5				ug/L	944784	Standard
	Ho	165	13.3	43.3				ug/L	8	Standard
	Tl	203	42.0	21.2	**0.0043**	0.002	40.3	ug/L	5	Standard
	Tl	205	45.0	44.4	**0.0063**	0.004	62.7	ug/L	3	Standard
	Pb	206	309.0	4.8	**0.0263**	0.005	19.8	ug/L	197	Standard
	Pb	207	272.3	8.1	**0.0282**	0.007	24.3	ug/L	180	Standard
	Pb	208	1161.0	3.2	**0.0279**	0.004	12.9	ug/L	761	Standard
	U	238	15.7	3.7	**0.0022**	0.000	6.3	ug/L	0	Standard
>	**Bi**	209	641205.2	0.8				ug/L	628212	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	1143.4	6.6	**3.1206**	0.226	7.2	mg/L	12	Standard
K	39	5.0	0.0	**-0.0195**	0.001	2.9	mg/L	7	Standard
Ca	43	45.0	19.2	**2.9938**	0.932	31.1	mg/L	30	Standard
Fe	54	550.8	20.5	**0.0988**	0.046	46.9	mg/L	241	Standard
Fe	57	101.7	20.5	**0.0733**	0.029	40.0	mg/L	37	Standard
> **Sc-1**	45	110721.4	0.7				mg/L	108014	Standard
Cl	35	15227.0	0.8				ug/L	13720	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	1410.1	6.5				ug/L	750	Standard
P	31	17027.9	1.1				ug/L	15373	Standard
S	34	1128.4	3.4				ug/L	970	Standard
Sr	88	48.3	15.8				ug/L	5	Standard
C	12	80.0	45.1				mg/L	40	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	-1.0	50.0				mg/L	3	Standard
Ho-1	165	13.3	43.3				mg/L	8	Standard
Er	166	20.0	50.0				mg/L	17	Standard
I	127	7416.8	3.1				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.307	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.182	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.486
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.068
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 05, 2015

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, June 05, 2015 12:04:01
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	200272.3	2.8				ug/L	205676	Standard
	Be	9	50012.4	0.4	**50.0379**	1.494	3.0	ug/L	13	Standard
	Al	27	2907351.8	1.6	**52.0233**	1.522	2.9	ug/L	498	Standard
	Sc	45	102936.9	2.3				ug/L	108014	Standard
	Ti	47	29509.0	0.9	**100.9803**	0.971	1.0	ug/L	18	Standard
	V	51	321536.4	1.1	**51.4813**	0.504	1.0	ug/L	907	Standard
	Cr	52	356873.4	0.8	**52.3554**	0.365	0.7	ug/L	4635	Standard
	Cr	53	50188.0	2.5	**51.2429**	1.410	2.8	ug/L	255	Standard
	Mn	55	600334.0	1.1	**51.6374**	0.450	0.9	ug/L	746	Standard
	Co	59	364105.5	0.8	**51.5593**	0.325	0.6	ug/L	40	Standard
	Ni	60	113268.2	0.7	**50.7699**	0.310	0.6	ug/L	237	Standard
	Cu	65	116118.6	0.7	**51.1862**	0.445	0.9	ug/L	308	Standard
	Zn	66	72427.7	0.7	**52.1270**	0.361	0.7	ug/L	601	Standard
>	**Ge**	72	741994.7	0.5				ug/L	774356	Standard
	As	75	65745.8	1.0	**51.8315**	0.694	1.3	ug/L	-42	Standard
	Se	82	5808.7	2.0	**50.7424**	1.095	2.2	ug/L	16	Standard
	Se-1	77	4640.7	1.0	**51.2404**	0.425	0.8	ug/L	43	Standard
>	**Ga**	71	116.7	15.1				mg/L	30	Standard
	Rb	85	681.7	5.2				ug/L	15	Standard
	Y	89	879581.4	1.9				ug/L	919916	Standard
>	**Rh**	103	18.3	56.8				ug/L	3	Standard
	Mo	98	269943.4	1.4	**105.1424**	1.641	1.6	ug/L	12	Standard
	Ag	107	276808.0	0.4	**51.9775**	0.378	0.7	ug/L	84	Standard
	Cd	111	63023.1	1.1	**51.4896**	0.625	1.2	mg/L	2	Standard
	Cd	114	151210.8	0.7	**51.5596**	0.410	0.8	ug/L	2	Standard
>	**In**	115	673773.7	0.8				ug/L	707917	Standard
	Sn	118	182885.7	1.7	**48.9358**	1.162	2.4	ug/L	550	Standard
	Sb	123	148417.6	0.9	**51.7514**	0.588	1.1	ug/L	64	Standard
	Ba	135	45994.1	1.7	**51.9625**	0.814	1.6	ug/L	8	Standard
	Ce	140	30.0	44.1				ug/L	22	Standard
>	**Tb**	159	899210.0	0.7				ug/L	944784	Standard
	Ho	165	10.0	50.0				ug/L	8	Standard
	Tl	203	235117.4	1.1	**51.4731**	0.829	1.6	ug/L	5	Standard
	Tl	205	247183.6	1.5	**52.2730**	0.689	1.3	ug/L	3	Standard
	Pb	206	152513.4	0.7	**51.6921**	0.485	0.9	ug/L	197	Standard
	Pb	207	138905.5	0.4	**51.6596**	0.541	1.0	ug/L	180	Standard
	Pb	208	576255.6	0.5	**51.4886**	0.651	1.3	ug/L	761	Standard
	U	238	238177.1	0.5	**52.2334**	0.318	0.6	ug/L	0	Standard
>	**Bi**	209	592208.9	0.9				ug/L	628212	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	1815.1	3.5	**5.3708**	0.308	5.7	mg/L	12	Standard
K	39	301.7	10.7	**4.9006**	0.609	12.4	mg/L	7	Standard
Ca	43	83.3	24.2	**7.9867**	2.274	28.5	mg/L	30	Standard
Fe	54	11773.4	2.3	**5.2518**	0.131	2.5	mg/L	241	Standard
Fe	57	3917.2	2.7	**5.7213**	0.115	2.0	mg/L	37	Standard
> **Sc-1**	45	102936.9	2.3				mg/L	108014	Standard
Cl	35	14362.8	2.4				ug/L	13720	Standard
Kr	83	1.0	100.0				ug/L	0	Standard
Br	81	866.7	11.4				ug/L	750	Standard
P	31	17975.7	5.6				ug/L	15373	Standard
S	34	1198.4	7.8				ug/L	970	Standard
Sr	88	5.0	100.0				ug/L	5	Standard
C	12	46.7	12.4				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	43.0	13.1				mg/L	3	Standard
Ho-1	165	10.0	50.0				mg/L	8	Standard
Er	166	6.7	86.6				mg/L	17	Standard
I	127	958.4	13.6				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	100.076		
Al	27	104.047		
Sc	45			
Ti	47	100.980		
V	51	102.963		
Cr	52	104.711		
Cr	53			
Mn	55	103.275		
Co	59	103.119		
Ni	60	101.540		
Cu	65	102.372		
Zn	66	104.254		
> Ge	72		95.821	
As	75	103.663		
Se	82	101.485		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	105.142		
Ag	107	103.955		
Cd	111	102.979		
Cd	114			
In	115			95.177
Sn	118	97.872		
Sb	123	103.503		
Ba	135	103.925		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.946		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.977		
U	238	104.467		
Bi	209			94.269
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, June 05, 2015 12:07:12
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	205952.7	2.9				ug/L	205676	Standard
	Be	9	18.3	31.5	**0.0105**	0.006	55.2	ug/L	13	Standard
	Al	27	1241.7	58.4	**-0.0104**	0.013	121.9	ug/L	498	Standard
	Sc	45	104636.8	1.9				ug/L	108014	Standard
	Ti	47	22.3	25.5	**0.0263**	0.020	77.1	ug/L	18	Standard
	V	51	819.4	4.5	**-0.0086**	0.003	33.5	ug/L	907	Standard
	Cr	52	4400.6	3.7	**-0.0232**	0.009	39.6	ug/L	4635	Standard
	Cr	53	378.3	10.8	**0.1431**	0.032	22.4	ug/L	255	Standard
	Mn	55	1176.7	17.2	**0.0150**	0.015	98.7	ug/L	746	Standard
	Co	59	61.0	52.1	**0.0023**	0.004	185.9	ug/L	40	Standard
	Ni	60	332.3	8.8	**0.0352**	0.014	39.8	ug/L	237	Standard
	Cu	65	353.7	1.0	**0.0102**	0.004	37.7	ug/L	308	Standard
	Zn	66	738.7	4.1	**0.0392**	0.011	27.3	ug/L	601	Standard
>	**Ge**	72	759759.2	2.2				ug/L	774356	Standard
	As	75	-48.9	30.2	**-0.0216**	0.012	55.6	ug/L	-42	Standard
	Se	82	19.0	60.4	**-0.0577**	0.095	164.0	ug/L	16	Standard
	Se-1	77	42.3	3.6	**0.0262**	0.026	99.0	ug/L	43	Standard
>	**Ga**	71	51.7	24.4				mg/L	30	Standard
	Rb	85	13.3	21.7				ug/L	15	Standard
	Y	89	902304.0	1.8				ug/L	919916	Standard
>	**Rh**	103	0.0					ug/L	3	Standard
	Mo	98	63.3	38.5	**0.0146**	0.009	62.4	ug/L	12	Standard
	Ag	107	133.7	26.5	**0.0082**	0.006	76.7	ug/L	84	Standard
	Cd	111	10.9	96.3	**0.0071**	0.008	118.1	mg/L	2	Standard
	Cd	114	20.6	98.8	**0.0055**	0.007	122.7	ug/L	2	Standard
>	**In**	115	680826.8	1.1				ug/L	707917	Standard
	Sn	118	535.0	9.7	**0.0155**	0.012	78.9	ug/L	550	Standard
	Sb	123	385.6	24.5	**0.1228**	0.031	25.5	ug/L	64	Standard
	Ba	135	22.0	31.8	**0.0127**	0.008	59.5	ug/L	8	Standard
	Ce	140	10.0	50.0				ug/L	22	Standard
>	**Tb**	159	912128.4	1.5				ug/L	944784	Standard
	Ho	165	3.3	86.6				ug/L	8	Standard
	Tl	203	43.7	95.6	**0.0050**	0.009	173.7	ug/L	5	Standard
	Tl	205	28.3	83.4	**0.0033**	0.005	144.3	ug/L	3	Standard
	Pb	206	229.7	15.3	**0.0048**	0.011	227.3	ug/L	197	Standard
	Pb	207	185.3	12.4	**0.0013**	0.008	592.2	ug/L	180	Standard
	Pb	208	794.3	13.6	**0.0007**	0.009	1298.2	ug/L	761	Standard
	U	238	13.3	69.7	**0.0018**	0.002	105.5	ug/L	0	Standard
>	**Bi**	209	612265.5	1.0				ug/L	628212	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	6.7	114.6	**-0.0357**	0.022	61.5	mg/L	12	Standard
K	39	3.3	173.2	**-0.0432**	0.092	213.0	mg/L	7	Standard
Ca	43	13.3	94.4	**-0.4525**	1.521	336.1	mg/L	30	Standard
Fe	54	297.5	11.9	**-0.0014**	0.014	994.3	mg/L	241	Standard
Fe	57	35.0	14.3	**-0.0155**	0.008	53.0	mg/L	37	Standard
> **Sc-1**	45	104636.8	1.9				mg/L	108014	Standard
Cl	35	14867.3	1.8				ug/L	13720	Standard
Kr	83	0.7	86.6				ug/L	0	Standard
Br	81	670.0	19.6				ug/L	750	Standard
P	31	16762.6	4.8				ug/L	15373	Standard
S	34	1141.7	8.3				ug/L	970	Standard
Sr	88	8.3	34.6				ug/L	5	Standard
C	12	53.3	10.8				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	-0.6	114.6				mg/L	3	Standard
Ho-1	165	3.3	86.6				mg/L	8	Standard
Er	166	13.3	114.6				mg/L	17	Standard
I	127	571.7	17.4				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.115	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.173
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.462
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Friday, June 05, 2015 12:10:26
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	207726.1	1.4				ug/L	205676	Standard
	Be	9	213.3	9.5	**0.1984**	0.021	10.7	ug/L	13	Standard
	Al	27	703.4	59.3	**-0.0198**	0.007	37.5	ug/L	498	Standard
	Sc	45	105647.1	0.5				ug/L	108014	Standard
	Ti	47	9.7	23.9	**-0.0167**	0.008	46.0	ug/L	18	Standard
	V	51	3224.8	3.2	**0.3638**	0.016	4.5	ug/L	907	Standard
	Cr	52	9716.4	2.0	**0.7347**	0.030	4.0	ug/L	4635	Standard
	Cr	53	1101.7	7.5	**0.8576**	0.082	9.5	ug/L	255	Standard
	Mn	55	6823.9	1.4	**0.4848**	0.008	1.7	ug/L	746	Standard
	Co	59	2899.3	2.4	**0.3910**	0.009	2.4	ug/L	40	Standard
	Ni	60	3900.8	0.6	**1.5842**	0.013	0.8	ug/L	237	Standard
	Cu	65	2246.8	1.9	**0.8182**	0.019	2.3	ug/L	308	Standard
	Zn	66	10063.7	1.1	**6.5863**	0.083	1.3	ug/L	601	Standard
>	**Ge**	72	767104.8	0.1				ug/L	774356	Standard
	As	75	493.8	4.2	**0.3926**	0.016	4.0	ug/L	-42	Standard
	Se	82	64.3	20.6	**0.3264**	0.112	34.2	ug/L	16	Standard
	Se-1	77	68.7	3.7	**0.3050**	0.026	8.5	ug/L	43	Standard
>	**Ga**	71	51.7	14.8				mg/L	30	Standard
	Rb	85	36.7	47.9				ug/L	15	Standard
	Y	89	909384.0	2.1				ug/L	919916	Standard
>	**Rh**	103	1.7	173.2				ug/L	3	Standard
	Mo	98	23.6	51.6	**-0.0007**	0.005	726.1	ug/L	12	Standard
	Ag	107	2236.5	1.4	**0.3966**	0.014	3.5	ug/L	84	Standard
	Cd	111	303.3	10.4	**0.2417**	0.021	8.6	mg/L	2	Standard
	Cd	114	625.8	5.2	**0.2086**	0.014	6.8	ug/L	2	Standard
>	**In**	115	685210.2	1.9				ug/L	707917	Standard
	Sn	118	653.3	15.6	**0.0459**	0.026	57.0	ug/L	550	Standard
	Sb	123	1244.9	4.5	**0.4168**	0.020	4.8	ug/L	64	Standard
	Ba	135	662.0	1.6	**0.7238**	0.012	1.7	ug/L	8	Standard
	Ce	140	48.3	46.6				ug/L	22	Standard
>	**Tb**	159	920732.0	2.2				ug/L	944784	Standard
	Ho	165	10.0	50.0				ug/L	8	Standard
	Tl	203	378.0	9.5	**0.0753**	0.008	11.2	ug/L	5	Standard
	Tl	205	385.0	7.2	**0.0757**	0.006	8.1	ug/L	3	Standard
	Pb	206	809.7	1.3	**0.1933**	0.005	2.7	ug/L	197	Standard
	Pb	207	741.7	4.8	**0.1998**	0.013	6.7	ug/L	180	Standard
	Pb	208	3061.8	3.9	**0.1949**	0.008	4.3	ug/L	761	Standard
	U	238	1865.8	2.7	**0.3918**	0.007	1.8	ug/L	0	Standard
>	**Bi**	209	616841.8	1.1				ug/L	628212	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	18.3	15.7	**-0.0017**	0.009	509.4	mg/L	12	Standard
K	39	5.0	0.0	**-0.0158**	0.000	2.7	mg/L	7	Standard
Ca	43	10.0	86.6	**-0.8822**	1.012	114.7	mg/L	30	Standard
Fe	54	293.9	3.4	**-0.0042**	0.004	96.1	mg/L	241	Standard
Fe	57	13.3	78.1	**-0.0473**	0.015	31.4	mg/L	37	Standard
Sc-1	45	105647.1	0.5				mg/L	108014	Standard
Cl	35	14580.3	2.0				ug/L	13720	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	710.0	10.2				ug/L	750	Standard
P	31	16562.4	1.6				ug/L	15373	Standard
S	34	1193.4	4.0				ug/L	970	Standard
Sr	88	5.0	173.2				ug/L	5	Standard
C	12	80.0	37.5				mg/L	40	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.9	187.9				mg/L	3	Standard
Ho-1	165	10.0	50.0				mg/L	8	Standard
Er	166	10.0	100.0				mg/L	17	Standard
I	127	421.7	4.8				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	99.215		
Al	27			
Sc	45			
Ti	47			
V	51	90.939		
Cr	52	91.841		
Cr	53			
Mn	55	96.964		
Co	59	97.759		
Ni	60	99.014		
Cu	65	102.273		
Zn	66	105.380		
Ge	72		99.064	
As	75	98.153		
Se	82	81.605		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	99.156		
Cd	111	100.717		
Cd	114			
> In	115			96.792
Sn	118			
Sb	123	104.210		
Ba	135	96.507		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	94.177		
Tl	205			
Pb	206			
Pb	207			
Pb	208	97.462		
U	238	97.952		
> Bi	209			98.190
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, June 05, 2015 13:02:30
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	215737.0	4.4				ug/L	205676	Standard
	Be	9	54916.0	1.6	**51.0401**	2.301	4.5	ug/L	13	Standard
	Al	27	3081565.7	0.4	**51.2278**	2.216	4.3	ug/L	498	Standard
	Sc	45	109470.8	1.3				ug/L	108014	Standard
	Ti	47	31873.5	0.4	**103.4942**	1.309	1.3	ug/L	18	Standard
	V	51	347195.6	0.9	**52.7487**	0.608	1.2	ug/L	907	Standard
	Cr	52	376578.3	1.0	**52.4225**	0.900	1.7	ug/L	4635	Standard
	Cr	53	53061.1	0.5	**51.4029**	0.477	0.9	ug/L	255	Standard
	Mn	55	632371.5	1.7	**51.6124**	1.114	2.2	ug/L	746	Standard
	Co	59	394352.7	0.3	**52.9876**	0.685	1.3	ug/L	40	Standard
	Ni	60	121178.0	1.1	**51.5387**	0.771	1.5	ug/L	237	Standard
	Cu	65	123648.2	1.3	**51.7217**	1.130	2.2	ug/L	308	Standard
	Zn	66	75610.5	1.1	**51.6304**	0.882	1.7	ug/L	601	Standard
>	**Ge**	72	782041.8	1.0				ug/L	774356	Standard
	As	75	68500.0	1.1	**51.2399**	0.829	1.6	ug/L	-42	Standard
	Se	82	6145.5	0.7	**50.9394**	0.790	1.6	ug/L	16	Standard
	Se-1	77	4848.1	1.6	**50.7855**	0.652	1.3	ug/L	43	Standard
>	**Ga**	71	66.7	18.9				mg/L	30	Standard
	Rb	85	823.4	3.9				ug/L	15	Standard
	Y	89	928527.5	2.4				ug/L	919916	Standard
>	**Rh**	103	18.3	68.6				ug/L	3	Standard
	Mo	98	288155.1	0.8	**105.9052**	1.173	1.1	ug/L	12	Standard
	Ag	107	290788.3	0.7	**51.5278**	1.044	2.0	ug/L	84	Standard
	Cd	111	67025.2	0.9	**51.6759**	1.097	2.1	mg/L	2	Standard
	Cd	114	161040.4	0.2	**51.8182**	0.873	1.7	ug/L	2	Standard
>	**In**	115	714096.1	1.5				ug/L	707917	Standard
	Sn	118	195284.0	1.6	**49.3005**	0.621	1.3	ug/L	550	Standard
	Sb	123	156286.0	0.8	**51.4274**	1.156	2.2	ug/L	64	Standard
	Ba	135	49221.2	0.5	**52.4783**	1.025	2.0	ug/L	8	Standard
	Ce	140	30.0	60.1				ug/L	22	Standard
>	**Tb**	159	961249.8	2.2				ug/L	944784	Standard
	Ho	165	15.0	33.3				ug/L	8	Standard
	Tl	203	252134.1	1.2	**52.2725**	1.013	1.9	ug/L	5	Standard
	Tl	205	263925.7	1.1	**52.8567**	0.867	1.6	ug/L	3	Standard
	Pb	206	161777.8	1.0	**51.9299**	1.133	2.2	ug/L	197	Standard
	Pb	207	147746.9	0.2	**52.0339**	0.551	1.1	ug/L	180	Standard
	Pb	208	611593.0	1.7	**51.7512**	1.303	2.5	ug/L	761	Standard
	U	238	252412.5	1.7	**52.4251**	1.321	2.5	ug/L	0	Standard
>	**Bi**	209	625397.6	1.3				ug/L	628212	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	1801.8	8.1	**5.0029**	0.353	7.1	mg/L	12	Standard
K	39	356.7	5.3	**5.4500**	0.241	4.4	mg/L	7	Standard
Ca	43	61.7	38.3	**4.9371**	2.653	53.7	mg/L	30	Standard
Fe	54	12965.0	2.7	**5.4427**	0.178	3.3	mg/L	241	Standard
Fe	57	4025.5	4.0	**5.5273**	0.260	4.7	mg/L	37	Standard
> **Sc-1**	45	109470.8	1.3				mg/L	108014	Standard
Cl	35	15821.6	0.8				ug/L	13720	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	820.0	8.5				ug/L	750	Standard
P	31	18334.4	2.5				ug/L	15373	Standard
S	34	1276.7	8.7				ug/L	970	Standard
Sr	88	11.7	49.5				ug/L	5	Standard
C	12	96.7	79.0				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	18.9	6.4				mg/L	3	Standard
Ho-1	165	15.0	33.3				mg/L	8	Standard
Er	166	23.3	107.9				mg/L	17	Standard
I	127	191.7	10.5				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	102.080		
Al	27	102.456		
Sc	45			
Ti	47	103.494		
V	51	105.497		
Cr	52	104.845		
Cr	53			
Mn	55	103.225		
Co	59	105.975		
Ni	60	103.077		
Cu	65	103.443		
Zn	66	103.261		
> Ge	72		100.993	
As	75	102.480		
Se	82	101.879		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	105.905		
Ag	107	103.056		
Cd	111	103.352		
Cd	114			
> In	115		100.873	
Sn	118	98.601		
Sb	123	102.855		
Ba	135	104.957		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	104.545		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.502		
U	238	104.850		
> Bi	209		99.552	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, June 05, 2015 13:09:18
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	212053.7	0.9				ug/L	205676	Standard
	Be	9	11.7	65.5	**0.0036**	0.007	200.9	ug/L	13	Standard
	Al	27	720.0	45.0	**-0.0198**	0.006	28.1	ug/L	498	Standard
	Sc	45	107028.5	2.6				ug/L	108014	Standard
	Ti	47	19.7	24.0	**0.0156**	0.015	96.1	ug/L	18	Standard
	V	51	799.7	6.6	**-0.0144**	0.007	48.9	ug/L	907	Standard
	Cr	52	4277.9	1.9	**-0.0542**	0.009	16.6	ug/L	4635	Standard
	Cr	53	290.0	1.7	**0.0488**	0.002	4.3	ug/L	255	Standard
	Mn	55	910.7	9.7	**-0.0089**	0.007	74.5	ug/L	746	Standard
	Co	59	78.3	63.9	**0.0044**	0.007	150.1	ug/L	40	Standard
	Ni	60	302.0	2.1	**0.0189**	0.003	15.8	ug/L	237	Standard
	Cu	65	314.7	3.2	**-0.0096**	0.005	49.5	ug/L	308	Standard
	Zn	66	708.7	2.6	**0.0073**	0.018	244.0	ug/L	601	Standard
>	**Ge**	72	776498.9	1.0				ug/L	774356	Standard
	As	75	-50.7	43.3	**-0.0221**	0.017	75.9	ug/L	-42	Standard
	Se	82	14.6	28.5	**-0.0974**	0.035	35.9	ug/L	16	Standard
	Se-1	77	35.0	24.7	**-0.0615**	0.096	156.8	ug/L	43	Standard
>	**Ga**	71	43.3	29.0				mg/L	30	Standard
	Rb	85	33.3	37.7				ug/L	15	Standard
	Y	89	921900.7	0.5				ug/L	919916	Standard
>	**Rh**	103	0.0					ug/L	3	Standard
	Mo	98	53.9	82.1	**0.0106**	0.017	156.4	ug/L	12	Standard
	Ag	107	92.3	5.3	**0.0002**	0.001	337.4	ug/L	84	Standard
	Cd	111	2.0	50.5	**-0.0001**	0.001	798.8	mg/L	2	Standard
	Cd	114	-3.4	909.9	**-0.0025**	0.010	413.0	ug/L	2	Standard
>	**In**	115	693211.1	0.7				ug/L	707917	Standard
	Sn	118	996.7	76.2	**0.1325**	0.195	147.3	ug/L	550	Standard
	Sb	123	212.0	10.1	**0.0617**	0.007	11.1	ug/L	64	Standard
	Ba	135	11.3	28.4	**0.0006**	0.004	638.1	ug/L	8	Standard
	Ce	140	6.7	43.3				ug/L	22	Standard
>	**Tb**	159	933210.8	1.4				ug/L	944784	Standard
	Ho	165	15.0	33.3				ug/L	8	Standard
	Tl	203	7.0	24.7	**-0.0027**	0.000	12.8	ug/L	5	Standard
	Tl	205	25.0	138.6	**0.0025**	0.007	276.2	ug/L	3	Standard
	Pb	206	220.3	10.6	**-0.0003**	0.007	2465.0	ug/L	197	Standard
	Pb	207	182.7	7.9	**-0.0015**	0.005	331.1	ug/L	180	Standard
	Pb	208	776.3	8.6	**-0.0028**	0.005	187.8	ug/L	761	Standard
	U	238	12.3	146.0	**0.0015**	0.004	238.5	ug/L	0	Standard
>	**Bi**	209	630060.8	0.7				ug/L	628212	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	20.0	43.3	**0.0020**	0.024	1190.2	mg/L	12	Standard
K	39	6.7	114.6	**0.0113**	0.125	1113.9	mg/L	7	Standard
Ca	43	26.7	75.8	**1.0392**	2.337	224.8	mg/L	30	Standard
Fe	54	286.0	14.2	**-0.0095**	0.016	168.9	mg/L	241	Standard
Fe	57	16.7	45.8	**-0.0429**	0.010	24.1	mg/L	37	Standard
Sc-1	45	107028.5	2.6				mg/L	108014	Standard
Cl	35	15301.7	0.2				ug/L	13720	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	820.0	4.4				ug/L	750	Standard
P	31	17420.0	4.5				ug/L	15373	Standard
S	34	1241.7	6.4				ug/L	970	Standard
Sr	88	6.7	114.6				ug/L	5	Standard
C	12	66.7	34.6				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.8	88.0				mg/L	3	Standard
Ho-1	165	15.0	33.3				mg/L	8	Standard
Er	166	3.3	173.2				mg/L	17	Standard
I	127	146.7	5.2				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.277	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.923
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.294
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW 63 WG526450-03
Sample Date/Time: Friday, June 05, 2015 13:15:04
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	213894.6	2.1				ug/L	205676	Standard
	Be	9	11.7	65.5	**0.0034**	0.007	200.7	ug/L	13	Standard
	Al	27	16432.3	5.2	**0.2434**	0.015	6.3	ug/L	498	Standard
	Sc	45	108312.5	1.2				ug/L	108014	Standard
	Ti	47	61.3	5.0	**0.1511**	0.007	4.8	ug/L	18	Standard
	V	51	842.2	6.2	**-0.0083**	0.008	97.1	ug/L	907	Standard
	Cr	52	4726.4	0.7	**0.0069**	0.012	172.8	ug/L	4635	Standard
	Cr	53	615.0	8.3	**0.3647**	0.044	12.0	ug/L	255	Standard
	Mn	55	6257.6	0.5	**0.4293**	0.006	1.4	ug/L	746	Standard
	Co	59	67.7	12.9	**0.0030**	0.001	35.5	ug/L	40	Standard
	Ni	60	392.3	7.6	**0.0570**	0.011	19.2	ug/L	237	Standard
	Cu	65	597.7	7.7	**0.1088**	0.016	14.6	ug/L	308	Standard
	Zn	66	4693.1	0.8	**2.7607**	0.070	2.5	ug/L	601	Standard
>	**Ge**	72	779567.8	1.4				ug/L	774356	Standard
	As	75	54.7	53.8	**0.0572**	0.022	38.6	ug/L	-42	Standard
	Se	82	54.8	14.1	**0.2378**	0.059	24.6	ug/L	16	Standard
	Se-1	77	75.3	17.7	**0.3630**	0.132	36.4	ug/L	43	Standard
>	**Ga**	71	75.0	24.0				mg/L	30	Standard
	Rb	85	195.0	17.8				ug/L	15	Standard
	Y	89	919268.2	1.9				ug/L	919916	Standard
>	**Rh**	103	1.7	173.2				ug/L	3	Standard
	Mo	98	24.3	19.0	**-0.0005**	0.002	342.9	ug/L	12	Standard
	Ag	107	112.0	6.3	**0.0039**	0.001	34.4	ug/L	84	Standard
	Cd	111	5.3	47.7	**0.0026**	0.002	79.6	mg/L	2	Standard
	Cd	114	8.5	227.6	**0.0014**	0.006	449.3	ug/L	2	Standard
>	**In**	115	692011.2	0.7				ug/L	707917	Standard
	Sn	118	676.7	11.9	**0.0504**	0.022	43.2	ug/L	550	Standard
	Sb	123	88.2	31.3	**0.0198**	0.009	46.7	ug/L	64	Standard
	Ba	135	321.7	3.4	**0.3420**	0.010	2.9	ug/L	8	Standard
	Ce	140	166.7	9.2				ug/L	22	Standard
>	**Tb**	159	938963.7	1.0				ug/L	944784	Standard
	Ho	165	10.0	50.0				ug/L	8	Standard
	Tl	203	32.0	18.8	**0.0025**	0.001	50.0	ug/L	5	Standard
	Tl	205	30.0	57.7	**0.0035**	0.003	97.3	ug/L	3	Standard
	Pb	206	580.3	6.0	**0.1161**	0.011	9.8	ug/L	197	Standard
	Pb	207	508.0	3.1	**0.1139**	0.006	5.6	ug/L	180	Standard
	Pb	208	2168.7	1.4	**0.1158**	0.003	2.5	ug/L	761	Standard
	U	238	19.3	40.2	**0.0030**	0.002	52.6	ug/L	0	Standard
>	**Bi**	209	624957.9	0.5				ug/L	628212	Standard

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Na	23	1.7	173.2	**20.5167**	35.527	173.2	mg/L	0	Standard
Mg	24	20.0	75.0	**0.0016**	0.043	2666.8	mg/L	12	Standard
K	39	6.7	114.6	**0.0074**	0.118	1596.1	mg/L	7	Standard
Ca	43	21.7	35.3	**0.4354**	0.890	204.5	mg/L	30	Standard
Fe	54	346.0	3.1	**0.0152**	0.005	33.8	mg/L	241	Standard
Fe	57	30.0	33.3	**-0.0244**	0.014	55.8	mg/L	37	Standard
> **Sc-1**	45	108312.5	1.2				mg/L	108014	Standard
Cl	35	15231.7	0.5				ug/L	13720	Standard
Kr	83	0.7	173.2				ug/L	0	Standard
Br	81	3873.8	3.6				ug/L	750	Standard
P	31	18362.8	2.0				ug/L	15373	Standard
S	34	1190.0	7.9				ug/L	970	Standard
Sr	88	18.3	15.7				ug/L	5	Standard
C	12	93.3	30.9				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	22.2	22.9				mg/L	3	Standard
Ho-1	165	10.0	50.0				mg/L	8	Standard
Er	166	23.3	65.5				mg/L	17	Standard
I	127	531.7	8.7				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.996	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.673	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.753
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.482
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 63 WG526450-04
Sample Date/Time: Friday, June 05, 2015 13:18:15
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	223915.8	0.6				ug/L	205676	Standard
	Be	9	57234.6	1.5	**51.1886**	0.681	1.3	ug/L	13	Standard
	Al	27	7368.5	0.3	**0.0859**	0.001	1.1	ug/L	498	Standard
	Sc	45	110335.3	0.7				ug/L	108014	Standard
	Ti	47	33.3	16.5	**0.0567**	0.017	29.6	ug/L	18	Standard
	V	51	370951.7	1.1	**54.8706**	0.529	1.0	ug/L	907	Standard
	Cr	52	410412.6	2.0	**55.6568**	1.050	1.9	ug/L	4635	Standard
	Cr	53	57008.7	0.6	**53.7749**	0.068	0.1	ug/L	255	Standard
	Mn	55	699331.0	0.8	**55.5709**	0.498	0.9	ug/L	746	Standard
	Co	59	422180.0	1.0	**55.2226**	0.501	0.9	ug/L	40	Standard
	Ni	60	127807.5	0.8	**52.9207**	0.316	0.6	ug/L	237	Standard
	Cu	65	135783.7	0.5	**55.2989**	0.135	0.2	ug/L	308	Standard
	Zn	66	88057.8	0.6	**58.5998**	0.060	0.1	ug/L	601	Standard
>	**Ge**	72	803283.0	0.6				ug/L	774356	Standard
	As	75	73412.8	0.5	**53.4581**	0.124	0.2	ug/L	-42	Standard
	Se	82	6493.7	0.2	**52.4055**	0.403	0.8	ug/L	16	Standard
	Se-1	77	5221.9	1.5	**53.2746**	0.638	1.2	ug/L	43	Standard
>	**Ga**	71	108.3	34.9				mg/L	30	Standard
	Rb	85	111.7	2.6				ug/L	15	Standard
	Y	89	954908.4	1.3				ug/L	919916	Standard
>	**Rh**	103	15.0	57.7				ug/L	3	Standard
	Mo	98	113.3	17.3	**0.0319**	0.007	21.3	ug/L	12	Standard
	Ag	107	308313.0	0.6	**54.6217**	0.806	1.5	ug/L	84	Standard
	Cd	111	69296.0	0.3	**53.4125**	0.512	1.0	mg/L	2	Standard
	Cd	114	167788.2	1.1	**53.9735**	0.303	0.6	ug/L	2	Standard
>	**In**	115	714186.4	1.0				ug/L	707917	Standard
	Sn	118	3295.4	11.1	**0.7081**	0.100	14.1	ug/L	550	Standard
	Sb	123	169405.6	0.2	**55.7300**	0.627	1.1	ug/L	64	Standard
	Ba	135	50862.9	0.2	**54.2149**	0.516	1.0	ug/L	8	Standard
	Ce	140	85.0	11.8				ug/L	22	Standard
>	**Tb**	159	971707.1	0.8				ug/L	944784	Standard
	Ho	165	16.7	96.4				ug/L	8	Standard
	Tl	203	267883.7	0.3	**53.3633**	0.286	0.5	ug/L	5	Standard
	Tl	205	283156.5	0.8	**54.4925**	0.879	1.6	ug/L	3	Standard
	Pb	206	179383.0	1.0	**55.3319**	0.969	1.8	ug/L	197	Standard
	Pb	207	156180.2	0.4	**52.8554**	0.605	1.1	ug/L	180	Standard
	Pb	208	666459.3	0.7	**54.1893**	0.734	1.4	ug/L	761	Standard
	U	238	267213.2	1.2	**53.3280**	1.043	2.0	ug/L	0	Standard
>	**Bi**	209	650814.5	0.8				ug/L	628212	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	25.0	34.6	**0.0145**	0.024	164.8	mg/L	12	Standard
K	39	8.3	34.6	**0.0321**	0.044	137.9	mg/L	7	Standard
Ca	43	25.0	52.9	**0.7634**	1.500	196.6	mg/L	30	Standard
Fe	54	531.8	11.9	**0.0918**	0.027	29.5	mg/L	241	Standard
Fe	57	78.3	19.5	**0.0414**	0.020	48.9	mg/L	37	Standard
> **Sc-1**	45	110335.3	0.7				mg/L	108014	Standard
Cl	35	15285.0	1.5				ug/L	13720	Standard
Kr	83	0.7	86.6				ug/L	0	Standard
Br	81	1036.7	4.0				ug/L	750	Standard
P	31	18726.6	0.9				ug/L	15373	Standard
S	34	1198.4	7.8				ug/L	970	Standard
Sr	88	18.3	63.0				ug/L	5	Standard
C	12	66.7	22.9				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.4	90.3				mg/L	3	Standard
Ho-1	165	16.7	96.4				mg/L	8	Standard
Er	166	13.3	114.6				mg/L	17	Standard
I	127	571.7	3.3				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.868	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.736	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.886
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.598
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 63 WG526450-04
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Method 6020 - Summary Report

Sample ID: L1506023315 WG526450-01
Sample Date/Time: Friday, June 05, 2015 13:21:26
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	201105.6	4.1				ug/L	205676	Standard
	Be	9	45.0	29.4	**0.0375**	0.014	36.2	ug/L	13	Standard
	Al	27	12170845.7	6.5	**216.7441**	5.551	2.6	ug/L	498	Standard
	Sc	45	103924.0	4.3				ug/L	108014	Standard
	Ti	47	88.0	21.7	**0.2563**	0.072	28.1	ug/L	18	Standard
	V	51	848.1	4.3	**0.0004**	0.002	408.6	ug/L	907	Standard
	Cr	52	5270.3	3.6	**0.1289**	0.016	12.5	ug/L	4635	Standard
	Cr	53	1326.7	8.2	**1.1405**	0.141	12.3	ug/L	255	Standard
	Mn	55	94479475.3	4.6	**8214.9126**	165.225	2.0	ug/L	746	Standard
	Co	59	30337.1	4.8	**4.3295**	0.067	1.6	ug/L	40	Standard
	Ni	60	19333.0	4.7	**8.6528**	0.080	0.9	ug/L	237	Standard
	Cu	65	4883.1	6.1	**2.0353**	0.072	3.6	ug/L	308	Standard
	Zn	66	13215.4	4.3	**9.2063**	0.306	3.3	ug/L	601	Standard
>	**Ge**	72	735150.8	3.8				ug/L	774356	Standard
	As	75	732.4	2.8	**0.5996**	0.037	6.1	ug/L	-42	Standard
	Se	82	213.6	4.5	**1.6720**	0.057	3.4	ug/L	16	Standard
	Se-1	77	172.0	9.6	**1.5012**	0.209	13.9	ug/L	43	Standard
>	**Ga**	71	1726.8	2.5				mg/L	30	Standard
	Rb	85	19744.5	3.7				ug/L	15	Standard
	Y	89	866334.6	4.0				ug/L	919916	Standard
>	**Rh**	103	48.3	41.8				ug/L	3	Standard
	Mo	98	943.7	1.1	**0.3672**	0.012	3.2	ug/L	12	Standard
	Ag	107	106.3	14.9	**0.0039**	0.004	93.2	ug/L	84	Standard
	Cd	111	140.6	4.3	**0.1163**	0.009	7.5	mg/L	2	Standard
	Cd	114	316.3	2.5	**0.1092**	0.006	5.1	ug/L	2	Standard
>	**In**	115	657507.4	3.4				ug/L	707917	Standard
	Sn	118	573.3	11.4	**0.0316**	0.022	69.6	ug/L	550	Standard
	Sb	123	157.3	13.3	**0.0462**	0.008	17.7	ug/L	64	Standard
	Ba	135	7527.9	2.5	**8.7071**	0.106	1.2	ug/L	8	Standard
	Ce	140	8035.5	6.0				ug/L	22	Standard
>	**Tb**	159	910914.8	4.2				ug/L	944784	Standard
	Ho	165	305.0	8.7				ug/L	8	Standard
	Tl	203	123.0	11.4	**0.0242**	0.004	17.1	ug/L	5	Standard
	Tl	205	141.7	13.4	**0.0291**	0.005	17.6	ug/L	3	Standard
	Pb	206	441.3	4.1	**0.0866**	0.005	6.3	ug/L	197	Standard
	Pb	207	365.0	0.7	**0.0772**	0.005	7.0	ug/L	180	Standard
	Pb	208	1631.7	3.1	**0.0851**	0.002	1.8	ug/L	761	Standard
	U	238	675.3	4.7	**0.1543**	0.003	1.7	ug/L	0	Standard
>	**Bi**	209	564687.5	3.2				ug/L	628212	Standard

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Na	23	8.3	69.3	**108.1542**	74.252	68.7	mg/L	0	Standard
Mg	24	41745.8	1.4	**123.5652**	4.293	3.5	mg/L	12	Standard
K	39	230.0	13.2	**3.6760**	0.509	13.8	mg/L	7	Standard
Ca	43	471.7	7.8	**54.3354**	2.123	3.9	mg/L	30	Standard
Fe	54	13238.6	7.0	**5.8590**	0.174	3.0	mg/L	241	Standard
Fe	57	4325.6	1.6	**6.2688**	0.178	2.8	mg/L	37	Standard
Sc-1	45	103924.0	4.3				mg/L	108014	Standard
Cl	35	22574.1	2.9				ug/L	13720	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	9322.9	4.4				ug/L	750	Standard
P	31	18236.0	4.3				ug/L	15373	Standard
S	34	1070.0	11.8				ug/L	970	Standard
Sr	88	668.3	14.3				ug/L	5	Standard
C	12	310.0	3.2				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	202.6	13.0				mg/L	3	Standard
Ho-1	165	305.0	8.7				mg/L	8	Standard
Er	166	433.3	7.1				mg/L	17	Standard
I	127	192982.1	3.3				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		97.778	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		94.937	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	92.879
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	89.888
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1506023315DP WG526450-05
Sample Date/Time: Friday, June 05, 2015 13:24:38
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	222671.4	6.0				ug/L	205676	Standard
	Be	9	70.0	14.3	**0.0554**	0.006	10.1	ug/L	13	Standard
	Al	27	12864183.2	5.0	**207.1178**	2.605	1.3	ug/L	498	Standard
	Sc	45	111981.2	4.5				ug/L	108014	Standard
	Ti	47	111.3	7.8	**0.3015**	0.028	9.3	ug/L	18	Standard
	V	51	853.4	14.3	**-0.0114**	0.015	130.5	ug/L	907	Standard
	Cr	52	4924.1	2.3	**0.0103**	0.009	89.2	ug/L	4635	Standard
	Cr	53	1208.4	5.2	**0.9033**	0.068	7.5	ug/L	255	Standard
	Mn	55	99018941.5	2.4	**7833.9092**	45.764	0.6	ug/L	746	Standard
	Co	59	32188.5	2.8	**4.1797**	0.002	0.1	ug/L	40	Standard
	Ni	60	20743.2	3.8	**8.4438**	0.098	1.2	ug/L	237	Standard
	Cu	65	5055.2	3.7	**1.9094**	0.050	2.6	ug/L	308	Standard
	Zn	66	14780.2	1.9	**9.3759**	0.153	1.6	ug/L	601	Standard
>	**Ge**	72	808075.1	2.8				ug/L	774356	Standard
	As	75	818.0	8.0	**0.6078**	0.037	6.2	ug/L	-42	Standard
	Se	82	249.2	10.1	**1.7867**	0.177	9.9	ug/L	16	Standard
	Se-1	77	165.0	11.1	**1.2569**	0.238	18.9	ug/L	43	Standard
>	**Ga**	71	1485.1	10.5				mg/L	30	Standard
	Rb	85	20824.3	1.5				ug/L	15	Standard
	Y	89	950926.4	3.1				ug/L	919916	Standard
>	**Rh**	103	68.3	27.7				ug/L	3	Standard
	Mo	98	1016.4	0.4	**0.3662**	0.011	3.1	ug/L	12	Standard
	Ag	107	81.7	13.4	**-0.0021**	0.002	75.8	ug/L	84	Standard
	Cd	111	123.6	9.3	**0.0941**	0.007	7.7	mg/L	2	Standard
	Cd	114	317.3	7.3	**0.1015**	0.011	10.6	ug/L	2	Standard
>	**In**	115	710013.1	3.1				ug/L	707917	Standard
	Sn	118	596.7	14.9	**0.0259**	0.026	101.8	ug/L	550	Standard
	Sb	123	110.3	9.1	**0.0264**	0.003	11.8	ug/L	64	Standard
	Ba	135	7747.3	2.6	**8.2974**	0.134	1.6	ug/L	8	Standard
	Ce	140	8020.5	1.7				ug/L	22	Standard
>	**Tb**	159	974177.1	2.9				ug/L	944784	Standard
	Ho	165	291.7	15.9				ug/L	8	Standard
	Tl	203	96.3	14.2	**0.0163**	0.002	14.3	ug/L	5	Standard
	Tl	205	145.0	39.8	**0.0276**	0.013	45.6	ug/L	3	Standard
	Pb	206	439.0	4.0	**0.0749**	0.010	13.7	ug/L	197	Standard
	Pb	207	379.3	1.3	**0.0724**	0.006	8.2	ug/L	180	Standard
	Pb	208	1636.7	5.5	**0.0748**	0.009	11.6	ug/L	761	Standard
	U	238	724.0	5.1	**0.1539**	0.009	5.9	ug/L	0	Standard
>	**Bi**	209	607665.1	3.0				ug/L	628212	Standard

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Na	23	11.7	24.7	**140.6826**	33.514	23.8	mg/L	0	Standard
Mg	24	42377.6	4.4	**116.2983**	0.369	0.3	mg/L	12	Standard
K	39	180.0	11.1	**2.6380**	0.239	9.0	mg/L	7	Standard
Ca	43	471.7	5.8	**50.3712**	3.175	6.3	mg/L	30	Standard
Fe	54	14065.7	4.9	**5.7796**	0.109	1.9	mg/L	241	Standard
Fe	57	4522.3	5.3	**6.0741**	0.087	1.4	mg/L	37	Standard
> **Sc-1**	45	111981.2	4.5				mg/L	108014	Standard
Cl	35	23171.7	4.2				ug/L	13720	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	10580.4	4.8				ug/L	750	Standard
P	31	19273.9	3.6				ug/L	15373	Standard
S	34	1131.7	10.8				ug/L	970	Standard
Sr	88	695.0	9.4				ug/L	5	Standard
C	12	206.7	11.2				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	242.7	14.4				mg/L	3	Standard
Ho-1	165	291.7	15.9				mg/L	8	Standard
Er	166	500.0	17.3				mg/L	17	Standard
I	127	176704.9	2.6				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.263	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.354	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.296
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.729
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Approved: June 05, 2015

Method 6020 - Summary Report

Sample ID: L1506023315S WG526450-06
Sample Date/Time: Friday, June 05, 2015 13:27:49
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	220270.3	2.7				ug/L	205676	Standard
	Be	9	55317.5	2.1	**50.3015**	0.764	1.5	ug/L	13	Standard
	Al	27	13505138.8	2.4	**219.7563**	4.316	2.0	ug/L	498	Standard
	Sc	45	110606.0	4.1				ug/L	108014	Standard
	Ti	47	102.3	8.9	**0.2776**	0.032	11.5	ug/L	18	Standard
	V	51	357869.1	3.0	**53.3353**	1.149	2.2	ug/L	907	Standard
	Cr	52	384474.2	2.8	**52.5004**	1.040	2.0	ug/L	4635	Standard
	Cr	53	54236.9	1.6	**51.5455**	0.448	0.9	ug/L	255	Standard
	Mn	55	106447186.9	1.5	**8536.5200**	62.189	0.7	ug/L	746	Standard
	Co	59	427048.8	3.3	**56.2842**	1.367	2.4	ug/L	40	Standard
	Ni	60	139236.1	2.6	**58.1050**	1.035	1.8	ug/L	237	Standard
	Cu	65	125496.7	1.7	**51.4934**	0.464	0.9	ug/L	308	Standard
	Zn	66	92505.6	1.7	**62.0633**	0.661	1.1	ug/L	601	Standard
>	**Ge**	72	797103.3	0.9				ug/L	774356	Standard
	As	75	73156.0	1.4	**53.6822**	0.283	0.5	ug/L	-42	Standard
	Se	82	6838.3	2.2	**55.6225**	0.767	1.4	ug/L	16	Standard
	Se-1	77	5452.6	1.5	**56.0823**	0.410	0.7	ug/L	43	Standard
>	**Ga**	71	1343.4	8.3				mg/L	30	Standard
	Rb	85	22313.1	1.8				ug/L	15	Standard
	Y	89	949747.2	1.7				ug/L	919916	Standard
>	**Rh**	103	60.0	46.4				ug/L	3	Standard
	Mo	98	1113.3	5.9	**0.4103**	0.021	5.1	ug/L	12	Standard
	Ag	107	260344.3	1.5	**47.3651**	0.527	1.1	ug/L	84	Standard
	Cd	111	67508.9	1.8	**53.4422**	0.963	1.8	mg/L	2	Standard
	Cd	114	161305.0	2.7	**53.2926**	1.356	2.5	ug/L	2	Standard
>	**In**	115	695476.8	2.4				ug/L	707917	Standard
	Sn	118	671.7	2.4	**0.0481**	0.002	4.3	ug/L	550	Standard
	Sb	123	161573.0	1.7	**54.5882**	0.766	1.4	ug/L	64	Standard
	Ba	135	55838.1	1.9	**61.1224**	0.405	0.7	ug/L	8	Standard
	Ce	140	8407.3	2.9				ug/L	22	Standard
>	**Tb**	159	953248.2	1.6				ug/L	944784	Standard
	Ho	165	288.3	5.3				ug/L	8	Standard
	Tl	203	241771.0	1.7	**52.2834**	0.358	0.7	ug/L	5	Standard
	Tl	205	249639.8	0.6	**52.1565**	0.581	1.1	ug/L	3	Standard
	Pb	206	163019.5	1.8	**54.5828**	0.361	0.7	ug/L	197	Standard
	Pb	207	142116.3	2.1	**52.2071**	0.470	0.9	ug/L	180	Standard
	Pb	208	603516.5	2.4	**53.2644**	0.620	1.2	ug/L	761	Standard
	U	238	256331.6	1.8	**55.5292**	0.362	0.7	ug/L	0	Standard
>	**Bi**	209	599473.6	1.2				ug/L	628212	Standard

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Na	23	6.7	173.2	**79.6864**	138.012	173.2	mg/L	0	Standard
Mg	24	44600.6	2.8	**123.9761**	2.567	2.1	mg/L	12	Standard
K	39	170.0	29.8	**2.5063**	0.699	27.9	mg/L	7	Standard
Ca	43	460.0	3.8	**49.6739**	0.204	0.4	mg/L	30	Standard
Fe	54	14514.9	4.4	**6.0465**	0.216	3.6	mg/L	241	Standard
Fe	57	4869.1	3.4	**6.6318**	0.198	3.0	mg/L	37	Standard
> **Sc-1**	45	110606.0	4.1				mg/L	108014	Standard
Cl	35	23091.6	4.4				ug/L	13720	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	10690.4	3.6				ug/L	750	Standard
P	31	19275.6	3.4				ug/L	15373	Standard
S	34	1070.0	16.4				ug/L	970	Standard
Sr	88	770.0	20.5				ug/L	5	Standard
C	12	236.7	41.5				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	269.7	19.5				mg/L	3	Standard
Ho-1	165	288.3	5.3				mg/L	8	Standard
Er	166	493.3	20.3				mg/L	17	Standard
I	127	194613.7	1.5				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.096	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.938	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1506023315S WG526450-06
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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.243
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.425
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Approved: June 05, 2015

Method 6020 - Summary Report

Sample ID: L1505154801
Sample Date/Time: Friday, June 05, 2015 13:31:01
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	218410.7	3.2				ug/L	205676	Standard
	Be	9	53.3	28.6	**0.0418**	0.015	36.8	ug/L	13	Standard
	Al	27	10095742.2	4.7	**165.5870**	2.464	1.5	ug/L	498	Standard
	Sc	45	102497.8	5.0				ug/L	108014	Standard
	Ti	47	1306.4	17.7	**4.4365**	0.955	21.5	ug/L	18	Standard
	V	51	4139.3	5.9	**0.5251**	0.011	2.1	ug/L	907	Standard
	Cr	52	9059.7	5.2	**0.6801**	0.034	5.0	ug/L	4635	Standard
	Cr	53	5451.0	12.8	**5.3256**	0.483	9.1	ug/L	255	Standard
	Mn	55	1025756.6	4.0	**88.0249**	0.882	1.0	ug/L	746	Standard
	Co	59	2310.5	4.6	**0.3201**	0.008	2.6	ug/L	40	Standard
	Ni	60	13982.5	6.8	**6.1466**	0.168	2.7	ug/L	237	Standard
	Cu	65	28493.1	4.7	**12.4117**	0.068	0.5	ug/L	308	Standard
	Zn	66	344244.8	4.2	**248.8034**	0.094	0.0	ug/L	601	Standard
>	**Ge**	72	744286.3	4.2				ug/L	774356	Standard
	As	75	4209.1	7.6	**3.3221**	0.191	5.7	ug/L	-42	Standard
	Se	82	1163.4	7.9	**9.9493**	0.535	5.4	ug/L	16	Standard
	Se-1	77	904.7	7.3	**9.6146**	0.762	7.9	ug/L	43	Standard
>	**Ga**	71	1205.0	3.2				mg/L	30	Standard
	Rb	85	150958.6	2.6				ug/L	15	Standard
	Y	89	874763.7	3.9				ug/L	919916	Standard
>	**Rh**	103	126.7	43.3				ug/L	3	Standard
	Mo	98	380036.6	3.7	**157.3208**	1.166	0.7	ug/L	12	Standard
	Ag	107	119.0	22.6	**0.0073**	0.006	85.1	ug/L	84	Standard
	Cd	111	-197.7	3.2	**-0.1736**	0.011	6.6	mg/L	2	Standard
	Cd	114	606.3	6.5	**0.2188**	0.022	9.9	ug/L	2	Standard
>	**In**	115	633936.5	3.5				ug/L	707917	Standard
	Sn	118	1381.7	10.7	**0.2669**	0.028	10.7	ug/L	550	Standard
	Sb	123	5531.6	1.8	**2.0411**	0.044	2.2	ug/L	64	Standard
	Ba	135	56464.1	2.9	**67.8116**	0.407	0.6	ug/L	8	Standard
	Ce	140	1268.4	7.7				ug/L	22	Standard
>	**Tb**	159	889333.4	3.7				ug/L	944784	Standard
	Ho	165	46.7	30.9				ug/L	8	Standard
	Tl	203	417.7	2.8	**0.0938**	0.006	6.2	ug/L	5	Standard
	Tl	205	423.3	10.7	**0.0937**	0.013	14.4	ug/L	3	Standard
	Pb	206	597.3	8.0	**0.1466**	0.019	13.0	ug/L	197	Standard
	Pb	207	520.0	3.5	**0.1419**	0.005	3.8	ug/L	180	Standard
	Pb	208	2152.1	4.5	**0.1383**	0.015	10.9	ug/L	761	Standard
	U	238	5100.9	3.1	**1.1969**	0.043	3.6	ug/L	0	Standard
>	**Bi**	209	553320.3	3.3				ug/L	628212	Standard

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Na	23	11.7	65.5	**156.9578**	107.885	68.7	mg/L	0	Standard
Mg	24	112852.1	1.1	**338.8762**	12.733	3.8	mg/L	12	Standard
K	39	380.0	3.9	**6.2247**	0.346	5.6	mg/L	7	Standard
Ca	43	695.0	4.3	**82.2987**	1.233	1.5	mg/L	30	Standard
Fe	54	1063.9	7.1	**0.3538**	0.032	9.1	mg/L	241	Standard
Fe	57	666.7	11.5	**0.9207**	0.064	6.9	mg/L	37	Standard
> **Sc-1**	45	102497.8	5.0				mg/L	108014	Standard
Cl	35	29645.7	4.4				ug/L	13720	Standard
Kr	83	0.7	173.2				ug/L	0	Standard
Br	81	54323.9	2.7				ug/L	750	Standard
P	31	19248.9	4.0				ug/L	15373	Standard
S	34	938.4	7.4				ug/L	970	Standard
Sr	88	1741.8	13.5				ug/L	5	Standard
C	12	100.0	10.0				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	99.7	35.2				mg/L	3	Standard
Ho-1	165	46.7	30.9				mg/L	8	Standard
Er	166	76.7	7.5				mg/L	17	Standard
I	127	127402.0	2.8				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.191	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.117	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	89.550
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	88.079
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Zn 66 Upper, S, EEE	Zn	66	
Mo 98 Upper, S, EEE	Mo	98	

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Cd 111 Lower	Cd	111

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Method 6020 - Summary Report

Sample ID: L1505154901
Sample Date/Time: Friday, June 05, 2015 13:34:13
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	239618.3	0.6				ug/L	205676	Standard
	Be	9	55.0	24.1	**0.0386**	0.011	29.1	ug/L	13	Standard
	Al	27	3307353.4	1.6	**49.4406**	0.923	1.9	ug/L	498	Standard
	Sc	45	115594.4	1.8				ug/L	108014	Standard
	Ti	47	422.0	6.9	**1.1963**	0.082	6.9	ug/L	18	Standard
	V	51	3194.1	4.3	**0.3049**	0.019	6.1	ug/L	907	Standard
	Cr	52	8381.7	1.7	**0.4116**	0.018	4.4	ug/L	4635	Standard
	Cr	53	1386.7	7.5	**0.9901**	0.088	8.9	ug/L	255	Standard
	Mn	55	319419.6	2.6	**23.6320**	0.589	2.5	ug/L	746	Standard
	Co	59	1526.4	2.3	**0.1802**	0.005	2.6	ug/L	40	Standard
	Ni	60	3915.5	2.3	**1.4050**	0.031	2.2	ug/L	237	Standard
	Cu	65	7422.5	5.6	**2.6851**	0.159	5.9	ug/L	308	Standard
	Zn	66	25727.2	2.0	**15.6204**	0.303	1.9	ug/L	601	Standard
>	**Ge**	72	860988.2	0.3				ug/L	774356	Standard
	As	75	618.8	6.2	**0.4364**	0.025	5.8	ug/L	-42	Standard
	Se	82	152.2	11.7	**0.9316**	0.136	14.6	ug/L	16	Standard
	Se-1	77	113.7	9.4	**0.6564**	0.106	16.1	ug/L	43	Standard
>	**Ga**	71	340.0	24.5				mg/L	30	Standard
	Rb	85	7702.0	0.9				ug/L	15	Standard
	Y	89	991149.2	0.7				ug/L	919916	Standard
>	**Rh**	103	40.0	50.0				ug/L	3	Standard
	Mo	98	2193.0	7.3	**0.7733**	0.059	7.6	ug/L	12	Standard
	Ag	107	95.3	8.5	**-0.0002**	0.001	680.3	ug/L	84	Standard
	Cd	111	20.8	15.0	**0.0139**	0.002	16.5	mg/L	2	Standard
	Cd	114	21.9	96.6	**0.0055**	0.007	121.3	ug/L	2	Standard
>	**In**	115	735150.6	0.6				ug/L	707917	Standard
	Sn	118	1233.4	4.8	**0.1768**	0.013	7.3	ug/L	550	Standard
	Sb	123	196.3	3.7	**0.0526**	0.003	5.2	ug/L	64	Standard
	Ba	135	15607.7	0.7	**16.1528**	0.122	0.8	ug/L	8	Standard
	Ce	140	2425.2	0.8				ug/L	22	Standard
>	**Tb**	159	994434.4	0.7				ug/L	944784	Standard
	Ho	165	88.3	22.9				ug/L	8	Standard
	Tl	203	92.3	2.7	**0.0138**	0.000	2.6	ug/L	5	Standard
	Tl	205	95.0	27.3	**0.0154**	0.005	31.1	ug/L	3	Standard
	Pb	206	997.4	1.5	**0.2303**	0.004	1.5	ug/L	197	Standard
	Pb	207	849.0	1.4	**0.2156**	0.004	1.8	ug/L	180	Standard
	Pb	208	3629.2	1.5	**0.2206**	0.006	2.8	ug/L	761	Standard
	U	238	1113.4	4.1	**0.2160**	0.008	3.5	ug/L	0	Standard
>	**Bi**	209	666246.2	0.9				ug/L	628212	Standard

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Na	23	1.7	173.2	**19.4690**	33.713	173.2	mg/L	0	Standard
Mg	24	2388.5	5.4	**6.2974**	0.313	5.0	mg/L	12	Standard
K	39	60.0	30.0	**0.7844**	0.251	32.0	mg/L	7	Standard
Ca	43	143.3	20.4	**13.3378**	2.965	22.2	mg/L	30	Standard
Fe	54	697.2	7.2	**0.1487**	0.017	11.3	mg/L	241	Standard
Fe	57	213.3	1.4	**0.2142**	0.003	1.2	mg/L	37	Standard
Sc-1	45	115594.4	1.8				mg/L	108014	Standard
Cl	35	16611.8	0.8				ug/L	13720	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	6824.9	3.5				ug/L	750	Standard
P	31	19657.8	3.9				ug/L	15373	Standard
S	34	1181.7	2.6				ug/L	970	Standard
Sr	88	516.7	11.2				ug/L	5	Standard
C	12	86.7	59.2				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	124.6	8.4				mg/L	3	Standard
Ho-1	165	88.3	22.9				mg/L	8	Standard
Er	166	43.3	58.1				mg/L	17	Standard
I	127	11706.2	0.5				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		116.503	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		111.188	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.847
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.054
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1505158701
Sample Date/Time: Friday, June 05, 2015 13:37:24
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	238771.9	1.2				ug/L	205676	Standard
	Be	9	50.0	26.5	**0.0346**	0.011	33.1	ug/L	13	Standard
	Al	27	1935292.1	1.2	**29.0212**	0.518	1.8	ug/L	498	Standard
	Sc	45	117488.8	0.8				ug/L	108014	Standard
	Ti	47	290.7	5.3	**0.8136**	0.049	6.0	ug/L	18	Standard
	V	51	-242.5	54.6	**-0.1707**	0.018	10.7	ug/L	907	Standard
	Cr	52	210825.4	0.8	**26.4725**	0.485	1.8	ug/L	4635	Standard
	Cr	53	30245.2	1.2	**26.6391**	0.480	1.8	ug/L	255	Standard
	Mn	55	21222.2	2.1	**1.5003**	0.048	3.2	ug/L	746	Standard
	Co	59	1054.7	1.6	**0.1233**	0.003	2.5	ug/L	40	Standard
	Ni	60	30084.8	1.7	**11.5979**	0.309	2.7	ug/L	237	Standard
	Cu	65	20402.4	1.2	**7.6708**	0.171	2.2	ug/L	308	Standard
	Zn	66	33748.5	1.5	**20.7547**	0.524	2.5	ug/L	601	Standard
>	**Ge**	72	856561.6	1.0				ug/L	774356	Standard
	As	75	342.3	12.0	**0.2498**	0.028	11.0	ug/L	-42	Standard
	Se	82	75.0	8.8	**0.3507**	0.054	15.3	ug/L	16	Standard
	Se-1	77	225.3	3.8	**1.7396**	0.104	6.0	ug/L	43	Standard
>	**Ga**	71	1066.7	16.6				mg/L	30	Standard
	Rb	85	10368.5	2.5				ug/L	15	Standard
	Y	89	990282.2	0.8				ug/L	919916	Standard
>	**Rh**	103	85.0	21.2				ug/L	3	Standard
	Mo	98	1324.2	4.4	**0.4678**	0.028	5.9	ug/L	12	Standard
	Ag	107	31110.9	0.3	**5.3915**	0.098	1.8	ug/L	84	Standard
	Cd	111	76.6	11.5	**0.0562**	0.006	10.3	mg/L	2	Standard
	Cd	114	159.0	28.6	**0.0487**	0.014	29.1	ug/L	2	Standard
>	**In**	115	728155.7	1.6				ug/L	707917	Standard
	Sn	118	5444.3	4.4	**1.2251**	0.062	5.1	ug/L	550	Standard
	Sb	123	590.8	0.6	**0.1805**	0.003	1.5	ug/L	64	Standard
	Ba	135	5863.8	0.6	**6.1209**	0.137	2.2	ug/L	8	Standard
	Ce	140	138.3	19.9				ug/L	22	Standard
>	**Tb**	159	998733.7	1.4				ug/L	944784	Standard
	Ho	165	18.3	41.7				ug/L	8	Standard
	Tl	203	132.3	11.1	**0.0218**	0.003	12.3	ug/L	5	Standard
	Tl	205	161.7	12.5	**0.0282**	0.004	14.2	ug/L	3	Standard
	Pb	206	3421.7	2.2	**0.9719**	0.035	3.6	ug/L	197	Standard
	Pb	207	2849.9	0.5	**0.8871**	0.019	2.2	ug/L	180	Standard
	Pb	208	12244.3	0.6	**0.9152**	0.021	2.3	ug/L	761	Standard
	U	238	42.0	8.2	**0.0073**	0.001	11.2	ug/L	0	Standard
>	**Bi**	209	659898.9	1.5				ug/L	628212	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	10048.3	4.4	**26.2458**	1.324	5.0	mg/L	12	Standard
K	39	106.7	11.8	**1.4487**	0.170	11.8	mg/L	7	Standard
Ca	43	83.3	6.9	**6.7672**	0.654	9.7	mg/L	30	Standard
Fe	54	419.8	6.3	**0.0330**	0.009	28.1	mg/L	241	Standard
Fe	57	110.0	7.9	**0.0759**	0.010	13.2	mg/L	37	Standard
> **Sc-1**	45	117488.8	0.8				mg/L	108014	Standard
Cl	35	15879.0	1.4				ug/L	13720	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	3737.1	9.0				ug/L	750	Standard
P	31	20600.7	3.1				ug/L	15373	Standard
S	34	1145.0	5.5				ug/L	970	Standard
Sr	88	245.0	2.0				ug/L	5	Standard
C	12	73.3	34.3				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	12.2	86.6				mg/L	3	Standard
Ho-1	165	18.3	41.7				mg/L	8	Standard
Er	166	23.3	89.2				mg/L	17	Standard
I	127	27920.7	1.3				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.091	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.616	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.859
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.044
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1505158701PS WG526515-01
Sample Date/Time: Friday, June 05, 2015 13:40:35
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	229551.2	1.9				ug/L	205676	Standard
	Be	9	58802.2	0.6	**51.3113**	0.964	1.9	ug/L	13	Standard
	Al	27	1930410.1	0.6	**30.1180**	0.738	2.5	ug/L	498	Standard
	Sc	45	114768.4	3.7				ug/L	108014	Standard
	Ti	47	269.3	8.5	**0.7634**	0.076	9.9	ug/L	18	Standard
	V	51	361400.2	0.9	**50.9357**	0.621	1.2	ug/L	907	Standard
	Cr	52	598367.8	0.8	**77.5904**	0.931	1.2	ug/L	4635	Standard
	Cr	53	85389.9	0.4	**76.8669**	1.335	1.7	ug/L	255	Standard
	Mn	55	697190.2	0.4	**52.7953**	0.882	1.7	ug/L	746	Standard
	Co	59	416409.2	1.7	**51.9134**	1.363	2.6	ug/L	40	Standard
	Ni	60	154961.7	0.2	**61.1682**	0.822	1.3	ug/L	237	Standard
	Cu	65	150109.6	0.5	**58.2721**	1.068	1.8	ug/L	308	Standard
	Zn	66	114555.8	0.3	**72.7725**	1.272	1.7	ug/L	601	Standard
>	**Ge**	72	842971.8	1.4				ug/L	774356	Standard
	As	75	74004.0	0.3	**51.3594**	0.814	1.6	ug/L	-42	Standard
	Se	82	6452.3	0.6	**49.6120**	0.603	1.2	ug/L	16	Standard
	Se-1	77	5343.3	0.4	**51.9441**	0.815	1.6	ug/L	43	Standard
>	**Ga**	71	1105.0	2.1				mg/L	30	Standard
	Rb	85	10240.1	1.5				ug/L	15	Standard
	Y	89	978333.0	1.9				ug/L	919916	Standard
>	**Rh**	103	86.7	12.0				ug/L	3	Standard
	Mo	98	1298.5	2.5	**0.4696**	0.023	4.9	ug/L	12	Standard
	Ag	107	318512.4	0.2	**56.6596**	1.295	2.3	ug/L	84	Standard
	Cd	111	65919.0	0.6	**51.0156**	0.982	1.9	mg/L	2	Standard
	Cd	114	158786.3	0.7	**51.2971**	1.557	3.0	ug/L	2	Standard
>	**In**	115	711480.5	2.4				ug/L	707917	Standard
	Sn	118	5641.1	4.3	**1.3081**	0.096	7.3	ug/L	550	Standard
	Sb	123	161093.5	0.3	**53.2161**	1.437	2.7	ug/L	64	Standard
	Ba	135	54436.3	0.2	**58.2655**	1.459	2.5	ug/L	8	Standard
	Ce	140	166.7	9.6				ug/L	22	Standard
>	**Tb**	159	974088.9	2.1				ug/L	944784	Standard
	Ho	165	11.7	107.9				ug/L	8	Standard
	Tl	203	255026.7	0.3	**51.5258**	1.142	2.2	ug/L	5	Standard
	Tl	205	268488.0	0.4	**52.4044**	1.275	2.4	ug/L	3	Standard
	Pb	206	169257.5	0.8	**52.9436**	1.049	2.0	ug/L	197	Standard
	Pb	207	154919.7	0.8	**53.1686**	0.798	1.5	ug/L	180	Standard
	Pb	208	640035.0	0.5	**52.7813**	1.369	2.6	ug/L	761	Standard
	U	238	262928.4	0.7	**53.2191**	1.378	2.6	ug/L	0	Standard
>	**Bi**	209	641870.8	2.3				ug/L	628212	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	10291.8	2.0	**27.5328**	0.841	3.1	mg/L	12	Standard
K	39	98.3	7.8	**1.3666**	0.166	12.2	mg/L	7	Standard
Ca	43	98.3	16.3	**8.6189**	1.887	21.9	mg/L	30	Standard
Fe	54	527.3	4.9	**0.0811**	0.003	3.9	mg/L	241	Standard
Fe	57	110.0	29.8	**0.0787**	0.041	52.0	mg/L	37	Standard
Sc-1	45	114768.4	3.7				mg/L	108014	Standard
Cl	35	15562.0	0.8				ug/L	13720	Standard
Kr	83	1.3	114.6				ug/L	0	Standard
Br	81	3680.4	1.5				ug/L	750	Standard
P	31	20016.6	3.4				ug/L	15373	Standard
S	34	1083.4	7.9				ug/L	970	Standard
Sr	88	251.7	20.0				ug/L	5	Standard
C	12	76.7	15.1				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	6.0	100.4				mg/L	3	Standard
Ho-1	165	11.7	107.9				mg/L	8	Standard
Er	166	13.3	43.3				mg/L	17	Standard
I	127	28264.7	3.8				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.608	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.861	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.503
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.174
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 05, 2015

Method 6020 - Summary Report

Sample ID: L1505158701SDL WG526515-02
Sample Date/Time: Friday, June 05, 2015 13:43:46
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	233436.7	2.2				ug/L	205676	Standard
	Be	9	35.0	42.9	**0.0225**	0.013	56.5	ug/L	13	Standard
	Al	27	392282.6	1.7	**5.9943**	0.229	3.8	ug/L	498	Standard
	Sc	45	114595.1	1.1				ug/L	108014	Standard
	Ti	47	70.3	7.2	**0.1626**	0.015	9.3	ug/L	18	Standard
	V	51	403.8	46.3	**-0.0803**	0.026	32.4	ug/L	907	Standard
	Cr	52	47175.0	0.6	**5.4862**	0.077	1.4	ug/L	4635	Standard
	Cr	53	6686.5	2.7	**5.7797**	0.124	2.1	ug/L	255	Standard
	Mn	55	6911.0	27.0	**0.4391**	0.145	33.1	ug/L	746	Standard
	Co	59	291.3	5.5	**0.0301**	0.002	6.9	ug/L	40	Standard
	Ni	60	6797.5	0.8	**2.5678**	0.036	1.4	ug/L	237	Standard
	Cu	65	4698.4	3.1	**1.6793**	0.056	3.3	ug/L	308	Standard
	Zn	66	27363.7	1.3	**16.9508**	0.225	1.3	ug/L	601	Standard
>	**Ge**	72	845904.4	0.7				ug/L	774356	Standard
	As	75	63.1	45.3	**0.0598**	0.020	33.3	ug/L	-42	Standard
	Se	82	39.7	17.2	**0.0858**	0.053	61.4	ug/L	16	Standard
	Se-1	77	80.7	10.5	**0.3535**	0.085	24.1	ug/L	43	Standard
>	**Ga**	71	306.7	2.5				mg/L	30	Standard
	Rb	85	2180.2	5.3				ug/L	15	Standard
	Y	89	976052.4	0.2				ug/L	919916	Standard
>	**Rh**	103	26.7	28.6				ug/L	3	Standard
	Mo	98	290.9	3.6	**0.0958**	0.004	4.0	ug/L	12	Standard
	Ag	107	6645.1	1.1	**1.1464**	0.024	2.1	ug/L	84	Standard
	Cd	111	28.9	74.0	**0.0204**	0.017	80.8	mg/L	2	Standard
	Cd	114	90.8	60.1	**0.0275**	0.018	64.0	ug/L	2	Standard
>	**In**	115	723167.3	0.9				ug/L	707917	Standard
	Sn	118	1648.4	6.2	**0.2854**	0.022	7.7	ug/L	550	Standard
	Sb	123	567.0	15.9	**0.1743**	0.031	17.8	ug/L	64	Standard
	Ba	135	1249.7	3.0	**1.3041**	0.049	3.7	ug/L	8	Standard
	Ce	140	40.0	33.1				ug/L	22	Standard
>	**Tb**	159	984713.0	1.2				ug/L	944784	Standard
	Ho	165	13.3	21.7				ug/L	8	Standard
	Tl	203	98.7	43.3	**0.0151**	0.008	55.6	ug/L	5	Standard
	Tl	205	61.7	69.0	**0.0092**	0.008	87.7	ug/L	3	Standard
	Pb	206	1098.7	3.1	**0.2621**	0.011	4.0	ug/L	197	Standard
	Pb	207	897.7	6.0	**0.2328**	0.018	7.9	ug/L	180	Standard
	Pb	208	3947.9	3.0	**0.2470**	0.010	3.9	ug/L	761	Standard
	U	238	29.0	72.2	**0.0047**	0.004	87.6	ug/L	0	Standard
>	**Bi**	209	663876.1	0.3				ug/L	628212	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	2075.1	5.3	**5.5113**	0.255	4.6	mg/L	12	Standard
K	39	11.7	24.7	**0.0771**	0.044	57.3	mg/L	7	Standard
Ca	43	30.0	28.9	**1.2064**	0.969	80.3	mg/L	30	Standard
Fe	54	415.0	24.4	**0.0351**	0.040	113.6	mg/L	241	Standard
Fe	57	40.0	33.1	**-0.0134**	0.017	129.5	mg/L	37	Standard
> **Sc-1**	45	114595.1	1.1				mg/L	108014	Standard
Cl	35	15563.3	0.9				ug/L	13720	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	1380.1	11.9				ug/L	750	Standard
P	31	19098.7	2.0				ug/L	15373	Standard
S	34	1131.7	4.6				ug/L	970	Standard
Sr	88	55.0	41.7				ug/L	5	Standard
C	12	86.7	40.5				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	22.5	23.3				mg/L	3	Standard
Ho-1	165	13.3	21.7				mg/L	8	Standard
Er	166	16.7	91.7				mg/L	17	Standard
I	127	6738.2	1.2				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.497	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.240	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.154
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.677
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, June 05, 2015 13:46:59
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	236714.1	2.9				ug/L	205676	Standard
	Be	9	57025.5	1.4	**48.2697**	1.484	3.1	ug/L	13	Standard
	Al	27	3235673.6	0.5	**48.9835**	1.210	2.5	ug/L	498	Standard
	Sc	45	117804.6	1.4				ug/L	108014	Standard
	Ti	47	32394.9	0.5	**96.0416**	2.011	2.1	ug/L	18	Standard
	V	51	357525.7	1.5	**49.5953**	1.518	3.1	ug/L	907	Standard
	Cr	52	390279.4	1.9	**49.5741**	1.515	3.1	ug/L	4635	Standard
	Cr	53	55904.6	0.7	**49.4419**	1.001	2.0	ug/L	255	Standard
	Mn	55	660954.6	1.6	**49.2476**	0.935	1.9	ug/L	746	Standard
	Co	59	401817.7	1.4	**49.2953**	1.073	2.2	ug/L	40	Standard
	Ni	60	124846.9	0.9	**48.4753**	0.832	1.7	ug/L	237	Standard
	Cu	65	127137.5	0.8	**48.5449**	0.831	1.7	ug/L	308	Standard
	Zn	66	78911.3	0.9	**49.1755**	0.912	1.9	ug/L	601	Standard
>	**Ge**	72	856693.4	2.4				ug/L	774356	Standard
	As	75	71126.4	1.2	**48.5778**	0.906	1.9	ug/L	-42	Standard
	Se	82	6432.2	1.1	**48.6681**	0.806	1.7	ug/L	16	Standard
	Se-1	77	5155.2	0.9	**49.2976**	0.905	1.8	ug/L	43	Standard
>	**Ga**	71	78.3	3.7				mg/L	30	Standard
	Rb	85	855.0	10.2				ug/L	15	Standard
	Y	89	1015671.6	2.4				ug/L	919916	Standard
>	**Rh**	103	6.7	43.3				ug/L	3	Standard
	Mo	98	293460.6	0.2	**101.8375**	2.497	2.5	ug/L	12	Standard
	Ag	107	291572.2	1.6	**48.7664**	0.522	1.1	ug/L	84	Standard
	Cd	111	67762.9	1.0	**49.3162**	0.652	1.3	mg/L	2	Standard
	Cd	114	162935.5	1.3	**49.4946**	1.073	2.2	ug/L	2	Standard
>	**In**	115	756500.2	2.3				ug/L	707917	Standard
	Sn	118	197887.8	2.5	**47.1528**	0.822	1.7	ug/L	550	Standard
	Sb	123	158437.3	0.8	**49.2143**	0.861	1.7	ug/L	64	Standard
	Ba	135	49304.4	1.0	**49.6209**	0.742	1.5	ug/L	8	Standard
	Ce	140	30.0	28.9				ug/L	22	Standard
>	**Tb**	159	1024011.0	3.1				ug/L	944784	Standard
	Ho	165	8.3	124.9				ug/L	8	Standard
	Tl	203	255890.0	1.3	**49.3043**	0.833	1.7	ug/L	5	Standard
	Tl	205	267090.3	0.9	**49.7213**	1.235	2.5	ug/L	3	Standard
	Pb	206	165905.1	1.0	**49.4929**	1.109	2.2	ug/L	197	Standard
	Pb	207	151263.8	1.5	**49.5165**	1.383	2.8	ug/L	180	Standard
	Pb	208	626494.0	1.4	**49.2626**	0.823	1.7	ug/L	761	Standard
	U	238	261269.1	0.7	**50.4365**	1.166	2.3	ug/L	0	Standard
>	**Bi**	209	673049.4	2.9				ug/L	628212	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	1905.1	3.9	**4.9160**	0.134	2.7	mg/L	12	Standard
K	39	326.7	7.2	**4.6253**	0.336	7.3	mg/L	7	Standard
Ca	43	68.3	15.2	**5.1490**	0.996	19.3	mg/L	30	Standard
Fe	54	13413.8	3.8	**5.2257**	0.137	2.6	mg/L	241	Standard
Fe	57	4238.9	1.7	**5.4061**	0.080	1.5	mg/L	37	Standard
> **Sc-1**	45	117804.6	1.4				mg/L	108014	Standard
Cl	35	15774.2	2.9				ug/L	13720	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	953.4	13.3				ug/L	750	Standard
P	31	20106.7	3.5				ug/L	15373	Standard
S	34	1233.4	8.3				ug/L	970	Standard
Sr	88	5.0	100.0				ug/L	5	Standard
C	12	83.3	18.3				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	19.2	99.2				mg/L	3	Standard
Ho-1	165	8.3	124.9				mg/L	8	Standard
Er	166	16.7	124.9				mg/L	17	Standard
I	127	695.0	5.0				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	96.539		
Al	27	97.967		
Sc	45			
Ti	47	96.042		
V	51	99.191		
Cr	52	99.148		
Cr	53			
Mn	55	98.495		
Co	59	98.591		
Ni	60	96.951		
Cu	65	97.090		
Zn	66	98.351		
> Ge	72		110.633	
As	75	97.156		
Se	82	97.336		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	101.838		
Ag	107	97.533		
Cd	111	98.632		
Cd	114			
> In	115			106.863
Sn	118	94.306		
Sb	123	98.429		
Ba	135	99.242		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.609		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.525		
U	238	100.873		
> Bi	209			107.137
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, June 05, 2015 13:50:10
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	240942.7	1.7				ug/L	205676	Standard
	Be	9	11.7	49.5	**0.0023**	0.005	209.8	ug/L	13	Standard
	Al	27	763.4	5.1	**-0.0207**	0.001	2.5	ug/L	498	Standard
	Sc	45	117757.9	3.5				ug/L	108014	Standard
	Ti	47	15.3	29.4	**-0.0040**	0.013	322.5	ug/L	18	Standard
	V	51	879.2	14.2	**-0.0168**	0.017	100.7	ug/L	907	Standard
	Cr	52	4655.4	1.7	**-0.0723**	0.014	19.0	ug/L	4635	Standard
	Cr	53	303.3	13.3	**0.0295**	0.034	114.7	ug/L	255	Standard
	Mn	55	1092.0	4.0	**-0.0037**	0.003	74.1	ug/L	746	Standard
	Co	59	52.0	25.1	**0.0002**	0.002	1047.1	ug/L	40	Standard
	Ni	60	516.0	4.7	**0.0867**	0.008	9.1	ug/L	237	Standard
	Cu	65	455.3	1.6	**0.0290**	0.002	7.1	ug/L	308	Standard
	Zn	66	808.4	2.0	**0.0156**	0.013	85.8	ug/L	601	Standard
>	**Ge**	72	871042.7	0.6				ug/L	774356	Standard
	As	75	-39.2	57.2	**-0.0102**	0.015	148.8	ug/L	-42	Standard
	Se	82	24.0	40.7	**-0.0402**	0.073	180.2	ug/L	16	Standard
	Se-1	77	49.0	11.4	**0.0303**	0.054	178.2	ug/L	43	Standard
>	**Ga**	71	43.3	43.7				mg/L	30	Standard
	Rb	85	33.3	43.3				ug/L	15	Standard
	Y	89	1011702.7	0.4				ug/L	919916	Standard
>	**Rh**	103	0.0					ug/L	3	Standard
	Mo	98	70.6	26.8	**0.0149**	0.007	45.0	ug/L	12	Standard
	Ag	107	124.7	23.5	**0.0044**	0.005	116.4	ug/L	84	Standard
	Cd	111	2.9	90.6	**0.0005**	0.002	402.5	mg/L	2	Standard
	Cd	114	17.1	90.9	**0.0038**	0.005	123.8	ug/L	2	Standard
>	**In**	115	752521.8	0.7				ug/L	707917	Standard
	Sn	118	603.3	4.2	**0.0185**	0.007	37.4	ug/L	550	Standard
	Sb	123	427.5	13.5	**0.1233**	0.018	14.5	ug/L	64	Standard
	Ba	135	15.0	30.6	**0.0033**	0.005	143.7	ug/L	8	Standard
	Ce	140	10.0	50.0				ug/L	22	Standard
>	**Tb**	159	1028950.2	0.6				ug/L	944784	Standard
	Ho	165	11.7	65.5				ug/L	8	Standard
	Tl	203	21.7	77.4	**-0.0001**	0.003	3074.5	ug/L	5	Standard
	Tl	205	8.3	124.9	**-0.0010**	0.002	197.5	ug/L	3	Standard
	Pb	206	247.3	4.6	**0.0015**	0.003	211.4	ug/L	197	Standard
	Pb	207	215.3	8.7	**0.0034**	0.006	169.1	ug/L	180	Standard
	Pb	208	883.3	1.3	**-0.0002**	0.001	678.0	ug/L	761	Standard
	U	238	9.3	99.0	**0.0008**	0.002	224.2	ug/L	0	Standard
>	**Bi**	209	689657.9	0.3				ug/L	628212	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	30.0	44.1	**0.0226**	0.032	139.5	mg/L	12	Standard
K	39	1.7	173.2	**-0.0715**	0.043	60.2	mg/L	7	Standard
Ca	43	21.7	35.3	**0.2304**	0.807	350.4	mg/L	30	Standard
Fe	54	332.7	14.7	**-0.0017**	0.023	1338.2	mg/L	241	Standard
Fe	57	20.0	43.3	**-0.0407**	0.011	27.4	mg/L	37	Standard
> **Sc-1**	45	117757.9	3.5				mg/L	108014	Standard
Cl	35	16170.0	0.5				ug/L	13720	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	896.7	4.6				ug/L	750	Standard
P	31	19452.5	3.0				ug/L	15373	Standard
S	34	1363.4	4.2				ug/L	970	Standard
Sr	88	6.7	86.6				ug/L	5	Standard
C	12	93.3	40.6				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.9	44.9				mg/L	3	Standard
Ho-1	165	11.7	65.5				mg/L	8	Standard
Er	166	10.0					mg/L	17	Standard
I	127	501.7	12.8				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		112.486	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.301
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.781
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1505158701SDL WG526515-02
Sample Date/Time: Friday, June 05, 2015 13:53:22
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	239406.6	0.5				ug/L	205676	Standard
	Be	9	28.3	66.8	**0.0163**	0.016	97.1	ug/L	13	Standard
	Al	27	84937.6	3.2	**1.2397**	0.047	3.8	ug/L	498	Standard
	Sc	45	119652.3	1.4				ug/L	108014	Standard
	Ti	47	33.7	27.0	**0.0489**	0.027	54.8	ug/L	18	Standard
	V	51	652.9	6.5	**-0.0485**	0.005	9.4	ug/L	907	Standard
	Cr	52	13454.6	0.3	**1.0280**	0.027	2.7	ug/L	4635	Standard
	Cr	53	1590.1	3.8	**1.1426**	0.035	3.0	ug/L	255	Standard
	Mn	55	3087.7	17.2	**0.1407**	0.036	25.6	ug/L	746	Standard
	Co	59	92.7	10.9	**0.0050**	0.001	22.7	ug/L	40	Standard
	Ni	60	1817.1	0.9	**0.5792**	0.004	0.7	ug/L	237	Standard
	Cu	65	1310.7	4.3	**0.3474**	0.027	7.7	ug/L	308	Standard
	Zn	66	4142.6	2.2	**2.0583**	0.031	1.5	ug/L	601	Standard
>	**Ge**	72	877949.1	1.3				ug/L	774356	Standard
	As	75	-32.8	44.9	**-0.0056**	0.010	173.3	ug/L	-42	Standard
	Se	82	16.2	24.7	**-0.0996**	0.029	29.2	ug/L	16	Standard
	Se-1	77	52.0	26.0	**0.0554**	0.130	234.2	ug/L	43	Standard
>	**Ga**	71	91.7	13.7				mg/L	30	Standard
	Rb	85	466.7	10.6				ug/L	15	Standard
	Y	89	1008155.3	2.5				ug/L	919916	Standard
>	**Rh**	103	5.0	0.0				ug/L	3	Standard
	Mo	98	96.6	15.5	**0.0239**	0.006	23.7	ug/L	12	Standard
	Ag	107	1442.7	0.8	**0.2251**	0.005	2.4	ug/L	84	Standard
	Cd	111	10.2	31.4	**0.0058**	0.002	38.9	mg/L	2	Standard
	Cd	114	30.7	98.3	**0.0079**	0.009	115.8	ug/L	2	Standard
>	**In**	115	755451.9	1.4				ug/L	707917	Standard
	Sn	118	966.7	11.4	**0.1051**	0.030	28.1	ug/L	550	Standard
	Sb	123	187.0	10.4	**0.0480**	0.006	11.5	ug/L	64	Standard
	Ba	135	289.0	4.6	**0.2795**	0.017	6.1	ug/L	8	Standard
	Ce	140	21.7	26.6				ug/L	22	Standard
>	**Tb**	159	1017545.9	1.2				ug/L	944784	Standard
	Ho	165	16.7	69.3				ug/L	8	Standard
	Tl	203	30.7	13.6	**0.0016**	0.001	43.9	ug/L	5	Standard
	Tl	205	30.0	83.3	**0.0029**	0.005	153.3	ug/L	3	Standard
	Pb	206	436.3	4.9	**0.0565**	0.004	7.6	ug/L	197	Standard
	Pb	207	375.7	5.7	**0.0546**	0.005	9.7	ug/L	180	Standard
	Pb	208	1638.4	2.1	**0.0578**	0.002	2.8	ug/L	761	Standard
	U	238	28.0	91.2	**0.0043**	0.005	112.3	ug/L	0	Standard
>	**Bi**	209	690167.1	1.6				ug/L	628212	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	431.7	7.0	**1.0536**	0.064	6.1	mg/L	12	Standard
K	39	6.7	86.6	**-0.0012**	0.083	6997.2	mg/L	7	Standard
Ca	43	28.3	27.0	**0.8822**	0.761	86.3	mg/L	30	Standard
Fe	54	356.6	6.7	**0.0051**	0.008	159.9	mg/L	241	Standard
Fe	57	33.3	56.8	**-0.0242**	0.024	97.6	mg/L	37	Standard
> **Sc-1**	45	119652.3	1.4				mg/L	108014	Standard
Cl	35	15885.0	1.8				ug/L	13720	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	966.7	3.6				ug/L	750	Standard
P	31	19255.6	1.6				ug/L	15373	Standard
S	34	1370.1	6.8				ug/L	970	Standard
Sr	88	26.7	28.6				ug/L	5	Standard
C	12	73.3	47.9				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.7	103.3				mg/L	3	Standard
Ho-1	165	16.7	69.3				mg/L	8	Standard
Er	166	6.7	86.6				mg/L	17	Standard
I	127	1480.1	3.0				mg/L	138	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		116.400	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		113.378	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1505158701SDL WG526515-02
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.715
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.862
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1506023301
Sample Date/Time: Friday, June 05, 2015 13:56:34
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	241596.0	0.6				ug/L	205676	Standard
	Be	9	4283.9	7.8	**3.5453**	0.296	8.3	ug/L	13	Standard
	Al	27	14141441.3	0.5	**209.7653**	1.667	0.8	ug/L	498	Standard
	Sc	45	168501.8	1.0				ug/L	108014	Standard
	Ti	47	161838.1	1.2	**481.5890**	3.242	0.7	ug/L	18	Standard
	V	51	484973.8	3.3	**67.5242**	1.100	1.6	ug/L	907	Standard
	Cr	52	284443.9	3.1	**36.0625**	0.530	1.5	ug/L	4635	Standard
	Cr	53	42812.1	4.4	**37.9204**	1.026	2.7	ug/L	255	Standard
	Mn	55	76859841.1	4.0	**5754.2456**	134.846	2.3	ug/L	746	Standard
	Co	59	103183.1	3.3	**12.6937**	0.217	1.7	ug/L	40	Standard
	Ni	60	111867.3	2.6	**43.5638**	0.351	0.8	ug/L	237	Standard
	Cu	65	78373.3	2.4	**29.9689**	0.391	1.3	ug/L	308	Standard
	Zn	66	987566.8	1.9	**623.0613**	6.157	1.0	ug/L	601	Standard
>	**Ge**	72	853647.7	1.8				ug/L	774356	Standard
	As	75	28105.8	2.7	**19.2670**	0.209	1.1	ug/L	-42	Standard
	Se	82	1068.6	5.2	**7.9270**	0.322	4.1	ug/L	16	Standard
	Se-1	77	739.4	4.6	**6.7191**	0.206	3.1	ug/L	43	Standard
>	**Ga**	71	72854.8	2.1				mg/L	30	Standard
	Rb	85	667112.2	2.1				ug/L	15	Standard
	Y	89	3773910.1	1.1				ug/L	919916	Standard
>	**Rh**	103	105.0	17.2				ug/L	3	Standard
	Mo	98	4964.4	2.6	**1.5953**	0.044	2.7	ug/L	12	Standard
	Ag	107	1680.1	4.6	**0.2452**	0.010	4.0	ug/L	84	Standard
	Cd	111	4062.0	3.8	**2.7541**	0.146	5.3	mg/L	2	Standard
	Cd	114	9302.7	2.7	**2.6318**	0.088	3.4	ug/L	2	Standard
>	**In**	115	811894.1	2.2				ug/L	707917	Standard
	Sn	118	3237.0	2.8	**0.5943**	0.020	3.3	ug/L	550	Standard
	Sb	123	1666.1	3.5	**0.4721**	0.014	2.9	ug/L	64	Standard
	Ba	135	144273.8	2.0	**135.3018**	2.411	1.8	ug/L	8	Standard
	Ce	140	1599191.5	2.9				ug/L	22	Standard
>	**Tb**	159	1171867.6	3.3				ug/L	944784	Standard
	Ho	165	105148.6	0.6				ug/L	8	Standard
	Tl	203	2668.2	5.0	**0.5321**	0.030	5.6	ug/L	5	Standard
	Tl	205	2650.2	2.6	**0.5120**	0.017	3.3	ug/L	3	Standard
	Pb	206	164035.2	2.7	**51.0217**	1.341	2.6	ug/L	197	Standard
	Pb	207	129784.0	2.2	**44.2845**	0.895	2.0	ug/L	180	Standard
	Pb	208	562253.9	2.1	**46.0938**	0.850	1.8	ug/L	761	Standard
	U	238	10720.1	1.5	**2.1568**	0.047	2.2	ug/L	0	Standard
>	**Bi**	209	645325.0	1.5				ug/L	628212	Standard

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Na	23	3.3	173.2	**26.4329**	45.774	173.2	mg/L	0	Standard
Mg	24	9021.0	6.4	**16.4004**	0.930	5.7	mg/L	12	Standard
K	39	383.3	14.4	**3.7759**	0.540	14.3	mg/L	7	Standard
Ca	43	643.3	7.1	**45.4472**	3.698	8.1	mg/L	30	Standard
Fe	54	268932.8	1.9	**75.0180**	0.667	0.9	mg/L	241	Standard
Fe	57	83968.9	3.7	**75.7107**	2.252	3.0	mg/L	37	Standard
> **Sc-1**	45	168501.8	1.0				mg/L	108014	Standard
Cl	35	15144.2	3.4				ug/L	13720	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	64852.0	4.7				ug/L	750	Standard
P	31	41762.5	1.2				ug/L	15373	Standard
S	34	1045.0	7.9				ug/L	970	Standard
Sr	88	923.4	5.1				ug/L	5	Standard
C	12	143.3	22.4				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	306.7	25.3				mg/L	0	Standard
Dy	164	148804.6	3.0				mg/L	3	Standard
Ho-1	165	105148.6	0.6				mg/L	8	Standard
Er	166	101482.2	2.6				mg/L	17	Standard
I	127	52917.3	1.8				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.464	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.240	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.688
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.724
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	

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Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1506023302
Sample Date/Time: Friday, June 05, 2015 13:59:46
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	236660.8	1.2				ug/L	205676	Standard
	Be	9	21.7	70.5	**0.0110**	0.013	118.0	ug/L	13	Standard
	Al	27	6875572.5	2.2	**104.1041**	2.497	2.4	ug/L	498	Standard
	Sc	45	118809.4	3.5				ug/L	108014	Standard
	Ti	47	79.7	11.4	**0.1892**	0.030	16.0	ug/L	18	Standard
	V	51	914.1	19.8	**-0.0093**	0.024	261.1	ug/L	907	Standard
	Cr	52	6099.9	9.0	**0.1275**	0.061	47.7	ug/L	4635	Standard
	Cr	53	2520.2	3.0	**2.0174**	0.093	4.6	ug/L	255	Standard
	Mn	55	7226360.1	0.7	**542.4166**	7.874	1.5	ug/L	746	Standard
	Co	59	947.0	6.0	**0.1107**	0.006	5.0	ug/L	40	Standard
	Ni	60	6143.3	7.9	**2.2923**	0.161	7.0	ug/L	237	Standard
	Cu	65	1389.4	6.8	**0.3924**	0.031	8.0	ug/L	308	Standard
	Zn	66	8779.2	1.7	**5.0714**	0.030	0.6	ug/L	601	Standard
>	**Ge**	72	851623.2	1.3				ug/L	774356	Standard
	As	75	894.7	7.1	**0.6310**	0.051	8.1	ug/L	-42	Standard
	Se	82	388.5	6.0	**2.7514**	0.210	7.6	ug/L	16	Standard
	Se-1	77	265.3	6.3	**2.1390**	0.141	6.6	ug/L	43	Standard
>	**Ga**	71	115.0	19.9				mg/L	30	Standard
	Rb	85	13839.7	0.3				ug/L	15	Standard
	Y	89	1015823.0	2.2				ug/L	919916	Standard
>	**Rh**	103	98.3	10.6				ug/L	3	Standard
	Mo	98	156.8	13.9	**0.0456**	0.008	17.1	ug/L	12	Standard
	Ag	107	85.0	10.2	**-0.0022**	0.002	73.4	ug/L	84	Standard
	Cd	111	340.5	6.0	**0.2503**	0.015	5.9	mg/L	2	Standard
	Cd	114	814.2	4.1	**0.2501**	0.010	4.2	ug/L	2	Standard
>	**In**	115	743713.7	0.7				ug/L	707917	Standard
	Sn	118	590.0	14.7	**0.0170**	0.022	127.0	ug/L	550	Standard
	Sb	123	95.3	11.8	**0.0200**	0.004	18.1	ug/L	64	Standard
	Ba	135	17711.0	1.3	**18.1211**	0.343	1.9	ug/L	8	Standard
	Ce	140	706.7	28.3				ug/L	22	Standard
>	**Tb**	159	1010969.9	1.4				ug/L	944784	Standard
	Ho	165	150.0	8.8				ug/L	8	Standard
	Tl	203	189.3	3.5	**0.0337**	0.001	3.1	ug/L	5	Standard
	Tl	205	165.0	19.9	**0.0295**	0.007	22.5	ug/L	3	Standard
	Pb	206	304.7	6.1	**0.0239**	0.005	20.9	ug/L	197	Standard
	Pb	207	262.0	9.3	**0.0237**	0.008	32.3	ug/L	180	Standard
	Pb	208	1122.3	2.4	**0.0238**	0.003	13.4	ug/L	761	Standard
	U	238	695.7	0.5	**0.1385**	0.002	1.4	ug/L	0	Standard
>	**Bi**	209	647966.4	1.9				ug/L	628212	Standard

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Na	23	3.3	86.6	**38.2852**	33.203	86.7	mg/L	0	Standard
Mg	24	9109.4	1.5	**23.5437**	1.124	4.8	mg/L	12	Standard
K	39	195.0	31.1	**2.7196**	0.976	35.9	mg/L	7	Standard
Ca	43	503.3	3.0	**50.6687**	2.125	4.2	mg/L	30	Standard
Fe	54	381.3	18.1	**0.0156**	0.024	156.3	mg/L	241	Standard
Fe	57	318.3	12.0	**0.3425**	0.064	18.7	mg/L	37	Standard
> **Sc-1**	45	118809.4	3.5				mg/L	108014	Standard
Cl	35	17285.2	4.8				ug/L	13720	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	28727.2	2.9				ug/L	750	Standard
P	31	20774.3	10.9				ug/L	15373	Standard
S	34	1228.4	11.0				ug/L	970	Standard
Sr	88	868.4	11.3				ug/L	5	Standard
C	12	133.3	24.1				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	168.7	20.6				mg/L	3	Standard
Ho-1	165	150.0	8.8				mg/L	8	Standard
Er	166	166.7	40.0				mg/L	17	Standard
I	127	58097.8	0.8				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.065	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.978	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.057
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.145
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1506023304
Sample Date/Time: Friday, June 05, 2015 14:02:57
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	232096.2	1.8				ug/L	205676	Standard
	Be	9	533.3	6.6	**0.4530**	0.033	7.2	ug/L	13	Standard
	Al	27	5267262.0	0.7	**81.3234**	1.400	1.7	ug/L	498	Standard
	Sc	45	128783.3	0.3				ug/L	108014	Standard
	Ti	47	14634.7	1.8	**42.9840**	1.294	3.0	ug/L	18	Standard
	V	51	46777.1	0.2	**6.3116**	0.073	1.2	ug/L	907	Standard
	Cr	52	21812.7	1.0	**2.1213**	0.053	2.5	ug/L	4635	Standard
	Cr	53	3753.8	2.4	**3.0707**	0.079	2.6	ug/L	255	Standard
	Mn	55	8310319.7	1.5	**614.7801**	13.551	2.2	ug/L	746	Standard
	Co	59	71838.2	0.9	**8.7311**	0.160	1.8	ug/L	40	Standard
	Ni	60	23113.6	0.6	**8.8053**	0.098	1.1	ug/L	237	Standard
	Cu	65	21341.0	0.4	**7.9584**	0.104	1.3	ug/L	308	Standard
	Zn	66	137774.9	0.3	**85.4609**	1.355	1.6	ug/L	601	Standard
>	**Ge**	72	864134.5	1.3				ug/L	774356	Standard
	As	75	2565.0	3.2	**1.7520**	0.056	3.2	ug/L	-42	Standard
	Se	82	137.1	6.3	**0.8137**	0.066	8.1	ug/L	16	Standard
	Se-1	77	279.0	6.1	**2.2340**	0.181	8.1	ug/L	43	Standard
>	**Ga**	71	4105.6	5.7				mg/L	30	Standard
	Rb	85	33151.2	2.6				ug/L	15	Standard
	Y	89	1507189.5	0.8				ug/L	919916	Standard
>	**Rh**	103	68.3	4.2				ug/L	3	Standard
	Mo	98	1078.5	2.1	**0.3495**	0.008	2.3	ug/L	12	Standard
	Ag	107	621.3	8.1	**0.0832**	0.008	10.0	ug/L	84	Standard
	Cd	111	720.8	1.3	**0.5019**	0.008	1.5	mg/L	2	Standard
	Cd	114	1811.1	2.6	**0.5267**	0.013	2.5	ug/L	2	Standard
>	**In**	115	787927.3	0.2				ug/L	707917	Standard
	Sn	118	893.4	11.4	**0.0785**	0.023	29.3	ug/L	550	Standard
	Sb	123	589.1	5.3	**0.1655**	0.010	5.8	ug/L	64	Standard
	Ba	135	68289.9	0.6	**65.9772**	0.502	0.8	ug/L	8	Standard
	Ce	140	240812.0	0.8				ug/L	22	Standard
>	**Tb**	159	1080741.5	1.4				ug/L	944784	Standard
	Ho	165	14074.9	2.2				ug/L	8	Standard
	Tl	203	293.3	3.9	**0.0532**	0.003	5.5	ug/L	5	Standard
	Tl	205	326.7	3.9	**0.0592**	0.003	5.2	ug/L	3	Standard
	Pb	206	96197.1	0.7	**29.0897**	0.684	2.4	ug/L	197	Standard
	Pb	207	80001.3	0.9	**26.5384**	0.430	1.6	ug/L	180	Standard
	Pb	208	344199.8	0.6	**27.4334**	0.495	1.8	ug/L	761	Standard
	U	238	1956.5	3.2	**0.3822**	0.012	3.1	ug/L	0	Standard
>	**Bi**	209	663217.6	1.8				ug/L	628212	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	7391.8	6.5	**17.5899**	1.104	6.3	mg/L	12	Standard
K	39	263.3	5.8	**3.3856**	0.207	6.1	mg/L	7	Standard
Ca	43	371.7	8.1	**33.8439**	3.029	9.0	mg/L	30	Standard
Fe	54	54097.3	3.0	**19.6472**	0.650	3.3	mg/L	241	Standard
Fe	57	17234.8	3.1	**20.2876**	0.670	3.3	mg/L	37	Standard
> **Sc-1**	45	128783.3	0.3				mg/L	108014	Standard
Cl	35	16338.8	0.9				ug/L	13720	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	7728.6	0.8				ug/L	750	Standard
P	31	22583.6	8.4				ug/L	15373	Standard
S	34	1311.7	2.1				ug/L	970	Standard
Sr	88	896.7	4.7				ug/L	5	Standard
C	12	196.7	20.5				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	44.6				mg/L	0	Standard
Dy	164	18505.1	0.4				mg/L	3	Standard
Ho-1	165	14074.9	2.2				mg/L	8	Standard
Er	166	14203.3	4.2				mg/L	17	Standard
I	127	82881.6	6.0				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.845	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.594	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.302
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.572
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1506023305
Sample Date/Time: Friday, June 05, 2015 14:06:09
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	232230.1	2.3				ug/L	205676	Standard
	Be	9	20.0	43.3	**0.0098**	0.007	75.3	ug/L	13	Standard
	Al	27	4211629.2	1.6	**64.9854**	1.478	2.3	ug/L	498	Standard
	Sc	45	123207.5	2.7				ug/L	108014	Standard
	Ti	47	77.0	17.0	**0.1779**	0.036	20.2	ug/L	18	Standard
	V	51	695.9	1.1	**-0.0408**	0.002	5.8	ug/L	907	Standard
	Cr	52	5124.2	1.9	**-0.0063**	0.014	219.4	ug/L	4635	Standard
	Cr	53	1368.4	8.1	**0.9736**	0.117	12.1	ug/L	255	Standard
	Mn	55	5255138.2	1.8	**389.5559**	1.179	0.3	ug/L	746	Standard
	Co	59	1634.1	1.0	**0.1931**	0.001	0.8	ug/L	40	Standard
	Ni	60	3595.4	2.1	**1.2792**	0.016	1.2	ug/L	237	Standard
	Cu	65	1465.7	1.9	**0.4152**	0.017	4.0	ug/L	308	Standard
	Zn	66	3648.8	3.4	**1.7967**	0.083	4.6	ug/L	601	Standard
>	**Ge**	72	862162.9	1.5				ug/L	774356	Standard
	As	75	1163.9	6.4	**0.8061**	0.061	7.5	ug/L	-42	Standard
	Se	82	158.6	3.7	**0.9783**	0.063	6.4	ug/L	16	Standard
	Se-1	77	185.0	7.6	**1.3383**	0.132	9.8	ug/L	43	Standard
>	**Ga**	71	80.0	25.0				mg/L	30	Standard
	Rb	85	10300.2	1.5				ug/L	15	Standard
	Y	89	1050680.7	2.0				ug/L	919916	Standard
>	**Rh**	103	60.0	8.3				ug/L	3	Standard
	Mo	98	437.9	2.3	**0.1385**	0.001	0.6	ug/L	12	Standard
	Ag	107	72.3	6.8	**-0.0048**	0.001	12.5	ug/L	84	Standard
	Cd	111	2.1	72.6	**-0.0002**	0.001	551.2	mg/L	2	Standard
	Cd	114	17.4	86.1	**0.0038**	0.005	120.0	ug/L	2	Standard
>	**In**	115	775065.3	1.9				ug/L	707917	Standard
	Sn	118	19420.8	1.7	**4.4024**	0.040	0.9	ug/L	550	Standard
	Sb	123	114.6	6.6	**0.0246**	0.003	12.0	ug/L	64	Standard
	Ba	135	54950.5	0.8	**53.9754**	0.589	1.1	ug/L	8	Standard
	Ce	140	1726.8	3.6				ug/L	22	Standard
>	**Tb**	159	1049958.1	1.3				ug/L	944784	Standard
	Ho	165	151.7	22.0				ug/L	8	Standard
	Tl	203	44.7	16.5	**0.0045**	0.001	28.4	ug/L	5	Standard
	Tl	205	65.0	27.7	**0.0098**	0.003	35.3	ug/L	3	Standard
	Pb	206	2910.6	2.1	**0.8092**	0.008	0.9	ug/L	197	Standard
	Pb	207	2541.9	1.3	**0.7777**	0.020	2.6	ug/L	180	Standard
	Pb	208	10613.5	3.1	**0.7777**	0.029	3.7	ug/L	761	Standard
	U	238	79.3	8.9	**0.0145**	0.001	9.9	ug/L	0	Standard
>	**Bi**	209	664973.2	1.7				ug/L	628212	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	7426.8	1.3	**18.4890**	0.664	3.6	mg/L	12	Standard
K	39	266.7	4.7	**3.5933**	0.262	7.3	mg/L	7	Standard
Ca	43	256.7	4.5	**23.8599**	1.186	5.0	mg/L	30	Standard
Fe	54	19458.2	0.7	**7.3061**	0.245	3.4	mg/L	241	Standard
Fe	57	6309.6	2.7	**7.7231**	0.162	2.1	mg/L	37	Standard
> **Sc-1**	45	123207.5	2.7				mg/L	108014	Standard
Cl	35	16768.6	0.6				ug/L	13720	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	11080.7	5.4				ug/L	750	Standard
P	31	20894.4	2.4				ug/L	15373	Standard
S	34	1446.7	8.9				ug/L	970	Standard
Sr	88	843.4	5.0				ug/L	5	Standard
C	12	160.0	16.5				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	141.2	46.2				mg/L	3	Standard
Ho-1	165	151.7	22.0				mg/L	8	Standard
Er	166	183.3	8.3				mg/L	17	Standard
I	127	71379.5	2.6				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.910	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.339	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.485
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.852
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Report Date/Time: Friday, June 05, 2015 14:08:26
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Method 6020 - Summary Report

Sample ID: L1506023307
Sample Date/Time: Friday, June 05, 2015 14:09:21
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	227593.6	1.8				ug/L	205676	Standard
	Be	9	341.7	2.2	**0.2934**	0.011	3.9	ug/L	13	Standard
	Al	27	10179407.9	1.9	**160.2860**	2.798	1.7	ug/L	498	Standard
	Sc	45	128625.7	3.0				ug/L	108014	Standard
	Ti	47	18290.7	1.1	**54.0086**	0.430	0.8	ug/L	18	Standard
	V	51	57501.8	2.2	**7.8350**	0.321	4.1	ug/L	907	Standard
	Cr	52	34893.1	0.8	**3.8143**	0.117	3.1	ug/L	4635	Standard
	Cr	53	6439.7	6.3	**5.4628**	0.255	4.7	ug/L	255	Standard
	Mn	55	10940486.2	1.2	**813.6191**	10.833	1.3	ug/L	746	Standard
	Co	59	27742.4	0.6	**3.3858**	0.043	1.3	ug/L	40	Standard
	Ni	60	19982.8	1.7	**7.6382**	0.116	1.5	ug/L	237	Standard
	Cu	65	18829.4	1.5	**7.0428**	0.121	1.7	ug/L	308	Standard
	Zn	66	126976.5	1.0	**79.1386**	0.702	0.9	ug/L	601	Standard
>	**Ge**	72	859618.4	1.9				ug/L	774356	Standard
	As	75	12433.8	0.9	**8.4767**	0.204	2.4	ug/L	-42	Standard
	Se	82	1069.6	1.5	**7.8819**	0.186	2.4	ug/L	16	Standard
	Se-1	77	403.3	12.6	**3.4370**	0.413	12.0	ug/L	43	Standard
>	**Ga**	71	7913.7	3.8				mg/L	30	Standard
	Rb	85	74479.3	1.8				ug/L	15	Standard
	Y	89	1254053.3	3.0				ug/L	919916	Standard
>	**Rh**	103	196.7	12.8				ug/L	3	Standard
	Mo	98	3481.8	1.7	**1.1540**	0.030	2.6	ug/L	12	Standard
	Ag	107	410.0	3.3	**0.0495**	0.003	6.9	ug/L	84	Standard
	Cd	111	285.6	6.2	**0.1987**	0.016	8.2	mg/L	2	Standard
	Cd	114	754.6	1.6	**0.2194**	0.003	1.4	ug/L	2	Standard
>	**In**	115	785410.1	2.1				ug/L	707917	Standard
	Sn	118	1258.4	4.6	**0.1633**	0.015	9.4	ug/L	550	Standard
	Sb	123	1038.3	1.0	**0.3005**	0.004	1.4	ug/L	64	Standard
	Ba	135	458493.8	0.2	**444.5730**	8.875	2.0	ug/L	8	Standard
	Ce	140	180551.1	0.5				ug/L	22	Standard
>	**Tb**	159	1066498.2	1.6				ug/L	944784	Standard
	Ho	165	7788.7	2.1				ug/L	8	Standard
	Tl	203	260.7	9.2	**0.0481**	0.004	8.8	ug/L	5	Standard
	Tl	205	280.0	3.6	**0.0518**	0.002	4.0	ug/L	3	Standard
	Pb	206	37296.2	0.9	**11.5384**	0.227	2.0	ug/L	197	Standard
	Pb	207	30716.4	0.4	**10.4241**	0.159	1.5	ug/L	180	Standard
	Pb	208	132281.3	1.1	**10.7843**	0.077	0.7	ug/L	761	Standard
	U	238	2120.8	3.7	**0.4254**	0.011	2.5	ug/L	0	Standard
>	**Bi**	209	645799.1	1.1				ug/L	628212	Standard

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Na	23	1.7	173.2	**16.9308**	29.316	173.2	mg/L	0	Standard
Mg	24	18778.3	2.5	**44.8364**	0.578	1.3	mg/L	12	Standard
K	39	400.0	5.7	**5.2041**	0.391	7.5	mg/L	7	Standard
Ca	43	455.0	3.3	**41.9870**	2.569	6.1	mg/L	30	Standard
Fe	54	41577.0	2.2	**15.0888**	0.128	0.8	mg/L	241	Standard
Fe	57	13476.0	0.2	**15.8765**	0.466	2.9	mg/L	37	Standard
> **Sc-1**	45	128625.7	3.0				mg/L	108014	Standard
Cl	35	16785.3	1.4				ug/L	13720	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	76114.2	3.7				ug/L	750	Standard
P	31	22914.0	3.2				ug/L	15373	Standard
S	34	1343.4	1.9				ug/L	970	Standard
Sr	88	2028.5	6.5				ug/L	5	Standard
C	12	220.0	24.1				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	0.0				mg/L	0	Standard
Dy	164	11106.3	3.6				mg/L	3	Standard
Ho-1	165	7788.7	2.1				mg/L	8	Standard
Er	166	7892.1	1.8				mg/L	17	Standard
I	127	283792.9	6.1				mg/L	138	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		110.656	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		111.011	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.947
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.800
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1506023308
Sample Date/Time: Friday, June 05, 2015 14:12:33
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	230436.1	1.6				ug/L	205676	Standard
	Be	9	25.0	40.0	**0.0143**	0.009	60.2	ug/L	13	Standard
	Al	27	8327085.4	1.7	**129.4910**	1.554	1.2	ug/L	498	Standard
	Sc	45	126136.4	2.1				ug/L	108014	Standard
	Ti	47	113.0	20.3	**0.2821**	0.066	23.4	ug/L	18	Standard
	V	51	850.5	8.4	**-0.0202**	0.010	48.0	ug/L	907	Standard
	Cr	52	5720.7	2.7	**0.0656**	0.023	35.7	ug/L	4635	Standard
	Cr	53	2435.2	8.4	**1.9015**	0.181	9.5	ug/L	255	Standard
	Mn	55	5925935.5	1.9	**436.6707**	6.398	1.5	ug/L	746	Standard
	Co	59	2499.2	3.5	**0.2967**	0.012	4.0	ug/L	40	Standard
	Ni	60	7452.2	2.3	**2.7529**	0.053	1.9	ug/L	237	Standard
	Cu	65	1159.7	3.0	**0.2961**	0.014	4.8	ug/L	308	Standard
	Zn	66	7395.5	1.7	**4.1110**	0.068	1.7	ug/L	601	Standard
>	**Ge**	72	867326.7	0.5				ug/L	774356	Standard
	As	75	12081.4	0.8	**8.1617**	0.080	1.0	ug/L	-42	Standard
	Se	82	1791.0	1.4	**13.2228**	0.215	1.6	ug/L	16	Standard
	Se-1	77	365.3	4.7	**3.0454**	0.154	5.1	ug/L	43	Standard
>	**Ga**	71	108.3	14.8				mg/L	30	Standard
	Rb	85	22476.7	2.6				ug/L	15	Standard
	Y	89	1046905.7	0.9				ug/L	919916	Standard
>	**Rh**	103	253.3	17.8				ug/L	3	Standard
	Mo	98	3340.7	1.7	**1.1094**	0.019	1.7	ug/L	12	Standard
	Ag	107	87.7	8.7	**-0.0025**	0.001	46.9	ug/L	84	Standard
	Cd	111	4.0	56.8	**0.0012**	0.002	137.8	mg/L	2	Standard
	Cd	114	14.8	84.2	**0.0030**	0.004	124.9	ug/L	2	Standard
>	**In**	115	783428.9	0.8				ug/L	707917	Standard
	Sn	118	690.0	14.5	**0.0327**	0.022	67.3	ug/L	550	Standard
	Sb	123	432.1	3.3	**0.1195**	0.004	3.4	ug/L	64	Standard
	Ba	135	475755.8	1.4	**462.3387**	3.195	0.7	ug/L	8	Standard
	Ce	140	3167.0	2.6				ug/L	22	Standard
>	**Tb**	159	1066797.4	1.3				ug/L	944784	Standard
	Ho	165	185.0	13.5				ug/L	8	Standard
	Tl	203	52.3	19.2	**0.0061**	0.002	32.7	ug/L	5	Standard
	Tl	205	36.7	15.7	**0.0045**	0.001	23.9	ug/L	3	Standard
	Pb	206	2159.8	2.5	**0.5892**	0.015	2.6	ug/L	197	Standard
	Pb	207	1872.1	2.4	**0.5621**	0.020	3.5	ug/L	180	Standard
	Pb	208	8074.2	1.7	**0.5821**	0.007	1.1	ug/L	761	Standard
	U	238	1082.0	1.0	**0.2126**	0.003	1.6	ug/L	0	Standard
>	**Bi**	209	657993.8	0.8				ug/L	628212	Standard

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Na	23	6.7	86.6	**72.1611**	62.500	86.6	mg/L	0	Standard
Mg	24	21259.9	2.3	**51.7634**	0.201	0.4	mg/L	12	Standard
K	39	400.0	11.1	**5.3029**	0.584	11.0	mg/L	7	Standard
Ca	43	438.3	7.6	**41.1891**	3.608	8.8	mg/L	30	Standard
Fe	54	17088.7	1.3	**6.2474**	0.213	3.4	mg/L	241	Standard
Fe	57	5529.3	4.4	**6.6057**	0.416	6.3	mg/L	37	Standard
> **Sc-1**	45	126136.4	2.1				mg/L	108014	Standard
Cl	35	17405.3	1.2				ug/L	13720	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	127730.0	4.0				ug/L	750	Standard
P	31	20553.9	3.1				ug/L	15373	Standard
S	34	1386.7	3.3				ug/L	970	Standard
Sr	88	2391.9	6.1				ug/L	5	Standard
C	12	173.3	34.8				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	162.0	14.8				mg/L	3	Standard
Ho-1	165	185.0	13.5				mg/L	8	Standard
Er	166	236.7	24.0				mg/L	17	Standard
I	127	250109.4	3.8				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.038	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		112.006	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	110.667
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	104.741
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1506023310
Sample Date/Time: Friday, June 05, 2015 14:15:44
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	242134.8	1.8				ug/L	205676	Standard
	Be	9	15.0	33.3	**0.0050**	0.004	85.6	ug/L	13	Standard
	Al	27	138423.0	2.2	**2.0173**	0.052	2.6	ug/L	498	Standard
	Sc	45	126963.1	1.4				ug/L	108014	Standard
	Ti	47	130.7	23.3	**0.3264**	0.084	25.8	ug/L	18	Standard
	V	51	1626.3	1.8	**0.0821**	0.005	5.6	ug/L	907	Standard
	Cr	52	5656.7	1.8	**0.0438**	0.010	22.0	ug/L	4635	Standard
	Cr	53	538.3	16.7	**0.2282**	0.079	34.5	ug/L	255	Standard
	Mn	55	55183.3	12.0	**3.9080**	0.494	12.6	ug/L	746	Standard
	Co	59	149.0	39.1	**0.0116**	0.007	60.2	ug/L	40	Standard
	Ni	60	479.7	0.3	**0.0702**	0.002	2.8	ug/L	237	Standard
	Cu	65	1011.0	2.1	**0.2327**	0.011	4.7	ug/L	308	Standard
	Zn	66	4043.9	2.0	**1.9808**	0.044	2.2	ug/L	601	Standard
>	**Ge**	72	884022.6	0.8				ug/L	774356	Standard
	As	75	1183.7	1.6	**0.7992**	0.016	2.0	ug/L	-42	Standard
	Se	82	30.8	11.5	**0.0076**	0.025	334.8	ug/L	16	Standard
	Se-1	77	49.0	8.9	**0.0235**	0.042	180.0	ug/L	43	Standard
>	**Ga**	71	96.7	21.5				mg/L	30	Standard
	Rb	85	468.3	14.5				ug/L	15	Standard
	Y	89	1051652.8	1.2				ug/L	919916	Standard
>	**Rh**	103	16.7	45.8				ug/L	3	Standard
	Mo	98	89.3	5.7	**0.0200**	0.002	9.9	ug/L	12	Standard
	Ag	107	85.3	7.6	**-0.0029**	0.001	41.0	ug/L	84	Standard
	Cd	111	4.9	0.1	**0.0018**	0.000	2.4	mg/L	2	Standard
	Cd	114	30.0	66.4	**0.0074**	0.006	79.6	ug/L	2	Standard
>	**In**	115	787349.3	1.3				ug/L	707917	Standard
	Sn	118	681.7	10.0	**0.0299**	0.014	45.2	ug/L	550	Standard
	Sb	123	126.8	3.4	**0.0277**	0.002	5.9	ug/L	64	Standard
	Ba	135	1819.8	3.7	**1.7481**	0.073	4.2	ug/L	8	Standard
	Ce	140	4940.8	4.0				ug/L	22	Standard
>	**Tb**	159	1053509.7	1.4				ug/L	944784	Standard
	Ho	165	73.3	10.4				ug/L	8	Standard
	Tl	203	8.7	85.1	**-0.0025**	0.001	55.3	ug/L	5	Standard
	Tl	205	8.3	34.6	**-0.0010**	0.001	55.5	ug/L	3	Standard
	Pb	206	123553.4	0.1	**35.6626**	0.534	1.5	ug/L	197	Standard
	Pb	207	104283.3	0.8	**33.0255**	0.649	2.0	ug/L	180	Standard
	Pb	208	452824.4	0.9	**34.4528**	0.521	1.5	ug/L	761	Standard
	U	238	23.7	13.6	**0.0034**	0.001	18.9	ug/L	0	Standard
>	**Bi**	209	695042.3	1.4				ug/L	628212	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	71.7	49.5	**0.1182**	0.085	72.2	mg/L	12	Standard
K	39	10.0	86.6	**0.0368**	0.114	309.3	mg/L	7	Standard
Ca	43	28.3	81.5	**0.7181**	2.259	314.6	mg/L	30	Standard
Fe	54	552.6	0.6	**0.0698**	0.003	4.4	mg/L	241	Standard
Fe	57	106.7	9.8	**0.0612**	0.011	18.4	mg/L	37	Standard
Sc-1	45	126963.1	1.4				mg/L	108014	Standard
Cl	35	17108.3	1.8				ug/L	13720	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	2076.8	20.7				ug/L	750	Standard
P	31	19242.2	2.2				ug/L	15373	Standard
S	34	1298.4	4.9				ug/L	970	Standard
Sr	88	15.0	88.2				ug/L	5	Standard
C	12	180.0	9.6				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	96.3	27.2				mg/L	3	Standard
Ho-1	165	73.3	10.4				mg/L	8	Standard
Er	166	76.7	7.5				mg/L	17	Standard
I	127	6816.6	19.8				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.726	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.162	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.221
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.638
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1506023311
Sample Date/Time: Friday, June 05, 2015 14:18:56
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	240480.1	0.2				ug/L	205676	Standard
	Be	9	15.0	57.7	**0.0051**	0.007	142.3	ug/L	13	Standard
	Al	27	7142400.4	3.4	**106.4177**	3.520	3.3	ug/L	498	Standard
	Sc	45	126037.1	1.7				ug/L	108014	Standard
	Ti	47	102.7	8.5	**0.2461**	0.025	10.1	ug/L	18	Standard
	V	51	1172.4	34.6	**0.0205**	0.054	260.8	ug/L	907	Standard
	Cr	52	6367.7	0.3	**0.1320**	0.013	10.2	ug/L	4635	Standard
	Cr	53	1331.7	8.6	**0.9093**	0.081	8.9	ug/L	255	Standard
	Mn	55	2642711.6	0.6	**190.8957**	2.163	1.1	ug/L	746	Standard
	Co	59	3069.6	4.8	**0.3584**	0.012	3.2	ug/L	40	Standard
	Ni	60	7295.1	2.2	**2.6377**	0.035	1.3	ug/L	237	Standard
	Cu	65	2275.8	2.6	**0.7011**	0.009	1.4	ug/L	308	Standard
	Zn	66	5921.8	2.0	**3.1231**	0.048	1.5	ug/L	601	Standard
>	**Ge**	72	884703.7	1.7				ug/L	774356	Standard
	As	75	12178.9	1.7	**8.0660**	0.013	0.2	ug/L	-42	Standard
	Se	82	686.0	6.3	**4.8259**	0.256	5.3	ug/L	16	Standard
	Se-1	77	179.7	6.9	**1.2426**	0.094	7.5	ug/L	43	Standard
>	**Ga**	71	100.0	31.2				mg/L	30	Standard
	Rb	85	39620.1	1.8				ug/L	15	Standard
	Y	89	1062435.8	2.1				ug/L	919916	Standard
>	**Rh**	103	335.0	27.6				ug/L	3	Standard
	Mo	98	1997.5	2.1	**0.6539**	0.012	1.9	ug/L	12	Standard
	Ag	107	98.0	2.0	**-0.0009**	0.000	29.4	ug/L	84	Standard
	Cd	111	8.3	53.0	**0.0041**	0.003	74.2	mg/L	2	Standard
	Cd	114	17.4	62.6	**0.0037**	0.003	86.2	ug/L	2	Standard
>	**In**	115	789964.6	0.4				ug/L	707917	Standard
	Sn	118	716.7	6.0	**0.0376**	0.010	26.9	ug/L	550	Standard
	Sb	123	753.7	1.9	**0.2140**	0.004	1.8	ug/L	64	Standard
	Ba	135	250776.0	0.7	**241.6941**	2.581	1.1	ug/L	8	Standard
	Ce	140	3175.3	3.1				ug/L	22	Standard
>	**Tb**	159	1060836.6	1.5				ug/L	944784	Standard
	Ho	165	186.7	31.0				ug/L	8	Standard
	Tl	203	36.3	13.6	**0.0028**	0.001	33.7	ug/L	5	Standard
	Tl	205	41.7	18.3	**0.0052**	0.001	25.3	ug/L	3	Standard
	Pb	206	11179.1	1.1	**3.2318**	0.032	1.0	ug/L	197	Standard
	Pb	207	9270.5	0.5	**2.9392**	0.030	1.0	ug/L	180	Standard
	Pb	208	40976.8	0.8	**3.1227**	0.013	0.4	ug/L	761	Standard
	U	238	370.7	8.5	**0.0698**	0.006	9.2	ug/L	0	Standard
>	**Bi**	209	680412.3	1.2				ug/L	628212	Standard

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Na	23	1.7	173.2	**17.5501**	30.389	173.2	mg/L	0	Standard
Mg	24	8922.6	3.7	**21.7069**	0.529	2.4	mg/L	12	Standard
K	39	671.7	17.5	**8.9644**	1.461	16.3	mg/L	7	Standard
Ca	43	226.7	11.1	**20.3203**	2.606	12.8	mg/L	30	Standard
Fe	54	6088.8	5.1	**2.1390**	0.086	4.0	mg/L	241	Standard
Fe	57	2091.8	3.5	**2.4574**	0.062	2.5	mg/L	37	Standard
> **Sc-1**	45	126037.1	1.7				mg/L	108014	Standard
Cl	35	17409.3	2.5				ug/L	13720	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	49500.9	6.3				ug/L	750	Standard
P	31	21315.0	2.1				ug/L	15373	Standard
S	34	1416.7	4.0				ug/L	970	Standard
Sr	88	833.4	4.6				ug/L	5	Standard
C	12	296.7	7.0				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	123.4	28.3				mg/L	3	Standard
Ho-1	165	186.7	31.0				mg/L	8	Standard
Er	166	276.7	21.2				mg/L	17	Standard
I	127	647552.4	5.5				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.922	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.250	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	111.590	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	108.309	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Approved: June 05, 2015

Method 6020 - Summary Report

Sample ID: L1506023314
Sample Date/Time: Friday, June 05, 2015 14:22:07
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	225050.9	1.1				ug/L	205676	Standard
	Be	9	345.0	9.1	**0.2997**	0.029	9.6	ug/L	13	Standard
	Al	27	13037139.1	1.7	**207.6087**	3.800	1.8	ug/L	498	Standard
	Sc	45	119596.8	0.7				ug/L	108014	Standard
	Ti	47	634.3	18.7	**1.8666**	0.348	18.7	ug/L	18	Standard
	V	51	1641.7	13.9	**0.0955**	0.032	33.1	ug/L	907	Standard
	Cr	52	6000.5	1.4	**0.1251**	0.011	9.1	ug/L	4635	Standard
	Cr	53	1390.1	9.6	**1.0224**	0.116	11.4	ug/L	255	Standard
	Mn	55	104293644.0	0.8	**7928.2290**	39.290	0.5	ug/L	746	Standard
	Co	59	34847.4	1.0	**4.3484**	0.025	0.6	ug/L	40	Standard
	Ni	60	22068.4	1.7	**8.6365**	0.159	1.8	ug/L	237	Standard
	Cu	65	50764.2	0.7	**19.6574**	0.169	0.9	ug/L	308	Standard
	Zn	66	36520.3	1.1	**22.9224**	0.168	0.7	ug/L	601	Standard
>	**Ge**	72	840919.4	0.5				ug/L	774356	Standard
	As	75	3604.3	2.5	**2.5224**	0.051	2.0	ug/L	-42	Standard
	Se	82	201.3	9.6	**1.3384**	0.145	10.9	ug/L	16	Standard
	Se-1	77	175.3	4.6	**1.2880**	0.075	5.8	ug/L	43	Standard
>	**Ga**	71	1466.7	4.3				mg/L	30	Standard
	Rb	85	22738.7	0.3				ug/L	15	Standard
	Y	89	1108927.1	0.5				ug/L	919916	Standard
>	**Rh**	103	61.7	16.9				ug/L	3	Standard
	Mo	98	1683.9	2.0	**0.5646**	0.008	1.5	ug/L	12	Standard
	Ag	107	117.0	14.8	**0.0026**	0.003	112.1	ug/L	84	Standard
	Cd	111	345.0	10.6	**0.2451**	0.025	10.3	mg/L	2	Standard
	Cd	114	852.8	8.8	**0.2532**	0.022	8.7	ug/L	2	Standard
>	**In**	115	769436.0	0.6				ug/L	707917	Standard
	Sn	118	828.4	3.5	**0.0682**	0.007	9.9	ug/L	550	Standard
	Sb	123	453.6	2.1	**0.1284**	0.004	3.0	ug/L	64	Standard
	Ba	135	8914.6	0.9	**8.8093**	0.066	0.7	ug/L	8	Standard
	Ce	140	282307.9	1.7				ug/L	22	Standard
>	**Tb**	159	1046652.5	1.3				ug/L	944784	Standard
	Ho	165	4477.3	1.7				ug/L	8	Standard
	Tl	203	83.3	3.0	**0.0129**	0.001	4.4	ug/L	5	Standard
	Tl	205	96.7	24.4	**0.0167**	0.005	27.8	ug/L	3	Standard
	Pb	206	5661.4	0.5	**1.7291**	0.015	0.9	ug/L	197	Standard
	Pb	207	4704.4	1.8	**1.5753**	0.034	2.2	ug/L	180	Standard
	Pb	208	20864.0	1.9	**1.6802**	0.036	2.2	ug/L	761	Standard
	U	238	1456.4	1.8	**0.2982**	0.006	2.1	ug/L	0	Standard
>	**Bi**	209	632295.4	0.3				ug/L	628212	Standard

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Na	23	5.0	100.0	**56.2495**	56.058	99.7	mg/L	0	Standard
Mg	24	44562.1	0.7	**114.5032**	0.737	0.6	mg/L	12	Standard
K	39	241.7	23.5	**3.3460**	0.823	24.6	mg/L	7	Standard
Ca	43	511.7	11.7	**51.1291**	5.849	11.4	mg/L	30	Standard
Fe	54	37577.5	1.3	**14.6614**	0.242	1.6	mg/L	241	Standard
Fe	57	12076.5	3.0	**15.2896**	0.403	2.6	mg/L	37	Standard
> **Sc-1**	45	119596.8	0.7				mg/L	108014	Standard
Cl	35	24564.6	2.9				ug/L	13720	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	12251.6	2.3				ug/L	750	Standard
P	31	19904.7	0.8				ug/L	15373	Standard
S	34	1151.7	3.1				ug/L	970	Standard
Sr	88	791.7	14.9				ug/L	5	Standard
C	12	156.7	16.1				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	6774.0	4.8				mg/L	3	Standard
Ho-1	165	4477.3	1.7				mg/L	8	Standard
Er	166	4960.8	6.7				mg/L	17	Standard
I	127	186703.5	1.5				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.420	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.596	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.690
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.650
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Approved: June 05, 2015

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, June 05, 2015 14:25:20
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	233894.2	3.0				ug/L	205676	Standard
	Be	9	57206.1	0.8	**49.0165**	1.817	3.7	ug/L	13	Standard
	Al	27	3367712.1	0.9	**51.6130**	1.954	3.8	ug/L	498	Standard
	Sc	45	119766.8	3.4				ug/L	108014	Standard
	Ti	47	33439.9	0.7	**98.8301**	1.989	2.0	ug/L	18	Standard
	V	51	375604.9	1.5	**51.9319**	0.385	0.7	ug/L	907	Standard
	Cr	52	405436.8	0.9	**51.3557**	0.827	1.6	ug/L	4635	Standard
	Cr	53	56990.3	1.5	**50.2403**	0.458	0.9	ug/L	255	Standard
	Mn	55	697350.3	2.6	**51.7924**	0.829	1.6	ug/L	746	Standard
	Co	59	418178.1	0.6	**51.1400**	0.642	1.3	ug/L	40	Standard
	Ni	60	128490.2	0.6	**49.7359**	0.681	1.4	ug/L	237	Standard
	Cu	65	132300.1	0.8	**50.3597**	0.363	0.7	ug/L	308	Standard
	Zn	66	81640.4	0.7	**50.7282**	0.348	0.7	ug/L	601	Standard
>	**Ge**	72	859263.9	1.4				ug/L	774356	Standard
	As	75	73321.2	0.2	**49.9197**	0.662	1.3	ug/L	-42	Standard
	Se	82	6608.1	0.1	**49.8480**	0.629	1.3	ug/L	16	Standard
	Se-1	77	5234.6	0.9	**49.9077**	1.071	2.1	ug/L	43	Standard
>	**Ga**	71	88.3	18.2				mg/L	30	Standard
	Rb	85	865.0	6.5				ug/L	15	Standard
	Y	89	1006701.9	1.3				ug/L	919916	Standard
>	**Rh**	103	5.0	173.2				ug/L	3	Standard
	Mo	98	306465.1	0.7	**105.7964**	0.892	0.8	ug/L	12	Standard
	Ag	107	303632.6	0.6	**50.5326**	0.486	1.0	ug/L	84	Standard
	Cd	111	69065.5	0.5	**50.0103**	0.064	0.1	mg/L	2	Standard
	Cd	114	167274.6	1.2	**50.5511**	0.433	0.9	ug/L	2	Standard
>	**In**	115	760189.3	0.5				ug/L	707917	Standard
	Sn	118	203266.1	1.0	**48.1991**	0.402	0.8	ug/L	550	Standard
	Sb	123	162688.1	1.5	**50.2779**	0.835	1.7	ug/L	64	Standard
	Ba	135	50571.6	1.6	**50.6403**	0.941	1.9	ug/L	8	Standard
	Ce	140	38.3	32.8				ug/L	22	Standard
>	**Tb**	159	1029189.5	0.8				ug/L	944784	Standard
	Ho	165	8.3	124.9				ug/L	8	Standard
	Tl	203	260100.7	1.1	**50.2578**	0.452	0.9	ug/L	5	Standard
	Tl	205	274986.4	0.9	**51.3289**	0.315	0.6	ug/L	3	Standard
	Pb	206	169361.6	0.4	**50.6645**	0.175	0.3	ug/L	197	Standard
	Pb	207	155063.9	1.3	**50.8971**	0.309	0.6	ug/L	180	Standard
	Pb	208	642237.9	0.4	**50.6468**	0.173	0.3	ug/L	761	Standard
	U	238	263281.2	0.9	**50.9619**	0.116	0.2	ug/L	0	Standard
>	**Bi**	209	670933.3	0.7				ug/L	628212	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	1901.8	3.2	**4.8326**	0.285	5.9	mg/L	12	Standard
K	39	350.0	2.9	**4.8803**	0.025	0.5	mg/L	7	Standard
Ca	43	63.3	31.9	**4.5249**	2.114	46.7	mg/L	30	Standard
Fe	54	13478.5	3.8	**5.1639**	0.057	1.1	mg/L	241	Standard
Fe	57	4223.9	1.7	**5.3007**	0.181	3.4	mg/L	37	Standard
> **Sc-1**	45	119766.8	3.4				mg/L	108014	Standard
Cl	35	16320.1	0.8				ug/L	13720	Standard
Kr	83	1.3	43.3				ug/L	0	Standard
Br	81	1180.0	23.3				ug/L	750	Standard
P	31	19712.8	2.7				ug/L	15373	Standard
S	34	1310.1	5.3				ug/L	970	Standard
Sr	88	3.3	86.6				ug/L	5	Standard
C	12	96.7	6.0				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.0	193.9				mg/L	3	Standard
Ho-1	165	8.3	124.9				mg/L	8	Standard
Er	166	13.3	43.3				mg/L	17	Standard
I	127	5187.6	31.2				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	98.033		
Al	27	103.226		
Sc	45			
Ti	47	98.830		
V	51	103.864		
Cr	52	102.711		
Cr	53			
Mn	55	103.585		
Co	59	102.280		
Ni	60	99.472		
Cu	65	100.719		
Zn	66	101.456		
> Ge	72		110.965	
As	75	99.839		
Se	82	99.696		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	105.796		
Ag	107	101.065		
Cd	111	100.021		
Cd	114			
In	115			107.384
Sn	118	96.398		
Sb	123	100.556		
Ba	135	101.281		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.516		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.294		
U	238	101.924		
Bi	209			106.801
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, June 05, 2015 14:28:31
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	226297.5	1.0				ug/L	205676	Standard
	Be	9	25.0	20.0	**0.0147**	0.004	28.7	ug/L	13	Standard
	Al	27	1401.7	41.6	**-0.0098**	0.009	96.1	ug/L	498	Standard
	Sc	45	116995.2	3.0				ug/L	108014	Standard
	Ti	47	16.0	27.2	**-0.0002**	0.013	6219.0	ug/L	18	Standard
	V	51	861.8	3.8	**-0.0145**	0.002	15.0	ug/L	907	Standard
	Cr	52	4704.7	1.6	**-0.0424**	0.019	44.8	ug/L	4635	Standard
	Cr	53	381.7	8.9	**0.1118**	0.038	34.3	ug/L	255	Standard
	Mn	55	5877.9	77.7	**0.3686**	0.358	97.2	ug/L	746	Standard
	Co	59	67.7	46.3	**0.0024**	0.004	169.7	ug/L	40	Standard
	Ni	60	403.7	7.9	**0.0498**	0.010	19.6	ug/L	237	Standard
	Cu	65	611.7	7.2	**0.0970**	0.017	17.5	ug/L	308	Standard
	Zn	66	903.0	3.1	**0.0963**	0.020	20.3	ug/L	601	Standard
>	**Ge**	72	837925.0	2.1				ug/L	774356	Standard
	As	75	-63.0	46.2	**-0.0280**	0.021	76.2	ug/L	-42	Standard
	Se	82	12.0	37.1	**-0.1263**	0.033	26.5	ug/L	16	Standard
	Se-1	77	48.7	17.1	**0.0446**	0.075	167.5	ug/L	43	Standard
>	**Ga**	71	36.7	20.8				mg/L	30	Standard
	Rb	85	28.3	10.2				ug/L	15	Standard
	Y	89	1007457.4	3.1				ug/L	919916	Standard
>	**Rh**	103	1.7	173.2				ug/L	3	Standard
	Mo	98	78.9	48.8	**0.0181**	0.014	77.1	ug/L	12	Standard
	Ag	107	128.3	32.0	**0.0052**	0.007	135.2	ug/L	84	Standard
	Cd	111	14.2	114.1	**0.0087**	0.012	134.5	mg/L	2	Standard
	Cd	114	15.7	166.9	**0.0034**	0.008	234.9	ug/L	2	Standard
>	**In**	115	745485.9	1.4				ug/L	707917	Standard
	Sn	118	656.7	16.1	**0.0326**	0.023	71.8	ug/L	550	Standard
	Sb	123	405.6	18.5	**0.1178**	0.025	21.1	ug/L	64	Standard
	Ba	135	36.3	92.3	**0.0249**	0.034	134.5	ug/L	8	Standard
	Ce	140	40.0	87.5				ug/L	22	Standard
>	**Tb**	159	1007167.5	2.0				ug/L	944784	Standard
	Ho	165	15.0	57.7				ug/L	8	Standard
	Tl	203	33.3	73.6	**0.0023**	0.005	208.5	ug/L	5	Standard
	Tl	205	6.7	43.3	**-0.0012**	0.001	47.6	ug/L	3	Standard
	Pb	206	255.7	5.9	**0.0060**	0.006	101.8	ug/L	197	Standard
	Pb	207	206.0	8.5	**0.0022**	0.006	259.1	ug/L	180	Standard
	Pb	208	875.0	1.7	**0.0010**	0.003	283.6	ug/L	761	Standard
	U	238	11.0	68.6	**0.0012**	0.002	129.8	ug/L	0	Standard
>	**Bi**	209	671877.8	2.6				ug/L	628212	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	38.3	45.8	**0.0448**	0.044	97.6	mg/L	12	Standard
K	39	1.7	173.2	**-0.0726**	0.041	57.0	mg/L	7	Standard
Ca	43	21.7	93.3	**0.2063**	2.108	1021.9	mg/L	30	Standard
Fe	54	296.3	10.2	**-0.0157**	0.015	98.1	mg/L	241	Standard
Fe	57	35.0	24.7	**-0.0211**	0.010	49.5	mg/L	37	Standard
Sc-1	45	116995.2	3.0				mg/L	108014	Standard
Cl	35	16239.4	2.3				ug/L	13720	Standard
Kr	83	0.7	86.6				ug/L	0	Standard
Br	81	980.0	6.2				ug/L	750	Standard
P	31	18775.0	3.4				ug/L	15373	Standard
S	34	1343.4	0.8				ug/L	970	Standard
Sr	88	13.3	94.4				ug/L	5	Standard
C	12	33.3	17.3				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	-0.8	91.7				mg/L	3	Standard
Ho-1	165	15.0	57.7				mg/L	8	Standard
Er	166	16.7	91.7				mg/L	17	Standard
I	127	2278.5	15.8				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		108.209	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.307
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.951
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1506024301
Sample Date/Time: Friday, June 05, 2015 14:31:44
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	176064.5	3.3				ug/L	205676	Standard
	Be	9	33.3	31.2	**0.0305**	0.012	39.6	ug/L	13	Standard
	Al	27	364069.2	1.2	**7.3867**	0.330	4.5	ug/L	498	Standard
	Sc	45	95786.8	0.5				ug/L	108014	Standard
	Ti	47	194.7	22.2	**0.7742**	0.173	22.4	ug/L	18	Standard
	V	51	-10647.0	14.4	**-2.2527**	0.327	14.5	ug/L	907	Standard
	Cr	52	6405.7	1.3	**0.5153**	0.024	4.6	ug/L	4635	Standard
	Cr	53	41461.7	1.0	**52.3512**	0.947	1.8	ug/L	255	Standard
	Mn	55	1360181.8	0.1	**144.8245**	1.902	1.3	ug/L	746	Standard
	Co	59	2675.2	1.3	**0.4624**	0.010	2.1	ug/L	40	Standard
	Ni	60	17528.8	1.9	**9.6262**	0.233	2.4	ug/L	237	Standard
	Cu	65	17660.0	6.4	**9.5064**	0.530	5.6	ug/L	308	Standard
	Zn	66	35128.7	3.2	**31.0614**	0.677	2.2	ug/L	601	Standard
>	**Ge**	72	600115.9	1.4				ug/L	774356	Standard
	As	75	-3343.1	42.7	**-3.2376**	1.380	42.6	ug/L	-42	Standard
	Se	82	-1193.4	36.8	**-13.1473**	4.686	35.6	ug/L	16	Standard
	Se-1	77	6365.0	3.5	**87.2150**	3.560	4.1	ug/L	43	Standard
>	**Ga**	71	386.7	14.5				mg/L	30	Standard
	Rb	85	9434.6	0.6				ug/L	15	Standard
	Y	89	732917.6	2.4				ug/L	919916	Standard
>	**Rh**	103	66.7	78.1				ug/L	3	Standard
	Mo	98	23715.2	0.9	**11.6402**	0.129	1.1	ug/L	12	Standard
	Ag	107	95.0	7.9	**0.0059**	0.002	28.3	ug/L	84	Standard
	Cd	111	10.0	121.2	**0.0086**	0.012	145.0	mg/L	2	Standard
	Cd	114	78.3	40.8	**0.0322**	0.013	41.9	ug/L	2	Standard
>	**In**	115	534273.7	0.8				ug/L	707917	Standard
	Sn	118	2115.1	3.7	**0.5893**	0.033	5.5	ug/L	550	Standard
	Sb	123	234.3	9.5	**0.0929**	0.009	10.1	ug/L	64	Standard
	Ba	135	2890.3	2.1	**4.1068**	0.067	1.6	ug/L	8	Standard
	Ce	140	116.7	22.0				ug/L	22	Standard
>	**Tb**	159	766826.2	1.3				ug/L	944784	Standard
	Ho	165	25.0	105.8				ug/L	8	Standard
	Tl	203	49.3	23.1	**0.0100**	0.003	31.3	ug/L	5	Standard
	Tl	205	48.3	51.0	**0.0110**	0.007	62.4	ug/L	3	Standard
	Pb	206	622.3	2.7	**0.2079**	0.005	2.3	ug/L	197	Standard
	Pb	207	547.0	8.4	**0.2030**	0.020	10.1	ug/L	180	Standard
	Pb	208	2349.4	5.6	**0.2090**	0.013	6.3	ug/L	761	Standard
	U	238	23.7	32.3	**0.0059**	0.002	36.9	ug/L	0	Standard
>	**Bi**	209	449176.9	1.0				ug/L	628212	Standard

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Na	23	1.7	173.2	**23.3972**	40.517	173.2	mg/L	0	Standard
Mg	24	961278.1	0.3	**3085.4373**	17.164	0.6	mg/L	12	Standard
K	39	148.3	17.0	**2.5391**	0.435	17.1	mg/L	7	Standard
Ca	43	66.7	33.8	**6.6045**	2.943	44.6	mg/L	30	Standard
Fe	54	1663.5	0.8	**0.6826**	0.008	1.2	mg/L	241	Standard
Fe	57	638.3	12.0	**0.9474**	0.126	13.3	mg/L	37	Standard
> **Sc-1**	45	95786.8	0.5				mg/L	108014	Standard
Cl	35	61077.6	3.9				ug/L	13720	Standard
Kr	83	0.7	86.6				ug/L	0	Standard
Br	81	14066.5	6.7				ug/L	750	Standard
P	31	14850.6	4.0				ug/L	15373	Standard
S	34	1016.7	5.8				ug/L	970	Standard
Sr	88	133.3	13.2				ug/L	5	Standard
C	12	100.0	30.0				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.5	51.2				mg/L	3	Standard
Ho-1	165	25.0	105.8				mg/L	8	Standard
Er	166	10.0					mg/L	17	Standard
I	127	3412.1	2.9				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		85.603	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		77.499	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	75.471
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	71.501
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Lower	V	51	
Mn 55 Upper, S, EEE	Mn	55	
As 75 Lower	As	75	

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Se 82 Lower	Se	82

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Method 6020 - Summary Report

Sample ID: L1506024501
Sample Date/Time: Friday, June 05, 2015 14:34:55
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	174339.4	2.6				ug/L	205676	Standard
	Be	9	33.3	34.6	**0.0308**	0.013	41.9	ug/L	13	Standard
	Al	27	430757.7	2.3	**8.8254**	0.182	2.1	ug/L	498	Standard
	Sc	45	92060.6	2.3				ug/L	108014	Standard
	Ti	47	403.0	6.6	**1.6673**	0.156	9.4	ug/L	18	Standard
	V	51	-7096.9	2.4	**-1.5527**	0.061	3.9	ug/L	907	Standard
	Cr	52	30078.5	1.3	**4.8887**	0.063	1.3	ug/L	4635	Standard
	Cr	53	36505.6	3.3	**46.2610**	0.930	2.0	ug/L	255	Standard
	Mn	55	2491952.3	2.5	**266.5311**	0.711	0.3	ug/L	746	Standard
	Co	59	6035.5	2.5	**1.0554**	0.007	0.7	ug/L	40	Standard
	Ni	60	33005.3	2.8	**18.3009**	0.201	1.1	ug/L	237	Standard
	Cu	65	27767.5	4.5	**15.0951**	0.317	2.1	ug/L	308	Standard
	Zn	66	631993.5	1.7	**569.7137**	7.190	1.3	ug/L	601	Standard
>	**Ge**	72	597488.4	2.5				ug/L	774356	Standard
	As	75	-3213.7	19.4	**-3.1208**	0.545	17.5	ug/L	-42	Standard
	Se	82	-1217.6	15.1	**-13.4580**	1.689	12.5	ug/L	16	Standard
	Se-1	77	4930.8	3.2	**67.8133**	3.893	5.7	ug/L	43	Standard
>	**Ga**	71	786.7	8.3				mg/L	30	Standard
	Rb	85	10338.5	2.5				ug/L	15	Standard
	Y	89	722877.0	3.0				ug/L	919916	Standard
>	**Rh**	103	103.3	37.6				ug/L	3	Standard
	Mo	98	10569.8	2.2	**5.1897**	0.066	1.3	ug/L	12	Standard
	Ag	107	68.7	10.2	**-0.0003**	0.002	652.9	ug/L	84	Standard
	Cd	111	47.6	9.1	**0.0474**	0.004	7.4	mg/L	2	Standard
	Cd	114	133.2	13.5	**0.0559**	0.007	11.9	ug/L	2	Standard
>	**In**	115	533547.5	2.1				ug/L	707917	Standard
	Sn	118	2240.2	6.3	**0.6329**	0.055	8.7	ug/L	550	Standard
	Sb	123	230.0	6.7	**0.0911**	0.005	5.2	ug/L	64	Standard
	Ba	135	4756.7	3.0	**6.7754**	0.092	1.4	ug/L	8	Standard
	Ce	140	183.3	6.3				ug/L	22	Standard
>	**Tb**	159	752846.1	2.5				ug/L	944784	Standard
	Ho	165	35.0	28.6				ug/L	8	Standard
	Tl	203	43.0	18.5	**0.0086**	0.002	28.1	ug/L	5	Standard
	Tl	205	46.7	37.6	**0.0109**	0.005	45.2	ug/L	3	Standard
	Pb	206	1086.0	4.2	**0.4281**	0.023	5.3	ug/L	197	Standard
	Pb	207	932.0	1.6	**0.4041**	0.010	2.4	ug/L	180	Standard
	Pb	208	3913.2	1.8	**0.4055**	0.003	0.7	ug/L	761	Standard
	U	238	24.7	54.0	**0.0063**	0.004	61.5	ug/L	0	Standard
>	**Bi**	209	437779.1	1.3				ug/L	628212	Standard

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Na	23	1.7	173.2	**24.0186**	41.593	173.2	mg/L	0	Standard
Mg	24	956489.1	1.7	**3194.6320**	29.867	0.9	mg/L	12	Standard
K	39	216.7	27.5	**3.9056**	1.067	27.3	mg/L	7	Standard
Ca	43	98.3	34.6	**11.1684**	4.382	39.2	mg/L	30	Standard
Fe	54	9516.5	1.9	**4.7338**	0.113	2.4	mg/L	241	Standard
Fe	57	3302.0	2.5	**5.3892**	0.117	2.2	mg/L	37	Standard
Sc-1	45	92060.6	2.3				mg/L	108014	Standard
Cl	35	80384.7	1.1				ug/L	13720	Standard
Kr	83	0.7	86.6				ug/L	0	Standard
Br	81	14737.2	3.9				ug/L	750	Standard
P	31	14283.4	4.2				ug/L	15373	Standard
S	34	901.7	8.0				ug/L	970	Standard
Sr	88	230.0	13.0				ug/L	5	Standard
C	12	86.7	35.3				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	29.8	33.5				mg/L	3	Standard
Ho-1	165	35.0	28.6				mg/L	8	Standard
Er	166	3.3	173.2				mg/L	17	Standard
I	127	4925.8	5.1				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		84.764	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		77.159	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	75.369
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	69.687
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Lower	V	51	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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As 75 Lower	As	75
Se 82 Lower	Se	82

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Method 6020 - Summary Report

Sample ID: L1506024701
Sample Date/Time: Friday, June 05, 2015 14:38:06
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	207652.0	2.1				ug/L	205676	Standard
	Be	9	31.7	18.2	**0.0232**	0.006	26.4	ug/L	13	Standard
	Al	27	487837.5	0.4	**8.3906**	0.168	2.0	ug/L	498	Standard
	Sc	45	114806.7	1.6				ug/L	108014	Standard
	Ti	47	1992.1	31.0	**6.2670**	1.846	29.5	ug/L	18	Standard
	V	51	3589.8	22.3	**0.4002**	0.131	32.8	ug/L	907	Standard
	Cr	52	9947.6	5.1	**0.7130**	0.099	13.8	ug/L	4635	Standard
	Cr	53	3903.8	13.1	**3.4813**	0.433	12.4	ug/L	255	Standard
	Mn	55	45150.9	3.2	**3.5304**	0.073	2.1	ug/L	746	Standard
	Co	59	565.7	0.7	**0.0683**	0.002	2.7	ug/L	40	Standard
	Ni	60	4406.6	3.9	**1.7292**	0.082	4.7	ug/L	237	Standard
	Cu	65	11772.3	10.0	**4.6881**	0.395	8.4	ug/L	308	Standard
	Zn	66	20850.4	10.3	**13.5753**	1.200	8.8	ug/L	601	Standard
>	**Ge**	72	798528.9	2.0				ug/L	774356	Standard
	As	75	1363.6	32.9	**1.0110**	0.310	30.7	ug/L	-42	Standard
	Se	82	529.1	35.4	**4.0760**	1.448	35.5	ug/L	16	Standard
	Se-1	77	189.3	11.8	**1.5225**	0.200	13.2	ug/L	43	Standard
>	**Ga**	71	848.4	29.2				mg/L	30	Standard
	Rb	85	5319.3	3.8				ug/L	15	Standard
	Y	89	947430.1	0.9				ug/L	919916	Standard
>	**Rh**	103	13.3	21.7				ug/L	3	Standard
	Mo	98	1320.7	4.7	**0.4780**	0.021	4.4	ug/L	12	Standard
	Ag	107	104.7	6.1	**0.0020**	0.001	61.4	ug/L	84	Standard
	Cd	111	18.9	17.3	**0.0130**	0.003	19.9	mg/L	2	Standard
	Cd	114	58.9	16.0	**0.0176**	0.003	17.0	ug/L	2	Standard
>	**In**	115	710536.0	0.5				ug/L	707917	Standard
	Sn	118	725.0	6.6	**0.0580**	0.012	21.0	ug/L	550	Standard
	Sb	123	825.0	0.9	**0.2627**	0.004	1.4	ug/L	64	Standard
	Ba	135	4191.2	1.9	**4.4793**	0.087	1.9	ug/L	8	Standard
	Ce	140	2863.6	15.9				ug/L	22	Standard
>	**Tb**	159	958679.3	0.3				ug/L	944784	Standard
	Ho	165	101.7	10.2				ug/L	8	Standard
	Tl	203	99.3	9.5	**0.0161**	0.002	11.1	ug/L	5	Standard
	Tl	205	88.3	27.9	**0.0150**	0.005	31.8	ug/L	3	Standard
	Pb	206	1065.0	2.4	**0.2670**	0.009	3.4	ug/L	197	Standard
	Pb	207	903.4	5.7	**0.2486**	0.016	6.4	ug/L	180	Standard
	Pb	208	3797.9	2.3	**0.2493**	0.006	2.4	ug/L	761	Standard
	U	238	129.0	8.2	**0.0254**	0.002	8.2	ug/L	0	Standard
>	**Bi**	209	634142.4	0.8				ug/L	628212	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	2510.2	5.8	**6.6643**	0.286	4.3	mg/L	12	Standard
K	39	46.7	37.6	**0.5934**	0.251	42.4	mg/L	7	Standard
Ca	43	78.3	29.5	**6.4580**	2.663	41.2	mg/L	30	Standard
Fe	54	661.9	10.1	**0.1360**	0.024	17.4	mg/L	241	Standard
Fe	57	136.7	11.8	**0.1145**	0.021	17.9	mg/L	37	Standard
Sc-1	45	114806.7	1.6				mg/L	108014	Standard
Cl	35	13851.0	2.7				ug/L	13720	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	1623.4	8.3				ug/L	750	Standard
P	31	16871.1	3.4				ug/L	15373	Standard
S	34	921.7	14.1				ug/L	970	Standard
Sr	88	113.3	25.5				ug/L	5	Standard
C	12	50.0	20.0				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	0	Standard
Dy	164	148.7	10.5				mg/L	3	Standard
Ho-1	165	101.7	10.2				mg/L	8	Standard
Er	166	96.7	26.0				mg/L	17	Standard
I	127	2478.5	6.6				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		100.961	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.122	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.370
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.944
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 05, 2015

Method 6020 - Summary Report

Sample ID: L1506024702 WG526450-02
Sample Date/Time: Friday, June 05, 2015 14:41:18
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	198734.1	3.3				ug/L	205676	Standard
	Be	9	46.7	12.4	**0.0396**	0.006	14.4	ug/L	13	Standard
	Al	27	389818.5	1.7	**7.0039**	0.282	4.0	ug/L	498	Standard
	Sc	45	110773.7	2.8				ug/L	108014	Standard
	Ti	47	1348.4	4.8	**4.3860**	0.214	4.9	ug/L	18	Standard
	V	51	3736.2	24.5	**0.4416**	0.157	35.6	ug/L	907	Standard
	Cr	52	9989.3	14.6	**0.7633**	0.198	25.9	ug/L	4635	Standard
	Cr	53	2833.6	8.7	**2.5530**	0.177	6.9	ug/L	255	Standard
	Mn	55	41499.1	0.7	**3.3516**	0.100	3.0	ug/L	746	Standard
	Co	59	396.7	5.1	**0.0479**	0.004	8.6	ug/L	40	Standard
	Ni	60	4507.3	1.6	**1.8343**	0.034	1.9	ug/L	237	Standard
	Cu	65	10804.9	3.2	**4.4445**	0.093	2.1	ug/L	308	Standard
	Zn	66	12860.8	3.1	**8.4880**	0.203	2.4	ug/L	601	Standard
>	**Ge**	72	772568.6	2.4				ug/L	774356	Standard
	As	75	588.0	16.9	**0.4604**	0.067	14.5	ug/L	-42	Standard
	Se	82	228.0	15.6	**1.6991**	0.269	15.8	ug/L	16	Standard
	Se-1	77	145.7	1.7	**1.1240**	0.051	4.5	ug/L	43	Standard
>	**Ga**	71	828.4	15.4				mg/L	30	Standard
	Rb	85	4298.9	2.4				ug/L	15	Standard
	Y	89	916655.1	2.5				ug/L	919916	Standard
>	**Rh**	103	41.7	45.4				ug/L	3	Standard
	Mo	98	790.4	2.1	**0.2859**	0.007	2.4	ug/L	12	Standard
	Ag	107	99.0	3.0	**0.0012**	0.001	43.5	ug/L	84	Standard
	Cd	111	18.6	3.2	**0.0129**	0.001	4.2	mg/L	2	Standard
	Cd	114	46.6	35.8	**0.0139**	0.005	39.1	ug/L	2	Standard
>	**In**	115	701668.4	1.2				ug/L	707917	Standard
	Sn	118	1058.4	12.1	**0.1460**	0.030	20.4	ug/L	550	Standard
	Sb	123	3102.2	2.1	**1.0287**	0.013	1.2	ug/L	64	Standard
	Ba	135	2291.5	1.8	**2.4751**	0.072	2.9	ug/L	8	Standard
	Ce	140	3940.5	2.7				ug/L	22	Standard
>	**Tb**	159	943864.2	2.1				ug/L	944784	Standard
	Ho	165	85.0	29.4				ug/L	8	Standard
	Tl	203	63.0	11.1	**0.0091**	0.002	19.1	ug/L	5	Standard
	Tl	205	55.0	32.8	**0.0087**	0.004	44.0	ug/L	3	Standard
	Pb	206	1026.7	4.0	**0.2634**	0.015	5.7	ug/L	197	Standard
	Pb	207	841.0	2.0	**0.2348**	0.012	5.3	ug/L	180	Standard
	Pb	208	3777.2	1.0	**0.2559**	0.010	3.7	ug/L	761	Standard
	U	238	239.0	1.5	**0.0493**	0.002	3.5	ug/L	0	Standard
>	**Bi**	209	618080.1	2.1				ug/L	628212	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	366.7	15.0	**0.9637**	0.163	16.9	mg/L	12	Standard
K	39	41.7	25.0	**0.5419**	0.146	27.0	mg/L	7	Standard
Ca	43	95.0	19.0	**8.6532**	2.301	26.6	mg/L	30	Standard
Fe	54	622.3	11.8	**0.1297**	0.036	27.6	mg/L	241	Standard
Fe	57	136.7	27.5	**0.1222**	0.056	46.1	mg/L	37	Standard
> **Sc-1**	45	110773.7	2.8				mg/L	108014	Standard
Cl	35	13719.5	0.7				ug/L	13720	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	2810.3	6.4				ug/L	750	Standard
P	31	16220.4	3.4				ug/L	15373	Standard
S	34	1020.0	10.1				ug/L	970	Standard
Sr	88	416.7	7.2				ug/L	5	Standard
C	12	110.0	15.7				mg/L	40	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	0	Standard
Dy	164	129.3	15.8				mg/L	3	Standard
Ho-1	165	85.0	29.4				mg/L	8	Standard
Er	166	83.3	30.2				mg/L	17	Standard
I	127	3662.1	1.9				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		96.625	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.769	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	99.117
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	98.387
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 05, 2015

Method 6020 - Summary Report

Sample ID: L1506024702S WG526450-07
Sample Date/Time: Friday, June 05, 2015 14:44:30
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	195825.8	1.4				ug/L	205676	Standard
	Be	9	51301.7	0.4	**52.4726**	0.885	1.7	ug/L	13	Standard
	Al	27	371827.2	2.4	**6.7759**	0.264	3.9	ug/L	498	Standard
	Sc	45	109972.7	1.7				ug/L	108014	Standard
	Ti	47	1330.4	21.7	**4.4520**	0.980	22.0	ug/L	18	Standard
	V	51	345709.7	0.1	**54.6852**	0.709	1.3	ug/L	907	Standard
	Cr	52	382666.8	1.5	**55.4864**	0.155	0.3	ug/L	4635	Standard
	Cr	53	55200.4	2.2	**55.6934**	1.570	2.8	ug/L	255	Standard
	Mn	55	670158.2	1.1	**56.9439**	0.157	0.3	ug/L	746	Standard
	Co	59	381691.0	0.5	**53.3897**	0.614	1.1	ug/L	40	Standard
	Ni	60	123257.4	1.0	**54.5838**	1.061	1.9	ug/L	237	Standard
	Cu	65	133380.5	0.7	**58.0934**	0.425	0.7	ug/L	308	Standard
	Zn	66	86163.7	1.1	**61.3468**	1.480	2.4	ug/L	601	Standard
>	**Ge**	72	751240.5	1.3				ug/L	774356	Standard
	As	75	68315.0	0.6	**53.1993**	0.880	1.7	ug/L	-42	Standard
	Se	82	6186.9	0.4	**53.3989**	0.884	1.7	ug/L	16	Standard
	Se-1	77	4876.1	1.6	**53.1971**	0.891	1.7	ug/L	43	Standard
>	**Ga**	71	606.7	11.5				mg/L	30	Standard
	Rb	85	4047.2	2.9				ug/L	15	Standard
	Y	89	897005.9	0.3				ug/L	919916	Standard
>	**Rh**	103	31.7	18.2				ug/L	3	Standard
	Mo	98	778.8	8.9	**0.2868**	0.025	8.7	ug/L	12	Standard
	Ag	107	290402.3	0.6	**53.3196**	0.316	0.6	ug/L	84	Standard
	Cd	111	65684.0	0.6	**52.4731**	0.555	1.1	mg/L	2	Standard
	Cd	114	157115.3	1.0	**52.3851**	0.748	1.4	ug/L	2	Standard
>	**In**	115	689059.6	0.4				ug/L	707917	Standard
	Sn	118	698.3	13.5	**0.0567**	0.024	42.9	ug/L	550	Standard
	Sb	123	161615.9	0.9	**55.1013**	0.336	0.6	ug/L	64	Standard
	Ba	135	50256.9	1.3	**55.5195**	0.704	1.3	ug/L	8	Standard
	Ce	140	3857.2	1.7				ug/L	22	Standard
>	**Tb**	159	922104.3	1.1				ug/L	944784	Standard
	Ho	165	78.3	41.0				ug/L	8	Standard
	Tl	203	249532.0	0.5	**52.8487**	0.102	0.2	ug/L	5	Standard
	Tl	205	260321.3	2.2	**53.2636**	1.333	2.5	ug/L	3	Standard
	Pb	206	165491.9	0.9	**54.2679**	0.321	0.6	ug/L	197	Standard
	Pb	207	143725.8	0.1	**51.7119**	0.251	0.5	ug/L	180	Standard
	Pb	208	610241.0	1.2	**52.7507**	0.682	1.3	ug/L	761	Standard
	U	238	247600.5	1.0	**52.5351**	0.786	1.5	ug/L	0	Standard
>	**Bi**	209	612117.4	0.6				ug/L	628212	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	380.0	41.8	**1.0024**	0.422	42.1	mg/L	12	Standard
K	39	58.3	43.1	**0.8112**	0.405	49.9	mg/L	7	Standard
Ca	43	66.7	18.9	**5.4721**	1.315	24.0	mg/L	30	Standard
Fe	54	573.9	9.0	**0.1108**	0.026	23.6	mg/L	241	Standard
Fe	57	135.0	11.1	**0.1205**	0.024	19.8	mg/L	37	Standard
Sc-1	45	109972.7	1.7				mg/L	108014	Standard
Cl	35	14127.3	3.1				ug/L	13720	Standard
Kr	83	0.7	86.6				ug/L	0	Standard
Br	81	1203.4	3.9				ug/L	750	Standard
P	31	16590.8	4.0				ug/L	15373	Standard
S	34	1033.4	9.9				ug/L	970	Standard
Sr	88	413.3	5.0				ug/L	5	Standard
C	12	93.3	43.3				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	121.6	17.0				mg/L	3	Standard
Ho-1	165	78.3	41.0				mg/L	8	Standard
Er	166	106.7	5.4				mg/L	17	Standard
I	127	1981.8	1.0				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		95.211	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.015	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.336
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.438
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 05, 2015

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, June 05, 2015 14:47:43
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	194061.8	1.8				ug/L	205676	Standard
	Be	9	49793.4	1.2	**51.3914**	0.706	1.4	ug/L	13	Standard
	Al	27	2898781.7	1.0	**53.5116**	0.481	0.9	ug/L	498	Standard
	Sc	45	111096.1	3.1				ug/L	108014	Standard
	Ti	47	31296.3	1.0	**104.3667**	2.704	2.6	ug/L	18	Standard
	V	51	331815.3	1.5	**51.7842**	1.959	3.8	ug/L	907	Standard
	Cr	52	365337.0	1.8	**52.2258**	1.408	2.7	ug/L	4635	Standard
	Cr	53	53422.4	2.5	**53.1540**	1.520	2.9	ug/L	255	Standard
	Mn	55	617629.3	2.0	**51.7580**	0.717	1.4	ug/L	746	Standard
	Co	59	381356.7	2.3	**52.6103**	0.806	1.5	ug/L	40	Standard
	Ni	60	118543.0	1.1	**51.7845**	1.520	2.9	ug/L	237	Standard
	Cu	65	122055.1	1.7	**52.4322**	1.448	2.8	ug/L	308	Standard
	Zn	66	74501.1	0.9	**52.2548**	1.442	2.8	ug/L	601	Standard
>	**Ge**	72	761831.8	3.3				ug/L	774356	Standard
	As	75	68416.7	1.0	**52.5588**	1.272	2.4	ug/L	-42	Standard
	Se	82	6149.8	1.3	**52.3536**	1.133	2.2	ug/L	16	Standard
	Se-1	77	4799.4	1.7	**51.6363**	0.962	1.9	ug/L	43	Standard
>	**Ga**	71	113.3	30.0				mg/L	30	Standard
	Rb	85	895.0	3.4				ug/L	15	Standard
	Y	89	916296.0	2.3				ug/L	919916	Standard
>	**Rh**	103	13.3	43.3				ug/L	3	Standard
	Mo	98	280158.7	1.8	**103.6665**	1.642	1.6	ug/L	12	Standard
	Ag	107	287791.4	1.8	**51.3422**	1.129	2.2	ug/L	84	Standard
	Cd	111	65817.2	1.5	**51.0846**	0.687	1.3	mg/L	2	Standard
	Cd	114	158072.0	1.5	**51.2041**	0.530	1.0	ug/L	2	Standard
>	**In**	115	709317.6	2.3				ug/L	707917	Standard
	Sn	118	190193.1	1.3	**48.3448**	0.825	1.7	ug/L	550	Standard
	Sb	123	150868.0	1.8	**49.9775**	0.942	1.9	ug/L	64	Standard
	Ba	135	48385.8	1.3	**51.9366**	0.909	1.8	ug/L	8	Standard
	Ce	140	31.7	63.8				ug/L	22	Standard
>	**Tb**	159	941882.5	2.3				ug/L	944784	Standard
	Ho	165	6.7	43.3				ug/L	8	Standard
	Tl	203	244259.1	2.2	**51.6808**	0.612	1.2	ug/L	5	Standard
	Tl	205	254422.5	2.4	**52.0037**	0.935	1.8	ug/L	3	Standard
	Pb	206	156565.9	1.3	**51.2903**	0.357	0.7	ug/L	197	Standard
	Pb	207	142762.2	1.7	**51.3150**	0.379	0.7	ug/L	180	Standard
	Pb	208	589975.3	2.0	**50.9448**	0.288	0.6	ug/L	761	Standard
	U	238	242929.1	1.0	**51.4954**	0.367	0.7	ug/L	0	Standard
>	**Bi**	209	612693.8	1.5				ug/L	628212	Standard

Sample ID: QC Std 6
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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	1878.4	4.1	**5.1470**	0.273	5.3	mg/L	12	Standard
K	39	386.7	9.2	**5.8243**	0.395	6.8	mg/L	7	Standard
Ca	43	70.0	7.1	**5.7837**	0.574	9.9	mg/L	30	Standard
Fe	54	13228.5	0.5	**5.4753**	0.161	2.9	mg/L	241	Standard
Fe	57	3938.8	4.0	**5.3300**	0.299	5.6	mg/L	37	Standard
> **Sc-1**	45	111096.1	3.1				mg/L	108014	Standard
Cl	35	14896.0	3.6				ug/L	13720	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	923.4	27.1				ug/L	750	Standard
P	31	16372.2	1.1				ug/L	15373	Standard
S	34	1136.7	8.6				ug/L	970	Standard
Sr	88	5.0	0.0				ug/L	5	Standard
C	12	66.7	22.9				mg/L	40	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	13.2	44.9				mg/L	3	Standard
Ho-1	165	6.7	43.3				mg/L	8	Standard
Er	166	3.3	173.2				mg/L	17	Standard
I	127	515.0	15.3				mg/L	138	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	102.783		
	Al	27	107.023		
	Sc	45			
	Ti	47	104.367		
	V	51	103.568		
	Cr	52	104.452		
	Cr	53			
	Mn	55	103.516		
	Co	59	105.221		
	Ni	60	103.569		
	Cu	65	104.864		
	Zn	66	104.510		
>	Ge	72		98.383	
	As	75	105.118		
	Se	82	104.707		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	103.667		
Ag	107	102.684		
Cd	111	102.169		
Cd	114			
In	115			100.198
Sn	118	96.690		
Sb	123	99.955		
Ba	135	103.873		
Ce	140			
Tb	159			
Ho	165			
Tl	203	103.362		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.890		
U	238	102.991		
Bi	209			97.530
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, June 05, 2015 14:50:54
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	194147.7	0.8				ug/L	205676	Standard
	Be	9	50.0	36.1	**0.0443**	0.019	42.9	ug/L	13	Standard
	Al	27	2176.8	49.9	**0.0083**	0.020	245.1	ug/L	498	Standard
	Sc	45	109632.0	2.5				ug/L	108014	Standard
	Ti	47	26.7	9.4	**0.0409**	0.009	22.2	ug/L	18	Standard
	V	51	590.7	10.4	**-0.0440**	0.010	23.7	ug/L	907	Standard
	Cr	52	4058.2	1.7	**-0.0706**	0.009	13.0	ug/L	4635	Standard
	Cr	53	1291.7	11.0	**1.0638**	0.150	14.1	ug/L	255	Standard
	Mn	55	2175.5	60.4	**0.1002**	0.112	111.7	ug/L	746	Standard
	Co	59	82.0	51.6	**0.0053**	0.006	112.4	ug/L	40	Standard
	Ni	60	1960.1	2.3	**0.7525**	0.026	3.5	ug/L	237	Standard
	Cu	65	1926.5	3.0	**0.6924**	0.031	4.5	ug/L	308	Standard
	Zn	66	1713.4	2.1	**0.7355**	0.036	4.9	ug/L	601	Standard
>	**Ge**	72	756985.5	0.8				ug/L	774356	Standard
	As	75	68.7	77.8	**0.0695**	0.042	59.8	ug/L	-42	Standard
	Se	82	55.4	28.4	**0.2573**	0.138	53.8	ug/L	16	Standard
	Se-1	77	82.0	10.0	**0.4604**	0.088	19.2	ug/L	43	Standard
>	**Ga**	71	85.0	40.8				mg/L	30	Standard
	Rb	85	35.0	89.2				ug/L	15	Standard
	Y	89	908098.0	1.7				ug/L	919916	Standard
>	**Rh**	103	3.3	86.6				ug/L	3	Standard
	Mo	98	68.7	46.4	**0.0166**	0.012	73.6	ug/L	12	Standard
	Ag	107	111.3	7.6	**0.0040**	0.002	38.9	ug/L	84	Standard
	Cd	111	5.9	73.5	**0.0031**	0.003	112.8	mg/L	2	Standard
	Cd	114	10.3	45.5	**0.0021**	0.002	76.3	ug/L	2	Standard
>	**In**	115	683817.5	0.1				ug/L	707917	Standard
	Sn	118	548.3	8.8	**0.0185**	0.013	69.7	ug/L	550	Standard
	Sb	123	388.3	18.3	**0.1233**	0.024	19.7	ug/L	64	Standard
	Ba	135	12.7	9.1	**0.0022**	0.001	57.8	ug/L	8	Standard
	Ce	140	8.3	34.6				ug/L	22	Standard
>	**Tb**	159	907710.2	0.8				ug/L	944784	Standard
	Ho	165	6.7	86.6				ug/L	8	Standard
	Tl	203	35.0	42.7	**0.0033**	0.003	97.8	ug/L	5	Standard
	Tl	205	68.3	66.4	**0.0115**	0.009	80.2	ug/L	3	Standard
	Pb	206	196.7	2.1	**-0.0058**	0.001	21.1	ug/L	197	Standard
	Pb	207	185.3	5.7	**0.0016**	0.004	269.6	ug/L	180	Standard
	Pb	208	889.7	14.0	**0.0092**	0.011	116.4	ug/L	761	Standard
	U	238	58.0	72.5	**0.0113**	0.009	78.3	ug/L	0	Standard
>	**Bi**	209	610423.0	0.7				ug/L	628212	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	153.3	61.0	**0.3725**	0.253	67.8	mg/L	12	Standard
K	39	0.0		**-0.0964**	0.000	0.0	mg/L	7	Standard
Ca	43	28.3	100.3	**1.1318**	3.199	282.6	mg/L	30	Standard
Fe	54	339.8	20.5	**0.0103**	0.027	258.9	mg/L	241	Standard
Fe	57	20.0	25.0	**-0.0386**	0.008	19.5	mg/L	37	Standard
Sc-1	45	109632.0	2.5				mg/L	108014	Standard
Cl	35	14910.7	0.4				ug/L	13720	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	873.4	17.6				ug/L	750	Standard
P	31	16003.5	3.4				ug/L	15373	Standard
S	34	1143.4	7.4				ug/L	970	Standard
Sr	88	6.7	43.3				ug/L	5	Standard
C	12	73.3	15.7				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.5	91.3				mg/L	3	Standard
Ho-1	165	6.7	86.6				mg/L	8	Standard
Er	166	3.3	173.2				mg/L	17	Standard
I	127	398.3	14.7				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.757	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.596
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.168
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Se	82	

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Method 6020 - Summary Report

Sample ID: PBW 13 WG526291-02
Sample Date/Time: Friday, June 05, 2015 15:03:24
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	204638.1	2.2				ug/L	205676	Standard
	Be	9	25.0	52.9	**0.0172**	0.013	78.2	ug/L	13	Standard
	Al	27	3295.4	1.3	**0.0257**	0.002	6.6	ug/L	498	Standard
	Sc	45	110516.7	1.8				ug/L	108014	Standard
	Ti	47	32.0	14.3	**0.0570**	0.016	28.3	ug/L	18	Standard
	V	51	681.3	3.5	**-0.0315**	0.005	15.2	ug/L	907	Standard
	Cr	52	4590.0	2.4	**-0.0040**	0.023	574.1	ug/L	4635	Standard
	Cr	53	986.7	1.9	**0.7401**	0.013	1.8	ug/L	255	Standard
	Mn	55	2642.9	3.0	**0.1356**	0.006	4.6	ug/L	746	Standard
	Co	59	69.3	16.9	**0.0033**	0.002	45.7	ug/L	40	Standard
	Ni	60	1319.7	2.8	**0.4609**	0.022	4.8	ug/L	237	Standard
	Cu	65	1193.0	2.6	**0.3659**	0.013	3.5	ug/L	308	Standard
	Zn	66	3453.7	2.1	**1.9334**	0.024	1.2	ug/L	601	Standard
>	**Ge**	72	769761.8	1.1				ug/L	774356	Standard
	As	75	3.6	488.1	**0.0190**	0.013	70.2	ug/L	-42	Standard
	Se	82	29.1	32.8	**0.0263**	0.079	301.4	ug/L	16	Standard
	Se-1	77	59.7	9.2	**0.2063**	0.065	31.4	ug/L	43	Standard
>	**Ga**	71	76.7	32.8				mg/L	30	Standard
	Rb	85	83.3	39.0				ug/L	15	Standard
	Y	89	913145.0	1.7				ug/L	919916	Standard
>	**Rh**	103	1.7	173.2				ug/L	3	Standard
	Mo	98	25.0	22.5	**-0.0003**	0.002	700.0	ug/L	12	Standard
	Ag	107	86.7	0.7	**-0.0009**	0.000	31.9	ug/L	84	Standard
	Cd	111	4.6	24.9	**0.0020**	0.001	44.3	mg/L	2	Standard
	Cd	114	20.5	42.5	**0.0054**	0.003	53.4	ug/L	2	Standard
>	**In**	115	695518.0	1.3				ug/L	707917	Standard
	Sn	118	478.3	8.4	**-0.0021**	0.010	492.6	ug/L	550	Standard
	Sb	123	113.7	11.3	**0.0282**	0.004	14.9	ug/L	64	Standard
	Ba	135	94.0	14.3	**0.0909**	0.014	15.2	ug/L	8	Standard
	Ce	140	71.7	22.4				ug/L	22	Standard
>	**Tb**	159	931870.3	0.4				ug/L	944784	Standard
	Ho	165	10.0	50.0				ug/L	8	Standard
	Tl	203	21.7	16.2	**0.0003**	0.001	221.6	ug/L	5	Standard
	Tl	205	38.3	66.9	**0.0052**	0.005	97.8	ug/L	3	Standard
	Pb	206	232.0	4.1	**0.0043**	0.002	52.1	ug/L	197	Standard
	Pb	207	207.0	7.0	**0.0079**	0.006	74.5	ug/L	180	Standard
	Pb	208	880.3	7.0	**0.0068**	0.005	66.2	ug/L	761	Standard
	U	238	13.3	43.9	**0.0018**	0.001	67.9	ug/L	0	Standard
>	**Bi**	209	622945.8	1.3				ug/L	628212	Standard

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Na	23	1.7	173.2	**20.5790**	35.635	173.2	mg/L	0	Standard
Mg	24	65.0	15.4	**0.1261**	0.031	24.2	mg/L	12	Standard
K	39	0.0		**-0.0964**	0.000	0.0	mg/L	7	Standard
Ca	43	26.7	60.3	**0.9534**	1.844	193.4	mg/L	30	Standard
Fe	54	364.1	9.0	**0.0199**	0.014	70.4	mg/L	241	Standard
Fe	57	41.7	25.0	**-0.0092**	0.014	154.6	mg/L	37	Standard
> **Sc-1**	45	110516.7	1.8				mg/L	108014	Standard
Cl	35	14956.0	1.7				ug/L	13720	Standard
Kr	83	0.7	173.2				ug/L	0	Standard
Br	81	816.7	6.7				ug/L	750	Standard
P	31	16917.8	4.1				ug/L	15373	Standard
S	34	1086.7	1.1				ug/L	970	Standard
Sr	88	8.3	91.7				ug/L	5	Standard
C	12	50.0	20.0				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.4	109.4				mg/L	3	Standard
Ho-1	165	10.0	50.0				mg/L	8	Standard
Er	166	13.3	43.3				mg/L	17	Standard
I	127	360.0	18.2				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.495	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.407	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.249
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.162
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 13 WG526291-03
Sample Date/Time: Friday, June 05, 2015 15:06:35
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	200827.9	2.8				ug/L	205676	Standard
	Be	9	52937.3	1.2	**52.8178**	1.679	3.2	ug/L	13	Standard
	Al	27	3263.7	3.5	**0.0263**	0.003	11.0	ug/L	498	Standard
	Sc	45	109474.2	2.1				ug/L	108014	Standard
	Ti	47	39.7	7.7	**0.0820**	0.008	9.9	ug/L	18	Standard
	V	51	341710.4	0.3	**52.6941**	1.044	2.0	ug/L	907	Standard
	Cr	52	378097.8	0.2	**53.4312**	0.832	1.6	ug/L	4635	Standard
	Cr	53	52925.6	1.4	**52.0462**	1.399	2.7	ug/L	255	Standard
	Mn	55	637502.3	1.0	**52.8163**	1.435	2.7	ug/L	746	Standard
	Co	59	386452.9	1.7	**52.7114**	1.762	3.3	ug/L	40	Standard
	Ni	60	119948.3	0.4	**51.7774**	0.739	1.4	ug/L	237	Standard
	Cu	65	126415.9	0.3	**53.6711**	0.872	1.6	ug/L	308	Standard
	Zn	66	78062.6	2.0	**54.1203**	1.202	2.2	ug/L	601	Standard
>	**Ge**	72	770626.4	1.8				ug/L	774356	Standard
	As	75	67928.9	0.8	**51.5696**	0.795	1.5	ug/L	-42	Standard
	Se	82	5964.1	0.1	**50.1706**	0.859	1.7	ug/L	16	Standard
	Se-1	77	4758.1	2.7	**50.5767**	0.852	1.7	ug/L	43	Standard
>	**Ga**	71	76.7	10.0				mg/L	30	Standard
	Rb	85	108.3	23.2				ug/L	15	Standard
	Y	89	930539.0	1.1				ug/L	919916	Standard
>	**Rh**	103	16.7	45.8				ug/L	3	Standard
	Mo	98	64.3	7.4	**0.0143**	0.002	11.3	ug/L	12	Standard
	Ag	107	294216.5	0.5	**53.1895**	0.520	1.0	ug/L	84	Standard
	Cd	111	65006.1	0.5	**51.1308**	0.284	0.6	mg/L	2	Standard
	Cd	114	157112.6	1.6	**51.5768**	0.865	1.7	ug/L	2	Standard
>	**In**	115	699840.4	0.7				ug/L	707917	Standard
	Sn	118	486.7	19.2	**-0.0008**	0.023	2779.0	ug/L	550	Standard
	Sb	123	159062.5	0.4	**53.3973**	0.382	0.7	ug/L	64	Standard
	Ba	135	48182.2	0.9	**52.4076**	0.497	0.9	ug/L	8	Standard
	Ce	140	61.7	26.1				ug/L	22	Standard
>	**Tb**	159	933410.7	0.2				ug/L	944784	Standard
	Ho	165	11.7	65.5				ug/L	8	Standard
	Tl	203	248611.5	0.8	**52.0905**	0.556	1.1	ug/L	5	Standard
	Tl	205	257494.6	0.6	**52.1186**	0.483	0.9	ug/L	3	Standard
	Pb	206	163350.9	0.6	**52.9901**	0.100	0.2	ug/L	197	Standard
	Pb	207	142748.6	0.5	**50.8077**	0.071	0.1	ug/L	180	Standard
	Pb	208	609150.8	0.5	**52.0915**	0.485	0.9	ug/L	761	Standard
	U	238	244340.8	0.3	**51.2864**	0.424	0.8	ug/L	0	Standard
>	**Bi**	209	618753.1	0.6				ug/L	628212	Standard

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Na	23	1.7	173.2	**20.8389**	36.085	173.2	mg/L	0	Standard
Mg	24	31.7	24.1	**0.0341**	0.023	67.1	mg/L	12	Standard
K	39	6.7	43.3	**0.0076**	0.046	608.1	mg/L	7	Standard
Ca	43	16.7	17.3	**-0.1669**	0.285	170.5	mg/L	30	Standard
Fe	54	354.2	12.1	**0.0169**	0.015	90.3	mg/L	241	Standard
Fe	57	33.3	48.2	**-0.0203**	0.022	109.5	mg/L	37	Standard
> **Sc-1**	45	109474.2	2.1				mg/L	108014	Standard
Cl	35	14575.0	0.9				ug/L	13720	Standard
Kr	83	0.7	86.6				ug/L	0	Standard
Br	81	836.7	8.1				ug/L	750	Standard
P	31	17344.9	4.0				ug/L	15373	Standard
S	34	1063.4	6.0				ug/L	970	Standard
Sr	88	11.7	49.5				ug/L	5	Standard
C	12	63.3	36.5				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	-1.0	50.0				mg/L	3	Standard
Ho-1	165	11.7	65.5				mg/L	8	Standard
Er	166	20.0	50.0				mg/L	17	Standard
I	127	385.0	14.5				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.643	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.518	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.859
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.494
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1506020001 WG526291-01
Sample Date/Time: Friday, June 05, 2015 15:09:45
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	208208.0	2.5				ug/L	205676	Standard
	Be	9	46.7	91.1	**0.0380**	0.042	111.5	ug/L	13	Standard
	Al	27	2772501.0	1.1	**47.7107**	1.114	2.3	ug/L	498	Standard
	Sc	45	114405.3	1.2				ug/L	108014	Standard
	Ti	47	658.0	8.2	**2.1143**	0.221	10.5	ug/L	18	Standard
	V	51	612.6	22.0	**-0.0424**	0.023	53.9	ug/L	907	Standard
	Cr	52	5706.7	1.5	**0.1514**	0.005	3.6	ug/L	4635	Standard
	Cr	53	3573.8	6.5	**3.2770**	0.158	4.8	ug/L	255	Standard
	Mn	55	84040.1	0.6	**6.8604**	0.152	2.2	ug/L	746	Standard
	Co	59	834.0	10.6	**0.1073**	0.014	13.1	ug/L	40	Standard
	Ni	60	5390.0	1.8	**2.2109**	0.008	0.4	ug/L	237	Standard
	Cu	65	5026.2	2.1	**1.9890**	0.090	4.5	ug/L	308	Standard
	Zn	66	20809.6	0.6	**14.0122**	0.255	1.8	ug/L	601	Standard
>	**Ge**	72	773875.2	2.1				ug/L	774356	Standard
	As	75	544.7	18.9	**0.4272**	0.072	16.9	ug/L	-42	Standard
	Se	82	177.0	6.6	**1.2688**	0.075	5.9	ug/L	16	Standard
	Se-1	77	439.3	9.1	**4.2517**	0.337	7.9	ug/L	43	Standard
>	**Ga**	71	65.0	35.3				mg/L	30	Standard
	Rb	85	37056.9	1.1				ug/L	15	Standard
	Y	89	933277.2	1.9				ug/L	919916	Standard
>	**Rh**	103	61.7	23.4				ug/L	3	Standard
	Mo	98	501.5	6.6	**0.1789**	0.016	9.0	ug/L	12	Standard
	Ag	107	116.3	28.8	**0.0045**	0.007	143.7	ug/L	84	Standard
	Cd	111	29.7	28.6	**0.0218**	0.007	32.9	mg/L	2	Standard
	Cd	114	73.8	12.5	**0.0229**	0.003	14.5	ug/L	2	Standard
>	**In**	115	698309.0	2.0				ug/L	707917	Standard
	Sn	118	605.0	15.8	**0.0300**	0.023	76.5	ug/L	550	Standard
	Sb	123	421.3	4.4	**0.1317**	0.009	6.9	ug/L	64	Standard
	Ba	135	19693.1	0.5	**21.4662**	0.500	2.3	ug/L	8	Standard
	Ce	140	81.7	30.8				ug/L	22	Standard
>	**Tb**	159	951819.4	2.1				ug/L	944784	Standard
	Ho	165	21.7	35.3				ug/L	8	Standard
	Tl	203	188.7	27.6	**0.0364**	0.012	32.5	ug/L	5	Standard
	Tl	205	218.3	62.2	**0.0430**	0.029	67.6	ug/L	3	Standard
	Pb	206	356.7	6.1	**0.0479**	0.009	18.2	ug/L	197	Standard
	Pb	207	330.7	8.3	**0.0551**	0.012	21.4	ug/L	180	Standard
	Pb	208	1462.4	12.2	**0.0601**	0.018	29.7	ug/L	761	Standard
	U	238	195.7	46.4	**0.0412**	0.020	49.3	ug/L	0	Standard
>	**Bi**	209	605418.3	1.6				ug/L	628212	Standard

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Na	23	3.3	86.6	**39.1277**	33.883	86.6	mg/L	0	Standard
Mg	24	18082.5	3.4	**48.5330**	1.215	2.5	mg/L	12	Standard
K	39	313.3	10.6	**4.5640**	0.448	9.8	mg/L	7	Standard
Ca	43	478.3	14.9	**49.8932**	7.132	14.3	mg/L	30	Standard
Fe	54	344.4	3.9	**0.0065**	0.005	82.6	mg/L	241	Standard
Fe	57	240.0	13.0	**0.2525**	0.041	16.1	mg/L	37	Standard
> **Sc-1**	45	114405.3	1.2				mg/L	108014	Standard
Cl	35	15922.4	0.8				ug/L	13720	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	11234.2	6.1				ug/L	750	Standard
P	31	19816.3	3.9				ug/L	15373	Standard
S	34	1151.7	4.4				ug/L	970	Standard
Sr	88	506.7	11.1				ug/L	5	Standard
C	12	163.3	36.9				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	36.0	18.0				mg/L	3	Standard
Ho-1	165	21.7	35.3				mg/L	8	Standard
Er	166	13.3	114.6				mg/L	17	Standard
I	127	55310.9	3.5				mg/L	138	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		101.231	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.938	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.643
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.372
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1506020001DP WG526291-05
Sample Date/Time: Friday, June 05, 2015 15:12:57
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	202398.2	2.0				ug/L	205676	Standard
	Be	9	18.3	15.7	**0.0107**	0.003	27.9	ug/L	13	Standard
	Al	27	2677135.9	1.0	**47.3848**	0.784	1.7	ug/L	498	Standard
	Sc	45	110417.6	1.0				ug/L	108014	Standard
	Ti	47	621.3	2.4	**2.0401**	0.087	4.2	ug/L	18	Standard
	V	51	431.2	48.9	**-0.0694**	0.032	46.4	ug/L	907	Standard
	Cr	52	6012.5	2.5	**0.2154**	0.029	13.6	ug/L	4635	Standard
	Cr	53	4317.3	5.2	**4.1133**	0.287	7.0	ug/L	255	Standard
	Mn	55	82712.9	1.6	**6.9114**	0.163	2.4	ug/L	746	Standard
	Co	59	758.7	2.6	**0.0993**	0.003	2.9	ug/L	40	Standard
	Ni	60	5212.2	0.5	**2.1877**	0.044	2.0	ug/L	237	Standard
	Cu	65	4742.4	1.2	**1.9151**	0.026	1.4	ug/L	308	Standard
	Zn	66	20017.2	0.6	**13.7887**	0.249	1.8	ug/L	601	Standard
>	**Ge**	72	756046.1	2.0				ug/L	774356	Standard
	As	75	469.8	1.1	**0.3797**	0.009	2.4	ug/L	-42	Standard
	Se	82	158.6	3.2	**1.1470**	0.069	6.0	ug/L	16	Standard
	Se-1	77	490.0	6.9	**4.9244**	0.437	8.9	ug/L	43	Standard
>	**Ga**	71	71.7	10.7				mg/L	30	Standard
	Rb	85	35920.9	2.3				ug/L	15	Standard
	Y	89	903933.9	1.9				ug/L	919916	Standard
>	**Rh**	103	33.3	31.2				ug/L	3	Standard
	Mo	98	482.2	5.8	**0.1763**	0.009	5.0	ug/L	12	Standard
	Ag	107	87.3	13.2	**-0.0004**	0.002	527.1	ug/L	84	Standard
	Cd	111	18.4	16.2	**0.0132**	0.002	18.5	mg/L	2	Standard
	Cd	114	25.8	21.2	**0.0073**	0.002	25.0	ug/L	2	Standard
>	**In**	115	679757.5	1.1				ug/L	707917	Standard
	Sn	118	653.3	13.6	**0.0473**	0.024	51.0	ug/L	550	Standard
	Sb	123	345.5	7.5	**0.1094**	0.010	9.3	ug/L	64	Standard
	Ba	135	19097.7	1.0	**21.3790**	0.072	0.3	ug/L	8	Standard
	Ce	140	113.3	24.3				ug/L	22	Standard
>	**Tb**	159	922386.7	0.9				ug/L	944784	Standard
	Ho	165	11.7	24.7				ug/L	8	Standard
	Tl	203	91.3	5.5	**0.0157**	0.001	6.7	ug/L	5	Standard
	Tl	205	76.7	10.0	**0.0137**	0.002	11.3	ug/L	3	Standard
	Pb	206	360.0	2.1	**0.0512**	0.002	3.7	ug/L	197	Standard
	Pb	207	306.3	8.3	**0.0482**	0.009	19.1	ug/L	180	Standard
	Pb	208	1270.4	1.9	**0.0452**	0.002	5.5	ug/L	761	Standard
	U	238	116.7	8.8	**0.0245**	0.002	8.7	ug/L	0	Standard
>	**Bi**	209	594471.6	0.6				ug/L	628212	Standard

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Na	23	6.7	114.6	**82.2011**	94.652	115.1	mg/L	0	Standard
Mg	24	17501.8	1.4	**48.6844**	1.120	2.3	mg/L	12	Standard
K	39	361.7	4.0	**5.4820**	0.249	4.5	mg/L	7	Standard
Ca	43	408.3	8.2	**43.9482**	3.908	8.9	mg/L	30	Standard
Fe	54	296.1	5.0	**-0.0089**	0.007	76.8	mg/L	241	Standard
Fe	57	300.0	22.0	**0.3464**	0.089	25.7	mg/L	37	Standard
> **Sc-1**	45	110417.6	1.0				mg/L	108014	Standard
Cl	35	15903.7	2.7				ug/L	13720	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	10740.5	2.7				ug/L	750	Standard
P	31	19896.4	3.3				ug/L	15373	Standard
S	34	1056.7	6.8				ug/L	970	Standard
Sr	88	528.3	0.5				ug/L	5	Standard
C	12	113.3	13.5				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	35.1	56.7				mg/L	3	Standard
Ho-1	165	11.7	24.7				mg/L	8	Standard
Er	166	33.3	75.5				mg/L	17	Standard
I	127	55198.7	2.1				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.406	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.635	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	96.022
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	94.629
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 05, 2015

Method 6020 - Summary Report

Sample ID: L1506020001S WG526291-06
Sample Date/Time: Friday, June 05, 2015 15:16:08
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	199403.9	1.9				ug/L	205676	Standard
	Be	9	51910.5	1.4	**52.1572**	1.759	3.4	ug/L	13	Standard
	Al	27	2713410.4	0.4	**48.7545**	1.153	2.4	ug/L	498	Standard
	Sc	45	107008.4	2.6				ug/L	108014	Standard
	Ti	47	630.3	6.2	**2.1139**	0.131	6.2	ug/L	18	Standard
	V	51	339941.7	0.8	**54.5559**	0.817	1.5	ug/L	907	Standard
	Cr	52	368490.8	0.4	**54.2006**	0.643	1.2	ug/L	4635	Standard
	Cr	53	55918.0	0.9	**57.2399**	0.476	0.8	ug/L	255	Standard
	Mn	55	704837.0	0.8	**60.7747**	0.944	1.6	ug/L	746	Standard
	Co	59	367288.5	0.6	**52.1244**	0.714	1.4	ug/L	40	Standard
	Ni	60	118782.1	0.7	**53.3603**	0.074	0.1	ug/L	237	Standard
	Cu	65	122620.2	1.0	**54.1752**	0.493	0.9	ug/L	308	Standard
	Zn	66	94437.7	0.5	**68.2619**	0.431	0.6	ug/L	601	Standard
>	**Ge**	72	740422.3	0.8				ug/L	774356	Standard
	As	75	69967.0	0.3	**55.2750**	0.287	0.5	ug/L	-42	Standard
	Se	82	6211.0	1.2	**54.3849**	0.296	0.5	ug/L	16	Standard
	Se-1	77	5233.6	1.9	**57.9717**	1.437	2.5	ug/L	43	Standard
>	**Ga**	71	60.0	8.3				mg/L	30	Standard
	Rb	85	36326.8	1.0				ug/L	15	Standard
	Y	89	884809.4	0.5				ug/L	919916	Standard
>	**Rh**	103	51.7	48.7				ug/L	3	Standard
	Mo	98	491.9	8.4	**0.1845**	0.015	8.1	ug/L	12	Standard
	Ag	107	274683.2	0.4	**52.3131**	0.489	0.9	ug/L	84	Standard
	Cd	111	63820.1	1.0	**52.8832**	0.684	1.3	mg/L	2	Standard
	Cd	114	155482.9	1.2	**53.7684**	0.321	0.6	ug/L	2	Standard
>	**In**	115	664324.7	0.9				ug/L	707917	Standard
	Sn	118	723.4	14.8	**0.0705**	0.031	43.6	ug/L	550	Standard
	Sb	123	158566.0	0.2	**56.0774**	0.389	0.7	ug/L	64	Standard
	Ba	135	65242.8	0.8	**74.7677**	1.105	1.5	ug/L	8	Standard
	Ce	140	176.7	41.4				ug/L	22	Standard
>	**Tb**	159	893316.2	1.6				ug/L	944784	Standard
	Ho	165	18.3	41.7				ug/L	8	Standard
	Tl	203	238110.5	1.1	**53.7943**	0.410	0.8	ug/L	5	Standard
	Tl	205	244832.4	1.2	**53.4382**	0.980	1.8	ug/L	3	Standard
	Pb	206	157232.0	1.1	**55.0025**	0.718	1.3	ug/L	197	Standard
	Pb	207	136440.6	0.3	**52.3673**	0.309	0.6	ug/L	180	Standard
	Pb	208	573107.8	0.6	**52.8483**	0.650	1.2	ug/L	761	Standard
	U	238	241149.0	0.9	**54.5805**	0.776	1.4	ug/L	0	Standard
>	**Bi**	209	573829.3	0.7				ug/L	628212	Standard

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Na	23	5.0	100.0	**63.5712**	62.897	98.9	mg/L	0	Standard
Mg	24	18072.4	1.8	**51.9090**	2.277	4.4	mg/L	12	Standard
K	39	330.0	17.5	**5.1621**	0.956	18.5	mg/L	7	Standard
Ca	43	448.3	15.8	**49.9651**	7.121	14.3	mg/L	30	Standard
Fe	54	363.6	4.0	**0.0248**	0.004	17.5	mg/L	241	Standard
Fe	57	276.7	10.6	**0.3275**	0.051	15.7	mg/L	37	Standard
Sc-1	45	107008.4	2.6				mg/L	108014	Standard
Cl	35	15280.4	1.7				ug/L	13720	Standard
Kr	83	1.0	0.0				ug/L	0	Standard
Br	81	10727.1	6.3				ug/L	750	Standard
P	31	18870.1	1.7				ug/L	15373	Standard
S	34	1125.0	5.0				ug/L	970	Standard
Sr	88	458.3	5.2				ug/L	5	Standard
C	12	86.7	35.3				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	11.7	132.5				mg/L	3	Standard
Ho-1	165	18.3	41.7				mg/L	8	Standard
Er	166	33.3	91.7				mg/L	17	Standard
I	127	56821.4	3.3				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		96.950	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.618	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.842
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.343
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 05, 2015

Method 6020 - Summary Report

Sample ID: L1506020001SD WG526291-07
Sample Date/Time: Friday, June 05, 2015 15:19:20
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	194183.6	2.5				ug/L	205676	Standard
	Be	9	52517.6	2.2	**54.1664**	0.467	0.9	ug/L	13	Standard
	Al	27	2780293.8	0.4	**51.3058**	1.236	2.4	ug/L	498	Standard
	Sc	45	107548.7	1.5				ug/L	108014	Standard
	Ti	47	611.0	2.3	**2.0824**	0.037	1.8	ug/L	18	Standard
	V	51	338858.4	1.8	**55.2803**	0.568	1.0	ug/L	907	Standard
	Cr	52	373505.5	0.8	**55.8690**	0.505	0.9	ug/L	4635	Standard
	Cr	53	55946.4	1.2	**58.2254**	0.774	1.3	ug/L	255	Standard
	Mn	55	698095.9	0.8	**61.1944**	0.984	1.6	ug/L	746	Standard
	Co	59	367238.7	0.7	**52.9806**	0.389	0.7	ug/L	40	Standard
	Ni	60	119824.0	1.2	**54.7265**	0.700	1.3	ug/L	237	Standard
	Cu	65	123211.3	0.9	**55.3437**	0.476	0.9	ug/L	308	Standard
	Zn	66	94939.2	1.4	**69.7719**	0.651	0.9	ug/L	601	Standard
>	**Ge**	72	728326.7	0.8				ug/L	774356	Standard
	As	75	69711.5	0.1	**55.9886**	0.449	0.8	ug/L	-42	Standard
	Se	82	6251.3	0.3	**55.6557**	0.504	0.9	ug/L	16	Standard
	Se-1	77	5262.9	2.3	**59.2637**	0.895	1.5	ug/L	43	Standard
>	**Ga**	71	76.7	26.4				mg/L	30	Standard
	Rb	85	37232.4	0.6				ug/L	15	Standard
	Y	89	881310.4	1.1				ug/L	919916	Standard
>	**Rh**	103	50.0	0.0				ug/L	3	Standard
	Mo	98	589.3	6.6	**0.2241**	0.015	6.6	ug/L	12	Standard
	Ag	107	274272.9	0.5	**52.4664**	0.401	0.8	ug/L	84	Standard
	Cd	111	64398.4	0.9	**53.5978**	0.382	0.7	mg/L	2	Standard
	Cd	114	155996.9	0.7	**54.1873**	0.173	0.3	ug/L	2	Standard
>	**In**	115	661375.6	0.6				ug/L	707917	Standard
	Sn	118	830.0	10.0	**0.1004**	0.022	21.8	ug/L	550	Standard
	Sb	123	158511.5	0.3	**56.3067**	0.243	0.4	ug/L	64	Standard
	Ba	135	66156.5	0.9	**76.1475**	0.570	0.7	ug/L	8	Standard
	Ce	140	170.0	12.8				ug/L	22	Standard
>	**Tb**	159	891774.9	1.7				ug/L	944784	Standard
	Ho	165	16.7	45.8				ug/L	8	Standard
	Tl	203	237758.4	0.8	**54.1225**	0.842	1.6	ug/L	5	Standard
	Tl	205	244376.8	1.1	**53.7428**	1.213	2.3	ug/L	3	Standard
	Pb	206	155844.4	0.2	**54.9274**	0.544	1.0	ug/L	197	Standard
	Pb	207	136064.6	0.4	**52.6186**	0.741	1.4	ug/L	180	Standard
	Pb	208	575266.9	0.3	**53.4480**	0.755	1.4	ug/L	761	Standard
	U	238	241054.4	0.4	**54.9704**	0.797	1.4	ug/L	0	Standard
>	**Bi**	209	569565.4	1.1				ug/L	628212	Standard

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Na	23	1.7	173.2	**20.7962**	36.011	173.2	mg/L	0	Standard
Mg	24	17975.7	0.8	**51.3441**	1.186	2.3	mg/L	12	Standard
K	39	378.3	4.2	**5.8921**	0.170	2.9	mg/L	7	Standard
Ca	43	458.3	9.3	**50.9775**	5.303	10.4	mg/L	30	Standard
Fe	54	349.5	10.4	**0.0179**	0.017	92.7	mg/L	241	Standard
Fe	57	261.7	5.5	**0.3034**	0.015	4.9	mg/L	37	Standard
> **Sc-1**	45	107548.7	1.5				mg/L	108014	Standard
Cl	35	15565.3	2.2				ug/L	13720	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	12972.2	0.6				ug/L	750	Standard
P	31	18444.6	2.1				ug/L	15373	Standard
S	34	1081.7	1.8				ug/L	970	Standard
Sr	88	523.3	3.9				ug/L	5	Standard
C	12	110.0	39.6				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.5	52.5				mg/L	3	Standard
Ho-1	165	16.7	45.8				mg/L	8	Standard
Er	166	10.0	100.0				mg/L	17	Standard
I	127	62331.3	1.1				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.412	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.056	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1506020001SD WG526291-07
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.426
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.665
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 05, 2015

Method 6020 - Summary Report

Sample ID: L1506019101
Sample Date/Time: Friday, June 05, 2015 15:22:31
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	207082.7	2.3				ug/L	205676	Standard
	Be	9	66.7	38.5	**0.0567**	0.023	41.1	ug/L	13	Standard
	Al	27	2148572.9	2.4	**37.1577**	0.626	1.7	ug/L	498	Standard
	Sc	45	111667.0	3.5				ug/L	108014	Standard
	Ti	47	1273.1	14.8	**4.0811**	0.597	14.6	ug/L	18	Standard
	V	51	5108.3	4.8	**0.6399**	0.029	4.5	ug/L	907	Standard
	Cr	52	9079.4	3.8	**0.6165**	0.039	6.3	ug/L	4635	Standard
	Cr	53	2188.5	6.7	**1.8905**	0.111	5.9	ug/L	255	Standard
	Mn	55	1022279.4	2.5	**83.3675**	0.749	0.9	ug/L	746	Standard
	Co	59	4133.9	4.1	**0.5485**	0.013	2.4	ug/L	40	Standard
	Ni	60	5694.1	2.6	**2.3128**	0.022	1.0	ug/L	237	Standard
	Cu	65	4674.7	4.1	**1.8151**	0.050	2.7	ug/L	308	Standard
	Zn	66	10708.1	2.2	**6.8858**	0.068	1.0	ug/L	601	Standard
>	**Ge**	72	783028.2	1.7				ug/L	774356	Standard
	As	75	771.2	3.1	**0.5923**	0.023	4.0	ug/L	-42	Standard
	Se	82	129.4	9.6	**0.8564**	0.099	11.6	ug/L	16	Standard
	Se-1	77	184.3	6.8	**1.5093**	0.099	6.6	ug/L	43	Standard
>	**Ga**	71	453.3	12.1				mg/L	30	Standard
	Rb	85	16740.9	1.2				ug/L	15	Standard
	Y	89	926024.5	0.5				ug/L	919916	Standard
>	**Rh**	103	38.3	7.5				ug/L	3	Standard
	Mo	98	2457.6	1.9	**0.9159**	0.016	1.7	ug/L	12	Standard
	Ag	107	164.0	33.0	**0.0131**	0.009	72.2	ug/L	84	Standard
	Cd	111	66.0	26.1	**0.0504**	0.013	26.0	mg/L	2	Standard
	Cd	114	182.4	27.4	**0.0586**	0.016	27.0	ug/L	2	Standard
>	**In**	115	696818.2	1.1				ug/L	707917	Standard
	Sn	118	1090.0	2.1	**0.1563**	0.004	2.8	ug/L	550	Standard
	Sb	123	272.9	18.8	**0.0818**	0.016	19.7	ug/L	64	Standard
	Ba	135	19633.4	1.9	**21.4416**	0.421	2.0	ug/L	8	Standard
	Ce	140	5677.7	3.8				ug/L	22	Standard
>	**Tb**	159	934082.6	0.7				ug/L	944784	Standard
	Ho	165	190.0	31.9				ug/L	8	Standard
	Tl	203	168.3	30.7	**0.0315**	0.010	33.3	ug/L	5	Standard
	Tl	205	145.0	26.0	**0.0272**	0.007	27.3	ug/L	3	Standard
	Pb	206	2781.3	1.8	**0.8449**	0.016	1.9	ug/L	197	Standard
	Pb	207	2389.2	2.3	**0.7974**	0.022	2.7	ug/L	180	Standard
	Pb	208	10124.3	0.2	**0.8105**	0.012	1.5	ug/L	761	Standard
	U	238	372.0	5.9	**0.0781**	0.004	5.3	ug/L	0	Standard
>	**Bi**	209	610652.1	1.3				ug/L	628212	Standard

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Na	23	1.7	173.2	**19.5157**	33.794	173.2	mg/L	0	Standard
Mg	24	4397.3	5.0	**12.0586**	0.654	5.4	mg/L	12	Standard
K	39	86.7	23.3	**1.2295**	0.337	27.4	mg/L	7	Standard
Ca	43	176.7	11.4	**17.6650**	2.646	15.0	mg/L	30	Standard
Fe	54	1728.8	3.8	**0.5939**	0.019	3.1	mg/L	241	Standard
Fe	57	528.3	14.2	**0.6513**	0.077	11.9	mg/L	37	Standard
> **Sc-1**	45	111667.0	3.5				mg/L	108014	Standard
Cl	35	16083.2	1.6				ug/L	13720	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	6428.0	3.1				ug/L	750	Standard
P	31	17657.0	5.1				ug/L	15373	Standard
S	34	1076.7	7.0				ug/L	970	Standard
Sr	88	425.0	5.1				ug/L	5	Standard
C	12	116.7	35.7				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	288.0	25.2				mg/L	3	Standard
Ho-1	165	190.0	31.9				mg/L	8	Standard
Er	166	180.0	40.1				mg/L	17	Standard
I	127	14346.8	2.1				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.684	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.120	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.432
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.205
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 05, 2015

Method 6020 - Summary Report

Sample ID: L1506019103
Sample Date/Time: Friday, June 05, 2015 15:25:42
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	214364.7	2.4				ug/L	205676	Standard
	Be	9	43.3	13.3	**0.0330**	0.004	13.4	ug/L	13	Standard
	Al	27	2414879.3	2.7	**40.3439**	0.446	1.1	ug/L	498	Standard
	Sc	45	113307.1	0.9				ug/L	108014	Standard
	Ti	47	145.0	21.8	**0.4264**	0.104	24.4	ug/L	18	Standard
	V	51	-381.1	190.7	**-0.1956**	0.112	57.1	ug/L	907	Standard
	Cr	52	102385.5	2.0	**13.8935**	0.334	2.4	ug/L	4635	Standard
	Cr	53	15890.0	3.8	**15.3607**	0.637	4.1	ug/L	255	Standard
	Mn	55	210699.7	2.2	**17.2869**	0.432	2.5	ug/L	746	Standard
	Co	59	747.0	10.3	**0.0951**	0.011	11.1	ug/L	40	Standard
	Ni	60	4543.0	2.7	**1.8421**	0.057	3.1	ug/L	237	Standard
	Cu	65	3482.4	4.0	**1.3305**	0.058	4.4	ug/L	308	Standard
	Zn	66	6044.5	3.2	**3.7167**	0.134	3.6	ug/L	601	Standard
>	**Ge**	72	775436.3	0.3				ug/L	774356	Standard
	As	75	475.6	3.4	**0.3748**	0.012	3.1	ug/L	-42	Standard
	Se	82	107.9	6.4	**0.6865**	0.056	8.1	ug/L	16	Standard
	Se-1	77	244.7	3.0	**2.1722**	0.069	3.2	ug/L	43	Standard
>	**Ga**	71	186.7	8.6				mg/L	30	Standard
	Rb	85	8550.7	2.4				ug/L	15	Standard
	Y	89	919667.8	1.2				ug/L	919916	Standard
>	**Rh**	103	53.3	5.4				ug/L	3	Standard
	Mo	98	3068.5	1.0	**1.1602**	0.014	1.2	ug/L	12	Standard
	Ag	107	100.7	10.0	**0.0019**	0.002	95.9	ug/L	84	Standard
	Cd	111	5.8	85.9	**0.0030**	0.004	134.8	mg/L	2	Standard
	Cd	114	-179.2	194.8	**-0.0617**	0.117	189.2	ug/L	2	Standard
>	**In**	115	688354.5	0.9				ug/L	707917	Standard
	Sn	118	355390.6	1.9	**93.1794**	1.134	1.2	ug/L	550	Standard
	Sb	123	1708.0	3.6	**0.5728**	0.018	3.1	ug/L	64	Standard
	Ba	135	8188.5	2.3	**9.0447**	0.157	1.7	ug/L	8	Standard
	Ce	140	143.3	14.1				ug/L	22	Standard
>	**Tb**	159	936305.9	1.3				ug/L	944784	Standard
	Ho	165	25.0	34.6				ug/L	8	Standard
	Tl	203	65.3	17.7	**0.0099**	0.003	26.9	ug/L	5	Standard
	Tl	205	88.3	21.4	**0.0159**	0.004	25.5	ug/L	3	Standard
	Pb	206	439.3	3.1	**0.0760**	0.006	8.4	ug/L	197	Standard
	Pb	207	377.0	1.2	**0.0725**	0.003	3.9	ug/L	180	Standard
	Pb	208	1667.4	3.3	**0.0785**	0.004	4.6	ug/L	761	Standard
	U	238	189.7	15.1	**0.0399**	0.006	15.7	ug/L	0	Standard
>	**Bi**	209	602790.0	1.5				ug/L	628212	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	15080.8	3.4	**40.8601**	1.054	2.6	mg/L	12	Standard
K	39	65.0	27.7	**0.8820**	0.281	31.8	mg/L	7	Standard
Ca	43	220.0	2.3	**22.0930**	0.577	2.6	mg/L	30	Standard
Fe	54	623.9	3.0	**0.1241**	0.008	6.8	mg/L	241	Standard
Fe	57	255.0	21.8	**0.2759**	0.075	27.2	mg/L	37	Standard
> **Sc-1**	45	113307.1	0.9				mg/L	108014	Standard
Cl	35	16954.8	2.2				ug/L	13720	Standard
Kr	83	0.7	173.2				ug/L	0	Standard
Br	81	5010.8	4.9				ug/L	750	Standard
P	31	18491.3	3.6				ug/L	15373	Standard
S	34	1160.0	13.3				ug/L	970	Standard
Sr	88	401.7	4.4				ug/L	5	Standard
C	12	103.3	64.4				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.7	46.9				mg/L	3	Standard
Ho-1	165	25.0	34.6				mg/L	8	Standard
Er	166	13.3	114.6				mg/L	17	Standard
I	127	12221.6	1.8				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.224	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.139	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1506019103
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.237
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.953
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 05, 2015

Method 6020 - Summary Report

Sample ID: L1506019103PS WG526532-01
Sample Date/Time: Friday, June 05, 2015 15:28:53
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	220354.8	2.5				ug/L	205676	Standard
	Be	9	55670.4	1.8	**50.6056**	0.939	1.9	ug/L	13	Standard
	Al	27	2483583.1	0.9	**40.3757**	0.682	1.7	ug/L	498	Standard
	Sc	45	116610.4	0.6				ug/L	108014	Standard
	Ti	47	151.0	5.3	**0.4241**	0.020	4.8	ug/L	18	Standard
	V	51	358446.3	0.3	**52.5012**	0.394	0.7	ug/L	907	Standard
	Cr	52	486365.4	0.6	**65.4365**	1.041	1.6	ug/L	4635	Standard
	Cr	53	70039.8	0.4	**65.4802**	0.884	1.4	ug/L	255	Standard
	Mn	55	867536.0	0.6	**68.2854**	0.291	0.4	ug/L	746	Standard
	Co	59	400276.5	0.5	**51.8520**	0.753	1.5	ug/L	40	Standard
	Ni	60	126310.0	0.6	**51.7930**	0.670	1.3	ug/L	237	Standard
	Cu	65	130326.8	0.4	**52.5559**	0.589	1.1	ug/L	308	Standard
	Zn	66	82953.8	0.7	**54.6384**	0.844	1.5	ug/L	601	Standard
>	Ge	72	811179.2	1.0				ug/L	774356	Standard
	As	75	74039.1	0.3	**53.3920**	0.473	0.9	ug/L	-42	Standard
	Se	82	6545.8	0.7	**52.3150**	0.808	1.5	ug/L	16	Standard
	Se-1	77	5241.2	1.7	**52.9532**	1.069	2.0	ug/L	43	Standard
>	Ga	71	223.3	13.7				mg/L	30	Standard
	Rb	85	8792.6	1.3				ug/L	15	Standard
	Y	89	959241.4	1.3				ug/L	919916	Standard
>	Rh	103	61.7	28.5				ug/L	3	Standard
	Mo	98	3113.6	1.6	**1.1447**	0.029	2.5	ug/L	12	Standard
	Ag	107	291134.2	0.9	**52.0300**	0.632	1.2	ug/L	84	Standard
	Cd	111	66188.7	0.3	**51.4664**	0.374	0.7	mg/L	2	Standard
	Cd	114	159230.4	0.9	**51.6779**	0.943	1.8	ug/L	2	Standard
>	In	115	707947.5	1.0				ug/L	707917	Standard
	Sn	118	361696.4	0.7	**92.2182**	1.283	1.4	ug/L	550	Standard
	Sb	123	161189.4	0.8	**53.4922**	0.503	0.9	ug/L	64	Standard
	Ba	135	56968.2	1.5	**61.2572**	0.873	1.4	ug/L	8	Standard
	Ce	140	100.0	26.0				ug/L	22	Standard
>	Tb	159	969110.2	1.6				ug/L	944784	Standard
	Ho	165	11.7	65.5				ug/L	8	Standard
	Tl	203	251745.0	1.2	**52.5583**	0.392	0.7	ug/L	5	Standard
	Tl	205	260776.7	0.7	**52.5950**	0.194	0.4	ug/L	3	Standard
	Pb	206	160830.1	0.6	**51.9865**	0.142	0.3	ug/L	197	Standard
	Pb	207	147112.4	0.9	**52.1770**	0.267	0.5	ug/L	180	Standard
	Pb	208	606327.3	0.2	**51.6658**	0.295	0.6	ug/L	761	Standard
	U	238	254241.0	0.5	**53.1744**	0.132	0.2	ug/L	0	Standard
>	Bi	209	620943.1	0.4				ug/L	628212	Standard

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Na	23	1.7	173.2	**19.4225**	33.632	173.2	mg/L	0	Standard
Mg	24	15159.3	3.3	**39.9188**	1.544	3.9	mg/L	12	Standard
K	39	88.3	22.9	**1.1928**	0.290	24.3	mg/L	7	Standard
Ca	43	240.0	27.1	**23.5282**	6.841	29.1	mg/L	30	Standard
Fe	54	741.3	4.0	**0.1642**	0.013	7.8	mg/L	241	Standard
Fe	57	240.0	9.1	**0.2465**	0.028	11.5	mg/L	37	Standard
> **Sc-1**	45	116610.4	0.6				mg/L	108014	Standard
Cl	35	17707.0	0.5				ug/L	13720	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	5330.9	4.2				ug/L	750	Standard
P	31	19347.4	3.0				ug/L	15373	Standard
S	34	1126.7	4.2				ug/L	970	Standard
Sr	88	505.0	11.4				ug/L	5	Standard
C	12	100.0	45.8				mg/L	40	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	22.5	88.2				mg/L	3	Standard
Ho-1	165	11.7	65.5				mg/L	8	Standard
Er	166	16.7	173.2				mg/L	17	Standard
I	127	12368.4	2.8				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.137	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.755	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.004
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.843
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1506019103PS WG526532-01
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Approved: June 05, 2015

Method 6020 - Summary Report

Sample ID: L1506019103SDL WG526532-02
Sample Date/Time: Friday, June 05, 2015 15:32:04
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	221012.2	1.6				ug/L	205676	Standard
	Be	9	43.3	24.0	**0.0319**	0.010	31.1	ug/L	13	Standard
	Al	27	752195.1	1.5	**12.1681**	0.250	2.1	ug/L	498	Standard
	Sc	45	120112.6	1.0				ug/L	108014	Standard
	Ti	47	51.3	12.5	**0.1072**	0.019	17.7	ug/L	18	Standard
	V	51	799.2	9.1	**-0.0233**	0.010	42.0	ug/L	907	Standard
	Cr	52	26959.3	1.9	**2.8905**	0.052	1.8	ug/L	4635	Standard
	Cr	53	4058.9	7.1	**3.4566**	0.257	7.4	ug/L	255	Standard
	Mn	55	48046.4	1.9	**3.5873**	0.054	1.5	ug/L	746	Standard
	Co	59	284.7	41.8	**0.0296**	0.015	49.9	ug/L	40	Standard
	Ni	60	1676.4	2.2	**0.5572**	0.014	2.4	ug/L	237	Standard
	Cu	65	1413.1	3.2	**0.4115**	0.018	4.3	ug/L	308	Standard
	Zn	66	4062.2	0.7	**2.1325**	0.027	1.3	ug/L	601	Standard
>	**Ge**	72	836603.3	0.5				ug/L	774356	Standard
	As	75	60.6	68.6	**0.0586**	0.029	50.0	ug/L	-42	Standard
	Se	82	35.6	28.1	**0.0578**	0.079	137.0	ug/L	16	Standard
	Se-1	77	105.0	7.2	**0.6023**	0.072	12.0	ug/L	43	Standard
>	**Ga**	71	83.3	15.1				mg/L	30	Standard
	Rb	85	2065.1	6.3				ug/L	15	Standard
	Y	89	974639.3	2.3				ug/L	919916	Standard
>	**Rh**	103	11.7	89.2				ug/L	3	Standard
	Mo	98	664.8	3.4	**0.2269**	0.005	2.0	ug/L	12	Standard
	Ag	107	130.7	32.3	**0.0058**	0.007	122.5	ug/L	84	Standard
	Cd	111	4.7	116.0	**0.0019**	0.004	218.1	mg/L	2	Standard
	Cd	114	48.8	144.0	**0.0137**	0.022	159.3	ug/L	2	Standard
>	**In**	115	737232.0	1.5				ug/L	707917	Standard
	Sn	118	77090.6	1.4	**18.7725**	0.086	0.5	ug/L	550	Standard
	Sb	123	835.3	5.5	**0.2562**	0.018	6.9	ug/L	64	Standard
	Ba	135	1771.4	3.6	**1.8175**	0.056	3.1	ug/L	8	Standard
	Ce	140	33.3	8.7				ug/L	22	Standard
>	**Tb**	159	991743.2	0.8				ug/L	944784	Standard
	Ho	165	11.7	65.5				ug/L	8	Standard
	Tl	203	57.3	14.1	**0.0072**	0.002	24.6	ug/L	5	Standard
	Tl	205	58.3	106.5	**0.0086**	0.012	136.5	ug/L	3	Standard
	Pb	206	422.7	14.2	**0.0591**	0.018	30.3	ug/L	197	Standard
	Pb	207	347.0	21.2	**0.0513**	0.024	47.6	ug/L	180	Standard
	Pb	208	1466.4	10.2	**0.0505**	0.012	22.9	ug/L	761	Standard
	U	238	70.7	45.8	**0.0130**	0.006	48.8	ug/L	0	Standard
>	**Bi**	209	655330.0	1.4				ug/L	628212	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3123.7	3.5	**7.9393**	0.207	2.6	mg/L	12	Standard
K	39	21.7	26.6	**0.2102**	0.079	37.7	mg/L	7	Standard
Ca	43	50.0	40.0	**3.1342**	2.124	67.8	mg/L	30	Standard
Fe	54	443.2	7.6	**0.0385**	0.012	31.1	mg/L	241	Standard
Fe	57	65.0	33.5	**0.0157**	0.027	172.2	mg/L	37	Standard
> **Sc-1**	45	120112.6	1.0				mg/L	108014	Standard
Cl	35	17209.8	2.6				ug/L	13720	Standard
Kr	83	1.3	43.3				ug/L	0	Standard
Br	81	1860.1	9.8				ug/L	750	Standard
P	31	17825.5	4.7				ug/L	15373	Standard
S	34	1088.4	1.1				ug/L	970	Standard
Sr	88	100.0	21.8				ug/L	5	Standard
C	12	66.7	45.8				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.9	120.2				mg/L	3	Standard
Ho-1	165	11.7	65.5				mg/L	8	Standard
Er	166	10.0	173.2				mg/L	17	Standard
I	127	3073.6	5.2				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.456	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.039	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		104.141
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		104.317
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 05, 2015

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, June 05, 2015 15:35:17
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	210786.5	4.6				ug/L	205676	Standard
	Be	9	53858.9	2.5	**51.2057**	1.182	2.3	ug/L	13	Standard
	Al	27	3026207.9	4.2	**51.4316**	0.307	0.6	ug/L	498	Standard
	Sc	45	114356.9	3.2				ug/L	108014	Standard
	Ti	47	32372.9	3.1	**102.3057**	1.358	1.3	ug/L	18	Standard
	V	51	347888.7	5.5	**51.4082**	1.029	2.0	ug/L	907	Standard
	Cr	52	380703.3	4.7	**51.5467**	0.618	1.2	ug/L	4635	Standard
	Cr	53	54051.3	3.5	**50.9555**	0.353	0.7	ug/L	255	Standard
	Mn	55	640642.4	3.9	**50.8764**	0.206	0.4	ug/L	746	Standard
	Co	59	394226.8	4.4	**51.5370**	0.531	1.0	ug/L	40	Standard
	Ni	60	122496.3	3.8	**50.6979**	0.684	1.3	ug/L	237	Standard
	Cu	65	126046.1	3.2	**51.3096**	0.506	1.0	ug/L	308	Standard
	Zn	66	76023.4	3.4	**50.5146**	0.973	1.9	ug/L	601	Standard
>	Ge	72	803652.3	3.9				ug/L	774356	Standard
	As	75	69581.9	3.3	**50.6548**	0.456	0.9	ug/L	-42	Standard
	Se	82	6263.9	3.6	**50.5251**	0.551	1.1	ug/L	16	Standard
	Se-1	77	4964.5	5.0	**50.5992**	1.269	2.5	ug/L	43	Standard
>	Ga	71	35.0	14.3				mg/L	30	Standard
	Rb	85	771.7	6.0				ug/L	15	Standard
	Y	89	958146.1	3.6				ug/L	919916	Standard
>	Rh	103	15.0	88.2				ug/L	3	Standard
	Mo	98	288703.5	4.2	**104.0879**	0.203	0.2	ug/L	12	Standard
	Ag	107	291971.3	3.0	**50.7641**	0.538	1.1	ug/L	84	Standard
	Cd	111	66857.2	3.2	**50.5758**	0.649	1.3	mg/L	2	Standard
	Cd	114	161261.0	1.9	**50.9289**	1.071	2.1	ug/L	2	Standard
>	In	115	727839.6	4.0				ug/L	707917	Standard
	Sn	118	194920.3	3.8	**48.2767**	0.133	0.3	ug/L	550	Standard
	Sb	123	155140.3	3.1	**50.0877**	0.497	1.0	ug/L	64	Standard
	Ba	135	48278.5	3.5	**50.5002**	0.658	1.3	ug/L	8	Standard
	Ce	140	28.3	20.4				ug/L	22	Standard
>	Tb	159	971954.9	4.6				ug/L	944784	Standard
	Ho	165	11.7	24.7				ug/L	8	Standard
	Tl	203	248250.2	2.8	**51.0085**	0.450	0.9	ug/L	5	Standard
	Tl	205	261081.1	2.5	**51.8297**	0.927	1.8	ug/L	3	Standard
	Pb	206	160837.4	3.3	**51.1611**	0.649	1.3	ug/L	197	Standard
	Pb	207	146886.6	3.0	**51.2696**	0.455	0.9	ug/L	180	Standard
	Pb	208	609185.3	2.7	**51.0861**	0.344	0.7	ug/L	761	Standard
	U	238	247985.3	2.8	**51.0432**	0.300	0.6	ug/L	0	Standard
>	Bi	209	630992.5	3.1				ug/L	628212	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	2013.5	3.6	**5.3578**	0.049	0.9	mg/L	12	Standard
K	39	343.3	14.4	**5.0349**	0.911	18.1	mg/L	7	Standard
Ca	43	53.3	47.2	**3.6985**	2.594	70.1	mg/L	30	Standard
Fe	54	13069.5	2.2	**5.2478**	0.069	1.3	mg/L	241	Standard
Fe	57	4102.2	1.8	**5.3932**	0.218	4.0	mg/L	37	Standard
Sc-1	45	114356.9	3.2				mg/L	108014	Standard
Cl	35	16216.0	0.5				ug/L	13720	Standard
Kr	83	0.7	173.2				ug/L	0	Standard
Br	81	916.7	1.7				ug/L	750	Standard
P	31	17935.6	3.0				ug/L	15373	Standard
S	34	1300.1	3.5				ug/L	970	Standard
Sr	88	8.3	34.6				ug/L	5	Standard
C	12	46.7	12.4				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	13.0	117.0				mg/L	3	Standard
Ho-1	165	11.7	24.7				mg/L	8	Standard
Er	166	6.7	86.6				mg/L	17	Standard
I	127	391.7	18.2				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.411		
Al	27	102.863		
Sc	45			
Ti	47	102.306		
V	51	102.816		
Cr	52	103.093		
Cr	53			
Mn	55	101.753		
Co	59	103.074		
Ni	60	101.396		
Cu	65	102.619		
Zn	66	101.029		
Ge	72		103.783	
As	75	101.310		
Se	82	101.050		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
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Rb	85			
Y	89			
Rh	103			
Mo	98	104.088		
Ag	107	101.528		
Cd	111	101.152		
Cd	114			
In	115			102.814
Sn	118	96.553		
Sb	123	100.175		
Ba	135	101.000		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.017		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.172		
U	238	102.086		
Bi	209			100.443
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Friday, June 05, 2015 15:37:34
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, June 05, 2015 15:38:29
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	204343.5	4.1				ug/L	205676	Standard
	Be	9	38.3	19.9	**0.0300**	0.006	20.2	ug/L	13	Standard
	Al	27	1383.4	63.1	**-0.0080**	0.015	184.3	ug/L	498	Standard
	Sc	45	107410.1	5.4				ug/L	108014	Standard
	Ti	47	20.7	7.4	**0.0205**	0.003	15.8	ug/L	18	Standard
	V	51	896.8	14.3	**0.0035**	0.016	456.3	ug/L	907	Standard
	Cr	52	4394.6	4.7	**-0.0231**	0.015	65.2	ug/L	4635	Standard
	Cr	53	768.4	5.9	**0.5368**	0.069	12.9	ug/L	255	Standard
	Mn	55	1182.7	23.0	**0.0155**	0.021	134.0	ug/L	746	Standard
	Co	59	140.3	63.0	**0.0130**	0.012	90.4	ug/L	40	Standard
	Ni	60	725.7	6.3	**0.2080**	0.011	5.4	ug/L	237	Standard
	Cu	65	568.0	3.2	**0.1033**	0.012	11.7	ug/L	308	Standard
	Zn	66	793.0	6.6	**0.0786**	0.029	37.2	ug/L	601	Standard
>	**Ge**	72	758716.0	3.7				ug/L	774356	Standard
	As	75	-37.8	74.1	**-0.0132**	0.022	166.4	ug/L	-42	Standard
	Se	82	14.9	7.7	**-0.0917**	0.013	13.9	ug/L	16	Standard
	Se-1	77	54.3	12.9	**0.1558**	0.056	35.8	ug/L	43	Standard
>	**Ga**	71	20.0	0.0				mg/L	30	Standard
	Rb	85	31.7	18.2				ug/L	15	Standard
	Y	89	918348.7	2.4				ug/L	919916	Standard
>	**Rh**	103	1.7	173.2				ug/L	3	Standard
	Mo	98	85.6	42.2	**0.0228**	0.013	57.4	ug/L	12	Standard
	Ag	107	115.7	3.9	**0.0048**	0.001	27.4	ug/L	84	Standard
	Cd	111	4.6	62.5	**0.0020**	0.002	113.6	mg/L	2	Standard
	Cd	114	4.9	88.8	**0.0003**	0.001	581.8	ug/L	2	Standard
>	**In**	115	685303.3	2.2				ug/L	707917	Standard
	Sn	118	563.3	4.9	**0.0223**	0.010	46.9	ug/L	550	Standard
	Sb	123	179.3	9.5	**0.0514**	0.006	12.4	ug/L	64	Standard
	Ba	135	9.3	34.4	**-0.0015**	0.004	233.3	ug/L	8	Standard
	Ce	140	5.0	100.0				ug/L	22	Standard
>	**Tb**	159	918252.4	2.3				ug/L	944784	Standard
	Ho	165	10.0	50.0				ug/L	8	Standard
	Tl	203	16.0	22.5	**-0.0008**	0.001	102.9	ug/L	5	Standard
	Tl	205	71.7	77.2	**0.0121**	0.011	93.9	ug/L	3	Standard
	Pb	206	223.7	6.1	**0.0026**	0.003	99.1	ug/L	197	Standard
	Pb	207	188.7	15.8	**0.0022**	0.009	408.0	ug/L	180	Standard
	Pb	208	889.7	16.4	**0.0087**	0.012	139.7	ug/L	761	Standard
	U	238	53.0	95.1	**0.0102**	0.011	105.5	ug/L	0	Standard
>	**Bi**	209	614186.1	2.5				ug/L	628212	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	33.3	37.7	**0.0414**	0.039	93.9	mg/L	12	Standard
K	39	3.3	86.6	**-0.0447**	0.045	100.4	mg/L	7	Standard
Ca	43	18.3	78.7	**0.0151**	1.521	10088.5	mg/L	30	Standard
Fe	54	331.0	8.3	**0.0099**	0.009	88.3	mg/L	241	Standard
Fe	57	26.7	54.1	**-0.0292**	0.020	66.8	mg/L	37	Standard
> **Sc-1**	45	107410.1	5.4				mg/L	108014	Standard
Cl	35	15606.0	3.5				ug/L	13720	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	866.7	3.5				ug/L	750	Standard
P	31	16619.1	1.8				ug/L	15373	Standard
S	34	1276.7	5.2				ug/L	970	Standard
Sr	88	3.3	173.2				ug/L	5	Standard
C	12	56.7	10.2				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.5	222.5				mg/L	3	Standard
Ho-1	165	10.0	50.0				mg/L	8	Standard
Er	166	16.7	34.6				mg/L	17	Standard
I	127	308.3	0.9				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.980	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.806
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.767
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1506019103SDL WG526532-02
Sample Date/Time: Friday, June 05, 2015 15:41:42
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	216433.9	2.5				ug/L	205676	Standard
	Be	9	20.0	75.0	**0.0110**	0.014	122.8	ug/L	13	Standard
	Al	27	148602.0	2.1	**2.4304**	0.102	4.2	ug/L	498	Standard
	Sc	45	115570.8	1.7				ug/L	108014	Standard
	Ti	47	23.7	17.1	**0.0251**	0.012	48.8	ug/L	18	Standard
	V	51	837.5	14.2	**-0.0145**	0.018	127.6	ug/L	907	Standard
	Cr	52	8897.9	0.8	**0.5424**	0.018	3.2	ug/L	4635	Standard
	Cr	53	1265.1	4.9	**0.9459**	0.045	4.7	ug/L	255	Standard
	Mn	55	11710.5	0.7	**0.8351**	0.018	2.1	ug/L	746	Standard
	Co	59	132.3	12.3	**0.0109**	0.002	17.3	ug/L	40	Standard
	Ni	60	896.7	5.3	**0.2560**	0.015	5.8	ug/L	237	Standard
	Cu	65	746.4	1.0	**0.1580**	0.001	0.8	ug/L	308	Standard
	Zn	66	3504.7	2.1	**1.8344**	0.075	4.1	ug/L	601	Standard
>	**Ge**	72	814754.7	1.2				ug/L	774356	Standard
	As	75	-11.0	80.5	**0.0083**	0.006	76.8	ug/L	-42	Standard
	Se	82	28.8	10.8	**0.0108**	0.028	254.3	ug/L	16	Standard
	Se-1	77	67.3	11.1	**0.2478**	0.069	27.9	ug/L	43	Standard
>	**Ga**	71	66.7	22.9				mg/L	30	Standard
	Rb	85	386.7	11.0				ug/L	15	Standard
	Y	89	951921.2	1.8				ug/L	919916	Standard
>	**Rh**	103	3.3	173.2				ug/L	3	Standard
	Mo	98	227.3	8.6	**0.0719**	0.006	8.6	ug/L	12	Standard
	Ag	107	160.3	34.3	**0.0110**	0.009	81.0	ug/L	84	Standard
	Cd	111	13.0	87.3	**0.0081**	0.009	105.4	mg/L	2	Standard
	Cd	114	9.0	487.8	**0.0013**	0.014	1086.0	ug/L	2	Standard
>	**In**	115	730646.9	2.2				ug/L	707917	Standard
	Sn	118	16003.4	1.8	**3.8324**	0.027	0.7	ug/L	550	Standard
	Sb	123	225.0	19.9	**0.0620**	0.013	20.7	ug/L	64	Standard
	Ba	135	415.0	5.4	**0.4205**	0.018	4.2	ug/L	8	Standard
	Ce	140	18.3	41.7				ug/L	22	Standard
>	**Tb**	159	970104.0	1.8				ug/L	944784	Standard
	Ho	165	13.3	21.7				ug/L	8	Standard
	Tl	203	71.3	53.9	**0.0102**	0.008	75.3	ug/L	5	Standard
	Tl	205	28.3	56.7	**0.0030**	0.003	101.9	ug/L	3	Standard
	Pb	206	394.7	8.4	**0.0527**	0.009	17.1	ug/L	197	Standard
	Pb	207	342.3	13.1	**0.0519**	0.014	27.4	ug/L	180	Standard
	Pb	208	1428.4	5.0	**0.0496**	0.005	10.3	ug/L	761	Standard
	U	238	37.3	3.1	**0.0066**	0.000	4.1	ug/L	0	Standard
>	**Bi**	209	643135.7	1.1				ug/L	628212	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	716.7	3.8	**1.8518**	0.077	4.1	mg/L	12	Standard
K	39	1.7	173.2	**-0.0716**	0.043	60.2	mg/L	7	Standard
Ca	43	38.3	27.2	**2.0800**	1.181	56.8	mg/L	30	Standard
Fe	54	349.0	8.6	**0.0069**	0.010	149.9	mg/L	241	Standard
Fe	57	41.7	54.1	**-0.0115**	0.030	261.7	mg/L	37	Standard
> **Sc-1**	45	115570.8	1.7				mg/L	108014	Standard
Cl	35	16170.0	1.4				ug/L	13720	Standard
Kr	83	0.7	86.6				ug/L	0	Standard
Br	81	1010.0	15.4				ug/L	750	Standard
P	31	17815.5	1.1				ug/L	15373	Standard
S	34	1220.0	3.0				ug/L	970	Standard
Sr	88	40.0	57.3				ug/L	5	Standard
C	12	63.3	50.8				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	26.5	21.3				mg/L	3	Standard
Ho-1	165	13.3	21.7				mg/L	8	Standard
Er	166	3.3	173.2				mg/L	17	Standard
I	127	800.0	7.1				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.230	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.217	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1506019103SDL WG526532-02
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.211
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.376
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 05, 2015

Method 6020 - Summary Report

Sample ID: L1506018904
Sample Date/Time: Friday, June 05, 2015 15:44:54
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1000
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	211765.4	2.9				ug/L	205676	Standard
	Be	9	21.7	48.0	**0.0133**	0.010	77.2	ug/L	13	Standard
	Al	27	15663.1	2.6	**0.2331**	0.003	1.2	ug/L	498	Standard
	Sc	45	114919.7	4.4				ug/L	108014	Standard
	Ti	47	24.0	11.0	**0.0274**	0.010	37.8	ug/L	18	Standard
	V	51	-139.1	24.1	**-0.1576**	0.005	3.0	ug/L	907	Standard
	Cr	52	71094.8	2.4	**9.1019**	0.194	2.1	ug/L	4635	Standard
	Cr	53	9796.5	2.6	**9.0516**	0.092	1.0	ug/L	255	Standard
	Mn	55	4387.6	2.7	**0.2656**	0.005	2.0	ug/L	746	Standard
	Co	59	54.3	10.1	**0.0010**	0.001	80.1	ug/L	40	Standard
	Ni	60	770.7	5.3	**0.2096**	0.024	11.3	ug/L	237	Standard
	Cu	65	696.0	4.2	**0.1420**	0.015	10.5	ug/L	308	Standard
	Zn	66	3756.1	1.3	**2.0378**	0.050	2.5	ug/L	601	Standard
>	**Ge**	72	802794.5	2.5				ug/L	774356	Standard
	As	75	-39.5	43.8	**-0.0124**	0.012	96.1	ug/L	-42	Standard
	Se	82	22.8	18.1	**-0.0346**	0.029	84.5	ug/L	16	Standard
	Se-1	77	50.7	9.1	**0.0865**	0.038	44.3	ug/L	43	Standard
>	**Ga**	71	65.0	7.7				mg/L	30	Standard
	Rb	85	60.0	14.4				ug/L	15	Standard
	Y	89	954264.7	3.3				ug/L	919916	Standard
>	**Rh**	103	0.0					ug/L	3	Standard
	Mo	98	88.3	1.8	**0.0223**	0.001	4.6	ug/L	12	Standard
	Ag	107	82.3	15.4	**-0.0022**	0.002	87.6	ug/L	84	Standard
	Cd	111	1.9	0.7	**-0.0002**	0.000	15.7	mg/L	2	Standard
	Cd	114	17.2	110.3	**0.0040**	0.006	146.9	ug/L	2	Standard
>	**In**	115	723739.4	2.0				ug/L	707917	Standard
	Sn	118	788.4	11.8	**0.0704**	0.022	31.5	ug/L	550	Standard
	Sb	123	80.3	29.8	**0.0158**	0.007	45.9	ug/L	64	Standard
	Ba	135	43.3	16.4	**0.0336**	0.007	19.5	ug/L	8	Standard
	Ce	140	25.0	40.0				ug/L	22	Standard
>	**Tb**	159	967809.1	1.8				ug/L	944784	Standard
	Ho	165	13.3	57.3				ug/L	8	Standard
	Tl	203	9.0	40.1	**-0.0023**	0.001	32.0	ug/L	5	Standard
	Tl	205	11.7	99.0	**-0.0002**	0.002	1245.6	ug/L	3	Standard
	Pb	206	430.0	2.3	**0.0641**	0.002	2.6	ug/L	197	Standard
	Pb	207	375.3	12.8	**0.0634**	0.014	22.1	ug/L	180	Standard
	Pb	208	1595.7	5.0	**0.0637**	0.004	6.8	ug/L	761	Standard
	U	238	7.0	28.6	**0.0004**	0.000	93.1	ug/L	0	Standard
>	**Bi**	209	641842.0	1.8				ug/L	628212	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	53.3	23.6	**0.0880**	0.037	41.5	mg/L	12	Standard
K	39	5.0	100.0	**-0.0209**	0.075	357.5	mg/L	7	Standard
Ca	43	20.0	50.0	**0.0995**	1.078	1082.8	mg/L	30	Standard
Fe	54	335.9	19.0	**0.0031**	0.031	1004.8	mg/L	241	Standard
Fe	57	48.3	23.9	**-0.0025**	0.015	611.5	mg/L	37	Standard
> **Sc-1**	45	114919.7	4.4				mg/L	108014	Standard
Cl	35	16319.5	3.9				ug/L	13720	Standard
Kr	83	0.7	173.2				ug/L	0	Standard
Br	81	823.4	18.6				ug/L	750	Standard
P	31	17808.8	5.5				ug/L	15373	Standard
S	34	1275.1	5.4				ug/L	970	Standard
Sr	88	11.7	24.7				ug/L	5	Standard
C	12	70.0	37.8				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	36.3	16.3				mg/L	3	Standard
Ho-1	165	13.3	57.3				mg/L	8	Standard
Er	166	6.7	86.6				mg/L	17	Standard
I	127	245.0	5.4				mg/L	138	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		102.961	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		103.673	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1506018904
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.235
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.170
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 05, 2015

Method 6020 - Summary Report

Sample ID: L1506019213
Sample Date/Time: Friday, June 05, 2015 15:48:04
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	227187.7	2.1				ug/L	205676	Standard
	Be	9	91.7	45.7	**0.0738**	0.039	52.2	ug/L	13	Standard
	Al	27	2767131.9	1.7	**43.6321**	1.005	2.3	ug/L	498	Standard
	Sc	45	121146.1	3.6				ug/L	108014	Standard
	Ti	47	610.0	34.4	**1.7836**	0.665	37.3	ug/L	18	Standard
	V	51	1784.0	3.1	**0.1128**	0.004	4.0	ug/L	907	Standard
	Cr	52	7016.6	4.3	**0.2474**	0.020	8.0	ug/L	4635	Standard
	Cr	53	930.0	9.6	**0.5954**	0.053	8.9	ug/L	255	Standard
	Mn	55	1890351.4	1.9	**141.9935**	2.703	1.9	ug/L	746	Standard
	Co	59	17724.7	1.5	**2.1838**	0.043	2.0	ug/L	40	Standard
	Ni	60	12285.6	2.1	**4.7036**	0.095	2.0	ug/L	237	Standard
	Cu	65	3830.5	3.9	**1.3342**	0.036	2.7	ug/L	308	Standard
	Zn	66	11204.1	1.9	**6.6155**	0.157	2.4	ug/L	601	Standard
>	**Ge**	72	850820.3	3.1				ug/L	774356	Standard
	As	75	109.5	48.1	**0.0920**	0.038	40.9	ug/L	-42	Standard
	Se	82	36.6	16.6	**0.0618**	0.054	87.7	ug/L	16	Standard
	Se-1	77	76.7	25.0	**0.3069**	0.162	52.8	ug/L	43	Standard
>	**Ga**	71	181.7	18.7				mg/L	30	Standard
	Rb	85	13944.7	2.4				ug/L	15	Standard
	Y	89	997150.4	4.0				ug/L	919916	Standard
>	**Rh**	103	86.7	16.7				ug/L	3	Standard
	Mo	98	243.5	4.0	**0.0761**	0.006	7.4	ug/L	12	Standard
	Ag	107	81.0	10.7	**-0.0028**	0.002	65.4	ug/L	84	Standard
	Cd	111	54.3	9.4	**0.0385**	0.004	10.6	mg/L	2	Standard
	Cd	114	112.9	39.7	**0.0333**	0.014	41.2	ug/L	2	Standard
>	**In**	115	745423.4	3.7				ug/L	707917	Standard
	Sn	118	700.0	9.8	**0.0435**	0.018	41.9	ug/L	550	Standard
	Sb	123	173.0	6.7	**0.0445**	0.005	12.3	ug/L	64	Standard
	Ba	135	6042.2	1.1	**6.1635**	0.164	2.7	ug/L	8	Standard
	Ce	140	1245.1	11.9				ug/L	22	Standard
>	**Tb**	159	1002564.8	3.4				ug/L	944784	Standard
	Ho	165	145.0	13.8				ug/L	8	Standard
	Tl	203	65.0	18.7	**0.0085**	0.002	22.3	ug/L	5	Standard
	Tl	205	41.7	18.3	**0.0054**	0.002	27.8	ug/L	3	Standard
	Pb	206	534.0	3.6	**0.0920**	0.007	7.8	ug/L	197	Standard
	Pb	207	426.3	5.8	**0.0768**	0.005	5.9	ug/L	180	Standard
	Pb	208	1938.4	0.8	**0.0875**	0.004	4.9	ug/L	761	Standard
	U	238	179.7	3.8	**0.0343**	0.001	3.5	ug/L	0	Standard
>	**Bi**	209	660798.6	3.5				ug/L	628212	Standard

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Na	23	1.7	173.2	**19.1652**	33.186	173.2	mg/L	0	Standard
Mg	24	1348.4	16.8	**3.3585**	0.486	14.5	mg/L	12	Standard
K	39	70.0	28.6	**0.8837**	0.255	28.8	mg/L	7	Standard
Ca	43	218.3	7.4	**20.3536**	1.358	6.7	mg/L	30	Standard
Fe	54	494.2	14.9	**0.0564**	0.022	38.8	mg/L	241	Standard
Fe	57	190.0	20.6	**0.1731**	0.056	32.4	mg/L	37	Standard
> **Sc-1**	45	121146.1	3.6				mg/L	108014	Standard
Cl	35	18636.1	4.0				ug/L	13720	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	1550.1	21.3				ug/L	750	Standard
P	31	19652.7	2.2				ug/L	15373	Standard
S	34	1238.4	9.1				ug/L	970	Standard
Sr	88	871.7	19.4				ug/L	5	Standard
C	12	93.3	37.6				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	144.3	37.8				mg/L	3	Standard
Ho-1	165	145.0	13.8				mg/L	8	Standard
Er	166	120.0	30.0				mg/L	17	Standard
I	127	2766.9	1.7				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.459	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.875	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.298
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.187
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: FBLANK 13 WG526291-04
Sample Date/Time: Friday, June 05, 2015 15:51:16
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	227316.0	1.1				ug/L	205676	Standard
	Be	9	25.0	34.6	**0.0146**	0.008	52.7	ug/L	13	Standard
	Al	27	4590.7	10.8	**0.0404**	0.009	21.2	ug/L	498	Standard
	Sc	45	118407.6	1.0				ug/L	108014	Standard
	Ti	47	24.7	16.4	**0.0261**	0.013	49.3	ug/L	18	Standard
	V	51	1285.3	14.2	**0.0457**	0.027	59.8	ug/L	907	Standard
	Cr	52	6549.4	1.2	**0.1992**	0.017	8.7	ug/L	4635	Standard
	Cr	53	711.7	15.4	**0.4100**	0.097	23.7	ug/L	255	Standard
	Mn	55	6861.9	3.5	**0.4392**	0.022	5.0	ug/L	746	Standard
	Co	59	68.7	65.5	**0.0025**	0.006	228.5	ug/L	40	Standard
	Ni	60	949.7	2.5	**0.2667**	0.010	3.8	ug/L	237	Standard
	Cu	65	932.4	0.9	**0.2221**	0.006	2.9	ug/L	308	Standard
	Zn	66	4344.6	2.1	**2.3072**	0.083	3.6	ug/L	601	Standard
>	**Ge**	72	838900.6	1.0				ug/L	774356	Standard
	As	75	-19.4	58.7	**0.0026**	0.008	303.6	ug/L	-42	Standard
	Se	82	21.1	5.9	**-0.0556**	0.011	20.1	ug/L	16	Standard
	Se-1	77	57.0	12.2	**0.1264**	0.063	49.5	ug/L	43	Standard
>	**Ga**	71	48.3	39.2				mg/L	30	Standard
	Rb	85	75.0	23.1				ug/L	15	Standard
	Y	89	992441.3	1.7				ug/L	919916	Standard
>	**Rh**	103	0.0					ug/L	3	Standard
	Mo	98	42.0	59.6	**0.0051**	0.009	177.1	ug/L	12	Standard
	Ag	107	100.7	10.3	**0.0005**	0.002	394.6	ug/L	84	Standard
	Cd	111	1.3	89.0	**-0.0007**	0.001	117.1	mg/L	2	Standard
	Cd	114	9.2	108.1	**0.0014**	0.003	213.7	ug/L	2	Standard
>	**In**	115	745487.2	1.1				ug/L	707917	Standard
	Sn	118	590.0	9.6	**0.0166**	0.013	77.5	ug/L	550	Standard
	Sb	123	117.9	17.7	**0.0271**	0.007	25.8	ug/L	64	Standard
	Ba	135	164.0	4.3	**0.1556**	0.006	4.0	ug/L	8	Standard
	Ce	140	863.4	3.9				ug/L	22	Standard
>	**Tb**	159	991933.1	0.7				ug/L	944784	Standard
	Ho	165	10.0	100.0				ug/L	8	Standard
	Tl	203	8.3	25.0	**-0.0025**	0.000	15.2	ug/L	5	Standard
	Tl	205	11.7	173.2	**-0.0002**	0.004	1798.5	ug/L	3	Standard
	Pb	206	286.0	0.9	**0.0164**	0.001	8.0	ug/L	197	Standard
	Pb	207	247.0	13.0	**0.0171**	0.012	69.6	ug/L	180	Standard
	Pb	208	1080.7	2.8	**0.0186**	0.004	20.5	ug/L	761	Standard
	U	238	9.7	121.2	**0.0009**	0.002	249.8	ug/L	0	Standard
>	**Bi**	209	661137.6	1.6				ug/L	628212	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	26.7	21.7	**0.0142**	0.015	108.3	mg/L	12	Standard
K	39	3.3	173.2	**-0.0487**	0.083	170.0	mg/L	7	Standard
Ca	43	16.7	17.3	**-0.3071**	0.290	94.5	mg/L	30	Standard
Fe	54	415.6	7.1	**0.0301**	0.012	38.7	mg/L	241	Standard
Fe	57	36.7	28.4	**-0.0193**	0.014	71.3	mg/L	37	Standard
Sc-1	45	118407.6	1.0				mg/L	108014	Standard
Cl	35	17664.3	1.2				ug/L	13720	Standard
Kr	83	1.3	114.6				ug/L	0	Standard
Br	81	986.7	17.4				ug/L	750	Standard
P	31	19696.1	3.4				ug/L	15373	Standard
S	34	1236.7	10.4				ug/L	970	Standard
Sr	88	6.7	114.6				ug/L	5	Standard
C	12	63.3	48.2				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.2	41.6				mg/L	3	Standard
Ho-1	165	10.0	100.0				mg/L	8	Standard
Er	166	23.3	65.5				mg/L	17	Standard
I	127	366.7	8.9				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.521	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.335	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.307
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.241
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, June 05, 2015 15:54:30
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	225394.4	1.6				ug/L	205676	Standard
	Be	9	56060.2	0.9	**49.8192**	1.035	2.1	ug/L	13	Standard
	Al	27	3215271.1	2.5	**51.0919**	0.601	1.2	ug/L	498	Standard
	Sc	45	121555.8	2.3				ug/L	108014	Standard
	Ti	47	33533.1	0.4	**100.5206**	2.442	2.4	ug/L	18	Standard
	V	51	368822.0	1.7	**51.7201**	0.804	1.6	ug/L	907	Standard
	Cr	52	400632.9	1.3	**51.4675**	0.823	1.6	ug/L	4635	Standard
	Cr	53	56423.2	0.4	**50.4600**	1.238	2.5	ug/L	255	Standard
	Mn	55	670426.0	1.5	**50.5042**	0.707	1.4	ug/L	746	Standard
	Co	59	415341.4	1.6	**51.5112**	0.713	1.4	ug/L	40	Standard
	Ni	60	128525.6	1.6	**50.4556**	0.847	1.7	ug/L	237	Standard
	Cu	65	130021.2	1.3	**50.1982**	0.984	2.0	ug/L	308	Standard
	Zn	66	79100.6	1.2	**49.8414**	0.792	1.6	ug/L	601	Standard
>	Ge	72	847342.4	2.4				ug/L	774356	Standard
	As	75	71951.1	1.9	**49.6752**	0.422	0.8	ug/L	-42	Standard
	Se	82	6508.8	1.6	**49.7902**	0.419	0.8	ug/L	16	Standard
	Se-1	77	5183.2	0.6	**50.1211**	0.991	2.0	ug/L	43	Standard
>	Ga	71	53.3	14.3				mg/L	30	Standard
	Rb	85	846.7	12.7				ug/L	15	Standard
	Y	89	1007140.4	1.9				ug/L	919916	Standard
>	Rh	103	6.7	43.3				ug/L	3	Standard
	Mo	98	305256.0	1.5	**104.7316**	1.234	1.2	ug/L	12	Standard
	Ag	107	304145.9	1.2	**50.3070**	0.491	1.0	ug/L	84	Standard
	Cd	111	70364.5	1.6	**50.6370**	0.371	0.7	mg/L	2	Standard
	Cd	114	168329.4	0.5	**50.5647**	0.842	1.7	ug/L	2	Standard
>	In	115	764976.0	2.2				ug/L	707917	Standard
	Sn	118	204222.4	1.8	**48.1255**	0.204	0.4	ug/L	550	Standard
	Sb	123	161223.8	0.7	**49.5253**	0.939	1.9	ug/L	64	Standard
	Ba	135	50822.1	1.0	**50.5799**	0.622	1.2	ug/L	8	Standard
	Ce	140	31.7	24.1				ug/L	22	Standard
>	Tb	159	1021055.1	2.3				ug/L	944784	Standard
	Ho	165	8.3	69.3				ug/L	8	Standard
	Tl	203	256833.6	1.0	**50.3530**	0.800	1.6	ug/L	5	Standard
	Tl	205	271564.3	1.9	**51.4240**	0.343	0.7	ug/L	3	Standard
	Pb	206	168010.1	1.2	**50.9961**	0.891	1.7	ug/L	197	Standard
	Pb	207	152395.3	1.3	**50.7527**	0.732	1.4	ug/L	180	Standard
	Pb	208	638401.7	2.1	**51.0756**	0.808	1.6	ug/L	761	Standard
	U	238	260123.4	1.8	**51.0865**	0.982	1.9	ug/L	0	Standard
>	Bi	209	661421.6	2.5				ug/L	628212	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	1935.1	2.0	**4.8396**	0.018	0.4	mg/L	12	Standard
K	39	385.0	6.5	**5.3031**	0.454	8.6	mg/L	7	Standard
Ca	43	90.0	20.0	**7.1342**	1.696	23.8	mg/L	30	Standard
Fe	54	14061.7	5.9	**5.3095**	0.199	3.7	mg/L	241	Standard
Fe	57	4230.6	1.8	**5.2278**	0.122	2.3	mg/L	37	Standard
Sc-1	45	121555.8	2.3				mg/L	108014	Standard
Cl	35	17417.3	3.4				ug/L	13720	Standard
Kr	83	0.7	86.6				ug/L	0	Standard
Br	81	1113.4	11.7				ug/L	750	Standard
P	31	18965.2	0.9				ug/L	15373	Standard
S	34	1500.1	4.4				ug/L	970	Standard
Sr	88	3.3	86.6				ug/L	5	Standard
C	12	43.3	74.2				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	15.5	39.0				mg/L	3	Standard
Ho-1	165	8.3	69.3				mg/L	8	Standard
Er	166	23.3	49.5				mg/L	17	Standard
I	127	248.3	11.4				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	99.638		
Al	27	102.184		
Sc	45			
Ti	47	100.521		
V	51	103.440		
Cr	52	102.935		
Cr	53			
Mn	55	101.008		
Co	59	103.022		
Ni	60	100.911		
Cu	65	100.396		
Zn	66	99.683		
Ge	72		109.425	
As	75	99.350		
Se	82	99.580		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	104.732		
Ag	107	100.614		
Cd	111	101.274		
Cd	114			
In	115			108.060
Sn	118	96.251		
Sb	123	99.051		
Ba	135	101.160		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.706		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.151		
U	238	102.173		
Bi	209			105.286
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, June 05, 2015 15:57:42
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	232288.6	3.7				ug/L	205676	Standard
	Be	9	40.0	54.5	**0.0274**	0.020	71.7	ug/L	13	Standard
	Al	27	866.7	38.9	**-0.0186**	0.005	29.5	ug/L	498	Standard
	Sc	45	124127.0	4.3				ug/L	108014	Standard
	Ti	47	18.0	64.1	**0.0050**	0.035	712.0	ug/L	18	Standard
	V	51	860.2	10.1	**-0.0173**	0.014	78.0	ug/L	907	Standard
	Cr	52	4807.1	0.8	**-0.0429**	0.016	37.6	ug/L	4635	Standard
	Cr	53	600.0	9.3	**0.2987**	0.065	21.6	ug/L	255	Standard
	Mn	55	1051.0	11.0	**-0.0053**	0.010	185.6	ug/L	746	Standard
	Co	59	76.0	65.0	**0.0033**	0.006	191.9	ug/L	40	Standard
	Ni	60	632.0	2.9	**0.1354**	0.015	10.9	ug/L	237	Standard
	Cu	65	528.7	3.1	**0.0599**	0.007	11.0	ug/L	308	Standard
	Zn	66	860.7	2.9	**0.0566**	0.002	3.4	ug/L	601	Standard
>	**Ge**	72	857051.4	3.2				ug/L	774356	Standard
	As	75	-21.9	127.7	**0.0016**	0.018	1124.1	ug/L	-42	Standard
	Se	82	26.5	21.8	**-0.0175**	0.049	282.9	ug/L	16	Standard
	Se-1	77	58.3	26.0	**0.1264**	0.137	108.7	ug/L	43	Standard
>	**Ga**	71	15.0	33.3				mg/L	30	Standard
	Rb	85	18.3	15.7				ug/L	15	Standard
	Y	89	1011241.7	3.4				ug/L	919916	Standard
>	**Rh**	103	0.0					ug/L	3	Standard
	Mo	98	78.9	53.8	**0.0176**	0.015	86.6	ug/L	12	Standard
	Ag	107	161.0	45.8	**0.0102**	0.013	125.2	ug/L	84	Standard
	Cd	111	13.2	129.7	**0.0080**	0.013	156.9	mg/L	2	Standard
	Cd	114	20.9	193.1	**0.0050**	0.012	246.4	ug/L	2	Standard
>	**In**	115	762570.8	3.2				ug/L	707917	Standard
	Sn	118	586.7	10.7	**0.0127**	0.016	125.3	ug/L	550	Standard
	Sb	123	161.9	40.1	**0.0399**	0.021	52.3	ug/L	64	Standard
	Ba	135	24.3	67.6	**0.0125**	0.017	135.2	ug/L	8	Standard
	Ce	140	11.7	65.5				ug/L	22	Standard
>	**Tb**	159	1022196.7	2.6				ug/L	944784	Standard
	Ho	165	10.0					ug/L	8	Standard
	Tl	203	46.3	139.6	**0.0048**	0.013	262.6	ug/L	5	Standard
	Tl	205	13.3	142.0	**0.0000**	0.004	13029.8	ug/L	3	Standard
	Pb	206	261.7	9.8	**0.0068**	0.009	136.4	ug/L	197	Standard
	Pb	207	223.0	4.7	**0.0068**	0.005	73.9	ug/L	180	Standard
	Pb	208	842.3	3.3	**-0.0025**	0.003	124.9	ug/L	761	Standard
	U	238	14.0	105.2	**0.0017**	0.003	167.4	ug/L	0	Standard
>	**Bi**	209	681578.9	2.8				ug/L	628212	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	31.7	24.1	**0.0229**	0.015	67.1	mg/L	12	Standard
K	39	3.3	86.6	**-0.0508**	0.040	78.1	mg/L	7	Standard
Ca	43	18.3	56.8	**-0.2465**	0.951	385.8	mg/L	30	Standard
Fe	54	376.2	21.5	**0.0069**	0.025	357.3	mg/L	241	Standard
Fe	57	20.0	25.0	**-0.0419**	0.007	16.1	mg/L	37	Standard
> **Sc-1**	45	124127.0	4.3				mg/L	108014	Standard
Cl	35	17897.2	3.2				ug/L	13720	Standard
Kr	83	0.7	86.6				ug/L	0	Standard
Br	81	926.7	12.6				ug/L	750	Standard
P	31	18823.4	2.4				ug/L	15373	Standard
S	34	1478.4	9.6				ug/L	970	Standard
Sr	88	11.7	24.7				ug/L	5	Standard
C	12	63.3	50.8				mg/L	40	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	13.0	89.8				mg/L	3	Standard
Ho-1	165	10.0					mg/L	8	Standard
Er	166	6.7	86.6				mg/L	17	Standard
I	127	190.0	20.9				mg/L	138	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.679	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.720
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.495
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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2.4 General Chemistry Data

2.4.1 Method 9056

2.4.1.1 Summary Data

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-01	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW13-052015	**Prep Method:**	9056	**Prep Date:**	05/21/2015 15:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG524674	**Analyst:**	ALS	**Run Date:**	05/21/2015 17:12
Collect Date:	05/20/2015 08:30	**Dilution:**	5	**File ID:**	I1_052115-07
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	442	J	2.00	1.00	0.500
Nitrate	14797-55-8	1.00	U	2.00	1.00	0.500
Nitrite	14797-65-0	0.850	J	2.00	1.00	0.500
Sulfate	14808-79-8	319		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-01	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW13-052015	**Prep Method:**	9056	**Prep Date:**	05/21/2015 15:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG524674	**Analyst:**	ALS	**Run Date:**	05/21/2015 17:30
Collect Date:	05/20/2015 08:30	**Dilution:**	20	**File ID:**	I1_052115-08
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	360		8.00	4.00	2.00
Nitrate	14797-55-8	4.00	U	8.00	4.00	2.00
Nitrite	14797-65-0	4.00	U	8.00	4.00	2.00
Sulfate	14808-79-8	284		40.0	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-03	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW14-052015	**Prep Method:**	9056	**Prep Date:**	05/21/2015 15:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG524674	**Analyst:**	ALS	**Run Date:**	05/21/2015 17:48
Collect Date:	05/20/2015 09:45	**Dilution:**	5	**File ID:**	I1_052115-09
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	463	J	2.00	1.00	0.500
Nitrate	14797-55-8	1.00	U	2.00	1.00	0.500
Nitrite	14797-65-0	0.730	J	2.00	1.00	0.500
Sulfate	14808-79-8	378		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-03	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW14-052015	**Prep Method:**	9056	**Prep Date:**	05/21/2015 15:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG524674	**Analyst:**	ALS	**Run Date:**	05/21/2015 18:05
Collect Date:	05/20/2015 09:45	**Dilution:**	20	**File ID:**	I1_052115-10
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	369		8.00	4.00	2.00
Nitrate	14797-55-8	4.00	U	8.00	4.00	2.00
Nitrite	14797-65-0	4.00	U	8.00	4.00	2.00
Sulfate	14808-79-8	322		40.0	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-05	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW11-052015	**Prep Method:**	9056	**Prep Date:**	05/21/2015 15:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG524674	**Analyst:**	ALS	**Run Date:**	05/21/2015 18:23
Collect Date:	05/20/2015 11:00	**Dilution:**	3	**File ID:**	I1_052115-11
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	285	J	1.20	0.600	0.300
Nitrate	14797-55-8	0.600	U	1.20	0.600	0.300
Nitrite	14797-65-0	0.309	J	1.20	0.600	0.300
Sulfate	14808-79-8	305		6.00	3.00	1.50

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-05	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW11-052015	**Prep Method:**	9056	**Prep Date:**	05/21/2015 15:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG524674	**Analyst:**	ALS	**Run Date:**	05/21/2015 18:41
Collect Date:	05/20/2015 11:00	**Dilution:**	20	**File ID:**	I1_052115-12
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	230		8.00	4.00	2.00
Nitrate	14797-55-8	4.00	U	8.00	4.00	2.00
Nitrite	14797-65-0	4.00	U	8.00	4.00	2.00
Sulfate	14808-79-8	263		40.0	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-07	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW06-052015	**Prep Method:**	9056	**Prep Date:**	05/21/2015 15:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG524674	**Analyst:**	ALS	**Run Date:**	05/21/2015 18:59
Collect Date:	05/20/2015 13:15	**Dilution:**	5	**File ID:**	I1_052115-13
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	243	J	2.00	1.00	0.500
Nitrate	14797-55-8	1.00	U	2.00	1.00	0.500
Nitrite	14797-65-0	0.650	J	2.00	1.00	0.500
Sulfate	14808-79-8	157		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-07	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW06-052015	**Prep Method:**	9056	**Prep Date:**	05/21/2015 15:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG524674	**Analyst:**	ALS	**Run Date:**	05/21/2015 19:16
Collect Date:	05/20/2015 13:15	**Dilution:**	10	**File ID:**	I1_052115-14
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	218		4.00	2.00	1.00
Nitrate	14797-55-8	2.00	U	4.00	2.00	1.00
Nitrite	14797-65-0	2.00	U	4.00	2.00	1.00
Sulfate	14808-79-8	148		20.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-09	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW12-052015	**Prep Method:**	9056	**Prep Date:**	05/21/2015 15:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG524674	**Analyst:**	ALS	**Run Date:**	05/21/2015 20:09
Collect Date:	05/20/2015 14:40	**Dilution:**	10	**File ID:**	I1_052115-17
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1470	J	4.00	2.00	1.00
Nitrate	14797-55-8	2.00	U	4.00	2.00	1.00
Nitrite	14797-65-0	2.84	J	4.00	2.00	1.00
Sulfate	14808-79-8	547		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-09	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW12-052015	**Prep Method:**	9056	**Prep Date:**	05/21/2015 15:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG524674	**Analyst:**	ALS	**Run Date:**	05/21/2015 20:27
Collect Date:	05/20/2015 14:40	**Dilution:**	100	**File ID:**	I1_052115-18
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1050		40.0	20.0	10.0
Nitrate	14797-55-8	20.0	U	40.0	20.0	10.0
Nitrite	14797-65-0	20.0	U	40.0	20.0	10.0
Sulfate	14808-79-8	484		200	100	50.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-11	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW23-052015	**Prep Method:**	9056	**Prep Date:**	05/21/2015 15:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG524674	**Analyst:**	ALS	**Run Date:**	05/21/2015 20:45
Collect Date:	05/20/2015 15:55	**Dilution:**	10	**File ID:**	I1_052115-19
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	2300	J	4.00	2.00	1.00
Nitrate	14797-55-8	2.00	U	4.00	2.00	1.00
Nitrite	14797-65-0	3.65	J	4.00	2.00	1.00
Sulfate	14808-79-8	72.0		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-11	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW23-052015	**Prep Method:**	9056	**Prep Date:**	05/21/2015 15:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG524674	**Analyst:**	ALS	**Run Date:**	05/21/2015 21:02
Collect Date:	05/20/2015 15:55	**Dilution:**	100	**File ID:**	I1_052115-20
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1660		40.0	20.0	10.0
Nitrate	14797-55-8	20.0	U	40.0	20.0	10.0
Nitrite	14797-65-0	20.0	U	40.0	20.0	10.0
Sulfate	14808-79-8	82.0	J	200	100	50.0

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.4.1.2 QC Summary Data

Example Calculations - Ion Chromatography

A. Methods 9056/300.0 (Quadratic with Offset)

1. Retrieve Curve Data from the ICAL Curve

c2 = the value of curve constant
c1= the curve slope
c0 = the curve offset

2. Obtain the area, y , from the instrument raw data

3. Calculate the concentration of the analyte, f(y), where:

$$f(y) = \frac{1}{2 * c_2} * \left(- c_1 \pm \sqrt{c_1^2 - 4 * c_2 * (c_0 - y)}\right)$$

Example Calculation:

Value of constant, c2, (curve):	0.0003
Value of curve constant, c1, (slope):	0.0869
Value of curve constant, c0, (offset):	-0.0103
Area of target analyte, y, (uS*min):	2.993
Calculated concentration, f(y), (mg/L):	31.1998864
or:	-40.1161215 *
Dilution factor (D):	1.00
Concentration of analyte in sample (mg/L):	31.200

* There are two possible solutions, but only one is valid.

B. Method 314.0 - Perchlorate (Linear)

Retrieve Curve Data from Linear Plot

c1 = the curve slope

Obtain the area, y , from the quantitation report

Calculate the concentration of the analyte, f(y), where:

f (y) = y / c1

Example Calculation:

Value of c1, slope:	0.0034
Area of target analyte, y:	0.083
Calculated concentration:	24.4117647
Dilution Factor:	1
Concentration in sample:	24.4117647

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 042115 ICAL IC1.SEQ
Analyst1: AED Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 17

Maintenance Log ID: 53072 Syringe Filter Lot#: 00193905
Eluent ID#: RGT33321
Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
Workgroups: WG520208
Internal STD: NA Surrogate STD: NA Calibration STD STD69215
CCV STD: STD69215 LCS STD: STD69216 MS/MSD STD: STD69216

Comments: 04/21/15 IC1 ICAL

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I1_042115-01	ELUENT	1	1		04/21/15 13:54
2	I1_042115-02	DI WATER	1	1		04/21/15 14:12
3	I1_042115-03	WG520208-01 STD \#6	1	1		04/21/15 14:29
4	I1_042115-04	WG520208-02 STD \#5	1	1		04/21/15 14:47
5	I1_042115-05	WG520208-03 STD \#4	1	1		04/21/15 15:05
6	I1_042115-06	WG520208-04 STD \#3	1	1		04/21/15 15:23
7	I1_042115-07	WG520208-05 STD \#2	1	1		04/21/15 15:40
8	I1_042115-08	WG520208-06 STD \#1	1	1		04/21/15 15:58
9	I1_042115-09	WG520208-07 ALT STD	1	1		04/21/15 16:16
10	I1_042115-10	LCR LEVEL 6	1	1		04/21/15 16:33
11	I1_042115-11	LCR LEVEL 2	1	1		04/21/15 16:51
12	I1_042115-12	LCR LEVEL 0	1	1		04/21/15 17:09
13	I1_042115-13	END	1	1		04/21/15 17:27

Comments

Seq.	Rerun	Dil.	Reason	Analytes

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 052115 IC1.SEQ
Analyst1: ALS Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 17

Maintenance Log ID: 53164 Syringe Filter Lot#: 00197629
Eluent ID#: RGT33675
Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
Workgroups: WG524674
Internal STD: NA Surrogate STD: NA Calibration STD STD69215
CCV STD: STD69215 LCS STD: STD69216 MS/MSD STD: STD69216

Comments: Fractions L15051303 (all) were analyzed at dilutions due to analyte concentrations exceeding 200ppm.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I1_052115-01	ELUENT	1	1		05/21/15 15:26
2	I1_052115-02	DI WATER	1	1		05/21/15 15:44
3	I1_052115-03	WG524691-01 ANION CCV	1	1		05/21/15 16:01
4	I1_052115-04	WG524691-02 ANION CCB	1	1		05/21/15 16:19
5	I1_052115-05	WG524674-01 ANION BLANK	1	1		05/21/15 16:37
6	I1_052115-06	WG524674-02 ANION LCS	1	1		05/21/15 16:55
7	I1_052115-07	L15051303-01 1/5 (CL,NO2,NO3,SO4)	1	5		05/21/15 17:12
8	I1_052115-08	L15051303-01 1/20 (CL,NO2,NO3,SO4)	1	20		05/21/15 17:30
9	I1_052115-09	L15051303-03 1/5 (CL,NO2,NO3,SO4)	1	5		05/21/15 17:48
10	I1_052115-10	L15051303-03 1/20 (CL,NO2,NO3,SO4)	1	20		05/21/15 18:05
11	I1_052115-11	L15051303-05 1/3 (CL,NO2,NO3,SO4)	1	3		05/21/15 18:23
12	I1_052115-12	L15051303-05 1/20 (CL,NO2,NO3,SO4)	1	20		05/21/15 18:41
13	I1_052115-13	L15051303-07 1/5 (CL,NO2,NO3,SO4)	1	5		05/21/15 18:59
14	I1_052115-14	L15051303-07 1/10 (CL,NO2,NO3,SO4)	1	10		05/21/15 19:16
15	I1_052115-15	WG524691-03 ANION CCV	1	1		05/21/15 19:34
16	I1_052115-16	WG524691-04 ANION CCB	1	1		05/21/15 19:52
17	I1_052115-17	L15051303-09 1/10 (CL,NO2,NO3,SO4)	1	10		05/21/15 20:09
18	I1_052115-18	L15051303-09 1/100 (CL,NO2,NO3,SO4)	1	100		05/21/15 20:27
19	I1_052115-19	L15051303-11 1/10 (CL,NO2,NO3,SO4)	1	10		05/21/15 20:45
20	I1_052115-20	L15051303-11 1/100 (CL,NO2,NO3,SO4)	1	100		05/21/15 21:02
21	I1_052115-21	L15051310-01 (NO2,NO3)	2	1		05/21/15 21:20
22	I1_052115-22	L15051310-02 (NO2,NO3)	2	1		05/21/15 21:38
23	I1_052115-23	L15051277-01 (SO4) REF	1	1		05/21/15 21:56
24	I1_052115-24	WG524674-04 DUP 1277-01	2	1		05/21/15 22:13
25	I1_052115-25	WG524674-05 MS	2	1		05/21/15 22:31
26	I1_052115-26	WG524674-06 MSD	2	1		05/21/15 22:49
27	I1_052115-27	WG524691-05 ANION CCV	1	1		05/21/15 23:06
28	I1_052115-28	WG524691-06 ANION CCB	1	1		05/21/15 23:24
29	I1_052115-29	L15051277-02 (SO4)	2	1		05/21/15 23:42
30	I1_052115-30	L15051277-03 (SO4)	2	1		05/22/15 00:00
31	I1_052115-31	L15051277-05 1/20 (SO4)	2	20		05/22/15 00:17
32	I1_052115-32	L15051277-09 (SO4) NR	2	1		05/22/15 00:35
33	I1_052115-33	L15051277-10 1/20 (SO4)	2	20		05/22/15 00:53

Page: 1 Approved: 22-MAY-15

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 052115 IC1.SEQ

Analyst1: ALS Analyst2: NA

Method: 300/9056 SOP: IC01 Rev: 17

Maintenance Log ID: 53164 Syringe Filter Lot#: 00197629

Eluent ID#: RGT33675

Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM

Workgroups: WG524674

Internal STD: NA Surrogate STD: NA STD69215

CCV STD: STD69215 LCS STD: STD69216 STD69216

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	I1_052115-34	WG524691-07 ANION CCV	1	1		05/22/15 01:10
35	I1_052115-35	WG524691-08 ANION CCB	1	1		05/22/15 01:28
36	I1_052115-36	END	1	1		05/22/15 01:46

Comments

Seq.	Rerun	Dil.	Reason	Analytes
32	X	50	Over Calibration Range	SO4
	L15051277-09 (SO4) NR			

Page: 2 Approved: 22-MAY-15

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Microbac Laboratories Inc.

Data Checklist

Date: 21-APR-2015
Analyst: AED
Analyst: NA
Method: 300/9056
Instrument: IC1
Curve Workgroup: NA
Runlog ID: 67520
Analytical Workgroups: WG520208 ICAL

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	X
Special standards	NA
Blanks	X
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual Integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	AED
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
22-APR-2015

Secondary Reviewer:
24-APR-2015

CHECKLIST1 - Modified 03/05/2008
Generated: APR-24-2015 12:54:11

Microbac Laboratories Inc.

Data Checklist

Date: 21-MAY-2015
Analyst: ALS
Analyst: NA
Method: 300/9056
Instrument: IC1
Curve Workgroup: NA
Runlog ID: 68148
Analytical Workgroups: 05-1277,1303,1310

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	X
Special standards	NA
Blanks	X
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual Integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	X
Check for completeness	X
Primary Reviewer	ALS
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
22-MAY-2015

Secondary Reviewer:
22-MAY-2015

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-22-2015 13:17:23

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 9056 AAB#: WG524674

Login Number: L15051303

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW13-052015	01	05/20/15					05/21/2015	1.3	2		05/21/15	1.4	2	
50WW13-052015	01	05/20/15					05/21/2015	1.3	2		05/21/15	1.4	2	
50WW14-052015	03	05/20/15					05/21/2015	1.2	2		05/21/15	1.3	2	
50WW14-052015	03	05/20/15					05/21/2015	1.2	2		05/21/15	1.3	2	
50WW11-052015	05	05/20/15					05/21/2015	1.2	2		05/21/15	1.3	2	
50WW11-052015	05	05/20/15					05/21/2015	1.2	2		05/21/15	1.3	2	
50WW06-052015	07	05/20/15					05/21/2015	1.1	2		05/21/15	1.2	2	
50WW06-052015	07	05/20/15					05/21/2015	1.1	2		05/21/15	1.3	2	
50WW12-052015	09	05/20/15					05/21/2015	1	2		05/21/15	1.2	2	
50WW12-052015	09	05/20/15					05/21/2015	1	2		05/21/15	1.2	2	
50WW23-052015	11	05/20/15					05/21/2015	1	2		05/21/15	1.2	2	
50WW23-052015	11	05/20/15					05/21/2015	1	2		05/21/15	1.2	2	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4194153
Report generated 05/22/2015 14:38

METHOD BLANK SUMMARY

Login Number: L15051303
Blank File ID: I1_052115-05
Prep Date: 05/21/15 15:00
Analyzed Date: 05/21/15 16:37
Analyst: ALS

Work Group: WG524674
Blank Sample ID: WG524674-01
Instrument ID: IC1
Method: 9056

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG524674-02	I1_052115-06	05/21/15 16:55	01
50WW13-052015	L15051303-01	I1_052115-07	05/21/15 17:12	DL01
50WW13-052015	L15051303-01	I1_052115-08	05/21/15 17:30	DL02
50WW14-052015	L15051303-03	I1_052115-09	05/21/15 17:48	DL01
50WW14-052015	L15051303-03	I1_052115-10	05/21/15 18:05	DL02
50WW11-052015	L15051303-05	I1_052115-11	05/21/15 18:23	DL01
50WW11-052015	L15051303-05	I1_052115-12	05/21/15 18:41	DL02
50WW06-052015	L15051303-07	I1_052115-13	05/21/15 18:59	DL01
50WW06-052015	L15051303-07	I1_052115-14	05/21/15 19:16	DL02
50WW12-052015	L15051303-09	I1_052115-17	05/21/15 20:09	DL01
50WW12-052015	L15051303-09	I1_052115-18	05/21/15 20:27	DL02
50WW23-052015	L15051303-11	I1_052115-19	05/21/15 20:45	DL01
50WW23-052015	L15051303-11	I1_052115-20	05/21/15 21:02	DL02
DUP	WG524674-04	I1_052115-24	05/21/15 22:13	01

Report Name: BLANK_SUMMARY
PDF File ID: 4194154
Report generated 05/22/2015 14:38

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051303 Prep Date: 05/21/15 15:00 Sample ID: WG524674-01
Instrument ID: IC1 Run Date: 05/21/15 16:37 Prep Method: 9056
File ID: I1 052115-05 Analyst: ALS Method: 9056
Workgroup (AAB#): WG524674 Matrix: Water Units: mg/L
Contract #: Cal ID: IC1-21-APR-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Chloride	0.100	0.400	0.100	1	U
Nitrate	0.100	0.400	0.100	1	U
Nitrite	0.100	0.400	0.100	1	U
Sulfate	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4194155
22-MAY-2015 14:38

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051303 Run Date: 05/21/2015 Sample ID: WG524674-02
Instrument ID: IC1 Run Time: 16:55 Prep Method: 9056
File ID: I1 052115-06 Analyst: ALS Method: 9056
Workgroup (AAB#): WG524674 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD69215 Cal ID: IC1 - 21-APR-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Chloride	8.00	7.67	95.9	90 - 110	
Nitrate	5.42	5.36	99.0	90 - 110	
Nitrite	4.87	4.76	97.7	90 - 110	
Sulfate	40.0	39.1	97.7	90 - 110	

LCS - Modified 03/06/2008
PDF File ID: 4194156
Report generated: 05/22/2015 14:38

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L15051303
Analytical Method: 9056
ICAL Workgroup: WG520208

Instrument ID: IC1
Initial Calibration Date: 21-APR-15 15:58
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Chloride		5.585	7.66	0.99800	
Nitrate		2.277	8.84	0.99700	
Nitrite		2.770	4.28	0.99900	
Sulfate		7.395	11.2	0.99700	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4194157
Report generated 05/22/2015 14:38

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15051303

Analytical Method: 9056

Instrument ID: IC1

Initial Calibration Date: 21-APR-15 15:58

Column ID: F

Analyte	WG520208-01			WG520208-02			WG520208-03		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	24.0	4.89900000	4.899	12.0	2.24100000	5.355	8.00	1.43000000	5.594
Nitrate	16.3	8.29100000	1.962	8.13	3.76300000	2.161	5.42	2.38200000	2.276
Nitrite	14.6	5.59100000	2.614	7.31	2.74000000	2.667	4.87	1.77500000	2.744
Sulfate	120	19.2650000	6.229	60.0	8.80400000	6.815	40.0	5.51100000	7.258

INT_CAL - Modified 03/06/2008
PDF File ID: 4194157
Report generated 05/22/2015 14:38

Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number: L15051303
Analytical Method: 9056
Instrument ID: IC1
Initial Calibration Date: 21-APR-15 15:58
Column ID: F

Analyte	WG520208-04			WG520208-05			WG520208-06		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	4.00	0.691000000	5.789	1.00	0.167000000	5.988	0.200	0.0340000000	5.882
Nitrate	2.71	1.13800000	2.382	0.678	0.276000000	2.455	0.134	0.0550000000	2.428
Nitrite	2.44	0.872000000	2.793	0.609	0.210000000	2.900	0.122	0.0420000000	2.900
Sulfate	20.0	2.62800000	7.610	5.00	0.621000000	8.052	1.00	0.119000000	8.403

INT_CAL - Modified 03/06/2008
PDF File ID: 4194157
Report generated 05/22/2015 14:38

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15051303 Run Date: 04/21/2015 Sample ID: WG520208-07
Instrument ID: IC1 Run Time: 16:16 Method: 9056
File ID: I1 042115-09 Analyst: AED QC Key: DOD4
ICal Workgroup: WG520208 Cal ID: IC1 - 21-APR-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloride		8.00	7.93	mg/L	5.56	0.900	10	
Nitrate		5.42	5.53	mg/L	2.26	1.90	10	
Nitrite		4.87	4.86	mg/L	2.74	0.200	10	
Sulfate		40.0	39.9	mg/L	7.18	0.300	10	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4194158
Report generated 05/22/2015 14:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051303
Run Date: 05/21/2015
Sample ID: WG524691-02
Instrument ID: IC1
Run Time: 16:19
Method: 9056
File ID: I1 052115-04
Analyst: ALS
Units: mg/L
Workgroup (AAB#): WG524674
Cal ID: IC1 - 21-APR-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4194160
Report generated 05/22/2015 14:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051303
Run Date: 05/21/2015
Sample ID: WG524691-04
Instrument ID: IC1
Run Time: 19:52
Method: 9056
File ID: I1 052115-16
Analyst: ALS
Units: mg/L
Workgroup (AAB#): WG524674
Cal ID: IC1 - 21-APR-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4194160
Report generated 05/22/2015 14:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051303
Run Date: 05/21/2015
Sample ID: WG524691-06
Instrument ID: IC1
Run Time: 23:24
Method: 9056
File ID: I1 052115-28
Analyst: ALS
Units: mg/L
Workgroup (AAB#): WG524674
Cal ID: IC1 - 21-APR-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4194160
Report generated 05/22/2015 14:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051303
Run Date: 05/21/2015
Sample ID: WG524691-01
Instrument ID: IC1
Run Time: 16:01
Method: 9056
File ID: I1 052115-03
Analyst: ALS
QC Key: DOD4
Workgroup (AAB#): WG524674
Cal ID: IC1 - 21-APR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.57	mg/L	5.82	5.33	10	
Nitrate		5.42	5.30	mg/L	2.36	2.22	10	
Nitrite		4.87	4.65	mg/L	2.86	4.52	10	
Sulfate		40.0	38.5	mg/L	7.45	3.84	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4194159
Report generated 05/22/2015 14:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051303
Run Date: 05/21/2015
Sample ID: WG524691-03
Instrument ID: IC1
Run Time: 19:34
Method: 9056
File ID: I1 052115-15
Analyst: ALS
QC Key: DOD4
Workgroup (AAB#): WG524674
Cal ID: IC1 - 21-APR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.53	mg/L	5.86	5.90	10	
Nitrate		5.42	5.27	mg/L	2.37	2.89	10	
Nitrite		4.87	4.66	mg/L	2.86	4.36	10	
Sulfate		40.0	38.3	mg/L	7.49	4.31	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4194159
Report generated 05/22/2015 14:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051303
Run Date: 05/21/2015
Sample ID: WG524691-05
Instrument ID: IC1
Run Time: 23:06
Method: 9056
File ID: I1 052115-27
Analyst: ALS
QC Key: DOD4
Workgroup (AAB#): WG524674
Cal ID: IC1 - 21-APR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.55	mg/L	5.84	5.60	10	
Nitrate		5.42	5.29	mg/L	2.36	2.37	10	
Nitrite		4.87	4.75	mg/L	2.80	2.47	10	
Sulfate		40.0	38.3	mg/L	7.48	4.22	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4194159
Report generated 05/22/2015 14:39

2.4.1.3 Sample Data

7 L15051303-01 1/5 (CL,NO2,NO3,SO4)

1,5 ALS (CL,SO4>200PPM)

Sample Name:	**L15051303-01 1/5 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**7**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/21/2015 17:12**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

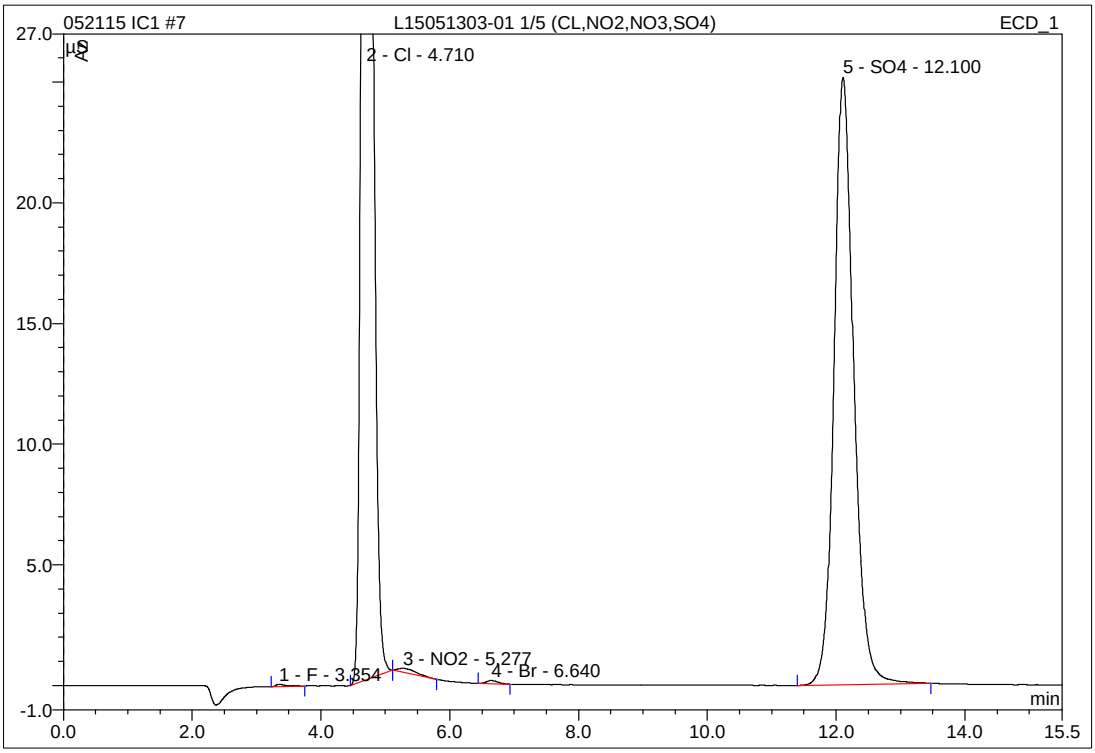

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.35	F	0.090	0.016	0.06	0.100	BMB
2	4.71	Cl	110.228	16.050	64.01	88.307	BMb
3	5.28	NO2	0.169	0.059	0.23	0.170	bMB
4	6.64	Br	0.133	0.027	0.11	0.376	BMB
5	12.10	SO4	25.158	8.923	35.59	63.794	BMB
Total:			135.778	25.075	100.00	152.747	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

8 L15051303-01 1/20 (CL,NO2,NO3,SO4)

1,20 ALS

Sample Name:	**L15051303-01 1/20 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**8**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/21/2015 17:30**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

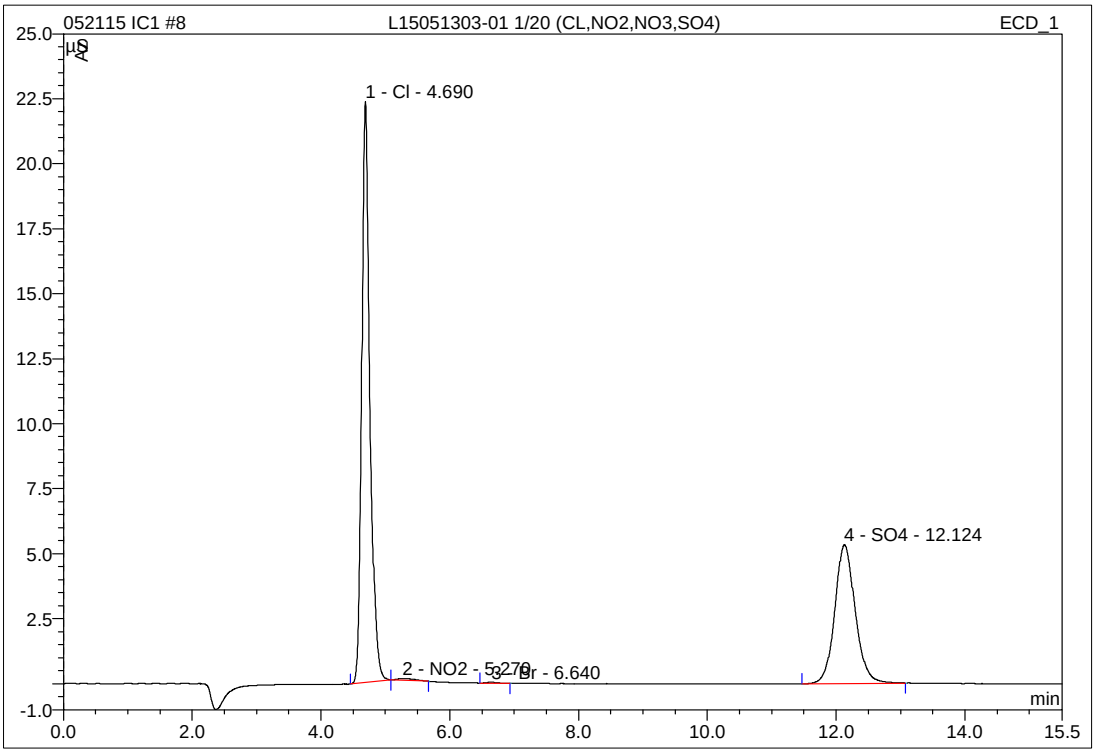

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	4.69	Cl	22.353	3.272	62.09	18.015	BMb
2	5.27	NO2	0.075	0.024	0.45	0.073	bMB
3	6.64	Br	0.037	0.007	0.14	0.100	BMB
4	12.12	SO4	5.343	1.966	37.32	14.190	BMB
Total:			27.807	5.269	100.00	32.377	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

9 L15051303-03 1/5 (CL,NO2,NO3,SO4)

1,5 ALS (CL,SO4>200PPM)

Sample Name:	**L15051303-03 1/5 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**9**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/21/2015 17:48**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

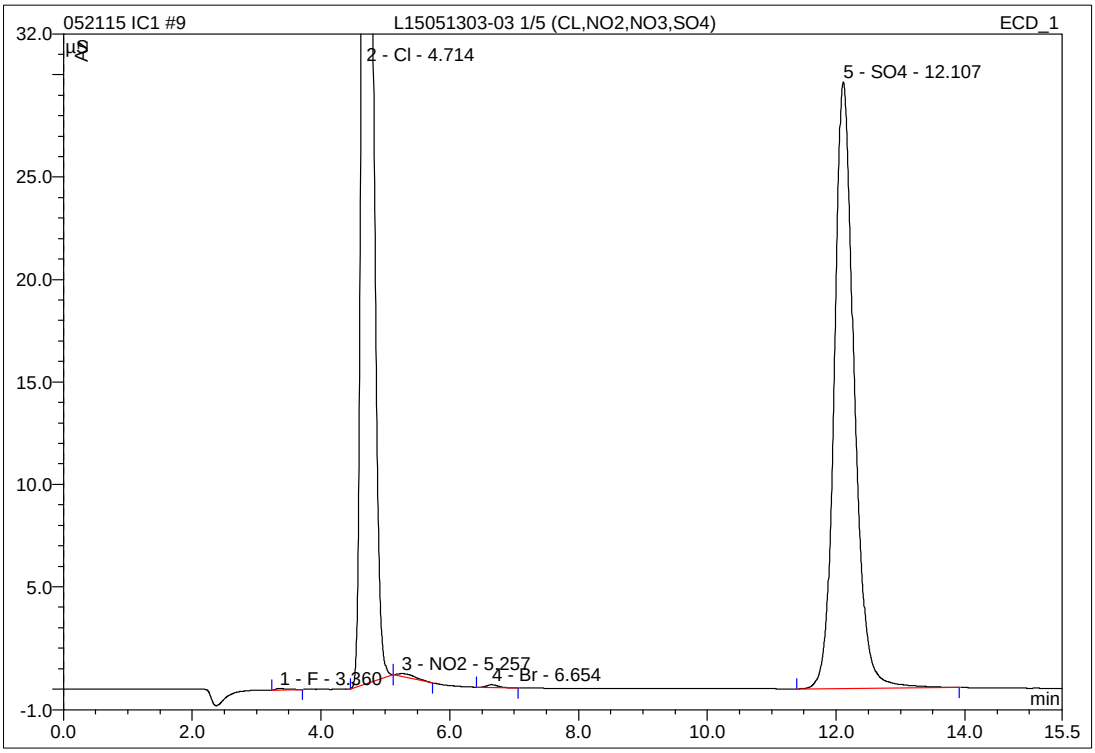

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.36	F	0.071	0.012	0.05	0.088	BMB
2	4.71	Cl	113.263	16.824	61.18	92.568	BMb
3	5.26	NO2	0.136	0.050	0.18	0.146	bMB
4	6.65	Br	0.139	0.029	0.11	0.408	BMB
5	12.11	SO4	29.622	10.584	38.49	75.635	BMB
Total:			143.232	27.500	100.00	168.845	

10 L15051303-03 1/20 (CL,NO2,NO3,SO4)

1,20 ALS

Sample Name:	**L15051303-03 1/20 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**10**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/21/2015 18:05**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

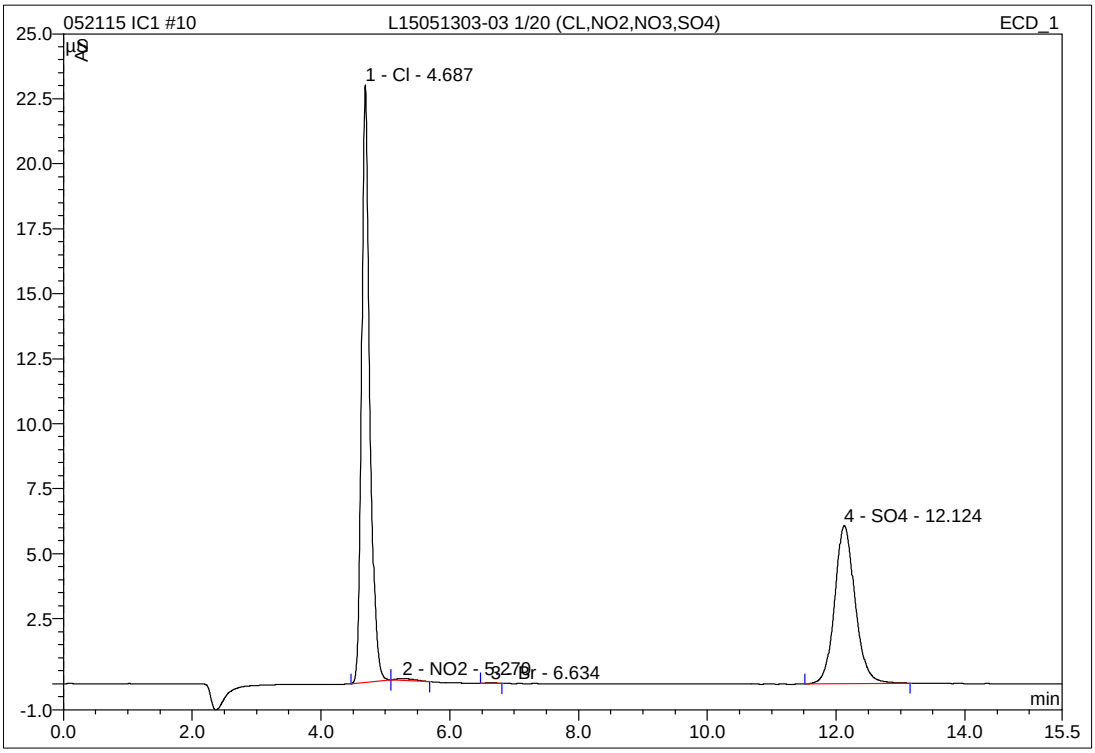

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	4.69	Cl	22.981	3.354	59.67	18.466	BMb
2	5.27	NO2	0.078	0.025	0.45	0.078	bMB
3	6.63	Br	0.031	0.005	0.08	0.061	BMB
4	12.12	SO4	6.081	2.237	39.80	16.121	BMB
Total:			29.171	5.621	100.00	34.726	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

11 L15051303-05 1/3 (CL,NO2,NO3,SO4)

1,3 ALS (CL,SO4>200PPM)

Sample Name:	**L15051303-05 1/3 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/21/2015 18:23**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

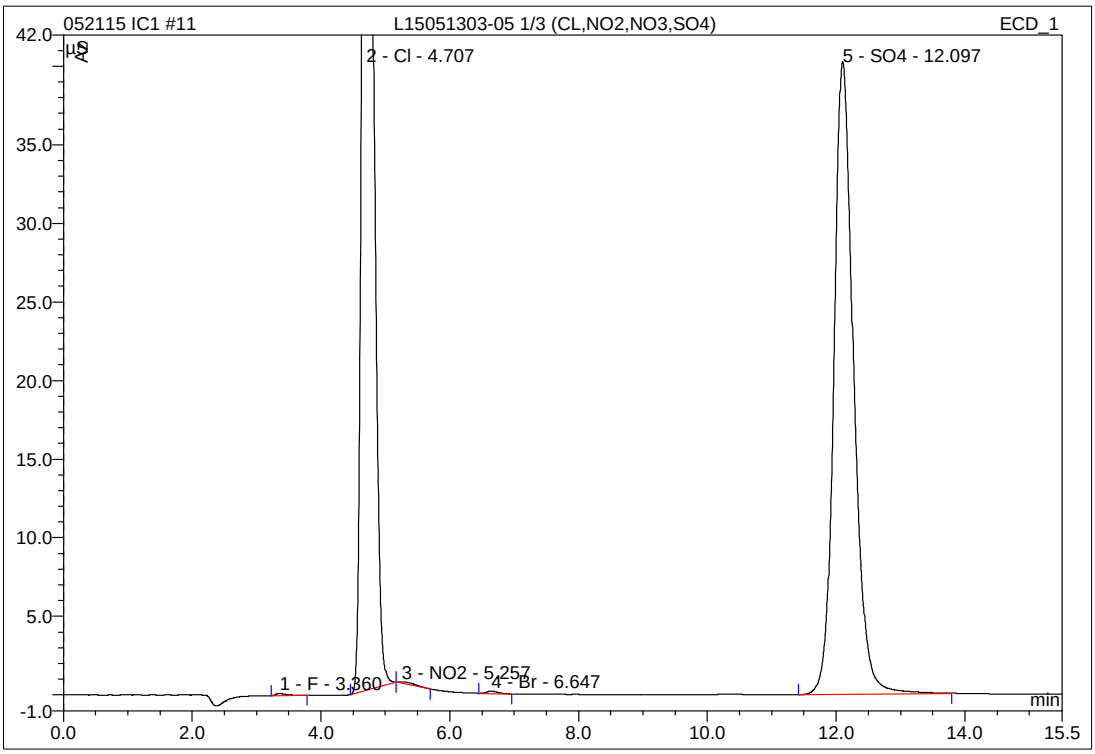

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.36	F	0.126	0.023	0.07	0.128	BMB
2	4.71	Cl	100.338	17.283	54.68	95.091	BMb
3	5.26	NO2	0.093	0.034	0.11	0.103	bMB
4	6.65	Br	0.155	0.031	0.10	0.429	BMB
5	12.10	SO4	40.250	14.236	45.04	101.676	BMB
Total:			140.960	31.607	100.00	197.426	

12 L15051303-05 1/20 (CL,NO2,NO3,SO4)

1,20 ALS

Sample Name:	**L15051303-05 1/20 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/21/2015 18:41**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

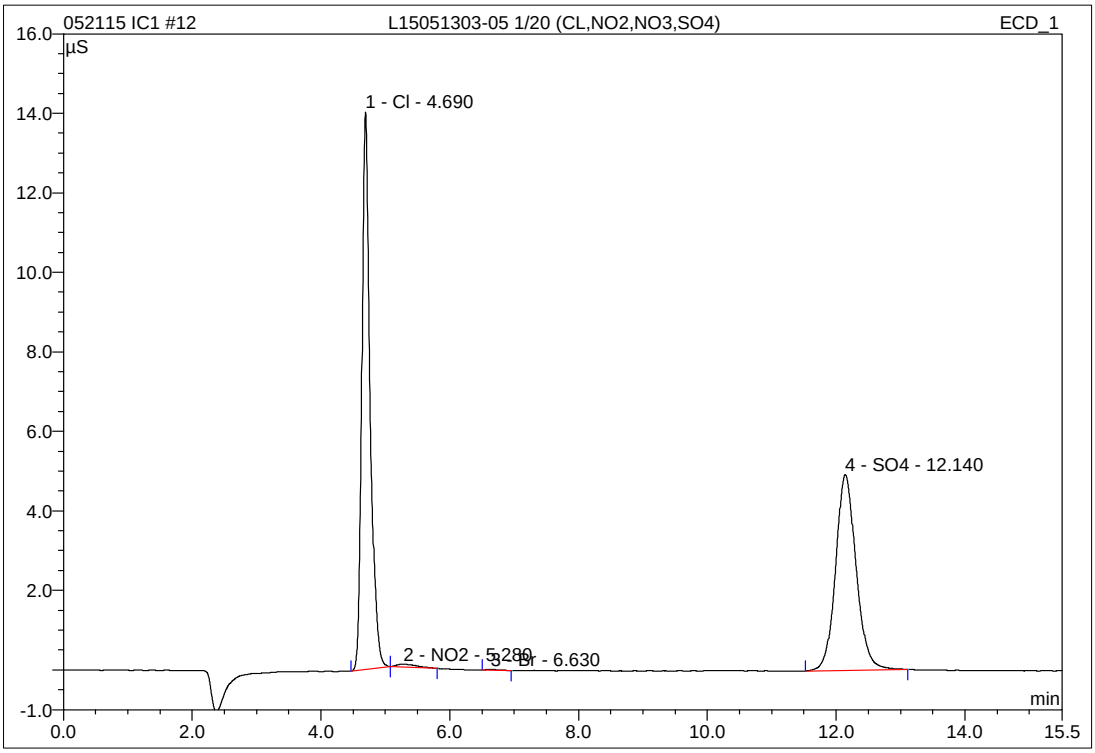

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	4.69	Cl	14.016	2.086	52.96	11.491	BMb
2	5.28	NO2	0.072	0.026	0.67	0.081	bMB
3	6.63	Br	0.025	0.005	0.13	0.067	BMB
4	12.14	SO4	4.925	1.821	46.24	13.156	BMB
Total:			19.039	3.939	100.00	24.794	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

13 L15051303-07 1/5 (CL,NO2,NO3,SO4)

1,5 ALS (CL,SO4>200PPM)

Sample Name:	**L15051303-07 1/5 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**13**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/21/2015 18:59**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

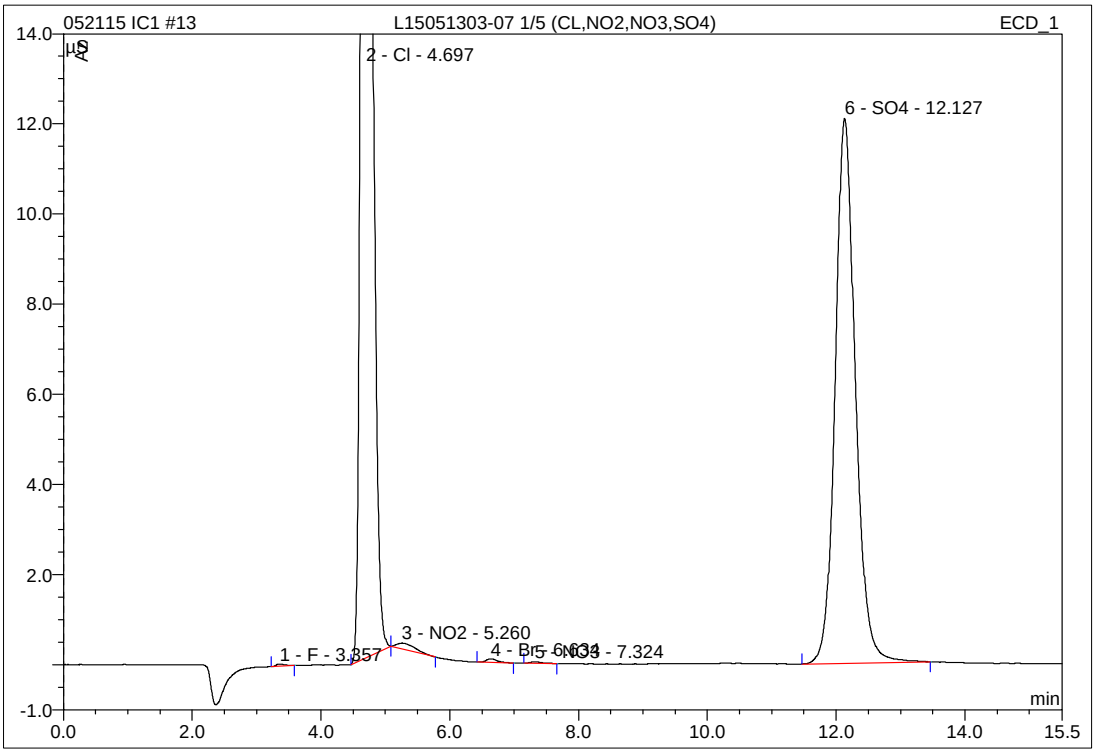

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.36	F	0.049	0.008	0.06	0.069	BMB
2	4.70	Cl	61.120	8.820	66.41	48.535	BMb
3	5.26	NO2	0.127	0.044	0.33	0.130	bMB
4	6.63	Br	0.080	0.016	0.12	0.221	BMB
5	7.32	NO3	0.035	0.007	0.06	0.027	BMB
6	12.13	SO4	12.091	4.385	33.02	31.438	BMB
Total:			73.501	13.280	100.00	80.419	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

14 L15051303-07 1/10 (CL,NO2,NO3,SO4)

1,10 ALS

Sample Name:	**L15051303-07 1/10 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**14**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/21/2015 19:16**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

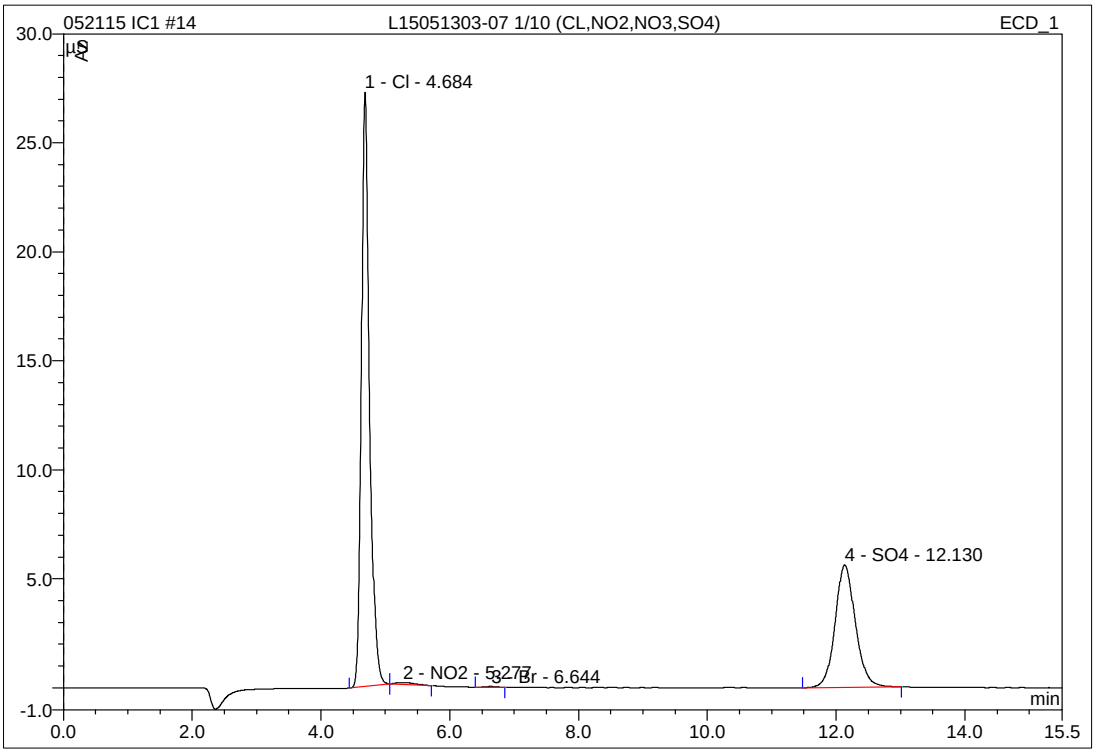

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	4.68	Cl	27.262	3.957	65.40	21.787	BMb
2	5.28	NO2	0.088	0.031	0.51	0.092	bMB
3	6.64	Br	0.040	0.009	0.14	0.115	BMB
4	12.13	SO4	5.616	2.054	33.95	14.819	BMB
Total:			33.006	6.051	100.00	36.813	

17 L15051303-09 1/10 (CL,NO2,NO3,SO4)

1,10 ALS (CL,SO4>200PM)

Sample Name:	**L15051303-09 1/10 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**17**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/21/2015 20:09**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

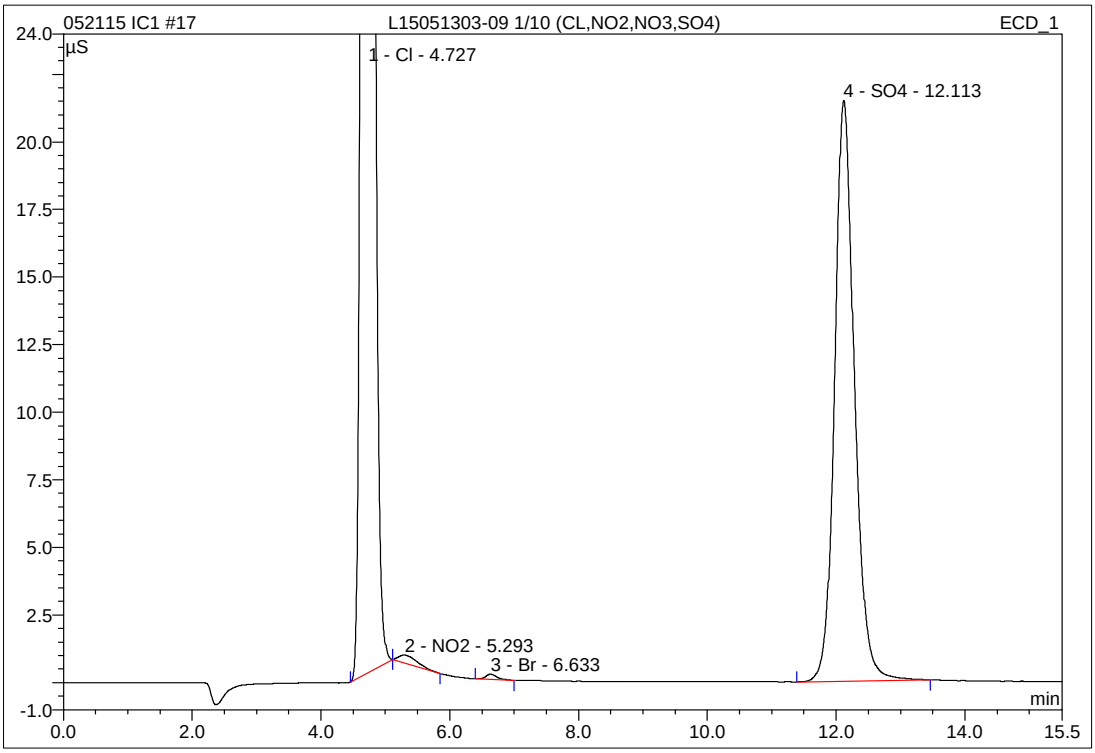

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	4.73	Cl	186.793	26.792	77.49	147.399	BMb
2	5.29	NO2	0.289	0.101	0.29	0.284	bMB
3	6.63	Br	0.192	0.038	0.11	0.535	BMB
4	12.11	SO4	21.479	7.644	22.11	54.674	BMB
Total:			208.753	34.575	100.00	202.891	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

18 L15051303-09 1/100 (CL,NO2,NO3,SO4)

1,100 ALS

Sample Name:	**L15051303-09 1/100 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**18**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/21/2015 20:27**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

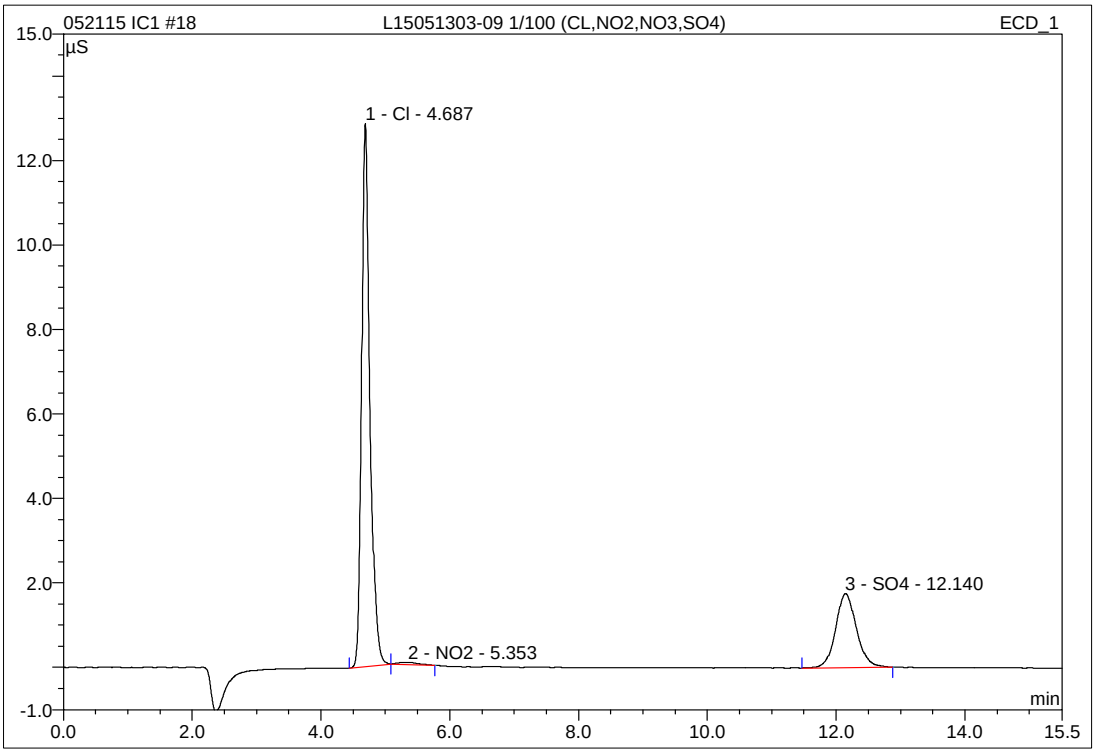

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	4.69	Cl	12.853	1.912	73.95	10.533	BMb
2	5.35	NO2	0.054	0.019	0.73	0.060	bMB
3	12.14	SO4	1.751	0.655	25.32	4.838	BMB
Total:			14.657	2.585	100.00	15.431	

19 L15051303-11 1/10 (CL,NO2,NO3,SO4)

1,10 ALS (CL,SO4>200PM)

Sample Name:	**L15051303-11 1/10 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**19**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/21/2015 20:45**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

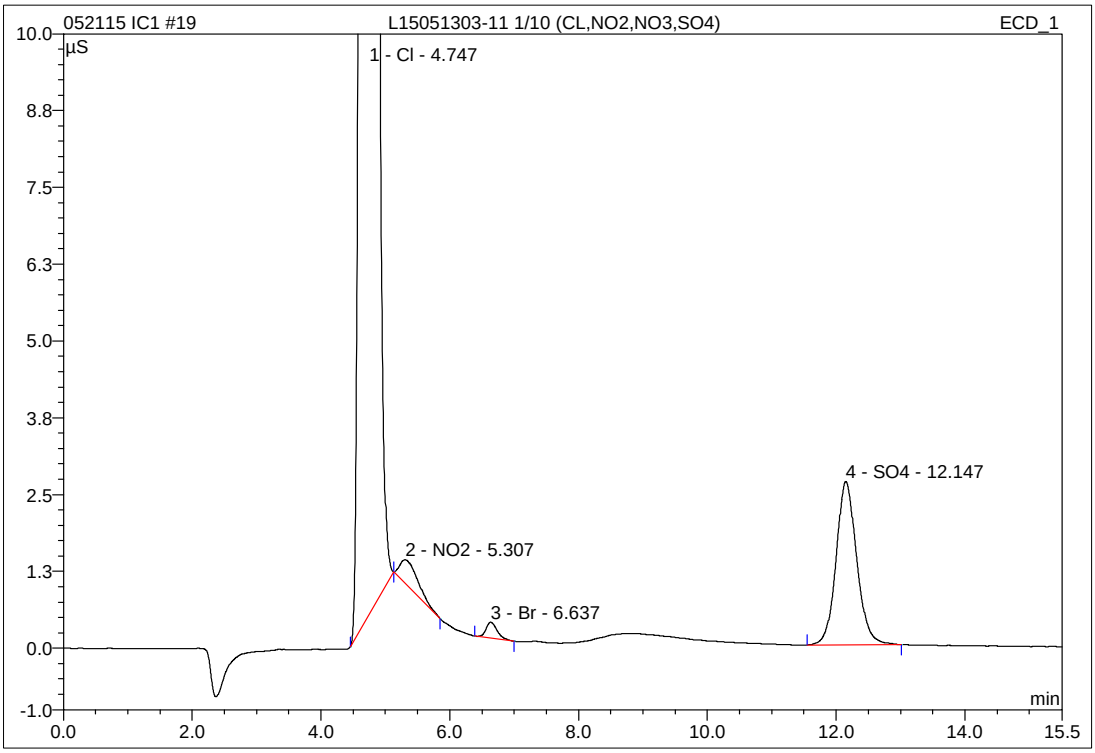

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	4.75	Cl	280.226	41.768	97.28	229.782	BMb
2	5.31	NO2	0.378	0.131	0.30	0.365	bMB
3	6.64	Br	0.260	0.052	0.12	0.728	BMB
4	12.15	SO4	2.657	0.985	2.30	7.196	BMB
Total:			283.520	42.936	100.00	238.071	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

20 L15051303-11 1/100 (CL,NO2,NO3,SO4)

1,100 ALS

Sample Name:	**L15051303-11 1/100 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**20**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/21/2015 21:02**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

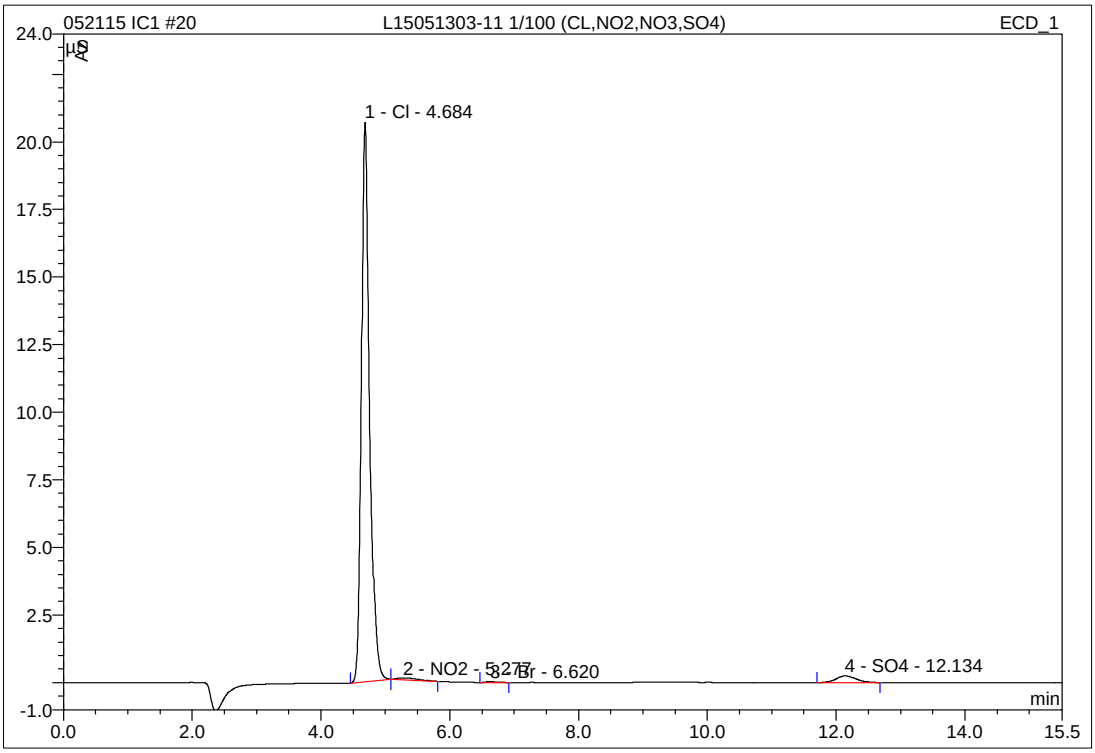

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	4.68	Cl	20.696	3.023	96.05	16.647	BMb
2	5.28	NO2	0.068	0.026	0.83	0.080	bMB
3	6.62	Br	0.032	0.007	0.22	0.093	BMB
4	12.13	SO4	0.250	0.091	2.90	0.820	BMB
Total:			21.046	3.147	100.00	17.641	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

2.4.1.4 Standards Data

3 WG520208-01 STD #6

1,1 AED STD69215

Sample Name:	**WG520208-01 STD #6**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/21/2015 14:29**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

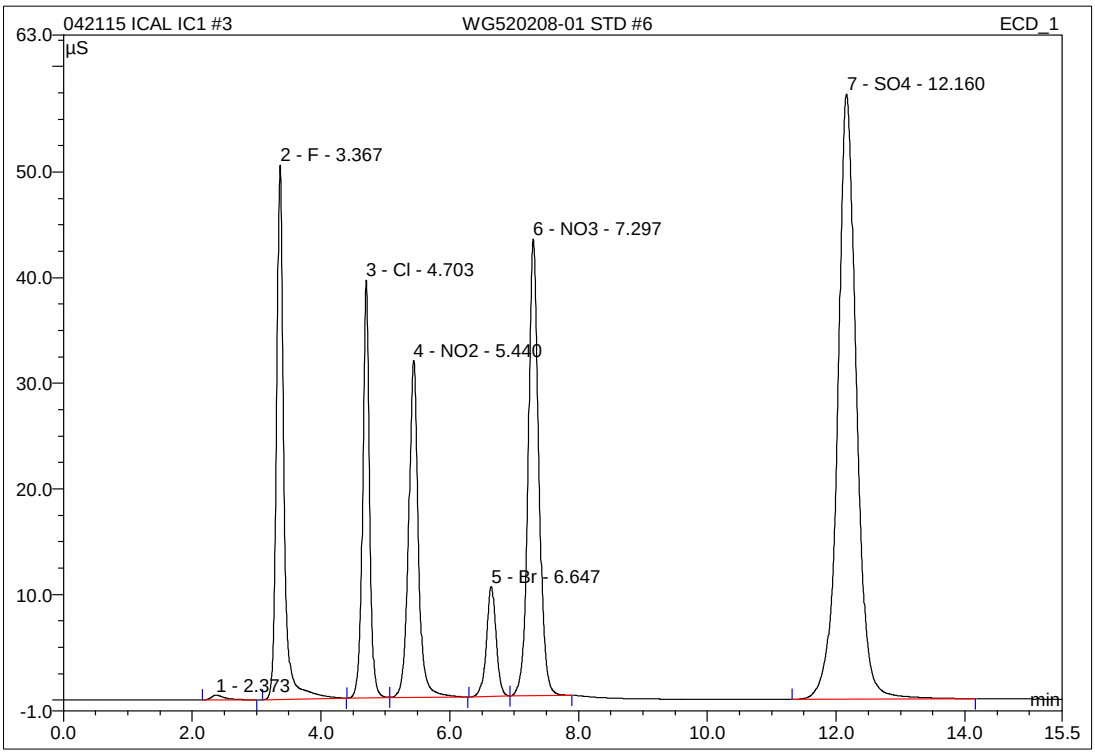

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.37	n.a.	0.448	0.111	0.24	n.a.	BMB
2	3.37	F	50.599	6.707	14.37	25.250	BMB
3	4.70	Cl	39.565	4.899	10.50	26.967	BMB
4	5.44	NO2	31.907	5.591	11.98	15.271	bMB
5	6.65	Br	10.441	1.816	3.89	25.554	BMB
6	7.30	NO3	43.238	8.291	17.76	19.067	BMB
7	12.16	SO4	57.303	19.265	41.27	137.537	BMB
Total:			233.501	46.680	100.00	249.646	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

4 WG520208-02 STD #5

1,1 AED STD69215

Sample Name:	**WG520208-02 STD #5**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/21/2015 14:47**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

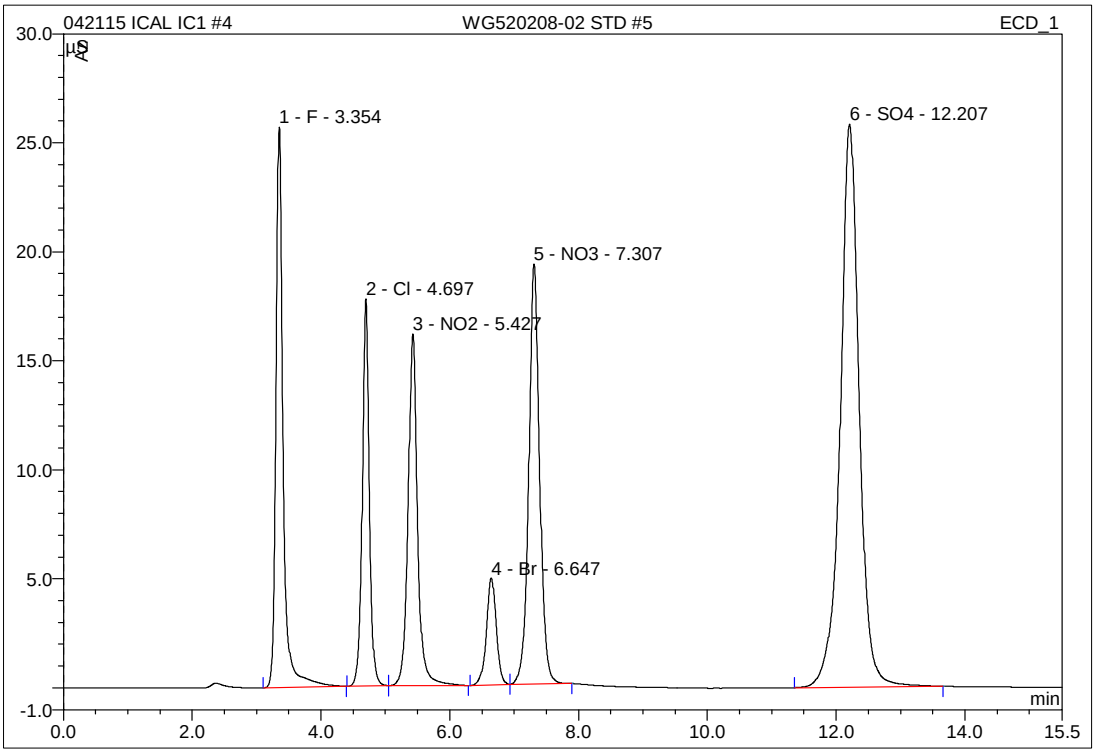

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.35	F	25.707	3.262	15.05	12.300	BMB
2	4.70	Cl	17.752	2.241	10.34	12.346	BMB
3	5.43	NO2	16.111	2.740	12.64	7.487	bMB
4	6.65	Br	4.905	0.868	4.00	12.206	BMB
5	7.31	NO3	19.267	3.763	17.36	8.658	BMB
6	12.21	SO4	25.818	8.804	40.61	62.945	BMB
Total:			109.561	21.676	100.00	115.941	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

4 WG520208-02 STD #5

1,1 AED STD69215

Sample Name:	**WG520208-02 STD #5**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/21/2015 14:47**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

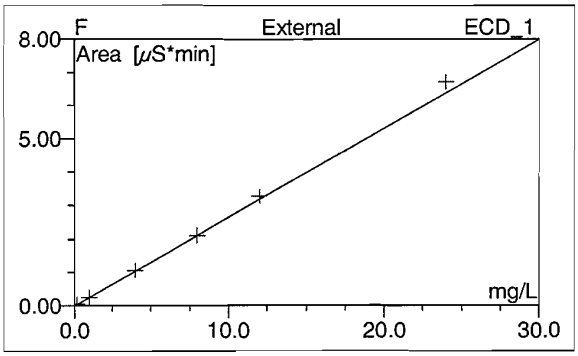

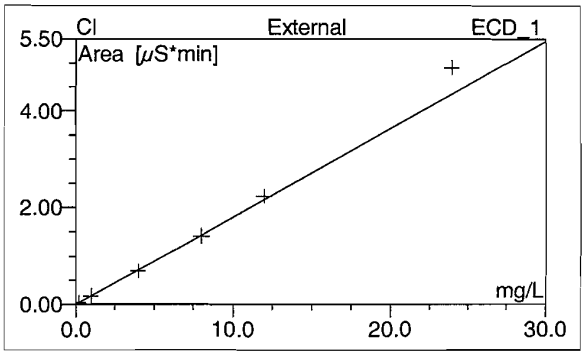

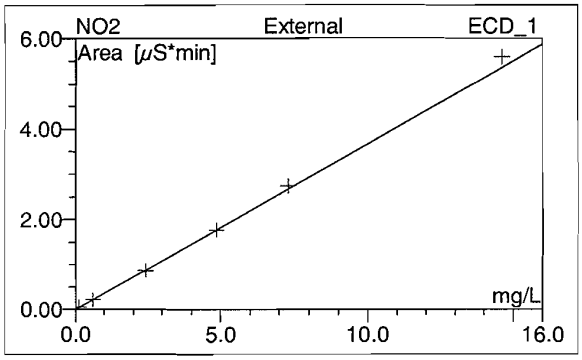

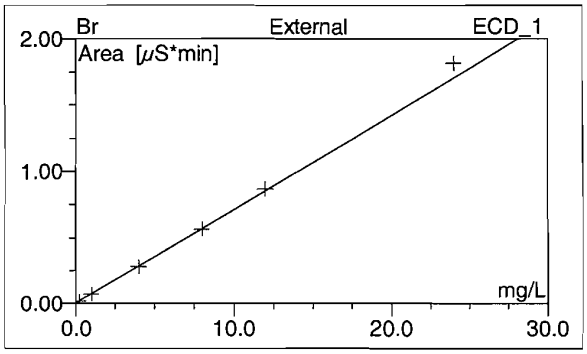

No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	3.35	F	YYLOff	6	99.9011	-0.0108	0.2661	0.0000
2	4.70	Cl	YYLOff	6	99.7641	-0.0031	0.1818	0.0000
3	5.43	NO2	YYLOff	6	99.9396	-0.0032	0.3664	0.0000
4	6.65	Br	YYLOff	6	99.9032	0.0004	0.0710	0.0000
5	7.31	NO3	YYLOff	6	99.6701	-0.0041	0.4350	0.0000
6	12.21	SO4	YYLOff	6	99.6529	-0.0238	0.1402	0.0000
Average:					99.8052	-0.0075	0.2434	0.0000

IC/Calibration(Batch)

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

4 WG520208-02 STD #5

1,1 AED STD69215

Sample Name:	**WG520208-02 STD #5**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/21/2015 14:47**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

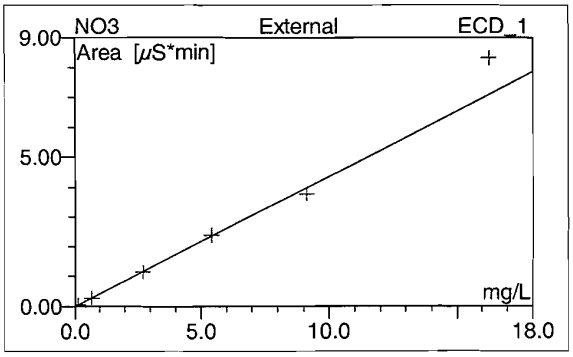

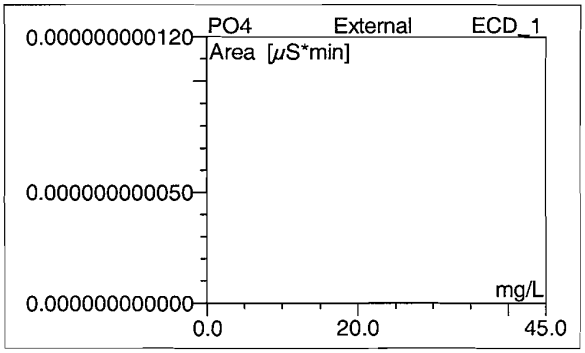

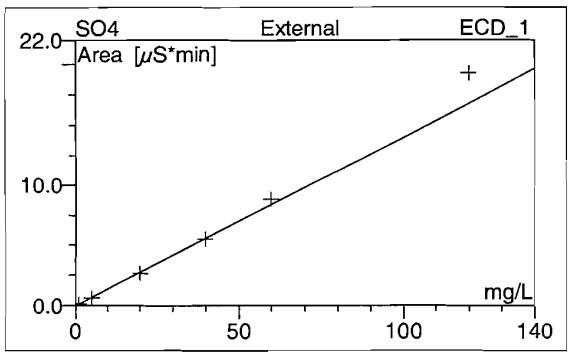

No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	3.35	F	YYLOff	6	99.9011	-0.0108	0.2661	0.0000
2	4.70	Cl	YYLOff	6	99.7641	-0.0031	0.1818	0.0000
3	5.43	NO2	YYLOff	6	99.9396	-0.0032	0.3664	0.0000
4	6.65	Br	YYLOff	6	99.9032	0.0004	0.0710	0.0000
5	7.31	NO3	YYLOff	6	99.6701	-0.0041	0.4350	0.0000
6	12.21	SO4	YYLOff	6	99.6529	-0.0238	0.1402	0.0000
Average:					99.8052	-0.0075	0.2434	0.0000

5 WG520208-03 STD #4

1,1 AED STD69215

Sample Name:	**WG520208-03 STD #4**	*Injection Volume:*	**20.0**
Vial Number:	**13**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/21/2015 15:05**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

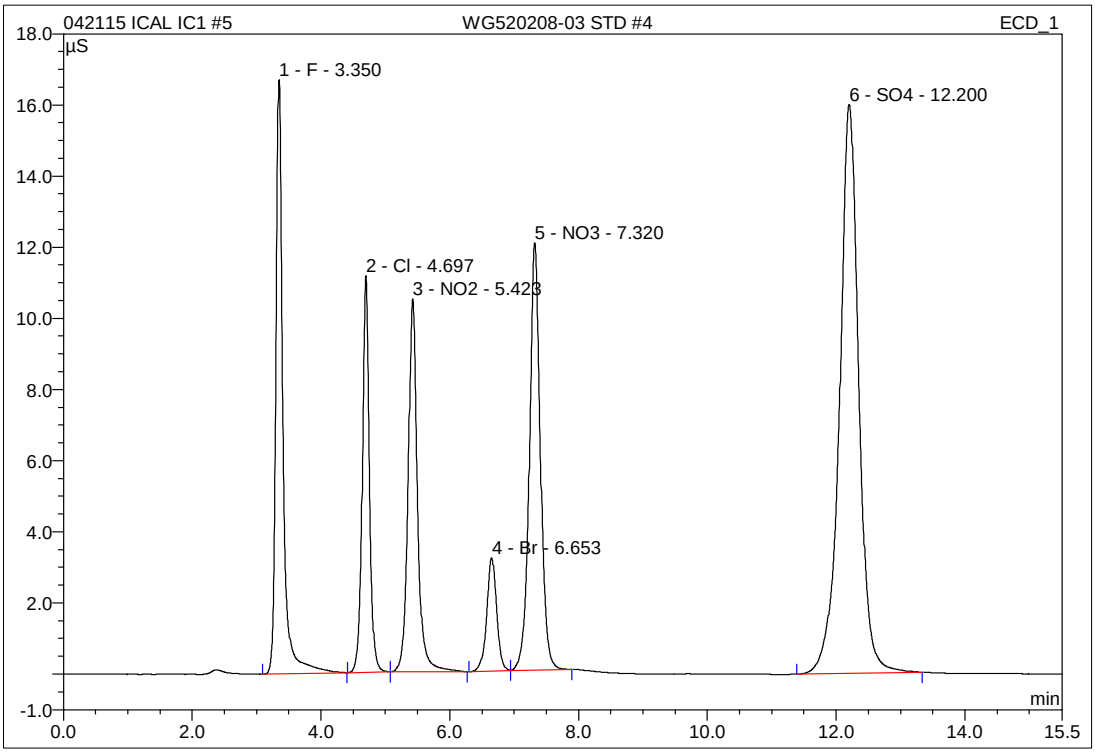

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.35	F	16.707	2.106	15.29	7.957	BMB
2	4.70	Cl	11.141	1.430	10.38	7.884	BMB
3	5.42	NO2	10.491	1.775	12.89	4.855	BMB
4	6.65	Br	3.173	0.567	4.12	7.978	BMB
5	7.32	NO3	12.011	2.382	17.30	5.485	BMB
6	12.20	SO4	15.994	5.511	40.02	39.468	BMB
Total:			69.517	13.772	100.00	73.626	

6 WG520208-04 STD #3

1,1 AED STD69215

Sample Name:	**WG520208-04 STD #3**	*Injection Volume:*	**20.0**
Vial Number:	**14**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/21/2015 15:23**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

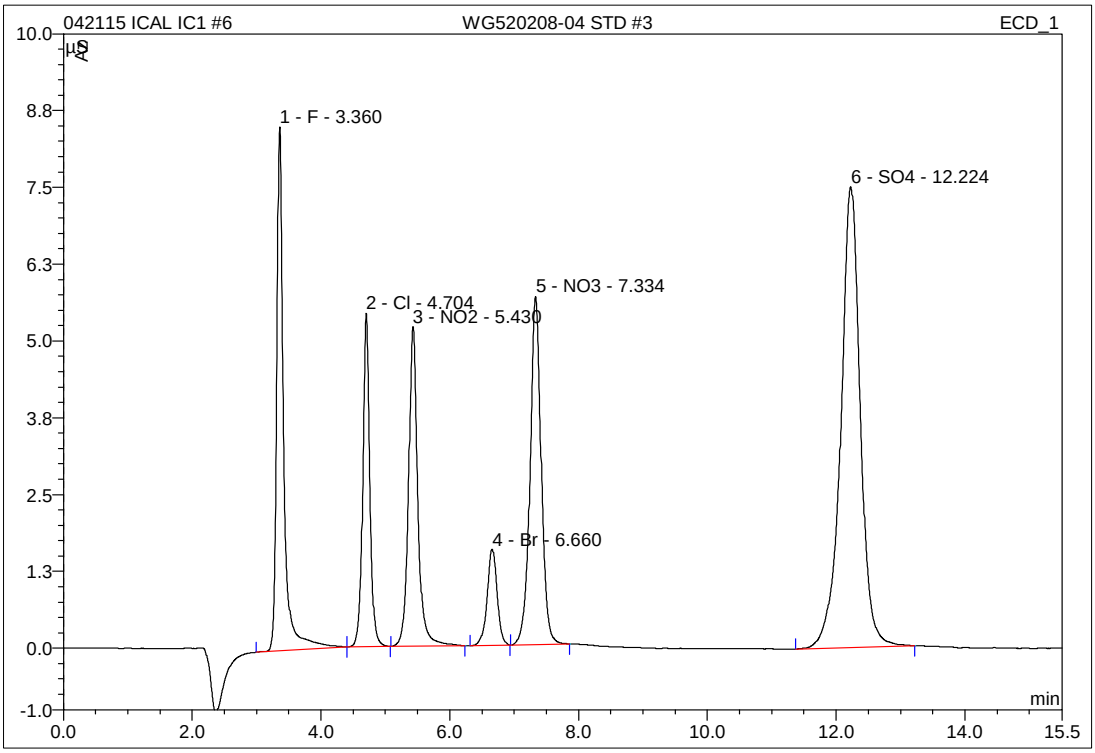

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.36	F	8.528	1.055	15.84	4.008	BMB
2	4.70	Cl	5.426	0.691	10.37	3.820	bMB
3	5.43	NO2	5.202	0.872	13.08	2.389	BMB
4	6.66	Br	1.564	0.279	4.19	3.928	BMB
5	7.33	NO3	5.667	1.138	17.08	2.626	BMB
6	12.22	SO4	7.499	2.628	39.43	18.906	BMB
Total:			33.887	6.664	100.00	35.676	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

7 WG520208-05 STD #2

1,1 AED STD69215

Sample Name:	**WG520208-05 STD #2**	*Injection Volume:*	**20.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/21/2015 15:40**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

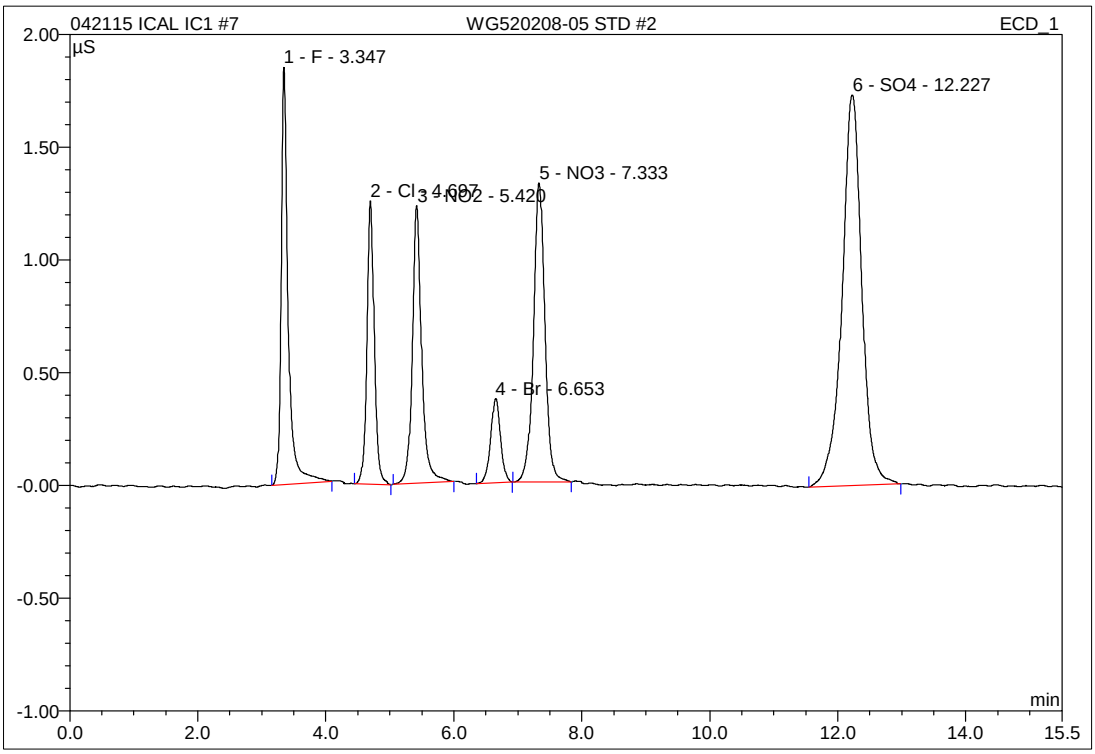

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.35	F	1.853	0.237	15.05	0.933	BMB
2	4.70	Cl	1.258	0.167	10.57	0.935	BMB
3	5.42	NO2	1.232	0.210	13.29	0.581	BMB
4	6.65	Br	0.373	0.067	4.26	0.941	BMB
5	7.33	NO3	1.327	0.276	17.47	0.643	BMB
6	12.23	SO4	1.732	0.621	39.36	4.598	BMB
Total:			7.774	1.578	100.00	8.631	

8 WG520208-06 STD #1

1,1 AED STD69215

Sample Name:	**WG520208-06 STD #1**	*Injection Volume:*	**20.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/21/2015 15:58**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

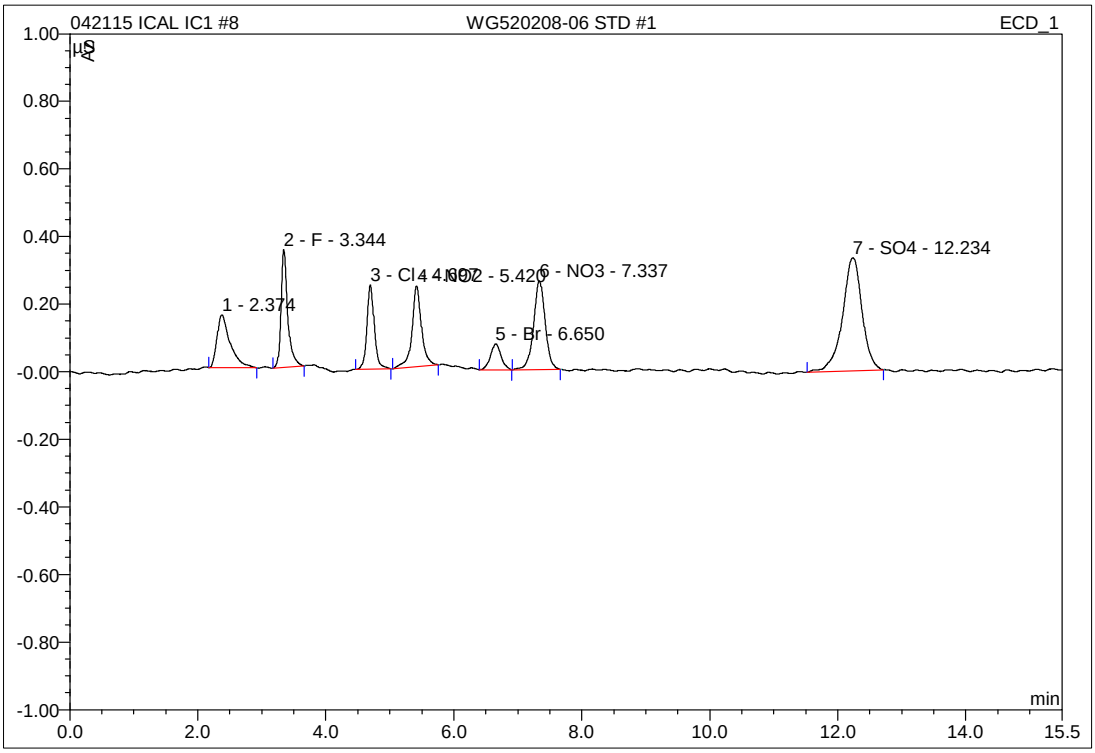

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.37	n.a.	0.156	0.037	10.80	n.a.	BMB
2	3.34	F	0.349	0.043	12.46	0.202	BMB
3	4.70	Cl	0.250	0.034	9.80	0.203	BMB
4	5.42	NO2	0.239	0.042	12.13	0.123	BMB
5	6.65	Br	0.077	0.015	4.29	0.203	BMB
6	7.34	NO3	0.262	0.055	16.10	0.137	BMB
7	12.23	SO4	0.334	0.119	34.44	1.016	BMB
Total:			1.667	0.345	100.00	1.884	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

9 WG520208-07 ALT STD

1,1 AED STD69216

Sample Name:	**WG520208-07 ALT STD**	*Injection Volume:*	**20.0**
Vial Number:	**17**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/21/2015 16:16**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

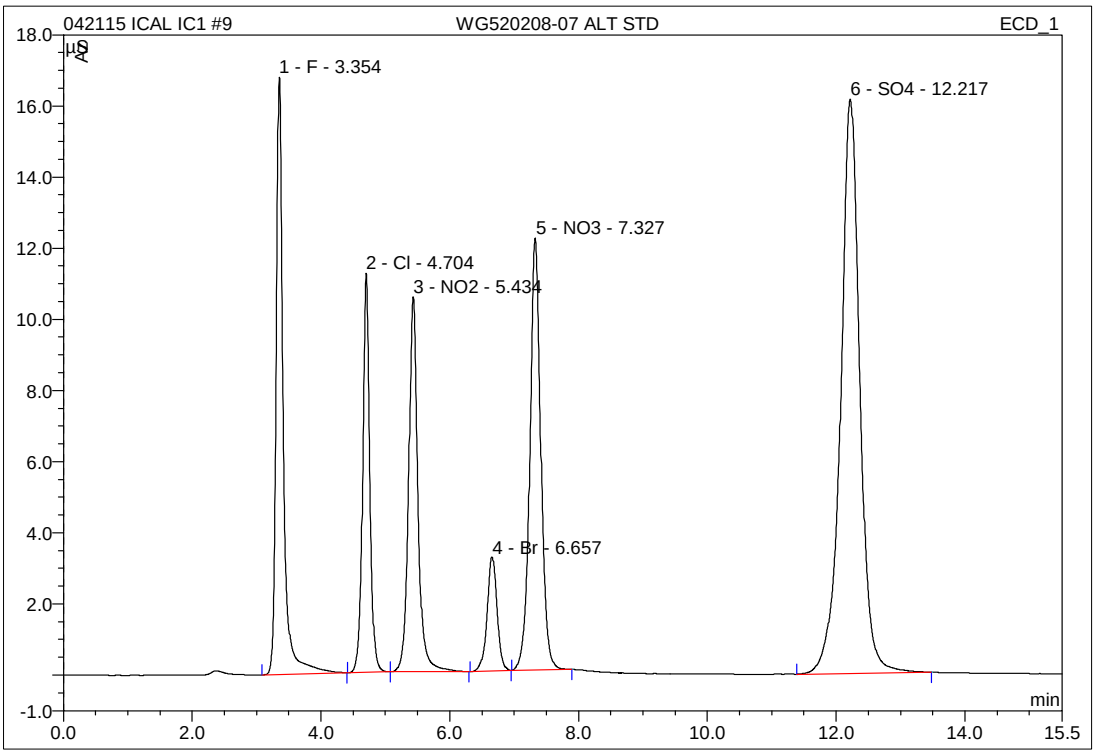

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.35	F	16.796	2.124	15.30	8.023	BMB
2	4.70	Cl	11.218	1.439	10.36	7.932	BMB
3	5.43	NO2	10.544	1.778	12.81	4.863	BMB
4	6.66	Br	3.210	0.573	4.13	8.062	BMB
5	7.33	NO3	12.140	2.400	17.29	5.526	BMB
6	12.22	SO4	16.146	5.570	40.12	39.884	BMB
Total:			70.055	13.884	100.00	74.290	

9 WG520208-07 ALT STD

1,1 AED STD69216

Sample Name:	**WG520208-07 ALT STD**	*Injection Volume:*	**20.0**
Vial Number:	**17**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/21/2015 16:16**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG520208-07 ALT S	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	8.0226	0.28	PASS
Cl	8.00	7.9321	-0.85	PASS
NO2-N	4.8714	4.8631	-0.17	PASS
Br	8.00	8.0623	0.78	PASS
NO3-N	5.4216	5.5263	1.93	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	39.8839	-0.29	PASS

3 WG524691-01 ANION CCV

1,1 ALS STD69215 (_____psi @___:___)

Sample Name:	**WG524691-01 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/21/2015 16:01**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

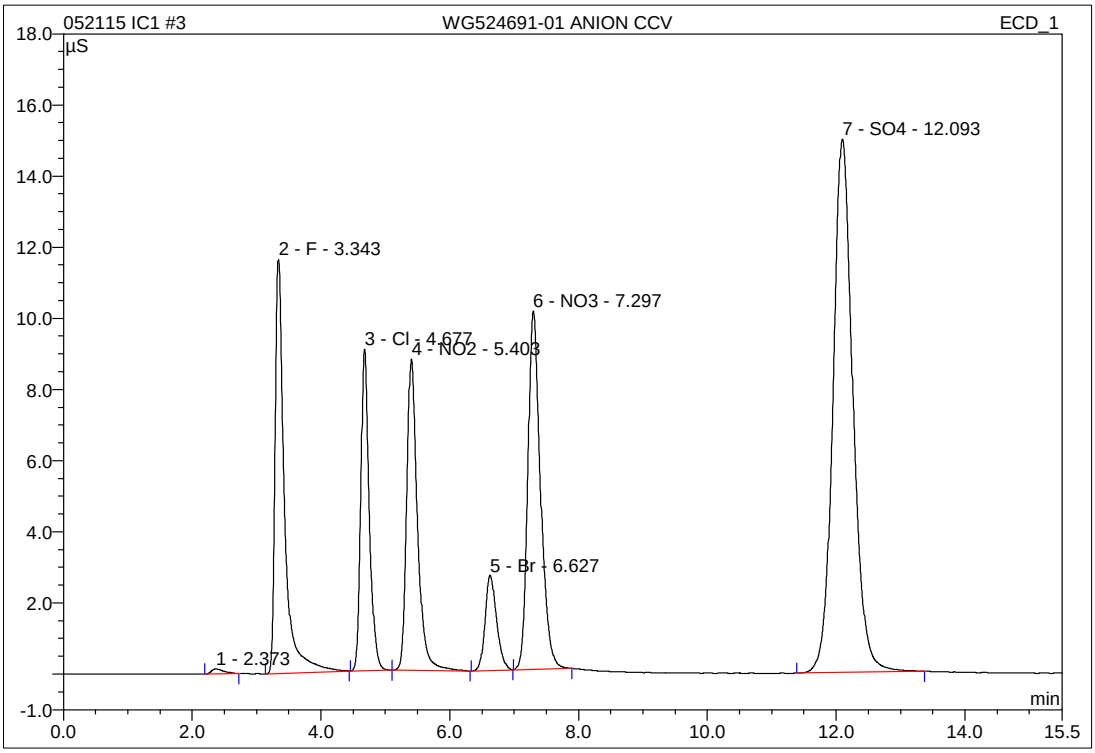

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.37	n.a.	0.137	0.030	0.23	n.a.	BMB
2	3.34	F	11.634	1.957	14.73	7.398	BMB
3	4.68	Cl	9.046	1.374	10.34	7.574	BMb
4	5.40	NO2	8.750	1.701	12.80	4.651	bMB
5	6.63	Br	2.682	0.553	4.16	7.781	BMB
6	7.30	NO3	10.082	2.302	17.32	5.301	BMB
7	12.09	SO4	14.990	5.370	40.42	38.463	BMB
Total:			57.319	13.287	100.00	71.168	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

3 WG524691-01 ANION CCV

1,1 ALS STD69215 (_____psi @___:___)

Sample Name:	**WG524691-01 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/21/2015 16:01**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG524691-01 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	7.3983	-7.52	PASS
Cl	8.00	7.5737	-5.33	PASS
NO2-N	4.8714	4.6507	-4.53	PASS
Br	8.00	7.7814	-2.73	PASS
NO3-N	5.4216	5.3007	-2.23	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	38.4633	-3.84	PASS

15 WG524691-03 ANION CCV

1,1 ALS STD69215

Sample Name:	**WG524691-03 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/21/2015 19:34**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

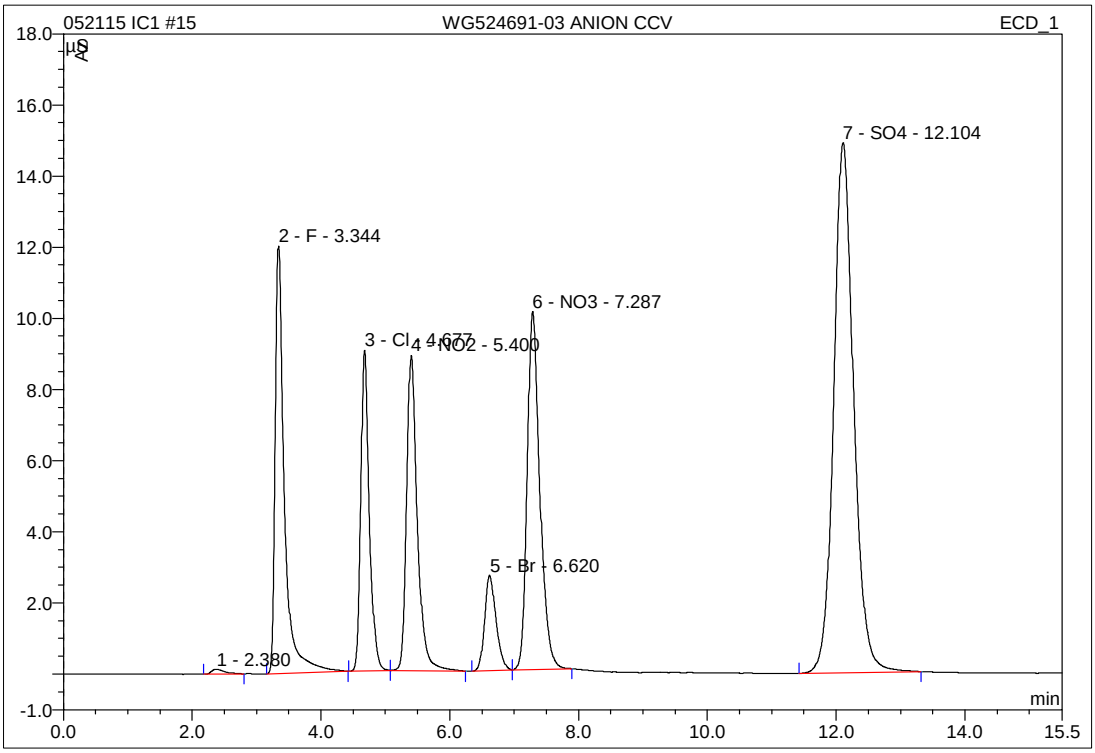

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.38	n.a.	0.133	0.032	0.24	n.a.	BMB
2	3.34	F	12.000	1.965	14.83	7.426	BMB
3	4.68	Cl	9.014	1.365	10.31	7.528	BMb
4	5.40	NO2	8.849	1.704	12.86	4.659	bMB
5	6.62	Br	2.679	0.549	4.14	7.717	BMB
6	7.29	NO3	10.069	2.286	17.26	5.265	BMB
7	12.10	SO4	14.903	5.344	40.35	38.276	BMB
Total:			57.648	13.244	100.00	70.871	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

15 WG524691-03 ANION CCV

1,1 ALS STD69215

Sample Name:	**WG524691-03 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/21/2015 19:34**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG524691-03 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	7.4258	-7.18	PASS
Cl	8.00	7.5278	-5.90	PASS
NO2-N	4.8714	4.6592	-4.36	PASS
Br	8.00	7.7168	-3.54	PASS
NO3-N	5.4216	5.2649	-2.89	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	38.2763	-4.31	PASS

27 WG524691-05 ANION CCV

1,1 ALS STD69215

Sample Name:	**WG524691-05 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**27**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/21/2015 23:06**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

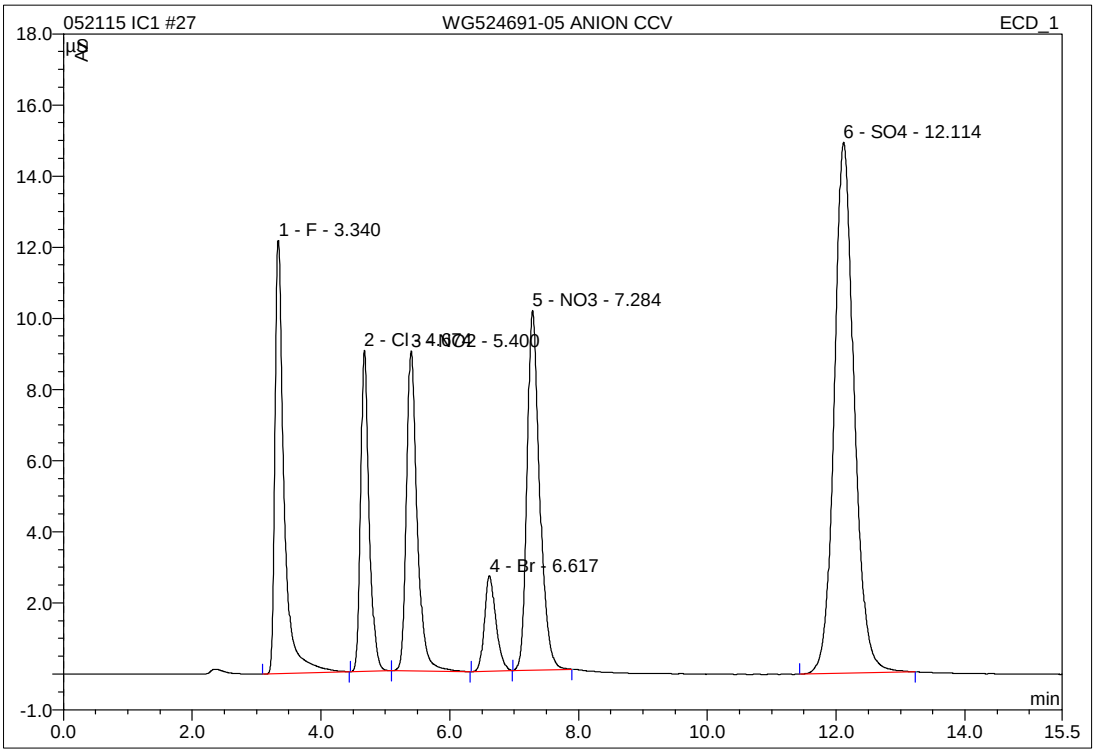

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.34	F	12.178	1.986	14.94	7.506	BMB
2	4.67	Cl	9.021	1.370	10.31	7.552	BMB
3	5.40	NO2	9.004	1.737	13.07	4.751	BMB
4	6.62	Br	2.690	0.551	4.15	7.752	BMB
5	7.28	NO3	10.115	2.298	17.29	5.293	BMB
6	12.11	SO4	14.928	5.349	40.24	38.311	BMB
Total:			57.937	13.292	100.00	71.165	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

27 WG524691-05 ANION CCV

1,1 ALS STD69215

Sample Name:	**WG524691-05 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**27**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/21/2015 23:06**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG524691-05 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	7.5065	-6.17	PASS
Cl	8.00	7.5522	-5.60	PASS
NO2-N	4.8714	4.7507	-2.48	PASS
Br	8.00	7.7519	-3.10	PASS
NO3-N	5.4216	5.2927	-2.38	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	38.3109	-4.22	PASS

4 WG524691-02 ANION CCB

1,1 ALS

Sample Name:	**WG524691-02 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/21/2015 16:19**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

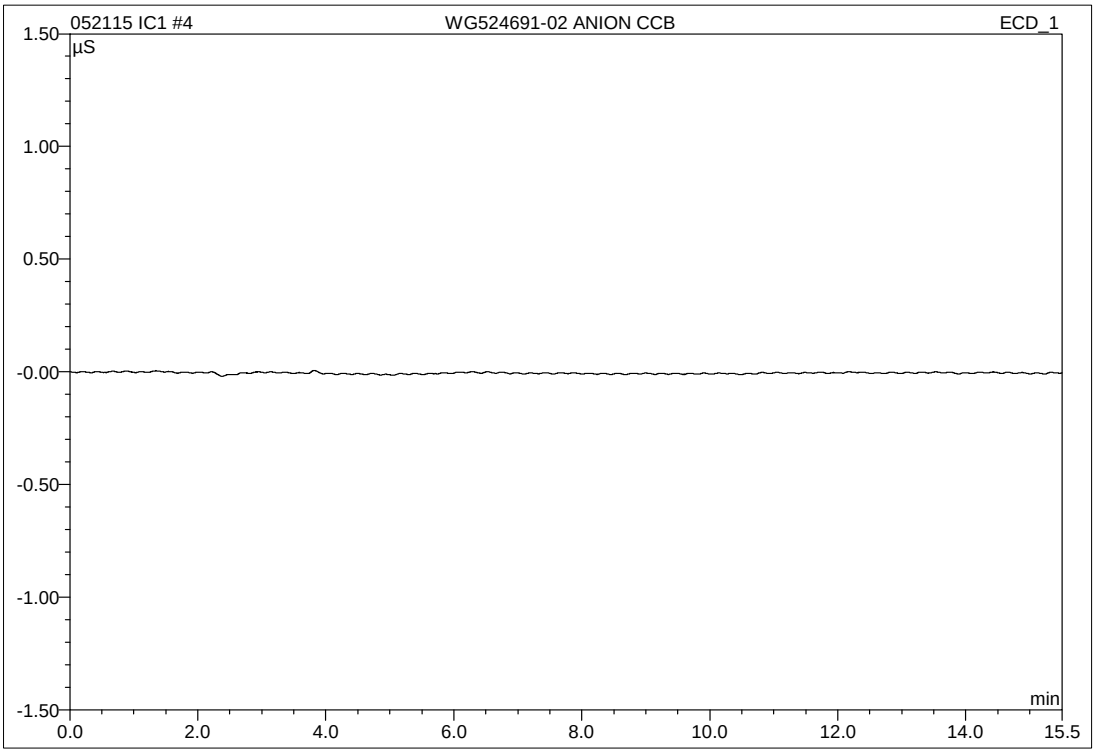

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

16 WG524691-04 ANION CCB

1,1 ALS

Sample Name:	**WG524691-04 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**16**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/21/2015 19:52**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

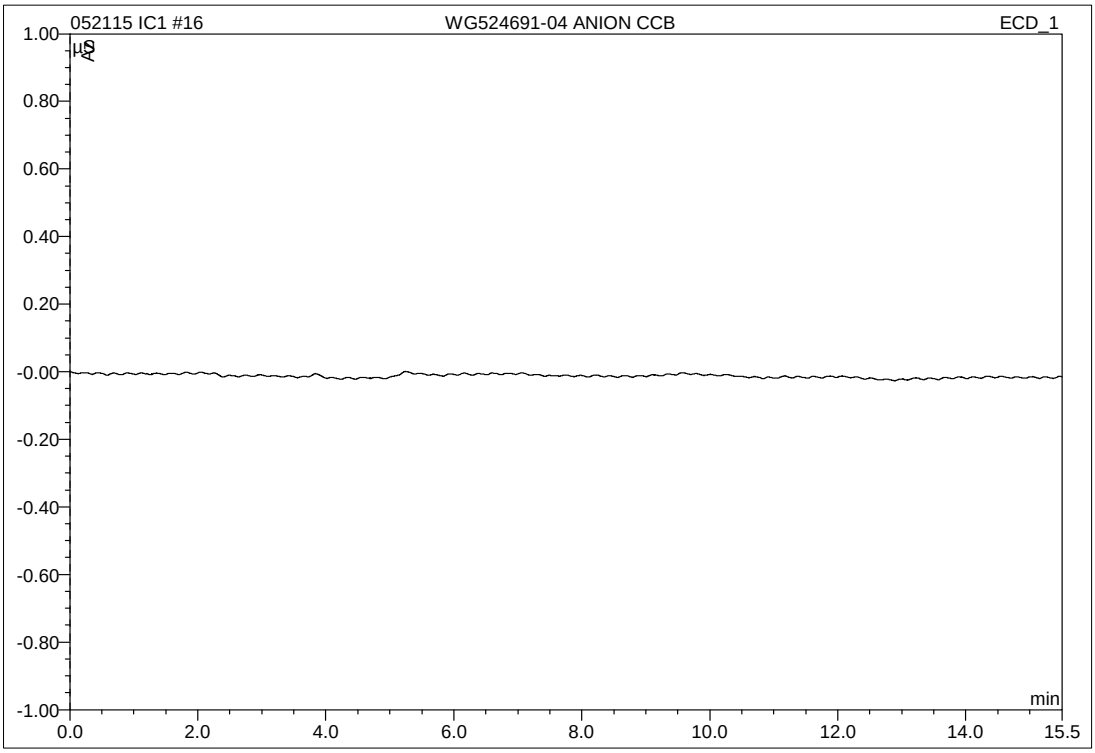

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

28 WG524691-06 ANION CCB

1,1 ALS

Sample Name:	**WG524691-06 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**28**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/21/2015 23:24**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

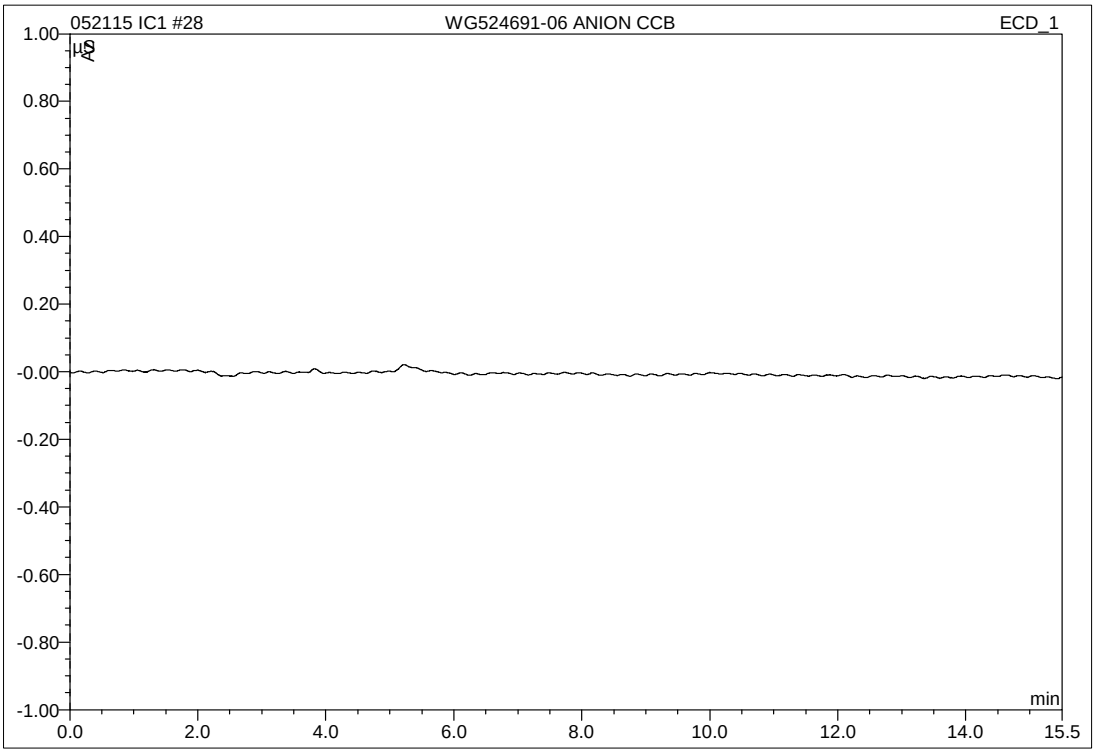

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

RETENTION TIME WINDOWS

Lab Name: MICROBAC Laboratories, Inc.

Instrument ID: IC1

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	6/5/2013	6/5/2013	6/6/2013
File #	WG432976-05	WG432976-07	WG433275-01
Time	16:16	18:25	16:50

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.41	3.40	3.41	0.017
Cl	4.87	4.87	4.88	0.017
NO2-N	5.67	5.66	5.67	0.017
Br	7.01	6.99	7.02	0.046
NO3-N	7.76	7.74	7.77	0.046
SO4	13.35	13.35	13.35	0.000

Instrument ID: IC2

IC Column: AS14A-4mm

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	3/2/2015	3/4/2015	3/5/2015
File #	WG514023-02	WG514341-02	WG514431-02
Time	23:15	18:47	17:41

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.33	3.33	3.32	0.017
Cl	4.75	4.78	4.76	0.043
NO2-N	5.54	5.59	5.56	0.082
Br	6.86	6.98	6.93	0.180
NO3-N	7.59	7.73	7.67	0.222
SO4	12.42	12.38	12.34	0.116

Instrument ID: IC3

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	5/20/2014	5/21/2014	5/21/2014
File #	WG476910-05	WG476934-01	WG476934-03
Time	12:41	9:54	13:59

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.41	3.41	3.41	0.000
Cl	5.11	5.09	5.07	0.050
NO2-N	6.14	6.11	6.07	0.101
Br	7.90	7.84	7.75	0.220
NO3-N	8.94	8.86	8.76	0.271
SO4	13.35	13.39	13.42	0.101

2.4.1.5 Raw QC Data

5 WG524674-01 ANION BLANK

1,1 ALS

Sample Name:	**WG524674-01 ANION BLANK**	*Injection Volume:*	**20.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/21/2015 16:37**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

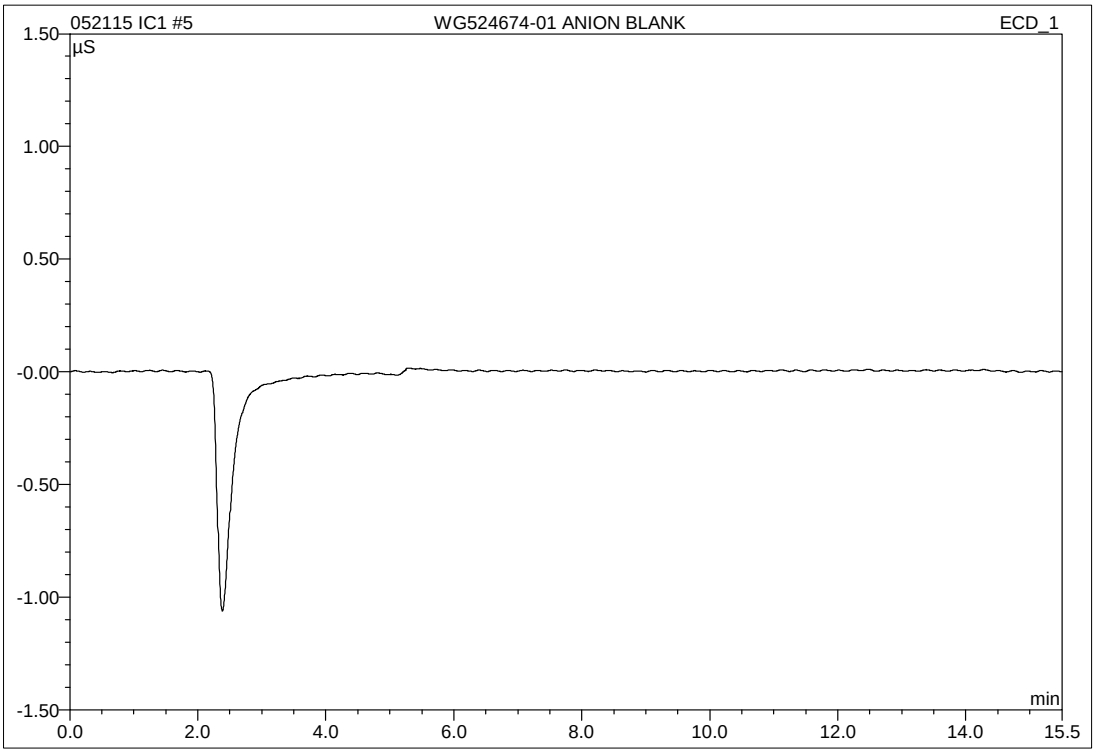

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

6 WG524674-02 ANION LCS

1,1 ALS

Sample Name:	**WG524674-02 ANION LCS**	*Injection Volume:*	**20.0**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/21/2015 16:55**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

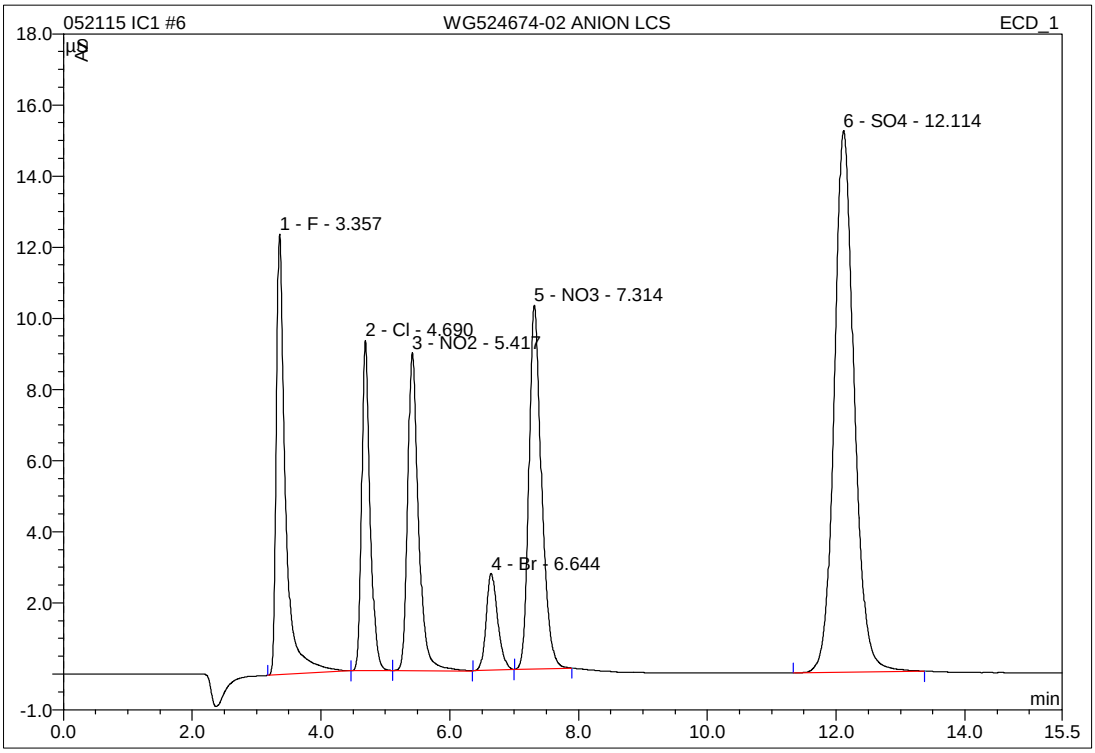

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.36	F	12.383	2.031	15.03	7.675	BMB
2	4.69	Cl	9.292	1.392	10.30	7.672	bMB
3	5.42	NO2	8.940	1.741	12.88	4.760	bMB
4	6.64	Br	2.724	0.561	4.15	7.894	BMB
5	7.31	NO3	10.224	2.327	17.23	5.360	BMB
6	12.11	SO4	15.231	5.460	40.41	39.099	BMB
Total:			58.793	13.512	100.00	72.459	

2.4.2 Alkalinity Data

2.4.2.1 Summary Data

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW13-052015	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	05/28/2015 08:41
Workgroup #:	WG525233	**Analyst:**	DCM	**Run Date:**	05/28/2015 08:54
Collect Date:	05/20/2015 08:30	**Dilution:**	2	**File ID:**	S2150528001.029
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	318		80.0	40.0	20.0

Certificate of Analysis

Sample #:	L15051303-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW14-052015	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	05/28/2015 08:41
Workgroup #:	WG525233	**Analyst:**	DCM	**Run Date:**	05/28/2015 08:55
Collect Date:	05/20/2015 09:45	**Dilution:**	1	**File ID:**	S2150528001.030
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	271		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L15051303-05	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW11-052015	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	05/28/2015 08:41
Workgroup #:	WG525233	**Analyst:**	DCM	**Run Date:**	05/28/2015 08:56
Collect Date:	05/20/2015 11:00	**Dilution:**	2	**File ID:**	S2150528001.031
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	308		80.0	40.0	20.0

Certificate of Analysis

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15051303-07	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW06-052015	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	05/28/2015 08:41
Workgroup #:	WG525233	**Analyst:**	DCM	**Run Date:**	05/28/2015 08:57
Collect Date:	05/20/2015 13:15	**Dilution:**	1	**File ID:**	S2150528001.032
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	282		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L15051303-09	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW12-052015	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	05/28/2015 09:47
Workgroup #:	WG525327	**Analyst:**	DCM	**Run Date:**	05/28/2015 09:55
Collect Date:	05/20/2015 14:40	**Dilution:**	1	**File ID:**	S2150528002.019
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	189		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L15051303-11	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW23-052015	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	05/28/2015 09:47
Workgroup #:	WG525327	**Analyst:**	DCM	**Run Date:**	05/28/2015 09:55
Collect Date:	05/20/2015 15:55	**Dilution:**	1	**File ID:**	S2150528002.020
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	206		40.0	20.0	10.0

2.4.2.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809	
Value of b from plot:	0.0004135	
Absorbance of unknown from quantitation report (y):	0.31	
Calculated concentration (x):	0.03964483	
Dilution factor (D):	1.00	
Concentration of analyte in sample, Cy:	0.0396	mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796	
Value of B from plot:	318.9056	
Value of C from plot:	-2.2712	
Absorbance of unknown from quantitation report (x):	0.1583	
Calculated concentration (y):	50.7495108	
Dilution factor (D):	1.00	
Concentration of analyte in sample, Cy:	50.75	mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 28-MAY-2015
Analyst: DCM
Analyst: NA
Method: ALK
Instrument: SC2
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG525233 WG525327 WG525332

Calibration/Linearity	5/25/2015
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DIH
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
28-MAY-2015

Secondary Reviewer:
29-MAY-2015

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-29-2015 09:39:01

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 310.2 AAB#: WG525233

Login Number: L15051303

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW13-052015	01	05/20/15					05/28/2015	8	14		05/28/15	8	14	
50WW14-052015	03	05/20/15					05/28/2015	8	14		05/28/15	8	14	
50WW11-052015	05	05/20/15					05/28/2015	7.9	14		05/28/15	7.9	14	
50WW06-052015	07	05/20/15					05/28/2015	7.8	14		05/28/15	7.8	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4203928
Report generated 05/28/2015 13:43

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 310.2 AAB#: WG525327

Login Number: L15051303

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW12-052015	09	05/20/15					05/28/2015	7.8	14		05/28/15	7.8	14	
50WW23-052015	11	05/20/15					05/28/2015	7.8	14		05/28/15	7.8	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4203928
Report generated 05/28/2015 13:43

METHOD BLANK SUMMARY

Login Number: L15051303
Blank File ID: S2150528001.012
Prep Date: 05/28/15 08:44
Analyzed Date: 05/28/15 08:44
Analyst: DCM

Work Group: WG525233
Blank Sample ID: WG525233-01
Instrument ID: SMARTCHEM2
Method: 310.2

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG525233-02	S2150528001.013	05/28/15 08:45	01
LCS2	WG525233-03	S2150528001.014	05/28/15 08:45	01
50WW13-052015	L15051303-01	S2150528001.029	05/28/15 08:54	DL01
50WW14-052015	L15051303-03	S2150528001.030	05/28/15 08:55	01
50WW11-052015	L15051303-05	S2150528001.031	05/28/15 08:56	DL01
50WW06-052015	L15051303-07	S2150528001.032	05/28/15 08:57	01
DUP	WG525233-05	S2150528001.041	05/28/15 09:02	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4203929
Report generated 05/28/2015 13:43

METHOD BLANK SUMMARY

Login Number: L15051303
Blank File ID: S2150528002.012
Prep Date: 05/28/15 09:50
Analyzed Date: 05/28/15 09:50
Analyst: DCM

Work Group: WG525327
Blank Sample ID: WG525327-01
Instrument ID: SMARTCHEM2
Method: 310.2

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG525327-02	S2150528002.013	05/28/15 09:51	01
LCS2	WG525327-03	S2150528002.014	05/28/15 09:51	01
50WW12-052015	L15051303-09	S2150528002.019	05/28/15 09:55	01
50WW23-052015	L15051303-11	S2150528002.020	05/28/15 09:55	01
DUP	WG525327-05	S2150528002.035	05/28/15 10:05	01

Report Name: BLANK_SUMMARY
PDF File ID: 4203929
Report generated 05/28/2015 13:43

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051303 Prep Date: 05/28/15 08:44 Sample ID: WG525233-01
Instrument ID: SMARTCHEM2 Run Date: 05/28/15 08:44 Prep Method: 310.2
File ID: S2150528001.012 Analyst: DCM Method: 310.2
Workgroup (AAB#): WG525233 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-28-MAY-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Alkalinity, Total (as CaCO3)	10.0	40.0	10.0	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4203930
28-MAY-2015 13:43

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051303 Prep Date: 05/28/15 09:50 Sample ID: WG525327-01
Instrument ID: SMARTCHEM2 Run Date: 05/28/15 09:50 Prep Method: 310.2
File ID: S2150528002.012 Analyst: DCM Method: 310.2
Workgroup (AAB#): WG525327 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-28-MAY-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Alkalinity, Total (as CaCO3)	10.0	40.0	-14.2	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4203930
28-MAY-2015 13:43

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051303 Analyst: DCM Prep Method: 310.2
Instrument ID: SMARTCHEM2 Matrix: Water Method: 310.2
Workgroup (AAB#): WG525233 Units: mg/L
QC Key: DOD4 Lot #: STD70072

Sample ID: WG525233-02 LCS File ID: S2150528001.013 Run Date: 05/28/2015 08:45
Sample ID: WG525233-03 LCS2 File ID: S2150528001.014 Run Date: 05/28/2015 08:45

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Alkalinity, Total (as CaCO3)	200	203	102	200	206	103	1.19	85 - 115	20	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4203931
Report generated: 05/28/2015 13:43

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051303 Analyst: DCM Prep Method: 310.2
Instrument ID: SMARTCHEM2 Matrix: Water Method: 310.2
Workgroup (AAB#): WG525327 Units: mg/L
QC Key: DOD4 Lot #: STD70072

Sample ID: WG525327-02 LCS File ID: S2150528002.013 Run Date: 05/28/2015 09:51
Sample ID: WG525327-03 LCS2 File ID: S2150528002.014 Run Date: 05/28/2015 09:51

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Alkalinity, Total (as CaCO3)	200	204	102	200	198	99.2	2.69	85 - 115	20	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4203931
Report generated: 05/28/2015 13:43

2.4.2.3 Raw Data

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

WORKGROUP: WG525233

525327
525332

Daily Check

- [x] Lamp On
- [x] Probe Rinse Full
- [x] DI Water > ½ Full
- [x] Wash Solution > ½ Full
- [ ] NO3 Reagent bottle connected / purged
- [ ] NO3 pH adj to pH 5-9

Syringe filter lot # _____

- [x] WBL Run
- [x] Reagents Full
- [x] Dilution H_2O Full
- [x] Waste Container Check

1) **Workgroup** _____ **Plan #** 20150528001
2) **Workgroup** _____ **Plan #** 20150528002
3) **Workgroup** _____ **Plan #** 20150528003

Instrument: SC1 [ ] SC2 [x]

	Analyte	1	2	3
		Alk		
		Dilution		
SC Prepared Curve				
Position				
1-1	ICV			
1-2	Blk			
1-3	LCS			
1-4	LCSDUP			
1-5	05-1605-12			
1-6	05-1605-12			
1-7	05-1310-01	1/2		
1-8	02	1/2		
1-9	05-1425-01	1/2		
1-10	02	1/10		
1-11	05-147202	1/4		color
1-12	03	1/4		color
1-13	05	1/4		color
1-14	06	1/4		color
1-15	08	1/4		color
1-16	09	1/4		color
1-17	05-1303-01	1/2		
1-18	03			
1-19	05	1/2		
1-20	07			
1-21	09			
1-22	11			
2-1	05-1393-02			BC
2-2	04	1/2		BC
2-3	MS 06	1/2		BC

Position	Analyte	1	2	3
2-4	MSD 05-1393-08	1/2		BC
2-5	DUP 05-1393-04	1/2		
2-6	05-1425-02	1/2		1 ICV
2-7	Blk			2
2-8	LCS			3
2-9	LCSDUP			4
2-10	05-002-15			5
2-11	16			6
2-12	17			7
2-13	05-1425-02	1/2		8
2-14	05-1303-09			9
2-15	11			10
2-16	05-1393-02			BC 11 *
2-17	04	1/2		BC 12 *
2-18	MS 06	1/2		BC 13 *
2-19	MSD 08	1/2		BC 14 *
2-20	10			BC 15 *
2-21	12			BC 16 *
2-22	05-1435-01	1/2		17
2-23	03	1/2		18
2-24	05-1302-01	1/5		color 19
2-25	02			20
2-26	DUP ↓			21
3-1	21			
3-2	22			

NOTES:
* Run NO2 std on NO3 runs
* LCSD must be run if no MS or Duplicate
*MS(10% sample): NO3, TKN, NH3, PHOS

* pH < 8.3 MDL 1 (20) std 7072
10 = 20

DCN#110871

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

WORKGROUP: WG525233

525 332

Position	Analyte	1	2	3
3-3 1	Icv			
3-4 2	Blk			
3-5 3	LCS			
3-6 4	LCSDUP			
3-7 5	05-1564-c1	1/2		BC
3-8 6	c3	1/2		BC
3-9 7	05-1550-c2	1/4		color
3-10 8	c3	1/4		color
3-11 9	c5	1/4		color
3-12 10	c6	1/4		color
3-13 11	05-1564-c1			BC
3-14 12	c3			BC
3-15 13	c5	1/2		BC

Position	Analyte	1	2	3
3-16 14	05-1564-c7			BC
3-17 15	c9			BC
3-18 16	11			BC
3-19 17	DUP c9			
3-20				
3-21				
3-22				
3-23				
3-24				
3-25				
3-26				
3-27				
3-28				

	Chloride	EPA 325.2/SM 4500-CI E-2000
	Nitrate-Nitrite	EPA 353.2/SM 4500-NO3 F-2000
✓	Alkalinity	EPA 310.2
	Sulfate	EPA 375.4/SM 426C (15th)/ SM4500-504 E-1997

	Ammonia	EPA 350.1/SM 4500-NH3 B-1997
	TKN	EPA 351.2
	Phos	EPA 365.4

Analyte	Alk		Reagents
SOP & Revision	K3102 R17		RGT 33725
Curve Stock (SC made)	std 70552		
NO2 STD			
ICV	std 70444		
CCV	std 70445		
LCS	std 70072		
MS	std 70284 0.4(2500) Dilution 10 =100		

Comments: _____

Analyst: David Merkle Date: 5/28/05

DCN#110871

MICROBAC (OVD)

SMARTCHEM200 INST2 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.0	0.7988	0.00		8:35:39 AM
DIL-1	RBL	0.0	0.8016	0.00	R	8:35:57 AM
DIL-1	RBL	0.0	0.7997	0.00		8:36:51 AM
DIL-1	Std-1	0.0	-0.0021	0.00		8:37:09 AM
SR5-1	Std-2	10.0	-0.0211	0.00		8:38:03 AM
SR5-2	Std-3	20.0	-0.0369	0.00		8:38:21 AM
SR5-3	Std-4	50.0	-0.0805	0.00		8:39:16 AM
SR5-4	Std-5	100.0	-0.1655	0.00		8:39:34 AM
SR5-5	Std-6	200.0	-0.3521	0.00		8:40:28 AM
SR5-6	Std-7	250.0	-0.4405	0.00		8:40:46 AM
SR5-7	Std-8	300.0	-0.5192	0.00		8:41:40 AM
ST-3	1CCV (150 mg/L)	148.3	-0.2558	98.86		8:41:58 AM
ST-2	2CCB (0 mg/L)	-14.2	0.0232	0.00	INV,><,LL	8:42:52 AM
1	ICV	254.2	-0.4427	0.00		8:43:10 AM
2	WG525233-01 BLK	-8.0	0.0127	0.00	INV,><,LL	8:44:04 AM
3	WG525233-02 LCS	203.2	-0.3522	0.00		8:45:16 AM
4	WG525233-03 LCSDUP	205.6	-0.3565	0.00		8:45:34 AM
5	L15051105-12	158.7	-0.2739	0.00		8:46:28 AM
6	L15051105-12 B	157.7 X	-0.2722	0.00		8:46:46 AM
7	L15051310-01 (2)	183.3	-0.3172	0.00		8:47:40 AM
8	L15051310-02 (2)	158.8	-0.2742	0.00		8:47:58 AM
9	L15051425-01 (2)	88.4	-0.1520	0.00		8:48:52 AM
10	L15051425-02 (10)	38.4 X	-0.0660	0.00		8:49:10 AM
ST-3	1CCV (150 mg/L)	141.8	-0.2445	94.54		8:50:04 AM
ST-2	2CCB (0 mg/L)	-7.5	0.0119	0.00	INV,><,LL	8:50:58 AM
11	L15051472-02 (4)	210.1	-0.3643	0.00		8:51:16 AM
12	L15051472-03 (4)	120.0	-0.2066	0.00		8:52:10 AM
13	L15051472-05 (4)	171.6	-0.2966	0.00		8:52:28 AM
14	L15051472-06 (4)	122.4	-0.2107	0.00		8:53:22 AM
15	L15051472-08 (4)	177.2	-0.3064	0.00		8:53:40 AM
16	L15051472-09 (4)	131.3	-0.2262	0.00		8:54:34 AM
17	L15051303-01 (2)	158.9	-0.2744	0.00		8:54:52 AM

Report Date :05/28/2015 **Run Date :5/28/2015** **Operator : WESTCO** **Plan # :20150528001**

Plan Description : ALK-A2-DCM/05/28/2015

MICROBAC (OVD)

SMARTCHEM200 INST2 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
18	L15051303-03	271.1	-0.4729	0.00		8:55:46 AM
19	L15051303-05 (2)	154.1	-0.2659	0.00		8:56:04 AM
20	L15051303-07	281.6	-0.4918	0.00		8:57:16 AM
ST-3	1CCV (150 mg/L)	162.6	-0.2808	108.40		8:57:34 AM
ST-2	2CCB (0 mg/L)	9.7	-0.0173	0.00		8:58:28 AM
21	L15051303-09	209.4	-0.3631	0.00		8:58:46 AM
22	L15051303-11	221.8	-0.3850	0.00		8:59:40 AM
23	L15051393-02	248.1	-0.4318	0.00		8:59:58 AM
24	L15051393-04 (2)	168.4	-0.2910	0.00		9:00:52 AM
25	L15051393-06 (2) MS	211.7	-0.3672	0.00		9:01:10 AM
26	L15051393-08 (2) MSD	208.7	-0.3619	0.00		9:02:04 AM
27	WG525233-07 (2) DUP	171.7	-0.2968	0.00		9:02:22 AM
28	ID 28 ~~1150~~ 1425-02 (2)	145.1	-0.2503	0.00	EPL	9:03:16 AM
ST-3	1CCV (150 mg/L)	163.6	-0.2826	109.08		9:03:34 AM
ST-2	2CCB (0 mg/L)	22.2	-0.0385	0.00		9:04:46 AM

Report Date :05/28/2015 Run Date :5/28/2015 Operator : WESTCO Plan # :20150528001

Plan Description : ALK-A2-DCM/05/28/2015

Calibrant Report - WALK -

Calib Lot #:010104 Exp Date:6/21/2020 User:MICROBAC

Plan # : 20150528001 Description : [ALK-A2-DCM/05/28/2015] Unit

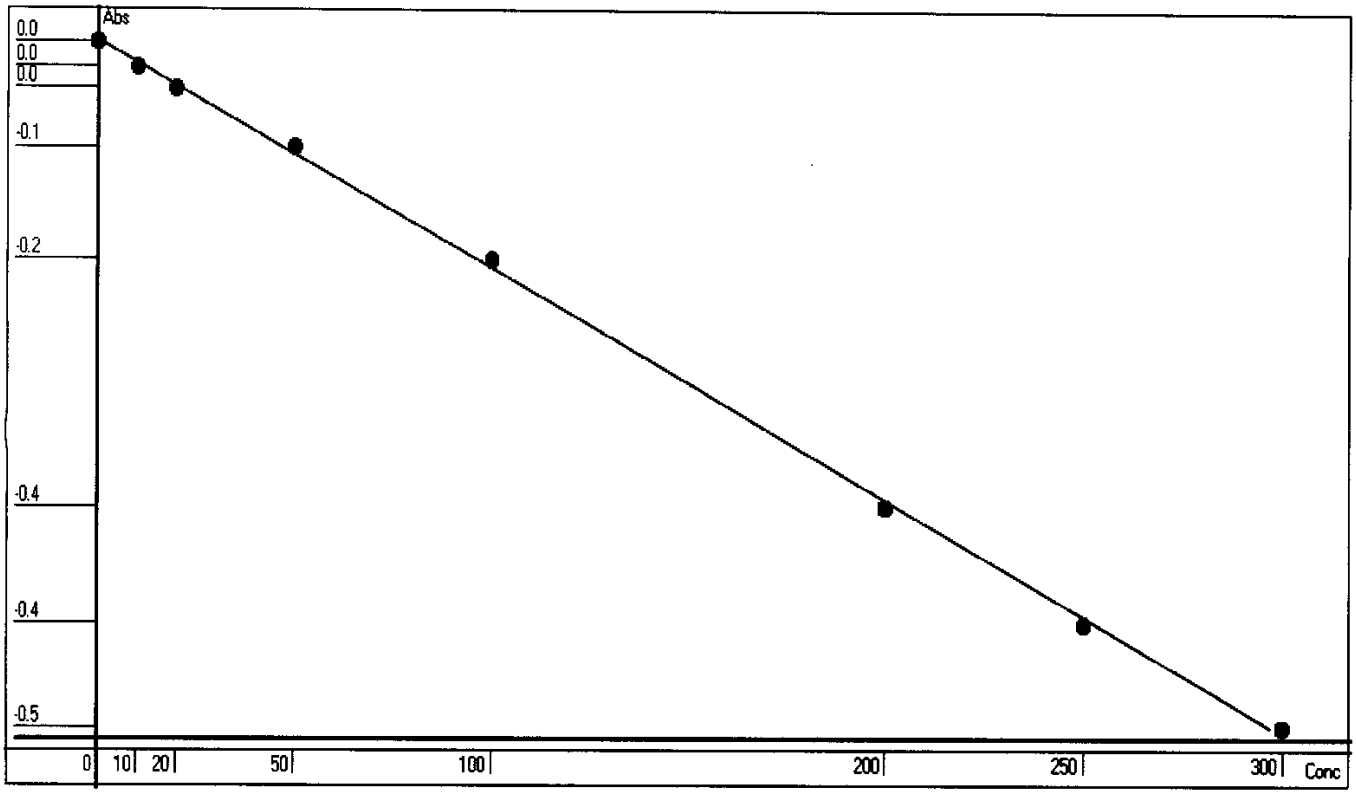

Point	OD	Conc	Recalc Conc	% Error
1	-0.0021	0	0.7415	74.15
2	-0.0211	10	11.9462	19.46
3	-0.0369	20	21.2450	6.23
4	-0.0804	50	46.7580	-6.48
5	-0.1655	100	96.2958	-3.70
6	-0.3521	200	203.1862	1.59
7	-0.4405	250	252.9942	1.20
8	-0.5192	300	296.8875	-1.04

Conc= -34.1587*Abso^2 -590.5124*Abso -0.4984 R^2=0.9994

RBL
0.7993
0

Report Date 5/28/2015 Run Date 5/28/2015

MICROBAC (OVD)

SMARTCHEM200 INST2 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.0	0.6434	0.00		9:41:56 AM
DIL-1	RBL	0.0	0.6442	0.00		9:42:14 AM
DIL-1	RBL	0.0	0.6528	0.00		9:43:08 AM
DIL-1	Std-1	0.0	0.0059	0.00	INV	9:43:26 AM
SR5-1	Std-2	10.0	-0.0094	0.00		9:44:20 AM
SR5-2	Std-3	20.0	-0.0270	0.00		9:44:38 AM
SR5-3	Std-4	50.0	-0.0688	0.00		9:45:32 AM
SR5-4	Std-5	100.0	-0.1354	0.00		9:45:50 AM
SR5-5	Std-6	200.0	-0.2823	0.00		9:46:44 AM
SR5-6	Std-7	250.0	-0.3660	0.00		9:47:02 AM
SR5-7	Std-8	300.0	-0.4179	0.00		9:47:56 AM
ST-3	1CCV (150 mg/L)	145.4	-0.2060	96.91		9:48:14 AM
ST-2	2CCB (0 mg/L)	-7.8	0.0167	0.00	INV,><,LL	9:49:08 AM
1	ICV	252.9	-0.3590	0.00		9:49:26 AM
2	WG525327-01 BLK	-14.2	0.0262	0.00	INV,><,LL	9:50:20 AM
3	WG525327-02 LCS	203.8	-0.2895	0.00		9:51:32 AM
4	WG525327-03 LCSDUP	198.4	-0.2818	0.00		9:51:50 AM
5	L15050002-15	15.2	-0.0171	0.00		9:52:44 AM
6	L15050002-16	18.7	-0.0222	0.00		9:53:02 AM
7	L15050002-17	16.5	-0.0189	0.00		9:53:56 AM
8	L15051425-02 (2)	117.3	-0.1656	0.00	EPL	9:54:14 AM
9	L15051303-09	189.0	-0.2684	0.00		9:55:08 AM
10	L15051303-11	206.0	-0.2926	0.00		9:55:26 AM
ST-3	1CCV (150 mg/L)	142.8	-0.2023	95.20		9:56:20 AM
ST-2	2CCB (0 mg/L)	-10.3	0.0205	0.00	INV,><,LL	9:57:14 AM
11	L15051393-02	239.8	-0.3405	0.00		9:57:32 AM
12	L15051393-04 (2)	151.0	-0.2141	0.00		9:58:27 AM
13	L15051393-06 (2) MS	201.1	-0.2856	0.00		9:58:44 AM
14	L15051393-08 (2) MSD	199.4	-0.2832	0.00		9:59:39 AM
15	L15051393-10	259.3	-0.3680	0.00		9:59:56 AM
16	L15051393-12	26.5	-0.0336	0.00		10:00:50 AM
17	L15051435-01 (2)	214.3	-0.3044	0.00		10:01:08 AM

Report Date :05/28/2015 **Run Date :5/28/2015** **Operator : WESTCO** **Plan # :20150528002**

Plan Description : ALK-B2-DCM/05/28/2015

MICROBAC (OVD)
SMARTCHEM200 INST2 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
18	L15051435-03 (2)	173.2	-0.2458	0.00		10:02:02 AM
19	L15051502-01 (5)	5.2	-0.0024	0.00		10:02:20 AM
20	L15051502-02	236.6	-0.3360	0.00		10:03:32 AM
ST-3	1CCV (150 mg/L)	158.9	-0.2254	105.94		10:03:50 AM
ST-2	2CCB (0 mg/L)	8.8	-0.0076	0.00		10:04:44 AM
21	WG525327-05 DUP	235.5	-0.3344	0.00		10:05:02 AM
ST-3	1CCV (150 mg/L)	157.9	-0.2239	105.24		10:05:56 AM
ST-2	2CCB (0 mg/L)	13.2	-0.0142	0.00		10:06:14 AM

Report Date :05/28/2015 Run Date :5/28/2015 Operator : WESTCO Plan # :20150528002

Plan Description : ALK-B2-DCM/05/28/2015

Calibrant Report - WALK -

Calib Lot #:010104 Exp Date:6/21/2020 User:MICROBAC

Plan # : 20150528002 Description : [ALK-B2-DCM/05/28/2015] Unit

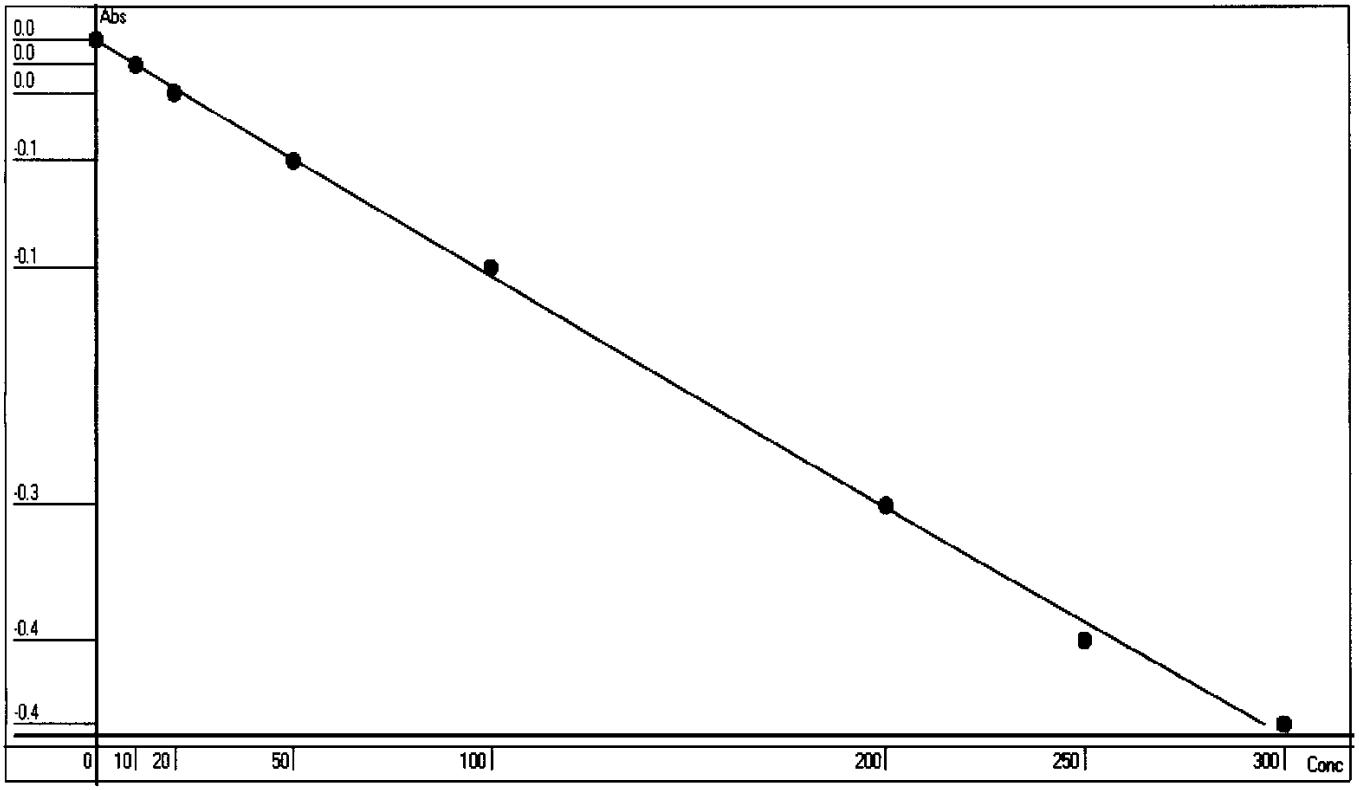

Point	OD	Conc	Recalc Conc	% Error
1	0.0059	0	-0.4226	-42.26
2	-0.0094	10	9.9808	-0.19
3	-0.0270	20	21.9720	9.86
4	-0.0688	50	50.5529	1.11
5	-0.1354	100	96.3873	-3.61
6	-0.2823	200	198.7726	-0.61
7	-0.3660	250	257.9019	3.16
8	-0.4179	300	294.8552	-1.71

Conc= +41.0664*Abso^2 -679.8193*Abso +3.5869 R^2=0.9989

RBL
0.6438
0

Report Date 5/28/2015 Run Date 5/28/2015

MICROBAC (OVD)

SMARTCHEM200 INST2 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.0	0.5391	0.00		11:17:05 AM
DIL-1	RBL	0.0	0.5294	0.00		11:17:23 AM
DIL-1	RBL	0.0	0.5278	0.00		11:18:18 AM
DIL-1	Std-1	0.0	0.0012	0.00	INV	11:18:36 AM
SR5-1	Std-2	10.0	0.0188	0.00	INV	11:19:30 AM
SR5-2	Std-3	20.0	0.0184	0.00	INV	11:19:48 AM
SR5-3	Std-4	50.0	-0.0499	0.00		11:20:42 AM
SR5-4	Std-5	100.0	-0.1142	0.00		11:21:00 AM
SR5-5	Std-6	200.0	-0.2238	0.00		11:21:54 AM
SR5-6	Std-7	250.0	-0.3097	0.00		11:22:12 AM
SR5-7	Std-8	300.0	-0.3637	0.00		11:23:06 AM
ST-3	1CCV (150 mg/L)	138.2	-0.1604	92.12		11:23:24 AM
ST-2	2CCB (0 mg/L)	3.9	0.0206	0.00	INV,><	11:24:18 AM
1	ICV	248.3	-0.3002	0.00	EPL	11:24:36 AM
2	WG525332-01 BLK	-1.9	0.0287	0.00	INV,><,LL	11:25:30 AM
3	WG525332-02 LCS	197.0	-0.2360	0.00		11:26:42 AM
4	WG525332-03 LCSDUP	200.3	-0.2401	0.00		11:27:00 AM
5	L15051504-01 (2)	151.3	-0.1775	0.00		11:27:54 AM
6	L15051504-03 (2)	164.0	-0.1939	0.00		11:28:12 AM
7	L15051550-02 (4)	137.5	-0.1595	0.00		11:29:06 AM
8	L15051550-03 (4)	100.4	-0.1107	0.00		11:29:24 AM
9	L15051550-05 (4)	145.3	-0.1697	0.00		11:30:18 AM
10	L15051550-06 (4)	123.1	-0.1407	0.00		11:30:36 AM
ST-3	1CCV (150 mg/L)	145.9	-0.1705	97.29		11:31:30 AM
ST-2	2CCB (0 mg/L)	-4.8	0.0328	0.00	INV,><,LL	11:32:24 AM
11	L15051564-01	184.2	-0.2197	0.00		11:32:42 AM
12	L15051564-03	281.6	-0.3412	0.00		11:33:36 AM
13	L15051564-05 (2)	151.9	-0.1782	0.00		11:33:54 AM
14	L15051564-07	255.8	-0.3095	0.00		11:34:48 AM
15	L15051564-09	272.3	-0.3298	0.00		11:35:06 AM
16	L15051564-11	24.3	-0.0077	0.00		11:36:00 AM
17	WG525332-05 DUP	270.3	-0.3273	0.00		11:36:18 AM

Report Date :05/28/2015 **Run Date :5/28/2015** **Operator : WESTCO** **Plan # :20150528003**

Plan Description : ALK-C2-DCM/05/28/2015

MICROBAC (OVD)
SMARTCHEM200 INST2 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
ST-3	**1CCV (150 mg/L)**	**147.6**	**-0.1727**	**98.42**		**11:37:12 AM**
ST-2	**2CCB (0 mg/L)**	**14.7**	**0.0055**	**0.00**	**INV**	**11:37:30 AM**

Report Date :05/28/2015 **Run Date :5/28/2015** **Operator : WESTCO** **Plan # :20150528003**

Plan Description : ALK-C2-DCM/05/28/2015

Calibrant Report - WALK -

Calib Lot #:010104 Exp Date:6/21/2020 User:MICROBAC

Plan # : 20150528003 Description : [ALK-C2-DCM/05/28/2015] Unit

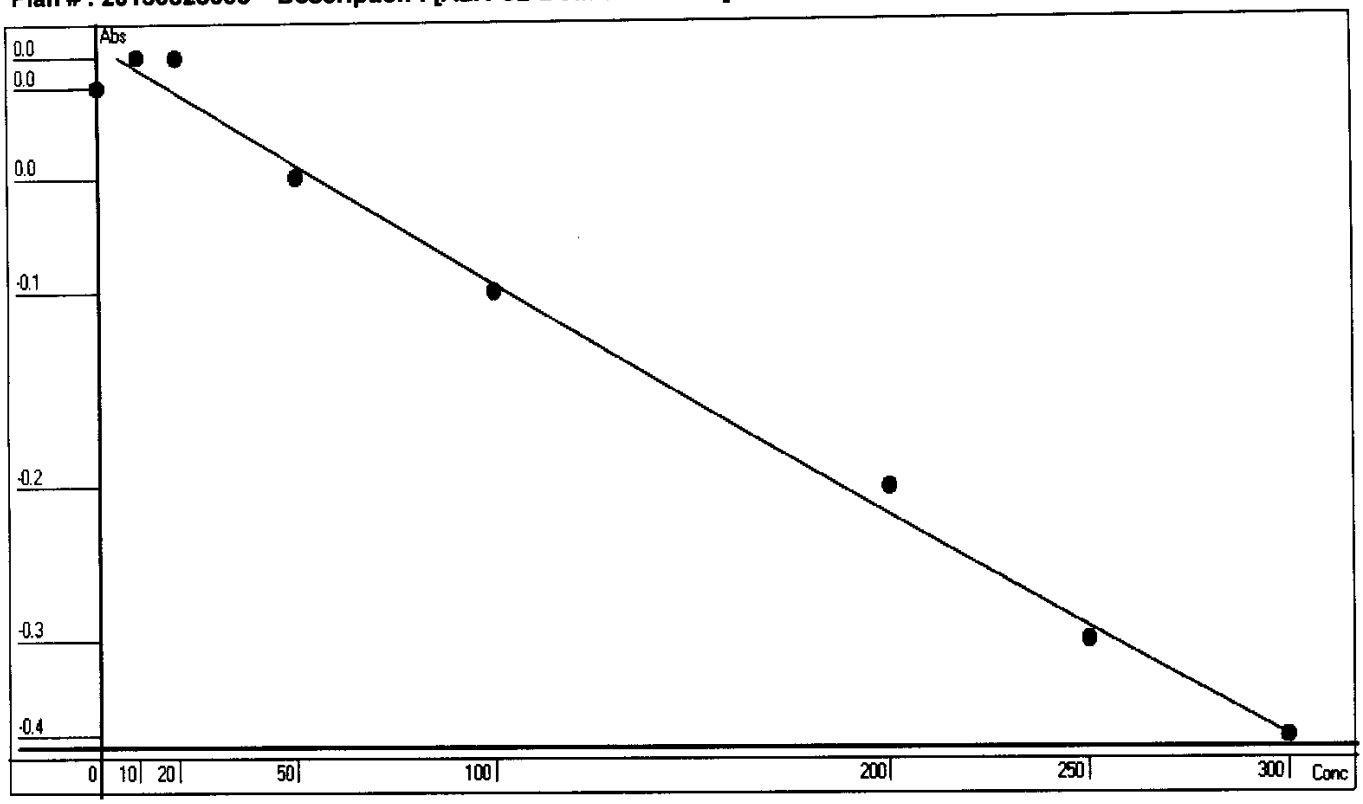

Point	OD	Conc	Recalc Conc	% Error
1	0.0012	0	17.8237	1782.37
2	0.0188	10	5.1641	-48.36
3	0.0184	20	5.4508	-72.75
4	-0.0499	50	55.0783	10.16
5	-0.1142	100	103.0095	3.01
6	-0.2238	200	187.4142	-6.29
7	-0.3097	250	255.9509	2.38
8	-0.3637	300	300.1081	0.04

Conc= +141.9452*Abso^2 -722.1385*Abso +18.6901 R^2=0.9920

RBL
0.5286
0

Report Date 5/28/2015 Run Date 5/28/2015

2.4.3 Phosphorus Data

2.4.3.1 Summary Data

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW13-052015	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	05/27/2015 08:42
Workgroup #:	WG525144	**Analyst:**	DCM	**Run Date:**	05/27/2015 08:45
Collect Date:	05/20/2015 08:30	**Dilution:**	1	**File ID:**	S2150527001.012
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.228	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW14-052015	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	05/27/2015 08:42
Workgroup #:	WG525144	**Analyst:**	DCM	**Run Date:**	05/27/2015 08:46
Collect Date:	05/20/2015 09:45	**Dilution:**	1	**File ID:**	S2150527001.013
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	1.66		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15051303-05	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW11-052015	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	05/27/2015 08:42
Workgroup #:	WG525144	**Analyst:**	DCM	**Run Date:**	05/27/2015 08:46
Collect Date:	05/20/2015 11:00	**Dilution:**	1	**File ID:**	S2150527001.014
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.665		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15051303-07	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW06-052015	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	05/27/2015 08:42
Workgroup #:	WG525144	**Analyst:**	DCM	**Run Date:**	05/27/2015 08:47
Collect Date:	05/20/2015 13:15	**Dilution:**	2	**File ID:**	S2150527001.015
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	1.29		0.800	0.400	0.200

Certificate of Analysis

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15051303-09	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW12-052015	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	05/27/2015 08:42
Workgroup #:	WG525144	**Analyst:**	DCM	**Run Date:**	05/27/2015 08:48
Collect Date:	05/20/2015 14:40	**Dilution:**	2	**File ID:**	S2150527001.016
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	1.10		0.800	0.400	0.200

Certificate of Analysis

Sample #:	L15051303-11	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW23-052015	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	05/27/2015 08:42
Workgroup #:	WG525144	**Analyst:**	DCM	**Run Date:**	05/27/2015 08:49
Collect Date:	05/20/2015 15:55	**Dilution:**	1	**File ID:**	S2150527001.017
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.248	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.4.3.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809	
Value of b from plot:	0.0004135	
Absorbance of unknown from quantitation report (y):	0.31	
Calculated concentration (x):	0.03964483	
Dilution factor (D):	1.00	
Concentration of analyte in sample, Cy:	0.0396	mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796	
Value of B from plot:	318.9056	
Value of C from plot:	-2.2712	
Absorbance of unknown from quantitation report (x):	0.1583	
Calculated concentration (y):	50.7495108	
Dilution factor (D):	1.00	
Concentration of analyte in sample, Cy:	50.75	mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 28-MAY-2015
Analyst: DCM
Analyst: NA
Method: PHOS
Instrument: SC2
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG525144

Calibration/Linearity	5/28/15
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DIH
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
28-MAY-2015

Secondary Reviewer:
29-MAY-2015

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-29-2015 09:45:02

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 365.4 AAB#: WG525144

Login Number: L15051303

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW13-052015	01	05/20/15					05/27/2015	7	28		05/27/15	7	28	
50WW14-052015	03	05/20/15					05/27/2015	7	28		05/27/15	7	28	
50WW11-052015	05	05/20/15					05/27/2015	6.9	28		05/27/15	6.9	28	
50WW06-052015	07	05/20/15					05/27/2015	6.8	28		05/27/15	6.8	28	
50WW12-052015	09	05/20/15					05/27/2015	6.8	28		05/27/15	6.8	28	
50WW23-052015	11	05/20/15					05/27/2015	6.7	28		05/27/15	6.7	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4204120
Report generated 05/28/2015 14:07

METHOD BLANK SUMMARY

Login Number: L15051303
Blank File ID: S2150527001.010
Prep Date: 05/27/15 08:44
Analyzed Date: 05/27/15 08:44
Analyst: DCM

Work Group: WG525144
Blank Sample ID: WG525144-01
Instrument ID: SMARTCHEM2
Method: 365.4

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG525144-02	S2150527001.011	05/27/15 08:44	01
50WW13-052015	L15051303-01	S2150527001.012	05/27/15 08:45	01
50WW14-052015	L15051303-03	S2150527001.013	05/27/15 08:46	01
50WW11-052015	L15051303-05	S2150527001.014	05/27/15 08:46	01
50WW06-052015	L15051303-07	S2150527001.015	05/27/15 08:47	DL01
50WW12-052015	L15051303-09	S2150527001.016	05/27/15 08:48	DL01
50WW23-052015	L15051303-11	S2150527001.017	05/27/15 08:49	01
DUP	WG525144-04	S2150527001.021	05/27/15 08:51	01

Report Name: BLANK_SUMMARY
PDF File ID: 4204121
Report generated 05/28/2015 14:07

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051303 Prep Date: 05/27/15 08:44 Sample ID: WG525144-01
Instrument ID: SMARTCHEM2 Run Date: 05/27/15 08:44 Prep Method: 365.4
File ID: S2150527001.010 Analyst: DCM Method: 365.4
Workgroup (AAB#): WG525144 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-27-MAY-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Phosphorus, Total	0.100	0.400	-0.271	1	*

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4204122
28-MAY-2015 14:07

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051303 Run Date: 05/27/2015 Sample ID: WG525144-02
Instrument ID: SMARTCHEM2 Run Time: 08:44 Prep Method: 365.4
File ID: S2150527001.011 Analyst: DCM Method: 365.4
Workgroup (AAB#): WG525144 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD70631 Cal ID: SMARTC-27-MAY-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Phosphorus, Total	1.00	0.866	86.6	70 - 130	

LCS - Modified 03/06/2008
PDF File ID: 4204123
Report generated: 05/28/2015 14:07

2.4.3.3 Raw Data

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

WORKGROUP: WG525144

Daily Check

- [x] Lamp On
- [x] Probe Rinse Full
- [x] DI Water > ½ Full
- [x] Wash Solution > ½ Full
- [ ] NO3 Reagent bottle connected / purged
- [ ] NO3 pH adj to pH 5-9

Syringe filter lot # _____

- [x] WBL Run
- [x] Reagents Full
- [x] Dilution H_2O Full
- [x] Waste Container Check

1) **Workgroup** _____
Plan # 26150527001
2) **Workgroup** _____
Plan # _____
3) **Workgroup** _____
Plan # _____

Instrument: SC1 [ ] SC2 [x]

	Analyte	1	2	3
		PHOS		
		Dilution		
SC Prepared Curve				
Position				
1-1	ICV			
1-2	Blk			
1-3	LCS			
1-4	05-1303-01			
1-5	03			
1-6	05			
1-7	07	1/2		
1-8	09	1/2		
1-9	11			
1-10	05-1390-01			
1-11	DUP 05-1390-01			
1-12	MS 05-1390-01			
1-13				
1-14				
1-15				
1-16				
1-17				
1-18				
1-19				
1-20				
1-21				
1-22				
2-1				
2-2				
2-3				

	Analyte	1	2	3
Position				
2-4				
2-5				
2-6				
2-7				
2-8				
2-9				
2-10				
2-11				
2-12				
2-13				
2-14				
2-15				
2-16				
2-17				
2-18				
2-19				
2-20				
2-21				
2-22				
2-23				
2-24				
2-25				
2-26				
3-1				
3-2				

NOTES:
* Run NO2 std on NO3 runs
* LCSD must be run if no MS or Duplicate
*MS(10% sample): NO3, TKN, NH3, PHOS

DCN#110856

SMARTCHEM RUN LOG
(smartchem2, smartchem3)

WORKGROUP: WG525144

Position	Analyte	1	2	3
3-3				
3-4				
3-5				
3-6				
3-7				
3-8				
3-9				
3-10				
3-11				
3-12				
3-13				
3-14				
3-15				

Position	Analyte	1	2	3
3-16				
3-17				
3-18				
3-19				
3-20				
3-21				
3-22				
3-23				
3-24				
3-25				
3-26				
3-27				
3-28				

	Chloride	EPA 325.2/SM 4500-CI E-2000
	Nitrate-Nitrite	EPA 353.2/SM 4500-NO3 F-2000
	Alkalinity	EPA 310.2
	Sulfate	EPA 375.4/SM 426C (15th)/ SM4500-504 E-1997

	Ammonia	EPA 350.1/SM 4500-NH3 B-1997
	TKN	EPA 351.2
✓	Phos	EPA 365.4

Analyte	PHOS		Reagents
SOP & Revision	K3654 R18		RGT 33515
Curve Stock (SC made)			RGT 33485
NO2 STD			RGT 33685
ICV			
CCV	Digest		
LCS	Col		
MS	Dilution		

Comments: _____

Analyst: David Merfeld Date: 5/27/15

DCN#110856

TKN/Phosphorus Digestion Log

TKN WG:
TKN Std: 70705
TKN CCV: 1/2 ↓
TKN ICV: 70519
TKN LCS: 70653

Phos WG:
Phos Std: 70705
Phos CCV: 1/2 ↓
Phos ICV: 70443
Phos LCS: 70631

MS/MSD: 70137
Daily Dilution: 1(25)/25=1

Block Digester Temperature: 380 °C
Digest Reagent: 33415

	Sample	Volume	TKN Dilution	Phos Dilution		Sample	Volume	TKN Dilution	Phos Dilution
1	Std		✓	✓	26	05-1472-08	1/50	✓	
2	Std		✓	✓	27	05-1303-01			✓
3	LCS T		✓		28	03			✓
4	ICV T		✓		29	05			✓
5	LCS Ph			✓	30	07			✓
6	ICV Ph			✓	31	09			✓
7	05-1181-02		✓		32	11			✓
8	04		✓		33	DUP 05-1390-01		✓	✓
9	06		✓		34	MS 05-1390-01		✓	✓
10	08		✓		35	MS 05-1138-01		✓	
11	09		✓		36				
12	10		✓		37				
13	05-1229-01		✓		38				
14	05-1310-01		✓		39				
15	02		✓		40				
16	05-1311-01		✓		41				
17	05-1343-01		✓		42				
18	05-1137-01		✓		43				
19	05-1138-01		✓		44				
20	05-1390-01		✓		45				
21	05-1425-01		✓		46				
22	02		✓		47				
23	05-1426-01		✓		48				
24	05-1472-02	1/50	✓		49				
25	05	1/50	✓		50				

Analyst: Tammy Morris Date: 5/26/15

MICROBAC (OVD)
SMARTCHEM200 INST2 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WTPH -Unit [mg/L] - EPA 365.4 TOTAL PHOSPHORUS

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.000	0.0792	0.00	R	8:37:20 AM
DIL-1	RBL	0.000	0.0901	0.00	R	8:37:38 AM
DIL-1	RBL	0.000	0.0802	0.00	R	8:38:32 AM
SR5-1	Std-1	0.010	0.0189	0.00		8:38:50 AM
SR5-2	Std-2	0.200	0.0371	0.00		8:39:44 AM
SR5-3	Std-3	0.500	0.0699	0.00		8:40:02 AM
SR5-4	Std-4	1.000	0.1432	0.00		8:40:56 AM
SR5-5	Std-5	1.500	0.2119	0.00		8:41:14 AM
ST-1	Std-6	2.000	0.2923	0.00		8:42:08 AM
ST-3	1CCV (1 mg/L)	0.969	0.1429	96.94		8:42:26 AM
ST-2	2CCB (0 mg/L)	-0.227	-0.0230	0.00	INV,><,LL	8:43:20 AM
1	ICV	1.403	0.2030	0.00		8:43:39 AM
2	WG525144-01 BLK	-0.271	-0.0291	0.00	INV,><,LL	8:44:32 AM
3	WG525144-02 LCS	0.866	0.1285	0.00		8:44:50 AM
4	L15051303-01	0.228	0.0401	0.00		8:45:44 AM
5	L15051303-03	1.656	0.2381	0.00	EPL	8:46:02 AM
6	L15051303-05	0.665	0.1007	0.00	EPL	8:46:56 AM
7	L15051303-07 (2)	0.646	0.0980	0.00	EPL	8:47:50 AM
8	L15051303-09 (2)	0.548	0.0845	0.00	EPL	8:48:08 AM
9	L15051303-11	0.248	0.0429	0.00		8:49:02 AM
10	WG525144-03 REF	-0.062	-0.0002	0.00	INV,><,LL	8:49:56 AM
ST-3	1CCV (1 mg/L)	0.944	0.1394	94.42		8:50:14 AM
ST-2	2CCB (0 mg/L)	-0.226	-0.0229	0.00	INV,><,LL	8:51:08 AM
11	WG525144-04 DUP	-0.209	-0.0206	0.00	INV,><,LL	8:51:26 AM
12	WG525144-05 MS	0.944	0.1394	0.00		8:52:20 AM
13	ID 13	-0.248	-0.0260	0.00	INV,><,LL	8:52:38 AM
14	ID 14	2.075	0.2962	0.00	EPL,><,LH	8:53:32 AM
15	ID 15	0.800	0.1194	0.00		8:53:50 AM
ST-3	1CCV (1 mg/L)	0.946	0.1397	94.63		8:54:44 AM
ST-2	2CCB (0 mg/L)	-0.204	-0.0198	0.00	INV,><,LL	8:55:02 AM
6-[1/2]	L15051303-05	0.782 X	0.0627	0.00		9:03:00 AM
7-[1/2]	L15051303-07	0.772 X	0.0620	0.00		9:04:12 AM

Report Date :05/27/2015 **Run Date :5/27/2015** **Operator : WESTCO** **Plan # :20150527001**

Plan Description : PHOS-A2-DCM/05/27/2015

MICROBAC (OVD)
SMARTCHEM200 INST2 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WTPH -Unit [mg/L] - EPA 365.4 TOTAL PHOSPHORUS

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
8-[1/2]	**L15051303-09**	**0.707**	**0.0575**	**0.00**		**9:05:24 AM**
14-[1/2]	**ID 14**	**1.734**	**0.1287**	**0.00**	**EPL**	**9:06:36 AM**
ST-3	**1CCV (1 mg/L)**	**0.966**	**0.1424**	**96.58**		**9:06:36 AM**
ST-2	**2CCB (0 mg/L)**	**-0.248**	**-0.0260**	**0.00**	**INV,><,LL**	**9:07:30 AM**

Report Date :05/27/2015 **Run Date :5/27/2015** **Operator : WESTCO** **Plan # :20150527001**

Plan Description : PHOS-A2-DCM/05/27/2015

Calibrant Report - WTPH -

Calib Lot #:010104 Exp Date:6/18/2020 User:MICROBAC

Plan # : 20150527001 Description : [PHOS-A2-DCM/05/27/2015] Unit

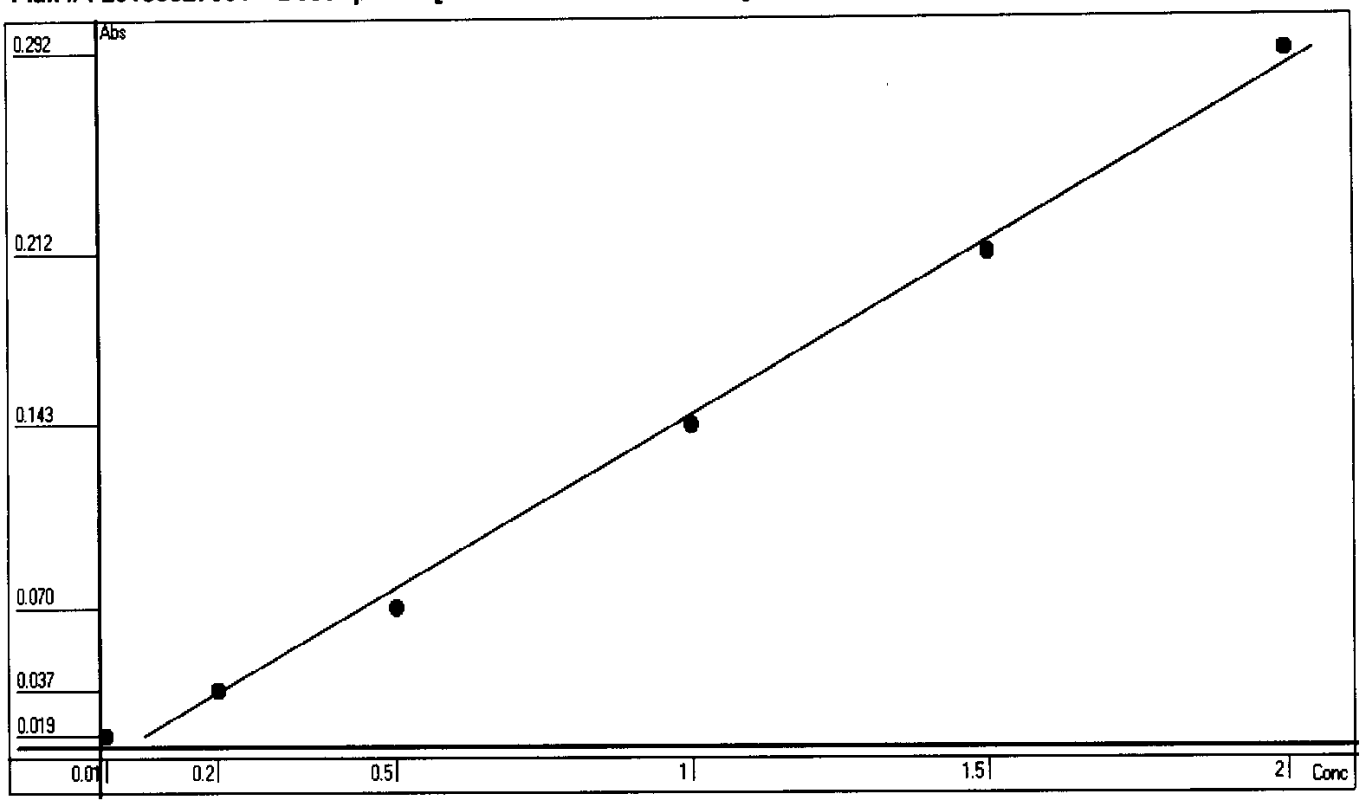

Point	OD	Conc	Recalc Conc	% Error
1	0.0189	0.01	0.0754	654.00
2	0.0371	0.2	0.2066	3.30
3	0.0699	0.5	0.4431	-11.38
4	0.1432	1	0.9715	-2.85
5	0.2119	1.5	1.4668	-2.21
6	0.2923	2	2.0465	2.33

Conc= +7.2096*Abso -0.0609 **R^2=0.9961**

RBL
0.0797
0

Report Date 5/27/2015 Run Date 5/27/2015

2.4.4 Sulfide Data

2.4.4.1 Summary Data

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-01	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW13-052015	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG524848	**Analyst:**	EPT	**Run Date:**	05/22/2015 14:50
Collect Date:	05/20/2015 08:30	**Dilution:**	1	**File ID:**	ET.1505221450-14
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-03	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW14-052015	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG524848	**Analyst:**	EPT	**Run Date:**	05/22/2015 14:50
Collect Date:	05/20/2015 09:45	**Dilution:**	1	**File ID:**	ET.1505221450-15
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-05	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW11-052015	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG524848	**Analyst:**	EPT	**Run Date:**	05/22/2015 14:50
Collect Date:	05/20/2015 11:00	**Dilution:**	1	**File ID:**	ET.1505221450-16
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-07	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW06-052015	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG524848	**Analyst:**	EPT	**Run Date:**	05/22/2015 14:50
Collect Date:	05/20/2015 13:15	**Dilution:**	1	**File ID:**	ET.1505221450-17
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-09	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW12-052015	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG524848	**Analyst:**	EPT	**Run Date:**	05/22/2015 14:50
Collect Date:	05/20/2015 14:40	**Dilution:**	1	**File ID:**	ET.1505221450-18
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-11	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW23-052015	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG524848	**Analyst:**	EPT	**Run Date:**	05/22/2015 14:50
Collect Date:	05/20/2015 15:55	**Dilution:**	1	**File ID:**	ET.1505221450-19
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	0.627	J	2.00	1.00	0.500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.4.4.2 QC Summary Data

Example Total Sulfide(Liquid) Calculations

[mL Iodine * N Iodide) - (mL titrant * N titrant)] * 16000/(volume * dilution) = mg/L Sulfide

where:

mL Iodine = mL of Iodine used
N Iodine = normality of Iodine
mL titrant = mL of titrant used
N titrant = normality of titrant
16000 = factor: 1mL of 0.025 N iodine reacts with 0.4mg sulfide
volume = mL filtered of mL titrated(if not filtered)
dilution = dilution in decimal form (1/5 = 0.2)

Example Total Sulfide(Soil) Calculations

[(mL Iodine * N Iodine) - (mL titrant * N titrant)] * 16.03/weight = mg/kg sulfide

where:

mL Iodine = mL of Iodine used
N Iodine = normality of Iodine
mL titrant = normality of titrant
16.03 = 32.06 grams per 2 equivalents
weight = kg of sample used

Microbac Laboratories Inc.

Data Checklist

Date: 22-MAY-2015
Analyst: EPT
Analyst: NA
Method: SULFIDE
Instrument: BURET
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG524848

Calibration/Linearity	05/22/15
Second Source Check	
ICV/CCV (std)	
ICB/CCB	
Blank	X
LCS/LCS Dup	X
MS/MSD	
Duplicate	
Upload Results	X
Client Forms	
QC Violation Sheet	
Case Narratives	
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	
Primary Reviewer	EPT
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
26-MAY-2015

Ethan Tido

Secondary Reviewer:
28-MAY-2015

Dianna Hesson

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-28-2015 10:14:03

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: SM4500-S-(-2)-F-

AAB#: WG524848

Login Number: L15051303

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW13-052015	01	05/20/15					05/22/2015	2.3	7		05/22/15	2.3	7	
50WW14-052015	03	05/20/15					05/22/2015	2.2	7		05/22/15	2.2	7	
50WW11-052015	05	05/20/15					05/22/2015	2.2	7		05/22/15	2.2	7	
50WW06-052015	07	05/20/15					05/22/2015	2.1	7		05/22/15	2.1	7	
50WW12-052015	09	05/20/15					05/22/2015	2	7		05/22/15	2	7	
50WW23-052015	11	05/20/15					05/22/2015	2	7		05/22/15	2	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4202190
Report generated 05/28/2015 09:06

METHOD BLANK SUMMARY

Login Number: L15051303
Blank File ID: ET.1505221450-01
Prep Date: 05/22/15 14:50
Analyzed Date: 05/22/15 14:50
Analyst: EPT

Work Group: WG524848
Blank Sample ID: WG524848-01
Instrument ID: BURET
Method: SM4500-S-(-2)-F-

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG524848-02	ET.1505221450-02	05/22/15 14:50	
LCS2	WG524848-03	ET.1505221450-03	05/22/15 14:50	
50WW13-052015	L15051303-01	ET.1505221450-14	05/22/15 14:50	
50WW14-052015	L15051303-03	ET.1505221450-15	05/22/15 14:50	
50WW11-052015	L15051303-05	ET.1505221450-16	05/22/15 14:50	
50WW06-052015	L15051303-07	ET.1505221450-17	05/22/15 14:50	
50WW12-052015	L15051303-09	ET.1505221450-18	05/22/15 14:50	
50WW23-052015	L15051303-11	ET.1505221450-19	05/22/15 14:50	

Report Name: BLANK_SUMMARY
PDF File ID: 4202191
Report generated 05/28/2015 09:06

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051303 Prep Date: 05/22/15 14:50 Sample ID: WG524848-01
Instrument ID: BURET Run Date: 05/22/15 14:50 Prep Method: SM4500-S-(-2)-F
File ID: ET.1505221450-01 Analyst: EPT Method: SM4500-S-(-2)-F
Workgroup (AAB#): WG524848 Matrix: Water Units: mg/L
Contract #: Cal ID: BURET-

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Sulfide	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4202192
28-MAY-2015 09:06

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051303 Analyst: EPT Prep Method: SM4500-S-(-2)-F
Instrument ID: BURET Matrix: Water Method: SM4500-S-(-2)-F
Workgroup (AAB#): WG524848 Units: mg/L
QC Key: DOD4 Lot #: STD70710

Sample ID: WG524848-02 LCS File ID: ET.1505221450-02 Run Date: 05/22/2015 14:50
Sample ID: WG524848-03 LCS2 File ID: ET.1505221450-03 Run Date: 05/22/2015 14:50

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Sulfide	16.7	16.4	98.3	16.7	16.6	99.5	1.21	85 - 115	10	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4202193
Report generated: 05/28/2015 09:06

2.4.4.3 Raw Data

SULFIDE
(sulfide1)

WORKGROUP: WG524848

Water:
EPA 376.1 / SM4500-S(-2)-F
SOP K3761 Revision #: 14

Soil:
SM846 9030B/9034
SOP K9030 Revision #: _____

Instrument: Buret

LCS: Std 70710

Iodine standardization (0.025N) COA: 17891
mL 0.025N titrant: 10.0
Volume I: 10.0 mL
Normality I: 0.0250

(0.1 N I) COA: 18088
mL 0.025 N titrant: 8.0
Volume I: 2.0 mL
Normality I: 0.100

Stock standardization (in duplicate) 5.0 mL stock
mL I 1) 10.0 2) 10.0
N I 1) 0.100 2) 0.100
mL 0.025 titrant 1) 26.1 2) 26.1
LCS daily dilution: $\frac{(3)(1112)}{200}$ = 16.68 mg/L

1112 = stock conc (mg/L)

Titrant: T- 1606-05-03

SAMPLE	Volume Filtered mL	mL Iodine	N Iodine	0.025N Sodium Thiosulfate (mL)
BLANK	200	15.0	0.0250	15.0
LCS (mL)	200	15.0	0.0250	6.8
LCSDUP (mL)	200	15.0	0.0250	6.7
05-1231-01	530	15.0	0.0250	15.0
-04	500	15.0	0.0250	14.8
-05	510	15.0	0.0250	15.0
05-1274-01	500	15.0	0.0250	15.0
-03	530	15.0	0.0250	15.0
-05	550	15.0	0.0250	14.9
-07	510	15.0	0.0250	14.8
-09	520	15.0	0.0250	15.0
-11	500	15.0	0.0250	15.0
-13	540	15.0	0.0250	15.0
05-1303-01	500	15.0	0.0250	14.7
-03	500	15.0	0.0250	15.0
-05	500	15.0	0.0250	14.5
-07	500	15.0	0.0250	15.0
-09	500	15.0	0.0250	14.5
-11	510	15.0	0.0250	14.2
05-1430-02	556	15.0	0.0250	15.0
05-1431-02	540	15.0	0.0250	14.5
05-1432-02	540	15.0	0.0250	14.8
05-1433-02	550	15.0	0.0250	15.0

Analyst: Ethan Tidd Date/Time: 05/22/15 1456

DCN#110813

Microbac Laboratories Inc.

TITRAMETRIC REPORT

Workgroup (AAB#): WG524848

Product: EPA 376.1\9034

Analyte: Sulfide

Analyst: EPT

Run Date: 05/22/2015 14:50

SAMPLE NUMBER	Volume	Vol I	Nor I	Vol T	Nor T	Dil	Analytical	Reported	Units
WG524848-01	200.0	15	.025	15	.025	1	0	0	mg/L
WG524848-02	200.0	15	.025	6.8	.025	1	16.4	16.40	mg/L
WG524848-03	200.0	15	.025	6.7	.025	1	16.6	16.60	mg/L
L15051231-01	530.0	15	.025	15	.025	1	0	ND	mg/L
L15051231-04	500.0	15	.025	14.8	.025	1	0.160	ND	mg/L
L15051231-05	510.0	15	.025	15	.025	1	0	ND	mg/L
L15051274-01	500.0	15	.025	15	.025	1	0	ND	mg/L
L15051274-03	530.0	15	.025	15	.025	1	0	ND	mg/L
L15051274-05	550.0	15	.025	14.9	.025	1	0.0727	ND	mg/L
L15051274-07	510.0	15	.025	14.8	.025	1	0.157	ND	mg/L
L15051274-09	520.0	15	.025	15	.025	1	0	ND	mg/L
L15051274-11	500.0	15	.025	15	.025	1	0	ND	mg/L
L15051274-13	540.0	15	.025	15	.025	1	0	ND	mg/L
L15051303-01	500.0	15	.025	14.7	.025	1	0.240	ND	mg/L
L15051303-03	500.0	15	.025	15	.025	1	0	ND	mg/L
L15051303-05	500.0	15	.025	14.5	.025	1	0.400	ND	mg/L
L15051303-07	500.0	15	.025	15	.025	1	0	ND	mg/L
L15051303-09	500.0	15	.025	14.5	.025	1	0.400	ND	mg/L
L15051303-11	510.0	15	.025	14.2	.025	1	0.627	0.6275 F	mg/L
L15051430-02	550.0	15	.025	15	.025	1	0	ND	mg/L
L15051431-02	540.0	15	.025	14.5	.025	1	0.370	ND	mg/L
L15051432-02	540.0	15	.025	14.8	.025	1	0.148	ND	mg/L
L15051433-02	550.0	15	.025	15	.025	1	0	ND	mg/L

SULFIDE_REPORT - Modified 03/06/2008

Report generated 05/26/2015 11:29

2.4.5 Total Organic Carbon Data

2.4.5.1 Summary Data

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-01	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW13-052015	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG524525	**Analyst:**	EPT	**Run Date:**	05/22/2015 11:58
Collect Date:	05/20/2015 08:30	**Dilution:**	3	**File ID:**	TC05212015.038
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	25.6		6.00	3.00	1.50

Certificate of Analysis

Sample #:	L15051303-03	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW14-052015	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG524525	**Analyst:**	EPT	**Run Date:**	05/22/2015 12:24
Collect Date:	05/20/2015 09:45	**Dilution:**	5	**File ID:**	TC05212015.039
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	36.8		10.0	5.00	2.50

Certificate of Analysis

Sample #:	L15051303-05	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW11-052015	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG524525	**Analyst:**	EPT	**Run Date:**	05/22/2015 12:51
Collect Date:	05/20/2015 11:00	**Dilution:**	5	**File ID:**	TC05212015.040
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	64.2		10.0	5.00	2.50

Certificate of Analysis

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15051303-07	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW06-052015	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG524525	**Analyst:**	EPT	**Run Date:**	05/22/2015 13:18
Collect Date:	05/20/2015 13:15	**Dilution:**	3	**File ID:**	TC05212015.041
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	7.51		6.00	3.00	1.50

Certificate of Analysis

Sample #:	L15051303-09	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW12-052015	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG524525	**Analyst:**	EPT	**Run Date:**	05/22/2015 14:06
Collect Date:	05/20/2015 14:40	**Dilution:**	3	**File ID:**	TC05212015.044
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	5.38	J	6.00	3.00	1.50

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051303
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051303-11	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW23-052015	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	07/16/2014 12:00
Workgroup #:	WG524525	**Analyst:**	EPT	**Run Date:**	05/22/2015 14:42
Collect Date:	05/20/2015 15:55	**Dilution:**	5	**File ID:**	TC05212015.045
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	22.5		10.0	5.00	2.50

2.4.5.2 QC Summary Data

Total Organic Carbon Example Calculations
(Direct Readout Parameter)

(Readout)/(dilution) = mg/L

where:

Readout = direct readout from the instrument
dilution = dilution in decimal form (ex. 1/5 dilution = 0.2)

Microbac Laboratories Inc.

Data Checklist

Date: 21-MAY-2015
Analyst: EPT
Analyst: NA
Method: TOC
Instrument: TOC-VWP
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG524525

Calibration/Linearity	7/16/14
Second Source Check	
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	
QC Violation Sheet	
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	
Primary Reviewer	EPT
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
26-MAY-2015

Ethan Tido

Secondary Reviewer:
27-MAY-2015

Dianna Hesson

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-27-2015 07:49:29

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 415.1 AAB#: WG524525

Login Number: L15051303

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW13-052015	01	05/20/15					05/22/2015	2.1	28		05/22/15	2.1	28	
50WW14-052015	03	05/20/15					05/22/2015	2.1	28		05/22/15	2.1	28	
50WW11-052015	05	05/20/15					05/22/2015	2.1	28		05/22/15	2.1	28	
50WW06-052015	07	05/20/15					05/22/2015	2	28		05/22/15	2	28	
50WW12-052015	09	05/20/15					05/22/2015	2	28		05/22/15	2	28	
50WW23-052015	11	05/20/15					05/22/2015	1.9	28		05/22/15	1.9	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4196604
Report generated 05/26/2015 09:15

METHOD BLANK SUMMARY

Login Number: L15051303
Blank File ID: TC05212015.003
Prep Date: 05/21/15 10:54
Analyzed Date: 05/21/15 10:54
Analyst: EPT

Work Group: WG524525
Blank Sample ID: WG524525-01
Instrument ID: TOC-VWP
Method: 415.1

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG524525-02	TC05212015.004	05/21/15 11:14	01
LCS2	WG524525-03	TC05212015.005	05/21/15 11:38	01
50WW13-052015	L15051303-01	TC05212015.038	05/22/15 11:58	DL01
50WW14-052015	L15051303-03	TC05212015.039	05/22/15 12:24	DL01
50WW11-052015	L15051303-05	TC05212015.040	05/22/15 12:51	DL01
50WW06-052015	L15051303-07	TC05212015.041	05/22/15 13:18	DL01
50WW12-052015	L15051303-09	TC05212015.044	05/22/15 14:06	DL01
50WW23-052015	L15051303-11	TC05212015.045	05/22/15 14:42	DL01
DUP	WG524525-05	TC05212015.046	05/22/15 15:08	01

Report Name: BLANK_SUMMARY
PDF File ID: 4196605
Report generated 05/26/2015 09:15

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051303 Prep Date: 05/21/15 10:54 Sample ID: WG524525-01
Instrument ID: TOC-VWP Run Date: 05/21/15 10:54 Prep Method: 415.1
File ID: TC05212015.003 Analyst: EPT Method: 415.1
Workgroup (AAB#): WG524525 Matrix: Water Units: mg/L
Contract #: Cal ID: TOC-VW-16-JUL-14

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Total Organic Carbon	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4196606
26-MAY-2015 09:15

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051303 Analyst: EPT Prep Method: 415.1
Instrument ID: TOC-VWP Matrix: Water Method: 415.1
Workgroup (AAB#): WG524525 Units: mg/L
QC Key: DOD4 Lot #: STD69935

Sample ID: WG524525-02 LCS File ID: TC05212015.004 Run Date: 05/21/2015 11:14
Sample ID: WG524525-03 LCS2 File ID: TC05212015.005 Run Date: 05/21/2015 11:38

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Total Organic Carbon	25.0	26.1	104	25.0	25.2	101	3.59	85 - 115	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4196607
Report generated: 05/26/2015 09:15

2.4.5.3 Raw Data

TC/TIC Curves wg484708

Total Organic Carbon

MAKE DAILY

CCV (TOC): _____ (5/200)(1000) = 25mg/L

LCS (TOC): _____ (5/200)(1000) = 25mg/L

CCV (TIC): see below (5/200)(1000) = 25mg/L

MS (TOC): _____

Calibration Curve Date: _____

Reagent: 30583 / 30943

☑ SM5310-C : Matrix 2 WG_____

☐ EPA 415.1/9060A(mod): Matrix 1 WG_____ SOP: K 4151 Rev. 16

WG_____ Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

☑ drain reservoir filled
☑ ASI water bottle full
☑ dilution water bottle full

☑ 3rd bottle full
☑ sufficient gas
☑ sufficient persulfate

☑ sufficient acid
☑ waste container

Position	Sample ID	Dilution	Position	Sample ID	Dilution	Position	Sample ID	Dilution
1	TC Curve		26	TC Curve		51		
2	TIC Curve		27	Std 65368		52		
3	TC ICV		28			53	see SOP	
4	TIC ICV		29	TIC Curve		54	for curve	
5			30	Std 65406		55	points	
6			31			56		
7			32			57		
8			33	TC ICV		58	ept 7/16/14	
9			34	Std 63965		59	~~5/200~~ 5/200	(1000)
10			35			60		=25mg/L
11			36	TIC ICV		61		
12			37	Std 65405		62		
13			38			63		
14	all points		39	analyzed	in	64	duplicate	
15			40			65		
16			41			66		
17			42			67		
18			43			68		
19			44			69		
20			45			70		
21			46			71		
22			47			72		
23			48			73		
24			49			74		
25			50			75		

Analyst: Ethan Todd / Deanne Hesson

Date/Time: 07/16/14 0930 + 7/17

DCN#103908

C:\TOC3201\Data\07-16-2014-DIH-CURVE.t32

	Anal	Sample Name	Result	Status	Date / Time
1	TC	TCCURVE		Completed	7/16/2014 12:06:36 PM
2	TC	TC ICV	TC:24.54mg/L	Completed	7/16/2014 1:33:15 PM
3	IC	TICCURVE		Completed	7/17/2014 12:33:06 PM
4	IC	TIC ICV	IC:25.59mg/L	Completed	7/17/2014 12:47:00 PM

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Cal. Curve

Sample Name: TCCURVE
Sample ID: Untitled
Cal. Curve: TCCURVE-07-16-2014.2014_07_16_11_05_11.cal
Status Completed

Type	Anal.
Standard	TC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	5.492	500uL	1	*******		7/16/2014 11:08:39 AM
2	4.691	500uL	1	*******		7/16/2014 11:12:03 AM

Acid Add. 0.000%
Mean Area 5.091

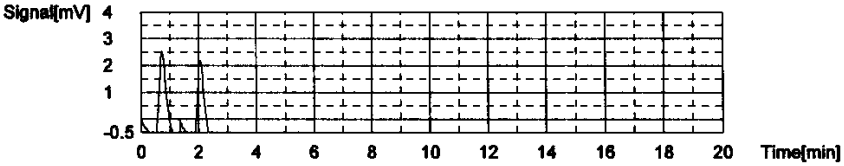

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	51.17	500uL	1	*******		7/16/2014 11:17:40 AM
2	51.30	500uL	1	*******		7/16/2014 11:21:41 AM

Acid Add. 0.000%
Mean Area 51.23

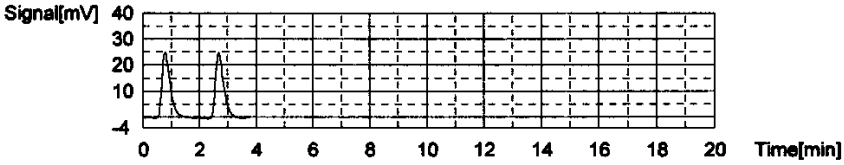

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	184.4	500uL	1	*******		7/16/2014 11:27:31 AM
2	188.1	500uL	1	*******		7/16/2014 11:31:40 AM

Acid Add. 0.000%
Mean Area 186.3

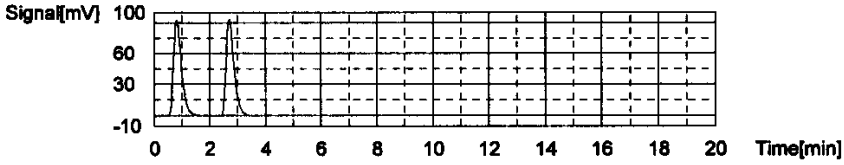

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	371.5	500uL	1	*******		7/16/2014 11:37:40 AM
2	397.8	500uL	1	*******		7/16/2014 11:42:09 AM

Acid Add. 0.000%
Mean Area 384.6

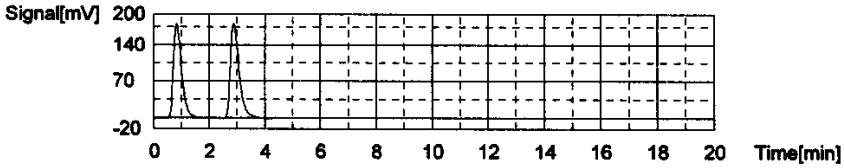

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	928.1	500uL	1	*******		7/16/2014 11:48:37 AM
2	992.4	500uL	1	*******		7/16/2014 11:53:28 AM

Acid Add. 0.000%
Mean Area 960.3

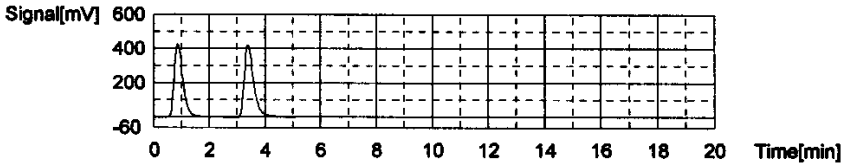

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1809	500uL	1	*******		7/16/2014 12:00:11 PM
2	2029	500uL	1	*******		7/16/2014 12:06:36 PM

Acid Add. 0.000%
Mean Area 1919

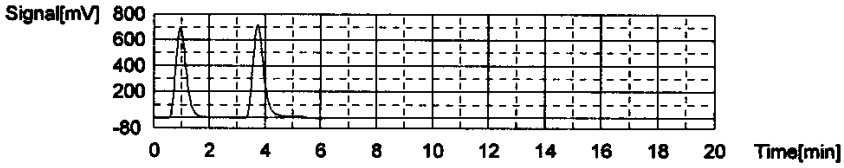

Slope: 38.27
Intercept 3.929
r^2 0.999938 ✓
Zero Shift No

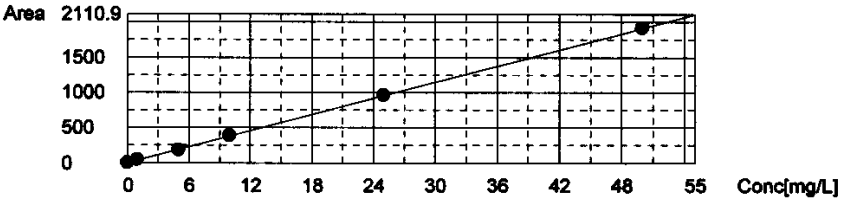

Sample

Sample Name: TC ICV
Sample ID: Untitled
Origin: TCCURVE-07-16-2014.cal
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TC	1.000	TC:24.54mg/L

= 98%

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	966.9	25.16mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/16/2014 1:28:24 PM
2	919.5	23.92mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	7/16/2014 1:33:15 PM

Mean Area 943.2
Mean Conc. 24.54mg/L

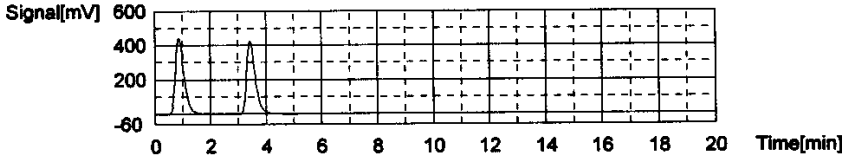

Cal. Curve

Sample Name: TICCURVE
Sample ID: Untitled
Cal. Curve: TICCURVE-A-07-17-2014.2014_07_17_11_16_59.cal
Status Completed

Type	Anal.
Standard	IC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	7.193	500uL	1	*******		7/17/2014 11:21:04 AM
2	6.644	500uL	1	*******		7/17/2014 11:25:12 AM

Acid Add. 10.00%
Mean Area 6.918

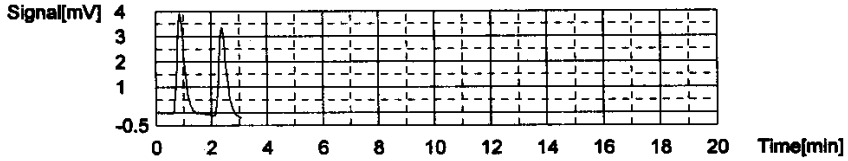

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	49.75	500uL	1	*******		7/17/2014 11:32:57 AM
2	50.58	500uL	1	*******		7/17/2014 11:37:28 AM

Acid Add. 10.00%
Mean Area 50.17

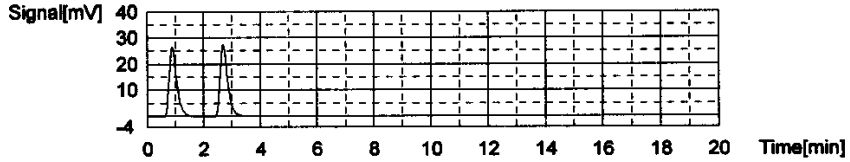

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	98.15	500uL	1	*******		7/17/2014 11:46:02 AM
2	158.0	500uL	1	*******		7/17/2014 11:50:52 AM

Acid Add. 10.00%
Mean Area 128.1

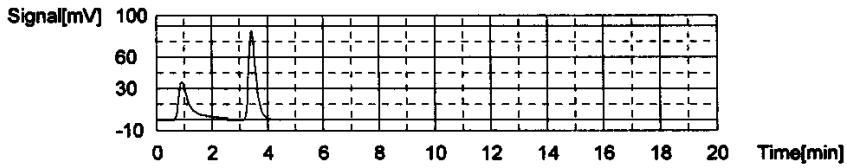

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	313.9	500uL	1	*******		7/17/2014 11:59:03 AM
2	314.5	500uL	1	*******		7/17/2014 12:04:02 PM

Acid Add. 10.00%
Mean Area 314.2

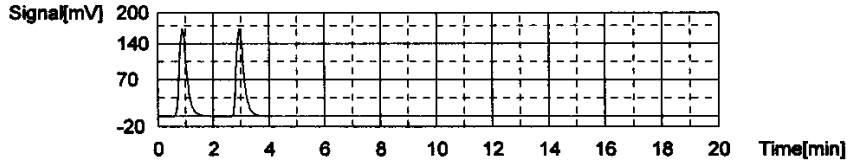

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	774.3	500uL	1	*******		7/17/2014 12:12:42 PM
2	781.8	500uL	1	*******		7/17/2014 12:17:58 PM

Acid Add. 10.00%
Mean Area 778.1

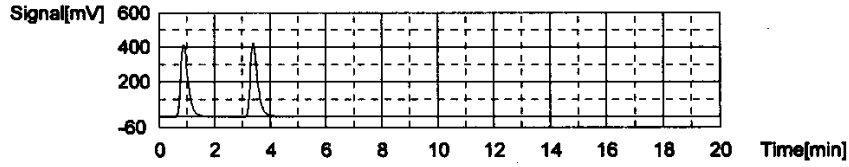

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1490	500uL	1	*******		7/17/2014 12:27:11 PM
2	1503	500uL	1	*******		7/17/2014 12:33:06 PM

Acid Add. 10.00%
Mean Area 1497

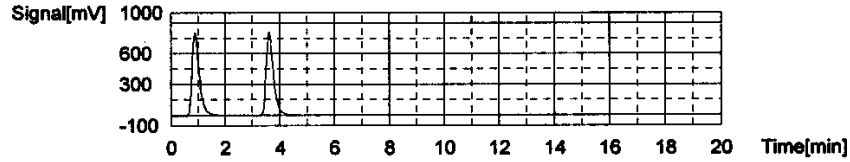

Slope: 29.95
Intercept 8.025
r^2 0.999041 ✓
Zero Shift No

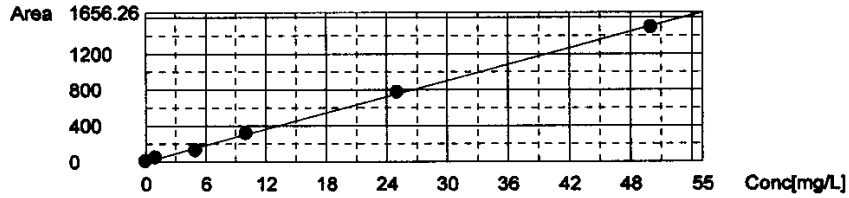

Sample

Sample Name: TIC ICV
Sample ID: Untitled
Origin: TICCURVE-A-07-17-2014.cal
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	IC	1.000	IC:25.59mg/L

=102%

1. Det

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	775.9	25.64mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/17/2014 12:41:44 PM
2	773.4	25.55mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	7/17/2014 12:47:00 PM

Mean Area 774.7
Mean Conc. 25.59mg/L

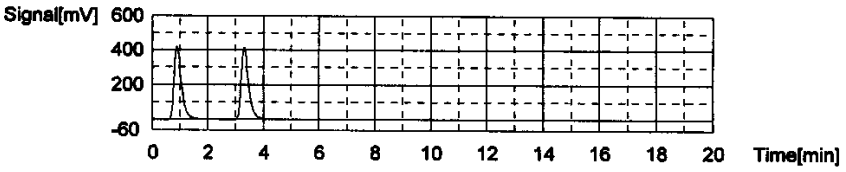

WORKGROUP: WG524525

Total Organic Carbon

MAKE DAILY

CCV (TOC): Std 65368
(5/200)(1000) = 25mg/L

LCS (TOC): Std 69935 Std 68222
(5/200)(1000) = 25mg/L

CCV (TIC): Std 68222
(5/200)(1000) = 25mg/L

MS (TOC): Std 69935
(.4)(1000)/40 = 10

Calibration Curve Date: 7/16/14

Reagent: 33399
32721

☒ SM5310-C : Matrix 2 WG 524525
☐ EPA 415.1/9060A(mod): Matrix 1 WG _____
WG _____

SOP: K 4151 Rev. 17
Instrument: Shimadza TOC-VWP/ASI

☒ drain reservoir filled
☒ ASI water bottle full
☒ dilution water bottle full

DAILY CHECK
☒ 3rd bottle full
☒ sufficient gas
☒ sufficient persulfate

☒ sufficient acid
☒ waste container

Position	Sample ID	Dilution
1	TIC	
2	CCV	
3	BLK	
4	LCS	
5	LCSDUP	
6	05-1200-09	1/3
7	05-1209-15	1/3
8	-16	1/3
9	-17	1/3
10	-27	1/10 cpt 5/21/15
11	-28	1/85
12	-29	1/3
13	05-1231-01	1/3
14	CCV	
15	CCB	
16	05-1231-04	1/3
17	-05	1/3
18	05-1267-01	
19	-02	
20	05-1268-01	
21	05-1269-01	
22	05-1303-01	1/3
23	-03	1/3
24	-05	1/3
25	-07	1/3

Position	Sample ID	Dilution
26	CCV	
27	CCB	
28	05-1303-09	1/3
29	-11	1/3
30	CCV	
31	CCB	cpt 5/21/15
32	05-1231-04	1/310
33	-05	1/3
34	05-1267-01	
35	-02	cpt 5/21/15
36	05-1268-01	1/1050
37	05-1269-01	1/3
38	05-1303-01	1/3
39	-03	1/5
40	-05	1/5
41	-07	1/3
42	CCV	
43	CCB	
44	05-1303-09	1/3
45	-11	1/85
46	DUP 1267-01	cpt 5/21/15
47	MS 1231-04	1/3
48	CCV	
49	CCB	
50		

Position	Sample ID	Dilution
51		
52		
53		
54		
55		
56		
57		
58		
59		
60		
61		
62		
63		
64		
65		
66		
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71		
72		
73		
74		
75		

Analyst: Ethan Todd

Date/Time: 05/21/15 1030

DCN#110771

C:\TOC3201\Data\05-21-2015-EPT-TOC.t32

	Analysis	Sample Name	Result	Status	Date / Time	Vial
1	TOC	TIC	TOC:1.346mg/L TC:26.10mg/L IC:24.76mg/L	Complete	5/21/2015 10:36:44 AM	1
2	TOC	CCV	!!Error!! TOC:25.15mg/L TC:25.05mg/L IC:-0.09567mg/	Complete	5/21/2015 10:49:11 AM	2
3	TOC	WG524525-01 BLK	TOC:0.1582mg/L TC:0.1621mg/L IC:0.00383mg/L	Complete	5/21/2015 11:06:00 AM	0
4	TOC	WG524525-02 LCS	TOC:26.12mg/L TC:46.89mg/L IC:20.77mg/L	Complete	5/21/2015 11:29:59 AM	4
5	TOC	WG524525-03 LCSDUP	TOC:25.20mg/L TC:45.82mg/L IC:20.62mg/L	Complete	5/21/2015 11:54:02 AM	5
6	TOC	L15051200-09 (3)	TOC:3.070mg/L TC:10.58mg/L IC:7.506mg/L	Complete	5/21/2015 12:16:02 PM	6
7	TOC	L15051209-15 (3)	TOC:3.484mg/L TC:37.89mg/L IC:34.40mg/L	Complete	5/21/2015 12:41:25 PM	7
8	TOC	L15051209-16 (3)	TOC:2.631mg/L TC:24.37mg/L IC:21.73mg/L	Complete	5/21/2015 1:05:21 PM	8
9	TOC	L15051209-17 (3)	TOC:2.690mg/L TC:37.74mg/L IC:35.05mg/L	Complete	5/21/2015 1:32:51 PM	9
10	TOC	L15051209-27 (10)	TOC:1.734mg/L TC:16.04mg/L IC:14.31mg/L	Complete	5/21/2015 1:56:03 PM	10
11	TOC	L15051209-28 (5)	TOC:7.992mg/L TC:39.51mg/L IC:31.51mg/L	Complete	5/21/2015 2:31:23 PM	11
12	TOC	L15051209-29 (3)	TOC:2.623mg/L TC:47.06mg/L IC:44.43mg/L	Complete	5/21/2015 2:57:37 PM	12
13	TOC	L15051231-01 (3)	TOC:2.772mg/L TC:21.17mg/L IC:18.39mg/L	Complete	5/21/2015 3:22:43 PM	13
14	TOC	CCV	TOC:23.78mg/L TC:23.82mg/L IC:0.03567mg/L	Complete	5/21/2015 3:35:09 PM	14
15	TOC	CCB	TOC:0.1161mg/L TC:0.1333mg/L IC:0.01717mg/L	Complete	5/21/2015 3:44:13 PM	0
16	TOC		TOC:2.629mg/L TC:30.99mg/L IC:28.36mg/L	Complete	5/21/2015 4:26:57 PM	16
17	TOC		TOC:1.355mg/L TC:11.17mg/L IC:9.818mg/L	Complete	5/21/2015 4:50:25 PM	17
18	TOC		TOC:2.702mg/L TC:5.196mg/L IC:2.494mg/L	Complete	5/21/2015 5:11:35 PM	18
19	TOC		TOC:2.776mg/L TC:4.114mg/L IC:1.338mg/L	Complete	5/21/2015 5:32:27 PM	19
20	TOC		TOC:217.9mg/L TC:228.3mg/L IC:10.43mg/L	Complete	5/21/2015 6:04:23 PM	20
21	TOC		TOC:70.51mg/L TC:71.43mg/L IC:0.9291mg/L	Complete	5/21/2015 6:28:56 PM	21
22	TOC		TOC:3.229mg/L TC:33.89mg/L IC:30.66mg/L	Complete	5/21/2015 6:55:06 PM	22
23	TOC		TOC:6.062mg/L TC:56.49mg/L IC:50.43mg/L	Complete	5/21/2015 7:23:59 PM	23
24	TOC		TOC:6.864mg/L TC:52.28mg/L IC:45.42mg/L	Complete	5/21/2015 7:52:26 PM	24
25	TOC		TOC:2.141mg/L TC:22.27mg/L IC:20.13mg/L	Complete	5/21/2015 8:17:01 PM	25
26	TOC		TOC:0.2038mg/L TC:0.3125mg/L IC:0.1087mg/L	Complete	5/21/2015 8:28:09 PM	26
27	TOC		TOC:0.1794mg/L TC:0.2004mg/L IC:0.02108mg/L	Complete	5/21/2015 8:37:20 PM	0
28	TOC		TOC:1.925mg/L TC:13.74mg/L IC:11.81mg/L	Complete	5/21/2015 9:01:07 PM	28
29	TOC		TOC:2.168mg/L TC:35.84mg/L IC:33.67mg/L	Complete	5/21/2015 9:26:53 PM	29
30	TOC	CCV	!!Error!! TOC:27.95mg/L TC:27.88mg/L IC:-0.07270mg/	Complete	5/22/2015 8:59:07 AM	30
31	TOC	CCB	TOC:0.1343mg/L TC:0.1511mg/L IC:0.01680mg/L	Complete	5/22/2015 9:08:14 AM	0
32	TOC	L15051231-04 (10)	TOC:6.241mg/L TC:28.62mg/L IC:22.38mg/L	Complete	5/22/2015 9:45:40 AM	32
33	TOC	L15051231-05 (3)	TOC:4.220mg/L TC:18.43mg/L IC:14.21mg/L	Complete	5/22/2015 10:08:43 AM	33
34	TOC	L15051267-01	TOC:2.741mg/L TC:6.668mg/L IC:3.927mg/L	Complete	5/22/2015 10:30:44 AM	34
35	TOC	L15051267-02	TOC:2.438mg/L TC:3.844mg/L IC:1.406mg/L	Complete	5/22/2015 10:51:43 AM	35
36	TOC	L15051268-01 (50)	TOC:21.54mg/L TC:21.81mg/L IC:0.2624mg/L	Complete	5/22/2015 11:26:53 AM	36
37	TOC	L15051269-01 (3)	TOC:26.78mg/L TC:27.40mg/L IC:0.6141mg/L	Complete	5/22/2015 11:50:08 AM	37
38	TOC	L15051303-01 (3)	TOC:8.548mg/L TC:40.92mg/L IC:32.37mg/L	Complete	5/22/2015 12:16:03 PM	38
39	TOC	L15051303-03 (5)	TOC:7.363mg/L TC:37.26mg/L IC:29.90mg/L	Complete	5/22/2015 12:41:40 PM	39
40	TOC	L15051303-05 (3) (5)	TOC:12.84mg/L TC:42.05mg/L IC:29.21mg/L	Complete	5/22/2015 1:09:40 PM	40
41	TOC	L15051303-07 (3)	TOC:2.503mg/L TC:25.05mg/L IC:22.55mg/L	Complete	5/22/2015 1:35:13 PM	41
42	TOC	CCV	TOC:27.75mg/L TC:27.83mg/L IC:0.07663mg/L	Complete	5/22/2015 1:49:49 PM	42
43	TOC	CCB	TOC:0.1361mg/L TC:0.1670mg/L IC:0.03086mg/L	Complete	5/22/2015 1:58:59 PM	0
44	TOC	L15051303-09 (3)	TOC:1.792mg/L TC:14.44mg/L IC:12.64mg/L	Complete	5/22/2015 2:22:21 PM	44
45	TOC	L15051303-11 (5)	TOC:4.497mg/L TC:39.17mg/L IC:34.67mg/L	Complete	5/22/2015 3:00:26 PM	45
46	TOC	WG524525-05 DUP	TOC:2.512mg/L TC:4.544mg/L IC:2.033mg/L	Complete	5/22/2015 3:21:48 PM	46
47	TOC	WG524525-07 (3) MS	TOC:6.375mg/L TC:36.08mg/L IC:29.71mg/L	Complete	5/22/2015 3:47:03 PM	47
48	TOC	CCV	TOC:26.96mg/L TC:27.07mg/L IC:0.1150mg/L	Complete	5/22/2015 4:00:53 PM	48
49	TOC	CCB	TOC:0.1783mg/L TC:0.2093mg/L IC:0.03103mg/L	Complete	5/22/2015 4:10:10 PM	0

5/22/2015 4:59:10 PM

1/1

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Sample

Sample Name: TIC
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.346mg/L TC:26.10mg/L IC:24.76mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1003	26.10mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 10:31:10 AM

Mean Area 1003
Mean Conc. 26.10mg/L

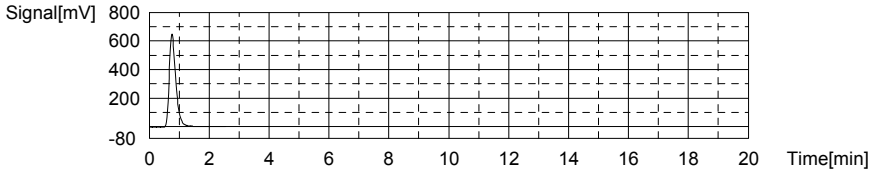

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	749.6	24.76mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 10:36:44 AM

Mean Area 749.6
Mean Conc. 24.76mg/L

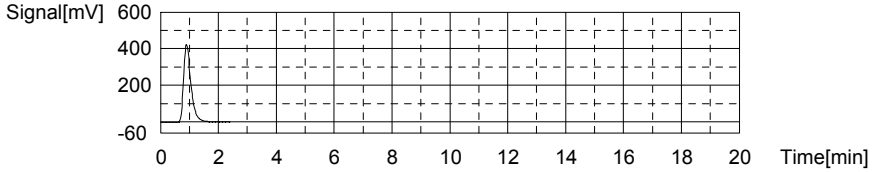

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:25.15mg/L TC:25.05mg/L IC:-0.09567mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	962.7	25.05mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 10:44:47 AM

Mean Area 962.7
Mean Conc. 25.05mg/L

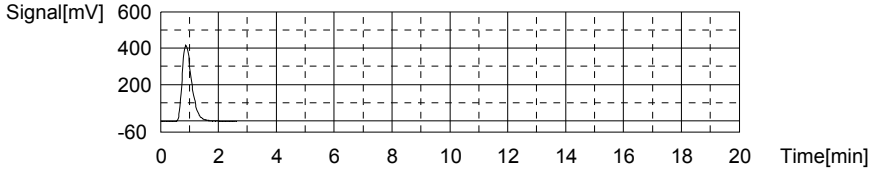

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.159	-0.09567mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 10:49:11 AM

Mean Area 5.159
Mean Conc. -0.09567mg/L

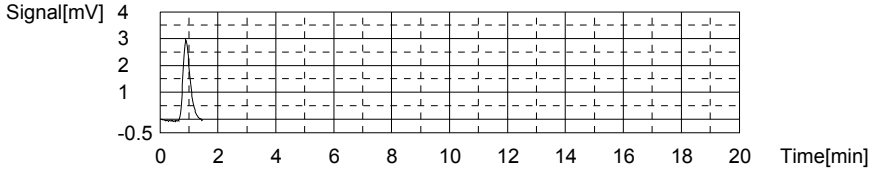

Sample

Sample Name: WG524525-01 BLK
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1582mg/L TC:0.1621mg/L IC:0.00383mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.94	0.1832mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 10:54:18 AM
2	9.324	0.1410mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 10:57:52 AM

Mean Area 10.13
Mean Conc. 0.1621mg/L

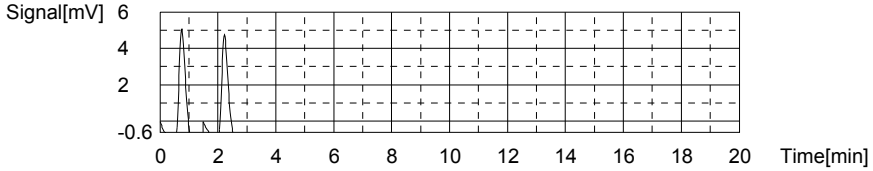

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.157	0.00442mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 11:01:57 AM
2	8.122	0.00325mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 11:06:00 AM

Mean Area 8.140
Mean Conc. 0.00383mg/L

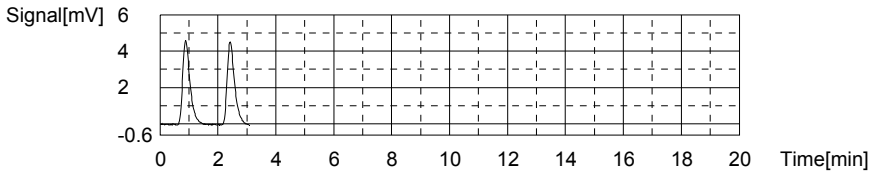

Sample

Sample Name: WG524525-02 LCS
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:26.12mg/L TC:46.89mg/L IC:20.77mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1793	46.74mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 11:14:14 AM
2	1804	47.03mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 11:19:11 AM

Mean Area 1799
Mean Conc. 46.89mg/L

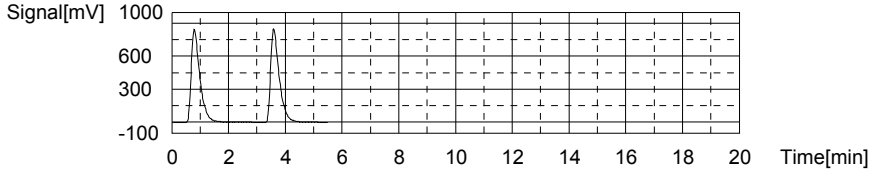

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	639.9	21.10mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 11:24:50 AM
2	620.4	20.44mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 11:29:59 AM

Mean Area 630.1
Mean Conc. 20.77mg/L

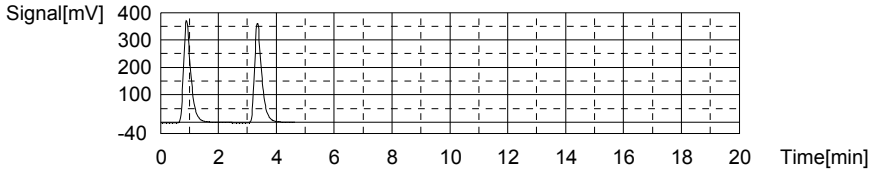

Sample

Sample Name: WG524525-03 LCSDUP
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:25.20mg/L TC:45.82mg/L IC:20.62mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1768	46.09mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 11:38:03 AM
2	1747	45.54mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 11:43:11 AM

Mean Area 1758
Mean Conc. 45.82mg/L

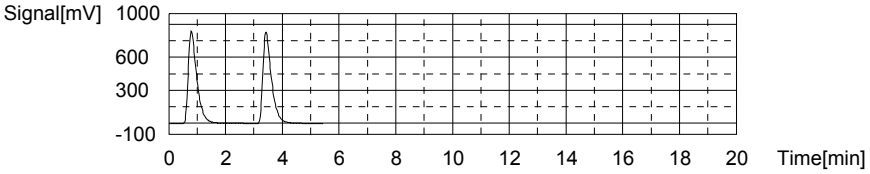

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	632.2	20.84mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 11:48:48 AM
2	619.1	20.40mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 11:54:02 AM

Mean Area 625.7
Mean Conc. 20.62mg/L

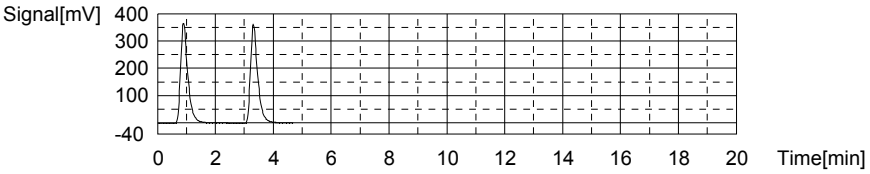

Sample

Sample Name: L15051200-09 (3)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.070mg/L TC:10.58mg/L IC:7.506mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	400.9	10.37mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 12:01:48 PM
2	416.5	10.78mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 12:06:01 PM

Mean Area 408.7
Mean Conc. 10.58mg/L

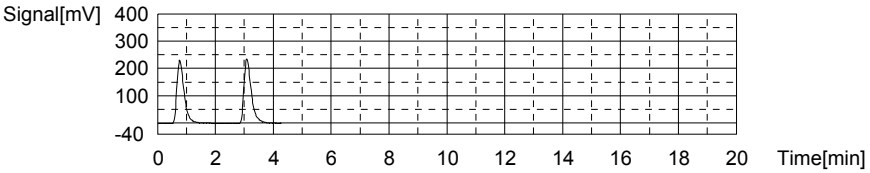

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	231.6	7.464mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 12:11:11 PM
2	234.1	7.548mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 12:16:02 PM

Mean Area 232.9
Mean Conc. 7.506mg/L

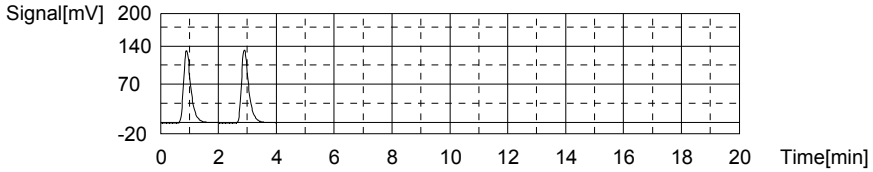

Sample

Sample Name: L15051209-15 (3)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.484mg/L TC:37.89mg/L IC:34.40mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1469	38.28mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 12:24:44 PM
2	1439	37.49mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 12:29:55 PM

Mean Area 1454
Mean Conc. 37.89mg/L

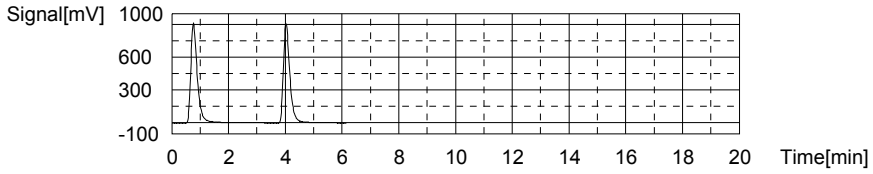

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1045	34.62mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 12:36:00 PM
2	1032	34.19mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 12:41:25 PM

Mean Area 1039
Mean Conc. 34.40mg/L

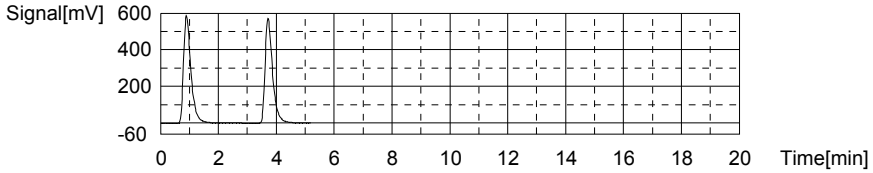

Sample

Sample Name: L15051209-16 (3)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.631mg/L TC:24.37mg/L IC:21.73mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	936.8	24.37mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 12:49:18 PM
2	936.2	24.36mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 12:53:52 PM

Mean Area 936.5
Mean Conc. 24.37mg/L

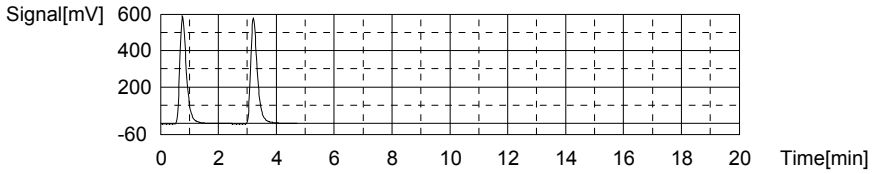

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	662.4	21.85mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 12:59:56 PM
2	655.7	21.62mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 1:05:21 PM

Mean Area 659.0
Mean Conc. 21.73mg/L

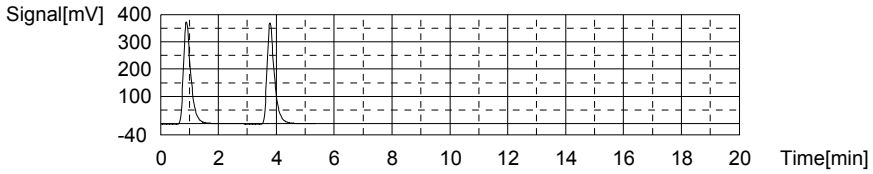

Sample

Sample Name: L15051209-17 (3)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.690mg/L TC:37.74mg/L IC:35.05mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1459	38.02mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 1:15:26 PM
2	1438	37.47mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 1:21:22 PM

Mean Area 1449
Mean Conc. 37.74mg/L

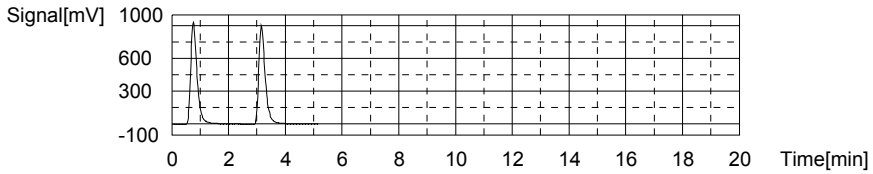

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1064	35.25mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 1:27:26 PM
2	1052	34.85mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 1:32:51 PM

Mean Area 1058
Mean Conc. 35.05mg/L

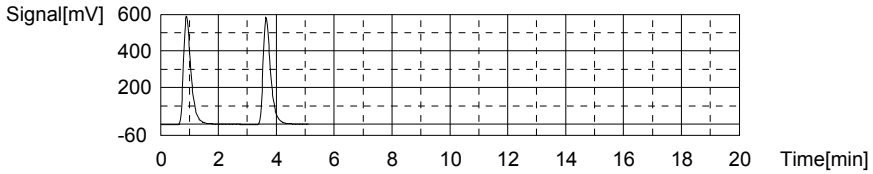

Sample

Sample Name: L15051209-27 (10)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.734mg/L TC:16.04mg/L IC:14.31mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	616.8	16.01mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 1:40:15 PM
2	619.2	16.08mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 1:45:29 PM

Mean Area 618.0
Mean Conc. 16.04mg/L

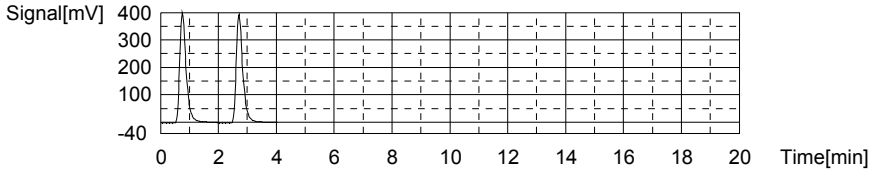

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	436.4	14.30mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 1:50:52 PM
2	436.9	14.32mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 1:56:03 PM

Mean Area 436.7
Mean Conc. 14.31mg/L

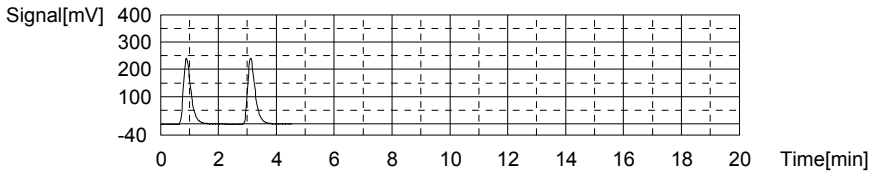

Sample

Sample Name: L15051209-28 (5)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.992mg/L TC:39.51mg/L IC:31.51mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1529	39.85mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 2:15:12 PM
2	1503	39.17mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 2:20:15 PM

Mean Area 1516
Mean Conc. 39.51mg/L

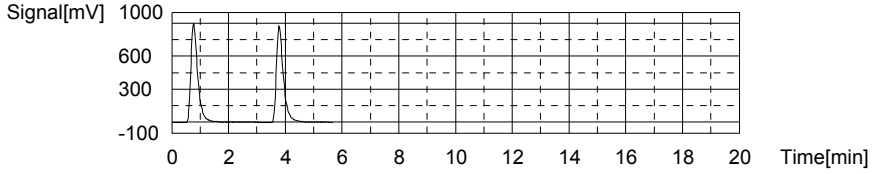

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	951.5	31.50mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 2:25:50 PM
2	952.5	31.53mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 2:31:23 PM

Mean Area 952.0
Mean Conc. 31.51mg/L

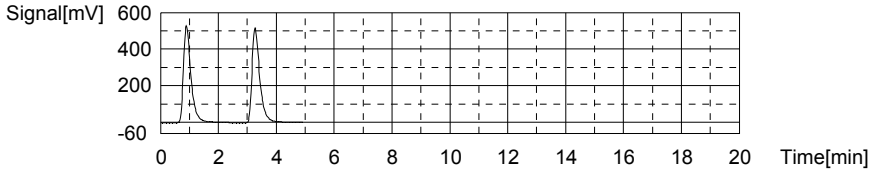

Sample

Sample Name: L15051209-29 (3)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.623mg/L TC:47.06mg/L IC:44.43mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1814	47.29mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 2:40:29 PM
2	1796	46.82mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 2:45:55 PM

Mean Area 1805
Mean Conc. 47.06mg/L

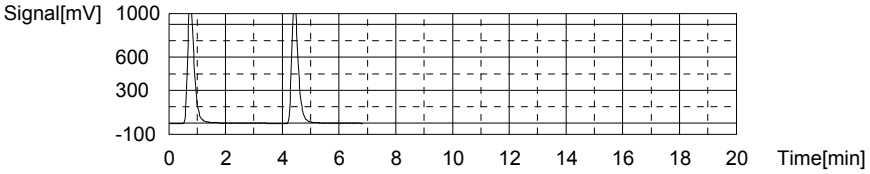

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1337	44.37mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 2:51:36 PM
2	1341	44.50mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 2:57:37 PM

Mean Area 1339
Mean Conc. 44.43mg/L

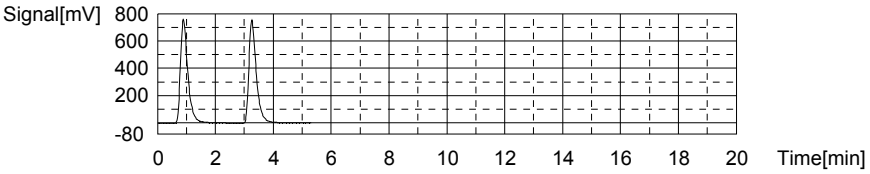

Sample

Sample Name: L15051231-01 (3)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.772mg/L TC:21.17mg/L IC:18.39mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	804.2	20.91mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 3:05:42 PM
2	823.9	21.42mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 3:12:06 PM

Mean Area 814.1
Mean Conc. 21.17mg/L

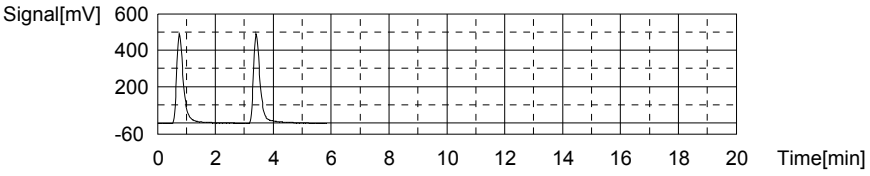

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	563.8	18.55mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 3:17:36 PM
2	554.2	18.23mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 3:22:43 PM

Mean Area 559.0
Mean Conc. 18.39mg/L

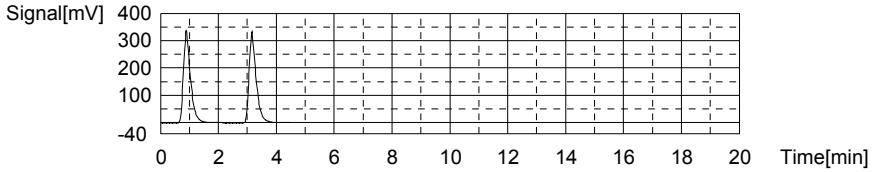

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:23.78mg/L TC:23.82mg/L IC:0.03567mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	915.5	23.82mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 3:30:39 PM

Mean Area 915.5
Mean Conc. 23.82mg/L

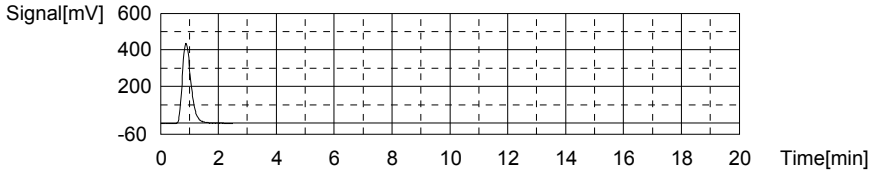

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.093	0.03567mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 3:35:09 PM

Mean Area 9.093
Mean Conc. 0.03567mg/L

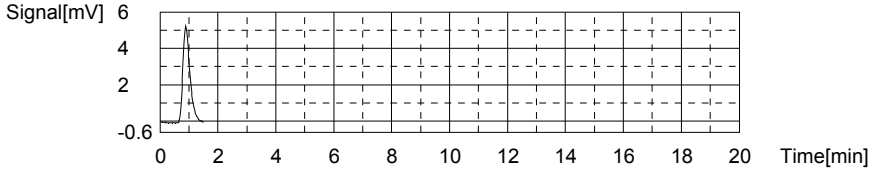

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1161mg/L TC:0.1333mg/L IC:0.01717mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.031	0.1333mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 3:40:12 PM

Mean Area 9.031
Mean Conc. 0.1333mg/L

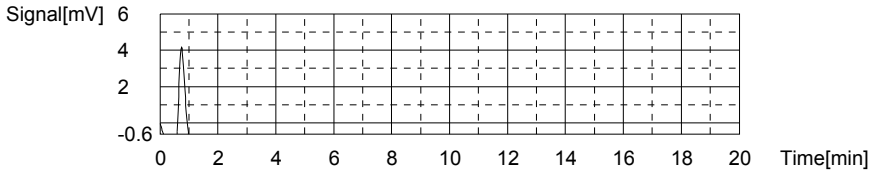

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.539	0.01717mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 3:44:13 PM

Mean Area 8.539
Mean Conc. 0.01717mg/L

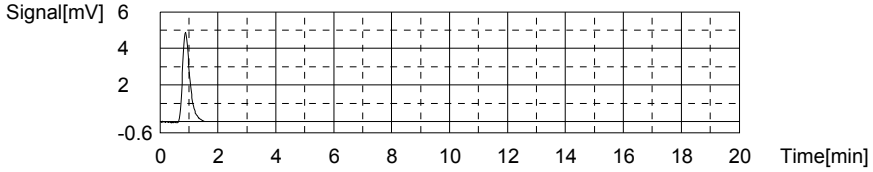

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.629mg/L TC:30.99mg/L IC:28.36mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1213	31.59mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 4:10:38 PM
2	1167	30.39mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 4:15:43 PM

Mean Area 1190
Mean Conc. 30.99mg/L

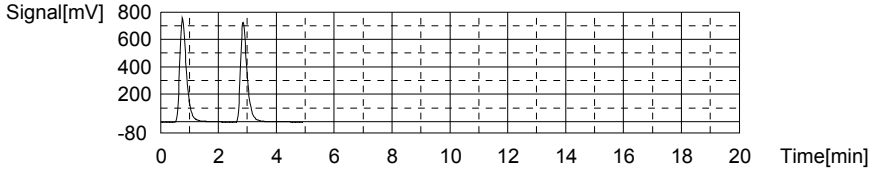

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	855.4	28.29mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 4:21:28 PM
2	859.6	28.43mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 4:26:57 PM

Mean Area 857.5
Mean Conc. 28.36mg/L

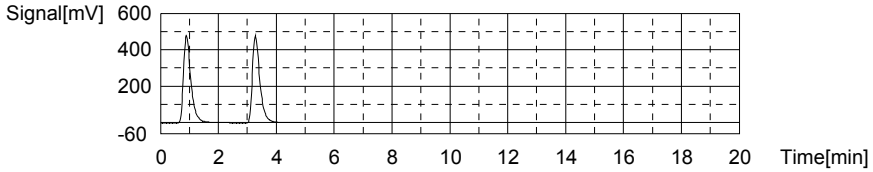

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.355mg/L TC:11.17mg/L IC:9.818mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	425.9	11.03mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 4:34:31 PM
2	437.2	11.32mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 4:40:13 PM

Mean Area 431.6
Mean Conc. 11.17mg/L

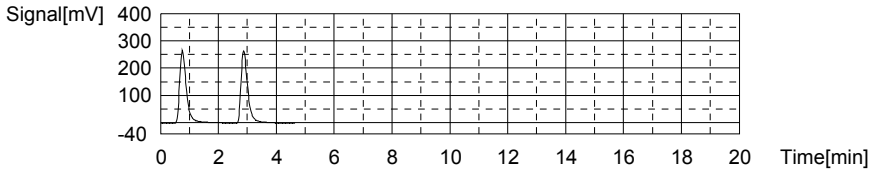

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	300.9	9.778mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 4:45:29 PM
2	303.3	9.858mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 4:50:25 PM

Mean Area 302.1
Mean Conc. 9.818mg/L

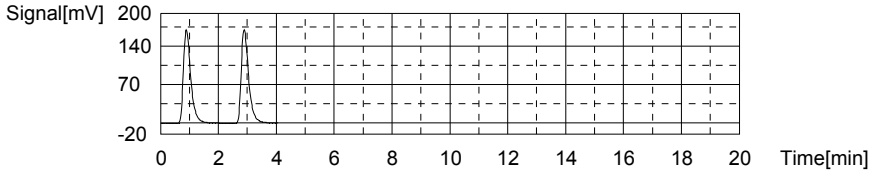

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.702mg/L TC:5.196mg/L IC:2.494mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	201.6	5.165mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 4:57:49 PM
2	204.0	5.227mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 5:02:11 PM

Mean Area 202.8
Mean Conc. 5.196mg/L

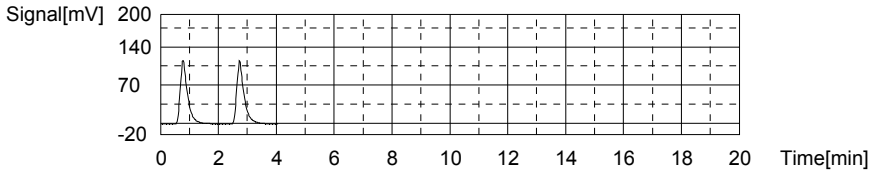

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	83.84	2.531mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 5:06:57 PM
2	81.60	2.456mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 5:11:35 PM

Mean Area 82.72
Mean Conc. 2.494mg/L

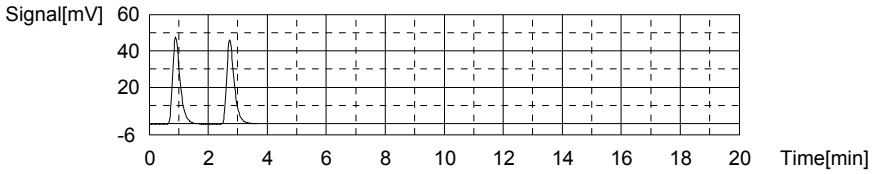

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.776mg/L TC:4.114mg/L IC:1.338mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	160.3	4.086mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 5:19:01 PM
2	162.5	4.143mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 5:23:21 PM

Mean Area 161.4
Mean Conc. 4.114mg/L

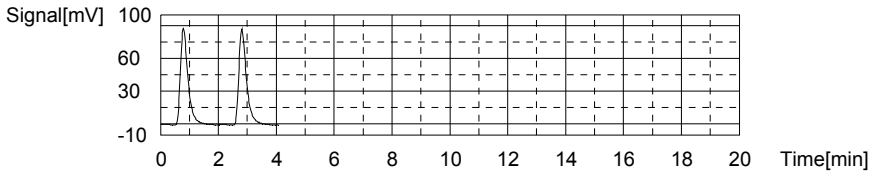

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	48.69	1.358mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 5:28:01 PM
2	47.51	1.318mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 5:32:27 PM

Mean Area 48.10
Mean Conc. 1.338mg/L

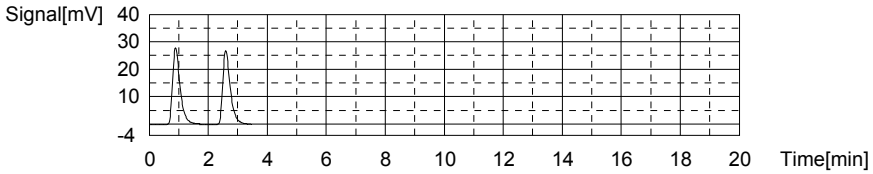

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:217.9mg/L TC:228.3mg/L IC:10.43mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9999	261.1mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 5:42:47 PM
2	7485	195.5mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 5:53:30 PM

Mean Area 8742
Mean Conc. 228.3mg/L

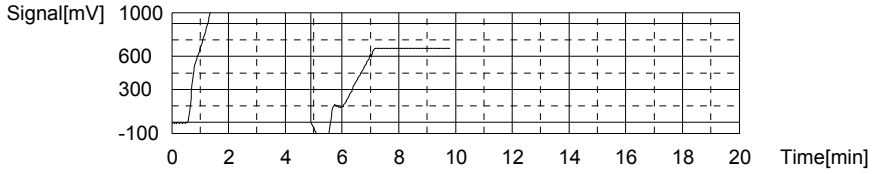

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	322.1	10.49mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 5:59:22 PM
2	318.6	10.37mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 6:04:23 PM

Mean Area 320.4
Mean Conc. 10.43mg/L

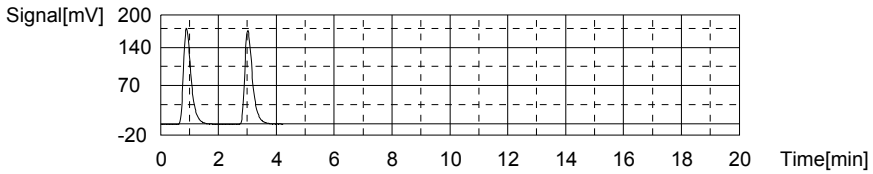

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:70.51mg/L TC:71.43mg/L IC:0.9291mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2371	61.85mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 6:12:34 PM
2	3105	81.02mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 6:19:50 PM

Mean Area 2738
Mean Conc. 71.43mg/L

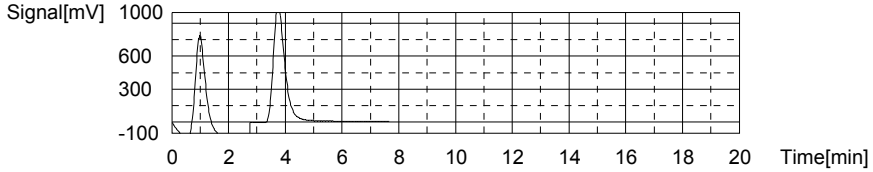

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	36.60	0.9540mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 6:24:29 PM
2	35.11	0.9042mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 6:28:56 PM

Mean Area 35.86
Mean Conc. 0.9291mg/L

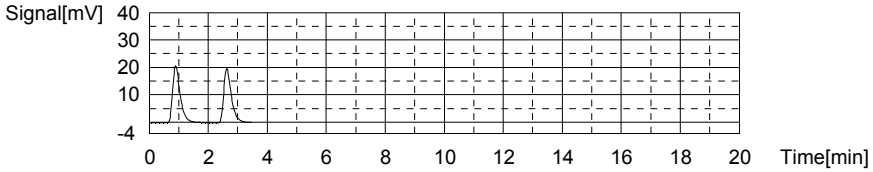

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.229mg/L TC:33.89mg/L IC:30.66mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1271	33.11mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 6:36:54 PM
2	1331	34.67mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 6:43:40 PM

Mean Area 1301
Mean Conc. 33.89mg/L

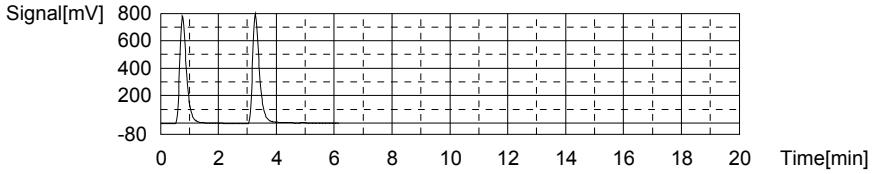

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	940.5	31.13mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 6:49:40 PM
2	912.3	30.19mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 6:55:06 PM

Mean Area 926.4
Mean Conc. 30.66mg/L

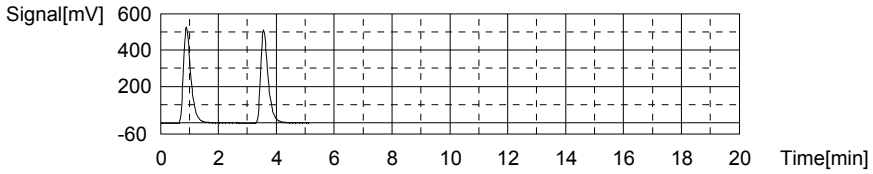

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.062mg/L TC:56.49mg/L IC:50.43mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2163	56.41mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 7:05:26 PM
2	2169	56.57mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 7:12:34 PM

Mean Area 2166
Mean Conc. 56.49mg/L

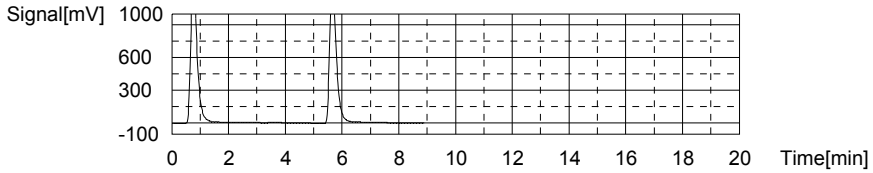

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1539	51.11mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 7:18:21 PM
2	1498	49.74mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 7:23:59 PM

Mean Area 1519
Mean Conc. 50.43mg/L

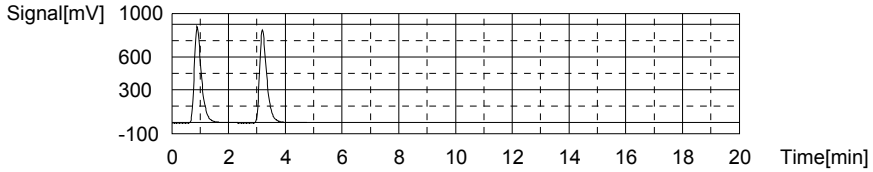

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.864mg/L TC:52.28mg/L IC:45.42mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1998	52.10mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 7:34:19 PM
2	2012	52.47mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 7:40:55 PM

Mean Area 2005
Mean Conc. 52.28mg/L

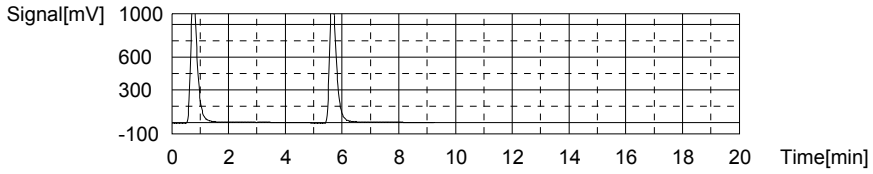

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1370	45.47mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 7:46:35 PM
2	1367	45.37mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 7:52:26 PM

Mean Area 1369
Mean Conc. 45.42mg/L

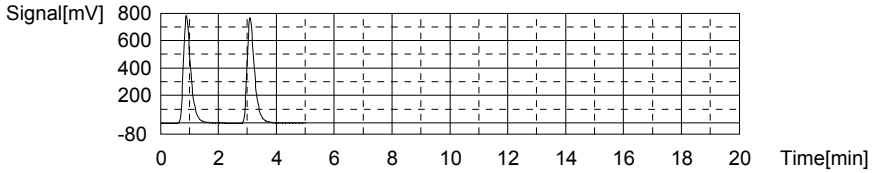

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.141mg/L TC:22.27mg/L IC:20.13mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	853.7	22.20mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 8:00:42 PM
2	859.2	22.35mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 8:06:34 PM

Mean Area 856.5
Mean Conc. 22.27mg/L

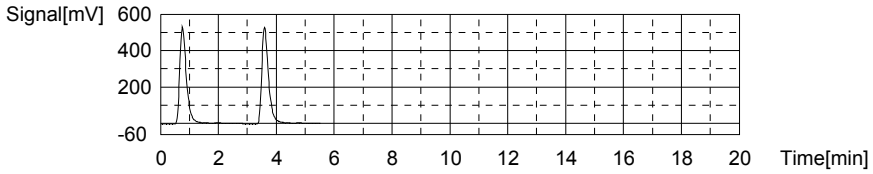

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	613.3	20.21mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 8:11:55 PM
2	608.9	20.06mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 8:17:01 PM

Mean Area 611.1
Mean Conc. 20.13mg/L

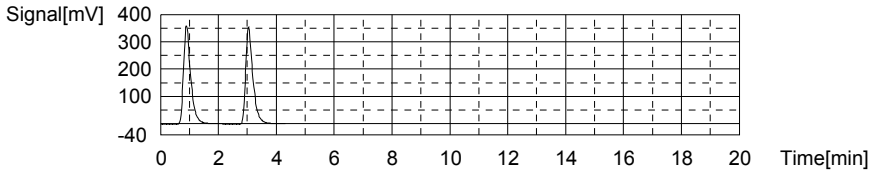

Sample

Sample Name:
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.2038mg/L TC:0.3125mg/L IC:0.1087mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	15.89	0.3125mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 8:23:45 PM

Mean Area 15.89
Mean Conc. 0.3125mg/L

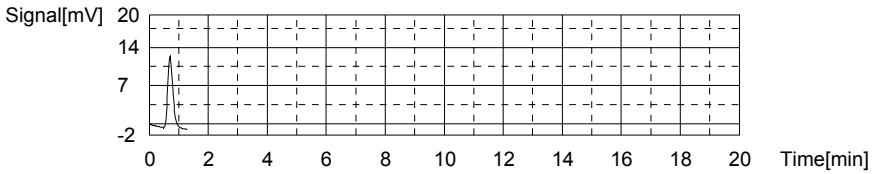

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.28	0.1087mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 8:28:09 PM

Mean Area 11.28
Mean Conc. 0.1087mg/L

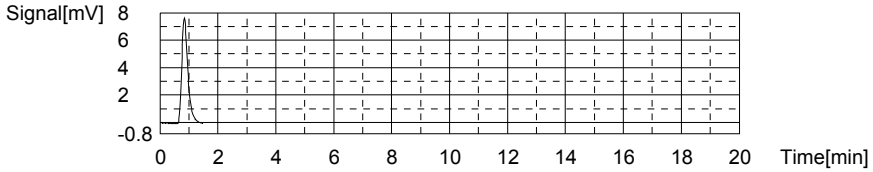

Sample

Sample Name:
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1794mg/L TC:0.2004mg/L IC:0.02108mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.60	0.2004mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 8:33:17 PM

Mean Area 11.60
Mean Conc. 0.2004mg/L

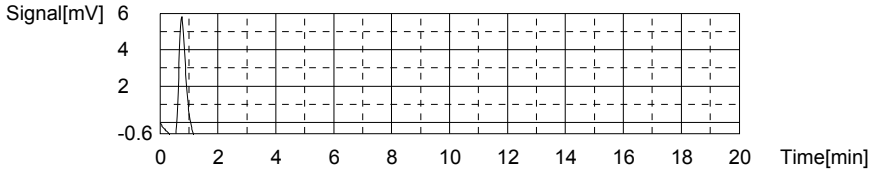

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.656	0.02108mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 8:37:20 PM

Mean Area 8.656
Mean Conc. 0.02108mg/L

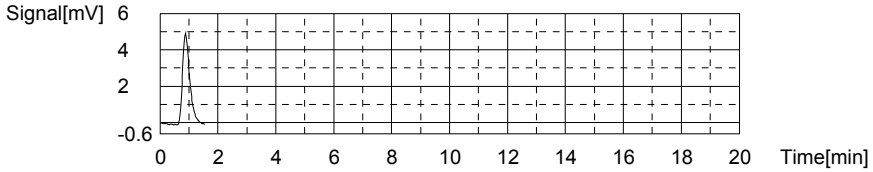

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.925mg/L TC:13.74mg/L IC:11.81mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	531.9	13.79mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 8:45:10 PM
2	527.4	13.68mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 8:51:03 PM

Mean Area 529.6
Mean Conc. 13.74mg/L

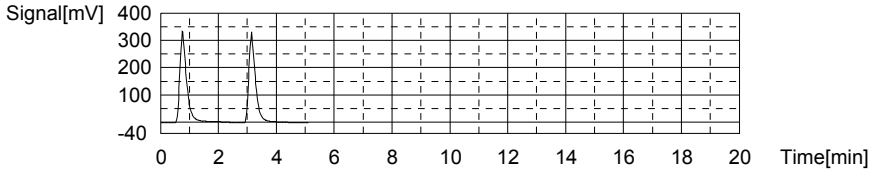

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	364.5	11.90mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 8:56:14 PM
2	359.1	11.72mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 9:01:07 PM

Mean Area 361.8
Mean Conc. 11.81mg/L

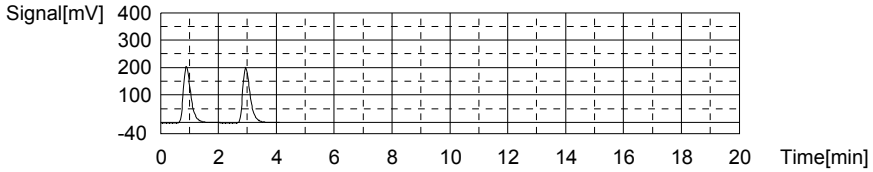

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.168mg/L TC:35.84mg/L IC:33.67mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1383	36.03mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 9:09:31 PM
2	1368	35.64mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/21/2015 9:15:19 PM

Mean Area 1376
Mean Conc. 35.84mg/L

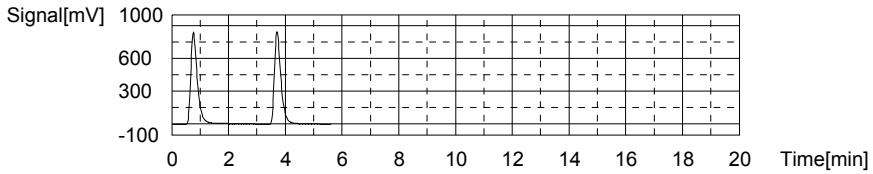

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1032	34.19mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 9:21:19 PM
2	1001	33.15mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/21/2015 9:26:53 PM

Mean Area 1017
Mean Conc. 33.67mg/L

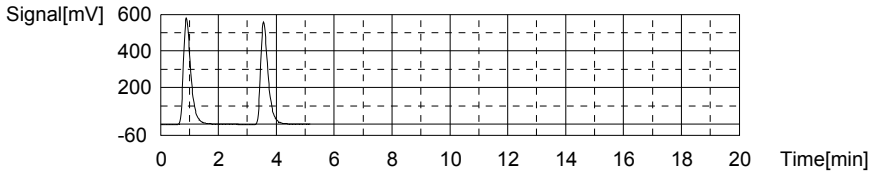

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:27.95mg/L TC:27.88mg/L IC:-0.07270mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1071	27.88mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 8:54:38 AM

Mean Area 1071
Mean Conc. 27.88mg/L

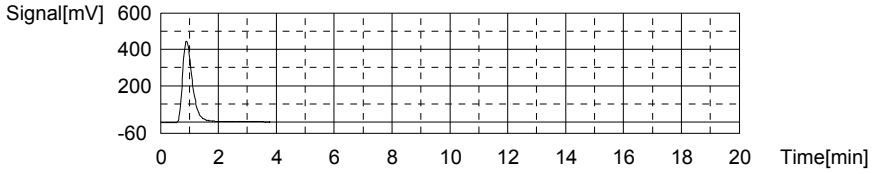

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.847	-0.07270mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 8:59:07 AM

Mean Area 5.847
Mean Conc. -0.07270mg/L

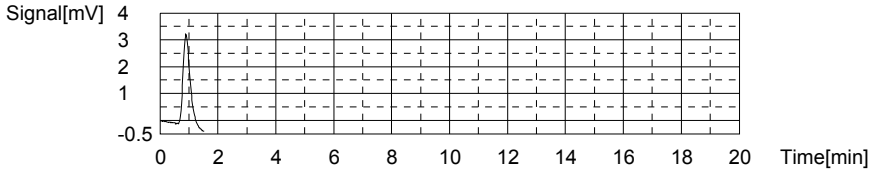

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1343mg/L TC:0.1511mg/L IC:0.01680mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.711	0.1511mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 9:04:13 AM

Mean Area 9.711
Mean Conc. 0.1511mg/L

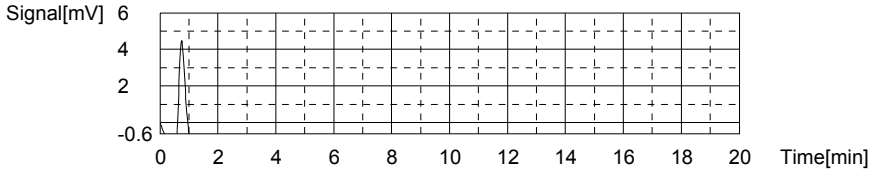

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.528	0.01680mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 9:08:14 AM

Mean Area 8.528
Mean Conc. 0.01680mg/L

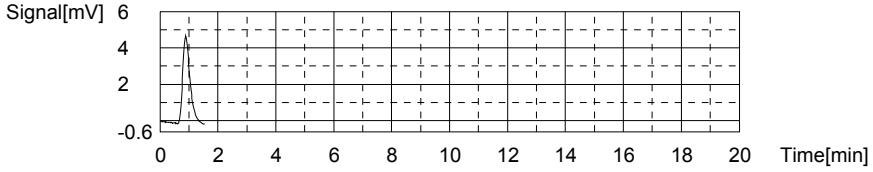

Sample

Sample Name: L15051231-04 (10)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.241mg/L TC:28.62mg/L IC:22.38mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1100	28.64mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 9:28:37 AM
2	1099	28.61mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 9:34:48 AM

Mean Area 1100
Mean Conc. 28.62mg/L

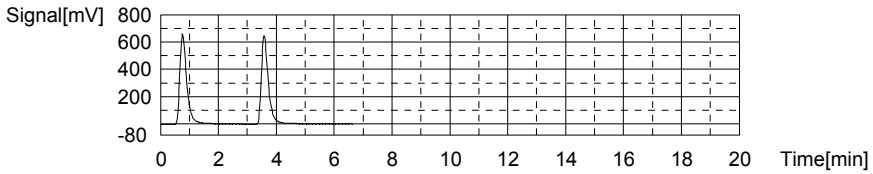

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	704.0	23.24mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 9:40:27 AM
2	653.0	21.53mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 9:45:40 AM

Mean Area 678.5
Mean Conc. 22.38mg/L

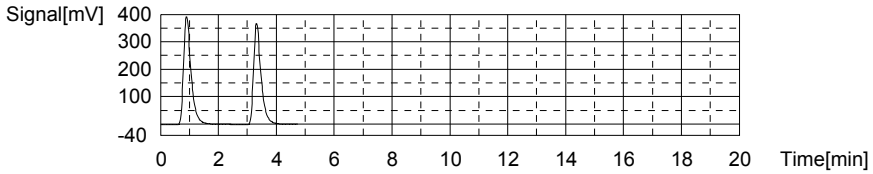

Sample

Sample Name: L15051231-05 (3)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.220mg/L TC:18.43mg/L IC:14.21mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	704.8	18.31mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 9:53:40 AM
2	713.7	18.54mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 9:58:22 AM

Mean Area 709.3
Mean Conc. 18.43mg/L

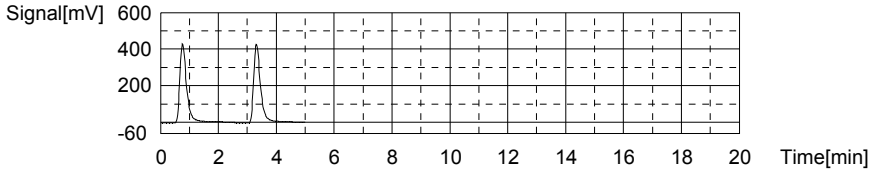

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	482.1	15.83mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 10:03:54 AM
2	385.1	12.59mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 10:08:43 AM

Mean Area 433.6
Mean Conc. 14.21mg/L

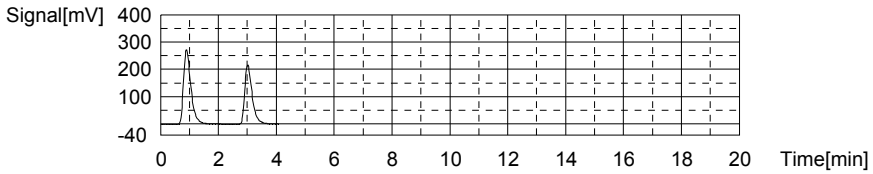

Sample

Sample Name: L15051267-01
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.741mg/L TC:6.668mg/L IC:3.927mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	259.6	6.680mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 10:16:34 AM
2	258.7	6.657mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 10:21:10 AM

Mean Area 259.1
Mean Conc. 6.668mg/L

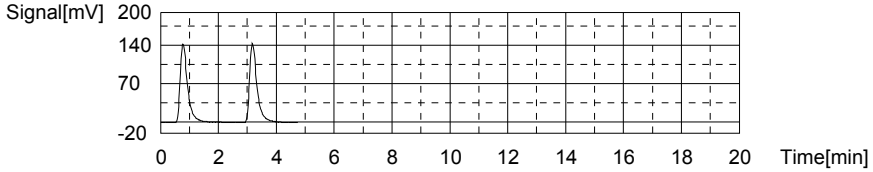

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	126.3	3.949mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 10:26:05 AM
2	125.0	3.905mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 10:30:44 AM

Mean Area 125.7
Mean Conc. 3.927mg/L

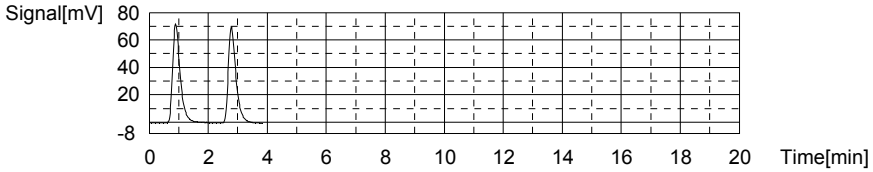

Sample

Sample Name: L15051267-02
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.438mg/L TC:3.844mg/L IC:1.406mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	149.2	3.796mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 10:38:02 AM
2	152.9	3.892mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 10:42:31 AM

Mean Area 151.1
Mean Conc. 3.844mg/L

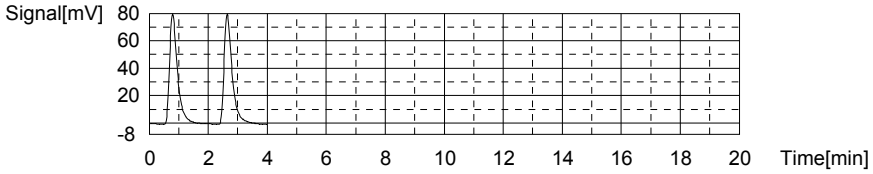

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	50.75	1.426mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 10:47:16 AM
2	49.50	1.385mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 10:51:43 AM

Mean Area 50.13
Mean Conc. 1.406mg/L

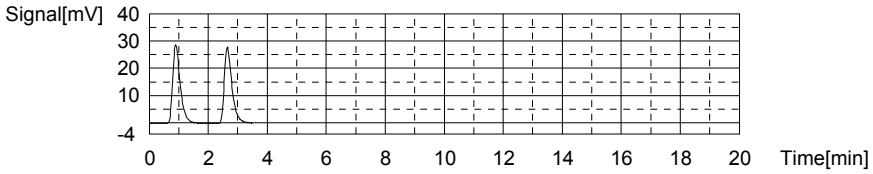

Sample

Sample Name: L15051268-01 (50)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:21.54mg/L TC:21.81mg/L IC:0.2624mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	839.1	21.82mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 11:11:42 AM
2	838.0	21.79mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 11:18:05 AM

Mean Area 838.5
Mean Conc. 21.81mg/L

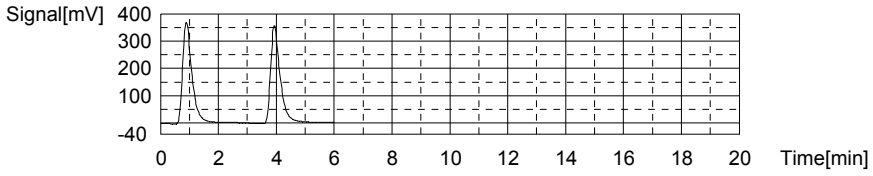

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	16.12	0.2703mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 11:22:35 AM
2	15.65	0.2546mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 11:26:53 AM

Mean Area 15.89
Mean Conc. 0.2624mg/L

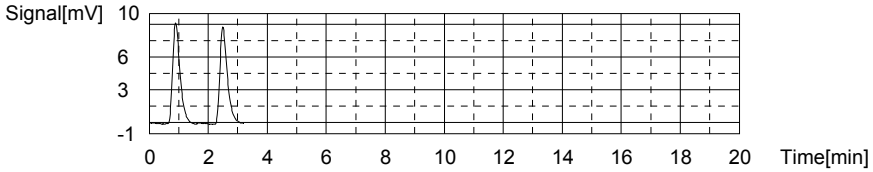

Sample

Sample Name: L15051269-01 (3)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:26.78mg/L TC:27.40mg/L IC:0.6141mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1062	27.64mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 11:35:52 AM
2	1043	27.15mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 11:41:10 AM

Mean Area 1053
Mean Conc. 27.40mg/L

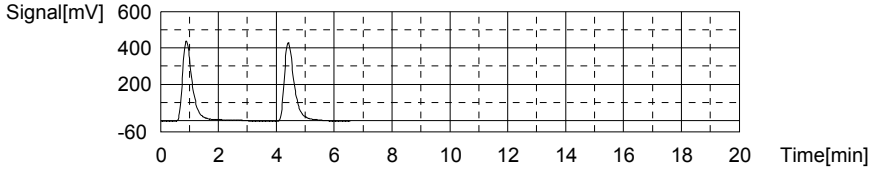

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	26.67	0.6225mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 11:45:49 AM
2	26.17	0.6058mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 11:50:08 AM

Mean Area 26.42
Mean Conc. 0.6141mg/L

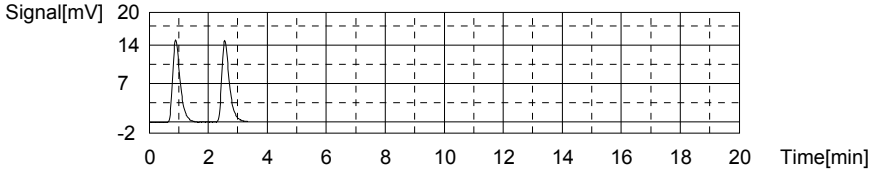

Sample

Sample Name: L15051303-01 (3)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:8.548mg/L TC:40.92mg/L IC:32.37mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1533	39.95mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 11:58:10 AM
2	1607	41.88mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 12:04:48 PM

Mean Area 1570
Mean Conc. 40.92mg/L

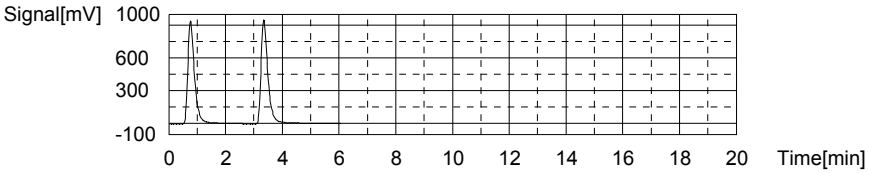

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1106	36.66mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 12:10:39 PM
2	849.2	28.08mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 12:16:03 PM

Mean Area 977.6
Mean Conc. 32.37mg/L

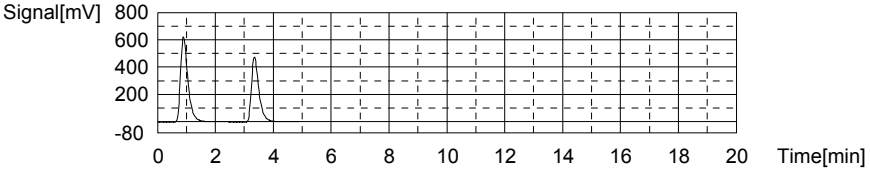

Sample

Sample Name: L15051303-03 (5)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.363mg/L TC:37.26mg/L IC:29.90mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1427	37.18mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 12:24:44 PM
2	1433	37.34mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 12:30:27 PM

Mean Area 1430
Mean Conc. 37.26mg/L

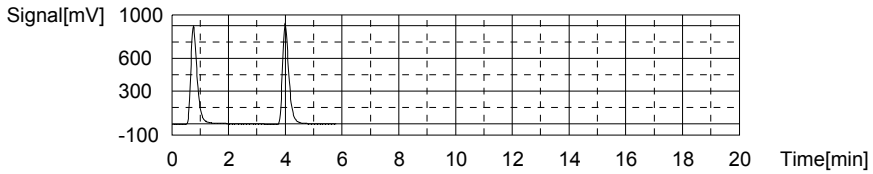

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1036	34.32mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 12:36:16 PM
2	771.1	25.48mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 12:41:40 PM

Mean Area 903.5
Mean Conc. 29.90mg/L

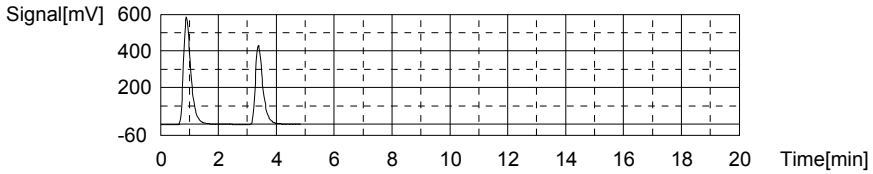

Sample

Sample Name: L15051303-05 (3)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:12.84mg/L TC:42.05mg/L IC:29.21mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1598	41.65mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 12:51:09 PM
2	1629	42.46mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 12:58:16 PM

Mean Area 1614
Mean Conc. 42.05mg/L

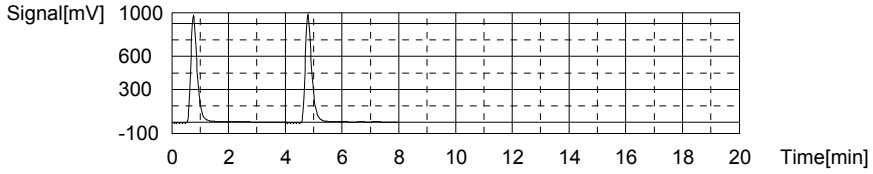

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1105	36.62mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 1:04:20 PM
2	661.2	21.81mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 1:09:40 PM

Mean Area 883.1
Mean Conc. 29.21mg/L

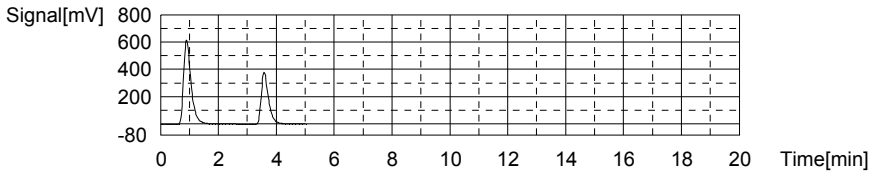

Sample

Sample Name: L15051303-07 (3)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.503mg/L TC:25.05mg/L IC:22.55mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	951.1	24.75mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 1:18:15 PM
2	974.6	25.36mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 1:24:17 PM

Mean Area 962.9
Mean Conc. 25.05mg/L

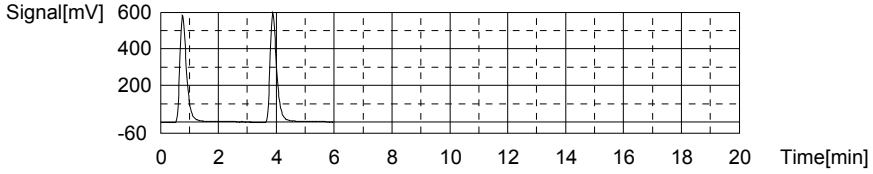

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	686.2	22.64mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 1:30:03 PM
2	680.8	22.46mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 1:35:13 PM

Mean Area 683.5
Mean Conc. 22.55mg/L

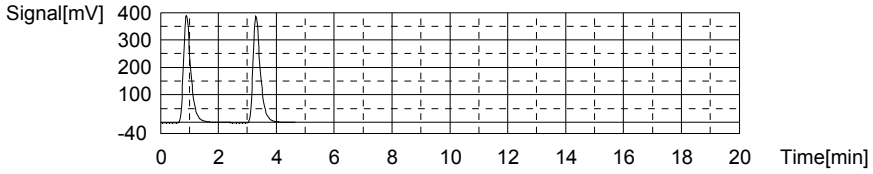

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:27.75mg/L TC:27.83mg/L IC:0.07663mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1069	27.83mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 1:45:13 PM

Mean Area 1069
Mean Conc. 27.83mg/L

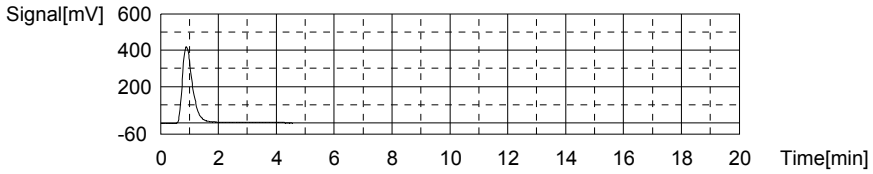

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.32	0.07663mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 1:49:49 PM

Mean Area 10.32
Mean Conc. 0.07663mg/L

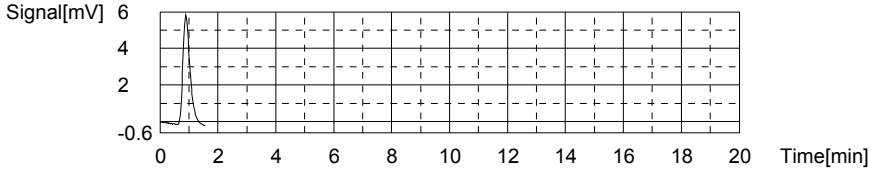

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1361mg/L TC:0.1670mg/L IC:0.03086mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.32	0.1670mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 1:54:57 PM

Mean Area 10.32
Mean Conc. 0.1670mg/L

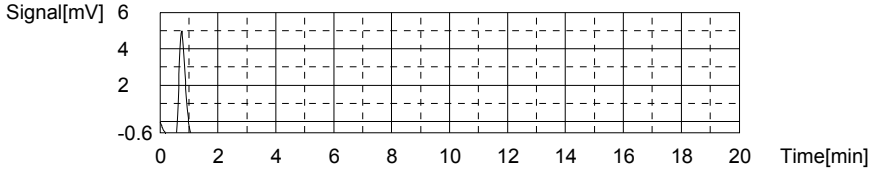

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.949	0.03086mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 1:58:59 PM

Mean Area 8.949
Mean Conc. 0.03086mg/L

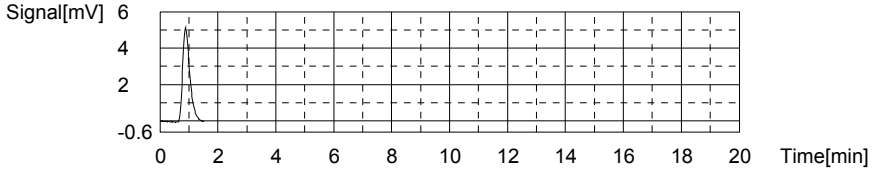

Sample

Sample Name: L15051303-09 (3)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.792mg/L TC:14.44mg/L IC:12.64mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	556.6	14.44mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 2:06:59 PM
2	556.3	14.43mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 2:12:05 PM

Mean Area 556.5
Mean Conc. 14.44mg/L

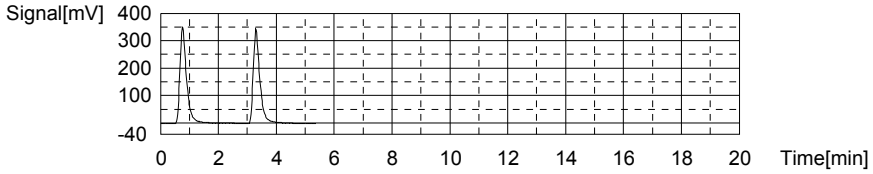

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	387.2	12.66mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 2:17:18 PM
2	386.3	12.63mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 2:22:21 PM

Mean Area 386.8
Mean Conc. 12.64mg/L

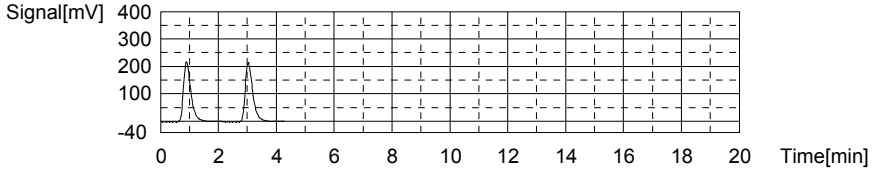

Sample

Sample Name: L15051303-11 (5)
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.497mg/L TC:39.17mg/L IC:34.67mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1499	39.06mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 2:42:14 PM
2	1507	39.27mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 2:49:07 PM

Mean Area 1503
Mean Conc. 39.17mg/L

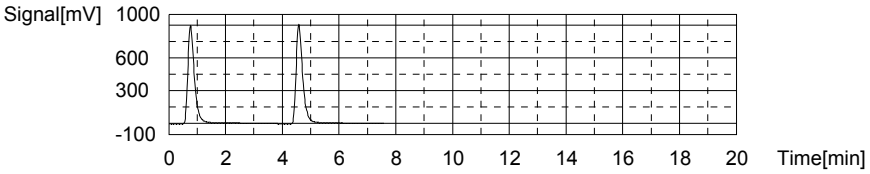

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1060	35.12mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 2:54:52 PM
2	1033	34.22mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 3:00:26 PM

Mean Area 1047
Mean Conc. 34.67mg/L

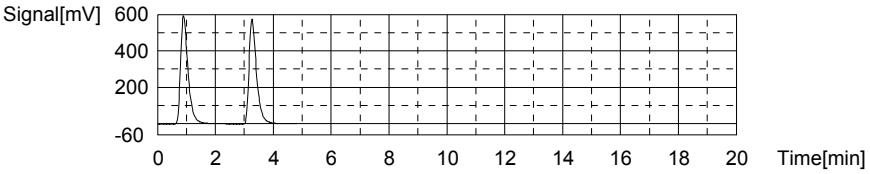

Sample

Sample Name: WG524525-05 DUP
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.512mg/L TC:4.544mg/L IC:2.033mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	180.7	4.619mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 3:08:02 PM
2	175.0	4.470mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 3:12:30 PM

Mean Area 177.9
Mean Conc. 4.544mg/L

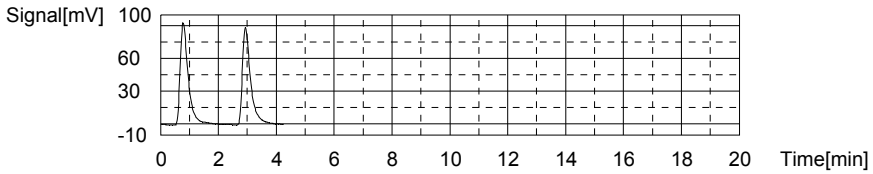

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	70.39	2.082mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 3:17:18 PM
2	67.42	1.983mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 3:21:48 PM

Mean Area 68.91
Mean Conc. 2.033mg/L

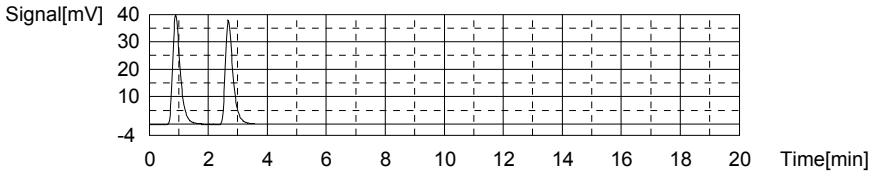

Sample

Sample Name: WG524525-07 (3) MS
Sample ID: <Untitled>
Origin: TOC-07-16-2014A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.375mg/L TC:36.08mg/L IC:29.71mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1388	36.16mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 3:30:23 PM
2	1382	36.01mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 3:35:55 PM

Mean Area 1385
Mean Conc. 36.08mg/L

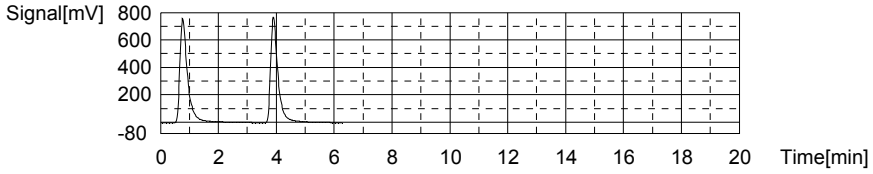

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	897.8	29.71mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 3:41:38 PM
2	898.0	29.71mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 3:47:03 PM

Mean Area 897.9
Mean Conc. 29.71mg/L

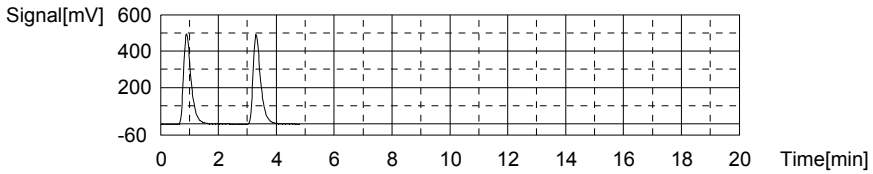

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:26.96mg/L TC:27.07mg/L IC:0.1150mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1040	27.07mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 3:56:23 PM

Mean Area 1040
Mean Conc. 27.07mg/L

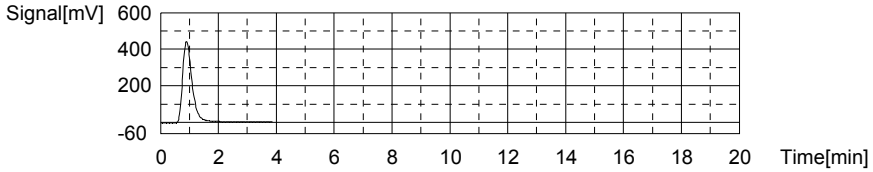

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.47	0.1150mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 4:00:53 PM

Mean Area 11.47
Mean Conc. 0.1150mg/L

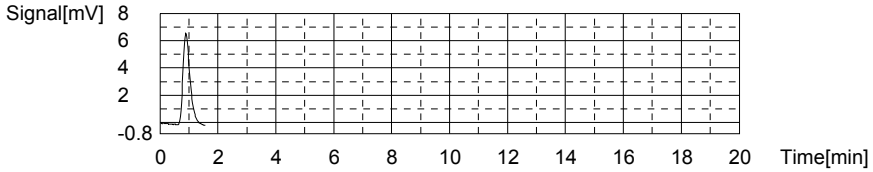

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-07-16-2014.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1783mg/L TC:0.2093mg/L IC:0.03103mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.94	0.2093mg/L	500uL	1		TCCURVE-07-16-2014.2014_07_16_11_05_1	5/22/2015 4:06:08 PM

Mean Area 11.94
Mean Conc. 0.2093mg/L

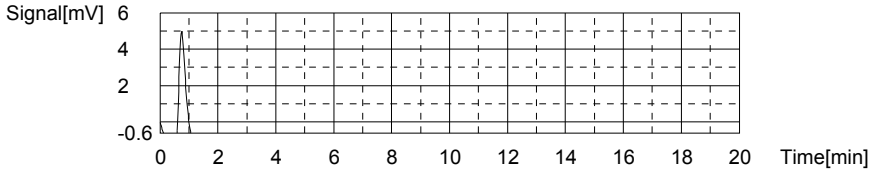

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.954	0.03103mg/L	500uL	1		TICCURVE-A-07-17-2014.2014_07_17_11_16	5/22/2015 4:10:10 PM

Mean Area 8.954
Mean Conc. 0.03103mg/L

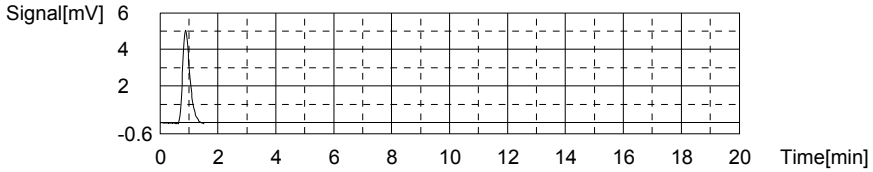

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
June 8, 2015

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001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK
EPT - ETHAN P. TIDD
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
June 08, 2015

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL/MDL).
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count
TNTC, B	Too numerous to count. Analyte present in method blank.

Microbac Laboratories Inc.
List of Valid Qualifiers
June 08, 2015

Qualkey: DOD

TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Mark Heaston
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD	pH:	
Project Name/Location:	Longhorn		
Project Number:	60256135.0002GA		

Mail to:	Linda Raabe 112 East Pecan STE. 400 San Antonio, TX 78205 210-296-2000
Fed Ex Airbill No:	
Program:	

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	PERCHLORATE	Dissolved Gases Carbon Dioxide	ALKALINITY	Nitrate/Nitrite Chloride/Sulfate	Sulfide	TOC	Total Phosphorous Dissolved Iron Dissolved Manganese	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
Site 50	50WW13-052015			5/20/15	0830		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW13FF-052015			5/20/15	0830		✓	W	1								✓					
	50WW14-052015			5/20/15	0945		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW14FF-052015			5/20/15	0945		✓	W	1								✓					
	50WW11-052015			5/20/15	1100		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW11FF-052015			5/20/15	1100		✓	W	1								✓					
	50WW06-052015			5/20/15	1315		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW06FF-052015			5/20/15	1315		✓	W	1								✓					
	50WW12-052015			5/20/15	1440		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW12FF-052015			5/20/15	1440		✓	W	1								✓					
	50WW23-052015			5/20/15	1555		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	~~50WW23 SB~~																					
	50WW23FF-052015			5/20/15	1555		✓	W	1								✓					
	TRIP BLANK			5/20/15			✓	W	2	✓												

Comments: STANDARD TAT

Relinquished by: (Signature) Scott Beesinger	Date 5/20/15	Time 1445	Received by: (Sig		Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Lab (Signature)		Remarks:

Microbac OVD
Received: 05/21/2015 09:41
By: CARA STRICKLER 221000070104
Cara Strickler

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

00640240

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051303
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 01-JUN-2015

Samplenum	Container ID	Products
L15051303-01	575837	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-MAY-2015 11:21	CLS		
2	ANALYZ	V1	ORG4	21-MAY-2015 16:17	AWE	CLS	
3	STORE	ORG4	A1	04-JUN-2015 07:51	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-MAY-2015 11:21	CLS		
2	ANALYZ	V1	ORG4	21-MAY-2015 16:17	AWE	CLS	
3	STORE	ORG4	A1	04-JUN-2015 07:51	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-MAY-2015 11:21	CLS		
2	ANALYZ	V1	ORG4	21-MAY-2015 16:17	AWE	CLS	
3	STORE	ORG4	A1	04-JUN-2015 07:51	CLS	AWE	

Samplenum	Container ID	Products
L15051303-01	575838	RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-MAY-2015 11:21	CLS		
2	ANALYZ	V1	ORG1	22-MAY-2015 07:47	AWE	CLS	
3	STORE	ORG1	A1	04-JUN-2015 07:39	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-MAY-2015 11:21	CLS		
2	ANALYZ	V1	ORG1	22-MAY-2015 07:47	AWE	CLS	
3	STORE	ORG1	A1	04-JUN-2015 07:39	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-MAY-2015 11:21	CLS		
2	ANALYZ	V1	ORG1	22-MAY-2015 07:47	AWE	CLS	
3	STORE	ORG1	A1	04-JUN-2015 07:39	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051303
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 01-JUN-2015

Samplenum	Container ID	Products
L15051303-01	575839	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	21-MAY-2015 11:21	CLS		
2	PREP	L1	SEM	21-MAY-2015 11:38	ALS	CLS	
3	STORE	SEM	A1	26-MAY-2015 11:03	CLS	ALS	

Samplenum	Container ID	Products
L15051303-01	575840	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-MAY-2015 11:21	CLS		
2	ANALYZ	W1	WET	27-MAY-2015 12:29	DCM	CLS	
3	STORE	WET	A1	02-JUN-2015 13:10	CLS	DCM	

Samplenum	Container ID	Products
L15051303-01	575841	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-MAY-2015 11:21	CLS		
2	ANALYZ	W1	SEM	27-MAY-2015 16:25	JWR	CLS	
3	STORE	SEM	A1	29-MAY-2015 13:40	CLS	JWR	

Samplenum	Container ID	Products
L15051303-01	575842	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-MAY-2015 11:21	CLS		<2
2	ANALYZ	W1	WET	21-MAY-2015 12:55	EPT	BRG	
3	STORE	WET	A1	27-MAY-2015 08:49	CLS	TMM	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051303
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 01-JUN-2015

Samplenum	Container ID	Products
L15051303-01	575843	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-MAY-2015 11:21	CLS		
2	ANALYZ	W1	WET	22-MAY-2015 08:39	EPT	CLS	
3	STORE	WET	A1	22-MAY-2015 17:15	CLS	EPT	

Samplenum	Container ID	Products
L15051303-02	575844	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-MAY-2015 11:21	CLS		
2	PREP	W1	DIG	21-MAY-2015 14:12	AC	BRG	
3	STORE	DIG	A1	22-MAY-2015 15:13	CLS	AC	
4	ANALYZ*	DIG	METALS	27-MAY-2015 08:08	KHR	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L15051303-03	575845	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-MAY-2015 11:21	CLS		
2	ANALYZ	V1	ORG4	21-MAY-2015 16:16	AWE	CLS	
3	STORE	ORG4	A1	04-JUN-2015 07:51	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-MAY-2015 11:21	CLS		
2	ANALYZ	V1	ORG4	21-MAY-2015 16:16	AWE	CLS	
3	STORE	ORG4	A1	04-JUN-2015 07:51	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-MAY-2015 11:21	CLS		
2	ANALYZ	V1	ORG4	21-MAY-2015 16:16	AWE	CLS	
3	STORE	ORG4	A1	04-JUN-2015 07:51	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051303
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 01-JUN-2015

Samplenum	Container ID	Products
L15051303-03	575846	RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-MAY-2015 11:21	CLS		
2	ANALYZ	V1	ORG1	22-MAY-2015 07:47	AWE	CLS	
3	STORE	ORG1	A1	04-JUN-2015 07:39	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-MAY-2015 11:21	CLS		
2	ANALYZ	V1	ORG1	22-MAY-2015 07:47	AWE	CLS	
3	STORE	ORG1	A1	04-JUN-2015 07:39	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-MAY-2015 11:21	CLS		
2	ANALYZ	V1	ORG1	22-MAY-2015 07:47	AWE	CLS	
3	STORE	ORG1	A1	04-JUN-2015 07:39	CLS	AWE	

Samplenum	Container ID	Products
L15051303-03	575847	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	21-MAY-2015 11:21	CLS		
2	PREP	L1	SEM	21-MAY-2015 11:38	ALS	CLS	
3	STORE	SEM	A1	26-MAY-2015 11:03	CLS	ALS	

Samplenum	Container ID	Products
L15051303-03	575848	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-MAY-2015 11:21	CLS		
2	ANALYZ	W1	WET	27-MAY-2015 12:29	DCM	CLS	
3	STORE	WET	A1	02-JUN-2015 13:10	CLS	DCM	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051303
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 01-JUN-2015

Samplenum	Container ID	Products
L15051303-03	575849	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-MAY-2015 11:21	CLS		
2	ANALYZ	W1	SEM	27-MAY-2015 16:25	JWR	CLS	
3	STORE	SEM	A1	29-MAY-2015 13:40	CLS	JWR	

Samplenum	Container ID	Products
L15051303-03	575850	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-MAY-2015 11:21	CLS		<2
2	ANALYZ	W1	WET	21-MAY-2015 12:55	EPT	BRG	
3	STORE	WET	A1	27-MAY-2015 08:49	CLS	TMM	

Samplenum	Container ID	Products
L15051303-03	575851	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-MAY-2015 11:21	CLS		
2	ANALYZ	W1	WET	22-MAY-2015 08:39	EPT	CLS	
3	STORE	WET	A1	22-MAY-2015 17:15	CLS	EPT	

Samplenum	Container ID	Products
L15051303-04	575852	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-MAY-2015 11:21	CLS		
2	PREP	W1	DIG	21-MAY-2015 14:12	AC	BRG	
3	STORE	DIG	A1	22-MAY-2015 15:13	CLS	AC	
4	ANALYZ*	DIG	METALS	27-MAY-2015 08:08	KHR	AC	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051303
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 01-JUN-2015

Samplenum	Container ID	Products
L15051303-05	575853	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-MAY-2015 11:21	CLS		
2	ANALYZ	V1	ORG4	21-MAY-2015 16:17	AWE	CLS	
3	STORE	ORG4	A1	04-JUN-2015 07:51	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-MAY-2015 11:21	CLS		
2	ANALYZ	V1	ORG4	21-MAY-2015 16:17	AWE	CLS	
3	STORE	ORG4	A1	04-JUN-2015 07:51	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-MAY-2015 11:21	CLS		
2	ANALYZ	V1	ORG4	21-MAY-2015 16:17	AWE	CLS	

Samplenum	Container ID	Products
L15051303-05	575854	RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-MAY-2015 11:21	CLS		
2	ANALYZ	V1	ORG1	22-MAY-2015 07:47	AWE	CLS	
3	STORE	ORG1	A1	04-JUN-2015 07:39	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-MAY-2015 11:21	CLS		
2	ANALYZ	V1	ORG1	22-MAY-2015 07:48	AWE	CLS	
3	STORE	ORG1	A1	04-JUN-2015 07:39	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-MAY-2015 11:21	CLS		
2	ANALYZ	V1	ORG1	22-MAY-2015 07:48	AWE	CLS	
3	STORE	ORG1	A1	04-JUN-2015 07:39	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051303
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 01-JUN-2015

Samplenum	Container ID	Products
L15051303-05	575855	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	21-MAY-2015 11:21	CLS		
2	PREP	L1	SEM	21-MAY-2015 11:38	ALS	CLS	
3	STORE	SEM	A1	26-MAY-2015 11:03	CLS	ALS	

Samplenum	Container ID	Products
L15051303-05	575856	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	WET	21-MAY-2015 11:21	CLS		
2	STORE	WET	A1	02-JUN-2015 13:10	CLS	DCM	

Samplenum	Container ID	Products
L15051303-05	575857	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-MAY-2015 11:21	CLS		
2	ANALYZ	W1	SEM	27-MAY-2015 16:25	JWR	CLS	
3	STORE	SEM	A1	29-MAY-2015 13:40	CLS	JWR	

Samplenum	Container ID	Products
L15051303-05	575858	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-MAY-2015 11:21	CLS		<2
2	ANALYZ	W1	WET	21-MAY-2015 12:55	EPT	BRG	
3	STORE	WET	A1	27-MAY-2015 08:49	CLS	TMM	

Samplenum	Container ID	Products
L15051303-05	575859	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-MAY-2015 11:21	CLS		
2	ANALYZ	W1	WET	22-MAY-2015 08:39	EPT	CLS	
3	STORE	WET	A1	22-MAY-2015 17:15	CLS	EPT	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051303
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 01-JUN-2015

Samplenum	Container ID	Products
L15051303-06	575860	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-MAY-2015 11:21	CLS		
2	PREP	W1	DIG	21-MAY-2015 14:12	AC	BRG	
3	STORE	DIG	A1	22-MAY-2015 15:13	CLS	AC	
4	ANALYZ*	DIG	METALS	27-MAY-2015 08:08	KHR	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L15051303-07	575861	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-MAY-2015 11:21	CLS		
2	ANALYZ	V1	ORG4	21-MAY-2015 16:17	AWE	CLS	
3	STORE	ORG4	A1	04-JUN-2015 07:51	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-MAY-2015 11:21	CLS		
2	ANALYZ	V1	ORG4	21-MAY-2015 16:17	AWE	CLS	
3	STORE	ORG4	A1	04-JUN-2015 07:51	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-MAY-2015 11:21	CLS		
2	ANALYZ	V1	ORG4	21-MAY-2015 16:17	AWE	CLS	
3	STORE	ORG4	A1	04-JUN-2015 07:51	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051303
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 01-JUN-2015

Samplenum	Container ID	Products
L15051303-07	575862	RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-MAY-2015 11:21	CLS		
2	ANALYZ	V1	ORG1	22-MAY-2015 07:48	AWE	CLS	
3	STORE	ORG1	A1	04-JUN-2015 07:39	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-MAY-2015 11:21	CLS		
2	ANALYZ	V1	ORG1	22-MAY-2015 07:48	AWE	CLS	
3	STORE	ORG1	A1	04-JUN-2015 07:39	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-MAY-2015 11:21	CLS		
2	ANALYZ	V1	ORG1	22-MAY-2015 07:48	AWE	CLS	
3	STORE	ORG1	A1	04-JUN-2015 07:39	CLS	AWE	

Samplenum	Container ID	Products
L15051303-07	575863	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	21-MAY-2015 11:21	CLS		
2	PREP	L1	SEM	21-MAY-2015 11:38	ALS	CLS	
3	STORE	SEM	A1	26-MAY-2015 11:03	CLS	ALS	

Samplenum	Container ID	Products
L15051303-07	575864	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-MAY-2015 11:21	CLS		
2	ANALYZ	W1	WET	27-MAY-2015 12:29	DCM	CLS	
3	STORE	WET	A1	02-JUN-2015 13:10	CLS	DCM	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051303
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 01-JUN-2015

Samplenum	Container ID	Products
L15051303-07	575865	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-MAY-2015 11:21	CLS		
2	ANALYZ	W1	SEM	27-MAY-2015 16:25	JWR	CLS	
3	STORE	SEM	A1	29-MAY-2015 13:40	CLS	JWR	

Samplenum	Container ID	Products
L15051303-07	575866	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-MAY-2015 11:21	CLS		<2
2	ANALYZ	W1	WET	21-MAY-2015 12:55	EPT	BRG	
3	STORE	WET	A1	27-MAY-2015 08:49	CLS	TMM	

Samplenum	Container ID	Products
L15051303-07	575867	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-MAY-2015 11:21	CLS		
2	ANALYZ	W1	WET	22-MAY-2015 08:39	EPT	CLS	
3	STORE	WET	A1	22-MAY-2015 17:15	CLS	EPT	

Samplenum	Container ID	Products
L15051303-08	575868	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-MAY-2015 11:21	CLS		
2	PREP	W1	DIG	21-MAY-2015 14:12	AC	BRG	
3	STORE	DIG	A1	22-MAY-2015 15:13	CLS	AC	
4	ANALYZ*	DIG	METALS	27-MAY-2015 08:08	KHR	AC	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051303
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 01-JUN-2015

Samplenum	Container ID	Products
L15051303-09	575869	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-MAY-2015 11:21	CLS		
2	ANALYZ	V1	ORG4	21-MAY-2015 16:17	AWE	CLS	
3	STORE	ORG4	A1	04-JUN-2015 07:51	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-MAY-2015 11:21	CLS		
2	ANALYZ	V1	ORG4	21-MAY-2015 16:17	AWE	CLS	
3	STORE	ORG4	A1	04-JUN-2015 07:51	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-MAY-2015 11:21	CLS		
2	ANALYZ	V1	ORG4	21-MAY-2015 16:17	AWE	CLS	
3	STORE	ORG4	A1	04-JUN-2015 07:51	CLS	AWE	

Samplenum	Container ID	Products
L15051303-09	575870	RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-MAY-2015 11:21	CLS		
2	ANALYZ	V1	ORG1	22-MAY-2015 07:48	AWE	CLS	
3	STORE	ORG1	A1	04-JUN-2015 07:39	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-MAY-2015 11:21	CLS		
2	ANALYZ	V1	ORG1	22-MAY-2015 07:48	AWE	CLS	
3	STORE	ORG1	A1	04-JUN-2015 07:39	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-MAY-2015 11:21	CLS		
2	ANALYZ	V1	ORG1	22-MAY-2015 07:48	AWE	CLS	
3	STORE	ORG1	A1	04-JUN-2015 07:39	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051303
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 01-JUN-2015

Samplenum	Container ID	Products
L15051303-09	575871	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	21-MAY-2015 11:21	CLS		
2	PREP	L1	SEM	21-MAY-2015 11:38	ALS	CLS	
3	STORE	SEM	A1	26-MAY-2015 11:03	CLS	ALS	

Samplenum	Container ID	Products
L15051303-09	575872	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-MAY-2015 11:21	CLS		
2	ANALYZ	W1	WET	27-MAY-2015 12:29	DCM	CLS	
3	STORE	WET	A1	02-JUN-2015 13:10	CLS	DCM	

Samplenum	Container ID	Products
L15051303-09	575873	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-MAY-2015 11:21	CLS		
2	ANALYZ	W1	SEM	27-MAY-2015 16:25	JWR	CLS	
3	STORE	SEM	A1	29-MAY-2015 13:40	CLS	JWR	

Samplenum	Container ID	Products
L15051303-09	575874	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-MAY-2015 11:21	CLS		<2
2	ANALYZ	W1	WET	21-MAY-2015 12:55	EPT	BRG	
3	STORE	WET	A1	27-MAY-2015 08:50	CLS	TMM	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051303
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 01-JUN-2015

Samplenum	Container ID	Products
L15051303-09	575875	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-MAY-2015 11:21	CLS		
2	ANALYZ	W1	WET	22-MAY-2015 08:39	EPT	CLS	
3	STORE	WET	A1	22-MAY-2015 17:15	CLS	EPT	

Samplenum	Container ID	Products
L15051303-10	575876	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-MAY-2015 11:21	CLS		
2	PREP	W1	DIG	21-MAY-2015 14:12	AC	BRG	
3	STORE	DIG	A1	22-MAY-2015 15:13	CLS	AC	
4	ANALYZ*	DIG	METALS	27-MAY-2015 08:08	KHR	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L15051303-11	575877	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-MAY-2015 11:21	CLS		
2	ANALYZ	V1	ORG4	21-MAY-2015 16:17	AWE	CLS	
3	STORE	ORG4	A1	04-JUN-2015 07:51	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-MAY-2015 11:21	CLS		
2	ANALYZ	V1	ORG4	21-MAY-2015 16:17	AWE	CLS	
3	STORE	ORG4	A1	04-JUN-2015 07:51	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-MAY-2015 11:21	CLS		
2	ANALYZ	V1	ORG4	21-MAY-2015 16:17	AWE	CLS	
3	STORE	ORG4	A1	04-JUN-2015 07:51	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051303
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 01-JUN-2015

Samplenum	Container ID	Products
L15051303-11	575878	RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-MAY-2015 11:21	CLS		
2	ANALYZ	V1	ORG1	22-MAY-2015 07:48	AWE	CLS	
3	STORE	ORG1	A1	04-JUN-2015 07:39	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-MAY-2015 11:21	CLS		
2	ANALYZ	V1	ORG1	22-MAY-2015 07:48	AWE	CLS	
3	STORE	ORG1	A1	04-JUN-2015 07:39	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-MAY-2015 11:21	CLS		
2	ANALYZ	V1	ORG1	22-MAY-2015 07:48	AWE	CLS	
3	STORE	ORG1	A1	04-JUN-2015 07:39	CLS	AWE	

Samplenum	Container ID	Products
L15051303-11	575879	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	21-MAY-2015 11:21	CLS		
2	PREP	L1	SEM	21-MAY-2015 11:38	ALS	CLS	
3	STORE	SEM	A1	26-MAY-2015 11:03	CLS	ALS	

Samplenum	Container ID	Products
L15051303-11	575880	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-MAY-2015 11:21	CLS		
2	ANALYZ	W1	WET	27-MAY-2015 12:29	DCM	CLS	
3	STORE	WET	A1	02-JUN-2015 13:10	CLS	DCM	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051303
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 01-JUN-2015

Samplenum	Container ID	Products
L15051303-11	575881	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-MAY-2015 11:21	CLS		
2	ANALYZ	W1	SEM	27-MAY-2015 16:26	JWR	CLS	
3	STORE	SEM	A1	29-MAY-2015 13:40	CLS	JWR	

Samplenum	Container ID	Products
L15051303-11	575882	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-MAY-2015 11:21	CLS		<2
2	ANALYZ	W1	WET	21-MAY-2015 12:55	EPT	BRG	
3	STORE	WET	A1	27-MAY-2015 08:49	CLS	TMM	

Samplenum	Container ID	Products
L15051303-11	575883	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-MAY-2015 11:21	CLS		
2	ANALYZ	W1	WET	22-MAY-2015 08:39	EPT	CLS	
3	STORE	WET	A1	22-MAY-2015 17:15	CLS	EPT	

Samplenum	Container ID	Products
L15051303-12	575884	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-MAY-2015 11:21	CLS		
2	PREP	W1	DIG	21-MAY-2015 14:12	AC	BRG	
3	STORE	DIG	A1	22-MAY-2015 15:13	CLS	AC	
4	ANALYZ*	DIG	METALS	27-MAY-2015 08:08	KHR	AC	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051303
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 01-JUN-2015

Samplenum	Container ID	Products
L15051303-13	575885	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-MAY-2015 11:21	CLS		
2	ANALYZ	V1	ORG4	21-MAY-2015 16:17	AWE	CLS	
3	STORE	ORG4	A1	04-JUN-2015 07:51	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-MAY-2015 11:21	CLS		
2	ANALYZ	V1	ORG4	21-MAY-2015 16:17	AWE	CLS	
3	STORE	ORG4	A1	04-JUN-2015 07:51	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - June 5, 2015

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVL NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Formate (HPLC-UV)
Propionaldehyde (HPLC-UV)
Fluoroborate (ISE)
n-Butane (RSK175)
Acetylene (RSK175)
Propane (RSK175)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVL MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene

Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL MSV0I/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVL HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVL HPLC12/HPLC/UV
Acetate

SOLID AND HAZARDOUS CHEMICALS

OVL MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVL MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene

Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L15051435

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on June 03 2015

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00112682	I	2.0		J2317161638	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
50WW08-052115	L15051435-01	05/21/2015 13:55	05/22/2015 09:37
50WW08FF-052115	L15051435-02	05/21/2015 13:55	05/22/2015 09:37
50WW22-052115	L15051435-03	05/21/2015 15:10	05/22/2015 09:37
50WW22FF-052115	L15051435-04	05/21/2015 15:10	05/22/2015 09:37
TRIP BLANK	L15051435-05	05/21/2015 00:01	05/22/2015 09:37

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L15051435
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.0 Summary Data

1.1 Narratives

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG525607, WG525662	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-06-02 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden	Franci Bolden	Analyst I	2015-06-02 22:21:45

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG525607, WG525662	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-06-02 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG525607, WG525662	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-06-02 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG525607, WG525662	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-06-02 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG525607, WG525662	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-06-02 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG525607, WG525662	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-06-02 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	WG524992, WG525190	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-06-02 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden	Franci Bolden	Analyst I	2015-06-02 22:18:59

RG-366/TRRP-13 May 2010 **ID:** 6432

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	WG524992, WG525190	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-06-02 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	WG524992, WG525190	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-06-02 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	WG524992, WG525190	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-06-02 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	WG524992, WG525190	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-06-02 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	WG524992, WG525190	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-06-02 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There were no exceptions.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG525193	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-05-29 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2015-05-29 16:54:52

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG525193	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-05-29 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG525193	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-05-29 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG525193	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-05-29 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG525193	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-05-29 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG525193	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-05-29 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG525082	**Reviewer Name:**	Maren Beery
LRC Date:	2015-06-02 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Maren Beery	Maren Beery	Metals Supervisor	2015-06-02 20:24:13

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG525082	**Reviewer Name:**	Maren Beery
LRC Date:	2015-06-02 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?			X		
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG525082	**Reviewer Name:**	Maren Beery
LRC Date:	2015-06-02 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG525082	**Reviewer Name:**	Maren Beery
LRC Date:	2015-06-02 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG525082	**Reviewer Name:**	Maren Beery
LRC Date:	2015-06-02 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG525082	**Reviewer Name:**	Maren Beery
LRC Date:	2015-06-02 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG525054	**Reviewer Name:**	Maren Beery
LRC Date:	2015-06-02 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Maren Beery	Maren Beery	Metals Supervisor	2015-06-02 20:19:15

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG525054	**Reviewer Name:**	Maren Beery
LRC Date:	2015-06-02 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG525054	**Reviewer Name:**	Maren Beery
LRC Date:	2015-06-02 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG525054	**Reviewer Name:**	Maren Beery
LRC Date:	2015-06-02 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG525054	**Reviewer Name:**	Maren Beery
LRC Date:	2015-06-02 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG525054	**Reviewer Name:**	Maren Beery
LRC Date:	2015-06-02 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG524861	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-05-22 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Adriane Steed	Adriane Steed		2015-05-27 13:55:15

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG524861	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-05-22 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?	X				
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG524861	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-05-22 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG524861	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-05-22 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG524861	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-05-22 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG524861	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-05-22 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. Fractions -01 and -03 were analyzed at dilutions only due to their high analyte concentrations (Cl and/or SO4) which were over 200 ppm. Any sample that has a single anion load greater than 200 ppm (or a total anion load greater than 400 ppm) will be diluted in order to prevent damage to the IC from repeated overloading of the analytical column and oversaturation of the suppressor membranes.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG525327	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-29 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-05-29 14:32:25

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG525327	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-29 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG525327	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-29 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG525327	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-29 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG525327	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-29 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG525327	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-29 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG525309	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-29 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-05-29 14:30:49

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG525309	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-29 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG525309	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-29 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG525309	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-29 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG525309	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-29 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG525309	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-29 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	S
Prep Batch Number(s):	WG524981	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-29 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-05-29 14:31:26

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	S
Prep Batch Number(s):	WG524981	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-29 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	S
Prep Batch Number(s):	WG524981	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-29 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	S
Prep Batch Number(s):	WG524981	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-29 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	S
Prep Batch Number(s):	WG524981	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-29 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

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5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

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Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	S
Prep Batch Number(s):	WG524981	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-29 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG525331	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-29 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-05-29 14:30:00

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051435
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG525331	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-05-29 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

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LRC Date:	2015-05-29 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

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Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

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Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

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LRC Date:	2015-05-29 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051435-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW08-052115	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/12/2015 21:08
Workgroup #:	WG525662	**Analyst:**	TMB	**Run Date:**	05/30/2015 21:48
Collect Date:	05/21/2015 13:55	**Dilution:**	2.5	**File ID:**	8M405040
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	25.0	12.5	6.25
Benzene	71-43-2	0.626	U	2.50	0.626	0.313
Bromobenzene	108-86-1	0.626	U	2.50	0.626	0.313
Bromochloromethane	74-97-5	1.00	U	2.50	1.00	0.500
Bromodichloromethane	75-27-4	1.25	U	2.50	1.25	0.625
Bromoform	75-25-2	2.50	U	5.00	2.50	1.25
Bromomethane	74-83-9	2.50	U	5.00	2.50	1.25
2-Butanone	78-93-3	12.5	U	25.0	12.5	6.25
n-Butylbenzene	104-51-8	1.25	U	2.50	1.25	0.625
sec-Butylbenzene	135-98-8	1.25	U	2.50	1.25	0.625
tert-Butylbenzene	98-06-6	1.25	U	2.50	1.25	0.625
Carbon disulfide	75-15-0	2.50	U	5.00	2.50	1.25
Carbon tetrachloride	56-23-5	1.25	U	2.50	1.25	0.625
Chlorobenzene	108-90-7	0.626	U	2.50	0.626	0.313
Chlorodibromomethane	124-48-1	1.25	U	2.50	1.25	0.625
Chloroethane	75-00-3	2.50	U	5.00	2.50	1.25
Chloroform	67-66-3	0.606	J	2.50	0.626	0.313
Chloromethane	74-87-3	2.50	U	5.00	2.50	1.25
2-Chlorotoluene	95-49-8	0.626	U	2.50	0.626	0.313
4-Chlorotoluene	106-43-4	1.25	U	2.50	1.25	0.625
1,2-Dibromo-3-chloropropane	96-12-8	5.00	U	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	2.50	1.25	0.625
Dibromomethane	74-95-3	1.25	U	2.50	1.25	0.625
1,2-Dichlorobenzene	95-50-1	0.626	U	2.50	0.626	0.313
1,3-Dichlorobenzene	541-73-1	1.25	U	2.50	1.25	0.625
1,4-Dichlorobenzene	106-46-7	0.626	U	2.50	0.626	0.313
Dichlorodifluoromethane	75-71-8	1.25	U	2.50	1.25	0.625
1,1-Dichloroethane	75-34-3	1.49	J	2.50	0.626	0.313
1,2-Dichloroethane	107-06-2	3.60		2.50	1.25	0.625
1,1-Dichloroethene	75-35-4	2.50	U	5.00	2.50	1.25
cis-1,2-Dichloroethene	156-59-2	62.1		2.50	1.25	0.625
trans-1,2-Dichloroethene	156-60-5	1.25	U	2.50	1.25	0.625

Microbac

Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.00	U	2.50	1.00	0.500
1,3-Dichloropropane	142-28-9	1.00	U	2.50	1.00	0.500
2,2-Dichloropropane	594-20-7	1.25	U	2.50	1.25	0.625
cis-1,3-Dichloropropene	10061-01-5	1.25	U	2.50	1.25	0.625
trans-1,3-Dichloropropene	10061-02-6	2.50	U	5.00	2.50	1.25
1,1-Dichloropropene	563-58-6	1.25	U	2.50	1.25	0.625
Ethylbenzene	100-41-4	1.25	U	2.50	1.25	0.625
2-Hexanone	591-78-6	12.5	U	25.0	12.5	6.25
Hexachlorobutadiene	87-68-3	1.25	U	2.50	1.25	0.625
Isopropylbenzene	98-82-8	1.25	U	2.50	1.25	0.625
p-Isopropyltoluene	99-87-6	1.25	U	2.50	1.25	0.625
4-Methyl-2-pentanone	108-10-1	12.5	U	25.0	12.5	6.25
Methylene chloride	75-09-2	1.25	U	2.50	1.25	0.625
Naphthalene	91-20-3	1.00	U	2.50	1.00	0.500
n-Propylbenzene	103-65-1	0.626	U	2.50	0.626	0.313
Styrene	100-42-5	0.626	U	2.50	0.626	0.313
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	2.50	1.25	0.625
1,1,2,2-Tetrachloroethane	79-34-5	1.00	U	2.50	1.00	0.500
Tetrachloroethene	127-18-4	2.00	J	2.50	1.25	0.625
Toluene	108-88-3	1.25	U	2.50	1.25	0.625
1,2,3-Trichlorobenzene	87-61-6	0.750	U	2.50	0.750	0.375
1,2,4-Trichlorobenzene	120-82-1	1.00	U	2.50	1.00	0.500
1,1,1-Trichloroethane	71-55-6	1.25	U	2.50	1.25	0.625
1,1,2-Trichloroethane	79-00-5	1.25	U	2.50	1.25	0.625
Trichloroethene	79-01-6	712		2.50	1.25	0.625
Trichlorofluoromethane	75-69-4	1.25	U	2.50	1.25	0.625
1,2,3-Trichloropropane	96-18-4	2.50	U	5.00	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	2.50	1.25	0.625
1,3,5-Trimethylbenzene	108-67-8	1.25	U	2.50	1.25	0.625
Vinyl chloride	75-01-4	1.25	U	2.50	1.25	0.625
o-Xylene	95-47-6	1.25	U	2.50	1.25	0.625
m-,p-Xylene	179601-23-1	2.50	U	5.00	2.50	1.25

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	97.1	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	99.4	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051435-01	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW08-052115	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG524992	**Analyst:**	JDS	**Run Date:**	05/26/2015 15:03
Collect Date:	05/21/2015 13:55	**Dilution:**	1	**File ID:**	16G47632
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	2.00	J	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051435-01	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW08-052115	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG525190	**Analyst:**	JDS	**Run Date:**	05/27/2015 14:59
Collect Date:	05/21/2015 13:55	**Dilution:**	5	**File ID:**	16G47659
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	331000		50000	25000	12500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051435-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW08-052115	**Prep Method:**	6850	**Prep Date:**	05/27/2015 16:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/27/2015 15:10
Workgroup #:	WG525193	**Analyst:**	JWR	**Run Date:**	05/28/2015 11:42
Collect Date:	05/21/2015 13:55	**Dilution:**	50	**File ID:**	1LM.LM29933
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	200		20.0	10.0	5.00

Certificate of Analysis

Sample #:	L15051435-01	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW08-052115	**Prep Method:**	9056	**Prep Date:**	05/22/2015 11:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG524861	**Analyst:**	ALS	**Run Date:**	05/22/2015 17:25
Collect Date:	05/21/2015 13:55	**Dilution:**	5	**File ID:**	I1_052215-20
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	1.00	U	2.00	1.00	0.500
Nitrite	14797-65-0	0.545	J	2.00	1.00	0.500
Sulfate	14808-79-8	293		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051435-01	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW08-052115	**Prep Method:**	9056	**Prep Date:**	05/22/2015 11:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG524861	**Analyst:**	ALS	**Run Date:**	05/22/2015 17:42
Collect Date:	05/21/2015 13:55	**Dilution:**	20	**File ID:**	I1_052215-21
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	322		8.00	4.00	2.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051435-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW08-052115	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	05/28/2015 09:47
Workgroup #:	WG525327	**Analyst:**	DCM	**Run Date:**	05/28/2015 10:01
Collect Date:	05/21/2015 13:55	**Dilution:**	2	**File ID:**	S2150528002.029
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	429		80.0	40.0	20.0

Certificate of Analysis

Sample #:	L15051435-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW08-052115	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	05/29/2015 08:53
Workgroup #:	WG525309	**Analyst:**	DCM	**Run Date:**	05/29/2015 09:03
Collect Date:	05/21/2015 13:55	**Dilution:**	1	**File ID:**	S2150529001.023
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051435-01	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW08-052115	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG524981	**Analyst:**	EPT	**Run Date:**	05/26/2015 14:50
Collect Date:	05/21/2015 13:55	**Dilution:**	1	**File ID:**	ET.1505261450-11
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051435-01	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW08-052115	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	05/27/2015 15:47
Workgroup #:	WG525331	**Analyst:**	EPT	**Run Date:**	05/28/2015 15:20
Collect Date:	05/21/2015 13:55	**Dilution:**	1	**File ID:**	TC05282015.010
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	3.68		2.00	1.00	0.500

Certificate of Analysis

Sample #:	L15051435-02	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	50WW08FF-052115	**Prep Method:**	3015	**Prep Date:**	05/26/2015 13:32
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	05/27/2015 08:53
Workgroup #:	WG525235	**Analyst:**	KHR	**Run Date:**	05/27/2015 16:28
Collect Date:	05/21/2015 13:55	**Dilution:**	1	**File ID:**	P2.052715.162810
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.100	U	0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051435-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW08FF-052115	**Prep Method:**	3015	**Prep Date:**	05/26/2015 12:49
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	05/31/2015 20:04
Workgroup #:	WG525405	**Analyst:**	BKT	**Run Date:**	05/31/2015 20:46
Collect Date:	05/21/2015 13:55	**Dilution:**	1	**File ID:**	NI.053115.204616
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0391		0.00400	0.00200	0.00100

Certificate of Analysis

Sample #:	L15051435-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW22-052115	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/12/2015 21:08
Workgroup #:	WG525607	**Analyst:**	TMB	**Run Date:**	05/29/2015 22:48
Collect Date:	05/21/2015 15:10	**Dilution:**	1	**File ID:**	8M405011
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

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Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.9	85	115	
1,2-Dichloroethane-d4	98.4	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	102	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051435-03	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW22-052115	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG525190	**Analyst:**	JDS	**Run Date:**	05/27/2015 15:11
Collect Date:	05/21/2015 15:10	**Dilution:**	1	**File ID:**	16G47660
Sample Tag:	02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	56300		10000	5000	2500
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051435-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW22-052115	**Prep Method:**	6850	**Prep Date:**	05/27/2015 16:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/27/2015 15:10
Workgroup #:	WG525193	**Analyst:**	JWR	**Run Date:**	05/28/2015 12:01
Collect Date:	05/21/2015 15:10	**Dilution:**	1	**File ID:**	1LM.LM29934
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.92		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15051435-03	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW22-052115	**Prep Method:**	9056	**Prep Date:**	05/22/2015 11:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG524861	**Analyst:**	ALS	**Run Date:**	05/22/2015 18:00
Collect Date:	05/21/2015 15:10	**Dilution:**	10	**File ID:**	I1_052215-22
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	2.00	U	4.00	2.00	1.00
Nitrite	14797-65-0	1.54	J	4.00	2.00	1.00
Sulfate	14808-79-8	559		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051435-03	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW22-052115	**Prep Method:**	9056	**Prep Date:**	05/22/2015 11:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG524861	**Analyst:**	ALS	**Run Date:**	05/22/2015 18:18
Collect Date:	05/21/2015 15:10	**Dilution:**	50	**File ID:**	I1_052215-23
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	782		20.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051435-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW22-052115	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	05/28/2015 09:47
Workgroup #:	WG525327	**Analyst:**	DCM	**Run Date:**	05/28/2015 10:02
Collect Date:	05/21/2015 15:10	**Dilution:**	2	**File ID:**	S2150528002.030
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	346		80.0	40.0	20.0

Certificate of Analysis

Sample #:	L15051435-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW22-052115	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	05/29/2015 08:53
Workgroup #:	WG525309	**Analyst:**	DCM	**Run Date:**	05/29/2015 09:04
Collect Date:	05/21/2015 15:10	**Dilution:**	1	**File ID:**	S2150529001.024
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.854		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15051435-03	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW22-052115	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG524981	**Analyst:**	EPT	**Run Date:**	05/26/2015 14:50
Collect Date:	05/21/2015 15:10	**Dilution:**	1	**File ID:**	ET.1505261450-12
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051435-03	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW22-052115	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	05/27/2015 15:47
Workgroup #:	WG525331	**Analyst:**	EPT	**Run Date:**	05/28/2015 15:47
Collect Date:	05/21/2015 15:10	**Dilution:**	3	**File ID:**	TC05282015.011
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	15.6		6.00	3.00	1.50

Certificate of Analysis

Sample #:	L15051435-04	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	50WW22FF-052115	**Prep Method:**	3015	**Prep Date:**	05/26/2015 13:32
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	05/27/2015 08:53
Workgroup #:	WG525235	**Analyst:**	KHR	**Run Date:**	05/27/2015 16:31
Collect Date:	05/21/2015 15:10	**Dilution:**	1	**File ID:**	P2.052715.163134
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.100	U	0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051435-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW22FF-052115	**Prep Method:**	3015	**Prep Date:**	05/26/2015 12:49
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	05/31/2015 20:04
Workgroup #:	WG525405	**Analyst:**	BKT	**Run Date:**	05/31/2015 20:49
Collect Date:	05/21/2015 15:10	**Dilution:**	1	**File ID:**	NI.053115.204928
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0466		0.00400	0.00200	0.00100

Certificate of Analysis

Sample #:	L15051435-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/12/2015 21:08
Workgroup #:	WG525607	**Analyst:**	TMB	**Run Date:**	05/29/2015 22:18
Collect Date:	05/21/2015 00:01	**Dilution:**	1	**File ID:**	8M405010
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

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Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	101	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	103	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051435-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW08-052115	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/12/2015 21:08
Workgroup #:	WG525662	**Analyst:**	TMB	**Run Date:**	05/30/2015 21:48
Collect Date:	05/21/2015 13:55	**Dilution:**	2.5	**File ID:**	8M405040
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	25.0	12.5	6.25
Benzene	71-43-2	0.626	U	2.50	0.626	0.313
Bromobenzene	108-86-1	0.626	U	2.50	0.626	0.313
Bromochloromethane	74-97-5	1.00	U	2.50	1.00	0.500
Bromodichloromethane	75-27-4	1.25	U	2.50	1.25	0.625
Bromoform	75-25-2	2.50	U	5.00	2.50	1.25
Bromomethane	74-83-9	2.50	U	5.00	2.50	1.25
2-Butanone	78-93-3	12.5	U	25.0	12.5	6.25
n-Butylbenzene	104-51-8	1.25	U	2.50	1.25	0.625
sec-Butylbenzene	135-98-8	1.25	U	2.50	1.25	0.625
tert-Butylbenzene	98-06-6	1.25	U	2.50	1.25	0.625
Carbon disulfide	75-15-0	2.50	U	5.00	2.50	1.25
Carbon tetrachloride	56-23-5	1.25	U	2.50	1.25	0.625
Chlorobenzene	108-90-7	0.626	U	2.50	0.626	0.313
Chlorodibromomethane	124-48-1	1.25	U	2.50	1.25	0.625
Chloroethane	75-00-3	2.50	U	5.00	2.50	1.25
Chloroform	67-66-3	0.606	J	2.50	0.626	0.313
Chloromethane	74-87-3	2.50	U	5.00	2.50	1.25
2-Chlorotoluene	95-49-8	0.626	U	2.50	0.626	0.313
4-Chlorotoluene	106-43-4	1.25	U	2.50	1.25	0.625
1,2-Dibromo-3-chloropropane	96-12-8	5.00	U	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	2.50	1.25	0.625
Dibromomethane	74-95-3	1.25	U	2.50	1.25	0.625
1,2-Dichlorobenzene	95-50-1	0.626	U	2.50	0.626	0.313
1,3-Dichlorobenzene	541-73-1	1.25	U	2.50	1.25	0.625
1,4-Dichlorobenzene	106-46-7	0.626	U	2.50	0.626	0.313
Dichlorodifluoromethane	75-71-8	1.25	U	2.50	1.25	0.625
1,1-Dichloroethane	75-34-3	1.49	J	2.50	0.626	0.313
1,2-Dichloroethane	107-06-2	3.60		2.50	1.25	0.625
1,1-Dichloroethene	75-35-4	2.50	U	5.00	2.50	1.25
cis-1,2-Dichloroethene	156-59-2	62.1		2.50	1.25	0.625
trans-1,2-Dichloroethene	156-60-5	1.25	U	2.50	1.25	0.625

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Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.00	U	2.50	1.00	0.500
1,3-Dichloropropane	142-28-9	1.00	U	2.50	1.00	0.500
2,2-Dichloropropane	594-20-7	1.25	U	2.50	1.25	0.625
cis-1,3-Dichloropropene	10061-01-5	1.25	U	2.50	1.25	0.625
trans-1,3-Dichloropropene	10061-02-6	2.50	U	5.00	2.50	1.25
1,1-Dichloropropene	563-58-6	1.25	U	2.50	1.25	0.625
Ethylbenzene	100-41-4	1.25	U	2.50	1.25	0.625
2-Hexanone	591-78-6	12.5	U	25.0	12.5	6.25
Hexachlorobutadiene	87-68-3	1.25	U	2.50	1.25	0.625
Isopropylbenzene	98-82-8	1.25	U	2.50	1.25	0.625
p-Isopropyltoluene	99-87-6	1.25	U	2.50	1.25	0.625
4-Methyl-2-pentanone	108-10-1	12.5	U	25.0	12.5	6.25
Methylene chloride	75-09-2	1.25	U	2.50	1.25	0.625
Naphthalene	91-20-3	1.00	U	2.50	1.00	0.500
n-Propylbenzene	103-65-1	0.626	U	2.50	0.626	0.313
Styrene	100-42-5	0.626	U	2.50	0.626	0.313
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	2.50	1.25	0.625
1,1,2,2-Tetrachloroethane	79-34-5	1.00	U	2.50	1.00	0.500
Tetrachloroethene	127-18-4	2.00	J	2.50	1.25	0.625
Toluene	108-88-3	1.25	U	2.50	1.25	0.625
1,2,3-Trichlorobenzene	87-61-6	0.750	U	2.50	0.750	0.375
1,2,4-Trichlorobenzene	120-82-1	1.00	U	2.50	1.00	0.500
1,1,1-Trichloroethane	71-55-6	1.25	U	2.50	1.25	0.625
1,1,2-Trichloroethane	79-00-5	1.25	U	2.50	1.25	0.625
Trichloroethene	79-01-6	712		2.50	1.25	0.625
Trichlorofluoromethane	75-69-4	1.25	U	2.50	1.25	0.625
1,2,3-Trichloropropane	96-18-4	2.50	U	5.00	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	2.50	1.25	0.625
1,3,5-Trimethylbenzene	108-67-8	1.25	U	2.50	1.25	0.625
Vinyl chloride	75-01-4	1.25	U	2.50	1.25	0.625
o-Xylene	95-47-6	1.25	U	2.50	1.25	0.625
m-,p-Xylene	179601-23-1	2.50	U	5.00	2.50	1.25

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	97.1	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	99.4	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051435-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW22-052115	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/12/2015 21:08
Workgroup #:	WG525607	**Analyst:**	TMB	**Run Date:**	05/29/2015 22:48
Collect Date:	05/21/2015 15:10	**Dilution:**	1	**File ID:**	8M405011
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

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Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.9	85	115	
1,2-Dichloroethane-d4	98.4	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	102	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051435-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/12/2015 21:08
Workgroup #:	WG525607	**Analyst:**	TMB	**Run Date:**	05/29/2015 22:18
Collect Date:	05/21/2015 00:01	**Dilution:**	1	**File ID:**	8M405010
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

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Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	101	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	103	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 100214
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 19
Method: 624 SOP: MSV10 Rev: 12
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 16
Maintenance Log ID: 51878

Internal Standard: STD66600 Surrogate Standard: STD66600
CCV: STD66818; STD66687 LCS: STD66693; STD66677 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG494714; WG494980

Comments: File # 8m400369 and 70 were skipped and not used.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M400354	RINSE	NA	1	1		10/02/14 10:24
8M400355	WG494714-01 50ng BFB STD 8260	NA	1	1	STD66476	10/02/14 11:16
8M400356	WG494714-01 50ng BFB STD 8260	NA	1	1	STD66476	10/02/14 11:33
8M400357	WG494714-01 50ng BFB STD 8260	NA	1	1	STD66476	10/02/14 11:58
8M400358	WG494714-02 5ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 12:24
8M400359	WG494714-03 20ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 12:53
8M400360	WG494714-04 50ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 13:22
8M400361	WG494714-05 100ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 13:51
8M400362	WG494714-06 200ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 14:19
8M400363	WG494714-07 300ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 14:48
8M400364	WG494714-08 400ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 15:16
8M400365	WG494714-09 500ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 15:45
8M400366	RINSE	NA	1	1		10/02/14 16:14
8M400367	WG494714-10 100ug/L ALT SRC STD A9/F	NA	1	1	STD66677	10/02/14 16:47
8M400368	WG494979-01 50ug/L CCV STD 8260	NA	1	1	STD66687	10/02/14 17:22
8M400371	WG494980-02 20ug/L LCS STD 624	NA	2	1	STD66693	10/02/14 17:51
8M400372	WG494980-03 20ug/L LCSDUP STD 624	NA	2	1	STD66693	10/02/14 18:20
8M400373	RINSE	NA	2	1		10/02/14 18:49
8M400374	WG494980-01 VBLK1002 BLANK STD 624	NA	2	1		10/02/14 19:18
8M400375	L14100004-01 LOD 826-SPE A9/FOO	NA	1	1		10/02/14 19:47
8M400376	L14100006-01 LOQ 826-SPE A9/FOO	NA	1	1		10/02/14 20:16
8M400377	L14100004-01 LOD 826-SPE	NA	1	1		10/02/14 20:45
8M400378	L14100006-01 LOQ 826-SPE	NA	1	1		10/02/14 21:14
8M400379	L14100004-01 LOD 826-SPE	NA	1	1		10/02/14 21:42
8M400380	L14100006-01 LOQ 826-SPE	NA	1	1		10/02/14 22:12
8M400381	L14100098-10 A 624-SPE	5	2	1		10/02/14 22:40
8M400382	L14100089-02 A 624-SPE	5	2	1		10/02/14 23:09
8M400383	L14100098-04 A 624-SPE	<2	2	1		10/02/14 23:38
8M400384	L14100098-05 A 624-SPE	<2	2	1		10/03/14 00:06
8M400385	L14100098-06 A 624-SPE	<2	2	1		10/03/14 00:36
8M400386	L14100098-07 A 624-SPE	<2	2	1		10/03/14 01:06
8M400387	L14100098-08 A 624-SPE	<2	2	1		10/03/14 01:34
8M400388	L14100098-09 A 624-SPE	<2	2	1		10/03/14 02:04
8M400389	L14100110-01 A 624-SPE2	<2	2	1		10/03/14 02:32

Approved: October 03, 2014

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Instrument Run Log

Instrument: HPMS8 Dataset: 100214
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 19
Method: 624 SOP: MSV10 Rev: 12
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 16
Maintenance Log ID: 51878

Internal Standard: STD66600 Surrogate Standard: STD66600
CCV: STD66818; STD66687 LCS: STD66693; STD66677 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG494714; WG494980

Comments: File # 8m400369 and 70 were skipped and not used.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M400390	L14100110-02 A 624-SPE1	<2	2	1		10/03/14 03:02
8M400391	RINSE	NA	1	1		10/03/14 03:30
8M400392	RINSE	NA	1	1		10/03/14 03:59

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 8M400355				
	Tune failed, DNR.			
3	X			
File ID: 8M400356				
	Tune failed, DNR.			
4				
File ID: 8M400357				
	Purged BFB.			
30	X	100	Over Calibration Range	TCE
File ID: 8M400385				
31	X	1	Carry-over contamination	
File ID: 8M400386				
	DNR.			
32	X	1	Carry-over contamination	
File ID: 8M400387				
	DNR.			
33	X	50	Over Calibration Range	TCE
File ID: 8M400388				
34	X	1	Carry-over contamination	
File ID: 8M400389				
	DNR.			

Approved: October 03, 2014

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051215
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 21
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53130

Internal Standard: STD70050 Surrogate Standard: STD70050
CCV: STD70474 LCS: STD70475 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG523161

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M404566	WG523161-01 50ng BFB STD 8260	NA	1	1	STD70032	05/12/15 08:44
8M404567	WG523161-01 50ng BFB STD 8260	NA	1	1	STD70032	05/12/15 09:01
8M404568	WG523161-01 50ng BFB STD 8260	NA	1	1	STD70032	05/12/15 09:37
8M404569	WG523161-01 50ng BFB STD 8260	NA	1	1	STD70032	05/12/15 10:02
8M404570	WG523161-01 50ng BFB STD 8260	NA	1	1	STD70032	05/12/15 10:16
8M404571	WG523161-02 50ug/L CCV STD 8260	NA	1	1	STD70341	05/12/15 10:39
8M404572	WG523161-01 50ng BFB STD 8260	NA	1	1	STD70032	05/12/15 11:07
8M404573	WG523161-02 50ug/L CCV STD 8260	NA	1	1	STD70341	05/12/15 11:30
8M404574	RINSE	NA	1	1		05/12/15 11:59
8M404575	RINSE	NA	1	1		05/12/15 13:56
8M404576	WG523161-01 50ng BFB STD 8260	NA	1	1	STD70032	05/12/15 15:38
8M404577	WG523161-01 50ng BFB STD 8260	NA	1	1	STD70032	05/12/15 15:55
8M404578	RINSE	NA	1	1		05/12/15 16:21
8M404579	WG523161-02 0.3ug/L STD 8260	NA	1	1	STD70474	05/12/15 16:50
8M404580	WG523161-03 0.4ug/L STD 8260	NA	1	1	STD70474	05/12/15 17:19
8M404581	WG523161-04 1ug/L STD 8260	NA	1	1	STD70474	05/12/15 17:48
8M404582	WG523161-05 2ug/L STD 8260	NA	1	1	STD70474	05/12/15 18:16
8M404583	WG523161-06 5ug/L STD 8260	NA	1	1	STD70474	05/12/15 18:45
8M404584	WG523161-07 20ug/L STD 8260	NA	1	1	STD70474	05/12/15 19:13
8M404585	WG523161-08 50ug/L STD 8260	NA	1	1	STD70474	05/12/15 19:42
8M404586	WG523161-09 100ug/L STD 8260	NA	1	1	STD70474	05/12/15 20:11
8M404587	WG523161-10 200ug/L STD 8260	NA	1	1	STD70474	05/12/15 20:40
8M404588	WG523161-11 300ug/L STD 8260	NA	1	1	STD70474	05/12/15 21:08
8M404589	RINSE	NA	1	1		05/12/15 21:37
8M404590	RINSE	NA	1	1		05/12/15 22:06
8M404591	WG523161-12 50ug/L ALT SRC STD 8260	NA	1	1	STD70475	05/12/15 22:34
8M404592	RINSE	NA	1	1		05/12/15 23:03
8M404593	RINSE	NA	1	1		05/12/15 23:31

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1	X			
File ID: 8M404566				

Approved: May 14, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS8	Dataset:	051215		
Analyst1:	TMB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	21
Method:	624	SOP:	MSV10	Rev:	13
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:	53130				

Internal Standard: STD70050 Surrogate Standard: STD70050

CCV: STD70474 LCS: STD70475 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG523161

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			Tune failed, DNR.	
2	X			
File ID: 8M404567				
			Tune failed, DNR. Changed the septa.	
3	X			
File ID: 8M404568				
			Tune failed, DNR.	
4				
File ID: 8M404569				
			Tune failed, DNR. Purged BFB.	
6	X			
File ID: 8M404571				
			Vc was high, DNR. Increased the voltage.	
8				
File ID: 8M404573				
			Vc was high, running a curve.	
11	X			
File ID: 8M404576				
			Tune failed, DNR.	

Approved: May 14, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 052915
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 21
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD70755 Surrogate Standard: STD70755
CCV: STD70754 LCS: STD70658 MS/MSD: STD70658

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG525607

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M404993	WG525606-01 50ng BFB STD 8260	NA	1	1	STD70707	05/29/15 14:20
8M404994	WG525606-01 50ng BFB STD 8260	NA	1	1	STD70707	05/29/15 14:41
8M404995	WG525606-02 50ug/L CCV STD 8260	NA	1	1	STD70754	05/29/15 15:06
8M404996	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD70547	05/29/15 15:38
8M404997	WG525607-01 VBLK0529 BLANK STD 826	NA	1	1		05/29/15 16:07
8M404998	L15050951-01 A 826-REF-BLK	<2	1	1		05/29/15 16:36
8M404999	L15050951-02 A 826-REF-BLK	<2	1	1		05/29/15 17:05
8M405000	L15050951-03 A 826-REF-BLK	<2	1	1		05/29/15 17:34
8M405001	L15050951-04 A 826-REF-BLK	<2	1	1		05/29/15 18:02
8M405002	L15050951-05 A 826-REF-BLK	<2	1	1		05/29/15 18:30
8M405003	WG525607-02 20ug/L LCS STD 8260	NA	1	1	STD70658	05/29/15 18:58
8M405004	L15051757-04 A MS 826-SPE2	7	12	1	STD70658	05/29/15 19:26
8M405005	L15051757-05 A MSD 826-SPE2	7	12	1	STD70658	05/29/15 19:55
8M405006	L15050384-01 C 1000X 8260 D1	<2	12	1000		05/29/15 20:24
8M405007	L15051757-01 A TB 826-SPE2	5	1	1		05/29/15 20:53
8M405008	L15051672-02 A TB 826-SPE	5	1	1		05/29/15 21:22
8M405009	L15051529-02 A TB 826-SPE	<2	1	1		05/29/15 21:50
8M405010	L15051435-05 A TB 826-LOW	<2	1	1		05/29/15 22:18
8M405011	L15051435-03 A 826-LOW	<2	1	1		05/29/15 22:48
8M405012	L15051532-01 A 826-SPE	<2	1	1		05/29/15 23:16
8M405013	L15051672-01 A 826-SPE	6	1	1		05/29/15 23:45
8M405014	L15051757-03 A 826-SPE2	7	1	1		05/30/15 00:14
8M405015	L15051757-02 REF A 826-SPE2	7	12	1		05/30/15 00:43
8M405016	L15051529-01 A 826-SPE	<2	1	1		05/30/15 01:12
8M405017	L15051530-01 A 25X 826-SPE	<2	1	25		05/30/15 01:40
8M405018	L15051435-01 A 10X 826-LOW	<2	1	10		05/30/15 02:09
8M405019	CCV	NA	1	1		05/30/15 02:37
8M405020	RINSE	NA	1	1		05/30/15 03:06
8M405021	RINSE	NA	1	1		05/30/15 03:35
8M405022	RINSE	NA	1	1		05/30/15 04:03
8M405023	ANTIFOAM BLANK	NA	1	1		05/30/15 11:21

Comments

Approved: June 01, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 052915
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 21
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD70755 Surrogate Standard: STD70755
CCV: STD70754 LCS: STD70658 MS/MSD: STD70658

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG525607

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1	X			
File ID: 8M404993				
	Tune failed, DNR.			
4				
File ID: 8M404996				
	Not needed, DNR.			
24	X	1	Carry-over contamination	
File ID: 8M405016				
	DNR.			
26	X	2.5	Analyzed too dilute	
File ID: 8M405018				
	Not Reported.			

Approved: June 01, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 053015
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 21
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID: 53182

Internal Standard: STD70755 Surrogate Standard: STD70755
CCV: STD70754 LCS: STD70796 MS/MSD: STD70796

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG525662

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M405024	WG525660-01 50ng BFB STD 8260	NA	1	1	STD70707	05/30/15 14:27
8M405025	WG525660-01 50ng BFB STD 8260	NA	1	1	STD70707	05/30/15 14:42
8M405026	WG525660-02 50ug/L CCV STD 8260	NA	1	1	STD70754	05/30/15 15:06
8M405027	WG525661-01 100ug/L A9 CCV STD 8260	NA	1	1	STD70547	05/30/15 15:34
8M405028	WG525662-01 VBLK0530 BLANK STD 826	NA	1	1		05/30/15 16:02
8M405029	WG525662-02 20ug/L LCS STD 8260	NA	1	1	STD70796	05/30/15 16:31
8M405030	L15051480-02 A MS 826-SPE	<2	1	1	STD70796	05/30/15 17:00
8M405031	L15051480-03 A MSD 826-SPE	<2	1	1	STD70796	05/30/15 17:29
8M405032	L15051713-01 A TB 826-SPE	<2	1	1		05/30/15 17:58
8M405033	L15051502-03 A TB 826-LOW	<2	1	1		05/30/15 18:26
8M405034	L15051755-01 A 826-SPE	<2	1	1		05/30/15 18:55
8M405035	L15051755-04 A 826-SPE	<2	1	1		05/30/15 19:24
8M405036	L15051755-02 A 826-SPE	<2	1	1		05/30/15 19:53
8M405037	L15051755-03 A 2X 826-SPE	<2	1	2		05/30/15 20:22
8M405038	L15051713-02 A 826-SPE	<2	1	1		05/30/15 20:51
8M405039	L15051713-03 A 826-SPE	<2	1	1		05/30/15 21:19
8M405040	L15051435-01 B 2.5X 826-LOW 00	<2	1	2.5		05/30/15 21:48
8M405041	L15051713-04 A 826-SPE	<2	1	1		05/30/15 22:17
8M405042	L15051480-01 A REF 826-SPE	<2	1	1		05/30/15 22:45
8M405043	L15051480-04 A 826-SPE	<2	1	1		05/30/15 23:14
8M405044	L15051480-05 A 826-SPE	<2	1	1		05/30/15 23:42
8M405045	L15051713-05 A 2X 826-SPE	<2	1	2		05/31/15 00:11
8M405046	L15051713-06 A 25X 826-SPE	<2	1	25		05/31/15 00:40
8M405047	L15051713-07 A 50X 826-SPE	<2	1	50		05/31/15 01:08
8M405048	L15051519-01 A 8260	5	1	1		05/31/15 01:37
8M405049	L15051682-01 A 826-SPE	<2	1	1		05/31/15 02:06
8M405050	CCV	NA	1	1		05/31/15 02:34
8M405051	RINSE	NA	1	1		05/31/15 03:03
8M405052	RINSE	NA	1	1		05/31/15 03:31
8M405053	ANTIFOAM BLK	NA	1	1		05/31/15 04:00

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Approved: June 02, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 053015

Analyst1: TMB Analyst2: NA

Method: 8260B SOP: MSV01 Rev: 21

Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID: 53182

Internal Standard: STD70755 Surrogate Standard: STD70755

CCV: STD70754 LCS: STD70796 MS/MSD: STD70796

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG525662

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1	X			
File ID: 8M405024				
	Tune failed, DNR.			

Approved: June 02, 2015

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Microbac Laboratories Inc.

Data Checklist

Date: 02-OCT-2014
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 63840
Analytical Workgroups: WG494714; WG494980

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
03-OCT-2014
Tiffany Bailey

Secondary Reviewer:
03-OCT-2014

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-03-2014 13:21:54

Microbac Laboratories Inc.

Data Checklist

Date: 12-MAY-2015
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 67921
Analytical Workgroups:

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
13-MAY-2015
Tiffany Bailey

Secondary Reviewer:
14-MAY-2015

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-14-2015 16:28:01

Microbac Laboratories Inc.

Data Checklist

Date: 29-MAY-2015
Analyst: TMB
Analyst: NA
Method: 8260B
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 68309
Analytical Workgroups: WG525607

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
30-MAY-2015
Tiffany Bailey

Secondary Reviewer:
01-JUN-2015
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-01-2015 15:56:45

Microbac Laboratories Inc.

Data Checklist

Date: 30-MAY-2015
Analyst: TMB
Analyst: NA
Method: 8260B
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 68318
Analytical Workgroups: WG525662

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
01-JUN-2015
Tiffany Bailey

Secondary Reviewer:
02-JUN-2015
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-02-2015 08:39:23

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG525607

Login Number: L15051435

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW22-052115	03	05/21/15					05/29/2015	8.3	14		05/29/15	8.3	14	
TRIP BLANK	05	05/21/15					05/29/2015	8.9	14		05/29/15	8.9	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4207697
Report generated 06/02/2015 18:22

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG525662

Login Number: L15051435

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW08-052115	01	05/21/15					05/30/2015	9.3	14		05/30/15	9.3	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4207697
Report generated 06/02/2015 18:22

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L15051435
Instrument Id: HPMS8
Workgroup (AAB#): WG525662

Method: 8260
CAL ID: HPMS8-12-MAY-15
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L15051435-01	2.50	DL01	97.1	101	99.4	103
WG525662-01	1.00	01	94.1	98.2	97.2	103
WG525662-02	1.00	01	94.1	99.9	94.4	103

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4207702
Report generated: 06/02/2015 18:23

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L15051435
Instrument Id: HPMS8
Workgroup (AAB#): WG525607

Method: 8260
CAL ID: HPMS8-12-MAY-15
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L15051435-03	1.00	01	98.4	99.9	102	104
L15051435-05	1.00	01	101	102	103	103
WG525607-01	1.00	01	94.6	101	98.2	103
WG525607-02	1.00	01	98.1	102	91.9	103

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4207702
Report generated: 06/02/2015 18:23

METHOD BLANK SUMMARY

Login Number: L15051435
Blank File ID: 8M404997
Prep Date: 05/29/15 16:07
Analyzed Date: 05/29/15 16:07
Analyst: TMB

Work Group: WG525607
Blank Sample ID: WG525607-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG525607-02	8M405003	05/29/15 18:58	01
TRIP BLANK	L15051435-05	8M405010	05/29/15 22:18	01
50WW22-052115	L15051435-03	8M405011	05/29/15 22:48	01

Report Name: BLANK_SUMMARY
PDF File ID: 4213022
Report generated 06/02/2015 18:22

METHOD BLANK SUMMARY

Login Number: L15051435
Blank File ID: 8M405028
Prep Date: 05/30/15 16:02
Analyzed Date: 05/30/15 16:02
Analyst: TMB

Work Group: WG525662
Blank Sample ID: WG525662-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG525662-02	8M405029	05/30/15 16:31	01
50WW08-052115	L15051435-01	8M405040	05/30/15 21:48	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4213022
Report generated 06/02/2015 18:22

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L15051435 Prep Date: 05/29/15 16:07 Sample ID: WG525607-01
Instrument ID: HPMS8 Run Date: 05/29/15 16:07 Prep Method: 5030B/5030C/503
File ID: 8M404997 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG525607 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-12-MAY-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4213023
02-JUN-2015 18:22

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051435 Prep Date: 05/29/15 16:07 Sample ID: WG525607-01
Instrument ID: HPMS8 Run Date: 05/29/15 16:07 Prep Method: 5030B/5030C/503
File ID: 8M404997 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG525607 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-12-MAY-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	101	85 - 115	PASS
1,2-Dichloroethane-d4	94.6	70 - 120	PASS
Toluene-d8	103	85 - 120	PASS
4-Bromofluorobenzene	98.2	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4213023
02-JUN-2015 18:22

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051435 Prep Date: 05/30/15 16:02 Sample ID: WG525662-01
Instrument ID: HPMS8 Run Date: 05/30/15 16:02 Prep Method: 5030B/5030C/503
File ID: 8M405028 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG525662 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-12-MAY-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4213023
02-JUN-2015 18:22

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051435 Prep Date: 05/30/15 16:02 Sample ID: WG525662-01
Instrument ID: HPMS8 Run Date: 05/30/15 16:02 Prep Method: 5030B/5030C/503
File ID: 8M405028 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG525662 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-12-MAY-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	98.2	85 - 115	PASS
1,2-Dichloroethane-d4	94.1	70 - 120	PASS
Toluene-d8	103	85 - 120	PASS
4-Bromofluorobenzene	97.2	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4213023
02-JUN-2015 18:22

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051435 | Run Date: 05/29/2015 | Sample ID: WG525607-02
Instrument ID: HPMS8 | Run Time: 18:58 | Prep Method: 5030B/5030C/503
File ID: 8M405003 | Analyst: TMB | Method: 8260B
Workgroup (AAB#): WG525607 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD70658 | Cal ID: HPMS8-12-MAY-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	20.9	104	40 - 140	
Benzene	20.0	20.3	101	80 - 120	
Bromobenzene	20.0	18.9	94.4	75 - 125	
Bromochloromethane	20.0	18.1	90.7	65 - 130	
Bromodichloromethane	20.0	19.4	97.2	75 - 120	
Bromoform	20.0	19.0	94.9	70 - 130	
Bromomethane	20.0	22.1	111	30 - 145	
2-Butanone	20.0	19.2	95.8	30 - 150	
n-Butylbenzene	20.0	19.4	97.2	70 - 135	
sec-Butylbenzene	20.0	19.2	96.2	70 - 125	
tert-Butylbenzene	20.0	17.5	87.3	70 - 130	
Carbon disulfide	20.0	17.4	86.8	35 - 160	
Carbon tetrachloride	20.0	19.6	98.1	65 - 140	
Chlorobenzene	20.0	18.3	91.5	80 - 120	
Chlorodibromomethane	20.0	19.3	96.3	60 - 135	
Chloroethane	20.0	20.5	102	60 - 135	
Chloroform	20.0	19.3	96.5	65 - 135	
Chloromethane	20.0	17.3	86.3	40 - 125	
2-Chlorotoluene	20.0	17.1	85.7	75 - 125	
4-Chlorotoluene	20.0	18.6	93.1	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	19.6	98.2	50 - 130	
1,2-Dibromoethane	20.0	20.2	101	80 - 120	
Dibromomethane	20.0	19.3	96.5	75 - 125	
1,2-Dichlorobenzene	20.0	19.0	95.0	70 - 120	
1,3-Dichlorobenzene	20.0	18.3	91.7	75 - 125	
1,4-Dichlorobenzene	20.0	19.3	96.7	75 - 125	
Dichlorodifluoromethane	20.0	21.0	105	30 - 155	
1,1-Dichloroethane	20.0	18.4	92.1	70 - 135	
1,2-Dichloroethane	20.0	18.4	92.2	70 - 130	
1,1-Dichloroethene	20.0	17.3	86.5	70 - 130	
cis-1,2-Dichloroethene	20.0	19.0	94.9	70 - 125	
trans-1,2-Dichloroethene	20.0	18.0	89.8	60 - 140	
1,2-Dichloropropane	20.0	19.1	95.6	75 - 125	
1,3-Dichloropropane	20.0	19.3	96.7	75 - 125	
2,2-Dichloropropane	20.0	17.5	87.3	70 - 135	
cis-1,3-Dichloropropene	20.0	20.6	103	70 - 130	
trans-1,3-Dichloropropene	20.0	18.2	90.9	55 - 140	
1,1-Dichloropropene	20.0	18.7	93.6	75 - 130	
Ethylbenzene	20.0	18.2	91.2	75 - 125	
2-Hexanone	20.0	19.6	98.2	55 - 130	
Hexachlorobutadiene	20.0	15.8	79.1	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4207698
Report generated: 06/02/2015 18:22

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051435 Run Date: 05/29/2015 Sample ID: WG525607-02
Instrument ID: HPMS8 Run Time: 18:58 Prep Method: 5030B/5030C/503
File ID: 8M405003 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG525607 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD70658 Cal ID: HPMS8-12-MAY-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	19.3	96.5	75 - 125	
p-Isopropyltoluene	20.0	18.8	93.9	75 - 130	
4-Methyl-2-pentanone	20.0	19.4	97.2	60 - 135	
Methylene chloride	20.0	19.9	99.4	55 - 140	
Naphthalene	20.0	22.3	111	55 - 140	
n-Propylbenzene	20.0	18.1	90.6	70 - 130	
Styrene	20.0	19.9	99.7	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	19.0	94.8	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	18.1	90.4	65 - 130	
Tetrachloroethene	20.0	18.7	93.4	45 - 150	
Toluene	20.0	19.8	98.9	75 - 120	
1,2,3-Trichlorobenzene	20.0	19.9	99.3	55 - 140	
1,2,4-Trichlorobenzene	20.0	19.3	96.5	65 - 135	
1,1,1-Trichloroethane	20.0	19.5	97.5	65 - 130	
1,1,2-Trichloroethane	20.0	19.5	97.6	75 - 125	
Trichloroethene	20.0	20.1	100	70 - 125	
Trichlorofluoromethane	20.0	18.8	94.0	60 - 145	
1,2,3-Trichloropropane	20.0	20.2	101	75 - 125	
1,2,4-Trimethylbenzene	20.0	20.0	100	75 - 130	
1,3,5-Trimethylbenzene	20.0	20.1	100	75 - 130	
Vinyl chloride	20.0	19.4	96.9	50 - 145	
o-Xylene	20.0	18.1	90.6	80 - 120	
m-,p-Xylene	40.0	37.9	94.7	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	102	85 - 115	PASS
1,2-Dichloroethane-d4	98.1	70 - 120	PASS
Toluene-d8	103	85 - 120	PASS
4-Bromofluorobenzene	91.9	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4207698
Report generated: 06/02/2015 18:22

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051435 | Run Date: 05/30/2015 | Sample ID: WG525662-02
Instrument ID: HPMS8 | Run Time: 16:31 | Prep Method: 5030B/5030C/503
File ID: 8M405029 | Analyst: TMB | Method: 8260B
Workgroup (AAB#): WG525662 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD70796 | Cal ID: HPMS8-12-MAY-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	20.5	102	40 - 140	
Benzene	20.0	19.7	98.4	80 - 120	
Bromobenzene	20.0	19.9	99.3	75 - 125	
Bromochloromethane	20.0	20.1	100	65 - 130	
Bromodichloromethane	20.0	19.1	95.3	75 - 120	
Bromoform	20.0	19.6	97.9	70 - 130	
Bromomethane	20.0	24.0	120	30 - 145	
2-Butanone	20.0	19.4	96.8	30 - 150	
n-Butylbenzene	20.0	19.6	97.8	70 - 135	
sec-Butylbenzene	20.0	19.4	97.2	70 - 125	
tert-Butylbenzene	20.0	17.9	89.5	70 - 130	
Carbon disulfide	20.0	17.6	88.0	35 - 160	
Carbon tetrachloride	20.0	20.1	101	65 - 140	
Chlorobenzene	20.0	18.3	91.7	80 - 120	
Chlorodibromomethane	20.0	20.4	102	60 - 135	
Chloroethane	20.0	20.5	102	60 - 135	
Chloroform	20.0	18.8	94.2	65 - 135	
Chloromethane	20.0	17.0	84.9	40 - 125	
2-Chlorotoluene	20.0	17.7	88.3	75 - 125	
4-Chlorotoluene	20.0	19.0	94.8	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	19.8	98.8	50 - 130	
1,2-Dibromoethane	20.0	20.3	102	80 - 120	
Dibromomethane	20.0	19.5	97.6	75 - 125	
1,2-Dichlorobenzene	20.0	18.7	93.5	70 - 120	
1,3-Dichlorobenzene	20.0	18.6	93.0	75 - 125	
1,4-Dichlorobenzene	20.0	19.8	99.2	75 - 125	
Dichlorodifluoromethane	20.0	20.6	103	30 - 155	
1,1-Dichloroethane	20.0	18.0	90.2	70 - 135	
1,2-Dichloroethane	20.0	18.6	92.9	70 - 130	
1,1-Dichloroethene	20.0	16.8	83.8	70 - 130	
cis-1,2-Dichloroethene	20.0	18.7	93.5	70 - 125	
trans-1,2-Dichloroethene	20.0	17.7	88.5	60 - 140	
1,2-Dichloropropane	20.0	18.5	92.6	75 - 125	
1,3-Dichloropropane	20.0	19.0	95.2	75 - 125	
2,2-Dichloropropane	20.0	18.4	92.1	70 - 135	
cis-1,3-Dichloropropene	20.0	20.3	102	70 - 130	
trans-1,3-Dichloropropene	20.0	18.4	92.0	55 - 140	
1,1-Dichloropropene	20.0	18.8	93.9	75 - 130	
Ethylbenzene	20.0	18.6	93.2	75 - 125	
2-Hexanone	20.0	19.0	94.9	55 - 130	
Hexachlorobutadiene	20.0	18.9	94.6	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4207698
Report generated: 06/02/2015 18:22

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051435 Run Date: 05/30/2015 Sample ID: WG525662-02
Instrument ID: HPMS8 Run Time: 16:31 Prep Method: 5030B/5030C/503
File ID: 8M405029 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG525662 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD70796 Cal ID: HPMS8-12-MAY-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	19.0	95.1	75 - 125	
p-Isopropyltoluene	20.0	19.1	95.7	75 - 130	
4-Methyl-2-pentanone	20.0	22.1	111	60 - 135	
Methylene chloride	20.0	19.8	99.0	55 - 140	
Naphthalene	20.0	21.3	106	55 - 140	
n-Propylbenzene	20.0	18.7	93.5	70 - 130	
Styrene	20.0	20.2	101	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	19.3	96.4	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	18.9	94.3	65 - 130	
Tetrachloroethene	20.0	19.3	96.3	45 - 150	
Toluene	20.0	19.9	99.4	75 - 120	
1,2,3-Trichlorobenzene	20.0	19.2	95.9	55 - 140	
1,2,4-Trichlorobenzene	20.0	19.3	96.3	65 - 135	
1,1,1-Trichloroethane	20.0	19.6	97.8	65 - 130	
1,1,2-Trichloroethane	20.0	19.2	96.0	75 - 125	
Trichloroethene	20.0	21.2	106	70 - 125	
Trichlorofluoromethane	20.0	19.0	95.2	60 - 145	
1,2,3-Trichloropropane	20.0	19.8	99.0	75 - 125	
1,2,4-Trimethylbenzene	20.0	19.9	99.5	75 - 130	
1,3,5-Trimethylbenzene	20.0	20.8	104	75 - 130	
Vinyl chloride	20.0	17.8	88.9	50 - 145	
o-Xylene	20.0	18.2	91.1	80 - 120	
m-,p-Xylene	40.0	38.5	96.3	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	99.9	85 - 115	PASS
1,2-Dichloroethane-d4	94.1	70 - 120	PASS
Toluene-d8	103	85 - 120	PASS
4-Bromofluorobenzene	94.4	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4207698
Report generated: 06/02/2015 18:22

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15051435
Instrument: HPMS8
Analyst: TMB
Workgroup: WG494714

Tune ID: WG494714-01
Run Date: 10/02/2014
Run Time: 11:58
File ID: 8M400357
Cal ID: HPMS8 - 02-OCT-14

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.7	5158	PASS
75.0	95.0	30.0	60.0	51.7	12312	PASS
95.0	95.0	100	100	100	23818	PASS
96.0	95.0	5.00	9.00	7.56	1800	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	69.7	16590	PASS
175	174	5.00	9.00	7.78	1290	PASS
176	174	95.0	101	97.3	16145	PASS
177	176	5.00	9.00	6.34	1023	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG494714-02	STD	01	10/02/2014 12:24	
WG494714-03	STD	01	10/02/2014 12:53	
WG494714-04	STD	01	10/02/2014 13:22	
WG494714-05	STD	01	10/02/2014 13:51	
WG494714-06	STD	01	10/02/2014 14:19	
WG494714-07	STD	01	10/02/2014 14:48	
WG494714-08	STD	01	10/02/2014 15:16	
WG494714-09	STD	01	10/02/2014 15:45	
WG494714-10	SSCV	01	10/02/2014 16:47	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4207700
Report generated 06/02/2015 18:22

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15051435
Instrument: HPMS8
Analyst: TMB
Workgroup: WG523161

Tune ID: WG523161-01
Run Date: 05/12/2015
Run Time: 15:55
File ID: 8M404577
Cal ID: HPMS8 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	26.3	7551	PASS
75.0	95.0	30.0	60.0	59.4	17014	PASS
95.0	95.0	100	100	100	28666	PASS
96.0	95.0	5.00	9.00	6.91	1981	PASS
173	174	0	2.00	0.480	119	PASS
174	95.0	50.0	100	86.5	24808	PASS
175	174	5.00	9.00	8.19	2031	PASS
176	174	95.0	101	95.4	23666	PASS
177	176	5.00	9.00	7.24	1714	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG523161-02	STD	01	05/12/2015 16:50	
WG523161-03	STD	01	05/12/2015 17:19	
WG523161-04	STD	01	05/12/2015 17:48	
WG523161-05	STD	01	05/12/2015 18:16	
WG523161-06	STD	01	05/12/2015 18:45	
WG523161-07	STD	01	05/12/2015 19:13	
WG523161-08	STD-CCV	01	05/12/2015 19:42	
WG523161-09	STD	01	05/12/2015 20:11	
WG523161-10	STD	01	05/12/2015 20:40	
WG523161-11	STD	01	05/12/2015 21:08	
WG523161-12	SSCV	01	05/12/2015 22:34	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4207700
Report generated 06/02/2015 18:22

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15051435
Instrument: HPMS8
Analyst: TMB
Workgroup: WG525606

Tune ID: WG525606-01
Run Date: 05/29/2015
Run Time: 14:41
File ID: 8M404994
Cal ID: HPMS8 - 12-MAY-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	25.2	11978	PASS
75.0	95.0	30.0	60.0	54.4	25909	PASS
95.0	95.0	100	100	100	47600	PASS
96.0	95.0	5.00	9.00	6.33	3014	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	74.7	35577	PASS
175	174	5.00	9.00	7.64	2717	PASS
176	174	95.0	101	98.5	35035	PASS
177	176	5.00	9.00	7.10	2489	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG525606-02	CCV	01	05/29/2015 15:06	
WG525607-01	BLANK	01	05/29/2015 16:07	
WG525607-02	LCS	01	05/29/2015 18:58	
L15051435-05	TRIP BLANK	01	05/29/2015 22:18	
L15051435-03	50WW22-052115	01	05/29/2015 22:48	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4207700
Report generated 06/02/2015 18:22

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15051435
Instrument: HPMS8
Analyst: TMB
Workgroup: WG525660

Tune ID: WG525660-01
Run Date: 05/30/2015
Run Time: 14:42
File ID: 8M405025
Cal ID: HPMS8 - 12-MAY-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	24.1	13320	PASS
75.0	95.0	30.0	60.0	51.1	28258	PASS
95.0	95.0	100	100	100	55253	PASS
96.0	95.0	5.00	9.00	6.44	3556	PASS
173	174	0	2.00	0.527	231	PASS
174	95.0	50.0	100	79.3	43837	PASS
175	174	5.00	9.00	6.91	3031	PASS
176	174	95.0	101	100	43918	PASS
177	176	5.00	9.00	6.30	2766	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG525660-02	CCV	01	05/30/2015 15:06	
WG525662-01	BLANK	01	05/30/2015 16:02	
WG525662-02	LCS	01	05/30/2015 16:31	
L15051435-01	50WW08-052115	DL01	05/30/2015 21:48	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4207700
Report generated 06/02/2015 18:22

Calibration Table Report
Method: A9FOOWTR.M
Title: A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Calibration: Fri Oct 03 12:32:07 2014
Curve: WG494714
Calibration Files

	Compound	5 8M400358.D	20 8M400359.D	50 8M400360.D	100 8M400361.D	200 8M400362.D	300 8M400363.D	400 8M400364.D	500 8M400365.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD											
T	Acetonitrile	0.015	0.015	0.015	0.016	0.017	0.016	0.015	0.016	0.016	4.015		
T	3-Chloro-1-propene	0.416	0.403	0.416	0.438	0.434	0.423	0.407	0.394	0.416	3.619		
T	2-Chloro-1,3-butadiene	0.467	0.479	0.496	0.520	0.522	0.508	0.485	0.462	0.493	4.640		
T	Ethyl Acetate	0.104	0.115	0.123	0.133	0.135	0.133	0.126	0.130	0.125	8.569		
T	Methacrylonitrile	0.062	0.065	0.072	0.077	0.080	0.080	0.077	0.081	0.074	9.397		
T	Isobutyl Alcohol			0.004	0.005	0.005	0.005	0.005	0.005	0.005	9.693		
T	1-Butanol			0.002	0.002	0.003	0.003	0.003	0.003	0.003	21.690	0.995	
T	Methyl methacrylate	0.115	0.123	0.137	0.147	0.154	0.151	0.145	0.150	0.140	10.193		
T	2-Nitropropane	0.032	0.035	0.039	0.043	0.047	0.046	0.046	0.048	0.042	14.057		
I	Chlorobenzene-d5	ISTD											
I	1,4-Dichlorobenzene-d4	ISTD											
T	Cyclohexanone			0.039	0.043	0.037	0.043	0.036	0.038	0.039	7.787		

Fri Oct 03 12:35:36 2014

Calibration Table Report
Method: 8260WT.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Calibration: Wed May 13 06:45:06 2015
Curve: WG523161
Calibration Files

	Compound	0.3 8M404579.D	0.4 8M404580.D	1 8M404581.D	2 8M404582.D	5 8M404583.D	20 8M404584.D	50 8M404585.D	100 8M404586.D	200 8M404587.D	300 8M404588.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.377	0.342	0.343	0.422	0.413	0.414	0.402	0.386	0.387	8.120		
P	Chloromethane			0.927	0.855	0.806	0.813	0.772	0.750	0.681	0.585	0.774	13.567		
C	Vinyl Chloride		0.899	0.773	0.766	0.735	0.785	0.754	0.711	0.621	0.515	0.729	14.853		
T	1,3-Butadiene				0.699	0.708	0.786	0.774	0.545	0.428	0.368	0.615	27.438		1.005
T	Bromomethane			0.093	0.095	0.114	0.140	0.167	0.187	0.213	0.220	0.154	33.064		1.000
T	Chloroethane			0.191	0.195	0.184	0.199	0.197	0.205	0.210	0.206	0.198	4.214		
T	Trichlorofluoromethane		0.485	0.424	0.436	0.436	0.458	0.456	0.468	0.474	0.482	0.458	4.832		
T	Diethyl ether			0.175	0.173	0.175	0.177	0.163	0.175		0.189	0.175	4.331		
T	Isoprene					0.291	0.328	0.345	0.349	0.355	0.368	0.339	7.996		
T	Acrolein				0.005	0.004	0.005	0.006	0.009		0.016	0.007	61.765		0.992
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.248	0.251	0.246	0.262	0.256	0.268	0.269	0.268	0.258	3.627		
T	Acetone					0.035	0.041	0.034	0.033	0.037	0.033	0.036	9.052		
C	1,1-Dichloroethene		0.463	0.416	0.442	0.398	0.434	0.442	0.451	0.456	0.452	0.439	4.731		
T	Tert-Butyl Alcohol				0.009	0.010	0.010	0.009	0.010		0.010	0.010	5.597		
T	Dimethyl Sulfide				0.247	0.222	0.255	0.260	0.261	0.274	0.274	0.256	6.964		
T	Iodomethane			0.077	0.088	0.088	0.132	0.173	0.188	0.198	0.189	0.142	36.465		0.999
T	Methyl acetate				0.120	0.134	0.127	0.123	0.123	0.133	0.131	0.127	4.336		
T	Methylene Chloride			0.232	0.249	0.239	0.243	0.249	0.256	0.267	0.268	0.250	5.171		
T	Carbon Disulfide			0.790	0.760	0.723	0.839	0.853	0.855	0.851	0.795	0.808	6.082		
T	Acrylonitrile				0.051	0.053	0.055	0.057	0.057		0.069	0.057	11.396		
T	Methyl Tert Butyl Ether			0.459	0.495	0.467	0.481	0.475	0.478	0.512	0.492	0.482	3.510		
T	trans-1,2-Dichloroethene		0.471	0.390	0.413	0.388	0.406	0.416	0.426	0.439	0.427	0.419	6.106		
T	n-Hexane					0.373	0.430	0.426	0.433	0.442	0.440	0.424	6.103		
T	Diisopropyl ether			0.925	0.939	0.970	0.966	0.910	0.930		0.865	0.929	3.857		
T	Vinyl Acetate					0.306	0.314	0.317	0.295	0.308	0.299	0.307	2.774		
P	1,1-Dichloroethane		0.473	0.490	0.518	0.483	0.515	0.517	0.524	0.527	0.509	0.506	3.812		
T	Ethyl-Tert-Butyl ether			0.710	0.717	0.754	0.757	0.708	0.736		0.721	0.729	2.801		
T	2-Butanone					0.052	0.063	0.057	0.058	0.061	0.057	0.058	6.522		
T	Propionitrile			0.018	0.017	0.019	0.019	0.017	0.019		0.020	0.019	5.338		
T	2,2-Dichloropropane		0.492	0.405	0.421	0.369	0.406	0.409	0.415	0.423	0.419	0.418	7.676		
T	cis-1,2-Dichloroethene		0.322	0.282	0.278	0.252	0.284	0.286	0.290	0.300	0.299	0.288	6.589		
C	Chloroform	0.454	0.443	0.488	0.461	0.460	0.482	0.472	0.483	0.490	0.470	0.470	3.300		
T	1-Bromopropane			0.026	0.049	0.046	0.049	0.050	0.051	0.053	0.054	0.047	18.483	0.999	
T	Bromochloromethane		0.166	0.153	0.136	0.130	0.143	0.147	0.147	0.152	0.148	0.147	7.112		
T	Tetrahydrofuran			0.039	0.038	0.039	0.041	0.037	0.038		0.042	0.039	4.342		
S	Dibromofluoromethane						0.245	0.245	0.245	0.252	0.252	0.248	1.641		
T	1,1,1-Trichloroethane		0.386	0.384	0.407	0.393	0.429	0.439	0.455	0.472	0.477	0.427	8.450		
T	Cyclohexane			0.452	0.505	0.452	0.520	0.520	0.544	0.568	0.578	0.517	9.145		
T	1,1-Dichloropropene			0.379	0.360	0.347	0.369	0.371	0.378	0.385	0.384	0.371	3.475		
T	Tert-Amyl-Methyl ether			0.517	0.511	0.548	0.549	0.516	0.540		0.564	0.535	3.832		
T	Carbon Tetrachloride		0.376	0.35	0.374	0.344	0.386	0.395	0.416	0.42	0.432	0.388	7.9058		
S	1,2-Dichloroethane-d4						0.235	0.234	0.226	0.235	0.235	0.2329	1.58451		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.36	0.324	0.315	0.334	0.334	0.33	0.338	0.354	0.345	0.3372	4.22305		
T	Benzene	1.049	0.999	1.049	1.062	0.995	1.029	1.019	1.016	0.957	0.831	1.0006	6.72085		
T	Trichloroethene		0.253	0.251	0.235	0.242	0.273	0.268	0.276	0.291	0.293	0.2647	7.84867		
T	Methylcyclohexane					0.378	0.424	0.431	0.435	0.45	0.459	0.4296	6.55883		
C	1,2-Dichloropropane		0.285	0.284	0.28	0.254	0.278	0.277	0.279	0.292	0.294	0.2803	4.12451		
T	Bromodichloromethane		0.339	0.348	0.324	0.31	0.34	0.348	0.356	0.374	0.367	0.345	5.77994		
T	1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.0011	17.6544	0.995	
T	Dibromomethane		0.147	0.106	0.134	0.123	0.133	0.13	0.132	0.141	0.142	0.132	9.16014		
T	2-Chloroethyl Vinyl Ether					0.092	0.063	0.063	0.063	0.069	0.068	0.0698	16.4535	0.997	
T	4-Methyl-2-Pentanone					0.041	0.048	0.048	0.049	0.053	0.051	0.0482	8.53113		
T	cis-1,3-Dichloropropene		0.405	0.323	0.335	0.358	0.388	0.39	0.393	0.409	0.395	0.3772	8.2344		

T	Dimethyl Disulfide					0.151	0.179	0.196	0.211	0.236	0.246	0.2031	17.4457	0.996
I	Chlorobenzene-d5	ISTD												
S	Toluene-d8						1.158	1.204	1.183	1.155	1.132	1.1666	2.3719	
C	Toluene		1.559	1.545	1.585	1.513	1.564	1.565	1.539	1.342	1.133	1.4829	10.1102	
T	Ethyl Methacrylate			0.194	0.236	0.242	0.279	0.287	0.277	0.297	0.299	0.2638	13.8744	
T	Paraldehyde											0	0	
T	trans-1,3-Dichloropropene			0.407	0.395	0.446	0.448	0.46	0.457	0.473	0.469	0.4445	6.38368	
T	1,1,2-Trichloroethane		0.229	0.224	0.213	0.22	0.236	0.233	0.233	0.239	0.246	0.2304	4.41199	
T	2-Hexanone					0.054	0.066	0.067	0.062	0.068	0.065	0.0634	8.02299	
T	1,3-Dichloropropane		0.375	0.385	0.434	0.402	0.411	0.407	0.402	0.41	0.407	0.4039	4.14111	
T	Tetrachloroethene		0.262	0.324	0.305	0.265	0.304	0.316	0.331	0.343	0.365	0.313	10.7766	
T	Dibromochloromethane		0.277	0.288	0.286	0.274	0.3	0.313	0.327	0.342	0.352	0.3066	9.30077	
T	1,2-Dibromoethane		0.197	0.183	0.211	0.217	0.227	0.23	0.23	0.242	0.243	0.2199	9.12529	
T	1-Chlorohexane		0.532	0.476	0.473	0.473	0.511	0.512	0.521	0.527	0.54	0.5072	5.23688	
P	Chlorobenzene		0.957	0.977	1.015	0.968	0.99	1.028	1.06	1.055	0.957	1.0009	4.02311	
T	1,1,1,2-Tetrachloroethane		0.34	0.306	0.325	0.323	0.343	0.366	0.404	0.465		0.3593	14.5906	
C	Ethylbenzene		0.535	0.556	0.529	0.546	0.55	0.595	0.64	0.711	0.733	0.5995	12.9604	
T	m-,p-Xylene		0.721	0.649	0.68	0.664	0.681	0.723	0.743	0.676	0.566	0.678	7.68979	
T	o-Xylene			0.602	0.621	0.637	0.667	0.678	0.701	0.723	0.73	0.67	7.0386	
T	Styrene		0.969	1.046	1.021	1.015	1.106	1.145	1.15	1.104	0.996	1.0613	6.27884	
P	Bromoform			0.106	0.138	0.145	0.163	0.171	0.18	0.199	0.209	0.1638	20.5568	0.995
T	Isopropylbenzene		1.881	1.631	1.677	1.671	1.736	1.756	1.725	1.46	1.212	1.6386	11.9341	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.491	0.493	0.49	0.461	0.463	0.464	0.463	0.483	0.467	0.475	2.92575	
S	p-Bromofluorobenzene						0.839	0.85	0.836	0.857	0.87	0.8505	1.6345	
T	1,2,3-Trichloropropane			0.091	0.152	0.125	0.133	0.127	0.129	0.138	0.134	0.1287	13.5025	
T	trans-1,4-Dichloro-2-Butene			0.152	0.135	0.147	0.156	0.169	0.154	0.186	0.163	0.1577	9.69396	
T	n-Propylbenzene		4.239	3.867	3.923	3.631	3.953	3.946	3.76	2.942		3.7826	10.1008	
T	Bromobenzene	0.878	0.687	0.721	0.666	0.693	0.747	0.743	0.773	0.803	0.8	0.7512	8.60544	
T	1,3,5-Trimethylbenzene		2.655	2.667	2.65	2.513	2.744	2.797	2.805	2.461	2.001	2.5881	9.61996	
T	2-Chlorotoluene		3.171	2.749	2.18	2.328	2.61	2.64	2.387	2.358		2.5528	12.2648	
T	4-Chlorotoluene		2.141	1.856	2.314	2.269	2.064	2.119	2.321	1.851	1.442	2.0419	13.9758	
T	a-Methylstyrene					1.27	1.457	1.528	1.558	1.57	1.46	1.4739	7.51384	
T	tert-Butylbenzene			0.589	0.508	0.516	0.551	0.566	0.587	0.626	0.661	0.5754	9.07804	
T	1,2,4-Trimethylbenzene		2.906	2.617	2.745	2.633	2.823	2.876	2.845	2.485	2.018	2.6608	10.4646	
T	sec-Butylbenzene			3.477	3.386	3.37	3.532	3.531	3.45	2.821	2.248	3.2269	14.184	
T	p-Isopropyltoluene			2.794	2.847	2.733	2.986	3	2.97	2.527	2.031	2.7358	11.9085	
T	1,3-Dichlorobenzene		1.602	1.477	1.544	1.384	1.538	1.567	1.605	1.574	1.411	1.5224	5.31773	
T	1,4-Dichlorobenzene	1.844	1.572	1.516	1.485	1.469	1.51	1.553	1.578	1.55	1.378	1.5456	7.79548	
T	n-Butylbenzene			2.729	2.794	2.736	2.906	2.923	2.888	2.449	1.956	2.6725	12.2433	
T	1,2-Dichlorobenzene	1.364	1.197	1.323	1.355	1.229	1.332	1.367	1.376	1.389	1.279	1.3211	4.95077	
T	1,2-Dibromo-3-Chloropropane				0.052	0.078	0.076	0.077	0.078	0.086	0.083	0.0758	14.5402	
T	1,2,4-Trichlorobenzene		1.028	0.83	0.936	0.907	0.982	1.025	1.059	1.127	1.064	0.9952	9.18602	
T	Hexachlorobutadiene		0.52	0.429	0.459	0.493	0.494	0.508	0.56	0.595	0.621	0.5199	11.9722	
T	Naphthalene		1.182	1.213	1.397	1.288	1.379	1.398	1.428	1.446	1.282	1.3347	7.21249	
T	1,2,3-Trichlorobenzene	0.901	0.732	0.762	0.836	0.778	0.829	0.859	0.89	0.947	0.9	0.8433	8.22754	

Wed May 13 07:00:21 2015

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15051435 Run Date: 05/12/2015 Sample ID: WG523161-12
Instrument ID: HPMS8 Run Time: 22:34 Method: 8260B
File ID: 8M404591 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG523161 Cal ID: HPMS8 - 12-MAY-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	49.2	ug/L	0.463	1.60	20	
1,1-Dichloroethene	CCC	50.0	46.8	ug/L	0.411	6.50	20	
1,2-Dichloropropane	CCC	50.0	48.6	ug/L	0.273	2.80	20	
Ethylbenzene	CCC	50.0	48.7	ug/L	0.584	2.60	20	
Toluene	CCC	50.0	50.9	ug/L	1.51	1.80	20	
Vinyl Chloride	CCC	50.0	48.0	ug/L	0.700	4.00	20	
Bromoform	SPCC	50.0	45.3	ug/L	0.177	9.30	20	
Chlorobenzene	SPCC	50.0	47.2	ug/L	0.944	5.70	20	
Chloromethane	SPCC	50.0	50.1	ug/L	0.775	0.200	20	
1,1-Dichloroethane	SPCC	50.0	48.8	ug/L	0.494	2.40	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	47.8	ug/L	0.454	4.50	20	
Acetone		50.0	56.9	ug/L	0.0406	13.7	20	
Benzene		50.0	50.3	ug/L	1.01	0.600	20	
Bromobenzene		50.0	48.1	ug/L	0.722	3.90	20	
Bromochloromethane		50.0	48.1	ug/L	0.141	3.90	20	
Bromodichloromethane		50.0	48.6	ug/L	0.335	2.90	20	
Bromomethane		50.0	49.4	ug/L	0.171	1.20	20	
2-Butanone		50.0	53.3	ug/L	0.0620	6.50	20	
n-Butylbenzene		50.0	51.8	ug/L	2.77	3.60	20	
sec-Butylbenzene		50.0	48.9	ug/L	3.16	2.20	20	
tert-Butylbenzene		50.0	45.4	ug/L	0.522	9.20	20	
Carbon Disulfide		50.0	47.0	ug/L	0.761	5.90	20	
Carbon Tetrachloride		50.0	49.2	ug/L	0.382	1.60	20	
Dibromochloromethane		50.0	49.1	ug/L	0.301	1.80	20	
Chloroethane		50.0	55.5	ug/L	0.220	10.9	20	
2-Chlorotoluene		50.0	40.9	ug/L	2.09	18.2	20	
4-Chlorotoluene		50.0	53.3	ug/L	2.18	6.70	20	
1,2-Dibromo-3-Chloropropane		50.0	52.6	ug/L	0.0797	5.20	20	
1,2-Dibromoethane		50.0	50.9	ug/L	0.224	1.70	20	
Dibromomethane		50.0	48.0	ug/L	0.127	3.90	20	
1,2-Dichlorobenzene		50.0	46.2	ug/L	1.22	7.50	20	
1,3-Dichlorobenzene		50.0	45.6	ug/L	1.39	8.80	20	
1,4-Dichlorobenzene		50.0	48.7	ug/L	1.51	2.60	20	
Dichlorodifluoromethane		50.0	56.2	ug/L	0.435	12.4	20	
1,2-Dichloroethane		50.0	48.7	ug/L	0.328	2.70	20	
cis-1,2-Dichloroethene		50.0	48.5	ug/L	0.280	2.90	20	
trans-1,2-Dichloroethene		50.0	49.8	ug/L	0.418	0.500	20	
1,3-Dichloropropane		50.0	50.8	ug/L	0.411	1.60	20	
2,2-Dichloropropane		50.0	45.8	ug/L	0.383	8.50	20	
cis-1,3-Dichloropropene		50.0	52.5	ug/L	0.396	5.00	20	
trans-1,3-Dichloropropene		50.0	49.2	ug/L	0.437	1.70	20	
1,1-Dichloropropene		50.0	47.8	ug/L	0.355	4.30	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4207699
Report generated 06/02/2015 18:22

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15051435 Run Date: 05/12/2015 Sample ID: WG523161-12
Instrument ID: HPMS8 Run Time: 22:34 Method: 8260B
File ID: 8M404591 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG523161 Cal ID: HPMS8 - 12-MAY-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	54.8	ug/L	0.0695	9.50	20	
Hexachlorobutadiene		50.0	50.4	ug/L	0.524	0.800	20	
Isopropylbenzene		50.0	47.9	ug/L	1.57	4.20	20	
p-Isopropyltoluene		50.0	48.0	ug/L	2.63	4.00	20	
4-Methyl-2-Pentanone		50.0	54.4	ug/L	0.0524	8.80	20	
Methylene Chloride		50.0	50.3	ug/L	0.252	0.600	20	
Naphthalene		50.0	51.5	ug/L	1.37	3.00	20	
n-Propylbenzene		50.0	46.3	ug/L	3.51	7.30	20	
Styrene		50.0	52.5	ug/L	1.11	5.00	20	
1,1,1,2-Tetrachloroethane		50.0	50.2	ug/L	0.361	0.400	20	
Tetrachloroethene		50.0	49.0	ug/L	0.307	2.00	20	
1,2,3-Trichlorobenzene		50.0	49.7	ug/L	0.838	0.600	20	
1,2,4-Trichlorobenzene		50.0	49.7	ug/L	0.989	0.600	20	
1,1,1-Trichloroethane		50.0	50.3	ug/L	0.430	0.600	20	
1,1,2-Trichloroethane		50.0	49.0	ug/L	0.226	2.00	20	
Trichloroethene		50.0	49.9	ug/L	0.264	0.100	20	
Trichlorofluoromethane		50.0	48.8	ug/L	0.447	2.50	20	
1,2,3-Trichloropropane		50.0	51.6	ug/L	0.133	3.20	20	
1,2,4-Trimethylbenzene		50.0	52.5	ug/L	2.79	5.00	20	
1,3,5-Trimethylbenzene		50.0	52.9	ug/L	2.74	5.70	20	
o-Xylene		50.0	46.8	ug/L	0.627	6.40	20	
m-,p-Xylene		100	99.5	ug/L	0.674	0.500	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4207699
Report generated 06/02/2015 18:22

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051435 Run Date: 05/29/2015 Sample ID: WG525606-02
Instrument ID: HPMS8 Run Time: 15:06 Method: 8260B
File ID: 8M404995 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG525607 Cal ID: HPMS8 - 12-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	48.5	ug/L	0.456	2.96	20	
1,1-Dichloroethene	CCC	50.0	47.9	ug/L	0.421	4.13	20	
1,2-Dichloropropane	CCC	50.0	46.9	ug/L	0.263	6.27	20	
Ethylbenzene	CCC	50.0	46.5	ug/L	0.558	6.96	20	
Toluene	CCC	50.0	49.9	ug/L	1.48	0.278	20	
Vinyl Chloride	CCC	50.0	48.0	ug/L	0.700	4.02	20	
Bromoform	SPCC	50.0	44.4	ug/L	0.173	11.2	20	
Chlorobenzene	SPCC	50.0	50.1	ug/L	1.00	0.211	20	
Chloromethane	SPCC	50.0	44.1	ug/L	0.682	11.8	20	
1,1-Dichloroethane	SPCC	50.0	48.2	ug/L	0.489	3.53	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	44.3	ug/L	0.421	11.4	20	
Xylenes		150	150	ug/L	0.671	0.0666	20	
Acetone		50.0	45.3	ug/L	0.0324	9.36	20	
Benzene		50.0	50.3	ug/L	1.01	0.688	20	
Bromobenzene		50.0	48.6	ug/L	0.731	2.74	20	
Bromochloromethane		50.0	48.3	ug/L	0.142	3.38	20	
Bromodichloromethane		50.0	49.7	ug/L	0.343	0.584	20	
Bromomethane		50.0	53.5	ug/L	0.186	7.03	20	
2-Butanone		50.0	43.1	ug/L	0.0501	13.8	20	
n-Butylbenzene		50.0	51.0	ug/L	2.73	2.00	20	
sec-Butylbenzene		50.0	52.2	ug/L	3.37	4.31	20	
tert-Butylbenzene		50.0	47.8	ug/L	0.550	4.44	20	
Carbon Disulfide		50.0	51.2	ug/L	0.828	2.46	20	
Carbon Tetrachloride		50.0	51.6	ug/L	0.401	3.24	20	
Dibromochloromethane		50.0	49.9	ug/L	0.306	0.168	20	
Chloroethane		50.0	49.5	ug/L	0.196	1.04	20	
2-Chlorotoluene		50.0	47.1	ug/L	2.41	5.75	20	
4-Chlorotoluene		50.0	51.9	ug/L	2.12	3.70	20	
1,2-Dibromo-3-Chloropropane		50.0	46.2	ug/L	0.0701	7.52	20	
1,2-Dibromoethane		50.0	48.1	ug/L	0.212	3.74	20	
Dibromomethane		50.0	47.1	ug/L	0.124	5.78	20	
1,2-Dichlorobenzene		50.0	50.4	ug/L	1.33	0.770	20	
1,3-Dichlorobenzene		50.0	51.0	ug/L	1.55	1.91	20	
1,4-Dichlorobenzene		50.0	49.2	ug/L	1.52	1.68	20	
Dichlorodifluoromethane		50.0	47.0	ug/L	0.364	6.03	20	
1,2-Dichloroethane		50.0	45.2	ug/L	0.305	9.58	20	
cis-1,2-Dichloroethene		50.0	48.1	ug/L	0.277	3.90	20	
trans-1,2-Dichloroethene		50.0	46.1	ug/L	0.387	7.75	20	
1,3-Dichloropropane		50.0	45.1	ug/L	0.365	9.71	20	
2,2-Dichloropropane		50.0	49.0	ug/L	0.410	1.95	20	
cis-1,3-Dichloropropene		50.0	50.1	ug/L	0.378	0.182	20	
trans-1,3-Dichloropropene		50.0	46.9	ug/L	0.417	6.26	20	

CCV - Modified 03/05/2008
PDF File ID: 4207701
Report generated 06/02/2015 18:22

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051435 Run Date: 05/29/2015 Sample ID: WG525606-02
Instrument ID: HPMS8 Run Time: 15:06 Method: 8260B
File ID: 8M404995 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG525607 Cal ID: HPMS8 - 12-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	50.1	ug/L	0.372	0.234	20	
2-Hexanone		50.0	43.1	ug/L	0.0547	13.8	20	
Hexachlorobutadiene		50.0	45.5	ug/L	0.473	9.09	20	
Isopropylbenzene		50.0	52.1	ug/L	1.71	4.13	20	
p-Isopropyltoluene		50.0	53.0	ug/L	2.90	6.06	20	
4-Methyl-2-Pentanone		50.0	45.2	ug/L	0.0436	9.58	20	
Methylene Chloride		50.0	48.8	ug/L	0.244	2.41	20	
Naphthalene		50.0	51.5	ug/L	1.37	2.95	20	
n-Propylbenzene		50.0	49.4	ug/L	3.74	1.11	20	
Styrene		50.0	51.0	ug/L	1.08	1.95	20	
1,1,1,2-Tetrachloroethane		50.0	49.9	ug/L	0.359	0.156	20	
Tetrachloroethene		50.0	49.3	ug/L	0.308	1.47	20	
1,2,3-Trichlorobenzene		50.0	49.3	ug/L	0.832	1.36	20	
1,2,4-Trichlorobenzene		50.0	49.4	ug/L	0.983	1.25	20	
1,1,1-Trichloroethane		50.0	51.6	ug/L	0.440	3.13	20	
1,1,2-Trichloroethane		50.0	46.2	ug/L	0.213	7.59	20	
Trichloroethene		50.0	51.8	ug/L	0.274	3.60	20	
Trichlorofluoromethane		50.0	49.0	ug/L	0.449	1.91	20	
1,2,3-Trichloropropane		50.0	45.9	ug/L	0.118	8.28	20	
1,2,4-Trimethylbenzene		50.0	51.8	ug/L	2.76	3.62	20	
1,3,5-Trimethylbenzene		50.0	51.7	ug/L	2.68	3.48	20	
o-Xylene		50.0	49.3	ug/L	0.660	1.43	20	
m-,p-Xylene		100	101	ug/L	0.682	0.613	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4207701
Report generated 06/02/2015 18:22

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051435 Run Date: 05/30/2015 Sample ID: WG525660-02
Instrument ID: HPMS8 Run Time: 15:06 Method: 8260B
File ID: 8M405026 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG525662 Cal ID: HPMS8 - 12-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	48.3	ug/L	0.454	3.47	20	
1,1-Dichloroethene	CCC	50.0	46.5	ug/L	0.409	6.94	20	
1,2-Dichloropropane	CCC	50.0	45.7	ug/L	0.256	8.53	20	
Ethylbenzene	CCC	50.0	47.0	ug/L	0.564	5.99	20	
Toluene	CCC	50.0	50.0	ug/L	1.48	0.0716	20	
Vinyl Chloride	CCC	50.0	42.0	ug/L	0.613	15.9	20	
Bromoform	SPCC	50.0	50.2	ug/L	0.196	0.375	20	
Chlorobenzene	SPCC	50.0	49.1	ug/L	0.983	1.75	20	
Chloromethane	SPCC	50.0	40.8	ug/L	0.632	18.3	20	
1,1-Dichloroethane	SPCC	50.0	47.5	ug/L	0.481	5.08	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	47.9	ug/L	0.455	4.14	20	
Xylenes		150	150	ug/L	0.670	0.228	20	
Acetone		50.0	42.9	ug/L	0.0306	14.3	20	
Benzene		50.0	48.7	ug/L	0.976	2.50	20	
Bromobenzene		50.0	50.6	ug/L	0.761	1.23	20	
Bromochloromethane		50.0	49.5	ug/L	0.146	0.919	20	
Bromodichloromethane		50.0	49.2	ug/L	0.339	1.65	20	
Bromomethane		50.0	53.8	ug/L	0.187	7.57	20	
2-Butanone		50.0	41.4	ug/L	0.0481	17.2	20	
n-Butylbenzene		50.0	51.4	ug/L	2.75	2.83	20	
sec-Butylbenzene		50.0	52.8	ug/L	3.41	5.52	20	
tert-Butylbenzene		50.0	49.3	ug/L	0.567	1.49	20	
Carbon Disulfide		50.0	50.6	ug/L	0.819	1.28	20	
Carbon Tetrachloride		50.0	53.5	ug/L	0.415	7.01	20	
Dibromochloromethane		50.0	53.3	ug/L	0.327	6.54	20	
Chloroethane		50.0	48.9	ug/L	0.194	2.25	20	
2-Chlorotoluene		50.0	46.5	ug/L	2.37	7.03	20	
4-Chlorotoluene		50.0	54.4	ug/L	2.22	8.82	20	
1,2-Dibromo-3-Chloropropane		50.0	48.6	ug/L	0.0737	2.80	20	
1,2-Dibromoethane		50.0	52.3	ug/L	0.230	4.60	20	
Dibromomethane		50.0	48.3	ug/L	0.128	3.42	20	
1,2-Dichlorobenzene		50.0	51.2	ug/L	1.35	2.34	20	
1,3-Dichlorobenzene		50.0	51.3	ug/L	1.56	2.55	20	
1,4-Dichlorobenzene		50.0	50.0	ug/L	1.55	0.0252	20	
Dichlorodifluoromethane		50.0	46.0	ug/L	0.357	7.98	20	
1,2-Dichloroethane		50.0	45.4	ug/L	0.306	9.20	20	
cis-1,2-Dichloroethene		50.0	47.3	ug/L	0.273	5.39	20	
trans-1,2-Dichloroethene		50.0	45.3	ug/L	0.380	9.48	20	
1,3-Dichloropropane		50.0	48.2	ug/L	0.390	3.56	20	
2,2-Dichloropropane		50.0	49.7	ug/L	0.415	0.574	20	
cis-1,3-Dichloropropene		50.0	49.7	ug/L	0.375	0.631	20	
trans-1,3-Dichloropropene		50.0	48.7	ug/L	0.433	2.62	20	

CCV - Modified 03/05/2008
PDF File ID: 4207701
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051435 Run Date: 05/30/2015 Sample ID: WG525660-02
Instrument ID: HPMS8 Run Time: 15:06 Method: 8260B
File ID: 8M405026 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG525662 Cal ID: HPMS8 - 12-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	48.7	ug/L	0.362	2.52	20	
2-Hexanone		50.0	45.4	ug/L	0.0576	9.26	20	
Hexachlorobutadiene		50.0	51.5	ug/L	0.536	3.05	20	
Isopropylbenzene		50.0	50.8	ug/L	1.66	1.54	20	
p-Isopropyltoluene		50.0	53.5	ug/L	2.93	7.06	20	
4-Methyl-2-Pentanone		50.0	47.1	ug/L	0.0454	5.85	20	
Methylene Chloride		50.0	49.0	ug/L	0.245	2.07	20	
Naphthalene		50.0	51.8	ug/L	1.38	3.56	20	
n-Propylbenzene		50.0	49.9	ug/L	3.78	0.158	20	
Styrene		50.0	50.7	ug/L	1.08	1.37	20	
1,1,1,2-Tetrachloroethane		50.0	51.7	ug/L	0.371	3.33	20	
Tetrachloroethene		50.0	51.5	ug/L	0.322	3.00	20	
1,2,3-Trichlorobenzene		50.0	48.7	ug/L	0.821	2.63	20	
1,2,4-Trichlorobenzene		50.0	49.2	ug/L	0.979	1.59	20	
1,1,1-Trichloroethane		50.0	51.2	ug/L	0.437	2.33	20	
1,1,2-Trichloroethane		50.0	48.9	ug/L	0.225	2.15	20	
Trichloroethene		50.0	52.5	ug/L	0.278	5.06	20	
Trichlorofluoromethane		50.0	49.7	ug/L	0.455	0.549	20	
1,2,3-Trichloropropane		50.0	50.6	ug/L	0.130	1.29	20	
1,2,4-Trimethylbenzene		50.0	51.7	ug/L	2.75	3.35	20	
1,3,5-Trimethylbenzene		50.0	52.6	ug/L	2.73	5.30	20	
o-Xylene		50.0	49.1	ug/L	0.658	1.76	20	
m-,p-Xylene		100	101	ug/L	0.682	0.539	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4207701
Report generated 06/02/2015 18:22

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15051435
Instrument ID: HPMS8
Workgroup (AAB#): WG525607

ICAL CCV Number: WG523161-08
CAL ID: HPMS8-12-MAY-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG523161-08	NA	NA	300564	545682	779258
Upper Limit	NA	NA	601128	1091364	1558516
Lower Limit	NA	NA	150282	272841	389629
L15051435-03	1.00	01	316653	641356	857508
L15051435-05	1.00	01	329707	668100	902354
WG525607-01	1.00	01	307190	599446	804789
WG525607-02	1.00	01	331754	584931	786222

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4213024
Report generated 06/02/2015 18:23

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15051435
Instrument ID: HPMS8
Workgroup (AAB#): WG525662

ICAL CCV Number: WG523161-08
CAL ID: HPMS8 - 12-MAY-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG523161-08	NA	NA	300564	545682	779258
Upper Limit	NA	NA	601128	1091364	1558516
Lower Limit	NA	NA	150282	272841	389629
L15051435-01	2.50	DL01	430484	813062	1096952
WG525662-01	1.00	01	379253	733967	1006218
WG525662-02	1.00	01	398127	734690	993344

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4213024
Report generated 06/02/2015 18:23

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15051435
Instrument ID: HPMS8
Workgroup (AAB#): WG525607

ICAL CCV Number: WG523161-08
CAL ID: HPMS8-12-MAY-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG523161-08	NA	NA	17.65	14.62	10.75
Upper Limit	NA	NA	18.15	15.12	11.25
Lower Limit	NA	NA	17.15	14.12	10.25
L15051435-03	1.00	01	17.64	14.61	10.76
L15051435-05	1.00	01	17.64	14.62	10.75
WG525607-01	1.00	01	17.64	14.62	10.75
WG525607-02	1.00	01	17.64	14.62	10.75

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4213025
Report generated: 06/02/2015 18:23

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15051435
Instrument ID: HPMS8
Workgroup (AAB#): WG525662

ICAL CCV Number: WG523161-08
CAL ID: HPMS8-12-MAY-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG523161-08	NA	NA	17.65	14.62	10.75
Upper Limit	NA	NA	18.15	15.12	11.25
Lower Limit	NA	NA	17.15	14.12	10.25
L15051435-01	2.50	DL01	17.64	14.62	10.75
WG525662-01	1.00	01	17.64	14.62	10.75
WG525662-02	1.00	01	17.64	14.62	10.75

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4213025
Report generated: 06/02/2015 18:23

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\053015\8M405040.D Vial: 16
Acq On : 30 May 2015 21:48 Operator: TMB
Sample : L15051435-01 B 2.5X 826-LOW 00 Inst : HPMS8
Misc : 1,2.5 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 01 08:24:50 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	1096952	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	813062	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	430484	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	273850	25.1868 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.76%		
43) 1,2-Dichloroethane-d4	10.35	65	248105	24.2818 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.12%		
58) Toluene-d8	12.73	98	976037	25.7249 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.88%		
80) p-Bromofluorobenzene	16.12	95	363780	24.8384 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.36%		

Target Compounds

					Qvalue
5) 1,3-Butadiene	3.95	54	326	Below Cal #	45
12) 1,1,2-Trichloro-1,2,2-Trif	6.20	101	4600	0.4058 ug/L	74
13) Acetone	6.27	43	974	0.6217 ug/L #	36
14) 1,1-Dichloroethene	6.51	61	7409	0.3843 ug/L	78
27) 1,1-Dichloroethane	8.37	63	13265	0.5970 ug/L	90
32) cis-1,2-Dichloroethene	9.21	96	313753	24.8205 ug/L	98
33) Chloroform	9.43	83	5006	0.2426 ug/L	98
45) 1,2-Dichloroethane	10.46	62	21305	1.4401 ug/L	94
47) Trichloroethene	11.26	130	3307186	284.7684 ug/L	98
66) Tetrachloroethene	13.65	164	8141	0.7998 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M405040.D 8260WT.M Mon Jun 01 08:24:50 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\053015\8M405040.D Vial: 16
Acq On : 30 May 2015 21:48 Operator: TMB
Sample : L15051435-01 B 2.5X 826-LOW 00 Inst : HPMS8
Misc : 1,2.5 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 1 8:24 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

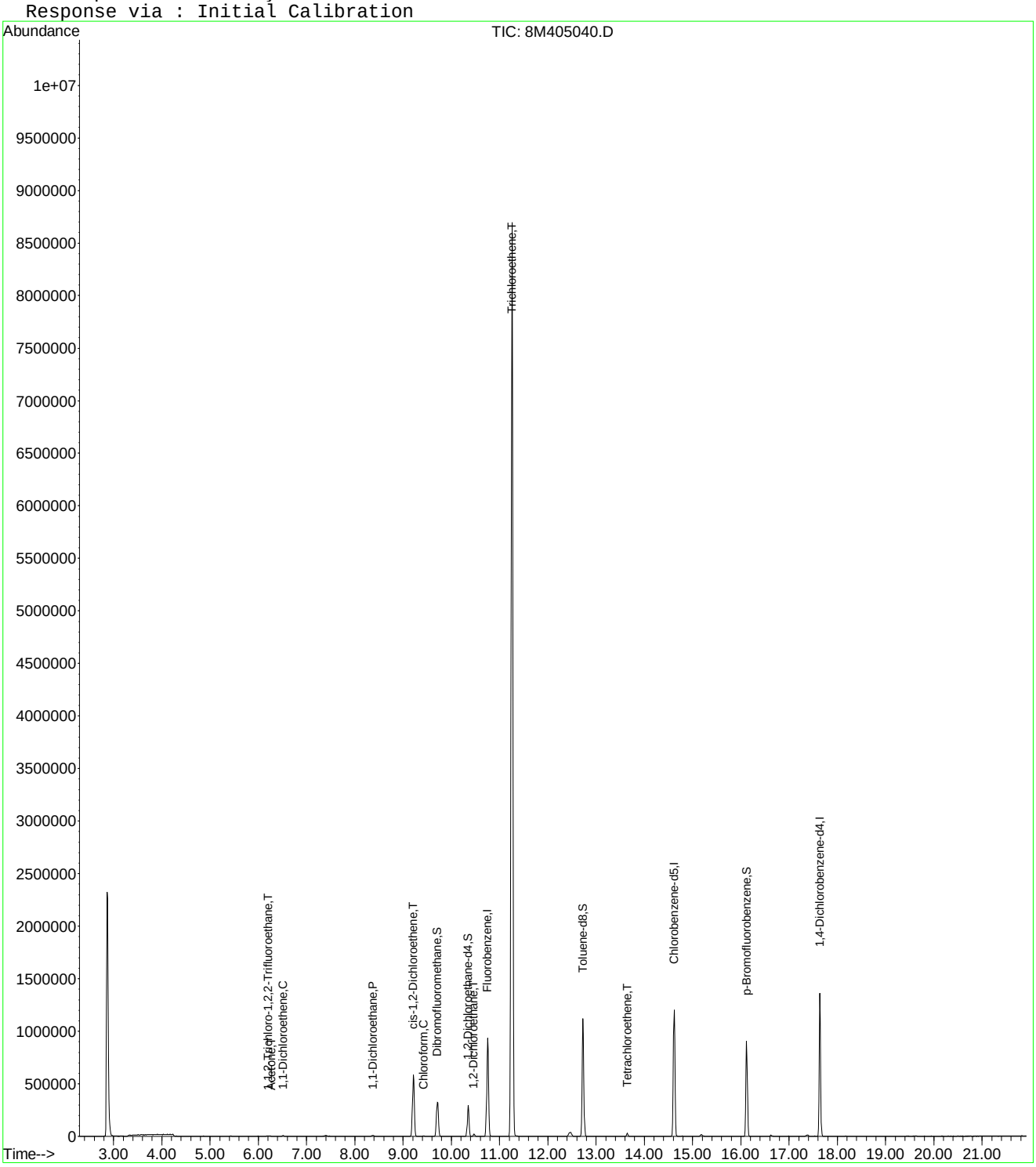

8M405040.D 8260WT.M Mon Jun 01 08:24:51 2015 Page 2

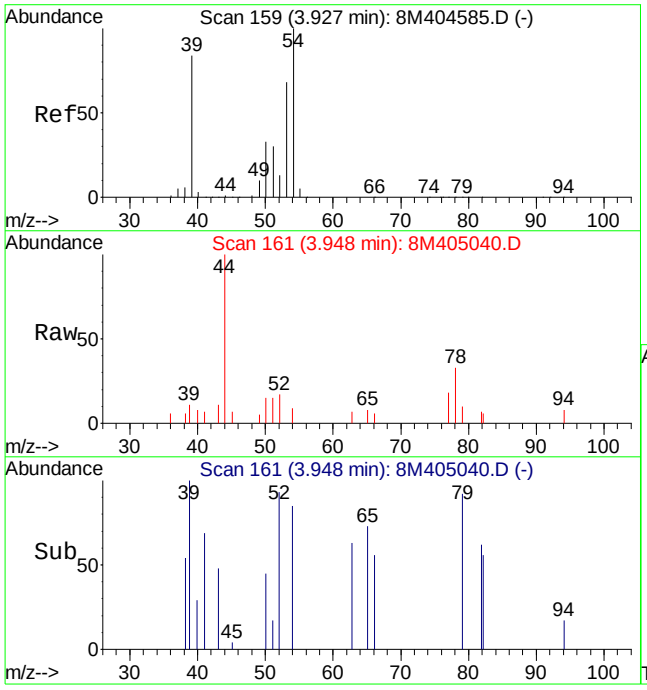

#5
1,3-Butadiene
Concen: Below Cal
RT: 3.95 min Scan# 161
Delta R.T. 0.04 min
Lab File: 8M405040.D
Acq: 30 May 2015 21:48

Tgt Ion: 54 Resp: 326

Ion	Ratio	Lower	Upper
54	100		
39	0.0	50.7	118.3#
53	62.0	40.4	94.4

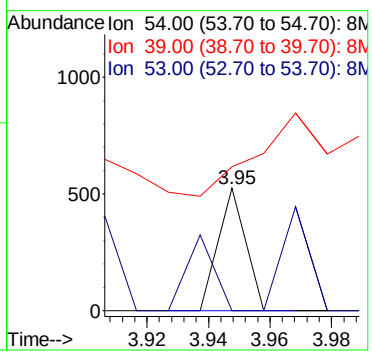

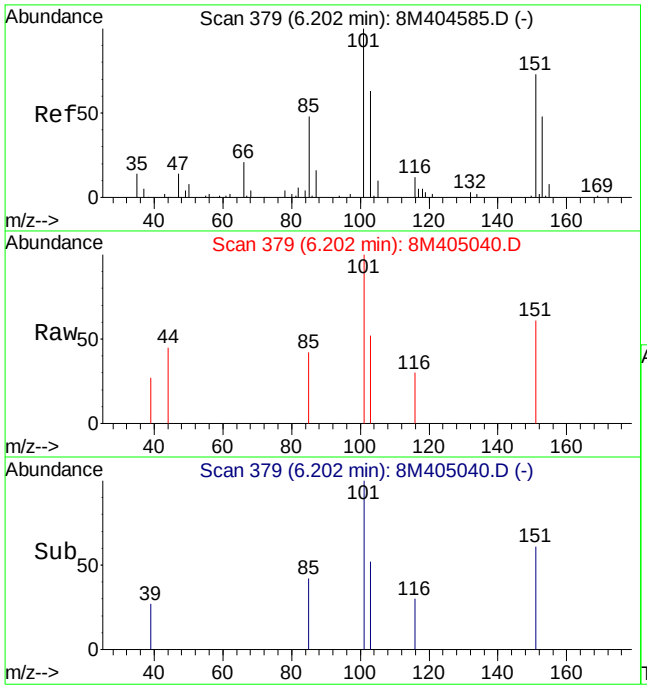

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 0.41 ug/L
RT: 6.20 min Scan# 379
Delta R.T. -0.00 min
Lab File: 8M405040.D
Acq: 30 May 2015 21:48

Tgt Ion:101 Resp: 4600

Ion	Ratio	Lower	Upper
101	100		
151	57.8	40.9	120.9

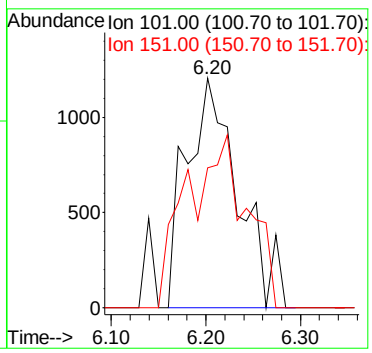

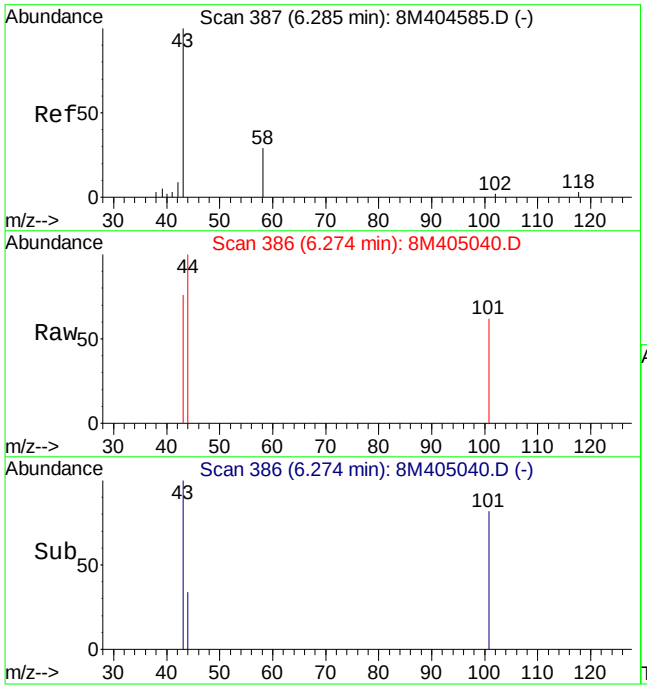

#13
Acetone
Concen: 0.62 ug/L
RT: 6.27 min Scan# 386
Delta R.T. -0.01 min
Lab File: 8M405040.D
Acq: 30 May 2015 21:48

Tgt Ion: 43 Resp: 974

Ion	Ratio	Lower	Upper
43	100		
58	0.0	23.2	54.0#

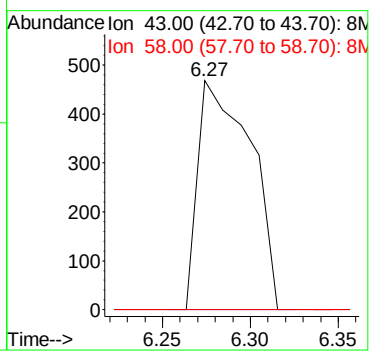

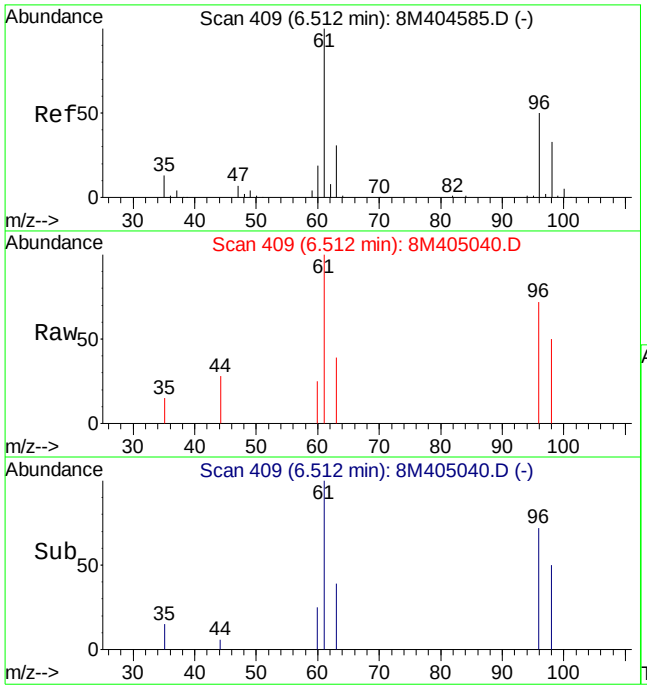

#14
1,1-Dichloroethene
Concen: 0.38 ug/L
RT: 6.51 min Scan# 409
Delta R.T. -0.00 min
Lab File: 8M405040.D
Acq: 30 May 2015 21:48

Tgt Ion: 61 Resp: 7409

Ion	Ratio	Lower	Upper
61	100		
96	48.2	39.1	91.3

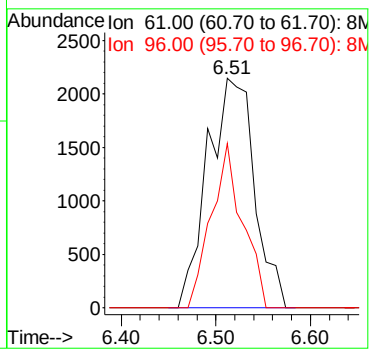

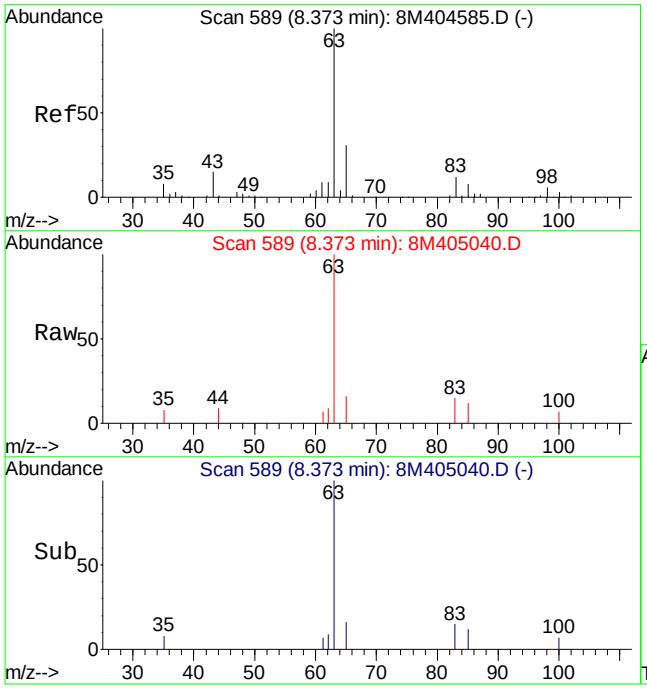

#27
1,1-Dichloroethane
Concen: 0.60 ug/L
RT: 8.37 min Scan# 589
Delta R.T. 0.01 min
Lab File: 8M405040.D
Acq: 30 May 2015 21:48

Tgt Ion: 63 Resp: 13265

Ion	Ratio	Lower	Upper
63	100		
65	27.4	20.7	48.3
83	12.0	8.6	20.2

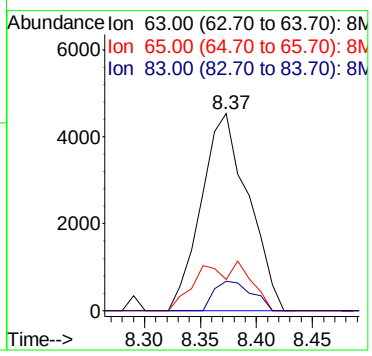

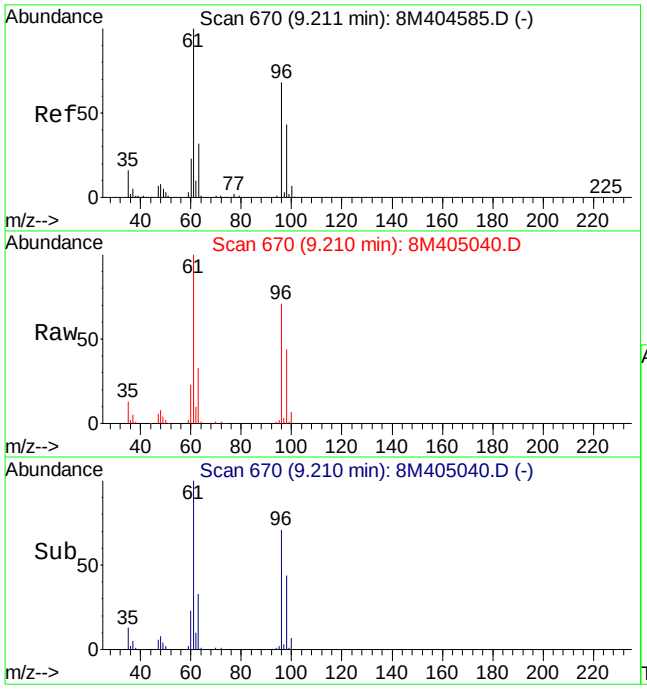

#32
cis-1,2-Dichloroethene
Concen: 24.82 ug/L
RT: 9.21 min Scan# 670
Delta R.T. -0.00 min
Lab File: 8M405040.D
Acq: 30 May 2015 21:48

Tgt Ion: 96 Resp: 313753

Ion	Ratio	Lower	Upper
96	100		
61	142.6	84.0	196.0

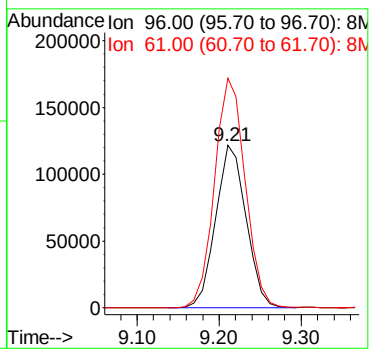

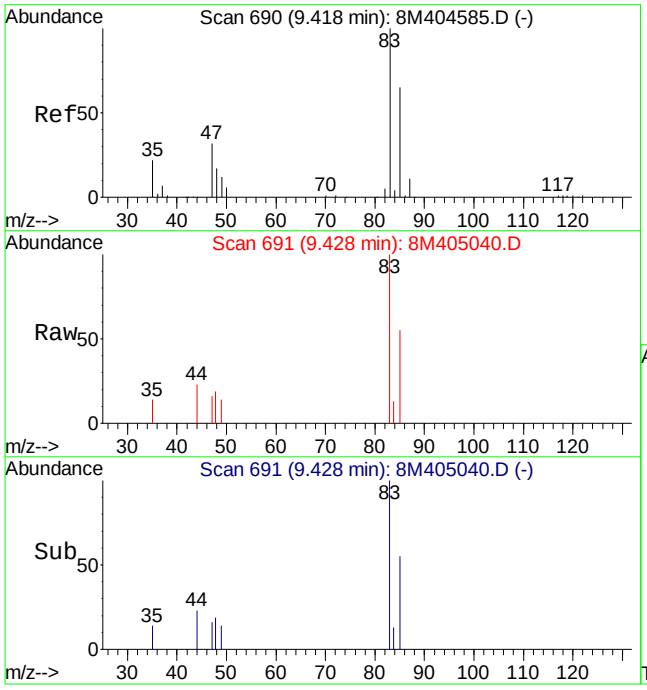

#33
Chloroform
Concen: 0.24 ug/L
RT: 9.43 min Scan# 691
Delta R.T. 0.01 min
Lab File: 8M405040.D
Acq: 30 May 2015 21:48

Tgt Ion: 83 Resp: 5006

Ion	Ratio	Lower	Upper
83	100		
85	67.0	41.3	96.3

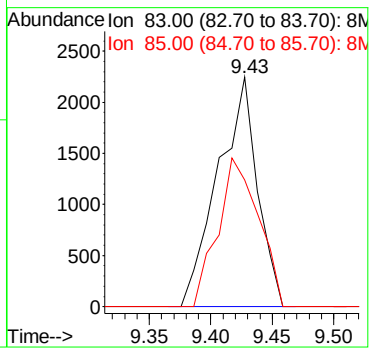

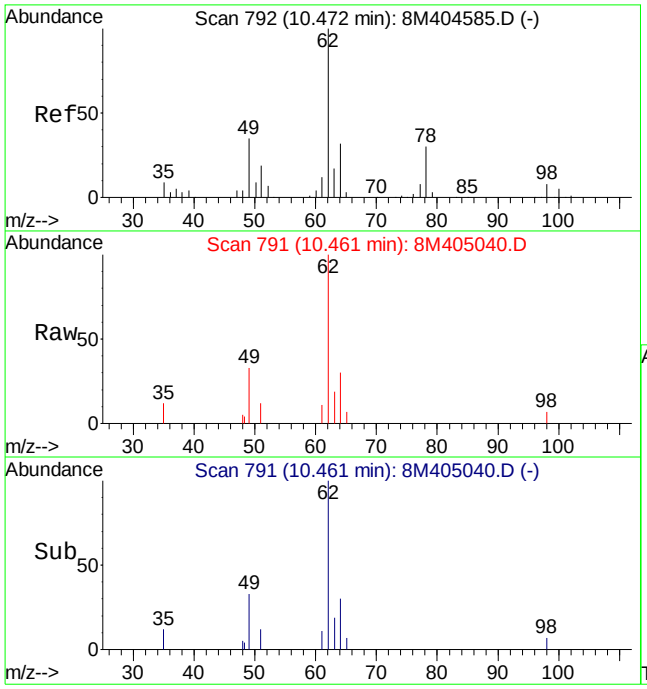

#45
1,2-Dichloroethane
Concen: 1.44 ug/L
RT: 10.46 min Scan# 791
Delta R.T. -0.00 min
Lab File: 8M405040.D
Acq: 30 May 2015 21:48

Tgt Ion: 62 Resp: 21305

Ion	Ratio	Lower	Upper
62	100		
64	31.2	20.5	47.9
49	32.2	21.8	51.0

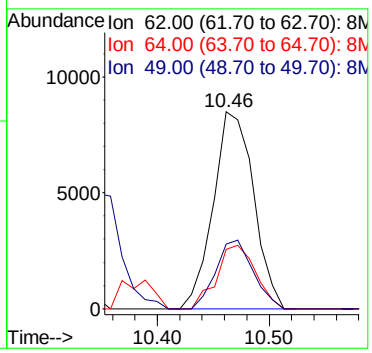

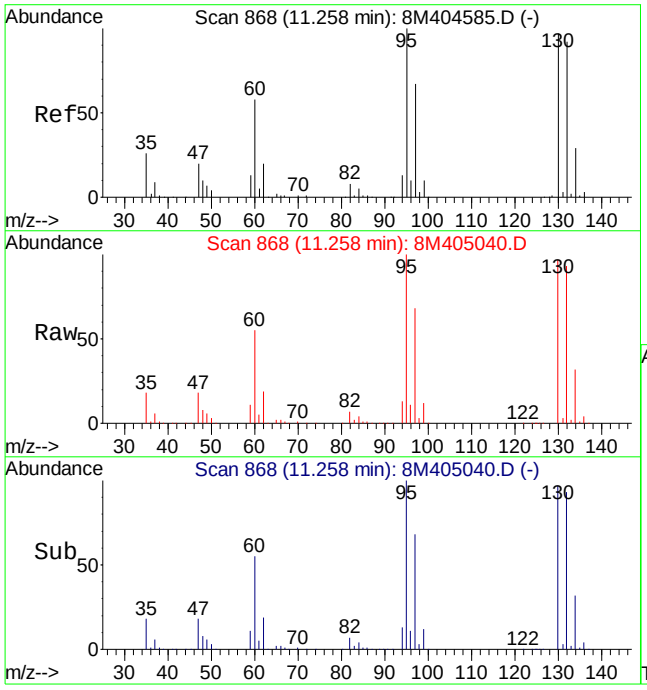

#47
Trichloroethene
Concen: 284.77 ug/L
RT: 11.26 min Scan# 868
Delta R.T. -0.00 min
Lab File: 8M405040.D
Acq: 30 May 2015 21:48

Tgt Ion:130 Resp: 3307186

Ion	Ratio	Lower	Upper
130	100		
132	96.3	58.3	135.9
95	102.4	59.2	138.2

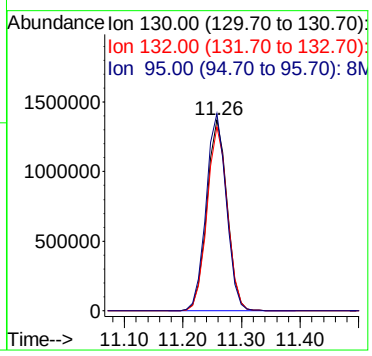

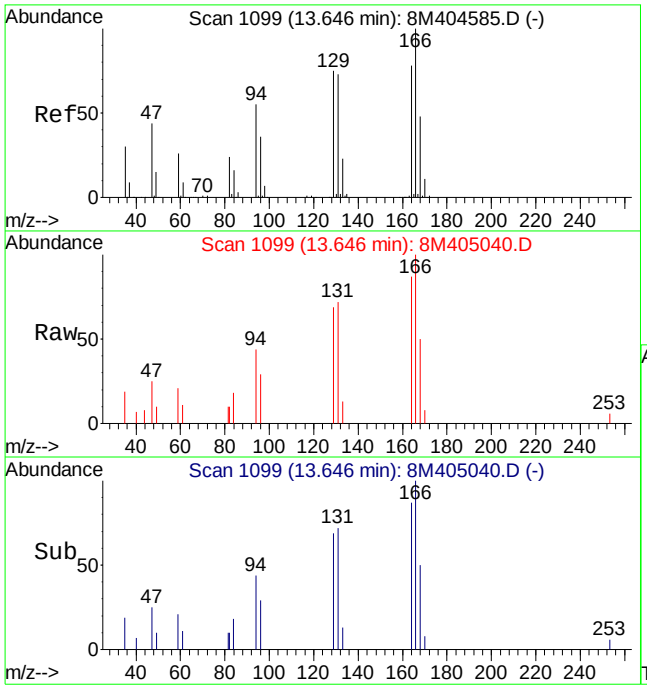

#66
Tetrachloroethene
Concen: 0.80 ug/L
RT: 13.65 min Scan# 1099
Delta R.T. -0.00 min
Lab File: 8M405040.D
Acq: 30 May 2015 21:48

Tgt Ion:164 Resp: 8141

Ion	Ratio	Lower	Upper
164	100		
129	87.2	52.6	122.6
94	56.4	31.2	72.8

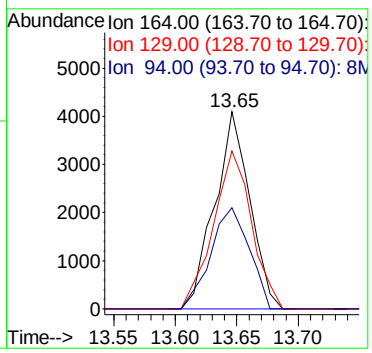

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052915\8M405011.D Vial: 18
Acq On : 29 May 2015 22:48 Operator: TMB
Sample : L15051435-03 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 30 10:58:44 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	857508	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.61	117	641356	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	316653	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	212363	24.9855 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.96%		
43) 1,2-Dichloroethane-d4	10.35	65	196526	24.6045 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.40%		
58) Toluene-d8	12.73	98	778763	26.0206 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.08%		
80) p-Bromofluorobenzene	16.12	95	275567	25.5791 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.32%		

Target Compounds					Qvalue
3) Chloromethane	3.65	50	4077	0.1537 ug/L	81
5) 1,3-Butadiene	3.92	54	232	Below Cal #	1
12) 1,1,2-Trichloro-1,2,2-Trif	6.20	101	17390	1.9625 ug/L	89
13) Acetone	6.30	43	224	0.1829 ug/L #	10
56) Dimethyl Disulfide	12.75	79	212	3.0502 ug/L #	1

(#) = qualifier out of range (m) = manual integration
8M405011.D 8260WT.M Sat May 30 10:58:45 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052915\8M405011.D Vial: 18
Acq On : 29 May 2015 22:48 Operator: TMB
Sample : L15051435-03 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 30 10:58 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

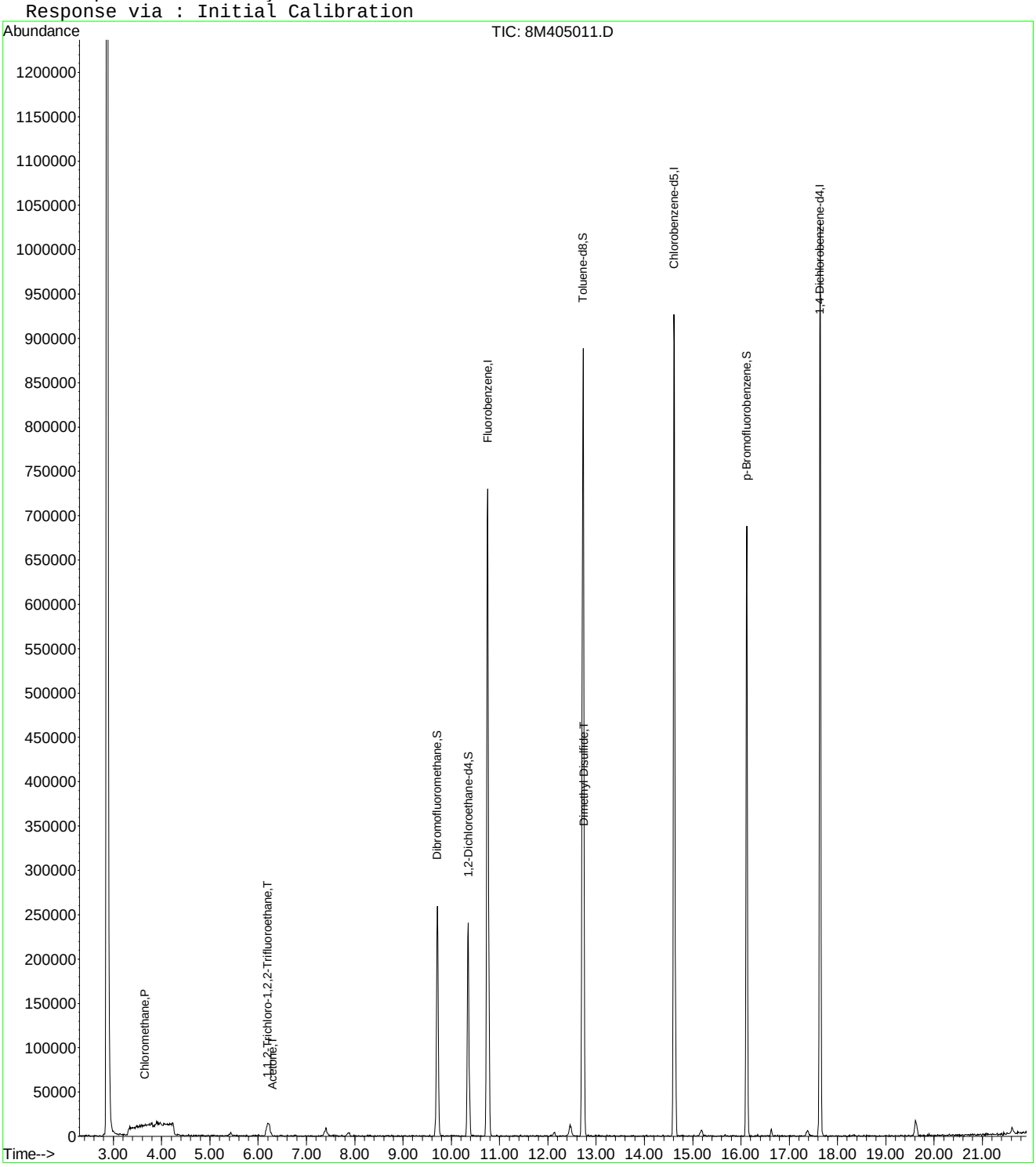

8M405011.D 8260WT.M Sat May 30 10:58:45 2015 Page 2

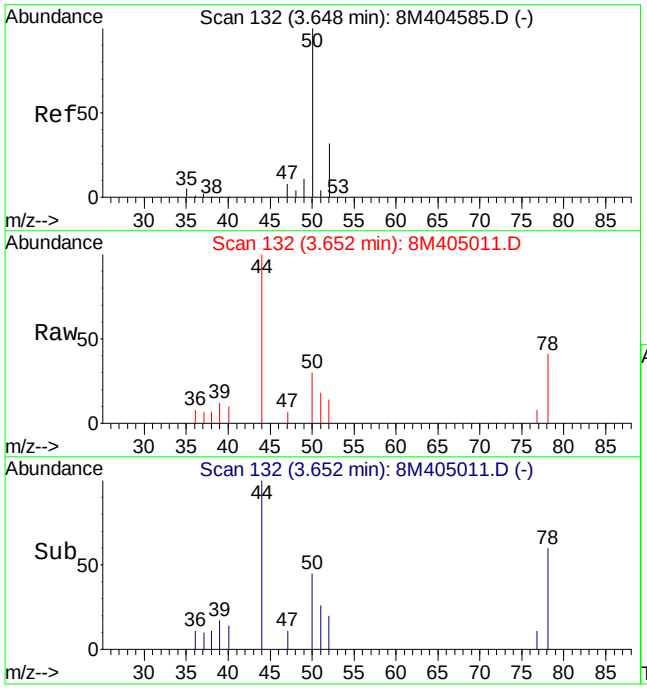

#3
Chloromethane
Concen: 0.15 ug/L
RT: 3.65 min Scan# 132
Delta R.T. 0.00 min
Lab File: 8M405011.D
Acq: 29 May 2015 22:48

Tgt Ion: 50 Resp: 4077

Ion	Ratio	Lower	Upper
50	100		
52	46.0	20.9	48.7

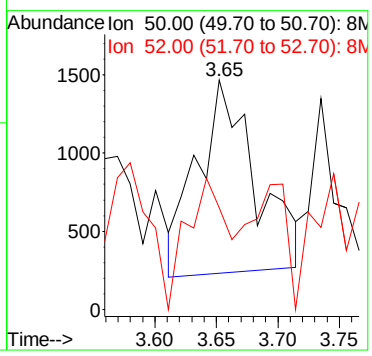

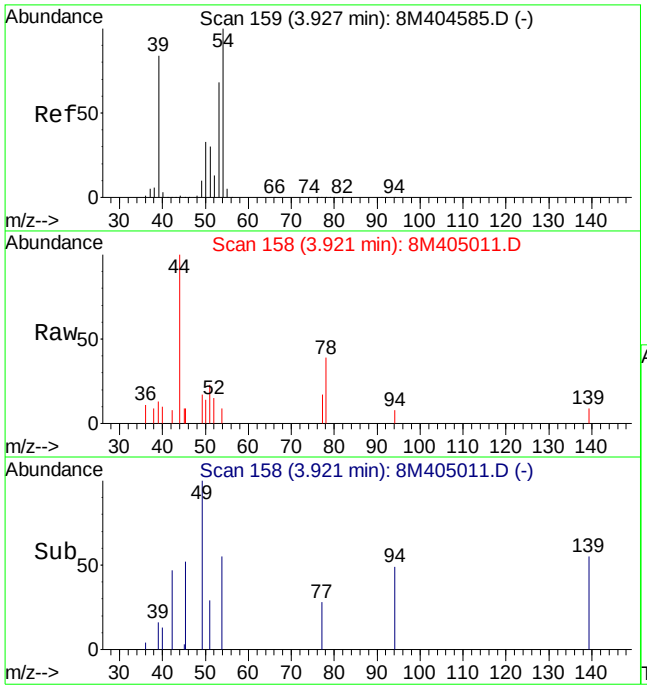

#5
1,3-Butadiene
Concen: Below Cal
RT: 3.92 min Scan# 158
Delta R.T. 0.01 min
Lab File: 8M405011.D
Acq: 29 May 2015 22:48

Tgt Ion: 54 Resp: 232

Ion	Ratio	Lower	Upper
54	100		
39	234.1	50.7	118.3#
53	0.0	40.4	94.4#

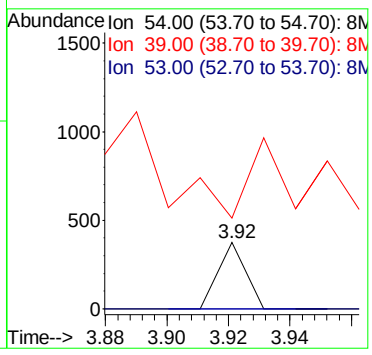

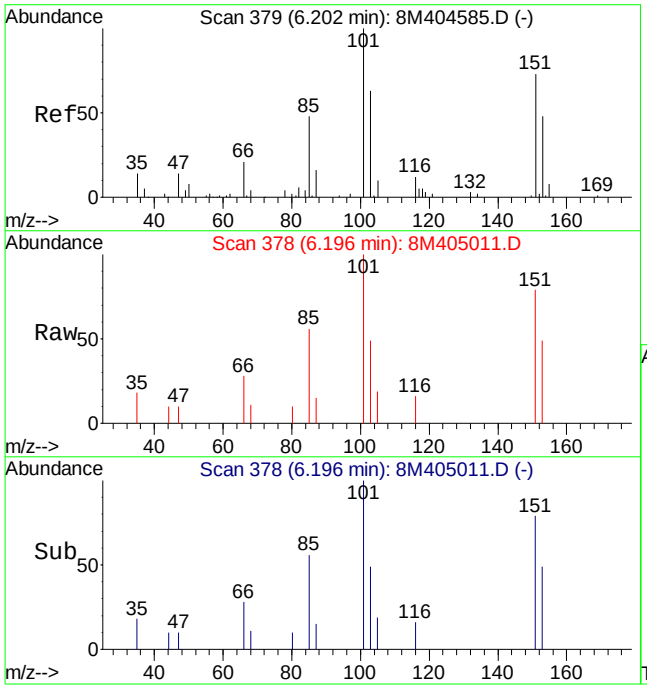

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 1.96 ug/L
RT: 6.20 min Scan# 378
Delta R.T. -0.01 min
Lab File: 8M405011.D
Acq: 29 May 2015 22:48

Tgt Ion:101 Resp: 17390

Ion	Ratio	Lower	Upper
101	100		
151	70.8	40.9	120.9

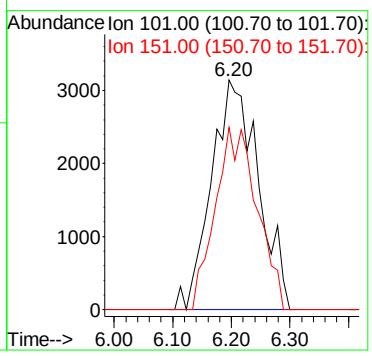

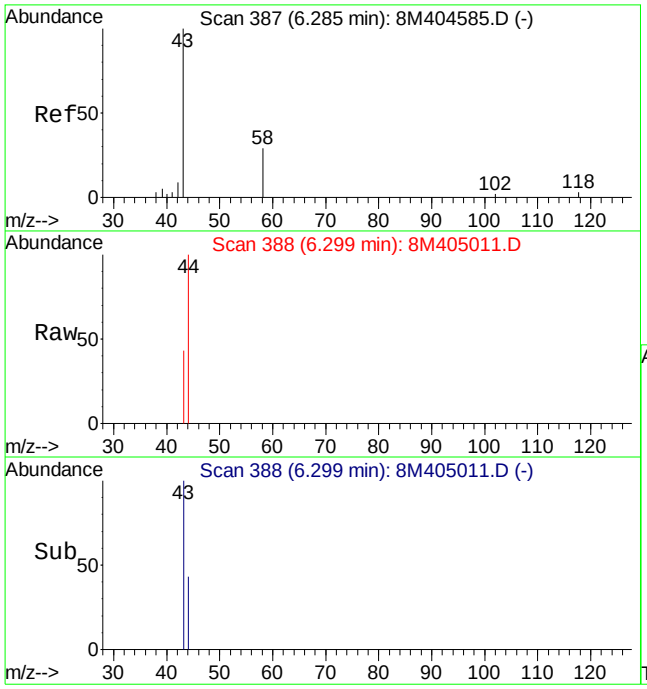

#13
Acetone
Concen: 0.18 ug/L
RT: 6.30 min Scan# 388
Delta R.T. 0.01 min
Lab File: 8M405011.D
Acq: 29 May 2015 22:48

Tgt Ion: 43 Resp: 224

Ion	Ratio	Lower	Upper
43	100		
58	93.3	23.2	54.0#

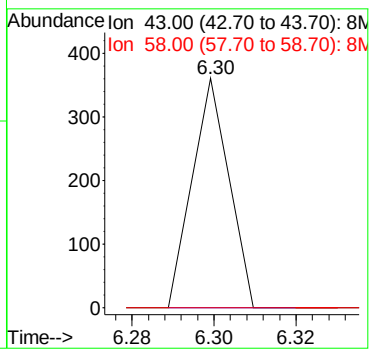

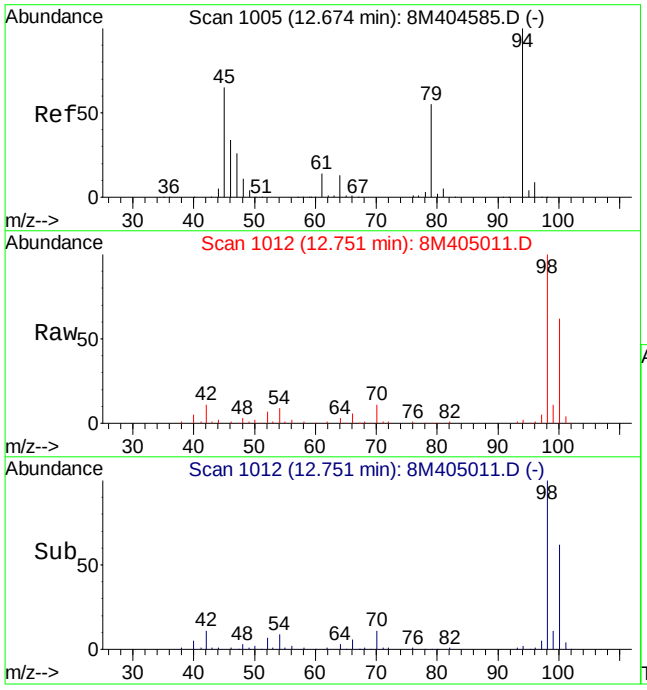

#56
Dimethyl Disulfide
Concen: 3.05 ug/L
RT: 12.75 min Scan# 1012
Delta R.T. 0.08 min
Lab File: 8M405011.D
Acq: 29 May 2015 22:48

Tgt Ion: 79 Resp: 212

Ion	Ratio	Lower	Upper
79	100		
94	10415.1	110.5	257.9#

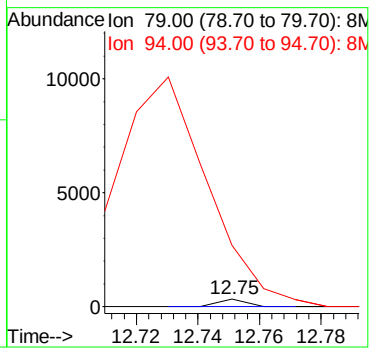

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052915\8M405010.D Vial: 17
Acq On : 29 May 2015 22:18 Operator: TMB
Sample : L15051435-05 A TB 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 30 10:58:43 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	902354	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	668100	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	329707	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	228659	25.5658 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.28%		
43) 1,2-Dichloroethane-d4	10.35	65	211975	25.2197 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.88%		
58) Toluene-d8	12.73	98	806428	25.8663 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.48%		
80) p-Bromofluorobenzene	16.12	95	289046	25.7680 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.08%		

Target Compounds					Qvalue
5) 1,3-Butadiene	3.86	54	202	Below Cal #	1
13) Acetone	6.30	43	623	0.4834 ug/L #	36
36) Tetrahydrofuran	9.68	42	430	0.3040 ug/L #	32
81) 1,2,3-Trichloropropane	16.13	110	265	0.1561 ug/L #	1

(#) = qualifier out of range (m) = manual integration
8M405010.D 8260WT.M Sat May 30 10:58:44 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052915\8M405010.D Vial: 17
Acq On : 29 May 2015 22:18 Operator: TMB
Sample : L15051435-05 A TB 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 30 10:58 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

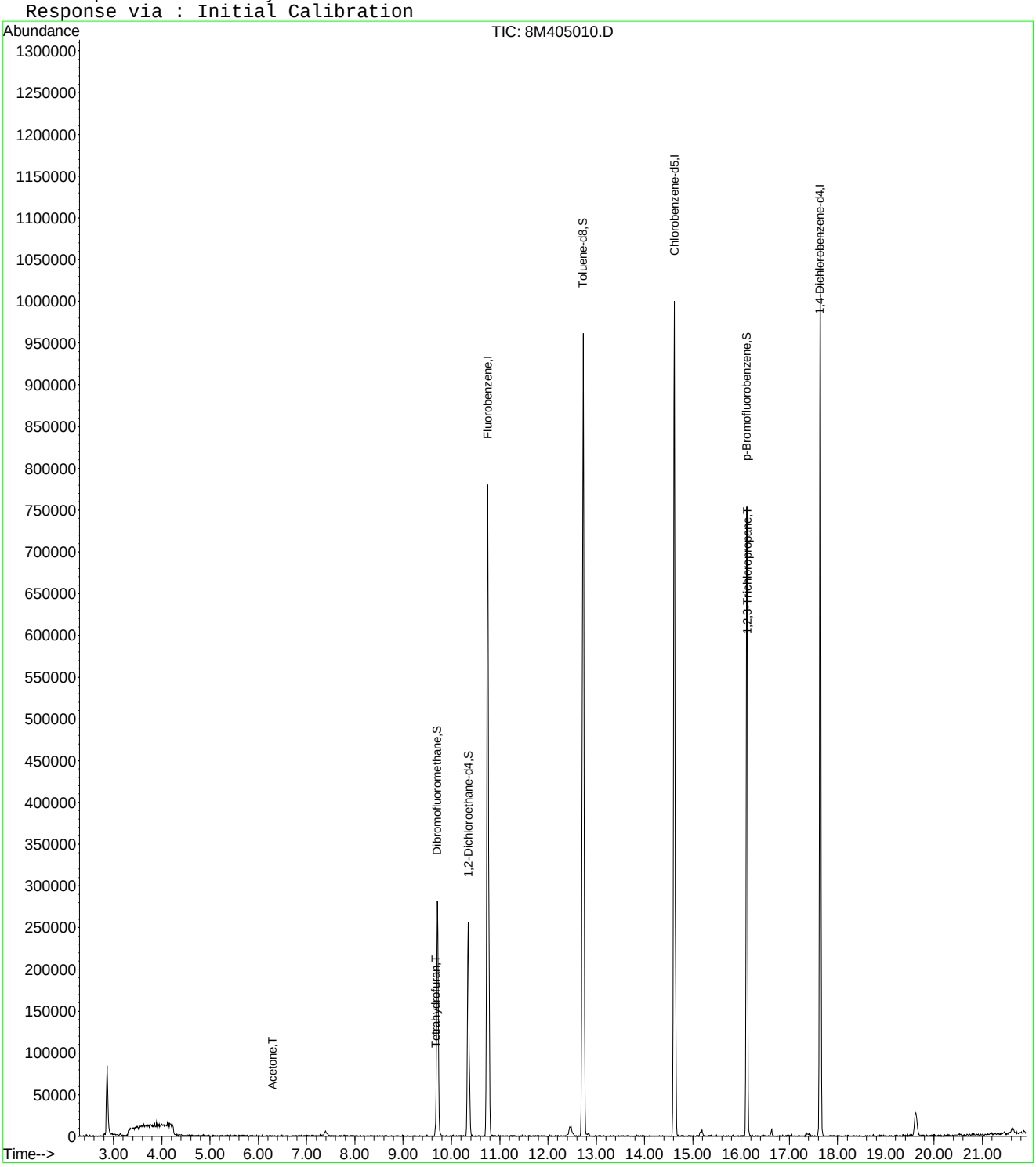

8M405010.D 8260WT.M Sat May 30 10:58:44 2015 Page 2

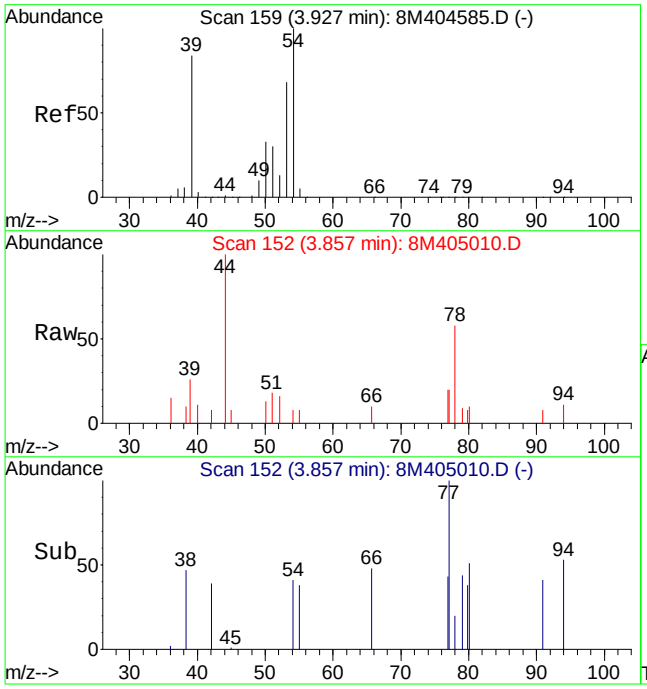

#5
1,3-Butadiene
Concen: Below Cal
RT: 3.86 min Scan# 152
Delta R.T. -0.05 min
Lab File: 8M405010.D
Acq: 29 May 2015 22:18

Tgt Ion: 54 Resp: 202

Ion	Ratio	Lower	Upper
54	100		
39	757.9	50.7	118.3#
53	0.0	40.4	94.4#

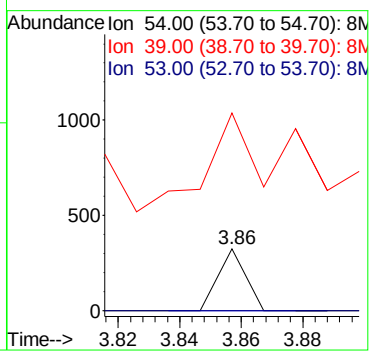

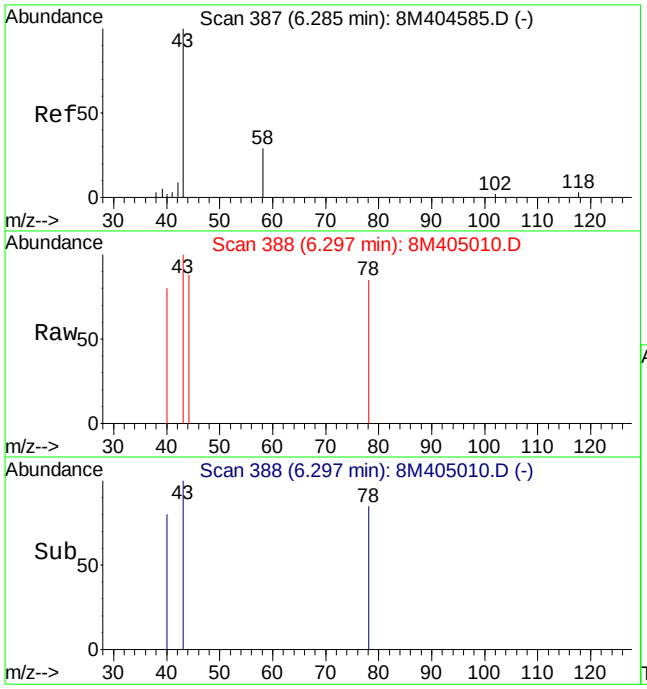

#13
Acetone
Concen: 0.48 ug/L
RT: 6.30 min Scan# 388
Delta R.T. 0.01 min
Lab File: 8M405010.D
Acq: 29 May 2015 22:18

Tgt Ion: 43 Resp: 623

Ion	Ratio	Lower	Upper
43	100		
58	0.0	23.2	54.0#

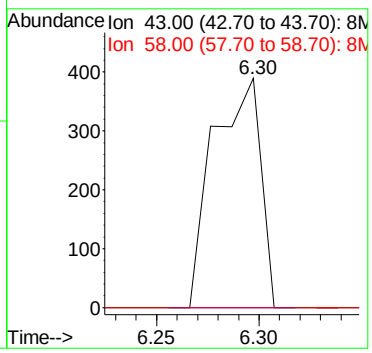

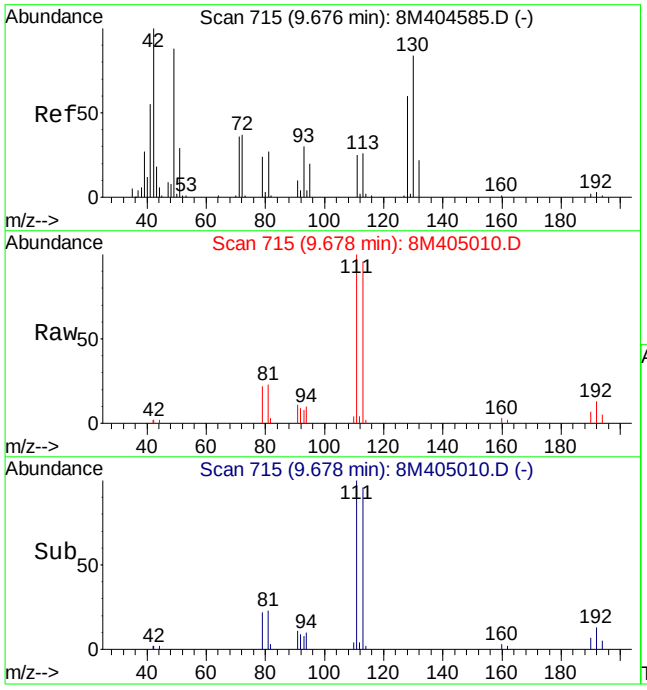

#36
Tetrahydrofuran
Concen: 0.30 ug/L
RT: 9.68 min Scan# 715
Delta R.T. -0.00 min
Lab File: 8M405010.D
Acq: 29 May 2015 22:18

Tgt Ion: 42 Resp: 430

Ion	Ratio	Lower	Upper
42	100		
72	0.0	27.5	64.3#
71	0.0	25.4	59.2#

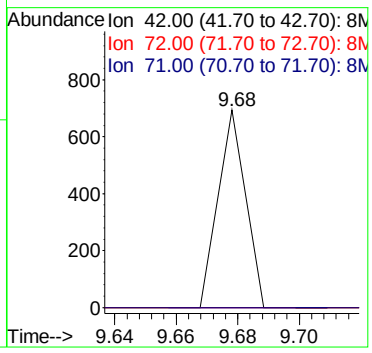

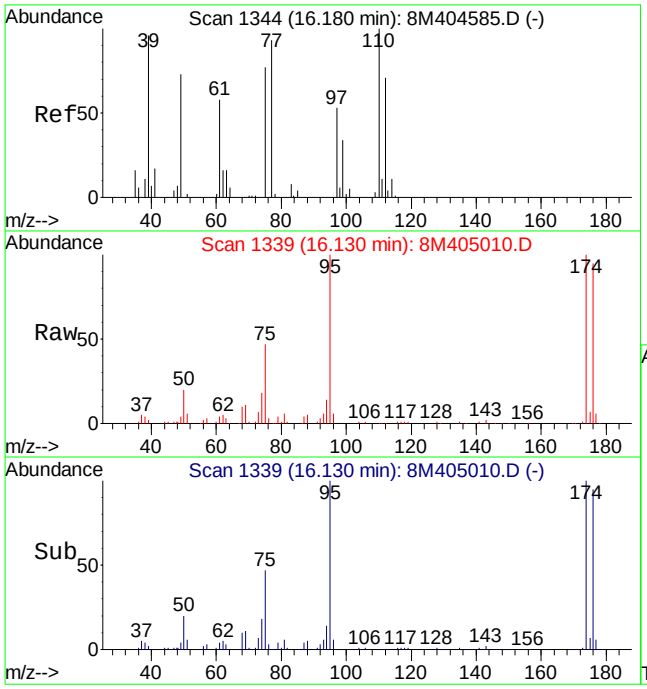

#81
1,2,3-Trichloropropane
Concen: 0.16 ug/L
RT: 16.13 min Scan# 1339
Delta R.T. -0.05 min
Lab File: 8M405010.D
Acq: 29 May 2015 22:18

Tgt Ion:110 Resp: 265

Ion	Ratio	Lower	Upper
110	100		
75	56633.2	115.6	269.6#
97	82.3	36.7	85.7

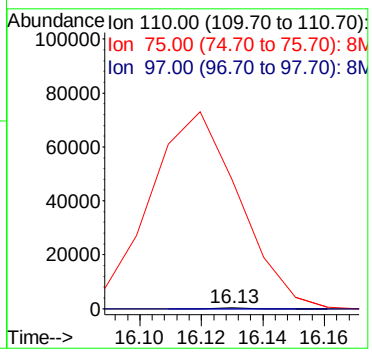

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400358.D Vial: 2
Acq On : 2 Oct 2014 12:24 Operator: TMB
Sample : WG494714-02 5ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:40 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	619208	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	544510	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	254129	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	1884	4.8234 ug/L #	23
3) 3-Chloro-1-propene	7.26	41	51461	4.9911 ug/L	88
4) 2-Chloro-1,3-butadiene	8.64	53	57885	4.7445 ug/L	89
5) Ethyl Acetate	9.28	43	12831	4.1474 ug/L	98
6) Methacrylonitrile	9.44	67	7738	4.2085 ug/L #	61
7) Isobutyl Alcohol	9.28	43	12831	104.0280 ug/L #	12
9) Methyl methacrylate	11.60	41	14247	4.0960 ug/L	83
10) 2-Nitropropane	11.94	43	3986	3.8294 ug/L	98
13) Cyclohexanone	16.03	55	1559	3.8882 ug/L #	43

(#) = qualifier out of range (m) = manual integration
8M400358.D A9FOOWTR.M Fri Oct 03 12:32:40 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400358.D Vial: 2
Acq On : 2 Oct 2014 12:24 Operator: TMB
Sample : WG494714-02 5ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

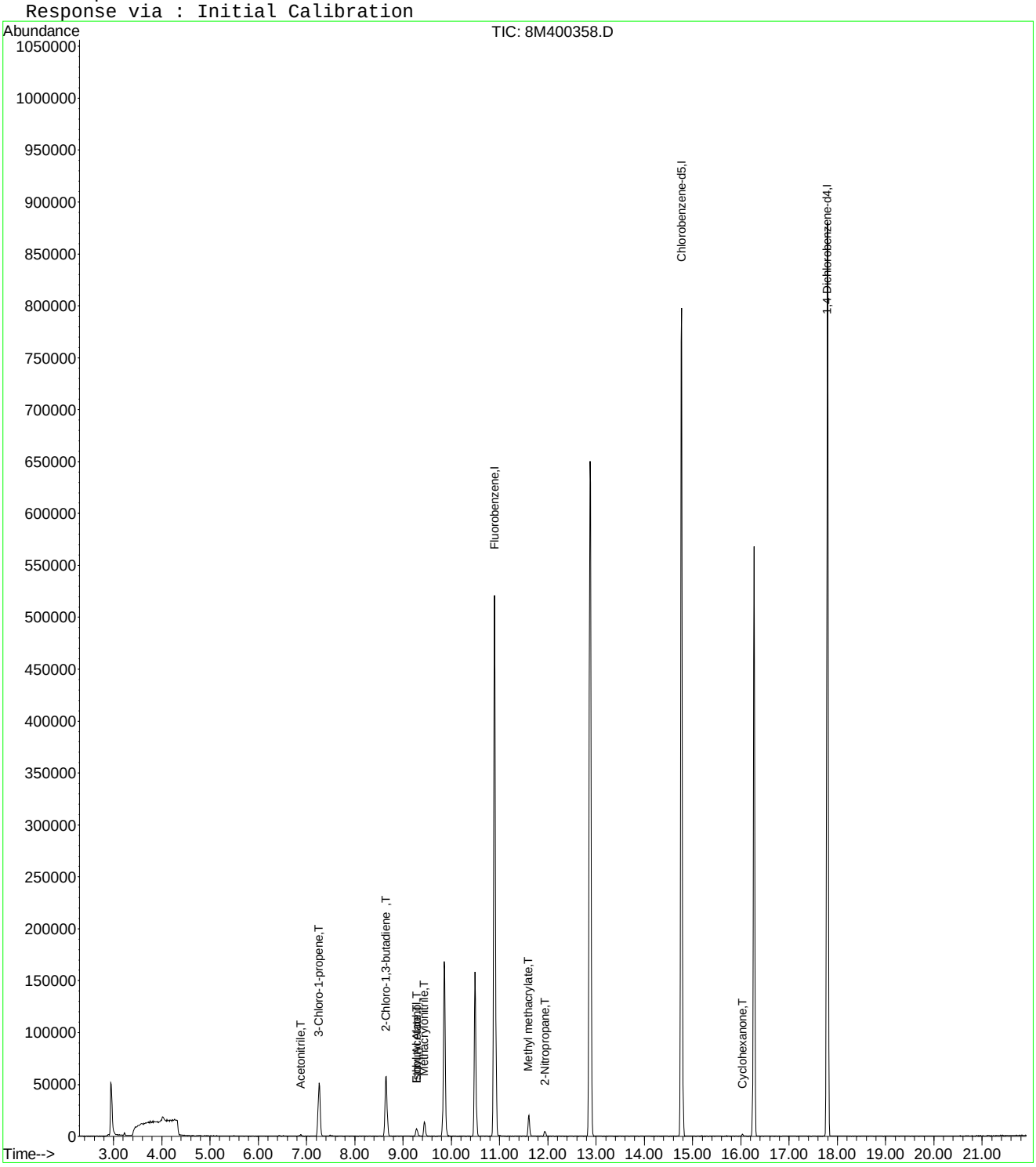

8M400358.D A9FOOWTR.M Fri Oct 03 12:32:41 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400359.D Vial: 3
Acq On : 2 Oct 2014 12:53 Operator: TMB
Sample : WG494714-03 20ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:41 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	590707	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	530005	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	246254	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	7263	19.4920 ug/L	97
3) 3-Chloro-1-propene	7.26	41	190581	19.3757 ug/L	90
4) 2-Chloro-1,3-butadiene	8.65	53	226534	19.4636 ug/L	90
5) Ethyl Acetate	9.28	43	54503	18.4670 ug/L	94
6) Methacrylonitrile	9.44	67	30898	17.6155 ug/L #	65
7) Isobutyl Alcohol	9.45	43	3143	26.7115 ug/L #	95
9) Methyl methacrylate	11.61	41	58234	17.5500 ug/L	72
10) 2-Nitropropane	11.94	43	16687	16.8050 ug/L	98
13) Cyclohexanone	16.03	55	7124	18.3357 ug/L	88

(#) = qualifier out of range (m) = manual integration
8M400359.D A9FOOWTR.M Fri Oct 03 12:32:41 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400359.D Vial: 3
Acq On : 2 Oct 2014 12:53 Operator: TMB
Sample : WG494714-03 20ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

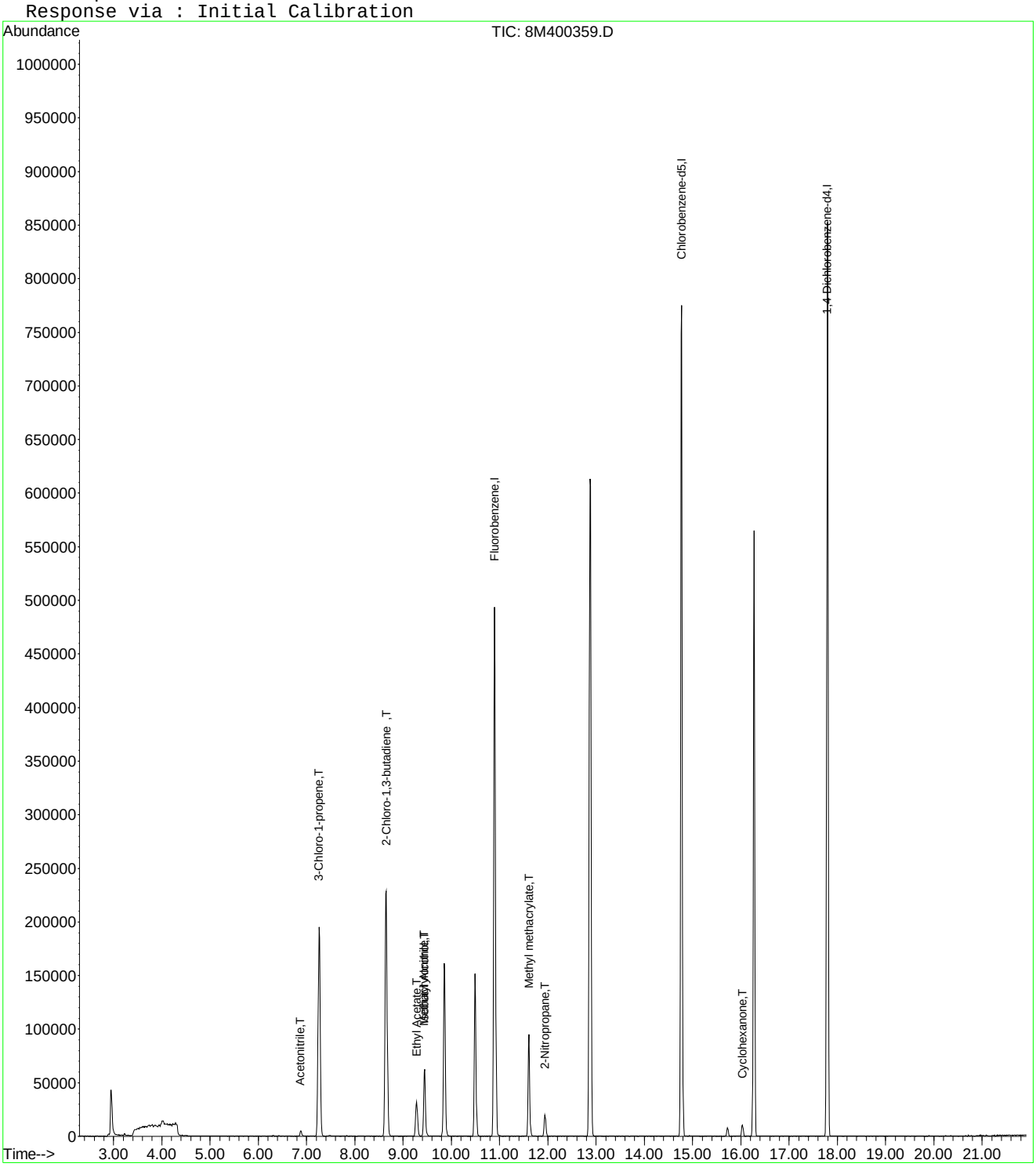

8M400359.D A9FOOWTR.M Fri Oct 03 12:32:42 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400360.D Vial: 4
Acq On : 2 Oct 2014 13:22 Operator: TMB
Sample : WG494714-04 50ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:42 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	590667	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	524443	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	249595	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	17698	47.5001 ug/L	100
3) 3-Chloro-1-propene	7.26	41	491365	49.9588 ug/L	90
4) 2-Chloro-1,3-butadiene	8.65	53	586258	50.3743 ug/L	90
5) Ethyl Acetate	9.27	43	145862	49.4250 ug/L	93
6) Methacrylonitrile	9.44	67	84924	48.4200 ug/L #	62
7) Isobutyl Alcohol	9.46	43	9563	81.2789 ug/L #	95
8) 1-Butanol	10.38	56	1895	48.4971 ug/L	87
9) Methyl methacrylate	11.61	41	161451	48.6599 ug/L	75
10) 2-Nitropropane	11.94	43	45766	46.0929 ug/L	98
13) Cyclohexanone	16.04	55	19698	50.0200 ug/L	89

(#) = qualifier out of range (m) = manual integration
8M400360.D A9FOOWTR.M Fri Oct 03 12:32:42 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400360.D Vial: 4
Acq On : 2 Oct 2014 13:22 Operator: TMB
Sample : WG494714-04 50ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

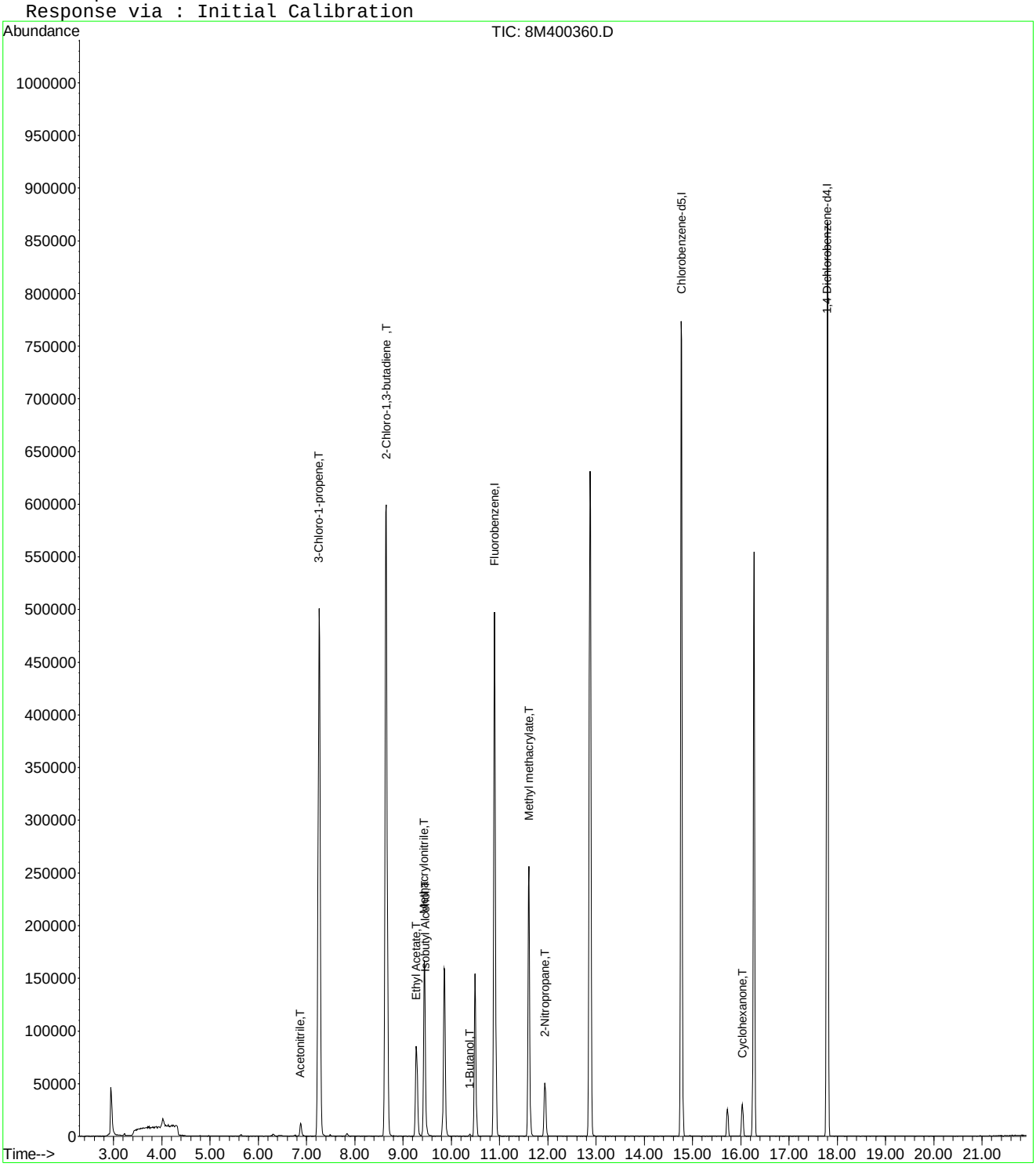

8M400360.D A9FOOWTR.M Fri Oct 03 12:32:42 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400361.D Vial: 5
Acq On : 2 Oct 2014 13:51 Operator: TMB
Sample : WG494714-05 100ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:43 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	595542	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	525736	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	251203	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	38265	101.8596 ug/L	98
3) 3-Chloro-1-propene	7.26	41	1042545	105.1315 ug/L	90
4) 2-Chloro-1,3-butadiene	8.65	53	1239135	105.6013 ug/L	88
5) Ethyl Acetate	9.27	43	315872	106.1564 ug/L	93
6) Methacrylonitrile	9.44	67	182857	103.4038 ug/L #	63
7) Isobutyl Alcohol	9.45	43	23247	195.9661 ug/L #	92
8) 1-Butanol	10.38	56	5482	96.3312 ug/L	88
9) Methyl methacrylate	11.61	41	351287	105.0082 ug/L	73
10) 2-Nitropropane	11.94	43	103249	103.1352 ug/L	99
13) Cyclohexanone	16.04	55	43523	109.8125 ug/L	88

(#) = qualifier out of range (m) = manual integration
8M400361.D A9FOOWTR.M Fri Oct 03 12:32:43 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400361.D Vial: 5
Acq On : 2 Oct 2014 13:51 Operator: TMB
Sample : WG494714-05 100ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

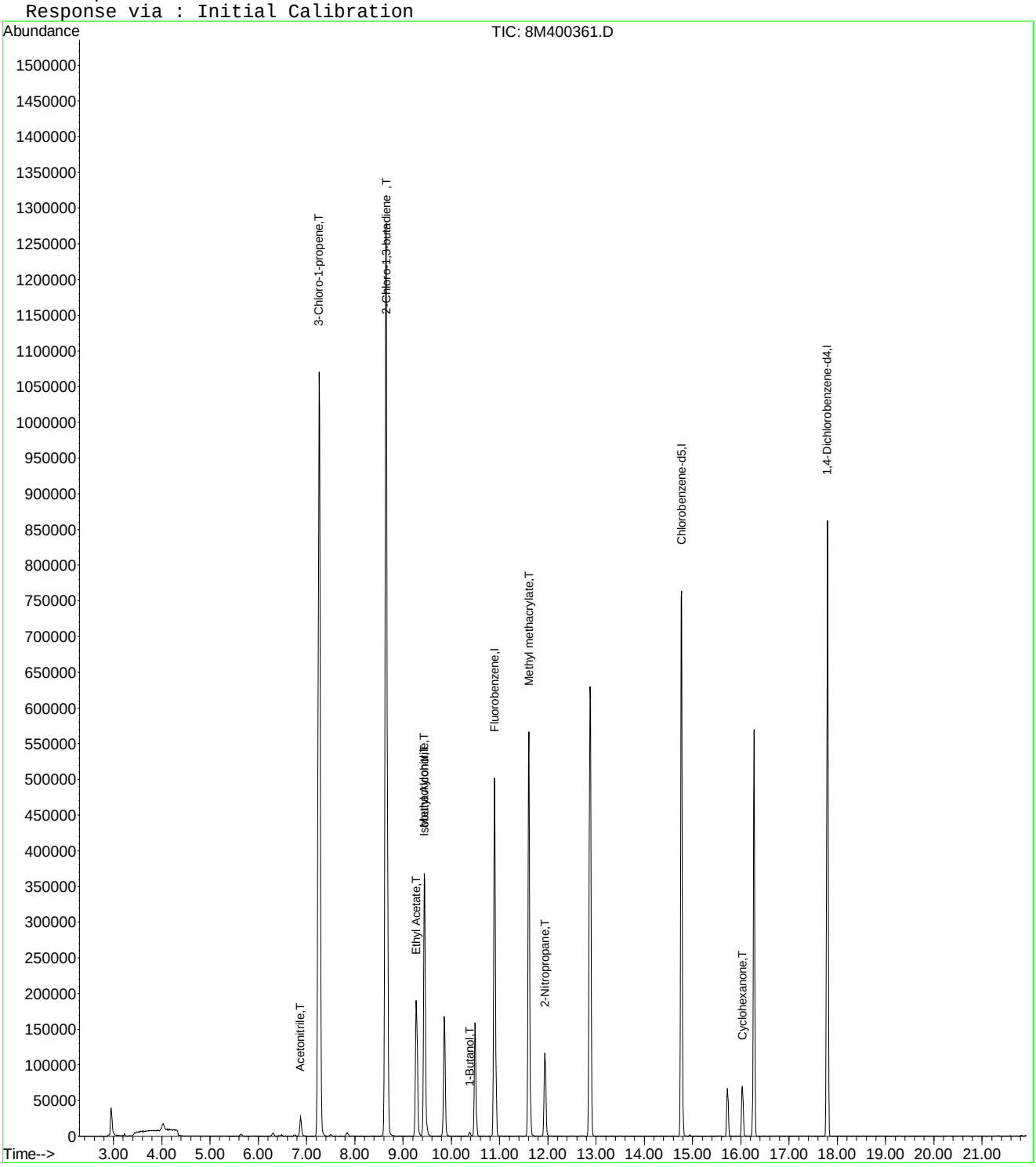

8M400361.D A9FOOWTR.M Fri Oct 03 12:32:43 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400362.D Vial: 6
Acq On : 2 Oct 2014 14:19 Operator: TMB
Sample : WG494714-06 200ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:43 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	605985	25.00 ug/L	-0.02
11) Chlorobenzene-d5	14.77	117	543073	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.80	152	256990	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	81322	212.7447 ug/L	93
3) 3-Chloro-1-propene	7.26	41	2105378	208.6501 ug/L	89
4) 2-Chloro-1,3-butadiene	8.65	53	2530154	211.9083 ug/L	84
5) Ethyl Acetate	9.28	43	654842	216.2828 ug/L	92
6) Methacrylonitrile	9.44	67	386897	215.0159 ug/L #	62
7) Isobutyl Alcohol	9.44	43	51188	424.0654 ug/L	97
8) 1-Butanol	10.37	56	13189	196.5131 ug/L	88
9) Methyl methacrylate	11.60	41	747593	219.6225 ug/L	71
10) 2-Nitropropane	11.94	43	227212	223.0503 ug/L	99
13) Cyclohexanone	16.03	55	76140	187.7821 ug/L	85

(#) = qualifier out of range (m) = manual integration
8M400362.D A9FOOWTR.M Fri Oct 03 12:32:44 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400362.D Vial: 6
Acq On : 2 Oct 2014 14:19 Operator: TMB
Sample : WG494714-06 200ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

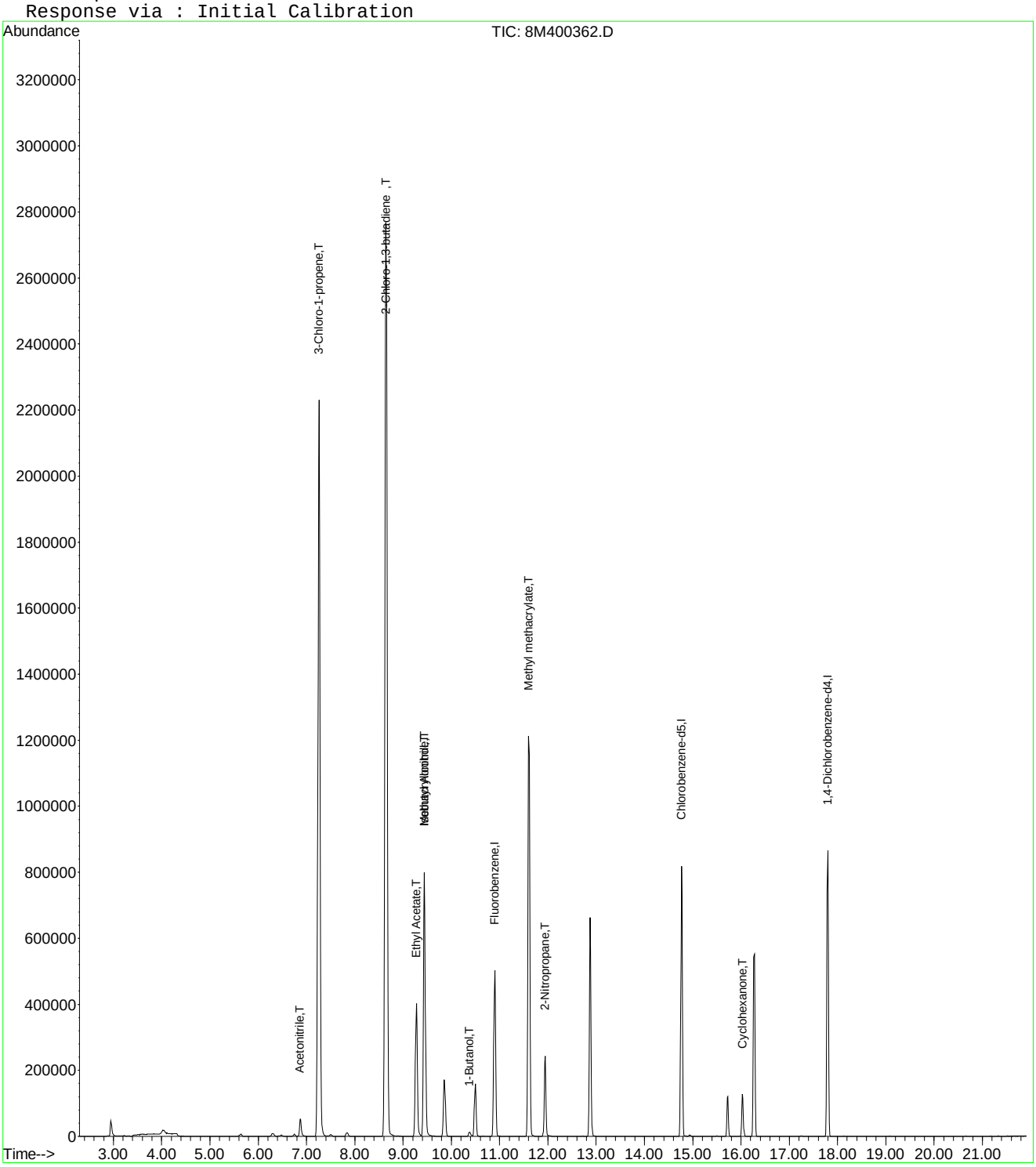

8M400362.D A9FOOWTR.M Fri Oct 03 12:32:44 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400363.D Vial: 7
Acq On : 2 Oct 2014 14:48 Operator: TMB
Sample : WG494714-07 300ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:45 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	617316	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	555877	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	259867	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	120718	310.0110 ug/L	94
3) 3-Chloro-1-propene	7.26	41	3133181	304.8093 ug/L	86
4) 2-Chloro-1,3-butadiene	8.64	53	3764580	309.5080 ug/L	79
5) Ethyl Acetate	9.27	43	984728	319.2685 ug/L	92
6) Methacrylonitrile	9.44	67	589378	321.5315 ug/L #	62
7) Isobutyl Alcohol	9.45	43	76604	622.9747 ug/L	98
8) 1-Butanol	10.37	56	23186	322.5015 ug/L	89
9) Methyl methacrylate	11.61	41	1120843	323.2293 ug/L	70
10) 2-Nitropropane	11.94	43	340074	327.7172 ug/L	99
13) Cyclohexanone	16.03	55	133635	325.9318 ug/L	85

(#) = qualifier out of range (m) = manual integration
8M400363.D A9FOOWTR.M Fri Oct 03 12:32:45 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400363.D Vial: 7
Acq On : 2 Oct 2014 14:48 Operator: TMB
Sample : WG494714-07 300ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

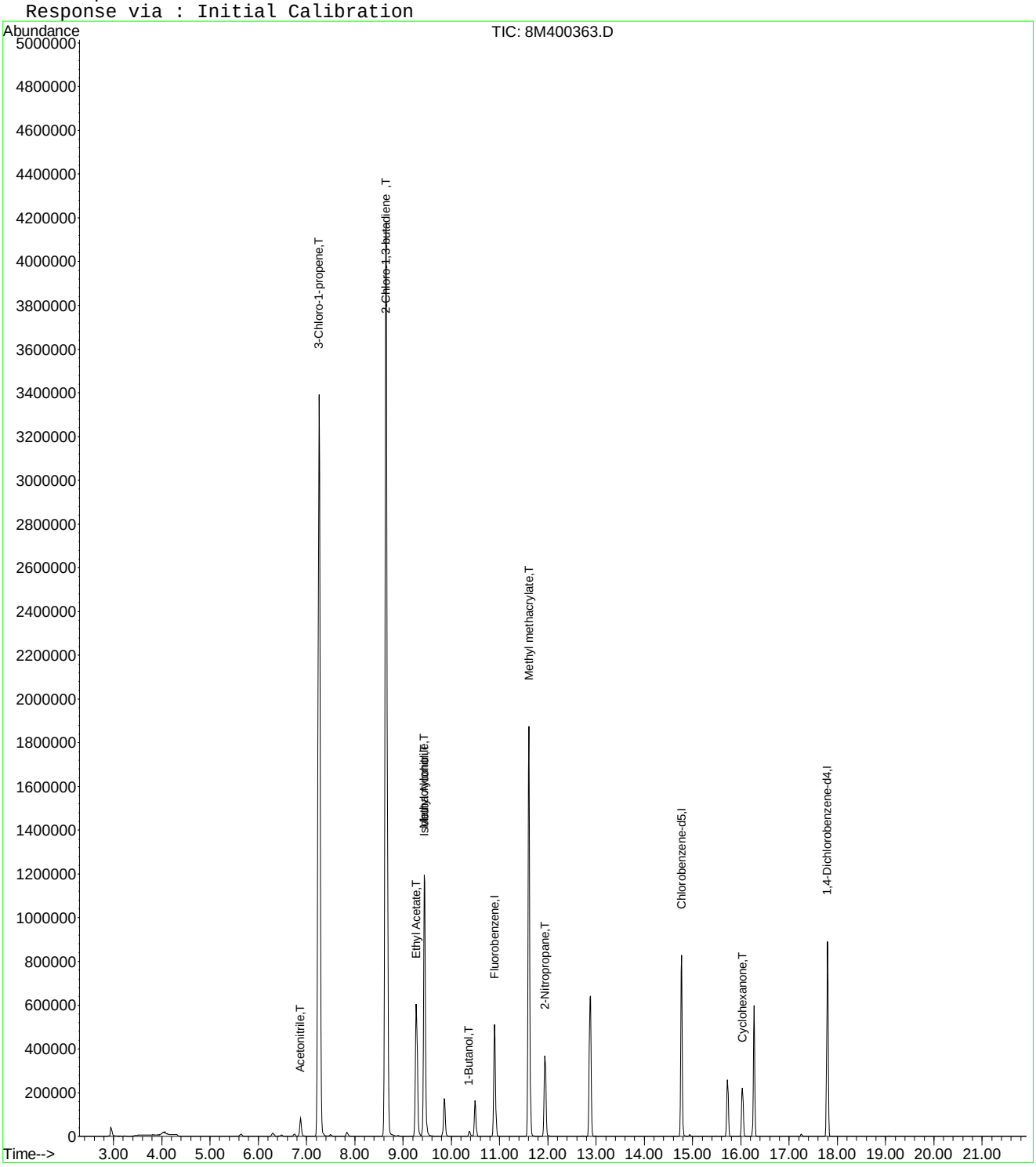

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400364.D Vial: 8
Acq On : 2 Oct 2014 15:16 Operator: TMB
Sample : WG494714-08 400ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:46 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	618926	25.00 ug/L	-0.02
11) Chlorobenzene-d5	14.77	117	559909	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.80	152	262346	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	151708	388.5818 ug/L	95
3) 3-Chloro-1-propene	7.26	41	4028272	390.8682 ug/L	83
4) 2-Chloro-1,3-butadiene	8.65	53	4802050	393.7774 ug/L	74
5) Ethyl Acetate	9.28	43	1250397	404.3491 ug/L	91
6) Methacrylonitrile	9.44	67	762998	415.1660 ug/L #	61
7) Isobutyl Alcohol	9.45	43	102436	830.8840 ug/L #	97
8) 1-Butanol	10.37	56	28243	386.8957 ug/L	89
9) Methyl methacrylate	11.60	41	1436773	413.2595 ug/L	68
10) 2-Nitropropane	11.94	43	451706	434.1607 ug/L	98
13) Cyclohexanone	16.03	55	150327	363.1785 ug/L	84

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400364.D Vial: 8
Acq On : 2 Oct 2014 15:16 Operator: TMB
Sample : WG494714-08 400ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

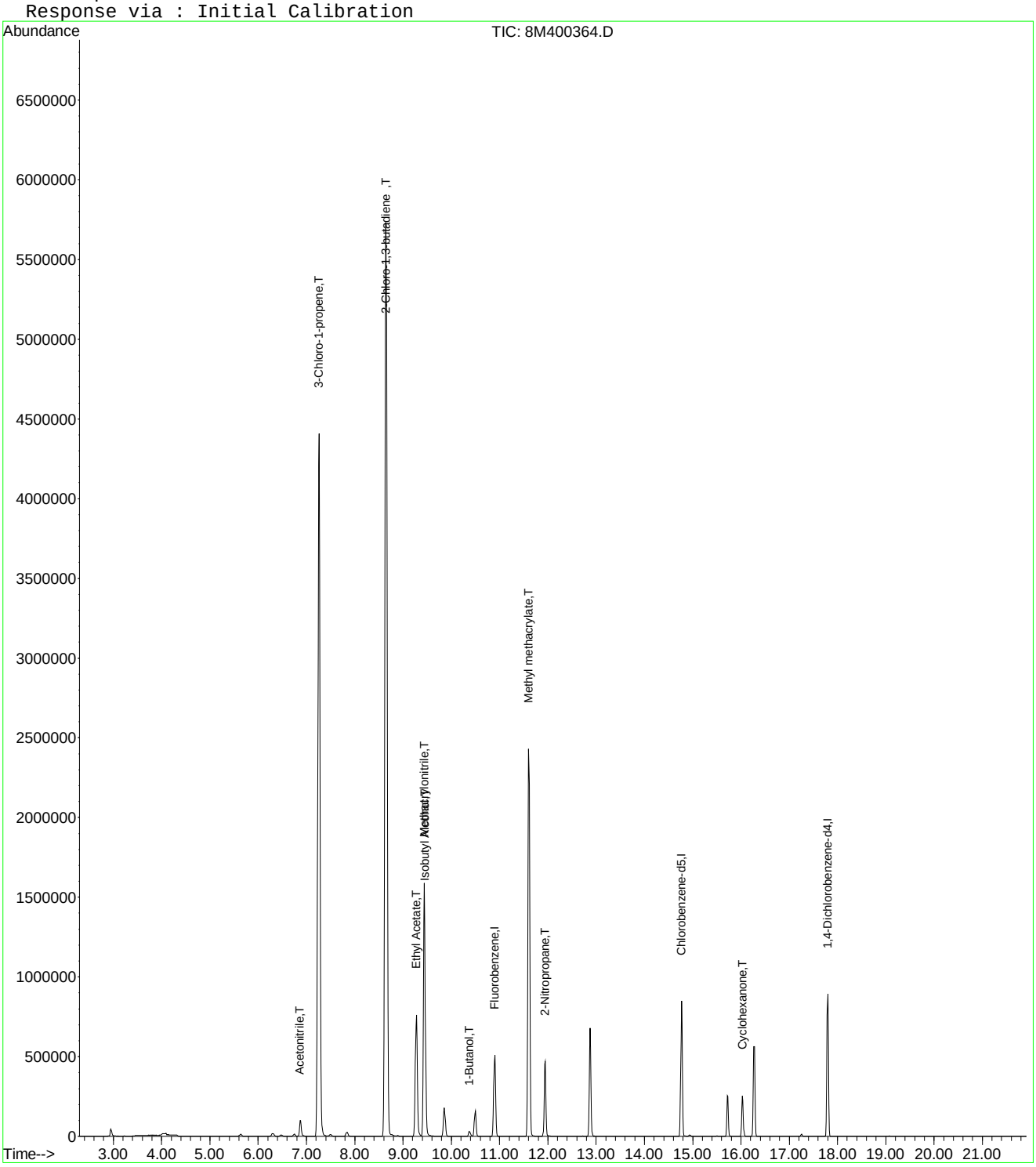

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400365.D Vial: 9
Acq On : 2 Oct 2014 15:45 Operator: TMB
Sample : WG494714-09 500ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:47 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	611679	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	574048	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	266141	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	197468	511.7830 ug/L	95
3) 3-Chloro-1-propene	7.26	41	4817953	473.0307 ug/L	79
4) 2-Chloro-1,3-butadiene	8.64	53	5656851	469.3686 ug/L	68
5) Ethyl Acetate	9.27	43	1590123	520.3008 ug/L	90
6) Methacrylonitrile	9.44	67	990168	545.1581 ug/L #	61
7) Isobutyl Alcohol	9.45	43	130410	1070.3205 ug/L	98
8) 1-Butanol	10.38	56	36529	499.2614 ug/L	87
9) Methyl methacrylate	11.61	41	1840524	535.6626 ug/L	68
10) 2-Nitropropane	11.94	43	590003	573.8046 ug/L	98
13) Cyclohexanone	16.04	55	203273	484.0894 ug/L	84

(#) = qualifier out of range (m) = manual integration
8M400365.D A9FOOWTR.M Fri Oct 03 12:32:47 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400365.D Vial: 9
Acq On : 2 Oct 2014 15:45 Operator: TMB
Sample : WG494714-09 500ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

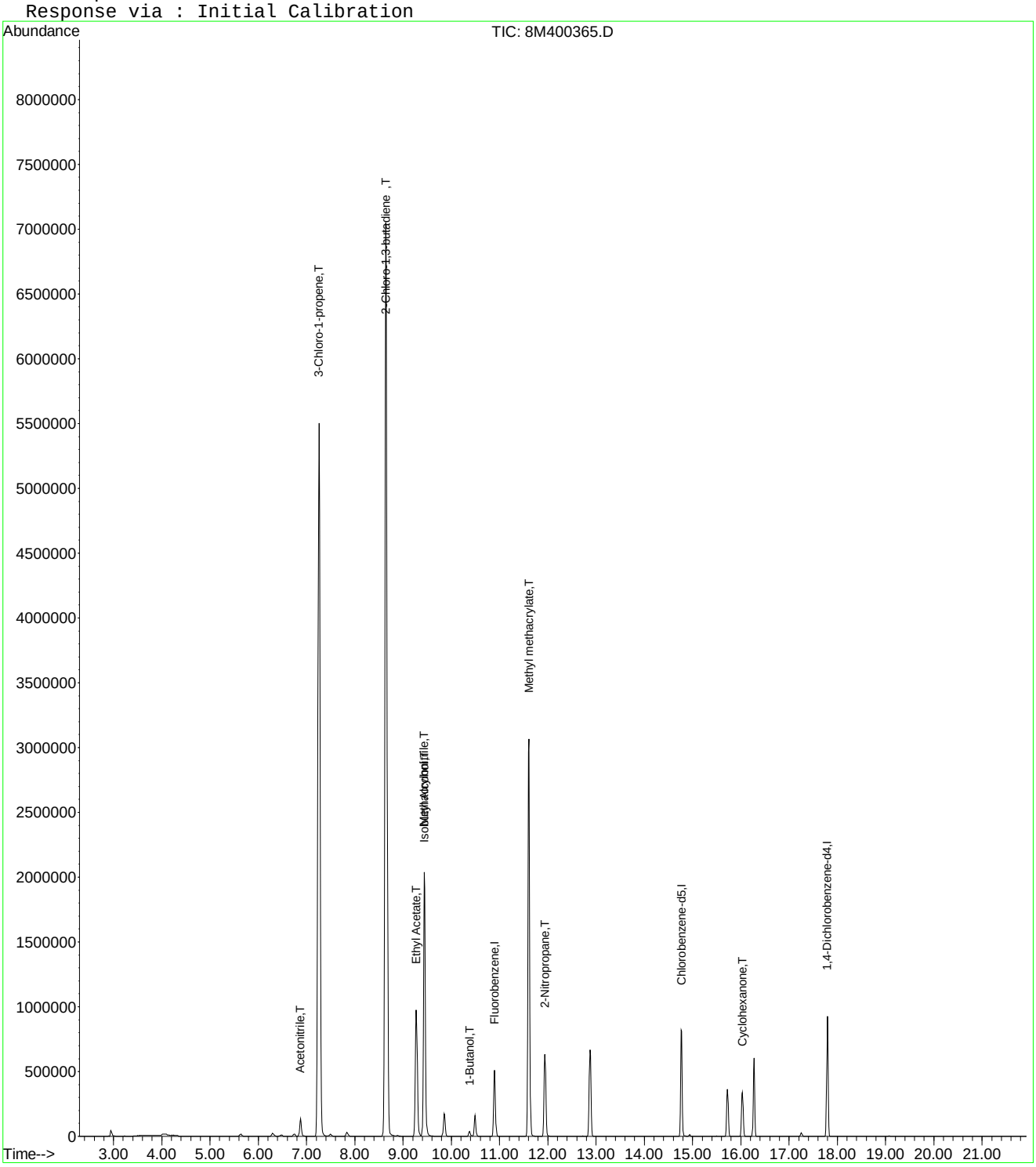

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400367.D Vial: 11
Acq On : 2 Oct 2014 16:47 Operator: TMB
Sample : WG494714-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66677 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:48 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	548066	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	508831	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	240116	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	36847	106.5815 ug/L	98
3) 3-Chloro-1-propene	7.26	41	1001386	109.7284 ug/L	90
4) 2-Chloro-1,3-butadiene	8.64	53	982184	90.9542 ug/L	89
5) Ethyl Acetate	9.27	43	328991	120.1430 ug/L	94
6) Methacrylonitrile	9.44	67	174278	107.0895 ug/L #	64
7) Isobutyl Alcohol	9.45	43	21185	194.0538 ug/L	99
8) 1-Butanol	10.39	56	5303	100.0865 ug/L	77
9) Methyl methacrylate	11.61	41	317777	103.2198 ug/L	73
10) 2-Nitropropane	11.94	43	95761	103.9416 ug/L	99
13) Cyclohexanone	16.03	55	11614	30.6562 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M400367.D A9FOOWTR.M Fri Oct 03 12:32:49 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400367.D Vial: 11
Acq On : 2 Oct 2014 16:47 Operator: TMB
Sample : WG494714-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66677 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

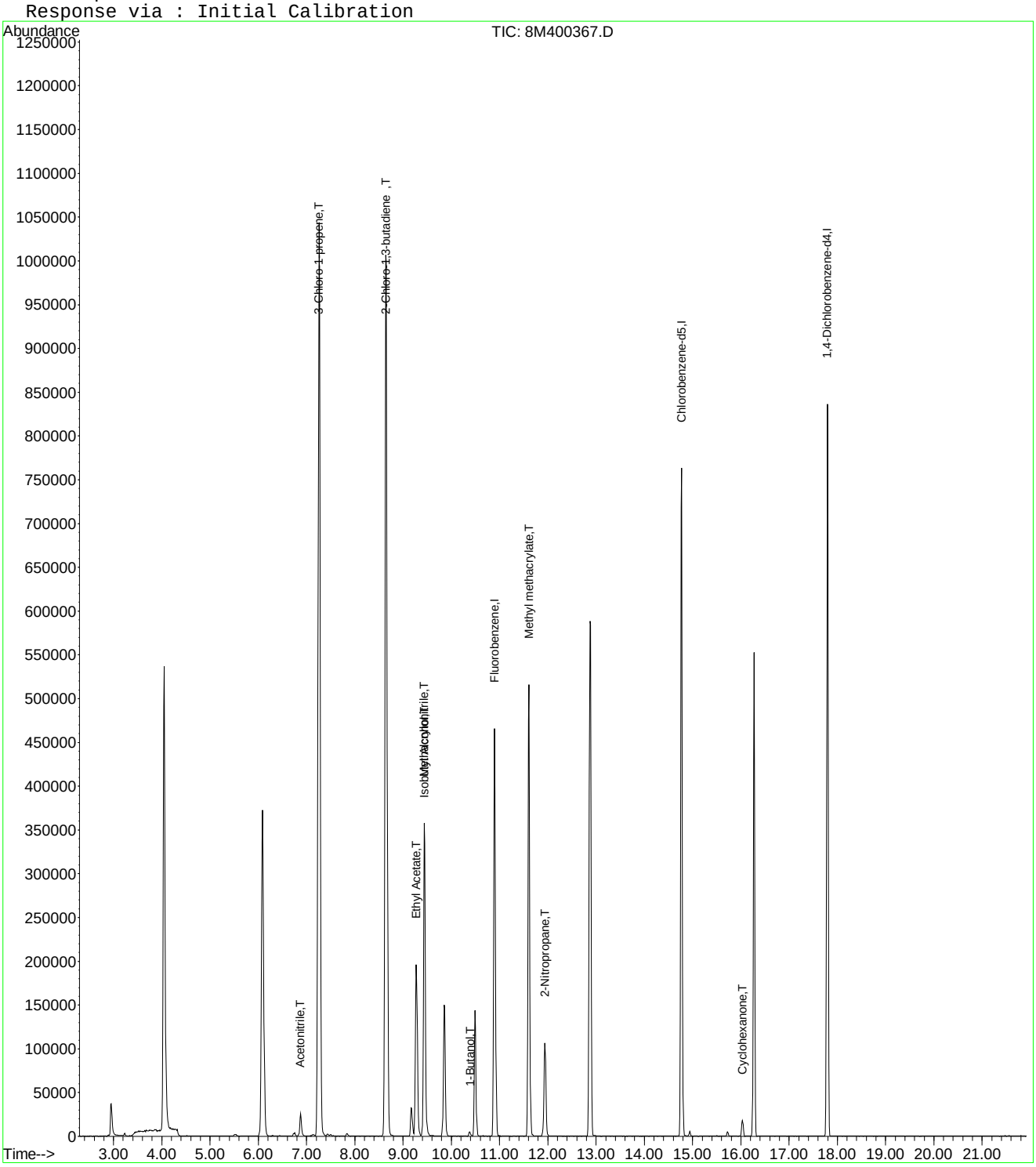

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\100214\8M400367.D Vial: 11
Acq On : 2 Oct 2014 16:47 Operator: TMB
Sample : WG494714-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66677 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	92	-0.03
2	T	Acetonitrile	100.0000	106.5815	-6.6	96	-0.02
3	T	3-Chloro-1-propene	100.0000	109.7284	-9.7	96	-0.03
4	T	2-Chloro-1,3-butadiene	100.0000	90.9542	9.0	79	-0.03
5	T	Ethyl Acetate	100.0000	120.1430	-20.1	104	-0.02
6	T	Methacrylonitrile	100.0000	107.0895	-7.1	95	-0.03
7	T	Isobutyl Alcohol	200.0000	194.0538	3.0	91	-0.02
8	T	1-Butanol	100.0000	100.0865	-0.1	97	0.00
9	T	Methyl methacrylate	100.0000	103.2198	-3.2	90	-0.02
10	T	2-Nitropropane	100.0000	103.9416	-3.9	93	-0.03
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	97	-0.03
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	96	-0.04
13	T	Cyclohexanone	100.0000	30.6562	69.3	27	-0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M400367.D A9FOOWTR.M Fri Oct 03 12:33:23 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404579.D Vial: 3
Acq On : 12 May 2015 16:50 Operator: TMB
Sample : WG523161-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:12 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:43:58 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	686121	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	491169	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.65	152	260131	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
80) p-Bromofluorobenzene	0.00	95	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.20	85	2048	0.1926 ug/L	86
3) Chloromethane	3.66	50	9733	0.4585 ug/L	81
4) Vinyl Chloride	3.89	62	5954	0.2976 ug/L	92
6) Bromomethane	4.78	94	888	0.9695 ug/L #	29
7) Chloroethane	4.93	64	1608	0.2954 ug/L #	61
8) Trichlorofluoromethane	5.42	101	3385	0.2695 ug/L #	80
10) Isoprene	6.00	67	2101	0.2256 ug/L #	57
12) 1,1,2-Trichloro-1,2,2-Trif	6.20	101	1894	0.2671 ug/L	56
13) Acetone	6.28	43	313	0.3194 ug/L #	36
14) 1,1-Dichloroethene	6.52	61	3506	0.2908 ug/L	76
16) Dimethyl Sulfide	6.78	62	1875	0.2667 ug/L	83
18) Methyl acetate	7.06	43	570	0.1630 ug/L #	58
19) Methylene Chloride	7.30	84	1819	0.2647 ug/L #	13
20) Carbon Disulfide	7.34	76	7144	0.3220 ug/L	89
22) Methyl Tert Butyl Ether	7.53	73	3822	0.2887 ug/L #	62
23) trans-1,2-Dichloroethene	7.74	61	3271	0.2841 ug/L	66
24) n-Hexane	7.83	57	2928	0.2515 ug/L	88
26) Vinyl Acetate	8.34	43	3028	0.3597 ug/L #	71
27) 1,1-Dichloroethane	8.37	63	5008	0.3604 ug/L #	79
29) 2-Butanone	8.93	43	453	0.2837 ug/L #	49
31) 2,2-Dichloropropane	9.14	77	3681	0.3210 ug/L	85
32) cis-1,2-Dichloroethene	9.21	96	2604	0.3293 ug/L	91
33) Chloroform	9.42	83	3741	0.2898 ug/L	89
35) Bromochloromethane	9.66	130	1064	0.2639 ug/L #	47
36) Tetrahydrofuran	9.69	42	742	0.6900 ug/L #	32
38) 1,1,1-Trichloroethane	9.96	97	3379	0.2884 ug/L	96
39) Cyclohexane	10.00	56	3808	0.2681 ug/L #	87
40) 1,1-Dichloropropene	10.14	75	2928	0.2872 ug/L #	71
42) Carbon Tetrachloride	10.29	117	2361	0.2217 ug/L	85
45) 1,2-Dichloroethane	10.47	62	2773	0.2997 ug/L	96
46) Benzene	10.50	78	8640	0.3146 ug/L	97
47) Trichloroethene	11.26	130	2342	0.3224 ug/L	94
48) Methylcyclohexane	11.34	83	3466	0.2940 ug/L	93
49) 1,2-Dichloropropane	11.48	63	1845	0.2399 ug/L	87
50) Bromodichloromethane	11.76	83	2889	0.3051 ug/L #	95
52) Dibromomethane	11.87	93	917	0.2531 ug/L #	54
53) 2-Chloroethyl Vinyl Ether	12.09	63	251	Below Cal #	1
55) cis-1,3-Dichloropropene	12.41	75	3322	0.3209 ug/L	81
56) Dimethyl Disulfide	12.66	79	1068	3.1879 ug/L	88
59) Toluene	12.83	91	9961	0.3419 ug/L	76

(#) = qualifier out of range (m) = manual integration
8M404579.D 8260WT.M Wed May 13 06:46:12 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404579.D Vial: 3
Acq On : 12 May 2015 16:50 Operator: TMB
Sample : WG523161-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:12 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:43:58 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
60)	Ethyl Methacrylate	12.92	69	836	0.1613 ug/L #	31
62)	trans-1,3-Dichloropropene	13.01	75	2509	0.2873 ug/L	87
63)	1,1,2-Trichloroethane	13.21	97	1152	0.2545 ug/L	100
65)	1,3-Dichloropropane	13.53	76	2228	0.2808 ug/L	87
66)	Tetrachloroethene	13.66	164	1478	0.2404 ug/L #	77
67)	Dibromochloromethane	13.91	129	2244	0.3726 ug/L	69
68)	1,2-Dibromoethane	14.17	107	698	0.1615 ug/L #	54
69)	1-Chlorohexane	14.26	91	2890	0.2900 ug/L	92
70)	Chlorobenzene	14.67	112	5841	0.2970 ug/L	96
71)	1,1,1,2-Tetrachloroethane	14.72	131	1900	0.2692 ug/L	86
72)	Ethylbenzene	14.71	106	2753	0.2337 ug/L #	1
73)	m-,p-Xylene	14.78	106	7323	0.5498 ug/L #	22
74)	o-Xylene	15.35	106	3679	0.2795 ug/L #	50
75)	Styrene	15.39	104	5769	0.2767 ug/L	99
76)	Bromoform	15.88	173	482	0.9047 ug/L #	57
77)	Isopropylbenzene	15.78	105	9462	0.2939 ug/L	87
79)	1,1,2,2-Tetrachloroethane	15.98	83	1325	0.2681 ug/L #	80
81)	1,2,3-Trichloropropane	16.18	110	215	0.1606 ug/L #	1
83)	n-Propylbenzene	16.28	91	13082	0.3324 ug/L #	66
84)	Bromobenzene	16.42	156	2742	0.3508 ug/L	85
85)	1,3,5-Trimethylbenzene	16.47	105	8035	0.2984 ug/L	91
86)	2-Chlorotoluene	16.55	91	8093	0.3047 ug/L #	59
87)	4-Chlorotoluene	16.60	91	6492	0.3056 ug/L	77
88)	a-Methylstyrene	16.87	118	3783	0.2467 ug/L	88
89)	tert-Butylbenzene	16.93	134	1688	0.2820 ug/L #	69
90)	1,2,4-Trimethylbenzene	16.99	105	8182	0.2955 ug/L	73
91)	sec-Butylbenzene	17.20	105	10759	0.3204 ug/L #	77
92)	p-Isopropyltoluene	17.37	119	7368	0.2588 ug/L	78
93)	1,3-Dichlorobenzene	17.55	146	5344	0.3374 ug/L #	72
94)	1,4-Dichlorobenzene	17.68	146	5757	0.3580 ug/L #	37
95)	n-Butylbenzene	17.89	91	8329	0.2995 ug/L	84
96)	1,2-Dichlorobenzene	18.19	146	4259	0.3098 ug/L	86
98)	1,2,4-Trichlorobenzene	20.33	180	2637	0.2546 ug/L #	71
99)	Hexachlorobutadiene	20.47	225	1581	0.2922 ug/L	88
100)	Naphthalene	20.70	128	4884	0.3517 ug/L #	72
101)	1,2,3-Trichlorobenzene	21.00	180	2811	0.3203 ug/L #	74

(#) = qualifier out of range (m) = manual integration
8M404579.D 8260WT.M Wed May 13 06:46:12 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404579.D Vial: 3
Acq On : 12 May 2015 16:50 Operator: TMB
Sample : WG523161-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

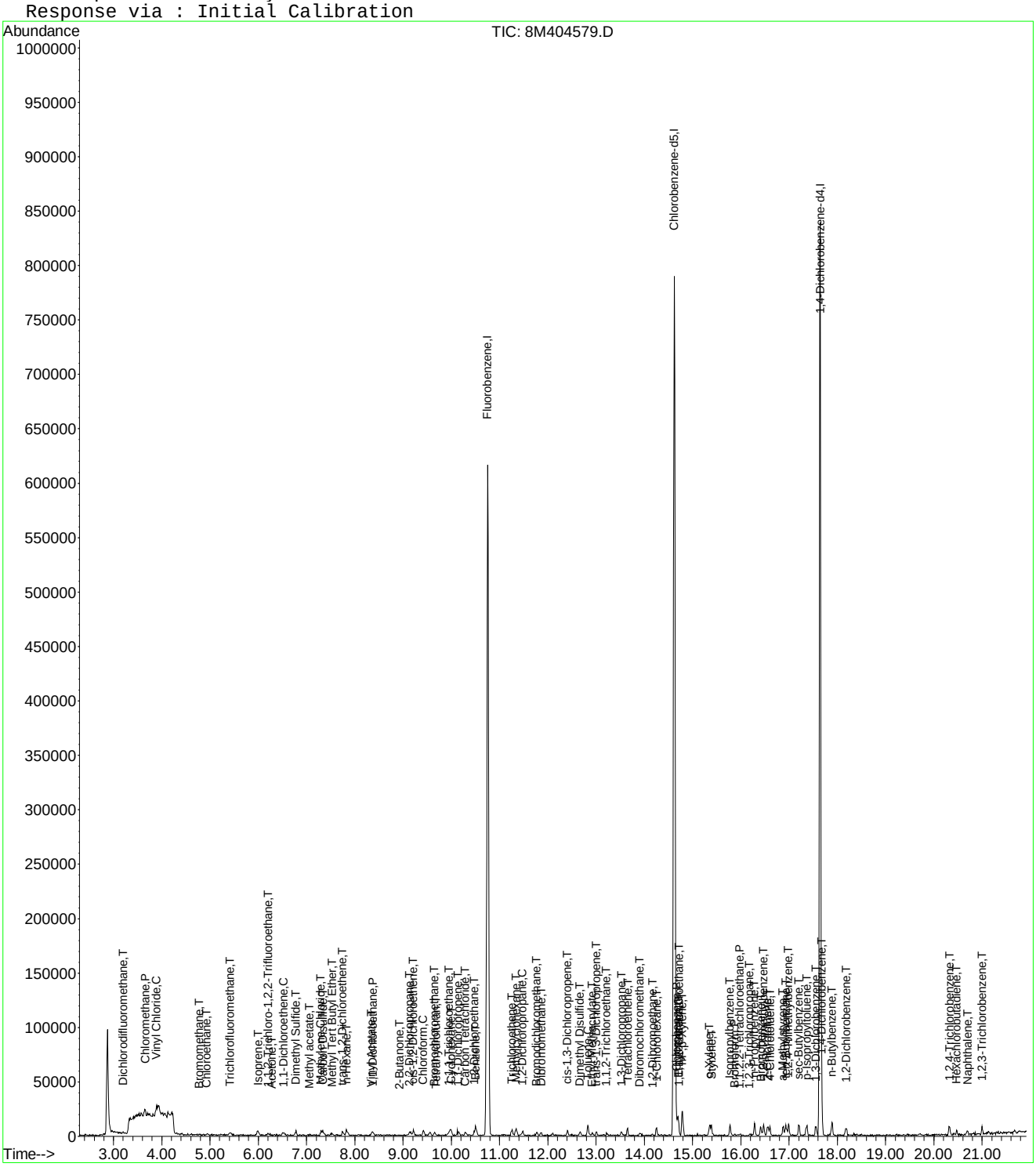

8M404579.D 8260WT.M Wed May 13 06:46:13 2015 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404579.D Vial: 3
Acq On : 12 May 2015 16:50 Operator: TMB
Sample : WG523161-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.1926	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.4585	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.2976	0.0	0	0.00
5	T	1,3-Butadiene	-1.0000	0.0459	0.0	0	0.03
6	T	Bromomethane	-1.0000	0.9695	0.0	100	0.00
7	T	Chloroethane	-1.0000	0.2954	0.0	100	0.00
8	T	Trichlorofluoromethane	-1.0000	0.2695	0.0	100	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.95#
10	T	Isoprene	-1.0000	0.2256	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.18#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2671	0.0	100	0.00
13	T	Acetone	-1.0000	0.3194	0.0	100	0.00
14	C	1,1-Dichloroethene	-1.0000	0.2908	0.0	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.63#
16	T	Dimethyl Sulfide	-1.0000	0.2667	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.03#
18	T	Methyl acetate	-1.0000	0.1630	0.0	100	0.02
19	T	Methylene Chloride	-1.0000	0.2647	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.3220	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.48#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2887	0.0	100	0.02
23	T	trans-1,2-Dichloroethene	-1.0000	0.2841	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.2515	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.17#
26	T	Vinyl Acetate	-1.0000	0.3597	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.3604	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.75#
29	T	2-Butanone	-1.0000	0.2837	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.04#
31	T	2,2-Dichloropropane	-1.0000	0.3210	0.0	100	-0.01
32	T	cis-1,2-Dichloroethene	-1.0000	0.3293	0.0	100	0.00
33	C	Chloroform	0.3000	0.2898	3.4	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.55#
35	T	Bromochloromethane	-1.0000	0.2639	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.6900	0.0	0	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.71#
38	T	1,1,1-Trichloroethane	-1.0000	0.2884	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.2681	0.0	100	0.02
40	T	1,1-Dichloropropene	-1.0000	0.2872	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.26#
42	T	Carbon Tetrachloride	-1.0000	0.2217	0.0	100	-0.01
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.35#
44		Heptane	-1.0000	0.0000	0.0	0	-2.58#
45	T	1,2-Dichloroethane	-1.0000	0.2997	0.0	100	0.00
46	T	Benzene	0.3000	0.3146	-4.9	100	0.00
47	T	Trichloroethene	-1.0000	0.3224	0.0	100	0.00
48	T	Methylcyclohexane	-1.0000	0.2940	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2399	0.0	100	0.00
50	T	Bromodichloromethane	-1.0000	0.3051	0.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.77#
52	T	Dibromomethane	-1.0000	0.2531	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	-0.8060	0.0	0	0.02
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.10#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404579.D Vial: 3
Acq On : 12 May 2015 16:50 Operator: TMB
Sample : WG523161-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.3209	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	3.1879	0.0	0	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0000	0.0	0	-12.73#
59	C	Toluene	-1.0000	0.3419	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.1613	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.18#
62	T	trans-1,3-Dichloropropene	-1.0000	0.2873	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.2545	0.0	100	-0.01
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.15#
65	T	1,3-Dichloropropane	-1.0000	0.2808	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.2404	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.3726	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.1615	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.2900	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.2970	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.2692	0.0	0	0.02
72	C	Ethylbenzene	-1.0000	0.2337	0.0	100	0.00
73	T	m-,p-Xylene	-1.0000	0.5498	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.2795	0.0	100	0.00
75	T	Styrene	-1.0000	0.2767	0.0	100	0.00
76	P	Bromoform	-1.0000	0.9047	0.0	0	0.00
77	T	Isopropylbenzene	-1.0000	0.2939	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2681	0.0	100	-0.01
80	S	p-Bromofluorobenzene	-1.0000	0.0000	0.0	0	-16.12#
81	T	1,2,3-Trichloropropane	-1.0000	0.1606	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.23#
83	T	n-Propylbenzene	-1.0000	0.3324	0.0	0	0.00
84	T	Bromobenzene	0.3000	0.3508	-16.9	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.2984	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.3047	0.0	0	0.00
87	T	4-Chlorotoluene	-1.0000	0.3056	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2467	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.2820	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.2955	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3204	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.2588	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.3374	0.0	100	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.3580	-19.3	100	-0.01
95	T	n-Butylbenzene	-1.0000	0.2995	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.3098	-3.3	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.17#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.2546	0.0	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.2922	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.3517	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.3203	-6.8	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M404579.D 8260WT.M Wed May 13 06:47:16 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404580.D Vial: 4
Acq On : 12 May 2015 17:19 Operator: TMB
Sample : WG523161-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:13 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	663902	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	470309	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.65	152	244778	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
80) p-Bromofluorobenzene	0.00	95	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.19	85	3796	0.3689 ug/L	92
3) Chloromethane	3.66	50	13511	0.6578 ug/L	93
4) Vinyl Chloride	3.89	62	9546	0.4932 ug/L	94
5) 1,3-Butadiene	3.94	54	7454	0.1559 ug/L #	54
6) Bromomethane	4.79	94	656	0.9235 ug/L	68
7) Chloroethane	4.94	64	2482	0.4712 ug/L #	53
8) Trichlorofluoromethane	5.43	101	5157	0.4243 ug/L #	85
10) Isoprene	5.98	67	3614	0.4010 ug/L	80
12) 1,1,2-Trichloro-1,2,2-Trif	6.20	101	2569	0.3745 ug/L	93
13) Acetone	6.31	43	627	0.6613 ug/L #	36
14) 1,1-Dichloroethene	6.52	61	4922	0.4218 ug/L	75
16) Dimethyl Sulfide	6.77	62	2958	0.4349 ug/L	85
17) Iodomethane	7.04	142	526	1.1457 ug/L #	35
18) Methyl acetate	7.06	43	1214	0.3588 ug/L #	58
19) Methylene Chloride	7.31	84	2766	0.4160 ug/L #	41
20) Carbon Disulfide	7.34	76	8914	0.4153 ug/L	89
22) Methyl Tert Butyl Ether	7.52	73	5194	0.4055 ug/L #	70
23) trans-1,2-Dichloroethene	7.74	61	5006	0.4494 ug/L	68
24) n-Hexane	7.83	57	5343	0.4743 ug/L	96
26) Vinyl Acetate	8.34	43	3343	0.4104 ug/L #	71
27) 1,1-Dichloroethane	8.37	63	5026	0.3738 ug/L #	81
29) 2-Butanone	8.94	43	273	0.1767 ug/L #	49
31) 2,2-Dichloropropane	9.15	77	5223	0.4708 ug/L	89
32) cis-1,2-Dichloroethene	9.20	96	3418	0.4468 ug/L	89
33) Chloroform	9.43	83	4710	0.3771 ug/L	96
35) Bromochloromethane	9.64	130	1767	0.4529 ug/L	90
36) Tetrahydrofuran	9.68	42	233	0.2239 ug/L #	32
38) 1,1,1-Trichloroethane	9.96	97	4103	0.3619 ug/L	87
39) Cyclohexane	9.98	56	5465	0.3977 ug/L	96
40) 1,1-Dichloropropene	10.15	75	3687	0.3738 ug/L #	72
42) Carbon Tetrachloride	10.31	117	3996	0.3878 ug/L	87
45) 1,2-Dichloroethane	10.47	62	3824	0.4271 ug/L	84
46) Benzene	10.51	78	10613	0.3994 ug/L	93
47) Trichloroethene	11.27	130	2689	0.3826 ug/L	73
48) Methylcyclohexane	11.34	83	4479	0.3926 ug/L #	75
49) 1,2-Dichloropropane	11.48	63	3027	0.4067 ug/L #	73
50) Bromodichloromethane	11.78	83	3600	0.3929 ug/L #	89
52) Dibromomethane	11.87	93	1560	0.4451 ug/L #	61
53) 2-Chloroethyl Vinyl Ether	12.08	63	1210	Below Cal #	48
55) cis-1,3-Dichloropropene	12.41	75	4299	0.4292 ug/L	89

(#) = qualifier out of range (m) = manual integration
8M404580.D 8260WT.M Wed May 13 06:46:13 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404580.D Vial: 4
Acq On : 12 May 2015 17:19 Operator: TMB
Sample : WG523161-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:13 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
56)	Dimethyl Disulfide	12.68	79	1741	3.3001 ug/L		97
59)	Toluene	12.83	91	11735	0.4207 ug/L		81
60)	Ethyl Methacrylate	12.92	69	1520	0.3062 ug/L	#	66
62)	trans-1,3-Dichloropropene	13.01	75	3168	0.3789 ug/L		84
63)	1,1,2-Trichloroethane	13.22	97	1720	0.3969 ug/L		72
65)	1,3-Dichloropropane	13.53	76	2820	0.3712 ug/L	#	43
66)	Tetrachloroethene	13.66	164	1973	0.3351 ug/L		82
67)	Dibromochloromethane	13.92	129	2081	0.3608 ug/L		72
68)	1,2-Dibromoethane	14.17	107	1483	0.3584 ug/L		84
69)	1-Chlorohexane	14.26	91	4005	0.4197 ug/L		96
70)	Chlorobenzene	14.67	112	7203	0.3826 ug/L		90
71)	1,1,1,2-Tetrachloroethane	14.70	131	2560	0.3788 ug/L		82
72)	Ethylbenzene	14.70	106	4026	0.3570 ug/L	#	17
73)	m-,p-Xylene	14.78	106	10847	0.8505 ug/L		57
74)	o-Xylene	15.35	106	5229	0.4149 ug/L		57
75)	Styrene	15.38	104	7288	0.3650 ug/L		100
76)	Bromoform	15.89	173	942	1.0334 ug/L	#	44
77)	Isopropylbenzene	15.78	105	14152	0.4591 ug/L		77
79)	1,1,2,2-Tetrachloroethane	16.00	83	1923	0.4135 ug/L	#	91
83)	n-Propylbenzene	16.28	91	16602	0.4483 ug/L	#	67
84)	Bromobenzene	16.43	156	2690	0.3657 ug/L		88
85)	1,3,5-Trimethylbenzene	16.47	105	10398	0.4103 ug/L		80
86)	2-Chlorotoluene	16.55	91	12418	0.4968 ug/L		75
87)	4-Chlorotoluene	16.60	91	8385	0.4194 ug/L		71
88)	a-Methylstyrene	16.87	118	5253	0.3640 ug/L		98
89)	tert-Butylbenzene	16.93	134	1913	0.3396 ug/L	#	28
90)	1,2,4-Trimethylbenzene	16.99	105	11381	0.4368 ug/L		73
91)	sec-Butylbenzene	17.20	105	13195	0.4176 ug/L	#	71
92)	p-Isopropyltoluene	17.37	119	12187	0.4550 ug/L	#	73
93)	1,3-Dichlorobenzene	17.57	146	6274	0.4209 ug/L		98
94)	1,4-Dichlorobenzene	17.68	146	6156	0.4068 ug/L	#	24
95)	n-Butylbenzene	17.89	91	12345	0.4718 ug/L	#	75
96)	1,2-Dichlorobenzene	18.19	146	4688	0.3624 ug/L		93
98)	1,2,4-Trichlorobenzene	20.33	180	4027	0.4133 ug/L		90
99)	Hexachlorobutadiene	20.48	225	2038	0.4003 ug/L	#	69
100)	Naphthalene	20.69	128	4629	0.3542 ug/L	#	62
101)	1,2,3-Trichlorobenzene	21.01	180	2866	0.3471 ug/L		78

(#) = qualifier out of range (m) = manual integration
8M404580.D 8260WT.M Wed May 13 06:46:14 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404580.D Vial: 4
Acq On : 12 May 2015 17:19 Operator: TMB
Sample : WG523161-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

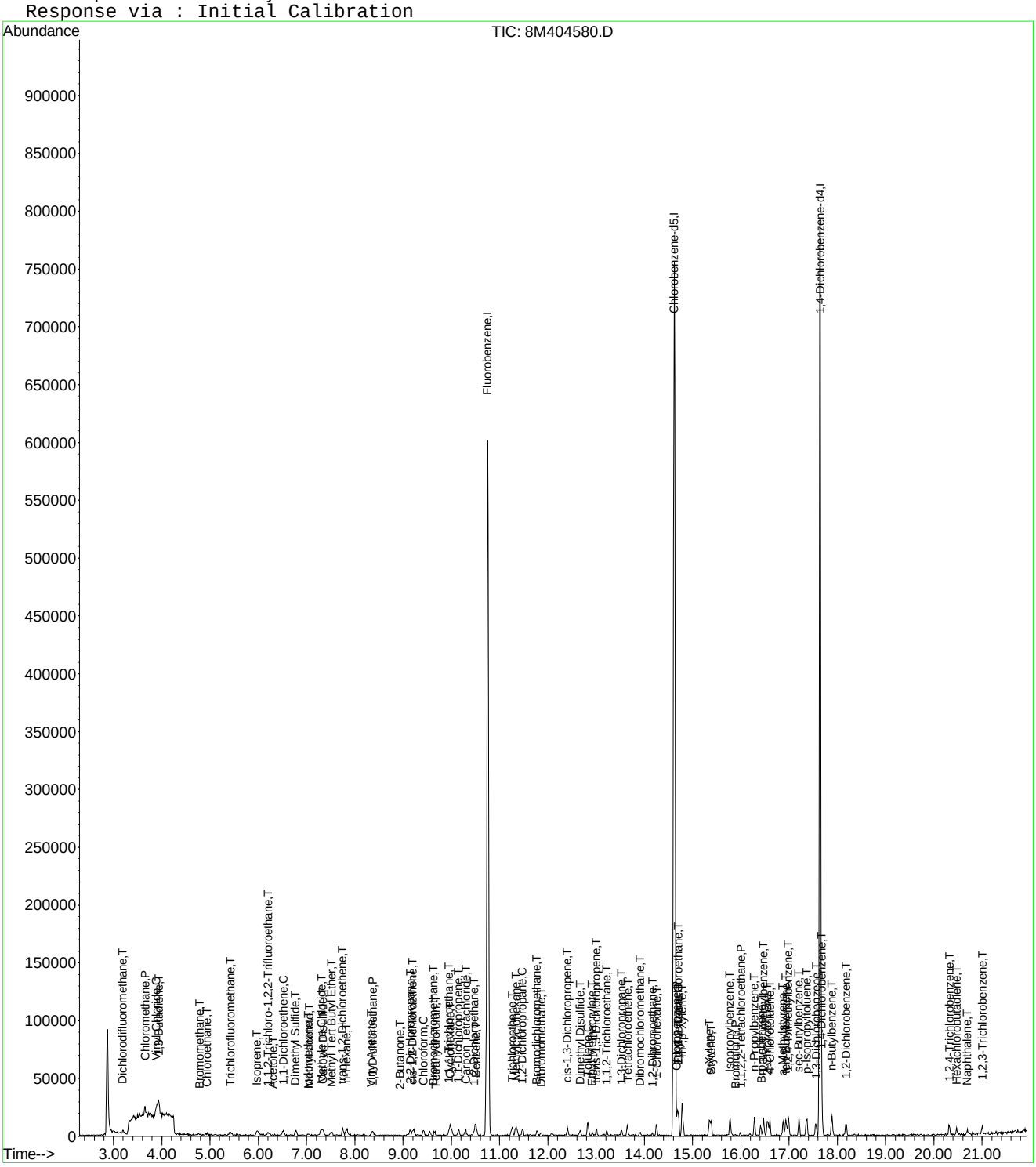

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404580.D Vial: 4
Acq On : 12 May 2015 17:19 Operator: TMB
Sample : WG523161-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.3689	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.6578	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.4932	-23.3#	100	0.00
5	T	1,3-Butadiene	-1.0000	0.1559	0.0	0	0.03
6	T	Bromomethane	-1.0000	0.9235	0.0	100	0.02
7	T	Chloroethane	-1.0000	0.4712	0.0	100	0.00
8	T	Trichlorofluoromethane	0.4000	0.4243	-6.1	100	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.95#
10	T	Isoprene	-1.0000	0.4010	0.0	100	-0.01
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.18#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3745	0.0	100	0.00
13	T	Acetone	-1.0000	0.6613	0.0	100	0.02
14	C	1,1-Dichloroethene	0.4000	0.4218	-5.5	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.63#
16	T	Dimethyl Sulfide	-1.0000	0.4349	0.0	100	0.00
17	T	Iodomethane	-1.0000	1.1457	0.0	0	0.00
18	T	Methyl acetate	-1.0000	0.3588	0.0	100	0.02
19	T	Methylene Chloride	-1.0000	0.4160	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4153	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.48#
22	T	Methyl Tert Butyl Ether	-1.0000	0.4055	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.4494	-12.4	100	0.00
24	T	n-Hexane	-1.0000	0.4743	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.17#
26	T	Vinyl Acetate	-1.0000	0.4104	0.0	100	0.00
27	P	1,1-Dichloroethane	0.4000	0.3738	6.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.75#
29	T	2-Butanone	-1.0000	0.1767	0.0	100	0.02
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.04#
31	T	2,2-Dichloropropane	0.4000	0.4708	-17.7	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.4468	-11.7	100	-0.01
33	C	Chloroform	0.4000	0.3771	5.7	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.55#
35	T	Bromochloromethane	0.4000	0.4529	-13.2	100	-0.02
36	T	Tetrahydrofuran	-1.0000	0.2239	0.0	0	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.71#
38	T	1,1,1-Trichloroethane	0.4000	0.3619	9.5	100	0.00
39	T	Cyclohexane	-1.0000	0.3977	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.3738	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.26#
42	T	Carbon Tetrachloride	0.4000	0.3878	3.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.35#
44		Heptane	-1.0000	0.0000	0.0	0	-2.58#
45	T	1,2-Dichloroethane	0.4000	0.4271	-6.8	100	0.00
46	T	Benzene	0.4000	0.3994	0.2	100	0.00
47	T	Trichloroethene	0.4000	0.3826	4.4	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3926	0.0	100	0.00
49	C	1,2-Dichloropropane	0.4000	0.4067	-1.7	100	0.00
50	T	Bromodichloromethane	0.4000	0.3929	1.8	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.77#
52	T	Dibromomethane	0.4000	0.4451	-11.3	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	-0.2604	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.10#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404580.D Vial: 4
Acq On : 12 May 2015 17:19 Operator: TMB
Sample : WG523161-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.4292	-7.3	100	0.00
56	T	Dimethyl Disulfide	-1.0000	3.3001	0.0	0	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0000	0.0	0	-12.73#
59	C	Toluene	0.4000	0.4207	-5.2	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3062	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.18#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3789	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.3968	0.8	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.15#
65	T	1,3-Dichloropropane	0.4000	0.3712	7.2	100	0.00
66	T	Tetrachloroethene	0.4000	0.3351	16.2	100	0.00
67	T	Dibromochloromethane	0.4000	0.3608	9.8	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.3584	10.4	100	0.00
69	T	1-Chlorohexane	0.4000	0.4197	-4.9	100	0.00
70	P	Chlorobenzene	0.4000	0.3826	4.4	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3788	5.3	100	0.00
72	C	Ethylbenzene	0.4000	0.3570	10.8	100	0.00
73	T	m-,p-Xylene	0.8000	0.8505	-6.3	100	0.00
74	T	o-Xylene	-1.0000	0.4149	0.0	100	0.00
75	T	Styrene	0.4000	0.3650	8.7	100	0.00
76	P	Bromoform	-1.0000	1.0334	0.0	0	0.00
77	T	Isopropylbenzene	0.4000	0.4591	-14.8	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.4135	-3.4	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0000	0.0	0	-16.12#
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.18#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.23#
83	T	n-Propylbenzene	0.4000	0.4483	-12.1	100	0.00
84	T	Bromobenzene	0.4000	0.3657	8.6	100	0.02
85	T	1,3,5-Trimethylbenzene	0.4000	0.4103	-2.6	100	0.00
86	T	2-Chlorotoluene	0.4000	0.4968	-24.2	100	0.00
87	T	4-Chlorotoluene	0.4000	0.4194	-4.9	100	0.00
88	T	a-Methylstyrene	-1.0000	0.3640	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3396	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	0.4000	0.4369	-9.2	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.4176	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4550	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.4209	-5.2	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.4068	-1.7	100	-0.01
95	T	n-Butylbenzene	-1.0000	0.4718	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.3624	9.4	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.17#
98	T	1,2,4-Trichlorobenzene	0.4000	0.4133	-3.3	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.4003	-0.1	100	0.00
100	T	Naphthalene	0.4000	0.3542	11.4	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.3471	13.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1
8M404580.D 8260WT.M Wed May 13 06:47:27 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404581.D Vial: 5
Acq On : 12 May 2015 17:48 Operator: TMB
Sample : WG523161-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:14 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	659590	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	460400	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	243542	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.71	111	2938	0.4494 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.80%#	
43) 1,2-Dichloroethane-d4	10.35	65	2843	0.4627 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	1.84%#	
58) Toluene-d8	12.73	98	11695	0.5443 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.16%#	
80) p-Bromofluorobenzene	16.12	95	4255	0.5135 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.04%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.20	85	9953	0.9736 ug/L	87
3) Chloromethane	3.65	50	24429	1.1970 ug/L	99
4) Vinyl Chloride	3.89	62	20406	1.0612 ug/L	96
5) 1,3-Butadiene	3.94	54	17219	0.6767 ug/L	82
6) Bromomethane	4.79	94	2450	1.3331 ug/L	94
7) Chloroethane	4.94	64	5035	0.9622 ug/L	90
8) Trichlorofluoromethane	5.43	101	11177	0.9255 ug/L	98
9) Diethyl ether	5.95	59	23102	4.9898 ug/L	87
10) Isoprene	6.00	67	7629	0.8520 ug/L	76
12) 1,1,2-Trichloro-1,2,2-Trif	6.23	101	6538	0.9592 ug/L	92
13) Acetone	6.30	43	745	0.7909 ug/L #	36
14) 1,1-Dichloroethene	6.51	61	10988	0.9479 ug/L	82
15) Tert-Butyl Alcohol	6.59	59	2356	9.2949 ug/L #	61
16) Dimethyl Sulfide	6.77	62	6885	1.0188 ug/L	85
17) Iodomethane	7.02	142	2038	1.4675 ug/L	95
18) Methyl acetate	7.05	43	2929	0.8714 ug/L #	79
19) Methylene Chloride	7.30	84	6116	0.9258 ug/L #	33
20) Carbon Disulfide	7.34	76	20852	0.9778 ug/L	97
21) Acrylonitrile	7.48	53	3571	2.3817 ug/L	97
22) Methyl Tert Butyl Ether	7.53	73	12114	0.9518 ug/L	86
23) trans-1,2-Dichloroethene	7.76	61	10287	0.9296 ug/L	85
24) n-Hexane	7.84	57	10789	0.9641 ug/L	98
25) Diisopropyl ether	8.17	45	121991	4.9765 ug/L	90
26) Vinyl Acetate	8.34	43	8061	0.9960 ug/L #	78
27) 1,1-Dichloroethane	8.38	63	12933	0.9681 ug/L	91
28) Ethyl-Tert-Butyl ether	8.75	59	93602	4.8664 ug/L	91
29) 2-Butanone	8.93	43	1254	0.8171 ug/L #	49
30) Propionitrile	9.03	54	2357	4.8184 ug/L	83
31) 2,2-Dichloropropane	9.15	77	10696	0.9704 ug/L	96
32) cis-1,2-Dichloroethene	9.21	96	7441	0.9790 ug/L	62
33) Chloroform	9.42	83	12873	1.0374 ug/L	89
34) 1-Bromopropane	9.55	122	699	0.9722 ug/L	13
35) Bromochloromethane	9.66	130	4028	1.0392 ug/L	77
36) Tetrahydrofuran	9.68	42	5122	4.9547 ug/L	85
38) 1,1,1-Trichloroethane	9.95	97	10138	0.9000 ug/L	95
39) Cyclohexane	9.99	56	11930	0.8739 ug/L	89
40) 1,1-Dichloropropene	10.14	75	9993	1.0196 ug/L	92
41) Tert-Amyl-Methyl ether	10.25	73	68220	4.8322 ug/L	94
42) Carbon Tetrachloride	10.30	117	9231	0.9018 ug/L	97
45) 1,2-Dichloroethane	10.47	62	8537	0.9597 ug/L	83

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404581.D Vial: 5
Acq On : 12 May 2015 17:48 Operator: TMB
Sample : WG523161-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:14 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	10.51	78	27669	1.0481 ug/L		98
47)	Trichloroethene	11.27	130	6630	0.9494 ug/L		95
48)	Methylcyclohexane	11.34	83	9973	0.8799 ug/L		81
49)	1,2-Dichloropropane	11.48	63	7489	1.0128 ug/L		99
50)	Bromodichloromethane	11.78	83	9171	1.0074 ug/L		95
52)	Dibromomethane	11.86	93	2794	0.8023 ug/L		87
53)	2-Chloroethyl Vinyl Ether	12.08	63	2512	0.4835 ug/L	#	64
54)	4-Methyl-2-Pentanone	12.11	58	522	0.4106 ug/L	#	36
55)	cis-1,3-Dichloropropene	12.41	75	8511	0.8553 ug/L		94
56)	Dimethyl Disulfide	12.67	79	3441	3.5730 ug/L		81
59)	Toluene	12.83	91	28445	1.0416 ug/L		80
60)	Ethyl Methacrylate	12.93	69	3578	0.7364 ug/L	#	33
62)	trans-1,3-Dichloropropene	13.01	75	7499	0.9161 ug/L		93
63)	1,1,2-Trichloroethane	13.23	97	4124	0.9720 ug/L		97
64)	2-Hexanone	13.15	58	995	0.8516 ug/L	#	31
65)	1,3-Dichloropropane	13.52	76	7090	0.9532 ug/L		70
66)	Tetrachloroethene	13.66	164	5967	1.0352 ug/L		87
67)	Dibromochloromethane	13.91	129	5305	0.9396 ug/L		84
68)	1,2-Dibromoethane	14.18	107	3373	0.8328 ug/L		82
69)	1-Chlorohexane	14.26	91	8764	0.9382 ug/L		86
70)	Chlorobenzene	14.67	112	17996	0.9764 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.70	131	5637	0.8520 ug/L		99
72)	Ethylbenzene	14.69	106	10247	0.9282 ug/L	#	34
73)	m-,p-Xylene	14.79	106	23914	1.9154 ug/L	#	43
74)	o-Xylene	15.35	106	11085	0.8984 ug/L		61
75)	Styrene	15.39	104	19272	0.9860 ug/L		86
76)	Bromoform	15.88	173	1949	1.3145 ug/L		86
77)	Isopropylbenzene	15.78	105	30028	0.9951 ug/L		78
79)	1,1,2,2-Tetrachloroethane	16.00	83	4807	1.0388 ug/L	#	91
81)	1,2,3-Trichloropropane	16.18	110	889	0.7091 ug/L	#	1
82)	trans-1,4-Dichloro-2-Buten	16.23	53	1479	0.9628 ug/L	#	23
83)	n-Propylbenzene	16.29	91	37672	1.0223 ug/L	#	71
84)	Bromobenzene	16.42	156	7025	0.9600 ug/L		81
85)	1,3,5-Trimethylbenzene	16.47	105	25978	1.0304 ug/L		75
86)	2-Chlorotoluene	16.55	91	26781	1.0769 ug/L	#	69
87)	4-Chlorotoluene	16.61	91	18077	0.9088 ug/L		73
88)	a-Methylstyrene	16.87	118	11588	0.8071 ug/L		95
89)	tert-Butylbenzene	16.94	134	5736	1.0234 ug/L		92
90)	1,2,4-Trimethylbenzene	16.99	105	25492	0.9834 ug/L		75
91)	sec-Butylbenzene	17.21	105	33874	1.0776 ug/L		80
92)	p-Isopropyltoluene	17.36	119	27221	1.0214 ug/L		76
93)	1,3-Dichlorobenzene	17.56	146	14385	0.9699 ug/L		92
94)	1,4-Dichlorobenzene	17.69	146	14766	0.9807 ug/L		79
95)	n-Butylbenzene	17.89	91	26584	1.0211 ug/L		79
96)	1,2-Dichlorobenzene	18.19	146	12891	1.0017 ug/L		93
97)	1,2-Dibromo-3-Chloropropan	19.18	75	792	1.0722 ug/L	#	17
98)	1,2,4-Trichlorobenzene	20.32	180	8084	0.8338 ug/L		96
99)	Hexachlorobutadiene	20.47	225	4179	0.8251 ug/L	#	82
100)	Naphthalene	20.69	128	11817	0.9088 ug/L		91
101)	1,2,3-Trichlorobenzene	21.00	180	7425	0.9038 ug/L		93

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404581.D Vial: 5
Acq On : 12 May 2015 17:48 Operator: TMB
Sample : WG523161-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

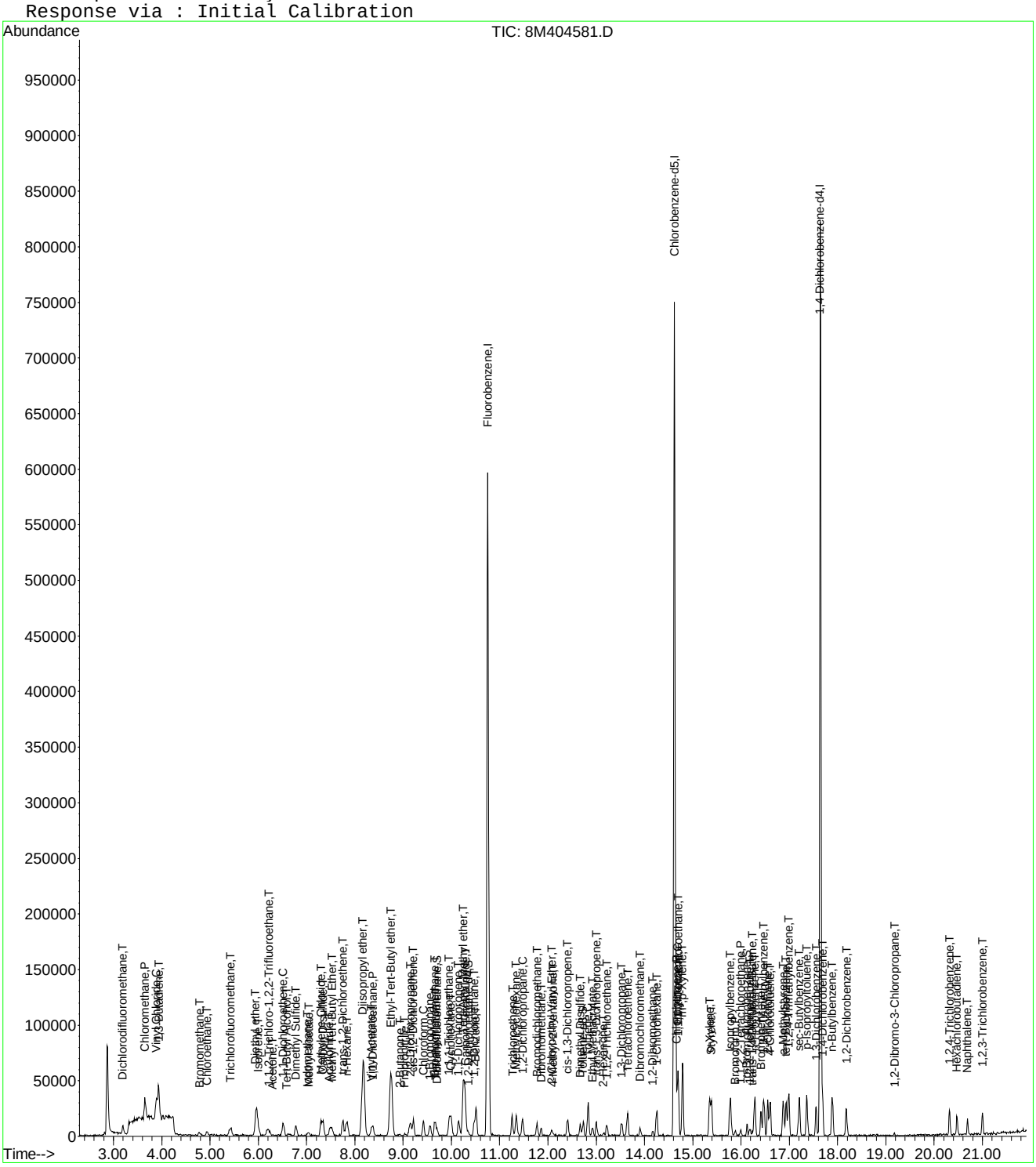

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404581.D Vial: 5
Acq On : 12 May 2015 17:48 Operator: TMB
Sample : WG523161-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9736	2.6	100	0.00
3	P	Chloromethane	1.0000	1.1970	-19.7	100	0.00
4	C	Vinyl Chloride	1.0000	1.0612	-6.1	100	0.01
5	T	1,3-Butadiene	-1.0000	0.6767	0.0	0	0.03
6	T	Bromomethane	1.0000	1.3331	-33.3#	100	0.02
7	T	Chloroethane	1.0000	0.9622	3.8	100	0.00
8	T	Trichlorofluoromethane	1.0000	0.9255	7.4	100	0.00
9	T	Diethyl ether	5.0000	4.9898	0.2	100	0.00
10	T	Isoprene	-1.0000	0.8520	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.18#
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	0.9592	4.1	100	0.02
13	T	Acetone	-1.0000	0.7909	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	0.9479	5.2	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	9.2949	0.0	0	-0.04
16	T	Dimethyl Sulfide	-1.0000	1.0188	0.0	100	0.00
17	T	Iodomethane	1.0000	1.4675	-46.8#	100	-0.01
18	T	Methyl acetate	-1.0000	0.8714	0.0	100	0.00
19	T	Methylene Chloride	1.0000	0.9258	7.4	100	0.00
20	T	Carbon Disulfide	1.0000	0.9778	2.2	100	0.00
21	T	Acrylonitrile	-1.0000	2.3817	0.0	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9518	4.8	100	0.02
23	T	trans-1,2-Dichloroethene	1.0000	0.9296	7.0	100	0.00
24	T	n-Hexane	-1.0000	0.9641	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	4.9765	0.5	100	0.00
26	T	Vinyl Acetate	-1.0000	0.9960	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	0.9681	3.2	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.8664	2.7	100	0.00
29	T	2-Butanone	-1.0000	0.8171	0.0	100	0.00
30	T	Propionitrile	5.0000	4.8184	3.6	100	-0.01
31	T	2,2-Dichloropropane	1.0000	0.9704	3.0	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	0.9790	2.1	100	0.00
33	C	Chloroform	1.0000	1.0374	-3.7	100	0.00
34		1-Bromopropane	1.0000	0.9722	2.8	100	0.00
35	T	Bromochloromethane	1.0000	1.0392	-3.9	100	0.00
36	T	Tetrahydrofuran	5.0000	4.9547	0.9	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.4494	0.0	0	0.00
38	T	1,1,1-Trichloroethane	1.0000	0.9000	10.0	100	-0.01
39	T	Cyclohexane	1.0000	0.8739	12.6	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0196	-2.0	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	4.8322	3.4	100	-0.01
42	T	Carbon Tetrachloride	1.0000	0.9018	9.8	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.4627	0.0	0	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.58#
45	T	1,2-Dichloroethane	1.0000	0.9597	4.0	100	0.00
46	T	Benzene	1.0000	1.0481	-4.8	100	0.00
47	T	Trichloroethene	1.0000	0.9494	5.1	100	0.00
48	T	Methylcyclohexane	-1.0000	0.8799	0.0	100	0.00
49	C	1,2-Dichloropropane	1.0000	1.0128	-1.3	100	0.00
50	T	Bromodichloromethane	1.0000	1.0074	-0.7	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.77#
52	T	Dibromomethane	1.0000	0.8023	19.8	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.4835	0.0	0	0.01
54	T	4-Methyl-2-Pentanone	-1.0000	0.4106	0.0	162	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404581.D Vial: 5
Acq On : 12 May 2015 17:48 Operator: TMB
Sample : WG523161-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.8553	14.5	100	0.00
56	T	Dimethyl Disulfide	-1.0000	3.5730	0.0	0	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.5443	0.0	0	0.00
59	C	Toluene	1.0000	1.0416	-4.2	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.7364	26.4#	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.18#
62	T	trans-1,3-Dichloropropene	1.0000	0.9161	8.4	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.9720	2.8	100	0.00
64	T	2-Hexanone	-1.0000	0.8516	0.0	100	0.00
65	T	1,3-Dichloropropane	1.0000	0.9533	4.7	100	0.00
66	T	Tetrachloroethene	1.0000	1.0352	-3.5	100	0.00
67	T	Dibromochloromethane	1.0000	0.9396	6.0	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.8328	16.7	100	0.00
69	T	1-Chlorohexane	1.0000	0.9382	6.2	100	0.00
70	P	Chlorobenzene	1.0000	0.9764	2.4	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.8520	14.8	100	0.00
72	C	Ethylbenzene	1.0000	0.9282	7.2	100	-0.01
73	T	m-,p-Xylene	2.0000	1.9154	4.2	100	0.00
74	T	o-Xylene	1.0000	0.8984	10.2	100	0.00
75	T	Styrene	1.0000	0.9860	1.4	100	0.00
76	P	Bromoform	1.0000	1.3144	-31.4#	100	0.00
77	T	Isopropylbenzene	1.0000	0.9951	0.5	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	1.0388	-3.9	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5135	0.0	0	0.00
81	T	1,2,3-Trichloropropane	1.0000	0.7091	29.1#	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	1.0000	0.9628	3.7	100	0.00
83	T	n-Propylbenzene	1.0000	1.0224	-2.2	100	0.00
84	T	Bromobenzene	1.0000	0.9600	4.0	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	1.0304	-3.0	100	0.00
86	T	2-Chlorotoluene	1.0000	1.0769	-7.7	100	0.00
87	T	4-Chlorotoluene	1.0000	0.9088	9.1	100	0.00
88	T	a-Methylstyrene	-1.0000	0.8071	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	1.0234	-2.3	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	0.9835	1.7	100	0.00
91	T	sec-Butylbenzene	1.0000	1.0776	-7.8	100	0.00
92	T	p-Isopropyltoluene	1.0000	1.0214	-2.1	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	0.9699	3.0	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	0.9807	1.9	100	0.00
95	T	n-Butylbenzene	1.0000	1.0211	-2.1	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0017	-0.2	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.0722	0.0	0	0.01
98	T	1,2,4-Trichlorobenzene	1.0000	0.8338	16.6	100	0.00
99	T	Hexachlorobutadiene	1.0000	0.8251	17.5	100	0.00
100	T	Naphthalene	1.0000	0.9088	9.1	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	0.9038	9.6	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M404581.D 8260WT.M Wed May 13 06:47:37 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404582.D Vial: 6
Acq On : 12 May 2015 18:16 Operator: TMB
Sample : WG523161-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:15 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	668457	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	470511	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.65	152	251240	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.72	111	6565	0.9909 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.96%#	
43) 1,2-Dichloroethane-d4	10.35	65	6190	0.9941 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.96%#	
58) Toluene-d8	12.73	98	21782	0.9921 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	3.96%#	
80) p-Bromofluorobenzene	16.12	95	9059	1.0598 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.24%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.19	85	18273	1.7638 ug/L	99
3) Chloromethane	3.65	50	45698	2.2095 ug/L	99
4) Vinyl Chloride	3.89	62	40979	2.1027 ug/L	96
5) 1,3-Butadiene	3.94	54	37404	1.7245 ug/L	86
6) Bromomethane	4.78	94	5092	1.9188 ug/L	91
7) Chloroethane	4.93	64	10438	1.9682 ug/L	95
8) Trichlorofluoromethane	5.42	101	23291	1.9031 ug/L	96
9) Diethyl ether	5.95	59	115894	24.7000 ug/L	90
10) Isoprene	6.00	67	16844	1.8561 ug/L	82
11) Acrolein	6.20	56	1525	Below Cal	65
12) 1,1,2-Trichloro-1,2,2-Trif	6.21	101	13397	1.9395 ug/L	85
13) Acetone	6.30	43	2254	2.3611 ug/L #	52
14) 1,1-Dichloroethene	6.51	61	23611	2.0098 ug/L	83
15) Tert-Butyl Alcohol	6.63	59	12335	48.0186 ug/L	96
16) Dimethyl Sulfide	6.77	62	13216	1.9296 ug/L	76
17) Iodomethane	7.03	142	4697	2.0188 ug/L	98
18) Methyl acetate	7.04	43	6429	1.8872 ug/L #	63
19) Methylene Chloride	7.30	84	13330	1.9910 ug/L #	51
20) Carbon Disulfide	7.34	76	40646	1.8807 ug/L	94
21) Acrylonitrile	7.47	53	16949	11.1543 ug/L	75
22) Methyl Tert Butyl Ether	7.53	73	26473	2.0525 ug/L	98
23) trans-1,2-Dichloroethene	7.74	61	22069	1.9677 ug/L	86
24) n-Hexane	7.84	57	21654	1.9093 ug/L	97
25) Diisopropyl ether	8.17	45	627644	25.2643 ug/L	90
26) Vinyl Acetate	8.34	43	16025	1.9538 ug/L #	84
27) 1,1-Dichloroethane	8.37	63	27711	2.0467 ug/L	97
28) Ethyl-Tert-Butyl ether	8.75	59	479574	24.6025 ug/L	93
29) 2-Butanone	8.91	43	2904	1.8670 ug/L #	49
30) Propionitrile	9.04	54	11650	23.5000 ug/L	93
31) 2,2-Dichloropropane	9.16	77	22508	2.0150 ug/L	87
32) cis-1,2-Dichloroethene	9.21	96	14863	1.9295 ug/L	80
33) Chloroform	9.42	83	24639	1.9592 ug/L	100
34) 1-Bromopropane	9.54	122	2635	2.3365 ug/L	96
35) Bromochloromethane	9.65	130	7260	1.8482 ug/L #	61
36) Tetrahydrofuran	9.68	42	25601	24.4363 ug/L	89
38) 1,1,1-Trichloroethane	9.96	97	21783	1.9081 ug/L	98
39) Cyclohexane	9.98	56	27008	1.9521 ug/L	78
40) 1,1-Dichloropropene	10.15	75	19262	1.9393 ug/L	87
41) Tert-Amyl-Methyl ether	10.26	73	341606	23.8760 ug/L	96
42) Carbon Tetrachloride	10.30	117	19985	1.9264 ug/L	93

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404582.D Vial: 6
Acq On : 12 May 2015 18:16 Operator: TMB
Sample : WG523161-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:15 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.47	62	16851	1.8691 ug/L		92
46)	Benzene	10.50	78	56814	2.1235 ug/L		96
47)	Trichloroethene	11.26	130	12549	1.7732 ug/L		96
48)	Methylcyclohexane	11.35	83	19938	1.7357 ug/L		89
49)	1,2-Dichloropropane	11.47	63	14953	1.9954 ug/L		91
50)	Bromodichloromethane	11.78	83	17347	1.8802 ug/L		98
51)	1,4-Dioxane	11.76	88	945	73.3339 ug/L		93
52)	Dibromomethane	11.86	93	7170	2.0316 ug/L		88
53)	2-Chloroethyl Vinyl Ether	12.08	63	5523	2.1519 ug/L	#	78
54)	4-Methyl-2-Pentanone	12.11	58	2984	2.3162 ug/L	#	83
55)	cis-1,3-Dichloropropene	12.41	75	17917	1.7766 ug/L		95
56)	Dimethyl Disulfide	12.67	79	7600	4.2202 ug/L		84
59)	Toluene	12.83	91	59670	2.1381 ug/L		80
60)	Ethyl Methacrylate	12.92	69	8875	1.7872 ug/L	#	54
62)	trans-1,3-Dichloropropene	13.01	75	14883	1.7791 ug/L		97
63)	1,1,2-Trichloroethane	13.22	97	8013	1.8480 ug/L		88
64)	2-Hexanone	13.16	58	2369	1.9841 ug/L	#	38
65)	1,3-Dichloropropane	13.52	76	16337	2.1493 ug/L		83
66)	Tetrachloroethene	13.65	164	11497	1.9518 ug/L		88
67)	Dibromochloromethane	13.92	129	10779	1.8681 ug/L		99
68)	1,2-Dibromoethane	14.16	107	7938	1.9177 ug/L		100
69)	1-Chlorohexane	14.26	91	17801	1.8648 ug/L		87
70)	Chlorobenzene	14.67	112	38190	2.0274 ug/L		92
71)	1,1,1,2-Tetrachloroethane	14.70	131	12247	1.8113 ug/L		100
72)	Ethylbenzene	14.70	106	19901	1.7639 ug/L	#	18
73)	m-,p-Xylene	14.78	106	51169	4.0103 ug/L	#	48
74)	o-Xylene	15.35	106	23385	1.8546 ug/L	#	50
75)	Styrene	15.39	104	38422	1.9235 ug/L		88
76)	Bromoform	15.88	173	5191	2.1713 ug/L		94
77)	Isopropylbenzene	15.78	105	63107	2.0464 ug/L		76
79)	1,1,2,2-Tetrachloroethane	15.98	83	9845	2.0623 ug/L		98
81)	1,2,3-Trichloropropane	16.18	110	3065	2.3699 ug/L	#	30
82)	trans-1,4-Dichloro-2-Buten	16.23	53	2710	1.7101 ug/L	#	13
83)	n-Propylbenzene	16.28	91	78854	2.0744 ug/L	#	72
84)	Bromobenzene	16.42	156	13385	1.7731 ug/L		74
85)	1,3,5-Trimethylbenzene	16.47	105	53268	2.0480 ug/L		79
86)	2-Chlorotoluene	16.55	91	43814	1.7078 ug/L		82
87)	4-Chlorotoluene	16.60	91	46513	2.2667 ug/L		77
88)	a-Methylstyrene	16.87	118	25754	1.7387 ug/L		89
89)	tert-Butylbenzene	16.94	134	10204	1.7647 ug/L		42
90)	1,2,4-Trimethylbenzene	16.99	105	55177	2.0634 ug/L		70
91)	sec-Butylbenzene	17.20	105	68065	2.0989 ug/L	#	74
92)	p-Isopropyltoluene	17.36	119	57213	2.0809 ug/L		75
93)	1,3-Dichlorobenzene	17.56	146	31027	2.0280 ug/L		93
94)	1,4-Dichlorobenzene	17.69	146	29852	1.9219 ug/L		92
95)	n-Butylbenzene	17.90	91	56152	2.0908 ug/L	#	77
96)	1,2-Dichlorobenzene	18.18	146	27243	2.0520 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.18	75	1051	1.3793 ug/L		76
98)	1,2,4-Trichlorobenzene	20.32	180	18804	1.8801 ug/L		95
99)	Hexachlorobutadiene	20.47	225	9220	1.7646 ug/L		93
100)	Naphthalene	20.69	128	28078	2.0933 ug/L		91
101)	1,2,3-Trichlorobenzene	21.00	180	16807	1.9831 ug/L		94

(#) = qualifier out of range (m) = manual integration
8M404582.D 8260WT.M Wed May 13 06:46:16 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404582.D Vial: 6
Acq On : 12 May 2015 18:16 Operator: TMB
Sample : WG523161-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

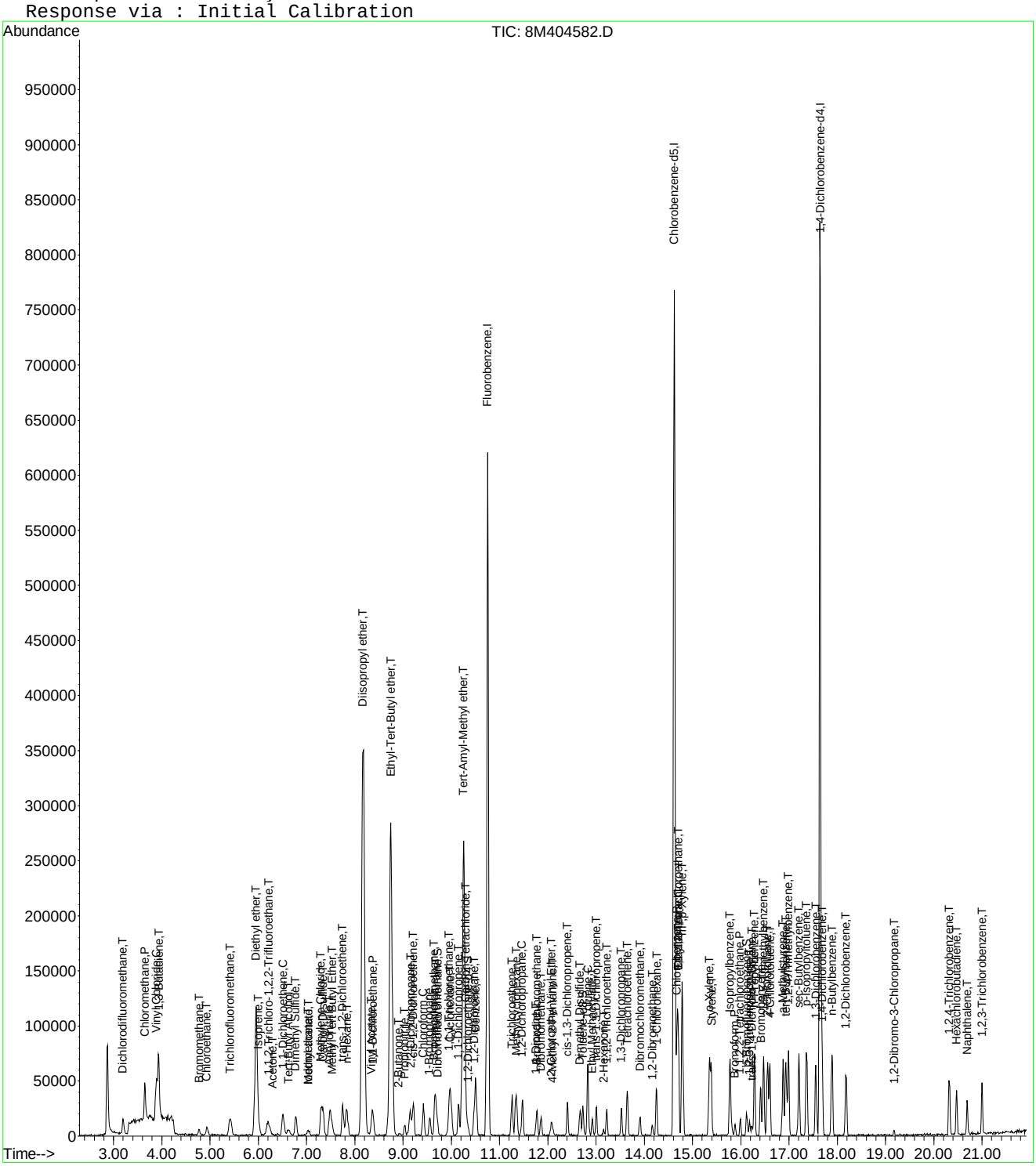

8M404582.D 8260WT.M Wed May 13 06:46:16 2015 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404582.D Vial: 6
Acq On : 12 May 2015 18:16 Operator: TMB
Sample : WG523161-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.7638	11.8	100	0.00
3	P	Chloromethane	2.0000	2.2095	-10.5	100	0.00
4	C	Vinyl Chloride	2.0000	2.1027	-5.1	100	0.00
5	T	1,3-Butadiene	2.0000	1.7245	13.8	100	0.03
6	T	Bromomethane	2.0000	1.9188	4.1	100	0.00
7	T	Chloroethane	2.0000	1.9682	1.6	100	0.00
8	T	Trichlorofluoromethane	2.0000	1.9031	4.8	100	0.00
9	T	Diethyl ether	25.0000	24.7000	1.2	100	0.00
10	T	Isoprene	-1.0000	1.8561	0.0	100	0.00
11	T	Acrolein	12.5000	-1.0000	108.0#	100	0.02
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.9395	3.0	100	0.00
13	T	Acetone	-1.0000	2.3611	0.0	100	0.00
14	C	1,1-Dichloroethene	2.0000	2.0098	-0.5	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	48.0186	4.0	100	0.00
16	T	Dimethyl Sulfide	2.0000	1.9297	3.5	100	0.00
17	T	Iodomethane	2.0000	2.0188	-0.9	100	0.00
18	T	Methyl acetate	2.0000	1.8872	5.6	100	0.00
19	T	Methylene Chloride	2.0000	1.9910	0.4	100	0.00
20	T	Carbon Disulfide	2.0000	1.8807	6.0	100	0.00
21	T	Acrylonitrile	12.5000	11.1543	10.8	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	2.0525	-2.6	100	0.02
23	T	trans-1,2-Dichloroethene	2.0000	1.9678	1.6	100	0.00
24	T	n-Hexane	-1.0000	1.9093	0.0	100	0.00
25	T	Diisopropyl ether	25.0000	25.2643	-1.1	100	0.00
26	T	Vinyl Acetate	-1.0000	1.9538	0.0	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.0467	-2.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	24.6025	1.6	100	0.00
29	T	2-Butanone	-1.0000	1.8670	0.0	100	-0.01
30	T	Propionitrile	25.0000	23.5000	6.0	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.0150	-0.7	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	1.9295	3.5	100	0.00
33	C	Chloroform	2.0000	1.9592	2.0	100	0.00
34		1-Bromopropane	2.0000	2.3365	-16.8	100	-0.01
35	T	Bromochloromethane	2.0000	1.8482	7.6	100	-0.01
36	T	Tetrahydrofuran	25.0000	24.4363	2.3	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.9909	0.0	0	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.9081	4.6	100	0.00
39	T	Cyclohexane	2.0000	1.9521	2.4	100	0.00
40	T	1,1-Dichloropropene	2.0000	1.9393	3.0	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	23.8760	4.5	100	0.00
42	T	Carbon Tetrachloride	2.0000	1.9264	3.7	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.9941	0.0	0	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.58#
45	T	1,2-Dichloroethane	2.0000	1.8691	6.5	100	0.00
46	T	Benzene	2.0000	2.1235	-6.2	100	0.00
47	T	Trichloroethene	2.0000	1.7732	11.3	100	0.00
48	T	Methylcyclohexane	-1.0000	1.7357	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	1.9954	0.2	100	0.00
50	T	Bromodichloromethane	2.0000	1.8803	6.0	100	0.00
51	T	1,4-Dioxane	-1.0000	73.3339	0.0	0	-0.01
52	T	Dibromomethane	2.0000	2.0316	-1.6	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	2.1519	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	2.3162	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404582.D Vial: 6
Acq On : 12 May 2015 18:16 Operator: TMB
Sample : WG523161-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.7766	11.2	100	0.00
56	T	Dimethyl Disulfide	-1.0000	4.2202	0.0	0	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.9921	0.0	0	0.00
59	C	Toluene	2.0000	2.1381	-6.9	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.7872	10.6	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.18#
62	T	trans-1,3-Dichloropropene	2.0000	1.7791	11.0	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.8480	7.6	100	0.00
64	T	2-Hexanone	-1.0000	1.9841	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.1493	-7.5	100	0.00
66	T	Tetrachloroethene	2.0000	1.9518	2.4	100	0.00
67	T	Dibromochloromethane	2.0000	1.8681	6.6	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.9177	4.1	100	0.00
69	T	1-Chlorohexane	2.0000	1.8647	6.8	100	0.00
70	P	Chlorobenzene	2.0000	2.0274	-1.4	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.8113	9.4	100	0.00
72	C	Ethylbenzene	2.0000	1.7639	11.8	100	0.00
73	T	m-,p-Xylene	4.0000	4.0103	-0.3	100	0.00
74	T	o-Xylene	2.0000	1.8546	7.3	100	0.00
75	T	Styrene	2.0000	1.9235	3.8	100	0.00
76	P	Bromoform	2.0000	2.1713	-8.6	100	0.00
77	T	Isopropylbenzene	2.0000	2.0464	-2.3	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	2.0623	-3.1	100	-0.01
80	S	p-Bromofluorobenzene	-1.0000	1.0598	0.0	0	0.00
81	T	1,2,3-Trichloropropane	2.0000	2.3699	-18.5	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	1.7101	14.5	100	0.00
83	T	n-Propylbenzene	2.0000	2.0744	-3.7	100	0.00
84	T	Bromobenzene	2.0000	1.7731	11.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.0480	-2.4	100	0.00
86	T	2-Chlorotoluene	2.0000	1.7078	14.6	100	0.00
87	T	4-Chlorotoluene	2.0000	2.2667	-13.3	100	0.00
88	T	a-Methylstyrene	-1.0000	1.7387	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	1.7647	11.8	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.0634	-3.2	100	0.00
91	T	sec-Butylbenzene	2.0000	2.0989	-4.9	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.0809	-4.0	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.0280	-1.4	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	1.9219	3.9	100	0.00
95	T	n-Butylbenzene	2.0000	2.0908	-4.5	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0520	-2.6	100	-0.01
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.3793	31.0#	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	1.8801	6.0	100	0.00
99	T	Hexachlorobutadiene	2.0000	1.7646	11.8	100	0.00
100	T	Naphthalene	2.0000	2.0933	-4.7	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9831	0.8	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M404582.D 8260WT.M Wed May 13 06:47:46 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404583.D Vial: 7
Acq On : 12 May 2015 18:45 Operator: TMB
Sample : WG523161-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:16 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	686040	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	475199	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	267048	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	168048	24.7134 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.84%		
43) 1,2-Dichloroethane-d4	10.35	65	161918	25.3383 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.36%		
58) Toluene-d8	12.73	98	587226	26.4814 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.92%		
80) p-Bromofluorobenzene	16.12	95	222599	24.5005 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.00%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.20	85	47127	4.4324 ug/L	96
3) Chloromethane	3.65	50	110533	5.2074 ug/L	96
4) Vinyl Chloride	3.89	62	100868	5.0431 ug/L	95
5) 1,3-Butadiene	3.93	54	97161	4.7530 ug/L	93
6) Bromomethane	4.77	94	15690	4.2002 ug/L	92
7) Chloroethane	4.93	64	25308	4.6497 ug/L #	87
8) Trichlorofluoromethane	5.42	101	59779	4.7593 ug/L	97
9) Diethyl ether	5.96	59	240712	49.9870 ug/L	88
10) Isoprene	6.00	67	39892	4.2833 ug/L	78
11) Acrolein	6.18	56	2733	26.2227 ug/L	71
12) 1,1,2-Trichloro-1,2,2-Trif	6.21	101	33786	4.7658 ug/L	88
13) Acetone	6.29	43	4839	4.9390 ug/L #	61
14) 1,1-Dichloroethene	6.51	61	54546	4.5240 ug/L	79
15) Tert-Butyl Alcohol	6.63	59	26541	100.6726 ug/L	99
16) Dimethyl Sulfide	6.78	62	30481	4.3364 ug/L	68
17) Iodomethane	7.04	142	12011	3.4856 ug/L	79
18) Methyl acetate	7.04	43	18409	5.2654 ug/L #	80
19) Methylene Chloride	7.30	84	32753	4.7667 ug/L #	49
20) Carbon Disulfide	7.34	76	99247	4.4746 ug/L	97
21) Acrylonitrile	7.48	53	36223	23.2277 ug/L	86
22) Methyl Tert Butyl Ether	7.51	73	64059	4.8393 ug/L	97
23) trans-1,2-Dichloroethene	7.76	61	53278	4.6287 ug/L	86
24) n-Hexane	7.84	57	51137	4.3934 ug/L	92
25) Diisopropyl ether	8.17	45	1331241	52.2124 ug/L	91
26) Vinyl Acetate	8.34	43	42002	4.9898 ug/L #	87
27) 1,1-Dichloroethane	8.38	63	66294	4.7710 ug/L	96
28) Ethyl-Tert-Butyl ether	8.75	59	1034994	51.7352 ug/L	91
29) 2-Butanone	8.92	43	7169	4.4910 ug/L #	71
30) Propionitrile	9.03	54	26318	51.7272 ug/L	97
31) 2,2-Dichloropropane	9.15	77	50659	4.4189 ug/L	96
32) cis-1,2-Dichloroethene	9.21	96	34547	4.3699 ug/L	68
33) Chloroform	9.42	83	63118	4.8903 ug/L	92
34) 1-Bromopropane	9.56	122	6302	4.8190 ug/L	90
35) Bromochloromethane	9.65	130	17796	4.4142 ug/L #	59
36) Tetrahydrofuran	9.68	42	54123	50.3367 ug/L	83
38) 1,1,1-Trichloroethane	9.96	97	53980	4.6072 ug/L	95
39) Cyclohexane	9.99	56	62040	4.3691 ug/L	85
40) 1,1-Dichloropropene	10.15	75	47579	4.6675 ug/L	92
41) Tert-Amyl-Methyl ether	10.26	73	751367	51.1697 ug/L	96
42) Carbon Tetrachloride	10.30	117	47176	4.4308 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M404583.D 8260WT.M Wed May 13 06:46:17 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404583.D Vial: 7
Acq On : 12 May 2015 18:45 Operator: TMB
Sample : WG523161-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:16 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.46	62	45883	4.9589 ug/L		91
46)	Benzene	10.51	78	136536	4.9724 ug/L		100
47)	Trichloroethene	11.26	130	33200	4.5710 ug/L		97
48)	Methylcyclohexane	11.34	83	51913	4.4036 ug/L		92
49)	1,2-Dichloropropane	11.48	63	34846	4.5308 ug/L		98
50)	Bromodichloromethane	11.77	83	42494	4.4879 ug/L		99
51)	1,4-Dioxane	11.76	88	2217	105.6275 ug/L		86
52)	Dibromomethane	11.86	93	16927	4.6733 ug/L		92
53)	2-Chloroethyl Vinyl Ether	12.07	63	12688	5.9847 ug/L		92
54)	4-Methyl-2-Pentanone	12.10	58	5613	4.2452 ug/L		93
55)	cis-1,3-Dichloropropene	12.41	75	49114	4.7452 ug/L		94
56)	Dimethyl Disulfide	12.67	79	20718	6.2009 ug/L		94
59)	Toluene	12.83	91	143782	5.1011 ug/L		83
60)	Ethyl Methacrylate	12.92	69	22986	4.5832 ug/L		68
62)	trans-1,3-Dichloropropene	13.01	75	42367	5.0147 ug/L		94
63)	1,1,2-Trichloroethane	13.21	97	20948	4.7835 ug/L		93
64)	2-Hexanone	13.16	58	5134	4.2573 ug/L	#	42
65)	1,3-Dichloropropane	13.52	76	38249	4.9824 ug/L		77
66)	Tetrachloroethene	13.65	164	25212	4.2379 ug/L		87
67)	Dibromochloromethane	13.92	129	26066	4.4729 ug/L		98
68)	1,2-Dibromoethane	14.17	107	20580	4.9228 ug/L		97
69)	1-Chlorohexane	14.26	91	44970	4.6644 ug/L		87
70)	Chlorobenzene	14.67	112	92011	4.8365 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.70	131	30717	4.4982 ug/L		96
72)	Ethylbenzene	14.70	106	51864	4.5516 ug/L	#	32
73)	m-,p-Xylene	14.79	106	126124	9.7872 ug/L	#	41
74)	o-Xylene	15.35	106	60560	4.7554 ug/L		61
75)	Styrene	15.39	104	96464	4.7816 ug/L		89
76)	Bromoform	15.88	173	13800	4.4404 ug/L		97
77)	Isopropylbenzene	15.78	105	158770	5.0977 ug/L		77
79)	1,1,2,2-Tetrachloroethane	16.00	83	24622	4.8524 ug/L		98
81)	1,2,3-Trichloropropane	16.18	110	6682	4.8607 ug/L		76
82)	trans-1,4-Dichloro-2-Buten	16.22	53	7861	4.6669 ug/L	#	59
83)	n-Propylbenzene	16.29	91	193929	4.7996 ug/L	#	74
84)	Bromobenzene	16.41	156	36989	4.6097 ug/L		85
85)	1,3,5-Trimethylbenzene	16.47	105	134210	4.8546 ug/L		79
86)	2-Chlorotoluene	16.55	91	124340	4.5598 ug/L		77
87)	4-Chlorotoluene	16.61	91	121177	5.5558 ug/L		73
88)	a-Methylstyrene	16.87	118	67830	4.3083 ug/L		97
89)	tert-Butylbenzene	16.94	134	27541	4.4811 ug/L		56
90)	1,2,4-Trimethylbenzene	16.99	105	140624	4.9476 ug/L		74
91)	sec-Butylbenzene	17.21	105	179981	5.2214 ug/L	#	76
92)	p-Isopropyltoluene	17.36	119	145950	4.9942 ug/L		76
93)	1,3-Dichlorobenzene	17.56	146	73899	4.5442 ug/L		95
94)	1,4-Dichlorobenzene	17.69	146	78460	4.7523 ug/L		96
95)	n-Butylbenzene	17.89	91	146124	5.1187 ug/L	#	78
96)	1,2-Dichlorobenzene	18.18	146	65645	4.6518 ug/L		97
97)	1,2-Dibromo-3-Chloropropan	19.18	75	4176	5.1559 ug/L		78
98)	1,2,4-Trichlorobenzene	20.33	180	48452	4.5577 ug/L		95
99)	Hexachlorobutadiene	20.47	225	26321	4.7392 ug/L		93
100)	Naphthalene	20.69	128	68778	4.8240 ug/L		93
101)	1,2,3-Trichlorobenzene	21.00	180	41531	4.6102 ug/L		96

(#) = qualifier out of range (m) = manual integration
8M404583.D 8260WT.M Wed May 13 06:46:17 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404583.D Vial: 7
Acq On : 12 May 2015 18:45 Operator: TMB
Sample : WG523161-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

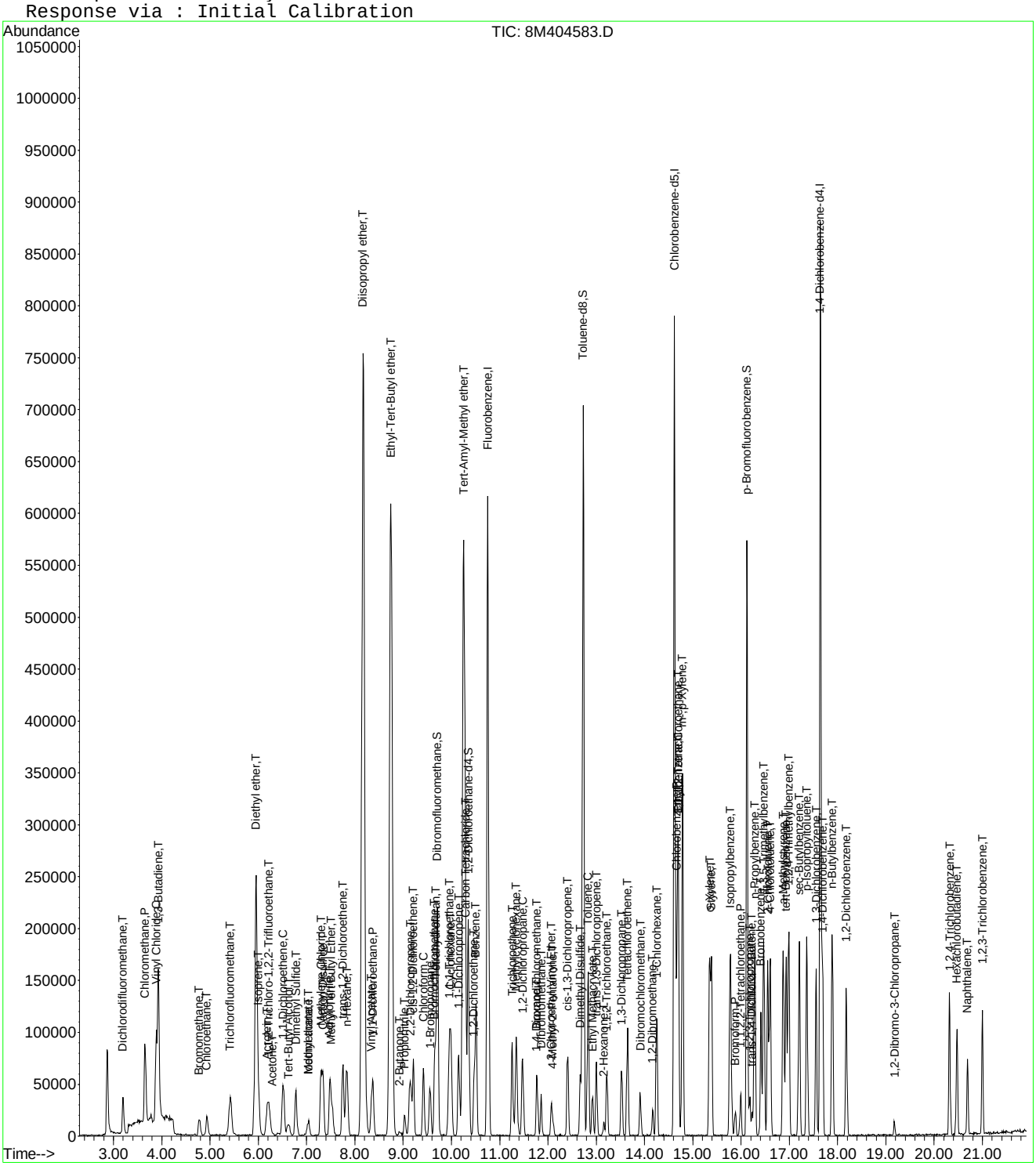

8M404583.D 8260WT.M Wed May 13 06:46:17 2015 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404583.D Vial: 7
Acq On : 12 May 2015 18:45 Operator: TMB
Sample : WG523161-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.4324	11.4	100	0.00
3	P	Chloromethane	5.0000	5.2074	-4.1	100	0.00
4	C	Vinyl Chloride	5.0000	5.0431	-0.9	100	0.01
5	T	1,3-Butadiene	5.0000	4.7530	4.9	100	0.02
6	T	Bromomethane	5.0000	4.2002	16.0	100	0.00
7	T	Chloroethane	5.0000	4.6498	7.0	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.7594	4.8	100	0.00
9	T	Diethyl ether	50.0000	49.9870	0.0	100	0.01
10	T	Isoprene	5.0000	4.2833	14.3	100	0.00
11	T	Acrolein	25.0000	26.2227	-4.9	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.7658	4.7	100	0.00
13	T	Acetone	5.0000	4.9390	1.2	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.5240	9.5	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	100.6726	-0.7	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.3364	13.3	100	0.00
17	T	Iodomethane	5.0000	3.4856	30.3#	100	0.00
18	T	Methyl acetate	5.0000	5.2654	-5.3	100	0.00
19	T	Methylene Chloride	5.0000	4.7667	4.7	100	0.00
20	T	Carbon Disulfide	5.0000	4.4746	10.5	100	0.00
21	T	Acrylonitrile	25.0000	23.2277	7.1	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.8393	3.2	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.6287	7.4	100	0.00
24	T	n-Hexane	5.0000	4.3934	12.1	100	0.00
25	T	Diisopropyl ether	50.0000	52.2124	-4.4	100	0.00
26	T	Vinyl Acetate	5.0000	4.9898	0.2	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.7710	4.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	51.7352	-3.5	100	0.00
29	T	2-Butanone	5.0000	4.4910	10.2	100	0.00
30	T	Propionitrile	50.0000	51.7272	-3.5	100	-0.01
31	T	2,2-Dichloropropane	5.0000	4.4189	11.6	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.3699	12.6	100	0.00
33	C	Chloroform	5.0000	4.8903	2.2	100	0.00
34		1-Bromopropane	5.0000	4.8190	3.6	100	0.00
35	T	Bromochloromethane	5.0000	4.4142	11.7	100	-0.01
36	T	Tetrahydrofuran	50.0000	50.3367	-0.7	100	0.00
37	S	Dibromofluoromethane	-1.0000	24.7134	0.0	0	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.6072	7.9	100	0.00
39	T	Cyclohexane	5.0000	4.3691	12.6	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.6675	6.7	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	51.1696	-2.3	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.4308	11.4	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	25.3383	0.0	0	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.58#
45	T	1,2-Dichloroethane	5.0000	4.9589	0.8	100	0.00
46	T	Benzene	5.0000	4.9724	0.6	100	0.00
47	T	Trichloroethene	5.0000	4.5710	8.6	100	0.00
48	T	Methylcyclohexane	5.0000	4.4036	11.9	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.5308	9.4	100	0.00
50	T	Bromodichloromethane	5.0000	4.4879	10.2	100	0.00
51	T	1,4-Dioxane	100.0000	105.6275	-5.6	100	-0.01
52	T	Dibromomethane	5.0000	4.6733	6.5	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	5.9847	-19.7	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.2452	15.1	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404583.D Vial: 7
Acq On : 12 May 2015 18:45 Operator: TMB
Sample : WG523161-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.7452	5.1	100	0.00
56	T	Dimethyl Disulfide	5.0000	6.2009	-24.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	26.4814	0.0	0	0.00
59	C	Toluene	5.0000	5.1011	-2.0	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.5832	8.3	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.18#
62	T	trans-1,3-Dichloropropene	5.0000	5.0146	-0.3	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.7835	4.3	100	-0.01
64	T	2-Hexanone	5.0000	4.2573	14.9	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.9824	0.4	100	0.00
66	T	Tetrachloroethene	5.0000	4.2379	15.2	100	0.00
67	T	Dibromochloromethane	5.0000	4.4729	10.5	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.9228	1.5	100	0.00
69	T	1-Chlorohexane	5.0000	4.6644	6.7	100	0.00
70	P	Chlorobenzene	5.0000	4.8365	3.3	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.4982	10.0	100	0.00
72	C	Ethylbenzene	5.0000	4.5516	9.0	100	0.00
73	T	m-,p-Xylene	10.0000	9.7873	2.1	100	0.00
74	T	o-Xylene	5.0000	4.7554	4.9	100	0.00
75	T	Styrene	5.0000	4.7816	4.4	100	0.00
76	P	Bromoform	5.0000	4.4404	11.2	100	0.00
77	T	Isopropylbenzene	5.0000	5.0977	-2.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	4.8524	3.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	24.5005	0.0	0	0.00
81	T	1,2,3-Trichloropropane	5.0000	4.8607	2.8	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.6669	6.7	100	-0.01
83	T	n-Propylbenzene	5.0000	4.7996	4.0	100	0.00
84	T	Bromobenzene	5.0000	4.6097	7.8	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	4.8546	2.9	100	0.00
86	T	2-Chlorotoluene	5.0000	4.5598	8.8	100	0.00
87	T	4-Chlorotoluene	5.0000	5.5558	-11.1	100	0.00
88	T	a-Methylstyrene	5.0000	4.3083	13.8	100	0.00
89	T	tert-Butylbenzene	5.0000	4.4811	10.4	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	4.9476	1.0	100	0.00
91	T	sec-Butylbenzene	5.0000	5.2214	-4.4	100	0.00
92	T	p-Isopropyltoluene	5.0000	4.9942	0.1	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	4.5442	9.1	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	4.7523	5.0	100	0.00
95	T	n-Butylbenzene	5.0000	5.1187	-2.4	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	4.6518	7.0	100	-0.01
97	T	1,2-Dibromo-3-Chloropropane	5.0000	5.1559	-3.1	100	0.01
98	T	1,2,4-Trichlorobenzene	5.0000	4.5577	8.8	100	0.00
99	T	Hexachlorobutadiene	5.0000	4.7392	5.2	100	0.00
100	T	Naphthalene	5.0000	4.8240	3.5	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.6102	7.8	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M404583.D 8260WT.M Wed May 13 06:47:55 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404584.D Vial: 8
Acq On : 12 May 2015 19:13 Operator: TMB
Sample : WG523161-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:17 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	727593	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	518323	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.65	152	285092	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	71169	9.8685 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 39.48%#		
43) 1,2-Dichloroethane-d4	10.35	65	68318	10.0804 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 40.32%#		
58) Toluene-d8	12.73	98	240107	9.9269 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 39.72%#		
80) p-Bromofluorobenzene	16.13	95	95680	9.8645 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 39.44%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.19	85	245768	21.7949 ug/L	97
3) Chloromethane	3.65	50	473219	21.0210 ug/L	95
4) Vinyl Chloride	3.89	62	456773	21.5331 ug/L	94
5) 1,3-Butadiene	3.93	54	457261	22.6102 ug/L	96
6) Bromomethane	4.78	94	81387	17.2761 ug/L	97
7) Chloroethane	4.93	64	115752	20.0522 ug/L	90
8) Trichlorofluoromethane	5.43	101	266817	20.0296 ug/L	97
9) Diethyl ether	5.95	59	412029	80.6767 ug/L	89
10) Isoprene	5.99	67	191093	19.3462 ug/L	79
11) Acrolein	6.18	56	5561	41.8032 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.20	101	152298	20.2560 ug/L	94
13) Acetone	6.28	43	24034	23.1296 ug/L	76
14) 1,1-Dichloroethene	6.51	61	252867	19.7750 ug/L	83
15) Tert-Butyl Alcohol	6.63	59	45992	164.4892 ug/L	97
16) Dimethyl Sulfide	6.78	62	148261	19.8879 ug/L	78
17) Iodomethane	7.03	142	76927	15.7797 ug/L	78
18) Methyl acetate	7.04	43	73990	19.9541 ug/L	93
19) Methylene Chloride	7.30	84	141246	19.3823 ug/L #	49
20) Carbon Disulfide	7.34	76	488267	20.7563 ug/L	94
21) Acrylonitrile	7.47	53	63930	38.6534 ug/L	85
22) Methyl Tert Butyl Ether	7.50	73	280227	19.9606 ug/L	96
23) trans-1,2-Dichloroethene	7.75	61	236060	19.3372 ug/L	85
24) n-Hexane	7.84	57	250582	20.2991 ug/L	98
25) Diisopropyl ether	8.18	45	2248464	83.1503 ug/L	92
26) Vinyl Acetate	8.34	43	183005	20.4992 ug/L	92
27) 1,1-Dichloroethane	8.37	63	299777	20.3420 ug/L	95
28) Ethyl-Tert-Butyl ether	8.74	59	1762800	83.0830 ug/L	92
29) 2-Butanone	8.92	43	36822	21.7495 ug/L	90
30) Propionitrile	9.03	54	44813	83.0484 ug/L	97
31) 2,2-Dichloropropane	9.15	77	236580	19.4577 ug/L	99
32) cis-1,2-Dichloroethene	9.21	96	165038	19.6836 ug/L	75
33) Chloroform	9.42	83	280488	20.4908 ug/L	92
34) 1-Bromopropane	9.55	122	28284	18.8723 ug/L	97
35) Bromochloromethane	9.65	130	83271	19.4752 ug/L #	66
36) Tetrahydrofuran	9.68	42	94391	82.7740 ug/L	85
38) 1,1,1-Trichloroethane	9.95	97	249818	20.1043 ug/L	99
39) Cyclohexane	9.99	56	302464	20.0844 ug/L	85
40) 1,1-Dichloropropene	10.15	75	214768	19.8654 ug/L	93
41) Tert-Amyl-Methyl ether	10.25	73	1279207	82.1414 ug/L	97
42) Carbon Tetrachloride	10.30	117	224404	19.8726 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404584.D Vial: 8
Acq On : 12 May 2015 19:13 Operator: TMB
Sample : WG523161-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:17 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.47	62	194558	19.8265 ug/L		92
46)	Benzene	10.51	78	598890	20.5650 ug/L		100
47)	Trichloroethene	11.26	130	158829	20.6187 ug/L		97
48)	Methylcyclohexane	11.35	83	246700	19.7314 ug/L		89
49)	1,2-Dichloropropane	11.47	63	161651	19.8183 ug/L		99
50)	Bromodichloromethane	11.77	83	198014	19.7184 ug/L		99
51)	1,4-Dioxane	11.76	88	4731	163.7290 ug/L	#	69
52)	Dibromomethane	11.86	93	77466	20.1658 ug/L		89
53)	2-Chloroethyl Vinyl Ether	12.06	63	36919	18.0638 ug/L		91
54)	4-Methyl-2-Pentanone	12.11	58	28112	20.0473 ug/L		92
55)	cis-1,3-Dichloropropene	12.41	75	225646	20.5559 ug/L		94
56)	Dimethyl Disulfide	12.67	79	104466	18.1272 ug/L		94
59)	Toluene	12.83	91	648413	21.0904 ug/L		84
60)	Ethyl Methacrylate	12.92	69	115634	21.1382 ug/L		76
62)	trans-1,3-Dichloropropene	13.00	75	185796	20.1616 ug/L		93
63)	1,1,2-Trichloroethane	13.22	97	97920	20.4999 ug/L		98
64)	2-Hexanone	13.15	58	27272	20.7336 ug/L	#	36
65)	1,3-Dichloropropane	13.52	76	170530	20.3655 ug/L		80
66)	Tetrachloroethene	13.65	164	126104	19.4334 ug/L		90
67)	Dibromochloromethane	13.91	129	124382	19.5682 ug/L		99
68)	1,2-Dibromoethane	14.16	107	94289	20.6778 ug/L		96
69)	1-Chlorohexane	14.26	91	211868	20.1470 ug/L		86
70)	Chlorobenzene	14.67	112	410486	19.7817 ug/L		94
71)	1,1,1,2-Tetrachloroethane	14.70	131	142319	19.1072 ug/L		99
72)	Ethylbenzene	14.70	106	228219	18.3622 ug/L	#	21
73)	m-,p-Xylene	14.78	106	564794	40.1817 ug/L	#	41
74)	o-Xylene	15.35	106	276601	19.9127 ug/L		63
75)	Styrene	15.38	104	458747	20.8476 ug/L		89
76)	Bromoform	15.88	173	67444	17.1776 ug/L		99
77)	Isopropylbenzene	15.78	105	719990	21.1936 ug/L		77
79)	1,1,2,2-Tetrachloroethane	15.99	83	105532	19.4816 ug/L		100
81)	1,2,3-Trichloropropane	16.18	110	30367	20.6917 ug/L		94
82)	trans-1,4-Dichloro-2-Buten	16.23	53	35550	19.7693 ug/L		79
83)	n-Propylbenzene	16.28	91	901587	20.9015 ug/L	#	72
84)	Bromobenzene	16.42	156	170410	19.8931 ug/L		87
85)	1,3,5-Trimethylbenzene	16.47	105	625945	21.2085 ug/L		78
86)	2-Chlorotoluene	16.55	91	595181	20.4450 ug/L		80
87)	4-Chlorotoluene	16.60	91	470804	20.2195 ug/L		75
88)	a-Methylstyrene	16.87	118	332268	19.7685 ug/L		91
89)	tert-Butylbenzene	16.93	134	125558	19.1361 ug/L		58
90)	1,2,4-Trimethylbenzene	16.99	105	643764	21.2160 ug/L		74
91)	sec-Butylbenzene	17.20	105	805481	21.8888 ug/L	#	76
92)	p-Isopropyltoluene	17.37	119	680965	21.8269 ug/L		77
93)	1,3-Dichlorobenzene	17.55	146	350883	20.2110 ug/L		93
94)	1,4-Dichlorobenzene	17.69	146	344395	19.5398 ug/L		93
95)	n-Butylbenzene	17.89	91	662694	21.7450 ug/L		78
96)	1,2-Dichlorobenzene	18.18	146	303795	20.1651 ug/L		93
97)	1,2-Dibromo-3-Chloropropan	19.18	75	17277	19.9810 ug/L		77
98)	1,2,4-Trichlorobenzene	20.31	180	223937	19.7317 ug/L		96
99)	Hexachlorobutadiene	20.47	225	112729	19.0128 ug/L		94
100)	Naphthalene	20.69	128	314530	20.6645 ug/L		92
101)	1,2,3-Trichlorobenzene	21.00	180	188988	19.6510 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M404584.D 8260WT.M Wed May 13 06:46:18 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404584.D Vial: 8
Acq On : 12 May 2015 19:13 Operator: TMB
Sample : WG523161-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

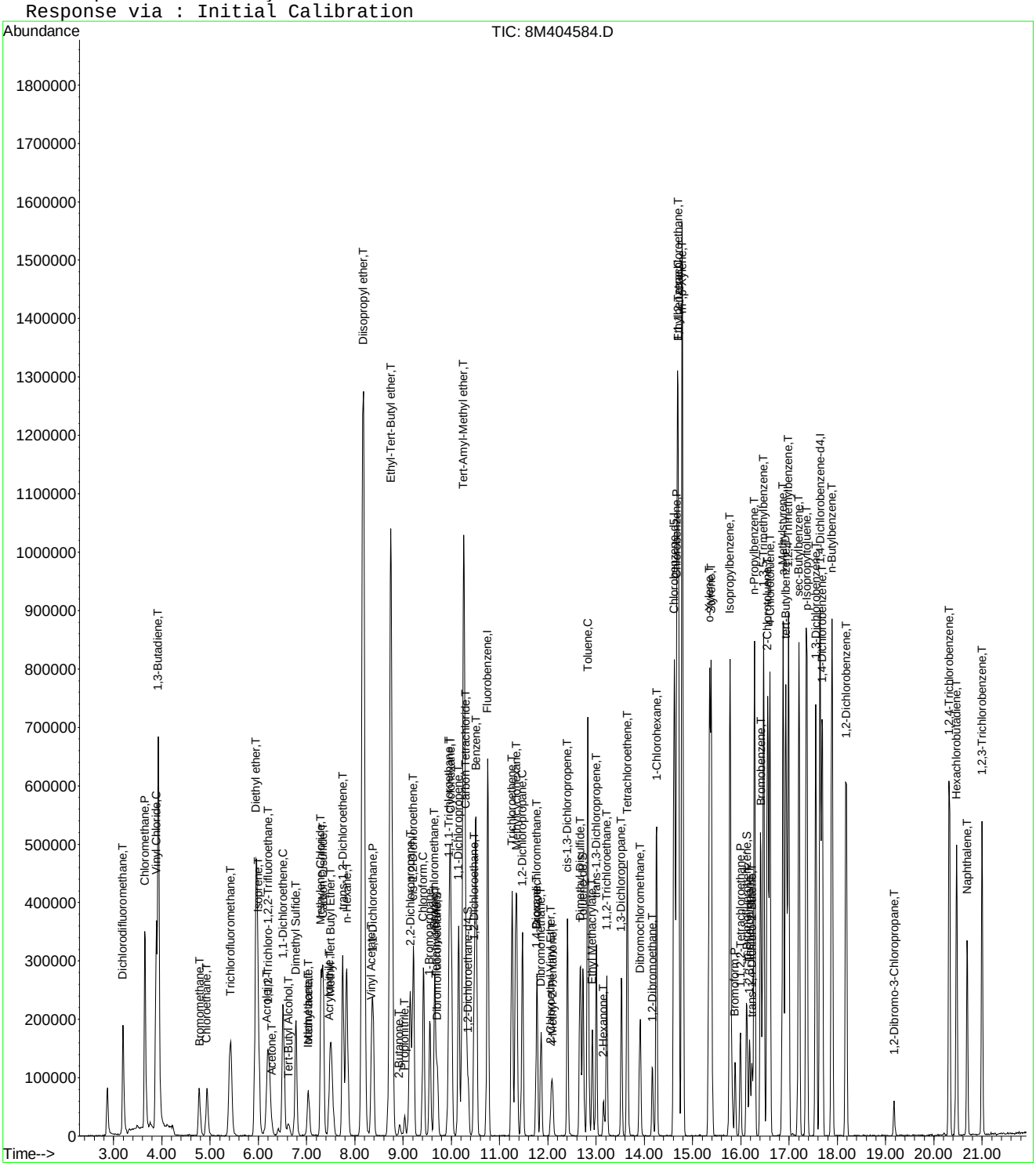

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404585.D Vial: 9
Acq On : 12 May 2015 19:42 Operator: TMB
Sample : WG523161-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:18 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	779258	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	545682	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.65	152	300564	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	191218	24.7569 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.04%		
43) 1,2-Dichloroethane-d4	10.35	65	182556	25.1505 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.60%		
58) Toluene-d8	12.73	98	657086	25.8044 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.20%		
80) p-Bromofluorobenzene	16.12	95	255554	24.9912 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.96%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.19	85	644248	53.3446 ug/L	99
3) Chloromethane	3.65	50	1203600	49.9206 ug/L	96
4) Vinyl Chloride	3.89	62	1175474	51.7399 ug/L	95
5) 1,3-Butadiene	3.93	54	1205454	60.0260 ug/L	99
6) Bromomethane	4.78	94	260223	48.3389 ug/L	99
7) Chloroethane	4.94	64	307028	49.6613 ug/L #	91
8) Trichlorofluoromethane	5.42	101	710092	49.7716 ug/L	98
9) Diethyl ether	5.95	59	509109	93.0762 ug/L	90
10) Isoprene	5.98	67	538313	50.8854 ug/L	80
11) Acrolein	6.19	56	9077	53.0585 ug/L	89
12) 1,1,2-Trichloro-1,2,2-Trif	6.20	101	399689	49.6350 ug/L	95
13) Acetone	6.28	43	53732	48.2817 ug/L	85
14) 1,1-Dichloroethene	6.51	61	689257	50.3284 ug/L	83
15) Tert-Butyl Alcohol	6.62	59	54364	181.5406 ug/L #	83
16) Dimethyl Sulfide	6.78	62	405835	50.8299 ug/L	79
17) Iodomethane	7.03	142	270107	48.8910 ug/L	80
18) Methyl acetate	7.04	43	191315	48.1743 ug/L	90
19) Methylene Chloride	7.30	84	388830	49.8192 ug/L #	54
20) Carbon Disulfide	7.34	76	1328711	52.7389 ug/L	96
21) Acrylonitrile	7.48	53	88115	49.7440 ug/L	94
22) Methyl Tert Butyl Ether	7.50	73	740269	49.2335 ug/L	96
23) trans-1,2-Dichloroethene	7.75	61	647880	49.5534 ug/L	85
24) n-Hexane	7.84	57	664406	50.2537 ug/L	95
25) Diisopropyl ether	8.18	45	2835089	97.8931 ug/L	92
26) Vinyl Acetate	8.34	43	494717	51.7415 ug/L	92
27) 1,1-Dichloroethane	8.37	63	805792	51.0536 ug/L	94
28) Ethyl-Tert-Butyl ether	8.75	59	2207186	97.1304 ug/L	93
29) 2-Butanone	8.92	43	89196	49.1919 ug/L	89
30) Propionitrile	9.03	54	54220	93.8197 ug/L	96
31) 2,2-Dichloropropane	9.15	77	637866	48.9836 ug/L	98
32) cis-1,2-Dichloroethene	9.21	96	446398	49.7108 ug/L	76
33) Chloroform	9.42	83	736233	50.2190 ug/L	95
34) 1-Bromopropane	9.56	122	78073	47.8976 ug/L	100
35) Bromochloromethane	9.66	130	229706	50.1611 ug/L #	70
36) Tetrahydrofuran	9.68	42	114556	93.7969 ug/L	86
38) 1,1,1-Trichloroethane	9.96	97	683447	51.3543 ug/L	97
39) Cyclohexane	9.99	56	810422	50.2462 ug/L	85
40) 1,1-Dichloropropene	10.15	75	577549	49.8796 ug/L	93
41) Tert-Amyl-Methyl ether	10.26	73	1610216	96.5412 ug/L	97
42) Carbon Tetrachloride	10.30	117	616028	50.9368 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404585.D Vial: 9
Acq On : 12 May 2015 19:42 Operator: TMB
Sample : WG523161-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:18 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.47	62	514353	48.9401	ug/L		92
46)	Benzene	10.51	78	1588546	50.9317	ug/L		98
47)	Trichloroethene	11.26	130	417289	50.5797	ug/L		97
48)	Methylcyclohexane	11.34	83	671759	50.1660	ug/L		90
49)	1,2-Dichloropropane	11.48	63	431723	49.4196	ug/L		100
50)	Bromodichloromethane	11.77	83	541835	50.3790	ug/L		96
51)	1,4-Dioxane	11.76	88	6692	200.7748	ug/L		82
52)	Dibromomethane	11.86	93	202188	49.1436	ug/L		89
53)	2-Chloroethyl Vinyl Ether	12.06	63	97536	45.9419	ug/L		94
54)	4-Methyl-2-Pentanone	12.10	58	74090	49.3322	ug/L		94
55)	cis-1,3-Dichloropropene	12.41	75	607979	51.7135	ug/L		95
56)	Dimethyl Disulfide	12.67	79	305206	44.2233	ug/L		96
59)	Toluene	12.83	91	1708453	52.7833	ug/L		84
60)	Ethyl Methacrylate	12.92	69	313437	54.4245	ug/L		74
62)	trans-1,3-Dichloropropene	13.01	75	501796	51.7221	ug/L		96
63)	1,1,2-Trichloroethane	13.22	97	254652	50.6394	ug/L		98
64)	2-Hexanone	13.16	58	72751	52.5360	ug/L	#	44
65)	1,3-Dichloropropane	13.52	76	444705	50.4460	ug/L		78
66)	Tetrachloroethene	13.65	164	345411	50.5613	ug/L		89
67)	Dibromochloromethane	13.92	129	341863	51.0864	ug/L		99
68)	1,2-Dibromoethane	14.16	107	250654	52.2130	ug/L		98
69)	1-Chlorohexane	14.26	91	558441	50.4410	ug/L		81
70)	Chlorobenzene	14.67	112	1122311	51.3735	ug/L		94
71)	1,1,1,2-Tetrachloroethane	14.70	131	399743	50.9771	ug/L		100
72)	Ethylbenzene	14.70	106	648843	49.5877	ug/L	#	32
73)	m-,p-Xylene	14.78	106	1577469	106.6006	ug/L	#	49
74)	o-Xylene	15.35	106	739767	50.5862	ug/L		62
75)	Styrene	15.38	104	1249268	53.9262	ug/L		88
76)	Bromoform	15.88	173	186775	43.9120	ug/L		98
77)	Isopropylbenzene	15.78	105	1915898	53.5687	ug/L		78
79)	1,1,2,2-Tetrachloroethane	15.99	83	278891	48.8342	ug/L		96
81)	1,2,3-Trichloropropane	16.18	110	76300	49.3137	ug/L		95
82)	trans-1,4-Dichloro-2-Buten	16.23	53	101529	53.5537	ug/L		73
83)	n-Propylbenzene	16.28	91	2371932	52.1578	ug/L	#	73
84)	Bromobenzene	16.42	156	446692	49.4611	ug/L		87
85)	1,3,5-Trimethylbenzene	16.47	105	1681429	54.0381	ug/L		79
86)	2-Chlorotoluene	16.55	91	1586959	51.7074	ug/L		79
87)	4-Chlorotoluene	16.60	91	1273589	51.8809	ug/L		76
88)	a-Methylstyrene	16.87	118	918764	51.8486	ug/L		94
89)	tert-Butylbenzene	16.93	134	340180	49.1775	ug/L		57
90)	1,2,4-Trimethylbenzene	16.99	105	1728864	54.0438	ug/L		75
91)	sec-Butylbenzene	17.20	105	2122575	54.7114	ug/L		78
92)	p-Isopropyltoluene	17.36	119	1803151	54.8210	ug/L		78
93)	1,3-Dichlorobenzene	17.55	146	941775	51.4543	ug/L		92
94)	1,4-Dichlorobenzene	17.69	146	933434	50.2338	ug/L		92
95)	n-Butylbenzene	17.89	91	1757124	54.6885	ug/L		79
96)	1,2-Dichlorobenzene	18.19	146	821672	51.7329	ug/L		94
97)	1,2-Dibromo-3-Chloropropan	19.18	75	46082	50.5509	ug/L		85
98)	1,2,4-Trichlorobenzene	20.33	180	615919	51.4767	ug/L		99
99)	Hexachlorobutadiene	20.47	225	305672	48.9007	ug/L		94
100)	Naphthalene	20.69	128	840527	52.3797	ug/L		92
101)	1,2,3-Trichlorobenzene	21.00	180	516669	50.9579	ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404585.D Vial: 9
Acq On : 12 May 2015 19:42 Operator: TMB
Sample : WG523161-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

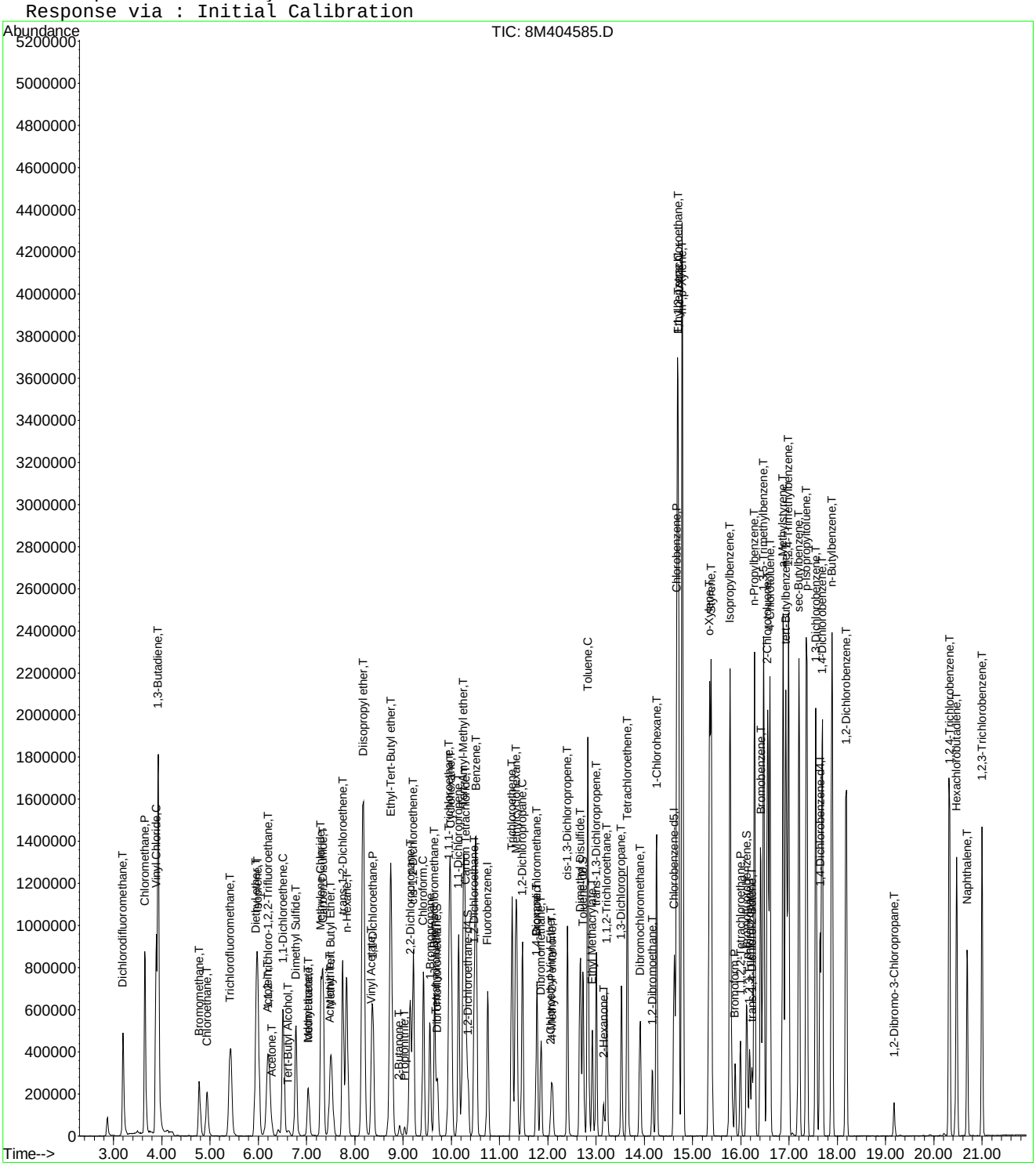

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404586.D Vial: 10
Acq On : 12 May 2015 20:11 Operator: TMB
Sample : WG523161-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:20 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	835793	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	592311	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	322769	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	408845	49.3524 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 197.40%#		
43) 1,2-Dichloroethane-d4	10.35	65	378235	48.5842 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 194.32%#		
58) Toluene-d8	12.73	98	1401831	50.7174 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 202.88%#		
80) p-Bromofluorobenzene	16.12	95	539730	49.1503 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 196.60%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.20	85	1383354	106.7956 ug/L	97
3) Chloromethane	3.65	50	2506665	96.9341 ug/L	98
4) Vinyl Chloride	3.88	62	2378459	97.6093 ug/L	97
5) 1,3-Butadiene	3.92	54	1821955	89.8183 ug/L	94
6) Bromomethane	4.78	94	626348	101.5627 ug/L	98
7) Chloroethane	4.93	64	685164	103.3278 ug/L	91
8) Trichlorofluoromethane	5.42	101	1565645	102.3158 ug/L	98
9) Diethyl ether	5.95	59	1168845	199.2357 ug/L	90
10) Isoprene	5.99	67	1166935	102.8460 ug/L	78
11) Acrolein	6.19	56	31264	95.9802 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.21	101	894848	103.6091 ug/L	94
13) Acetone	6.29	43	110215	92.3363 ug/L	86
14) 1,1-Dichloroethene	6.52	61	1506669	102.5728 ug/L	84
15) Tert-Butyl Alcohol	6.63	59	127964	398.4122 ug/L	99
16) Dimethyl Sulfide	6.79	62	872019	101.8306 ug/L	79
17) Iodomethane	7.03	142	628717	103.2155 ug/L	82
18) Methyl acetate	7.04	43	412223	96.7791 ug/L	90
19) Methylene Chloride	7.30	84	855087	102.1479 ug/L	57
20) Carbon Disulfide	7.34	76	2858622	105.7889 ug/L	96
21) Acrylonitrile	7.48	53	190020	100.0167 ug/L	92
22) Methyl Tert Butyl Ether	7.52	73	1596559	99.0009 ug/L	96
23) trans-1,2-Dichloroethene	7.75	61	1424677	101.5963 ug/L	84
24) n-Hexane	7.83	57	1448349	102.1387 ug/L	96
25) Diisopropyl ether	8.17	45	6219435	200.2252 ug/L	92
26) Vinyl Acetate	8.35	43	987523	96.2968 ug/L	93
27) 1,1-Dichloroethane	8.37	63	1750301	103.3947 ug/L	95
28) Ethyl-Tert-Butyl ether	8.75	59	4921546	201.9298 ug/L	94
29) 2-Butanone	8.93	43	192807	99.1412 ug/L	89
30) Propionitrile	9.04	54	125291	202.1329 ug/L	100
31) 2,2-Dichloropropane	9.15	77	1386765	99.2903 ug/L	99
32) cis-1,2-Dichloroethene	9.22	96	970632	100.7779 ug/L	77
33) Chloroform	9.42	83	1615985	102.7714 ug/L	96
34) 1-Bromopropane	9.56	122	171401	97.5487 ug/L	97
35) Bromochloromethane	9.65	130	492984	100.3714 ug/L #	70
36) Tetrahydrofuran	9.68	42	256736	195.9927 ug/L	87
38) 1,1,1-Trichloroethane	9.96	97	1521529	106.5945 ug/L	97
39) Cyclohexane	9.99	56	1818826	105.1394 ug/L	84
40) 1,1-Dichloropropene	10.15	75	1264140	101.7916 ug/L	92
41) Tert-Amyl-Methyl ether	10.26	73	3613952	202.0196 ug/L	96
42) Carbon Tetrachloride	10.30	117	1390334	107.1846 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404586.D Vial: 10
Acq On : 12 May 2015 20:11 Operator: TMB
Sample : WG523161-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:20 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.47	62	1128430	100.1062 ug/L		92
46)	Benzene	10.51	78	3395811	101.5114 ug/L		99
47)	Trichloroethene	11.26	130	922762	104.2826 ug/L		97
48)	Methylcyclohexane	11.35	83	1455920	101.3714 ug/L		89
49)	1,2-Dichloropropane	11.47	63	933784	99.6606 ug/L		100
50)	Bromodichloromethane	11.77	83	1190418	103.1964 ug/L		97
51)	1,4-Dioxane	11.77	88	15430	376.1778 ug/L		87
52)	Dibromomethane	11.86	93	440813	99.8961 ug/L		89
53)	2-Chloroethyl Vinyl Ether	12.07	63	209924	93.1404 ug/L		94
54)	4-Methyl-2-Pentanone	12.10	58	162221	100.7072 ug/L		91
55)	cis-1,3-Dichloropropene	12.41	75	1312387	104.0782 ug/L		95
56)	Dimethyl Disulfide	12.67	79	704664	91.7111 ug/L		100
59)	Toluene	12.83	91	3647044	103.8064 ug/L		85
60)	Ethyl Methacrylate	12.93	69	656031	104.9442 ug/L		72
62)	trans-1,3-Dichloropropene	13.00	75	1083873	102.9242 ug/L		96
63)	1,1,2-Trichloroethane	13.22	97	551455	101.0280 ug/L		99
64)	2-Hexanone	13.15	58	146129	97.2175 ug/L	#	75
65)	1,3-Dichloropropane	13.53	76	953196	99.6155 ug/L		79
66)	Tetrachloroethene	13.65	164	783174	105.6160 ug/L		90
67)	Dibromochloromethane	13.91	129	774593	106.6392 ug/L		98
68)	1,2-Dibromoethane	14.17	107	545217	104.6318 ug/L		99
69)	1-Chlorohexane	14.25	91	1233565	102.6499 ug/L		82
70)	Chlorobenzene	14.67	112	2511075	105.8950 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.71	131	958028	112.5543 ug/L		99
72)	Ethylbenzene	14.70	106	1517369	106.8354 ug/L	#	44
73)	m-,p-Xylene	14.79	106	3521035	219.2093 ug/L		66
74)	o-Xylene	15.35	106	1661714	104.6847 ug/L		66
75)	Styrene	15.39	104	2725004	108.3681 ug/L		91
76)	Bromoform	15.88	173	425724	91.3519 ug/L		99
77)	Isopropylbenzene	15.78	105	4087264	105.2836 ug/L		80
79)	1,1,2,2-Tetrachloroethane	15.99	83	597831	97.4794 ug/L		97
81)	1,2,3-Trichloropropane	16.18	110	166377	100.1340 ug/L		97
82)	trans-1,4-Dichloro-2-Buten	16.23	53	198733	97.6146 ug/L		83
83)	n-Propylbenzene	16.29	91	4854104	99.3965 ug/L		76
84)	Bromobenzene	16.41	156	998426	102.9478 ug/L		90
85)	1,3,5-Trimethylbenzene	16.47	105	3620860	108.3623 ug/L		82
86)	2-Chlorotoluene	16.56	91	3081622	93.5000 ug/L		82
87)	4-Chlorotoluene	16.60	91	2997134	113.6920 ug/L		78
88)	a-Methylstyrene	16.88	118	2011260	105.6931 ug/L		94
89)	tert-Butylbenzene	16.94	134	758018	102.0429 ug/L		62
90)	1,2,4-Trimethylbenzene	16.99	105	3673145	106.9222 ug/L		78
91)	sec-Butylbenzene	17.21	105	4454269	106.9145 ug/L		80
92)	p-Isopropyltoluene	17.36	119	3834274	108.5533 ug/L		81
93)	1,3-Dichlorobenzene	17.56	146	2072717	105.4531 ug/L		93
94)	1,4-Dichlorobenzene	17.68	146	2037658	102.1148 ug/L		94
95)	n-Butylbenzene	17.89	91	3728716	108.0683 ug/L		81
96)	1,2-Dichlorobenzene	18.18	146	1776025	104.1269 ug/L		94
97)	1,2-Dibromo-3-Chloropropan	19.17	75	101241	103.4188 ug/L		84
98)	1,2,4-Trichlorobenzene	20.32	180	1367029	106.3922 ug/L		99
99)	Hexachlorobutadiene	20.47	225	722376	107.6137 ug/L		95
100)	Naphthalene	20.69	128	1844011	107.0090 ug/L		94
101)	1,2,3-Trichlorobenzene	21.00	180	1148705	105.5000 ug/L		100

(#) = qualifier out of range (m) = manual integration
8M404586.D 8260WT.M Wed May 13 06:46:20 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404586.D Vial: 10
Acq On : 12 May 2015 20:11 Operator: TMB
Sample : WG523161-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

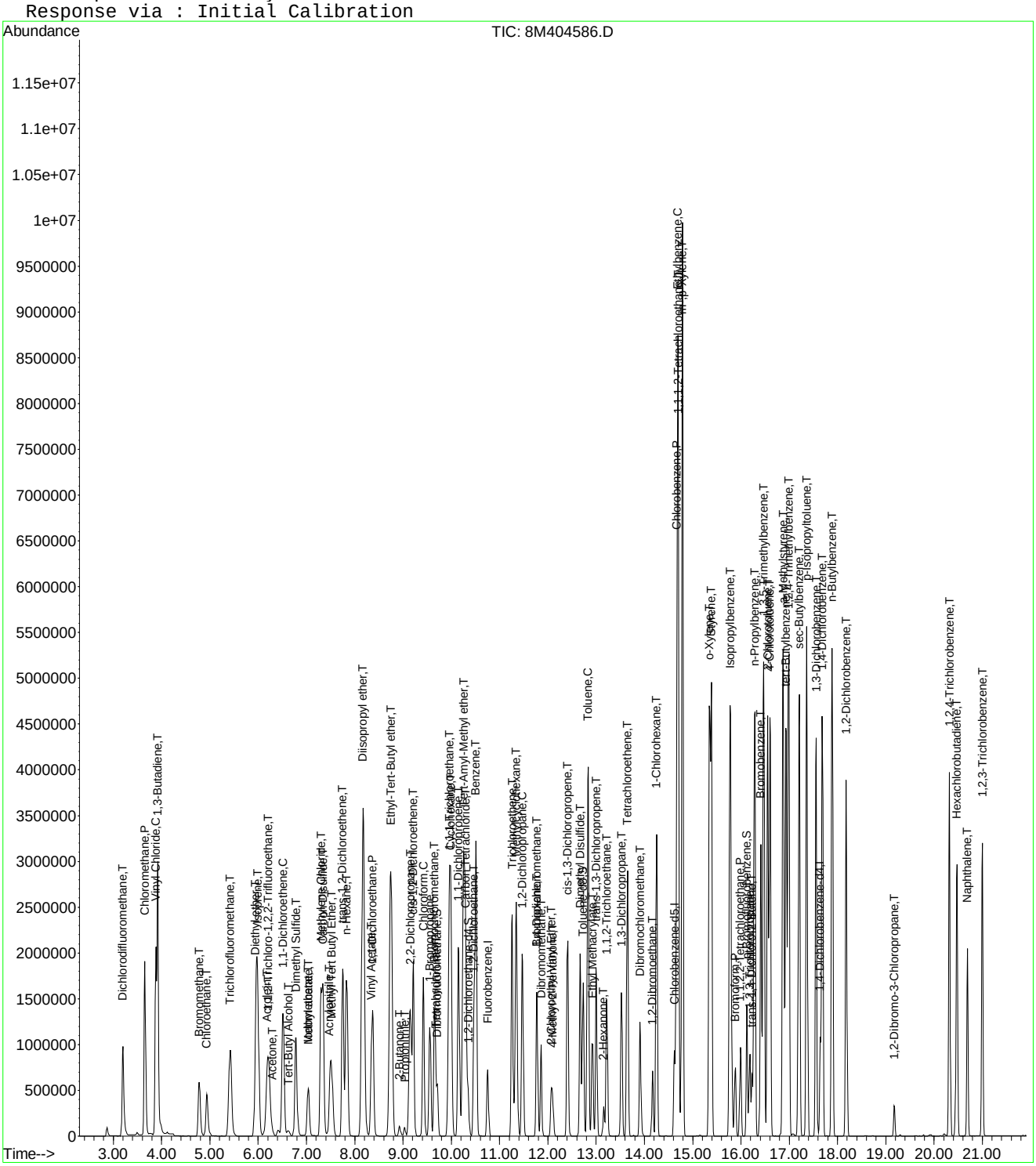

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404587.D Vial: 11
Acq On : 12 May 2015 20:40 Operator: TMB
Sample : WG523161-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:21 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	889446	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	653814	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.65	152	358038	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.71	111	897295	101.7803 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 407.12%#		
43) 1,2-Dichloroethane-d4	10.35	65	834454	100.7199 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 402.88%#		
58) Toluene-d8	12.73	98	3020686	99.0061 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 396.04%#		
80) p-Bromofluorobenzene	16.12	95	1227532	100.7731 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 403.08%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.19	85	2862202	207.6346 ug/L	100
3) Chloromethane	3.65	50	4844973	176.0559 ug/L	97
4) Vinyl Chloride	3.88	62	4418229	170.3816 ug/L	98
5) 1,3-Butadiene	3.92	54	3042896	167.5645 ug/L	93
6) Bromomethane	4.78	94	1514622	207.0087 ug/L	99
7) Chloroethane	4.93	64	1492001	211.4320 ug/L	91
8) Trichlorofluoromethane	5.42	101	3375416	207.2794 ug/L	99
10) Isoprene	5.99	67	2523633	208.9999 ug/L	79
11) Acrolein	6.19	56	215	Below Cal # 13	
12) 1,1,2-Trichloro-1,2,2-Trif	6.20	101	1910657	207.8790 ug/L	94
13) Acetone	6.29	43	266605	209.8839 ug/L	86
14) 1,1-Dichloroethene	6.51	61	3247825	207.7715 ug/L	85
15) Tert-Butyl Alcohol	6.65	59	409	1.1966 ug/L #	61
16) Dimethyl Sulfide	6.78	62	1949857	213.9608 ug/L	79
17) Iodomethane	7.03	142	1410075	209.7673 ug/L	81
18) Methyl acetate	7.04	43	947887	209.1149 ug/L	92
19) Methylene Chloride	7.30	84	1900593	213.3475 ug/L	59
20) Carbon Disulfide	7.34	76	6053547	210.5098 ug/L	97
21) Acrylonitrile	7.52	53	43757	21.6421 ug/L #	38
22) Methyl Tert Butyl Ether	7.51	73	3646249	212.4611 ug/L	95
23) trans-1,2-Dichloroethene	7.74	61	3120484	209.1042 ug/L	85
24) n-Hexane	7.83	57	3144492	208.3756 ug/L	96
26) Vinyl Acetate	8.34	43	2191703	200.8286 ug/L	92
27) 1,1-Dichloroethane	8.37	63	3753089	208.3309 ug/L	97
29) 2-Butanone	8.92	43	435590	210.4690 ug/L	87
30) Propionitrile	9.05	54	214	0.3244 ug/L #	1
31) 2,2-Dichloropropane	9.15	77	3011577	202.6176 ug/L	99
32) cis-1,2-Dichloroethene	9.21	96	2136676	208.4628 ug/L	77
33) Chloroform	9.42	83	3483917	208.2006 ug/L	97
34) 1-Bromopropane	9.56	122	375097	200.1030 ug/L	99
35) Bromochloromethane	9.66	130	1081406	206.8927 ug/L #	73
36) Tetrahydrofuran	9.68	42	1304	0.9354 ug/L #	32
38) 1,1,1-Trichloroethane	9.96	97	3356452	220.9602 ug/L	99
39) Cyclohexane	9.99	56	4044031	219.6687 ug/L	84
40) 1,1-Dichloropropene	10.15	75	2738411	207.2023 ug/L	93
42) Carbon Tetrachloride	10.30	117	2985746	216.2945 ug/L	98
45) 1,2-Dichloroethane	10.47	62	2521588	210.2034 ug/L	93
46) Benzene	10.51	78	6808887	191.2611 ug/L	93
47) Trichloroethene	11.26	130	2070517	219.8771 ug/L	97
48) Methylcyclohexane	11.34	83	3202469	209.5281 ug/L	88

(#) = qualifier out of range (m) = manual integration
8M404587.D 8260WT.M Wed May 13 06:46:21 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404587.D Vial: 11
Acq On : 12 May 2015 20:40 Operator: TMB
Sample : WG523161-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:21 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
49)	1,2-Dichloropropane	11.48	63	2078666	208.4687 ug/L		99
50)	Bromodichloromethane	11.78	83	2658161	216.5336 ug/L		97
51)	1,4-Dioxane	11.77	88	3610	120.3207 ug/L	#	23
52)	Dibromomethane	11.86	93	1002659	213.5141 ug/L		90
53)	2-Chloroethyl Vinyl Ether	12.07	63	491467	206.0353 ug/L		95
54)	4-Methyl-2-Pentanone	12.10	58	378377	220.7279 ug/L		93
55)	cis-1,3-Dichloropropene	12.41	75	2907986	216.7051 ug/L		97
56)	Dimethyl Disulfide	12.68	79	1679554	201.6567 ug/L		98
59)	Toluene	12.83	91	7021493	181.0540 ug/L		94
60)	Ethyl Methacrylate	12.92	69	1552021	224.9195 ug/L		72
62)	trans-1,3-Dichloropropene	13.01	75	2472627	212.7125 ug/L		98
63)	1,1,2-Trichloroethane	13.22	97	1251523	207.7141 ug/L		99
64)	2-Hexanone	13.16	58	355605	214.3243 ug/L	#	80
65)	1,3-Dichloropropane	13.52	76	2145547	203.1319 ug/L		79
66)	Tetrachloroethene	13.65	164	1796038	219.4233 ug/L		90
67)	Dibromochloromethane	13.92	129	1788944	223.1185 ug/L		99
68)	1,2-Dibromoethane	14.16	107	1265159	219.9555 ug/L		98
69)	1-Chlorohexane	14.26	91	2758216	207.9315 ug/L		79
70)	Chlorobenzene	14.67	112	5520224	210.8958 ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.70	131	2433988	259.0586 ug/L		100
72)	Ethylbenzene	14.70	106	3719039	237.2193 ug/L		89
73)	m-,p-Xylene	14.79	106	7071131	398.8164 ug/L		97
74)	o-Xylene	15.35	106	3783766	215.9467 ug/L		86
75)	Styrene	15.38	104	5773777	208.0127 ug/L		99
76)	Bromoform	15.88	173	1041191	201.4528 ug/L		100
77)	Isopropylbenzene	15.78	105	7635859	178.1893 ug/L		90
79)	1,1,2,2-Tetrachloroethane	15.99	83	1382772	203.2581 ug/L		98
81)	1,2,3-Trichloropropane	16.18	110	394464	214.0220 ug/L		60
82)	trans-1,4-Dichloro-2-Buten	16.23	53	532498	235.7900 ug/L	#	49
83)	n-Propylbenzene	16.28	91	8425487	155.5320 ug/L		89
84)	Bromobenzene	16.42	156	2300151	213.8061 ug/L		91
85)	1,3,5-Trimethylbenzene	16.47	105	7048923	190.1744 ug/L		92
86)	2-Chlorotoluene	16.55	91	6754472	184.7508 ug/L		88
87)	4-Chlorotoluene	16.60	91	5302382	181.3248 ug/L		88
88)	a-Methylstyrene	16.87	118	4497302	213.0558 ug/L		100
89)	tert-Butylbenzene	16.94	134	1793662	217.6740 ug/L		76
90)	1,2,4-Trimethylbenzene	16.99	105	7116862	186.7588 ug/L		91
91)	sec-Butylbenzene	17.20	105	8080340	174.8447 ug/L		91
92)	p-Isopropyltoluene	17.37	119	7238323	184.7399 ug/L		92
93)	1,3-Dichlorobenzene	17.56	146	4509634	206.8347 ug/L		99
94)	1,4-Dichlorobenzene	17.69	146	4440196	200.5960 ug/L		99
95)	n-Butylbenzene	17.89	91	7013484	183.2464 ug/L		91
96)	1,2-Dichlorobenzene	18.19	146	3977816	210.2429 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.18	75	246654	227.1401 ug/L		82
98)	1,2,4-Trichlorobenzene	20.33	180	3226918	226.4032 ug/L		99
99)	Hexachlorobutadiene	20.47	225	1704346	228.8889 ug/L		95
100)	Naphthalene	20.69	128	4140977	216.6318 ug/L		96
101)	1,2,3-Trichlorobenzene	21.00	180	2713711	224.6831 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M404587.D 8260WT.M Wed May 13 06:46:21 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404587.D Vial: 11
Acq On : 12 May 2015 20:40 Operator: TMB
Sample : WG523161-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

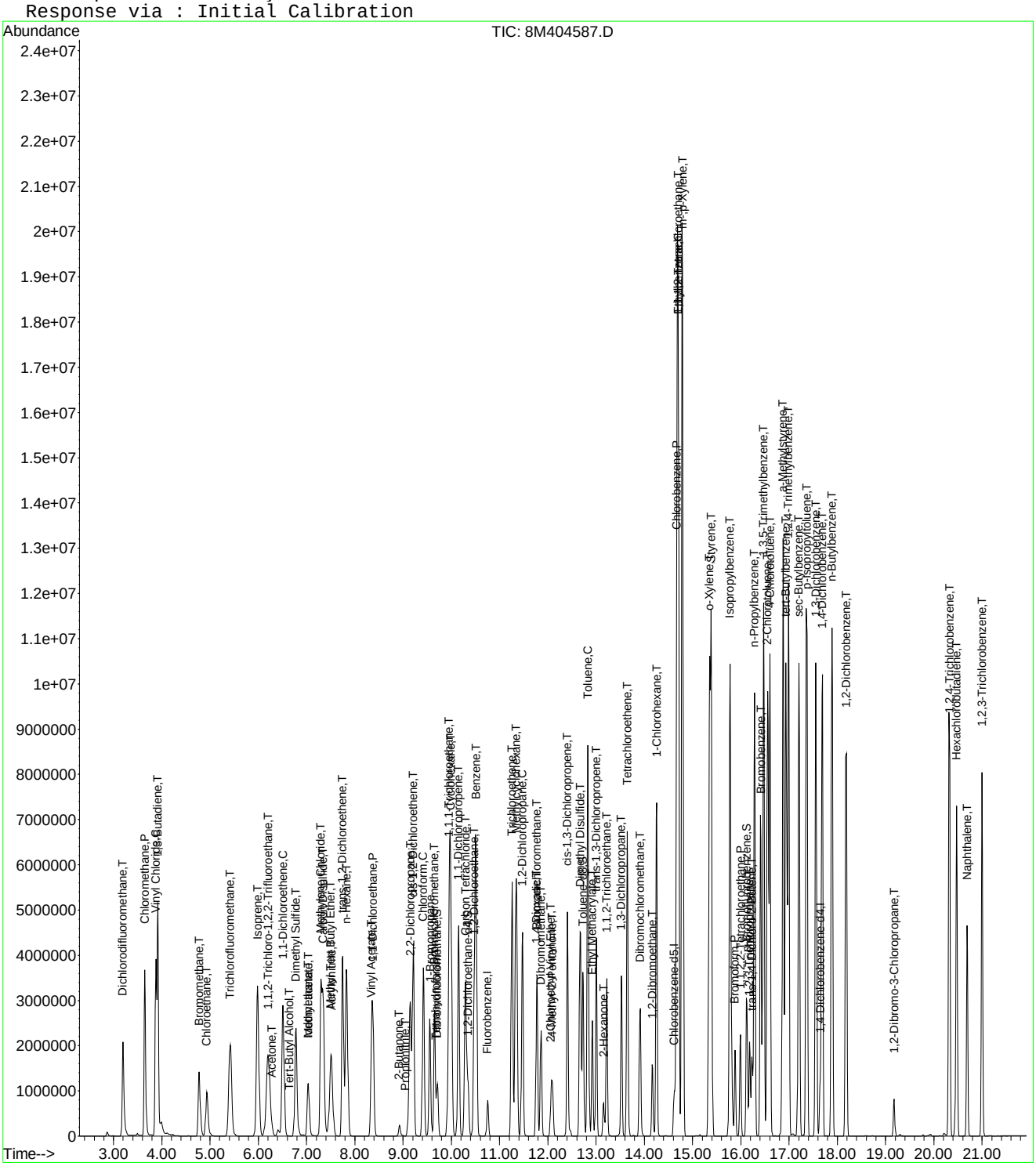

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404588.D Vial: 12
Acq On : 12 May 2015 21:08 Operator: TMB
Sample : WG523161-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:22 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	956908	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	688487	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	385083	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	1448349	152.7042 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 610.80%#		
43) 1,2-Dichloroethane-d4	10.35	65	1346423	151.0580 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 604.24%#		
58) Toluene-d8	12.73	98	4678124	145.6085 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 582.44%#		
80) p-Bromofluorobenzene	16.12	95	2010706	153.4742 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 613.88%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.20	85	4427735	298.5591 ug/L	99
3) Chloromethane	3.65	50	6722257	227.0512 ug/L	89
4) Vinyl Chloride	3.88	62	5912550	211.9331 ug/L	91
5) 1,3-Butadiene	3.91	54	4227927	Below Cal	94
6) Bromomethane	4.77	94	2527001	295.8588 ug/L	99
7) Chloroethane	4.93	64	2363039	311.2590 ug/L	92
8) Trichlorofluoromethane	5.42	101	5539478	316.1892 ug/L	99
9) Diethyl ether	5.95	59	2174019	323.6697 ug/L	91
10) Isoprene	5.99	67	4227943	325.4605 ug/L	77
11) Acrolein	6.18	56	90963	151.2625 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.21	101	3075974	311.0713 ug/L	96
13) Acetone	6.29	43	381061	278.8398 ug/L	93
14) 1,1-Dichloroethene	6.52	61	5185912	308.3670 ug/L	86
15) Tert-Butyl Alcohol	6.63	59	239538	651.4001 ug/L	99
16) Dimethyl Sulfide	6.77	62	3143641	320.6371 ug/L	79
17) Iodomethane	7.03	142	2174912	293.2570 ug/L	80
18) Methyl acetate	7.04	43	1497945	307.1664 ug/L	93
19) Methylene Chloride	7.30	84	3081232	321.4935 ug/L	64
20) Carbon Disulfide	7.34	76	9131673	295.1632 ug/L	99
21) Acrylonitrile	7.48	53	397136	182.5748 ug/L	98
22) Methyl Tert Butyl Ether	7.51	73	5644499	305.7088 ug/L	93
23) trans-1,2-Dichloroethene	7.75	61	4902610	305.3638 ug/L	87
24) n-Hexane	7.83	57	5055705	311.4064 ug/L	94
25) Diisopropyl ether	8.17	45	9927030	279.1359 ug/L	91
26) Vinyl Acetate	8.35	43	3434730	292.5404 ug/L	93
27) 1,1-Dichloroethane	8.37	63	5850225	301.8470 ug/L	99
28) Ethyl-Tert-Butyl ether	8.75	59	8274414	296.5272 ug/L	94
29) 2-Butanone	8.92	43	659119	296.0217 ug/L	90
30) Propionitrile	9.04	54	228827	322.4430 ug/L	99
31) 2,2-Dichloropropane	9.15	77	4810863	300.8539 ug/L	99
32) cis-1,2-Dichloroethene	9.21	96	3430243	311.0744 ug/L	78
33) Chloroform	9.42	83	5392781	299.5549 ug/L	100
34) 1-Bromopropane	9.56	122	616502	305.4506 ug/L	99
35) Bromochloromethane	9.66	130	1697935	301.9443 ug/L	75
36) Tetrahydrofuran	9.68	42	482439	321.6801 ug/L	86
38) 1,1,1-Trichloroethane	9.96	97	5475504	335.0480 ug/L	99
39) Cyclohexane	9.98	56	6639422	335.2226 ug/L	86
40) 1,1-Dichloropropene	10.14	75	4403988	309.7359 ug/L	95
41) Tert-Amyl-Methyl ether	10.26	73	6483836	316.5714 ug/L	95
42) Carbon Tetrachloride	10.30	117	4961684	334.0958 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M404588.D 8260WT.M Wed May 13 06:46:22 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404588.D Vial: 12
Acq On : 12 May 2015 21:08 Operator: TMB
Sample : WG523161-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:22 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.46	62	3965116	307.2351 ug/L		92
46)	Benzene	10.51	78	9538776	249.0534 ug/L		82
47)	Trichloroethene	11.26	130	3369408	332.5862 ug/L		96
48)	Methylcyclohexane	11.34	83	5268711	320.4137 ug/L		88
49)	1,2-Dichloropropane	11.47	63	3373652	314.4892 ug/L		98
50)	Bromodichloromethane	11.77	83	4217899	319.3667 ug/L		100
51)	1,4-Dioxane	11.77	88	30460	613.6909 ug/L		85
52)	Dibromomethane	11.86	93	1632189	323.0675 ug/L		90
53)	2-Chloroethyl Vinyl Ether	12.07	63	783687	305.8338 ug/L		95
54)	4-Methyl-2-Pentanone	12.10	58	581624	315.3728 ug/L		93
55)	cis-1,3-Dichloropropene	12.41	75	4539085	314.4087 ug/L		100
56)	Dimethyl Disulfide	12.67	79	2820560	313.0809 ug/L		93
59)	Toluene	12.83	91	9359764	229.1934 ug/L		97
60)	Ethyl Methacrylate	12.93	69	2471849	340.1809 ug/L		71
62)	trans-1,3-Dichloropropene	13.01	75	3878029	316.8138 ug/L		100
63)	1,1,2-Trichloroethane	13.23	97	2033857	320.5576 ug/L		98
64)	2-Hexanone	13.15	58	533241	305.2008 ug/L	#	81
65)	1,3-Dichloropropane	13.53	76	3365829	302.6151 ug/L		78
66)	Tetrachloroethene	13.65	164	3018572	350.2090 ug/L		90
67)	Dibromochloromethane	13.91	129	2906820	344.2828 ug/L		100
68)	1,2-Dibromoethane	14.17	107	2005124	331.0469 ug/L		99
69)	1-Chlorohexane	14.26	91	4462387	319.4608 ug/L		78
70)	Chlorobenzene	14.67	112	7907308	286.8788 ug/L		85
71)	1,1,1,2-Tetrachloroethane	14.70	131	4172914	421.7717 ug/L		99
72)	Ethylbenzene	14.70	106	6055831	366.8188 ug/L		80
73)	m-,p-Xylene	14.79	106	9345850	500.5661 ug/L		94
74)	o-Xylene	15.36	106	6029480	326.7839 ug/L		94
75)	Styrene	15.39	104	8231523	281.6232 ug/L		89
76)	Bromoform	15.88	173	1723238	316.1796 ug/L		99
77)	Isopropylbenzene	15.78	105	10012029	221.8729 ug/L		94
79)	1,1,2,2-Tetrachloroethane	16.00	83	2160112	295.2217 ug/L		98
81)	1,2,3-Trichloropropane	16.18	110	619391	312.4573 ug/L		58
82)	trans-1,4-Dichloro-2-Buten	16.23	53	753579	310.2494 ug/L	#	58
83)	n-Propylbenzene	16.29	91	10577160	181.5385 ug/L		95
84)	Bromobenzene	16.41	156	3698392	319.6329 ug/L		98
85)	1,3,5-Trimethylbenzene	16.47	105	9247035	231.9565 ug/L		96
86)	2-Chlorotoluene	16.55	91	7786851	198.0302 ug/L		86
87)	4-Chlorotoluene	16.61	91	6661327	211.7980 ug/L		97
88)	a-Methylstyrene	16.88	118	6747826	297.2213 ug/L		92
89)	tert-Butylbenzene	16.94	134	3054650	344.6689 ug/L		94
90)	1,2,4-Trimethylbenzene	16.99	105	9326416	227.5528 ug/L		94
91)	sec-Butylbenzene	17.21	105	10388453	209.0011 ug/L		95
92)	p-Isopropyltoluene	17.36	119	9384689	222.6985 ug/L		93
93)	1,3-Dichlorobenzene	17.56	146	6518770	277.9858 ug/L		91
94)	1,4-Dichlorobenzene	17.69	146	6369556	267.5495 ug/L		91
95)	n-Butylbenzene	17.89	91	9037379	219.5427 ug/L		96
96)	1,2-Dichlorobenzene	18.19	146	5908048	290.3323 ug/L		94
97)	1,2-Dibromo-3-Chloropropan	19.17	75	385147	329.7669 ug/L		85
98)	1,2,4-Trichlorobenzene	20.32	180	4917771	320.8025 ug/L		98
99)	Hexachlorobutadiene	20.47	225	2870393	358.4124 ug/L		94
100)	Naphthalene	20.69	128	5921865	288.0399 ug/L		100
101)	1,2,3-Trichlorobenzene	21.00	180	4158303	320.1088 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M404588.D 8260WT.M Wed May 13 06:46:22 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404588.D Vial: 12
Acq On : 12 May 2015 21:08 Operator: TMB
Sample : WG523161-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD70474 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

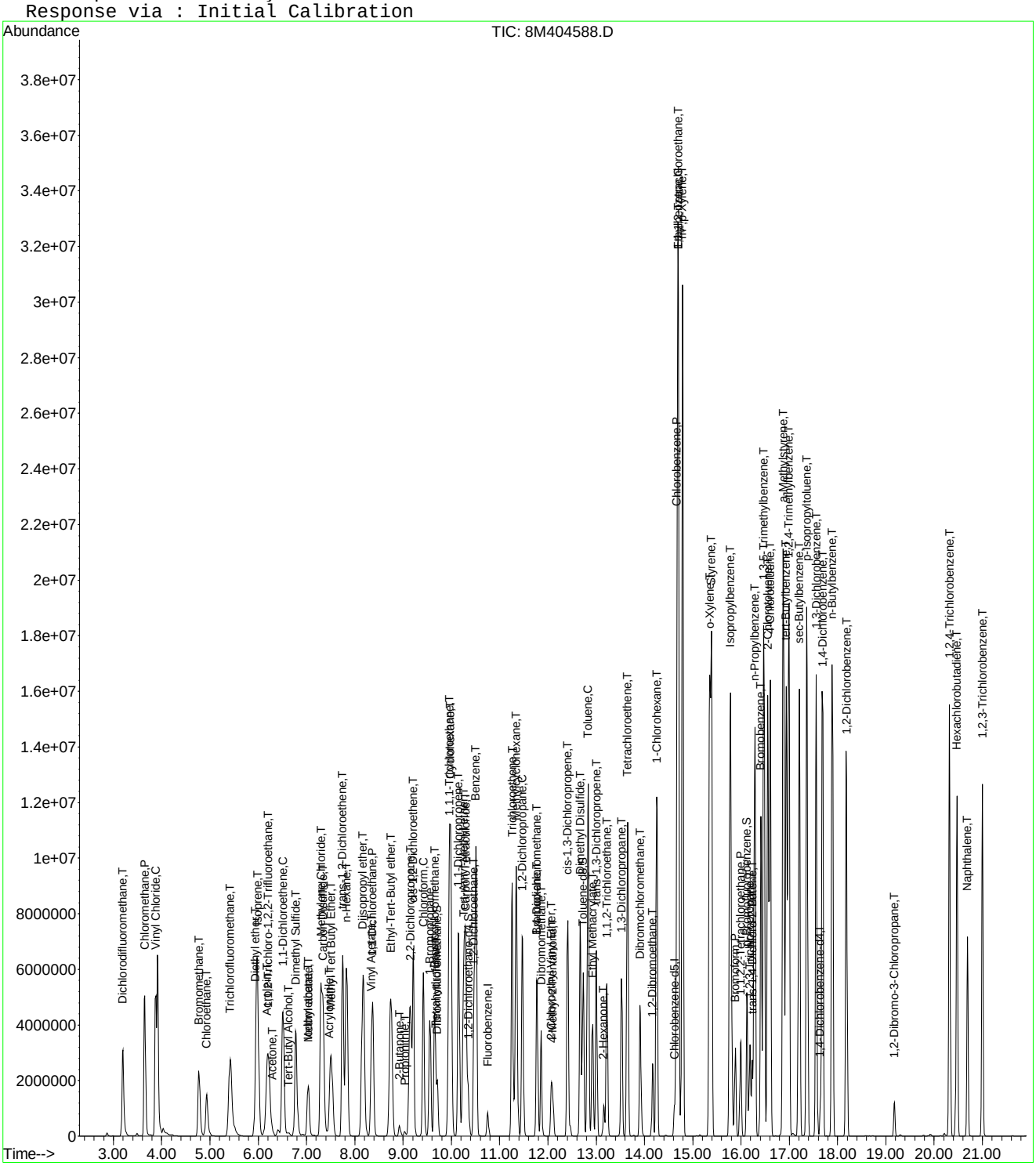

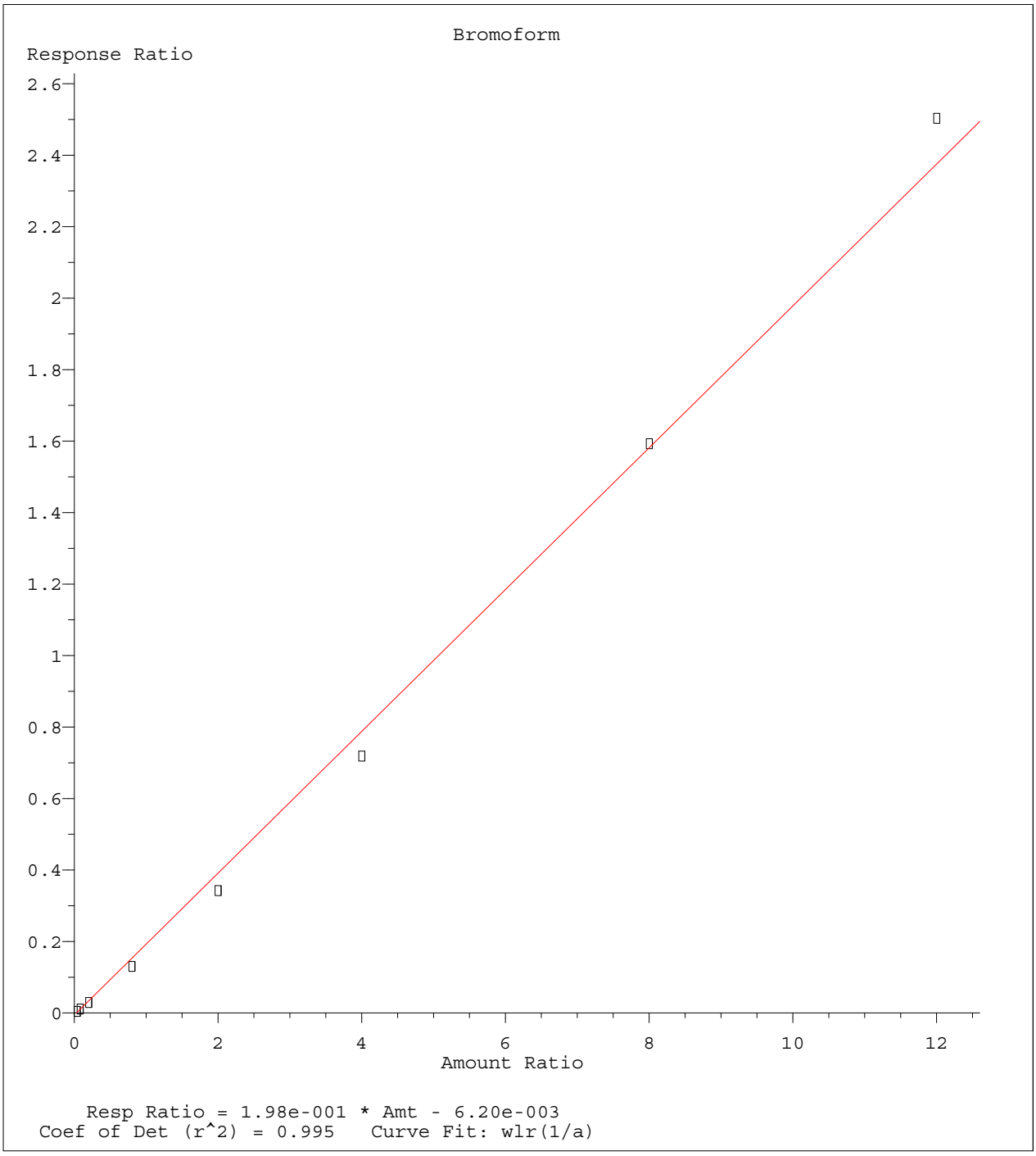

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Wed May 13 06:45:06 2015

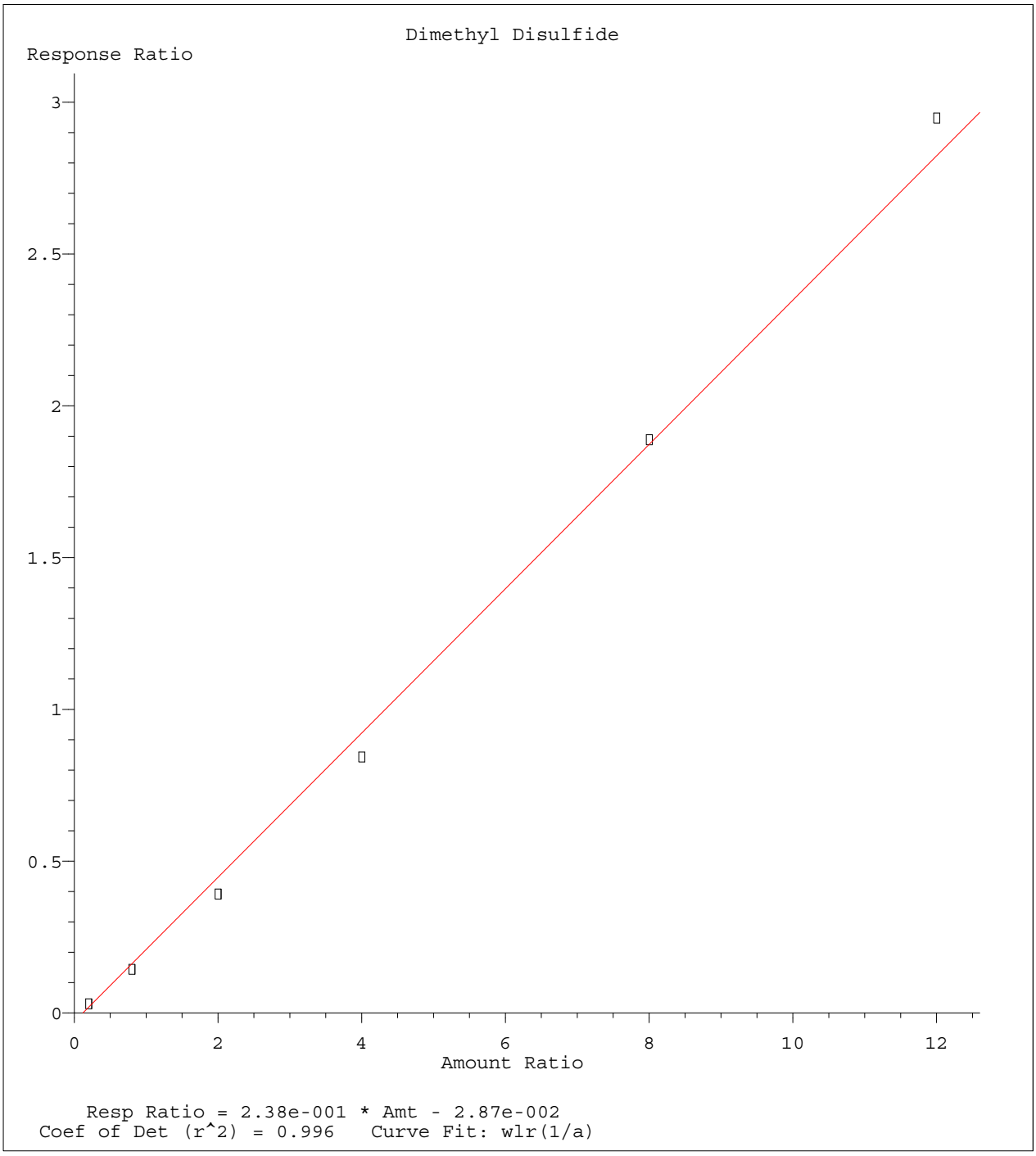

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Wed May 13 06:45:06 2015

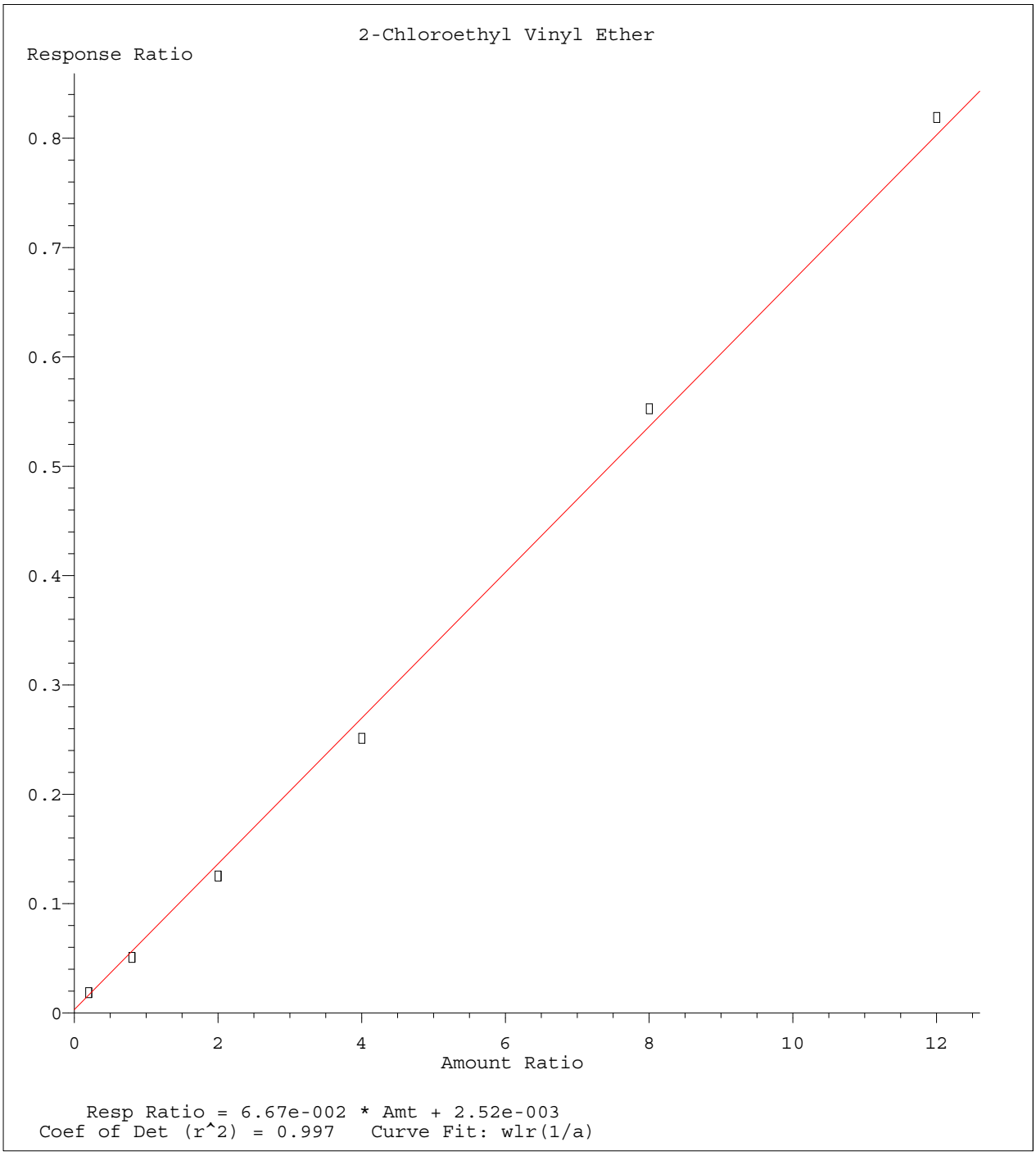

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Wed May 13 06:45:06 2015

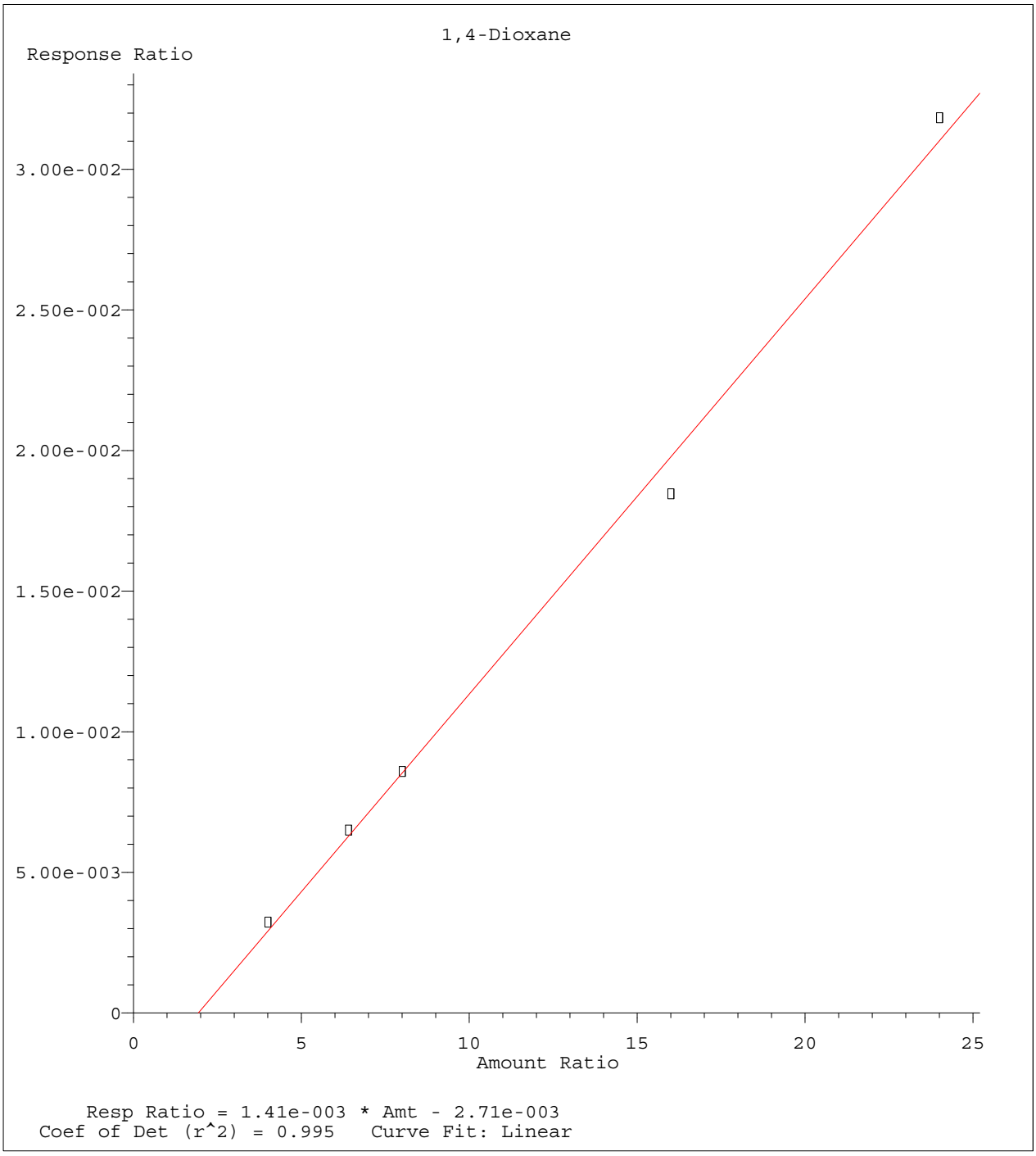

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Wed May 13 06:45:06 2015

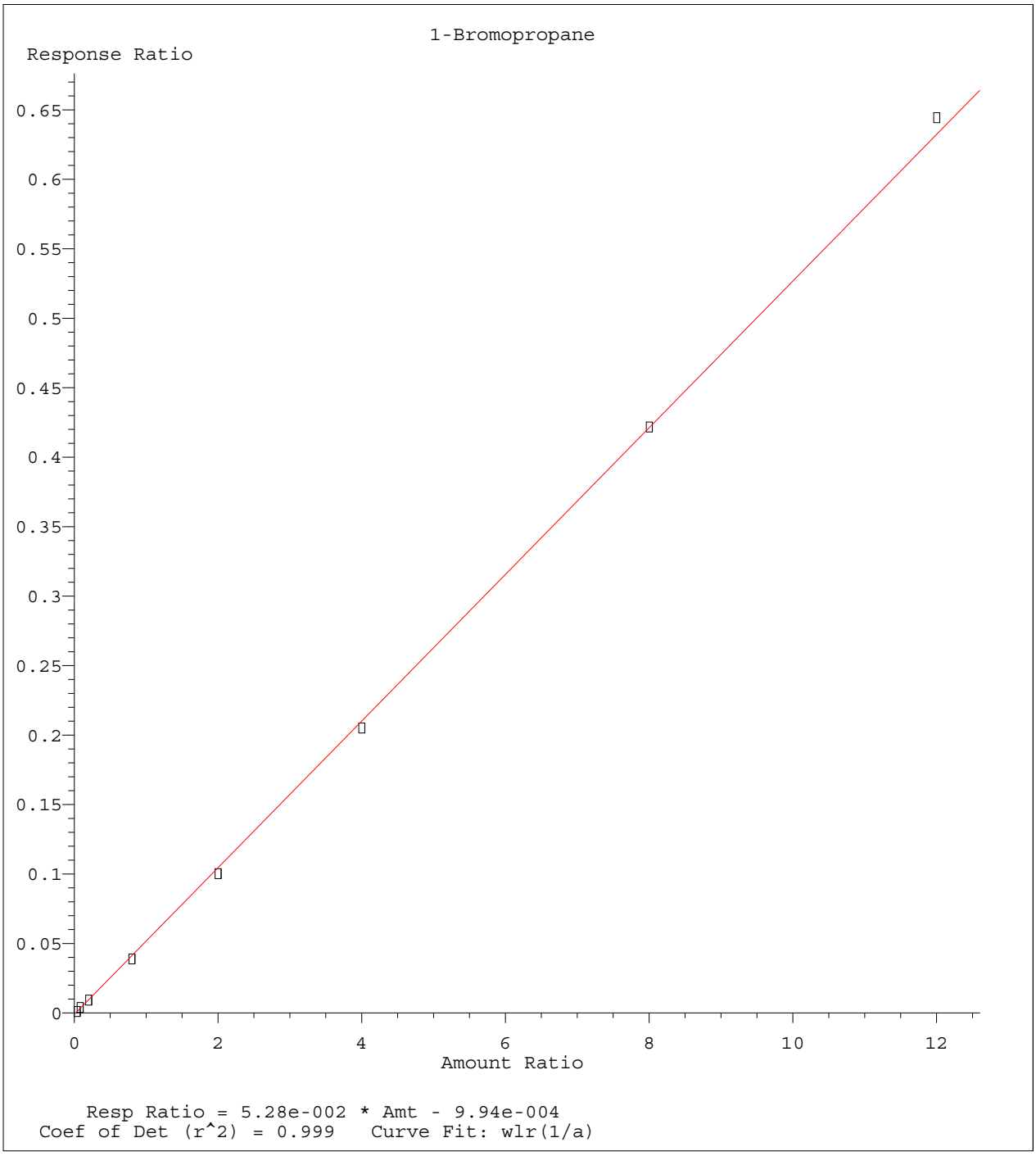

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Wed May 13 06:45:06 2015

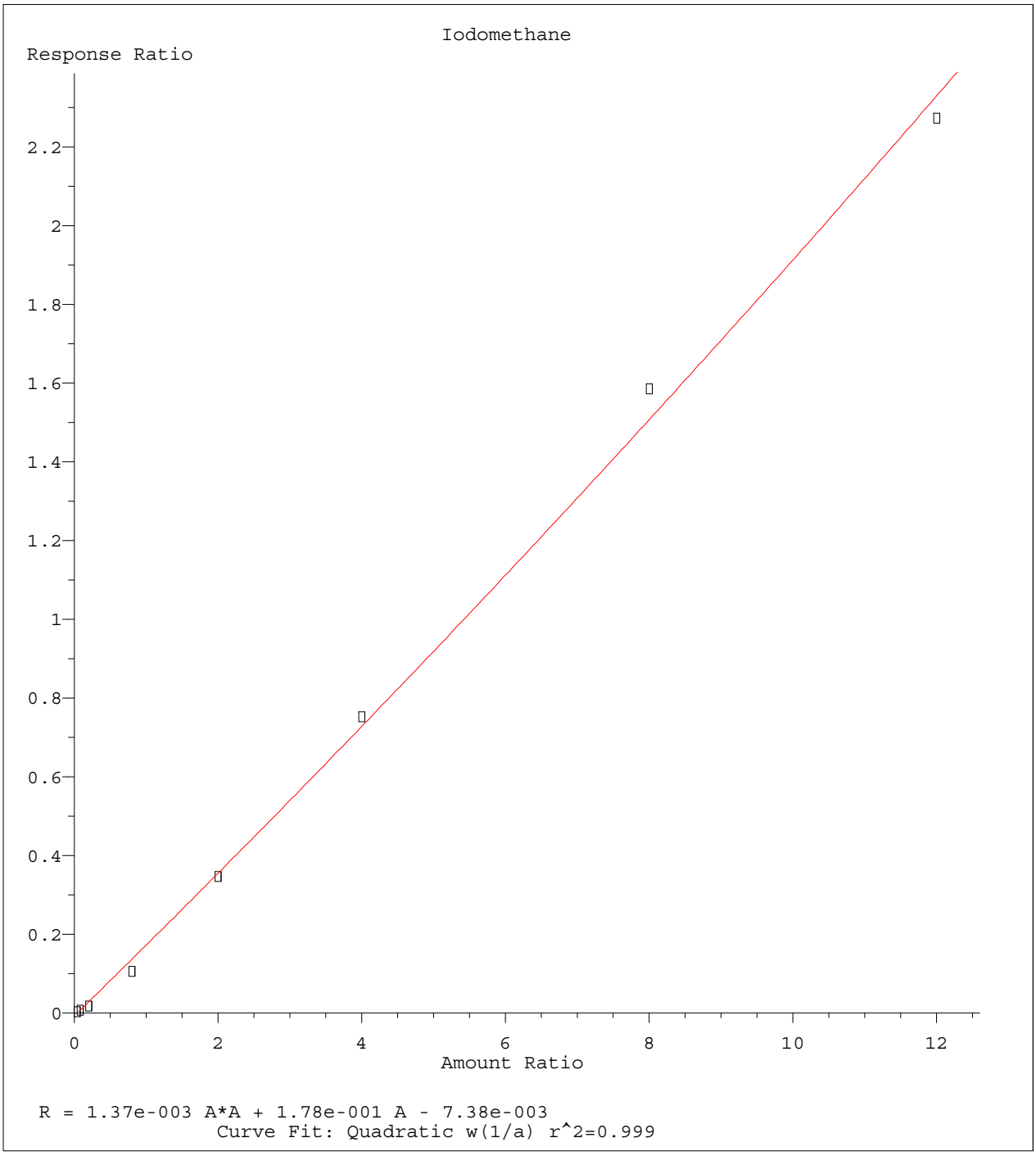

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Wed May 13 06:45:06 2015

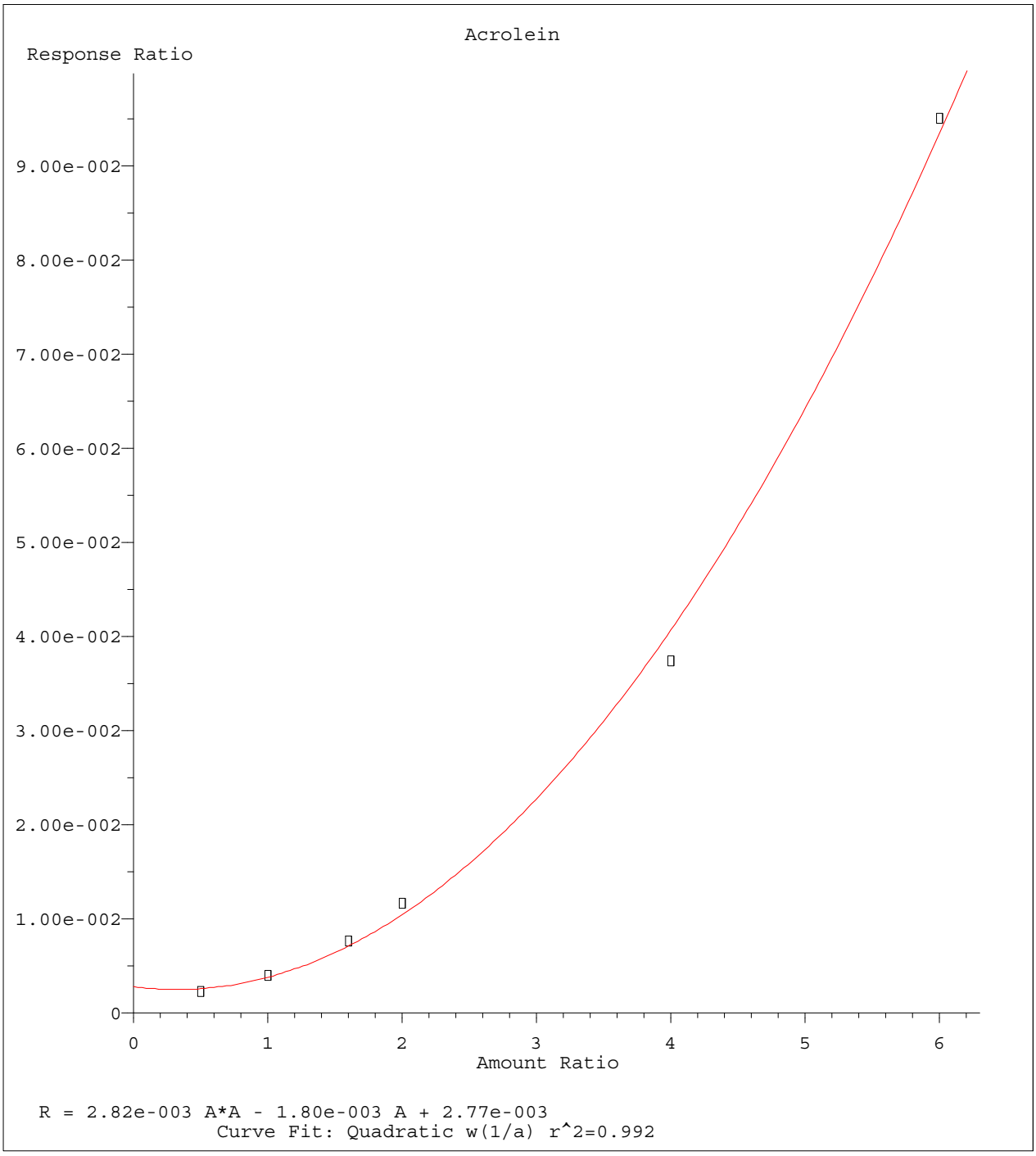

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Wed May 13 06:45:06 2015

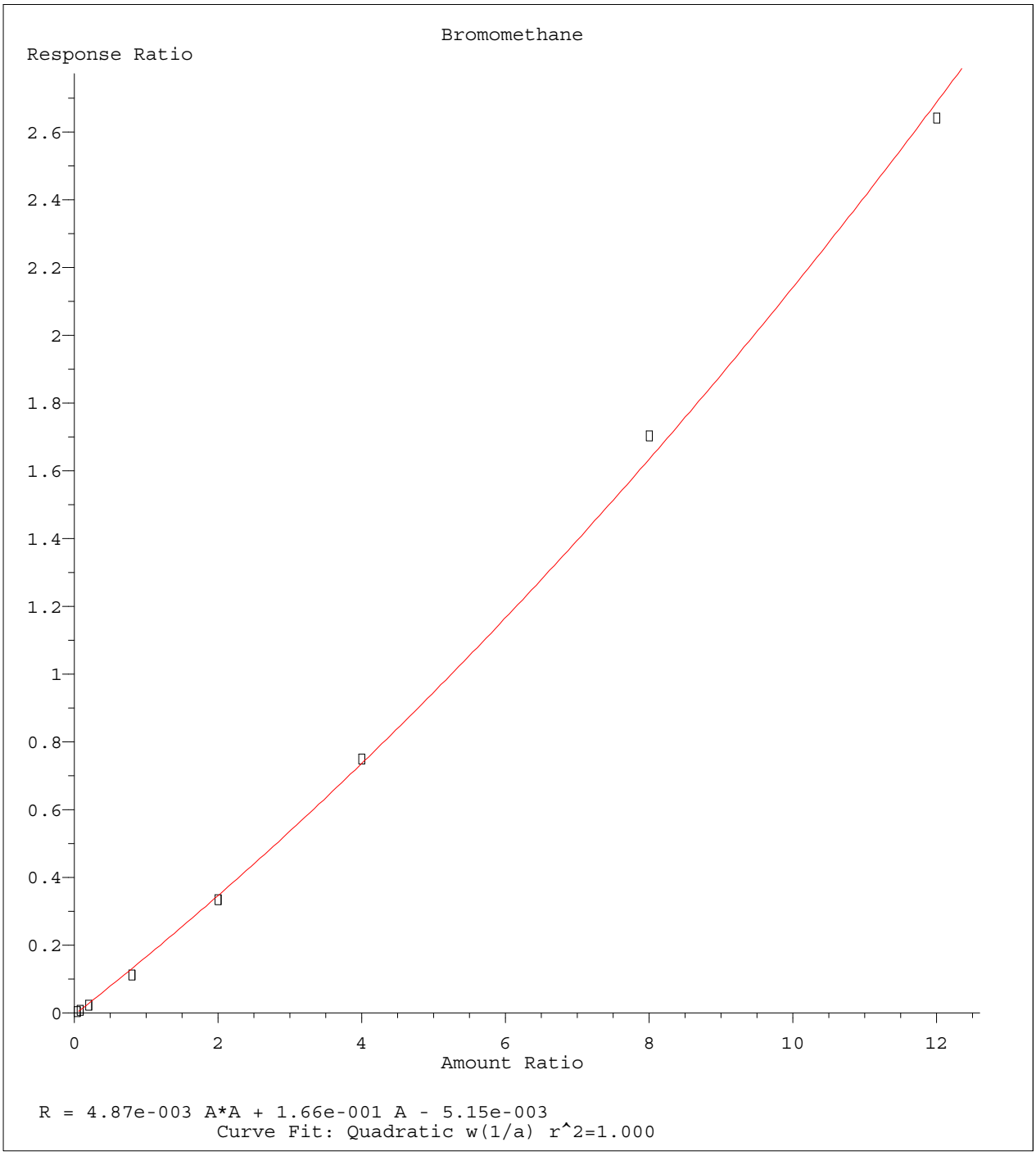

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Wed May 13 06:45:06 2015

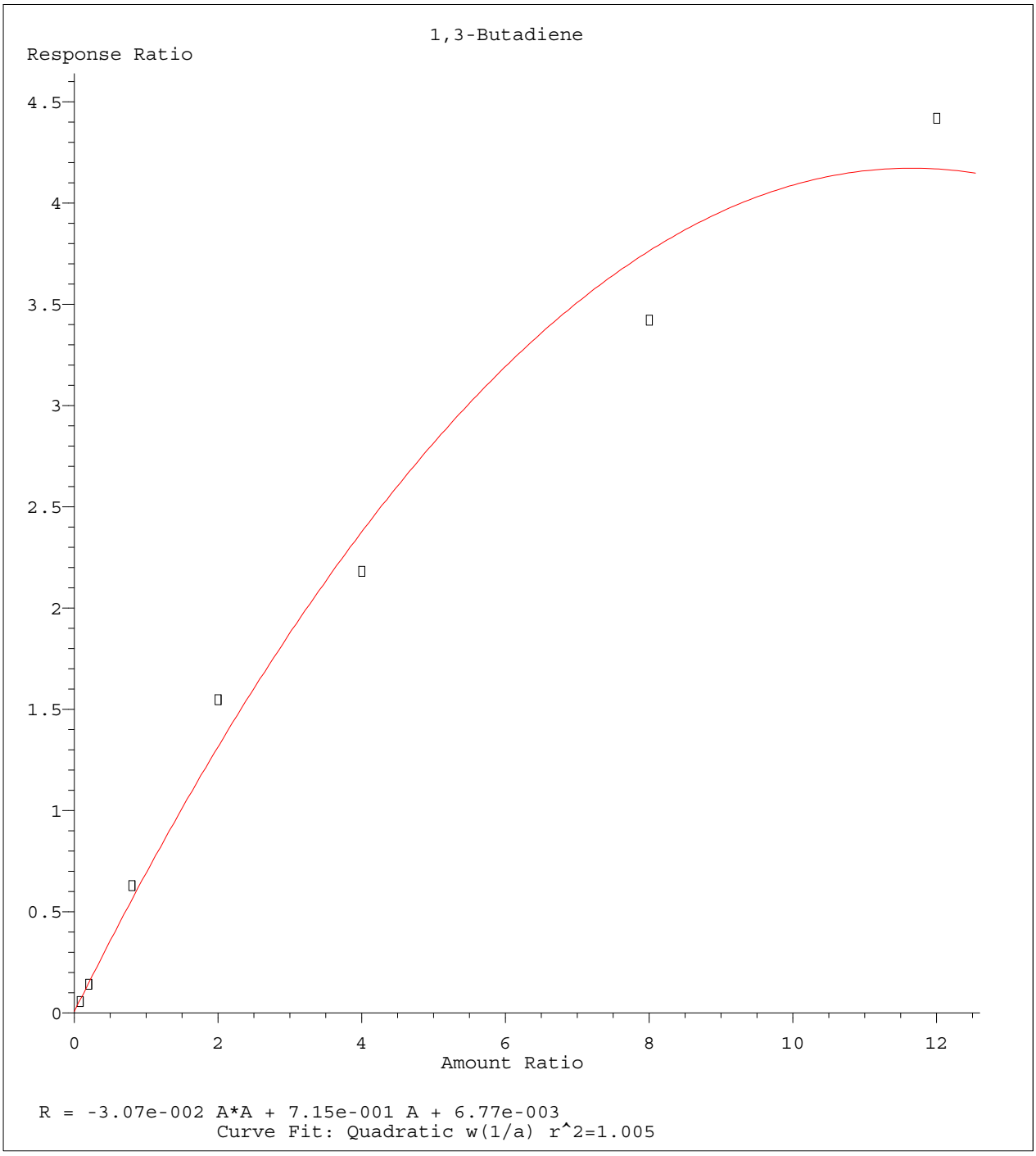

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Wed May 13 06:45:06 2015

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404591.D Vial: 15
Acq On : 12 May 2015 22:34 Operator: TMB
Sample : WG523161-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD70475 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:23 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	919308	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	650523	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.65	152	355810	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	220169	24.1626 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.64%		
43) 1,2-Dichloroethane-d4	10.35	65	208786	24.3822 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.52%		
58) Toluene-d8	12.73	98	742207	24.4497 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.80%		
80) p-Bromofluorobenzene	16.12	95	296553	24.4977 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.00%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.19	85	800374	56.1760 ug/L	98
3) Chloromethane	3.65	50	1424558	50.0839 ug/L	97
4) Vinyl Chloride	3.88	62	1286582	48.0032 ug/L	96
5) 1,3-Butadiene	3.92	54	691807	27.3545 ug/L	93
6) Bromomethane	4.78	94	314349	49.4206 ug/L	98
7) Chloroethane	4.93	64	404454	55.4535 ug/L	92
8) Trichlorofluoromethane	5.42	101	820931	48.7746 ug/L	98
9) Diethyl ether	5.94	59	587435	91.0349 ug/L	91
10) Isoprene	5.99	67	718544	57.5747 ug/L	80
11) Acrolein	6.18	56	24471	81.1360 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.20	101	455967	47.9976 ug/L	92
13) Acetone	6.29	43	74651	56.8598 ug/L	83
14) 1,1-Dichloroethene	6.51	61	755549	46.7643 ug/L	83
15) Tert-Butyl Alcohol	6.64	59	73310	207.5132 ug/L	94
16) Dimethyl Sulfide	6.77	62	630937	66.9848 ug/L	79
17) Iodomethane	7.03	142	395975	60.2995 ug/L	77
18) Methyl acetate	7.04	43	216897	46.2957 ug/L	92
19) Methylene Chloride	7.30	84	463114	50.2973 ug/L	59
20) Carbon Disulfide	7.34	76	1398233	47.0436 ug/L	95
21) Acrylonitrile	7.48	53	109604	52.4490 ug/L	91
22) Methyl Tert Butyl Ether	7.52	73	949202	53.5119 ug/L	97
23) trans-1,2-Dichloroethene	7.74	61	767654	49.7697 ug/L	85
24) n-Hexane	7.83	57	700372	44.9039 ug/L	97
25) Diisopropyl ether	8.17	45	3332814	97.5476 ug/L	93
26) Vinyl Acetate	8.34	43	617016	54.7014 ug/L	92
27) 1,1-Dichloroethane	8.37	63	908724	48.8040 ug/L	94
28) Ethyl-Tert-Butyl ether	8.75	59	2675688	99.8095 ug/L	93
29) 2-Butanone	8.92	43	113924	53.2579 ug/L	88
30) Propionitrile	9.04	54	72509	106.3523 ug/L	95
31) 2,2-Dichloropropane	9.15	77	703200	45.7742 ug/L	97
32) cis-1,2-Dichloroethene	9.21	96	514228	48.5405 ug/L	76
33) Chloroform	9.42	83	851052	49.2072 ug/L	95
34) 1-Bromopropane	9.56	122	104801	54.4355 ug/L	97
35) Bromochloromethane	9.66	130	259626	48.0577 ug/L #	73
36) Tetrahydrofuran	9.68	42	146217	101.4819 ug/L	87
38) 1,1,1-Trichloroethane	9.96	97	789635	50.2943 ug/L	97
39) Cyclohexane	9.99	56	902530	47.4323 ug/L	86
40) 1,1-Dichloropropene	10.15	75	653293	47.8258 ug/L	92
41) Tert-Amyl-Methyl ether	10.26	73	1985009	100.8814 ug/L	97
42) Carbon Tetrachloride	10.30	117	702126	49.2114 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M404591.D 8260WT.M Wed May 13 06:46:23 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404591.D Vial: 15
Acq On : 12 May 2015 22:34 Operator: TMB
Sample : WG523161-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD70475 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 06:46:23 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.47	62	603214	48.6514 ug/L		93
46)	Benzene	10.50	78	1850022	50.2789 ug/L		98
47)	Trichloroethene	11.26	130	486136	49.9479 ug/L		96
48)	Methylcyclohexane	11.34	83	749827	47.4654 ug/L		89
49)	1,2-Dichloropropane	11.48	63	501116	48.6242 ug/L		98
50)	Bromodichloromethane	11.78	83	616315	48.5742 ug/L		96
51)	1,4-Dioxane	11.77	88	7938	201.6115 ug/L		95
52)	Dibromomethane	11.86	93	233106	48.0270 ug/L		89
53)	2-Chloroethyl Vinyl Ether	12.07	63	212350	85.5819 ug/L		96
54)	4-Methyl-2-Pentanone	12.10	58	96374	54.3940 ug/L		95
55)	cis-1,3-Dichloropropene	12.41	75	728119	52.4974 ug/L		95
56)	Dimethyl Disulfide	12.66	79	376819	46.1411 ug/L		99
59)	Toluene	12.83	91	1963822	50.8947 ug/L		83
60)	Ethyl Methacrylate	12.92	69	394247	57.4235 ug/L		75
62)	trans-1,3-Dichloropropene	13.01	75	568578	49.1605 ug/L		94
63)	1,1,2-Trichloroethane	13.22	97	293758	49.0014 ug/L		97
64)	2-Hexanone	13.16	58	90401	54.7606 ug/L	#	80
65)	1,3-Dichloropropane	13.52	76	534108	50.8231 ug/L		82
66)	Tetrachloroethene	13.65	164	399242	49.0225 ug/L		92
67)	Dibromochloromethane	13.92	129	391690	49.0990 ug/L		100
68)	1,2-Dibromoethane	14.16	107	291132	50.8711 ug/L		99
69)	1-Chlorohexane	14.26	91	667237	50.5549 ug/L		84
70)	Chlorobenzene	14.67	112	1227973	47.1511 ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.70	131	469282	50.2001 ug/L		99
72)	Ethylbenzene	14.70	106	759764	48.7068 ug/L	#	33
73)	m-,p-Xylene	14.78	106	1754806	99.4729 ug/L	#	49
74)	o-Xylene	15.35	106	816052	46.8093 ug/L		63
75)	Styrene	15.38	104	1449226	52.4756 ug/L		88
76)	Bromoform	15.88	173	229962	45.3265 ug/L		98
77)	Isopropylbenzene	15.78	105	2042078	47.8947 ug/L		78
79)	1,1,2,2-Tetrachloroethane	15.99	83	322882	47.7586 ug/L		96
81)	1,2,3-Trichloropropane	16.18	110	94494	51.5901 ug/L		94
82)	trans-1,4-Dichloro-2-Buten	16.23	53	119151	53.0904 ug/L		78
83)	n-Propylbenzene	16.28	91	2494553	46.3371 ug/L	#	73
84)	Bromobenzene	16.41	156	513898	48.0675 ug/L		87
85)	1,3,5-Trimethylbenzene	16.47	105	1947168	52.8620 ug/L		80
86)	2-Chlorotoluene	16.55	91	1485272	40.8801 ug/L		89
87)	4-Chlorotoluene	16.60	91	1550170	53.3429 ug/L	#	67
88)	a-Methylstyrene	16.87	118	1093998	52.1517 ug/L		94
89)	tert-Butylbenzene	16.93	134	371781	45.4009 ug/L		58
90)	1,2,4-Trimethylbenzene	16.99	105	1987730	52.4881 ug/L		75
91)	sec-Butylbenzene	17.20	105	2246378	48.9121 ug/L		78
92)	p-Isopropyltoluene	17.36	119	1868949	47.9989 ug/L		78
93)	1,3-Dichlorobenzene	17.56	146	987544	45.5774 ug/L		92
94)	1,4-Dichlorobenzene	17.69	146	1071014	48.6885 ug/L		93
95)	n-Butylbenzene	17.89	91	1969840	51.7897 ug/L		80
96)	1,2-Dichlorobenzene	18.19	146	869480	46.2431 ug/L		93
97)	1,2-Dibromo-3-Chloropropan	19.18	75	56744	52.5819 ug/L		84
98)	1,2,4-Trichlorobenzene	20.32	180	703789	49.6876 ug/L		99
99)	Hexachlorobutadiene	20.47	225	372888	50.3914 ug/L		95
100)	Naphthalene	20.69	128	978141	51.4911 ug/L		93
101)	1,2,3-Trichlorobenzene	21.00	180	596654	49.7096 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M404591.D 8260WT.M Wed May 13 06:46:24 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051215\8M404591.D Vial: 15
Acq On : 12 May 2015 22:34 Operator: TMB
Sample : WG523161-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD70475 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 6:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

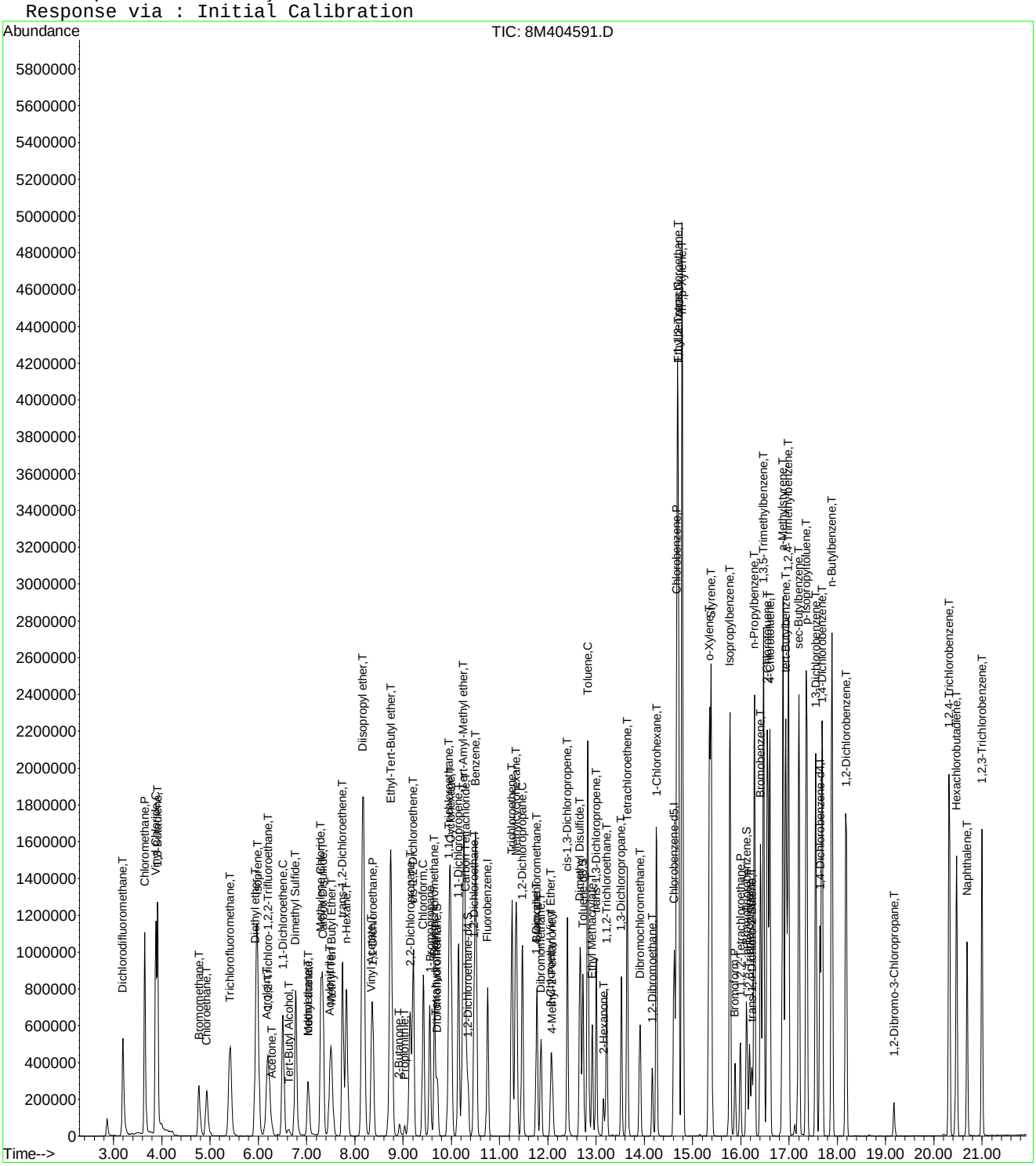

8M404591.D 8260WT.M Wed May 13 06:46:24 2015 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404591.D Vial: 15
Acq On : 12 May 2015 22:34 Operator: TMB
Sample : WG523161-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD70475 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	118	0.00
2	T	Dichlorodifluoromethane	50.0000	56.1760	-12.4	124	0.00
3	P	Chloromethane	50.0000	50.0839	-0.2	118	0.00
4	C	Vinyl Chloride	50.0000	48.0032	4.0	109	0.00
5	T	1,3-Butadiene	50.0000	27.3545	45.3#	57	0.00
6	T	Bromomethane	50.0000	49.4205	1.2	121	0.00
7	T	Chloroethane	50.0000	55.4535	-10.9	132	0.00
8	T	Trichlorofluoromethane	50.0000	48.7746	2.5	116	0.00
9	T	Diethyl ether	100.0000	91.0349	9.0	115	0.00
10	T	Isoprene	50.0000	57.5747	-15.1	133	0.00
11	T	Acrolein	50.0000	81.1360	-62.3#	270	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	47.9976	4.0	114	0.00
13	T	Acetone	50.0000	56.8598	-13.7	139	0.00
14	C	1,1-Dichloroethene	50.0000	46.7643	6.5	110	0.00
15	T	Tert-Butyl Alcohol	200.0000	207.5132	-3.8	133	0.00
16	T	Dimethyl Sulfide	50.0000	66.9848	-34.0#	155	0.00
17	T	Iodomethane	50.0000	60.2995	-20.6	147	0.00
18	T	Methyl acetate	50.0000	46.2957	7.4	113	0.00
19	T	Methylene Chloride	50.0000	50.2973	-0.6	119	0.00
20	T	Carbon Disulfide	50.0000	47.0436	5.9	105	0.00
21	T	Acrylonitrile	50.0000	52.4490	-4.9	124	0.00
22	T	Methyl Tert Butyl Ether	50.0000	53.5119	-7.0	128	0.00
23	T	trans-1,2-Dichloroethene	50.0000	49.7697	0.5	118	0.00
24	T	n-Hexane	50.0000	44.9039	10.2	105	0.00
25	T	Diisopropyl ether	100.0000	97.5476	2.5	118	0.00
26	T	Vinyl Acetate	50.0000	54.7015	-9.4	125	0.00
27	P	1,1-Dichloroethane	50.0000	48.8040	2.4	113	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	99.8095	0.2	121	0.00
29	T	2-Butanone	50.0000	53.2579	-6.5	128	0.00
30	T	Propionitrile	100.0000	106.3523	-6.4	134	0.00
31	T	2,2-Dichloropropane	50.0000	45.7742	8.5	110	0.00
32	T	cis-1,2-Dichloroethene	50.0000	48.5405	2.9	115	0.00
33	C	Chloroform	50.0000	49.2072	1.6	116	0.00
34		1-Bromopropane	50.0000	54.4355	-8.9	134	0.00
35	T	Bromochloromethane	50.0000	48.0577	3.9	113	0.00
36	T	Tetrahydrofuran	100.0000	101.4819	-1.5	128	0.00
37	S	Dibromofluoromethane	25.0000	24.1626	3.3	115	0.00
38	T	1,1,1-Trichloroethane	50.0000	50.2943	-0.6	116	0.00
39	T	Cyclohexane	50.0000	47.4323	5.1	111	0.00
40	T	1,1-Dichloropropene	50.0000	47.8258	4.3	113	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	100.8814	-0.9	123	0.00
42	T	Carbon Tetrachloride	50.0000	49.2114	1.6	114	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.3822	2.5	114	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.58#
45	T	1,2-Dichloroethane	50.0000	48.6514	2.7	117	0.00
46	T	Benzene	50.0000	50.2789	-0.6	116	0.00
47	T	Trichloroethene	50.0000	49.9479	0.1	116	0.00
48	T	Methylcyclohexane	50.0000	47.4654	5.1	112	0.00
49	C	1,2-Dichloropropane	50.0000	48.6243	2.8	116	0.00
50	T	Bromodichloromethane	50.0000	48.5742	2.9	114	0.00
51	T	1,4-Dioxane	200.0000	201.6115	-0.8	119	0.00
52	T	Dibromomethane	50.0000	48.0270	3.9	115	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	85.5819	-71.2#	218	0.00
54	T	4-Methyl-2-Pentanone	50.0000	54.3940	-8.8	130	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051215\8M404591.D Vial: 15
Acq On : 12 May 2015 22:34 Operator: TMB
Sample : WG523161-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD70475 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	52.4974	-5.0	120	0.00
56	T	Dimethyl Disulfide	50.0000	46.1411	7.7	123	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	119	0.00
58	S	Toluene-d8	25.0000	24.4497	2.2	113	0.00
59	C	Toluene	50.0000	50.8947	-1.8	115	0.00
60	T	Ethyl Methacrylate	50.0000	57.4235	-14.8	126	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.18#
62	T	trans-1,3-Dichloropropene	50.0000	49.1605	1.7	113	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.0014	2.0	115	0.00
64	T	2-Hexanone	50.0000	54.7606	-9.5	124	0.00
65	T	1,3-Dichloropropane	50.0000	50.8231	-1.6	120	0.00
66	T	Tetrachloroethene	50.0000	49.0224	2.0	116	0.00
67	T	Dibromochloromethane	50.0000	49.0990	1.8	115	0.00
68	T	1,2-Dibromoethane	50.0000	50.8711	-1.7	116	0.00
69	T	1-Chlorohexane	50.0000	50.5549	-1.1	119	0.00
70	P	Chlorobenzene	50.0000	47.1511	5.7	109	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	50.2002	-0.4	117	0.00
72	C	Ethylbenzene	50.0000	48.7068	2.6	117	0.00
73	T	m-,p-Xylene	100.0000	99.4729	0.5	111	0.00
74	T	o-Xylene	50.0000	46.8093	6.4	110	0.00
75	T	Styrene	50.0000	52.4756	-5.0	116	0.00
76	P	Bromoform	50.0000	45.3265	9.3	123	0.00
77	T	Isopropylbenzene	50.0000	47.8947	4.2	107	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	118	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	47.7586	4.5	116	0.00
80	S	p-Bromofluorobenzene	25.0000	24.4977	2.0	116	0.00
81	T	1,2,3-Trichloropropane	50.0000	51.5901	-3.2	124	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	53.0904	-6.2	117	0.00
83	T	n-Propylbenzene	50.0000	46.3371	7.3	105	0.00
84	T	Bromobenzene	50.0000	48.0675	3.9	115	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	52.8620	-5.7	116	0.00
86	T	2-Chlorotoluene	50.0000	40.8801	18.2	94	0.00
87	T	4-Chlorotoluene	50.0000	53.3429	-6.7	122	0.00
88	T	a-Methylstyrene	50.0000	52.1517	-4.3	119	0.00
89	T	tert-Butylbenzene	50.0000	45.4008	9.2	109	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	52.4881	-5.0	115	0.00
91	T	sec-Butylbenzene	50.0000	48.9121	2.2	106	0.00
92	T	p-Isopropyltoluene	50.0000	47.9989	4.0	104	0.00
93	T	1,3-Dichlorobenzene	50.0000	45.5774	8.8	105	0.00
94	T	1,4-Dichlorobenzene	50.0000	48.6885	2.6	115	0.00
95	T	n-Butylbenzene	50.0000	51.7897	-3.6	112	0.00
96	T	1,2-Dichlorobenzene	50.0000	46.2431	7.5	106	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	52.5819	-5.2	123	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	49.6876	0.6	114	0.00
99	T	Hexachlorobutadiene	50.0000	50.3914	-0.8	122	0.00
100	T	Naphthalene	50.0000	51.4911	-3.0	116	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	49.7096	0.6	115	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M404591.D 8260WT.M Wed May 13 06:49:00 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052915\8M404995.D Vial: 2
Acq On : 29 May 2015 15:06 Operator: TMB
Sample : WG525606-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD70754 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 29 15:28:09 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	855077	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	638300	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	356494	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	209481	24.7165 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.88%		
43) 1,2-Dichloroethane-d4	10.35	65	187689	23.5649 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.24%		
58) Toluene-d8	12.73	98	754014	25.3143 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.24%		
80) p-Bromofluorobenzene	16.12	95	287529	23.7067 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.84%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.20	85	622648	46.9847 ug/L	97
3) Chloromethane	3.65	50	1166578	44.0948 ug/L	95
4) Vinyl Chloride	3.88	62	1196364	47.9902 ug/L	94
5) 1,3-Butadiene	3.92	54	1214748	54.5301 ug/L	93
6) Bromomethane	4.78	94	318434	53.5150 ug/L	99
7) Chloroethane	4.93	64	335659	49.4782 ug/L	90
8) Trichlorofluoromethane	5.42	101	767792	49.0441 ug/L	99
9) Diethyl ether	5.95	59	513377	85.5343 ug/L	91
10) Isoprene	5.99	67	534508	46.0456 ug/L	79
11) Acrolein	6.18	56	22095	79.9453 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.21	101	431261	48.8070 ug/L	93
13) Acetone	6.28	43	55341	45.3182 ug/L	86
14) 1,1-Dichloroethene	6.52	61	720383	47.9370 ug/L	86
15) Tert-Butyl Alcohol	6.63	59	56100	170.7266 ug/L	97
16) Dimethyl Sulfide	6.77	62	400360	45.6979 ug/L	76
17) Iodomethane	7.03	142	302367	49.8425 ug/L	82
18) Methyl acetate	7.04	43	201782	46.3047 ug/L	89
19) Methylene Chloride	7.30	84	417907	48.7969 ug/L #	57
20) Carbon Disulfide	7.34	76	1416242	51.2288 ug/L	95
21) Acrylonitrile	7.48	53	82893	42.6466 ug/L	88
22) Methyl Tert Butyl Ether	7.51	73	705841	42.7813 ug/L	96
23) trans-1,2-Dichloroethene	7.75	61	661704	46.1231 ug/L	88
24) n-Hexane	7.83	57	675506	46.5629 ug/L	95
25) Diisopropyl ether	8.17	45	2958770	93.1049 ug/L	92
26) Vinyl Acetate	8.35	43	389774	37.1510 ug/L	93
27) 1,1-Dichloroethane	8.37	63	835337	48.2326 ug/L	95
28) Ethyl-Tert-Butyl ether	8.75	59	2253633	90.3807 ug/L	93
29) 2-Butanone	8.92	43	85740	43.0931 ug/L	88
30) Propionitrile	9.03	54	57660	90.9254 ug/L	96
31) 2,2-Dichloropropane	9.14	77	700520	49.0251 ug/L	98
32) cis-1,2-Dichloroethene	9.21	96	473490	48.0524 ug/L	79
33) Chloroform	9.42	83	780525	48.5194 ug/L	95
34) 1-Bromopropane	9.56	122	84125	47.0428 ug/L	100
35) Bromochloromethane	9.65	130	242765	48.3122 ug/L	76
36) Tetrahydrofuran	9.67	42	150851	112.5628 ug/L	86
38) 1,1,1-Trichloroethane	9.95	97	752985	51.5625 ug/L	97
39) Cyclohexane	9.98	56	842427	47.5993 ug/L	86
40) 1,1-Dichloropropene	10.14	75	636760	50.1171 ug/L	91
41) Tert-Amyl-Methyl ether	10.26	73	1642810	89.7619 ug/L	97
42) Carbon Tetrachloride	10.30	117	685045	51.6210 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M404995.D 8260WT.M Fri May 29 15:28:10 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052915\8M404995.D Vial: 2
Acq On : 29 May 2015 15:06 Operator: TMB
Sample : WG525606-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD70754 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 29 15:28:09 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.47	62	521374	45.2095	ug/L		91
46)	Benzene	10.51	78	1722990	50.3440	ug/L		98
47)	Trichloroethene	11.26	130	468945	51.8009	ug/L		98
48)	Methylcyclohexane	11.34	83	697119	47.4437	ug/L		92
49)	1,2-Dichloropropane	11.47	63	449237	46.8647	ug/L		97
50)	Bromodichloromethane	11.77	83	586635	49.7080	ug/L		95
51)	1,4-Dioxane	11.76	88	7837	211.0355	ug/L		93
52)	Dibromomethane	11.86	93	212689	47.1121	ug/L		89
53)	2-Chloroethyl Vinyl Ether	12.07	63	170013	73.5348	ug/L		96
54)	4-Methyl-2-Pentanone	12.10	58	74508	45.2116	ug/L		94
55)	cis-1,3-Dichloropropene	12.41	75	646200	50.0908	ug/L		93
56)	Dimethyl Disulfide	12.67	79	335809	44.3349	ug/L		94
59)	Toluene	12.82	91	1887793	49.8612	ug/L		83
60)	Ethyl Methacrylate	12.92	69	310859	46.1448	ug/L		76
62)	trans-1,3-Dichloropropene	13.00	75	531906	46.8704	ug/L		94
63)	1,1,2-Trichloroethane	13.22	97	271796	46.2061	ug/L		99
64)	2-Hexanone	13.15	58	69775	43.0758	ug/L	#	81
65)	1,3-Dichloropropane	13.53	76	465517	45.1445	ug/L		85
66)	Tetrachloroethene	13.65	164	393699	49.2675	ug/L		90
67)	Dibromochloromethane	13.91	129	390726	49.9161	ug/L		99
68)	1,2-Dibromoethane	14.17	107	270280	48.1319	ug/L		97
69)	1-Chlorohexane	14.25	91	620157	47.8876	ug/L		84
70)	Chlorobenzene	14.67	112	1280399	50.1056	ug/L		89
71)	1,1,1,2-Tetrachloroethane	14.69	131	457914	49.9221	ug/L		99
72)	Ethylbenzene	14.69	106	711987	46.5180	ug/L	#	31
73)	m-,p-Xylene	14.79	106	1741572	100.6132	ug/L	#	50
74)	o-Xylene	15.35	106	843101	49.2869	ug/L		66
75)	Styrene	15.39	104	1381314	50.9743	ug/L		87
76)	Bromoform	15.88	173	220849	44.3804	ug/L		98
77)	Isopropylbenzene	15.77	105	2178196	52.0655	ug/L		79
79)	1,1,2,2-Tetrachloroethane	15.99	83	299938	44.2798	ug/L		96
81)	1,2,3-Trichloropropane	16.18	110	84163	45.8616	ug/L		93
82)	trans-1,4-Dichloro-2-Buten	16.22	53	95650	42.5372	ug/L		82
83)	n-Propylbenzene	16.28	91	2667070	49.4466	ug/L	#	74
84)	Bromobenzene	16.41	156	520905	48.6294	ug/L		95
85)	1,3,5-Trimethylbenzene	16.46	105	1909494	51.7398	ug/L		80
86)	2-Chlorotoluene	16.56	91	1715398	47.1234	ug/L		80
87)	4-Chlorotoluene	16.60	91	1509731	51.8517	ug/L		78
88)	a-Methylstyrene	16.87	118	1033970	49.1956	ug/L		93
89)	tert-Butylbenzene	16.93	134	392002	47.7783	ug/L		61
90)	1,2,4-Trimethylbenzene	16.98	105	1965817	51.8099	ug/L		77
91)	sec-Butylbenzene	17.20	105	2399949	52.1557	ug/L		78
92)	p-Isopropyltoluene	17.36	119	2068830	53.0303	ug/L		79
93)	1,3-Dichlorobenzene	17.55	146	1106185	50.9550	ug/L		91
94)	1,4-Dichlorobenzene	17.68	146	1083431	49.1585	ug/L		90
95)	n-Butylbenzene	17.88	91	1943442	50.9977	ug/L		80
96)	1,2-Dichlorobenzene	18.18	146	949182	50.3852	ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.17	75	49996	46.2400	ug/L		85
98)	1,2,4-Trichlorobenzene	20.32	180	700685	49.3736	ug/L		99
99)	Hexachlorobutadiene	20.46	225	337006	45.4550	ug/L		94
100)	Naphthalene	20.69	128	979680	51.4731	ug/L		93
101)	1,2,3-Trichlorobenzene	20.99	180	593142	49.3222	ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052915\8M404995.D Vial: 2
Acq On : 29 May 2015 15:06 Operator: TMB
Sample : WG525606-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD70754 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 29 15:28 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

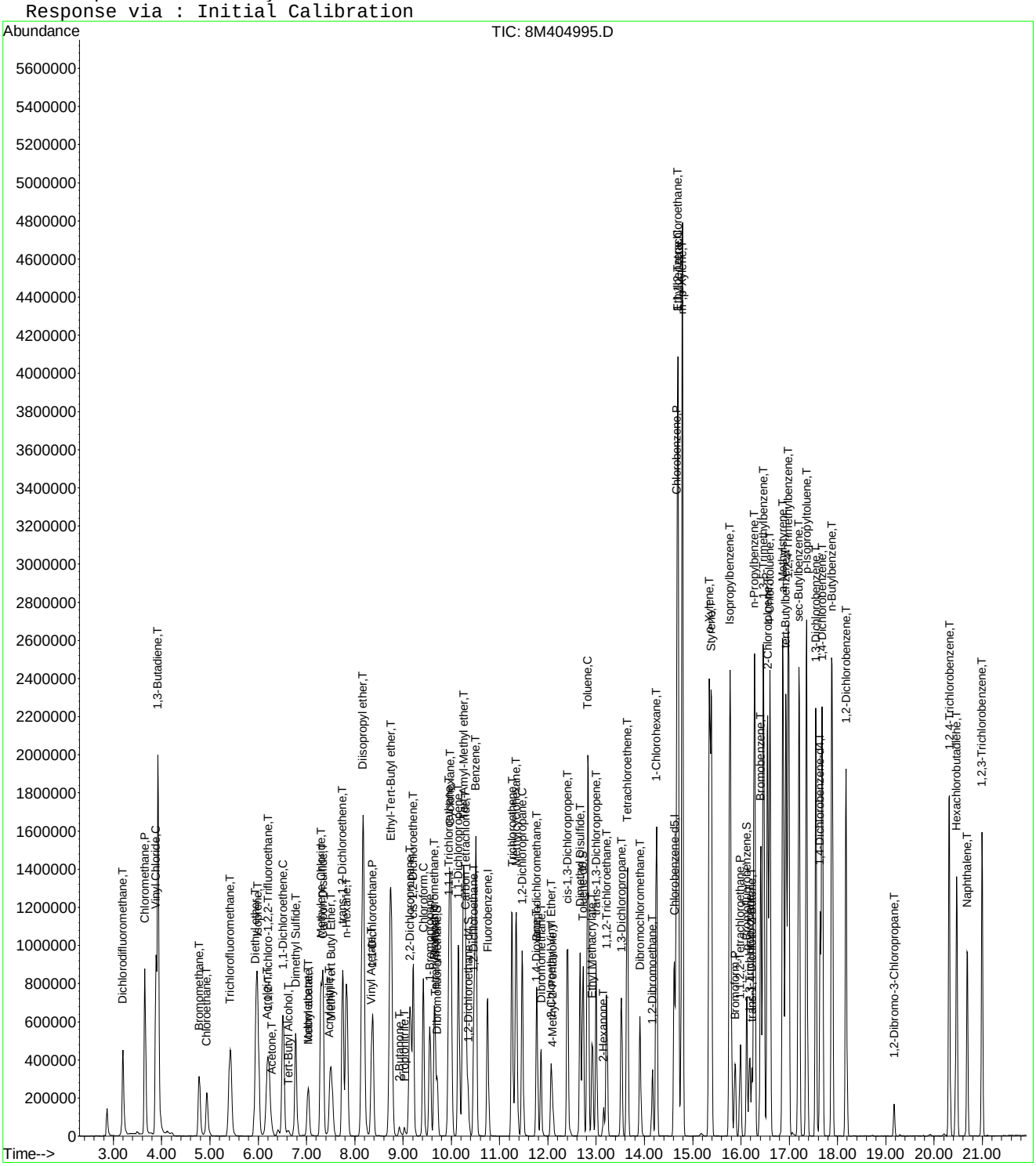

Continuing Calibration Area and RT check

Instrument: HPMS8
Initial cal date: 12 May 2015 19:42
CCV date: 29 May 2015 15:06
CCV Filename: 8M404995.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	779258	10.75	545682	14.62	300564	17.65
CCV	855077	10.75	638300	14.62	356494	17.64

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\052915\8M404995.D Vial: 2
Acq On : 29 May 2015 15:06 Operator: TMB
Sample : WG525606-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD70754 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	110	0.00
2	T	Dichlorodifluoromethane	0.3875	0.3641	6.0	97	0.00
3	P	Chloromethane	0.7735	0.6822	11.8	97	0.00
4	C	Vinyl Chloride	0.7289	0.6996	4.0	102	0.00
5	T	1,3-Butadiene	0.6155	0.7103	-15.4	101	0.01
6	T	Bromomethane	0.1537	0.1862	-21.2	122	0.01
7	T	Chloroethane	0.1983	0.1963	1.0	109	0.00
8	T	Trichlorofluoromethane	0.4577	0.4490	1.9	108	0.00
9	T	Diethyl ether	0.1755	0.1501	14.5	101	0.00
10	T	Isoprene	0.3394	0.3125	7.9	99	0.00
11	T	Acrolein	0.0074	0.0129	-74.8#	243#	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2583	0.2522	2.4	108	0.00
13	T	Acetone	0.0357	0.0324	9.4	103	0.00
14	C	1,1-Dichloroethene	0.4394	0.4212	4.1	105	0.00
15	T	Tert-Butyl Alcohol	0.0096	0.0082	14.7	101	0.00
16	T	Dimethyl Sulfide	0.2561	0.2341	8.6	99	0.00
17	T	Iodomethane	0.1417	0.1768	-24.8	112	0.00
18	T	Methyl acetate	0.1274	0.1180	7.4	105	0.00
19	T	Methylene Chloride	0.2504	0.2444	2.4	107	0.00
20	T	Carbon Disulfide	0.8083	0.8281	-2.5	107	0.00
21	T	Acrylonitrile	0.0568	0.0485	14.7	94	0.00
22	T	Methyl Tert Butyl Ether	0.4824	0.4127	14.4	95	0.00
23	T	trans-1,2-Dichloroethene	0.4194	0.3869	7.8	102	0.00
24	T	n-Hexane	0.4242	0.3950	6.9	102	0.00
25	T	Diisopropyl ether	0.9291	0.8651	6.9	104	0.00
26	T	Vinyl Acetate	0.3067	0.2279	25.7#	79	0.00
27	P	1,1-Dichloroethane	0.5064	0.4885	3.5	104	0.00
28	T	Ethyl-Tert-Butyl ether	0.7290	0.6589	9.6	102	0.00
29	T	2-Butanone	0.0582	0.0501	13.8	96	0.00
30	T	Propionitrile	0.0185	0.0169	9.1	106	0.00
31	T	2,2-Dichloropropane	0.4178	0.4096	2.0	110	0.00
32	T	cis-1,2-Dichloroethene	0.2881	0.2769	3.9	106	0.00
33	C	Chloroform	0.4703	0.4564	3.0	106	0.00
34		1-Bromopropane	0.0473	0.0492	-4.1	108	0.00
35	T	Bromochloromethane	0.1469	0.1420	3.4	106	0.00
36	T	Tetrahydrofuran	0.0392	0.0441	-12.6	132	0.00
37	S	Dibromofluoromethane	0.2478	0.2450	1.1	110	0.00
38	T	1,1,1-Trichloroethane	0.4270	0.4403	-3.1	110	0.00
39	T	Cyclohexane	0.5174	0.4926	4.8	104	0.00
40	T	1,1-Dichloropropene	0.3715	0.3723	-0.2	110	0.00
41	T	Tert-Amyl-Methyl ether	0.5351	0.4803	10.2	102	0.00
42	T	Carbon Tetrachloride	0.3880	0.4006	-3.2	111	0.00
43	S	1,2-Dichloroethane-d4	0.2329	0.2195	5.7	103	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.58#
45	T	1,2-Dichloroethane	0.3372	0.3049	9.6	101	0.00
46	T	Benzene	1.0006	1.0075	-0.7	108	0.00
47	T	Trichloroethene	0.2647	0.2742	-3.6	112	0.00
48	T	Methylcyclohexane	0.4296	0.4076	5.1	104	0.00
49	C	1,2-Dichloropropane	0.2803	0.2627	6.3	104	0.00
50	T	Bromodichloromethane	0.3451	0.3430	0.6	108	0.00
51	T	1,4-Dioxane	0.0011	0.0012	-6.5	117	0.00
52	T	Dibromomethane	0.1320	0.1244	5.8	105	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0698	0.0994	-42.5#	174#	0.00
54	T	4-Methyl-2-Pentanone	0.0482	0.0436	9.6	101	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\052915\8M404995.D Vial: 2
Acq On : 29 May 2015 15:06 Operator: TMB
Sample : WG525606-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD70754 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.3772	0.3779	-0.2	106	0.00
56	T	Dimethyl Disulfide	0.2031	0.1964	3.3	110	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	117	0.00
58	S	Toluene-d8	1.1666	1.1813	-1.3	115	0.00
59	C	Toluene	1.4829	1.4788	0.3	110	0.00
60	T	Ethyl Methacrylate	0.2638	0.2435	7.7	99	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.18#
62	T	trans-1,3-Dichloropropene	0.4445	0.4167	6.3	106	0.00
63	T	1,1,2-Trichloroethane	0.2304	0.2129	7.6	107	0.00
64	T	2-Hexanone	0.0634	0.0547	13.8	96	0.00
65	T	1,3-Dichloropropane	0.4039	0.3646	9.7	105	0.00
66	T	Tetrachloroethene	0.3130	0.3084	1.5	114	0.00
67	T	Dibromochloromethane	0.3066	0.3061	0.2	114	0.00
68	T	1,2-Dibromoethane	0.2199	0.2117	3.7	108	0.00
69	T	1-Chlorohexane	0.5072	0.4858	4.2	111	0.00
70	P	Chlorobenzene	1.0009	1.0030	-0.2	114	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3593	0.3587	0.2	115	0.00
72	C	Ethylbenzene	0.5995	0.5577	7.0	110	0.00
73	T	m-,p-Xylene	0.6780	0.6821	-0.6	110	0.00
74	T	o-Xylene	0.6700	0.6604	1.4	114	0.00
75	T	Styrene	1.0613	1.0820	-1.9	111	0.00
76	P	Bromoform	0.1638	0.1730	-5.6	118	0.00
77	T	Isopropylbenzene	1.6386	1.7063	-4.1	114	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	119	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4750	0.4207	11.4	108	0.00
80	S	p-Bromofluorobenzene	0.8506	0.8065	5.2	113	0.00
81	T	1,2,3-Trichloropropane	0.1287	0.1180	8.3	110	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1577	0.1341	14.9	94	0.00
83	T	n-Propylbenzene	3.7826	3.7407	1.1	112	0.00
84	T	Bromobenzene	0.7512	0.7306	2.7	117	0.00
85	T	1,3,5-Trimethylbenzene	2.5881	2.6782	-3.5	114	0.00
86	T	2-Chlorotoluene	2.5528	2.4059	5.8	108	0.00
87	T	4-Chlorotoluene	2.0419	2.1175	-3.7	119	0.00
88	T	a-Methylstyrene	1.4739	1.4502	1.6	113	0.00
89	T	tert-Butylbenzene	0.5754	0.5498	4.4	115	0.00
90	T	1,2,4-Trimethylbenzene	2.6608	2.7572	-3.6	114	0.00
91	T	sec-Butylbenzene	3.2269	3.3660	-4.3	113	0.00
92	T	p-Isopropyltoluene	2.7358	2.9016	-6.1	115	0.00
93	T	1,3-Dichlorobenzene	1.5224	1.5515	-1.9	117	0.00
94	T	1,4-Dichlorobenzene	1.5456	1.5196	1.7	116	0.00
95	T	n-Butylbenzene	2.6725	2.7258	-2.0	111	0.00
96	T	1,2-Dichlorobenzene	1.3211	1.3313	-0.8	116	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.0758	0.0701	7.5	108	0.00
98	T	1,2,4-Trichlorobenzene	0.9952	0.9827	1.3	114	0.00
99	T	Hexachlorobutadiene	0.5199	0.4727	9.1	110	0.00
100	T	Naphthalene	1.3347	1.3741	-2.9	117	0.00
101	T	1,2,3-Trichlorobenzene	0.8433	0.8319	1.4	115	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M404995.D 8260WT.M Fri May 29 15:32:26 2015 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\052915\8M404995.D Vial: 2
Acq On : 29 May 2015 15:06 Operator: TMB
Sample : WG525606-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD70754 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	110	0.00
2	T	Dichlorodifluoromethane	50.0000	46.9847	6.0	97	0.00
3	P	Chloromethane	50.0000	44.0948	11.8	97	0.00
4	C	Vinyl Chloride	50.0000	47.9902	4.0	102	0.00
5	T	1,3-Butadiene	50.0000	54.5301	-9.1	101	0.01
6	T	Bromomethane	50.0000	53.5150	-7.0	122	0.01
7	T	Chloroethane	50.0000	49.4782	1.0	109	0.00
8	T	Trichlorofluoromethane	50.0000	49.0441	1.9	108	0.00
9	T	Diethyl ether	100.0000	85.5343	14.5	101	0.00
10	T	Isoprene	50.0000	46.0456	7.9	99	0.00
11	T	Acrolein	50.0000	79.9453	-59.9#	243	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	48.8070	2.4	108	0.00
13	T	Acetone	50.0000	45.3182	9.4	103	0.00
14	C	1,1-Dichloroethene	50.0000	47.9370	4.1	105	0.00
15	T	Tert-Butyl Alcohol	200.0000	170.7266	14.6	101	0.00
16	T	Dimethyl Sulfide	50.0000	45.6979	8.6	99	0.00
17	T	Iodomethane	50.0000	49.8425	0.3	112	0.00
18	T	Methyl acetate	50.0000	46.3047	7.4	105	0.00
19	T	Methylene Chloride	50.0000	48.7969	2.4	107	0.00
20	T	Carbon Disulfide	50.0000	51.2288	-2.5	107	0.00
21	T	Acrylonitrile	50.0000	42.6466	14.7	94	0.00
22	T	Methyl Tert Butyl Ether	50.0000	42.7813	14.4	95	0.00
23	T	trans-1,2-Dichloroethene	50.0000	46.1232	7.8	102	0.00
24	T	n-Hexane	50.0000	46.5629	6.9	102	0.00
25	T	Diisopropyl ether	100.0000	93.1049	6.9	104	0.00
26	T	Vinyl Acetate	50.0000	37.1510	25.7#	79	0.00
27	P	1,1-Dichloroethane	50.0000	48.2326	3.5	104	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	90.3807	9.6	102	0.00
29	T	2-Butanone	50.0000	43.0931	13.8	96	0.00
30	T	Propionitrile	100.0000	90.9254	9.1	106	0.00
31	T	2,2-Dichloropropane	50.0000	49.0251	1.9	110	0.00
32	T	cis-1,2-Dichloroethene	50.0000	48.0524	3.9	106	0.00
33	C	Chloroform	50.0000	48.5194	3.0	106	0.00
34		1-Bromopropane	50.0000	47.0428	5.9	108	0.00
35	T	Bromochloromethane	50.0000	48.3122	3.4	106	0.00
36	T	Tetrahydrofuran	100.0000	112.5628	-12.6	132	0.00
37	S	Dibromofluoromethane	25.0000	24.7165	1.1	110	0.00
38	T	1,1,1-Trichloroethane	50.0000	51.5625	-3.1	110	0.00
39	T	Cyclohexane	50.0000	47.5993	4.8	104	0.00
40	T	1,1-Dichloropropene	50.0000	50.1171	-0.2	110	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	89.7619	10.2	102	0.00
42	T	Carbon Tetrachloride	50.0000	51.6210	-3.2	111	0.00
43	S	1,2-Dichloroethane-d4	25.0000	23.5649	5.7	103	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.58#
45	T	1,2-Dichloroethane	50.0000	45.2094	9.6	101	0.00
46	T	Benzene	50.0000	50.3440	-0.7	108	0.00
47	T	Trichloroethene	50.0000	51.8009	-3.6	112	0.00
48	T	Methylcyclohexane	50.0000	47.4437	5.1	104	0.00
49	C	1,2-Dichloropropane	50.0000	46.8647	6.3	104	0.00
50	T	Bromodichloromethane	50.0000	49.7080	0.6	108	0.00
51	T	1,4-Dioxane	200.0000	211.0355	-5.5	117	0.00
52	T	Dibromomethane	50.0000	47.1121	5.8	105	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	73.5348	-47.1#	174	0.00
54	T	4-Methyl-2-Pentanone	50.0000	45.2116	9.6	101	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\052915\8M404995.D Vial: 2
Acq On : 29 May 2015 15:06 Operator: TMB
Sample : WG525606-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD70754 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	50.0908	-0.2	106	0.00
56	T	Dimethyl Disulfide	50.0000	44.3349	11.3	110	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	117	0.00
58	S	Toluene-d8	25.0000	25.3143	-1.3	115	0.00
59	C	Toluene	50.0000	49.8612	0.3	110	0.00
60	T	Ethyl Methacrylate	50.0000	46.1448	7.7	99	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.18#
62	T	trans-1,3-Dichloropropene	50.0000	46.8704	6.3	106	0.00
63	T	1,1,2-Trichloroethane	50.0000	46.2061	7.6	107	0.00
64	T	2-Hexanone	50.0000	43.0757	13.8	96	0.00
65	T	1,3-Dichloropropane	50.0000	45.1445	9.7	105	0.00
66	T	Tetrachloroethene	50.0000	49.2676	1.5	114	0.00
67	T	Dibromochloromethane	50.0000	49.9161	0.2	114	0.00
68	T	1,2-Dibromoethane	50.0000	48.1319	3.7	108	0.00
69	T	1-Chlorohexane	50.0000	47.8876	4.2	111	0.00
70	P	Chlorobenzene	50.0000	50.1056	-0.2	114	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	49.9221	0.2	115	0.00
72	C	Ethylbenzene	50.0000	46.5180	7.0	110	0.00
73	T	m-,p-Xylene	100.0000	100.6132	-0.6	110	0.00
74	T	o-Xylene	50.0000	49.2869	1.4	114	0.00
75	T	Styrene	50.0000	50.9743	-1.9	111	0.00
76	P	Bromoform	50.0000	44.3804	11.2	118	0.00
77	T	Isopropylbenzene	50.0000	52.0655	-4.1	114	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	119	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	44.2798	11.4	108	0.00
80	S	p-Bromofluorobenzene	25.0000	23.7067	5.2	113	0.00
81	T	1,2,3-Trichloropropane	50.0000	45.8616	8.3	110	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	42.5372	14.9	94	0.00
83	T	n-Propylbenzene	50.0000	49.4466	1.1	112	0.00
84	T	Bromobenzene	50.0000	48.6294	2.7	117	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	51.7398	-3.5	114	0.00
86	T	2-Chlorotoluene	50.0000	47.1234	5.8	108	0.00
87	T	4-Chlorotoluene	50.0000	51.8517	-3.7	119	0.00
88	T	a-Methylstyrene	50.0000	49.1956	1.6	113	0.00
89	T	tert-Butylbenzene	50.0000	47.7783	4.4	115	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	51.8099	-3.6	114	0.00
91	T	sec-Butylbenzene	50.0000	52.1557	-4.3	113	0.00
92	T	p-Isopropyltoluene	50.0000	53.0303	-6.1	115	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.9550	-1.9	117	0.00
94	T	1,4-Dichlorobenzene	50.0000	49.1585	1.7	116	0.00
95	T	n-Butylbenzene	50.0000	50.9977	-2.0	111	0.00
96	T	1,2-Dichlorobenzene	50.0000	50.3852	-0.8	116	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	46.2400	7.5	108	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	49.3736	1.3	114	0.00
99	T	Hexachlorobutadiene	50.0000	45.4550	9.1	110	0.00
100	T	Naphthalene	50.0000	51.4731	-2.9	117	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	49.3222	1.4	115	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\053015\8M405026.D Vial: 2
Acq On : 30 May 2015 15:06 Operator: TMB
Sample : WG525660-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD70754 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 30 15:28:13 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	1098460	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	790524	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	420710	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	268878	24.6956 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.80%		
43) 1,2-Dichloroethane-d4	10.35	65	241889	23.6409 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.56%		
58) Toluene-d8	12.73	98	964573	26.1475 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.60%		
80) p-Bromofluorobenzene	16.12	95	351170	24.5344 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.12%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.19	85	783296	46.0109 ug/L	97
3) Chloromethane	3.65	50	1388054	40.8414 ug/L	96
4) Vinyl Chloride	3.88	62	1346262	42.0378 ug/L	95
5) 1,3-Butadiene	3.93	54	1310567	44.9379 ug/L	97
6) Bromomethane	4.78	94	411295	53.7859 ug/L	98
7) Chloroethane	4.94	64	425949	48.8759 ug/L	92
8) Trichlorofluoromethane	5.42	101	1000036	49.7256 ug/L	99
9) Diethyl ether	5.96	59	687566	89.1742 ug/L	92
10) Isoprene	5.99	67	694380	46.5642 ug/L	85
11) Acrolein	6.18	56	29532	81.5380 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.21	101	561135	49.4346 ug/L	98
13) Acetone	6.28	43	67258	42.8736 ug/L	88
14) 1,1-Dichloroethene	6.51	61	898259	46.5297 ug/L	89
15) Tert-Butyl Alcohol	6.62	59	81131	192.1968 ug/L	98
16) Dimethyl Sulfide	6.77	62	520654	46.2611 ug/L	83
17) Iodomethane	7.03	142	353955	45.5680 ug/L	83
18) Methyl acetate	7.04	43	261903	46.7848 ug/L	91
19) Methylene Chloride	7.30	84	538708	48.9652 ug/L	66
20) Carbon Disulfide	7.34	76	1798454	50.6404 ug/L	95
21) Acrylonitrile	7.47	53	115974	46.4460 ug/L	97
22) Methyl Tert Butyl Ether	7.51	73	973471	45.9295 ug/L	98
23) trans-1,2-Dichloroethene	7.74	61	834138	45.2600 ug/L	90
24) n-Hexane	7.83	57	824738	44.2535 ug/L	98
25) Diisopropyl ether	8.17	45	3648628	89.3742 ug/L	94
26) Vinyl Acetate	8.34	43	510564	37.8817 ug/L	94
27) 1,1-Dichloroethane	8.37	63	1055868	47.4580 ug/L	95
28) Ethyl-Tert-Butyl ether	8.75	59	2937618	91.7083 ug/L	95
29) 2-Butanone	8.92	43	105761	41.3782 ug/L	92
30) Propionitrile	9.04	54	74589	91.5601 ug/L	98
31) 2,2-Dichloropropane	9.15	77	912539	49.7130 ug/L	98
32) cis-1,2-Dichloroethene	9.21	96	598813	47.3060 ug/L	81
33) Chloroform	9.42	83	997453	48.2661 ug/L	95
34) 1-Bromopropane	9.55	122	110821	48.2284 ug/L	99
35) Bromochloromethane	9.66	130	319793	49.5405 ug/L	81
36) Tetrahydrofuran	9.68	42	154239	89.5905 ug/L	87
38) 1,1,1-Trichloroethane	9.96	97	959860	51.1654 ug/L	97
39) Cyclohexane	9.99	56	1047125	46.0561 ug/L	88
40) 1,1-Dichloropropene	10.15	75	795536	48.7406 ug/L	94
41) Tert-Amyl-Methyl ether	10.26	73	2195397	93.3767 ug/L	98
42) Carbon Tetrachloride	10.30	117	912118	53.5031 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M405026.D 8260WT.M Sat May 30 15:28:13 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\053015\8M405026.D Vial: 2
Acq On : 30 May 2015 15:06 Operator: TMB
Sample : WG525660-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD70754 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 30 15:28:13 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.46	62	672568	45.3980	ug/L		94
46)	Benzene	10.50	78	2143234	48.7478	ug/L		97
47)	Trichloroethene	11.26	130	610914	52.5311	ug/L		99
48)	Methylcyclohexane	11.34	83	888458	47.0684	ug/L		93
49)	1,2-Dichloropropane	11.47	63	563172	45.7333	ug/L		98
50)	Bromodichloromethane	11.78	83	745564	49.1773	ug/L		97
51)	1,4-Dioxane	11.77	88	10878	224.1403	ug/L		80
52)	Dibromomethane	11.86	93	280053	48.2891	ug/L		93
53)	2-Chloroethyl Vinyl Ether	12.07	63	227635	76.6825	ug/L		99
54)	4-Methyl-2-Pentanone	12.10	58	99660	47.0748	ug/L		95
55)	cis-1,3-Dichloropropene	12.41	75	823396	49.6845	ug/L		96
56)	Dimethyl Disulfide	12.67	79	447536	45.8810	ug/L		94
59)	Toluene	12.83	91	2346191	50.0358	ug/L		84
60)	Ethyl Methacrylate	12.91	69	410667	49.2219	ug/L		78
62)	trans-1,3-Dichloropropene	13.01	75	684342	48.6908	ug/L		97
63)	1,1,2-Trichloroethane	13.22	97	356418	48.9245	ug/L		99
64)	2-Hexanone	13.15	58	91015	45.3686	ug/L	#	85
65)	1,3-Dichloropropane	13.52	76	615792	48.2185	ug/L		88
66)	Tetrachloroethene	13.65	164	509663	51.4979	ug/L		94
67)	Dibromochloromethane	13.91	129	516439	53.2717	ug/L		98
68)	1,2-Dibromoethane	14.16	107	363723	52.2998	ug/L		97
69)	1-Chlorohexane	14.25	91	785620	48.9828	ug/L		91
70)	Chlorobenzene	14.67	112	1554680	49.1237	ug/L		91
71)	1,1,1,2-Tetrachloroethane	14.70	131	586926	51.6657	ug/L		100
72)	Ethylbenzene	14.69	106	890987	47.0035	ug/L	#	36
73)	m-,p-Xylene	14.78	106	2155324	100.5393	ug/L	#	54
74)	o-Xylene	15.34	106	1040613	49.1191	ug/L		68
75)	Styrene	15.38	104	1701074	50.6865	ug/L		86
76)	Bromoform	15.88	173	309947	50.1873	ug/L		97
77)	Isopropylbenzene	15.77	105	2630500	50.7693	ug/L		80
79)	1,1,2,2-Tetrachloroethane	15.98	83	383137	47.9289	ug/L		99
81)	1,2,3-Trichloropropane	16.18	110	109685	50.6459	ug/L		93
82)	trans-1,4-Dichloro-2-Buten	16.22	53	120556	45.4300	ug/L		88
83)	n-Propylbenzene	16.27	91	3177695	49.9210	ug/L		75
84)	Bromobenzene	16.41	156	639867	50.6174	ug/L		95
85)	1,3,5-Trimethylbenzene	16.47	105	2292999	52.6477	ug/L		81
86)	2-Chlorotoluene	16.55	91	1997040	46.4866	ug/L		82
87)	4-Chlorotoluene	16.59	91	1869618	54.4108	ug/L		78
88)	a-Methylstyrene	16.87	118	1222391	49.2831	ug/L		93
89)	tert-Butylbenzene	16.94	134	476934	49.2573	ug/L		66
90)	1,2,4-Trimethylbenzene	16.99	105	2313866	51.6746	ug/L		77
91)	sec-Butylbenzene	17.20	105	2865192	52.7622	ug/L		79
92)	p-Isopropyltoluene	17.36	119	2464501	53.5301	ug/L		79
93)	1,3-Dichlorobenzene	17.56	146	1313628	51.2744	ug/L		91
94)	1,4-Dichlorobenzene	17.68	146	1300153	49.9874	ug/L		91
95)	n-Butylbenzene	17.89	91	2312295	51.4152	ug/L		81
96)	1,2-Dichlorobenzene	18.18	146	1137650	51.1719	ug/L		93
97)	1,2-Dibromo-3-Chloropropan	19.17	75	62014	48.6006	ug/L		88
98)	1,2,4-Trichlorobenzene	20.32	180	824083	49.2053	ug/L		99
99)	Hexachlorobutadiene	20.47	225	450841	51.5272	ug/L		95
100)	Naphthalene	20.69	128	1163067	51.7810	ug/L		93
101)	1,2,3-Trichlorobenzene	21.00	180	690974	48.6872	ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\053015\8M405026.D Vial: 2
Acq On : 30 May 2015 15:06 Operator: TMB
Sample : WG525660-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD70754 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 30 15:28 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

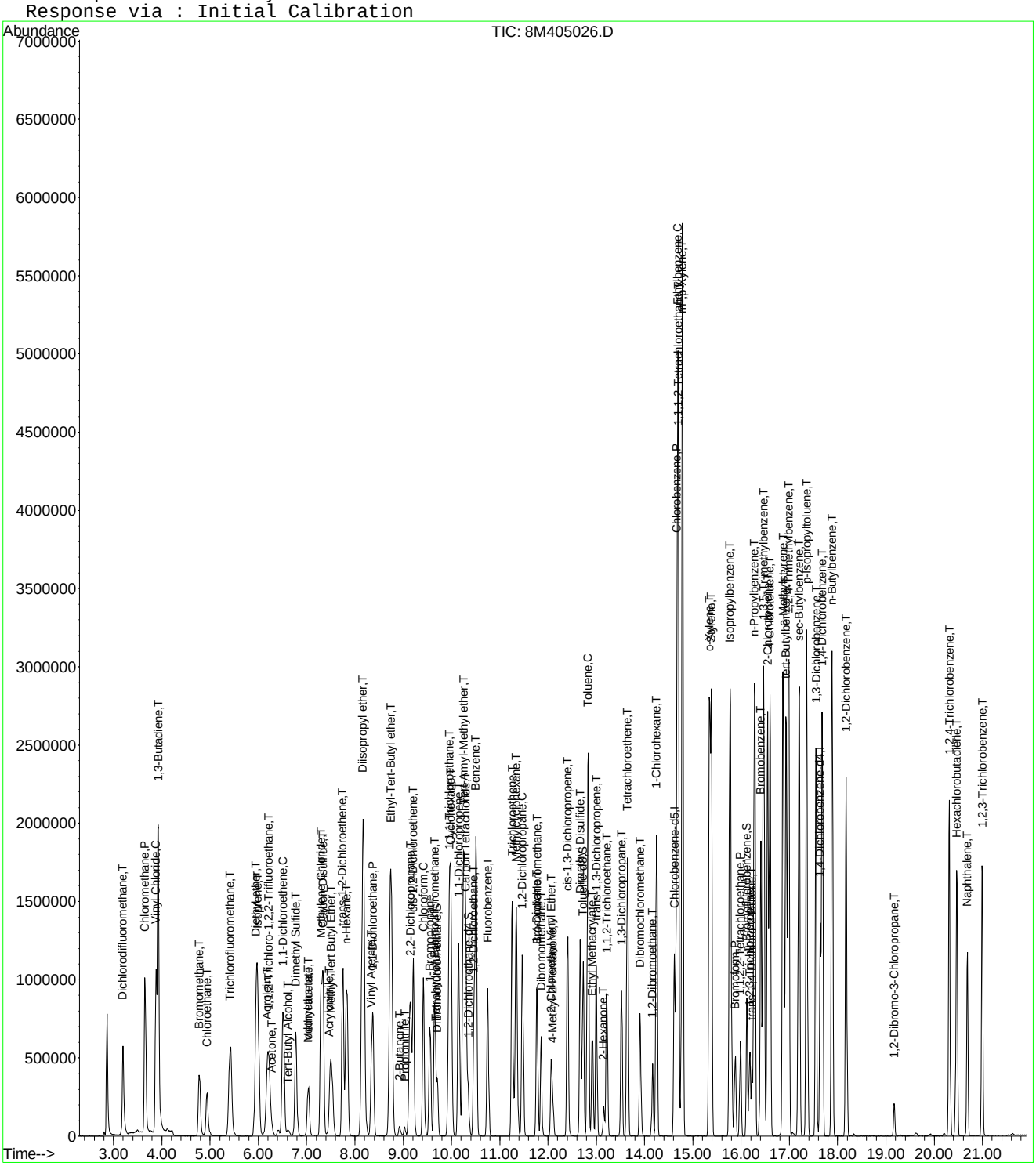

8M405026.D 8260WT.M Sat May 30 15:28:14 2015 Page 3

Continuing Calibration Area and RT check

Instrument: HPMS8
Initial cal date: 12 May 2015 19:42
CCV date: 30 May 2015 15:06
CCV Filename: 8M405026.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	779258	10.75	545682	14.62	300564	17.65
CCV	1098460	10.75	790524	14.62	420710	17.64

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\053015\8M405026.D Vial: 2
Acq On : 30 May 2015 15:06 Operator: TMB
Sample : WG525660-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD70754 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	141	0.00
2	T	Dichlorodifluoromethane	0.3875	0.3565	8.0	122	0.00
3	P	Chloromethane	0.7735	0.6318	18.3	115	0.00
4	C	Vinyl Chloride	0.7289	0.6128	15.9	115	0.00
5	T	1,3-Butadiene	0.6155	0.5966	3.1	109	0.02
6	T	Bromomethane	0.1537	0.1872	-21.8	158#	0.00
7	T	Chloroethane	0.1983	0.1939	2.2	139	0.00
8	T	Trichlorofluoromethane	0.4577	0.4552	0.5	141	0.00
9	T	Diethyl ether	0.1755	0.1565	10.8	135	0.00
10	T	Isoprene	0.3394	0.3161	6.9	129	0.00
11	T	Acrolein	0.0074	0.0134	-81.9#	325#	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2583	0.2554	1.1	140	0.00
13	T	Acetone	0.0357	0.0306	14.3	125	-0.01
14	C	1,1-Dichloroethene	0.4394	0.4089	6.9	130	0.00
15	T	Tert-Butyl Alcohol	0.0096	0.0092	4.0	147	-0.01
16	T	Dimethyl Sulfide	0.2561	0.2370	7.5	128	0.00
17	T	Iodomethane	0.1417	0.1611	-13.7	131	0.00
18	T	Methyl acetate	0.1274	0.1192	6.4	137	0.00
19	T	Methylene Chloride	0.2504	0.2452	2.1	139	0.00
20	T	Carbon Disulfide	0.8083	0.8186	-1.3	135	0.00
21	T	Acrylonitrile	0.0568	0.0528	7.1	132	0.00
22	T	Methyl Tert Butyl Ether	0.4824	0.4431	8.1	132	0.00
23	T	trans-1,2-Dichloroethene	0.4194	0.3797	9.5	129	0.00
24	T	n-Hexane	0.4242	0.3754	11.5	124	0.00
25	T	Diisopropyl ether	0.9291	0.8304	10.6	129	0.00
26	T	Vinyl Acetate	0.3067	0.2324	24.2	103	0.00
27	P	1,1-Dichloroethane	0.5064	0.4806	5.1	131	0.00
28	T	Ethyl-Tert-Butyl ether	0.7290	0.6686	8.3	133	0.00
29	T	2-Butanone	0.0582	0.0481	17.2	119	0.00
30	T	Propionitrile	0.0185	0.0170	8.4	138	0.00
31	T	2,2-Dichloropropane	0.4178	0.4154	0.6	143	0.00
32	T	cis-1,2-Dichloroethene	0.2881	0.2726	5.4	134	0.00
33	C	Chloroform	0.4703	0.4540	3.5	135	0.00
34		1-Bromopropane	0.0473	0.0504	-6.7	142	0.00
35	T	Bromochloromethane	0.1469	0.1456	0.9	139	0.00
36	T	Tetrahydrofuran	0.0392	0.0351	10.4	135	0.00
37	S	Dibromofluoromethane	0.2478	0.2448	1.2	141	0.00
38	T	1,1,1-Trichloroethane	0.4270	0.4369	-2.3	140	0.00
39	T	Cyclohexane	0.5174	0.4766	7.9	129	0.00
40	T	1,1-Dichloropropene	0.3715	0.3621	2.5	138	0.00
41	T	Tert-Amyl-Methyl ether	0.5351	0.4996	6.6	137	0.00
42	T	Carbon Tetrachloride	0.3880	0.4152	-7.0	148	0.00
43	S	1,2-Dichloroethane-d4	0.2329	0.2202	5.4	133	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.58#
45	T	1,2-Dichloroethane	0.3372	0.3061	9.2	131	0.00
46	T	Benzene	1.0006	0.9756	2.5	135	0.00
47	T	Trichloroethene	0.2647	0.2781	-5.1	146	0.00
48	T	Methylcyclohexane	0.4296	0.4044	5.9	132	0.00
49	C	1,2-Dichloropropane	0.2803	0.2564	8.5	130	0.00
50	T	Bromodichloromethane	0.3451	0.3394	1.6	138	0.00
51	T	1,4-Dioxane	0.0011	0.0012	-14.8	163#	0.00
52	T	Dibromomethane	0.1320	0.1275	3.4	139	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0698	0.1036	-48.5#	233#	0.00
54	T	4-Methyl-2-Pentanone	0.0482	0.0454	5.9	135	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\053015\8M405026.D Vial: 2
Acq On : 30 May 2015 15:06 Operator: TMB
Sample : WG525660-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD70754 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.3772	0.3748	0.6	135	0.00
56	T	Dimethyl Disulfide	0.2031	0.2037	-0.3	147	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	145	0.00
58	S	Toluene-d8	1.1666	1.2202	-4.6	147	0.00
59	C	Toluene	1.4829	1.4840	-0.1	137	0.00
60	T	Ethyl Methacrylate	0.2638	0.2597	1.6	131	-0.01
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.18#
62	T	trans-1,3-Dichloropropene	0.4445	0.4328	2.6	136	0.00
63	T	1,1,2-Trichloroethane	0.2304	0.2254	2.2	140	0.00
64	T	2-Hexanone	0.0634	0.0576	9.3	125	0.00
65	T	1,3-Dichloropropane	0.4039	0.3895	3.6	138	0.00
66	T	Tetrachloroethene	0.3130	0.3224	-3.0	148	0.00
67	T	Dibromochloromethane	0.3066	0.3266	-6.5	151#	0.00
68	T	1,2-Dibromoethane	0.2199	0.2301	-4.6	145	0.00
69	T	1-Chlorohexane	0.5072	0.4969	2.0	141	-0.01
70	P	Chlorobenzene	1.0009	0.9833	1.8	139	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3593	0.3712	-3.3	147	0.00
72	C	Ethylbenzene	0.5995	0.5635	6.0	137	-0.01
73	T	m-,p-Xylene	0.6780	0.6816	-0.5	137	0.00
74	T	o-Xylene	0.6700	0.6582	1.8	141	-0.01
75	T	Styrene	1.0613	1.0759	-1.4	136	0.00
76	P	Bromoform	0.1638	0.1960	-19.7	166#	0.00
77	T	Isopropylbenzene	1.6386	1.6638	-1.5	137	-0.01
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	140	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4750	0.4553	4.1	137	-0.01
80	S	p-Bromofluorobenzene	0.8506	0.8347	1.9	137	0.00
81	T	1,2,3-Trichloropropane	0.1287	0.1304	-1.3	144	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1577	0.1433	9.1	119	-0.01
83	T	n-Propylbenzene	3.7826	3.7766	0.2	134	-0.01
84	T	Bromobenzene	0.7512	0.7605	-1.2	143	0.00
85	T	1,3,5-Trimethylbenzene	2.5881	2.7252	-5.3	136	0.00
86	T	2-Chlorotoluene	2.5528	2.3734	7.0	126	0.00
87	T	4-Chlorotoluene	2.0419	2.2220	-8.8	147	-0.01
88	T	a-Methylstyrene	1.4739	1.4528	1.4	133	0.00
89	T	tert-Butylbenzene	0.5754	0.5668	1.5	140	0.00
90	T	1,2,4-Trimethylbenzene	2.6608	2.7500	-3.3	134	0.00
91	T	sec-Butylbenzene	3.2269	3.4052	-5.5	135	0.00
92	T	p-Isopropyltoluene	2.7358	2.9290	-7.1	137	0.00
93	T	1,3-Dichlorobenzene	1.5224	1.5612	-2.5	139	0.00
94	T	1,4-Dichlorobenzene	1.5456	1.5452	0.0	139	-0.01
95	T	n-Butylbenzene	2.6725	2.7481	-2.8	132	0.00
96	T	1,2-Dichlorobenzene	1.3211	1.3521	-2.3	138	-0.01
97	T	1,2-Dibromo-3-Chloropropane	0.0758	0.0737	2.8	135	0.00
98	T	1,2,4-Trichlorobenzene	0.9952	0.9794	1.6	134	0.00
99	T	Hexachlorobutadiene	0.5199	0.5358	-3.1	147	0.00
100	T	Naphthalene	1.3347	1.3823	-3.6	138	0.00
101	T	1,2,3-Trichlorobenzene	0.8433	0.8212	2.6	134	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M405026.D 8260WT.M Sat May 30 15:28:54 2015 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\053015\8M405026.D Vial: 2
Acq On : 30 May 2015 15:06 Operator: TMB
Sample : WG525660-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD70754 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	141	0.00
2	T	Dichlorodifluoromethane	50.0000	46.0109	8.0	122	0.00
3	P	Chloromethane	50.0000	40.8414	18.3	115	0.00
4	C	Vinyl Chloride	50.0000	42.0378	15.9	115	0.00
5	T	1,3-Butadiene	50.0000	44.9379	10.1	109	0.02
6	T	Bromomethane	50.0000	53.7859	-7.6	158	0.00
7	T	Chloroethane	50.0000	48.8759	2.2	139	0.00
8	T	Trichlorofluoromethane	50.0000	49.7256	0.5	141	0.00
9	T	Diethyl ether	100.0000	89.1742	10.8	135	0.00
10	T	Isoprene	50.0000	46.5642	6.9	129	0.00
11	T	Acrolein	50.0000	81.5380	-63.1#	325	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	49.4346	1.1	140	0.00
13	T	Acetone	50.0000	42.8736	14.3	125	-0.01
14	C	1,1-Dichloroethene	50.0000	46.5297	6.9	130	0.00
15	T	Tert-Butyl Alcohol	200.0000	192.1968	3.9	147	-0.01
16	T	Dimethyl Sulfide	50.0000	46.2611	7.5	128	0.00
17	T	Iodomethane	50.0000	45.5680	8.9	131	0.00
18	T	Methyl acetate	50.0000	46.7848	6.4	137	0.00
19	T	Methylene Chloride	50.0000	48.9652	2.1	139	0.00
20	T	Carbon Disulfide	50.0000	50.6404	-1.3	135	0.00
21	T	Acrylonitrile	50.0000	46.4460	7.1	132	0.00
22	T	Methyl Tert Butyl Ether	50.0000	45.9295	8.1	132	0.00
23	T	trans-1,2-Dichloroethene	50.0000	45.2600	9.5	129	0.00
24	T	n-Hexane	50.0000	44.2535	11.5	124	0.00
25	T	Diisopropyl ether	100.0000	89.3742	10.6	129	0.00
26	T	Vinyl Acetate	50.0000	37.8817	24.2	103	0.00
27	P	1,1-Dichloroethane	50.0000	47.4580	5.1	131	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	91.7083	8.3	133	0.00
29	T	2-Butanone	50.0000	41.3782	17.2	119	0.00
30	T	Propionitrile	100.0000	91.5601	8.4	138	0.00
31	T	2,2-Dichloropropane	50.0000	49.7130	0.6	143	0.00
32	T	cis-1,2-Dichloroethene	50.0000	47.3060	5.4	134	0.00
33	C	Chloroform	50.0000	48.2661	3.5	135	0.00
34		1-Bromopropane	50.0000	48.2284	3.5	142	0.00
35	T	Bromochloromethane	50.0000	49.5405	0.9	139	0.00
36	T	Tetrahydrofuran	100.0000	89.5905	10.4	135	0.00
37	S	Dibromofluoromethane	25.0000	24.6956	1.2	141	0.00
38	T	1,1,1-Trichloroethane	50.0000	51.1655	-2.3	140	0.00
39	T	Cyclohexane	50.0000	46.0561	7.9	129	0.00
40	T	1,1-Dichloropropene	50.0000	48.7406	2.5	138	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	93.3767	6.6	137	0.00
42	T	Carbon Tetrachloride	50.0000	53.5031	-7.0	148	0.00
43	S	1,2-Dichloroethane-d4	25.0000	23.6409	5.4	133	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.58#
45	T	1,2-Dichloroethane	50.0000	45.3980	9.2	131	0.00
46	T	Benzene	50.0000	48.7478	2.5	135	0.00
47	T	Trichloroethene	50.0000	52.5311	-5.1	146	0.00
48	T	Methylcyclohexane	50.0000	47.0684	5.9	132	0.00
49	C	1,2-Dichloropropane	50.0000	45.7333	8.5	130	0.00
50	T	Bromodichloromethane	50.0000	49.1773	1.6	138	0.00
51	T	1,4-Dioxane	200.0000	224.1403	-12.1	163	0.00
52	T	Dibromomethane	50.0000	48.2891	3.4	139	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	76.6825	-53.4#	233	0.00
54	T	4-Methyl-2-Pentanone	50.0000	47.0748	5.9	135	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\053015\8M405026.D Vial: 2
Acq On : 30 May 2015 15:06 Operator: TMB
Sample : WG525660-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD70754 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	49.6845	0.6	135	0.00
56	T	Dimethyl Disulfide	50.0000	45.8810	8.2	147	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	145	0.00
58	S	Toluene-d8	25.0000	26.1475	-4.6	147	0.00
59	C	Toluene	50.0000	50.0359	-0.1	137	0.00
60	T	Ethyl Methacrylate	50.0000	49.2219	1.6	131	-0.01
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.18#
62	T	trans-1,3-Dichloropropene	50.0000	48.6908	2.6	136	0.00
63	T	1,1,2-Trichloroethane	50.0000	48.9245	2.2	140	0.00
64	T	2-Hexanone	50.0000	45.3686	9.3	125	0.00
65	T	1,3-Dichloropropane	50.0000	48.2185	3.6	138	0.00
66	T	Tetrachloroethene	50.0000	51.4979	-3.0	148	0.00
67	T	Dibromochloromethane	50.0000	53.2717	-6.5	151	0.00
68	T	1,2-Dibromoethane	50.0000	52.2998	-4.6	145	0.00
69	T	1-Chlorohexane	50.0000	48.9828	2.0	141	-0.01
70	P	Chlorobenzene	50.0000	49.1238	1.8	139	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	51.6657	-3.3	147	0.00
72	C	Ethylbenzene	50.0000	47.0035	6.0	137	-0.01
73	T	m-,p-Xylene	100.0000	100.5393	-0.5	137	0.00
74	T	o-Xylene	50.0000	49.1191	1.8	141	-0.01
75	T	Styrene	50.0000	50.6865	-1.4	136	0.00
76	P	Bromoform	50.0000	50.1873	-0.4	166	0.00
77	T	Isopropylbenzene	50.0000	50.7693	-1.5	137	-0.01
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	140	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	47.9289	4.1	137	-0.01
80	S	p-Bromofluorobenzene	25.0000	24.5344	1.9	137	0.00
81	T	1,2,3-Trichloropropane	50.0000	50.6459	-1.3	144	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	45.4300	9.1	119	-0.01
83	T	n-Propylbenzene	50.0000	49.9210	0.2	134	-0.01
84	T	Bromobenzene	50.0000	50.6174	-1.2	143	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	52.6477	-5.3	136	0.00
86	T	2-Chlorotoluene	50.0000	46.4866	7.0	126	0.00
87	T	4-Chlorotoluene	50.0000	54.4108	-8.8	147	-0.01
88	T	a-Methylstyrene	50.0000	49.2831	1.4	133	0.00
89	T	tert-Butylbenzene	50.0000	49.2573	1.5	140	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	51.6746	-3.3	134	0.00
91	T	sec-Butylbenzene	50.0000	52.7622	-5.5	135	0.00
92	T	p-Isopropyltoluene	50.0000	53.5301	-7.1	137	0.00
93	T	1,3-Dichlorobenzene	50.0000	51.2744	-2.5	139	0.00
94	T	1,4-Dichlorobenzene	50.0000	49.9875	0.0	139	-0.01
95	T	n-Butylbenzene	50.0000	51.4152	-2.8	132	0.00
96	T	1,2-Dichlorobenzene	50.0000	51.1719	-2.3	138	-0.01
97	T	1,2-Dibromo-3-Chloropropane	50.0000	48.6006	2.8	135	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	49.2053	1.6	134	0.00
99	T	Hexachlorobutadiene	50.0000	51.5272	-3.1	147	0.00
100	T	Naphthalene	50.0000	51.7810	-3.6	138	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	48.6872	2.6	134	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M405026.D 8260WT.M Sat May 30 15:28:55 2015 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\2\DATA\100214\8M400357.D          Vial: 3
Acq On    :  2 Oct 2014  11:58                       Operator: TMB
Sample    : WG494714-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD66476                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
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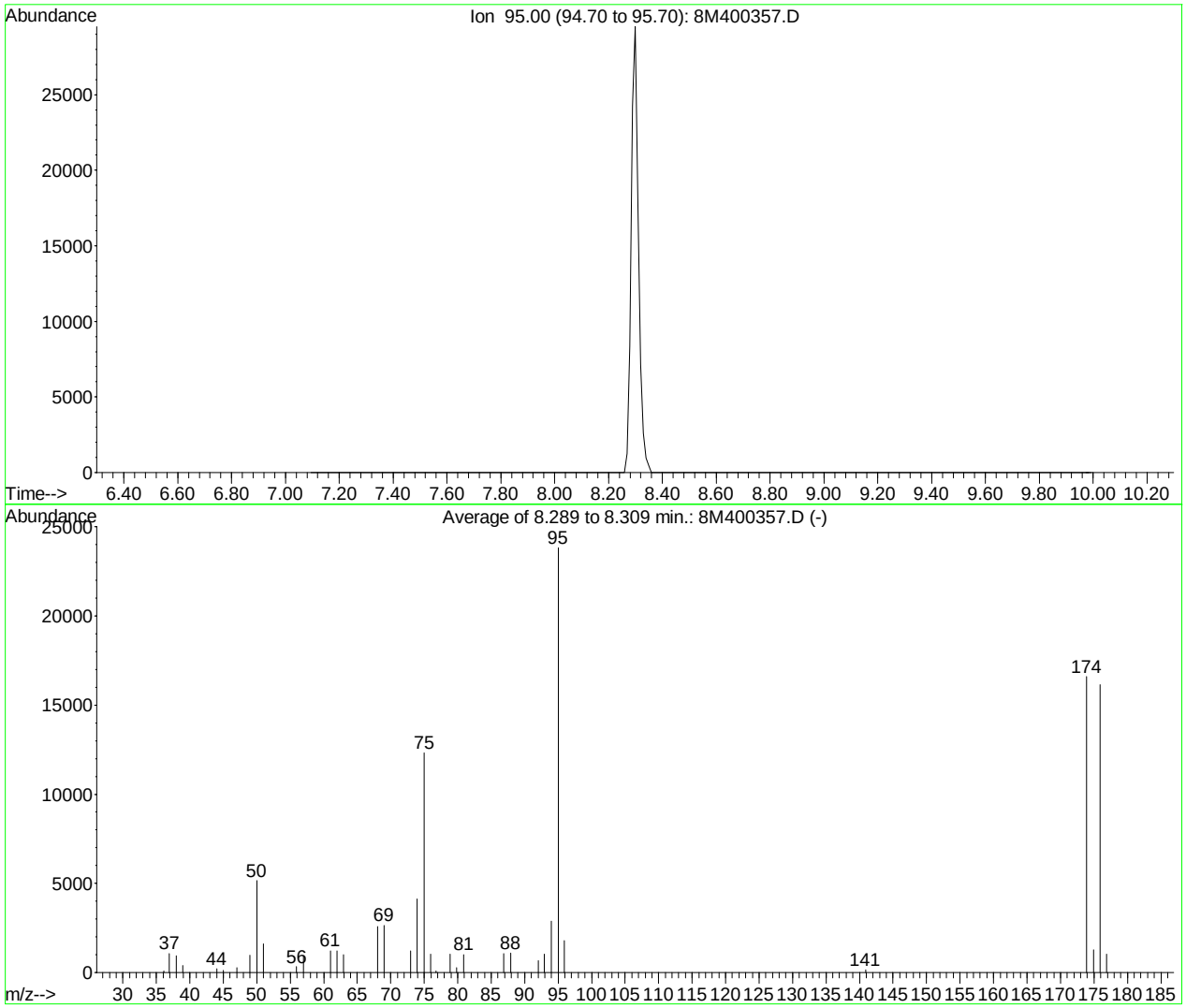

AutoFind: Scans 118, 119, 120; Background Corrected with Scan 113

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.7	5158	PASS
75	95	30	60	51.7	12312	PASS
95	95	100	100	100.0	23818	PASS
96	95	5	9	7.6	1800	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	69.7	16590	PASS
175	174	5	9	7.8	1290	PASS
176	174	95	101	97.3	16145	PASS
177	176	5	9	6.3	1023	PASS

8M400357.D BFB.M Thu Oct 02 12:09:27 2014

BFB

```
Data File : C:\MSDCHEM\2\DATA\051215\8M404577.D          Vial: 2
Acq On    : 12 May 2015  15:55                       Operator: TMB
Sample    : WG523161-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD70032                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
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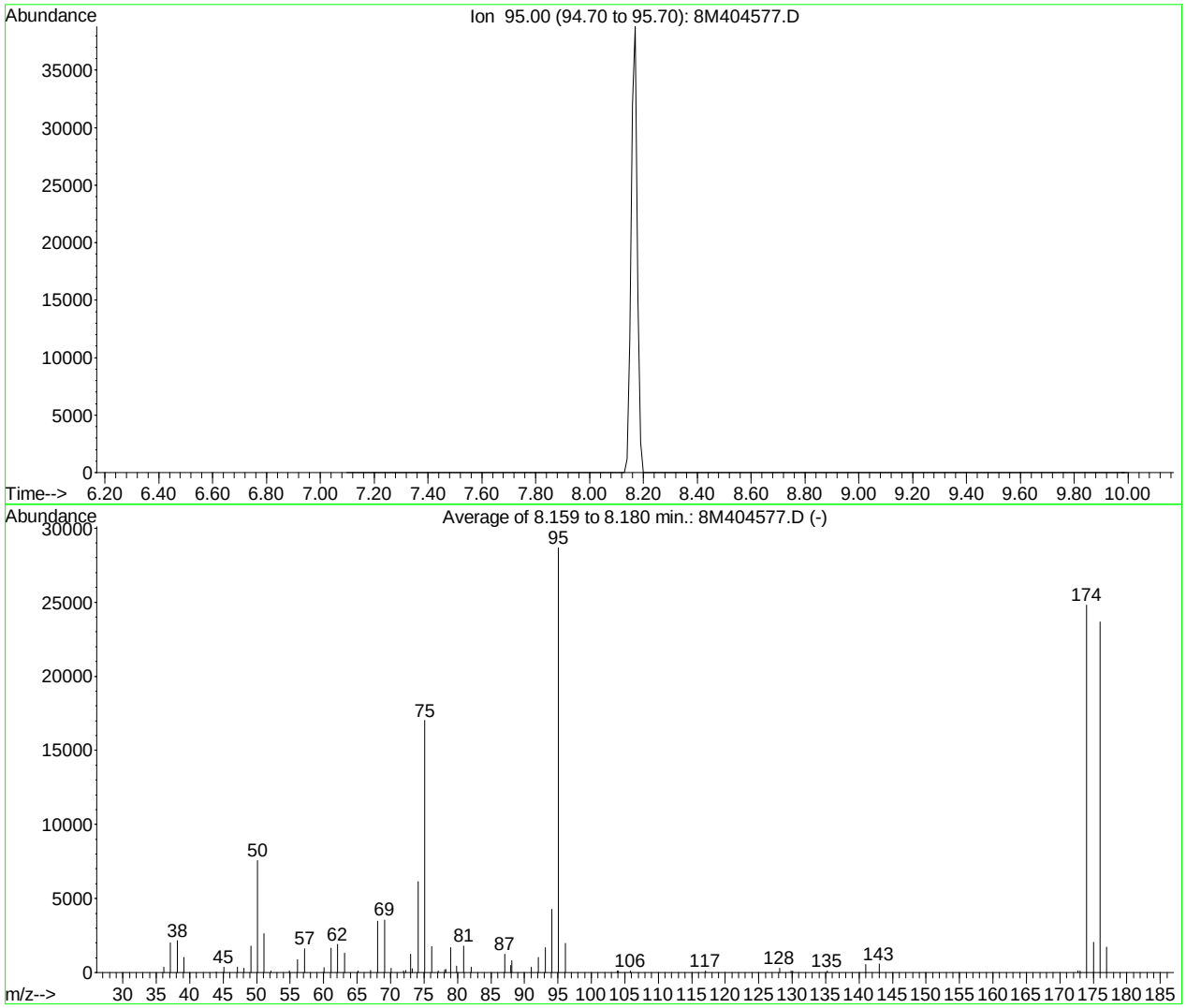

AutoFind: Scans 105, 106, 107; Background Corrected with Scan 100

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	26.3	7551	PASS
75	95	30	60	59.4	17014	PASS
95	95	100	100	100.0	28666	PASS
96	95	5	9	6.9	1981	PASS
173	174	0.00	2	0.5	119	PASS
174	95	50	100	86.5	24808	PASS
175	174	5	9	8.2	2031	PASS
176	174	95	101	95.4	23666	PASS
177	176	5	9	7.2	1714	PASS

8M404577.D BFB.M Tue May 12 16:07:11 2015

BFB

```
Data File : C:\MSDCHEM\2\DATA\052915\8M404994.D          Vial: 2
Acq On    : 29 May 2015  14:41                       Operator: TMB
Sample    : WG525606-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD70707                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

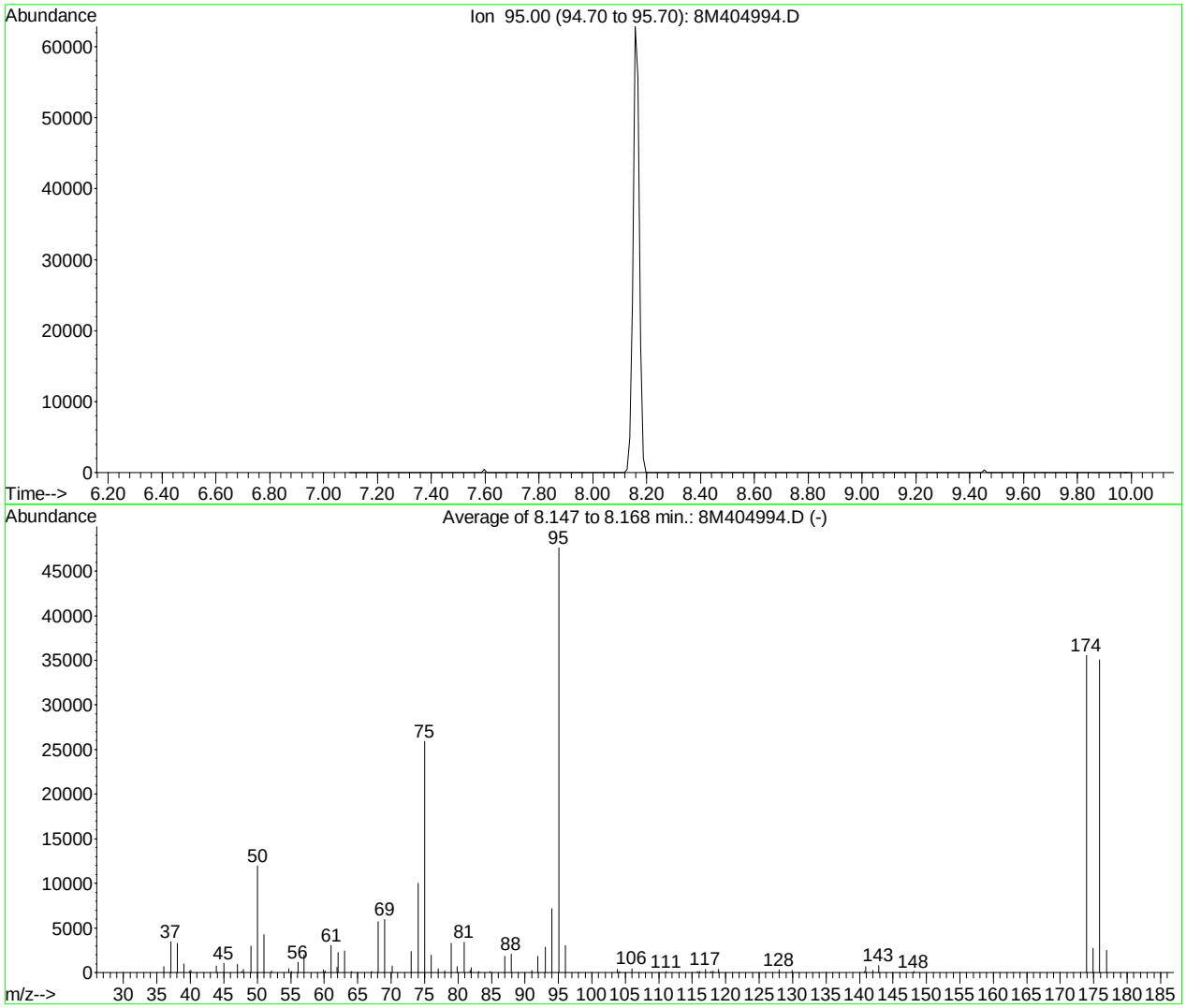

AutoFind: Scans 104, 105, 106; Background Corrected with Scan 99

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	25.2	11978	PASS
75	95	30	60	54.4	25909	PASS
95	95	100	100	100.0	47600	PASS
96	95	5	9	6.3	3014	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	74.7	35577	PASS
175	174	5	9	7.6	2717	PASS
176	174	95	101	98.5	35035	PASS
177	176	5	9	7.1	2489	PASS

8M404994.D BFB.M Fri May 29 14:52:08 2015

BFB

```
Data File : C:\MSDCHEM\2\DATA\053015\8M405025.D          Vial: 2
Acq On    : 30 May 2015  14:42                       Operator: TMB
Sample    : WG525660-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD70707                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

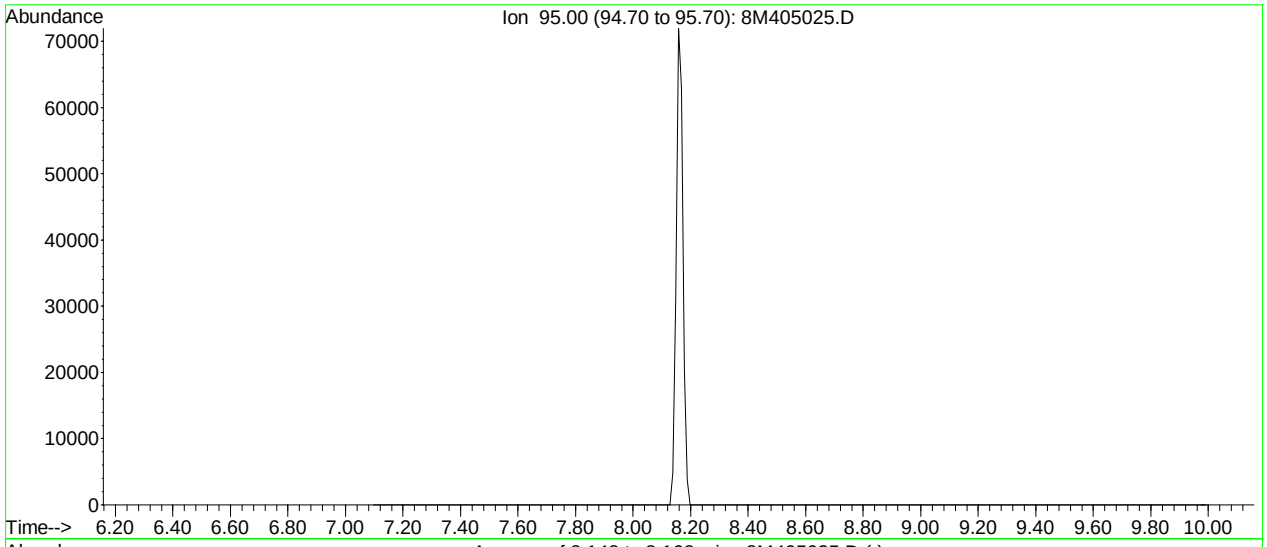

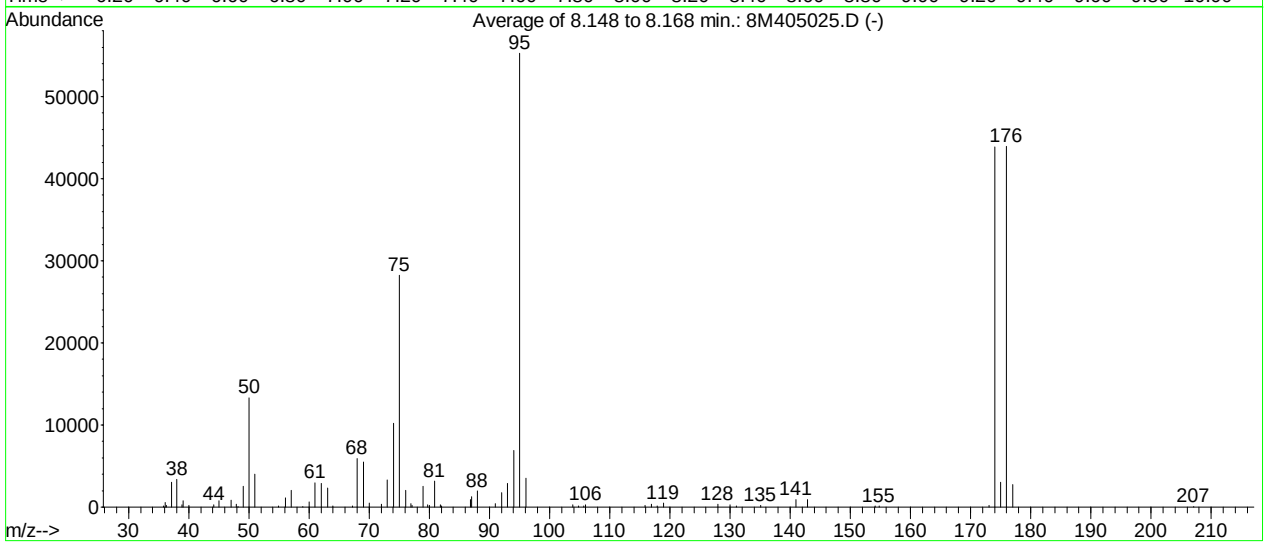

AutoFind: Scans 104, 105, 106; Background Corrected with Scan 100

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	24.1	13320	PASS
75	95	30	60	51.1	28258	PASS
95	95	100	100	100.0	55253	PASS
96	95	5	9	6.4	3556	PASS
173	174	0.00	2	0.5	231	PASS
174	95	50	100	79.3	43837	PASS
175	174	5	9	6.9	3031	PASS
176	174	95	101	100.2	43918	PASS
177	176	5	9	6.3	2766	PASS

8M405025.D BFB.M Sat May 30 14:53:17 2015

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052915\8M404997.D Vial: 4
Acq On : 29 May 2015 16:07 Operator: TMB
Sample : WG525607-01 VBLK0529 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 30 10:58:30 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	804789	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	599446	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	307190	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	201050	25.2040 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.80%		
43) 1,2-Dichloroethane-d4	10.35	65	177219	23.6407 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.56%		
58) Toluene-d8	12.73	98	722062	25.8128 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.24%		
80) p-Bromofluorobenzene	16.12	95	256556	24.5480 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.20%		

Target Compounds

					Qvalue
17) Iodomethane	6.97	142	201	1.0697 ug/L #	35
36) Tetrahydrofuran	9.67	42	213	0.1689 ug/L #	32
56) Dimethyl Disulfide	12.72	79	217	3.0526 ug/L #	1
81) 1,2,3-Trichloropropane	16.12	110	306	0.1935 ug/L #	1

(#) = qualifier out of range (m) = manual integration
8M404997.D 8260WT.M Sat May 30 10:58:31 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\052915\8M404997.D Vial: 4
Acq On : 29 May 2015 16:07 Operator: TMB
Sample : WG525607-01 VBLK0529 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 30 10:58 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

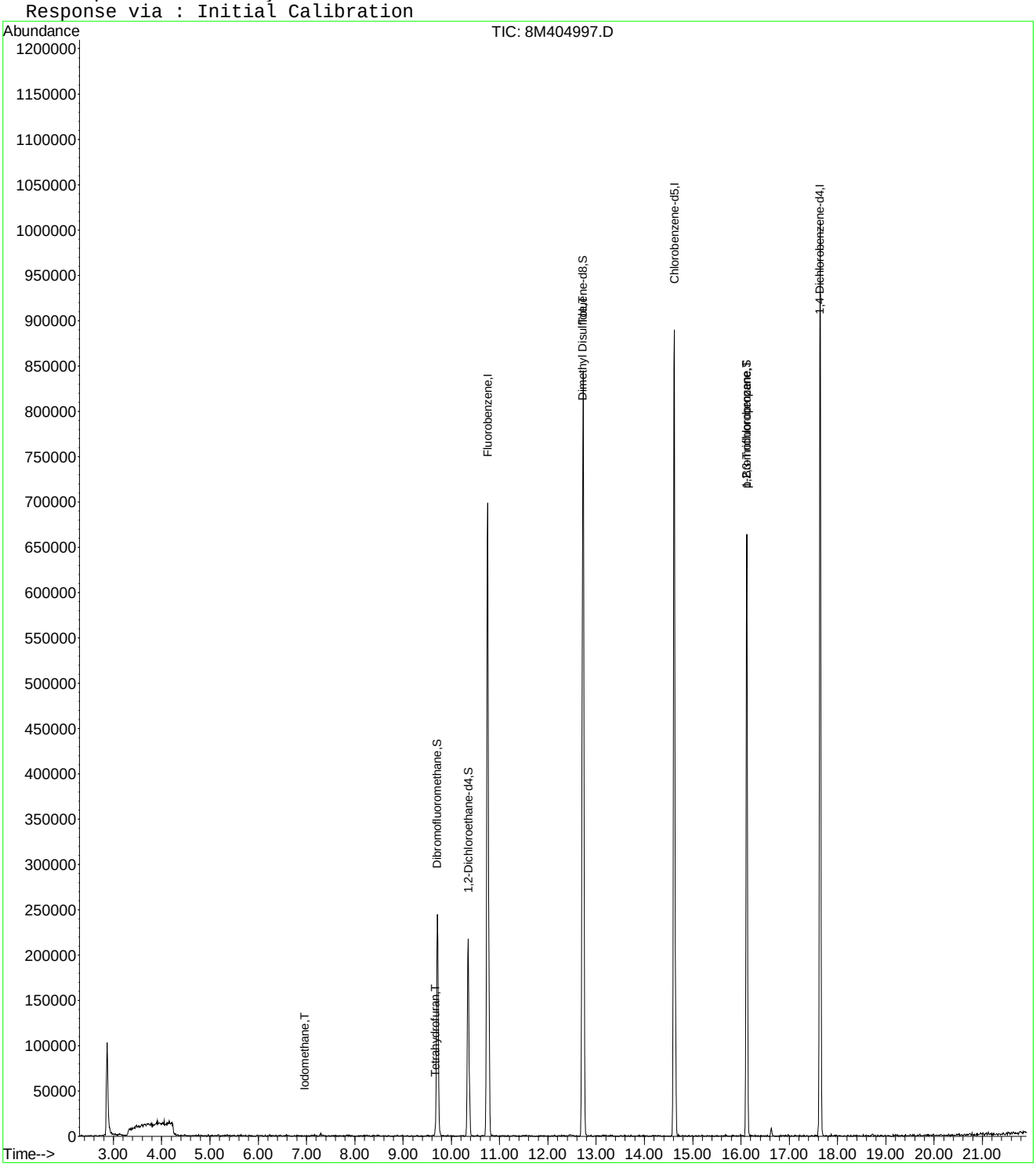

8M404997.D 8260WT.M Sat May 30 10:58:31 2015 Page 2

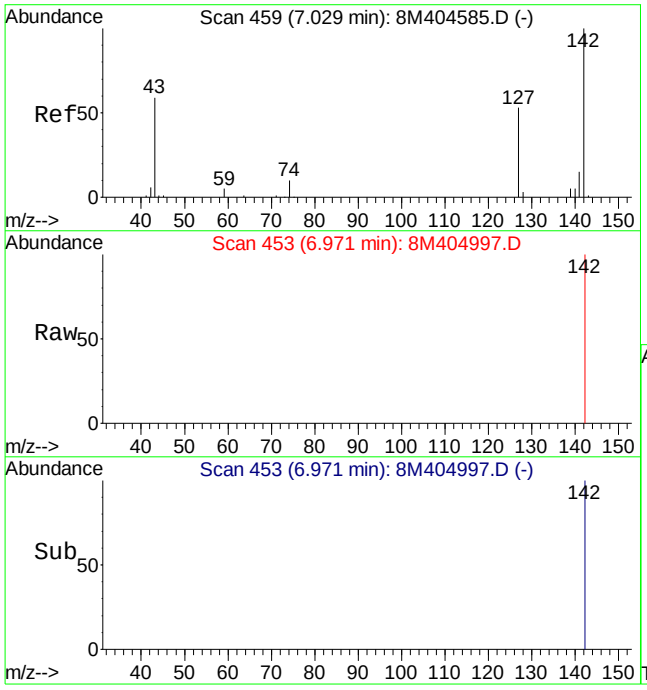

#17
Iodomethane
Concen: 1.07 ug/L
RT: 6.97 min Scan# 453
Delta R.T. -0.06 min
Lab File: 8M404997.D
Acq: 29 May 2015 16:07

Tgt Ion:142 Resp: 201

Ion	Ratio	Lower	Upper
142	100		
127	0.0	23.9	55.7#

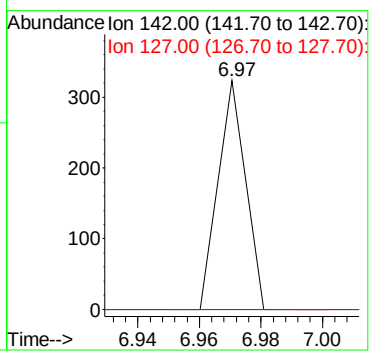

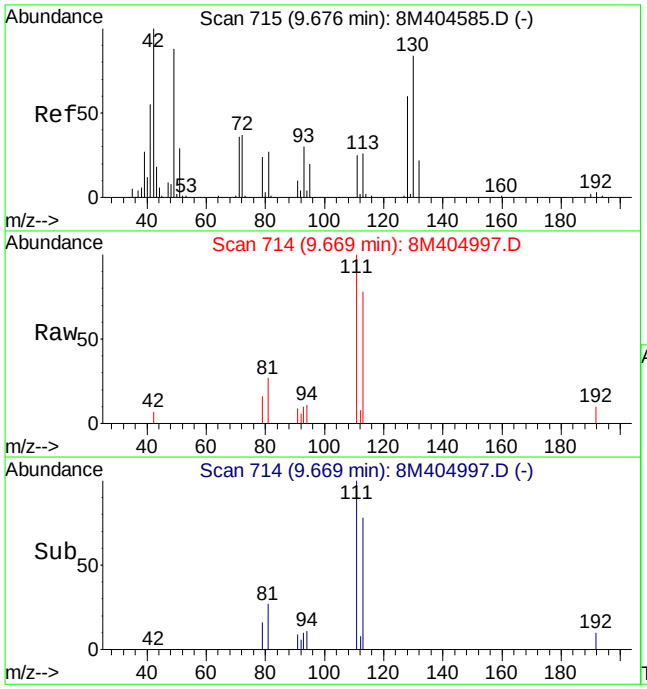

#36
Tetrahydrofuran
Concen: 0.17 ug/L
RT: 9.67 min Scan# 714
Delta R.T. -0.01 min
Lab File: 8M404997.D
Acq: 29 May 2015 16:07

Tgt Ion: 42 Resp: 213

Ion	Ratio	Lower	Upper
42	100		
72	0.0	27.5	64.3#
71	0.0	25.4	59.2#

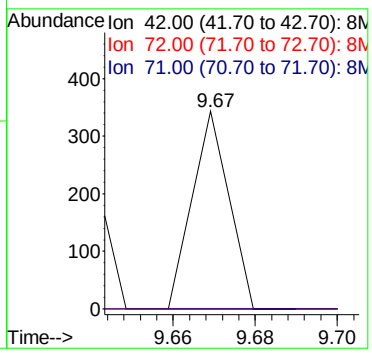

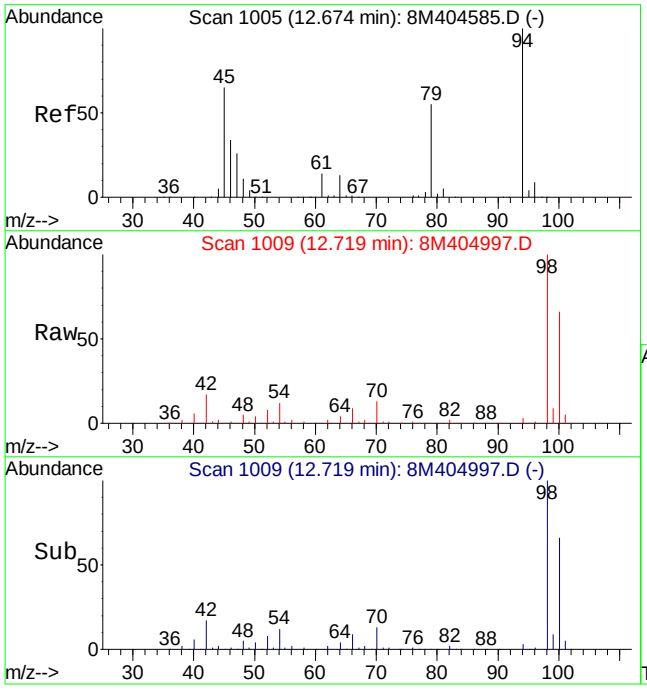

#56
Dimethyl Disulfide
Concen: 3.05 ug/L
RT: 12.72 min Scan# 1009
Delta R.T. 0.05 min
Lab File: 8M404997.D
Acq: 29 May 2015 16:07

Tgt Ion: 79 Resp: 217

Ion	Ratio	Lower	Upper
79	100		
94	10029.5	110.5	257.9#

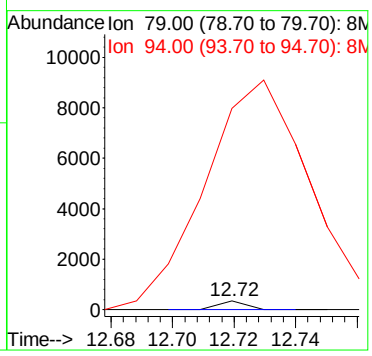

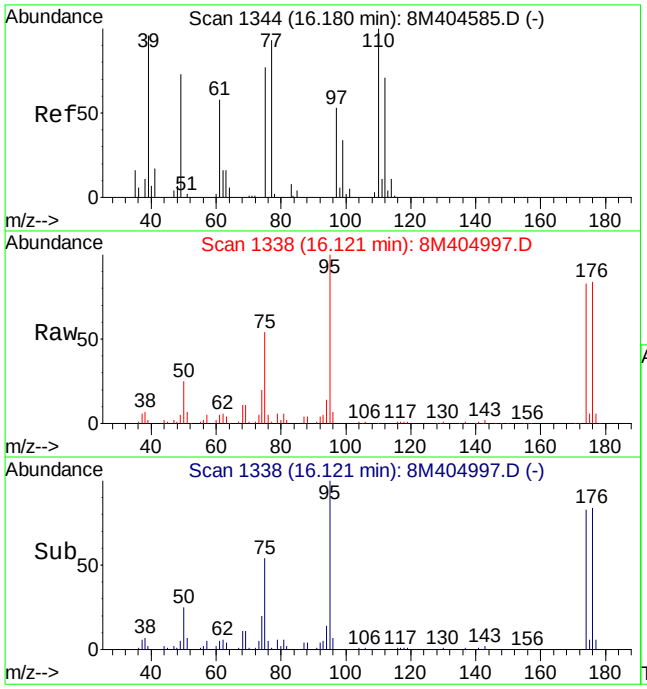

#81
1,2,3-Trichloropropane
Concen: 0.19 ug/L
RT: 16.12 min Scan# 1338
Delta R.T. -0.06 min
Lab File: 8M404997.D
Acq: 29 May 2015 16:07

Tgt Ion:110 Resp: 306

Ion	Ratio	Lower	Upper
110	100		
75	45351.3	115.6	269.6#
97	77.1	36.7	85.7

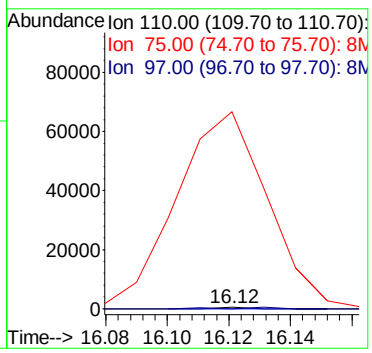

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\053015\8M405028.D Vial: 4
Acq On : 30 May 2015 16:02 Operator: TMB
Sample : WG525662-01 VBLK0530 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 01 08:24:29 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	1006218	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	733967	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	379253	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	244869	24.5522 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.20%		
43) 1,2-Dichloroethane-d4	10.35	65	220553	23.5317 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.12%		
58) Toluene-d8	12.73	98	886031	25.8692 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.48%		
80) p-Bromofluorobenzene	16.12	95	313562	24.3016 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.20%		

Target Compounds

					Qvalue
5) 1,3-Butadiene	3.91	54	251	Below Cal	# 1
13) Acetone	6.31	43	204	0.1420 ug/L	# 36
15) Tert-Butyl Alcohol	6.62	59	207	0.5353 ug/L	# 1
36) Tetrahydrofuran	9.68	42	528	0.3348 ug/L	# 32
56) Dimethyl Disulfide	12.74	79	231	3.0484 ug/L	# 1
81) 1,2,3-Trichloropropane	16.12	110	240	0.1229 ug/L	# 1

(#) = qualifier out of range (m) = manual integration
8M405028.D 8260WT.M Mon Jun 01 08:24:30 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\053015\8M405028.D Vial: 4
Acq On : 30 May 2015 16:02 Operator: TMB
Sample : WG525662-01 VBLK0530 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 1 8:24 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

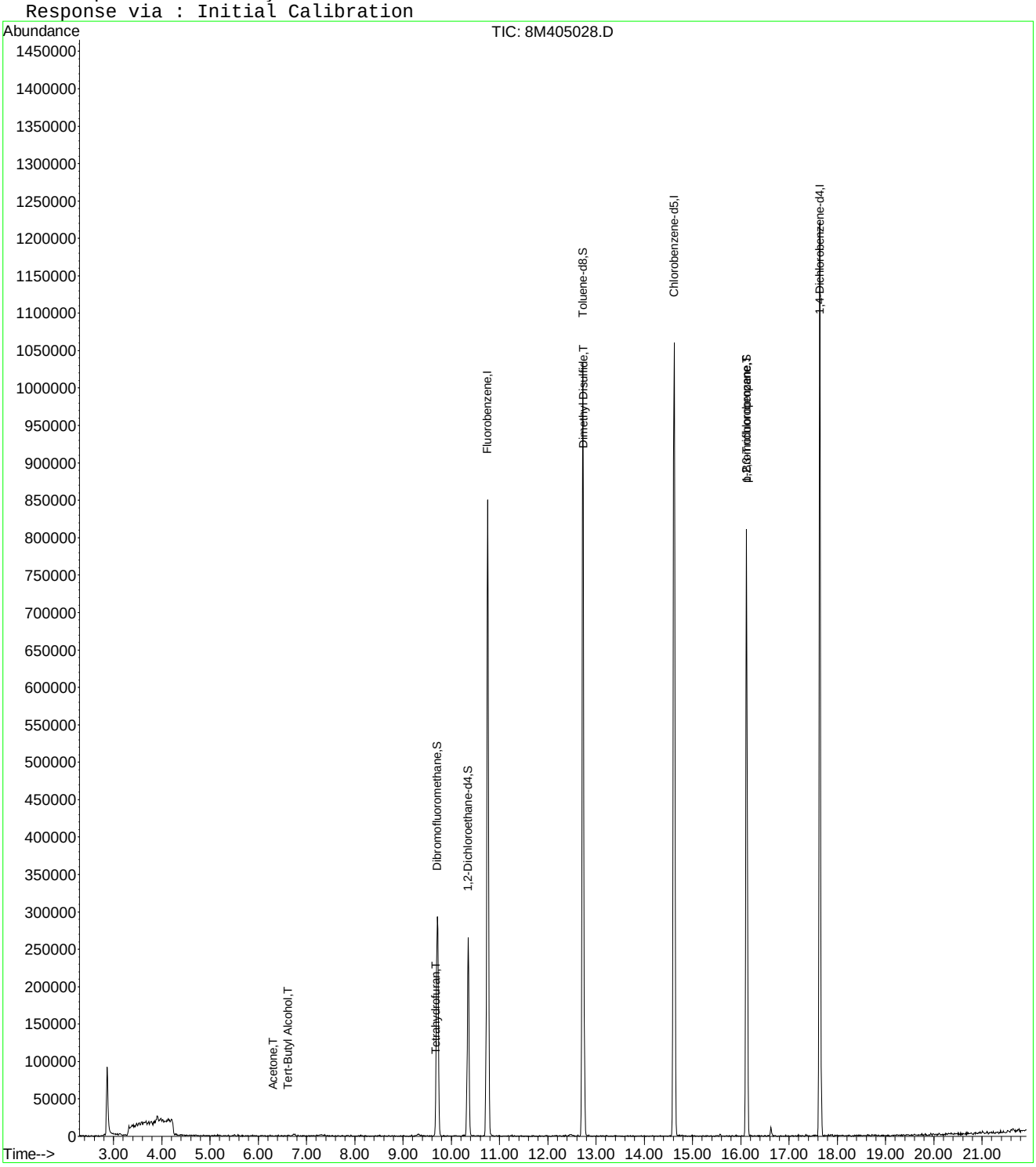

8M405028.D 8260WT.M Mon Jun 01 08:24:30 2015 Page 2

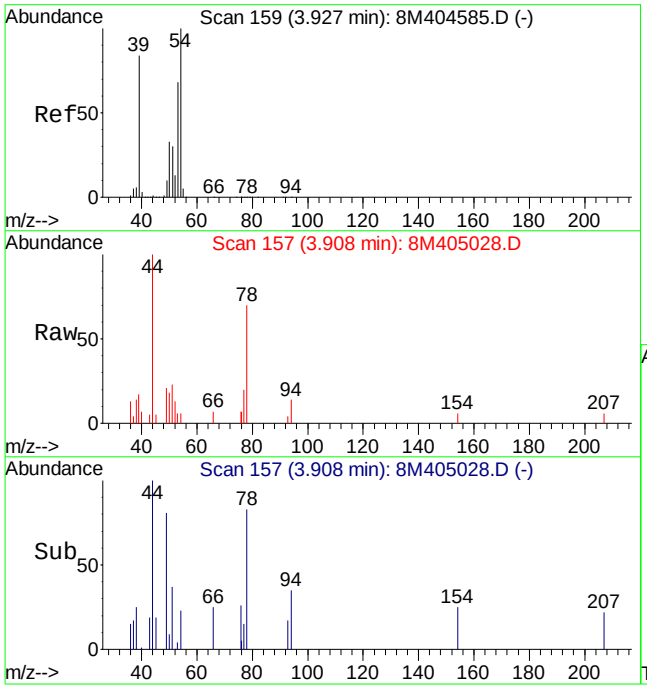

#5
1,3-Butadiene
Concen: Below Cal
RT: 3.91 min Scan# 157
Delta R.T. -0.00 min
Lab File: 8M405028.D
Acq: 30 May 2015 16:02

Tgt Ion: 54 Resp: 251

Ion	Ratio	Lower	Upper
54	100		
39	317.1	50.7	118.3#
53	208.0	40.4	94.4#

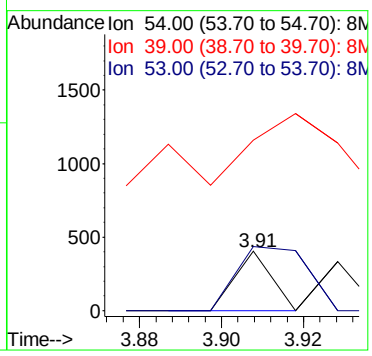

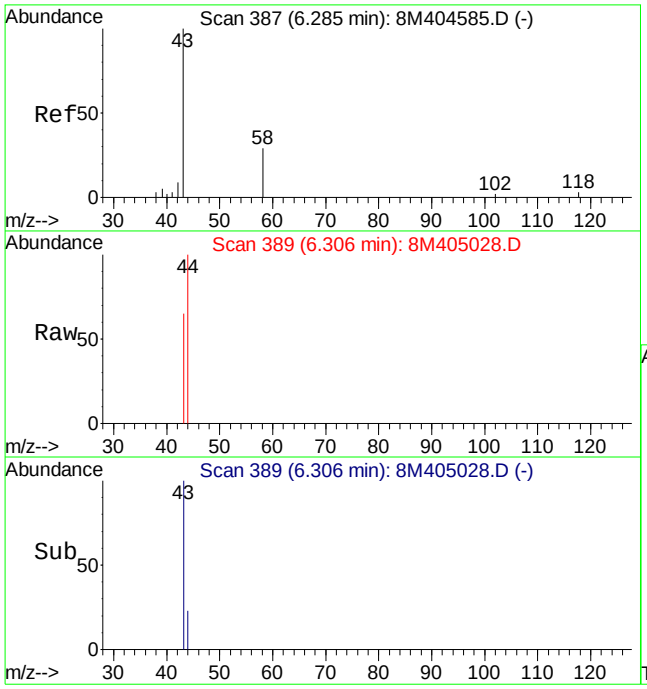

#13
Acetone
Concen: 0.14 ug/L
RT: 6.31 min Scan# 389
Delta R.T. 0.02 min
Lab File: 8M405028.D
Acq: 30 May 2015 16:02

Tgt Ion: 43 Resp: 204

Ion	Ratio	Lower	Upper
43	100		
58	0.0	23.2	54.0#

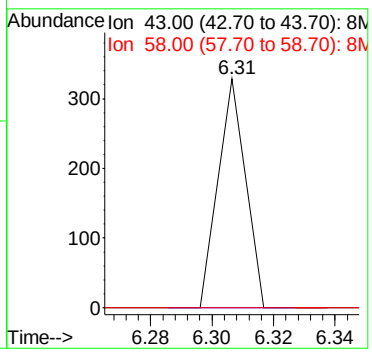

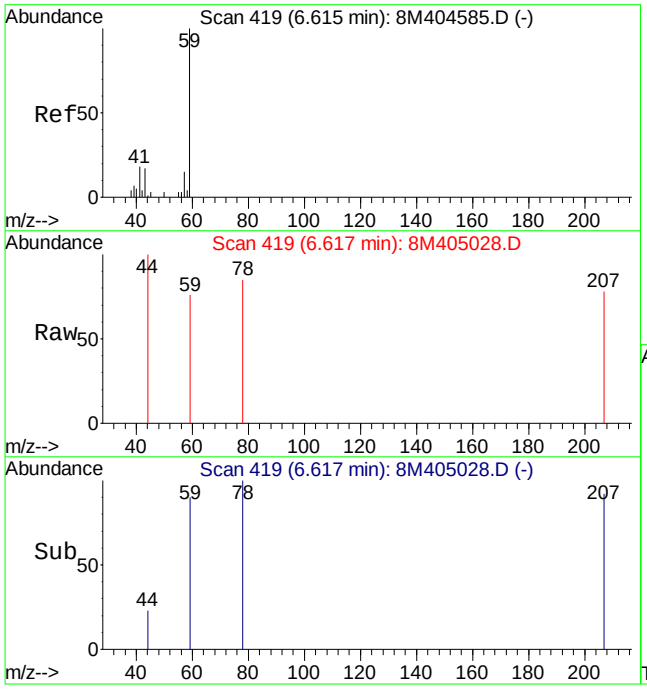

#15
Tert-Butyl Alcohol
Concen: 0.54 ug/L
RT: 6.62 min Scan# 419
Delta R.T. -0.01 min
Lab File: 8M405028.D
Acq: 30 May 2015 16:02

Tgt Ion: 59 Resp: 207

Ion	Ratio	Lower	Upper
59	100		
41	121.3	12.8	29.8#
57	0.0	6.1	14.3#

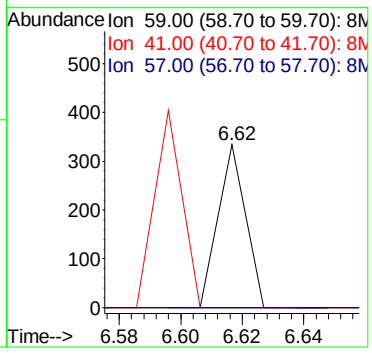

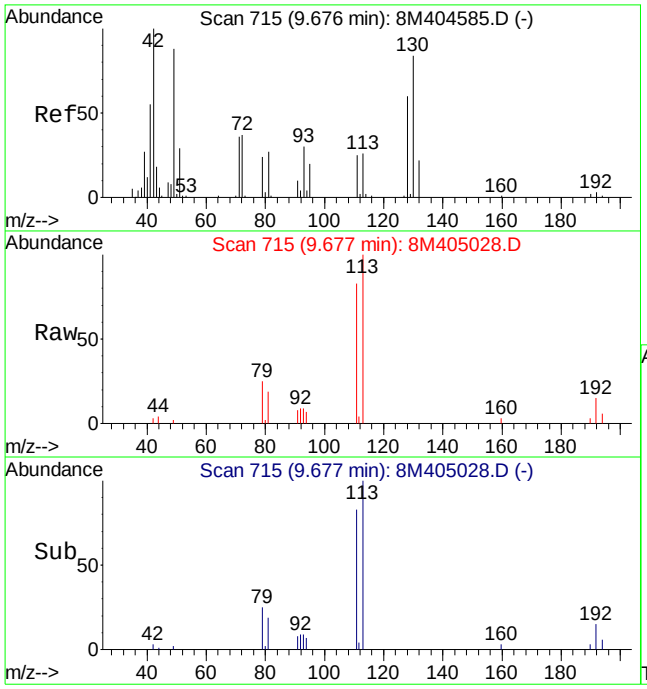

#36
Tetrahydrofuran
Concen: 0.33 ug/L
RT: 9.68 min Scan# 715
Delta R.T. -0.00 min
Lab File: 8M405028.D
Acq: 30 May 2015 16:02

Tgt Ion: 42 Resp: 528

Ion	Ratio	Lower	Upper
42	100		
72	0.0	27.5	64.3#
71	0.0	25.4	59.2#

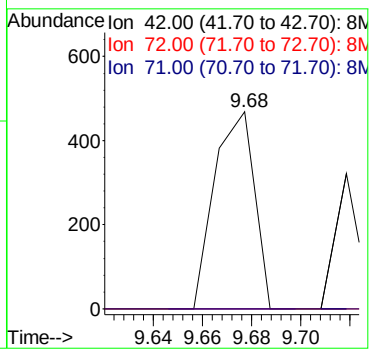

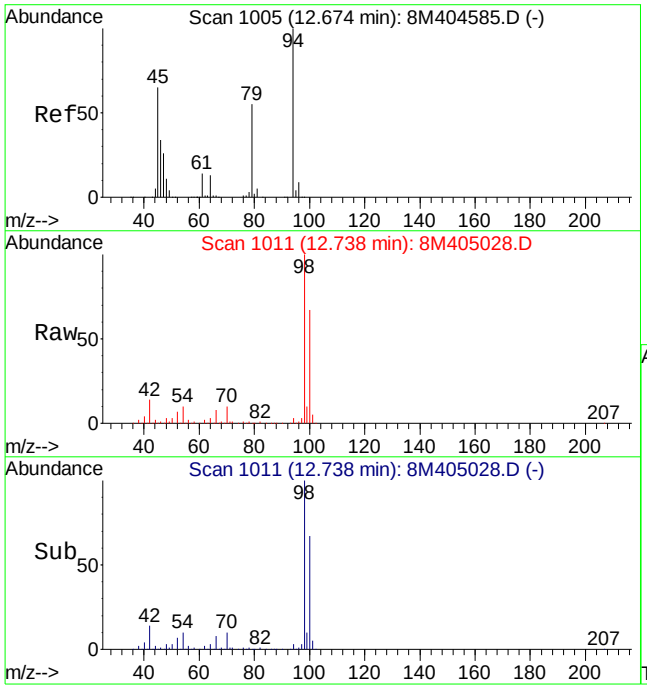

#56
Dimethyl Disulfide
Concen: 3.05 ug/L
RT: 12.74 min Scan# 1011
Delta R.T. 0.07 min
Lab File: 8M405028.D
Acq: 30 May 2015 16:02

Tgt Ion: 79 Resp: 231

Ion	Ratio	Lower	Upper
79	100		
94	11232.5	110.5	257.9#

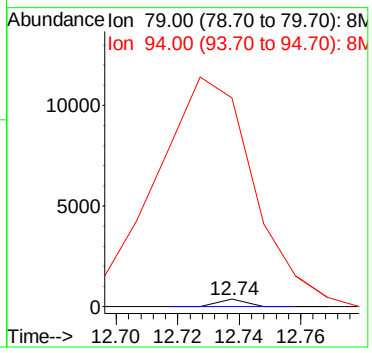

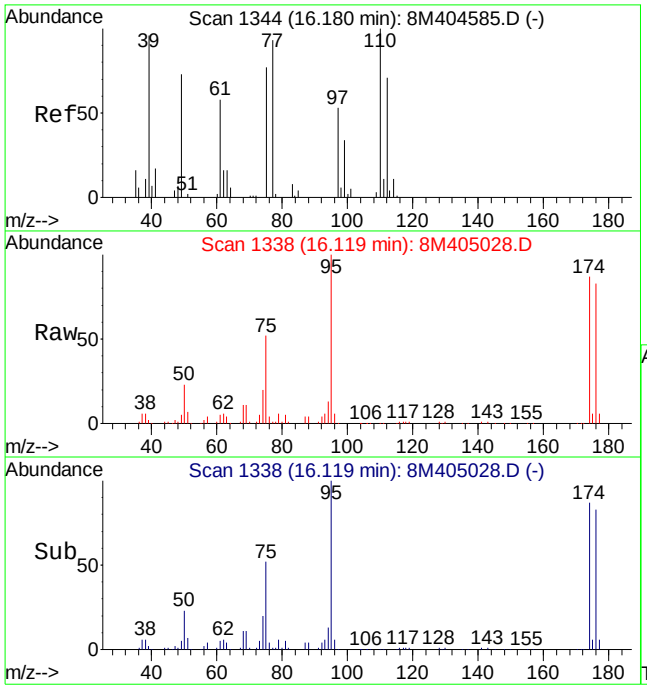

#81
1,2,3-Trichloropropane
Concen: 0.12 ug/L
RT: 16.12 min Scan# 1338
Delta R.T. -0.06 min
Lab File: 8M405028.D
Acq: 30 May 2015 16:02

Tgt Ion:110 Resp: 240

Ion	Ratio	Lower	Upper
110	100		
75	68127.5	115.6	269.6#
97	197.9	36.7	85.7#

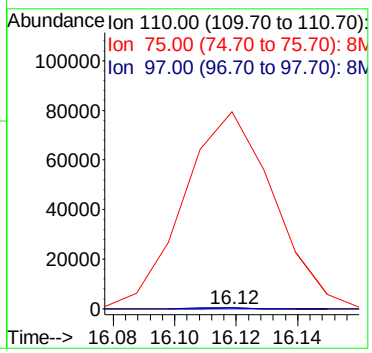

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052915\8M405003.D Vial: 10
Acq On : 29 May 2015 18:58 Operator: TMB
Sample : WG525607-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD70658 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 29 19:20:24 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	786222	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	584931	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	331754	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.71	111	198325	25.4496 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.80%		
43) 1,2-Dichloroethane-d4	10.35	65	179624	24.5274 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.12%		
58) Toluene-d8	12.73	98	704516	25.8105 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.24%		
80) p-Bromofluorobenzene	16.12	95	259248	22.9689 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 91.88%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.20	85	256462	21.0473 ug/L	98
3) Chloromethane	3.65	50	419731	17.2546 ug/L	97
4) Vinyl Chloride	3.88	62	444001	19.3701 ug/L	95
5) 1,3-Butadiene	3.92	54	290971	12.9903 ug/L	97
6) Bromomethane	4.78	94	114523	22.1434 ug/L	99
7) Chloroethane	4.93	64	127642	20.4630 ug/L	89
8) Trichlorofluoromethane	5.42	101	270498	18.7917 ug/L	96
9) Diethyl ether	5.95	59	479262	86.8434 ug/L	92
10) Isoprene	5.99	67	220602	20.6682 ug/L	82
11) Acrolein	6.18	56	31788	99.7126 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.21	101	153268	18.8649 ug/L	94
13) Acetone	6.29	43	23427	20.8642 ug/L	84
14) 1,1-Dichloroethene	6.52	61	239172	17.3092 ug/L	86
15) Tert-Butyl Alcohol	6.63	59	50252	166.3228 ug/L	96
16) Dimethyl Sulfide	6.78	62	192224	23.8624 ug/L	78
17) Iodomethane	7.03	142	104170	19.4916 ug/L	82
18) Methyl acetate	7.04	43	64865	16.1888 ug/L	92
19) Methylene Chloride	7.30	84	156490	19.8728 ug/L	60
20) Carbon Disulfide	7.34	76	441253	17.3590 ug/L	95
21) Acrylonitrile	7.48	53	33706	18.8597 ug/L	92
22) Methyl Tert Butyl Ether	7.52	73	284143	18.7303 ug/L	96
23) trans-1,2-Dichloroethene	7.76	61	236830	17.9536 ug/L	87
24) n-Hexane	7.83	57	218628	16.3899 ug/L	99
25) Diisopropyl ether	8.17	45	2716517	92.9681 ug/L	93
26) Vinyl Acetate	8.35	43	162800	16.8761 ug/L	91
27) 1,1-Dichloroethane	8.37	63	293329	18.4202 ug/L	95
28) Ethyl-Tert-Butyl ether	8.75	59	2119859	92.4611 ug/L	94
29) 2-Butanone	8.94	43	35046	19.1568 ug/L	90
30) Propionitrile	9.04	54	52041	89.2517 ug/L	98
31) 2,2-Dichloropropane	9.15	77	229518	17.4693 ug/L	97
32) cis-1,2-Dichloroethene	9.21	96	172001	18.9843 ug/L	83
33) Chloroform	9.42	83	285457	19.2988 ug/L	94
34) 1-Bromopropane	9.56	122	33828	20.8381 ug/L	98
35) Bromochloromethane	9.66	130	83845	18.1471 ug/L #	67
36) Tetrahydrofuran	9.67	42	115514	93.7435 ug/L	85
38) 1,1,1-Trichloroethane	9.95	97	261938	19.5077 ug/L	97
39) Cyclohexane	9.99	56	294664	18.1074 ug/L	86
40) 1,1-Dichloropropene	10.16	75	218757	18.7255 ug/L	94
41) Tert-Amyl-Methyl ether	10.26	73	1577067	93.7162 ug/L	96
42) Carbon Tetrachloride	10.29	117	239476	19.6259 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M405003.D 8260WT.M Fri May 29 19:20:24 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052915\8M405003.D Vial: 10
Acq On : 29 May 2015 18:58 Operator: TMB
Sample : WG525607-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD70658 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 29 19:20:24 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.47	62	195433	18.4305 ug/L		91
46)	Benzene	10.51	78	637297	20.2519 ug/L		97
47)	Trichloroethene	11.26	130	166922	20.0535 ug/L		95
48)	Methylcyclohexane	11.34	83	245072	18.1395 ug/L		92
49)	1,2-Dichloropropane	11.47	63	168487	19.1160 ug/L		98
50)	Bromodichloromethane	11.77	83	210870	19.4327 ug/L		97
51)	1,4-Dioxane	11.76	88	5090	163.2269 ug/L		91
52)	Dibromomethane	11.86	93	80145	19.3074 ug/L		90
53)	2-Chloroethyl Vinyl Ether	12.07	63	69487	32.1631 ug/L		94
54)	4-Methyl-2-Pentanone	12.10	58	29446	19.4327 ug/L		99
55)	cis-1,3-Dichloropropene	12.41	75	244906	20.6467 ug/L		94
56)	Dimethyl Disulfide	12.67	79	119668	19.0348 ug/L		85
59)	Toluene	12.82	91	686195	19.7777 ug/L		82
60)	Ethyl Methacrylate	12.92	69	126940	20.5626 ug/L		79
62)	trans-1,3-Dichloropropene	13.00	75	188965	18.1704 ug/L		97
63)	1,1,2-Trichloroethane	13.22	97	105222	19.5202 ug/L		100
64)	2-Hexanone	13.15	58	29164	19.6472 ug/L	#	49
65)	1,3-Dichloropropane	13.53	76	182845	19.3496 ug/L		85
66)	Tetrachloroethene	13.65	164	136751	18.6744 ug/L		91
67)	Dibromochloromethane	13.91	129	138148	19.2590 ug/L		99
68)	1,2-Dibromoethane	14.17	107	104127	20.2350 ug/L		98
69)	1-Chlorohexane	14.25	91	230371	19.4120 ug/L		89
70)	Chlorobenzene	14.67	112	428411	18.2945 ug/L		91
71)	1,1,1,2-Tetrachloroethane	14.70	131	159321	18.9541 ug/L		99
72)	Ethylbenzene	14.69	106	255919	18.2462 ug/L	#	31
73)	m-,p-Xylene	14.79	106	600877	37.8808 ug/L	#	47
74)	o-Xylene	15.35	106	284014	18.1181 ug/L		64
75)	Styrene	15.39	104	495398	19.9496 ug/L		86
76)	Bromoform	15.88	173	84523	18.9898 ug/L		94
77)	Isopropylbenzene	15.77	105	740292	19.3097 ug/L		79
79)	1,1,2,2-Tetrachloroethane	15.99	83	114010	18.0864 ug/L		98
81)	1,2,3-Trichloropropane	16.18	110	34471	20.1845 ug/L		82
82)	trans-1,4-Dichloro-2-Buten	16.22	53	39023	18.6484 ug/L		72
83)	n-Propylbenzene	16.28	91	909585	18.1210 ug/L	#	73
84)	Bromobenzene	16.41	156	188288	18.8886 ug/L		94
85)	1,3,5-Trimethylbenzene	16.46	105	689928	20.0884 ug/L		80
86)	2-Chlorotoluene	16.56	91	580741	17.1431 ug/L		82
87)	4-Chlorotoluene	16.60	91	504550	18.6210 ug/L		78
88)	a-Methylstyrene	16.87	118	377186	19.2846 ug/L		92
89)	tert-Butylbenzene	16.93	134	133251	17.4522 ug/L		57
90)	1,2,4-Trimethylbenzene	16.98	105	706601	20.0115 ug/L		76
91)	sec-Butylbenzene	17.20	105	823669	19.2348 ug/L		77
92)	p-Isopropyltoluene	17.36	119	681948	18.7840 ug/L		78
93)	1,3-Dichlorobenzene	17.55	146	370577	18.3431 ug/L		90
94)	1,4-Dichlorobenzene	17.68	146	396851	19.3491 ug/L		90
95)	n-Butylbenzene	17.88	91	689769	19.4499 ug/L		79
96)	1,2-Dichlorobenzene	18.18	146	333021	18.9960 ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.17	75	19760	19.6384 ug/L		86
98)	1,2,4-Trichlorobenzene	20.32	180	254896	19.3006 ug/L		98
99)	Hexachlorobutadiene	20.46	225	109207	15.8282 ug/L		92
100)	Naphthalene	20.69	128	394125	22.2519 ug/L		92
101)	1,2,3-Trichlorobenzene	20.99	180	222349	19.8680 ug/L		97

(#) = qualifier out of range (m) = manual integration
8M405003.D 8260WT.M Fri May 29 19:20:24 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\052915\8M405003.D Vial: 10
Acq On : 29 May 2015 18:58 Operator: TMB
Sample : WG525607-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD70658 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 29 19:20 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

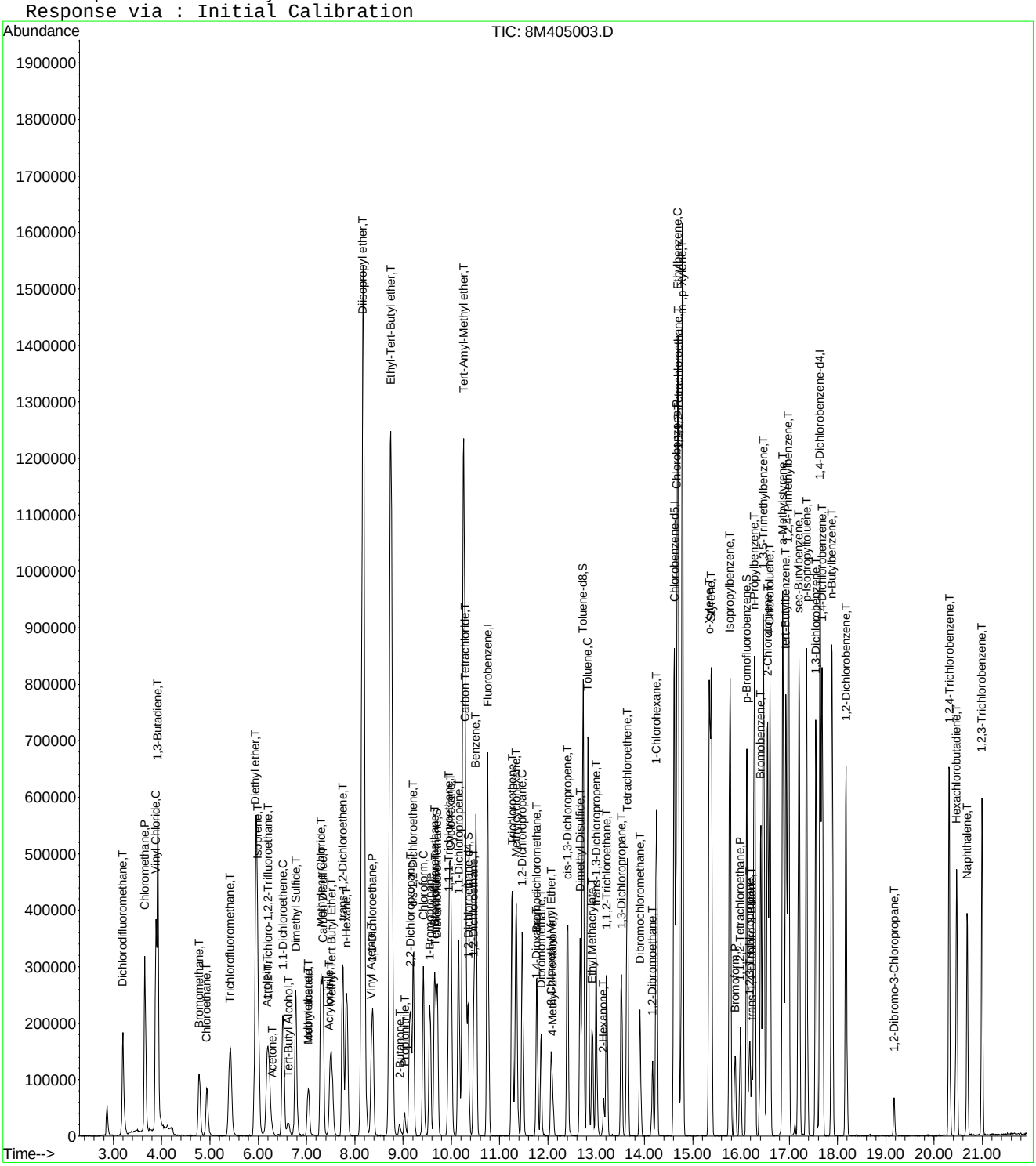

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\053015\8M405029.D Vial: 5
Acq On : 30 May 2015 16:31 Operator: TMB
Sample : WG525662-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD70796 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 30 16:53:26 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.75	96	993344	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.62	117	734690	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.64	152	398127	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.71	111	245931	24.9782 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.92%		
43) 1,2-Dichloroethane-d4	10.35	65	217746	23.5333 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.12%		
58) Toluene-d8	12.73	98	881884	25.7228 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.88%		
80) p-Bromofluorobenzene	16.12	95	319597	23.5951 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.40%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.20	85	316819	20.5793 ug/L	96
3) Chloromethane	3.65	50	521842	16.9792 ug/L	94
4) Vinyl Chloride	3.88	62	515023	17.7837 ug/L	95
5) 1,3-Butadiene	3.92	54	336428	11.8436 ug/L	95
6) Bromomethane	4.78	94	157734	24.0195 ug/L	96
7) Chloroethane	4.93	64	161308	20.4681 ug/L	92
8) Trichlorofluoromethane	5.42	101	346135	19.0324 ug/L	98
9) Diethyl ether	5.95	59	596360	85.5299 ug/L	92
10) Isoprene	5.99	67	284925	21.1286 ug/L	83
11) Acrolein	6.18	56	49678	110.6411 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.21	101	193922	18.8919 ug/L	93
13) Acetone	6.29	43	29013	20.4514 ug/L	85
14) 1,1-Dichloroethene	6.52	61	292460	16.7525 ug/L	87
15) Tert-Butyl Alcohol	6.62	59	72506	189.9406 ug/L #	84
16) Dimethyl Sulfide	6.77	62	242526	23.8292 ug/L	80
17) Iodomethane	7.03	142	144917	21.3459 ug/L	85
18) Methyl acetate	7.04	43	72292	14.2803 ug/L	94
19) Methylene Chloride	7.30	84	197040	19.8049 ug/L	67
20) Carbon Disulfide	7.34	76	564924	17.5903 ug/L	95
21) Acrylonitrile	7.48	53	43768	19.3833 ug/L	96
22) Methyl Tert Butyl Ether	7.51	73	372646	19.4424 ug/L	99
23) trans-1,2-Dichloroethene	7.75	61	295045	17.7031 ug/L	91
24) n-Hexane	7.84	57	270745	16.0649 ug/L	99
25) Diisopropyl ether	8.17	45	3305615	89.5404 ug/L	94
26) Vinyl Acetate	8.35	43	276805	22.7111 ug/L	92
27) 1,1-Dichloroethane	8.37	63	362772	18.0309 ug/L	94
28) Ethyl-Tert-Butyl ether	8.75	59	2668905	92.1363 ug/L	94
29) 2-Butanone	8.92	43	44755	19.3630 ug/L	86
30) Propionitrile	9.03	54	65126	88.4037 ug/L	92
31) 2,2-Dichloropropane	9.15	77	305780	18.4210 ug/L	97
32) cis-1,2-Dichloroethene	9.21	96	213974	18.6926 ug/L	84
33) Chloroform	9.42	83	352180	18.8451 ug/L	96
34) 1-Bromopropane	9.56	122	46849	22.7964 ug/L	97
35) Bromochloromethane	9.65	130	117080	20.0567 ug/L	81
36) Tetrahydrofuran	9.68	42	140098	89.9879 ug/L	90
38) 1,1,1-Trichloroethane	9.96	97	331788	19.5575 ug/L	97
39) Cyclohexane	9.99	56	358655	17.4442 ug/L	88
40) 1,1-Dichloropropene	10.14	75	277182	18.7794 ug/L	95
41) Tert-Amyl-Methyl ether	10.26	73	2015148	94.7801 ug/L	98
42) Carbon Tetrachloride	10.30	117	310291	20.1271 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M405029.D 8260WT.M Sat May 30 16:53:27 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\053015\8M405029.D Vial: 5
Acq On : 30 May 2015 16:31 Operator: TMB
Sample : WG525662-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD70796 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 30 16:53:26 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.47	62	248997	18.5857 ug/L		95
46)	Benzene	10.51	78	782404	19.6789 ug/L		96
47)	Trichloroethene	11.26	130	223064	21.2105 ug/L		99
48)	Methylcyclohexane	11.34	83	307763	18.0299 ug/L		93
49)	1,2-Dichloropropane	11.47	63	206132	18.5106 ug/L		100
50)	Bromodichloromethane	11.77	83	261393	19.0659 ug/L		97
51)	1,4-Dioxane	11.76	88	8204	194.9359 ug/L		86
52)	Dibromomethane	11.85	93	102409	19.5268 ug/L		91
53)	2-Chloroethyl Vinyl Ether	12.07	63	83068	30.3814 ug/L		99
54)	4-Methyl-2-Pentanone	12.10	58	42364	22.1284 ug/L		88
55)	cis-1,3-Dichloropropene	12.41	75	304572	20.3229 ug/L		95
56)	Dimethyl Disulfide	12.67	79	154457	19.3805 ug/L		81
59)	Toluene	12.83	91	866705	19.8884 ug/L		82
60)	Ethyl Methacrylate	12.93	69	151632	19.5556 ug/L		74
62)	trans-1,3-Dichloropropene	13.00	75	240351	18.4005 ug/L		95
63)	1,1,2-Trichloroethane	13.22	97	130026	19.2047 ug/L		97
64)	2-Hexanone	13.15	58	35387	18.9801 ug/L	#	82
65)	1,3-Dichloropropane	13.53	76	225973	19.0391 ug/L		86
66)	Tetrachloroethene	13.65	164	177088	19.2534 ug/L		92
67)	Dibromochloromethane	13.91	129	184061	20.4292 ug/L		95
68)	1,2-Dibromoethane	14.17	107	131390	20.3284 ug/L		100
69)	1-Chlorohexane	14.25	91	293414	19.6844 ug/L		93
70)	Chlorobenzene	14.67	112	539368	18.3378 ug/L		90
71)	1,1,1,2-Tetrachloroethane	14.70	131	203506	19.2756 ug/L		98
72)	Ethylbenzene	14.69	106	328542	18.6492 ug/L	#	34
73)	m-,p-Xylene	14.79	106	767649	38.5298 ug/L	#	48
74)	o-Xylene	15.35	106	358870	18.2268 ug/L		68
75)	Styrene	15.39	104	628556	20.1523 ug/L		83
76)	Bromoform	15.88	173	109570	19.5741 ug/L		97
77)	Isopropylbenzene	15.77	105	916354	19.0299 ug/L		77
79)	1,1,2,2-Tetrachloroethane	15.99	83	142599	18.8504 ug/L		100
81)	1,2,3-Trichloropropane	16.18	110	40578	19.7993 ug/L	#	26
82)	trans-1,4-Dichloro-2-Buten	16.22	53	45061	17.9439 ug/L	#	40
83)	n-Propylbenzene	16.28	91	1125991	18.6925 ug/L	#	74
84)	Bromobenzene	16.41	156	237635	19.8647 ug/L		95
85)	1,3,5-Trimethylbenzene	16.46	105	857471	20.8045 ug/L		80
86)	2-Chlorotoluene	16.56	91	718062	17.6630 ug/L		80
87)	4-Chlorotoluene	16.60	91	616279	18.9527 ug/L		78
88)	a-Methylstyrene	16.87	118	466420	19.8713 ug/L		90
89)	tert-Butylbenzene	16.93	134	164055	17.9045 ug/L		61
90)	1,2,4-Trimethylbenzene	16.98	105	843474	19.9054 ug/L		77
91)	sec-Butylbenzene	17.20	105	998793	19.4360 ug/L		78
92)	p-Isopropyltoluene	17.36	119	833565	19.1324 ug/L		78
93)	1,3-Dichlorobenzene	17.55	146	450747	18.5918 ug/L		90
94)	1,4-Dichlorobenzene	17.68	146	488337	19.8403 ug/L		90
95)	n-Butylbenzene	17.89	91	832104	19.5518 ug/L		80
96)	1,2-Dichlorobenzene	18.18	146	393503	18.7039 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.17	75	23860	19.7599 ug/L		82
98)	1,2,4-Trichlorobenzene	20.32	180	305181	19.2557 ug/L		99
99)	Hexachlorobutadiene	20.46	225	156641	18.9182 ug/L		97
100)	Naphthalene	20.69	128	451848	21.2578 ug/L		93
101)	1,2,3-Trichlorobenzene	20.99	180	257486	19.1720 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M405029.D 8260WT.M Sat May 30 16:53:27 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\053015\8M405029.D Vial: 5
Acq On : 30 May 2015 16:31 Operator: TMB
Sample : WG525662-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD70796 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 30 16:53 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-12-15 HPMS 8
Last Update : Wed May 13 06:45:06 2015
Response via : Initial Calibration

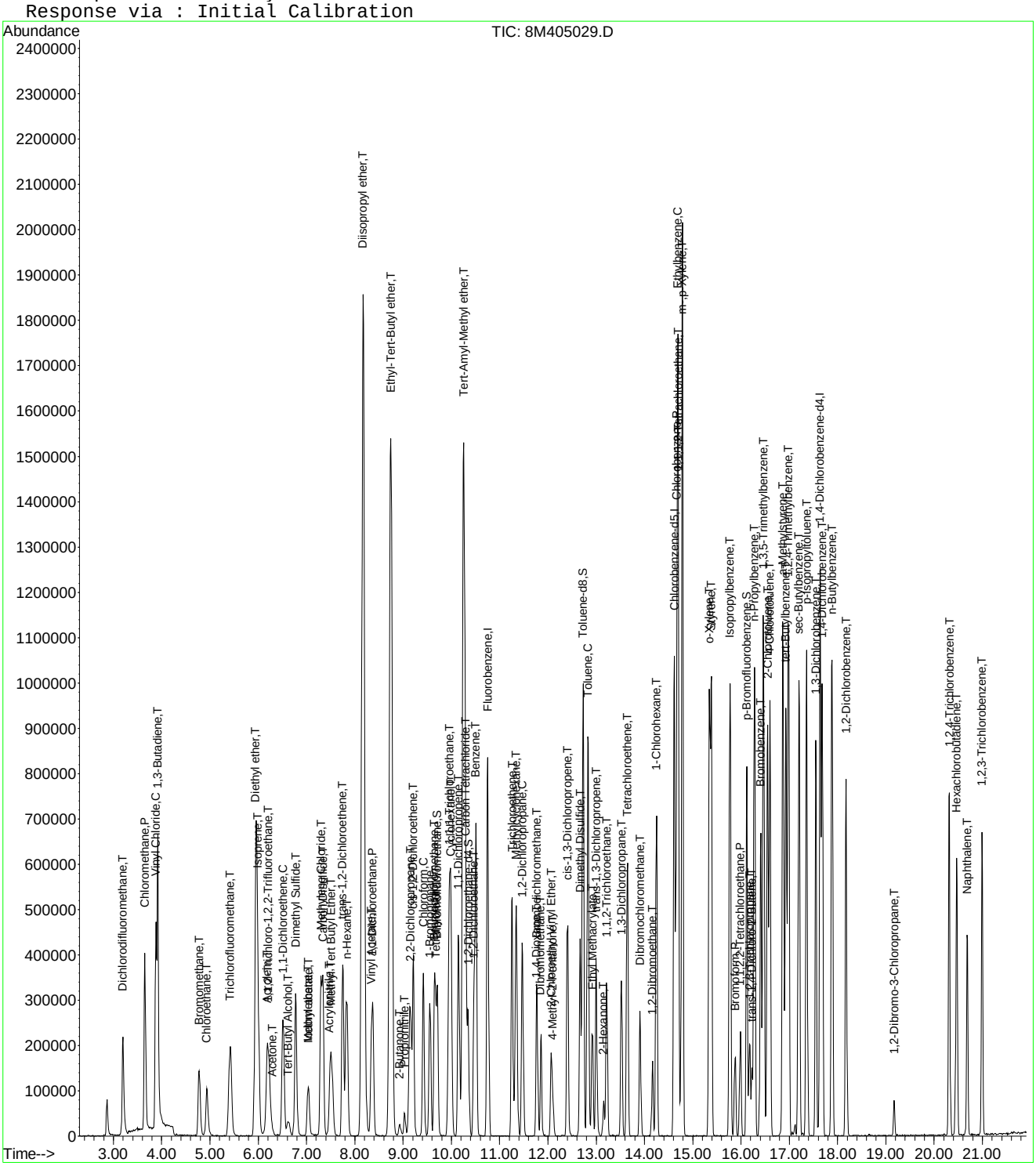

2.1.2 RSK 175

2.1.2.1 Summary Data

Microbac

Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051435-01	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW08-052115	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG524992	**Analyst:**	JDS	**Run Date:**	05/26/2015 15:03
Collect Date:	05/21/2015 13:55	**Dilution:**	1	**File ID:**	16G47632
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	400000	J	10000	5000	2500
Methane	74-82-8	2.00	J	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051435-01	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW08-052115	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG525190	**Analyst:**	JDS	**Run Date:**	05/27/2015 14:59
Collect Date:	05/21/2015 13:55	**Dilution:**	5	**File ID:**	16G47659
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	331000		50000	25000	12500
Methane	74-82-8	10.0	U	25.0	10.0	5.00
ethene	74-85-1	10.0	U	25.0	10.0	5.00
ethane	74-84-0	10.0	U	25.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051435-03	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW22-052115	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG525190	**Analyst:**	JDS	**Run Date:**	05/27/2015 15:11
Collect Date:	05/21/2015 15:10	**Dilution:**	1	**File ID:**	16G47660
Sample Tag:	02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	56300		10000	5000	2500
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.2.2 QC Summary Data

RSK-175 - Example Calculation for Methane

1.0 Linear Calibration Models

Option A - Average RF Method

ICAL_x	ICAL_r		RF
1.67	19901		11917
6.67	69174		10371
16.7	176923		10594
66.7	685135		10272
133	1324853		9961
300	2845104		9484
		Average RF:	**10433**

Where:
ICAL_x = the ICAL concentration
ICAL_r = the ICAL response (area)
RF = calibration factor = ICAL_r / ICAL_x

Option B - Agilent Linear Regression Constant

ICAL_x	ICAL_r	[ICAL_r}^2	[ICAL-x][ICAL-r]
1.67	19901	396049801	33235
6.67	69174	4785042276	461391
16.7	176923	31301747929	2954614
66.7	685135	4.6941E+11	45698505
133	1324853	1.75524E+12	176205449
300	2845104	8.09462E+12	853531200
Summation:		**1.03557E+13**	**1078884393**

Agilent Linear Regression Constant : **9598.567853**
(1.03557E+13)/1078884393)

2.0 Calculate the concentration in extract, Cx

Where:

y = area response of methane from quant report	**1157414**
a = average RF (or Agilent regression constant)	**10433.00**
Cx = y/a	**110.9377935**

3.0 Calculate the concentration in sample

Cs = Cx (MW/Tf) (HS/S) (DF)

Where:

Cx = Concentration in extract	**110.9377935**	umol/mol
MW = molecular weight of analyte	**16.04**	ug/umol
TF = temperature factor = (22.4)(313/273)	**25.68**	L/mol
HS = headspace volume	**0.015**	L
S = sample volume remaining after headspace removal	**0.00547**	L
DF = dilution factor	**2**	
Cs = calculated sample concentration	**380.034301**	ug/L

RSK-175 - Example Calculation for Carbon Dioxide

ICAL Plot - Quadratic Regression (y = Ax^2 + Bx +C)

Ax^2 + Bx + (C - y) = 0

Step 1 - Calculate the concentration in extract, Cx

Data from quadratic regression plot:		
Value of A from plot:	**0.916**	
Value of B from plot:	**1540**	
Value of C from plot:	**0**	
Response for methane from quantitation report (y):	**8763828**	
Value of C - y	**-8763828**	
Solving for Cx using the quadratic formula:		
Root 1 - Computed Cx1:	**2364.716284**	umol/mol
Root 2 - Computed Cx2:	**-4045.938991**	

Step 2 - Calculate the concentration in sample

Cs = Cx (MW/Tf) (HS/S) (DF)

Where:

Cx = Concentration in extract :	**2364.716284**	umol/mol
MW = molecular weight of analyte:	**44.0**	ug/umol
TF = temperature factor = (22.4)(313/273):	**25.68**	L/mol
HS = initial headspace volume (extraction log):	**0.015**	L
S = final volume (extraction log):	**0.00547**	L
DF = dilution factor:	**10**	
Cs = calculated sample concentration:	**111106.798**	ug/L

Other Notes:

Temperature of headspace = 40 C = 313 K

Analyte	**MW (g/mol)**
Methane	16.04
Ethane	30.07
Ethene	28.05
Propane	44.1
Carbon Dioxide	44.0

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 030315
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG514119

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G46874	RINSE	NA	1	1		03/03/15 14:05
16G46875	WG514119-01 0.67umol/mol STD RSK175	NA	1	1	STD67276	03/03/15 14:17
16G46876	WG514119-02 1.67umol/mol STD RSK175	NA	1	1	STD67276	03/03/15 14:30
16G46877	WG514119-03 33.3umol/mol STD RSK175	NA	1	1	STD67276	03/03/15 14:42
16G46878	WG514119-04 66.7umol/mol STD RSK175	NA	1	1	STD67274	03/03/15 14:53
16G46879	WG514119-05 133umol/mol STD RSK175	NA	1	1	STD67274	03/03/15 15:05
16G46880	WG514119-06 333umol/mol STD RSK175	NA	1	1	STD67274	03/03/15 15:17
16G46881	WG514119-07 533umol/mol STD RSK175	NA	1	1	STD67274	03/03/15 15:29
16G46882	RINSE	NA	1	1		03/03/15 15:41
16G46883	WG514119-08 133umol/mol ALT SRC STD	NA	1	1	STD68250	03/03/15 16:14
16G46884	WG514119-08 133umol/mol ALT SRC STD	NA	1	1	STD68250	03/03/15 17:10

Comments

Seq.	Rerun	Dil.	Reason	Analytes
10	X			
File ID: 16G46883				
	Wrong vial taken up by HT3 autosampler			

Approved: March 11, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 052615
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG524992 WG524993

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G47618	WG524991-01 133umol/mol CCV RSK175	NA	1	1	STD67274	05/26/15 09:26
16G47619	WG524992-01 BLANK RSK175	NA	1	1		05/26/15 09:43
16G47620	WG524992-02 67umol/mol LCS RSK175	NA	1	1	STD68250	05/26/15 09:54
16G47621	WG524992-03 67umol/mol LCS2 RSK175	NA	1	1	STD68250	05/26/15 10:06
16G47622	L15051450-01 B D1 50X RSK175	6	1	50		05/26/15 13:05
16G47623	L15051452-01 B D1 20X RSK175	<2	1	20		05/26/15 13:17
16G47624	L15051303-03 C 00 5X RSK175	6	1	5		05/26/15 13:28
16G47625	L15051303-05 C 00 5X RSK175	6	1	5		05/26/15 13:40
16G47626	L15051303-07 C 00 5X RSK175	6	1	5		05/26/15 13:52
16G47627	L15051303-11 C 00 5X RSK175	6	1	5		05/26/15 14:04
16G47628	L15051456-01 B D1 5X RSK175	6	1	5		05/26/15 14:16
16G47629	WG524991-02 133umol/mol CCV RSK175	NA	1	1	STD67274	05/26/15 14:28
16G47630	L15051453-01 B A1 RSK175	7	1	1		05/26/15 14:39
16G47631	L15051458-01 B A1 RSK175	7	1	1		05/26/15 14:51
16G47632	L15051435-01 A RSK175	7	1	1		05/26/15 15:03
16G47633	L15051435-03 A RSK175	7	1	1		05/26/15 15:15
16G47634	L15051402-01 A RSK175	<2	1	1		05/26/15 15:26
16G47635	L15051403-01 A RSK175	<2	1	1		05/26/15 15:37
16G47636	L15051405-01 A RSK175	<2	1	1		05/26/15 15:49
16G47637	L15051405-02 A RSK175	<2	1	1		05/26/15 16:02
16G47638	L15051407-01 A RSK175	<2	1	1		05/26/15 16:13
16G47639	L15051407-02 A RSK175	<2	1	1		05/26/15 16:24
16G47640	WG524991-03 133umol/mol CCV RSK175	NA	1	1	STD657274	05/26/15 16:36
16G47641	L15051407-03 A RSK175	<2	1	1		05/26/15 16:48
16G47642	L15051407-04 A RSK175	<2	1	1		05/26/15 16:59
16G47643	L15051407-05 A RSK175	<2	1	1		05/26/15 17:11
16G47644	WG524991-04 133umol/mol CCV RSK175	NA	1	1	STD67274	05/26/15 17:23
16G47645	WG524993-01 BLANK RSK175	NA	1	1		05/26/15 17:35
16G47646	WG524993-02 67umol/mol LCS RSK175	NA	1	1	STD68250	05/26/15 17:46
16G47647	WG524993-03 67umol/mol LCS2 RSK175	NA	1	1	STD68250	05/26/15 17:58
16G47648	L15051409-01 A RSK175	<2	1	1		05/26/15 18:09
16G47649	L15051413-01 A RSK175	<2	1	1		05/26/15 18:21
16G47650	L15051413-02 A RSK175	<2	1	1		05/26/15 18:34
16G47651	L15051429-01 A RSK175	<2	1	1		05/26/15 18:46

Approved: May 28, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 052615
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG524992 WG524993

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G47652	L15051429-04 A RSK175	7	1	1		05/26/15 18:57
16G47653	L15051429-05 A RSK175	<2	1	1		05/26/15 19:09
16G47654	WG524991-05 133umol/mol CCV RSK175	NA	1	1	STD67274	05/26/15 19:20

Comments

Seq.	Rerun	Dil.	Reason	Analytes
9 File ID: 16G47626				
sample mistakenly ran as 5x when it was meant to be ran as a 1x for CO2 carryover. Dilution run still matches up with original run and 2nd run				
15 File ID: 16G47632	X	5	Over Calibration Range	CO2
16 File ID: 16G47633	X		Carry-over contamination	CO2

Approved: May 28, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 052715
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG525190

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G47655	WG525189-01 133umol/mol CCV RSK175	NA	1	1	STD67274	05/27/15 11:43
16G47656	WG525190-01 BLANK RSK175	NA	1	1		05/27/15 12:08
16G47657	WG525190-02 67umol/mol LCS RSK175	NA	1	1	STD68250	05/27/15 12:20
16G47658	WG525190-03 67umol/mol LCS2 RSK175	NA	1	1	STD68250	05/27/15 12:31
16G47659	L15051435-01 B D1 5X RSK175	6	1	5		05/27/15 14:59
16G47660	L15051435-03 B A1 RSK175	6	1	1		05/27/15 15:11
16G47661	L15051590-01 A RSK175	6	1	1		05/27/15 15:22
16G47662	L15051591-01 A RSK175	5	1	1		05/27/15 15:34
16G47663	L15051592-01 A RSK175	5	1	1		05/27/15 15:45
16G47664	L15051593-01 A RSK175	5	1	1		05/27/15 15:57
16G47665	L15051594-01 A RSK175	5	1	1		05/27/15 16:09
16G47666	WG525189-02 133umol/mol CCV RSK175	NA	1	1	STD67274	05/27/15 16:21
16G47667	L15051595-01 A RSK175	5	1	1		05/27/15 16:32
16G47668	L15051596-01 A RSK175	5	1	1		05/27/15 16:44
16G47669	L15051597-01 A RSK175	5	1	1		05/27/15 16:56
16G47670	L15051599-01 A RSK175	5	1	1		05/27/15 17:08
16G47671	L15051600-01 A RSK175	5	1	1		05/27/15 17:19
16G47672	L15051605-06 A RSK175	<2	1	1		05/27/15 17:30
16G47673	L15051605-07 A RSK175	<2	1	1		05/27/15 17:42
16G47674	WG525189-03 133umol/mol CCV RSK175	NA	1	1	STD67274	05/27/15 17:54

Comments

Seq.	Rerun	Dil.	Reason	Analytes
10	X	5	Over Calibration Range	m
File ID: 16G47664				
16	X	5	Over Calibration Range	m
File ID: 16G47670				
17	X		Carry-over contamination	m
File ID: 16G47671				
18	X	10	Over Calibration Range	m
File ID: 16G47672				

Approved: June 02, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 052715
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG525190

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
19	X		Carry-over contamination	m
File ID: 16G47673				

Approved: June 02, 2015

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Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B202656

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG514119-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-04	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-05	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-06	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-07	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-08	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B206729

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG524991-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG524991-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG524991-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG524991-04	15	mL	15	mL					5.47	mL	5.47	mL	40
WG524991-05	15	mL	15	mL					5.47	mL	5.47	mL	40
WG524992-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051303-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051435-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051403-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG524993-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051452-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051303-07	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051405-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG524993-03	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L15051303-05	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051303-11	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051456-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051435-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051407-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051407-05	15	mL	15	mL					5.47	mL	5.47	mL	40
WG524993-02	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L15051409-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051429-04	15	mL	15	mL					5.47	mL	5.47	mL	40
WG524992-02	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L15051413-02	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051407-04	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051429-05	15	mL	15	mL					5.47	mL	5.47	mL	40
WG524992-03	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L15051458-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051405-02	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051407-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051413-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051407-02	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051402-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051429-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051450-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051453-01	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B206829

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG525189-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG525189-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG525189-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051597-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051435-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051605-07	15	mL	15	mL					5.47	mL	5.47	mL	40
WG525190-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG525190-02	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L15051592-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051595-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051600-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051590-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051593-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051599-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051605-06	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051596-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051591-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG525190-03	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L15051435-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051594-01	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAR-2015
Analyst: JDS
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 66688
Analytical Workgroups: WG514119

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	NA
Project/Client Specific Requirements	NA
Special Standards	NA
Blanks	NA
TCL's	NA
Surrogates	NA
LCS (Laboratory Control Sample)	NA
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	NA
Surrogates	NA
Calculations & Correct Factors	NA
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
06-MAR-2015

Secondary Reviewer:
11-MAR-2015

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-11-2015 12:34:12

Microbac Laboratories Inc.

Data Checklist

Date: 26-MAY-2015
Analyst: JDS
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 68219
Analytical Workgroups: WG524992 WG524993

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	NA
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	X
Surrogates	NA
Calculations & Correct Factors	NA
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	NA
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
28-MAY-2015

Secondary Reviewer:
28-MAY-2015

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-28-2015 20:21:54

Microbac Laboratories Inc.

Data Checklist

Date: 27-MAY-2015
Analyst: JDS
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 68259
Analytical Workgroups: WG525190

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	NA
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	X
Surrogates	NA
Calculations & Correct Factors	NA
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	NA
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
28-MAY-2015

Secondary Reviewer:
02-JUN-2015

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-02-2015 14:18:34

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: RSK175 AAB#: WG524992

Login Number: L15051435

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW08-052115	01	05/21/15					05/26/2015	5	7		05/26/15	5	7	
50WW22-052115	03	05/21/15					05/26/2015	5	7		05/26/15	5	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4203346
Report generated 05/28/2015 16:48

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: RSK175 AAB#: WG525190

Login Number: L15051435

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW08-052115	01	05/21/15					05/27/2015	6	7		05/27/15	6	7	
50WW22-052115	03	05/21/15					05/27/2015	6	7		05/27/15	6	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4203346
Report generated 05/28/2015 16:48

METHOD BLANK SUMMARY

Login Number: L15051435
Blank File ID: 16G47619
Prep Date: 05/26/15 09:43
Analyzed Date: 05/26/15 09:43
Analyst: JDS

Work Group: WG524992
Blank Sample ID: WG524992-01
Instrument ID: HP16
Method: RSK175

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG524992-02	16G47620	05/26/15 09:54	01
LCS2	WG524992-03	16G47621	05/26/15 10:06	01
50WW08-052115	L15051435-01	16G47632	05/26/15 15:03	01
50WW22-052115	L15051435-03	16G47633	05/26/15 15:15	01

Report Name: BLANK_SUMMARY
PDF File ID: 4203347
Report generated 05/28/2015 16:48

METHOD BLANK SUMMARY

Login Number: L15051435
Blank File ID: 16G47656
Prep Date: 05/27/15 12:08
Analyzed Date: 05/27/15 12:08
Analyst: JDS

Work Group: WG525190
Blank Sample ID: WG525190-01
Instrument ID: HP16
Method: RSK175

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG525190-02	16G47657	05/27/15 12:20	01
LCS2	WG525190-03	16G47658	05/27/15 12:31	01
50WW08-052115	L15051435-01	16G47659	05/27/15 14:59	DL01
50WW22-052115	L15051435-03	16G47660	05/27/15 15:11	02

Report Name: BLANK_SUMMARY
PDF File ID: 4203347
Report generated 05/28/2015 16:48

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051435 Prep Date: 05/26/15 09:43 Sample ID: WG524992-01
Instrument ID: HP16 Run Date: 05/26/15 09:43 Prep Method: 5021
File ID: 16G47619 Analyst: JDS Method: RSK175
Workgroup (AAB#): WG524992 Matrix: Water Units: ug/L
Contract #: Cal ID: HP16 - 03-MAR-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Carbon Dioxide	2500	10000	2500	1	U
Methane	1.00	5.00	1.00	1	U
ethene	1.00	5.00	1.00	1	U
ethane	1.00	5.00	1.00	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4203348
28-MAY-2015 16:48

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051435 Prep Date: 05/27/15 12:08 Sample ID: WG525190-01
Instrument ID: HP16 Run Date: 05/27/15 12:08 Prep Method: 5021
File ID: 16G47656 Analyst: JDS Method: RSK175
Workgroup (AAB#): WG525190 Matrix: Water Units: ug/L
Contract #: Cal ID: HP16 - 03-MAR-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Carbon Dioxide	2500	10000	2500	1	U
Methane	1.00	5.00	1.00	1	U
ethene	1.00	5.00	1.00	1	U
ethane	1.00	5.00	1.00	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4203348
28-MAY-2015 16:48

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051435 Analyst: JDS Prep Method: 5021
Instrument ID: HP16 Matrix: Water Method: RSK175
Workgroup (AAB#): WG525190 Units: ug/L
QC Key: DOD4 Lot #: STD68250

Sample ID: WG525190-02 LCS File ID: 16G47657 Run Date: 05/27/2015 12:20
Sample ID: WG525190-03 LCS2 File ID: 16G47658 Run Date: 05/27/2015 12:31

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Methane	114	107	94.1	114	109	95.3	1.31	85 - 115	20	
ethene	200	184	92.3	200	188	94.3	2.07	85 - 115	20	
ethane	214	191	89.3	214	195	91.3	2.21	85 - 115	20	
Carbon Dioxide	31300	30300	96.6	31300	29600	94.5	2.14	10 - 200	40	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4203349
Report generated: 05/28/2015 16:48

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051435 Analyst: JDS Prep Method: 5021
Instrument ID: HP16 Matrix: Water Method: RSK175
Workgroup (AAB#): WG524992 Units: ug/L
QC Key: DOD4 Lot #: STD68250

Sample ID: WG524992-02 LCS File ID: 16G47620 Run Date: 05/26/2015 09:54
Sample ID: WG524992-03 LCS2 File ID: 16G47621 Run Date: 05/26/2015 10:06

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Methane	114	109	95.7	114	107	93.7	2.14	85 - 115	20	
ethene	200	188	94.4	200	184	92.2	2.32	85 - 115	20	
ethane	214	195	91.1	214	191	89.2	2.11	85 - 115	20	
Carbon Dioxide	31300	30900	98.6	31300	29600	94.4	4.29	10 - 200	40	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4203349
Report generated: 05/28/2015 16:48

Calibration Table Report
Method: RSKEXT1.M
Title: RSK175 HP16 (SOP: OVL RSK01) 030315
Last Calibration: Fri Mar 06 11:52:33 2015
Curve:WG514119
Calibration Files

		0.67	1.67	33.3	66.7	133	333	533			
		16G46875.	16G46876.	16G46877.	16G46878.	16G46879.	16G46880.	16G46881.D			
	Compound								Avg	%RSD	Linear
T	methane		442542.3	201716.7	175611.6	187516.9	186065.3	188702.9	230359.0	45.3	0.999
T	ethene		322209.5	334124.6	295911.1	313430.8	319356.4	318282.1	317219.0	3.9	
T	acetylene		316851.9	343603.6	313507.6	354933.8	357109.5	344601.6	338435.0	5.6	
T	ethane	381661.4	339569.9	346403.4	312338.4	328333.4	335709.7	335266.3	339897.0	6.3	
T	propane	528069.3	481580.8	518227.1	469331.7	483950.9	500133.6	493547.4	496406.0	4.2	
T	n-butane	686564.3	616037.4	680754.9	613926.5	634552.4	659898.4	646188.9	648275.0	4.5	
	Signal #2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
T	carbon dioxide		3977.4	5604.2	5581.8	6054.5	6060.7	5810.7	5514.9	14.2	

Fri Mar 06 11:59:12 2015

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15051435 Run Date: 03/03/2015 Sample ID: WG514119-08
Instrument ID: HP16 Run Time: 17:10 Method: RSK175
File ID: 16G46884 Analyst: JDS QC Key: DOD4
ICal Workgroup: WG514119 Cal ID: HP16 - 03-MAR-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
carbon dioxide		62500	65100	ug/L	5740	4.10	15	
methane		228	236	ug/L	195000	3.50	15	
ethene		398	407	ug/L	324000	2.20	15	
ethane		427	423	ug/L	337000	0.900	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4203350
Report generated 05/28/2015 16:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051435
Run Date: 05/26/2015
Sample ID: WG524991-01
Instrument ID: HP16
Run Time: 09:26
Method: RSK175
File ID: 16G47618
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG524992
Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
methane		228	217	ug/L	180000	4.69	15	
ethene		398	375	ug/L	298000	5.92	15	
ethane		427	392	ug/L	312000	8.23	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4203351
Report generated 05/28/2015 16:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051435
Run Date: 05/26/2015
Sample ID: WG524991-02
Instrument ID: HP16
Run Time: 14:28
Method: RSK175
File ID: 16G47629
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG524992
Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
methane		228	217	ug/L	180000	4.59	15	
ethene		398	378	ug/L	301000	5.02	15	
ethane		427	396	ug/L	316000	7.12	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4203351
Report generated 05/28/2015 16:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051435
Run Date: 05/26/2015
Sample ID: WG524991-03
Instrument ID: HP16
Run Time: 16:36
Method: RSK175
File ID: 16G47640
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG524992
Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
methane		228	212	ug/L	176000	6.79	15	
ethene		398	369	ug/L	294000	7.34	15	
ethane		427	388	ug/L	309000	9.14	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4203351
Report generated 05/28/2015 16:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051435
Run Date: 05/27/2015
Sample ID: WG525189-01
Instrument ID: HP16
Run Time: 11:43
Method: RSK175
File ID: 16G47655
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG525190
Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62500	64000	ug/L	5640	2.33	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4203351
Report generated 05/28/2015 16:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051435
Run Date: 05/27/2015
Sample ID: WG525189-02
Instrument ID: HP16
Run Time: 16:21
Method: RSK175
File ID: 16G47666
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG525190
Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62500	60500	ug/L	5340	3.26	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4203351
Report generated 05/28/2015 16:48

2.1.2.3 Sample Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\052615\16G47632.D\FID1A.CH Vial: 15
Signal #2 : C:\MSDchem\1\DATA\052615\16G47632.D\TCD2B.CH
Acq On : 26 May 2015 15:03 Operator: JDS
Sample : L15051435-01 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 26 15:09:50 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	627388	1.172	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.39	12583	0.037	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	469124772	85065.334	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47632.D RSKEXT1.M Tue May 26 15:09:50 2015 Page 1

Signal #1 : C:\MSDchem\1\DATA\052615\16G47632.D\FID1A.CH Vial: 15
Signal #2 : C:\MSDchem\1\DATA\052615\16G47632.D\TCD2B.CH
Acq On : 26 May 2015 15:03 Operator: JDS
Sample : L15051435-01 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 26 15:09 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

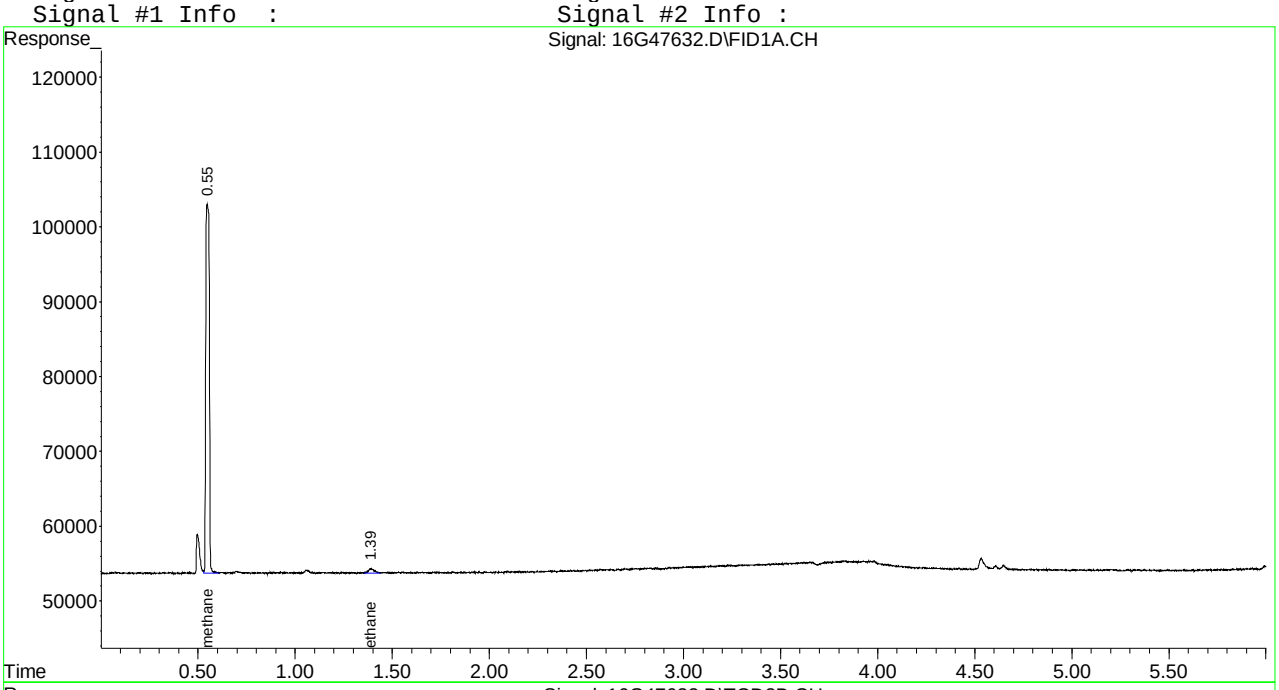

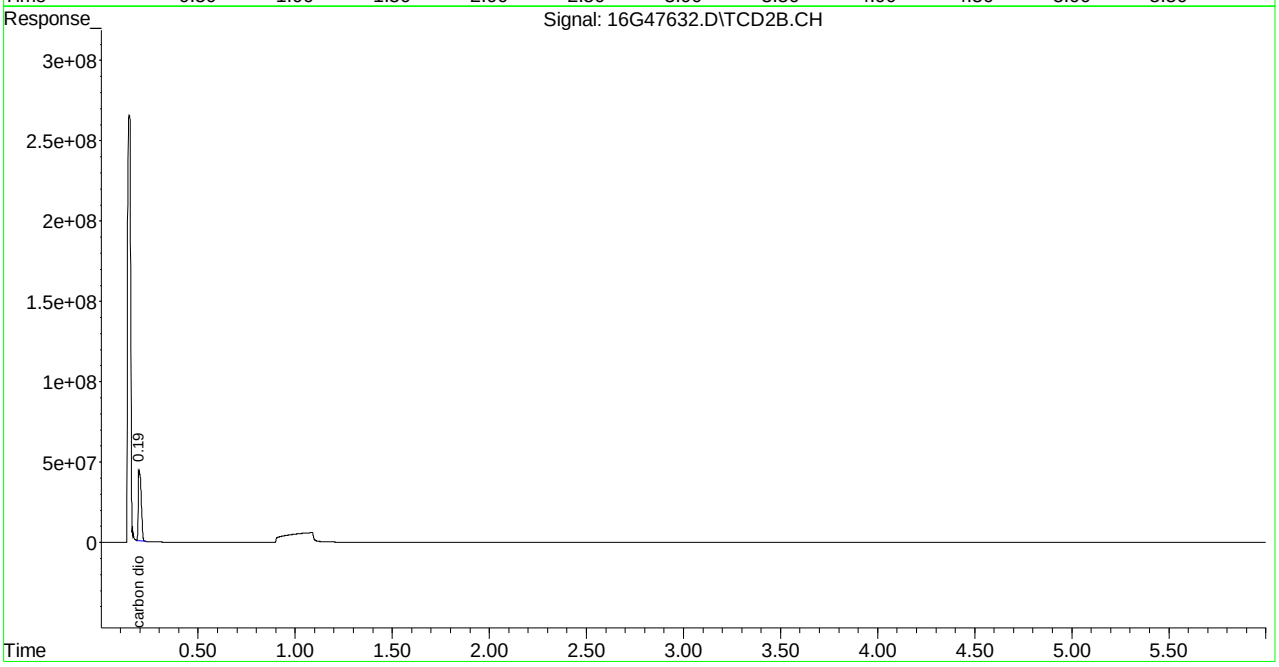

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\052715\16G47659.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\052715\16G47659.D\TCD2B.CH
Acq On : 27 May 2015 14:59 Operator: JDS
Sample : L15051435-01 B D1 5X RSK175 Inst : HP16
Misc : 1,5 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 27 15:05:51 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	314191	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	77740246	14096.463	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47659.D RSKEXT1.M Wed May 27 15:41:56 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\052715\16G47659.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\052715\16G47659.D\TCD2B.CH
Acq On : 27 May 2015 14:59 Operator: JDS
Sample : L15051435-01 B D1 5X RSK175 Inst : HP16
Misc : 1,5 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 27 15:05 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

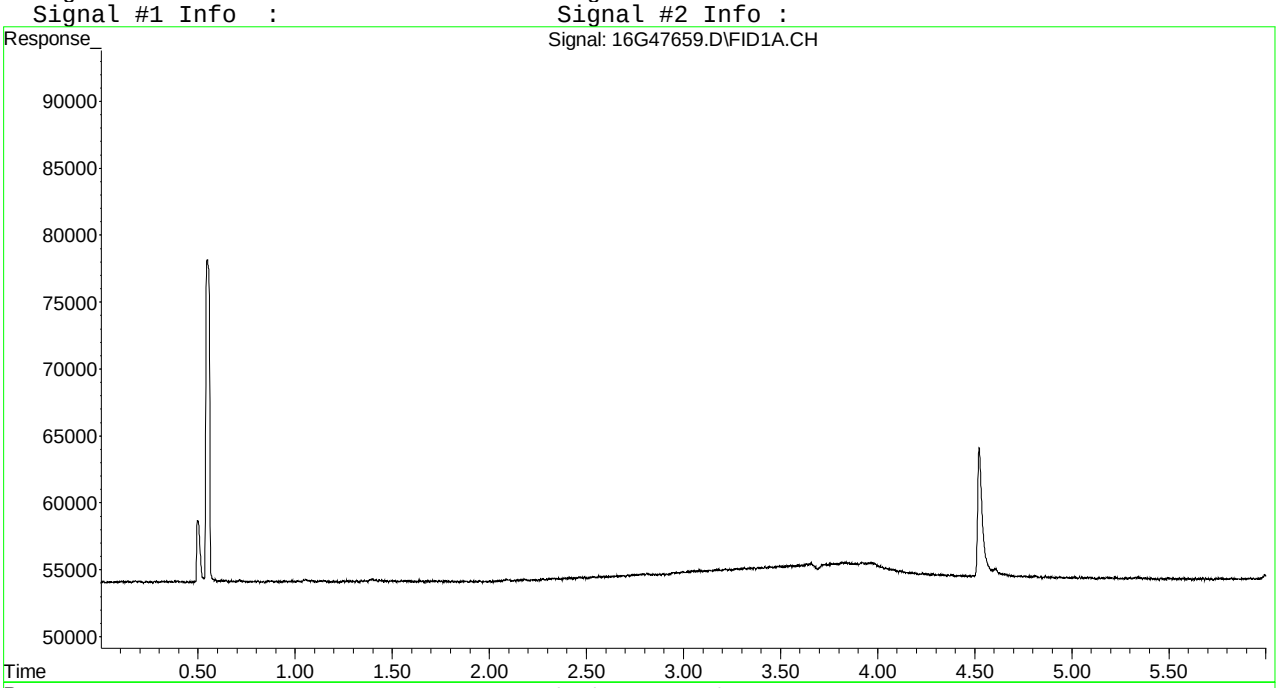

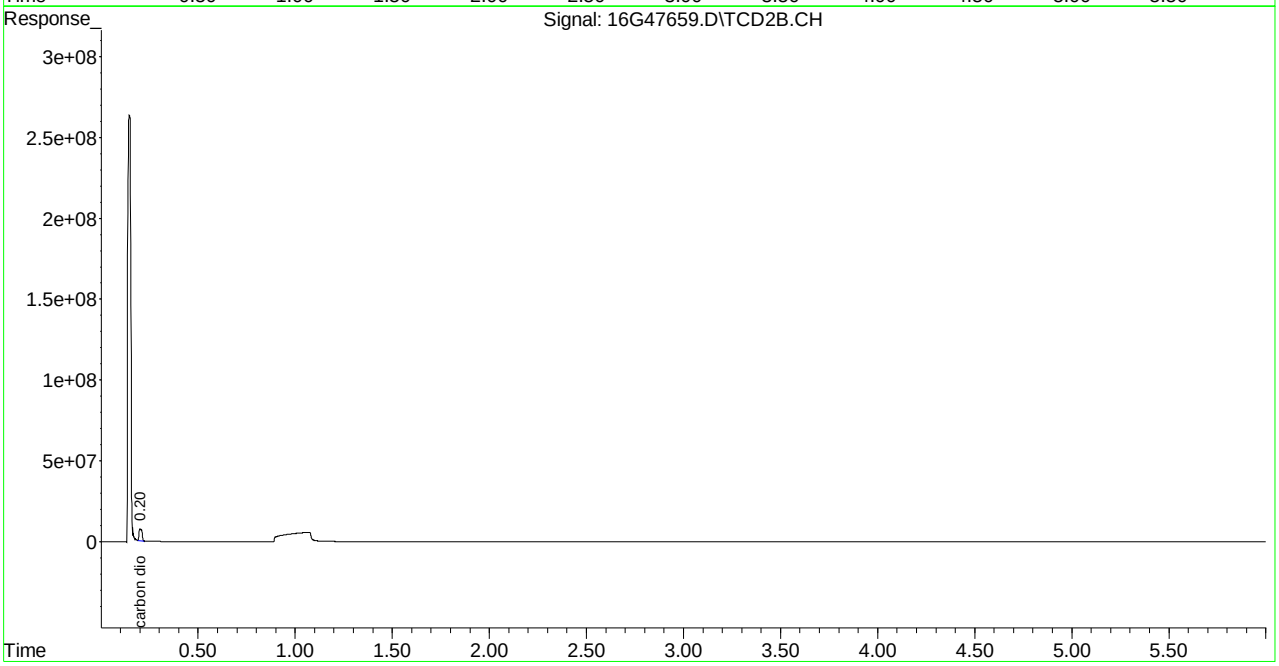

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\052715\16G47660.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\052715\16G47660.D\TCD2B.CH
Acq On : 27 May 2015 15:11 Operator: JDS
Sample : L15051435-03 B A1 RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 27 15:17:08 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	260572	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	66128936	11991.010	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47660.D RSKEXT1.M Wed May 27 15:42:02 2015 Page 1

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\052715\16G47660.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\052715\16G47660.D\TCD2B.CH
Acq On    : 27 May 2015  15:11                        Operator: JDS
Sample    : L15051435-03 B A1 RSK175                  Inst    : HP16
Misc      : 1,1                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: May 27 15:17 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

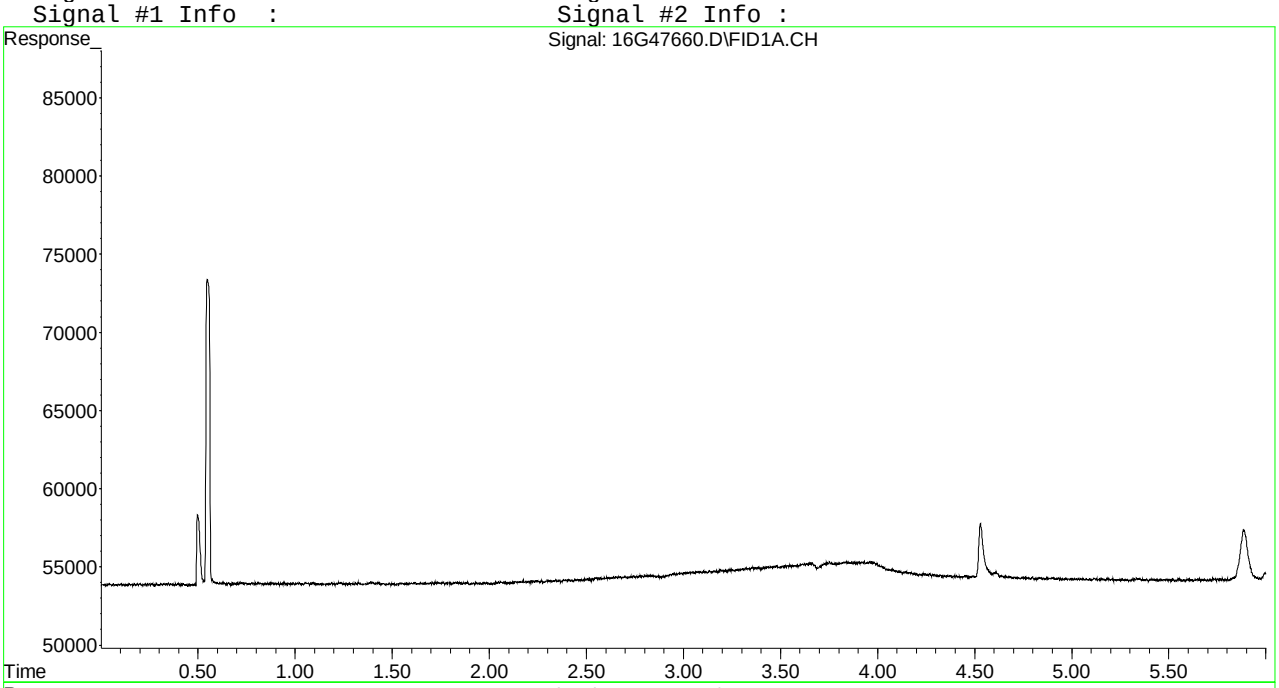

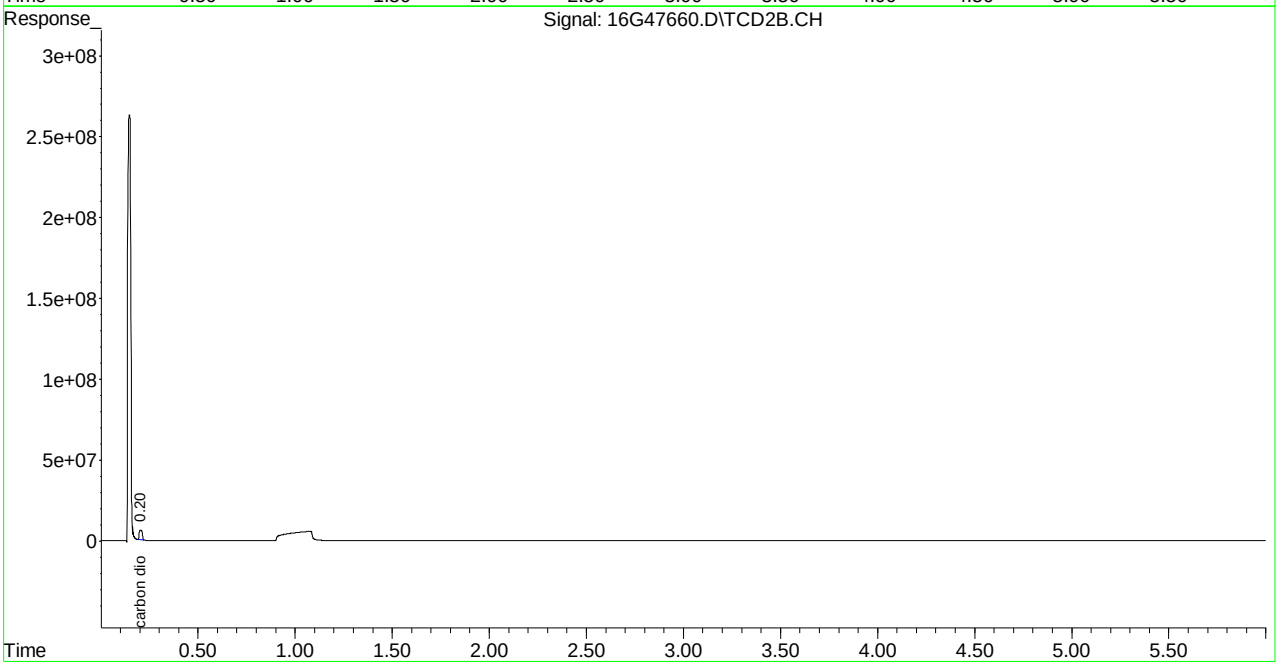

2.1.2.4 Standards Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46875.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46875.D\TCD2B.CH
Acq On : 03 Mar 2015 14:17 Operator: JDS
Sample : WG514119-01 0.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:54:08 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	566979	0.846	umol/
2) T	ethene	1.06	233416	0.736	umol/
3) T	acetylene	1.14	213812	0.632	umol/
4) T	ethane	1.39	254568	0.749	umol/
5) T	propane	3.83	352222	0.710	umol/
6) T	n-butane	5.34	457938	0.706	umol/
8) T	carbon dioxide	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46875.D RSKEXT1.M Fri Mar 06 11:56:43 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46875.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46875.D\TCD2B.CH
Acq On : 03 Mar 2015 14:17 Operator: JDS
Sample : WG514119-01 0.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:54 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

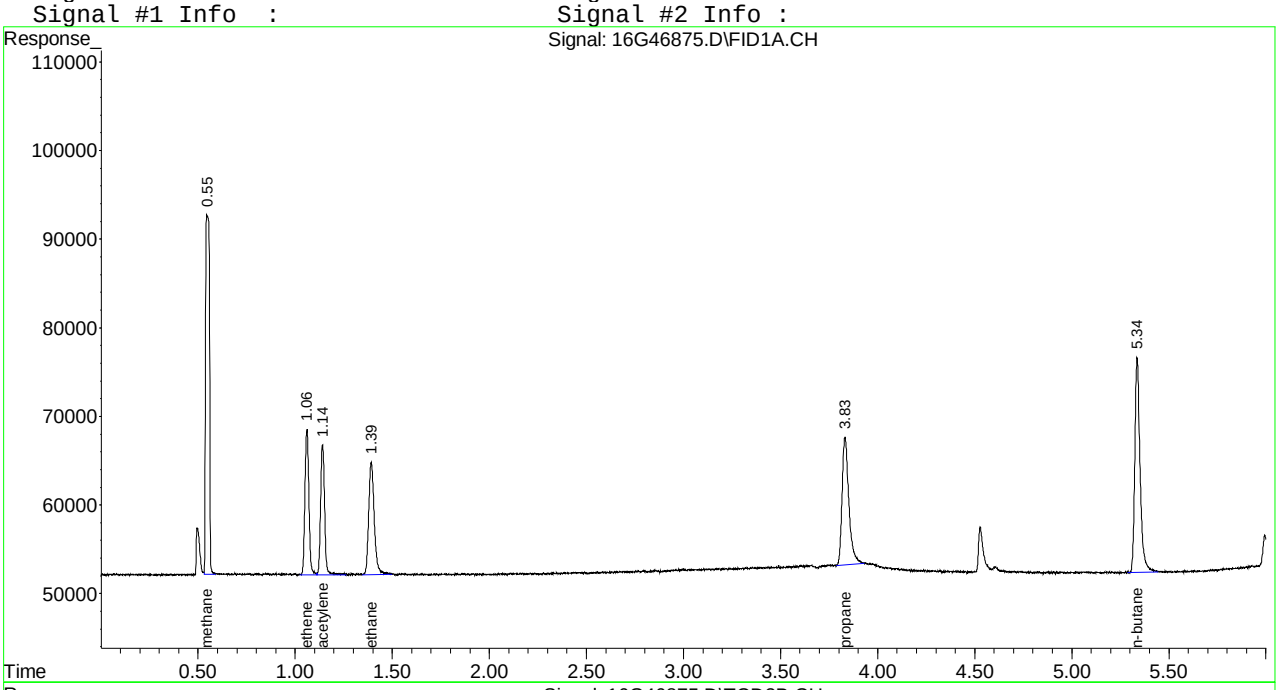

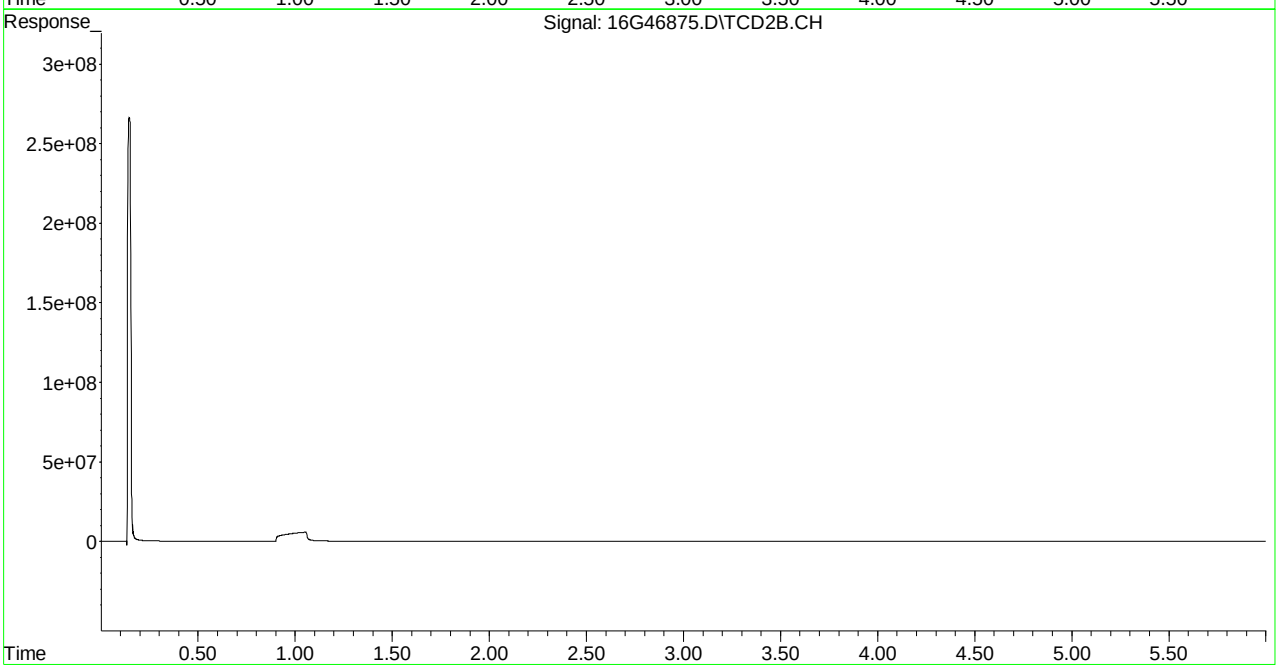

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46875.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46875.D\TCD2B.CH
Acq On : 03 Mar 2015 14:17 Operator: JDS
Sample : WG514119-01 0.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	-1.000	0.846	0.0	0	0.00
2	T	ethene	-1.000	0.736	0.0	100	0.00
3	T	acetylene	-1.000	0.632	0.0	100	0.00
4	T	ethane	0.667	0.749	-12.3	100	0.00
5	T	propane	0.667	0.710	-6.4	100	0.00
6	T	n-butane	0.667	0.706	-5.8	100	0.00

Signal #2

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46875.D RSKEXT1.M Fri Mar 06 11:55:53 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46875.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46875.D\TCD2B.CH
Acq On    : 03 Mar 2015  14:17                        Operator: JDS
Sample    : WG514119-01 0.67umol/mol STD RSK175       Inst    : HP16
Misc      : 1,1 STD67276                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%
```

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
	Signal #2					
8 T	carbon dioxide	-1.000	0.000	0.0	0	-0.21

```
---------------------------------------------------------------------------
(#) = Out of Range            SPCC's out = 0  CCC's out = 0
16G46875.D  RSKEXT1.M      Fri Mar 06 11:55:53 2015                    Page 2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46876.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46876.D\TCD2B.CH
Acq On : 03 Mar 2015 14:30 Operator: JDS
Sample : WG514119-02 1.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:08 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	739046	1.773	umol/
2) T	ethene	1.06	538090	1.696	umol/
3) T	acetylene	1.14	529143	1.564	umol/
4) T	ethane	1.39	567082	1.668	umol/
5) T	propane	3.83	804240	1.620	umol/
6) T	n-butane	5.34	1028782	1.587	umol/
8) T	carbon dioxide	0.20	7954783	1442.423	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46876.D RSKEXT1.M Fri Mar 06 11:57:08 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46876.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46876.D\TCD2B.CH
Acq On : 03 Mar 2015 14:30 Operator: JDS
Sample : WG514119-02 1.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

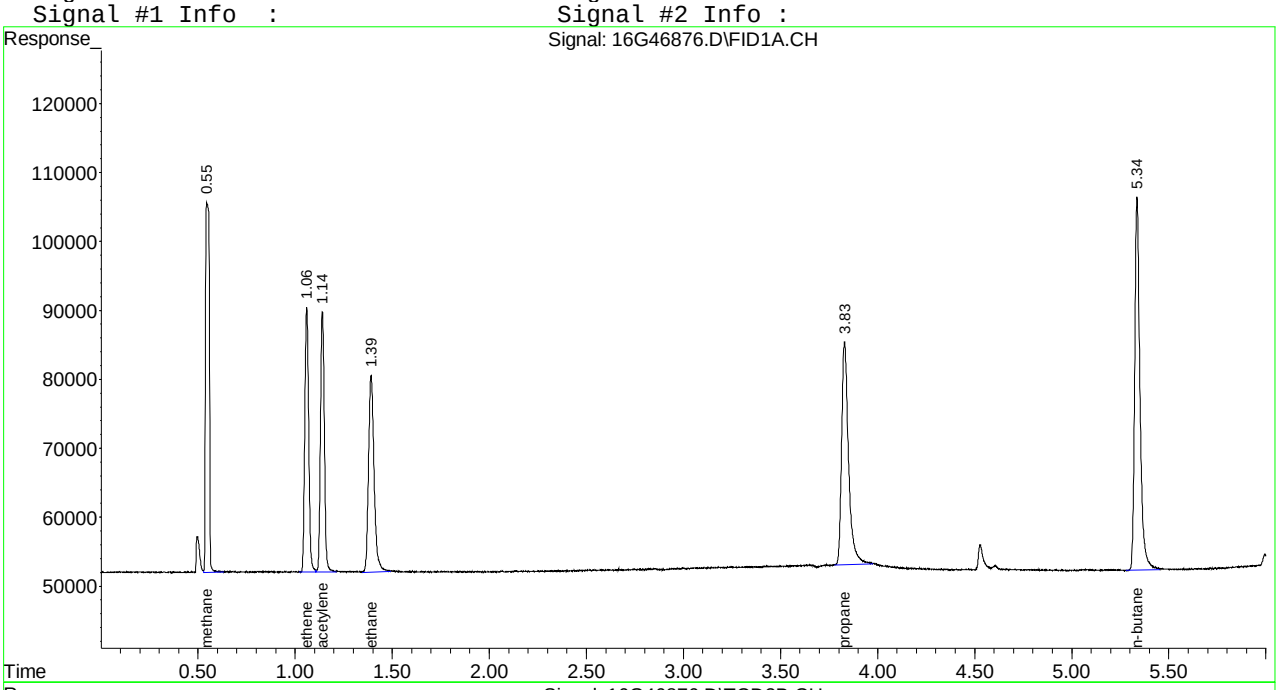

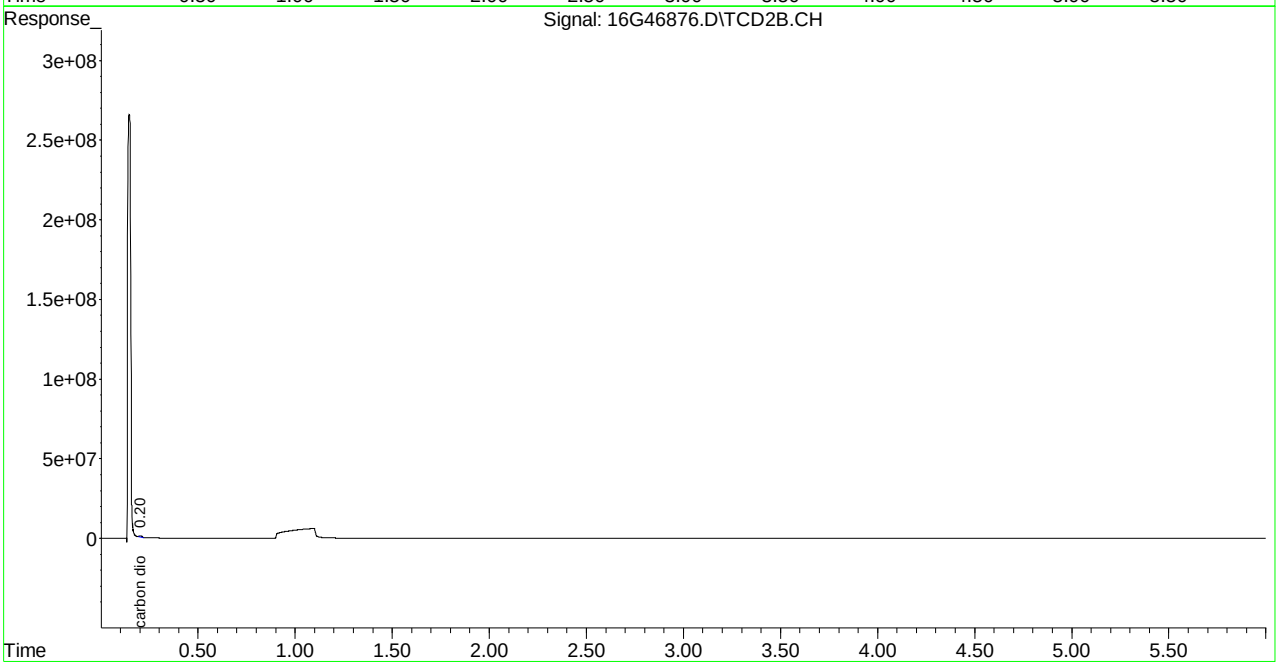

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46876.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46876.D\TCD2B.CH
Acq On : 03 Mar 2015 14:30 Operator: JDS
Sample : WG514119-02 1.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	1.670	1.773	-6.2	100	0.00
2	T	ethene	1.670	1.696	-1.6	100	0.00
3	T	acetylene	1.670	1.564	6.3	100	0.00
4	T	ethane	1.670	1.668	0.1	100	0.00
5	T	propane	1.670	1.620	3.0	100	0.00
6	T	n-butane	1.670	1.587	5.0	100	0.00

Signal #2

8	T	carbon dioxide	2000.000	1442.423	27.9#	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46876.D RSKEXT1.M Fri Mar 06 11:52:49 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46876.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46876.D\TCD2B.CH
Acq On    : 03 Mar 2015  14:30                        Operator: JDS
Sample    : WG514119-02 1.67umol/mol STD RSK175       Inst    : HP16
Misc      : 1,1 STD67276                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46877.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46877.D\TCD2B.CH
Acq On : 03 Mar 2015 14:42 Operator: JDS
Sample : WG514119-03 33.3umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:10 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	6717167	33.998	umol/
2) T	ethene	1.06	11126351	35.075	umol/
3) T	acetylene	1.14	11442001	33.809	umol/
4) T	ethane	1.39	11535235	33.937	umol/
5) T	propane	3.83	17256964	34.764	umol/
6) T	n-butane	5.34	22669140	34.968	umol/
8) T	carbon dioxide	0.20	18661832	3383.908	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46877.D RSKEXT1.M Fri Mar 06 11:57:10 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46877.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46877.D\TCD2B.CH
Acq On : 03 Mar 2015 14:42 Operator: JDS
Sample : WG514119-03 33.3umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

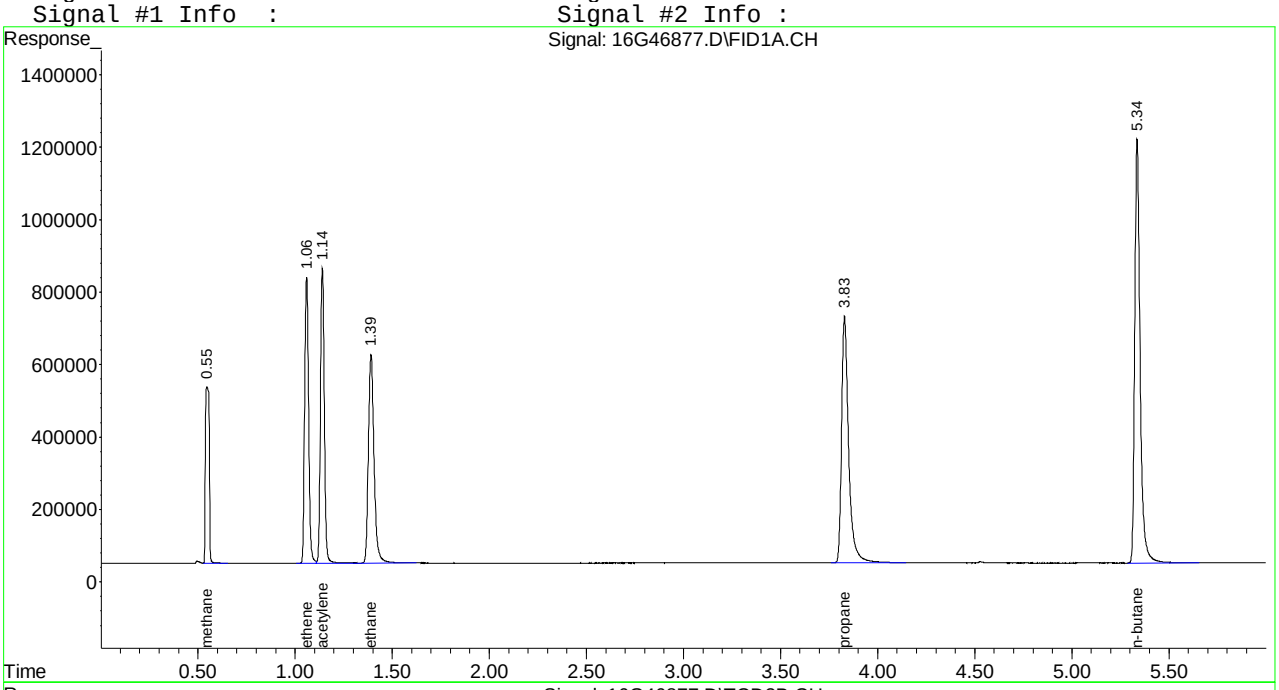

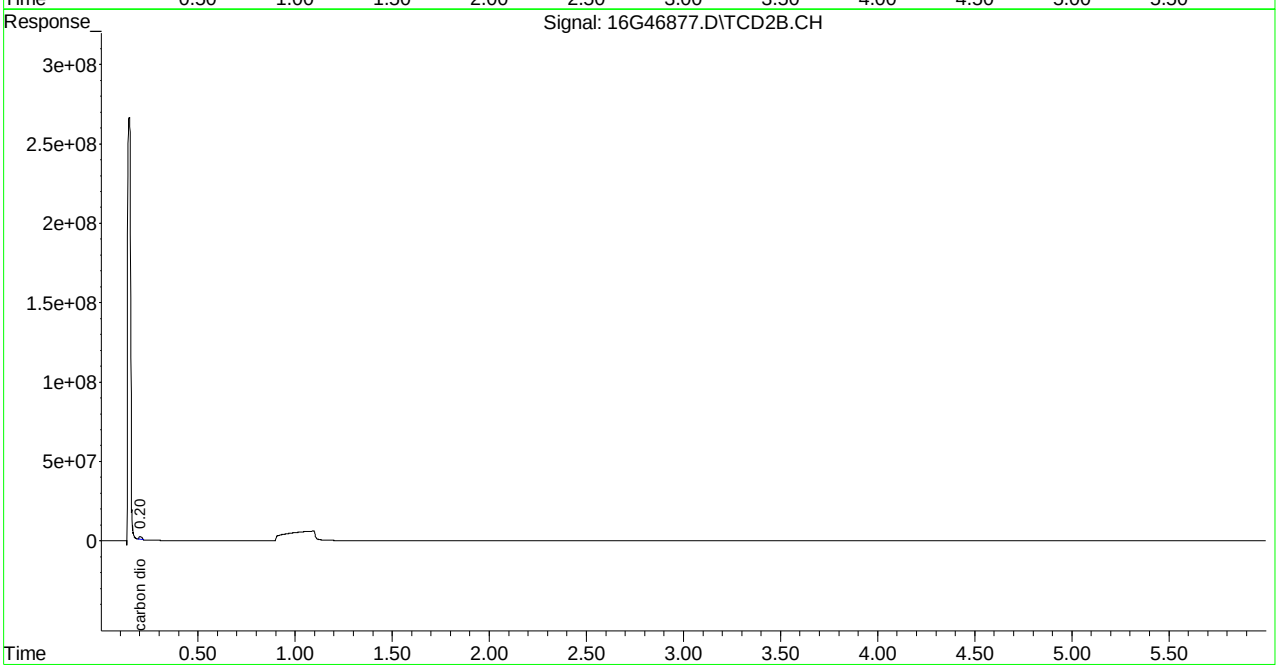

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46878.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46878.D\TCD2B.CH
Acq On : 03 Mar 2015 14:53 Operator: JDS
Sample : WG514119-04 66.7umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:11 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	11713293	60.930	umol/
2) T	ethene	1.06	19737271	62.220	umol/
3) T	acetylene	1.14	20910957	61.787	umol/
4) T	ethane	1.39	20832969	61.292	umol/
5) T	propane	3.83	31304425	63.062	umol/
6) T	n-butane	5.33	40948894	63.166	umol/
8) T	carbon dioxide	0.20	37230879	6750.991	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46878.D RSKEXT1.M Fri Mar 06 11:57:11 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46878.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46878.D\TCD2B.CH
Acq On : 03 Mar 2015 14:53 Operator: JDS
Sample : WG514119-04 66.7umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

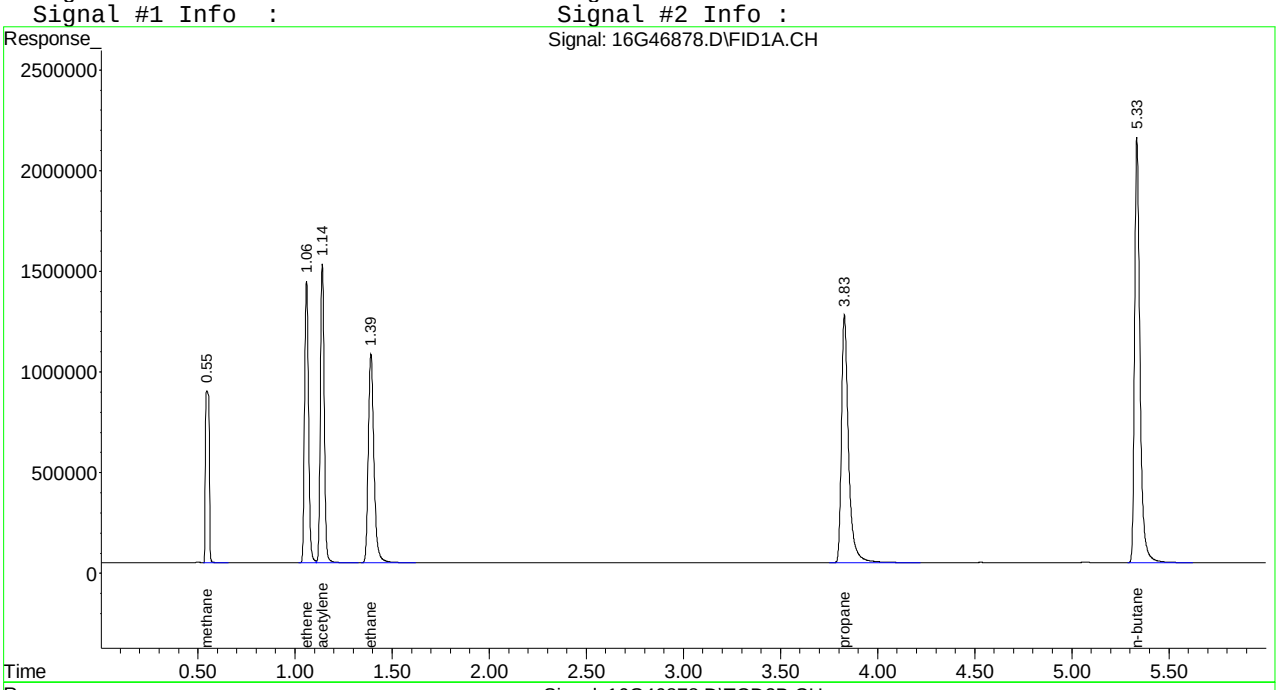

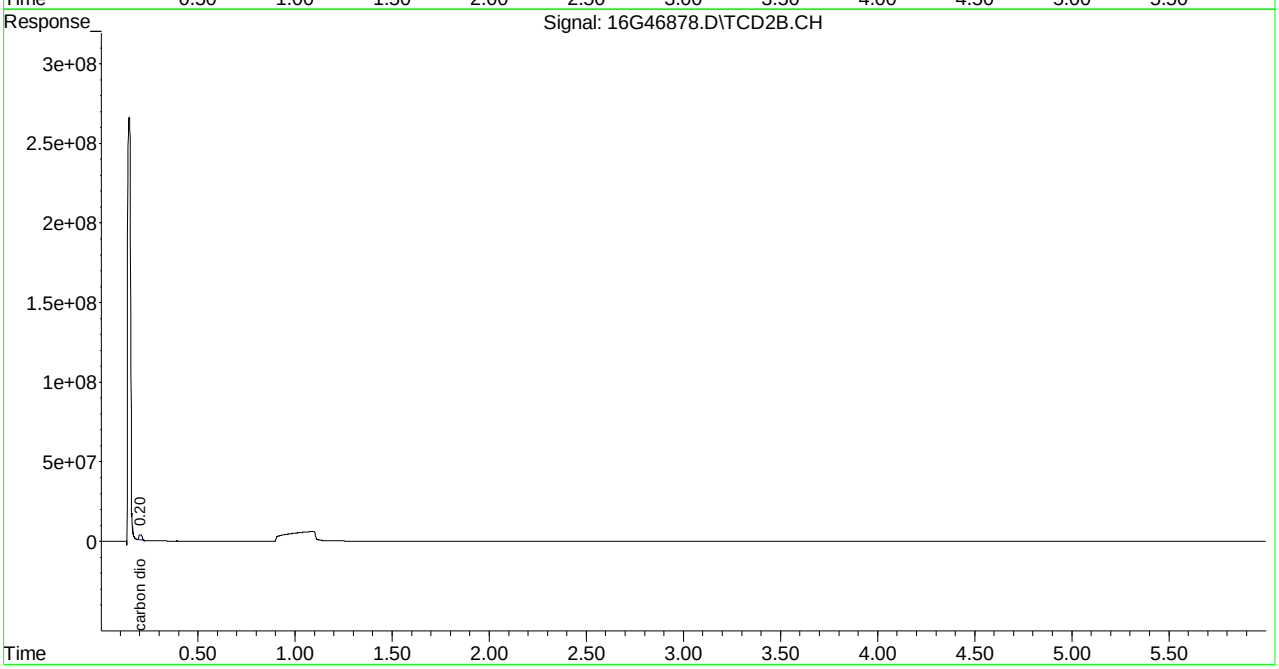

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46879.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46879.D\TCD2B.CH
Acq On : 03 Mar 2015 15:05 Operator: JDS
Sample : WG514119-05 133umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:11 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	24939741	132.227	umol/
2) T	ethene	1.06	41686300	131.412	umol/
3) T	acetylene	1.14	47206199	139.484	umol/
4) T	ethane	1.39	43668346	128.475	umol/
5) T	propane	3.83	64365472	129.663	umol/
6) T	n-butane	5.33	84395468	130.185	umol/
8) T	carbon dioxide	0.20	80524699	14601.362	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46879.D RSKEXT1.M Fri Mar 06 11:57:12 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46879.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46879.D\TCD2B.CH
Acq On : 03 Mar 2015 15:05 Operator: JDS
Sample : WG514119-05 133umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

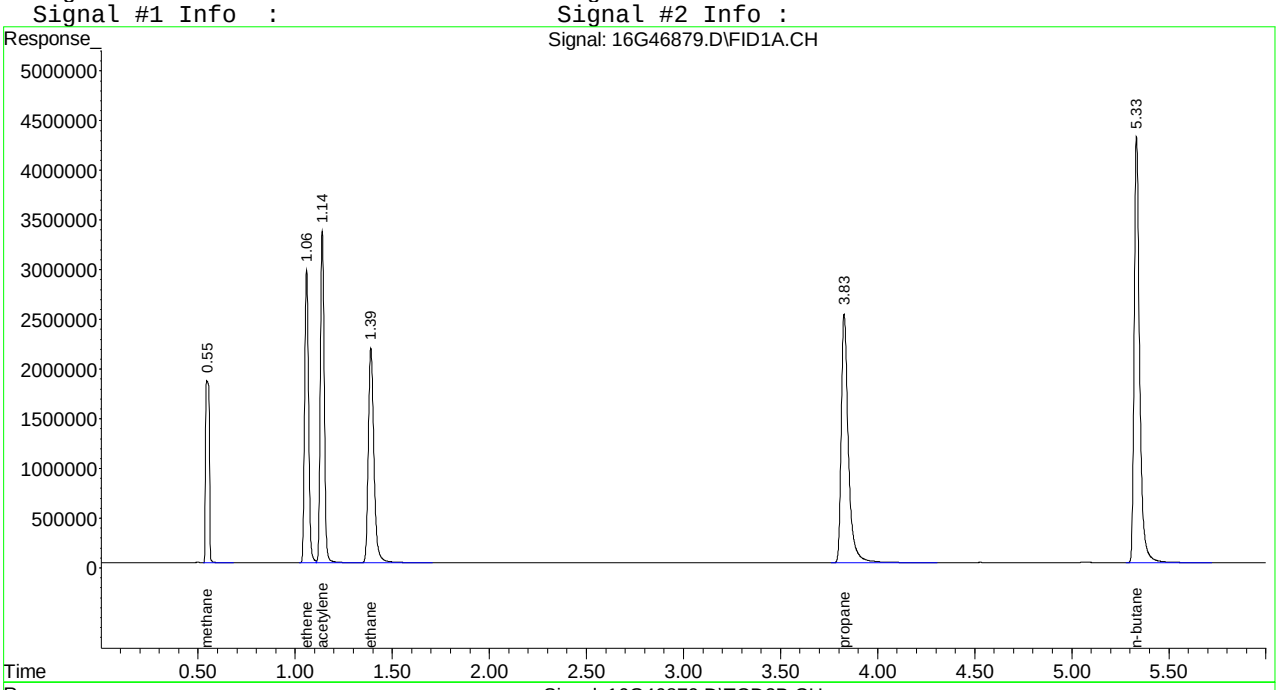

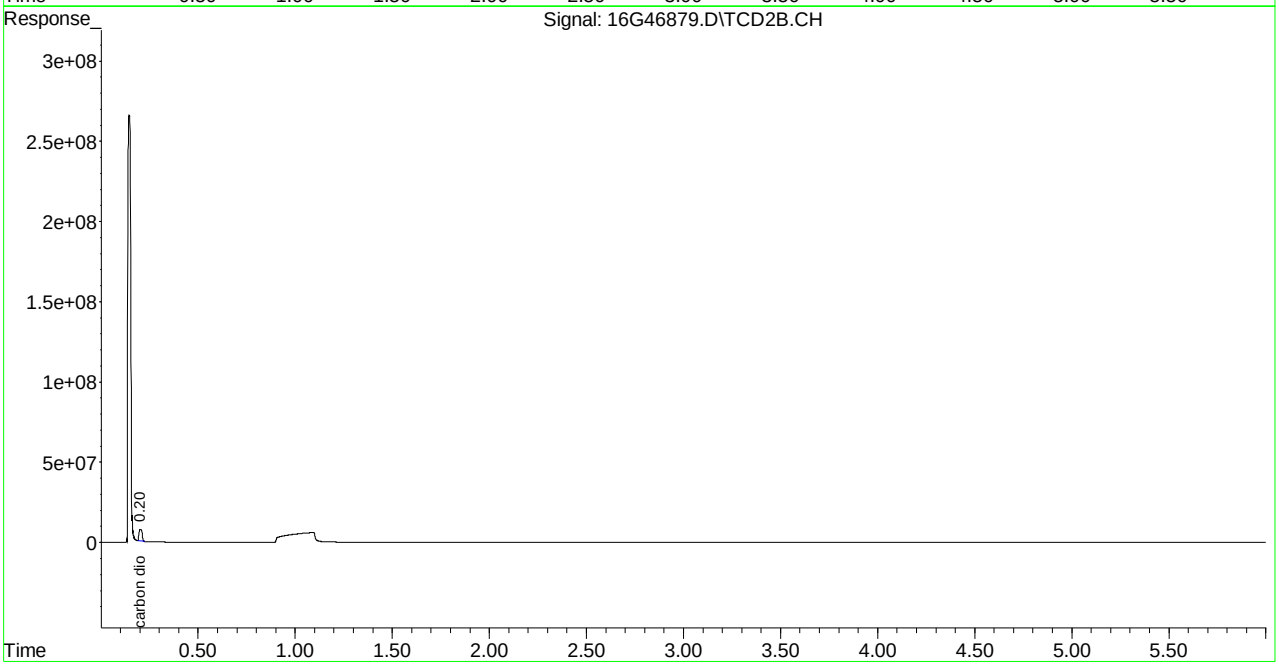

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46880.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46880.D\TCD2B.CH
Acq On : 03 Mar 2015 15:17 Operator: JDS
Sample : WG514119-06 333umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:12 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	61959752	331.783	umol/
2) T	ethene	1.06	106345688	335.244	umol/
3) T	acetylene	1.14	118917475	351.375	umol/
4) T	ethane	1.39	111791323	328.897	umol/
5) T	propane	3.83	166544491	335.501	umol/
6) T	n-butane	5.33	219746160	338.971	umol/
8) T	carbon dioxide	0.20	201820251	36595.610	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46880.D RSKEXT1.M Fri Mar 06 11:57:12 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46880.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46880.D\TCD2B.CH
Acq On : 03 Mar 2015 15:17 Operator: JDS
Sample : WG514119-06 333umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

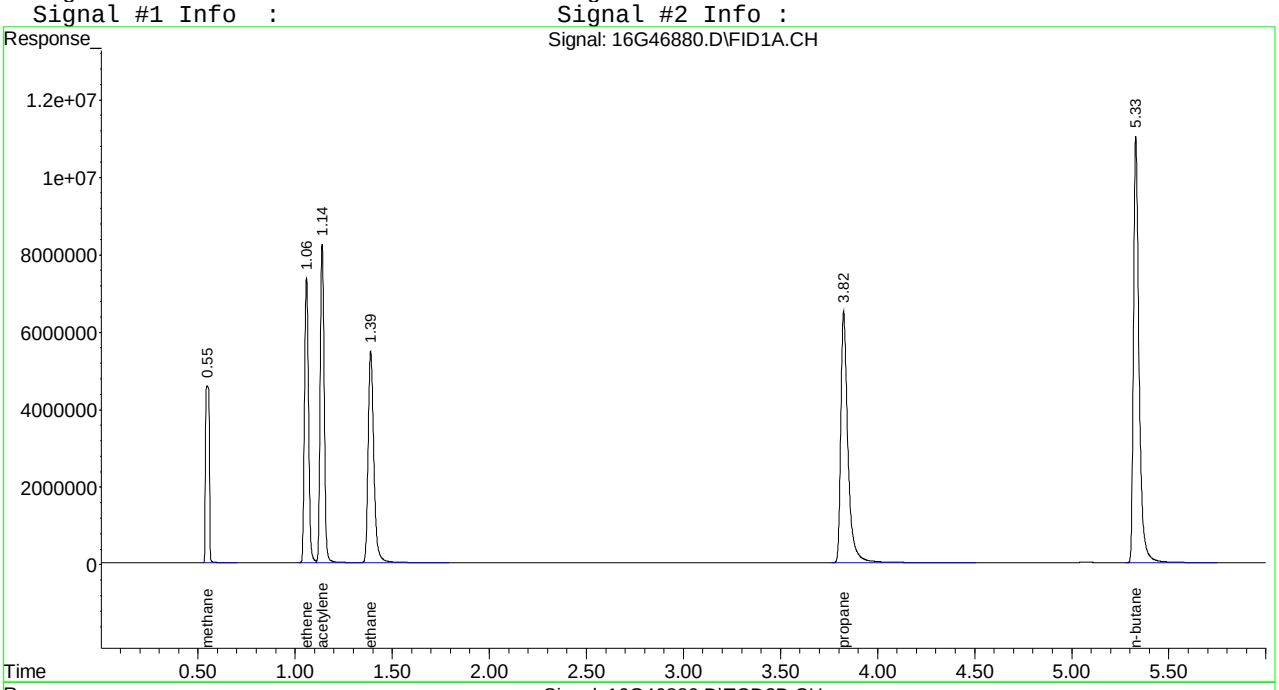

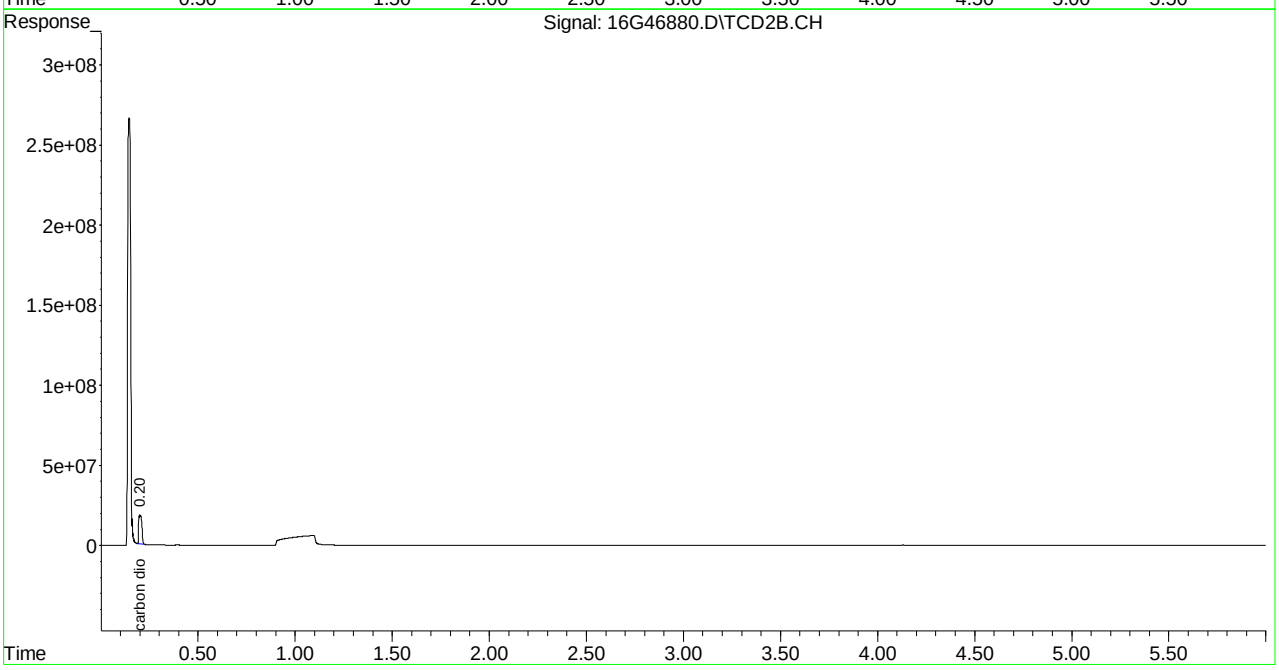

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46881.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46881.D\TCD2B.CH
Acq On : 03 Mar 2015 15:29 Operator: JDS
Sample : WG514119-07 533umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:13 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	100578633	539.958	umol/
2) T	ethene	1.06	169644372	534.786	umol/
3) T	acetylene	1.14	183672662	542.712	umol/
4) T	ethane	1.39	178696917	525.738	umol/
5) T	propane	3.82	263060772	529.931	umol/
6) T	n-butane	5.33	344418707	531.285	umol/
8) T	carbon dioxide	0.20	309711021	56159.199	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46881.D RSKEXT1.M Fri Mar 06 11:57:13 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46881.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46881.D\TCD2B.CH
Acq On : 03 Mar 2015 15:29 Operator: JDS
Sample : WG514119-07 533umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

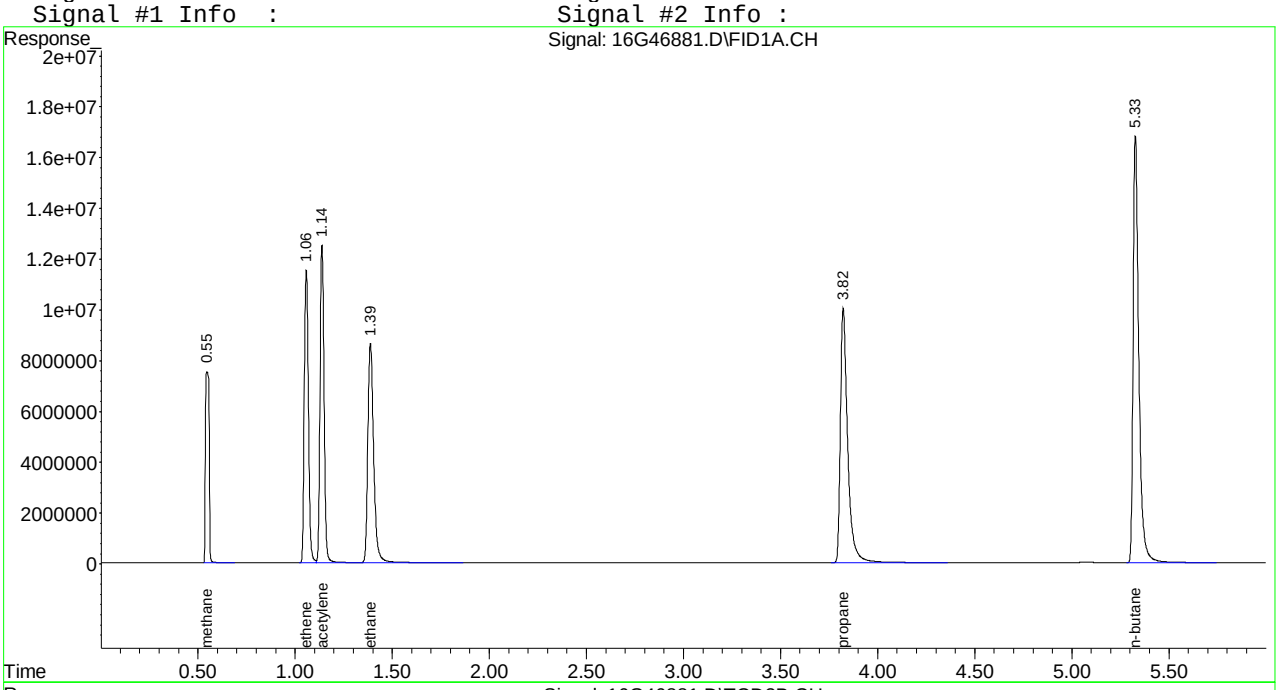

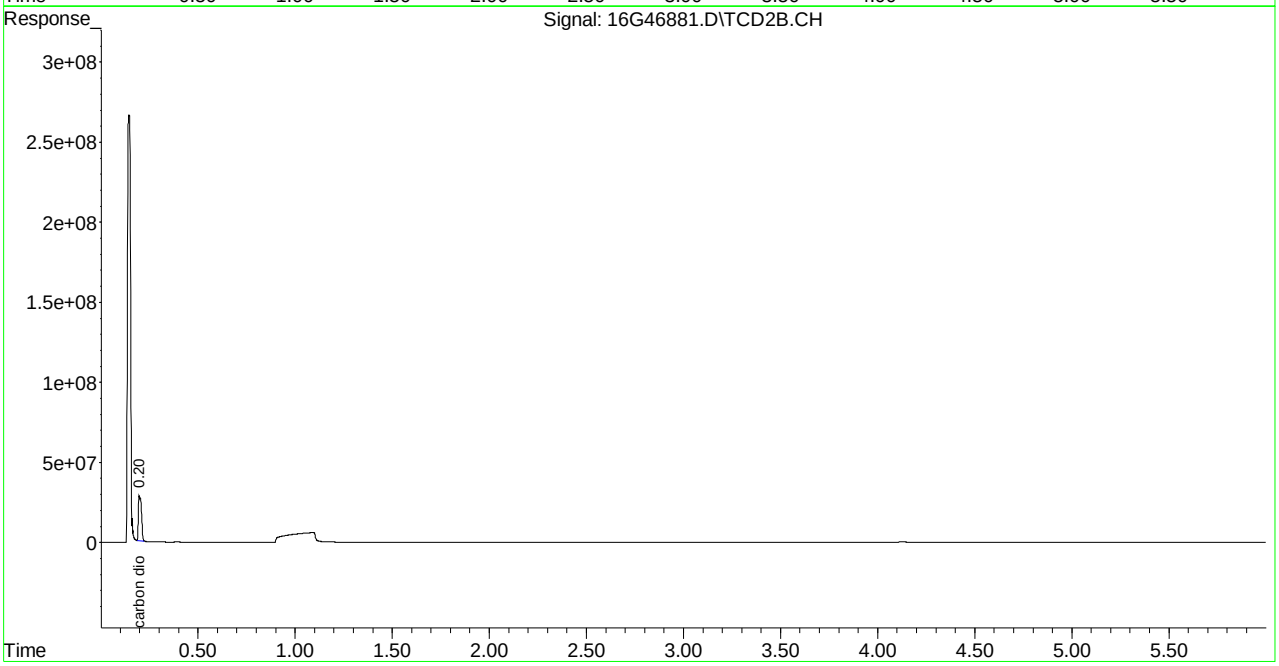

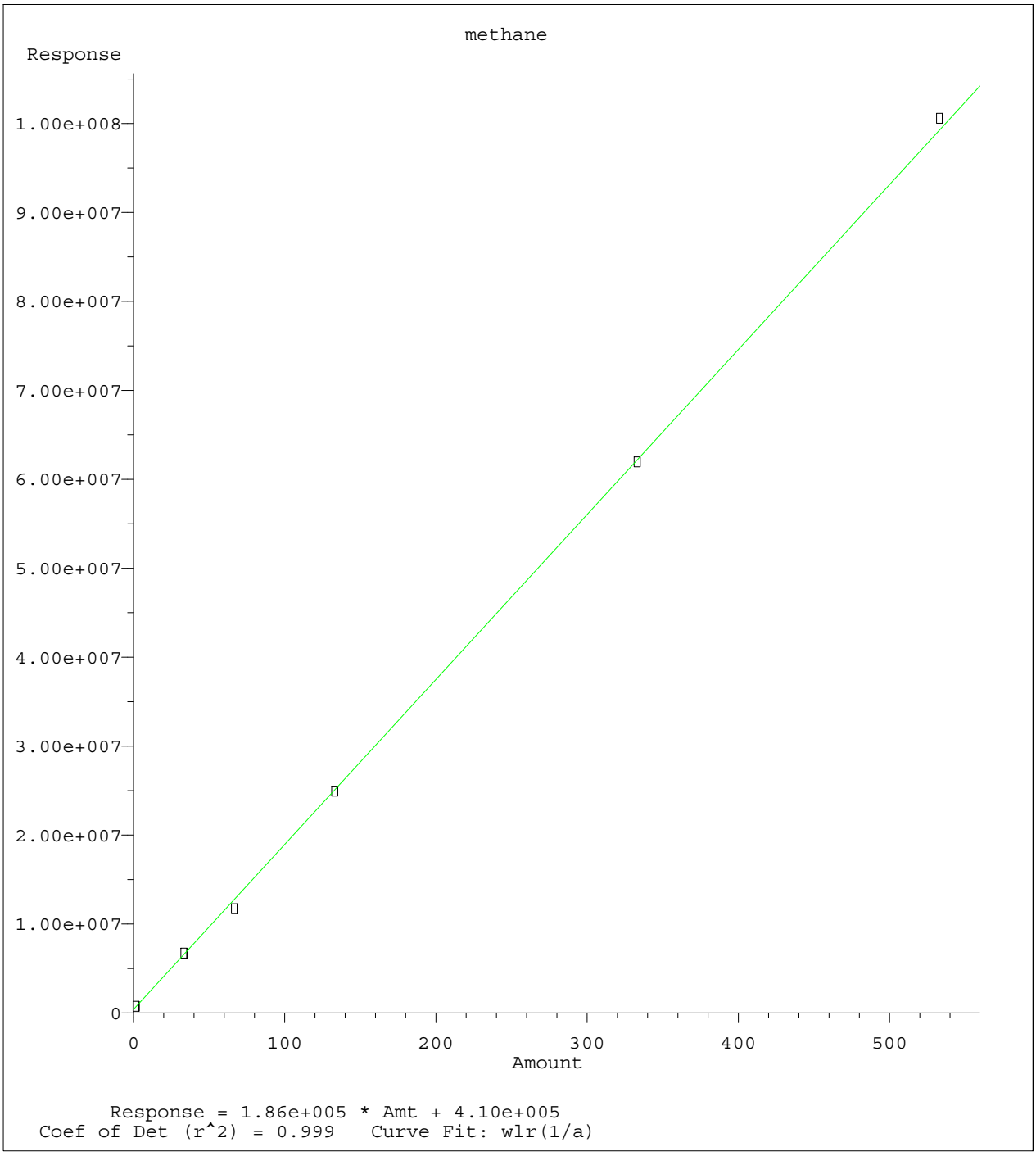

Method Name: C:\MSDCHEM\1\METHODS\RSKEXT1.M
Calibration Table Last Updated: Fri Mar 06 11:52:33 2015

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46884.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46884.D\TCD2B.CH
Acq On : 03 Mar 2015 17:10 Operator: JDS
Sample : WG514119-08 133umol/mol ALT SRC STD RSK1 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:58:49 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	25936090	137.598	umol/
2) T	ethene	1.06	43111404	135.904	umol/
3) T	acetylene	1.14	47098795	139.167	umol/
4) T	ethane	1.39	44778091	131.740	umol/
5) T	propane	3.83	64822008	130.583	umol/
6) T	n-butane	5.33	82856392	127.811	umol/
8) T	carbon dioxide	0.20	76359751	13846.141	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46884.D RSKEXT1.M Fri Mar 06 11:58:49 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46884.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46884.D\TCD2B.CH
Acq On : 03 Mar 2015 17:10 Operator: JDS
Sample : WG514119-08 133umol/mol ALT SRC STD RSK1 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:58 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

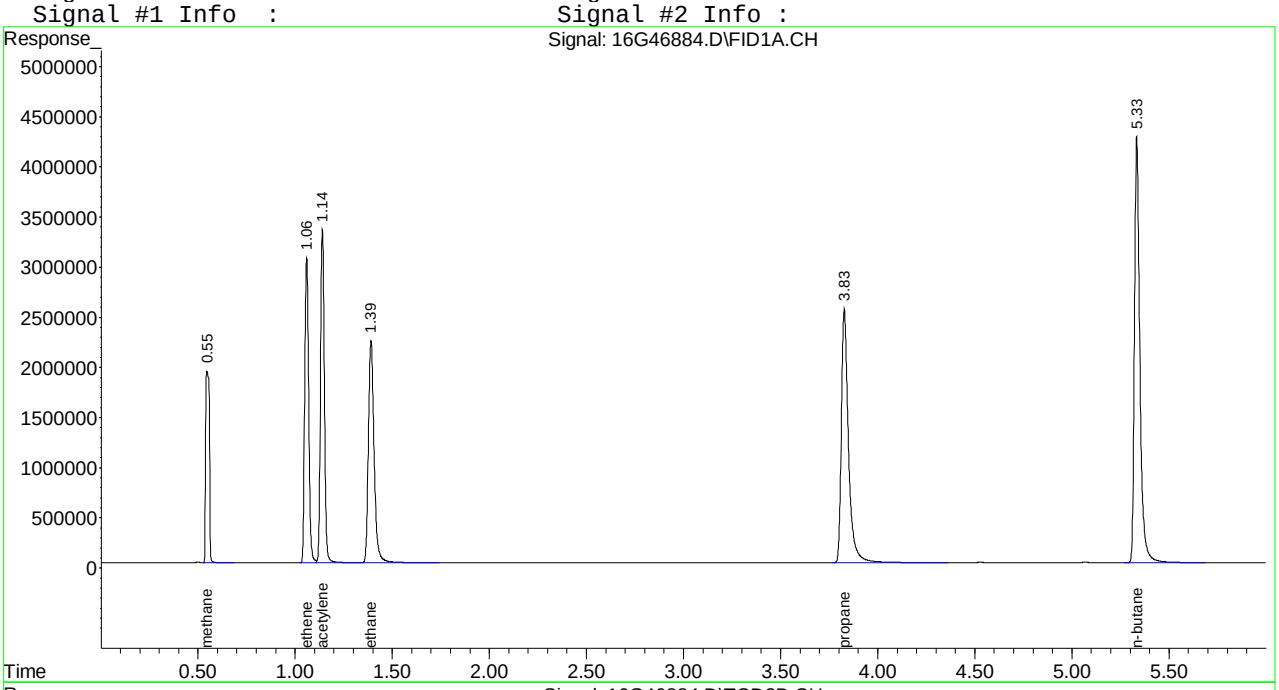

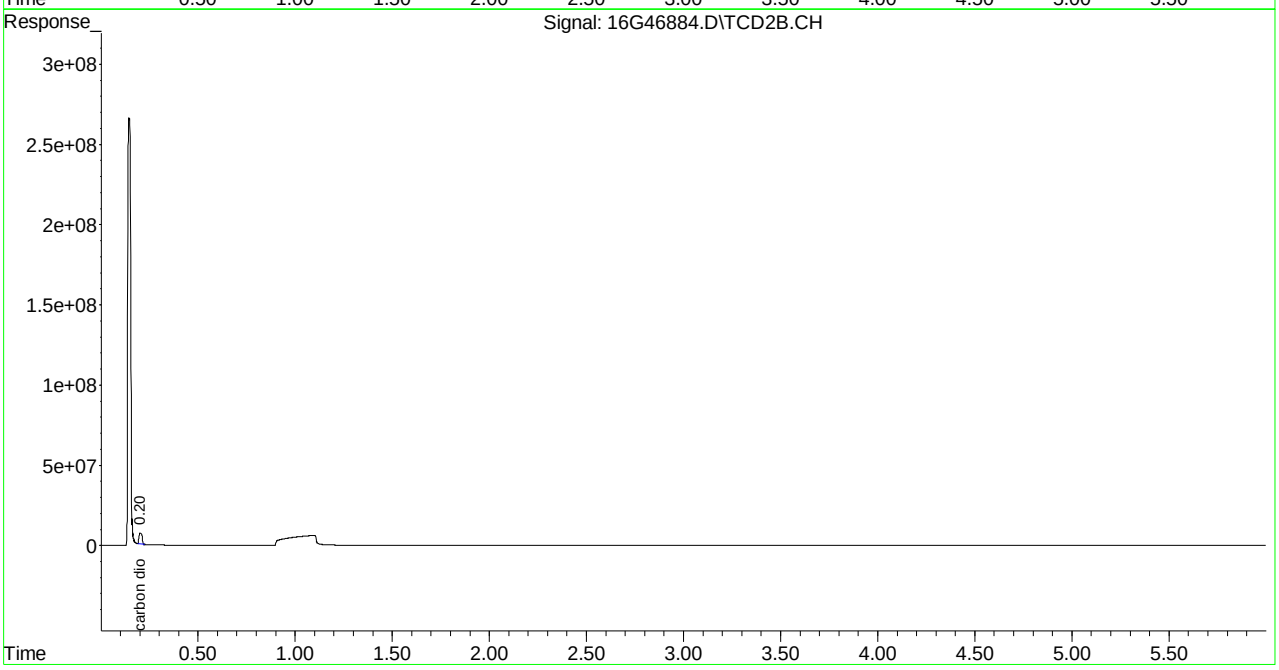

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46884.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46884.D\TCD2B.CH
Acq On : 03 Mar 2015 17:10 Operator: JDS
Sample : WG514119-08 133umol/mol ALT SRC STD RSK1 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	137.598	-3.5	104	0.00
2	T	ethene	133.000	135.904	-2.2	103	0.00
3	T	acetylene	133.000	139.167	-4.6	100	0.00
4	T	ethane	133.000	131.740	0.9	103	0.00
5	T	propane	133.000	130.583	1.8	101	0.00
6	T	n-butane	133.000	127.811	3.9	98	0.00

Signal #2

8	T	carbon dioxide	13300.000	13846.141	-4.1	95	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46884.D RSKEXT1.M Fri Mar 06 11:59:02 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46884.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46884.D\TCD2B.CH
Acq On    : 03 Mar 2015  17:10                        Operator: JDS
Sample    : WG514119-08 133umol/mol ALT SRC STD RSK1 Inst    : HP16
Misc      : 1,1 STD68250                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\052615\16G47618.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDchem\1\DATA\052615\16G47618.D\TCD2B.CH
Acq On : 26 May 2015 9:26 Operator: JDS
Sample : WG524991-01 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 26 09:32:42 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	23926711	126.766	umol/
2) T	ethene	1.06	39692415	125.126	umol/
3) T	acetylene	1.14	44420594	131.253	umol/
4) T	ethane	1.39	41485541	122.053	umol/
5) T	propane	3.83	60456767	121.789	umol/
6) T	n-butane	5.34	78565704	121.192	umol/
8) T	carbon dioxide	0.20	76563215	13883.035	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47618.D RSKEXT1.M Tue May 26 09:32:42 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\052615\16G47618.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDchem\1\DATA\052615\16G47618.D\TCD2B.CH
Acq On : 26 May 2015 9:26 Operator: JDS
Sample : WG524991-01 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 26 9:32 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

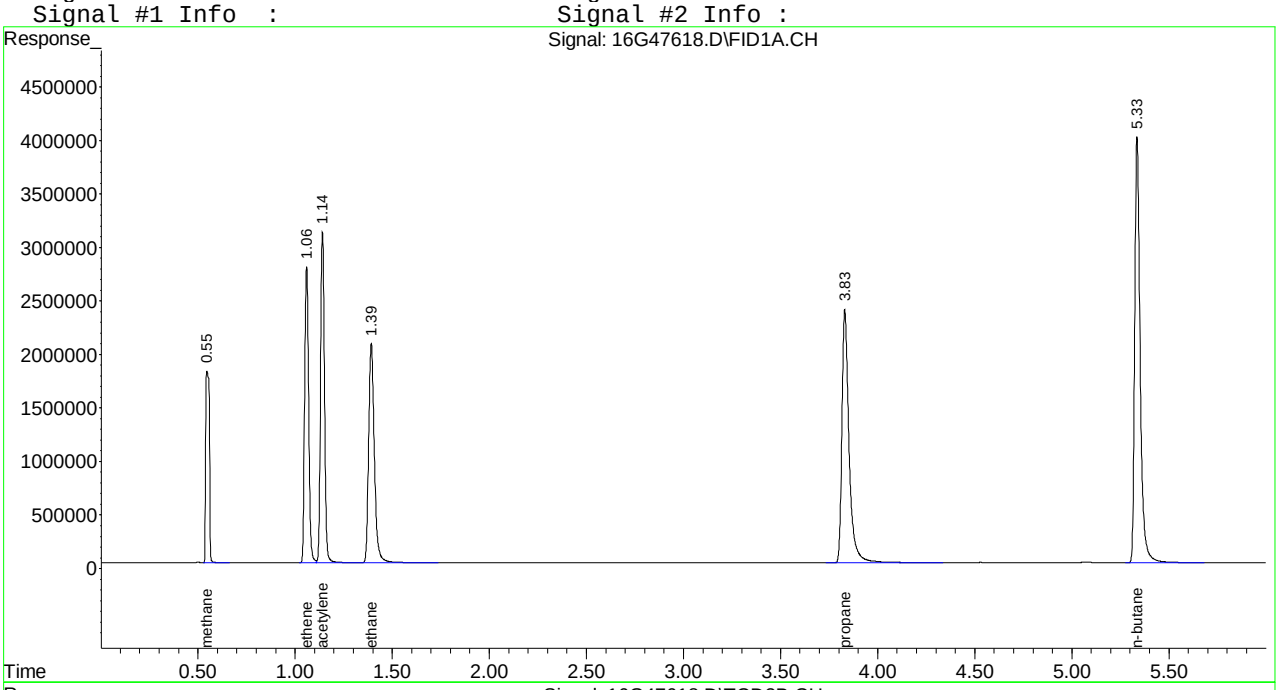

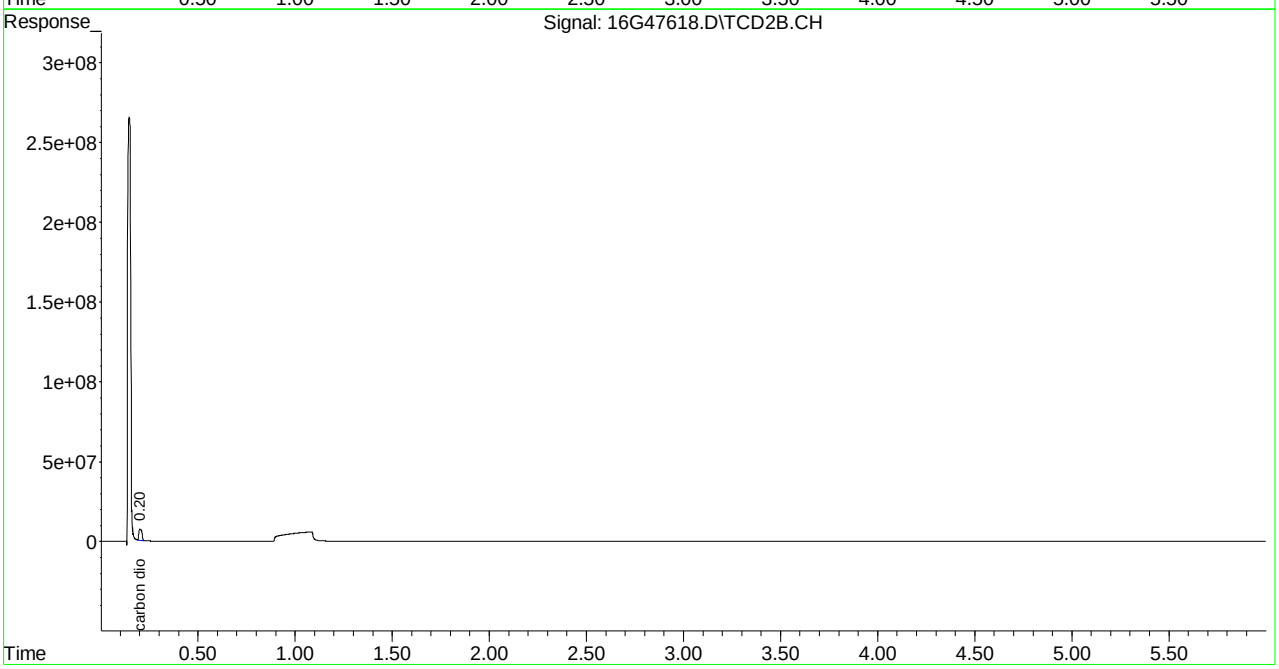

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\052615\16G47618.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\052615\16G47618.D\TCD2B.CH
Acq On : 26 May 2015 9:26 Operator: JDS
Sample : WG524991-01 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	126.766	4.7	96	0.00
2	T	ethene	133.000	125.126	5.9	95	0.00
3	T	acetylene	133.000	131.253	1.3	94	0.00
4	T	ethane	133.000	122.053	8.2	95	0.00
5	T	propane	133.000	121.789	8.4	94	0.00
6	T	n-butane	133.000	121.192	8.9	93	0.00

Signal #2

8	T	carbon dioxide	13300.000	13883.035	-4.4	95	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G47618.D RSKEXT1.M Wed May 27 09:05:25 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\052615\16G47618.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\052615\16G47618.D\TCD2B.CH
Acq On    : 26 May 2015   9:26                        Operator: JDS
Sample    : WG524991-01 133umol/mol CCV RSK175        Inst    : HP16
Misc      : 1,1 STD67274                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\052615\16G47629.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\052615\16G47629.D\TCD2B.CH
Acq On : 26 May 2015 14:28 Operator: JDS
Sample : WG524991-02 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 26 14:34:09 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	23950128	126.893	umol/
2) T	ethene	1.06	40071384	126.321	umol/
3) T	acetylene	1.14	44119070	130.362	umol/
4) T	ethane	1.39	41987682	123.530	umol/
5) T	propane	3.83	61873361	124.643	umol/
6) T	n-butane	5.34	81350056	125.487	umol/
8) T	carbon dioxide	0.20	75697353	13726.030	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47629.D RSKEXT1.M Tue May 26 14:34:09 2015 Page 1

Signal #1 : C:\MSDchem\1\DATA\052615\16G47629.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\052615\16G47629.D\TCD2B.CH
Acq On : 26 May 2015 14:28 Operator: JDS
Sample : WG524991-02 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 26 14:34 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

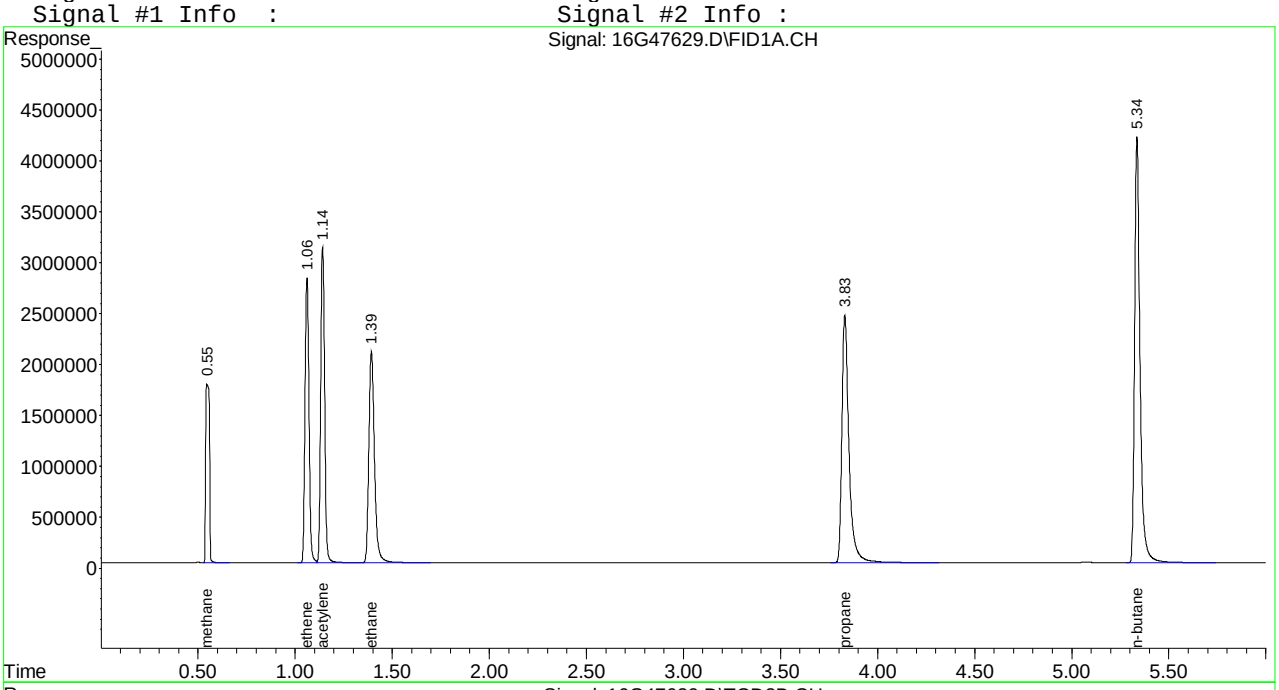

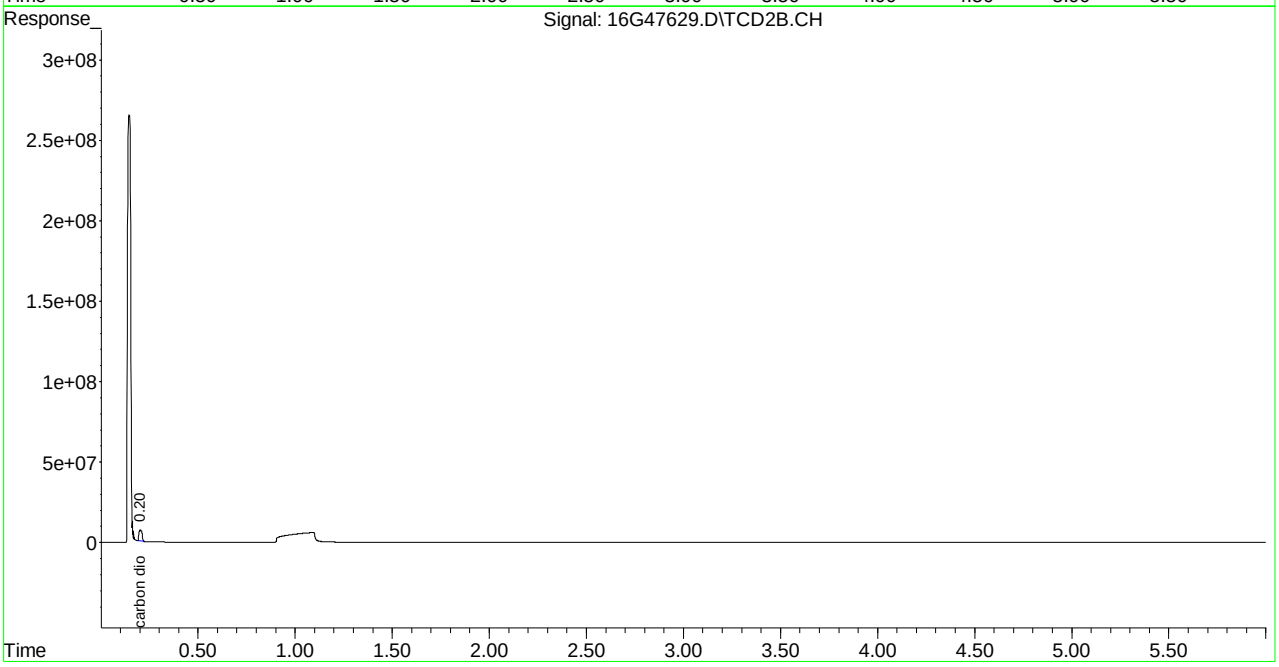

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\052615\16G47629.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\052615\16G47629.D\TCD2B.CH
Acq On : 26 May 2015 14:28 Operator: JDS
Sample : WG524991-02 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	126.893	4.6	96	0.00
2	T	ethene	133.000	126.321	5.0	96	0.00
3	T	acetylene	133.000	130.362	2.0	93	0.00
4	T	ethane	133.000	123.530	7.1	96	0.00
5	T	propane	133.000	124.643	6.3	96	0.00
6	T	n-butane	133.000	125.487	5.6	96	0.00

Signal #2

8	T	carbon dioxide	13300.000	13726.030	-3.2	94	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G47629.D RSKEXT1.M Wed May 27 09:05:32 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\052615\16G47629.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\052615\16G47629.D\TCD2B.CH
Acq On    : 26 May 2015  14:28                      Operator: JDS
Sample    : WG524991-02 133umol/mol CCV RSK175      Inst    : HP16
Misc      : 1,1 STD67274                            Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDchem\1\DATA\052615\16G47640.D\FID1A.CH Vial: 23
Signal #2 : C:\MSDchem\1\DATA\052615\16G47640.D\TCD2B.CH
Acq On    : 26 May 2015  16:36                        Operator: JDS
Sample    : WG524991-03 133umol/mol CCV RSK175        Inst    : HP16
Misc      : 1,1 STD657274                             Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: May 26 16:42:17 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc Units
	Target Compounds			
1) T	methane	0.55	23408347	123.972 umol/
2) T	ethene	1.06	39093420	123.238 umol/
3) T	acetylene	1.14	42075026	124.322 umol/
4) T	ethane	1.39	41072808	120.839 umol/
5) T	propane	3.83	60585151	122.048 umol/
6) T	n-butane	5.34	79399800	122.479 umol/
8) T	carbon dioxide	0.20	72234201	13098.064 umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

16G47640.D RSKEXT1.M Tue May 26 16:42:17 2015 Page 1

Signal #1 : C:\MSDchem\1\DATA\052615\16G47640.D\FID1A.CH Vial: 23
Signal #2 : C:\MSDchem\1\DATA\052615\16G47640.D\TCD2B.CH
Acq On : 26 May 2015 16:36 Operator: JDS
Sample : WG524991-03 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD657274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 26 16:42 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

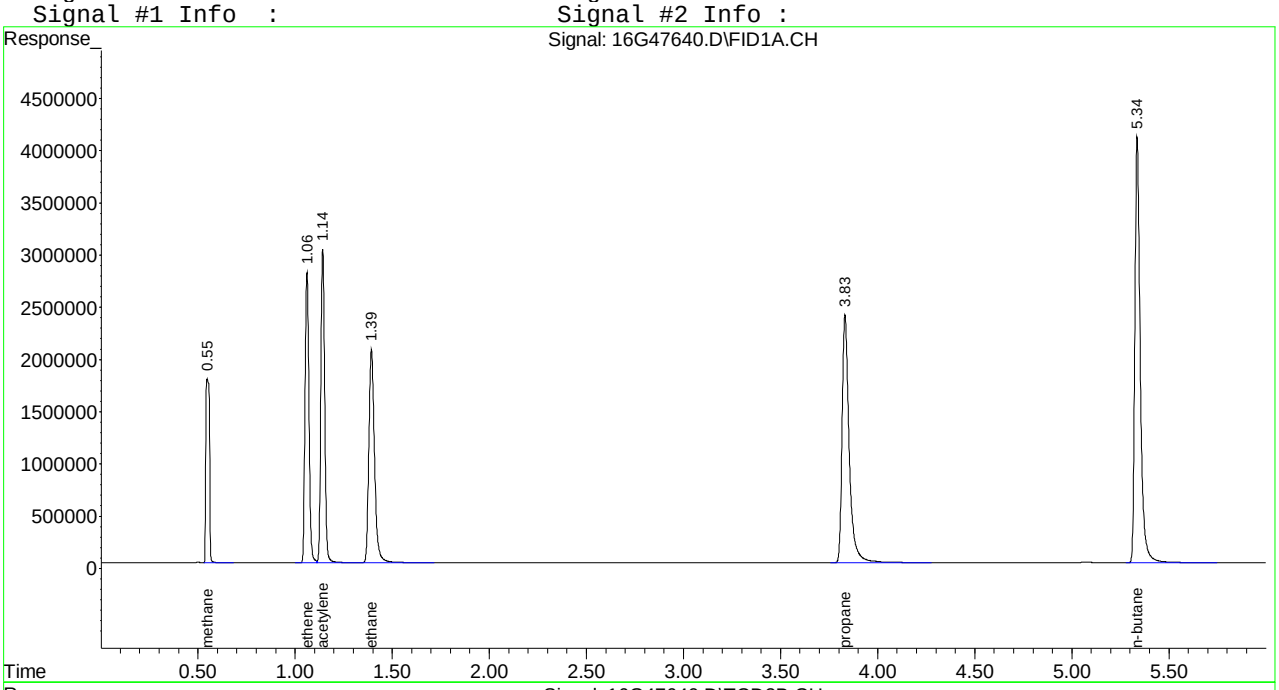

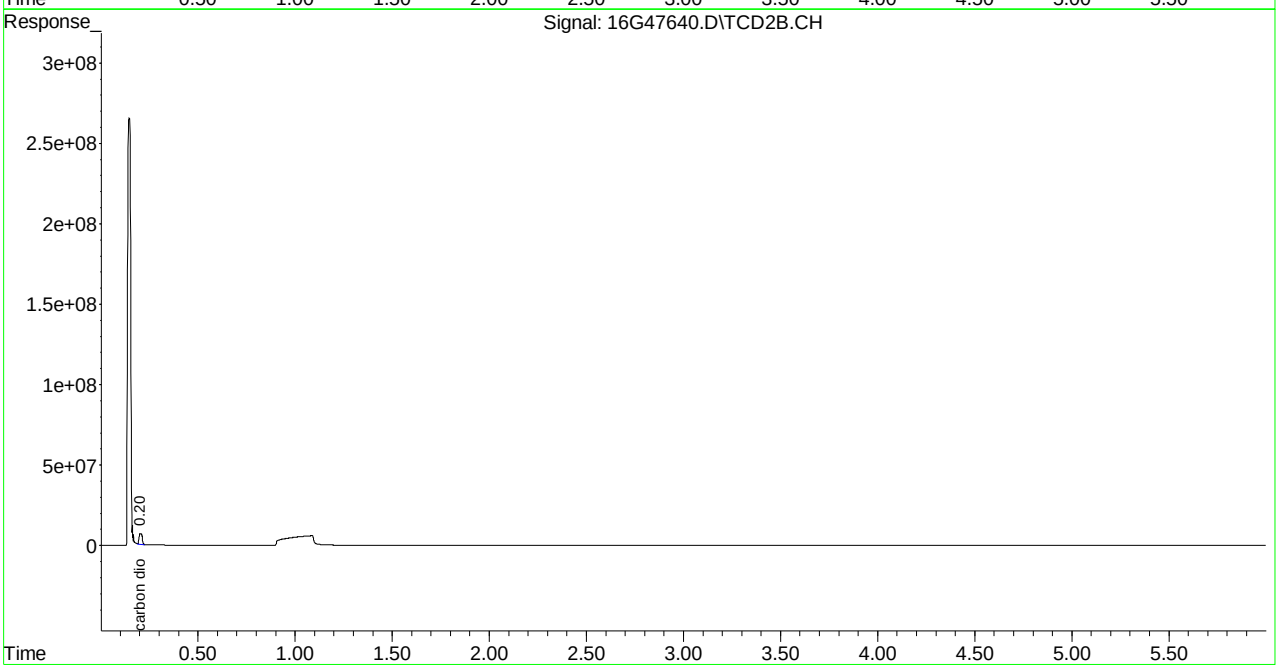

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\052615\16G47640.D\FID1A.CH Vial: 23
Signal #2 : C:\MSDCHEM\1\DATA\052615\16G47640.D\TCD2B.CH
Acq On : 26 May 2015 16:36 Operator: JDS
Sample : WG524991-03 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD657274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	123.972	6.8	94	0.00
2	T	ethene	133.000	123.238	7.3	94	0.00
3	T	acetylene	133.000	124.322	6.5	89	0.00
4	T	ethane	133.000	120.839	9.1	94	0.00
5	T	propane	133.000	122.048	8.2	94	0.00
6	T	n-butane	133.000	122.479	7.9	94	0.00

Signal #2

8	T	carbon dioxide	13300.000	13098.064	1.5	90	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G47640.D RSKEXT1.M Wed May 27 09:05:40 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\052615\16G47640.D\FID1A.CH Vial: 23
Signal #2 : C:\MSDCHEM\1\DATA\052615\16G47640.D\TCD2B.CH
Acq On    : 26 May 2015  16:36                      Operator: JDS
Sample    : WG524991-03 133umol/mol CCV RSK175      Inst    : HP16
Misc      : 1,1 STD657274                           Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\052715\16G47655.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDchem\1\DATA\052715\16G47655.D\TCD2B.CH
Acq On : 27 May 2015 11:43 Operator: JDS
Sample : WG525189-01 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 27 11:49:38 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	23319343	123.492	umol/
2) T	ethene	1.06	38810386	122.346	umol/
3) T	acetylene	1.14	44204640	130.615	umol/
4) T	ethane	1.39	40492354	119.131	umol/
5) T	propane	3.83	58847248	118.547	umol/
6) T	n-butane	5.34	76294764	117.689	umol/
8) T	carbon dioxide	0.20	75053459	13609.274	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47655.D RSKEXT1.M Wed May 27 11:49:38 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\052715\16G47655.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDchem\1\DATA\052715\16G47655.D\TCD2B.CH
Acq On : 27 May 2015 11:43 Operator: JDS
Sample : WG525189-01 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 27 11:49 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

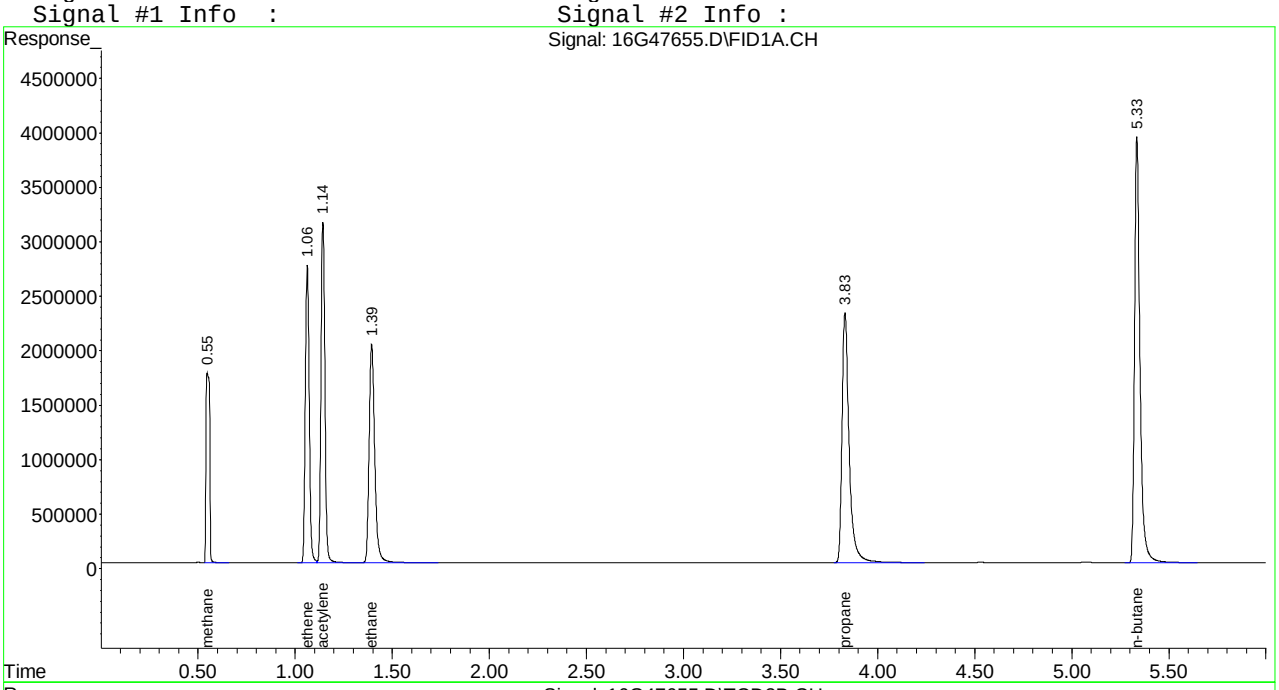

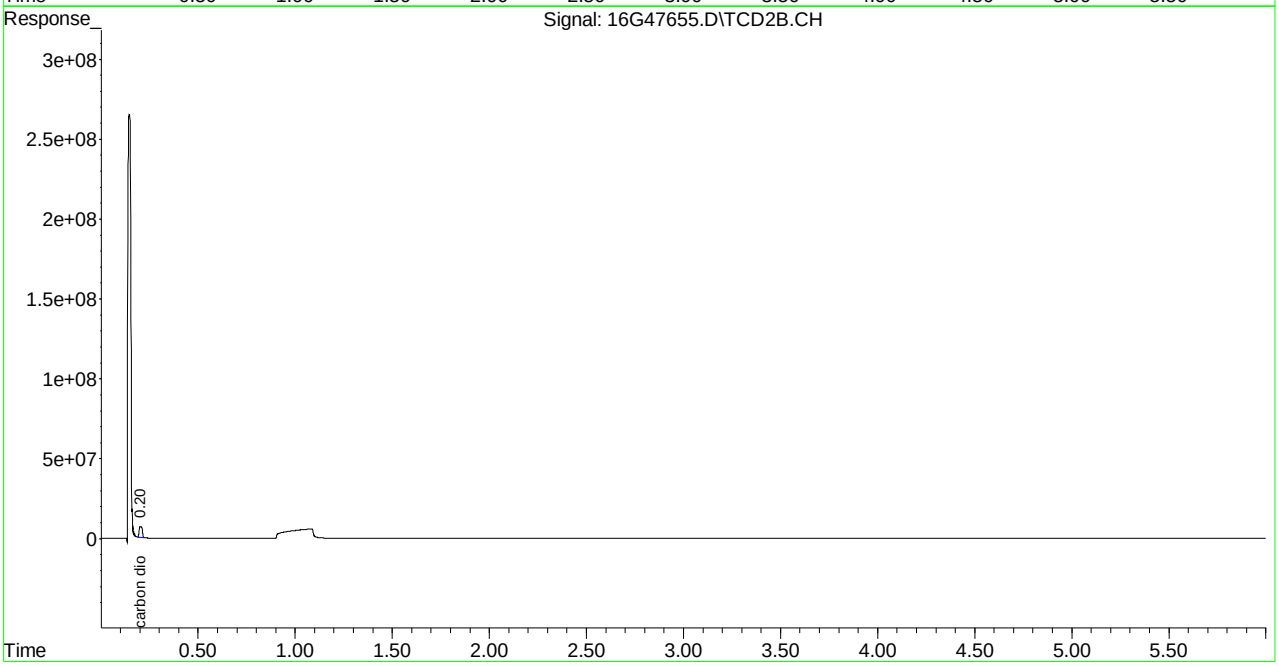

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\052715\16G47655.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\052715\16G47655.D\TCD2B.CH
Acq On : 27 May 2015 11:43 Operator: JDS
Sample : WG525189-01 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	123.492	7.1	94	0.00
2	T	ethene	133.000	122.346	8.0	93	0.00
3	T	acetylene	133.000	130.615	1.8	94	0.00
4	T	ethane	133.000	119.131	10.4	93	0.00
5	T	propane	133.000	118.547	10.9	91	0.00
6	T	n-butane	133.000	117.689	11.5	90	0.00

Signal #2

8	T	carbon dioxide	13300.000	13609.274	-2.3	93	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G47655.D RSKEXT1.M Thu May 28 09:14:39 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\052715\16G47655.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\052715\16G47655.D\TCD2B.CH
Acq On    : 27 May 2015  11:43                      Operator: JDS
Sample    : WG525189-01 133umol/mol CCV RSK175      Inst    : HP16
Misc      : 1,1 STD67274                            Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\052715\16G47666.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\052715\16G47666.D\TCD2B.CH
Acq On : 27 May 2015 16:21 Operator: JDS
Sample : WG525189-02 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 27 16:27:10 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	22658437	119.930	umol/
2) T	ethene	1.06	38165791	120.314	umol/
3) T	acetylene	1.14	40529904	119.757	umol/
4) T	ethane	1.39	40219290	118.328	umol/
5) T	propane	3.83	59402336	119.665	umol/
6) T	n-butane	5.34	77716667	119.882	umol/
8) T	carbon dioxide	0.20	70958870	12866.811	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47666.D RSKEXT1.M Wed May 27 16:27:11 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\052715\16G47666.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\052715\16G47666.D\TCD2B.CH
Acq On : 27 May 2015 16:21 Operator: JDS
Sample : WG525189-02 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 27 16:27 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

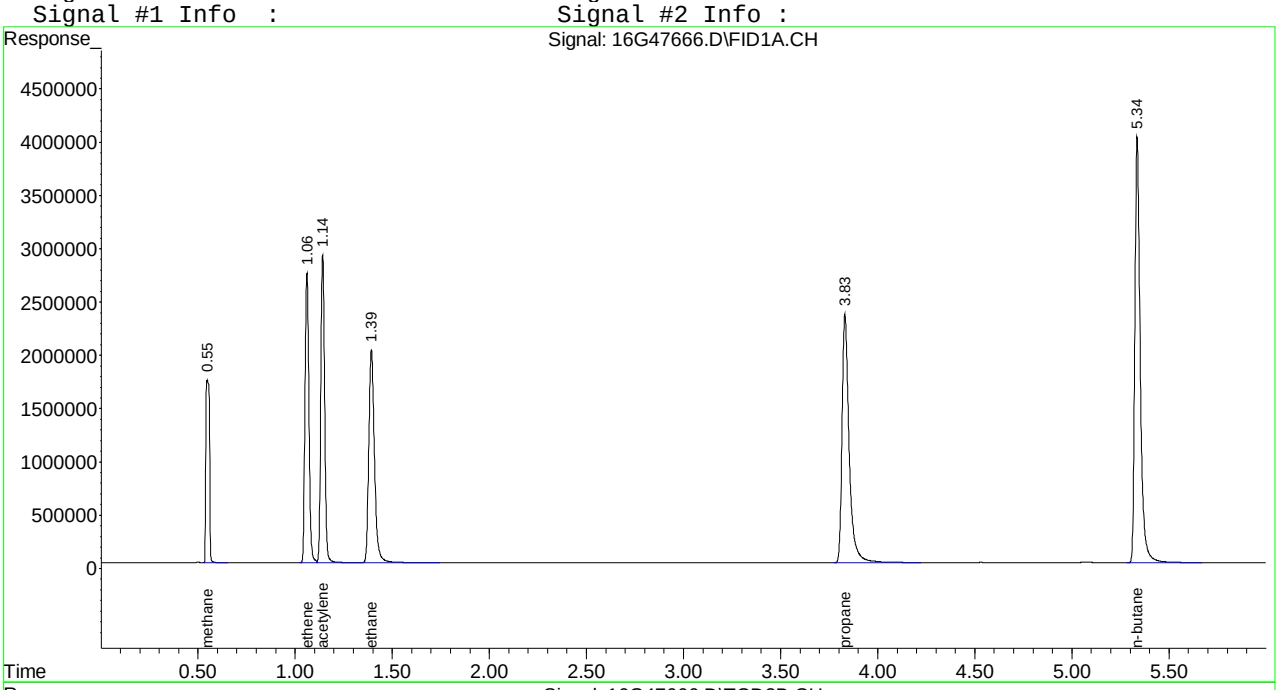

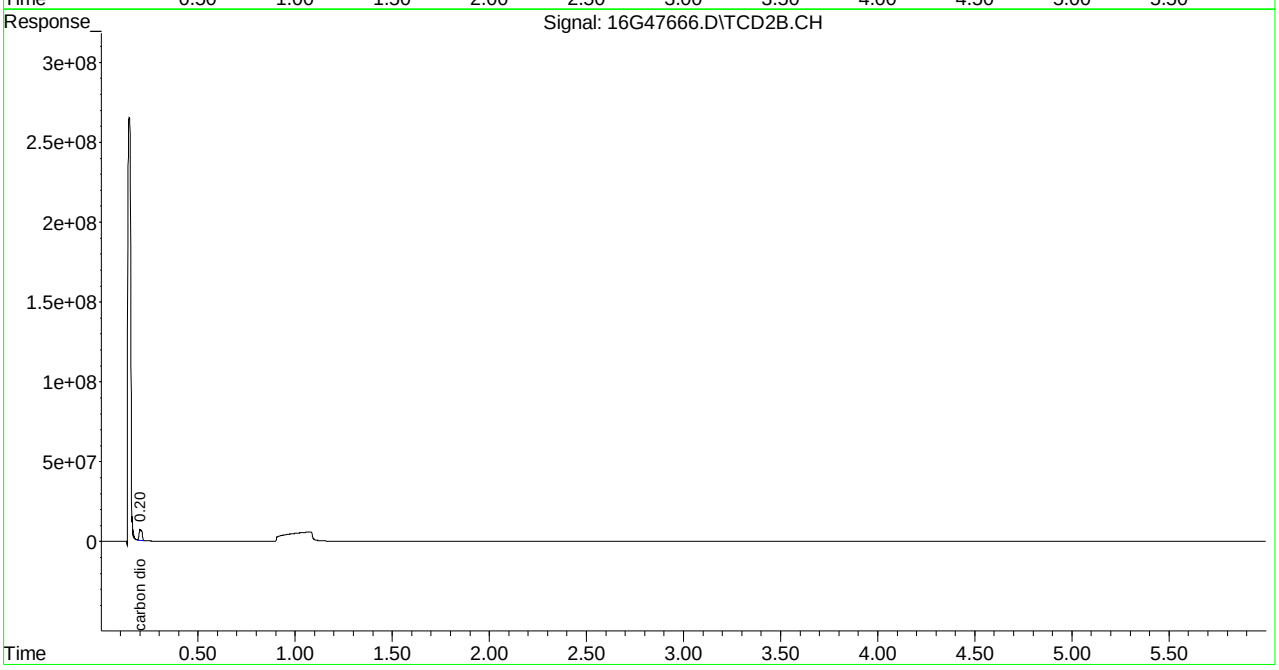

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\052715\16G47666.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\052715\16G47666.D\TCD2B.CH
Acq On : 27 May 2015 16:21 Operator: JDS
Sample : WG525189-02 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	119.930	9.8	91	0.00
2	T	ethene	133.000	120.314	9.5	92	0.00
3	T	acetylene	133.000	119.757	10.0	86	0.00
4	T	ethane	133.000	118.328	11.0	92	0.00
5	T	propane	133.000	119.665	10.0	92	0.00
6	T	n-butane	133.000	119.882	9.9	92	0.00

Signal #2

8	T	carbon dioxide	13300.000	12866.811	3.3	88	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G47666.D RSKEXT1.M Thu May 28 09:14:47 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\052715\16G47666.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\052715\16G47666.D\TCD2B.CH
Acq On    : 27 May 2015  16:21                      Operator: JDS
Sample    : WG525189-02 133umol/mol CCV RSK175      Inst    : HP16
Misc      : 1,1 STD67274                            Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Microbac Laboratories Inc.
Daily Retention Time Window Determination

Login #: L15051435 **Run Date:** 05/26/2015 **Sample ID:** WG524991-01
Instrument: HP16 **Run Time:** 09:26 **Method:** RSK175
Workgroup (AAB#): WG524992 **File ID:** 16G47618

RT Standard	Analysis Date	File ID	Analyst
WG507817-01	01/13/2015	16G46159	JDS
WG507448-01	01/09/2015	16G46148	JDS
WG507013-01	01/06/2015	16G46125	JDS

Analyte	RT #1	RT #2	RT #3	STD	Lower	Upper
METHANE	.54	.55	.55	.55	0.520	0.580
ETHENE	1.06	1.06	1.06	1.06	1.030	1.090
ETHANE	1.39	1.39	1.39	1.39	1.360	1.420
PROPANE	3.82	3.83	3.83	3.83	3.800	3.860
N-BUTANE	5.33	5.34	5.34	5.34	5.310	5.370
CARBON DIOXIDE	.2	.2	.2	.2	0.170	0.230
ACETYLENE	1.14	1.14	1.14	1.14	1.110	1.170

RT_WIN - Modified 01/06/2010
PDF File ID: 4204733
Report generated 05/28/2015 16:49

Microbac Laboratories Inc.
Daily Retention Time Window Determination

Login #: L15051435 **Run Date:** 05/27/2015 **Sample ID:** WG525189-01
Instrument: HP16 **Run Time:** 11:43 **Method:** RSK175
Workgroup (AAB#): WG525190 **File ID:** 16G47655

RT Standard	Analysis Date	File ID	Analyst
WG507817-01	01/13/2015	16G46159	JDS
WG507448-01	01/09/2015	16G46148	JDS
WG507013-01	01/06/2015	16G46125	JDS

Analyte	RT #1	RT #2	RT #3	STD	Lower	Upper
METHANE	.54	.55	.55	.55	0.520	0.580
ETHENE	1.06	1.06	1.06	1.06	1.030	1.090
ETHANE	1.39	1.39	1.39	1.39	1.360	1.420
PROPANE	3.82	3.83	3.83	3.83	3.800	3.860
N-BUTANE	5.33	5.34	5.34	5.34	5.310	5.370
CARBON DIOXIDE	.2	.2	.2	.2	0.170	0.230
ACETYLENE	1.14	1.14	1.14	1.14	1.110	1.170

RT_WIN - Modified 01/06/2010
PDF File ID: 4204733
Report generated 05/28/2015 16:49

2.1.2.5 Raw QC Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\052615\16G47619.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\052615\16G47619.D\TCD2B.CH
Acq On : 26 May 2015 9:43 Operator: JDS
Sample : WG524992-01 BLANK RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 26 09:49:35 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	365329	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.39	12022	0.035	umol/
5) T	propane	3.83	5935	0.012	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47619.D RSKEXT1.M Tue May 26 10:00:25 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\052615\16G47619.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\052615\16G47619.D\TCD2B.CH
Acq On : 26 May 2015 9:43 Operator: JDS
Sample : WG524992-01 BLANK RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 26 9:49 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

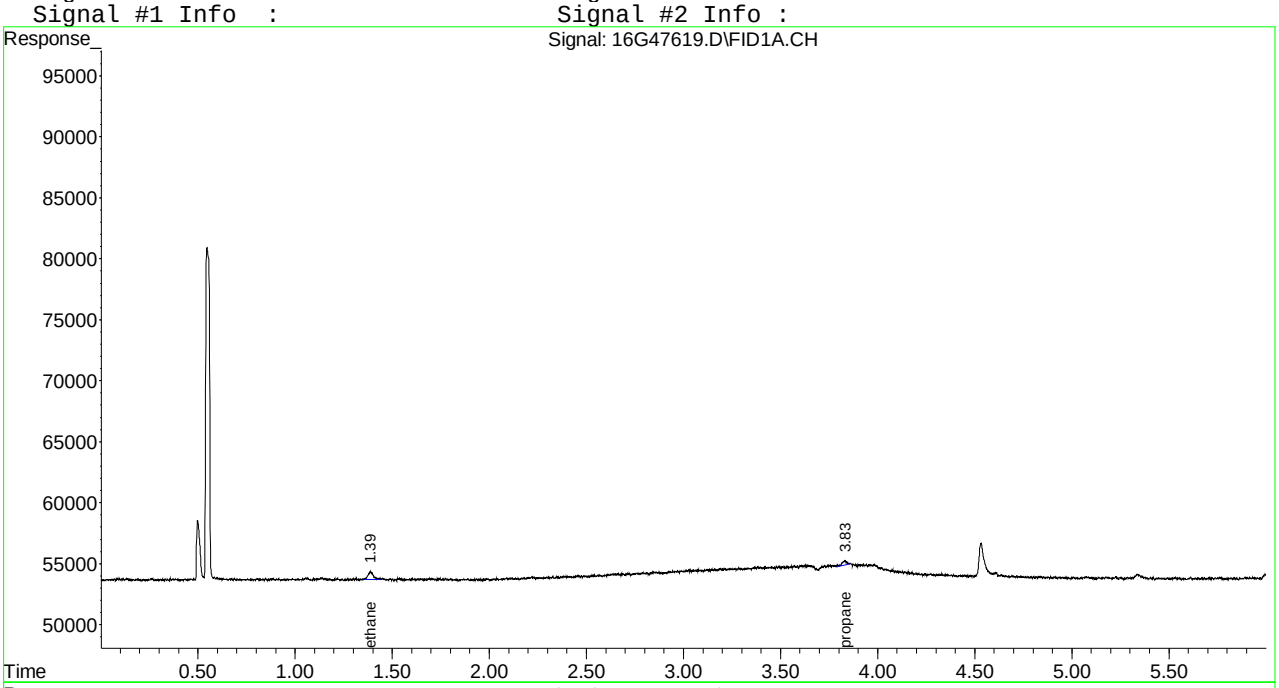

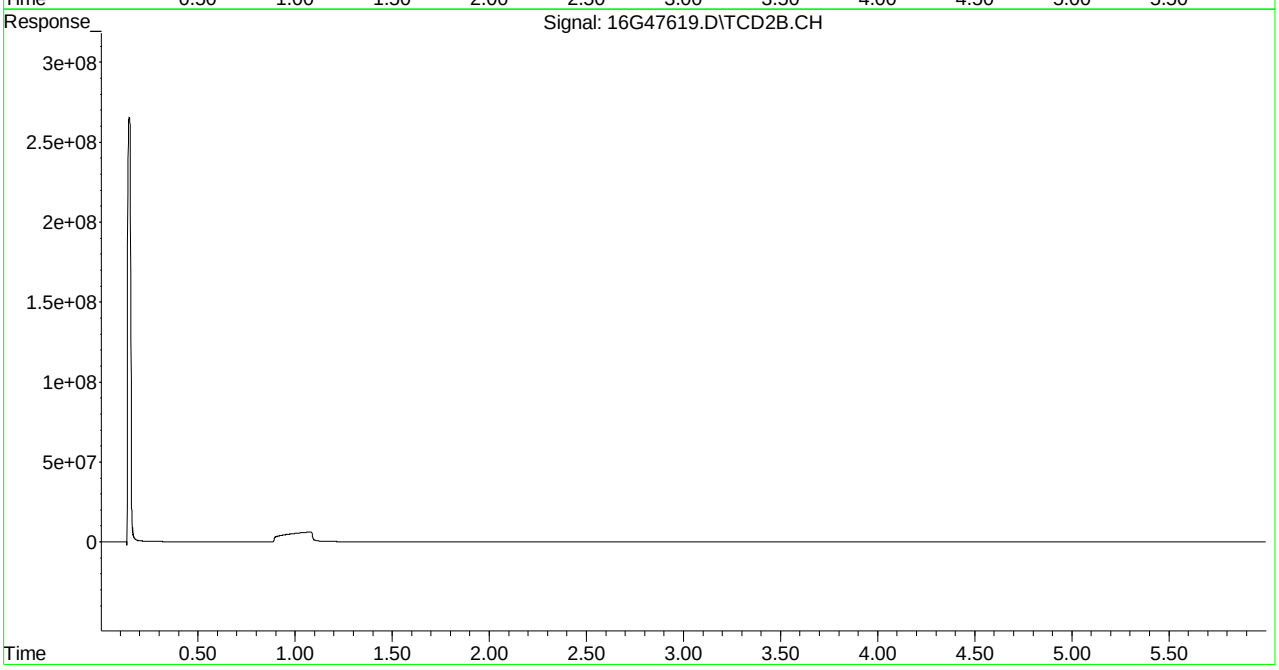

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\052715\16G47656.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\052715\16G47656.D\TCD2B.CH
Acq On : 27 May 2015 12:08 Operator: JDS
Sample : WG525190-01 BLANK RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 27 12:14:55 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	329680	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47656.D RSKEXT1.M Wed May 27 13:20:29 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\052715\16G47656.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\052715\16G47656.D\TCD2B.CH
Acq On : 27 May 2015 12:08 Operator: JDS
Sample : WG525190-01 BLANK RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 27 12:14 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

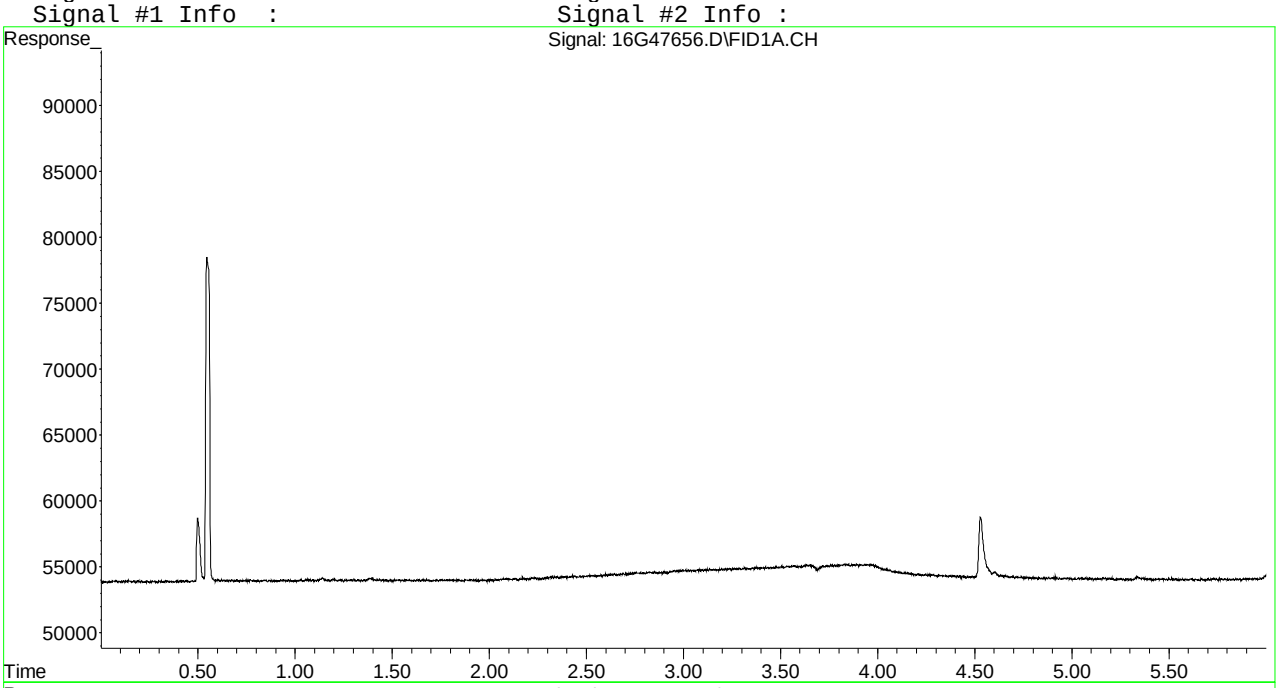

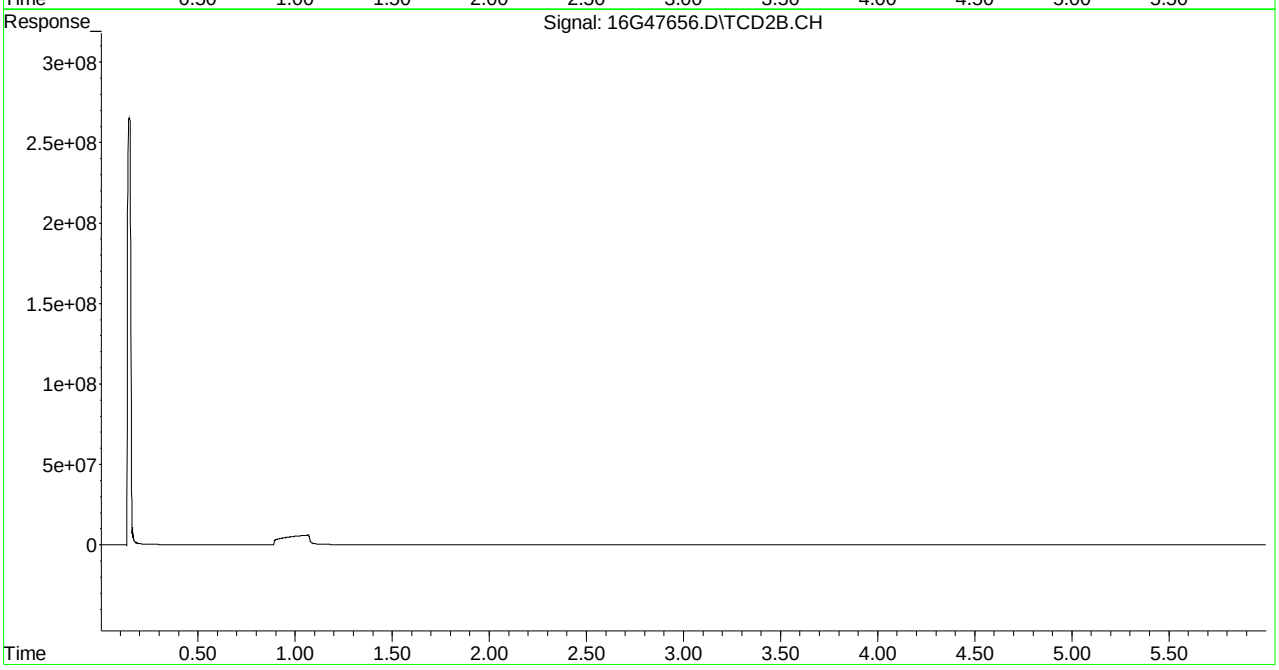

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\052615\16G47620.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDchem\1\DATA\052615\16G47620.D\TCD2B.CH
Acq On : 26 May 2015 9:54 Operator: JDS
Sample : WG524992-02 67umol/mol LCS RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 26 10:01:00 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	12249191	63.819	umol/
2) T	ethene	1.06	19952756	62.899	umol/
3) T	acetylene	1.14	21223933	62.712	umol/
4) T	ethane	1.39	20635643	60.711	umol/
5) T	propane	3.83	29750418	59.932	umol/
6) T	n-butane	5.34	38249248	59.002	umol/
8) T	carbon dioxide	0.20	36238521	6571.049	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47620.D RSKEXT1.M Tue May 26 10:01:00 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\052615\16G47620.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDchem\1\DATA\052615\16G47620.D\TCD2B.CH
Acq On : 26 May 2015 9:54 Operator: JDS
Sample : WG524992-02 67umol/mol LCS RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 26 10:01 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

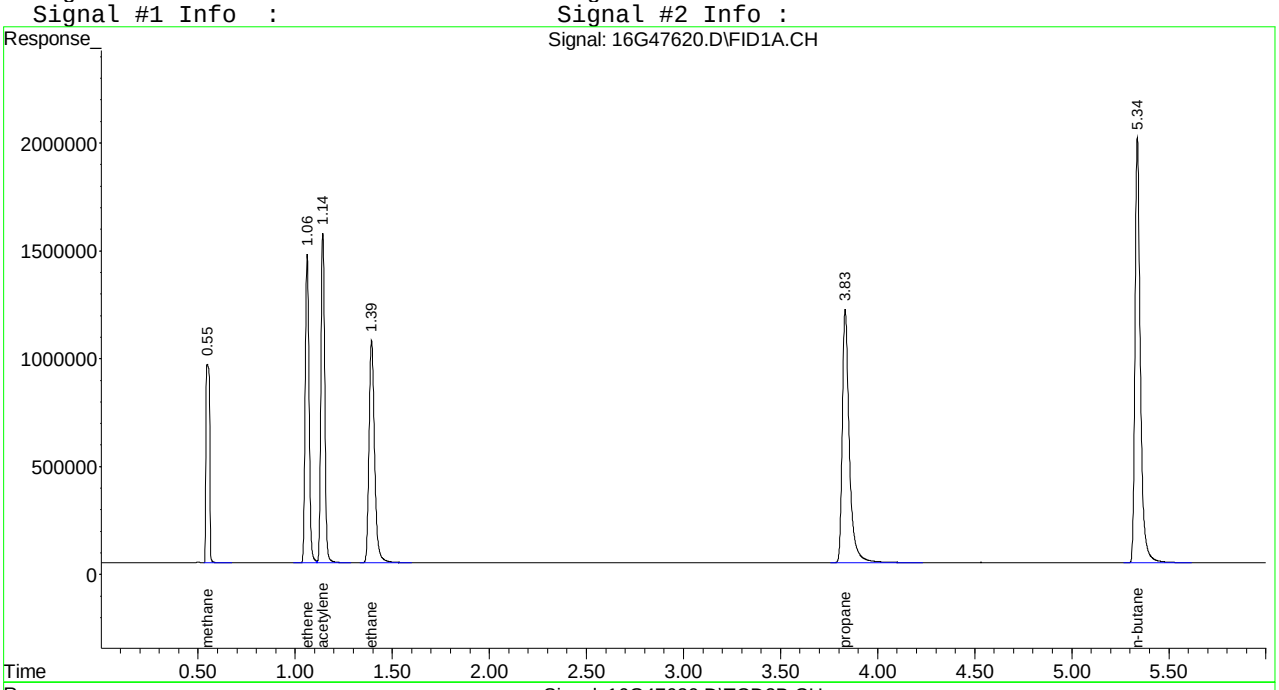

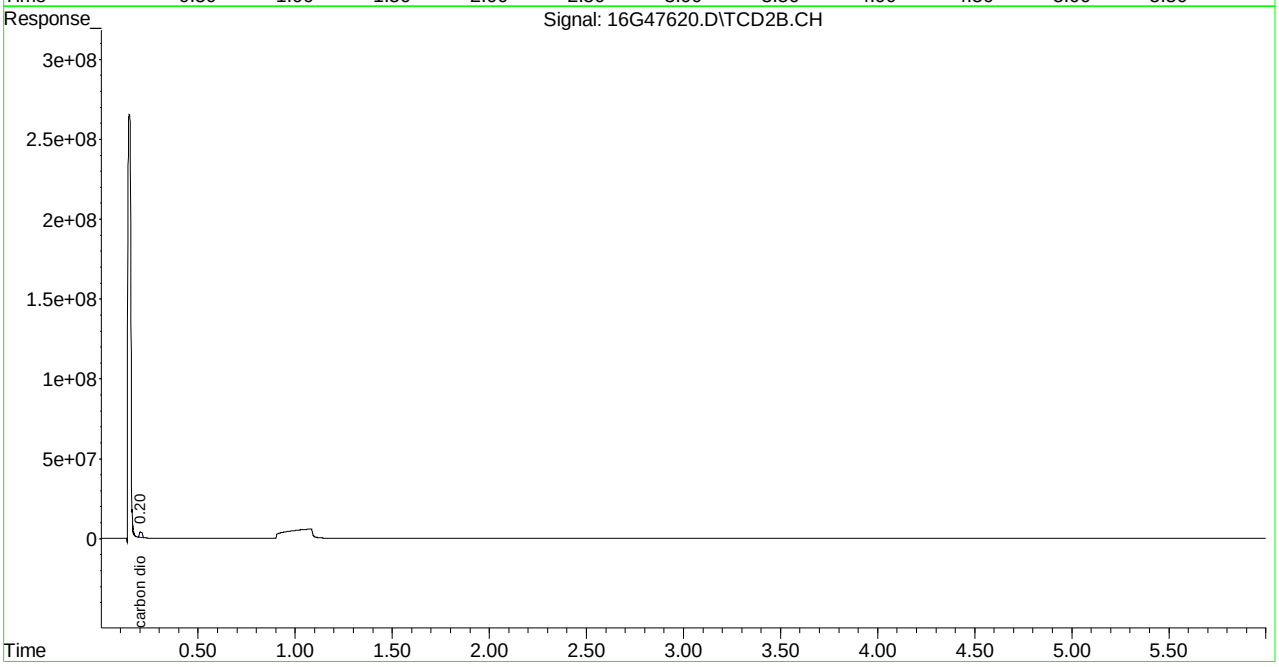

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\052715\16G47657.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDchem\1\DATA\052715\16G47657.D\TCD2B.CH
Acq On : 27 May 2015 12:20 Operator: JDS
Sample : WG525190-02 67umol/mol LCS RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 27 12:26:15 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	12042831	62.706	umol/
2) T	ethene	1.06	19524498	61.549	umol/
3) T	acetylene	1.14	20135061	59.495	umol/
4) T	ethane	1.39	20238487	59.543	umol/
5) T	propane	3.83	29189608	58.802	umol/
6) T	n-butane	5.34	37361584	57.632	umol/
8) T	carbon dioxide	0.20	35507647	6438.521	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47657.D RSKEXT1.M Wed May 27 12:26:15 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\052715\16G47657.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDchem\1\DATA\052715\16G47657.D\TCD2B.CH
Acq On : 27 May 2015 12:20 Operator: JDS
Sample : WG525190-02 67umol/mol LCS RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 27 12:26 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

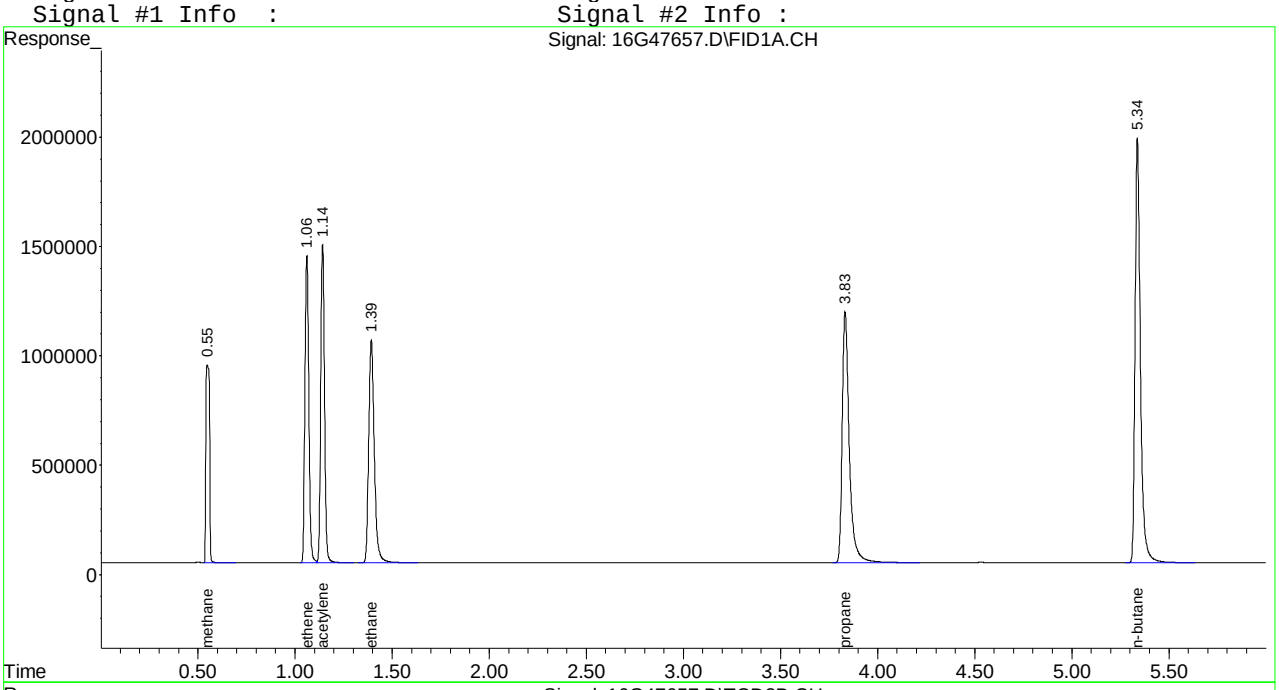

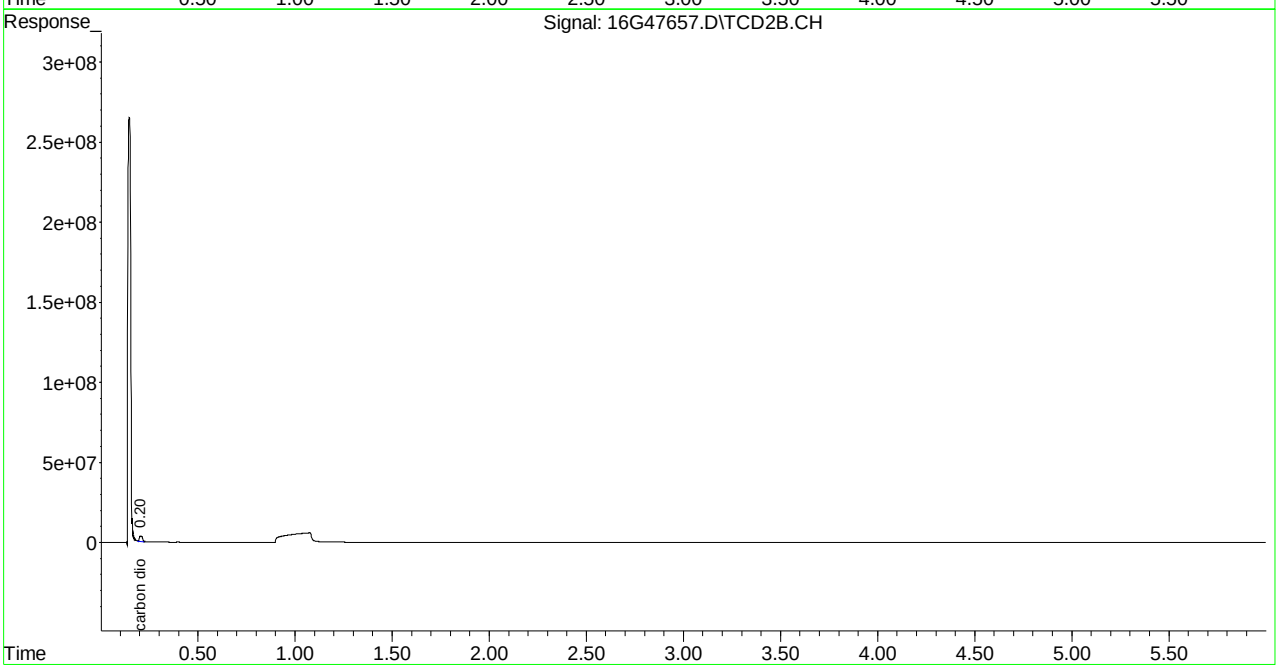

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\052615\16G47621.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDchem\1\DATA\052615\16G47621.D\TCD2B.CH
Acq On : 26 May 2015 10:06 Operator: JDS
Sample : WG524992-03 67umol/mol LCS2 RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 26 10:12:50 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	11998243	62.466	umol/
2) T	ethene	1.06	19495962	61.459	umol/
3) T	acetylene	1.14	20188280	59.652	umol/
4) T	ethane	1.39	20202845	59.438	umol/
5) T	propane	3.83	29196543	58.816	umol/
6) T	n-butane	5.34	36971498	57.031	umol/
8) T	carbon dioxide	0.20	34717507	6295.247	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47621.D RSKEXT1.M Tue May 26 10:12:50 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\052615\16G47621.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDchem\1\DATA\052615\16G47621.D\TCD2B.CH
Acq On : 26 May 2015 10:06 Operator: JDS
Sample : WG524992-03 67umol/mol LCS2 RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 26 10:12 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

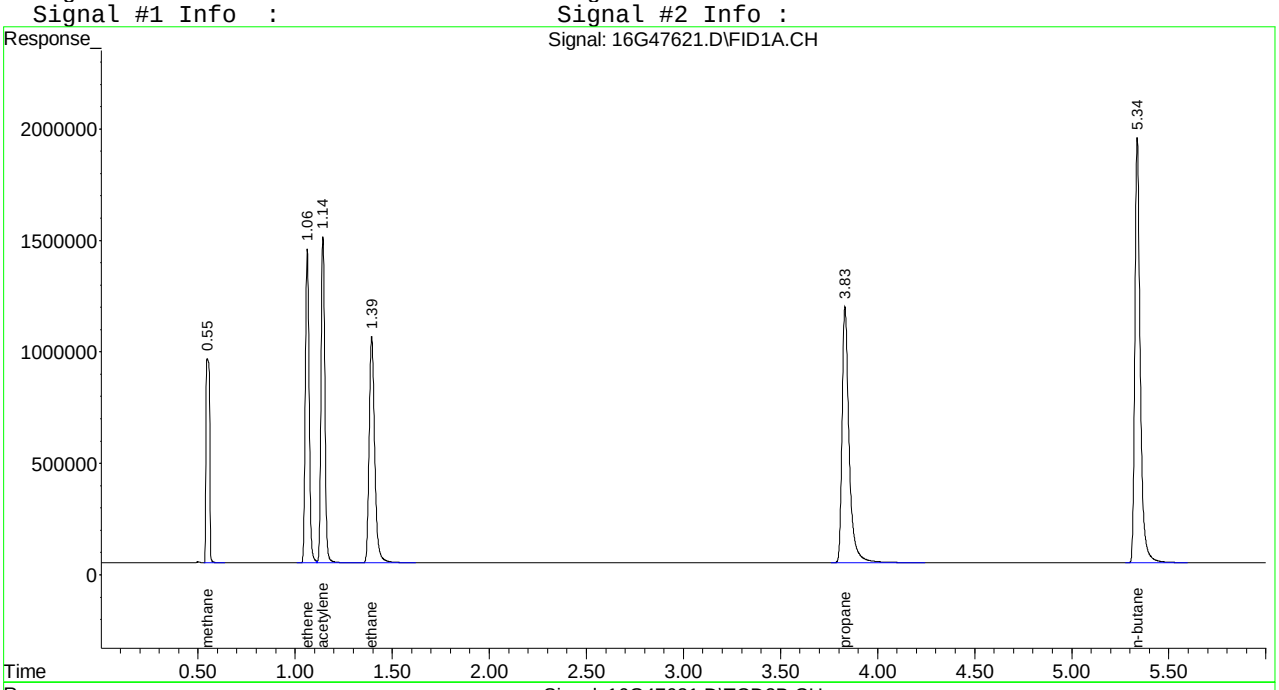

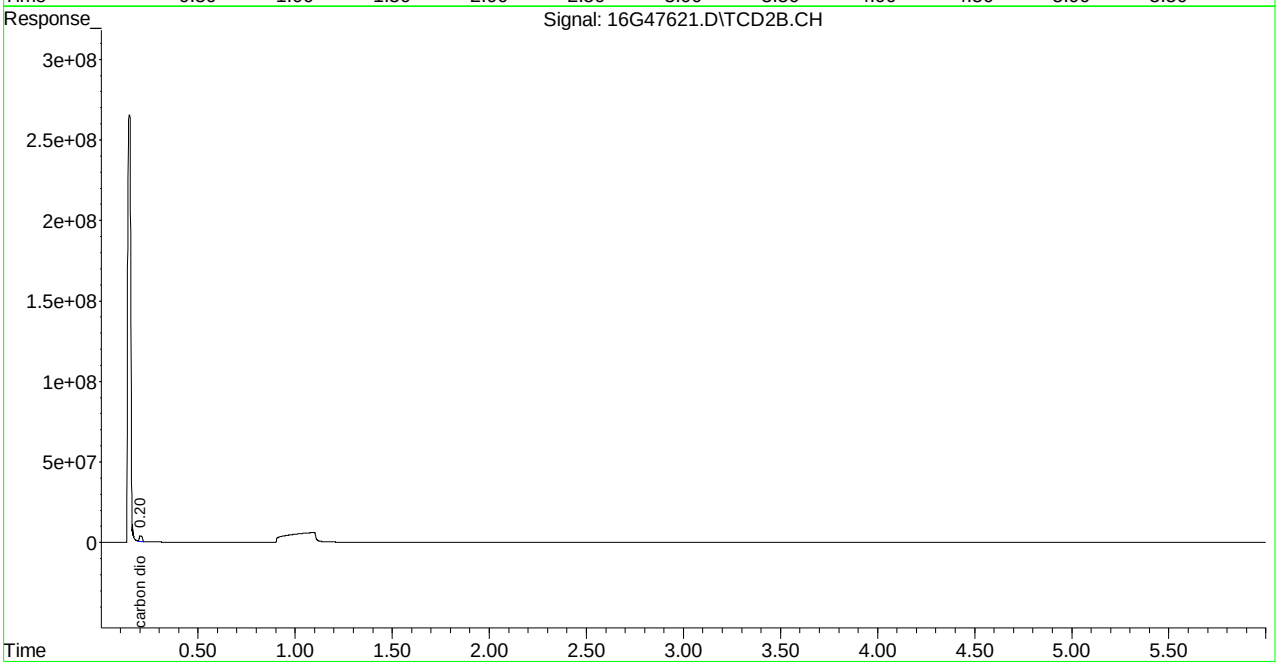

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDchem\1\DATA\052715\16G47658.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDchem\1\DATA\052715\16G47658.D\TCD2B.CH
Acq On    : 27 May 2015  12:31                        Operator: JDS
Sample    : WG525190-03 67umol/mol LCS2 RSK175        Inst    : HP16
Misc      : 1,1 STD68250                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: May 27 12:37:44 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	12196558	63.535	umol/
2) T	ethene	1.06	19934293	62.841	umol/
3) T	acetylene	1.14	20350112	60.130	umol/
4) T	ethane	1.39	20688291	60.866	umol/
5) T	propane	3.83	29924476	60.282	umol/
6) T	n-butane	5.34	37898793	58.461	umol/
8) T	carbon dioxide	0.20	34754226	6301.905	umol/

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\052715\16G47658.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDchem\1\DATA\052715\16G47658.D\TCD2B.CH
Acq On : 27 May 2015 12:31 Operator: JDS
Sample : WG525190-03 67umol/mol LCS2 RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: May 27 12:37 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

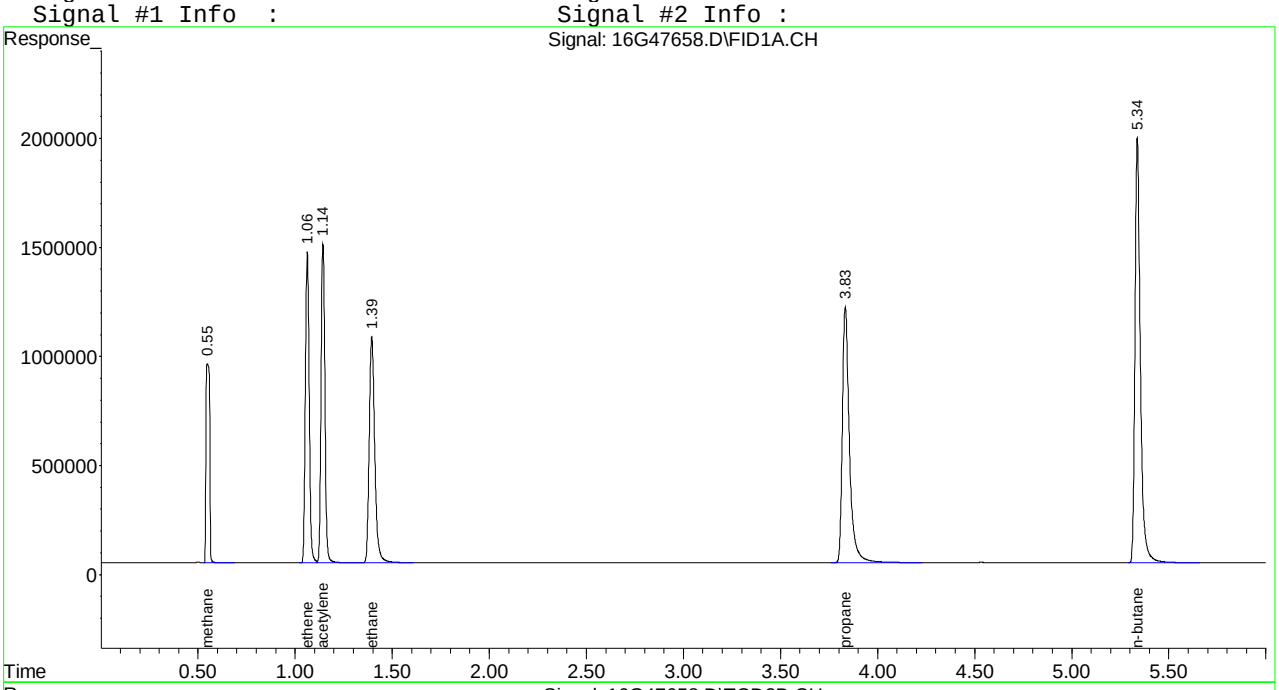

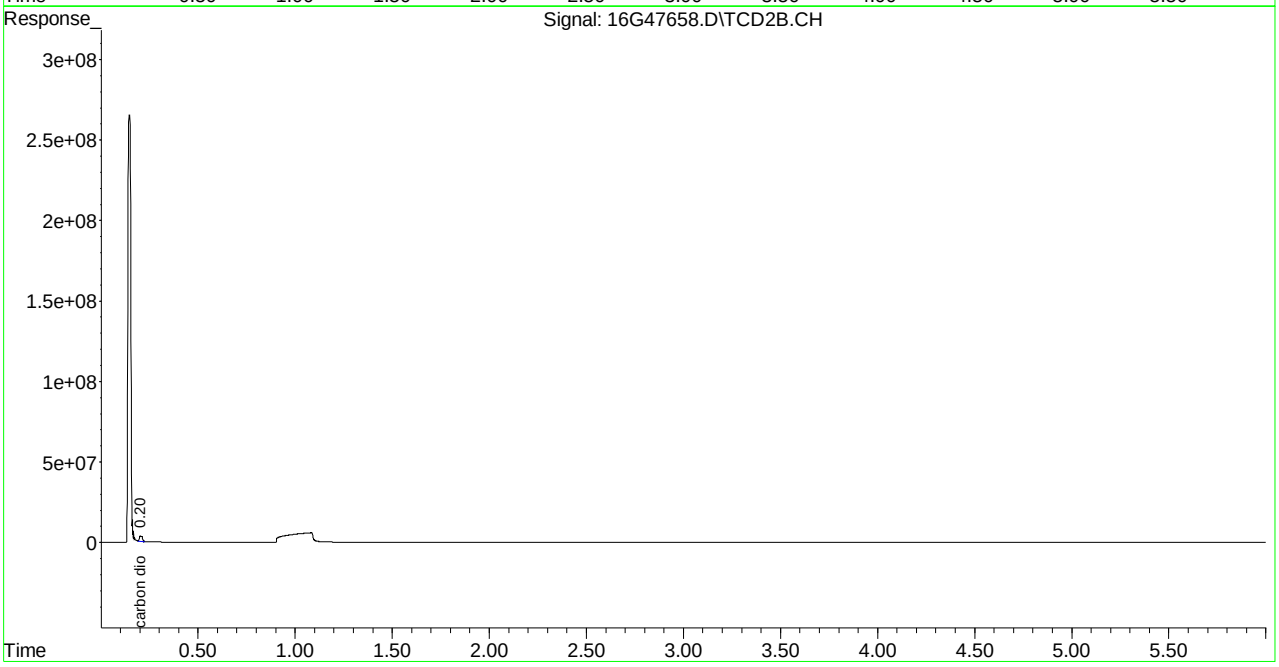

2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051435-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW08-052115	**Prep Method:**	6850	**Prep Date:**	05/27/2015 16:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/27/2015 15:10
Workgroup #:	WG525193	**Analyst:**	JWR	**Run Date:**	05/28/2015 11:42
Collect Date:	05/21/2015 13:55	**Dilution:**	50	**File ID:**	1LM.LM29933
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	200		20.0	10.0	5.00

Certificate of Analysis

Sample #:	L15051435-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW22-052115	**Prep Method:**	6850	**Prep Date:**	05/27/2015 16:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/27/2015 15:10
Workgroup #:	WG525193	**Analyst:**	JWR	**Run Date:**	05/28/2015 12:01
Collect Date:	05/21/2015 15:10	**Dilution:**	1	**File ID:**	1LM.LM29934
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.92		0.400	0.200	0.100

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1446 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG525193-01 MCT	10,330.	
-02 Blank	0.40	
-03 LCS	0.53	
L15051007-01	989.	
-02	169.2	
L15051140-01	185.1	
-02	186.2	
L15051141-01	185.8	
L15051146-01	98.8	
-02	73.6	
-03	80.2	
-04	97.9	
-05	141.4	
-06	116.9	
-07	54.4	
L15051303-01	2,540.	
-03	2,540.	
-05	1,740.	
-07	1,444.	
-09	5,130.	
-11	6,220.	
L15051435-01	2,660.	
-03	4,440.	

Analyst: John Richards

Date/Time: 05/28/15 / 13:30

DCN#110898

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 052715_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 140701254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG525192 (waters) Analytical WG525193 (waters)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD69537 (05/27/2015)

CCV STD: STD69537 LCS STD: STD69913 MS/MSD STD: STD69913

Comments: ICAL WG525179 : Alternate Source STD69913

Samples from workorders L15050604, L15050605, L15051007, L15051146 have no historical results in our LIMS. Samples with no historical results are initially screened at a 100x dilution in order to avoid overloading the LC-analytical column and/or the MS-detector. Samples L15050604-01 and L15051146(-02,-07) were analyzed at dilutions based on their screen results from 05/26/2015.

Samples L15051303(-01,-05,-07,-09) and L15051435-01 were analyzed at dilutions based on their historical results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM29862	WG525179-01 CCB	1	1		05/27/15 12:57
2	1LM.LM29863	WG525179-02 STD (0.1 ug/L)	1	1	STD69537	05/27/15 13:16
3	1LM.LM29864	WG525179-03 STD (0.2 ug/L)	1	1	STD69537	05/27/15 13:35
4	1LM.LM29865	WG525179-04 STD (0.5 ug/L)	1	1	STD69537	05/27/15 13:54
5	1LM.LM29866	WG525179-05 STD (1.0 ug/L)	1	1	STD69537	05/27/15 14:13
6	1LM.LM29867	WG525179-06 STD (2.0 ug/L)	1	1	STD69537	05/27/15 14:32
7	1LM.LM29868	WG525179-07 STD (5.0 ug/L)	1	1	STD69537	05/27/15 14:51
8	1LM.LM29869	WG525179-08 STD (10 ug/L)	1	1	STD69537	05/27/15 15:10
9	1LM.LM29870	WG525179-09 SSCV (1.0 ug/L)	1	1	STD69913	05/27/15 15:28
10	1LM.LM29871	WG525212-01 CCB	1	1		05/27/15 15:58
11	1LM.LM29872	WG525212-02 CCV (1.0ug/L)	1	1	STD69537	05/27/15 16:17
12	1LM.LM29873	WG525192-07 MRL (0.2ug/L)	1	1	STD69537	05/27/15 16:36
13	1LM.LM29874	WG525192-01 MCT (0.2ug/L)	1	1	STD69913	05/27/15 16:55
14	1LM.LM29875	WG525192-02 BLANK	1	1		05/27/15 17:14
15	1LM.LM29876	WG525192-03 LCS (0.2ug/L)	1	1	STD69913	05/27/15 17:33
16	1LM.LM29877	L15050604-01 (10x)	1	10		05/27/15 17:52
17	1LM.LM29878	L15050604-02	1	1		05/27/15 18:21
18	1LM.LM29879	L15050605-01	1	1		05/27/15 18:40
19	1LM.LM29880	L15050605-02	1	1		05/27/15 18:59
20	1LM.LM29881	L15050605-03	1	1		05/27/15 19:18
21	1LM.LM29882	L15050605-04	1	1		05/27/15 19:37
22	1LM.LM29883	L15050605-05	1	1		05/27/15 19:56
23	1LM.LM29884	WG525212-03 CCV (1.0ug/L)	1	1	STD69537	05/27/15 20:15
24	1LM.LM29885	WG525192-08 MRL (0.2ug/L)	1	1	STD69537	05/27/15 20:34
25	1LM.LM29886	WG525212-04 CCB	1	1		05/27/15 20:53
26	1LM.LM29887	L15050605-06	1	1		05/27/15 21:12
27	1LM.LM29888	L15050605-07 RS	1	1		05/27/15 21:31
28	1LM.LM29889	L15050605-08 MS	1	1	STD69913	05/27/15 21:49
29	1LM.LM29890	L15050605-09 MSD	1	1	STD69913	05/27/15 22:08
30	1LM.LM29891	L15050605-10	1	1		05/27/15 22:27

Page: 1 Approved: 29-MAY-15

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 052715_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 140701254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG525192 (waters) Analytical WG525193 (waters)

Internal STD: COA18071 Surrogate STD: NA STD69537 (05/27/2015)

CCV STD: STD69537 LCS STD: STD69913 STD69913

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
31	1LM.LM29892	L15050605-11	1	1		05/27/15 22:46
32	1LM.LM29893	L15050605-12	1	1		05/27/15 23:05
33	1LM.LM29894	L15050605-13	1	1		05/27/15 23:24
34	1LM.LM29895	L15050605-14	1	1		05/27/15 23:43
35	1LM.LM29896	L15050605-15	1	1		05/28/15 00:02
36	1LM.LM29897	WG525212-05 CCV (1.0ug/L)	1	1	STD69537	05/28/15 00:21
37	1LM.LM29898	WG525192-09 MRL (0.2ug/L)	1	1	STD69537	05/28/15 00:40
38	1LM.LM29899	WG525193-07 MRL (0.2ug/L)	1	1	STD69537	05/28/15 00:59
39	1LM.LM29900	WG525212-06 CCB	1	1		05/28/15 01:18
40	1LM.LM29901	L15050605-16	1	1		05/28/15 01:37
41	1LM.LM29902	L15050605-17	1	1		05/28/15 01:56
42	1LM.LM29903	WG525193-01 MCT (0.2ug/L)	1	1	STD69913	05/28/15 02:14
43	1LM.LM29904	WG525193-02 BLANK	1	1		05/28/15 02:33
44	1LM.LM29905	WG525193-03 LCS (0.2ug/L)	1	1	STD69913	05/28/15 02:52
45	1LM.LM29906	L15051007-01 REF	1	1		05/28/15 03:11
46	1LM.LM29907	L15051007-01 MS	1	1	STD69913	05/28/15 03:30
47	1LM.LM29908	L15051007-01 MSD	1	1	STD69913	05/28/15 03:49
48	1LM.LM29909	L15051007-02	1	1		05/28/15 04:08
49	1LM.LM29910	WG525212-07 CCV (1.0ug/L)	1	1	STD69537	05/28/15 04:27
50	1LM.LM29911	WG525192-10 MRL (0.2ug/L)	1	1	STD69537	05/28/15 04:46
51	1LM.LM29912	WG525193-08 MRL (0.2ug/L)	1	1	STD69537	05/28/15 05:05
52	1LM.LM29913	WG525212-08 CCB	1	1		05/28/15 05:24
53	1LM.LM29914	L15051140-01 (NR)	1	1		05/28/15 05:43
54	1LM.LM29915	L15051140-02 (NR)	1	1		05/28/15 06:02
55	1LM.LM29916	L15051141-01 (NR)	1	1		05/28/15 06:20
56	1LM.LM29917	L15051146-01 (NR)	1	1		05/28/15 06:39
57	1LM.LM29918	L15051146-02 (5x)	1	5		05/28/15 06:58
58	1LM.LM29919	L15051146-03	1	1		05/28/15 07:17
59	1LM.LM29920	L15051146-04	1	1		05/28/15 07:36
60	1LM.LM29921	L15051146-05	1	1		05/28/15 07:55
61	1LM.LM29922	L15051146-06	1	1		05/28/15 08:14
62	1LM.LM29923	L15051146-07 (10x)	1	10		05/28/15 08:33
63	1LM.LM29924	WG525212-09 CCV (1.0ug/L)	1	1	STD69537	05/28/15 08:52
64	1LM.LM29925	WG525193-09 MRL (0.2ug/L)	1	1	STD69537	05/28/15 09:11
65	1LM.LM29926	WG525212-10 CCB	1	1		05/28/15 09:30
66	1LM.LM29927	L15051303-01 (500x) (NR)	1	500		05/28/15 09:49

Page: 2 Approved: 29-MAY-15

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 052715_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 140701254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG525192 (waters) Analytical WG525193 (waters)

Internal STD: COA18071 Surrogate STD: NA STD69537 (05/27/2015)

CCV STD: STD69537 LCS STD: STD69913 STD69913

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
67	1LM.LM29928	L15051303-03	1	1		05/28/15 10:08
68	1LM.LM29929	L15051303-05 (2,000x)	1	2000		05/28/15 10:27
69	1LM.LM29930	L15051303-07 (1,000x)	1	1000		05/28/15 10:46
70	1LM.LM29931	L15051303-09 (10,000x)	1	10000		05/28/15 11:04
71	1LM.LM29932	L15051303-11 (NR)	1	1		05/28/15 11:23
72	1LM.LM29933	L15051435-01 (50x)	1	50		05/28/15 11:42
73	1LM.LM29934	L15051435-03	1	1		05/28/15 12:01
74	1LM.LM29935	WG525212-11 CCV (1.0ug/L)	1	1	STD69537	05/28/15 12:20
75	1LM.LM29936	WG525193-10 MRL (0.2ug/L)	1	1	STD69537	05/28/15 12:39
76	1LM.LM29937	WG525212-12 CCB	1	1		05/28/15 12:58
77	1LM.LM29938	L15051140-01 (RR 50x)	1	50		05/28/15 13:30
78	1LM.LM29939	L15051140-02 (RR 100x)	1	100		05/28/15 13:49
79	1LM.LM29940	L15051141-01 (RR 100x)	1	100		05/28/15 14:08
80	1LM.LM29941	L15051146-01 (RR Neat)	1	1		05/28/15 14:27
81	1LM.LM29942	L15051303-01 (RR 100x)	1	100		05/28/15 14:46
82	1LM.LM29943	L15051303-11 (RR 10x)	1	10		05/28/15 15:04
83	1LM.LM29944	WG525212-13 CCV (1.0ug/L)	1	1	STD69537	05/28/15 15:23
84	1LM.LM29945	WG525193-11 MRL (0.2ug/L)	1	1	STD69537	05/28/15 15:42
85	1LM.LM29946	WG525212-14 CCB	1	1		05/28/15 16:01

Comments

Seq.	Rerun	Dil.	Reason	Analytes
53	X	50	Over Calibration Range	
	L15051140-01 (NR) : This sample was reanalyzed at a 50x dilution on the end of this run.			
54	X	100	Over Calibration Range	
	L15051140-02 (NR) : This sample was reanalyzed at a 100x dilution on the end of this run.			
55	X	100	Over Calibration Range	
	L15051141-01 (NR) : This sample was reanalyzed at a 100x dilution on the end of this run.			
56	X	1		
	L15051146-01 (NR) : This sample was reanalyzed neat on the end of this run as a precautionary measure in order to prevent reporting any carryover that may occur from the three "over-range" samples injected prior to this sample.			
66	X	100	Analyzed too dilute	
	L15051303-01 (500x) (NR) : This sample was reanalyzed at a 100x dilution on the end of this run.			
71	X	10	Over Calibration Range	
	L15051303-11 (NR) : This sample was reanalyzed at a 10x dilution on the end of this run.			

Page: 3 Approved: 29-MAY-15

Microbac Laboratories Inc.

Data Checklist

Date: 27-MAY-2015
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG525179
Runlog ID: 68271
Analytical Workgroups: L15050604, 0605, 1007, 1140, 1141, 1146, 1303, 1435 (WATERS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 29-MAY-2015 John Richards

Secondary Reviewer: 29-MAY-2015 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-29-2015 11:32:03

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG525193

Login Number: L15051435

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW08-052115	01	05/21/15					05/27/2015	6.1	28		05/28/15	.8	28	
50WW22-052115	03	05/21/15					05/27/2015	6.1	28		05/28/15	.8	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4205485
Report generated 05/29/2015 13:30

METHOD BLANK SUMMARY

Login Number: L15051435
Blank File ID: 1LM.LM29904
Prep Date: 05/27/15 16:30
Analyzed Date: 05/28/15 02:33
Analyst: JWR

Work Group: WG525193
Blank Sample ID: WG525193-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG525193-07	1LM.LM29899	05/28/15 00:59	01
MCT	WG525193-01	1LM.LM29903	05/28/15 02:14	01
LCS	WG525193-03	1LM.LM29905	05/28/15 02:52	01
QCMRL	WG525193-08	1LM.LM29912	05/28/15 05:05	01
QCMRL	WG525193-09	1LM.LM29925	05/28/15 09:11	01
50WW08-052115	L15051435-01	1LM.LM29933	05/28/15 11:42	DL01
50WW22-052115	L15051435-03	1LM.LM29934	05/28/15 12:01	01
QCMRL	WG525193-10	1LM.LM29936	05/28/15 12:39	01
QCMRL	WG525193-11	1LM.LM29945	05/28/15 15:42	01

Report Name: BLANK_SUMMARY
PDF File ID: 4205486
Report generated 05/29/2015 13:30

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051435 Prep Date: 05/27/15 16:30 Sample ID: WG525193-02
Instrument ID: LCMS1 Run Date: 05/28/15 02:33 Prep Method: 6850
File ID: 1LM.LM29904 Analyst: JWR Method: 6850
Workgroup (AAB#): WG525193 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-27-MAY-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4205487
29-MAY-2015 13:30

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051435 Run Date: 05/28/2015 Sample ID: WG525193-03
Instrument ID: LCMS1 Run Time: 02:52 Prep Method: 6850
File ID: 1LM.LM29905 Analyst: JWR Method: 6850
Workgroup (AAB#): WG525193 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD69913 Cal ID: LCMS1-27-MAY-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	0.200	0.200	100	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4205488
Report generated: 05/29/2015 13:30

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L15051435
Analytical Method: 6850
ICAL Workgroup: WG525179

Instrument ID: LCMS1
Initial Calibration Date: 27-MAY-15 15:10
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		0.7866	4.69	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4205744
Report generated 05/29/2015 13:30

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15051435

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 27-MAY-15 15:10

Column ID: F

Analyte	WG525179-02			WG525179-03			WG525179-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	4310.00000	0.7490	0.200	9360.00000	0.7980	0.500	23600.0000	0.7980

INT_CAL - Modified 03/06/2008
PDF File ID: 4205744
Report generated 05/29/2015 13:30

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15051435

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 27-MAY-15 15:10

Column ID: F

Analyte	WG525179-05			WG525179-06			WG525179-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	47200.0000	0.8170	2.00	90300.0000	0.7730	5.00	223000.000	0.8100

INT_CAL - Modified 03/06/2008
PDF File ID: 4205744
Report generated 05/29/2015 13:30

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15051435

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 27-MAY-15 15:10

Column ID: F

Analyte	WG525179-08		
	CONC	RESP	RF
Perchlorate	10.0	418000.000	0.7610

INT_CAL - Modified 03/06/2008

PDF File ID: 4205744

Report generated 05/29/2015 13:30

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15051435 Run Date: 05/27/2015 Sample ID: WG525179-09
Instrument ID: LCMS1 Run Time: 15:28 Method: 6850
File ID: 1LM.LM29870 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG525179 Cal ID: LCMS1 - 27-MAY-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.981	ug/L	0.767	1.90	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4205745
Report generated 05/29/2015 13:31

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051435
Run Date: 05/27/2015
Sample ID: WG525212-04
Instrument ID: LCMS1
Run Time: 20:53
Method: 6850
File ID: 1LM.LM29886
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG525193
Cal ID: LCMS1 - 27-MAY-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4205491
Report generated 05/29/2015 13:31

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051435
Run Date: 05/28/2015
Sample ID: WG525212-06
Instrument ID: LCMS1
Run Time: 01:18
Method: 6850
File ID: 1LM.LM29900
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG525193
Cal ID: LCMS1 - 27-MAY-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4205491
Report generated 05/29/2015 13:31

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051435
Run Date: 05/28/2015
Sample ID: WG525212-08
Instrument ID: LCMS1
Run Time: 05:24
Method: 6850
File ID: 1LM.LM29913
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG525193
Cal ID: LCMS1 - 27-MAY-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4205491
Report generated 05/29/2015 13:31

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051435
Run Date: 05/28/2015
Sample ID: WG525212-10
Instrument ID: LCMS1
Run Time: 09:30
Method: 6850
File ID: 1LM.LM29926
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG525193
Cal ID: LCMS1 - 27-MAY-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4205491
Report generated 05/29/2015 13:31

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051435
Run Date: 05/28/2015
Sample ID: WG525212-12
Instrument ID: LCMS1
Run Time: 12:58
Method: 6850
File ID: 1LM.LM29937
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG525193
Cal ID: LCMS1 - 27-MAY-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4205491
Report generated 05/29/2015 13:31

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051435
Run Date: 05/28/2015
Sample ID: WG525212-14
Instrument ID: LCMS1
Run Time: 16:01
Method: 6850
File ID: 1LM.LM29946
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG525193
Cal ID: LCMS1 - 27-MAY-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4205491
Report generated 05/29/2015 13:31

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051435
Run Date: 05/28/2015
Sample ID: WG525212-05
Instrument ID: LCMS1
Run Time: 00:21
Method: 6850
File ID: 1LM.LM29897
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG525193
Cal ID: LCMS1 - 27-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.05	ug/L	0.819	5.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4205490
Report generated 05/29/2015 13:31

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051435
Run Date: 05/28/2015
Sample ID: WG525212-07
Instrument ID: LCMS1
Run Time: 04:27
Method: 6850
File ID: 1LM.LM29910
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG525193
Cal ID: LCMS1 - 27-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.05	ug/L	0.817	5.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4205490
Report generated 05/29/2015 13:31

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051435
Run Date: 05/28/2015
Sample ID: WG525212-09
Instrument ID: LCMS1
Run Time: 08:52
Method: 6850
File ID: 1LM.LM29924
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG525193
Cal ID: LCMS1 - 27-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.09	ug/L	0.852	9.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4205490
Report generated 05/29/2015 13:31

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051435
Run Date: 05/28/2015
Sample ID: WG525212-11
Instrument ID: LCMS1
Run Time: 12:20
Method: 6850
File ID: 1LM.LM29935
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG525193
Cal ID: LCMS1 - 27-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.06	ug/L	0.832	6.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4205490
Report generated 05/29/2015 13:31

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051435
Run Date: 05/28/2015
Sample ID: WG525212-13
Instrument ID: LCMS1
Run Time: 15:23
Method: 6850
File ID: 1LM.LM29944
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG525193
Cal ID: LCMS1 - 27-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.08	ug/L	0.845	8.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4205490
Report generated 05/29/2015 13:31

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15051435 Run Date: 05/28/2015 Sample ID: WG525193-07
Instrument ID: LCMS1 Run Time: 00:59 Prep Method: 6850
File ID: 1LM.LM29899 Analyst: JWR Method: 6850
Workgroup (AAB#): WG525193 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-27-MAY-15

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.222	111	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4205489
Report generated 05/29/2015 13:30

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15051435 Run Date: 05/28/2015 Sample ID: WG525193-08
Instrument ID: LCMS1 Run Time: 05:05 Prep Method: 6850
File ID: 1LM.LM29912 Analyst: JWR Method: 6850
Workgroup (AAB#): WG525193 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-27-MAY-15

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.219	110	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4205489
Report generated 05/29/2015 13:30

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15051435 Run Date: 05/28/2015 Sample ID: WG525193-09
Instrument ID: LCMS1 Run Time: 09:11 Prep Method: 6850
File ID: 1LM.LM29925 Analyst: JWR Method: 6850
Workgroup (AAB#): WG525193 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-27-MAY-15

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.221	111	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4205489
Report generated 05/29/2015 13:30

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15051435 Run Date: 05/28/2015 Sample ID: WG525193-10
Instrument ID: LCMS1 Run Time: 12:39 Prep Method: 6850
File ID: 1LM.LM29936 Analyst: JWR Method: 6850
Workgroup (AAB#): WG525193 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-27-MAY-15

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.212	106	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4205489
Report generated 05/29/2015 13:30

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15051435 Run Date: 05/28/2015 Sample ID: WG525193-11
Instrument ID: LCMS1 Run Time: 15:42 Prep Method: 6850
File ID: 1LM.LM29945 Analyst: JWR Method: 6850
Workgroup (AAB#): WG525193 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-27-MAY-15

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.208	104	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4205489
Report generated 05/29/2015 13:30

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L15051435
Instrument ID: LCMS1
Workgroup (AAB#): WG525193

ICAL CCV Number: WG525179-05
CAL ID: LCMS1-27-MAY-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG525179	NA	NA	287000
Upper Limit	NA	NA	430500
Lower Limit	NA	NA	143500
L15051435-01	50.0	DL01	333000
L15051435-03	1.00	01	318000
WG525193-02	1.00	01	352000
WG525193-03	1.00	01	331000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4205492
Report generated 05/29/2015 13:31

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051435	**Prep Method:**	6850	**Samplenum:**	L15051435-01
Instrument:	LCMS1	**Prep Date:**	05/27/2015 16:30	**File ID:**	1LM.LM29933
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/28/2015 11:42	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	208000	78600	2.65	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051435	**Prep Method:**	6850	**Samplenum:**	L15051435-03
Instrument:	LCMS1	**Prep Date:**	05/27/2015 16:30	**File ID:**	1LM.LM29934
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/28/2015 12:01	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	145000	54600	2.66	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051435	**Prep Method:**		**Samplenum:**	WG525179-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29863
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/27/2015 13:16	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	4310	1720	2.51	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051435	**Prep Method:**		**Samplenum:**	WG525179-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29864
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/27/2015 13:35	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	9360	3750	2.50	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051435	**Prep Method:**		**Samplenum:**	WG525179-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29865
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/27/2015 13:54	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	23600	8730	2.70	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051435	**Prep Method:**		**Samplenum:**	WG525179-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29866
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/27/2015 14:13	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	47200	17600	2.68	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051435	**Prep Method:**		**Samplenum:**	WG525179-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29867
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/27/2015 14:32	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	90300	33900	2.66	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051435	**Prep Method:**		**Samplenum:**	WG525179-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29868
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/27/2015 14:51	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	223000	83400	2.67	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051435	**Prep Method:**		**Samplenum:**	WG525179-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29869
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/27/2015 15:10	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	418000	160000	2.61	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051435	**Prep Method:**		**Samplenum:**	WG525179-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29870
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/27/2015 15:28	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	44900	16700	2.69	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051435	**Prep Method:**	6850	**Samplenum:**	WG525193-01
Instrument:	LCMS1	**Prep Date:**	05/27/2015 16:30	**File ID:**	1LM.LM29903
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/28/2015 02:14	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	11300	4540	2.49	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051435	**Prep Method:**	6850	**Samplenum:**	WG525193-02
Instrument:	LCMS1	**Prep Date:**	05/27/2015 16:30	**File ID:**	1LM.LM29904
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/28/2015 02:33	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051435	**Prep Method:**	6850	**Samplenum:**	WG525193-03
Instrument:	LCMS1	**Prep Date:**	05/27/2015 16:30	**File ID:**	1LM.LM29905
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/28/2015 02:52	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	10500	4160	2.52	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051435	**Prep Method:**	6850	**Samplenum:**	WG525193-07
Instrument:	LCMS1	**Prep Date:**	05/27/2015 16:30	**File ID:**	1LM.LM29899
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/28/2015 00:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	11600	4300	2.70	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051435	**Prep Method:**	6850	**Samplenum:**	WG525193-08
Instrument:	LCMS1	**Prep Date:**	05/27/2015 16:30	**File ID:**	1LM.LM29912
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/28/2015 05:05	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	12000	4810	2.49	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051435	**Prep Method:**	6850	**Samplenum:**	WG525193-09
Instrument:	LCMS1	**Prep Date:**	05/27/2015 16:30	**File ID:**	1LM.LM29925
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/28/2015 09:11	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	11400	4590	2.48	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051435	**Prep Method:**	6850	**Samplenum:**	WG525193-10
Instrument:	LCMS1	**Prep Date:**	05/27/2015 16:30	**File ID:**	1LM.LM29936
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/28/2015 12:39	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	11700	4310	2.71	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051435	**Prep Method:**	6850	**Samplenum:**	WG525193-11
Instrument:	LCMS1	**Prep Date:**	05/27/2015 16:30	**File ID:**	1LM.LM29945
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/28/2015 15:42	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	11200	4390	2.55	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051435	**Prep Method:**		**Samplenum:**	WG525212-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29886
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/27/2015 20:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	404	191	2.12	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051435	**Prep Method:**		**Samplenum:**	WG525212-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29897
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/28/2015 00:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	53500	20800	2.57	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051435	**Prep Method:**		**Samplenum:**	WG525212-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29900
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/28/2015 01:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	263	189	1.39	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051435	**Prep Method:**		**Samplenum:**	WG525212-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29910
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/28/2015 04:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	55400	20900	2.65	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051435	**Prep Method:**		**Samplenum:**	WG525212-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29913
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/28/2015 05:24	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	366	272	1.35	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051435	**Prep Method:**		**Samplenum:**	WG525212-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29924
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/28/2015 08:52	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	55500	21100	2.63	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051435	**Prep Method:**		**Samplenum:**	WG525212-10
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29926
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/28/2015 09:30	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	118	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051435	**Prep Method:**		**Samplenum:**	WG525212-11
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29935
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/28/2015 12:20	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	58500	21300	2.75	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051435	**Prep Method:**		**Samplenum:**	WG525212-12
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29937
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/28/2015 12:58	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	514	169	3.04	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051435	**Prep Method:**		**Samplenum:**	WG525212-13
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29944
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/28/2015 15:23	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	58400	22000	2.65	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051435	**Prep Method:**		**Samplenum:**	WG525212-14
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29946
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525193	**Analysis Date:**	05/28/2015 16:01	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	615	121	5.08	2.3	3.8	*

2.2.1.3 Sample Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/28/2015 5:18 PM

Data File	LM29933.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 11:42:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15051435-01 (50x)	**Injection Vial**	55.00
Data File	LM29933.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 11:42:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	L15051435-01	**Dilution Factor**	1.00
Sample Comment	1,50 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.330e+05	10.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.080e+05	11.00	N/A	4.00
Perchlorate conf	7.860e+04	10.90	N/A	3.99

O18LP (Internal Standard)

RT (Exp. RT): 10.90(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

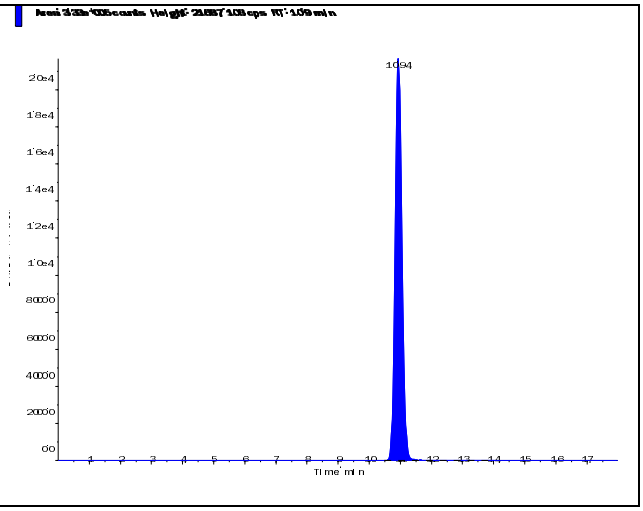

s.dataFile Page 1 of 2

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Created with Analyst Reporter
Printed: 5/28/2015 5:18 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.00 (11.10) min
Calculated conc:	4.00 ng/ml
Area Ratio:	0.623
Sample Type:	(Unknown)

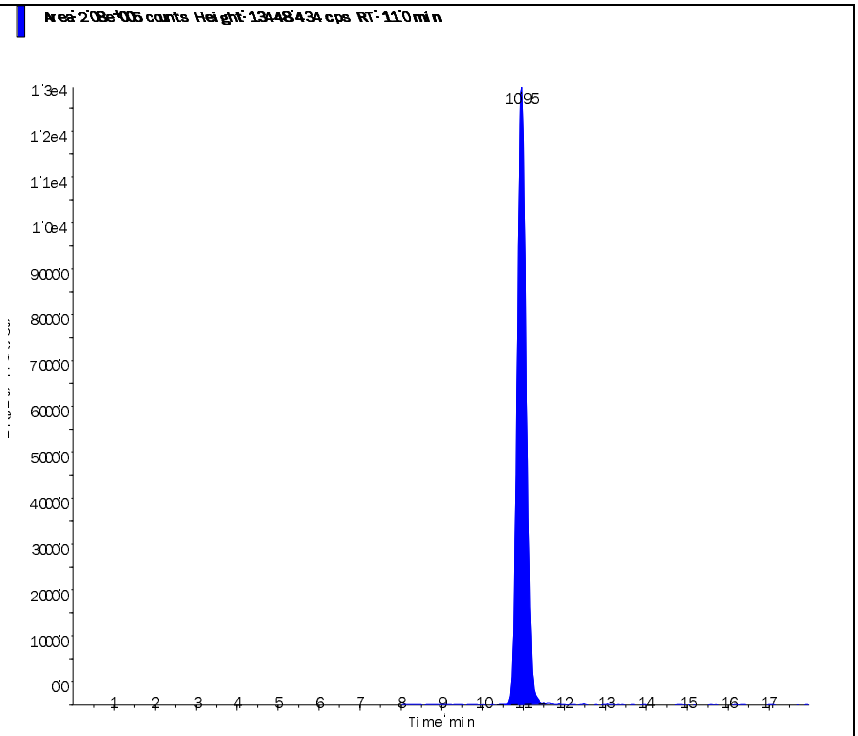

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.90 (11.10) min
Calculated conc:	3.99 ng/ml
Area Ratio:	0.236
Sample Type:	(Unknown)

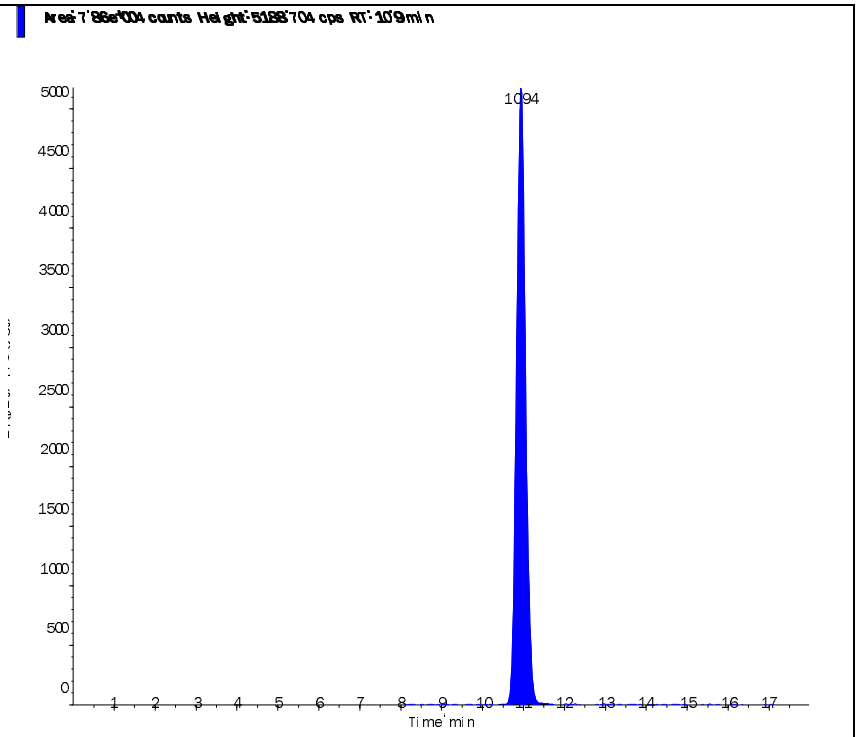

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/28/2015 5:19 PM

Data File	LM29934.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 12:01:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15051435-03	**Injection Vial**	56.00
Data File	LM29934.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 12:01:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	L15051435-03	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.180e+05	10.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.450e+05	10.70	N/A	2.92
Perchlorate conf	5.460e+04	10.70	N/A	2.90

O18LP (Internal Standard)

RT (Exp. RT): 10.70(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

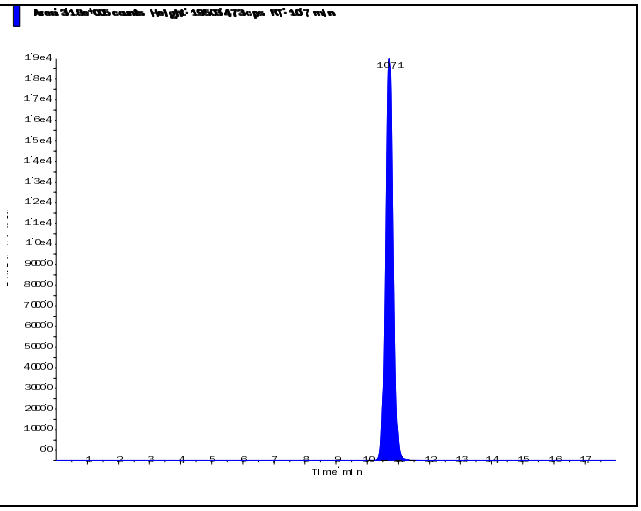

s.dataFile Page 1 of 2

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Created with Analyst Reporter
Printed: 5/28/2015 5:19 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.70 (11.10) min
Calculated conc:	2.92 ng/ml
Area Ratio:	0.455
Sample Type:	(Unknown)

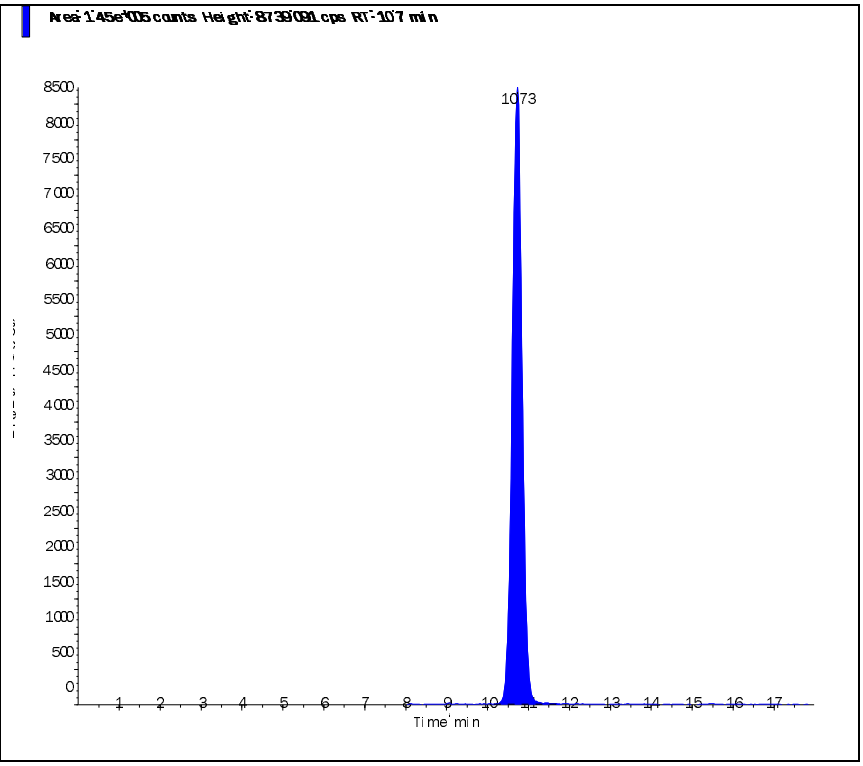

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.70 (11.10) min
Calculated conc:	2.90 ng/ml
Area Ratio:	0.172
Sample Type:	(Unknown)

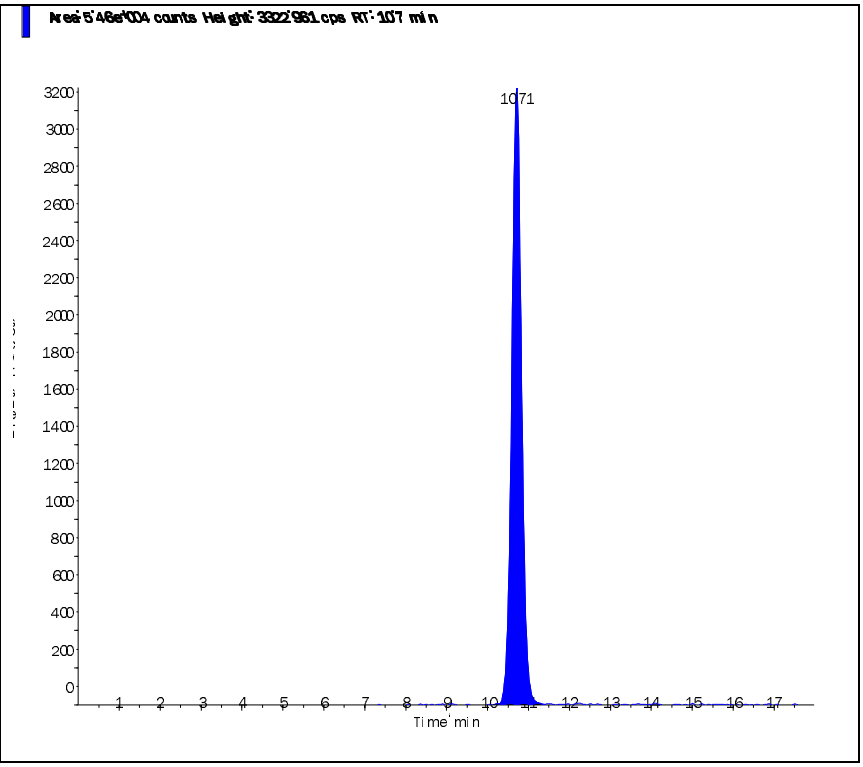

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2.2.1.4 Standards Data

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Data File	LM29862.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/27/2015 12:57:31 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525179-01 CCB	**Injection Vial**	1.00
Data File	LM29862.wiff	**Injection Volume**	10.00
Acquisition Date	5/27/2015 12:57:31 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525179-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.960e+05	11.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 11.10(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

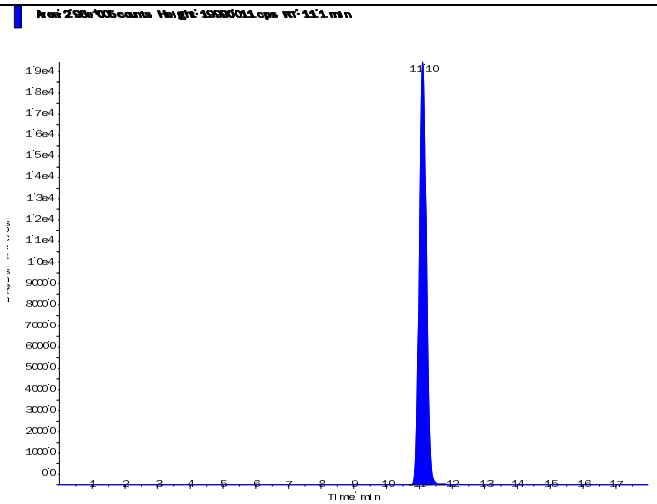

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (11.10) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	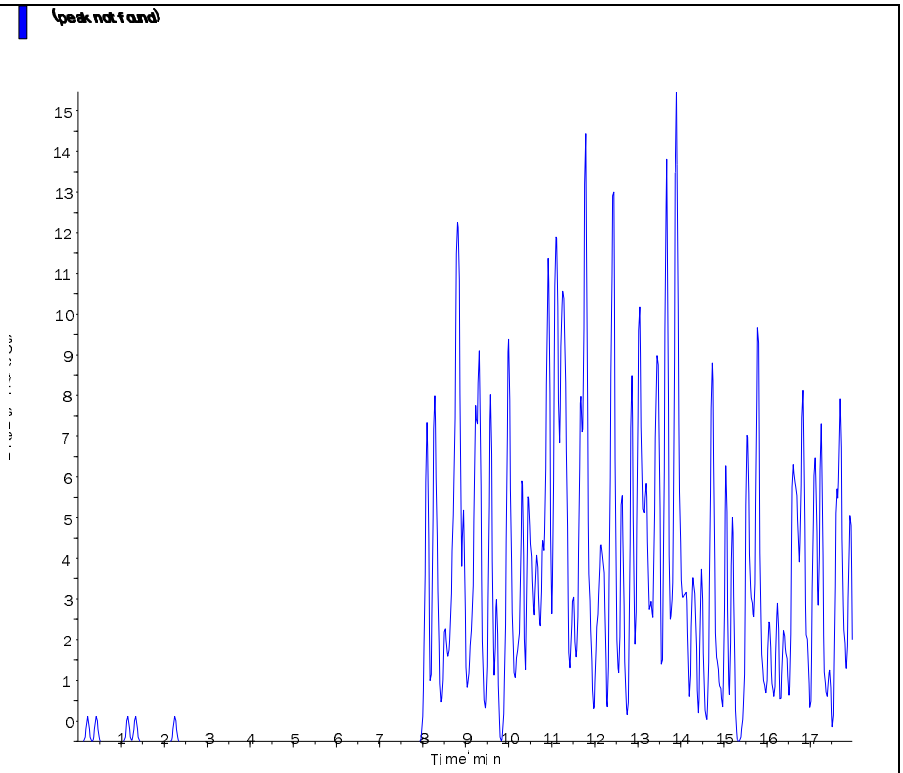
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (11.10) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	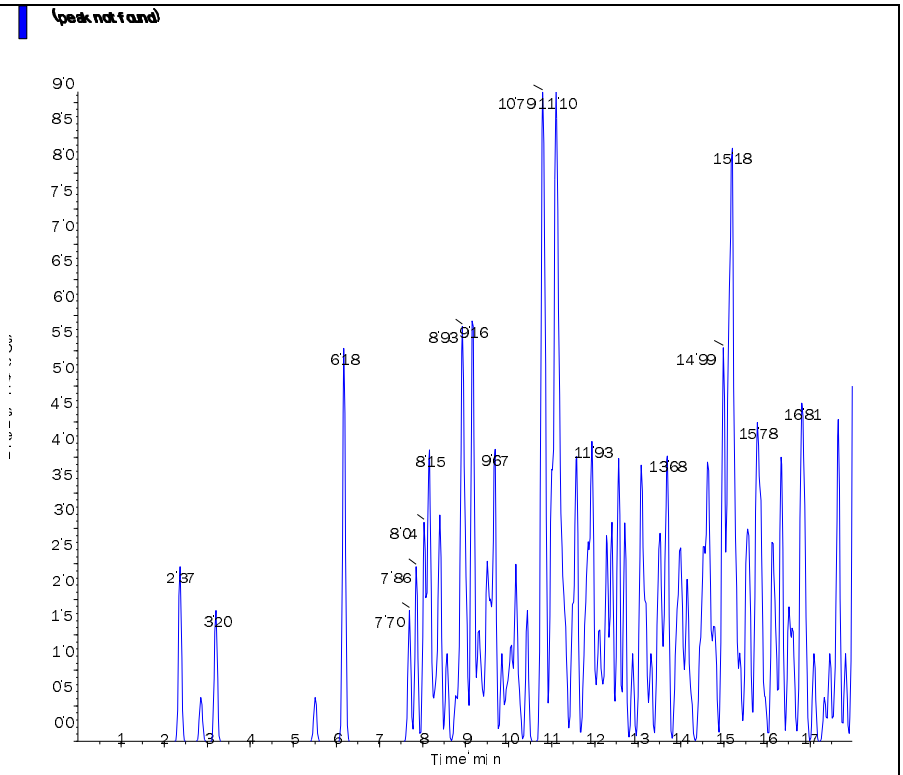

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Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM29862.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/27/2015 12:57:31 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.778 x + 0.000602 (r = 0.9995)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	92.4	N/A	N/A
0.20	1	0.20	100.5	N/A	N/A
0.50	1	0.51	101.7	N/A	N/A
1.00	1	1.05	104.6	N/A	N/A
2.00	1	1.98	99.1	N/A	N/A
5.00	1	5.20	104.0	N/A	N/A
10.00	1	9.77	97.7	N/A	N/A

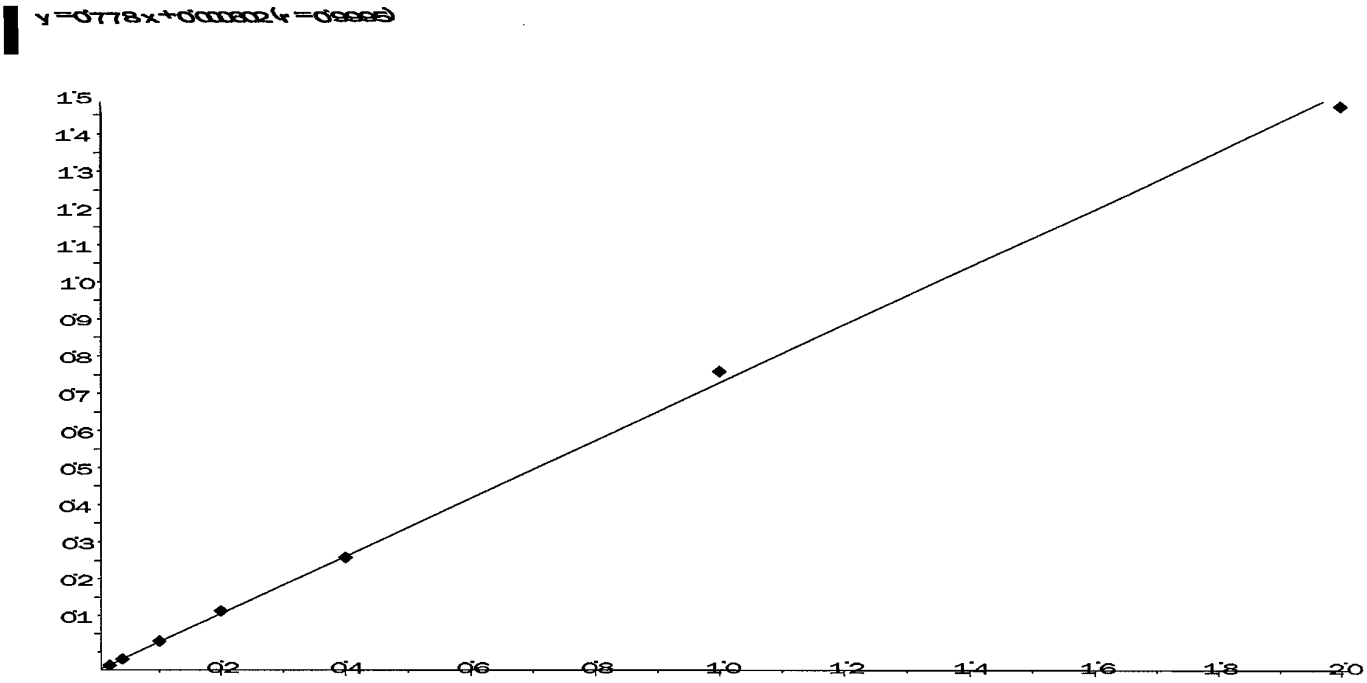

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Created with Analyst Reporter
Printed: 5/28/2015 4:54 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM29862.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/27/2015 12:57:31 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.295 x + 0.000432 (r = 0.9998)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	94.3	N/A	N/A
0.20	1	0.21	104.7	N/A	N/A
0.50	1	0.49	98.7	N/A	N/A
1.00	1	1.03	103.0	N/A	N/A
2.00	1	1.96	97.9	N/A	N/A
5.00	1	5.13	102.6	N/A	N/A
10.00	1	9.89	98.9	N/A	N/A

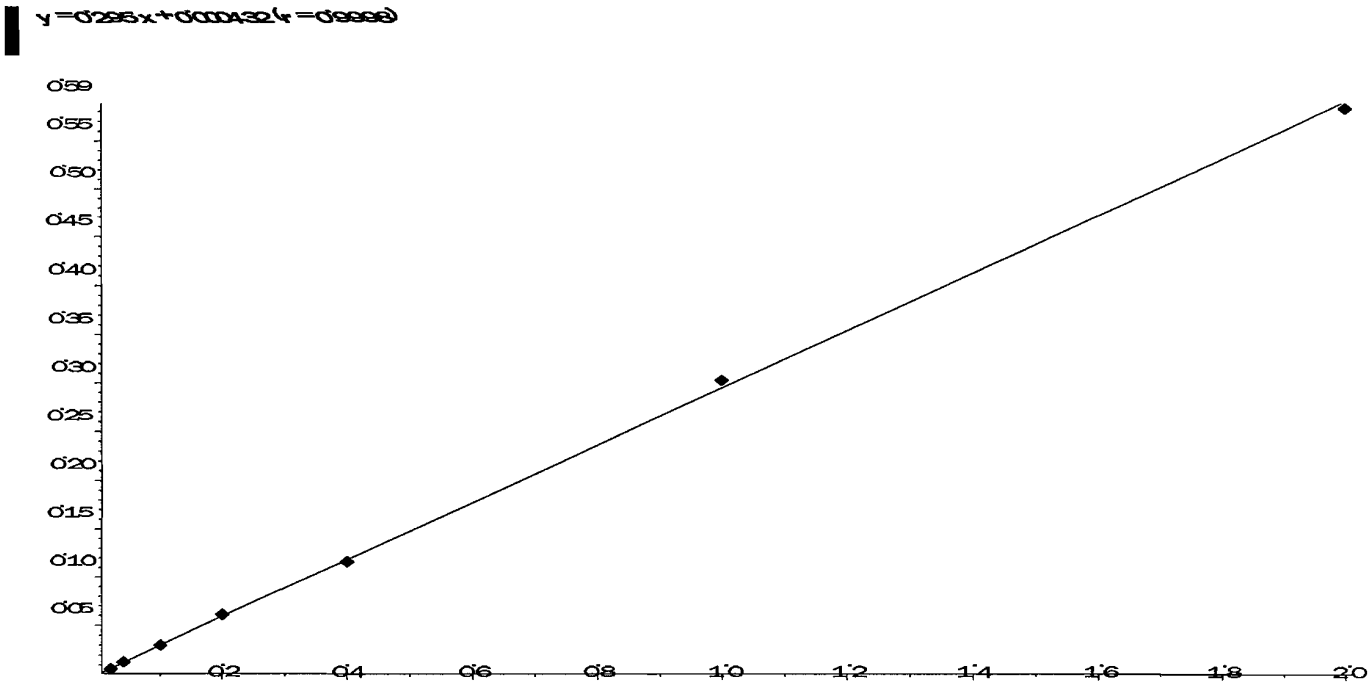

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Data File	LM29863.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/27/2015 1:16:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525179-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM29863.wiff	**Injection Volume**	10.00
Acquisition Date	5/27/2015 1:16:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525179-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.880e+05	11.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.310e+03	11.20	0.10	0.0924
Perchlorate conf	1.720e+03	11.10	0.10	0.0943

O18LP (Internal Standard)

RT (Exp. RT): 11.10(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

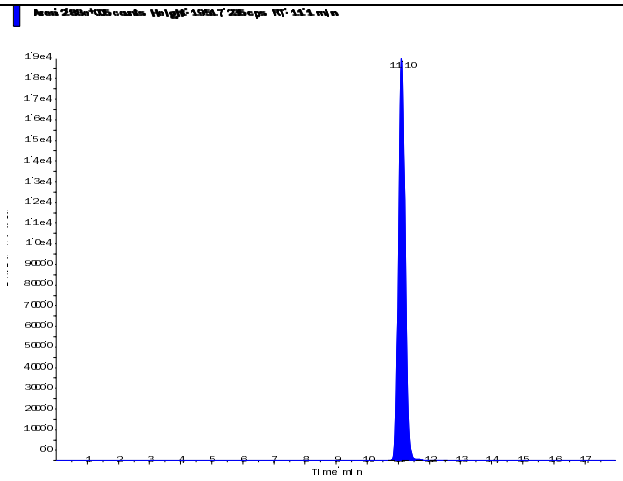

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.20 (11.10) min
Calculated conc:	0.0924 ng/ml
Area Ratio:	0.015
Sample Type:	(Standard)

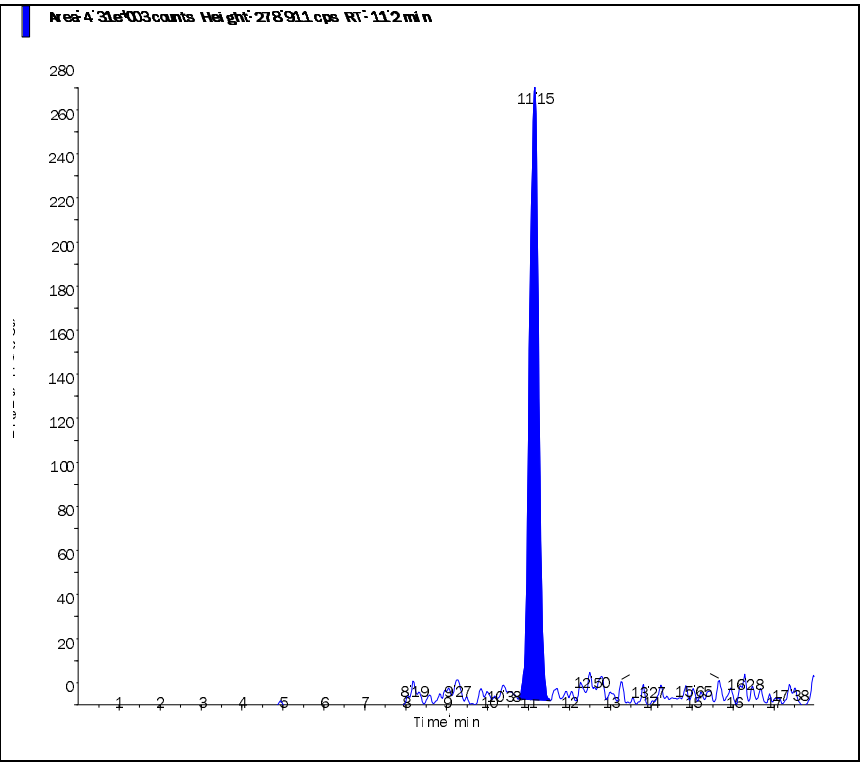

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.10 (11.10) min
Calculated conc:	0.0943 ng/ml
Area Ratio:	0.006
Sample Type:	(Standard)

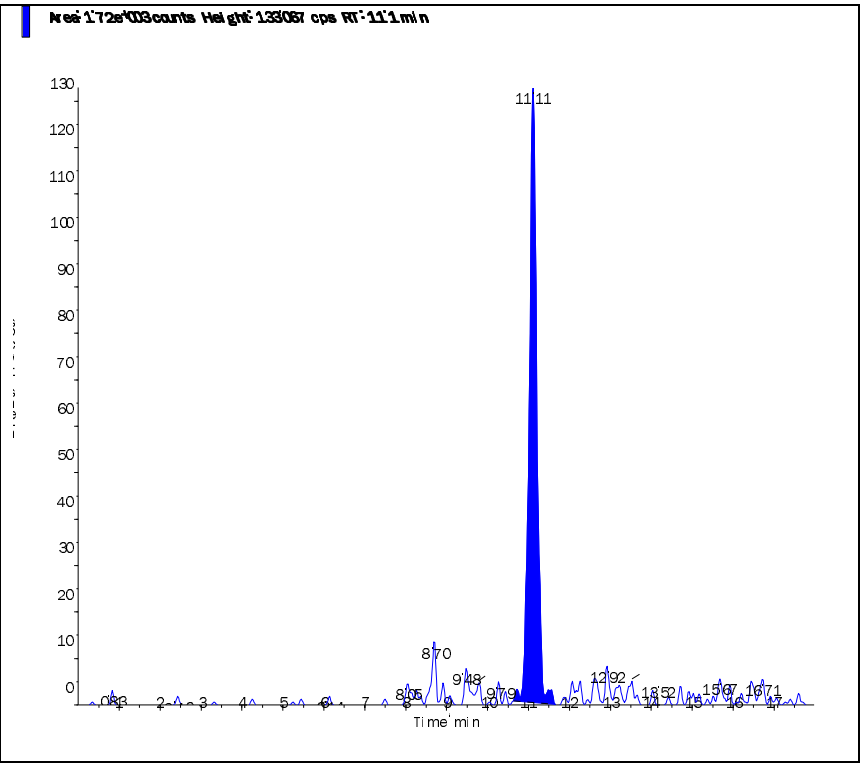

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Data File	LM29864.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/27/2015 1:35:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525179-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM29864.wiff	**Injection Volume**	10.00
Acquisition Date	5/27/2015 1:35:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525179-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.930e+05	11.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	9.360e+03	11.10	0.20	0.201
Perchlorate conf	3.750e+03	11.10	0.20	0.209

O18LP (Internal Standard)

RT (Exp. RT): 11.10(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

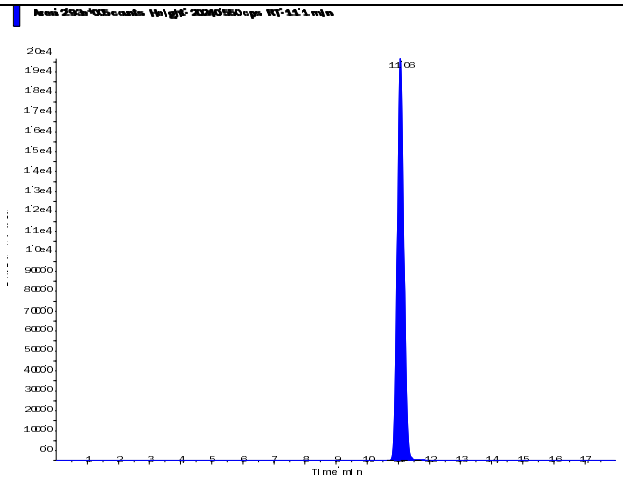

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.10 (11.10) min Calculated conc: 0.201 ng/ml Area Ratio: 0.032 Sample Type: (Standard)	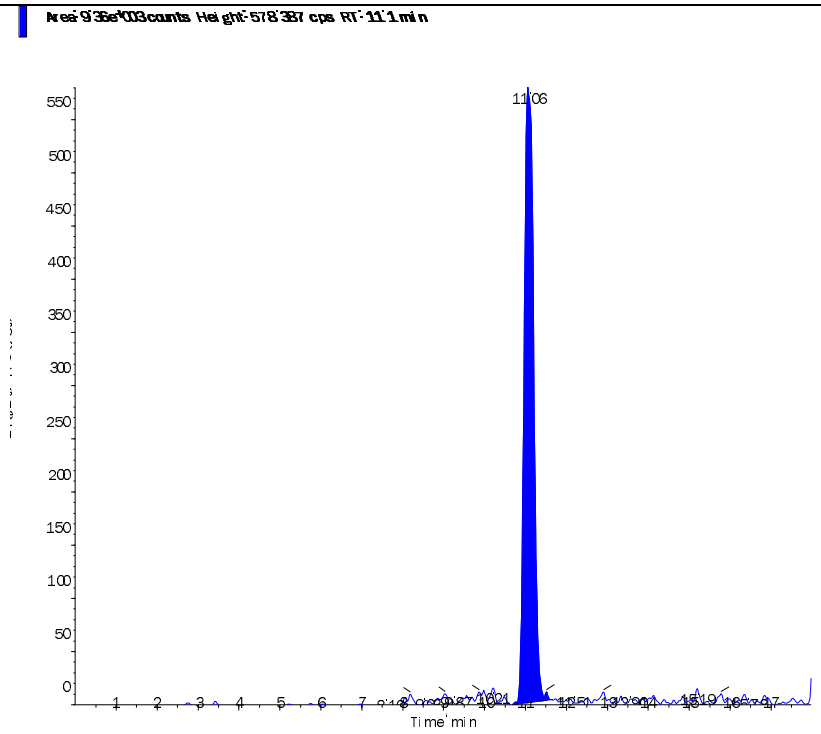
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.10 (11.10) min Calculated conc: 0.209 ng/ml Area Ratio: 0.013 Sample Type: (Standard)	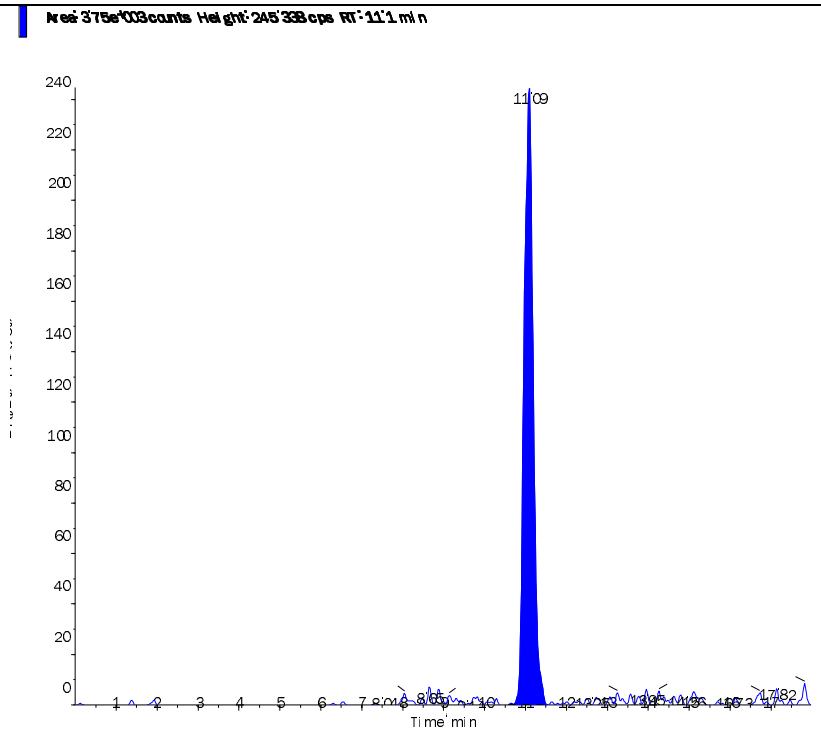

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Data File	LM29865.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/27/2015 1:54:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525179-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM29865.wiff	**Injection Volume**	10.00
Acquisition Date	5/27/2015 1:54:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525179-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.960e+05	11.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.360e+04	11.10	0.50	0.509
Perchlorate conf	8.730e+03	11.10	0.50	0.493

O18LP (Internal Standard)

RT (Exp. RT): 11.10(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

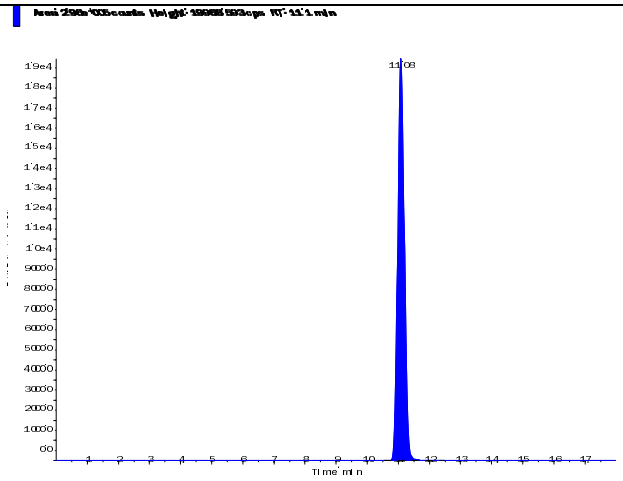

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.10 (11.10) min Calculated conc: 0.509 ng/ml Area Ratio: 0.08 Sample Type: (Standard)	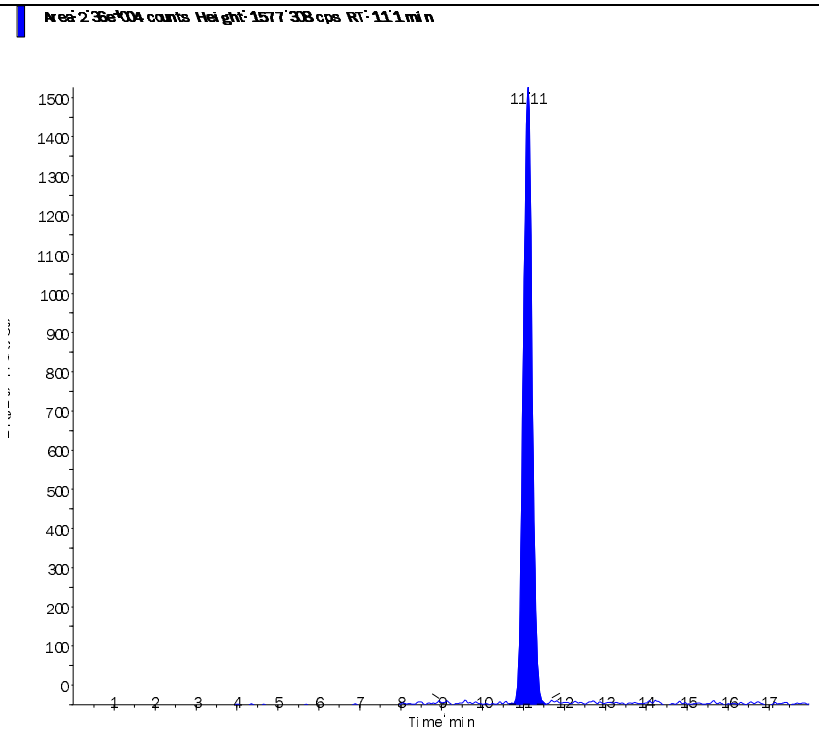
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.10 (11.10) min Calculated conc: 0.493 ng/ml Area Ratio: 0.03 Sample Type: (Standard)	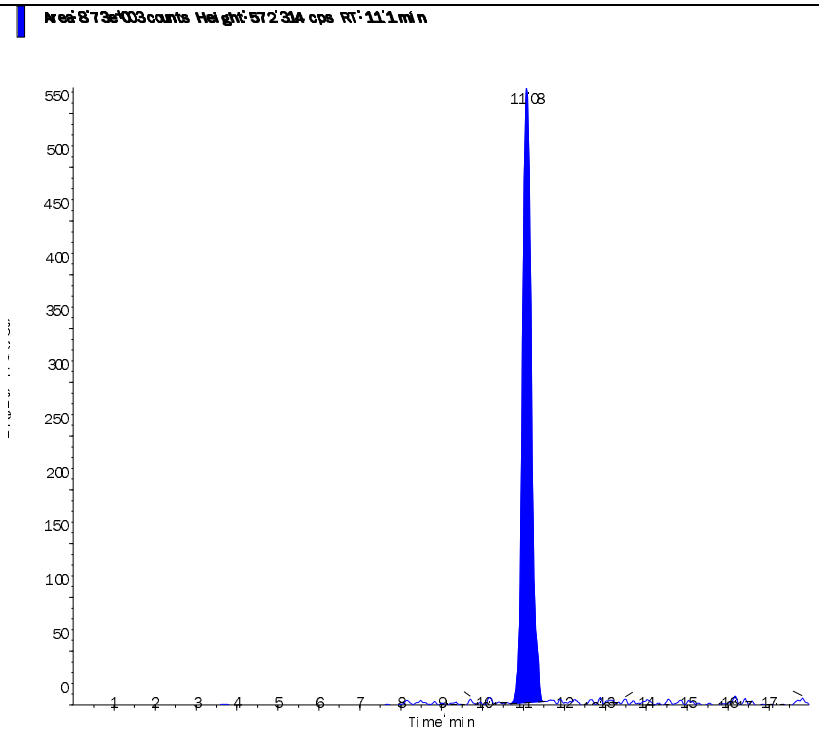

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Data File	LM29866.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/27/2015 2:13:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525179-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM29866.wiff	**Injection Volume**	10.00
Acquisition Date	5/27/2015 2:13:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525179-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.890e+05	11.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.720e+04	11.10	1.00	1.05
Perchlorate conf	1.760e+04	11.10	1.00	1.03

O18LP (Internal Standard)

RT (Exp. RT): 11.10(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

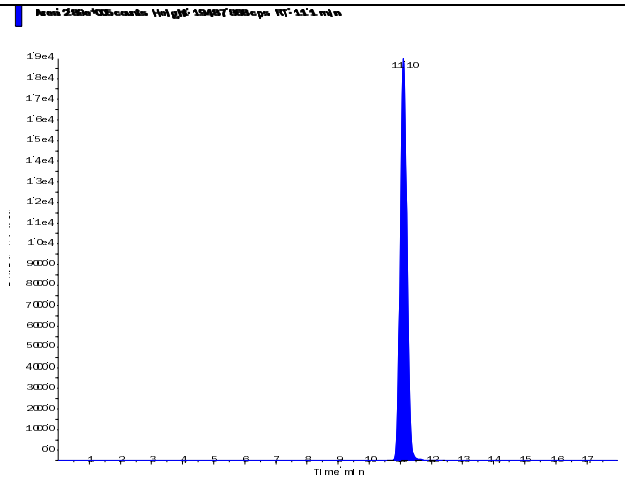

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.10 (11.10) min Calculated conc: 1.05 ng/ml Area Ratio: 0.163 Sample Type: (Standard)	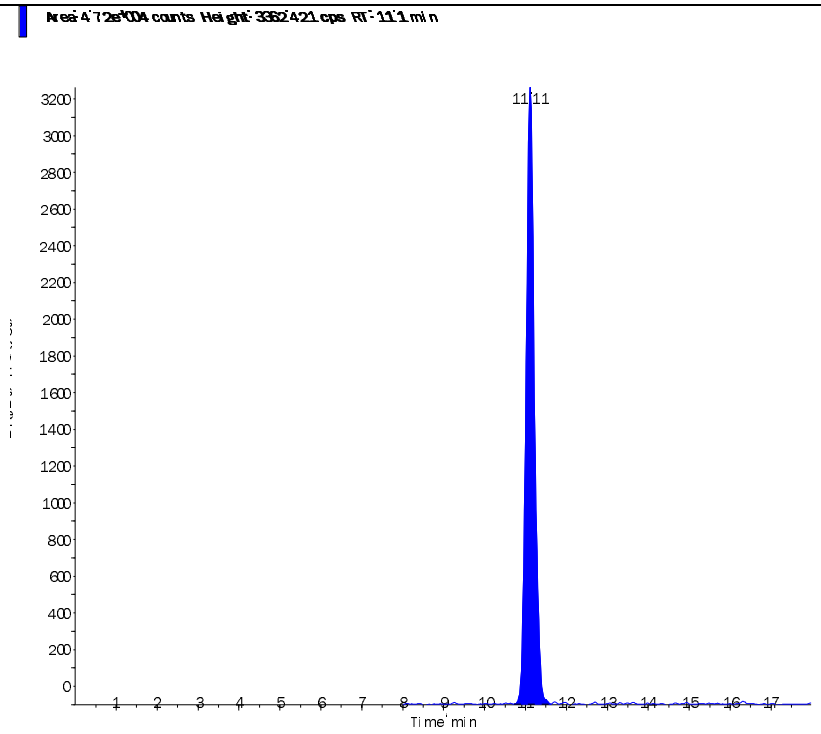
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.10 (11.10) min Calculated conc: 1.03 ng/ml Area Ratio: 0.061 Sample Type: (Standard)	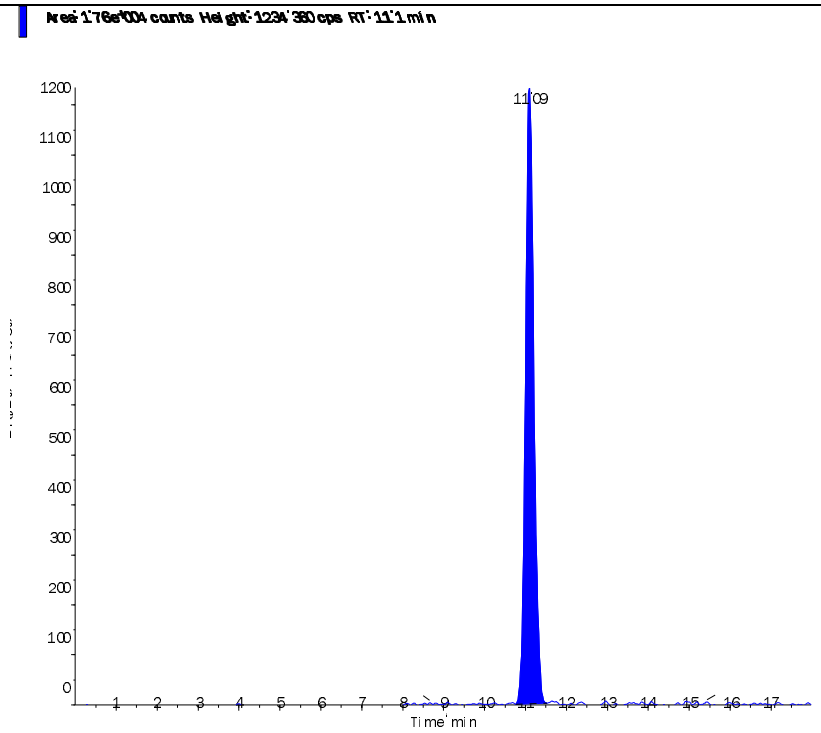

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Data File	LM29867.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/27/2015 2:32:11 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525179-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM29867.wiff	**Injection Volume**	10.00
Acquisition Date	5/27/2015 2:32:11 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525179-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.920e+05	11.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	9.030e+04	11.10	2.00	1.98
Perchlorate conf	3.390e+04	11.10	2.00	1.96

O18LP (Internal Standard)

RT (Exp. RT): 11.10(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

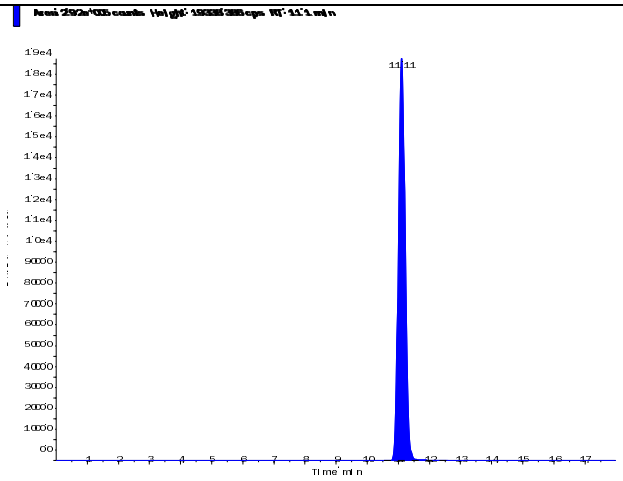

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.10 (11.10) min
Calculated conc:	1.98 ng/ml
Area Ratio:	0.309
Sample Type:	(Standard)

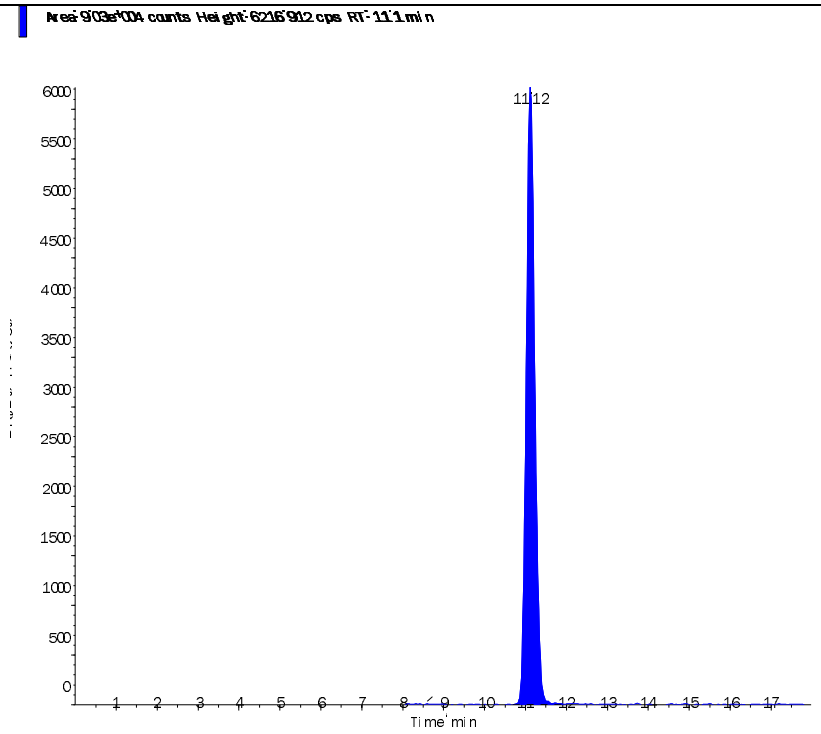

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.10 (11.10) min
Calculated conc:	1.96 ng/ml
Area Ratio:	0.116
Sample Type:	(Standard)

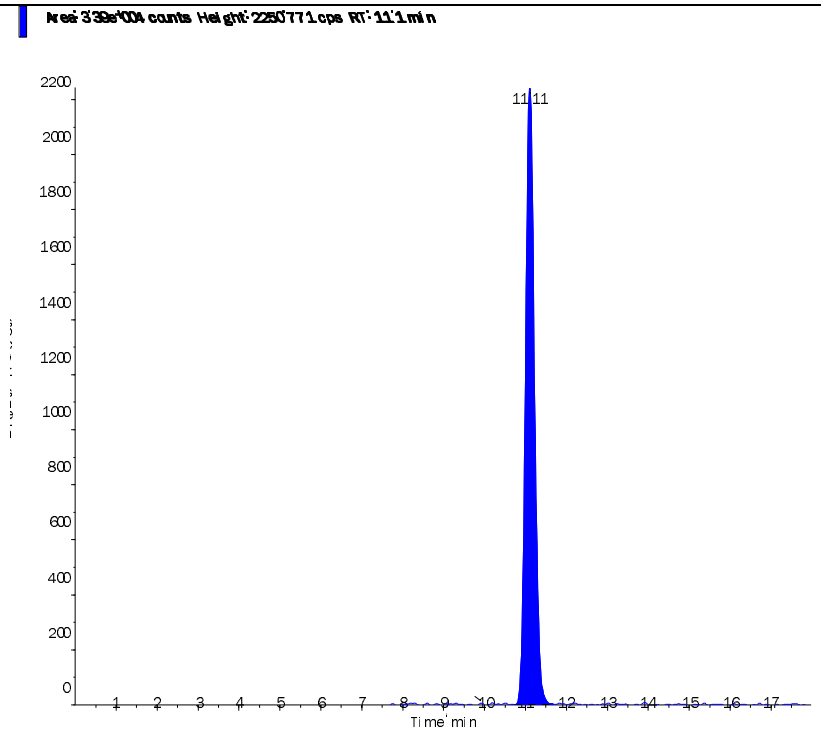

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Data File	LM29868.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/27/2015 2:51:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525179-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM29868.wiff	**Injection Volume**	10.00
Acquisition Date	5/27/2015 2:51:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525179-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.750e+05	11.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.230e+05	11.10	5.00	5.20
Perchlorate conf	8.340e+04	11.10	5.00	5.13

O18LP (Internal Standard)

RT (Exp. RT): 11.10(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

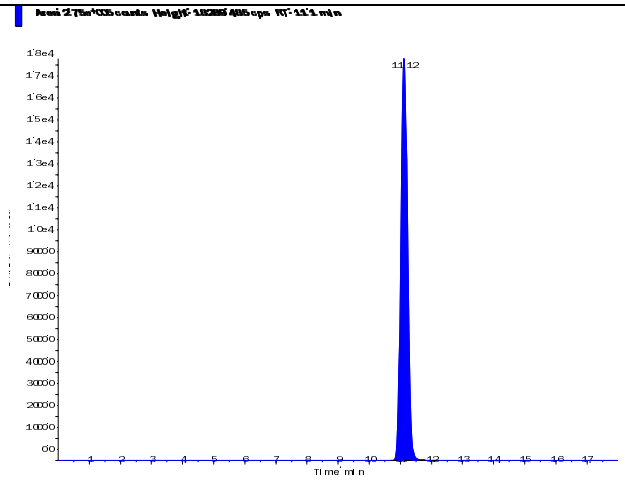

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.10 (11.10) min Calculated conc: 5.20 ng/ml Area Ratio: 0.81 Sample Type: (Standard)	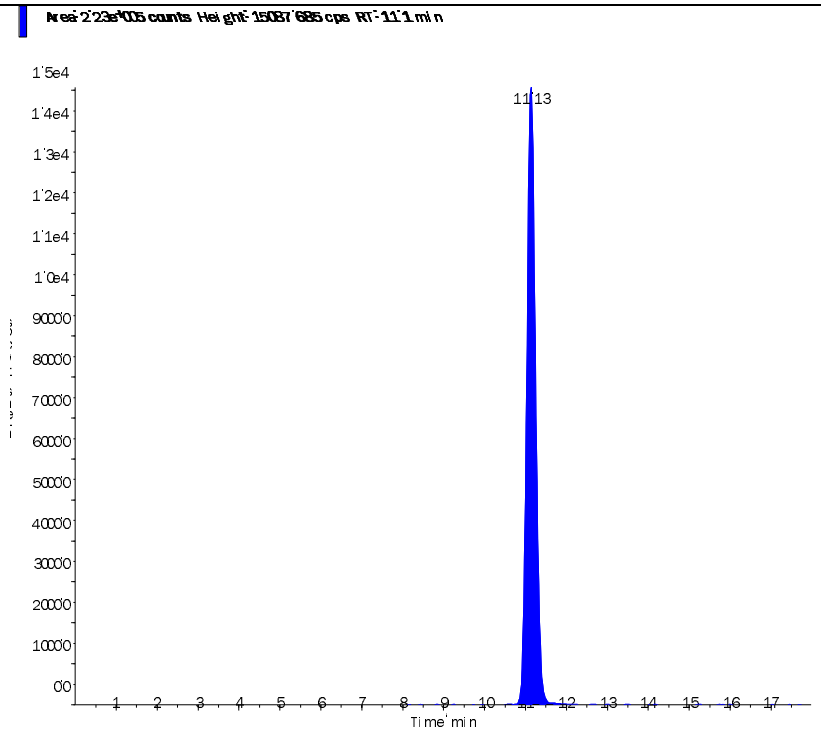
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.10 (11.10) min Calculated conc: 5.13 ng/ml Area Ratio: 0.303 Sample Type: (Standard)	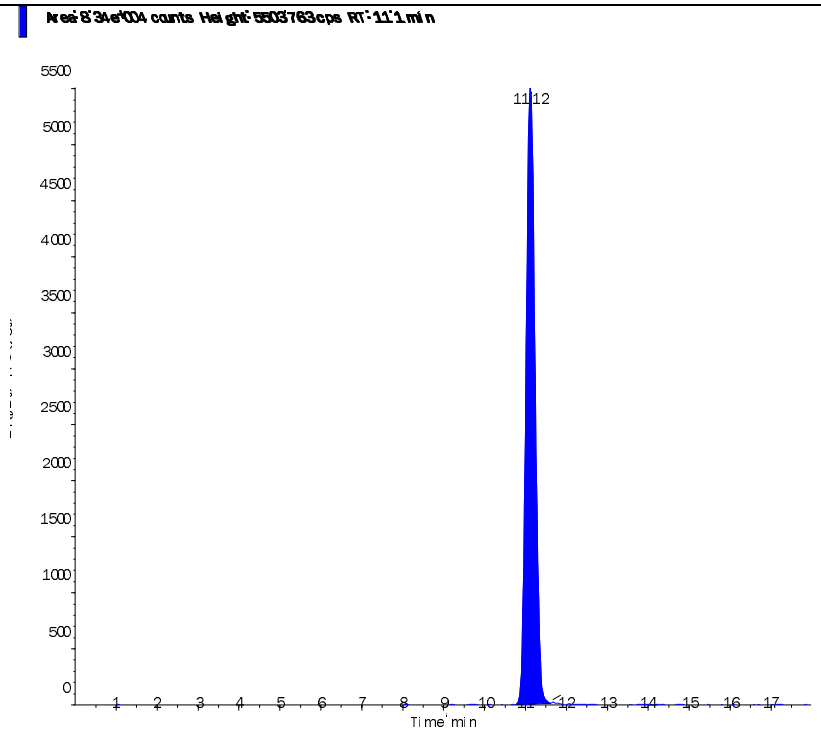

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Data File	LM29869.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/27/2015 3:10:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525179-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM29869.wiff	**Injection Volume**	10.00
Acquisition Date	5/27/2015 3:10:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525179-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.740e+05	11.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.180e+05	11.10	10.00	9.77
Perchlorate conf	1.600e+05	11.10	10.00	9.89

O18LP (Internal Standard)

RT (Exp. RT): 11.10(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

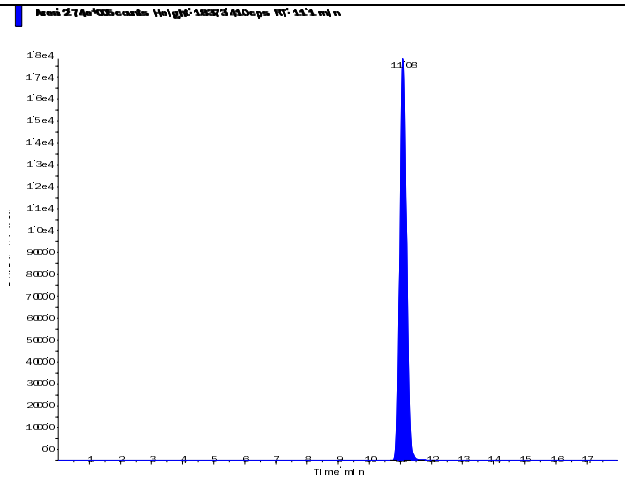

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.10 (11.10) min Calculated conc: 9.77 ng/ml Area Ratio: 1.522 Sample Type: (Standard)	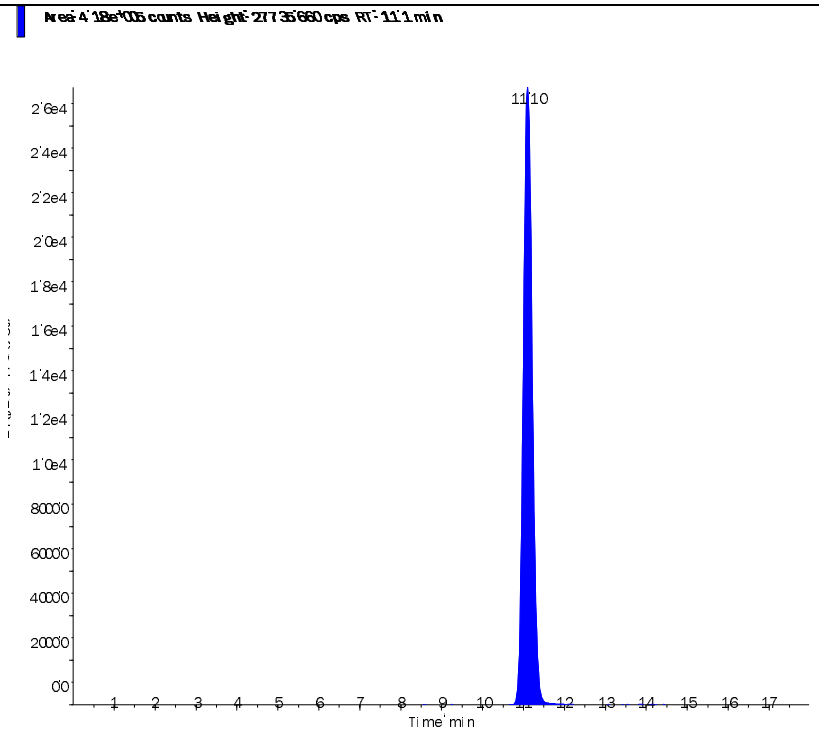
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.10 (11.10) min Calculated conc: 9.89 ng/ml Area Ratio: 0.583 Sample Type: (Standard)	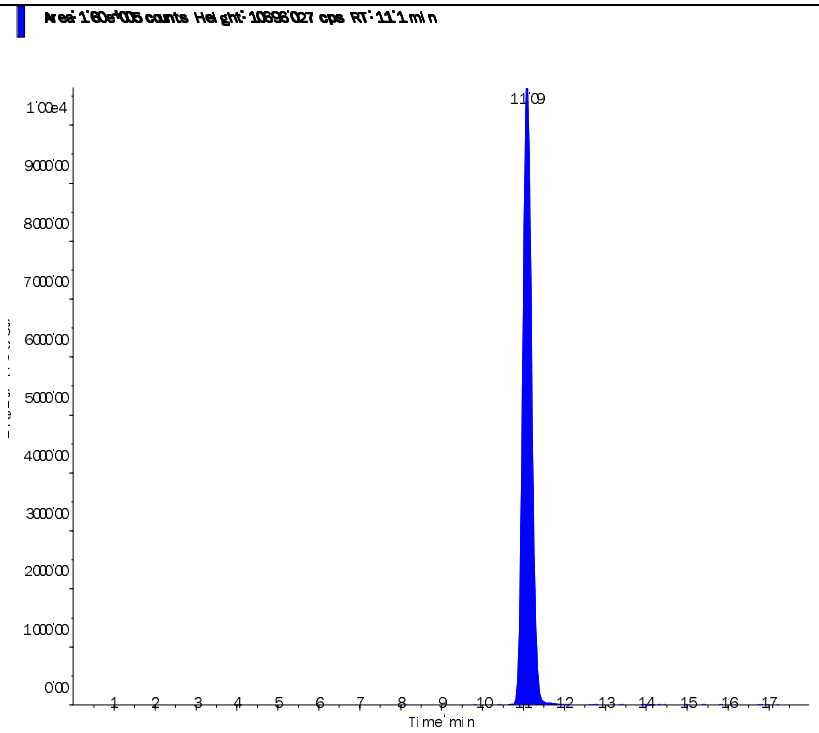

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Data File	LM29870.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/27/2015 3:28:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525179-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM29870.wiff	**Injection Volume**	10.00
Acquisition Date	5/27/2015 3:28:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525179-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD69913	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.930e+05	11.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.490e+04	11.10	1.00	0.981
Perchlorate conf	1.670e+04	11.10	1.00	0.961

O18LP (Internal Standard)

RT (Exp. RT): 11.10(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

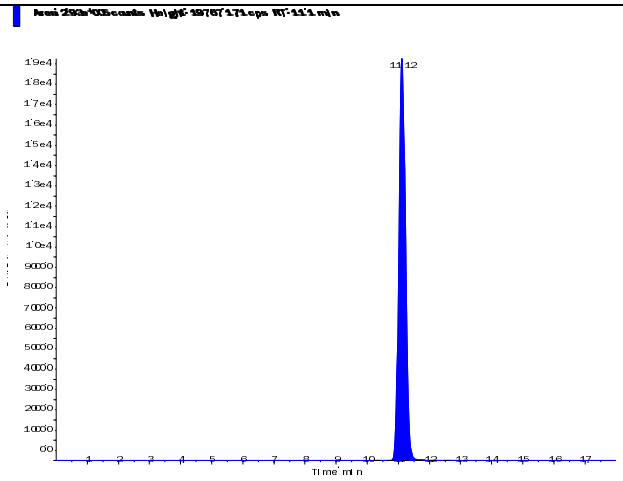

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.10 (11.10) min
Calculated conc:	0.981 ng/ml
Area Ratio:	0.153
Sample Type:	(Quality Control)

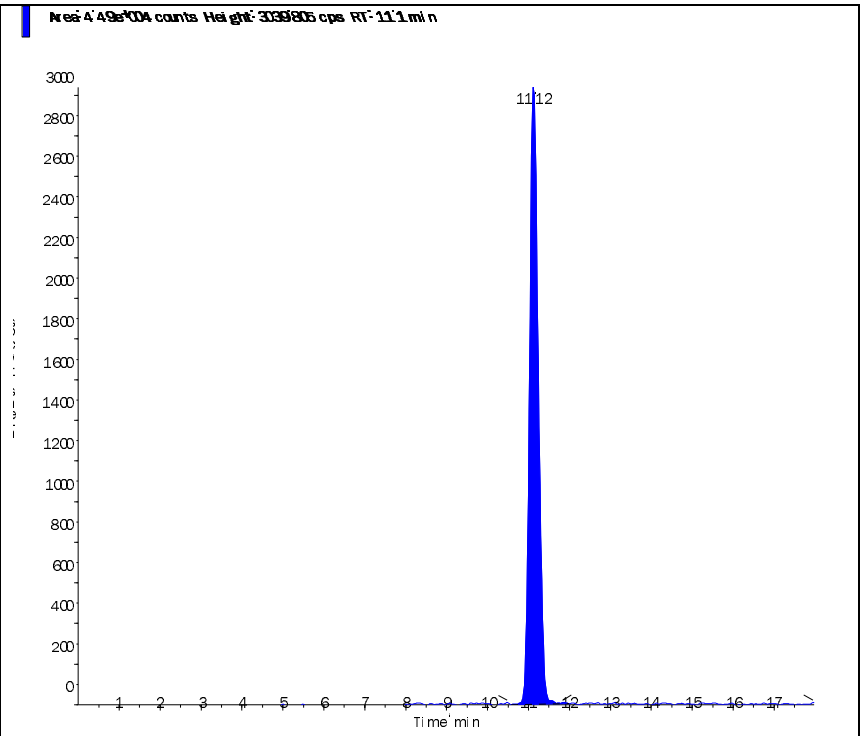

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.10 (11.10) min
Calculated conc:	0.961 ng/ml
Area Ratio:	0.057
Sample Type:	(Quality Control)

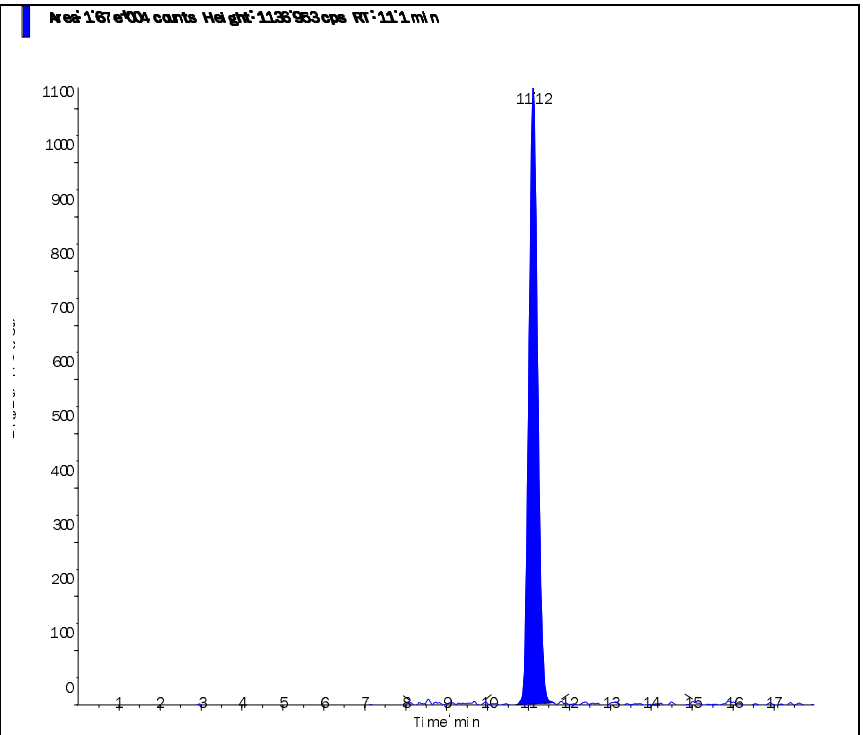

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Data File	LM29897.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 12:21:23 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525212-05 CCV (1.0ug/L)	**Injection Vial**	5.00
Data File	LM29897.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 12:21:23 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525212-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.270e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.350e+04	11.00	1.00	1.05
Perchlorate conf	2.080e+04	11.00	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

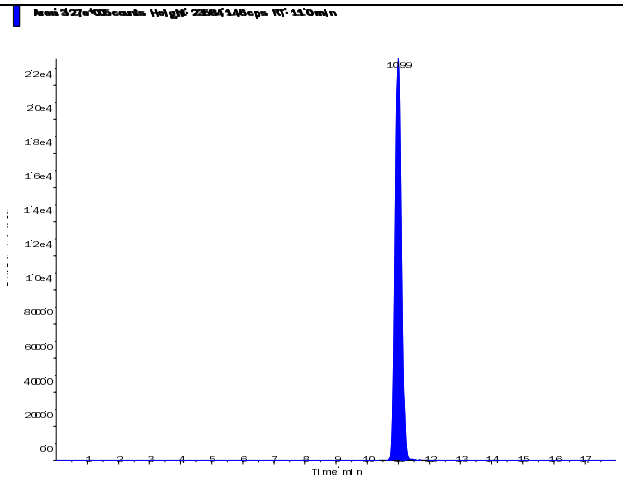

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.00 (11.10) min Calculated conc: 1.05 ng/ml Area Ratio: 0.164 Sample Type: (Quality Control)	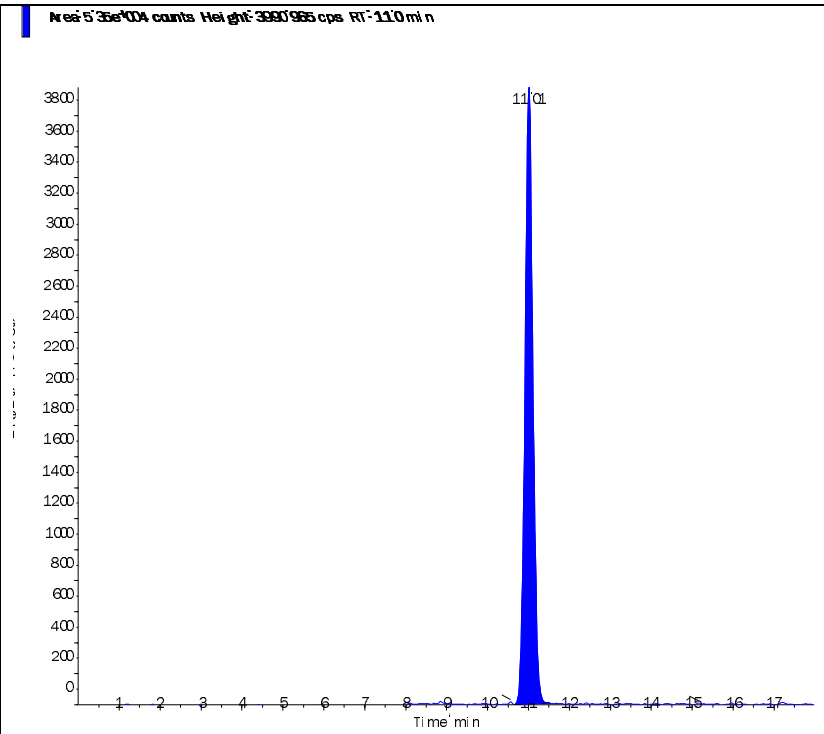
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.00 (11.10) min Calculated conc: 1.07 ng/ml Area Ratio: 0.064 Sample Type: (Quality Control)	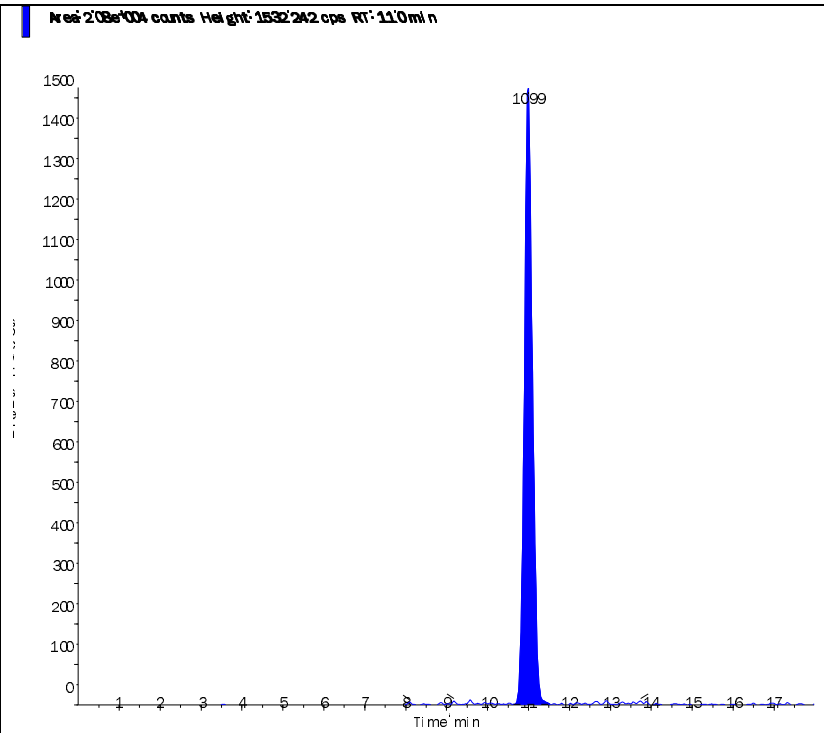

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Data File	LM29910.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 4:27:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525212-07 CCV (1.0ug/L)	**Injection Vial**	5.00
Data File	LM29910.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 4:27:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525212-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.390e+05	10.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.540e+04	10.90	1.00	1.05
Perchlorate conf	2.090e+04	10.90	1.00	1.04

O18LP (Internal Standard)

RT (Exp. RT): 10.90(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

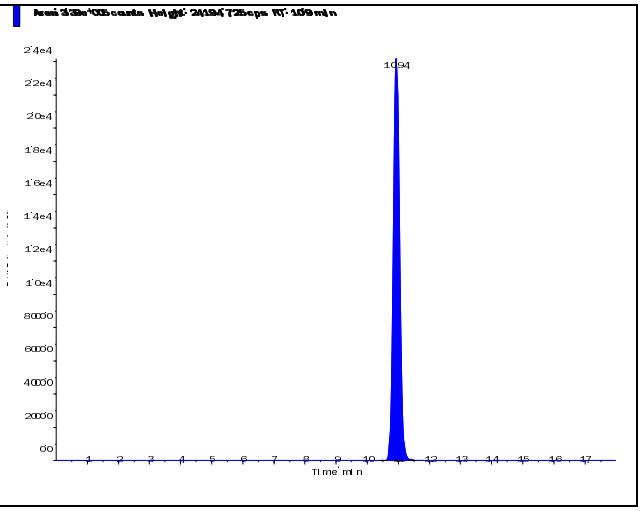

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.90 (11.10) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.163
Sample Type:	(Quality Control)

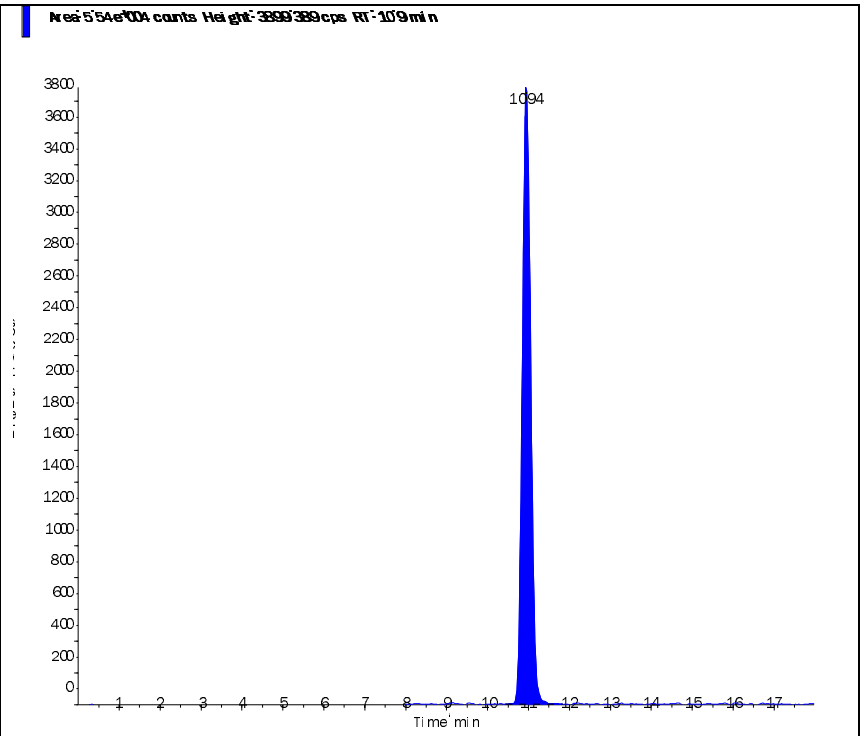

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.90 (11.10) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.062
Sample Type:	(Quality Control)

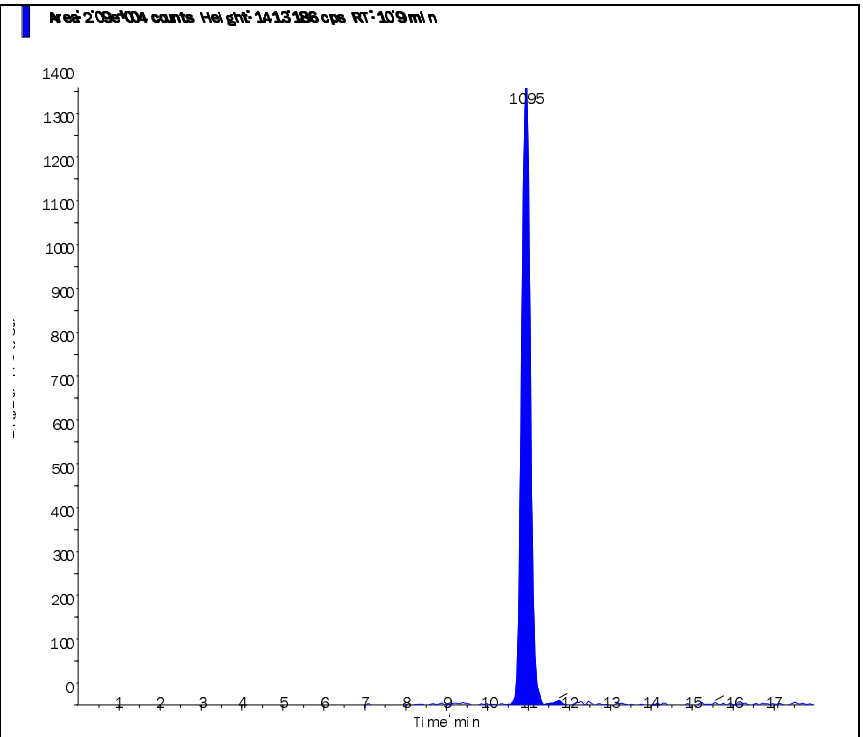

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Data File	LM29924.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 8:52:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525212-09 CCV (1.0ug/L)	**Injection Vial**	5.00
Data File	LM29924.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 8:52:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525212-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.250e+05	10.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.550e+04	10.90	1.00	1.09
Perchlorate conf	2.110e+04	10.90	1.00	1.09

O18LP (Internal Standard)

RT (Exp. RT): 10.90(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

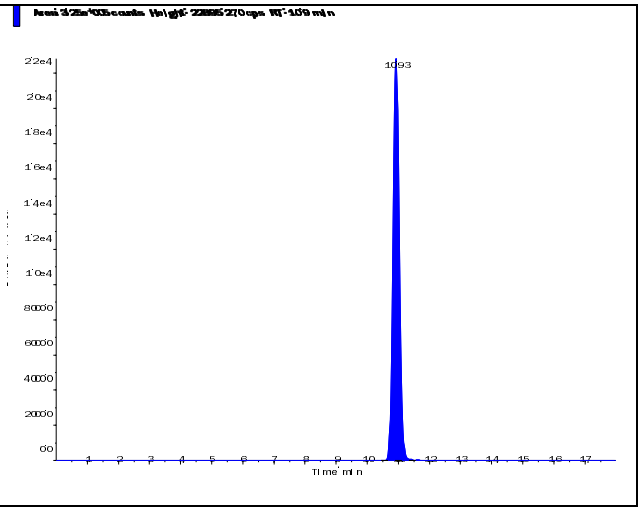

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.90 (11.10) min
Calculated conc:	1.09 ng/ml
Area Ratio:	0.17
Sample Type:	(Quality Control)

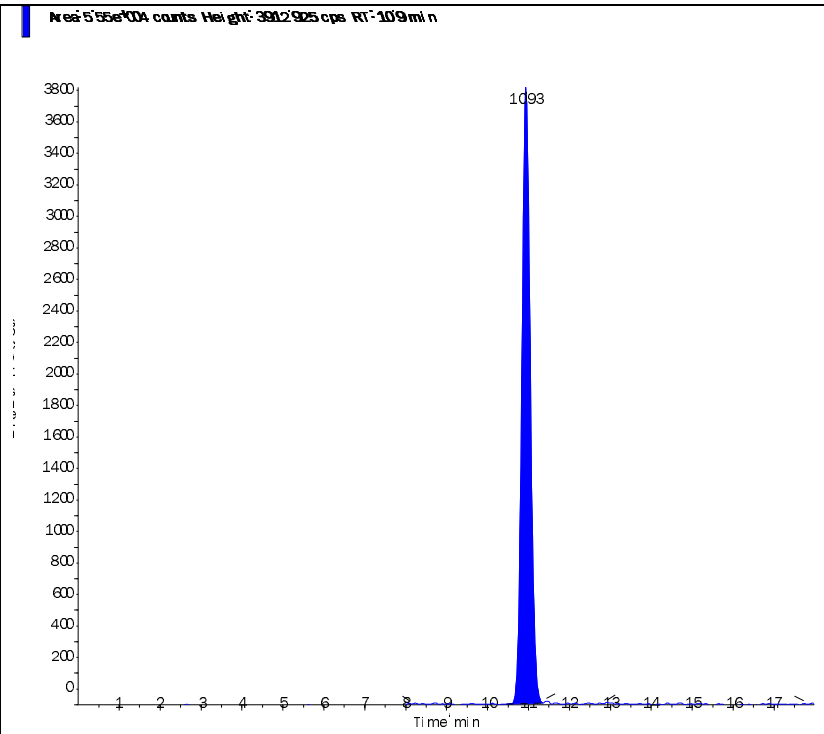

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.90 (11.10) min
Calculated conc:	1.09 ng/ml
Area Ratio:	0.065
Sample Type:	(Quality Control)

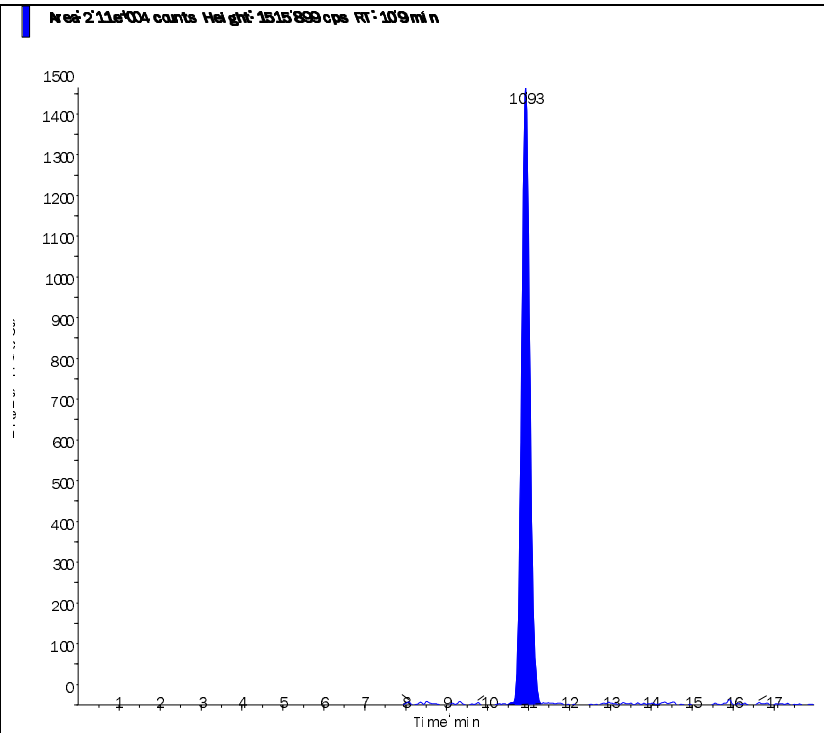

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Data File	LM29935.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 12:20:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525212-11 CCV (1.0ug/L)	**Injection Vial**	5.00
Data File	LM29935.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 12:20:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525212-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.510e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.850e+04	11.00	1.00	1.06
Perchlorate conf	2.130e+04	11.00	1.00	1.02

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

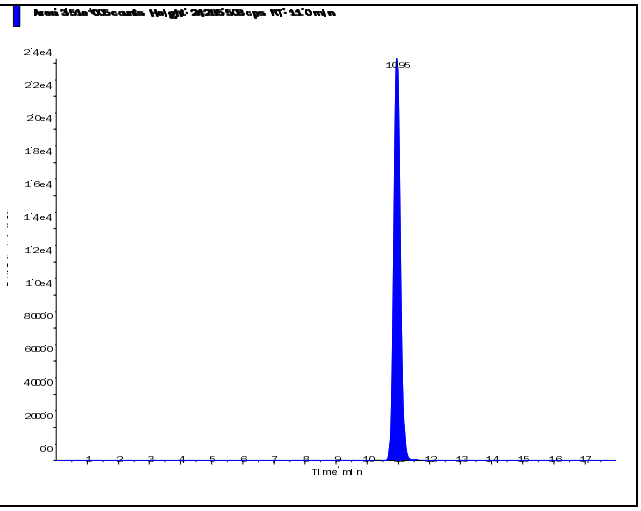

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.00 (11.10) min Calculated conc: 1.06 ng/ml Area Ratio: 0.166 Sample Type: (Quality Control)	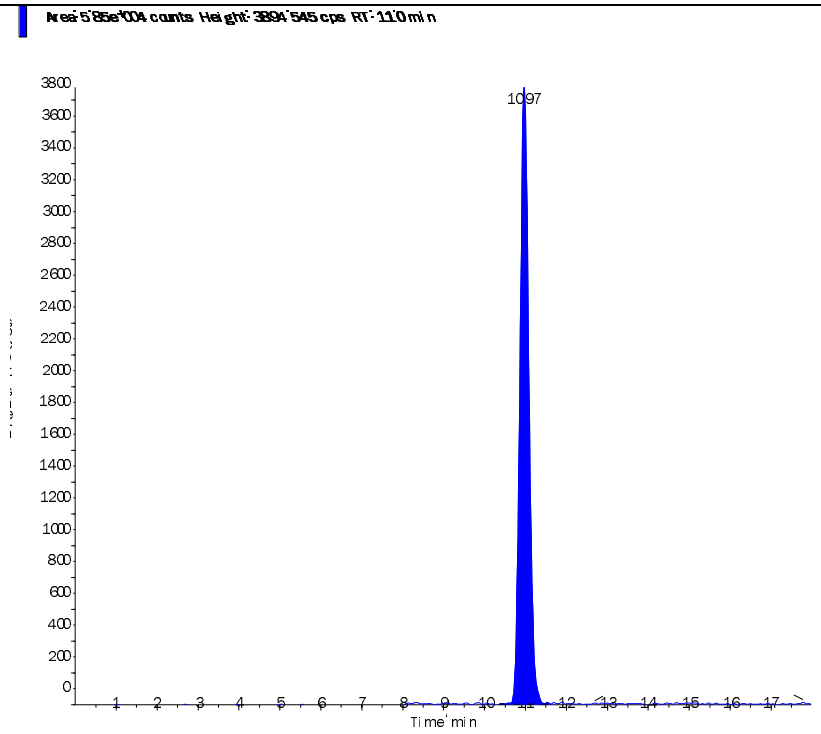
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.00 (11.10) min Calculated conc: 1.02 ng/ml Area Ratio: 0.061 Sample Type: (Quality Control)	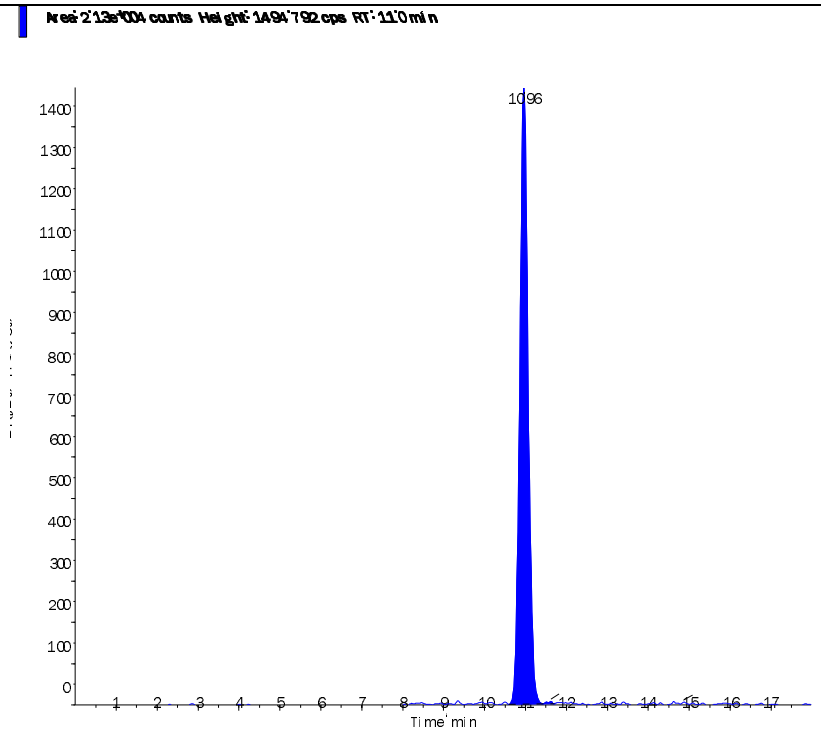

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Data File	LM29944.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 3:23:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525212-13 CCV (1.0ug/L)	**Injection Vial**	5.00
Data File	LM29944.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 3:23:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525212-13	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.460e+05	10.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.840e+04	10.90	1.00	1.08
Perchlorate conf	2.200e+04	10.90	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 10.90(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

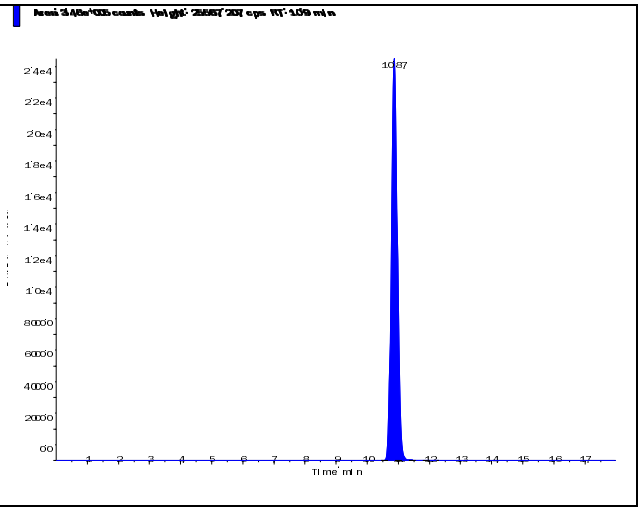

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.90 (11.10) min Calculated conc: 1.08 ng/ml Area Ratio: 0.169 Sample Type: (Quality Control)	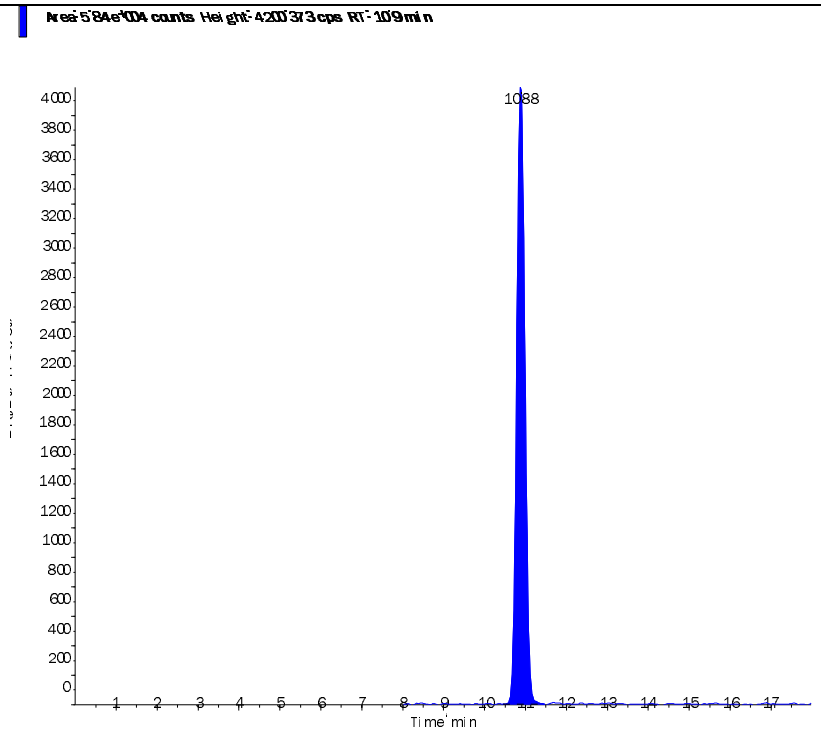
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 10.90 (11.10) min Calculated conc: 1.07 ng/ml Area Ratio: 0.064 Sample Type: (Quality Control)	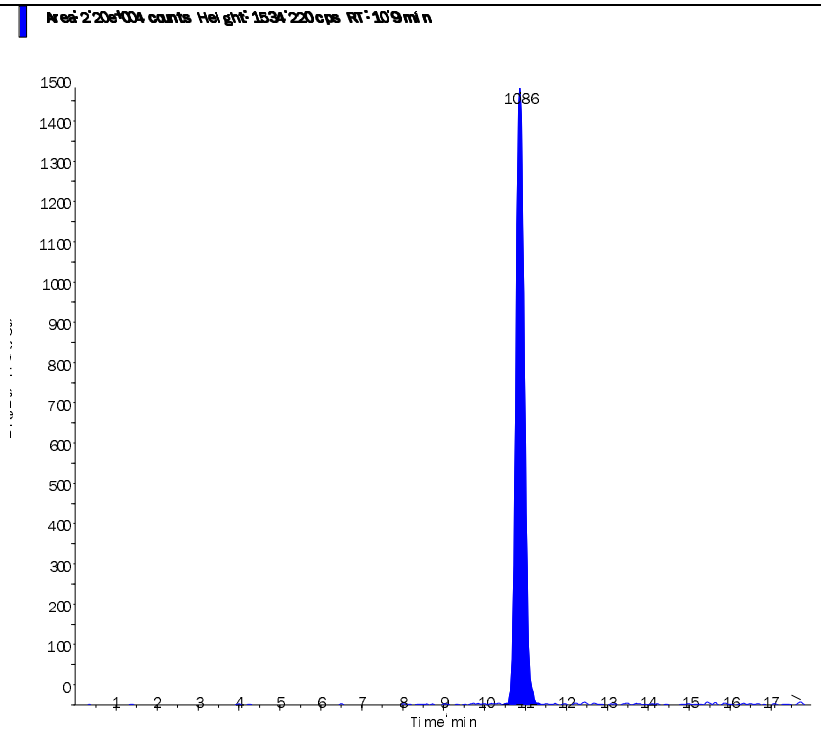

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Data File	LM29899.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 12:59:14 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525193-07 MRL (0.2ug/L)	**Injection Vial**	3.00
Data File	LM29899.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 12:59:14 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525193-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.300e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.160e+04	11.00	N/A	0.222
Perchlorate conf	4.300e+03	11.00	N/A	0.214

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

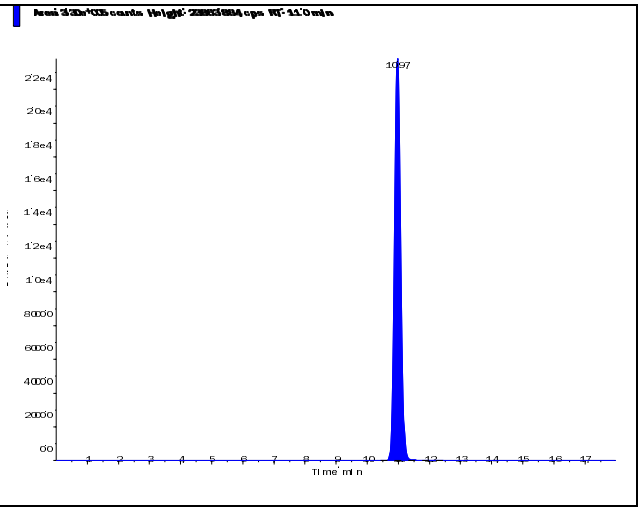

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.00 (11.10) min Calculated conc: 0.222 ng/ml Area Ratio: 0.035 Sample Type: (Unknown)	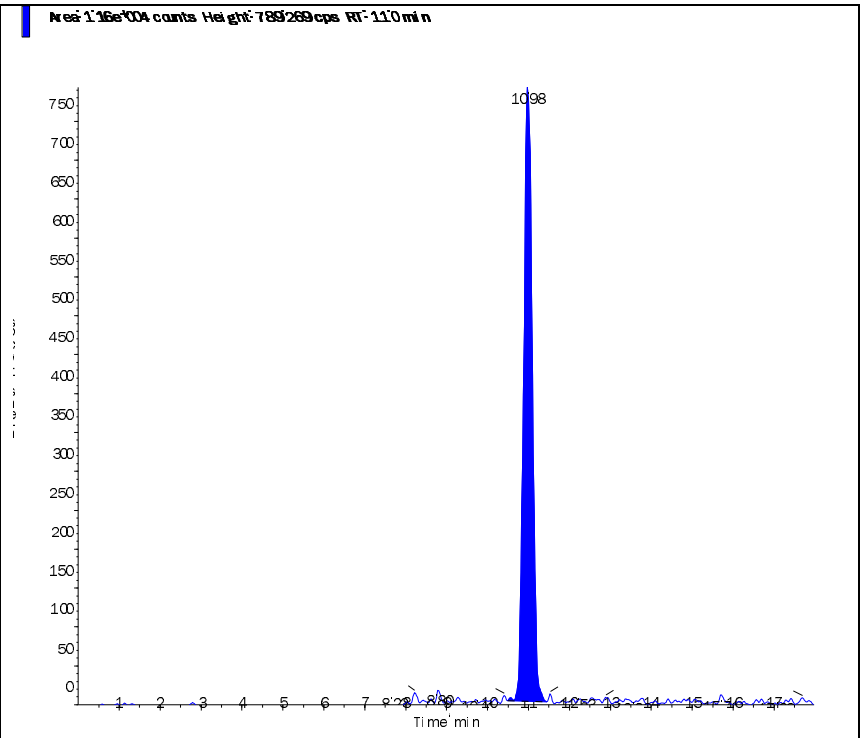
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.00 (11.10) min Calculated conc: 0.214 ng/ml Area Ratio: 0.013 Sample Type: (Unknown)	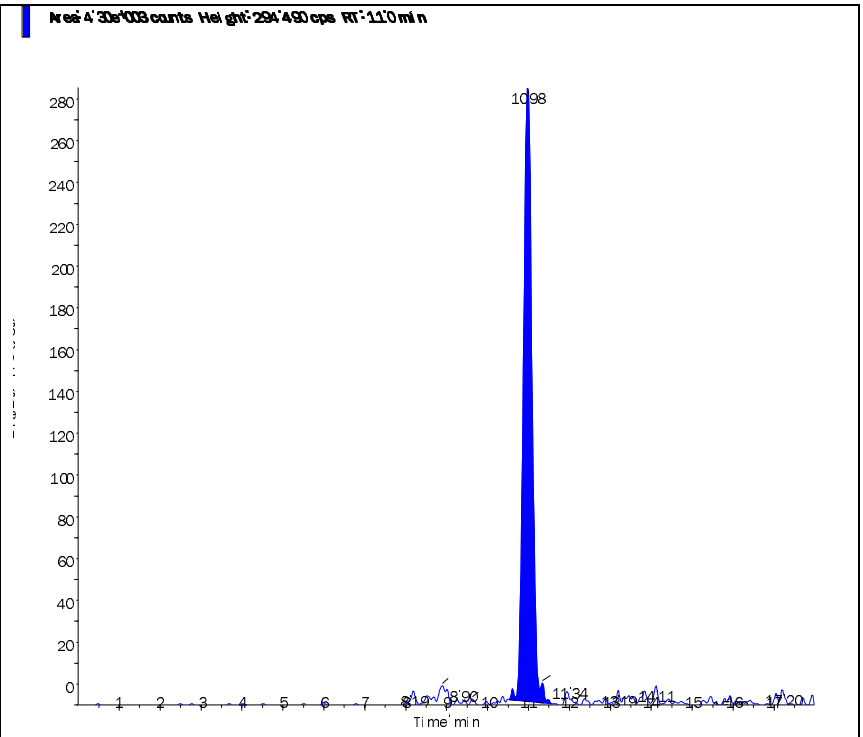

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Data File	LM29912.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 5:05:16 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525193-08 MRL (0.2ug/L)	**Injection Vial**	3.00
Data File	LM29912.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 5:05:16 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525193-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.470e+05	10.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.200e+04	11.00	N/A	0.219
Perchlorate conf	4.810e+03	10.90	N/A	0.227

O18LP (Internal Standard)

RT (Exp. RT): 10.90(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

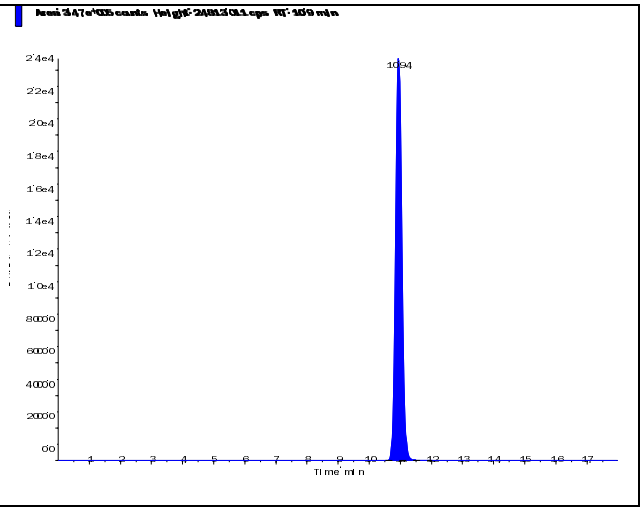

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.00 (11.10) min Calculated conc: 0.219 ng/ml Area Ratio: 0.035 Sample Type: (Unknown)	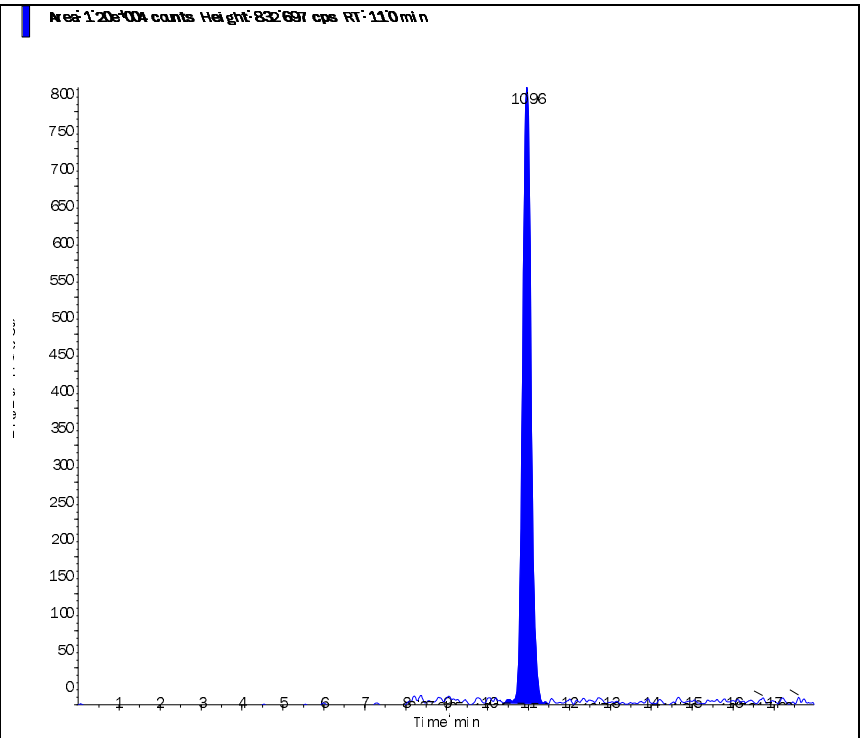
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 10.90 (11.10) min Calculated conc: 0.227 ng/ml Area Ratio: 0.014 Sample Type: (Unknown)	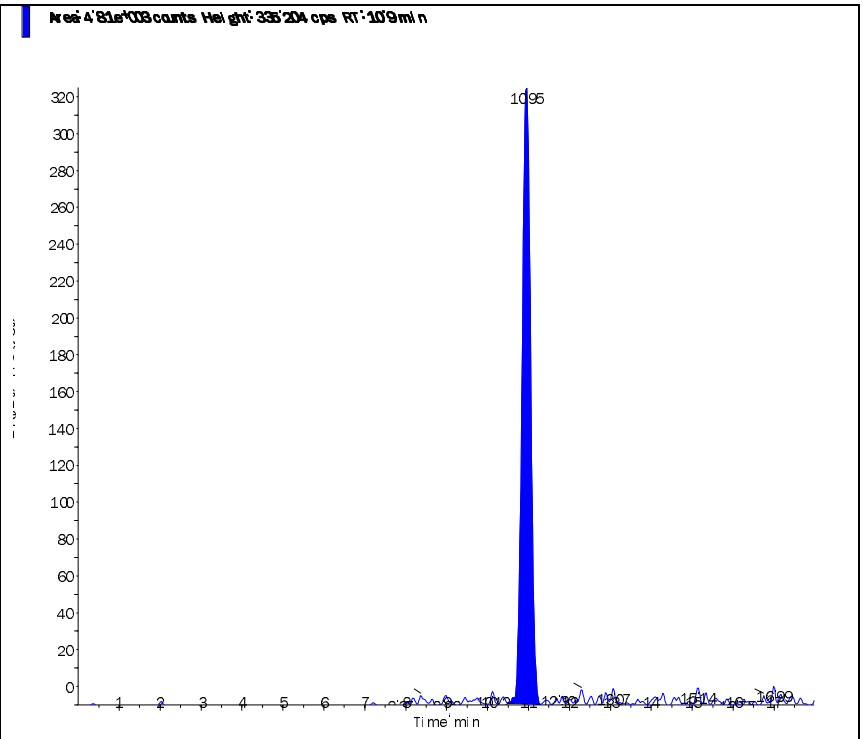

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Data File	LM29925.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 9:11:22 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525193-09 MRL (0.2ug/L)	**Injection Vial**	3.00
Data File	LM29925.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 9:11:22 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525193-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.260e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.140e+04	11.00	N/A	0.221
Perchlorate conf	4.590e+03	10.90	N/A	0.232

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

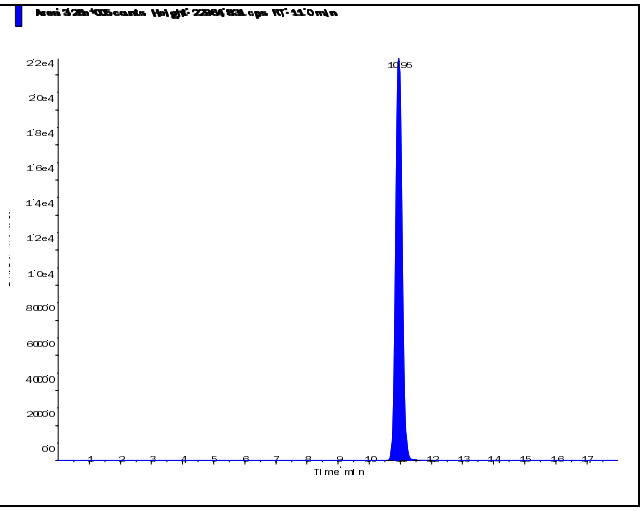

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.00 (11.10) min
Calculated conc:	0.221 ng/ml
Area Ratio:	0.035
Sample Type:	(Unknown)

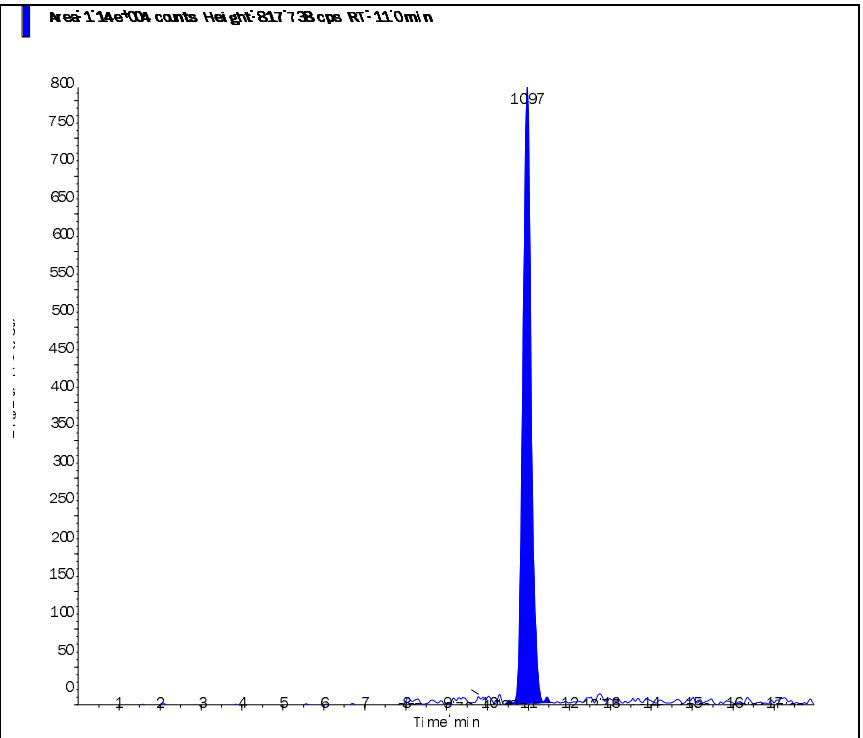

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.90 (11.10) min
Calculated conc:	0.232 ng/ml
Area Ratio:	0.014
Sample Type:	(Unknown)

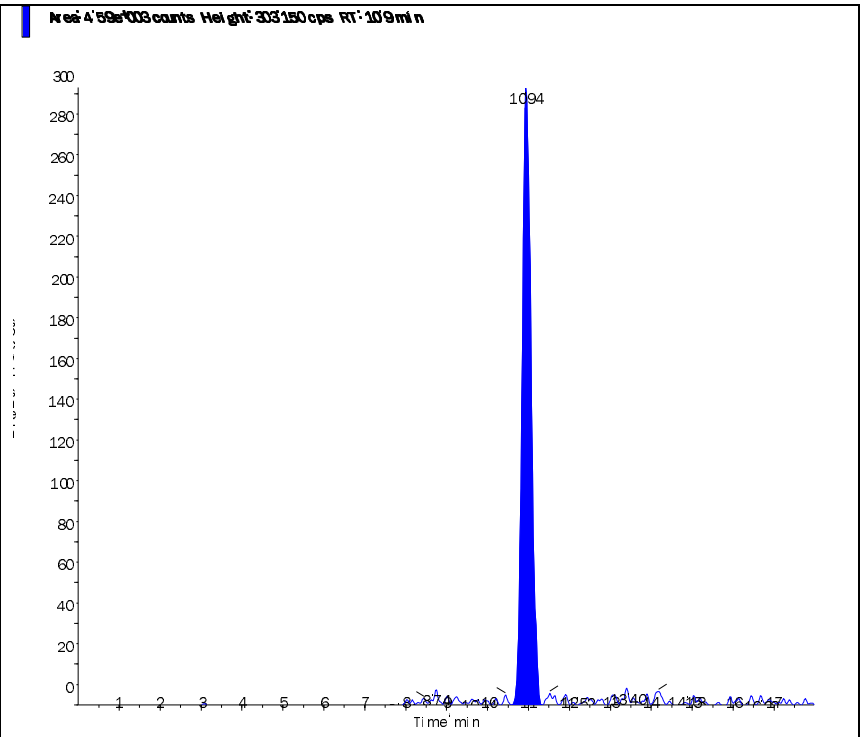

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Printed: 5/28/2015 5:19 PM

Data File	LM29936.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 12:39:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525193-10 MRL (0.2ug/L)	**Injection Vial**	3.00
Data File	LM29936.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 12:39:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525193-10	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.480e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.170e+04	11.00	N/A	0.212
Perchlorate conf	4.310e+03	10.90	N/A	0.203

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

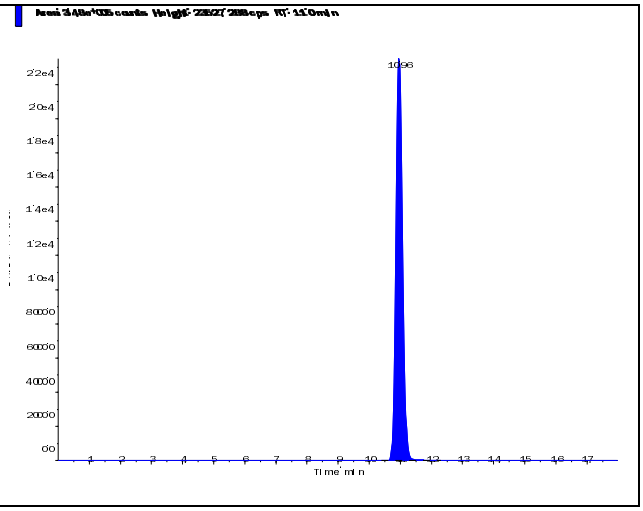

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Printed: 5/28/2015 5:19 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.00 (11.10) min Calculated conc: 0.212 ng/ml Area Ratio: 0.034 Sample Type: (Unknown)	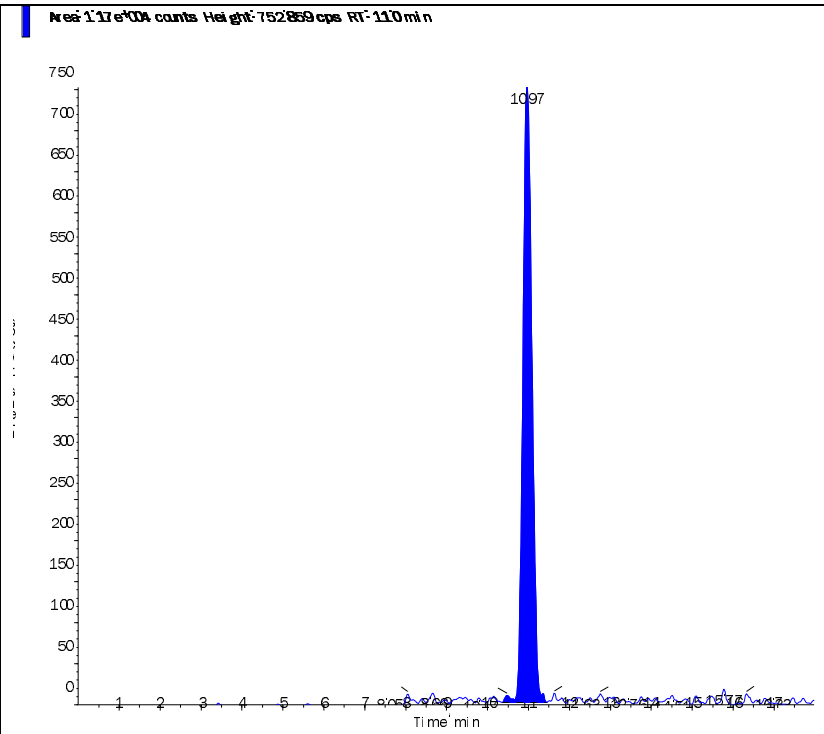
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 10.90 (11.10) min Calculated conc: 0.203 ng/ml Area Ratio: 0.012 Sample Type: (Unknown)	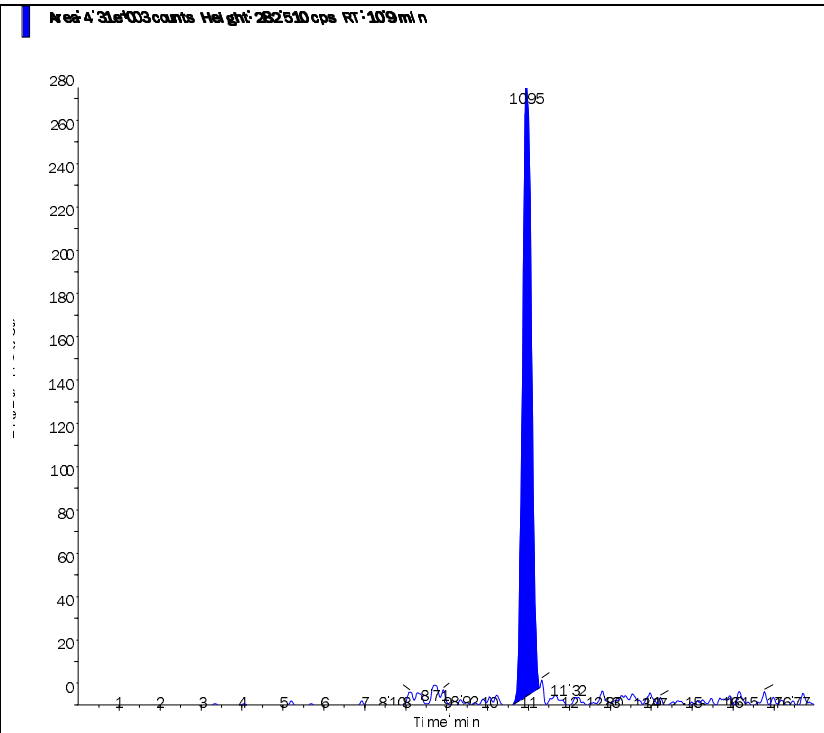

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Printed: 5/28/2015 5:22 PM

Data File	LM29945.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 3:42:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525193-11 MRL (0.2ug/L)	**Injection Vial**	3.00
Data File	LM29945.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 3:42:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525193-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.390e+05	10.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.120e+04	10.90	N/A	0.208
Perchlorate conf	4.390e+03	10.90	N/A	0.212

O18LP (Internal Standard)

RT (Exp. RT): 10.90(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

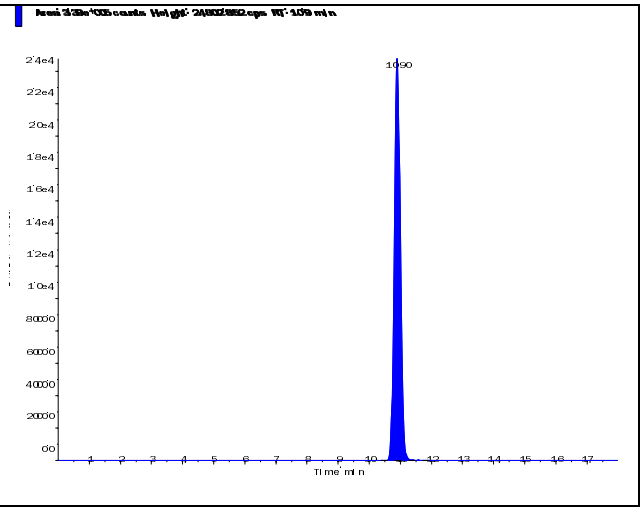

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.90 (11.10) min Calculated conc: 0.208 ng/ml Area Ratio: 0.033 Sample Type: (Unknown)	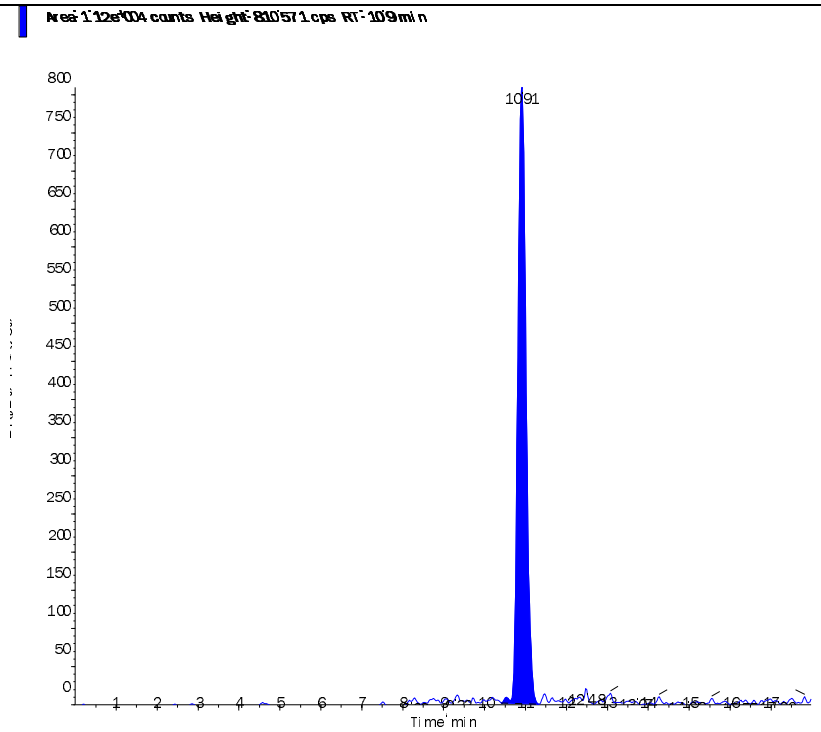
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 10.90 (11.10) min Calculated conc: 0.212 ng/ml Area Ratio: 0.013 Sample Type: (Unknown)	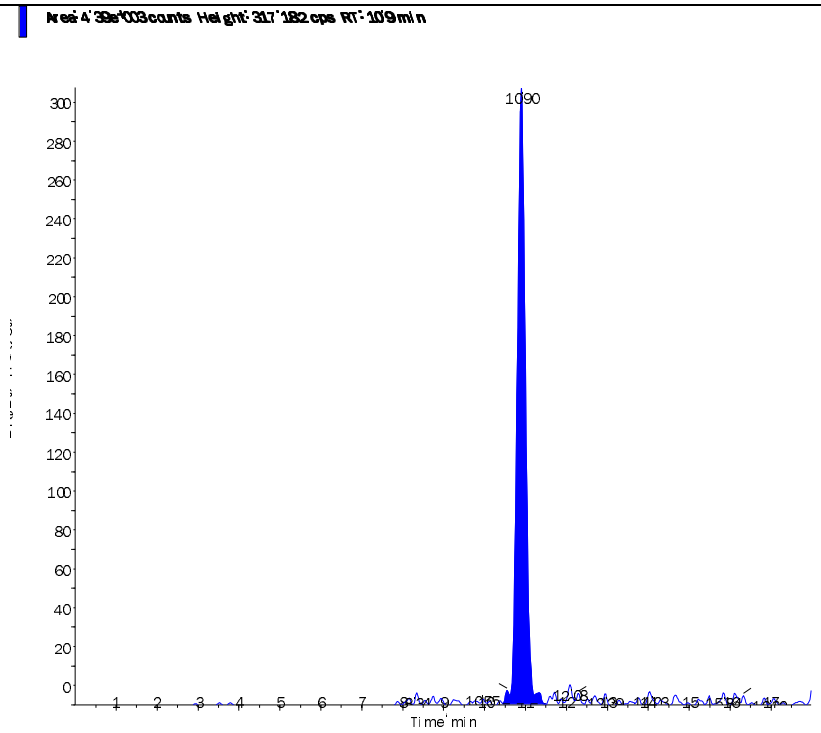

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Printed: 5/28/2015 5:03 PM

Data File	LM29886.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/27/2015 8:53:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525212-04 CCB	**Injection Vial**	1.00
Data File	LM29886.wiff	**Injection Volume**	10.00
Acquisition Date	5/27/2015 8:53:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525212-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.090e+05	11.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.040e+02	11.10	N/A	0.0045
Perchlorate conf	1.910e+02	11.10	N/A	0.0032

O18LP (Internal Standard)

RT (Exp. RT): 11.10(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

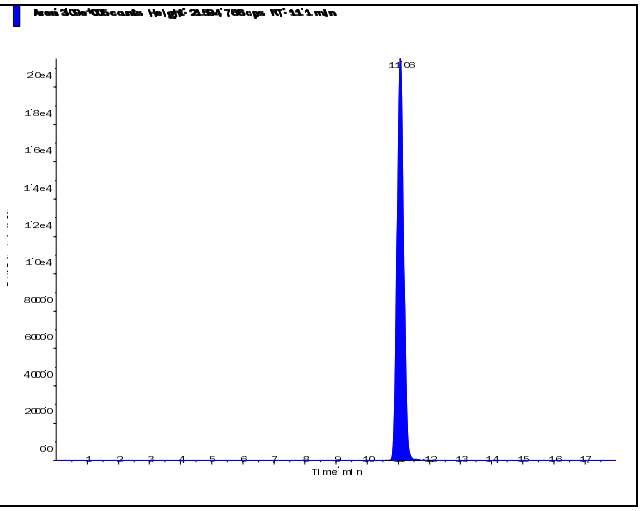

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.10 (11.10) min Calculated conc: 0.0045 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	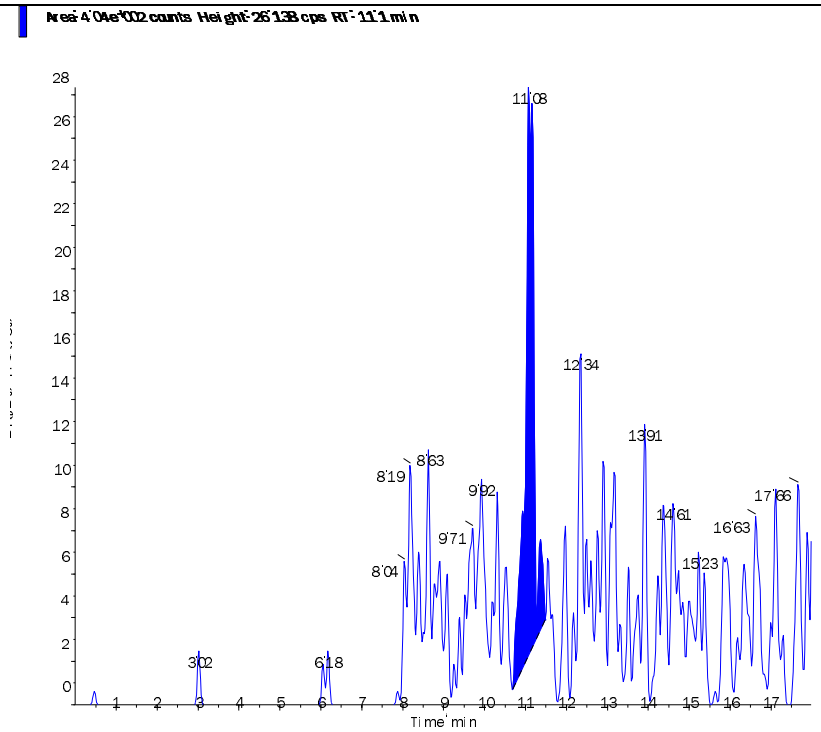
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.10 (11.10) min Calculated conc: 0.0032 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	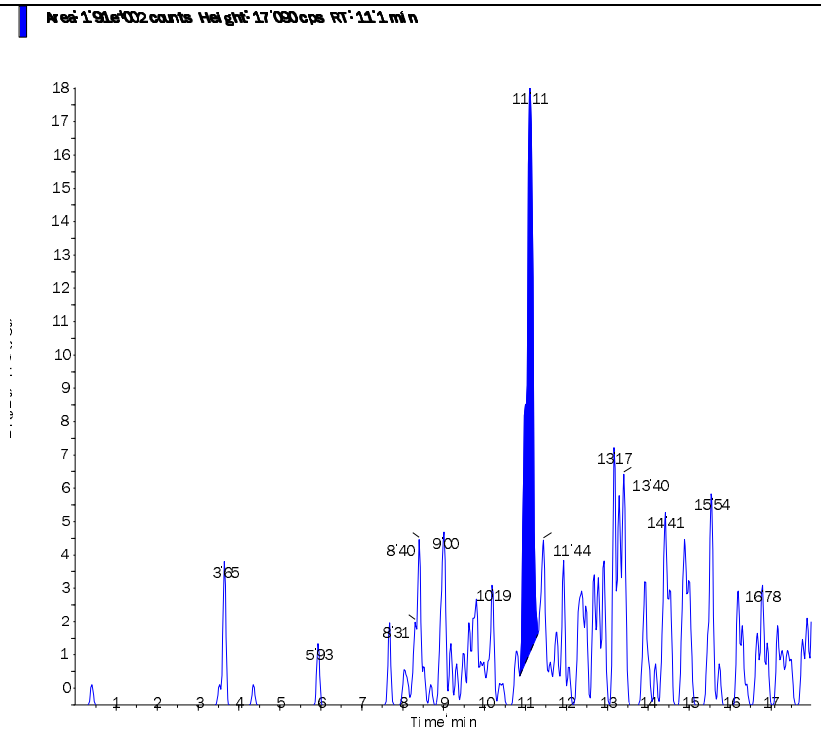

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Printed: 5/28/2015 5:08 PM

Data File	LM29900.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 1:18:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525212-06 CCB	**Injection Vial**	1.00
Data File	LM29900.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 1:18:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525212-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.320e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.630e+02	10.90	N/A	0.0012
Perchlorate conf	1.890e+02	11.00	N/A	0.0023

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

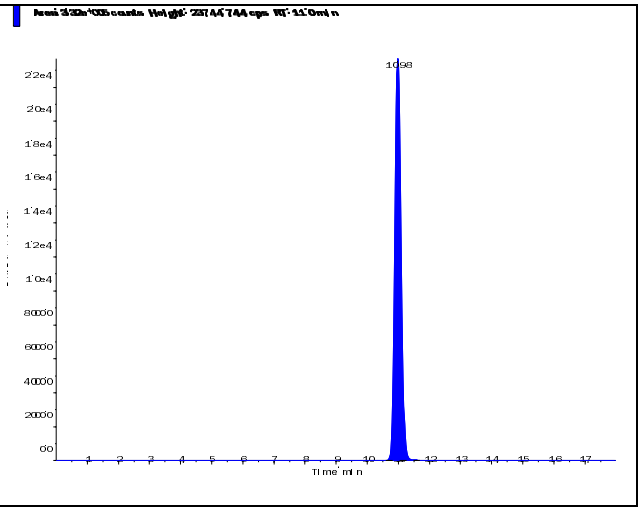

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.90 (11.10) min Calculated conc: 0.0012 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	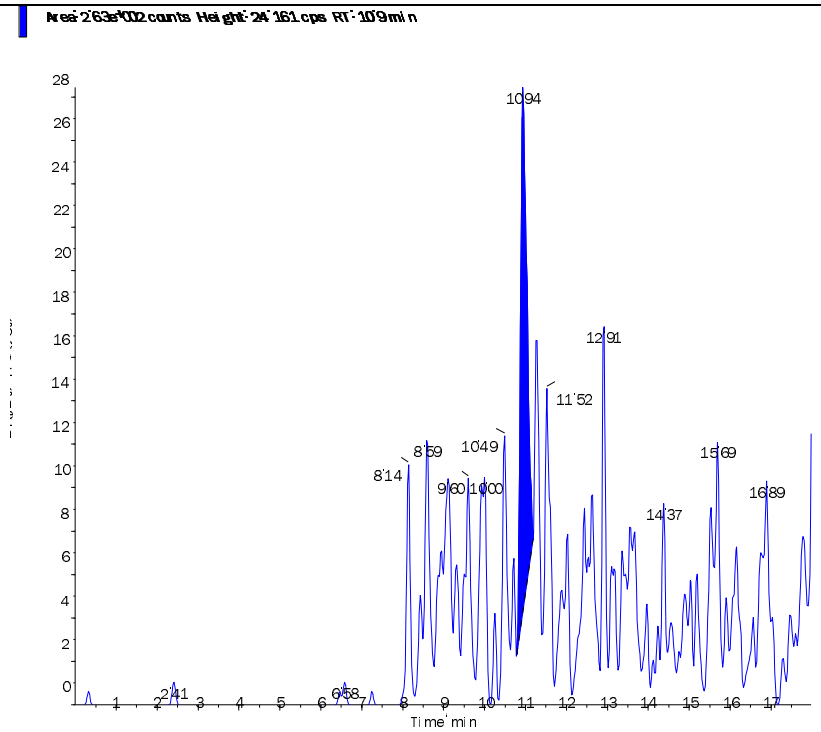
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.00 (11.10) min Calculated conc: 0.0023 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	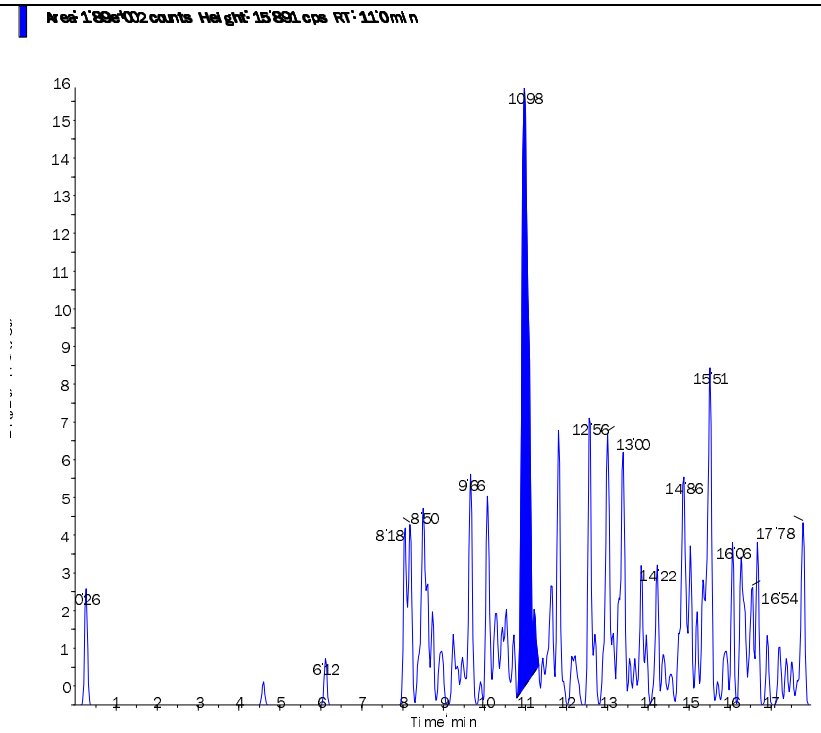

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Data File	LM29913.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 5:24:11 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525212-08 CCB	**Injection Vial**	1.00
Data File	LM29913.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 5:24:11 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525212-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.570e+05	10.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.660e+02	11.00	N/A	0.0027
Perchlorate conf	2.720e+02	11.00	N/A	0.0056

O18LP (Internal Standard)

RT (Exp. RT): 10.90(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

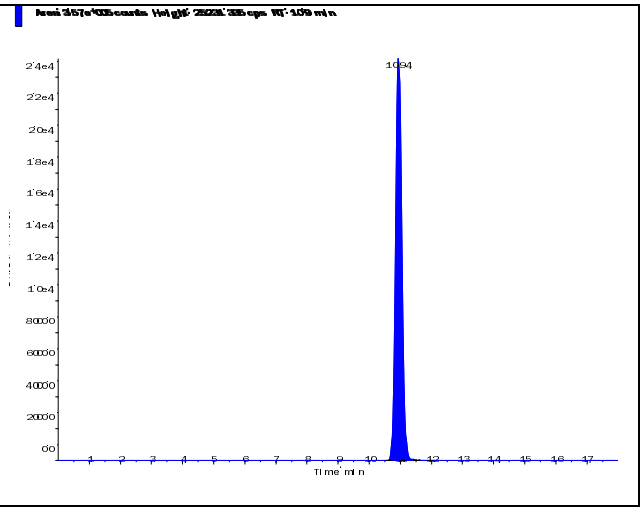

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.00 (11.10) min
Calculated conc:	0.0027 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

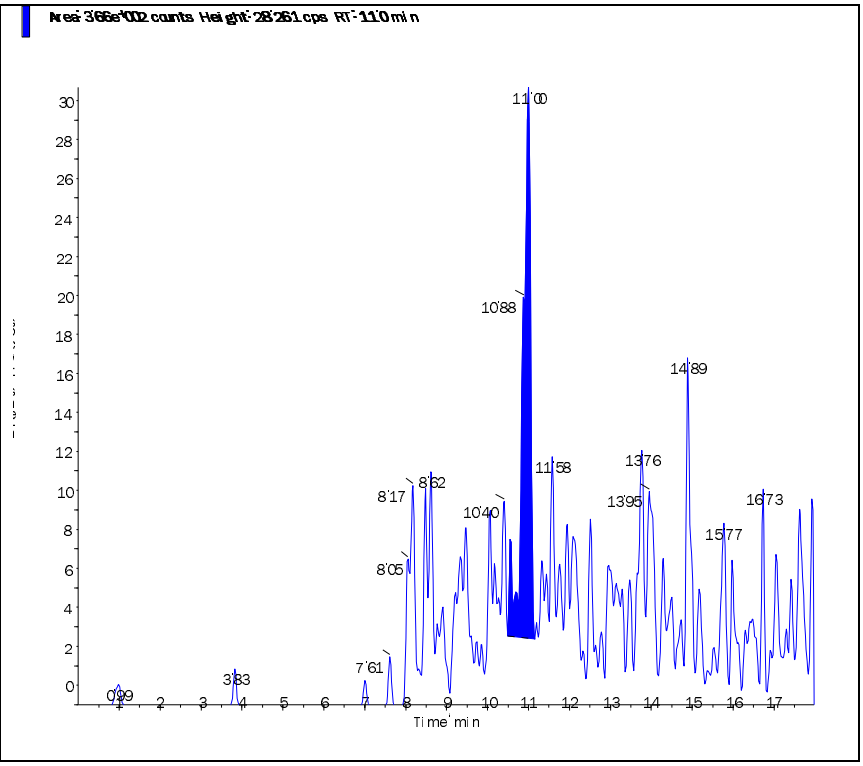

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.00 (11.10) min
Calculated conc:	0.0056 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

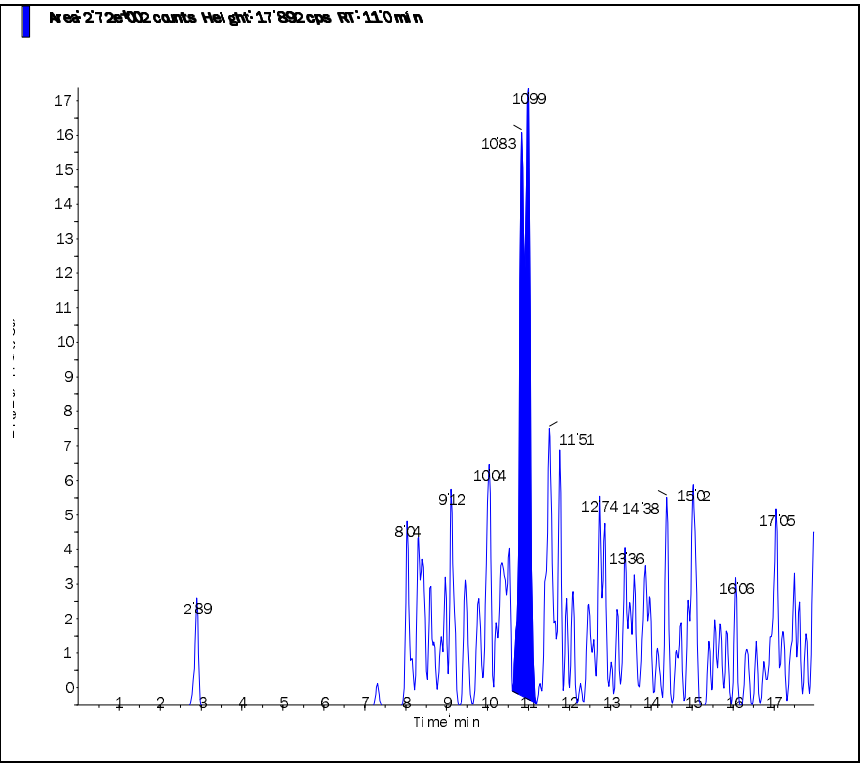

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Data File	LM29926.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 9:30:17 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525212-10 CCB	**Injection Vial**	1.00
Data File	LM29926.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 9:30:17 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525212-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.430e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	1.180e+02	11.00	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

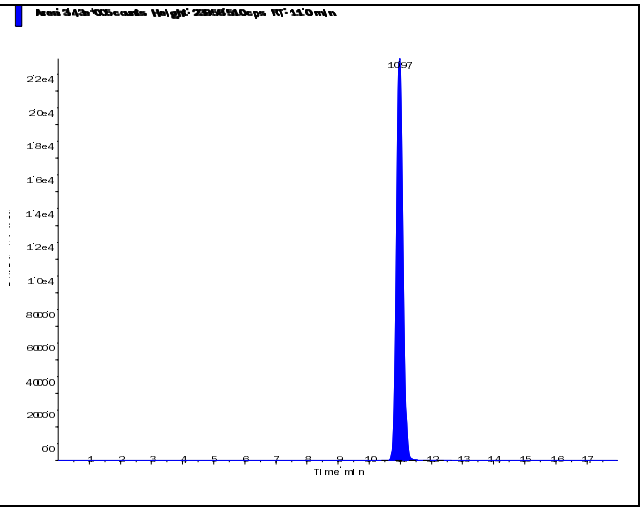

s.dataFile Page 1 of 2

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Printed: 5/28/2015 5:16 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (11.10) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	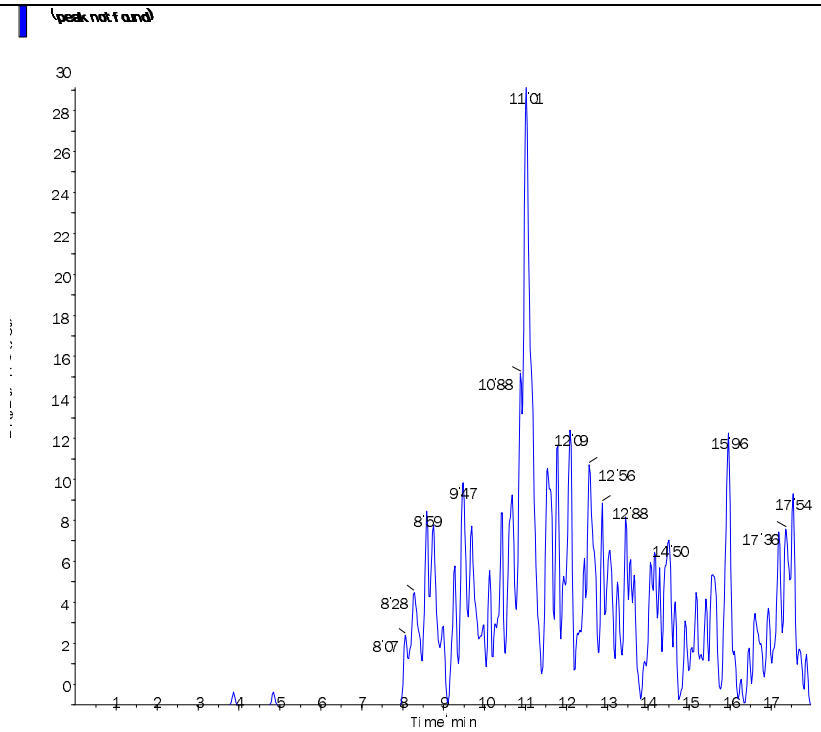
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.00 (11.10) min Calculated conc: < 0 ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	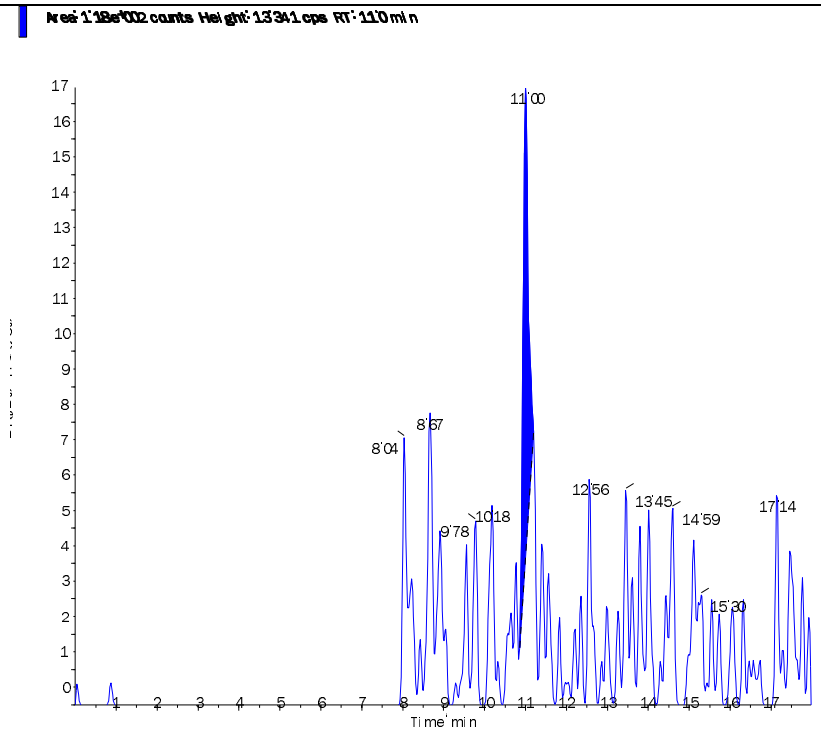

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/28/2015 5:20 PM

Data File	LM29937.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 12:58:27 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525212-12 CCB	**Injection Vial**	1.00
Data File	LM29937.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 12:58:27 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525212-12	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.450e+05	10.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.140e+02	10.90	N/A	0.0057
Perchlorate conf	1.690e+02	11.00	N/A	0.001

O18LP (Internal Standard)

RT (Exp. RT): 10.90(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

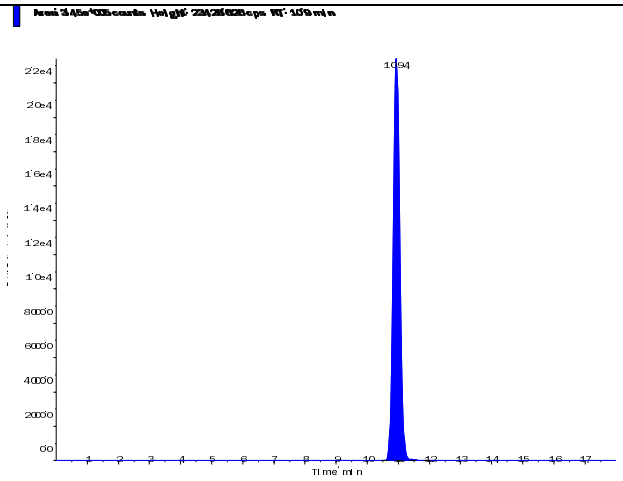

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

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Printed: 5/28/2015 5:20 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.90 (11.10) min
Calculated conc:	0.0057 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

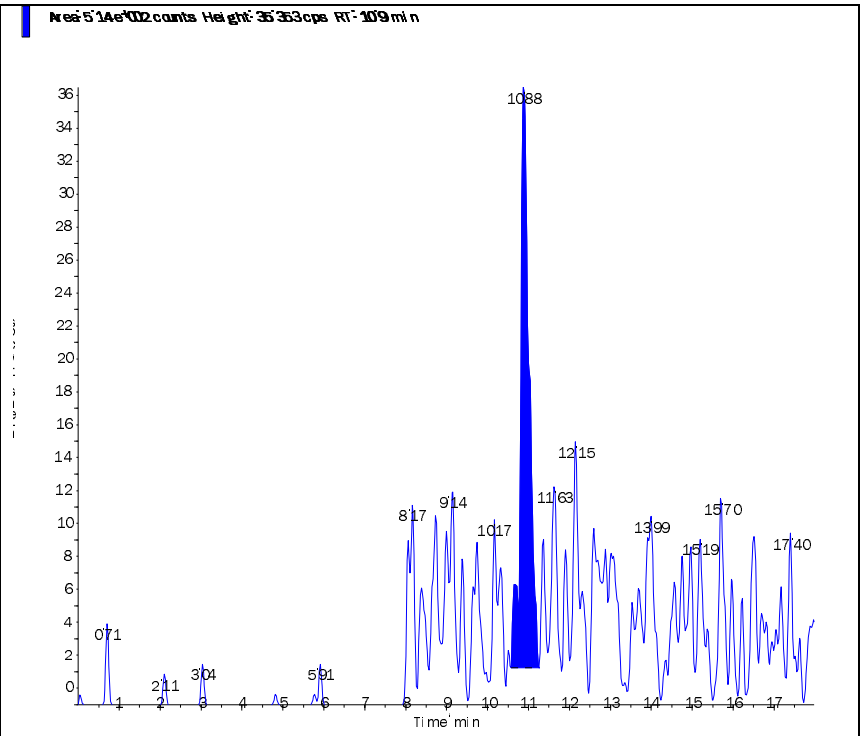

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.00 (11.10) min
Calculated conc:	0.001 ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

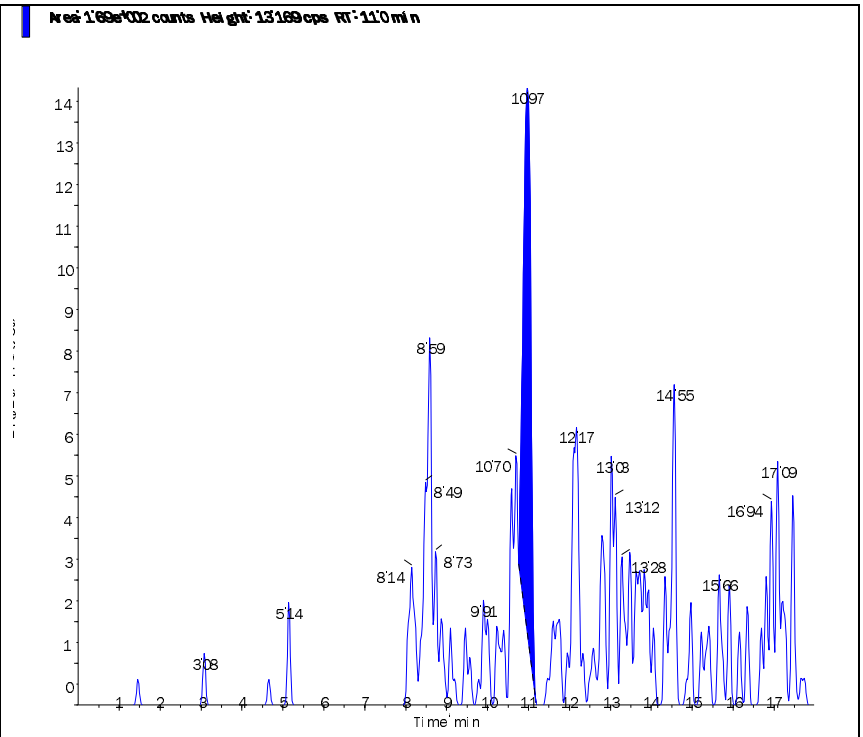

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/28/2015 5:22 PM

Data File	LM29946.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 4:01:44 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525212-14 CCB	**Injection Vial**	1.00
Data File	LM29946.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 4:01:44 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525212-14	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.470e+05	10.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	6.150e+02	10.90	N/A	0.0075
Perchlorate conf	1.210e+02	10.90	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 10.90(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

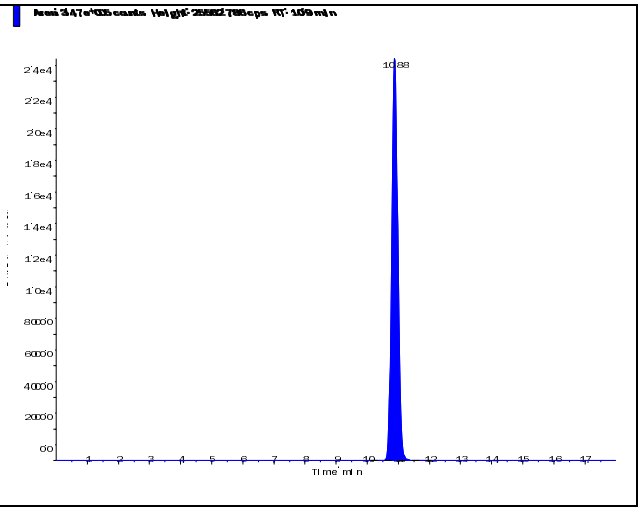

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Printed: 5/28/2015 5:22 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.90 (11.10) min Calculated conc: 0.0075 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	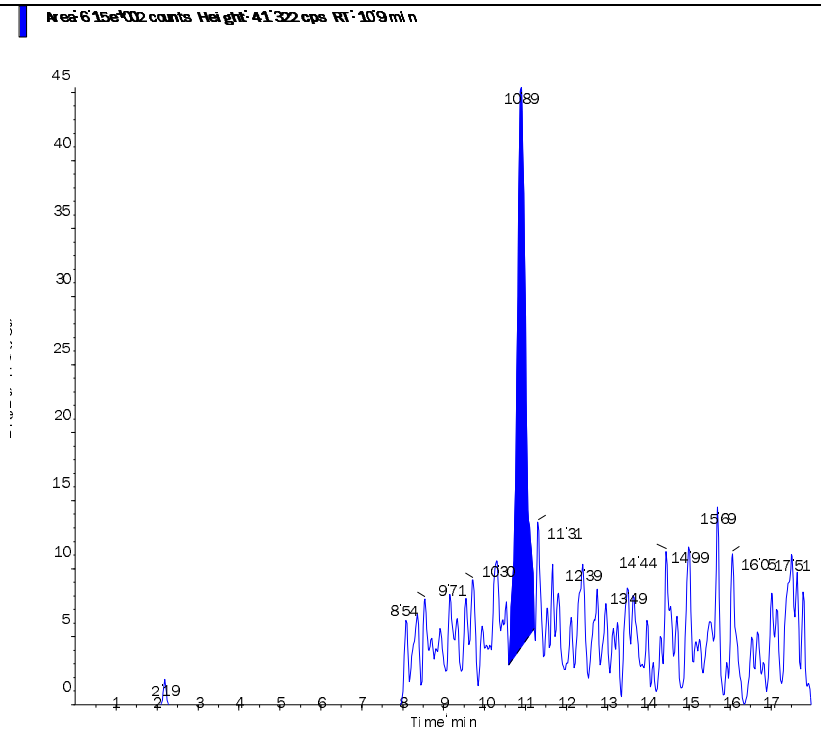
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 10.90 (11.10) min Calculated conc: < 0 ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	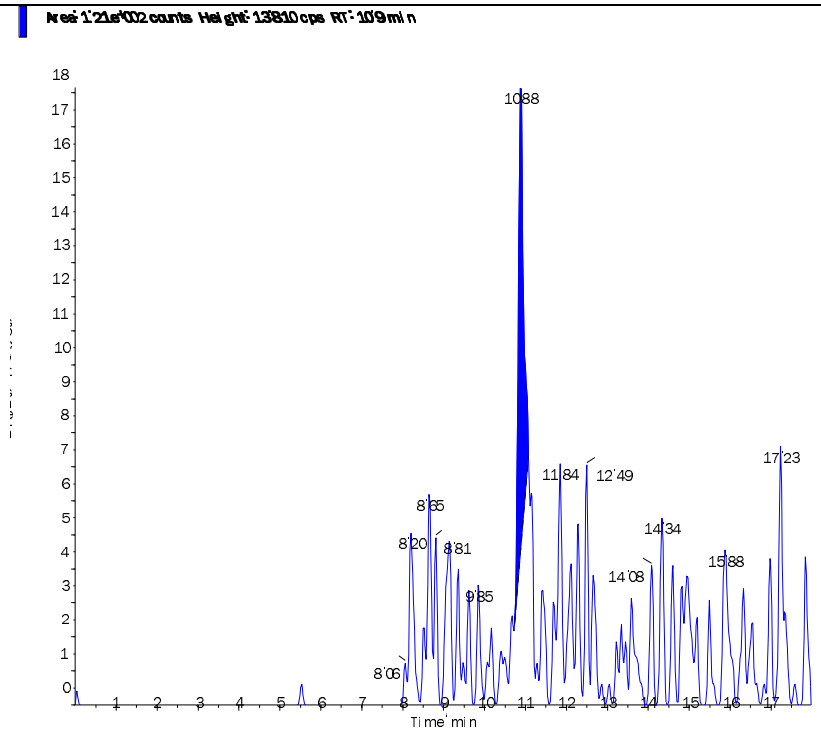

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/28/2015 5:09 PM

Data File	LM29903.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 2:14:54 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525193-01 MCT (0.2ug/L)	**Injection Vial**	32.00
Data File	LM29903.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 2:14:54 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525193-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD69913	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.460e+05	10.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.130e+04	10.80	N/A	0.205
Perchlorate conf	4.540e+03	10.70	N/A	0.215

O18LP (Internal Standard)

RT (Exp. RT): 10.70(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

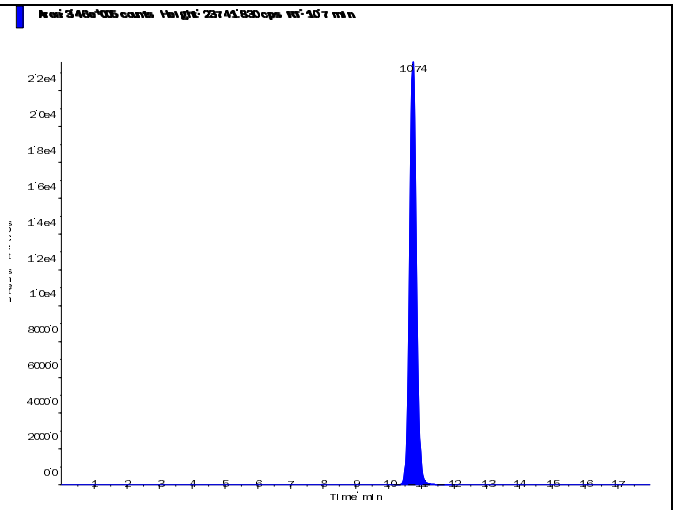

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Applied Biosystems | MDS SCIEX

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Printed: 5/28/2015 5:09 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.80 (11.10) min
Calculated conc:	0.205 ng/ml
Area Ratio:	0.033
Sample Type:	(Unknown)

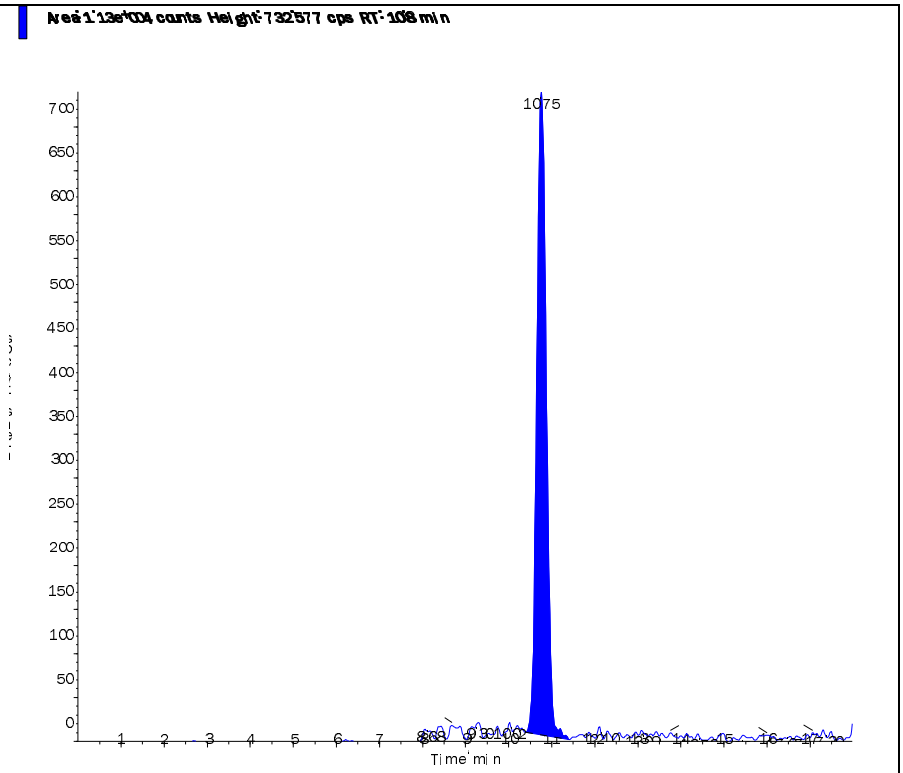

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.70 (11.10) min
Calculated conc:	0.215 ng/ml
Area Ratio:	0.013
Sample Type:	(Unknown)

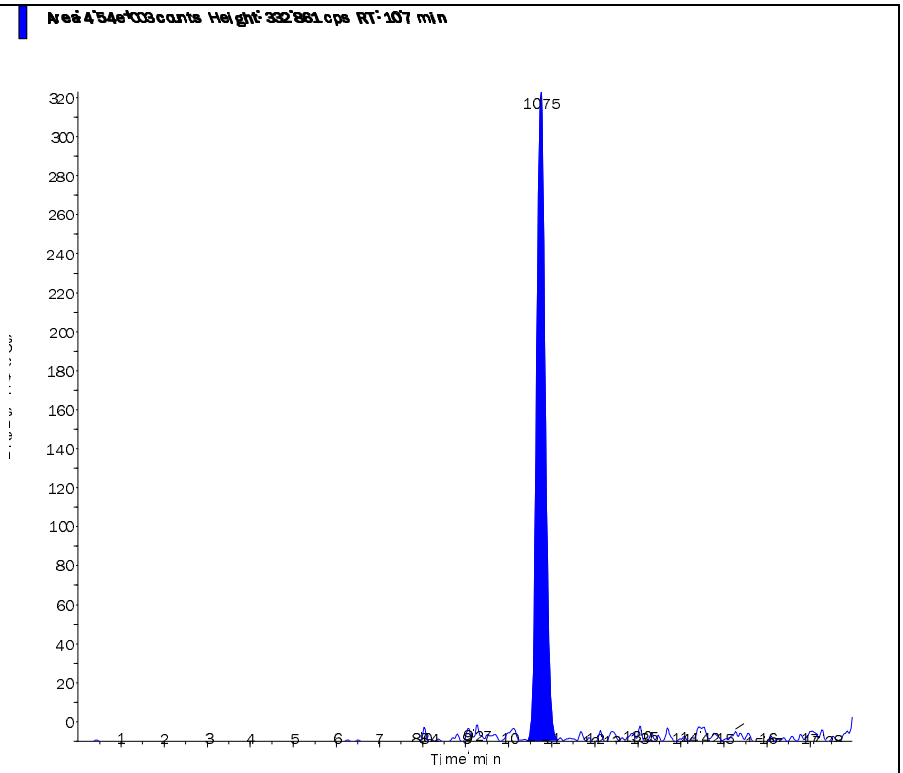

2.2.1.5 Raw QC Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/28/2015 5:09 PM

Data File	LM29904.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 2:33:50 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525193-02 BLANK	**Injection Vial**	33.00
Data File	LM29904.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 2:33:50 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525193-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.520e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

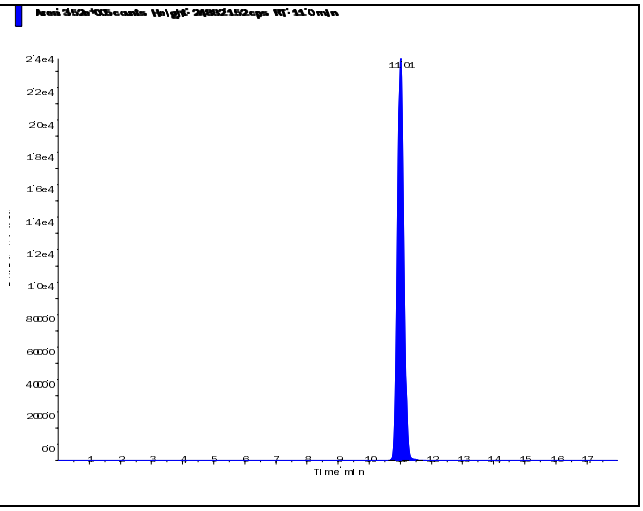

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/28/2015 5:09 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (11.10) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

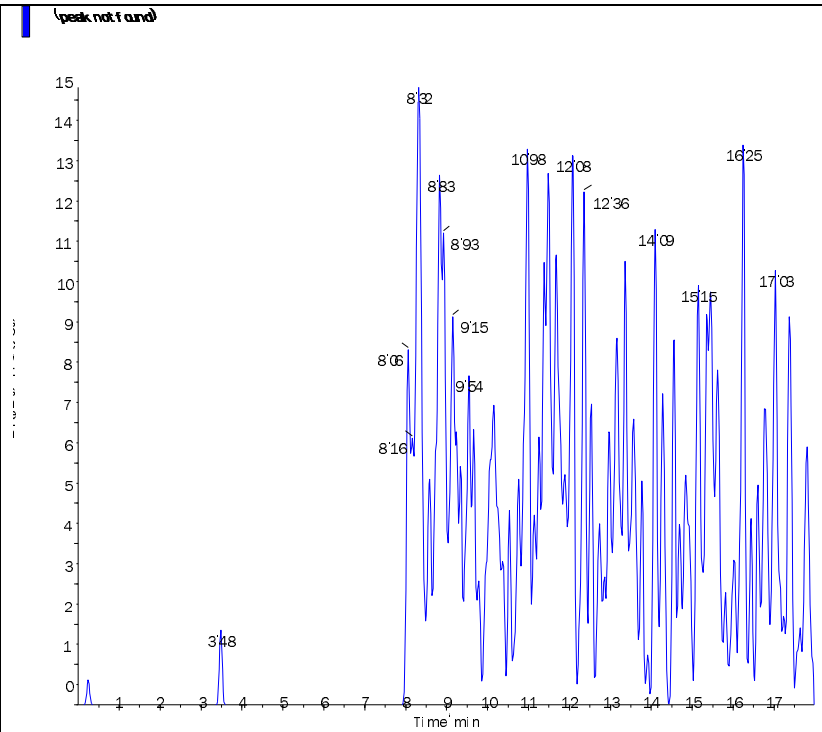

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (11.10) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

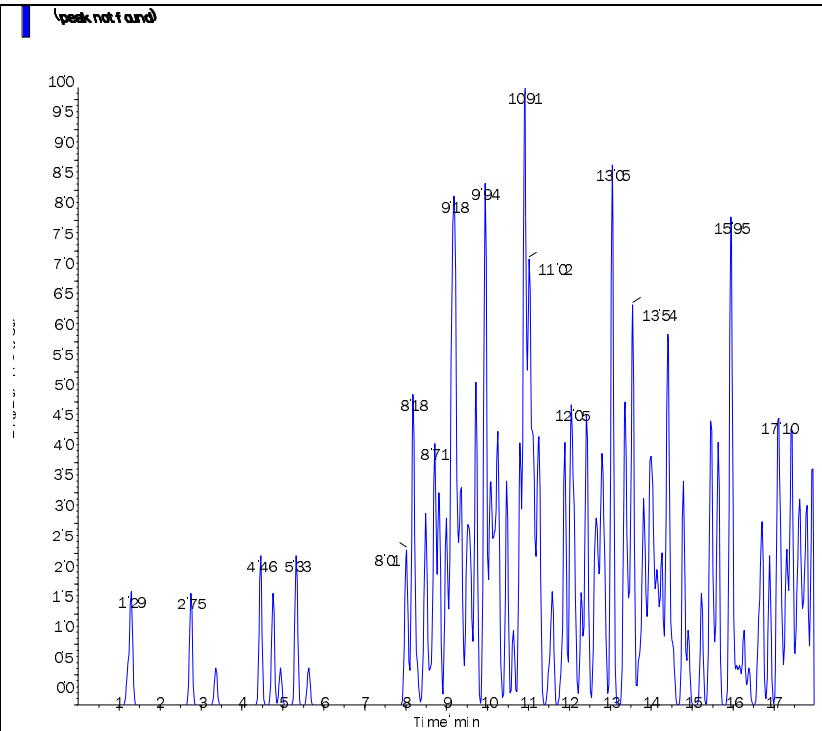

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/28/2015 5:09 PM

Data File	LM29905.wiff	**Result Table**	052715_JWR.rdb
Acquisition Date	5/28/2015 2:52:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525193-03 LCS (0.2ug/L)	**Injection Vial**	34.00
Data File	LM29905.wiff	**Injection Volume**	10.00
Acquisition Date	5/28/2015 2:52:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	052715_JWR.rdb
Sample ID	WG525193-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD69913	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.310e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.050e+04	11.00	N/A	0.20
Perchlorate conf	4.160e+03	11.00	N/A	0.206

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.10) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

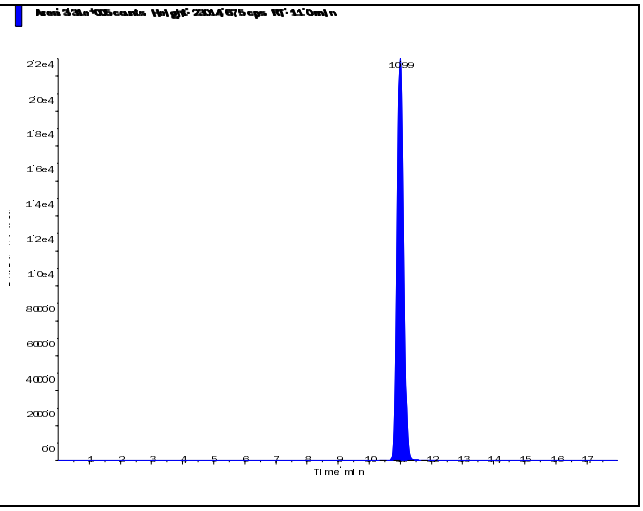

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.00 (11.10) min Calculated conc: 0.20 ng/ml Area Ratio: 0.032 Sample Type: (Unknown)	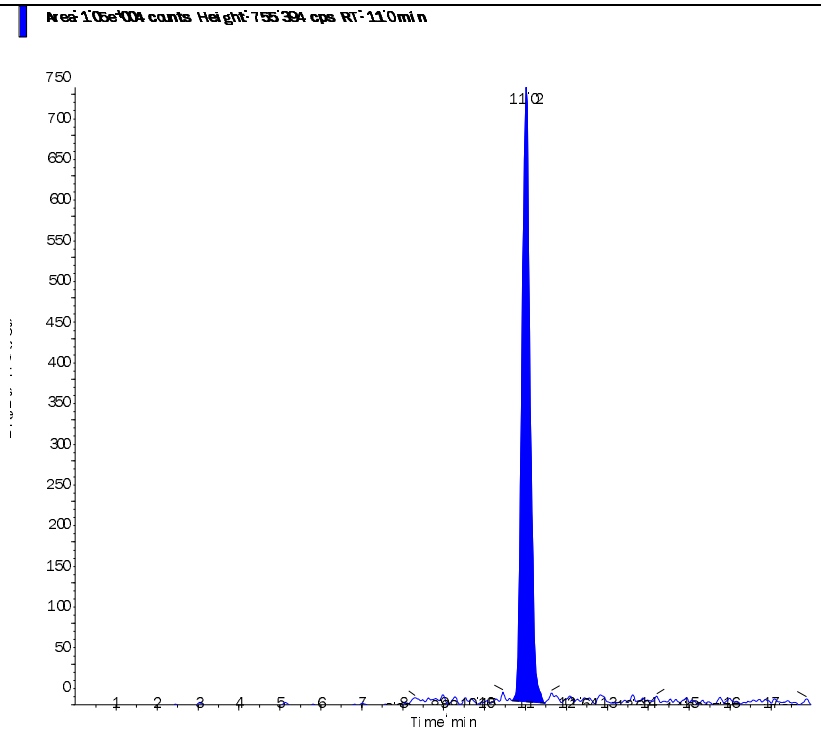
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.00 (11.10) min Calculated conc: 0.206 ng/ml Area Ratio: 0.013 Sample Type: (Unknown)	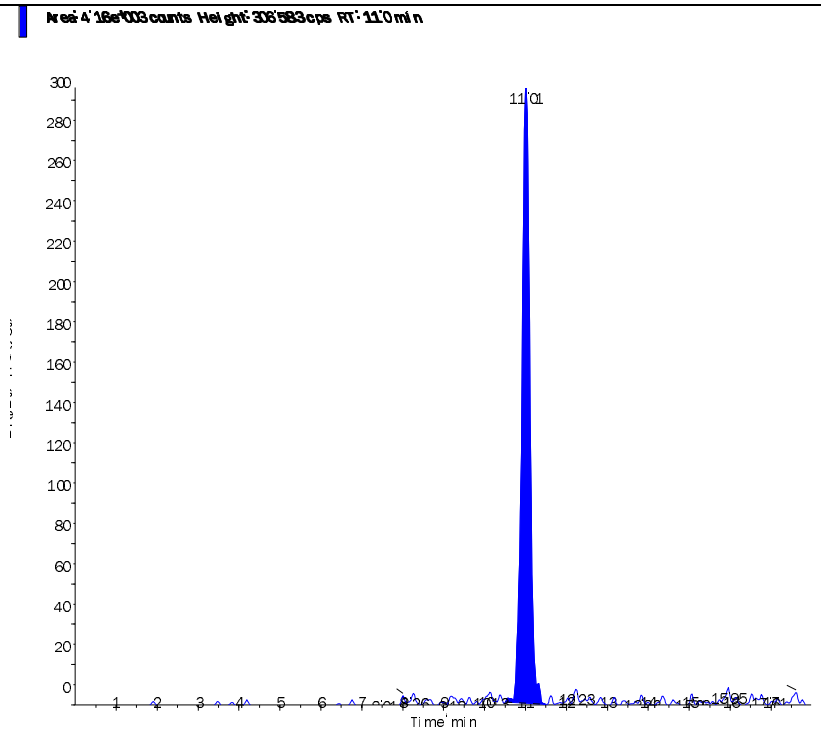

2.3 Metals Data

2.3.1 Metals I C P Data

2.3.1.1 Summary Data

Microbac

Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051435-02	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	50WW08FF-052115	**Prep Method:**	3015	**Prep Date:**	05/26/2015 13:32
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	05/27/2015 08:53
Workgroup #:	WG525235	**Analyst:**	KHR	**Run Date:**	05/27/2015 16:28
Collect Date:	05/21/2015 13:55	**Dilution:**	1	**File ID:**	P2.052715.162810
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.100	U	0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051435-04	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	50WW22FF-052115	**Prep Method:**	3015	**Prep Date:**	05/26/2015 13:32
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	05/27/2015 08:53
Workgroup #:	WG525235	**Analyst:**	KHR	**Run Date:**	05/27/2015 16:31
Collect Date:	05/21/2015 15:10	**Dilution:**	1	**File ID:**	P2.052715.163134
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.100	U	0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.3.1.2 QC Summary Data

Example 6010 Calculations
Perkin Elmer Optima 4300 DV

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG525082
Analyst: AC
Spike Analyst: AC
Run Date: 05/26/2015 13:32
Method: 3015
Balance: BAL019
Instrument: MW-4
Instrument Start: 05/26/2015 13:39

SOP: ME407 Revison 17
Spike Solution: STD70570
Spike Witness: ERP
HNO3 Lot #: COA18221
HCL Lot #: COA18196
ICP Filters- fisher-Lot# RGT32945
40 & 50 ML. DIGESTION TU COA18222

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG525082-02	BLANK	1	40 mL	50 mL	204.986 g	204.965 g		
2	WG525082-03	LCS	1	40 mL	50 mL	210.698 g	210.679 g	5 mL	
3	L15051405-01	SAMP	1	40 mL	50 mL	204.663 g	204.641 g		06/01/15
4	L15051405-02	SAMP	1	40 mL	50 mL	206.266 g	206.242 g		06/01/15
5	L15051435-02	SAMP	1	40 mL	50 mL	204.101 g	204.055 g		06/02/15
6	L15051435-04	SAMP	1	40 mL	50 mL	203.906 g	203.872 g		06/02/15
7	L15051463-01	SAMP	1	40 mL	50 mL	203.437 g	203.424 g		06/01/15
8	L15051463-02	SAMP	1	40 mL	50 mL	203.404 g	203.371 g		06/01/15
9	L15051463-03	SAMP	1	40 mL	50 mL	204.4 g	204.382 g		06/01/15
10	WG525082-01	REF	1	40 mL	50 mL	206.239 g	206.204 g		
11	L15051463-04	RS01	1	40 mL	50 mL	206.239 g	206.204 g		06/01/15
12	WG525082-04	MS	1	40 mL	50 mL	210.35 g	210.327 g	5 mL	
13	L15051463-05	MS01	1	40 mL	50 mL	210.35 g	210.327 g	5 mL	06/01/15
14	WG525082-05	MSD	1	40 mL	50 mL	209.609 g	209.569 g	5 mL	
15	L15051463-06	SD01	1	40 mL	50 mL	209.609 g	209.569 g	5 mL	06/01/15
16	L15051463-07	SAMP	1	40 mL	50 mL	204.772 g	204.735 g		06/01/15
17	L15051477-01	SAMP	1	40 mL	50 mL	204.059 g	204.031 g		06/02/15
18	L15051477-02	SAMP	1	40 mL	50 mL	204.357 g	204.325 g		06/02/15
19	L15051477-03	SAMP	1	40 mL	50 mL	205.619 g	205.596 g		06/02/15
20	L15051502-01	SAMP	1	40 mL	50 mL	207.01 g	206.977 g		06/02/15
21	L15051502-02	SAMP	1	40 mL	50 mL	205.179 g	205.132 g		06/02/15
22	L15051508-01	SAMP	1	40 mL	50 mL	205.831 g	205.814 g		06/01/15
23	L15051508-02	SAMP	1	40 mL	50 mL	204.282 g	204.242 g		06/01/15
24	L15051508-03	SAMP	1	40 mL	50 mL	204.17 g	204.154 g		06/01/15
25	L15051508-04	SAMP	1	40 mL	50 mL	204.365 g	204.314 g		06/01/15
26	L15051508-05	SAMP	1	40 mL	50 mL	203.25 g	203.214 g		06/01/15
27	L15051508-06	SAMP	1	40 mL	50 mL	204.144 g	204.112 g		06/01/15

Analyst: [signature]

Reviewer: [signature]

MW_DIG - Modified 09/30/2009
PDF ID: 4197915
Report generated: 05/26/2015 14:23

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: PE-ICP2 Dataset: 052715HR.CSV

Analyst1: KHR Analyst2: N/A

Method: 6010/200.7 SOP: ME600E Rev: 18

Maintenance Log ID:

Calibration Std: STD70488 ICV Std: STD70489 Post Spike: STD70196

ICSA: STD70342 ICSAB: STD70522 Int. Std: RGT33135

CCV: STD70732 LLCCV: STD70488 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 525150, 525152, 525234, 525249, 525235

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	P2.052715.084045	WG525267-01	Calibration Point		1		05/27/15 08:40
2	P2.052715.084407	WG525267-02	Calibration Point		1		05/27/15 08:44
3	P2.052715.084726	WG525267-03	Calibration Point		1		05/27/15 08:47
4	P2.052715.085048	WG525267-04	Calibration Point		1		05/27/15 08:50
5	P2.052715.085312	WG525267-05	Calibration Point		1		05/27/15 08:53
6	P2.052715.085537	WG525267-06	Initial Calibration Verification		1		05/27/15 08:55
7	P2.052715.085803	WG525267-07	Initial Calib Blank		1		05/27/15 08:58
8	P2.052715.090124	WG525267-08	Low Level Initial Calibration V		1		05/27/15 09:01
9	P2.052715.090348	WG525267-09	Interference Check		1		05/27/15 09:03
10	P2.052715.090611	WG525267-10	Interference Check		1		05/27/15 09:06
11	P2.052715.090834	WG525267-11	CCV		1		05/27/15 09:08
12	P2.052715.091102	WG525267-12	CCB		1		05/27/15 09:11
13	P2.052715.095617	WG524813-02	Method/Prep Blank	40/50	1		05/27/15 09:56
14	P2.052715.095939	WG524813-03	Laboratory Control S	40/50	1		05/27/15 09:59
15	P2.052715.100202	WG524637-01	Fluid Blank		1		05/27/15 10:02
16	P2.052715.100525	L15051303-02	50WW13FF-052015	40/50	1		05/27/15 10:05
17	P2.052715.100750	L15051303-04	50WW14FF-052015	40/50	1		05/27/15 10:07
18	P2.052715.101014	L15051303-06	50WW11FF-052015	40/50	1		05/27/15 10:10
19	P2.052715.101335	L15051303-08	50WW06FF-052015	40/50	1		05/27/15 10:13
20	P2.052715.101700	L15051303-10	50WW12FF-052015	40/50	1		05/27/15 10:17
21	P2.052715.101925	WG525150-01	Post Digestion Spike		1	L15051303-10	05/27/15 10:19
22	P2.052715.102148	WG525150-02	Serial Dilution		5	L15051303-10	05/27/15 10:21
23	P2.052715.102507	WG525267-13	CCV		1		05/27/15 10:25
24	P2.052715.102732	WG525267-14	CCB		1		05/27/15 10:27
25	P2.052715.103056	L15051303-12	50WW23FF-052015	40/50	1		05/27/15 10:30
26	P2.052715.103323	L15051308-01	A44986	5/50	1		05/27/15 10:33
27	P2.052715.103547	L15051323-01	GT150008	5/50	1		05/27/15 10:35
28	P2.052715.103909	WG524813-01	Reference Sample		1	L15051333-04	05/27/15 10:39
29	P2.052715.104231	WG524813-04	Matrix Spike	40/50	1	L15051333-04	05/27/15 10:42
30	P2.052715.104456	WG524813-05	Matrix Spike Duplica	40/50	1	L15051333-04	05/27/15 10:44
31	P2.052715.104719	L15051333-11	MW2E-309-14	40/50	1		05/27/15 10:47
32	P2.052715.104947	L15051333-14	MW4B-309-14	40/50	1		05/27/15 10:49
33	P2.052715.105212	L15051333-17	MW4B2-309-14	40/50	1		05/27/15 10:52
34	P2.052715.105437	L15051333-20	MW5A-309-14	40/50	1		05/27/15 10:54

Page: 1 Approved: May 28, 2015

Maren Berry

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: PE-ICP2 Dataset: 052715HR.CSV

Analyst1: KHR Analyst2: N/A

Method: 6010/200.7 SOP: ME600E Rev: 18

Maintenance Log ID:

Calibration Std: STD70488 ICV Std: STD70489 Post Spike: STD70196

ICSA: STD70342 ICSAB: STD70522 Int. Std: RGT33135

CCV: STD70732 LLCCV: STD70488 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 525150, 525152, 525234, 525249, 525235

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	P2.052715.105759	WG525267-15	CCV		1		05/27/15 10:57
36	P2.052715.110024	WG525267-16	CCB		1		05/27/15 11:00
37	P2.052715.110345	L15051333-23	OW1B-309-14	40/50	1		05/27/15 11:03
38	P2.052715.110609	L15051333-26	OW2A-309-14	40/50	1		05/27/15 11:06
39	P2.052715.110930	L15051333-29	OW3A-309-14	40/50	1		05/27/15 11:09
40	P2.052715.111251	L15051387-01	15-11-14 W1	40/50	1		05/27/15 11:12
41	P2.052715.111513	L15051389-01	1801-150 S1	40/50	1		05/27/15 11:15
42	P2.052715.111735	L15051389-02	1801-150 S2	40/50	1		05/27/15 11:17
43	P2.052715.111959	WG525267-17	CCV		1		05/27/15 11:19
44	P2.052715.112223	WG525267-18	CCB		1		05/27/15 11:22
45	P2.052715.112544	WG525267-19	Low Level Continuing Calibra		1		05/27/15 11:25
46	P2.052715.112928	WG525046-02	Method/Prep Blank	40/50	1		05/27/15 11:29
47	P2.052715.113251	WG525046-03	Laboratory Control S	40/50	1		05/27/15 11:32
48	P2.052715.113518	L15051525-01	DW-345-3	40/50	1		05/27/15 11:35
49	P2.052715.113838	L15051526-01	DW-12-1	40/50	1		05/27/15 11:38
50	P2.052715.114101	WG525046-01	Reference Sample		1	L15051526-02	05/27/15 11:41
51	P2.052715.114421	WG525046-04	Matrix Spike	40/50	1	L15051526-02	05/27/15 11:44
52	P2.052715.114644	WG525046-05	Matrix Spike Duplica	40/50	1	L15051526-02	05/27/15 11:46
53	P2.052715.114907	L15051407-01	21054000 DS-3	40/50	1		05/27/15 11:49
54	P2.052715.115129	WG525152-01	Post Digestion Spike		1	L15051407-01	05/27/15 11:51
55	P2.052715.115352	WG525152-02	Serial Dilution		5	L15051407-01	05/27/15 11:53
56	P2.052715.115714	WG525267-20	CCV		1		05/27/15 11:57
57	P2.052715.115939	WG525267-21	CCB		1		05/27/15 11:59
58	P2.052715.120303	L15051407-02	21054000 P-1	40/50	1		05/27/15 12:03
59	P2.052715.120525	L15051407-03	21054000 DS-2	40/50	1		05/27/15 12:05
60	P2.052715.120749	L15051407-04	21054000 DS-1	40/50	1		05/27/15 12:07
61	P2.052715.121109	L15051407-05	21054000 DW-1	40/50	1		05/27/15 12:11
62	P2.052715.121331	L15051409-01	21055000 DS-1	40/50	1		05/27/15 12:13
63	P2.052715.121651	L15051413-01	51177000 DS-1	40/50	1		05/27/15 12:16
64	P2.052715.122011	L15051413-02	51177000 DS-2	40/50	1		05/27/15 12:20
65	P2.052715.122331	L15051457-01	FT002MW0204-005	40/50	1		05/27/15 12:23
66	P2.052715.122554	L15051460-01	SS007MWN751-005	40/50	1		05/27/15 12:25
67	P2.052715.122917	L15051460-02	SS007MWN750-005	40/50	1		05/27/15 12:29
68	P2.052715.123240	WG525267-22	CCV		1		05/27/15 12:32

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Instrument Run Log

Instrument: PE-ICP2 Dataset: 052715HR.CSV

Analyst1: KHR Analyst2: N/A

Method: 6010/200.7 SOP: ME600E Rev: 18

Maintenance Log ID:

Calibration Std: STD70488 ICV Std: STD70489 Post Spike: STD70196

ICSA: STD70342 ICSAB: STD70522 Int. Std: RGT33135

CCV: STD70732 LLCCV: STD70488 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 525150, 525152, 525234, 525249, 525235

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	P2.052715.123505	WG525267-23	CCB		1		05/27/15 12:35
70	P2.052715.123826	L15051460-03	SS007MWOB16-005	40/50	1		05/27/15 12:38
71	P2.052715.124149	L15051460-04	SS007MWOB16-005 DUP	40/50	1		05/27/15 12:41
72	P2.052715.124512	L15051460-05	SS007MWOB18-005	40/50	1		05/27/15 12:45
73	P2.052715.124735	L15051512-01	40574-01	40/50	1		05/27/15 12:47
74	P2.052715.124957	L15051513-01	59-9-9.3 W1	40/50	1		05/27/15 12:49
75	P2.052715.125317	L15051514-01	1235-B01-WQ-W0002	40/50	1		05/27/15 12:53
76	P2.052715.125639	WG525267-24	CCV		1		05/27/15 12:56
77	P2.052715.125904	WG525267-25	CCB		1		05/27/15 12:59
78	P2.052715.131933	WG525038-03	Method/Prep Blank	40/50	1		05/27/15 13:19
79	P2.052715.132256	WG525038-04	Laboratory Control S	40/50	1		05/27/15 13:22
80	P2.052715.132522	L15051523-01	DW-345	40/50	1		05/27/15 13:25
81	P2.052715.132749	L15051523-02	DW-345-2	40/50	1		05/27/15 13:27
82	P2.052715.133108	L15051386-01	27-10-8 RW1 (T)	40/50	1		05/27/15 13:31
83	P2.052715.133431	L15051386-02	27-10-8 RW1 (T)	40/50	1		05/27/15 13:34
84	P2.052715.133654	L15051386-03	27-10-8 RW1 (U)	40/50	1		05/27/15 13:36
85	P2.052715.133916	L15051386-04	27-10-8 RW1 (U)	40/50	1		05/27/15 13:39
86	P2.052715.134138	WG525234-01	Post Digestion Spike		1	L15051386-04	05/27/15 13:41
87	P2.052715.134401	WG525234-02	Serial Dilution		5	L15051386-04	05/27/15 13:44
88	P2.052715.134721	WG525267-26	CCV		1		05/27/15 13:47
89	P2.052715.134949	WG525267-27	CCB		1		05/27/15 13:49
90	P2.052715.135310	L15051388-01	1804-226 W1	40/50	1		05/27/15 13:53
91	P2.052715.135534	L15051391-01	1804-103 W1	40/50	1		05/27/15 13:55
92	P2.052715.135757	L15051391-02	1804-111 P1	40/50	1		05/27/15 13:57
93	P2.052715.140022	L15051393-02	TW16S	40/50	1		05/27/15 14:00
94	P2.052715.140246	L15051393-03	TW16S	40/50	1		05/27/15 14:02
95	P2.052715.140610	WG525038-01	Reference Sample		1	L15051393-04	05/27/15 14:06
96	P2.052715.140833	WG525038-02	Reference Sample		1	L15051393-05	05/27/15 14:08
97	P2.052715.141057	WG525038-05	Matrix Spike	40/50	1	L15051393-04	05/27/15 14:10
98	P2.052715.141321	WG525038-07	Matrix Spike	40/50	1	L15051393-05	05/27/15 14:13
99	P2.052715.141545	WG525038-06	Matrix Spike Duplica	40/50	1	L15051393-04	05/27/15 14:15
100	P2.052715.141809	WG525267-28	CCV		1		05/27/15 14:18
101	P2.052715.142034	WG525267-29	CCB		1		05/27/15 14:20
102	P2.052715.142355	WG525038-08	Matrix Spike Duplica	40/50	1	L15051393-05	05/27/15 14:23

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Maren Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: PE-ICP2 Dataset: 052715HR.CSV

Analyst1: KHR Analyst2: N/A

Method: 6010/200.7 SOP: ME600E Rev: 18

Maintenance Log ID:

Calibration Std: STD70488 ICV Std: STD70489 Post Spike: STD70196

ICSA: STD70342 ICSAB: STD70522 Int. Std: RGT33135

CCV: STD70732 LLCCV: STD70488 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 525150, 525152, 525234, 525249, 525235

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	P2.052715.142619	L15051393-10	TW11S	40/50	1		05/27/15 14:26
104	P2.052715.142843	L15051393-11	TW11S	40/50	1		05/27/15 14:28
105	P2.052715.143203	L15051393-12	EQ RINSE 2	40/50	1		05/27/15 14:32
106	P2.052715.143525	L15051402-01	51152001 W-1	40/50	1		05/27/15 14:35
107	P2.052715.143750	L15051403-01	21061000 P-1	40/50	1		05/27/15 14:37
108	P2.052715.144014	WG525267-30	CCV		1		05/27/15 14:40
109	P2.052715.144239	WG525267-31	CCB		1		05/27/15 14:42
110	P2.052715.145324	WG525230-02	Method/Prep Blank	40/50	1		05/27/15 14:53
111	P2.052715.145646	WG525230-03	Laboratory Control S	40/50	1		05/27/15 14:56
112	P2.052715.145910	WG525064-01	Fluid Blank 1		1		05/27/15 14:59
113	P2.052715.150233	WG525064-02	Fluid Blank 2		1		05/27/15 15:02
114	P2.052715.150555	L15051349-01	15E1150-01	5/50	1		05/27/15 15:05
115	P2.052715.150918	L15051353-01	15E1152-01	5/50	1		05/27/15 15:09
116	P2.052715.151143	L15051428-01	60500-SSP0001-SSP0001	5/50	1		05/27/15 15:11
117	P2.052715.151503	L15051428-03	60500-SSP0002-SSP0002	5/50	1		05/27/15 15:15
118	P2.052715.151823	WG525249-01	Post Digestion Spike		1	L15051428-03	05/27/15 15:18
119	P2.052715.152047	WG525249-02	Serial Dilution		5	L15051428-03	05/27/15 15:20
120	P2.052715.152407	WG525267-32	CCV		1		05/27/15 15:24
121	P2.052715.152632	WG525267-33	CCB		1		05/27/15 15:26
122	P2.052715.152953	L15051546-01	SS007MWOB21-005	40/50	1		05/27/15 15:29
123	P2.052715.153217	L15051546-02	SS007MWOB04-005	40/50	1		05/27/15 15:32
124	P2.052715.153537	WG525230-01	Reference Sample		1	L15051546-03	05/27/15 15:35
125	P2.052715.153901	WG525230-04	Matrix Spike	40/50	1	L15051546-03	05/27/15 15:39
126	P2.052715.154126	WG525230-05	Matrix Spike Duplica	40/50	1	L15051546-03	05/27/15 15:41
127	P2.052715.154351	L15051546-06	SS007MWOB13-005	40/50	1		05/27/15 15:43
128	P2.052715.154616	L15051546-07	SS007MWN752-005	40/50	1		05/27/15 15:46
129	P2.052715.154941	L15051546-08	SS007MWOB19-005	40/50	1		05/27/15 15:49
130	P2.052715.155204	L15051546-09	SS007MWN748-005	40/50	1		05/27/15 15:52
131	P2.052715.155529	WG525267-34	CCV		1		05/27/15 15:55
132	P2.052715.155754	WG525267-35	CCB		1		05/27/15 15:57
133	P2.052715.160115	L15051546-10	SS007MWN752-005 DUP	40/50	1		05/27/15 16:01
134	P2.052715.160439	L15051546-11	FQC-RB052115CC-01	40/50	1		05/27/15 16:04
135	P2.052715.160801	L15051557-01	15E1230-01	5/50	1		05/27/15 16:08
136	P2.052715.161155	WG525267-36	CCV		1		05/27/15 16:11

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Maren Berry

Microbac Laboratories Inc.

Instrument Run Log

Instrument: PE-ICP2 Dataset: 052715HR.CSV
Analyst1: KHR Analyst2: N/A
Method: 6010/200.7 SOP: ME600E Rev: 18
Maintenance Log ID:

Calibration Std: STD70488 ICV Std: STD70489 Post Spike: STD70196
ICSA: STD70342 ICSAB: STD70522 Int. Std: RGT33135
CCV: STD70732 LLCCV: STD70488 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 525150, 525152, 525234, 525249, 525235

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	P2.052715.161420	WG525267-37	CCB		1		05/27/15 16:14
138	P2.052715.161741	WG525082-02	Method/Prep Blank	40/50	1		05/27/15 16:17
139	P2.052715.162103	WG525082-03	Laboratory Control S	40/50	1		05/27/15 16:21
140	P2.052715.162326	L15051405-01	21052000 DS-1	40/50	1		05/27/15 16:23
141	P2.052715.162548	L15051405-02	21052000 DW-1	40/50	1		05/27/15 16:25
142	P2.052715.162810	L15051435-02	50WW08FF-052115	40/50	1		05/27/15 16:28
143	P2.052715.163134	L15051435-04	50WW22FF-052115	40/50	1		05/27/15 16:31
144	P2.052715.163458	L15051463-01	ST008MW0812-005	40/50	1		05/27/15 16:34
145	P2.052715.163819	L15051463-02	ST008MW0809-005	40/50	1		05/27/15 16:38
146	P2.052715.164042	WG525235-01	Post Digestion Spike		1	L15051463-02	05/27/15 16:40
147	P2.052715.164306	WG525235-02	Serial Dilution		5	L15051463-02	05/27/15 16:43
148	P2.052715.164529	WG525267-38	CCV		1		05/27/15 16:45
149	P2.052715.164759	WG525267-39	CCB		1		05/27/15 16:47
150	P2.052715.165120	L15051463-03	ST008MW0816-005	40/50	1		05/27/15 16:51
151	P2.052715.165343	WG525082-01	Reference Sample		1	L15051463-04	05/27/15 16:53
152	P2.052715.165619	WG525082-04	Matrix Spike	40/50	1	L15051463-04	05/27/15 16:56
153	P2.052715.165849	WG525082-05	Matrix Spike Duplica	40/50	1	L15051463-04	05/27/15 16:58
154	P2.052715.170121	L15051463-07	FQC-RB05201501-CB	40/50	1		05/27/15 17:01
155	P2.052715.170444	L15051477-01	FT02PTS-EFFLUENT-20MA	40/50	1		05/27/15 17:04
156	P2.052715.170803	L15051477-02	FT02PTS-INTERMEDIATE-2	40/50	1		05/27/15 17:08
157	P2.052715.171122	L15051477-03	FT02PTS-INFLUENT-20MAY	40/50	1		05/27/15 17:11
158	P2.052715.171344	L15051502-01	COZART SEEP 1	40/50	1		05/27/15 17:13
159	P2.052715.171605	L15051502-02	COZART BASIN	40/50	1		05/27/15 17:16
160	P2.052715.171828	WG525267-40	CCV		1		05/27/15 17:18
161	P2.052715.172053	WG525267-41	CCB		1		05/27/15 17:20
162	P2.052715.172417	L15051508-01	6-10-19 W1	40/50	1		05/27/15 17:24
163	P2.052715.172737	L15051508-02	6-10-19.01 W1	40/50	1		05/27/15 17:27
164	P2.052715.173057	L15051508-03	6-10-19.01 S1	40/50	1		05/27/15 17:30
165	P2.052715.173320	L15051508-04	27-3-4.01 S1	40/50	1		05/27/15 17:33
166	P2.052715.173640	L15051508-05	59-10-1.12 W1	40/50	1		05/27/15 17:36
167	P2.052715.173903	L15051508-06	59-10-1.12 W1	40/50	1		05/27/15 17:39
168	P2.052715.174223	WG525267-42	CCV		1		05/27/15 17:42
169	P2.052715.174448	WG525267-43	CCB		1		05/27/15 17:44
170	P2.052715.174811	WG525267-44	Low Level Continuing Calibra		1		05/27/15 17:48

Page: 5 Approved: May 28, 2015

Maren Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: PE-ICP2 Dataset: 052715HR.CSV

Analyst1: KHR Analyst2: N/A

Method: 6010/200.7 SOP: ME600E Rev: 18

Maintenance Log ID:

Calibration Std: STD70488 ICV Std: STD70489 Post Spike: STD70196

ICSA: STD70342 ICSAB: STD70522 Int. Std: RGT33135

CCV: STD70732 LLCCV: STD70488 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 525150, 525152, 525234, 525249, 525235

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
171	P2.052715.175036	WG525206-02	Method/Prep Blank		1		05/27/15 17:50
172	P2.052715.175358	WG525206-03	Laboratory Control S		1		05/27/15 17:53
173	P2.052715.175622	L15051504-01	SL21		1		05/27/15 17:56
174	P2.052715.175847	L15051504-02	SL21		1		05/27/15 17:58
175	P2.052715.180209	L15051504-03	TW14D		1		05/27/15 18:02
176	P2.052715.180434	L15051504-04	TW14D		1		05/27/15 18:04
177	P2.052715.180756	L15051529-01	ST008MW0805-005		1		05/27/15 18:07
178	P2.052715.181118	L15051530-01	LF003MW0309-005		1		05/27/15 18:11
179	P2.052715.181342	WG525252-01	Post Digestion Spike		1	L15051530-01	05/27/15 18:13
180	P2.052715.181608	WG525252-02	Serial Dilution		5	L15051530-01	05/27/15 18:16
181	P2.052715.181832	WG525267-45	CCV		1		05/27/15 18:18
182	P2.052715.182057	WG525267-46	CCB		1		05/27/15 18:20
183	P2.052715.182321	L15051532-01	DP005MW0509-005		1		05/27/15 18:23
184	P2.052715.182547	L15051533-01	ST008MW0818-005		1		05/27/15 18:25
185	P2.052715.182812	L15051535-01	FT002MW0205-005		1		05/27/15 18:28
186	P2.052715.183038	L15051538-01	DP005MW0507-005		1		05/27/15 18:30
187	P2.052715.183301	L15051543-01	SS007MW0704-005		1		05/27/15 18:33
188	P2.052715.183525	L15051543-02	SS007MW0704-005 DUP		1		05/27/15 18:35
189	P2.052715.183749	L15051544-01	SS007MWOB05-005		1		05/27/15 18:37
190	P2.052715.184014	L15051544-02	SS007MWOB05-005 DUP		1		05/27/15 18:40
191	P2.052715.184239	WG525267-47	CCV		1		05/27/15 18:42
192	P2.052715.184507	WG525267-48	CCB		1		05/27/15 18:45
193	P2.052715.184830	L15051570-02	PZ-89-1		1		05/27/15 18:48
194	P2.052715.185054	L15051570-03	PZ-89-1		1		05/27/15 18:50
195	P2.052715.185321	L15051570-04	TW62S		1		05/27/15 18:53
196	P2.052715.185546	L15051570-05	TW62S		1		05/27/15 18:55
197	P2.052715.185811	L15051544-03	SS007MWOB02-005		1	WG525206-01	05/27/15 18:58
198	P2.052715.190039	L15051544-04	SS007MWOB02-005 MS		1	WG525206-04	05/27/15 19:00
199	P2.052715.190304	L15051544-05	SS007MWOB02-005 MSD		1	WG525206-05	05/27/15 19:03
200	P2.052715.190529	WG525267-49	CCV		1		05/27/15 19:05
201	P2.052715.190754	WG525267-50	CCB		1		05/27/15 19:07

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Maren Berry

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 27-MAY-2015
Analyst: KHR
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: PE-ICP2
Curve Workgroup: 525267
Runlog ID: 68224
Analytical Workgroups: 525150, 525152, 525234, 525249, 525235

Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	1502
Level 3	
Level 4	1303, 1457, 1460, 1514, 1393, 1428
Add'l Level 4	1546, 1435, 1463, 1477
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	KHR
Secondary Reviewer	MMB
Comments	

Primary Reviewer: 28-MAY-2015 Kim H. Rhoden

Secondary Reviewer: 28-MAY-2015 Maren Berry

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-28-2015 14:05:49

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010C

AAB#: WG525235

Login Number: L15051435

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW08FF-052115	02	05/21/15					05/26/2015	5	180		05/27/15	6.1	180	
50WW22FF-052115	04	05/21/15					05/26/2015	4.9	180		05/27/15	6.1	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4202392
Report generated 05/28/2015 09:19

METHOD BLANK SUMMARY

Login Number: L15051435
Blank File ID: P2.052715.161741
Prep Date: 05/26/15 13:32
Analyzed Date: 05/27/15 16:17
Analyst: KHR

Work Group: WG525235
Blank Sample ID: WG525082-02
Instrument ID: PE-ICP2
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG525082-03	P2.052715.162103	05/27/15 16:21	01
50WW08FF-052115	L15051435-02	P2.052715.162810	05/27/15 16:28	01
50WW22FF-052115	L15051435-04	P2.052715.163134	05/27/15 16:31	01

Report Name: BLANK_SUMMARY
PDF File ID: 4202394
Report generated 05/28/2015 09:22

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051435 Prep Date: 05/26/15 13:32 Sample ID: WG525082-02
Instrument ID: PE-ICP2 Run Date: 05/27/15 16:17 Prep Method: 3015
File ID: P2.052715.161741 Analyst: KHR Method: 6010C
Workgroup (AAB#): WG525235 Matrix: Water Units: mg/L
Contract #: Cal ID: PE-ICP-27-MAY-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Iron, Dissolved	0.0500	0.200	0.0500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4202396
28-MAY-2015 09:22

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051435 Run Date: 05/27/2015 Sample ID: WG525082-03
Instrument ID: PE-ICP2 Run Time: 16:21 Prep Method: 3015
File ID: P2.052715.162103 Analyst: KHR Method: 6010C
Workgroup (AAB#): WG525235 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD70570 Cal ID: PE-ICP-27-MAY-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Iron, Dissolved	2.50	2.54	102	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4202398
Report generated: 05/28/2015 09:22

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L15051435 Cal ID: PE-ICP2- Worknum: WG525235
Instrument ID: PE-ICP2 Contract #: Method: 6010C
Parent ID: WG525082-01 File ID: P2.052715.165343 Dil: 1 Matrix: WATER
Sample ID: WG525082-04 MS File ID: P2.052715.165619 Dil: 1 Units: mg/L
Sample ID: WG525082-05 MSD File ID: P2.052715.165849 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Iron	0.124	2.50	2.51	95.5	2.50	2.53	96.1	0.578	80 - 120	20	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4202400
Report generated 05/28/2015 09:20

Microbac Laboratories Inc.
Serial Dilution Report

Login: L15051435 **Worknum:** WG525235
Instrument: PE-ICP2 **Method:** 6010C
Serial Dil: WG525235-02 **File ID:** P2.052715.164306 **Dil:** 5 **Units:** mg/L
Sample: L15051463-02 **File ID:** P2.052715.163819 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Iron	5.65		5.84		3.41	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 50 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 50 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4202388
05/28/2015 09:22

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L15051435 **Worknum:** WG525235
Instrument ID: PE-ICP2 **Method:** 6010C
Post Spike ID: WG525235-01 **File ID:** P2.052715.164042 **Dil:** 1 **Units:** mg/L
Sample ID: L15051463-02 **File ID:** P2.052715.163819 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
IRON	7.15		5.65		2	103.6	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4202390
Report generated: 05/28/2015 09:22

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L15051435	Workgroup (AAB#):	WG525235
Analytical Method:	6010C	Instrument ID:	PE-ICP2
ICAL Worknum:	WG525267	Initial Calibration Date:	27-MAY-2015 08:53

	WG525267-01		WG525267-02		WG525267-03		WG525267-04		WG525267-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
IRON	0	15.8	.04	195	.08	373	4	23100	8	46600	.99999	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4202404
Report generated: 28-MAY-2015 09:22

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L15051435
Instrument ID: PE-ICP2
File ID: P2.052715.085803
Workgroup (AAB#): WG525235
Matrix: WATER

Run Date: 05/27/2015
Run Time: 08:58
Analyst: KHR
Cal ID: PE-ICP2 - 27-MAY-15

Sample ID: WG525267-07
Method: 6010C
Units: mg/L

Analytes	MDL	RDL	Concentration	Qualifier
IRON	.04	.16	.04	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4202406
Report generated 05/28/2015 09:22

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051435
Run Date: 05/27/2015
Sample ID: WG525267-12
Instrument ID: PE-ICP2
Run Time: 09:11
Method: 6010C
File ID: P2.052715.091102
Analyst: KHR
Units: mg/L
Workgroup (AAB#): WG525235
Cal ID: PE-ICP - 27-MAY-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4202409
Report generated 05/28/2015 09:22

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051435
Run Date: 05/27/2015
Sample ID: WG525267-37
Instrument ID: PE-ICP2
Run Time: 16:14
Method: 6010C
File ID: P2.052715.161420
Analyst: KHR
Units: mg/L
Workgroup (AAB#): WG525235
Cal ID: PE-ICP - 27-MAY-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4202409
Report generated 05/28/2015 09:22

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051435
Run Date: 05/27/2015
Sample ID: WG525267-39
Instrument ID: PE-ICP2
Run Time: 16:47
Method: 6010C
File ID: P2.052715.164759
Analyst: KHR
Units: mg/L
Workgroup (AAB#): WG525235
Cal ID: PE-ICP - 27-MAY-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4202409
Report generated 05/28/2015 09:22

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L15051435
Run Date: 05/27/2015
Sample ID: WG525267-06
Instrument ID: PE-ICP2
Run Time: 08:55
Method: 6010C
File ID: P2.052715.085537
Analyst: KHR
Units: mg/L
Workgroup (AAB#): WG525235
Cal ID: PE-ICP - 27-MAY-15
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Iron		4	4.10	103	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4202405
Report generated 05/28/2015 09:22

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051435
Run Date: 05/27/2015
Sample ID: WG525267-11
Instrument ID: PE-ICP2
Run Time: 09:08
Method: 6010C
File ID: P2.052715.090834
Analyst: KHR
QC Key: DOD4
Workgroup (AAB#): WG525235
Cal ID: PE-ICP - 27-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.08	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4202408
Report generated 05/28/2015 09:22

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051435
Run Date: 05/27/2015
Sample ID: WG525267-36
Instrument ID: PE-ICP2
Run Time: 16:11
Method: 6010C
File ID: P2.052715.161155
Analyst: KHR
QC Key: DOD4
Workgroup (AAB#): WG525235
Cal ID: PE-ICP - 27-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.06	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4202408
Report generated 05/28/2015 09:22

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051435
Run Date: 05/27/2015
Sample ID: WG525267-38
Instrument ID: PE-ICP2
Run Time: 16:45
Method: 6010C
File ID: P2.052715.164529
Analyst: KHR
QC Key: DOD4
Workgroup (AAB#): WG525235
Cal ID: PE-ICP - 27-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	3.98	mg/L	99.4	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4202408
Report generated 05/28/2015 09:22

Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15051435
Run Date: 05/27/2015
Sample ID: WG525267-08
Instrument ID: PE-ICP2
Run Time: 09:01
Method: 6010C
File ID: P2.052715.090124
Analyst: KHR
QC Key: DOD4
Workgroup (AAB#): WG525235
Cal ID: PE-ICP - 27-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		0.160	0.165	mg/L	103	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4202410
Report generated 05/28/2015 09:29

Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15051435
Run Date: 05/27/2015
Sample ID: WG525267-19
Instrument ID: PE-ICP2
Run Time: 11:25
Method: 6010C
File ID: P2.052715.112544
Analyst: KHR
QC Key: DOD4
Workgroup (AAB#): WG525235
Cal ID: PE-ICP - 27-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		0.160	0.165	mg/L	103	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4202410
Report generated 05/28/2015 09:29

Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15051435
Run Date: 05/27/2015
Sample ID: WG525267-44
Instrument ID: PE-ICP2
Run Time: 17:48
Method: 6010C
File ID: P2.052715.174811
Analyst: KHR
QC Key: DOD4
Workgroup (AAB#): WG525235
Cal ID: PE-ICP - 27-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		0.160	0.172	mg/L	108	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4202410
Report generated 05/28/2015 09:29

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L15051435
Instrument ID: PE-ICP2
Sol. A : WG525267-09 **File ID:** P2.052715.090348
Sol. AB : WG525267-10 **File ID:** P2.052715.090611

Workgroup (AAB#): WG525235
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Iron	100	101	101	100	98.4	98.4	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4202407
Report generated 05/28/2015 09:22

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15051435 **Date:** 01/02/2015
Insturment ID: PE-ICP2 **Method:** 6010C

Analyte	Wave Length	AG	AL	AS	B	BA
ALUMINUM	396.15	0	0	0.206	0	0
ANTIMONY	206.84	0	0	-0.740	0	0
ARSENIC	188.98	0	0.0709	0	0	0
BARIUM	233.53	0	0	0	0	0
BERYLLIUM	234.86	0	0	0	0	0
BORON	249.68	0	0	0	0	0
CADMIUM	228.80	0	0	5.00	0	0
CALCIUM	227.55	0	0	0	0	0
CHROMIUM	267.72	0	0	0	0	0
COBALT	228.62	0	0	0	0	0.337
COPPER	327.39	0	0	0	0	0
IRON	239.56	0	0	0	0	0
LEAD	220.35	0	-0.160	0	0	0
LITHIUM	670.78	0	0	0	0	0
MAGNESIUM	279.08	0	0	0	0	0
MANGANESE	257.61	0	0	0	0	0
MOLYBDENUM	202.03	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
POTASSIUM	766.49	0	0	0	0	0
SELENIUM	196.03	0	-0.0380	0	0	0
SILICON	251.61	0	0	0	0	0
SILVER	328.07	0	0	0	0	0
SODIUM	589.59	0	0	0	0	0
STRONTIUM	407.77	0	0	0	0	0
THALLIUM	190.80	0	0.000100	0	0	0
TIN	189.93	0	0	0	0	0
TITANIUM	334.94	0	0	0	0	0
VANADIUM	290.88	0	0	0.200	0	0.0400
ZINC	206.20	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4202403
Report generated: 05/28/2015 09:19

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15051435 **Date:** 01/02/2015
Insturment ID: PE-ICP2 **Method:** 6010C

Analyte	Wave Length	BE	CA	CD	CO	CR
ALUMINUM	396.15	0	0	0	0	0
ANTIMONY	206.84	0	0	0	0.730	8.46
ARSENIC	188.98	0	-0.0220	0	0	-0.490
BARIUM	233.53	0	0	0	-0.192	0
BERYLLIUM	234.86	0	0	0	0	-0.0220
BORON	249.68	0	0	24.1	5.90	1.50
CADMIUM	228.80	0	0	0	-3.64	0
CALCIUM	227.55	0	0	0	0	0
CHROMIUM	267.72	0	0	0	0	0
COBALT	228.62	0	0	0	0	-0.200
COPPER	327.39	0	0	0	0.280	-0.0400
IRON	239.56	0	0	0	2.77	0
LEAD	220.35	0	0	0	0.462	0.0550
LITHIUM	670.78	0	0	0	0	0
MAGNESIUM	279.08	0	0	0	0	0
MANGANESE	257.61	0	0	0	0	0
MOLYBDENUM	202.03	0	0	0	0	0
NICKEL	231.60	0	0	0	1.05	0
POTASSIUM	766.49	0	0	0	0	0
SELENIUM	196.03	0	0	0	-0.250	0
SILICON	251.61	0	0	0	0	0
SILVER	328.07	0	0	0	0	0
SODIUM	589.59	0	0	0	0	0
STRONTIUM	407.77	0	0.0319	0	0	0
THALLIUM	190.80	0	0	0	1.00	0
TIN	189.93	0	0	0	0	0
TITANIUM	334.94	0	-0.150	0	0	0.297
VANADIUM	290.88	0	0	0	0	0
ZINC	206.20	0	0	0	0	-8.16

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4202403
Report generated: 05/28/2015 09:19

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15051435 **Date:** 01/02/2015
Insturment ID: PE-ICP2 **Method:** 6010C

Analyte	Wave Length	CU	FE	K	LI	MG
ALUMINUM	396.15	0	-0.119	0	0	0
ANTIMONY	206.84	0	-0.0366	0	0	0
ARSENIC	188.98	0	-0.250	0	0	0
BARIUM	233.53	0	0.0703	0	0	0
BERYLLIUM	234.86	0	0.224	0	0	0
BORON	249.68	0	-3.19	0	0	0
CADMIUM	228.80	0	0.00436	0	0	0
CALCIUM	227.55	0	0	0	0	0
CHROMIUM	267.72	0	0.0292	0	0	0
COBALT	228.62	0	0.0262	0	0	0
COPPER	327.39	0	-0.0434	0	0.154	0
IRON	239.56	0	0	0	0	0.0200
LEAD	220.35	0	0.0327	0	0	0
LITHIUM	670.78	0	0	0	0	0
MAGNESIUM	279.08	0	0.540	0	0	0
MANGANESE	257.61	0	-0.0240	0	0	0
MOLYBDENUM	202.03	0	-0.0159	0	0	0
NICKEL	231.60	0	0	0	0	0
POTASSIUM	766.49	0	0	0	0	0
SELENIUM	196.03	0	-0.253	0	0	0
SILICON	251.61	0	0	0	0	0
SILVER	328.07	0.0710	-0.421	0	0	0
SODIUM	589.59	0	0	0	0	0
STRONTIUM	407.77	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.93	0	0	0	0	0
TITANIUM	334.94	0	0	0	0	0
VANADIUM	290.88	0	-0.0729	0	0	0.0260
ZINC	206.20	-0.200	0.00660	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4202403
Report generated: 05/28/2015 09:19

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15051435 **Date:** 01/02/2015
Insturment ID: PE-ICP2 **Method:** 6010C

Analyte	Wave Length	MN	MO	NA	NI	PB
ALUMINUM	396.15	0	69.0	0	0	0
ANTIMONY	206.84	0	-1.46	0	-0.745	0
ARSENIC	188.98	0	5.34	0	0	0
BARIUM	233.53	0	-0.750	0	0	0
BERYLLIUM	234.86	-0.100	-0.376	0	-0.00970	0
BORON	249.68	0	-1.00	0	0	0
CADMIUM	228.80	0	0.0420	0	-0.0400	0
CALCIUM	227.55	0	-10.0	0	-150	0
CHROMIUM	267.72	0	0.170	0	0	0
COBALT	228.62	0	-1.80	0	0.129	0
COPPER	327.39	0	-0.0774	0	0.150	0
IRON	239.56	0	0	0	0	0
LEAD	220.35	0.600	-0.500	0	-0.190	0
LITHIUM	670.78	0	0	0	0	0
MAGNESIUM	279.08	0	0	0	0	0
MANGANESE	257.61	0	-0.0200	0	0	0
MOLYBDENUM	202.03	-0.209	0	0	0	0
NICKEL	231.60	0	0	0	0	0
POTASSIUM	766.49	0	0	1.00	0	0
SELENIUM	196.03	0.300	0	0	-0.376	0
SILICON	251.61	0	11.1	0	0	0
SILVER	328.07	0.130	0	0	0	0
SODIUM	589.59	0	0	0	0	0
STRONTIUM	407.77	0	0	0	0	0
THALLIUM	190.80	1.00	0.00100	0	0	0
TIN	189.93	0	0	0	0	0
TITANIUM	334.94	0	0	0	0	0
VANADIUM	290.88	0	0.178	0	0	0
ZINC	206.20	0	0	0	-0.200	-0.100

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4202403
Report generated: 05/28/2015 09:19

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15051435 **Date:** 01/02/2015
Insturment ID: PE-ICP2 **Method:** 6010C

Analyte	Wave Length	SB	SE	SI	SN	SR
ALUMINUM	396.15	0	0	0	0	0
ANTIMONY	206.84	0	0	0	0	0
ARSENIC	188.98	0	0	0	0	0
BARIUM	233.53	0	0	0	0	0
BERYLLIUM	234.86	0	0	0	0	0
BORON	249.68	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	227.55	0	0	0	0	0
CHROMIUM	267.72	0	0	0	0	0
COBALT	228.62	0	0	0	0	0
COPPER	327.39	0	0.0700	0	0	0
IRON	239.56	0	0	0	0	0
LEAD	220.35	-0.0100	0	0	0	0
LITHIUM	670.78	0	0	0	0	0
MAGNESIUM	279.08	0	0	0	0	0
MANGANESE	257.61	0	0	0	0	0
MOLYBDENUM	202.03	0	0	0	0	0
NICKEL	231.60	-0.0500	0	0	0	0
POTASSIUM	766.49	0	0	0	0	0
SELENIUM	196.03	0	0	0	0	0
SILICON	251.61	0	0	0	0	0
SILVER	328.07	0	0	0	0	0.200
SODIUM	589.59	0	0	0	0	0
STRONTIUM	407.77	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.93	0	0	0	0	0
TITANIUM	334.94	0	0	0	0	0
VANADIUM	290.88	0	0	0	0	0
ZINC	206.20	-0.300	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4202403
Report generated: 05/28/2015 09:19

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15051435 **Date:** 01/02/2015
Insturment ID: PE-ICP2 **Method:** 6010C

Analyte	Wave Length	TI	TL	V	ZN
ALUMINUM	396.15	0	0	0	0
ANTIMONY	206.84	0	0	-0.920	0
ARSENIC	188.98	0	0	0.0990	0
BARIUM	233.53	0	0	0.360	0
BERYLLIUM	234.86	0	0	0	0
BORON	249.68	0	0	0	0
CADMIUM	228.80	0	0	0.0800	0
CALCIUM	227.55	0	0	0	0
CHROMIUM	267.72	0	0	-0.567	-0.0400
COBALT	228.62	2.21	0	0	0
COPPER	327.39	-1.05	0	-0.440	-0.0600
IRON	239.56	0	0	0	0
LEAD	220.35	0	0	-0.224	0
LITHIUM	670.78	0	0	0	0
MAGNESIUM	279.08	0	0	0	0
MANGANESE	257.61	0	0	0.00100	0
MOLYBDENUM	202.03	0	0	-0.480	0
NICKEL	231.60	0	0.400	0	0
POTASSIUM	766.49	0	0	0	0
SELENIUM	196.03	-0.220	0	-0.100	0
SILICON	251.61	0	0	0	0
SILVER	328.07	0	0	-2.05	0
SODIUM	589.59	0	0	0	0
STRONTIUM	407.77	0	0	0	0
THALLIUM	190.80	-8.00	0	-2.76	0
TIN	189.93	0	0	0	0
TITANIUM	334.94	0	0	0	0
VANADIUM	290.88	0	0	0	0
ZINC	206.20	0	0	-0.100	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4202403
Report generated: 05/28/2015 09:19

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L15051435 **Date:** 05/01/2015
Insturment ID: PE-ICP2 **Method:** 6010C

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	630.0
Antimony	10.00	45.0
Arsenic	10.00	36.0
Barium	10.00	72.0
Beryllium	10.00	4.5
Boron	10.00	45.0
Cadmium	10.00	4.5
Calcium	10.00	900.0
Chromium	10.00	45.0
Cobalt	10.00	45.0
Copper	10.00	90.0
Iron	10.00	900.0
Lead	10.00	162.0
Lithium	10.00	0.9
Magnesium	10.00	900.0
Manganese	10.00	18.0
Molybdenum	10.00	45.0
Nickel	10.00	90.0
Phosphorus	10.00	72.0
Potassium	10.00	90.0
Selenium	10.00	45.0
Silicon	10.00	22.5
Silver	10.00	1.8
Sodium	10.00	180.0
Strontium	10.00	4.5
Thallium	10.00	9.0
Tin	10.00	45.0
Titanium	10.00	18.0
Vanadium	10.00	90.0
Zinc	10.00	45.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4202402
Report generated: 05/28/2015 09:19

2.3.1.3 Raw Data

==========

Reprocessing Begun
Logged In Analyst: peicp2 **Technique: ICP Continuous**

Results Data Set (original): 052215H4R
Results Library (original): C:\pe\peicp2\Results\results2.mdb
Results Data Set (reprocessed): 052715HR
Results Library (reprocessed): C:\pe\peicp2\Results\results2.mdb

==========

Sequence No.: 1 **Autosampler Location: 1**
Sample ID: S0 **Date Collected: 5/27/2015 8:40:45 AM**
Analyst: **Data Type: Reprocessed on 5/27/2015 9:48:28 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: S0

Analyte	Back Pressure	Flow
All	233.0 kPa	0.40 L/min

Mean Data: S0

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Calib Conc.	Units
Y 371.029	3353707.5	26114.49	0.78%		
YRADIAL	205277.2	4629.07	2.26%		
Ga 417.206	1551868.6	10698.68	0.69%		
GaRADIAL	49951.8	1141.15	2.28%		
Ag 328.068†	410.9	158.13	38.48%	[0.00]	mg/L
Al 396.153†	-66.5	13.56	20.38%	[0.00]	mg/L
As 188.979†	17.1	5.33	31.17%	[0.00]	mg/L
Ba 233.527†	61.5	15.72	25.58%	[0.00]	mg/L
Be 234.861†	-138.5	13.16	9.50%	[0.00]	mg/L
B 249.677†	6872.6	275.21	4.00%	[0.00]	mg/L
Ca 227.546†	3.8	15.65	416.40%	[0.00]	mg/L
Cd 228.802†	10.7	4.44	41.62%	[0.00]	mg/L
Co 228.616†	-8.4	6.38	76.39%	[0.00]	mg/L
Cr 267.716†	257.0	64.29	25.02%	[0.00]	mg/L
Cu 327.393†	558.5	239.76	42.93%	[0.00]	mg/L
Fe 239.562†	15.8	3.16	20.00%	[0.00]	mg/L
Mg 279.077†	99.8	13.36	13.38%	[0.00]	mg/L
Mn 257.610†	13.5	8.70	64.63%	[0.00]	mg/L
Mo 202.031†	30.7	10.61	34.50%	[0.00]	mg/L
Ni 231.604†	-27.1	17.57	64.73%	[0.00]	mg/L
Pb 220.353†	-60.5	5.93	9.80%	[0.00]	mg/L
Sb 206.836†	19.3	9.45	48.88%	[0.00]	mg/L
Se 196.026†	-5.4	3.87	71.79%	[0.00]	mg/L
Si 251.611†	635461.7	1968.27	0.31%	[0.00]	mg/L
Sn 189.927†	84.3	3.31	3.92%	[0.00]	mg/L
Ti 334.940†	2580.6	116.82	4.53%	[0.00]	mg/L
Tl 190.801†	-35.5	7.02	19.74%	[0.00]	mg/L
V 290.880†	9236.0	190.23	2.06%	[0.00]	mg/L
Zn 206.200†	282.9	12.08	4.27%	[0.00]	mg/L
K 766.490†	184.7	154.30	83.53%	[0.00]	mg/L
Na 589.592†	1673.4	164.47	9.83%	[0.00]	mg/L
Sr 407.771†	-907.1	83.22	9.17%	[0.00]	mg/L
Li 670.784†	-14.3	82.81	579.74%	[0.00]	mg/L
P 214.914†	-21.7	9.70	44.72%	[0.00]	mg/L

==========

Sequence No.: 2 **Autosampler Location: 2**
Sample ID: S1 **Date Collected: 5/27/2015 8:44:07 AM**
Analyst: **Data Type: Reprocessed on 5/27/2015 9:48:30 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: S1

Approved: May 28, 2015
Lynn H. Rhoden

Analyte	Back Pressure	Flow
All	233.0 kPa	0.40 L/min

Mean Data: S1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	3378060.0	43235.57	1.28%		
YRADIAL	208120.5	2950.06	1.42%		
Ga 417.206	1559664.5	21098.77	1.35%		
GaRADIAL	50588.8	663.05	1.31%		
Ag 328.068†	994.3	238.11	23.95%	[0.0032]	mg/L
Al 396.153†	225.2	12.50	5.55%	[0.08]	mg/L
Ba 233.527†	464.8	23.27	5.01%	[0.008]	mg/L
Be 234.861†	195.7	23.67	12.10%	[0.0004]	mg/L
Cd 228.802†	2.3	5.78	251.79%	[0.0004]	mg/L
Co 228.616†	24.3	3.48	14.34%	[0.0016]	mg/L
Cr 267.716†	643.4	32.35	5.03%	[0.004]	mg/L
Cu 327.393†	837.6	68.29	8.15%	[0.004]	mg/L
Fe 239.562†	194.8	1.91	0.98%	[0.032]	mg/L
Mg 279.077†	244.4	8.20	3.36%	[0.08]	mg/L
Mn 257.610†	2745.6	39.02	1.42%	[0.004]	mg/L
Mo 202.031†	80.2	10.54	13.14%	[0.008]	mg/L
Ni 231.604†	115.6	17.37	15.03%	[0.004]	mg/L
Pb 220.353†	18.4	12.17	66.02%	[0.004]	mg/L
Sb 206.836†	8.9	2.23	25.12%	[0.0096]	mg/L
Si 251.611†	-1986.4	2925.75	147.29%	[0.04]	mg/L
Standard intensity and concentration values are not in the same order.					
Sn 189.927†	43.9	21.64	49.34%	[0.008]	mg/L
Ti 334.940†	7294.6	95.26	1.31%	[0.008]	mg/L
V 290.880†	1102.2	210.84	19.13%	[0.008]	mg/L
Zn 206.200†	225.0	0.74	0.33%	[0.008]	mg/L
K 766.490†	594.2	99.80	16.79%	[0.4]	mg/L
Na 589.592†	3141.1	103.69	3.30%	[0.4]	mg/L
Sr 407.771†	6742.8	96.07	1.42%	[0.008]	mg/L
Li 670.784†	386.5	46.07	11.92%	[0.008]	mg/L
P 214.914†	45.1	4.99	11.07%	[0.08]	mg/L

Sequence No.: 3 **Autosampler Location: 3**
Sample ID: S2 **Date Collected: 5/27/2015 8:47:26 AM**
Analyst: **Data Type: Reprocessed on 5/27/2015 9:48:30 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: S2

Analyte	Back Pressure	Flow
All	234.0 kPa	0.40 L/min

Mean Data: S2

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	3406616.5	12479.13	0.37%		
YRADIAL	208715.1	2407.70	1.15%		
Ga 417.206	1562657.9	13005.25	0.83%		
GaRADIAL	50849.0	663.77	1.31%		
Ag 328.068†	2064.8	394.61	19.11%	[0.0064]	mg/L
Al 396.153†	482.7	4.65	0.96%	[0.16]	mg/L
As 188.979†	4.5	11.94	262.86%	[0.0064]	mg/L
Ba 233.527†	951.6	13.13	1.38%	[0.016]	mg/L
Be 234.861†	370.6	11.59	3.13%	[0.0008]	mg/L
B 249.677†	372.6	33.00	8.86%	[0.008]	mg/L
Ca 227.546†	10.8	3.50	32.36%	[0.16]	mg/L
Cd 228.802†	12.5	4.89	39.15%	[0.0008]	mg/L
Co 228.616†	48.5	4.58	9.45%	[0.0032]	mg/L
Cr 267.716†	1189.2	62.25	5.23%	[0.008]	mg/L
Cu 327.393†	1801.5	16.19	0.90%	[0.008]	mg/L
Fe 239.562†	372.7	9.66	2.59%	[0.064]	mg/L
Mg 279.077†	462.0	12.50	2.71%	[0.16]	mg/L

Approved: May 28, 2015

Mn 257.610†	5393.7	37.47	0.69%	[0.008]	mg/L
Mo 202.031†	167.8	13.22	7.88%	[0.016]	mg/L
Ni 231.604†	253.9	14.87	5.86%	[0.008]	mg/L
Pb 220.353†	32.0	6.75	21.06%	[0.008]	mg/L
Sb 206.836†	21.2	7.52	35.51%	[0.0192]	mg/L
Se 196.026†	1.3	11.33	862.26%	[0.0062]	mg/L
Si 251.611†	3826.9	5997.83	156.73%	[0.08]	mg/L
Standard intensity and concentration values are not in the same order.					
Sn 189.927†	87.8	6.62	7.54%	[0.016]	mg/L
Ti 334.940†	14885.0	114.99	0.77%	[0.016]	mg/L
Tl 190.801†	8.8	2.82	32.12%	[0.008]	mg/L
V 290.880†	2983.3	35.87	1.20%	[0.016]	mg/L
Zn 206.200†	479.2	5.85	1.22%	[0.016]	mg/L
K 766.490†	1168.6	49.15	4.21%	[0.8]	mg/L
Na 589.592†	6172.3	126.55	2.05%	[0.8]	mg/L
Sr 407.771†	13441.6	145.65	1.08%	[0.016]	mg/L
Li 670.784†	513.4	58.83	11.46%	[0.016]	mg/L
P 214.914†	107.2	12.83	11.97%	[0.16]	mg/L

Sequence No.: 4 **Autosampler Location: 4**
Sample ID: S3 **Date Collected: 5/27/2015 8:50:48 AM**
Analyst: **Data Type: Reprocessed on 5/27/2015 9:48:31 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: S3

Analyte	Back Pressure	Flow
All	233.0 kPa	0.40 L/min

Mean Data: S3

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	3181448.7	38269.06	1.20%		
YRADIAL	199353.2	1639.04	0.82%		
Ga 417.206	1346016.7	22922.91	1.70%		
GaRADIAL	46936.4	228.05	0.49%		
Ag 328.068†	131970.0	829.45	0.63%	[0.40]	mg/L
Al 396.153†	28903.5	181.91	0.63%	[10.00]	mg/L
As 188.979†	629.2	14.04	2.23%	[0.40]	mg/L
Ba 233.527†	57883.6	439.88	0.76%	[1.00]	mg/L
Be 234.861†	26766.4	328.92	1.23%	[0.05]	mg/L
B 249.677†	34262.9	341.54	1.00%	[0.50]	mg/L
Ca 227.546†	777.5	20.04	2.58%	[10.00]	mg/L
Cd 228.802†	812.3	13.93	1.71%	[0.05]	mg/L
Co 228.616†	2895.4	48.51	1.68%	[0.20]	mg/L
Cr 267.716†	68000.3	250.55	0.37%	[0.50]	mg/L
Cu 327.393†	104767.7	847.60	0.81%	[0.50]	mg/L
Fe 239.562†	23085.8	142.41	0.62%	[4.00]	mg/L
Mg 279.077†	27148.4	129.48	0.48%	[10.00]	mg/L
Mn 257.610†	319963.2	2091.46	0.65%	[0.50]	mg/L
Mo 202.031†	10509.1	166.40	1.58%	[1.00]	mg/L
Ni 231.604†	16152.3	245.85	1.52%	[0.50]	mg/L
Pb 220.353†	2256.7	47.70	2.11%	[0.50]	mg/L
Sb 206.836†	1363.3	21.05	1.54%	[1.20]	mg/L
Se 196.026†	249.7	4.34	1.74%	[0.40]	mg/L
Si 251.611†	122387.8	980.52	0.80%	[5.00]	mg/L
Standard intensity and concentration values are not in the same order.					
Sn 189.927†	5996.5	100.58	1.68%	[1.00]	mg/L
Ti 334.940†	917599.0	3563.81	0.39%	[1.00]	mg/L
Tl 190.801†	612.6	11.04	1.80%	[0.50]	mg/L
V 290.880†	187464.9	668.65	0.36%	[1.00]	mg/L
Zn 206.200†	29611.5	458.85	1.55%	[1.00]	mg/L
K 766.490†	78395.8	525.38	0.67%	[50.00]	mg/L
Na 589.592†	398101.6	7582.27	1.90%	[50.00]	mg/L
Sr 407.771†	805988.2	17278.35	2.14%	[1.00]	mg/L
Li 670.784†	38904.9	410.55	1.06%	[1.00]	mg/L
P 214.914†	6369.5	102.87	1.62%	[10]	mg/L

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Sequence No.: 5
Sample ID: S4
Analyst:
Logged In Analyst (Original) : peicp2
Initial Sample Wt:
Dilution:

Autosampler Location: 5
Date Collected: 5/27/2015 8:53:12 AM
Data Type: Reprocessed on 5/27/2015 9:48:32 AM

Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: S4

Analyte	Back Pressure	Flow
All	233.0 kPa	0.40 L/min

Mean Data: S4

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	3135357.1	55103.27	1.76%		
YRADIAL	195573.7	2480.45	1.27%		
Ga 417.206	1285776.1	22564.84	1.75%		
GaRADIAL	46821.5	497.32	1.06%		
Ag 328.068†	274096.6	1281.31	0.47%	[0.80]	mg/L
Al 396.153†	56926.0	274.60	0.48%	[20.00]	mg/L
As 188.979†	1328.7	18.55	1.40%	[0.80]	mg/L
Ba 233.527†	115681.5	577.87	0.50%	[2.00]	mg/L
Be 234.861†	55245.5	348.15	0.63%	[0.10]	mg/L
B 249.677†	71165.9	1048.94	1.47%	[1.00]	mg/L
Ca 227.546†	1594.5	31.23	1.96%	[20.00]	mg/L
Cd 228.802†	1662.8	28.27	1.70%	[0.10]	mg/L
Co 228.616†	5671.6	86.57	1.53%	[0.40]	mg/L
Cr 267.716†	135947.9	980.21	0.72%	[1.00]	mg/L
Cu 327.393†	216915.8	1432.54	0.66%	[1.00]	mg/L
Fe 239.562†	46604.5	353.72	0.76%	[8.00]	mg/L
Mg 279.077†	53962.4	374.25	0.69%	[20.00]	mg/L
Mn 257.610†	638003.8	4198.86	0.66%	[1.00]	mg/L
Mo 202.031†	21009.8	314.83	1.50%	[2.00]	mg/L
Ni 231.604†	31862.5	485.40	1.52%	[1.00]	mg/L
Pb 220.353†	4466.8	55.34	1.24%	[1.00]	mg/L
Sb 206.836†	2792.1	46.05	1.65%	[2.40]	mg/L
Se 196.026†	514.7	14.52	2.82%	[0.80]	mg/L
Si 251.611†	193842.0	3042.52	1.57%	[10.00]	mg/L
Standard intensity and concentration values are not in the same order.					
Sn 189.927†	11801.8	182.00	1.54%	[2.00]	mg/L
Ti 334.940†	1860021.3	8178.96	0.44%	[2.00]	mg/L
Tl 190.801†	1201.9	12.15	1.01%	[1.00]	mg/L
V 290.880†	378339.7	2079.96	0.55%	[2.00]	mg/L
Zn 206.200†	57115.3	419.59	0.73%	[2.00]	mg/L
K 766.490†	155271.7	894.18	0.58%	[100.00]	mg/L
Na 589.592†	773934.0	14743.92	1.91%	[100.00]	mg/L
Sr 407.771†	1611862.5	28364.76	1.76%	[2.00]	mg/L
Li 670.784†	76096.5	220.45	0.29%	[2.00]	mg/L
P 214.914†	12757.0	204.24	1.60%	[20]	mg/L

Calibration Summary

Analyte	Stds.	Equation	Intercept	Slope	Curvature	Corr. Coef.	Reslope
Ag 328.068	4	Lin, Calc Int	-704.9	341100	0.00000	0.999839	
Al 396.153	4	Lin, Calc Int	62.6	2851	0.00000	0.999972	
As 188.979	3	Wt. Lin	-5.9	1628	0.00000	0.999686	
Ba 233.527	4	Lin, Calc Int	14.2	57840	0.00000	1.000000	
Be 234.861	4	Lin, Calc Int	-136.9	550700	0.00000	0.999889	
B 249.677	3	Lin, Calc Int	-329.5	71030	0.00000	0.999826	
Ca 227.546	3	Lin, Calc Int	-4.5	79.60	0.00000	0.999922	
Cd 228.802	4	Lin, Calc Int	-4.0	16600	0.00000	0.999941	
Co 228.616	4	Lin, Calc Int	8.9	14210	0.00000	0.999949	
Cr 267.716	4	Lin, Calc Int	66.3	135900	0.00000	1.000000	
Cu 327.393	4	Lin, Calc Int	-448.7	216000	0.00000	0.999861	
Fe 239.562	4	Lin, Calc Int	-24.4	5818	0.00000	0.999990	
Mg 279.077	4	Lin, Calc Int	39.2	2699	0.00000	0.999996	
Mn 257.610	4	Lin, Calc Int	271.0	638100	0.00000	0.999999	
Mo 202.031	4	Lin, Calc Int	-0.8	10510	0.00000	1.000000	

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Ni 231.604	4	Lin, Calc Int	23.5	31920	0.00000	0.999977
Pb 220.353	4	Lin, Calc Int	1.9	4474	0.00000	0.999986
Sb 206.836	4	Lin, Calc Int	-5.2	1160	0.00000	0.999937
Se 196.026	3	Wt. Lin	-2.6	638.8	0.00000	0.999921
Si 251.611	4	Lin, Calc Int	3018.2	20040	0.00000	0.992198
Sn 189.927	4	Lin, Calc Int	8.8	5915	0.00000	0.999968
Ti 334.940	4	Lin, Calc Int	-1591.1	928500	0.00000	0.999979
Tl 190.801	3	Lin, Calc Int	1.7	1204	0.00000	0.999948
V 290.880	4	Lin, Calc Int	-355.1	189000	0.00000	0.999991
Zn 206.200	4	Lin, Calc Int	137.2	28690	0.00000	0.999841
K 766.490	4	Non Lin, Calc Int	-45.7	1584	-0.31241	1.000000
Na 589.592	4	Non Lin, Calc Int	-168.6	8190	-4.48484	1.000000
Sr 407.771	4	Lin, Calc Int	270.5	805800	0.00000	1.000000
Li 670.784	4	Lin, Calc Int	102.7	38160	0.00000	0.999938
P 214.914	4	Lin, Calc Int	-1.4	637.8	0.00000	1.000000

Sequence No.: 6
Sample ID: ICV
Analyst:
Logged In Analyst (Original) : peicp2
Initial Sample Wt:
Dilution:

Autosampler Location: 11
Date Collected: 5/27/2015 8:55:37 AM
Data Type: Reprocessed on 5/27/2015 9:48:33 AM

Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ICV

Analyte	Back Pressure	Flow
All	233.0 kPa	0.40 L/min

Mean Data: ICV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3164649.0						19724.55	0.62%
YRADIAL	197868.2						3631.65	1.84%
Ga 417.206	1326830.7						10403.25	0.78%
GaRADIAL	46259.3						850.27	1.84%
Ag 328.068†	136984.8	0.407	mg/L	0.0027	0.407	mg/L	0.0027	0.67%
QC value within limits for Ag 328.068 Recovery = 101.82%								
Al 396.153†	29631.9	10.3	mg/L	0.11	10.3	mg/L	0.11	1.08%
QC value within limits for Al 396.153 Recovery = 103.31%								
As 188.979†	650.1	0.399	mg/L	0.0015	0.399	mg/L	0.0015	0.39%
QC value within limits for As 188.979 Recovery = 99.64%								
Ba 233.527†	59269.0	1.02	mg/L	0.008	1.02	mg/L	0.008	0.80%
QC value within limits for Ba 233.527 Recovery = 102.47%								
Be 234.861†	27340.5	0.0493	mg/L	0.00028	0.0493	mg/L	0.00028	0.58%
QC value within limits for Be 234.861 Recovery = 98.59%								
B 249.677†	27850.4	0.410	mg/L	0.0018	0.410	mg/L	0.0018	0.44%
QC value less than the lower limit for B 249.677 Recovery = 82.03%								
Ca 227.546†	798.2	10.2	mg/L	0.02	10.2	mg/L	0.02	0.24%
QC value within limits for Ca 227.546 Recovery = 101.54%								
Cd 228.802†	826.5	0.0487	mg/L	0.00068	0.0487	mg/L	0.00068	1.40%
QC value within limits for Cd 228.802 Recovery = 97.31%								
Co 228.616†	2901.5	0.203	mg/L	0.0016	0.203	mg/L	0.0016	0.79%
QC value within limits for Co 228.616 Recovery = 101.35%								
Cr 267.716†	69054.0	0.508	mg/L	0.0044	0.508	mg/L	0.0044	0.86%
QC value within limits for Cr 267.716 Recovery = 101.61%								
Cu 327.393†	107003.8	0.499	mg/L	0.0038	0.499	mg/L	0.0038	0.76%
QC value within limits for Cu 327.393 Recovery = 99.89%								
Fe 239.562†	23864.4	4.10	mg/L	0.044	4.10	mg/L	0.044	1.06%
QC value within limits for Fe 239.562 Recovery = 102.62%								
Mg 279.077†	27287.9	10.1	mg/L	0.09	10.1	mg/L	0.09	0.85%
QC value within limits for Mg 279.077 Recovery = 100.93%								
Mn 257.610†	318065.5	0.498	mg/L	0.0057	0.498	mg/L	0.0057	1.14%
QC value within limits for Mn 257.610 Recovery = 99.64%								
Mo 202.031†	10411.4	0.992	mg/L	0.0100	0.992	mg/L	0.0100	1.01%
QC value within limits for Mo 202.031 Recovery = 99.16%								
Ni 231.604†	15937.0	0.498	mg/L	0.0055	0.498	mg/L	0.0055	1.11%
QC value within limits for Ni 231.604 Recovery = 99.63%								
Pb 220.353†	2221.3	0.498	mg/L	0.0018	0.498	mg/L	0.0018	0.37%
QC value within limits for Pb 220.353 Recovery = 99.70%								
Sb 206.836†	1380.3	1.19	mg/L	0.014	1.19	mg/L	0.014	1.17%

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   QC value within limits for Sb 206.836  Recovery = 99.39%
Se 196.026†              265.7       0.422 mg/L        0.0106       0.422 mg/L        0.0106   2.51%
   QC value greater than the upper limit for Se 196.026  Recovery = 105.46%
Si 251.611†          -174965.3      -8.89 mg/L         0.079       -8.89 mg/L         0.079   0.89%
   QC value less than the lower limit for Si 251.611  Recovery = -177.86%
Sn 189.927†             6064.9        1.02 mg/L         0.009        1.02 mg/L         0.009   0.88%
   QC value within limits for Sn 189.927  Recovery = 102.39%
Ti 334.940†           929170.5        1.00 mg/L         0.010        1.00 mg/L         0.010   0.96%
   QC value within limits for Ti 334.940  Recovery = 100.29%
Tl 190.801†              604.1       0.510 mg/L        0.0136       0.510 mg/L        0.0136   2.67%
   QC value within limits for Tl 190.801  Recovery = 102.04%
V 290.880†            191655.9        1.02 mg/L         0.012        1.02 mg/L         0.012   1.15%
   QC value within limits for V 290.880  Recovery = 101.59%
Zn 206.200†            29875.9        1.04 mg/L         0.010        1.04 mg/L         0.010   0.95%
   QC value within limits for Zn 206.200  Recovery = 104.19%
K 766.490†             79299.5        50.5 mg/L          0.44        50.5 mg/L          0.44   0.86%
   QC value within limits for K 766.490  Recovery = 101.07%
Na 589.592†           398642.1        50.1 mg/L          1.36        50.1 mg/L          1.36   2.71%
   QC value within limits for Na 589.592  Recovery = 100.14%
Sr 407.771†           808076.0        1.00 mg/L         0.017        1.00 mg/L         0.017   1.73%
   QC value within limits for Sr 407.771  Recovery = 100.22%
Li 670.784†            39584.7        1.03 mg/L         0.006        1.03 mg/L         0.006   0.62%
   QC value within limits for Li 670.784  Recovery = 103.47%
P 214.914†              6469.9        10.1 mg/L          0.12        10.1 mg/L          0.12   1.18%
   QC value within limits for P 214.914  Recovery = 101.47%
QC Failed.  Continue with analysis.
```

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Sequence No.: 7 **Autosampler Location: 1**
Sample ID: ICB **Date Collected: 5/27/2015 8:58:03 AM**
Analyst: **Data Type: Reprocessed on 5/27/2015 9:48:35 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: ICB

Analyte	Back Pressure	Flow
All	233.0 kPa	0.40 L/min

Mean Data: ICB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3362313.5						36680.45	1.09%
YRADIAL	211366.9						3171.03	1.50%
Ga 417.206	1564571.0						12392.27	0.79%
GaRADIAL	51405.8						954.78	1.86%
Ag 328.068†	205.6	0.00267	mg/L	0.000884	0.00267	mg/L	0.000884	33.07%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	-0.6	-0.0222	mg/L	0.00401	-0.0222	mg/L	0.00401	18.05%
QC value within limits for Al 396.153 Recovery = Not calculated								
As 188.979†	-6.3	-0.00025	mg/L	0.002318	-0.00025	mg/L	0.002318	940.64%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	2.7	-0.00020	mg/L	0.000155	-0.00020	mg/L	0.000155	78.26%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 234.861†	-16.8	0.00022	mg/L	0.000049	0.00022	mg/L	0.000049	22.44%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	-80.9	0.00351	mg/L	0.003242	0.00351	mg/L	0.003242	92.46%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	-0.8	0.0462	mg/L	0.05440	0.0462	mg/L	0.05440	117.87%
QC value within limits for Ca 227.546 Recovery = Not calculated								
Cd 228.802†	3.8	0.00047	mg/L	0.000202	0.00047	mg/L	0.000202	43.18%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	4.7	-0.00029	mg/L	0.000539	-0.00029	mg/L	0.000539	182.62%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	79.5	0.00010	mg/L	0.000274	0.00010	mg/L	0.000274	280.55%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	-59.9	0.00180	mg/L	0.001424	0.00180	mg/L	0.001424	78.95%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	-1.1	0.00401	mg/L	0.002313	0.00401	mg/L	0.002313	57.74%
QC value within limits for Fe 239.562 Recovery = Not calculated								

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Mg 279.077†	9.5	-0.0110 mg/L	0.00550	-0.0110 mg/L	0.00550	49.95%
QC value within limits for Mg 279.077 Recovery = Not calculated						
Mn 257.610†	5.3	-0.00042 mg/L	0.000029	-0.00042 mg/L	0.000029	6.93%
QC value within limits for Mn 257.610 Recovery = Not calculated						
Mo 202.031†	7.8	0.00082 mg/L	0.000838	0.00082 mg/L	0.000838	102.77%
QC value within limits for Mo 202.031 Recovery = Not calculated						
Ni 231.604†	-9.5	-0.00103 mg/L	0.000408	-0.00103 mg/L	0.000408	39.48%
QC value within limits for Ni 231.604 Recovery = Not calculated						
Pb 220.353†	-6.5	-0.00189 mg/L	0.003988	-0.00189 mg/L	0.003988	210.76%
QC value within limits for Pb 220.353 Recovery = Not calculated						
Sb 206.836†	-0.2	0.00425 mg/L	0.002447	0.00425 mg/L	0.002447	57.63%
QC value within limits for Sb 206.836 Recovery = Not calculated						
Se 196.026†	5.3	0.0125 mg/L	0.00817	0.0125 mg/L	0.00817	65.27%
QC value within limits for Se 196.026 Recovery = Not calculated						
Si 251.611†	-4906.9	-0.396 mg/L	0.0761	-0.396 mg/L	0.0761	19.25%
QC value within limits for Si 251.611 Recovery = Not calculated						
Sn 189.927†	8.4	-0.00007 mg/L	0.001996	-0.00007 mg/L	0.001996	>999.9%
QC value within limits for Sn 189.927 Recovery = Not calculated						
Ti 334.940†	380.0	0.00213 mg/L	0.000167	0.00213 mg/L	0.000167	7.87%
QC value within limits for Ti 334.940 Recovery = Not calculated						
Tl 190.801†	8.2	0.00540 mg/L	0.001942	0.00540 mg/L	0.001942	35.98%
QC value within limits for Tl 190.801 Recovery = Not calculated						
V 290.880†	-69.8	0.00151 mg/L	0.001206	0.00151 mg/L	0.001206	79.86%
QC value within limits for V 290.880 Recovery = Not calculated						
Zn 206.200†	14.0	-0.00429 mg/L	0.000226	-0.00429 mg/L	0.000226	5.27%
QC value within limits for Zn 206.200 Recovery = Not calculated						
K 766.490†	150.4	0.124 mg/L	0.0363	0.124 mg/L	0.0363	29.31%
QC value within limits for K 766.490 Recovery = Not calculated						
Na 589.592†	-98.3	0.00859 mg/L	0.012501	0.00859 mg/L	0.012501	145.45%
QC value within limits for Na 589.592 Recovery = Not calculated						
Sr 407.771†	144.8	-0.00016 mg/L	0.000098	-0.00016 mg/L	0.000098	62.20%
QC value within limits for Sr 407.771 Recovery = Not calculated						
Li 670.784†	72.5	-0.00079 mg/L	0.000196	-0.00079 mg/L	0.000196	24.75%
QC value within limits for Li 670.784 Recovery = Not calculated						
P 214.914†	2.5	0.00608 mg/L	0.002000	0.00608 mg/L	0.002000	32.92%
QC value within limits for P 214.914 Recovery = Not calculated						

All analyte(s) passed QC.

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Sequence No.: 8 **Autosampler Location: 14**
Sample ID: LLICV **Date Collected: 5/27/2015 9:01:24 AM**
Analyst: KHR **Data Type: Reprocessed on 5/27/2015 9:48:36 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: LLICV

Analyte	Back Pressure	Flow
All	233.0 kPa	0.40 L/min

Mean Data: LLICV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3348326.0						24561.57	0.73%
YRADIAL	209375.6						4430.40	2.12%
Ga 417.206	1530258.2						11320.20	0.74%
GaRADIAL	50324.9						1168.06	2.32%
Ag 328.068†	5427.1	0.0181	mg/L	0.00147	0.0181	mg/L	0.00147	8.12%
Al 396.153†	1178.8	0.390	mg/L	0.0382	0.390	mg/L	0.0382	9.79%
As 188.979†	17.1	0.0139	mg/L	0.00573	0.0139	mg/L	0.00573	41.09%
Ba 233.527†	2453.0	0.0422	mg/L	0.00038	0.0422	mg/L	0.00038	0.90%
Be 234.861†	1017.9	0.00207	mg/L	0.000029	0.00207	mg/L	0.000029	1.40%
B 249.677†	1152.7	0.0214	mg/L	0.00275	0.0214	mg/L	0.00275	12.85%
Ca 227.546†	25.4	0.379	mg/L	0.1220	0.379	mg/L	0.1220	32.22%
Cd 228.802†	30.1	0.00201	mg/L	0.000348	0.00201	mg/L	0.000348	17.32%
Co 228.616†	114.7	0.00740	mg/L	0.000058	0.00740	mg/L	0.000058	0.78%
Cr 267.716†	2748.4	0.0198	mg/L	0.00056	0.0198	mg/L	0.00056	2.83%
Cu 327.393†	4314.8	0.0221	mg/L	0.00122	0.0221	mg/L	0.00122	5.50%
Fe 239.562†	936.0	0.165	mg/L	0.0081	0.165	mg/L	0.0081	4.90%
Mg 279.077†	1142.4	0.409	mg/L	0.0179	0.409	mg/L	0.0179	4.37%

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Mn 257.610†	13800.0	0.0212 mg/L	0.00066	0.0212 mg/L	0.00066	3.12%
Mo 202.031†	421.9	0.0403 mg/L	0.00084	0.0403 mg/L	0.00084	2.09%
Ni 231.604†	685.4	0.0207 mg/L	0.00013	0.0207 mg/L	0.00013	0.63%
Pb 220.353†	89.8	0.0197 mg/L	0.00269	0.0197 mg/L	0.00269	13.65%
Sb 206.836†	50.5	0.0479 mg/L	0.00803	0.0479 mg/L	0.00803	16.75%
Se 196.026†	9.9	0.0196 mg/L	0.01270	0.0196 mg/L	0.01270	64.64%
Si 251.611†	4945.1	0.0957 mg/L	0.05597	0.0957 mg/L	0.05597	58.48%
Sn 189.927†	239.6	0.0390 mg/L	0.00044	0.0390 mg/L	0.00044	1.13%
Ti 334.940†	37692.4	0.0423 mg/L	0.00084	0.0423 mg/L	0.00084	1.98%
Tl 190.801†	19.3	0.0150 mg/L	0.00788	0.0150 mg/L	0.00788	52.51%
V 290.880†	7552.4	0.0418 mg/L	0.00147	0.0418 mg/L	0.00147	3.52%
Zn 206.200†	1280.4	0.0401 mg/L	0.00055	0.0401 mg/L	0.00055	1.37%
K 766.490†	3105.6	1.99 mg/L	0.060	1.99 mg/L	0.060	3.02%
Na 589.592†	16556.6	2.04 mg/L	0.007	2.04 mg/L	0.007	0.36%
Sr 407.771†	33553.7	0.0413 mg/L	0.00021	0.0413 mg/L	0.00021	0.52%
Li 670.784†	1565.6	0.0383 mg/L	0.00428	0.0383 mg/L	0.00428	11.17%
P 214.914†	241.5	0.381 mg/L	0.0053	0.381 mg/L	0.0053	1.38%

Sequence No.: 9 **Autosampler Location: 12**
Sample ID: ICSA **Date Collected: 5/27/2015 9:03:48 AM**
Analyst: **Data Type: Reprocessed on 5/27/2015 9:48:37 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: ICSA

Analyte	Back Pressure	Flow
All	233.0 kPa	0.40 L/min

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3001108.1						36082.13	1.20%
YRADIAL	186808.6						2420.30	1.30%
Ga 417.206	1264184.8						11820.51	0.94%
GaRADIAL	45991.7						536.92	1.17%
Ag 328.068†	-15660.7	0.00256	mg/L	0.000948	0.00256	mg/L	0.000948	36.96%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	715901.6	251	mg/L	3.4	251	mg/L	3.4	1.35%
QC value within limits for Al 396.153 Recovery = 100.43%								
As 188.979†	-40.2	0.00002	mg/L	0.004725	0.00002	mg/L	0.004725	>999.9%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	285.8	0.00137	mg/L	0.000197	0.00137	mg/L	0.000197	14.39%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 234.861†	14267.7	0.00058	mg/L	0.000132	0.00058	mg/L	0.000132	22.80%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	-22437.8	0.0714	mg/L	0.00180	0.0714	mg/L	0.00180	2.52%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	23035.1	289	mg/L	2.2	289	mg/L	2.2	0.75%
QC value within limits for Ca 227.546 Recovery = 115.78%								
Cd 228.802†	3.5	0.00052	mg/L	0.000403	0.00052	mg/L	0.000403	77.66%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	8.2	-0.00264	mg/L	0.000220	-0.00264	mg/L	0.000220	8.33%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	358.7	-0.00060	mg/L	0.000247	-0.00060	mg/L	0.000247	41.50%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	-3576.2	0.00000	mg/L	0.001530	0.00000	mg/L	0.001530	>999.9%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	585943.9	101	mg/L	0.5	101	mg/L	0.5	0.51%
QC value within limits for Fe 239.562 Recovery = 100.70%								
Mg 279.077†	676577.6	251	mg/L	1.5	251	mg/L	1.5	0.58%
QC value within limits for Mg 279.077 Recovery = 100.24%								
Mn 257.610†	160.6	0.00224	mg/L	0.000119	0.00224	mg/L	0.000119	5.30%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	35.1	0.00168	mg/L	0.001248	0.00168	mg/L	0.001248	74.09%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	-29.3	-0.00164	mg/L	0.000840	-0.00164	mg/L	0.000840	51.19%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	-236.0	-0.00526	mg/L	0.004242	-0.00526	mg/L	0.004242	80.58%

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   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†              -10.5    -0.00095 mg/L      0.004559    -0.00095 mg/L      0.004559 477.58%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†              -22.8     0.00002 mg/L      0.005889     0.00002 mg/L      0.005889 >999.9%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†          -318051.6       -16.0 mg/L          0.07       -16.0 mg/L          0.07   0.41%
   QC value less than the lower limit for Si 251.611  Recovery = Not calculated
Sn 189.927†              -56.1     -0.0110 mg/L       0.00219     -0.0110 mg/L       0.00219  19.93%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†           -18826.3     0.00002 mg/L      0.000250     0.00002 mg/L      0.000250 >999.9%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†              -31.5     -0.0278 mg/L       0.00864     -0.0278 mg/L       0.00864  31.03%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†             -2555.9     0.00118 mg/L      0.001784     0.00118 mg/L      0.001784 151.06%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†             -131.5     0.00000 mg/L      0.000811     0.00000 mg/L      0.000811 >999.9%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†               123.5       0.107 mg/L        0.0979       0.107 mg/L        0.0979  91.71%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†              545.7      0.0872 mg/L       0.01002      0.0872 mg/L       0.01002  11.49%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†             1930.6    -0.00717 mg/L      0.000250    -0.00717 mg/L      0.000250   3.49%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†              251.4     0.00390 mg/L      0.001037     0.00390 mg/L      0.001037  26.62%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†                54.0      0.0868 mg/L       0.01650      0.0868 mg/L       0.01650  19.00%
   QC value within limits for P 214.914  Recovery = Not calculated
QC Failed.  Continue with analysis.

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Sequence No.: 10                                    Autosampler Location: 13
Sample ID: ICSAB                                    Date Collected: 5/27/2015 9:06:11 AM
Analyst:                                            Data Type: Reprocessed on 5/27/2015 9:48:38 AM
Logged In Analyst (Original) : peicp2
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

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Nebulizer Parameters: ICSAB
Analyte                 Back Pressure    Flow
All                    233.0 kPa         0.40 L/min

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Mean Data: ICSAB
                   Mean Corrected         Calib.                          Sample
Analyte               Intensity     Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029            2996212.6                                                    19624.12   0.65%
YRADIAL               189767.8                                                     1037.37   0.55%
Ga 417.206           1263369.7                                                     9836.50   0.78%
GaRADIAL               46264.3                                                       86.41   0.19%
Ag 328.068†           163019.1       0.526 mg/L        0.0022       0.526 mg/L        0.0022   0.43%
   QC value within limits for Ag 328.068  Recovery = 105.15%
Al 396.153†           705583.4         247 mg/L           3.7         247 mg/L           3.7   1.50%
   QC value within limits for Al 396.153  Recovery = 98.98%
As 188.979†              359.6       0.245 mg/L        0.0083       0.245 mg/L        0.0083   3.40%
   QC value within limits for As 188.979  Recovery = 98.07%
Ba 233.527†            15428.0       0.263 mg/L        0.0011       0.263 mg/L        0.0011   0.42%
   QC value within limits for Ba 233.527  Recovery = 105.27%
Be 234.861†           150735.7       0.249 mg/L        0.0011       0.249 mg/L        0.0011   0.42%
   QC value within limits for Be 234.861  Recovery = 99.61%
B 249.677†            -23103.8      0.0406 mg/L       0.00956      0.0406 mg/L       0.00956  23.55%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†            22682.9         285 mg/L           1.7         285 mg/L           1.7   0.59%
   QC value within limits for Ca 227.546  Recovery = 114.03%
Cd 228.802†             7562.4       0.456 mg/L        0.0018       0.456 mg/L        0.0018   0.39%
   QC value within limits for Cd 228.802  Recovery = 91.11%
Co 228.616†             3419.6       0.237 mg/L        0.0005       0.237 mg/L        0.0005   0.23%
   QC value within limits for Co 228.616  Recovery = 94.94%
Cr 267.716†            34525.6       0.251 mg/L        0.0009       0.251 mg/L        0.0009   0.37%
   QC value within limits for Cr 267.716  Recovery = 100.43%
Cu 327.393†            51607.4       0.255 mg/L        0.0008       0.255 mg/L        0.0008   0.32%
   QC value within limits for Cu 327.393  Recovery = 102.07%
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Fe 239.562†          572571.8        98.4 mg/L          1.37        98.4 mg/L          1.37   1.39%
   QC value within limits for Fe 239.562  Recovery = 98.41%
Mg 279.077†          662463.4         245 mg/L           3.9         245 mg/L           3.9   1.60%
   QC value within limits for Mg 279.077  Recovery = 98.15%
Mn 257.610†          156520.7       0.247 mg/L        0.0014       0.247 mg/L        0.0014   0.55%
   QC value within limits for Mn 257.610  Recovery = 98.90%
Mo 202.031†              12.0    -0.00030 mg/L      0.001738    -0.00030 mg/L      0.001738 574.99%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†           15059.6       0.471 mg/L        0.0011       0.471 mg/L        0.0011   0.23%
   QC value within limits for Ni 231.604  Recovery = 94.12%
Pb 220.353†            1976.3       0.488 mg/L        0.0064       0.488 mg/L        0.0064   1.31%
   QC value within limits for Pb 220.353  Recovery = 97.69%
Sb 206.836†             562.7       0.491 mg/L        0.0041       0.491 mg/L        0.0041   0.84%
   QC value within limits for Sb 206.836  Recovery = 98.27%
Se 196.026†             129.0       0.237 mg/L        0.0303       0.237 mg/L        0.0303  12.77%
   QC value within limits for Se 196.026  Recovery = 94.99%
Si 251.611†         -321629.1       -16.2 mg/L          0.11       -16.2 mg/L          0.11   0.70%
   QC value less than the lower limit for Si 251.611  Recovery = Not calculated
Sn 189.927†             -56.2     -0.0110 mg/L       0.00260     -0.0110 mg/L       0.00260  23.71%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†          -18377.9     0.00014 mg/L      0.000280     0.00014 mg/L      0.000280 195.28%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†             576.1       0.477 mg/L        0.0082       0.477 mg/L        0.0082   1.73%
   QC value within limits for Tl 190.801  Recovery = 95.38%
V 290.880†            46224.4       0.259 mg/L        0.0015       0.259 mg/L        0.0015   0.60%
   QC value within limits for V 290.880  Recovery = 103.54%
Zn 206.200†           14056.4       0.497 mg/L        0.0029       0.497 mg/L        0.0029   0.58%
   QC value within limits for Zn 206.200  Recovery = 99.36%
K 766.490†             8850.2        5.62 mg/L         0.114        5.62 mg/L         0.114   2.03%
   QC value within limits for K 766.490  Recovery = 112.31%
Na 589.592†           42951.6        5.28 mg/L         0.090        5.28 mg/L         0.090   1.71%
   QC value within limits for Na 589.592  Recovery = 105.61%
Sr 407.771†            1897.8    -0.00707 mg/L      0.000100    -0.00707 mg/L      0.000100   1.41%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†             202.9     0.00262 mg/L      0.004058     0.00262 mg/L      0.004058 154.65%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†             -117.2      -0.182 mg/L        0.0086      -0.182 mg/L        0.0086   4.75%
   QC value within limits for P 214.914  Recovery = Not calculated
QC Failed.  Continue with analysis.

==========================================================================================================
Sequence No.: 11                                    Autosampler Location: 6
Sample ID: CCV                                      Date Collected: 5/27/2015 9:08:34 AM
Analyst:                                            Data Type: Reprocessed on 5/27/2015 9:48:38 AM
Logged In Analyst (Original) : peicp2
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

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Nebulizer Parameters: CCV
Analyte                 Back Pressure    Flow
All                    232.0 kPa        0.40 L/min

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Mean Data: CCV
                   Mean Corrected        Calib.                          Sample
Analyte               Intensity     Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029            3223207.8                                                    17754.75   0.55%
YRADIAL               201576.9                                                     3001.65   1.49%
Ga 417.206           1348048.0                                                     2940.77   0.22%
GaRADIAL               47401.8                                                      638.70   1.35%
Ag 328.068†           135722.4       0.404 mg/L        0.0022       0.404 mg/L        0.0022   0.56%
   QC value within limits for Ag 328.068  Recovery = 100.89%
Al 396.153†            29431.4        10.3 mg/L          0.08        10.3 mg/L          0.08   0.81%
   QC value within limits for Al 396.153  Recovery = 102.61%
As 188.979†              644.1       0.395 mg/L        0.0060       0.395 mg/L        0.0060   1.51%
   QC value within limits for As 188.979  Recovery = 98.71%
Ba 233.527†            58376.3        1.01 mg/L         0.008        1.01 mg/L         0.008   0.80%
   QC value within limits for Ba 233.527  Recovery = 100.93%
Be 234.861†            27451.8      0.0495 mg/L       0.00026      0.0495 mg/L       0.00026   0.52%
   QC value within limits for Be 234.861  Recovery = 99.01%
B 249.677†             26797.3       0.395 mg/L        0.0038       0.395 mg/L        0.0038   0.96%
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   QC value less than the lower limit for B 249.677  Recovery = 79.05%
Ca 227.546†            765.5        9.74 mg/L        0.186        9.74 mg/L        0.186   1.91%
   QC value within limits for Ca 227.546  Recovery = 97.43%
Cd 228.802†            827.6      0.0487 mg/L      0.00034      0.0487 mg/L      0.00034   0.69%
   QC value within limits for Cd 228.802  Recovery = 97.47%
Co 228.616†           2889.7       0.202 mg/L       0.0013       0.202 mg/L       0.0013   0.62%
   QC value within limits for Co 228.616  Recovery = 100.94%
Cr 267.716†          68368.7       0.503 mg/L       0.0067       0.503 mg/L       0.0067   1.34%
   QC value within limits for Cr 267.716  Recovery = 100.60%
Cu 327.393†         106699.0       0.498 mg/L       0.0047       0.498 mg/L       0.0047   0.94%
   QC value within limits for Cu 327.393  Recovery = 99.60%
Fe 239.562†          23744.0        4.08 mg/L        0.010        4.08 mg/L        0.010   0.25%
   QC value within limits for Fe 239.562  Recovery = 102.11%
Mg 279.077†          27469.8        10.2 mg/L         0.05        10.2 mg/L         0.05   0.45%
   QC value within limits for Mg 279.077  Recovery = 101.61%
Mn 257.610†         322331.3       0.505 mg/L       0.0040       0.505 mg/L       0.0040   0.80%
   QC value within limits for Mn 257.610  Recovery = 100.97%
Mo 202.031†          10470.8       0.997 mg/L       0.0087       0.997 mg/L       0.0087   0.87%
   QC value within limits for Mo 202.031  Recovery = 99.72%
Ni 231.604†          16079.9       0.503 mg/L       0.0032       0.503 mg/L       0.0032   0.64%
   QC value within limits for Ni 231.604  Recovery = 100.53%
Pb 220.353†           2250.6       0.505 mg/L       0.0047       0.505 mg/L       0.0047   0.93%
   QC value within limits for Pb 220.353  Recovery = 101.00%
Sb 206.836†           1364.4        1.18 mg/L        0.006        1.18 mg/L        0.006   0.51%
   QC value within limits for Sb 206.836  Recovery = 98.24%
Se 196.026†            249.8       0.397 mg/L       0.0093       0.397 mg/L       0.0093   2.34%
   QC value within limits for Se 196.026  Recovery = 99.25%
Si 251.611†         -171862.8       -8.74 mg/L        0.202       -8.74 mg/L        0.202   2.31%
   QC value less than the lower limit for Si 251.611  Recovery = -174.77%
Sn 189.927†           5911.6       0.998 mg/L       0.0055       0.998 mg/L       0.0055   0.55%
   QC value within limits for Sn 189.927  Recovery = 99.80%
Ti 334.940†         926417.2       1.000 mg/L       0.0087       1.000 mg/L       0.0087   0.87%
   QC value within limits for Ti 334.940  Recovery = 100.00%
Tl 190.801†            600.2       0.507 mg/L       0.0073       0.507 mg/L       0.0073   1.43%
   QC value within limits for Tl 190.801  Recovery = 101.38%
V 290.880†          189141.7        1.00 mg/L        0.011        1.00 mg/L        0.011   1.13%
   QC value within limits for V 290.880  Recovery = 100.26%
Zn 206.200†          29271.2        1.02 mg/L        0.007        1.02 mg/L        0.007   0.70%
   QC value within limits for Zn 206.200  Recovery = 102.08%
K 766.490†           79180.8        50.5 mg/L         0.17        50.5 mg/L         0.17   0.34%
   QC value within limits for K 766.490  Recovery = 100.91%
Na 589.592†         397626.4        49.9 mg/L         0.72        49.9 mg/L         0.72   1.44%
   QC value within limits for Na 589.592  Recovery = 99.88%
Sr 407.771†         810730.3        1.01 mg/L        0.011        1.01 mg/L        0.011   1.12%
   QC value within limits for Sr 407.771  Recovery = 100.55%
Li 670.784†          39335.6        1.03 mg/L        0.005        1.03 mg/L        0.005   0.49%
   QC value within limits for Li 670.784  Recovery = 102.82%
P 214.914†            6344.5        9.95 mg/L        0.091        9.95 mg/L        0.091   0.92%
   QC value within limits for P 214.914  Recovery = 99.50%
QC Failed.  Continue with analysis.

==========================================================================================
Sequence No.: 12                                  Autosampler Location: 1
Sample ID: CCB                                    Date Collected: 5/27/2015 9:11:02 AM
Analyst:                                          Data Type: Reprocessed on 5/27/2015 9:48:39 AM
Logged In Analyst (Original) : peicp2
Initial Sample Wt:                                Initial Sample Vol:
Dilution:                                         Sample Prep Vol:

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Nebulizer Parameters: CCB
Analyte                  Back Pressure     Flow
All                       232.0 kPa        0.40 L/min

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Mean Data: CCB
                     Mean Corrected        Calib.                          Sample
Analyte                 Intensity     Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029             3390438.6                                                     55006.43   1.62%
YRADIAL                211836.0                                                      2786.13   1.32%
Ga 417.206            1564393.3                                                     26663.58   1.70%
GaRADIAL                51409.6                                                       569.69   1.11%
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Ag 328.068†              424.3     0.00331 mg/L      0.000428     0.00331 mg/L      0.000428  12.92%
   QC value within limits for Ag 328.068  Recovery = Not calculated
Al 396.153†               16.9     -0.0161 mg/L       0.00087     -0.0161 mg/L       0.00087   5.42%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†              -10.3    -0.00275 mg/L      0.005910    -0.00275 mg/L      0.005910 215.25%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†                4.2    -0.00017 mg/L      0.000275    -0.00017 mg/L      0.000275 160.22%
   QC value within limits for Ba 233.527  Recovery = Not calculated
Be 234.861†              -16.2     0.00022 mg/L      0.000034     0.00022 mg/L      0.000034  15.53%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†              -266.5     0.00090 mg/L      0.003389     0.00090 mg/L      0.003389 374.83%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†               -6.8     -0.0290 mg/L       0.23305     -0.0290 mg/L       0.23305 804.04%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†                2.2     0.00039 mg/L      0.000499     0.00039 mg/L      0.000499 129.22%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†               -3.4    -0.00087 mg/L      0.000460    -0.00087 mg/L      0.000460  52.86%
   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†               73.1     0.00005 mg/L      0.000590     0.00005 mg/L      0.000590 >999.9%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†              -93.4     0.00165 mg/L      0.000205     0.00165 mg/L      0.000205  12.43%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†                5.4     0.00512 mg/L      0.002423     0.00512 mg/L      0.002423  47.37%
   QC value within limits for Fe 239.562  Recovery = Not calculated
Mg 279.077†               10.3     -0.0107 mg/L       0.00501     -0.0107 mg/L       0.00501  46.68%
   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†               38.4    -0.00036 mg/L      0.000022    -0.00036 mg/L      0.000022   6.08%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†               10.0     0.00103 mg/L      0.000900     0.00103 mg/L      0.000900  87.60%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†                5.7    -0.00055 mg/L      0.000794    -0.00055 mg/L      0.000794 143.66%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†               -6.4    -0.00186 mg/L      0.003764    -0.00186 mg/L      0.003764 201.89%
   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†               -3.5     0.00142 mg/L      0.001945     0.00142 mg/L      0.001945 136.55%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†                3.1     0.00901 mg/L      0.010513     0.00901 mg/L      0.010513 116.74%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†            -2076.0      -0.254 mg/L        0.1465      -0.254 mg/L        0.1465  57.64%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†               -5.7    -0.00246 mg/L      0.000628    -0.00246 mg/L      0.000628  25.55%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†              261.9     0.00199 mg/L      0.000064     0.00199 mg/L      0.000064   3.20%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†               -6.2    -0.00657 mg/L      0.002355    -0.00657 mg/L      0.002355  35.84%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†              -147.3     0.00110 mg/L      0.001021     0.00110 mg/L      0.001021  92.74%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†                2.6    -0.00469 mg/L      0.000314    -0.00469 mg/L      0.000314   6.69%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†                85.5      0.0828 mg/L       0.01139      0.0828 mg/L       0.01139  13.76%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†               43.1      0.0259 mg/L       0.01340      0.0259 mg/L       0.01340  51.81%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†              133.9    -0.00017 mg/L      0.000124    -0.00017 mg/L      0.000124  73.70%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†              -75.6    -0.00467 mg/L      0.000238    -0.00467 mg/L      0.000238   5.09%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†                 0.5     0.00302 mg/L      0.006136     0.00302 mg/L      0.006136 202.92%
   QC value within limits for P 214.914  Recovery = Not calculated
All analyte(s) passed QC.
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Approved: May 28, 2015

Lynn H. Rhoden

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Analysis Begun

Start Time: 5/27/2015 9:56:16 AM **Plasma On Time: 5/27/2015 6:39:13 AM**
Logged In Analyst: peicp2 **Technique: ICP Continuous**
Spectrometer Model: Optima 4300 DV, S/N 077N4011401 **Autosampler Model: Cetac**

Sample Information File: C:\pe\peicp2\Sample Information\MONDAY1.sif
Batch ID:
Results Data Set: 052715HR
Results Library: C:\pe\peicp2\Results\results2.mdb

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Sequence No.: 1 **Autosampler Location: 15**
Sample ID: PBW 1A WG524813-02 **Date Collected: 5/27/2015 9:56:17 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: PBW 1A WG524813-02

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: PBW 1A WG524813-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3419531.8						57166.55	1.67%
YRADIAL	211564.0						3051.14	1.44%
Ga 417.206	1550910.2						26944.95	1.74%
GaRADIAL	50406.1						801.43	1.59%
Ag 328.068†	123.1	0.00243	mg/L	0.000681	0.00243	mg/L	0.000681	27.98%
Al 396.153†	5.9	-0.0200	mg/L	0.00339	-0.0200	mg/L	0.00339	17.02%
As 188.979†	-9.1	-0.00196	mg/L	0.005180	-0.00196	mg/L	0.005180	264.13%
Ba 233.527†	-8.5	-0.00039	mg/L	0.000078	-0.00039	mg/L	0.000078	19.84%
Be 234.861†	-86.3	0.00009	mg/L	0.000030	0.00009	mg/L	0.000030	32.89%
B 249.677†	7581.6	0.111	mg/L	0.0024	0.111	mg/L	0.0024	2.18%
Ca 227.546†	-16.8	-0.155	mg/L	0.0642	-0.155	mg/L	0.0642	41.33%
Cd 228.802†	-1.1	0.00018	mg/L	0.000122	0.00018	mg/L	0.000122	68.81%
Co 228.616†	-8.3	-0.00121	mg/L	0.000411	-0.00121	mg/L	0.000411	33.90%
Cr 267.716†	115.3	0.00036	mg/L	0.000160	0.00036	mg/L	0.000160	44.31%
Cu 327.393†	-272.7	0.00082	mg/L	0.000415	0.00082	mg/L	0.000415	50.73%
Fe 239.562†	8.1	0.00558	mg/L	0.002104	0.00558	mg/L	0.002104	37.70%
Mg 279.077†	16.0	-0.00862	mg/L	0.002562	-0.00862	mg/L	0.002562	29.73%
Mn 257.610†	174.1	-0.00015	mg/L	0.000034	-0.00015	mg/L	0.000034	22.23%
Mo 202.031†	15.1	0.00151	mg/L	0.000474	0.00151	mg/L	0.000474	31.44%
Ni 231.604†	-2.8	-0.00082	mg/L	0.000262	-0.00082	mg/L	0.000262	31.87%
Pb 220.353†	-18.8	-0.00463	mg/L	0.002722	-0.00463	mg/L	0.002722	58.80%
Sb 206.836†	-0.6	0.00397	mg/L	0.004507	0.00397	mg/L	0.004507	113.60%
Se 196.026†	6.7	0.0146	mg/L	0.01333	0.0146	mg/L	0.01333	91.30%
Si 251.611†	-313565.1	-15.8	mg/L	0.51	-15.8	mg/L	0.51	3.21%
Sn 189.927†	-32.0	-0.00690	mg/L	0.000456	-0.00690	mg/L	0.000456	6.61%
Ti 334.940†	442.7	0.00218	mg/L	0.000076	0.00218	mg/L	0.000076	3.48%
Tl 190.801†	-1.8	-0.00289	mg/L	0.004737	-0.00289	mg/L	0.004737	163.75%
V 290.880†	-128.9	0.00120	mg/L	0.001564	0.00120	mg/L	0.001564	130.60%
Zn 206.200†	-161.2	-0.0104	mg/L	0.00020	-0.0104	mg/L	0.00020	1.95%
K 766.490†	-48.2	-0.00156	mg/L	0.072933	-0.00156	mg/L	0.072933	>999.9%
Na 589.592†	-247.0	-0.00957	mg/L	0.030775	-0.00957	mg/L	0.030775	321.61%
Sr 407.771†	106.0	-0.00020	mg/L	0.000117	-0.00020	mg/L	0.000117	58.53%
Li 670.784†	-120.7	-0.00586	mg/L	0.002073	-0.00586	mg/L	0.002073	35.40%
P 214.914†	0.3	0.00268	mg/L	0.013744	0.00268	mg/L	0.013744	512.55%

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Sequence No.: 2 **Autosampler Location: 16**
Sample ID: LCSW 1A WG524813-03 **Date Collected: 5/27/2015 9:59:39 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Approved: May 28, 2015

Nebulizer Parameters: LCSW 1A WG524813-03

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: LCSW 1A WG524813-03

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3300819.2						74418.75	2.25%
YRADIAL	201830.8						1001.83	0.50%
Ga 417.206	1398879.7						26938.99	1.93%
GaRADIAL	47131.7						180.88	0.38%
Ag 328.068†	67043.6	0.200	mg/L	0.0030	0.200	mg/L	0.0030	1.49%
Al 396.153†	14806.2	5.15	mg/L	0.012	5.15	mg/L	0.012	0.23%
As 188.979†	307.1	0.190	mg/L	0.0074	0.190	mg/L	0.0074	3.89%
Ba 233.527†	29751.6	0.514	mg/L	0.0161	0.514	mg/L	0.0161	3.13%
Be 234.861†	13015.0	0.0236	mg/L	0.00066	0.0236	mg/L	0.00066	2.81%
B 249.677†	66282.7	0.944	mg/L	0.0116	0.944	mg/L	0.0116	1.23%
Ca 227.546†	369.3	4.73	mg/L	0.258	4.73	mg/L	0.258	5.46%
Cd 228.802†	400.5	0.0237	mg/L	0.00080	0.0237	mg/L	0.00080	3.38%
Co 228.616†	1431.0	0.0997	mg/L	0.00298	0.0997	mg/L	0.00298	2.99%
Cr 267.716†	34547.3	0.254	mg/L	0.0003	0.254	mg/L	0.0003	0.14%
Cu 327.393†	52774.9	0.247	mg/L	0.0007	0.247	mg/L	0.0007	0.29%
Fe 239.562†	11843.2	2.04	mg/L	0.017	2.04	mg/L	0.017	0.85%
Mg 279.077†	13559.4	5.01	mg/L	0.045	5.01	mg/L	0.045	0.89%
Mn 257.610†	160343.3	0.251	mg/L	0.0019	0.251	mg/L	0.0019	0.75%
Mo 202.031†	5238.0	0.499	mg/L	0.0157	0.499	mg/L	0.0157	3.15%
Ni 231.604†	7769.2	0.242	mg/L	0.0076	0.242	mg/L	0.0076	3.14%
Pb 220.353†	1112.3	0.249	mg/L	0.0085	0.249	mg/L	0.0085	3.41%
Sb 206.836†	662.1	0.574	mg/L	0.0182	0.574	mg/L	0.0182	3.16%
Se 196.026†	122.1	0.196	mg/L	0.0068	0.196	mg/L	0.0068	3.44%
Si 251.611†	-210495.6	-10.7	mg/L	0.16	-10.7	mg/L	0.16	1.47%
Sn 189.927†	2940.6	0.496	mg/L	0.0144	0.496	mg/L	0.0144	2.90%
Ti 334.940†	462565.1	0.500	mg/L	0.0029	0.500	mg/L	0.0029	0.58%
Tl 190.801†	300.6	0.253	mg/L	0.0062	0.253	mg/L	0.0062	2.46%
V 290.880†	94582.8	0.502	mg/L	0.0034	0.502	mg/L	0.0034	0.67%
Zn 206.200†	14335.5	0.498	mg/L	0.0154	0.498	mg/L	0.0154	3.09%
K 766.490†	39352.6	25.0	mg/L	0.24	25.0	mg/L	0.24	0.96%
Na 589.592†	202629.2	25.1	mg/L	0.35	25.1	mg/L	0.35	1.38%
Sr 407.771†	407826.6	0.506	mg/L	0.0094	0.506	mg/L	0.0094	1.87%
Li 670.784†	19875.8	0.518	mg/L	0.0019	0.518	mg/L	0.0019	0.38%
P 214.914†	3078.0	4.83	mg/L	0.174	4.83	mg/L	0.174	3.61%

Sequence No.: 3
Sample ID: FBLK WG524637-01
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 17
Date Collected: 5/27/2015 10:02:02 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: FBLK WG524637-01

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: FBLK WG524637-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3268242.4						9260.27	0.28%
YRADIAL	196074.5						2862.39	1.46%
Ga 417.206	1341533.7						2571.73	0.19%
GaRADIAL	45370.8						589.14	1.30%
Ag 328.068†	-175.1	0.00156	mg/L	0.000069	0.00156	mg/L	0.000069	4.43%
Al 396.153†	2.7	-0.0211	mg/L	0.00194	-0.0211	mg/L	0.00194	9.23%
As 188.979†	-7.1	-0.00076	mg/L	0.001584	-0.00076	mg/L	0.001584	207.17%
Ba 233.527†	-0.9	-0.00026	mg/L	0.000076	-0.00026	mg/L	0.000076	29.10%
Be 234.861†	-120.6	0.00003	mg/L	0.000035	0.00003	mg/L	0.000035	121.81%
B 249.677†	8887.8	0.130	mg/L	0.0002	0.130	mg/L	0.0002	0.13%
Ca 227.546†	-13.3	-0.111	mg/L	0.0636	-0.111	mg/L	0.0636	57.01%
Cd 228.802†	0.4	0.00026	mg/L	0.000223	0.00026	mg/L	0.000223	85.41%
Co 228.616†	-6.3	-0.00107	mg/L	0.000846	-0.00107	mg/L	0.000846	78.90%

Approved: May 28, 2015

Kym H. Rhoden

Cr 267.716†	190.8	0.00092	mg/L	0.001791	0.00092	mg/L	0.001791	195.35%
Cu 327.393†	-967.6	-0.00240	mg/L	0.001758	-0.00240	mg/L	0.001758	73.30%
Fe 239.562†	10.8	0.00605	mg/L	0.000826	0.00605	mg/L	0.000826	13.64%
Mg 279.077†	52.7	0.00498	mg/L	0.009477	0.00498	mg/L	0.009477	190.30%
Mn 257.610†	78.8	-0.00030	mg/L	0.000047	-0.00030	mg/L	0.000047	15.53%
Mo 202.031†	10.1	0.00104	mg/L	0.000589	0.00104	mg/L	0.000589	56.64%
Ni 231.604†	-24.0	-0.00148	mg/L	0.000324	-0.00148	mg/L	0.000324	21.87%
Pb 220.353†	-11.6	-0.00303	mg/L	0.004645	-0.00303	mg/L	0.004645	153.12%
Sb 206.836†	5.8	0.00948	mg/L	0.003741	0.00948	mg/L	0.003741	39.47%
Se 196.026†	7.5	0.0159	mg/L	0.00445	0.0159	mg/L	0.00445	27.95%
Si 251.611†	-271834.6	-13.7	mg/L	0.01	-13.7	mg/L	0.01	0.09%
Sn 189.927†	-37.2	-0.00778	mg/L	0.002320	-0.00778	mg/L	0.002320	29.82%
Ti 334.940†	635.2	0.00239	mg/L	0.000312	0.00239	mg/L	0.000312	13.05%
Tl 190.801†	-8.3	-0.00828	mg/L	0.001671	-0.00828	mg/L	0.001671	20.18%
V 290.880†	117.2	0.00250	mg/L	0.000803	0.00250	mg/L	0.000803	32.13%
Zn 206.200†	-92.4	-0.00799	mg/L	0.000075	-0.00799	mg/L	0.000075	0.94%
K 766.490†	-120.8	-0.190	mg/L	0.0490	-0.190	mg/L	0.0490	25.83%
Na 589.592†	1074240.9	142	mg/L	1.5	142	mg/L	1.5	1.07%
Sr 407.771†	220.0	-0.00006	mg/L	0.000124	-0.00006	mg/L	0.000124	209.81%
Li 670.784†	-56.7	-0.00418	mg/L	0.005352	-0.00418	mg/L	0.005352	128.05%
P 214.914†	5.8	0.0113	mg/L	0.01655	0.0113	mg/L	0.01655	146.78%

Sequence No.: 4
Sample ID: L1505130302
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 18
Date Collected: 5/27/2015 10:05:25 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505130302

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505130302

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3063137.9						14042.01	0.46%
YRADIAL	191856.3						1287.76	0.67%
Ga 417.206	1253518.0						4572.55	0.36%
GaRADIAL	45530.2						388.86	0.85%
Ag 328.068†	1416.7	0.00603	mg/L	0.000500	0.00603	mg/L	0.000500	8.28%
Al 396.153†	44.1	-0.00681	mg/L	0.031902	-0.00681	mg/L	0.031902	468.49%
As 188.979†	-27.6	-0.0110	mg/L	0.00312	-0.0110	mg/L	0.00312	28.41%
Ba 233.527†	1846.0	0.0317	mg/L	0.00021	0.0317	mg/L	0.00021	0.67%
Be 234.861†	-83.0	0.00006	mg/L	0.000030	0.00006	mg/L	0.000030	47.59%
B 249.677†	354.8	0.0104	mg/L	0.00177	0.0104	mg/L	0.00177	17.07%
Ca 227.546†	8480.8	107	mg/L	0.5	107	mg/L	0.5	0.44%
Cd 228.802†	13.7	0.00113	mg/L	0.000231	0.00113	mg/L	0.000231	20.47%
Co 228.616†	2.1	-0.00047	mg/L	0.000780	-0.00047	mg/L	0.000780	167.57%
Cr 267.716†	376.9	0.00228	mg/L	0.000294	0.00228	mg/L	0.000294	12.91%
Cu 327.393†	-940.4	-0.00227	mg/L	0.000321	-0.00227	mg/L	0.000321	14.16%
Fe 239.562†	1107.7	0.194	mg/L	0.0070	0.194	mg/L	0.0070	3.62%
Mg 279.077†	121922.9	45.2	mg/L	0.21	45.2	mg/L	0.21	0.47%
Mn 257.610†	66231.9	0.103	mg/L	0.0019	0.103	mg/L	0.0019	1.88%
Mo 202.031†	90.9	0.00874	mg/L	0.002053	0.00874	mg/L	0.002053	23.49%
Ni 231.604†	118.9	0.00300	mg/L	0.000720	0.00300	mg/L	0.000720	24.02%
Pb 220.353†	38.3	0.00806	mg/L	0.003406	0.00806	mg/L	0.003406	42.27%
Sb 206.836†	1.2	0.00550	mg/L	0.006545	0.00550	mg/L	0.006545	118.90%
Se 196.026†	-5.7	-0.00479	mg/L	0.009062	-0.00479	mg/L	0.009062	189.28%
Si 251.611†	248432.8	12.2	mg/L	0.37	12.2	mg/L	0.37	3.00%
Sn 189.927†	-45.8	-0.00924	mg/L	0.002641	-0.00924	mg/L	0.002641	28.59%
Ti 334.940†	-6683.3	0.00136	mg/L	0.000146	0.00136	mg/L	0.000146	10.73%
Tl 190.801†	-29.7	-0.0263	mg/L	0.00489	-0.0263	mg/L	0.00489	18.61%
V 290.880†	-1447.1	-0.00691	mg/L	0.000011	-0.00691	mg/L	0.000011	0.16%
Zn 206.200†	-36.3	-0.00601	mg/L	0.000084	-0.00601	mg/L	0.000084	1.41%
K 766.490†	2033.6	1.07	mg/L	0.078	1.07	mg/L	0.078	7.31%
Na 589.592†	1729072.2	244	mg/L	0.4	244	mg/L	0.4	0.18%
Sr 407.771†	1014543.1	1.26	mg/L	0.005	1.26	mg/L	0.005	0.37%
Li 670.784†	2396.3	0.0601	mg/L	0.00540	0.0601	mg/L	0.00540	8.99%
P 214.914†	32.1	0.0524	mg/L	0.02107	0.0524	mg/L	0.02107	40.18%

Approved: May 28, 2015

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Sequence No.: 5 **Autosampler Location: 19**
Sample ID: L1505130304 **Date Collected: 5/27/2015 10:07:50 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505130304

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505130304

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3112505.6						60932.00	1.96%
YRADIAL	195716.3						2649.89	1.35%
Ga 417.206	1270375.7						21051.17	1.66%
GaRADIAL	45797.6						675.88	1.48%
Ag 328.068†	180.0	0.00538	mg/L	0.000381	0.00538	mg/L	0.000381	7.08%
Al 396.153†	160.8	0.0349	mg/L	0.07553	0.0349	mg/L	0.07553	216.48%
As 188.979†	-17.3	-0.00287	mg/L	0.002414	-0.00287	mg/L	0.002414	84.14%
Ba 233.527†	2658.1	0.0455	mg/L	0.00132	0.0455	mg/L	0.00132	2.91%
Be 234.861†	1040.3	0.00040	mg/L	0.000102	0.00040	mg/L	0.000102	25.57%
B 249.677†	-1139.5	0.0153	mg/L	0.00184	0.0153	mg/L	0.00184	12.01%
Ca 227.546†	8802.0	111	mg/L	2.5	111	mg/L	2.5	2.23%
Cd 228.802†	3.8	0.00051	mg/L	0.000578	0.00051	mg/L	0.000578	113.47%
Co 228.616†	40.6	0.00206	mg/L	0.000469	0.00206	mg/L	0.000469	22.75%
Cr 267.716†	356.3	0.00194	mg/L	0.000316	0.00194	mg/L	0.000316	16.30%
Cu 327.393†	-905.2	-0.00112	mg/L	0.000380	-0.00112	mg/L	0.000380	33.95%
Fe 239.562†	40924.4	7.04	mg/L	0.047	7.04	mg/L	0.047	0.67%
Mg 279.077†	134146.6	49.7	mg/L	0.04	49.7	mg/L	0.04	0.09%
Mn 257.610†	283299.7	0.444	mg/L	0.0075	0.444	mg/L	0.0075	1.69%
Mo 202.031†	102.5	0.00980	mg/L	0.000843	0.00980	mg/L	0.000843	8.60%
Ni 231.604†	67.6	0.00139	mg/L	0.000322	0.00139	mg/L	0.000322	23.22%
Pb 220.353†	34.9	0.00688	mg/L	0.000557	0.00688	mg/L	0.000557	8.10%
Sb 206.836†	-3.4	0.00173	mg/L	0.004607	0.00173	mg/L	0.004607	266.08%
Se 196.026†	-6.3	-0.00658	mg/L	0.007248	-0.00658	mg/L	0.007248	110.11%
Si 251.611†	117783.7	5.73	mg/L	0.169	5.73	mg/L	0.169	2.94%
Sn 189.927†	-48.3	-0.00966	mg/L	0.002202	-0.00966	mg/L	0.002202	22.80%
Ti 334.940†	-6980.6	0.00130	mg/L	0.000301	0.00130	mg/L	0.000301	23.23%
Tl 190.801†	-16.3	-0.0155	mg/L	0.00276	-0.0155	mg/L	0.00276	17.82%
V 290.880†	-1925.4	-0.00825	mg/L	0.001564	-0.00825	mg/L	0.001564	18.96%
Zn 206.200†	-52.1	-0.00593	mg/L	0.000359	-0.00593	mg/L	0.000359	6.06%
K 766.490†	6800.2	4.10	mg/L	0.063	4.10	mg/L	0.063	1.53%
Na 589.592†	1596974.2	222	mg/L	3.9	222	mg/L	3.9	1.77%
Sr 407.771†	1529104.9	1.89	mg/L	0.017	1.89	mg/L	0.017	0.92%
Li 670.784†	2264.5	0.0567	mg/L	0.00330	0.0567	mg/L	0.00330	5.83%
P 214.914†	23.4	0.0389	mg/L	0.00620	0.0389	mg/L	0.00620	15.92%

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Sequence No.: 6 **Autosampler Location: 20**
Sample ID: L1505130306 **Date Collected: 5/27/2015 10:10:14 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505130306

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505130306

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3097679.4						29202.48	0.94%
YRADIAL	195783.6						2544.88	1.30%
Ga 417.206	1276057.5						14099.80	1.10%
GaRADIAL	45961.8						770.25	1.68%

Approved: May 28, 2015

Kym H. Rhoden

Ag 328.068†	1098.8	0.00511	mg/L	0.000231	0.00511	mg/L	0.000231	4.51%
Al 396.153†	9.4	-0.0190	mg/L	0.00207	-0.0190	mg/L	0.00207	10.93%
As 188.979†	-26.7	-0.0111	mg/L	0.00288	-0.0111	mg/L	0.00288	25.90%
Ba 233.527†	1267.1	0.0217	mg/L	0.00018	0.0217	mg/L	0.00018	0.83%
Be 234.861†	-111.4	0.00005	mg/L	0.000039	0.00005	mg/L	0.000039	76.36%
B 249.677†	247.2	0.00824	mg/L	0.000944	0.00824	mg/L	0.000944	11.45%
Ca 227.546†	6043.6	76.0	mg/L	0.90	76.0	mg/L	0.90	1.19%
Cd 228.802†	6.0	0.00067	mg/L	0.000377	0.00067	mg/L	0.000377	56.46%
Co 228.616†	9.7	0.00007	mg/L	0.000459	0.00007	mg/L	0.000459	664.05%
Cr 267.716†	275.4	0.00153	mg/L	0.000185	0.00153	mg/L	0.000185	12.04%
Cu 327.393†	-940.7	-0.00229	mg/L	0.002364	-0.00229	mg/L	0.002364	103.42%
Fe 239.562†	182.0	0.0348	mg/L	0.00052	0.0348	mg/L	0.00052	1.50%
Mg 279.077†	87394.2	32.4	mg/L	0.18	32.4	mg/L	0.18	0.57%
Mn 257.610†	68198.2	0.106	mg/L	0.0008	0.106	mg/L	0.0008	0.70%
Mo 202.031†	83.6	0.00805	mg/L	0.000332	0.00805	mg/L	0.000332	4.12%
Ni 231.604†	41.7	0.00058	mg/L	0.000321	0.00058	mg/L	0.000321	55.49%
Pb 220.353†	22.2	0.00446	mg/L	0.002176	0.00446	mg/L	0.002176	48.76%
Sb 206.836†	2.0	0.00614	mg/L	0.003676	0.00614	mg/L	0.003676	59.92%
Se 196.026†	-5.9	-0.00514	mg/L	0.010745	-0.00514	mg/L	0.010745	209.19%
Si 251.611†	209563.9	10.3	mg/L	0.29	10.3	mg/L	0.29	2.78%
Sn 189.927†	-55.3	-0.0108	mg/L	0.00361	-0.0108	mg/L	0.00361	33.37%
Ti 334.940†	-4918.1	0.00129	mg/L	0.000236	0.00129	mg/L	0.000236	18.22%
Tl 190.801†	-21.9	-0.0198	mg/L	0.00539	-0.0198	mg/L	0.00539	27.22%
V 290.880†	-1070.2	-0.00462	mg/L	0.001438	-0.00462	mg/L	0.001438	31.13%
Zn 206.200†	-119.6	-0.00894	mg/L	0.000249	-0.00894	mg/L	0.000249	2.78%
K 766.490†	1932.8	1.05	mg/L	0.096	1.05	mg/L	0.096	9.14%
Na 589.592†	1470330.5	202	mg/L	2.5	202	mg/L	2.5	1.25%
Sr 407.771†	697796.9	0.863	mg/L	0.0120	0.863	mg/L	0.0120	1.39%
Li 670.784†	2061.1	0.0513	mg/L	0.00565	0.0513	mg/L	0.00565	11.01%
P 214.914†	31.7	0.0518	mg/L	0.01459	0.0518	mg/L	0.01459	28.16%

Sequence No.: 7
Sample ID: L1505130308
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 21
Date Collected: 5/27/2015 10:13:35 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505130308

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505130308

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3143733.9						19542.58	0.62%
YRADIAL	203720.4						3488.27	1.71%
Ga 417.206	1313382.1						3681.69	0.28%
GaRADIAL	48380.6						631.14	1.30%
Ag 328.068†	1705.7	0.00643	mg/L	0.000448	0.00643	mg/L	0.000448	6.97%
Al 396.153†	-28.8	-0.0327	mg/L	0.00832	-0.0327	mg/L	0.00832	25.42%
As 188.979†	-40.3	-0.0185	mg/L	0.00637	-0.0185	mg/L	0.00637	34.41%
Ba 233.527†	8483.5	0.146	mg/L	0.0008	0.146	mg/L	0.0008	0.52%
Be 234.861†	-119.3	0.00005	mg/L	0.000062	0.00005	mg/L	0.000062	122.32%
B 249.677†	293.9	0.00880	mg/L	0.000378	0.00880	mg/L	0.000378	4.30%
Ca 227.546†	9886.4	124	mg/L	0.3	124	mg/L	0.3	0.22%
Cd 228.802†	5.3	0.00066	mg/L	0.000675	0.00066	mg/L	0.000675	102.05%
Co 228.616†	-1.5	-0.00074	mg/L	0.000434	-0.00074	mg/L	0.000434	59.02%
Cr 267.716†	689.4	0.00458	mg/L	0.000229	0.00458	mg/L	0.000229	4.99%
Cu 327.393†	-408.1	0.00018	mg/L	0.001249	0.00018	mg/L	0.001249	702.30%
Fe 239.562†	16.3	0.00656	mg/L	0.000776	0.00656	mg/L	0.000776	11.83%
Mg 279.077†	57899.8	21.4	mg/L	0.25	21.4	mg/L	0.25	1.17%
Mn 257.610†	88967.2	0.139	mg/L	0.0009	0.139	mg/L	0.0009	0.63%
Mo 202.031†	173.3	0.0166	mg/L	0.00091	0.0166	mg/L	0.00091	5.51%
Ni 231.604†	116.0	0.00291	mg/L	0.000376	0.00291	mg/L	0.000376	12.91%
Pb 220.353†	23.2	0.00466	mg/L	0.001958	0.00466	mg/L	0.001958	41.99%
Sb 206.836†	-1.6	0.00303	mg/L	0.005232	0.00303	mg/L	0.005232	172.80%
Se 196.026†	-8.9	-0.00992	mg/L	0.003153	-0.00992	mg/L	0.003153	31.80%
Si 251.611†	42817.0	1.99	mg/L	0.097	1.99	mg/L	0.097	4.90%
Sn 189.927†	-18.2	-0.00457	mg/L	0.000648	-0.00457	mg/L	0.000648	14.17%

Approved: May 28, 2015

Kym H. Rhoden

Ti 334.940†	-8404.0	0.00064	mg/L	0.000090	0.00064	mg/L	0.000090 14.12%
Tl 190.801†	-32.3	-0.0285	mg/L	0.00123	-0.0285	mg/L	0.00123 4.31%
V 290.880†	-239.0	0.00005	mg/L	0.000380	0.00005	mg/L	0.000380 708.14%
Zn 206.200†	60.5	-0.00263	mg/L	0.000227	-0.00263	mg/L	0.000227 8.62%
K 766.490†	3477.3	2.12	mg/L	0.057	2.12	mg/L	0.057 2.67%
Na 589.592†	795782.5	103	mg/L	1.8	103	mg/L	1.8 1.73%
Sr 407.771†	2499133.1	3.10	mg/L	0.078	3.10	mg/L	0.078 2.52%
Li 670.784†	1478.3	0.0361	mg/L	0.00019	0.0361	mg/L	0.00019 0.52%
P 214.914†	13.3	0.0231	mg/L	0.02442	0.0231	mg/L	0.02442 105.86%

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Sequence No.: 8 **Autosampler Location: 22**
Sample ID: L1505130310 **Date Collected: 5/27/2015 10:17:00 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505130310

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505130310

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3044401.1						30552.75	1.00%
YRADIAL	190295.6						1061.98	0.56%
Ga 417.206	1217559.8						12423.34	1.02%
GaRADIAL	45225.4						113.48	0.25%
Ag 328.068†	4119.7	0.0135	mg/L	0.00083	0.0135	mg/L	0.00083	6.16%
Al 396.153†	41.5	-0.00783	mg/L	0.029627	-0.00783	mg/L	0.029627	378.21%
As 188.979†	-34.1	-0.00989	mg/L	0.007604	-0.00989	mg/L	0.007604	76.87%
Ba 233.527†	1817.1	0.0312	mg/L	0.00061	0.0312	mg/L	0.00061	1.97%
Be 234.861†	-64.0	0.00012	mg/L	0.000024	0.00012	mg/L	0.000024	19.29%
B 249.677†	1181.1	0.0216	mg/L	0.00146	0.0216	mg/L	0.00146	6.79%
Ca 227.546†	27062.0	340	mg/L	4.6	340	mg/L	4.6	1.34%
Cd 228.802†	19.9	0.00153	mg/L	0.000602	0.00153	mg/L	0.000602	39.43%
Co 228.616†	18.5	0.00073	mg/L	0.000354	0.00073	mg/L	0.000354	48.76%
Cr 267.716†	517.3	0.00331	mg/L	0.000445	0.00331	mg/L	0.000445	13.46%
Cu 327.393†	-816.1	-0.00173	mg/L	0.000982	-0.00173	mg/L	0.000982	56.93%
Fe 239.562†	479.4	0.0841	mg/L	0.00742	0.0841	mg/L	0.00742	8.82%
Mg 279.077†	332624.6	123	mg/L	1.9	123	mg/L	1.9	1.54%
Mn 257.610†	51191.4	0.0798	mg/L	0.00042	0.0798	mg/L	0.00042	0.53%
Mo 202.031†	111.9	0.0107	mg/L	0.00152	0.0107	mg/L	0.00152	14.13%
Ni 231.604†	261.5	0.00747	mg/L	0.000162	0.00747	mg/L	0.000162	2.17%
Pb 220.353†	51.0	0.0109	mg/L	0.00410	0.0109	mg/L	0.00410	37.51%
Sb 206.836†	-9.0	-0.00333	mg/L	0.005374	-0.00333	mg/L	0.005374	161.34%
Se 196.026†	-17.7	-0.0237	mg/L	0.01277	-0.0237	mg/L	0.01277	53.93%
Si 251.611†	310398.3	15.3	mg/L	0.30	15.3	mg/L	0.30	1.98%
Sn 189.927†	-77.2	-0.0145	mg/L	0.00388	-0.0145	mg/L	0.00388	26.70%
Ti 334.940†	-19916.2	0.00209	mg/L	0.000216	0.00209	mg/L	0.000216	10.34%
Tl 190.801†	-32.9	-0.0290	mg/L	0.00446	-0.0290	mg/L	0.00446	15.38%
V 290.880†	-2623.9	-0.0152	mg/L	0.00213	-0.0152	mg/L	0.00213	14.06%
Zn 206.200†	-38.7	-0.00610	mg/L	0.000178	-0.00610	mg/L	0.000178	2.91%
K 766.490†	3819.3	2.10	mg/L	0.089	2.10	mg/L	0.089	4.24%
Na 589.592†	2282952.2	343	mg/L	5.2	343	mg/L	5.2	1.51%
Sr 407.771†	2430877.1	3.01	mg/L	0.055	3.01	mg/L	0.055	1.83%
Li 670.784†	2974.5	0.0753	mg/L	0.00456	0.0753	mg/L	0.00456	6.06%
P 214.914†	30.0	0.0493	mg/L	0.01755	0.0493	mg/L	0.01755	35.64%

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Sequence No.: 9 **Autosampler Location: 23**
Sample ID: L1505130310PS WG525150-01 **Date Collected: 5/27/2015 10:19:25 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505130310PS WG525150-01

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Approved: May 28, 2015

Kym H. Rhoden

Mean Data: L1505130310PS WG525150-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	2977615.3						29853.91	1.00%
YRADIAL	188924.2						4071.48	2.16%
Ga 417.206	1203672.8						16949.84	1.41%
GaRADIAL	44780.6						1037.51	2.32%
Ag 328.068†	76046.8	0.226	mg/L	0.0042	0.226	mg/L	0.0042	1.87%
Al 396.153†	14198.0	4.94	mg/L	0.059	4.94	mg/L	0.059	1.19%
As 188.979†	297.8	0.191	mg/L	0.0121	0.191	mg/L	0.0121	6.31%
Ba 233.527†	31276.5	0.541	mg/L	0.0108	0.541	mg/L	0.0108	1.99%
Be 234.861†	14196.4	0.0257	mg/L	0.00049	0.0257	mg/L	0.00049	1.92%
B 249.677†	64421.6	0.918	mg/L	0.0222	0.918	mg/L	0.0222	2.41%
Ca 227.546†	24919.0	313	mg/L	6.1	313	mg/L	6.1	1.95%
Cd 228.802†	440.2	0.0261	mg/L	0.00070	0.0261	mg/L	0.00070	2.68%
Co 228.616†	1390.7	0.0969	mg/L	0.00142	0.0969	mg/L	0.00142	1.47%
Cr 267.716†	34129.3	0.251	mg/L	0.0041	0.251	mg/L	0.0041	1.62%
Cu 327.393†	54165.4	0.254	mg/L	0.0013	0.254	mg/L	0.0013	0.52%
Fe 239.562†	11881.5	2.04	mg/L	0.031	2.04	mg/L	0.031	1.53%
Mg 279.077†	311126.2	115	mg/L	1.2	115	mg/L	1.2	1.04%
Mn 257.610†	202036.0	0.316	mg/L	0.0048	0.316	mg/L	0.0048	1.53%
Mo 202.031†	5436.4	0.518	mg/L	0.0099	0.518	mg/L	0.0099	1.91%
Ni 231.604†	7654.8	0.239	mg/L	0.0045	0.239	mg/L	0.0045	1.87%
Pb 220.353†	1130.1	0.253	mg/L	0.0072	0.253	mg/L	0.0072	2.83%
Sb 206.836†	723.8	0.628	mg/L	0.0172	0.628	mg/L	0.0172	2.75%
Se 196.026†	111.0	0.179	mg/L	0.0181	0.179	mg/L	0.0181	10.15%
Si 251.611†	323049.6	16.0	mg/L	0.28	16.0	mg/L	0.28	1.74%
Sn 189.927†	2894.7	0.488	mg/L	0.0065	0.488	mg/L	0.0065	1.34%
Ti 334.940†	445317.7	0.501	mg/L	0.0053	0.501	mg/L	0.0053	1.07%
Tl 190.801†	254.3	0.214	mg/L	0.0081	0.214	mg/L	0.0081	3.78%
V 290.880†	93565.2	0.494	mg/L	0.0070	0.494	mg/L	0.0070	1.42%
Zn 206.200†	14159.6	0.491	mg/L	0.0098	0.491	mg/L	0.0098	1.99%
K 766.490†	43676.7	27.4	mg/L	0.36	27.4	mg/L	0.36	1.31%
Na 589.592†	2214766.3	330	mg/L	4.2	330	mg/L	4.2	1.28%
Sr 407.771†	2536507.8	3.14	mg/L	0.038	3.14	mg/L	0.038	1.22%
Li 670.784†	21961.5	0.573	mg/L	0.0007	0.573	mg/L	0.0007	0.13%
P 214.914†	3336.9	5.23	mg/L	0.098	5.23	mg/L	0.098	1.88%

Sequence No.: 10 **Autosampler Location: 24**
Sample ID: L1505130310DL WG525150-02 **Date Collected: 5/27/2015 10:21:48 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505130310DL WG525150-02

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505130310DL WG525150-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3178612.9						52960.92	1.67%
YRADIAL	197861.1						2490.51	1.26%
Ga 417.206	1366103.0						23947.55	1.75%
GaRADIAL	47711.7						349.90	0.73%
Ag 328.068†	1076.9	0.00510	mg/L	0.000474	0.00510	mg/L	0.000474	9.30%
Al 396.153†	-2.0	-0.0228	mg/L	0.00844	-0.0228	mg/L	0.00844	36.98%
As 188.979†	-13.4	-0.00323	mg/L	0.005291	-0.00323	mg/L	0.005291	163.63%
Ba 233.527†	378.2	0.00630	mg/L	0.000197	0.00630	mg/L	0.000197	3.12%
Be 234.861†	-11.9	0.00022	mg/L	0.000039	0.00022	mg/L	0.000039	17.25%
B 249.677†	1906.8	0.0316	mg/L	0.00122	0.0316	mg/L	0.00122	3.86%
Ca 227.546†	5083.0	63.9	mg/L	0.66	63.9	mg/L	0.66	1.03%
Cd 228.802†	-1.2	0.00019	mg/L	0.000179	0.00019	mg/L	0.000179	95.96%
Co 228.616†	0.5	-0.00058	mg/L	0.001514	-0.00058	mg/L	0.001514	262.78%
Cr 267.716†	203.0	0.00100	mg/L	0.000205	0.00100	mg/L	0.000205	20.45%
Cu 327.393†	-517.9	-0.00032	mg/L	0.001489	-0.00032	mg/L	0.001489	458.66%
Fe 239.562†	104.5	0.0216	mg/L	0.00087	0.0216	mg/L	0.00087	4.01%

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Mg 279.077†	70102.9	26.0	mg/L	0.56	26.0	mg/L	0.56	2.15%
Mn 257.610†	10786.4	0.0165	mg/L	0.00017	0.0165	mg/L	0.00017	1.04%
Mo 202.031†	43.4	0.00421	mg/L	0.000820	0.00421	mg/L	0.000820	19.48%
Ni 231.604†	37.6	0.00045	mg/L	0.000031	0.00045	mg/L	0.000031	7.01%
Pb 220.353†	17.3	0.00342	mg/L	0.002849	0.00342	mg/L	0.002849	83.33%
Sb 206.836†	-1.9	0.00280	mg/L	0.006810	0.00280	mg/L	0.006810	243.29%
Se 196.026†	-8.1	-0.00850	mg/L	0.005444	-0.00850	mg/L	0.005444	64.05%
Si 251.611†	165303.3	8.10	mg/L	0.075	8.10	mg/L	0.075	0.93%
Sn 189.927†	-59.4	-0.0115	mg/L	0.00153	-0.0115	mg/L	0.00153	13.26%
Ti 334.940†	-4405.6	0.00107	mg/L	0.000445	0.00107	mg/L	0.000445	41.52%
Tl 190.801†	-12.1	-0.0116	mg/L	0.00886	-0.0116	mg/L	0.00886	76.58%
V 290.880†	-1121.4	-0.00472	mg/L	0.001780	-0.00472	mg/L	0.001780	37.67%
Zn 206.200†	-120.1	-0.00896	mg/L	0.000418	-0.00896	mg/L	0.000418	4.66%
K 766.490†	787.1	0.467	mg/L	0.0473	0.467	mg/L	0.0473	10.13%
Na 589.592†	467201.0	59.0	mg/L	0.77	59.0	mg/L	0.77	1.30%
Sr 407.771†	501238.1	0.620	mg/L	0.0057	0.620	mg/L	0.0057	0.92%
Li 670.784†	803.7	0.0184	mg/L	0.00393	0.0184	mg/L	0.00393	21.37%
P 214.914†	11.8	0.0207	mg/L	0.02021	0.0207	mg/L	0.02021	97.58%

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Sequence No.: 11 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 5/27/2015 10:25:07 AM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3139912.3						34628.58	1.10%
YRADIAL	196805.9						2125.77	1.08%
Ga 417.206	1319341.4						10092.73	0.76%
GaRADIAL	46015.9						424.70	0.92%
Ag 328.068†	132874.8	0.395	mg/L	0.0068	0.395	mg/L	0.0068	1.71%
QC value within limits for Ag 328.068 Recovery = 98.78%								
Al 396.153†	29016.9	10.1	mg/L	0.09	10.1	mg/L	0.09	0.92%
QC value within limits for Al 396.153 Recovery = 101.15%								
As 188.979†	643.1	0.394	mg/L	0.0063	0.394	mg/L	0.0063	1.59%
QC value within limits for As 188.979 Recovery = 98.55%								
Ba 233.527†	57958.0	1.00	mg/L	0.013	1.00	mg/L	0.013	1.33%
QC value within limits for Ba 233.527 Recovery = 100.21%								
Be 234.861†	26928.8	0.0486	mg/L	0.00058	0.0486	mg/L	0.00058	1.20%
QC value within limits for Be 234.861 Recovery = 97.16%								
B 249.677†	26192.2	0.386	mg/L	0.0092	0.386	mg/L	0.0092	2.38%
QC value less than the lower limit for B 249.677 Recovery = 77.26%								
Ca 227.546†	779.1	9.91	mg/L	0.133	9.91	mg/L	0.133	1.35%
QC value within limits for Ca 227.546 Recovery = 99.14%								
Cd 228.802†	823.6	0.0485	mg/L	0.00098	0.0485	mg/L	0.00098	2.03%
QC value within limits for Cd 228.802 Recovery = 96.99%								
Co 228.616†	2870.3	0.201	mg/L	0.0017	0.201	mg/L	0.0017	0.84%
QC value within limits for Co 228.616 Recovery = 100.26%								
Cr 267.716†	67833.3	0.499	mg/L	0.0057	0.499	mg/L	0.0057	1.15%
QC value within limits for Cr 267.716 Recovery = 99.81%								
Cu 327.393†	104998.1	0.490	mg/L	0.0086	0.490	mg/L	0.0086	1.76%
QC value within limits for Cu 327.393 Recovery = 98.02%								
Fe 239.562†	23077.4	3.97	mg/L	0.013	3.97	mg/L	0.013	0.34%
QC value within limits for Fe 239.562 Recovery = 99.24%								
Mg 279.077†	27091.8	10.0	mg/L	0.08	10.0	mg/L	0.08	0.77%
QC value within limits for Mg 279.077 Recovery = 100.21%								
Mn 257.610†	319607.4	0.501	mg/L	0.0073	0.501	mg/L	0.0073	1.47%
QC value within limits for Mn 257.610 Recovery = 100.12%								
Mo 202.031†	10413.8	0.992	mg/L	0.0135	0.992	mg/L	0.0135	1.36%
QC value within limits for Mo 202.031 Recovery = 99.18%								
Ni 231.604†	16005.7	0.500	mg/L	0.0064	0.500	mg/L	0.0064	1.27%
QC value within limits for Ni 231.604 Recovery = 100.06%								
Pb 220.353†	2243.7	0.503	mg/L	0.0048	0.503	mg/L	0.0048	0.96%

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   QC value within limits for Pb 220.353  Recovery = 100.69%
Sb 206.836†            1351.9        1.17 mg/L        0.026        1.17 mg/L        0.026   2.22%
   QC value within limits for Sb 206.836  Recovery = 97.35%
Se 196.026†             252.7       0.401 mg/L       0.0157       0.401 mg/L       0.0157   3.92%
   QC value within limits for Se 196.026  Recovery = 100.35%
Si 251.611†         -172614.3       -8.78 mg/L        0.105       -8.78 mg/L        0.105   1.20%
   QC value less than the lower limit for Si 251.611  Recovery = -175.52%
Sn 189.927†            5884.3       0.993 mg/L       0.0114       0.993 mg/L       0.0114   1.15%
   QC value within limits for Sn 189.927  Recovery = 99.34%
Ti 334.940†          919069.8       0.992 mg/L       0.0122       0.992 mg/L       0.0122   1.23%
   QC value within limits for Ti 334.940  Recovery = 99.21%
Tl 190.801†             603.3       0.509 mg/L       0.0208       0.509 mg/L       0.0208   4.08%
   QC value within limits for Tl 190.801  Recovery = 101.88%
V 290.880†           187454.6       0.994 mg/L       0.0125       0.994 mg/L       0.0125   1.26%
   QC value within limits for V 290.880  Recovery = 99.37%
Zn 206.200†           29155.4        1.02 mg/L        0.014        1.02 mg/L        0.014   1.33%
   QC value within limits for Zn 206.200  Recovery = 101.67%
K 766.490†            77941.0        49.7 mg/L         0.32        49.7 mg/L         0.32   0.64%
   QC value within limits for K 766.490  Recovery = 99.32%
Na 589.592†          394804.1        49.6 mg/L         0.92        49.6 mg/L         0.92   1.86%
   QC value within limits for Na 589.592  Recovery = 99.15%
Sr 407.771†          801912.7       0.995 mg/L       0.0159       0.995 mg/L       0.0159   1.60%
   QC value within limits for Sr 407.771  Recovery = 99.45%
Li 670.784†           38704.2        1.01 mg/L        0.007        1.01 mg/L        0.007   0.69%
   QC value within limits for Li 670.784  Recovery = 101.16%
P 214.914†             6321.7        9.91 mg/L        0.125        9.91 mg/L        0.125   1.26%
   QC value within limits for P 214.914  Recovery = 99.15%
QC Failed.  Continue with analysis.

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Sequence No.: 12                                    Autosampler Location: 1
Sample ID: CCB                                      Date Collected: 5/27/2015 10:27:32 AM
Analyst:                                            Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

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Nebulizer Parameters: CCB
Analyte                 Back Pressure     Flow
All                     231.0 kPa         0.40 L/min

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Mean Data: CCB
                   Mean Corrected         Calib.                          Sample
Analyte               Intensity      Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029           3460412.4                                                      22677.58   0.66%
YRADIAL              211456.1                                                       2570.44   1.22%
Ga 417.206          1594326.3                                                       2989.72   0.19%
GaRADIAL              51304.5                                                        507.42   0.99%
Ag 328.068†              24.2     0.00214 mg/L      0.000715     0.00214 mg/L      0.000715  33.38%
   QC value within limits for Ag 328.068  Recovery = Not calculated
Al 396.153†              21.3     -0.0145 mg/L       0.00198     -0.0145 mg/L       0.00198  13.70%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†              -8.6    -0.00169 mg/L      0.000847    -0.00169 mg/L      0.000847  50.06%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†             -13.3    -0.00048 mg/L      0.000142    -0.00048 mg/L      0.000142  29.74%
   QC value within limits for Ba 233.527  Recovery = Not calculated
Be 234.861†             -12.3     0.00022 mg/L      0.000007     0.00022 mg/L      0.000007   3.29%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†              -180.8     0.00212 mg/L      0.001361     0.00212 mg/L      0.001361  64.11%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†              -9.8     -0.0668 mg/L       0.12438     -0.0668 mg/L       0.12438 186.21%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†              -4.3    -0.00001 mg/L      0.000355    -0.00001 mg/L      0.000355 >999.9%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†              -7.3    -0.00114 mg/L      0.000838    -0.00114 mg/L      0.000838  73.18%
   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†              13.4    -0.00039 mg/L      0.000950    -0.00039 mg/L      0.000950 244.15%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†              60.1     0.00236 mg/L      0.000722     0.00236 mg/L      0.000722  30.60%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†               6.8     0.00536 mg/L      0.002157     0.00536 mg/L      0.002157  40.25%
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   QC value within limits for Fe 239.562  Recovery = Not calculated
Mg 279.077†              10.6     -0.0106 mg/L       0.01092     -0.0106 mg/L       0.01092 103.02%
   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†               7.3    -0.00041 mg/L      0.000012    -0.00041 mg/L      0.000012   2.97%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†              -1.1    -0.00003 mg/L      0.000217    -0.00003 mg/L      0.000217 759.41%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†               4.2    -0.00060 mg/L      0.000248    -0.00060 mg/L      0.000248  41.10%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†              -5.5    -0.00166 mg/L      0.001142    -0.00166 mg/L      0.001142  68.85%
   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†              -4.4     0.00068 mg/L      0.003453     0.00068 mg/L      0.003453 511.03%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†               4.2      0.0107 mg/L       0.00533      0.0107 mg/L       0.00533  49.70%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†            2154.5     -0.0431 mg/L       0.27685     -0.0431 mg/L       0.27685 642.36%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†             -17.9    -0.00451 mg/L      0.001094    -0.00451 mg/L      0.001094  24.24%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†             340.2     0.00208 mg/L      0.000303     0.00208 mg/L      0.000303  14.60%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†               2.7     0.00083 mg/L      0.006048     0.00083 mg/L      0.006048 731.25%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†             -257.3     0.00052 mg/L      0.001373     0.00052 mg/L      0.001373 264.50%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†               4.1    -0.00464 mg/L      0.000162    -0.00464 mg/L      0.000162   3.49%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†              124.4       0.107 mg/L        0.0655       0.107 mg/L        0.0655  61.06%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†             326.4      0.0605 mg/L       0.03006      0.0605 mg/L       0.03006  49.73%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†             223.6    -0.00006 mg/L      0.000038    -0.00006 mg/L      0.000038  66.90%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†             -98.1    -0.00526 mg/L      0.006905    -0.00526 mg/L      0.006905 131.19%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†                1.6     0.00468 mg/L      0.014145     0.00468 mg/L      0.014145 302.39%
   QC value within limits for P 214.914  Recovery = Not calculated
All analyte(s) passed QC.
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Sequence No.: 13 **Autosampler Location: 25**
Sample ID: L1505130312 **Date Collected: 5/27/2015 10:30:56 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505130312

Analyte	**Back Pressure**	**Flow**
All	230.0 kPa	0.40 L/min

Mean Data: L1505130312

Analyte	**Mean Corrected Intensity**	**Calib. Conc.**	**Units**	**Std.Dev.**	**Sample Conc.**	**Units**	**Std.Dev.**	**RSD**
Y 371.029	2977124.2						34843.78	1.17%
YRADIAL	193031.0						2856.57	1.48%
Ga 417.206	1182099.1						13110.61	1.11%
GaRADIAL	44944.5						451.67	1.00%
Ag 328.068†	5020.6	0.0161	mg/L	0.00067	0.0161	mg/L	0.00067	4.15%
Al 396.153†	-41.5	-0.0369	mg/L	0.07445	-0.0369	mg/L	0.07445	201.78%
As 188.979†	-45.6	-0.0152	mg/L	0.01095	-0.0152	mg/L	0.01095	71.99%
Ba 233.527†	31472.1	0.544	mg/L	0.0098	0.544	mg/L	0.0098	1.81%
Be 234.861†	-71.8	0.00011	mg/L	0.000009	0.00011	mg/L	0.000009	8.26%
B 249.677†	195.8	0.00768	mg/L	0.000981	0.00768	mg/L	0.000981	12.78%
Ca 227.546†	33277.6	418	mg/L	5.1	418	mg/L	5.1	1.22%
Cd 228.802†	17.5	0.00142	mg/L	0.000325	0.00142	mg/L	0.000325	22.92%
Co 228.616†	3.6	-0.00048	mg/L	0.000364	-0.00048	mg/L	0.000364	75.25%
Cr 267.716†	634.2	0.00417	mg/L	0.000341	0.00417	mg/L	0.000341	8.18%
Cu 327.393†	-865.9	-0.00196	mg/L	0.001043	-0.00196	mg/L	0.001043	53.12%
Fe 239.562†	444.0	0.0778	mg/L	0.00165	0.0778	mg/L	0.00165	2.12%
Mg 279.077†	362542.1	134	mg/L	1.0	134	mg/L	1.0	0.72%

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Mn 257.610†	65446.0	0.102	mg/L	0.0004	0.102	mg/L	0.0004	0.38%
Mo 202.031†	99.6	0.00956	mg/L	0.000190	0.00956	mg/L	0.000190	1.99%
Ni 231.604†	374.1	0.0110	mg/L	0.00087	0.0110	mg/L	0.00087	7.87%
Pb 220.353†	53.5	0.0115	mg/L	0.00425	0.0115	mg/L	0.00425	37.08%
Sb 206.836†	9.3	0.0124	mg/L	0.00723	0.0124	mg/L	0.00723	58.13%
Se 196.026†	-29.1	-0.0414	mg/L	0.01928	-0.0414	mg/L	0.01928	46.58%
Si 251.611†	290569.2	14.3	mg/L	0.28	14.3	mg/L	0.28	1.92%
Sn 189.927†	-80.6	-0.0151	mg/L	0.00334	-0.0151	mg/L	0.00334	22.12%
Ti 334.940†	-24277.5	0.00241	mg/L	0.000086	0.00241	mg/L	0.000086	3.59%
Tl 190.801†	-48.2	-0.0418	mg/L	0.00818	-0.0418	mg/L	0.00818	19.58%
V 290.880†	-2735.4	-0.0161	mg/L	0.00302	-0.0161	mg/L	0.00302	18.78%
Zn 206.200†	154.3	0.00064	mg/L	0.000189	0.00064	mg/L	0.000189	29.44%
K 766.490†	6318.1	3.66	mg/L	0.140	3.66	mg/L	0.140	3.81%
Na 589.592†	2351948.4	357	mg/L	9.5	357	mg/L	9.5	2.66%
Sr 407.771†	2896281.2	3.58	mg/L	0.083	3.58	mg/L	0.083	2.31%
Li 670.784†	3688.4	0.0940	mg/L	0.00086	0.0940	mg/L	0.00086	0.92%
P 214.914†	30.4	0.0498	mg/L	0.00184	0.0498	mg/L	0.00184	3.70%

Sequence No.: 14 **Autosampler Location: 26**
Sample ID: L1505130801 **Date Collected: 5/27/2015 10:33:23 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505130801

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505130801

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3227384.3						39629.93	1.23%
YRADIAL	200656.5						4545.84	2.27%
Ga 417.206	1319483.9						11178.14	0.85%
GaRADIAL	45857.6						356.18	0.78%
Ag 328.068†	-23.8	0.00262	mg/L	0.000867	0.00262	mg/L	0.000867	33.10%
Al 396.153†	344.9	0.0991	mg/L	0.03204	0.0991	mg/L	0.03204	32.34%
As 188.979†	-8.5	-0.00125	mg/L	0.001600	-0.00125	mg/L	0.001600	128.24%
Ba 233.527†	1363.5	0.0233	mg/L	0.00081	0.0233	mg/L	0.00081	3.48%
Be 234.861†	83.2	0.00006	mg/L	0.000026	0.00006	mg/L	0.000026	40.86%
B 249.677†	9217.6	0.139	mg/L	0.0034	0.139	mg/L	0.0034	2.43%
Ca 227.546†	39.9	0.558	mg/L	0.1028	0.558	mg/L	0.1028	18.42%
Cd 228.802†	13.9	0.00108	mg/L	0.000289	0.00108	mg/L	0.000289	26.64%
Co 228.616†	4.8	-0.00032	mg/L	0.000183	-0.00032	mg/L	0.000183	57.57%
Cr 267.716†	8722.5	0.0638	mg/L	0.00156	0.0638	mg/L	0.00156	2.44%
Cu 327.393†	-532.7	0.00006	mg/L	0.001294	0.00006	mg/L	0.001294	>999.9%
Fe 239.562†	7795.5	1.34	mg/L	0.033	1.34	mg/L	0.033	2.44%
Mg 279.077†	341.4	0.111	mg/L	0.0319	0.111	mg/L	0.0319	28.70%
Mn 257.610†	18245.8	0.0282	mg/L	0.00065	0.0282	mg/L	0.00065	2.30%
Mo 202.031†	13.1	0.00131	mg/L	0.000839	0.00131	mg/L	0.000839	64.14%
Ni 231.604†	92.1	0.00215	mg/L	0.000532	0.00215	mg/L	0.000532	24.72%
Pb 220.353†	1642.0	0.367	mg/L	0.0166	0.367	mg/L	0.0166	4.52%
Sb 206.836†	-0.9	0.00323	mg/L	0.005080	0.00323	mg/L	0.005080	157.44%
Se 196.026†	0.1	0.00414	mg/L	0.016845	0.00414	mg/L	0.016845	406.55%
Si 251.611†	-254343.1	-12.8	mg/L	0.29	-12.8	mg/L	0.29	2.27%
Sn 189.927†	-37.7	-0.00787	mg/L	0.000979	-0.00787	mg/L	0.000979	12.44%
Ti 334.940†	601.3	0.00238	mg/L	0.000068	0.00238	mg/L	0.000068	2.84%
Tl 190.801†	-2.7	-0.00365	mg/L	0.005684	-0.00365	mg/L	0.005684	155.77%
V 290.880†	517.6	0.00487	mg/L	0.001133	0.00487	mg/L	0.001133	23.25%
Zn 206.200†	117270.8	4.08	mg/L	0.085	4.08	mg/L	0.085	2.09%
K 766.490†	293.4	0.0709	mg/L	0.03941	0.0709	mg/L	0.03941	55.61%
Na 589.592†	1080400.3	143	mg/L	3.4	143	mg/L	3.4	2.39%
Sr 407.771†	14755.4	0.0180	mg/L	0.00048	0.0180	mg/L	0.00048	2.68%
Li 670.784†	-179.4	-0.00739	mg/L	0.002610	-0.00739	mg/L	0.002610	35.29%
P 214.914†	-4.9	-0.00547	mg/L	0.005244	-0.00547	mg/L	0.005244	95.79%

Sequence No.: 15 **Autosampler Location: 27**
Sample ID: L1505132301 **Date Collected: 5/27/2015 10:35:47 AM**

Approved: May 28, 2015
Lynn H. Rhoden

Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505132301

Analyte	Back Pressure	Flow
All	230.0 kPa	0.40 L/min

Mean Data: L1505132301

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3288050.2						41832.22	1.27%
YRADIAL	207001.0						3250.55	1.57%
Ga 417.206	1346404.4						19174.02	1.42%
GaRADIAL	48615.7						784.58	1.61%
Ag 328.068†	172.2	0.00255	mg/L	0.000965	0.00255	mg/L	0.000965	37.90%
Al 396.153†	99.5	-0.00615	mg/L	0.009909	-0.00615	mg/L	0.009909	161.21%
As 188.979†	-24.9	-0.0142	mg/L	0.00320	-0.0142	mg/L	0.00320	22.51%
Ba 233.527†	43.5	0.00087	mg/L	0.000290	0.00087	mg/L	0.000290	33.49%
Be 234.861†	-38.6	0.00034	mg/L	0.000035	0.00034	mg/L	0.000035	10.11%
B 249.677†	389562.0	5.49	mg/L	0.023	5.49	mg/L	0.023	0.41%
Ca 227.546†	20.8	0.322	mg/L	0.1778	0.322	mg/L	0.1778	55.13%
Cd 228.802†	0.6	0.00032	mg/L	0.000691	0.00032	mg/L	0.000691	219.05%
Co 228.616†	1.6	0.00034	mg/L	0.000282	0.00034	mg/L	0.000282	83.07%
Cr 267.716†	153.7	0.00056	mg/L	0.001316	0.00056	mg/L	0.001316	233.94%
Cu 327.393†	122047.4	0.567	mg/L	0.0046	0.567	mg/L	0.0046	0.82%
Fe 239.562†	332.4	0.0613	mg/L	0.00128	0.0613	mg/L	0.00128	2.09%
Mg 279.077†	134.4	0.0352	mg/L	0.00526	0.0352	mg/L	0.00526	14.94%
Mn 257.610†	1988.9	0.00270	mg/L	0.000061	0.00270	mg/L	0.000061	2.26%
Mo 202.031†	5011.7	0.477	mg/L	0.0078	0.477	mg/L	0.0078	1.63%
Ni 231.604†	129.4	0.00332	mg/L	0.000220	0.00332	mg/L	0.000220	6.62%
Pb 220.353†	132.5	0.0294	mg/L	0.00579	0.0294	mg/L	0.00579	19.67%
Sb 206.836†	6.0	0.0103	mg/L	0.00709	0.0103	mg/L	0.00709	68.92%
Se 196.026†	-11.3	-0.0135	mg/L	0.00292	-0.0135	mg/L	0.00292	21.67%
Si 251.611†	101630.9	4.92	mg/L	0.080	4.92	mg/L	0.080	1.63%
Sn 189.927†	0.6	-0.00138	mg/L	0.000239	-0.00138	mg/L	0.000239	17.33%
Ti 334.940†	96.5	0.00184	mg/L	0.000177	0.00184	mg/L	0.000177	9.61%
Tl 190.801†	-11.0	-0.0106	mg/L	0.00293	-0.0106	mg/L	0.00293	27.71%
V 290.880†	-1481.0	-0.00603	mg/L	0.000965	-0.00603	mg/L	0.000965	16.01%
Zn 206.200†	3773.2	0.127	mg/L	0.0025	0.127	mg/L	0.0025	1.95%
K 766.490†	73853.1	47.0	mg/L	0.43	47.0	mg/L	0.43	0.92%
Na 589.592†	420751.5	52.9	mg/L	0.21	52.9	mg/L	0.21	0.40%
Sr 407.771†	1385.1	0.00137	mg/L	0.000020	0.00137	mg/L	0.000020	1.43%
Li 670.784†	196.0	0.00244	mg/L	0.001562	0.00244	mg/L	0.001562	63.91%
P 214.914†	1562.3	2.45	mg/L	0.042	2.45	mg/L	0.042	1.72%

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Sequence No.: 16 **Autosampler Location: 28**
Sample ID: L1505133304 WG524813-01 **Date Collected: 5/27/2015 10:39:09 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505133304 WG524813-01

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505133304 WG524813-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3426924.9						65768.38	1.92%
YRADIAL	207463.0						5930.46	2.86%
Ga 417.206	1518870.7						23965.54	1.58%
GaRADIAL	49428.7						1290.04	2.61%
Ag 328.068†	105.1	0.00239	mg/L	0.000475	0.00239	mg/L	0.000475	19.90%
Al 396.153†	50.6	-0.00427	mg/L	0.011500	-0.00427	mg/L	0.011500	269.50%
As 188.979†	-7.7	-0.00113	mg/L	0.001934	-0.00113	mg/L	0.001934	171.74%
Ba 233.527†	712.0	0.0121	mg/L	0.00048	0.0121	mg/L	0.00048	4.01%

Approved: May 28, 2015

Be 234.861†	-107.9	0.00005	mg/L	0.000058	0.00005	mg/L	0.000058	119.88%
B 249.677†	557.7	0.0126	mg/L	0.00636	0.0126	mg/L	0.00636	50.54%
Ca 227.546†	26.2	0.386	mg/L	0.0643	0.386	mg/L	0.0643	16.67%
Cd 228.802†	0.3	0.00026	mg/L	0.000552	0.00026	mg/L	0.000552	209.78%
Co 228.616†	2.1	-0.00048	mg/L	0.000509	-0.00048	mg/L	0.000509	105.19%
Cr 267.716†	131.2	0.00048	mg/L	0.001118	0.00048	mg/L	0.001118	234.42%
Cu 327.393†	-424.3	0.00012	mg/L	0.000825	0.00012	mg/L	0.000825	687.99%
Fe 239.562†	121.4	0.0250	mg/L	0.00094	0.0250	mg/L	0.00094	3.75%
Mg 279.077†	890.7	0.315	mg/L	0.0070	0.315	mg/L	0.0070	2.23%
Mn 257.610†	8336.0	0.0126	mg/L	0.00022	0.0126	mg/L	0.00022	1.75%
Mo 202.031†	15.3	0.00153	mg/L	0.001143	0.00153	mg/L	0.001143	74.72%
Ni 231.604†	16.0	-0.00024	mg/L	0.000087	-0.00024	mg/L	0.000087	36.76%
Pb 220.353†	-13.9	-0.00354	mg/L	0.002459	-0.00354	mg/L	0.002459	69.44%
Sb 206.836†	-4.1	0.00091	mg/L	0.002922	0.00091	mg/L	0.002922	321.14%
Se 196.026†	-3.7	-0.00163	mg/L	0.012884	-0.00163	mg/L	0.012884	791.51%
Si 251.611†	-263626.3	-13.3	mg/L	0.32	-13.3	mg/L	0.32	2.39%
Sn 189.927†	-47.0	-0.00943	mg/L	0.001496	-0.00943	mg/L	0.001496	15.86%
Ti 334.940†	585.0	0.00237	mg/L	0.000054	0.00237	mg/L	0.000054	2.27%
Tl 190.801†	1.9	0.00011	mg/L	0.001581	0.00011	mg/L	0.001581	>999.9%
V 290.880†	-129.3	0.00119	mg/L	0.001007	0.00119	mg/L	0.001007	84.64%
Zn 206.200†	-105.8	-0.00847	mg/L	0.000247	-0.00847	mg/L	0.000247	2.92%
K 766.490†	620.0	0.418	mg/L	0.0572	0.418	mg/L	0.0572	13.67%
Na 589.592†	14358.5	1.78	mg/L	0.039	1.78	mg/L	0.039	2.18%
Sr 407.771†	2642.0	0.00293	mg/L	0.000068	0.00293	mg/L	0.000068	2.31%
Li 670.784†	23.3	-0.00208	mg/L	0.002609	-0.00208	mg/L	0.002609	125.30%
P 214.914†	2.0	0.00536	mg/L	0.005464	0.00536	mg/L	0.005464	102.01%

Sequence No.: 17
Sample ID: L1505133305MS WG524813-04
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 29
Date Collected: 5/27/2015 10:42:31 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505133305MS WG524813-04

Analyte	Back Pressure	Flow
All	230.0 kPa	0.40 L/min

Mean Data: L1505133305MS WG524813-04

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3224785.0						23810.16	0.74%
YRADIAL	198802.4						1167.77	0.59%
Ga 417.206	1344401.6						6367.29	0.47%
GaRADIAL	46161.2						222.93	0.48%
Ag 328.068†	71504.8	0.214	mg/L	0.0033	0.214	mg/L	0.0033	1.53%
Al 396.153†	15932.8	5.55	mg/L	0.020	5.55	mg/L	0.020	0.36%
As 188.979†	307.7	0.191	mg/L	0.0041	0.191	mg/L	0.0041	2.13%
Ba 233.527†	31083.4	0.537	mg/L	0.0060	0.537	mg/L	0.0060	1.12%
Be 234.861†	13740.7	0.0248	mg/L	0.00040	0.0248	mg/L	0.00040	1.60%
B 249.677†	58737.7	0.840	mg/L	0.0086	0.840	mg/L	0.0086	1.03%
Ca 227.546†	422.4	5.40	mg/L	0.011	5.40	mg/L	0.011	0.21%
Cd 228.802†	418.3	0.0248	mg/L	0.00022	0.0248	mg/L	0.00022	0.87%
Co 228.616†	1459.9	0.102	mg/L	0.0016	0.102	mg/L	0.0016	1.54%
Cr 267.716†	35797.1	0.263	mg/L	0.0021	0.263	mg/L	0.0021	0.81%
Cu 327.393†	56224.0	0.263	mg/L	0.0035	0.263	mg/L	0.0035	1.34%
Fe 239.562†	15115.1	2.60	mg/L	0.019	2.60	mg/L	0.019	0.74%
Mg 279.077†	14916.0	5.51	mg/L	0.009	5.51	mg/L	0.009	0.16%
Mn 257.610†	179564.2	0.281	mg/L	0.0041	0.281	mg/L	0.0041	1.46%
Mo 202.031†	5321.4	0.507	mg/L	0.0083	0.507	mg/L	0.0083	1.64%
Ni 231.604†	8079.8	0.252	mg/L	0.0037	0.252	mg/L	0.0037	1.47%
Pb 220.353†	1113.1	0.250	mg/L	0.0040	0.250	mg/L	0.0040	1.61%
Sb 206.836†	683.3	0.593	mg/L	0.0035	0.593	mg/L	0.0035	0.59%
Se 196.026†	124.9	0.201	mg/L	0.0080	0.201	mg/L	0.0080	4.01%
Si 251.611†	-138402.6	-7.06	mg/L	0.472	-7.06	mg/L	0.472	6.68%
Sn 189.927†	2961.0	0.499	mg/L	0.0097	0.499	mg/L	0.0097	1.95%
Ti 334.940†	466460.2	0.504	mg/L	0.0038	0.504	mg/L	0.0038	0.75%
Tl 190.801†	298.5	0.252	mg/L	0.0051	0.252	mg/L	0.0051	2.02%
V 290.880†	99382.6	0.528	mg/L	0.0097	0.528	mg/L	0.0097	1.84%
Zn 206.200†	14687.7	0.510	mg/L	0.0091	0.510	mg/L	0.0091	1.78%

Approved: May 28, 2015

K 766.490†	40975.9	26.0	mg/L	0.10	26.0	mg/L	0.10	0.38%
Na 589.592†	222495.7	27.6	mg/L	0.24	27.6	mg/L	0.24	0.87%
Sr 407.771†	422525.9	0.524	mg/L	0.0028	0.524	mg/L	0.0028	0.53%
Li 670.784†	20706.9	0.540	mg/L	0.0030	0.540	mg/L	0.0030	0.55%
P 214.914†	3099.1	4.86	mg/L	0.077	4.86	mg/L	0.077	1.58%

Sequence No.: 18 **Autosampler Location: 30**
Sample ID: L1505133306SD WG524813-05 **Date Collected: 5/27/2015 10:44:56 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505133306SD WG524813-05

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505133306SD WG524813-05

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3242799.3						50109.38	1.55%
YRADIAL	203040.7						2393.08	1.18%
Ga 417.206	1362450.2						17639.93	1.29%
GaRADIAL	47109.1						772.05	1.64%
Ag 328.068†	66568.0	0.199	mg/L	0.0012	0.199	mg/L	0.0012	0.61%
Al 396.153†	15187.8	5.29	mg/L	0.100	5.29	mg/L	0.100	1.89%
As 188.979†	295.2	0.183	mg/L	0.0046	0.183	mg/L	0.0046	2.50%
Ba 233.527†	30496.2	0.527	mg/L	0.0115	0.527	mg/L	0.0115	2.18%
Be 234.861†	13176.2	0.0238	mg/L	0.00043	0.0238	mg/L	0.00043	1.80%
B 249.677†	55588.2	0.795	mg/L	0.0057	0.795	mg/L	0.0057	0.72%
Ca 227.546†	420.1	5.37	mg/L	0.171	5.37	mg/L	0.171	3.19%
Cd 228.802†	392.7	0.0233	mg/L	0.00021	0.0233	mg/L	0.00021	0.92%
Co 228.616†	1420.2	0.0989	mg/L	0.00204	0.0989	mg/L	0.00204	2.06%
Cr 267.716†	34015.9	0.250	mg/L	0.0019	0.250	mg/L	0.0019	0.77%
Cu 327.393†	52624.3	0.247	mg/L	0.0014	0.247	mg/L	0.0014	0.56%
Fe 239.562†	13038.6	2.24	mg/L	0.020	2.24	mg/L	0.020	0.89%
Mg 279.077†	14418.4	5.33	mg/L	0.085	5.33	mg/L	0.085	1.60%
Mn 257.610†	169217.9	0.265	mg/L	0.0024	0.265	mg/L	0.0024	0.92%
Mo 202.031†	5144.1	0.490	mg/L	0.0101	0.490	mg/L	0.0101	2.07%
Ni 231.604†	7754.0	0.242	mg/L	0.0054	0.242	mg/L	0.0054	2.24%
Pb 220.353†	1097.7	0.246	mg/L	0.0065	0.246	mg/L	0.0065	2.64%
Sb 206.836†	652.7	0.566	mg/L	0.0102	0.566	mg/L	0.0102	1.79%
Se 196.026†	120.4	0.193	mg/L	0.0112	0.193	mg/L	0.0112	5.79%
Si 251.611†	-166363.7	-8.46	mg/L	0.166	-8.46	mg/L	0.166	1.96%
Sn 189.927†	2883.5	0.486	mg/L	0.0100	0.486	mg/L	0.0100	2.07%
Ti 334.940†	456321.2	0.493	mg/L	0.0039	0.493	mg/L	0.0039	0.79%
Tl 190.801†	296.7	0.250	mg/L	0.0139	0.250	mg/L	0.0139	5.56%
V 290.880†	93228.6	0.495	mg/L	0.0058	0.495	mg/L	0.0058	1.17%
Zn 206.200†	14050.3	0.488	mg/L	0.0108	0.488	mg/L	0.0108	2.22%
K 766.490†	39726.6	25.2	mg/L	0.51	25.2	mg/L	0.51	2.04%
Na 589.592†	216973.7	26.9	mg/L	1.19	26.9	mg/L	1.19	4.41%
Sr 407.771†	410830.9	0.509	mg/L	0.0184	0.509	mg/L	0.0184	3.61%
Li 670.784†	20037.3	0.522	mg/L	0.0064	0.522	mg/L	0.0064	1.22%
P 214.914†	3010.6	4.72	mg/L	0.095	4.72	mg/L	0.095	2.02%

Sequence No.: 19 **Autosampler Location: 31**
Sample ID: L1505133311 **Date Collected: 5/27/2015 10:47:19 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505133311

Analyte	Back Pressure	Flow
All	230.0 kPa	0.40 L/min

Mean Data: L1505133311

Analyte	Mean Corrected	Calib.	Sample

Approved: May 28, 2015

Kym H. Rhoden

Method: 200.7-6010-3015 ASX **Page 15** **Date: 5/27/2015 10:52:10 AM**

Analyte	Intensity	Conc.	Units	Std.Dev.	Conc.	Units	Std.Dev.	RSD
Y 371.029	3374791.9						45032.51	1.33%
YRADIAL	206595.9						1156.00	0.56%
Ga 417.206	1504907.2						13101.87	0.87%
GaRADIAL	48998.2						251.27	0.51%
Ag 328.068†	-292.2	0.00150	mg/L	0.000358	0.00150	mg/L	0.000358	23.95%
Al 396.153†	415.2	0.124	mg/L	0.0214	0.124	mg/L	0.0214	17.27%
As 188.979†	-7.4	-0.00077	mg/L	0.006749	-0.00077	mg/L	0.006749	877.15%
Ba 233.527†	824.6	0.0140	mg/L	0.00029	0.0140	mg/L	0.00029	2.07%
Be 234.861†	-2.8	0.00009	mg/L	0.000034	0.00009	mg/L	0.000034	39.68%
B 249.677†	-851.1	-0.00497	mg/L	0.000334	-0.00497	mg/L	0.000334	6.72%
Ca 227.546†	49.1	0.673	mg/L	0.0890	0.673	mg/L	0.0890	13.22%
Cd 228.802†	3.1	0.00043	mg/L	0.000354	0.00043	mg/L	0.000354	82.81%
Co 228.616†	-1.1	-0.00073	mg/L	0.000698	-0.00073	mg/L	0.000698	95.70%
Cr 267.716†	219.0	0.00111	mg/L	0.000478	0.00111	mg/L	0.000478	43.17%
Cu 327.393†	-661.5	-0.00089	mg/L	0.000237	-0.00089	mg/L	0.000237	26.54%
Fe 239.562†	3614.6	0.625	mg/L	0.0224	0.625	mg/L	0.0224	3.59%
Mg 279.077†	1315.5	0.473	mg/L	0.0362	0.473	mg/L	0.0362	7.66%
Mn 257.610†	8871.7	0.0135	mg/L	0.00018	0.0135	mg/L	0.00018	1.33%
Mo 202.031†	19.9	0.00196	mg/L	0.000333	0.00196	mg/L	0.000333	16.97%
Ni 231.604†	16.8	-0.00021	mg/L	0.000404	-0.00021	mg/L	0.000404	195.36%
Pb 220.353†	-20.0	-0.00492	mg/L	0.000732	-0.00492	mg/L	0.000732	14.88%
Sb 206.836†	-1.4	0.00330	mg/L	0.007431	0.00330	mg/L	0.007431	225.04%
Se 196.026†	3.7	0.00983	mg/L	0.004116	0.00983	mg/L	0.004116	41.89%
Si 251.611†	-219130.0	-11.1	mg/L	0.15	-11.1	mg/L	0.15	1.38%
Sn 189.927†	-48.0	-0.00960	mg/L	0.001579	-0.00960	mg/L	0.001579	16.45%
Ti 334.940†	1282.1	0.00314	mg/L	0.000334	0.00314	mg/L	0.000334	10.64%
Tl 190.801†	-2.6	-0.00361	mg/L	0.014228	-0.00361	mg/L	0.014228	394.11%
V 290.880†	-222.7	0.00081	mg/L	0.000926	0.00081	mg/L	0.000926	114.67%
Zn 206.200†	-49.3	-0.00643	mg/L	0.000455	-0.00643	mg/L	0.000455	7.07%
K 766.490†	656.3	0.442	mg/L	0.0611	0.442	mg/L	0.0611	13.83%
Na 589.592†	11429.3	1.42	mg/L	0.012	1.42	mg/L	0.012	0.84%
Sr 407.771†	4881.5	0.00570	mg/L	0.000094	0.00570	mg/L	0.000094	1.64%
Li 670.784†	12.5	-0.00237	mg/L	0.008889	-0.00237	mg/L	0.008889	375.66%
P 214.914†	1.7	0.00486	mg/L	0.010059	0.00486	mg/L	0.010059	207.15%

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Sequence No.: 20 **Autosampler Location: 32**
Sample ID: L1505133314 **Date Collected: 5/27/2015 10:49:47 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505133314

Analyte	Back Pressure	Flow
All	230.0 kPa	0.40 L/min

Mean Data: L1505133314

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3394393.0						30572.13	0.90%
YRADIAL	206347.3						5944.96	2.88%
Ga 417.206	1521456.9						9413.66	0.62%
GaRADIAL	49174.4						1123.04	2.28%
Ag 328.068†	43.7	0.00248	mg/L	0.001017	0.00248	mg/L	0.001017	41.05%
Al 396.153†	836.1	0.271	mg/L	0.0272	0.271	mg/L	0.0272	10.03%
As 188.979†	0.3	0.00396	mg/L	0.001312	0.00396	mg/L	0.001312	33.17%
Ba 233.527†	477.1	0.00798	mg/L	0.000114	0.00798	mg/L	0.000114	1.43%
Be 234.861†	-6.7	0.00008	mg/L	0.000028	0.00008	mg/L	0.000028	34.27%
B 249.677†	-1960.2	-0.0206	mg/L	0.00302	-0.0206	mg/L	0.00302	14.63%
Ca 227.546†	45.5	0.628	mg/L	0.0926	0.628	mg/L	0.0926	14.75%
Cd 228.802†	2.8	0.00039	mg/L	0.000078	0.00039	mg/L	0.000078	20.32%
Co 228.616†	-5.7	-0.00105	mg/L	0.000209	-0.00105	mg/L	0.000209	19.92%
Cr 267.716†	357.3	0.00213	mg/L	0.001361	0.00213	mg/L	0.001361	64.05%
Cu 327.393†	-509.7	-0.00019	mg/L	0.000604	-0.00019	mg/L	0.000604	316.54%
Fe 239.562†	3558.0	0.616	mg/L	0.0176	0.616	mg/L	0.0176	2.86%
Mg 279.077†	2202.4	0.801	mg/L	0.0219	0.801	mg/L	0.0219	2.74%
Mn 257.610†	14260.0	0.0219	mg/L	0.00014	0.0219	mg/L	0.00014	0.66%
Mo 202.031†	15.9	0.00158	mg/L	0.001395	0.00158	mg/L	0.001395	88.03%
Ni 231.604†	83.1	0.00187	mg/L	0.000413	0.00187	mg/L	0.000413	22.07%

Approved: May 28, 2015

Pb 220.353†	0.6	-0.00027	mg/L	0.001638	-0.00027	mg/L	0.001638	596.42%
Sb 206.836†	0.7	0.00505	mg/L	0.007429	0.00505	mg/L	0.007429	147.24%
Se 196.026†	4.3	0.0109	mg/L	0.02298	0.0109	mg/L	0.02298	210.69%
Si 251.611†	-244836.4	-12.4	mg/L	0.22	-12.4	mg/L	0.22	1.75%
Sn 189.927†	-43.6	-0.00886	mg/L	0.001355	-0.00886	mg/L	0.001355	15.29%
Ti 334.940†	1207.2	0.00305	mg/L	0.000297	0.00305	mg/L	0.000297	9.73%
Tl 190.801†	-3.0	-0.00393	mg/L	0.003653	-0.00393	mg/L	0.003653	92.96%
V 290.880†	-91.1	0.00149	mg/L	0.001194	0.00149	mg/L	0.001194	80.04%
Zn 206.200†	41.6	-0.00325	mg/L	0.000184	-0.00325	mg/L	0.000184	5.65%
K 766.490†	314.6	0.226	mg/L	0.1039	0.226	mg/L	0.1039	45.97%
Na 589.592†	10707.9	1.33	mg/L	0.017	1.33	mg/L	0.017	1.27%
Sr 407.771†	4704.4	0.00548	mg/L	0.000190	0.00548	mg/L	0.000190	3.47%
Li 670.784†	40.2	-0.00164	mg/L	0.001374	-0.00164	mg/L	0.001374	83.86%
P 214.914†	-3.2	-0.00282	mg/L	0.000707	-0.00282	mg/L	0.000707	25.10%

Sequence No.: 21 **Autosampler Location: 33**
Sample ID: L1505133317 **Date Collected: 5/27/2015 10:52:12 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505133317

Analyte	Back Pressure	Flow
All	230.0 kPa	0.40 L/min

Mean Data: L1505133317

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3336929.4						105726.70	3.17%
YRADIAL	210515.1						6689.35	3.18%
Ga 417.206	1500221.6						47982.50	3.20%
GaRADIAL	48498.2						639.15	1.32%
Ag 328.068†	-264.8	0.00182	mg/L	0.000836	0.00182	mg/L	0.000836	46.05%
Al 396.153†	1557.4	0.524	mg/L	0.0099	0.524	mg/L	0.0099	1.89%
As 188.979†	-14.4	-0.00499	mg/L	0.006468	-0.00499	mg/L	0.006468	129.58%
Ba 233.527†	592.7	0.00997	mg/L	0.000268	0.00997	mg/L	0.000268	2.69%
Be 234.861†	89.5	0.00012	mg/L	0.000011	0.00012	mg/L	0.000011	9.15%
B 249.677†	-2257.6	-0.0228	mg/L	0.00320	-0.0228	mg/L	0.00320	14.04%
Ca 227.546†	50.5	0.691	mg/L	0.1590	0.691	mg/L	0.1590	23.02%
Cd 228.802†	5.0	0.00057	mg/L	0.000425	0.00057	mg/L	0.000425	75.14%
Co 228.616†	8.4	-0.00007	mg/L	0.000549	-0.00007	mg/L	0.000549	812.88%
Cr 267.716†	476.0	0.00298	mg/L	0.001580	0.00298	mg/L	0.001580	52.94%
Cu 327.393†	-352.2	0.00062	mg/L	0.000477	0.00062	mg/L	0.000477	77.48%
Fe 239.562†	6650.7	1.15	mg/L	0.038	1.15	mg/L	0.038	3.32%
Mg 279.077†	2451.4	0.893	mg/L	0.0292	0.893	mg/L	0.0292	3.27%
Mn 257.610†	23059.6	0.0357	mg/L	0.00071	0.0357	mg/L	0.00071	1.98%
Mo 202.031†	29.5	0.00287	mg/L	0.000834	0.00287	mg/L	0.000834	29.06%
Ni 231.604†	103.5	0.00251	mg/L	0.000585	0.00251	mg/L	0.000585	23.33%
Pb 220.353†	-7.4	-0.00203	mg/L	0.004515	-0.00203	mg/L	0.004515	221.94%
Sb 206.836†	3.8	0.00773	mg/L	0.006061	0.00773	mg/L	0.006061	78.37%
Se 196.026†	11.0	0.0213	mg/L	0.01446	0.0213	mg/L	0.01446	67.97%
Si 251.611†	-237888.7	-12.0	mg/L	0.46	-12.0	mg/L	0.46	3.80%
Sn 189.927†	-41.2	-0.00846	mg/L	0.001272	-0.00846	mg/L	0.001272	15.04%
Ti 334.940†	1698.5	0.00359	mg/L	0.000126	0.00359	mg/L	0.000126	3.52%
Tl 190.801†	-5.8	-0.00625	mg/L	0.002155	-0.00625	mg/L	0.002155	34.47%
V 290.880†	-84.0	0.00163	mg/L	0.000970	0.00163	mg/L	0.000970	59.46%
Zn 206.200†	104.4	-0.00101	mg/L	0.000354	-0.00101	mg/L	0.000354	35.06%
K 766.490†	409.2	0.286	mg/L	0.0091	0.286	mg/L	0.0091	3.19%
Na 589.592†	10730.7	1.33	mg/L	0.011	1.33	mg/L	0.011	0.80%
Sr 407.771†	4649.6	0.00541	mg/L	0.000172	0.00541	mg/L	0.000172	3.19%
Li 670.784†	-25.0	-0.00335	mg/L	0.004170	-0.00335	mg/L	0.004170	124.50%
P 214.914†	5.9	0.0114	mg/L	0.00600	0.0114	mg/L	0.00600	52.56%

Sequence No.: 22 **Autosampler Location: 34**
Sample ID: L1505133320 **Date Collected: 5/27/2015 10:54:37 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Approved: May 28, 2015
Kym H. Rhoden

Nebulizer Parameters: L1505133320

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505133320

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3396383.2						32981.90	0.97%
YRADIAL	208172.1						1280.68	0.62%
Ga 417.206	1519975.5						22375.46	1.47%
GaRADIAL	49699.5						404.23	0.81%
Ag 328.068†	182.3	0.00262	mg/L	0.000261	0.00262	mg/L	0.000261	9.97%
Al 396.153†	173.2	0.0387	mg/L	0.00061	0.0387	mg/L	0.00061	1.58%
As 188.979†	-10.3	-0.00269	mg/L	0.002580	-0.00269	mg/L	0.002580	95.88%
Ba 233.527†	289.0	0.00475	mg/L	0.000070	0.00475	mg/L	0.000070	1.47%
Be 234.861†	-109.6	0.00004	mg/L	0.000016	0.00004	mg/L	0.000016	38.21%
B 249.677†	-1969.2	-0.0229	mg/L	0.00093	-0.0229	mg/L	0.00093	4.06%
Ca 227.546†	52.7	0.718	mg/L	0.0883	0.718	mg/L	0.0883	12.30%
Cd 228.802†	0.7	0.00029	mg/L	0.000183	0.00029	mg/L	0.000183	62.95%
Co 228.616†	-7.6	-0.00116	mg/L	0.000729	-0.00116	mg/L	0.000729	62.61%
Cr 267.716†	28.5	-0.00028	mg/L	0.001057	-0.00028	mg/L	0.001057	378.15%
Cu 327.393†	-619.7	-0.00078	mg/L	0.001108	-0.00078	mg/L	0.001108	141.10%
Fe 239.562†	202.4	0.0390	mg/L	0.00056	0.0390	mg/L	0.00056	1.43%
Mg 279.077†	2170.3	0.790	mg/L	0.0115	0.790	mg/L	0.0115	1.46%
Mn 257.610†	3259.7	0.00468	mg/L	0.000047	0.00468	mg/L	0.000047	1.01%
Mo 202.031†	21.7	0.00214	mg/L	0.000489	0.00214	mg/L	0.000489	22.88%
Ni 231.604†	32.7	0.00029	mg/L	0.000238	0.00029	mg/L	0.000238	81.80%
Pb 220.353†	-10.5	-0.00276	mg/L	0.002357	-0.00276	mg/L	0.002357	85.24%
Sb 206.836†	1.3	0.00560	mg/L	0.004511	0.00560	mg/L	0.004511	80.50%
Se 196.026†	7.6	0.0160	mg/L	0.01524	0.0160	mg/L	0.01524	95.18%
Si 251.611†	-254286.7	-12.8	mg/L	0.29	-12.8	mg/L	0.29	2.29%
Sn 189.927†	-44.7	-0.00905	mg/L	0.001142	-0.00905	mg/L	0.001142	12.61%
Ti 334.940†	400.5	0.00219	mg/L	0.000180	0.00219	mg/L	0.000180	8.23%
Tl 190.801†	-3.9	-0.00467	mg/L	0.002111	-0.00467	mg/L	0.002111	45.21%
V 290.880†	-394.0	-0.00022	mg/L	0.001207	-0.00022	mg/L	0.001207	551.40%
Zn 206.200†	-62.3	-0.00695	mg/L	0.000127	-0.00695	mg/L	0.000127	1.82%
K 766.490†	367.4	0.259	mg/L	0.0954	0.259	mg/L	0.0954	36.80%
Na 589.592†	11781.5	1.46	mg/L	0.033	1.46	mg/L	0.033	2.29%
Sr 407.771†	5148.6	0.00603	mg/L	0.000275	0.00603	mg/L	0.000275	4.57%
Li 670.784†	81.1	-0.00057	mg/L	0.003327	-0.00057	mg/L	0.003327	587.85%
P 214.914†	1.8	0.00503	mg/L	0.006531	0.00503	mg/L	0.006531	129.90%

Sequence No.: 23
Sample ID: CCV
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 6
Date Collected: 5/27/2015 10:57:59 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3207294.9						48461.56	1.51%
YRADIAL	197425.2						3550.54	1.80%
Ga 417.206	1338269.0						17805.30	1.33%
GaRADIAL	46420.0						886.10	1.91%
Ag 328.068†	134790.0	0.401	mg/L	0.0024	0.401	mg/L	0.0024	0.60%
QC value within limits for Ag 328.068 Recovery = 100.19%								
Al 396.153†	29490.0	10.3	mg/L	0.10	10.3	mg/L	0.10	0.93%
QC value within limits for Al 396.153 Recovery = 102.82%								
As 188.979†	632.0	0.387	mg/L	0.0111	0.387	mg/L	0.0111	2.87%
QC value within limits for As 188.979 Recovery = 96.86%								
Ba 233.527†	58111.1	1.00	mg/L	0.009	1.00	mg/L	0.009	0.88%

Approved: May 28, 2015

Kym H. Rhoden

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   QC value within limits for Ba 233.527  Recovery = 100.47%
Be 234.861†          26759.8      0.0483 mg/L       0.00042      0.0483 mg/L       0.00042   0.87%
   QC value within limits for Be 234.861  Recovery = 96.51%
B 249.677†           26776.8      0.395 mg/L        0.0007       0.395 mg/L        0.0007   0.17%
   QC value less than the lower limit for B 249.677  Recovery = 78.95%
Ca 227.546†            783.1       9.96 mg/L         0.254        9.96 mg/L         0.254   2.55%
   QC value within limits for Ca 227.546  Recovery = 99.64%
Cd 228.802†            815.3      0.0480 mg/L       0.00116      0.0480 mg/L       0.00116   2.41%
   QC value within limits for Cd 228.802  Recovery = 96.06%
Co 228.616†           2870.8       0.201 mg/L        0.0043       0.201 mg/L        0.0043   2.12%
   QC value within limits for Co 228.616  Recovery = 100.27%
Cr 267.716†          68199.1       0.502 mg/L        0.0036       0.502 mg/L        0.0036   0.71%
   QC value within limits for Cr 267.716  Recovery = 100.35%
Cu 327.393†         106548.0       0.497 mg/L        0.0043       0.497 mg/L        0.0043   0.87%
   QC value within limits for Cu 327.393  Recovery = 99.46%
Fe 239.562†          23394.3        4.02 mg/L         0.043        4.02 mg/L         0.043   1.07%
   QC value within limits for Fe 239.562  Recovery = 100.60%
Mg 279.077†          27325.5        10.1 mg/L          0.09        10.1 mg/L          0.09   0.94%
   QC value within limits for Mg 279.077  Recovery = 101.07%
Mn 257.610†         320919.4       0.503 mg/L        0.0041       0.503 mg/L        0.0041   0.81%
   QC value within limits for Mn 257.610  Recovery = 100.53%
Mo 202.031†          10358.6       0.987 mg/L        0.0206       0.987 mg/L        0.0206   2.09%
   QC value within limits for Mo 202.031  Recovery = 98.65%
Ni 231.604†          15918.3       0.498 mg/L        0.0103       0.498 mg/L        0.0103   2.07%
   QC value within limits for Ni 231.604  Recovery = 99.51%
Pb 220.353†           2220.2       0.498 mg/L        0.0142       0.498 mg/L        0.0142   2.85%
   QC value within limits for Pb 220.353  Recovery = 99.64%
Sb 206.836†           1358.5        1.17 mg/L         0.026        1.17 mg/L         0.026   2.25%
   QC value within limits for Sb 206.836  Recovery = 97.82%
Se 196.026†            255.8       0.406 mg/L        0.0198       0.406 mg/L        0.0198   4.88%
   QC value within limits for Se 196.026  Recovery = 101.58%
Si 251.611†         -171333.1       -8.71 mg/L         0.175       -8.71 mg/L         0.175   2.01%
   QC value less than the lower limit for Si 251.611  Recovery = -174.24%
Sn 189.927†           5877.3       0.992 mg/L        0.0252       0.992 mg/L        0.0252   2.54%
   QC value within limits for Sn 189.927  Recovery = 99.22%
Ti 334.940†         924079.5       0.997 mg/L        0.0059       0.997 mg/L        0.0059   0.60%
   QC value within limits for Ti 334.940  Recovery = 99.74%
Tl 190.801†            597.7       0.505 mg/L        0.0085       0.505 mg/L        0.0085   1.69%
   QC value within limits for Tl 190.801  Recovery = 100.97%
V 290.880†          188418.4       0.999 mg/L        0.0067       0.999 mg/L        0.0067   0.67%
   QC value within limits for V 290.880  Recovery = 99.88%
Zn 206.200†          28990.1        1.01 mg/L         0.022        1.01 mg/L         0.022   2.16%
   QC value within limits for Zn 206.200  Recovery = 101.10%
K 766.490†           79071.2        50.4 mg/L          0.52        50.4 mg/L          0.52   1.04%
   QC value within limits for K 766.490  Recovery = 100.77%
Na 589.592†         406994.3        51.2 mg/L          0.99        51.2 mg/L          0.99   1.93%
   QC value within limits for Na 589.592  Recovery = 102.30%
Sr 407.771†         826494.8        1.03 mg/L         0.015        1.03 mg/L         0.015   1.43%
   QC value within limits for Sr 407.771  Recovery = 102.51%
Li 670.784†          39194.6        1.02 mg/L         0.012        1.02 mg/L         0.012   1.16%
   QC value within limits for Li 670.784  Recovery = 102.45%
P 214.914†            6288.7        9.86 mg/L         0.208        9.86 mg/L         0.208   2.11%
   QC value within limits for P 214.914  Recovery = 98.63%
QC Failed.  Continue with analysis.

==========================================================================================
Sequence No.: 24                                    Autosampler Location: 1
Sample ID: CCB                                      Date Collected: 5/27/2015 11:00:24 AM
Analyst:                                            Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

------------------------------------------------------------------------------------------
Nebulizer Parameters: CCB
Analyte                  Back Pressure    Flow
All                     231.0 kPa         0.40 L/min

------------------------------------------------------------------------------------------
Mean Data: CCB
                   Mean Corrected         Calib.                          Sample
Analyte               Intensity     Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029            3382007.7                                                     35260.74   1.04%
```

Approved: May 28, 2015

Lynn H. Rhoden

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YRADIAL              208970.3                                                    3339.49   1.60%
Ga 417.206          1561255.3                                                   19087.97   1.22%
GaRADIAL              50411.3                                                     772.38   1.53%
Ag 328.068†              58.1     0.00224 mg/L      0.001312     0.00224 mg/L      0.001312  58.58%
   QC value within limits for Ag 328.068  Recovery = Not calculated
Al 396.153†              -4.1     -0.0234 mg/L       0.00797     -0.0234 mg/L       0.00797  34.01%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†              -5.4     0.00030 mg/L      0.002385     0.00030 mg/L      0.002385 807.43%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†              -9.4    -0.00041 mg/L      0.000225    -0.00041 mg/L      0.000225  55.24%
   QC value within limits for Ba 233.527  Recovery = Not calculated
Be 234.861†             -15.8     0.00022 mg/L      0.000046     0.00022 mg/L      0.000046  20.97%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†             -116.9     0.00301 mg/L      0.001871     0.00301 mg/L      0.001871  62.07%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†               1.2      0.0710 mg/L       0.10165      0.0710 mg/L       0.10165 143.21%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†               1.3     0.00031 mg/L      0.000257     0.00031 mg/L      0.000257  81.90%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†             -12.4    -0.00150 mg/L      0.000889    -0.00150 mg/L      0.000889  59.25%
   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†             -23.1    -0.00066 mg/L      0.000622    -0.00066 mg/L      0.000622  94.48%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†            -143.9     0.00141 mg/L      0.000285     0.00141 mg/L      0.000285  20.18%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†               1.3     0.00442 mg/L      0.001596     0.00442 mg/L      0.001596  36.11%
   QC value within limits for Fe 239.562  Recovery = Not calculated
Mg 279.077†              28.4    -0.00402 mg/L      0.008000    -0.00402 mg/L      0.008000 199.04%
   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†              -9.4    -0.00044 mg/L      0.000034    -0.00044 mg/L      0.000034   7.78%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†               6.4     0.00068 mg/L      0.000716     0.00068 mg/L      0.000716 105.36%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†               2.6    -0.00065 mg/L      0.000482    -0.00065 mg/L      0.000482  74.00%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†              -2.3    -0.00095 mg/L      0.005240    -0.00095 mg/L      0.005240 550.90%
   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†               3.4     0.00736 mg/L      0.003489     0.00736 mg/L      0.003489  47.38%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†              -1.0     0.00265 mg/L      0.006924     0.00265 mg/L      0.006924 261.43%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†            6763.4       0.187 mg/L        0.2224       0.187 mg/L        0.2224 118.99%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†             -18.2    -0.00457 mg/L      0.001832    -0.00457 mg/L      0.001832  40.13%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†             275.5     0.00202 mg/L      0.000292     0.00202 mg/L      0.000292  14.51%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†              -3.0    -0.00389 mg/L      0.004421    -0.00389 mg/L      0.004421 113.68%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†             -320.1     0.00019 mg/L      0.000498     0.00019 mg/L      0.000498 267.69%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†               8.7    -0.00448 mg/L      0.000198    -0.00448 mg/L      0.000198   4.42%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†               19.9      0.0414 mg/L       0.03772      0.0414 mg/L       0.03772  91.13%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†             127.7      0.0362 mg/L       0.00519      0.0362 mg/L       0.00519  14.34%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†             196.4    -0.00009 mg/L      0.000092    -0.00009 mg/L      0.000092  97.90%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†               8.9    -0.00246 mg/L      0.001870    -0.00246 mg/L      0.001870  76.06%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†                5.4      0.0106 mg/L       0.00761      0.0106 mg/L       0.00761  71.65%
   QC value within limits for P 214.914  Recovery = Not calculated
All analyte(s) passed QC.
```

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Sequence No.: 25 **Autosampler Location: 35**
Sample ID: L1505133323 **Date Collected: 5/27/2015 11:03:45 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Approved: May 28, 2015

Kym H. Rhoden

Nebulizer Parameters: L1505133323

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505133323

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3439691.2						21159.80	0.62%
YRADIAL	205459.6						4109.86	2.00%
Ga 417.206	1543205.9						14494.77	0.94%
GaRADIAL	48205.5						1352.60	2.81%
Ag 328.068†	-134.3	0.00201	mg/L	0.000209	0.00201	mg/L	0.000209	10.40%
Al 396.153†	1087.6	0.359	mg/L	0.0063	0.359	mg/L	0.0063	1.74%
As 188.979†	-3.8	0.00147	mg/L	0.000731	0.00147	mg/L	0.000731	49.65%
Ba 233.527†	530.2	0.00890	mg/L	0.000099	0.00890	mg/L	0.000099	1.12%
Be 234.861†	34.3	0.00013	mg/L	0.000067	0.00013	mg/L	0.000067	52.21%
B 249.677†	-2342.0	-0.0256	mg/L	0.00169	-0.0256	mg/L	0.00169	6.63%
Ca 227.546†	43.0	0.596	mg/L	0.0316	0.596	mg/L	0.0316	5.30%
Cd 228.802†	4.6	0.00051	mg/L	0.000314	0.00051	mg/L	0.000314	61.54%
Co 228.616†	-0.1	-0.00066	mg/L	0.000668	-0.00066	mg/L	0.000668	101.79%
Cr 267.716†	466.2	0.00292	mg/L	0.000325	0.00292	mg/L	0.000325	11.11%
Cu 327.393†	-646.4	-0.00081	mg/L	0.001623	-0.00081	mg/L	0.001623	201.39%
Fe 239.562†	4238.3	0.733	mg/L	0.0407	0.733	mg/L	0.0407	5.56%
Mg 279.077†	2160.3	0.785	mg/L	0.0676	0.785	mg/L	0.0676	8.61%
Mn 257.610†	16852.7	0.0260	mg/L	0.00029	0.0260	mg/L	0.00029	1.11%
Mo 202.031†	14.4	0.00143	mg/L	0.000674	0.00143	mg/L	0.000674	47.01%
Ni 231.604†	79.5	0.00176	mg/L	0.000412	0.00176	mg/L	0.000412	23.45%
Pb 220.353†	-9.6	-0.00254	mg/L	0.002524	-0.00254	mg/L	0.002524	99.20%
Sb 206.836†	-0.1	0.00436	mg/L	0.002217	0.00436	mg/L	0.002217	50.89%
Se 196.026†	2.4	0.00785	mg/L	0.014985	0.00785	mg/L	0.014985	190.95%
Si 251.611†	-249401.6	-12.6	mg/L	0.22	-12.6	mg/L	0.22	1.73%
Sn 189.927†	-40.0	-0.00824	mg/L	0.000396	-0.00824	mg/L	0.000396	4.80%
Ti 334.940†	1418.3	0.00328	mg/L	0.000451	0.00328	mg/L	0.000451	13.76%
Tl 190.801†	-6.7	-0.00697	mg/L	0.004098	-0.00697	mg/L	0.004098	58.80%
V 290.880†	-248.5	0.00068	mg/L	0.001206	0.00068	mg/L	0.001206	176.54%
Zn 206.200†	-3.5	-0.00481	mg/L	0.000255	-0.00481	mg/L	0.000255	5.31%
K 766.490†	295.6	0.214	mg/L	0.0654	0.214	mg/L	0.0654	30.53%
Na 589.592†	10173.3	1.26	mg/L	0.026	1.26	mg/L	0.026	2.03%
Sr 407.771†	4605.0	0.00536	mg/L	0.000258	0.00536	mg/L	0.000258	4.82%
Li 670.784†	-155.3	-0.00676	mg/L	0.004044	-0.00676	mg/L	0.004044	59.78%
P 214.914†	4.7	0.00957	mg/L	0.017351	0.00957	mg/L	0.017351	181.24%

Sequence No.: 26
Sample ID: L1505133326
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 36
Date Collected: 5/27/2015 11:06:09 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505133326

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505133326

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3437859.4						39522.24	1.15%
YRADIAL	209945.5						2824.80	1.35%
Ga 417.206	1545386.7						14172.06	0.92%
GaRADIAL	50039.1						847.60	1.69%
Ag 328.068†	203.5	0.00267	mg/L	0.000701	0.00267	mg/L	0.000701	26.24%
Al 396.153†	11.9	-0.0179	mg/L	0.00535	-0.0179	mg/L	0.00535	29.96%
As 188.979†	-3.2	0.00164	mg/L	0.001521	0.00164	mg/L	0.001521	93.01%
Ba 233.527†	56.2	0.00073	mg/L	0.000280	0.00073	mg/L	0.000280	38.45%
Be 234.861†	-88.3	0.00009	mg/L	0.000033	0.00009	mg/L	0.000033	37.69%
B 249.677†	-2102.9	-0.0249	mg/L	0.00187	-0.0249	mg/L	0.00187	7.52%
Ca 227.546†	-16.3	-0.149	mg/L	0.1026	-0.149	mg/L	0.1026	68.83%
Cd 228.802†	-4.6	-0.00005	mg/L	0.000303	-0.00005	mg/L	0.000303	598.51%

Approved: May 28, 2015

Kym H. Rhoden

Co 228.616†	-6.5	-0.00108	mg/L	0.000374	-0.00108	mg/L	0.000374	34.53%
Cr 267.716†	67.0	0.00000	mg/L	0.000066	0.00000	mg/L	0.000066	>999.9%
Cu 327.393†	-589.0	-0.00065	mg/L	0.001093	-0.00065	mg/L	0.001093	169.42%
Fe 239.562†	28.8	0.00914	mg/L	0.001297	0.00914	mg/L	0.001297	14.18%
Mg 279.077†	36.8	-0.00090	mg/L	0.003746	-0.00090	mg/L	0.003746	414.95%
Mn 257.610†	80.7	-0.00030	mg/L	0.000015	-0.00030	mg/L	0.000015	4.93%
Mo 202.031†	12.5	0.00126	mg/L	0.001271	0.00126	mg/L	0.001271	100.81%
Ni 231.604†	9.2	-0.00045	mg/L	0.000729	-0.00045	mg/L	0.000729	162.07%
Pb 220.353†	-7.8	-0.00218	mg/L	0.001697	-0.00218	mg/L	0.001697	77.88%
Sb 206.836†	-3.3	0.00157	mg/L	0.004833	0.00157	mg/L	0.004833	308.12%
Se 196.026†	-1.6	0.00170	mg/L	0.019344	0.00170	mg/L	0.019344	>999.9%
Si 251.611†	-345110.2	-17.4	mg/L	0.09	-17.4	mg/L	0.09	0.52%
Sn 189.927†	17.9	0.00154	mg/L	0.002192	0.00154	mg/L	0.002192	141.98%
Ti 334.940†	436.6	0.00217	mg/L	0.000425	0.00217	mg/L	0.000425	19.55%
Tl 190.801†	7.0	0.00442	mg/L	0.002859	0.00442	mg/L	0.002859	64.75%
V 290.880†	-126.6	0.00121	mg/L	0.000951	0.00121	mg/L	0.000951	78.60%
Zn 206.200†	-115.8	-0.00882	mg/L	0.000292	-0.00882	mg/L	0.000292	3.31%
K 766.490†	-6.1	0.0239	mg/L	0.03291	0.0239	mg/L	0.03291	137.68%
Na 589.592†	8767.7	1.09	mg/L	0.007	1.09	mg/L	0.007	0.61%
Sr 407.771†	358.7	0.00011	mg/L	0.000048	0.00011	mg/L	0.000048	42.30%
Li 670.784†	-3.9	-0.00280	mg/L	0.002263	-0.00280	mg/L	0.002263	80.94%
P 214.914†	4.5	0.00923	mg/L	0.005322	0.00923	mg/L	0.005322	57.66%

Sequence No.: 27
Sample ID: L1505133329
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 37
Date Collected: 5/27/2015 11:09:30 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505133329

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505133329

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3455605.8						60826.24	1.76%
YRADIAL	209020.1						3711.54	1.78%
Ga 417.206	1540582.6						21828.86	1.42%
GaRADIAL	49859.7						704.22	1.41%
Ag 328.068†	330.4	0.00304	mg/L	0.000263	0.00304	mg/L	0.000263	8.66%
Al 396.153†	-10.7	-0.0258	mg/L	0.00579	-0.0258	mg/L	0.00579	22.46%
As 188.979†	-7.0	-0.00068	mg/L	0.003109	-0.00068	mg/L	0.003109	460.27%
Ba 233.527†	40.9	0.00046	mg/L	0.000146	0.00046	mg/L	0.000146	31.64%
Be 234.861†	-96.6	0.00007	mg/L	0.000028	0.00007	mg/L	0.000028	39.02%
B 249.677†	-2419.9	-0.0294	mg/L	0.00269	-0.0294	mg/L	0.00269	9.14%
Ca 227.546†	-0.4	0.0508	mg/L	0.08933	0.0508	mg/L	0.08933	175.87%
Cd 228.802†	-1.6	0.00015	mg/L	0.000352	0.00015	mg/L	0.000352	240.95%
Co 228.616†	4.0	-0.00035	mg/L	0.000248	-0.00035	mg/L	0.000248	71.80%
Cr 267.716†	112.7	0.00034	mg/L	0.000724	0.00034	mg/L	0.000724	212.79%
Cu 327.393†	-470.2	-0.00010	mg/L	0.000546	-0.00010	mg/L	0.000546	561.01%
Fe 239.562†	-0.2	0.00416	mg/L	0.000479	0.00416	mg/L	0.000479	11.50%
Mg 279.077†	31.7	-0.00281	mg/L	0.002923	-0.00281	mg/L	0.002923	104.15%
Mn 257.610†	139.5	-0.00021	mg/L	0.000017	-0.00021	mg/L	0.000017	8.16%
Mo 202.031†	9.0	0.00093	mg/L	0.000564	0.00093	mg/L	0.000564	60.71%
Ni 231.604†	-16.5	-0.00125	mg/L	0.000525	-0.00125	mg/L	0.000525	41.98%
Pb 220.353†	1.5	-0.00010	mg/L	0.000334	-0.00010	mg/L	0.000334	333.71%
Sb 206.836†	0.4	0.00480	mg/L	0.003643	0.00480	mg/L	0.003643	75.91%
Se 196.026†	2.2	0.00759	mg/L	0.006487	0.00759	mg/L	0.006487	85.51%
Si 251.611†	-349043.7	-17.6	mg/L	0.27	-17.6	mg/L	0.27	1.53%
Sn 189.927†	-44.4	-0.00900	mg/L	0.001252	-0.00900	mg/L	0.001252	13.92%
Ti 334.940†	273.5	0.00201	mg/L	0.000293	0.00201	mg/L	0.000293	14.55%
Tl 190.801†	-3.7	-0.00450	mg/L	0.006295	-0.00450	mg/L	0.006295	139.93%
V 290.880†	-436.5	-0.00043	mg/L	0.000757	-0.00043	mg/L	0.000757	176.20%
Zn 206.200†	-113.4	-0.00873	mg/L	0.000183	-0.00873	mg/L	0.000183	2.10%
K 766.490†	57.7	0.0641	mg/L	0.06827	0.0641	mg/L	0.06827	106.43%
Na 589.592†	9029.9	1.12	mg/L	0.017	1.12	mg/L	0.017	1.53%
Sr 407.771†	459.6	0.00023	mg/L	0.000020	0.00023	mg/L	0.000020	8.68%
Li 670.784†	0.2	-0.00269	mg/L	0.003922	-0.00269	mg/L	0.003922	146.00%

Approved: May 28, 2015

Kym H. Rhoden

P 214.914†	-3.9	-0.00402 mg/L	0.010496	-0.00402 mg/L	0.010496	261.32%

Sequence No.: 28 **Autosampler Location: 38**
Sample ID: L1505138701 **Date Collected: 5/27/2015 11:12:51 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505138701

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505138701

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3264200.7						12895.69	0.40%
YRADIAL	206512.7						737.60	0.36%
Ga 417.206	1388288.6						4656.14	0.34%
GaRADIAL	48725.6						41.09	0.08%
Ag 328.068†	1366.9	0.00737	mg/L	0.001249	0.00737	mg/L	0.001249	16.94%
Al 396.153†	2116.7	0.720	mg/L	0.0087	0.720	mg/L	0.0087	1.21%
As 188.979†	-29.2	-0.0104	mg/L	0.00283	-0.0104	mg/L	0.00283	27.17%
Ba 233.527†	3754.2	0.0646	mg/L	0.00091	0.0646	mg/L	0.00091	1.41%
Be 234.861†	329.1	0.00010	mg/L	0.000135	0.00010	mg/L	0.000135	136.82%
B 249.677†	-1768.0	-0.00897	mg/L	0.000904	-0.00897	mg/L	0.000904	10.08%
Ca 227.546†	11690.2	147	mg/L	2.0	147	mg/L	2.0	1.36%
Cd 228.802†	6.2	0.00069	mg/L	0.000168	0.00069	mg/L	0.000168	24.45%
Co 228.616†	7.4	-0.00019	mg/L	0.000863	-0.00019	mg/L	0.000863	450.59%
Cr 267.716†	3065.6	0.0220	mg/L	0.00044	0.0220	mg/L	0.00044	2.01%
Cu 327.393†	12514.6	0.0604	mg/L	0.00122	0.0604	mg/L	0.00122	2.01%
Fe 239.562†	17314.1	2.98	mg/L	0.036	2.98	mg/L	0.036	1.22%
Mg 279.077†	43068.2	15.9	mg/L	0.15	15.9	mg/L	0.15	0.94%
Mn 257.610†	39566.9	0.0617	mg/L	0.00080	0.0617	mg/L	0.00080	1.29%
Mo 202.031†	69.9	0.00669	mg/L	0.000868	0.00669	mg/L	0.000868	12.97%
Ni 231.604†	659.1	0.0199	mg/L	0.00070	0.0199	mg/L	0.00070	3.50%
Pb 220.353†	63.0	0.0137	mg/L	0.00223	0.0137	mg/L	0.00223	16.28%
Sb 206.836†	-1.0	0.00353	mg/L	0.002263	0.00353	mg/L	0.002263	64.12%
Se 196.026†	-3.1	-0.00085	mg/L	0.014078	-0.00085	mg/L	0.014078	>999.9%
Si 251.611†	-186570.0	-9.46	mg/L	0.087	-9.46	mg/L	0.087	0.92%
Sn 189.927†	-70.8	-0.0135	mg/L	0.00367	-0.0135	mg/L	0.00367	27.28%
Ti 334.940†	-2288.5	0.00867	mg/L	0.000142	0.00867	mg/L	0.000142	1.64%
Tl 190.801†	-27.0	-0.0239	mg/L	0.00415	-0.0239	mg/L	0.00415	17.34%
V 290.880†	-741.8	-0.00189	mg/L	0.001362	-0.00189	mg/L	0.001362	72.12%
Zn 206.200†	349.1	0.00786	mg/L	0.000704	0.00786	mg/L	0.000704	8.96%
K 766.490†	2670.3	1.70	mg/L	0.055	1.70	mg/L	0.055	3.22%
Na 589.592†	99161.4	12.2	mg/L	0.10	12.2	mg/L	0.10	0.78%
Sr 407.771†	225387.4	0.275	mg/L	0.0097	0.275	mg/L	0.0097	3.53%
Li 670.784†	20.6	-0.00215	mg/L	0.005871	-0.00215	mg/L	0.005871	272.77%
P 214.914†	49.5	0.0798	mg/L	0.01000	0.0798	mg/L	0.01000	12.53%

Sequence No.: 29 **Autosampler Location: 39**
Sample ID: L1505138901 **Date Collected: 5/27/2015 11:15:13 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505138901

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505138901

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3324547.0						5381.28	0.16%
YRADIAL	206958.2						1727.67	0.83%
Ga 417.206	1460417.3						9876.74	0.68%

Approved: May 28, 2015

Kym H. Rhoden

GaRADIAL	49257.8					105.05	0.21%
Ag 328.068†	638.0	0.00399	mg/L	0.000532	0.00399 mg/L	0.000532	13.33%
Al 396.153†	342.0	0.0978	mg/L	0.02997	0.0978 mg/L	0.02997	30.63%
As 188.979†	-19.7	-0.00756	mg/L	0.007355	-0.00756 mg/L	0.007355	97.29%
Ba 233.527†	3244.1	0.0558	mg/L	0.00024	0.0558 mg/L	0.00024	0.42%
Be 234.861†	-59.3	0.00010	mg/L	0.000050	0.00010 mg/L	0.000050	50.85%
B 249.677†	-1084.2	-0.00993	mg/L	0.000707	-0.00993 mg/L	0.000707	7.13%
Ca 227.546†	3257.4	41.0	mg/L	0.29	41.0 mg/L	0.29	0.70%
Cd 228.802†	-2.2	0.00014	mg/L	0.000184	0.00014 mg/L	0.000184	127.45%
Co 228.616†	-8.9	-0.00127	mg/L	0.000603	-0.00127 mg/L	0.000603	47.49%
Cr 267.716†	178.0	0.00082	mg/L	0.000170	0.00082 mg/L	0.000170	20.89%
Cu 327.393†	-783.7	-0.00152	mg/L	0.001105	-0.00152 mg/L	0.001105	72.56%
Fe 239.562†	1030.5	0.181	mg/L	0.0117	0.181 mg/L	0.0117	6.48%
Mg 279.077†	13618.0	5.03	mg/L	0.111	5.03 mg/L	0.111	2.22%
Mn 257.610†	11635.5	0.0178	mg/L	0.00007	0.0178 mg/L	0.00007	0.40%
Mo 202.031†	43.1	0.00418	mg/L	0.000643	0.00418 mg/L	0.000643	15.39%
Ni 231.604†	-14.8	-0.00120	mg/L	0.000440	-0.00120 mg/L	0.000440	36.84%
Pb 220.353†	13.4	0.00258	mg/L	0.001312	0.00258 mg/L	0.001312	50.93%
Sb 206.836†	1.5	0.00574	mg/L	0.003201	0.00574 mg/L	0.003201	55.79%
Se 196.026†	-4.8	-0.00332	mg/L	0.015203	-0.00332 mg/L	0.015203	457.60%
Si 251.611†	-254116.5	-12.8	mg/L	0.09	-12.8 mg/L	0.09	0.71%
Sn 189.927†	-50.7	-0.0101	mg/L	0.00302	-0.0101 mg/L	0.00302	30.00%
Ti 334.940†	-872.8	0.00340	mg/L	0.000276	0.00340 mg/L	0.000276	8.11%
Tl 190.801†	-10.8	-0.0104	mg/L	0.00270	-0.0104 mg/L	0.00270	25.87%
V 290.880†	-448.1	-0.00059	mg/L	0.001043	-0.00059 mg/L	0.001043	176.94%
Zn 206.200†	6.3	-0.00454	mg/L	0.000263	-0.00454 mg/L	0.000263	5.79%
K 766.490†	3508.4	2.24	mg/L	0.052	2.24 mg/L	0.052	2.31%
Na 589.592†	59231.0	7.28	mg/L	0.051	7.28 mg/L	0.051	0.70%
Sr 407.771†	102684.2	0.126	mg/L	0.0005	0.126 mg/L	0.0005	0.36%
Li 670.784†	-111.6	-0.00562	mg/L	0.001908	-0.00562 mg/L	0.001908	33.97%
P 214.914†	30.2	0.0496	mg/L	0.01401	0.0496 mg/L	0.01401	28.26%

Sequence No.: 30 **Autosampler Location: 40**
Sample ID: L1505138902 **Date Collected: 5/27/2015 11:17:35 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505138902

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505138902

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3327079.7						58502.38	1.76%
YRADIAL	204442.6						4680.78	2.29%
Ga 417.206	1488837.0						21703.30	1.46%
GaRADIAL	48692.4						1152.05	2.37%
Ag 328.068†	238.9	0.00290	mg/L	0.000496	0.00290	mg/L	0.000496	17.11%
Al 396.153†	505.7	0.155	mg/L	0.0302	0.155	mg/L	0.0302	19.44%
As 188.979†	-14.0	-0.00463	mg/L	0.001464	-0.00463	mg/L	0.001464	31.61%
Ba 233.527†	1831.5	0.0314	mg/L	0.00087	0.0314	mg/L	0.00087	2.78%
Be 234.861†	-58.5	0.00006	mg/L	0.000017	0.00006	mg/L	0.000017	27.12%
B 249.677†	-1340.5	-0.0130	mg/L	0.00167	-0.0130	mg/L	0.00167	12.77%
Ca 227.546†	1167.4	14.7	mg/L	0.32	14.7	mg/L	0.32	2.15%
Cd 228.802†	4.8	0.00055	mg/L	0.000155	0.00055	mg/L	0.000155	27.91%
Co 228.616†	-4.1	-0.00094	mg/L	0.000408	-0.00094	mg/L	0.000408	43.35%
Cr 267.716†	130.1	0.00046	mg/L	0.000803	0.00046	mg/L	0.000803	173.92%
Cu 327.393†	6523.8	0.0323	mg/L	0.00146	0.0323	mg/L	0.00146	4.51%
Fe 239.562†	1800.9	0.314	mg/L	0.0051	0.314	mg/L	0.0051	1.63%
Mg 279.077†	6258.8	2.30	mg/L	0.115	2.30	mg/L	0.115	5.00%
Mn 257.610†	2719.2	0.00384	mg/L	0.000065	0.00384	mg/L	0.000065	1.70%
Mo 202.031†	22.3	0.00220	mg/L	0.000274	0.00220	mg/L	0.000274	12.48%
Ni 231.604†	8.5	-0.00047	mg/L	0.000433	-0.00047	mg/L	0.000433	93.11%
Pb 220.353†	7.8	0.00132	mg/L	0.004998	0.00132	mg/L	0.004998	378.16%
Sb 206.836†	1.1	0.00544	mg/L	0.003019	0.00544	mg/L	0.003019	55.55%
Se 196.026†	-4.7	-0.00324	mg/L	0.013123	-0.00324	mg/L	0.013123	405.25%
Si 251.611†	-249597.1	-12.6	mg/L	0.20	-12.6	mg/L	0.20	1.60%

Approved: May 28, 2015

Sn 189.927†	-54.9	-0.0108 mg/L	0.00214	-0.0108 mg/L	0.00214	19.85%
Ti 334.940†	2309.3	0.00515 mg/L	0.000176	0.00515 mg/L	0.000176	3.43%
Tl 190.801†	-6.7	-0.00698 mg/L	0.004100	-0.00698 mg/L	0.004100	58.76%
V 290.880†	-177.8	0.00094 mg/L	0.001144	0.00094 mg/L	0.001144	122.08%
Zn 206.200†	693.3	0.0194 mg/L	0.00053	0.0194 mg/L	0.00053	2.72%
K 766.490†	1653.7	1.07 mg/L	0.087	1.07 mg/L	0.087	8.13%
Na 589.592†	14769.0	1.83 mg/L	0.020	1.83 mg/L	0.020	1.11%
Sr 407.771†	42593.8	0.0521 mg/L	0.00065	0.0521 mg/L	0.00065	1.25%
Li 670.784†	42.6	-0.00158 mg/L	0.002548	-0.00158 mg/L	0.002548	161.56%
P 214.914†	-13.0	-0.0182 mg/L	0.01359	-0.0182 mg/L	0.01359	74.89%

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Sequence No.: 31 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 5/27/2015 11:19:59 AM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3199368.1						72392.11	2.26%
YRADIAL	200621.6						2540.43	1.27%
Ga 417.206	1331705.1						31942.41	2.40%
GaRADIAL	47058.3						510.23	1.08%
Ag 328.068†	132645.4	0.394	mg/L	0.0042	0.394	mg/L	0.0042	1.07%
QC value within limits for Ag 328.068 Recovery = 98.61%								
Al 396.153†	28894.0	10.1	mg/L	0.06	10.1	mg/L	0.06	0.55%
QC value within limits for Al 396.153 Recovery = 100.73%								
As 188.979†	630.7	0.387	mg/L	0.0062	0.387	mg/L	0.0062	1.60%
QC value within limits for As 188.979 Recovery = 96.67%								
Ba 233.527†	57055.3	0.986	mg/L	0.0122	0.986	mg/L	0.0122	1.24%
QC value within limits for Ba 233.527 Recovery = 98.65%								
Be 234.861†	26747.1	0.0482	mg/L	0.00111	0.0482	mg/L	0.00111	2.29%
QC value within limits for Be 234.861 Recovery = 96.48%								
B 249.677†	26166.5	0.386	mg/L	0.0080	0.386	mg/L	0.0080	2.07%
QC value less than the lower limit for B 249.677 Recovery = 77.21%								
Ca 227.546†	756.3	9.63	mg/L	0.068	9.63	mg/L	0.068	0.70%
QC value within limits for Ca 227.546 Recovery = 96.27%								
Cd 228.802†	820.8	0.0484	mg/L	0.00108	0.0484	mg/L	0.00108	2.23%
QC value within limits for Cd 228.802 Recovery = 96.72%								
Co 228.616†	2847.4	0.199	mg/L	0.0031	0.199	mg/L	0.0031	1.56%
QC value within limits for Co 228.616 Recovery = 99.47%								
Cr 267.716†	66598.1	0.490	mg/L	0.0048	0.490	mg/L	0.0048	0.99%
QC value within limits for Cr 267.716 Recovery = 97.99%								
Cu 327.393†	104628.5	0.488	mg/L	0.0073	0.488	mg/L	0.0073	1.49%
QC value within limits for Cu 327.393 Recovery = 97.68%								
Fe 239.562†	23219.3	3.99	mg/L	0.042	3.99	mg/L	0.042	1.04%
QC value within limits for Fe 239.562 Recovery = 99.85%								
Mg 279.077†	26905.8	9.95	mg/L	0.038	9.95	mg/L	0.038	0.38%
QC value within limits for Mg 279.077 Recovery = 99.52%								
Mn 257.610†	315741.1	0.495	mg/L	0.0062	0.495	mg/L	0.0062	1.25%
QC value within limits for Mn 257.610 Recovery = 98.91%								
Mo 202.031†	10356.0	0.986	mg/L	0.0168	0.986	mg/L	0.0168	1.70%
QC value within limits for Mo 202.031 Recovery = 98.63%								
Ni 231.604†	15863.3	0.496	mg/L	0.0066	0.496	mg/L	0.0066	1.34%
QC value within limits for Ni 231.604 Recovery = 99.17%								
Pb 220.353†	2227.7	0.500	mg/L	0.0093	0.500	mg/L	0.0093	1.86%
QC value within limits for Pb 220.353 Recovery = 99.97%								
Sb 206.836†	1357.9	1.17	mg/L	0.018	1.17	mg/L	0.018	1.51%
QC value within limits for Sb 206.836 Recovery = 97.78%								
Se 196.026†	255.0	0.405	mg/L	0.0116	0.405	mg/L	0.0116	2.86%
QC value within limits for Se 196.026 Recovery = 101.28%								
Si 251.611†	-174297.3	-8.86	mg/L	0.005	-8.86	mg/L	0.005	0.06%
QC value less than the lower limit for Si 251.611 Recovery = -177.20%								
Sn 189.927†	5852.9	0.988	mg/L	0.0129	0.988	mg/L	0.0129	1.31%

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QC value within limits for Sn 189.927 Recovery = 98.81%
Ti 334.940† 907998.3 0.980 mg/L 0.0109 0.980 mg/L 0.0109 1.11%
QC value within limits for Ti 334.940 Recovery = 98.01%
Tl 190.801† 600.5 0.507 mg/L 0.0050 0.507 mg/L 0.0050 0.99%
QC value within limits for Tl 190.801 Recovery = 101.39%
V 290.880† 184493.8 0.978 mg/L 0.0132 0.978 mg/L 0.0132 1.35%
QC value within limits for V 290.880 Recovery = 97.80%
Zn 206.200† 28897.7 1.01 mg/L 0.016 1.01 mg/L 0.016 1.55%
QC value within limits for Zn 206.200 Recovery = 100.77%
K 766.490† 77861.8 49.6 mg/L 0.07 49.6 mg/L 0.07 0.14%
QC value within limits for K 766.490 Recovery = 99.21%
Na 589.592† 395823.4 49.7 mg/L 0.26 49.7 mg/L 0.26 0.53%
QC value within limits for Na 589.592 Recovery = 99.41%
Sr 407.771† 800970.5 0.993 mg/L 0.0067 0.993 mg/L 0.0067 0.68%
QC value within limits for Sr 407.771 Recovery = 99.34%
Li 670.784† 38688.5 1.01 mg/L 0.002 1.01 mg/L 0.002 0.22%
QC value within limits for Li 670.784 Recovery = 101.12%
P 214.914† 6230.5 9.77 mg/L 0.130 9.77 mg/L 0.130 1.33%
QC value within limits for P 214.914 Recovery = 97.72%
QC Failed. Continue with analysis.

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Sequence No.: 32 **Autosampler Location: 1**
Sample ID: CCB **Date Collected: 5/27/2015 11:22:23 AM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCB

Analyte	**Back Pressure**	**Flow**
All	232.0 kPa	0.40 L/min

Mean Data: CCB

Analyte	**Mean Corrected Intensity**	**Calib. Conc.**	**Units**	**Std.Dev.**	**Sample Conc.**	**Units**	**Std.Dev.**	**RSD**
Y 371.029	3411059.2						31204.53	0.91%
YRADIAL	213099.6						3804.59	1.79%
Ga 417.206	1551852.7						9250.33	0.60%
GaRADIAL	51668.6						1000.65	1.94%
Ag 328.068†	-4.3	0.00206	mg/L	0.000163	0.00206	mg/L	0.000163	7.91%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	-6.9	-0.0244	mg/L	0.00417	-0.0244	mg/L	0.00417	17.09%
QC value within limits for Al 396.153 Recovery = Not calculated								
As 188.979†	-7.2	-0.00079	mg/L	0.003607	-0.00079	mg/L	0.003607	457.73%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	5.6	-0.00015	mg/L	0.000099	-0.00015	mg/L	0.000099	66.83%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 234.861†	-23.0	0.00021	mg/L	0.000062	0.00021	mg/L	0.000062	30.32%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	-127.9	0.00285	mg/L	0.003955	0.00285	mg/L	0.003955	138.53%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	-3.7	0.00932	mg/L	0.130316	0.00932	mg/L	0.130316	>999.9%
QC value within limits for Ca 227.546 Recovery = Not calculated								
Cd 228.802†	-2.2	0.00011	mg/L	0.000429	0.00011	mg/L	0.000429	394.77%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	-2.5	-0.00081	mg/L	0.000605	-0.00081	mg/L	0.000605	74.86%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	14.4	-0.00038	mg/L	0.000219	-0.00038	mg/L	0.000219	57.22%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	-43.4	0.00188	mg/L	0.000595	0.00188	mg/L	0.000595	31.65%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	-2.9	0.00370	mg/L	0.001121	0.00370	mg/L	0.001121	30.29%
QC value within limits for Fe 239.562 Recovery = Not calculated								
Mg 279.077†	11.1	-0.0104	mg/L	0.00280	-0.0104	mg/L	0.00280	26.83%
QC value within limits for Mg 279.077 Recovery = Not calculated								
Mn 257.610†	19.4	-0.00039	mg/L	0.000046	-0.00039	mg/L	0.000046	11.70%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	0.6	0.00013	mg/L	0.000387	0.00013	mg/L	0.000387	288.75%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	-11.3	-0.00109	mg/L	0.000091	-0.00109	mg/L	0.000091	8.39%

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QC value within limits for Ni 231.604 Recovery = Not calculated
Pb 220.353† -4.3 -0.00140 mg/L 0.003053 -0.00140 mg/L 0.003053 218.47%
QC value within limits for Pb 220.353 Recovery = Not calculated
Sb 206.836† 1.1 0.00537 mg/L 0.005092 0.00537 mg/L 0.005092 94.83%
QC value within limits for Sb 206.836 Recovery = Not calculated
Se 196.026† 7.4 0.0158 mg/L 0.00450 0.0158 mg/L 0.00450 28.57%
QC value within limits for Se 196.026 Recovery = Not calculated
Si 251.611† 4769.2 0.0874 mg/L 0.35191 0.0874 mg/L 0.35191 402.72%
QC value within limits for Si 251.611 Recovery = Not calculated
Sn 189.927† -14.1 -0.00387 mg/L 0.002004 -0.00387 mg/L 0.002004 51.77%
QC value within limits for Sn 189.927 Recovery = Not calculated
Ti 334.940† 231.5 0.00196 mg/L 0.000083 0.00196 mg/L 0.000083 4.24%
QC value within limits for Ti 334.940 Recovery = Not calculated
Tl 190.801† 0.8 -0.00075 mg/L 0.002810 -0.00075 mg/L 0.002810 372.23%
QC value within limits for Tl 190.801 Recovery = Not calculated
V 290.880† -327.5 0.00015 mg/L 0.001113 0.00015 mg/L 0.001113 757.27%
QC value within limits for V 290.880 Recovery = Not calculated
Zn 206.200† -1.1 -0.00482 mg/L 0.000495 -0.00482 mg/L 0.000495 10.26%
QC value within limits for Zn 206.200 Recovery = Not calculated
K 766.490† 44.8 0.0570 mg/L 0.03658 0.0570 mg/L 0.03658 64.13%
QC value within limits for K 766.490 Recovery = Not calculated
Na 589.592† 225.0 0.0481 mg/L 0.01845 0.0481 mg/L 0.01845 38.39%
QC value within limits for Na 589.592 Recovery = Not calculated
Sr 407.771† 87.9 -0.00023 mg/L 0.000034 -0.00023 mg/L 0.000034 14.99%
QC value within limits for Sr 407.771 Recovery = Not calculated
Li 670.784† 0.4 -0.00268 mg/L 0.003438 -0.00268 mg/L 0.003438 128.23%
QC value within limits for Li 670.784 Recovery = Not calculated
P 214.914† -6.2 -0.00762 mg/L 0.013679 -0.00762 mg/L 0.013679 179.51%
QC value within limits for P 214.914 Recovery = Not calculated
All analyte(s) passed QC.

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Sequence No.: 33 **Autosampler Location: 41**
Sample ID: LLCCV **Date Collected: 5/27/2015 11:25:44 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: LLCCV

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: LLCCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3340172.7						47045.50	1.41%
YRADIAL	210744.8						4201.07	1.99%
Ga 417.206	1517547.7						24577.91	1.62%
GaRADIAL	50541.4						1026.12	2.03%
Ag 328.068†	5255.1	0.0176	mg/L	0.00026	0.0176	mg/L	0.00026	1.45%
Al 396.153†	1247.7	0.414	mg/L	0.0568	0.414	mg/L	0.0568	13.72%
As 188.979†	19.8	0.0156	mg/L	0.00746	0.0156	mg/L	0.00746	47.77%
Ba 233.527†	2412.4	0.0415	mg/L	0.00094	0.0415	mg/L	0.00094	2.26%
Be 234.861†	1031.1	0.00210	mg/L	0.000075	0.00210	mg/L	0.000075	3.56%
B 249.677†	1010.1	0.0194	mg/L	0.00190	0.0194	mg/L	0.00190	9.79%
Ca 227.546†	28.2	0.413	mg/L	0.0787	0.413	mg/L	0.0787	19.06%
Cd 228.802†	32.8	0.00216	mg/L	0.000388	0.00216	mg/L	0.000388	17.96%
Co 228.616†	112.5	0.00725	mg/L	0.000037	0.00725	mg/L	0.000037	0.51%
Cr 267.716†	2865.6	0.0206	mg/L	0.00061	0.0206	mg/L	0.00061	2.95%
Cu 327.393†	3876.4	0.0201	mg/L	0.00071	0.0201	mg/L	0.00071	3.52%
Fe 239.562†	934.9	0.165	mg/L	0.0019	0.165	mg/L	0.0019	1.18%
Mg 279.077†	1187.8	0.425	mg/L	0.0214	0.425	mg/L	0.0214	5.03%
Mn 257.610†	13366.5	0.0205	mg/L	0.00040	0.0205	mg/L	0.00040	1.95%
Mo 202.031†	408.9	0.0390	mg/L	0.00013	0.0390	mg/L	0.00013	0.34%
Ni 231.604†	663.9	0.0200	mg/L	0.00087	0.0200	mg/L	0.00087	4.36%
Pb 220.353†	81.5	0.0179	mg/L	0.00110	0.0179	mg/L	0.00110	6.13%
Sb 206.836†	50.0	0.0475	mg/L	0.00364	0.0475	mg/L	0.00364	7.67%
Se 196.026†	18.1	0.0326	mg/L	0.01128	0.0326	mg/L	0.01128	34.59%
Si 251.611†	1423.4	-0.0800	mg/L	0.15645	-0.0800	mg/L	0.15645	195.51%
Sn 189.927†	218.1	0.0354	mg/L	0.00145	0.0354	mg/L	0.00145	4.11%

Approved: May 28, 2015
Kym H. Rhoden

Ti 334.940†	36333.9	0.0409 mg/L	0.00054	0.0409 mg/L	0.00054	1.32%
Tl 190.801†	24.6	0.0194 mg/L	0.00118	0.0194 mg/L	0.00118	6.07%
V 290.880†	7090.7	0.0394 mg/L	0.00186	0.0394 mg/L	0.00186	4.72%
Zn 206.200†	1239.5	0.0386 mg/L	0.00100	0.0386 mg/L	0.00100	2.59%
K 766.490†	3050.6	1.95 mg/L	0.016	1.95 mg/L	0.016	0.82%
Na 589.592†	16544.2	2.04 mg/L	0.028	2.04 mg/L	0.028	1.38%
Sr 407.771†	32997.4	0.0406 mg/L	0.00058	0.0406 mg/L	0.00058	1.44%
Li 670.784†	1652.3	0.0406 mg/L	0.00233	0.0406 mg/L	0.00233	5.73%
P 214.914†	246.0	0.388 mg/L	0.0032	0.388 mg/L	0.0032	0.83%

Approved: May 28, 2015

Lynn H. Rhoden

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Analysis Begun

Start Time: 5/27/2015 11:29:27 AM **Plasma On Time: 5/27/2015 6:39:13 AM**
Logged In Analyst: peicp2 **Technique: ICP Continuous**
Spectrometer Model: Optima 4300 DV, S/N 077N4011401 **Autosampler Model: Cetac**

Sample Information File: C:\pe\peicp2\Sample Information\MONDAY1.sif
Batch ID:
Results Data Set: 052715HR
Results Library: C:\pe\peicp2\Results\results2.mdb

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Method Loaded
Method Name: 200.7-6010-3015 ASX **Method Last Saved: 5/27/2015 9:59:38 AM**
IEC File: PLUS-P.iec **SMF File:**
Method Description: STANDARD

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Sequence No.: 1 **Autosampler Location: 42**
Sample ID: PBW 76 WG525046-02 **Date Collected: 5/27/2015 11:29:28 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: PBW 76 WG525046-02

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: PBW 76 WG525046-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3416014.0						67671.38	1.98%
YRADIAL	211548.6						3707.48	1.75%
Ga 417.206	1544523.3						22603.87	1.46%
GaRADIAL	50616.9						582.03	1.15%
Ag 328.068†	-294.4	0.00121	mg/L	0.000392	0.00121	mg/L	0.000392	32.41%
Al 396.153†	10.6	-0.0183	mg/L	0.00623	-0.0183	mg/L	0.00623	34.06%
As 188.979†	-12.9	-0.00430	mg/L	0.002985	-0.00430	mg/L	0.002985	69.43%
Ba 233.527†	-17.9	-0.00055	mg/L	0.000246	-0.00055	mg/L	0.000246	44.42%
Be 234.861†	-73.3	0.00011	mg/L	0.000021	0.00011	mg/L	0.000021	18.32%
B 249.677†	9955.2	0.145	mg/L	0.0052	0.145	mg/L	0.0052	3.58%
Ca 227.546†	-9.4	-0.0616	mg/L	0.27060	-0.0616	mg/L	0.27060	439.59%
Cd 228.802†	3.4	0.00046	mg/L	0.000301	0.00046	mg/L	0.000301	64.94%
Co 228.616†	-1.9	-0.00076	mg/L	0.000784	-0.00076	mg/L	0.000784	102.72%
Cr 267.716†	113.5	0.00035	mg/L	0.000354	0.00035	mg/L	0.000354	102.16%
Cu 327.393†	-586.4	-0.00063	mg/L	0.000682	-0.00063	mg/L	0.000682	107.62%
Fe 239.562†	18.9	0.00744	mg/L	0.001713	0.00744	mg/L	0.001713	23.04%
Mg 279.077†	22.0	-0.00640	mg/L	0.006994	-0.00640	mg/L	0.006994	109.33%
Mn 257.610†	4.5	-0.00042	mg/L	0.000010	-0.00042	mg/L	0.000010	2.46%
Mo 202.031†	10.6	0.00108	mg/L	0.000544	0.00108	mg/L	0.000544	50.27%
Ni 231.604†	-36.9	-0.00189	mg/L	0.000229	-0.00189	mg/L	0.000229	12.11%
Pb 220.353†	0.5	-0.00032	mg/L	0.003445	-0.00032	mg/L	0.003445	>999.9%
Sb 206.836†	2.1	0.00622	mg/L	0.002344	0.00622	mg/L	0.002344	37.66%
Se 196.026†	3.9	0.0103	mg/L	0.00655	0.0103	mg/L	0.00655	63.69%
Si 251.611†	-155810.1	-7.93	mg/L	0.325	-7.93	mg/L	0.325	4.10%
Sn 189.927†	-53.1	-0.0105	mg/L	0.00050	-0.0105	mg/L	0.00050	4.75%
Ti 334.940†	302.2	0.00203	mg/L	0.000477	0.00203	mg/L	0.000477	23.43%
Tl 190.801†	3.7	0.00162	mg/L	0.004377	0.00162	mg/L	0.004377	269.95%
V 290.880†	-241.2	0.00060	mg/L	0.001795	0.00060	mg/L	0.001795	296.90%
Zn 206.200†	-132.2	-0.00939	mg/L	0.000041	-0.00939	mg/L	0.000041	0.44%
K 766.490†	11.0	0.0357	mg/L	0.07463	0.0357	mg/L	0.07463	208.80%
Na 589.592†	-38.0	0.0160	mg/L	0.02401	0.0160	mg/L	0.02401	150.45%
Sr 407.771†	358.9	0.00011	mg/L	0.000115	0.00011	mg/L	0.000115	103.29%
Li 670.784†	-183.6	-0.00751	mg/L	0.004155	-0.00751	mg/L	0.004155	55.35%
P 214.914†	-6.5	-0.00804	mg/L	0.017160	-0.00804	mg/L	0.017160	213.51%

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Sequence No.: 2 **Autosampler Location: 43**

Approved: May 28, 2015

Lynn H. Rhoden

Sample ID: LCSW 76 WG525046-03
Analyst: KHR
Initial Sample Wt:
Dilution:

Date Collected: 5/27/2015 11:32:51 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: LCSW 76 WG525046-03

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: LCSW 76 WG525046-03

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3303700.3						4228.55	0.13%
YRADIAL	204704.6						1145.19	0.56%
Ga 417.206	1398712.3						8473.96	0.61%
GaRADIAL	47753.7						218.64	0.46%
Ag 328.068†	65645.3	0.196	mg/L	0.0008	0.196	mg/L	0.0008	0.39%
Al 396.153†	14597.3	5.08	mg/L	0.072	5.08	mg/L	0.072	1.41%
As 188.979†	301.7	0.187	mg/L	0.0055	0.187	mg/L	0.0055	2.94%
Ba 233.527†	29207.0	0.505	mg/L	0.0044	0.505	mg/L	0.0044	0.87%
Be 234.861†	12816.8	0.0232	mg/L	0.00009	0.0232	mg/L	0.00009	0.38%
B 249.677†	67188.1	0.957	mg/L	0.0088	0.957	mg/L	0.0088	0.91%
Ca 227.546†	361.2	4.63	mg/L	0.145	4.63	mg/L	0.145	3.14%
Cd 228.802†	384.1	0.0227	mg/L	0.00020	0.0227	mg/L	0.00020	0.89%
Co 228.616†	1399.1	0.0974	mg/L	0.00048	0.0974	mg/L	0.00048	0.49%
Cr 267.716†	33957.1	0.250	mg/L	0.0015	0.250	mg/L	0.0015	0.60%
Cu 327.393†	51624.9	0.242	mg/L	0.0018	0.242	mg/L	0.0018	0.73%
Fe 239.562†	11721.2	2.02	mg/L	0.012	2.02	mg/L	0.012	0.60%
Mg 279.077†	13612.4	5.03	mg/L	0.020	5.03	mg/L	0.020	0.39%
Mn 257.610†	157664.3	0.247	mg/L	0.0004	0.247	mg/L	0.0004	0.16%
Mo 202.031†	5063.0	0.482	mg/L	0.0011	0.482	mg/L	0.0011	0.24%
Ni 231.604†	7612.3	0.238	mg/L	0.0018	0.238	mg/L	0.0018	0.75%
Pb 220.353†	1074.3	0.241	mg/L	0.0036	0.241	mg/L	0.0036	1.49%
Sb 206.836†	644.1	0.559	mg/L	0.0058	0.559	mg/L	0.0058	1.04%
Se 196.026†	122.2	0.196	mg/L	0.0109	0.196	mg/L	0.0109	5.58%
Si 251.611†	-62779.2	-3.29	mg/L	0.365	-3.29	mg/L	0.365	11.11%
Sn 189.927†	2860.1	0.482	mg/L	0.0032	0.482	mg/L	0.0032	0.67%
Ti 334.940†	454278.3	0.491	mg/L	0.0013	0.491	mg/L	0.0013	0.26%
Tl 190.801†	299.4	0.252	mg/L	0.0104	0.252	mg/L	0.0104	4.11%
V 290.880†	92816.3	0.493	mg/L	0.0022	0.493	mg/L	0.0022	0.44%
Zn 206.200†	13874.8	0.481	mg/L	0.0028	0.481	mg/L	0.0028	0.58%
K 766.490†	38758.5	24.6	mg/L	0.06	24.6	mg/L	0.06	0.23%
Na 589.592†	197535.1	24.5	mg/L	0.36	24.5	mg/L	0.36	1.47%
Sr 407.771†	394010.1	0.488	mg/L	0.0091	0.488	mg/L	0.0091	1.85%
Li 670.784†	19885.2	0.518	mg/L	0.0040	0.518	mg/L	0.0040	0.77%
P 214.914†	2975.3	4.67	mg/L	0.036	4.67	mg/L	0.036	0.78%

Sequence No.: 3
Sample ID: L1505152501
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 44
Date Collected: 5/27/2015 11:35:18 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505152501

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505152501

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3317348.3						31310.77	0.94%
YRADIAL	204292.6						4042.65	1.98%
Ga 417.206	1421974.2						17768.71	1.25%
GaRADIAL	49104.6						1104.28	2.25%
Ag 328.068†	458.5	0.00339	mg/L	0.000469	0.00339	mg/L	0.000469	13.82%
Al 396.153†	126.3	0.0221	mg/L	0.00889	0.0221	mg/L	0.00889	40.26%
As 188.979†	-29.1	-0.0130	mg/L	0.00297	-0.0130	mg/L	0.00297	22.91%

Approved: May 28, 2015

Kym H. Rhoden

Ba 233.527†	2640.9	0.0454	mg/L	0.00026	0.0454	mg/L	0.00026	0.57%
Be 234.861†	-96.4	0.00006	mg/L	0.000038	0.00006	mg/L	0.000038	65.09%
B 249.677†	2951.5	0.0465	mg/L	0.00207	0.0465	mg/L	0.00207	4.44%
Ca 227.546†	4598.9	57.8	mg/L	0.61	57.8	mg/L	0.61	1.06%
Cd 228.802†	1.1	0.00038	mg/L	0.000593	0.00038	mg/L	0.000593	157.19%
Co 228.616†	4.5	-0.00031	mg/L	0.000310	-0.00031	mg/L	0.000310	99.21%
Cr 267.716†	222.8	0.00115	mg/L	0.000060	0.00115	mg/L	0.000060	5.26%
Cu 327.393†	-336.7	0.00053	mg/L	0.001023	0.00053	mg/L	0.001023	194.56%
Fe 239.562†	464.7	0.0837	mg/L	0.00108	0.0837	mg/L	0.00108	1.29%
Mg 279.077†	45833.3	17.0	mg/L	0.24	17.0	mg/L	0.24	1.41%
Mn 257.610†	26651.4	0.0413	mg/L	0.00046	0.0413	mg/L	0.00046	1.11%
Mo 202.031†	71.1	0.00684	mg/L	0.001354	0.00684	mg/L	0.001354	19.79%
Ni 231.604†	9.6	-0.00043	mg/L	0.000310	-0.00043	mg/L	0.000310	72.23%
Pb 220.353†	26.8	0.00554	mg/L	0.002081	0.00554	mg/L	0.002081	37.58%
Sb 206.836†	2.2	0.00637	mg/L	0.002459	0.00637	mg/L	0.002459	38.62%
Se 196.026†	-2.6	0.00000	mg/L	0.001187	0.00000	mg/L	0.001187	>999.9%
Si 251.611†	-317722.2	-16.0	mg/L	0.05	-16.0	mg/L	0.05	0.28%
Sn 189.927†	-65.1	-0.0125	mg/L	0.00088	-0.0125	mg/L	0.00088	7.02%
Ti 334.940†	-3267.9	0.00191	mg/L	0.000162	0.00191	mg/L	0.000162	8.48%
Tl 190.801†	-13.2	-0.0125	mg/L	0.00949	-0.0125	mg/L	0.00949	75.93%
V 290.880†	-1139.2	-0.00457	mg/L	0.001133	-0.00457	mg/L	0.001133	24.78%
Zn 206.200†	45.9	-0.00316	mg/L	0.000389	-0.00316	mg/L	0.000389	12.29%
K 766.490†	4742.2	3.00	mg/L	0.156	3.00	mg/L	0.156	5.21%
Na 589.592†	212598.6	26.4	mg/L	0.25	26.4	mg/L	0.25	0.94%
Sr 407.771†	178720.6	0.220	mg/L	0.0030	0.220	mg/L	0.0030	1.37%
Li 670.784†	501.3	0.0104	mg/L	0.00505	0.0104	mg/L	0.00505	48.33%
P 214.914†	21.8	0.0364	mg/L	0.01303	0.0364	mg/L	0.01303	35.76%

Sequence No.: 4
Sample ID: L1505152601
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 45
Date Collected: 5/27/2015 11:38:38 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505152601

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505152601

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3336452.2						39594.17	1.19%
YRADIAL	202868.9						2000.75	0.99%
Ga 417.206	1422468.1						19758.58	1.39%
GaRADIAL	48722.0						406.65	0.83%
Ag 328.068†	1045.5	0.00514	mg/L	0.001263	0.00514	mg/L	0.001263	24.59%
Al 396.153†	50.7	-0.00449	mg/L	0.002177	-0.00449	mg/L	0.002177	48.54%
As 188.979†	-19.9	-0.00745	mg/L	0.004030	-0.00745	mg/L	0.004030	54.09%
Ba 233.527†	3958.5	0.0682	mg/L	0.00099	0.0682	mg/L	0.00099	1.46%
Be 234.861†	-101.5	0.00004	mg/L	0.000034	0.00004	mg/L	0.000034	86.69%
B 249.677†	2515.3	0.0405	mg/L	0.00143	0.0405	mg/L	0.00143	3.52%
Ca 227.546†	4119.0	51.8	mg/L	0.89	51.8	mg/L	0.89	1.72%
Cd 228.802†	2.1	0.00041	mg/L	0.000084	0.00041	mg/L	0.000084	20.63%
Co 228.616†	4.8	-0.00029	mg/L	0.001167	-0.00029	mg/L	0.001167	398.68%
Cr 267.716†	307.6	0.00177	mg/L	0.000150	0.00177	mg/L	0.000150	8.50%
Cu 327.393†	-641.4	-0.00088	mg/L	0.001393	-0.00088	mg/L	0.001393	158.58%
Fe 239.562†	685.9	0.122	mg/L	0.0064	0.122	mg/L	0.0064	5.27%
Mg 279.077†	43068.8	15.9	mg/L	0.26	15.9	mg/L	0.26	1.63%
Mn 257.610†	17425.5	0.0269	mg/L	0.00043	0.0269	mg/L	0.00043	1.60%
Mo 202.031†	79.3	0.00762	mg/L	0.000717	0.00762	mg/L	0.000717	9.40%
Ni 231.604†	37.5	0.00045	mg/L	0.000377	0.00045	mg/L	0.000377	84.62%
Pb 220.353†	46.4	0.00993	mg/L	0.000328	0.00993	mg/L	0.000328	3.31%
Sb 206.836†	-1.6	0.00302	mg/L	0.002843	0.00302	mg/L	0.002843	93.98%
Se 196.026†	-2.6	0.00012	mg/L	0.020299	0.00012	mg/L	0.020299	>999.9%
Si 251.611†	-306016.1	-15.4	mg/L	0.15	-15.4	mg/L	0.15	0.98%
Sn 189.927†	-65.5	-0.0126	mg/L	0.00178	-0.0126	mg/L	0.00178	14.19%
Ti 334.940†	-3448.5	0.00132	mg/L	0.000112	0.00132	mg/L	0.000112	8.44%
Tl 190.801†	-18.9	-0.0172	mg/L	0.00420	-0.0172	mg/L	0.00420	24.48%
V 290.880†	-906.2	-0.00331	mg/L	0.001743	-0.00331	mg/L	0.001743	52.68%

Approved: May 28, 2015

Zn 206.200†	-74.6	-0.00736 mg/L	0.000318	-0.00736 mg/L	0.000318	4.32%
K 766.490†	4044.4	2.56 mg/L	0.065	2.56 mg/L	0.065	2.54%
Na 589.592†	191731.4	23.7 mg/L	0.16	23.7 mg/L	0.16	0.69%
Sr 407.771†	169948.1	0.209 mg/L	0.0034	0.209 mg/L	0.0034	1.61%
Li 670.784†	248.7	0.00383 mg/L	0.005481	0.00383 mg/L	0.005481	143.27%
P 214.914†	29.2	0.0479 mg/L	0.00960	0.0479 mg/L	0.00960	20.04%

Sequence No.: 5 **Autosampler Location: 46**
Sample ID: L1505152602 WG525046-01 **Date Collected: 5/27/2015 11:41:01 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505152602 WG525046-01

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505152602 WG525046-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3257983.7						60876.60	1.87%
YRADIAL	207397.7						2531.18	1.22%
Ga 417.206	1402104.1						25125.22	1.79%
GaRADIAL	50021.5						501.85	1.00%
Ag 328.068†	771.6	0.00430	mg/L	0.000764	0.00430	mg/L	0.000764	17.76%
Al 396.153†	15.4	-0.0168	mg/L	0.00400	-0.0168	mg/L	0.00400	23.75%
As 188.979†	-25.2	-0.0107	mg/L	0.00564	-0.0107	mg/L	0.00564	52.65%
Ba 233.527†	5840.2	0.101	mg/L	0.0016	0.101	mg/L	0.0016	1.62%
Be 234.861†	-122.8	0.00002	mg/L	0.000079	0.00002	mg/L	0.000079	494.37%
B 249.677†	2337.6	0.0378	mg/L	0.00265	0.0378	mg/L	0.00265	7.01%
Ca 227.546†	4279.4	53.8	mg/L	1.24	53.8	mg/L	1.24	2.30%
Cd 228.802†	-0.7	0.00026	mg/L	0.000331	0.00026	mg/L	0.000331	129.40%
Co 228.616†	0.3	-0.00062	mg/L	0.000162	-0.00062	mg/L	0.000162	26.01%
Cr 267.716†	302.2	0.00173	mg/L	0.000145	0.00173	mg/L	0.000145	8.36%
Cu 327.393†	-388.0	0.00028	mg/L	0.000799	0.00028	mg/L	0.000799	281.71%
Fe 239.562†	295.0	0.0546	mg/L	0.00173	0.0546	mg/L	0.00173	3.18%
Mg 279.077†	42594.7	15.8	mg/L	0.18	15.8	mg/L	0.18	1.12%
Mn 257.610†	10712.6	0.0164	mg/L	0.00033	0.0164	mg/L	0.00033	2.00%
Mo 202.031†	70.9	0.00682	mg/L	0.001612	0.00682	mg/L	0.001612	23.64%
Ni 231.604†	15.7	-0.00024	mg/L	0.000838	-0.00024	mg/L	0.000838	349.94%
Pb 220.353†	41.0	0.00872	mg/L	0.003644	0.00872	mg/L	0.003644	41.79%
Sb 206.836†	-1.3	0.00333	mg/L	0.005507	0.00333	mg/L	0.005507	165.26%
Se 196.026†	1.9	0.00718	mg/L	0.015143	0.00718	mg/L	0.015143	210.92%
Si 251.611†	-320111.5	-16.1	mg/L	0.02	-16.1	mg/L	0.02	0.13%
Sn 189.927†	-64.4	-0.0124	mg/L	0.00092	-0.0124	mg/L	0.00092	7.48%
Ti 334.940†	-3958.7	0.00090	mg/L	0.000412	0.00090	mg/L	0.000412	45.49%
Tl 190.801†	-9.3	-0.00919	mg/L	0.006580	-0.00919	mg/L	0.006580	71.57%
V 290.880†	-1065.7	-0.00416	mg/L	0.000482	-0.00416	mg/L	0.000482	11.59%
Zn 206.200†	-89.9	-0.00790	mg/L	0.000565	-0.00790	mg/L	0.000565	7.16%
K 766.490†	4198.0	2.66	mg/L	0.072	2.66	mg/L	0.072	2.71%
Na 589.592†	194961.2	24.1	mg/L	0.24	24.1	mg/L	0.24	0.98%
Sr 407.771†	174163.7	0.214	mg/L	0.0023	0.214	mg/L	0.0023	1.05%
Li 670.784†	264.2	0.00423	mg/L	0.003339	0.00423	mg/L	0.003339	78.90%
P 214.914†	15.4	0.0263	mg/L	0.00700	0.0263	mg/L	0.00700	26.61%

Sequence No.: 6 **Autosampler Location: 47**
Sample ID: L1505152602MS WG525046-04 **Date Collected: 5/27/2015 11:44:21 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505152602MS WG525046-04

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505152602MS WG525046-04

Approved: May 28, 2015

Kym H. Rhoden

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3282519.9						44414.90	1.35%
YRADIAL	207600.6						1333.13	0.64%
Ga 417.206	1372117.0						18771.97	1.37%
GaRADIAL	48809.3						373.52	0.77%
Ag 328.068†	65930.4	0.197	mg/L	0.0019	0.197	mg/L	0.0019	0.94%
Al 396.153†	14292.5	4.97	mg/L	0.045	4.97	mg/L	0.045	0.91%
As 188.979†	290.8	0.181	mg/L	0.0082	0.181	mg/L	0.0082	4.51%
Ba 233.527†	33331.2	0.576	mg/L	0.0037	0.576	mg/L	0.0037	0.64%
Be 234.861†	12826.0	0.0232	mg/L	0.00037	0.0232	mg/L	0.00037	1.61%
B 249.677†	58489.3	0.835	mg/L	0.0020	0.835	mg/L	0.0020	0.24%
Ca 227.546†	4586.2	57.7	mg/L	0.58	57.7	mg/L	0.58	1.00%
Cd 228.802†	382.2	0.0226	mg/L	0.00003	0.0226	mg/L	0.00003	0.15%
Co 228.616†	1340.8	0.0933	mg/L	0.00079	0.0933	mg/L	0.00079	0.85%
Cr 267.716†	32875.4	0.242	mg/L	0.0024	0.242	mg/L	0.0024	1.00%
Cu 327.393†	50333.0	0.236	mg/L	0.0011	0.236	mg/L	0.0011	0.47%
Fe 239.562†	11614.8	2.00	mg/L	0.029	2.00	mg/L	0.029	1.43%
Mg 279.077†	54968.4	20.3	mg/L	0.35	20.3	mg/L	0.35	1.74%
Mn 257.610†	161810.4	0.253	mg/L	0.0020	0.253	mg/L	0.0020	0.77%
Mo 202.031†	5117.3	0.487	mg/L	0.0048	0.487	mg/L	0.0048	0.99%
Ni 231.604†	7291.3	0.228	mg/L	0.0023	0.228	mg/L	0.0023	1.01%
Pb 220.353†	1080.7	0.242	mg/L	0.0010	0.242	mg/L	0.0010	0.41%
Sb 206.836†	646.9	0.561	mg/L	0.0142	0.561	mg/L	0.0142	2.54%
Se 196.026†	115.0	0.185	mg/L	0.0052	0.185	mg/L	0.0052	2.79%
Si 251.611†	-243461.8	-12.3	mg/L	0.24	-12.3	mg/L	0.24	1.97%
Sn 189.927†	2779.7	0.468	mg/L	0.0049	0.468	mg/L	0.0049	1.05%
Ti 334.940†	440893.8	0.480	mg/L	0.0038	0.480	mg/L	0.0038	0.79%
Tl 190.801†	272.2	0.229	mg/L	0.0064	0.229	mg/L	0.0064	2.78%
V 290.880†	90357.0	0.480	mg/L	0.0067	0.480	mg/L	0.0067	1.40%
Zn 206.200†	13470.0	0.467	mg/L	0.0058	0.467	mg/L	0.0058	1.25%
K 766.490†	42401.8	26.9	mg/L	0.39	26.9	mg/L	0.39	1.46%
Na 589.592†	378418.4	47.5	mg/L	0.94	47.5	mg/L	0.94	1.97%
Sr 407.771†	550452.4	0.681	mg/L	0.0134	0.681	mg/L	0.0134	1.96%
Li 670.784†	19344.9	0.504	mg/L	0.0057	0.504	mg/L	0.0057	1.13%
P 214.914†	3020.3	4.74	mg/L	0.050	4.74	mg/L	0.050	1.07%

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Sequence No.: 7
Sample ID: L1505152602SD WG525046-05
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 48
Date Collected: 5/27/2015 11:46:44 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505152602SD WG525046-05

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505152602SD WG525046-05

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3258049.6						19387.80	0.60%
YRADIAL	207517.8						3325.57	1.60%
Ga 417.206	1361996.4						8356.10	0.61%
GaRADIAL	48749.1						970.62	1.99%
Ag 328.068†	66927.9	0.200	mg/L	0.0002	0.200	mg/L	0.0002	0.11%
Al 396.153†	14342.5	4.99	mg/L	0.098	4.99	mg/L	0.098	1.97%
As 188.979†	293.0	0.183	mg/L	0.0044	0.183	mg/L	0.0044	2.39%
Ba 233.527†	34123.8	0.590	mg/L	0.0048	0.590	mg/L	0.0048	0.81%
Be 234.861†	13008.4	0.0236	mg/L	0.00031	0.0236	mg/L	0.00031	1.34%
B 249.677†	60336.1	0.861	mg/L	0.0026	0.861	mg/L	0.0026	0.31%
Ca 227.546†	4669.7	58.8	mg/L	0.74	58.8	mg/L	0.74	1.26%
Cd 228.802†	389.8	0.0231	mg/L	0.00107	0.0231	mg/L	0.00107	4.63%
Co 228.616†	1357.1	0.0944	mg/L	0.00190	0.0944	mg/L	0.00190	2.01%
Cr 267.716†	33543.2	0.247	mg/L	0.0019	0.247	mg/L	0.0019	0.78%
Cu 327.393†	51758.3	0.243	mg/L	0.0023	0.243	mg/L	0.0023	0.95%
Fe 239.562†	11847.3	2.04	mg/L	0.024	2.04	mg/L	0.024	1.16%
Mg 279.077†	55573.8	20.6	mg/L	0.25	20.6	mg/L	0.25	1.24%
Mn 257.610†	164240.3	0.257	mg/L	0.0016	0.257	mg/L	0.0016	0.63%
Mo 202.031†	5193.7	0.495	mg/L	0.0067	0.495	mg/L	0.0067	1.35%

Approved: May 28, 2015

Ni 231.604†	7393.0	0.231 mg/L	0.0036	0.231 mg/L	0.0036	1.56%
Pb 220.353†	1084.0	0.243 mg/L	0.0043	0.243 mg/L	0.0043	1.75%
Sb 206.836†	658.7	0.571 mg/L	0.0100	0.571 mg/L	0.0100	1.76%
Se 196.026†	120.2	0.193 mg/L	0.0065	0.193 mg/L	0.0065	3.35%
Si 251.611†	-243383.8	-12.3 mg/L	0.09	-12.3 mg/L	0.09	0.75%
Sn 189.927†	2848.8	0.480 mg/L	0.0080	0.480 mg/L	0.0080	1.67%
Ti 334.940†	448811.9	0.489 mg/L	0.0027	0.489 mg/L	0.0027	0.55%
Tl 190.801†	277.5	0.234 mg/L	0.0075	0.234 mg/L	0.0075	3.23%
V 290.880†	92191.6	0.489 mg/L	0.0048	0.489 mg/L	0.0048	0.98%
Zn 206.200†	13665.1	0.474 mg/L	0.0075	0.474 mg/L	0.0075	1.59%
K 766.490†	42458.3	26.9 mg/L	0.53	26.9 mg/L	0.53	1.97%
Na 589.592†	391423.9	49.1 mg/L	1.24	49.1 mg/L	1.24	2.53%
Sr 407.771†	568064.5	0.703 mg/L	0.0104	0.703 mg/L	0.0104	1.48%
Li 670.784†	19426.2	0.506 mg/L	0.0062	0.506 mg/L	0.0062	1.23%
P 214.914†	3067.7	4.81 mg/L	0.088	4.81 mg/L	0.088	1.82%

Sequence No.: 8 **Autosampler Location: 49**
Sample ID: L1505140701 **Date Collected: 5/27/2015 11:49:07 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505140701

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505140701

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3298333.8						36198.14	1.10%
YRADIAL	208790.4						3055.17	1.46%
Ga 417.206	1456202.5						15751.85	1.08%
GaRADIAL	50912.0						534.13	1.05%
Ag 328.068†	935.8	0.00489	mg/L	0.000756	0.00489	mg/L	0.000756	15.45%
Al 396.153†	140.8	0.0272	mg/L	0.03662	0.0272	mg/L	0.03662	134.81%
As 188.979†	-23.0	-0.00911	mg/L	0.000842	-0.00911	mg/L	0.000842	9.24%
Ba 233.527†	2551.7	0.0439	mg/L	0.00075	0.0439	mg/L	0.00075	1.72%
Be 234.861†	-42.9	0.00011	mg/L	0.000051	0.00011	mg/L	0.000051	46.11%
B 249.677†	10.1	0.00578	mg/L	0.001504	0.00578	mg/L	0.001504	26.01%
Ca 227.546†	5019.9	63.1	mg/L	0.77	63.1	mg/L	0.77	1.23%
Cd 228.802†	0.1	0.00030	mg/L	0.000032	0.00030	mg/L	0.000032	10.90%
Co 228.616†	5.9	-0.00022	mg/L	0.000484	-0.00022	mg/L	0.000484	224.98%
Cr 267.716†	208.5	0.00104	mg/L	0.000196	0.00104	mg/L	0.000196	18.91%
Cu 327.393†	-773.2	-0.00147	mg/L	0.000915	-0.00147	mg/L	0.000915	62.24%
Fe 239.562†	1507.5	0.263	mg/L	0.0069	0.263	mg/L	0.0069	2.63%
Mg 279.077†	22193.5	8.21	mg/L	0.276	8.21	mg/L	0.276	3.37%
Mn 257.610†	19261.2	0.0298	mg/L	0.00042	0.0298	mg/L	0.00042	1.40%
Mo 202.031†	73.2	0.00704	mg/L	0.001449	0.00704	mg/L	0.001449	20.57%
Ni 231.604†	78.5	0.00173	mg/L	0.000281	0.00173	mg/L	0.000281	16.25%
Pb 220.353†	38.1	0.00806	mg/L	0.002081	0.00806	mg/L	0.002081	25.82%
Sb 206.836†	2.4	0.00654	mg/L	0.009876	0.00654	mg/L	0.009876	150.93%
Se 196.026†	1.1	0.00579	mg/L	0.007065	0.00579	mg/L	0.007065	122.07%
Si 251.611†	-193984.5	-9.83	mg/L	0.069	-9.83	mg/L	0.069	0.70%
Sn 189.927†	-48.2	-0.00963	mg/L	0.001185	-0.00963	mg/L	0.001185	12.30%
Ti 334.940†	-4189.1	0.00125	mg/L	0.000267	0.00125	mg/L	0.000267	21.33%
Tl 190.801†	-11.4	-0.0110	mg/L	0.00451	-0.0110	mg/L	0.00451	40.96%
V 290.880†	-643.1	-0.00169	mg/L	0.000234	-0.00169	mg/L	0.000234	13.84%
Zn 206.200†	-70.3	-0.00720	mg/L	0.000281	-0.00720	mg/L	0.000281	3.90%
K 766.490†	909.2	0.600	mg/L	0.1132	0.600	mg/L	0.1132	18.88%
Na 589.592†	23237.2	2.86	mg/L	0.033	2.86	mg/L	0.033	1.16%
Sr 407.771†	127390.3	0.156	mg/L	0.0019	0.156	mg/L	0.0019	1.21%
Li 670.784†	319.3	0.00567	mg/L	0.002318	0.00567	mg/L	0.002318	40.86%
P 214.914†	10.5	0.0186	mg/L	0.01772	0.0186	mg/L	0.01772	95.38%

Sequence No.: 9 **Autosampler Location: 50**
Sample ID: L1505140701PS WG525152-01 **Date Collected: 5/27/2015 11:51:29 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**

Approved: May 28, 2015

Dilution: Sample Prep Vol:

Nebulizer Parameters: L1505140701PS WG525152-01

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505140701PS WG525152-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3267029.4						26966.37	0.83%
YRADIAL	205404.2						4802.96	2.34%
Ga 417.206	1381183.5						14031.20	1.02%
GaRADIAL	48389.1						663.88	1.37%
Ag 328.068†	66640.1	0.199	mg/L	0.0011	0.199	mg/L	0.0011	0.57%
Al 396.153†	14354.3	4.99	mg/L	0.025	4.99	mg/L	0.025	0.49%
As 188.979†	278.9	0.174	mg/L	0.0046	0.174	mg/L	0.0046	2.63%
Ba 233.527†	31775.1	0.549	mg/L	0.0046	0.549	mg/L	0.0046	0.84%
Be 234.861†	13086.6	0.0237	mg/L	0.00029	0.0237	mg/L	0.00029	1.23%
B 249.677†	57387.8	0.820	mg/L	0.0021	0.820	mg/L	0.0021	0.25%
Ca 227.546†	5060.2	63.7	mg/L	0.72	63.7	mg/L	0.72	1.13%
Cd 228.802†	397.2	0.0236	mg/L	0.00045	0.0236	mg/L	0.00045	1.89%
Co 228.616†	1380.0	0.0961	mg/L	0.00062	0.0961	mg/L	0.00062	0.64%
Cr 267.716†	33608.2	0.247	mg/L	0.0014	0.247	mg/L	0.0014	0.57%
Cu 327.393†	50605.4	0.237	mg/L	0.0019	0.237	mg/L	0.0019	0.82%
Fe 239.562†	12919.6	2.22	mg/L	0.030	2.22	mg/L	0.030	1.36%
Mg 279.077†	33110.6	12.3	mg/L	0.12	12.3	mg/L	0.12	0.94%
Mn 257.610†	171066.8	0.268	mg/L	0.0007	0.268	mg/L	0.0007	0.27%
Mo 202.031†	5216.2	0.497	mg/L	0.0045	0.497	mg/L	0.0045	0.91%
Ni 231.604†	7542.3	0.235	mg/L	0.0022	0.235	mg/L	0.0022	0.92%
Pb 220.353†	1099.7	0.247	mg/L	0.0078	0.247	mg/L	0.0078	3.17%
Sb 206.836†	655.9	0.569	mg/L	0.0026	0.569	mg/L	0.0026	0.45%
Se 196.026†	119.2	0.192	mg/L	0.0103	0.192	mg/L	0.0103	5.36%
Si 251.611†	-106684.3	-5.48	mg/L	0.209	-5.48	mg/L	0.209	3.81%
Sn 189.927†	2866.8	0.483	mg/L	0.0074	0.483	mg/L	0.0074	1.54%
Ti 334.940†	450337.3	0.491	mg/L	0.0023	0.491	mg/L	0.0023	0.47%
Tl 190.801†	281.2	0.237	mg/L	0.0031	0.237	mg/L	0.0031	1.29%
V 290.880†	93431.9	0.496	mg/L	0.0017	0.496	mg/L	0.0017	0.35%
Zn 206.200†	13885.2	0.482	mg/L	0.0054	0.482	mg/L	0.0054	1.11%
K 766.490†	39489.5	25.0	mg/L	0.28	25.0	mg/L	0.28	1.11%
Na 589.592†	218358.9	27.1	mg/L	0.28	27.1	mg/L	0.28	1.05%
Sr 407.771†	513422.3	0.635	mg/L	0.0098	0.635	mg/L	0.0098	1.54%
Li 670.784†	19688.2	0.513	mg/L	0.0038	0.513	mg/L	0.0038	0.74%
P 214.914†	3091.3	4.85	mg/L	0.050	4.85	mg/L	0.050	1.03%

Sequence No.: 10 **Autosampler Location: 51**
Sample ID: L1505140701DL WG525152-02 **Date Collected: 5/27/2015 11:53:52 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505140701DL WG525152-02

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505140701DL WG525152-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3496619.8						41219.81	1.18%
YRADIAL	215843.7						6462.10	2.99%
Ga 417.206	1591188.2						17593.36	1.11%
GaRADIAL	52408.6						1129.48	2.16%
Ag 328.068†	11.1	0.00212	mg/L	0.000828	0.00212	mg/L	0.000828	39.12%
Al 396.153†	17.3	-0.0159	mg/L	0.00780	-0.0159	mg/L	0.00780	48.96%
As 188.979†	-7.2	-0.00054	mg/L	0.004852	-0.00054	mg/L	0.004852	899.82%
Ba 233.527†	496.0	0.00833	mg/L	0.000188	0.00833	mg/L	0.000188	2.25%
Be 234.861†	-0.9	0.00023	mg/L	0.000035	0.00023	mg/L	0.000035	14.84%
B 249.677†	634.5	0.0138	mg/L	0.00180	0.0138	mg/L	0.00180	13.04%

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Ca 227.546†	966.6	12.2	mg/L	0.30	12.2	mg/L	0.30	2.47%
Cd 228.802†	4.4	0.00051	mg/L	0.000958	0.00051	mg/L	0.000958	189.07%
Co 228.616†	0.5	-0.00059	mg/L	0.000530	-0.00059	mg/L	0.000530	89.69%
Cr 267.716†	22.2	-0.00033	mg/L	0.001330	-0.00033	mg/L	0.001330	406.34%
Cu 327.393†	-557.8	-0.00050	mg/L	0.001192	-0.00050	mg/L	0.001192	239.79%
Fe 239.562†	310.1	0.0575	mg/L	0.00248	0.0575	mg/L	0.00248	4.32%
Mg 279.077†	4829.0	1.77	mg/L	0.049	1.77	mg/L	0.049	2.78%
Mn 257.610†	3726.8	0.00542	mg/L	0.000169	0.00542	mg/L	0.000169	3.12%
Mo 202.031†	15.0	0.00150	mg/L	0.000380	0.00150	mg/L	0.000380	25.38%
Ni 231.604†	3.3	-0.00063	mg/L	0.000419	-0.00063	mg/L	0.000419	66.68%
Pb 220.353†	15.4	0.00300	mg/L	0.000609	0.00300	mg/L	0.000609	20.33%
Sb 206.836†	-1.5	0.00317	mg/L	0.004287	0.00317	mg/L	0.004287	135.20%
Se 196.026†	4.6	0.0113	mg/L	0.00839	0.0113	mg/L	0.00839	74.41%
Si 251.611†	16959.6	0.696	mg/L	0.1512	0.696	mg/L	0.1512	21.73%
Sn 189.927†	-48.4	-0.00967	mg/L	0.000983	-0.00967	mg/L	0.000983	10.17%
Ti 334.940†	-787.4	0.00165	mg/L	0.000419	0.00165	mg/L	0.000419	25.43%
Tl 190.801†	-4.0	-0.00476	mg/L	0.008440	-0.00476	mg/L	0.008440	177.17%
V 290.880†	-561.7	-0.00113	mg/L	0.000463	-0.00113	mg/L	0.000463	41.00%
Zn 206.200†	-118.5	-0.00891	mg/L	0.000311	-0.00891	mg/L	0.000311	3.49%
K 766.490†	212.7	0.162	mg/L	0.0710	0.162	mg/L	0.0710	43.68%
Na 589.592†	4757.4	0.602	mg/L	0.0171	0.602	mg/L	0.0171	2.84%
Sr 407.771†	26502.6	0.0322	mg/L	0.00051	0.0322	mg/L	0.00051	1.60%
Li 670.784†	51.6	-0.00134	mg/L	0.002746	-0.00134	mg/L	0.002746	205.09%
P 214.914†	2.9	0.00669	mg/L	0.005377	0.00669	mg/L	0.005377	80.37%

Sequence No.: 11 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 5/27/2015 11:57:14 AM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	233.0 kPa	0.40 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3163612.3						21551.37	0.68%
YRADIAL	201835.7						2973.39	1.47%
Ga 417.206	1308289.3						10205.25	0.78%
GaRADIAL	46980.4						910.39	1.94%
Ag 328.068†	131921.6	0.392	mg/L	0.0043	0.392	mg/L	0.0043	1.10%
QC value within limits for Ag 328.068 Recovery = 98.06%								
Al 396.153†	28487.2	9.93	mg/L	0.162	9.93	mg/L	0.162	1.64%
QC value within limits for Al 396.153 Recovery = 99.30%								
As 188.979†	636.2	0.390	mg/L	0.0094	0.390	mg/L	0.0094	2.41%
QC value within limits for As 188.979 Recovery = 97.51%								
Ba 233.527†	56381.7	0.975	mg/L	0.0102	0.975	mg/L	0.0102	1.05%
QC value within limits for Ba 233.527 Recovery = 97.48%								
Be 234.861†	26455.1	0.0477	mg/L	0.00039	0.0477	mg/L	0.00039	0.81%
QC value within limits for Be 234.861 Recovery = 95.46%								
B 249.677†	26275.9	0.387	mg/L	0.0035	0.387	mg/L	0.0035	0.90%
QC value less than the lower limit for B 249.677 Recovery = 77.45%								
Ca 227.546†	781.6	9.94	mg/L	0.299	9.94	mg/L	0.299	3.01%
QC value within limits for Ca 227.546 Recovery = 99.45%								
Cd 228.802†	825.1	0.0486	mg/L	0.00048	0.0486	mg/L	0.00048	0.98%
QC value within limits for Cd 228.802 Recovery = 97.20%								
Co 228.616†	2839.8	0.198	mg/L	0.0023	0.198	mg/L	0.0023	1.18%
QC value within limits for Co 228.616 Recovery = 99.21%								
Cr 267.716†	65993.8	0.486	mg/L	0.0043	0.486	mg/L	0.0043	0.89%
QC value within limits for Cr 267.716 Recovery = 97.10%								
Cu 327.393†	103399.4	0.483	mg/L	0.0057	0.483	mg/L	0.0057	1.17%
QC value within limits for Cu 327.393 Recovery = 96.53%								
Fe 239.562†	22722.5	3.91	mg/L	0.040	3.91	mg/L	0.040	1.03%
QC value within limits for Fe 239.562 Recovery = 97.72%								
Mg 279.077†	26376.2	9.76	mg/L	0.076	9.76	mg/L	0.076	0.78%
QC value within limits for Mg 279.077 Recovery = 97.56%								
Mn 257.610†	311469.7	0.488	mg/L	0.0036	0.488	mg/L	0.0036	0.75%

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   QC value within limits for Mn 257.610  Recovery = 97.57%
Mo 202.031†            10314.0       0.982 mg/L        0.0129       0.982 mg/L        0.0129   1.31%
   QC value within limits for Mo 202.031  Recovery = 98.23%
Ni 231.604†            15817.6       0.494 mg/L        0.0063       0.494 mg/L        0.0063   1.27%
   QC value within limits for Ni 231.604  Recovery = 98.88%
Pb 220.353†             2216.5       0.497 mg/L        0.0095       0.497 mg/L        0.0095   1.92%
   QC value within limits for Pb 220.353  Recovery = 99.46%
Sb 206.836†             1371.9        1.19 mg/L         0.012        1.19 mg/L         0.012   1.02%
   QC value within limits for Sb 206.836  Recovery = 98.79%
Se 196.026†              257.1       0.408 mg/L        0.0220       0.408 mg/L        0.0220   5.40%
   QC value within limits for Se 196.026  Recovery = 102.06%
Si 251.611†          -172349.7       -8.76 mg/L         0.122       -8.76 mg/L         0.122   1.39%
   QC value less than the lower limit for Si 251.611  Recovery = -175.25%
Sn 189.927†             5830.8       0.984 mg/L        0.0125       0.984 mg/L        0.0125   1.27%
   QC value within limits for Sn 189.927  Recovery = 98.43%
Ti 334.940†           897905.8       0.969 mg/L        0.0069       0.969 mg/L        0.0069   0.71%
   QC value within limits for Ti 334.940  Recovery = 96.93%
Tl 190.801†              593.3       0.501 mg/L        0.0135       0.501 mg/L        0.0135   2.70%
   QC value within limits for Tl 190.801  Recovery = 100.18%
V 290.880†            182279.4       0.966 mg/L        0.0050       0.966 mg/L        0.0050   0.52%
   QC value within limits for V 290.880  Recovery = 96.63%
Zn 206.200†            28853.6        1.01 mg/L         0.013        1.01 mg/L         0.013   1.34%
   QC value within limits for Zn 206.200  Recovery = 100.61%
K 766.490†             77049.0        49.1 mg/L          0.62        49.1 mg/L          0.62   1.27%
   QC value within limits for K 766.490  Recovery = 98.17%
Na 589.592†           393964.6        49.5 mg/L          1.14        49.5 mg/L          1.14   2.30%
   QC value within limits for Na 589.592  Recovery = 98.93%
Sr 407.771†           783894.2       0.972 mg/L        0.0224       0.972 mg/L        0.0224   2.31%
   QC value within limits for Sr 407.771  Recovery = 97.22%
Li 670.784†            38117.5       0.996 mg/L        0.0123       0.996 mg/L        0.0123   1.24%
   QC value within limits for Li 670.784  Recovery = 99.63%
P 214.914†              6226.7        9.77 mg/L         0.129        9.77 mg/L         0.129   1.32%
   QC value within limits for P 214.914  Recovery = 97.66%
QC Failed.  Continue with analysis.

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Sequence No.: 12                                    Autosampler Location: 1
Sample ID: CCB                                      Date Collected: 5/27/2015 11:59:39 AM
Analyst:                                            Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

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Nebulizer Parameters: CCB
Analyte                  Back Pressure    Flow
All                      232.0 kPa        0.40 L/min

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Mean Data: CCB
                    Mean Corrected        Calib.                          Sample
Analyte                Intensity     Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029            3460519.5                                                      31353.43   0.91%
YRADIAL               213581.5                                                        350.08   0.16%
Ga 417.206           1574896.1                                                       9763.94   0.62%
GaRADIAL               51754.9                                                         88.52   0.17%
Ag 328.068†               55.2     0.00223 mg/L      0.000120     0.00223 mg/L      0.000120   5.36%
   QC value within limits for Ag 328.068  Recovery = Not calculated
Al 396.153†               -3.7     -0.0233 mg/L       0.00561     -0.0233 mg/L       0.00561  24.08%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†               -0.1     0.00356 mg/L      0.001562     0.00356 mg/L      0.001562  43.91%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†               -3.0    -0.00030 mg/L      0.000218    -0.00030 mg/L      0.000218  73.39%
   QC value within limits for Ba 233.527  Recovery = Not calculated
Be 234.861†                4.8     0.00026 mg/L      0.000041     0.00026 mg/L      0.000041  15.83%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†              -131.3     0.00281 mg/L      0.001716     0.00281 mg/L      0.001716  61.07%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†               -9.6     -0.0649 mg/L       0.12881     -0.0649 mg/L       0.12881 198.46%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†               -2.6     0.00006 mg/L      0.000392     0.00006 mg/L      0.000392 638.45%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†               -3.3    -0.00086 mg/L      0.000126    -0.00086 mg/L      0.000126  14.66%
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Lynn H. Rhoden

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   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†              70.1     0.00003 mg/L      0.000489     0.00003 mg/L      0.000489 >999.9%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†             -21.6     0.00198 mg/L      0.001674     0.00198 mg/L      0.001674  84.51%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†              -0.6     0.00409 mg/L      0.000975     0.00409 mg/L      0.000975  23.87%
   QC value within limits for Fe 239.562  Recovery = Not calculated
Mg 279.077†               5.6     -0.0125 mg/L       0.00262     -0.0125 mg/L       0.00262  21.02%
   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†             -21.4    -0.00046 mg/L      0.000034    -0.00046 mg/L      0.000034   7.33%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†               8.2     0.00086 mg/L      0.000534     0.00086 mg/L      0.000534  62.27%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†              -5.0    -0.00089 mg/L      0.000224    -0.00089 mg/L      0.000224  25.19%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†              -6.1    -0.00181 mg/L      0.000831    -0.00181 mg/L      0.000831  45.97%
   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†               1.9     0.00611 mg/L      0.004285     0.00611 mg/L      0.004285  70.18%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†               1.8     0.00702 mg/L      0.002034     0.00702 mg/L      0.002034  28.97%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†            4171.1      0.0575 mg/L       0.17011      0.0575 mg/L       0.17011 295.72%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†             -19.0    -0.00470 mg/L      0.000740    -0.00470 mg/L      0.000740  15.75%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†             344.2     0.00208 mg/L      0.000269     0.00208 mg/L      0.000269  12.94%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†              -1.1    -0.00237 mg/L      0.004172    -0.00237 mg/L      0.004172 176.10%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†             -389.4    -0.00018 mg/L      0.000483    -0.00018 mg/L      0.000483 266.80%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†               1.7    -0.00472 mg/L      0.000318    -0.00472 mg/L      0.000318   6.73%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†               66.7      0.0709 mg/L       0.08232      0.0709 mg/L       0.08232 116.12%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†              62.8      0.0283 mg/L       0.02989      0.0283 mg/L       0.02989 105.76%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†              79.2    -0.00024 mg/L      0.000035    -0.00024 mg/L      0.000035  14.66%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†             -71.6    -0.00457 mg/L      0.003160    -0.00457 mg/L      0.003160  69.17%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†               3.5     0.00763 mg/L      0.013202     0.00763 mg/L      0.013202 172.98%
   QC value within limits for P 214.914  Recovery = Not calculated
All analyte(s) passed QC.

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Sequence No.: 13                                   Autosampler Location: 52
Sample ID: L1505140702                             Date Collected: 5/27/2015 12:03:03 PM
Analyst: KHR                                       Data Type: Original
Initial Sample Wt:                                 Initial Sample Vol:
Dilution:                                          Sample Prep Vol:

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Nebulizer Parameters: L1505140702
Analyte                 Back Pressure    Flow
All                    232.0 kPa        0.40 L/min

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Mean Data: L1505140702
                   Mean Corrected         Calib.                          Sample
Analyte               Intensity     Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029            3394930.9                                                     4333.53   0.13%
YRADIAL               210913.9                                                     2311.18   1.10%
Ga 417.206           1471973.9                                                     7114.48   0.48%
GaRADIAL               49999.5                                                      965.15   1.93%
Ag 328.068†              868.7     0.00488 mg/L      0.000499     0.00488 mg/L      0.000499  10.23%
Al 396.153†             1533.1       0.516 mg/L        0.0084       0.516 mg/L        0.0084   1.62%
As 188.979†              -25.3     -0.0102 mg/L       0.00520     -0.0102 mg/L       0.00520  50.89%
Ba 233.527†             2208.5      0.0379 mg/L       0.00020      0.0379 mg/L       0.00020   0.52%
Be 234.861†               27.8     0.00011 mg/L      0.000030     0.00011 mg/L      0.000030  27.80%
B 249.677†              -619.5    -0.00092 mg/L      0.001315    -0.00092 mg/L      0.001315 143.22%
Ca 227.546†             5645.0        71.0 mg/L          0.27        71.0 mg/L          0.27   0.37%
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Approved: May 28, 2015

Kym H. Rhoden

Cd 228.802†	-1.2	0.00023	mg/L	0.000058	0.00023	mg/L	0.000058	25.53%
Co 228.616†	2.9	-0.00046	mg/L	0.000969	-0.00046	mg/L	0.000969	209.66%
Cr 267.716†	316.4	0.00182	mg/L	0.000085	0.00182	mg/L	0.000085	4.70%
Cu 327.393†	-573.8	-0.00045	mg/L	0.001070	-0.00045	mg/L	0.001070	235.96%
Fe 239.562†	4819.9	0.832	mg/L	0.0139	0.832	mg/L	0.0139	1.67%
Mg 279.077†	62449.5	23.1	mg/L	0.55	23.1	mg/L	0.55	2.37%
Mn 257.610†	116587.7	0.182	mg/L	0.0015	0.182	mg/L	0.0015	0.80%
Mo 202.031†	50.6	0.00491	mg/L	0.000584	0.00491	mg/L	0.000584	11.89%
Ni 231.604†	54.1	0.00097	mg/L	0.000456	0.00097	mg/L	0.000456	47.16%
Pb 220.353†	45.0	0.00960	mg/L	0.002952	0.00960	mg/L	0.002952	30.75%
Sb 206.836†	-1.7	0.00301	mg/L	0.003150	0.00301	mg/L	0.003150	104.72%
Se 196.026†	-0.7	0.00300	mg/L	0.005034	0.00300	mg/L	0.005034	167.85%
Si 251.611†	-295371.2	-14.9	mg/L	0.19	-14.9	mg/L	0.19	1.28%
Sn 189.927†	-53.2	-0.0105	mg/L	0.00106	-0.0105	mg/L	0.00106	10.11%
Ti 334.940†	3868.9	0.0104	mg/L	0.00010	0.0104	mg/L	0.00010	0.92%
Tl 190.801†	-18.4	-0.0169	mg/L	0.00349	-0.0169	mg/L	0.00349	20.69%
V 290.880†	-1013.1	-0.00392	mg/L	0.001262	-0.00392	mg/L	0.001262	32.17%
Zn 206.200†	292.2	0.00550	mg/L	0.000402	0.00550	mg/L	0.000402	7.31%
K 766.490†	3015.5	1.93	mg/L	0.043	1.93	mg/L	0.043	2.22%
Na 589.592†	42970.2	5.28	mg/L	0.125	5.28	mg/L	0.125	2.37%
Sr 407.771†	351268.6	0.433	mg/L	0.0063	0.433	mg/L	0.0063	1.46%
Li 670.784†	-71.0	-0.00455	mg/L	0.002242	-0.00455	mg/L	0.002242	49.24%
P 214.914†	26.8	0.0442	mg/L	0.01331	0.0442	mg/L	0.01331	30.16%

Sequence No.: 14 **Autosampler Location: 53**
Sample ID: L1505140703 **Date Collected: 5/27/2015 12:05:25 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505140703

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505140703

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3170366.3						34974.21	1.10%
YRADIAL	203337.9						3999.83	1.97%
Ga 417.206	1314956.2						8433.90	0.64%
GaRADIAL	48128.4						757.51	1.57%
Ag 328.068†	1618.6	0.0118	mg/L	0.00012	0.0118	mg/L	0.00012	1.00%
Al 396.153†	532.8	0.166	mg/L	0.0166	0.166	mg/L	0.0166	9.97%
As 188.979†	-37.0	-0.00868	mg/L	0.006246	-0.00868	mg/L	0.006246	71.95%
Ba 233.527†	1012.1	0.0168	mg/L	0.00032	0.0168	mg/L	0.00032	1.90%
Be 234.861†	1786.9	0.00056	mg/L	0.000458	0.00056	mg/L	0.000458	81.31%
B 249.677†	76.9	0.0562	mg/L	0.00484	0.0562	mg/L	0.00484	8.63%
Ca 227.546†	25998.4	327	mg/L	3.3	327	mg/L	3.3	1.02%
Cd 228.802†	6.1	0.00074	mg/L	0.000260	0.00074	mg/L	0.000260	35.10%
Co 228.616†	163.0	0.0106	mg/L	0.00052	0.0106	mg/L	0.00052	4.97%
Cr 267.716†	515.0	0.00293	mg/L	0.000068	0.00293	mg/L	0.000068	2.33%
Cu 327.393†	-1949.0	-0.00507	mg/L	0.000654	-0.00507	mg/L	0.000654	12.91%
Fe 239.562†	77304.7	13.3	mg/L	0.10	13.3	mg/L	0.10	0.76%
Mg 279.077†	246386.6	91.3	mg/L	0.36	91.3	mg/L	0.36	0.40%
Mn 257.610†	2817612.4	4.42	mg/L	0.057	4.42	mg/L	0.057	1.29%
Mo 202.031†	91.9	0.00951	mg/L	0.001115	0.00951	mg/L	0.001115	11.72%
Ni 231.604†	310.3	0.00899	mg/L	0.000242	0.00899	mg/L	0.000242	2.69%
Pb 220.353†	46.1	0.00681	mg/L	0.003285	0.00681	mg/L	0.003285	48.24%
Sb 206.836†	-6.4	-0.00065	mg/L	0.005714	-0.00065	mg/L	0.005714	874.76%
Se 196.026†	-16.2	-0.0238	mg/L	0.00808	-0.0238	mg/L	0.00808	33.97%
Si 251.611†	-165562.8	-8.41	mg/L	0.148	-8.41	mg/L	0.148	1.76%
Sn 189.927†	-65.0	-0.0125	mg/L	0.00087	-0.0125	mg/L	0.00087	6.94%
Ti 334.940†	-21190.3	-0.00014	mg/L	0.000555	-0.00014	mg/L	0.000555	404.60%
Tl 190.801†	-40.6	-0.0397	mg/L	0.00823	-0.0397	mg/L	0.00823	20.71%
V 290.880†	-2752.3	-0.0125	mg/L	0.00165	-0.0125	mg/L	0.00165	13.23%
Zn 206.200†	171.7	0.00246	mg/L	0.000417	0.00246	mg/L	0.000417	16.93%
K 766.490†	3956.9	2.51	mg/L	0.017	2.51	mg/L	0.017	0.70%
Na 589.592†	169773.3	21.0	mg/L	0.11	21.0	mg/L	0.11	0.52%
Sr 407.771†	2104406.0	2.60	mg/L	0.018	2.60	mg/L	0.018	0.71%

Approved: May 28, 2015

Li 670.784†	1192.6	0.0286	mg/L	0.00168	0.0286	mg/L	0.00168	5.89%
P 214.914†	12.6	0.0219	mg/L	0.00504	0.0219	mg/L	0.00504	23.04%

Sequence No.: 15 **Autosampler Location: 54**
Sample ID: L1505140704 **Date Collected: 5/27/2015 12:07:49 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505140704

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505140704

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3304787.3						18509.31	0.56%
YRADIAL	209740.8						3461.27	1.65%
Ga 417.206	1430002.4						8856.77	0.62%
GaRADIAL	50612.4						951.40	1.88%
Ag 328.068†	1497.1	0.00634	mg/L	0.000497	0.00634	mg/L	0.000497	7.85%
Al 396.153†	35.0	-0.00999	mg/L	0.002678	-0.00999	mg/L	0.002678	26.81%
As 188.979†	-34.8	-0.0155	mg/L	0.00354	-0.0155	mg/L	0.00354	22.87%
Ba 233.527†	2233.9	0.0384	mg/L	0.00008	0.0384	mg/L	0.00008	0.22%
Be 234.861†	-91.8	0.00008	mg/L	0.000042	0.00008	mg/L	0.000042	52.58%
B 249.677†	-555.5	-0.00309	mg/L	0.000641	-0.00309	mg/L	0.000641	20.71%
Ca 227.546†	8388.5	105	mg/L	0.1	105	mg/L	0.1	0.11%
Cd 228.802†	-1.9	0.00021	mg/L	0.000481	0.00021	mg/L	0.000481	228.31%
Co 228.616†	1.3	-0.00052	mg/L	0.000896	-0.00052	mg/L	0.000896	172.04%
Cr 267.716†	268.9	0.00148	mg/L	0.000114	0.00148	mg/L	0.000114	7.69%
Cu 327.393†	-825.6	-0.00175	mg/L	0.001473	-0.00175	mg/L	0.001473	83.96%
Fe 239.562†	100.4	0.0208	mg/L	0.00167	0.0208	mg/L	0.00167	7.99%
Mg 279.077†	82432.2	30.5	mg/L	0.11	30.5	mg/L	0.11	0.36%
Mn 257.610†	1753.0	0.00232	mg/L	0.000048	0.00232	mg/L	0.000048	2.08%
Mo 202.031†	79.0	0.00759	mg/L	0.000765	0.00759	mg/L	0.000765	10.09%
Ni 231.604†	-8.6	-0.00100	mg/L	0.000424	-0.00100	mg/L	0.000424	42.49%
Pb 220.353†	39.1	0.00831	mg/L	0.002723	0.00831	mg/L	0.002723	32.76%
Sb 206.836†	-4.4	0.00062	mg/L	0.000496	0.00062	mg/L	0.000496	80.04%
Se 196.026†	-4.7	-0.00315	mg/L	0.005764	-0.00315	mg/L	0.005764	182.84%
Si 251.611†	-172193.7	-8.74	mg/L	0.049	-8.74	mg/L	0.049	0.56%
Sn 189.927†	-74.3	-0.0140	mg/L	0.00163	-0.0140	mg/L	0.00163	11.58%
Ti 334.940†	-7385.7	0.00053	mg/L	0.000360	0.00053	mg/L	0.000360	68.21%
Tl 190.801†	-18.6	-0.0170	mg/L	0.00247	-0.0170	mg/L	0.00247	14.59%
V 290.880†	-1871.3	-0.00881	mg/L	0.001165	-0.00881	mg/L	0.001165	13.23%
Zn 206.200†	-152.8	-0.0101	mg/L	0.00041	-0.0101	mg/L	0.00041	4.03%
K 766.490†	1649.2	1.07	mg/L	0.069	1.07	mg/L	0.069	6.51%
Na 589.592†	39050.6	4.80	mg/L	0.020	4.80	mg/L	0.020	0.41%
Sr 407.771†	442303.6	0.545	mg/L	0.0010	0.545	mg/L	0.0010	0.18%
Li 670.784†	694.1	0.0155	mg/L	0.00297	0.0155	mg/L	0.00297	19.18%
P 214.914†	18.3	0.0309	mg/L	0.01173	0.0309	mg/L	0.01173	37.96%

Sequence No.: 16 **Autosampler Location: 55**
Sample ID: L1505140705 **Date Collected: 5/27/2015 12:11:09 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505140705

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505140705

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3391653.8						11938.17	0.35%
YRADIAL	210257.1						3124.36	1.49%

Approved: May 28, 2015

Kym H. Rhoden

Ga 417.206	1491001.8							3066.45	0.21%
GaRADIAL	49918.7							437.36	0.88%
Ag 328.068†	110.9	0.00246	mg/L	0.000356	0.00246	mg/L	0.000356		14.49%
Al 396.153†	534.6	0.165	mg/L	0.0271	0.165	mg/L	0.0271		16.39%
As 188.979†	-12.0	-0.00333	mg/L	0.001112	-0.00333	mg/L	0.001112		33.45%
Ba 233.527†	2249.5	0.0386	mg/L	0.00019	0.0386	mg/L	0.00019		0.49%
Be 234.861†	-58.9	0.00010	mg/L	0.000097	0.00010	mg/L	0.000097		100.29%
B 249.677†	-559.7	-0.00254	mg/L	0.000420	-0.00254	mg/L	0.000420		16.56%
Ca 227.546†	1586.2	20.0	mg/L	0.17	20.0	mg/L	0.17		0.87%
Cd 228.802†	2.5	0.00041	mg/L	0.000283	0.00041	mg/L	0.000283		69.13%
Co 228.616†	5.1	-0.00029	mg/L	0.000094	-0.00029	mg/L	0.000094		32.97%
Cr 267.716†	163.0	0.00071	mg/L	0.000175	0.00071	mg/L	0.000175		24.85%
Cu 327.393†	-447.4	0.00004	mg/L	0.000331	0.00004	mg/L	0.000331		911.81%
Fe 239.562†	1058.8	0.186	mg/L	0.0119	0.186	mg/L	0.0119		6.42%
Mg 279.077†	12671.9	4.68	mg/L	0.212	4.68	mg/L	0.212		4.54%
Mn 257.610†	4524.5	0.00667	mg/L	0.000026	0.00667	mg/L	0.000026		0.40%
Mo 202.031†	37.9	0.00368	mg/L	0.000632	0.00368	mg/L	0.000632		17.15%
Ni 231.604†	37.2	0.00043	mg/L	0.000274	0.00043	mg/L	0.000274		63.20%
Pb 220.353†	7.0	0.00115	mg/L	0.003458	0.00115	mg/L	0.003458		300.52%
Sb 206.836†	3.8	0.00769	mg/L	0.001304	0.00769	mg/L	0.001304		16.95%
Se 196.026†	4.5	0.0112	mg/L	0.00794	0.0112	mg/L	0.00794		71.03%
Si 251.611†	-242304.2	-12.2	mg/L	0.12	-12.2	mg/L	0.12		0.96%
Sn 189.927†	-47.5	-0.00951	mg/L	0.002232	-0.00951	mg/L	0.002232		23.47%
Ti 334.940†	1839.0	0.00498	mg/L	0.000459	0.00498	mg/L	0.000459		9.22%
Tl 190.801†	-12.3	-0.0117	mg/L	0.00210	-0.0117	mg/L	0.00210		17.98%
V 290.880†	-516.0	-0.00094	mg/L	0.000710	-0.00094	mg/L	0.000710		75.64%
Zn 206.200†	166.5	0.00105	mg/L	0.000459	0.00105	mg/L	0.000459		43.89%
K 766.490†	2024.9	1.30	mg/L	0.062	1.30	mg/L	0.062		4.80%
Na 589.592†	47396.2	5.83	mg/L	0.045	5.83	mg/L	0.045		0.78%
Sr 407.771†	63540.0	0.0779	mg/L	0.00070	0.0779	mg/L	0.00070		0.90%
Li 670.784†	15.6	-0.00228	mg/L	0.001985	-0.00228	mg/L	0.001985		86.97%
P 214.914†	38.7	0.0629	mg/L	0.02000	0.0629	mg/L	0.02000		31.81%

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Sequence No.: 17 **Autosampler Location: 56**
Sample ID: L1505140901 **Date Collected: 5/27/2015 12:13:31 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505140901

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505140901

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3290939.6						25804.86	0.78%
YRADIAL	208421.6						2302.55	1.10%
Ga 417.206	1424513.9						9916.50	0.70%
GaRADIAL	50149.4						434.99	0.87%
Ag 328.068†	1049.5	0.00503	mg/L	0.000446	0.00503	mg/L	0.000446	8.86%
Al 396.153†	73.5	0.00352	mg/L	0.006597	0.00352	mg/L	0.006597	187.48%
As 188.979†	-26.8	-0.0112	mg/L	0.00685	-0.0112	mg/L	0.00685	61.26%
Ba 233.527†	3193.8	0.0550	mg/L	0.00036	0.0550	mg/L	0.00036	0.65%
Be 234.861†	-104.1	0.00006	mg/L	0.000029	0.00006	mg/L	0.000029	51.53%
B 249.677†	-839.1	-0.00708	mg/L	0.000603	-0.00708	mg/L	0.000603	8.51%
Ca 227.546†	6215.4	78.1	mg/L	0.43	78.1	mg/L	0.43	0.56%
Cd 228.802†	8.0	0.00078	mg/L	0.000198	0.00078	mg/L	0.000198	25.35%
Co 228.616†	0.8	-0.00057	mg/L	0.000806	-0.00057	mg/L	0.000806	141.65%
Cr 267.716†	274.5	0.00153	mg/L	0.000155	0.00153	mg/L	0.000155	10.17%
Cu 327.393†	-863.2	-0.00192	mg/L	0.002006	-0.00192	mg/L	0.002006	104.28%
Fe 239.562†	129.9	0.0260	mg/L	0.00057	0.0260	mg/L	0.00057	2.21%
Mg 279.077†	74707.1	27.7	mg/L	0.41	27.7	mg/L	0.41	1.47%
Mn 257.610†	906.4	0.00100	mg/L	0.000039	0.00100	mg/L	0.000039	3.89%
Mo 202.031†	73.4	0.00705	mg/L	0.001195	0.00705	mg/L	0.001195	16.95%
Ni 231.604†	-25.3	-0.00152	mg/L	0.001039	-0.00152	mg/L	0.001039	68.42%
Pb 220.353†	33.8	0.00713	mg/L	0.001290	0.00713	mg/L	0.001290	18.09%
Sb 206.836†	-1.1	0.00349	mg/L	0.004789	0.00349	mg/L	0.004789	137.14%
Se 196.026†	0.5	0.00494	mg/L	0.018977	0.00494	mg/L	0.018977	384.46%

Approved: May 28, 2015

Si 251.611†	-186019.5	-9.43	mg/L	0.023	-9.43	mg/L	0.023	0.24%
Sn 189.927†	-62.9	-0.0121	mg/L	0.00099	-0.0121	mg/L	0.00099	8.19%
Ti 334.940†	-5240.3	0.00109	mg/L	0.000159	0.00109	mg/L	0.000159	14.65%
Tl 190.801†	-25.0	-0.0222	mg/L	0.00249	-0.0222	mg/L	0.00249	11.18%
V 290.880†	-1561.7	-0.00710	mg/L	0.001155	-0.00710	mg/L	0.001155	16.27%
Zn 206.200†	-75.6	-0.00740	mg/L	0.000462	-0.00740	mg/L	0.000462	6.24%
K 766.490†	894.1	0.589	mg/L	0.0727	0.589	mg/L	0.0727	12.34%
Na 589.592†	36859.7	4.53	mg/L	0.077	4.53	mg/L	0.077	1.70%
Sr 407.771†	447880.1	0.553	mg/L	0.0107	0.553	mg/L	0.0107	1.93%
Li 670.784†	522.6	0.0110	mg/L	0.00298	0.0110	mg/L	0.00298	27.07%
P 214.914†	-1.7	-0.00057	mg/L	0.007358	-0.00057	mg/L	0.007358	>999.9%

Sequence No.: 18 **Autosampler Location: 57**
Sample ID: L1505141301 **Date Collected: 5/27/2015 12:16:51 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505141301

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505141301

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3355828.0						10773.87	0.32%
YRADIAL	207024.2						855.22	0.41%
Ga 417.206	1475815.7						12364.87	0.84%
GaRADIAL	50522.2						166.48	0.33%
Ag 328.068†	724.5	0.00420	mg/L	0.000673	0.00420	mg/L	0.000673	16.04%
Al 396.153†	309.8	0.0865	mg/L	0.00607	0.0865	mg/L	0.00607	7.01%
As 188.979†	-25.8	-0.0111	mg/L	0.00340	-0.0111	mg/L	0.00340	30.52%
Ba 233.527†	4750.0	0.0819	mg/L	0.00025	0.0819	mg/L	0.00025	0.30%
Be 234.861†	-110.7	0.00002	mg/L	0.000052	0.00002	mg/L	0.000052	215.61%
B 249.677†	-1208.1	-0.0120	mg/L	0.00094	-0.0120	mg/L	0.00094	7.81%
Ca 227.546†	3979.7	50.1	mg/L	0.43	50.1	mg/L	0.43	0.87%
Cd 228.802†	-0.6	0.00026	mg/L	0.000598	0.00026	mg/L	0.000598	229.23%
Co 228.616†	-10.6	-0.00139	mg/L	0.000990	-0.00139	mg/L	0.000990	70.97%
Cr 267.716†	206.1	0.00103	mg/L	0.000300	0.00103	mg/L	0.000300	29.27%
Cu 327.393†	373.9	0.00382	mg/L	0.001699	0.00382	mg/L	0.001699	44.42%
Fe 239.562†	575.2	0.103	mg/L	0.0016	0.103	mg/L	0.0016	1.55%
Mg 279.077†	20927.5	7.74	mg/L	0.132	7.74	mg/L	0.132	1.71%
Mn 257.610†	3453.1	0.00499	mg/L	0.000068	0.00499	mg/L	0.000068	1.36%
Mo 202.031†	54.3	0.00524	mg/L	0.001427	0.00524	mg/L	0.001427	27.23%
Ni 231.604†	2.3	-0.00066	mg/L	0.000388	-0.00066	mg/L	0.000388	59.06%
Pb 220.353†	21.0	0.00428	mg/L	0.002184	0.00428	mg/L	0.002184	51.08%
Sb 206.836†	9.6	0.0127	mg/L	0.01445	0.0127	mg/L	0.01445	113.80%
Se 196.026†	0.5	0.00499	mg/L	0.004329	0.00499	mg/L	0.004329	86.76%
Si 251.611†	-223044.6	-11.3	mg/L	0.22	-11.3	mg/L	0.22	1.91%
Sn 189.927†	-60.9	-0.0118	mg/L	0.00138	-0.0118	mg/L	0.00138	11.75%
Ti 334.940†	-1526.1	0.00328	mg/L	0.000450	0.00328	mg/L	0.000450	13.71%
Tl 190.801†	-11.8	-0.0112	mg/L	0.00499	-0.0112	mg/L	0.00499	44.43%
V 290.880†	-686.7	-0.00194	mg/L	0.000457	-0.00194	mg/L	0.000457	23.59%
Zn 206.200†	832.8	0.0243	mg/L	0.00030	0.0243	mg/L	0.00030	1.22%
K 766.490†	1057.9	0.695	mg/L	0.0552	0.695	mg/L	0.0552	7.94%
Na 589.592†	17159.4	2.12	mg/L	0.047	2.12	mg/L	0.047	2.23%
Sr 407.771†	135718.2	0.166	mg/L	0.0017	0.166	mg/L	0.0017	1.02%
Li 670.784†	102.7	0.00000	mg/L	0.003680	0.00000	mg/L	0.003680	>999.9%
P 214.914†	0.8	0.00335	mg/L	0.008829	0.00335	mg/L	0.008829	263.34%

Sequence No.: 19 **Autosampler Location: 58**
Sample ID: L1505141302 **Date Collected: 5/27/2015 12:20:11 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505141302

Approved: May 28, 2015
Kym H. Rhoden

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505141302

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3325329.5						33370.04	1.00%
YRADIAL	208176.7						4285.40	2.06%
Ga 417.206	1444143.2						19218.04	1.33%
GaRADIAL	50340.6						797.94	1.59%
Ag 328.068†	786.3	0.00436	mg/L	0.000608	0.00436	mg/L	0.000608	13.96%
Al 396.153†	163.7	0.0352	mg/L	0.00455	0.0352	mg/L	0.00455	12.92%
As 188.979†	-22.9	-0.00922	mg/L	0.004380	-0.00922	mg/L	0.004380	47.51%
Ba 233.527†	3426.8	0.0590	mg/L	0.00069	0.0590	mg/L	0.00069	1.17%
Be 234.861†	-71.7	0.00011	mg/L	0.000014	0.00011	mg/L	0.000014	12.64%
B 249.677†	-314.8	0.00039	mg/L	0.001598	0.00039	mg/L	0.001598	408.61%
Ca 227.546†	4560.2	57.3	mg/L	0.59	57.3	mg/L	0.59	1.04%
Cd 228.802†	-0.6	0.00025	mg/L	0.000126	0.00025	mg/L	0.000126	49.49%
Co 228.616†	-7.3	-0.00115	mg/L	0.000446	-0.00115	mg/L	0.000446	38.81%
Cr 267.716†	182.0	0.00085	mg/L	0.000065	0.00085	mg/L	0.000065	7.68%
Cu 327.393†	-580.3	-0.00060	mg/L	0.000870	-0.00060	mg/L	0.000870	143.97%
Fe 239.562†	248.9	0.0468	mg/L	0.00060	0.0468	mg/L	0.00060	1.29%
Mg 279.077†	21123.6	7.81	mg/L	0.126	7.81	mg/L	0.126	1.61%
Mn 257.610†	2998.7	0.00428	mg/L	0.000056	0.00428	mg/L	0.000056	1.31%
Mo 202.031†	54.7	0.00528	mg/L	0.000894	0.00528	mg/L	0.000894	16.94%
Ni 231.604†	2.4	-0.00065	mg/L	0.000386	-0.00065	mg/L	0.000386	59.18%
Pb 220.353†	16.9	0.00335	mg/L	0.003684	0.00335	mg/L	0.003684	110.12%
Sb 206.836†	-2.5	0.00228	mg/L	0.001414	0.00228	mg/L	0.001414	62.14%
Se 196.026†	0.5	0.00489	mg/L	0.007612	0.00489	mg/L	0.007612	155.53%
Si 251.611†	-220556.6	-11.2	mg/L	0.13	-11.2	mg/L	0.13	1.19%
Sn 189.927†	-64.8	-0.0124	mg/L	0.00056	-0.0124	mg/L	0.00056	4.48%
Ti 334.940†	-2130.0	0.00310	mg/L	0.001172	0.00310	mg/L	0.001172	37.78%
Tl 190.801†	-24.5	-0.0218	mg/L	0.00200	-0.0218	mg/L	0.00200	9.18%
V 290.880†	-693.4	-0.00198	mg/L	0.000565	-0.00198	mg/L	0.000565	28.49%
Zn 206.200†	-145.4	-0.00984	mg/L	0.000405	-0.00984	mg/L	0.000405	4.12%
K 766.490†	1730.7	1.12	mg/L	0.051	1.12	mg/L	0.051	4.61%
Na 589.592†	51048.3	6.28	mg/L	0.020	6.28	mg/L	0.020	0.32%
Sr 407.771†	120436.7	0.147	mg/L	0.0012	0.147	mg/L	0.0012	0.83%
Li 670.784†	128.5	0.00067	mg/L	0.002453	0.00067	mg/L	0.002453	363.64%
P 214.914†	68.6	0.110	mg/L	0.0091	0.110	mg/L	0.0091	8.34%

Sequence No.: 20
Sample ID: L1505145701
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 59
Date Collected: 5/27/2015 12:23:31 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505145701

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505145701

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3185741.7						11920.79	0.37%
YRADIAL	206874.9						1326.49	0.64%
Ga 417.206	1277184.1						6843.39	0.54%
GaRADIAL	48017.7						528.36	1.10%
Ag 328.068†	987.0	0.00504	mg/L	0.001469	0.00504	mg/L	0.001469	29.18%
Al 396.153†	118.0	0.0191	mg/L	0.02270	0.0191	mg/L	0.02270	118.89%
As 188.979†	-14.5	-0.00407	mg/L	0.001051	-0.00407	mg/L	0.001051	25.84%
Ba 233.527†	6241.1	0.108	mg/L	0.0010	0.108	mg/L	0.0010	0.94%
Be 234.861†	-46.3	0.00010	mg/L	0.000091	0.00010	mg/L	0.000091	88.15%
B 249.677†	17880.5	0.257	mg/L	0.0087	0.257	mg/L	0.0087	3.38%
Ca 227.546†	4360.8	54.8	mg/L	0.40	54.8	mg/L	0.40	0.73%
Cd 228.802†	6.9	0.00068	mg/L	0.000107	0.00068	mg/L	0.000107	15.61%
Co 228.616†	7.7	-0.00011	mg/L	0.001095	-0.00011	mg/L	0.001095	955.58%
Cr 267.716†	293.1	0.00166	mg/L	0.000205	0.00166	mg/L	0.000205	12.34%

Approved: May 28, 2015

Cu 327.393†	-763.7	-0.00141	mg/L	0.000880	-0.00141	mg/L	0.000880	62.30%
Fe 239.562†	1687.9	0.294	mg/L	0.0089	0.294	mg/L	0.0089	3.03%
Mg 279.077†	77554.9	28.7	mg/L	0.06	28.7	mg/L	0.06	0.20%
Mn 257.610†	61869.7	0.0965	mg/L	0.00260	0.0965	mg/L	0.00260	2.70%
Mo 202.031†	96.1	0.00924	mg/L	0.002441	0.00924	mg/L	0.002441	26.42%
Ni 231.604†	-16.9	-0.00126	mg/L	0.000279	-0.00126	mg/L	0.000279	22.20%
Pb 220.353†	15.9	0.00306	mg/L	0.000639	0.00306	mg/L	0.000639	20.87%
Sb 206.836†	-2.1	0.00264	mg/L	0.003601	0.00264	mg/L	0.003601	136.30%
Se 196.026†	-15.8	-0.0207	mg/L	0.01443	-0.0207	mg/L	0.01443	69.81%
Si 251.611†	-22077.7	-1.25	mg/L	0.255	-1.25	mg/L	0.255	20.39%
Sn 189.927†	-47.3	-0.00949	mg/L	0.002592	-0.00949	mg/L	0.002592	27.32%
Ti 334.940†	-1100.6	0.00405	mg/L	0.000426	0.00405	mg/L	0.000426	10.52%
Tl 190.801†	-15.9	-0.0147	mg/L	0.00698	-0.0147	mg/L	0.00698	47.42%
V 290.880†	-103.6	0.00064	mg/L	0.000354	0.00064	mg/L	0.000354	55.75%
Zn 206.200†	550.2	0.0144	mg/L	0.00029	0.0144	mg/L	0.00029	2.00%
K 766.490†	1552.6	0.699	mg/L	0.0690	0.699	mg/L	0.0690	9.87%
Na 589.592†	2106392.5	310	mg/L	3.3	310	mg/L	3.3	1.07%
Sr 407.771†	200488.3	0.247	mg/L	0.0012	0.247	mg/L	0.0012	0.47%
Li 670.784†	397.0	0.00771	mg/L	0.002329	0.00771	mg/L	0.002329	30.21%
P 214.914†	28.5	0.0468	mg/L	0.00614	0.0468	mg/L	0.00614	13.11%

Sequence No.: 21
Sample ID: L1505146001
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 60
Date Collected: 5/27/2015 12:25:54 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505146001

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505146001

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3061875.4						9089.75	0.30%
YRADIAL	192652.1						3001.40	1.56%
Ga 417.206	1198885.7						7245.19	0.60%
GaRADIAL	45715.9						598.54	1.31%
Ag 328.068†	1697.6	0.00670	mg/L	0.000903	0.00670	mg/L	0.000903	13.48%
Al 396.153†	343.7	0.0979	mg/L	0.00395	0.0979	mg/L	0.00395	4.03%
As 188.979†	-15.6	-0.00287	mg/L	0.009663	-0.00287	mg/L	0.009663	337.23%
Ba 233.527†	902.6	0.0154	mg/L	0.00042	0.0154	mg/L	0.00042	2.75%
Be 234.861†	-143.4	-0.00003	mg/L	0.000054	-0.00003	mg/L	0.000054	181.03%
B 249.677†	46148.5	0.655	mg/L	0.0040	0.655	mg/L	0.0040	0.60%
Ca 227.546†	11560.0	145	mg/L	0.9	145	mg/L	0.9	0.62%
Cd 228.802†	-0.6	0.00023	mg/L	0.000512	0.00023	mg/L	0.000512	219.87%
Co 228.616†	1.1	-0.00052	mg/L	0.001244	-0.00052	mg/L	0.001244	241.13%
Cr 267.716†	810.5	0.00547	mg/L	0.000055	0.00547	mg/L	0.000055	1.01%
Cu 327.393†	-1455.0	-0.00466	mg/L	0.001819	-0.00466	mg/L	0.001819	39.02%
Fe 239.562†	533.3	0.0942	mg/L	0.00159	0.0942	mg/L	0.00159	1.68%
Mg 279.077†	221424.9	82.0	mg/L	0.56	82.0	mg/L	0.56	0.69%
Mn 257.610†	1743.3	0.00231	mg/L	0.000025	0.00231	mg/L	0.000025	1.07%
Mo 202.031†	167.6	0.0160	mg/L	0.00083	0.0160	mg/L	0.00083	5.15%
Ni 231.604†	-0.6	-0.00074	mg/L	0.001351	-0.00074	mg/L	0.001351	181.97%
Pb 220.353†	40.2	0.00857	mg/L	0.001375	0.00857	mg/L	0.001375	16.04%
Sb 206.836†	-2.7	0.00210	mg/L	0.010007	0.00210	mg/L	0.010007	475.92%
Se 196.026†	7.2	0.0155	mg/L	0.02492	0.0155	mg/L	0.02492	161.08%
Si 251.611†	-44231.5	-2.36	mg/L	0.174	-2.36	mg/L	0.174	7.40%
Sn 189.927†	-78.2	-0.0147	mg/L	0.00167	-0.0147	mg/L	0.00167	11.34%
Ti 334.940†	-6323.7	0.00423	mg/L	0.000293	0.00423	mg/L	0.000293	6.92%
Tl 190.801†	-37.6	-0.0327	mg/L	0.00686	-0.0327	mg/L	0.00686	21.01%
V 290.880†	-1340.7	-0.00733	mg/L	0.001397	-0.00733	mg/L	0.001397	19.05%
Zn 206.200†	-135.7	-0.00946	mg/L	0.000357	-0.00946	mg/L	0.000357	3.77%
K 766.490†	4707.8	2.09	mg/L	0.070	2.09	mg/L	0.070	3.37%
Na 589.592†	3885115.1	913	mg/L	0.0	913	mg/L	0.0	0.00%
Sr 407.771†	1534803.8	1.90	mg/L	0.056	1.90	mg/L	0.056	2.94%
Li 670.784†	2174.9	0.0543	mg/L	0.00419	0.0543	mg/L	0.00419	7.72%
P 214.914†	12.8	0.0222	mg/L	0.01711	0.0222	mg/L	0.01711	77.20%

Approved: May 28, 2015

Sequence No.: 22 **Autosampler Location: 61**
Sample ID: L1505146002 **Date Collected: 5/27/2015 12:29:17 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505146002

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505146002

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3057849.0						26882.84	0.88%
YRADIAL	198422.7						1989.37	1.00%
Ga 417.206	1205757.7						17211.20	1.43%
GaRADIAL	47227.4						199.73	0.42%
Ag 328.068†	1775.7	0.00702	mg/L	0.000624	0.00702	mg/L	0.000624	8.88%
Al 396.153†	5.2	-0.0206	mg/L	0.00284	-0.0206	mg/L	0.00284	13.84%
As 188.979†	-21.2	-0.00681	mg/L	0.004846	-0.00681	mg/L	0.004846	71.15%
Ba 233.527†	1253.5	0.0214	mg/L	0.00039	0.0214	mg/L	0.00039	1.82%
Be 234.861†	-136.5	0.00000	mg/L	0.000032	0.00000	mg/L	0.000032	>999.9%
B 249.677†	31968.3	0.455	mg/L	0.0012	0.455	mg/L	0.0012	0.26%
Ca 227.546†	9630.1	121	mg/L	1.0	121	mg/L	1.0	0.82%
Cd 228.802†	7.6	0.00074	mg/L	0.000324	0.00074	mg/L	0.000324	43.79%
Co 228.616†	0.1	-0.00059	mg/L	0.000312	-0.00059	mg/L	0.000312	52.78%
Cr 267.716†	864.1	0.00587	mg/L	0.000254	0.00587	mg/L	0.000254	4.33%
Cu 327.393†	-1324.1	-0.00406	mg/L	0.002561	-0.00406	mg/L	0.002561	63.08%
Fe 239.562†	84.6	0.0173	mg/L	0.00126	0.0173	mg/L	0.00126	7.26%
Mg 279.077†	188258.8	69.7	mg/L	0.98	69.7	mg/L	0.98	1.40%
Mn 257.610†	543.2	0.00043	mg/L	0.000037	0.00043	mg/L	0.000037	8.67%
Mo 202.031†	102.6	0.00985	mg/L	0.000269	0.00985	mg/L	0.000269	2.73%
Ni 231.604†	45.9	0.00071	mg/L	0.000358	0.00071	mg/L	0.000358	50.42%
Pb 220.353†	38.3	0.00814	mg/L	0.004965	0.00814	mg/L	0.004965	60.99%
Sb 206.836†	-2.9	0.00194	mg/L	0.007362	0.00194	mg/L	0.007362	379.24%
Se 196.026†	9.6	0.0192	mg/L	0.00515	0.0192	mg/L	0.00515	26.87%
Si 251.611†	8881.5	0.292	mg/L	0.1309	0.292	mg/L	0.1309	44.77%
Sn 189.927†	-61.6	-0.0119	mg/L	0.00167	-0.0119	mg/L	0.00167	14.04%
Ti 334.940†	-7370.9	0.00154	mg/L	0.000100	0.00154	mg/L	0.000100	6.48%
Tl 190.801†	-26.3	-0.0233	mg/L	0.00666	-0.0233	mg/L	0.00666	28.58%
V 290.880†	1320.1	0.00705	mg/L	0.001196	0.00705	mg/L	0.001196	16.97%
Zn 206.200†	-153.3	-0.0101	mg/L	0.00041	-0.0101	mg/L	0.00041	4.08%
K 766.490†	4983.2	2.63	mg/L	0.067	2.63	mg/L	0.067	2.53%
Na 589.592†	3132230.0	546	mg/L	14.7	546	mg/L	14.7	2.69%
Sr 407.771†	1114189.2	1.38	mg/L	0.009	1.38	mg/L	0.009	0.68%
Li 670.784†	1615.0	0.0396	mg/L	0.00067	0.0396	mg/L	0.00067	1.70%
P 214.914†	6.7	0.0127	mg/L	0.00910	0.0127	mg/L	0.00910	71.51%

Sequence No.: 23 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 5/27/2015 12:32:40 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3265796.0						45627.09	1.40%
YRADIAL	206682.9						4556.49	2.20%
Ga 417.206	1343114.5						15324.38	1.14%
GaRADIAL	48275.2						1194.15	2.47%
Ag 328.068†	133993.3	0.398	mg/L	0.0021	0.398	mg/L	0.0021	0.53%

Approved: May 28, 2015

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   QC value within limits for Ag 328.068  Recovery = 99.59%
Al 396.153†            28137.6        9.81 mg/L         0.089        9.81 mg/L         0.089   0.91%
   QC value within limits for Al 396.153  Recovery = 98.08%
As 188.979†              627.2       0.385 mg/L        0.0076       0.385 mg/L        0.0076   1.99%
   QC value within limits for As 188.979  Recovery = 96.17%
Ba 233.527†            56762.7       0.981 mg/L        0.0114       0.981 mg/L        0.0114   1.16%
   QC value within limits for Ba 233.527  Recovery = 98.14%
Be 234.861†            26739.5      0.0482 mg/L       0.00026      0.0482 mg/L       0.00026   0.54%
   QC value within limits for Be 234.861  Recovery = 96.46%
B 249.677†             26948.3       0.397 mg/L        0.0051       0.397 mg/L        0.0051   1.28%
   QC value less than the lower limit for B 249.677  Recovery = 79.38%
Ca 227.546†              764.6        9.73 mg/L         0.128        9.73 mg/L         0.128   1.31%
   QC value within limits for Ca 227.546  Recovery = 97.30%
Cd 228.802†              806.2      0.0475 mg/L       0.00044      0.0475 mg/L       0.00044   0.93%
   QC value within limits for Cd 228.802  Recovery = 94.95%
Co 228.616†             2780.7       0.194 mg/L        0.0029       0.194 mg/L        0.0029   1.52%
   QC value within limits for Co 228.616  Recovery = 97.09%
Cr 267.716†            66518.0       0.489 mg/L        0.0025       0.489 mg/L        0.0025   0.51%
   QC value within limits for Cr 267.716  Recovery = 97.88%
Cu 327.393†           105164.7       0.491 mg/L        0.0022       0.491 mg/L        0.0022   0.45%
   QC value within limits for Cu 327.393  Recovery = 98.17%
Fe 239.562†            22914.9        3.94 mg/L         0.018        3.94 mg/L         0.018   0.45%
   QC value within limits for Fe 239.562  Recovery = 98.54%
Mg 279.077†            26578.0        9.83 mg/L         0.045        9.83 mg/L         0.045   0.45%
   QC value within limits for Mg 279.077  Recovery = 98.30%
Mn 257.610†           315224.7       0.494 mg/L        0.0049       0.494 mg/L        0.0049   0.99%
   QC value within limits for Mn 257.610  Recovery = 98.74%
Mo 202.031†            10032.2       0.955 mg/L        0.0122       0.955 mg/L        0.0122   1.28%
   QC value within limits for Mo 202.031  Recovery = 95.55%
Ni 231.604†            15474.6       0.484 mg/L        0.0059       0.484 mg/L        0.0059   1.22%
   QC value within limits for Ni 231.604  Recovery = 96.74%
Pb 220.353†             2165.0       0.486 mg/L        0.0059       0.486 mg/L        0.0059   1.21%
   QC value within limits for Pb 220.353  Recovery = 97.15%
Sb 206.836†             1334.8        1.15 mg/L         0.008        1.15 mg/L         0.008   0.72%
   QC value within limits for Sb 206.836  Recovery = 96.12%
Se 196.026†              255.9       0.406 mg/L        0.0250       0.406 mg/L        0.0250   6.15%
   QC value within limits for Se 196.026  Recovery = 101.60%
Si 251.611†          -166648.2       -8.48 mg/L         0.192       -8.48 mg/L         0.192   2.26%
   QC value less than the lower limit for Si 251.611  Recovery = -169.55%
Sn 189.927†             5693.0       0.961 mg/L        0.0111       0.961 mg/L        0.0111   1.15%
   QC value within limits for Sn 189.927  Recovery = 96.10%
Ti 334.940†           909063.8       0.981 mg/L        0.0091       0.981 mg/L        0.0091   0.92%
   QC value within limits for Ti 334.940  Recovery = 98.13%
Tl 190.801†              588.8       0.497 mg/L        0.0127       0.497 mg/L        0.0127   2.56%
   QC value within limits for Tl 190.801  Recovery = 99.45%
V 290.880†            185144.5       0.981 mg/L        0.0098       0.981 mg/L        0.0098   1.00%
   QC value within limits for V 290.880  Recovery = 98.15%
Zn 206.200†            28072.3       0.979 mg/L        0.0121       0.979 mg/L        0.0121   1.24%
   QC value within limits for Zn 206.200  Recovery = 97.89%
K 766.490†             76417.0        48.7 mg/L          0.41        48.7 mg/L          0.41   0.85%
   QC value within limits for K 766.490  Recovery = 97.36%
Na 589.592†           388676.1        48.8 mg/L          1.64        48.8 mg/L          1.64   3.36%
   QC value within limits for Na 589.592  Recovery = 97.57%
Sr 407.771†           776171.4       0.963 mg/L        0.0325       0.963 mg/L        0.0325   3.38%
   QC value within limits for Sr 407.771  Recovery = 96.26%
Li 670.784†            37917.5       0.991 mg/L        0.0135       0.991 mg/L        0.0135   1.36%
   QC value within limits for Li 670.784  Recovery = 99.10%
P 214.914†              6093.2        9.56 mg/L         0.140        9.56 mg/L         0.140   1.46%
   QC value within limits for P 214.914  Recovery = 95.56%
QC Failed.  Continue with analysis.

==========================================================================================
Sequence No.: 24                                  Autosampler Location: 1
Sample ID: CCB                                    Date Collected: 5/27/2015 12:35:05 PM
Analyst:                                          Data Type: Original
Initial Sample Wt:                                Initial Sample Vol:
Dilution:                                         Sample Prep Vol:

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Nebulizer Parameters: CCB
Analyte                  Back Pressure    Flow
All                    232.0 kPa         0.40 L/min
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Approved: May 28, 2015

Lynn H. Rhoden

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3416252.2						54066.69	1.58%
YRADIAL	219123.4						2255.81	1.03%
Ga 417.206	1549536.3						25073.54	1.62%
GaRADIAL	52423.9						603.72	1.15%
Ag 328.068†	132.4	0.00246	mg/L	0.000942	0.00246	mg/L	0.000942	38.32%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	19.6	-0.0151	mg/L	0.00905	-0.0151	mg/L	0.00905	59.77%
QC value within limits for Al 396.153 Recovery = Not calculated								
As 188.979†	0.2	0.00375	mg/L	0.004843	0.00375	mg/L	0.004843	129.09%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	-4.0	-0.00031	mg/L	0.000172	-0.00031	mg/L	0.000172	54.72%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 234.861†	-6.9	0.00024	mg/L	0.000034	0.00024	mg/L	0.000034	14.39%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	281.7	0.00863	mg/L	0.002192	0.00863	mg/L	0.002192	25.38%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	-5.5	-0.0132	mg/L	0.16883	-0.0132	mg/L	0.16883	>999.9%
QC value within limits for Ca 227.546 Recovery = Not calculated								
Cd 228.802†	-6.5	-0.00017	mg/L	0.000217	-0.00017	mg/L	0.000217	125.56%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	-7.0	-0.00112	mg/L	0.000672	-0.00112	mg/L	0.000672	59.87%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	1.8	-0.00048	mg/L	0.001304	-0.00048	mg/L	0.001304	274.45%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	40.8	0.00227	mg/L	0.000913	0.00227	mg/L	0.000913	40.22%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	3.0	0.00470	mg/L	0.001880	0.00470	mg/L	0.001880	39.99%
QC value within limits for Fe 239.562 Recovery = Not calculated								
Mg 279.077†	23.0	-0.00602	mg/L	0.007742	-0.00602	mg/L	0.007742	128.63%
QC value within limits for Mg 279.077 Recovery = Not calculated								
Mn 257.610†	10.3	-0.00041	mg/L	0.000019	-0.00041	mg/L	0.000019	4.58%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	8.8	0.00091	mg/L	0.000484	0.00091	mg/L	0.000484	53.08%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	3.0	-0.00064	mg/L	0.000096	-0.00064	mg/L	0.000096	15.06%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	-7.4	-0.00209	mg/L	0.002698	-0.00209	mg/L	0.002698	129.07%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	-1.5	0.00316	mg/L	0.002970	0.00316	mg/L	0.002970	93.98%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	4.7	0.0115	mg/L	0.01325	0.0115	mg/L	0.01325	114.92%
QC value within limits for Se 196.026 Recovery = Not calculated								
Si 251.611†	3382.7	0.0182	mg/L	0.06489	0.0182	mg/L	0.06489	356.86%
QC value within limits for Si 251.611 Recovery = Not calculated								
Sn 189.927†	-22.6	-0.00530	mg/L	0.001047	-0.00530	mg/L	0.001047	19.74%
QC value within limits for Sn 189.927 Recovery = Not calculated								
Ti 334.940†	25.4	0.00174	mg/L	0.000189	0.00174	mg/L	0.000189	10.86%
QC value within limits for Ti 334.940 Recovery = Not calculated								
Tl 190.801†	-3.6	-0.00441	mg/L	0.003981	-0.00441	mg/L	0.003981	90.27%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 290.880†	-221.2	0.00071	mg/L	0.001499	0.00071	mg/L	0.001499	211.55%
QC value within limits for V 290.880 Recovery = Not calculated								
Zn 206.200†	-7.8	-0.00506	mg/L	0.000487	-0.00506	mg/L	0.000487	9.64%
QC value within limits for Zn 206.200 Recovery = Not calculated								
K 766.490†	10.8	0.0356	mg/L	0.06559	0.0356	mg/L	0.06559	184.44%
QC value within limits for K 766.490 Recovery = Not calculated								
Na 589.592†	464.6	0.0773	mg/L	0.01170	0.0773	mg/L	0.01170	15.13%
QC value within limits for Na 589.592 Recovery = Not calculated								
Sr 407.771†	87.1	-0.00023	mg/L	0.000075	-0.00023	mg/L	0.000075	33.17%
QC value within limits for Sr 407.771 Recovery = Not calculated								
Li 670.784†	29.2	-0.00193	mg/L	0.004562	-0.00193	mg/L	0.004562	236.77%
QC value within limits for Li 670.784 Recovery = Not calculated								
P 214.914†	2.7	0.00633	mg/L	0.002050	0.00633	mg/L	0.002050	32.39%
QC value within limits for P 214.914 Recovery = Not calculated								

All analyte(s) passed QC.

Approved: May 28, 2015

Kym H. Rhoden

Sequence No.: 25
Sample ID: L1505146003
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 62
Date Collected: 5/27/2015 12:38:26 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505146003

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505146003

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3152785.0						47928.42	1.52%
YRADIAL	201093.1						3001.33	1.49%
Ga 417.206	1258864.6						16018.09	1.27%
GaRADIAL	47416.3						555.51	1.17%
Ag 328.068†	1231.2	0.00565	mg/L	0.001493	0.00565	mg/L	0.001493	26.43%
Al 396.153†	82.1	0.00654	mg/L	0.005370	0.00654	mg/L	0.005370	82.10%
As 188.979†	-27.0	-0.0113	mg/L	0.00806	-0.0113	mg/L	0.00806	71.12%
Ba 233.527†	1183.5	0.0202	mg/L	0.00023	0.0202	mg/L	0.00023	1.12%
Be 234.861†	-124.4	0.00002	mg/L	0.000048	0.00002	mg/L	0.000048	235.93%
B 249.677†	4156.3	0.0632	mg/L	0.00132	0.0632	mg/L	0.00132	2.09%
Ca 227.546†	5990.2	75.3	mg/L	0.94	75.3	mg/L	0.94	1.24%
Cd 228.802†	8.2	0.00080	mg/L	0.000261	0.00080	mg/L	0.000261	32.78%
Co 228.616†	0.6	-0.00057	mg/L	0.000054	-0.00057	mg/L	0.000054	9.46%
Cr 267.716†	481.7	0.00306	mg/L	0.000065	0.00306	mg/L	0.000065	2.14%
Cu 327.393†	-1049.7	-0.00278	mg/L	0.000870	-0.00278	mg/L	0.000870	31.27%
Fe 239.562†	101.6	0.0213	mg/L	0.00177	0.0213	mg/L	0.00177	8.34%
Mg 279.077†	50070.4	18.5	mg/L	0.14	18.5	mg/L	0.14	0.75%
Mn 257.610†	393.9	0.00019	mg/L	0.000040	0.00019	mg/L	0.000040	20.51%
Mo 202.031†	79.6	0.00765	mg/L	0.000866	0.00765	mg/L	0.000866	11.31%
Ni 231.604†	-17.4	-0.00127	mg/L	0.000695	-0.00127	mg/L	0.000695	54.67%
Pb 220.353†	5.7	0.00086	mg/L	0.001364	0.00086	mg/L	0.001364	159.06%
Sb 206.836†	-0.9	0.00369	mg/L	0.010731	0.00369	mg/L	0.010731	291.00%
Se 196.026†	1.2	0.00597	mg/L	0.004540	0.00597	mg/L	0.004540	76.01%
Si 251.611†	-91632.6	-4.72	mg/L	0.065	-4.72	mg/L	0.065	1.38%
Sn 189.927†	-65.0	-0.0125	mg/L	0.00276	-0.0125	mg/L	0.00276	22.15%
Ti 334.940†	-3957.8	0.00228	mg/L	0.000209	0.00228	mg/L	0.000209	9.16%
Tl 190.801†	-27.4	-0.0242	mg/L	0.00649	-0.0242	mg/L	0.00649	26.85%
V 290.880†	850.9	0.00590	mg/L	0.000566	0.00590	mg/L	0.000566	9.60%
Zn 206.200†	-110.1	-0.00859	mg/L	0.000339	-0.00859	mg/L	0.000339	3.95%
K 766.490†	1203.9	0.494	mg/L	0.0669	0.494	mg/L	0.0669	13.53%
Na 589.592†	2024160.0	295	mg/L	3.1	295	mg/L	3.1	1.05%
Sr 407.771†	209658.3	0.257	mg/L	0.0025	0.257	mg/L	0.0025	0.98%
Li 670.784†	638.0	0.0140	mg/L	0.00196	0.0140	mg/L	0.00196	13.99%
P 214.914†	9.5	0.0170	mg/L	0.01834	0.0170	mg/L	0.01834	107.87%

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Sequence No.: 26
Sample ID: L1505146004
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 63
Date Collected: 5/27/2015 12:41:49 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505146004

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505146004

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3133755.7						29422.46	0.94%
YRADIAL	197062.4						1694.96	0.86%
Ga 417.206	1248920.9						11385.95	0.91%
GaRADIAL	46681.1						455.52	0.98%
Ag 328.068†	1049.9	0.00512	mg/L	0.001424	0.00512	mg/L	0.001424	27.81%
Al 396.153†	116.9	0.0187	mg/L	0.00293	0.0187	mg/L	0.00293	15.66%

Approved: May 28, 2015

Kym H. Rhoden

As 188.979†	-26.8	-0.0112 mg/L	0.00380	-0.0112 mg/L	0.00380	33.94%
Ba 233.527†	1189.5	0.0203 mg/L	0.00042	0.0203 mg/L	0.00042	2.07%
Be 234.861†	-98.1	0.00007 mg/L	0.000022	0.00007 mg/L	0.000022	33.54%
B 249.677†	3847.4	0.0589 mg/L	0.00097	0.0589 mg/L	0.00097	1.65%
Ca 227.546†	6056.5	76.1 mg/L	0.32	76.1 mg/L	0.32	0.42%
Cd 228.802†	6.2	0.00067 mg/L	0.000436	0.00067 mg/L	0.000436	64.62%
Co 228.616†	-2.4	-0.00078 mg/L	0.000786	-0.00078 mg/L	0.000786	100.92%
Cr 267.716†	508.6	0.00326 mg/L	0.000035	0.00326 mg/L	0.000035	1.06%
Cu 327.393†	-701.2	-0.00116 mg/L	0.001639	-0.00116 mg/L	0.001639	140.71%
Fe 239.562†	156.9	0.0308 mg/L	0.00226	0.0308 mg/L	0.00226	7.33%
Mg 279.077†	51008.5	18.9 mg/L	0.16	18.9 mg/L	0.16	0.87%
Mn 257.610†	553.2	0.00044 mg/L	0.000055	0.00044 mg/L	0.000055	12.42%
Mo 202.031†	87.7	0.00842 mg/L	0.000943	0.00842 mg/L	0.000943	11.19%
Ni 231.604†	-13.9	-0.00116 mg/L	0.000546	-0.00116 mg/L	0.000546	47.01%
Pb 220.353†	31.1	0.00653 mg/L	0.003485	0.00653 mg/L	0.003485	53.40%
Sb 206.836†	7.8	0.0111 mg/L	0.00696	0.0111 mg/L	0.00696	62.48%
Se 196.026†	-7.7	-0.00792 mg/L	0.016654	-0.00792 mg/L	0.016654	210.27%
Si 251.611†	-92678.5	-4.78 mg/L	0.139	-4.78 mg/L	0.139	2.91%
Sn 189.927†	-42.7	-0.00871 mg/L	0.000861	-0.00871 mg/L	0.000861	9.88%
Ti 334.940†	-4263.5	0.00201 mg/L	0.000413	0.00201 mg/L	0.000413	20.56%
Tl 190.801†	-25.3	-0.0225 mg/L	0.00221	-0.0225 mg/L	0.00221	9.82%
V 290.880†	880.2	0.00605 mg/L	0.001633	0.00605 mg/L	0.001633	27.00%
Zn 206.200†	-87.9	-0.00781 mg/L	0.000198	-0.00781 mg/L	0.000198	2.54%
K 766.490†	1210.5	0.484 mg/L	0.0730	0.484 mg/L	0.0730	15.07%
Na 589.592†	2099595.6	309 mg/L	5.6	309 mg/L	5.6	1.82%
Sr 407.771†	215187.4	0.264 mg/L	0.0005	0.264 mg/L	0.0005	0.20%
Li 670.784†	488.1	0.0101 mg/L	0.00037	0.0101 mg/L	0.00037	3.65%
P 214.914†	15.0	0.0257 mg/L	0.02301	0.0257 mg/L	0.02301	89.53%

Sequence No.: 27
Sample ID: L1505146005
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 64
Date Collected: 5/27/2015 12:45:12 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505146005

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505146005

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3311020.0						10877.72	0.33%
YRADIAL	204647.1						1903.06	0.93%
Ga 417.206	1357786.7						8009.38	0.59%
GaRADIAL	47853.6						589.18	1.23%
Ag 328.068†	589.8	0.00384	mg/L	0.000750	0.00384	mg/L	0.000750	19.54%
Al 396.153†	600.5	0.188	mg/L	0.0222	0.188	mg/L	0.0222	11.79%
As 188.979†	-18.6	-0.00690	mg/L	0.004032	-0.00690	mg/L	0.004032	58.46%
Ba 233.527†	1375.3	0.0235	mg/L	0.00016	0.0235	mg/L	0.00016	0.69%
Be 234.861†	-77.6	0.00008	mg/L	0.000009	0.00008	mg/L	0.000009	11.83%
B 249.677†	5986.1	0.0894	mg/L	0.00322	0.0894	mg/L	0.00322	3.60%
Ca 227.546†	3320.3	41.8	mg/L	0.12	41.8	mg/L	0.12	0.29%
Cd 228.802†	2.5	0.00042	mg/L	0.000319	0.00042	mg/L	0.000319	75.22%
Co 228.616†	-1.6	-0.00074	mg/L	0.000450	-0.00074	mg/L	0.000450	60.43%
Cr 267.716†	466.6	0.00295	mg/L	0.000223	0.00295	mg/L	0.000223	7.56%
Cu 327.393†	-723.3	-0.00125	mg/L	0.001110	-0.00125	mg/L	0.001110	89.08%
Fe 239.562†	737.0	0.131	mg/L	0.0111	0.131	mg/L	0.0111	8.50%
Mg 279.077†	14075.5	5.20	mg/L	0.145	5.20	mg/L	0.145	2.79%
Mn 257.610†	1156.5	0.00139	mg/L	0.000024	0.00139	mg/L	0.000024	1.74%
Mo 202.031†	64.5	0.00622	mg/L	0.000295	0.00622	mg/L	0.000295	4.75%
Ni 231.604†	0.3	-0.00072	mg/L	0.000325	-0.00072	mg/L	0.000325	45.24%
Pb 220.353†	18.6	0.00376	mg/L	0.002061	0.00376	mg/L	0.002061	54.83%
Sb 206.836†	7.5	0.0109	mg/L	0.00986	0.0109	mg/L	0.00986	90.16%
Se 196.026†	1.5	0.00656	mg/L	0.007557	0.00656	mg/L	0.007557	115.19%
Si 251.611†	-10158.1	-0.658	mg/L	0.3440	-0.658	mg/L	0.3440	52.30%
Sn 189.927†	-62.5	-0.0121	mg/L	0.00243	-0.0121	mg/L	0.00243	20.13%
Ti 334.940†	2386.3	0.00696	mg/L	0.000758	0.00696	mg/L	0.000758	10.89%
Tl 190.801†	-20.9	-0.0187	mg/L	0.00531	-0.0187	mg/L	0.00531	28.34%

Approved: May 28, 2015

V 290.880†	1314.9	0.00872	mg/L	0.001961	0.00872	mg/L	0.001961	22.48%
Zn 206.200†	-132.3	-0.00935	mg/L	0.000051	-0.00935	mg/L	0.000051	0.55%
K 766.490†	2563.0	1.53	mg/L	0.082	1.53	mg/L	0.082	5.32%
Na 589.592†	875817.5	114	mg/L	0.3	114	mg/L	0.3	0.28%
Sr 407.771†	135506.5	0.166	mg/L	0.0011	0.166	mg/L	0.0011	0.66%
Li 670.784†	581.9	0.0126	mg/L	0.00333	0.0126	mg/L	0.00333	26.55%
P 214.914†	71.1	0.114	mg/L	0.0085	0.114	mg/L	0.0085	7.47%

Sequence No.: 28 **Autosampler Location: 65**
Sample ID: L1505151201 **Date Collected: 5/27/2015 12:47:35 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505151201

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505151201

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3399095.6						36815.65	1.08%
YRADIAL	215696.4						6081.83	2.82%
Ga 417.206	1494006.8						17626.26	1.18%
GaRADIAL	50933.2						1453.04	2.85%
Ag 328.068†	610.5	0.00394	mg/L	0.001365	0.00394	mg/L	0.001365	34.69%
Al 396.153†	554.0	0.172	mg/L	0.0166	0.172	mg/L	0.0166	9.62%
As 188.979†	-15.8	-0.00548	mg/L	0.004459	-0.00548	mg/L	0.004459	81.38%
Ba 233.527†	1665.9	0.0286	mg/L	0.00044	0.0286	mg/L	0.00044	1.54%
Be 234.861†	-74.2	0.00006	mg/L	0.000023	0.00006	mg/L	0.000023	36.97%
B 249.677†	-989.2	-0.00844	mg/L	0.001060	-0.00844	mg/L	0.001060	12.55%
Ca 227.546†	2203.0	27.7	mg/L	0.43	27.7	mg/L	0.43	1.55%
Cd 228.802†	6.5	0.00066	mg/L	0.000888	0.00066	mg/L	0.000888	135.41%
Co 228.616†	-10.9	-0.00141	mg/L	0.000286	-0.00141	mg/L	0.000286	20.28%
Cr 267.716†	146.0	0.00058	mg/L	0.000227	0.00058	mg/L	0.000227	39.16%
Cu 327.393†	-727.9	-0.00126	mg/L	0.000524	-0.00126	mg/L	0.000524	41.70%
Fe 239.562†	1271.9	0.223	mg/L	0.0118	0.223	mg/L	0.0118	5.32%
Mg 279.077†	9384.5	3.46	mg/L	0.130	3.46	mg/L	0.130	3.74%
Mn 257.610†	19099.6	0.0295	mg/L	0.00040	0.0295	mg/L	0.00040	1.37%
Mo 202.031†	35.4	0.00345	mg/L	0.001590	0.00345	mg/L	0.001590	46.16%
Ni 231.604†	-11.5	-0.00109	mg/L	0.000677	-0.00109	mg/L	0.000677	62.03%
Pb 220.353†	12.7	0.00242	mg/L	0.004034	0.00242	mg/L	0.004034	166.70%
Sb 206.836†	-5.6	-0.00035	mg/L	0.006562	-0.00035	mg/L	0.006562	>999.9%
Se 196.026†	-2.0	0.00094	mg/L	0.013102	0.00094	mg/L	0.013102	>999.9%
Si 251.611†	-263370.0	-13.3	mg/L	0.15	-13.3	mg/L	0.15	1.13%
Sn 189.927†	-69.7	-0.0133	mg/L	0.00267	-0.0133	mg/L	0.00267	20.14%
Ti 334.940†	2447.4	0.00613	mg/L	0.000170	0.00613	mg/L	0.000170	2.78%
Tl 190.801†	-14.8	-0.0137	mg/L	0.00439	-0.0137	mg/L	0.00439	32.01%
V 290.880†	-508.6	-0.00086	mg/L	0.000668	-0.00086	mg/L	0.000668	77.73%
Zn 206.200†	-152.0	-0.0101	mg/L	0.00021	-0.0101	mg/L	0.00021	2.06%
K 766.490†	1110.0	0.727	mg/L	0.0341	0.727	mg/L	0.0341	4.69%
Na 589.592†	22847.9	2.81	mg/L	0.040	2.81	mg/L	0.040	1.42%
Sr 407.771†	68296.7	0.0835	mg/L	0.00100	0.0835	mg/L	0.00100	1.19%
Li 670.784†	-42.1	-0.00379	mg/L	0.002811	-0.00379	mg/L	0.002811	74.07%
P 214.914†	18.4	0.0310	mg/L	0.00675	0.0310	mg/L	0.00675	21.77%

Sequence No.: 29 **Autosampler Location: 66**
Sample ID: L1505151301 **Date Collected: 5/27/2015 12:49:57 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505151301

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Approved: May 28, 2015

Kym H. Rhoden

Mean Data: L1505151301

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3308118.1						24485.18	0.74%
YRADIAL	207497.1						4093.75	1.97%
Ga 417.206	1424405.2						11102.25	0.78%
GaRADIAL	50012.1						889.25	1.78%
Ag 328.068†	943.0	0.00481	mg/L	0.001387	0.00481	mg/L	0.001387	28.85%
Al 396.153†	31.5	-0.0112	mg/L	0.00185	-0.0112	mg/L	0.00185	16.56%
As 188.979†	-27.1	-0.0117	mg/L	0.00546	-0.0117	mg/L	0.00546	46.88%
Ba 233.527†	4299.0	0.0741	mg/L	0.00018	0.0741	mg/L	0.00018	0.25%
Be 234.861†	-98.7	0.00006	mg/L	0.000015	0.00006	mg/L	0.000015	24.42%
B 249.677†	-1257.5	-0.0129	mg/L	0.00050	-0.0129	mg/L	0.00050	3.85%
Ca 227.546†	5084.5	63.9	mg/L	0.40	63.9	mg/L	0.40	0.62%
Cd 228.802†	-1.9	0.00019	mg/L	0.000375	0.00019	mg/L	0.000375	195.62%
Co 228.616†	5.3	-0.00026	mg/L	0.000715	-0.00026	mg/L	0.000715	277.13%
Cr 267.716†	204.7	0.00102	mg/L	0.000199	0.00102	mg/L	0.000199	19.58%
Cu 327.393†	-145.4	0.00141	mg/L	0.001571	0.00141	mg/L	0.001571	111.63%
Fe 239.562†	246.6	0.0465	mg/L	0.00062	0.0465	mg/L	0.00062	1.34%
Mg 279.077†	13237.1	4.89	mg/L	0.065	4.89	mg/L	0.065	1.34%
Mn 257.610†	1275.9	0.00158	mg/L	0.000023	0.00158	mg/L	0.000023	1.47%
Mo 202.031†	65.6	0.00631	mg/L	0.000565	0.00631	mg/L	0.000565	8.94%
Ni 231.604†	21.0	-0.00007	mg/L	0.000202	-0.00007	mg/L	0.000202	291.95%
Pb 220.353†	27.4	0.00569	mg/L	0.001429	0.00569	mg/L	0.001429	25.11%
Sb 206.836†	0.6	0.00495	mg/L	0.002560	0.00495	mg/L	0.002560	51.77%
Se 196.026†	-5.3	-0.00412	mg/L	0.024133	-0.00412	mg/L	0.024133	585.11%
Si 251.611†	-208301.9	-10.5	mg/L	0.14	-10.5	mg/L	0.14	1.34%
Sn 189.927†	-69.9	-0.0133	mg/L	0.00196	-0.0133	mg/L	0.00196	14.73%
Ti 334.940†	-4250.4	0.00124	mg/L	0.000290	0.00124	mg/L	0.000290	23.41%
Tl 190.801†	-19.7	-0.0178	mg/L	0.01036	-0.0178	mg/L	0.01036	58.09%
V 290.880†	-476.4	-0.00076	mg/L	0.001087	-0.00076	mg/L	0.001087	142.74%
Zn 206.200†	-49.4	-0.00649	mg/L	0.000298	-0.00649	mg/L	0.000298	4.60%
K 766.490†	1157.9	0.751	mg/L	0.0419	0.751	mg/L	0.0419	5.58%
Na 589.592†	73217.7	9.01	mg/L	0.058	9.01	mg/L	0.058	0.64%
Sr 407.771†	173354.8	0.213	mg/L	0.0015	0.213	mg/L	0.0015	0.73%
Li 670.784†	228.0	0.00328	mg/L	0.005299	0.00328	mg/L	0.005299	161.36%
P 214.914†	-6.3	-0.00766	mg/L	0.008124	-0.00766	mg/L	0.008124	106.12%

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Sequence No.: 30 **Autosampler Location: 67**
Sample ID: L1505151401 **Date Collected: 5/27/2015 12:53:17 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505151401

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505151401

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3476241.4						23741.03	0.68%
YRADIAL	216711.2						2605.90	1.20%
Ga 417.206	1544926.1						10787.40	0.70%
GaRADIAL	51815.7						669.68	1.29%
Ag 328.068†	79.1	0.00230	mg/L	0.000870	0.00230	mg/L	0.000870	37.78%
Al 396.153†	102.5	0.0140	mg/L	0.00927	0.0140	mg/L	0.00927	66.31%
As 188.979†	-5.6	0.00019	mg/L	0.003919	0.00019	mg/L	0.003919	>999.9%
Ba 233.527†	71.0	0.00098	mg/L	0.000235	0.00098	mg/L	0.000235	23.93%
Be 234.861†	-84.5	0.00009	mg/L	0.000039	0.00009	mg/L	0.000039	41.42%
B 249.677†	-1978.8	-0.0232	mg/L	0.00132	-0.0232	mg/L	0.00132	5.69%
Ca 227.546†	0.1	0.0576	mg/L	0.08673	0.0576	mg/L	0.08673	150.62%
Cd 228.802†	3.6	0.00045	mg/L	0.000263	0.00045	mg/L	0.000263	58.14%
Co 228.616†	-8.4	-0.00122	mg/L	0.000629	-0.00122	mg/L	0.000629	51.47%
Cr 267.716†	-62.6	-0.00095	mg/L	0.000685	-0.00095	mg/L	0.000685	72.19%
Cu 327.393†	-528.1	-0.00036	mg/L	0.001095	-0.00036	mg/L	0.001095	300.23%
Fe 239.562†	20.8	0.00777	mg/L	0.001088	0.00777	mg/L	0.001088	14.00%
Mg 279.077†	45.4	0.00226	mg/L	0.010763	0.00226	mg/L	0.010763	475.75%
Mn 257.610†	77.3	-0.00030	mg/L	0.000041	-0.00030	mg/L	0.000041	13.63%

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Mo 202.031†	2.9	0.00035	mg/L	0.000294	0.00035	mg/L	0.000294	85.15%
Ni 231.604†	5.7	-0.00055	mg/L	0.000478	-0.00055	mg/L	0.000478	86.16%
Pb 220.353†	-6.7	-0.00194	mg/L	0.000901	-0.00194	mg/L	0.000901	46.54%
Sb 206.836†	-0.3	0.00423	mg/L	0.007459	0.00423	mg/L	0.007459	176.25%
Se 196.026†	7.9	0.0166	mg/L	0.00559	0.0166	mg/L	0.00559	33.77%
Si 251.611†	-345628.1	-17.4	mg/L	0.17	-17.4	mg/L	0.17	0.98%
Sn 189.927†	-52.0	-0.0103	mg/L	0.00112	-0.0103	mg/L	0.00112	10.92%
Ti 334.940†	365.3	0.00211	mg/L	0.000020	0.00211	mg/L	0.000020	0.96%
Tl 190.801†	0.3	-0.00120	mg/L	0.007265	-0.00120	mg/L	0.007265	606.83%
V 290.880†	-291.3	0.00034	mg/L	0.002128	0.00034	mg/L	0.002128	628.51%
Zn 206.200†	-18.9	-0.00545	mg/L	0.000252	-0.00545	mg/L	0.000252	4.62%
K 766.490†	38.1	0.0528	mg/L	0.04268	0.0528	mg/L	0.04268	80.79%
Na 589.592†	582.3	0.0917	mg/L	0.01322	0.0917	mg/L	0.01322	14.41%
Sr 407.771†	126.2	-0.00018	mg/L	0.000128	-0.00018	mg/L	0.000128	70.49%
Li 670.784†	34.7	-0.00178	mg/L	0.001614	-0.00178	mg/L	0.001614	90.46%
P 214.914†	1.4	0.00429	mg/L	0.007990	0.00429	mg/L	0.007990	186.15%

Sequence No.: 31 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 5/27/2015 12:56:39 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3224505.2						27133.04	0.84%
YRADIAL	202235.3						520.56	0.26%
Ga 417.206	1328168.7						16033.15	1.21%
GaRADIAL	47207.1						284.13	0.60%
Ag 328.068†	131675.5	0.392	mg/L	0.0012	0.392	mg/L	0.0012	0.30%
QC value within limits for Ag 328.068 Recovery = 97.88%								
Al 396.153†	28439.5	9.91	mg/L	0.038	9.91	mg/L	0.038	0.38%
QC value within limits for Al 396.153 Recovery = 99.15%								
As 188.979†	619.5	0.380	mg/L	0.0036	0.380	mg/L	0.0036	0.95%
QC value within limits for As 188.979 Recovery = 95.00%								
Ba 233.527†	55976.2	0.968	mg/L	0.0074	0.968	mg/L	0.0074	0.76%
QC value within limits for Ba 233.527 Recovery = 96.78%								
Be 234.861†	26189.0	0.0472	mg/L	0.00023	0.0472	mg/L	0.00023	0.49%
QC value within limits for Be 234.861 Recovery = 94.46%								
B 249.677†	25867.9	0.382	mg/L	0.0053	0.382	mg/L	0.0053	1.39%
QC value less than the lower limit for B 249.677 Recovery = 76.31%								
Ca 227.546†	752.1	9.57	mg/L	0.245	9.57	mg/L	0.245	2.56%
QC value within limits for Ca 227.546 Recovery = 95.72%								
Cd 228.802†	797.4	0.0470	mg/L	0.00078	0.0470	mg/L	0.00078	1.66%
QC value within limits for Cd 228.802 Recovery = 93.91%								
Co 228.616†	2746.5	0.192	mg/L	0.0013	0.192	mg/L	0.0013	0.66%
QC value within limits for Co 228.616 Recovery = 95.90%								
Cr 267.716†	65847.3	0.484	mg/L	0.0030	0.484	mg/L	0.0030	0.62%
QC value within limits for Cr 267.716 Recovery = 96.89%								
Cu 327.393†	103752.3	0.484	mg/L	0.0028	0.484	mg/L	0.0028	0.59%
QC value within limits for Cu 327.393 Recovery = 96.86%								
Fe 239.562†	22706.4	3.91	mg/L	0.018	3.91	mg/L	0.018	0.47%
QC value within limits for Fe 239.562 Recovery = 97.65%								
Mg 279.077†	26500.5	9.80	mg/L	0.047	9.80	mg/L	0.047	0.48%
QC value within limits for Mg 279.077 Recovery = 98.02%								
Mn 257.610†	309854.9	0.485	mg/L	0.0027	0.485	mg/L	0.0027	0.55%
QC value within limits for Mn 257.610 Recovery = 97.06%								
Mo 202.031†	9882.6	0.941	mg/L	0.0043	0.941	mg/L	0.0043	0.46%
QC value within limits for Mo 202.031 Recovery = 94.12%								
Ni 231.604†	15280.1	0.478	mg/L	0.0024	0.478	mg/L	0.0024	0.50%
QC value within limits for Ni 231.604 Recovery = 95.52%								
Pb 220.353†	2130.2	0.478	mg/L	0.0022	0.478	mg/L	0.0022	0.47%
QC value within limits for Pb 220.353 Recovery = 95.60%								
Sb 206.836†	1311.0	1.13	mg/L	0.002	1.13	mg/L	0.002	0.14%

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   QC value within limits for Sb 206.836  Recovery = 94.42%
Se 196.026†              243.3       0.387 mg/L        0.0132       0.387 mg/L        0.0132   3.42%
   QC value within limits for Se 196.026  Recovery = 96.66%
Si 251.611†          -169897.7       -8.64 mg/L         0.179       -8.64 mg/L         0.179   2.07%
   QC value less than the lower limit for Si 251.611  Recovery = -172.79%
Sn 189.927†             5601.9       0.946 mg/L        0.0027       0.946 mg/L        0.0027   0.28%
   QC value within limits for Sn 189.927  Recovery = 94.56%
Ti 334.940†           895190.7       0.966 mg/L        0.0036       0.966 mg/L        0.0036   0.37%
   QC value within limits for Ti 334.940  Recovery = 96.63%
Tl 190.801†              568.7       0.480 mg/L        0.0053       0.480 mg/L        0.0053   1.09%
   QC value within limits for Tl 190.801  Recovery = 96.08%
V 290.880†            182301.8       0.966 mg/L        0.0059       0.966 mg/L        0.0059   0.61%
   QC value within limits for V 290.880  Recovery = 96.64%
Zn 206.200†            27646.4       0.964 mg/L        0.0001       0.964 mg/L        0.0001   0.01%
   QC value within limits for Zn 206.200  Recovery = 96.40%
K 766.490†             75837.5        48.3 mg/L          0.05        48.3 mg/L          0.05   0.11%
   QC value within limits for K 766.490  Recovery = 96.61%
Na 589.592†           398108.8        50.0 mg/L          0.75        50.0 mg/L          0.75   1.50%
   QC value within limits for Na 589.592  Recovery = 100.00%
Sr 407.771†           795989.6       0.987 mg/L        0.0113       0.987 mg/L        0.0113   1.14%
   QC value within limits for Sr 407.771  Recovery = 98.72%
Li 670.784†            37760.4       0.987 mg/L        0.0031       0.987 mg/L        0.0031   0.31%
   QC value within limits for Li 670.784  Recovery = 98.69%
P 214.914†              5988.5        9.39 mg/L         0.014        9.39 mg/L         0.014   0.15%
   QC value within limits for P 214.914  Recovery = 93.92%
QC Failed.  Continue with analysis.

==========================================================================================
Sequence No.: 32                                    Autosampler Location: 1
Sample ID: CCB                                      Date Collected: 5/27/2015 12:59:04 PM
Analyst:                                            Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

------------------------------------------------------------------------------------------
Nebulizer Parameters: CCB
Analyte                 Back Pressure    Flow
All                     232.0 kPa        0.40 L/min

------------------------------------------------------------------------------------------
Mean Data: CCB
                   Mean Corrected        Calib.                          Sample
Analyte               Intensity     Conc. Units     Std.Dev.     Conc. Units     Std.Dev.   RSD
Y 371.029            3449763.9                                                  56907.01   1.65%
YRADIAL               210659.9                                                   3643.68   1.73%
Ga 417.206           1563026.0                                                  27505.81   1.76%
GaRADIAL               51024.5                                                    784.99   1.54%
Ag 328.068†              116.1     0.00241 mg/L      0.000218     0.00241 mg/L      0.000218   9.07%
   QC value within limits for Ag 328.068  Recovery = Not calculated
Al 396.153†               -6.4    -0.0242 mg/L       0.00212    -0.0242 mg/L       0.00212   8.76%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†               -5.4     0.00032 mg/L      0.006218     0.00032 mg/L      0.006218 >999.9%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†               -2.8    -0.00029 mg/L      0.000211    -0.00029 mg/L      0.000211  71.66%
   QC value within limits for Ba 233.527  Recovery = Not calculated
Be 234.861†              -21.9     0.00021 mg/L      0.000034     0.00021 mg/L      0.000034  16.54%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†               -64.5     0.00374 mg/L      0.003145     0.00374 mg/L      0.003145  84.13%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†                6.2       0.134 mg/L        0.1898       0.134 mg/L        0.1898 141.73%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†                2.3     0.00038 mg/L      0.000154     0.00038 mg/L      0.000154  40.90%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†               -0.7    -0.00068 mg/L      0.000447    -0.00068 mg/L      0.000447  66.04%
   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†              -13.6    -0.00059 mg/L      0.000596    -0.00059 mg/L      0.000596 101.24%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†             -225.4     0.00104 mg/L      0.000894     0.00104 mg/L      0.000894  86.26%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†               -6.7     0.00304 mg/L      0.001255     0.00304 mg/L      0.001255  41.23%
   QC value within limits for Fe 239.562  Recovery = Not calculated
Mg 279.077†               14.1    -0.00932 mg/L      0.008584    -0.00932 mg/L      0.008584  92.11%
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   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†                7.0    -0.00041 mg/L      0.000038    -0.00041 mg/L      0.000038   9.21%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†                2.8     0.00034 mg/L      0.001014     0.00034 mg/L      0.001014 300.08%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†               -6.9    -0.00095 mg/L      0.000360    -0.00095 mg/L      0.000360  37.77%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†              -14.0    -0.00356 mg/L      0.000716    -0.00356 mg/L      0.000716  20.08%
   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†               -0.8     0.00378 mg/L      0.002187     0.00378 mg/L      0.002187  57.89%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†                5.9      0.0134 mg/L       0.01186      0.0134 mg/L       0.01186  88.43%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†             8419.2       0.270 mg/L        0.2197       0.270 mg/L        0.2197  81.51%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†              -21.6    -0.00514 mg/L      0.000554    -0.00514 mg/L      0.000554  10.78%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†              297.9     0.00204 mg/L      0.000166     0.00204 mg/L      0.000166   8.12%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†                4.9     0.00261 mg/L      0.002439     0.00261 mg/L      0.002439  93.41%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†              -369.8    -0.00008 mg/L      0.001378    -0.00008 mg/L      0.001378 >999.9%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†                1.3    -0.00474 mg/L      0.000111    -0.00474 mg/L      0.000111   2.35%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†                15.1      0.0383 mg/L       0.02559      0.0383 mg/L       0.02559  66.80%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†              201.3      0.0452 mg/L       0.02429      0.0452 mg/L       0.02429  53.77%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†              172.8    -0.00013 mg/L      0.000170    -0.00013 mg/L      0.000170 135.19%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†               33.6    -0.00181 mg/L      0.001487    -0.00181 mg/L      0.001487  82.09%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†                -0.6     0.00117 mg/L      0.005929     0.00117 mg/L      0.005929 508.45%
   QC value within limits for P 214.914  Recovery = Not calculated
All analyte(s) passed QC.
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Approved: May 28, 2015

Lynn H. Rhoden

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Analysis Begun

Start Time: 5/27/2015 1:19:31 PM **Plasma On Time: 5/27/2015 6:39:13 AM**
Logged In Analyst: peicp2 **Technique: ICP Continuous**
Spectrometer Model: Optima 4300 DV, S/N 077N4011401 **Autosampler Model: Cetac**

Sample Information File: C:\pe\peicp2\Sample Information\MONDAY1.sif
Batch ID:
Results Data Set: 052715HR
Results Library: C:\pe\peicp2\Results\results2.mdb

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Sequence No.: 1 **Autosampler Location: 68**
Sample ID: PBW 81 WG525038-03 **Date Collected: 5/27/2015 1:19:33 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: PBW 81 WG525038-03

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: PBW 81 WG525038-03

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3514029.9						7730.17	0.22%
YRADIAL	210508.3						4373.74	2.08%
Ga 417.206	1563411.5						14606.60	0.93%
GaRADIAL	50337.8						603.03	1.20%
Ag 328.068†	72.7	0.00228	mg/L	0.001233	0.00228	mg/L	0.001233	54.03%
Al 396.153†	38.7	-0.00840	mg/L	0.004375	-0.00840	mg/L	0.004375	52.09%
As 188.979†	-11.3	-0.00331	mg/L	0.003164	-0.00331	mg/L	0.003164	95.74%
Ba 233.527†	-10.7	-0.00043	mg/L	0.000099	-0.00043	mg/L	0.000099	23.08%
Be 234.861†	-87.3	0.00009	mg/L	0.000055	0.00009	mg/L	0.000055	62.49%
B 249.677†	18291.6	0.262	mg/L	0.0039	0.262	mg/L	0.0039	1.50%
Ca 227.546†	-4.9	-0.00494	mg/L	0.112300	-0.00494	mg/L	0.112300	>999.9%
Cd 228.802†	1.3	0.00033	mg/L	0.000436	0.00033	mg/L	0.000436	130.85%
Co 228.616†	-5.1	-0.00099	mg/L	0.000965	-0.00099	mg/L	0.000965	97.78%
Cr 267.716†	264.2	0.00146	mg/L	0.001473	0.00146	mg/L	0.001473	101.23%
Cu 327.393†	-560.1	-0.00051	mg/L	0.000971	-0.00051	mg/L	0.000971	189.52%
Fe 239.562†	30.6	0.00946	mg/L	0.001518	0.00946	mg/L	0.001518	16.05%
Mg 279.077†	18.3	-0.00776	mg/L	0.001846	-0.00776	mg/L	0.001846	23.80%
Mn 257.610†	374.2	0.00016	mg/L	0.000014	0.00016	mg/L	0.000014	8.80%
Mo 202.031†	0.9	0.00016	mg/L	0.000463	0.00016	mg/L	0.000463	289.88%
Ni 231.604†	5.2	-0.00057	mg/L	0.000141	-0.00057	mg/L	0.000141	24.59%
Pb 220.353†	3.5	0.00034	mg/L	0.000846	0.00034	mg/L	0.000846	251.04%
Sb 206.836†	1.7	0.00588	mg/L	0.002759	0.00588	mg/L	0.002759	46.90%
Se 196.026†	5.1	0.0122	mg/L	0.00810	0.0122	mg/L	0.00810	66.46%
Si 251.611†	-206946.3	-10.5	mg/L	0.24	-10.5	mg/L	0.24	2.31%
Sn 189.927†	-42.4	-0.00865	mg/L	0.001173	-0.00865	mg/L	0.001173	13.56%
Ti 334.940†	134.7	0.00186	mg/L	0.000378	0.00186	mg/L	0.000378	20.37%
Tl 190.801†	4.2	0.00202	mg/L	0.002515	0.00202	mg/L	0.002515	124.57%
V 290.880†	-453.6	-0.00052	mg/L	0.000836	-0.00052	mg/L	0.000836	161.25%
Zn 206.200†	-119.8	-0.00895	mg/L	0.000351	-0.00895	mg/L	0.000351	3.93%
K 766.490†	18.3	0.0403	mg/L	0.06488	0.0403	mg/L	0.06488	160.91%
Na 589.592†	329.0	0.0608	mg/L	0.01459	0.0608	mg/L	0.01459	24.02%
Sr 407.771†	681.7	0.00051	mg/L	0.000039	0.00051	mg/L	0.000039	7.68%
Li 670.784†	-159.3	-0.00687	mg/L	0.001441	-0.00687	mg/L	0.001441	20.99%
P 214.914†	-5.3	-0.00617	mg/L	0.012828	-0.00617	mg/L	0.012828	207.85%

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Sequence No.: 2 **Autosampler Location: 69**
Sample ID: LCSW 81 WG525038-04 **Date Collected: 5/27/2015 1:22:56 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Approved: May 28, 2015

Kym H. Rhoden

Nebulizer Parameters: LCSW 81 WG525038-04

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: LCSW 81 WG525038-04

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3282434.7						100549.57	3.06%
YRADIAL	208970.8						974.06	0.47%
Ga 417.206	1377289.1						37429.54	2.72%
GaRADIAL	48469.8						175.87	0.36%
Ag 328.068†	66739.6	0.199	mg/L	0.0086	0.199	mg/L	0.0086	4.32%
Al 396.153†	14148.2	4.92	mg/L	0.036	4.92	mg/L	0.036	0.73%
As 188.979†	301.7	0.187	mg/L	0.0089	0.187	mg/L	0.0089	4.75%
Ba 233.527†	28067.0	0.485	mg/L	0.0190	0.485	mg/L	0.0190	3.92%
Be 234.861†	12700.2	0.0230	mg/L	0.00073	0.0230	mg/L	0.00073	3.16%
B 249.677†	74751.8	1.06	mg/L	0.046	1.06	mg/L	0.046	4.37%
Ca 227.546†	364.6	4.67	mg/L	0.182	4.67	mg/L	0.182	3.89%
Cd 228.802†	389.8	0.0231	mg/L	0.00163	0.0231	mg/L	0.00163	7.05%
Co 228.616†	1387.0	0.0966	mg/L	0.00442	0.0966	mg/L	0.00442	4.57%
Cr 267.716†	33134.4	0.244	mg/L	0.0098	0.244	mg/L	0.0098	4.03%
Cu 327.393†	51969.2	0.244	mg/L	0.0091	0.244	mg/L	0.0091	3.74%
Fe 239.562†	11367.5	1.96	mg/L	0.005	1.96	mg/L	0.005	0.25%
Mg 279.077†	13032.6	4.81	mg/L	0.025	4.81	mg/L	0.025	0.53%
Mn 257.610†	155284.6	0.243	mg/L	0.0104	0.243	mg/L	0.0104	4.29%
Mo 202.031†	5070.7	0.483	mg/L	0.0196	0.483	mg/L	0.0196	4.05%
Ni 231.604†	7698.2	0.240	mg/L	0.0101	0.240	mg/L	0.0101	4.19%
Pb 220.353†	1065.8	0.239	mg/L	0.0093	0.239	mg/L	0.0093	3.90%
Sb 206.836†	650.3	0.564	mg/L	0.0158	0.564	mg/L	0.0158	2.81%
Se 196.026†	125.3	0.201	mg/L	0.0218	0.201	mg/L	0.0218	10.86%
Si 251.611†	-106894.3	-5.49	mg/L	0.597	-5.49	mg/L	0.597	10.88%
Sn 189.927†	2855.7	0.481	mg/L	0.0191	0.481	mg/L	0.0191	3.97%
Ti 334.940†	444765.8	0.481	mg/L	0.0051	0.481	mg/L	0.0051	1.06%
Tl 190.801†	293.8	0.247	mg/L	0.0116	0.247	mg/L	0.0116	4.70%
V 290.880†	92102.6	0.489	mg/L	0.0220	0.489	mg/L	0.0220	4.50%
Zn 206.200†	13520.1	0.469	mg/L	0.0209	0.469	mg/L	0.0209	4.46%
K 766.490†	37731.1	23.9	mg/L	0.17	23.9	mg/L	0.17	0.70%
Na 589.592†	193335.6	23.9	mg/L	0.16	23.9	mg/L	0.16	0.69%
Sr 407.771†	381148.6	0.473	mg/L	0.0022	0.473	mg/L	0.0022	0.46%
Li 670.784†	19129.3	0.499	mg/L	0.0032	0.499	mg/L	0.0032	0.63%
P 214.914†	2989.3	4.69	mg/L	0.198	4.69	mg/L	0.198	4.21%

Sequence No.: 3 **Autosampler Location: 70**
Sample ID: L1505152301 **Date Collected: 5/27/2015 1:25:22 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505152301

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505152301

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3294570.4						8199.66	0.25%
YRADIAL	208873.9						6519.50	3.12%
Ga 417.206	1403397.5						4612.53	0.33%
GaRADIAL	49904.8						1563.39	3.13%
Ag 328.068†	751.8	0.00430	mg/L	0.001608	0.00430	mg/L	0.001608	37.42%
Al 396.153†	227.5	0.0576	mg/L	0.03371	0.0576	mg/L	0.03371	58.56%
As 188.979†	-15.5	-0.00480	mg/L	0.006115	-0.00480	mg/L	0.006115	127.43%
Ba 233.527†	3801.4	0.0655	mg/L	0.00056	0.0655	mg/L	0.00056	0.86%
Be 234.861†	-85.5	0.00006	mg/L	0.000025	0.00006	mg/L	0.000025	45.25%
B 249.677†	4961.6	0.0752	mg/L	0.00286	0.0752	mg/L	0.00286	3.81%
Ca 227.546†	4063.9	51.1	mg/L	0.74	51.1	mg/L	0.74	1.45%
Cd 228.802†	-2.7	0.00011	mg/L	0.000448	0.00011	mg/L	0.000448	422.67%
Co 228.616†	2.6	-0.00046	mg/L	0.000833	-0.00046	mg/L	0.000833	182.90%

Approved: May 28, 2015

Kym H. Rhoden

Cr 267.716†	280.4	0.00157	mg/L	0.000138	0.00157	mg/L	0.000138	8.82%
Cu 327.393†	-485.9	-0.00015	mg/L	0.001777	-0.00015	mg/L	0.001777	>999.9%
Fe 239.562†	1031.5	0.181	mg/L	0.0035	0.181	mg/L	0.0035	1.94%
Mg 279.077†	41535.8	15.4	mg/L	0.31	15.4	mg/L	0.31	2.03%
Mn 257.610†	39280.8	0.0611	mg/L	0.00044	0.0611	mg/L	0.00044	0.72%
Mo 202.031†	70.3	0.00678	mg/L	0.000168	0.00678	mg/L	0.000168	2.48%
Ni 231.604†	40.9	0.00055	mg/L	0.000822	0.00055	mg/L	0.000822	149.00%
Pb 220.353†	48.3	0.0103	mg/L	0.00142	0.0103	mg/L	0.00142	13.68%
Sb 206.836†	0.8	0.00517	mg/L	0.005578	0.00517	mg/L	0.005578	107.79%
Se 196.026†	-2.6	0.00010	mg/L	0.004862	0.00010	mg/L	0.004862	>999.9%
Si 251.611†	-307384.9	-15.5	mg/L	0.16	-15.5	mg/L	0.16	1.03%
Sn 189.927†	-65.3	-0.0125	mg/L	0.00127	-0.0125	mg/L	0.00127	10.11%
Ti 334.940†	-2538.0	0.00226	mg/L	0.000880	0.00226	mg/L	0.000880	38.91%
Tl 190.801†	-18.0	-0.0165	mg/L	0.00544	-0.0165	mg/L	0.00544	33.03%
V 290.880†	-985.4	-0.00370	mg/L	0.001354	-0.00370	mg/L	0.001354	36.57%
Zn 206.200†	-30.5	-0.00582	mg/L	0.000501	-0.00582	mg/L	0.000501	8.61%
K 766.490†	4672.1	2.96	mg/L	0.161	2.96	mg/L	0.161	5.44%
Na 589.592†	186739.8	23.1	mg/L	0.41	23.1	mg/L	0.41	1.79%
Sr 407.771†	168460.2	0.207	mg/L	0.0029	0.207	mg/L	0.0029	1.40%
Li 670.784†	186.9	0.00221	mg/L	0.001327	0.00221	mg/L	0.001327	60.15%
P 214.914†	44.2	0.0715	mg/L	0.00924	0.0715	mg/L	0.00924	12.92%

Sequence No.: 4
Sample ID: L1505152302
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 71
Date Collected: 5/27/2015 1:27:49 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505152302

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505152302

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3302516.7						26151.45	0.79%
YRADIAL	210920.2						5165.46	2.45%
Ga 417.206	1404938.4						4296.08	0.31%
GaRADIAL	50495.1						1121.34	2.22%
Ag 328.068†	824.4	0.00447	mg/L	0.000712	0.00447	mg/L	0.000712	15.93%
Al 396.153†	55.2	-0.00285	mg/L	0.004683	-0.00285	mg/L	0.004683	164.54%
As 188.979†	-21.6	-0.00847	mg/L	0.007350	-0.00847	mg/L	0.007350	86.82%
Ba 233.527†	4040.9	0.0696	mg/L	0.00102	0.0696	mg/L	0.00102	1.47%
Be 234.861†	-93.2	0.00006	mg/L	0.000049	0.00006	mg/L	0.000049	78.03%
B 249.677†	2653.1	0.0423	mg/L	0.00108	0.0423	mg/L	0.00108	2.56%
Ca 227.546†	4294.4	54.0	mg/L	0.38	54.0	mg/L	0.38	0.70%
Cd 228.802†	6.3	0.00067	mg/L	0.000231	0.00067	mg/L	0.000231	34.68%
Co 228.616†	8.5	-0.00004	mg/L	0.000622	-0.00004	mg/L	0.000622	>999.9%
Cr 267.716†	236.5	0.00125	mg/L	0.000249	0.00125	mg/L	0.000249	19.96%
Cu 327.393†	-447.4	0.00001	mg/L	0.001047	0.00001	mg/L	0.001047	>999.9%
Fe 239.562†	456.1	0.0823	mg/L	0.00042	0.0823	mg/L	0.00042	0.51%
Mg 279.077†	41490.0	15.4	mg/L	0.19	15.4	mg/L	0.19	1.21%
Mn 257.610†	15485.2	0.0238	mg/L	0.00018	0.0238	mg/L	0.00018	0.75%
Mo 202.031†	68.0	0.00655	mg/L	0.000970	0.00655	mg/L	0.000970	14.81%
Ni 231.604†	22.1	-0.00004	mg/L	0.000644	-0.00004	mg/L	0.000644	>999.9%
Pb 220.353†	16.6	0.00326	mg/L	0.001262	0.00326	mg/L	0.001262	38.70%
Sb 206.836†	-4.5	0.00058	mg/L	0.005542	0.00058	mg/L	0.005542	952.62%
Se 196.026†	0.2	0.00448	mg/L	0.007839	0.00448	mg/L	0.007839	175.00%
Si 251.611†	-316480.6	-15.9	mg/L	0.10	-15.9	mg/L	0.10	0.62%
Sn 189.927†	-64.4	-0.0124	mg/L	0.00119	-0.0124	mg/L	0.00119	9.65%
Ti 334.940†	-3271.3	0.00166	mg/L	0.000264	0.00166	mg/L	0.000264	15.93%
Tl 190.801†	-15.6	-0.0145	mg/L	0.00610	-0.0145	mg/L	0.00610	42.17%
V 290.880†	-1147.7	-0.00458	mg/L	0.000426	-0.00458	mg/L	0.000426	9.30%
Zn 206.200†	-132.1	-0.00937	mg/L	0.000446	-0.00937	mg/L	0.000446	4.76%
K 766.490†	3756.2	2.38	mg/L	0.078	2.38	mg/L	0.078	3.27%
Na 589.592†	203418.1	25.2	mg/L	0.13	25.2	mg/L	0.13	0.51%
Sr 407.771†	170156.6	0.209	mg/L	0.0014	0.209	mg/L	0.0014	0.66%
Li 670.784†	60.5	-0.00111	mg/L	0.002206	-0.00111	mg/L	0.002206	199.27%
P 214.914†	14.5	0.0249	mg/L	0.01998	0.0249	mg/L	0.01998	80.21%

Approved: May 28, 2015

Kym H. Rhoden

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Sequence No.: 5 **Autosampler Location: 72**
Sample ID: L1505138601 **Date Collected: 5/27/2015 1:31:08 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505138601

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505138601

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3276393.3						19244.72	0.59%
YRADIAL	200112.5						3857.91	1.93%
Ga 417.206	1347871.9						14241.16	1.06%
GaRADIAL	46852.4						994.01	2.12%
Ag 328.068†	207.0	0.00269	mg/L	0.001363	0.00269	mg/L	0.001363	50.63%
Al 396.153†	143.1	0.0282	mg/L	0.00553	0.0282	mg/L	0.00553	19.63%
As 188.979†	-17.8	-0.00734	mg/L	0.004647	-0.00734	mg/L	0.004647	63.30%
Ba 233.527†	75.3	0.00106	mg/L	0.000177	0.00106	mg/L	0.000177	16.73%
Be 234.861†	-116.2	0.00003	mg/L	0.000037	0.00003	mg/L	0.000037	129.49%
B 249.677†	2005.0	0.0330	mg/L	0.00226	0.0330	mg/L	0.00226	6.86%
Ca 227.546†	22.6	0.340	mg/L	0.0887	0.340	mg/L	0.0887	26.07%
Cd 228.802†	3.8	0.00050	mg/L	0.000334	0.00050	mg/L	0.000334	66.52%
Co 228.616†	-4.3	-0.00093	mg/L	0.000324	-0.00093	mg/L	0.000324	34.71%
Cr 267.716†	265.6	0.00147	mg/L	0.001083	0.00147	mg/L	0.001083	73.80%
Cu 327.393†	4655.3	0.0236	mg/L	0.00137	0.0236	mg/L	0.00137	5.80%
Fe 239.562†	198.2	0.0383	mg/L	0.00317	0.0383	mg/L	0.00317	8.30%
Mg 279.077†	370.0	0.123	mg/L	0.0028	0.123	mg/L	0.0028	2.30%
Mn 257.610†	2768.0	0.00391	mg/L	0.000187	0.00391	mg/L	0.000187	4.78%
Mo 202.031†	12.0	0.00121	mg/L	0.000923	0.00121	mg/L	0.000923	76.12%
Ni 231.604†	-0.5	-0.00075	mg/L	0.000751	-0.00075	mg/L	0.000751	100.36%
Pb 220.353†	-5.9	-0.00174	mg/L	0.002360	-0.00174	mg/L	0.002360	135.70%
Sb 206.836†	-2.1	0.00263	mg/L	0.000864	0.00263	mg/L	0.000864	32.87%
Se 196.026†	1.5	0.00653	mg/L	0.009792	0.00653	mg/L	0.009792	150.04%
Si 251.611†	-150145.4	-7.64	mg/L	0.223	-7.64	mg/L	0.223	2.92%
Sn 189.927†	-42.3	-0.00863	mg/L	0.001103	-0.00863	mg/L	0.001103	12.77%
Ti 334.940†	603.9	0.00239	mg/L	0.000157	0.00239	mg/L	0.000157	6.59%
Tl 190.801†	1.2	-0.00047	mg/L	0.006111	-0.00047	mg/L	0.006111	>999.9%
V 290.880†	-10.8	0.00183	mg/L	0.000667	0.00183	mg/L	0.000667	36.49%
Zn 206.200†	445.5	0.0108	mg/L	0.00049	0.0108	mg/L	0.00049	4.52%
K 766.490†	341.5	0.140	mg/L	0.0503	0.140	mg/L	0.0503	35.81%
Na 589.592†	802877.0	104	mg/L	0.9	104	mg/L	0.9	0.84%
Sr 407.771†	2530.9	0.00279	mg/L	0.000170	0.00279	mg/L	0.000170	6.09%
Li 670.784†	-21.8	-0.00326	mg/L	0.003216	-0.00326	mg/L	0.003216	98.52%
P 214.914†	-16.4	-0.0236	mg/L	0.00630	-0.0236	mg/L	0.00630	26.68%

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Sequence No.: 6 **Autosampler Location: 73**
Sample ID: L1505138602 **Date Collected: 5/27/2015 1:34:31 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505138602

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505138602

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2895149.6						16804.28	0.58%
YRADIAL	203540.8						3765.37	1.85%
Ga 417.206	1274098.7						17650.80	1.39%
GaRADIAL	46104.9						961.30	2.09%

Approved: May 28, 2015

Ag 328.068†	-152.9	0.00166	mg/L	0.000932	0.00166	mg/L	0.000932	56.03%
Al 396.153†	9.0	-0.0190	mg/L	0.02871	-0.0190	mg/L	0.02871	151.33%
As 188.979†	-2.2	0.00226	mg/L	0.010241	0.00226	mg/L	0.010241	452.32%
Ba 233.527†	116.6	0.00177	mg/L	0.000105	0.00177	mg/L	0.000105	5.95%
Be 234.861†	28.7	0.00030	mg/L	0.000015	0.00030	mg/L	0.000015	5.02%
B 249.677†	6693.2	0.0989	mg/L	0.00508	0.0989	mg/L	0.00508	5.13%
Ca 227.546†	17.1	0.270	mg/L	0.3301	0.270	mg/L	0.3301	122.11%
Cd 228.802†	-4.2	-0.00003	mg/L	0.000088	-0.00003	mg/L	0.000088	316.20%
Co 228.616†	0.3	-0.00061	mg/L	0.000908	-0.00061	mg/L	0.000908	149.76%
Cr 267.716†	377.8	0.00230	mg/L	0.000102	0.00230	mg/L	0.000102	4.44%
Cu 327.393†	3428.5	0.0180	mg/L	0.00164	0.0180	mg/L	0.00164	9.12%
Fe 239.562†	47.7	0.0124	mg/L	0.01392	0.0124	mg/L	0.01392	112.36%
Mg 279.077†	174.4	0.0501	mg/L	0.01856	0.0501	mg/L	0.01856	37.07%
Mn 257.610†	265.5	-0.00001	mg/L	0.000026	-0.00001	mg/L	0.000026	315.41%
Mo 202.031†	39.2	0.00381	mg/L	0.001093	0.00381	mg/L	0.001093	28.65%
Ni 231.604†	-15.0	-0.00119	mg/L	0.000718	-0.00119	mg/L	0.000718	60.12%
Pb 220.353†	-65.9	-0.0152	mg/L	0.00418	-0.0152	mg/L	0.00418	27.57%
Sb 206.836†	8.3	0.0116	mg/L	0.00692	0.0116	mg/L	0.00692	59.64%
Se 196.026†	-3.3	-0.00109	mg/L	0.008114	-0.00109	mg/L	0.008114	744.72%
Si 251.611†	-109034.6	-5.59	mg/L	0.284	-5.59	mg/L	0.284	5.08%
Sn 189.927†	8.6	-0.00003	mg/L	0.002706	-0.00003	mg/L	0.002706	>999.9%
Ti 334.940†	2278.1	0.00418	mg/L	0.000402	0.00418	mg/L	0.000402	9.61%
Tl 190.801†	-30.8	-0.0270	mg/L	0.00544	-0.0270	mg/L	0.00544	20.17%
V 290.880†	3400.9	0.0199	mg/L	0.00005	0.0199	mg/L	0.00005	0.25%
Zn 206.200†	1195.6	0.0369	mg/L	0.00079	0.0369	mg/L	0.00079	2.14%
K 766.490†	434.6	0.195	mg/L	0.0470	0.195	mg/L	0.0470	24.16%
Na 589.592†	835358.5	108	mg/L	0.7	108	mg/L	0.7	0.69%
Sr 407.771†	1872.2	0.00198	mg/L	0.000068	0.00198	mg/L	0.000068	3.44%
Li 670.784†	142.6	0.00104	mg/L	0.003283	0.00104	mg/L	0.003283	314.28%
P 214.914†	-9.0	-0.0120	mg/L	0.01491	-0.0120	mg/L	0.01491	124.35%

Sequence No.: 7
Sample ID: L1505138603
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 74
Date Collected: 5/27/2015 1:36:54 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505138603

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505138603

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2943817.0						23221.71	0.79%
YRADIAL	187245.0						5418.94	2.89%
Ga 417.206	1395922.5						13659.10	0.98%
GaRADIAL	43519.7						1041.87	2.39%
Ag 328.068†	916.2	0.00474	mg/L	0.001122	0.00474	mg/L	0.001122	23.65%
Al 396.153†	115.7	0.0182	mg/L	0.02656	0.0182	mg/L	0.02656	145.56%
As 188.979†	-16.3	-0.00504	mg/L	0.007633	-0.00504	mg/L	0.007633	151.31%
Ba 233.527†	12024.5	0.208	mg/L	0.0014	0.208	mg/L	0.0014	0.68%
Be 234.861†	74.0	0.00038	mg/L	0.000011	0.00038	mg/L	0.000011	2.81%
B 249.677†	5841.7	0.0870	mg/L	0.00555	0.0870	mg/L	0.00555	6.38%
Ca 227.546†	4989.1	62.7	mg/L	0.47	62.7	mg/L	0.47	0.76%
Cd 228.802†	-1.3	0.00019	mg/L	0.000533	0.00019	mg/L	0.000533	287.70%
Co 228.616†	-12.8	-0.00158	mg/L	0.000885	-0.00158	mg/L	0.000885	56.07%
Cr 267.716†	390.8	0.00239	mg/L	0.000266	0.00239	mg/L	0.000266	11.13%
Cu 327.393†	-1055.6	-0.00280	mg/L	0.001604	-0.00280	mg/L	0.001604	57.29%
Fe 239.562†	173.3	0.0337	mg/L	0.00549	0.0337	mg/L	0.00549	16.29%
Mg 279.077†	36471.3	13.5	mg/L	0.47	13.5	mg/L	0.47	3.45%
Mn 257.610†	9089.5	0.0138	mg/L	0.00010	0.0138	mg/L	0.00010	0.75%
Mo 202.031†	91.6	0.00880	mg/L	0.001043	0.00880	mg/L	0.001043	11.85%
Ni 231.604†	15.2	-0.00024	mg/L	0.000974	-0.00024	mg/L	0.000974	398.20%
Pb 220.353†	-20.8	-0.00507	mg/L	0.002063	-0.00507	mg/L	0.002063	40.69%
Sb 206.836†	-2.9	0.00197	mg/L	0.006551	0.00197	mg/L	0.006551	333.01%
Se 196.026†	-5.1	-0.00380	mg/L	0.008869	-0.00380	mg/L	0.008869	233.52%
Si 251.611†	-161383.3	-8.20	mg/L	0.273	-8.20	mg/L	0.273	3.33%
Sn 189.927†	45.5	0.00621	mg/L	0.002245	0.00621	mg/L	0.002245	36.18%

Approved: May 28, 2015

Ti 334.940†	-2642.2	0.00289	mg/L	0.000505	0.00289	mg/L	0.000505 17.46%
Tl 190.801†	-43.1	-0.0372	mg/L	0.00386	-0.0372	mg/L	0.00386 10.38%
V 290.880†	2065.4	0.0125	mg/L	0.00071	0.0125	mg/L	0.00071 5.69%
Zn 206.200†	-16.4	-0.00533	mg/L	0.000066	-0.00533	mg/L	0.000066 1.24%
K 766.490†	1528.7	0.984	mg/L	0.0593	0.984	mg/L	0.0593 6.03%
Na 589.592†	78553.8	9.66	mg/L	0.016	9.66	mg/L	0.016 0.17%
Sr 407.771†	196423.9	0.241	mg/L	0.0016	0.241	mg/L	0.0016 0.67%
Li 670.784†	169.6	0.00175	mg/L	0.004362	0.00175	mg/L	0.004362 248.74%
P 214.914†	5.3	0.0104	mg/L	0.00848	0.0104	mg/L	0.00848 81.48%

Sequence No.: 8 **Autosampler Location: 75**
Sample ID: L1505138604 **Date Collected: 5/27/2015 1:39:16 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505138604

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505138604

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3034579.7						32658.54	1.08%
YRADIAL	189074.0						369.57	0.20%
Ga 417.206	1416484.2						17721.55	1.25%
GaRADIAL	44730.8						191.14	0.43%
Ag 328.068†	971.2	0.00488	mg/L	0.001015	0.00488	mg/L	0.001015	20.80%
Al 396.153†	-30.3	-0.0329	mg/L	0.02953	-0.0329	mg/L	0.02953	89.80%
As 188.979†	-19.9	-0.00715	mg/L	0.001386	-0.00715	mg/L	0.001386	19.38%
Ba 233.527†	12501.4	0.216	mg/L	0.0020	0.216	mg/L	0.0020	0.90%
Be 234.861†	12.0	0.00027	mg/L	0.000059	0.00027	mg/L	0.000059	21.97%
B 249.677†	4312.7	0.0654	mg/L	0.00420	0.0654	mg/L	0.00420	6.43%
Ca 227.546†	5333.4	67.1	mg/L	0.61	67.1	mg/L	0.61	0.91%
Cd 228.802†	-3.5	0.00007	mg/L	0.000200	0.00007	mg/L	0.000200	283.22%
Co 228.616†	5.1	-0.00032	mg/L	0.000254	-0.00032	mg/L	0.000254	78.59%
Cr 267.716†	332.4	0.00196	mg/L	0.000453	0.00196	mg/L	0.000453	23.12%
Cu 327.393†	-844.7	-0.00183	mg/L	0.001543	-0.00183	mg/L	0.001543	84.36%
Fe 239.562†	94.2	0.0201	mg/L	0.01321	0.0201	mg/L	0.01321	65.62%
Mg 279.077†	34768.8	12.9	mg/L	0.07	12.9	mg/L	0.07	0.52%
Mn 257.610†	11950.8	0.0183	mg/L	0.00016	0.0183	mg/L	0.00016	0.88%
Mo 202.031†	82.1	0.00789	mg/L	0.000380	0.00789	mg/L	0.000380	4.81%
Ni 231.604†	30.9	0.00024	mg/L	0.000318	0.00024	mg/L	0.000318	130.66%
Pb 220.353†	9.2	0.00162	mg/L	0.002831	0.00162	mg/L	0.002831	174.58%
Sb 206.836†	-1.9	0.00278	mg/L	0.006452	0.00278	mg/L	0.006452	231.90%
Se 196.026†	-3.8	-0.00176	mg/L	0.013516	-0.00176	mg/L	0.013516	766.92%
Si 251.611†	-176101.3	-8.94	mg/L	0.173	-8.94	mg/L	0.173	1.94%
Sn 189.927†	28.5	0.00333	mg/L	0.004384	0.00333	mg/L	0.004384	131.68%
Ti 334.940†	-3623.5	0.00212	mg/L	0.000264	0.00212	mg/L	0.000264	12.46%
Tl 190.801†	-35.8	-0.0312	mg/L	0.00426	-0.0312	mg/L	0.00426	13.66%
V 290.880†	1131.8	0.00753	mg/L	0.000618	0.00753	mg/L	0.000618	8.21%
Zn 206.200†	86.2	-0.00176	mg/L	0.000674	-0.00176	mg/L	0.000674	38.29%
K 766.490†	2029.7	1.30	mg/L	0.044	1.30	mg/L	0.044	3.40%
Na 589.592†	89550.1	11.0	mg/L	0.03	11.0	mg/L	0.03	0.25%
Sr 407.771†	226416.3	0.279	mg/L	0.0009	0.279	mg/L	0.0009	0.34%
Li 670.784†	127.3	0.00064	mg/L	0.001460	0.00064	mg/L	0.001460	226.61%
P 214.914†	2.5	0.00611	mg/L	0.007124	0.00611	mg/L	0.007124	116.51%

Sequence No.: 9 **Autosampler Location: 76**
Sample ID: L1505138604PS WG525234-01 **Date Collected: 5/27/2015 1:41:38 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505138604PS WG525234-01

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Approved: May 28, 2015

Mean Data: L1505138604PS WG525234-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3018847.9						57127.99	1.89%
YRADIAL	193897.4						756.11	0.39%
Ga 417.206	1347301.6						19673.93	1.46%
GaRADIAL	45812.0						475.08	1.04%
Ag 328.068†	65748.0	0.197	mg/L	0.0012	0.197	mg/L	0.0012	0.60%
Al 396.153†	13743.3	4.78	mg/L	0.101	4.78	mg/L	0.101	2.10%
As 188.979†	308.5	0.192	mg/L	0.0032	0.192	mg/L	0.0032	1.65%
Ba 233.527†	39879.1	0.689	mg/L	0.0045	0.689	mg/L	0.0045	0.65%
Be 234.861†	13126.4	0.0238	mg/L	0.00019	0.0238	mg/L	0.00019	0.79%
B 249.677†	63153.6	0.901	mg/L	0.0103	0.901	mg/L	0.0103	1.14%
Ca 227.546†	5311.7	66.8	mg/L	0.47	66.8	mg/L	0.47	0.70%
Cd 228.802†	389.7	0.0231	mg/L	0.00044	0.0231	mg/L	0.00044	1.89%
Co 228.616†	1457.7	0.102	mg/L	0.0011	0.102	mg/L	0.0011	1.08%
Cr 267.716†	34923.1	0.257	mg/L	0.0007	0.257	mg/L	0.0007	0.26%
Cu 327.393†	49806.8	0.234	mg/L	0.0032	0.234	mg/L	0.0032	1.38%
Fe 239.562†	12207.0	2.10	mg/L	0.021	2.10	mg/L	0.021	0.98%
Mg 279.077†	42848.7	15.9	mg/L	0.16	15.9	mg/L	0.16	0.99%
Mn 257.610†	170414.7	0.267	mg/L	0.0008	0.267	mg/L	0.0008	0.32%
Mo 202.031†	5383.7	0.513	mg/L	0.0068	0.513	mg/L	0.0068	1.32%
Ni 231.604†	8082.7	0.252	mg/L	0.0028	0.252	mg/L	0.0028	1.13%
Pb 220.353†	1192.6	0.267	mg/L	0.0051	0.267	mg/L	0.0051	1.90%
Sb 206.836†	651.1	0.565	mg/L	0.0049	0.565	mg/L	0.0049	0.86%
Se 196.026†	118.3	0.190	mg/L	0.0102	0.190	mg/L	0.0102	5.36%
Si 251.611†	-107586.7	-5.53	mg/L	0.166	-5.53	mg/L	0.166	3.00%
Sn 189.927†	3419.6	0.577	mg/L	0.0039	0.577	mg/L	0.0039	0.68%
Ti 334.940†	453273.8	0.494	mg/L	0.0008	0.494	mg/L	0.0008	0.17%
Tl 190.801†	289.6	0.244	mg/L	0.0075	0.244	mg/L	0.0075	3.07%
V 290.880†	97282.0	0.516	mg/L	0.0012	0.516	mg/L	0.0012	0.23%
Zn 206.200†	15884.6	0.552	mg/L	0.0102	0.552	mg/L	0.0102	1.85%
K 766.490†	40062.5	25.4	mg/L	0.30	25.4	mg/L	0.30	1.19%
Na 589.592†	268705.5	33.4	mg/L	0.04	33.4	mg/L	0.04	0.13%
Sr 407.771†	578106.3	0.715	mg/L	0.0100	0.715	mg/L	0.0100	1.40%
Li 670.784†	18953.3	0.494	mg/L	0.0096	0.494	mg/L	0.0096	1.94%
P 214.914†	3436.3	5.39	mg/L	0.110	5.39	mg/L	0.110	2.03%

Sequence No.: 10 **Autosampler Location: 77**
Sample ID: L1505138604DL WG525234-02 **Date Collected: 5/27/2015 1:44:01 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505138604DL WG525234-02

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505138604DL WG525234-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3312085.0						12992.95	0.39%
YRADIAL	204512.2						4725.61	2.31%
Ga 417.206	1554746.0						3039.93	0.20%
GaRADIAL	49732.2						897.37	1.80%
Ag 328.068†	289.8	0.00291	mg/L	0.000455	0.00291	mg/L	0.000455	15.62%
Al 396.153†	-5.8	-0.0241	mg/L	0.00390	-0.0241	mg/L	0.00390	16.19%
As 188.979†	-11.5	-0.00319	mg/L	0.005522	-0.00319	mg/L	0.005522	172.97%
Ba 233.527†	2417.5	0.0416	mg/L	0.00033	0.0416	mg/L	0.00033	0.80%
Be 234.861†	-3.4	0.00024	mg/L	0.000022	0.00024	mg/L	0.000022	9.18%
B 249.677†	4128.5	0.0628	mg/L	0.00263	0.0628	mg/L	0.00263	4.20%
Ca 227.546†	1078.4	13.6	mg/L	0.24	13.6	mg/L	0.24	1.77%
Cd 228.802†	0.5	0.00028	mg/L	0.000233	0.00028	mg/L	0.000233	82.55%
Co 228.616†	-6.6	-0.00110	mg/L	0.000324	-0.00110	mg/L	0.000324	29.45%
Cr 267.716†	87.8	0.00016	mg/L	0.000102	0.00016	mg/L	0.000102	64.38%
Cu 327.393†	-601.6	-0.00070	mg/L	0.001819	-0.00070	mg/L	0.001819	258.18%
Fe 239.562†	15.3	0.00677	mg/L	0.000775	0.00677	mg/L	0.000775	11.45%

Approved: May 28, 2015

Mg 279.077†	6630.2	2.44 mg/L	0.053	2.44 mg/L	0.053	2.18%
Mn 257.610†	2315.3	0.00320 mg/L	0.000021	0.00320 mg/L	0.000021	0.66%
Mo 202.031†	25.5	0.00250 mg/L	0.001510	0.00250 mg/L	0.001510	60.42%
Ni 231.604†	-3.1	-0.00083 mg/L	0.000473	-0.00083 mg/L	0.000473	57.04%
Pb 220.353†	-6.8	-0.00195 mg/L	0.003621	-0.00195 mg/L	0.003621	185.40%
Sb 206.836†	0.5	0.00485 mg/L	0.007767	0.00485 mg/L	0.007767	160.07%
Se 196.026†	2.5	0.00808 mg/L	0.007495	0.00808 mg/L	0.007495	92.72%
Si 251.611†	9919.0	0.344 mg/L	0.0322	0.344 mg/L	0.0322	9.34%
Sn 189.927†	108.6	0.0169 mg/L	0.00397	0.0169 mg/L	0.00397	23.55%
Ti 334.940†	-847.9	0.00167 mg/L	0.000048	0.00167 mg/L	0.000048	2.85%
Tl 190.801†	-4.1	-0.00486 mg/L	0.004498	-0.00486 mg/L	0.004498	92.56%
V 290.880†	54.0	0.00210 mg/L	0.000381	0.00210 mg/L	0.000381	18.15%
Zn 206.200†	-74.7	-0.00738 mg/L	0.000413	-0.00738 mg/L	0.000413	5.59%
K 766.490†	328.4	0.234 mg/L	0.0710	0.234 mg/L	0.0710	30.36%
Na 589.592†	18119.9	2.24 mg/L	0.026	2.24 mg/L	0.026	1.17%
Sr 407.771†	48171.9	0.0590 mg/L	0.00133	0.0590 mg/L	0.00133	2.25%
Li 670.784†	-41.1	-0.00377 mg/L	0.003107	-0.00377 mg/L	0.003107	82.40%
P 214.914†	-7.1	-0.00898 mg/L	0.002809	-0.00898 mg/L	0.002809	31.27%

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Sequence No.: 11 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 5/27/2015 1:47:21 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3226772.1						43962.96	1.36%
YRADIAL	202316.8						1523.85	0.75%
Ga 417.206	1379074.0						18604.76	1.35%
GaRADIAL	47803.4						41.47	0.09%
Ag 328.068†	130480.4	0.388	mg/L	0.0020	0.388	mg/L	0.0020	0.52%
QC value within limits for Ag 328.068 Recovery = 97.04%								
Al 396.153†	28502.8	9.94	mg/L	0.097	9.94	mg/L	0.097	0.97%
QC value within limits for Al 396.153 Recovery = 99.36%								
As 188.979†	627.8	0.385	mg/L	0.0064	0.385	mg/L	0.0064	1.66%
QC value within limits for As 188.979 Recovery = 96.23%								
Ba 233.527†	56681.2	0.980	mg/L	0.0052	0.980	mg/L	0.0052	0.53%
QC value within limits for Ba 233.527 Recovery = 98.00%								
Be 234.861†	26081.2	0.0470	mg/L	0.00035	0.0470	mg/L	0.00035	0.74%
QC value within limits for Be 234.861 Recovery = 94.01%								
B 249.677†	29131.1	0.428	mg/L	0.0061	0.428	mg/L	0.0061	1.42%
QC value less than the lower limit for B 249.677 Recovery = 85.63%								
Ca 227.546†	734.2	9.35	mg/L	0.241	9.35	mg/L	0.241	2.57%
QC value within limits for Ca 227.546 Recovery = 93.48%								
Cd 228.802†	787.1	0.0463	mg/L	0.00033	0.0463	mg/L	0.00033	0.72%
QC value within limits for Cd 228.802 Recovery = 92.66%								
Co 228.616†	2825.0	0.197	mg/L	0.0028	0.197	mg/L	0.0028	1.41%
QC value within limits for Co 228.616 Recovery = 98.67%								
Cr 267.716†	67385.0	0.496	mg/L	0.0013	0.496	mg/L	0.0013	0.26%
QC value within limits for Cr 267.716 Recovery = 99.15%								
Cu 327.393†	102790.9	0.480	mg/L	0.0023	0.480	mg/L	0.0023	0.47%
QC value within limits for Cu 327.393 Recovery = 95.98%								
Fe 239.562†	23725.0	4.08	mg/L	0.038	4.08	mg/L	0.038	0.94%
QC value within limits for Fe 239.562 Recovery = 102.02%								
Mg 279.077†	27744.4	10.3	mg/L	0.08	10.3	mg/L	0.08	0.79%
QC value within limits for Mg 279.077 Recovery = 102.62%								
Mn 257.610†	316522.2	0.496	mg/L	0.0019	0.496	mg/L	0.0019	0.38%
QC value within limits for Mn 257.610 Recovery = 99.15%								
Mo 202.031†	10228.5	0.974	mg/L	0.0114	0.974	mg/L	0.0114	1.17%
QC value within limits for Mo 202.031 Recovery = 97.41%								
Ni 231.604†	15786.4	0.493	mg/L	0.0050	0.493	mg/L	0.0050	1.01%
QC value within limits for Ni 231.604 Recovery = 98.69%								
Pb 220.353†	2221.0	0.498	mg/L	0.0078	0.498	mg/L	0.0078	1.57%

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   QC value within limits for Pb 220.353  Recovery = 99.66%
Sb 206.836†            1311.0        1.13 mg/L        0.011        1.13 mg/L        0.011   1.00%
   QC value within limits for Sb 206.836  Recovery = 94.41%
Se 196.026†             249.9       0.397 mg/L       0.0097       0.397 mg/L       0.0097   2.46%
   QC value within limits for Se 196.026  Recovery = 99.24%
Si 251.611†         -183874.5       -9.34 mg/L        0.130       -9.34 mg/L        0.130   1.39%
   QC value less than the lower limit for Si 251.611  Recovery = -186.75%
Sn 189.927†            5978.2        1.01 mg/L        0.012        1.01 mg/L        0.012   1.23%
   QC value within limits for Sn 189.927  Recovery = 100.93%
Ti 334.940†          909170.0       0.981 mg/L       0.0030       0.981 mg/L       0.0030   0.30%
   QC value within limits for Ti 334.940  Recovery = 98.14%
Tl 190.801†             595.6       0.503 mg/L       0.0074       0.503 mg/L       0.0074   1.47%
   QC value within limits for Tl 190.801  Recovery = 100.58%
V 290.880†           186218.2       0.987 mg/L       0.0036       0.987 mg/L       0.0036   0.36%
   QC value within limits for V 290.880  Recovery = 98.72%
Zn 206.200†           29010.0        1.01 mg/L        0.010        1.01 mg/L        0.010   0.99%
   QC value within limits for Zn 206.200  Recovery = 101.16%
K 766.490†            77484.5        49.4 mg/L         0.29        49.4 mg/L         0.29   0.58%
   QC value within limits for K 766.490  Recovery = 98.73%
Na 589.592†          401158.3        50.4 mg/L         1.48        50.4 mg/L         1.48   2.94%
   QC value within limits for Na 589.592  Recovery = 100.79%
Sr 407.771†          807873.3        1.00 mg/L        0.041        1.00 mg/L        0.041   4.12%
   QC value within limits for Sr 407.771  Recovery = 100.20%
Li 670.784†           38642.3        1.01 mg/L        0.008        1.01 mg/L        0.008   0.81%
   QC value within limits for Li 670.784  Recovery = 101.00%
P 214.914†             6274.4        9.84 mg/L        0.120        9.84 mg/L        0.120   1.22%
   QC value within limits for P 214.914  Recovery = 98.40%
QC Failed.  Continue with analysis.

==========================================================================================
Sequence No.: 12                                   Autosampler Location: 1
Sample ID: CCB                                     Date Collected: 5/27/2015 1:49:49 PM
Analyst:                                           Data Type: Original
Initial Sample Wt:                                 Initial Sample Vol:
Dilution:                                          Sample Prep Vol:

------------------------------------------------------------------------------------------
Nebulizer Parameters: CCB
Analyte                 Back Pressure     Flow
All                     231.0 kPa         0.40 L/min

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Mean Data: CCB
                   Mean Corrected         Calib.                          Sample
Analyte               Intensity      Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029           3461045.4                                                      20462.16   0.59%
YRADIAL              216270.1                                                       1057.28   0.49%
Ga 417.206          1612417.7                                                       6990.04   0.43%
GaRADIAL              52669.1                                                        571.57   1.09%
Ag 328.068†               9.5     0.00210 mg/L      0.000380     0.00210 mg/L      0.000380  18.14%
   QC value within limits for Ag 328.068  Recovery = Not calculated
Al 396.153†             -14.4     -0.0270 mg/L       0.00808     -0.0270 mg/L       0.00808  29.89%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†              -3.8     0.00127 mg/L      0.002394     0.00127 mg/L      0.002394 188.27%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†               2.1    -0.00021 mg/L      0.000359    -0.00021 mg/L      0.000359 172.66%
   QC value within limits for Ba 233.527  Recovery = Not calculated
Be 234.861†             -12.8     0.00022 mg/L      0.000030     0.00022 mg/L      0.000030  13.23%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†             1271.6      0.0226 mg/L       0.00296      0.0226 mg/L       0.00296  13.10%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†              -7.8     -0.0421 mg/L       0.06748     -0.0421 mg/L       0.06748 160.43%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†              -0.5     0.00020 mg/L      0.000142     0.00020 mg/L      0.000142  70.71%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†               4.3    -0.00033 mg/L      0.000432    -0.00033 mg/L      0.000432 132.29%
   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†              60.2    -0.00005 mg/L      0.000497    -0.00005 mg/L      0.000497 >999.9%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†            -167.7     0.00130 mg/L      0.000087     0.00130 mg/L      0.000087   6.65%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†              14.6     0.00670 mg/L      0.001574     0.00670 mg/L      0.001574  23.48%
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   QC value within limits for Fe 239.562  Recovery = Not calculated
Mg 279.077†              16.2    -0.00852 mg/L      0.004751    -0.00852 mg/L      0.004751  55.74%
   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†             -17.0    -0.00045 mg/L      0.000019    -0.00045 mg/L      0.000019   4.26%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†               8.1     0.00084 mg/L      0.000807     0.00084 mg/L      0.000807  96.12%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†              -2.6    -0.00082 mg/L      0.000399    -0.00082 mg/L      0.000399  48.85%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†              -2.8    -0.00107 mg/L      0.005259    -0.00107 mg/L      0.005259 492.18%
   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†              -7.0    -0.00161 mg/L      0.002928    -0.00161 mg/L      0.002928 181.87%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†               3.1     0.00903 mg/L      0.014187     0.00903 mg/L      0.014187 157.18%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†          -19793.0       -1.14 mg/L         0.180       -1.14 mg/L         0.180  15.78%
   QC value less than the lower limit for Si 251.611  Recovery = Not calculated
Sn 189.927†              38.4     0.00500 mg/L      0.001665     0.00500 mg/L      0.001665  33.31%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†              81.5     0.00180 mg/L      0.000335     0.00180 mg/L      0.000335  18.61%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†               3.6     0.00159 mg/L      0.006380     0.00159 mg/L      0.006380 400.66%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†             -435.9    -0.00043 mg/L      0.000444    -0.00043 mg/L      0.000444 104.00%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†               1.4    -0.00473 mg/L      0.000438    -0.00473 mg/L      0.000438   9.26%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†              -22.7      0.0145 mg/L       0.07210      0.0145 mg/L       0.07210 498.74%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†             157.3      0.0398 mg/L       0.01226      0.0398 mg/L       0.01226  30.80%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†             189.2    -0.00010 mg/L      0.000149    -0.00010 mg/L      0.000149 149.33%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†            -100.4    -0.00533 mg/L      0.002948    -0.00533 mg/L      0.002948  55.36%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†                3.7     0.00790 mg/L      0.001518     0.00790 mg/L      0.001518  19.22%
   QC value within limits for P 214.914  Recovery = Not calculated
QC Failed.  Continue with analysis.

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Sequence No.: 13                                    Autosampler Location: 78
Sample ID: L1505138801                              Date Collected: 5/27/2015 1:53:10 PM
Analyst: KHR                                        Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

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Nebulizer Parameters: L1505138801
Analyte                 Back Pressure    Flow
All                    231.0 kPa        0.40 L/min

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Mean Data: L1505138801
                   Mean Corrected         Calib.                          Sample
Analyte               Intensity     Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029            3308522.6                                                     31179.51   0.94%
YRADIAL               205724.8                                                      4184.15   2.03%
Ga 417.206           1400724.5                                                     11394.34   0.81%
GaRADIAL               48078.1                                                       907.79   1.89%
Ag 328.068†              434.8     0.00323 mg/L      0.000139     0.00323 mg/L      0.000139   4.30%
Al 396.153†               74.5     0.00402 mg/L      0.034077     0.00402 mg/L      0.034077 847.42%
As 188.979†              -21.0    -0.00849 mg/L      0.005428    -0.00849 mg/L      0.005428  63.97%
Ba 233.527†           126851.3        2.19 mg/L         0.018        2.19 mg/L         0.018   0.83%
Be 234.861†              -85.6     0.00007 mg/L      0.000032     0.00007 mg/L      0.000032  43.19%
B 249.677†              4536.1      0.0689 mg/L       0.00220      0.0689 mg/L       0.00220   3.19%
Ca 227.546†             2931.1        36.9 mg/L          0.46        36.9 mg/L          0.46   1.26%
Cd 228.802†               9.8     0.00087 mg/L      0.000425     0.00087 mg/L      0.000425  48.73%
Co 228.616†              -5.0    -0.00171 mg/L      0.000264    -0.00171 mg/L      0.000264  15.42%
Cr 267.716†             174.5     0.00080 mg/L      0.000454     0.00080 mg/L      0.000454  57.05%
Cu 327.393†             1981.4      0.0113 mg/L       0.00076      0.0113 mg/L       0.00076   6.77%
Fe 239.562†              567.0       0.101 mg/L        0.0045       0.101 mg/L        0.0045   4.39%
Mg 279.077†            20765.4        7.68 mg/L         0.090        7.68 mg/L         0.090   1.17%
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Mn 257.610†	36479.7	0.0568	mg/L	0.00066	0.0568	mg/L	0.00066	1.16%
Mo 202.031†	35.8	0.00349	mg/L	0.000272	0.00349	mg/L	0.000272	7.78%
Ni 231.604†	37.8	0.00045	mg/L	0.000453	0.00045	mg/L	0.000453	100.25%
Pb 220.353†	16.1	0.00313	mg/L	0.001371	0.00313	mg/L	0.001371	43.86%
Sb 206.836†	-0.4	0.00414	mg/L	0.008732	0.00414	mg/L	0.008732	210.95%
Se 196.026†	-3.0	-0.00052	mg/L	0.029667	-0.00052	mg/L	0.029667	>999.9%
Si 251.611†	-146435.3	-7.46	mg/L	0.142	-7.46	mg/L	0.142	1.90%
Sn 189.927†	-26.4	-0.00596	mg/L	0.002657	-0.00596	mg/L	0.002657	44.59%
Ti 334.940†	-2640.2	0.00124	mg/L	0.000288	0.00124	mg/L	0.000288	23.30%
Tl 190.801†	-8.3	-0.00838	mg/L	0.003910	-0.00838	mg/L	0.003910	46.68%
V 290.880†	-440.8	-0.00072	mg/L	0.000752	-0.00072	mg/L	0.000752	104.39%
Zn 206.200†	2652.1	0.0877	mg/L	0.00151	0.0877	mg/L	0.00151	1.72%
K 766.490†	1940.5	1.18	mg/L	0.058	1.18	mg/L	0.058	4.95%
Na 589.592†	581590.7	74.0	mg/L	0.75	74.0	mg/L	0.75	1.02%
Sr 407.771†	591060.8	0.732	mg/L	0.0053	0.732	mg/L	0.0053	0.73%
Li 670.784†	462.9	0.00944	mg/L	0.004490	0.00944	mg/L	0.004490	47.57%
P 214.914†	0.1	0.00231	mg/L	0.016624	0.00231	mg/L	0.016624	718.89%

Sequence No.: 14 **Autosampler Location: 79**
Sample ID: L1505139101 **Date Collected: 5/27/2015 1:55:34 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505139101

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505139101

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3305486.8						39694.75	1.20%
YRADIAL	205131.7						1580.56	0.77%
Ga 417.206	1422940.5						24156.52	1.70%
GaRADIAL	49407.7						380.07	0.77%
Ag 328.068†	715.2	0.00425	mg/L	0.000606	0.00425	mg/L	0.000606	14.25%
Al 396.153†	76.9	0.00483	mg/L	0.008402	0.00483	mg/L	0.008402	174.02%
As 188.979†	-21.3	-0.00817	mg/L	0.008093	-0.00817	mg/L	0.008093	99.12%
Ba 233.527†	7719.3	0.133	mg/L	0.0021	0.133	mg/L	0.0021	1.60%
Be 234.861†	-43.0	0.00007	mg/L	0.000023	0.00007	mg/L	0.000023	33.63%
B 249.677†	2401.9	0.0403	mg/L	0.00235	0.0403	mg/L	0.00235	5.84%
Ca 227.546†	4476.6	56.3	mg/L	1.43	56.3	mg/L	1.43	2.54%
Cd 228.802†	-1.6	0.00019	mg/L	0.000128	0.00019	mg/L	0.000128	68.39%
Co 228.616†	-3.0	-0.00087	mg/L	0.000427	-0.00087	mg/L	0.000427	48.92%
Cr 267.716†	229.7	0.00119	mg/L	0.000090	0.00119	mg/L	0.000090	7.55%
Cu 327.393†	-783.0	-0.00148	mg/L	0.000354	-0.00148	mg/L	0.000354	23.86%
Fe 239.562†	2786.5	0.483	mg/L	0.0143	0.483	mg/L	0.0143	2.97%
Mg 279.077†	28675.0	10.6	mg/L	0.34	10.6	mg/L	0.34	3.16%
Mn 257.610†	124795.5	0.195	mg/L	0.0027	0.195	mg/L	0.0027	1.39%
Mo 202.031†	62.8	0.00609	mg/L	0.000418	0.00609	mg/L	0.000418	6.87%
Ni 231.604†	-21.5	-0.00140	mg/L	0.000530	-0.00140	mg/L	0.000530	37.78%
Pb 220.353†	30.6	0.00628	mg/L	0.004139	0.00628	mg/L	0.004139	65.89%
Sb 206.836†	-1.6	0.00311	mg/L	0.003559	0.00311	mg/L	0.003559	114.60%
Se 196.026†	3.7	0.00989	mg/L	0.004816	0.00989	mg/L	0.004816	48.70%
Si 251.611†	-182115.3	-9.24	mg/L	0.032	-9.24	mg/L	0.032	0.34%
Sn 189.927†	-20.4	-0.00494	mg/L	0.001062	-0.00494	mg/L	0.001062	21.52%
Ti 334.940†	-4157.0	0.00085	mg/L	0.000286	0.00085	mg/L	0.000286	33.61%
Tl 190.801†	-14.2	-0.0135	mg/L	0.01246	-0.0135	mg/L	0.01246	92.36%
V 290.880†	-415.8	-0.00051	mg/L	0.001616	-0.00051	mg/L	0.001616	317.59%
Zn 206.200†	277.8	0.00496	mg/L	0.000418	0.00496	mg/L	0.000418	8.44%
K 766.490†	1703.3	1.08	mg/L	0.096	1.08	mg/L	0.096	8.92%
Na 589.592†	226922.2	28.2	mg/L	0.50	28.2	mg/L	0.50	1.79%
Sr 407.771†	435213.6	0.538	mg/L	0.0113	0.538	mg/L	0.0113	2.09%
Li 670.784†	485.2	0.0100	mg/L	0.00252	0.0100	mg/L	0.00252	25.14%
P 214.914†	-6.6	-0.00819	mg/L	0.017377	-0.00819	mg/L	0.017377	212.20%

Sequence No.: 15 **Autosampler Location: 80**
Sample ID: L1505139102 **Date Collected: 5/27/2015 1:57:57 PM**

Approved: May 28, 2015

Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505139102

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505139102

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3456946.9						49179.12	1.42%
YRADIAL	217569.6						2282.86	1.05%
Ga 417.206	1557405.2						20562.88	1.32%
GaRADIAL	49848.4						452.44	0.91%
Ag 328.068†	467.8	0.00372	mg/L	0.000765	0.00372	mg/L	0.000765	20.56%
Al 396.153†	519.7	0.160	mg/L	0.0102	0.160	mg/L	0.0102	6.37%
As 188.979†	-11.9	-0.00299	mg/L	0.001238	-0.00299	mg/L	0.001238	41.45%
Ba 233.527†	1751.0	0.0300	mg/L	0.00028	0.0300	mg/L	0.00028	0.94%
Be 234.861†	-0.5	0.00009	mg/L	0.000058	0.00009	mg/L	0.000058	63.05%
B 249.677†	451.4	0.0138	mg/L	0.00347	0.0138	mg/L	0.00347	25.18%
Ca 227.546†	1965.1	24.7	mg/L	0.16	24.7	mg/L	0.16	0.65%
Cd 228.802†	1.7	0.00036	mg/L	0.000289	0.00036	mg/L	0.000289	80.66%
Co 228.616†	-0.7	-0.00071	mg/L	0.000477	-0.00071	mg/L	0.000477	67.12%
Cr 267.716†	47.4	-0.00016	mg/L	0.000551	-0.00016	mg/L	0.000551	345.48%
Cu 327.393†	-903.3	-0.00199	mg/L	0.001098	-0.00199	mg/L	0.001098	55.05%
Fe 239.562†	4229.6	0.731	mg/L	0.0174	0.731	mg/L	0.0174	2.38%
Mg 279.077†	11373.4	4.20	mg/L	0.118	4.20	mg/L	0.118	2.81%
Mn 257.610†	181290.0	0.284	mg/L	0.0003	0.284	mg/L	0.0003	0.12%
Mo 202.031†	36.3	0.00358	mg/L	0.000444	0.00358	mg/L	0.000444	12.42%
Ni 231.604†	-0.9	-0.00076	mg/L	0.001044	-0.00076	mg/L	0.001044	137.26%
Pb 220.353†	5.7	0.00068	mg/L	0.002315	0.00068	mg/L	0.002315	338.23%
Sb 206.836†	-8.5	-0.00286	mg/L	0.000871	-0.00286	mg/L	0.000871	30.43%
Se 196.026†	3.4	0.00937	mg/L	0.001792	0.00937	mg/L	0.001792	19.13%
Si 251.611†	-255410.9	-12.9	mg/L	0.16	-12.9	mg/L	0.16	1.25%
Sn 189.927†	-43.5	-0.00884	mg/L	0.001322	-0.00884	mg/L	0.001322	14.96%
Ti 334.940†	2749.2	0.00626	mg/L	0.003263	0.00626	mg/L	0.003263	52.10%
Tl 190.801†	-10.2	-0.0102	mg/L	0.00997	-0.0102	mg/L	0.00997	98.00%
V 290.880†	-166.8	0.00103	mg/L	0.001850	0.00103	mg/L	0.001850	180.28%
Zn 206.200†	-152.7	-0.0100	mg/L	0.00049	-0.0100	mg/L	0.00049	4.93%
K 766.490†	978.6	0.644	mg/L	0.0488	0.644	mg/L	0.0488	7.58%
Na 589.592†	23694.9	2.92	mg/L	0.045	2.92	mg/L	0.045	1.55%
Sr 407.771†	76037.2	0.0932	mg/L	0.00062	0.0932	mg/L	0.00062	0.66%
Li 670.784†	-31.8	-0.00352	mg/L	0.005662	-0.00352	mg/L	0.005662	160.65%
P 214.914†	16.0	0.0272	mg/L	0.00456	0.0272	mg/L	0.00456	16.73%

Sequence No.: 16 **Autosampler Location: 81**
Sample ID: L1505139302 **Date Collected: 5/27/2015 2:00:22 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505139302

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505139302

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3328157.4						48524.50	1.46%
YRADIAL	211287.0						5006.11	2.37%
Ga 417.206	1442936.1						17527.40	1.21%
GaRADIAL	49956.8						1179.22	2.36%
Ag 328.068†	696.3	0.00491	mg/L	0.000805	0.00491	mg/L	0.000805	16.38%
Al 396.153†	2965.4	1.02	mg/L	0.037	1.02	mg/L	0.037	3.67%
As 188.979†	-20.4	-0.00633	mg/L	0.005941	-0.00633	mg/L	0.005941	93.81%
Ba 233.527†	4047.0	0.0697	mg/L	0.00048	0.0697	mg/L	0.00048	0.70%

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Be 234.861†	190.7	0.00015	mg/L	0.000057	0.00015	mg/L	0.000057	37.49%
B 249.677†	10440.9	0.158	mg/L	0.0003	0.158	mg/L	0.0003	0.22%
Ca 227.546†	6359.8	80.0	mg/L	0.47	80.0	mg/L	0.47	0.59%
Cd 228.802†	1.6	0.00038	mg/L	0.000057	0.00038	mg/L	0.000057	15.05%
Co 228.616†	1.9	-0.00041	mg/L	0.000665	-0.00041	mg/L	0.000665	163.04%
Cr 267.716†	116728.6	0.859	mg/L	0.0028	0.859	mg/L	0.0028	0.33%
Cu 327.393†	-365.1	0.00071	mg/L	0.000900	0.00071	mg/L	0.000900	126.29%
Fe 239.562†	11204.2	1.93	mg/L	0.013	1.93	mg/L	0.013	0.70%
Mg 279.077†	58724.6	21.7	mg/L	0.28	21.7	mg/L	0.28	1.28%
Mn 257.610†	163981.5	0.257	mg/L	0.0015	0.257	mg/L	0.0015	0.59%
Mo 202.031†	71.0	0.00685	mg/L	0.001305	0.00685	mg/L	0.001305	19.04%
Ni 231.604†	85.4	0.00195	mg/L	0.000709	0.00195	mg/L	0.000709	36.38%
Pb 220.353†	41.6	0.00881	mg/L	0.001944	0.00881	mg/L	0.001944	22.08%
Sb 206.836†	17.0	0.0119	mg/L	0.00836	0.0119	mg/L	0.00836	70.31%
Se 196.026†	-0.9	0.00258	mg/L	0.003233	0.00258	mg/L	0.003233	125.45%
Si 251.611†	-182722.7	-9.27	mg/L	0.095	-9.27	mg/L	0.095	1.02%
Sn 189.927†	-44.7	-0.00904	mg/L	0.000270	-0.00904	mg/L	0.000270	2.98%
Ti 334.940†	10002.9	0.0174	mg/L	0.00002	0.0174	mg/L	0.00002	0.12%
Tl 190.801†	-21.3	-0.0193	mg/L	0.00318	-0.0193	mg/L	0.00318	16.52%
V 290.880†	-874.7	-0.00295	mg/L	0.000380	-0.00295	mg/L	0.000380	12.90%
Zn 206.200†	644.3	0.0249	mg/L	0.00027	0.0249	mg/L	0.00027	1.10%
K 766.490†	4507.4	2.85	mg/L	0.005	2.85	mg/L	0.005	0.18%
Na 589.592†	199208.1	24.7	mg/L	0.67	24.7	mg/L	0.67	2.70%
Sr 407.771†	184044.3	0.226	mg/L	0.0054	0.226	mg/L	0.0054	2.38%
Li 670.784†	70.8	-0.00084	mg/L	0.002755	-0.00084	mg/L	0.002755	328.80%
P 214.914†	41.7	0.0676	mg/L	0.02811	0.0676	mg/L	0.02811	41.60%

Sequence No.: 17
Sample ID: L1505139303
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 82
Date Collected: 5/27/2015 2:02:46 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505139303

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505139303

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3380927.8						50785.99	1.50%
YRADIAL	214447.5						1326.84	0.62%
Ga 417.206	1471802.2						22919.92	1.56%
GaRADIAL	51571.7						455.68	0.88%
Ag 328.068†	1174.3	0.00546	mg/L	0.000912	0.00546	mg/L	0.000912	16.71%
Al 396.153†	-1.2	-0.0226	mg/L	0.01046	-0.0226	mg/L	0.01046	46.25%
As 188.979†	-28.6	-0.0118	mg/L	0.00173	-0.0118	mg/L	0.00173	14.59%
Ba 233.527†	2744.3	0.0472	mg/L	0.00122	0.0472	mg/L	0.00122	2.58%
Be 234.861†	-108.0	0.00007	mg/L	0.000024	0.00007	mg/L	0.000024	34.32%
B 249.677†	11199.4	0.161	mg/L	0.0012	0.161	mg/L	0.0012	0.77%
Ca 227.546†	6329.4	79.6	mg/L	1.63	79.6	mg/L	1.63	2.05%
Cd 228.802†	-2.3	0.00017	mg/L	0.000158	0.00017	mg/L	0.000158	93.13%
Co 228.616†	-1.2	-0.00054	mg/L	0.001152	-0.00054	mg/L	0.001152	213.13%
Cr 267.716†	111812.1	0.822	mg/L	0.0060	0.822	mg/L	0.0060	0.73%
Cu 327.393†	-1006.9	-0.00256	mg/L	0.000510	-0.00256	mg/L	0.000510	19.94%
Fe 239.562†	39.3	0.0105	mg/L	0.00130	0.0105	mg/L	0.00130	12.31%
Mg 279.077†	56877.9	21.1	mg/L	0.11	21.1	mg/L	0.11	0.53%
Mn 257.610†	1022.5	0.00118	mg/L	0.000033	0.00118	mg/L	0.000033	2.77%
Mo 202.031†	60.7	0.00584	mg/L	0.001202	0.00584	mg/L	0.001202	20.56%
Ni 231.604†	-7.8	-0.00097	mg/L	0.000372	-0.00097	mg/L	0.000372	38.31%
Pb 220.353†	29.4	0.00608	mg/L	0.001450	0.00608	mg/L	0.001450	23.85%
Sb 206.836†	12.9	0.00858	mg/L	0.005547	0.00858	mg/L	0.005547	64.62%
Se 196.026†	-5.2	-0.00404	mg/L	0.006481	-0.00404	mg/L	0.006481	160.34%
Si 251.611†	-221225.6	-11.2	mg/L	0.07	-11.2	mg/L	0.07	0.60%
Sn 189.927†	-54.4	-0.0107	mg/L	0.00180	-0.0107	mg/L	0.00180	16.86%
Ti 334.940†	-5619.8	0.00053	mg/L	0.000154	0.00053	mg/L	0.000154	29.29%
Tl 190.801†	-20.0	-0.0181	mg/L	0.00310	-0.0181	mg/L	0.00310	17.13%
V 290.880†	-1560.3	-0.00692	mg/L	0.000685	-0.00692	mg/L	0.000685	9.90%
Zn 206.200†	-199.4	-0.00502	mg/L	0.000330	-0.00502	mg/L	0.000330	6.58%

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K 766.490†	3973.9	2.51	mg/L	0.038	2.51	mg/L	0.038	1.51%
Na 589.592†	195731.6	24.2	mg/L	0.21	24.2	mg/L	0.21	0.85%
Sr 407.771†	179788.8	0.220	mg/L	0.0018	0.220	mg/L	0.0018	0.83%
Li 670.784†	186.3	0.00219	mg/L	0.000222	0.00219	mg/L	0.000222	10.12%
P 214.914†	2.5	0.00604	mg/L	0.007087	0.00604	mg/L	0.007087	117.31%

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Sequence No.: 18 **Autosampler Location: 83**
Sample ID: L1505139304 WG525038-01 **Date Collected: 5/27/2015 2:06:10 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505139304 WG525038-01

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505139304 WG525038-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3195796.8						19169.64	0.60%
YRADIAL	204897.8						2649.40	1.29%
Ga 417.206	1324744.4						11079.16	0.84%
GaRADIAL	48101.0						1284.84	2.67%
Ag 328.068†	3227.5	0.0117	mg/L	0.00092	0.0117	mg/L	0.00092	7.89%
Al 396.153†	210.1	0.0514	mg/L	0.02910	0.0514	mg/L	0.02910	56.61%
As 188.979†	-32.2	-0.0103	mg/L	0.00741	-0.0103	mg/L	0.00741	71.97%
Ba 233.527†	988.4	0.0168	mg/L	0.00040	0.0168	mg/L	0.00040	2.38%
Be 234.861†	-80.4	0.00000	mg/L	0.000059	0.00000	mg/L	0.000059	>999.9%
B 249.677†	291852.1	4.12	mg/L	0.055	4.12	mg/L	0.055	1.33%
Ca 227.546†	20631.1	259	mg/L	2.2	259	mg/L	2.2	0.84%
Cd 228.802†	4.6	0.00061	mg/L	0.000420	0.00061	mg/L	0.000420	68.97%
Co 228.616†	40.3	0.00224	mg/L	0.000334	0.00224	mg/L	0.000334	14.95%
Cr 267.716†	658.5	0.00433	mg/L	0.000489	0.00433	mg/L	0.000489	11.29%
Cu 327.393†	-1305.1	-0.00395	mg/L	0.000428	-0.00395	mg/L	0.000428	10.83%
Fe 239.562†	4272.0	0.737	mg/L	0.0244	0.737	mg/L	0.0244	3.32%
Mg 279.077†	240955.8	89.3	mg/L	0.44	89.3	mg/L	0.44	0.49%
Mn 257.610†	529968.2	0.830	mg/L	0.0094	0.830	mg/L	0.0094	1.13%
Mo 202.031†	101.7	0.00991	mg/L	0.001351	0.00991	mg/L	0.001351	13.63%
Ni 231.604†	29.2	0.00019	mg/L	0.000756	0.00019	mg/L	0.000756	405.32%
Pb 220.353†	42.4	0.00854	mg/L	0.001681	0.00854	mg/L	0.001681	19.68%
Sb 206.836†	-9.8	-0.00404	mg/L	0.002609	-0.00404	mg/L	0.002609	64.63%
Se 196.026†	-18.5	-0.0251	mg/L	0.01338	-0.0251	mg/L	0.01338	53.39%
Si 251.611†	-85150.7	-4.40	mg/L	0.093	-4.40	mg/L	0.093	2.11%
Sn 189.927†	-65.3	-0.0125	mg/L	0.00137	-0.0125	mg/L	0.00137	10.90%
Ti 334.940†	-15515.7	0.00165	mg/L	0.000387	0.00165	mg/L	0.000387	23.55%
Tl 190.801†	-29.2	-0.0267	mg/L	0.00360	-0.0267	mg/L	0.00360	13.51%
V 290.880†	-2758.1	-0.0149	mg/L	0.00097	-0.0149	mg/L	0.00097	6.50%
Zn 206.200†	-128.6	-0.00916	mg/L	0.000249	-0.00916	mg/L	0.000249	2.71%
K 766.490†	3659.7	2.20	mg/L	0.069	2.20	mg/L	0.069	3.16%
Na 589.592†	1058425.7	140	mg/L	5.4	140	mg/L	5.4	3.85%
Sr 407.771†	273369.8	0.331	mg/L	0.0005	0.331	mg/L	0.0005	0.16%
Li 670.784†	16876.1	0.440	mg/L	0.0104	0.440	mg/L	0.0104	2.36%
P 214.914†	18.4	0.0311	mg/L	0.00714	0.0311	mg/L	0.00714	22.96%

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Sequence No.: 19 **Autosampler Location: 84**
Sample ID: L1505139305 WG525038-02 **Date Collected: 5/27/2015 2:08:33 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505139305 WG525038-02

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505139305 WG525038-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD

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Method: 200.7-6010-3015 ASX **Page 15** **Date: 5/27/2015 2:13:19 PM**

Analyte	Intensity	Conc.	Units	Std.Dev.	Conc.	Units	Std.Dev.	RSD
Y 371.029	3202165.5						64828.24	2.02%
YRADIAL	205065.4						3146.78	1.53%
Ga 417.206	1320057.2						26069.16	1.97%
GaRADIAL	48423.2						653.66	1.35%
Ag 328.068†	3023.6	0.0110	mg/L	0.00057	0.0110	mg/L	0.00057	5.23%
Al 396.153†	37.0	-0.00931	mg/L	0.019738	-0.00931	mg/L	0.019738	212.02%
As 188.979†	-37.8	-0.0138	mg/L	0.00587	-0.0138	mg/L	0.00587	42.67%
Ba 233.527†	776.4	0.0132	mg/L	0.00054	0.0132	mg/L	0.00054	4.10%
Be 234.861†	-81.1	0.00005	mg/L	0.000057	0.00005	mg/L	0.000057	106.01%
B 249.677†	294387.6	4.15	mg/L	0.044	4.15	mg/L	0.044	1.07%
Ca 227.546†	20778.1	261	mg/L	4.5	261	mg/L	4.5	1.71%
Cd 228.802†	16.1	0.00131	mg/L	0.000493	0.00131	mg/L	0.000493	37.63%
Co 228.616†	16.2	0.00055	mg/L	0.000410	0.00055	mg/L	0.000410	74.43%
Cr 267.716†	477.3	0.00300	mg/L	0.000314	0.00300	mg/L	0.000314	10.47%
Cu 327.393†	-1506.3	-0.00491	mg/L	0.000698	-0.00491	mg/L	0.000698	14.21%
Fe 239.562†	2975.9	0.514	mg/L	0.0167	0.514	mg/L	0.0167	3.25%
Mg 279.077†	236516.3	87.6	mg/L	0.79	87.6	mg/L	0.79	0.91%
Mn 257.610†	509495.1	0.798	mg/L	0.0089	0.798	mg/L	0.0089	1.12%
Mo 202.031†	95.6	0.00933	mg/L	0.001521	0.00933	mg/L	0.001521	16.31%
Ni 231.604†	15.3	-0.00025	mg/L	0.000697	-0.00025	mg/L	0.000697	283.01%
Pb 220.353†	44.1	0.00894	mg/L	0.002959	0.00894	mg/L	0.002959	33.11%
Sb 206.836†	-3.0	0.00189	mg/L	0.011990	0.00189	mg/L	0.011990	635.32%
Se 196.026†	-10.3	-0.0122	mg/L	0.00616	-0.0122	mg/L	0.00616	50.32%
Si 251.611†	-86430.9	-4.46	mg/L	0.197	-4.46	mg/L	0.197	4.41%
Sn 189.927†	-56.6	-0.0111	mg/L	0.00306	-0.0111	mg/L	0.00306	27.64%
Ti 334.940†	-16606.0	0.00059	mg/L	0.000201	0.00059	mg/L	0.000201	34.15%
Tl 190.801†	-27.2	-0.0250	mg/L	0.00186	-0.0250	mg/L	0.00186	7.47%
V 290.880†	-2891.6	-0.0156	mg/L	0.00256	-0.0156	mg/L	0.00256	16.41%
Zn 206.200†	-134.4	-0.00940	mg/L	0.000316	-0.00940	mg/L	0.000316	3.36%
K 766.490†	3424.2	2.05	mg/L	0.084	2.05	mg/L	0.084	4.07%
Na 589.592†	1038203.7	137	mg/L	1.1	137	mg/L	1.1	0.84%
Sr 407.771†	268461.2	0.325	mg/L	0.0027	0.325	mg/L	0.0027	0.82%
Li 670.784†	16679.5	0.434	mg/L	0.0070	0.434	mg/L	0.0070	1.61%
P 214.914†	21.4	0.0358	mg/L	0.01585	0.0358	mg/L	0.01585	44.33%

Sequence No.: 20
Sample ID: L1505139306MS WG525038-05
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 85
Date Collected: 5/27/2015 2:10:57 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505139306MS WG525038-05

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505139306MS WG525038-05

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3140902.3						34982.50	1.11%
YRADIAL	208238.8						3632.68	1.74%
Ga 417.206	1289283.5						13168.66	1.02%
GaRADIAL	49178.7						823.11	1.67%
Ag 328.068†	70724.7	0.211	mg/L	0.0010	0.211	mg/L	0.0010	0.45%
Al 396.153†	14174.6	4.93	mg/L	0.046	4.93	mg/L	0.046	0.93%
As 188.979†	289.8	0.186	mg/L	0.0103	0.186	mg/L	0.0103	5.55%
Ba 233.527†	29371.5	0.508	mg/L	0.0058	0.508	mg/L	0.0058	1.14%
Be 234.861†	13215.8	0.0238	mg/L	0.00028	0.0238	mg/L	0.00028	1.16%
B 249.677†	369871.1	5.22	mg/L	0.007	5.22	mg/L	0.007	0.13%
Ca 227.546†	22254.0	280	mg/L	2.8	280	mg/L	2.8	1.01%
Cd 228.802†	399.1	0.0237	mg/L	0.00071	0.0237	mg/L	0.00071	3.01%
Co 228.616†	1325.5	0.0923	mg/L	0.00233	0.0923	mg/L	0.00233	2.52%
Cr 267.716†	32640.5	0.240	mg/L	0.0005	0.240	mg/L	0.0005	0.22%
Cu 327.393†	50799.6	0.238	mg/L	0.0014	0.238	mg/L	0.0014	0.58%
Fe 239.562†	16116.0	2.77	mg/L	0.031	2.77	mg/L	0.031	1.10%
Mg 279.077†	266319.5	98.7	mg/L	0.86	98.7	mg/L	0.86	0.87%
Mn 257.610†	731002.0	1.15	mg/L	0.001	1.15	mg/L	0.001	0.13%
Mo 202.031†	5140.8	0.490	mg/L	0.0048	0.490	mg/L	0.0048	0.98%
Ni 231.604†	7134.5	0.223	mg/L	0.0030	0.223	mg/L	0.0030	1.34%

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Pb 220.353†	1078.7	0.241 mg/L	0.0012	0.241 mg/L	0.0012	0.48%
Sb 206.836†	666.1	0.578 mg/L	0.0070	0.578 mg/L	0.0070	1.22%
Se 196.026†	103.8	0.167 mg/L	0.0326	0.167 mg/L	0.0326	19.52%
Si 251.611†	-11995.4	-0.755 mg/L	0.1535	-0.755 mg/L	0.1535	20.34%
Sn 189.927†	2774.4	0.468 mg/L	0.0047	0.468 mg/L	0.0047	1.02%
Ti 334.940†	429179.2	0.482 mg/L	0.0012	0.482 mg/L	0.0012	0.25%
Tl 190.801†	251.8	0.211 mg/L	0.0110	0.211 mg/L	0.0110	5.20%
V 290.880†	88783.8	0.469 mg/L	0.0027	0.469 mg/L	0.0027	0.58%
Zn 206.200†	13288.8	0.461 mg/L	0.0052	0.461 mg/L	0.0052	1.12%
K 766.490†	42132.1	26.6 mg/L	0.13	26.6 mg/L	0.13	0.48%
Na 589.592†	1259055.6	170 mg/L	4.3	170 mg/L	4.3	2.51%
Sr 407.771†	662219.6	0.813 mg/L	0.0218	0.813 mg/L	0.0218	2.68%
Li 670.784†	36114.7	0.944 mg/L	0.0086	0.944 mg/L	0.0086	0.91%
P 214.914†	3139.1	4.92 mg/L	0.081	4.92 mg/L	0.081	1.64%

Sequence No.: 21
Sample ID: L1505139307MS WG525038-07
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 86
Date Collected: 5/27/2015 2:13:21 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505139307MS WG525038-07

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505139307MS WG525038-07

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3161321.3						19656.72	0.62%
YRADIAL	209205.7						780.70	0.37%
Ga 417.206	1299733.9						9962.46	0.77%
GaRADIAL	49598.5						271.63	0.55%
Ag 328.068†	72286.6	0.216	mg/L	0.0006	0.216	mg/L	0.0006	0.29%
Al 396.153†	14124.6	4.91	mg/L	0.034	4.91	mg/L	0.034	0.69%
As 188.979†	295.8	0.189	mg/L	0.0139	0.189	mg/L	0.0139	7.32%
Ba 233.527†	29625.9	0.512	mg/L	0.0043	0.512	mg/L	0.0043	0.85%
Be 234.861†	13424.6	0.0243	mg/L	0.00027	0.0243	mg/L	0.00027	1.09%
B 249.677†	366232.7	5.17	mg/L	0.030	5.17	mg/L	0.030	0.59%
Ca 227.546†	21887.8	275	mg/L	2.9	275	mg/L	2.9	1.05%
Cd 228.802†	417.4	0.0248	mg/L	0.00044	0.0248	mg/L	0.00044	1.78%
Co 228.616†	1357.1	0.0945	mg/L	0.00039	0.0945	mg/L	0.00039	0.41%
Cr 267.716†	33334.8	0.245	mg/L	0.0017	0.245	mg/L	0.0017	0.69%
Cu 327.393†	52152.3	0.244	mg/L	0.0008	0.244	mg/L	0.0008	0.33%
Fe 239.562†	14382.0	2.47	mg/L	0.027	2.47	mg/L	0.027	1.11%
Mg 279.077†	264371.7	97.9	mg/L	0.49	97.9	mg/L	0.49	0.50%
Mn 257.610†	668742.4	1.05	mg/L	0.002	1.05	mg/L	0.002	0.20%
Mo 202.031†	5235.3	0.499	mg/L	0.0048	0.499	mg/L	0.0048	0.96%
Ni 231.604†	7271.7	0.227	mg/L	0.0012	0.227	mg/L	0.0012	0.51%
Pb 220.353†	1093.3	0.245	mg/L	0.0018	0.245	mg/L	0.0018	0.75%
Sb 206.836†	682.5	0.592	mg/L	0.0018	0.592	mg/L	0.0018	0.31%
Se 196.026†	116.3	0.187	mg/L	0.0155	0.187	mg/L	0.0155	8.32%
Si 251.611†	-18530.4	-1.08	mg/L	0.059	-1.08	mg/L	0.059	5.50%
Sn 189.927†	2805.1	0.473	mg/L	0.0043	0.473	mg/L	0.0043	0.92%
Ti 334.940†	438172.6	0.491	mg/L	0.0016	0.491	mg/L	0.0016	0.32%
Tl 190.801†	241.7	0.203	mg/L	0.0105	0.203	mg/L	0.0105	5.17%
V 290.880†	91684.0	0.485	mg/L	0.0025	0.485	mg/L	0.0025	0.52%
Zn 206.200†	13495.9	0.468	mg/L	0.0037	0.468	mg/L	0.0037	0.79%
K 766.490†	43008.0	27.1	mg/L	0.21	27.1	mg/L	0.21	0.76%
Na 589.592†	1267520.0	171	mg/L	3.5	171	mg/L	3.5	2.04%
Sr 407.771†	687890.0	0.845	mg/L	0.0126	0.845	mg/L	0.0126	1.50%
Li 670.784†	36590.1	0.956	mg/L	0.0050	0.956	mg/L	0.0050	0.52%
P 214.914†	3185.8	5.00	mg/L	0.057	5.00	mg/L	0.057	1.13%

Sequence No.: 22
Sample ID: L1505139308SD WG525038-06
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 87
Date Collected: 5/27/2015 2:15:45 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Approved: May 28, 2015

Nebulizer Parameters: L1505139308SD WG525038-06

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505139308SD WG525038-06

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3127594.6						15409.71	0.49%
YRADIAL	205865.7						1217.94	0.59%
Ga 417.206	1289692.6						11759.14	0.91%
GaRADIAL	48694.5						283.32	0.58%
Ag 328.068†	70957.2	0.212	mg/L	0.0025	0.212	mg/L	0.0025	1.18%
Al 396.153†	14463.6	5.03	mg/L	0.025	5.03	mg/L	0.025	0.49%
As 188.979†	279.4	0.179	mg/L	0.0111	0.179	mg/L	0.0111	6.22%
Ba 233.527†	29817.9	0.515	mg/L	0.0025	0.515	mg/L	0.0025	0.48%
Be 234.861†	13371.3	0.0241	mg/L	0.00025	0.0241	mg/L	0.00025	1.05%
B 249.677†	370766.9	5.23	mg/L	0.026	5.23	mg/L	0.026	0.50%
Ca 227.546†	22328.6	281	mg/L	2.6	281	mg/L	2.6	0.93%
Cd 228.802†	407.9	0.0242	mg/L	0.00026	0.0242	mg/L	0.00026	1.07%
Co 228.616†	1359.5	0.0947	mg/L	0.00122	0.0947	mg/L	0.00122	1.29%
Cr 267.716†	33187.0	0.244	mg/L	0.0021	0.244	mg/L	0.0021	0.85%
Cu 327.393†	51368.2	0.241	mg/L	0.0020	0.241	mg/L	0.0020	0.82%
Fe 239.562†	16242.1	2.79	mg/L	0.026	2.79	mg/L	0.026	0.94%
Mg 279.077†	267594.0	99.1	mg/L	1.25	99.1	mg/L	1.25	1.26%
Mn 257.610†	737659.5	1.16	mg/L	0.002	1.16	mg/L	0.002	0.14%
Mo 202.031†	5215.1	0.497	mg/L	0.0045	0.497	mg/L	0.0045	0.91%
Ni 231.604†	7254.0	0.226	mg/L	0.0012	0.226	mg/L	0.0012	0.53%
Pb 220.353†	1089.9	0.244	mg/L	0.0036	0.244	mg/L	0.0036	1.48%
Sb 206.836†	670.1	0.581	mg/L	0.0105	0.581	mg/L	0.0105	1.81%
Se 196.026†	113.0	0.182	mg/L	0.0093	0.182	mg/L	0.0093	5.13%
Si 251.611†	-10516.9	-0.681	mg/L	0.2558	-0.681	mg/L	0.2558	37.56%
Sn 189.927†	2811.6	0.474	mg/L	0.0020	0.474	mg/L	0.0020	0.42%
Ti 334.940†	435977.6	0.489	mg/L	0.0020	0.489	mg/L	0.0020	0.40%
Tl 190.801†	241.2	0.203	mg/L	0.0071	0.203	mg/L	0.0071	3.53%
V 290.880†	90581.2	0.479	mg/L	0.0032	0.479	mg/L	0.0032	0.66%
Zn 206.200†	13466.4	0.467	mg/L	0.0026	0.467	mg/L	0.0026	0.56%
K 766.490†	42857.8	27.1	mg/L	0.20	27.1	mg/L	0.20	0.75%
Na 589.592†	1273369.2	172	mg/L	1.5	172	mg/L	1.5	0.86%
Sr 407.771†	681283.8	0.836	mg/L	0.0081	0.836	mg/L	0.0081	0.97%
Li 670.784†	36670.1	0.958	mg/L	0.0081	0.958	mg/L	0.0081	0.84%
P 214.914†	3173.2	4.98	mg/L	0.033	4.98	mg/L	0.033	0.66%

Sequence No.: 23
Sample ID: CCV
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 6
Date Collected: 5/27/2015 2:18:09 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3278186.8						35755.29	1.09%
YRADIAL	206760.9						1366.42	0.66%
Ga 417.206	1374140.6						17808.14	1.30%
GaRADIAL	48310.8						416.03	0.86%
Ag 328.068†	132213.5	0.393	mg/L	0.0053	0.393	mg/L	0.0053	1.35%
QC value within limits for Ag 328.068 Recovery = 98.29%								
Al 396.153†	28756.3	10.0	mg/L	0.10	10.0	mg/L	0.10	0.96%
QC value within limits for Al 396.153 Recovery = 100.26%								
As 188.979†	600.1	0.368	mg/L	0.0011	0.368	mg/L	0.0011	0.30%
QC value within limits for As 188.979 Recovery = 92.01%								
Ba 233.527†	56395.5	0.975	mg/L	0.0172	0.975	mg/L	0.0172	1.77%

Approved: May 28, 2015

QC value within limits for Ba 233.527 Recovery = 97.50%

Be 234.861†	26222.1	0.0473 mg/L	0.00080	0.0473 mg/L	0.00080	1.69%
QC value within limits for Be 234.861 Recovery = 94.55%						
B 249.677†	33212.4	0.485 mg/L	0.0135	0.485 mg/L	0.0135	2.78%
QC value within limits for B 249.677 Recovery = 97.05%						
Ca 227.546†	747.4	9.51 mg/L	0.133	9.51 mg/L	0.133	1.40%
QC value within limits for Ca 227.546 Recovery = 95.13%						
Cd 228.802†	787.4	0.0464 mg/L	0.00150	0.0464 mg/L	0.00150	3.24%
QC value within limits for Cd 228.802 Recovery = 92.84%						
Co 228.616†	2762.0	0.193 mg/L	0.0021	0.193 mg/L	0.0021	1.11%
QC value within limits for Co 228.616 Recovery = 96.43%						
Cr 267.716†	66902.0	0.492 mg/L	0.0061	0.492 mg/L	0.0061	1.24%
QC value within limits for Cr 267.716 Recovery = 98.44%						
Cu 327.393†	104417.1	0.487 mg/L	0.0071	0.487 mg/L	0.0071	1.46%
QC value within limits for Cu 327.393 Recovery = 97.48%						
Fe 239.562†	23153.2	3.98 mg/L	0.073	3.98 mg/L	0.073	1.83%
QC value within limits for Fe 239.562 Recovery = 99.57%						
Mg 279.077†	26967.3	9.97 mg/L	0.155	9.97 mg/L	0.155	1.55%
QC value within limits for Mg 279.077 Recovery = 99.75%						
Mn 257.610†	313994.0	0.492 mg/L	0.0085	0.492 mg/L	0.0085	1.73%
QC value within limits for Mn 257.610 Recovery = 98.36%						
Mo 202.031†	9940.0	0.947 mg/L	0.0085	0.947 mg/L	0.0085	0.90%
QC value within limits for Mo 202.031 Recovery = 94.67%						
Ni 231.604†	15361.9	0.480 mg/L	0.0033	0.480 mg/L	0.0033	0.68%
QC value within limits for Ni 231.604 Recovery = 96.03%						
Pb 220.353†	2155.5	0.484 mg/L	0.0064	0.484 mg/L	0.0064	1.32%
QC value within limits for Pb 220.353 Recovery = 96.74%						
Sb 206.836†	1302.6	1.13 mg/L	0.015	1.13 mg/L	0.015	1.32%
QC value within limits for Sb 206.836 Recovery = 93.81%						
Se 196.026†	244.0	0.388 mg/L	0.0016	0.388 mg/L	0.0016	0.42%
QC value within limits for Se 196.026 Recovery = 96.94%						
Si 251.611†	-178234.4	-9.06 mg/L	0.061	-9.06 mg/L	0.061	0.68%
QC value less than the lower limit for Si 251.611 Recovery = -181.12%						
Sn 189.927†	5639.8	0.952 mg/L	0.0078	0.952 mg/L	0.0078	0.82%
QC value within limits for Sn 189.927 Recovery = 95.20%						
Ti 334.940†	907356.4	0.979 mg/L	0.0152	0.979 mg/L	0.0152	1.55%
QC value within limits for Ti 334.940 Recovery = 97.94%						
Tl 190.801†	580.2	0.490 mg/L	0.0052	0.490 mg/L	0.0052	1.07%
QC value within limits for Tl 190.801 Recovery = 98.02%						
V 290.880†	184134.5	0.976 mg/L	0.0157	0.976 mg/L	0.0157	1.61%
QC value within limits for V 290.880 Recovery = 97.61%						
Zn 206.200†	27809.2	0.970 mg/L	0.0094	0.970 mg/L	0.0094	0.97%
QC value within limits for Zn 206.200 Recovery = 96.97%						
K 766.490†	77258.1	49.2 mg/L	0.61	49.2 mg/L	0.61	1.23%
QC value within limits for K 766.490 Recovery = 98.44%						
Na 589.592†	391172.6	49.1 mg/L	0.51	49.1 mg/L	0.51	1.04%
QC value within limits for Na 589.592 Recovery = 98.21%						
Sr 407.771†	786095.0	0.975 mg/L	0.0080	0.975 mg/L	0.0080	0.82%
QC value within limits for Sr 407.771 Recovery = 97.49%						
Li 670.784†	38546.1	1.01 mg/L	0.016	1.01 mg/L	0.016	1.59%
QC value within limits for Li 670.784 Recovery = 100.75%						
P 214.914†	6034.7	9.46 mg/L	0.073	9.46 mg/L	0.073	0.77%
QC value within limits for P 214.914 Recovery = 94.65%						

QC Failed. Continue with analysis.

Sequence No.: 24 **Autosampler Location: 1**
Sample ID: CCB **Date Collected: 5/27/2015 2:20:34 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCB

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3465042.3						32078.69	0.93%

Approved: May 28, 2015

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YRADIAL              218175.9                                                    6097.59   2.79%
Ga 417.206          1596151.4                                                   14826.61   0.93%
GaRADIAL              52931.4                                                    1387.79   2.62%
Ag 328.068†             -41.4     0.00195 mg/L      0.001020     0.00195 mg/L      0.001020  52.34%
   QC value within limits for Ag 328.068  Recovery = Not calculated
Al 396.153†               7.9     -0.0192 mg/L       0.00704     -0.0192 mg/L       0.00704  36.67%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†               3.7     0.00588 mg/L      0.001497     0.00588 mg/L      0.001497  25.44%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†               6.5    -0.00013 mg/L      0.000095    -0.00013 mg/L      0.000095  71.39%
   QC value within limits for Ba 233.527  Recovery = Not calculated
Be 234.861†             -23.2     0.00021 mg/L      0.000038     0.00021 mg/L      0.000038  18.53%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†             1488.9      0.0256 mg/L       0.00135      0.0256 mg/L       0.00135   5.27%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†              -1.2      0.0408 mg/L       0.14695      0.0408 mg/L       0.14695 360.00%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†               0.2     0.00022 mg/L      0.000104     0.00022 mg/L      0.000104  46.73%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†               2.1    -0.00048 mg/L      0.000111    -0.00048 mg/L      0.000111  22.97%
   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†             168.2     0.00075 mg/L      0.000698     0.00075 mg/L      0.000698  93.12%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†             -310.7     0.00064 mg/L      0.001045     0.00064 mg/L      0.001045 162.80%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†               5.5     0.00514 mg/L      0.001286     0.00514 mg/L      0.001286  25.01%
   QC value within limits for Fe 239.562  Recovery = Not calculated
Mg 279.077†              38.5    -0.00026 mg/L      0.010738    -0.00026 mg/L      0.010738 >999.9%
   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†              17.8    -0.00040 mg/L      0.000019    -0.00040 mg/L      0.000019   4.84%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†               1.4     0.00021 mg/L      0.000220     0.00021 mg/L      0.000220 104.74%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†              -2.5    -0.00081 mg/L      0.000285    -0.00081 mg/L      0.000285  35.13%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†              -5.5    -0.00167 mg/L      0.002217    -0.00167 mg/L      0.002217 133.04%
   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†               1.0     0.00531 mg/L      0.003502     0.00531 mg/L      0.003502  66.01%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†               0.6     0.00506 mg/L      0.006504     0.00506 mg/L      0.006504 128.67%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†            -3829.3      -0.342 mg/L        0.0448      -0.342 mg/L        0.0448  13.11%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†              -8.9    -0.00299 mg/L      0.000438    -0.00299 mg/L      0.000438  14.64%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†             223.1     0.00196 mg/L      0.000241     0.00196 mg/L      0.000241  12.30%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†              -3.6    -0.00444 mg/L      0.005387    -0.00444 mg/L      0.005387 121.29%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†             -280.4     0.00040 mg/L      0.001357     0.00040 mg/L      0.001357 343.56%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†               8.0    -0.00449 mg/L      0.000214    -0.00449 mg/L      0.000214   4.76%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†              -79.4     -0.0213 mg/L       0.05832     -0.0213 mg/L       0.05832 273.28%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†             406.9      0.0703 mg/L       0.01826      0.0703 mg/L       0.01826  25.98%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†             263.8    -0.00001 mg/L      0.000102    -0.00001 mg/L      0.000102 >999.9%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†              58.8    -0.00115 mg/L      0.000530    -0.00115 mg/L      0.000530  46.02%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†                4.9     0.00982 mg/L      0.010484     0.00982 mg/L      0.010484 106.78%
   QC value within limits for P 214.914  Recovery = Not calculated
All analyte(s) passed QC.

==========================================================================================
Sequence No.: 25                                  Autosampler Location: 88
Sample ID: L1505139309SD WG525038-08              Date Collected: 5/27/2015 2:23:55 PM
Analyst: KHR                                      Data Type: Original
Initial Sample Wt:                                Initial Sample Vol:
Dilution:                                         Sample Prep Vol:
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Approved: May 28, 2015

Kym H. Rhoden

Nebulizer Parameters: L1505139309SD WG525038-08

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505139309SD WG525038-08

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3214394.0						13635.27	0.42%
YRADIAL	214455.4						1492.91	0.70%
Ga 417.206	1325905.6						5213.14	0.39%
GaRADIAL	50686.8						236.94	0.47%
Ag 328.068†	72703.4	0.217	mg/L	0.0029	0.217	mg/L	0.0029	1.36%
Al 396.153†	14181.7	4.93	mg/L	0.008	4.93	mg/L	0.008	0.17%
As 188.979†	287.8	0.184	mg/L	0.0052	0.184	mg/L	0.0052	2.82%
Ba 233.527†	29527.2	0.510	mg/L	0.0078	0.510	mg/L	0.0078	1.53%
Be 234.861†	13368.0	0.0242	mg/L	0.00053	0.0242	mg/L	0.00053	2.19%
B 249.677†	369239.3	5.21	mg/L	0.090	5.21	mg/L	0.090	1.73%
Ca 227.546†	21953.5	276	mg/L	3.5	276	mg/L	3.5	1.28%
Cd 228.802†	409.4	0.0243	mg/L	0.00022	0.0243	mg/L	0.00022	0.92%
Co 228.616†	1342.8	0.0935	mg/L	0.00166	0.0935	mg/L	0.00166	1.77%
Cr 267.716†	33634.9	0.247	mg/L	0.0028	0.247	mg/L	0.0028	1.14%
Cu 327.393†	52122.4	0.244	mg/L	0.0031	0.244	mg/L	0.0031	1.28%
Fe 239.562†	14500.2	2.49	mg/L	0.008	2.49	mg/L	0.008	0.31%
Mg 279.077†	267647.4	99.1	mg/L	0.06	99.1	mg/L	0.06	0.06%
Mn 257.610†	689251.1	1.08	mg/L	0.010	1.08	mg/L	0.010	0.89%
Mo 202.031†	5202.8	0.496	mg/L	0.0078	0.496	mg/L	0.0078	1.57%
Ni 231.604†	7263.5	0.227	mg/L	0.0035	0.227	mg/L	0.0035	1.56%
Pb 220.353†	1084.1	0.243	mg/L	0.0030	0.243	mg/L	0.0030	1.22%
Sb 206.836†	667.0	0.579	mg/L	0.0030	0.579	mg/L	0.0030	0.52%
Se 196.026†	105.8	0.170	mg/L	0.0217	0.170	mg/L	0.0217	12.72%
Si 251.611†	-13201.5	-0.815	mg/L	0.1937	-0.815	mg/L	0.1937	23.76%
Sn 189.927†	2857.6	0.482	mg/L	0.0104	0.482	mg/L	0.0104	2.16%
Ti 334.940†	442385.2	0.496	mg/L	0.0033	0.496	mg/L	0.0033	0.67%
Tl 190.801†	253.2	0.213	mg/L	0.0025	0.213	mg/L	0.0025	1.16%
V 290.880†	92506.2	0.489	mg/L	0.0026	0.489	mg/L	0.0026	0.53%
Zn 206.200†	13479.9	0.468	mg/L	0.0095	0.468	mg/L	0.0095	2.02%
K 766.490†	43191.3	27.3	mg/L	0.08	27.3	mg/L	0.08	0.29%
Na 589.592†	1262890.9	170	mg/L	5.0	170	mg/L	5.0	2.95%
Sr 407.771†	678368.9	0.833	mg/L	0.0221	0.833	mg/L	0.0221	2.65%
Li 670.784†	37154.5	0.971	mg/L	0.0047	0.971	mg/L	0.0047	0.48%
P 214.914†	3183.5	4.99	mg/L	0.101	4.99	mg/L	0.101	2.02%

Sequence No.: 26
Sample ID: L1505139310
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 89
Date Collected: 5/27/2015 2:26:19 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505139310

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505139310

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3279696.0						21589.60	0.66%
YRADIAL	208627.4						2470.21	1.18%
Ga 417.206	1383389.3						7239.54	0.52%
GaRADIAL	49752.2						664.20	1.34%
Ag 328.068†	-2046.8	0.00394	mg/L	0.000655	0.00394	mg/L	0.000655	16.63%
Al 396.153†	23682.9	8.29	mg/L	0.050	8.29	mg/L	0.050	0.60%
As 188.979†	-19.7	-0.00203	mg/L	0.007810	-0.00203	mg/L	0.007810	383.93%
Ba 233.527†	14410.9	0.248	mg/L	0.0011	0.248	mg/L	0.0011	0.46%
Be 234.861†	2637.7	0.00074	mg/L	0.000249	0.00074	mg/L	0.000249	33.45%
B 249.677†	29477.8	0.486	mg/L	0.0019	0.486	mg/L	0.0019	0.40%
Ca 227.546†	8321.2	105	mg/L	0.9	105	mg/L	0.9	0.90%
Cd 228.802†	12.9	0.00108	mg/L	0.000463	0.00108	mg/L	0.000463	42.95%

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Co 228.616†	101.2	0.00579	mg/L	0.000972	0.00579	mg/L	0.000972 16.80%
Cr 267.716†	31956.1	0.234	mg/L	0.0038	0.234	mg/L	0.0038 1.62%
Cu 327.393†	3194.1	0.0195	mg/L	0.00074	0.0195	mg/L	0.00074 3.81%
Fe 239.562†	102401.2	17.6	mg/L	0.16	17.6	mg/L	0.16 0.91%
Mg 279.077†	79313.2	29.4	mg/L	0.18	29.4	mg/L	0.18 0.62%
Mn 257.610†	1073317.4	1.68	mg/L	0.030	1.68	mg/L	0.030 1.78%
Mo 202.031†	84.3	0.00816	mg/L	0.000994	0.00816	mg/L	0.000994 12.18%
Ni 231.604†	485.6	0.0145	mg/L	0.00033	0.0145	mg/L	0.00033 2.25%
Pb 220.353†	83.3	0.0183	mg/L	0.00201	0.0183	mg/L	0.00201 10.99%
Sb 206.836†	1.7	0.00458	mg/L	0.006003	0.00458	mg/L	0.006003 130.94%
Se 196.026†	-5.0	-0.00453	mg/L	0.007854	-0.00453	mg/L	0.007854 173.19%
Si 251.611†	175809.6	8.62	mg/L	0.469	8.62	mg/L	0.469 5.44%
Sn 189.927†	-56.3	-0.0110	mg/L	0.00121	-0.0110	mg/L	0.00121 11.00%
Ti 334.940†	93953.8	0.110	mg/L	0.0017	0.110	mg/L	0.0017 1.57%
Tl 190.801†	-17.4	-0.0167	mg/L	0.00283	-0.0167	mg/L	0.00283 16.97%
V 290.880†	2089.2	0.0155	mg/L	0.00101	0.0155	mg/L	0.00101 6.48%
Zn 206.200†	3053.7	0.105	mg/L	0.0013	0.105	mg/L	0.0013 1.22%
K 766.490†	6688.2	4.20	mg/L	0.031	4.20	mg/L	0.031 0.73%
Na 589.592†	404925.7	50.9	mg/L	1.34	50.9	mg/L	1.34 2.63%
Sr 407.771†	215298.7	0.264	mg/L	0.0025	0.264	mg/L	0.0025 0.96%
Li 670.784†	609.9	0.0133	mg/L	0.00213	0.0133	mg/L	0.00213 16.01%
P 214.914†	260.1	0.410	mg/L	0.0021	0.410	mg/L	0.0021 0.51%

Sequence No.: 27
Sample ID: L1505139311
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 90
Date Collected: 5/27/2015 2:28:43 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505139311

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505139311

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3278945.1						31611.30	0.96%
YRADIAL	207372.0						4646.37	2.24%
Ga 417.206	1400151.0						13095.18	0.94%
GaRADIAL	49865.7						747.55	1.50%
Ag 328.068†	1158.7	0.00541	mg/L	0.000399	0.00541	mg/L	0.000399	7.38%
Al 396.153†	70.2	0.00237	mg/L	0.001195	0.00237	mg/L	0.001195	50.37%
As 188.979†	-20.1	-0.00646	mg/L	0.001853	-0.00646	mg/L	0.001853	28.68%
Ba 233.527†	3290.1	0.0566	mg/L	0.00047	0.0566	mg/L	0.00047	0.84%
Be 234.861†	-123.2	0.00003	mg/L	0.000024	0.00003	mg/L	0.000024	91.89%
B 249.677†	28747.5	0.409	mg/L	0.0037	0.409	mg/L	0.0037	0.91%
Ca 227.546†	7984.6	100	mg/L	0.3	100	mg/L	0.3	0.26%
Cd 228.802†	2.3	0.00042	mg/L	0.000317	0.00042	mg/L	0.000317	75.76%
Co 228.616†	-8.5	-0.00117	mg/L	0.000569	-0.00117	mg/L	0.000569	48.52%
Cr 267.716†	32602.4	0.239	mg/L	0.0013	0.239	mg/L	0.0013	0.55%
Cu 327.393†	-1020.9	-0.00264	mg/L	0.000214	-0.00264	mg/L	0.000214	8.09%
Fe 239.562†	129.3	0.0259	mg/L	0.00103	0.0259	mg/L	0.00103	3.97%
Mg 279.077†	73940.2	27.4	mg/L	0.30	27.4	mg/L	0.30	1.08%
Mn 257.610†	842.5	0.00090	mg/L	0.000049	0.00090	mg/L	0.000049	5.42%
Mo 202.031†	69.4	0.00668	mg/L	0.000822	0.00668	mg/L	0.000822	12.31%
Ni 231.604†	-0.6	-0.00075	mg/L	0.000138	-0.00075	mg/L	0.000138	18.47%
Pb 220.353†	45.1	0.00963	mg/L	0.003205	0.00963	mg/L	0.003205	33.27%
Sb 206.836†	2.8	0.00487	mg/L	0.005980	0.00487	mg/L	0.005980	122.90%
Se 196.026†	-7.0	-0.00678	mg/L	0.007491	-0.00678	mg/L	0.007491	110.56%
Si 251.611†	-189158.4	-9.59	mg/L	0.114	-9.59	mg/L	0.114	1.18%
Sn 189.927†	-65.9	-0.0126	mg/L	0.00215	-0.0126	mg/L	0.00215	16.99%
Ti 334.940†	-6829.3	0.00073	mg/L	0.000356	0.00073	mg/L	0.000356	48.66%
Tl 190.801†	-16.8	-0.0154	mg/L	0.00296	-0.0154	mg/L	0.00296	19.18%
V 290.880†	-1398.2	-0.00623	mg/L	0.000573	-0.00623	mg/L	0.000573	9.20%
Zn 206.200†	-163.0	-0.00851	mg/L	0.000152	-0.00851	mg/L	0.000152	1.79%
K 766.490†	3831.1	2.40	mg/L	0.065	2.40	mg/L	0.065	2.72%
Na 589.592†	399593.7	50.2	mg/L	0.38	50.2	mg/L	0.38	0.75%
Sr 407.771†	206668.3	0.253	mg/L	0.0029	0.253	mg/L	0.0029	1.13%
Li 670.784†	406.7	0.00797	mg/L	0.003935	0.00797	mg/L	0.003935	49.40%

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P 214.914†	6.0	0.0116	mg/L	0.00872	0.0116	mg/L	0.00872 75.46%

Sequence No.: 28 **Autosampler Location: 91**
Sample ID: L1505139312 **Date Collected: 5/27/2015 2:32:03 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505139312

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505139312

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3560660.6						38958.90	1.09%
YRADIAL	221353.4						1791.88	0.81%
Ga 417.206	1606633.3						12765.24	0.79%
GaRADIAL	52811.5						288.24	0.55%
Ag 328.068†	205.9	0.00268	mg/L	0.000540	0.00268	mg/L	0.000540	20.16%
Al 396.153†	29.1	-0.0118	mg/L	0.00755	-0.0118	mg/L	0.00755	64.20%
As 188.979†	-10.3	-0.00272	mg/L	0.002819	-0.00272	mg/L	0.002819	103.69%
Ba 233.527†	7.5	-0.00012	mg/L	0.000037	-0.00012	mg/L	0.000037	31.58%
Be 234.861†	-77.0	0.00011	mg/L	0.000016	0.00011	mg/L	0.000016	15.33%
B 249.677†	-460.3	-0.00181	mg/L	0.002374	-0.00181	mg/L	0.002374	131.47%
Ca 227.546†	-4.1	0.00445	mg/L	0.131701	0.00445	mg/L	0.131701	>999.9%
Cd 228.802†	3.4	0.00045	mg/L	0.000459	0.00045	mg/L	0.000459	101.60%
Co 228.616†	-10.7	-0.00138	mg/L	0.000599	-0.00138	mg/L	0.000599	43.41%
Cr 267.716†	77.4	0.00008	mg/L	0.000314	0.00008	mg/L	0.000314	382.74%
Cu 327.393†	-566.4	-0.00054	mg/L	0.000480	-0.00054	mg/L	0.000480	88.75%
Fe 239.562†	33.1	0.00988	mg/L	0.001313	0.00988	mg/L	0.001313	13.29%
Mg 279.077†	52.8	0.00500	mg/L	0.004589	0.00500	mg/L	0.004589	91.71%
Mn 257.610†	375.8	0.00016	mg/L	0.000019	0.00016	mg/L	0.000019	11.74%
Mo 202.031†	2.4	0.00031	mg/L	0.000722	0.00031	mg/L	0.000722	235.58%
Ni 231.604†	-8.7	-0.00100	mg/L	0.000237	-0.00100	mg/L	0.000237	23.57%
Pb 220.353†	-3.9	-0.00131	mg/L	0.004268	-0.00131	mg/L	0.004268	325.22%
Sb 206.836†	4.1	0.00802	mg/L	0.001699	0.00802	mg/L	0.001699	21.20%
Se 196.026†	6.6	0.0144	mg/L	0.00563	0.0144	mg/L	0.00563	39.08%
Si 251.611†	-351674.3	-17.7	mg/L	0.29	-17.7	mg/L	0.29	1.64%
Sn 189.927†	-31.4	-0.00680	mg/L	0.002277	-0.00680	mg/L	0.002277	33.49%
Ti 334.940†	211.6	0.00194	mg/L	0.000312	0.00194	mg/L	0.000312	16.07%
Tl 190.801†	-5.9	-0.00633	mg/L	0.002401	-0.00633	mg/L	0.002401	37.90%
V 290.880†	-166.5	0.00100	mg/L	0.001019	0.00100	mg/L	0.001019	101.90%
Zn 206.200†	-133.8	-0.00944	mg/L	0.000225	-0.00944	mg/L	0.000225	2.39%
K 766.490†	-47.5	-0.00122	mg/L	0.068594	-0.00122	mg/L	0.068594	>999.9%
Na 589.592†	726.3	0.109	mg/L	0.0223	0.109	mg/L	0.0223	20.42%
Sr 407.771†	264.3	-0.00001	mg/L	0.000079	-0.00001	mg/L	0.000079	>999.9%
Li 670.784†	-169.8	-0.00714	mg/L	0.000593	-0.00714	mg/L	0.000593	8.30%
P 214.914†	-0.3	0.00175	mg/L	0.008204	0.00175	mg/L	0.008204	469.20%

Sequence No.: 29 **Autosampler Location: 92**
Sample ID: L1505140201 **Date Collected: 5/27/2015 2:35:25 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505140201

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505140201

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3244308.4						49583.81	1.53%
YRADIAL	208222.3						5733.01	2.75%
Ga 417.206	1341985.0						19086.27	1.42%

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GaRADIAL	49282.0					1475.58	2.99%
Ag 328.068†	839.6	0.00437	mg/L	0.000402	0.00437 mg/L	0.000402	9.22%
Al 396.153†	1.7	-0.0216	mg/L	0.01631	-0.0216 mg/L	0.01631	75.53%
As 188.979†	-19.7	-0.00705	mg/L	0.002643	-0.00705 mg/L	0.002643	37.49%
Ba 233.527†	1406.9	0.0241	mg/L	0.00038	0.0241 mg/L	0.00038	1.58%
Be 234.861†	-3.7	0.00011	mg/L	0.000026	0.00011 mg/L	0.000026	23.95%
B 249.677†	14630.9	0.213	mg/L	0.0038	0.213 mg/L	0.0038	1.77%
Ca 227.546†	4767.7	60.0	mg/L	0.92	60.0 mg/L	0.92	1.53%
Cd 228.802†	4.2	0.00053	mg/L	0.000191	0.00053 mg/L	0.000191	35.83%
Co 228.616†	-7.4	-0.00115	mg/L	0.000563	-0.00115 mg/L	0.000563	49.06%
Cr 267.716†	261.7	0.00142	mg/L	0.000323	0.00142 mg/L	0.000323	22.79%
Cu 327.393†	138.4	0.00280	mg/L	0.000209	0.00280 mg/L	0.000209	7.47%
Fe 239.562†	3502.8	0.606	mg/L	0.0116	0.606 mg/L	0.0116	1.91%
Mg 279.077†	70689.2	26.2	mg/L	0.11	26.2 mg/L	0.11	0.41%
Mn 257.610†	113505.8	0.177	mg/L	0.0016	0.177 mg/L	0.0016	0.88%
Mo 202.031†	81.8	0.00789	mg/L	0.000909	0.00789 mg/L	0.000909	11.53%
Ni 231.604†	10.3	-0.00040	mg/L	0.000372	-0.00040 mg/L	0.000372	92.15%
Pb 220.353†	25.5	0.00513	mg/L	0.003554	0.00513 mg/L	0.003554	69.29%
Sb 206.836†	-2.1	0.00262	mg/L	0.004157	0.00262 mg/L	0.004157	158.96%
Se 196.026†	-0.6	0.00303	mg/L	0.007138	0.00303 mg/L	0.007138	235.64%
Si 251.611†	-231238.5	-11.7	mg/L	0.15	-11.7 mg/L	0.15	1.27%
Sn 189.927†	-55.6	-0.0109	mg/L	0.00119	-0.0109 mg/L	0.00119	10.97%
Ti 334.940†	-4313.4	0.00092	mg/L	0.000569	0.00092 mg/L	0.000569	62.05%
Tl 190.801†	-20.9	-0.0190	mg/L	0.00675	-0.0190 mg/L	0.00675	35.49%
V 290.880†	-840.0	-0.00313	mg/L	0.000517	-0.00313 mg/L	0.000517	16.53%
Zn 206.200†	-41.9	-0.00617	mg/L	0.000048	-0.00617 mg/L	0.000048	0.78%
K 766.490†	3606.2	2.14	mg/L	0.040	2.14 mg/L	0.040	1.88%
Na 589.592†	1261821.7	170	mg/L	1.4	170 mg/L	1.4	0.85%
Sr 407.771†	1659449.5	2.06	mg/L	0.013	2.06 mg/L	0.013	0.64%
Li 670.784†	696.3	0.0156	mg/L	0.00312	0.0156 mg/L	0.00312	20.07%
P 214.914†	-6.1	-0.00743	mg/L	0.015683	-0.00743 mg/L	0.015683	211.07%

Sequence No.: 30 **Autosampler Location: 93**
Sample ID: L1505140301 **Date Collected: 5/27/2015 2:37:50 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505140301

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505140301

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3330721.2						76786.60	2.31%
YRADIAL	210112.3						2371.02	1.13%
Ga 417.206	1453384.2						22382.76	1.54%
GaRADIAL	49997.7						679.53	1.36%
Ag 328.068†	1067.4	0.00502	mg/L	0.001283	0.00502	mg/L	0.001283	25.56%
Al 396.153†	569.7	0.178	mg/L	0.0226	0.178	mg/L	0.0226	12.73%
As 188.979†	-33.0	-0.0146	mg/L	0.00474	-0.0146	mg/L	0.00474	32.44%
Ba 233.527†	3124.2	0.0538	mg/L	0.00105	0.0538	mg/L	0.00105	1.95%
Be 234.861†	-99.7	0.00003	mg/L	0.000009	0.00003	mg/L	0.000009	27.86%
B 249.677†	4048.3	0.0625	mg/L	0.00034	0.0625	mg/L	0.00034	0.54%
Ca 227.546†	7285.3	91.6	mg/L	0.92	91.6	mg/L	0.92	1.00%
Cd 228.802†	-2.3	0.00018	mg/L	0.000187	0.00018	mg/L	0.000187	101.69%
Co 228.616†	-2.8	-0.00083	mg/L	0.000696	-0.00083	mg/L	0.000696	83.72%
Cr 267.716†	344.6	0.00204	mg/L	0.000063	0.00204	mg/L	0.000063	3.08%
Cu 327.393†	-859.9	-0.00188	mg/L	0.001785	-0.00188	mg/L	0.001785	95.11%
Fe 239.562†	1275.8	0.223	mg/L	0.0021	0.223	mg/L	0.0021	0.94%
Mg 279.077†	85927.0	31.8	mg/L	0.43	31.8	mg/L	0.43	1.36%
Mn 257.610†	126017.0	0.197	mg/L	0.0004	0.197	mg/L	0.0004	0.22%
Mo 202.031†	61.4	0.00595	mg/L	0.001656	0.00595	mg/L	0.001656	27.84%
Ni 231.604†	33.4	0.00032	mg/L	0.000420	0.00032	mg/L	0.000420	131.10%
Pb 220.353†	34.7	0.00724	mg/L	0.002027	0.00724	mg/L	0.002027	28.00%
Sb 206.836†	1.1	0.00540	mg/L	0.003157	0.00540	mg/L	0.003157	58.51%
Se 196.026†	-5.8	-0.00502	mg/L	0.012521	-0.00502	mg/L	0.012521	249.35%
Si 251.611†	-260270.3	-13.1	mg/L	0.17	-13.1	mg/L	0.17	1.29%

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Sn 189.927†	-63.1	-0.0122 mg/L	0.00368	-0.0122 mg/L	0.00368	30.25%
Ti 334.940†	-4546.7	0.00270 mg/L	0.000525	0.00270 mg/L	0.000525	19.46%
Tl 190.801†	-26.1	-0.0234 mg/L	0.00355	-0.0234 mg/L	0.00355	15.20%
V 290.880†	-1514.3	-0.00692 mg/L	0.001102	-0.00692 mg/L	0.001102	15.94%
Zn 206.200†	-148.1	-0.00991 mg/L	0.000902	-0.00991 mg/L	0.000902	9.10%
K 766.490†	3535.6	2.25 mg/L	0.020	2.25 mg/L	0.020	0.88%
Na 589.592†	94850.0	11.7 mg/L	0.12	11.7 mg/L	0.12	1.04%
Sr 407.771†	963500.0	1.19 mg/L	0.016	1.19 mg/L	0.016	1.34%
Li 670.784†	89.2	-0.00036 mg/L	0.003362	-0.00036 mg/L	0.003362	947.14%
P 214.914†	7.8	0.0144 mg/L	0.00697	0.0144 mg/L	0.00697	48.59%

Sequence No.: 31 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 5/27/2015 2:40:14 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3249825.8						42392.73	1.30%
YRADIAL	207417.8						1390.98	0.67%
Ga 417.206	1366679.8						11771.69	0.86%
GaRADIAL	48756.2						728.97	1.50%
Ag 328.068†	133283.7	0.396	mg/L	0.0040	0.396	mg/L	0.0040	1.01%
QC value within limits for Ag 328.068 Recovery = 99.10%								
Al 396.153†	29386.1	10.2	mg/L	0.09	10.2	mg/L	0.09	0.89%
QC value within limits for Al 396.153 Recovery = 102.46%								
As 188.979†	615.1	0.377	mg/L	0.0070	0.377	mg/L	0.0070	1.87%
QC value within limits for As 188.979 Recovery = 94.32%								
Ba 233.527†	57215.9	0.989	mg/L	0.0062	0.989	mg/L	0.0062	0.62%
QC value within limits for Ba 233.527 Recovery = 98.92%								
Be 234.861†	26812.5	0.0483	mg/L	0.00039	0.0483	mg/L	0.00039	0.80%
QC value within limits for Be 234.861 Recovery = 96.64%								
B 249.677†	26570.0	0.392	mg/L	0.0024	0.392	mg/L	0.0024	0.62%
QC value less than the lower limit for B 249.677 Recovery = 78.44%								
Ca 227.546†	755.2	9.61	mg/L	0.149	9.61	mg/L	0.149	1.55%
QC value within limits for Ca 227.546 Recovery = 96.12%								
Cd 228.802†	794.6	0.0468	mg/L	0.00030	0.0468	mg/L	0.00030	0.64%
QC value within limits for Cd 228.802 Recovery = 93.64%								
Co 228.616†	2799.5	0.195	mg/L	0.0017	0.195	mg/L	0.0017	0.86%
QC value within limits for Co 228.616 Recovery = 97.74%								
Cr 267.716†	67778.3	0.499	mg/L	0.0013	0.499	mg/L	0.0013	0.26%
QC value within limits for Cr 267.716 Recovery = 99.73%								
Cu 327.393†	105475.4	0.492	mg/L	0.0041	0.492	mg/L	0.0041	0.84%
QC value within limits for Cu 327.393 Recovery = 98.47%								
Fe 239.562†	23916.3	4.11	mg/L	0.027	4.11	mg/L	0.027	0.66%
QC value within limits for Fe 239.562 Recovery = 102.85%								
Mg 279.077†	27760.1	10.3	mg/L	0.04	10.3	mg/L	0.04	0.40%
QC value within limits for Mg 279.077 Recovery = 102.68%								
Mn 257.610†	318944.1	0.500	mg/L	0.0025	0.500	mg/L	0.0025	0.50%
QC value within limits for Mn 257.610 Recovery = 99.91%								
Mo 202.031†	10056.1	0.958	mg/L	0.0056	0.958	mg/L	0.0056	0.58%
QC value within limits for Mo 202.031 Recovery = 95.77%								
Ni 231.604†	15585.8	0.487	mg/L	0.0044	0.487	mg/L	0.0044	0.90%
QC value within limits for Ni 231.604 Recovery = 97.43%								
Pb 220.353†	2169.6	0.487	mg/L	0.0046	0.487	mg/L	0.0046	0.94%
QC value within limits for Pb 220.353 Recovery = 97.37%								
Sb 206.836†	1308.9	1.13	mg/L	0.003	1.13	mg/L	0.003	0.22%
QC value within limits for Sb 206.836 Recovery = 94.26%								
Se 196.026†	250.9	0.399	mg/L	0.0074	0.399	mg/L	0.0074	1.86%
QC value within limits for Se 196.026 Recovery = 99.65%								
Si 251.611†	-178550.8	-9.07	mg/L	0.318	-9.07	mg/L	0.318	3.50%
QC value less than the lower limit for Si 251.611 Recovery = -181.43%								
Sn 189.927†	5718.7	0.965	mg/L	0.0083	0.965	mg/L	0.0083	0.86%

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QC value within limits for Sn 189.927 Recovery = 96.54%
Ti 334.940† 921293.5 0.994 mg/L 0.0054 0.994 mg/L 0.0054 0.54%
QC value within limits for Ti 334.940 Recovery = 99.44%
Tl 190.801† 583.2 0.493 mg/L 0.0093 0.493 mg/L 0.0093 1.89%
QC value within limits for Tl 190.801 Recovery = 98.54%
V 290.880† 187016.8 0.991 mg/L 0.0074 0.991 mg/L 0.0074 0.74%
QC value within limits for V 290.880 Recovery = 99.14%
Zn 206.200† 28160.0 0.982 mg/L 0.0076 0.982 mg/L 0.0076 0.77%
QC value within limits for Zn 206.200 Recovery = 98.20%
K 766.490† 78382.4 49.9 mg/L 0.61 49.9 mg/L 0.61 1.22%
QC value within limits for K 766.490 Recovery = 99.88%
Na 589.592† 400346.6 50.3 mg/L 0.96 50.3 mg/L 0.96 1.91%
QC value within limits for Na 589.592 Recovery = 100.58%
Sr 407.771† 812020.1 1.01 mg/L 0.007 1.01 mg/L 0.007 0.72%
QC value within limits for Sr 407.771 Recovery = 100.71%
Li 670.784† 39456.7 1.03 mg/L 0.021 1.03 mg/L 0.021 2.02%
QC value within limits for Li 670.784 Recovery = 103.14%
P 214.914† 6118.9 9.60 mg/L 0.051 9.60 mg/L 0.051 0.53%
QC value within limits for P 214.914 Recovery = 95.97%
QC Failed. Continue with analysis.

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Sequence No.: 32 **Autosampler Location: 1**
Sample ID: CCB **Date Collected: 5/27/2015 2:42:39 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCB

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3491395.4						31717.45	0.91%
YRADIAL	218151.5						2668.06	1.22%
Ga 417.206	1607692.0						8494.80	0.53%
GaRADIAL	52808.6						563.22	1.07%
Ag 328.068†	89.9	0.00233	mg/L	0.000540	0.00233	mg/L	0.000540	23.16%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	15.6	-0.0165	mg/L	0.00349	-0.0165	mg/L	0.00349	21.11%
QC value within limits for Al 396.153 Recovery = Not calculated								
As 188.979†	-7.0	-0.00071	mg/L	0.002450	-0.00071	mg/L	0.002450	347.38%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	-5.7	-0.00034	mg/L	0.000187	-0.00034	mg/L	0.000187	54.26%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 234.861†	0.7	0.00025	mg/L	0.000069	0.00025	mg/L	0.000069	27.57%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	-79.3	0.00355	mg/L	0.002158	0.00355	mg/L	0.002158	60.87%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	-0.8	0.0455	mg/L	0.03934	0.0455	mg/L	0.03934	86.48%
QC value within limits for Ca 227.546 Recovery = Not calculated								
Cd 228.802†	-4.2	-0.00002	mg/L	0.000466	-0.00002	mg/L	0.000466	>999.9%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	-7.1	-0.00112	mg/L	0.000129	-0.00112	mg/L	0.000129	11.44%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	110.8	0.00033	mg/L	0.001075	0.00033	mg/L	0.001075	328.64%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	-273.4	0.00081	mg/L	0.000558	0.00081	mg/L	0.000558	68.45%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	0.1	0.00421	mg/L	0.001046	0.00421	mg/L	0.001046	24.82%
QC value within limits for Fe 239.562 Recovery = Not calculated								
Mg 279.077†	52.0	0.00473	mg/L	0.007479	0.00473	mg/L	0.007479	158.05%
QC value within limits for Mg 279.077 Recovery = Not calculated								
Mn 257.610†	24.5	-0.00039	mg/L	0.000033	-0.00039	mg/L	0.000033	8.43%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	10.2	0.00104	mg/L	0.000441	0.00104	mg/L	0.000441	42.27%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	-1.1	-0.00077	mg/L	0.000523	-0.00077	mg/L	0.000523	68.22%

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   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†                11.2     0.00206 mg/L      0.002456     0.00206 mg/L      0.002456 119.12%
   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†                -4.8     0.00033 mg/L      0.003541     0.00033 mg/L      0.003541 >999.9%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†                 0.8     0.00532 mg/L      0.006573     0.00532 mg/L      0.006573 123.50%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†            -6463.3      -0.473 mg/L        0.2656      -0.473 mg/L        0.2656  56.13%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†              -23.4    -0.00545 mg/L      0.001006    -0.00545 mg/L      0.001006  18.48%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†              207.0     0.00194 mg/L      0.000241     0.00194 mg/L      0.000241  12.42%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†               -3.7    -0.00452 mg/L      0.000675    -0.00452 mg/L      0.000675  14.93%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†               -351.1     0.00002 mg/L      0.000669     0.00002 mg/L      0.000669 >999.9%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†               -4.7    -0.00494 mg/L      0.000456    -0.00494 mg/L      0.000456   9.22%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†               -36.9     0.00550 mg/L      0.060309     0.00550 mg/L      0.060309 >999.9%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†              278.1      0.0546 mg/L       0.01185      0.0546 mg/L       0.01185  21.73%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†              173.5    -0.00012 mg/L      0.000210    -0.00012 mg/L      0.000210 172.22%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†               48.6    -0.00142 mg/L      0.002764    -0.00142 mg/L      0.002764 194.70%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†                -2.7    -0.00205 mg/L      0.018309    -0.00205 mg/L      0.018309 892.12%
   QC value within limits for P 214.914  Recovery = Not calculated
All analyte(s) passed QC.
```

Approved: May 28, 2015

Lynn H. Rhoden

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Analysis Begun

Start Time: 5/27/2015 2:53:21 PM **Plasma On Time: 5/27/2015 6:39:13 AM**
Logged In Analyst: peicp2 **Technique: ICP Continuous**
Spectrometer Model: Optima 4300 DV, S/N 077N4011401 **Autosampler Model: Cetac**

Sample Information File: C:\pe\peicp2\Sample Information\MONDAY1.sif
Batch ID:
Results Data Set: 052715HR
Results Library: C:\pe\peicp2\Results\results2.mdb

==========

Method Loaded
Method Name: 200.7-6010-3015 ASX **Method Last Saved: 5/27/2015 11:32:50 AM**
IEC File: PLUS-P.iec **SMF File:**
Method Description: STANDARD

==========

Sequence No.: 1 **Autosampler Location: 121**
Sample ID: PBW ZB WG525230-02 **Date Collected: 5/27/2015 2:53:24 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: PBW ZB WG525230-02

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: PBW ZB WG525230-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3461512.5						24775.57	0.72%
YRADIAL	216848.6						1948.17	0.90%
Ga 417.206	1577413.7						10502.26	0.67%
GaRADIAL	52240.2						856.88	1.64%
Ag 328.068†	-43.3	0.00195	mg/L	0.000795	0.00195	mg/L	0.000795	40.83%
Al 396.153†	13.9	-0.0171	mg/L	0.00208	-0.0171	mg/L	0.00208	12.13%
As 188.979†	-8.7	-0.00173	mg/L	0.000477	-0.00173	mg/L	0.000477	27.64%
Ba 233.527†	-1.3	-0.00027	mg/L	0.000062	-0.00027	mg/L	0.000062	23.17%
Be 234.861†	-56.7	0.00014	mg/L	0.000019	0.00014	mg/L	0.000019	13.00%
B 249.677†	-412.8	-0.00113	mg/L	0.001561	-0.00113	mg/L	0.001561	138.43%
Ca 227.546†	-4.3	0.00175	mg/L	0.303264	0.00175	mg/L	0.303264	>999.9%
Cd 228.802†	-2.3	0.00011	mg/L	0.000001	0.00011	mg/L	0.000001	0.49%
Co 228.616†	-1.5	-0.00073	mg/L	0.000952	-0.00073	mg/L	0.000952	129.91%
Cr 267.716†	77.6	0.00008	mg/L	0.000300	0.00008	mg/L	0.000300	362.40%
Cu 327.393†	-419.8	0.00014	mg/L	0.000809	0.00014	mg/L	0.000809	590.93%
Fe 239.562†	39.5	0.0110	mg/L	0.00056	0.0110	mg/L	0.00056	5.06%
Mg 279.077†	19.4	-0.00736	mg/L	0.003486	-0.00736	mg/L	0.003486	47.38%
Mn 257.610†	30.4	-0.00038	mg/L	0.000029	-0.00038	mg/L	0.000029	7.75%
Mo 202.031†	5.8	0.00063	mg/L	0.000245	0.00063	mg/L	0.000245	38.96%
Ni 231.604†	-9.7	-0.00104	mg/L	0.000394	-0.00104	mg/L	0.000394	37.97%
Pb 220.353†	-4.1	-0.00136	mg/L	0.000942	-0.00136	mg/L	0.000942	69.20%
Sb 206.836†	-6.6	-0.00122	mg/L	0.009301	-0.00122	mg/L	0.009301	762.28%
Se 196.026†	10.5	0.0206	mg/L	0.00533	0.0206	mg/L	0.00533	25.86%
Si 251.611†	-171057.0	-8.69	mg/L	0.282	-8.69	mg/L	0.282	3.25%
Sn 189.927†	-45.9	-0.00924	mg/L	0.001841	-0.00924	mg/L	0.001841	19.92%
Ti 334.940†	170.5	0.00190	mg/L	0.000184	0.00190	mg/L	0.000184	9.68%
Tl 190.801†	-2.4	-0.00343	mg/L	0.001677	-0.00343	mg/L	0.001677	48.82%
V 290.880†	-144.9	0.00111	mg/L	0.000847	0.00111	mg/L	0.000847	76.04%
Zn 206.200†	-162.0	-0.0104	mg/L	0.00018	-0.0104	mg/L	0.00018	1.73%
K 766.490†	32.2	0.0491	mg/L	0.06768	0.0491	mg/L	0.06768	137.72%
Na 589.592†	120.4	0.0353	mg/L	0.00604	0.0353	mg/L	0.00604	17.10%
Sr 407.771†	239.9	-0.00004	mg/L	0.000075	-0.00004	mg/L	0.000075	196.31%
Li 670.784†	9.7	-0.00244	mg/L	0.002726	-0.00244	mg/L	0.002726	111.81%
P 214.914†	5.7	0.0111	mg/L	0.00613	0.0111	mg/L	0.00613	55.23%

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Sequence No.: 2 **Autosampler Location: 122**

Approved: May 28, 2015

Lynn H. Rhoden

Sample ID: LCSW ZB WG525230-03
Analyst: KHR
Initial Sample Wt:
Dilution:

Date Collected: 5/27/2015 2:56:46 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: LCSW ZB WG525230-03

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: LCSW ZB WG525230-03

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3296185.8						20661.74	0.63%
YRADIAL	211385.6						3037.26	1.44%
Ga 417.206	1390682.8						8430.37	0.61%
GaRADIAL	49343.3						385.52	0.78%
Ag 328.068†	65238.0	0.195	mg/L	0.0010	0.195	mg/L	0.0010	0.50%
Al 396.153†	14431.1	5.02	mg/L	0.014	5.02	mg/L	0.014	0.28%
As 188.979†	278.2	0.172	mg/L	0.0061	0.172	mg/L	0.0061	3.57%
Ba 233.527†	28828.7	0.498	mg/L	0.0019	0.498	mg/L	0.0019	0.38%
Be 234.861†	12736.3	0.0231	mg/L	0.00006	0.0231	mg/L	0.00006	0.25%
B 249.677†	56191.8	0.802	mg/L	0.0065	0.802	mg/L	0.0065	0.81%
Ca 227.546†	356.6	4.57	mg/L	0.034	4.57	mg/L	0.034	0.75%
Cd 228.802†	382.7	0.0227	mg/L	0.00050	0.0227	mg/L	0.00050	2.20%
Co 228.616†	1376.6	0.0958	mg/L	0.00129	0.0958	mg/L	0.00129	1.35%
Cr 267.716†	33122.2	0.243	mg/L	0.0022	0.243	mg/L	0.0022	0.91%
Cu 327.393†	50746.4	0.238	mg/L	0.0006	0.238	mg/L	0.0006	0.26%
Fe 239.562†	11715.5	2.02	mg/L	0.013	2.02	mg/L	0.013	0.64%
Mg 279.077†	13365.1	4.94	mg/L	0.042	4.94	mg/L	0.042	0.85%
Mn 257.610†	154400.9	0.242	mg/L	0.0014	0.242	mg/L	0.0014	0.57%
Mo 202.031†	4967.1	0.473	mg/L	0.0015	0.473	mg/L	0.0015	0.31%
Ni 231.604†	7534.2	0.235	mg/L	0.0007	0.235	mg/L	0.0007	0.29%
Pb 220.353†	1056.3	0.237	mg/L	0.0040	0.237	mg/L	0.0040	1.70%
Sb 206.836†	632.8	0.549	mg/L	0.0006	0.549	mg/L	0.0006	0.12%
Se 196.026†	114.8	0.185	mg/L	0.0064	0.185	mg/L	0.0064	3.46%
Si 251.611†	-87735.7	-4.53	mg/L	0.058	-4.53	mg/L	0.058	1.28%
Sn 189.927†	2809.6	0.474	mg/L	0.0036	0.474	mg/L	0.0036	0.75%
Ti 334.940†	445105.2	0.481	mg/L	0.0029	0.481	mg/L	0.0029	0.59%
Tl 190.801†	289.5	0.244	mg/L	0.0071	0.244	mg/L	0.0071	2.90%
V 290.880†	91039.5	0.484	mg/L	0.0047	0.484	mg/L	0.0047	0.97%
Zn 206.200†	13629.8	0.473	mg/L	0.0034	0.473	mg/L	0.0034	0.72%
K 766.490†	37949.2	24.1	mg/L	0.17	24.1	mg/L	0.17	0.72%
Na 589.592†	195817.8	24.3	mg/L	0.30	24.3	mg/L	0.30	1.25%
Sr 407.771†	395017.4	0.490	mg/L	0.0065	0.490	mg/L	0.0065	1.32%
Li 670.784†	19618.3	0.511	mg/L	0.0083	0.511	mg/L	0.0083	1.62%
P 214.914†	2938.5	4.61	mg/L	0.028	4.61	mg/L	0.028	0.60%

Sequence No.: 3
Sample ID: FBLK1 WG525064-01
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 123
Date Collected: 5/27/2015 2:59:10 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: FBLK1 WG525064-01

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: FBLK1 WG525064-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3254848.0						36808.06	1.13%
YRADIAL	208104.5						2969.80	1.43%
Ga 417.206	1351388.5						11854.27	0.88%
GaRADIAL	48250.6						812.37	1.68%
Ag 328.068†	407.6	0.00327	mg/L	0.001008	0.00327	mg/L	0.001008	30.84%
Al 396.153†	-2.1	-0.0227	mg/L	0.00877	-0.0227	mg/L	0.00877	38.59%
As 188.979†	-8.5	-0.00160	mg/L	0.005219	-0.00160	mg/L	0.005219	325.82%

Approved: May 28, 2015

Kym H. Rhoden

Ba 233.527†	-0.3	-0.00025	mg/L	0.000136	-0.00025	mg/L	0.000136	54.29%
Be 234.861†	-100.6	0.00006	mg/L	0.000057	0.00006	mg/L	0.000057	89.07%
B 249.677†	826.5	0.0163	mg/L	0.00314	0.0163	mg/L	0.00314	19.28%
Ca 227.546†	-10.8	-0.0795	mg/L	0.17328	-0.0795	mg/L	0.17328	218.03%
Cd 228.802†	3.0	0.00043	mg/L	0.000366	0.00043	mg/L	0.000366	85.99%
Co 228.616†	-5.9	-0.00105	mg/L	0.000994	-0.00105	mg/L	0.000994	95.07%
Cr 267.716†	172.7	0.00078	mg/L	0.002013	0.00078	mg/L	0.002013	256.98%
Cu 327.393†	-509.4	-0.00028	mg/L	0.001607	-0.00028	mg/L	0.001607	578.96%
Fe 239.562†	18.8	0.00743	mg/L	0.002186	0.00743	mg/L	0.002186	29.42%
Mg 279.077†	24.7	-0.00541	mg/L	0.007849	-0.00541	mg/L	0.007849	145.14%
Mn 257.610†	40.6	-0.00036	mg/L	0.000033	-0.00036	mg/L	0.000033	9.18%
Mo 202.031†	8.9	0.00092	mg/L	0.001215	0.00092	mg/L	0.001215	132.41%
Ni 231.604†	-16.6	-0.00125	mg/L	0.000326	-0.00125	mg/L	0.000326	26.06%
Pb 220.353†	-25.8	-0.00621	mg/L	0.001360	-0.00621	mg/L	0.001360	21.91%
Sb 206.836†	-6.2	-0.00090	mg/L	0.003209	-0.00090	mg/L	0.003209	358.17%
Se 196.026†	8.5	0.0175	mg/L	0.00852	0.0175	mg/L	0.00852	48.63%
Si 251.611†	-126655.2	-6.47	mg/L	0.488	-6.47	mg/L	0.488	7.54%
Sn 189.927†	-28.9	-0.00638	mg/L	0.000656	-0.00638	mg/L	0.000656	10.30%
Ti 334.940†	241.2	0.00197	mg/L	0.000422	0.00197	mg/L	0.000422	21.43%
Tl 190.801†	-3.7	-0.00448	mg/L	0.004661	-0.00448	mg/L	0.004661	104.09%
V 290.880†	102.0	0.00242	mg/L	0.001195	0.00242	mg/L	0.001195	49.37%
Zn 206.200†	-100.1	-0.00827	mg/L	0.000137	-0.00827	mg/L	0.000137	1.66%
K 766.490†	25.3	-0.0897	mg/L	0.09247	-0.0897	mg/L	0.09247	103.12%
Na 589.592†	1019954.6	134	mg/L	0.8	134	mg/L	0.8	0.59%
Sr 407.771†	334.2	0.00008	mg/L	0.000116	0.00008	mg/L	0.000116	141.71%
Li 670.784†	-0.8	-0.00271	mg/L	0.004279	-0.00271	mg/L	0.004279	157.71%
P 214.914†	2.6	0.00618	mg/L	0.020422	0.00618	mg/L	0.020422	330.26%

Sequence No.: 4
Sample ID: FBLK2 WG525064-02
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 124
Date Collected: 5/27/2015 3:02:33 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: FBLK2 WG525064-02

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: FBLK2 WG525064-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3489024.8						45852.33	1.31%
YRADIAL	218822.7						7047.66	3.22%
Ga 417.206	1591809.2						18091.11	1.14%
GaRADIAL	52383.3						1688.15	3.22%
Ag 328.068†	-238.0	0.00137	mg/L	0.000412	0.00137	mg/L	0.000412	30.13%
Al 396.153†	5.3	-0.0202	mg/L	0.00407	-0.0202	mg/L	0.00407	20.14%
As 188.979†	-9.6	-0.00228	mg/L	0.003955	-0.00228	mg/L	0.003955	173.41%
Ba 233.527†	-6.7	-0.00036	mg/L	0.000239	-0.00036	mg/L	0.000239	66.63%
Be 234.861†	-107.9	0.00005	mg/L	0.000068	0.00005	mg/L	0.000068	130.08%
B 249.677†	-906.2	-0.00810	mg/L	0.001125	-0.00810	mg/L	0.001125	13.89%
Ca 227.546†	-17.9	-0.169	mg/L	0.0932	-0.169	mg/L	0.0932	55.13%
Cd 228.802†	2.6	0.00040	mg/L	0.000197	0.00040	mg/L	0.000197	48.99%
Co 228.616†	-12.7	-0.00152	mg/L	0.000365	-0.00152	mg/L	0.000365	24.08%
Cr 267.716†	71.6	0.00004	mg/L	0.001705	0.00004	mg/L	0.001705	>999.9%
Cu 327.393†	-639.8	-0.00088	mg/L	0.001436	-0.00088	mg/L	0.001436	162.85%
Fe 239.562†	3.2	0.00475	mg/L	0.001652	0.00475	mg/L	0.001652	34.77%
Mg 279.077†	15.7	-0.00872	mg/L	0.005076	-0.00872	mg/L	0.005076	58.18%
Mn 257.610†	51.7	-0.00034	mg/L	0.000015	-0.00034	mg/L	0.000015	4.39%
Mo 202.031†	21.8	0.00215	mg/L	0.000796	0.00215	mg/L	0.000796	36.97%
Ni 231.604†	-9.3	-0.00103	mg/L	0.000587	-0.00103	mg/L	0.000587	57.19%
Pb 220.353†	-6.1	-0.00180	mg/L	0.000043	-0.00180	mg/L	0.000043	2.41%
Sb 206.836†	-1.1	0.00353	mg/L	0.005282	0.00353	mg/L	0.005282	149.52%
Se 196.026†	-0.6	0.00319	mg/L	0.004150	0.00319	mg/L	0.004150	130.25%
Si 251.611†	-210699.7	-10.7	mg/L	0.08	-10.7	mg/L	0.08	0.71%
Sn 189.927†	-43.4	-0.00883	mg/L	0.001388	-0.00883	mg/L	0.001388	15.72%
Ti 334.940†	-39.5	0.00166	mg/L	0.000238	0.00166	mg/L	0.000238	14.32%
Tl 190.801†	-1.2	-0.00246	mg/L	0.003418	-0.00246	mg/L	0.003418	138.74%
V 290.880†	-619.2	-0.00140	mg/L	0.001548	-0.00140	mg/L	0.001548	110.85%

Approved: May 28, 2015

Zn 206.200†	-96.1	-0.00813 mg/L	0.000282	-0.00813 mg/L	0.000282	3.46%
K 766.490†	50.6	0.0607 mg/L	0.01555	0.0607 mg/L	0.01555	25.62%
Na 589.592†	589.4	0.0926 mg/L	0.01565	0.0926 mg/L	0.01565	16.91%
Sr 407.771†	165.2	-0.00013 mg/L	0.000138	-0.00013 mg/L	0.000138	110.11%
Li 670.784†	-103.3	-0.00540 mg/L	0.002310	-0.00540 mg/L	0.002310	42.79%
P 214.914†	-1.3	0.00020 mg/L	0.017577	0.00020 mg/L	0.017577	>999.9%

Sequence No.: 5 **Autosampler Location: 125**
Sample ID: L1505134901 **Date Collected: 5/27/2015 3:05:55 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505134901

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505134901

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3267505.3						54773.19	1.68%
YRADIAL	210139.3						3612.77	1.72%
Ga 417.206	1347935.0						21067.51	1.56%
GaRADIAL	48689.3						576.31	1.18%
Ag 328.068†	239.1	0.00272	mg/L	0.000703	0.00272	mg/L	0.000703	25.86%
Al 396.153†	22.6	-0.0141	mg/L	0.01218	-0.0141	mg/L	0.01218	86.34%
As 188.979†	-5.9	0.00002	mg/L	0.003908	0.00002	mg/L	0.003908	>999.9%
Ba 233.527†	457.7	0.00767	mg/L	0.000397	0.00767	mg/L	0.000397	5.18%
Be 234.861†	-132.3	0.00005	mg/L	0.000048	0.00005	mg/L	0.000048	87.89%
B 249.677†	1177.7	0.0213	mg/L	0.00083	0.0213	mg/L	0.00083	3.87%
Ca 227.546†	138.2	1.79	mg/L	0.215	1.79	mg/L	0.215	11.98%
Cd 228.802†	4.8	0.00053	mg/L	0.000094	0.00053	mg/L	0.000094	17.67%
Co 228.616†	38.0	0.00204	mg/L	0.000635	0.00204	mg/L	0.000635	31.09%
Cr 267.716†	224.2	0.00117	mg/L	0.001484	0.00117	mg/L	0.001484	127.33%
Cu 327.393†	2662.0	0.0144	mg/L	0.00131	0.0144	mg/L	0.00131	9.11%
Fe 239.562†	140.3	0.0283	mg/L	0.00203	0.0283	mg/L	0.00203	7.19%
Mg 279.077†	4177.3	1.53	mg/L	0.022	1.53	mg/L	0.022	1.45%
Mn 257.610†	334351.9	0.524	mg/L	0.0086	0.524	mg/L	0.0086	1.64%
Mo 202.031†	12.4	0.00136	mg/L	0.000767	0.00136	mg/L	0.000767	56.28%
Ni 231.604†	88.4	0.00203	mg/L	0.000243	0.00203	mg/L	0.000243	11.97%
Pb 220.353†	-5.3	-0.00193	mg/L	0.003544	-0.00193	mg/L	0.003544	183.90%
Sb 206.836†	4.8	0.00856	mg/L	0.008035	0.00856	mg/L	0.008035	93.85%
Se 196.026†	4.9	0.0117	mg/L	0.00674	0.0117	mg/L	0.00674	57.77%
Si 251.611†	-137979.2	-7.04	mg/L	0.446	-7.04	mg/L	0.446	6.33%
Sn 189.927†	-41.3	-0.00846	mg/L	0.003564	-0.00846	mg/L	0.003564	42.12%
Ti 334.940†	139.3	0.00198	mg/L	0.000320	0.00198	mg/L	0.000320	16.19%
Tl 190.801†	-5.1	-0.00618	mg/L	0.003771	-0.00618	mg/L	0.003771	61.03%
V 290.880†	379.9	0.00385	mg/L	0.001386	0.00385	mg/L	0.001386	35.97%
Zn 206.200†	1828.8	0.0590	mg/L	0.00112	0.0590	mg/L	0.00112	1.89%
K 766.490†	677.2	0.328	mg/L	0.1102	0.328	mg/L	0.1102	33.64%
Na 589.592†	979166.9	129	mg/L	1.0	129	mg/L	1.0	0.79%
Sr 407.771†	9690.2	0.0116	mg/L	0.00021	0.0116	mg/L	0.00021	1.84%
Li 670.784†	-93.7	-0.00515	mg/L	0.005307	-0.00515	mg/L	0.005307	103.09%
P 214.914†	410.9	0.646	mg/L	0.0201	0.646	mg/L	0.0201	3.12%

Sequence No.: 6 **Autosampler Location: 126**
Sample ID: L1505135301 **Date Collected: 5/27/2015 3:09:18 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505135301

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505135301

Approved: May 28, 2015

Kym H. Rhoden

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3347259.6						66019.81	1.97%
YRADIAL	212026.3						408.94	0.19%
Ga 417.206	1386597.5						26940.84	1.94%
GaRADIAL	49036.5						1475.47	3.01%
Ag 328.068†	328.6	0.00347	mg/L	0.001234	0.00347	mg/L	0.001234	35.55%
Al 396.153†	166.6	0.0365	mg/L	0.01729	0.0365	mg/L	0.01729	47.36%
As 188.979†	-13.9	-0.00447	mg/L	0.006887	-0.00447	mg/L	0.006887	154.23%
Ba 233.527†	402.4	0.00668	mg/L	0.000138	0.00668	mg/L	0.000138	2.07%
Be 234.861†	20.6	0.00006	mg/L	0.000099	0.00006	mg/L	0.000099	176.56%
B 249.677†	2644.9	0.0461	mg/L	0.00449	0.0461	mg/L	0.00449	9.74%
Ca 227.546†	765.9	9.68	mg/L	0.235	9.68	mg/L	0.235	2.43%
Cd 228.802†	-4.9	-0.00002	mg/L	0.000766	-0.00002	mg/L	0.000766	>999.9%
Co 228.616†	35.4	0.00183	mg/L	0.000549	0.00183	mg/L	0.000549	29.94%
Cr 267.716†	121.4	0.00038	mg/L	0.000719	0.00038	mg/L	0.000719	189.40%
Cu 327.393†	-690.5	-0.00095	mg/L	0.001501	-0.00095	mg/L	0.001501	157.45%
Fe 239.562†	6392.8	1.10	mg/L	0.044	1.10	mg/L	0.044	3.99%
Mg 279.077†	7218.4	2.66	mg/L	0.088	2.66	mg/L	0.088	3.29%
Mn 257.610†	314786.3	0.493	mg/L	0.0154	0.493	mg/L	0.0154	3.12%
Mo 202.031†	22.6	0.00231	mg/L	0.000217	0.00231	mg/L	0.000217	9.41%
Ni 231.604†	79.3	0.00175	mg/L	0.000336	0.00175	mg/L	0.000336	19.20%
Pb 220.353†	0.2	-0.00072	mg/L	0.001867	-0.00072	mg/L	0.001867	259.53%
Sb 206.836†	0.9	0.00530	mg/L	0.005351	0.00530	mg/L	0.005351	100.92%
Se 196.026†	6.0	0.0134	mg/L	0.00856	0.0134	mg/L	0.00856	64.07%
Si 251.611†	-133122.1	-6.79	mg/L	0.473	-6.79	mg/L	0.473	6.96%
Sn 189.927†	-43.1	-0.00878	mg/L	0.000440	-0.00878	mg/L	0.000440	5.01%
Ti 334.940†	-213.0	0.00211	mg/L	0.000142	0.00211	mg/L	0.000142	6.76%
Tl 190.801†	-7.9	-0.00847	mg/L	0.001641	-0.00847	mg/L	0.001641	19.38%
V 290.880†	144.6	0.00279	mg/L	0.000854	0.00279	mg/L	0.000854	30.66%
Zn 206.200†	2549.6	0.0842	mg/L	0.00221	0.0842	mg/L	0.00221	2.63%
K 766.490†	320.1	0.101	mg/L	0.0946	0.101	mg/L	0.0946	93.33%
Na 589.592†	985590.6	130	mg/L	5.0	130	mg/L	5.0	3.82%
Sr 407.771†	29950.4	0.0365	mg/L	0.00034	0.0365	mg/L	0.00034	0.92%
Li 670.784†	-177.6	-0.00735	mg/L	0.000276	-0.00735	mg/L	0.000276	3.76%
P 214.914†	1104.6	1.73	mg/L	0.011	1.73	mg/L	0.011	0.66%

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Sequence No.: 7
Sample ID: L1505142801
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 127
Date Collected: 5/27/2015 3:11:43 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505142801

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505142801

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3282081.7						57584.59	1.75%
YRADIAL	211520.8						2141.51	1.01%
Ga 417.206	1409755.7						17355.34	1.23%
GaRADIAL	50943.5						408.72	0.80%
Ag 328.068†	2759.9	0.0101	mg/L	0.00049	0.0101	mg/L	0.00049	4.84%
Al 396.153†	-31.4	-0.0333	mg/L	0.00278	-0.0333	mg/L	0.00278	8.34%
As 188.979†	-43.1	-0.0182	mg/L	0.00621	-0.0182	mg/L	0.00621	34.09%
Ba 233.527†	1704.7	0.0292	mg/L	0.00035	0.0292	mg/L	0.00035	1.19%
Be 234.861†	-97.3	0.00009	mg/L	0.000049	0.00009	mg/L	0.000049	57.52%
B 249.677†	1297.4	0.0228	mg/L	0.00081	0.0228	mg/L	0.00081	3.55%
Ca 227.546†	16965.0	213	mg/L	1.4	213	mg/L	1.4	0.66%
Cd 228.802†	63.3	0.00417	mg/L	0.000812	0.00417	mg/L	0.000812	19.45%
Co 228.616†	37.9	0.00207	mg/L	0.000372	0.00207	mg/L	0.000372	17.92%
Cr 267.716†	252.1	0.00137	mg/L	0.000141	0.00137	mg/L	0.000141	10.25%
Cu 327.393†	60944.2	0.284	mg/L	0.0048	0.284	mg/L	0.0048	1.67%
Fe 239.562†	9.6	0.00578	mg/L	0.000566	0.00578	mg/L	0.000566	9.80%
Mg 279.077†	6759.7	2.49	mg/L	0.029	2.49	mg/L	0.029	1.17%
Mn 257.610†	79741.1	0.125	mg/L	0.0004	0.125	mg/L	0.0004	0.35%
Mo 202.031†	77.4	0.00746	mg/L	0.000541	0.00746	mg/L	0.000541	7.24%

Approved: May 28, 2015

Kym H. Rhoden

Ni 231.604†	116.7	0.00293	mg/L	0.000267	0.00293	mg/L	0.000267 9.12%
Pb 220.353†	109.2	0.0239	mg/L	0.00213	0.0239	mg/L	0.00213 8.92%
Sb 206.836†	-7.7	-0.00224	mg/L	0.007979	-0.00224	mg/L	0.007979 355.84%
Se 196.026†	-14.0	-0.0178	mg/L	0.01170	-0.0178	mg/L	0.01170 65.87%
Si 251.611†	-155957.9	-7.93	mg/L	0.147	-7.93	mg/L	0.147 1.86%
Sn 189.927†	-88.3	-0.0164	mg/L	0.00077	-0.0164	mg/L	0.00077 4.68%
Ti 334.940†	-14920.9	-0.00067	mg/L	0.000270	-0.00067	mg/L	0.000270 40.32%
Tl 190.801†	-32.5	-0.0286	mg/L	0.00744	-0.0286	mg/L	0.00744 25.98%
V 290.880†	-94.4	0.00132	mg/L	0.002198	0.00132	mg/L	0.002198 166.82%
Zn 206.200†	4275.5	0.144	mg/L	0.0016	0.144	mg/L	0.0016 1.08%
K 766.490†	1547.7	1.00	mg/L	0.035	1.00	mg/L	0.035 3.48%
Na 589.592†	19598.0	2.42	mg/L	0.015	2.42	mg/L	0.015 0.61%
Sr 407.771†	274825.9	0.334	mg/L	0.0013	0.334	mg/L	0.0013 0.40%
Li 670.784†	148.7	0.00120	mg/L	0.003771	0.00120	mg/L	0.003771 313.36%
P 214.914†	-168.8	-0.262	mg/L	0.0139	-0.262	mg/L	0.0139 5.30%

==========

Sequence No.: 8 **Autosampler Location: 128**
Sample ID: L1505142803 **Date Collected: 5/27/2015 3:15:03 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505142803

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505142803

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3329847.5						70612.74	2.12%
YRADIAL	215515.9						4763.11	2.21%
Ga 417.206	1429244.6						31634.98	2.21%
GaRADIAL	51546.3						768.29	1.49%
Ag 328.068†	2276.9	0.00865	mg/L	0.000918	0.00865	mg/L	0.000918	10.60%
Al 396.153†	-2.8	-0.0232	mg/L	0.00153	-0.0232	mg/L	0.00153	6.59%
As 188.979†	-31.8	-0.0126	mg/L	0.00816	-0.0126	mg/L	0.00816	64.68%
Ba 233.527†	5266.6	0.0908	mg/L	0.00150	0.0908	mg/L	0.00150	1.65%
Be 234.861†	-84.2	0.00011	mg/L	0.000054	0.00011	mg/L	0.000054	48.82%
B 249.677†	2430.7	0.0389	mg/L	0.00229	0.0389	mg/L	0.00229	5.89%
Ca 227.546†	12095.9	152	mg/L	2.9	152	mg/L	2.9	1.91%
Cd 228.802†	20.6	0.00156	mg/L	0.000744	0.00156	mg/L	0.000744	47.79%
Co 228.616†	-12.1	-0.00148	mg/L	0.000771	-0.00148	mg/L	0.000771	52.30%
Cr 267.716†	200.8	0.00099	mg/L	0.000414	0.00099	mg/L	0.000414	41.82%
Cu 327.393†	4359.2	0.0223	mg/L	0.00122	0.0223	mg/L	0.00122	5.49%
Fe 239.562†	12.2	0.00624	mg/L	0.001164	0.00624	mg/L	0.001164	18.64%
Mg 279.077†	5988.7	2.20	mg/L	0.046	2.20	mg/L	0.046	2.09%
Mn 257.610†	94950.7	0.148	mg/L	0.0013	0.148	mg/L	0.0013	0.85%
Mo 202.031†	65.9	0.00638	mg/L	0.000314	0.00638	mg/L	0.000314	4.93%
Ni 231.604†	16.8	-0.00020	mg/L	0.000150	-0.00020	mg/L	0.000150	76.08%
Pb 220.353†	44.8	0.00949	mg/L	0.006247	0.00949	mg/L	0.006247	65.84%
Sb 206.836†	0.7	0.00506	mg/L	0.003417	0.00506	mg/L	0.003417	67.46%
Se 196.026†	-14.1	-0.0179	mg/L	0.01135	-0.0179	mg/L	0.01135	63.34%
Si 251.611†	-146201.2	-7.45	mg/L	0.197	-7.45	mg/L	0.197	2.65%
Sn 189.927†	-83.0	-0.0155	mg/L	0.00224	-0.0155	mg/L	0.00224	14.40%
Ti 334.940†	-10938.9	-0.00031	mg/L	0.000394	-0.00031	mg/L	0.000394	127.61%
Tl 190.801†	-34.2	-0.0300	mg/L	0.00077	-0.0300	mg/L	0.00077	2.55%
V 290.880†	-32.3	0.00165	mg/L	0.001286	0.00165	mg/L	0.001286	77.94%
Zn 206.200†	720.9	0.0204	mg/L	0.00055	0.0204	mg/L	0.00055	2.72%
K 766.490†	2023.3	1.30	mg/L	0.065	1.30	mg/L	0.065	5.02%
Na 589.592†	56531.0	6.95	mg/L	0.065	6.95	mg/L	0.065	0.94%
Sr 407.771†	295775.0	0.362	mg/L	0.0034	0.362	mg/L	0.0034	0.93%
Li 670.784†	474.8	0.00975	mg/L	0.005863	0.00975	mg/L	0.005863	60.13%
P 214.914†	462.7	0.728	mg/L	0.0118	0.728	mg/L	0.0118	1.62%

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Sequence No.: 9 **Autosampler Location: 129**
Sample ID: L1505142803PS WG525249-01 **Date Collected: 5/27/2015 3:18:23 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**

Approved: May 28, 2015

Dilution: Sample Prep Vol:

Nebulizer Parameters: L1505142803PS WG525249-01

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505142803PS WG525249-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3313660.6						12251.32	0.37%
YRADIAL	212147.2						698.99	0.33%
Ga 417.206	1396042.6						5531.92	0.40%
GaRADIAL	49891.5						184.51	0.37%
Ag 328.068†	68678.5	0.205	mg/L	0.0012	0.205	mg/L	0.0012	0.58%
Al 396.153†	14512.2	5.05	mg/L	0.086	5.05	mg/L	0.086	1.70%
As 188.979†	269.5	0.170	mg/L	0.0040	0.170	mg/L	0.0040	2.34%
Ba 233.527†	32696.2	0.565	mg/L	0.0024	0.565	mg/L	0.0024	0.43%
Be 234.861†	13269.9	0.0241	mg/L	0.00005	0.0241	mg/L	0.00005	0.21%
B 249.677†	60168.5	0.858	mg/L	0.0067	0.858	mg/L	0.0067	0.78%
Ca 227.546†	11431.8	144	mg/L	0.7	144	mg/L	0.7	0.46%
Cd 228.802†	403.3	0.0240	mg/L	0.00015	0.0240	mg/L	0.00015	0.61%
Co 228.616†	1360.0	0.0947	mg/L	0.00047	0.0947	mg/L	0.00047	0.50%
Cr 267.716†	33677.1	0.248	mg/L	0.0008	0.248	mg/L	0.0008	0.34%
Cu 327.393†	56010.3	0.262	mg/L	0.0032	0.262	mg/L	0.0032	1.23%
Fe 239.562†	11714.4	2.02	mg/L	0.024	2.02	mg/L	0.024	1.18%
Mg 279.077†	18616.7	6.88	mg/L	0.076	6.88	mg/L	0.076	1.11%
Mn 257.610†	238873.3	0.374	mg/L	0.0030	0.374	mg/L	0.0030	0.80%
Mo 202.031†	5129.9	0.489	mg/L	0.0013	0.489	mg/L	0.0013	0.27%
Ni 231.604†	7423.8	0.232	mg/L	0.0009	0.232	mg/L	0.0009	0.40%
Pb 220.353†	1121.3	0.251	mg/L	0.0019	0.251	mg/L	0.0019	0.76%
Sb 206.836†	641.8	0.557	mg/L	0.0040	0.557	mg/L	0.0040	0.72%
Se 196.026†	115.1	0.185	mg/L	0.0040	0.185	mg/L	0.0040	2.18%
Si 251.611†	-70748.5	-3.69	mg/L	0.187	-3.69	mg/L	0.187	5.08%
Sn 189.927†	2791.3	0.470	mg/L	0.0026	0.470	mg/L	0.0026	0.56%
Ti 334.940†	444422.7	0.490	mg/L	0.0032	0.490	mg/L	0.0032	0.66%
Tl 190.801†	264.5	0.223	mg/L	0.0008	0.223	mg/L	0.0008	0.35%
V 290.880†	93752.4	0.498	mg/L	0.0065	0.498	mg/L	0.0065	1.30%
Zn 206.200†	14429.4	0.501	mg/L	0.0011	0.501	mg/L	0.0011	0.21%
K 766.490†	40884.9	25.9	mg/L	0.12	25.9	mg/L	0.12	0.45%
Na 589.592†	252140.9	31.3	mg/L	0.16	31.3	mg/L	0.16	0.50%
Sr 407.771†	677340.4	0.836	mg/L	0.0065	0.836	mg/L	0.0065	0.78%
Li 670.784†	20044.0	0.523	mg/L	0.0065	0.523	mg/L	0.0065	1.25%
P 214.914†	3528.0	5.53	mg/L	0.013	5.53	mg/L	0.013	0.24%

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Sequence No.: 10 **Autosampler Location: 130**
Sample ID: L1505142803DL WG525249-02 **Date Collected: 5/27/2015 3:20:47 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505142803DL WG525249-02

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505142803DL WG525249-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3373943.3						35026.74	1.04%
YRADIAL	217651.2						504.41	0.23%
Ga 417.206	1543642.9						24390.25	1.58%
GaRADIAL	52531.0						289.56	0.55%
Ag 328.068†	138.3	0.00246	mg/L	0.001039	0.00246	mg/L	0.001039	42.31%
Al 396.153†	1.4	-0.0216	mg/L	0.00481	-0.0216	mg/L	0.00481	22.28%
As 188.979†	-13.4	-0.00399	mg/L	0.001456	-0.00399	mg/L	0.001456	36.50%
Ba 233.527†	1084.6	0.0185	mg/L	0.00015	0.0185	mg/L	0.00015	0.81%
Be 234.861†	-18.8	0.00022	mg/L	0.000018	0.00022	mg/L	0.000018	8.42%
B 249.677†	1565.8	0.0267	mg/L	0.00294	0.0267	mg/L	0.00294	11.01%

Approved: May 28, 2015

Kym H. Rhoden

Ca 227.546†	2308.2	29.1	mg/L	0.41	29.1	mg/L	0.41	1.39%
Cd 228.802†	2.4	0.00040	mg/L	0.000788	0.00040	mg/L	0.000788	195.25%
Co 228.616†	-5.7	-0.00103	mg/L	0.000711	-0.00103	mg/L	0.000711	69.15%
Cr 267.716†	87.7	0.00016	mg/L	0.000132	0.00016	mg/L	0.000132	83.60%
Cu 327.393†	70.3	0.00240	mg/L	0.000514	0.00240	mg/L	0.000514	21.41%
Fe 239.562†	-3.0	0.00368	mg/L	0.001617	0.00368	mg/L	0.001617	44.00%
Mg 279.077†	1317.6	0.474	mg/L	0.0048	0.474	mg/L	0.0048	1.01%
Mn 257.610†	20547.7	0.0318	mg/L	0.00048	0.0318	mg/L	0.00048	1.52%
Mo 202.031†	25.0	0.00246	mg/L	0.000921	0.00246	mg/L	0.000921	37.40%
Ni 231.604†	-12.2	-0.00111	mg/L	0.000428	-0.00111	mg/L	0.000428	38.42%
Pb 220.353†	26.8	0.00554	mg/L	0.002351	0.00554	mg/L	0.002351	42.46%
Sb 206.836†	-1.8	0.00288	mg/L	0.003186	0.00288	mg/L	0.003186	110.58%
Se 196.026†	3.4	0.00942	mg/L	0.011398	0.00942	mg/L	0.011398	121.00%
Si 251.611†	24596.4	1.08	mg/L	0.184	1.08	mg/L	0.184	17.06%
Sn 189.927†	-51.3	-0.0102	mg/L	0.00114	-0.0102	mg/L	0.00114	11.24%
Ti 334.940†	-2641.2	0.00073	mg/L	0.000441	0.00073	mg/L	0.000441	60.09%
Tl 190.801†	-11.5	-0.0110	mg/L	0.00340	-0.0110	mg/L	0.00340	30.83%
V 290.880†	-271.7	0.00043	mg/L	0.000813	0.00043	mg/L	0.000813	189.61%
Zn 206.200†	81.1	-0.00195	mg/L	0.000193	-0.00195	mg/L	0.000193	9.86%
K 766.490†	468.8	0.323	mg/L	0.0330	0.323	mg/L	0.0330	10.20%
Na 589.592†	11374.6	1.41	mg/L	0.011	1.41	mg/L	0.011	0.75%
Sr 407.771†	61394.2	0.0749	mg/L	0.00060	0.0749	mg/L	0.00060	0.80%
Li 670.784†	118.2	0.00040	mg/L	0.001778	0.00040	mg/L	0.001778	439.57%
P 214.914†	93.2	0.148	mg/L	0.0129	0.148	mg/L	0.0129	8.70%

Sequence No.: 11
Sample ID: CCV
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 6
Date Collected: 5/27/2015 3:24:07 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3255028.0						21390.66	0.66%
YRADIAL	212743.9						2206.43	1.04%
Ga 417.206	1359590.0						11115.19	0.82%
GaRADIAL	49509.2						485.02	0.98%
Ag 328.068†	131773.0	0.392	mg/L	0.0044	0.392	mg/L	0.0044	1.11%
QC value within limits for Ag 328.068 Recovery = 97.97%								
Al 396.153†	28803.6	10.0	mg/L	0.14	10.0	mg/L	0.14	1.42%
QC value within limits for Al 396.153 Recovery = 100.42%								
As 188.979†	620.1	0.380	mg/L	0.0017	0.380	mg/L	0.0017	0.45%
QC value within limits for As 188.979 Recovery = 95.08%								
Ba 233.527†	56427.1	0.976	mg/L	0.0083	0.976	mg/L	0.0083	0.85%
QC value within limits for Ba 233.527 Recovery = 97.56%								
Be 234.861†	26177.0	0.0472	mg/L	0.00081	0.0472	mg/L	0.00081	1.72%
QC value within limits for Be 234.861 Recovery = 94.38%								
B 249.677†	25925.6	0.383	mg/L	0.0034	0.383	mg/L	0.0034	0.90%
QC value less than the lower limit for B 249.677 Recovery = 76.56%								
Ca 227.546†	763.8	9.72	mg/L	0.350	9.72	mg/L	0.350	3.60%
QC value within limits for Ca 227.546 Recovery = 97.21%								
Cd 228.802†	806.9	0.0475	mg/L	0.00086	0.0475	mg/L	0.00086	1.81%
QC value within limits for Cd 228.802 Recovery = 95.09%								
Co 228.616†	2821.6	0.197	mg/L	0.0008	0.197	mg/L	0.0008	0.41%
QC value within limits for Co 228.616 Recovery = 98.55%								
Cr 267.716†	66512.8	0.489	mg/L	0.0029	0.489	mg/L	0.0029	0.60%
QC value within limits for Cr 267.716 Recovery = 97.87%								
Cu 327.393†	103848.2	0.485	mg/L	0.0064	0.485	mg/L	0.0064	1.32%
QC value within limits for Cu 327.393 Recovery = 96.95%								
Fe 239.562†	23369.0	4.02	mg/L	0.061	4.02	mg/L	0.061	1.51%
QC value within limits for Fe 239.562 Recovery = 100.50%								
Mg 279.077†	27346.7	10.1	mg/L	0.09	10.1	mg/L	0.09	0.87%
QC value within limits for Mg 279.077 Recovery = 101.15%								
Mn 257.610†	313636.5	0.491	mg/L	0.0049	0.491	mg/L	0.0049	1.00%

Approved: May 28, 2015

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   QC value within limits for Mn 257.610  Recovery = 98.25%
Mo 202.031†          10111.9       0.963 mg/L        0.0076       0.963 mg/L        0.0076   0.79%
   QC value within limits for Mo 202.031  Recovery = 96.30%
Ni 231.604†          15666.3       0.490 mg/L        0.0042       0.490 mg/L        0.0042   0.87%
   QC value within limits for Ni 231.604  Recovery = 97.94%
Pb 220.353†           2194.6       0.492 mg/L        0.0033       0.492 mg/L        0.0033   0.67%
   QC value within limits for Pb 220.353  Recovery = 98.49%
Sb 206.836†           1326.7        1.15 mg/L         0.015        1.15 mg/L         0.015   1.29%
   QC value within limits for Sb 206.836  Recovery = 95.54%
Se 196.026†            251.0       0.399 mg/L        0.0036       0.399 mg/L        0.0036   0.91%
   QC value within limits for Se 196.026  Recovery = 99.69%
Si 251.611†         -177172.9       -9.00 mg/L         0.216       -9.00 mg/L         0.216   2.40%
   QC value less than the lower limit for Si 251.611  Recovery = -180.06%
Sn 189.927†           5749.6       0.971 mg/L        0.0073       0.971 mg/L        0.0073   0.76%
   QC value within limits for Sn 189.927  Recovery = 97.06%
Ti 334.940†         905086.9       0.977 mg/L        0.0081       0.977 mg/L        0.0081   0.83%
   QC value within limits for Ti 334.940  Recovery = 97.70%
Tl 190.801†            588.4       0.497 mg/L        0.0069       0.497 mg/L        0.0069   1.39%
   QC value within limits for Tl 190.801  Recovery = 99.37%
V 290.880†          183818.7       0.974 mg/L        0.0102       0.974 mg/L        0.0102   1.04%
   QC value within limits for V 290.880  Recovery = 97.45%
Zn 206.200†          28407.6       0.991 mg/L        0.0083       0.991 mg/L        0.0083   0.83%
   QC value within limits for Zn 206.200  Recovery = 99.06%
K 766.490†           77281.7        49.2 mg/L          0.68        49.2 mg/L          0.68   1.38%
   QC value within limits for K 766.490  Recovery = 98.47%
Na 589.592†         392942.9        49.3 mg/L          0.49        49.3 mg/L          0.49   1.00%
   QC value within limits for Na 589.592  Recovery = 98.67%
Sr 407.771†         787001.9       0.976 mg/L        0.0078       0.976 mg/L        0.0078   0.80%
   QC value within limits for Sr 407.771  Recovery = 97.61%
Li 670.784†          38801.2        1.01 mg/L         0.017        1.01 mg/L         0.017   1.67%
   QC value within limits for Li 670.784  Recovery = 101.42%
P 214.914†            6180.3        9.69 mg/L         0.045        9.69 mg/L         0.045   0.46%
   QC value within limits for P 214.914  Recovery = 96.93%
QC Failed.  Continue with analysis.

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Sequence No.: 12                                    Autosampler Location: 1
Sample ID: CCB                                      Date Collected: 5/27/2015 3:26:32 PM
Analyst:                                            Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

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Nebulizer Parameters: CCB
Analyte                 Back Pressure    Flow
All                     231.0 kPa        0.40 L/min

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Mean Data: CCB
                   Mean Corrected        Calib.                          Sample
Analyte               Intensity     Conc. Units     Std.Dev.     Conc. Units     Std.Dev.   RSD
Y 371.029            3441460.5                                                  26819.82   0.78%
YRADIAL               220924.5                                                    679.82   0.31%
Ga 417.206           1582380.6                                                   8919.33   0.56%
GaRADIAL               53504.6                                                    708.00   1.32%
Ag 328.068†             -143.3     0.00165 mg/L      0.000266     0.00165 mg/L      0.000266  16.16%
   QC value within limits for Ag 328.068  Recovery = Not calculated
Al 396.153†               13.6     -0.0172 mg/L       0.00428     -0.0172 mg/L       0.00428  24.86%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†               -7.9    -0.00126 mg/L      0.004464    -0.00126 mg/L      0.004464 354.18%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†               -9.8    -0.00041 mg/L      0.000103    -0.00041 mg/L      0.000103  24.81%
   QC value within limits for Ba 233.527  Recovery = Not calculated
Be 234.861†              -18.4     0.00021 mg/L      0.000054     0.00021 mg/L      0.000054  25.22%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†               -270.9     0.00084 mg/L      0.001593     0.00084 mg/L      0.001593 189.53%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†               -6.1     -0.0204 mg/L       0.14306     -0.0204 mg/L       0.14306 702.72%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†               -0.9     0.00019 mg/L      0.000084     0.00019 mg/L      0.000084  44.18%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†               -8.7    -0.00124 mg/L      0.000274    -0.00124 mg/L      0.000274  22.01%
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   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†              -12.5    -0.00058 mg/L      0.001403    -0.00058 mg/L      0.001403 241.60%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†             -305.7     0.00066 mg/L      0.000827     0.00066 mg/L      0.000827 124.52%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†               -8.2     0.00279 mg/L      0.000323     0.00279 mg/L      0.000323  11.58%
   QC value within limits for Fe 239.562  Recovery = Not calculated
Mg 279.077†               23.0    -0.00601 mg/L      0.010118    -0.00601 mg/L      0.010118 168.27%
   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†               26.3    -0.00038 mg/L      0.000065    -0.00038 mg/L      0.000065  16.96%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†                3.8     0.00043 mg/L      0.000640     0.00043 mg/L      0.000640 148.30%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†              -14.8    -0.00120 mg/L      0.000608    -0.00120 mg/L      0.000608  50.82%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†                2.3     0.00007 mg/L      0.004726     0.00007 mg/L      0.004726 >999.9%
   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†               -0.3     0.00423 mg/L      0.005359     0.00423 mg/L      0.005359 126.55%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†                5.0      0.0120 mg/L       0.00623      0.0120 mg/L       0.00623  52.14%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†            -3600.1      -0.330 mg/L        0.0941      -0.330 mg/L        0.0941  28.49%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†              -19.6    -0.00479 mg/L      0.001021    -0.00479 mg/L      0.001021  21.31%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†              209.0     0.00194 mg/L      0.000245     0.00194 mg/L      0.000245  12.66%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†                0.8    -0.00076 mg/L      0.008949    -0.00076 mg/L      0.008949 >999.9%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†              -554.5    -0.00105 mg/L      0.001344    -0.00105 mg/L      0.001344 127.52%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†               -4.0    -0.00493 mg/L      0.000287    -0.00493 mg/L      0.000287   5.82%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†                35.7      0.0514 mg/L       0.03528      0.0514 mg/L       0.03528  68.71%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†              -85.8      0.0101 mg/L       0.02416      0.0101 mg/L       0.02416 238.77%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†              149.5    -0.00015 mg/L      0.000124    -0.00015 mg/L      0.000124  82.68%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†              -69.4    -0.00451 mg/L      0.001183    -0.00451 mg/L      0.001183  26.24%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†                -3.0    -0.00252 mg/L      0.005185    -0.00252 mg/L      0.005185 205.34%
   QC value within limits for P 214.914  Recovery = Not calculated
All analyte(s) passed QC.

==========================================================================================
Sequence No.: 13                                    Autosampler Location: 131
Sample ID: L1505154601                              Date Collected: 5/27/2015 3:29:53 PM
Analyst: KHR                                        Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

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Nebulizer Parameters: L1505154601
Analyte                 Back Pressure    Flow
All                    232.0 kPa        0.40 L/min

------------------------------------------------------------------------------------------
Mean Data: L1505154601
                   Mean Corrected         Calib.                          Sample
Analyte               Intensity     Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029            3217289.6                                                    74069.32   2.30%
YRADIAL               210786.9                                                     2890.24   1.37%
Ga 417.206           1303517.5                                                    22837.32   1.75%
GaRADIAL               48928.9                                                      885.95   1.81%
Ag 328.068†             1175.9     0.00659 mg/L      0.000301     0.00659 mg/L      0.000301   4.56%
Al 396.153†              569.9       0.178 mg/L        0.0197       0.178 mg/L        0.0197  11.06%
As 188.979†               -8.8     0.00157 mg/L      0.009720     0.00157 mg/L      0.009720 617.61%
Ba 233.527†             9533.1       0.164 mg/L        0.0042       0.164 mg/L        0.0042   2.58%
Be 234.861†              314.8     0.00020 mg/L      0.000046     0.00020 mg/L      0.000046  23.38%
B 249.677†             10935.5       0.169 mg/L        0.0032       0.169 mg/L        0.0032   1.92%
Ca 227.546†             9864.1         124 mg/L           2.5         124 mg/L           2.5   2.04%
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Cd 228.802†	7.8	0.00072	mg/L	0.000754	0.00072	mg/L	0.000754	105.23%
Co 228.616†	7.7	-0.00018	mg/L	0.001095	-0.00018	mg/L	0.001095	606.03%
Cr 267.716†	334.3	0.00189	mg/L	0.000162	0.00189	mg/L	0.000162	8.55%
Cu 327.393†	715.1	0.00579	mg/L	0.000390	0.00579	mg/L	0.000390	6.74%
Fe 239.562†	16343.4	2.81	mg/L	0.052	2.81	mg/L	0.052	1.84%
Mg 279.077†	94397.5	35.0	mg/L	0.49	35.0	mg/L	0.49	1.40%
Mn 257.610†	544923.5	0.854	mg/L	0.0062	0.854	mg/L	0.0062	0.73%
Mo 202.031†	119.0	0.0115	mg/L	0.00096	0.0115	mg/L	0.00096	8.29%
Ni 231.604†	81.1	0.00181	mg/L	0.000612	0.00181	mg/L	0.000612	33.74%
Pb 220.353†	40.8	0.00814	mg/L	0.002089	0.00814	mg/L	0.002089	25.68%
Sb 206.836†	1.8	0.00608	mg/L	0.001985	0.00608	mg/L	0.001985	32.68%
Se 196.026†	-16.7	-0.0225	mg/L	0.00853	-0.0225	mg/L	0.00853	37.82%
Si 251.611†	-25963.2	-1.45	mg/L	0.253	-1.45	mg/L	0.253	17.47%
Sn 189.927†	-44.3	-0.00898	mg/L	0.000879	-0.00898	mg/L	0.000879	9.80%
Ti 334.940†	-5238.5	0.00403	mg/L	0.000437	0.00403	mg/L	0.000437	10.83%
Tl 190.801†	-23.8	-0.0221	mg/L	0.01143	-0.0221	mg/L	0.01143	51.66%
V 290.880†	-757.3	-0.00250	mg/L	0.000879	-0.00250	mg/L	0.000879	35.10%
Zn 206.200†	-91.1	-0.00768	mg/L	0.000631	-0.00768	mg/L	0.000631	8.21%
K 766.490†	804.7	0.281	mg/L	0.0526	0.281	mg/L	0.0526	18.71%
Na 589.592†	1799037.7	255	mg/L	5.4	255	mg/L	5.4	2.10%
Sr 407.771†	420381.5	0.517	mg/L	0.0078	0.517	mg/L	0.0078	1.51%
Li 670.784†	483.4	0.00998	mg/L	0.005645	0.00998	mg/L	0.005645	56.59%
P 214.914†	187.9	0.297	mg/L	0.0168	0.297	mg/L	0.0168	5.67%

Sequence No.: 14 **Autosampler Location: 132**
Sample ID: L1505154602 **Date Collected: 5/27/2015 3:32:17 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505154602

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505154602

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3355181.0						62403.62	1.86%
YRADIAL	210679.4						3800.43	1.80%
Ga 417.206	1454405.7						29313.90	2.02%
GaRADIAL	50486.3						746.88	1.48%
Ag 328.068†	591.0	0.00377	mg/L	0.000622	0.00377	mg/L	0.000622	16.48%
Al 396.153†	216.2	0.0536	mg/L	0.00821	0.0536	mg/L	0.00821	15.31%
As 188.979†	-11.5	-0.00273	mg/L	0.001655	-0.00273	mg/L	0.001655	60.61%
Ba 233.527†	2667.9	0.0459	mg/L	0.00105	0.0459	mg/L	0.00105	2.29%
Be 234.861†	-80.2	0.00009	mg/L	0.000047	0.00009	mg/L	0.000047	52.14%
B 249.677†	1867.5	0.0312	mg/L	0.00272	0.0312	mg/L	0.00272	8.73%
Ca 227.546†	2764.7	34.8	mg/L	0.42	34.8	mg/L	0.42	1.22%
Cd 228.802†	-0.8	0.00021	mg/L	0.000476	0.00021	mg/L	0.000476	227.55%
Co 228.616†	-0.3	-0.00065	mg/L	0.000709	-0.00065	mg/L	0.000709	108.56%
Cr 267.716†	271.0	0.00150	mg/L	0.000091	0.00150	mg/L	0.000091	6.08%
Cu 327.393†	-740.7	-0.00134	mg/L	0.001343	-0.00134	mg/L	0.001343	100.07%
Fe 239.562†	321.3	0.0590	mg/L	0.00272	0.0590	mg/L	0.00272	4.61%
Mg 279.077†	58726.3	21.7	mg/L	0.34	21.7	mg/L	0.34	1.57%
Mn 257.610†	1045.4	0.00122	mg/L	0.000023	0.00122	mg/L	0.000023	1.93%
Mo 202.031†	62.4	0.00601	mg/L	0.000867	0.00601	mg/L	0.000867	14.43%
Ni 231.604†	-17.2	-0.00127	mg/L	0.000229	-0.00127	mg/L	0.000229	18.05%
Pb 220.353†	9.5	0.00170	mg/L	0.001033	0.00170	mg/L	0.001033	60.72%
Sb 206.836†	0.5	0.00486	mg/L	0.009642	0.00486	mg/L	0.009642	198.46%
Se 196.026†	-4.2	-0.00250	mg/L	0.012219	-0.00250	mg/L	0.012219	488.30%
Si 251.611†	-180628.1	-9.16	mg/L	0.206	-9.16	mg/L	0.206	2.25%
Sn 189.927†	-56.6	-0.0111	mg/L	0.00094	-0.0111	mg/L	0.00094	8.46%
Ti 334.940†	-247.1	0.00368	mg/L	0.000209	0.00368	mg/L	0.000209	5.68%
Tl 190.801†	-6.7	-0.00702	mg/L	0.001856	-0.00702	mg/L	0.001856	26.45%
V 290.880†	-547.3	-0.00157	mg/L	0.000558	-0.00157	mg/L	0.000558	35.47%
Zn 206.200†	-58.2	-0.00679	mg/L	0.000098	-0.00679	mg/L	0.000098	1.44%
K 766.490†	960.3	0.615	mg/L	0.0833	0.615	mg/L	0.0833	13.55%
Na 589.592†	163154.4	20.2	mg/L	0.28	20.2	mg/L	0.28	1.41%
Sr 407.771†	203084.6	0.251	mg/L	0.0034	0.251	mg/L	0.0034	1.34%

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Li 670.784†	68.1	-0.00091	mg/L	0.003464	-0.00091	mg/L	0.003464	381.75%
P 214.914†	33.7	0.0550	mg/L	0.00294	0.0550	mg/L	0.00294	5.34%

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Sequence No.: 15 **Autosampler Location: 133**
Sample ID: L1505154603 WG525230-01 **Date Collected: 5/27/2015 3:35:37 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505154603 WG525230-01

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505154603 WG525230-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3223836.3						50432.61	1.56%
YRADIAL	205036.8						2142.75	1.05%
Ga 417.206	1294102.5						22700.79	1.75%
GaRADIAL	48960.6						648.30	1.32%
Ag 328.068†	1488.3	0.00636	mg/L	0.000245	0.00636	mg/L	0.000245	3.85%
Al 396.153†	119.0	0.0195	mg/L	0.00926	0.0195	mg/L	0.00926	47.56%
As 188.979†	-20.6	-0.00666	mg/L	0.003039	-0.00666	mg/L	0.003039	45.63%
Ba 233.527†	1134.4	0.0194	mg/L	0.00041	0.0194	mg/L	0.00041	2.14%
Be 234.861†	-118.4	0.00003	mg/L	0.000038	0.00003	mg/L	0.000038	138.33%
B 249.677†	5205.9	0.0780	mg/L	0.00169	0.0780	mg/L	0.00169	2.16%
Ca 227.546†	8610.7	108	mg/L	1.7	108	mg/L	1.7	1.60%
Cd 228.802†	12.6	0.00104	mg/L	0.000424	0.00104	mg/L	0.000424	40.81%
Co 228.616†	-2.8	-0.00081	mg/L	0.000659	-0.00081	mg/L	0.000659	81.72%
Cr 267.716†	600.8	0.00393	mg/L	0.000027	0.00393	mg/L	0.000027	0.69%
Cu 327.393†	-864.2	-0.00193	mg/L	0.002083	-0.00193	mg/L	0.002083	108.20%
Fe 239.562†	189.2	0.0361	mg/L	0.00338	0.0361	mg/L	0.00338	9.36%
Mg 279.077†	82585.8	30.6	mg/L	0.20	30.6	mg/L	0.20	0.66%
Mn 257.610†	561.9	0.00046	mg/L	0.000008	0.00046	mg/L	0.000008	1.68%
Mo 202.031†	76.5	0.00735	mg/L	0.000938	0.00735	mg/L	0.000938	12.75%
Ni 231.604†	-16.0	-0.00123	mg/L	0.000350	-0.00123	mg/L	0.000350	28.51%
Pb 220.353†	34.3	0.00724	mg/L	0.000964	0.00724	mg/L	0.000964	13.30%
Sb 206.836†	8.9	0.0121	mg/L	0.00646	0.0121	mg/L	0.00646	53.48%
Se 196.026†	3.4	0.00952	mg/L	0.005087	0.00952	mg/L	0.005087	53.41%
Si 251.611†	-70455.9	-3.67	mg/L	0.079	-3.67	mg/L	0.079	2.15%
Sn 189.927†	-60.7	-0.0117	mg/L	0.00159	-0.0117	mg/L	0.00159	13.51%
Ti 334.940†	-6241.8	0.00194	mg/L	0.000413	0.00194	mg/L	0.000413	21.28%
Tl 190.801†	-23.4	-0.0209	mg/L	0.00162	-0.0209	mg/L	0.00162	7.72%
V 290.880†	129.0	0.00177	mg/L	0.001025	0.00177	mg/L	0.001025	57.85%
Zn 206.200†	-86.0	-0.00774	mg/L	0.000114	-0.00774	mg/L	0.000114	1.47%
K 766.490†	1721.5	0.722	mg/L	0.0175	0.722	mg/L	0.0175	2.42%
Na 589.592†	2526642.7	393	mg/L	5.5	393	mg/L	5.5	1.41%
Sr 407.771†	382849.2	0.471	mg/L	0.0029	0.471	mg/L	0.0029	0.62%
Li 670.784†	796.5	0.0182	mg/L	0.00371	0.0182	mg/L	0.00371	20.38%
P 214.914†	19.4	0.0326	mg/L	0.00900	0.0326	mg/L	0.00900	27.64%

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Sequence No.: 16 **Autosampler Location: 134**
Sample ID: L1505154604MS WG525230-04 **Date Collected: 5/27/2015 3:39:01 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505154604MS WG525230-04

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505154604MS WG525230-04

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3149705.7						23036.14	0.73%
YRADIAL	206504.8						422.57	0.20%

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Ga 417.206	1265255.9					9873.05	0.78%
GaRADIAL	48188.2					114.56	0.24%
Ag 328.068†	70495.7	0.210	mg/L	0.0015	0.210 mg/L	0.0015	0.73%
Al 396.153†	13867.3	4.82	mg/L	0.023	4.82 mg/L	0.023	0.48%
As 188.979†	296.2	0.186	mg/L	0.0061	0.186 mg/L	0.0061	3.29%
Ba 233.527†	28999.1	0.501	mg/L	0.0054	0.501 mg/L	0.0054	1.08%
Be 234.861†	13382.4	0.0243	mg/L	0.00021	0.0243 mg/L	0.00021	0.89%
B 249.677†	66189.0	0.943	mg/L	0.0100	0.943 mg/L	0.0100	1.06%
Ca 227.546†	9005.1	113	mg/L	1.2	113 mg/L	1.2	1.02%
Cd 228.802†	402.6	0.0239	mg/L	0.00052	0.0239 mg/L	0.00052	2.17%
Co 228.616†	1329.2	0.0925	mg/L	0.00128	0.0925 mg/L	0.00128	1.38%
Cr 267.716†	33183.3	0.244	mg/L	0.0025	0.244 mg/L	0.0025	1.02%
Cu 327.393†	53189.0	0.249	mg/L	0.0033	0.249 mg/L	0.0033	1.31%
Fe 239.562†	11477.3	1.98	mg/L	0.015	1.98 mg/L	0.015	0.74%
Mg 279.077†	93987.8	34.8	mg/L	0.09	34.8 mg/L	0.09	0.26%
Mn 257.610†	151217.9	0.237	mg/L	0.0019	0.237 mg/L	0.0019	0.79%
Mo 202.031†	5038.6	0.480	mg/L	0.0034	0.480 mg/L	0.0034	0.70%
Ni 231.604†	7216.7	0.225	mg/L	0.0018	0.225 mg/L	0.0018	0.80%
Pb 220.353†	1035.7	0.232	mg/L	0.0067	0.232 mg/L	0.0067	2.90%
Sb 206.836†	670.8	0.582	mg/L	0.0094	0.582 mg/L	0.0094	1.62%
Se 196.026†	124.2	0.199	mg/L	0.0143	0.199 mg/L	0.0143	7.16%
Si 251.611†	-8302.6	-0.570	mg/L	0.1619	-0.570 mg/L	0.1619	28.39%
Sn 189.927†	2740.5	0.462	mg/L	0.0066	0.462 mg/L	0.0066	1.43%
Ti 334.940†	440569.9	0.483	mg/L	0.0034	0.483 mg/L	0.0034	0.71%
Tl 190.801†	249.9	0.211	mg/L	0.0078	0.211 mg/L	0.0078	3.68%
V 290.880†	92695.7	0.492	mg/L	0.0042	0.492 mg/L	0.0042	0.85%
Zn 206.200†	13377.3	0.464	mg/L	0.0047	0.464 mg/L	0.0047	1.01%
K 766.490†	39867.2	24.9	mg/L	0.11	24.9 mg/L	0.11	0.43%
Na 589.592†	2699284.0	432	mg/L	4.3	432 mg/L	4.3	1.00%
Sr 407.771†	748383.4	0.925	mg/L	0.0039	0.925 mg/L	0.0039	0.42%
Li 670.784†	19523.6	0.509	mg/L	0.0022	0.509 mg/L	0.0022	0.43%
P 214.914†	3091.1	4.85	mg/L	0.066	4.85 mg/L	0.066	1.37%

Sequence No.: 17 **Autosampler Location: 135**
Sample ID: L1505154605SD WG525230-05 **Date Collected: 5/27/2015 3:41:26 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505154605SD WG525230-05

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505154605SD WG525230-05

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3078933.6						36556.91	1.19%
YRADIAL	205366.4						2116.28	1.03%
Ga 417.206	1237712.3						10630.77	0.86%
GaRADIAL	48102.6						431.79	0.90%
Ag 328.068†	70724.0	0.211	mg/L	0.0011	0.211	mg/L	0.0011	0.50%
Al 396.153†	14395.0	5.01	mg/L	0.021	5.01	mg/L	0.021	0.42%
As 188.979†	301.2	0.189	mg/L	0.0052	0.189	mg/L	0.0052	2.78%
Ba 233.527†	29621.9	0.512	mg/L	0.0073	0.512	mg/L	0.0073	1.42%
Be 234.861†	13645.2	0.0247	mg/L	0.00025	0.0247	mg/L	0.00025	1.00%
B 249.677†	66582.4	0.949	mg/L	0.0083	0.949	mg/L	0.0083	0.88%
Ca 227.546†	9049.4	114	mg/L	1.1	114	mg/L	1.1	0.98%
Cd 228.802†	420.4	0.0249	mg/L	0.00038	0.0249	mg/L	0.00038	1.52%
Co 228.616†	1346.8	0.0937	mg/L	0.00177	0.0937	mg/L	0.00177	1.89%
Cr 267.716†	33132.7	0.244	mg/L	0.0012	0.244	mg/L	0.0012	0.48%
Cu 327.393†	53512.6	0.251	mg/L	0.0003	0.251	mg/L	0.0003	0.13%
Fe 239.562†	11954.4	2.06	mg/L	0.045	2.06	mg/L	0.045	2.20%
Mg 279.077†	94037.8	34.8	mg/L	0.31	34.8	mg/L	0.31	0.90%
Mn 257.610†	152581.9	0.239	mg/L	0.0013	0.239	mg/L	0.0013	0.53%
Mo 202.031†	5112.3	0.487	mg/L	0.0072	0.487	mg/L	0.0072	1.47%
Ni 231.604†	7361.6	0.230	mg/L	0.0027	0.230	mg/L	0.0027	1.16%
Pb 220.353†	1078.1	0.242	mg/L	0.0027	0.242	mg/L	0.0027	1.11%
Sb 206.836†	683.6	0.593	mg/L	0.0065	0.593	mg/L	0.0065	1.10%
Se 196.026†	120.4	0.193	mg/L	0.0104	0.193	mg/L	0.0104	5.40%

Approved: May 28, 2015

Si 251.611†	-4897.1	-0.400 mg/L	0.1857	-0.400 mg/L	0.1857	46.38%
Sn 189.927†	2790.2	0.470 mg/L	0.0057	0.470 mg/L	0.0057	1.22%
Ti 334.940†	446232.8	0.490 mg/L	0.0024	0.490 mg/L	0.0024	0.49%
Tl 190.801†	250.8	0.212 mg/L	0.0112	0.212 mg/L	0.0112	5.28%
V 290.880†	93485.6	0.496 mg/L	0.0019	0.496 mg/L	0.0019	0.38%
Zn 206.200†	13616.9	0.472 mg/L	0.0070	0.472 mg/L	0.0070	1.49%
K 766.490†	40438.0	25.2 mg/L	0.23	25.2 mg/L	0.23	0.93%
Na 589.592†	2717015.9	436 mg/L	7.1	436 mg/L	7.1	1.62%
Sr 407.771†	769436.8	0.951 mg/L	0.0172	0.951 mg/L	0.0172	1.80%
Li 670.784†	19671.9	0.513 mg/L	0.0108	0.513 mg/L	0.0108	2.10%
P 214.914†	3152.3	4.94 mg/L	0.090	4.94 mg/L	0.090	1.82%

Sequence No.: 18 **Autosampler Location: 136**
Sample ID: L1505154606 **Date Collected: 5/27/2015 3:43:51 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505154606

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505154606

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3253001.1						36838.33	1.13%
YRADIAL	205483.4						1155.49	0.56%
Ga 417.206	1333923.9						9940.10	0.75%
GaRADIAL	48261.1						81.59	0.17%
Ag 328.068†	650.0	0.00403	mg/L	0.000774	0.00403	mg/L	0.000774	19.19%
Al 396.153†	596.0	0.187	mg/L	0.0223	0.187	mg/L	0.0223	11.96%
As 188.979†	-9.5	-0.00152	mg/L	0.004637	-0.00152	mg/L	0.004637	305.08%
Ba 233.527†	1744.7	0.0299	mg/L	0.00050	0.0299	mg/L	0.00050	1.66%
Be 234.861†	-91.1	0.00005	mg/L	0.000046	0.00005	mg/L	0.000046	89.18%
B 249.677†	10792.9	0.157	mg/L	0.0047	0.157	mg/L	0.0047	3.02%
Ca 227.546†	2691.9	33.9	mg/L	0.44	33.9	mg/L	0.44	1.31%
Cd 228.802†	6.0	0.00061	mg/L	0.000268	0.00061	mg/L	0.000268	43.84%
Co 228.616†	0.2	-0.00063	mg/L	0.000539	-0.00063	mg/L	0.000539	85.90%
Cr 267.716†	507.2	0.00325	mg/L	0.000128	0.00325	mg/L	0.000128	3.95%
Cu 327.393†	-101.2	0.00164	mg/L	0.000340	0.00164	mg/L	0.000340	20.72%
Fe 239.562†	757.0	0.134	mg/L	0.0004	0.134	mg/L	0.0004	0.33%
Mg 279.077†	40426.0	15.0	mg/L	0.34	15.0	mg/L	0.34	2.27%
Mn 257.610†	966.8	0.00109	mg/L	0.000051	0.00109	mg/L	0.000051	4.67%
Mo 202.031†	76.7	0.00738	mg/L	0.001124	0.00738	mg/L	0.001124	15.22%
Ni 231.604†	5.6	-0.00055	mg/L	0.000487	-0.00055	mg/L	0.000487	87.93%
Pb 220.353†	18.6	0.00376	mg/L	0.002584	0.00376	mg/L	0.002584	68.79%
Sb 206.836†	-5.0	0.00013	mg/L	0.002935	0.00013	mg/L	0.002935	>999.9%
Se 196.026†	0.6	0.00515	mg/L	0.007117	0.00515	mg/L	0.007117	138.16%
Si 251.611†	-84891.5	-4.39	mg/L	0.215	-4.39	mg/L	0.215	4.90%
Sn 189.927†	-44.6	-0.00902	mg/L	0.002765	-0.00902	mg/L	0.002765	30.64%
Ti 334.940†	4410.4	0.00864	mg/L	0.000427	0.00864	mg/L	0.000427	4.94%
Tl 190.801†	-19.5	-0.0175	mg/L	0.00312	-0.0175	mg/L	0.00312	17.82%
V 290.880†	2789.7	0.0163	mg/L	0.00197	0.0163	mg/L	0.00197	12.12%
Zn 206.200†	51.5	-0.00295	mg/L	0.000230	-0.00295	mg/L	0.000230	7.81%
K 766.490†	836.2	0.358	mg/L	0.0931	0.358	mg/L	0.0931	25.98%
Na 589.592†	1447709.2	198	mg/L	2.0	198	mg/L	2.0	1.01%
Sr 407.771†	149007.5	0.184	mg/L	0.0010	0.184	mg/L	0.0010	0.56%
Li 670.784†	451.5	0.00914	mg/L	0.003099	0.00914	mg/L	0.003099	33.91%
P 214.914†	59.1	0.0949	mg/L	0.01761	0.0949	mg/L	0.01761	18.56%

Sequence No.: 19 **Autosampler Location: 137**
Sample ID: L1505154607 **Date Collected: 5/27/2015 3:46:16 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505154607

Approved: May 28, 2015

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505154607

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3184456.2						45529.41	1.43%
YRADIAL	204704.5						2826.90	1.38%
Ga 417.206	1287188.4						19202.92	1.49%
GaRADIAL	48529.9						707.49	1.46%
Ag 328.068†	1326.6	0.00577	mg/L	0.000697	0.00577	mg/L	0.000697	12.07%
Al 396.153†	86.3	0.00792	mg/L	0.003709	0.00792	mg/L	0.003709	46.84%
As 188.979†	-18.1	-0.00520	mg/L	0.005247	-0.00520	mg/L	0.005247	100.85%
Ba 233.527†	3162.0	0.0544	mg/L	0.00094	0.0544	mg/L	0.00094	1.73%
Be 234.861†	-134.0	0.00000	mg/L	0.000067	0.00000	mg/L	0.000067	>999.9%
B 249.677†	20289.7	0.290	mg/L	0.0024	0.290	mg/L	0.0024	0.84%
Ca 227.546†	8418.2	106	mg/L	1.9	106	mg/L	1.9	1.81%
Cd 228.802†	10.2	0.00089	mg/L	0.000553	0.00089	mg/L	0.000553	62.21%
Co 228.616†	3.6	-0.00036	mg/L	0.000467	-0.00036	mg/L	0.000467	129.34%
Cr 267.716†	478.6	0.00303	mg/L	0.000373	0.00303	mg/L	0.000373	12.31%
Cu 327.393†	-824.0	-0.00174	mg/L	0.001178	-0.00174	mg/L	0.001178	67.66%
Fe 239.562†	216.6	0.0403	mg/L	0.00033	0.0403	mg/L	0.00033	0.82%
Mg 279.077†	147485.5	54.6	mg/L	0.51	54.6	mg/L	0.51	0.94%
Mn 257.610†	1357.7	0.00170	mg/L	0.000026	0.00170	mg/L	0.000026	1.51%
Mo 202.031†	99.7	0.00957	mg/L	0.000907	0.00957	mg/L	0.000907	9.48%
Ni 231.604†	20.1	-0.00010	mg/L	0.000389	-0.00010	mg/L	0.000389	404.37%
Pb 220.353†	26.4	0.00547	mg/L	0.001927	0.00547	mg/L	0.001927	35.22%
Sb 206.836†	-1.6	0.00303	mg/L	0.005389	0.00303	mg/L	0.005389	177.89%
Se 196.026†	-2.8	-0.00023	mg/L	0.010530	-0.00023	mg/L	0.010530	>999.9%
Si 251.611†	-16990.5	-0.999	mg/L	0.1044	-0.999	mg/L	0.1044	10.46%
Sn 189.927†	-66.6	-0.0128	mg/L	0.00199	-0.0128	mg/L	0.00199	15.63%
Ti 334.940†	-5840.3	0.00222	mg/L	0.000068	0.00222	mg/L	0.000068	3.08%
Tl 190.801†	-30.8	-0.0270	mg/L	0.00219	-0.0270	mg/L	0.00219	8.12%
V 290.880†	-158.8	-0.00038	mg/L	0.001532	-0.00038	mg/L	0.001532	406.87%
Zn 206.200†	-33.2	-0.00591	mg/L	0.000545	-0.00591	mg/L	0.000545	9.21%
K 766.490†	3627.7	2.01	mg/L	0.055	2.01	mg/L	0.055	2.74%
Na 589.592†	2122252.6	313	mg/L	2.6	313	mg/L	2.6	0.84%
Sr 407.771†	819547.7	1.01	mg/L	0.004	1.01	mg/L	0.004	0.40%
Li 670.784†	1498.5	0.0366	mg/L	0.00152	0.0366	mg/L	0.00152	4.16%
P 214.914†	8.5	0.0155	mg/L	0.00174	0.0155	mg/L	0.00174	11.18%

Sequence No.: 20
Sample ID: L1505154608
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 138
Date Collected: 5/27/2015 3:49:41 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505154608

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505154608

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3279860.7						9769.01	0.30%
YRADIAL	206636.7						1533.57	0.74%
Ga 417.206	1388353.5						5107.73	0.37%
GaRADIAL	49300.0						354.16	0.72%
Ag 328.068†	621.0	0.00395	mg/L	0.000149	0.00395	mg/L	0.000149	3.78%
Al 396.153†	915.6	0.299	mg/L	0.0302	0.299	mg/L	0.0302	10.09%
As 188.979†	-17.2	-0.00598	mg/L	0.006875	-0.00598	mg/L	0.006875	114.95%
Ba 233.527†	3008.0	0.0518	mg/L	0.00022	0.0518	mg/L	0.00022	0.43%
Be 234.861†	-65.3	0.00009	mg/L	0.000026	0.00009	mg/L	0.000026	30.14%
B 249.677†	2333.1	0.0382	mg/L	0.00175	0.0382	mg/L	0.00175	4.57%
Ca 227.546†	3532.7	44.4	mg/L	0.32	44.4	mg/L	0.32	0.71%
Cd 228.802†	6.4	0.00066	mg/L	0.000399	0.00066	mg/L	0.000399	60.74%
Co 228.616†	-6.5	-0.00111	mg/L	0.000934	-0.00111	mg/L	0.000934	83.88%
Cr 267.716†	248.1	0.00134	mg/L	0.000247	0.00134	mg/L	0.000247	18.51%

Approved: May 28, 2015

Cu 327.393†	-517.7	-0.00028	mg/L	0.000398	-0.00028	mg/L	0.000398	142.33%
Fe 239.562†	1038.8	0.182	mg/L	0.0107	0.182	mg/L	0.0107	5.87%
Mg 279.077†	34109.4	12.6	mg/L	0.25	12.6	mg/L	0.25	2.00%
Mn 257.610†	1095.4	0.00130	mg/L	0.000012	0.00130	mg/L	0.000012	0.94%
Mo 202.031†	65.1	0.00627	mg/L	0.000585	0.00627	mg/L	0.000585	9.33%
Ni 231.604†	2.3	-0.00066	mg/L	0.000175	-0.00066	mg/L	0.000175	26.42%
Pb 220.353†	16.6	0.00333	mg/L	0.005779	0.00333	mg/L	0.005779	173.37%
Sb 206.836†	2.3	0.00648	mg/L	0.004970	0.00648	mg/L	0.004970	76.66%
Se 196.026†	-4.0	-0.00212	mg/L	0.002683	-0.00212	mg/L	0.002683	126.69%
Si 251.611†	-53179.4	-2.80	mg/L	0.144	-2.80	mg/L	0.144	5.15%
Sn 189.927†	-61.3	-0.0119	mg/L	0.00220	-0.0119	mg/L	0.00220	18.53%
Ti 334.940†	7607.9	0.0128	mg/L	0.00036	0.0128	mg/L	0.00036	2.78%
Tl 190.801†	1.6	0.00002	mg/L	0.010176	0.00002	mg/L	0.010176	>999.9%
V 290.880†	1158.2	0.00771	mg/L	0.001047	0.00771	mg/L	0.001047	13.58%
Zn 206.200†	-63.5	-0.00697	mg/L	0.000305	-0.00697	mg/L	0.000305	4.37%
K 766.490†	3663.2	2.28	mg/L	0.044	2.28	mg/L	0.044	1.95%
Na 589.592†	497584.9	62.9	mg/L	0.95	62.9	mg/L	0.95	1.51%
Sr 407.771†	169545.1	0.209	mg/L	0.0033	0.209	mg/L	0.0033	1.59%
Li 670.784†	419.3	0.00830	mg/L	0.001536	0.00830	mg/L	0.001536	18.51%
P 214.914†	209.1	0.330	mg/L	0.0198	0.330	mg/L	0.0198	6.01%

Sequence No.: 21
Sample ID: L1505154609
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 139
Date Collected: 5/27/2015 3:52:04 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505154609

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505154609

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3171232.6						50411.09	1.59%
YRADIAL	205886.6						3914.87	1.90%
Ga 417.206	1274344.3						13673.89	1.07%
GaRADIAL	49016.4						808.76	1.65%
Ag 328.068†	480.0	0.00342	mg/L	0.000233	0.00342	mg/L	0.000233	6.81%
Al 396.153†	11.5	-0.0183	mg/L	0.00458	-0.0183	mg/L	0.00458	25.06%
As 188.979†	-3.7	0.00251	mg/L	0.000600	0.00251	mg/L	0.000600	23.90%
Ba 233.527†	929.2	0.0158	mg/L	0.00044	0.0158	mg/L	0.00044	2.80%
Be 234.861†	-151.8	-0.00003	mg/L	0.000046	-0.00003	mg/L	0.000046	164.87%
B 249.677†	13121.6	0.189	mg/L	0.0018	0.189	mg/L	0.0018	0.96%
Ca 227.546†	4407.9	55.4	mg/L	0.64	55.4	mg/L	0.64	1.16%
Cd 228.802†	4.4	0.00050	mg/L	0.000583	0.00050	mg/L	0.000583	117.26%
Co 228.616†	7.1	-0.00011	mg/L	0.000209	-0.00011	mg/L	0.000209	183.90%
Cr 267.716†	558.1	0.00363	mg/L	0.000125	0.00363	mg/L	0.000125	3.45%
Cu 327.393†	-928.0	-0.00221	mg/L	0.001185	-0.00221	mg/L	0.001185	53.53%
Fe 239.562†	76.9	0.0168	mg/L	0.00544	0.0168	mg/L	0.00544	32.30%
Mg 279.077†	77467.5	28.7	mg/L	0.29	28.7	mg/L	0.29	1.01%
Mn 257.610†	403.5	0.00021	mg/L	0.000030	0.00021	mg/L	0.000030	14.26%
Mo 202.031†	91.2	0.00876	mg/L	0.001535	0.00876	mg/L	0.001535	17.53%
Ni 231.604†	1.4	-0.00069	mg/L	0.000041	-0.00069	mg/L	0.000041	5.96%
Pb 220.353†	1.0	-0.00022	mg/L	0.002882	-0.00022	mg/L	0.002882	>999.9%
Sb 206.836†	2.8	0.00690	mg/L	0.006768	0.00690	mg/L	0.006768	98.13%
Se 196.026†	2.7	0.00834	mg/L	0.025062	0.00834	mg/L	0.025062	300.61%
Si 251.611†	50210.1	2.35	mg/L	0.073	2.35	mg/L	0.073	3.10%
Sn 189.927†	-65.4	-0.0125	mg/L	0.00234	-0.0125	mg/L	0.00234	18.66%
Ti 334.940†	-2896.5	0.00215	mg/L	0.000210	0.00215	mg/L	0.000210	9.76%
Tl 190.801†	-13.8	-0.0129	mg/L	0.00713	-0.0129	mg/L	0.00713	55.28%
V 290.880†	2971.4	0.0169	mg/L	0.00097	0.0169	mg/L	0.00097	5.74%
Zn 206.200†	-111.8	-0.00864	mg/L	0.000339	-0.00864	mg/L	0.000339	3.92%
K 766.490†	2334.0	1.14	mg/L	0.062	1.14	mg/L	0.062	5.45%
Na 589.592†	2378517.8	362	mg/L	11.3	362	mg/L	11.3	3.11%
Sr 407.771†	399525.0	0.494	mg/L	0.0115	0.494	mg/L	0.0115	2.33%
Li 670.784†	1006.3	0.0237	mg/L	0.00326	0.0237	mg/L	0.00326	13.79%
P 214.914†	12.5	0.0218	mg/L	0.01413	0.0218	mg/L	0.01413	64.83%

Approved: May 28, 2015

Sequence No.: 22
Sample ID: CCV
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 6
Date Collected: 5/27/2015 3:55:29 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3193805.8						49118.01	1.54%
YRADIAL	206946.7						2882.97	1.39%
Ga 417.206	1341033.3						19423.06	1.45%
GaRADIAL	48480.7						365.86	0.75%
Ag 328.068†	132839.0	0.395	mg/L	0.0015	0.395	mg/L	0.0015	0.38%
QC value within limits for Ag 328.068 Recovery = 98.76%								
Al 396.153†	28899.2	10.1	mg/L	0.10	10.1	mg/L	0.10	1.01%
QC value within limits for Al 396.153 Recovery = 100.76%								
As 188.979†	616.4	0.378	mg/L	0.0147	0.378	mg/L	0.0147	3.88%
QC value within limits for As 188.979 Recovery = 94.51%								
Ba 233.527†	56822.7	0.982	mg/L	0.0058	0.982	mg/L	0.0058	0.59%
QC value within limits for Ba 233.527 Recovery = 98.24%								
Be 234.861†	26472.1	0.0477	mg/L	0.00020	0.0477	mg/L	0.00020	0.42%
QC value within limits for Be 234.861 Recovery = 95.43%								
B 249.677†	26091.6	0.385	mg/L	0.0018	0.385	mg/L	0.0018	0.48%
QC value less than the lower limit for B 249.677 Recovery = 77.06%								
Ca 227.546†	751.2	9.56	mg/L	0.292	9.56	mg/L	0.292	3.05%
QC value within limits for Ca 227.546 Recovery = 95.62%								
Cd 228.802†	794.2	0.0468	mg/L	0.00096	0.0468	mg/L	0.00096	2.05%
QC value within limits for Cd 228.802 Recovery = 93.57%								
Co 228.616†	2800.5	0.196	mg/L	0.0046	0.196	mg/L	0.0046	2.37%
QC value within limits for Co 228.616 Recovery = 97.78%								
Cr 267.716†	67169.4	0.494	mg/L	0.0006	0.494	mg/L	0.0006	0.11%
QC value within limits for Cr 267.716 Recovery = 98.83%								
Cu 327.393†	104382.1	0.487	mg/L	0.0018	0.487	mg/L	0.0018	0.37%
QC value within limits for Cu 327.393 Recovery = 97.45%								
Fe 239.562†	23607.4	4.06	mg/L	0.027	4.06	mg/L	0.027	0.65%
QC value within limits for Fe 239.562 Recovery = 101.52%								
Mg 279.077†	27460.4	10.2	mg/L	0.07	10.2	mg/L	0.07	0.72%
QC value within limits for Mg 279.077 Recovery = 101.57%								
Mn 257.610†	317010.8	0.497	mg/L	0.0019	0.497	mg/L	0.0019	0.38%
QC value within limits for Mn 257.610 Recovery = 99.30%								
Mo 202.031†	10028.5	0.955	mg/L	0.0227	0.955	mg/L	0.0227	2.38%
QC value within limits for Mo 202.031 Recovery = 95.51%								
Ni 231.604†	15662.3	0.490	mg/L	0.0123	0.490	mg/L	0.0123	2.51%
QC value within limits for Ni 231.604 Recovery = 97.91%								
Pb 220.353†	2181.3	0.489	mg/L	0.0131	0.489	mg/L	0.0131	2.68%
QC value within limits for Pb 220.353 Recovery = 97.89%								
Sb 206.836†	1302.3	1.13	mg/L	0.026	1.13	mg/L	0.026	2.34%
QC value within limits for Sb 206.836 Recovery = 93.78%								
Se 196.026†	256.9	0.408	mg/L	0.0358	0.408	mg/L	0.0358	8.78%
QC value within limits for Se 196.026 Recovery = 101.98%								
Si 251.611†	-177954.4	-9.04	mg/L	0.105	-9.04	mg/L	0.105	1.16%
QC value less than the lower limit for Si 251.611 Recovery = -180.84%								
Sn 189.927†	5709.8	0.964	mg/L	0.0250	0.964	mg/L	0.0250	2.59%
QC value within limits for Sn 189.927 Recovery = 96.39%								
Ti 334.940†	915496.7	0.988	mg/L	0.0036	0.988	mg/L	0.0036	0.36%
QC value within limits for Ti 334.940 Recovery = 98.82%								
Tl 190.801†	588.1	0.497	mg/L	0.0180	0.497	mg/L	0.0180	3.62%
QC value within limits for Tl 190.801 Recovery = 99.36%								
V 290.880†	186086.6	0.986	mg/L	0.0058	0.986	mg/L	0.0058	0.59%
QC value within limits for V 290.880 Recovery = 98.65%								
Zn 206.200†	28116.9	0.980	mg/L	0.0233	0.980	mg/L	0.0233	2.37%
QC value within limits for Zn 206.200 Recovery = 98.05%								
K 766.490†	77725.0	49.5	mg/L	0.49	49.5	mg/L	0.49	0.99%
QC value within limits for K 766.490 Recovery = 99.04%								

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Na 589.592†          397577.6        49.9 mg/L          0.46        49.9 mg/L          0.46   0.93%
   QC value within limits for Na 589.592  Recovery = 99.87%
Sr 407.771†          802838.4       0.996 mg/L        0.0160       0.996 mg/L        0.0160   1.61%
   QC value within limits for Sr 407.771  Recovery = 99.57%
Li 670.784†           38956.1        1.02 mg/L         0.012        1.02 mg/L         0.012   1.15%
   QC value within limits for Li 670.784  Recovery = 101.82%
P 214.914†             6121.1        9.60 mg/L         0.227        9.60 mg/L         0.227   2.36%
   QC value within limits for P 214.914  Recovery = 96.00%
QC Failed.  Continue with analysis.

==========================================================================================
Sequence No.: 23                                    Autosampler Location: 1
Sample ID: CCB                                      Date Collected: 5/27/2015 3:57:54 PM
Analyst:                                            Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

------------------------------------------------------------------------------------------
Nebulizer Parameters: CCB
Analyte                 Back Pressure    Flow
All                     231.0 kPa        0.40 L/min

------------------------------------------------------------------------------------------
Mean Data: CCB
                   Mean Corrected        Calib.                          Sample
Analyte               Intensity     Conc. Units      Std.Dev.     Conc. Units      Std.Dev.   RSD
Y 371.029            3407472.4                                                    38052.23   1.12%
YRADIAL               216219.9                                                     2132.27   0.99%
Ga 417.206           1563970.5                                                    19398.41   1.24%
GaRADIAL               52408.7                                                      407.26   0.78%
Ag 328.068†              308.4     0.00297 mg/L      0.000576     0.00297 mg/L      0.000576  19.38%
   QC value within limits for Ag 328.068  Recovery = Not calculated
Al 396.153†                2.9     -0.0210 mg/L       0.00731     -0.0210 mg/L       0.00731  34.84%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†               -4.7     0.00070 mg/L      0.002184     0.00070 mg/L      0.002184 309.99%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†              -16.1    -0.00052 mg/L      0.000128    -0.00052 mg/L      0.000128  24.56%
   QC value within limits for Ba 233.527  Recovery = Not calculated
Be 234.861†              -17.0     0.00022 mg/L      0.000010     0.00022 mg/L      0.000010   4.72%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†                61.7     0.00552 mg/L      0.002891     0.00552 mg/L      0.002891  52.37%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†               -9.0     -0.0564 mg/L       0.08156     -0.0564 mg/L       0.08156 144.68%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†               -1.1     0.00017 mg/L      0.000468     0.00017 mg/L      0.000468 279.75%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†                3.3    -0.00039 mg/L      0.000461    -0.00039 mg/L      0.000461 117.40%
   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†              -31.9    -0.00072 mg/L      0.000449    -0.00072 mg/L      0.000449  62.06%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†              -29.0     0.00195 mg/L      0.000175     0.00195 mg/L      0.000175   8.99%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†               -5.1     0.00331 mg/L      0.001420     0.00331 mg/L      0.001420  42.84%
   QC value within limits for Fe 239.562  Recovery = Not calculated
Mg 279.077†               23.7    -0.00576 mg/L      0.004352    -0.00576 mg/L      0.004352  75.52%
   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†               29.2    -0.00038 mg/L      0.000047    -0.00038 mg/L      0.000047  12.48%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†                9.7     0.00100 mg/L      0.000655     0.00100 mg/L      0.000655  65.45%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†               -8.7    -0.00101 mg/L      0.000188    -0.00101 mg/L      0.000188  18.64%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†               21.0     0.00426 mg/L      0.002776     0.00426 mg/L      0.002776  65.20%
   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†                5.3     0.00899 mg/L      0.003593     0.00899 mg/L      0.003593  39.96%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†                0.8     0.00546 mg/L      0.003109     0.00546 mg/L      0.003109  56.89%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†             -308.7      -0.166 mg/L        0.0271      -0.166 mg/L        0.0271  16.30%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†              -24.7    -0.00566 mg/L      0.001363    -0.00566 mg/L      0.001363  24.08%
   QC value within limits for Sn 189.927  Recovery = Not calculated
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Ti 334.940†	109.9	0.00183 mg/L	0.000151	0.00183 mg/L	0.000151	8.28%
QC value within limits for Ti 334.940 Recovery = Not calculated						
Tl 190.801†	4.0	0.00188 mg/L	0.003595	0.00188 mg/L	0.003595	191.67%
QC value within limits for Tl 190.801 Recovery = Not calculated						
V 290.880†	-322.5	0.00017 mg/L	0.000437	0.00017 mg/L	0.000437	253.04%
QC value within limits for V 290.880 Recovery = Not calculated						
Zn 206.200†	-4.5	-0.00494 mg/L	0.000220	-0.00494 mg/L	0.000220	4.45%
QC value within limits for Zn 206.200 Recovery = Not calculated						
K 766.490†	11.1	0.0358 mg/L	0.04211	0.0358 mg/L	0.04211	117.76%
QC value within limits for K 766.490 Recovery = Not calculated						
Na 589.592†	556.6	0.0886 mg/L	0.02875	0.0886 mg/L	0.02875	32.46%
QC value within limits for Na 589.592 Recovery = Not calculated						
Sr 407.771†	127.8	-0.00018 mg/L	0.000043	-0.00018 mg/L	0.000043	24.64%
QC value within limits for Sr 407.771 Recovery = Not calculated						
Li 670.784†	-104.1	-0.00542 mg/L	0.001442	-0.00542 mg/L	0.001442	26.62%
QC value within limits for Li 670.784 Recovery = Not calculated						
P 214.914†	-5.0	-0.00569 mg/L	0.010685	-0.00569 mg/L	0.010685	187.81%
QC value within limits for P 214.914 Recovery = Not calculated						

All analyte(s) passed QC.

Sequence No.: 24 **Autosampler Location: 140**
Sample ID: L1505154610 **Date Collected: 5/27/2015 4:01:15 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505154610

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505154610

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3168644.1						44622.79	1.41%
YRADIAL	203383.5						2950.89	1.45%
Ga 417.206	1281592.7						18018.35	1.41%
GaRADIAL	48286.9						444.92	0.92%
Ag 328.068†	1225.7	0.00548	mg/L	0.000544	0.00548	mg/L	0.000544	9.93%
Al 396.153†	60.8	-0.00106	mg/L	0.007623	-0.00106	mg/L	0.007623	719.17%
As 188.979†	-20.7	-0.00697	mg/L	0.004827	-0.00697	mg/L	0.004827	69.25%
Ba 233.527†	2987.8	0.0514	mg/L	0.00068	0.0514	mg/L	0.00068	1.32%
Be 234.861†	-115.2	0.00004	mg/L	0.000015	0.00004	mg/L	0.000015	41.47%
B 249.677†	19042.9	0.273	mg/L	0.0017	0.273	mg/L	0.0017	0.62%
Ca 227.546†	7963.1	100	mg/L	0.9	100	mg/L	0.9	0.86%
Cd 228.802†	8.3	0.00079	mg/L	0.000323	0.00079	mg/L	0.000323	41.15%
Co 228.616†	-0.9	-0.00068	mg/L	0.000438	-0.00068	mg/L	0.000438	64.76%
Cr 267.716†	467.4	0.00295	mg/L	0.000148	0.00295	mg/L	0.000148	5.03%
Cu 327.393†	-784.5	-0.00156	mg/L	0.001481	-0.00156	mg/L	0.001481	95.01%
Fe 239.562†	148.2	0.0286	mg/L	0.00081	0.0286	mg/L	0.00081	2.82%
Mg 279.077†	138990.3	51.5	mg/L	0.44	51.5	mg/L	0.44	0.86%
Mn 257.610†	1104.3	0.00131	mg/L	0.000019	0.00131	mg/L	0.000019	1.43%
Mo 202.031†	105.9	0.0102	mg/L	0.00095	0.0102	mg/L	0.00095	9.36%
Ni 231.604†	-2.1	-0.00079	mg/L	0.000409	-0.00079	mg/L	0.000409	51.77%
Pb 220.353†	36.1	0.00763	mg/L	0.003835	0.00763	mg/L	0.003835	50.24%
Sb 206.836†	-1.4	0.00319	mg/L	0.007223	0.00319	mg/L	0.007223	226.43%
Se 196.026†	-1.7	0.00146	mg/L	0.008653	0.00146	mg/L	0.008653	594.04%
Si 251.611†	-24422.9	-1.37	mg/L	0.039	-1.37	mg/L	0.039	2.86%
Sn 189.927†	-60.0	-0.0116	mg/L	0.00179	-0.0116	mg/L	0.00179	15.35%
Ti 334.940†	-5782.2	0.00191	mg/L	0.000333	0.00191	mg/L	0.000333	17.43%
Tl 190.801†	-27.9	-0.0246	mg/L	0.00251	-0.0246	mg/L	0.00251	10.18%
V 290.880†	-119.5	-0.00009	mg/L	0.002417	-0.00009	mg/L	0.002417	>999.9%
Zn 206.200†	25.7	-0.00386	mg/L	0.000068	-0.00386	mg/L	0.000068	1.75%
K 766.490†	3287.0	1.81	mg/L	0.060	1.81	mg/L	0.060	3.30%
Na 589.592†	2021458.8	294	mg/L	10.6	294	mg/L	10.6	3.59%
Sr 407.771†	777406.2	0.961	mg/L	0.0346	0.961	mg/L	0.0346	3.60%
Li 670.784†	1399.8	0.0340	mg/L	0.00305	0.0340	mg/L	0.00305	8.99%
P 214.914†	0.3	0.00265	mg/L	0.018601	0.00265	mg/L	0.018601	702.63%

Approved: May 28, 2015

Kym H. Rhoden

Sequence No.: 25
Sample ID: L1505154611
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 141
Date Collected: 5/27/2015 4:04:39 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505154611

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505154611

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3491783.9						55491.30	1.59%
YRADIAL	218938.4						5285.37	2.41%
Ga 417.206	1574791.8						22928.46	1.46%
GaRADIAL	52536.1						1085.73	2.07%
Ag 328.068†	7.7	0.00210	mg/L	0.000298	0.00210	mg/L	0.000298	14.24%
Al 396.153†	42.5	-0.00708	mg/L	0.003800	-0.00708	mg/L	0.003800	53.65%
As 188.979†	-9.7	-0.00236	mg/L	0.005604	-0.00236	mg/L	0.005604	237.49%
Ba 233.527†	11.6	-0.00004	mg/L	0.000031	-0.00004	mg/L	0.000031	72.11%
Be 234.861†	-104.3	0.00005	mg/L	0.000010	0.00005	mg/L	0.000010	18.16%
B 249.677†	-3429.9	-0.0436	mg/L	0.00174	-0.0436	mg/L	0.00174	3.99%
Ca 227.546†	-5.6	-0.0146	mg/L	0.03443	-0.0146	mg/L	0.03443	235.10%
Cd 228.802†	0.4	0.00027	mg/L	0.000324	0.00027	mg/L	0.000324	118.23%
Co 228.616†	-2.5	-0.00081	mg/L	0.000332	-0.00081	mg/L	0.000332	41.15%
Cr 267.716†	489.2	0.00311	mg/L	0.001261	0.00311	mg/L	0.001261	40.53%
Cu 327.393†	-393.2	0.00026	mg/L	0.000937	0.00026	mg/L	0.000937	359.00%
Fe 239.562†	88.0	0.0193	mg/L	0.00138	0.0193	mg/L	0.00138	7.13%
Mg 279.077†	56.8	0.00648	mg/L	0.005159	0.00648	mg/L	0.005159	79.67%
Mn 257.610†	534.4	0.00041	mg/L	0.000011	0.00041	mg/L	0.000011	2.61%
Mo 202.031†	8.5	0.00088	mg/L	0.001503	0.00088	mg/L	0.001503	169.95%
Ni 231.604†	31.1	0.00024	mg/L	0.000334	0.00024	mg/L	0.000334	138.41%
Pb 220.353†	-8.6	-0.00235	mg/L	0.001957	-0.00235	mg/L	0.001957	83.41%
Sb 206.836†	-6.1	-0.00086	mg/L	0.004765	-0.00086	mg/L	0.004765	552.86%
Se 196.026†	5.8	0.0132	mg/L	0.00241	0.0132	mg/L	0.00241	18.27%
Si 251.611†	-347088.0	-17.5	mg/L	0.16	-17.5	mg/L	0.16	0.92%
Sn 189.927†	-41.4	-0.00849	mg/L	0.000766	-0.00849	mg/L	0.000766	9.03%
Ti 334.940†	427.1	0.00217	mg/L	0.000305	0.00217	mg/L	0.000305	14.03%
Tl 190.801†	-0.9	-0.00219	mg/L	0.002269	-0.00219	mg/L	0.002269	103.53%
V 290.880†	-503.9	-0.00078	mg/L	0.002527	-0.00078	mg/L	0.002527	322.69%
Zn 206.200†	-118.0	-0.00887	mg/L	0.000296	-0.00887	mg/L	0.000296	3.33%
K 766.490†	170.1	0.136	mg/L	0.0421	0.136	mg/L	0.0421	31.01%
Na 589.592†	3249.6	0.417	mg/L	0.0168	0.417	mg/L	0.0168	4.03%
Sr 407.771†	417.1	0.00018	mg/L	0.000113	0.00018	mg/L	0.000113	62.16%
Li 670.784†	-12.7	-0.00303	mg/L	0.005280	-0.00303	mg/L	0.005280	174.51%
P 214.914†	-4.0	-0.00404	mg/L	0.017304	-0.00404	mg/L	0.017304	428.56%

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Sequence No.: 26
Sample ID: L1505155701
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 142
Date Collected: 5/27/2015 4:08:01 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505155701

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505155701

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3295767.7						24524.61	0.74%
YRADIAL	210174.8						2023.92	0.96%
Ga 417.206	1350443.0						4474.12	0.33%
GaRADIAL	48479.9						732.21	1.51%
Ag 328.068†	109.2	0.00238	mg/L	0.000675	0.00238	mg/L	0.000675	28.42%
Al 396.153†	31.2	-0.0111	mg/L	0.00495	-0.0111	mg/L	0.00495	44.45%

Approved: May 28, 2015

Kym H. Rhoden

As 188.979†	-15.9	-0.00600 mg/L	0.005345	-0.00600 mg/L	0.005345	89.02%
Ba 233.527†	1090.9	0.0186 mg/L	0.00015	0.0186 mg/L	0.00015	0.78%
Be 234.861†	-82.9	0.00011 mg/L	0.000012	0.00011 mg/L	0.000012	10.98%
B 249.677†	1365.1	0.0239 mg/L	0.00489	0.0239 mg/L	0.00489	20.51%
Ca 227.546†	670.9	8.49 mg/L	0.036	8.49 mg/L	0.036	0.42%
Cd 228.802†	8.4	0.00081 mg/L	0.000745	0.00081 mg/L	0.000745	92.35%
Co 228.616†	115.9	0.00752 mg/L	0.000735	0.00752 mg/L	0.000735	9.77%
Cr 267.716†	47.4	-0.00014 mg/L	0.001100	-0.00014 mg/L	0.001100	812.23%
Cu 327.393†	-294.6	0.00072 mg/L	0.000698	0.00072 mg/L	0.000698	96.92%
Fe 239.562†	78.7	0.0177 mg/L	0.00118	0.0177 mg/L	0.00118	6.68%
Mg 279.077†	2223.7	0.809 mg/L	0.0248	0.809 mg/L	0.0248	3.06%
Mn 257.610†	96866.9	0.151 mg/L	0.0029	0.151 mg/L	0.0029	1.93%
Mo 202.031†	30.8	0.00303 mg/L	0.000627	0.00303 mg/L	0.000627	20.65%
Ni 231.604†	263.2	0.00750 mg/L	0.000891	0.00750 mg/L	0.000891	11.88%
Pb 220.353†	6.5	0.00092 mg/L	0.001281	0.00092 mg/L	0.001281	139.19%
Sb 206.836†	2.5	0.00660 mg/L	0.005240	0.00660 mg/L	0.005240	79.43%
Se 196.026†	0.2	0.00444 mg/L	0.008775	0.00444 mg/L	0.008775	197.57%
Si 251.611†	-106774.0	-5.48 mg/L	0.279	-5.48 mg/L	0.279	5.09%
Sn 189.927†	-44.0	-0.00893 mg/L	0.000400	-0.00893 mg/L	0.000400	4.48%
Ti 334.940†	-195.2	0.00205 mg/L	0.000181	0.00205 mg/L	0.000181	8.83%
Tl 190.801†	1.8	-0.00012 mg/L	0.006663	-0.00012 mg/L	0.006663	>999.9%
V 290.880†	92.1	0.00235 mg/L	0.000407	0.00235 mg/L	0.000407	17.36%
Zn 206.200†	2336.9	0.0767 mg/L	0.00096	0.0767 mg/L	0.00096	1.26%
K 766.490†	121.5	-0.0324 mg/L	0.01503	-0.0324 mg/L	0.01503	46.37%
Na 589.592†	1044033.1	138 mg/L	2.4	138 mg/L	2.4	1.72%
Sr 407.771†	16732.1	0.0202 mg/L	0.00028	0.0202 mg/L	0.00028	1.41%
Li 670.784†	-124.5	-0.00596 mg/L	0.002024	-0.00596 mg/L	0.002024	33.98%
P 214.914†	5.7	0.0112 mg/L	0.01342	0.0112 mg/L	0.01342	120.13%

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Sequence No.: 27 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 5/27/2015 4:11:55 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3244907.4						28335.40	0.87%
YRADIAL	206305.1						6495.48	3.15%
Ga 417.206	1356698.9						9865.45	0.73%
GaRADIAL	48046.3						1324.81	2.76%
Ag 328.068†	132688.8	0.395	mg/L	0.0032	0.395	mg/L	0.0032	0.80%
QC value within limits for Ag 328.068 Recovery = 98.65%								
Al 396.153†	28956.6	10.1	mg/L	0.09	10.1	mg/L	0.09	0.85%
QC value within limits for Al 396.153 Recovery = 100.97%								
As 188.979†	603.4	0.370	mg/L	0.0063	0.370	mg/L	0.0063	1.72%
QC value within limits for As 188.979 Recovery = 92.54%								
Ba 233.527†	56227.1	0.972	mg/L	0.0088	0.972	mg/L	0.0088	0.90%
QC value within limits for Ba 233.527 Recovery = 97.21%								
Be 234.861†	26219.1	0.0472	mg/L	0.00011	0.0472	mg/L	0.00011	0.24%
QC value within limits for Be 234.861 Recovery = 94.49%								
B 249.677†	25866.8	0.382	mg/L	0.0046	0.382	mg/L	0.0046	1.20%
QC value less than the lower limit for B 249.677 Recovery = 76.42%								
Ca 227.546†	734.3	9.35	mg/L	0.259	9.35	mg/L	0.259	2.77%
QC value within limits for Ca 227.546 Recovery = 93.49%								
Cd 228.802†	788.6	0.0465	mg/L	0.00047	0.0465	mg/L	0.00047	1.02%
QC value within limits for Cd 228.802 Recovery = 92.96%								
Co 228.616†	2759.2	0.193	mg/L	0.0021	0.193	mg/L	0.0021	1.07%
QC value within limits for Co 228.616 Recovery = 96.32%								
Cr 267.716†	66664.2	0.490	mg/L	0.0031	0.490	mg/L	0.0031	0.63%
QC value within limits for Cr 267.716 Recovery = 98.09%								
Cu 327.393†	104221.7	0.487	mg/L	0.0039	0.487	mg/L	0.0039	0.81%
QC value within limits for Cu 327.393 Recovery = 97.30%								
Fe 239.562†	23594.7	4.06	mg/L	0.024	4.06	mg/L	0.024	0.60%

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   QC value within limits for Fe 239.562  Recovery = 101.47%
Mg 279.077†            27378.1        10.1 mg/L          0.07        10.1 mg/L          0.07   0.71%
   QC value within limits for Mg 279.077  Recovery = 101.27%
Mn 257.610†           314887.5       0.493 mg/L        0.0050       0.493 mg/L        0.0050   1.02%
   QC value within limits for Mn 257.610  Recovery = 98.64%
Mo 202.031†             9802.5       0.934 mg/L        0.0085       0.934 mg/L        0.0085   0.91%
   QC value within limits for Mo 202.031  Recovery = 93.36%
Ni 231.604†            15357.5       0.480 mg/L        0.0040       0.480 mg/L        0.0040   0.82%
   QC value within limits for Ni 231.604  Recovery = 96.00%
Pb 220.353†             2144.6       0.481 mg/L        0.0048       0.481 mg/L        0.0048   1.00%
   QC value within limits for Pb 220.353  Recovery = 96.25%
Sb 206.836†             1286.2        1.11 mg/L         0.007        1.11 mg/L         0.007   0.63%
   QC value within limits for Sb 206.836  Recovery = 92.63%
Se 196.026†              238.5       0.379 mg/L        0.0044       0.379 mg/L        0.0044   1.16%
   QC value within limits for Se 196.026  Recovery = 94.79%
Si 251.611†          -176403.3       -8.96 mg/L         0.115       -8.96 mg/L         0.115   1.28%
   QC value less than the lower limit for Si 251.611  Recovery = -179.29%
Sn 189.927†             5590.8       0.944 mg/L        0.0089       0.944 mg/L        0.0089   0.94%
   QC value within limits for Sn 189.927  Recovery = 94.38%
Ti 334.940†           910053.4       0.982 mg/L        0.0093       0.982 mg/L        0.0093   0.95%
   QC value within limits for Ti 334.940  Recovery = 98.23%
Tl 190.801†              582.4       0.492 mg/L        0.0088       0.492 mg/L        0.0088   1.78%
   QC value within limits for Tl 190.801  Recovery = 98.40%
V 290.880†            185347.4       0.983 mg/L        0.0090       0.983 mg/L        0.0090   0.91%
   QC value within limits for V 290.880  Recovery = 98.26%
Zn 206.200†            27473.3       0.958 mg/L        0.0090       0.958 mg/L        0.0090   0.94%
   QC value within limits for Zn 206.200  Recovery = 95.80%
K 766.490†             77864.0        49.6 mg/L          0.17        49.6 mg/L          0.17   0.34%
   QC value within limits for K 766.490  Recovery = 99.22%
Na 589.592†           394170.3        49.5 mg/L          1.00        49.5 mg/L          1.00   2.01%
   QC value within limits for Na 589.592  Recovery = 98.99%
Sr 407.771†           787931.5       0.977 mg/L        0.0249       0.977 mg/L        0.0249   2.55%
   QC value within limits for Sr 407.771  Recovery = 97.72%
Li 670.784†            38944.3        1.02 mg/L         0.001        1.02 mg/L         0.001   0.14%
   QC value within limits for Li 670.784  Recovery = 101.79%
P 214.914†              5985.7        9.39 mg/L         0.092        9.39 mg/L         0.092   0.98%
   QC value within limits for P 214.914  Recovery = 93.88%
QC Failed.  Continue with analysis.

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Sequence No.: 28                                    Autosampler Location: 1
Sample ID: CCB                                      Date Collected: 5/27/2015 4:14:20 PM
Analyst:                                            Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

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Nebulizer Parameters: CCB
Analyte                  Back Pressure    Flow
All                     231.0 kPa        0.40 L/min

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Mean Data: CCB
                   Mean Corrected         Calib.                          Sample
Analyte               Intensity     Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029            3426374.8                                                     82010.10   2.39%
YRADIAL               219273.7                                                      8906.20   4.06%
Ga 417.206           1574556.2                                                     23301.81   1.48%
GaRADIAL               52942.2                                                      2092.72   3.95%
Ag 328.068†               -8.7     0.00204 mg/L      0.000315     0.00204 mg/L      0.000315  15.43%
   QC value within limits for Ag 328.068  Recovery = Not calculated
Al 396.153†                6.1     -0.0198 mg/L       0.00238     -0.0198 mg/L       0.00238  12.02%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†                0.6     0.00398 mg/L      0.004200     0.00398 mg/L      0.004200 105.65%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†               -7.2    -0.00037 mg/L      0.000148    -0.00037 mg/L      0.000148  40.05%
   QC value within limits for Ba 233.527  Recovery = Not calculated
Be 234.861†              -15.8     0.00022 mg/L      0.000040     0.00022 mg/L      0.000040  18.51%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†               -164.9     0.00234 mg/L      0.003870     0.00234 mg/L      0.003870 165.26%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†               -0.4      0.0509 mg/L       0.07411      0.0509 mg/L       0.07411 145.74%
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   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†                -3.4     0.00001 mg/L      0.000328     0.00001 mg/L      0.000328 >999.9%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†                 1.4    -0.00053 mg/L      0.000472    -0.00053 mg/L      0.000472  89.35%
   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†                21.6    -0.00033 mg/L      0.001093    -0.00033 mg/L      0.001093 331.72%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†              -288.8     0.00074 mg/L      0.000594     0.00074 mg/L      0.000594  79.93%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†                 9.1     0.00575 mg/L      0.000579     0.00575 mg/L      0.000579  10.07%
   QC value within limits for Fe 239.562  Recovery = Not calculated
Mg 279.077†                21.7    -0.00651 mg/L      0.007236    -0.00651 mg/L      0.007236 111.22%
   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†                19.0    -0.00039 mg/L      0.000013    -0.00039 mg/L      0.000013   3.38%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†                 1.0     0.00016 mg/L      0.000391     0.00016 mg/L      0.000391 238.04%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†                 3.6    -0.00062 mg/L      0.000538    -0.00062 mg/L      0.000538  86.36%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†                13.7     0.00263 mg/L      0.003404     0.00263 mg/L      0.003404 129.46%
   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†                -2.6     0.00224 mg/L      0.003215     0.00224 mg/L      0.003215 143.61%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†                 3.9      0.0103 mg/L       0.01068      0.0103 mg/L       0.01068 103.51%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†             -6950.9      -0.498 mg/L        0.3967      -0.498 mg/L        0.3967  79.73%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†               -21.3    -0.00508 mg/L      0.000538    -0.00508 mg/L      0.000538  10.59%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†               344.3     0.00209 mg/L      0.000478     0.00209 mg/L      0.000478  22.91%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†                 4.5     0.00235 mg/L      0.001755     0.00235 mg/L      0.001755  74.77%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†               -359.2    -0.00002 mg/L      0.001130    -0.00002 mg/L      0.001130 >999.9%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†                 0.1    -0.00478 mg/L      0.000209    -0.00478 mg/L      0.000209   4.38%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†                -16.7      0.0182 mg/L       0.04352      0.0182 mg/L       0.04352 238.79%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†               597.4      0.0935 mg/L       0.00174      0.0935 mg/L       0.00174   1.86%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†               143.1    -0.00016 mg/L      0.000073    -0.00016 mg/L      0.000073  45.46%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†               -18.3    -0.00317 mg/L      0.000363    -0.00317 mg/L      0.000363  11.46%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†                  0.9     0.00351 mg/L      0.008404     0.00351 mg/L      0.008404 239.22%
   QC value within limits for P 214.914  Recovery = Not calculated
All analyte(s) passed QC.

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Sequence No.: 29                                    Autosampler Location: 94
Sample ID: PBW A6 WG525082-02                       Date Collected: 5/27/2015 4:17:41 PM
Analyst: KHR                                        Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

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Nebulizer Parameters: PBW A6 WG525082-02
Analyte                  Back Pressure    Flow
All                     231.0 kPa         0.40 L/min

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Mean Data: PBW A6 WG525082-02
                   Mean Corrected         Calib.                          Sample
Analyte               Intensity     Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029            3441515.3                                                    32062.02   0.93%
YRADIAL               217813.7                                                     2405.77   1.10%
Ga 417.206           1562079.9                                                     7184.39   0.46%
GaRADIAL               52158.7                                                      634.28   1.22%
Ag 328.068†                1.0     0.00207 mg/L      0.000281     0.00207 mg/L      0.000281  13.54%
Al 396.153†               44.5    -0.00641 mg/L      0.006488    -0.00641 mg/L      0.006488 101.22%
As 188.979†              -13.0    -0.00435 mg/L      0.004774    -0.00435 mg/L      0.004774 109.64%
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Ba 233.527†	-6.6	-0.00036	mg/L	0.000241	-0.00036	mg/L	0.000241	67.15%
Be 234.861†	-80.3	0.00010	mg/L	0.000016	0.00010	mg/L	0.000016	15.57%
B 249.677†	8846.1	0.129	mg/L	0.0075	0.129	mg/L	0.0075	5.78%
Ca 227.546†	-2.8	0.0205	mg/L	0.21647	0.0205	mg/L	0.21647	>999.9%
Cd 228.802†	1.1	0.00032	mg/L	0.000207	0.00032	mg/L	0.000207	64.03%
Co 228.616†	-4.0	-0.00091	mg/L	0.000549	-0.00091	mg/L	0.000549	60.54%
Cr 267.716†	24.3	-0.00031	mg/L	0.000867	-0.00031	mg/L	0.000867	280.37%
Cu 327.393†	-387.9	0.00028	mg/L	0.001184	0.00028	mg/L	0.001184	416.34%
Fe 239.562†	1.1	0.00438	mg/L	0.002290	0.00438	mg/L	0.002290	52.29%
Mg 279.077†	15.0	-0.00899	mg/L	0.003267	-0.00899	mg/L	0.003267	36.33%
Mn 257.610†	7.3	-0.00041	mg/L	0.000031	-0.00041	mg/L	0.000031	7.55%
Mo 202.031†	10.0	0.00103	mg/L	0.000505	0.00103	mg/L	0.000505	49.09%
Ni 231.604†	-4.8	-0.00088	mg/L	0.000415	-0.00088	mg/L	0.000415	47.00%
Pb 220.353†	-15.7	-0.00394	mg/L	0.001503	-0.00394	mg/L	0.001503	38.20%
Sb 206.836†	-2.1	0.00263	mg/L	0.005545	0.00263	mg/L	0.005545	210.65%
Se 196.026†	1.3	0.00613	mg/L	0.005902	0.00613	mg/L	0.005902	96.36%
Si 251.611†	-134978.4	-6.89	mg/L	0.807	-6.89	mg/L	0.807	11.72%
Sn 189.927†	-41.6	-0.00852	mg/L	0.000413	-0.00852	mg/L	0.000413	4.84%
Ti 334.940†	166.6	0.00189	mg/L	0.000080	0.00189	mg/L	0.000080	4.21%
Tl 190.801†	0.1	-0.00136	mg/L	0.004505	-0.00136	mg/L	0.004505	330.57%
V 290.880†	-169.9	0.00098	mg/L	0.001343	0.00098	mg/L	0.001343	136.91%
Zn 206.200†	-148.6	-0.00996	mg/L	0.000408	-0.00996	mg/L	0.000408	4.09%
K 766.490†	5.7	0.0323	mg/L	0.10540	0.0323	mg/L	0.10540	325.85%
Na 589.592†	700.9	0.106	mg/L	0.0102	0.106	mg/L	0.0102	9.65%
Sr 407.771†	536.9	0.00033	mg/L	0.000103	0.00033	mg/L	0.000103	31.26%
Li 670.784†	-20.8	-0.00324	mg/L	0.002924	-0.00324	mg/L	0.002924	90.35%
P 214.914†	-5.3	-0.00619	mg/L	0.003067	-0.00619	mg/L	0.003067	49.54%

Sequence No.: 30 **Autosampler Location: 95**
Sample ID: LCSW A6 WG525082-03 **Date Collected: 5/27/2015 4:21:03 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: LCSW A6 WG525082-03

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: LCSW A6 WG525082-03

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3336665.2						37249.62	1.12%
YRADIAL	211361.8						5201.43	2.46%
Ga 417.206	1412548.9						16423.93	1.16%
GaRADIAL	49083.6						1244.50	2.54%
Ag 328.068†	64508.4	0.193	mg/L	0.0021	0.193	mg/L	0.0021	1.11%
Al 396.153†	14468.0	5.03	mg/L	0.120	5.03	mg/L	0.120	2.39%
As 188.979†	281.3	0.174	mg/L	0.0071	0.174	mg/L	0.0071	4.06%
Ba 233.527†	28419.8	0.491	mg/L	0.0092	0.491	mg/L	0.0092	1.87%
Be 234.861†	12484.8	0.0226	mg/L	0.00034	0.0226	mg/L	0.00034	1.50%
B 249.677†	64545.1	0.920	mg/L	0.0109	0.920	mg/L	0.0109	1.18%
Ca 227.546†	350.0	4.49	mg/L	0.126	4.49	mg/L	0.126	2.81%
Cd 228.802†	373.4	0.0222	mg/L	0.00034	0.0222	mg/L	0.00034	1.53%
Co 228.616†	1356.5	0.0944	mg/L	0.00201	0.0944	mg/L	0.00201	2.13%
Cr 267.716†	32902.6	0.242	mg/L	0.0045	0.242	mg/L	0.0045	1.87%
Cu 327.393†	50608.0	0.237	mg/L	0.0029	0.237	mg/L	0.0029	1.24%
Fe 239.562†	11798.3	2.03	mg/L	0.067	2.03	mg/L	0.067	3.28%
Mg 279.077†	13634.3	5.04	mg/L	0.087	5.04	mg/L	0.087	1.74%
Mn 257.610†	153870.6	0.241	mg/L	0.0036	0.241	mg/L	0.0036	1.49%
Mo 202.031†	4810.8	0.458	mg/L	0.0087	0.458	mg/L	0.0087	1.89%
Ni 231.604†	7411.4	0.231	mg/L	0.0033	0.231	mg/L	0.0033	1.44%
Pb 220.353†	1029.3	0.231	mg/L	0.0017	0.231	mg/L	0.0017	0.75%
Sb 206.836†	610.9	0.530	mg/L	0.0072	0.530	mg/L	0.0072	1.35%
Se 196.026†	118.3	0.190	mg/L	0.0079	0.190	mg/L	0.0079	4.17%
Si 251.611†	-58143.2	-3.06	mg/L	0.099	-3.06	mg/L	0.099	3.25%
Sn 189.927†	2730.1	0.460	mg/L	0.0065	0.460	mg/L	0.0065	1.41%
Ti 334.940†	445518.7	0.482	mg/L	0.0065	0.482	mg/L	0.0065	1.36%
Tl 190.801†	282.6	0.238	mg/L	0.0077	0.238	mg/L	0.0077	3.23%
V 290.880†	90737.6	0.482	mg/L	0.0060	0.482	mg/L	0.0060	1.25%

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Zn 206.200†	13210.3	0.458	mg/L	0.0080	0.458	mg/L	0.0080	1.74%
K 766.490†	38109.8	24.2	mg/L	0.44	24.2	mg/L	0.44	1.81%
Na 589.592†	201582.8	25.0	mg/L	0.55	25.0	mg/L	0.55	2.21%
Sr 407.771†	398977.1	0.495	mg/L	0.0135	0.495	mg/L	0.0135	2.72%
Li 670.784†	19635.7	0.512	mg/L	0.0137	0.512	mg/L	0.0137	2.68%
P 214.914†	2864.0	4.49	mg/L	0.089	4.49	mg/L	0.089	1.98%

Sequence No.: 31 **Autosampler Location: 96**
Sample ID: L1505140501 **Date Collected: 5/27/2015 4:23:26 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505140501

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505140501

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3356060.1						12870.22	0.38%
YRADIAL	216848.8						1409.88	0.65%
Ga 417.206	1472545.0						2845.63	0.19%
GaRADIAL	52392.6						378.39	0.72%
Ag 328.068†	962.3	0.00490	mg/L	0.001084	0.00490	mg/L	0.001084	22.12%
Al 396.153†	47.3	-0.00559	mg/L	0.047539	-0.00559	mg/L	0.047539	850.26%
As 188.979†	-19.1	-0.00687	mg/L	0.001555	-0.00687	mg/L	0.001555	22.63%
Ba 233.527†	6106.0	0.105	mg/L	0.0004	0.105	mg/L	0.0004	0.39%
Be 234.861†	-95.9	0.00004	mg/L	0.000036	0.00004	mg/L	0.000036	88.90%
B 249.677†	-897.4	-0.00744	mg/L	0.002391	-0.00744	mg/L	0.002391	32.15%
Ca 227.546†	4493.4	56.5	mg/L	0.05	56.5	mg/L	0.05	0.09%
Cd 228.802†	-1.9	0.00016	mg/L	0.000340	0.00016	mg/L	0.000340	209.07%
Co 228.616†	-2.8	-0.00084	mg/L	0.000075	-0.00084	mg/L	0.000075	8.91%
Cr 267.716†	206.9	0.00103	mg/L	0.000257	0.00103	mg/L	0.000257	25.01%
Cu 327.393†	880.5	0.00617	mg/L	0.000932	0.00617	mg/L	0.000932	15.10%
Fe 239.562†	821.5	0.145	mg/L	0.0070	0.145	mg/L	0.0070	4.85%
Mg 279.077†	31903.2	11.8	mg/L	0.30	11.8	mg/L	0.30	2.52%
Mn 257.610†	2577.6	0.00362	mg/L	0.000031	0.00362	mg/L	0.000031	0.84%
Mo 202.031†	63.3	0.00610	mg/L	0.000908	0.00610	mg/L	0.000908	14.90%
Ni 231.604†	7.9	-0.00048	mg/L	0.000707	-0.00048	mg/L	0.000707	146.45%
Pb 220.353†	25.5	0.00525	mg/L	0.002154	0.00525	mg/L	0.002154	41.02%
Sb 206.836†	-6.7	-0.00135	mg/L	0.002584	-0.00135	mg/L	0.002584	192.01%
Se 196.026†	-1.1	0.00246	mg/L	0.002861	0.00246	mg/L	0.002861	116.15%
Si 251.611†	-176741.7	-8.97	mg/L	0.022	-8.97	mg/L	0.022	0.24%
Sn 189.927†	-58.1	-0.0113	mg/L	0.00115	-0.0113	mg/L	0.00115	10.13%
Ti 334.940†	-3894.1	0.00115	mg/L	0.000527	0.00115	mg/L	0.000527	45.94%
Tl 190.801†	-15.6	-0.0144	mg/L	0.00047	-0.0144	mg/L	0.00047	3.24%
V 290.880†	-857.7	-0.00294	mg/L	0.001649	-0.00294	mg/L	0.001649	56.06%
Zn 206.200†	324.2	0.00654	mg/L	0.000249	0.00654	mg/L	0.000249	3.81%
K 766.490†	2164.5	1.39	mg/L	0.099	1.39	mg/L	0.099	7.12%
Na 589.592†	36729.6	4.52	mg/L	0.022	4.52	mg/L	0.022	0.48%
Sr 407.771†	186646.5	0.229	mg/L	0.0022	0.229	mg/L	0.0022	0.95%
Li 670.784†	251.6	0.00390	mg/L	0.000321	0.00390	mg/L	0.000321	8.23%
P 214.914†	-4.4	-0.00465	mg/L	0.012281	-0.00465	mg/L	0.012281	264.17%

Sequence No.: 32 **Autosampler Location: 97**
Sample ID: L1505140502 **Date Collected: 5/27/2015 4:25:48 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505140502

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505140502

Approved: May 28, 2015

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3381159.8						22903.72	0.68%
YRADIAL	212780.4						5761.88	2.71%
Ga 417.206	1458015.6						12478.08	0.86%
GaRADIAL	50991.5						1331.42	2.61%
Ag 328.068†	829.0	0.00450	mg/L	0.001105	0.00450	mg/L	0.001105	24.54%
Al 396.153†	166.4	0.0362	mg/L	0.01894	0.0362	mg/L	0.01894	52.31%
As 188.979†	-26.5	-0.0113	mg/L	0.00218	-0.0113	mg/L	0.00218	19.32%
Ba 233.527†	2346.0	0.0403	mg/L	0.00039	0.0403	mg/L	0.00039	0.97%
Be 234.861†	-75.4	0.00008	mg/L	0.000043	0.00008	mg/L	0.000043	53.23%
B 249.677†	-972.8	-0.00852	mg/L	0.000875	-0.00852	mg/L	0.000875	10.27%
Ca 227.546†	4948.9	62.2	mg/L	0.50	62.2	mg/L	0.50	0.80%
Cd 228.802†	7.4	0.00075	mg/L	0.000189	0.00075	mg/L	0.000189	25.32%
Co 228.616†	-7.0	-0.00112	mg/L	0.000623	-0.00112	mg/L	0.000623	55.50%
Cr 267.716†	233.7	0.00123	mg/L	0.000105	0.00123	mg/L	0.000105	8.57%
Cu 327.393†	-312.5	0.00065	mg/L	0.001109	0.00065	mg/L	0.001109	169.95%
Fe 239.562†	807.0	0.142	mg/L	0.0040	0.142	mg/L	0.0040	2.83%
Mg 279.077†	64153.9	23.8	mg/L	0.86	23.8	mg/L	0.86	3.61%
Mn 257.610†	20689.2	0.0320	mg/L	0.00033	0.0320	mg/L	0.00033	1.03%
Mo 202.031†	51.5	0.00498	mg/L	0.000936	0.00498	mg/L	0.000936	18.80%
Ni 231.604†	-2.4	-0.00081	mg/L	0.000455	-0.00081	mg/L	0.000455	56.35%
Pb 220.353†	31.8	0.00667	mg/L	0.000330	0.00667	mg/L	0.000330	4.95%
Sb 206.836†	2.1	0.00622	mg/L	0.006425	0.00622	mg/L	0.006425	103.24%
Se 196.026†	-4.7	-0.00318	mg/L	0.001535	-0.00318	mg/L	0.001535	48.20%
Si 251.611†	-253289.7	-12.8	mg/L	0.14	-12.8	mg/L	0.14	1.09%
Sn 189.927†	-64.9	-0.0125	mg/L	0.00037	-0.0125	mg/L	0.00037	2.98%
Ti 334.940†	-3721.3	0.00170	mg/L	0.000426	0.00170	mg/L	0.000426	25.07%
Tl 190.801†	-10.9	-0.0106	mg/L	0.00105	-0.0106	mg/L	0.00105	9.91%
V 290.880†	-1417.8	-0.00621	mg/L	0.000713	-0.00621	mg/L	0.000713	11.47%
Zn 206.200†	2506.6	0.0826	mg/L	0.00096	0.0826	mg/L	0.00096	1.16%
K 766.490†	1752.4	1.12	mg/L	0.076	1.12	mg/L	0.076	6.82%
Na 589.592†	154844.9	19.1	mg/L	0.32	19.1	mg/L	0.32	1.69%
Sr 407.771†	178620.5	0.219	mg/L	0.0043	0.219	mg/L	0.0043	1.95%
Li 670.784†	105.5	0.00007	mg/L	0.002413	0.00007	mg/L	0.002413	>999.9%
P 214.914†	32.8	0.0536	mg/L	0.00980	0.0536	mg/L	0.00980	18.29%

Sequence No.: 33
Sample ID: L1505143502
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 98
Date Collected: 5/27/2015 4:28:10 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505143502

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505143502

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3170419.8						72279.58	2.28%
YRADIAL	207255.0						1222.49	0.59%
Ga 417.206	1291124.2						28008.14	2.17%
GaRADIAL	49442.8						448.31	0.91%
Ag 328.068†	1022.0	0.00483	mg/L	0.000500	0.00483	mg/L	0.000500	10.35%
Al 396.153†	-9.5	-0.0255	mg/L	0.00728	-0.0255	mg/L	0.00728	28.50%
As 188.979†	-17.8	-0.00557	mg/L	0.009960	-0.00557	mg/L	0.009960	178.88%
Ba 233.527†	1464.9	0.0251	mg/L	0.00068	0.0251	mg/L	0.00068	2.73%
Be 234.861†	-125.9	0.00002	mg/L	0.000012	0.00002	mg/L	0.000012	50.20%
B 249.677†	-797.2	-0.00656	mg/L	0.002275	-0.00656	mg/L	0.002275	34.68%
Ca 227.546†	6392.8	80.4	mg/L	2.08	80.4	mg/L	2.08	2.59%
Cd 228.802†	0.8	0.00032	mg/L	0.000625	0.00032	mg/L	0.000625	193.35%
Co 228.616†	-6.0	-0.00104	mg/L	0.001170	-0.00104	mg/L	0.001170	112.76%
Cr 267.716†	297.8	0.00170	mg/L	0.000074	0.00170	mg/L	0.000074	4.35%
Cu 327.393†	-603.6	-0.00073	mg/L	0.001006	-0.00073	mg/L	0.001006	137.32%
Fe 239.562†	7.3	0.00459	mg/L	0.001739	0.00459	mg/L	0.001739	37.85%
Mg 279.077†	114681.9	42.5	mg/L	0.58	42.5	mg/L	0.58	1.37%
Mn 257.610†	20019.1	0.0310	mg/L	0.00081	0.0310	mg/L	0.00081	2.61%
Mo 202.031†	64.5	0.00622	mg/L	0.001007	0.00622	mg/L	0.001007	16.20%

Approved: May 28, 2015

Ni 231.604†	17.1	-0.00019	mg/L	0.000726	-0.00019	mg/L	0.000726	379.19%
Pb 220.353†	30.3	0.00632	mg/L	0.001839	0.00632	mg/L	0.001839	29.10%
Sb 206.836†	1.7	0.00594	mg/L	0.001701	0.00594	mg/L	0.001701	28.64%
Se 196.026†	-1.7	0.00140	mg/L	0.010796	0.00140	mg/L	0.010796	773.61%
Si 251.611†	209703.3	10.3	mg/L	0.32	10.3	mg/L	0.32	3.09%
Sn 189.927†	-69.9	-0.0133	mg/L	0.00123	-0.0133	mg/L	0.00123	9.27%
Ti 334.940†	-5585.0	0.00086	mg/L	0.000120	0.00086	mg/L	0.000120	14.04%
Tl 190.801†	-25.3	-0.0225	mg/L	0.00572	-0.0225	mg/L	0.00572	25.42%
V 290.880†	-1255.4	-0.00587	mg/L	0.000214	-0.00587	mg/L	0.000214	3.65%
Zn 206.200†	-43.7	-0.00629	mg/L	0.000467	-0.00629	mg/L	0.000467	7.42%
K 766.490†	1696.7	0.805	mg/L	0.1045	0.805	mg/L	0.1045	12.97%
Na 589.592†	2023939.7	295	mg/L	5.9	295	mg/L	5.9	2.00%
Sr 407.771†	899867.8	1.11	mg/L	0.014	1.11	mg/L	0.014	1.25%
Li 670.784†	2510.2	0.0631	mg/L	0.00438	0.0631	mg/L	0.00438	6.94%
P 214.914†	48.7	0.0785	mg/L	0.01341	0.0785	mg/L	0.01341	17.08%

Sequence No.: 34 **Autosampler Location: 99**
Sample ID: L1505143504 **Date Collected: 5/27/2015 4:31:34 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505143504

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1505143504

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3118895.4						8001.04	0.26%
YRADIAL	201149.8						3981.86	1.98%
Ga 417.206	1250673.5						7469.55	0.60%
GaRADIAL	48196.0						905.52	1.88%
Ag 328.068†	2582.0	0.00916	mg/L	0.000486	0.00916	mg/L	0.000486	5.30%
Al 396.153†	-66.8	-0.0457	mg/L	0.00398	-0.0457	mg/L	0.00398	8.72%
As 188.979†	-34.5	-0.0127	mg/L	0.00555	-0.0127	mg/L	0.00555	43.61%
Ba 233.527†	1789.2	0.0307	mg/L	0.00076	0.0307	mg/L	0.00076	2.49%
Be 234.861†	-145.9	-0.00001	mg/L	0.000113	-0.00001	mg/L	0.000113	923.58%
B 249.677†	4234.5	0.0643	mg/L	0.00216	0.0643	mg/L	0.00216	3.36%
Ca 227.546†	17745.0	223	mg/L	2.9	223	mg/L	2.9	1.29%
Cd 228.802†	11.4	0.00101	mg/L	0.000545	0.00101	mg/L	0.000545	53.85%
Co 228.616†	-4.9	-0.00093	mg/L	0.000534	-0.00093	mg/L	0.000534	57.34%
Cr 267.716†	908.0	0.00619	mg/L	0.000102	0.00619	mg/L	0.000102	1.65%
Cu 327.393†	-880.6	-0.00203	mg/L	0.002418	-0.00203	mg/L	0.002418	119.20%
Fe 239.562†	39.5	0.00949	mg/L	0.001129	0.00949	mg/L	0.001129	11.90%
Mg 279.077†	201359.7	74.6	mg/L	0.25	74.6	mg/L	0.25	0.33%
Mn 257.610†	23402.7	0.0363	mg/L	0.00028	0.0363	mg/L	0.00028	0.76%
Mo 202.031†	83.9	0.00806	mg/L	0.000785	0.00806	mg/L	0.000785	9.74%
Ni 231.604†	30.8	0.00024	mg/L	0.000453	0.00024	mg/L	0.000453	186.80%
Pb 220.353†	36.4	0.00767	mg/L	0.000717	0.00767	mg/L	0.000717	9.35%
Sb 206.836†	-9.7	-0.00396	mg/L	0.005402	-0.00396	mg/L	0.005402	136.47%
Se 196.026†	-15.5	-0.0201	mg/L	0.00050	-0.0201	mg/L	0.00050	2.50%
Si 251.611†	179696.5	8.82	mg/L	0.285	8.82	mg/L	0.285	3.23%
Sn 189.927†	-82.1	-0.0154	mg/L	0.00359	-0.0154	mg/L	0.00359	23.39%
Ti 334.940†	-14620.7	0.00028	mg/L	0.000420	0.00028	mg/L	0.000420	149.40%
Tl 190.801†	-38.2	-0.0333	mg/L	0.01026	-0.0333	mg/L	0.01026	30.78%
V 290.880†	-2222.6	-0.0118	mg/L	0.00132	-0.0118	mg/L	0.00132	11.16%
Zn 206.200†	-48.1	-0.00641	mg/L	0.000474	-0.00641	mg/L	0.000474	7.40%
K 766.490†	6462.7	3.71	mg/L	0.075	3.71	mg/L	0.075	2.03%
Na 589.592†	2570494.8	403	mg/L	14.8	403	mg/L	14.8	3.69%
Sr 407.771†	1830342.4	2.26	mg/L	0.043	2.26	mg/L	0.043	1.91%
Li 670.784†	3449.1	0.0877	mg/L	0.00231	0.0877	mg/L	0.00231	2.63%
P 214.914†	38.8	0.0630	mg/L	0.02625	0.0630	mg/L	0.02625	41.66%

Sequence No.: 35 **Autosampler Location: 100**
Sample ID: L1505146301 **Date Collected: 5/27/2015 4:34:58 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**

Approved: May 28, 2015

Dilution: Sample Prep Vol:

Nebulizer Parameters: L1505146301

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505146301

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3251875.8						4023.33	0.12%
YRADIAL	207039.9						3434.30	1.66%
Ga 417.206	1356351.8						4886.89	0.36%
GaRADIAL	48425.2						937.87	1.94%
Ag 328.068†	353.6	0.00300	mg/L	0.000545	0.00300	mg/L	0.000545	18.16%
Al 396.153†	29.5	-0.0119	mg/L	0.00445	-0.0119	mg/L	0.00445	37.46%
As 188.979†	-13.6	-0.00369	mg/L	0.004163	-0.00369	mg/L	0.004163	112.90%
Ba 233.527†	8902.0	0.154	mg/L	0.0007	0.154	mg/L	0.0007	0.44%
Be 234.861†	-155.5	0.00000	mg/L	0.000015	0.00000	mg/L	0.000015	>999.9%
B 249.677†	12907.9	0.186	mg/L	0.0035	0.186	mg/L	0.0035	1.87%
Ca 227.546†	3815.6	48.0	mg/L	0.18	48.0	mg/L	0.18	0.37%
Cd 228.802†	6.0	0.00062	mg/L	0.000375	0.00062	mg/L	0.000375	60.37%
Co 228.616†	5.9	-0.00025	mg/L	0.000739	-0.00025	mg/L	0.000739	300.40%
Cr 267.716†	245.7	0.00132	mg/L	0.000199	0.00132	mg/L	0.000199	15.12%
Cu 327.393†	-676.1	-0.00105	mg/L	0.001903	-0.00105	mg/L	0.001903	180.79%
Fe 239.562†	82.0	0.0177	mg/L	0.00090	0.0177	mg/L	0.00090	5.08%
Mg 279.077†	75049.4	27.8	mg/L	0.19	27.8	mg/L	0.19	0.69%
Mn 257.610†	229274.7	0.359	mg/L	0.0032	0.359	mg/L	0.0032	0.90%
Mo 202.031†	67.9	0.00661	mg/L	0.000457	0.00661	mg/L	0.000457	6.91%
Ni 231.604†	76.5	0.00167	mg/L	0.000496	0.00167	mg/L	0.000496	29.74%
Pb 220.353†	6.5	0.00082	mg/L	0.002974	0.00082	mg/L	0.002974	364.42%
Sb 206.836†	-4.6	0.00052	mg/L	0.004614	0.00052	mg/L	0.004614	881.09%
Se 196.026†	-6.6	-0.00630	mg/L	0.000359	-0.00630	mg/L	0.000359	5.69%
Si 251.611†	-99104.6	-5.10	mg/L	0.153	-5.10	mg/L	0.153	3.00%
Sn 189.927†	-62.4	-0.0120	mg/L	0.00179	-0.0120	mg/L	0.00179	14.86%
Ti 334.940†	-3123.6	0.00143	mg/L	0.000072	0.00143	mg/L	0.000072	5.00%
Tl 190.801†	-17.5	-0.0164	mg/L	0.00481	-0.0164	mg/L	0.00481	29.37%
V 290.880†	-597.7	-0.00201	mg/L	0.000282	-0.00201	mg/L	0.000282	14.06%
Zn 206.200†	-42.1	-0.00624	mg/L	0.000276	-0.00624	mg/L	0.000276	4.43%
K 766.490†	2537.7	1.55	mg/L	0.043	1.55	mg/L	0.043	2.78%
Na 589.592†	629559.2	80.4	mg/L	0.45	80.4	mg/L	0.45	0.55%
Sr 407.771†	249977.2	0.308	mg/L	0.0006	0.308	mg/L	0.0006	0.19%
Li 670.784†	248.2	0.00381	mg/L	0.001975	0.00381	mg/L	0.001975	51.82%
P 214.914†	18.9	0.0318	mg/L	0.00745	0.0318	mg/L	0.00745	23.44%

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Sequence No.: 36 **Autosampler Location: 101**
Sample ID: L1505146302 **Date Collected: 5/27/2015 4:38:19 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505146302

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505146302

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3301503.1						37674.16	1.14%
YRADIAL	214999.5						6033.89	2.81%
Ga 417.206	1378302.1						12818.11	0.93%
GaRADIAL	49881.7						1419.16	2.85%
Ag 328.068†	-239.4	0.00380	mg/L	0.000198	0.00380	mg/L	0.000198	5.20%
Al 396.153†	194.5	0.0466	mg/L	0.01909	0.0466	mg/L	0.01909	40.94%
As 188.979†	-15.4	-0.00325	mg/L	0.003481	-0.00325	mg/L	0.003481	107.05%
Ba 233.527†	18879.6	0.326	mg/L	0.0031	0.326	mg/L	0.0031	0.94%
Be 234.861†	662.1	0.00007	mg/L	0.000211	0.00007	mg/L	0.000211	314.55%
B 249.677†	8255.8	0.142	mg/L	0.0029	0.142	mg/L	0.0029	2.04%

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Ca 227.546†	4391.6	55.2	mg/L	0.74	55.2	mg/L	0.74	1.35%
Cd 228.802†	12.9	0.00104	mg/L	0.000183	0.00104	mg/L	0.000183	17.58%
Co 228.616†	3.9	-0.00059	mg/L	0.000162	-0.00059	mg/L	0.000162	27.54%
Cr 267.716†	244.3	0.00115	mg/L	0.000145	0.00115	mg/L	0.000145	12.57%
Cu 327.393†	-805.3	-0.00084	mg/L	0.000905	-0.00084	mg/L	0.000905	107.38%
Fe 239.562†	32827.6	5.65	mg/L	0.057	5.65	mg/L	0.057	1.02%
Mg 279.077†	100327.3	37.2	mg/L	0.18	37.2	mg/L	0.18	0.49%
Mn 257.610†	302637.3	0.474	mg/L	0.0044	0.474	mg/L	0.0044	0.92%
Mo 202.031†	73.8	0.00710	mg/L	0.001246	0.00710	mg/L	0.001246	17.55%
Ni 231.604†	0.7	-0.00071	mg/L	0.000666	-0.00071	mg/L	0.000666	93.64%
Pb 220.353†	19.7	0.00351	mg/L	0.002839	0.00351	mg/L	0.002839	80.86%
Sb 206.836†	-4.5	0.00076	mg/L	0.001720	0.00076	mg/L	0.001720	227.00%
Se 196.026†	-9.2	-0.0109	mg/L	0.01124	-0.0109	mg/L	0.01124	102.70%
Si 251.611†	-47026.4	-2.50	mg/L	0.181	-2.50	mg/L	0.181	7.24%
Sn 189.927†	-65.6	-0.0126	mg/L	0.00220	-0.0126	mg/L	0.00220	17.53%
Ti 334.940†	-3853.2	0.00111	mg/L	0.000314	0.00111	mg/L	0.000314	28.35%
Tl 190.801†	-9.2	-0.00957	mg/L	0.005303	-0.00957	mg/L	0.005303	55.43%
V 290.880†	-1917.2	-0.00816	mg/L	0.001400	-0.00816	mg/L	0.001400	17.16%
Zn 206.200†	30.0	-0.00320	mg/L	0.000741	-0.00320	mg/L	0.000741	23.14%
K 766.490†	404.2	0.229	mg/L	0.1283	0.229	mg/L	0.1283	56.10%
Na 589.592†	438117.2	55.2	mg/L	2.02	55.2	mg/L	2.02	3.66%
Sr 407.771†	343710.6	0.424	mg/L	0.0149	0.424	mg/L	0.0149	3.50%
Li 670.784†	223.4	0.00316	mg/L	0.000452	0.00316	mg/L	0.000452	14.29%
P 214.914†	15.2	0.0260	mg/L	0.00590	0.0260	mg/L	0.00590	22.69%

Sequence No.: 37
Sample ID: L1505146302PS WG525235-01
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 102
Date Collected: 5/27/2015 4:40:42 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505146302PS WG525235-01

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505146302PS WG525235-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3288184.5						37309.83	1.13%
YRADIAL	212273.7						1219.38	0.57%
Ga 417.206	1359380.9						14079.80	1.04%
GaRADIAL	50392.9						228.83	0.45%
Ag 328.068†	66315.8	0.200	mg/L	0.0024	0.200	mg/L	0.0024	1.22%
Al 396.153†	14288.3	4.97	mg/L	0.082	4.97	mg/L	0.082	1.65%
As 188.979†	283.3	0.178	mg/L	0.0086	0.178	mg/L	0.0086	4.81%
Ba 233.527†	43728.6	0.756	mg/L	0.0147	0.756	mg/L	0.0147	1.94%
Be 234.861†	13536.9	0.0233	mg/L	0.00057	0.0233	mg/L	0.00057	2.45%
B 249.677†	64949.4	0.945	mg/L	0.0176	0.945	mg/L	0.0176	1.86%
Ca 227.546†	4311.8	54.3	mg/L	0.82	54.3	mg/L	0.82	1.51%
Cd 228.802†	385.6	0.0229	mg/L	0.00027	0.0229	mg/L	0.00027	1.19%
Co 228.616†	1314.6	0.0912	mg/L	0.00200	0.0912	mg/L	0.00200	2.19%
Cr 267.716†	32627.9	0.240	mg/L	0.0053	0.240	mg/L	0.0053	2.20%
Cu 327.393†	50470.5	0.237	mg/L	0.0046	0.237	mg/L	0.0046	1.95%
Fe 239.562†	41596.4	7.15	mg/L	0.077	7.15	mg/L	0.077	1.07%
Mg 279.077†	104457.3	38.7	mg/L	0.47	38.7	mg/L	0.47	1.21%
Mn 257.610†	417073.3	0.653	mg/L	0.0144	0.653	mg/L	0.0144	2.21%
Mo 202.031†	4924.2	0.469	mg/L	0.0095	0.469	mg/L	0.0095	2.03%
Ni 231.604†	7163.8	0.224	mg/L	0.0042	0.224	mg/L	0.0042	1.86%
Pb 220.353†	1047.8	0.235	mg/L	0.0038	0.235	mg/L	0.0038	1.63%
Sb 206.836†	634.8	0.551	mg/L	0.0067	0.551	mg/L	0.0067	1.21%
Se 196.026†	113.6	0.182	mg/L	0.0149	0.182	mg/L	0.0149	8.20%
Si 251.611†	3400.1	0.0139	mg/L	0.39812	0.0139	mg/L	0.39812	>999.9%
Sn 189.927†	2692.2	0.454	mg/L	0.0098	0.454	mg/L	0.0098	2.16%
Ti 334.940†	442108.1	0.481	mg/L	0.0106	0.481	mg/L	0.0106	2.20%
Tl 190.801†	263.3	0.222	mg/L	0.0008	0.222	mg/L	0.0008	0.35%
V 290.880†	89806.0	0.477	mg/L	0.0126	0.477	mg/L	0.0126	2.64%
Zn 206.200†	13183.2	0.458	mg/L	0.0103	0.458	mg/L	0.0103	2.24%
K 766.490†	38784.2	24.6	mg/L	0.39	24.6	mg/L	0.39	1.57%
Na 589.592†	576322.4	73.3	mg/L	1.59	73.3	mg/L	1.59	2.17%

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Sr 407.771†	713966.0	0.884 mg/L	0.0204	0.884 mg/L	0.0204	2.31%
Li 670.784†	19629.0	0.512 mg/L	0.0076	0.512 mg/L	0.0076	1.49%
P 214.914†	2954.7	4.64 mg/L	0.081	4.64 mg/L	0.081	1.74%

Sequence No.: 38 **Autosampler Location: 103**
Sample ID: L1505146302DL WG525235-02 **Date Collected: 5/27/2015 4:43:06 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505146302DL WG525235-02

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505146302DL WG525235-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3462534.2						39231.98	1.13%
YRADIAL	221620.8						4681.35	2.11%
Ga 417.206	1535394.8						15592.14	1.02%
GaRADIAL	51204.3						505.54	0.99%
Ag 328.068†	-12.0	0.00253	mg/L	0.000172	0.00253	mg/L	0.000172	6.79%
Al 396.153†	43.5	-0.00665	mg/L	0.045533	-0.00665	mg/L	0.045533	684.43%
As 188.979†	-15.3	-0.00524	mg/L	0.004099	-0.00524	mg/L	0.004099	78.20%
Ba 233.527†	3803.4	0.0655	mg/L	0.00063	0.0655	mg/L	0.00063	0.96%
Be 234.861†	132.3	0.00020	mg/L	0.000027	0.00020	mg/L	0.000027	13.51%
B 249.677†	2904.4	0.0500	mg/L	0.00117	0.0500	mg/L	0.00117	2.35%
Ca 227.546†	845.2	10.7	mg/L	0.10	10.7	mg/L	0.10	0.96%
Cd 228.802†	2.6	0.00042	mg/L	0.000508	0.00042	mg/L	0.000508	120.44%
Co 228.616†	-1.8	-0.00081	mg/L	0.000795	-0.00081	mg/L	0.000795	98.72%
Cr 267.716†	91.7	0.00015	mg/L	0.000096	0.00015	mg/L	0.000096	63.08%
Cu 327.393†	-443.1	0.00019	mg/L	0.001317	0.00019	mg/L	0.001317	682.91%
Fe 239.562†	6770.0	1.17	mg/L	0.025	1.17	mg/L	0.025	2.12%
Mg 279.077†	21044.1	7.78	mg/L	0.234	7.78	mg/L	0.234	3.00%
Mn 257.610†	62938.0	0.0982	mg/L	0.00073	0.0982	mg/L	0.00073	0.75%
Mo 202.031†	19.4	0.00192	mg/L	0.001279	0.00192	mg/L	0.001279	66.59%
Ni 231.604†	16.6	-0.00021	mg/L	0.000601	-0.00021	mg/L	0.000601	282.14%
Pb 220.353†	16.1	0.00306	mg/L	0.002003	0.00306	mg/L	0.002003	65.50%
Sb 206.836†	-0.2	0.00435	mg/L	0.002215	0.00435	mg/L	0.002215	50.95%
Se 196.026†	9.4	0.0188	mg/L	0.00818	0.0188	mg/L	0.00818	43.62%
Si 251.611†	64184.0	3.05	mg/L	0.047	3.05	mg/L	0.047	1.55%
Sn 189.927†	-50.5	-0.0100	mg/L	0.00198	-0.0100	mg/L	0.00198	19.77%
Ti 334.940†	-1062.0	0.00126	mg/L	0.000336	0.00126	mg/L	0.000336	26.80%
Tl 190.801†	-2.1	-0.00328	mg/L	0.004648	-0.00328	mg/L	0.004648	141.53%
V 290.880†	-907.7	-0.00290	mg/L	0.001166	-0.00290	mg/L	0.001166	40.14%
Zn 206.200†	-105.7	-0.00836	mg/L	0.000358	-0.00836	mg/L	0.000358	4.28%
K 766.490†	-15.3	0.00752	mg/L	0.008574	0.00752	mg/L	0.008574	114.02%
Na 589.592†	94614.7	11.6	mg/L	0.34	11.6	mg/L	0.34	2.96%
Sr 407.771†	72535.9	0.0893	mg/L	0.00040	0.0893	mg/L	0.00040	0.44%
Li 670.784†	-82.7	-0.00486	mg/L	0.005506	-0.00486	mg/L	0.005506	113.31%
P 214.914†	8.0	0.0148	mg/L	0.01329	0.0148	mg/L	0.01329	90.06%

Sequence No.: 39 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 5/27/2015 4:45:29 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3256463.6						69216.67	2.13%

Approved: May 28, 2015

Kym H. Rhoden

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YRADIAL              215535.0                                                    2700.77   1.25%
Ga 417.206          1355503.2                                                   19018.53   1.40%
GaRADIAL              50276.8                                                     764.35   1.52%
Ag 328.068†          131778.4       0.392 mg/L        0.0005       0.392 mg/L        0.0005   0.12%
   QC value within limits for Ag 328.068  Recovery = 97.97%
Al 396.153†           28577.3        9.96 mg/L         0.163        9.96 mg/L         0.163   1.64%
   QC value within limits for Al 396.153  Recovery = 99.64%
As 188.979†             607.1       0.372 mg/L        0.0122       0.372 mg/L        0.0122   3.28%
   QC value within limits for As 188.979  Recovery = 93.11%
Ba 233.527†           55810.6       0.965 mg/L        0.0089       0.965 mg/L        0.0089   0.92%
   QC value within limits for Ba 233.527  Recovery = 96.49%
Be 234.861†           26051.9      0.0470 mg/L       0.00024      0.0470 mg/L       0.00024   0.51%
   QC value within limits for Be 234.861  Recovery = 93.92%
B 249.677†            26176.8       0.386 mg/L        0.0021       0.386 mg/L        0.0021   0.55%
   QC value less than the lower limit for B 249.677  Recovery = 77.23%
Ca 227.546†             738.8        9.40 mg/L         0.093        9.40 mg/L         0.093   0.99%
   QC value within limits for Ca 227.546  Recovery = 94.04%
Cd 228.802†             793.4      0.0468 mg/L       0.00083      0.0468 mg/L       0.00083   1.77%
   QC value within limits for Cd 228.802  Recovery = 93.51%
Co 228.616†            2737.2       0.191 mg/L        0.0037       0.191 mg/L        0.0037   1.95%
   QC value within limits for Co 228.616  Recovery = 95.55%
Cr 267.716†           66005.7       0.486 mg/L        0.0036       0.486 mg/L        0.0036   0.75%
   QC value within limits for Cr 267.716  Recovery = 97.12%
Cu 327.393†          103481.0       0.483 mg/L        0.0021       0.483 mg/L        0.0021   0.44%
   QC value within limits for Cu 327.393  Recovery = 96.61%
Fe 239.562†           23112.5        3.98 mg/L         0.088        3.98 mg/L         0.088   2.20%
   QC value within limits for Fe 239.562  Recovery = 99.39%
Mg 279.077†           27170.5        10.0 mg/L          0.19        10.0 mg/L          0.19   1.85%
   QC value within limits for Mg 279.077  Recovery = 100.50%
Mn 257.610†          311543.7       0.488 mg/L        0.0030       0.488 mg/L        0.0030   0.62%
   QC value within limits for Mn 257.610  Recovery = 97.59%
Mo 202.031†            9752.7       0.929 mg/L        0.0195       0.929 mg/L        0.0195   2.10%
   QC value within limits for Mo 202.031  Recovery = 92.89%
Ni 231.604†           15352.8       0.480 mg/L        0.0095       0.480 mg/L        0.0095   1.98%
   QC value within limits for Ni 231.604  Recovery = 95.97%
Pb 220.353†            2143.1       0.481 mg/L        0.0108       0.481 mg/L        0.0108   2.24%
   QC value within limits for Pb 220.353  Recovery = 96.18%
Sb 206.836†            1283.3        1.11 mg/L         0.015        1.11 mg/L         0.015   1.39%
   QC value within limits for Sb 206.836  Recovery = 92.42%
Se 196.026†             259.3       0.412 mg/L        0.0041       0.412 mg/L        0.0041   1.00%
   QC value within limits for Se 196.026  Recovery = 102.94%
Si 251.611†         -176340.6       -8.96 mg/L         0.288       -8.96 mg/L         0.288   3.21%
   QC value less than the lower limit for Si 251.611  Recovery = -179.22%
Sn 189.927†            5588.7       0.943 mg/L        0.0177       0.943 mg/L        0.0177   1.88%
   QC value within limits for Sn 189.927  Recovery = 94.34%
Ti 334.940†          900788.4       0.972 mg/L        0.0049       0.972 mg/L        0.0049   0.50%
   QC value within limits for Ti 334.940  Recovery = 97.23%
Tl 190.801†             572.9       0.484 mg/L        0.0083       0.484 mg/L        0.0083   1.71%
   QC value within limits for Tl 190.801  Recovery = 96.80%
V 290.880†           182833.8       0.969 mg/L        0.0067       0.969 mg/L        0.0067   0.69%
   QC value within limits for V 290.880  Recovery = 96.93%
Zn 206.200†           27435.7       0.957 mg/L        0.0180       0.957 mg/L        0.0180   1.88%
   QC value within limits for Zn 206.200  Recovery = 95.66%
K 766.490†            76353.8        48.6 mg/L          0.63        48.6 mg/L          0.63   1.29%
   QC value within limits for K 766.490  Recovery = 97.28%
Na 589.592†          383033.7        48.1 mg/L          0.89        48.1 mg/L          0.89   1.85%
   QC value within limits for Na 589.592  Recovery = 96.11%
Sr 407.771†          775090.5       0.961 mg/L        0.0187       0.961 mg/L        0.0187   1.95%
   QC value within limits for Sr 407.771  Recovery = 96.13%
Li 670.784†           38404.5        1.00 mg/L         0.009        1.00 mg/L         0.009   0.89%
   QC value within limits for Li 670.784  Recovery = 100.38%
P 214.914†             5984.8        9.39 mg/L         0.194        9.39 mg/L         0.194   2.06%
   QC value within limits for P 214.914  Recovery = 93.86%
QC Failed.  Continue with analysis.

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Sequence No.: 40 **Autosampler Location: 1**
Sample ID: CCB **Date Collected: 5/27/2015 4:47:59 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Approved: May 28, 2015

Nebulizer Parameters: CCB

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3485834.0						20650.94	0.59%
YRADIAL	216715.6						5248.75	2.42%
Ga 417.206	1588054.6						13401.09	0.84%
GaRADIAL	52507.3						1351.07	2.57%
Ag 328.068†	-51.0	0.00192	mg/L	0.000159	0.00192	mg/L	0.000159	8.29%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	-6.9	-0.0245	mg/L	0.01134	-0.0245	mg/L	0.01134	46.37%
QC value within limits for Al 396.153 Recovery = Not calculated								
As 188.979†	-9.9	-0.00249	mg/L	0.004543	-0.00249	mg/L	0.004543	182.18%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	-13.9	-0.00048	mg/L	0.000133	-0.00048	mg/L	0.000133	27.47%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 234.861†	-7.9	0.00023	mg/L	0.000038	0.00023	mg/L	0.000038	16.30%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	77.5	0.00576	mg/L	0.001911	0.00576	mg/L	0.001911	33.19%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	-3.0	0.0179	mg/L	0.09372	0.0179	mg/L	0.09372	523.93%
QC value within limits for Ca 227.546 Recovery = Not calculated								
Cd 228.802†	-0.0	0.00025	mg/L	0.000153	0.00025	mg/L	0.000153	62.18%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	-7.7	-0.00117	mg/L	0.000686	-0.00117	mg/L	0.000686	58.74%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	-7.7	-0.00055	mg/L	0.000362	-0.00055	mg/L	0.000362	66.30%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	50.0	0.00231	mg/L	0.000388	0.00231	mg/L	0.000388	16.80%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	13.9	0.00658	mg/L	0.001427	0.00658	mg/L	0.001427	21.69%
QC value within limits for Fe 239.562 Recovery = Not calculated								
Mg 279.077†	25.0	-0.00529	mg/L	0.006013	-0.00529	mg/L	0.006013	113.62%
QC value within limits for Mg 279.077 Recovery = Not calculated								
Mn 257.610†	13.6	-0.00040	mg/L	0.000013	-0.00040	mg/L	0.000013	3.33%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	14.1	0.00141	mg/L	0.000942	0.00141	mg/L	0.000942	66.69%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	-15.5	-0.00122	mg/L	0.000264	-0.00122	mg/L	0.000264	21.65%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	-6.3	-0.00184	mg/L	0.002028	-0.00184	mg/L	0.002028	110.08%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	6.4	0.00993	mg/L	0.001613	0.00993	mg/L	0.001613	16.24%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	3.9	0.0103	mg/L	0.01576	0.0103	mg/L	0.01576	153.36%
QC value within limits for Se 196.026 Recovery = Not calculated								
Si 251.611†	685.7	-0.116	mg/L	0.2524	-0.116	mg/L	0.2524	216.80%
QC value within limits for Si 251.611 Recovery = Not calculated								
Sn 189.927†	-29.2	-0.00642	mg/L	0.000749	-0.00642	mg/L	0.000749	11.67%
QC value within limits for Sn 189.927 Recovery = Not calculated								
Ti 334.940†	326.3	0.00207	mg/L	0.000247	0.00207	mg/L	0.000247	11.93%
QC value within limits for Ti 334.940 Recovery = Not calculated								
Tl 190.801†	0.9	-0.00072	mg/L	0.002680	-0.00072	mg/L	0.002680	373.08%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 290.880†	-440.4	-0.00045	mg/L	0.001240	-0.00045	mg/L	0.001240	275.91%
QC value within limits for V 290.880 Recovery = Not calculated								
Zn 206.200†	-14.6	-0.00529	mg/L	0.000141	-0.00529	mg/L	0.000141	2.66%
QC value within limits for Zn 206.200 Recovery = Not calculated								
K 766.490†	-46.9	-0.00085	mg/L	0.013473	-0.00085	mg/L	0.013473	>999.9%
QC value within limits for K 766.490 Recovery = Not calculated								
Na 589.592†	500.0	0.0817	mg/L	0.01373	0.0817	mg/L	0.01373	16.82%
QC value within limits for Na 589.592 Recovery = Not calculated								
Sr 407.771†	207.3	-0.00008	mg/L	0.000172	-0.00008	mg/L	0.000172	218.37%
QC value within limits for Sr 407.771 Recovery = Not calculated								
Li 670.784†	-39.4	-0.00372	mg/L	0.002383	-0.00372	mg/L	0.002383	63.99%
QC value within limits for Li 670.784 Recovery = Not calculated								
P 214.914†	-2.6	-0.00195	mg/L	0.005025	-0.00195	mg/L	0.005025	257.80%

Approved: May 28, 2015

Lynn H. Rhoden

QC value within limits for P 214.914 Recovery = Not calculated
All analyte(s) passed QC.

Sequence No.: 41 **Autosampler Location: 104**
Sample ID: L1505146303 **Date Collected: 5/27/2015 4:51:20 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505146303

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505146303

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3326870.6						37658.09	1.13%
YRADIAL	213456.2						2601.37	1.22%
Ga 417.206	1403824.1						16212.94	1.15%
GaRADIAL	48809.1						712.13	1.46%
Ag 328.068†	346.9	0.00326	mg/L	0.000782	0.00326	mg/L	0.000782	23.98%
Al 396.153†	182.0	0.0417	mg/L	0.01520	0.0417	mg/L	0.01520	36.41%
As 188.979†	-19.7	-0.00714	mg/L	0.007578	-0.00714	mg/L	0.007578	106.08%
Ba 233.527†	7390.4	0.128	mg/L	0.0016	0.128	mg/L	0.0016	1.28%
Be 234.861†	-32.7	0.00007	mg/L	0.000011	0.00007	mg/L	0.000011	14.76%
B 249.677†	8189.9	0.122	mg/L	0.0026	0.122	mg/L	0.0026	2.11%
Ca 227.546†	4437.5	55.8	mg/L	0.71	55.8	mg/L	0.71	1.27%
Cd 228.802†	-0.8	0.00023	mg/L	0.000343	0.00023	mg/L	0.000343	146.72%
Co 228.616†	3.2	-0.00045	mg/L	0.000577	-0.00045	mg/L	0.000577	129.59%
Cr 267.716†	276.5	0.00153	mg/L	0.000174	0.00153	mg/L	0.000174	11.37%
Cu 327.393†	-316.2	0.00071	mg/L	0.001130	0.00071	mg/L	0.001130	159.94%
Fe 239.562†	3841.6	0.664	mg/L	0.0082	0.664	mg/L	0.0082	1.23%
Mg 279.077†	57952.9	21.5	mg/L	0.37	21.5	mg/L	0.37	1.72%
Mn 257.610†	313497.8	0.491	mg/L	0.0025	0.491	mg/L	0.0025	0.51%
Mo 202.031†	53.2	0.00523	mg/L	0.000253	0.00523	mg/L	0.000253	4.84%
Ni 231.604†	6.6	-0.00052	mg/L	0.000406	-0.00052	mg/L	0.000406	77.78%
Pb 220.353†	13.2	0.00221	mg/L	0.001356	0.00221	mg/L	0.001356	61.27%
Sb 206.836†	2.1	0.00628	mg/L	0.002250	0.00628	mg/L	0.002250	35.81%
Se 196.026†	-4.3	-0.00272	mg/L	0.013346	-0.00272	mg/L	0.013346	490.22%
Si 251.611†	-113733.8	-5.83	mg/L	0.147	-5.83	mg/L	0.147	2.53%
Sn 189.927†	-58.9	-0.0114	mg/L	0.00164	-0.0114	mg/L	0.00164	14.34%
Ti 334.940†	-3217.8	0.00183	mg/L	0.000227	0.00183	mg/L	0.000227	12.39%
Tl 190.801†	-16.5	-0.0157	mg/L	0.00184	-0.0157	mg/L	0.00184	11.78%
V 290.880†	-937.0	-0.00351	mg/L	0.000500	-0.00351	mg/L	0.000500	14.23%
Zn 206.200†	122.4	-0.00044	mg/L	0.000389	-0.00044	mg/L	0.000389	88.18%
K 766.490†	1749.8	1.08	mg/L	0.055	1.08	mg/L	0.055	5.07%
Na 589.592†	446020.9	56.2	mg/L	0.30	56.2	mg/L	0.30	0.53%
Sr 407.771†	245024.9	0.302	mg/L	0.0020	0.302	mg/L	0.0020	0.65%
Li 670.784†	170.4	0.00177	mg/L	0.002613	0.00177	mg/L	0.002613	147.37%
P 214.914†	29.8	0.0488	mg/L	0.01185	0.0488	mg/L	0.01185	24.26%

Sequence No.: 42 **Autosampler Location: 105**
Sample ID: L1505146304 WG525082-01 **Date Collected: 5/27/2015 4:53:43 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505146304 WG525082-01

Analyte	Back Pressure	Flow
All	230.0 kPa	0.40 L/min

Mean Data: L1505146304 WG525082-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2969463.7						49612.05	1.67%
YRADIAL	199722.9						4159.80	2.08%

Approved: May 28, 2015

Ga 417.206	1148839.2							12015.19	1.05%
GaRADIAL	46873.8							626.40	1.34%
Ag 328.068†	5816.3	0.0177	mg/L	0.00014	0.0177	mg/L		0.00014	0.82%
Al 396.153†	191.8	0.0443	mg/L	0.02488	0.0443	mg/L		0.02488	56.14%
As 188.979†	-24.9	-0.00079	mg/L	0.005782	-0.00079	mg/L		0.005782	733.82%
Ba 233.527†	1164.5	0.0199	mg/L	0.00058	0.0199	mg/L		0.00058	2.90%
Be 234.861†	-124.7	0.00002	mg/L	0.000050	0.00002	mg/L		0.000050	223.33%
B 249.677†	100112.5	1.41	mg/L	0.025	1.41	mg/L		0.025	1.75%
Ca 227.546†	39884.3	501	mg/L	7.6	501	mg/L		7.6	1.51%
Cd 228.802†	2.6	0.00045	mg/L	0.000417	0.00045	mg/L		0.000417	92.50%
Co 228.616†	1.1	-0.00045	mg/L	0.000522	-0.00045	mg/L		0.000522	115.34%
Cr 267.716†	585.7	0.00382	mg/L	0.000097	0.00382	mg/L		0.000097	2.54%
Cu 327.393†	-2321.1	-0.00869	mg/L	0.001520	-0.00869	mg/L		0.001520	17.49%
Fe 239.562†	566.4	0.0996	mg/L	0.00197	0.0996	mg/L		0.00197	1.97%
Mg 279.077†	266657.8	98.8	mg/L	0.54	98.8	mg/L		0.54	0.55%
Mn 257.610†	107283.6	0.168	mg/L	0.0032	0.168	mg/L		0.0032	1.89%
Mo 202.031†	257.6	0.0246	mg/L	0.00126	0.0246	mg/L		0.00126	5.11%
Ni 231.604†	10.7	-0.00039	mg/L	0.000081	-0.00039	mg/L		0.000081	20.93%
Pb 220.353†	55.2	0.0118	mg/L	0.00322	0.0118	mg/L		0.00322	27.25%
Sb 206.836†	-6.9	-0.00147	mg/L	0.007584	-0.00147	mg/L		0.007584	515.02%
Se 196.026†	21.0	0.0369	mg/L	0.00749	0.0369	mg/L		0.00749	20.31%
Si 251.611†	-99181.4	-5.10	mg/L	0.218	-5.10	mg/L		0.218	4.28%
Sn 189.927†	-93.0	-0.0172	mg/L	0.00345	-0.0172	mg/L		0.00345	20.05%
Ti 334.940†	-27128.4	0.00467	mg/L	0.000780	0.00467	mg/L		0.000780	16.70%
Tl 190.801†	-46.1	-0.0401	mg/L	0.00692	-0.0401	mg/L		0.00692	17.27%
V 290.880†	305.6	0.00094	mg/L	0.002940	0.00094	mg/L		0.002940	311.72%
Zn 206.200†	-131.1	-0.00931	mg/L	0.000541	-0.00931	mg/L		0.000541	5.81%
K 766.490†	5914.2	2.85	mg/L	0.044	2.85	mg/L		0.044	1.53%
Na 589.592†	6502751.4	913	mg/L	0.0	913	mg/L		0.0	0.00%
Sr 407.771†	5751589.5	7.12	mg/L	0.181	7.12	mg/L		0.181	2.55%
Li 670.784†	2877.7	0.0727	mg/L	0.00384	0.0727	mg/L		0.00384	5.28%
P 214.914†	12.8	0.0222	mg/L	0.01768	0.0222	mg/L		0.01768	79.69%

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Sequence No.: 43 **Autosampler Location: 106**
Sample ID: L1505146305MS WG525082-04 **Date Collected: 5/27/2015 4:56:19 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505146305MS WG525082-04

Analyte	**Back Pressure**	**Flow**
All	231.0 kPa	0.40 L/min

Mean Data: L1505146305MS WG525082-04

Analyte	**Mean Corrected Intensity**	**Calib. Conc.**	**Units**	**Std.Dev.**	**Sample Conc.**	**Units**	**Std.Dev.**	**RSD**
Y 371.029	2958024.9						16161.20	0.55%
YRADIAL	203947.7						1054.69	0.52%
Ga 417.206	1144439.0						2100.73	0.18%
GaRADIAL	48089.9						206.23	0.43%
Ag 328.068†	81428.4	0.241	mg/L	0.0010	0.241	mg/L	0.0010	0.41%
Al 396.153†	14035.9	4.88	mg/L	0.044	4.88	mg/L	0.044	0.91%
As 188.979†	315.1	0.206	mg/L	0.0152	0.206	mg/L	0.0152	7.37%
Ba 233.527†	29446.9	0.509	mg/L	0.0050	0.509	mg/L	0.0050	0.98%
Be 234.861†	14208.0	0.0258	mg/L	0.00013	0.0258	mg/L	0.00013	0.50%
B 249.677†	167971.7	2.38	mg/L	0.011	2.38	mg/L	0.011	0.47%
Ca 227.546†	39713.7	499	mg/L	4.0	499	mg/L	4.0	0.81%
Cd 228.802†	435.6	0.0258	mg/L	0.00018	0.0258	mg/L	0.00018	0.72%
Co 228.616†	1327.2	0.0924	mg/L	0.00115	0.0924	mg/L	0.00115	1.24%
Cr 267.716†	33031.1	0.243	mg/L	0.0011	0.243	mg/L	0.0011	0.43%
Cu 327.393†	55093.3	0.258	mg/L	0.0018	0.258	mg/L	0.0018	0.68%
Fe 239.562†	11686.7	2.01	mg/L	0.008	2.01	mg/L	0.008	0.38%
Mg 279.077†	283422.1	105	mg/L	0.4	105	mg/L	0.4	0.39%
Mn 257.610†	247933.2	0.388	mg/L	0.0025	0.388	mg/L	0.0025	0.63%
Mo 202.031†	5216.4	0.497	mg/L	0.0017	0.497	mg/L	0.0017	0.34%
Ni 231.604†	7246.3	0.226	mg/L	0.0023	0.226	mg/L	0.0023	1.01%
Pb 220.353†	1057.8	0.237	mg/L	0.0072	0.237	mg/L	0.0072	3.04%
Sb 206.836†	705.5	0.612	mg/L	0.0048	0.612	mg/L	0.0048	0.78%
Se 196.026†	164.9	0.263	mg/L	0.0080	0.263	mg/L	0.0080	3.05%

Approved: May 28, 2015

Si 251.611†	-34477.2	-1.88	mg/L	0.187	-1.88	mg/L	0.187	9.97%
Sn 189.927†	2685.8	0.453	mg/L	0.0029	0.453	mg/L	0.0029	0.64%
Ti 334.940†	430988.5	0.498	mg/L	0.0030	0.498	mg/L	0.0030	0.60%
Tl 190.801†	225.8	0.191	mg/L	0.0106	0.191	mg/L	0.0106	5.53%
V 290.880†	95129.1	0.503	mg/L	0.0004	0.503	mg/L	0.0004	0.08%
Zn 206.200†	13175.3	0.457	mg/L	0.0031	0.457	mg/L	0.0031	0.67%
K 766.490†	46475.0	28.6	mg/L	0.20	28.6	mg/L	0.20	0.71%
Na 589.592†	6551281.6	913	mg/L	0.0	913	mg/L	0.0	0.00%
Sr 407.771†	6031529.0	7.47	mg/L	0.031	7.47	mg/L	0.031	0.42%
Li 670.784†	22558.9	0.589	mg/L	0.0061	0.589	mg/L	0.0061	1.04%
P 214.914†	3226.6	5.06	mg/L	0.020	5.06	mg/L	0.020	0.39%

Sequence No.: 44 **Autosampler Location: 107**
Sample ID: L1505146306SD WG525082-05 **Date Collected: 5/27/2015 4:58:49 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505146306SD WG525082-05

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505146306SD WG525082-05

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2941106.2						52492.78	1.78%
YRADIAL	198420.4						4024.72	2.03%
Ga 417.206	1140332.1						20896.49	1.83%
GaRADIAL	46712.8						722.55	1.55%
Ag 328.068†	78489.1	0.232	mg/L	0.0034	0.232	mg/L	0.0034	1.46%
Al 396.153†	14060.5	4.89	mg/L	0.059	4.89	mg/L	0.059	1.20%
As 188.979†	291.1	0.191	mg/L	0.0075	0.191	mg/L	0.0075	3.90%
Ba 233.527†	28854.0	0.499	mg/L	0.0092	0.499	mg/L	0.0092	1.85%
Be 234.861†	13961.5	0.0253	mg/L	0.00037	0.0253	mg/L	0.00037	1.45%
B 249.677†	163909.5	2.32	mg/L	0.033	2.32	mg/L	0.033	1.40%
Ca 227.546†	39476.1	496	mg/L	7.3	496	mg/L	7.3	1.48%
Cd 228.802†	428.0	0.0254	mg/L	0.00016	0.0254	mg/L	0.00016	0.64%
Co 228.616†	1306.9	0.0910	mg/L	0.00260	0.0910	mg/L	0.00260	2.86%
Cr 267.716†	32119.4	0.236	mg/L	0.0041	0.236	mg/L	0.0041	1.72%
Cu 327.393†	53236.8	0.249	mg/L	0.0015	0.249	mg/L	0.0015	0.58%
Fe 239.562†	11754.5	2.02	mg/L	0.048	2.02	mg/L	0.048	2.37%
Mg 279.077†	283200.2	105	mg/L	1.6	105	mg/L	1.6	1.54%
Mn 257.610†	248290.0	0.389	mg/L	0.0049	0.389	mg/L	0.0049	1.26%
Mo 202.031†	5102.8	0.486	mg/L	0.0086	0.486	mg/L	0.0086	1.76%
Ni 231.604†	7108.6	0.222	mg/L	0.0029	0.222	mg/L	0.0029	1.29%
Pb 220.353†	1047.0	0.235	mg/L	0.0076	0.235	mg/L	0.0076	3.25%
Sb 206.836†	686.8	0.596	mg/L	0.0158	0.596	mg/L	0.0158	2.65%
Se 196.026†	160.1	0.256	mg/L	0.0096	0.256	mg/L	0.0096	3.77%
Si 251.611†	-38432.0	-2.07	mg/L	0.182	-2.07	mg/L	0.182	8.77%
Sn 189.927†	2625.5	0.442	mg/L	0.0073	0.442	mg/L	0.0073	1.66%
Ti 334.940†	418259.8	0.484	mg/L	0.0050	0.484	mg/L	0.0050	1.04%
Tl 190.801†	229.7	0.194	mg/L	0.0122	0.194	mg/L	0.0122	6.29%
V 290.880†	92216.5	0.487	mg/L	0.0058	0.487	mg/L	0.0058	1.18%
Zn 206.200†	12884.3	0.447	mg/L	0.0076	0.447	mg/L	0.0076	1.71%
K 766.490†	46502.3	28.6	mg/L	0.46	28.6	mg/L	0.46	1.60%
Na 589.592†	6658561.8	913	mg/L	0.0	913	mg/L	0.0	0.00%
Sr 407.771†	6193625.4	7.67	mg/L	0.100	7.67	mg/L	0.100	1.30%
Li 670.784†	22562.0	0.589	mg/L	0.0075	0.589	mg/L	0.0075	1.28%
P 214.914†	3144.9	4.93	mg/L	0.090	4.93	mg/L	0.090	1.82%

Sequence No.: 45 **Autosampler Location: 108**
Sample ID: L1505146307 **Date Collected: 5/27/2015 5:01:21 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505146307

Approved: May 28, 2015
Kym H. Rhoden

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505146307

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3556870.9						49186.12	1.38%
YRADIAL	223554.1						2004.77	0.90%
Ga 417.206	1593030.0						19743.09	1.24%
GaRADIAL	53457.6						339.84	0.64%
Ag 328.068†	204.1	0.00267	mg/L	0.000661	0.00267	mg/L	0.000661	24.80%
Al 396.153†	3.6	-0.0207	mg/L	0.00364	-0.0207	mg/L	0.00364	17.57%
As 188.979†	-4.9	0.00063	mg/L	0.000431	0.00063	mg/L	0.000431	68.55%
Ba 233.527†	13.8	-0.00001	mg/L	0.000154	-0.00001	mg/L	0.000154	>999.9%
Be 234.861†	-62.4	0.00013	mg/L	0.000009	0.00013	mg/L	0.000009	6.96%
B 249.677†	-1327.5	-0.0140	mg/L	0.00293	-0.0140	mg/L	0.00293	20.92%
Ca 227.546†	-2.4	0.0254	mg/L	0.20338	0.0254	mg/L	0.20338	801.07%
Cd 228.802†	0.6	0.00027	mg/L	0.000559	0.00027	mg/L	0.000559	206.31%
Co 228.616†	-7.3	-0.00114	mg/L	0.000921	-0.00114	mg/L	0.000921	80.86%
Cr 267.716†	51.5	-0.00011	mg/L	0.001188	-0.00011	mg/L	0.001188	>999.9%
Cu 327.393†	-457.2	-0.00004	mg/L	0.000479	-0.00004	mg/L	0.000479	>999.9%
Fe 239.562†	29.4	0.00924	mg/L	0.001415	0.00924	mg/L	0.001415	15.32%
Mg 279.077†	84.9	0.0169	mg/L	0.00366	0.0169	mg/L	0.00366	21.67%
Mn 257.610†	251.0	-0.00003	mg/L	0.000006	-0.00003	mg/L	0.000006	20.59%
Mo 202.031†	3.6	0.00041	mg/L	0.000586	0.00041	mg/L	0.000586	142.13%
Ni 231.604†	-13.8	-0.00117	mg/L	0.000189	-0.00117	mg/L	0.000189	16.20%
Pb 220.353†	0.0	-0.00043	mg/L	0.001081	-0.00043	mg/L	0.001081	249.92%
Sb 206.836†	0.9	0.00527	mg/L	0.007074	0.00527	mg/L	0.007074	134.31%
Se 196.026†	6.5	0.0144	mg/L	0.00400	0.0144	mg/L	0.00400	27.82%
Si 251.611†	-333760.1	-16.8	mg/L	0.08	-16.8	mg/L	0.08	0.48%
Sn 189.927†	-38.7	-0.00804	mg/L	0.000712	-0.00804	mg/L	0.000712	8.86%
Ti 334.940†	164.0	0.00189	mg/L	0.000235	0.00189	mg/L	0.000235	12.42%
Tl 190.801†	-1.5	-0.00269	mg/L	0.001993	-0.00269	mg/L	0.001993	74.05%
V 290.880†	-556.9	-0.00107	mg/L	0.000761	-0.00107	mg/L	0.000761	71.38%
Zn 206.200†	-153.4	-0.0101	mg/L	0.00027	-0.0101	mg/L	0.00027	2.69%
K 766.490†	34.2	0.0497	mg/L	0.04101	0.0497	mg/L	0.04101	82.47%
Na 589.592†	5432.6	0.684	mg/L	0.0307	0.684	mg/L	0.0307	4.48%
Sr 407.771†	980.1	0.00088	mg/L	0.000224	0.00088	mg/L	0.000224	25.50%
Li 670.784†	-37.9	-0.00369	mg/L	0.002899	-0.00369	mg/L	0.002899	78.63%
P 214.914†	4.6	0.00931	mg/L	0.007950	0.00931	mg/L	0.007950	85.36%

Sequence No.: 46
Sample ID: L1505147701
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 109
Date Collected: 5/27/2015 5:04:44 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505147701

Analyte	Back Pressure	Flow
All	230.0 kPa	0.40 L/min

Mean Data: L1505147701

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3402852.1						39546.16	1.16%
YRADIAL	219491.0						3482.85	1.59%
Ga 417.206	1506490.2						16896.63	1.12%
GaRADIAL	52355.6						821.69	1.57%
Ag 328.068†	598.3	0.00381	mg/L	0.000855	0.00381	mg/L	0.000855	22.44%
Al 396.153†	83.0	0.00700	mg/L	0.010583	0.00700	mg/L	0.010583	151.28%
As 188.979†	-19.2	-0.00748	mg/L	0.002923	-0.00748	mg/L	0.002923	39.06%
Ba 233.527†	462.1	0.00775	mg/L	0.000203	0.00775	mg/L	0.000203	2.62%
Be 234.861†	-114.9	0.00004	mg/L	0.000019	0.00004	mg/L	0.000019	48.38%
B 249.677†	-1716.1	-0.0195	mg/L	0.00090	-0.0195	mg/L	0.00090	4.62%
Ca 227.546†	2658.2	33.5	mg/L	0.64	33.5	mg/L	0.64	1.92%
Cd 228.802†	2.8	0.00045	mg/L	0.000256	0.00045	mg/L	0.000256	57.35%
Co 228.616†	-3.1	-0.00084	mg/L	0.000555	-0.00084	mg/L	0.000555	66.28%
Cr 267.716†	157.3	0.00067	mg/L	0.000261	0.00067	mg/L	0.000261	39.13%

Approved: May 28, 2015

Cu 327.393†	-631.5	-0.00085	mg/L	0.000683	-0.00085	mg/L	0.000683 80.61%
Fe 239.562†	21.2	0.00773	mg/L	0.000471	0.00773	mg/L	0.000471 6.10%
Mg 279.077†	14982.5	5.54	mg/L	0.117	5.54	mg/L	0.117 2.10%
Mn 257.610†	2301.0	0.00318	mg/L	0.000040	0.00318	mg/L	0.000040 1.25%
Mo 202.031†	42.3	0.00409	mg/L	0.001321	0.00409	mg/L	0.001321 32.27%
Ni 231.604†	7.1	-0.00051	mg/L	0.000300	-0.00051	mg/L	0.000300 59.13%
Pb 220.353†	27.4	0.00569	mg/L	0.001546	0.00569	mg/L	0.001546 27.17%
Sb 206.836†	0.1	0.00452	mg/L	0.006270	0.00452	mg/L	0.006270 138.76%
Se 196.026†	-1.9	0.00118	mg/L	0.010465	0.00118	mg/L	0.010465 887.75%
Si 251.611†	-268188.8	-13.5	mg/L	0.12	-13.5	mg/L	0.12 0.88%
Sn 189.927†	-49.5	-0.00986	mg/L	0.000473	-0.00986	mg/L	0.000473 4.80%
Ti 334.940†	-2383.2	0.00129	mg/L	0.000066	0.00129	mg/L	0.000066 5.06%
Tl 190.801†	-11.8	-0.0113	mg/L	0.01010	-0.0113	mg/L	0.01010 89.70%
V 290.880†	-823.5	-0.00262	mg/L	0.000134	-0.00262	mg/L	0.000134 5.12%
Zn 206.200†	-103.0	-0.00837	mg/L	0.000437	-0.00837	mg/L	0.000437 5.22%
K 766.490†	669.1	0.449	mg/L	0.0804	0.449	mg/L	0.0804 17.90%
Na 589.592†	15229.4	1.88	mg/L	0.007	1.88	mg/L	0.007 0.38%
Sr 407.771†	29463.2	0.0352	mg/L	0.00014	0.0352	mg/L	0.00014 0.39%
Li 670.784†	35.9	-0.00175	mg/L	0.004260	-0.00175	mg/L	0.004260 243.24%
P 214.914†	12.8	0.0223	mg/L	0.00630	0.0223	mg/L	0.00630 28.31%

Sequence No.: 47
Sample ID: L1505147702
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 110
Date Collected: 5/27/2015 5:08:03 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505147702

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505147702

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3423831.9						51453.17	1.50%
YRADIAL	214983.1						2172.07	1.01%
Ga 417.206	1519755.9						24382.95	1.60%
GaRADIAL	51248.3						201.49	0.39%
Ag 328.068†	579.0	0.00377	mg/L	0.000751	0.00377	mg/L	0.000751	19.93%
Al 396.153†	92.3	0.0102	mg/L	0.00451	0.0102	mg/L	0.00451	44.20%
As 188.979†	-18.8	-0.00725	mg/L	0.004158	-0.00725	mg/L	0.004158	57.32%
Ba 233.527†	408.4	0.00682	mg/L	0.000249	0.00682	mg/L	0.000249	3.66%
Be 234.861†	-103.8	0.00006	mg/L	0.000018	0.00006	mg/L	0.000018	31.64%
B 249.677†	-1879.6	-0.0217	mg/L	0.00176	-0.0217	mg/L	0.00176	8.10%
Ca 227.546†	2585.1	32.5	mg/L	0.66	32.5	mg/L	0.66	2.04%
Cd 228.802†	-1.6	0.00018	mg/L	0.000612	0.00018	mg/L	0.000612	342.69%
Co 228.616†	-8.1	-0.00118	mg/L	0.000469	-0.00118	mg/L	0.000469	39.61%
Cr 267.716†	155.3	0.00065	mg/L	0.000070	0.00065	mg/L	0.000070	10.69%
Cu 327.393†	-558.4	-0.00051	mg/L	0.000904	-0.00051	mg/L	0.000904	178.87%
Fe 239.562†	118.9	0.0245	mg/L	0.00147	0.0245	mg/L	0.00147	6.02%
Mg 279.077†	15213.0	5.62	mg/L	0.052	5.62	mg/L	0.052	0.92%
Mn 257.610†	3755.1	0.00546	mg/L	0.000110	0.00546	mg/L	0.000110	2.02%
Mo 202.031†	48.6	0.00470	mg/L	0.000574	0.00470	mg/L	0.000574	12.21%
Ni 231.604†	8.1	-0.00048	mg/L	0.000360	-0.00048	mg/L	0.000360	75.19%
Pb 220.353†	21.0	0.00426	mg/L	0.001484	0.00426	mg/L	0.001484	34.86%
Sb 206.836†	3.8	0.00771	mg/L	0.001621	0.00771	mg/L	0.001621	21.04%
Se 196.026†	2.3	0.00771	mg/L	0.007919	0.00771	mg/L	0.007919	102.74%
Si 251.611†	-269226.7	-13.6	mg/L	0.11	-13.6	mg/L	0.11	0.82%
Sn 189.927†	-56.2	-0.0110	mg/L	0.00086	-0.0110	mg/L	0.00086	7.87%
Ti 334.940†	-2352.2	0.00127	mg/L	0.000404	0.00127	mg/L	0.000404	31.81%
Tl 190.801†	-6.4	-0.00680	mg/L	0.005460	-0.00680	mg/L	0.005460	80.30%
V 290.880†	-525.9	-0.00104	mg/L	0.000376	-0.00104	mg/L	0.000376	36.03%
Zn 206.200†	160.3	0.00082	mg/L	0.000757	0.00082	mg/L	0.000757	92.75%
K 766.490†	575.7	0.390	mg/L	0.0761	0.390	mg/L	0.0761	19.51%
Na 589.592†	15112.9	1.87	mg/L	0.020	1.87	mg/L	0.020	1.10%
Sr 407.771†	28864.4	0.0344	mg/L	0.00036	0.0344	mg/L	0.00036	1.04%
Li 670.784†	45.3	-0.00150	mg/L	0.000459	-0.00150	mg/L	0.000459	30.50%
P 214.914†	-3.2	-0.00278	mg/L	0.010335	-0.00278	mg/L	0.010335	371.38%

Approved: May 28, 2015

Sequence No.: 48 **Autosampler Location: 111**
Sample ID: L1505147703 **Date Collected: 5/27/2015 5:11:22 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505147703

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505147703

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3374415.8						52109.86	1.54%
YRADIAL	218355.0						4476.18	2.05%
Ga 417.206	1504315.8						19780.45	1.31%
GaRADIAL	51886.4						1232.75	2.38%
Ag 328.068†	510.9	0.00360	mg/L	0.000732	0.00360	mg/L	0.000732	20.33%
Al 396.153†	42.9	-0.00707	mg/L	0.041593	-0.00707	mg/L	0.041593	588.34%
As 188.979†	-18.3	-0.00689	mg/L	0.002695	-0.00689	mg/L	0.002695	39.10%
Ba 233.527†	375.3	0.00624	mg/L	0.000298	0.00624	mg/L	0.000298	4.77%
Be 234.861†	-97.4	0.00005	mg/L	0.000023	0.00005	mg/L	0.000023	47.99%
B 249.677†	-2037.1	-0.0236	mg/L	0.00098	-0.0236	mg/L	0.00098	4.15%
Ca 227.546†	2650.5	33.4	mg/L	0.50	33.4	mg/L	0.50	1.50%
Cd 228.802†	4.4	0.00054	mg/L	0.000222	0.00054	mg/L	0.000222	41.13%
Co 228.616†	-1.6	-0.00074	mg/L	0.000464	-0.00074	mg/L	0.000464	63.14%
Cr 267.716†	138.7	0.00053	mg/L	0.000066	0.00053	mg/L	0.000066	12.45%
Cu 327.393†	-748.1	-0.00137	mg/L	0.000917	-0.00137	mg/L	0.000917	66.79%
Fe 239.562†	582.3	0.104	mg/L	0.0028	0.104	mg/L	0.0028	2.66%
Mg 279.077†	15285.3	5.65	mg/L	0.205	5.65	mg/L	0.205	3.64%
Mn 257.610†	8394.4	0.0127	mg/L	0.00020	0.0127	mg/L	0.00020	1.54%
Mo 202.031†	45.0	0.00435	mg/L	0.000909	0.00435	mg/L	0.000909	20.89%
Ni 231.604†	-16.3	-0.00124	mg/L	0.000438	-0.00124	mg/L	0.000438	35.39%
Pb 220.353†	5.1	0.00069	mg/L	0.001443	0.00069	mg/L	0.001443	210.39%
Sb 206.836†	-4.5	0.00060	mg/L	0.004167	0.00060	mg/L	0.004167	691.65%
Se 196.026†	4.9	0.0118	mg/L	0.00131	0.0118	mg/L	0.00131	11.08%
Si 251.611†	-275068.1	-13.9	mg/L	0.09	-13.9	mg/L	0.09	0.67%
Sn 189.927†	-52.7	-0.0104	mg/L	0.00129	-0.0104	mg/L	0.00129	12.39%
Ti 334.940†	-2510.1	0.00115	mg/L	0.000178	0.00115	mg/L	0.000178	15.46%
Tl 190.801†	-17.8	-0.0162	mg/L	0.00099	-0.0162	mg/L	0.00099	6.09%
V 290.880†	-547.4	-0.00114	mg/L	0.000915	-0.00114	mg/L	0.000915	80.01%
Zn 206.200†	-146.1	-0.00986	mg/L	0.000263	-0.00986	mg/L	0.000263	2.67%
K 766.490†	507.0	0.347	mg/L	0.0570	0.347	mg/L	0.0570	16.42%
Na 589.592†	14887.4	1.84	mg/L	0.037	1.84	mg/L	0.037	2.02%
Sr 407.771†	28607.1	0.0341	mg/L	0.00030	0.0341	mg/L	0.00030	0.88%
Li 670.784†	-75.8	-0.00468	mg/L	0.001677	-0.00468	mg/L	0.001677	35.83%
P 214.914†	-0.9	0.00080	mg/L	0.015286	0.00080	mg/L	0.015286	>999.9%

Sequence No.: 49 **Autosampler Location: 112**
Sample ID: L1505150201 **Date Collected: 5/27/2015 5:13:44 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505150201

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505150201

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3402664.8						38011.12	1.12%
YRADIAL	216961.3						4047.80	1.87%
Ga 417.206	1503006.7						11069.04	0.74%
GaRADIAL	51196.3						1006.47	1.97%
Ag 328.068†	-370.3	0.00179	mg/L	0.000820	0.00179	mg/L	0.000820	45.71%

Approved: May 28, 2015

Kym H. Rhoden

Al 396.153†	3756.3	1.30	mg/L	0.023	1.30	mg/L	0.023	1.81%
As 188.979†	-5.0	0.00104	mg/L	0.005048	0.00104	mg/L	0.005048	486.87%
Ba 233.527†	2877.2	0.0494	mg/L	0.00060	0.0494	mg/L	0.00060	1.21%
Be 234.861†	147.1	0.00007	mg/L	0.000072	0.00007	mg/L	0.000072	105.15%
B 249.677†	10571.5	0.160	mg/L	0.0031	0.160	mg/L	0.0031	1.96%
Ca 227.546†	322.2	4.10	mg/L	0.042	4.10	mg/L	0.042	1.02%
Cd 228.802†	-5.4	-0.00008	mg/L	0.000418	-0.00008	mg/L	0.000418	548.46%
Co 228.616†	53.8	0.00306	mg/L	0.000824	0.00306	mg/L	0.000824	26.89%
Cr 267.716†	287.5	0.00158	mg/L	0.000836	0.00158	mg/L	0.000836	52.85%
Cu 327.393†	94.3	0.00279	mg/L	0.000670	0.00279	mg/L	0.000670	23.98%
Fe 239.562†	10596.0	1.83	mg/L	0.028	1.83	mg/L	0.028	1.55%
Mg 279.077†	8869.8	3.27	mg/L	0.039	3.27	mg/L	0.039	1.20%
Mn 257.610†	103134.0	0.161	mg/L	0.0027	0.161	mg/L	0.0027	1.66%
Mo 202.031†	10.0	0.00103	mg/L	0.000874	0.00103	mg/L	0.000874	84.75%
Ni 231.604†	198.2	0.00547	mg/L	0.000205	0.00547	mg/L	0.000205	3.75%
Pb 220.353†	-13.2	-0.00327	mg/L	0.001394	-0.00327	mg/L	0.001394	42.67%
Sb 206.836†	3.1	0.00714	mg/L	0.001435	0.00714	mg/L	0.001435	20.09%
Se 196.026†	4.9	0.0118	mg/L	0.00223	0.0118	mg/L	0.00223	18.86%
Si 251.611†	-185395.7	-9.40	mg/L	0.457	-9.40	mg/L	0.457	4.86%
Sn 189.927†	-46.0	-0.00927	mg/L	0.001348	-0.00927	mg/L	0.001348	14.55%
Ti 334.940†	12182.3	0.0151	mg/L	0.00045	0.0151	mg/L	0.00045	3.00%
Tl 190.801†	3.9	0.00178	mg/L	0.003152	0.00178	mg/L	0.003152	177.03%
V 290.880†	116.2	0.00276	mg/L	0.000798	0.00276	mg/L	0.000798	28.94%
Zn 206.200†	1875.7	0.0608	mg/L	0.00099	0.0608	mg/L	0.00099	1.62%
K 766.490†	2061.1	1.33	mg/L	0.134	1.33	mg/L	0.134	10.10%
Na 589.592†	20182.5	2.49	mg/L	0.032	2.49	mg/L	0.032	1.30%
Sr 407.771†	48916.2	0.0602	mg/L	0.00020	0.0602	mg/L	0.00020	0.34%
Li 670.784†	105.9	0.00008	mg/L	0.000746	0.00008	mg/L	0.000746	907.78%
P 214.914†	29.5	0.0484	mg/L	0.01098	0.0484	mg/L	0.01098	22.68%

Sequence No.: 50
Sample ID: L1505150202
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 113
Date Collected: 5/27/2015 5:16:05 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505150202

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505150202

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3394005.0						3758.63	0.11%
YRADIAL	217435.0						2950.65	1.36%
Ga 417.206	1446221.1						5052.84	0.35%
GaRADIAL	49828.3						676.72	1.36%
Ag 328.068†	767.4	0.00436	mg/L	0.000616	0.00436	mg/L	0.000616	14.14%
Al 396.153†	574.2	0.179	mg/L	0.0023	0.179	mg/L	0.0023	1.27%
As 188.979†	-17.3	-0.00618	mg/L	0.000950	-0.00618	mg/L	0.000950	15.36%
Ba 233.527†	2264.8	0.0389	mg/L	0.00017	0.0389	mg/L	0.00017	0.45%
Be 234.861†	-59.8	0.00013	mg/L	0.000055	0.00013	mg/L	0.000055	41.84%
B 249.677†	149016.4	2.10	mg/L	0.027	2.10	mg/L	0.027	1.30%
Ca 227.546†	2622.6	33.0	mg/L	0.04	33.0	mg/L	0.04	0.11%
Cd 228.802†	-2.0	0.00015	mg/L	0.000095	0.00015	mg/L	0.000095	62.69%
Co 228.616†	-2.4	-0.00082	mg/L	0.000280	-0.00082	mg/L	0.000280	34.11%
Cr 267.716†	252.1	0.00135	mg/L	0.000109	0.00135	mg/L	0.000109	8.07%
Cu 327.393†	-620.5	-0.00071	mg/L	0.001326	-0.00071	mg/L	0.001326	185.55%
Fe 239.562†	3187.8	0.552	mg/L	0.0158	0.552	mg/L	0.0158	2.87%
Mg 279.077†	35010.8	13.0	mg/L	0.22	13.0	mg/L	0.22	1.67%
Mn 257.610†	834420.9	1.31	mg/L	0.011	1.31	mg/L	0.011	0.87%
Mo 202.031†	42.5	0.00438	mg/L	0.000862	0.00438	mg/L	0.000862	19.65%
Ni 231.604†	58.2	0.00109	mg/L	0.000781	0.00109	mg/L	0.000781	71.41%
Pb 220.353†	30.9	0.00571	mg/L	0.004439	0.00571	mg/L	0.004439	77.68%
Sb 206.836†	1.8	0.00604	mg/L	0.001810	0.00604	mg/L	0.001810	29.96%
Se 196.026†	-1.1	0.00202	mg/L	0.001965	0.00202	mg/L	0.001965	97.09%
Si 251.611†	-199771.1	-10.1	mg/L	0.13	-10.1	mg/L	0.13	1.25%
Sn 189.927†	-64.8	-0.0124	mg/L	0.00247	-0.0124	mg/L	0.00247	19.86%
Ti 334.940†	970.4	0.00488	mg/L	0.000481	0.00488	mg/L	0.000481	9.86%

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Tl 190.801†	-15.9	-0.0159 mg/L	0.00324	-0.0159 mg/L	0.00324	20.40%
V 290.880†	-1142.1	-0.00439 mg/L	0.000384	-0.00439 mg/L	0.000384	8.74%
Zn 206.200†	-144.1	-0.00974 mg/L	0.000193	-0.00974 mg/L	0.000193	1.98%
K 766.490†	4778.7	3.02 mg/L	0.046	3.02 mg/L	0.046	1.51%
Na 589.592†	179790.1	22.2 mg/L	0.15	22.2 mg/L	0.15	0.67%
Sr 407.771†	145502.7	0.179 mg/L	0.0024	0.179 mg/L	0.0024	1.32%
Li 670.784†	-68.5	-0.00449 mg/L	0.002112	-0.00449 mg/L	0.002112	47.07%
P 214.914†	6.3	0.0120 mg/L	0.00496	0.0120 mg/L	0.00496	41.42%

Sequence No.: 51 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 5/27/2015 5:18:28 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	230.0 kPa	0.40 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3273462.3						36939.64	1.13%
YRADIAL	208795.6						1815.20	0.87%
Ga 417.206	1360128.0						16144.21	1.19%
GaRADIAL	48610.8						636.02	1.31%
Ag 328.068†	131892.2	0.392	mg/L	0.0025	0.392	mg/L	0.0025	0.63%
QC value within limits for Ag 328.068 Recovery = 98.06%								
Al 396.153†	28867.8	10.1	mg/L	0.08	10.1	mg/L	0.08	0.77%
QC value within limits for Al 396.153 Recovery = 100.66%								
As 188.979†	594.9	0.365	mg/L	0.0026	0.365	mg/L	0.0026	0.72%
QC value within limits for As 188.979 Recovery = 91.27%								
Ba 233.527†	55733.5	0.964	mg/L	0.0064	0.964	mg/L	0.0064	0.66%
QC value within limits for Ba 233.527 Recovery = 96.36%								
Be 234.861†	26179.2	0.0472	mg/L	0.00026	0.0472	mg/L	0.00026	0.56%
QC value within limits for Be 234.861 Recovery = 94.33%								
B 249.677†	28378.4	0.417	mg/L	0.0028	0.417	mg/L	0.0028	0.68%
QC value less than the lower limit for B 249.677 Recovery = 83.49%								
Ca 227.546†	739.5	9.41	mg/L	0.062	9.41	mg/L	0.062	0.66%
QC value within limits for Ca 227.546 Recovery = 94.13%								
Cd 228.802†	779.8	0.0460	mg/L	0.00042	0.0460	mg/L	0.00042	0.90%
QC value within limits for Cd 228.802 Recovery = 91.94%								
Co 228.616†	2734.0	0.191	mg/L	0.0010	0.191	mg/L	0.0010	0.51%
QC value within limits for Co 228.616 Recovery = 95.42%								
Cr 267.716†	66295.7	0.488	mg/L	0.0017	0.488	mg/L	0.0017	0.34%
QC value within limits for Cr 267.716 Recovery = 97.55%								
Cu 327.393†	103812.4	0.485	mg/L	0.0005	0.485	mg/L	0.0005	0.11%
QC value within limits for Cu 327.393 Recovery = 96.92%								
Fe 239.562†	23576.3	4.06	mg/L	0.068	4.06	mg/L	0.068	1.67%
QC value within limits for Fe 239.562 Recovery = 101.39%								
Mg 279.077†	27358.6	10.1	mg/L	0.12	10.1	mg/L	0.12	1.23%
QC value within limits for Mg 279.077 Recovery = 101.19%								
Mn 257.610†	312442.7	0.489	mg/L	0.0031	0.489	mg/L	0.0031	0.63%
QC value within limits for Mn 257.610 Recovery = 97.87%								
Mo 202.031†	9628.9	0.917	mg/L	0.0049	0.917	mg/L	0.0049	0.54%
QC value within limits for Mo 202.031 Recovery = 91.71%								
Ni 231.604†	15234.3	0.476	mg/L	0.0033	0.476	mg/L	0.0033	0.69%
QC value within limits for Ni 231.604 Recovery = 95.23%								
Pb 220.353†	2109.6	0.473	mg/L	0.0055	0.473	mg/L	0.0055	1.17%
QC value within limits for Pb 220.353 Recovery = 94.68%								
Sb 206.836†	1278.1	1.10	mg/L	0.003	1.10	mg/L	0.003	0.23%
QC value within limits for Sb 206.836 Recovery = 92.05%								
Se 196.026†	244.4	0.388	mg/L	0.0087	0.388	mg/L	0.0087	2.25%
QC value within limits for Se 196.026 Recovery = 97.12%								
Si 251.611†	-176125.4	-8.95	mg/L	0.199	-8.95	mg/L	0.199	2.23%
QC value less than the lower limit for Si 251.611 Recovery = -179.00%								
Sn 189.927†	5497.5	0.928	mg/L	0.0101	0.928	mg/L	0.0101	1.09%
QC value within limits for Sn 189.927 Recovery = 92.80%								
Ti 334.940†	905875.5	0.978	mg/L	0.0052	0.978	mg/L	0.0052	0.53%

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   QC value within limits for Ti 334.940  Recovery = 97.78%
Tl 190.801†              574.8       0.486 mg/L        0.0051       0.486 mg/L        0.0051   1.05%
   QC value within limits for Tl 190.801  Recovery = 97.12%
V 290.880†            183436.5       0.972 mg/L        0.0079       0.972 mg/L        0.0079   0.82%
   QC value within limits for V 290.880  Recovery = 97.25%
Zn 206.200†            27064.1       0.944 mg/L        0.0055       0.944 mg/L        0.0055   0.58%
   QC value within limits for Zn 206.200  Recovery = 94.37%
K 766.490†             76607.5        48.8 mg/L         0.66        48.8 mg/L          0.66   1.35%
   QC value within limits for K 766.490  Recovery = 97.60%
Na 589.592†           402388.0        50.6 mg/L         0.81        50.6 mg/L          0.81   1.61%
   QC value within limits for Na 589.592  Recovery = 101.11%
Sr 407.771†           809269.0        1.00 mg/L        0.012        1.00 mg/L         0.012   1.18%
   QC value within limits for Sr 407.771  Recovery = 100.37%
Li 670.784†            38686.8        1.01 mg/L        0.014        1.01 mg/L         0.014   1.38%
   QC value within limits for Li 670.784  Recovery = 101.12%
P 214.914†              5918.1        9.28 mg/L        0.050        9.28 mg/L         0.050   0.54%
   QC value within limits for P 214.914  Recovery = 92.82%
QC Failed.  Continue with analysis.

==========================================================================================
Sequence No.: 52                                    Autosampler Location: 1
Sample ID: CCB                                      Date Collected: 5/27/2015 5:20:53 PM
Analyst:                                            Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

------------------------------------------------------------------------------------------
Nebulizer Parameters: CCB
Analyte                 Back Pressure    Flow
All                     231.0 kPa        0.40 L/min

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Mean Data: CCB
                   Mean Corrected         Calib.                          Sample
Analyte               Intensity     Conc. Units     Std.Dev.     Conc. Units     Std.Dev.   RSD
Y 371.029            3511601.7                                                  16602.98   0.47%
YRADIAL               218681.5                                                   3826.67   1.75%
Ga 417.206           1591593.4                                                   8212.45   0.52%
GaRADIAL               52951.1                                                    879.67   1.66%
Ag 328.068†              -62.9     0.00188 mg/L      0.001493     0.00188 mg/L      0.001493  79.38%
   QC value within limits for Ag 328.068  Recovery = Not calculated
Al 396.153†               15.1     -0.0167 mg/L       0.00412     -0.0167 mg/L       0.00412  24.70%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†               -6.2    -0.00022 mg/L      0.000377    -0.00022 mg/L      0.000377 173.64%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†               -2.0    -0.00028 mg/L      0.000131    -0.00028 mg/L      0.000131  47.02%
   QC value within limits for Ba 233.527  Recovery = Not calculated
Be 234.861†              -22.1     0.00021 mg/L      0.000028     0.00021 mg/L      0.000028  13.30%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†               646.9      0.0138 mg/L       0.00195      0.0138 mg/L       0.00195  14.15%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†                0.0      0.0562 mg/L       0.04932      0.0562 mg/L       0.04932  87.73%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†               -4.4    -0.00002 mg/L      0.000268    -0.00002 mg/L      0.000268 >999.9%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†               -1.8    -0.00076 mg/L      0.000290    -0.00076 mg/L      0.000290  38.37%
   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†               87.5     0.00015 mg/L      0.001090     0.00015 mg/L      0.001090 705.17%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†              -96.1     0.00163 mg/L      0.001037     0.00163 mg/L      0.001037  63.42%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†                2.4     0.00460 mg/L      0.001777     0.00460 mg/L      0.001777  38.58%
   QC value within limits for Fe 239.562  Recovery = Not calculated
Mg 279.077†               36.4    -0.00105 mg/L      0.003623    -0.00105 mg/L      0.003623 344.64%
   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†               47.6    -0.00035 mg/L      0.000028    -0.00035 mg/L      0.000028   7.95%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†                4.5     0.00050 mg/L      0.000826     0.00050 mg/L      0.000826 166.07%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†                2.3    -0.00066 mg/L      0.000096    -0.00066 mg/L      0.000096  14.57%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†                0.4    -0.00036 mg/L      0.003265    -0.00036 mg/L      0.003265 918.60%
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QC value within limits for Pb 220.353 Recovery = Not calculated
Sb 206.836† -2.0 0.00269 mg/L 0.006649 0.00269 mg/L 0.006649 246.81%
QC value within limits for Sb 206.836 Recovery = Not calculated
Se 196.026† -0.2 0.00376 mg/L 0.009690 0.00376 mg/L 0.009690 257.88%
QC value within limits for Se 196.026 Recovery = Not calculated
Si 251.611† -3843.1 -0.342 mg/L 0.1065 -0.342 mg/L 0.1065 31.09%
QC value within limits for Si 251.611 Recovery = Not calculated
Sn 189.927† -12.2 -0.00356 mg/L 0.000611 -0.00356 mg/L 0.000611 17.18%
QC value within limits for Sn 189.927 Recovery = Not calculated
Ti 334.940† 35.3 0.00176 mg/L 0.000192 0.00176 mg/L 0.000192 10.95%
QC value within limits for Ti 334.940 Recovery = Not calculated
Tl 190.801† 1.5 -0.00020 mg/L 0.003248 -0.00020 mg/L 0.003248 >999.9%
QC value within limits for Tl 190.801 Recovery = Not calculated
V 290.880† -635.0 -0.00148 mg/L 0.000179 -0.00148 mg/L 0.000179 12.08%
QC value within limits for V 290.880 Recovery = Not calculated
Zn 206.200† -23.6 -0.00560 mg/L 0.000117 -0.00560 mg/L 0.000117 2.09%
QC value within limits for Zn 206.200 Recovery = Not calculated
K 766.490† 103.5 0.0941 mg/L 0.04716 0.0941 mg/L 0.04716 50.12%
QC value within limits for K 766.490 Recovery = Not calculated
Na 589.592† 775.5 0.115 mg/L 0.0178 0.115 mg/L 0.0178 15.46%
QC value within limits for Na 589.592 Recovery = Not calculated
Sr 407.771† 188.8 -0.00010 mg/L 0.000145 -0.00010 mg/L 0.000145 140.17%
QC value within limits for Sr 407.771 Recovery = Not calculated
Li 670.784† -28.2 -0.00343 mg/L 0.002073 -0.00343 mg/L 0.002073 60.38%
QC value within limits for Li 670.784 Recovery = Not calculated
P 214.914† 4.1 0.00867 mg/L 0.001433 0.00867 mg/L 0.001433 16.54%
QC value within limits for P 214.914 Recovery = Not calculated
All analyte(s) passed QC.

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Sequence No.: 53 **Autosampler Location: 114**
Sample ID: L1505150801 **Date Collected: 5/27/2015 5:24:17 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505150801

Analyte	Back Pressure	Flow
All	230.0 kPa	0.40 L/min

Mean Data: L1505150801

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3374247.8						22848.05	0.68%
YRADIAL	216362.0						5759.58	2.66%
Ga 417.206	1452225.5						11344.32	0.78%
GaRADIAL	52059.2						1146.82	2.20%
Ag 328.068†	995.8	0.00493	mg/L	0.000346	0.00493	mg/L	0.000346	7.00%
Al 396.153†	-15.0	-0.0275	mg/L	0.00511	-0.0275	mg/L	0.00511	18.59%
As 188.979†	-28.1	-0.0118	mg/L	0.00610	-0.0118	mg/L	0.00610	51.55%
Ba 233.527†	2816.4	0.0485	mg/L	0.00055	0.0485	mg/L	0.00055	1.14%
Be 234.861†	-121.2	0.00003	mg/L	0.000017	0.00003	mg/L	0.000017	62.77%
B 249.677†	-415.1	-0.00111	mg/L	0.000289	-0.00111	mg/L	0.000289	26.15%
Ca 227.546†	6746.3	84.8	mg/L	0.95	84.8	mg/L	0.95	1.12%
Cd 228.802†	1.8	0.00042	mg/L	0.000081	0.00042	mg/L	0.000081	19.31%
Co 228.616†	-2.3	-0.00078	mg/L	0.000632	-0.00078	mg/L	0.000632	80.84%
Cr 267.716†	226.6	0.00118	mg/L	0.000040	0.00118	mg/L	0.000040	3.42%
Cu 327.393†	-1130.1	-0.00316	mg/L	0.001832	-0.00316	mg/L	0.001832	58.00%
Fe 239.562†	125.1	0.0254	mg/L	0.00193	0.0254	mg/L	0.00193	7.60%
Mg 279.077†	45255.2	16.8	mg/L	0.02	16.8	mg/L	0.02	0.11%
Mn 257.610†	20628.7	0.0319	mg/L	0.00024	0.0319	mg/L	0.00024	0.75%
Mo 202.031†	69.8	0.00672	mg/L	0.000686	0.00672	mg/L	0.000686	10.22%
Ni 231.604†	-12.4	-0.00112	mg/L	0.000421	-0.00112	mg/L	0.000421	37.70%
Pb 220.353†	49.7	0.0107	mg/L	0.00191	0.0107	mg/L	0.00191	17.93%
Sb 206.836†	-8.2	-0.00264	mg/L	0.004719	-0.00264	mg/L	0.004719	178.99%
Se 196.026†	-2.5	0.00018	mg/L	0.004034	0.00018	mg/L	0.004034	>999.9%
Si 251.611†	-200552.3	-10.2	mg/L	0.09	-10.2	mg/L	0.09	0.85%
Sn 189.927†	-31.9	-0.00689	mg/L	0.000953	-0.00689	mg/L	0.000953	13.84%
Ti 334.940†	-6305.0	0.00037	mg/L	0.000230	0.00037	mg/L	0.000230	62.64%
Tl 190.801†	-13.9	-0.0131	mg/L	0.01221	-0.0131	mg/L	0.01221	93.30%

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V 290.880†	-1079.5	-0.00426	mg/L	0.000850	-0.00426	mg/L	0.000850	19.94%
Zn 206.200†	-93.8	-0.00804	mg/L	0.000439	-0.00804	mg/L	0.000439	5.46%
K 766.490†	2338.2	1.49	mg/L	0.013	1.49	mg/L	0.013	0.87%
Na 589.592†	129443.6	16.0	mg/L	0.07	16.0	mg/L	0.07	0.45%
Sr 407.771†	208682.0	0.256	mg/L	0.0010	0.256	mg/L	0.0010	0.40%
Li 670.784†	332.3	0.00602	mg/L	0.003974	0.00602	mg/L	0.003974	66.06%
P 214.914†	0.7	0.00327	mg/L	0.011027	0.00327	mg/L	0.011027	336.84%

Sequence No.: 54 **Autosampler Location: 115**
Sample ID: L1505150802 **Date Collected: 5/27/2015 5:27:37 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505150802

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505150802

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3360191.2						22893.32	0.68%
YRADIAL	215708.5						4298.94	1.99%
Ga 417.206	1466135.6						15635.69	1.07%
GaRADIAL	51870.8						903.24	1.74%
Ag 328.068†	948.1	0.00480	mg/L	0.001763	0.00480	mg/L	0.001763	36.74%
Al 396.153†	-3.1	-0.0232	mg/L	0.00480	-0.0232	mg/L	0.00480	20.67%
As 188.979†	-34.8	-0.0163	mg/L	0.00050	-0.0163	mg/L	0.00050	3.10%
Ba 233.527†	4888.3	0.0843	mg/L	0.00100	0.0843	mg/L	0.00100	1.18%
Be 234.861†	-106.1	0.00006	mg/L	0.000039	0.00006	mg/L	0.000039	71.45%
B 249.677†	-1639.4	-0.0184	mg/L	0.00048	-0.0184	mg/L	0.00048	2.63%
Ca 227.546†	5432.1	68.3	mg/L	1.07	68.3	mg/L	1.07	1.57%
Cd 228.802†	3.5	0.00054	mg/L	0.000451	0.00054	mg/L	0.000451	83.54%
Co 228.616†	-4.4	-0.00095	mg/L	0.000293	-0.00095	mg/L	0.000293	30.90%
Cr 267.716†	187.7	0.00089	mg/L	0.000143	0.00089	mg/L	0.000143	15.99%
Cu 327.393†	-256.4	0.00089	mg/L	0.001163	0.00089	mg/L	0.001163	130.83%
Fe 239.562†	36.1	0.0102	mg/L	0.00134	0.0102	mg/L	0.00134	13.16%
Mg 279.077†	29917.0	11.1	mg/L	0.12	11.1	mg/L	0.12	1.06%
Mn 257.610†	175.3	-0.00015	mg/L	0.000010	-0.00015	mg/L	0.000010	6.56%
Mo 202.031†	50.9	0.00491	mg/L	0.000831	0.00491	mg/L	0.000831	16.91%
Ni 231.604†	-19.1	-0.00133	mg/L	0.000749	-0.00133	mg/L	0.000749	56.40%
Pb 220.353†	27.9	0.00581	mg/L	0.000311	0.00581	mg/L	0.000311	5.35%
Sb 206.836†	-2.5	0.00230	mg/L	0.006268	0.00230	mg/L	0.006268	272.34%
Se 196.026†	-13.0	-0.0162	mg/L	0.01286	-0.0162	mg/L	0.01286	79.35%
Si 251.611†	-203711.7	-10.3	mg/L	0.16	-10.3	mg/L	0.16	1.54%
Sn 189.927†	-74.3	-0.0141	mg/L	0.00174	-0.0141	mg/L	0.00174	12.36%
Ti 334.940†	-5293.1	0.00040	mg/L	0.000073	0.00040	mg/L	0.000073	18.38%
Tl 190.801†	-14.1	-0.0131	mg/L	0.00315	-0.0131	mg/L	0.00315	23.99%
V 290.880†	-612.5	-0.00165	mg/L	0.000673	-0.00165	mg/L	0.000673	40.83%
Zn 206.200†	482.9	0.0121	mg/L	0.00029	0.0121	mg/L	0.00029	2.41%
K 766.490†	1183.9	0.772	mg/L	0.1162	0.772	mg/L	0.1162	15.05%
Na 589.592†	33537.2	4.13	mg/L	0.055	4.13	mg/L	0.055	1.34%
Sr 407.771†	193014.2	0.237	mg/L	0.0037	0.237	mg/L	0.0037	1.56%
Li 670.784†	283.2	0.00473	mg/L	0.003165	0.00473	mg/L	0.003165	66.90%
P 214.914†	-0.9	0.00079	mg/L	0.010955	0.00079	mg/L	0.010955	>999.9%

Sequence No.: 55 **Autosampler Location: 116**
Sample ID: L1505150803 **Date Collected: 5/27/2015 5:30:57 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505150803

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Approved: May 28, 2015

Kym H. Rhoden

Mean Data: L1505150803

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3397268.8						31083.81	0.91%
YRADIAL	216583.9						4599.53	2.12%
Ga 417.206	1490687.9						13326.66	0.89%
GaRADIAL	51263.3						1274.95	2.49%
Ag 328.068†	829.6	0.00454	mg/L	0.000107	0.00454	mg/L	0.000107	2.35%
Al 396.153†	590.3	0.185	mg/L	0.0191	0.185	mg/L	0.0191	10.33%
As 188.979†	-23.1	-0.00950	mg/L	0.001307	-0.00950	mg/L	0.001307	13.76%
Ba 233.527†	3250.7	0.0560	mg/L	0.00080	0.0560	mg/L	0.00080	1.44%
Be 234.861†	-58.6	0.00010	mg/L	0.000084	0.00010	mg/L	0.000084	80.63%
B 249.677†	-1457.4	-0.0153	mg/L	0.00044	-0.0153	mg/L	0.00044	2.85%
Ca 227.546†	3923.9	49.4	mg/L	0.59	49.4	mg/L	0.59	1.19%
Cd 228.802†	5.2	0.00061	mg/L	0.000343	0.00061	mg/L	0.000343	56.52%
Co 228.616†	1.9	-0.00051	mg/L	0.000646	-0.00051	mg/L	0.000646	127.44%
Cr 267.716†	190.8	0.00091	mg/L	0.000014	0.00091	mg/L	0.000014	1.55%
Cu 327.393†	-1112.8	-0.00305	mg/L	0.000777	-0.00305	mg/L	0.000777	25.46%
Fe 239.562†	903.8	0.159	mg/L	0.0059	0.159	mg/L	0.0059	3.72%
Mg 279.077†	14434.4	5.33	mg/L	0.075	5.33	mg/L	0.075	1.40%
Mn 257.610†	3564.8	0.00517	mg/L	0.000074	0.00517	mg/L	0.000074	1.43%
Mo 202.031†	46.9	0.00454	mg/L	0.001845	0.00454	mg/L	0.001845	40.68%
Ni 231.604†	-3.1	-0.00083	mg/L	0.000538	-0.00083	mg/L	0.000538	64.78%
Pb 220.353†	34.5	0.00731	mg/L	0.001006	0.00731	mg/L	0.001006	13.76%
Sb 206.836†	-9.0	-0.00327	mg/L	0.009592	-0.00327	mg/L	0.009592	293.41%
Se 196.026†	2.7	0.00832	mg/L	0.014343	0.00832	mg/L	0.014343	172.33%
Si 251.611†	-216771.9	-11.0	mg/L	0.06	-11.0	mg/L	0.06	0.59%
Sn 189.927†	-75.1	-0.0142	mg/L	0.00103	-0.0142	mg/L	0.00103	7.25%
Ti 334.940†	-742.7	0.00408	mg/L	0.000507	0.00408	mg/L	0.000507	12.43%
Tl 190.801†	-10.3	-0.00997	mg/L	0.003906	-0.00997	mg/L	0.003906	39.18%
V 290.880†	-453.7	-0.00063	mg/L	0.001607	-0.00063	mg/L	0.001607	254.72%
Zn 206.200†	-164.7	-0.0105	mg/L	0.00022	-0.0105	mg/L	0.00022	2.08%
K 766.490†	874.3	0.577	mg/L	0.0372	0.577	mg/L	0.0372	6.44%
Na 589.592†	30341.2	3.73	mg/L	0.052	3.73	mg/L	0.052	1.39%
Sr 407.771†	108079.3	0.132	mg/L	0.0022	0.132	mg/L	0.0022	1.69%
Li 670.784†	123.3	0.00054	mg/L	0.003637	0.00054	mg/L	0.003637	673.78%
P 214.914†	9.3	0.0168	mg/L	0.01149	0.0168	mg/L	0.01149	68.35%

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Sequence No.: 56 **Autosampler Location: 117**
Sample ID: L1505150804 **Date Collected: 5/27/2015 5:33:20 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505150804

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505150804

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3335108.2						12288.04	0.37%
YRADIAL	212724.3						2819.57	1.33%
Ga 417.206	1438899.4						1860.32	0.13%
GaRADIAL	51133.7						965.01	1.89%
Ag 328.068†	838.3	0.00447	mg/L	0.000547	0.00447	mg/L	0.000547	12.24%
Al 396.153†	24.7	-0.0136	mg/L	0.00560	-0.0136	mg/L	0.00560	41.26%
As 188.979†	-25.7	-0.0106	mg/L	0.00210	-0.0106	mg/L	0.00210	19.76%
Ba 233.527†	5703.7	0.0984	mg/L	0.00032	0.0984	mg/L	0.00032	0.33%
Be 234.861†	-99.5	0.00006	mg/L	0.000053	0.00006	mg/L	0.000053	81.85%
B 249.677†	-1512.7	-0.0166	mg/L	0.00031	-0.0166	mg/L	0.00031	1.85%
Ca 227.546†	5820.6	73.2	mg/L	0.53	73.2	mg/L	0.53	0.72%
Cd 228.802†	2.6	0.00045	mg/L	0.000286	0.00045	mg/L	0.000286	62.97%
Co 228.616†	-2.2	-0.00080	mg/L	0.000507	-0.00080	mg/L	0.000507	63.73%
Cr 267.716†	179.1	0.00083	mg/L	0.000277	0.00083	mg/L	0.000277	33.49%
Cu 327.393†	-553.0	-0.00048	mg/L	0.000442	-0.00048	mg/L	0.000442	91.26%
Fe 239.562†	125.9	0.0257	mg/L	0.00188	0.0257	mg/L	0.00188	7.32%
Mg 279.077†	23148.6	8.56	mg/L	0.086	8.56	mg/L	0.086	1.01%
Mn 257.610†	5294.2	0.00787	mg/L	0.000023	0.00787	mg/L	0.000023	0.29%

Approved: May 28, 2015
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Mo 202.031†	69.0	0.00664	mg/L	0.000885	0.00664	mg/L	0.000885	13.33%
Ni 231.604†	-8.6	-0.00100	mg/L	0.000957	-0.00100	mg/L	0.000957	95.77%
Pb 220.353†	27.6	0.00574	mg/L	0.002759	0.00574	mg/L	0.002759	48.10%
Sb 206.836†	-2.2	0.00254	mg/L	0.004098	0.00254	mg/L	0.004098	161.09%
Se 196.026†	-3.0	-0.00050	mg/L	0.008711	-0.00050	mg/L	0.008711	>999.9%
Si 251.611†	-198180.1	-10.0	mg/L	0.12	-10.0	mg/L	0.12	1.19%
Sn 189.927†	-67.6	-0.0129	mg/L	0.00189	-0.0129	mg/L	0.00189	14.60%
Ti 334.940†	-5005.4	0.00102	mg/L	0.000252	0.00102	mg/L	0.000252	24.71%
Tl 190.801†	-16.8	-0.0154	mg/L	0.00496	-0.0154	mg/L	0.00496	32.18%
V 290.880†	-729.9	-0.00220	mg/L	0.000435	-0.00220	mg/L	0.000435	19.76%
Zn 206.200†	-148.9	-0.00996	mg/L	0.000126	-0.00996	mg/L	0.000126	1.26%
K 766.490†	1145.0	0.740	mg/L	0.0923	0.740	mg/L	0.0923	12.48%
Na 589.592†	97984.1	12.1	mg/L	0.10	12.1	mg/L	0.10	0.80%
Sr 407.771†	240834.5	0.296	mg/L	0.0028	0.296	mg/L	0.0028	0.94%
Li 670.784†	290.7	0.00493	mg/L	0.003443	0.00493	mg/L	0.003443	69.89%
P 214.914†	2.9	0.00672	mg/L	0.007658	0.00672	mg/L	0.007658	113.94%

Sequence No.: 57 **Autosampler Location: 118**
Sample ID: L1505150805 **Date Collected: 5/27/2015 5:36:40 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505150805

Analyte	Back Pressure	Flow
All	230.0 kPa	0.40 L/min

Mean Data: L1505150805

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3341125.4						54054.88	1.62%
YRADIAL	210821.5						3236.27	1.54%
Ga 417.206	1401755.9						19710.27	1.41%
GaRADIAL	48601.5						466.42	0.96%
Ag 328.068†	1215.3	0.00605	mg/L	0.000805	0.00605	mg/L	0.000805	13.30%
Al 396.153†	726.5	0.233	mg/L	0.0458	0.233	mg/L	0.0458	19.68%
As 188.979†	-20.9	-0.00690	mg/L	0.005852	-0.00690	mg/L	0.005852	84.84%
Ba 233.527†	7742.2	0.134	mg/L	0.0021	0.134	mg/L	0.0021	1.57%
Be 234.861†	56.0	0.00009	mg/L	0.000018	0.00009	mg/L	0.000018	20.17%
B 249.677†	-1185.4	-0.00747	mg/L	0.001386	-0.00747	mg/L	0.001386	18.57%
Ca 227.546†	7531.6	94.7	mg/L	1.28	94.7	mg/L	1.28	1.35%
Cd 228.802†	-0.2	0.00027	mg/L	0.000402	0.00027	mg/L	0.000402	147.47%
Co 228.616†	9.5	-0.00001	mg/L	0.000136	-0.00001	mg/L	0.000136	958.15%
Cr 267.716†	268.8	0.00149	mg/L	0.000053	0.00149	mg/L	0.000053	3.57%
Cu 327.393†	4193.7	0.0217	mg/L	0.00151	0.0217	mg/L	0.00151	6.93%
Fe 239.562†	6994.8	1.21	mg/L	0.026	1.21	mg/L	0.026	2.13%
Mg 279.077†	26976.2	9.98	mg/L	0.227	9.98	mg/L	0.227	2.28%
Mn 257.610†	287116.5	0.450	mg/L	0.0022	0.450	mg/L	0.0022	0.49%
Mo 202.031†	61.6	0.00601	mg/L	0.000928	0.00601	mg/L	0.000928	15.44%
Ni 231.604†	36.4	0.00041	mg/L	0.000344	0.00041	mg/L	0.000344	83.19%
Pb 220.353†	113.6	0.0247	mg/L	0.00259	0.0247	mg/L	0.00259	10.48%
Sb 206.836†	-0.8	0.00381	mg/L	0.001637	0.00381	mg/L	0.001637	42.94%
Se 196.026†	-2.7	-0.00027	mg/L	0.012214	-0.00027	mg/L	0.012214	>999.9%
Si 251.611†	-186545.9	-9.46	mg/L	0.025	-9.46	mg/L	0.025	0.26%
Sn 189.927†	-75.1	-0.0142	mg/L	0.00254	-0.0142	mg/L	0.00254	17.94%
Ti 334.940†	-3852.0	0.00364	mg/L	0.000458	0.00364	mg/L	0.000458	12.58%
Tl 190.801†	-24.0	-0.0218	mg/L	0.00245	-0.0218	mg/L	0.00245	11.23%
V 290.880†	-506.7	-0.00083	mg/L	0.000321	-0.00083	mg/L	0.000321	38.44%
Zn 206.200†	23690.9	0.821	mg/L	0.0157	0.821	mg/L	0.0157	1.92%
K 766.490†	4533.8	2.84	mg/L	0.051	2.84	mg/L	0.051	1.78%
Na 589.592†	380088.1	47.7	mg/L	1.05	47.7	mg/L	1.05	2.20%
Sr 407.771†	281051.9	0.345	mg/L	0.0019	0.345	mg/L	0.0019	0.54%
Li 670.784†	219.3	0.00305	mg/L	0.005937	0.00305	mg/L	0.005937	194.36%
P 214.914†	29.9	0.0490	mg/L	0.01539	0.0490	mg/L	0.01539	31.39%

Sequence No.: 58 **Autosampler Location: 119**
Sample ID: L1505150806 **Date Collected: 5/27/2015 5:39:03 PM**
Analyst: KHR **Data Type: Original**

Approved: May 28, 2015
Lynn H. Rhoden

Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505150806

Analyte	Back Pressure	Flow
All	230.0 kPa	0.40 L/min

Mean Data: L1505150806

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3281642.3						54154.80	1.65%
YRADIAL	211621.3						3437.35	1.62%
Ga 417.206	1372371.9						20313.97	1.48%
GaRADIAL	50449.4						839.34	1.66%
Ag 328.068†	1218.6	0.00556	mg/L	0.000884	0.00556	mg/L	0.000884	15.89%
Al 396.153†	-38.6	-0.0358	mg/L	0.00281	-0.0358	mg/L	0.00281	7.85%
As 188.979†	-32.4	-0.0142	mg/L	0.00569	-0.0142	mg/L	0.00569	40.15%
Ba 233.527†	6821.7	0.118	mg/L	0.0011	0.118	mg/L	0.0011	0.94%
Be 234.861†	-122.7	0.00003	mg/L	0.000020	0.00003	mg/L	0.000020	68.19%
B 249.677†	-853.4	-0.00736	mg/L	0.000331	-0.00736	mg/L	0.000331	4.50%
Ca 227.546†	7686.4	96.6	mg/L	0.75	96.6	mg/L	0.75	0.78%
Cd 228.802†	6.4	0.00070	mg/L	0.000678	0.00070	mg/L	0.000678	96.37%
Co 228.616†	-3.3	-0.00087	mg/L	0.000742	-0.00087	mg/L	0.000742	84.89%
Cr 267.716†	218.4	0.00114	mg/L	0.000232	0.00114	mg/L	0.000232	20.39%
Cu 327.393†	-353.1	0.00047	mg/L	0.001030	0.00047	mg/L	0.001030	220.08%
Fe 239.562†	13.4	0.00629	mg/L	0.000421	0.00629	mg/L	0.000421	6.69%
Mg 279.077†	28480.1	10.5	mg/L	0.31	10.5	mg/L	0.31	2.90%
Mn 257.610†	17337.9	0.0267	mg/L	0.00026	0.0267	mg/L	0.00026	0.98%
Mo 202.031†	65.3	0.00630	mg/L	0.001604	0.00630	mg/L	0.001604	25.46%
Ni 231.604†	8.7	-0.00045	mg/L	0.000546	-0.00045	mg/L	0.000546	120.62%
Pb 220.353†	42.5	0.00904	mg/L	0.002897	0.00904	mg/L	0.002897	32.05%
Sb 206.836†	-3.8	0.00118	mg/L	0.002962	0.00118	mg/L	0.002962	250.25%
Se 196.026†	-8.7	-0.00947	mg/L	0.007484	-0.00947	mg/L	0.007484	79.02%
Si 251.611†	-198104.7	-10.0	mg/L	0.14	-10.0	mg/L	0.14	1.41%
Sn 189.927†	-67.4	-0.0129	mg/L	0.00354	-0.0129	mg/L	0.00354	27.51%
Ti 334.940†	-7055.4	0.00032	mg/L	0.000388	0.00032	mg/L	0.000388	122.23%
Tl 190.801†	-29.7	-0.0262	mg/L	0.00394	-0.0262	mg/L	0.00394	15.06%
V 290.880†	-723.3	-0.00222	mg/L	0.000945	-0.00222	mg/L	0.000945	42.51%
Zn 206.200†	15140.7	0.523	mg/L	0.0048	0.523	mg/L	0.0048	0.92%
K 766.490†	4632.5	2.91	mg/L	0.030	2.91	mg/L	0.030	1.02%
Na 589.592†	378477.7	47.5	mg/L	1.07	47.5	mg/L	1.07	2.26%
Sr 407.771†	286632.7	0.352	mg/L	0.0077	0.352	mg/L	0.0077	2.18%
Li 670.784†	468.1	0.00958	mg/L	0.003666	0.00958	mg/L	0.003666	38.28%
P 214.914†	11.7	0.0205	mg/L	0.01286	0.0205	mg/L	0.01286	62.80%

Sequence No.: 59 **Autosampler Location: 7**
Sample ID: CCV **Date Collected: 5/27/2015 5:42:23 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3263462.7						32707.94	1.00%
YRADIAL	211718.5						1822.63	0.86%
Ga 417.206	1351899.6						14085.48	1.04%
GaRADIAL	49370.0						330.14	0.67%
Ag 328.068†	132564.5	0.394	mg/L	0.0046	0.394	mg/L	0.0046	1.17%
QC value within limits for Ag 328.068 Recovery = 98.55%								
Al 396.153†	28709.3	10.0	mg/L	0.08	10.0	mg/L	0.08	0.76%
QC value within limits for Al 396.153 Recovery = 100.11%								
As 188.979†	595.3	0.365	mg/L	0.0104	0.365	mg/L	0.0104	2.84%

Approved: May 28, 2015

Lynn H. Rhoden

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   QC value within limits for As 188.979  Recovery = 91.32%
Ba 233.527†            55697.1       0.963 mg/L        0.0033       0.963 mg/L        0.0033   0.34%
   QC value within limits for Ba 233.527  Recovery = 96.29%
Be 234.861†            26556.2      0.0479 mg/L       0.00038      0.0479 mg/L       0.00038   0.79%
   QC value within limits for Be 234.861  Recovery = 95.72%
B 249.677†             26801.4       0.395 mg/L        0.0092       0.395 mg/L        0.0092   2.33%
   QC value less than the lower limit for B 249.677  Recovery = 79.02%
Ca 227.546†              747.3        9.51 mg/L         0.028        9.51 mg/L         0.028   0.30%
   QC value within limits for Ca 227.546  Recovery = 95.10%
Cd 228.802†              783.9      0.0462 mg/L       0.00073      0.0462 mg/L       0.00073   1.59%
   QC value within limits for Cd 228.802  Recovery = 92.43%
Co 228.616†             2724.4       0.190 mg/L        0.0018       0.190 mg/L        0.0018   0.95%
   QC value within limits for Co 228.616  Recovery = 95.08%
Cr 267.716†            66497.7       0.489 mg/L        0.0041       0.489 mg/L        0.0041   0.84%
   QC value within limits for Cr 267.716  Recovery = 97.85%
Cu 327.393†           104880.5       0.490 mg/L        0.0044       0.490 mg/L        0.0044   0.90%
   QC value within limits for Cu 327.393  Recovery = 97.91%
Fe 239.562†            23341.3        4.02 mg/L         0.038        4.02 mg/L         0.038   0.94%
   QC value within limits for Fe 239.562  Recovery = 100.38%
Mg 279.077†            27097.3        10.0 mg/L          0.17        10.0 mg/L          0.17   1.67%
   QC value within limits for Mg 279.077  Recovery = 100.23%
Mn 257.610†           313709.2       0.491 mg/L        0.0034       0.491 mg/L        0.0034   0.68%
   QC value within limits for Mn 257.610  Recovery = 98.27%
Mo 202.031†             9599.4       0.914 mg/L        0.0086       0.914 mg/L        0.0086   0.94%
   QC value within limits for Mo 202.031  Recovery = 91.43%
Ni 231.604†            15208.2       0.475 mg/L        0.0049       0.475 mg/L        0.0049   1.03%
   QC value within limits for Ni 231.604  Recovery = 95.07%
Pb 220.353†             2107.4       0.473 mg/L        0.0060       0.473 mg/L        0.0060   1.28%
   QC value within limits for Pb 220.353  Recovery = 94.58%
Sb 206.836†             1261.5        1.09 mg/L         0.018        1.09 mg/L         0.018   1.61%
   QC value within limits for Sb 206.836  Recovery = 90.85%
Se 196.026†              239.9       0.381 mg/L        0.0190       0.381 mg/L        0.0190   4.98%
   QC value within limits for Se 196.026  Recovery = 95.36%
Si 251.611†           -88564.7       -4.58 mg/L         0.098       -4.58 mg/L         0.098   2.13%
   QC value less than the lower limit for Si 251.611  Recovery = -91.61%
Sn 189.927†             5481.4       0.925 mg/L        0.0088       0.925 mg/L        0.0088   0.96%
   QC value within limits for Sn 189.927  Recovery = 92.53%
Ti 334.940†           907472.0       0.980 mg/L        0.0046       0.980 mg/L        0.0046   0.47%
   QC value within limits for Ti 334.940  Recovery = 97.95%
Tl 190.801†              581.3       0.491 mg/L        0.0033       0.491 mg/L        0.0033   0.68%
   QC value within limits for Tl 190.801  Recovery = 98.21%
V 290.880†            184087.3       0.976 mg/L        0.0060       0.976 mg/L        0.0060   0.62%
   QC value within limits for V 290.880  Recovery = 97.59%
Zn 206.200†            26992.7       0.941 mg/L        0.0107       0.941 mg/L        0.0107   1.13%
   QC value within limits for Zn 206.200  Recovery = 94.12%
K 766.490†             76241.3        48.6 mg/L          0.59        48.6 mg/L          0.59   1.21%
   QC value within limits for K 766.490  Recovery = 97.13%
Na 589.592†           395509.6        49.7 mg/L          0.07        49.7 mg/L          0.07   0.15%
   QC value within limits for Na 589.592  Recovery = 99.33%
Sr 407.771†           804148.6       0.997 mg/L        0.0058       0.997 mg/L        0.0058   0.58%
   QC value within limits for Sr 407.771  Recovery = 99.73%
Li 670.784†            38566.2        1.01 mg/L         0.013        1.01 mg/L         0.013   1.32%
   QC value within limits for Li 670.784  Recovery = 100.80%
P 214.914†              5891.4        9.24 mg/L         0.076        9.24 mg/L         0.076   0.82%
   QC value within limits for P 214.914  Recovery = 92.40%
QC Failed.  Continue with analysis.

==========================================================================================
Sequence No.: 60                                    Autosampler Location: 8
Sample ID: CCB                                      Date Collected: 5/27/2015 5:44:48 PM
Analyst:                                            Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

------------------------------------------------------------------------------------------
Nebulizer Parameters: CCB
Analyte                 Back Pressure    Flow
All                    231.0 kPa         0.40 L/min

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Mean Data: CCB
                  Mean Corrected         Calib.                        Sample
```

Approved: May 28, 2015

Analyte	Intensity	Conc. Units	Std.Dev.	Conc. Units	Std.Dev.	RSD
Y 371.029	3442500.2				45621.74	1.33%
YRADIAL	220905.9				2265.87	1.03%
Ga 417.206	1558921.8				17533.68	1.12%
GaRADIAL	53446.0				562.29	1.05%
Ag 328.068†	416.8	0.00329 mg/L	0.000771	0.00329 mg/L	0.000771	23.42%
QC value within limits for Ag 328.068 Recovery = Not calculated						
Al 396.153†	-11.7	-0.0261 mg/L	0.00379	-0.0261 mg/L	0.00379	14.51%
QC value within limits for Al 396.153 Recovery = Not calculated						
As 188.979†	-3.9	0.00124 mg/L	0.003567	0.00124 mg/L	0.003567	288.38%
QC value within limits for As 188.979 Recovery = Not calculated						
Ba 233.527†	-4.5	-0.00032 mg/L	0.000140	-0.00032 mg/L	0.000140	43.36%
QC value within limits for Ba 233.527 Recovery = Not calculated						
Be 234.861†	-4.2	0.00024 mg/L	0.000024	0.00024 mg/L	0.000024	9.78%
QC value within limits for Be 234.861 Recovery = Not calculated						
B 249.677†	-54.8	0.00388 mg/L	0.003308	0.00388 mg/L	0.003308	85.28%
QC value within limits for B 249.677 Recovery = Not calculated						
Ca 227.546†	-12.6	-0.102 mg/L	0.1412	-0.102 mg/L	0.1412	137.90%
QC value within limits for Ca 227.546 Recovery = Not calculated						
Cd 228.802†	3.3	0.00043 mg/L	0.000449	0.00043 mg/L	0.000449	103.84%
QC value within limits for Cd 228.802 Recovery = Not calculated						
Co 228.616†	-5.0	-0.00098 mg/L	0.000706	-0.00098 mg/L	0.000706	71.82%
QC value within limits for Co 228.616 Recovery = Not calculated						
Cr 267.716†	36.9	-0.00022 mg/L	0.000812	-0.00022 mg/L	0.000812	374.04%
QC value within limits for Cr 267.716 Recovery = Not calculated						
Cu 327.393†	-237.8	0.00098 mg/L	0.000990	0.00098 mg/L	0.000990	101.06%
QC value within limits for Cu 327.393 Recovery = Not calculated						
Fe 239.562†	-2.7	0.00372 mg/L	0.000465	0.00372 mg/L	0.000465	12.48%
QC value within limits for Fe 239.562 Recovery = Not calculated						
Mg 279.077†	9.0	-0.0112 mg/L	0.00085	-0.0112 mg/L	0.00085	7.55%
QC value within limits for Mg 279.077 Recovery = Not calculated						
Mn 257.610†	-27.1	-0.00047 mg/L	0.000019	-0.00047 mg/L	0.000019	4.06%
QC value within limits for Mn 257.610 Recovery = Not calculated						
Mo 202.031†	9.1	0.00094 mg/L	0.000204	0.00094 mg/L	0.000204	21.68%
QC value within limits for Mo 202.031 Recovery = Not calculated						
Ni 231.604†	-4.9	-0.00089 mg/L	0.000391	-0.00089 mg/L	0.000391	43.96%
QC value within limits for Ni 231.604 Recovery = Not calculated						
Pb 220.353†	4.8	0.00063 mg/L	0.002410	0.00063 mg/L	0.002410	385.38%
QC value within limits for Pb 220.353 Recovery = Not calculated						
Sb 206.836†	1.7	0.00589 mg/L	0.003509	0.00589 mg/L	0.003509	59.59%
QC value within limits for Sb 206.836 Recovery = Not calculated						
Se 196.026†	1.8	0.00700 mg/L	0.007995	0.00700 mg/L	0.007995	114.17%
QC value within limits for Se 196.026 Recovery = Not calculated						
Si 251.611†	-2037.2	-0.252 mg/L	0.4534	-0.252 mg/L	0.4534	179.71%
QC value within limits for Si 251.611 Recovery = Not calculated						
Sn 189.927†	-25.2	-0.00574 mg/L	0.000708	-0.00574 mg/L	0.000708	12.34%
QC value within limits for Sn 189.927 Recovery = Not calculated						
Ti 334.940†	75.7	0.00179 mg/L	0.000168	0.00179 mg/L	0.000168	9.37%
QC value within limits for Ti 334.940 Recovery = Not calculated						
Tl 190.801†	4.6	0.00241 mg/L	0.002286	0.00241 mg/L	0.002286	94.69%
QC value within limits for Tl 190.801 Recovery = Not calculated						
V 290.880†	-332.9	0.00012 mg/L	0.000572	0.00012 mg/L	0.000572	485.12%
QC value within limits for V 290.880 Recovery = Not calculated						
Zn 206.200†	-21.7	-0.00554 mg/L	0.000148	-0.00554 mg/L	0.000148	2.68%
QC value within limits for Zn 206.200 Recovery = Not calculated						
K 766.490†	-10.5	0.0221 mg/L	0.00953	0.0221 mg/L	0.00953	43.08%
QC value within limits for K 766.490 Recovery = Not calculated						
Na 589.592†	372.6	0.0661 mg/L	0.00629	0.0661 mg/L	0.00629	9.51%
QC value within limits for Na 589.592 Recovery = Not calculated						
Sr 407.771†	137.8	-0.00016 mg/L	0.000086	-0.00016 mg/L	0.000086	53.53%
QC value within limits for Sr 407.771 Recovery = Not calculated						
Li 670.784†	-113.3	-0.00566 mg/L	0.004179	-0.00566 mg/L	0.004179	73.82%
QC value within limits for Li 670.784 Recovery = Not calculated						
P 214.914†	5.7	0.0110 mg/L	0.00865	0.0110 mg/L	0.00865	78.35%
QC value within limits for P 214.914 Recovery = Not calculated						

All analyte(s) passed QC.

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Sequence No.: 61
Sample ID: LLCCV
Analyst: KHR
Initial Sample Wt:

Autosampler Location: 120
Date Collected: 5/27/2015 5:48:11 PM
Data Type: Original
Initial Sample Vol:

Approved: May 28, 2015

Kym H. Rhoden

Dilution: **Sample Prep Vol:**

Nebulizer Parameters: LLCCV

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: LLCCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3435496.2						66640.68	1.94%
YRADIAL	221639.3						4403.04	1.99%
Ga 417.206	1533251.6						29006.49	1.89%
GaRADIAL	53091.9						999.84	1.88%
Ag 328.068†	5024.5	0.0169	mg/L	0.00065	0.0169	mg/L	0.00065	3.81%
Al 396.153†	1181.4	0.391	mg/L	0.0185	0.391	mg/L	0.0185	4.73%
As 188.979†	14.7	0.0125	mg/L	0.00087	0.0125	mg/L	0.00087	6.95%
Ba 233.527†	2299.5	0.0395	mg/L	0.00069	0.0395	mg/L	0.00069	1.74%
Be 234.861†	982.5	0.00201	mg/L	0.000014	0.00201	mg/L	0.000014	0.71%
B 249.677†	1018.2	0.0195	mg/L	0.00301	0.0195	mg/L	0.00301	15.41%
Ca 227.546†	31.3	0.452	mg/L	0.0788	0.452	mg/L	0.0788	17.46%
Cd 228.802†	31.8	0.00212	mg/L	0.000240	0.00212	mg/L	0.000240	11.34%
Co 228.616†	121.9	0.00791	mg/L	0.000059	0.00791	mg/L	0.000059	0.75%
Cr 267.716†	2730.7	0.0196	mg/L	0.00115	0.0196	mg/L	0.00115	5.84%
Cu 327.393†	3975.6	0.0206	mg/L	0.00236	0.0206	mg/L	0.00236	11.47%
Fe 239.562†	977.9	0.172	mg/L	0.0056	0.172	mg/L	0.0056	3.27%
Mg 279.077†	1141.3	0.408	mg/L	0.0049	0.408	mg/L	0.0049	1.20%
Mn 257.610†	13111.5	0.0201	mg/L	0.00029	0.0201	mg/L	0.00029	1.42%
Mo 202.031†	382.9	0.0365	mg/L	0.00033	0.0365	mg/L	0.00033	0.91%
Ni 231.604†	624.2	0.0188	mg/L	0.00027	0.0188	mg/L	0.00027	1.43%
Pb 220.353†	84.9	0.0186	mg/L	0.00068	0.0186	mg/L	0.00068	3.65%
Sb 206.836†	48.2	0.0460	mg/L	0.00493	0.0460	mg/L	0.00493	10.72%
Se 196.026†	15.3	0.0282	mg/L	0.00903	0.0282	mg/L	0.00903	32.07%
Si 251.611†	6786.6	0.188	mg/L	0.0669	0.188	mg/L	0.0669	35.63%
Sn 189.927†	200.6	0.0324	mg/L	0.00079	0.0324	mg/L	0.00079	2.43%
Ti 334.940†	36016.9	0.0405	mg/L	0.00068	0.0405	mg/L	0.00068	1.68%
Tl 190.801†	22.1	0.0173	mg/L	0.00505	0.0173	mg/L	0.00505	29.22%
V 290.880†	6855.4	0.0382	mg/L	0.00115	0.0382	mg/L	0.00115	3.02%
Zn 206.200†	1152.1	0.0356	mg/L	0.00073	0.0356	mg/L	0.00073	2.04%
K 766.490†	2831.5	1.81	mg/L	0.086	1.81	mg/L	0.086	4.75%
Na 589.592†	16532.9	2.04	mg/L	0.025	2.04	mg/L	0.025	1.21%
Sr 407.771†	32518.3	0.0400	mg/L	0.00028	0.0400	mg/L	0.00028	0.71%
Li 670.784†	1679.3	0.0413	mg/L	0.00227	0.0413	mg/L	0.00227	5.49%
P 214.914†	226.1	0.357	mg/L	0.0068	0.357	mg/L	0.0068	1.90%

Sequence No.: 62 **Autosampler Location: 143**
Sample ID: PBW 43 WG525206-02 **Date Collected: 5/27/2015 5:50:36 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: PBW 43 WG525206-02

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: PBW 43 WG525206-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3480359.9						42011.47	1.21%
YRADIAL	220657.6						3833.38	1.74%
Ga 417.206	1557605.2						6963.76	0.45%
GaRADIAL	52986.7						499.29	0.94%
Ag 328.068†	-75.2	0.00185	mg/L	0.000864	0.00185	mg/L	0.000864	46.73%
Al 396.153†	3.7	-0.0207	mg/L	0.00251	-0.0207	mg/L	0.00251	12.17%
As 188.979†	-14.5	-0.00529	mg/L	0.002168	-0.00529	mg/L	0.002168	40.97%
Ba 233.527†	-12.4	-0.00046	mg/L	0.000125	-0.00046	mg/L	0.000125	27.10%
Be 234.861†	-98.4	0.00007	mg/L	0.000035	0.00007	mg/L	0.000035	51.23%
B 249.677†	4500.6	0.0680	mg/L	0.00464	0.0680	mg/L	0.00464	6.82%

Approved: May 28, 2015

Ca 227.546†	-2.6	0.0236	mg/L	0.05020	0.0236	mg/L	0.05020 212.84%
Cd 228.802†	-0.0	0.00026	mg/L	0.000421	0.00026	mg/L	0.000421 158.92%
Co 228.616†	5.3	-0.00026	mg/L	0.000343	-0.00026	mg/L	0.000343 133.66%
Cr 267.716†	48.6	-0.00013	mg/L	0.000993	-0.00013	mg/L	0.000993 762.20%
Cu 327.393†	-531.8	-0.00038	mg/L	0.000899	-0.00038	mg/L	0.000899 234.98%
Fe 239.562†	4.9	0.00504	mg/L	0.000668	0.00504	mg/L	0.000668 13.27%
Mg 279.077†	12.8	-0.00980	mg/L	0.010024	-0.00980	mg/L	0.010024 102.26%
Mn 257.610†	44.5	-0.00035	mg/L	0.000063	-0.00035	mg/L	0.000063 17.86%
Mo 202.031†	-0.4	0.00003	mg/L	0.000994	0.00003	mg/L	0.000994 >999.9%
Ni 231.604†	-14.5	-0.00119	mg/L	0.000224	-0.00119	mg/L	0.000224 18.82%
Pb 220.353†	0.7	-0.00029	mg/L	0.003495	-0.00029	mg/L	0.003495 >999.9%
Sb 206.836†	-3.3	0.00163	mg/L	0.000233	0.00163	mg/L	0.000233 14.25%
Se 196.026†	4.9	0.0118	mg/L	0.00127	0.0118	mg/L	0.00127 10.72%
Si 251.611†	-128520.7	-6.56	mg/L	0.733	-6.56	mg/L	0.733 11.16%
Sn 189.927†	-46.8	-0.00941	mg/L	0.001383	-0.00941	mg/L	0.001383 14.70%
Ti 334.940†	273.8	0.00201	mg/L	0.000322	0.00201	mg/L	0.000322 16.00%
Tl 190.801†	1.5	-0.00016	mg/L	0.005312	-0.00016	mg/L	0.005312 >999.9%
V 290.880†	-268.5	0.00046	mg/L	0.001975	0.00046	mg/L	0.001975 429.13%
Zn 206.200†	-121.2	-0.00901	mg/L	0.000469	-0.00901	mg/L	0.000469 5.20%
K 766.490†	-19.0	0.0167	mg/L	0.05473	0.0167	mg/L	0.05473 327.21%
Na 589.592†	608.9	0.0950	mg/L	0.02434	0.0950	mg/L	0.02434 25.64%
Sr 407.771†	229.3	-0.00005	mg/L	0.000077	-0.00005	mg/L	0.000077 147.25%
Li 670.784†	35.8	-0.00175	mg/L	0.004384	-0.00175	mg/L	0.004384 249.98%
P 214.914†	-9.2	-0.0123	mg/L	0.01549	-0.0123	mg/L	0.01549 126.03%

Sequence No.: 63
Sample ID: LCSW 43 WG525206-03
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 144
Date Collected: 5/27/2015 5:53:58 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: LCSW 43 WG525206-03

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: LCSW 43 WG525206-03

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3302463.3						19924.92	0.60%
YRADIAL	212824.4						2137.98	1.00%
Ga 417.206	1387712.2						10314.10	0.74%
GaRADIAL	49486.1						478.29	0.97%
Ag 328.068†	66730.8	0.200	mg/L	0.0004	0.200	mg/L	0.0004	0.19%
Al 396.153†	14973.8	5.21	mg/L	0.068	5.21	mg/L	0.068	1.30%
As 188.979†	281.2	0.174	mg/L	0.0033	0.174	mg/L	0.0033	1.90%
Ba 233.527†	29019.8	0.502	mg/L	0.0050	0.502	mg/L	0.0050	0.99%
Be 234.861†	12861.8	0.0233	mg/L	0.00023	0.0233	mg/L	0.00023	0.98%
B 249.677†	62574.0	0.892	mg/L	0.0134	0.892	mg/L	0.0134	1.50%
Ca 227.546†	362.5	4.64	mg/L	0.143	4.64	mg/L	0.143	3.08%
Cd 228.802†	378.1	0.0224	mg/L	0.00040	0.0224	mg/L	0.00040	1.79%
Co 228.616†	1393.8	0.0970	mg/L	0.00117	0.0970	mg/L	0.00117	1.21%
Cr 267.716†	34083.5	0.251	mg/L	0.0009	0.251	mg/L	0.0009	0.36%
Cu 327.393†	52638.0	0.247	mg/L	0.0009	0.247	mg/L	0.0009	0.35%
Fe 239.562†	12052.8	2.08	mg/L	0.057	2.08	mg/L	0.057	2.73%
Mg 279.077†	13988.0	5.17	mg/L	0.143	5.17	mg/L	0.143	2.76%
Mn 257.610†	158955.0	0.249	mg/L	0.0010	0.249	mg/L	0.0010	0.42%
Mo 202.031†	4845.7	0.462	mg/L	0.0050	0.462	mg/L	0.0050	1.09%
Ni 231.604†	7568.6	0.236	mg/L	0.0024	0.236	mg/L	0.0024	1.00%
Pb 220.353†	1055.1	0.237	mg/L	0.0010	0.237	mg/L	0.0010	0.43%
Sb 206.836†	619.1	0.537	mg/L	0.0036	0.537	mg/L	0.0036	0.66%
Se 196.026†	121.8	0.196	mg/L	0.0073	0.196	mg/L	0.0073	3.72%
Si 251.611†	-43666.8	-2.33	mg/L	0.097	-2.33	mg/L	0.097	4.16%
Sn 189.927†	2745.2	0.463	mg/L	0.0045	0.463	mg/L	0.0045	0.97%
Ti 334.940†	461456.2	0.499	mg/L	0.0010	0.499	mg/L	0.0010	0.20%
Tl 190.801†	291.7	0.246	mg/L	0.0028	0.246	mg/L	0.0028	1.14%
V 290.880†	93951.7	0.499	mg/L	0.0011	0.499	mg/L	0.0011	0.23%
Zn 206.200†	13411.7	0.465	mg/L	0.0060	0.465	mg/L	0.0060	1.28%
K 766.490†	39159.1	24.8	mg/L	0.20	24.8	mg/L	0.20	0.82%
Na 589.592†	201862.2	25.0	mg/L	0.63	25.0	mg/L	0.63	2.52%

Approved: May 28, 2015

Sr 407.771†	404731.1	0.502 mg/L	0.0132	0.502 mg/L	0.0132	2.63%
Li 670.784†	20209.2	0.527 mg/L	0.0040	0.527 mg/L	0.0040	0.76%
P 214.914†	2886.5	4.53 mg/L	0.049	4.53 mg/L	0.049	1.08%

Sequence No.: 64 **Autosampler Location: 145**
Sample ID: L1505150401 **Date Collected: 5/27/2015 5:56:22 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505150401

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505150401

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3148028.9						27640.12	0.88%
YRADIAL	203325.3						1980.22	0.97%
Ga 417.206	1281247.6						14084.21	1.10%
GaRADIAL	47745.6						203.90	0.43%
Ag 328.068†	4457.0	0.0149	mg/L	0.00056	0.0149	mg/L	0.00056	3.77%
Al 396.153†	187.2	0.0434	mg/L	0.01575	0.0434	mg/L	0.01575	36.32%
As 188.979†	-47.2	-0.0182	mg/L	0.00332	-0.0182	mg/L	0.00332	18.27%
Ba 233.527†	724.9	0.0123	mg/L	0.00053	0.0123	mg/L	0.00053	4.33%
Be 234.861†	-128.6	0.00013	mg/L	0.000025	0.00013	mg/L	0.000025	19.30%
B 249.677†	379977.8	5.35	mg/L	0.035	5.35	mg/L	0.035	0.65%
Ca 227.546†	26023.8	327	mg/L	2.3	327	mg/L	2.3	0.72%
Cd 228.802†	3.8	0.00061	mg/L	0.000216	0.00061	mg/L	0.000216	35.64%
Co 228.616†	42.2	0.00239	mg/L	0.000490	0.00239	mg/L	0.000490	20.49%
Cr 267.716†	520.0	0.00332	mg/L	0.000120	0.00332	mg/L	0.000120	3.60%
Cu 327.393†	-1460.8	-0.00476	mg/L	0.001849	-0.00476	mg/L	0.001849	38.87%
Fe 239.562†	1212.7	0.210	mg/L	0.0020	0.210	mg/L	0.0020	0.93%
Mg 279.077†	288194.5	107	mg/L	0.7	107	mg/L	0.7	0.64%
Mn 257.610†	1045797.0	1.64	mg/L	0.019	1.64	mg/L	0.019	1.14%
Mo 202.031†	91.7	0.00913	mg/L	0.000984	0.00913	mg/L	0.000984	10.78%
Ni 231.604†	39.2	0.00050	mg/L	0.000490	0.00050	mg/L	0.000490	97.37%
Pb 220.353†	53.5	0.0106	mg/L	0.00297	0.0106	mg/L	0.00297	28.13%
Sb 206.836†	-4.5	0.00049	mg/L	0.001243	0.00049	mg/L	0.001243	253.11%
Se 196.026†	-10.8	-0.0133	mg/L	0.00919	-0.0133	mg/L	0.00919	68.88%
Si 251.611†	-81171.5	-4.20	mg/L	0.083	-4.20	mg/L	0.083	1.97%
Sn 189.927†	-83.0	-0.0155	mg/L	0.00218	-0.0155	mg/L	0.00218	14.02%
Ti 334.940†	-18978.2	0.00227	mg/L	0.001114	0.00227	mg/L	0.001114	49.16%
Tl 190.801†	-40.9	-0.0372	mg/L	0.01173	-0.0372	mg/L	0.01173	31.51%
V 290.880†	-2772.2	-0.0155	mg/L	0.00218	-0.0155	mg/L	0.00218	14.03%
Zn 206.200†	-124.9	-0.00909	mg/L	0.000319	-0.00909	mg/L	0.000319	3.51%
K 766.490†	3357.4	2.02	mg/L	0.080	2.02	mg/L	0.080	3.95%
Na 589.592†	955065.5	125	mg/L	0.3	125	mg/L	0.3	0.22%
Sr 407.771†	316663.8	0.382	mg/L	0.0024	0.382	mg/L	0.0024	0.64%
Li 670.784†	19238.6	0.501	mg/L	0.0059	0.501	mg/L	0.0059	1.19%
P 214.914†	29.1	0.0478	mg/L	0.00445	0.0478	mg/L	0.00445	9.31%

Sequence No.: 65 **Autosampler Location: 146**
Sample ID: L1505150402 **Date Collected: 5/27/2015 5:58:47 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505150402

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505150402

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3177662.4						13737.61	0.43%

Approved: May 28, 2015

Kym H. Rhoden

YRADIAL	209071.4					3187.10	1.52%
Ga 417.206	1289692.8					9998.25	0.78%
GaRADIAL	49332.6					787.02	1.60%
Ag 328.068†	4199.1	0.0141	mg/L	0.00044	0.0141 mg/L	0.00044	3.09%
Al 396.153†	-65.8	-0.0453	mg/L	0.00337	-0.0453 mg/L	0.00337	7.42%
As 188.979†	-43.9	-0.0162	mg/L	0.00505	-0.0162 mg/L	0.00505	31.17%
Ba 233.527†	541.2	0.00912	mg/L	0.000105	0.00912 mg/L	0.000105	1.16%
Be 234.861†	-171.4	0.00009	mg/L	0.000030	0.00009 mg/L	0.000030	33.51%
B 249.677†	388400.7	5.47	mg/L	0.022	5.47 mg/L	0.022	0.40%
Ca 227.546†	26058.9	327	mg/L	1.4	327 mg/L	1.4	0.44%
Cd 228.802†	4.0	0.00061	mg/L	0.000197	0.00061 mg/L	0.000197	32.61%
Co 228.616†	39.8	0.00224	mg/L	0.000554	0.00224 mg/L	0.000554	24.78%
Cr 267.716†	497.5	0.00316	mg/L	0.000422	0.00316 mg/L	0.000422	13.33%
Cu 327.393†	-1400.6	-0.00451	mg/L	0.002669	-0.00451 mg/L	0.002669	59.15%
Fe 239.562†	8.9	0.00359	mg/L	0.001441	0.00359 mg/L	0.001441	40.18%
Mg 279.077†	288085.4	107	mg/L	1.2	107 mg/L	1.2	1.16%
Mn 257.610†	962043.7	1.51	mg/L	0.013	1.51 mg/L	0.013	0.89%
Mo 202.031†	81.5	0.00814	mg/L	0.000111	0.00814 mg/L	0.000111	1.36%
Ni 231.604†	32.8	0.00030	mg/L	0.000492	0.00030 mg/L	0.000492	162.86%
Pb 220.353†	51.8	0.0102	mg/L	0.00256	0.0102 mg/L	0.00256	24.98%
Sb 206.836†	-8.8	-0.00315	mg/L	0.003727	-0.00315 mg/L	0.003727	118.40%
Se 196.026†	-8.6	-0.00974	mg/L	0.006894	-0.00974 mg/L	0.006894	70.75%
Si 251.611†	-89916.8	-4.64	mg/L	0.114	-4.64 mg/L	0.114	2.45%
Sn 189.927†	-94.2	-0.0174	mg/L	0.00267	-0.0174 mg/L	0.00267	15.34%
Ti 334.940†	-21507.4	-0.00043	mg/L	0.000568	-0.00043 mg/L	0.000568	132.08%
Tl 190.801†	-37.8	-0.0346	mg/L	0.00294	-0.0346 mg/L	0.00294	8.51%
V 290.880†	-3155.2	-0.0176	mg/L	0.00155	-0.0176 mg/L	0.00155	8.83%
Zn 206.200†	-67.6	-0.00712	mg/L	0.000529	-0.00712 mg/L	0.000529	7.43%
K 766.490†	3412.2	2.06	mg/L	0.105	2.06 mg/L	0.105	5.09%
Na 589.592†	953665.1	125	mg/L	1.6	125 mg/L	1.6	1.29%
Sr 407.771†	317716.8	0.384	mg/L	0.0051	0.384 mg/L	0.0051	1.33%
Li 670.784†	19239.5	0.502	mg/L	0.0097	0.502 mg/L	0.0097	1.94%
P 214.914†	20.5	0.0342	mg/L	0.02626	0.0342 mg/L	0.02626	76.69%

Sequence No.: 66
Sample ID: L1505150403
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 147
Date Collected: 5/27/2015 6:02:09 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505150403

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505150403

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3146122.2						38326.15	1.22%
YRADIAL	208675.8						1466.20	0.70%
Ga 417.206	1276736.7						9692.20	0.76%
GaRADIAL	48861.6						329.32	0.67%
Ag 328.068†	4336.9	0.0145	mg/L	0.00128	0.0145	mg/L	0.00128	8.81%
Al 396.153†	158.9	0.0335	mg/L	0.04087	0.0335	mg/L	0.04087	122.16%
As 188.979†	-44.4	-0.0163	mg/L	0.01406	-0.0163	mg/L	0.01406	86.26%
Ba 233.527†	688.6	0.0117	mg/L	0.00023	0.0117	mg/L	0.00023	1.95%
Be 234.861†	-131.3	0.00014	mg/L	0.000049	0.00014	mg/L	0.000049	35.85%
B 249.677†	395511.3	5.57	mg/L	0.019	5.57	mg/L	0.019	0.34%
Ca 227.546†	26525.4	333	mg/L	3.9	333	mg/L	3.9	1.16%
Cd 228.802†	3.6	0.00058	mg/L	0.000073	0.00058	mg/L	0.000073	12.47%
Co 228.616†	35.5	0.00192	mg/L	0.000861	0.00192	mg/L	0.000861	44.89%
Cr 267.716†	580.9	0.00377	mg/L	0.000104	0.00377	mg/L	0.000104	2.75%
Cu 327.393†	-1686.4	-0.00581	mg/L	0.000827	-0.00581	mg/L	0.000827	14.23%
Fe 239.562†	916.5	0.160	mg/L	0.0046	0.160	mg/L	0.0046	2.87%
Mg 279.077†	293669.0	109	mg/L	0.9	109	mg/L	0.9	0.82%
Mn 257.610†	1055900.4	1.65	mg/L	0.008	1.65	mg/L	0.008	0.49%
Mo 202.031†	83.4	0.00835	mg/L	0.000321	0.00835	mg/L	0.000321	3.85%
Ni 231.604†	52.5	0.00092	mg/L	0.000696	0.00092	mg/L	0.000696	75.65%
Pb 220.353†	53.4	0.0105	mg/L	0.00348	0.0105	mg/L	0.00348	33.09%
Sb 206.836†	-3.1	0.00175	mg/L	0.006569	0.00175	mg/L	0.006569	375.64%

Approved: May 28, 2015

Se 196.026†	-11.0	-0.0137	mg/L	0.00769	-0.0137	mg/L	0.00769	56.35%
Si 251.611†	-85352.8	-4.41	mg/L	0.180	-4.41	mg/L	0.180	4.09%
Sn 189.927†	-73.6	-0.0139	mg/L	0.00190	-0.0139	mg/L	0.00190	13.62%
Ti 334.940†	-19038.4	0.00261	mg/L	0.000828	0.00261	mg/L	0.000828	31.80%
Tl 190.801†	-38.8	-0.0355	mg/L	0.00946	-0.0355	mg/L	0.00946	26.65%
V 290.880†	-2756.5	-0.0155	mg/L	0.00158	-0.0155	mg/L	0.00158	10.19%
Zn 206.200†	-151.2	-0.0100	mg/L	0.00032	-0.0100	mg/L	0.00032	3.21%
K 766.490†	3333.0	2.01	mg/L	0.048	2.01	mg/L	0.048	2.41%
Na 589.592†	967196.4	127	mg/L	1.3	127	mg/L	1.3	1.02%
Sr 407.771†	320548.9	0.387	mg/L	0.0033	0.387	mg/L	0.0033	0.85%
Li 670.784†	19394.3	0.506	mg/L	0.0059	0.506	mg/L	0.0059	1.17%
P 214.914†	21.4	0.0358	mg/L	0.01383	0.0358	mg/L	0.01383	38.62%

Sequence No.: 67 **Autosampler Location: 148**
Sample ID: L1505150404 **Date Collected: 5/27/2015 6:04:34 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505150404

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505150404

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3157788.8						41273.13	1.31%
YRADIAL	205376.9						5562.49	2.71%
Ga 417.206	1278559.8						22650.12	1.77%
GaRADIAL	48634.0						1115.55	2.29%
Ag 328.068†	4364.0	0.0145	mg/L	0.00074	0.0145	mg/L	0.00074	5.12%
Al 396.153†	-81.2	-0.0508	mg/L	0.00469	-0.0508	mg/L	0.00469	9.23%
As 188.979†	-38.9	-0.0126	mg/L	0.00610	-0.0126	mg/L	0.00610	48.41%
Ba 233.527†	582.4	0.00984	mg/L	0.000176	0.00984	mg/L	0.000176	1.79%
Be 234.861†	-174.5	0.00010	mg/L	0.000065	0.00010	mg/L	0.000065	68.18%
B 249.677†	417287.6	5.88	mg/L	0.070	5.88	mg/L	0.070	1.19%
Ca 227.546†	27914.4	351	mg/L	8.0	351	mg/L	8.0	2.27%
Cd 228.802†	13.1	0.00114	mg/L	0.000468	0.00114	mg/L	0.000468	41.11%
Co 228.616†	39.7	0.00223	mg/L	0.000571	0.00223	mg/L	0.000571	25.62%
Cr 267.716†	523.5	0.00335	mg/L	0.000313	0.00335	mg/L	0.000313	9.34%
Cu 327.393†	-1825.1	-0.00648	mg/L	0.000561	-0.00648	mg/L	0.000561	8.66%
Fe 239.562†	-0.3	0.00189	mg/L	0.000806	0.00189	mg/L	0.000806	42.68%
Mg 279.077†	303719.6	113	mg/L	1.4	113	mg/L	1.4	1.28%
Mn 257.610†	1033177.2	1.62	mg/L	0.013	1.62	mg/L	0.013	0.83%
Mo 202.031†	90.3	0.00900	mg/L	0.000583	0.00900	mg/L	0.000583	6.48%
Ni 231.604†	27.7	0.00014	mg/L	0.000699	0.00014	mg/L	0.000699	494.12%
Pb 220.353†	35.8	0.00659	mg/L	0.003106	0.00659	mg/L	0.003106	47.16%
Sb 206.836†	-9.6	-0.00391	mg/L	0.004094	-0.00391	mg/L	0.004094	104.82%
Se 196.026†	-15.1	-0.0201	mg/L	0.01374	-0.0201	mg/L	0.01374	68.45%
Si 251.611†	-90720.5	-4.68	mg/L	0.169	-4.68	mg/L	0.169	3.60%
Sn 189.927†	-84.1	-0.0157	mg/L	0.00268	-0.0157	mg/L	0.00268	17.05%
Ti 334.940†	-22775.6	-0.00030	mg/L	0.000715	-0.00030	mg/L	0.000715	238.86%
Tl 190.801†	-39.1	-0.0358	mg/L	0.00040	-0.0358	mg/L	0.00040	1.13%
V 290.880†	-3143.5	-0.0177	mg/L	0.00142	-0.0177	mg/L	0.00142	8.06%
Zn 206.200†	-134.8	-0.00946	mg/L	0.000251	-0.00946	mg/L	0.000251	2.65%
K 766.490†	3680.2	2.22	mg/L	0.054	2.22	mg/L	0.054	2.45%
Na 589.592†	1004154.6	132	mg/L	1.2	132	mg/L	1.2	0.92%
Sr 407.771†	337287.9	0.407	mg/L	0.0086	0.407	mg/L	0.0086	2.11%
Li 670.784†	20294.7	0.529	mg/L	0.0046	0.529	mg/L	0.0046	0.86%
P 214.914†	39.1	0.0635	mg/L	0.00634	0.0635	mg/L	0.00634	9.98%

Sequence No.: 68 **Autosampler Location: 149**
Sample ID: L1505152901 **Date Collected: 5/27/2015 6:07:56 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Approved: May 28, 2015

Kym H. Rhoden

Nebulizer Parameters: L1505152901

Analyte	Back Pressure	Flow
All	230.0 kPa	0.40 L/min

Mean Data: L1505152901

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3253871.5						41501.28	1.28%
YRADIAL	210121.8						1270.58	0.60%
Ga 417.206	1339581.1						18488.85	1.38%
GaRADIAL	49057.5						513.31	1.05%
Ag 328.068†	1247.9	0.00560	mg/L	0.000252	0.00560	mg/L	0.000252	4.50%
Al 396.153†	-12.1	-0.0265	mg/L	0.00295	-0.0265	mg/L	0.00295	11.14%
As 188.979†	-19.5	-0.00678	mg/L	0.004094	-0.00678	mg/L	0.004094	60.38%
Ba 233.527†	4516.9	0.0779	mg/L	0.00106	0.0779	mg/L	0.00106	1.36%
Be 234.861†	-152.3	-0.00002	mg/L	0.000030	-0.00002	mg/L	0.000030	136.01%
B 249.677†	26669.6	0.380	mg/L	0.0118	0.380	mg/L	0.0118	3.10%
Ca 227.546†	5744.6	72.2	mg/L	1.11	72.2	mg/L	1.11	1.53%
Cd 228.802†	0.2	0.00029	mg/L	0.000602	0.00029	mg/L	0.000602	207.16%
Co 228.616†	-4.6	-0.00095	mg/L	0.000915	-0.00095	mg/L	0.000915	96.06%
Cr 267.716†	393.4	0.00240	mg/L	0.000223	0.00240	mg/L	0.000223	9.27%
Cu 327.393†	-832.5	-0.00178	mg/L	0.001433	-0.00178	mg/L	0.001433	80.43%
Fe 239.562†	14.7	0.00576	mg/L	0.002725	0.00576	mg/L	0.002725	47.35%
Mg 279.077†	129354.3	47.9	mg/L	0.38	47.9	mg/L	0.38	0.79%
Mn 257.610†	33539.6	0.0521	mg/L	0.00059	0.0521	mg/L	0.00059	1.13%
Mo 202.031†	66.4	0.00640	mg/L	0.001141	0.00640	mg/L	0.001141	17.82%
Ni 231.604†	23.5	0.00001	mg/L	0.001069	0.00001	mg/L	0.001069	>999.9%
Pb 220.353†	27.2	0.00560	mg/L	0.004444	0.00560	mg/L	0.004444	79.32%
Sb 206.836†	-6.5	-0.00121	mg/L	0.005219	-0.00121	mg/L	0.005219	432.13%
Se 196.026†	-6.1	-0.00541	mg/L	0.014799	-0.00541	mg/L	0.014799	273.35%
Si 251.611†	-78363.9	-4.06	mg/L	0.076	-4.06	mg/L	0.076	1.86%
Sn 189.927†	-67.9	-0.0130	mg/L	0.00193	-0.0130	mg/L	0.00193	14.90%
Ti 334.940†	-5048.2	0.00091	mg/L	0.000140	0.00091	mg/L	0.000140	15.33%
Tl 190.801†	-21.1	-0.0190	mg/L	0.00124	-0.0190	mg/L	0.00124	6.51%
V 290.880†	-1070.6	-0.00503	mg/L	0.001203	-0.00503	mg/L	0.001203	23.90%
Zn 206.200†	-133.9	-0.00943	mg/L	0.000381	-0.00943	mg/L	0.000381	4.04%
K 766.490†	860.5	0.483	mg/L	0.0808	0.483	mg/L	0.0808	16.73%
Na 589.592†	694044.8	89.1	mg/L	0.99	89.1	mg/L	0.99	1.11%
Sr 407.771†	460674.5	0.569	mg/L	0.0041	0.569	mg/L	0.0041	0.72%
Li 670.784†	280.6	0.00466	mg/L	0.002348	0.00466	mg/L	0.002348	50.38%
P 214.914†	2.4	0.00587	mg/L	0.011161	0.00587	mg/L	0.011161	190.13%

Sequence No.: 69
Sample ID: L1505153001
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 150
Date Collected: 5/27/2015 6:11:18 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505153001

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505153001

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3349938.7						31279.11	0.93%
YRADIAL	224481.0						2764.25	1.23%
Ga 417.206	1356462.3						3807.64	0.28%
GaRADIAL	51453.1						562.96	1.09%
Ag 328.068†	523.8	0.00482	mg/L	0.000321	0.00482	mg/L	0.000321	6.66%
Al 396.153†	175.6	0.0397	mg/L	0.03574	0.0397	mg/L	0.03574	90.03%
As 188.979†	-16.6	-0.00408	mg/L	0.001458	-0.00408	mg/L	0.001458	35.76%
Ba 233.527†	13401.7	0.231	mg/L	0.0028	0.231	mg/L	0.0028	1.21%
Be 234.861†	249.6	-0.00001	mg/L	0.000288	-0.00001	mg/L	0.000288	>999.9%
B 249.677†	10452.8	0.163	mg/L	0.0067	0.163	mg/L	0.0067	4.10%
Ca 227.546†	6459.4	81.2	mg/L	0.81	81.2	mg/L	0.81	0.99%
Cd 228.802†	8.8	0.00080	mg/L	0.000417	0.00080	mg/L	0.000417	51.96%
Co 228.616†	4.0	-0.00048	mg/L	0.000484	-0.00048	mg/L	0.000484	101.23%

Approved: May 28, 2015

Cr 267.716†	284.2	0.00152	mg/L	0.000163	0.00152	mg/L	0.000163	10.74%
Cu 327.393†	-508.5	0.00015	mg/L	0.000821	0.00015	mg/L	0.000821	538.84%
Fe 239.562†	17579.6	3.02	mg/L	0.041	3.02	mg/L	0.041	1.34%
Mg 279.077†	105857.2	39.2	mg/L	0.63	39.2	mg/L	0.63	1.60%
Mn 257.610†	349300.6	0.547	mg/L	0.0066	0.547	mg/L	0.0066	1.21%
Mo 202.031†	70.2	0.00681	mg/L	0.000676	0.00681	mg/L	0.000676	9.92%
Ni 231.604†	-13.1	-0.00114	mg/L	0.000454	-0.00114	mg/L	0.000454	39.92%
Pb 220.353†	466.7	0.103	mg/L	0.0018	0.103	mg/L	0.0018	1.73%
Sb 206.836†	-5.0	0.00022	mg/L	0.004468	0.00022	mg/L	0.004468	>999.9%
Se 196.026†	-3.5	-0.00178	mg/L	0.013054	-0.00178	mg/L	0.013054	734.61%
Si 251.611†	-54525.9	-2.87	mg/L	0.268	-2.87	mg/L	0.268	9.33%
Sn 189.927†	-62.3	-0.0120	mg/L	0.00078	-0.0120	mg/L	0.00078	6.51%
Ti 334.940†	-5498.7	0.00100	mg/L	0.000323	0.00100	mg/L	0.000323	32.11%
Tl 190.801†	-28.1	-0.0254	mg/L	0.00681	-0.0254	mg/L	0.00681	26.83%
V 290.880†	-1192.7	-0.00488	mg/L	0.001089	-0.00488	mg/L	0.001089	22.32%
Zn 206.200†	-67.2	-0.00682	mg/L	0.000300	-0.00682	mg/L	0.000300	4.40%
K 766.490†	496.7	0.165	mg/L	0.0901	0.165	mg/L	0.0901	54.63%
Na 589.592†	1311344.7	177	mg/L	2.1	177	mg/L	2.1	1.16%
Sr 407.771†	386613.1	0.477	mg/L	0.0087	0.477	mg/L	0.0087	1.83%
Li 670.784†	185.9	0.00218	mg/L	0.003378	0.00218	mg/L	0.003378	154.95%
P 214.914†	6.7	0.0126	mg/L	0.01089	0.0126	mg/L	0.01089	86.17%

Sequence No.: 70
Sample ID: L1505153001PS WG525252-01
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 151
Date Collected: 5/27/2015 6:13:42 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505153001PS WG525252-01

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505153001PS WG525252-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3369267.9						50378.20	1.50%
YRADIAL	229813.1						2664.29	1.16%
Ga 417.206	1403892.0						12531.02	0.89%
GaRADIAL	53544.4						488.34	0.91%
Ag 328.068†	68321.8	0.205	mg/L	0.0019	0.205	mg/L	0.0019	0.90%
Al 396.153†	13954.6	4.85	mg/L	0.023	4.85	mg/L	0.023	0.47%
As 188.979†	319.6	0.200	mg/L	0.0071	0.200	mg/L	0.0071	3.53%
Ba 233.527†	40088.5	0.693	mg/L	0.0041	0.693	mg/L	0.0041	0.59%
Be 234.861†	13919.5	0.0246	mg/L	0.00015	0.0246	mg/L	0.00015	0.61%
B 249.677†	67565.0	0.973	mg/L	0.0044	0.973	mg/L	0.0044	0.45%
Ca 227.546†	5960.0	75.0	mg/L	0.69	75.0	mg/L	0.69	0.92%
Cd 228.802†	414.0	0.0245	mg/L	0.00040	0.0245	mg/L	0.00040	1.65%
Co 228.616†	1402.3	0.0975	mg/L	0.00194	0.0975	mg/L	0.00194	1.99%
Cr 267.716†	33899.2	0.249	mg/L	0.0036	0.249	mg/L	0.0036	1.45%
Cu 327.393†	51468.2	0.242	mg/L	0.0026	0.242	mg/L	0.0026	1.07%
Fe 239.562†	28050.4	4.82	mg/L	0.075	4.82	mg/L	0.075	1.56%
Mg 279.077†	116002.3	43.0	mg/L	0.62	43.0	mg/L	0.62	1.45%
Mn 257.610†	480672.3	0.753	mg/L	0.0093	0.753	mg/L	0.0093	1.24%
Mo 202.031†	4998.5	0.476	mg/L	0.0094	0.476	mg/L	0.0094	1.97%
Ni 231.604†	7694.8	0.240	mg/L	0.0051	0.240	mg/L	0.0051	2.11%
Pb 220.353†	1524.7	0.341	mg/L	0.0019	0.341	mg/L	0.0019	0.57%
Sb 206.836†	666.6	0.578	mg/L	0.0156	0.578	mg/L	0.0156	2.69%
Se 196.026†	122.8	0.197	mg/L	0.0176	0.197	mg/L	0.0176	8.92%
Si 251.611†	4830.3	0.0852	mg/L	0.08448	0.0852	mg/L	0.08448	99.21%
Sn 189.927†	2835.4	0.478	mg/L	0.0101	0.478	mg/L	0.0101	2.10%
Ti 334.940†	447544.3	0.488	mg/L	0.0049	0.488	mg/L	0.0049	1.01%
Tl 190.801†	271.9	0.229	mg/L	0.0066	0.229	mg/L	0.0066	2.88%
V 290.880†	94086.3	0.499	mg/L	0.0052	0.499	mg/L	0.0052	1.05%
Zn 206.200†	14380.9	0.499	mg/L	0.0121	0.499	mg/L	0.0121	2.43%
K 766.490†	38771.2	24.4	mg/L	0.28	24.4	mg/L	0.28	1.13%
Na 589.592†	1374884.2	187	mg/L	3.4	187	mg/L	3.4	1.83%
Sr 407.771†	736667.0	0.912	mg/L	0.0112	0.912	mg/L	0.0112	1.23%
Li 670.784†	19698.2	0.514	mg/L	0.0047	0.514	mg/L	0.0047	0.92%
P 214.914†	3281.7	5.15	mg/L	0.113	5.15	mg/L	0.113	2.20%

Approved: May 28, 2015
Kym H. Rhoden

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Sequence No.: 71 **Autosampler Location: 152**
Sample ID: L1505153001DL WG525252-02 **Date Collected: 5/27/2015 6:16:08 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505153001DL WG525252-02

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505153001DL WG525252-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3012916.0						29845.60	0.99%
YRADIAL	226939.9						2510.95	1.11%
Ga 417.206	1400958.8						17178.08	1.23%
GaRADIAL	52478.2						601.32	1.15%
Ag 328.068†	386.5	0.00354	mg/L	0.001137	0.00354	mg/L	0.001137	32.07%
Al 396.153†	91.5	0.0101	mg/L	0.03009	0.0101	mg/L	0.03009	298.79%
As 188.979†	4.2	0.00666	mg/L	0.003674	0.00666	mg/L	0.003674	55.14%
Ba 233.527†	3087.4	0.0531	mg/L	0.00129	0.0531	mg/L	0.00129	2.44%
Be 234.861†	208.4	0.00045	mg/L	0.000051	0.00045	mg/L	0.000051	11.36%
B 249.677†	12711.2	0.186	mg/L	0.0249	0.186	mg/L	0.0249	13.37%
Ca 227.546†	1136.6	14.3	mg/L	0.23	14.3	mg/L	0.23	1.63%
Cd 228.802†	-3.2	0.00002	mg/L	0.000545	0.00002	mg/L	0.000545	>999.9%
Co 228.616†	7.0	-0.00017	mg/L	0.000193	-0.00017	mg/L	0.000193	112.76%
Cr 267.716†	364.8	0.00219	mg/L	0.000214	0.00219	mg/L	0.000214	9.77%
Cu 327.393†	-580.9	-0.00049	mg/L	0.001550	-0.00049	mg/L	0.001550	313.64%
Fe 239.562†	4348.9	0.751	mg/L	0.0262	0.751	mg/L	0.0262	3.48%
Mg 279.077†	31292.9	11.6	mg/L	0.28	11.6	mg/L	0.28	2.45%
Mn 257.610†	80928.0	0.126	mg/L	0.0014	0.126	mg/L	0.0014	1.13%
Mo 202.031†	39.4	0.00384	mg/L	0.002086	0.00384	mg/L	0.002086	54.25%
Ni 231.604†	-12.2	-0.00111	mg/L	0.000336	-0.00111	mg/L	0.000336	30.24%
Pb 220.353†	62.8	0.0135	mg/L	0.00326	0.0135	mg/L	0.00326	24.14%
Sb 206.836†	0.9	0.00527	mg/L	0.007488	0.00527	mg/L	0.007488	142.05%
Se 196.026†	-0.9	0.00257	mg/L	0.002310	0.00257	mg/L	0.002310	90.07%
Si 251.611†	148326.8	7.25	mg/L	0.411	7.25	mg/L	0.411	5.67%
Sn 189.927†	2.1	-0.00113	mg/L	0.000546	-0.00113	mg/L	0.000546	48.23%
Ti 334.940†	522.1	0.00320	mg/L	0.000251	0.00320	mg/L	0.000251	7.87%
Tl 190.801†	-23.2	-0.0207	mg/L	0.01379	-0.0207	mg/L	0.01379	66.53%
V 290.880†	2823.7	0.0167	mg/L	0.00243	0.0167	mg/L	0.00243	14.60%
Zn 206.200†	-48.4	-0.00638	mg/L	0.000978	-0.00638	mg/L	0.000978	15.33%
K 766.490†	-143.8	-0.0974	mg/L	0.05371	-0.0974	mg/L	0.05371	55.16%
Na 589.592†	284672.1	35.5	mg/L	0.38	35.5	mg/L	0.38	1.06%
Sr 407.771†	76931.7	0.0947	mg/L	0.00048	0.0947	mg/L	0.00048	0.51%
Li 670.784†	197.3	0.00248	mg/L	0.001117	0.00248	mg/L	0.001117	45.05%
P 214.914†	8.4	0.0153	mg/L	0.03590	0.0153	mg/L	0.03590	234.27%

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Sequence No.: 72 **Autosampler Location: 7**
Sample ID: CCV **Date Collected: 5/27/2015 6:18:32 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2964463.4						17730.30	0.60%
YRADIAL	194771.1						3973.47	2.04%
Ga 417.206	1347029.4						5978.18	0.44%
GaRADIAL	44800.3						1090.80	2.43%

Approved: May 28, 2015

Kym H. Rhoden

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Ag 328.068†           128869.5       0.384 mg/L        0.0013       0.384 mg/L        0.0013   0.34%
   QC value within limits for Ag 328.068  Recovery = 95.95%
Al 396.153†            28129.4        9.80 mg/L         0.131        9.80 mg/L         0.131   1.33%
   QC value within limits for Al 396.153  Recovery = 98.04%
As 188.979†              677.3       0.415 mg/L        0.0032       0.415 mg/L        0.0032   0.78%
   QC value within limits for As 188.979  Recovery = 103.84%
Ba 233.527†            59362.5        1.03 mg/L         0.006        1.03 mg/L         0.006   0.58%
   QC value within limits for Ba 233.527  Recovery = 102.63%
Be 234.861†            27367.2      0.0492 mg/L       0.00065      0.0492 mg/L       0.00065   1.32%
   QC value within limits for Be 234.861  Recovery = 98.49%
B 249.677†             39029.9       0.569 mg/L        0.0067       0.569 mg/L        0.0067   1.18%
   QC value greater than the upper limit for B 249.677  Recovery = 113.79%
Ca 227.546†              630.7        8.05 mg/L         0.350        8.05 mg/L         0.350   4.35%
   QC value less than the lower limit for Ca 227.546  Recovery = 80.55%
Cd 228.802†              801.9      0.0471 mg/L       0.00071      0.0471 mg/L       0.00071   1.51%
   QC value within limits for Cd 228.802  Recovery = 94.26%
Co 228.616†             3084.8       0.216 mg/L        0.0027       0.216 mg/L        0.0027   1.27%
   QC value within limits for Co 228.616  Recovery = 107.78%
Cr 267.716†            72653.9       0.535 mg/L        0.0018       0.535 mg/L        0.0018   0.34%
   QC value within limits for Cr 267.716  Recovery = 106.91%
Cu 327.393†           100397.3       0.469 mg/L        0.0022       0.469 mg/L        0.0022   0.46%
   QC value within limits for Cu 327.393  Recovery = 93.79%
Fe 239.562†            26191.0        4.50 mg/L         0.024        4.50 mg/L         0.024   0.54%
   QC value greater than the upper limit for Fe 239.562  Recovery = 112.62%
Mg 279.077†            32877.9        12.2 mg/L          0.10        12.2 mg/L          0.10   0.83%
   QC value greater than the upper limit for Mg 279.077  Recovery = 121.64%
Mn 257.610†           339033.5       0.531 mg/L        0.0025       0.531 mg/L        0.0025   0.47%
   QC value within limits for Mn 257.610  Recovery = 106.21%
Mo 202.031†            10444.8       0.995 mg/L        0.0104       0.995 mg/L        0.0104   1.04%
   QC value within limits for Mo 202.031  Recovery = 99.48%
Ni 231.604†            17488.3       0.547 mg/L        0.0066       0.547 mg/L        0.0066   1.21%
   QC value within limits for Ni 231.604  Recovery = 109.34%
Pb 220.353†             2491.5       0.559 mg/L        0.0067       0.559 mg/L        0.0067   1.19%
   QC value greater than the upper limit for Pb 220.353  Recovery = 111.75%
Sb 206.836†             1288.5        1.11 mg/L         0.009        1.11 mg/L         0.009   0.79%
   QC value within limits for Sb 206.836  Recovery = 92.78%
Se 196.026†              276.9       0.439 mg/L        0.0031       0.439 mg/L        0.0031   0.72%
   QC value within limits for Se 196.026  Recovery = 109.79%
Si 251.611†           -76469.2       -3.98 mg/L         0.302       -3.98 mg/L         0.302   7.58%
   QC value less than the lower limit for Si 251.611  Recovery = -79.56%
Sn 189.927†             6523.5        1.10 mg/L         0.015        1.10 mg/L         0.015   1.34%
   QC value greater than the upper limit for Sn 189.927  Recovery = 110.14%
Ti 334.940†           940830.2        1.02 mg/L         0.005        1.02 mg/L         0.005   0.46%
   QC value within limits for Ti 334.940  Recovery = 101.54%
Tl 190.801†              636.1       0.537 mg/L        0.0078       0.537 mg/L        0.0078   1.46%
   QC value within limits for Tl 190.801  Recovery = 107.40%
V 290.880†            200566.0        1.06 mg/L         0.007        1.06 mg/L         0.007   0.62%
   QC value within limits for V 290.880  Recovery = 106.31%
Zn 206.200†            34106.2        1.19 mg/L         0.021        1.19 mg/L         0.021   1.73%
   QC value greater than the upper limit for Zn 206.200  Recovery = 118.97%
K 766.490†             77810.8        49.6 mg/L          0.59        49.6 mg/L          0.59   1.18%
   QC value within limits for K 766.490  Recovery = 99.15%
Na 589.592†           393274.6        49.4 mg/L          0.81        49.4 mg/L          0.81   1.64%
   QC value within limits for Na 589.592  Recovery = 98.76%
Sr 407.771†           740901.5       0.919 mg/L        0.0114       0.919 mg/L        0.0114   1.24%
   QC value within limits for Sr 407.771  Recovery = 91.89%
Li 670.784†            37839.2       0.989 mg/L        0.0132       0.989 mg/L        0.0132   1.33%
   QC value within limits for Li 670.784  Recovery = 98.90%
P 214.914†              7417.2        11.6 mg/L          0.21        11.6 mg/L          0.21   1.81%
   QC value greater than the upper limit for P 214.914  Recovery = 116.32%
QC Failed.  Continue with analysis.

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Sequence No.: 73                                    Autosampler Location: 8
Sample ID: CCB                                      Date Collected: 5/27/2015 6:20:57 PM
Analyst:                                            Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

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Nebulizer Parameters: CCB
Analyte                 Back Pressure    Flow
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Approved: May 28, 2015

Lynn H. Rhoden

All 230.0 kPa 0.40 L/min

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3162394.7						30355.06	0.96%
YRADIAL	205394.2						1127.95	0.55%
Ga 417.206	1534908.9						13063.91	0.85%
GaRADIAL	48249.2						174.95	0.36%
Ag 328.068†	106.0	0.00240	mg/L	0.000826	0.00240	mg/L	0.000826	34.43%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	-17.7	-0.0282	mg/L	0.05323	-0.0282	mg/L	0.05323	188.66%
QC value within limits for Al 396.153 Recovery = Not calculated								
As 188.979†	7.4	0.00817	mg/L	0.002102	0.00817	mg/L	0.002102	25.74%
QC value greater than the upper limit for As 188.979 Recovery = Not calculated								
Ba 233.527†	14.0	-0.00001	mg/L	0.000341	-0.00001	mg/L	0.000341	>999.9%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 234.861†	42.6	0.00032	mg/L	0.000037	0.00032	mg/L	0.000037	11.51%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	7874.3	0.116	mg/L	0.0044	0.116	mg/L	0.0044	3.82%
QC value greater than the upper limit for B 249.677 Recovery = Not calculated								
Ca 227.546†	-8.0	-0.0445	mg/L	0.16843	-0.0445	mg/L	0.16843	378.42%
QC value within limits for Ca 227.546 Recovery = Not calculated								
Cd 228.802†	0.5	0.00023	mg/L	0.000141	0.00023	mg/L	0.000141	62.55%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	0.3	-0.00061	mg/L	0.000685	-0.00061	mg/L	0.000685	112.26%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	143.7	0.00057	mg/L	0.000106	0.00057	mg/L	0.000106	18.40%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	-283.9	0.00077	mg/L	0.001218	0.00077	mg/L	0.001218	158.02%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	16.0	0.00694	mg/L	0.003890	0.00694	mg/L	0.003890	56.08%
QC value within limits for Fe 239.562 Recovery = Not calculated								
Mg 279.077†	154.0	0.0425	mg/L	0.07578	0.0425	mg/L	0.07578	178.17%
QC value within limits for Mg 279.077 Recovery = Not calculated								
Mn 257.610†	-45.3	-0.00050	mg/L	0.000067	-0.00050	mg/L	0.000067	13.60%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	11.5	0.00117	mg/L	0.001233	0.00117	mg/L	0.001233	105.29%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	-0.0	-0.00073	mg/L	0.000277	-0.00073	mg/L	0.000277	37.82%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	-33.2	-0.00785	mg/L	0.003608	-0.00785	mg/L	0.003608	45.95%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	3.1	0.00714	mg/L	0.005510	0.00714	mg/L	0.005510	77.21%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	11.8	0.0225	mg/L	0.00940	0.0225	mg/L	0.00940	41.68%
QC value greater than the upper limit for Se 196.026 Recovery = Not calculated								
Si 251.611†	570.4	-0.122	mg/L	0.1861	-0.122	mg/L	0.1861	152.34%
QC value within limits for Si 251.611 Recovery = Not calculated								
Sn 189.927†	132.6	0.0209	mg/L	0.00811	0.0209	mg/L	0.00811	38.73%
QC value within limits for Sn 189.927 Recovery = Not calculated								
Ti 334.940†	1342.4	0.00316	mg/L	0.000325	0.00316	mg/L	0.000325	10.29%
QC value within limits for Ti 334.940 Recovery = Not calculated								
Tl 190.801†	-8.5	-0.00843	mg/L	0.008240	-0.00843	mg/L	0.008240	97.72%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 290.880†	1465.2	0.00963	mg/L	0.001280	0.00963	mg/L	0.001280	13.29%
QC value greater than the upper limit for V 290.880 Recovery = Not calculated								
Zn 206.200†	11.6	-0.00437	mg/L	0.000231	-0.00437	mg/L	0.000231	5.29%
QC value within limits for Zn 206.200 Recovery = Not calculated								
K 766.490†	-19.4	0.0166	mg/L	0.08473	0.0166	mg/L	0.08473	511.02%
QC value within limits for K 766.490 Recovery = Not calculated								
Na 589.592†	80.1	0.0304	mg/L	0.01007	0.0304	mg/L	0.01007	33.15%
QC value within limits for Na 589.592 Recovery = Not calculated								
Sr 407.771†	34.6	-0.00029	mg/L	0.000097	-0.00029	mg/L	0.000097	33.26%
QC value within limits for Sr 407.771 Recovery = Not calculated								
Li 670.784†	-96.1	-0.00521	mg/L	0.001486	-0.00521	mg/L	0.001486	28.51%
QC value within limits for Li 670.784 Recovery = Not calculated								
P 214.914†	-2.4	-0.00160	mg/L	0.007830	-0.00160	mg/L	0.007830	490.69%
QC value within limits for P 214.914 Recovery = Not calculated								

QC Failed. Continue with analysis.

Approved: May 28, 2015

Lynn H. Rhoden

Sequence No.: 74 **Autosampler Location: 153**
Sample ID: L1505153201 **Date Collected: 5/27/2015 6:23:21 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505153201

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505153201

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3023975.8						50927.65	1.68%
YRADIAL	199363.8						771.53	0.39%
Ga 417.206	1268036.1						22867.41	1.80%
GaRADIAL	47083.1						531.73	1.13%
Ag 328.068†	2538.7	0.00893	mg/L	0.000518	0.00893	mg/L	0.000518	5.80%
Al 396.153†	98.9	0.0122	mg/L	0.07372	0.0122	mg/L	0.07372	601.93%
As 188.979†	-27.2	-0.00886	mg/L	0.008225	-0.00886	mg/L	0.008225	92.83%
Ba 233.527†	531.6	0.00895	mg/L	0.000142	0.00895	mg/L	0.000142	1.59%
Be 234.861†	-90.5	0.00008	mg/L	0.000118	0.00008	mg/L	0.000118	143.24%
B 249.677†	39333.5	0.558	mg/L	0.0075	0.558	mg/L	0.0075	1.34%
Ca 227.546†	15590.8	196	mg/L	4.6	196	mg/L	4.6	2.35%
Cd 228.802†	17.0	0.00132	mg/L	0.000794	0.00132	mg/L	0.000794	60.02%
Co 228.616†	-2.4	-0.00075	mg/L	0.000639	-0.00075	mg/L	0.000639	85.04%
Cr 267.716†	929.8	0.00636	mg/L	0.000095	0.00636	mg/L	0.000095	1.50%
Cu 327.393†	-1720.7	-0.00590	mg/L	0.001260	-0.00590	mg/L	0.001260	21.37%
Fe 239.562†	133.1	0.0251	mg/L	0.01563	0.0251	mg/L	0.01563	62.24%
Mg 279.077†	266183.0	98.6	mg/L	0.38	98.6	mg/L	0.38	0.39%
Mn 257.610†	421.6	0.00024	mg/L	0.000012	0.00024	mg/L	0.000012	5.19%
Mo 202.031†	124.6	0.0119	mg/L	0.00050	0.0119	mg/L	0.00050	4.23%
Ni 231.604†	4.7	-0.00057	mg/L	0.000324	-0.00057	mg/L	0.000324	56.45%
Pb 220.353†	34.1	0.00721	mg/L	0.000799	0.00721	mg/L	0.000799	11.09%
Sb 206.836†	-5.2	-0.00009	mg/L	0.013154	-0.00009	mg/L	0.013154	>999.9%
Se 196.026†	9.7	0.0193	mg/L	0.00203	0.0193	mg/L	0.00203	10.52%
Si 251.611†	26355.6	1.16	mg/L	0.266	1.16	mg/L	0.266	22.87%
Sn 189.927†	256.9	0.0419	mg/L	0.00265	0.0419	mg/L	0.00265	6.32%
Ti 334.940†	-12230.3	0.00112	mg/L	0.000079	0.00112	mg/L	0.000079	7.06%
Tl 190.801†	-40.1	-0.0348	mg/L	0.01227	-0.0348	mg/L	0.01227	35.23%
V 290.880†	2104.0	0.0104	mg/L	0.00111	0.0104	mg/L	0.00111	10.59%
Zn 206.200†	-132.4	-0.00934	mg/L	0.000267	-0.00934	mg/L	0.000267	2.85%
K 766.490†	2989.5	1.64	mg/L	0.024	1.64	mg/L	0.024	1.45%
Na 589.592†	1898923.6	273	mg/L	3.5	273	mg/L	3.5	1.27%
Sr 407.771†	2501781.0	3.10	mg/L	0.016	3.10	mg/L	0.016	0.50%
Li 670.784†	1584.0	0.0388	mg/L	0.00148	0.0388	mg/L	0.00148	3.80%
P 214.914†	0.1	0.00235	mg/L	0.010090	0.00235	mg/L	0.010090	428.74%

Sequence No.: 75 **Autosampler Location: 154**
Sample ID: L1505153301 **Date Collected: 5/27/2015 6:25:47 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505153301

Analyte	Back Pressure	Flow
All	230.0 kPa	0.40 L/min

Mean Data: L1505153301

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3160797.5						10718.09	0.34%
YRADIAL	202616.8						1179.41	0.58%
Ga 417.206	1332228.8						4391.97	0.33%
GaRADIAL	47669.8						130.68	0.27%
Ag 328.068†	923.0	0.00477	mg/L	0.000527	0.00477	mg/L	0.000527	11.05%

Approved: May 28, 2015

Kym H. Rhoden

Al 396.153†	271.6	0.0730	mg/L	0.04487	0.0730	mg/L	0.04487	61.43%
As 188.979†	-17.7	-0.00603	mg/L	0.001894	-0.00603	mg/L	0.001894	31.44%
Ba 233.527†	1762.8	0.0302	mg/L	0.00015	0.0302	mg/L	0.00015	0.49%
Be 234.861†	-67.3	0.00011	mg/L	0.000027	0.00011	mg/L	0.000027	25.41%
B 249.677†	19013.5	0.273	mg/L	0.0108	0.273	mg/L	0.0108	3.96%
Ca 227.546†	4471.3	56.2	mg/L	0.15	56.2	mg/L	0.15	0.26%
Cd 228.802†	14.9	0.00117	mg/L	0.000672	0.00117	mg/L	0.000672	57.51%
Co 228.616†	-2.1	-0.00078	mg/L	0.000468	-0.00078	mg/L	0.000468	60.35%
Cr 267.716†	593.4	0.00388	mg/L	0.000272	0.00388	mg/L	0.000272	7.00%
Cu 327.393†	-781.3	-0.00152	mg/L	0.001725	-0.00152	mg/L	0.001725	113.27%
Fe 239.562†	514.6	0.0921	mg/L	0.01300	0.0921	mg/L	0.01300	14.12%
Mg 279.077†	78274.4	29.0	mg/L	0.57	29.0	mg/L	0.57	1.96%
Mn 257.610†	3768.9	0.00548	mg/L	0.000028	0.00548	mg/L	0.000028	0.51%
Mo 202.031†	71.6	0.00689	mg/L	0.000605	0.00689	mg/L	0.000605	8.77%
Ni 231.604†	34.5	0.00035	mg/L	0.000368	0.00035	mg/L	0.000368	104.48%
Pb 220.353†	19.9	0.00402	mg/L	0.005425	0.00402	mg/L	0.005425	134.86%
Sb 206.836†	0.9	0.00521	mg/L	0.003771	0.00521	mg/L	0.003771	72.42%
Se 196.026†	0.9	0.00558	mg/L	0.021476	0.00558	mg/L	0.021476	385.07%
Si 251.611†	125818.9	6.13	mg/L	0.269	6.13	mg/L	0.269	4.39%
Sn 189.927†	155.4	0.0248	mg/L	0.00337	0.0248	mg/L	0.00337	13.61%
Ti 334.940†	-1577.8	0.00362	mg/L	0.000797	0.00362	mg/L	0.000797	22.01%
Tl 190.801†	-18.7	-0.0170	mg/L	0.00524	-0.0170	mg/L	0.00524	30.88%
V 290.880†	2475.7	0.0142	mg/L	0.00164	0.0142	mg/L	0.00164	11.49%
Zn 206.200†	-95.4	-0.00807	mg/L	0.000185	-0.00807	mg/L	0.000185	2.30%
K 766.490†	1567.9	0.796	mg/L	0.0711	0.796	mg/L	0.0711	8.93%
Na 589.592†	1600414.5	223	mg/L	5.3	223	mg/L	5.3	2.39%
Sr 407.771†	312204.9	0.385	mg/L	0.0054	0.385	mg/L	0.0054	1.39%
Li 670.784†	792.4	0.0181	mg/L	0.00327	0.0181	mg/L	0.00327	18.06%
P 214.914†	6.2	0.0119	mg/L	0.00929	0.0119	mg/L	0.00929	78.37%

Sequence No.: 76
Sample ID: L1505153501
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 155
Date Collected: 5/27/2015 6:28:12 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505153501

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505153501

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3198346.4						9631.71	0.30%
YRADIAL	206133.1						1625.95	0.79%
Ga 417.206	1304362.2						7739.83	0.59%
GaRADIAL	48550.9						308.99	0.64%
Ag 328.068†	434.2	0.00339	mg/L	0.000953	0.00339	mg/L	0.000953	28.08%
Al 396.153†	-15.7	-0.0277	mg/L	0.02083	-0.0277	mg/L	0.02083	75.20%
As 188.979†	-23.7	-0.00988	mg/L	0.004841	-0.00988	mg/L	0.004841	49.00%
Ba 233.527†	10964.1	0.189	mg/L	0.0019	0.189	mg/L	0.0019	0.98%
Be 234.861†	-85.5	0.00005	mg/L	0.000022	0.00005	mg/L	0.000022	44.85%
B 249.677†	9714.1	0.142	mg/L	0.0064	0.142	mg/L	0.0064	4.48%
Ca 227.546†	3777.0	47.5	mg/L	0.68	47.5	mg/L	0.68	1.43%
Cd 228.802†	5.9	0.00064	mg/L	0.000433	0.00064	mg/L	0.000433	67.13%
Co 228.616†	-1.5	-0.00078	mg/L	0.000710	-0.00078	mg/L	0.000710	90.49%
Cr 267.716†	299.0	0.00171	mg/L	0.000168	0.00171	mg/L	0.000168	9.85%
Cu 327.393†	-684.0	-0.00106	mg/L	0.000961	-0.00106	mg/L	0.000961	90.55%
Fe 239.562†	1165.0	0.204	mg/L	0.0018	0.204	mg/L	0.0018	0.90%
Mg 279.077†	74096.7	27.4	mg/L	0.40	27.4	mg/L	0.40	1.46%
Mn 257.610†	33647.2	0.0523	mg/L	0.00062	0.0523	mg/L	0.00062	1.19%
Mo 202.031†	70.8	0.00682	mg/L	0.000974	0.00682	mg/L	0.000974	14.28%
Ni 231.604†	-4.8	-0.00088	mg/L	0.001049	-0.00088	mg/L	0.001049	119.28%
Pb 220.353†	22.1	0.00446	mg/L	0.001416	0.00446	mg/L	0.001416	31.76%
Sb 206.836†	1.2	0.00552	mg/L	0.003047	0.00552	mg/L	0.003047	55.20%
Se 196.026†	8.4	0.0173	mg/L	0.02111	0.0173	mg/L	0.02111	122.00%
Si 251.611†	-13571.7	-0.828	mg/L	0.2784	-0.828	mg/L	0.2784	33.63%
Sn 189.927†	59.5	0.00857	mg/L	0.001572	0.00857	mg/L	0.001572	18.35%
Ti 334.940†	-2690.9	0.00186	mg/L	0.000211	0.00186	mg/L	0.000211	11.33%

Approved: May 28, 2015

Tl 190.801†	-12.0	-0.0115	mg/L	0.00718	-0.0115	mg/L	0.00718	62.62%
V 290.880†	565.4	0.00419	mg/L	0.001527	0.00419	mg/L	0.001527	36.45%
Zn 206.200†	-102.0	-0.00830	mg/L	0.000098	-0.00830	mg/L	0.000098	1.19%
K 766.490†	903.7	0.180	mg/L	0.1067	0.180	mg/L	0.1067	59.43%
Na 589.592†	2647008.9	420	mg/L	8.2	420	mg/L	8.2	1.96%
Sr 407.771†	176342.2	0.217	mg/L	0.0031	0.217	mg/L	0.0031	1.42%
Li 670.784†	418.8	0.00828	mg/L	0.002063	0.00828	mg/L	0.002063	24.91%
P 214.914†	7.3	0.0136	mg/L	0.00630	0.0136	mg/L	0.00630	46.42%

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Sequence No.: 77 **Autosampler Location: 156**
Sample ID: L1505153801 **Date Collected: 5/27/2015 6:30:38 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505153801

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505153801

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3372933.6						28936.14	0.86%
YRADIAL	219636.6						3443.53	1.57%
Ga 417.206	1487130.5						14146.71	0.95%
GaRADIAL	52338.8						1052.06	2.01%
Ag 328.068†	660.4	0.00445	mg/L	0.000461	0.00445	mg/L	0.000461	10.36%
Al 396.153†	447.6	0.135	mg/L	0.0364	0.135	mg/L	0.0364	26.96%
As 188.979†	-22.9	-0.00880	mg/L	0.003669	-0.00880	mg/L	0.003669	41.71%
Ba 233.527†	8593.1	0.148	mg/L	0.0017	0.148	mg/L	0.0017	1.16%
Be 234.861†	85.2	0.00011	mg/L	0.000036	0.00011	mg/L	0.000036	32.96%
B 249.677†	5917.9	0.0925	mg/L	0.00325	0.0925	mg/L	0.00325	3.52%
Ca 227.546†	5025.7	63.2	mg/L	0.94	63.2	mg/L	0.94	1.49%
Cd 228.802†	2.7	0.00045	mg/L	0.000177	0.00045	mg/L	0.000177	38.87%
Co 228.616†	-1.6	-0.00081	mg/L	0.000718	-0.00081	mg/L	0.000718	88.85%
Cr 267.716†	338.7	0.00197	mg/L	0.000218	0.00197	mg/L	0.000218	11.08%
Cu 327.393†	-763.5	-0.00129	mg/L	0.001732	-0.00129	mg/L	0.001732	134.61%
Fe 239.562†	6962.1	1.20	mg/L	0.028	1.20	mg/L	0.028	2.35%
Mg 279.077†	97257.2	36.0	mg/L	0.49	36.0	mg/L	0.49	1.37%
Mn 257.610†	54257.8	0.0846	mg/L	0.00135	0.0846	mg/L	0.00135	1.59%
Mo 202.031†	63.0	0.00606	mg/L	0.000417	0.00606	mg/L	0.000417	6.89%
Ni 231.604†	5.0	-0.00057	mg/L	0.000253	-0.00057	mg/L	0.000253	44.24%
Pb 220.353†	26.7	0.00549	mg/L	0.001375	0.00549	mg/L	0.001375	25.07%
Sb 206.836†	-7.2	-0.00175	mg/L	0.004219	-0.00175	mg/L	0.004219	241.69%
Se 196.026†	-2.5	0.00012	mg/L	0.005850	0.00012	mg/L	0.005850	>999.9%
Si 251.611†	-133480.5	-6.81	mg/L	0.070	-6.81	mg/L	0.070	1.03%
Sn 189.927†	-16.1	-0.00421	mg/L	0.001792	-0.00421	mg/L	0.001792	42.60%
Ti 334.940†	-2266.8	0.00333	mg/L	0.000227	0.00333	mg/L	0.000227	6.82%
Tl 190.801†	-19.7	-0.0179	mg/L	0.00852	-0.0179	mg/L	0.00852	47.49%
V 290.880†	-1089.2	-0.00459	mg/L	0.001473	-0.00459	mg/L	0.001473	32.06%
Zn 206.200†	-152.2	-0.00996	mg/L	0.000187	-0.00996	mg/L	0.000187	1.88%
K 766.490†	1372.6	0.885	mg/L	0.0492	0.885	mg/L	0.0492	5.56%
Na 589.592†	83678.1	10.3	mg/L	0.10	10.3	mg/L	0.10	1.01%
Sr 407.771†	361085.8	0.446	mg/L	0.0024	0.446	mg/L	0.0024	0.53%
Li 670.784†	98.7	-0.00011	mg/L	0.000508	-0.00011	mg/L	0.000508	479.18%
P 214.914†	36.5	0.0593	mg/L	0.01263	0.0593	mg/L	0.01263	21.28%

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Sequence No.: 78 **Autosampler Location: 157**
Sample ID: L1505154301 **Date Collected: 5/27/2015 6:33:01 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505154301

Analyte	Back Pressure	Flow
All	230.0 kPa	0.40 L/min

Approved: May 28, 2015

Lynn H. Rhoden

Mean Data: L1505154301

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3209990.1						17212.25	0.54%
YRADIAL	215385.3						2633.80	1.22%
Ga 417.206	1346532.6						2824.35	0.21%
GaRADIAL	50530.1						459.01	0.91%
Ag 328.068†	72.3	0.00403	mg/L	0.000417	0.00403	mg/L	0.000417	10.34%
Al 396.153†	278.3	0.0759	mg/L	0.01478	0.0759	mg/L	0.01478	19.48%
As 188.979†	3.5	0.00797	mg/L	0.003309	0.00797	mg/L	0.003309	41.53%
Ba 233.527†	16318.2	0.282	mg/L	0.0017	0.282	mg/L	0.0017	0.62%
Be 234.861†	498.6	0.00016	mg/L	0.000209	0.00016	mg/L	0.000209	129.47%
B 249.677†	10436.6	0.167	mg/L	0.0051	0.167	mg/L	0.0051	3.06%
Ca 227.546†	4287.7	53.9	mg/L	0.62	53.9	mg/L	0.62	1.14%
Cd 228.802†	8.2	0.00070	mg/L	0.000049	0.00070	mg/L	0.000049	7.01%
Co 228.616†	-2.2	-0.00097	mg/L	0.000643	-0.00097	mg/L	0.000643	66.26%
Cr 267.716†	273.1	0.00141	mg/L	0.000089	0.00141	mg/L	0.000089	6.33%
Cu 327.393†	-756.0	-0.00084	mg/L	0.000852	-0.00084	mg/L	0.000852	101.88%
Fe 239.562†	23781.3	4.09	mg/L	0.045	4.09	mg/L	0.045	1.09%
Mg 279.077†	84230.1	31.2	mg/L	0.39	31.2	mg/L	0.39	1.24%
Mn 257.610†	282495.7	0.442	mg/L	0.0041	0.442	mg/L	0.0041	0.92%
Mo 202.031†	58.8	0.00569	mg/L	0.000369	0.00569	mg/L	0.000369	6.48%
Ni 231.604†	-3.6	-0.00084	mg/L	0.000163	-0.00084	mg/L	0.000163	19.44%
Pb 220.353†	19.4	0.00351	mg/L	0.003859	0.00351	mg/L	0.003859	109.79%
Sb 206.836†	-8.8	-0.00299	mg/L	0.002680	-0.00299	mg/L	0.002680	89.54%
Se 196.026†	-3.3	-0.00162	mg/L	0.005222	-0.00162	mg/L	0.005222	322.89%
Si 251.611†	-71365.8	-3.71	mg/L	0.186	-3.71	mg/L	0.186	5.01%
Sn 189.927†	-22.1	-0.00522	mg/L	0.000909	-0.00522	mg/L	0.000909	17.40%
Ti 334.940†	-3239.2	0.00169	mg/L	0.000269	0.00169	mg/L	0.000269	15.96%
Tl 190.801†	-21.3	-0.0196	mg/L	0.00444	-0.0196	mg/L	0.00444	22.67%
V 290.880†	-792.0	-0.00235	mg/L	0.002370	-0.00235	mg/L	0.002370	100.83%
Zn 206.200†	-87.3	-0.00743	mg/L	0.000250	-0.00743	mg/L	0.000250	3.36%
K 766.490†	640.1	0.292	mg/L	0.0113	0.292	mg/L	0.0113	3.89%
Na 589.592†	1066888.1	141	mg/L	2.8	141	mg/L	2.8	1.99%
Sr 407.771†	300232.7	0.371	mg/L	0.0091	0.371	mg/L	0.0091	2.44%
Li 670.784†	217.0	0.00300	mg/L	0.002496	0.00300	mg/L	0.002496	83.33%
P 214.914†	57.0	0.0915	mg/L	0.01851	0.0915	mg/L	0.01851	20.23%

Sequence No.: 79
Sample ID: L1505154302
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 158
Date Collected: 5/27/2015 6:35:25 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505154302

Analyte	Back Pressure	Flow
All	230.0 kPa	0.40 L/min

Mean Data: L1505154302

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3250509.9						9820.83	0.30%
YRADIAL	213367.6						2994.81	1.40%
Ga 417.206	1359777.0						5153.14	0.38%
GaRADIAL	49841.0						471.48	0.95%
Ag 328.068†	-114.3	0.00349	mg/L	0.000524	0.00349	mg/L	0.000524	15.01%
Al 396.153†	333.7	0.0953	mg/L	0.02345	0.0953	mg/L	0.02345	24.62%
As 188.979†	-4.7	0.00288	mg/L	0.007155	0.00288	mg/L	0.007155	248.37%
Ba 233.527†	16253.9	0.281	mg/L	0.0007	0.281	mg/L	0.0007	0.25%
Be 234.861†	518.8	0.00019	mg/L	0.000741	0.00019	mg/L	0.000741	381.55%
B 249.677†	9345.8	0.152	mg/L	0.0030	0.152	mg/L	0.0030	1.95%
Ca 227.546†	4283.2	53.9	mg/L	0.10	53.9	mg/L	0.10	0.19%
Cd 228.802†	4.2	0.00049	mg/L	0.000012	0.00049	mg/L	0.000012	2.39%
Co 228.616†	3.5	-0.00057	mg/L	0.000444	-0.00057	mg/L	0.000444	78.16%
Cr 267.716†	253.3	0.00126	mg/L	0.000177	0.00126	mg/L	0.000177	14.05%
Cu 327.393†	-1139.3	-0.00261	mg/L	0.000932	-0.00261	mg/L	0.000932	35.75%
Fe 239.562†	23897.2	4.11	mg/L	0.040	4.11	mg/L	0.040	0.97%
Mg 279.077†	84782.2	31.4	mg/L	0.19	31.4	mg/L	0.19	0.60%

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Mn 257.610†	287654.5	0.450	mg/L	0.0021	0.450	mg/L	0.0021	0.47%
Mo 202.031†	76.1	0.00734	mg/L	0.000839	0.00734	mg/L	0.000839	11.43%
Ni 231.604†	18.1	-0.00016	mg/L	0.000306	-0.00016	mg/L	0.000306	189.69%
Pb 220.353†	25.1	0.00480	mg/L	0.002150	0.00480	mg/L	0.002150	44.75%
Sb 206.836†	-4.2	0.00094	mg/L	0.008151	0.00094	mg/L	0.008151	868.48%
Se 196.026†	-4.2	-0.00298	mg/L	0.002136	-0.00298	mg/L	0.002136	71.62%
Si 251.611†	-63798.1	-3.33	mg/L	0.309	-3.33	mg/L	0.309	9.25%
Sn 189.927†	-28.1	-0.00625	mg/L	0.002394	-0.00625	mg/L	0.002394	38.33%
Ti 334.940†	-2902.8	0.00205	mg/L	0.000630	0.00205	mg/L	0.000630	30.80%
Tl 190.801†	-16.9	-0.0160	mg/L	0.00754	-0.0160	mg/L	0.00754	47.26%
V 290.880†	-756.5	-0.00216	mg/L	0.001530	-0.00216	mg/L	0.001530	70.73%
Zn 206.200†	-102.1	-0.00795	mg/L	0.000114	-0.00795	mg/L	0.000114	1.44%
K 766.490†	746.1	0.357	mg/L	0.0165	0.357	mg/L	0.0165	4.61%
Na 589.592†	1079419.7	143	mg/L	3.7	143	mg/L	3.7	2.56%
Sr 407.771†	303902.9	0.375	mg/L	0.0087	0.375	mg/L	0.0087	2.32%
Li 670.784†	337.8	0.00616	mg/L	0.000946	0.00616	mg/L	0.000946	15.37%
P 214.914†	58.4	0.0938	mg/L	0.02716	0.0938	mg/L	0.02716	28.95%

Sequence No.: 80 **Autosampler Location: 159**
Sample ID: L1505154401 **Date Collected: 5/27/2015 6:37:49 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505154401

Analyte	Back Pressure	Flow
All	230.0 kPa	0.40 L/min

Mean Data: L1505154401

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3243732.2						39958.92	1.23%
YRADIAL	210646.7						1007.03	0.48%
Ga 417.206	1323402.9						21220.91	1.60%
GaRADIAL	49631.2						139.45	0.28%
Ag 328.068†	758.9	0.00430	mg/L	0.000071	0.00430	mg/L	0.000071	1.65%
Al 396.153†	327.7	0.0927	mg/L	0.04518	0.0927	mg/L	0.04518	48.72%
As 188.979†	-14.9	-0.00437	mg/L	0.002152	-0.00437	mg/L	0.002152	49.19%
Ba 233.527†	990.1	0.0169	mg/L	0.00034	0.0169	mg/L	0.00034	2.03%
Be 234.861†	-86.8	0.00007	mg/L	0.000071	0.00007	mg/L	0.000071	95.41%
B 249.677†	5054.3	0.0761	mg/L	0.00326	0.0761	mg/L	0.00326	4.28%
Ca 227.546†	4274.8	53.8	mg/L	0.83	53.8	mg/L	0.83	1.54%
Cd 228.802†	4.5	0.00054	mg/L	0.000504	0.00054	mg/L	0.000504	93.84%
Co 228.616†	-7.6	-0.00116	mg/L	0.000544	-0.00116	mg/L	0.000544	46.96%
Cr 267.716†	441.4	0.00276	mg/L	0.000095	0.00276	mg/L	0.000095	3.45%
Cu 327.393†	-854.3	-0.00186	mg/L	0.001198	-0.00186	mg/L	0.001198	64.31%
Fe 239.562†	425.2	0.0770	mg/L	0.00017	0.0770	mg/L	0.00017	0.22%
Mg 279.077†	42694.4	15.8	mg/L	0.23	15.8	mg/L	0.23	1.47%
Mn 257.610†	1855.2	0.00248	mg/L	0.000039	0.00248	mg/L	0.000039	1.55%
Mo 202.031†	58.4	0.00564	mg/L	0.001391	0.00564	mg/L	0.001391	24.67%
Ni 231.604†	0.7	-0.00071	mg/L	0.000489	-0.00071	mg/L	0.000489	69.23%
Pb 220.353†	19.9	0.00404	mg/L	0.003400	0.00404	mg/L	0.003400	84.12%
Sb 206.836†	0.2	0.00459	mg/L	0.007379	0.00459	mg/L	0.007379	160.92%
Se 196.026†	-3.7	-0.00169	mg/L	0.014118	-0.00169	mg/L	0.014118	835.80%
Si 251.611†	-98619.7	-5.07	mg/L	0.196	-5.07	mg/L	0.196	3.86%
Sn 189.927†	-40.6	-0.00834	mg/L	0.002323	-0.00834	mg/L	0.002323	27.83%
Ti 334.940†	-699.7	0.00441	mg/L	0.001101	0.00441	mg/L	0.001101	24.97%
Tl 190.801†	-12.9	-0.0121	mg/L	0.00701	-0.0121	mg/L	0.00701	57.91%
V 290.880†	1084.8	0.00722	mg/L	0.000556	0.00722	mg/L	0.000556	7.70%
Zn 206.200†	-107.8	-0.00851	mg/L	0.000369	-0.00851	mg/L	0.000369	4.34%
K 766.490†	916.4	0.317	mg/L	0.0363	0.317	mg/L	0.0363	11.46%
Na 589.592†	2000182.0	290	mg/L	2.8	290	mg/L	2.8	0.96%
Sr 407.771†	166077.7	0.204	mg/L	0.0017	0.204	mg/L	0.0017	0.85%
Li 670.784†	330.9	0.00598	mg/L	0.004397	0.00598	mg/L	0.004397	73.53%
P 214.914†	13.0	0.0226	mg/L	0.00454	0.0226	mg/L	0.00454	20.12%

Sequence No.: 81 **Autosampler Location: 160**
Sample ID: L1505154402 **Date Collected: 5/27/2015 6:40:14 PM**

Approved: May 28, 2015

Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505154402

Analyte	Back Pressure	Flow
All	230.0 kPa	0.40 L/min

Mean Data: L1505154402

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3222166.0						85779.90	2.66%
YRADIAL	215327.2						2552.36	1.19%
Ga 417.206	1311054.7						31519.31	2.40%
GaRADIAL	50597.3						487.46	0.96%
Ag 328.068†	574.8	0.00376	mg/L	0.001685	0.00376	mg/L	0.001685	44.78%
Al 396.153†	282.1	0.0767	mg/L	0.01677	0.0767	mg/L	0.01677	21.85%
As 188.979†	-22.1	-0.00878	mg/L	0.000836	-0.00878	mg/L	0.000836	9.52%
Ba 233.527†	1009.7	0.0172	mg/L	0.00050	0.0172	mg/L	0.00050	2.91%
Be 234.861†	-140.3	-0.00002	mg/L	0.000065	-0.00002	mg/L	0.000065	281.53%
B 249.677†	4769.9	0.0721	mg/L	0.00168	0.0721	mg/L	0.00168	2.33%
Ca 227.546†	4314.1	54.3	mg/L	0.93	54.3	mg/L	0.93	1.72%
Cd 228.802†	2.1	0.00041	mg/L	0.000287	0.00041	mg/L	0.000287	69.69%
Co 228.616†	-9.3	-0.00127	mg/L	0.000427	-0.00127	mg/L	0.000427	33.53%
Cr 267.716†	411.6	0.00254	mg/L	0.000254	0.00254	mg/L	0.000254	10.00%
Cu 327.393†	-848.6	-0.00184	mg/L	0.000338	-0.00184	mg/L	0.000338	18.42%
Fe 239.562†	433.0	0.0783	mg/L	0.00258	0.0783	mg/L	0.00258	3.30%
Mg 279.077†	42646.1	15.8	mg/L	0.15	15.8	mg/L	0.15	0.96%
Mn 257.610†	1837.8	0.00246	mg/L	0.000042	0.00246	mg/L	0.000042	1.70%
Mo 202.031†	70.6	0.00679	mg/L	0.001172	0.00679	mg/L	0.001172	17.25%
Ni 231.604†	-5.3	-0.00089	mg/L	0.000791	-0.00089	mg/L	0.000791	88.56%
Pb 220.353†	21.4	0.00436	mg/L	0.003154	0.00436	mg/L	0.003154	72.29%
Sb 206.836†	2.7	0.00681	mg/L	0.006702	0.00681	mg/L	0.006702	98.45%
Se 196.026†	-3.2	-0.00089	mg/L	0.006820	-0.00089	mg/L	0.006820	764.72%
Si 251.611†	-99787.5	-5.13	mg/L	0.279	-5.13	mg/L	0.279	5.44%
Sn 189.927†	-46.0	-0.00927	mg/L	0.002421	-0.00927	mg/L	0.002421	26.12%
Ti 334.940†	-1307.5	0.00379	mg/L	0.000587	0.00379	mg/L	0.000587	15.51%
Tl 190.801†	-17.5	-0.0160	mg/L	0.00697	-0.0160	mg/L	0.00697	43.62%
V 290.880†	1191.0	0.00778	mg/L	0.002137	0.00778	mg/L	0.002137	27.46%
Zn 206.200†	44.2	-0.00321	mg/L	0.000199	-0.00321	mg/L	0.000199	6.19%
K 766.490†	918.7	0.317	mg/L	0.0231	0.317	mg/L	0.0231	7.28%
Na 589.592†	2006602.7	292	mg/L	2.5	292	mg/L	2.5	0.87%
Sr 407.771†	165244.5	0.203	mg/L	0.0010	0.203	mg/L	0.0010	0.51%
Li 670.784†	439.3	0.00882	mg/L	0.002428	0.00882	mg/L	0.002428	27.53%
P 214.914†	21.8	0.0363	mg/L	0.00681	0.0363	mg/L	0.00681	18.77%

Sequence No.: 82 **Autosampler Location: 7**
Sample ID: CCV **Date Collected: 5/27/2015 6:42:39 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3245988.3						67018.62	2.06%
YRADIAL	213641.9						2885.23	1.35%
Ga 417.206	1369085.1						35249.38	2.57%
GaRADIAL	49886.6						230.67	0.46%
Ag 328.068†	129442.1	0.385	mg/L	0.0060	0.385	mg/L	0.0060	1.55%
QC value within limits for Ag 328.068 Recovery = 96.25%								
Al 396.153†	28256.0	9.85	mg/L	0.096	9.85	mg/L	0.096	0.97%
QC value within limits for Al 396.153 Recovery = 98.52%								

Approved: May 28, 2015

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As 188.979†              581.3       0.357 mg/L        0.0119       0.357 mg/L        0.0119   3.34%
   QC value less than the lower limit for As 188.979  Recovery = 89.20%
Ba 233.527†            54593.4       0.944 mg/L        0.0108       0.944 mg/L        0.0108   1.14%
   QC value within limits for Ba 233.527  Recovery = 94.38%
Be 234.861†            25438.9      0.0458 mg/L       0.00056      0.0458 mg/L       0.00056   1.21%
   QC value within limits for Be 234.861  Recovery = 91.68%
B 249.677†             27132.5       0.400 mg/L        0.0120       0.400 mg/L        0.0120   3.01%
   QC value less than the lower limit for B 249.677  Recovery = 79.92%
Ca 227.546†              721.4        9.19 mg/L         0.269        9.19 mg/L         0.269   2.93%
   QC value within limits for Ca 227.546  Recovery = 91.86%
Cd 228.802†              766.1      0.0452 mg/L       0.00143      0.0452 mg/L       0.00143   3.16%
   QC value within limits for Cd 228.802  Recovery = 90.36%
Co 228.616†             2704.9       0.189 mg/L        0.0047       0.189 mg/L        0.0047   2.47%
   QC value within limits for Co 228.616  Recovery = 94.40%
Cr 267.716†            65429.3       0.481 mg/L        0.0052       0.481 mg/L        0.0052   1.09%
   QC value within limits for Cr 267.716  Recovery = 96.27%
Cu 327.393†           102309.5       0.478 mg/L        0.0079       0.478 mg/L        0.0079   1.65%
   QC value within limits for Cu 327.393  Recovery = 95.52%
Fe 239.562†            23043.0        3.96 mg/L         0.040        3.96 mg/L         0.040   1.01%
   QC value within limits for Fe 239.562  Recovery = 99.10%
Mg 279.077†            26855.1        9.93 mg/L         0.074        9.93 mg/L         0.074   0.75%
   QC value within limits for Mg 279.077  Recovery = 99.33%
Mn 257.610†           308356.9       0.483 mg/L        0.0057       0.483 mg/L        0.0057   1.17%
   QC value within limits for Mn 257.610  Recovery = 96.59%
Mo 202.031†             9426.0       0.898 mg/L        0.0177       0.898 mg/L        0.0177   1.98%
   QC value less than the lower limit for Mo 202.031  Recovery = 89.77%
Ni 231.604†            15138.0       0.473 mg/L        0.0103       0.473 mg/L        0.0103   2.19%
   QC value within limits for Ni 231.604  Recovery = 94.63%
Pb 220.353†             2078.1       0.466 mg/L        0.0108       0.466 mg/L        0.0108   2.31%
   QC value within limits for Pb 220.353  Recovery = 93.26%
Sb 206.836†             1224.5        1.06 mg/L         0.029        1.06 mg/L         0.029   2.71%
   QC value less than the lower limit for Sb 206.836  Recovery = 88.20%
Se 196.026†              241.4       0.384 mg/L        0.0179       0.384 mg/L        0.0179   4.68%
   QC value within limits for Se 196.026  Recovery = 95.92%
Si 251.611†          -102927.2       -5.30 mg/L         0.155       -5.30 mg/L         0.155   2.93%
   QC value less than the lower limit for Si 251.611  Recovery = -105.94%
Sn 189.927†             5420.0       0.915 mg/L        0.0210       0.915 mg/L        0.0210   2.30%
   QC value within limits for Sn 189.927  Recovery = 91.49%
Ti 334.940†           893431.2       0.964 mg/L        0.0113       0.964 mg/L        0.0113   1.18%
   QC value within limits for Ti 334.940  Recovery = 96.44%
Tl 190.801†              564.5       0.477 mg/L        0.0108       0.477 mg/L        0.0108   2.27%
   QC value within limits for Tl 190.801  Recovery = 95.38%
V 290.880†            180974.0       0.959 mg/L        0.0135       0.959 mg/L        0.0135   1.41%
   QC value within limits for V 290.880  Recovery = 95.94%
Zn 206.200†            26501.7       0.924 mg/L        0.0187       0.924 mg/L        0.0187   2.02%
   QC value within limits for Zn 206.200  Recovery = 92.40%
K 766.490†             75382.2        48.0 mg/L          0.31        48.0 mg/L          0.31   0.65%
   QC value within limits for K 766.490  Recovery = 96.02%
Na 589.592†           392286.6        49.3 mg/L          0.62        49.3 mg/L          0.62   1.26%
   QC value within limits for Na 589.592  Recovery = 98.50%
Sr 407.771†           791341.4       0.981 mg/L        0.0280       0.981 mg/L        0.0280   2.86%
   QC value within limits for Sr 407.771  Recovery = 98.15%
Li 670.784†            38310.8        1.00 mg/L         0.005        1.00 mg/L         0.005   0.52%
   QC value within limits for Li 670.784  Recovery = 100.13%
P 214.914†              5821.4        9.13 mg/L         0.183        9.13 mg/L         0.183   2.00%
   QC value within limits for P 214.914  Recovery = 91.30%
QC Failed.  Continue with analysis.

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Sequence No.: 83                                    Autosampler Location: 8
Sample ID: CCB                                      Date Collected: 5/27/2015 6:45:07 PM
Analyst:                                            Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

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Nebulizer Parameters: CCB
Analyte                 Back Pressure    Flow
All                     230.0 kPa        0.40 L/min

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Mean Data: CCB
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Approved: May 28, 2015

Lynn H. Rhoden

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3461158.8						17915.87	0.52%
YRADIAL	227625.6						2882.32	1.27%
Ga 417.206	1596844.1						5697.62	0.36%
GaRADIAL	55103.2						580.83	1.05%
Ag 328.068†	-246.0	0.00135	mg/L	0.000498	0.00135	mg/L	0.000498	36.93%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	-3.6	-0.0233	mg/L	0.00380	-0.0233	mg/L	0.00380	16.35%
QC value within limits for Al 396.153 Recovery = Not calculated								
As 188.979†	-7.2	-0.00079	mg/L	0.002203	-0.00079	mg/L	0.002203	277.75%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	-5.6	-0.00034	mg/L	0.000113	-0.00034	mg/L	0.000113	33.14%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 234.861†	-31.4	0.00019	mg/L	0.000058	0.00019	mg/L	0.000058	30.39%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	589.6	0.0130	mg/L	0.00284	0.0130	mg/L	0.00284	21.94%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	-6.5	-0.0261	mg/L	0.09448	-0.0261	mg/L	0.09448	361.34%
QC value within limits for Ca 227.546 Recovery = Not calculated								
Cd 228.802†	-3.1	0.00005	mg/L	0.000259	0.00005	mg/L	0.000259	484.88%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	-11.9	-0.00147	mg/L	0.000752	-0.00147	mg/L	0.000752	51.36%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	-11.7	-0.00057	mg/L	0.000510	-0.00057	mg/L	0.000510	88.95%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	-152.5	0.00137	mg/L	0.001226	0.00137	mg/L	0.001226	89.16%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	0.4	0.00426	mg/L	0.000940	0.00426	mg/L	0.000940	22.05%
QC value within limits for Fe 239.562 Recovery = Not calculated								
Mg 279.077†	15.3	-0.00889	mg/L	0.003815	-0.00889	mg/L	0.003815	42.93%
QC value within limits for Mg 279.077 Recovery = Not calculated								
Mn 257.610†	22.4	-0.00039	mg/L	0.000024	-0.00039	mg/L	0.000024	6.07%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	5.0	0.00055	mg/L	0.000864	0.00055	mg/L	0.000864	158.16%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	-0.8	-0.00076	mg/L	0.000216	-0.00076	mg/L	0.000216	28.51%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	-1.4	-0.00075	mg/L	0.000299	-0.00075	mg/L	0.000299	39.98%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	1.6	0.00585	mg/L	0.002422	0.00585	mg/L	0.002422	41.43%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	6.6	0.0145	mg/L	0.00584	0.0145	mg/L	0.00584	40.35%
QC value within limits for Se 196.026 Recovery = Not calculated								
Si 251.611†	-15599.9	-0.929	mg/L	0.1229	-0.929	mg/L	0.1229	13.22%
QC value less than the lower limit for Si 251.611 Recovery = Not calculated								
Sn 189.927†	-14.7	-0.00397	mg/L	0.001706	-0.00397	mg/L	0.001706	42.91%
QC value within limits for Sn 189.927 Recovery = Not calculated								
Ti 334.940†	316.9	0.00205	mg/L	0.000150	0.00205	mg/L	0.000150	7.31%
QC value within limits for Ti 334.940 Recovery = Not calculated								
Tl 190.801†	1.1	-0.00049	mg/L	0.003804	-0.00049	mg/L	0.003804	769.20%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 290.880†	-143.6	0.00112	mg/L	0.000383	0.00112	mg/L	0.000383	34.25%
QC value within limits for V 290.880 Recovery = Not calculated								
Zn 206.200†	-19.9	-0.00548	mg/L	0.000288	-0.00548	mg/L	0.000288	5.26%
QC value within limits for Zn 206.200 Recovery = Not calculated								
K 766.490†	52.9	0.0621	mg/L	0.03083	0.0621	mg/L	0.03083	49.64%
QC value within limits for K 766.490 Recovery = Not calculated								
Na 589.592†	822.8	0.121	mg/L	0.0220	0.121	mg/L	0.0220	18.17%
QC value within limits for Na 589.592 Recovery = Not calculated								
Sr 407.771†	211.6	-0.00007	mg/L	0.000089	-0.00007	mg/L	0.000089	123.62%
QC value within limits for Sr 407.771 Recovery = Not calculated								
Li 670.784†	-29.4	-0.00346	mg/L	0.003371	-0.00346	mg/L	0.003371	97.36%
QC value within limits for Li 670.784 Recovery = Not calculated								
P 214.914†	-5.1	-0.00588	mg/L	0.007095	-0.00588	mg/L	0.007095	120.74%
QC value within limits for P 214.914 Recovery = Not calculated								

QC Failed. Continue with analysis.

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Sequence No.: 84 **Autosampler Location: 164**
Sample ID: L1505157002 **Date Collected: 5/27/2015 6:48:30 PM**
Analyst: KHR **Data Type: Original**

Approved: May 28, 2015

Kym H. Rhoden

Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505157002

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505157002

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3378915.2						25784.53	0.76%
YRADIAL	225110.1						3043.75	1.35%
Ga 417.206	1476996.5						3793.86	0.26%
GaRADIAL	54011.1						765.65	1.42%
Ag 328.068†	-1357.5	0.00417	mg/L	0.000682	0.00417	mg/L	0.000682	16.38%
Al 396.153†	8598.2	3.00	mg/L	0.016	3.00	mg/L	0.016	0.53%
As 188.979†	-4.4	0.00635	mg/L	0.007361	0.00635	mg/L	0.007361	116.00%
Ba 233.527†	13474.7	0.232	mg/L	0.0023	0.232	mg/L	0.0023	0.98%
Be 234.861†	1922.4	0.00063	mg/L	0.000071	0.00063	mg/L	0.000071	11.32%
B 249.677†	-3819.1	0.0106	mg/L	0.00070	0.0106	mg/L	0.00070	6.60%
Ca 227.546†	6099.7	76.7	mg/L	0.22	76.7	mg/L	0.22	0.29%
Cd 228.802†	10.3	0.00087	mg/L	0.000464	0.00087	mg/L	0.000464	53.48%
Co 228.616†	83.0	0.00464	mg/L	0.000148	0.00464	mg/L	0.000148	3.18%
Cr 267.716†	1222.0	0.00808	mg/L	0.000180	0.00808	mg/L	0.000180	2.23%
Cu 327.393†	591.0	0.00713	mg/L	0.001693	0.00713	mg/L	0.001693	23.75%
Fe 239.562†	91527.8	15.7	mg/L	0.15	15.7	mg/L	0.15	0.94%
Mg 279.077†	61673.1	22.8	mg/L	0.20	22.8	mg/L	0.20	0.87%
Mn 257.610†	5632130.6	8.83	mg/L	0.026	8.83	mg/L	0.026	0.30%
Mo 202.031†	67.6	0.00809	mg/L	0.001143	0.00809	mg/L	0.001143	14.13%
Ni 231.604†	275.6	0.00790	mg/L	0.000249	0.00790	mg/L	0.000249	3.16%
Pb 220.353†	67.2	0.00940	mg/L	0.004678	0.00940	mg/L	0.004678	49.77%
Sb 206.836†	-2.4	0.00287	mg/L	0.002521	0.00287	mg/L	0.002521	87.81%
Se 196.026†	-6.9	-0.0103	mg/L	0.00806	-0.0103	mg/L	0.00806	77.98%
Si 251.611†	37180.4	1.70	mg/L	0.368	1.70	mg/L	0.368	21.58%
Sn 189.927†	-55.6	-0.0109	mg/L	0.00174	-0.0109	mg/L	0.00174	15.94%
Ti 334.940†	38981.7	0.0486	mg/L	0.00019	0.0486	mg/L	0.00019	0.40%
Tl 190.801†	-28.7	-0.0338	mg/L	0.00439	-0.0338	mg/L	0.00439	13.00%
V 290.880†	465.0	0.00675	mg/L	0.001588	0.00675	mg/L	0.001588	23.50%
Zn 206.200†	1022.8	0.0324	mg/L	0.00017	0.0324	mg/L	0.00017	0.53%
K 766.490†	1780.4	1.13	mg/L	0.051	1.13	mg/L	0.051	4.54%
Na 589.592†	164744.6	20.4	mg/L	0.12	20.4	mg/L	0.12	0.58%
Sr 407.771†	157543.0	0.193	mg/L	0.0006	0.193	mg/L	0.0006	0.32%
Li 670.784†	273.8	0.00448	mg/L	0.002949	0.00448	mg/L	0.002949	65.78%
P 214.914†	224.0	0.353	mg/L	0.0058	0.353	mg/L	0.0058	1.65%

Sequence No.: 85 **Autosampler Location: 165**
Sample ID: L1505157003 **Date Collected: 5/27/2015 6:50:54 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505157003

Analyte	Back Pressure	Flow
All	230.0 kPa	0.40 L/min

Mean Data: L1505157003

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3306333.9						3231.23	0.10%
YRADIAL	222997.1						1439.47	0.65%
Ga 417.206	1425250.5						2026.00	0.14%
GaRADIAL	52487.7						364.91	0.70%
Ag 328.068†	-232.3	0.00444	mg/L	0.000640	0.00444	mg/L	0.000640	14.42%
Al 396.153†	140.4	0.0279	mg/L	0.03818	0.0279	mg/L	0.03818	136.65%
As 188.979†	-7.0	0.00300	mg/L	0.005374	0.00300	mg/L	0.005374	179.15%
Ba 233.527†	11397.8	0.197	mg/L	0.0009	0.197	mg/L	0.0009	0.45%
Be 234.861†	752.6	0.00004	mg/L	0.000026	0.00004	mg/L	0.000026	60.96%

Approved: May 28, 2015

Kym H. Rhoden

B 249.677†	-2578.1	-0.00119	mg/L	0.000711	-0.00119	mg/L	0.000711	59.70%
Ca 227.546†	6283.3	79.0	mg/L	0.12	79.0	mg/L	0.12	0.15%
Cd 228.802†	5.7	0.00059	mg/L	0.000269	0.00059	mg/L	0.000269	45.57%
Co 228.616†	28.9	0.00115	mg/L	0.000592	0.00115	mg/L	0.000592	51.28%
Cr 267.716†	406.7	0.00228	mg/L	0.000301	0.00228	mg/L	0.000301	13.20%
Cu 327.393†	-546.1	0.00070	mg/L	0.000445	0.00070	mg/L	0.000445	63.84%
Fe 239.562†	46650.1	8.02	mg/L	0.117	8.02	mg/L	0.117	1.46%
Mg 279.077†	60305.0	22.3	mg/L	0.31	22.3	mg/L	0.31	1.37%
Mn 257.610†	2951246.8	4.63	mg/L	0.051	4.63	mg/L	0.051	1.11%
Mo 202.031†	72.4	0.00779	mg/L	0.000535	0.00779	mg/L	0.000535	6.86%
Ni 231.604†	26.0	0.00009	mg/L	0.000338	0.00009	mg/L	0.000338	389.63%
Pb 220.353†	34.5	0.00425	mg/L	0.003251	0.00425	mg/L	0.003251	76.47%
Sb 206.836†	0.1	0.00484	mg/L	0.005514	0.00484	mg/L	0.005514	113.85%
Se 196.026†	2.7	0.00618	mg/L	0.008110	0.00618	mg/L	0.008110	131.31%
Si 251.611†	-93041.2	-4.79	mg/L	0.174	-4.79	mg/L	0.174	3.62%
Sn 189.927†	-55.6	-0.0109	mg/L	0.00032	-0.0109	mg/L	0.00032	2.97%
Ti 334.940†	-5693.2	0.00065	mg/L	0.000654	0.00065	mg/L	0.000654	100.16%
Tl 190.801†	-28.7	-0.0299	mg/L	0.00228	-0.0299	mg/L	0.00228	7.63%
V 290.880†	-974.0	-0.00232	mg/L	0.001547	-0.00232	mg/L	0.001547	66.58%
Zn 206.200†	-36.6	-0.00529	mg/L	0.000438	-0.00529	mg/L	0.000438	8.27%
K 766.490†	704.0	0.452	mg/L	0.0251	0.452	mg/L	0.0251	5.56%
Na 589.592†	170126.4	21.0	mg/L	0.48	21.0	mg/L	0.48	2.29%
Sr 407.771†	157939.7	0.193	mg/L	0.0040	0.193	mg/L	0.0040	2.09%
Li 670.784†	64.6	-0.00100	mg/L	0.002219	-0.00100	mg/L	0.002219	221.95%
P 214.914†	115.6	0.184	mg/L	0.0143	0.184	mg/L	0.0143	7.80%

Sequence No.: 86
Sample ID: L1505157004
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 166
Date Collected: 5/27/2015 6:53:21 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505157004

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505157004

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3183777.4						18741.50	0.59%
YRADIAL	211821.6						2800.08	1.32%
Ga 417.206	1323361.3						9043.05	0.68%
GaRADIAL	50309.4						652.66	1.30%
Ag 328.068†	902.2	0.00785	mg/L	0.001043	0.00785	mg/L	0.001043	13.29%
Al 396.153†	11585.8	4.04	mg/L	0.012	4.04	mg/L	0.012	0.30%
As 188.979†	-23.2	-0.00469	mg/L	0.008258	-0.00469	mg/L	0.008258	176.23%
Ba 233.527†	5981.7	0.103	mg/L	0.0010	0.103	mg/L	0.0010	0.98%
Be 234.861†	1028.4	0.00056	mg/L	0.000224	0.00056	mg/L	0.000224	40.26%
B 249.677†	70804.7	1.03	mg/L	0.013	1.03	mg/L	0.013	1.24%
Ca 227.546†	12449.5	156	mg/L	1.6	156	mg/L	1.6	1.01%
Cd 228.802†	19.9	0.00151	mg/L	0.000546	0.00151	mg/L	0.000546	36.26%
Co 228.616†	68.2	0.00402	mg/L	0.000222	0.00402	mg/L	0.000222	5.53%
Cr 267.716†	136563.8	1.00	mg/L	0.007	1.00	mg/L	0.007	0.66%
Cu 327.393†	837.3	0.00729	mg/L	0.002828	0.00729	mg/L	0.002828	38.78%
Fe 239.562†	51158.3	8.80	mg/L	0.091	8.80	mg/L	0.091	1.04%
Mg 279.077†	117991.8	43.7	mg/L	0.26	43.7	mg/L	0.26	0.59%
Mn 257.610†	4149222.9	6.50	mg/L	0.052	6.50	mg/L	0.052	0.80%
Mo 202.031†	81.1	0.00901	mg/L	0.001500	0.00901	mg/L	0.001500	16.65%
Ni 231.604†	475.3	0.0142	mg/L	0.00076	0.0142	mg/L	0.00076	5.36%
Pb 220.353†	66.2	0.0109	mg/L	0.00530	0.0109	mg/L	0.00530	48.41%
Sb 206.836†	21.6	0.0149	mg/L	0.00507	0.0149	mg/L	0.00507	33.94%
Se 196.026†	-8.7	-0.0116	mg/L	0.00039	-0.0116	mg/L	0.00039	3.36%
Si 251.611†	99622.2	4.82	mg/L	0.071	4.82	mg/L	0.071	1.46%
Sn 189.927†	-72.4	-0.0137	mg/L	0.00297	-0.0137	mg/L	0.00297	21.62%
Ti 334.940†	41589.9	0.0563	mg/L	0.00056	0.0563	mg/L	0.00056	1.00%
Tl 190.801†	-39.0	-0.0399	mg/L	0.01204	-0.0399	mg/L	0.01204	30.16%
V 290.880†	-67.0	0.00207	mg/L	0.000263	0.00207	mg/L	0.000263	12.70%
Zn 206.200†	923.4	0.0364	mg/L	0.00072	0.0364	mg/L	0.00072	1.98%
K 766.490†	8558.4	5.31	mg/L	0.073	5.31	mg/L	0.073	1.38%

Approved: May 28, 2015

Kym H. Rhoden

Na 589.592†	948524.7	124	mg/L	2.0	124	mg/L	2.0	1.60%
Sr 407.771†	290008.7	0.355	mg/L	0.0039	0.355	mg/L	0.0039	1.11%
Li 670.784†	4647.6	0.119	mg/L	0.0009	0.119	mg/L	0.0009	0.79%
P 214.914†	114.0	0.181	mg/L	0.0107	0.181	mg/L	0.0107	5.92%

Sequence No.: 87 **Autosampler Location: 167**
Sample ID: L1505157005 **Date Collected: 5/27/2015 6:55:46 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505157005

Analyte	Back Pressure	Flow
All	230.0 kPa	0.40 L/min

Mean Data: L1505157005

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3258513.8						54517.67	1.67%
YRADIAL	212953.0						2857.10	1.34%
Ga 417.206	1350609.1						24273.21	1.80%
GaRADIAL	49928.9						581.97	1.17%
Ag 328.068†	2185.6	0.00833	mg/L	0.000735	0.00833	mg/L	0.000735	8.83%
Al 396.153†	343.0	0.0980	mg/L	0.02528	0.0980	mg/L	0.02528	25.79%
As 188.979†	-31.4	-0.0119	mg/L	0.00558	-0.0119	mg/L	0.00558	46.79%
Ba 233.527†	2207.3	0.0379	mg/L	0.00042	0.0379	mg/L	0.00042	1.10%
Be 234.861†	-137.8	0.00006	mg/L	0.000024	0.00006	mg/L	0.000024	37.52%
B 249.677†	77931.9	1.10	mg/L	0.012	1.10	mg/L	0.012	1.08%
Ca 227.546†	12502.1	157	mg/L	2.3	157	mg/L	2.3	1.47%
Cd 228.802†	1.6	0.00041	mg/L	0.000157	0.00041	mg/L	0.000157	38.05%
Co 228.616†	2.1	-0.00033	mg/L	0.000360	-0.00033	mg/L	0.000360	108.98%
Cr 267.716†	90540.1	0.666	mg/L	0.0060	0.666	mg/L	0.0060	0.89%
Cu 327.393†	-1089.4	-0.00296	mg/L	0.001845	-0.00296	mg/L	0.001845	62.37%
Fe 239.562†	447.1	0.0802	mg/L	0.00944	0.0802	mg/L	0.00944	11.77%
Mg 279.077†	118516.1	43.9	mg/L	0.20	43.9	mg/L	0.20	0.47%
Mn 257.610†	438019.9	0.686	mg/L	0.0045	0.686	mg/L	0.0045	0.66%
Mo 202.031†	72.8	0.00714	mg/L	0.001299	0.00714	mg/L	0.001299	18.19%
Ni 231.604†	63.1	0.00125	mg/L	0.000981	0.00125	mg/L	0.000981	78.31%
Pb 220.353†	52.4	0.0109	mg/L	0.00388	0.0109	mg/L	0.00388	35.76%
Sb 206.836†	7.3	0.00514	mg/L	0.002738	0.00514	mg/L	0.002738	53.22%
Se 196.026†	-8.8	-0.00982	mg/L	0.021038	-0.00982	mg/L	0.021038	214.29%
Si 251.611†	-87250.9	-4.50	mg/L	0.085	-4.50	mg/L	0.085	1.89%
Sn 189.927†	-61.4	-0.0119	mg/L	0.00220	-0.0119	mg/L	0.00220	18.53%
Ti 334.940†	-8589.9	0.00235	mg/L	0.000594	0.00235	mg/L	0.000594	25.27%
Tl 190.801†	-34.0	-0.0304	mg/L	0.00386	-0.0304	mg/L	0.00386	12.68%
V 290.880†	-2109.6	-0.0104	mg/L	0.00163	-0.0104	mg/L	0.00163	15.69%
Zn 206.200†	-66.8	-0.00167	mg/L	0.000377	-0.00167	mg/L	0.000377	22.61%
K 766.490†	7340.6	4.53	mg/L	0.060	4.53	mg/L	0.060	1.32%
Na 589.592†	1034386.4	137	mg/L	1.4	137	mg/L	1.4	1.01%
Sr 407.771†	305595.8	0.374	mg/L	0.0046	0.374	mg/L	0.0046	1.22%
Li 670.784†	4663.3	0.120	mg/L	0.0033	0.120	mg/L	0.0033	2.80%
P 214.914†	21.3	0.0356	mg/L	0.01100	0.0356	mg/L	0.01100	30.92%

Sequence No.: 88 **Autosampler Location: 161**
Sample ID: L1505154403 WG525206-01 **Date Collected: 5/27/2015 6:58:11 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505154403 WG525206-01

Analyte	Back Pressure	Flow
All	230.0 kPa	0.40 L/min

Mean Data: L1505154403 WG525206-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD

Approved: May 28, 2015

Y 371.029	3275503.6					27275.56	0.83%
YRADIAL	214286.8					3191.53	1.49%
Ga 417.206	1330630.3					14565.06	1.09%
GaRADIAL	49377.4					510.04	1.03%
Ag 328.068†	733.8	0.00430	mg/L	0.000647	0.00430 mg/L	0.000647	15.03%
Al 396.153†	14.0	-0.0172	mg/L	0.02680	-0.0172 mg/L	0.02680	155.48%
As 188.979†	-19.6	-0.00735	mg/L	0.004837	-0.00735 mg/L	0.004837	65.79%
Ba 233.527†	6757.4	0.117	mg/L	0.0013	0.117 mg/L	0.0013	1.08%
Be 234.861†	-63.9	0.00006	mg/L	0.000027	0.00006 mg/L	0.000027	48.74%
B 249.677†	10069.0	0.148	mg/L	0.0012	0.148 mg/L	0.0012	0.83%
Ca 227.546†	3612.7	45.4	mg/L	0.43	45.4 mg/L	0.43	0.94%
Cd 228.802†	10.8	0.00093	mg/L	0.000500	0.00093 mg/L	0.000500	53.83%
Co 228.616†	0.2	-0.00065	mg/L	0.000423	-0.00065 mg/L	0.000423	65.12%
Cr 267.716†	372.4	0.00224	mg/L	0.000436	0.00224 mg/L	0.000436	19.49%
Cu 327.393†	-759.8	-0.00139	mg/L	0.001373	-0.00139 mg/L	0.001373	99.06%
Fe 239.562†	2320.1	0.402	mg/L	0.0029	0.402 mg/L	0.0029	0.72%
Mg 279.077†	67056.8	24.8	mg/L	0.16	24.8 mg/L	0.16	0.64%
Mn 257.610†	151733.9	0.237	mg/L	0.0029	0.237 mg/L	0.0029	1.23%
Mo 202.031†	55.9	0.00543	mg/L	0.000951	0.00543 mg/L	0.000951	17.50%
Ni 231.604†	-4.8	-0.00088	mg/L	0.000701	-0.00088 mg/L	0.000701	79.55%
Pb 220.353†	23.3	0.00462	mg/L	0.001771	0.00462 mg/L	0.001771	38.35%
Sb 206.836†	9.2	0.0123	mg/L	0.00228	0.0123 mg/L	0.00228	18.44%
Se 196.026†	1.9	0.00696	mg/L	0.011723	0.00696 mg/L	0.011723	168.53%
Si 251.611†	-45334.2	-2.41	mg/L	0.044	-2.41 mg/L	0.044	1.83%
Sn 189.927†	-42.2	-0.00862	mg/L	0.001130	-0.00862 mg/L	0.001130	13.10%
Ti 334.940†	-2843.2	0.00157	mg/L	0.000214	0.00157 mg/L	0.000214	13.66%
Tl 190.801†	-6.9	-0.00746	mg/L	0.001986	-0.00746 mg/L	0.001986	26.60%
V 290.880†	-1108.3	-0.00456	mg/L	0.001220	-0.00456 mg/L	0.001220	26.78%
Zn 206.200†	-106.3	-0.00843	mg/L	0.000213	-0.00843 mg/L	0.000213	2.52%
K 766.490†	410.4	0.0646	mg/L	0.05688	0.0646 mg/L	0.05688	88.09%
Na 589.592†	1604820.5	223	mg/L	1.6	223 mg/L	1.6	0.73%
Sr 407.771†	245667.2	0.303	mg/L	0.0007	0.303 mg/L	0.0007	0.22%
Li 670.784†	261.5	0.00416	mg/L	0.001876	0.00416 mg/L	0.001876	45.09%
P 214.914†	-5.9	-0.00701	mg/L	0.009765	-0.00701 mg/L	0.009765	139.34%

Sequence No.: 89 **Autosampler Location: 162**
Sample ID: L1505154404MS WG525206-04 **Date Collected: 5/27/2015 7:00:39 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505154404MS WG525206-04

Analyte	Back Pressure	Flow
All	230.0 kPa	0.40 L/min

Mean Data: L1505154404MS WG525206-04

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3254195.8						53101.15	1.63%
YRADIAL	215726.2						5549.47	2.57%
Ga 417.206	1313797.8						21877.00	1.67%
GaRADIAL	50056.9						1170.64	2.34%
Ag 328.068†	70835.7	0.212	mg/L	0.0012	0.212	mg/L	0.0012	0.55%
Al 396.153†	14473.0	5.04	mg/L	0.084	5.04	mg/L	0.084	1.68%
As 188.979†	295.7	0.184	mg/L	0.0088	0.184	mg/L	0.0088	4.78%
Ba 233.527†	34125.1	0.590	mg/L	0.0064	0.590	mg/L	0.0064	1.08%
Be 234.861†	13482.1	0.0244	mg/L	0.00042	0.0244	mg/L	0.00042	1.71%
B 249.677†	69924.4	0.997	mg/L	0.0138	0.997	mg/L	0.0138	1.38%
Ca 227.546†	3952.7	49.7	mg/L	1.11	49.7	mg/L	1.11	2.24%
Cd 228.802†	410.3	0.0243	mg/L	0.00044	0.0243	mg/L	0.00044	1.83%
Co 228.616†	1338.8	0.0931	mg/L	0.00205	0.0931	mg/L	0.00205	2.20%
Cr 267.716†	33445.7	0.246	mg/L	0.0040	0.246	mg/L	0.0040	1.63%
Cu 327.393†	53759.8	0.252	mg/L	0.0010	0.252	mg/L	0.0010	0.40%
Fe 239.562†	13825.0	2.38	mg/L	0.033	2.38	mg/L	0.033	1.38%
Mg 279.077†	79328.0	29.4	mg/L	0.16	29.4	mg/L	0.16	0.54%
Mn 257.610†	301847.2	0.473	mg/L	0.0042	0.473	mg/L	0.0042	0.89%
Mo 202.031†	4878.0	0.465	mg/L	0.0085	0.465	mg/L	0.0085	1.83%
Ni 231.604†	7314.1	0.228	mg/L	0.0046	0.228	mg/L	0.0046	2.01%
Pb 220.353†	1055.7	0.237	mg/L	0.0036	0.237	mg/L	0.0036	1.54%

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Sb 206.836†	648.7	0.563 mg/L	0.0106	0.563 mg/L	0.0106	1.89%
Se 196.026†	132.9	0.213 mg/L	0.0029	0.213 mg/L	0.0029	1.35%
Si 251.611†	9923.5	0.339 mg/L	0.0525	0.339 mg/L	0.0525	15.47%
Sn 189.927†	2698.2	0.455 mg/L	0.0067	0.455 mg/L	0.0067	1.48%
Ti 334.940†	453514.6	0.493 mg/L	0.0044	0.493 mg/L	0.0044	0.89%
Tl 190.801†	265.9	0.224 mg/L	0.0049	0.224 mg/L	0.0049	2.18%
V 290.880†	93421.3	0.496 mg/L	0.0042	0.496 mg/L	0.0042	0.85%
Zn 206.200†	13093.7	0.454 mg/L	0.0078	0.454 mg/L	0.0078	1.72%
K 766.490†	39674.5	24.9 mg/L	0.07	24.9 mg/L	0.07	0.29%
Na 589.592†	1741692.1	246 mg/L	8.4	246 mg/L	8.4	3.42%
Sr 407.771†	639620.5	0.792 mg/L	0.0255	0.792 mg/L	0.0255	3.23%
Li 670.784†	19767.4	0.515 mg/L	0.0072	0.515 mg/L	0.0072	1.40%
P 214.914†	3012.0	4.73 mg/L	0.085	4.73 mg/L	0.085	1.80%

Sequence No.: 90 **Autosampler Location: 163**
Sample ID: L1505154405SD WG525206-05 **Date Collected: 5/27/2015 7:03:04 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505154405SD WG525206-05

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: L1505154405SD WG525206-05

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3200464.1						34978.72	1.09%
YRADIAL	215987.4						342.03	0.16%
Ga 417.206	1297312.1						11676.88	0.90%
GaRADIAL	49679.4						89.32	0.18%
Ag 328.068†	68691.0	0.205	mg/L	0.0012	0.205	mg/L	0.0012	0.56%
Al 396.153†	14223.2	4.95	mg/L	0.029	4.95	mg/L	0.029	0.59%
As 188.979†	280.0	0.175	mg/L	0.0051	0.175	mg/L	0.0051	2.93%
Ba 233.527†	34857.1	0.602	mg/L	0.0088	0.602	mg/L	0.0088	1.45%
Be 234.861†	13221.1	0.0239	mg/L	0.00038	0.0239	mg/L	0.00038	1.57%
B 249.677†	68564.1	0.978	mg/L	0.0087	0.978	mg/L	0.0087	0.89%
Ca 227.546†	3993.7	50.3	mg/L	0.88	50.3	mg/L	0.88	1.75%
Cd 228.802†	393.7	0.0234	mg/L	0.00071	0.0234	mg/L	0.00071	3.05%
Co 228.616†	1297.5	0.0902	mg/L	0.00195	0.0902	mg/L	0.00195	2.17%
Cr 267.716†	32812.3	0.241	mg/L	0.0025	0.241	mg/L	0.0025	1.05%
Cu 327.393†	52106.5	0.244	mg/L	0.0014	0.244	mg/L	0.0014	0.59%
Fe 239.562†	13831.6	2.38	mg/L	0.026	2.38	mg/L	0.026	1.08%
Mg 279.077†	79928.3	29.6	mg/L	0.09	29.6	mg/L	0.09	0.31%
Mn 257.610†	298670.9	0.468	mg/L	0.0027	0.468	mg/L	0.0027	0.57%
Mo 202.031†	4777.4	0.455	mg/L	0.0075	0.455	mg/L	0.0075	1.65%
Ni 231.604†	7180.8	0.224	mg/L	0.0046	0.224	mg/L	0.0046	2.07%
Pb 220.353†	1038.8	0.233	mg/L	0.0038	0.233	mg/L	0.0038	1.63%
Sb 206.836†	633.5	0.550	mg/L	0.0079	0.550	mg/L	0.0079	1.43%
Se 196.026†	114.3	0.184	mg/L	0.0188	0.184	mg/L	0.0188	10.21%
Si 251.611†	5979.2	0.143	mg/L	0.2144	0.143	mg/L	0.2144	150.23%
Sn 189.927†	2640.8	0.445	mg/L	0.0087	0.445	mg/L	0.0087	1.96%
Ti 334.940†	443873.2	0.483	mg/L	0.0041	0.483	mg/L	0.0041	0.86%
Tl 190.801†	252.5	0.213	mg/L	0.0047	0.213	mg/L	0.0047	2.20%
V 290.880†	91383.6	0.485	mg/L	0.0037	0.485	mg/L	0.0037	0.76%
Zn 206.200†	12831.8	0.445	mg/L	0.0083	0.445	mg/L	0.0083	1.87%
K 766.490†	39160.3	24.6	mg/L	0.16	24.6	mg/L	0.16	0.66%
Na 589.592†	1775244.1	251	mg/L	2.6	251	mg/L	2.6	1.03%
Sr 407.771†	636862.9	0.788	mg/L	0.0018	0.788	mg/L	0.0018	0.22%
Li 670.784†	19550.5	0.510	mg/L	0.0047	0.510	mg/L	0.0047	0.91%
P 214.914†	2937.7	4.61	mg/L	0.112	4.61	mg/L	0.112	2.44%

Sequence No.: 91 **Autosampler Location: 7**
Sample ID: CCV **Date Collected: 5/27/2015 7:05:29 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Approved: May 28, 2015

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	230.0 kPa	0.40 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3225223.5						14318.26	0.44%
YRADIAL	212465.2						801.44	0.38%
Ga 417.206	1358496.5						7876.35	0.58%
GaRADIAL	49585.6						259.13	0.52%
Ag 328.068†	130988.1	0.390	mg/L	0.0006	0.390	mg/L	0.0006	0.15%
QC value within limits for Ag 328.068 Recovery = 97.39%								
Al 396.153†	28830.8	10.1	mg/L	0.02	10.1	mg/L	0.02	0.23%
QC value within limits for Al 396.153 Recovery = 100.54%								
As 188.979†	593.9	0.364	mg/L	0.0034	0.364	mg/L	0.0034	0.95%
QC value within limits for As 188.979 Recovery = 91.12%								
Ba 233.527†	55364.6	0.957	mg/L	0.0039	0.957	mg/L	0.0039	0.41%
QC value within limits for Ba 233.527 Recovery = 95.72%								
Be 234.861†	25593.8	0.0461	mg/L	0.00029	0.0461	mg/L	0.00029	0.64%
QC value within limits for Be 234.861 Recovery = 92.22%								
B 249.677†	27764.0	0.409	mg/L	0.0043	0.409	mg/L	0.0043	1.05%
QC value less than the lower limit for B 249.677 Recovery = 81.73%								
Ca 227.546†	728.0	9.27	mg/L	0.098	9.27	mg/L	0.098	1.06%
QC value within limits for Ca 227.546 Recovery = 92.69%								
Cd 228.802†	771.0	0.0454	mg/L	0.00038	0.0454	mg/L	0.00038	0.84%
QC value within limits for Cd 228.802 Recovery = 90.88%								
Co 228.616†	2724.7	0.190	mg/L	0.0015	0.190	mg/L	0.0015	0.80%
QC value within limits for Co 228.616 Recovery = 95.09%								
Cr 267.716†	66385.2	0.488	mg/L	0.0015	0.488	mg/L	0.0015	0.30%
QC value within limits for Cr 267.716 Recovery = 97.68%								
Cu 327.393†	103562.4	0.483	mg/L	0.0033	0.483	mg/L	0.0033	0.68%
QC value within limits for Cu 327.393 Recovery = 96.69%								
Fe 239.562†	23299.5	4.01	mg/L	0.020	4.01	mg/L	0.020	0.49%
QC value within limits for Fe 239.562 Recovery = 100.20%								
Mg 279.077†	27286.1	10.1	mg/L	0.07	10.1	mg/L	0.07	0.65%
QC value within limits for Mg 279.077 Recovery = 100.93%								
Mn 257.610†	311718.8	0.488	mg/L	0.0009	0.488	mg/L	0.0009	0.19%
QC value within limits for Mn 257.610 Recovery = 97.65%								
Mo 202.031†	9506.3	0.905	mg/L	0.0036	0.905	mg/L	0.0036	0.40%
QC value within limits for Mo 202.031 Recovery = 90.54%								
Ni 231.604†	15319.6	0.479	mg/L	0.0033	0.479	mg/L	0.0033	0.68%
QC value within limits for Ni 231.604 Recovery = 95.77%								
Pb 220.353†	2099.4	0.471	mg/L	0.0064	0.471	mg/L	0.0064	1.36%
QC value within limits for Pb 220.353 Recovery = 94.23%								
Sb 206.836†	1238.7	1.07	mg/L	0.006	1.07	mg/L	0.006	0.58%
QC value less than the lower limit for Sb 206.836 Recovery = 89.21%								
Se 196.026†	249.5	0.396	mg/L	0.0127	0.396	mg/L	0.0127	3.19%
QC value within limits for Se 196.026 Recovery = 99.12%								
Si 251.611†	-100726.8	-5.19	mg/L	0.201	-5.19	mg/L	0.201	3.87%
QC value less than the lower limit for Si 251.611 Recovery = -103.75%								
Sn 189.927†	5466.6	0.923	mg/L	0.0061	0.923	mg/L	0.0061	0.66%
QC value within limits for Sn 189.927 Recovery = 92.28%								
Ti 334.940†	904873.6	0.977	mg/L	0.0024	0.977	mg/L	0.0024	0.25%
QC value within limits for Ti 334.940 Recovery = 97.67%								
Tl 190.801†	562.4	0.475	mg/L	0.0065	0.475	mg/L	0.0065	1.38%
QC value within limits for Tl 190.801 Recovery = 95.05%								
V 290.880†	183458.0	0.973	mg/L	0.0071	0.973	mg/L	0.0071	0.73%
QC value within limits for V 290.880 Recovery = 97.26%								
Zn 206.200†	26751.0	0.933	mg/L	0.0055	0.933	mg/L	0.0055	0.59%
QC value within limits for Zn 206.200 Recovery = 93.28%								
K 766.490†	76468.8	48.7	mg/L	0.29	48.7	mg/L	0.29	0.59%
QC value within limits for K 766.490 Recovery = 97.42%								
Na 589.592†	395327.2	49.6	mg/L	0.33	49.6	mg/L	0.33	0.67%
QC value within limits for Na 589.592 Recovery = 99.28%								
Sr 407.771†	798290.8	0.990	mg/L	0.0064	0.990	mg/L	0.0064	0.65%
QC value within limits for Sr 407.771 Recovery = 99.01%								
Li 670.784†	38977.0	1.02	mg/L	0.005	1.02	mg/L	0.005	0.52%
QC value within limits for Li 670.784 Recovery = 101.88%								
P 214.914†	5895.1	9.25	mg/L	0.057	9.25	mg/L	0.057	0.62%

Approved: May 28, 2015

Lynn H. Rhoden

QC value within limits for P 214.914 Recovery = 92.46%
QC Failed. Continue with analysis.

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Sequence No.: 92 **Autosampler Location: 8**
Sample ID: CCB **Date Collected: 5/27/2015 7:07:54 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCB

Analyte	Back Pressure	Flow
All	231.0 kPa	0.40 L/min

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3463437.2						52439.23	1.51%
YRADIAL	222222.8						3181.38	1.43%
Ga 417.206	1603138.0						24777.69	1.55%
GaRADIAL	53826.1						697.09	1.30%
Ag 328.068†	312.0	0.00298	mg/L	0.001171	0.00298	mg/L	0.001171	39.27%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	2.3	-0.0212	mg/L	0.00345	-0.0212	mg/L	0.00345	16.30%
QC value within limits for Al 396.153 Recovery = Not calculated								
As 188.979†	-8.1	-0.00137	mg/L	0.001713	-0.00137	mg/L	0.001713	125.17%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	-9.2	-0.00040	mg/L	0.000253	-0.00040	mg/L	0.000253	62.70%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 234.861†	-16.3	0.00022	mg/L	0.000032	0.00022	mg/L	0.000032	14.60%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	153.3	0.00682	mg/L	0.002145	0.00682	mg/L	0.002145	31.47%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	-10.2	-0.0715	mg/L	0.13853	-0.0715	mg/L	0.13853	193.69%
QC value within limits for Ca 227.546 Recovery = Not calculated								
Cd 228.802†	-1.1	0.00018	mg/L	0.000533	0.00018	mg/L	0.000533	297.55%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	4.0	-0.00035	mg/L	0.000524	-0.00035	mg/L	0.000524	151.36%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	85.9	0.00014	mg/L	0.000025	0.00014	mg/L	0.000025	17.64%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	-277.3	0.00079	mg/L	0.001707	0.00079	mg/L	0.001707	214.97%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	10.7	0.00603	mg/L	0.000756	0.00603	mg/L	0.000756	12.54%
QC value within limits for Fe 239.562 Recovery = Not calculated								
Mg 279.077†	21.4	-0.00662	mg/L	0.008948	-0.00662	mg/L	0.008948	135.09%
QC value within limits for Mg 279.077 Recovery = Not calculated								
Mn 257.610†	79.9	-0.00030	mg/L	0.000040	-0.00030	mg/L	0.000040	13.35%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	2.7	0.00033	mg/L	0.001264	0.00033	mg/L	0.001264	383.40%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	1.9	-0.00068	mg/L	0.000312	-0.00068	mg/L	0.000312	46.19%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	2.7	0.00017	mg/L	0.002312	0.00017	mg/L	0.002312	>999.9%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	-1.7	0.00298	mg/L	0.007738	0.00298	mg/L	0.007738	259.92%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	15.5	0.0283	mg/L	0.01128	0.0283	mg/L	0.01128	39.78%
QC value greater than the upper limit for Se 196.026 Recovery = Not calculated								
Si 251.611†	-14637.1	-0.881	mg/L	0.0561	-0.881	mg/L	0.0561	6.37%
QC value less than the lower limit for Si 251.611 Recovery = Not calculated								
Sn 189.927†	-8.5	-0.00292	mg/L	0.001502	-0.00292	mg/L	0.001502	51.42%
QC value within limits for Sn 189.927 Recovery = Not calculated								
Ti 334.940†	-140.8	0.00156	mg/L	0.000272	0.00156	mg/L	0.000272	17.45%
QC value within limits for Ti 334.940 Recovery = Not calculated								
Tl 190.801†	3.8	0.00170	mg/L	0.005700	0.00170	mg/L	0.005700	336.26%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 290.880†	-430.1	-0.00040	mg/L	0.001457	-0.00040	mg/L	0.001457	368.33%
QC value within limits for V 290.880 Recovery = Not calculated								
Zn 206.200†	-22.0	-0.00555	mg/L	0.000195	-0.00555	mg/L	0.000195	3.52%

Approved: May 28, 2015

QC value within limits for Zn 206.200 Recovery = Not calculated

K 766.490†	47.1	0.0584 mg/L	0.05314	0.0584 mg/L	0.05314	90.91%

QC value within limits for K 766.490 Recovery = Not calculated

Na 589.592†	862.2	0.126 mg/L	0.0243	0.126 mg/L	0.0243	19.31%

QC value within limits for Na 589.592 Recovery = Not calculated

Sr 407.771†	186.2	-0.00010 mg/L	0.000087	-0.00010 mg/L	0.000087	84.77%

QC value within limits for Sr 407.771 Recovery = Not calculated

Li 670.784†	25.7	-0.00202 mg/L	0.002767	-0.00202 mg/L	0.002767	137.13%

QC value within limits for Li 670.784 Recovery = Not calculated

P 214.914†	2.8	0.00659 mg/L	0.007451	0.00659 mg/L	0.007451	113.03%

QC value within limits for P 214.914 Recovery = Not calculated

QC Failed. Continue with analysis.

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Sequence No.: 93 **Autosampler Location: 164**
Sample ID: BLK **Date Collected: 5/27/2015 7:11:17 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: BLK

Analyte	Back Pressure	Flow
All	230.0 kPa	0.40 L/min

Mean Data: BLK

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	6456253.7						574824.78	8.90%
YRADIAL	410905.3						30687.74	7.47%
Ga 417.206	2893816.8						269583.27	9.32%
GaRADIAL	97116.4						7277.50	7.49%
Ag 328.068†	-217.3	0.00132	mg/L	0.001003	0.00132	mg/L	0.001003	76.07%
Al 396.153†	97.5	0.0122	mg/L	0.01310	0.0122	mg/L	0.01310	107.11%
As 188.979†	-13.0	-0.00419	mg/L	0.000919	-0.00419	mg/L	0.000919	21.94%
Ba 233.527†	1331.7	0.0228	mg/L	0.00280	0.0228	mg/L	0.00280	12.29%
Be 234.861†	320.3	0.00088	mg/L	0.000285	0.00088	mg/L	0.000285	32.39%
B 249.677†	-4155.6	-0.0537	mg/L	0.00511	-0.0537	mg/L	0.00511	9.52%
Ca 227.546†	592.9	7.50	mg/L	0.850	7.50	mg/L	0.850	11.33%
Cd 228.802†	-3.1	0.00007	mg/L	0.000097	0.00007	mg/L	0.000097	131.31%
Co 228.616†	3.2	-0.00043	mg/L	0.000487	-0.00043	mg/L	0.000487	114.52%
Cr 267.716†	64.3	-0.00003	mg/L	0.000036	-0.00003	mg/L	0.000036	118.61%
Cu 327.393†	-386.4	0.00029	mg/L	0.000641	0.00029	mg/L	0.000641	220.32%
Fe 239.562†	248.5	0.0469	mg/L	0.03839	0.0469	mg/L	0.03839	81.85%
Mg 279.077†	86.7	0.0176	mg/L	0.05670	0.0176	mg/L	0.05670	322.67%
Mn 257.610†	396250.1	0.621	mg/L	0.6255	0.621	mg/L	0.6255	100.79%
Mo 202.031†	-3.0	-0.00010	mg/L	0.000443	-0.00010	mg/L	0.000443	464.96%
Ni 231.604†	31.5	0.00025	mg/L	0.000220	0.00025	mg/L	0.000220	88.53%
Pb 220.353†	30.3	0.00597	mg/L	0.001701	0.00597	mg/L	0.001701	28.50%
Sb 206.836†	-9.0	-0.00332	mg/L	0.002648	-0.00332	mg/L	0.002648	79.76%
Se 196.026†	5.4	0.0123	mg/L	0.00340	0.0123	mg/L	0.00340	27.55%
Si 251.611†	-352596.7	-17.7	mg/L	2.09	-17.7	mg/L	2.09	11.80%
Sn 189.927†	-60.3	-0.0117	mg/L	0.00047	-0.0117	mg/L	0.00047	4.05%
Ti 334.940†	5412.0	0.00802	mg/L	0.003592	0.00802	mg/L	0.003592	44.77%
Tl 190.801†	14.6	0.0100	mg/L	0.00197	0.0100	mg/L	0.00197	19.65%
V 290.880†	-5090.7	-0.0250	mg/L	0.00277	-0.0250	mg/L	0.00277	11.08%
Zn 206.200†	-92.4	-0.00800	mg/L	0.000167	-0.00800	mg/L	0.000167	2.09%
K 766.490†	-146.8	-0.0640	mg/L	0.03342	-0.0640	mg/L	0.03342	52.22%
Na 589.592†	1377.1	0.189	mg/L	0.3514	0.189	mg/L	0.3514	186.12%
Sr 407.771†	1809.4	0.00167	mg/L	0.003161	0.00167	mg/L	0.003161	189.25%
Li 670.784†	39.6	-0.00165	mg/L	0.001660	-0.00165	mg/L	0.001660	100.37%
P 214.914†	28.0	0.0461	mg/L	0.01274	0.0461	mg/L	0.01274	27.61%

==========

Sequence No.: 94 **Autosampler Location: 165**
Sample ID: BLK **Date Collected: 5/27/2015 7:13:44 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Approved: May 28, 2015

Lynn H. Rhoden

2.3.2 Metals ICP-MS Data

2.3.2.1 Summary Data

Microbac

Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051435-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW08FF-052115	**Prep Method:**	3015	**Prep Date:**	05/26/2015 12:49
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	05/31/2015 20:04
Workgroup #:	WG525405	**Analyst:**	BKT	**Run Date:**	05/31/2015 20:46
Collect Date:	05/21/2015 13:55	**Dilution:**	1	**File ID:**	NI.053115.204616
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0391		0.00400	0.00200	0.00100

Certificate of Analysis

Sample #:	L15051435-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW22FF-052115	**Prep Method:**	3015	**Prep Date:**	05/26/2015 12:49
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	05/31/2015 20:04
Workgroup #:	WG525405	**Analyst:**	BKT	**Run Date:**	05/31/2015 20:49
Collect Date:	05/21/2015 15:10	**Dilution:**	1	**File ID:**	NI.053115.204928
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0466		0.00400	0.00200	0.00100

2.3.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer NexION 300X

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	100
Vi = Initial volume	40
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/L)	0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	200
Vi = Initial volume	0.5
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/kg)	40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	40
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	50

50 ug/kg = 0.050 mg/kg

Perkin Elmer NexION ICP/MS

STANDARDS KEY

QC Std 1 - ICV
QC Std 2 - ICB
QC Std 3 - LLICV
QC Std 4 - ICSA
QC Std 5 - ICSAB
QC Std 6 - CCV
QC Std 7 - CCB
QC Std 8 - LLCCV

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.00005	0.05	0.1
Sb	10	0	0.00005	0.05	0.1
As	10	0	0.00005	0.05	0.1
Ba	10	0	0.00005	0.05	0.1
Be	10	0	0.00005	0.05	0.1
Ca	1000	0	0.005	5	10
Cd	10	0	0.0005	0.05	0.1
Cr	10	0	0.0005	0.05	0.1
Co	10	0	0.0005	0.05	0.1
Cu	10	0	0.0005	0.05	0.1
Fe	1000	0	0.005	5	10
Pb	10	0	0.00005	0.05	0.1
Mg	1000	0	0.005	5	10
Mn	10	0	0.00005	0.05	0.1
Ni	10	0	0.00005	0.05	0.1
K	1000	0	0.005	5	10
Se	10	0	0.00005	0.05	0.1
Ag	10	0	0.00005	0.05	0.1
Na	1000	0	0.005	5	10
Tl	10	0	0.00005	0.05	0.1
V	10	0	0.00005	0.05	0.1
U	1000	0	0.00005	0.05	0.1
Zn	10	0	0.00005	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG525054
Analyst: JTP
Spike Analyst: ERP
Run Date: 05/26/2015 12:49
Method: 3015
Balance: BAL016
Instrument: MW-3
Instrument Start: 05/26/2015 12:44

SOP: ME407 Revison 17
Spike Solution: STD68313
Spike Witness: JTP
HNO3 Lot #: COA18221
MS Filters- fisher-Lot#r RGT32947
40 & 50 ML. DIGESTION TU COA18222

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG525054-03	BLANK	1	20 mL	50 mL	183.656 g	183.598 g		
2	WG525054-04	LCS	1	20 mL	50 mL	184.82 g	184.77 g	.25 mL	
3	L15051435-02	SAMP	1	20 mL	50 mL	182.954 g	182.889 g		06/02/15
4	L15051435-04	SAMP	1	20 mL	50 mL	182.925 g	182.875 g		06/02/15
5	L15051463-01	SAMP	1	20 mL	50 mL	181.105 g	181.057 g		06/01/15
6	L15051463-02	SAMP	1	20 mL	50 mL	181.794 g	181.736 g		06/01/15
7	L15051463-03	SAMP	1	20 mL	50 mL	184.053 g	183.979 g		06/01/15
8	WG525054-01	REF	1	20 mL	50 mL	183.703 g	183.669 g		
9	L15051463-04	RS01	1	20 mL	50 mL	183.703 g	183.669 g		06/01/15
10	WG525054-06	MS	1	20 mL	50 mL	181.553 g	181.509 g	.25 mL	
11	L15051463-05	MS01	1	20 mL	50 mL	181.553 g	181.509 g	.25 mL	06/01/15
12	WG525054-07	MSD	1	20 mL	50 mL	181.536 g	181.48 g	.25 mL	
13	L15051463-06	SD01	1	20 mL	50 mL	181.536 g	181.48 g	.25 mL	06/01/15
14	L15051463-07	SAMP	1	20 mL	50 mL	180.967 g	180.91 g		06/01/15
15	L15051497-01	SAMP	2	20 mL	50 mL	183.575 g	183.527 g		05/29/15
16	L15051497-02	SAMP	2	20 mL	50 mL	182.349 g	182.292 g		05/29/15
17	L15051497-03	SAMP	2	20 mL	50 mL	181.991 g	181.93 g		05/29/15
18	L15051497-04	SAMP	2	20 mL	50 mL	182.304 g	182.25 g		05/29/15
19	L15051497-05	SAMP	2	20 mL	50 mL	183.857 g	183.806 g		05/29/15
20	L15051497-06	SAMP	2	20 mL	50 mL	182.286 g	182.236 g		05/29/15
21	L15051497-07	SAMP	2	20 mL	50 mL	181.815 g	181.748 g		05/29/15
22	L15051497-08	SAMP	2	20 mL	50 mL	180.753 g	180.682 g		05/29/15
23	L15051497-09	SAMP	2	20 mL	50 mL	181.089 g	181.02 g		05/29/15
24	L15051497-10	SAMP	2	20 mL	50 mL	180.349 g	180.274 g		05/29/15
25	L15051497-11	SAMP	2	20 mL	50 mL	185.754 g	185.713 g		05/29/15
26	WG525054-02	REF	2	20 mL	50 mL	181.473 g	181.407 g		
27	L15051497-12	SAMP	2	20 mL	50 mL	181.473 g	181.407 g		05/29/15
28	WG525054-05	DUP	1	20 mL	50 mL	180.58 g	180.53 g		

L15051497-12	FILTERED DIGESTATE
WG525054-02	FILTERED DIGESTATE
WG525054-05	FILTERED DIGESTATE

Analyst: Joshua Pemberton

Reviewer: Erin Potter

MW_DIG - Modified 09/30/2009
PDF ID: 4197614
Report generated: 05/26/2015 13:49

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 053115B.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 1
Maintenance Log ID:

Calibration Std: STD70733 ICV Std: STD70798 Post Spike: STD69341
ICSA: STD70283 ICSAB: STD70321 Int. Std: RGT31676
CCV: STD70031 LLCCV: STD70320 Tuning Sol : STD69491
Stannous : Hydroxylamine :

Workgroups: 525405,525403,525266,525535

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.053115.195151	Blank	Blank		1		05/31/15 19:51
2	NI.053115.195502	WG525750-01	Calibration Point		1		05/31/15 19:55
3	NI.053115.195814	WG525750-02	Calibration Point		1		05/31/15 19:58
4	NI.053115.200126	WG525750-03	Calibration Point		1		05/31/15 20:01
5	NI.053115.200437	WG525750-04	Calibration Point		1		05/31/15 20:04
6	NI.053115.200751	WG525750-05	Initial Calibration Verification		1		05/31/15 20:07
7	NI.053115.201104	WG525750-06	Initial Calib Blank		1		05/31/15 20:11
8	NI.053115.201417	WG525750-07	Low Level Initial Calibration V		1		05/31/15 20:14
9	NI.053115.201728	WG525750-08	Interference Check		1		05/31/15 20:17
10	NI.053115.202039	WG525750-09	Interference Check		1		05/31/15 20:20
11	NI.053115.202352	WG525750-10	CCV		1		05/31/15 20:23
12	NI.053115.202704	WG525750-11	CCB		1		05/31/15 20:27
13	NI.053115.203016	WG525054-03	Method/Prep Blank	20/50	1		05/31/15 20:30
14	NI.053115.203328	WG525054-04	Laboratory Control S	20/50	1		05/31/15 20:33
15	NI.053115.203639	WG525054-01	Reference Sample		1	L15051463-04	05/31/15 20:36
16	NI.053115.203950	WG525054-06	Matrix Spike	20/50	1	L15051463-04	05/31/15 20:39
17	NI.053115.204304	WG525054-07	Matrix Spike Duplica	20/50	1	L15051463-04	05/31/15 20:43
18	NI.053115.204616	L15051435-02	50WW08FF-052115	20/50	1		05/31/15 20:46
19	NI.053115.204928	L15051435-04	50WW22FF-052115	20/50	1		05/31/15 20:49
20	NI.053115.210252	L15051463-01	ST008MW0812-005	20/50	1		05/31/15 21:02
21	NI.053115.210603	WG525405-03	Post Digestion Spike		1	L15051463-01	05/31/15 21:06
22	NI.053115.210915	WG525405-04	Serial Dilution		5	L15051463-01	05/31/15 21:09
23	NI.053115.211228	WG525750-12	CCV		1		05/31/15 21:12
24	NI.053115.211539	WG525750-13	CCB		1		05/31/15 21:15
25	NI.053115.211851	WG524728-02	Method/Prep Blank	20/50	1		05/31/15 21:18
26	NI.053115.212202	WG524728-03	Laboratory Control S	20/50	1		05/31/15 21:22
27	NI.053115.212513	WG524728-01	Reference Sample		1	L15051340-02	05/31/15 21:25
28	NI.053115.212825	WG524728-04	Matrix Spike	20/50	1	L15051340-02	05/31/15 21:28
29	NI.053115.213137	WG524728-05	Matrix Spike Duplica	20/50	1	L15051340-02	05/31/15 21:31
30	NI.053115.213448	L15051303-02	50WW13FF-052015	20/50	1		05/31/15 21:34
31	NI.053115.213759	L15051303-04	50WW14FF-052015	20/50	1		05/31/15 21:37
32	NI.053115.214111	WG525403-03	Post Digestion Spike		1	L15051303-04	05/31/15 21:41
33	NI.053115.214422	L15051303-04	50WW14FF-052015		5		05/31/15 21:44
34	NI.053115.214733	WG525403-04	Serial Dilution		25	L15051303-04	05/31/15 21:47

Page: 1 Approved: June 02, 2015

Maren Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 053115B.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 1
Maintenance Log ID:

Calibration Std: STD70733 ICV Std: STD70798 Post Spike: STD69341
ICSA: STD70283 ICSAB: STD70321 Int. Std: RGT31676
CCV: STD70031 LLCCV: STD70320 Tuning Sol : STD69491
Stannous : Hydroxylamine :

Workgroups: 525405,525403,525266,525535

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.053115.215045	WG525750-14	CCV		1		05/31/15 21:50
36	NI.053115.215357	WG525750-15	CCB		1		05/31/15 21:53
37	NI.053115.215710	WG525405-04	Serial Dilution		25	L15051463-01	05/31/15 21:57
38	NI.053115.220021	L15051463-02	ST008MW0809-005	20/50	1		05/31/15 22:00
39	NI.053115.220332	L15051463-03	ST008MW0816-005	20/50	1		05/31/15 22:03
40	NI.053115.220644	L15051463-07	FQC-RB05201501-CB	20/50	1		05/31/15 22:06
41	NI.053115.220957	L15051303-06	50WW11FF-052015	20/50	1		05/31/15 22:09
42	NI.053115.221308	L15051303-08	50WW06FF-052015	20/50	1		05/31/15 22:13
43	NI.053115.221619	L15051303-10	50WW12FF-052015	20/50	1		05/31/15 22:16
44	NI.053115.221931	L15051303-12	50WW23FF-052015	20/50	1		05/31/15 22:19
45	NI.053115.222244	WG525750-16	CCV		1		05/31/15 22:22
46	NI.053115.222555	WG525750-17	CCB		1		05/31/15 22:25
47	NI.053115.222907	WG525750-18	Low Level Continuing Calibra		1		05/31/15 22:29
48	NI.053115.223219	L15051460-01	SS007MWN751-005	20/50	1		05/31/15 22:32
49	NI.053115.223531	L15051460-02	SS007MWN750-005	20/50	1		05/31/15 22:35
50	NI.053115.223842	L15051460-03	SS007MWOB16-005	20/50	1		05/31/15 22:38
51	NI.053115.224153	L15051460-04	SS007MWOB16-005 DUP	20/50	1		05/31/15 22:41
52	NI.053115.224505	L15051460-05	SS007MWOB18-005	20/50	1		05/31/15 22:45
53	NI.053115.224817	L15051529-01	ST008MW0805-005	20/50	1		05/31/15 22:48
54	NI.053115.225128	L15051530-01	LF003MW0309-005	20/50	1		05/31/15 22:51
55	NI.053115.225442	WG525750-19	CCV		1		05/31/15 22:54
56	NI.053115.225754	WG525750-20	CCB		1		05/31/15 22:57
57	NI.053115.230107	WG525183-02	Method/Prep Blank	20/50	1		05/31/15 23:01
58	NI.053115.230419	WG525183-03	Laboratory Control S	20/50	1		05/31/15 23:04
59	NI.053115.230730	WG525183-01	Reference Sample		1	L15051546-03	05/31/15 23:07
60	NI.053115.231042	WG525183-04	Matrix Spike	20/50	1	L15051546-03	05/31/15 23:10
61	NI.053115.231353	WG525183-05	Matrix Spike Duplica	20/50	1	L15051546-03	05/31/15 23:13
62	NI.053115.231704	L15051532-01	DP005MW0509-005	20/50	1		05/31/15 23:17
63	NI.053115.232016	L15051533-01	ST008MW0818-005	20/50	1		05/31/15 23:20
64	NI.053115.232327	WG525535-01	Post Digestion Spike		1	L15051533-01	05/31/15 23:23
65	NI.053115.232638	WG525535-02	Serial Dilution		5	L15051533-01	05/31/15 23:26
66	NI.053115.232950	WG525535-02	Serial Dilution		25	L15051533-01	05/31/15 23:29
67	NI.053115.233303	WG525750-21	CCV		1		05/31/15 23:33
68	NI.053115.233615	WG525750-22	CCB		1		05/31/15 23:36

Page: 2 Approved: June 02, 2015

Maren Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 053115B.REP

Analyst1: BKT Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 1

Maintenance Log ID:

Calibration Std: STD70733 ICV Std: STD70798 Post Spike: STD69341

ICSA: STD70283 ICSAB: STD70321 Int. Std: RGT31676

CCV: STD70031 LLCCV: STD70320 Tuning Sol : STD69491

Stannous : Hydroxylamine :

Workgroups: 525405,525403,525266,525535

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.053115.233927	L15051535-01	FT002MW0205-005	20/50	1		05/31/15 23:39
70	NI.053115.234239	L15051538-01	DP005MW0507-005	20/50	1		05/31/15 23:42
71	NI.053115.234550	L15051543-01	SS007MW0704-005	20/50	1		05/31/15 23:45
72	NI.053115.234902	L15051543-02	SS007MW0704-005 DUP	20/50	1		05/31/15 23:49
73	NI.053115.235213	L15051546-01	SS007MWOB21-005	20/50	1		05/31/15 23:52
74	NI.053115.235525	L15051546-02	SS007MWOB04-005	20/50	1		05/31/15 23:55
75	NI.053115.235836	L15051546-06	SS007MWOB13-005	20/50	1		05/31/15 23:58
76	NI.060115.000148	L15051546-07	SS007MWN752-005	20/50	1		06/01/15 00:01
77	NI.060115.000459	L15051546-08	SS007MWOB19-005	20/50	1		06/01/15 00:04
78	NI.060115.000811	L15051546-09	SS007MWN748-005	20/50	1		06/01/15 00:08
79	NI.060115.001123	WG525750-23	CCV		1		06/01/15 00:11
80	NI.060115.001434	WG525750-24	CCB		1		06/01/15 00:14

Page: 3 Approved: June 02, 2015

Maren Berry

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 31-MAY-2015
Analyst: BKT
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 525750
Runlog ID: 68316
Analytical Workgroups: 525405,525403,525266,525535

Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	1435,1460,1463,1529,1530
Client Forms	X
Level X	
Level 3	
Level 4	1435,1460,1463,1529,1530
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BKT
Secondary Reviewer	MMB
Comments	

Primary Reviewer:
01-JUN-2015

Secondary Reviewer:
02-JUN-2015

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-02-2015 13:59:41

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG525405

Login Number: L15051435

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW08FF-052115	02	05/21/15					05/26/2015	5	180		05/31/15	10.3	180	
50WW22FF-052115	04	05/21/15					05/26/2015	4.9	180		05/31/15	10.2	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4208445
Report generated 06/01/2015 11:23

METHOD BLANK SUMMARY

Login Number: L15051435
Blank File ID: NI.053115.203016
Prep Date: 05/26/15 12:49
Analyzed Date: 05/31/15 20:30
Analyst: BKT

Work Group: WG525405
Blank Sample ID: WG525054-03
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG525054-04	NI.052815.150111	05/28/15 15:01	01
DUP	WG525054-05	NI.052815.151708	05/28/15 15:17	01
LCS	WG525054-04	NI.053115.203328	05/31/15 20:33	02
50WW08FF-052115	L15051435-02	NI.053115.204616	05/31/15 20:46	01
50WW22FF-052115	L15051435-04	NI.053115.204928	05/31/15 20:49	01

Report Name: BLANK_SUMMARY
PDF File ID: 4208446
Report generated 06/01/2015 11:23

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051435 Prep Date: 05/26/15 12:49 Sample ID: WG525054-03
Instrument ID: ICP-MS2 Run Date: 05/31/15 20:30 Prep Method: 3015
File ID: NI.053115.203016 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG525405 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-31-MAY-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Manganese, Dissolved	0.00100	0.00400	0.00100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4208447
01-JUN-2015 11:23

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051435 Run Date: 05/31/2015 Sample ID: WG525054-04
Instrument ID: ICP-MS2 Run Time: 20:33 Prep Method: 3015
File ID: NI.053115.203328 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG525405 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD68313 Cal ID: ICP-MS-31-MAY-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Manganese, Dissolved	0.125	0.131	105	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4208448
Report generated: 06/01/2015 11:23

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L15051435 Cal ID: ICP-MS2- Worknum: WG525405
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG525054-01 File ID: NI.053115.203639 Dil: 1 Matrix: WATER
Sample ID: WG525054-06 MS File ID: NI.053115.203950 Dil: 1 Units: mg/L
Sample ID: WG525054-07 MSD File ID: NI.053115.204304 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Manganese	0.219	0.125	0.321	82.3	0.125	0.316	77.6	1.83	80 - 120	20	*

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4208449
Report generated 06/01/2015 11:26

Microbac Laboratories Inc.
Serial Dilution Report

Login: L15051435 **Worknum:** WG525405
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG525405-04 **File ID:** NI.053115.210915 **Dil:** 5 **Units:** ug/L
Sample: L15051463-01 **File ID:** NI.053115.210252 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Manganese	164		171		4.07	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4208443
06/01/2015 11:23

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L15051435 **Worknum:** WG525405
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG525405-03 **File ID:** NI.053115.210603 **Dil:** 1 **Units:** ug/L
Sample ID: L15051463-01 **File ID:** NI.053115.210252 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MANGANESE	220		164		50	111.2	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4208444
Report generated: 06/01/2015 11:23

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L15051435	Workgroup (AAB#):	WG525405
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG525750	Initial Calibration Date:	31-MAY-2015 20:04

	WG525750-01		WG525750-02		WG525750-03		WG525750-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
MANGANESE	0	999	.4	3080	50	574000	100	1160000	.999997	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4208452
Report generated: 01-JUN-2015 11:23

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L15051435
Instrument ID: ICP-MS2
File ID: NI.053115.201104
Workgroup (AAB#): WG525405
Matrix: WATER

Run Date: 05/31/2015
Run Time: 20:11
Analyst: BKT
Cal ID: ICP-MS2 - 31-MAY-15

Sample ID: WG525750-06
Method: 6020A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
MANGANESE	.4	1.6	.4	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4208454
Report generated 06/01/2015 11:23

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051435
Run Date: 05/31/2015
Sample ID: WG525750-11
Instrument ID: ICP-MS2
Run Time: 20:27
Method: 6020A
File ID: NI.053115.202704
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG525405
Cal ID: ICP-MS - 31-MAY-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4208457
Report generated 06/01/2015 11:23

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051435
Run Date: 05/31/2015
Sample ID: WG525750-13
Instrument ID: ICP-MS2
Run Time: 21:15
Method: 6020A
File ID: NI.053115.211539
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG525405
Cal ID: ICP-MS - 31-MAY-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4208457
Report generated 06/01/2015 11:23

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L15051435
Run Date: 05/31/2015
Sample ID: WG525750-05
Instrument ID: ICP-MS2
Run Time: 20:07
Method: 6020A
File ID: NI.053115.200751
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG525405
Cal ID: ICP-MS - 31-MAY-15
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Manganese		50	51.4	103	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4208453
Report generated 06/01/2015 11:23

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051435
Run Date: 05/31/2015
Sample ID: WG525750-10
Instrument ID: ICP-MS2
Run Time: 20:23
Method: 6020A
File ID: NI.053115.202352
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG525405
Cal ID: ICP-MS - 31-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0502	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4208456
Report generated 06/01/2015 11:23

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051435
Run Date: 05/31/2015
Sample ID: WG525750-12
Instrument ID: ICP-MS2
Run Time: 21:12
Method: 6020A
File ID: NI.053115.211228
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG525405
Cal ID: ICP-MS - 31-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0504	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4208456
Report generated 06/01/2015 11:23

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15051435
Run Date: 05/31/2015
Sample ID: WG525750-07
Instrument ID: ICP-MS2
Run Time: 20:14
Method: 6020A
File ID: NI.053115.201417
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG525405
Cal ID: ICP-MS - 31-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.500	0.355	ug/L	71.1	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4208458
Report generated 06/01/2015 11:23

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15051435
Run Date: 05/31/2015
Sample ID: WG525750-18
Instrument ID: ICP-MS2
Run Time: 22:29
Method: 6020A
File ID: NI.053115.222907
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG525405
Cal ID: ICP-MS - 31-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.500	0.451	ug/L	90.1	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4208458
Report generated 06/01/2015 11:23

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L15051435
Instrument ID: ICP-MS2
Sol. A : WG525750-08 **File ID:** NI.053115.201728
Sol. AB : WG525750-09 **File ID:** NI.053115.202039

Workgroup (AAB#): WG525405
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Manganese	NS	-0.0969	NS	100	103	103	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4208455
Report generated 06/01/2015 11:23

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L15051435 **Analytical Method:** 6020
Analytical Workgroup: WG525405 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 31-MAY-2015 19:55

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L15051435-02	SAMP	31-MAY-2015 20:46	97.231	103.012	101.807
L15051435-04	SAMP	31-MAY-2015 20:49	94.277	99.391	103.196
L15051463-01	SAMP	31-MAY-2015 21:02	99.624	100.391	103.172
WG525054-03	BLANK	31-MAY-2015 20:30	102.916	105.778	102.42
WG525054-04	LCS	31-MAY-2015 20:33	102.409	105.044	102.955
WG525405-03	PSPK	31-MAY-2015 21:06	100.168	100.668	103.557
WG525405-04	SERIAL	31-MAY-2015 21:09	104.58	103.612	107.082
WG525750-05	ICV	31-MAY-2015 20:07	98.107	99.499	100.455
WG525750-06	ICB	31-MAY-2015 20:11	99.844	100.345	100.061
WG525750-07	LLICV	31-MAY-2015 20:14	99.388	100.219	98.711
WG525750-08	ICS	31-MAY-2015 20:17	96.161	99.473	99.512
WG525750-09	ICS	31-MAY-2015 20:20	98.165	101.62	102.054
WG525750-10	CCV	31-MAY-2015 20:23	99.439	100.536	102.399
WG525750-11	CCB	31-MAY-2015 20:27	100.83	101.373	101.761
WG525750-12	CCV	31-MAY-2015 21:12	102.656	100.814	106.419
WG525750-13	CCB	31-MAY-2015 21:15	103.757	100.147	105.133
WG525750-18	LLCCV	31-MAY-2015 22:29	109.826	108.87	112.828

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4208451
Report generated: 06/01/2015 11:23

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L15051435 **Date:** 04/07/2015
Insturment ID: ICP-MS2 **Method:** 6020A

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Uranium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4208450
Report generated: 06/01/2015 11:23

2.3.2.3 Raw Data

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Sunday, May 31, 2015 18:46:05

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1326	2025	0.691	
Mg	23.985	23.975	4500	2019	0.704	
Co	58.933	58.925	11688	2022	0.687	
In	114.904	114.925	22867	2027	0.699	
U	238.050	238.025	47456	2042	0.673	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	5.116
5.575	4.177
5.625	4.631
5.675	3.178
5.725	1.637
5.775	2.370
5.825	3.698
5.875	2.580
5.925	1.483
5.975	1.883
6.025	0.736
6.075	1.891
6.125	1.944
6.175	1.672
6.225	4.687
6.275	10.884
6.325	72.436
6.375	82.402
6.425	74.689
6.475	41.110
6.525	10.008
6.575	3.327
6.625	1.949
6.675	1.604
6.725	1.382
6.775	1.836
6.825	1.433

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6.875	1.820
6.925	1.289
6.975	1.650
7.025	1.436
7.075	1.961
7.125	1.915
7.175	2.028
7.225	1.133
7.275	1.479
7.325	2.252
7.375	48.290
7.425	84.779
7.475	57.601
7.525	80.027
7.575	63.191
7.625	81.312
7.675	63.888
7.725	58.330
7.775	38.030
7.825	83.853
7.875	71.261
7.925	106.863
7.975	63.888
8.025	52.705
8.075	38.030
8.125	81.223
8.175	79.057
8.225	81.441
8.275	59.266
8.325	122.475
8.375	70.711
8.425	55.902
8.475	60.858
22.525	136.931
22.575	37.268
22.625	64.358
22.675	67.748
22.725	37.029
22.775	51.875
22.825	60.990
22.875	63.738
22.925	34.233
22.975	62.883
23.025	18.887
23.075	41.752
23.125	15.215
23.175	19.764

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23.225	44.947
23.275	23.697
23.325	31.181
23.375	22.480
23.425	34.297
23.475	31.855
23.525	4.831
23.575	2.473
23.625	1.426
23.675	1.457
23.725	1.253
23.775	1.873
23.825	1.540
23.875	1.418
23.925	1.378
23.975	1.500
24.025	1.069
24.075	1.720
24.125	1.841
24.175	1.199
24.225	2.298
24.275	2.972
24.325	14.943
24.375	50.990
24.425	42.492
24.475	15.462
24.525	7.302
24.575	1.894
24.625	2.001
24.675	0.960
24.725	1.803
24.775	0.329
24.825	1.614
24.875	2.002
24.925	1.557
24.975	1.162
25.025	1.935
25.075	1.597
25.125	2.309
25.175	2.020
25.225	3.315
25.275	7.856
25.325	60.990
25.375	44.605
25.425	28.085
25.475	17.129
57.525	10.361

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57.575	6.156
57.625	3.088
57.675	2.380
57.725	3.810
57.775	2.591
57.825	3.639
57.875	4.028
57.925	3.045
57.975	2.299
58.025	1.878
58.075	1.881
58.125	3.327
58.175	1.935
58.225	2.681
58.275	9.170
58.325	49.793
58.375	33.333
58.425	42.492
58.475	5.858
58.525	15.430
58.575	2.067
58.625	3.110
58.675	0.393
58.725	1.410
58.775	3.121
58.825	2.206
58.875	2.972
58.925	3.205
58.975	2.386
59.025	2.306
59.075	2.257
59.125	2.628
59.175	3.765
59.225	2.948
59.275	11.014
59.325	81.312
59.375	104.583
59.425	39.123
59.475	35.392
59.525	10.807
59.575	12.353
59.625	5.881
59.675	4.563
59.725	4.056
59.775	3.210
59.825	2.973
59.875	3.150

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59.925	2.826
59.975	1.145
60.025	2.308
60.075	4.404
60.125	5.596
60.175	3.938
60.225	6.275
60.275	33.543
60.325	39.123
60.375	63.888
60.425	43.853
60.475	37.268
113.525	7.766
113.575	7.345
113.625	4.467
113.675	4.115
113.725	2.982
113.775	3.226
113.825	2.042
113.875	3.404
113.925	2.052
113.975	3.114
114.025	2.806
114.075	1.937
114.125	10.078
114.175	3.007
114.225	6.950
114.275	11.203
114.325	17.678
114.375	36.377
114.425	16.197
114.475	4.173
114.525	2.474
114.575	2.393
114.625	1.351
114.675	2.862
114.725	1.317
114.775	2.415
114.825	1.794
114.875	1.703
114.925	1.774
114.975	1.296
115.025	2.088
115.075	1.775
115.125	2.425
115.175	3.016
115.225	1.769

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115.275	7.910
115.325	10.143
115.375	62.361
115.425	55.902
115.475	56.723
115.525	10.102
115.575	6.429
115.625	7.119
115.675	1.409
115.725	3.703
115.775	4.683
115.825	6.689
115.875	2.543
115.925	2.192
115.975	2.807
116.025	4.221
116.075	4.625
116.125	4.318
116.175	12.519
116.225	9.027
116.275	24.417
116.325	51.618
116.375	46.481
116.425	72.436
116.475	62.630
236.525	
236.575	34.401
236.625	45.015
236.675	21.066
236.725	30.305
236.775	29.881
236.825	15.408
236.875	34.641
236.925	23.903
236.975	21.815
237.025	30.459
237.075	31.110
237.125	41.211
237.175	22.822
237.225	26.716
237.275	32.439
237.325	67.527
237.375	31.672
237.425	43.460
237.475	32.401
237.525	18.708
237.575	19.715

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237.625	16.312
237.675	5.615
237.725	3.608
237.775	2.753
237.825	0.847
237.875	1.728
237.925	1.669
237.975	1.657
238.025	0.445
238.075	1.685
238.125	1.136
238.175	1.840
238.225	1.998
238.275	2.535
238.325	4.043
238.375	6.031
238.425	6.932
238.475	7.606
238.525	30.408
238.575	43.651
238.625	22.017
238.675	57.282
238.725	16.855
238.775	52.736
238.825	33.535
238.875	23.697
238.925	33.840
238.975	12.304
239.025	38.065
239.075	36.099
239.125	36.990
239.175	30.162
239.225	26.082
239.275	54.128
239.325	38.030
239.375	45.015
239.425	21.626
239.475	39.123

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SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 5/31/2015 6:51:00 PM
End Time: 5/31/2015 6:53:23 PM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 4333.95
        Obtained Intensity (Mg 23.985): 182961.48
        Obtained Intensity (In 114.904): 70910.81
        Obtained Intensity (U 238.05): 41876.87
        Obtained Intensity (Bkgd 220): 0.07
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.020 (=2897.74 / 143627.02)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.011 (=1509.21 / 143627.02)
```

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SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 5/31/2015 6:51:00 PM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 4333.95
                Obtained Intensity (Mg 23.985): 182961.48
                Obtained Intensity (In 114.904): 70910.81
                Obtained Intensity (U 238.05): 41876.87
                Obtained Intensity (Bkgd 220): 0.07
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.020 (=2897.74 / 143627.02)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.011 (=1509.21 / 143627.02)
[Passed]  Optimum value(s): N/A

End Time: 5/31/2015 6:53:23 PM
```


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Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Sunday, May 31, 2015 19:51:51
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	128085.8	0.9				ug/L		Standard
	Be	9	16.7	34.6				ug/L		Standard
	Al	27	1108.4	3.5				ug/L		Standard
	Sc	45	42531.3	0.8				ug/L		Standard
	Ti	47	7.0	79.5				ug/L		Standard
	V	51	906.5	9.1				ug/L		Standard
	Cr	52	4643.4	1.2				ug/L		Standard
	Cr	53	310.0	17.0				ug/L		Standard
	Mn	55	1006.0	3.4				ug/L		Standard
	Co	59	74.3	12.2				ug/L		Standard
	Ni	60	292.0	11.0				ug/L		Standard
	Cu	65	5020.2	1.1				ug/L		Standard
	Zn	66	17909.9	1.6				ug/L		Standard
>	**Ge**	72	508788.2	0.2				ug/L		Standard
	As	75	-97.5	29.3				ug/L		Standard
	Se	82	17.7	15.6				ug/L		Standard
	Se-1	77	63.7	10.5				ug/L		Standard
>	**Ga**	71	26.7	43.3				mg/L		Standard
	Rb	85	160.0	14.3				ug/L		Standard
	Y	89	653037.1	1.0				ug/L		Standard
>	**Rh**	103	6.7	43.3				ug/L		Standard
	Mo	98	17.3	8.9				ug/L		Standard
	Ag	107	68.3	12.3				ug/L		Standard
	Cd	111	5.3	22.2				mg/L		Standard
	Cd	114	6.0	293.8				ug/L		Standard
>	**In**	115	538484.2	0.1				ug/L		Standard
	Sn	118	1080.0	9.8				ug/L		Standard
	Sb	123	22.3	27.0				ug/L		Standard
	Ba	135	9.3	68.9				ug/L		Standard
	Ce	140	8.3	69.3				ug/L		Standard
>	**Tb**	159	729623.4	0.7				ug/L		Standard
	Ho	165	0.0					ug/L		Standard
	Tl	203	7.3	114.4				ug/L		Standard
	Tl	205	3.3	86.6				ug/L		Standard
	Pb	206	547.7	4.3				ug/L		Standard
	Pb	207	453.3	5.2				ug/L		Standard
	Pb	208	1835.4	1.3				ug/L		Standard
	U	238	1.3	43.3				ug/L		Standard
>	**Bi**	209	438591.1	0.2				ug/L		Standard

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	Na	23	0.0		mg/L	Standard
	Mg	24	18.3	15.7	mg/L	Standard
	K	39	3.3	86.6	mg/L	Standard
	Ca	43	1.7	173.2	mg/L	Standard
	Fe	54	292.4	14.2	mg/L	Standard
	Fe	57	31.7	45.6	mg/L	Standard
>	**Sc-1**	45	42531.3	0.8	mg/L	Standard
	Cl	35	58933.8	2.0	ug/L	Standard
	Kr	83	1.0	100.0	ug/L	Standard
	Br	81	1486.7	14.9	ug/L	Standard
	P	31	15052.6	14.5	ug/L	Standard
	S	34	1318.4	9.9	ug/L	Standard
	Sr	88	26.7	39.0	ug/L	Standard
	C	12	56.7	20.4	mg/L	Standard
	N	14	0.0		mg/L	Standard
	Hg	202	0.0		mg/L	Standard
	Dy	164	2.4	243.9	mg/L	Standard
	Ho-1	165	0.0		mg/L	Standard
	Er	166	20.0	50.0	mg/L	Standard
	I	127	175.0	5.7	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Sunday, May 31, 2015 19:55:02
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	123924.8	1.9				ug/L	128086	Standard
	Be	9	13.3	43.3				ug/L	17	Standard
	Al	27	1170.0	2.6				ug/L	1108	Standard
	Sc	45	42847.2	0.8				ug/L	42531	Standard
	Ti	47	6.7	48.2				ug/L	7	Standard
	V	51	861.4	3.6				ug/L	906	Standard
	Cr	52	4726.7	2.3				ug/L	4643	Standard
	Cr	53	331.7	8.8				ug/L	310	Standard
	Mn	55	998.7	4.3				ug/L	1006	Standard
	Co	59	80.3	10.4				ug/L	74	Standard
	Ni	60	319.3	5.0				ug/L	292	Standard
	Cu	65	5187.2	2.1				ug/L	5020	Standard
	Zn	66	18628.1	2.0				ug/L	17910	Standard
>	**Ge**	72	505575.7	0.9				ug/L	508788	Standard
	As	75	-114.6	26.9				ug/L	-98	Standard
	Se	82	17.7	54.8				ug/L	18	Standard
	Se-1	77	74.0	6.2				ug/L	64	Standard
>	**Ga**	71	28.3	40.8				mg/L	27	Standard
	Rb	85	136.7	15.2				ug/L	160	Standard
	Y	89	645684.6	0.6				ug/L	653037	Standard
>	**Rh**	103	0.0					ug/L	7	Standard
	Mo	98	10.0	27.2				ug/L	17	Standard
	Ag	107	64.3	28.9				ug/L	68	Standard
	Cd	111	5.3	21.7				mg/L	5	Standard
	Cd	114	15.8	83.9				ug/L	6	Standard
>	**In**	115	532794.4	0.7				ug/L	538484	Standard
	Sn	118	1090.0	0.0				ug/L	1080	Standard
	Sb	123	14.3	34.8				ug/L	22	Standard
	Ba	135	18.0	20.0				ug/L	9	Standard
	Ce	140	5.0	100.0				ug/L	8	Standard
>	**Tb**	159	722739.5	0.3				ug/L	729623	Standard
	Ho	165	3.3	173.2				ug/L	0	Standard
	Tl	203	1.3	86.6				ug/L	7	Standard
	Tl	205	1.7	173.2				ug/L	3	Standard
	Pb	206	549.3	3.9				ug/L	548	Standard
	Pb	207	433.0	2.8				ug/L	453	Standard
	Pb	208	1910.7	1.6				ug/L	1835	Standard
	U	238	0.3	173.2				ug/L	1	Standard
>	**Bi**	209	433093.8	0.6				ug/L	438591	Standard

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	Na	23	0.0		mg/L	0	Standard
	Mg	24	15.0	57.7	mg/L	18	Standard
	K	39	1.7	173.2	mg/L	3	Standard
	Ca	43	6.7	114.6	mg/L	2	Standard
	Fe	54	317.3	9.6	mg/L	292	Standard
	Fe	57	35.0	65.5	mg/L	32	Standard
>	**Sc-1**	45	42847.2	0.8	mg/L	42531	Standard
	Cl	35	61712.1	2.1	ug/L	58934	Standard
	Kr	83	0.0		ug/L	1	Standard
	Br	81	1493.4	7.9	ug/L	1487	Standard
	P	31	14131.6	3.9	ug/L	15053	Standard
	S	34	1408.4	2.0	ug/L	1318	Standard
	Sr	88	25.0	60.0	ug/L	27	Standard
	C	12	103.3	55.0	mg/L	57	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	0.0		mg/L	0	Standard
	Dy	164	-0.2	173.2	mg/L	2	Standard
	Ho-1	165	3.3	173.2	mg/L	0	Standard
	Er	166	3.3	173.2	mg/L	20	Standard
	I	127	158.3	21.0	mg/L	175	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Sunday, May 31, 2015 19:58:14
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	124353.3	1.7				ug/L	128086	Standard
	Be	9	58.3	40.5				ug/L	17	Standard
	Al	27	5856.1	4.3				ug/L	1108	Standard
	Sc	45	42813.8	1.9				ug/L	42531	Standard
	Ti	47	28.7	24.5				ug/L	7	Standard
	V	51	1202.9	1.0				ug/L	906	Standard
	Cr	52	5049.5	0.4				ug/L	4643	Standard
	Cr	53	388.3	12.9				ug/L	310	Standard
	Mn	55	3076.3	1.4				ug/L	1006	Standard
	Co	59	482.7	0.6				ug/L	74	Standard
	Ni	60	441.0	6.1				ug/L	292	Standard
	Cu	65	5415.3	2.9				ug/L	5020	Standard
	Zn	66	19060.6	1.2				ug/L	17910	Standard
>	**Ge**	72	512828.4	0.4				ug/L	508788	Standard
	As	75	-55.4	34.6				ug/L	-98	Standard
	Se	82	23.7	14.4				ug/L	18	Standard
	Se-1	77	69.0	16.7				ug/L	64	Standard
>	**Ga**	71	23.3	49.5				mg/L	27	Standard
	Rb	85	165.0	23.7				ug/L	160	Standard
	Y	89	655202.6	1.0				ug/L	653037	Standard
>	**Rh**	103	3.3	86.6				ug/L	7	Standard
	Mo	98	315.9	12.0				ug/L	17	Standard
	Ag	107	413.3	5.7				ug/L	68	Standard
	Cd	111	78.5	7.9				mg/L	5	Standard
	Cd	114	182.4	12.8				ug/L	6	Standard
>	**In**	115	535516.0	0.3				ug/L	538484	Standard
	Sn	118	1525.1	11.9				ug/L	1080	Standard
	Sb	123	207.0	22.2				ug/L	22	Standard
	Ba	135	85.7	2.4				ug/L	9	Standard
	Ce	140	16.7	34.6				ug/L	8	Standard
>	**Tb**	159	725078.5	1.1				ug/L	729623	Standard
	Ho	165	13.3	43.3				ug/L	0	Standard
	Tl	203	275.0	6.3				ug/L	7	Standard
	Tl	205	250.0	5.3				ug/L	3	Standard
	Pb	206	814.7	2.4				ug/L	548	Standard
	Pb	207	661.7	3.9				ug/L	453	Standard
	Pb	208	2774.1	1.1				ug/L	1835	Standard
	U	238	255.0	2.0				ug/L	1	Standard
>	**Bi**	209	436065.5	1.1				ug/L	438591	Standard

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Na	23	0.0		mg/L	0	Standard
Mg	24	18.3	31.5	mg/L	18	Standard
K	39	0.0		mg/L	3	Standard
Ca	43	6.7	43.3	mg/L	2	Standard
Fe	54	304.3	13.2	mg/L	292	Standard
Fe	57	41.7	36.7	mg/L	32	Standard
Sc-1	45	42813.8	1.9	mg/L	42531	Standard
Cl	35	60522.7	1.4	ug/L	58934	Standard
Kr	83	1.0	100.0	ug/L	1	Standard
Br	81	1350.1	7.1	ug/L	1487	Standard
P	31	13360.9	1.8	ug/L	15053	Standard
S	34	1433.4	5.9	ug/L	1318	Standard
Sr	88	6.7	114.6	ug/L	27	Standard
C	12	86.7	17.6	mg/L	57	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	3.3	173.2	mg/L	0	Standard
Dy	164	6.5	86.7	mg/L	2	Standard
Ho-1	165	13.3	43.3	mg/L	0	Standard
Er	166	3.3	173.2	mg/L	20	Standard
I	127	140.0	12.9	mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Sunday, May 31, 2015 20:01:26
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	119298.2	3.7				ug/L	128086	Standard
	Be	9	46641.7	3.6	**50.0000**	0.114	0.2	ug/L	17	Standard
	Al	27	2945119.4	5.4	**50.0000**	1.041	2.1	ug/L	1108	Standard
	Sc	45	42145.2	0.2				ug/L	42531	Standard
	Ti	47	20559.3	4.2	**100.0000**	3.208	3.2	ug/L	7	Standard
	V	51	308503.0	3.8	**50.0000**	1.362	2.7	ug/L	906	Standard
	Cr	52	345404.0	3.4	**50.0000**	1.193	2.4	ug/L	4643	Standard
	Cr	53	49592.7	3.1	**50.0000**	1.030	2.1	ug/L	310	Standard
	Mn	55	573855.5	3.4	**50.0000**	1.171	2.3	ug/L	1006	Standard
	Co	59	388186.1	3.2	**50.0000**	1.084	2.2	ug/L	74	Standard
	Ni	60	121657.5	3.3	**50.0000**	1.103	2.2	ug/L	292	Standard
	Cu	65	127320.3	2.6	**50.0000**	0.840	1.7	ug/L	5020	Standard
	Zn	66	76077.4	3.7	**50.0000**	1.747	3.5	ug/L	17910	Standard
>	**Ge**	72	499257.5	1.1				ug/L	508788	Standard
	As	75	65632.3	3.4	**50.0000**	1.172	2.3	ug/L	-98	Standard
	Se	82	6127.9	4.5	**50.0000**	1.739	3.5	ug/L	18	Standard
	Se-1	77	4587.4	3.1	**50.0000**	1.113	2.2	ug/L	64	Standard
>	**Ga**	71	96.7	23.3				mg/L	27	Standard
	Rb	85	931.7	3.6				ug/L	160	Standard
	Y	89	632671.1	2.2				ug/L	653037	Standard
>	**Rh**	103	38.3	37.7				ug/L	7	Standard
	Mo	98	291432.3	3.4	**100.0000**	3.248	3.2	ug/L	17	Standard
	Ag	107	329390.2	2.0	**50.0000**	0.949	1.9	ug/L	68	Standard
	Cd	111	70729.3	3.0	**50.0000**	1.435	2.9	mg/L	5	Standard
	Cd	114	172038.0	3.4	**50.0000**	1.535	3.1	ug/L	6	Standard
>	**In**	115	531750.9	0.8				ug/L	538484	Standard
	Sn	118	271164.8	3.1	**50.0000**	1.798	3.6	ug/L	1080	Standard
	Sb	123	171047.4	2.5	**50.0000**	1.113	2.2	ug/L	22	Standard
	Ba	135	54239.9	1.8	**50.0000**	0.725	1.5	ug/L	9	Standard
	Ce	140	33.3	37.7				ug/L	8	Standard
>	**Tb**	159	716011.6	0.7				ug/L	729623	Standard
	Ho	165	6.7	114.6				ug/L	0	Standard
	Tl	203	256336.0	2.8	**50.0000**	1.649	3.3	ug/L	7	Standard
	Tl	205	241621.3	3.6	**50.0000**	2.006	4.0	ug/L	3	Standard
	Pb	206	167067.7	2.3	**50.0000**	1.373	2.7	ug/L	548	Standard
	Pb	207	152916.1	2.7	**50.0000**	1.563	3.1	ug/L	453	Standard
	Pb	208	597939.3	3.7	**50.0000**	2.111	4.2	ug/L	1835	Standard
	U	238	236635.9	3.3	**50.0000**	1.858	3.7	ug/L	1	Standard
>	**Bi**	209	425690.4	0.7				ug/L	438591	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	1878.5	6.1	**5.0000**	0.307	6.1	mg/L	18	Standard
K	39	135.0	9.8	**5.0000**	0.496	9.9	mg/L	3	Standard
Ca	43	16.7	69.3	**5.0000**	5.735	114.7	mg/L	2	Standard
Fe	54	10635.8	5.3	**5.0000**	0.268	5.4	mg/L	292	Standard
Fe	57	3140.3	3.0	**5.0000**	0.147	2.9	mg/L	32	Standard
> **Sc-1**	45	42145.2	0.2				mg/L	42531	Standard
Cl	35	61186.8	4.3				ug/L	58934	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	1483.4	16.6				ug/L	1487	Standard
P	31	18347.8	3.5				ug/L	15053	Standard
S	34	1381.7	6.1				ug/L	1318	Standard
Sr	88	23.3	44.6				ug/L	27	Standard
C	12	110.0	63.6				mg/L	57	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.0	193.9				mg/L	2	Standard
Ho-1	165	6.7	114.6				mg/L	0	Standard
Er	166	13.3	43.3				mg/L	20	Standard
I	127	180.0	9.6				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Sunday, May 31, 2015 20:04:37
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	120421.8	1.8				ug/L	128086	Standard
	Be	9	95488.3	0.8	**100.7090**	1.312	1.3	ug/L	17	Standard
	Al	27	6002539.6	1.3	**100.5218**	0.931	0.9	ug/L	1108	Standard
	Sc	45	43878.4	0.4				ug/L	42531	Standard
	Ti	47	42732.8	0.5	**202.4204**	1.606	0.8	ug/L	7	Standard
	V	51	625403.6	0.6	**100.0209**	0.693	0.7	ug/L	906	Standard
	Cr	52	687818.4	0.7	**99.3862**	1.016	1.0	ug/L	4643	Standard
	Cr	53	102326.2	2.5	**101.0006**	2.602	2.6	ug/L	310	Standard
	Mn	55	1156215.5	1.1	**99.7460**	0.402	0.4	ug/L	1006	Standard
	Co	59	781549.9	0.9	**99.6118**	1.354	1.4	ug/L	74	Standard
	Ni	60	244700.8	0.2	**99.6215**	0.999	1.0	ug/L	292	Standard
	Cu	65	250594.4	0.6	**99.4799**	0.372	0.4	ug/L	5020	Standard
	Zn	66	135803.9	0.4	**100.0861**	1.054	1.1	ug/L	17910	Standard
>	Ge	72	506664.1	0.9				ug/L	508788	Standard
	As	75	132837.7	0.7	**99.8228**	0.175	0.2	ug/L	-98	Standard
	Se	82	12250.0	0.2	**99.3229**	1.096	1.1	ug/L	18	Standard
	Se-1	77	9247.8	3.2	**100.0036**	2.460	2.5	ug/L	64	Standard
>	Ga	71	111.7	41.6				mg/L	27	Standard
	Rb	85	1646.8	4.4				ug/L	160	Standard
	Y	89	639069.4	0.5				ug/L	653037	Standard
>	Rh	103	40.0	45.1				ug/L	7	Standard
	Mo	98	588312.3	0.7	**199.9548**	1.805	0.9	ug/L	17	Standard
	Ag	107	656877.1	0.4	**99.3709**	0.611	0.6	ug/L	68	Standard
	Cd	111	144984.3	0.3	**100.7426**	0.550	0.5	mg/L	5	Standard
	Cd	114	349591.7	0.5	**100.3079**	0.359	0.4	ug/L	6	Standard
>	In	115	536999.1	0.2				ug/L	538484	Standard
	Sn	118	551248.8	1.6	**100.4347**	1.889	1.9	ug/L	1080	Standard
	Sb	123	345249.0	0.2	**99.9742**	0.467	0.5	ug/L	22	Standard
	Ba	135	109470.4	0.2	**99.9782**	0.157	0.2	ug/L	9	Standard
	Ce	140	46.7	6.2				ug/L	8	Standard
>	Tb	159	721497.5	1.3				ug/L	729623	Standard
	Ho	165	5.0	0.0				ug/L	0	Standard
	Tl	203	514594.3	0.7	**100.6093**	0.845	0.8	ug/L	7	Standard
	Tl	205	499570.7	0.4	**102.0808**	0.557	0.5	ug/L	3	Standard
	Pb	206	337619.2	0.6	**101.0361**	0.602	0.6	ug/L	548	Standard
	Pb	207	308880.4	0.6	**100.9991**	0.719	0.7	ug/L	453	Standard
	Pb	208	1204718.1	0.5	**100.8772**	0.643	0.6	ug/L	1835	Standard
	U	238	483388.9	0.4	**101.4794**	0.581	0.6	ug/L	1	Standard
>	Bi	209	422074.1	0.2				ug/L	438591	Standard

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Na	23	1.7	173.2	**19.9850**	34.606	173.2	mg/L	0	Standard
Mg	24	3665.4	4.0	**9.6952**	0.359	3.7	mg/L	18	Standard
K	39	338.3	19.0	**10.9177**	2.039	18.7	mg/L	3	Standard
Ca	43	31.7	45.6	**10.8217**	6.267	57.9	mg/L	2	Standard
Fe	54	20986.4	1.8	**9.7971**	0.207	2.1	mg/L	292	Standard
Fe	57	6714.8	2.9	**10.1641**	0.334	3.3	mg/L	32	Standard
Sc-1	45	43878.4	0.4				mg/L	42531	Standard
Cl	35	62451.1	1.5				ug/L	58934	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	1580.1	6.6				ug/L	1487	Standard
P	31	22186.2	1.1				ug/L	15053	Standard
S	34	1458.4	5.6				ug/L	1318	Standard
Sr	88	18.3	95.8				ug/L	27	Standard
C	12	103.3	11.2				mg/L	57	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.3	86.9				mg/L	2	Standard
Ho-1	165	5.0	0.0				mg/L	0	Standard
Er	166	6.7	173.2				mg/L	20	Standard
I	127	231.7	13.0				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998
Corr. Coef.	K	39	Correlation coefficient < 0.998
Corr. Coef.	Ca	43	Correlation coefficient < 0.998

Sample ID: Standard 4
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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Sunday, May 31, 2015 20:07:51
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	120833.4	1.9				ug/L	128086	Standard
	Be	9	47218.5	1.8	**49.6343**	1.488	3.0	ug/L	17	Standard
	Al	27	3104136.3	1.3	**51.7875**	0.710	1.4	ug/L	1108	Standard
	Sc	45	42185.3	1.4				ug/L	42531	Standard
	Ti	47	22450.3	0.8	**106.4157**	0.807	0.8	ug/L	7	Standard
	V	51	317293.0	0.7	**50.7170**	0.115	0.2	ug/L	906	Standard
	Cr	52	354290.8	0.7	**50.9080**	0.438	0.9	ug/L	4643	Standard
	Cr	53	52867.1	1.2	**52.0640**	0.329	0.6	ug/L	310	Standard
	Mn	55	596294.5	0.6	**51.3852**	0.562	1.1	ug/L	1006	Standard
	Co	59	404331.8	0.7	**51.5721**	0.676	1.3	ug/L	74	Standard
	Ni	60	128969.6	0.3	**52.4879**	0.323	0.6	ug/L	292	Standard
	Cu	65	137229.0	1.1	**53.5630**	0.269	0.5	ug/L	5020	Standard
	Zn	66	98954.8	0.7	**68.6414**	0.546	0.8	ug/L	17910	Standard
>	Ge	72	506238.2	0.8				ug/L	508788	Standard
	As	75	68169.2	0.8	**51.3140**	0.268	0.5	ug/L	-98	Standard
	Se	82	6367.7	1.1	**51.6029**	0.538	1.0	ug/L	18	Standard
	Se-1	77	4787.1	1.4	**51.4867**	1.010	2.0	ug/L	64	Standard
>	Ga	71	115.0	19.0				mg/L	27	Standard
	Rb	85	905.0	4.4				ug/L	160	Standard
	Y	89	646009.5	0.4				ug/L	653037	Standard
>	Rh	103	18.3	56.8				ug/L	7	Standard
	Mo	98	313633.7	0.1	**105.8319**	1.546	1.5	ug/L	17	Standard
	Ag	107	344088.6	1.3	**51.6810**	1.392	2.7	ug/L	68	Standard
	Cd	111	73562.6	0.6	**50.7505**	1.052	2.1	mg/L	5	Standard
	Cd	114	177607.5	1.1	**50.5987**	1.134	2.2	ug/L	6	Standard
>	In	115	540933.3	1.4				ug/L	538484	Standard
	Sn	118	241211.6	0.7	**43.5042**	0.818	1.9	ug/L	1080	Standard
	Sb	123	167833.4	0.4	**48.2460**	0.585	1.2	ug/L	22	Standard
	Ba	135	56808.6	0.7	**51.5017**	1.085	2.1	ug/L	9	Standard
	Ce	140	103.3	26.6				ug/L	8	Standard
>	Tb	159	732594.7	0.4				ug/L	729623	Standard
	Ho	165	3.3	86.6				ug/L	0	Standard
	Tl	203	267725.4	0.9	**51.3454**	0.732	1.4	ug/L	7	Standard
	Tl	205	254067.5	0.8	**50.9255**	0.525	1.0	ug/L	3	Standard
	Pb	206	174039.9	0.7	**50.9990**	0.650	1.3	ug/L	548	Standard
	Pb	207	159029.6	0.2	**50.9293**	0.338	0.7	ug/L	453	Standard
	Pb	208	619579.3	0.4	**50.8046**	0.477	0.9	ug/L	1835	Standard
	U	238	246850.2	1.3	**50.8338**	0.842	1.7	ug/L	1	Standard
>	Bi	209	430289.1	0.5				ug/L	438591	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	1895.1	3.0	**5.1951**	0.211	4.1	mg/L	18	Standard
K	39	165.0	8.0	**5.5479**	0.519	9.3	mg/L	3	Standard
Ca	43	13.3	142.0	**2.9836**	8.451	283.3	mg/L	2	Standard
Fe	54	10832.9	4.5	**5.1966**	0.313	6.0	mg/L	292	Standard
Fe	57	3297.0	3.9	**5.1619**	0.215	4.2	mg/L	32	Standard
> **Sc-1**	45	42185.3	1.4				mg/L	42531	Standard
Cl	35	66155.5	1.4				ug/L	58934	Standard
Kr	83	0.0					ug/L	1	Standard
Br	81	1470.1	14.8				ug/L	1487	Standard
P	31	14076.6	7.4				ug/L	15053	Standard
S	34	1598.4	1.3				ug/L	1318	Standard
Sr	88	10.0	132.3				ug/L	27	Standard
C	12	86.7	37.1				mg/L	57	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.5	68.3				mg/L	2	Standard
Ho-1	165	3.3	86.6				mg/L	0	Standard
Er	166	3.3	173.2				mg/L	20	Standard
I	127	201.7	27.3				mg/L	175	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	99.269		
	Al	27	103.575		
	Sc	45			
	Ti	47	106.416		
	V	51	101.434		
	Cr	52	101.816		
	Cr	53			
	Mn	55	102.770		
	Co	59	103.144		
	Ni	60	104.976		
	Cu	65	107.126		
	Zn	66	137.283		
>	Ge	72		99.499	
	As	75	102.628		
	Se	82	103.206		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	105.832		
Ag	107	103.362		
Cd	111	101.501		
Cd	114			
In	115		100.455	
Sn	118	87.008		
Sb	123	96.492		
Ba	135	103.003		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.691		
Tl	205			
Pb	206	101.998		
Pb	207	101.859		
Pb	208	101.609		
U	238	101.668		
Bi	209		98.107	
Na	23	0.100		
Mg	24	103.903		
K	39	110.959		
Ca	43	59.671		
Fe	54	103.933		
Fe	57	103.239		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Zn	66	
QC Std 1	Na	23	
QC Std 1	K	39	

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QC Std 1	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Sunday, May 31, 2015 20:11:04
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	125435.5	1.2				ug/L	128086	Standard
	Be	9	16.7	62.4	**0.0074**	0.010	139.6	ug/L	17	Standard
	Al	27	1553.4	21.9	**-0.0200**	0.005	26.1	ug/L	1108	Standard
	Sc	45	42001.5	2.3				ug/L	42531	Standard
	Ti	47	9.3	16.4	**0.0096**	0.007	76.1	ug/L	7	Standard
	V	51	958.6	9.5	**0.0121**	0.015	125.9	ug/L	906	Standard
	Cr	52	4759.7	2.4	**0.0115**	0.019	164.2	ug/L	4643	Standard
	Cr	53	375.0	2.3	**0.0385**	0.009	22.2	ug/L	310	Standard
	Mn	55	1120.4	11.9	**-0.1166**	0.012	10.1	ug/L	1006	Standard
	Co	59	147.0	54.9	**0.0078**	0.010	131.5	ug/L	74	Standard
	Ni	60	333.7	9.7	**0.0074**	0.013	179.0	ug/L	292	Standard
	Cu	65	5407.6	1.2	**0.0566**	0.034	60.4	ug/L	5020	Standard
	Zn	66	19449.1	0.5	**0.4519**	0.150	33.1	ug/L	17910	Standard
>	**Ge**	72	510543.2	0.4				ug/L	508788	Standard
	As	75	-101.2	20.0	**0.0157**	0.015	95.8	ug/L	-98	Standard
	Se	82	20.5	54.0	**0.0251**	0.090	357.4	ug/L	18	Standard
	Se-1	77	69.0	3.8	**0.0531**	0.028	52.7	ug/L	64	Standard
>	**Ga**	71	30.0	16.7				mg/L	27	Standard
	Rb	85	163.3	4.7				ug/L	160	Standard
	Y	89	657852.8	1.3				ug/L	653037	Standard
>	**Rh**	103	1.7	173.2				ug/L	7	Standard
	Mo	98	122.6	57.0	**0.0337**	0.023	69.1	ug/L	17	Standard
	Ag	107	104.3	2.0	**0.0030**	0.000	8.4	ug/L	68	Standard
	Cd	111	8.5	40.8	**0.0012**	0.002	204.0	mg/L	5	Standard
	Cd	114	20.3	112.5	**0.0033**	0.007	196.3	ug/L	6	Standard
>	**In**	115	538812.5	0.7				ug/L	538484	Standard
	Sn	118	1230.0	2.5	**-0.0054**	0.006	115.8	ug/L	1080	Standard
	Sb	123	460.0	11.7	**0.1226**	0.015	12.6	ug/L	22	Standard
	Ba	135	14.0	31.1	**-0.0157**	0.004	25.1	ug/L	9	Standard
	Ce	140	6.7	43.3				ug/L	8	Standard
>	**Tb**	159	724657.2	1.0				ug/L	729623	Standard
	Ho	165	11.7	137.8				ug/L	0	Standard
	Tl	203	14.3	38.4	**0.0006**	0.001	160.5	ug/L	7	Standard
	Tl	205	35.0	123.7	**0.0074**	0.009	114.4	ug/L	3	Standard
	Pb	206	596.7	2.6	**-0.0140**	0.004	32.1	ug/L	548	Standard
	Pb	207	497.3	6.2	**-0.0028**	0.009	333.2	ug/L	453	Standard
	Pb	208	2047.1	5.8	**-0.0098**	0.009	94.5	ug/L	1835	Standard
	U	238	28.3	103.0	**0.0039**	0.006	151.0	ug/L	1	Standard
>	**Bi**	209	437908.1	0.2				ug/L	438591	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	21.7	96.1	**0.0146**	0.056	383.0	mg/L	18	Standard
K	39	0.0		**0.0050**	0.000	0.0	mg/L	3	Standard
Ca	43	5.0	100.0	**-0.7079**	2.318	327.4	mg/L	2	Standard
Fe	54	284.1	12.7	**-0.0021**	0.020	945.4	mg/L	292	Standard
Fe	57	26.7	28.6	**-0.0172**	0.013	74.3	mg/L	32	Standard
Sc-1	45	42001.5	2.3				mg/L	42531	Standard
Cl	35	66567.2	0.8				ug/L	58934	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	1616.8	12.5				ug/L	1487	Standard
P	31	14522.0	1.6				ug/L	15053	Standard
S	34	1665.1	4.4				ug/L	1318	Standard
Sr	88	13.3	86.6				ug/L	27	Standard
C	12	83.3	30.2				mg/L	57	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	13.3	43.3				mg/L	2	Standard
Ho-1	165	11.7	137.8				mg/L	0	Standard
Er	166	0.0					mg/L	20	Standard
I	127	170.0	15.6				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.345	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.061	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.844	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Sunday, May 31, 2015 20:14:17
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	124091.1	0.8				ug/L	128086	Standard
	Be	9	248.3	6.5	**0.2449**	0.018	7.4	ug/L	17	Standard
	Al	27	671.7	54.0	**-0.0340**	0.006	17.5	ug/L	1108	Standard
	Sc	45	42193.7	2.1				ug/L	42531	Standard
	Ti	47	5.0	40.0	**-0.0107**	0.009	87.9	ug/L	7	Standard
	V	51	3295.6	4.0	**0.3841**	0.022	5.6	ug/L	906	Standard
	Cr	52	10121.7	0.3	**0.7873**	0.004	0.5	ug/L	4643	Standard
	Cr	53	1121.7	7.1	**0.7737**	0.078	10.1	ug/L	310	Standard
	Mn	55	6613.4	1.9	**0.3554**	0.010	2.9	ug/L	1006	Standard
	Co	59	3276.7	1.2	**0.4042**	0.004	1.1	ug/L	74	Standard
	Ni	60	4154.2	1.0	**1.5550**	0.018	1.2	ug/L	292	Standard
	Cu	65	5390.3	1.3	**0.0523**	0.028	53.4	ug/L	5020	Standard
	Zn	66	8975.7	3.0	**-8.4275**	0.231	2.7	ug/L	17910	Standard
>	**Ge**	72	509901.0	0.1				ug/L	508788	Standard
	As	75	417.2	6.3	**0.4023**	0.020	4.9	ug/L	-98	Standard
	Se	82	67.1	14.5	**0.4016**	0.079	19.6	ug/L	18	Standard
	Se-1	77	109.3	9.5	**0.4906**	0.114	23.1	ug/L	64	Standard
>	**Ga**	71	21.7	26.6				mg/L	27	Standard
	Rb	85	28.3	20.4				ug/L	160	Standard
	Y	89	636814.0	0.5				ug/L	653037	Standard
>	**Rh**	103	3.3	86.6				ug/L	7	Standard
	Mo	98	59.6	63.2	**0.0128**	0.013	100.5	ug/L	17	Standard
	Ag	107	2716.9	0.9	**0.4026**	0.004	0.9	ug/L	68	Standard
	Cd	111	331.9	4.3	**0.2283**	0.011	4.9	mg/L	5	Standard
	Cd	114	806.9	9.5	**0.2313**	0.021	8.9	ug/L	6	Standard
>	**In**	115	531542.8	0.7				ug/L	538484	Standard
	Sn	118	676.7	7.8	**-0.1045**	0.009	8.6	ug/L	1080	Standard
	Sb	123	1373.4	2.4	**0.3917**	0.007	1.7	ug/L	22	Standard
	Ba	135	820.7	5.2	**0.7291**	0.043	5.9	ug/L	9	Standard
	Ce	140	16.7	34.6				ug/L	8	Standard
>	**Tb**	159	721170.1	1.0				ug/L	729623	Standard
	Ho	165	6.7	43.3				ug/L	0	Standard
	Tl	203	429.3	2.6	**0.0792**	0.002	2.0	ug/L	7	Standard
	Tl	205	418.3	7.2	**0.0833**	0.005	6.2	ug/L	3	Standard
	Pb	206	867.0	6.6	**0.0653**	0.017	26.6	ug/L	548	Standard
	Pb	207	724.4	3.2	**0.0699**	0.006	8.9	ug/L	453	Standard
	Pb	208	3044.5	1.7	**0.0720**	0.002	2.5	ug/L	1835	Standard
	U	238	2006.1	0.2	**0.4060**	0.003	0.8	ug/L	1	Standard
>	**Bi**	209	435906.9	1.0				ug/L	438591	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	30.0	16.7	**0.0383**	0.015	40.1	mg/L	18	Standard
K	39	3.3	86.6	**0.1161**	0.096	82.9	mg/L	3	Standard
Ca	43	3.3	173.2	**-1.4637**	2.650	181.1	mg/L	2	Standard
Fe	54	305.3	13.6	**0.0073**	0.019	254.6	mg/L	292	Standard
Fe	57	38.3	15.1	**0.0008**	0.008	918.5	mg/L	32	Standard
> **Sc-1**	45	42193.7	2.1				mg/L	42531	Standard
Cl	35	65709.5	2.0				ug/L	58934	Standard
Kr	83	0.0					ug/L	1	Standard
Br	81	1586.8	12.6				ug/L	1487	Standard
P	31	13993.1	3.8				ug/L	15053	Standard
S	34	1478.4	3.9				ug/L	1318	Standard
Sr	88	10.0	86.6				ug/L	27	Standard
C	12	126.7	60.3				mg/L	57	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	-0.8	34.6				mg/L	2	Standard
Ho-1	165	6.7	43.3				mg/L	0	Standard
Er	166	16.7	34.6				mg/L	20	Standard
I	127	143.3	28.4				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	122.450		
Al	27	-3.403		
Sc	45			
Ti	47			
V	51	96.029		
Cr	52	98.417		
Cr	53			
Mn	55	71.072		
Co	59	101.053		
Ni	60	97.187		
Cu	65	6.532		
Zn	66	-134.840		
> Ge	72		100.219	
As	75	100.580		
Se	82	100.408		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98			
Ag	107	100.644		
Cd	111	95.140		
Cd	114			
In	115		98.711	
Sn	118			
Sb	123	97.917		
Ba	135	97.212		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.023		
Tl	205			
Pb	206			
Pb	207			
Pb	208	36.006		
U	238	101.497		
Bi	209		99.388	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	
QC Std 3	Cu	65	
QC Std 3	Zn	66	

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QC Std 3	Pb	208

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Sunday, May 31, 2015 20:17:28
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	122284.8	0.5				ug/L	128086	Standard
	Be	9	26.7	71.0	**0.0183**	0.020	107.1	ug/L	17	Standard
	Al	27	3119231.0	1.9	**51.4181**	1.194	2.3	ug/L	1108	Standard
	Sc	45	41719.0	1.9				ug/L	42531	Standard
	Ti	47	23918.5	0.8	**113.4121**	1.638	1.4	ug/L	7	Standard
	V	51	71.5	134.2	**-0.1288**	0.015	12.0	ug/L	906	Standard
	Cr	52	6155.3	2.2	**0.2208**	0.026	11.6	ug/L	4643	Standard
	Cr	53	3097.0	5.6	**2.7404**	0.177	6.5	ug/L	310	Standard
	Mn	55	1338.7	1.1	**-0.0969**	0.002	1.7	ug/L	1006	Standard
	Co	59	218.7	6.7	**0.0171**	0.002	11.7	ug/L	74	Standard
	Ni	60	1554.7	2.3	**0.5069**	0.018	3.6	ug/L	292	Standard
	Cu	65	823.7	1.8	**-1.7849**	0.004	0.2	ug/L	5020	Standard
	Zn	66	1222.7	4.9	**-15.0078**	0.048	0.3	ug/L	17910	Standard
>	Ge	72	506107.2	0.7				ug/L	508788	Standard
	As	75	-105.2	45.7	**0.0122**	0.036	292.6	ug/L	-98	Standard
	Se	82	22.0	22.6	**0.0385**	0.039	102.5	ug/L	18	Standard
	Se-1	77	413.7	4.2	**3.8182**	0.222	5.8	ug/L	64	Standard
>	Ga	71	198.3	2.9				mg/L	27	Standard
	Rb	85	956.7	10.5				ug/L	160	Standard
	Y	89	633197.3	2.1				ug/L	653037	Standard
>	Rh	103	5.0	173.2				ug/L	7	Standard
	Mo	98	308997.5	1.7	**105.2502**	2.402	2.3	ug/L	17	Standard
	Ag	107	83.7	23.3	**-0.0000**	0.003	15378.2	ug/L	68	Standard
	Cd	111	-166.1	5.3	**-0.1204**	0.007	5.6	mg/L	5	Standard
	Cd	114	485.4	4.4	**0.1371**	0.005	4.0	ug/L	6	Standard
>	In	115	535858.3	0.6				ug/L	538484	Standard
	Sn	118	668.3	8.5	**-0.1070**	0.010	9.6	ug/L	1080	Standard
	Sb	123	85.9	7.6	**0.0148**	0.002	12.8	ug/L	22	Standard
	Ba	135	94.7	8.8	**0.0582**	0.007	12.2	ug/L	9	Standard
	Ce	140	53.3	28.6				ug/L	8	Standard
>	Tb	159	714628.1	0.4				ug/L	729623	Standard
	Ho	165	6.7	43.3				ug/L	0	Standard
	Tl	203	55.0	7.9	**0.0087**	0.001	10.6	ug/L	7	Standard
	Tl	205	46.7	44.6	**0.0101**	0.004	43.1	ug/L	3	Standard
	Pb	206	275.0	2.0	**-0.1039**	0.002	2.3	ug/L	548	Standard
	Pb	207	226.7	0.9	**-0.0855**	0.001	0.7	ug/L	453	Standard
	Pb	208	970.7	4.1	**-0.0937**	0.004	3.9	ug/L	1835	Standard
	U	238	4.0	43.3	**-0.0010**	0.000	37.2	ug/L	1	Standard
>	Bi	209	421755.0	0.9				ug/L	438591	Standard

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Na	23	3.3	86.6	**41.4074**	35.856	86.6	mg/L	0	Standard
Mg	24	4725.7	3.8	**13.1729**	0.744	5.6	mg/L	18	Standard
K	39	136.7	34.0	**4.6647**	1.682	36.1	mg/L	3	Standard
Ca	43	45.0	11.1	**17.6602**	2.021	11.4	mg/L	2	Standard
Fe	54	26201.6	0.9	**12.9108**	0.142	1.1	mg/L	292	Standard
Fe	57	8364.0	2.7	**13.3404**	0.593	4.4	mg/L	32	Standard
> **Sc-1**	45	41719.0	1.9				mg/L	42531	Standard
Cl	35	77802.6	1.0				ug/L	58934	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	1663.4	21.3				ug/L	1487	Standard
P	31	14602.0	2.7				ug/L	15053	Standard
S	34	1681.8	4.1				ug/L	1318	Standard
Sr	88	10.0	86.6				ug/L	27	Standard
C	12	143.3	14.5				mg/L	57	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.5	48.4				mg/L	2	Standard
Ho-1	165	6.7	43.3				mg/L	0	Standard
Er	166	16.7	69.3				mg/L	20	Standard
I	127	143.3	14.5				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27	1.028		
Sc	45			
Ti	47	113.412		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.473	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	105.250		
Ag	107			
Cd	111			
Cd	114			
In	115			99.512
Sn	118			
Sb	123			
Ba	135			
Ce	140			
Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
Bi	209			96.161
Na	23	331.260		
Mg	24	263.458		
K	39	93.293		
Ca	43	117.734		
Fe	54	103.286		
Fe	57	106.723		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Cu	65	
QC Std 4	Zn	66	

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QC Std 4	Cd	111
QC Std 4	Na	23
QC Std 4	Mg	24

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Sunday, May 31, 2015 20:20:39
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	122946.8	0.7				ug/L	128086	Standard
	Be	9	99510.8	2.5	**102.7845**	2.546	2.5	ug/L	17	Standard
	Al	27	3213910.9	2.6	**52.6914**	1.350	2.6	ug/L	1108	Standard
	Sc	45	42574.7	0.8				ug/L	42531	Standard
	Ti	47	24435.4	1.5	**113.4312**	2.943	2.6	ug/L	7	Standard
	V	51	655535.1	0.6	**102.7550**	1.887	1.8	ug/L	906	Standard
	Cr	52	724068.2	0.7	**102.5610**	2.045	2.0	ug/L	4643	Standard
	Cr	53	107983.5	1.7	**104.4765**	2.830	2.7	ug/L	310	Standard
	Mn	55	1220107.9	0.8	**103.1748**	2.164	2.1	ug/L	1006	Standard
	Co	59	827573.6	1.4	**103.3768**	2.516	2.4	ug/L	74	Standard
	Ni	60	256069.1	0.7	**102.1747**	2.007	2.0	ug/L	292	Standard
	Cu	65	265674.4	0.5	**103.4497**	1.910	1.8	ug/L	5020	Standard
	Zn	66	164077.7	1.1	**121.4710**	2.986	2.5	ug/L	17910	Standard
>	Ge	72	517030.6	1.4				ug/L	508788	Standard
	As	75	142684.0	0.8	**105.0869**	2.298	2.2	ug/L	-98	Standard
	Se	82	13212.8	1.1	**105.0002**	2.233	2.1	ug/L	18	Standard
	Se-1	77	9975.3	0.5	**105.7760**	1.835	1.7	ug/L	64	Standard
>	Ga	71	233.3	24.7				mg/L	27	Standard
	Rb	85	1146.7	2.2				ug/L	160	Standard
	Y	89	653189.0	1.3				ug/L	653037	Standard
>	Rh	103	45.0	29.4				ug/L	7	Standard
	Mo	98	323332.3	1.1	**107.3836**	1.556	1.4	ug/L	17	Standard
	Ag	107	649695.7	3.5	**96.0463**	3.621	3.8	ug/L	68	Standard
	Cd	111	153229.3	1.2	**104.0416**	1.356	1.3	mg/L	5	Standard
	Cd	114	365263.2	1.0	**102.4148**	1.332	1.3	ug/L	6	Standard
>	In	115	549545.1	0.3				ug/L	538484	Standard
	Sn	118	1365.1	9.8	**0.0143**	0.025	172.7	ug/L	1080	Standard
	Sb	123	348980.3	0.7	**98.7484**	0.915	0.9	ug/L	22	Standard
	Ba	135	115992.3	1.1	**103.5190**	1.355	1.3	ug/L	9	Standard
	Ce	140	46.7	12.4				ug/L	8	Standard
>	Tb	159	727724.0	1.0				ug/L	729623	Standard
	Ho	165	5.0	100.0				ug/L	0	Standard
	Tl	203	540066.8	0.5	**103.5216**	1.517	1.5	ug/L	7	Standard
	Tl	205	522612.8	1.2	**104.7024**	2.248	2.1	ug/L	3	Standard
	Pb	206	351276.5	0.7	**103.0656**	1.227	1.2	ug/L	548	Standard
	Pb	207	320939.8	0.4	**102.8897**	1.391	1.4	ug/L	453	Standard
	Pb	208	1253340.3	1.1	**102.9007**	2.142	2.1	ug/L	1835	Standard
	U	238	501790.3	1.2	**103.2831**	2.181	2.1	ug/L	1	Standard
>	Bi	209	430541.0	0.9				ug/L	438591	Standard

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Na	23	1.7	173.2	**20.7097**	35.862	173.2	mg/L	0	Standard
Mg	24	4972.5	2.4	**13.5766**	0.445	3.3	mg/L	18	Standard
K	39	136.7	11.8	**4.5490**	0.516	11.4	mg/L	3	Standard
Ca	43	61.7	18.7	**24.7489**	5.050	20.4	mg/L	2	Standard
Fe	54	27232.3	1.0	**13.1500**	0.088	0.7	mg/L	292	Standard
Fe	57	8360.6	1.1	**13.0588**	0.072	0.6	mg/L	32	Standard
Sc-1	45	42574.7	0.8				mg/L	42531	Standard
Cl	35	79067.8	1.8				ug/L	58934	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	1570.1	5.0				ug/L	1487	Standard
P	31	14418.6	7.9				ug/L	15053	Standard
S	34	1565.1	2.5				ug/L	1318	Standard
Sr	88	8.3	34.6				ug/L	27	Standard
C	12	153.3	7.5				mg/L	57	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	-0.5	100.0				mg/L	2	Standard
Ho-1	165	5.0	100.0				mg/L	0	Standard
Er	166	10.0	100.0				mg/L	20	Standard
I	127	196.7	11.7				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.785		
Al	27	1.054		
Sc	45			
Ti	47	113.431		
V	51	102.755		
Cr	52	102.561		
Cr	53			
Mn	55	103.175		
Co	59	103.377		
Ni	60	102.175		
Cu	65	103.450		
Zn	66	121.471		
Ge	72		101.620	
As	75	105.087		
Se	82	105.000		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	107.384		
Ag	107	96.046		
Cd	111	104.042		
Cd	114			
In	115		102.054	
Sn	118			
Sb	123	98.748		
Ba	135	103.519		
Ce	140			
Tb	159			
Ho	165			
Tl	203	103.522		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.901		
U	238	103.283		
Bi	209		98.165	
Na	23	165.678		
Mg	24	271.532		
K	39	90.980		
Ca	43	164.993		
Fe	54	105.200		
Fe	57	104.470		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Zn	66	
QC Std 5	Na	23	

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QC Std 5	Mg	24
QC Std 5	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Sunday, May 31, 2015 20:23:52
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	123313.1	1.1				ug/L	128086	Standard
	Be	9	46078.3	1.1	**47.4540**	1.009	2.1	ug/L	17	Standard
	Al	27	3017954.9	1.0	**49.3357**	0.976	2.0	ug/L	1108	Standard
	Sc	45	42559.7	0.6				ug/L	42531	Standard
	Ti	47	21279.3	1.9	**99.8195**	1.828	1.8	ug/L	7	Standard
	V	51	314432.1	0.7	**49.7389**	0.407	0.8	ug/L	906	Standard
	Cr	52	351460.8	0.9	**49.9679**	0.600	1.2	ug/L	4643	Standard
	Cr	53	51275.0	2.4	**49.9641**	1.301	2.6	ug/L	310	Standard
	Mn	55	588551.2	1.0	**50.1867**	0.353	0.7	ug/L	1006	Standard
	Co	59	401312.3	0.3	**50.6564**	0.343	0.7	ug/L	74	Standard
	Ni	60	123897.2	0.7	**49.8971**	0.567	1.1	ug/L	292	Standard
	Cu	65	127069.6	0.9	**48.9095**	0.377	0.8	ug/L	5020	Standard
	Zn	66	68576.5	0.1	**42.0343**	0.193	0.5	ug/L	17910	Standard
>	**Ge**	72	511515.5	0.4				ug/L	508788	Standard
	As	75	67218.9	1.0	**50.0791**	0.551	1.1	ug/L	-98	Standard
	Se	82	6286.2	2.4	**50.4130**	1.191	2.4	ug/L	18	Standard
	Se-1	77	4725.7	1.7	**50.2820**	0.804	1.6	ug/L	64	Standard
>	**Ga**	71	66.7	24.1				mg/L	27	Standard
	Rb	85	895.0	6.4				ug/L	160	Standard
	Y	89	656647.7	0.6				ug/L	653037	Standard
>	**Rh**	103	13.3	108.3				ug/L	7	Standard
	Mo	98	301085.5	0.3	**99.6559**	0.600	0.6	ug/L	17	Standard
	Ag	107	338900.8	1.0	**49.9221**	0.443	0.9	ug/L	68	Standard
	Cd	111	72930.4	0.9	**49.3490**	0.322	0.7	mg/L	5	Standard
	Cd	114	174703.5	0.8	**48.8166**	0.306	0.6	ug/L	6	Standard
>	**In**	115	551402.7	0.4				ug/L	538484	Standard
	Sn	118	221125.3	1.0	**39.0957**	0.508	1.3	ug/L	1080	Standard
	Sb	123	166955.1	0.4	**47.0768**	0.086	0.2	ug/L	22	Standard
	Ba	135	56386.1	0.8	**50.1381**	0.496	1.0	ug/L	9	Standard
	Ce	140	21.7	13.3				ug/L	8	Standard
>	**Tb**	159	732299.5	0.6				ug/L	729623	Standard
	Ho	165	6.7	86.6				ug/L	0	Standard
	Tl	203	262542.6	1.7	**49.6754**	0.902	1.8	ug/L	7	Standard
	Tl	205	251441.2	1.6	**49.7219**	0.644	1.3	ug/L	3	Standard
	Pb	206	170262.0	0.7	**49.2150**	0.209	0.4	ug/L	548	Standard
	Pb	207	154520.3	1.1	**48.8171**	0.750	1.5	ug/L	453	Standard
	Pb	208	613593.1	1.1	**49.6343**	0.488	1.0	ug/L	1835	Standard
	U	238	243870.4	0.8	**49.5451**	0.275	0.6	ug/L	1	Standard
>	**Bi**	209	436128.6	0.5				ug/L	438591	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	1825.1	5.1	**4.9566**	0.281	5.7	mg/L	18	Standard
K	39	146.7	11.0	**4.8827**	0.509	10.4	mg/L	3	Standard
Ca	43	28.3	10.2	**9.7694**	1.364	14.0	mg/L	2	Standard
Fe	54	10621.1	2.0	**5.0435**	0.108	2.1	mg/L	292	Standard
Fe	57	3313.7	3.1	**5.1420**	0.178	3.5	mg/L	32	Standard
Sc-1	45	42559.7	0.6				mg/L	42531	Standard
Cl	35	67775.9	0.9				ug/L	58934	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	1496.7	7.3				ug/L	1487	Standard
P	31	13846.3	4.3				ug/L	15053	Standard
S	34	1733.4	7.2				ug/L	1318	Standard
Sr	88	11.7	24.7				ug/L	27	Standard
C	12	93.3	55.0				mg/L	57	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	5.7	101.5				mg/L	2	Standard
Ho-1	165	6.7	86.6				mg/L	0	Standard
Er	166	20.0	50.0				mg/L	20	Standard
I	127	173.3	9.3				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	94.908		
Al	27	98.671		
Sc	45			
Ti	47	99.820		
V	51	99.478		
Cr	52	99.936		
Cr	53			
Mn	55	100.373		
Co	59	101.313		
Ni	60	99.794		
Cu	65	97.819		
Zn	66	84.069		
Ge	72		100.536	
As	75	100.158		
Se	82	100.826		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	99.656		
Ag	107	99.844		
Cd	111	98.698		
Cd	114			
> In	115		102.399	
Sn	118	78.191		
Sb	123	94.154		
Ba	135	100.276		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.351		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.269		
U	238	99.090		
> Bi	209		99.439	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Zn	66	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Sunday, May 31, 2015 20:27:04
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	126257.4	2.1				ug/L	128086	Standard
	Be	9	26.7	39.0	**0.0174**	0.010	57.7	ug/L	17	Standard
	Al	27	1821.8	52.3	**-0.0161**	0.015	90.4	ug/L	1108	Standard
	Sc	45	42399.3	1.8				ug/L	42531	Standard
	Ti	47	11.0	83.3	**0.0172**	0.043	251.0	ug/L	7	Standard
	V	51	848.6	5.7	**-0.0068**	0.008	117.2	ug/L	906	Standard
	Cr	52	4667.4	2.9	**-0.0088**	0.012	135.9	ug/L	4643	Standard
	Cr	53	425.0	4.1	**0.0835**	0.021	25.2	ug/L	310	Standard
	Mn	55	965.4	6.8	**-0.1308**	0.005	3.6	ug/L	1006	Standard
	Co	59	110.3	21.0	**0.0030**	0.003	92.1	ug/L	74	Standard
	Ni	60	345.0	8.5	**0.0106**	0.013	120.7	ug/L	292	Standard
	Cu	65	5211.2	0.9	**-0.0437**	0.007	16.2	ug/L	5020	Standard
	Zn	66	18599.4	2.0	**-0.4303**	0.208	48.4	ug/L	17910	Standard
>	Ge	72	515771.8	1.1				ug/L	508788	Standard
	As	75	-109.2	43.3	**0.0107**	0.034	322.5	ug/L	-98	Standard
	Se	82	17.5	23.0	**-0.0001**	0.033	41456.4	ug/L	18	Standard
	Se-1	77	69.0	22.6	**0.0468**	0.173	370.8	ug/L	64	Standard
>	Ga	71	31.7	24.1				mg/L	27	Standard
	Rb	85	151.7	15.6				ug/L	160	Standard
	Y	89	661647.5	1.1				ug/L	653037	Standard
>	Rh	103	3.3	86.6				ug/L	7	Standard
	Mo	98	101.6	33.1	**0.0262**	0.011	42.9	ug/L	17	Standard
	Ag	107	152.7	33.0	**0.0099**	0.008	75.6	ug/L	68	Standard
	Cd	111	14.9	40.8	**0.0054**	0.004	76.9	mg/L	5	Standard
	Cd	114	44.0	6.3	**0.0099**	0.001	7.9	ug/L	6	Standard
>	In	115	547964.4	0.2				ug/L	538484	Standard
	Sn	118	1281.7	10.2	**0.0001**	0.024	24384.5	ug/L	1080	Standard
	Sb	123	521.6	16.1	**0.1379**	0.024	17.4	ug/L	22	Standard
	Ba	135	27.0	42.1	**-0.0043**	0.010	238.0	ug/L	9	Standard
	Ce	140	8.3	124.9				ug/L	8	Standard
>	Tb	159	745183.7	0.5				ug/L	729623	Standard
	Ho	165	3.3	86.6				ug/L	0	Standard
	Tl	203	55.3	82.0	**0.0083**	0.009	103.1	ug/L	7	Standard
	Tl	205	73.3	99.4	**0.0149**	0.014	95.6	ug/L	3	Standard
	Pb	206	575.7	10.6	**-0.0216**	0.019	87.5	ug/L	548	Standard
	Pb	207	481.3	4.2	**-0.0093**	0.007	78.1	ug/L	453	Standard
	Pb	208	2004.1	6.1	**-0.0148**	0.010	69.6	ug/L	1835	Standard
	U	238	57.0	116.8	**0.0096**	0.013	138.9	ug/L	1	Standard
>	Bi	209	442230.7	1.1				ug/L	438591	Standard

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Na	23	1.7	173.2	**20.7294**	35.896	173.2	mg/L	0	Standard
Mg	24	28.3	20.4	**0.0332**	0.016	49.4	mg/L	18	Standard
K	39	1.7	173.2	**0.0614**	0.098	159.1	mg/L	3	Standard
Ca	43	1.7	173.2	**-2.2554**	1.279	56.7	mg/L	2	Standard
Fe	54	304.5	6.5	**0.0065**	0.012	182.3	mg/L	292	Standard
Fe	57	41.7	13.9	**0.0059**	0.009	150.1	mg/L	32	Standard
> **Sc-1**	45	42399.3	1.8				mg/L	42531	Standard
Cl	35	64191.0	1.3				ug/L	58934	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	1476.7	4.4				ug/L	1487	Standard
P	31	13706.2	0.8				ug/L	15053	Standard
S	34	1578.4	2.9				ug/L	1318	Standard
Sr	88	8.3	69.3				ug/L	27	Standard
C	12	40.0	75.0				mg/L	57	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.3	179.8				mg/L	2	Standard
Ho-1	165	3.3	86.6				mg/L	0	Standard
Er	166	6.7	86.6				mg/L	20	Standard
I	127	195.0	41.3				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.373	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.761
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.830
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW 56 WG525054-03
Sample Date/Time: Sunday, May 31, 2015 20:30:16
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	130817.3	0.3				ug/L	128086	Standard
	Be	9	23.3	24.7	**0.0133**	0.006	42.5	ug/L	17	Standard
	Al	27	3817.1	5.4	**0.0139**	0.003	22.9	ug/L	1108	Standard
	Sc	45	44394.9	0.5				ug/L	42531	Standard
	Ti	47	85.3	15.9	**0.3466**	0.063	18.1	ug/L	7	Standard
	V	51	946.9	1.1	**0.0024**	0.003	103.1	ug/L	906	Standard
	Cr	52	5084.5	1.3	**0.0206**	0.009	43.2	ug/L	4643	Standard
	Cr	53	440.0	6.0	**0.0802**	0.024	30.2	ug/L	310	Standard
	Mn	55	1380.7	4.1	**-0.1004**	0.005	5.2	ug/L	1006	Standard
	Co	59	95.7	9.4	**0.0007**	0.001	146.4	ug/L	74	Standard
	Ni	60	212.7	4.7	**-0.0460**	0.003	7.5	ug/L	292	Standard
	Cu	65	2382.5	1.5	**-1.2099**	0.009	0.7	ug/L	5020	Standard
	Zn	66	2707.2	0.4	**-13.8747**	0.025	0.2	ug/L	17910	Standard
>	Ge	72	538186.4	1.0				ug/L	508788	Standard
	As	75	-108.0	39.6	**0.0145**	0.031	214.0	ug/L	-98	Standard
	Se	82	18.1	18.3	**-0.0015**	0.024	1586.3	ug/L	18	Standard
	Se-1	77	76.3	17.4	**0.0909**	0.143	157.5	ug/L	64	Standard
>	Ga	71	35.0	28.6				mg/L	27	Standard
	Rb	85	591.7	8.3				ug/L	160	Standard
	Y	89	676084.0	1.6				ug/L	653037	Standard
>	Rh	103	3.3	173.2				ug/L	7	Standard
	Mo	98	52.6	27.5	**0.0097**	0.005	49.1	ug/L	17	Standard
	Ag	107	74.3	9.0	**-0.0018**	0.001	60.0	ug/L	68	Standard
	Cd	111	3.9	50.7	**-0.0021**	0.001	63.9	mg/L	5	Standard
	Cd	114	5.1	247.8	**-0.0010**	0.004	341.7	ug/L	6	Standard
>	In	115	551516.7	0.7				ug/L	538484	Standard
	Sn	118	678.3	0.9	**-0.1087**	0.000	0.2	ug/L	1080	Standard
	Sb	123	206.7	6.8	**0.0482**	0.004	8.9	ug/L	22	Standard
	Ba	135	79.3	9.6	**0.0421**	0.007	17.1	ug/L	9	Standard
	Ce	140	65.0	60.1				ug/L	8	Standard
>	Tb	159	740943.0	0.4				ug/L	729623	Standard
	Ho	165	13.3	21.7				ug/L	0	Standard
	Tl	203	7.3	34.3	**-0.0007**	0.000	65.3	ug/L	7	Standard
	Tl	205	11.7	137.8	**0.0028**	0.003	109.8	ug/L	3	Standard
	Pb	206	339.0	2.1	**-0.0913**	0.003	2.8	ug/L	548	Standard
	Pb	207	282.3	11.6	**-0.0734**	0.009	12.3	ug/L	453	Standard
	Pb	208	1185.4	1.8	**-0.0823**	0.003	3.2	ug/L	1835	Standard
	U	238	7.3	67.3	**-0.0004**	0.001	241.2	ug/L	1	Standard
>	Bi	209	451380.4	1.1				ug/L	438591	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	25.0	80.0	**0.0210**	0.053	251.8	mg/L	18	Standard
K	39	1.7	173.2	**0.0585**	0.093	158.4	mg/L	3	Standard
Ca	43	6.7	43.3	**-0.1120**	1.263	1128.4	mg/L	2	Standard
Fe	54	333.0	5.2	**0.0130**	0.009	68.7	mg/L	292	Standard
Fe	57	43.3	29.0	**0.0054**	0.019	344.8	mg/L	32	Standard
> **Sc-1**	45	44394.9	0.5				mg/L	42531	Standard
Cl	35	62747.0	2.3				ug/L	58934	Standard
Kr	83	0.0					ug/L	1	Standard
Br	81	1776.8	7.7				ug/L	1487	Standard
P	31	19981.5	2.1				ug/L	15053	Standard
S	34	1338.4	11.7				ug/L	1318	Standard
Sr	88	23.3	12.4				ug/L	27	Standard
C	12	113.3	39.8				mg/L	57	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.0	107.3				mg/L	2	Standard
Ho-1	165	13.3	21.7				mg/L	0	Standard
Er	166	13.3	114.6				mg/L	20	Standard
I	127	290.0	6.2				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.133	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.778	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115	102.420	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209	102.916	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cu 65 Lower	Cu	65	
Zn 66 Lower	Zn	66	

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Method 6020 - Summary Report

Sample ID: LCSW 56 WG525054-04
Sample Date/Time: Sunday, May 31, 2015 20:33:28
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	131908.6	2.7				ug/L	128086	Standard
	Be	9	51480.7	3.0	**49.5541**	0.453	0.9	ug/L	17	Standard
	Al	27	3260.4	9.8	**0.0050**	0.006	124.7	ug/L	1108	Standard
	Sc	45	44256.2	1.4				ug/L	42531	Standard
	Ti	47	89.3	7.5	**0.3670**	0.032	8.6	ug/L	7	Standard
	V	51	340480.1	1.6	**51.5542**	0.908	1.8	ug/L	906	Standard
	Cr	52	386876.6	0.2	**52.6779**	0.115	0.2	ug/L	4643	Standard
	Cr	53	55369.3	0.8	**51.6481**	0.354	0.7	ug/L	310	Standard
	Mn	55	643372.2	0.5	**52.5177**	0.156	0.3	ug/L	1006	Standard
	Co	59	429962.0	0.4	**51.9444**	0.408	0.8	ug/L	74	Standard
	Ni	60	133679.6	1.9	**51.5326**	1.214	2.4	ug/L	292	Standard
	Cu	65	142536.7	0.9	**52.6664**	0.686	1.3	ug/L	5020	Standard
	Zn	66	77080.2	0.8	**46.4366**	0.631	1.4	ug/L	17910	Standard
>	Ge	72	534449.1	0.4				ug/L	508788	Standard
	As	75	72007.0	1.2	**51.3435**	0.805	1.6	ug/L	-98	Standard
	Se	82	6603.5	1.2	**50.6882**	0.849	1.7	ug/L	18	Standard
	Se-1	77	5006.5	2.8	**50.9982**	1.683	3.3	ug/L	64	Standard
>	Ga	71	95.0	21.1				mg/L	27	Standard
	Rb	85	588.3	9.1				ug/L	160	Standard
	Y	89	682319.6	1.1				ug/L	653037	Standard
>	Rh	103	13.3	57.3				ug/L	7	Standard
	Mo	98	135.4	64.7	**0.0369**	0.029	77.9	ug/L	17	Standard
	Ag	107	359743.3	0.3	**52.7080**	0.381	0.7	ug/L	68	Standard
	Cd	111	75681.7	0.9	**50.9364**	0.664	1.3	mg/L	5	Standard
	Cd	114	182762.1	1.1	**50.7947**	0.713	1.4	ug/L	6	Standard
>	In	115	554395.8	0.4				ug/L	538484	Standard
	Sn	118	701.7	10.7	**-0.1052**	0.013	12.3	ug/L	1080	Standard
	Sb	123	180461.9	0.8	**50.6131**	0.592	1.2	ug/L	22	Standard
	Ba	135	58199.6	0.3	**51.4723**	0.375	0.7	ug/L	9	Standard
	Ce	140	58.3	13.1				ug/L	8	Standard
>	Tb	159	741324.8	0.8				ug/L	729623	Standard
	Ho	165	13.3	78.1				ug/L	0	Standard
	Tl	203	280831.2	1.0	**51.5946**	0.584	1.1	ug/L	7	Standard
	Tl	205	272098.3	1.1	**52.2482**	0.647	1.2	ug/L	3	Standard
	Pb	206	187605.7	0.6	**52.6691**	0.365	0.7	ug/L	548	Standard
	Pb	207	163022.3	0.5	**50.0120**	0.438	0.9	ug/L	453	Standard
	Pb	208	660751.5	0.3	**51.9074**	0.308	0.6	ug/L	1835	Standard
	U	238	257391.9	0.7	**50.7767**	0.486	1.0	ug/L	1	Standard
>	Bi	209	449157.3	0.4				ug/L	438591	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	23.3	53.9	**0.0165**	0.032	196.8	mg/L	18	Standard
K	39	1.7	173.2	**0.0588**	0.093	158.5	mg/L	3	Standard
Ca	43	3.3	86.6	**-1.5553**	1.246	80.1	mg/L	2	Standard
Fe	54	323.8	11.3	**0.0092**	0.017	188.8	mg/L	292	Standard
Fe	57	31.7	9.1	**-0.0120**	0.004	30.7	mg/L	32	Standard
> **Sc-1**	45	44256.2	1.4				mg/L	42531	Standard
Cl	35	60543.4	1.7				ug/L	58934	Standard
Kr	83	1.0	173.2				ug/L	1	Standard
Br	81	1540.1	9.1				ug/L	1487	Standard
P	31	20735.9	2.4				ug/L	15053	Standard
S	34	1203.4	7.2				ug/L	1318	Standard
Sr	88	18.3	87.7				ug/L	27	Standard
C	12	83.3	25.0				mg/L	57	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	2.2	267.0				mg/L	2	Standard
Ho-1	165	13.3	78.1				mg/L	0	Standard
Er	166	23.3	24.7				mg/L	20	Standard
I	127	565.0	6.4				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.985	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.044	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.955
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.409
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 56 WG525054-04
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Method 6020 - Summary Report

Sample ID: L1505146304 WG525054-01
Sample Date/Time: Sunday, May 31, 2015 20:36:39
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	123654.4	2.4				ug/L	128086	Standard
	Be	9	46.7	27.0	**0.0384**	0.012	30.6	ug/L	17	Standard
	Al	27	27981897.1	1.7	**456.5303**	4.906	1.1	ug/L	1108	Standard
	Sc	45	40283.5	3.3				ug/L	42531	Standard
	Ti	47	305.3	16.8	**1.5628**	0.283	18.1	ug/L	7	Standard
	V	51	41606.6	1.0	**7.2074**	0.132	1.8	ug/L	906	Standard
	Cr	52	7297.8	2.2	**0.4949**	0.032	6.5	ug/L	4643	Standard
	Cr	53	10405.3	10.8	**11.0415**	1.379	12.5	ug/L	310	Standard
	Mn	55	919313.6	1.1	**87.4357**	2.127	2.4	ug/L	1006	Standard
	Co	59	2756.3	3.0	**0.3767**	0.016	4.2	ug/L	74	Standard
	Ni	60	18359.1	4.4	**8.1266**	0.449	5.5	ug/L	292	Standard
	Cu	65	8104.8	2.1	**1.5034**	0.022	1.5	ug/L	5020	Standard
	Zn	66	7041.3	2.7	**-9.4162**	0.092	1.0	ug/L	17910	Standard
>	**Ge**	72	459539.0	1.5				ug/L	508788	Standard
	As	75	2318.4	2.6	**2.0101**	0.035	1.7	ug/L	-98	Standard
	Se	82	3866.2	0.4	**34.4738**	0.570	1.7	ug/L	18	Standard
	Se-1	77	4222.6	1.9	**50.0228**	1.695	3.4	ug/L	64	Standard
>	**Ga**	71	175.0	20.0				mg/L	27	Standard
	Rb	85	12722.0	2.4				ug/L	160	Standard
	Y	89	614800.2	2.5				ug/L	653037	Standard
>	**Rh**	103	1916.8	5.8				ug/L	7	Standard
	Mo	98	28233.2	1.6	**10.2921**	0.302	2.9	ug/L	17	Standard
	Ag	107	248.0	8.9	**0.0276**	0.004	14.4	ug/L	68	Standard
	Cd	111	68.9	16.5	**0.0466**	0.008	17.7	mg/L	5	Standard
	Cd	114	238.0	6.4	**0.0707**	0.004	5.1	ug/L	6	Standard
>	**In**	115	500479.8	2.0				ug/L	538484	Standard
	Sn	118	573.3	16.4	**-0.1171**	0.018	15.0	ug/L	1080	Standard
	Sb	123	280.0	13.5	**0.0771**	0.013	17.3	ug/L	22	Standard
	Ba	135	10187.8	1.3	**9.9600**	0.220	2.2	ug/L	9	Standard
	Ce	140	926.7	1.1				ug/L	8	Standard
>	**Tb**	159	686857.3	1.5				ug/L	729623	Standard
	Ho	165	21.7	13.3				ug/L	0	Standard
	Tl	203	60.7	7.6	**0.0123**	0.001	10.6	ug/L	7	Standard
	Tl	205	91.7	74.5	**0.0231**	0.017	71.8	ug/L	3	Standard
	Pb	206	473.7	3.3	**-0.0151**	0.006	42.4	ug/L	548	Standard
	Pb	207	398.0	5.9	**-0.0025**	0.010	409.3	ug/L	453	Standard
	Pb	208	1678.0	5.4	**-0.0055**	0.008	137.0	ug/L	1835	Standard
	U	238	38454.7	1.5	**9.7364**	0.207	2.1	ug/L	1	Standard
>	**Bi**	209	349950.1	1.4				ug/L	438591	Standard

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Na	23	13.3	57.3	**171.7944**	96.764	56.3	mg/L	0	Standard
Mg	24	144053.4	1.9	**417.2005**	14.460	3.5	mg/L	18	Standard
K	39	50.0	40.0	**1.7737**	0.753	42.5	mg/L	3	Standard
Ca	43	513.3	5.4	**241.6613**	20.947	8.7	mg/L	2	Standard
Fe	54	357.3	7.0	**0.0419**	0.019	45.6	mg/L	292	Standard
Fe	57	955.0	10.1	**1.5246**	0.159	10.4	mg/L	32	Standard
Sc-1	45	40283.5	3.3				mg/L	42531	Standard
Cl	35	587636.6	1.3				ug/L	58934	Standard
Kr	83	0.3	173.2				ug/L	1	Standard
Br	81	33664.0	1.3				ug/L	1487	Standard
P	31	19175.5	6.3				ug/L	15053	Standard
S	34	1846.8	9.4				ug/L	1318	Standard
Sr	88	15497.9	4.2				ug/L	27	Standard
C	12	90.0	80.1				mg/L	57	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	28.2	62.3				mg/L	2	Standard
Ho-1	165	21.7	13.3				mg/L	0	Standard
Er	166	36.7	31.5				mg/L	20	Standard
I	127	68233.5	4.6				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		96.540	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.320	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		92.942
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		79.790
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1505146305S WG525054-06
Sample Date/Time: Sunday, May 31, 2015 20:39:50
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	128227.2	2.3				ug/L	128086	Standard
	Be	9	45672.1	1.6	**45.2386**	1.113	2.5	ug/L	17	Standard
	Al	27	28563670.2	0.8	**449.4591**	8.047	1.8	ug/L	1108	Standard
	Sc	45	41027.2	2.1				ug/L	42531	Standard
	Ti	47	173.7	2.7	**0.8577**	0.031	3.6	ug/L	7	Standard
	V	51	365248.1	0.5	**63.2700**	0.810	1.3	ug/L	906	Standard
	Cr	52	350438.6	0.2	**54.5863**	0.559	1.0	ug/L	4643	Standard
	Cr	53	61469.5	1.6	**65.6585**	1.599	2.4	ug/L	310	Standard
	Mn	55	1374112.2	2.0	**128.5731**	3.316	2.6	ug/L	1006	Standard
	Co	59	377758.8	1.4	**52.1841**	0.888	1.7	ug/L	74	Standard
	Ni	60	131263.2	0.9	**57.8751**	1.009	1.7	ug/L	292	Standard
	Cu	65	120198.2	0.9	**50.7091**	0.913	1.8	ug/L	5020	Standard
	Zn	66	71286.7	1.2	**50.0330**	1.299	2.6	ug/L	17910	Standard
>	**Ge**	72	467418.3	0.9				ug/L	508788	Standard
	As	75	71341.2	0.6	**58.1539**	0.841	1.4	ug/L	-98	Standard
	Se	82	10913.2	1.6	**95.9117**	2.089	2.2	ug/L	18	Standard
	Se-1	77	9494.3	1.2	**111.3814**	0.992	0.9	ug/L	64	Standard
>	**Ga**	71	100.0	13.2				mg/L	27	Standard
	Rb	85	13564.4	3.1				ug/L	160	Standard
	Y	89	617197.6	1.2				ug/L	653037	Standard
>	**Rh**	103	1920.1	2.1				ug/L	7	Standard
	Mo	98	28528.4	0.7	**10.1098**	0.129	1.3	ug/L	17	Standard
	Ag	107	292592.8	0.4	**46.1775**	0.570	1.2	ug/L	68	Standard
	Cd	111	69981.9	1.0	**50.7380**	0.989	1.9	mg/L	5	Standard
	Cd	114	167869.9	0.8	**50.2553**	0.492	1.0	ug/L	6	Standard
>	**In**	115	514689.8	0.9				ug/L	538484	Standard
	Sn	118	626.7	6.2	**-0.1098**	0.009	7.8	ug/L	1080	Standard
	Sb	123	171467.5	0.5	**51.8021**	0.575	1.1	ug/L	22	Standard
	Ba	135	65278.3	0.8	**62.1917**	0.129	0.2	ug/L	9	Standard
	Ce	140	826.7	6.7				ug/L	8	Standard
>	**Tb**	159	695107.7	1.5				ug/L	729623	Standard
	Ho	165	18.3	41.7				ug/L	0	Standard
	Tl	203	231677.8	0.2	**53.3642**	0.168	0.3	ug/L	7	Standard
	Tl	205	233264.2	2.3	**56.1603**	1.556	2.8	ug/L	3	Standard
	Pb	206	165764.9	0.9	**58.3677**	0.772	1.3	ug/L	548	Standard
	Pb	207	143264.5	1.0	**55.1205**	0.810	1.5	ug/L	453	Standard
	Pb	208	567813.7	0.6	**55.9397**	0.567	1.0	ug/L	1835	Standard
	U	238	283318.4	1.4	**70.0771**	1.337	1.9	ug/L	1	Standard
>	**Bi**	209	358251.9	0.5				ug/L	438591	Standard

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Na	23	25.0	52.9	**319.0542**	169.324	53.1	mg/L	0	Standard
Mg	24	145084.7	1.3	**412.4977**	13.628	3.3	mg/L	18	Standard
K	39	43.3	6.7	**1.5008**	0.102	6.8	mg/L	3	Standard
Ca	43	448.3	5.3	**206.6333**	15.173	7.3	mg/L	2	Standard
Fe	54	322.1	15.9	**0.0204**	0.027	132.0	mg/L	292	Standard
Fe	57	983.4	2.3	**1.5417**	0.036	2.3	mg/L	32	Standard
> **Sc-1**	45	41027.2	2.1				mg/L	42531	Standard
Cl	35	588337.2	1.0				ug/L	58934	Standard
Kr	83	1.3	86.6				ug/L	1	Standard
Br	81	33009.3	4.5				ug/L	1487	Standard
P	31	19871.4	5.2				ug/L	15053	Standard
S	34	2011.8	12.4				ug/L	1318	Standard
Sr	88	14488.6	0.8				ug/L	27	Standard
C	12	173.3	8.8				mg/L	57	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	21.9	50.9				mg/L	2	Standard
Ho-1	165	18.3	41.7				mg/L	0	Standard
Er	166	30.0	33.3				mg/L	20	Standard
I	127	79842.2	7.0				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.110	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		91.869	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.581
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		81.682
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Se-1 77 Upper, S, EEE	Se-1	77	

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Method 6020 - Summary Report

Sample ID: L1505146306SD WG525054-07
Sample Date/Time: Sunday, May 31, 2015 20:43:04
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	132824.8	2.0				ug/L	128086	Standard
	Be	9	47288.7	0.6	**45.2214**	1.172	2.6	ug/L	17	Standard
	Al	27	28021843.1	1.8	**425.6093**	6.943	1.6	ug/L	1108	Standard
	Sc	45	43052.8	1.2				ug/L	42531	Standard
	Ti	47	232.0	3.4	**1.1225**	0.043	3.8	ug/L	7	Standard
	V	51	367119.2	0.8	**61.7336**	0.616	1.0	ug/L	906	Standard
	Cr	52	353478.4	0.3	**53.4381**	0.135	0.3	ug/L	4643	Standard
	Cr	53	62209.1	0.9	**64.4977**	0.531	0.8	ug/L	310	Standard
	Mn	55	1389906.3	0.8	**126.2434**	0.880	0.7	ug/L	1006	Standard
	Co	59	381365.8	0.9	**51.1434**	0.334	0.7	ug/L	74	Standard
	Ni	60	132236.1	2.6	**56.5979**	1.568	2.8	ug/L	292	Standard
	Cu	65	120536.0	1.5	**49.3097**	0.878	1.8	ug/L	5020	Standard
	Zn	66	71416.9	0.9	**48.2190**	0.772	1.6	ug/L	17910	Standard
>	**Ge**	72	481450.7	0.3				ug/L	508788	Standard
	As	75	71202.9	1.4	**56.3477**	0.740	1.3	ug/L	-98	Standard
	Se	82	10638.6	0.9	**90.7586**	0.953	1.0	ug/L	18	Standard
	Se-1	77	9360.9	2.6	**106.5821**	2.522	2.4	ug/L	64	Standard
>	**Ga**	71	146.7	20.8				mg/L	27	Standard
	Rb	85	12717.0	3.9				ug/L	160	Standard
	Y	89	644205.4	0.8				ug/L	653037	Standard
>	**Rh**	103	1811.8	2.7				ug/L	7	Standard
	Mo	98	27454.8	1.2	**9.3438**	0.183	2.0	ug/L	17	Standard
	Ag	107	297505.4	1.3	**45.0950**	0.922	2.0	ug/L	68	Standard
	Cd	111	70169.9	1.3	**48.8594**	0.996	2.0	mg/L	5	Standard
	Cd	114	169190.8	1.9	**48.6492**	1.235	2.5	ug/L	6	Standard
>	**In**	115	535905.3	0.8				ug/L	538484	Standard
	Sn	118	648.3	8.7	**-0.1107**	0.009	8.6	ug/L	1080	Standard
	Sb	123	173856.5	0.6	**50.4447**	0.683	1.4	ug/L	22	Standard
	Ba	135	65245.8	0.5	**59.7025**	0.788	1.3	ug/L	9	Standard
	Ce	140	1028.4	8.9				ug/L	8	Standard
>	**Tb**	159	725813.6	1.5				ug/L	729623	Standard
	Ho	165	23.3	44.6				ug/L	0	Standard
	Tl	203	234045.5	0.6	**51.9164**	0.851	1.6	ug/L	7	Standard
	Tl	205	235763.7	1.4	**54.6623**	1.334	2.4	ug/L	3	Standard
	Pb	206	167782.9	0.6	**56.8881**	0.968	1.7	ug/L	548	Standard
	Pb	207	145314.5	0.7	**53.8371**	0.973	1.8	ug/L	453	Standard
	Pb	208	569198.0	0.7	**53.9954**	0.897	1.7	ug/L	1835	Standard
	U	238	280844.0	0.6	**66.8937**	1.155	1.7	ug/L	1	Standard
>	**Bi**	209	372047.1	1.1				ug/L	438591	Standard

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Na	23	11.7	89.2	**142.7212**	127.836	89.6	mg/L	0	Standard
Mg	24	140584.2	0.9	**380.7364**	3.106	0.8	mg/L	18	Standard
K	39	41.7	42.1	**1.3719**	0.567	41.3	mg/L	3	Standard
Ca	43	500.0	10.1	**219.7495**	24.859	11.3	mg/L	2	Standard
Fe	54	352.0	12.1	**0.0272**	0.022	82.3	mg/L	292	Standard
Fe	57	955.0	11.0	**1.4214**	0.151	10.6	mg/L	32	Standard
Sc-1	45	43052.8	1.2				mg/L	42531	Standard
Cl	35	587112.6	0.7				ug/L	58934	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	33647.3	2.8				ug/L	1487	Standard
P	31	19545.9	2.1				ug/L	15053	Standard
S	34	2060.1	6.9				ug/L	1318	Standard
Sr	88	14043.2	3.7				ug/L	27	Standard
C	12	100.0	45.8				mg/L	57	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	24.9	100.8				mg/L	2	Standard
Ho-1	165	23.3	44.6				mg/L	0	Standard
Er	166	36.7	31.5				mg/L	20	Standard
I	127	69546.1	4.1				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.700	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.627	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.521
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	84.828
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Se-1 77 Upper, S, EEE	Se-1	77	

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Method 6020 - Summary Report

Sample ID: L1505143502
Sample Date/Time: Sunday, May 31, 2015 20:46:16
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	137839.2	0.4				ug/L	128086	Standard
	Be	9	46.7	27.0	**0.0337**	0.012	34.7	ug/L	17	Standard
	Al	27	13509822.7	1.3	**197.6786**	1.808	0.9	ug/L	1108	Standard
	Sc	45	45710.5	1.1				ug/L	42531	Standard
	Ti	47	167.7	4.6	**0.7335**	0.032	4.3	ug/L	7	Standard
	V	51	4115.2	1.8	**0.4968**	0.009	1.8	ug/L	906	Standard
	Cr	52	8270.9	0.9	**0.4874**	0.007	1.5	ug/L	4643	Standard
	Cr	53	6042.9	5.5	**5.4541**	0.301	5.5	ug/L	310	Standard
	Mn	55	189807.5	0.8	**15.6511**	0.180	1.2	ug/L	1006	Standard
	Co	59	1513.4	5.0	**0.1757**	0.009	4.9	ug/L	74	Standard
	Ni	60	5386.3	2.2	**1.9948**	0.044	2.2	ug/L	292	Standard
	Cu	65	4856.4	2.0	**-0.2157**	0.048	22.3	ug/L	5020	Standard
	Zn	66	6210.3	1.1	**-10.9203**	0.070	0.6	ug/L	17910	Standard
>	**Ge**	72	524114.0	0.6				ug/L	508788	Standard
	As	75	2553.7	2.6	**1.9444**	0.038	1.9	ug/L	-98	Standard
	Se	82	1214.5	0.9	**9.3924**	0.134	1.4	ug/L	18	Standard
	Se-1	77	936.4	2.4	**9.1657**	0.276	3.0	ug/L	64	Standard
>	**Ga**	71	61.7	28.5				mg/L	27	Standard
	Rb	85	4052.2	0.9				ug/L	160	Standard
	Y	89	667823.7	0.4				ug/L	653037	Standard
>	**Rh**	103	378.3	14.1				ug/L	7	Standard
	Mo	98	561.2	10.8	**0.1791**	0.019	10.5	ug/L	17	Standard
	Ag	107	104.3	14.9	**0.0028**	0.002	83.4	ug/L	68	Standard
	Cd	111	40.2	0.0	**0.0227**	0.000	0.8	mg/L	5	Standard
	Cd	114	100.2	45.1	**0.0257**	0.013	49.4	ug/L	6	Standard
>	**In**	115	548215.1	0.7				ug/L	538484	Standard
	Sn	118	551.7	8.1	**-0.1306**	0.008	5.9	ug/L	1080	Standard
	Sb	123	164.6	4.6	**0.0366**	0.002	5.8	ug/L	22	Standard
	Ba	135	14411.9	0.5	**12.8685**	0.103	0.8	ug/L	9	Standard
	Ce	140	173.3	16.7				ug/L	8	Standard
>	**Tb**	159	750577.3	0.7				ug/L	729623	Standard
	Ho	165	18.3	15.7				ug/L	0	Standard
	Tl	203	73.7	15.6	**0.0122**	0.002	17.9	ug/L	7	Standard
	Tl	205	83.3	69.3	**0.0174**	0.012	66.7	ug/L	3	Standard
	Pb	206	351.3	9.0	**-0.0822**	0.009	10.9	ug/L	548	Standard
	Pb	207	302.0	11.0	**-0.0619**	0.010	16.8	ug/L	453	Standard
	Pb	208	1152.4	12.6	**-0.0796**	0.012	14.7	ug/L	1835	Standard
	U	238	39926.5	0.7	**8.2944**	0.085	1.0	ug/L	1	Standard
>	**Bi**	209	426447.4	0.3				ug/L	438591	Standard

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Na	23	8.3	34.6	**95.6729**	33.682	35.2	mg/L	0	Standard
Mg	24	51256.6	2.5	**130.6981**	1.975	1.5	mg/L	18	Standard
K	39	18.3	63.0	**0.5748**	0.361	62.7	mg/L	3	Standard
Ca	43	83.3	40.8	**32.0021**	14.491	45.3	mg/L	2	Standard
Fe	54	383.7	5.2	**0.0315**	0.008	24.8	mg/L	292	Standard
Fe	57	253.3	34.0	**0.3100**	0.124	39.9	mg/L	32	Standard
> **Sc-1**	45	45710.5	1.1				mg/L	42531	Standard
Cl	35	167056.0	1.4				ug/L	58934	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	71300.7	1.3				ug/L	1487	Standard
P	31	25882.1	5.2				ug/L	15053	Standard
S	34	1886.8	8.1				ug/L	1318	Standard
Sr	88	2460.2	7.5				ug/L	27	Standard
C	12	293.3	20.0				mg/L	57	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	25.2	61.2				mg/L	2	Standard
Ho-1	165	18.3	15.7				mg/L	0	Standard
Er	166	30.0	33.3				mg/L	20	Standard
I	127	300445.4	6.2				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.615	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.012	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.807	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.231	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Zn 66 Lower	Zn	66	

Sample ID: L1505143502
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Method 6020 - Summary Report

Sample ID: L1505143504
Sample Date/Time: Sunday, May 31, 2015 20:49:28
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	140750.7	0.2				ug/L	128086	Standard
	Be	9	51.7	29.6	**0.0373**	0.014	37.2	ug/L	17	Standard
	Al	27	24243023.1	1.4	**347.4366**	5.295	1.5	ug/L	1108	Standard
	Sc	45	45722.2	0.6				ug/L	42531	Standard
	Ti	47	147.3	5.0	**0.6651**	0.036	5.4	ug/L	7	Standard
	V	51	-967.4	26.9	**-0.2956**	0.042	14.2	ug/L	906	Standard
	Cr	52	20078.0	1.5	**2.2506**	0.031	1.4	ug/L	4643	Standard
	Cr	53	12275.0	1.3	**11.8488**	0.185	1.6	ug/L	310	Standard
	Mn	55	217453.1	3.3	**18.6219**	0.550	3.0	ug/L	1006	Standard
	Co	59	2204.2	3.4	**0.2707**	0.008	3.1	ug/L	74	Standard
	Ni	60	13040.9	3.5	**5.1981**	0.174	3.3	ug/L	292	Standard
	Cu	65	6851.5	0.8	**0.6640**	0.026	4.0	ug/L	5020	Standard
	Zn	66	6584.1	0.9	**-10.4130**	0.052	0.5	ug/L	17910	Standard
>	**Ge**	72	505690.8	0.5				ug/L	508788	Standard
	As	75	4320.7	3.6	**3.3411**	0.109	3.2	ug/L	-98	Standard
	Se	82	1835.3	2.2	**14.7890**	0.305	2.1	ug/L	18	Standard
	Se-1	77	1688.4	5.2	**17.7329**	1.039	5.9	ug/L	64	Standard
>	**Ga**	71	65.0	42.8				mg/L	27	Standard
	Rb	85	31152.0	0.7				ug/L	160	Standard
	Y	89	665105.1	1.6				ug/L	653037	Standard
>	**Rh**	103	731.7	3.1				ug/L	7	Standard
	Mo	98	438.1	2.8	**0.1362**	0.003	2.5	ug/L	17	Standard
	Ag	107	141.0	41.2	**0.0079**	0.008	106.8	ug/L	68	Standard
	Cd	111	95.7	8.1	**0.0595**	0.005	8.3	mg/L	5	Standard
	Cd	114	215.0	12.2	**0.0571**	0.007	12.8	ug/L	6	Standard
>	**In**	115	555696.4	0.6				ug/L	538484	Standard
	Sn	118	620.0	17.0	**-0.1200**	0.018	15.0	ug/L	1080	Standard
	Sb	123	264.9	2.5	**0.0640**	0.002	3.5	ug/L	22	Standard
	Ba	135	17811.8	1.8	**15.6972**	0.359	2.3	ug/L	9	Standard
	Ce	140	165.0	18.2				ug/L	8	Standard
>	**Tb**	159	758292.4	1.8				ug/L	729623	Standard
	Ho	165	25.0	40.0				ug/L	0	Standard
	Tl	203	90.7	56.7	**0.0160**	0.010	63.8	ug/L	7	Standard
	Tl	205	115.0	41.5	**0.0245**	0.010	40.6	ug/L	3	Standard
	Pb	206	430.0	4.5	**-0.0548**	0.006	10.2	ug/L	548	Standard
	Pb	207	346.7	5.4	**-0.0439**	0.006	13.9	ug/L	453	Standard
	Pb	208	1359.0	2.8	**-0.0589**	0.003	5.4	ug/L	1835	Standard
	U	238	14005.1	2.2	**2.9995**	0.072	2.4	ug/L	1	Standard
>	**Bi**	209	413489.2	0.4				ug/L	438591	Standard

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Na	23	10.0	50.0	**114.4709**	56.832	49.6	mg/L	0	Standard
Mg	24	65970.0	0.8	**168.2065**	2.178	1.3	mg/L	18	Standard
K	39	53.3	42.3	**1.6551**	0.695	42.0	mg/L	3	Standard
Ca	43	286.7	19.4	**117.1032**	22.814	19.5	mg/L	2	Standard
Fe	54	357.2	11.3	**0.0195**	0.019	96.1	mg/L	292	Standard
Fe	57	603.3	17.4	**0.8212**	0.149	18.1	mg/L	32	Standard
> **Sc-1**	45	45722.2	0.6				mg/L	42531	Standard
Cl	35	253092.3	2.2				ug/L	58934	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	128667.9	3.8				ug/L	1487	Standard
P	31	24785.3	5.5				ug/L	15053	Standard
S	34	2033.5	8.5				ug/L	1318	Standard
Sr	88	4939.1	8.3				ug/L	27	Standard
C	12	253.3	8.2				mg/L	57	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	19.4	49.2				mg/L	2	Standard
Ho-1	165	25.0	40.0				mg/L	0	Standard
Er	166	13.3	86.6				mg/L	20	Standard
I	127	232518.5	6.3				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.888	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.391	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.196
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.277
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Zn 66 Lower	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1505146301
Sample Date/Time: Sunday, May 31, 2015 21:02:52
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	125763.3	2.2				ug/L	128086	Standard
	Be	9	15.0	57.7	**0.0059**	0.009	154.4	ug/L	17	Standard
	Al	27	7615585.1	2.0	**122.1461**	2.976	2.4	ug/L	1108	Standard
	Sc	45	43985.4	1.2				ug/L	42531	Standard
	Ti	47	119.7	5.9	**0.5282**	0.036	6.7	ug/L	7	Standard
	V	51	15586.4	0.9	**2.3357**	0.018	0.8	ug/L	906	Standard
	Cr	52	5890.1	1.2	**0.1742**	0.007	4.1	ug/L	4643	Standard
	Cr	53	693.3	8.8	**0.3509**	0.058	16.6	ug/L	310	Standard
	Mn	55	1918067.9	1.9	**164.2697**	2.419	1.5	ug/L	1006	Standard
	Co	59	584.7	2.0	**0.0631**	0.001	1.9	ug/L	74	Standard
	Ni	60	5412.0	1.4	**2.0606**	0.026	1.3	ug/L	292	Standard
	Cu	65	2739.2	1.8	**-1.0176**	0.017	1.7	ug/L	5020	Standard
	Zn	66	6594.4	1.2	**-10.4603**	0.086	0.8	ug/L	17910	Standard
>	**Ge**	72	510778.9	0.4				ug/L	508788	Standard
	As	75	1107.7	4.0	**0.9160**	0.031	3.4	ug/L	-98	Standard
	Se	82	297.5	5.1	**2.2558**	0.118	5.2	ug/L	18	Standard
	Se-1	77	98.7	9.4	**0.3734**	0.104	27.8	ug/L	64	Standard
>	**Ga**	71	75.0	23.1				mg/L	27	Standard
	Rb	85	1323.4	0.6				ug/L	160	Standard
	Y	89	656041.6	1.2				ug/L	653037	Standard
>	**Rh**	103	91.7	8.3				ug/L	7	Standard
	Mo	98	3594.0	1.5	**1.1731**	0.013	1.1	ug/L	17	Standard
	Ag	107	91.0	20.5	**0.0006**	0.003	450.5	ug/L	68	Standard
	Cd	111	28.8	24.4	**0.0146**	0.005	33.2	mg/L	5	Standard
	Cd	114	73.2	31.1	**0.0178**	0.006	34.3	ug/L	6	Standard
>	**In**	115	555563.8	0.9				ug/L	538484	Standard
	Sn	118	751.7	7.7	**-0.0966**	0.010	10.4	ug/L	1080	Standard
	Sb	123	95.6	3.1	**0.0166**	0.001	3.5	ug/L	22	Standard
	Ba	135	77593.2	0.1	**68.4918**	0.615	0.9	ug/L	9	Standard
	Ce	140	356.7	16.9				ug/L	8	Standard
>	**Tb**	159	753229.0	0.6				ug/L	729623	Standard
	Ho	165	25.0	80.0				ug/L	0	Standard
	Tl	203	46.7	21.9	**0.0068**	0.002	29.2	ug/L	7	Standard
	Tl	205	55.0	9.1	**0.0114**	0.001	7.7	ug/L	3	Standard
	Pb	206	575.0	5.1	**-0.0199**	0.007	36.9	ug/L	548	Standard
	Pb	207	492.0	4.6	**-0.0042**	0.006	135.4	ug/L	453	Standard
	Pb	208	1898.7	2.5	**-0.0214**	0.005	24.3	ug/L	1835	Standard
	U	238	7881.7	1.5	**1.5966**	0.027	1.7	ug/L	1	Standard
>	**Bi**	209	436944.0	1.1				ug/L	438591	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	13112.3	2.4	**34.7256**	1.232	3.5	mg/L	18	Standard
K	39	31.7	24.1	**1.0227**	0.235	22.9	mg/L	3	Standard
Ca	43	81.7	31.4	**32.5517**	11.023	33.9	mg/L	2	Standard
Fe	54	326.0	6.2	**0.0111**	0.008	70.9	mg/L	292	Standard
Fe	57	156.7	37.3	**0.1788**	0.091	51.1	mg/L	32	Standard
> **Sc-1**	45	43985.4	1.2				mg/L	42531	Standard
Cl	35	80659.5	1.1				ug/L	58934	Standard
Kr	83	0.0					ug/L	1	Standard
Br	81	20727.5	1.3				ug/L	1487	Standard
P	31	19986.5	1.8				ug/L	15053	Standard
S	34	2000.1	2.4				ug/L	1318	Standard
Sr	88	555.0	3.6				ug/L	27	Standard
C	12	140.0	44.6				mg/L	57	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	35.1	61.2				mg/L	2	Standard
Ho-1	165	25.0	80.0				mg/L	0	Standard
Er	166	33.3	45.8				mg/L	20	Standard
I	127	732463.2	5.2				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.187	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.391	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.172	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.624	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Cu 65 Lower	Cu	65	

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Zn 66 Lower	Zn	66

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Method 6020 - Summary Report

Sample ID: L1505146301PS WG525405-03
Sample Date/Time: Sunday, May 31, 2015 21:06:03
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	122864.6	1.6				ug/L	128086	Standard
	Be	9	48390.5	1.4	**50.0185**	1.079	2.2	ug/L	17	Standard
	Al	27	7745977.1	0.9	**127.1502**	0.914	0.7	ug/L	1108	Standard
	Sc	45	44975.0	1.4				ug/L	42531	Standard
	Ti	47	122.0	4.9	**0.5373**	0.018	3.4	ug/L	7	Standard
	V	51	336672.6	1.5	**53.2033**	0.919	1.7	ug/L	906	Standard
	Cr	52	354054.8	1.8	**50.2761**	0.692	1.4	ug/L	4643	Standard
	Cr	53	52056.0	2.8	**50.6631**	1.199	2.4	ug/L	310	Standard
	Mn	55	2573353.6	1.2	**219.8877**	2.639	1.2	ug/L	1006	Standard
	Co	59	399553.6	1.6	**50.3680**	0.110	0.2	ug/L	74	Standard
	Ni	60	127843.4	0.6	**51.4308**	0.876	1.7	ug/L	292	Standard
	Cu	65	127505.5	2.5	**49.0181**	0.975	2.0	ug/L	5020	Standard
	Zn	66	75142.2	1.7	**47.5205**	1.228	2.6	ug/L	17910	Standard
>	**Ge**	72	512186.1	1.7				ug/L	508788	Standard
	As	75	69306.1	1.8	**51.5662**	0.704	1.4	ug/L	-98	Standard
	Se	82	6690.5	2.3	**53.5913**	0.564	1.1	ug/L	18	Standard
	Se-1	77	4767.1	4.0	**50.6526**	1.482	2.9	ug/L	64	Standard
>	**Ga**	71	125.0	24.3				mg/L	27	Standard
	Rb	85	1321.7	2.5				ug/L	160	Standard
	Y	89	659100.3	1.3				ug/L	653037	Standard
>	**Rh**	103	111.7	20.7				ug/L	7	Standard
	Mo	98	3654.7	1.3	**1.1885**	0.012	1.0	ug/L	17	Standard
	Ag	107	342561.2	1.7	**49.8971**	0.743	1.5	ug/L	68	Standard
	Cd	111	73796.3	1.7	**49.3745**	0.482	1.0	mg/L	5	Standard
	Cd	114	179852.0	2.0	**49.6914**	0.708	1.4	ug/L	6	Standard
>	**In**	115	557638.1	0.7				ug/L	538484	Standard
	Sn	118	731.7	1.7	**-0.1006**	0.002	1.9	ug/L	1080	Standard
	Sb	123	171996.0	1.0	**47.9563**	0.370	0.8	ug/L	22	Standard
	Ba	135	137178.9	1.1	**120.6533**	1.119	0.9	ug/L	9	Standard
	Ce	140	330.0	14.5				ug/L	8	Standard
>	**Tb**	159	752474.7	0.7				ug/L	729623	Standard
	Ho	165	20.0	66.1				ug/L	0	Standard
	Tl	203	267477.2	1.1	**50.2395**	0.080	0.2	ug/L	7	Standard
	Tl	205	256178.0	1.9	**50.2905**	0.723	1.4	ug/L	3	Standard
	Pb	206	172817.4	1.1	**49.5912**	0.039	0.1	ug/L	548	Standard
	Pb	207	156694.6	1.8	**49.1401**	0.439	0.9	ug/L	453	Standard
	Pb	208	620652.3	1.6	**49.8388**	0.264	0.5	ug/L	1835	Standard
	U	238	258577.2	0.7	**52.1523**	0.269	0.5	ug/L	1	Standard
>	**Bi**	209	439327.7	1.1				ug/L	438591	Standard

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Na	23	6.7	43.3	**77.7314**	33.958	43.7	mg/L	0	Standard
Mg	24	13511.0	2.4	**34.9952**	1.230	3.5	mg/L	18	Standard
K	39	28.3	27.0	**0.8961**	0.237	26.5	mg/L	3	Standard
Ca	43	90.0	27.8	**35.4547**	11.139	31.4	mg/L	2	Standard
Fe	54	326.5	13.4	**0.0079**	0.020	247.1	mg/L	292	Standard
Fe	57	156.7	20.5	**0.1728**	0.047	27.0	mg/L	32	Standard
> **Sc-1**	45	44975.0	1.4				mg/L	42531	Standard
Cl	35	79859.3	2.1				ug/L	58934	Standard
Kr	83	0.3	173.2				ug/L	1	Standard
Br	81	21171.5	1.6				ug/L	1487	Standard
P	31	20156.7	2.0				ug/L	15053	Standard
S	34	2023.5	7.1				ug/L	1318	Standard
Sr	88	628.3	11.5				ug/L	27	Standard
C	12	136.7	30.5				mg/L	57	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	18.4	55.8				mg/L	2	Standard
Ho-1	165	20.0	66.1				mg/L	0	Standard
Er	166	33.3	45.8				mg/L	20	Standard
I	127	754686.5	3.1				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.924	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.668	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.557
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.168
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1505146301PS WG525405-03
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Method 6020 - Summary Report

Sample ID: L1505146301SDL WG525405-04
Sample Date/Time: Sunday, May 31, 2015 21:09:15
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	125716.2	2.0				ug/L	128086	Standard
	Be	9	26.7	43.3	**0.0175**	0.011	65.2	ug/L	17	Standard
	Al	27	1627301.7	1.1	**26.0748**	0.536	2.1	ug/L	1108	Standard
	Sc	45	44558.8	2.1				ug/L	42531	Standard
	Ti	47	34.7	20.3	**0.1231**	0.028	22.7	ug/L	7	Standard
	V	51	4213.5	1.0	**0.5084**	0.011	2.3	ug/L	906	Standard
	Cr	52	5590.4	1.1	**0.1061**	0.018	16.9	ug/L	4643	Standard
	Cr	53	505.0	13.3	**0.1515**	0.072	47.6	ug/L	310	Standard
	Mn	55	413972.2	1.5	**34.1919**	0.486	1.4	ug/L	1006	Standard
	Co	59	256.7	42.6	**0.0207**	0.013	64.9	ug/L	74	Standard
	Ni	60	1514.4	3.1	**0.4657**	0.015	3.2	ug/L	292	Standard
	Cu	65	4788.4	2.1	**-0.2528**	0.052	20.5	ug/L	5020	Standard
	Zn	66	17864.5	2.6	**-1.3715**	0.085	6.2	ug/L	17910	Standard
>	**Ge**	72	527167.7	2.5				ug/L	508788	Standard
	As	75	164.5	25.5	**0.2094**	0.028	13.1	ug/L	-98	Standard
	Se	82	80.9	15.1	**0.4905**	0.081	16.5	ug/L	18	Standard
	Se-1	77	79.7	11.9	**0.1407**	0.091	64.9	ug/L	64	Standard
>	**Ga**	71	33.3	43.3				mg/L	27	Standard
	Rb	85	423.3	13.4				ug/L	160	Standard
	Y	89	676258.4	2.9				ug/L	653037	Standard
>	**Rh**	103	16.7	17.3				ug/L	7	Standard
	Mo	98	772.9	2.8	**0.2370**	0.006	2.6	ug/L	17	Standard
	Ag	107	102.7	20.0	**0.0017**	0.003	161.2	ug/L	68	Standard
	Cd	111	16.5	31.0	**0.0060**	0.003	54.5	mg/L	5	Standard
	Cd	114	43.7	44.5	**0.0092**	0.005	56.0	ug/L	6	Standard
>	**In**	115	576621.5	0.8				ug/L	538484	Standard
	Sn	118	1103.4	4.5	**-0.0417**	0.007	17.5	ug/L	1080	Standard
	Sb	123	439.3	12.0	**0.1083**	0.014	12.5	ug/L	22	Standard
	Ba	135	16805.7	2.5	**14.2681**	0.252	1.8	ug/L	9	Standard
	Ce	140	45.0	38.5				ug/L	8	Standard
>	**Tb**	159	770753.9	1.5				ug/L	729623	Standard
	Ho	165	13.3	57.3				ug/L	0	Standard
	Tl	203	38.3	21.7	**0.0048**	0.001	29.0	ug/L	7	Standard
	Tl	205	71.7	137.1	**0.0139**	0.018	131.6	ug/L	3	Standard
	Pb	206	585.3	5.2	**-0.0250**	0.006	22.5	ug/L	548	Standard
	Pb	207	478.0	6.1	**-0.0158**	0.006	40.2	ug/L	453	Standard
	Pb	208	2111.1	11.4	**-0.0124**	0.017	137.0	ug/L	1835	Standard
	U	238	1752.1	5.9	**0.3366**	0.019	5.6	ug/L	1	Standard
>	**Bi**	209	458677.2	1.8				ug/L	438591	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	2798.6	7.4	**7.2758**	0.452	6.2	mg/L	18	Standard
K	39	10.0	50.0	**0.3208**	0.152	47.4	mg/L	3	Standard
Ca	43	8.3	124.9	**0.5290**	4.357	823.7	mg/L	2	Standard
Fe	54	319.6	10.4	**0.0064**	0.018	284.1	mg/L	292	Standard
Fe	57	46.7	12.4	**0.0102**	0.008	80.3	mg/L	32	Standard
> **Sc-1**	45	44558.8	2.1				mg/L	42531	Standard
Cl	35	80904.2	2.2				ug/L	58934	Standard
Kr	83	0.3	173.2				ug/L	1	Standard
Br	81	5564.4	5.4				ug/L	1487	Standard
P	31	16338.8	6.4				ug/L	15053	Standard
S	34	1960.1	3.6				ug/L	1318	Standard
Sr	88	173.3	19.6				ug/L	27	Standard
C	12	66.7	22.9				mg/L	57	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	15.9	37.3				mg/L	2	Standard
Ho-1	165	13.3	57.3				mg/L	0	Standard
Er	166	16.7	34.6				mg/L	20	Standard
I	127	167650.9	1.6				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.150	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.612	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		107.082
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		104.580
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Sunday, May 31, 2015 21:12:28
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	123696.6	3.3				ug/L	128086	Standard
	Be	9	45794.1	1.5	**47.0513**	2.079	4.4	ug/L	17	Standard
	Al	27	3148091.1	0.5	**51.3393**	1.914	3.7	ug/L	1108	Standard
	Sc	45	43830.0	2.0				ug/L	42531	Standard
	Ti	47	21553.3	1.3	**100.8292**	0.794	0.8	ug/L	7	Standard
	V	51	321060.8	1.4	**50.6517**	0.686	1.4	ug/L	906	Standard
	Cr	52	358555.7	0.5	**50.8519**	0.707	1.4	ug/L	4643	Standard
	Cr	53	52699.9	2.2	**51.2158**	0.767	1.5	ug/L	310	Standard
	Mn	55	593151.2	1.5	**50.4401**	0.186	0.4	ug/L	1006	Standard
	Co	59	406513.0	1.3	**51.1707**	0.111	0.2	ug/L	74	Standard
	Ni	60	126211.9	1.3	**50.6901**	0.315	0.6	ug/L	292	Standard
	Cu	65	127092.5	0.5	**48.7813**	0.387	0.8	ug/L	5020	Standard
	Zn	66	68333.1	0.6	**41.6713**	0.412	1.0	ug/L	17910	Standard
>	Ge	72	512927.4	1.2				ug/L	508788	Standard
	As	75	67371.3	1.5	**50.0527**	0.204	0.4	ug/L	-98	Standard
	Se	82	6370.6	0.7	**50.9539**	0.452	0.9	ug/L	18	Standard
	Se-1	77	4748.1	0.7	**50.3851**	0.390	0.8	ug/L	64	Standard
>	Ga	71	73.3	17.2				mg/L	27	Standard
	Rb	85	880.0	7.8				ug/L	160	Standard
	Y	89	658454.8	1.3				ug/L	653037	Standard
>	Rh	103	23.3	49.5				ug/L	7	Standard
	Mo	98	308670.4	1.3	**98.3040**	0.386	0.4	ug/L	17	Standard
	Ag	107	354966.7	1.3	**50.3135**	0.394	0.8	ug/L	68	Standard
	Cd	111	75928.8	1.4	**49.4362**	0.196	0.4	mg/L	5	Standard
	Cd	114	184464.0	1.2	**49.5968**	0.201	0.4	ug/L	6	Standard
>	In	115	573051.0	1.0				ug/L	538484	Standard
	Sn	118	231555.0	2.5	**39.3901**	0.627	1.6	ug/L	1080	Standard
	Sb	123	172933.2	0.5	**46.9222**	0.293	0.6	ug/L	22	Standard
	Ba	135	58640.6	1.9	**50.1693**	0.451	0.9	ug/L	9	Standard
	Ce	140	28.3	53.9				ug/L	8	Standard
>	Tb	159	765580.9	1.4				ug/L	729623	Standard
	Ho	165	6.7	43.3				ug/L	0	Standard
	Tl	203	272654.6	1.2	**49.9703**	0.216	0.4	ug/L	7	Standard
	Tl	205	261262.6	2.7	**50.0451**	1.187	2.4	ug/L	3	Standard
	Pb	206	176100.9	1.1	**49.3074**	0.166	0.3	ug/L	548	Standard
	Pb	207	160612.2	1.3	**49.1492**	0.220	0.4	ug/L	453	Standard
	Pb	208	635379.9	1.0	**49.7871**	0.339	0.7	ug/L	1835	Standard
	U	238	252935.1	0.6	**49.7775**	0.144	0.3	ug/L	1	Standard
>	Bi	209	450237.9	0.9				ug/L	438591	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	1981.8	4.0	**5.2262**	0.114	2.2	mg/L	18	Standard
K	39	135.0	3.7	**4.3687**	0.231	5.3	mg/L	3	Standard
Ca	43	11.7	65.5	**2.0679**	3.241	156.7	mg/L	2	Standard
Fe	54	11150.1	4.9	**5.1418**	0.161	3.1	mg/L	292	Standard
Fe	57	3417.1	5.3	**5.1510**	0.325	6.3	mg/L	32	Standard
> **Sc-1**	45	43830.0	2.0				mg/L	42531	Standard
Cl	35	80032.2	1.6				ug/L	58934	Standard
Kr	83	0.3	173.2				ug/L	1	Standard
Br	81	1846.8	6.6				ug/L	1487	Standard
P	31	16068.5	3.9				ug/L	15053	Standard
S	34	2315.2	5.5				ug/L	1318	Standard
Sr	88	21.7	35.3				ug/L	27	Standard
C	12	66.7	48.2				mg/L	57	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	-1.1	99.0				mg/L	2	Standard
Ho-1	165	6.7	43.3				mg/L	0	Standard
Er	166	23.3	99.0				mg/L	20	Standard
I	127	6153.0	28.2				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	94.103		
Al	27	102.679		
Sc	45			
Ti	47	100.829		
V	51	101.303		
Cr	52	101.704		
Cr	53			
Mn	55	100.880		
Co	59	102.341		
Ni	60	101.380		
Cu	65	97.563		
Zn	66	83.343		
> Ge	72		100.814	
As	75	100.105		
Se	82	101.908		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	98.304		
Ag	107	100.627		
Cd	111	98.872		
Cd	114			
In	115		106.419	
Sn	118	78.780		
Sb	123	93.844		
Ba	135	100.339		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.941		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.574		
U	238	99.555		
Bi	209		102.656	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Zn	66	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Sunday, May 31, 2015 21:15:39
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	120606.5	1.0				ug/L	128086	Standard
	Be	9	23.3	32.7	**0.0152**	0.008	52.8	ug/L	17	Standard
	Al	27	1575.1	25.1	**-0.0187**	0.006	34.1	ug/L	1108	Standard
	Sc	45	43828.3	1.1				ug/L	42531	Standard
	Ti	47	9.3	24.7	**0.0097**	0.011	111.0	ug/L	7	Standard
	V	51	953.6	10.7	**0.0115**	0.016	138.6	ug/L	906	Standard
	Cr	52	4754.1	1.0	**0.0119**	0.005	42.4	ug/L	4643	Standard
	Cr	53	420.0	10.9	**0.0835**	0.045	53.4	ug/L	310	Standard
	Mn	55	1041.4	7.7	**-0.1233**	0.007	5.4	ug/L	1006	Standard
	Co	59	118.3	31.1	**0.0042**	0.005	110.1	ug/L	74	Standard
	Ni	60	341.0	9.8	**0.0106**	0.013	124.9	ug/L	292	Standard
	Cu	65	5209.9	1.1	**-0.0189**	0.022	118.7	ug/L	5020	Standard
	Zn	66	18339.1	0.2	**-0.4598**	0.050	10.9	ug/L	17910	Standard
>	**Ge**	72	509537.4	0.3				ug/L	508788	Standard
	As	75	-87.1	18.4	**0.0261**	0.012	46.5	ug/L	-98	Standard
	Se	82	15.3	23.3	**-0.0164**	0.029	176.7	ug/L	18	Standard
	Se-1	77	78.7	9.5	**0.1592**	0.081	50.6	ug/L	64	Standard
>	**Ga**	71	20.0	50.0				mg/L	27	Standard
	Rb	85	135.0	9.8				ug/L	160	Standard
	Y	89	662310.6	1.2				ug/L	653037	Standard
>	**Rh**	103	3.3	173.2				ug/L	7	Standard
	Mo	98	94.3	61.0	**0.0227**	0.019	81.7	ug/L	17	Standard
	Ag	107	132.7	37.7	**0.0063**	0.007	113.4	ug/L	68	Standard
	Cd	111	13.9	44.7	**0.0044**	0.004	92.7	mg/L	5	Standard
	Cd	114	5.2	132.4	**-0.0011**	0.002	172.7	ug/L	6	Standard
>	**In**	115	566127.2	0.3				ug/L	538484	Standard
	Sn	118	1485.1	6.1	**0.0279**	0.016	56.7	ug/L	1080	Standard
	Sb	123	450.3	18.1	**0.1136**	0.022	19.8	ug/L	22	Standard
	Ba	135	23.3	24.7	**-0.0083**	0.005	59.7	ug/L	9	Standard
	Ce	140	13.3	57.3				ug/L	8	Standard
>	**Tb**	159	754191.4	0.2				ug/L	729623	Standard
	Ho	165	8.3	34.6				ug/L	0	Standard
	Tl	203	33.3	47.5	**0.0040**	0.003	71.5	ug/L	7	Standard
	Tl	205	40.0	54.5	**0.0081**	0.004	50.5	ug/L	3	Standard
	Pb	206	578.7	5.2	**-0.0255**	0.008	32.2	ug/L	548	Standard
	Pb	207	503.0	4.0	**-0.0070**	0.006	78.4	ug/L	453	Standard
	Pb	208	1968.7	3.5	**-0.0221**	0.005	21.8	ug/L	1835	Standard
	U	238	23.7	95.1	**0.0028**	0.004	157.3	ug/L	1	Standard
>	**Bi**	209	455069.5	0.4				ug/L	438591	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	20.0	43.3	**0.0085**	0.023	273.2	mg/L	18	Standard
K	39	6.7	114.6	**0.2186**	0.244	111.6	mg/L	3	Standard
Ca	43	8.3	34.6	**0.6513**	1.267	194.5	mg/L	2	Standard
Fe	54	282.5	9.7	**-0.0090**	0.012	135.8	mg/L	292	Standard
Fe	57	35.0	37.8	**-0.0064**	0.020	316.2	mg/L	32	Standard
> **Sc-1**	45	43828.3	1.1				mg/L	42531	Standard
Cl	35	79187.1	2.4				ug/L	58934	Standard
Kr	83	0.3	173.2				ug/L	1	Standard
Br	81	1576.8	15.5				ug/L	1487	Standard
P	31	15466.2	4.4				ug/L	15053	Standard
S	34	2391.9	3.6				ug/L	1318	Standard
Sr	88	11.7	65.5				ug/L	27	Standard
C	12	86.7	24.0				mg/L	57	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.7	46.6				mg/L	2	Standard
Ho-1	165	8.3	34.6				mg/L	0	Standard
Er	166	13.3	43.3				mg/L	20	Standard
I	127	2995.3	8.4				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.147	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.133
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.757
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Monday, June 01, 2015 16:18:02
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Method 6020 - Summary Report

Sample ID: PBW 94 WG524728-02
Sample Date/Time: Sunday, May 31, 2015 21:18:51
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	125849.1	2.8				ug/L	128086	Standard
	Be	9	21.7	96.1	**0.0122**	0.020	165.3	ug/L	17	Standard
	Al	27	15264.4	12.1	**0.1993**	0.023	11.3	ug/L	1108	Standard
	Sc	45	44413.4	2.7				ug/L	42531	Standard
	Ti	47	29.3	24.7	**0.0996**	0.033	33.2	ug/L	7	Standard
	V	51	907.1	10.5	**-0.0005**	0.014	3037.3	ug/L	906	Standard
	Cr	52	5247.6	1.2	**0.0594**	0.007	11.2	ug/L	4643	Standard
	Cr	53	448.3	2.8	**0.0975**	0.013	13.1	ug/L	310	Standard
	Mn	55	4319.6	11.2	**0.1468**	0.039	26.6	ug/L	1006	Standard
	Co	59	131.3	93.0	**0.0053**	0.015	281.0	ug/L	74	Standard
	Ni	60	571.0	6.0	**0.0965**	0.013	13.2	ug/L	292	Standard
	Cu	65	1143.0	2.8	**-1.6729**	0.012	0.7	ug/L	5020	Standard
	Zn	66	2926.9	1.3	**-13.6439**	0.027	0.2	ug/L	17910	Standard
>	Ge	72	526104.8	0.4				ug/L	508788	Standard
	As	75	-96.5	47.2	**0.0214**	0.033	152.9	ug/L	-98	Standard
	Se	82	18.2	28.0	**0.0023**	0.040	1742.1	ug/L	18	Standard
	Se-1	77	67.3	11.9	**0.0137**	0.085	624.5	ug/L	64	Standard
>	Ga	71	31.7	63.8				mg/L	27	Standard
	Rb	85	200.0	9.0				ug/L	160	Standard
	Y	89	688478.4	1.5				ug/L	653037	Standard
>	Rh	103	1.7	173.2				ug/L	7	Standard
	Mo	98	57.0	45.6	**0.0102**	0.008	80.1	ug/L	17	Standard
	Ag	107	89.7	2.8	**-0.0002**	0.000	198.2	ug/L	68	Standard
	Cd	111	6.9	51.7	**-0.0003**	0.002	865.6	mg/L	5	Standard
	Cd	114	8.5	136.2	**-0.0002**	0.003	1357.7	ug/L	6	Standard
>	In	115	580413.8	0.4				ug/L	538484	Standard
	Sn	118	551.7	0.5	**-0.1361**	0.001	0.6	ug/L	1080	Standard
	Sb	123	142.6	7.0	**0.0281**	0.003	9.6	ug/L	22	Standard
	Ba	135	135.7	4.1	**0.0862**	0.004	5.0	ug/L	9	Standard
	Ce	140	75.0	17.6				ug/L	8	Standard
>	Tb	159	782291.3	0.8				ug/L	729623	Standard
	Ho	165	8.3	91.7				ug/L	0	Standard
	Tl	203	18.3	60.3	**0.0012**	0.002	164.9	ug/L	7	Standard
	Tl	205	73.3	126.0	**0.0142**	0.017	121.6	ug/L	3	Standard
	Pb	206	257.3	5.2	**-0.1164**	0.003	2.7	ug/L	548	Standard
	Pb	207	222.3	4.5	**-0.0937**	0.003	3.7	ug/L	453	Standard
	Pb	208	1110.3	22.3	**-0.0906**	0.020	21.7	ug/L	1835	Standard
	U	238	55.3	157.6	**0.0088**	0.017	190.5	ug/L	1	Standard
>	Bi	209	464805.4	0.8				ug/L	438591	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	45.0	11.1	**0.0736**	0.016	21.7	mg/L	18	Standard
K	39	5.0	100.0	**0.1671**	0.164	98.4	mg/L	3	Standard
Ca	43	8.3	124.9	**0.6795**	4.650	684.4	mg/L	2	Standard
Fe	54	366.0	10.0	**0.0281**	0.013	45.5	mg/L	292	Standard
Fe	57	38.3	27.2	**-0.0018**	0.017	983.6	mg/L	32	Standard
> **Sc-1**	45	44413.4	2.7				mg/L	42531	Standard
Cl	35	76944.3	2.6				ug/L	58934	Standard
Kr	83	0.0					ug/L	1	Standard
Br	81	1873.4	6.5				ug/L	1487	Standard
P	31	16585.7	2.6				ug/L	15053	Standard
S	34	2188.5	0.6				ug/L	1318	Standard
Sr	88	31.7	18.2				ug/L	27	Standard
C	12	106.7	28.6				mg/L	57	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	10.0	100.0				mg/L	2	Standard
Ho-1	165	8.3	91.7				mg/L	0	Standard
Er	166	0.0					mg/L	20	Standard
I	127	2338.5	12.1				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.254	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.404	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	107.787	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	105.977	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cu 65 Lower	Cu	65	
Zn 66 Lower	Zn	66	

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Method 6020 - Summary Report

Sample ID: LCSW 94 WG524728-03
Sample Date/Time: Sunday, May 31, 2015 21:22:02
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	124612.0	0.8				ug/L	128086	Standard
	Be	9	47435.8	1.8	**48.3332**	0.516	1.1	ug/L	17	Standard
	Al	27	24165.1	26.2	**0.3459**	0.100	28.9	ug/L	1108	Standard
	Sc	45	42954.2	2.4				ug/L	42531	Standard
	Ti	47	24.3	23.4	**0.0790**	0.027	34.0	ug/L	7	Standard
	V	51	323863.0	1.1	**50.8005**	0.792	1.6	ug/L	906	Standard
	Cr	52	364722.6	1.1	**51.4341**	0.849	1.7	ug/L	4643	Standard
	Cr	53	53787.0	2.2	**51.9821**	1.373	2.6	ug/L	310	Standard
	Mn	55	618070.4	1.7	**52.2693**	1.142	2.2	ug/L	1006	Standard
	Co	59	413572.1	1.4	**51.7632**	0.982	1.9	ug/L	74	Standard
	Ni	60	127184.0	1.3	**50.7897**	0.928	1.8	ug/L	292	Standard
	Cu	65	133503.0	1.5	**51.0413**	1.070	2.1	ug/L	5020	Standard
	Zn	66	72887.9	1.4	**45.1655**	1.178	2.6	ug/L	17910	Standard
>	Ge	72	515897.1	0.5				ug/L	508788	Standard
	As	75	68636.7	1.2	**50.7017**	0.811	1.6	ug/L	-98	Standard
	Se	82	6341.6	1.5	**50.4275**	0.906	1.8	ug/L	18	Standard
	Se-1	77	4734.7	1.4	**49.9492**	0.976	2.0	ug/L	64	Standard
>	Ga	71	56.7	18.4				mg/L	27	Standard
	Rb	85	180.0	21.0				ug/L	160	Standard
	Y	89	672054.7	0.2				ug/L	653037	Standard
>	Rh	103	15.0	57.7				ug/L	7	Standard
	Mo	98	80.3	20.7	**0.0181**	0.005	29.8	ug/L	17	Standard
	Ag	107	355398.8	1.0	**50.8548**	0.483	0.9	ug/L	68	Standard
	Cd	111	75718.6	1.1	**49.7705**	0.598	1.2	mg/L	5	Standard
	Cd	114	181337.5	1.9	**49.2218**	0.985	2.0	ug/L	6	Standard
>	In	115	567642.3	0.3				ug/L	538484	Standard
	Sn	118	621.7	5.2	**-0.1219**	0.006	4.8	ug/L	1080	Standard
	Sb	123	178495.2	1.1	**48.8912**	0.474	1.0	ug/L	22	Standard
	Ba	135	58565.3	0.9	**50.5856**	0.447	0.9	ug/L	9	Standard
	Ce	140	91.7	35.5				ug/L	8	Standard
>	Tb	159	760750.4	1.0				ug/L	729623	Standard
	Ho	165	16.7	45.8				ug/L	0	Standard
	Tl	203	277945.6	0.7	**50.1374**	0.594	1.2	ug/L	7	Standard
	Tl	205	263344.0	0.9	**49.6467**	0.245	0.5	ug/L	3	Standard
	Pb	206	184610.2	0.4	**50.8808**	0.451	0.9	ug/L	548	Standard
	Pb	207	160633.1	1.2	**48.3792**	0.778	1.6	ug/L	453	Standard
	Pb	208	653670.6	1.6	**50.4159**	1.067	2.1	ug/L	1835	Standard
	U	238	253403.9	1.7	**49.0839**	1.088	2.2	ug/L	1	Standard
>	Bi	209	457473.1	0.6				ug/L	438591	Standard

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	Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
	Mg	24	65.0	30.8	**0.1309**	0.051	38.7	mg/L	18	Standard
	K	39	3.3	86.6	**0.1156**	0.096	82.9	mg/L	3	Standard
	Ca	43	5.0	100.0	**-0.7920**	2.206	278.5	mg/L	2	Standard
	Fe	54	338.6	7.9	**0.0211**	0.017	78.8	mg/L	292	Standard
	Fe	57	40.0	21.7	**0.0023**	0.012	533.2	mg/L	32	Standard
>	**Sc-1**	45	42954.2	2.4				mg/L	42531	Standard
	Cl	35	74827.7	1.3				ug/L	58934	Standard
	Kr	83	1.0	100.0				ug/L	1	Standard
	Br	81	1620.1	14.1				ug/L	1487	Standard
	P	31	16550.7	3.8				ug/L	15053	Standard
	S	34	2073.5	2.8				ug/L	1318	Standard
	Sr	88	13.3	108.3				ug/L	27	Standard
	C	12	100.0	36.1				mg/L	57	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	0	Standard
	Dy	164	8.7	120.3				mg/L	2	Standard
	Ho-1	165	16.7	45.8				mg/L	0	Standard
	Er	166	26.7	57.3				mg/L	20	Standard
	I	127	1681.8	5.5				mg/L	175	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		97.288	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.397	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.415
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.305
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1505134002 WG524728-01
Sample Date/Time: Sunday, May 31, 2015 21:25:13
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	122728.4	1.3				ug/L	128086	Standard
	Be	9	36.7	7.9	**0.0286**	0.003	9.1	ug/L	17	Standard
	Al	27	7530866.2	1.1	**123.7624**	2.309	1.9	ug/L	1108	Standard
	Sc	45	44007.2	1.5				ug/L	42531	Standard
	Ti	47	233.0	26.0	**1.0730**	0.277	25.8	ug/L	7	Standard
	V	51	50788.8	1.3	**8.0316**	0.092	1.1	ug/L	906	Standard
	Cr	52	10026.3	3.1	**0.7893**	0.020	2.6	ug/L	4643	Standard
	Cr	53	3763.8	8.1	**3.4116**	0.244	7.2	ug/L	310	Standard
	Mn	55	34525.0	1.7	**2.7859**	0.019	0.7	ug/L	1006	Standard
	Co	59	676.7	4.9	**0.0759**	0.005	7.1	ug/L	74	Standard
	Ni	60	2939.0	2.3	**1.0758**	0.013	1.2	ug/L	292	Standard
	Cu	65	2962.0	4.3	**-0.9133**	0.026	2.9	ug/L	5020	Standard
	Zn	66	4689.4	3.1	**-12.0262**	0.071	0.6	ug/L	17910	Standard
>	**Ge**	72	504367.4	2.1				ug/L	508788	Standard
	As	75	2347.0	7.6	**1.8598**	0.096	5.2	ug/L	-98	Standard
	Se	82	323.9	9.8	**2.4988**	0.206	8.2	ug/L	18	Standard
	Se-1	77	585.0	4.0	**5.7066**	0.190	3.3	ug/L	64	Standard
>	**Ga**	71	93.3	11.2				mg/L	27	Standard
	Rb	85	3028.6	4.2				ug/L	160	Standard
	Y	89	648305.1	1.7				ug/L	653037	Standard
>	**Rh**	103	81.7	12.7				ug/L	7	Standard
	Mo	98	413.4	4.3	**0.1311**	0.006	4.4	ug/L	17	Standard
	Ag	107	111.7	13.0	**0.0040**	0.002	52.1	ug/L	68	Standard
	Cd	111	46.4	15.5	**0.0271**	0.005	18.8	mg/L	5	Standard
	Cd	114	122.3	14.9	**0.0322**	0.005	16.7	ug/L	6	Standard
>	**In**	115	543803.7	0.9				ug/L	538484	Standard
	Sn	118	660.0	4.6	**-0.1103**	0.005	4.4	ug/L	1080	Standard
	Sb	123	184.9	6.2	**0.0428**	0.004	8.4	ug/L	22	Standard
	Ba	135	17280.9	1.8	**15.5628**	0.380	2.4	ug/L	9	Standard
	Ce	140	1388.4	4.4				ug/L	8	Standard
>	**Tb**	159	738448.8	1.2				ug/L	729623	Standard
	Ho	165	26.7	28.6				ug/L	0	Standard
	Tl	203	68.7	18.2	**0.0114**	0.003	23.2	ug/L	7	Standard
	Tl	205	51.7	5.6	**0.0111**	0.001	6.9	ug/L	3	Standard
	Pb	206	394.0	1.4	**-0.0683**	0.003	4.9	ug/L	548	Standard
	Pb	207	337.3	8.7	**-0.0493**	0.011	23.1	ug/L	453	Standard
	Pb	208	1315.4	0.8	**-0.0650**	0.002	3.6	ug/L	1835	Standard
	U	238	10361.9	1.8	**2.1721**	0.056	2.6	ug/L	1	Standard
>	**Bi**	209	422424.6	1.6				ug/L	438591	Standard

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Na	23	3.3	173.2	**39.4400**	68.303	173.2	mg/L	0	Standard
Mg	24	38428.7	3.3	**101.7913**	3.486	3.4	mg/L	18	Standard
K	39	20.0	25.0	**0.6471**	0.153	23.6	mg/L	3	Standard
Ca	43	70.0	39.8	**27.3915**	11.743	42.9	mg/L	2	Standard
Fe	54	396.7	7.7	**0.0446**	0.017	38.6	mg/L	292	Standard
Fe	57	188.3	17.3	**0.2266**	0.053	23.6	mg/L	32	Standard
Sc-1	45	44007.2	1.5				mg/L	42531	Standard
Cl	35	121495.3	2.0				ug/L	58934	Standard
Kr	83	0.3	173.2				ug/L	1	Standard
Br	81	10046.7	10.9				ug/L	1487	Standard
P	31	20470.5	6.5				ug/L	15053	Standard
S	34	1973.5	3.0				ug/L	1318	Standard
Sr	88	563.3	2.7				ug/L	27	Standard
C	12	190.0	27.9				mg/L	57	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	31.9	16.8				mg/L	2	Standard
Ho-1	165	26.7	28.6				mg/L	0	Standard
Er	166	30.0	33.3				mg/L	20	Standard
I	127	67026.4	3.1				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		95.817	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.131	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.988	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.314	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Cu 65 Lower	Cu	65	
Zn 66 Lower	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1505134002S WG524728-04
Sample Date/Time: Sunday, May 31, 2015 21:28:25
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	127151.4	1.3				ug/L	128086	Standard
	Be	9	50922.1	3.1	**50.8552**	1.567	3.1	ug/L	17	Standard
	Al	27	7535366.0	0.8	**119.5322**	2.439	2.0	ug/L	1108	Standard
	Sc	45	46600.0	3.9				ug/L	42531	Standard
	Ti	47	252.7	13.3	**1.1200**	0.155	13.8	ug/L	7	Standard
	V	51	395009.0	2.2	**60.8531**	1.113	1.8	ug/L	906	Standard
	Cr	52	378808.9	2.6	**52.4550**	1.222	2.3	ug/L	4643	Standard
	Cr	53	59081.8	4.0	**56.0755**	2.034	3.6	ug/L	310	Standard
	Mn	55	657596.3	2.7	**54.6006**	1.264	2.3	ug/L	1006	Standard
	Co	59	412076.3	3.0	**50.6291**	1.329	2.6	ug/L	74	Standard
	Ni	60	130020.3	1.8	**50.9712**	0.745	1.5	ug/L	292	Standard
	Cu	65	131902.1	1.9	**49.4409**	0.800	1.6	ug/L	5020	Standard
	Zn	66	75744.2	1.9	**46.3984**	0.952	2.1	ug/L	17910	Standard
>	**Ge**	72	525476.6	0.4				ug/L	508788	Standard
	As	75	75029.6	1.3	**54.4033**	0.522	1.0	ug/L	-98	Standard
	Se	82	7021.2	2.0	**54.8216**	0.959	1.7	ug/L	18	Standard
	Se-1	77	5507.3	3.3	**57.1308**	1.685	2.9	ug/L	64	Standard
>	**Ga**	71	106.7	39.0				mg/L	27	Standard
	Rb	85	3128.7	5.8				ug/L	160	Standard
	Y	89	682368.3	2.5				ug/L	653037	Standard
>	**Rh**	103	121.7	14.4				ug/L	7	Standard
	Mo	98	452.2	2.6	**0.1399**	0.004	3.0	ug/L	17	Standard
	Ag	107	335912.0	1.4	**48.7847**	0.638	1.3	ug/L	68	Standard
	Cd	111	76056.1	1.5	**50.7398**	0.730	1.4	mg/L	5	Standard
	Cd	114	182190.7	1.1	**50.1925**	0.532	1.1	ug/L	6	Standard
>	**In**	115	559273.9	0.3				ug/L	538484	Standard
	Sn	118	623.3	10.4	**-0.1200**	0.011	9.4	ug/L	1080	Standard
	Sb	123	183174.7	1.6	**50.9232**	0.682	1.3	ug/L	22	Standard
	Ba	135	75392.1	1.6	**66.1020**	0.946	1.4	ug/L	9	Standard
	Ce	140	1698.4	32.8				ug/L	8	Standard
>	**Tb**	159	762429.2	0.7				ug/L	729623	Standard
	Ho	165	33.3	8.7				ug/L	0	Standard
	Tl	203	271040.1	1.4	**51.4344**	0.547	1.1	ug/L	7	Standard
	Tl	205	261585.7	1.2	**51.8826**	0.493	0.9	ug/L	3	Standard
	Pb	206	180877.4	1.6	**52.4500**	0.611	1.2	ug/L	548	Standard
	Pb	207	157722.9	1.8	**49.9765**	0.651	1.3	ug/L	453	Standard
	Pb	208	636785.2	1.9	**51.6692**	0.787	1.5	ug/L	1835	Standard
	U	238	271203.3	1.3	**55.2617**	0.542	1.0	ug/L	1	Standard
>	**Bi**	209	434833.5	0.5				ug/L	438591	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	38462.1	2.3	**96.2455**	2.118	2.2	mg/L	18	Standard
K	39	23.3	12.4	**0.7169**	0.113	15.7	mg/L	3	Standard
Ca	43	60.0	28.9	**21.5776**	6.620	30.7	mg/L	2	Standard
Fe	54	372.6	12.9	**0.0232**	0.020	86.5	mg/L	292	Standard
Fe	57	168.3	13.4	**0.1810**	0.024	13.1	mg/L	32	Standard
> **Sc-1**	45	46600.0	3.9				mg/L	42531	Standard
Cl	35	130858.1	2.0				ug/L	58934	Standard
Kr	83	0.3	173.2				ug/L	1	Standard
Br	81	13215.8	6.0				ug/L	1487	Standard
P	31	21693.9	4.6				ug/L	15053	Standard
S	34	2105.1	11.0				ug/L	1318	Standard
Sr	88	655.0	2.0				ug/L	27	Standard
C	12	140.0	0.0				mg/L	57	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	52.1	40.4				mg/L	2	Standard
Ho-1	165	33.3	8.7				mg/L	0	Standard
Er	166	26.7	21.7				mg/L	20	Standard
I	127	58414.2	4.1				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.270	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.280	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.861
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.143
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1505134002SD WG524728-05
Sample Date/Time: Sunday, May 31, 2015 21:31:37
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	125793.6	2.6				ug/L	128086	Standard
	Be	9	48908.9	3.3	**49.3708**	1.093	2.2	ug/L	17	Standard
	Al	27	8144966.2	1.9	**130.5975**	1.237	0.9	ug/L	1108	Standard
	Sc	45	45006.8	1.6				ug/L	42531	Standard
	Ti	47	195.0	8.1	**0.8774**	0.074	8.5	ug/L	7	Standard
	V	51	387610.5	1.9	**61.1150**	1.206	2.0	ug/L	906	Standard
	Cr	52	373977.1	1.5	**53.0084**	0.876	1.7	ug/L	4643	Standard
	Cr	53	57012.1	0.4	**55.3789**	0.214	0.4	ug/L	310	Standard
	Mn	55	643745.0	1.4	**54.7058**	0.763	1.4	ug/L	1006	Standard
	Co	59	408702.4	1.5	**51.3941**	0.808	1.6	ug/L	74	Standard
	Ni	60	127346.6	0.4	**51.0944**	0.192	0.4	ug/L	292	Standard
	Cu	65	129417.4	0.8	**49.6559**	0.326	0.7	ug/L	5020	Standard
	Zn	66	82118.3	0.3	**53.2425**	0.362	0.7	ug/L	17910	Standard
>	**Ge**	72	513452.6	0.2				ug/L	508788	Standard
	As	75	72747.3	1.0	**53.9853**	0.493	0.9	ug/L	-98	Standard
	Se	82	6816.4	1.1	**54.4705**	0.600	1.1	ug/L	18	Standard
	Se-1	77	5523.0	1.4	**58.6573**	0.793	1.4	ug/L	64	Standard
>	**Ga**	71	110.0	15.7				mg/L	27	Standard
	Rb	85	3148.7	5.2				ug/L	160	Standard
	Y	89	660642.9	1.6				ug/L	653037	Standard
>	**Rh**	103	121.7	6.3				ug/L	7	Standard
	Mo	98	463.2	3.5	**0.1444**	0.005	3.7	ug/L	17	Standard
	Ag	107	330355.4	0.8	**48.2673**	0.453	0.9	ug/L	68	Standard
	Cd	111	74892.9	1.3	**50.2655**	0.684	1.4	mg/L	5	Standard
	Cd	114	181320.0	1.3	**50.2541**	0.690	1.4	ug/L	6	Standard
>	**In**	115	555925.6	0.1				ug/L	538484	Standard
	Sn	118	1706.8	6.8	**0.0718**	0.020	28.6	ug/L	1080	Standard
	Sb	123	181817.3	0.9	**50.8517**	0.540	1.1	ug/L	22	Standard
	Ba	135	75744.5	1.2	**66.8127**	0.895	1.3	ug/L	9	Standard
	Ce	140	1436.7	6.2				ug/L	8	Standard
>	**Tb**	159	752947.3	0.7				ug/L	729623	Standard
	Ho	165	28.3	10.2				ug/L	0	Standard
	Tl	203	266350.4	0.3	**51.1702**	0.617	1.2	ug/L	7	Standard
	Tl	205	257620.5	1.9	**51.7393**	1.726	3.3	ug/L	3	Standard
	Pb	206	178181.1	1.6	**52.3134**	1.374	2.6	ug/L	548	Standard
	Pb	207	155345.3	0.9	**49.8332**	0.706	1.4	ug/L	453	Standard
	Pb	208	625850.4	1.3	**51.4186**	1.434	2.8	ug/L	1835	Standard
	U	238	266812.8	1.5	**55.0475**	1.511	2.7	ug/L	1	Standard
>	**Bi**	209	429572.6	1.5				ug/L	438591	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	41819.3	2.8	**108.3098**	2.822	2.6	mg/L	18	Standard
K	39	3.3	86.6	**0.1100**	0.091	82.7	mg/L	3	Standard
Ca	43	61.7	4.7	**23.2673**	1.233	5.3	mg/L	2	Standard
Fe	54	378.8	13.5	**0.0320**	0.023	72.2	mg/L	292	Standard
Fe	57	191.7	24.2	**0.2242**	0.065	28.8	mg/L	32	Standard
> **Sc-1**	45	45006.8	1.6				mg/L	42531	Standard
Cl	35	129105.8	1.8				ug/L	58934	Standard
Kr	83	0.3	173.2				ug/L	1	Standard
Br	81	11070.7	5.6				ug/L	1487	Standard
P	31	21523.6	3.2				ug/L	15053	Standard
S	34	2051.8	4.9				ug/L	1318	Standard
Sr	88	610.0	8.3				ug/L	27	Standard
C	12	93.3	6.2				mg/L	57	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	44.4	67.2				mg/L	2	Standard
Ho-1	165	28.3	10.2				mg/L	0	Standard
Er	166	46.7	32.7				mg/L	20	Standard
I	127	90806.7	4.4				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.210	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.917	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.239	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.944	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1505130302
Sample Date/Time: Sunday, May 31, 2015 21:34:48
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	139191.5	0.9				ug/L	128086	Standard
	Be	9	45.0	50.9	**0.0316**	0.021	65.5	ug/L	17	Standard
	Al	27	14769521.4	0.6	**214.0235**	0.741	0.3	ug/L	1108	Standard
	Sc	45	47582.9	0.2				ug/L	42531	Standard
	Ti	47	172.0	1.5	**0.7356**	0.001	0.2	ug/L	7	Standard
	V	51	-109.2	248.0	**-0.1572**	0.041	26.3	ug/L	906	Standard
	Cr	52	7984.8	2.7	**0.4216**	0.024	5.6	ug/L	4643	Standard
	Cr	53	6838.2	6.2	**6.0640**	0.293	4.8	ug/L	310	Standard
	Mn	55	635903.0	0.9	**51.7333**	0.868	1.7	ug/L	1006	Standard
	Co	59	4804.1	0.2	**0.5678**	0.008	1.5	ug/L	74	Standard
	Ni	60	10454.9	1.5	**3.8998**	0.123	3.2	ug/L	292	Standard
	Cu	65	4872.8	0.7	**-0.2524**	0.043	17.0	ug/L	5020	Standard
	Zn	66	6704.1	1.1	**-10.6377**	0.051	0.5	ug/L	17910	Standard
>	Ge	72	536306.5	1.6				ug/L	508788	Standard
	As	75	2391.7	2.4	**1.7877**	0.045	2.5	ug/L	-98	Standard
	Se	82	942.0	1.8	**7.0859**	0.097	1.4	ug/L	18	Standard
	Se-1	77	992.7	5.2	**9.5196**	0.476	5.0	ug/L	64	Standard
>	Ga	71	95.0	13.9				mg/L	27	Standard
	Rb	85	5926.2	2.6				ug/L	160	Standard
	Y	89	691608.3	0.9				ug/L	653037	Standard
>	Rh	103	425.0	12.2				ug/L	7	Standard
	Mo	98	322.9	4.8	**0.0948**	0.005	5.0	ug/L	17	Standard
	Ag	107	114.0	33.9	**0.0034**	0.006	161.8	ug/L	68	Standard
	Cd	111	76.9	5.9	**0.0451**	0.003	6.3	mg/L	5	Standard
	Cd	114	276.2	40.5	**0.0715**	0.030	41.9	ug/L	6	Standard
>	In	115	575073.9	0.4				ug/L	538484	Standard
	Sn	118	888.4	7.2	**-0.0778**	0.011	14.6	ug/L	1080	Standard
	Sb	123	171.7	10.7	**0.0363**	0.005	13.9	ug/L	22	Standard
	Ba	135	17608.9	1.6	**14.9932**	0.244	1.6	ug/L	9	Standard
	Ce	140	481.7	4.2				ug/L	8	Standard
>	Tb	159	776110.0	0.7				ug/L	729623	Standard
	Ho	165	15.0	33.3				ug/L	0	Standard
	Tl	203	180.0	10.9	**0.0317**	0.004	11.2	ug/L	7	Standard
	Tl	205	130.0	40.0	**0.0260**	0.010	38.7	ug/L	3	Standard
	Pb	206	392.7	11.1	**-0.0735**	0.012	16.4	ug/L	548	Standard
	Pb	207	322.0	9.6	**-0.0587**	0.009	15.9	ug/L	453	Standard
	Pb	208	1267.0	2.2	**-0.0733**	0.002	2.5	ug/L	1835	Standard
	U	238	12784.1	0.4	**2.5718**	0.003	0.1	ug/L	1	Standard
>	Bi	209	440140.4	0.4				ug/L	438591	Standard

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Na	23	3.3	86.6	**36.6583**	31.743	86.6	mg/L	0	Standard
Mg	24	43223.2	0.9	**105.8791**	1.201	1.1	mg/L	18	Standard
K	39	18.3	68.6	**0.5512**	0.376	68.1	mg/L	3	Standard
Ca	43	145.0	19.2	**55.4162**	11.278	20.4	mg/L	2	Standard
Fe	54	537.1	13.8	**0.0916**	0.032	35.1	mg/L	292	Standard
Fe	57	316.7	12.3	**0.3849**	0.055	14.3	mg/L	32	Standard
Sc-1	45	47582.9	0.2				mg/L	42531	Standard
Cl	35	183688.2	1.0				ug/L	58934	Standard
Kr	83	0.3	173.2				ug/L	1	Standard
Br	81	62810.0	2.7				ug/L	1487	Standard
P	31	25873.7	2.6				ug/L	15053	Standard
S	34	2088.5	2.4				ug/L	1318	Standard
Sr	88	2898.6	1.5				ug/L	27	Standard
C	12	216.7	11.6				mg/L	57	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	42.9	59.8				mg/L	2	Standard
Ho-1	165	15.0	33.3				mg/L	0	Standard
Er	166	10.0	100.0				mg/L	20	Standard
I	127	767168.1	6.7				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.670	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.409	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.795
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.353
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Zn 66 Lower	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1505130304
Sample Date/Time: Sunday, May 31, 2015 21:37:59
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	138671.9	2.5				ug/L	128086	Standard
	Be	9	50.0	50.0	**0.0362**	0.022	60.5	ug/L	17	Standard
	Al	27	15596789.3	4.5	**226.8848**	9.840	4.3	ug/L	1108	Standard
	Sc	45	48072.8	2.0				ug/L	42531	Standard
	Ti	47	145.0	8.6	**0.6017**	0.071	11.7	ug/L	7	Standard
	V	51	-540.4	12.5	**-0.2205**	0.012	5.5	ug/L	906	Standard
	Cr	52	7583.6	1.9	**0.3443**	0.034	9.9	ug/L	4643	Standard
	Cr	53	6067.9	1.2	**5.2262**	0.197	3.8	ug/L	310	Standard
	Mn	55	2700367.8	2.1	**215.5580**	0.586	0.3	ug/L	1006	Standard
	Co	59	14198.7	4.9	**1.6611**	0.042	2.5	ug/L	74	Standard
	Ni	60	9346.6	3.5	**3.3932**	0.073	2.2	ug/L	292	Standard
	Cu	65	4375.6	4.6	**-0.4802**	0.042	8.8	ug/L	5020	Standard
	Zn	66	8093.8	3.3	**-9.6584**	0.074	0.8	ug/L	17910	Standard
>	**Ge**	72	548219.6	2.4				ug/L	508788	Standard
	As	75	3379.8	5.4	**2.4351**	0.072	3.0	ug/L	-98	Standard
	Se	82	930.5	5.9	**6.8380**	0.249	3.6	ug/L	18	Standard
	Se-1	77	822.0	6.0	**7.5901**	0.668	8.8	ug/L	64	Standard
>	**Ga**	71	86.7	31.8				mg/L	27	Standard
	Rb	85	36268.4	5.1				ug/L	160	Standard
	Y	89	714142.0	2.4				ug/L	653037	Standard
>	**Rh**	103	583.3	16.9				ug/L	7	Standard
	Mo	98	1286.0	4.5	**0.3874**	0.014	3.6	ug/L	17	Standard
	Ag	107	85.0	11.6	**-0.0011**	0.002	141.5	ug/L	68	Standard
	Cd	111	33.6	35.0	**0.0164**	0.008	45.8	mg/L	5	Standard
	Cd	114	87.5	37.7	**0.0203**	0.009	43.2	ug/L	6	Standard
>	**In**	115	593939.9	1.5				ug/L	538484	Standard
	Sn	118	713.4	7.4	**-0.1115**	0.008	7.3	ug/L	1080	Standard
	Sb	123	145.0	13.3	**0.0278**	0.005	16.2	ug/L	22	Standard
	Ba	135	25702.1	1.2	**21.2027**	0.305	1.4	ug/L	9	Standard
	Ce	140	2115.1	7.6				ug/L	8	Standard
>	**Tb**	159	799204.0	0.9				ug/L	729623	Standard
	Ho	165	15.0	66.7				ug/L	0	Standard
	Tl	203	85.7	15.8	**0.0138**	0.002	16.4	ug/L	7	Standard
	Tl	205	93.3	16.4	**0.0187**	0.003	17.6	ug/L	3	Standard
	Pb	206	498.3	2.3	**-0.0448**	0.001	3.1	ug/L	548	Standard
	Pb	207	420.0	5.0	**-0.0295**	0.005	17.7	ug/L	453	Standard
	Pb	208	1695.7	3.8	**-0.0405**	0.003	7.0	ug/L	1835	Standard
	U	238	701.7	7.4	**0.1377**	0.008	5.9	ug/L	1	Standard
>	**Bi**	209	445377.7	1.7				ug/L	438591	Standard

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Na	23	8.3	91.7	**90.2215**	83.234	92.3	mg/L	0	Standard
Mg	24	38916.6	3.2	**94.3605**	2.803	3.0	mg/L	18	Standard
K	39	46.7	12.4	**1.3781**	0.151	11.0	mg/L	3	Standard
Ca	43	138.3	17.8	**52.0734**	9.173	17.6	mg/L	2	Standard
Fe	54	7290.8	0.8	**3.0096**	0.054	1.8	mg/L	292	Standard
Fe	57	2456.9	5.9	**3.3527**	0.134	4.0	mg/L	32	Standard
> **Sc-1**	45	48072.8	2.0				mg/L	42531	Standard
Cl	35	195969.6	2.3				ug/L	58934	Standard
Kr	83	0.0					ug/L	1	Standard
Br	81	61518.0	1.9				ug/L	1487	Standard
P	31	23938.9	3.0				ug/L	15053	Standard
S	34	2390.2	3.0				ug/L	1318	Standard
Sr	88	4172.2	2.2				ug/L	27	Standard
C	12	166.7	17.3				mg/L	57	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	28.6	56.3				mg/L	2	Standard
Ho-1	165	15.0	66.7				mg/L	0	Standard
Er	166	30.0	88.2				mg/L	20	Standard
I	127	446154.2	6.1				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.265	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.750	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.298
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.547
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1505130304PS WG525403-03
Sample Date/Time: Sunday, May 31, 2015 21:41:11
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	145997.1	3.1				ug/L	128086	Standard
	Be	9	51940.6	1.9	**45.2063**	1.821	4.0	ug/L	17	Standard
	Al	27	15924671.4	1.5	**220.1321**	7.074	3.2	ug/L	1108	Standard
	Sc	45	48857.0	2.2				ug/L	42531	Standard
	Ti	47	151.3	7.4	**0.6219**	0.053	8.4	ug/L	7	Standard
	V	51	351208.3	2.7	**51.3191**	1.467	2.9	ug/L	906	Standard
	Cr	52	388894.2	2.2	**51.0809**	1.105	2.2	ug/L	4643	Standard
	Cr	53	61969.9	3.5	**55.8099**	1.888	3.4	ug/L	310	Standard
	Mn	55	3371558.9	2.2	**266.4527**	5.334	2.0	ug/L	1006	Standard
	Co	59	449562.4	2.0	**52.4131**	1.052	2.0	ug/L	74	Standard
	Ni	60	140284.9	1.6	**52.1873**	0.849	1.6	ug/L	292	Standard
	Cu	65	137380.0	2.9	**48.8358**	1.415	2.9	ug/L	5020	Standard
	Zn	66	82125.4	3.0	**48.1936**	1.665	3.5	ug/L	17910	Standard
>	Ge	72	553821.9	0.9				ug/L	508788	Standard
	As	75	78749.3	2.3	**54.1780**	1.040	1.9	ug/L	-98	Standard
	Se	82	7987.6	1.1	**59.1935**	0.971	1.6	ug/L	18	Standard
	Se-1	77	5939.2	0.8	**58.4785**	0.365	0.6	ug/L	64	Standard
>	Ga	71	113.3	9.2				mg/L	27	Standard
	Rb	85	36717.9	5.2				ug/L	160	Standard
	Y	89	717309.4	0.8				ug/L	653037	Standard
>	Rh	103	586.7	3.5				ug/L	7	Standard
	Mo	98	1300.4	3.9	**0.3857**	0.019	4.9	ug/L	17	Standard
	Ag	107	334866.1	1.3	**45.0663**	0.990	2.2	ug/L	68	Standard
	Cd	111	79903.6	2.2	**49.4001**	1.502	3.0	mg/L	5	Standard
	Cd	114	190916.7	1.8	**48.7414**	1.323	2.7	ug/L	6	Standard
>	In	115	603610.7	0.9				ug/L	538484	Standard
	Sn	118	711.7	17.9	**-0.1137**	0.021	18.4	ug/L	1080	Standard
	Sb	123	185899.0	2.0	**47.8937**	1.401	2.9	ug/L	22	Standard
	Ba	135	88111.5	1.0	**71.5911**	1.370	1.9	ug/L	9	Standard
	Ce	140	2168.5	3.3				ug/L	8	Standard
>	Tb	159	806082.0	1.2				ug/L	729623	Standard
	Ho	165	33.3	31.2				ug/L	0	Standard
	Tl	203	283244.2	1.2	**51.4622**	1.003	1.9	ug/L	7	Standard
	Tl	205	268764.7	1.3	**51.0376**	1.086	2.1	ug/L	3	Standard
	Pb	206	185539.5	2.2	**51.5108**	1.475	2.9	ug/L	548	Standard
	Pb	207	169028.2	2.2	**51.2867**	1.517	3.0	ug/L	453	Standard
	Pb	208	652185.0	1.7	**50.6651**	1.247	2.5	ug/L	1835	Standard
	U	238	269886.6	1.0	**52.6527**	0.991	1.9	ug/L	1	Standard
>	Bi	209	454223.3	0.9				ug/L	438591	Standard

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Na	23	6.7	43.3	**71.1031**	29.243	41.1	mg/L	0	Standard
Mg	24	39282.5	1.1	**93.7256**	1.087	1.2	mg/L	18	Standard
K	39	53.3	32.9	**1.5586**	0.542	34.8	mg/L	3	Standard
Ca	43	123.3	27.0	**45.3816**	12.996	28.6	mg/L	2	Standard
Fe	54	7434.8	1.2	**3.0200**	0.037	1.2	mg/L	292	Standard
Fe	57	2530.2	5.2	**3.3984**	0.106	3.1	mg/L	32	Standard
Sc-1	45	48857.0	2.2				mg/L	42531	Standard
Cl	35	198119.4	2.6				ug/L	58934	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	62589.0	2.0				ug/L	1487	Standard
P	31	25833.7	3.0				ug/L	15053	Standard
S	34	2523.5	9.4				ug/L	1318	Standard
Sr	88	4360.6	5.9				ug/L	27	Standard
C	12	216.7	23.2				mg/L	57	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	28.4	123.7				mg/L	2	Standard
Ho-1	165	33.3	31.2				mg/L	0	Standard
Er	166	33.3	75.5				mg/L	20	Standard
I	127	451794.3	5.4				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.984	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.851	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	112.094
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.564
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1505130304SDL WG525403-04
Sample Date/Time: Sunday, May 31, 2015 21:44:22
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	130029.6	4.4				ug/L	128086	Standard
	Be	9	40.0	54.5	**0.0292**	0.019	66.0	ug/L	17	Standard
	Al	27	2947461.4	0.7	**45.7342**	1.683	3.7	ug/L	1108	Standard
	Sc	45	44933.2	1.9				ug/L	42531	Standard
	Ti	47	32.3	4.7	**0.1080**	0.007	6.2	ug/L	7	Standard
	V	51	641.2	19.9	**-0.0450**	0.018	40.9	ug/L	906	Standard
	Cr	52	5629.0	3.1	**0.0849**	0.017	20.6	ug/L	4643	Standard
	Cr	53	1560.1	2.1	**1.1050**	0.028	2.5	ug/L	310	Standard
	Mn	55	492177.9	1.5	**39.3134**	0.257	0.7	ug/L	1006	Standard
	Co	59	2852.3	9.2	**0.3268**	0.028	8.6	ug/L	74	Standard
	Ni	60	1971.5	1.8	**0.6189**	0.015	2.5	ug/L	292	Standard
	Cu	65	9079.1	1.9	**1.3000**	0.051	3.9	ug/L	5020	Standard
	Zn	66	19283.6	1.5	**-0.7351**	0.217	29.5	ug/L	17910	Standard
>	Ge	72	545415.6	0.8				ug/L	508788	Standard
	As	75	576.6	3.3	**0.4932**	0.010	2.1	ug/L	-98	Standard
	Se	82	191.9	3.6	**1.3074**	0.059	4.5	ug/L	18	Standard
	Se-1	77	221.3	6.2	**1.5459**	0.123	7.9	ug/L	64	Standard
>	Ga	71	38.3	39.8				mg/L	27	Standard
	Rb	85	6873.2	1.2				ug/L	160	Standard
	Y	89	687257.4	2.2				ug/L	653037	Standard
>	Rh	103	123.3	19.2				ug/L	7	Standard
	Mo	98	249.6	8.9	**0.0691**	0.006	8.8	ug/L	17	Standard
	Ag	107	1106.0	31.4	**0.1385**	0.046	33.3	ug/L	68	Standard
	Cd	111	19.7	51.7	**0.0076**	0.006	82.3	mg/L	5	Standard
	Cd	114	73.6	73.8	**0.0166**	0.014	84.1	ug/L	6	Standard
>	In	115	593364.3	1.0				ug/L	538484	Standard
	Sn	118	1108.4	7.2	**-0.0461**	0.014	30.2	ug/L	1080	Standard
	Sb	123	501.0	8.5	**0.1212**	0.011	8.7	ug/L	22	Standard
	Ba	135	4951.5	2.9	**4.0649**	0.086	2.1	ug/L	9	Standard
	Ce	140	393.3	8.5				ug/L	8	Standard
>	Tb	159	797136.8	0.4				ug/L	729623	Standard
	Ho	165	6.7	86.6				ug/L	0	Standard
	Tl	203	108.7	41.7	**0.0171**	0.008	45.2	ug/L	7	Standard
	Tl	205	168.3	76.4	**0.0314**	0.023	73.8	ug/L	3	Standard
	Pb	206	714.4	13.6	**0.0068**	0.024	348.9	ug/L	548	Standard
	Pb	207	630.7	16.3	**0.0265**	0.028	105.0	ug/L	453	Standard
	Pb	208	2457.1	13.3	**0.0107**	0.022	208.9	ug/L	1835	Standard
	U	238	210.0	53.6	**0.0378**	0.021	54.8	ug/L	1	Standard
>	Bi	209	467467.9	1.3				ug/L	438591	Standard

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Na	23	1.7	173.2	**19.1648**	33.186	173.2	mg/L	0	Standard
Mg	24	7455.2	3.2	**19.3008**	0.396	2.1	mg/L	18	Standard
K	39	8.3	34.6	**0.2665**	0.087	32.6	mg/L	3	Standard
Ca	43	28.3	36.7	**9.0597**	4.310	47.6	mg/L	2	Standard
Fe	54	1604.4	4.9	**0.5996**	0.047	7.8	mg/L	292	Standard
Fe	57	508.3	10.0	**0.6967**	0.084	12.0	mg/L	32	Standard
> **Sc-1**	45	44933.2	1.9				mg/L	42531	Standard
Cl	35	97371.3	1.6				ug/L	58934	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	12361.7	0.9				ug/L	1487	Standard
P	31	16248.7	3.7				ug/L	15053	Standard
S	34	2253.5	4.7				ug/L	1318	Standard
Sr	88	790.0	5.7				ug/L	27	Standard
C	12	66.7	48.2				mg/L	57	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	5.5	101.6				mg/L	2	Standard
Ho-1	165	6.7	86.6				mg/L	0	Standard
Er	166	23.3	24.7				mg/L	20	Standard
I	127	93356.8	1.7				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.518	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.199	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		110.192
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		106.584
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1505130304SDL WG525403-04
Sample Date/Time: Sunday, May 31, 2015 21:47:33
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	122298.4	2.1				ug/L	128086	Standard
	Be	9	23.3	44.6	**0.0147**	0.010	69.2	ug/L	17	Standard
	Al	27	763434.1	2.1	**12.5531**	0.413	3.3	ug/L	1108	Standard
	Sc	45	43671.2	1.6				ug/L	42531	Standard
	Ti	47	13.0	27.7	**0.0253**	0.016	64.7	ug/L	7	Standard
	V	51	876.8	3.3	**-0.0044**	0.004	100.7	ug/L	906	Standard
	Cr	52	5010.2	0.9	**0.0298**	0.008	25.8	ug/L	4643	Standard
	Cr	53	786.7	4.5	**0.4241**	0.035	8.3	ug/L	310	Standard
	Mn	55	93871.2	1.0	**7.6427**	0.058	0.8	ug/L	1006	Standard
	Co	59	561.7	6.5	**0.0585**	0.005	7.7	ug/L	74	Standard
	Ni	60	620.7	10.0	**0.1173**	0.024	20.3	ug/L	292	Standard
	Cu	65	4776.1	1.6	**-0.2449**	0.026	10.8	ug/L	5020	Standard
	Zn	66	17856.5	1.1	**-1.2735**	0.133	10.5	ug/L	17910	Standard
>	**Ge**	72	523432.2	0.2				ug/L	508788	Standard
	As	75	7.0	488.4	**0.0962**	0.025	25.6	ug/L	-98	Standard
	Se	82	46.4	9.2	**0.2249**	0.033	14.7	ug/L	18	Standard
	Se-1	77	104.7	8.3	**0.4109**	0.095	23.0	ug/L	64	Standard
>	**Ga**	71	35.0	28.6				mg/L	27	Standard
	Rb	85	1431.7	4.1				ug/L	160	Standard
	Y	89	668023.9	0.2				ug/L	653037	Standard
>	**Rh**	103	16.7	34.6				ug/L	7	Standard
	Mo	98	53.1	14.8	**0.0087**	0.002	27.7	ug/L	17	Standard
	Ag	107	168.3	19.0	**0.0104**	0.005	43.7	ug/L	68	Standard
	Cd	111	18.3	79.8	**0.0068**	0.009	136.4	mg/L	5	Standard
	Cd	114	42.9	102.5	**0.0087**	0.012	132.5	ug/L	6	Standard
>	**In**	115	592570.9	0.7				ug/L	538484	Standard
	Sn	118	1071.7	18.1	**-0.0521**	0.031	59.5	ug/L	1080	Standard
	Sb	123	133.3	6.7	**0.0249**	0.002	9.8	ug/L	22	Standard
	Ba	135	965.4	1.0	**0.7708**	0.012	1.6	ug/L	9	Standard
	Ce	140	105.0	20.8				ug/L	8	Standard
>	**Tb**	159	782580.1	0.5				ug/L	729623	Standard
	Ho	165	13.3	57.3				ug/L	0	Standard
	Tl	203	78.0	51.6	**0.0117**	0.007	61.2	ug/L	7	Standard
	Tl	205	48.3	46.6	**0.0095**	0.004	44.2	ug/L	3	Standard
	Pb	206	541.7	5.2	**-0.0399**	0.008	19.6	ug/L	548	Standard
	Pb	207	500.7	5.5	**-0.0119**	0.008	68.5	ug/L	453	Standard
	Pb	208	1945.0	3.0	**-0.0280**	0.004	13.6	ug/L	1835	Standard
	U	238	38.3	15.3	**0.0054**	0.001	20.6	ug/L	1	Standard
>	**Bi**	209	467760.4	0.4				ug/L	438591	Standard

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Na	23	3.3	173.2	**40.1215**	69.484	173.2	mg/L	0	Standard
Mg	24	1396.7	2.5	**3.6860**	0.142	3.9	mg/L	18	Standard
K	39	6.7	43.3	**0.2214**	0.094	42.6	mg/L	3	Standard
Ca	43	11.7	24.7	**2.1138**	1.178	55.7	mg/L	2	Standard
Fe	54	524.5	4.1	**0.1068**	0.011	10.1	mg/L	292	Standard
Fe	57	123.3	24.4	**0.1286**	0.044	33.9	mg/L	32	Standard
> **Sc-1**	45	43671.2	1.6				mg/L	42531	Standard
Cl	35	76730.5	1.7				ug/L	58934	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	3610.4	3.5				ug/L	1487	Standard
P	31	14828.9	4.4				ug/L	15053	Standard
S	34	2021.8	3.0				ug/L	1318	Standard
Sr	88	156.7	38.6				ug/L	27	Standard
C	12	50.0	20.0				mg/L	57	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.4	107.5				mg/L	2	Standard
Ho-1	165	13.3	57.3				mg/L	0	Standard
Er	166	13.3	173.2				mg/L	20	Standard
I	127	20764.2	3.9				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.482	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.878	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		110.044
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		106.651
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Sunday, May 31, 2015 21:50:45
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	151083.7	4.2				ug/L	128086	Standard
	Be	9	64199.2	4.6	**54.0888**	4.759	8.8	ug/L	17	Standard
	Al	27	4335731.7	5.4	**57.9671**	4.869	8.4	ug/L	1108	Standard
	Sc	45	53036.0	0.9				ug/L	42531	Standard
	Ti	47	30291.6	4.9	**114.9817**	4.784	4.2	ug/L	7	Standard
	V	51	448983.9	2.7	**57.4934**	0.889	1.5	ug/L	906	Standard
	Cr	52	497367.1	4.6	**57.3101**	2.079	3.6	ug/L	4643	Standard
	Cr	53	70874.2	6.4	**55.9166**	3.250	5.8	ug/L	310	Standard
	Mn	55	838085.5	4.1	**57.8632**	2.075	3.6	ug/L	1006	Standard
	Co	59	573161.1	3.0	**58.5464**	1.276	2.2	ug/L	74	Standard
	Ni	60	176863.1	5.6	**57.6472**	2.723	4.7	ug/L	292	Standard
	Cu	65	179169.0	6.1	**56.0945**	3.027	5.4	ug/L	5020	Standard
	Zn	66	94021.7	5.2	**48.3932**	3.060	6.3	ug/L	17910	Standard
>	**Ge**	72	632079.4	1.6				ug/L	508788	Standard
	As	75	90998.1	6.9	**54.8503**	3.618	6.6	ug/L	-98	Standard
	Se	82	8594.8	7.9	**55.7989**	4.406	7.9	ug/L	18	Standard
	Se-1	77	6537.4	7.1	**56.3673**	3.772	6.7	ug/L	64	Standard
>	**Ga**	71	48.3	43.1				mg/L	27	Standard
	Rb	85	1285.1	9.8				ug/L	160	Standard
	Y	89	811484.3	2.0				ug/L	653037	Standard
>	**Rh**	103	23.3	44.6				ug/L	7	Standard
	Mo	98	427057.9	3.3	**118.2087**	3.817	3.2	ug/L	17	Standard
	Ag	107	465194.0	4.8	**57.3122**	2.838	5.0	ug/L	68	Standard
	Cd	111	98736.7	6.4	**55.8774**	3.657	6.5	mg/L	5	Standard
	Cd	114	238018.8	6.3	**55.6261**	3.608	6.5	ug/L	6	Standard
>	**In**	115	659362.7	1.0				ug/L	538484	Standard
	Sn	118	303996.3	5.2	**44.9853**	2.428	5.4	ug/L	1080	Standard
	Sb	123	215778.9	5.9	**50.8862**	3.054	6.0	ug/L	22	Standard
	Ba	135	76464.1	4.8	**56.8647**	2.731	4.8	ug/L	9	Standard
	Ce	140	51.7	39.1				ug/L	8	Standard
>	**Tb**	159	871898.0	1.7				ug/L	729623	Standard
	Ho	165	8.3	91.7				ug/L	0	Standard
	Tl	203	358238.4	4.4	**57.4608**	2.463	4.3	ug/L	7	Standard
	Tl	205	353644.6	5.6	**59.2852**	3.296	5.6	ug/L	3	Standard
	Pb	206	229999.3	4.9	**56.3862**	2.713	4.8	ug/L	548	Standard
	Pb	207	210568.8	5.0	**56.4159**	2.740	4.9	ug/L	453	Standard
	Pb	208	857309.4	4.0	**58.8209**	2.238	3.8	ug/L	1835	Standard
	U	238	329082.5	4.9	**56.6770**	2.710	4.8	ug/L	1	Standard
>	**Bi**	209	514455.6	0.6				ug/L	438591	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	2590.2	8.1	**5.6477**	0.405	7.2	mg/L	18	Standard
K	39	178.3	10.6	**4.7669**	0.517	10.8	mg/L	3	Standard
Ca	43	23.3	24.7	**5.4422**	2.116	38.9	mg/L	2	Standard
Fe	54	16162.1	2.5	**6.1896**	0.112	1.8	mg/L	292	Standard
Fe	57	4905.8	5.2	**6.1186**	0.287	4.7	mg/L	32	Standard
Sc-1	45	53036.0	0.9				mg/L	42531	Standard
Cl	35	112257.5	4.4				ug/L	58934	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	2823.6	11.9				ug/L	1487	Standard
P	31	26621.7	5.3				ug/L	15053	Standard
S	34	3113.7	10.9				ug/L	1318	Standard
Sr	88	20.0	90.1				ug/L	27	Standard
C	12	66.7	17.3				mg/L	57	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.4	182.1				mg/L	2	Standard
Ho-1	165	8.3	91.7				mg/L	0	Standard
Er	166	13.3	86.6				mg/L	20	Standard
I	127	3485.4	23.5				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	108.178		
Al	27	115.934		
Sc	45			
Ti	47	114.982		
V	51	114.987		
Cr	52	114.620		
Cr	53			
Mn	55	115.726		
Co	59	117.093		
Ni	60	115.294		
Cu	65	112.189		
Zn	66	96.786		
Ge	72		124.232	
As	75	109.701		
Se	82	111.598		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	118.209		
Ag	107	114.624		
Cd	111	111.755		
Cd	114			
In	115			122.448
Sn	118	89.971		
Sb	123	101.772		
Ba	135	113.729		
Ce	140			
Tb	159			
Ho	165			
Tl	203	114.922		
Tl	205			
Pb	206			
Pb	207			
Pb	208	117.642		
U	238	113.354		
Bi	209			117.297
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	
QC Std 6	Ti	47	
QC Std 6	V	51	

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QC Std 6	Cr	52	
QC Std 6	Mn	55	
QC Std 6	Co	59	
QC Std 6	Ni	60	
QC Std 6	Cu	65	
Ge 72 Int Std for QC Std	Ge	72	Rerun sample
QC Std 6	Se	82	
QC Std 6	Mo	98	
QC Std 6	Ag	107	
QC Std 6	Cd	111	
In 115 Int Std for QC Std	In	115	Rerun sample
QC Std 6	Ba	135	
QC Std 6	Tl	203	
QC Std 6	Pb	208	
QC Std 6	U	238	

Approved: June 01, 2015

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Sunday, May 31, 2015 21:53:57
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	147206.9	2.2				ug/L	128086	Standard
	Be	9	35.0	24.7	**0.0208**	0.007	33.2	ug/L	17	Standard
	Al	27	1741.8	13.8	**-0.0211**	0.004	18.2	ug/L	1108	Standard
	Sc	45	52691.5	1.3				ug/L	42531	Standard
	Ti	47	6.0	28.9	**-0.0109**	0.007	61.3	ug/L	7	Standard
	V	51	1148.0	3.6	**0.0106**	0.007	66.5	ug/L	906	Standard
	Cr	52	6179.6	1.4	**0.0620**	0.004	6.7	ug/L	4643	Standard
	Cr	53	466.7	2.7	**0.0493**	0.015	29.6	ug/L	310	Standard
	Mn	55	1240.4	8.0	**-0.1247**	0.007	5.8	ug/L	1006	Standard
	Co	59	89.0	32.7	**-0.0015**	0.003	211.8	ug/L	74	Standard
	Ni	60	389.0	3.1	**0.0026**	0.006	213.6	ug/L	292	Standard
	Cu	65	7341.8	1.9	**0.3242**	0.075	23.1	ug/L	5020	Standard
	Zn	66	25303.8	1.1	**1.7072**	0.387	22.7	ug/L	17910	Standard
>	**Ge**	72	617370.1	1.2				ug/L	508788	Standard
	As	75	-164.8	25.2	**-0.0104**	0.025	241.8	ug/L	-98	Standard
	Se	82	26.2	13.0	**0.0350**	0.024	67.4	ug/L	18	Standard
	Se-1	77	94.3	6.7	**0.1502**	0.050	33.2	ug/L	64	Standard
>	**Ga**	71	20.0	66.1				mg/L	27	Standard
	Rb	85	216.7	10.9				ug/L	160	Standard
	Y	89	794431.8	1.2				ug/L	653037	Standard
>	**Rh**	103	3.3	86.6				ug/L	7	Standard
	Mo	98	78.9	15.7	**0.0148**	0.004	26.7	ug/L	17	Standard
	Ag	107	138.3	34.6	**0.0048**	0.006	126.9	ug/L	68	Standard
	Cd	111	18.8	96.3	**0.0062**	0.011	169.6	mg/L	5	Standard
	Cd	114	75.0	112.0	**0.0155**	0.020	130.0	ug/L	6	Standard
>	**In**	115	641847.7	1.9				ug/L	538484	Standard
	Sn	118	1678.4	4.8	**0.0273**	0.016	58.1	ug/L	1080	Standard
	Sb	123	493.3	10.6	**0.1096**	0.015	13.5	ug/L	22	Standard
	Ba	135	28.7	62.6	**-0.0065**	0.014	210.7	ug/L	9	Standard
	Ce	140	8.3	91.7				ug/L	8	Standard
>	**Tb**	159	858467.9	1.4				ug/L	729623	Standard
	Ho	165	8.3	124.9				ug/L	0	Standard
	Tl	203	59.0	84.7	**0.0074**	0.008	108.3	ug/L	7	Standard
	Tl	205	26.7	47.2	**0.0050**	0.002	42.1	ug/L	3	Standard
	Pb	206	738.4	0.9	**-0.0051**	0.001	22.8	ug/L	548	Standard
	Pb	207	652.3	7.6	**0.0153**	0.015	96.1	ug/L	453	Standard
	Pb	208	2535.8	0.9	**-0.0010**	0.002	155.4	ug/L	1835	Standard
	U	238	9.7	88.0	**-0.0002**	0.001	938.5	ug/L	1	Standard
>	**Bi**	209	515321.5	1.1				ug/L	438591	Standard

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Na	23	1.7	173.2	**16.7789**	29.053	173.2	mg/L	0	Standard
Mg	24	23.3	32.7	**0.0068**	0.017	245.4	mg/L	18	Standard
K	39	5.0	100.0	**0.1388**	0.133	95.6	mg/L	3	Standard
Ca	43	1.7	173.2	**-2.3802**	1.063	44.7	mg/L	2	Standard
Fe	54	420.5	6.0	**0.0231**	0.012	52.0	mg/L	292	Standard
Fe	57	48.3	52.1	**0.0014**	0.031	2268.9	mg/L	32	Standard
Sc-1	45	52691.5	1.3				mg/L	42531	Standard
Cl	35	108944.3	1.3				ug/L	58934	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	2266.8	10.9				ug/L	1487	Standard
P	31	23636.8	3.7				ug/L	15053	Standard
S	34	2940.3	5.3				ug/L	1318	Standard
Sr	88	10.0	50.0				ug/L	27	Standard
C	12	56.7	71.3				mg/L	57	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.5	239.4				mg/L	2	Standard
Ho-1	165	8.3	124.9				mg/L	0	Standard
Er	166	16.7	69.3				mg/L	20	Standard
I	127	2116.8	13.5				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		121.341	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	119.195
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	117.495
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ge 72 Int Std for QC Std	Ge	72	Rerun sample

Approved: June 01, 2015

Method 6020 - Summary Report

Sample ID: L1505146301SDL WG525405-04
Sample Date/Time: Sunday, May 31, 2015 21:57:10
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	133926.1	2.2				ug/L	128086	Standard
	Be	9	33.3	8.7	**0.0223**	0.003	15.0	ug/L	17	Standard
	Al	27	535734.9	1.5	**8.0273**	0.196	2.4	ug/L	1108	Standard
	Sc	45	49579.3	1.4				ug/L	42531	Standard
	Ti	47	15.7	13.3	**0.0298**	0.009	29.1	ug/L	7	Standard
	V	51	1781.2	3.0	**0.1058**	0.001	1.4	ug/L	906	Standard
	Cr	52	5755.1	0.9	**0.0472**	0.024	51.4	ug/L	4643	Standard
	Cr	53	440.0	2.0	**0.0462**	0.014	29.6	ug/L	310	Standard
	Mn	55	102640.5	1.6	**7.4497**	0.260	3.5	ug/L	1006	Standard
	Co	59	102.7	8.8	**0.0005**	0.001	221.9	ug/L	74	Standard
	Ni	60	682.3	4.8	**0.1124**	0.008	6.8	ug/L	292	Standard
	Cu	65	6367.7	2.4	**0.1104**	0.100	90.7	ug/L	5020	Standard
	Zn	66	24067.1	1.4	**1.7199**	0.682	39.7	ug/L	17910	Standard
>	**Ge**	72	587079.5	2.8				ug/L	508788	Standard
	As	75	-94.8	23.3	**0.0297**	0.014	47.2	ug/L	-98	Standard
	Se	82	31.8	12.4	**0.0836**	0.033	39.2	ug/L	18	Standard
	Se-1	77	88.3	4.3	**0.1376**	0.027	19.8	ug/L	64	Standard
>	**Ga**	71	31.7	50.8				mg/L	27	Standard
	Rb	85	273.3	18.0				ug/L	160	Standard
	Y	89	770149.5	1.1				ug/L	653037	Standard
>	**Rh**	103	5.0	0.0				ug/L	7	Standard
	Mo	98	218.7	2.9	**0.0559**	0.001	1.6	ug/L	17	Standard
	Ag	107	87.0	12.2	**-0.0015**	0.001	87.1	ug/L	68	Standard
	Cd	111	9.4	26.9	**0.0008**	0.001	171.5	mg/L	5	Standard
	Cd	114	23.0	107.6	**0.0031**	0.006	193.0	ug/L	6	Standard
>	**In**	115	627539.1	1.6				ug/L	538484	Standard
	Sn	118	1501.7	5.9	**0.0053**	0.010	197.6	ug/L	1080	Standard
	Sb	123	165.6	9.5	**0.0310**	0.004	14.5	ug/L	22	Standard
	Ba	135	3942.2	1.5	**3.0533**	0.012	0.4	ug/L	9	Standard
	Ce	140	23.3	12.4				ug/L	8	Standard
>	**Tb**	159	833154.0	1.1				ug/L	729623	Standard
	Ho	165	10.0	50.0				ug/L	0	Standard
	Tl	203	13.3	24.1	**0.0002**	0.001	359.8	ug/L	7	Standard
	Tl	205	18.3	103.3	**0.0037**	0.003	88.9	ug/L	3	Standard
	Pb	206	664.0	4.8	**-0.0180**	0.007	39.9	ug/L	548	Standard
	Pb	207	590.3	2.7	**0.0038**	0.002	57.3	ug/L	453	Standard
	Pb	208	2449.7	2.2	**-0.0014**	0.003	253.5	ug/L	1835	Standard
	U	238	395.3	3.1	**0.0684**	0.003	4.2	ug/L	1	Standard
>	**Bi**	209	498887.2	2.1				ug/L	438591	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	626.7	7.4	**1.4296**	0.117	8.2	mg/L	18	Standard
K	39	10.0	50.0	**0.2918**	0.147	50.4	mg/L	3	Standard
Ca	43	10.0	100.0	**0.9032**	3.931	435.2	mg/L	2	Standard
Fe	54	349.0	6.6	**0.0034**	0.010	295.3	mg/L	292	Standard
Fe	57	28.3	56.7	**-0.0215**	0.022	101.3	mg/L	32	Standard
> **Sc-1**	45	49579.3	1.4				mg/L	42531	Standard
Cl	35	97191.4	1.5				ug/L	58934	Standard
Kr	83	0.3	173.2				ug/L	1	Standard
Br	81	2940.3	10.7				ug/L	1487	Standard
P	31	20754.2	3.0				ug/L	15053	Standard
S	34	2708.6	6.7				ug/L	1318	Standard
Sr	88	30.0	16.7				ug/L	27	Standard
C	12	63.3	39.7				mg/L	57	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	-0.5	100.0				mg/L	2	Standard
Ho-1	165	10.0	50.0				mg/L	0	Standard
Er	166	10.0	100.0				mg/L	20	Standard
I	127	34993.8	4.9				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.560	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		115.388	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		116.538
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		113.748
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1505146302
Sample Date/Time: Sunday, May 31, 2015 22:00:21
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	137227.1	1.5				ug/L	128086	Standard
	Be	9	21.7	93.3	**0.0109**	0.019	174.7	ug/L	17	Standard
	Al	27	14413761.1	3.0	**211.8332**	4.321	2.0	ug/L	1108	Standard
	Sc	45	50851.9	1.7				ug/L	42531	Standard
	Ti	47	195.3	5.2	**0.7807**	0.042	5.4	ug/L	7	Standard
	V	51	1400.4	12.3	**0.0572**	0.024	42.6	ug/L	906	Standard
	Cr	52	6797.9	3.2	**0.1951**	0.027	13.8	ug/L	4643	Standard
	Cr	53	1023.4	7.1	**0.5623**	0.062	11.0	ug/L	310	Standard
	Mn	55	3716022.7	1.4	**282.6991**	4.161	1.5	ug/L	1006	Standard
	Co	59	1713.8	2.7	**0.1816**	0.006	3.1	ug/L	74	Standard
	Ni	60	4921.1	4.2	**1.6389**	0.076	4.6	ug/L	292	Standard
	Cu	65	2729.6	1.2	**-1.1447**	0.009	0.8	ug/L	5020	Standard
	Zn	66	15974.4	1.6	**-4.0243**	0.223	5.5	ug/L	17910	Standard
>	**Ge**	72	575358.8	0.3				ug/L	508788	Standard
	As	75	5433.3	0.9	**3.6833**	0.035	0.9	ug/L	-98	Standard
	Se	82	347.9	0.4	**2.3477**	0.017	0.7	ug/L	18	Standard
	Se-1	77	145.0	7.3	**0.6977**	0.097	13.9	ug/L	64	Standard
>	**Ga**	71	101.7	10.2				mg/L	27	Standard
	Rb	85	2355.2	8.5				ug/L	160	Standard
	Y	89	755772.4	1.2				ug/L	653037	Standard
>	**Rh**	103	250.0	8.7				ug/L	7	Standard
	Mo	98	3650.5	4.0	**1.0876**	0.049	4.5	ug/L	17	Standard
	Ag	107	90.3	28.5	**-0.0006**	0.004	556.4	ug/L	68	Standard
	Cd	111	14.1	40.7	**0.0039**	0.004	91.3	mg/L	5	Standard
	Cd	114	29.5	86.4	**0.0050**	0.007	130.0	ug/L	6	Standard
>	**In**	115	608406.4	0.6				ug/L	538484	Standard
	Sn	118	765.0	2.4	**-0.1060**	0.002	2.1	ug/L	1080	Standard
	Sb	123	161.5	3.7	**0.0312**	0.002	5.3	ug/L	22	Standard
	Ba	135	227975.2	1.4	**183.8030**	3.261	1.8	ug/L	9	Standard
	Ce	140	448.3	6.5				ug/L	8	Standard
>	**Tb**	159	818551.6	2.0				ug/L	729623	Standard
	Ho	165	33.3	37.7				ug/L	0	Standard
	Tl	203	50.7	20.5	**0.0068**	0.002	25.8	ug/L	7	Standard
	Tl	205	40.0	25.0	**0.0079**	0.002	22.2	ug/L	3	Standard
	Pb	206	763.0	1.9	**0.0187**	0.001	3.4	ug/L	548	Standard
	Pb	207	669.0	3.9	**0.0367**	0.007	20.3	ug/L	453	Standard
	Pb	208	2713.1	2.3	**0.0288**	0.004	14.7	ug/L	1835	Standard
	U	238	19.7	23.5	**0.0019**	0.001	48.8	ug/L	1	Standard
>	**Bi**	209	470705.2	1.6				ug/L	438591	Standard

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Na	23	3.3	173.2	**34.9437**	60.516	173.2	mg/L	0	Standard
Mg	24	12908.8	2.0	**29.5586**	0.588	2.0	mg/L	18	Standard
K	39	11.7	24.7	**0.3299**	0.080	24.3	mg/L	3	Standard
Ca	43	103.3	12.2	**35.9032**	4.095	11.4	mg/L	2	Standard
Fe	54	7909.5	3.8	**3.0891**	0.089	2.9	mg/L	292	Standard
Fe	57	2561.9	3.7	**3.3058**	0.112	3.4	mg/L	32	Standard
> **Sc-1**	45	50851.9	1.7				mg/L	42531	Standard
Cl	35	100933.1	1.0				ug/L	58934	Standard
Kr	83	0.3	173.2				ug/L	1	Standard
Br	81	21969.3	3.9				ug/L	1487	Standard
P	31	29942.9	3.7				ug/L	15053	Standard
S	34	2805.3	7.7				ug/L	1318	Standard
Sr	88	1475.1	5.3				ug/L	27	Standard
C	12	126.7	16.4				mg/L	57	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	34.8	42.8				mg/L	2	Standard
Ho-1	165	33.3	37.7				mg/L	0	Standard
Er	166	40.0	75.0				mg/L	20	Standard
I	127	413819.9	4.3				mg/L	175	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		107.137	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		113.084	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.985
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.322
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Cu 65 Lower	Cu	65	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1505146303
Sample Date/Time: Sunday, May 31, 2015 22:03:32
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	142064.9	2.6				ug/L	128086	Standard
	Be	9	20.0	25.0	**0.0085**	0.004	50.8	ug/L	17	Standard
	Al	27	8037431.2	1.4	**114.1595**	4.229	3.7	ug/L	1108	Standard
	Sc	45	50199.7	1.0				ug/L	42531	Standard
	Ti	47	211.0	4.8	**0.8384**	0.047	5.7	ug/L	7	Standard
	V	51	1859.3	1.1	**0.1195**	0.001	1.0	ug/L	906	Standard
	Cr	52	6678.8	0.4	**0.1722**	0.005	3.0	ug/L	4643	Standard
	Cr	53	666.7	6.1	**0.2463**	0.038	15.6	ug/L	310	Standard
	Mn	55	3728105.3	1.0	**281.1117**	4.813	1.7	ug/L	1006	Standard
	Co	59	1068.0	3.0	**0.1080**	0.004	3.9	ug/L	74	Standard
	Ni	60	4837.4	2.1	**1.5935**	0.042	2.7	ug/L	292	Standard
	Cu	65	6017.9	2.0	**0.0104**	0.055	531.9	ug/L	5020	Standard
	Zn	66	12614.6	0.8	**-6.6387**	0.147	2.2	ug/L	17910	Standard
>	**Ge**	72	580525.3	0.7				ug/L	508788	Standard
	As	75	578.0	5.3	**0.4698**	0.020	4.3	ug/L	-98	Standard
	Se	82	252.1	4.2	**1.6466**	0.080	4.8	ug/L	18	Standard
	Se-1	77	115.0	10.9	**0.4005**	0.119	29.7	ug/L	64	Standard
>	**Ga**	71	120.0	22.0				mg/L	27	Standard
	Rb	85	14301.8	3.5				ug/L	160	Standard
	Y	89	750308.3	1.0				ug/L	653037	Standard
>	**Rh**	103	136.7	12.8				ug/L	7	Standard
	Mo	98	681.0	1.3	**0.1976**	0.004	1.8	ug/L	17	Standard
	Ag	107	67.7	11.5	**-0.0036**	0.001	27.0	ug/L	68	Standard
	Cd	111	153.4	11.7	**0.0897**	0.010	11.6	mg/L	5	Standard
	Cd	114	399.7	10.1	**0.0992**	0.009	9.6	ug/L	6	Standard
>	**In**	115	605465.5	0.7				ug/L	538484	Standard
	Sn	118	695.0	7.6	**-0.1168**	0.008	6.6	ug/L	1080	Standard
	Sb	123	353.3	4.8	**0.0806**	0.004	5.0	ug/L	22	Standard
	Ba	135	87950.5	0.9	**71.2325**	0.133	0.2	ug/L	9	Standard
	Ce	140	850.0	1.6				ug/L	8	Standard
>	**Tb**	159	818038.7	0.8				ug/L	729623	Standard
	Ho	165	26.7	39.0				ug/L	0	Standard
	Tl	203	28.0	3.6	**0.0028**	0.000	5.0	ug/L	7	Standard
	Tl	205	21.7	58.1	**0.0045**	0.002	51.4	ug/L	3	Standard
	Pb	206	503.7	8.4	**-0.0519**	0.010	19.9	ug/L	548	Standard
	Pb	207	420.7	4.8	**-0.0370**	0.006	16.9	ug/L	453	Standard
	Pb	208	1749.7	2.7	**-0.0445**	0.003	5.8	ug/L	1835	Standard
	U	238	2744.6	0.2	**0.5116**	0.004	0.8	ug/L	1	Standard
>	**Bi**	209	473705.7	0.7				ug/L	438591	Standard

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Na	23	5.0	100.0	**51.9685**	52.084	100.2	mg/L	0	Standard
Mg	24	12561.9	0.3	**29.1357**	0.209	0.7	mg/L	18	Standard
K	39	16.7	75.5	**0.4741**	0.351	74.0	mg/L	3	Standard
Ca	43	76.7	57.0	**26.1776**	16.389	62.6	mg/L	2	Standard
Fe	54	1169.1	7.0	**0.3409**	0.030	8.8	mg/L	292	Standard
Fe	57	540.0	16.5	**0.6582**	0.112	17.0	mg/L	32	Standard
Sc-1	45	50199.7	1.0				mg/L	42531	Standard
Cl	35	100911.0	2.2				ug/L	58934	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	16489.0	2.4				ug/L	1487	Standard
P	31	28358.2	4.5				ug/L	15053	Standard
S	34	2710.2	5.9				ug/L	1318	Standard
Sr	88	931.7	5.5				ug/L	27	Standard
C	12	113.3	56.7				mg/L	57	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	38.7	51.7				mg/L	2	Standard
Ho-1	165	26.7	39.0				mg/L	0	Standard
Er	166	26.7	21.7				mg/L	20	Standard
I	127	270041.0	2.3				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		110.914	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		114.100	
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	112.439
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	108.006
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1505146307
Sample Date/Time: Sunday, May 31, 2015 22:06:44
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	139563.5	2.7				ug/L	128086	Standard
	Be	9	23.3	32.7	**0.0120**	0.007	61.6	ug/L	17	Standard
	Al	27	16300.5	10.4	**0.1909**	0.028	14.5	ug/L	1108	Standard
	Sc	45	50393.7	3.1				ug/L	42531	Standard
	Ti	47	90.3	14.3	**0.3320**	0.051	15.5	ug/L	7	Standard
	V	51	1463.1	8.0	**0.0603**	0.016	26.3	ug/L	906	Standard
	Cr	52	7417.8	3.7	**0.2480**	0.025	10.1	ug/L	4643	Standard
	Cr	53	766.7	15.5	**0.3197**	0.098	30.6	ug/L	310	Standard
	Mn	55	10109.7	6.2	**0.5356**	0.048	8.9	ug/L	1006	Standard
	Co	59	126.3	15.4	**0.0030**	0.002	69.2	ug/L	74	Standard
	Ni	60	3058.3	2.8	**0.9396**	0.019	2.1	ug/L	292	Standard
	Cu	65	3234.7	3.6	**-0.9966**	0.032	3.2	ug/L	5020	Standard
	Zn	66	3739.1	2.4	**-13.3170**	0.040	0.3	ug/L	17910	Standard
>	**Ge**	72	591777.3	1.0				ug/L	508788	Standard
	As	75	-50.0	43.9	**0.0589**	0.014	24.1	ug/L	-98	Standard
	Se	82	41.3	10.9	**0.1470**	0.033	22.2	ug/L	18	Standard
	Se-1	77	91.0	14.5	**0.1551**	0.115	73.9	ug/L	64	Standard
>	**Ga**	71	93.3	21.7				mg/L	27	Standard
	Rb	85	633.3	0.5				ug/L	160	Standard
	Y	89	768182.1	2.9				ug/L	653037	Standard
>	**Rh**	103	1.7	173.2				ug/L	7	Standard
	Mo	98	76.6	12.0	**0.0145**	0.003	19.0	ug/L	17	Standard
	Ag	107	109.3	18.5	**0.0014**	0.003	187.9	ug/L	68	Standard
	Cd	111	9.6	48.3	**0.0009**	0.003	295.7	mg/L	5	Standard
	Cd	114	4.5	556.1	**-0.0014**	0.006	443.0	ug/L	6	Standard
>	**In**	115	630074.9	0.4				ug/L	538484	Standard
	Sn	118	5732.8	1.3	**0.6629**	0.015	2.2	ug/L	1080	Standard
	Sb	123	88.2	19.6	**0.0117**	0.004	37.2	ug/L	22	Standard
	Ba	135	365.7	12.4	**0.2562**	0.035	13.7	ug/L	9	Standard
	Ce	140	108.3	14.1				ug/L	8	Standard
>	**Tb**	159	840496.0	1.4				ug/L	729623	Standard
	Ho	165	6.7	86.6				ug/L	0	Standard
	Tl	203	27.0	74.4	**0.0024**	0.003	138.7	ug/L	7	Standard
	Tl	205	8.3	34.6	**0.0020**	0.000	25.1	ug/L	3	Standard
	Pb	206	1332.1	1.4	**0.1488**	0.005	3.4	ug/L	548	Standard
	Pb	207	1074.4	4.2	**0.1355**	0.013	9.3	ug/L	453	Standard
	Pb	208	4534.9	1.7	**0.1440**	0.006	3.9	ug/L	1835	Standard
	U	238	9.7	52.1	**-0.0001**	0.001	719.7	ug/L	1	Standard
>	**Bi**	209	502847.4	0.1				ug/L	438591	Standard

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Na	23	1.7	173.2	**17.5536**	30.395	173.2	mg/L	0	Standard
Mg	24	60.0	41.7	**0.0932**	0.054	58.0	mg/L	18	Standard
K	39	3.3	173.2	**0.0999**	0.164	164.5	mg/L	3	Standard
Ca	43	3.3	86.6	**-1.7033**	1.118	65.6	mg/L	2	Standard
Fe	54	489.1	3.1	**0.0590**	0.012	19.7	mg/L	292	Standard
Fe	57	60.0	33.3	**0.0204**	0.029	140.8	mg/L	32	Standard
> **Sc-1**	45	50393.7	3.1				mg/L	42531	Standard
Cl	35	93697.7	3.5				ug/L	58934	Standard
Kr	83	0.3	173.2				ug/L	1	Standard
Br	81	2753.6	2.0				ug/L	1487	Standard
P	31	24009.0	3.6				ug/L	15053	Standard
S	34	2563.6	5.6				ug/L	1318	Standard
Sr	88	20.0	75.0				ug/L	27	Standard
C	12	103.3	44.7				mg/L	57	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.0	102.5				mg/L	2	Standard
Ho-1	165	6.7	86.6				mg/L	0	Standard
Er	166	20.0	50.0				mg/L	20	Standard
I	127	6096.3	36.9				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.961	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		116.311	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		117.009
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		114.651
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cu 65 Lower	Cu	65	
Zn 66 Lower	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1505130306
Sample Date/Time: Sunday, May 31, 2015 22:09:57
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	145557.6	1.7				ug/L	128086	Standard
	Be	9	45.0	33.3	**0.0301**	0.014	45.7	ug/L	17	Standard
	Al	27	11652969.8	1.6	**161.4987**	4.086	2.5	ug/L	1108	Standard
	Sc	45	49617.8	1.1				ug/L	42531	Standard
	Ti	47	173.3	6.4	**0.7029**	0.043	6.1	ug/L	7	Standard
	V	51	1347.7	3.7	**0.0535**	0.007	13.7	ug/L	906	Standard
	Cr	52	7236.7	1.1	**0.2696**	0.013	5.0	ug/L	4643	Standard
	Cr	53	5164.2	2.5	**4.2615**	0.084	2.0	ug/L	310	Standard
	Mn	55	732522.3	1.4	**56.6507**	0.233	0.4	ug/L	1006	Standard
	Co	59	7190.4	2.1	**0.8122**	0.017	2.1	ug/L	74	Standard
	Ni	60	7425.2	2.7	**2.5905**	0.092	3.5	ug/L	292	Standard
	Cu	65	4362.3	2.1	**-0.5313**	0.018	3.3	ug/L	5020	Standard
	Zn	66	6961.3	2.3	**-10.7094**	0.081	0.8	ug/L	17910	Standard
>	**Ge**	72	564263.2	1.0				ug/L	508788	Standard
	As	75	1676.2	3.7	**1.2209**	0.031	2.5	ug/L	-98	Standard
	Se	82	703.1	3.2	**4.9850**	0.116	2.3	ug/L	18	Standard
	Se-1	77	737.7	1.9	**6.5206**	0.102	1.6	ug/L	64	Standard
>	**Ga**	71	71.7	10.7				mg/L	27	Standard
	Rb	85	3415.4	2.1				ug/L	160	Standard
	Y	89	735926.1	2.6				ug/L	653037	Standard
>	**Rh**	103	293.3	10.0				ug/L	7	Standard
	Mo	98	376.0	8.6	**0.1075**	0.010	9.6	ug/L	17	Standard
	Ag	107	103.0	21.5	**0.0013**	0.003	229.0	ug/L	68	Standard
	Cd	111	164.5	12.9	**0.0982**	0.013	13.5	mg/L	5	Standard
	Cd	114	337.9	18.1	**0.0849**	0.016	18.9	ug/L	6	Standard
>	**In**	115	596137.8	0.6				ug/L	538484	Standard
	Sn	118	823.4	7.6	**-0.0938**	0.011	11.7	ug/L	1080	Standard
	Sb	123	156.7	25.1	**0.0308**	0.010	33.7	ug/L	22	Standard
	Ba	135	13291.8	0.8	**10.9096**	0.054	0.5	ug/L	9	Standard
	Ce	140	348.3	15.5				ug/L	8	Standard
>	**Tb**	159	802778.7	1.7				ug/L	729623	Standard
	Ho	165	11.7	89.2				ug/L	0	Standard
	Tl	203	97.7	2.1	**0.0157**	0.000	1.1	ug/L	7	Standard
	Tl	205	76.7	13.6	**0.0151**	0.002	13.2	ug/L	3	Standard
	Pb	206	379.3	13.0	**-0.0808**	0.014	17.9	ug/L	548	Standard
	Pb	207	299.3	9.9	**-0.0688**	0.010	13.9	ug/L	453	Standard
	Pb	208	1303.4	8.3	**-0.0738**	0.009	12.3	ug/L	1835	Standard
	U	238	6846.9	0.9	**1.3316**	0.027	2.0	ug/L	1	Standard
>	**Bi**	209	455048.4	1.2				ug/L	438591	Standard

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Na	23	3.3	86.6	**34.9806**	30.290	86.6	mg/L	0	Standard
Mg	24	39681.9	1.9	**93.2280**	2.667	2.9	mg/L	18	Standard
K	39	33.3	37.7	**0.9583**	0.368	38.4	mg/L	3	Standard
Ca	43	120.0	22.0	**43.3349**	10.017	23.1	mg/L	2	Standard
Fe	54	468.5	8.4	**0.0535**	0.019	35.1	mg/L	292	Standard
Fe	57	240.0	22.9	**0.2630**	0.071	27.1	mg/L	32	Standard
> **Sc-1**	45	49617.8	1.1				mg/L	42531	Standard
Cl	35	183659.1	0.9				ug/L	58934	Standard
Kr	83	0.0					ug/L	1	Standard
Br	81	46852.5	5.1				ug/L	1487	Standard
P	31	28244.7	3.7				ug/L	15053	Standard
S	34	2415.2	4.4				ug/L	1318	Standard
Sr	88	2240.2	1.0				ug/L	27	Standard
C	12	173.3	27.3				mg/L	57	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	28.9	59.5				mg/L	2	Standard
Ho-1	165	11.7	89.2				mg/L	0	Standard
Er	166	23.3	24.7				mg/L	20	Standard
I	127	809114.9	4.6				mg/L	175	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		113.641	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		110.903	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	110.707
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.752
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Zn 66 Lower	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1505130308
Sample Date/Time: Sunday, May 31, 2015 22:13:08
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	146166.1	4.9				ug/L	128086	Standard
	Be	9	30.0	60.1	**0.0173**	0.017	99.5	ug/L	17	Standard
	Al	27	8455728.6	3.3	**116.7608**	4.161	3.6	ug/L	1108	Standard
	Sc	45	52000.8	1.3				ug/L	42531	Standard
	Ti	47	134.0	6.6	**0.5231**	0.033	6.4	ug/L	7	Standard
	V	51	13145.9	1.7	**1.7092**	0.063	3.7	ug/L	906	Standard
	Cr	52	19645.4	0.2	**1.8345**	0.050	2.7	ug/L	4643	Standard
	Cr	53	7266.7	2.0	**5.9888**	0.027	0.5	ug/L	310	Standard
	Mn	55	1047753.9	2.0	**79.3473**	2.068	2.6	ug/L	1006	Standard
	Co	59	4282.9	1.6	**0.4688**	0.015	3.3	ug/L	74	Standard
	Ni	60	15826.6	2.0	**5.5384**	0.134	2.4	ug/L	292	Standard
	Cu	65	7007.3	1.8	**0.3758**	0.049	12.9	ug/L	5020	Standard
	Zn	66	11312.9	2.3	**-7.5581**	0.191	2.5	ug/L	17910	Standard
>	**Ge**	72	576969.5	1.8				ug/L	508788	Standard
	As	75	2005.0	0.3	**1.4132**	0.024	1.7	ug/L	-98	Standard
	Se	82	744.6	4.4	**5.1681**	0.176	3.4	ug/L	18	Standard
	Se-1	77	751.4	2.6	**6.4949**	0.262	4.0	ug/L	64	Standard
>	**Ga**	71	90.0	33.3				mg/L	27	Standard
	Rb	85	20687.4	1.4				ug/L	160	Standard
	Y	89	749685.4	1.6				ug/L	653037	Standard
>	**Rh**	103	1403.4	6.8				ug/L	7	Standard
	Mo	98	15661.9	1.9	**4.6132**	0.166	3.6	ug/L	17	Standard
	Ag	107	95.3	5.2	**-0.0002**	0.001	465.9	ug/L	68	Standard
	Cd	111	375.2	4.9	**0.2214**	0.007	3.3	mg/L	5	Standard
	Cd	114	935.4	15.4	**0.2309**	0.040	17.3	ug/L	6	Standard
>	**In**	115	618881.2	1.7				ug/L	538484	Standard
	Sn	118	980.0	5.4	**-0.0739**	0.011	14.7	ug/L	1080	Standard
	Sb	123	332.5	9.8	**0.0734**	0.007	9.5	ug/L	22	Standard
	Ba	135	98416.6	1.5	**78.0121**	2.470	3.2	ug/L	9	Standard
	Ce	140	413.3	7.3				ug/L	8	Standard
>	**Tb**	159	815815.0	2.8				ug/L	729623	Standard
	Ho	165	21.7	66.6				ug/L	0	Standard
	Tl	203	120.7	10.0	**0.0200**	0.002	11.0	ug/L	7	Standard
	Tl	205	140.0	19.9	**0.0273**	0.005	18.9	ug/L	3	Standard
	Pb	206	458.7	3.4	**-0.0579**	0.006	11.1	ug/L	548	Standard
	Pb	207	410.3	2.5	**-0.0342**	0.005	15.5	ug/L	453	Standard
	Pb	208	1652.7	3.2	**-0.0457**	0.005	11.7	ug/L	1835	Standard
	U	238	2399.9	1.1	**0.4688**	0.010	2.1	ug/L	1	Standard
>	**Bi**	209	451953.5	1.7				ug/L	438591	Standard

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Na	23	6.7	43.3	**66.9513**	28.163	42.1	mg/L	0	Standard
Mg	24	24628.3	2.0	**55.1935**	1.647	3.0	mg/L	18	Standard
K	39	38.3	15.1	**1.0477**	0.145	13.8	mg/L	3	Standard
Ca	43	218.3	5.8	**77.4576**	4.161	5.4	mg/L	2	Standard
Fe	54	431.0	14.4	**0.0292**	0.023	78.2	mg/L	292	Standard
Fe	57	403.3	11.2	**0.4587**	0.062	13.5	mg/L	32	Standard
Sc-1	45	52000.8	1.3				mg/L	42531	Standard
Cl	35	160446.4	1.0				ug/L	58934	Standard
Kr	83	0.0					ug/L	1	Standard
Br	81	45829.3	3.2				ug/L	1487	Standard
P	31	27545.0	1.9				ug/L	15053	Standard
S	34	2571.9	6.7				ug/L	1318	Standard
Sr	88	9286.2	6.5				ug/L	27	Standard
C	12	190.0	38.0				mg/L	57	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	30.0	68.1				mg/L	2	Standard
Ho-1	165	21.7	66.6				mg/L	0	Standard
Er	166	70.0	49.5				mg/L	20	Standard
I	127	286399.0	2.2				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		114.116	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		113.401	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	114.930
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.047
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1505130310
Sample Date/Time: Sunday, May 31, 2015 22:16:19
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	157685.0	2.5				ug/L	128086	Standard
	Be	9	50.0	30.0	**0.0310**	0.012	39.8	ug/L	17	Standard
	Al	27	47904487.9	3.1	**612.8639**	12.704	2.1	ug/L	1108	Standard
	Sc	45	50104.5	4.2				ug/L	42531	Standard
	Ti	47	339.0	0.8	**1.4298**	0.039	2.8	ug/L	7	Standard
	V	51	-2562.8	21.0	**-0.5143**	0.079	15.3	ug/L	906	Standard
	Cr	52	10107.0	4.5	**0.6635**	0.024	3.6	ug/L	4643	Standard
	Cr	53	19561.0	6.0	**17.3143**	0.804	4.6	ug/L	310	Standard
	Mn	55	577395.3	3.2	**45.2674**	0.399	0.9	ug/L	1006	Standard
	Co	59	9047.0	3.4	**1.0398**	0.012	1.2	ug/L	74	Standard
	Ni	60	35181.5	3.0	**12.9384**	0.075	0.6	ug/L	292	Standard
	Cu	65	10438.6	4.2	**1.7360**	0.068	3.9	ug/L	5020	Standard
	Zn	66	8106.5	3.0	**-9.7378**	0.081	0.8	ug/L	17910	Standard
>	Ge	72	556057.4	2.7				ug/L	508788	Standard
	As	75	6515.9	1.1	**4.5499**	0.087	1.9	ug/L	-98	Standard
	Se	82	2865.2	3.4	**21.0538**	0.151	0.7	ug/L	18	Standard
	Se-1	77	3122.0	3.5	**30.2815**	0.267	0.9	ug/L	64	Standard
>	Ga	71	121.7	8.6				mg/L	27	Standard
	Rb	85	6169.6	4.5				ug/L	160	Standard
	Y	89	739047.0	2.8				ug/L	653037	Standard
>	Rh	103	1390.1	3.3				ug/L	7	Standard
	Mo	98	165.2	0.9	**0.0426**	0.001	3.0	ug/L	17	Standard
	Ag	107	85.3	4.7	**-0.0012**	0.000	30.6	ug/L	68	Standard
	Cd	111	218.1	6.4	**0.1309**	0.007	5.5	mg/L	5	Standard
	Cd	114	512.9	5.5	**0.1293**	0.008	6.4	ug/L	6	Standard
>	In	115	599939.8	1.7				ug/L	538484	Standard
	Sn	118	701.7	2.3	**-0.1146**	0.002	1.4	ug/L	1080	Standard
	Sb	123	133.2	5.1	**0.0244**	0.002	6.4	ug/L	22	Standard
	Ba	135	20628.0	1.5	**16.8402**	0.160	1.0	ug/L	9	Standard
	Ce	140	1573.4	6.0				ug/L	8	Standard
>	Tb	159	811546.2	1.3				ug/L	729623	Standard
	Ho	165	58.3	13.1				ug/L	0	Standard
	Tl	203	67.0	6.0	**0.0107**	0.001	9.3	ug/L	7	Standard
	Tl	205	65.0	35.3	**0.0135**	0.004	33.2	ug/L	3	Standard
	Pb	206	491.0	3.5	**-0.0430**	0.005	12.7	ug/L	548	Standard
	Pb	207	429.3	3.4	**-0.0229**	0.003	11.1	ug/L	453	Standard
	Pb	208	1691.4	2.4	**-0.0371**	0.001	2.8	ug/L	1835	Standard
	U	238	3506.4	1.5	**0.7151**	0.004	0.5	ug/L	1	Standard
>	Bi	209	433421.4	1.8				ug/L	438591	Standard

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Na	23	20.0	66.1	**209.9165**	142.098	67.7	mg/L	0	Standard
Mg	24	67921.9	2.0	**158.1266**	3.813	2.4	mg/L	18	Standard
K	39	48.3	21.5	**1.3651**	0.238	17.4	mg/L	3	Standard
Ca	43	445.0	11.1	**167.4570**	20.913	12.5	mg/L	2	Standard
Fe	54	515.8	2.0	**0.0712**	0.007	10.3	mg/L	292	Standard
Fe	57	1003.4	8.2	**1.2800**	0.133	10.4	mg/L	32	Standard
> **Sc-1**	45	50104.5	4.2				mg/L	42531	Standard
Cl	35	315084.1	2.8				ug/L	58934	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	182024.7	4.1				ug/L	1487	Standard
P	31	32563.3	4.5				ug/L	15053	Standard
S	34	2768.6	4.0				ug/L	1318	Standard
Sr	88	7997.1	5.6				ug/L	27	Standard
C	12	170.0	5.9				mg/L	57	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	119.3	28.9				mg/L	2	Standard
Ho-1	165	58.3	13.1				mg/L	0	Standard
Er	166	83.3	100.6				mg/L	20	Standard
I	127	106229.9	4.4				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.109	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.291	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	111.413	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.821	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
V 51 Lower	V	51	

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Method 6020 - Summary Report

Sample ID: L1505130312
Sample Date/Time: Sunday, May 31, 2015 22:19:31
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	155142.5	3.4				ug/L	128086	Standard
	Be	9	115.0	39.8	**0.0840**	0.034	40.4	ug/L	17	Standard
	Al	27	54479361.2	2.7	**708.4922**	6.476	0.9	ug/L	1108	Standard
	Sc	45	51512.4	2.3				ug/L	42531	Standard
	Ti	47	206.7	6.3	**0.8957**	0.065	7.2	ug/L	7	Standard
	V	51	-3727.5	8.3	**-0.7069**	0.041	5.7	ug/L	906	Standard
	Cr	52	13277.5	0.8	**1.1584**	0.024	2.1	ug/L	4643	Standard
	Cr	53	25920.5	3.7	**24.0405**	0.796	3.3	ug/L	310	Standard
	Mn	55	755531.4	0.5	**61.8150**	0.854	1.4	ug/L	1006	Standard
	Co	59	6559.8	1.6	**0.7832**	0.018	2.4	ug/L	74	Standard
	Ni	60	45190.3	3.0	**17.3620**	0.429	2.5	ug/L	292	Standard
	Cu	65	11568.4	1.4	**2.3341**	0.023	1.0	ug/L	5020	Standard
	Zn	66	12113.5	2.4	**-6.2187**	0.174	2.8	ug/L	17910	Standard
>	**Ge**	72	533598.9	1.2				ug/L	508788	Standard
	As	75	8749.2	2.8	**6.3274**	0.106	1.7	ug/L	-98	Standard
	Se	82	3915.6	0.7	**30.0472**	0.275	0.9	ug/L	18	Standard
	Se-1	77	4570.7	1.9	**46.5797**	1.395	3.0	ug/L	64	Standard
>	**Ga**	71	136.7	11.8				mg/L	27	Standard
	Rb	85	21795.7	1.9				ug/L	160	Standard
	Y	89	722151.8	1.6				ug/L	653037	Standard
>	**Rh**	103	1713.4	1.2				ug/L	7	Standard
	Mo	98	216.5	0.6	**0.0579**	0.001	2.5	ug/L	17	Standard
	Ag	107	123.7	8.2	**0.0040**	0.001	31.7	ug/L	68	Standard
	Cd	111	310.7	5.7	**0.1876**	0.010	5.6	mg/L	5	Standard
	Cd	114	721.3	14.2	**0.1817**	0.023	12.7	ug/L	6	Standard
>	**In**	115	602804.4	1.6				ug/L	538484	Standard
	Sn	118	945.0	2.6	**-0.0756**	0.002	3.1	ug/L	1080	Standard
	Sb	123	214.0	5.2	**0.0451**	0.003	6.9	ug/L	22	Standard
	Ba	135	352449.4	1.0	**286.8216**	1.769	0.6	ug/L	9	Standard
	Ce	140	923.4	4.1				ug/L	8	Standard
>	**Tb**	159	801618.1	1.8				ug/L	729623	Standard
	Ho	165	35.0	37.8				ug/L	0	Standard
	Tl	203	290.7	8.6	**0.0550**	0.005	9.0	ug/L	7	Standard
	Tl	205	236.7	16.9	**0.0492**	0.008	17.2	ug/L	3	Standard
	Pb	206	615.0	6.1	**-0.0013**	0.009	699.1	ug/L	548	Standard
	Pb	207	542.3	2.6	**0.0186**	0.006	31.9	ug/L	453	Standard
	Pb	208	2093.1	1.8	**0.0011**	0.003	297.3	ug/L	1835	Standard
	U	238	4799.1	1.3	**1.0102**	0.015	1.4	ug/L	1	Standard
>	**Bi**	209	420194.2	1.3				ug/L	438591	Standard

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Na	23	23.3	44.6	**235.7787**	99.405	42.2	mg/L	0	Standard
Mg	24	73291.9	2.5	**165.9142**	5.369	3.2	mg/L	18	Standard
K	39	55.0	24.1	**1.5138**	0.344	22.7	mg/L	3	Standard
Ca	43	575.0	12.3	**210.6439**	21.699	10.3	mg/L	2	Standard
Fe	54	442.2	10.5	**0.0354**	0.017	48.9	mg/L	292	Standard
Fe	57	1190.0	12.3	**1.4822**	0.170	11.4	mg/L	32	Standard
Sc-1	45	51512.4	2.3				mg/L	42531	Standard
Cl	35	143315.5	2.1				ug/L	58934	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	243321.9	1.7				ug/L	1487	Standard
P	31	33740.9	3.1				ug/L	15053	Standard
S	34	2736.9	5.1				ug/L	1318	Standard
Sr	88	9251.2	3.3				ug/L	27	Standard
C	12	176.7	8.6				mg/L	57	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	57.9	28.3				mg/L	2	Standard
Ho-1	165	35.0	37.8				mg/L	0	Standard
Er	166	43.3	74.2				mg/L	20	Standard
I	127	108509.5	5.1				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		121.124	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.876	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	111.945	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	95.805	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
V 51 Lower	V	51	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Sunday, May 31, 2015 22:22:44
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	130503.0	1.3				ug/L	128086	Standard
	Be	9	55227.2	2.4	**53.7340**	0.941	1.8	ug/L	17	Standard
	Al	27	3752066.6	1.9	**57.9538**	0.349	0.6	ug/L	1108	Standard
	Sc	45	48969.0	0.3				ug/L	42531	Standard
	Ti	47	26262.7	1.4	**111.7949**	2.145	1.9	ug/L	7	Standard
	V	51	382257.0	0.9	**54.8803**	0.630	1.1	ug/L	906	Standard
	Cr	52	424248.9	1.4	**54.7960**	1.164	2.1	ug/L	4643	Standard
	Cr	53	62881.9	2.3	**55.6303**	1.121	2.0	ug/L	310	Standard
	Mn	55	713512.0	0.7	**55.2293**	0.686	1.2	ug/L	1006	Standard
	Co	59	494670.4	1.2	**56.6617**	1.180	2.1	ug/L	74	Standard
	Ni	60	152972.0	0.7	**55.9160**	0.862	1.5	ug/L	292	Standard
	Cu	65	153921.3	1.2	**53.9661**	0.680	1.3	ug/L	5020	Standard
	Zn	66	81227.9	1.7	**46.3777**	1.198	2.6	ug/L	17910	Standard
>	Ge	72	563761.7	1.0				ug/L	508788	Standard
	As	75	79698.3	1.0	**53.8720**	0.975	1.8	ug/L	-98	Standard
	Se	82	7539.6	0.8	**54.8797**	0.981	1.8	ug/L	18	Standard
	Se-1	77	5819.1	1.1	**56.2603**	0.496	0.9	ug/L	64	Standard
>	Ga	71	66.7	8.7				mg/L	27	Standard
	Rb	85	1016.7	8.1				ug/L	160	Standard
	Y	89	726707.1	1.0				ug/L	653037	Standard
>	Rh	103	21.7	26.6				ug/L	7	Standard
	Mo	98	372991.9	0.6	**109.7735**	1.790	1.6	ug/L	17	Standard
	Ag	107	415781.0	0.2	**54.4583**	0.558	1.0	ug/L	68	Standard
	Cd	111	89820.3	0.6	**54.0387**	0.312	0.6	mg/L	5	Standard
	Cd	114	216309.3	0.8	**53.7418**	0.632	1.2	ug/L	6	Standard
>	In	115	620202.1	1.2				ug/L	538484	Standard
	Sn	118	274219.3	0.6	**43.1295**	0.380	0.9	ug/L	1080	Standard
	Sb	123	198293.5	0.9	**49.7186**	0.949	1.9	ug/L	22	Standard
	Ba	135	69263.3	0.3	**54.7626**	0.580	1.1	ug/L	9	Standard
	Ce	140	58.3	21.6				ug/L	8	Standard
>	Tb	159	816079.9	1.2				ug/L	729623	Standard
	Ho	165	11.7	49.5				ug/L	0	Standard
	Tl	203	320027.5	0.0	**55.2775**	0.519	0.9	ug/L	7	Standard
	Tl	205	307625.3	1.6	**55.5360**	1.089	2.0	ug/L	3	Standard
	Pb	206	203397.8	0.3	**53.6902**	0.630	1.2	ug/L	548	Standard
	Pb	207	186335.1	0.1	**53.7545**	0.477	0.9	ug/L	453	Standard
	Pb	208	747986.5	0.4	**55.2567**	0.710	1.3	ug/L	1835	Standard
	U	238	293759.4	0.4	**54.4839**	0.659	1.2	ug/L	1	Standard
>	Bi	209	477766.1	0.9				ug/L	438591	Standard

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Na	23	1.7	173.2	**17.7758**	30.780	173.2	mg/L	0	Standard
Mg	24	2345.2	6.6	**5.5403**	0.385	6.9	mg/L	18	Standard
K	39	183.3	6.9	**5.3053**	0.349	6.6	mg/L	3	Standard
Ca	43	31.7	9.1	**9.4008**	1.158	12.3	mg/L	2	Standard
Fe	54	13763.7	5.7	**5.6977**	0.320	5.6	mg/L	292	Standard
Fe	57	4123.9	2.0	**5.5663**	0.125	2.3	mg/L	32	Standard
Sc-1	45	48969.0	0.3				mg/L	42531	Standard
Cl	35	97936.3	2.5				ug/L	58934	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	3247.0	18.3				ug/L	1487	Standard
P	31	20161.7	1.9				ug/L	15053	Standard
S	34	2810.3	1.2				ug/L	1318	Standard
Sr	88	26.7	54.1				ug/L	27	Standard
C	12	96.7	11.9				mg/L	57	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	2.7	235.5				mg/L	2	Standard
Ho-1	165	11.7	49.5				mg/L	0	Standard
Er	166	13.3	114.6				mg/L	20	Standard
I	127	4117.3	29.2				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	107.468		
Al	27	115.908		
Sc	45			
Ti	47	111.795		
V	51	109.761		
Cr	52	109.592		
Cr	53			
Mn	55	110.459		
Co	59	113.323		
Ni	60	111.832		
Cu	65	107.932		
Zn	66	92.755		
Ge	72		110.805	
As	75	107.744		
Se	82	109.759		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	109.774		
Ag	107	108.917		
Cd	111	108.077		
Cd	114			
In	115		115.176	
Sn	118	86.259		
Sb	123	99.437		
Ba	135	109.525		
Ce	140			
Tb	159			
Ho	165			
Tl	203	110.555		
Tl	205			
Pb	206			
Pb	207			
Pb	208	110.513		
U	238	108.968		
Bi	209		108.932	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	
QC Std 6	Ti	47	
QC Std 6	Mn	55	

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QC Std 6	Co	59
QC Std 6	Ni	60
QC Std 6	Tl	203
QC Std 6	Pb	208

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Sunday, May 31, 2015 22:25:55
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	132663.3	0.1				ug/L	128086	Standard
	Be	9	18.3	83.3	**0.0082**	0.015	178.2	ug/L	17	Standard
	Al	27	2350.2	57.9	**-0.0093**	0.021	222.8	ug/L	1108	Standard
	Sc	45	48363.7	1.6				ug/L	42531	Standard
	Ti	47	9.7	57.0	**0.0067**	0.023	350.7	ug/L	7	Standard
	V	51	965.3	8.9	**-0.0022**	0.013	575.1	ug/L	906	Standard
	Cr	52	5551.0	1.8	**0.0455**	0.014	30.0	ug/L	4643	Standard
	Cr	53	946.7	5.3	**0.5073**	0.048	9.4	ug/L	310	Standard
	Mn	55	1058.0	6.1	**-0.1311**	0.005	4.1	ug/L	1006	Standard
	Co	59	70.7	24.1	**-0.0027**	0.002	71.2	ug/L	74	Standard
	Ni	60	305.7	4.7	**-0.0163**	0.005	33.6	ug/L	292	Standard
	Cu	65	6308.0	2.0	**0.1650**	0.055	33.3	ug/L	5020	Standard
	Zn	66	21509.6	0.8	**0.3738**	0.135	36.1	ug/L	17910	Standard
>	**Ge**	72	567303.1	0.4				ug/L	508788	Standard
	As	75	-141.4	25.1	**-0.0036**	0.023	642.4	ug/L	-98	Standard
	Se	82	23.5	26.9	**0.0304**	0.046	152.2	ug/L	18	Standard
	Se-1	77	120.7	5.6	**0.4809**	0.064	13.2	ug/L	64	Standard
>	**Ga**	71	16.7	105.4				mg/L	27	Standard
	Rb	85	166.7	19.3				ug/L	160	Standard
	Y	89	736693.6	0.8				ug/L	653037	Standard
>	**Rh**	103	5.0	100.0				ug/L	7	Standard
	Mo	98	70.9	27.4	**0.0134**	0.006	43.5	ug/L	17	Standard
	Ag	107	113.7	31.8	**0.0023**	0.005	210.1	ug/L	68	Standard
	Cd	111	8.5	43.7	**0.0004**	0.002	511.8	mg/L	5	Standard
	Cd	114	19.1	121.3	**0.0023**	0.006	253.8	ug/L	6	Standard
>	**In**	115	615674.4	0.7				ug/L	538484	Standard
	Sn	118	1463.4	2.1	**0.0038**	0.007	171.4	ug/L	1080	Standard
	Sb	123	461.0	19.6	**0.1064**	0.023	21.9	ug/L	22	Standard
	Ba	135	43.3	91.3	**0.0061**	0.032	517.2	ug/L	9	Standard
	Ce	140	5.0	100.0				ug/L	8	Standard
>	**Tb**	159	821793.0	1.1				ug/L	729623	Standard
	Ho	165	8.3	124.9				ug/L	0	Standard
	Tl	203	37.0	56.8	**0.0042**	0.004	85.7	ug/L	7	Standard
	Tl	205	28.3	36.7	**0.0055**	0.002	33.1	ug/L	3	Standard
	Pb	206	667.3	6.8	**-0.0140**	0.013	92.6	ug/L	548	Standard
	Pb	207	562.3	4.3	**-0.0012**	0.008	665.7	ug/L	453	Standard
	Pb	208	2257.1	2.3	**-0.0122**	0.004	36.2	ug/L	1835	Standard
	U	238	8.7	94.0	**-0.0003**	0.001	587.0	ug/L	1	Standard
>	**Bi**	209	490088.3	0.7				ug/L	438591	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	31.7	24.1	**0.0316**	0.018	57.3	mg/L	18	Standard
K	39	5.0	100.0	**0.1500**	0.145	96.7	mg/L	3	Standard
Ca	43	6.7	86.6	**-0.3386**	2.300	679.3	mg/L	2	Standard
Fe	54	420.6	14.5	**0.0376**	0.024	62.9	mg/L	292	Standard
Fe	57	46.7	32.7	**0.0045**	0.020	448.7	mg/L	32	Standard
> **Sc-1**	45	48363.7	1.6				mg/L	42531	Standard
Cl	35	92370.8	1.9				ug/L	58934	Standard
Kr	83	1.0	0.0				ug/L	1	Standard
Br	81	2123.5	6.8				ug/L	1487	Standard
P	31	19098.7	1.7				ug/L	15053	Standard
S	34	2688.6	4.3				ug/L	1318	Standard
Sr	88	8.3	34.6				ug/L	27	Standard
C	12	56.7	36.7				mg/L	57	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	5.7	108.5				mg/L	2	Standard
Ho-1	165	8.3	124.9				mg/L	0	Standard
Er	166	20.0	50.0				mg/L	20	Standard
I	127	2345.2	8.9				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.501	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.335
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		111.742
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Sunday, May 31, 2015 22:29:07
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	130846.4	3.8				ug/L	128086	Standard
	Be	9	245.0	14.1	**0.2286**	0.033	14.6	ug/L	17	Standard
	Al	27	12108.4	163.5	**0.1358**	0.295	217.0	ug/L	1108	Standard
	Sc	45	48168.1	1.0				ug/L	42531	Standard
	Ti	47	11.0	78.7	**0.0136**	0.038	279.8	ug/L	7	Standard
	V	51	4105.3	1.9	**0.4611**	0.012	2.7	ug/L	906	Standard
	Cr	52	12184.6	2.2	**0.9459**	0.050	5.2	ug/L	4643	Standard
	Cr	53	1563.4	6.4	**1.0856**	0.079	7.3	ug/L	310	Standard
	Mn	55	8384.0	10.4	**0.4506**	0.074	16.5	ug/L	1006	Standard
	Co	59	4037.2	1.6	**0.4600**	0.012	2.6	ug/L	74	Standard
	Ni	60	4869.8	2.4	**1.6884**	0.060	3.5	ug/L	292	Standard
	Cu	65	6283.6	1.3	**0.2113**	0.051	24.3	ug/L	5020	Standard
	Zn	66	10505.6	0.4	**-7.8361**	0.099	1.3	ug/L	17910	Standard
>	**Ge**	72	553916.7	0.9				ug/L	508788	Standard
	As	75	469.2	8.0	**0.4135**	0.029	6.9	ug/L	-98	Standard
	Se	82	83.9	8.7	**0.4833**	0.058	12.0	ug/L	18	Standard
	Se-1	77	148.3	2.2	**0.7849**	0.019	2.4	ug/L	64	Standard
>	**Ga**	71	15.0	88.2				mg/L	27	Standard
	Rb	85	33.3	37.7				ug/L	160	Standard
	Y	89	734362.3	0.4				ug/L	653037	Standard
>	**Rh**	103	0.0					ug/L	7	Standard
	Mo	98	63.3	110.5	**0.0115**	0.021	185.7	ug/L	17	Standard
	Ag	107	3384.0	3.6	**0.4398**	0.017	3.8	ug/L	68	Standard
	Cd	111	445.3	8.0	**0.2687**	0.020	7.5	mg/L	5	Standard
	Cd	114	996.0	8.8	**0.2500**	0.020	8.2	ug/L	6	Standard
>	**In**	115	607563.1	0.8				ug/L	538484	Standard
	Sn	118	770.0	5.3	**-0.1050**	0.006	6.0	ug/L	1080	Standard
	Sb	123	1674.1	2.7	**0.4184**	0.013	3.0	ug/L	22	Standard
	Ba	135	983.7	2.1	**0.7658**	0.017	2.2	ug/L	9	Standard
	Ce	140	10.0	50.0				ug/L	8	Standard
>	**Tb**	159	809228.1	0.3				ug/L	729623	Standard
	Ho	165	11.7	49.5				ug/L	0	Standard
	Tl	203	534.7	2.4	**0.0896**	0.003	3.0	ug/L	7	Standard
	Tl	205	555.0	14.9	**0.1000**	0.015	15.3	ug/L	3	Standard
	Pb	206	1051.7	1.0	**0.0899**	0.001	1.0	ug/L	548	Standard
	Pb	207	857.4	1.6	**0.0862**	0.002	2.7	ug/L	453	Standard
	Pb	208	3911.9	5.1	**0.1123**	0.017	14.7	ug/L	1835	Standard
	U	238	2449.9	4.2	**0.4489**	0.022	4.9	ug/L	1	Standard
>	**Bi**	209	481688.5	0.7				ug/L	438591	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	28.3	73.5	**0.0238**	0.051	212.5	mg/L	18	Standard
K	39	1.7	173.2	**0.0542**	0.085	157.2	mg/L	3	Standard
Ca	43	10.0	50.0	**0.9881**	2.011	203.5	mg/L	2	Standard
Fe	54	376.6	6.5	**0.0195**	0.009	47.9	mg/L	292	Standard
Fe	57	33.3	56.8	**-0.0135**	0.026	196.0	mg/L	32	Standard
Sc-1	45	48168.1	1.0				mg/L	42531	Standard
Cl	35	95422.3	1.6				ug/L	58934	Standard
Kr	83	1.0	0.0				ug/L	1	Standard
Br	81	2386.9	8.7				ug/L	1487	Standard
P	31	18696.5	4.9				ug/L	15053	Standard
S	34	2621.9	8.3				ug/L	1318	Standard
Sr	88	21.7	58.1				ug/L	27	Standard
C	12	63.3	92.5				mg/L	57	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.5	100.0				mg/L	2	Standard
Ho-1	165	11.7	49.5				mg/L	0	Standard
Er	166	10.0	100.0				mg/L	20	Standard
I	127	1576.7	13.8				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	114.282		
Al	27			
Sc	45			
Ti	47			
V	51	115.269		
Cr	52	118.234		
Cr	53			
Mn	55	90.124		
Co	59	114.994		
Ni	60	105.527		
Cu	65	26.413		
Zn	66	-125.378		
Ge	72		108.870	
As	75	103.370		
Se	82	120.826		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	109.958		
Cd	111	111.948		
Cd	114			
> In	115			112.828
Sn	118			
Sb	123	104.603		
Ba	135	102.110		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	111.944		
Tl	205			
Pb	206			
Pb	207			
Pb	208	56.174		
U	238	112.233		
> Bi	209			109.826
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 8	Cu	65	
QC Std 8	Zn	66	
QC Std 8	Pb	208	

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Method 6020 - Summary Report

Sample ID: L1505146001
Sample Date/Time: Sunday, May 31, 2015 22:32:19
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	147012.1	3.7				ug/L	128086	Standard
	Be	9	28.3	27.0	**0.0150**	0.006	39.2	ug/L	17	Standard
	Al	27	35181209.8	7.2	**482.3604**	19.286	4.0	ug/L	1108	Standard
	Sc	45	53017.7	4.7				ug/L	42531	Standard
	Ti	47	640.3	5.5	**2.7336**	0.078	2.9	ug/L	7	Standard
	V	51	26857.7	3.6	**3.7864**	0.117	3.1	ug/L	906	Standard
	Cr	52	23512.0	7.3	**2.4437**	0.140	5.7	ug/L	4643	Standard
	Cr	53	27679.0	15.5	**24.6269**	3.192	13.0	ug/L	310	Standard
	Mn	55	28200.3	6.3	**2.0112**	0.077	3.8	ug/L	1006	Standard
	Co	59	1841.4	6.6	**0.2033**	0.008	4.1	ug/L	74	Standard
	Ni	60	11830.0	11.1	**4.2674**	0.374	8.8	ug/L	292	Standard
	Cu	65	3916.8	10.2	**-0.6717**	0.109	16.2	ug/L	5020	Standard
	Zn	66	5225.2	5.3	**-11.9776**	0.099	0.8	ug/L	17910	Standard
>	**Ge**	72	555079.7	3.0				ug/L	508788	Standard
	As	75	5811.2	8.5	**4.0690**	0.222	5.5	ug/L	-98	Standard
	Se	82	2570.6	7.1	**18.8948**	0.802	4.2	ug/L	18	Standard
	Se-1	77	4648.4	12.8	**45.4227**	4.658	10.3	ug/L	64	Standard
>	**Ga**	71	295.0	3.4				mg/L	27	Standard
	Rb	85	11110.8	7.6				ug/L	160	Standard
	Y	89	729705.0	4.5				ug/L	653037	Standard
>	**Rh**	103	936.7	11.0				ug/L	7	Standard
	Mo	98	19224.7	4.3	**5.8428**	0.150	2.6	ug/L	17	Standard
	Ag	107	99.7	6.7	**0.0008**	0.001	137.4	ug/L	68	Standard
	Cd	111	5.5	65.2	**-0.0013**	0.002	163.1	mg/L	5	Standard
	Cd	114	48.5	22.4	**0.0100**	0.003	28.3	ug/L	6	Standard
>	**In**	115	599635.1	2.3				ug/L	538484	Standard
	Sn	118	551.7	14.7	**-0.1389**	0.015	10.8	ug/L	1080	Standard
	Sb	123	115.9	11.4	**0.0199**	0.003	14.1	ug/L	22	Standard
	Ba	135	11730.9	3.7	**9.5668**	0.144	1.5	ug/L	9	Standard
	Ce	140	3742.2	44.1				ug/L	8	Standard
>	**Tb**	159	809091.1	2.8				ug/L	729623	Standard
	Ho	165	43.3	46.6				ug/L	0	Standard
	Tl	203	38.7	8.3	**0.0053**	0.001	13.6	ug/L	7	Standard
	Tl	205	33.3	8.7	**0.0072**	0.001	9.5	ug/L	3	Standard
	Pb	206	827.7	1.8	**0.0539**	0.008	14.7	ug/L	548	Standard
	Pb	207	671.3	4.8	**0.0530**	0.007	13.9	ug/L	453	Standard
	Pb	208	2748.1	2.4	**0.0479**	0.002	5.0	ug/L	1835	Standard
	U	238	48293.0	4.9	**9.8108**	0.353	3.6	ug/L	1	Standard
>	**Bi**	209	435983.8	2.1				ug/L	438591	Standard

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Na	23	6.7	86.6	**65.4217**	56.814	86.8	mg/L	0	Standard
Mg	24	131095.5	4.7	**288.2890**	3.399	1.2	mg/L	18	Standard
K	39	45.0	22.2	**1.2008**	0.214	17.9	mg/L	3	Standard
Ca	43	205.0	16.0	**71.5117**	14.506	20.3	mg/L	2	Standard
Fe	54	495.5	16.9	**0.0508**	0.026	51.9	mg/L	292	Standard
Fe	57	583.3	5.7	**0.6754**	0.030	4.5	mg/L	32	Standard
> **Sc-1**	45	53017.7	4.7				mg/L	42531	Standard
Cl	35	277715.8	6.9				ug/L	58934	Standard
Kr	83	0.3	173.2				ug/L	1	Standard
Br	81	41065.9	9.5				ug/L	1487	Standard
P	31	31170.5	7.8				ug/L	15053	Standard
S	34	2738.6	1.7				ug/L	1318	Standard
Sr	88	5844.5	3.6				ug/L	27	Standard
C	12	113.3	58.8				mg/L	57	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	58.4	45.3				mg/L	2	Standard
Ho-1	165	43.3	46.6				mg/L	0	Standard
Er	166	33.3	45.8				mg/L	20	Standard
I	127	69981.6	6.0				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.776	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.098	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	111.356
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.406
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Zn 66 Lower	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1505146002
Sample Date/Time: Sunday, May 31, 2015 22:35:31
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	148447.2	2.2				ug/L	128086	Standard
	Be	9	18.3	31.5	**0.0064**	0.005	81.8	ug/L	17	Standard
	Al	27	30061387.9	2.4	**408.4782**	1.003	0.2	ug/L	1108	Standard
	Sc	45	51928.9	2.0				ug/L	42531	Standard
	Ti	47	253.0	10.0	**1.0376**	0.100	9.6	ug/L	7	Standard
	V	51	81085.3	1.7	**11.4770**	0.103	0.9	ug/L	906	Standard
	Cr	52	29099.3	2.1	**3.1112**	0.055	1.8	ug/L	4643	Standard
	Cr	53	27915.7	3.5	**24.4048**	0.996	4.1	ug/L	310	Standard
	Mn	55	10281.5	3.3	**0.5824**	0.020	3.4	ug/L	1006	Standard
	Co	59	1283.7	1.2	**0.1356**	0.003	2.0	ug/L	74	Standard
	Ni	60	12713.3	3.8	**4.5080**	0.144	3.2	ug/L	292	Standard
	Cu	65	3460.1	2.6	**-0.8642**	0.031	3.6	ug/L	5020	Standard
	Zn	66	4612.7	3.1	**-12.5258**	0.078	0.6	ug/L	17910	Standard
>	**Ge**	72	566325.3	0.9				ug/L	508788	Standard
	As	75	5553.9	3.9	**3.8212**	0.128	3.4	ug/L	-98	Standard
	Se	82	2620.0	1.9	**18.8905**	0.279	1.5	ug/L	18	Standard
	Se-1	77	4741.1	3.3	**45.4986**	1.452	3.2	ug/L	64	Standard
>	**Ga**	71	85.0	25.6				mg/L	27	Standard
	Rb	85	12381.7	0.5				ug/L	160	Standard
	Y	89	755333.3	1.3				ug/L	653037	Standard
>	**Rh**	103	763.4	7.2				ug/L	7	Standard
	Mo	98	7957.4	2.4	**2.4252**	0.067	2.8	ug/L	17	Standard
	Ag	107	779.0	4.5	**0.0933**	0.005	4.9	ug/L	68	Standard
	Cd	111	179.3	9.0	**0.1073**	0.010	9.5	mg/L	5	Standard
	Cd	114	475.4	11.1	**0.1203**	0.014	11.9	ug/L	6	Standard
>	**In**	115	597036.5	0.7				ug/L	538484	Standard
	Sn	118	483.3	6.7	**-0.1499**	0.005	3.2	ug/L	1080	Standard
	Sb	123	101.7	8.4	**0.0164**	0.002	14.7	ug/L	22	Standard
	Ba	135	15454.2	1.4	**12.6701**	0.172	1.4	ug/L	9	Standard
	Ce	140	480.0	12.0				ug/L	8	Standard
>	**Tb**	159	804957.8	0.4				ug/L	729623	Standard
	Ho	165	15.0	57.7				ug/L	0	Standard
	Tl	203	33.3	14.2	**0.0042**	0.001	21.8	ug/L	7	Standard
	Tl	205	20.0	50.0	**0.0045**	0.002	44.5	ug/L	3	Standard
	Pb	206	370.7	0.6	**-0.0795**	0.002	1.9	ug/L	548	Standard
	Pb	207	311.3	4.1	**-0.0617**	0.005	8.0	ug/L	453	Standard
	Pb	208	1251.7	2.4	**-0.0743**	0.003	4.3	ug/L	1835	Standard
	U	238	28941.3	2.4	**5.8406**	0.134	2.3	ug/L	1	Standard
>	**Bi**	209	438940.9	0.9				ug/L	438591	Standard

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Na	23	3.3	86.6	**33.9865**	29.433	86.6	mg/L	0	Standard
Mg	24	110625.8	2.1	**248.4473**	8.008	3.2	mg/L	18	Standard
K	39	40.0	37.5	**1.1015**	0.431	39.1	mg/L	3	Standard
Ca	43	166.7	25.5	**58.4127**	14.875	25.5	mg/L	2	Standard
Fe	54	438.3	12.6	**0.0328**	0.025	77.6	mg/L	292	Standard
Fe	57	453.3	6.6	**0.5241**	0.051	9.7	mg/L	32	Standard
> **Sc-1**	45	51928.9	2.0				mg/L	42531	Standard
Cl	35	227992.0	2.6				ug/L	58934	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	42422.7	3.6				ug/L	1487	Standard
P	31	30507.4	2.6				ug/L	15053	Standard
S	34	2748.6	0.6				ug/L	1318	Standard
Sr	88	4475.7	4.7				ug/L	27	Standard
C	12	143.3	10.7				mg/L	57	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	22.9	54.2				mg/L	2	Standard
Ho-1	165	15.0	57.7				mg/L	0	Standard
Er	166	10.0	173.2				mg/L	20	Standard
I	127	46088.3	1.6				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.897	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.309	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	110.874	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.080	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Cu 65 Lower	Cu	65	
Zn 66 Lower	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1505146003
Sample Date/Time: Sunday, May 31, 2015 22:38:42
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	136904.2	1.5				ug/L	128086	Standard
	Be	9	30.0	16.7	**0.0185**	0.004	24.2	ug/L	17	Standard
	Al	27	7032462.1	6.2	**103.6142**	6.923	6.7	ug/L	1108	Standard
	Sc	45	49708.1	2.6				ug/L	42531	Standard
	Ti	47	240.7	13.9	**1.0086**	0.119	11.8	ug/L	7	Standard
	V	51	30337.7	7.4	**4.3084**	0.217	5.0	ug/L	906	Standard
	Cr	52	15357.1	4.6	**1.3709**	0.044	3.2	ug/L	4643	Standard
	Cr	53	7388.5	1.0	**6.3770**	0.137	2.2	ug/L	310	Standard
	Mn	55	10457.6	5.3	**0.6154**	0.025	4.0	ug/L	1006	Standard
	Co	59	723.4	11.5	**0.0736**	0.008	11.3	ug/L	74	Standard
	Ni	60	5349.3	12.3	**1.8673**	0.196	10.5	ug/L	292	Standard
	Cu	65	3458.4	6.4	**-0.8351**	0.050	6.0	ug/L	5020	Standard
	Zn	66	4699.7	5.7	**-12.3728**	0.137	1.1	ug/L	17910	Standard
>	Ge	72	552871.2	2.6				ug/L	508788	Standard
	As	75	2618.6	7.8	**1.8912**	0.099	5.2	ug/L	-98	Standard
	Se	82	1434.3	8.9	**10.5205**	0.678	6.4	ug/L	18	Standard
	Se-1	77	1224.4	2.8	**11.5279**	0.265	2.3	ug/L	64	Standard
>	Ga	71	91.7	24.6				mg/L	27	Standard
	Rb	85	2033.5	12.1				ug/L	160	Standard
	Y	89	727239.2	2.8				ug/L	653037	Standard
>	Rh	103	123.3	20.4				ug/L	7	Standard
	Mo	98	674.8	5.7	**0.2047**	0.009	4.2	ug/L	17	Standard
	Ag	107	77.7	11.0	**-0.0018**	0.001	68.0	ug/L	68	Standard
	Cd	111	40.1	30.2	**0.0210**	0.007	35.6	mg/L	5	Standard
	Cd	114	107.7	23.5	**0.0261**	0.006	24.5	ug/L	6	Standard
>	In	115	579571.6	1.7				ug/L	538484	Standard
	Sn	118	456.7	4.4	**-0.1520**	0.004	2.4	ug/L	1080	Standard
	Sb	123	99.5	2.1	**0.0166**	0.001	4.0	ug/L	22	Standard
	Ba	135	13064.3	4.3	**11.0264**	0.294	2.7	ug/L	9	Standard
	Ce	140	631.7	5.7				ug/L	8	Standard
>	Tb	159	785694.4	0.9				ug/L	729623	Standard
	Ho	165	38.3	19.9				ug/L	0	Standard
	Tl	203	51.0	17.4	**0.0075**	0.002	23.4	ug/L	7	Standard
	Tl	205	31.7	39.7	**0.0067**	0.002	36.4	ug/L	3	Standard
	Pb	206	364.0	2.6	**-0.0821**	0.003	3.1	ug/L	548	Standard
	Pb	207	300.7	3.7	**-0.0657**	0.003	4.8	ug/L	453	Standard
	Pb	208	1263.0	2.0	**-0.0740**	0.001	1.3	ug/L	1835	Standard
	U	238	15605.7	3.9	**3.1276**	0.087	2.8	ug/L	1	Standard
>	Bi	209	441781.0	1.2				ug/L	438591	Standard

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Na	23	1.7	173.2	**17.2767**	29.915	173.2	mg/L	0	Standard
Mg	24	60999.4	5.3	**142.9936**	4.519	3.2	mg/L	18	Standard
K	39	20.0	25.0	**0.5751**	0.142	24.7	mg/L	3	Standard
Ca	43	128.3	8.1	**46.4618**	3.332	7.2	mg/L	2	Standard
Fe	54	426.9	19.9	**0.0354**	0.034	94.6	mg/L	292	Standard
Fe	57	290.0	17.2	**0.3303**	0.068	20.5	mg/L	32	Standard
Sc-1	45	49708.1	2.6				mg/L	42531	Standard
Cl	35	158710.4	5.2				ug/L	58934	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	57746.6	3.9				ug/L	1487	Standard
P	31	26705.2	6.6				ug/L	15053	Standard
S	34	2461.9	8.2				ug/L	1318	Standard
Sr	88	680.0	18.5				ug/L	27	Standard
C	12	96.7	15.8				mg/L	57	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	39.4	53.3				mg/L	2	Standard
Ho-1	165	38.3	19.9				mg/L	0	Standard
Er	166	13.3	173.2				mg/L	20	Standard
I	127	32616.8	4.3				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.885	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.664	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.630
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.727
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Cu 65 Lower	Cu	65	
Zn 66 Lower	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1505146004
Sample Date/Time: Sunday, May 31, 2015 22:41:53
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	126516.0	1.0				ug/L	128086	Standard
	Be	9	16.7	124.9	**0.0075**	0.021	282.9	ug/L	17	Standard
	Al	27	6920458.0	0.5	**110.3098**	0.454	0.4	ug/L	1108	Standard
	Sc	45	47611.4	0.4				ug/L	42531	Standard
	Ti	47	223.7	7.2	**0.9898**	0.065	6.5	ug/L	7	Standard
	V	51	29906.1	1.4	**4.4908**	0.104	2.3	ug/L	906	Standard
	Cr	52	15460.9	0.1	**1.4989**	0.030	2.0	ug/L	4643	Standard
	Cr	53	7330.1	1.5	**6.6873**	0.014	0.2	ug/L	310	Standard
	Mn	55	7992.4	3.7	**0.4552**	0.017	3.8	ug/L	1006	Standard
	Co	59	705.0	2.1	**0.0761**	0.002	2.4	ug/L	74	Standard
	Ni	60	4812.8	1.9	**1.7691**	0.036	2.1	ug/L	292	Standard
	Cu	65	3430.7	1.1	**-0.7745**	0.004	0.6	ug/L	5020	Standard
	Zn	66	4816.1	2.8	**-12.0724**	0.110	0.9	ug/L	17910	Standard
>	Ge	72	524070.8	1.4				ug/L	508788	Standard
	As	75	2505.6	2.8	**1.9096**	0.032	1.7	ug/L	-98	Standard
	Se	82	1392.9	2.0	**10.7941**	0.228	2.1	ug/L	18	Standard
	Se-1	77	1234.1	2.7	**12.3041**	0.511	4.2	ug/L	64	Standard
>	Ga	71	106.7	18.9				mg/L	27	Standard
	Rb	85	2078.5	5.6				ug/L	160	Standard
	Y	89	679318.9	0.9				ug/L	653037	Standard
>	Rh	103	120.0	4.2				ug/L	7	Standard
	Mo	98	659.9	6.9	**0.2059**	0.013	6.3	ug/L	17	Standard
	Ag	107	1066.4	2.6	**0.1410**	0.004	2.7	ug/L	68	Standard
	Cd	111	88.4	7.7	**0.0537**	0.004	8.2	mg/L	5	Standard
	Cd	114	238.7	14.4	**0.0627**	0.009	14.0	ug/L	6	Standard
>	In	115	563823.7	0.9				ug/L	538484	Standard
	Sn	118	481.7	7.7	**-0.1455**	0.006	4.1	ug/L	1080	Standard
	Sb	123	473.5	1.8	**0.1205**	0.002	2.0	ug/L	22	Standard
	Ba	135	13531.0	2.0	**11.7440**	0.128	1.1	ug/L	9	Standard
	Ce	140	853.4	30.1				ug/L	8	Standard
>	Tb	159	764474.4	1.1				ug/L	729623	Standard
	Ho	165	36.7	20.8				ug/L	0	Standard
	Tl	203	46.3	9.0	**0.0069**	0.001	11.4	ug/L	7	Standard
	Tl	205	43.3	35.3	**0.0093**	0.003	34.2	ug/L	3	Standard
	Pb	206	347.7	2.2	**-0.0835**	0.003	3.8	ug/L	548	Standard
	Pb	207	304.3	6.9	**-0.0614**	0.007	11.9	ug/L	453	Standard
	Pb	208	1244.0	4.8	**-0.0723**	0.004	5.7	ug/L	1835	Standard
	U	238	15584.3	2.1	**3.2273**	0.078	2.4	ug/L	1	Standard
>	Bi	209	427671.2	1.0				ug/L	438591	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	61168.3	2.6	**149.7593**	3.581	2.4	mg/L	18	Standard
K	39	8.3	124.9	**0.2529**	0.309	122.3	mg/L	3	Standard
Ca	43	90.0	19.2	**33.2179**	6.838	20.6	mg/L	2	Standard
Fe	54	411.5	6.7	**0.0367**	0.011	31.0	mg/L	292	Standard
Fe	57	293.3	2.0	**0.3518**	0.008	2.3	mg/L	32	Standard
Sc-1	45	47611.4	0.4				mg/L	42531	Standard
Cl	35	154223.8	2.1				ug/L	58934	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	57284.8	1.6				ug/L	1487	Standard
P	31	25469.7	3.5				ug/L	15053	Standard
S	34	2308.5	1.5				ug/L	1318	Standard
Sr	88	755.0	12.1				ug/L	27	Standard
C	12	163.3	24.7				mg/L	57	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	19.2	88.8				mg/L	2	Standard
Ho-1	165	36.7	20.8				mg/L	0	Standard
Er	166	16.7	69.3				mg/L	20	Standard
I	127	33067.7	0.9				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.774	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.004	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.706
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.510
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Zn 66 Lower	Zn	66	

Sample ID: L1505146004
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Method 6020 - Summary Report

Sample ID: L1505146005
Sample Date/Time: Sunday, May 31, 2015 22:45:05
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	125420.5	2.4				ug/L	128086	Standard
	Be	9	21.7	48.0	**0.0125**	0.010	83.3	ug/L	17	Standard
	Al	27	1883371.1	4.7	**30.2398**	0.828	2.7	ug/L	1108	Standard
	Sc	45	47924.0	2.2				ug/L	42531	Standard
	Ti	47	651.0	5.7	**2.9121**	0.118	4.0	ug/L	7	Standard
	V	51	35015.7	4.9	**5.2161**	0.116	2.2	ug/L	906	Standard
	Cr	52	15622.4	3.7	**1.4955**	0.007	0.5	ug/L	4643	Standard
	Cr	53	2426.9	2.0	**1.9684**	0.109	5.5	ug/L	310	Standard
	Mn	55	15039.1	5.6	**1.0289**	0.026	2.6	ug/L	1006	Standard
	Co	59	1511.1	6.6	**0.1731**	0.005	3.1	ug/L	74	Standard
	Ni	60	3757.5	7.0	**1.3345**	0.050	3.8	ug/L	292	Standard
	Cu	65	3611.4	6.4	**-0.7206**	0.069	9.6	ug/L	5020	Standard
	Zn	66	3838.2	5.5	**-12.9193**	0.104	0.8	ug/L	17910	Standard
>	**Ge**	72	530327.8	3.7				ug/L	508788	Standard
	As	75	1801.9	3.3	**1.3837**	0.007	0.5	ug/L	-98	Standard
	Se	82	570.7	8.7	**4.2831**	0.269	6.3	ug/L	18	Standard
	Se-1	77	349.3	1.3	**2.9447**	0.117	4.0	ug/L	64	Standard
>	**Ga**	71	221.7	10.4				mg/L	27	Standard
	Rb	85	16509.0	4.0				ug/L	160	Standard
	Y	89	695151.4	2.0				ug/L	653037	Standard
>	**Rh**	103	83.3	12.5				ug/L	7	Standard
	Mo	98	3239.8	7.0	**1.0208**	0.066	6.5	ug/L	17	Standard
	Ag	107	111.7	0.5	**0.0031**	0.000	2.2	ug/L	68	Standard
	Cd	111	142.4	5.0	**0.0877**	0.005	5.5	mg/L	5	Standard
	Cd	114	390.7	21.8	**0.1022**	0.023	22.2	ug/L	6	Standard
>	**In**	115	574804.2	0.8				ug/L	538484	Standard
	Sn	118	656.7	5.0	**-0.1173**	0.005	4.4	ug/L	1080	Standard
	Sb	123	356.9	5.5	**0.0864**	0.005	5.4	ug/L	22	Standard
	Ba	135	16541.4	3.7	**14.0875**	0.453	3.2	ug/L	9	Standard
	Ce	140	2503.5	3.5				ug/L	8	Standard
>	**Tb**	159	766482.8	0.6				ug/L	729623	Standard
	Ho	165	36.7	55.1				ug/L	0	Standard
	Tl	203	71.0	29.5	**0.0111**	0.004	34.8	ug/L	7	Standard
	Tl	205	60.0	22.0	**0.0121**	0.003	20.8	ug/L	3	Standard
	Pb	206	501.3	1.1	**-0.0442**	0.003	7.0	ug/L	548	Standard
	Pb	207	424.0	2.0	**-0.0284**	0.003	12.1	ug/L	453	Standard
	Pb	208	1785.7	4.6	**-0.0336**	0.005	14.9	ug/L	1835	Standard
	U	238	5375.3	5.0	**1.0656**	0.045	4.3	ug/L	1	Standard
>	**Bi**	209	446131.6	1.1				ug/L	438591	Standard

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Na	23	1.7	173.2	**18.6118**	32.228	173.2	mg/L	0	Standard
Mg	24	25913.8	3.0	**62.9997**	0.518	0.8	mg/L	18	Standard
K	39	48.3	11.9	**1.4355**	0.199	13.9	mg/L	3	Standard
Ca	43	63.3	67.1	**22.0953**	16.469	74.5	mg/L	2	Standard
Fe	54	477.8	7.6	**0.0642**	0.011	17.6	mg/L	292	Standard
Fe	57	181.7	29.4	**0.1928**	0.070	36.3	mg/L	32	Standard
Sc-1	45	47924.0	2.2				mg/L	42531	Standard
Cl	35	105532.8	4.6				ug/L	58934	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	18851.7	5.9				ug/L	1487	Standard
P	31	23915.6	6.3				ug/L	15053	Standard
S	34	2286.8	9.7				ug/L	1318	Standard
Sr	88	475.0	15.5				ug/L	27	Standard
C	12	130.0	35.3				mg/L	57	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	51.1	82.0				mg/L	2	Standard
Ho-1	165	36.7	55.1				mg/L	0	Standard
Er	166	46.7	12.4				mg/L	20	Standard
I	127	42199.1	10.1				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.919	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.234	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.745
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.719
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Zn 66 Lower	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1505152901
Sample Date/Time: Sunday, May 31, 2015 22:48:17
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	130052.5	0.8				ug/L	128086	Standard
	Be	9	21.7	53.3	**0.0118**	0.011	94.4	ug/L	17	Standard
	Al	27	16467817.7	1.1	**255.4091**	2.252	0.9	ug/L	1108	Standard
	Sc	45	47725.1	2.1				ug/L	42531	Standard
	Ti	47	135.0	3.9	**0.5685**	0.025	4.4	ug/L	7	Standard
	V	51	22169.7	1.4	**3.2056**	0.050	1.6	ug/L	906	Standard
	Cr	52	9168.1	1.3	**0.5811**	0.016	2.8	ug/L	4643	Standard
	Cr	53	2146.8	9.3	**1.6736**	0.189	11.3	ug/L	310	Standard
	Mn	55	361409.6	1.6	**29.2330**	0.537	1.8	ug/L	1006	Standard
	Co	59	802.7	2.7	**0.0856**	0.003	3.3	ug/L	74	Standard
	Ni	60	5852.5	4.3	**2.1206**	0.101	4.8	ug/L	292	Standard
	Cu	65	2076.8	2.1	**-1.3257**	0.017	1.3	ug/L	5020	Standard
	Zn	66	4185.2	1.9	**-12.6815**	0.067	0.5	ug/L	17910	Standard
>	**Ge**	72	537642.4	0.2				ug/L	508788	Standard
	As	75	2311.1	2.7	**1.7262**	0.046	2.7	ug/L	-98	Standard
	Se	82	818.2	4.0	**6.1208**	0.260	4.2	ug/L	18	Standard
	Se-1	77	264.3	5.2	**2.0202**	0.142	7.0	ug/L	64	Standard
>	**Ga**	71	43.3	24.0				mg/L	27	Standard
	Rb	85	2343.5	4.2				ug/L	160	Standard
	Y	89	711941.7	2.7				ug/L	653037	Standard
>	**Rh**	103	231.7	5.0				ug/L	7	Standard
	Mo	98	663.0	2.9	**0.1991**	0.007	3.4	ug/L	17	Standard
	Ag	107	84.7	10.2	**-0.0010**	0.001	129.5	ug/L	68	Standard
	Cd	111	30.7	7.5	**0.0148**	0.002	10.3	mg/L	5	Standard
	Cd	114	93.6	49.2	**0.0221**	0.012	54.3	ug/L	6	Standard
>	**In**	115	585397.5	0.4				ug/L	538484	Standard
	Sn	118	548.3	8.5	**-0.1375**	0.008	5.5	ug/L	1080	Standard
	Sb	123	68.6	14.5	**0.0081**	0.003	31.9	ug/L	22	Standard
	Ba	135	51489.0	2.3	**43.1215**	1.046	2.4	ug/L	9	Standard
	Ce	140	155.0	5.6				ug/L	8	Standard
>	**Tb**	159	783921.7	0.4				ug/L	729623	Standard
	Ho	165	33.3	22.9				ug/L	0	Standard
	Tl	203	55.7	14.0	**0.0081**	0.001	17.0	ug/L	7	Standard
	Tl	205	56.7	36.7	**0.0114**	0.004	35.3	ug/L	3	Standard
	Pb	206	476.7	2.0	**-0.0525**	0.003	5.4	ug/L	548	Standard
	Pb	207	403.0	8.4	**-0.0361**	0.012	32.3	ug/L	453	Standard
	Pb	208	1619.4	2.7	**-0.0479**	0.005	10.2	ug/L	1835	Standard
	U	238	28800.0	1.6	**5.6643**	0.160	2.8	ug/L	1	Standard
>	**Bi**	209	450490.3	1.3				ug/L	438591	Standard

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Na	23	3.3	86.6	**36.1520**	31.304	86.6	mg/L	0	Standard
Mg	24	18850.1	3.1	**46.0430**	2.371	5.1	mg/L	18	Standard
K	39	30.0	60.1	**0.8973**	0.535	59.6	mg/L	3	Standard
Ca	43	135.0	25.9	**51.2273**	13.902	27.1	mg/L	2	Standard
Fe	54	325.5	18.6	**-0.0015**	0.024	1644.0	mg/L	292	Standard
Fe	57	281.7	2.0	**0.3345**	0.000	0.1	mg/L	32	Standard
Sc-1	45	47725.1	2.1				mg/L	42531	Standard
Cl	35	105272.5	1.6				ug/L	58934	Standard
Kr	83	0.3	173.2				ug/L	1	Standard
Br	81	52912.3	2.4				ug/L	1487	Standard
P	31	23665.2	5.8				ug/L	15053	Standard
S	34	2440.2	4.9				ug/L	1318	Standard
Sr	88	1328.4	12.0				ug/L	27	Standard
C	12	113.3	13.5				mg/L	57	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	36.7	31.5				mg/L	0	Standard
Dy	164	48.4	40.8				mg/L	2	Standard
Ho-1	165	33.3	22.9				mg/L	0	Standard
Er	166	33.3	17.3				mg/L	20	Standard
I	127	1787897.2	1.6				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		101.535	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		105.671	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	108.712	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	102.713	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Cu 65 Lower	Cu	65	
Zn 66 Lower	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1505153001
Sample Date/Time: Sunday, May 31, 2015 22:51:28
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	131582.3	1.3				ug/L	128086	Standard
	Be	9	23.3	24.7	**0.0132**	0.006	42.7	ug/L	17	Standard
	Al	27	13708294.6	3.3	**210.0921**	4.134	2.0	ug/L	1108	Standard
	Sc	45	49791.7	1.7				ug/L	42531	Standard
	Ti	47	167.0	6.1	**0.7146**	0.047	6.6	ug/L	7	Standard
	V	51	10102.3	2.2	**1.3911**	0.040	2.9	ug/L	906	Standard
	Cr	52	7299.1	2.0	**0.3292**	0.015	4.5	ug/L	4643	Standard
	Cr	53	7923.8	13.0	**7.0961**	0.961	13.5	ug/L	310	Standard
	Mn	55	3679660.3	1.4	**300.8705**	2.302	0.8	ug/L	1006	Standard
	Co	59	1015.0	0.9	**0.1117**	0.002	1.6	ug/L	74	Standard
	Ni	60	5262.6	2.7	**1.9025**	0.044	2.3	ug/L	292	Standard
	Cu	65	4526.3	3.7	**-0.3826**	0.054	14.0	ug/L	5020	Standard
	Zn	66	5822.1	2.1	**-11.3423**	0.075	0.7	ug/L	17910	Standard
>	Ge	72	535319.5	0.7				ug/L	508788	Standard
	As	75	9433.7	2.5	**6.7943**	0.144	2.1	ug/L	-98	Standard
	Se	82	646.3	6.5	**4.8261**	0.312	6.5	ug/L	18	Standard
	Se-1	77	992.0	5.3	**9.5333**	0.561	5.9	ug/L	64	Standard
>	Ga	71	126.7	35.6				mg/L	27	Standard
	Rb	85	1043.4	10.2				ug/L	160	Standard
	Y	89	701699.2	1.3				ug/L	653037	Standard
>	Rh	103	226.7	24.6				ug/L	7	Standard
	Mo	98	337.8	4.6	**0.0945**	0.005	5.1	ug/L	17	Standard
	Ag	107	125.3	8.5	**0.0042**	0.001	34.0	ug/L	68	Standard
	Cd	111	21.5	33.5	**0.0086**	0.004	52.2	mg/L	5	Standard
	Cd	114	42.2	26.5	**0.0083**	0.003	34.8	ug/L	6	Standard
>	In	115	603494.0	0.2				ug/L	538484	Standard
	Sn	118	601.7	9.0	**-0.1315**	0.009	6.8	ug/L	1080	Standard
	Sb	123	543.3	3.5	**0.1299**	0.005	3.7	ug/L	22	Standard
	Ba	135	151205.1	0.7	**122.8864**	1.096	0.9	ug/L	9	Standard
	Ce	140	958.4	4.7				ug/L	8	Standard
>	Tb	159	809044.3	0.7				ug/L	729623	Standard
	Ho	165	23.3	68.9				ug/L	0	Standard
	Tl	203	25.0	24.0	**0.0025**	0.001	43.5	ug/L	7	Standard
	Tl	205	36.7	41.7	**0.0075**	0.003	38.4	ug/L	3	Standard
	Pb	206	204799.6	0.9	**57.1641**	0.744	1.3	ug/L	548	Standard
	Pb	207	172951.0	1.6	**52.7457**	1.046	2.0	ug/L	453	Standard
	Pb	208	712742.6	0.7	**55.6649**	0.581	1.0	ug/L	1835	Standard
	U	238	2740.9	1.6	**0.5356**	0.011	2.0	ug/L	1	Standard
>	Bi	209	451900.8	0.4				ug/L	438591	Standard

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Na	23	3.3	86.6	**34.8804**	30.212	86.6	mg/L	0	Standard
Mg	24	38341.8	2.3	**89.7783**	3.241	3.6	mg/L	18	Standard
K	39	8.3	91.7	**0.2413**	0.218	90.4	mg/L	3	Standard
Ca	43	151.7	22.0	**55.4433**	13.253	23.9	mg/L	2	Standard
Fe	54	3622.9	2.4	**1.3697**	0.055	4.0	mg/L	292	Standard
Fe	57	1335.1	9.8	**1.7319**	0.180	10.4	mg/L	32	Standard
Sc-1	45	49791.7	1.7				mg/L	42531	Standard
Cl	35	95743.6	0.7				ug/L	58934	Standard
Kr	83	0.0					ug/L	1	Standard
Br	81	41520.3	6.7				ug/L	1487	Standard
P	31	24813.6	1.3				ug/L	15053	Standard
S	34	2626.9	3.4				ug/L	1318	Standard
Sr	88	1223.4	7.0				ug/L	27	Standard
C	12	203.3	36.3				mg/L	57	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	58.6	15.4				mg/L	2	Standard
Ho-1	165	23.3	68.9				mg/L	0	Standard
Er	166	30.0	66.7				mg/L	20	Standard
I	127	162667.0	1.6				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		102.730	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		105.215	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	112.073	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	103.035	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Lower	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Sunday, May 31, 2015 22:54:42
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	127343.1	2.4				ug/L	128086	Standard
	Be	9	50189.7	1.0	**50.0715**	1.680	3.4	ug/L	17	Standard
	Al	27	3535605.8	1.3	**55.9938**	1.830	3.3	ug/L	1108	Standard
	Sc	45	48016.0	2.8				ug/L	42531	Standard
	Ti	47	24561.9	0.2	**107.4007**	0.473	0.4	ug/L	7	Standard
	V	51	358513.5	0.5	**52.8700**	0.197	0.4	ug/L	906	Standard
	Cr	52	397654.0	0.4	**52.7333**	0.319	0.6	ug/L	4643	Standard
	Cr	53	58442.5	2.3	**53.1016**	1.237	2.3	ug/L	310	Standard
	Mn	55	657533.7	0.3	**52.2732**	0.448	0.9	ug/L	1006	Standard
	Co	59	456982.5	0.5	**53.7685**	0.500	0.9	ug/L	74	Standard
	Ni	60	139936.3	0.9	**52.5369**	0.596	1.1	ug/L	292	Standard
	Cu	65	141877.5	0.3	**50.9884**	0.192	0.4	ug/L	5020	Standard
	Zn	66	75063.2	1.2	**43.2146**	0.959	2.2	ug/L	17910	Standard
>	Ge	72	548773.1	0.5				ug/L	508788	Standard
	As	75	74320.3	1.2	**51.6074**	0.571	1.1	ug/L	-98	Standard
	Se	82	7095.2	1.3	**53.0466**	0.796	1.5	ug/L	18	Standard
	Se-1	77	5267.9	0.5	**52.2730**	0.140	0.3	ug/L	64	Standard
>	Ga	71	68.3	15.2				mg/L	27	Standard
	Rb	85	981.7	9.5				ug/L	160	Standard
	Y	89	700906.9	3.6				ug/L	653037	Standard
>	Rh	103	11.7	49.5				ug/L	7	Standard
	Mo	98	347734.2	0.3	**102.8664**	1.044	1.0	ug/L	17	Standard
	Ag	107	393415.2	0.3	**51.7956**	0.502	1.0	ug/L	68	Standard
	Cd	111	84391.8	0.4	**51.0383**	0.611	1.2	mg/L	5	Standard
	Cd	114	205839.0	0.2	**51.4063**	0.519	1.0	ug/L	6	Standard
>	In	115	616985.6	0.9				ug/L	538484	Standard
	Sn	118	258311.8	1.1	**40.8294**	0.808	2.0	ug/L	1080	Standard
	Sb	123	188307.5	0.6	**47.4568**	0.606	1.3	ug/L	22	Standard
	Ba	135	65561.9	0.9	**52.1033**	0.635	1.2	ug/L	9	Standard
	Ce	140	46.7	16.4				ug/L	8	Standard
>	Tb	159	809932.1	1.9				ug/L	729623	Standard
	Ho	165	11.7	65.5				ug/L	0	Standard
	Tl	203	300678.2	0.3	**51.9949**	0.524	1.0	ug/L	7	Standard
	Tl	205	292572.4	2.7	**52.8871**	1.920	3.6	ug/L	3	Standard
	Pb	206	193232.7	0.3	**51.0550**	0.377	0.7	ug/L	548	Standard
	Pb	207	174468.2	1.1	**50.3815**	0.956	1.9	ug/L	453	Standard
	Pb	208	707342.9	0.4	**52.3050**	0.692	1.3	ug/L	1835	Standard
	U	238	279436.4	1.1	**51.8895**	1.043	2.0	ug/L	1	Standard
>	Bi	209	477218.9	1.0				ug/L	438591	Standard

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Na	23	1.7	173.2	**18.2643**	31.626	173.2	mg/L	0	Standard
Mg	24	2213.5	3.1	**5.3305**	0.048	0.9	mg/L	18	Standard
K	39	178.3	5.8	**5.2700**	0.420	8.0	mg/L	3	Standard
Ca	43	20.0	25.0	**5.0294**	2.213	44.0	mg/L	2	Standard
Fe	54	12450.3	0.7	**5.2483**	0.142	2.7	mg/L	292	Standard
Fe	57	3813.8	2.6	**5.2472**	0.105	2.0	mg/L	32	Standard
Sc-1	45	48016.0	2.8				mg/L	42531	Standard
Cl	35	92844.3	0.6				ug/L	58934	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	2533.6	22.8				ug/L	1487	Standard
P	31	19395.7	3.1				ug/L	15053	Standard
S	34	2992.0	6.2				ug/L	1318	Standard
Sr	88	20.0	86.6				ug/L	27	Standard
C	12	83.3	27.7				mg/L	57	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.5	205.9				mg/L	2	Standard
Ho-1	165	11.7	65.5				mg/L	0	Standard
Er	166	16.7	69.3				mg/L	20	Standard
I	127	6629.9	33.0				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	100.143		
Al	27	111.988		
Sc	45			
Ti	47	107.401		
V	51	105.740		
Cr	52	105.467		
Cr	53			
Mn	55	104.546		
Co	59	107.537		
Ni	60	105.074		
Cu	65	101.977		
Zn	66	86.429		
Ge	72		107.859	
As	75	103.215		
Se	82	106.093		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	102.866		
Ag	107	103.591		
Cd	111	102.077		
Cd	114			
> In	115		114.578	
Sn	118	81.659		
Sb	123	94.914		
Ba	135	104.207		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	103.990		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.610		
U	238	103.779		
> Bi	209		108.807	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	
QC Std 6	Zn	66	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Sunday, May 31, 2015 22:57:54
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	124099.6	2.0				ug/L	128086	Standard
	Be	9	23.3	12.4	**0.0146**	0.003	23.3	ug/L	17	Standard
	Al	27	4159.4	109.7	**0.0217**	0.072	332.2	ug/L	1108	Standard
	Sc	45	46225.4	0.1				ug/L	42531	Standard
	Ti	47	10.3	31.1	**0.0125**	0.015	119.7	ug/L	7	Standard
	V	51	966.7	5.6	**0.0074**	0.011	148.1	ug/L	906	Standard
	Cr	52	5059.2	4.0	**0.0260**	0.014	55.6	ug/L	4643	Standard
	Cr	53	533.3	9.8	**0.1733**	0.042	24.2	ug/L	310	Standard
	Mn	55	1276.4	34.7	**-0.1080**	0.034	31.6	ug/L	1006	Standard
	Co	59	97.3	32.9	**0.0010**	0.004	361.4	ug/L	74	Standard
	Ni	60	332.3	7.8	**0.0015**	0.008	505.1	ug/L	292	Standard
	Cu	65	5673.4	1.2	**0.0747**	0.032	43.1	ug/L	5020	Standard
	Zn	66	19527.6	3.2	**-0.1312**	0.197	150.0	ug/L	17910	Standard
>	**Ge**	72	531279.3	2.0				ug/L	508788	Standard
	As	75	-116.0	12.7	**0.0079**	0.012	153.0	ug/L	-98	Standard
	Se	82	22.4	25.9	**0.0329**	0.043	129.7	ug/L	18	Standard
	Se-1	77	87.7	5.9	**0.2179**	0.050	23.0	ug/L	64	Standard
>	**Ga**	71	20.0	66.1				mg/L	27	Standard
	Rb	85	191.7	12.3				ug/L	160	Standard
	Y	89	692414.2	3.6				ug/L	653037	Standard
>	**Rh**	103	1.7	173.2				ug/L	7	Standard
	Mo	98	79.6	32.1	**0.0162**	0.007	45.6	ug/L	17	Standard
	Ag	107	130.0	27.0	**0.0046**	0.004	94.5	ug/L	68	Standard
	Cd	111	11.2	41.9	**0.0022**	0.003	135.6	mg/L	5	Standard
	Cd	114	38.3	28.4	**0.0072**	0.003	39.0	ug/L	6	Standard
>	**In**	115	607170.5	1.8				ug/L	538484	Standard
	Sn	118	1430.1	1.2	**0.0017**	0.005	282.5	ug/L	1080	Standard
	Sb	123	419.6	17.4	**0.0973**	0.018	18.2	ug/L	22	Standard
	Ba	135	22.0	24.1	**-0.0107**	0.004	39.5	ug/L	9	Standard
	Ce	140	10.0					ug/L	8	Standard
>	**Tb**	159	799007.5	0.9				ug/L	729623	Standard
	Ho	165	11.7	65.5				ug/L	0	Standard
	Tl	203	24.0	67.1	**0.0021**	0.003	131.4	ug/L	7	Standard
	Tl	205	23.3	101.3	**0.0048**	0.004	89.1	ug/L	3	Standard
	Pb	206	591.3	5.5	**-0.0291**	0.009	30.8	ug/L	548	Standard
	Pb	207	520.7	5.0	**-0.0085**	0.008	93.7	ug/L	453	Standard
	Pb	208	2235.4	7.6	**-0.0089**	0.012	131.6	ug/L	1835	Standard
	U	238	22.7	105.9	**0.0024**	0.004	186.4	ug/L	1	Standard
>	**Bi**	209	475687.0	0.7				ug/L	438591	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	33.3	8.7	**0.0393**	0.007	18.6	mg/L	18	Standard
K	39	0.0		**0.0050**	0.000	0.0	mg/L	3	Standard
Ca	43	11.7	65.5	**1.8405**	3.161	171.7	mg/L	2	Standard
Fe	54	346.0	19.4	**0.0126**	0.030	237.8	mg/L	292	Standard
Fe	57	48.3	39.2	**0.0101**	0.027	270.3	mg/L	32	Standard
> **Sc-1**	45	46225.4	0.1				mg/L	42531	Standard
Cl	35	86042.3	1.7				ug/L	58934	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	1846.8	4.2				ug/L	1487	Standard
P	31	16976.2	3.9				ug/L	15053	Standard
S	34	2570.2	7.8				ug/L	1318	Standard
Sr	88	21.7	48.0				ug/L	27	Standard
C	12	36.7	56.8				mg/L	57	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.9	187.9				mg/L	2	Standard
Ho-1	165	11.7	65.5				mg/L	0	Standard
Er	166	10.0	100.0				mg/L	20	Standard
I	127	3272.0	14.4				mg/L	175	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.421	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.755
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.458
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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2.4 General Chemistry Data

2.4.1 Method 9056

2.4.1.1 Summary Data

Microbac

Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051435-01	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW08-052115	**Prep Method:**	9056	**Prep Date:**	05/22/2015 11:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG524861	**Analyst:**	ALS	**Run Date:**	05/22/2015 17:25
Collect Date:	05/21/2015 13:55	**Dilution:**	5	**File ID:**	I1_052215-20
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	412	J	2.00	1.00	0.500
Nitrate	14797-55-8	1.00	U	2.00	1.00	0.500
Nitrite	14797-65-0	0.545	J	2.00	1.00	0.500
Sulfate	14808-79-8	293		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051435-01	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW08-052115	**Prep Method:**	9056	**Prep Date:**	05/22/2015 11:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG524861	**Analyst:**	ALS	**Run Date:**	05/22/2015 17:42
Collect Date:	05/21/2015 13:55	**Dilution:**	20	**File ID:**	I1_052215-21
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	322		8.00	4.00	2.00
Nitrate	14797-55-8	4.00	U	8.00	4.00	2.00
Nitrite	14797-65-0	4.00	U	8.00	4.00	2.00
Sulfate	14808-79-8	253		40.0	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051435-03	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW22-052115	**Prep Method:**	9056	**Prep Date:**	05/22/2015 11:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG524861	**Analyst:**	ALS	**Run Date:**	05/22/2015 18:00
Collect Date:	05/21/2015 15:10	**Dilution:**	10	**File ID:**	I1_052215-22
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	989	J	4.00	2.00	1.00
Nitrate	14797-55-8	2.00	U	4.00	2.00	1.00
Nitrite	14797-65-0	1.54	J	4.00	2.00	1.00
Sulfate	14808-79-8	559		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051435-03	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW22-052115	**Prep Method:**	9056	**Prep Date:**	05/22/2015 11:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG524861	**Analyst:**	ALS	**Run Date:**	05/22/2015 18:18
Collect Date:	05/21/2015 15:10	**Dilution:**	50	**File ID:**	I1_052215-23
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	782		20.0	10.0	5.00
Nitrate	14797-55-8	10.0	U	20.0	10.0	5.00
Nitrite	14797-65-0	10.0	U	20.0	10.0	5.00
Sulfate	14808-79-8	498		100	50.0	25.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.4.1.2 QC Summary Data

Example Calculations - Ion Chromatography

A. Methods 9056/300.0 (Quadratic with Offset)

1. Retrieve Curve Data from the ICAL Curve

c2 = the value of curve constant
c1= the curve slope
c0 = the curve offset

2. Obtain the area, y , from the instrument raw data

3. Calculate the concentration of the analyte, f(y), where:

$$f(y) = \frac{1}{2 * c_2} * \left(-c_1 \pm \sqrt{c_1^2 - 4 * c_2 * (c_0 - y)}\right)$$

Example Calculation:

Value of constant, c2, (curve):	0.0003
Value of curve constant, c1, (slope):	0.0869
Value of curve constant, c0, (offset):	-0.0103
Area of target analyte, y, (uS*min):	2.993
Calculated concentration, f(y), (mg/L):	31.1998864
or:	-40.1161215 *
Dilution factor (D):	1.00
Concentration of analyte in sample (mg/L):	31.200

* There are two possible solutions, but only one is valid.

B. Method 314.0 - Perchlorate (Linear)

Retrieve Curve Data from Linear Plot

c1 = the curve slope

Obtain the area, y , from the quantitation report

Calculate the concentration of the analyte, f(y), where:

f (y) = y / c1

Example Calculation:

Value of c1, slope:	0.0034
Area of target analyte, y:	0.083
Calculated concentration:	24.4117647
Dilution Factor:	1
Concentration in sample:	24.4117647

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 042115 ICAL IC1.SEQ

Analyst1: AED Analyst2: NA

Method: 300/9056 SOP: IC01 Rev: 17

Maintenance Log ID: 53072 Syringe Filter Lot#: 00193905

Eluent ID#: RGT33321

Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM

Workgroups: WG520208

Internal STD: NA Surrogate STD: NA Calibration STD STD69215

CCV STD: STD69215 LCS STD: STD69216 MS/MSD STD: STD69216

Comments: 04/21/15 IC1 ICAL

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I1_042115-01	ELUENT	1	1		04/21/15 13:54
2	I1_042115-02	DI WATER	1	1		04/21/15 14:12
3	I1_042115-03	WG520208-01 STD \#6	1	1		04/21/15 14:29
4	I1_042115-04	WG520208-02 STD \#5	1	1		04/21/15 14:47
5	I1_042115-05	WG520208-03 STD \#4	1	1		04/21/15 15:05
6	I1_042115-06	WG520208-04 STD \#3	1	1		04/21/15 15:23
7	I1_042115-07	WG520208-05 STD \#2	1	1		04/21/15 15:40
8	I1_042115-08	WG520208-06 STD \#1	1	1		04/21/15 15:58
9	I1_042115-09	WG520208-07 ALT STD	1	1		04/21/15 16:16
10	I1_042115-10	LCR LEVEL 6	1	1		04/21/15 16:33
11	I1_042115-11	LCR LEVEL 2	1	1		04/21/15 16:51
12	I1_042115-12	LCR LEVEL 0	1	1		04/21/15 17:09
13	I1_042115-13	END	1	1		04/21/15 17:27

Comments

Seq.	Rerun	Dil.	Reason	Analytes

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 052215 IC1.SEQ
Analyst1: ALS Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 17

Maintenance Log ID: 53168 Syringe Filter Lot#: 00197629
Eluent ID#: RGT33675
Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
Workgroups: WG524861
Internal STD: NA Surrogate STD: NA Calibration STD STD69215
CCV STD: STD69215 LCS STD: STD69216 MS/MSD STD: STD69216

Comments: Fractions L15051435-01,03 were analyzed at dilutions due to single analyte concentrations exceeding 200ppm.
Fractions L15051105 are being reanalyzed for confirmations

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I1_052215-01	ELUENT	1	1		05/22/15 11:48
2	I1_052215-02	DI WATER	1	1		05/22/15 12:06
3	I1_052215-03	WG525057-01 ANION CCV	1	1		05/22/15 12:24
4	I1_052215-04	WG525057-02 ANION CCB	1	1		05/22/15 12:41
5	I1_052215-05	WG524861-01 ANION BLANK	1	1		05/22/15 12:59
6	I1_052215-06	WG524861-02 ANION LCS	1	1		05/22/15 13:17
7	I1_052215-07	L15051105-04 NR	2	1		05/22/15 13:34
8	I1_052215-08	L15051105-24 NR	2	1		05/22/15 13:52
9	I1_052215-09	L15051105-12 NR	2	1		05/22/15 14:10
10	I1_052215-10	L15051429-01 (CL,NO2,NO3,SO4) REF	1	1		05/22/15 14:28
11	I1_052215-11	WG524861-04 DUP 1429-01	1	1		05/22/15 14:45
12	I1_052215-12	WG524861-05 MS	1	1		05/22/15 15:03
13	I1_052215-13	WG524861-06 MSD	1	1		05/22/15 15:21
14	I1_052215-14	L15051429-05 (CL,NO2.NO3,SO4)	1	1		05/22/15 15:38
15	I1_052215-15	WG525057-03 ANION CCV	1	1		05/22/15 15:56
16	I1_052215-16	WG525057-04 ANION CCB	1	1		05/22/15 16:14
17	I1_052215-17	L15051429-05 1/2 (CL,NO2.NO3,SO4)	1	2		05/22/15 16:32
18	I1_052215-18	L15051425-01 (NO2,NO3)	2	1		05/22/15 16:49
19	I1_052215-19	L15051425-02 (NO2,NO3) RR NO2	2	1		05/22/15 17:07
20	I1_052215-20	L15051435-01 1/5 (CL,NO2,NO3,SO4)	1	5		05/22/15 17:25
21	I1_052215-21	L15051435-01 1/20 (CL,NO2,NO3,SO4)	1	20		05/22/15 17:42
22	I1_052215-22	L15051435-03 1/10 (CL,NO2,NO3,SO4)	1	10		05/22/15 18:00
23	I1_052215-23	L15051435-03 1/50 (CL,NO2,NO3,SO4)	1	50		05/22/15 18:18
24	I1_052215-24	L15051105-04 1/5 CL NR	2	5		05/22/15 18:35
25	I1_052215-25	L15051105-12 1/2 CL NR	2	2		05/22/15 18:53
26	I1_052215-26	WG525057-05 ANION CCV	1	1		05/22/15 19:11
27	I1_052215-27	WG525057-06 ANION CCB	1	1		05/22/15 19:29
28	I1_052215-28	L15051502-01 (ALL-BR)	1	1		05/22/15 19:46
29	I1_052215-29	L15051502-02 (ALL-BR)	1	1		05/22/15 20:04
30	I1_052215-30	WG525057-07 ANION CCV	1	1		05/22/15 20:22
31	I1_052215-31	WG525057-08 ANION CCB	1	1		05/22/15 20:39
32	I1_052215-32	END	1	1		05/22/15 20:57

Comments

Page: 1 Approved: 26-MAY-15

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 052215 IC1.SEQ

Analyst1: ALS Analyst2: NA

Method: 300/9056 SOP: IC01 Rev: 17

Maintenance Log ID: 53168 Syringe Filter Lot#: 00197629

Eluent ID#: RGT33675

Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM

Workgroups: WG524861

Internal STD: NA Surrogate STD: NA STD69215

CCV STD: STD69215 LCS STD: STD69216 STD69216

Comments

Seq.	Rerun	Dil.	Reason	Analytes
19	X	5	Over Calibration Range	NO2
	L15051425-02 (NO2,NO3) RR NO2			

Page: 2 Approved: 26-MAY-15

Microbac Laboratories Inc.

Data Checklist

Date: 21-APR-2015
Analyst: AED
Analyst: NA
Method: 300/9056
Instrument: IC1
Curve Workgroup: NA
Runlog ID: 67520
Analytical Workgroups: WG520208 ICAL

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	X
Special standards	NA
Blanks	X
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual Integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	AED
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
22-APR-2015

Secondary Reviewer:
24-APR-2015

CHECKLIST1 - Modified 03/05/2008
Generated: APR-24-2015 12:54:11

Microbac Laboratories Inc.

Data Checklist

Date: 22-MAY-2015
Analyst: ALS
Analyst: NA
Method: 300/9056
Instrument: IC1
Curve Workgroup: NA
Runlog ID: 68182
Analytical Workgroups: 05-1425,1429,1435,1502

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	X
Special standards	NA
Blanks	X
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual Integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	X
Check for completeness	X
Primary Reviewer	ALS
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 26-MAY-2015

Secondary Reviewer: 26-MAY-2015

CHECKLIST1 - Modified 03/05/2008

Generated: MAY-26-2015 14:34:38

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 9056 AAB#: WG524861

Login Number: L15051435

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW08-052115	01	05/21/15					05/22/2015	.9	2		05/22/15	1.2	2	
50WW08-052115	01	05/21/15					05/22/2015	.9	2		05/22/15	1.1	2	
50WW22-052115	03	05/21/15					05/22/2015	.8	2		05/22/15	1.1	2	
50WW22-052115	03	05/21/15					05/22/2015	.8	2		05/22/15	1.1	2	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4197089
Report generated 05/27/2015 09:48

METHOD BLANK SUMMARY

Login Number: L15051435
Blank File ID: I1_052215-05
Prep Date: 05/22/15 11:00
Analyzed Date: 05/22/15 12:59
Analyst: ALS

Work Group: WG524861
Blank Sample ID: WG524861-01
Instrument ID: IC1
Method: 9056

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG524861-02	I1_052215-06	05/22/15 13:17	01
DUP	WG524861-04	I1_052215-11	05/22/15 14:45	01
50WW08-052115	L15051435-01	I1_052215-20	05/22/15 17:25	DL01
50WW08-052115	L15051435-01	I1_052215-21	05/22/15 17:42	DL02
50WW22-052115	L15051435-03	I1_052215-22	05/22/15 18:00	DL01
50WW22-052115	L15051435-03	I1_052215-23	05/22/15 18:18	DL02

Report Name: BLANK_SUMMARY
PDF File ID: 4197090
Report generated 05/27/2015 09:48

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051435 Prep Date: 05/22/15 11:00 Sample ID: WG524861-01
Instrument ID: IC1 Run Date: 05/22/15 12:59 Prep Method: 9056
File ID: I1 052215-05 Analyst: ALS Method: 9056
Workgroup (AAB#): WG524861 Matrix: Water Units: mg/L
Contract #: Cal ID: IC1-21-APR-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Chloride	0.100	0.400	0.100	1	U
Nitrate	0.100	0.400	0.100	1	U
Nitrite	0.100	0.400	0.100	1	U
Sulfate	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4197091
27-MAY-2015 09:48

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051435 Run Date: 05/22/2015 Sample ID: WG524861-02
Instrument ID: IC1 Run Time: 13:17 Prep Method: 9056
File ID: I1 052215-06 Analyst: ALS Method: 9056
Workgroup (AAB#): WG524861 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD69215 Cal ID: IC1 - 21-APR-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Chloride	8.00	7.75	96.9	90 - 110	
Nitrate	5.42	5.40	99.7	90 - 110	
Nitrite	4.87	4.77	98.0	90 - 110	
Sulfate	40.0	39.3	98.3	90 - 110	

LCS - Modified 03/06/2008
PDF File ID: 4197092
Report generated: 05/27/2015 09:48

INITIAL CALIBRATION SUMMARY

Login Number: L15051435
Analytical Method: 9056
ICAL Workgroup: WG520208

Instrument ID: IC1
Initial Calibration Date: 21-APR-15 15:58
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Chloride		5.585	7.66	0.99800	
Nitrate		2.277	8.84	0.99700	
Nitrite		2.770	4.28	0.99900	
Sulfate		7.395	11.2	0.99700	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4197094
Report generated 05/27/2015 09:48

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15051435

Analytical Method: 9056

Instrument ID: IC1

Initial Calibration Date: 21-APR-15 15:58

Column ID: F

Analyte	WG520208-01			WG520208-02			WG520208-03		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	24.0	4.89900000	4.899	12.0	2.24100000	5.355	8.00	1.43000000	5.594
Nitrate	16.3	8.29100000	1.962	8.13	3.76300000	2.161	5.42	2.38200000	2.276
Nitrite	14.6	5.59100000	2.614	7.31	2.74000000	2.667	4.87	1.77500000	2.744
Sulfate	120	19.2650000	6.229	60.0	8.80400000	6.815	40.0	5.51100000	7.258

INT_CAL - Modified 03/06/2008
PDF File ID: 4197094
Report generated 05/27/2015 09:48

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15051435

Analytical Method: 9056

Instrument ID: IC1

Initial Calibration Date: 21-APR-15 15:58

Column ID: F

Analyte	WG520208-04			WG520208-05			WG520208-06		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	4.00	0.691000000	5.789	1.00	0.167000000	5.988	0.200	0.0340000000	5.882
Nitrate	2.71	1.13800000	2.382	0.678	0.276000000	2.455	0.134	0.0550000000	2.428
Nitrite	2.44	0.872000000	2.793	0.609	0.210000000	2.900	0.122	0.0420000000	2.900
Sulfate	20.0	2.62800000	7.610	5.00	0.621000000	8.052	1.00	0.119000000	8.403

INT_CAL - Modified 03/06/2008
PDF File ID: 4197094
Report generated 05/27/2015 09:48

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15051435 Run Date: 04/21/2015 Sample ID: WG520208-07
Instrument ID: IC1 Run Time: 16:16 Method: 9056
File ID: I1 042115-09 Analyst: AED QC Key: DOD4
ICal Workgroup: WG520208 Cal ID: IC1 - 21-APR-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloride		8.00	7.93	mg/L	5.56	0.900	10	
Nitrate		5.42	5.53	mg/L	2.26	1.90	10	
Nitrite		4.87	4.86	mg/L	2.74	0.200	10	
Sulfate		40.0	39.9	mg/L	7.18	0.300	10	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4197095
Report generated 05/27/2015 09:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051435
Run Date: 05/22/2015
Sample ID: WG525057-02
Instrument ID: IC1
Run Time: 12:41
Method: 9056
File ID: I1 052215-04
Analyst: ALS
Units: mg/L
Workgroup (AAB#): WG524861
Cal ID: IC1 - 21-APR-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4197097
Report generated 05/27/2015 09:49

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051435
Run Date: 05/22/2015
Sample ID: WG525057-04
Instrument ID: IC1
Run Time: 16:14
Method: 9056
File ID: I1 052215-16
Analyst: ALS
Units: mg/L
Workgroup (AAB#): WG524861
Cal ID: IC1 - 21-APR-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4197097
Report generated 05/27/2015 09:49

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051435
Run Date: 05/22/2015
Sample ID: WG525057-06
Instrument ID: IC1
Run Time: 19:29
Method: 9056
File ID: I1 052215-27
Analyst: ALS
Units: mg/L
Workgroup (AAB#): WG524861
Cal ID: IC1 - 21-APR-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4197097
Report generated 05/27/2015 09:49

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051435
Run Date: 05/22/2015
Sample ID: WG525057-01
Instrument ID: IC1
Run Time: 12:24
Method: 9056
File ID: I1 052215-03
Analyst: ALS
QC Key: DOD4
Workgroup (AAB#): WG524861
Cal ID: IC1 - 21-APR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.51	mg/L	5.87	6.08	10	
Nitrate		5.42	5.26	mg/L	2.37	2.98	10	
Nitrite		4.87	4.59	mg/L	2.90	5.76	10	
Sulfate		40.0	38.2	mg/L	7.50	4.52	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4197096
Report generated 05/27/2015 09:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051435
Run Date: 05/22/2015
Sample ID: WG525057-03
Instrument ID: IC1
Run Time: 15:56
Method: 9056
File ID: I1 052215-15
Analyst: ALS
QC Key: DOD4
Workgroup (AAB#): WG524861
Cal ID: IC1 - 21-APR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.52	mg/L	5.87	6.00	10	
Nitrate		5.42	5.26	mg/L	2.37	2.93	10	
Nitrite		4.87	4.66	mg/L	2.86	4.36	10	
Sulfate		40.0	38.1	mg/L	7.53	4.85	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4197096
Report generated 05/27/2015 09:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051435
Run Date: 05/22/2015
Sample ID: WG525057-05
Instrument ID: IC1
Run Time: 19:11
Method: 9056
File ID: I1 052215-26
Analyst: ALS
QC Key: DOD4
Workgroup (AAB#): WG524861
Cal ID: IC1 - 21-APR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.50	mg/L	5.88	6.28	10	
Nitrate		5.42	5.22	mg/L	2.39	3.66	10	
Nitrite		4.87	4.66	mg/L	2.86	4.36	10	
Sulfate		40.0	38.1	mg/L	7.51	4.63	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4197096
Report generated 05/27/2015 09:48

2.4.1.3 Sample Data

20 L15051435-01 1/5 (CL,NO2,NO3,SO4)

1,5 ALS

Sample Name:	**L15051435-01 1/5 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**20**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/22/2015 17:25**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

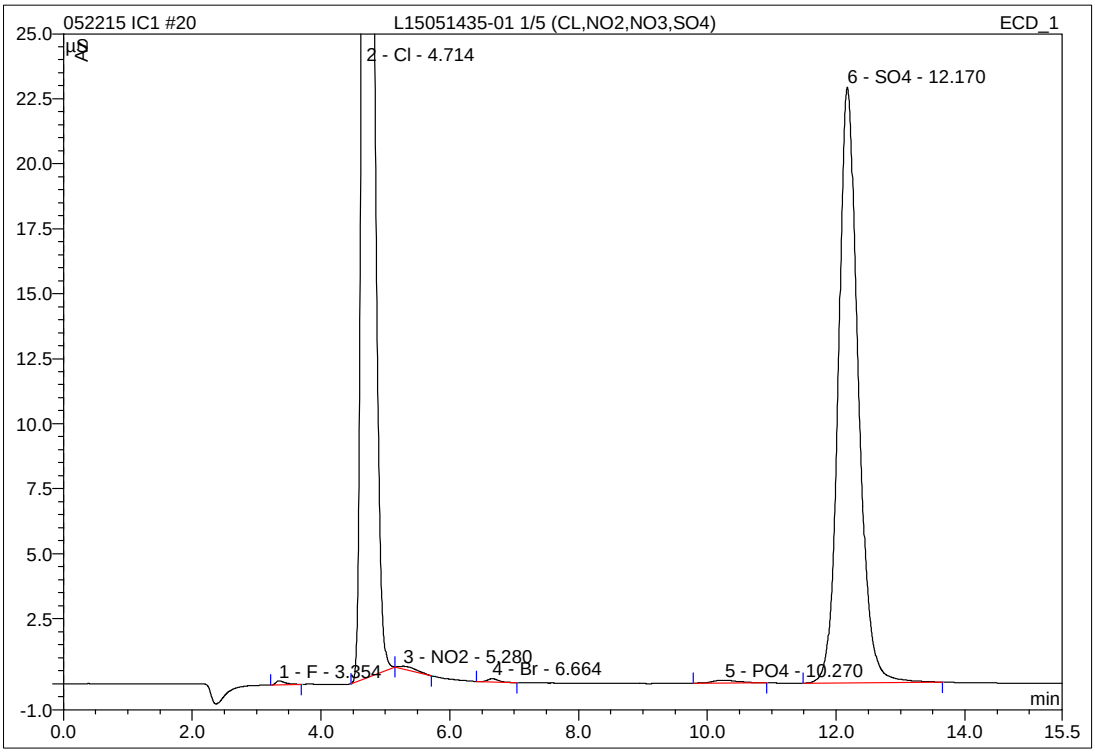

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.35	F	0.161	0.027	0.12	0.143	BMB
2	4.71	Cl	98.204	14.980	64.22	82.422	BMb
3	5.28	NO2	0.100	0.037	0.16	0.109	bMB
4	6.66	Br	0.125	0.025	0.11	0.348	BMB
5	10.27	PO4	0.114	0.055	0.23	n.a.	BMB
6	12.17	SO4	22.904	8.202	35.16	58.657	BMB
Total:			121.609	23.326	100.00	141.679	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

21 L15051435-01 1/20 (CL,NO2,NO3,SO4)

1,20 ALS

Sample Name:	**L15051435-01 1/20 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**21**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/22/2015 17:42**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

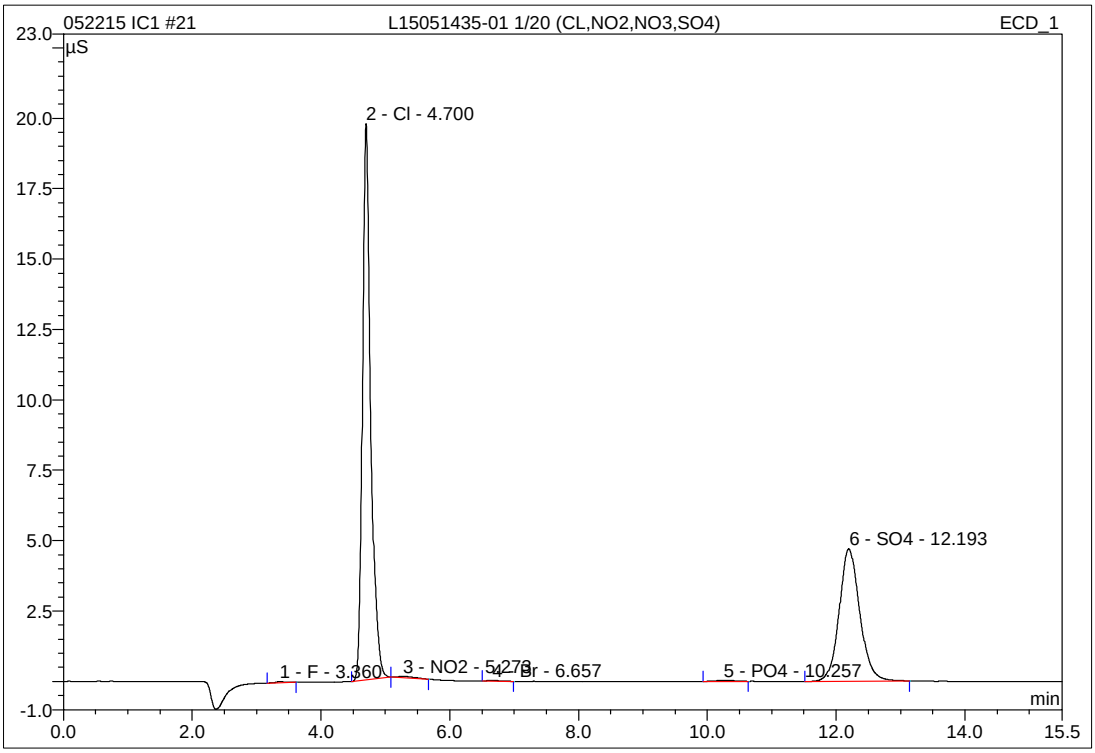

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.36	F	0.041	0.007	0.15	0.068	BMB
2	4.70	Cl	19.763	2.928	61.99	16.122	BMb
3	5.27	NO2	0.051	0.016	0.34	0.052	bMB
4	6.66	Br	0.035	0.007	0.16	0.100	BMB
5	10.26	PO4	0.043	0.015	0.32	n.a.	BMB
6	12.19	SO4	4.706	1.750	37.05	12.644	BMB
Total:			24.638	4.723	100.00	28.986	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

22 L15051435-03 1/10 (CL,NO2,NO3,SO4)

1,10 ALS

Sample Name:	**L15051435-03 1/10 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**22**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/22/2015 18:00**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

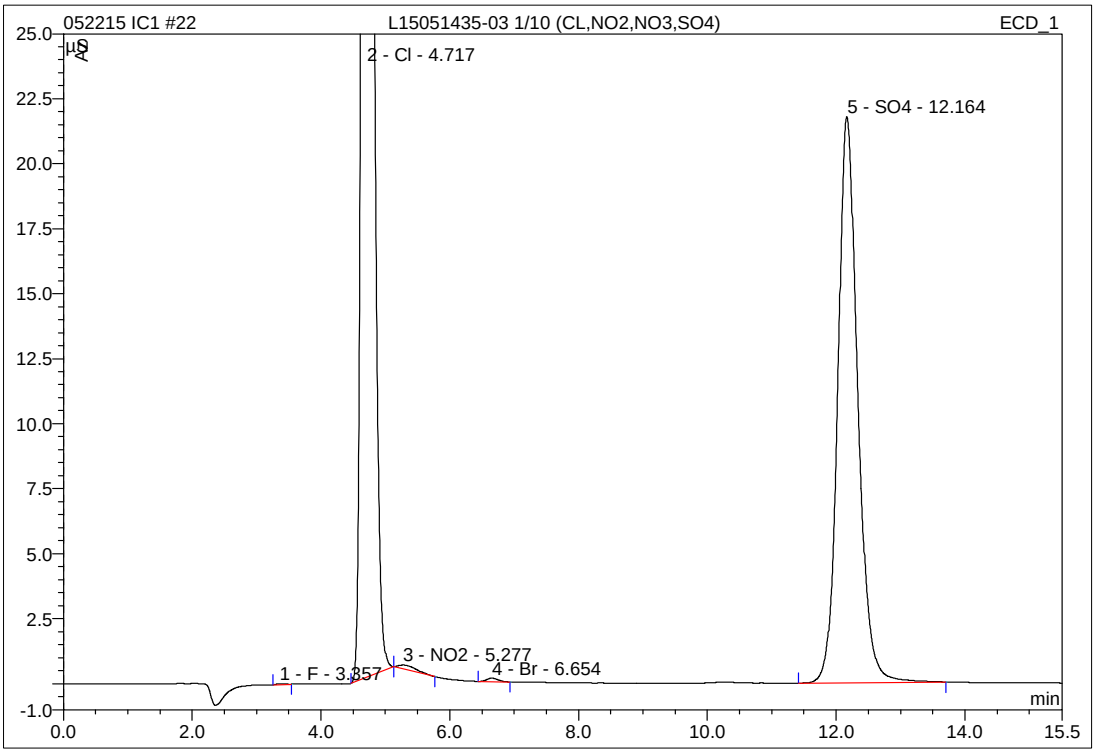

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.36	F	0.035	0.005	0.02	0.058	BMB
2	4.72	Cl	124.257	17.983	69.48	98.939	BMb
3	5.28	NO2	0.151	0.053	0.21	0.154	bMB
4	6.65	Br	0.137	0.028	0.11	0.386	BMB
5	12.16	SO4	21.782	7.814	30.19	55.889	BMB
Total:			146.362	25.882	100.00	155.425	

23 L15051435-03 1/50 (CL,NO2,NO3,SO4)

1,50 ALS

Sample Name:	**L15051435-03 1/50 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**23**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/22/2015 18:18**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

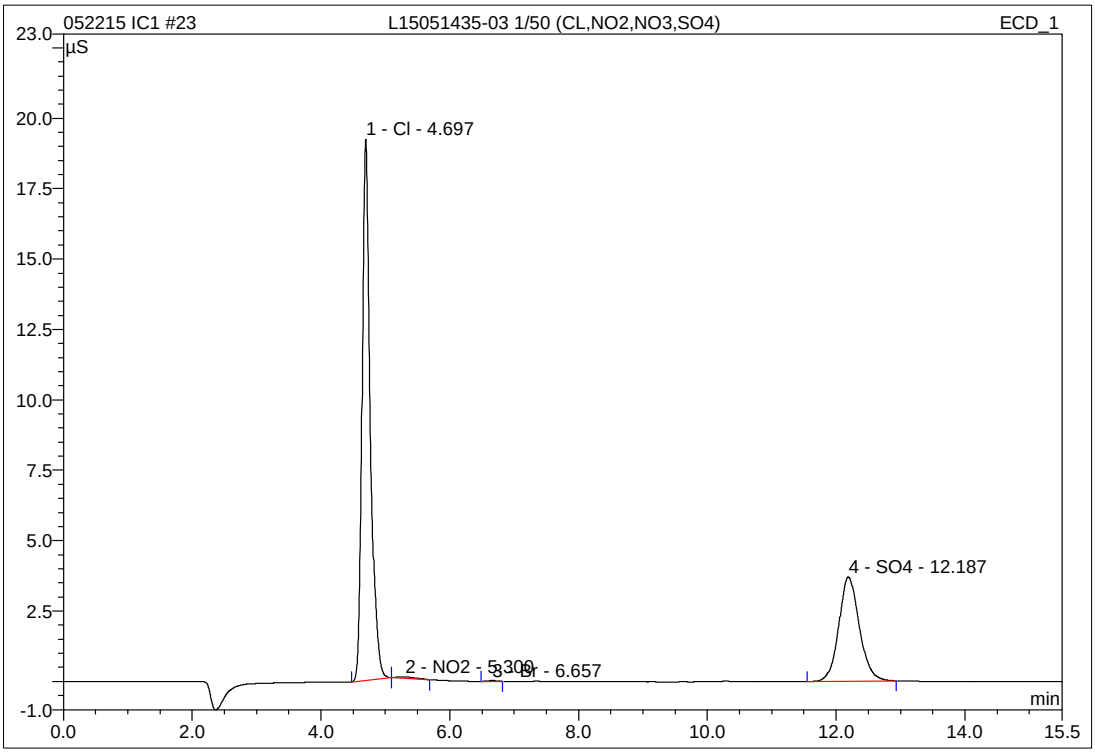

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	4.70	Cl	19.206	2.841	67.06	15.643	BMb
2	5.30	NO2	0.052	0.017	0.40	0.055	bMB
3	6.66	Br	0.028	0.004	0.10	0.055	BMB
4	12.19	SO4	3.704	1.374	32.44	9.967	BMB
Total:			22.990	4.236	100.00	25.720	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

2.4.1.4 Standards Data

3 WG520208-01 STD #6

1,1 AED STD69215

Sample Name:	**WG520208-01 STD #6**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/21/2015 14:29**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

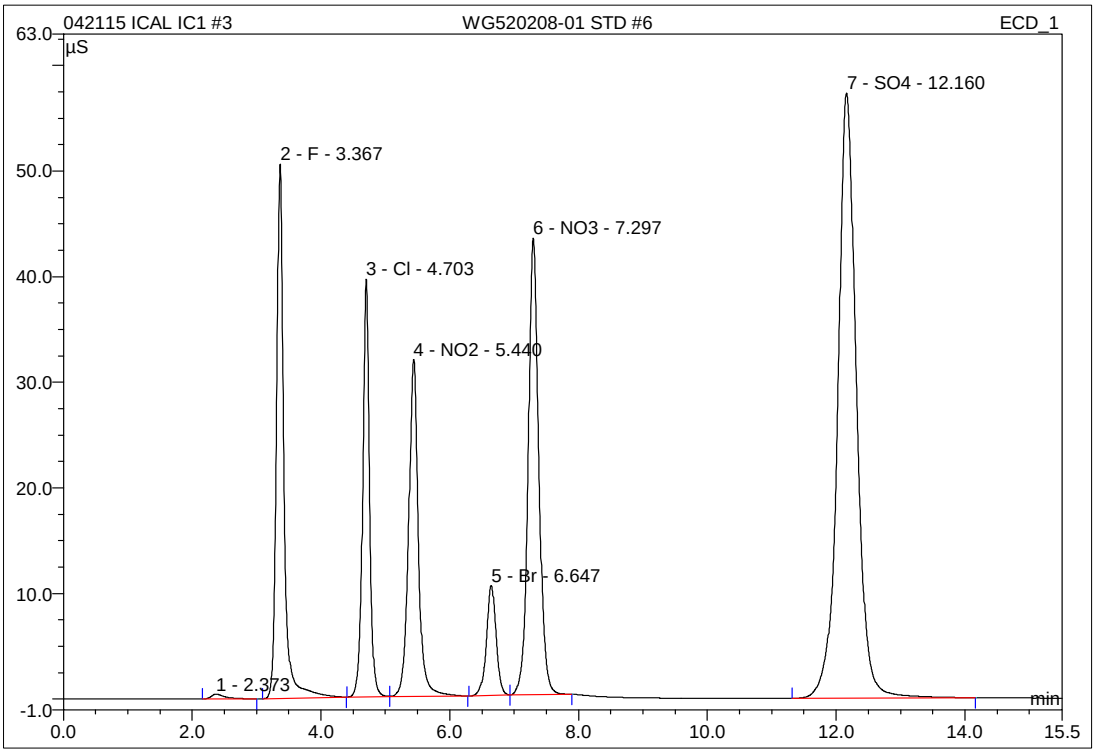

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.37	n.a.	0.448	0.111	0.24	n.a.	BMB
2	3.37	F	50.599	6.707	14.37	25.250	BMB
3	4.70	Cl	39.565	4.899	10.50	26.967	BMB
4	5.44	NO2	31.907	5.591	11.98	15.271	bMB
5	6.65	Br	10.441	1.816	3.89	25.554	BMB
6	7.30	NO3	43.238	8.291	17.76	19.067	BMB
7	12.16	SO4	57.303	19.265	41.27	137.537	BMB
Total:			233.501	46.680	100.00	249.646	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

4 WG520208-02 STD #5

1,1 AED STD69215

Sample Name:	**WG520208-02 STD #5**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/21/2015 14:47**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

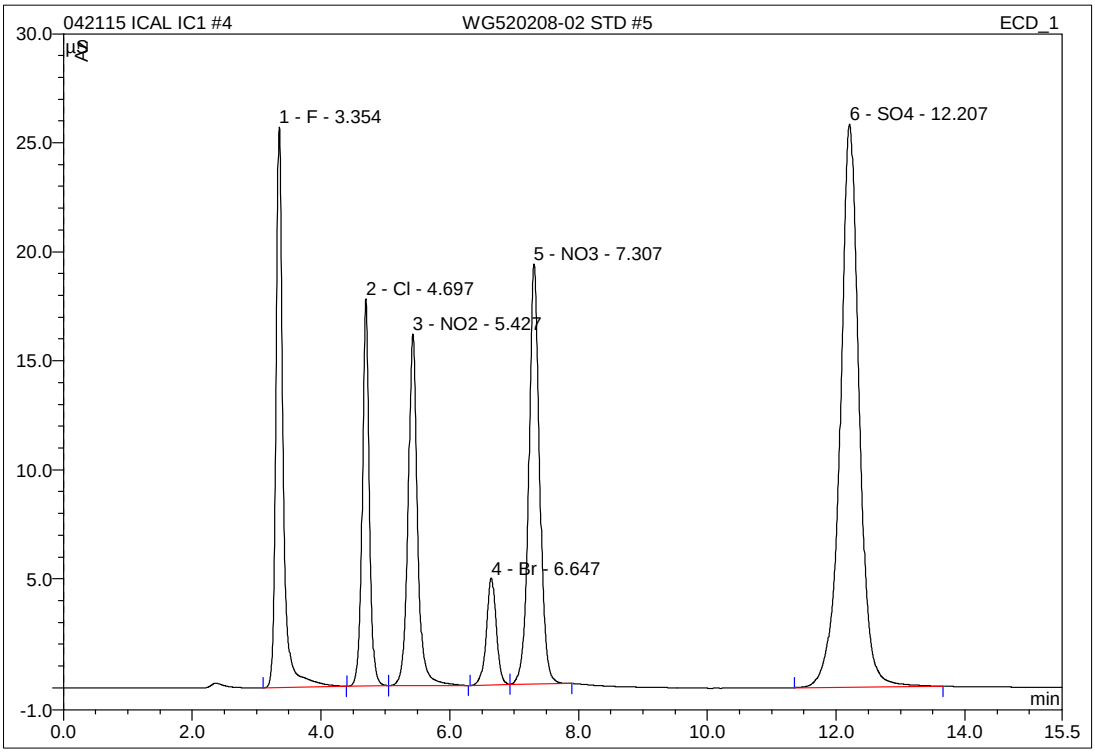

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.35	F	25.707	3.262	15.05	12.300	BMB
2	4.70	Cl	17.752	2.241	10.34	12.346	BMB
3	5.43	NO2	16.111	2.740	12.64	7.487	bMB
4	6.65	Br	4.905	0.868	4.00	12.206	BMB
5	7.31	NO3	19.267	3.763	17.36	8.658	BMB
6	12.21	SO4	25.818	8.804	40.61	62.945	BMB
Total:			109.561	21.676	100.00	115.941	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

4 WG520208-02 STD #5

1,1 AED STD69215

Sample Name:	**WG520208-02 STD #5**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/21/2015 14:47**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

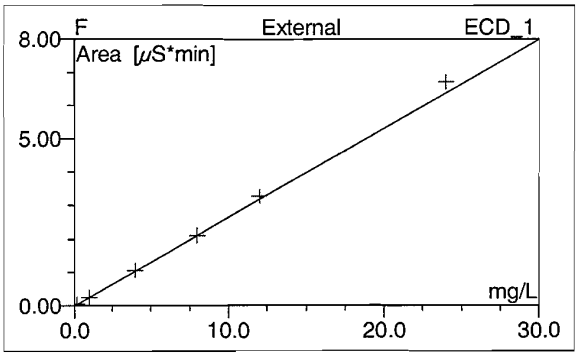

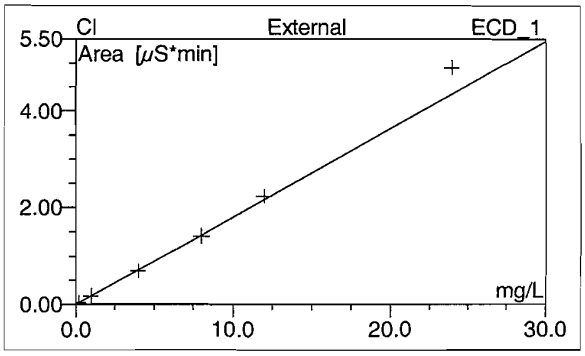

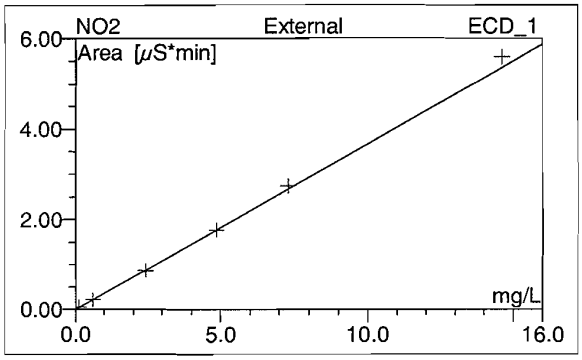

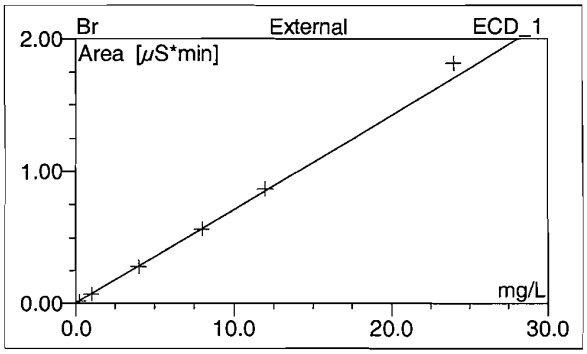

No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	3.35	F	YYLOff	6	99.9011	-0.0108	0.2661	0.0000
2	4.70	Cl	YYLOff	6	99.7641	-0.0031	0.1818	0.0000
3	5.43	NO2	YYLOff	6	99.9396	-0.0032	0.3664	0.0000
4	6.65	Br	YYLOff	6	99.9032	0.0004	0.0710	0.0000
5	7.31	NO3	YYLOff	6	99.6701	-0.0041	0.4350	0.0000
6	12.21	SO4	YYLOff	6	99.6529	-0.0238	0.1402	0.0000
Average:					99.8052	-0.0075	0.2434	0.0000

IC/Calibration(Batch)

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

4 WG520208-02 STD #5

1,1 AED STD69215

Sample Name:	**WG520208-02 STD #5**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/21/2015 14:47**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

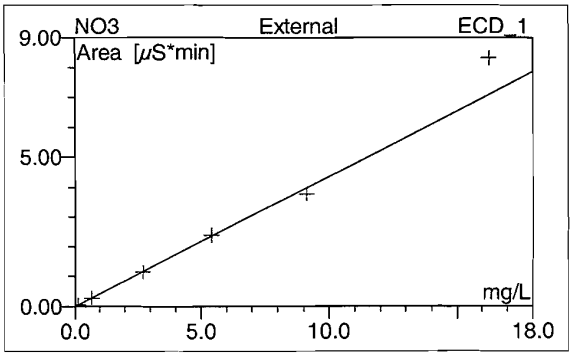

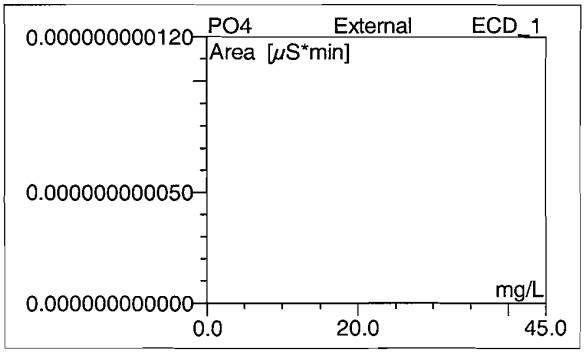

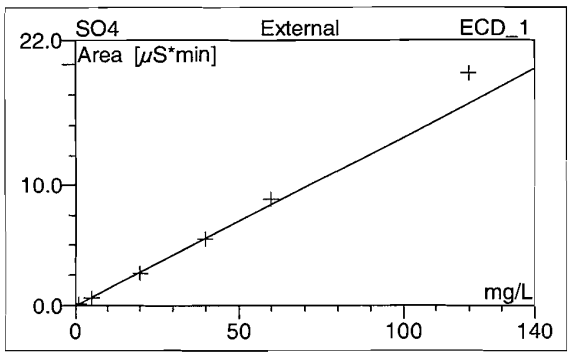

No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	3.35	F	YYLOff	6	99.9011	-0.0108	0.2661	0.0000
2	4.70	Cl	YYLOff	6	99.7641	-0.0031	0.1818	0.0000
3	5.43	NO2	YYLOff	6	99.9396	-0.0032	0.3664	0.0000
4	6.65	Br	YYLOff	6	99.9032	0.0004	0.0710	0.0000
5	7.31	NO3	YYLOff	6	99.6701	-0.0041	0.4350	0.0000
6	12.21	SO4	YYLOff	6	99.6529	-0.0238	0.1402	0.0000
Average:					99.8052	-0.0075	0.2434	0.0000

5 WG520208-03 STD #4

1,1 AED STD69215

Sample Name:	**WG520208-03 STD #4**	*Injection Volume:*	**20.0**
Vial Number:	**13**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/21/2015 15:05**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

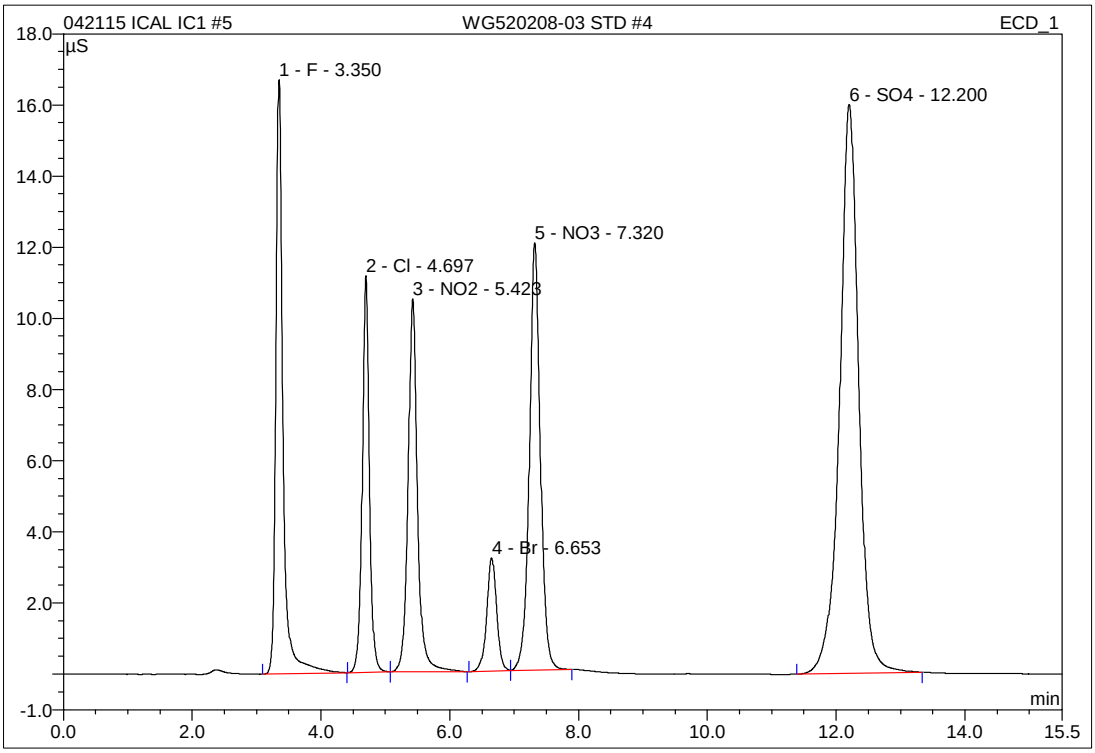

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.35	F	16.707	2.106	15.29	7.957	BMB
2	4.70	Cl	11.141	1.430	10.38	7.884	BMB
3	5.42	NO2	10.491	1.775	12.89	4.855	BMB
4	6.65	Br	3.173	0.567	4.12	7.978	BMB
5	7.32	NO3	12.011	2.382	17.30	5.485	BMB
6	12.20	SO4	15.994	5.511	40.02	39.468	BMB
Total:			69.517	13.772	100.00	73.626	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

6 WG520208-04 STD #3

1,1 AED STD69215

Sample Name:	**WG520208-04 STD #3**	*Injection Volume:*	**20.0**
Vial Number:	**14**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/21/2015 15:23**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

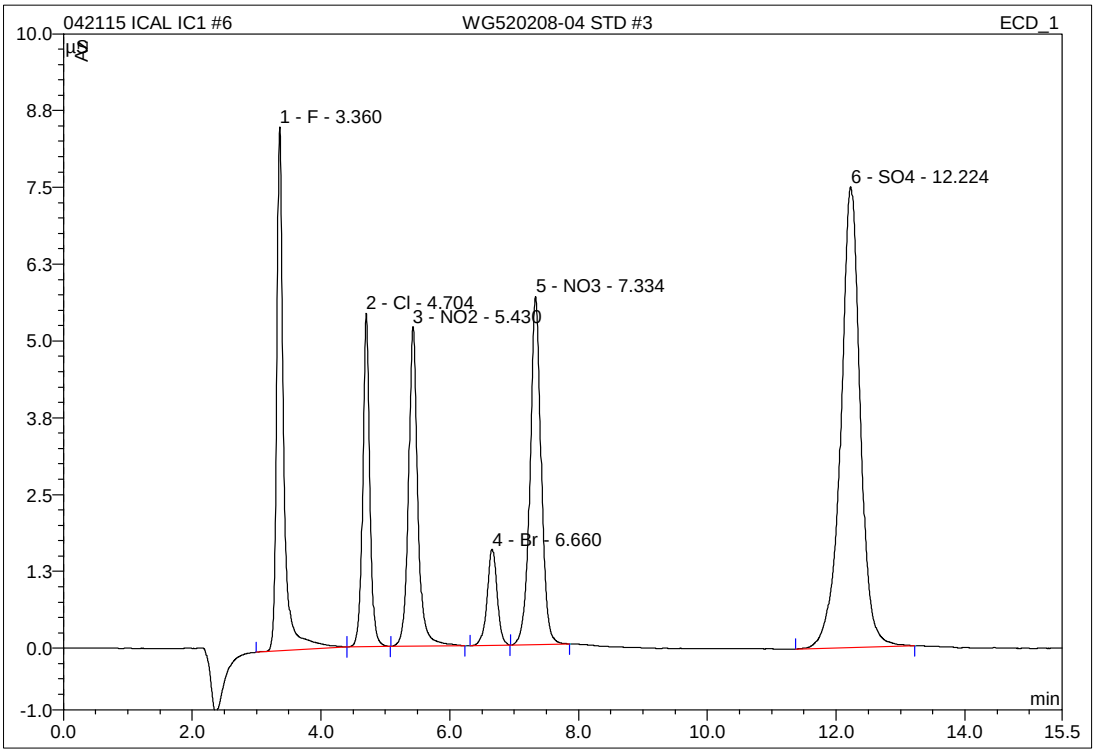

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.36	F	8.528	1.055	15.84	4.008	BMB
2	4.70	Cl	5.426	0.691	10.37	3.820	bMB
3	5.43	NO2	5.202	0.872	13.08	2.389	BMB
4	6.66	Br	1.564	0.279	4.19	3.928	BMB
5	7.33	NO3	5.667	1.138	17.08	2.626	BMB
6	12.22	SO4	7.499	2.628	39.43	18.906	BMB
Total:			33.887	6.664	100.00	35.676	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

7 WG520208-05 STD #2

1,1 AED STD69215

Sample Name:	**WG520208-05 STD #2**	*Injection Volume:*	**20.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/21/2015 15:40**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

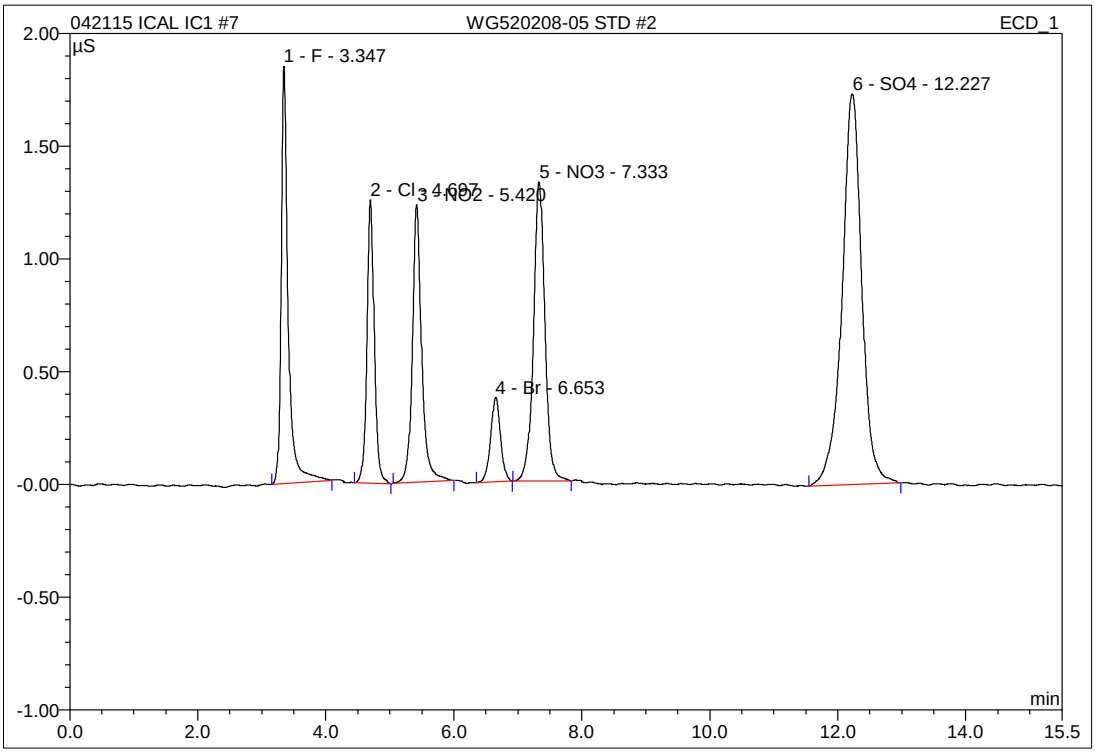

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.35	F	1.853	0.237	15.05	0.933	BMB
2	4.70	Cl	1.258	0.167	10.57	0.935	BMB
3	5.42	NO2	1.232	0.210	13.29	0.581	BMB
4	6.65	Br	0.373	0.067	4.26	0.941	BMB
5	7.33	NO3	1.327	0.276	17.47	0.643	BMB
6	12.23	SO4	1.732	0.621	39.36	4.598	BMB
Total:			7.774	1.578	100.00	8.631	

8 WG520208-06 STD #1

1,1 AED STD69215

Sample Name:	**WG520208-06 STD #1**	*Injection Volume:*	**20.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/21/2015 15:58**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

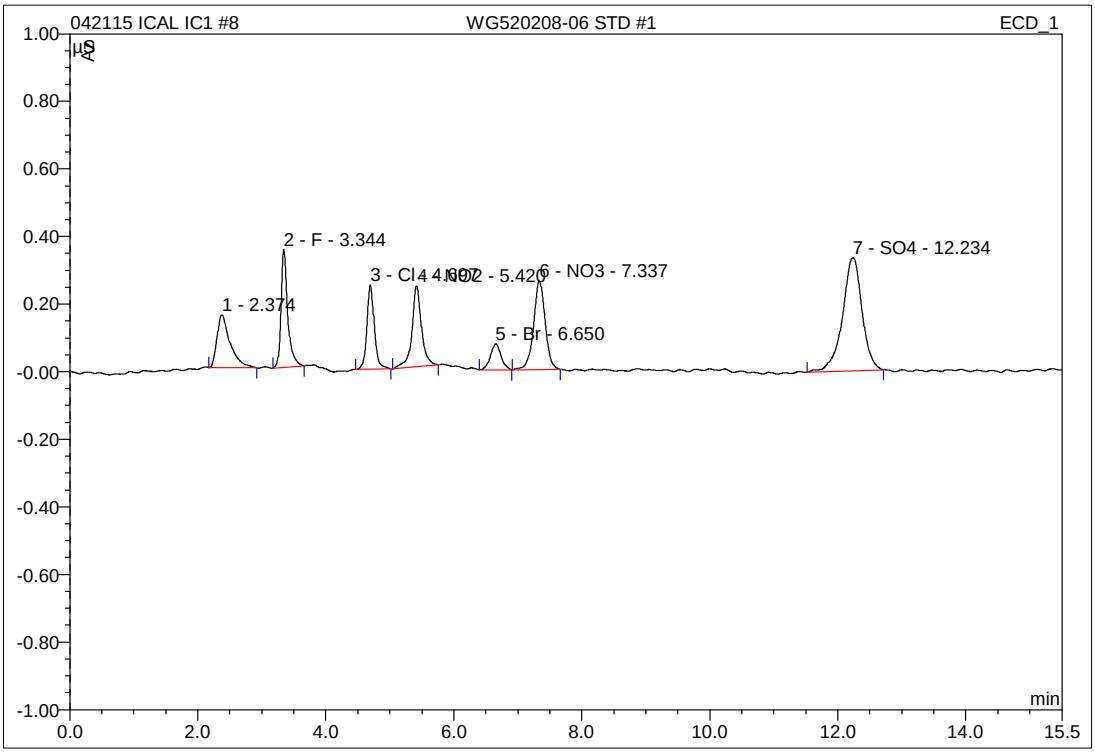

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.37	n.a.	0.156	0.037	10.80	n.a.	BMB
2	3.34	F	0.349	0.043	12.46	0.202	BMB
3	4.70	Cl	0.250	0.034	9.80	0.203	BMB
4	5.42	NO2	0.239	0.042	12.13	0.123	BMB
5	6.65	Br	0.077	0.015	4.29	0.203	BMB
6	7.34	NO3	0.262	0.055	16.10	0.137	BMB
7	12.23	SO4	0.334	0.119	34.44	1.016	BMB
Total:			1.667	0.345	100.00	1.884	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

9 WG520208-07 ALT STD

1,1 AED STD69216

Sample Name:	**WG520208-07 ALT STD**	*Injection Volume:*	**20.0**
Vial Number:	**17**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/21/2015 16:16**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

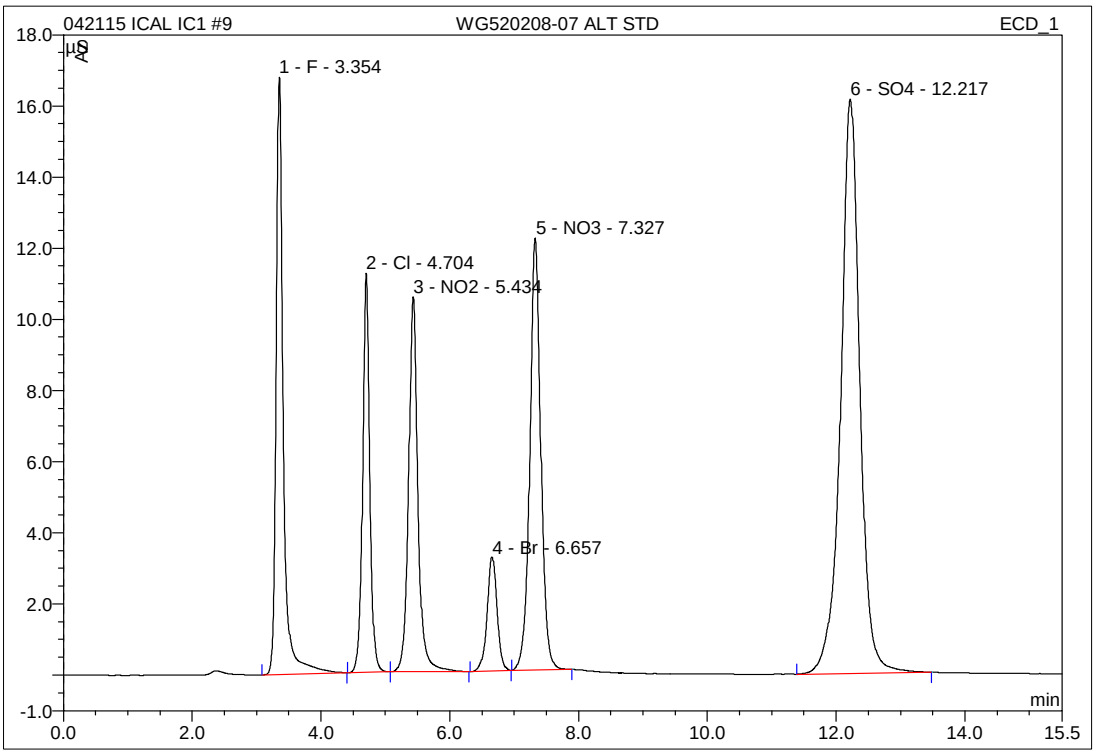

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.35	F	16.796	2.124	15.30	8.023	BMB
2	4.70	Cl	11.218	1.439	10.36	7.932	BMB
3	5.43	NO2	10.544	1.778	12.81	4.863	BMB
4	6.66	Br	3.210	0.573	4.13	8.062	BMB
5	7.33	NO3	12.140	2.400	17.29	5.526	BMB
6	12.22	SO4	16.146	5.570	40.12	39.884	BMB
Total:			70.055	13.884	100.00	74.290	

9 WG520208-07 ALT STD

1,1 AED STD69216

Sample Name:	**WG520208-07 ALT STD**	*Injection Volume:*	**20.0**
Vial Number:	**17**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/21/2015 16:16**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG520208-07 ALT S	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	8.0226	0.28	PASS
Cl	8.00	7.9321	-0.85	PASS
NO2-N	4.8714	4.8631	-0.17	PASS
Br	8.00	8.0623	0.78	PASS
NO3-N	5.4216	5.5263	1.93	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	39.8839	-0.29	PASS

3 WG525057-01 ANION CCV

1,1 ALS STD69215 (_____psi @___:___)

Sample Name:	**WG525057-01 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/22/2015 12:24**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

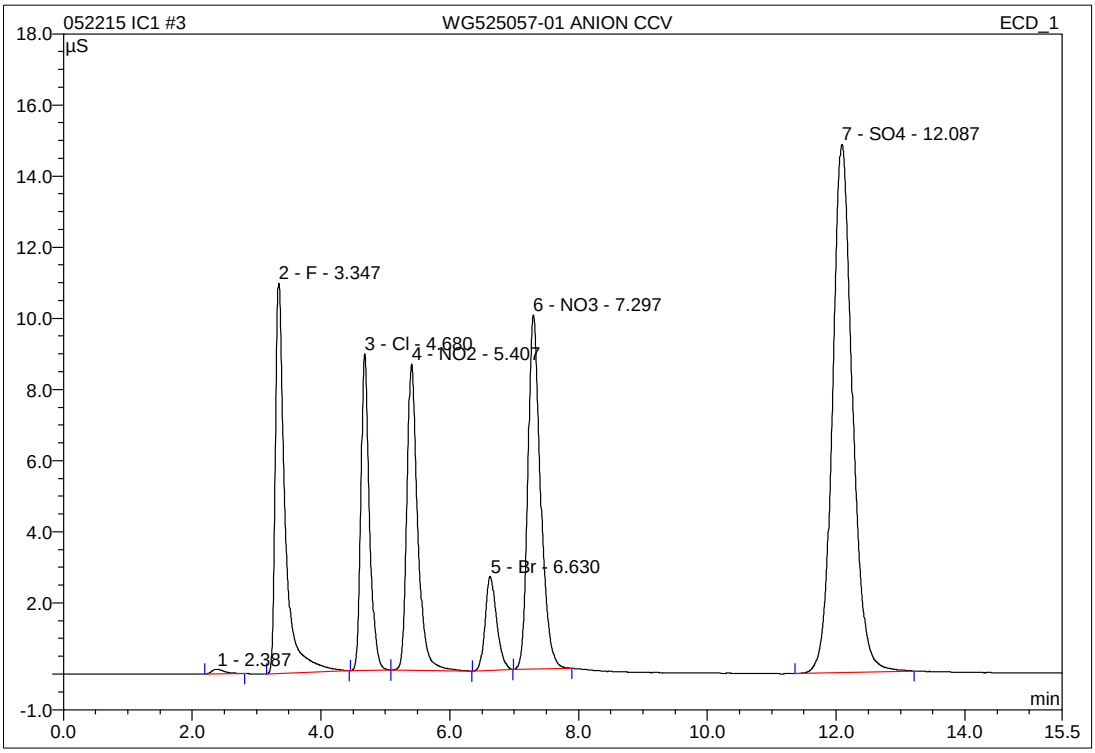

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.39	n.a.	0.126	0.030	0.23	n.a.	BMB
2	3.35	F	10.970	1.925	14.63	7.275	BMB
3	4.68	Cl	8.901	1.363	10.36	7.514	BMb
4	5.41	NO2	8.603	1.679	12.76	4.591	bMB
5	6.63	Br	2.644	0.547	4.15	7.687	BMB
6	7.30	NO3	9.962	2.284	17.36	5.260	BMB
7	12.09	SO4	14.849	5.332	40.52	38.191	BMB
Total:			56.055	13.159	100.00	70.519	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

3 WG525057-01 ANION CCV

1,1 ALS STD69215 (_____psi @___:___)

Sample Name:	**WG525057-01 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/22/2015 12:24**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG525057-01 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	7.2752	-9.06	PASS
Cl	8.00	7.5135	-6.08	PASS
NO2-N	4.8714	4.5915	-5.75	PASS
Br	8.00	7.6871	-3.91	PASS
NO3-N	5.4216	5.2600	-2.98	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	38.1913	-4.52	PASS

15 WG525057-03 ANION CCV

1,1 ALS STD69215

Sample Name:	**WG525057-03 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/22/2015 15:56**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

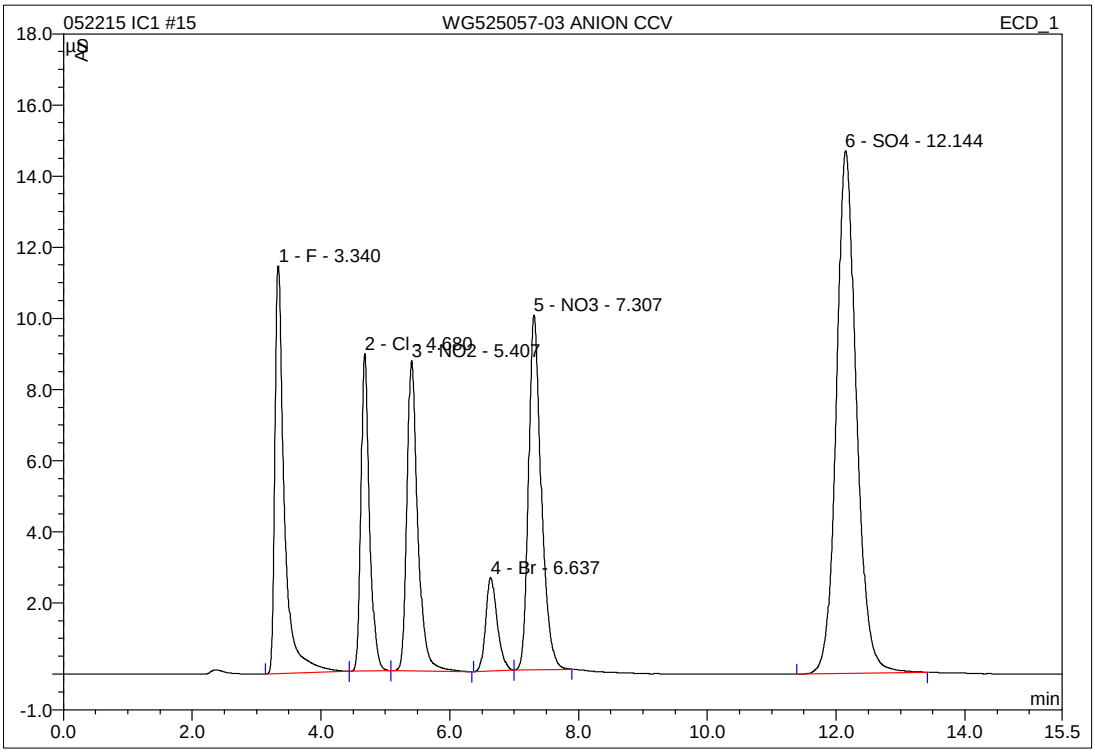

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.34	F	11.456	1.937	14.73	7.322	BMB
2	4.68	Cl	8.928	1.364	10.37	7.520	BMb
3	5.41	NO2	8.720	1.704	12.96	4.659	bMB
4	6.64	Br	2.632	0.545	4.15	7.671	BMB
5	7.31	NO3	9.968	2.285	17.38	5.263	BMB
6	12.14	SO4	14.690	5.314	40.41	38.061	BMB
Total:			56.394	13.149	100.00	70.496	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

15 WG525057-03 ANION CCV

1,1 ALS STD69215

Sample Name:	**WG525057-03 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/22/2015 15:56**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG525057-03 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	7.3224	-8.47	PASS
Cl	8.00	7.5197	-6.00	PASS
NO2-N	4.8714	4.6590	-4.36	PASS
Br	8.00	7.6711	-4.11	PASS
NO3-N	5.4216	5.2625	-2.93	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	38.0609	-4.85	PASS

26 WG525057-05 ANION CCV

1,1 ALS STD69215

Sample Name:	**WG525057-05 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**27**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/22/2015 19:11**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

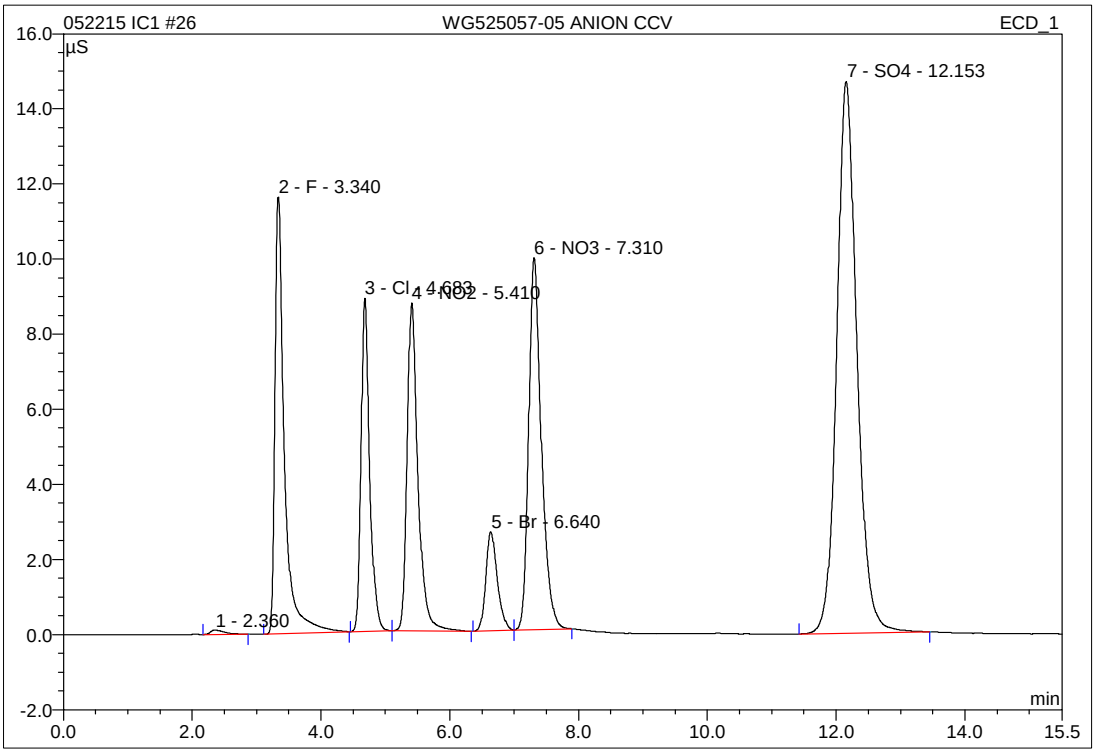

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.36	n.a.	0.119	0.030	0.23	n.a.	BMB
2	3.34	F	11.639	1.952	14.80	7.376	BMB
3	4.68	Cl	8.871	1.360	10.31	7.498	BMB
4	5.41	NO2	8.729	1.704	12.92	4.659	BMB
5	6.64	Br	2.637	0.545	4.13	7.661	BMB
6	7.31	NO3	9.902	2.268	17.20	5.223	BMB
7	12.15	SO4	14.689	5.326	40.40	38.148	BMB
Total:			56.586	13.184	100.00	70.565	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

26 WG525057-05 ANION CCV

1,1 ALS STD69215

Sample Name:	**WG525057-05 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**27**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/22/2015 19:11**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG525057-05 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	7.3763	-7.80	PASS
Cl	8.00	7.4983	-6.27	PASS
NO2-N	4.8714	4.6592	-4.36	PASS
Br	8.00	7.6608	-4.24	PASS
NO3-N	5.4216	5.2227	-3.67	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	38.1481	-4.63	PASS

4 WG525057-02 ANION CCB

1,1 ALS

Sample Name:	**WG525057-02 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/22/2015 12:41**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

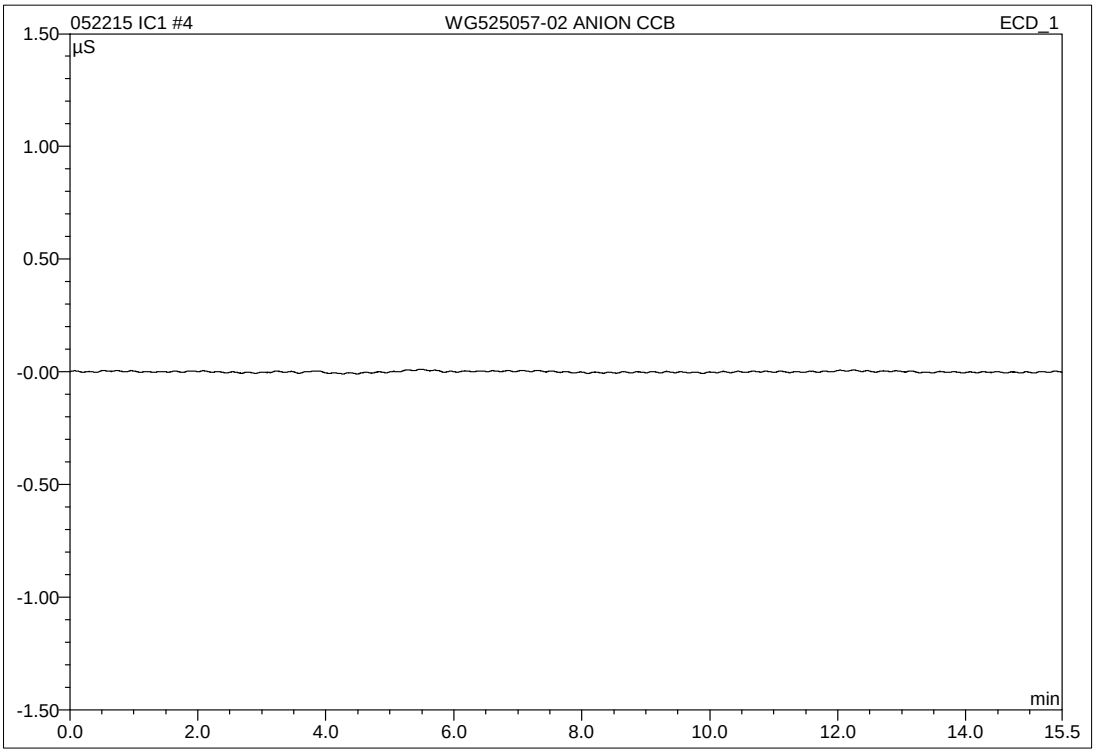

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

16 WG525057-04 ANION CCB

1,1 ALS

Sample Name:	**WG525057-04 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**16**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/22/2015 16:14**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

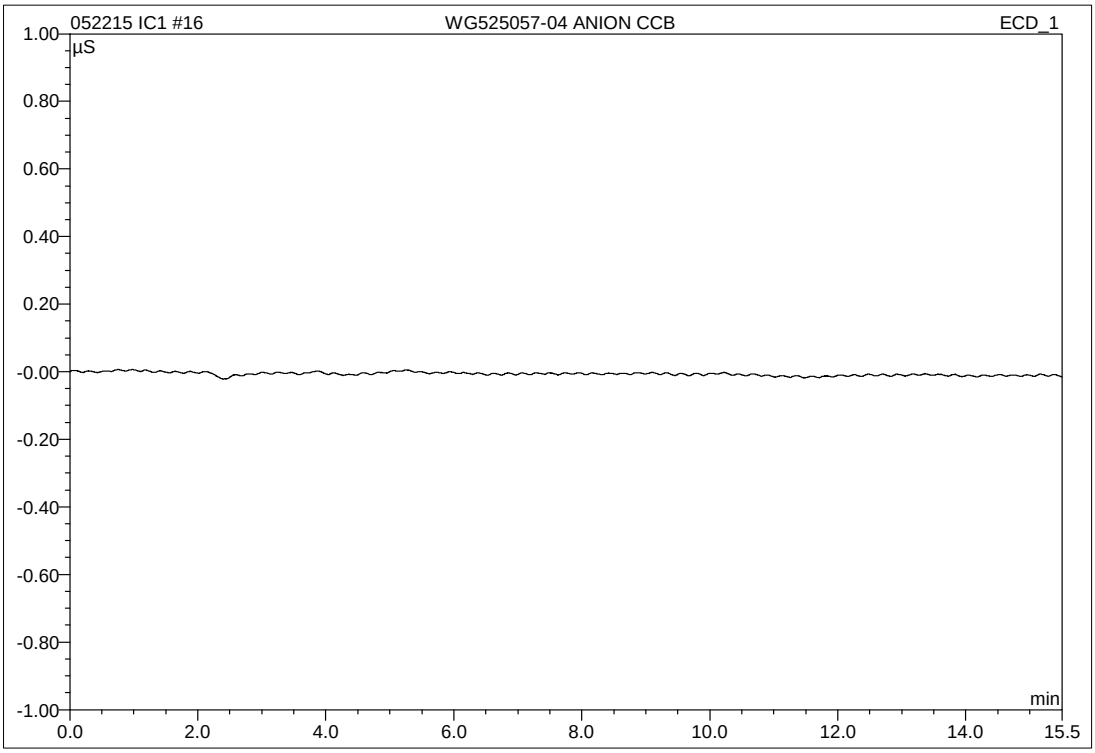

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

27 WG525057-06 ANION CCB

1,1 ALS

Sample Name:	**WG525057-06 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**28**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/22/2015 19:29**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

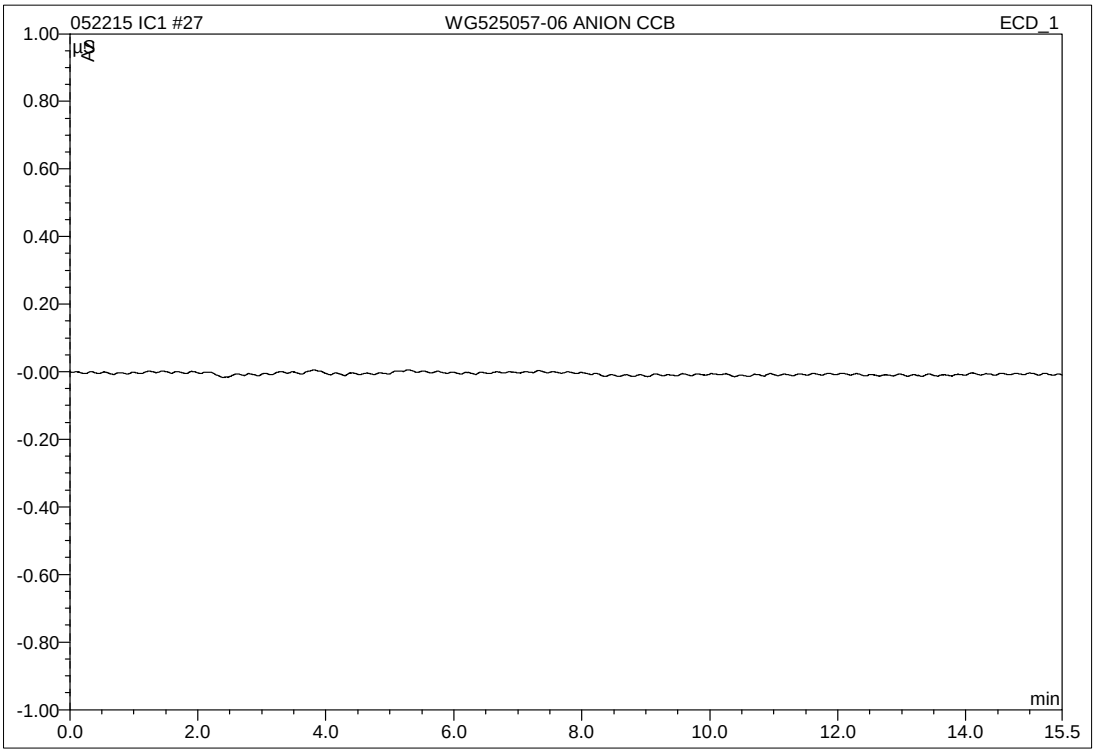

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

RETENTION TIME WINDOWS

Lab Name: MICROBAC Laboratories, Inc.

Instrument ID: IC1

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	6/5/2013	6/5/2013	6/6/2013
File #	WG432976-05	WG432976-07	WG433275-01
Time	16:16	18:25	16:50

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.41	3.40	3.41	0.017
Cl	4.87	4.87	4.88	0.017
NO2-N	5.67	5.66	5.67	0.017
Br	7.01	6.99	7.02	0.046
NO3-N	7.76	7.74	7.77	0.046
SO4	13.35	13.35	13.35	0.000

Instrument ID: IC2

IC Column: AS14A-4mm

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	3/2/2015	3/4/2015	3/5/2015
File #	WG514023-02	WG514341-02	WG514431-02
Time	23:15	18:47	17:41

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.33	3.33	3.32	0.017
Cl	4.75	4.78	4.76	0.043
NO2-N	5.54	5.59	5.56	0.082
Br	6.86	6.98	6.93	0.180
NO3-N	7.59	7.73	7.67	0.222
SO4	12.42	12.38	12.34	0.116

Instrument ID: IC3

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	5/20/2014	5/21/2014	5/21/2014
File #	WG476910-05	WG476934-01	WG476934-03
Time	12:41	9:54	13:59

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.41	3.41	3.41	0.000
Cl	5.11	5.09	5.07	0.050
NO2-N	6.14	6.11	6.07	0.101
Br	7.90	7.84	7.75	0.220
NO3-N	8.94	8.86	8.76	0.271
SO4	13.35	13.39	13.42	0.101

2.4.1.5 Raw QC Data

5 WG524861-01 ANION BLANK

1,1 ALS

Sample Name:	**WG524861-01 ANION BLANK**	*Injection Volume:*	**20.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/22/2015 12:59**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

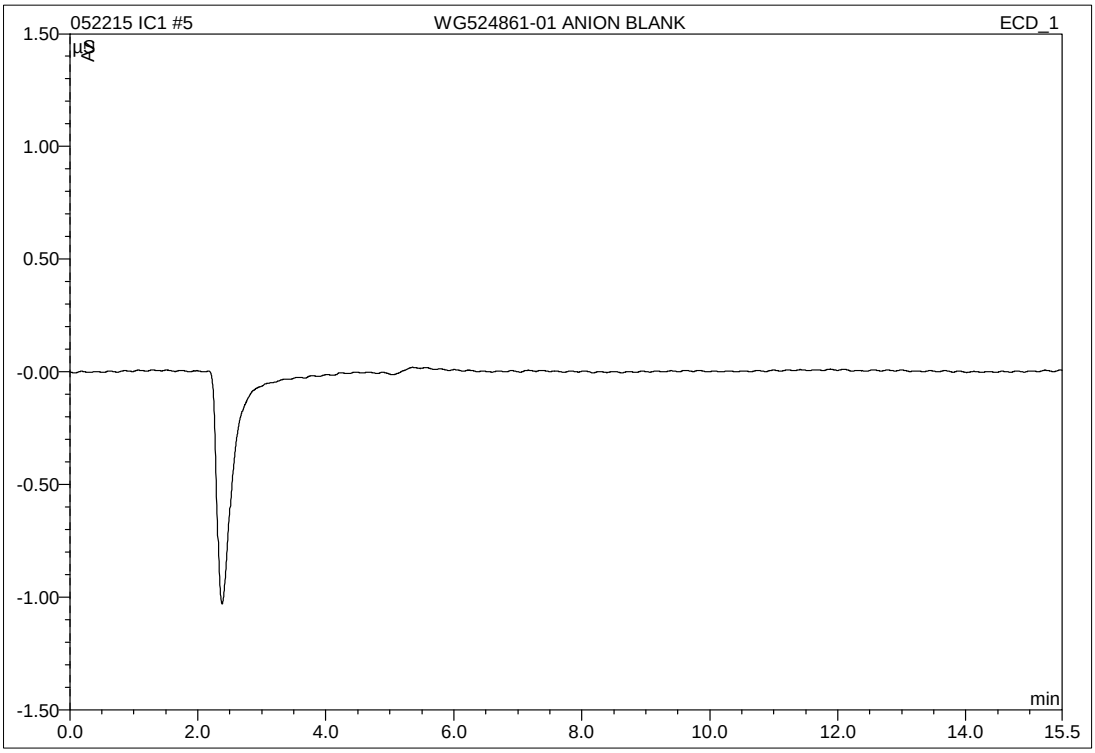

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

6 WG524861-02 ANION LCS

1,1 ALS

Sample Name:	**WG524861-02 ANION LCS**	*Injection Volume:*	**20.0**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/22/2015 13:17**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

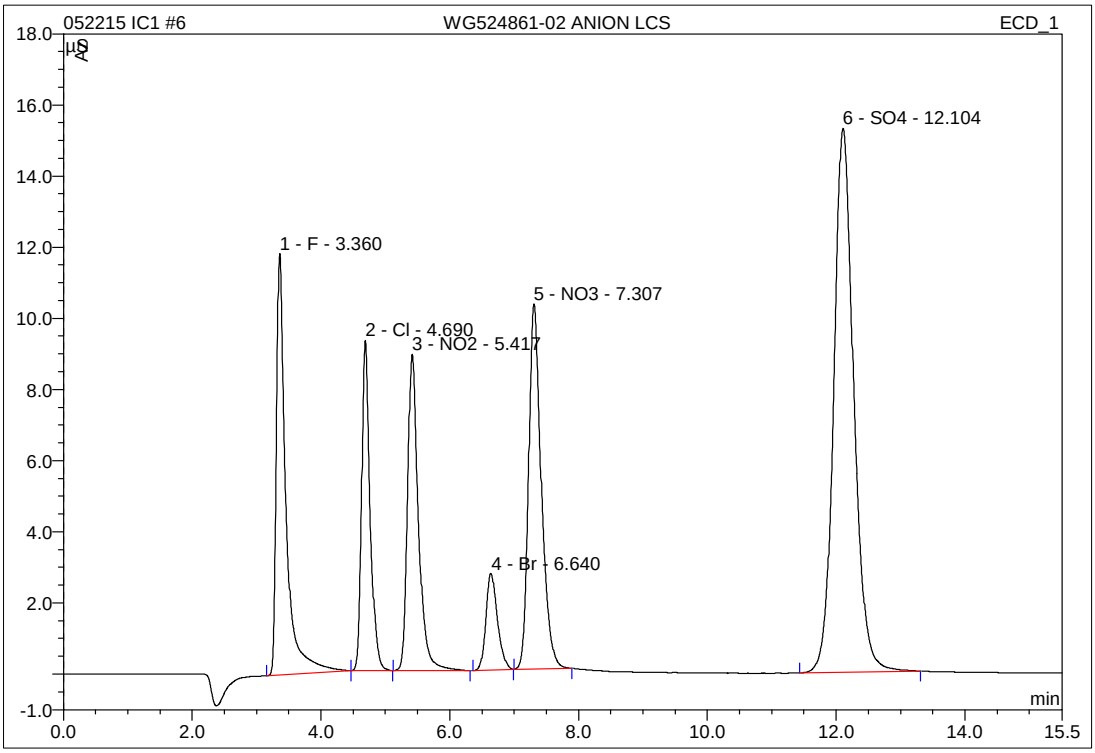

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.36	F	11.844	2.031	14.96	7.676	BMB
2	4.69	Cl	9.284	1.406	10.36	7.752	bMB
3	5.42	NO2	8.889	1.745	12.85	4.772	BMB
4	6.64	Br	2.722	0.562	4.14	7.900	BMB
5	7.31	NO3	10.255	2.344	17.26	5.398	BMB
6	12.10	SO4	15.291	5.491	40.44	39.321	BMB
Total:			58.286	13.579	100.00	72.818	

2.4.2 Alkalinity Data

2.4.2.1 Summary Data

Microbac

Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051435-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW08-052115	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	05/28/2015 09:47
Workgroup #:	WG525327	**Analyst:**	DCM	**Run Date:**	05/28/2015 10:01
Collect Date:	05/21/2015 13:55	**Dilution:**	2	**File ID:**	S2150528002.029
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	429		80.0	40.0	20.0

Certificate of Analysis

Sample #:	L15051435-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW22-052115	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	05/28/2015 09:47
Workgroup #:	WG525327	**Analyst:**	DCM	**Run Date:**	05/28/2015 10:02
Collect Date:	05/21/2015 15:10	**Dilution:**	2	**File ID:**	S2150528002.030
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	346		80.0	40.0	20.0

2.4.2.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809
Value of b from plot:	0.0004135
Absorbance of unknown from quantitation report (y):	0.31
Calculated concentration (x):	0.03964483
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	0.0396 mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796
Value of B from plot:	318.9056
Value of C from plot:	-2.2712
Absorbance of unknown from quantitation report (x):	0.1583
Calculated concentration (y):	50.7495108
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	50.75 mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 28-MAY-2015
Analyst: DCM
Analyst: NA
Method: ALK
Instrument: SC2
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG525233 WG525327 WG525332

Calibration/Linearity	5/25/2015
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DIH
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
28-MAY-2015

Secondary Reviewer:
29-MAY-2015

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-29-2015 09:39:01

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 310.2 AAB#: WG525327

Login Number: L15051435

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW08-052115	01	05/21/15					05/28/2015	6.8	14		05/28/15	6.8	14	
50WW22-052115	03	05/21/15					05/28/2015	6.8	14		05/28/15	6.8	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4203957
Report generated 05/28/2015 13:45

METHOD BLANK SUMMARY

Login Number: L15051435
Blank File ID: S2150528002.012
Prep Date: 05/28/15 09:50
Analyzed Date: 05/28/15 09:50
Analyst: DCM

Work Group: WG525327
Blank Sample ID: WG525327-01
Instrument ID: SMARTCHEM2
Method: 310.2

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG525327-02	S2150528002.013	05/28/15 09:51	01
LCS2	WG525327-03	S2150528002.014	05/28/15 09:51	01
50WW08-052115	L15051435-01	S2150528002.029	05/28/15 10:01	DL01
50WW22-052115	L15051435-03	S2150528002.030	05/28/15 10:02	DL01
DUP	WG525327-05	S2150528002.035	05/28/15 10:05	01

Report Name: BLANK_SUMMARY
PDF File ID: 4203958
Report generated 05/28/2015 13:45

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051435 Prep Date: 05/28/15 09:50 Sample ID: WG525327-01
Instrument ID: SMARTCHEM2 Run Date: 05/28/15 09:50 Prep Method: 310.2
File ID: S2150528002.012 Analyst: DCM Method: 310.2
Workgroup (AAB#): WG525327 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-28-MAY-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Alkalinity, Total (as CaCO3)	10.0	40.0	-14.2	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4203959
28-MAY-2015 13:45

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051435 Analyst: DCM Prep Method: 310.2
Instrument ID: SMARTCHEM2 Matrix: Water Method: 310.2
Workgroup (AAB#): WG525327 Units: mg/L
QC Key: DOD4 Lot #: STD70072

Sample ID: WG525327-02 LCS File ID: S2150528002.013 Run Date: 05/28/2015 09:51
Sample ID: WG525327-03 LCS2 File ID: S2150528002.014 Run Date: 05/28/2015 09:51

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Alkalinity, Total (as CaCO3)	200	204	102	200	198	99.2	2.69	85 - 115	20	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4203960
Report generated: 05/28/2015 13:45

2.4.2.3 Raw Data

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

WORKGROUP: WG525233

525327
525332

Daily Check

- [x] Lamp On
- [x] Probe Rinse Full
- [x] DI Water > ½ Full
- [x] Wash Solution > ½ Full
- [ ] NO3 Reagent bottle connected / purged
- [ ] NO3 pH adj to pH 5-9

Syringe filter lot # _____

- [x] WBL Run
- [x] Reagents Full
- [x] Dilution H_2O Full
- [x] Waste Container Check

1) **Workgroup** _____
Plan # 20150528001
2) **Workgroup** _____
Plan # 20150528002
3) **Workgroup** _____
Plan # 20150528003

Instrument: SC1 [ ] SC2 [x]

	Analyte	1	2	3
		Alk		
		Dilution		
SC Prepared Curve				
Position				
1-1	ICV			
1-2	Blk			
1-3	LCS			
1-4	LCSDUP			
1-5	05-1605-12			
1-6	05-1605-12			
1-7	05-1310-01	1/2		
1-8	02	1/2		
1-9	05-1425-01	1/2		
1-10	02	1/10		
1-11	05-147202	1/4		color
1-12	03	1/4		color
1-13	05	1/4		color
1-14	06	1/4		color
1-15	08	1/4		color
1-16	09	1/4		color
1-17	05-1303-01	1/2		
1-18	03			
1-19	05	1/2		
1-20	07			
1-21	09			
1-22	11			
2-1	05-1393-02			BC
2-2	04	1/2		BC
2-3	MS 06	1/2		BC

Position	Analyte	1	2	3
2-4	MSD 05-1393-08	1/2		BC
2-5	DUP 05-1393-04	1/2		
2-6	05-1425-02	1/2		1 ICV
2-7	Blk			2
2-8	LCS			3
2-9	LCSDUP			4
2-10	05-002-15			5
2-11	16			6
2-12	17			7
2-13	05-1425-02	1/2		8
2-14	05-1303-09			9
2-15	11			10
2-16	05-1393-02			BC 11 *
2-17	04	1/2		BC 12 *
2-18	MS 06	1/2		BC 13 *
2-19	MSD 08	1/2		BC 14 *
2-20	10			BC 15 *
2-21	12			BC 16 *
2-22	05-1435-01	1/2		17
2-23	03	1/2		18
2-24	05-1302-01	1/5		color 19
2-25	02			20
2-26	DUP ↓			21
3-1	21			
3-2	22			

NOTES:
* Run NO2 std on NO3 runs
* LCSD must be run if no MS or Duplicate
*MS(10% sample): NO3, TKN, NH3, PHOS

* pH < 8.3 MDL 1 (20) std 7072
10 = 20

DCN#110871

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

WORKGROUP: WG525233

525 332

Position	Analyte	1	2	3
3-3 1	Icv			
3-4 2	Blk			
3-5 3	LCS			
3-6 4	LCSDUP			
3-7 5	05-1564-c1	1/2		BC
3-8 6	c3	1/2		BC
3-9 7	05-1550-c2	1/4		color
3-10 8	c3	1/4		color
3-11 9	c5	1/4		color
3-12 10	c6	1/4		color
3-13 11	05-1564-c1			BC
3-14 12	c3			BC
3-15 13	c5	1/2		BC

Position	Analyte	1	2	3
3-16 14	05-1564-c7			BC
3-17 15	c9			BC
3-18 16	11			BC
3-19 17	DUP c9			
3-20				
3-21				
3-22				
3-23				
3-24				
3-25				
3-26				
3-27				
3-28				

	Chloride	EPA 325.2/SM 4500-CI E-2000
	Nitrate-Nitrite	EPA 353.2/SM 4500-NO3 F-2000
✓	Alkalinity	EPA 310.2
	Sulfate	EPA 375.4/SM 426C (15th)/ SM4500-504 E-1997

	Ammonia	EPA 350.1/SM 4500-NH3 B-1997
	TKN	EPA 351.2
	Phos	EPA 365.4

Analyte	Alk		Reagents
SOP & Revision	K3102 R17		RGT 33725
Curve Stock (SC made)	std 70552		
NO2 STD			
ICV	std 70444		
CCV	std 70445		
LCS	std 70072		
MS	std 70284 0.4(2500) Dilution 10 =100		

Comments: _____

Analyst: David Merkle Date: 5/28/05

DCN#110871

MICROBAC (OVD)

SMARTCHEM200 INST2 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.0	0.7988	0.00		8:35:39 AM
DIL-1	RBL	0.0	0.8016	0.00	R	8:35:57 AM
DIL-1	RBL	0.0	0.7997	0.00		8:36:51 AM
DIL-1	Std-1	0.0	-0.0021	0.00		8:37:09 AM
SR5-1	Std-2	10.0	-0.0211	0.00		8:38:03 AM
SR5-2	Std-3	20.0	-0.0369	0.00		8:38:21 AM
SR5-3	Std-4	50.0	-0.0805	0.00		8:39:16 AM
SR5-4	Std-5	100.0	-0.1655	0.00		8:39:34 AM
SR5-5	Std-6	200.0	-0.3521	0.00		8:40:28 AM
SR5-6	Std-7	250.0	-0.4405	0.00		8:40:46 AM
SR5-7	Std-8	300.0	-0.5192	0.00		8:41:40 AM
ST-3	1CCV (150 mg/L)	148.3	-0.2558	98.86		8:41:58 AM
ST-2	2CCB (0 mg/L)	-14.2	0.0232	0.00	INV,><,LL	8:42:52 AM
1	ICV	254.2	-0.4427	0.00		8:43:10 AM
2	WG525233-01 BLK	-8.0	0.0127	0.00	INV,><,LL	8:44:04 AM
3	WG525233-02 LCS	203.2	-0.3522	0.00		8:45:16 AM
4	WG525233-03 LCSDUP	205.6	-0.3565	0.00		8:45:34 AM
5	L15051105-12	158.7	-0.2739	0.00		8:46:28 AM
6	L15051105-12 B	157.7 X	-0.2722	0.00		8:46:46 AM
7	L15051310-01 (2)	183.3	-0.3172	0.00		8:47:40 AM
8	L15051310-02 (2)	158.8	-0.2742	0.00		8:47:58 AM
9	L15051425-01 (2)	88.4	-0.1520	0.00		8:48:52 AM
10	L15051425-02 (10)	38.4 X	-0.0660	0.00		8:49:10 AM
ST-3	1CCV (150 mg/L)	141.8	-0.2445	94.54		8:50:04 AM
ST-2	2CCB (0 mg/L)	-7.5	0.0119	0.00	INV,><,LL	8:50:58 AM
11	L15051472-02 (4)	210.1	-0.3643	0.00		8:51:16 AM
12	L15051472-03 (4)	120.0	-0.2066	0.00		8:52:10 AM
13	L15051472-05 (4)	171.6	-0.2966	0.00		8:52:28 AM
14	L15051472-06 (4)	122.4	-0.2107	0.00		8:53:22 AM
15	L15051472-08 (4)	177.2	-0.3064	0.00		8:53:40 AM
16	L15051472-09 (4)	131.3	-0.2262	0.00		8:54:34 AM
17	L15051303-01 (2)	158.9	-0.2744	0.00		8:54:52 AM

Report Date :05/28/2015 **Run Date :5/28/2015** **Operator : WESTCO** **Plan # :20150528001**

Plan Description : ALK-A2-DCM/05/28/2015

MICROBAC (OVD)

SMARTCHEM200 INST2 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
18	L15051303-03	271.1	-0.4729	0.00		8:55:46 AM
19	L15051303-05 (2)	154.1	-0.2659	0.00		8:56:04 AM
20	L15051303-07	281.6	-0.4918	0.00		8:57:16 AM
ST-3	1CCV (150 mg/L)	162.6	-0.2808	108.40		8:57:34 AM
ST-2	2CCB (0 mg/L)	9.7	-0.0173	0.00		8:58:28 AM
21	L15051303-09	209.4	-0.3631	0.00		8:58:46 AM
22	L15051303-11	221.8	-0.3850	0.00		8:59:40 AM
23	L15051393-02	248.1	-0.4318	0.00		8:59:58 AM
24	L15051393-04 (2)	168.4	-0.2910	0.00		9:00:52 AM
25	L15051393-06 (2) MS	211.7	-0.3672	0.00		9:01:10 AM
26	L15051393-08 (2) MSD	208.7	-0.3619	0.00		9:02:04 AM
27	WG525233-~~07~~ 05 (2) DUP	171.7	-0.2968	0.00		9:02:22 AM
28	ID 28 ~~1150~~ 1425 -02 (2)	145.1	-0.2503	0.00	EPL	9:03:16 AM
ST-3	1CCV (150 mg/L)	163.6	-0.2826	109.08		9:03:34 AM
ST-2	2CCB (0 mg/L)	22.2	-0.0385	0.00		9:04:46 AM

Report Date :05/28/2015 **Run Date :5/28/2015** **Operator : WESTCO** **Plan # :20150528001**

Plan Description : ALK-A2-DCM/05/28/2015

Calibrant Report - WALK -

Calib Lot #:010104 Exp Date:6/21/2020 User:MICROBAC

Plan # : 20150528001 Description : [ALK-A2-DCM/05/28/2015] Unit

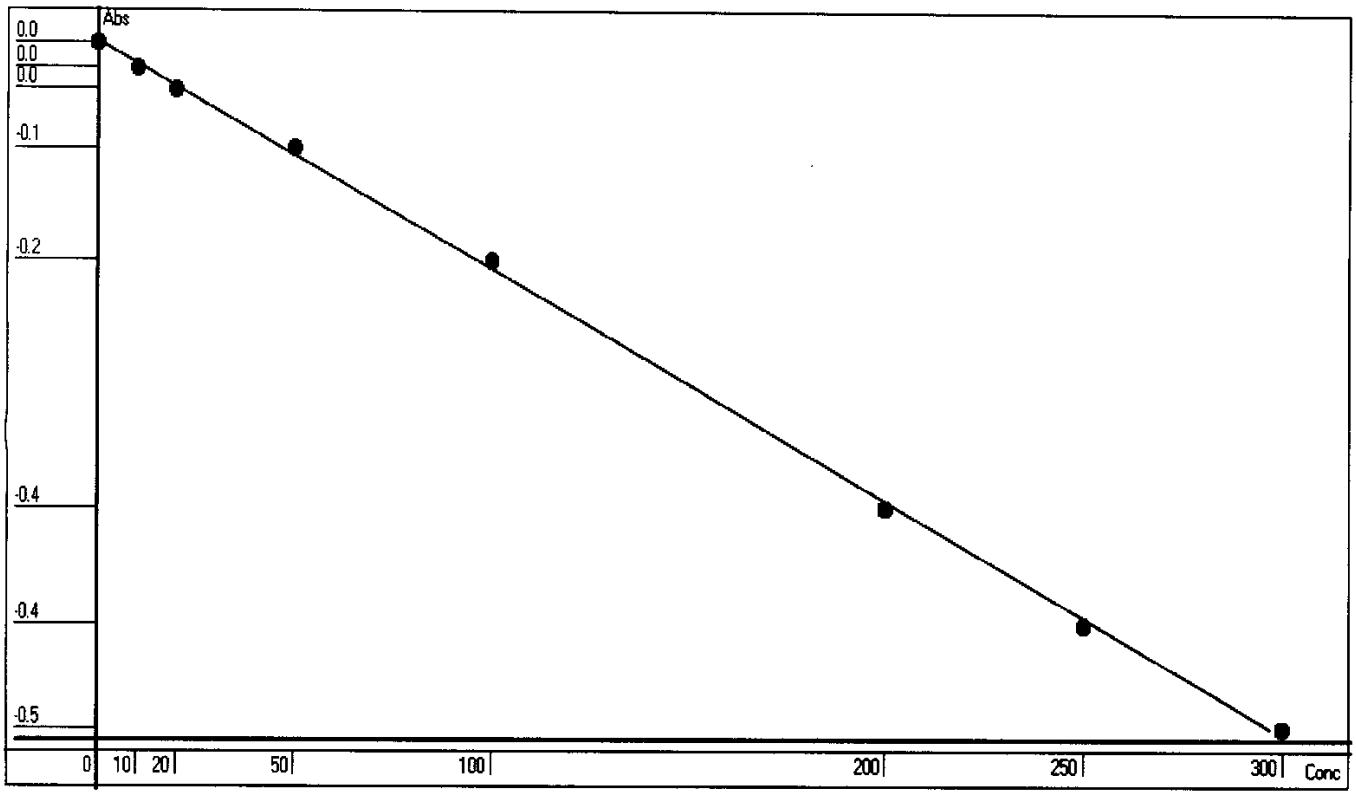

Point	OD	Conc	Recalc Conc	% Error
1	-0.0021	0	0.7415	74.15
2	-0.0211	10	11.9462	19.46
3	-0.0369	20	21.2450	6.23
4	-0.0804	50	46.7580	-6.48
5	-0.1655	100	96.2958	-3.70
6	-0.3521	200	203.1862	1.59
7	-0.4405	250	252.9942	1.20
8	-0.5192	300	296.8875	-1.04

Conc= -34.1587*Abso^2 -590.5124*Abso -0.4984 R^2=0.9994

RBL
0.7993
0

Report Date 5/28/2015 Run Date 5/28/2015

MICROBAC (OVD)

SMARTCHEM200 INST2 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.0	0.6434	0.00		9:41:56 AM
DIL-1	RBL	0.0	0.6442	0.00		9:42:14 AM
DIL-1	RBL	0.0	0.6528	0.00		9:43:08 AM
DIL-1	Std-1	0.0	0.0059	0.00	INV	9:43:26 AM
SR5-1	Std-2	10.0	-0.0094	0.00		9:44:20 AM
SR5-2	Std-3	20.0	-0.0270	0.00		9:44:38 AM
SR5-3	Std-4	50.0	-0.0688	0.00		9:45:32 AM
SR5-4	Std-5	100.0	-0.1354	0.00		9:45:50 AM
SR5-5	Std-6	200.0	-0.2823	0.00		9:46:44 AM
SR5-6	Std-7	250.0	-0.3660	0.00		9:47:02 AM
SR5-7	Std-8	300.0	-0.4179	0.00		9:47:56 AM
ST-3	1CCV (150 mg/L)	145.4	-0.2060	96.91		9:48:14 AM
ST-2	2CCB (0 mg/L)	-7.8	0.0167	0.00	INV,><,LL	9:49:08 AM
1	ICV	252.9	-0.3590	0.00		9:49:26 AM
2	WG525327-01 BLK	-14.2	0.0262	0.00	INV,><,LL	9:50:20 AM
3	WG525327-02 LCS	203.8	-0.2895	0.00		9:51:32 AM
4	WG525327-03 LCSDUP	198.4	-0.2818	0.00		9:51:50 AM
5	L15050002-15	15.2	-0.0171	0.00		9:52:44 AM
6	L15050002-16	18.7	-0.0222	0.00		9:53:02 AM
7	L15050002-17	16.5	-0.0189	0.00		9:53:56 AM
8	L15051425-02 (2)	117.3	-0.1656	0.00	EPL	9:54:14 AM
9	L15051303-09	189.0	-0.2684	0.00		9:55:08 AM
10	L15051303-11	206.0	-0.2926	0.00		9:55:26 AM
ST-3	1CCV (150 mg/L)	142.8	-0.2023	95.20		9:56:20 AM
ST-2	2CCB (0 mg/L)	-10.3	0.0205	0.00	INV,><,LL	9:57:14 AM
11	L15051393-02	239.8	-0.3405	0.00		9:57:32 AM
12	L15051393-04 (2)	151.0	-0.2141	0.00		9:58:27 AM
13	L15051393-06 (2) MS	201.1	-0.2856	0.00		9:58:44 AM
14	L15051393-08 (2) MSD	199.4	-0.2832	0.00		9:59:39 AM
15	L15051393-10	259.3	-0.3680	0.00		9:59:56 AM
16	L15051393-12	26.5	-0.0336	0.00		10:00:50 AM
17	L15051435-01 (2)	214.3	-0.3044	0.00		10:01:08 AM

Report Date :05/28/2015 **Run Date :5/28/2015** **Operator : WESTCO** **Plan # :20150528002**

Plan Description : ALK-B2-DCM/05/28/2015

MICROBAC (OVD)
SMARTCHEM200 INST2 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
18	L15051435-03 (2)	173.2	-0.2458	0.00		10:02:02 AM
19	L15051502-01 (5)	5.2	-0.0024	0.00		10:02:20 AM
20	L15051502-02	236.6	-0.3360	0.00		10:03:32 AM
ST-3	1CCV (150 mg/L)	158.9	-0.2254	105.94		10:03:50 AM
ST-2	2CCB (0 mg/L)	8.8	-0.0076	0.00		10:04:44 AM
21	WG525327-05 DUP	235.5	-0.3344	0.00		10:05:02 AM
ST-3	1CCV (150 mg/L)	157.9	-0.2239	105.24		10:05:56 AM
ST-2	2CCB (0 mg/L)	13.2	-0.0142	0.00		10:06:14 AM

Report Date :05/28/2015 Run Date :5/28/2015 Operator : WESTCO Plan # :20150528002

Plan Description : ALK-B2-DCM/05/28/2015

Calibrant Report - WALK -

Calib Lot #:010104 Exp Date:6/21/2020 User:MICROBAC

Plan # : 20150528002 Description : [ALK-B2-DCM/05/28/2015] Unit

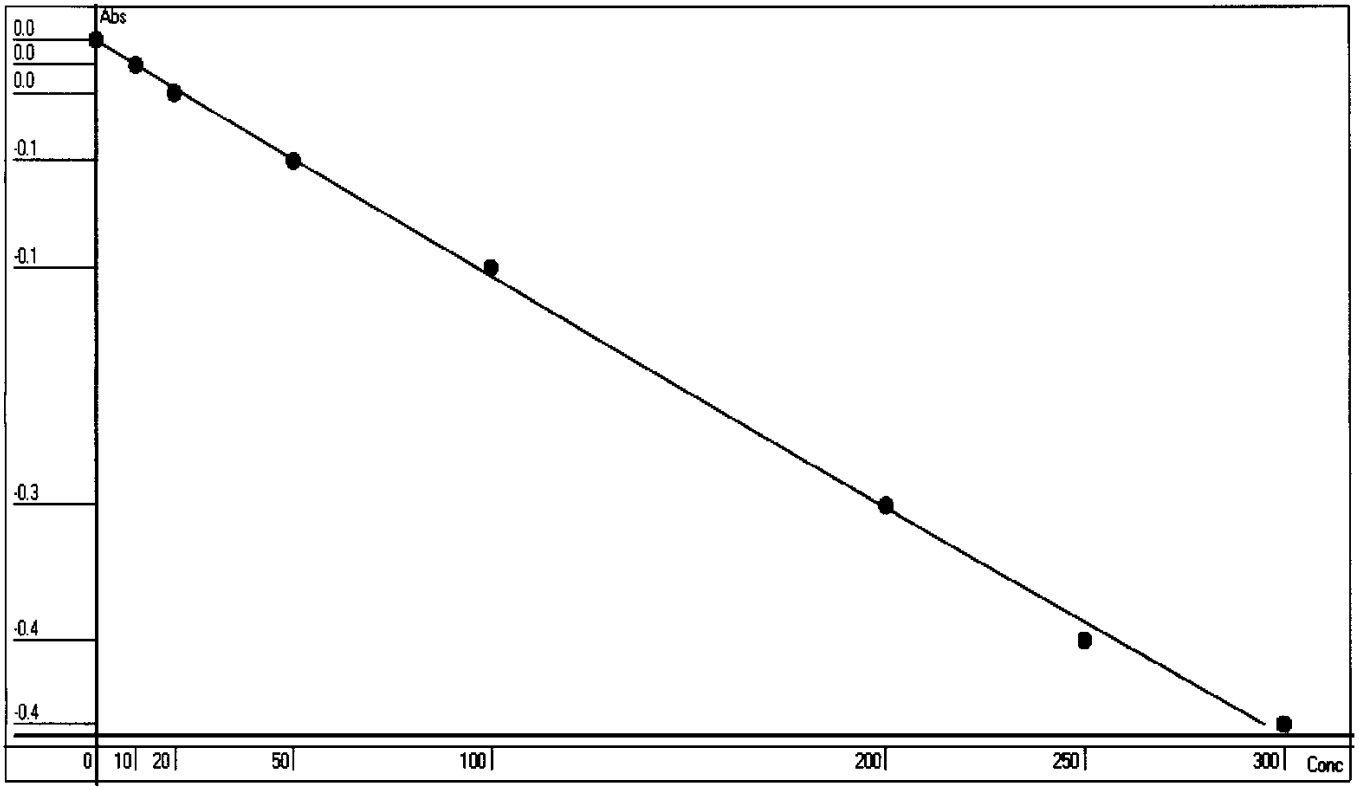

Point	OD	Conc	Recalc Conc	% Error
1	0.0059	0	-0.4226	-42.26
2	-0.0094	10	9.9808	-0.19
3	-0.0270	20	21.9720	9.86
4	-0.0688	50	50.5529	1.11
5	-0.1354	100	96.3873	-3.61
6	-0.2823	200	198.7726	-0.61
7	-0.3660	250	257.9019	3.16
8	-0.4179	300	294.8552	-1.71

Conc= +41.0664*Abso^2 -679.8193*Abso +3.5869 R^2=0.9989

RBL
0.6438
0

Report Date 5/28/2015 Run Date 5/28/2015

MICROBAC (OVD)

SMARTCHEM200 INST2 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.0	0.5391	0.00		11:17:05 AM
DIL-1	RBL	0.0	0.5294	0.00		11:17:23 AM
DIL-1	RBL	0.0	0.5278	0.00		11:18:18 AM
DIL-1	Std-1	0.0	0.0012	0.00	INV	11:18:36 AM
SR5-1	Std-2	10.0	0.0188	0.00	INV	11:19:30 AM
SR5-2	Std-3	20.0	0.0184	0.00	INV	11:19:48 AM
SR5-3	Std-4	50.0	-0.0499	0.00		11:20:42 AM
SR5-4	Std-5	100.0	-0.1142	0.00		11:21:00 AM
SR5-5	Std-6	200.0	-0.2238	0.00		11:21:54 AM
SR5-6	Std-7	250.0	-0.3097	0.00		11:22:12 AM
SR5-7	Std-8	300.0	-0.3637	0.00		11:23:06 AM
ST-3	1CCV (150 mg/L)	138.2	-0.1604	92.12		11:23:24 AM
ST-2	2CCB (0 mg/L)	3.9	0.0206	0.00	INV,><	11:24:18 AM
1	ICV	248.3	-0.3002	0.00	EPL	11:24:36 AM
2	WG525332-01 BLK	-1.9	0.0287	0.00	INV,><,LL	11:25:30 AM
3	WG525332-02 LCS	197.0	-0.2360	0.00		11:26:42 AM
4	WG525332-03 LCSDUP	200.3	-0.2401	0.00		11:27:00 AM
5	L15051504-01 (2)	151.3	-0.1775	0.00		11:27:54 AM
6	L15051504-03 (2)	164.0	-0.1939	0.00		11:28:12 AM
7	L15051550-02 (4)	137.5	-0.1595	0.00		11:29:06 AM
8	L15051550-03 (4)	100.4	-0.1107	0.00		11:29:24 AM
9	L15051550-05 (4)	145.3	-0.1697	0.00		11:30:18 AM
10	L15051550-06 (4)	123.1	-0.1407	0.00		11:30:36 AM
ST-3	1CCV (150 mg/L)	145.9	-0.1705	97.29		11:31:30 AM
ST-2	2CCB (0 mg/L)	-4.8	0.0328	0.00	INV,><,LL	11:32:24 AM
11	L15051564-01	184.2	-0.2197	0.00		11:32:42 AM
12	L15051564-03	281.6	-0.3412	0.00		11:33:36 AM
13	L15051564-05 (2)	151.9	-0.1782	0.00		11:33:54 AM
14	L15051564-07	255.8	-0.3095	0.00		11:34:48 AM
15	L15051564-09	272.3	-0.3298	0.00		11:35:06 AM
16	L15051564-11	24.3	-0.0077	0.00		11:36:00 AM
17	WG525332-05 DUP	270.3	-0.3273	0.00		11:36:18 AM

Report Date :05/28/2015 **Run Date :5/28/2015** **Operator : WESTCO** **Plan # :20150528003**

Plan Description : ALK-C2-DCM/05/28/2015

MICROBAC (OVD)
SMARTCHEM200 INST2 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
ST-3	**1CCV (150 mg/L)**	**147.6**	**-0.1727**	**98.42**		**11:37:12 AM**
ST-2	**2CCB (0 mg/L)**	**14.7**	**0.0055**	**0.00**	**INV**	**11:37:30 AM**

Report Date :05/28/2015 **Run Date :5/28/2015** **Operator : WESTCO** **Plan # :20150528003**

Plan Description : ALK-C2-DCM/05/28/2015

Calibrant Report - WALK -

Calib Lot #:010104 Exp Date:6/21/2020 User:MICROBAC

Plan # : 20150528003 Description : [ALK-C2-DCM/05/28/2015] Unit

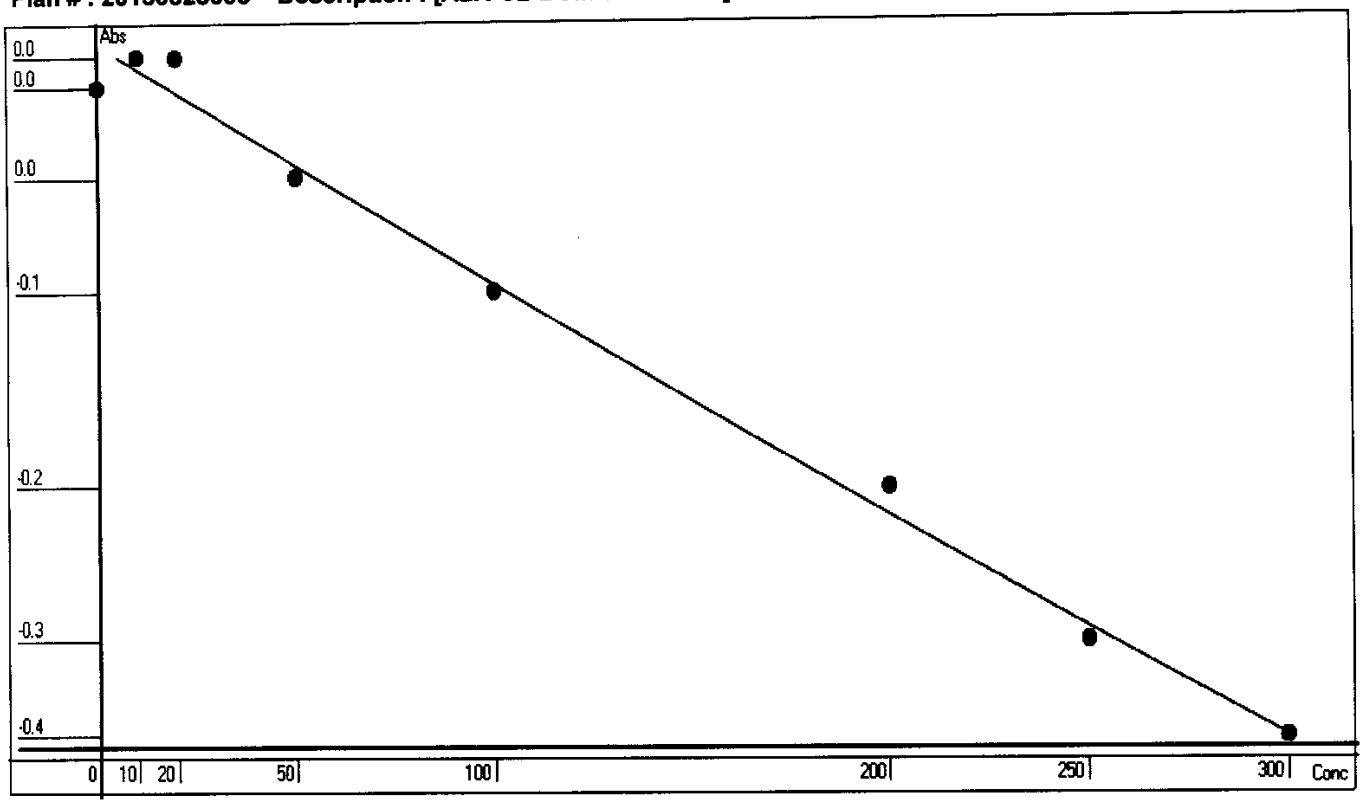

Point	OD	Conc	Recalc Conc	% Error
1	0.0012	0	17.8237	1782.37
2	0.0188	10	5.1641	-48.36
3	0.0184	20	5.4508	-72.75
4	-0.0499	50	55.0783	10.16
5	-0.1142	100	103.0095	3.01
6	-0.2238	200	187.4142	-6.29
7	-0.3097	250	255.9509	2.38
8	-0.3637	300	300.1081	0.04

Conc= +141.9452*Abso^2 -722.1385*Abso +18.6901 R^2=0.9920

RBL
0.5286
0

Report Date 5/28/2015 Run Date 5/28/2015

2.4.3 Phosphorus Data

2.4.3.1 Summary Data

Microbac

Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051435-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW08-052115	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	05/29/2015 08:53
Workgroup #:	WG525309	**Analyst:**	DCM	**Run Date:**	05/29/2015 09:03
Collect Date:	05/21/2015 13:55	**Dilution:**	1	**File ID:**	S2150529001.023
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051435-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW22-052115	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	05/29/2015 08:53
Workgroup #:	WG525309	**Analyst:**	DCM	**Run Date:**	05/29/2015 09:04
Collect Date:	05/21/2015 15:10	**Dilution:**	1	**File ID:**	S2150529001.024
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.854		0.400	0.200	0.100

2.4.3.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809
Value of b from plot:	0.0004135
Absorbance of unknown from quantitation report (y):	0.31
Calculated concentration (x):	0.03964483
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	0.0396 mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796
Value of B from plot:	318.9056
Value of C from plot:	-2.2712
Absorbance of unknown from quantitation report (x):	0.1583
Calculated concentration (y):	50.7495108
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	50.75 mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 29-MAY-2015
Analyst: DCM
Analyst: NA
Method: PHOS
Instrument: SC
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG525309

Calibration/Linearity	05-29-2015
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DCM
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
29-MAY-2015

Secondary Reviewer:
29-MAY-2015

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-29-2015 13:10:27

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 365.4 AAB#: WG525309

Login Number: L15051435

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW08-052115	01	05/21/15					05/29/2015	7.8	28		05/29/15	7.8	28	
50WW22-052115	03	05/21/15					05/29/2015	7.7	28		05/29/15	7.7	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4206055
Report generated 05/29/2015 12:57

METHOD BLANK SUMMARY

Login Number: L15051435
Blank File ID: S2150529001.010
Prep Date: 05/29/15 08:55
Analyzed Date: 05/29/15 08:55
Analyst: DCM

Work Group: WG525309
Blank Sample ID: WG525309-01
Instrument ID: SMARTCHEM2
Method: 365.4

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG525309-02	S2150529001.011	05/29/15 08:55	01
50WW08-052115	L15051435-01	S2150529001.023	05/29/15 09:03	01
50WW22-052115	L15051435-03	S2150529001.024	05/29/15 09:04	01
DUP	WG525309-04	S2150529001.040	05/29/15 09:24	01

Report Name: BLANK_SUMMARY
PDF File ID: 4206056
Report generated 05/29/2015 12:57

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051435 Prep Date: 05/29/15 08:55 Sample ID: WG525309-01
Instrument ID: SMARTCHEM2 Run Date: 05/29/15 08:55 Prep Method: 365.4
File ID: S2150529001.010 Analyst: DCM Method: 365.4
Workgroup (AAB#): WG525309 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-29-MAY-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Phosphorus, Total	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4206057
29-MAY-2015 12:57

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051435 Run Date: 05/29/2015 Sample ID: WG525309-02
Instrument ID: SMARTCHEM2 Run Time: 08:55 Prep Method: 365.4
File ID: S2150529001.011 Analyst: DCM Method: 365.4
Workgroup (AAB#): WG525309 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD70631 Cal ID: SMARTC-29-MAY-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Phosphorus, Total	1.00	0.746	74.6	70 - 130	

LCS - Modified 03/06/2008
PDF File ID: 4206058
Report generated: 05/29/2015 12:57

2.4.3.3 Raw Data

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

WORKGROUP: WG525309

Daily Check

- [x] Lamp On
- [x] Probe Rinse Full
- [x] DI Water > ½ Full
- [x] Wash Solution > ½ Full
- [ ] NO3 Reagent bottle connected / purged
- [ ] NO3 pH adj to pH 5-9

Syringe filter lot # _____

- [x] WBL Run
- [x] Reagents Full
- [x] Dilution H_2O Full
- [x] Waste Container Check

1) **Workgroup** _____
Plan # 2615652800/
2) **Workgroup** _____
Plan # _____
3) **Workgroup** _____
Plan # _____

Instrument: SC1 [ ] SC2 [x]

	Analyte	1	2	3
		PHOS		
		Dilution		
SC Prepared Curve				
Position				
1-1	ICV			
1-2	BLK			
1-3	LCS			
1-4	05-1105-05			
1-5	05	1ml/2		
1-6	05	1ml/5		
1-7	05	1ml/10		
1-8	05-1319-01			
1-9	02			
1-10	03			
1-11	04			
1-12	05-1342-01			
1-13	05-1435-01			
1-14	03			
1-15	DUP 05-1319-02			
1-16	MS 05-1319-02			
1-17				
1-18				
1-19				
1-20				
1-21				
1-22				
2-1				
2-2				
2-3				

Position	Analyte	1	2	3
2-4				
2-5				
2-6				
2-7				
2-8				
2-9				
2-10				
2-11				
2-12				
2-13				
2-14				
2-15				
2-16				
2-17				
2-18				
2-19				
2-20				
2-21				
2-22				
2-23				
2-24				
2-25				
2-26				
3-1				
3-2				

NOTES:
* Run NO2 std on NO3 runs
* LCSD must be run if no MS or Duplicate
*MS(10% sample): NO3, TKN, NH3, PHOS

DCN#110882

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

WORKGROUP: WG525309

Position	Analyte	1	2	3
3-3				
3-4				
3-5				
3-6				
3-7				
3-8				
3-9				
3-10				
3-11				
3-12				
3-13				
3-14				
3-15				

Position	Analyte	1	2	3
3-16				
3-17				
3-18				
3-19				
3-20				
3-21				
3-22				
3-23				
3-24				
3-25				
3-26				
3-27				
3-28				

	Chloride	EPA 325.2/SM 4500-CI E-2000
	Nitrate-Nitrite	EPA 353.2/SM 4500-NO3 F-2000
	Alkalinity	EPA 310.2
	Sulfate	EPA 375.4/SM 426C (15th)/ SM4500-504 E-1997

	Ammonia	EPA 350.1/SM 4500-NH3 B-1997
	TKN	EPA 351.2
✓	Phos	EPA 365.4

Analyte	Phos		Reagents
SOP & Revision	K3654 R18		RGT 33721
Curve Stock (SC made)			RGT 33687
NO2 STD			RGT 33733
ICV	See Digest		
CCV			
LCS	607		
MS	Dilution		

Comments:

Analyst: David Merckle

Date: 5/28/15

DCN#110882

TKN/Phosphorus Digestion Log

TKN WG:
TKN Std: Std 70705
TKN CCV: 1/2 (Std 70705)
TKN ICV: Std 70519
TKN LCS: Std 70653

Phos WG:
Phos Std: Std 70705
Phos CCV: 1/2 (Std 70705)
Phos ICV: Std 70443
Phos LCS: Std 70631

MS/MSD: Std 70137
Daily Dilution: 1/(25/35) = 1

Block Digester Temperature: 380 °C
Digest Reagent: 33705

	Sample	Volume	TKN Dilution	Phos Dilution		Sample	Volume	TKN Dilution	Phos Dilution
1	Std		5	2	26	05-1236-01	1/5	✓	
2	Std		5	2	27	02	1/5	✓	
3	ICVT		2		28	03	1/10	✓	
4	ICVP			1.5	29	04	1/5	✓	
5	LCST		1		30	NH3 stock	1/25		
6	LCSP			1	31	NH3 stock	1/25		
7	05-1105-05		✓	✓	32				
8	05	1/2	✓	✓	33				
9	05	1/5	✓	✓	34				
10	05	1/10	✓	✓	35				
11	05-1319-01		✓	✓	36				
12	02		✓	✓	37				
13	03		✓	✓	38				
14	04		✓	✓	39				
15	05-1342-01		✓	✓	40				
16	05-1350-02	1/50	✓		41				
17	05	1/50	✓		42				
18	05-1435-01			✓	43				
19	03			✓	44				
20	DUP 05-1319-02		✓	✓	45				
21	MS 05-1319-02		✓	✓	46				
22	MS 05-1319-01		✓		47				
23					48				
24					49				
25					50				

Analyst: Daniel Merkle Date: 5/27/15

MICROBAC (OVD)
SMARTCHEM200 INST2 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WTPH -Unit [mg/L] - EPA 365.4 TOTAL PHOSPHORUS

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.000	0.0616	0.00	R	8:48:14 AM
DIL-1	RBL	0.000	0.0711	0.00	R	8:48:32 AM
DIL-1	RBL	0.000	0.0666	0.00	R	8:49:26 AM
SR5-1	Std-1	0.010	0.0049	0.00		8:49:44 AM
SR5-2	Std-2	0.200	0.0347	0.00		8:50:38 AM
SR5-3	Std-3	0.500	0.0766	0.00		8:50:56 AM
SR5-4	Std-4	1.000	0.1523	0.00		8:51:50 AM
SR5-5	Std-5	1.500	0.2199	0.00		8:52:08 AM
ST-1	Std-6	2.000	0.2952	0.00		8:53:02 AM
ST-3	1CCV (1 mg/L)	1.026	0.1535	102.61		8:53:20 AM
ST-2	2CCB (0 mg/L)	-0.019	0.0018	0.00	><,LL	8:54:14 AM
1	ICV	1.572	0.2327	0.00	EPL	8:54:32 AM
2	WG525309-01 BLK	-0.098	-0.0096	0.00	INV,><,LL	8:55:26 AM
3	WG525309-02 LCS	0.746	0.1129	0.00		8:55:44 AM
4	L15051105-05	X 6.184	0.9015	0.00	><,LH	8:56:38 AM
5	L15051105-05 (2)	X 3.264	0.4780	0.00	><,LH	8:56:56 AM
6	L15051105-05 (5)	X 2.114	0.3112	0.00	EPL,><,LH	8:57:50 AM
7	L15051105-05 (10)	X 0.810	0.1222	0.00		8:58:08 AM
8	L15051319-01	-0.070	-0.0056	0.00	INV,><,LL	8:59:02 AM
9	L15051319-02	-0.127	-0.0138	0.00	INV,><,LL	8:59:20 AM
10	L15051319-03	0.369	0.0582	0.00		9:00:15 AM
ST-3	1CCV (1 mg/L)	1.023	0.1531	102.34		9:00:32 AM
ST-2	2CCB (0 mg/L)	-0.010	0.0032	0.00	><,LL	9:01:26 AM
11	L15051319-04	X 2.525	0.3709	0.00	EPL,><,LH	9:01:44 AM
12	L15051342-01	1.638	0.2423	0.00	EPL	9:02:38 AM
13	L15051435-01	0.029	0.0088	0.00		9:03:50 AM
14	L15051435-03	0.854	0.1286	0.00	EPL	9:04:08 AM
15	WG525309-04 DUP	X 2.234	0.3287	0.00	EPL,><,LH	9:05:02 AM
16	WG525309-05 MS	0.974	0.1460	0.00		9:05:20 AM
17	ID 17	***	0.5443	0.00	SS	9:06:14 AM
18	ID 18	***	0.5681	0.00	SS	9:06:32 AM
19	ID 19	***	0.5261	0.00	SS	9:07:26 AM

Report Date :05/29/2015 **Run Date :5/29/2015** **Operator : WESTCO** **Plan # :20150529001**

Plan Description : PHOS-A2-DCM/05/28/2015

MICROBAC (OVD)
SMARTCHEM200 INST2 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WTPH -Unit [mg/L] - EPA 365.4 TOTAL PHOSPHORUS

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
ST-3	1CCV (1 mg/L)	1.006	0.1506	100.61		9:07:44 AM
ST-2	2CCB (0 mg/L)	0.022	0.0077	0.00		9:08:38 AM
1-[1/2]	ICV	1.233	0.0941	0.00		9:16:18 AM
ST-3	1CCV (1 mg/L)	1.023	0.1531	102.34		9:16:18 AM
ST-2	2CCB (0 mg/L)	0.017	0.0071	0.00		9:17:12 AM
4-[1/2]	L15051105-05	6.335	0.4641	0.00	><,LH	9:18:42 AM
4-[1/2]	L15051105-05	6.385	0.4677	0.00	><,LH	9:19:54 AM
5-[1/2]	L15051105-05 (2)	3.271	0.2419	0.00	LH	9:21:06 AM
6-[1/2]	L15051105-05 (5)	1.691	0.1273	0.00		9:22:18 AM
11-[1/2]	L15051319-04	1.102	0.0846	0.00		9:23:30 AM
15-[1/2]	WG525309-04 DUP	0.763	0.0600	0.00		9:24:42 AM
ST-3	1CCV (1 mg/L)	1.010	0.1512	101.03		9:24:42 AM
ST-2	2CCB (0 mg/L)	0.006	0.0055	0.00		9:25:36 AM
4-[1/5]	L15051105-05	6.186	0.1841	0.00	LH	9:33:16 AM
ST-3	1CCV (1 mg/L)	1.019	0.1525	101.92		9:33:16 AM
ST-2	2CCB (0 mg/L)	-0.003	0.0041	0.00	><,LL	9:34:10 AM
4-[1/5]	L15051105-05	6.317	0.1879	0.00	LH	9:35:40 AM
ST-3	1CCV (1 mg/L)	0.986	0.1477	98.61		9:36:34 AM
ST-2	2CCB (0 mg/L)	-0.040	-0.0012	0.00	INV,><,LL	9:36:52 AM

Report Date :05/29/2015 Run Date :5/29/2015 Operator : WESTCO Plan # :20150529001

Plan Description : PHOS-A2-DCM/05/28/2015

Calibrant Report - WTPH -

Calib Lot #:010104 Exp Date:6/18/2020 User:MICROBAC

Plan # : 20150529001 Description : [PHOS-A2-DCM/05/28/2015] Unit

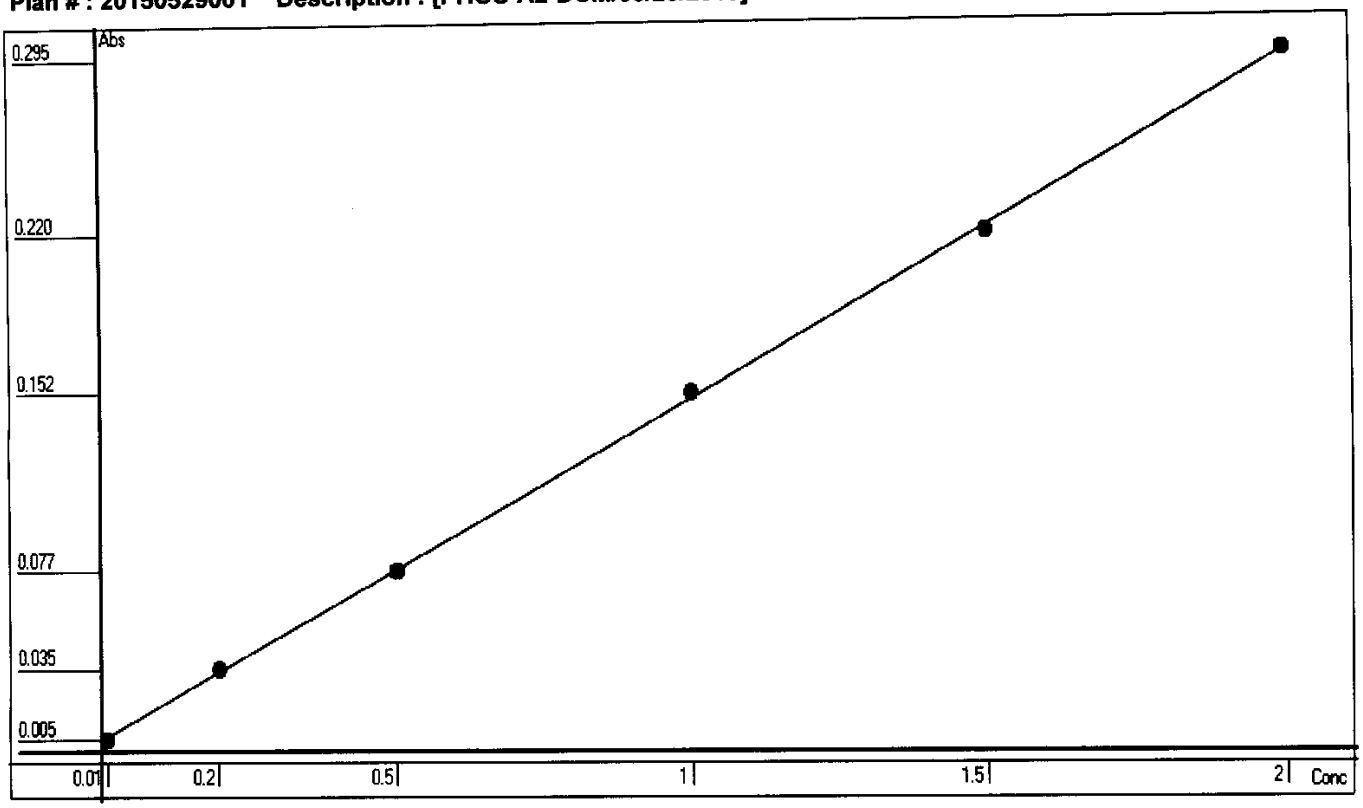

Point	OD	Conc	Recalc Conc	% Error
1	0.0049	0.01	0.0019	-81.00
2	0.0347	0.2	0.2074	3.70
3	0.0765	0.5	0.4956	-0.88
4	0.1523	1	1.0182	1.82
5	0.2199	1.5	1.4843	-1.05
6	0.2952	2	2.0035	0.18

Conc= +6.895*Abso -0.0319 R^2=0.9998

RBL
0.0689
0

Report Date 5/29/2015 Run Date 5/29/2015

2.4.4 Sulfide Data

2.4.4.1 Summary Data

Microbac

Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051435-01	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW08-052115	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG524981	**Analyst:**	EPT	**Run Date:**	05/26/2015 14:50
Collect Date:	05/21/2015 13:55	**Dilution:**	1	**File ID:**	ET.1505261450-11
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051435-03	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW22-052115	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG524981	**Analyst:**	EPT	**Run Date:**	05/26/2015 14:50
Collect Date:	05/21/2015 15:10	**Dilution:**	1	**File ID:**	ET.1505261450-12
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.4.4.2 QC Summary Data

Example Total Sulfide(Liquid) Calculations

[mL Iodine * N Iodide) - (mL titrant * N titrant)] * 16000/(volume * dilution) = mg/L Sulfide

where:

mL Iodine = mL of Iodine used
N Iodine = normality of Iodine
mL titrant = mL of titrant used
N titrant = normality of titrant
16000 = factor: 1mL of 0.025 N iodine reacts with 0.4mg sulfide
volume = mL filtered of mL titrated(if not filtered)
dilution = dilution in decimal form (1/5 = 0.2)

Example Total Sulfide(Soil) Calculations

[(mL Iodine * N Iodine) - (mL titrant * N titrant)] * 16.03/weight = mg/kg sulfide

where:

mL Iodine = mL of Iodine used
N Iodine = normality of Iodine
mL titrant = normality of titrant
16.03 = 32.06 grams per 2 equivalents
weight = kg of sample used

Microbac Laboratories Inc.

Data Checklist

Date: 26-MAY-2015
Analyst: EPT
Analyst: NA
Method: SULFIDE
Instrument: BURET
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG524981

Calibration/Linearity	5/26/15
Second Source Check	
ICV/CCV (std)	
ICB/CCB	
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	
Upload Results	X
Client Forms	
QC Violation Sheet	
Case Narratives	
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	
Primary Reviewer	EPT
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
26-MAY-2015
Ethan Tido

Secondary Reviewer:
28-MAY-2015
Dianna Hesson

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-28-2015 10:14:02

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: SM4500-S-(-2)-F-

AAB#: WG524981

Login Number: L15051435

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW08-052115	01	05/21/15					05/26/2015	5	7		05/26/15	5	7	
50WW22-052115	03	05/21/15					05/26/2015	5	7		05/26/15	5	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4202220
Report generated 05/28/2015 09:08

METHOD BLANK SUMMARY

Login Number: L15051435
Blank File ID: ET.1505261450-01
Prep Date: 05/26/15 14:50
Analyzed Date: 05/26/15 14:50
Analyst: EPT

Work Group: WG524981
Blank Sample ID: WG524981-01
Instrument ID: BURET
Method: SM4500-S-(-2)-F-

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG524981-02	ET.1505261450-02	05/26/15 14:50	
LCS2	WG524981-03	ET.1505261450-03	05/26/15 14:50	
50WW08-052115	L15051435-01	ET.1505261450-11	05/26/15 14:50	
50WW22-052115	L15051435-03	ET.1505261450-12	05/26/15 14:50	

Report Name: BLANK_SUMMARY
PDF File ID: 4202221
Report generated 05/28/2015 09:08

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051435 Prep Date: 05/26/15 14:50 Sample ID: WG524981-01
Instrument ID: BURET Run Date: 05/26/15 14:50 Prep Method: SM4500-S-(-2)-F
File ID: ET.1505261450-01 Analyst: EPT Method: SM4500-S-(-2)-F
Workgroup (AAB#): WG524981 Matrix: Water Units: mg/L
Contract #: Cal ID: BURET-

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Sulfide	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4202222
28-MAY-2015 09:08

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051435 Analyst: EPT Prep Method: SM4500-S-(-2)-F
Instrument ID: BURET Matrix: Water Method: SM4500-S-(-2)-F
Workgroup (AAB#): WG524981 Units: mg/L
QC Key: DOD4 Lot #: STD70718

Sample ID: WG524981-02 LCS File ID: ET.1505261450-02 Run Date: 05/26/2015 14:50
Sample ID: WG524981-03 LCS2 File ID: ET.1505261450-03 Run Date: 05/26/2015 14:50

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Sulfide	16.1	15.8	98.3	16.1	15.8	98.3	0.00	85 - 115	10	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4202223
Report generated: 05/28/2015 09:08

2.4.4.3 Raw Data

SULFIDE
(sulfide1)

WORKGROUP: WG524981

Water
EPA 376.1 / SM4500-S(-2)-F
SOP K3761 Revision #: 17

Soil:
SM846 9030B/9034
SOP K9030 Revision #: _____

Instrument: Buret

LCS: Std 70718

Iodine standardization (0.025N) COA: 17891
mL 0.025N titrant: 10.0
Volume I: 10.0 mL
Normality I: 0.0250

(0.1 N I) COA: 18088
mL 0.025 N titrant: 8.0
Volume I: 2.0 mL
Normality I: 0.100

Stock standardization (in duplicate) 5.0 mL stock

mL I	1) 10.0	2) 10.0
N I	1) 0.100	2) 0.100
mL 0.025 titrant I)	26.6	2) 26.6

1072 = stock conc (mg/L)

LCS daily dilution: $\frac{(5)(1072)}{200}$ = 16.08 mg/L

Titrant: T- 1606-05-03

SAMPLE	Volume Filtered mL	mL Iodine	N Iodine	0.0250 N Sodium Thiosulfate (mL)
BLANK	200	15.0	0.0250	15.0
LCS (mL)	200	15.0	0.0250	7.1
LCSDUP (mL)	200	15.0	0.0250	7.1
05-1393-02	510	15.0	0.0250	15.0
Ref -04	530	15.0	0.0250	15.0
MS -06	490	15.0	0.0250	6.7
MSD -08	520	15.0	0.0250	6.5
-10	490	15.0	0.0250	15.0
-12	540	15.0	0.0250	14.6
05-1434-02	550	15.0	0.0250	15.0
05-1435-01	480	15.0	0.0250	14.7
-03	490	15.0	0.0250	14.8
05-1504-01	510	15.0	0.0250	14.2
-03	510	15.0	0.0250	14.7

Analyst: Ethan Tadd Date/Time: 05/26/15 1450

DCN#110826

Microbac Laboratories Inc.

TITRAMETRIC REPORT

Workgroup (AAB#): WG524981

Product: EPA 376.1\9034

Analyte: Sulfide

Analyst: EPT

Run Date: 05/26/2015 14:50

SAMPLE NUMBER	Volume	Vol I	Nor I	Vol T	Nor T	Dil	Analytical	Reported	Units
WG524981-01	200.0	15	.025	15	.025	1	0	0	mg/L
WG524981-02	200.0	15	.025	7.1	.025	1	15.8	15.80	mg/L
WG524981-03	200.0	15	.025	7.1	.025	1	15.8	15.80	mg/L
L15051393-02	510.0	15	.025	15	.025	1	0	ND	mg/L
L15051393-04	530.0	15	.025	15	.025	1	0	ND	mg/L
WG524981-04	530.0	15	.025	15	.025	1	0	0	mg/L
L15051393-06	490.0	15	.025	6.7	.025	1	6.78	6.776	mg/L
WG524981-05	490.0	15	.025	6.7	.025	1	6.78	6.776	mg/L
L15051393-08	520.0	15	.025	6.5	.025	1	6.54	6.538	mg/L
WG524981-06	520.0	15	.025	6.5	.025	1	6.54	6.538	mg/L
L15051393-10	490.0	15	.025	15	.025	1	0	ND	mg/L
L15051393-12	540.0	15	.025	14.6	.025	1	0.296	ND	mg/L
L15051434-02	550.0	15	.025	15	.025	1	0	ND	mg/L
L15051435-01	480.0	15	.025	14.7	.025	1	0.250	ND	mg/L
L15051435-03	490.0	15	.025	14.8	.025	1	0.163	ND	mg/L
L15051504-01	510.0	15	.025	14.2	.025	1	0.627	0.6275 F	mg/L
L15051504-03	510.0	15	.025	14.7	.025	1	0.235	ND	mg/L

SULFIDE_REPORT - Modified 03/06/2008

Report generated 05/26/2015 16:47

2.4.5 Total Organic Carbon Data

2.4.5.1 Summary Data

Microbac

Lab Report #: L15051435
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051435-01	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW08-052115	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	05/27/2015 15:47
Workgroup #:	WG525331	**Analyst:**	EPT	**Run Date:**	05/28/2015 15:20
Collect Date:	05/21/2015 13:55	**Dilution:**	1	**File ID:**	TC05282015.010
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	3.68		2.00	1.00	0.500

Certificate of Analysis

Sample #:	L15051435-03	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW22-052115	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	05/27/2015 15:47
Workgroup #:	WG525331	**Analyst:**	EPT	**Run Date:**	05/28/2015 15:47
Collect Date:	05/21/2015 15:10	**Dilution:**	3	**File ID:**	TC05282015.011
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	15.6		6.00	3.00	1.50

2.4.5.2 QC Summary Data

Total Organic Carbon Example Calculations
(Direct Readout Parameter)

(Readout)/(dilution) = mg/L

where:

Readout = direct readout from the instrument
dilution = dilution in decimal form (ex. 1/5 dilution = 0.2)

Microbac Laboratories Inc.

Data Checklist

Date: 28-MAY-2015
Analyst: EPT
Analyst: NA
Method: TOC
Instrument: TOC-VWP
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG525354 WG525331

Calibration/Linearity	5/27/15
Second Source Check	
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	
QC Violation Sheet	
Case Narratives	
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	
Primary Reviewer	EPT
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
29-MAY-2015
Ethan Tido

Secondary Reviewer:
29-MAY-2015
Dianna Hesson

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-29-2015 15:22:03

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 415.1 AAB#: WG525331

Login Number: L15051435

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW08-052115	01	05/21/15					05/28/2015	7.1	28		05/28/15	7.1	28	
50WW22-052115	03	05/21/15					05/28/2015	7	28		05/28/15	7	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4206849
Report generated 05/29/2015 15:20

METHOD BLANK SUMMARY

Login Number: L15051435
Blank File ID: TC05282015.003
Prep Date: 05/28/15 11:43
Analyzed Date: 05/28/15 11:43
Analyst: EPT

Work Group: WG525331
Blank Sample ID: WG525331-01
Instrument ID: TOC-VWP
Method: 415.1

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG525331-02	TC05282015.004	05/28/15 12:05	01
LCS2	WG525331-03	TC05282015.005	05/28/15 12:35	01
50WW08-052115	L15051435-01	TC05282015.010	05/28/15 15:20	01
50WW22-052115	L15051435-03	TC05282015.011	05/28/15 15:47	DL01
DUP	WG525331-05	TC05282015.028	05/28/15 22:19	01

Report Name: BLANK_SUMMARY
PDF File ID: 4206850
Report generated 05/29/2015 15:20

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051435 Prep Date: 05/28/15 11:43 Sample ID: WG525331-01
Instrument ID: TOC-VWP Run Date: 05/28/15 11:43 Prep Method: 415.1
File ID: TC05282015.003 Analyst: EPT Method: 415.1
Workgroup (AAB#): WG525331 Matrix: Water Units: mg/L
Contract #: Cal ID: TOC-VW-27-MAY-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Total Organic Carbon	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4206851
29-MAY-2015 15:20

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051435 Analyst: EPT Prep Method: 415.1
Instrument ID: TOC-VWP Matrix: Water Method: 415.1
Workgroup (AAB#): WG525331 Units: mg/L
QC Key: DOD4 Lot #: STD69935

Sample ID: WG525331-02 LCS File ID: TC05282015.004 Run Date: 05/28/2015 12:05
Sample ID: WG525331-03 LCS2 File ID: TC05282015.005 Run Date: 05/28/2015 12:35

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Total Organic Carbon	25.0	25.4	101	25.0	25.4	102	0.158	85 - 115	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4206852
Report generated: 05/29/2015 15:20

2.4.5.3 Raw Data

Curve wg525298

Total Organic Carbon

MAKE DAILY

CCV (TOC): _____ (5/200)(1000) = 25mg/L

LCS (TOC): _____ (5/200)(1000) = 25mg/L

CCV (TIC): _____ (5/200)(1000) = 25mg/L see below

MS (TOC): _____

Calibration Curve Date: _____

Reagent: ~~RGT 33399~~ 33691 ~~RGT 32721~~

☑ SM5310-C : Matrix 2 WG_____

☐ EPA 415.1/9060A(mod): Matrix 1 WG_____ SOP: K 4151 Rev. 18

WG_____ Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

☑ drain reservoir filled
☑ ASI water bottle full
☑ dilution water bottle full
☑ 3rd bottle full
☑ sufficient gas
☑ sufficient persulfate
☑ sufficient acid
☑ waste container

Position	Sample ID	Dilution	Position	Sample ID	Dilution	Position	Sample ID	Dilution
1	TC curve		26	TC curve		51		
2	TC curve		27	std 65368		52	see SOP for	
3	TC ICV		28			53	curve points	
4	~~TOC~~ TIC ICV		29	TIC curve		54		
5	on		30	std 68972		55		
6			31			56		
7			32			57		
8			33	TOC(TC)		58		
9			34	ICV		59	5/200(1000) = 25	
10			35	std 69935		60		
11			36			61		
12			37	TIC ICV		62		
13	all points		38	std 68222		63		
14	analyzed		39			64		
15	in duplicate		40			65		
16			41			66		
17			42			67		
18			43			68		
19			44			69		
20			45			70		
21			46			71		
22			47			72		
23			48			73		
24			49			74		
25			50			75		

Analyst: [signature] Date/Time: 5/27/15

DCN#110878

C:\TOC3201\Data\05-27-2015-DIH-CURVE.t32

	Analysis	Sample Name	Result	Status	Date / Time	Vial	
1	TC	TCCURVE		Complete	5/27/2015 3:55:16 PM	0, 1, 2,	
2	IC	TICCURVE		Complete	5/27/2015 5:11:46 PM	0, 6, 7,	
3	TC	TC ICV	TC:24.70mg/L	Complete	5/27/2015 5:28:06 PM	11	98.8%
4	IC	TIC ICV	IC:24.92mg/L	Complete	5/27/2015 5:40:34 PM	12	99.7%

5/28/2015 7:38:55 AM

1/1

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Cal. Curve

Sample Name: TCCURVE
Sample ID: Untitled
Cal. Curve: TCCURVE-05-27-2015.2015_05_27_14_45_03.cal
Status Completed

Type	Anal.
Standard	TC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	14.21	500uL	1	*******		5/27/2015 2:48:37 PM
2	14.13	500uL	1	*******		5/27/2015 2:52:11 PM

Acid Add. 0.000%
Mean Area 14.17

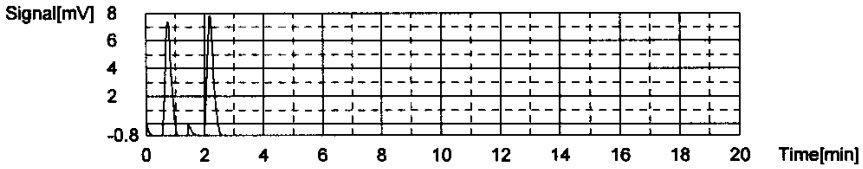

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	72.68	500uL	1	*******		5/27/2015 2:57:41 PM
2	73.82	500uL	1	*******		5/27/2015 3:01:49 PM

Acid Add. 0.000%
Mean Area 73.25

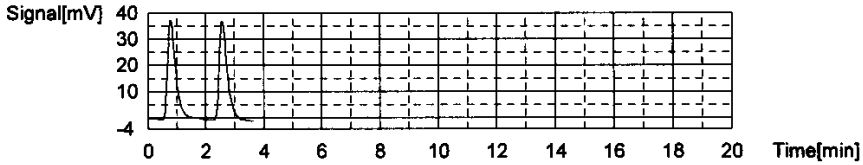

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	231.5	500uL	1	*******		5/27/2015 3:07:44 PM
2	231.3	500uL	1	*******		5/27/2015 3:12:05 PM

Acid Add. 0.000%
Mean Area 231.4

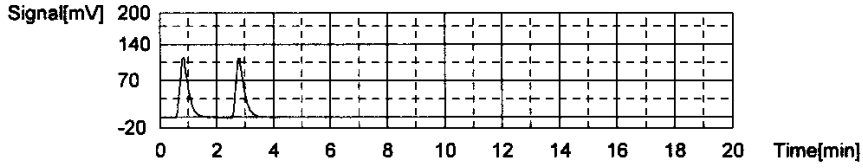

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	440.2	500uL	1	*******		5/27/2015 3:18:32 PM
2	435.3	500uL	1	*******		5/27/2015 3:23:03 PM

Acid Add. 0.000%
Mean Area 437.8

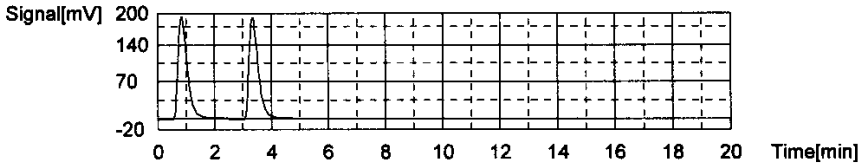

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1094	500uL	1	*******		5/27/2015 3:31:04 PM
2	1079	500uL	1	*******		5/27/2015 3:38:10 PM

Acid Add. 0.000%
Mean Area 1087

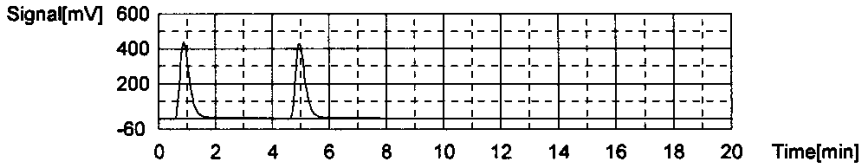

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	2210	500uL	1	T******		5/27/2015 3:47:01 PM
2	2208	500uL	1	T******		5/27/2015 3:55:16 PM

Acid Add. 0.000%
Mean Area 2209

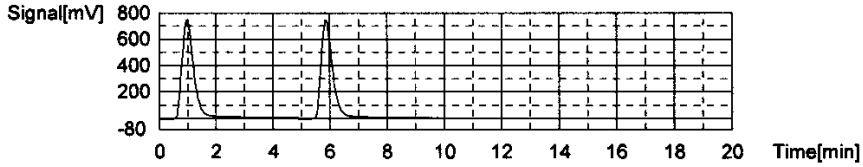

Slope: 43.70
Intercept 12.49
r^2 0.999746 ✓
Zero Shift No

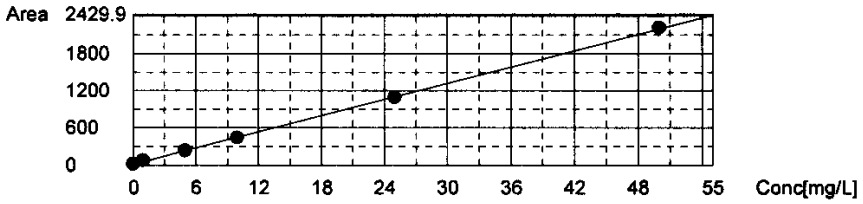

Cal. Curve

Sample Name: TICCURVE
Sample ID: Untitled
Cal. Curve: TICCURVE-05-27-2015.2015_05_27_15_55_16.cal
Status Completed

Type	Anal.
Standard	IC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	12.69	500uL	1	*******		5/27/2015 3:59:17 PM
2	12.56	500uL	1	*******		5/27/2015 4:03:21 PM

Acid Add. 10.00%
Mean Area 12.63

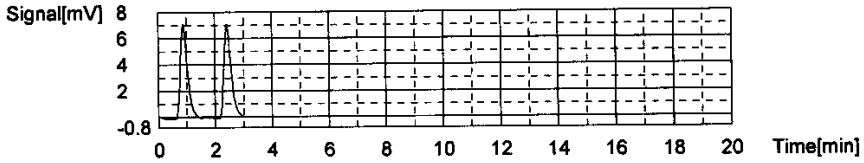

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	56.24	500uL	1	*******		5/27/2015 4:11:08 PM
2	56.43	500uL	1	*******		5/27/2015 4:15:44 PM

Acid Add. 10.00%
Mean Area 56.34

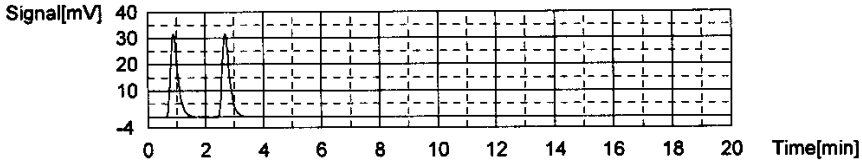

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	178.6	500uL	1	*******		5/27/2015 4:23:48 PM
2	185.6	500uL	1	*******		5/27/2015 4:28:40 PM

Acid Add. 10.00%
Mean Area 182.1

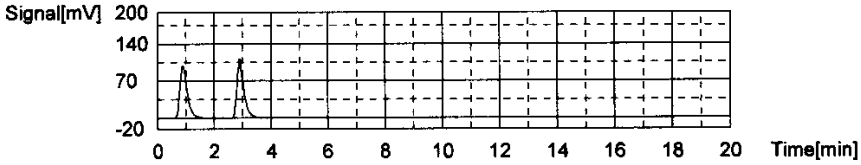

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	339.3	500uL	1	*******		5/27/2015 4:37:04 PM
2	343.0	500uL	1	*******		5/27/2015 4:42:04 PM

Acid Add. 10.00%
Mean Area 341.1

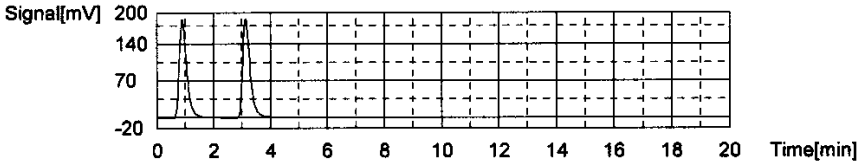

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	802.7	500uL	1	*******		5/27/2015 4:50:52 PM
2	804.1	500uL	1	*******		5/27/2015 4:56:25 PM

Acid Add. 10.00%
Mean Area 803.4

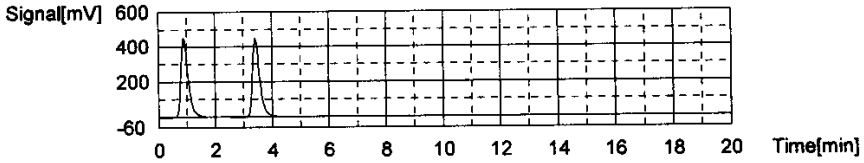

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1592	500uL	1	*******		5/27/2015 5:05:46 PM
2	1578	500uL	1	*******		5/27/2015 5:11:46 PM

Acid Add. 10.00%
Mean Area 1585

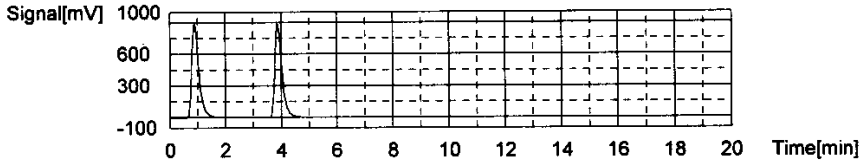

Slope: 31.27
Intercept 22.45
r^2 0.999917
Zero Shift No

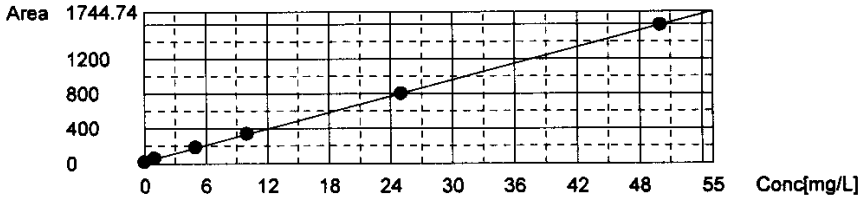

Sample

Sample Name: TC ICV
Sample ID: Untitled
Origin: TCCURVE-05-27-2015.cal
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TC	1.000	TC:24.70mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1111	25.13mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_05	5/27/2015 5:21:56 PM
2	1073	24.27mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_05	5/27/2015 5:28:06 PM

Mean Area 1092
Mean Conc. 24.70mg/L

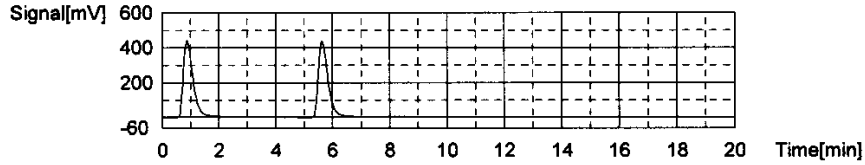

Sample

Sample Name:	TIC ICV
Sample ID:	Untitled
Origin:	TICCURVE-05-27-2015.cal
Status	Completed
Chk. Result	

Type	Anal.	Dil.	Result
Unknown	IC	1.000	IC:24.92mg/L

1. Det

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	800.1	24.87mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/27/2015 5:35:10 PM
2	803.2	24.97mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/27/2015 5:40:34 PM

Mean Area	801.7
Mean Conc.	24.92mg/L

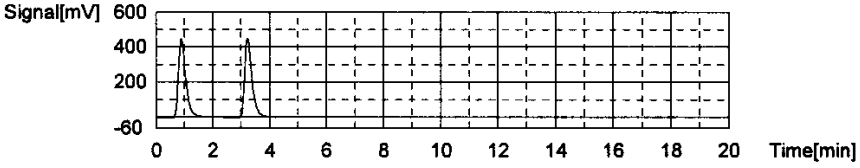

WORKGROUP: WG525331 WG525354

Total Organic Carbon

MAKE DAILY

CCV (TOC): Std 65368 (5/200)(1000) = 25mg/L

LCS (TOC): Std 69935 Std 68222 (5/200)(1000) = 25mg/L

CCV (TIC): Std 68222 (5/200)(1000) = 25mg/L

MS (TOC): Std 69935 (.4)(1000)/40 = 10

Calibration Curve Date: 5/27/15

Reagent: 33691 32721

☒ SM5310-C : Matrix 2 WG 525331

☒ EPA 415.1/9060A(mod): Matrix 1 WG WG525354 SOP: K 4151 Rev. 17

WG _____ Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

☒ drain reservoir filled
☒ ASI water bottle full
☒ dilution water bottle full
☒ 3rd bottle full
☒ sufficient gas
☒ sufficient persulfate
☒ sufficient acid
☒ waste container

Position	Sample ID	Dilution	Position	Sample ID	Dilution	Position	Sample ID	Dilution
1	TIC		26	CCV		51		
2	CCV		27	CCB		52		
3	BLK		28	DUP 1105-03	1/2	53		
4	LCS		29	MS ~~BLK~~		54		
5	LCSDUP		30	BLK		55		
6	05-1105-03		31	LCS		56		
7	05-1105-03	1/2	32	LCSDUP		57		
8	05-1429-01		33	1105-~~03~~-27 cp+5/28	1/2	58		
9	-05	cp+5/28/15	34	DUP 1105-27	1/2	59		
10	05-1435-01	~~1/3~~	35	CCV		60		
11	-03	1/3	36	CCB		61		
12	05-1531-01	1/3	37	05-1545-02	1/3	62		
13	-02	1/3	38	05-1605-07		63		
14	CCV		39	~~05-1610-01~~ MS 1610-01		64		
15	CCB		40	LCS cp+5/29/15		65		
16	05-1534-03		41	LCSDUP		66		
17	05-1545-01		42	CCV		67		
18	-02		43	CCB		68		
19	-03		44			69		
20	05-1605-06	1/3	45			70		
21	-07	1/3	46			71		
22	-08	1/3	47			72		
23	-10	1/3	48			73		
24	05-1610-01		49			74		
25	-02		50			75		

Analyst: Ethan Tidd Date/Time: 05/28/15 1115

DCN#110890

C:\TOC3201\Data\05-28-2015-EPT-TOC.t32

	Analysis	Sample Name	Result	Status	Date / Time	Vial
1	TOC	TIC	!!Error!! TOC:-0.8179mg/L TC:23.83mg/L IC:24.65mg/L	Complete	5/28/2015 11:24:16 AM	1
2	TOC	CCV	TOC:24.37mg/L TC:24.47mg/L IC:0.09675mg/L	Complete	5/28/2015 11:38:16 AM	2
3	TOC	WG525331-01 BLK	!!Error!! TOC:0.3181mg/L TC:0.07635mg/L IC:-0.2417mg/L	Complete	5/28/2015 11:55:26 AM	0
4	TOC	WG525331-02 LCS	TOC:25.35mg/L TC:45.13mg/L IC:19.78mg/L	Complete	5/28/2015 12:25:12 PM	4
5	TOC	WG525331-03 LCSDUP	TOC:25.39mg/L TC:44.45mg/L IC:19.06mg/L	Complete	5/28/2015 12:55:13 PM	5
6	TOC		!!Error!! TOC:59.88mg/L TC:59.86mg/L IC:-0.02652mg/L	Complete	5/28/2015 1:38:25 PM	6
7	TOC	L15051105-03 (2)	!!Error!! TOC:30.75mg/L TC:30.65mg/L IC:-0.1001mg/L	Complete	5/28/2015 2:05:31 PM	7
8	TOC	L15051429-01	TOC:4.217mg/L TC:14.78mg/L IC:10.56mg/L	Complete	5/28/2015 2:31:54 PM	8
9	TOC	L15051429-05	TOC:1.335mg/L TC:25.72mg/L IC:24.38mg/L	Complete	5/28/2015 2:58:22 PM	9
10	TOC	L15051435-01	TOC:3.677mg/L TC:49.23mg/L IC:45.55mg/L	Complete	5/28/2015 3:39:49 PM	10
11	TOC	L15051435-03 (3)	TOC:5.189mg/L TC:12.85mg/L IC:7.657mg/L	Complete	5/28/2015 4:02:57 PM	11
12	TOC	L15051531-01 (3)	TOC:3.425mg/L TC:20.99mg/L IC:17.56mg/L	Complete	5/28/2015 4:29:40 PM	12
13	TOC	L15051531-02 (3)	TOC:3.959mg/L TC:38.38mg/L IC:34.42mg/L	Complete	5/28/2015 5:09:25 PM	13
14	TOC	CCV	!!Error!! TOC:24.79mg/L TC:24.79mg/L IC:-0.00078mg/L	Complete	5/28/2015 5:24:16 PM	14
15	TOC	CCB	!!Error!! TOC:0.2796mg/L TC:0.04317mg/L IC:-0.2364mg/L	Complete	5/28/2015 5:33:42 PM	0
16	TOC	L15051534-03	TOC:4.306mg/L TC:17.52mg/L IC:13.22mg/L	Complete	5/28/2015 5:57:33 PM	16
17	TOC	L15051545-01	TOC:4.944mg/L TC:44.84mg/L IC:39.89mg/L	Complete	5/28/2015 6:27:39 PM	17
18	TOC		!!Error!! TOC:-2.243mg/L TC:59.14mg/L IC:61.38mg/L	Complete	5/28/2015 6:58:58 PM	18
19	TOC	L15051545-03	TOC:4.112mg/L TC:36.87mg/L IC:32.76mg/L	Complete	5/28/2015 7:28:03 PM	19
20	TOC	L15051605-06 (3)	TOC:4.922mg/L TC:17.35mg/L IC:12.43mg/L	Complete	5/28/2015 7:51:47 PM	20
21	TOC		TOC:1.968mg/L TC:6.152mg/L IC:4.184mg/L	Complete	5/28/2015 8:13:21 PM	21
22	TOC	L15051605-08 (3)	TOC:5.105mg/L TC:13.40mg/L IC:8.299mg/L	Complete	5/28/2015 8:37:07 PM	22
23	TOC	L15051605-10 (3)	TOC:3.488mg/L TC:12.01mg/L IC:8.525mg/L	Complete	5/28/2015 9:00:06 PM	23
24	TOC	L15051610-01	TOC:2.401mg/L TC:8.923mg/L IC:6.521mg/L	Complete	5/28/2015 9:23:39 PM	24
25	TOC	L15051610-02	TOC:1.079mg/L TC:5.183mg/L IC:4.104mg/L	Complete	5/28/2015 9:45:55 PM	25
26	TOC	CCV	!!Error!! TOC:24.73mg/L TC:24.45mg/L IC:-0.2767mg/L	Complete	5/28/2015 10:00:06 PM	26
27	TOC	CCB	!!Error!! TOC:0.3187mg/L TC:0.03493mg/L IC:-0.2838mg/L	Complete	5/28/2015 10:09:26 PM	0
28	TOC	WG525331-05 DUP	!!Error!! TOC:29.63mg/L TC:29.32mg/L IC:-0.3121mg/L	Complete	5/28/2015 10:35:19 PM	28
29	TOC		!!Error!! TOC:0.3020mg/L TC:-0.07470mg/L IC:-0.3767mg/	Complete	5/28/2015 10:54:11 PM	29
30	TOC	WG525354-01 BLK	!!Error!! TOC:0.3130mg/L TC:0.02201mg/L IC:-0.2910mg/L	Complete	5/28/2015 11:26:46 PM	0
31	TOC		!!Error!! TOC:0.3038mg/L TC:-0.07643mg/L IC:-0.3803mg/	Complete	5/29/2015 12:01:10 AM	31
32	TOC		!!Error!! TOC:0.3022mg/L TC:-0.07646mg/L IC:-0.3787mg/	Complete	5/29/2015 12:35:43 AM	32
33	TOC	L15051105-27 (2)	!!Error!! TOC:29.52mg/L TC:29.26mg/L IC:-0.2539mg/L	Complete	5/29/2015 1:26:06 AM	33
34	TOC	WG525354-05 (2) DUP	!!Error!! TOC:28.90mg/L TC:28.62mg/L IC:-0.2827mg/L	Complete	5/29/2015 2:14:09 AM	34
35	TOC	CCV	!!Error!! TOC:24.66mg/L TC:24.27mg/L IC:-0.3973mg/L	Complete	5/29/2015 8:38:47 AM	35
36	TOC	CCB	!!Error!! TOC:0.3680mg/L TC:0.04523mg/L IC:-0.3228mg/L	Complete	5/29/2015 8:48:03 AM	0
37	TOC	L15051545-02 (3)	TOC:2.926mg/L TC:26.68mg/L IC:23.75mg/L	Complete	5/29/2015 9:15:42 AM	37
38	TOC	L15051605-07	TOC:6.802mg/L TC:32.16mg/L IC:25.36mg/L	Complete	5/29/2015 9:43:51 AM	38
39	TOC	WG525331-07 MS	TOC:7.639mg/L TC:23.66mg/L IC:16.02mg/L	Complete	5/29/2015 10:09:52 AM	39
40	TOC	WG525354-01 LCS	TOC:25.58mg/L TC:45.26mg/L IC:19.68mg/L	Complete	5/29/2015 12:12:42 PM	40
41	TOC	WG525354-02 LCSDUP	TOC:26.53mg/L TC:44.87mg/L IC:18.34mg/L	Complete	5/29/2015 1:08:32 PM	41
42	TOC	CCV	!!Error!! TOC:24.56mg/L TC:24.27mg/L IC:-0.2966mg/L	Complete	5/29/2015 1:22:42 PM	42
43	TOC	CCB	!!Error!! TOC:0.3331mg/L TC:0.01800mg/L IC:-0.3151mg/L	Complete	5/29/2015 1:31:55 PM	0

5/29/2015 1:34:49 PM 1/1

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Sample

Sample Name: TIC
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-0.8179mg/L TC:23.83mg/L IC:24.65mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1054	23.83mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/28/2015 11:18:24 AM

Mean Area 1054
Mean Conc. 23.83mg/L

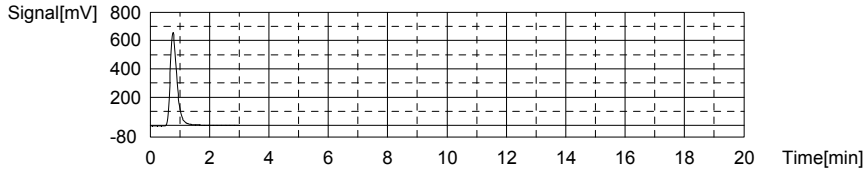

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	793.3	24.65mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/28/2015 11:24:16 AM

Mean Area 793.3
Mean Conc. 24.65mg/L

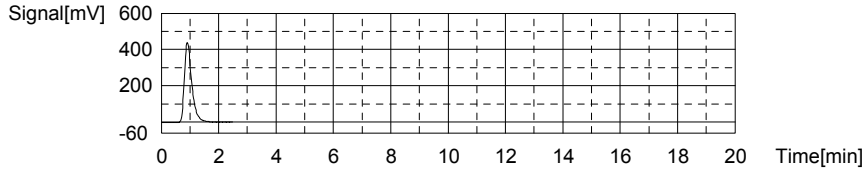

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:24.37mg/L TC:24.47mg/L IC:0.09675mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1082	24.47mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_05	5/28/2015 11:33:34 AM

Mean Area 1082
Mean Conc. 24.47mg/L

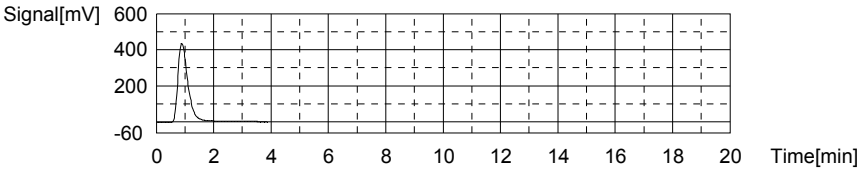

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	25.48	0.09675mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/28/2015 11:38:16 AM

Mean Area 25.48
Mean Conc. 0.09675mg/L

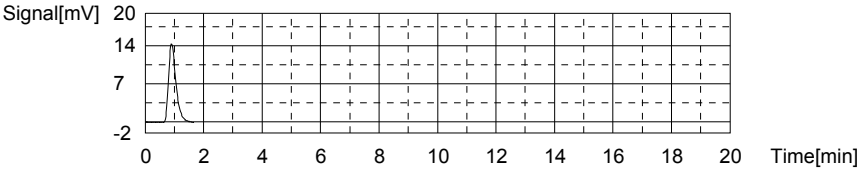

Sample

Sample Name: WG525331-01 BLK
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.3181mg/L TC:0.07635mg/L IC:-0.2417mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	16.68	0.09580mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_05	5/28/2015 11:43:24 AM
2	14.98	0.05690mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_05	5/28/2015 11:46:58 AM

Mean Area 15.83
Mean Conc. 0.07635mg/L

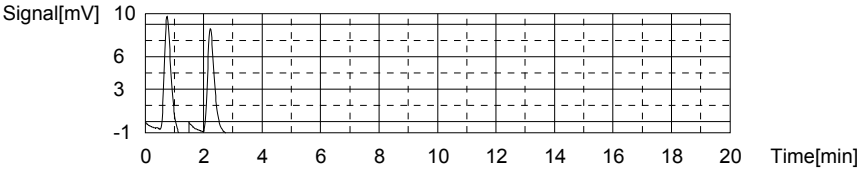

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	14.92	-0.2409mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/28/2015 11:51:13 AM
2	14.87	-0.2425mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/28/2015 11:55:26 AM

Mean Area 14.90
Mean Conc. -0.2417mg/L

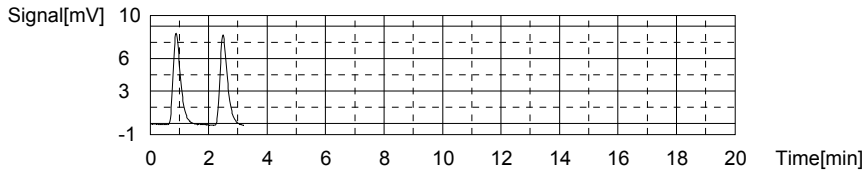

Sample

Sample Name: WG525331-02 LCS
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:25.35mg/L TC:45.13mg/L IC:19.78mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1974	44.88mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_05	5/28/2015 12:05:40 PM
2	1996	45.38mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_05	5/28/2015 12:13:50 PM

Mean Area 1985
Mean Conc. 45.13mg/L

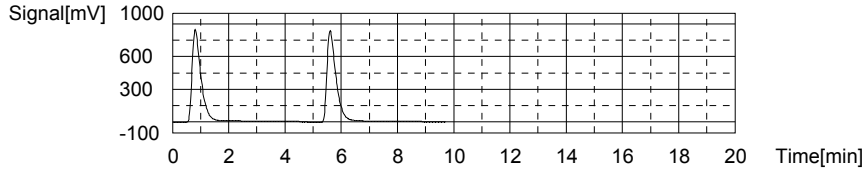

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	639.3	19.72mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_15	5/28/2015 12:19:26 PM
2	643.0	19.84mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_15	5/28/2015 12:25:12 PM

Mean Area 641.2
Mean Conc. 19.78mg/L

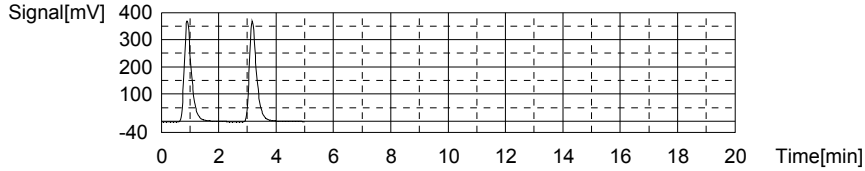

Sample

Sample Name: WG525331-03 LCSDUP
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:25.39mg/L TC:44.45mg/L IC:19.06mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1956	44.47mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_05	5/28/2015 12:35:31 PM
2	1954	44.42mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_05	5/28/2015 12:44:08 PM

Mean Area 1955
Mean Conc. 44.45mg/L

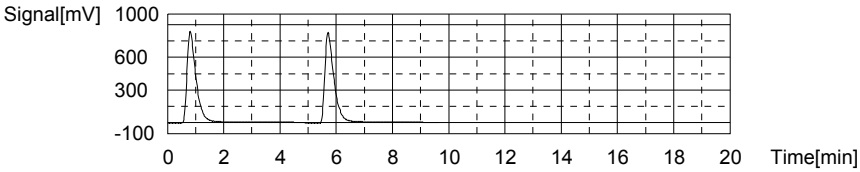

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	619.2	19.08mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_15	5/28/2015 12:49:50 PM
2	617.6	19.03mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_15	5/28/2015 12:55:13 PM

Mean Area 618.4
Mean Conc. 19.06mg/L

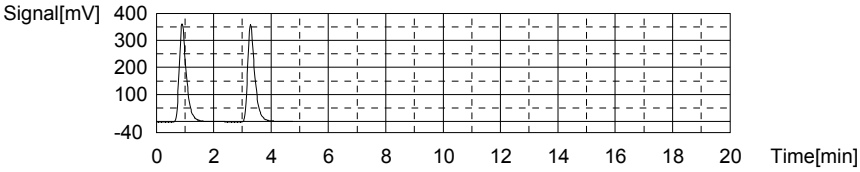

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:59.88mg/L TC:59.86mg/L IC:-0.02652mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2637	60.05mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_05	5/28/2015 1:21:43 PM
2	2620	59.66mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_05	5/28/2015 1:29:10 PM

Mean Area 2629
Mean Conc. 59.86mg/L

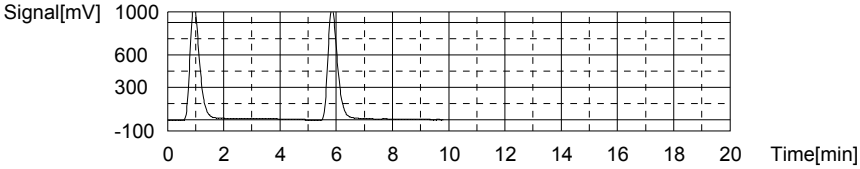

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	22.10	-0.01133mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/28/2015 1:33:55 PM
2	21.15	-0.04171mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/28/2015 1:38:25 PM

Mean Area 21.63
Mean Conc. -0.02652mg/L

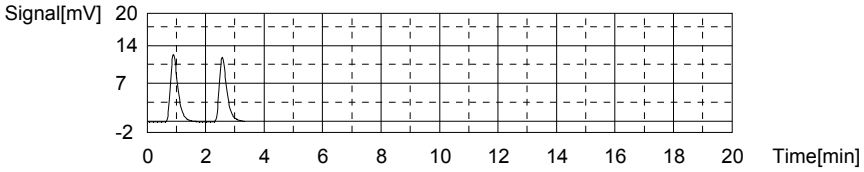

Sample

Sample Name: L15051105-03 (2)
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:30.75mg/L TC:30.65mg/L IC:-0.1001mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1375	31.18mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/28/2015 1:48:46 PM
2	1329	30.12mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/28/2015 1:56:26 PM

Mean Area 1352
Mean Conc. 30.65mg/L

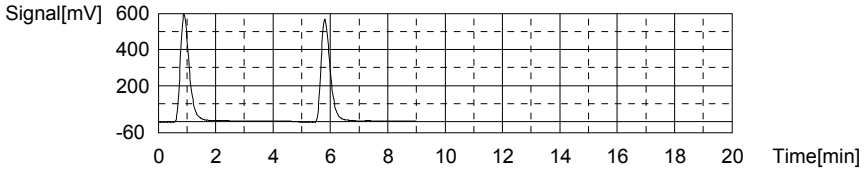

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	19.41	-0.09734mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/28/2015 2:01:04 PM
2	19.24	-0.1028mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/28/2015 2:05:31 PM

Mean Area 19.33
Mean Conc. -0.1001mg/L

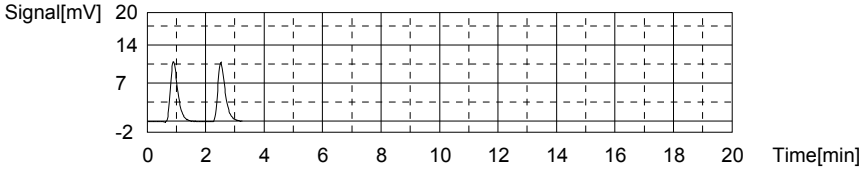

Sample

Sample Name: L15051429-01
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.217mg/L TC:14.78mg/L IC:10.56mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	657.1	14.75mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/28/2015 2:15:33 PM
2	659.7	14.81mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/28/2015 2:21:35 PM

Mean Area 658.4
Mean Conc. 14.78mg/L

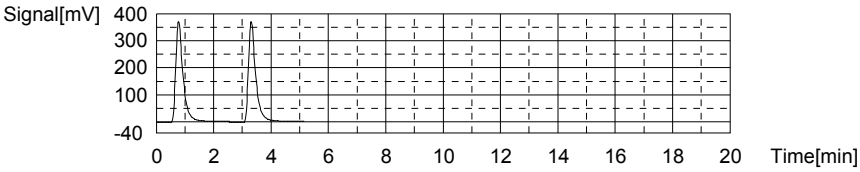

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	354.7	10.62mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/28/2015 2:26:47 PM
2	350.8	10.50mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/28/2015 2:31:54 PM

Mean Area 352.8
Mean Conc. 10.56mg/L

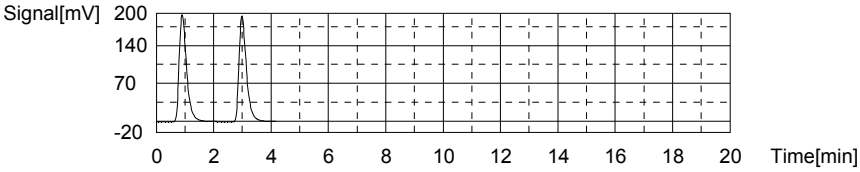

Sample

Sample Name: L15051429-05
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.335mg/L TC:25.72mg/L IC:24.38mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1134	25.66mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/28/2015 2:40:47 PM
2	1139	25.78mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/28/2015 2:47:19 PM

Mean Area 1137
Mean Conc. 25.72mg/L

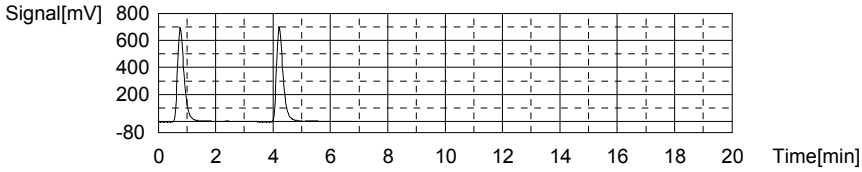

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	777.6	24.15mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/28/2015 2:52:58 PM
2	792.4	24.62mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/28/2015 2:58:22 PM

Mean Area 785.0
Mean Conc. 24.38mg/L

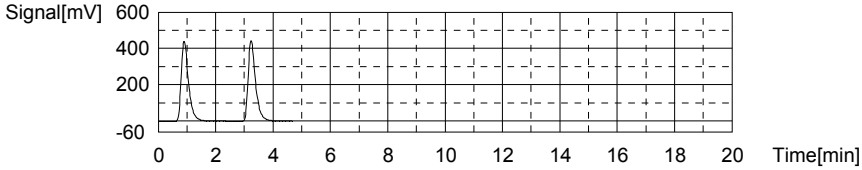

Sample

Sample Name: L15051435-01
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.677mg/L TC:49.23mg/L IC:45.55mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2161	49.16mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/28/2015 3:20:05 PM
2	2167	49.30mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/28/2015 3:27:46 PM

Mean Area 2164
Mean Conc. 49.23mg/L

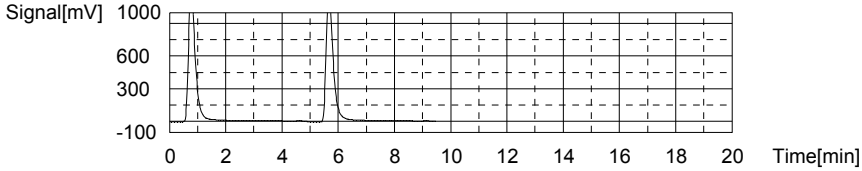

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1460	45.97mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/28/2015 3:34:00 PM
2	1434	45.14mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/28/2015 3:39:49 PM

Mean Area 1447
Mean Conc. 45.55mg/L

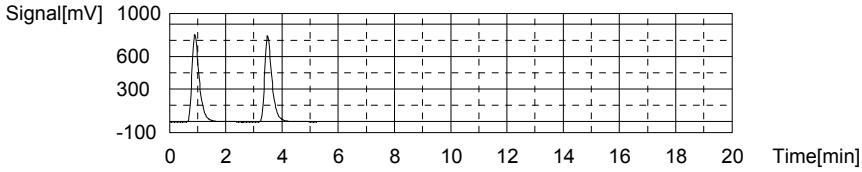

Sample

Sample Name: L15051435-03 (3)
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.189mg/L TC:12.85mg/L IC:7.657mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	574.0	12.85mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_05	5/28/2015 3:47:51 PM
2	573.8	12.84mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_05	5/28/2015 3:52:46 PM

Mean Area 573.9
Mean Conc. 12.85mg/L

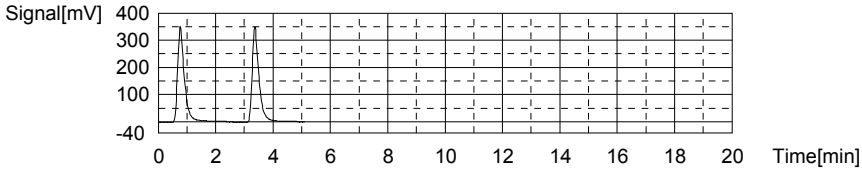

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	285.9	8.424mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_15	5/28/2015 3:58:00 PM
2	237.9	6.889mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_15	5/28/2015 4:02:57 PM

Mean Area 261.9
Mean Conc. 7.657mg/L

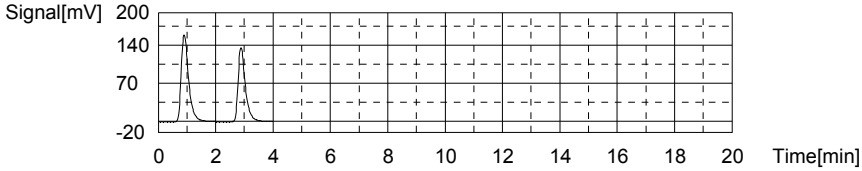

Sample

Sample Name: L15051531-01 (3)
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.425mg/L TC:20.99mg/L IC:17.56mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	935.1	21.11mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/28/2015 4:12:24 PM
2	924.3	20.86mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/28/2015 4:19:02 PM

Mean Area 929.7
Mean Conc. 20.99mg/L

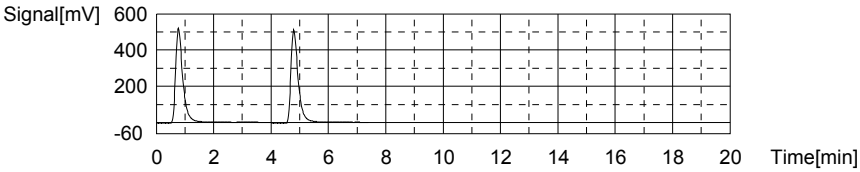

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	574.9	17.67mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/28/2015 4:24:22 PM
2	568.4	17.46mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/28/2015 4:29:40 PM

Mean Area 571.6
Mean Conc. 17.56mg/L

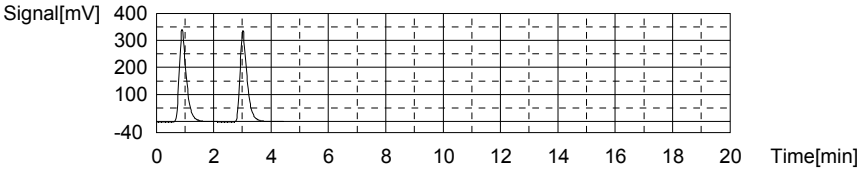

Sample

Sample Name: L15051531-02 (3)
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.959mg/L TC:38.38mg/L IC:34.42mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1712	38.89mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/28/2015 4:50:43 PM
2	1668	37.88mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/28/2015 4:58:07 PM

Mean Area 1690
Mean Conc. 38.38mg/L

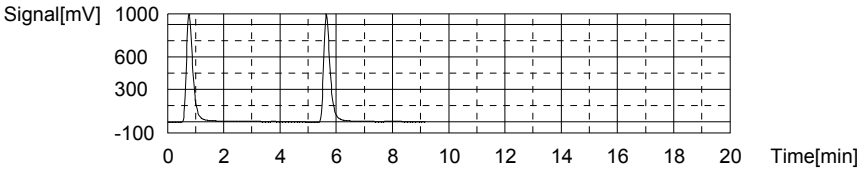

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1109	34.74mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/28/2015 5:03:58 PM
2	1089	34.10mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/28/2015 5:09:25 PM

Mean Area 1099
Mean Conc. 34.42mg/L

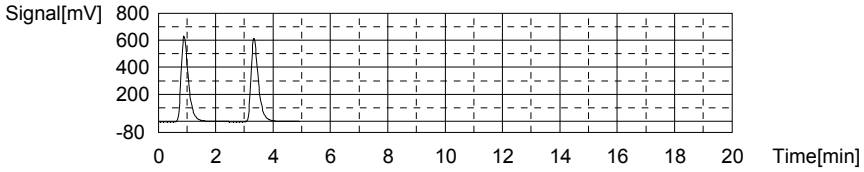

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.79mg/L TC:24.79mg/L IC:-0.00078mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1096	24.79mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/28/2015 5:19:27 PM

Mean Area 1096
Mean Conc. 24.79mg/L

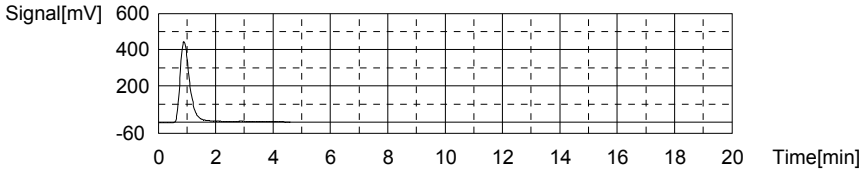

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	22.43	-0.00078mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/28/2015 5:24:16 PM

Mean Area 22.43
Mean Conc. -0.00078mg/L

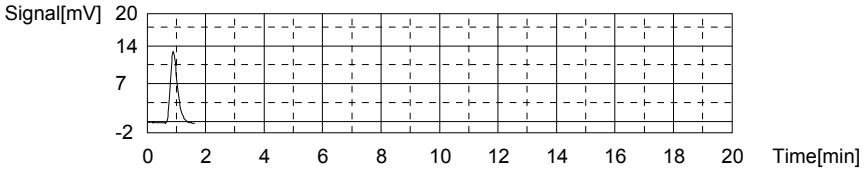

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.2796mg/L TC:0.04317mg/L IC:-0.2364mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	14.38	0.04317mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/28/2015 5:29:23 PM

Mean Area 14.38
Mean Conc. 0.04317mg/L

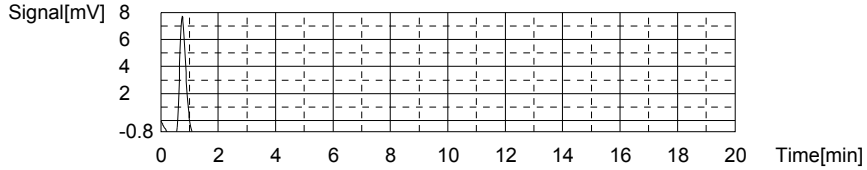

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	15.06	-0.2364mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/28/2015 5:33:42 PM

Mean Area 15.06
Mean Conc. -0.2364mg/L

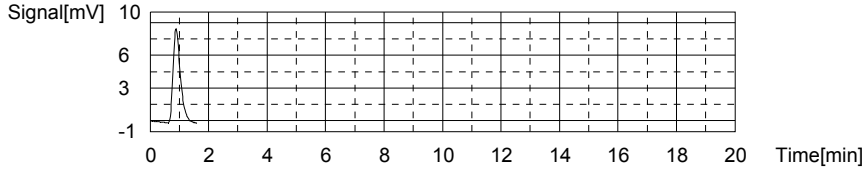

Sample

Sample Name: L15051534-03
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.306mg/L TC:17.52mg/L IC:13.22mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	775.9	17.47mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/28/2015 5:42:14 PM
2	780.9	17.58mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/28/2015 5:46:56 PM

Mean Area 778.4
Mean Conc. 17.52mg/L

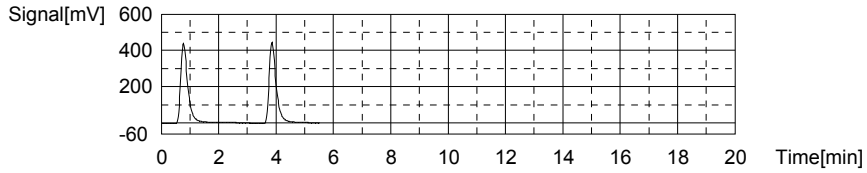

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	437.9	13.28mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/28/2015 5:52:22 PM
2	433.8	13.15mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/28/2015 5:57:33 PM

Mean Area 435.9
Mean Conc. 13.22mg/L

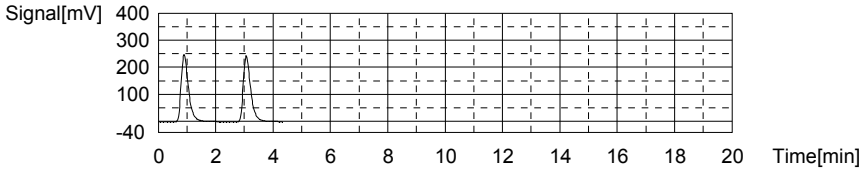

Sample

Sample Name: L15051545-01
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.944mg/L TC:44.84mg/L IC:39.89mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1945	44.22mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/28/2015 6:07:41 PM
2	1999	45.45mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/28/2015 6:15:46 PM

Mean Area 1972
Mean Conc. 44.84mg/L

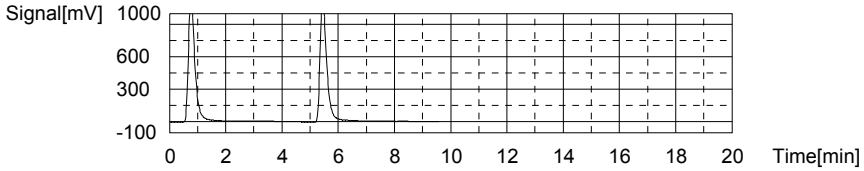

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1271	39.92mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/28/2015 6:21:55 PM
2	1269	39.86mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/28/2015 6:27:39 PM

Mean Area 1270
Mean Conc. 39.89mg/L

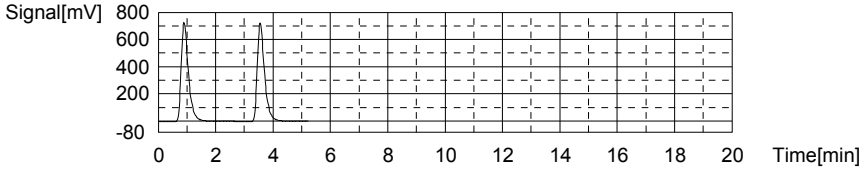

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-2.243mg/L TC:59.14mg/L IC:61.38mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2588	58.93mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/28/2015 6:37:59 PM
2	2606	59.34mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/28/2015 6:46:04 PM

Mean Area 2597
Mean Conc. 59.14mg/L

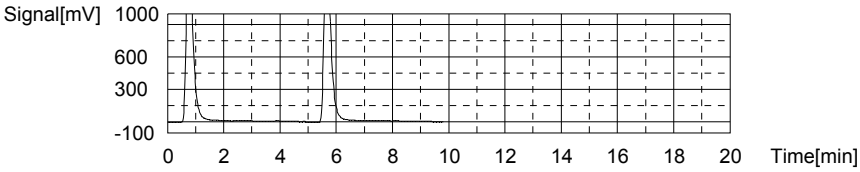

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1934	61.12mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/28/2015 6:52:46 PM
2	1950	61.64mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/28/2015 6:58:58 PM

Mean Area 1942
Mean Conc. 61.38mg/L

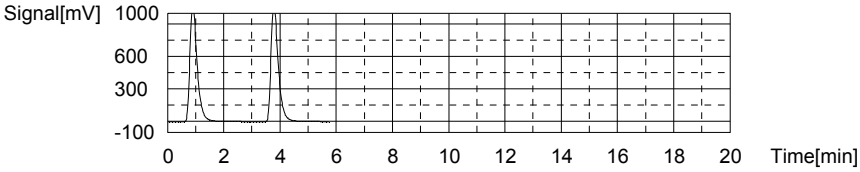

Sample

Sample Name: L15051545-03
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.112mg/L TC:36.87mg/L IC:32.76mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1627	36.94mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/28/2015 7:08:58 PM
2	1621	36.80mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/28/2015 7:16:21 PM

Mean Area 1624
Mean Conc. 36.87mg/L

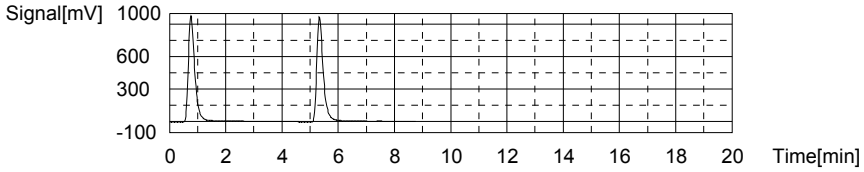

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1056	33.05mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/28/2015 7:22:25 PM
2	1038	32.47mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/28/2015 7:28:03 PM

Mean Area 1047
Mean Conc. 32.76mg/L

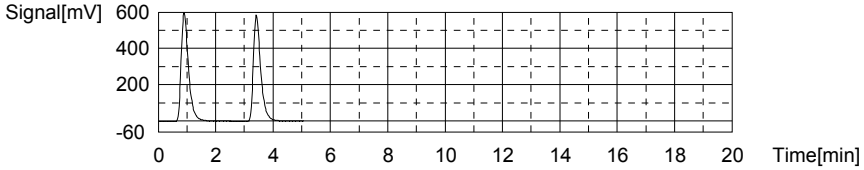

Sample

Sample Name: L15051605-06 (3)
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.922mg/L TC:17.35mg/L IC:12.43mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	773.5	17.41mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/28/2015 7:36:25 PM
2	767.8	17.28mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/28/2015 7:41:22 PM

Mean Area 770.7
Mean Conc. 17.35mg/L

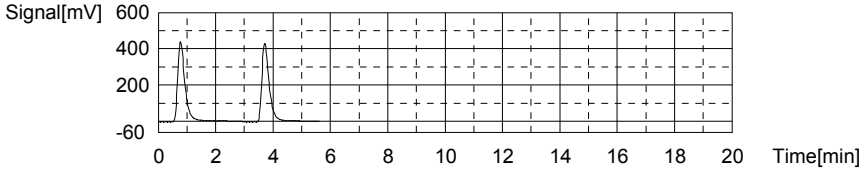

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	411.9	12.45mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/28/2015 7:46:46 PM
2	410.2	12.40mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/28/2015 7:51:47 PM

Mean Area 411.1
Mean Conc. 12.43mg/L

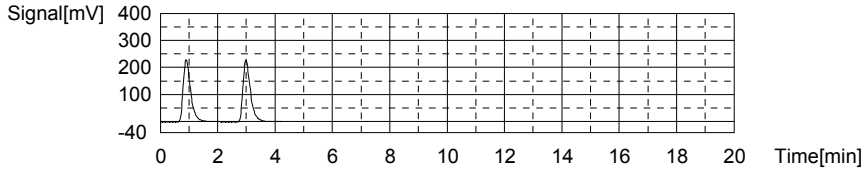

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.968mg/L TC:6.152mg/L IC:4.184mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	279.4	6.107mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_05	5/28/2015 7:59:17 PM
2	283.3	6.196mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_05	5/28/2015 8:03:32 PM

Mean Area 281.4
Mean Conc. 6.152mg/L

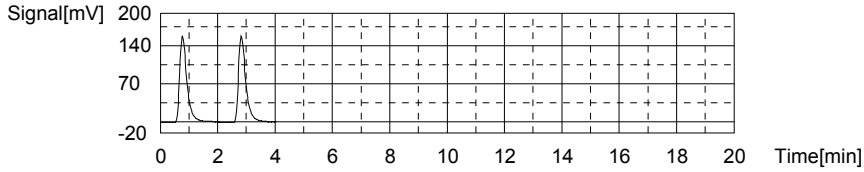

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	154.7	4.229mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_15	5/28/2015 8:08:33 PM
2	151.9	4.139mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_15	5/28/2015 8:13:21 PM

Mean Area 153.3
Mean Conc. 4.184mg/L

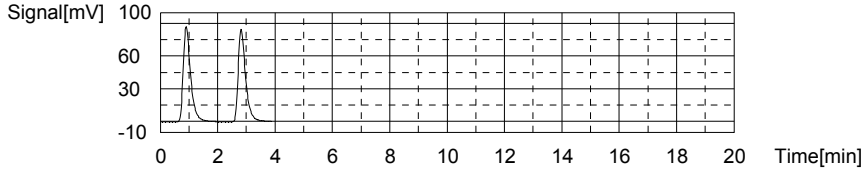

Sample

Sample Name: L15051605-08 (3)
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.105mg/L TC:13.40mg/L IC:8.299mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	588.6	13.18mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/28/2015 8:21:14 PM
2	608.0	13.63mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/28/2015 8:26:57 PM

Mean Area 598.3
Mean Conc. 13.40mg/L

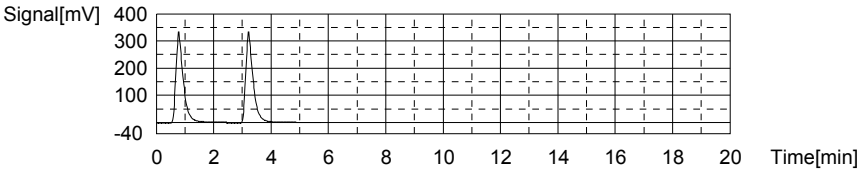

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	284.0	8.363mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/28/2015 8:32:06 PM
2	280.0	8.235mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/28/2015 8:37:07 PM

Mean Area 282.0
Mean Conc. 8.299mg/L

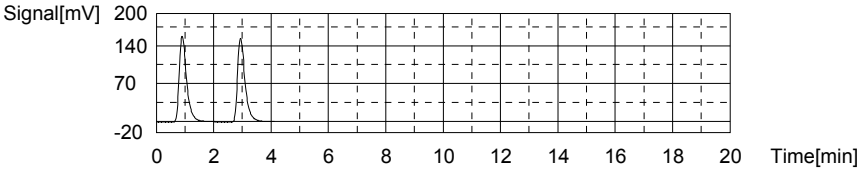

Sample

Sample Name: L15051605-10 (3)
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.488mg/L TC:12.01mg/L IC:8.525mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	539.5	12.06mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/28/2015 8:45:00 PM
2	535.5	11.97mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/28/2015 8:49:53 PM

Mean Area 537.5
Mean Conc. 12.01mg/L

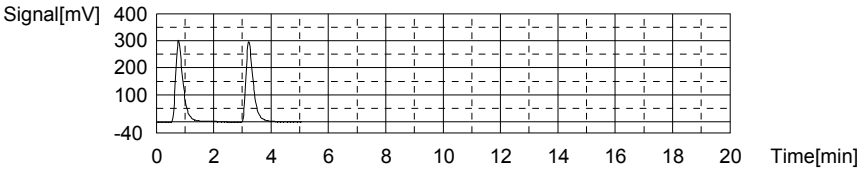

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	294.2	8.689mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/28/2015 8:55:08 PM
2	283.9	8.360mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/28/2015 9:00:06 PM

Mean Area 289.1
Mean Conc. 8.525mg/L

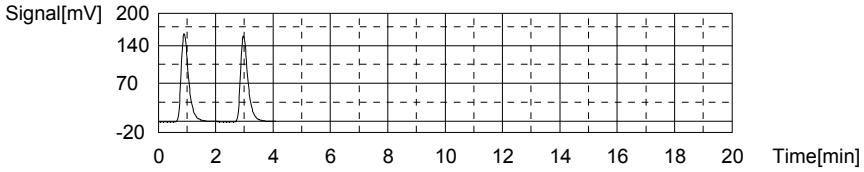

Sample

Sample Name: L15051610-01
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.401mg/L TC:8.923mg/L IC:6.521mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	403.7	8.951mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/28/2015 9:08:25 PM
2	401.2	8.894mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/28/2015 9:13:38 PM

Mean Area 402.5
Mean Conc. 8.923mg/L

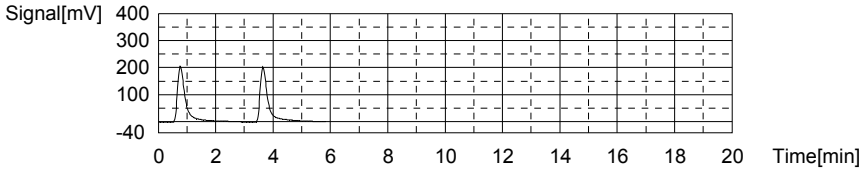

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	228.9	6.601mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/28/2015 9:18:45 PM
2	223.9	6.441mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/28/2015 9:23:39 PM

Mean Area 226.4
Mean Conc. 6.521mg/L

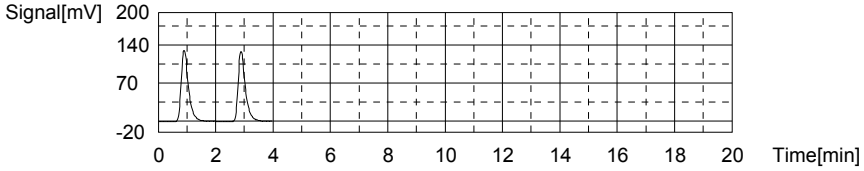

Sample

Sample Name: L15051610-02
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.079mg/L TC:5.183mg/L IC:4.104mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	238.3	5.167mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/28/2015 9:31:22 PM
2	239.7	5.199mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/28/2015 9:36:05 PM

Mean Area 239.0
Mean Conc. 5.183mg/L

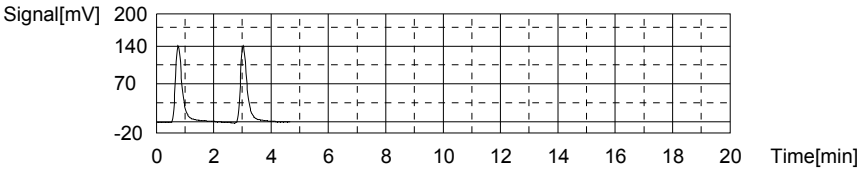

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	152.1	4.146mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/28/2015 9:41:08 PM
2	149.5	4.062mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/28/2015 9:45:55 PM

Mean Area 150.8
Mean Conc. 4.104mg/L

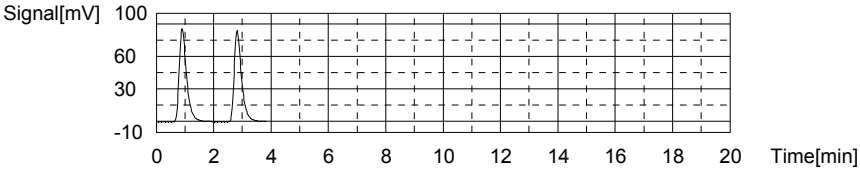

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.73mg/L TC:24.45mg/L IC:-0.2767mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1081	24.45mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/28/2015 9:55:26 PM

Mean Area 1081
Mean Conc. 24.45mg/L

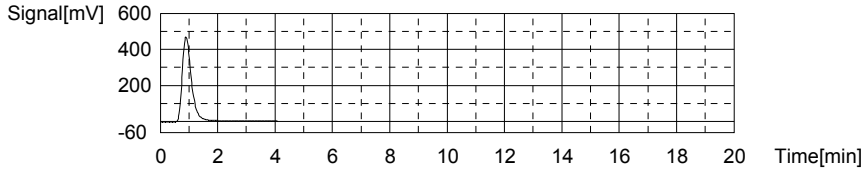

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	13.80	-0.2767mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/28/2015 10:00:06 PM

Mean Area 13.80
Mean Conc. -0.2767mg/L

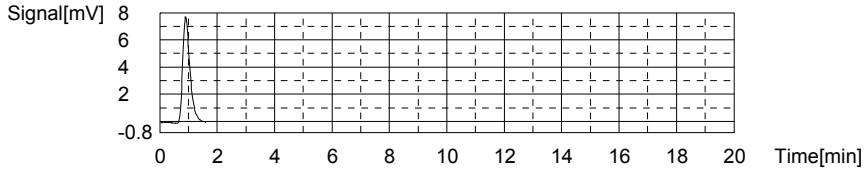

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.3187mg/L TC:0.03493mg/L IC:-0.2838mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	14.02	0.03493mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_05	5/28/2015 10:05:13 PM

Mean Area 14.02
Mean Conc. 0.03493mg/L

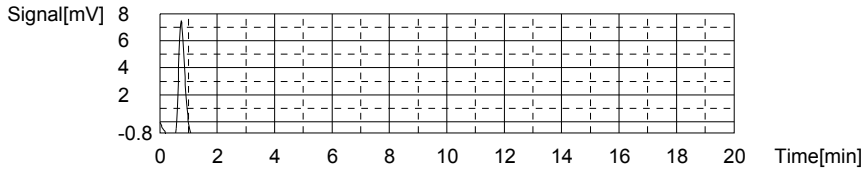

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	13.58	-0.2838mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/28/2015 10:09:26 PM

Mean Area 13.58
Mean Conc. -0.2838mg/L

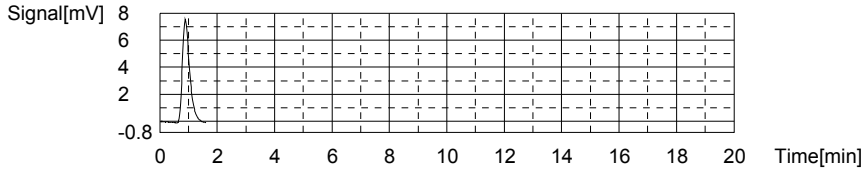

Sample

Sample Name: WG525331-05 DUP
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:29.63mg/L TC:29.32mg/L IC:-0.3121mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1311	29.71mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/28/2015 10:19:43 PM
2	1277	28.93mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/28/2015 10:26:17 PM

Mean Area 1294
Mean Conc. 29.32mg/L

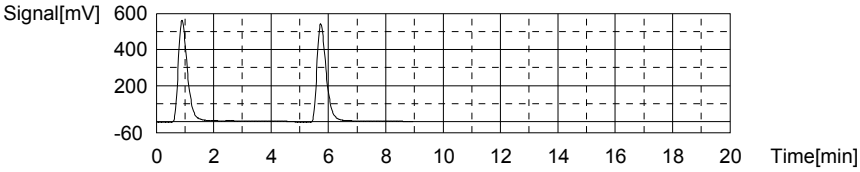

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	12.80	-0.3087mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/28/2015 10:30:55 PM
2	12.59	-0.3154mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/28/2015 10:35:19 PM

Mean Area 12.70
Mean Conc. -0.3121mg/L

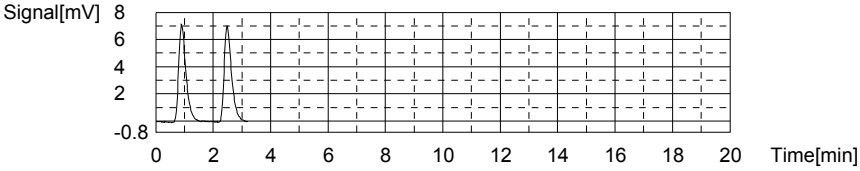

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.3020mg/L TC:-0.07470mg/L IC:-0.3767mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.487	-0.06879mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/28/2015 10:42:02 PM
2	8.970	-0.08062mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/28/2015 10:45:30 PM

Mean Area 9.229
Mean Conc. -0.07470mg/L

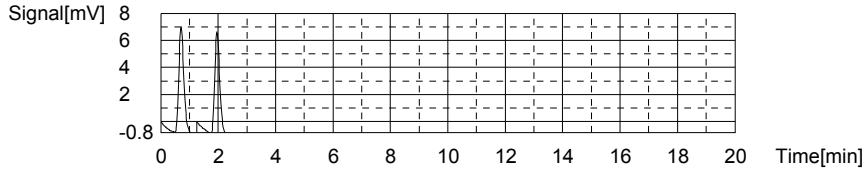

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.77	-0.3736mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/28/2015 10:49:57 PM
2	10.58	-0.3797mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/28/2015 10:54:11 PM

Mean Area 10.68
Mean Conc. -0.3767mg/L

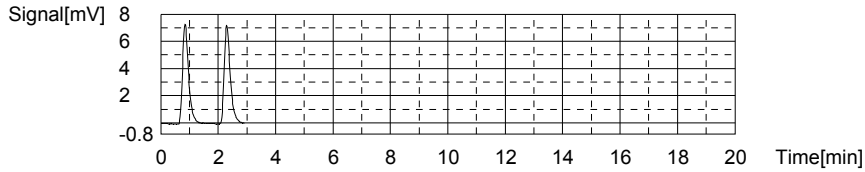

Sample

Sample Name: WG525354-01 BLK
Sample ID: <Untitled>
Origin: TOC9060-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.3130mg/L TC:0.02201mg/L IC:-0.2910mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	13.37	0.02006mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/28/2015 10:59:17 PM
2	13.56	0.02441mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/28/2015 11:02:51 PM
3	13.45	0.02189mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/28/2015 11:06:25 PM
4	13.44	0.02166mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/28/2015 11:09:59 PM

Mean Area 13.46
Mean Conc. 0.02201mg/L

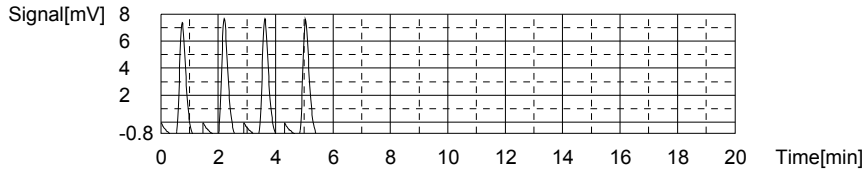

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	13.38	-0.2902mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/28/2015 11:14:10 PM
2	13.40	-0.2895mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/28/2015 11:18:20 PM
3	13.38	-0.2902mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/28/2015 11:22:33 PM
4	13.26	-0.2940mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/28/2015 11:26:46 PM

Mean Area 13.36
Mean Conc. -0.2910mg/L

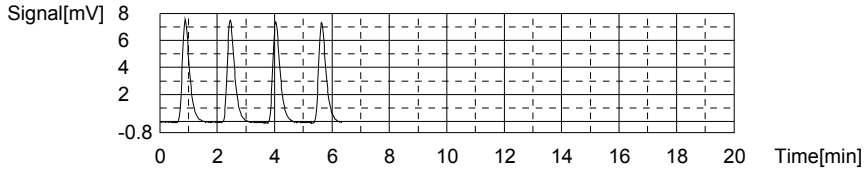

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC9060-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.3038mg/L TC:-0.07643mg/L IC:-0.3803mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.512	-0.06821mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_05	5/28/2015 11:33:27 PM
2	9.095	-0.07776mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_05	5/28/2015 11:36:57 PM
3	8.860	-0.08313mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_05	5/28/2015 11:40:27 PM
4	9.144	-0.07663mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_05	5/28/2015 11:43:57 PM

Mean Area 9.153
Mean Conc. -0.07643mg/L

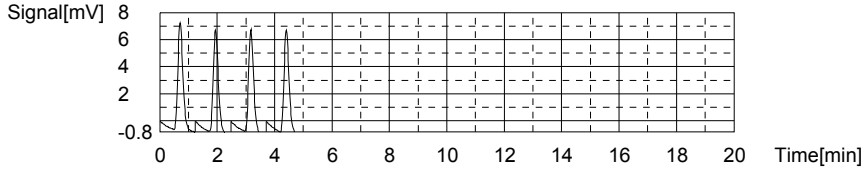

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.41	-0.3851mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_15	5/28/2015 11:48:22 PM
2	10.51	-0.3819mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_15	5/28/2015 11:52:41 PM
3	10.74	-0.3746mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_15	5/28/2015 11:56:53 PM
4	10.59	-0.3794mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_15	5/29/2015 12:01:10 AM

Mean Area 10.56
Mean Conc. -0.3803mg/L

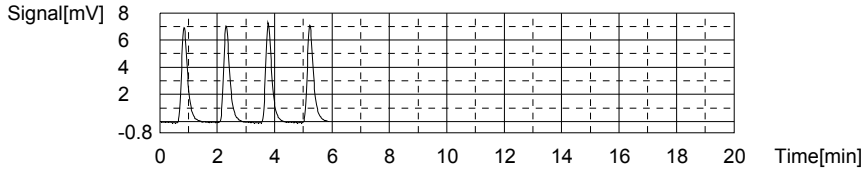

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC9060-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.3022mg/L TC:-0.07646mg/L IC:-0.3787mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.434	-0.07000mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/29/2015 12:07:52 AM
2	8.873	-0.08283mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/29/2015 12:11:21 AM
3	9.208	-0.07517mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/29/2015 12:14:49 AM
4	9.092	-0.07782mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/29/2015 12:18:17 AM

Mean Area 9.152
Mean Conc. -0.07646mg/L

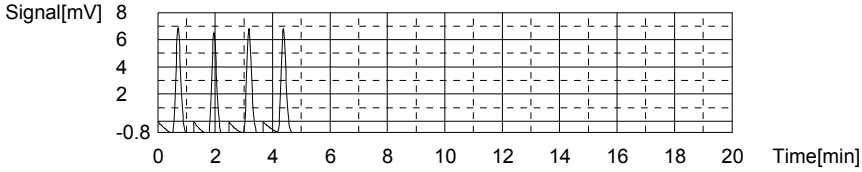

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.53	-0.3813mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/29/2015 12:22:45 AM
2	10.63	-0.3781mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/29/2015 12:27:02 AM
3	10.51	-0.3819mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/29/2015 12:31:23 AM
4	10.78	-0.3733mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/29/2015 12:35:43 AM

Mean Area 10.61
Mean Conc. -0.3787mg/L

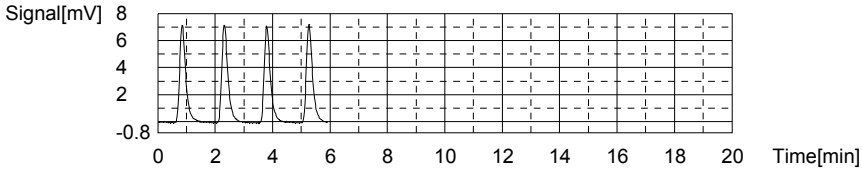

Sample

Sample Name: L15051105-27 (2)
Sample ID: <Untitled>
Origin: TOC9060-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:29.52mg/L TC:29.26mg/L IC:-0.2539mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1304	29.55mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/29/2015 12:45:40 AM
2	1278	28.96mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/29/2015 12:52:56 AM
3	1263	28.61mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/29/2015 12:59:56 AM
4	1321	29.94mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/29/2015 1:08:03 AM

Mean Area 1292
Mean Conc. 29.26mg/L

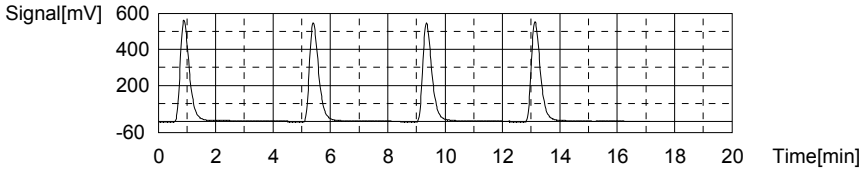

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	14.65	-0.2496mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/29/2015 1:12:43 AM
2	14.53	-0.2534mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/29/2015 1:17:10 AM
3	14.49	-0.2547mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/29/2015 1:21:40 AM
4	14.39	-0.2579mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/29/2015 1:26:06 AM

Mean Area 14.52
Mean Conc. -0.2539mg/L

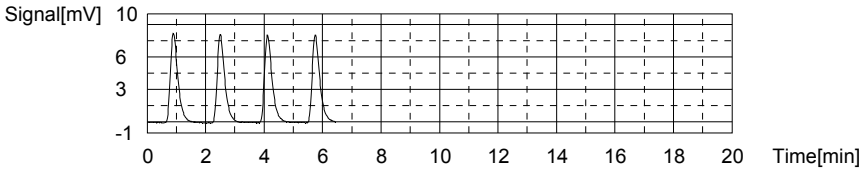

Sample

Sample Name: WG525354-05 (2) DUP
Sample ID: <Untitled>
Origin: TOC9060-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:28.90mg/L TC:28.62mg/L IC:-0.2827mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1283	29.07mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/29/2015 1:35:43 AM
2	1246	28.22mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/29/2015 1:42:41 AM
3	1270	28.77mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/29/2015 1:50:08 AM
4	1254	28.41mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/29/2015 1:56:17 AM

Mean Area 1263
Mean Conc. 28.62mg/L

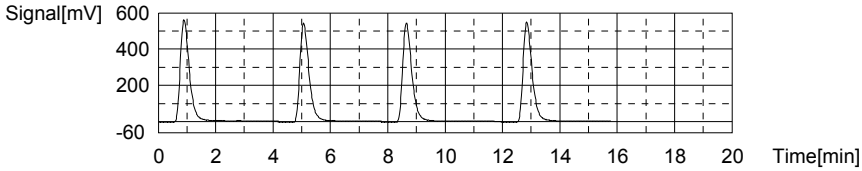

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	13.80	-0.2767mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/29/2015 2:00:57 AM
2	13.66	-0.2812mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/29/2015 2:05:20 AM
3	13.51	-0.2860mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/29/2015 2:09:44 AM
4	13.48	-0.2870mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/29/2015 2:14:09 AM

Mean Area 13.61
Mean Conc. -0.2827mg/L

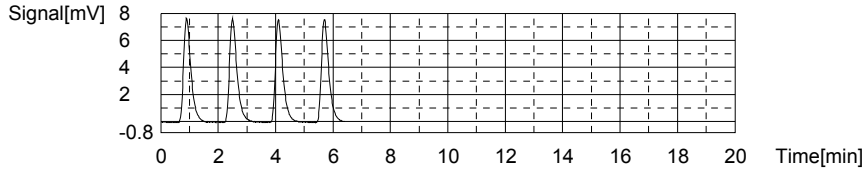

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.66mg/L TC:24.27mg/L IC:-0.3973mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1073	24.27mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/29/2015 8:34:09 AM

Mean Area 1073
Mean Conc. 24.27mg/L

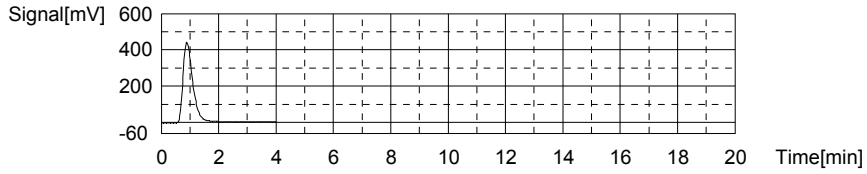

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.03	-0.3973mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/29/2015 8:38:47 AM

Mean Area 10.03
Mean Conc. -0.3973mg/L

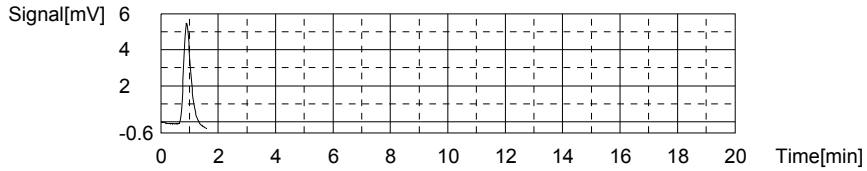

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.3680mg/L TC:0.04523mg/L IC:-0.3228mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	14.47	0.04523mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/29/2015 8:43:52 AM

Mean Area 14.47
Mean Conc. 0.04523mg/L

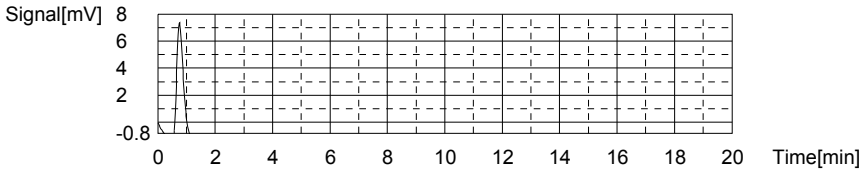

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	12.36	-0.3228mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/29/2015 8:48:03 AM

Mean Area 12.36
Mean Conc. -0.3228mg/L

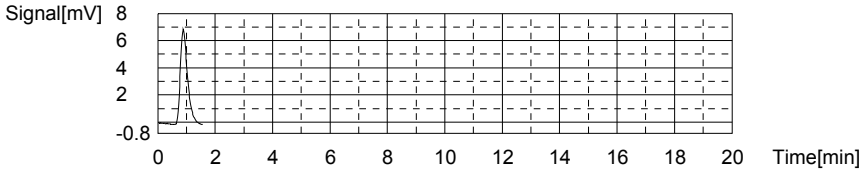

Sample

Sample Name: L15051545-02 (3)
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.926mg/L TC:26.68mg/L IC:23.75mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1177	26.65mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/29/2015 8:57:49 AM
2	1180	26.71mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/29/2015 9:04:44 AM

Mean Area 1179
Mean Conc. 26.68mg/L

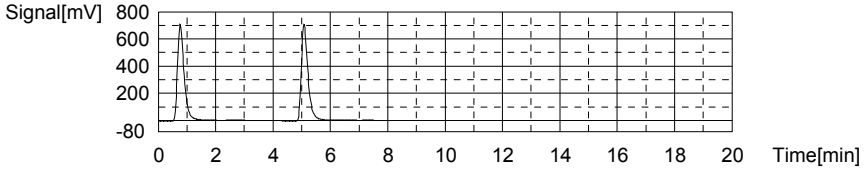

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	775.5	24.08mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/29/2015 9:10:24 AM
2	755.1	23.43mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/29/2015 9:15:42 AM

Mean Area 765.3
Mean Conc. 23.75mg/L

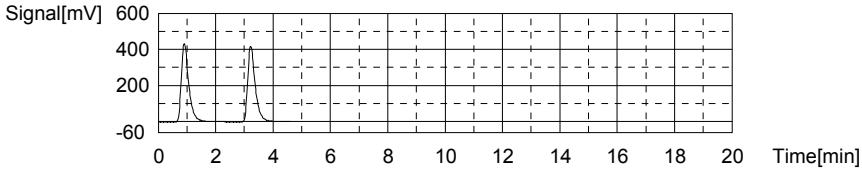

Sample

Sample Name: L15051605-07
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.802mg/L TC:32.16mg/L IC:25.36mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1405	31.86mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_05	5/29/2015 9:24:54 AM
2	1431	32.46mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_05	5/29/2015 9:32:38 AM

Mean Area 1418
Mean Conc. 32.16mg/L

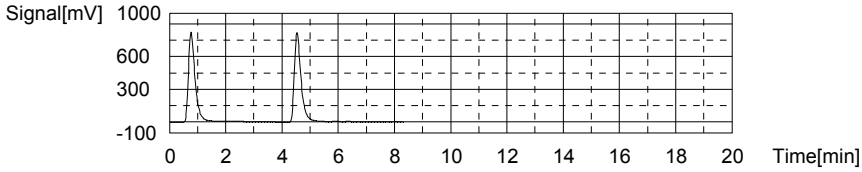

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	842.1	26.21mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_15	5/29/2015 9:38:20 AM
2	788.8	24.50mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_15	5/29/2015 9:43:51 AM

Mean Area 815.5
Mean Conc. 25.36mg/L

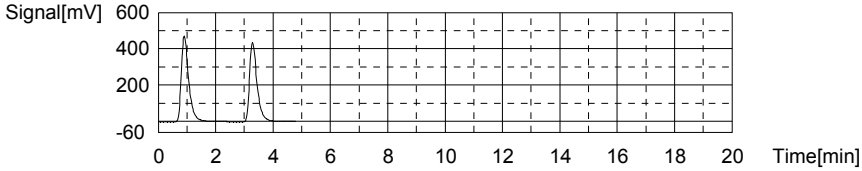

Sample

Sample Name: WG525331-07 MS
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.639mg/L TC:23.66mg/L IC:16.02mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1032	23.33mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/29/2015 9:53:11 AM
2	1061	23.99mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/29/2015 9:59:15 AM

Mean Area 1047
Mean Conc. 23.66mg/L

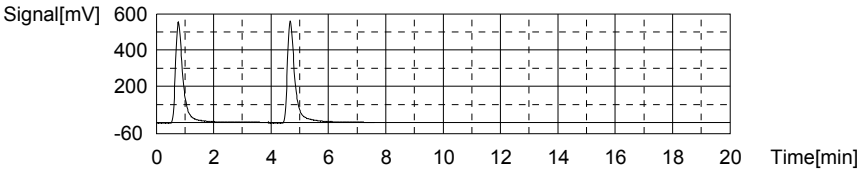

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	569.3	17.49mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/29/2015 10:04:45 AM
2	477.6	14.55mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/29/2015 10:09:52 AM

Mean Area 523.5
Mean Conc. 16.02mg/L

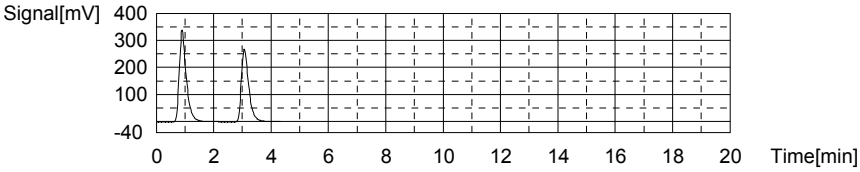

Sample

Sample Name: WG525354-01 LCS
Sample ID: <Untitled>
Origin: TOC9060-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:25.58mg/L TC:45.26mg/L IC:19.68mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1994	45.34mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/29/2015 11:27:29 AM
2	1974	44.88mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/29/2015 11:35:33 AM
3	2002	45.52mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/29/2015 11:42:51 AM
4	1992	45.29mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/29/2015 11:50:50 AM

Mean Area 1991
Mean Conc. 45.26mg/L

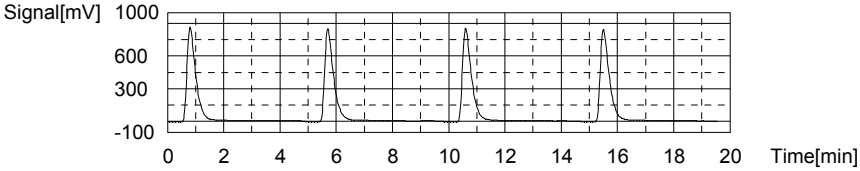

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	649.1	20.04mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/29/2015 11:56:30 AM
2	645.7	19.93mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/29/2015 12:02:03 PM
3	642.8	19.84mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/29/2015 12:07:18 PM
4	613.7	18.91mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/29/2015 12:12:42 PM

Mean Area 637.8
Mean Conc. 19.68mg/L

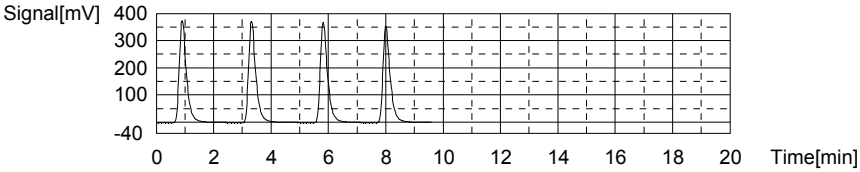

Sample

Sample Name: WG525354-02 LCSDUP
Sample ID: <Untitled>
Origin: TOC9060-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:26.53mg/L TC:44.87mg/L IC:18.34mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1990	45.25mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/29/2015 12:23:03 PM
2	2011	45.73mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/29/2015 12:31:22 PM
3	1973	44.86mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/29/2015 12:38:32 PM
4	1920	43.65mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/29/2015 12:46:21 PM

Mean Area 1974
Mean Conc. 44.87mg/L

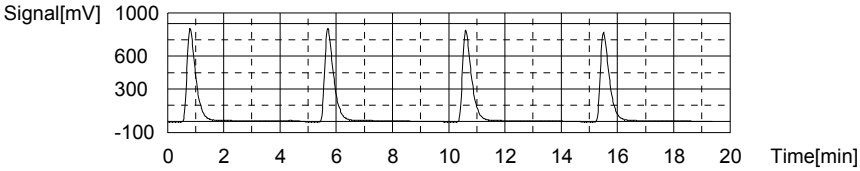

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	593.9	18.27mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/29/2015 12:52:08 PM
2	606.8	18.69mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/29/2015 12:57:36 PM
3	605.3	18.64mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/29/2015 1:03:06 PM
4	578.5	17.78mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/29/2015 1:08:32 PM

Mean Area 596.1
Mean Conc. 18.34mg/L

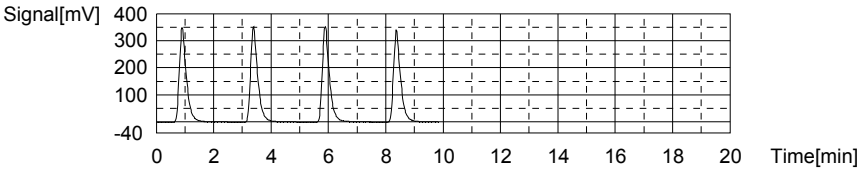

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.56mg/L TC:24.27mg/L IC:-0.2966mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1073	24.27mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_05	5/29/2015 1:18:02 PM

Mean Area 1073
Mean Conc. 24.27mg/L

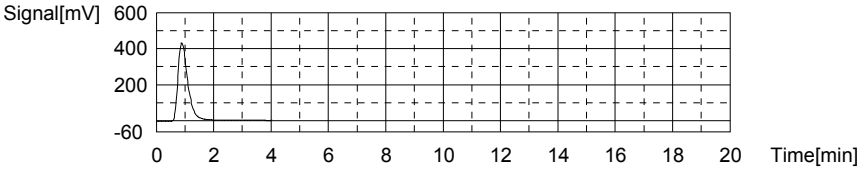

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	13.18	-0.2966mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_15	5/29/2015 1:22:42 PM

Mean Area 13.18
Mean Conc. -0.2966mg/L

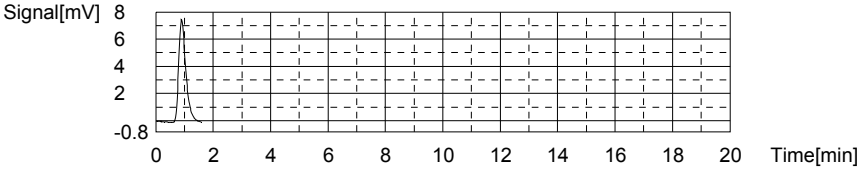

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.3331mg/L TC:0.01800mg/L IC:-0.3151mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	13.28	0.01800mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_05	5/29/2015 1:27:47 PM

Mean Area 13.28
Mean Conc. 0.01800mg/L

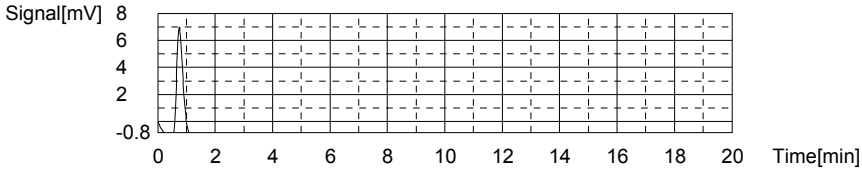

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	12.60	-0.3151mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/29/2015 1:31:55 PM

Mean Area 12.60
Mean Conc. -0.3151mg/L

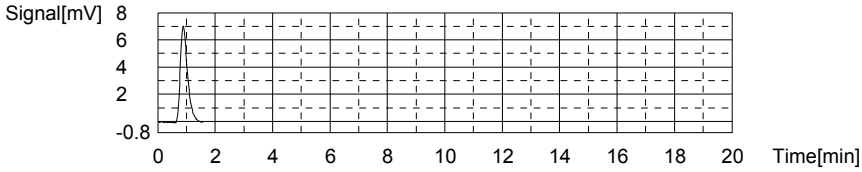

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
June 3, 2015

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001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK
EPT - ETHAN P. TIDD
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
June 03, 2015

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL/MDL).
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count
TNTC, B	Too numerous to count. Analyte present in method blank.

Microbac Laboratories Inc.
List of Valid Qualifiers
June 03, 2015

Qualkey: DOD

TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Mark Heaston
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD	pH:	
Project Name/Location:	Longhorn		
Project Number:	60256135.0002GA		

Mail to:	Linda Raabe 112 East Pecan STE. 400 San Antonio, TX 78205 210-296-2000
Fed Ex Airbill No:	
Program:	

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Dissolved Gases Carbon Dioxide	Alkalinity	Nitrate/Nitrite Chloride/Sulfate	Sulfide	TOC	Total Phosphorous Dissolved Iron Dissolved Manganese	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
Site 50	50WW08-052115			5/21/15	1355		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW08FF-052115			5/21/15	1355		✓	W	1								✓					
	50WW22-052115			5/21/15	1510		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW22FF-052115			5/21/15	1510		✓	W	1								✓					
	TRIP BLANK			5/21/15			✓	W	3	✓												

Microbac OVD
Received: 05/22/2015 09:37
By: JOSHUA PEMBERTON 221000070198

Comments: STANDARD TAT

	Date	Time	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature) Scott Beesinger	5/21/15	1600					
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time		Remarks:

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051435
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 02-JUN-2015

Samplenum	Container ID	Products
L15051435-01	577022	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-MAY-2015 12:37	CLS		
2	ANALYZ	V1	ORG4	22-MAY-2015 12:58	DLW	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-MAY-2015 12:37	CLS		
2	ANALYZ	V1	ORG4	22-MAY-2015 12:58	DLW	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-MAY-2015 12:37	CLS		
2	ANALYZ	V1	ORG4	22-MAY-2015 12:58	DLW	CLS	

Samplenum	Container ID	Products
L15051435-01	577023	RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-MAY-2015 12:37	CLS		
2	ANALYZ	V1	ORG1	22-MAY-2015 13:01	DLW	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-MAY-2015 12:37	CLS		
2	ANALYZ	V1	ORG1	22-MAY-2015 13:01	DLW	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-MAY-2015 12:37	CLS		
2	ANALYZ	V1	ORG1	22-MAY-2015 13:01	DLW	CLS	

Samplenum	Container ID	Products
L15051435-01	577024	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		22-MAY-2015 12:37	CLS		

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051435
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 02-JUN-2015

Samplenum	Container ID	Products
L15051435-01	577025	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	WET	22-MAY-2015 12:37	CLS		
2	STORE	WET	A1	02-JUN-2015 13:11	CLS	DCM	

Samplenum	Container ID	Products
L15051435-01	577026	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	22-MAY-2015 12:37	CLS		
2	ANALYZ	W1	SEM	27-MAY-2015 16:26	JWR	CLS	
3	STORE	SEM	A1	29-MAY-2015 13:40	CLS	JWR	

Samplenum	Container ID	Products
L15051435-01	577027	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	WET	22-MAY-2015 12:37	CLS		<2
2	STORE	WET	A1	27-MAY-2015 15:48	CLS	BLR	
3	STORE	WET	A1	02-JUN-2015 13:10	CLS	DCM	

Samplenum	Container ID	Products
L15051435-01	577028	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	22-MAY-2015 12:37	CLS		
2	ANALYZ	W1	WET	22-MAY-2015 12:42	EPT	BRG	
3	STORE	WET	A1	27-MAY-2015 09:10	CLS	EPT	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051435
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 02-JUN-2015

Samplenum	Container ID	Products
L15051435-02	577029	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	22-MAY-2015 12:37	CLS		
2	PREP	W1	DIG	26-MAY-2015 08:17	ERP	CLS	
3	STORE	DIG	A1	26-MAY-2015 14:49	CLS	ERP	
4	ANALYZ*	DIG	METALS	27-MAY-2015 12:28	KHR	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L15051435-03	577030	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-MAY-2015 12:37	CLS		
2	ANALYZ	V1	ORG4	22-MAY-2015 12:58	DLW	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-MAY-2015 12:37	CLS		
2	ANALYZ	V1	ORG4	22-MAY-2015 12:58	DLW	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-MAY-2015 12:37	CLS		
2	ANALYZ	V1	ORG4	22-MAY-2015 12:58	DLW	CLS	

Samplenum	Container ID	Products
L15051435-03	577031	RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-MAY-2015 12:37	CLS		
2	ANALYZ	V1	ORG1	22-MAY-2015 13:01	DLW	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-MAY-2015 12:37	CLS		
2	ANALYZ	V1	ORG1	22-MAY-2015 13:01	DLW	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-MAY-2015 12:37	CLS		
2	ANALYZ	V1	ORG1	22-MAY-2015 13:01	DLW	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051435
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 02-JUN-2015

Samplenum	Container ID	Products
L15051435-03	577032	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		22-MAY-2015 12:37	CLS		

Samplenum	Container ID	Products
L15051435-03	577033	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	22-MAY-2015 12:37	CLS		
2	ANALYZ	W1	WET	28-MAY-2015 09:07	DCM	CLS	
3	STORE	WET	A1	02-JUN-2015 13:11	CLS	DCM	

Samplenum	Container ID	Products
L15051435-03	577034	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	22-MAY-2015 12:37	CLS		
2	ANALYZ	W1	SEM	27-MAY-2015 16:26	JWR	CLS	
3	STORE	SEM	A1	29-MAY-2015 13:40	CLS	JWR	

Samplenum	Container ID	Products
L15051435-03	577035	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	WET	22-MAY-2015 12:37	CLS		<2
2	STORE	WET	A1	27-MAY-2015 15:48	CLS	BLR	
3	STORE	WET	A1	02-JUN-2015 13:10	CLS	DCM	

Samplenum	Container ID	Products
L15051435-03	577036	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	22-MAY-2015 12:37	CLS		
2	ANALYZ	W1	WET	22-MAY-2015 12:42	EPT	BRG	
3	STORE	WET	A1	27-MAY-2015 09:10	CLS	EPT	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051435
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 02-JUN-2015

Samplenum	Container ID	Products
L15051435-04	577037	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	22-MAY-2015 12:37	CLS		
2	PREP	W1	DIG	26-MAY-2015 08:17	ERP	CLS	
3	STORE	DIG	A1	26-MAY-2015 14:49	CLS	ERP	
4	ANALYZ*	DIG	METALS	27-MAY-2015 12:28	KHR	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L15051435-05	577038	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-MAY-2015 12:37	CLS		
2	ANALYZ	V1	ORG4	22-MAY-2015 12:58	DLW	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-MAY-2015 12:37	CLS		
2	ANALYZ	V1	ORG4	22-MAY-2015 12:58	DLW	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - May 26, 2015

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVL NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Formate (HPLC-UV)
Propionaldehyde (HPLC-UV)
Fluoroborate (ISE)
n-Butane (RSK175)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVL MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL MSV0I/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVL RSKOI/GC-FID

Acetylene
Propane

OVL HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVL HPLC12/HPLC/UV
Acetate

SOLID AND HAZARDOUS CHEMICALS

OVL MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVL MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide

Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L15051620

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on June 12 2015

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

The following discrepancies were noted:

Discrepancy	Resolution
Sample ID: 50SW06-052215 (5/22 @ 13:25). Time on Perchlorate bottle reads: 13:05. BRG	Please log per the COC. SLM

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00112670	I	4.0		J2317161665	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	No
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
50WW19-052215	L15051620-01	05/22/2015 08:45	05/27/2015 09:55
50WW19FD-052215	L15051620-02	05/22/2015 08:45	05/27/2015 09:55
50WW17-052215	L15051620-03	05/22/2015 10:05	05/27/2015 09:55
50WW16-052215	L15051620-04	05/22/2015 11:30	05/27/2015 09:55
GPW1-052215	L15051620-05	05/22/2015 13:05	05/27/2015 09:55
50SW06-052215	L15051620-06	05/22/2015 13:25	05/27/2015 09:55
50WW09-052315	L15051620-07	05/23/2015 08:00	05/27/2015 09:55
50WW09MS-052315	L15051620-08	05/23/2015 08:00	05/27/2015 09:55
50WW09MSD-052315	L15051620-09	05/23/2015 08:00	05/27/2015 09:55
50WW10-052315	L15051620-10	05/23/2015 09:15	05/27/2015 09:55
50WW27-052315	L15051620-11	05/23/2015 10:40	05/27/2015 09:55
50WW15-052315	L15051620-12	05/23/2015 11:40	05/27/2015 09:55
50WW26-052315	L15051620-13	05/23/2015 14:15	05/27/2015 09:55
50WW21-052315	L15051620-14	05/23/2015 15:30	05/27/2015 09:55
50WW21FD-052315	L15051620-15	05/23/2015 15:30	05/27/2015 09:55
50WW20-052615	L15051620-16	05/26/2015 09:35	05/27/2015 09:55
50WW05-052615	L15051620-17	05/26/2015 10:45	05/27/2015 09:55
50WW05MS-052615	L15051620-18	05/26/2015 10:45	05/27/2015 09:55
50WW05MSD-052615	L15051620-19	05/26/2015 10:45	05/27/2015 09:55
50WW07-052615	L15051620-20	05/26/2015 13:40	05/27/2015 09:55
50WW28-052615	L15051620-21	05/26/2015 15:05	05/27/2015 09:55
50WW28FD-052615	L15051620-22	05/26/2015 15:05	05/27/2015 09:55
TRIP BLANK	L15051620-23	05/26/2015 00:01	05/27/2015 09:55

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L15051620
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.0 Summary Data

1.1 Narratives

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051620
Project Name:		**Method:**	8260
Prep Batch Number(s):		**Reviewer Name:**	Wade DeLong
LRC Date:	2015-06-10 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Wade DeLong	Wade DeLong	Chemist I	2015-06-10 18:10:54

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051620
Project Name:		**Method:**	8260
Prep Batch Number(s):		**Reviewer Name:**	Wade DeLong
LRC Date:	2015-06-10 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051620
Project Name:		**Method:**	8260
Prep Batch Number(s):		**Reviewer Name:**	Wade DeLong
LRC Date:	2015-06-10 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			1
Were MS/MSD RPDs within laboratory QC limits?		X			1
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051620
Project Name:		**Method:**	8260
Prep Batch Number(s):		**Reviewer Name:**	Wade DeLong
LRC Date:	2015-06-10 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			3
Was the ICAL curve verified for each analyte?		X			2
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051620
Project Name:		**Method:**	8260
Prep Batch Number(s):		**Reviewer Name:**	Wade DeLong
LRC Date:	2015-06-10 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051620
Project Name:		**Method:**	8260
Prep Batch Number(s):		**Reviewer Name:**	Wade DeLong
LRC Date:	2015-06-10 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1)Trichloroethene and styrene, exceeded control limits in the MS/MSD anlyzed May 18, 2015 on HPMS17 .

2)Carbon disulfide and trichlorofluoromethane exceeded the UCL in ICV analyzed 5/18/15 on HPMS17.

3)Carbon disulfide and dichlorodifluoromethane exceeded the UCL in the CCV analyzed 6/01/15 on HPMS17. Carbon disulfide ,4-methyl-2-pentanone, and dichlorodifluoromethane exceeded the UCL in the CCV analyzed 6/2/15 on HPMS17. carbon disulfide and dichlordifluoromethane exceeded the UCL in the CCV analyzed 6/3/15 on HPMS17.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051620
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG526155, WG525760	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-06-05 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2015-06-05 12:28:24

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051620
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG526155, WG525760	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-06-05 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051620
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG526155, WG525760	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-06-05 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			1
Were MS/MSD RPDs within laboratory QC limits?		X			2
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051620
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG526155, WG525760	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-06-05 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051620
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG526155, WG525760	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-06-05 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051620
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG526155, WG525760	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-06-05 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. Sample 18 MS yielded a recovery for perchlorate that was above the acceptance limit due to SMI.
2. Samples 18MS and 19MSD yielded a %RPD that was beyond acceptance limits due to SMI.

1.2 Certificate of Analysis

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW19-052215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG525817	**Analyst:**	ADC	**Run Date:**	06/01/2015 21:19
Collect Date:	05/22/2015 08:45	**Dilution:**	1	**File ID:**	17M012434
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	110	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	105	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW19-052215	**Prep Method:**	6850	**Prep Date:**	06/01/2015 13:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG525760	**Analyst:**	JWR	**Run Date:**	06/01/2015 21:43
Collect Date:	05/22/2015 08:45	**Dilution:**	1	**File ID:**	1LM.LM29968
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.305	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW19FD-052215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG525817	**Analyst:**	ADC	**Run Date:**	06/01/2015 21:39
Collect Date:	05/22/2015 08:45	**Dilution:**	1	**File ID:**	17M012435
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	108	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	108	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW19FD-052215	**Prep Method:**	6850	**Prep Date:**	06/01/2015 13:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG525760	**Analyst:**	JWR	**Run Date:**	06/01/2015 22:02
Collect Date:	05/22/2015 08:45	**Dilution:**	1	**File ID:**	1LM.LM29969
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.198	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW17-052215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG525817	**Analyst:**	ADC	**Run Date:**	06/01/2015 21:59
Collect Date:	05/22/2015 10:05	**Dilution:**	1	**File ID:**	17M012436
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	106	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	111	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW17-052215	**Prep Method:**	6850	**Prep Date:**	06/01/2015 13:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG525760	**Analyst:**	JWR	**Run Date:**	06/01/2015 22:20
Collect Date:	05/22/2015 10:05	**Dilution:**	1	**File ID:**	1LM.LM29970
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW16-052215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG525817	**Analyst:**	ADC	**Run Date:**	06/01/2015 22:19
Collect Date:	05/22/2015 11:30	**Dilution:**	1	**File ID:**	17M012437
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	4.49	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	110	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	108	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW16-052215	**Prep Method:**	6850	**Prep Date:**	06/01/2015 13:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG525760	**Analyst:**	JWR	**Run Date:**	06/01/2015 22:39
Collect Date:	05/22/2015 11:30	**Dilution:**	1	**File ID:**	1LM.LM29971
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	GPW1-052215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG525817	**Analyst:**	ADC	**Run Date:**	06/01/2015 22:39
Collect Date:	05/22/2015 13:05	**Dilution:**	1	**File ID:**	17M012438
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	2.97	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	108	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	109	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	GPW1-052215	**Prep Method:**	6850	**Prep Date:**	06/01/2015 13:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG525760	**Analyst:**	JWR	**Run Date:**	06/01/2015 22:58
Collect Date:	05/22/2015 13:05	**Dilution:**	1	**File ID:**	1LM.LM29972
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.213	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50SW06-052215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG525817	**Analyst:**	ADC	**Run Date:**	06/01/2015 22:59
Collect Date:	05/22/2015 13:25	**Dilution:**	1	**File ID:**	17M012439
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	2.97	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	110	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	108	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50SW06-052215	**Prep Method:**	6850	**Prep Date:**	06/01/2015 13:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG525760	**Analyst:**	JWR	**Run Date:**	06/01/2015 23:17
Collect Date:	05/22/2015 13:25	**Dilution:**	1	**File ID:**	1LM.LM29973
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.218	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW09-052315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG525997	**Analyst:**	ADC	**Run Date:**	06/02/2015 20:49
Collect Date:	05/23/2015 08:00	**Dilution:**	1	**File ID:**	17M012475
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.272	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.349	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.11		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	19.7		1.00	0.500	0.250

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.423	J	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	202		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	111	70	120	
Toluene-d8	106	85	120	
4-Bromofluorobenzene	108	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW09-052315	**Prep Method:**	6850	**Prep Date:**	06/01/2015 13:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG525760	**Analyst:**	JWR	**Run Date:**	06/02/2015 00:51
Collect Date:	05/23/2015 08:00	**Dilution:**	1	**File ID:**	1LM.LM29978
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.196	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW09MS-052315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG525997	**Analyst:**	ADC	**Run Date:**	06/02/2015 23:08
Collect Date:	05/23/2015 08:00	**Dilution:**	1	**File ID:**	17M012482
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	24.2		10.0	5.00	2.50
Benzene	71-43-2	18.6		1.00	0.250	0.125
Bromobenzene	108-86-1	19.2		1.00	0.250	0.125
Bromochloromethane	74-97-5	20.5		1.00	0.400	0.200
Bromodichloromethane	75-27-4	19.5		1.00	0.500	0.250
Bromoform	75-25-2	23.3		2.00	1.00	0.500
Bromomethane	74-83-9	16.2		2.00	1.00	0.500
2-Butanone	78-93-3	22.7		10.0	5.00	2.50
n-Butylbenzene	104-51-8	18.3		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	17.2		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	17.4		1.00	0.500	0.250
Carbon disulfide	75-15-0	11.0	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	18.0		1.00	0.500	0.250
Chlorobenzene	108-90-7	17.7		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	20.4		1.00	0.500	0.250
Chloroethane	75-00-3	18.7		2.00	1.00	0.500
Chloroform	67-66-3	20.1		1.00	0.250	0.125
Chloromethane	74-87-3	18.5		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	17.5		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	17.7		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	22.9		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	20.8		1.00	0.500	0.250
Dibromomethane	74-95-3	21.8		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	18.3		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	17.4		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	18.8		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	18.5	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	19.0		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	21.6		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	16.7		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	36.5		1.00	0.500	0.250

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	18.6		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	19.6		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	20.7		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	17.5		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	19.9		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	20.7		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	17.7		1.00	0.500	0.250
Ethylbenzene	100-41-4	18.7		1.00	0.500	0.250
2-Hexanone	591-78-6	22.2		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	16.5		1.00	0.500	0.250
Isopropylbenzene	98-82-8	17.4		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	17.4		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	21.0	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	19.3		1.00	0.500	0.250
Naphthalene	91-20-3	21.0		1.00	0.400	0.200
n-Propylbenzene	103-65-1	17.4		1.00	0.250	0.125
Styrene	100-42-5	19.4		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	19.3		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	22.9		1.00	0.400	0.200
Tetrachloroethene	127-18-4	17.5		1.00	0.500	0.250
Toluene	108-88-3	18.9		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	19.9		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	19.3		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	18.4		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	20.6		1.00	0.500	0.250
Trichloroethene	79-01-6	177		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	17.6		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	22.7		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	19.4		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	19.4		1.00	0.500	0.250
Vinyl chloride	75-01-4	18.0		1.00	0.500	0.250
o-Xylene	95-47-6	17.6		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	36.9		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	111	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	107	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW09MS-052315	**Prep Method:**	6850	**Prep Date:**	06/01/2015 13:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG525760	**Analyst:**	JWR	**Run Date:**	06/02/2015 01:10
Collect Date:	05/23/2015 08:00	**Dilution:**	1	**File ID:**	1LM.LM29979
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.378	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW09MSD-052315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG525997	**Analyst:**	ADC	**Run Date:**	06/02/2015 23:28
Collect Date:	05/23/2015 08:00	**Dilution:**	1	**File ID:**	17M012483
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	22.9		10.0	5.00	2.50
Benzene	71-43-2	18.4		1.00	0.250	0.125
Bromobenzene	108-86-1	18.4		1.00	0.250	0.125
Bromochloromethane	74-97-5	19.9		1.00	0.400	0.200
Bromodichloromethane	75-27-4	19.3		1.00	0.500	0.250
Bromoform	75-25-2	23.3		2.00	1.00	0.500
Bromomethane	74-83-9	17.0		2.00	1.00	0.500
2-Butanone	78-93-3	22.0		10.0	5.00	2.50
n-Butylbenzene	104-51-8	17.7		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	16.5		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	16.9		1.00	0.500	0.250
Carbon disulfide	75-15-0	10.7	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	17.7		1.00	0.500	0.250
Chlorobenzene	108-90-7	17.6		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	20.1		1.00	0.500	0.250
Chloroethane	75-00-3	18.4		2.00	1.00	0.500
Chloroform	67-66-3	19.8		1.00	0.250	0.125
Chloromethane	74-87-3	17.9		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	16.9		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	17.0		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	22.2		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	20.7		1.00	0.500	0.250
Dibromomethane	74-95-3	21.6		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	17.6		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	16.8		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	18.3		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	17.7	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	18.6		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	21.3		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	16.3		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	36.8		1.00	0.500	0.250

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	18.5		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	19.3		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	20.5		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	17.1		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	19.9		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	20.6		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	17.4		1.00	0.500	0.250
Ethylbenzene	100-41-4	18.6		1.00	0.500	0.250
2-Hexanone	591-78-6	21.6		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	15.8		1.00	0.500	0.250
Isopropylbenzene	98-82-8	17.3		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	16.8		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	20.4	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	19.0		1.00	0.500	0.250
Naphthalene	91-20-3	20.3		1.00	0.400	0.200
n-Propylbenzene	103-65-1	16.8		1.00	0.250	0.125
Styrene	100-42-5	19.3		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	19.4		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	21.9		1.00	0.400	0.200
Tetrachloroethene	127-18-4	17.5		1.00	0.500	0.250
Toluene	108-88-3	18.6		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	19.3		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	18.6		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	18.1		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	20.3		1.00	0.500	0.250
Trichloroethene	79-01-6	179		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	17.0		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	21.5		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	18.8		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	18.7		1.00	0.500	0.250
Vinyl chloride	75-01-4	17.8		1.00	0.500	0.250
o-Xylene	95-47-6	17.7		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	36.7		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	108	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	102	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-09	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW09MSD-052315	**Prep Method:**	6850	**Prep Date:**	06/01/2015 13:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG525760	**Analyst:**	JWR	**Run Date:**	06/02/2015 01:29
Collect Date:	05/23/2015 08:00	**Dilution:**	1	**File ID:**	1LM.LM29980
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.393	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW10-052315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG525817	**Analyst:**	ADC	**Run Date:**	06/01/2015 23:19
Collect Date:	05/23/2015 09:15	**Dilution:**	1	**File ID:**	17M012440
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.38	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.549	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	106	70	120	
Toluene-d8	106	85	120	
4-Bromofluorobenzene	111	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-10	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW10-052315	**Prep Method:**	6850	**Prep Date:**	06/01/2015 13:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG525760	**Analyst:**	JWR	**Run Date:**	06/01/2015 23:36
Collect Date:	05/23/2015 09:15	**Dilution:**	1	**File ID:**	1LM.LM29974
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW27-052315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG525817	**Analyst:**	ADC	**Run Date:**	06/01/2015 23:39
Collect Date:	05/23/2015 10:40	**Dilution:**	1	**File ID:**	17M012441
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.709	J	1.00	0.500	0.250

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	111	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	106	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-11	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW27-052315	**Prep Method:**	6850	**Prep Date:**	06/01/2015 13:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG525760	**Analyst:**	JWR	**Run Date:**	06/02/2015 01:48
Collect Date:	05/23/2015 10:40	**Dilution:**	1	**File ID:**	1LM.LM29981
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW15-052315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG525817	**Analyst:**	ADC	**Run Date:**	06/01/2015 23:58
Collect Date:	05/23/2015 11:40	**Dilution:**	1	**File ID:**	17M012442
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	10.8		1.00	0.500	0.250

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	2.96		1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	13.0		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	1.91		1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	109	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	110	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-12	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW15-052315	**Prep Method:**	6850	**Prep Date:**	06/01/2015 13:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG525760	**Analyst:**	JWR	**Run Date:**	06/02/2015 02:07
Collect Date:	05/23/2015 11:40	**Dilution:**	1	**File ID:**	1LM.LM29982
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-13	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW26-052315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG525817	**Analyst:**	ADC	**Run Date:**	06/02/2015 00:18
Collect Date:	05/23/2015 14:15	**Dilution:**	1	**File ID:**	17M012443
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	85	115	
1,2-Dichloroethane-d4	112	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	108	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-13	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW26-052315	**Prep Method:**	6850	**Prep Date:**	06/01/2015 13:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG525760	**Analyst:**	JWR	**Run Date:**	06/02/2015 02:26
Collect Date:	05/23/2015 14:15	**Dilution:**	1	**File ID:**	1LM.LM29983
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-14	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW21-052315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG525997	**Analyst:**	ADC	**Run Date:**	06/02/2015 21:09
Collect Date:	05/23/2015 15:30	**Dilution:**	1	**File ID:**	17M012476
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.447	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	111	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	106	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-14	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW21-052315	**Prep Method:**	6850	**Prep Date:**	06/01/2015 13:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG525760	**Analyst:**	JWR	**Run Date:**	06/02/2015 02:45
Collect Date:	05/23/2015 15:30	**Dilution:**	1	**File ID:**	1LM.LM29984
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.502		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15051620-15	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW21FD-052315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG525997	**Analyst:**	ADC	**Run Date:**	06/02/2015 21:29
Collect Date:	05/23/2015 15:30	**Dilution:**	1	**File ID:**	17M012477
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

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Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

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Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	111	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	105	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-15	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW21FD-052315	**Prep Method:**	6850	**Prep Date:**	06/01/2015 13:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG525760	**Analyst:**	JWR	**Run Date:**	06/02/2015 03:04
Collect Date:	05/23/2015 15:30	**Dilution:**	1	**File ID:**	1LM.LM29985
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.516		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15051620-16	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW20-052615	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG525997	**Analyst:**	ADC	**Run Date:**	06/02/2015 21:49
Collect Date:	05/26/2015 09:35	**Dilution:**	1	**File ID:**	17M012478
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

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Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	113	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	106	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-16	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW20-052615	**Prep Method:**	6850	**Prep Date:**	06/01/2015 13:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG525760	**Analyst:**	JWR	**Run Date:**	06/02/2015 03:23
Collect Date:	05/26/2015 09:35	**Dilution:**	1	**File ID:**	1LM.LM29986
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-17	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW05-052615	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG525997	**Analyst:**	ADC	**Run Date:**	06/02/2015 22:09
Collect Date:	05/26/2015 10:45	**Dilution:**	1	**File ID:**	17M012479
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.152	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.90		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.77	J	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	9.81		1.00	0.500	0.250

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.860	J	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	197		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	112	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	104	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-17	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW05-052615	**Prep Method:**	6850	**Prep Date:**	06/03/2015 13:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG526155	**Analyst:**	JWR	**Run Date:**	06/03/2015 17:33
Collect Date:	05/26/2015 10:45	**Dilution:**	1	**File ID:**	1LM.LM30005
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.0288	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-18	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW05MS-052615	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG525997	**Analyst:**	ADC	**Run Date:**	06/02/2015 23:48
Collect Date:	05/26/2015 10:45	**Dilution:**	1	**File ID:**	17M012484
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	24.0		10.0	5.00	2.50
Benzene	71-43-2	18.3		1.00	0.250	0.125
Bromobenzene	108-86-1	18.4		1.00	0.250	0.125
Bromochloromethane	74-97-5	19.7		1.00	0.400	0.200
Bromodichloromethane	75-27-4	19.0		1.00	0.500	0.250
Bromoform	75-25-2	22.3		2.00	1.00	0.500
Bromomethane	74-83-9	17.0		2.00	1.00	0.500
2-Butanone	78-93-3	21.6		10.0	5.00	2.50
n-Butylbenzene	104-51-8	18.0		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	16.8		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	17.0		1.00	0.500	0.250
Carbon disulfide	75-15-0	10.8	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	17.7		1.00	0.500	0.250
Chlorobenzene	108-90-7	17.3		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	19.6		1.00	0.500	0.250
Chloroethane	75-00-3	18.2		2.00	1.00	0.500
Chloroform	67-66-3	19.5		1.00	0.250	0.125
Chloromethane	74-87-3	17.5		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	17.1		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	17.2		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	21.6		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	19.9		1.00	0.500	0.250
Dibromomethane	74-95-3	21.0		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	17.5		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	17.0		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	18.3		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	17.8	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	18.3		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	21.6		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	17.6		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	27.9		1.00	0.500	0.250

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	18.4		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	19.1		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	19.8		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	16.9		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	19.5		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	19.9		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	17.3		1.00	0.500	0.250
Ethylbenzene	100-41-4	18.5		1.00	0.500	0.250
2-Hexanone	591-78-6	20.8		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	16.3		1.00	0.500	0.250
Isopropylbenzene	98-82-8	17.2		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	17.0		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	19.8	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	18.6		1.00	0.500	0.250
Naphthalene	91-20-3	19.7		1.00	0.400	0.200
n-Propylbenzene	103-65-1	16.9		1.00	0.250	0.125
Styrene	100-42-5	18.9		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	19.1		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	21.3		1.00	0.400	0.200
Tetrachloroethene	127-18-4	17.8		1.00	0.500	0.250
Toluene	108-88-3	18.5		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	19.1		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	18.5		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	18.0		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	19.6		1.00	0.500	0.250
Trichloroethene	79-01-6	188		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	17.1		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	20.5		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	18.8		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	18.8		1.00	0.500	0.250
Vinyl chloride	75-01-4	17.9		1.00	0.500	0.250
o-Xylene	95-47-6	17.3		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	36.2		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	107	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	104	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-18	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW05MS-052615	**Prep Method:**	6850	**Prep Date:**	06/03/2015 13:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG526155	**Analyst:**	JWR	**Run Date:**	06/03/2015 17:52
Collect Date:	05/26/2015 10:45	**Dilution:**	1	**File ID:**	1LM.LM30006
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.286	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-19	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW05MSD-052615	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG525997	**Analyst:**	ADC	**Run Date:**	06/03/2015 00:08
Collect Date:	05/26/2015 10:45	**Dilution:**	1	**File ID:**	17M012485
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	22.8		10.0	5.00	2.50
Benzene	71-43-2	18.2		1.00	0.250	0.125
Bromobenzene	108-86-1	18.7		1.00	0.250	0.125
Bromochloromethane	74-97-5	19.5		1.00	0.400	0.200
Bromodichloromethane	75-27-4	19.0		1.00	0.500	0.250
Bromoform	75-25-2	22.3		2.00	1.00	0.500
Bromomethane	74-83-9	17.3		2.00	1.00	0.500
2-Butanone	78-93-3	21.2		10.0	5.00	2.50
n-Butylbenzene	104-51-8	18.2		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	17.0		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	17.2		1.00	0.500	0.250
Carbon disulfide	75-15-0	10.6	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	17.8		1.00	0.500	0.250
Chlorobenzene	108-90-7	17.5		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	20.0		1.00	0.500	0.250
Chloroethane	75-00-3	18.7		2.00	1.00	0.500
Chloroform	67-66-3	19.4		1.00	0.250	0.125
Chloromethane	74-87-3	17.9		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	17.1		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	17.3		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	21.6		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	20.0		1.00	0.500	0.250
Dibromomethane	74-95-3	21.1		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	17.8		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	17.1		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	18.4		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	17.6	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	18.2		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	21.5		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	17.6		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	27.5		1.00	0.500	0.250

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	18.3		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	19.1		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	20.0		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	16.7		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	19.4		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	19.8		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	17.4		1.00	0.500	0.250
Ethylbenzene	100-41-4	18.6		1.00	0.500	0.250
2-Hexanone	591-78-6	20.9		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	16.8		1.00	0.500	0.250
Isopropylbenzene	98-82-8	17.3		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	17.1		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	19.5	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	18.7		1.00	0.500	0.250
Naphthalene	91-20-3	20.0		1.00	0.400	0.200
n-Propylbenzene	103-65-1	17.1		1.00	0.250	0.125
Styrene	100-42-5	13.5		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	19.3		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	21.4		1.00	0.400	0.200
Tetrachloroethene	127-18-4	17.9		1.00	0.500	0.250
Toluene	108-88-3	18.5		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	19.3		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	18.8		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	18.0		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	19.7		1.00	0.500	0.250
Trichloroethene	79-01-6	183		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	17.0		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	21.4		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	19.0		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	19.1		1.00	0.500	0.250
Vinyl chloride	75-01-4	17.8		1.00	0.500	0.250
o-Xylene	95-47-6	17.5		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	36.5		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	108	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	105	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-19	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW05MSD-052615	**Prep Method:**	6850	**Prep Date:**	06/03/2015 13:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG526155	**Analyst:**	JWR	**Run Date:**	06/03/2015 18:11
Collect Date:	05/26/2015 10:45	**Dilution:**	1	**File ID:**	1LM.LM30007
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.222	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-20	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW07-052615	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG525997	**Analyst:**	ADC	**Run Date:**	06/02/2015 22:28
Collect Date:	05/26/2015 13:40	**Dilution:**	1	**File ID:**	17M012480
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	2.79	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.420	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	110	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	108	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-20	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW07-052615	**Prep Method:**	6850	**Prep Date:**	06/01/2015 13:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG525760	**Analyst:**	JWR	**Run Date:**	06/02/2015 04:38
Collect Date:	05/26/2015 13:40	**Dilution:**	1	**File ID:**	1LM.LM29990
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-21	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW28-052615	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG525997	**Analyst:**	ADC	**Run Date:**	06/02/2015 22:48
Collect Date:	05/26/2015 15:05	**Dilution:**	1	**File ID:**	17M012481
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	112	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	107	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-21	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW28-052615	**Prep Method:**	6850	**Prep Date:**	06/01/2015 13:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG525760	**Analyst:**	JWR	**Run Date:**	06/02/2015 04:57
Collect Date:	05/26/2015 15:05	**Dilution:**	1	**File ID:**	1LM.LM29991
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1.04		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15051620-22	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW28FD-052615	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG526216	**Analyst:**	ADC	**Run Date:**	06/03/2015 20:59
Collect Date:	05/26/2015 15:05	**Dilution:**	1	**File ID:**	17M012502
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	105	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	104	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-22	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW28FD-052615	**Prep Method:**	6850	**Prep Date:**	06/01/2015 13:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG525760	**Analyst:**	JWR	**Run Date:**	06/02/2015 05:16
Collect Date:	05/26/2015 15:05	**Dilution:**	1	**File ID:**	1LM.LM29992
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1.05		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15051620-23	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG526216	**Analyst:**	ADC	**Run Date:**	06/03/2015 20:00
Collect Date:	05/26/2015 00:01	**Dilution:**	1	**File ID:**	17M012499
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.779	J	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	108	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	105	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW19-052215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG525817	**Analyst:**	ADC	**Run Date:**	06/01/2015 21:19
Collect Date:	05/22/2015 08:45	**Dilution:**	1	**File ID:**	17M012434
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	110	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	105	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW19FD-052215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG525817	**Analyst:**	ADC	**Run Date:**	06/01/2015 21:39
Collect Date:	05/22/2015 08:45	**Dilution:**	1	**File ID:**	17M012435
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

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Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	108	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	108	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW17-052215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG525817	**Analyst:**	ADC	**Run Date:**	06/01/2015 21:59
Collect Date:	05/22/2015 10:05	**Dilution:**	1	**File ID:**	17M012436
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	106	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	111	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW16-052215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG525817	**Analyst:**	ADC	**Run Date:**	06/01/2015 22:19
Collect Date:	05/22/2015 11:30	**Dilution:**	1	**File ID:**	17M012437
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	4.49	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	110	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	108	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	GPW1-052215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG525817	**Analyst:**	ADC	**Run Date:**	06/01/2015 22:39
Collect Date:	05/22/2015 13:05	**Dilution:**	1	**File ID:**	17M012438
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	2.97	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	108	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	109	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50SW06-052215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG525817	**Analyst:**	ADC	**Run Date:**	06/01/2015 22:59
Collect Date:	05/22/2015 13:25	**Dilution:**	1	**File ID:**	17M012439
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	2.97	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	110	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	108	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW09-052315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG525997	**Analyst:**	ADC	**Run Date:**	06/02/2015 20:49
Collect Date:	05/23/2015 08:00	**Dilution:**	1	**File ID:**	17M012475
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.272	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.349	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.11		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	19.7		1.00	0.500	0.250

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.423	J	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	202		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	111	70	120	
Toluene-d8	106	85	120	
4-Bromofluorobenzene	108	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW09MS-052315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG525997	**Analyst:**	ADC	**Run Date:**	06/02/2015 23:08
Collect Date:	05/23/2015 08:00	**Dilution:**	1	**File ID:**	17M012482
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	24.2		10.0	5.00	2.50
Benzene	71-43-2	18.6		1.00	0.250	0.125
Bromobenzene	108-86-1	19.2		1.00	0.250	0.125
Bromochloromethane	74-97-5	20.5		1.00	0.400	0.200
Bromodichloromethane	75-27-4	19.5		1.00	0.500	0.250
Bromoform	75-25-2	23.3		2.00	1.00	0.500
Bromomethane	74-83-9	16.2		2.00	1.00	0.500
2-Butanone	78-93-3	22.7		10.0	5.00	2.50
n-Butylbenzene	104-51-8	18.3		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	17.2		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	17.4		1.00	0.500	0.250
Carbon disulfide	75-15-0	11.0	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	18.0		1.00	0.500	0.250
Chlorobenzene	108-90-7	17.7		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	20.4		1.00	0.500	0.250
Chloroethane	75-00-3	18.7		2.00	1.00	0.500
Chloroform	67-66-3	20.1		1.00	0.250	0.125
Chloromethane	74-87-3	18.5		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	17.5		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	17.7		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	22.9		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	20.8		1.00	0.500	0.250
Dibromomethane	74-95-3	21.8		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	18.3		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	17.4		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	18.8		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	18.5	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	19.0		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	21.6		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	16.7		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	36.5		1.00	0.500	0.250

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	18.6		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	19.6		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	20.7		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	17.5		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	19.9		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	20.7		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	17.7		1.00	0.500	0.250
Ethylbenzene	100-41-4	18.7		1.00	0.500	0.250
2-Hexanone	591-78-6	22.2		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	16.5		1.00	0.500	0.250
Isopropylbenzene	98-82-8	17.4		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	17.4		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	21.0	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	19.3		1.00	0.500	0.250
Naphthalene	91-20-3	21.0		1.00	0.400	0.200
n-Propylbenzene	103-65-1	17.4		1.00	0.250	0.125
Styrene	100-42-5	19.4		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	19.3		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	22.9		1.00	0.400	0.200
Tetrachloroethene	127-18-4	17.5		1.00	0.500	0.250
Toluene	108-88-3	18.9		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	19.9		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	19.3		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	18.4		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	20.6		1.00	0.500	0.250
Trichloroethene	79-01-6	177		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	17.6		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	22.7		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	19.4		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	19.4		1.00	0.500	0.250
Vinyl chloride	75-01-4	18.0		1.00	0.500	0.250
o-Xylene	95-47-6	17.6		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	36.9		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	111	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	107	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW09MSD-052315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG525997	**Analyst:**	ADC	**Run Date:**	06/02/2015 23:28
Collect Date:	05/23/2015 08:00	**Dilution:**	1	**File ID:**	17M012483
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	22.9		10.0	5.00	2.50
Benzene	71-43-2	18.4		1.00	0.250	0.125
Bromobenzene	108-86-1	18.4		1.00	0.250	0.125
Bromochloromethane	74-97-5	19.9		1.00	0.400	0.200
Bromodichloromethane	75-27-4	19.3		1.00	0.500	0.250
Bromoform	75-25-2	23.3		2.00	1.00	0.500
Bromomethane	74-83-9	17.0		2.00	1.00	0.500
2-Butanone	78-93-3	22.0		10.0	5.00	2.50
n-Butylbenzene	104-51-8	17.7		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	16.5		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	16.9		1.00	0.500	0.250
Carbon disulfide	75-15-0	10.7	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	17.7		1.00	0.500	0.250
Chlorobenzene	108-90-7	17.6		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	20.1		1.00	0.500	0.250
Chloroethane	75-00-3	18.4		2.00	1.00	0.500
Chloroform	67-66-3	19.8		1.00	0.250	0.125
Chloromethane	74-87-3	17.9		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	16.9		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	17.0		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	22.2		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	20.7		1.00	0.500	0.250
Dibromomethane	74-95-3	21.6		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	17.6		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	16.8		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	18.3		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	17.7	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	18.6		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	21.3		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	16.3		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	36.8		1.00	0.500	0.250

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	18.5		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	19.3		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	20.5		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	17.1		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	19.9		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	20.6		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	17.4		1.00	0.500	0.250
Ethylbenzene	100-41-4	18.6		1.00	0.500	0.250
2-Hexanone	591-78-6	21.6		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	15.8		1.00	0.500	0.250
Isopropylbenzene	98-82-8	17.3		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	16.8		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	20.4	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	19.0		1.00	0.500	0.250
Naphthalene	91-20-3	20.3		1.00	0.400	0.200
n-Propylbenzene	103-65-1	16.8		1.00	0.250	0.125
Styrene	100-42-5	19.3		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	19.4		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	21.9		1.00	0.400	0.200
Tetrachloroethene	127-18-4	17.5		1.00	0.500	0.250
Toluene	108-88-3	18.6		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	19.3		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	18.6		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	18.1		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	20.3		1.00	0.500	0.250
Trichloroethene	79-01-6	179		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	17.0		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	21.5		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	18.8		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	18.7		1.00	0.500	0.250
Vinyl chloride	75-01-4	17.8		1.00	0.500	0.250
o-Xylene	95-47-6	17.7		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	36.7		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	108	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	102	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW10-052315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG525817	**Analyst:**	ADC	**Run Date:**	06/01/2015 23:19
Collect Date:	05/23/2015 09:15	**Dilution:**	1	**File ID:**	17M012440
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.38	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.549	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	106	70	120	
Toluene-d8	106	85	120	
4-Bromofluorobenzene	111	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW27-052315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG525817	**Analyst:**	ADC	**Run Date:**	06/01/2015 23:39
Collect Date:	05/23/2015 10:40	**Dilution:**	1	**File ID:**	17M012441
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.709	J	1.00	0.500	0.250

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	111	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	106	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW15-052315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG525817	**Analyst:**	ADC	**Run Date:**	06/01/2015 23:58
Collect Date:	05/23/2015 11:40	**Dilution:**	1	**File ID:**	17M012442
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	10.8		1.00	0.500	0.250

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Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	2.96		1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	13.0		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	1.91		1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	109	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	110	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-13	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW26-052315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG525817	**Analyst:**	ADC	**Run Date:**	06/02/2015 00:18
Collect Date:	05/23/2015 14:15	**Dilution:**	1	**File ID:**	17M012443
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

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Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	85	115	
1,2-Dichloroethane-d4	112	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	108	75	120	

Q	One or more quality control criteria failed. See narrative.

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Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-14	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW21-052315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG525997	**Analyst:**	ADC	**Run Date:**	06/02/2015 21:09
Collect Date:	05/23/2015 15:30	**Dilution:**	1	**File ID:**	17M012476
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

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Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.447	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	111	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	106	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-15	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW21FD-052315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG525997	**Analyst:**	ADC	**Run Date:**	06/02/2015 21:29
Collect Date:	05/23/2015 15:30	**Dilution:**	1	**File ID:**	17M012477
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	111	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	105	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-16	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW20-052615	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG525997	**Analyst:**	ADC	**Run Date:**	06/02/2015 21:49
Collect Date:	05/26/2015 09:35	**Dilution:**	1	**File ID:**	17M012478
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	113	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	106	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-17	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW05-052615	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG525997	**Analyst:**	ADC	**Run Date:**	06/02/2015 22:09
Collect Date:	05/26/2015 10:45	**Dilution:**	1	**File ID:**	17M012479
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.152	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.90		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.77	J	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	9.81		1.00	0.500	0.250

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.860	J	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	197		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	112	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	104	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-18	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW05MS-052615	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG525997	**Analyst:**	ADC	**Run Date:**	06/02/2015 23:48
Collect Date:	05/26/2015 10:45	**Dilution:**	1	**File ID:**	17M012484
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	24.0		10.0	5.00	2.50
Benzene	71-43-2	18.3		1.00	0.250	0.125
Bromobenzene	108-86-1	18.4		1.00	0.250	0.125
Bromochloromethane	74-97-5	19.7		1.00	0.400	0.200
Bromodichloromethane	75-27-4	19.0		1.00	0.500	0.250
Bromoform	75-25-2	22.3		2.00	1.00	0.500
Bromomethane	74-83-9	17.0		2.00	1.00	0.500
2-Butanone	78-93-3	21.6		10.0	5.00	2.50
n-Butylbenzene	104-51-8	18.0		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	16.8		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	17.0		1.00	0.500	0.250
Carbon disulfide	75-15-0	10.8	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	17.7		1.00	0.500	0.250
Chlorobenzene	108-90-7	17.3		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	19.6		1.00	0.500	0.250
Chloroethane	75-00-3	18.2		2.00	1.00	0.500
Chloroform	67-66-3	19.5		1.00	0.250	0.125
Chloromethane	74-87-3	17.5		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	17.1		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	17.2		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	21.6		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	19.9		1.00	0.500	0.250
Dibromomethane	74-95-3	21.0		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	17.5		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	17.0		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	18.3		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	17.8	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	18.3		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	21.6		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	17.6		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	27.9		1.00	0.500	0.250

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	18.4		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	19.1		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	19.8		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	16.9		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	19.5		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	19.9		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	17.3		1.00	0.500	0.250
Ethylbenzene	100-41-4	18.5		1.00	0.500	0.250
2-Hexanone	591-78-6	20.8		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	16.3		1.00	0.500	0.250
Isopropylbenzene	98-82-8	17.2		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	17.0		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	19.8	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	18.6		1.00	0.500	0.250
Naphthalene	91-20-3	19.7		1.00	0.400	0.200
n-Propylbenzene	103-65-1	16.9		1.00	0.250	0.125
Styrene	100-42-5	18.9		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	19.1		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	21.3		1.00	0.400	0.200
Tetrachloroethene	127-18-4	17.8		1.00	0.500	0.250
Toluene	108-88-3	18.5		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	19.1		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	18.5		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	18.0		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	19.6		1.00	0.500	0.250
Trichloroethene	79-01-6	188		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	17.1		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	20.5		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	18.8		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	18.8		1.00	0.500	0.250
Vinyl chloride	75-01-4	17.9		1.00	0.500	0.250
o-Xylene	95-47-6	17.3		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	36.2		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	107	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	104	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-19	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW05MSD-052615	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG525997	**Analyst:**	ADC	**Run Date:**	06/03/2015 00:08
Collect Date:	05/26/2015 10:45	**Dilution:**	1	**File ID:**	17M012485
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	22.8		10.0	5.00	2.50
Benzene	71-43-2	18.2		1.00	0.250	0.125
Bromobenzene	108-86-1	18.7		1.00	0.250	0.125
Bromochloromethane	74-97-5	19.5		1.00	0.400	0.200
Bromodichloromethane	75-27-4	19.0		1.00	0.500	0.250
Bromoform	75-25-2	22.3		2.00	1.00	0.500
Bromomethane	74-83-9	17.3		2.00	1.00	0.500
2-Butanone	78-93-3	21.2		10.0	5.00	2.50
n-Butylbenzene	104-51-8	18.2		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	17.0		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	17.2		1.00	0.500	0.250
Carbon disulfide	75-15-0	10.6	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	17.8		1.00	0.500	0.250
Chlorobenzene	108-90-7	17.5		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	20.0		1.00	0.500	0.250
Chloroethane	75-00-3	18.7		2.00	1.00	0.500
Chloroform	67-66-3	19.4		1.00	0.250	0.125
Chloromethane	74-87-3	17.9		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	17.1		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	17.3		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	21.6		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	20.0		1.00	0.500	0.250
Dibromomethane	74-95-3	21.1		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	17.8		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	17.1		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	18.4		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	17.6	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	18.2		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	21.5		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	17.6		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	27.5		1.00	0.500	0.250

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	18.3		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	19.1		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	20.0		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	16.7		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	19.4		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	19.8		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	17.4		1.00	0.500	0.250
Ethylbenzene	100-41-4	18.6		1.00	0.500	0.250
2-Hexanone	591-78-6	20.9		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	16.8		1.00	0.500	0.250
Isopropylbenzene	98-82-8	17.3		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	17.1		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	19.5	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	18.7		1.00	0.500	0.250
Naphthalene	91-20-3	20.0		1.00	0.400	0.200
n-Propylbenzene	103-65-1	17.1		1.00	0.250	0.125
Styrene	100-42-5	13.5		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	19.3		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	21.4		1.00	0.400	0.200
Tetrachloroethene	127-18-4	17.9		1.00	0.500	0.250
Toluene	108-88-3	18.5		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	19.3		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	18.8		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	18.0		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	19.7		1.00	0.500	0.250
Trichloroethene	79-01-6	183		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	17.0		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	21.4		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	19.0		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	19.1		1.00	0.500	0.250
Vinyl chloride	75-01-4	17.8		1.00	0.500	0.250
o-Xylene	95-47-6	17.5		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	36.5		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	108	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	105	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-20	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW07-052615	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG525997	**Analyst:**	ADC	**Run Date:**	06/02/2015 22:28
Collect Date:	05/26/2015 13:40	**Dilution:**	1	**File ID:**	17M012480
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	2.79	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.420	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	110	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	108	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-21	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW28-052615	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG525997	**Analyst:**	ADC	**Run Date:**	06/02/2015 22:48
Collect Date:	05/26/2015 15:05	**Dilution:**	1	**File ID:**	17M012481
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	112	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	107	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-22	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW28FD-052615	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG526216	**Analyst:**	ADC	**Run Date:**	06/03/2015 20:59
Collect Date:	05/26/2015 15:05	**Dilution:**	1	**File ID:**	17M012502
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	105	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	104	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-23	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG526216	**Analyst:**	ADC	**Run Date:**	06/03/2015 20:00
Collect Date:	05/26/2015 00:01	**Dilution:**	1	**File ID:**	17M012499
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.779	J	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	108	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	105	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS17 Dataset: 051815
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 21
Method: 5030C/5030B/5035 SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD70450 Surrogate Standard: STD70451
CCV: STD70453 LCS: STD70455 MS/MSD: STD70455

Column 1 ID: RTX-VMS Column 2 ID: NA
Workgroups: WG524148, WG523986 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
17M011944	WG523986-01 50ng BFB 8260	NA	1	1	STD70032	05/18/15 10:58
17M011945	WG523986-02 50ug/L CCV 8260	NA	1	1	STD70529	05/18/15 11:17
17M011946	RINSE	NA	1	1	STD70529	05/18/15 11:37
17M011947	WG523986-03 0.3ug/L STD 8260	NA	1	1	STD70529	05/18/15 11:56
17M011948	WG523986-04 0.4ug/L STD 8260	NA	1	1	STD70529	05/18/15 12:16
17M011949	WG523986-05 1.0ug/L STD 8260	NA	1	1	STD70529	05/18/15 12:36
17M011950	WG523986-06 2.0ug/L STD 8260	NA	1	1	STD70529	05/18/15 12:55
17M011951	WG523986-07 5.0ug/L STD 8260	NA	1	1	STD70529	05/18/15 13:15
17M011952	WG523986-08 20.0ug/L STD 8260	NA	1	1	STD70529	05/18/15 13:35
17M011953	WG523986-09 100.0ug/L STD 8260	NA	1	1	STD70529	05/18/15 13:55
17M011954	WG523986-10 200.0ug/L STD 8260	NA	1	1	STD70529	05/18/15 14:15
17M011955	WG523986-11 300ug/L STD 8260	NA	1	1	STD70529	05/18/15 14:34
17M011956	RINSE	NA	1	1		05/18/15 14:54
17M011957	WG523986-12 50ug/L ALT SRC	NA	1	1	STD70455	05/18/15 15:14
17M011958	RINSE	NA	1	1		05/18/15 15:48
17M011959	WG523986-12 50ug/L ALT SRC	NA	1	1	STD70455	05/18/15 16:07
17M011960	RINSE	NA	1	1		05/18/15 16:27
17M011961	WG524148-01 BLK 8260	NA	1	1		05/18/15 16:47
17M011962	WG524148-02 20ug/L LCS 8260	NA	1	1	STD70455	05/18/15 17:07
17M011963	WG524148-03 20ug/L LCS2 8260	NA	1	1	STD70455	05/18/15 17:27
17M011964	L15050743-01 A 10X 826-TC	NA	17	10		05/18/15 17:46
17M011965	L15050744-01 A 10X 826-TC	NA	17	10		05/18/15 18:06
17M011966	L15050794-01 A 10X 826-TC	NA	17	10		05/18/15 18:26
17M011967	L15050890-25 A 826-SPE	<2	1	1		05/18/15 18:46
17M011968	L15050890-05 A 826-SPE	<2	1	1		05/18/15 19:06
17M011969	L15050890-07 A 826-SPE	<2	1	1		05/18/15 19:25
17M011970	L15050890-09 A 826-SPE	<2	1	1		05/18/15 19:45
17M011971	L15050890-11 A 826-SPE	<2	1	1		05/18/15 20:05
17M011972	L15050890-13 A 826-SPE	<2	1	1		05/18/15 20:24
17M011973	L15050890-15 A 826-SPE	<2	1	1		05/18/15 20:44
17M011974	L15050890-17 A 826-SPE	<2	1	1		05/18/15 21:04
17M011975	L15050890-19 A 826-SPE	<2	1	1		05/18/15 21:24
17M011976	L15050890-21 A 826-SPE	<2	1	1		05/18/15 21:44
17M011977	L15050890-23 A 826-SPE	<2	1	1		05/18/15 22:04

Approved: May 20, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS17 Dataset: 051815
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 21
Method: 5030C/5030B/5035 SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD70450 Surrogate Standard: STD70451
CCV: STD70453 LCS: STD70455 MS/MSD: STD70455

Column 1 ID: RTX-VMS Column 2 ID: NA
Workgroups: WG524148, WG523986 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
17M011978	L15050373-04 C 5000X 826-SPE4	<2	1	1		05/18/15 22:24
17M011979	WG523438-01 FBLK	NA	17	10		05/18/15 22:44
17M011980	WG524148-04 624-BLK	NA	2	1		05/18/15 23:04
17M011981	L15050962-01 A 10x 624-SPE1	<2	2	10		05/18/15 23:24
17M011982	L15050962-02 B 10X 624-SPE	<2	2	10		05/18/15 23:44
17M011983	L15050962-04 B 10X 624-SPE	<2	2	10		05/19/15 00:03
17M011984	L15050962-06 B 2X 624-SPE	<2	2	2		05/19/15 00:23
17M011985	L15050853-01 624-SPE	<2	2	1		05/19/15 00:43
17M011986	RINSE	NA	2	1		05/19/15 01:03
17M011987	RINSE	NA	2	1		05/19/15 01:23

Comments

Seq.	Rerun	Dil.	Reason	Analytes
14				
File ID: 17M011957				
			WG523986-12 RR, DNR. BAD LCS MIX USED.	

Approved: May 20, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS17 Dataset: 060115
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 21
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD70450 Surrogate Standard: STD70451
CCV: STD70529 LCS: STD70797 MS/MSD: NA

Column 1 ID: RTX-VMS Column 2 ID: NA
Workgroups: WG525817, WG525840

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
17M012416	WG525816-01 50ng BFB 8260	NA	1	1	STD70707	06/01/15 15:19
17M012417	WG525816-02 50ug/L CCV 8260	NA	1	1	STD70762	06/01/15 15:38
17M012418	RINSE	NA	1	1		06/01/15 16:02
17M012419	WG525817-01 BLANK 8260	NA	1	1		06/01/15 16:22
17M012420	WG525817-02 20ug/L LCS 8260	NA	1	1	STD70797	06/01/15 16:42
17M012421	L15051546-04 B MS 826-SPE	NA	1	1	STD70797	06/01/15 17:02
17M012422	L15051546-05 B MSD 826-SPE	NA	1	1	STD70797	06/01/15 17:22
17M012423	RINSE	NA	1	1		06/01/15 17:42
17M012424	L15051543-01 B 25X 826-SPE	<2	1	25		06/01/15 18:01
17M012425	L15051543-02 B 25X 826-SPE	<2	1	25		06/01/15 18:21
17M012426	RINSE	NA	1	1		06/01/15 18:41
17M012427	L15051546-08 A 5X 826-SPE	<2	1	5		06/01/15 19:01
17M012428	L15051546-09 A 826-SPE	<2	1	1		06/01/15 19:20
17M012429	RINSE	NA	1	1		06/01/15 19:40
17M012430	L15051546-03 B 826-SPE	NA	1	1		06/01/15 20:00
17M012431	L15051546-10 B 826-SPE	<2	1	1		06/01/15 20:20
17M012432	L15051529-01 B 826-SPE	<2	1	1		06/01/15 20:40
17M012433	L15051538-01 A 826-SPE	<2	1	1		06/01/15 20:59
17M012434	L15051620-01 A 826-LOW	<2	1	1		06/01/15 21:19
17M012435	L15051620-02 A 826-LOW	<2	1	1		06/01/15 21:39
17M012436	L15051620-03 A 826-LOW	<2	1	1		06/01/15 21:59
17M012437	L15051620-04 A 826-LOW	<2	1	1		06/01/15 22:19
17M012438	L15051620-05 A 826-LOW	<2	1	1		06/01/15 22:39
17M012439	L15051620-06 A 826-LOW	<2	1	1		06/01/15 22:59
17M012440	L15051620-10 A 826-LOW	<2	1	1		06/01/15 23:19
17M012441	L15051620-11 A 826-LOW	<2	1	1		06/01/15 23:39
17M012442	L15051620-12 A 826-LOW	<2	1	1		06/01/15 23:58
17M012443	L15051620-13 A 826-LOW	<2	1	1		06/02/15 00:18
17M012444	L15051620-14 A 826-LOW	<2	1	1		06/02/15 00:38
17M012445	WG525840-01 LCS 624	NA	2	1	STD70797	06/02/15 00:58
17M012446	WG525840-02 LCSDUP 624	NA	2	1	STD70797	06/02/15 01:18
17M012447	RINSE	NA	2	1		06/02/15 01:38
17M012448	WG525840-03 624-BLK	NA	2	1		06/02/15 01:58
17M012449	L15060031-03 A 624 TB	<2	2	1		06/02/15 02:18

Approved: June 03, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS17 Dataset: 060115
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 21
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD70450 Surrogate Standard: STD70451
CCV: STD70529 LCS: STD70797 MS/MSD: NA

Column 1 ID: RTX-VMS Column 2 ID: NA
Workgroups: WG525817, WG525840

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
17M012450	L15060031-01 A 624	<2	2	1		06/02/15 02:38
17M012451	L15060031-02 A 624	<2	2	1		06/02/15 02:58
17M012452	L15060017-01 A 624	<2	2	1		06/02/15 03:18
17M012453	L15060017-02 A 624	<2	2	1		06/02/15 03:38
17M012454	L15060017-03 A 624	<2	2	1		06/02/15 03:58
17M012455	L15060017-04 A 624	<2	2	1		06/02/15 04:18
17M012456	RINSE	NA	2	1		06/02/15 04:38
17M012457	RINSE	NA	2	1		06/02/15 04:58
17M012458	RINSE	NA	2	1		06/02/15 05:18

Comments

Seq.	Rerun	Dil.	Reason	Analytes
12	X			
File ID: 17M012427				
	L15051546-08 DNR Too dilute. RR STR.			
29	X			
File ID: 17M012444				
	L15051620-14 DNR NOT NEEDED. Not in this WG.			
34				
File ID: 17M012449				
	L15060031-03 Sample preserved incorrectly for Acrolein \& Acrylonitrile, reported results are estimated. Cooler temperature at time of receipt exceeded regulatory guidelines.			
35				
File ID: 17M012450				
	L15060031-01 Sample preserved incorrectly for Acrolein \& Acrylonitrile, reported results are estimated. Cooler temperature at time of receipt exceeded regulatory guidelines.			
36				
File ID: 17M012451				
	L15060031-02 Sample preserved incorrectly for Acrolein \& Acrylonitrile, reported results are estimated. Cooler temperature at time of receipt exceeded regulatory guidelines.			
37				
File ID: 17M012452				
	L15060017-01 - Sample preserved incorrectly for Acrolein \& Acrylonitrile, reported results are estimated.			
38				
File ID: 17M012453				
	L15060017-02 - Sample preserved incorrectly for Acrolein \& Acrylonitrile, reported results are estimated.			

Approved: June 03, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS17 Dataset: 060115
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 21
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD70450 Surrogate Standard: STD70451
CCV: STD70529 LCS: STD70797 MS/MSD: NA

Column 1 ID: RTX-VMS Column 2 ID: NA
Workgroups: WG525817, WG525840

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
39				
File ID: 17M012454				
	L15060017-03 - Sample preserved incorrectly for Acrolein \& Acrylonitrile, reported results are estimated.			
40				
File ID: 17M012455				
	L15060017-04 - Sample preserved incorrectly for Acrolein \& Acrylonitrile, reported results are estimated.			

Approved: June 03, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS17 Dataset: 060215
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 21
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD70450 Surrogate Standard: STD70451
CCV: STD70762 LCS: STD70797 MS/MSD: STD70797

Column 1 ID: RTX-VMS Column 2 ID: NA
Workgroups: WG525997

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
17M012459	WG525986-01 50ng BFB 8260	NA	1	1	STD70707	06/02/15 15:01
17M012460	WG525986-02 50ug/L CCV 8260	NA	1	1	STD70762	06/02/15 15:19
17M012461	RINSE	NA	1	1		06/02/15 15:41
17M012462	WG525997-01 BLANK 8260	NA	1	1		06/02/15 16:01
17M012463	WG525997-02 20ug/L LCS 8260	NA	1	1	STD70797	06/02/15 16:20
17M012464	RINSE	NA	1	1		06/02/15 17:12
17M012465	L15051546-08 B 826-SPE	<2	1	1		06/02/15 17:32
17M012466	L15051624-01 A 826-TC	NA	17	10		06/02/15 17:51
17M012467	L15051624-02 A 826-TC	NA	17	10		06/02/15 18:11
17M012468	L15051627-01 A 826-TC-SPE	NA	17	10		06/02/15 18:31
17M012469	L15051588-01 A 826-SPE3	<2	1	1		06/02/15 18:51
17M012470	L15051588-02 A 826-SPE3	<2	1	1		06/02/15 19:10
17M012471	L15051588-03 A 826-SPE3	<2	1	1		06/02/15 19:30
17M012472	L15051588-04 A 826-SPE3	<2	1	1		06/02/15 19:50
17M012473	L15051589-01 A 25X 826-SPE2	<2	1	25		06/02/15 20:10
17M012474	RINSE	NA	1	1		06/02/15 20:30
17M012475	L15051620-07 A 826-LOW	<2	1	1		06/02/15 20:49
17M012476	L15051620-14 B 826-LOW	<2	1	1		06/02/15 21:09
17M012477	L15051620-15 A 826-LOW	<2	1	1		06/02/15 21:29
17M012478	L15051620-16 A 826-LOW	<2	1	1		06/02/15 21:49
17M012479	L15051620-17 A 826-LOW	<2	1	1		06/02/15 22:09
17M012480	L15051620-20 A 826-LOW	<2	1	1		06/02/15 22:28
17M012481	L15051620-21 A 826-LOW	<2	1	1		06/02/15 22:48
17M012482	L15051620-08 A MS 826-LOW	<2	1	1	STD70797	06/02/15 23:08
17M012483	L15051620-09 A MSD 826-LOW	<2	1	1	STD70797	06/02/15 23:28
17M012484	L15051620-18 A MS 826-LOW	<2	1	1	STD70797	06/02/15 23:48
17M012485	L15051620-19 A MSD 826-LOW	<2	1	1	STD70797	06/03/15 00:08
17M012486	RINSE	NA	1	1		06/03/15 00:27
17M012487	WG525780-01 FBLK	NA	17	10		06/03/15 00:47
17M012488	WG525556-01 FBLK	NA	17	10		06/03/15 01:07

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Approved: June 03, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS17 Dataset: 060215
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 21
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD70450 Surrogate Standard: STD70451
CCV: STD70762 LCS: STD70797 MS/MSD: STD70797

Column 1 ID: RTX-VMS Column 2 ID: NA
Workgroups: WG525997

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
15	X	10	Analyzed too dilute	
File ID: 17M012473				
29	X	10	Over Calibration Range	2-BUTANONE
File ID: 17M012487				
2-butanone was over the ical in a fluid blank. Rerun to confirm.				

Approved: June 03, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS17 Dataset: 060315
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 22
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD70450 Surrogate Standard: STD70451
CCV: STD70762 LCS: STD70797 MS/MSD: STD70797

Column 1 ID: RTX-VMS Column 2 ID: NA
Workgroups: WG526216

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
17M012489	WG526215-01 50ng BFB 8260	NA	1	1	STD70707	06/03/15 16:07
17M012490	WG526215-02 50ug/L CCV 8260	NA	1	1	STD70762	06/03/15 16:26
17M012491	RINSE	NA	1	1		06/03/15 17:22
17M012492	WG526216-01 BLANK 8260	NA	1	1		06/03/15 17:41
17M012493	WG526216-02 20ug/L LCS 8260	NA	1	1	STD70797	06/03/15 18:01
17M012494	L15051605-03 A MS 826-SPE	<2	1	1	STD70797	06/03/15 18:21
17M012495	L15051605-04 A MSD 826-SPE	<2	1	1	STD70797	06/03/15 18:41
17M012496	L15051819-03 A 10X 826-TC	NA	17	10		06/03/15 19:00
17M012497	RINSE	NA	1	1		06/03/15 19:20
17M012498	L15051605-01 A 826-SPE	<2	1	1		06/03/15 19:40
17M012499	L15051620-23 A 826-LOW	<2	1	1		06/03/15 20:00
17M012500	L15051710-04 A 826-SPE	<2	1	1		06/03/15 20:20
17M012501	L15051605-02 A 826-SPE	<2	1	1		06/03/15 20:39
17M012502	L15051620-22 A 826-LOW	<2	1	1		06/03/15 20:59
17M012503	L15051605-06 A 826-SPE	<2	1	1		06/03/15 21:19
17M012504	L15051605-07 A 826-SPE	<2	1	1		06/03/15 21:39
17M012505	L15051605-08 A 826-SPE	<2	1	1		06/03/15 21:59
17M012506	L15051605-09 A 826-SPE	<2	1	1		06/03/15 22:18
17M012507	L15051605-10 A 826-SPE	<2	1	1		06/03/15 22:38
17M012508	L15051605-14 A 826-SPE	<2	1	1		06/03/15 22:58
17M012509	L15051605-16 A 826-SPE	<2	1	1		06/03/15 23:18
17M012510	L15051605-17 A 826-SPE	<2	1	1		06/03/15 23:38
17M012511	L15051589-01 B 10X 826-SPE	<2	1	10		06/03/15 23:57
17M012512	L15051710-01 A 50X 826-SPE	<2	1	50		06/04/15 00:17
17M012513	L15051710-02 A 2X 826-SPE	<2	1	2		06/04/15 00:37
17M012514	L15051710-03 A 500X 826-SPE	<2	1	500		06/04/15 00:57
17M012515	RINSE	NA	1	1		06/04/15 01:17
17M012516	RINSE	NA	1	1		06/04/15 01:36
17M012517	WG525780-01 FBLK A	NA	17	10		06/04/15 01:56
17M012518	WG525780-01 FBLK B	NA	17	10		06/04/15 02:16

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Approved: June 10, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS17 Dataset: 060315
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 22
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD70450 Surrogate Standard: STD70451
CCV: STD70762 LCS: STD70797 MS/MSD: STD70797

Column 1 ID: RTX-VMS Column 2 ID: NA
Workgroups: WG526216

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17	X	10	Over Calibration Range	CIS12
File ID:	17M012505			
	L15051605-08			
18	X		Carry-over contamination	
File ID:	17M012506			
	L15051605-09			
19	X		Carry-over contamination	
File ID:	17M012507			
	L15051605-10			
20	X		Carry-over contamination	
File ID:	17M012508			
	L15051605-14			
21	X	5	Over Calibration Range	CB
File ID:	17M012509			
	L15051605-16			
24	X	2	Analyzed too dilute	
File ID:	17M012512			
	L15051710-01 DNR			

Approved: June 10, 2015

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Microbac Laboratories Inc.

Data Checklist

Date: 20-MAY-2015
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS17
Curve Workgroup: NA
Runlog ID: 68079
Analytical Workgroups: WG524148, WG523986 (ICAL)

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
20-MAY-2015

Secondary Reviewer:
20-MAY-2015

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2015 13:49:51

Microbac Laboratories Inc.

Data Checklist

Date: 02-JUN-2015
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS17
Curve Workgroup: NA
Runlog ID: 68346
Analytical Workgroups: WG525817, WG525840

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer: 02-JUN-2015

Secondary Reviewer: 03-JUN-2015

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-03-2015 07:40:24

Microbac Laboratories Inc.

Data Checklist

Date: 02-JUN-2015
Analyst: ADC
Analyst: NA
Method: 8260B
Instrument: HPMS17
Curve Workgroup: NA
Runlog ID: 68380
Analytical Workgroups: WG525997

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
03-JUN-2015
Tiffany Bailey

Secondary Reviewer:
03-JUN-2015

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-03-2015 17:21:13

Microbac Laboratories Inc.

Data Checklist

Date: 03-JUN-2015
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS17
Curve Workgroup: NA
Runlog ID: 68494
Analytical Workgroups: WG526216

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer: 09-JUN-2015

Secondary Reviewer: 10-JUN-2015

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-10-2015 07:24:05

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG525817

Login Number: L15051620

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW19-052215	01	05/22/15					06/01/2015	10.5	14		06/01/15	10.5	14	
50WW19FD-052215	02	05/22/15					06/01/2015	10.5	14		06/01/15	10.5	14	
50WW17-052215	03	05/22/15					06/01/2015	10.5	14		06/01/15	10.5	14	
50WW16-052215	04	05/22/15					06/01/2015	10.5	14		06/01/15	10.5	14	
GPW1-052215	05	05/22/15					06/01/2015	10.4	14		06/01/15	10.4	14	
50SW06-052215	06	05/22/15					06/01/2015	10.4	14		06/01/15	10.4	14	
50WW10-052315	10	05/23/15					06/01/2015	9.6	14		06/01/15	9.6	14	
50WW27-052315	11	05/23/15					06/01/2015	9.5	14		06/01/15	9.5	14	
50WW15-052315	12	05/23/15					06/01/2015	9.5	14		06/01/15	9.5	14	
50WW26-052315	13	05/23/15					06/02/2015	9.4	14		06/02/15	9.4	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4211933
Report generated 06/10/2015 13:29

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG525997

Login Number: L15051620

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW09-052315	07	05/23/15					06/02/2015	10.5	14		06/02/15	10.5	14	
50WW09MS-052315	08	05/23/15					06/02/2015	10.6	14		06/02/15	10.6	14	
50WW09MSD-052315	09	05/23/15					06/02/2015	10.6	14		06/02/15	10.6	14	
50WW21-052315	14	05/23/15					06/02/2015	10.2	14		06/02/15	10.2	14	
50WW21FD-052315	15	05/23/15					06/02/2015	10.2	14		06/02/15	10.2	14	
50WW20-052615	16	05/26/15					06/02/2015	7.5	14		06/02/15	7.5	14	
50WW05-052615	17	05/26/15					06/02/2015	7.5	14		06/02/15	7.5	14	
50WW05MS-052615	18	05/26/15					06/02/2015	7.5	14		06/02/15	7.5	14	
50WW05MSD-052615	19	05/26/15					06/03/2015	7.6	14		06/03/15	7.6	14	
50WW07-052615	20	05/26/15					06/02/2015	7.4	14		06/02/15	7.4	14	
50WW28-052615	21	05/26/15					06/02/2015	7.3	14		06/02/15	7.3	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4211933
Report generated 06/10/2015 13:29

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG526216

Login Number: L15051620

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW28FD-052615	22	05/26/15					06/03/2015	8.2	14		06/03/15	8.2	14	
TRIP BLANK	23	05/26/15					06/03/2015	8.8	14		06/03/15	8.8	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4211933
Report generated 06/10/2015 13:29

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L15051620
Instrument Id: HPMS17
Workgroup (AAB#): WG525817

Method: 8260
CAL ID: HPMS17-18-MAY-15
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L15051620-01	1.00	01	110	103	105	104
L15051620-02	1.00	01	108	102	108	104
L15051620-03	1.00	01	106	103	111	105
L15051620-04	1.00	01	110	103	108	104
L15051620-05	1.00	01	108	102	109	105
L15051620-06	1.00	01	110	103	108	105
L15051620-10	1.00	01	106	104	111	106
L15051620-11	1.00	01	111	103	106	103
L15051620-12	1.00	01	109	103	110	104
L15051620-13	1.00	01	112	105	108	105
WG525817-01	1.00	01	103	101	110	105
WG525817-02	1.00	01	101	102	101	104

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4211941
Report generated: 06/10/2015 13:30

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L15051620
Instrument Id: HPMS17
Workgroup (AAB#): WG525997

Method: 8260
CAL ID: HPMS17-18-MAY-15
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L15051620-07	1.00	01	111	106	108	106
L15051620-08	1.00	01	111	106	107	105
L15051620-09	1.00	01	108	104	102	103
L15051620-14	1.00	01	111	104	106	104
L15051620-15	1.00	01	111	103	105	103
L15051620-16	1.00	01	113	104	106	105
L15051620-17	1.00	01	112	104	104	105
L15051620-18	1.00	01	107	104	104	103
L15051620-19	1.00	01	108	104	105	104
L15051620-20	1.00	01	110	104	108	105
L15051620-21	1.00	01	112	104	107	105
WG525997-01	1.00	01	105	102	109	106
WG525997-02	1.00	01	105	104	104	104

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4211941
Report generated: 06/10/2015 13:30

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L15051620
Instrument Id: HPMS17
Workgroup (AAB#): WG526216

Method: 8260
CAL ID: HPMS17-18-MAY-15
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L15051620-22	1.00	01	105	101	104	103
L15051620-23	1.00	01	108	103	105	105
WG526216-01	1.00	01	102	99.6	102	104
WG526216-02	1.00	01	103	102	100	103

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4211941
Report generated: 06/10/2015 13:30

METHOD BLANK SUMMARY

Login Number: L15051620
Blank File ID: 17M012419
Prep Date: 06/01/15 16:22
Analyzed Date: 06/01/15 16:22
Analyst: ADC

Work Group: WG525817
Blank Sample ID: WG525817-01
Instrument ID: HPMS17
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG525817-02	17M012420	06/01/15 16:42	01
50WW19-052215	L15051620-01	17M012434	06/01/15 21:19	01
50WW19FD-052215	L15051620-02	17M012435	06/01/15 21:39	01
50WW17-052215	L15051620-03	17M012436	06/01/15 21:59	01
50WW16-052215	L15051620-04	17M012437	06/01/15 22:19	01
GPW1-052215	L15051620-05	17M012438	06/01/15 22:39	01
50SW06-052215	L15051620-06	17M012439	06/01/15 22:59	01
50WW10-052315	L15051620-10	17M012440	06/01/15 23:19	01
50WW27-052315	L15051620-11	17M012441	06/01/15 23:39	01
50WW15-052315	L15051620-12	17M012442	06/01/15 23:58	01
50WW26-052315	L15051620-13	17M012443	06/02/15 00:18	01

Report Name: BLANK_SUMMARY
PDF File ID: 4211934
Report generated 06/10/2015 13:29

METHOD BLANK SUMMARY

Login Number: L15051620
Blank File ID: 17M012462
Prep Date: 06/02/15 16:01
Analyzed Date: 06/02/15 16:01
Analyst: ADC

Work Group: WG525997
Blank Sample ID: WG525997-01
Instrument ID: HPMS17
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG525997-02	17M012463	06/02/15 16:20	01
50WW09-052315	L15051620-07	17M012475	06/02/15 20:49	01
50WW21-052315	L15051620-14	17M012476	06/02/15 21:09	01
50WW21FD-052315	L15051620-15	17M012477	06/02/15 21:29	01
50WW20-052615	L15051620-16	17M012478	06/02/15 21:49	01
50WW05-052615	L15051620-17	17M012479	06/02/15 22:09	01
50WW07-052615	L15051620-20	17M012480	06/02/15 22:28	01
50WW28-052615	L15051620-21	17M012481	06/02/15 22:48	01
50WW09MS-052315	L15051620-08	17M012482	06/02/15 23:08	01
50WW09MSD-052315	L15051620-09	17M012483	06/02/15 23:28	01
50WW05MS-052615	L15051620-18	17M012484	06/02/15 23:48	01
50WW05MSD-052615	L15051620-19	17M012485	06/03/15 00:08	01

Report Name: BLANK_SUMMARY
PDF File ID: 4211934
Report generated 06/10/2015 13:29

METHOD BLANK SUMMARY

Login Number: L15051620
Blank File ID: 17M012492
Prep Date: 06/03/15 17:41
Analyzed Date: 06/03/15 17:41
Analyst: ADC

Work Group: WG526216
Blank Sample ID: WG526216-01
Instrument ID: HPMS17
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG526216-02	17M012493	06/03/15 18:01	01
TRIP BLANK	L15051620-23	17M012499	06/03/15 20:00	01
50WW28FD-052615	L15051620-22	17M012502	06/03/15 20:59	01

Report Name: BLANK_SUMMARY
PDF File ID: 4211934
Report generated 06/10/2015 13:29

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051620 Prep Date: 06/01/15 16:22 Sample ID: WG525817-01
Instrument ID: HPMS17 Run Date: 06/01/15 16:22 Prep Method: 5030B/5030C/503
File ID: 17M012419 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG525817 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS17-18-MAY-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.648	1	J
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4211935
10-JUN-2015 13:29

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051620 Prep Date: 06/01/15 16:22 Sample ID: WG525817-01
Instrument ID: HPMS17 Run Date: 06/01/15 16:22 Prep Method: 5030B/5030C/503
File ID: 17M012419 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG525817 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS17-18-MAY-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	101	85 - 115	PASS
1,2-Dichloroethane-d4	103	70 - 120	PASS
Toluene-d8	105	85 - 120	PASS
4-Bromofluorobenzene	110	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4211935
10-JUN-2015 13:29

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L15051620 Prep Date: 06/02/15 16:01 Sample ID: WG525997-01
Instrument ID: HPMS17 Run Date: 06/02/15 16:01 Prep Method: 5030B/5030C/503
File ID: 17M012462 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG525997 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS17-18-MAY-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

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Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051620 Prep Date: 06/02/15 16:01 Sample ID: WG525997-01
Instrument ID: HPMS17 Run Date: 06/02/15 16:01 Prep Method: 5030B/5030C/503
File ID: 17M012462 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG525997 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS17-18-MAY-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	102	85 - 115	PASS
1,2-Dichloroethane-d4	105	70 - 120	PASS
Toluene-d8	106	85 - 120	PASS
4-Bromofluorobenzene	109	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
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Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L15051620 Prep Date: 06/03/15 17:41 Sample ID: WG526216-01
Instrument ID: HPMS17 Run Date: 06/03/15 17:41 Prep Method: 5030B/5030C/503
File ID: 17M012492 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG526216 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS17-18-MAY-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

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Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L15051620 Prep Date: 06/03/15 17:41 Sample ID: WG526216-01
Instrument ID: HPMS17 Run Date: 06/03/15 17:41 Prep Method: 5030B/5030C/503
File ID: 17M012492 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG526216 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS17-18-MAY-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	99.6	85 - 115	PASS
1,2-Dichloroethane-d4	102	70 - 120	PASS
Toluene-d8	104	85 - 120	PASS
4-Bromofluorobenzene	102	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051620 | Run Date: 06/01/2015 | Sample ID: WG525817-02
Instrument ID: HPMS17 | Run Time: 16:42 | Prep Method: 5030B/5030C/503
File ID: 17M012420 | Analyst: ADC | Method: 8260B
Workgroup (AAB#): WG525817 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD70797 | Cal ID: HPMS17-18-MAY-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	17.1	85.6	40 - 140	
Benzene	20.0	18.8	94.0	80 - 120	
Bromobenzene	20.0	18.7	93.6	75 - 125	
Bromochloromethane	20.0	19.7	98.6	65 - 130	
Bromodichloromethane	20.0	19.0	95.1	75 - 120	
Bromoform	20.0	21.8	109	70 - 130	
Bromomethane	20.0	16.4	81.9	30 - 145	
2-Butanone	20.0	17.6	87.8	30 - 150	
n-Butylbenzene	20.0	19.1	95.6	70 - 135	
sec-Butylbenzene	20.0	17.8	89.2	70 - 125	
tert-Butylbenzene	20.0	18.0	89.8	70 - 130	
Carbon disulfide	20.0	10.7	53.6	35 - 160	
Carbon tetrachloride	20.0	19.6	98.0	65 - 140	
Chlorobenzene	20.0	17.7	88.4	80 - 120	
Chlorodibromomethane	20.0	19.8	98.9	60 - 135	
Chloroethane	20.0	17.8	88.8	60 - 135	
Chloroform	20.0	19.5	97.4	65 - 135	
Chloromethane	20.0	19.6	98.2	40 - 125	
2-Chlorotoluene	20.0	17.5	87.5	75 - 125	
4-Chlorotoluene	20.0	17.2	86.2	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	19.7	98.5	50 - 130	
1,2-Dibromoethane	20.0	19.7	98.6	80 - 120	
Dibromomethane	20.0	20.5	102	75 - 125	
1,2-Dichlorobenzene	20.0	17.5	87.7	70 - 120	
1,3-Dichlorobenzene	20.0	17.2	85.8	75 - 125	
1,4-Dichlorobenzene	20.0	18.3	91.7	75 - 125	
Dichlorodifluoromethane	20.0	25.2	126	30 - 155	
1,1-Dichloroethane	20.0	18.4	92.0	70 - 135	
1,2-Dichloroethane	20.0	19.4	97.2	70 - 130	
1,1-Dichloroethene	20.0	17.5	87.7	70 - 130	
cis-1,2-Dichloroethene	20.0	19.4	97.0	70 - 125	
trans-1,2-Dichloroethene	20.0	19.0	95.1	60 - 140	
1,2-Dichloropropane	20.0	19.3	96.6	75 - 125	
1,3-Dichloropropane	20.0	19.4	97.2	75 - 125	
2,2-Dichloropropane	20.0	20.1	101	70 - 135	
cis-1,3-Dichloropropene	20.0	20.6	103	70 - 130	
trans-1,3-Dichloropropene	20.0	20.5	102	55 - 140	
1,1-Dichloropropene	20.0	18.6	93.1	75 - 130	
Ethylbenzene	20.0	19.1	95.5	75 - 125	
2-Hexanone	20.0	17.8	88.8	55 - 130	
Hexachlorobutadiene	20.0	17.8	88.8	50 - 140	

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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051620 Run Date: 06/01/2015 Sample ID: WG525817-02
Instrument ID: HPMS17 Run Time: 16:42 Prep Method: 5030B/5030C/503
File ID: 17M012420 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG525817 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD70797 Cal ID: HPMS17-18-MAY-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	18.1	90.5	75 - 125	
p-Isopropyltoluene	20.0	18.0	89.8	75 - 130	
4-Methyl-2-pentanone	20.0	17.0	84.8	60 - 135	
Methylene chloride	20.0	18.9	94.7	55 - 140	
Naphthalene	20.0	18.7	93.5	55 - 140	
n-Propylbenzene	20.0	17.7	88.7	70 - 130	
Styrene	20.0	19.3	96.5	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	19.4	97.2	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	19.9	99.5	65 - 130	
Tetrachloroethene	20.0	18.5	92.6	45 - 150	
Toluene	20.0	19.2	96.0	75 - 120	
1,2,3-Trichlorobenzene	20.0	18.7	93.5	55 - 140	
1,2,4-Trichlorobenzene	20.0	18.5	92.4	65 - 135	
1,1,1-Trichloroethane	20.0	19.0	95.2	65 - 130	
1,1,2-Trichloroethane	20.0	19.4	96.9	75 - 125	
Trichloroethene	20.0	18.0	89.9	70 - 125	
Trichlorofluoromethane	20.0	20.1	100	60 - 145	
1,2,3-Trichloropropane	20.0	19.9	99.3	75 - 125	
1,2,4-Trimethylbenzene	20.0	19.5	97.6	75 - 130	
1,3,5-Trimethylbenzene	20.0	19.5	97.6	75 - 130	
Vinyl chloride	20.0	20.2	101	50 - 145	
o-Xylene	20.0	18.0	89.8	80 - 120	
m-,p-Xylene	40.0	37.7	94.2	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	102	85 - 115	PASS
1,2-Dichloroethane-d4	101	70 - 120	PASS
Toluene-d8	104	85 - 120	PASS
4-Bromofluorobenzene	101	75 - 120	PASS

* EXCEEDS %REC LIMIT

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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051620 | Run Date: 06/02/2015 | Sample ID: WG525997-02
Instrument ID: HPMS17 | Run Time: 16:20 | Prep Method: 5030B/5030C/503
File ID: 17M012463 | Analyst: ADC | Method: 8260B
Workgroup (AAB#): WG525997 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD70797 | Cal ID: HPMS17-18-MAY-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	18.3	91.7	40 - 140	
Benzene	20.0	19.3	96.3	80 - 120	
Bromobenzene	20.0	19.2	95.9	75 - 125	
Bromochloromethane	20.0	19.9	99.5	65 - 130	
Bromodichloromethane	20.0	19.5	97.4	75 - 120	
Bromoform	20.0	21.5	107	70 - 130	
Bromomethane	20.0	17.9	89.5	30 - 145	
2-Butanone	20.0	18.2	91.1	30 - 150	
n-Butylbenzene	20.0	19.9	99.3	70 - 135	
sec-Butylbenzene	20.0	18.6	92.8	70 - 125	
tert-Butylbenzene	20.0	18.7	93.7	70 - 130	
Carbon disulfide	20.0	11.1	55.7	35 - 160	
Carbon tetrachloride	20.0	20.3	101	65 - 140	
Chlorobenzene	20.0	18.1	90.3	80 - 120	
Chlorodibromomethane	20.0	19.7	98.3	60 - 135	
Chloroethane	20.0	18.6	92.8	60 - 135	
Chloroform	20.0	20.1	101	65 - 135	
Chloromethane	20.0	18.6	92.9	40 - 125	
2-Chlorotoluene	20.0	18.2	90.9	75 - 125	
4-Chlorotoluene	20.0	18.0	89.8	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	19.2	96.0	50 - 130	
1,2-Dibromoethane	20.0	19.7	98.6	80 - 120	
Dibromomethane	20.0	20.8	104	75 - 125	
1,2-Dichlorobenzene	20.0	17.8	89.0	70 - 120	
1,3-Dichlorobenzene	20.0	17.7	88.6	75 - 125	
1,4-Dichlorobenzene	20.0	18.8	94.2	75 - 125	
Dichlorodifluoromethane	20.0	26.1	130	30 - 155	
1,1-Dichloroethane	20.0	19.2	95.9	70 - 135	
1,2-Dichloroethane	20.0	19.9	99.3	70 - 130	
1,1-Dichloroethene	20.0	18.4	92.0	70 - 130	
cis-1,2-Dichloroethene	20.0	19.7	98.4	70 - 125	
trans-1,2-Dichloroethene	20.0	19.6	98.2	60 - 140	
1,2-Dichloropropane	20.0	19.7	98.5	75 - 125	
1,3-Dichloropropane	20.0	19.7	98.7	75 - 125	
2,2-Dichloropropane	20.0	20.5	102	70 - 135	
cis-1,3-Dichloropropene	20.0	20.8	104	70 - 130	
trans-1,3-Dichloropropene	20.0	20.5	102	55 - 140	
1,1-Dichloropropene	20.0	19.2	96.2	75 - 130	
Ethylbenzene	20.0	19.4	97.2	75 - 125	
2-Hexanone	20.0	17.9	89.4	55 - 130	
Hexachlorobutadiene	20.0	18.5	92.3	50 - 140	

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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051620 Run Date: 06/02/2015 Sample ID: WG525997-02
Instrument ID: HPMS17 Run Time: 16:20 Prep Method: 5030B/5030C/503
File ID: 17M012463 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG525997 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD70797 Cal ID: HPMS17-18-MAY-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	18.3	91.5	75 - 125	
p-Isopropyltoluene	20.0	18.5	92.4	75 - 130	
4-Methyl-2-pentanone	20.0	17.0	84.8	60 - 135	
Methylene chloride	20.0	19.4	97.0	55 - 140	
Naphthalene	20.0	18.3	91.4	55 - 140	
n-Propylbenzene	20.0	18.5	92.6	70 - 130	
Styrene	20.0	19.7	98.3	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	19.6	97.8	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	20.3	101	65 - 130	
Tetrachloroethene	20.0	19.0	95.2	45 - 150	
Toluene	20.0	19.7	98.5	75 - 120	
1,2,3-Trichlorobenzene	20.0	18.9	94.6	55 - 140	
1,2,4-Trichlorobenzene	20.0	18.9	94.5	65 - 135	
1,1,1-Trichloroethane	20.0	19.8	99.0	65 - 130	
1,1,2-Trichloroethane	20.0	19.4	96.9	75 - 125	
Trichloroethene	20.0	18.6	92.8	70 - 125	
Trichlorofluoromethane	20.0	21.3	106	60 - 145	
1,2,3-Trichloropropane	20.0	20.4	102	75 - 125	
1,2,4-Trimethylbenzene	20.0	20.1	101	75 - 130	
1,3,5-Trimethylbenzene	20.0	20.2	101	75 - 130	
Vinyl chloride	20.0	20.6	103	50 - 145	
o-Xylene	20.0	18.2	90.8	80 - 120	
m-,p-Xylene	40.0	38.4	96.1	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	104	85 - 115	PASS
1,2-Dichloroethane-d4	105	70 - 120	PASS
Toluene-d8	104	85 - 120	PASS
4-Bromofluorobenzene	104	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4211936
Report generated: 06/10/2015 13:29

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051620 Run Date: 06/03/2015 Sample ID: WG526216-02
Instrument ID: HPMS17 Run Time: 18:01 Prep Method: 5030B/5030C/503
File ID: 17M012493 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG526216 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD70797 Cal ID: HPMS17-18-MAY-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	20.9	104	40 - 140	
Benzene	20.0	19.1	95.5	80 - 120	
Bromobenzene	20.0	18.2	90.9	75 - 125	
Bromochloromethane	20.0	19.9	99.4	65 - 130	
Bromodichloromethane	20.0	19.3	96.5	75 - 120	
Bromoform	20.0	21.3	106	70 - 130	
Bromomethane	20.0	18.7	93.5	30 - 145	
2-Butanone	20.0	20.3	102	30 - 150	
n-Butylbenzene	20.0	19.3	96.7	70 - 135	
sec-Butylbenzene	20.0	17.5	87.7	70 - 125	
tert-Butylbenzene	20.0	17.3	86.5	70 - 130	
Carbon disulfide	20.0	11.2	55.8	35 - 160	
Carbon tetrachloride	20.0	19.8	99.1	65 - 140	
Chlorobenzene	20.0	18.0	90.2	80 - 120	
Chlorodibromomethane	20.0	19.6	97.8	60 - 135	
Chloroethane	20.0	18.5	92.7	60 - 135	
Chloroform	20.0	20.1	100	65 - 135	
Chloromethane	20.0	19.7	98.5	40 - 125	
2-Chlorotoluene	20.0	17.2	86.0	75 - 125	
4-Chlorotoluene	20.0	17.1	85.3	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	19.1	95.3	50 - 130	
1,2-Dibromoethane	20.0	19.7	98.5	80 - 120	
Dibromomethane	20.0	20.7	104	75 - 125	
1,2-Dichlorobenzene	20.0	17.1	85.4	70 - 120	
1,3-Dichlorobenzene	20.0	17.0	85.0	75 - 125	
1,4-Dichlorobenzene	20.0	18.3	91.7	75 - 125	
Dichlorodifluoromethane	20.0	25.9	130	30 - 155	
1,1-Dichloroethane	20.0	18.9	94.7	70 - 135	
1,2-Dichloroethane	20.0	19.9	99.4	70 - 130	
1,1-Dichloroethene	20.0	18.2	91.1	70 - 130	
cis-1,2-Dichloroethene	20.0	19.7	98.3	70 - 125	
trans-1,2-Dichloroethene	20.0	19.6	98.1	60 - 140	
1,2-Dichloropropane	20.0	19.6	98.1	75 - 125	
1,3-Dichloropropane	20.0	19.5	97.6	75 - 125	
2,2-Dichloropropane	20.0	20.0	100	70 - 135	
cis-1,3-Dichloropropene	20.0	20.7	103	70 - 130	
trans-1,3-Dichloropropene	20.0	20.5	103	55 - 140	
1,1-Dichloropropene	20.0	19.2	96.2	75 - 130	
Ethylbenzene	20.0	19.3	96.5	75 - 125	
2-Hexanone	20.0	19.3	96.7	55 - 130	
Hexachlorobutadiene	20.0	17.2	86.1	50 - 140	

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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051620 Run Date: 06/03/2015 Sample ID: WG526216-02
Instrument ID: HPMS17 Run Time: 18:01 Prep Method: 5030B/5030C/503
File ID: 17M012493 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG526216 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD70797 Cal ID: HPMS17-18-MAY-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	18.2	91.0	75 - 125	
p-Isopropyltoluene	20.0	17.6	88.0	75 - 130	
4-Methyl-2-pentanone	20.0	18.1	90.4	60 - 135	
Methylene chloride	20.0	19.2	96.1	55 - 140	
Naphthalene	20.0	17.7	88.3	55 - 140	
n-Propylbenzene	20.0	17.6	88.0	70 - 130	
Styrene	20.0	19.7	98.4	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	19.3	96.6	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	18.7	93.7	65 - 130	
Tetrachloroethene	20.0	19.0	94.9	45 - 150	
Toluene	20.0	19.5	97.3	75 - 120	
1,2,3-Trichlorobenzene	20.0	18.2	90.9	55 - 140	
1,2,4-Trichlorobenzene	20.0	18.3	91.7	65 - 135	
1,1,1-Trichloroethane	20.0	19.4	97.2	65 - 130	
1,1,2-Trichloroethane	20.0	19.3	96.4	75 - 125	
Trichloroethene	20.0	18.6	92.9	70 - 125	
Trichlorofluoromethane	20.0	20.8	104	60 - 145	
1,2,3-Trichloropropane	20.0	19.3	96.5	75 - 125	
1,2,4-Trimethylbenzene	20.0	19.1	95.3	75 - 130	
1,3,5-Trimethylbenzene	20.0	19.0	94.8	75 - 130	
Vinyl chloride	20.0	20.8	104	50 - 145	
o-Xylene	20.0	18.0	89.9	80 - 120	
m-,p-Xylene	40.0	38.2	95.5	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	102	85 - 115	PASS
1,2-Dichloroethane-d4	103	70 - 120	PASS
Toluene-d8	103	85 - 120	PASS
4-Bromofluorobenzene	100	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
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Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L15051620 Cal ID: HPMS17- 18-MAY-15 Worknum: WG525997

Instrument ID: HPMS17 Contract #: Prep Method: 5030B/5030C/

Parent ID: L15051620-07 File ID: 17M012475 Dil: 1 Method: 5035A

Sample ID: L15051620-08 MS File ID: 17M012482 Dil: 1 Matrix: 8260B

Sample ID: L15051620-09 MSD File ID: 17M012483 Dil: 1 Units: Water ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,1,1,2-Tetrachloroethane	U	20.0	19.3	96.4	20.0	19.4	97.1	0.723	80 - 130	30	
1,1,1-Trichloroethane	U	20.0	18.4	91.8	20.0	18.1	90.3	1.64	65 - 130	30	
1,1,2,2-Tetrachloroethane	U	20.0	22.9	114	20.0	21.9	109	4.34	65 - 130	30	
1,1,2-Trichloroethane	U	20.0	20.6	103	20.0	20.3	102	1.28	75 - 125	30	
1,1-Dichloroethane	0.349	20.0	19.0	93	20.0	18.6	91.2	1.90	70 - 135	30	
1,1-Dichloroethene	U	20.0	16.7	83.5	20.0	16.3	81.3	2.68	70 - 130	30	
1,1-Dichloropropene	U	20.0	17.7	88.4	20.0	17.4	86.9	1.74	75 - 130	30	
1,2,3-Trichlorobenzene	U	20.0	19.9	99.6	20.0	19.3	96.6	3.03	55 - 140	30	
1,2,3-Trichloropropane	U	20.0	22.7	113	20.0	21.5	108	5.19	75 - 125	30	
1,2,4-Trichlorobenzene	U	20.0	19.3	96.3	20.0	18.6	92.9	3.53	65 - 135	30	
1,2,4-Trimethylbenzene	U	20.0	19.4	97.2	20.0	18.8	94.2	3.14	75 - 130	30	
1,2-Dibromo-3-chloropropane	U	20.0	22.9	115	20.0	22.2	111	3.28	50 - 130	30	
1,2-Dibromoethane	U	20.0	20.8	104	20.0	20.7	104	0.282	80 - 120	30	
1,2-Dichlorobenzene	U	20.0	18.3	91.4	20.0	17.6	87.8	4.07	70 - 120	30	
1,2-Dichloroethane	1.11	20.0	21.6	102	20.0	21.3	101	1.07	70 - 130	30	
1,2-Dichloropropane	U	20.0	19.6	98.1	20.0	19.3	96.3	1.94	75 - 125	30	
1,3,5-Trimethylbenzene	U	20.0	19.4	97.2	20.0	18.7	93.3	4.07	75 - 130	30	
1,3-Dichlorobenzene	U	20.0	17.4	87.1	20.0	16.8	84	3.70	75 - 125	30	
1,3-Dichloropropane	U	20.0	20.7	103	20.0	20.5	102	1.18	75 - 125	30	
1,4-Dichlorobenzene	U	20.0	18.8	94	20.0	18.3	91.7	2.48	75 - 125	30	
2,2-Dichloropropane	U	20.0	17.5	87.4	20.0	17.1	85.4	2.26	70 - 135	30	
2-Butanone	U	20.0	22.7	114	20.0	22.0	110	3.18	30 - 150	30	
2-Chlorotoluene	U	20.0	17.5	87.7	20.0	16.9	84.7	3.53	75 - 125	30	
2-Hexanone	U	20.0	22.2	111	20.0	21.6	108	2.60	55 - 130	30	
4-Chlorotoluene	U	20.0	17.7	88.3	20.0	17.0	85	3.72	75 - 130	30	
4-Methyl-2-pentanone	U	20.0	21.0	105	20.0	20.4	102	2.70	60 - 135	30	
Acetone	U	20.0	24.2	121	20.0	22.9	114	5.73	40 - 140	30	
Benzene	U	20.0	18.6	93	20.0	18.4	91.8	1.28	80 - 120	30	
Bromobenzene	U	20.0	19.2	95.8	20.0	18.4	92.2	3.89	75 - 125	30	
Bromochloromethane	U	20.0	20.5	102	20.0	19.9	99.7	2.57	65 - 130	30	
Bromodichloromethane	U	20.0	19.5	97.4	20.0	19.3	96.6	0.838	75 - 120	30	
Bromoform	U	20.0	23.3	116	20.0	23.3	116	0.0020	70 - 130	30	
Bromomethane	U	20.0	16.2	81	20.0	17.0	85.2	5.06	30 - 145	30	
Carbon disulfide	U	20.0	11.0	55.2	20.0	10.7	53.4	3.29	35 - 160	30	
Carbon tetrachloride	U	20.0	18.0	89.9	20.0	17.7	88.7	1.32	65 - 140	30	
Chlorobenzene	U	20.0	17.7	88.6	20.0	17.6	88.1	0.560	80 - 120	30	
Chloroethane	U	20.0	18.7	93.6	20.0	18.4	92.1	1.66	60 - 135	30	
Chloroform	0.272	20.0	20.1	99	20.0	19.8	97.6	1.41	65 - 135	30	
Chloromethane	U	20.0	18.5	92.4	20.0	17.9	89.4	3.30	40 - 125	30	
cis-1,2-Dichloroethene	19.7	20.0	36.5	84	20.0	36.8	85.5	0.801	70 - 125	30	
cis-1,3-Dichloropropene	U	20.0	19.9	99.3	20.0	19.9	99.3	0.0021	70 - 130	30	

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Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L15051620 Cal ID: HPMS17 18-MAY-15 Worknum: WG525997

Instrument ID: HPMS17 Contract #: Prep Method: 5030B/5030C/

Parent ID: L15051620-07 File ID: 17M012475 Dil: 1 Method: 5035A

Sample ID: L15051620-08 MS File ID: 17M012482 Dil: 1 Matrix: 8260B

Sample ID: L15051620-09 MSD File ID: 17M012483 Dil: 1 Units: Water ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chlorodibromomethane	U	20.0	20.4	102	20.0	20.1	101	1.32	60 - 135	30	
Dibromomethane	U	20.0	21.8	109	20.0	21.6	108	0.718	75 - 125	30	
Dichlorodifluoromethane	U	20.0	18.5	92.3	20.0	17.7	88.7	4.03	30 - 155	30	
Ethylbenzene	U	20.0	18.7	93.4	20.0	18.6	93.1	0.322	75 - 125	30	
Hexachlorobutadiene	U	20.0	16.5	82.7	20.0	15.8	79.2	4.44	50 - 140	30	
Isopropylbenzene	U	20.0	17.4	86.9	20.0	17.3	86.3	0.603	75 - 125	30	
m-,p-Xylene	U	40.0	36.9	92.2	40.0	36.7	91.9	0.403	75 - 130	30	
Methylene chloride	U	20.0	19.3	96.7	20.0	19.0	94.9	1.87	55 - 140	30	
n-Butylbenzene	U	20.0	18.3	91.7	20.0	17.7	88.5	3.48	70 - 135	30	
n-Propylbenzene	U	20.0	17.4	87	20.0	16.8	83.9	3.71	70 - 130	30	
Naphthalene	U	20.0	21.0	105	20.0	20.3	102	3.42	55 - 140	30	
o-Xylene	U	20.0	17.6	88.2	20.0	17.7	88.3	0.145	80 - 120	30	
p-Isopropyltoluene	U	20.0	17.4	86.9	20.0	16.8	83.8	3.58	75 - 130	30	
sec-Butylbenzene	U	20.0	17.2	86.2	20.0	16.5	82.6	4.23	70 - 125	30	
Styrene	U	20.0	19.4	97.2	20.0	19.3	96.3	0.971	65 - 135	30	
tert-Butylbenzene	U	20.0	17.4	87	20.0	16.9	84.6	2.80	70 - 130	30	
Tetrachloroethene	0.423	20.0	17.5	85.6	20.0	17.5	85.5	0.174	45 - 150	30	
Toluene	U	20.0	18.9	94.3	20.0	18.6	93	1.39	75 - 120	30	
trans-1,2-Dichloroethene	U	20.0	18.6	93	20.0	18.5	92.6	0.420	60 - 140	30	
trans-1,3-Dichloropropene	U	20.0	20.7	103	20.0	20.6	103	0.527	55 - 140	30	
Trichloroethene	202	20.0	177	-125	20.0	179	-114	1.27	70 - 125	30	*
Trichlorofluoromethane	U	20.0	17.6	88.2	20.0	17.0	85.2	3.41	60 - 145	30	
Vinyl chloride	U	20.0	18.0	90	20.0	17.8	88.8	1.26	50 - 145	30	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

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Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L15051620 Cal ID: HPMS17- 18-MAY-15 Worknum: WG525997

Instrument ID: HPMS17 Contract #: Prep Method: 5030B/5030C/

Parent ID: L15051620-17 File ID: 17M012479 Dil: 1 Method: 5035A

Sample ID: L15051620-18 MS File ID: 17M012484 Dil: 1 Matrix: 8260B

Sample ID: L15051620-19 MSD File ID: 17M012485 Dil: 1 Units: Water ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,1,1,2-Tetrachloroethane	U	20.0	19.1	95.7	20.0	19.3	96.5	0.877	80 - 130	30	
1,1,1-Trichloroethane	U	20.0	18.0	90.2	20.0	18.0	90.2	0.0064	65 - 130	30	
1,1,2,2-Tetrachloroethane	U	20.0	21.3	107	20.0	21.4	107	0.306	65 - 130	30	
1,1,2-Trichloroethane	U	20.0	19.6	97.9	20.0	19.7	98.7	0.853	75 - 125	30	
1,1-Dichloroethane	0.152	20.0	18.3	90.8	20.0	18.2	90.3	0.597	70 - 135	30	
1,1-Dichloroethene	1.77	20.0	17.6	79.3	20.0	17.6	79.1	0.315	70 - 130	30	
1,1-Dichloropropene	U	20.0	17.3	86.7	20.0	17.4	86.8	0.0724	75 - 130	30	
1,2,3-Trichlorobenzene	U	20.0	19.1	95.7	20.0	19.3	96.7	1.03	55 - 140	30	
1,2,3-Trichloropropane	U	20.0	20.5	103	20.0	21.4	107	4.28	75 - 125	30	
1,2,4-Trichlorobenzene	U	20.0	18.5	92.6	20.0	18.8	93.8	1.30	65 - 135	30	
1,2,4-Trimethylbenzene	U	20.0	18.8	94.2	20.0	19.0	95	0.857	75 - 130	30	
1,2-Dibromo-3-chloropropane	U	20.0	21.6	108	20.0	21.6	108	0.0130	50 - 130	30	
1,2-Dibromoethane	U	20.0	19.9	99.5	20.0	20.0	100	0.601	80 - 120	30	
1,2-Dichlorobenzene	U	20.0	17.5	87.5	20.0	17.8	88.8	1.49	70 - 120	30	
1,2-Dichloroethane	1.90	20.0	21.6	98.5	20.0	21.5	98.2	0.239	70 - 130	30	
1,2-Dichloropropane	U	20.0	19.1	95.6	20.0	19.1	95.4	0.188	75 - 125	30	
1,3,5-Trimethylbenzene	U	20.0	18.8	94.1	20.0	19.1	95.6	1.61	75 - 130	30	
1,3-Dichlorobenzene	U	20.0	17.0	84.9	20.0	17.1	85.7	0.969	75 - 125	30	
1,3-Dichloropropane	U	20.0	19.8	98.8	20.0	20.0	99.9	1.11	75 - 125	30	
1,4-Dichlorobenzene	U	20.0	18.3	91.4	20.0	18.4	92.1	0.696	75 - 125	30	
2,2-Dichloropropane	U	20.0	16.9	84.5	20.0	16.7	83.4	1.26	70 - 135	30	
2-Butanone	U	20.0	21.6	108	20.0	21.2	106	1.77	30 - 150	30	
2-Chlorotoluene	U	20.0	17.1	85.3	20.0	17.1	85.6	0.356	75 - 125	30	
2-Hexanone	U	20.0	20.8	104	20.0	20.9	105	0.661	55 - 130	30	
4-Chlorotoluene	U	20.0	17.2	85.8	20.0	17.3	86.6	0.902	75 - 130	30	
4-Methyl-2-pentanone	U	20.0	19.8	99.2	20.0	19.5	97.7	1.51	60 - 135	30	
Acetone	U	20.0	24.0	120	20.0	22.8	114	5.11	40 - 140	30	
Benzene	U	20.0	18.3	91.6	20.0	18.2	91	0.694	80 - 120	30	
Bromobenzene	U	20.0	18.4	92.1	20.0	18.7	93.5	1.49	75 - 125	30	
Bromochloromethane	U	20.0	19.7	98.5	20.0	19.5	97.5	0.965	65 - 130	30	
Bromodichloromethane	U	20.0	19.0	95.2	20.0	19.0	95	0.257	75 - 120	30	
Bromoform	U	20.0	22.3	111	20.0	22.3	112	0.147	70 - 130	30	
Bromomethane	U	20.0	17.0	85.2	20.0	17.3	86.7	1.73	30 - 145	30	
Carbon disulfide	U	20.0	10.8	53.8	20.0	10.6	53.2	1.28	35 - 160	30	
Carbon tetrachloride	U	20.0	17.7	88.4	20.0	17.8	88.8	0.462	65 - 140	30	
Chlorobenzene	U	20.0	17.3	86.7	20.0	17.5	87.4	0.785	80 - 120	30	
Chloroethane	U	20.0	18.2	90.8	20.0	18.7	93.6	3.04	60 - 135	30	
Chloroform	U	20.0	19.5	97.6	20.0	19.4	97.1	0.448	65 - 135	30	
Chloromethane	U	20.0	17.5	87.4	20.0	17.9	89.7	2.55	40 - 125	30	
cis-1,2-Dichloroethene	9.81	20.0	27.9	90.3	20.0	27.5	88.3	1.40	70 - 125	30	
cis-1,3-Dichloropropene	U	20.0	19.5	97.3	20.0	19.4	97.2	0.155	70 - 130	30	

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Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L15051620 Cal ID: HPMS17 18-MAY-15 Worknum: WG525997

Instrument ID: HPMS17 Contract #: Prep Method: 5030B/5030C/

Parent ID: L15051620-17 File ID: 17M012479 Dil: 1 Method: 5035A

Sample ID: L15051620-18 MS File ID: 17M012484 Dil: 1 Matrix: 8260B

Sample ID: L15051620-19 MSD File ID: 17M012485 Dil: 1 Units: Water

ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chlorodibromomethane	U	20.0	19.6	97.9	20.0	20.0	99.9	2.05	60 - 135	30	
Dibromomethane	U	20.0	21.0	105	20.0	21.1	105	0.458	75 - 125	30	
Dichlorodifluoromethane	U	20.0	17.8	89.1	20.0	17.6	87.8	1.46	30 - 155	30	
Ethylbenzene	U	20.0	18.5	92.6	20.0	18.6	92.9	0.416	75 - 125	30	
Hexachlorobutadiene	U	20.0	16.3	81.4	20.0	16.8	83.8	2.87	50 - 140	30	
Isopropylbenzene	U	20.0	17.2	85.9	20.0	17.3	86.4	0.571	75 - 125	30	
m-,p-Xylene	U	40.0	36.2	90.6	40.0	36.5	91.2	0.665	75 - 130	30	
Methylene chloride	U	20.0	18.6	93.2	20.0	18.7	93.3	0.0197	55 - 140	30	
n-Butylbenzene	U	20.0	18.0	90.1	20.0	18.2	91.2	1.11	70 - 135	30	
n-Propylbenzene	U	20.0	16.9	84.7	20.0	17.1	85.4	0.858	70 - 130	30	
Naphthalene	U	20.0	19.7	98.6	20.0	20.0	100	1.50	55 - 140	30	
o-Xylene	U	20.0	17.3	86.7	20.0	17.5	87.5	0.868	80 - 120	30	
p-Isopropyltoluene	U	20.0	17.0	85.1	20.0	17.1	85.6	0.655	75 - 130	30	
sec-Butylbenzene	U	20.0	16.8	83.8	20.0	17.0	85.2	1.57	70 - 125	30	
Styrene	U	20.0	18.9	94.7	20.0	13.5	67.4	33.7	65 - 135	30	#
tert-Butylbenzene	U	20.0	17.0	85.1	20.0	17.2	86.1	1.16	70 - 130	30	
Tetrachloroethene	0.860	20.0	17.8	84.9	20.0	17.9	85.3	0.366	45 - 150	30	
Toluene	U	20.0	18.5	92.3	20.0	18.5	92.7	0.340	75 - 120	30	
trans-1,2-Dichloroethene	U	20.0	18.4	91.8	20.0	18.3	91.6	0.220	60 - 140	30	
trans-1,3-Dichloropropene	U	20.0	19.9	99.4	20.0	19.8	99.1	0.296	55 - 140	30	
Trichloroethene	197	20.0	188	-47.2	20.0	183	-71.7	2.64	70 - 125	30	*
Trichlorofluoromethane	U	20.0	17.1	85.6	20.0	17.0	85.2	0.463	60 - 145	30	
Vinyl chloride	U	20.0	17.9	89.3	20.0	17.8	89	0.305	50 - 145	30	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4214904
Report generated 06/10/2015 13:29

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15051620
Instrument: HPMS17
Analyst: ADC
Workgroup: WG523986

Tune ID: WG523986-01
Run Date: 05/18/2015
Run Time: 10:58
File ID: 17M011944
Cal ID: HPMS17 - 18-MAY-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	15.4	5148	PASS
75.0	95.0	30.0	60.0	46.4	15549	PASS
95.0	95.0	100	100	100	33515	PASS
96.0	95.0	5.00	9.00	6.60	2212	PASS
173	174	0	2.00	0.881	278	PASS
174	95.0	50.0	100	94.1	31549	PASS
175	174	5.00	9.00	7.29	2299	PASS
176	174	95.0	101	98.5	31069	PASS
177	176	5.00	9.00	6.55	2034	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG523986-02	STD-CCV	01	05/18/2015 11:17	
WG523986-03	STD	01	05/18/2015 11:56	
WG523986-04	STD	01	05/18/2015 12:16	
WG523986-05	STD	01	05/18/2015 12:36	
WG523986-06	STD	01	05/18/2015 12:55	
WG523986-07	STD	01	05/18/2015 13:15	
WG523986-08	STD	01	05/18/2015 13:35	
WG523986-09	STD	01	05/18/2015 13:55	
WG523986-10	STD	01	05/18/2015 14:15	
WG523986-11	STD	01	05/18/2015 14:34	
WG523986-12	SSCV	01	05/18/2015 16:07	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4211938
Report generated 06/10/2015 13:30

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15051620
Instrument: HPMS17
Analyst: ADC
Workgroup: WG525816

Tune ID: WG525816-01
Run Date: 06/01/2015
Run Time: 15:19
File ID: 17M012416
Cal ID: HPMS17 - 18-MAY-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	16.1	5506	PASS
75.0	95.0	30.0	60.0	46.1	15792	PASS
95.0	95.0	100	100	100	34243	PASS
96.0	95.0	5.00	9.00	6.39	2187	PASS
173	174	0	2.00	1.03	329	PASS
174	95.0	50.0	100	92.9	31797	PASS
175	174	5.00	9.00	7.65	2432	PASS
176	174	95.0	101	98.7	31379	PASS
177	176	5.00	9.00	6.66	2090	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG525816-02	CCV	01	06/01/2015 15:38	
WG525817-01	BLANK	01	06/01/2015 16:22	
WG525817-02	LCS	01	06/01/2015 16:42	
L15051620-01	50WW19-052215	01	06/01/2015 21:19	
L15051620-02	50WW19FD-052215	01	06/01/2015 21:39	
L15051620-03	50WW17-052215	01	06/01/2015 21:59	
L15051620-04	50WW16-052215	01	06/01/2015 22:19	
L15051620-05	GPW1-052215	01	06/01/2015 22:39	
L15051620-06	50SW06-052215	01	06/01/2015 22:59	
L15051620-10	50WW10-052315	01	06/01/2015 23:19	
L15051620-11	50WW27-052315	01	06/01/2015 23:39	
L15051620-12	50WW15-052315	01	06/01/2015 23:58	
L15051620-13	50WW26-052315	01	06/02/2015 00:18	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4211938
Report generated 06/10/2015 13:30

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15051620
Instrument: HPMS17
Analyst: ADC
Workgroup: WG525986

Tune ID: WG525986-01
Run Date: 06/02/2015
Run Time: 15:01
File ID: 17M012459
Cal ID: HPMS17 - 18-MAY-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	16.5	4693	PASS
75.0	95.0	30.0	60.0	46.6	13298	PASS
95.0	95.0	100	100	100	28515	PASS
96.0	95.0	5.00	9.00	6.37	1815	PASS
173	174	0	2.00	0.633	172	PASS
174	95.0	50.0	100	95.3	27173	PASS
175	174	5.00	9.00	7.39	2008	PASS
176	174	95.0	101	97.3	26443	PASS
177	176	5.00	9.00	6.81	1802	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG525986-02	CCV	01	06/02/2015 15:19	
WG525997-01	BLANK	01	06/02/2015 16:01	
WG525997-02	LCS	01	06/02/2015 16:20	
L15051620-07	50WW09-052315	01	06/02/2015 20:49	
L15051620-14	50WW21-052315	01	06/02/2015 21:09	
L15051620-15	50WW21FD-052315	01	06/02/2015 21:29	
L15051620-16	50WW20-052615	01	06/02/2015 21:49	
L15051620-17	50WW05-052615	01	06/02/2015 22:09	
L15051620-20	50WW07-052615	01	06/02/2015 22:28	
L15051620-21	50WW28-052615	01	06/02/2015 22:48	
L15051620-08	50WW09MS-052315	01	06/02/2015 23:08	
L15051620-09	50WW09MSD-052315	01	06/02/2015 23:28	
L15051620-18	50WW05MS-052615	01	06/02/2015 23:48	
L15051620-19	50WW05MSD-052615	01	06/03/2015 00:08	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4211938
Report generated 06/10/2015 13:30

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15051620
Instrument: HPMS17
Analyst: ADC
Workgroup: WG526215

Tune ID: WG526215-01
Run Date: 06/03/2015
Run Time: 16:07
File ID: 17M012489
Cal ID: HPMS17 - 18-MAY-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	16.1	4391	PASS
75.0	95.0	30.0	60.0	47.1	12881	PASS
95.0	95.0	100	100	100	27323	PASS
96.0	95.0	5.00	9.00	6.98	1907	PASS
173	174	0	2.00	1.06	272	PASS
174	95.0	50.0	100	93.9	25659	PASS
175	174	5.00	9.00	7.06	1811	PASS
176	174	95.0	101	96.0	24632	PASS
177	176	5.00	9.00	6.80	1676	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG526215-02	CCV	01	06/03/2015 16:26	
WG526216-01	BLANK	01	06/03/2015 17:41	
WG526216-02	LCS	01	06/03/2015 18:01	
L15051620-23	TRIP BLANK	01	06/03/2015 20:00	
L15051620-22	50WW28FD-052615	01	06/03/2015 20:59	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4211938
Report generated 06/10/2015 13:30

Response Factor Report HPMS17

Method Path : D:\MassHunter\GCMS\1\methods\
Method File : 826_VMS.M
Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
Last Update : Mon May 18 15:03:59 2015
Response Via : Initial Calibration
Curve: WG523986
Calibration Files
0.3 =17M011947.D 0.4 =17M011948.D 1 =17M011949.D 2 =17M011950.D 5 =17M011951.D 20 =17M011952.D 50 =17M011945.D
100 =17M011953.D 200 =17M011954.D 300 =17M011955.D

		Compound	0.3	0.4	1	2	5	20	50	100	200	300	Avg	%RSD	Linear R^2
1)	I	Fluorobenzene	----------ISTD----------												
2)	T	Dichlorodifluo...			0.242	0.242	0.242	0.293	0.303	0.298	0.301	0.321	0.280	11.69	
3)	P	Chloromethane			0.292	0.291	0.287	0.310	0.305	0.319	0.309	0.338	0.307	5.51	
4)	C	Vinyl Chloride		0.310	0.299	0.291	0.303	0.323	0.329	0.339	0.343	0.371	0.323	7.86#	
5)	T	1,3-Butadiene		0.163	0.153	0.151	0.156	0.168	0.175	0.179	0.185	0.203	0.170	9.95	
6)	T	Bromomethane			0.181	0.173	0.171	0.192	0.185	0.204	0.201	0.220	0.191	8.67	
7)	T	Chloroethane			0.168	0.167	0.172	0.179	0.151	0.139	0.131	0.137	0.156	11.78	
8)	T	Trichlorofluor...		0.404	0.423	0.394	0.406	0.427	0.436	0.419	0.284	0.303	0.388	14.32	
9)	T	Diethyl ether		0.138	0.157	0.158	0.164	0.163	0.154	0.169	0.167	0.188	0.162	8.29	
10)	C	1,1-Dichloroet...		0.363	0.377	0.365	0.375	0.386	0.398	0.395	0.393	0.432	0.387	5.46#	
11)	T	Carbon Disulfide		0.730	0.691	0.666	0.669	0.688	0.714	0.736	0.739	0.818	0.717	6.54	
12)	T	1,1,2-Trichlor...		0.245	0.256	0.241	0.257	0.262	0.269	0.261	0.263	0.284	0.260	4.92	
13)	T	Acrolein					0.018	0.020	0.019	0.022	0.022	0.025	0.021	12.05	
14)	T	Methylene Chlo...		0.269	0.280	0.263	0.271	0.271	0.269	0.279	0.273	0.304	0.275	4.33	
15)	T	Acetone					0.040	0.040	0.035	0.039	0.039	0.043	0.039	6.97	
16)	T	trans-1,2-Dich...		0.262	0.256	0.244	0.249	0.258	0.264	0.267	0.266	0.295	0.262	5.58	
17)	T	Methyl Tert Bu...		0.543	0.557	0.549	0.560	0.579	0.546	0.594	0.590	0.657	0.575	6.28	
18)	P	1,1-Dichloroet...		0.442	0.457	0.459	0.468	0.481	0.491	0.497	0.487	0.541	0.480	6.02	
19)	T	Acrylonitrile				0.047	0.052	0.055	0.050	0.057	0.057	0.063	0.054	9.99	
20)	T	Vinyl Acetate					0.013	0.018	0.022	0.023	0.024	0.026	0.021	22.57	0.996
21)	T	cis-1,2-Dichlo...		0.256	0.281	0.270	0.283	0.293	0.295	0.301	0.297	0.332	0.290	7.37	
22)	T	2,2-Dichloropr...		0.311	0.335	0.334	0.347	0.370	0.409	0.392	0.383	0.426	0.367	10.46	
23)	T	Cyclohexane		0.359	0.402	0.387	0.405	0.420	0.433	0.439	0.444	0.492	0.420	9.10	
24)	T	Bromochloromet...			0.142	0.155	0.169	0.182	0.180	0.191	0.188	0.211	0.177	12.29	
25)	C	Chloroform	0.406	0.412	0.450	0.449	0.460	0.476	0.478	0.480	0.471	0.524	0.461	7.49#	
26)	T	Carbon Tetrach...		0.300	0.330	0.335	0.353	0.377	0.400	0.397	0.399	0.445	0.371	12.09	
27)	S	Dibromofluorom...					0.263	0.240	0.274	0.272	0.263		0.262	5.12	
28)	T	1,1,1-Trichlor...		0.396	0.398	0.396	0.402	0.420	0.433	0.433	0.433	0.476	0.421	6.29	
29)	T	1,1-Dichloropr...		0.321	0.327	0.332	0.335	0.355	0.371	0.372	0.373	0.415	0.356	8.47	
30)	T	2-Butanone					0.057	0.063	0.056	0.066	0.067	0.075	0.064	10.93	
31)	T	Benzene		1.117	1.119	1.053	1.062	1.085	1.100	1.107	1.096	1.219	1.106	4.33	
32)	S	1,2-Dichloroet...					0.237	0.214	0.230	0.231	0.224		0.227	3.78	
33)	T	1,2-Dichloroet...		0.264	0.278	0.282	0.290	0.297	0.291	0.302	0.298	0.333	0.293	6.55	
34)	T	Trichloroethene		0.372	0.332	0.308	0.305	0.312	0.317	0.323	0.324	0.363	0.328	7.28	
35)	T	Dibromomethane		0.095	0.132	0.132	0.139	0.147	0.143	0.154	0.154		0.137	13.88	
36)	C	1,2-Dichloropr...		0.258	0.275	0.278	0.278	0.289	0.292	0.299	0.299	0.339	0.290	7.82#	
37)	T	Bromodichlorom...		0.295	0.314	0.318	0.334	0.348	0.356	0.369	0.370	0.417	0.347	10.57	
38)	T	1,4-Dioxane						0.001	0.001	0.002	0.002	0.002	0.002	13.28	
39)	T	2-Chloroethyl ...			0.108	0.111	0.117	0.127	0.122	0.137	0.140	0.157	0.127	13.15	

40)	T	cis-1,3-Dichlo...		0.333	0.353	0.359	0.375	0.408	0.423	0.439	0.446	0.504	0.404	13.52
41)	T	4-Methyl-2-Pen...					0.049	0.054	0.047	0.059	0.064	0.070	0.057	14.91
42)	T	trans-1,3-Dich...		0.256	0.275	0.282	0.301	0.335	0.341	0.363	0.371		0.315	13.58
43)	I	Chlorobenzene-d5	----------ISTD----------											
44)	S	Toluene-d8					1.392	1.257	1.387	1.347	1.254		1.327	5.11
45)	C	Toluene		1.616	1.585	1.548	1.598	1.650	1.653	1.641	1.563	1.769	1.625	4.05#
46)	Y	Tetrachloroethene		0.455	0.442	0.426	0.438	0.456	0.462	0.455	0.441	0.505	0.453	4.94
47)	T	1,1,2-Trichlor...		0.256	0.266	0.272	0.269	0.280	0.260	0.276	0.269	0.307	0.273	5.49
48)	Y	Dibromochlorom...		0.299	0.317	0.322	0.343	0.365	0.360	0.386	0.381	0.437	0.357	11.82
49)	T	1,3-Dichloropr...		0.437	0.428	0.425	0.433	0.446	0.421	0.445	0.433	0.493	0.440	4.93
50)	T	1,2-Dibromoethane		0.232	0.247	0.250	0.263	0.278	0.260	0.280	0.275	0.314	0.267	8.98
51)	Y	2-Hexanone				0.122	0.130	0.136	0.117	0.140	0.143	0.159	0.135	10.47
52)	P	Chlorobenzene		1.054	1.067	1.025	1.054	1.081	1.088	1.102	1.068	1.184	1.080	4.14
53)	T	1-Chlorohexane		0.075	0.086	0.085	0.092	0.095	0.100	0.102	0.101	0.113	0.094	11.83
54)	C	Ethylbenzene		0.554	0.540	0.538	0.558	0.580	0.594	0.603	0.586	0.647	0.578	6.04#
55)	T	1,1,1,2-Tetrac...		0.339	0.364	0.364	0.370	0.390	0.392	0.404	0.392	0.438	0.384	7.41
56)	T	m-,p-Xylene		0.660	0.656	0.643	0.680	0.709	0.734	0.734	0.690	0.714	0.691	4.92
57)	T	o-Xylene		0.661	0.638	0.628	0.654	0.689	0.701	0.715	0.699	0.758	0.683	6.02
58)	T	Styrene		0.963	0.985	0.961	1.043	1.115	1.144	1.189	1.162	1.238	1.089	9.54
59)	P	Bromoform		0.183	0.186	0.206	0.222	0.241	0.237	0.265	0.266		0.226	14.25
60)	T	Isopropylbenzene		1.676	1.674	1.643	1.738	1.812	1.861	1.884	1.811	1.890	1.776	5.41
61)	I	1,4-Dichlorobenzen...	----------ISTD----------											
62)	T	1,3,5-Trimethy...		2.680	2.713	2.686	2.842	2.972	3.028	3.050	2.853	3.116	2.882	5.79
63)	S	p-Bromofluorob...					0.877	0.801	0.875	0.900	0.863		0.863	4.34
64)	T	Bromobenzene	0.931	0.919	0.877	0.881	0.895	0.910	0.895	0.928			0.905	2.29
65)	T	n-Propylbenzene		3.555	3.545	3.525	3.701	3.867	3.976	3.988	3.734	4.142	3.782	5.91
66)	P	1,1,2,2-Tetrac...		0.504	0.538	0.536	0.550	0.579	0.532	0.591	0.574	0.665	0.563	8.30
67)	T	2-Chlorotoluene		2.264	2.285	2.208	2.305	2.308	2.337	2.377	2.279	2.592	2.328	4.70
68)	T	1,2,3-Trichlor...		0.100	0.136	0.149	0.156	0.156	0.144	0.159	0.154	0.173	0.147	13.89
69)	T	1,2,4-Trimethy...		2.656	2.712	2.641	2.860	2.977	3.004	3.047	2.863	3.113	2.875	6.06
70)	T	4-Chlorotoluene		2.238	2.227	2.207	2.276	2.352	2.400	2.424	2.345	2.640	2.345	5.75
71)	T	tert-Butylbenzene		0.467	0.515	0.507	0.531	0.550	0.559	0.567	0.546	0.612	0.539	7.64
72)	T	sec-Butylbenzene		3.293	3.403	3.461	3.613	3.744	3.801	3.798	3.550	3.772	3.604	5.24
73)	T	p-Isopropyltol...		2.775	2.820	2.797	3.049	3.241	3.327	3.314	3.089	3.260	3.075	7.41
74)	T	1,3-Dichlorobe...		1.663	1.670	1.603	1.691	1.718	1.727	1.774	1.694	1.880	1.713	4.58
75)	T	1,4-Dichlorobe...	1.851	1.739	1.666	1.620	1.664	1.678	1.700	1.746	1.664	1.851	1.718	4.62
76)	T	n-Butylbenzene		2.322	2.350	2.346	2.556	2.821	2.972	2.951	2.831	3.026	2.686	10.89
77)	T	1,2-Dichlorobe...	1.616	1.622	1.593	1.547	1.601	1.623	1.573	1.646	1.559	1.747	1.613	3.51
78)	T	1,2-Dibromo-3-...				0.087	0.088	0.096	0.087	0.101	0.098	0.113	0.096	10.02
79)	Y	Hexachlorobuta...		0.765	0.700	0.703	0.746	0.800	0.791	0.760	0.774	0.882	0.769	7.11
80)	T	1,2,4-Trichlor...		1.161	1.175	1.123	1.206	1.318	1.254	1.288	1.272	1.460	1.251	8.10
81)	T	Naphthalene		2.126	2.010	1.973	2.090	2.237	1.939	2.158	2.089	2.395	2.113	6.66
82)	T	1,2,3-Trichlor...		1.105	1.100	1.066	1.144	1.224	1.090	1.149	1.136	1.310	1.147	6.65

(#) = Out of Range

826_VMS.M Tue May 19 16:27:06 2015

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15051620 Run Date: 05/18/2015 Sample ID: WG523986-12
Instrument ID: HPMS17 Run Time: 16:07 Method: 8260B
File ID: 17M011959 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG523986 Cal ID: HPMS17 - 18-MAY-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	49.5	ug/L	0.456	1.00	20	
1,1-Dichloroethene	CCC	50.0	45.2	ug/L	0.350	9.60	20	
1,2-Dichloropropane	CCC	50.0	49.3	ug/L	0.286	1.40	20	
Ethylbenzene	CCC	50.0	50.1	ug/L	0.579	0.200	20	
Toluene	CCC	50.0	49.3	ug/L	1.60	1.40	20	
Vinyl Chloride	CCC	50.0	50.7	ug/L	0.328	1.30	20	
Bromoform	SPCC	50.0	56.6	ug/L	0.256	13.2	20	
Chlorobenzene	SPCC	50.0	46.4	ug/L	1.00	7.20	20	
Chloromethane	SPCC	50.0	49.0	ug/L	0.301	2.00	20	
1,1-Dichloroethane	SPCC	50.0	46.9	ug/L	0.451	6.10	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	51.3	ug/L	0.578	2.60	20	
Acetone		50.0	53.8	ug/L	0.0423	7.60	20	
Benzene		50.0	47.7	ug/L	1.06	4.60	20	
Bromobenzene		50.0	48.6	ug/L	0.880	2.80	20	
Bromochloromethane		50.0	49.1	ug/L	0.174	1.90	20	
Bromodichloromethane		50.0	48.4	ug/L	0.336	3.20	20	
Bromomethane		50.0	51.5	ug/L	0.197	3.00	20	
2-Butanone		50.0	52.6	ug/L	0.0670	5.10	20	
n-Butylbenzene		50.0	54.3	ug/L	2.92	8.70	20	
sec-Butylbenzene		50.0	47.5	ug/L	3.42	5.00	20	
tert-Butylbenzene		50.0	47.2	ug/L	0.509	5.70	20	
Carbon Disulfide		50.0	31.3	ug/L	0.448	37.5	20	*
Carbon Tetrachloride		50.0	48.6	ug/L	0.360	2.90	20	
Dibromochloromethane		50.0	49.6	ug/L	0.354	0.700	20	
Chloroethane		50.0	41.1	ug/L	0.128	17.7	20	
2-Chlorotoluene		50.0	45.7	ug/L	2.13	8.50	20	
4-Chlorotoluene		50.0	46.0	ug/L	2.16	8.00	20	
1,2-Dibromo-3-Chloropropane		50.0	49.4	ug/L	0.0946	1.10	20	
1,2-Dibromoethane		50.0	49.6	ug/L	0.264	0.800	20	
Dibromomethane		50.0	51.5	ug/L	0.141	3.00	20	
1,2-Dichlorobenzene		50.0	46.3	ug/L	1.49	7.30	20	
1,3-Dichlorobenzene		50.0	46.3	ug/L	1.59	7.40	20	
1,4-Dichlorobenzene		50.0	49.7	ug/L	1.71	0.600	20	
Dichlorodifluoromethane		50.0	55.8	ug/L	0.313	11.6	20	
1,2-Dichloroethane		50.0	48.6	ug/L	0.285	2.80	20	
cis-1,2-Dichloroethene		50.0	49.4	ug/L	0.287	1.10	20	
trans-1,2-Dichloroethene		50.0	48.8	ug/L	0.256	2.40	20	
1,3-Dichloropropane		50.0	49.3	ug/L	0.434	1.40	20	
2,2-Dichloropropane		50.0	52.2	ug/L	0.384	4.40	20	
cis-1,3-Dichloropropene		50.0	53.0	ug/L	0.429	6.00	20	
trans-1,3-Dichloropropene		50.0	52.8	ug/L	0.333	5.50	20	
1,1-Dichloropropene		50.0	49.0	ug/L	0.349	1.90	20	

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Version 1.5 PDF File ID: 4211937
Report generated 06/10/2015 13:30

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15051620 Run Date: 05/18/2015 Sample ID: WG523986-12
Instrument ID: HPMS17 Run Time: 16:07 Method: 8260B
File ID: 17M011959 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG523986 Cal ID: HPMS17 - 18-MAY-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	53.6	ug/L	0.145	7.20	20	
Hexachlorobutadiene		50.0	52.1	ug/L	0.801	4.10	20	
Isopropylbenzene		50.0	47.4	ug/L	1.69	5.10	20	
p-Isopropyltoluene		50.0	48.3	ug/L	2.97	3.50	20	
4-Methyl-2-Pentanone		50.0	51.7	ug/L	0.0592	3.40	20	
Methylene Chloride		50.0	47.0	ug/L	0.259	6.10	20	
Naphthalene		50.0	48.1	ug/L	2.03	3.80	20	
n-Propylbenzene		50.0	46.6	ug/L	3.53	6.70	20	
Styrene		50.0	51.7	ug/L	1.13	3.30	20	
1,1,1,2-Tetrachloroethane		50.0	49.9	ug/L	0.383	0.200	20	
Tetrachloroethene		50.0	47.8	ug/L	0.433	4.40	20	
1,2,3-Trichlorobenzene		50.0	48.7	ug/L	1.12	2.70	20	
1,2,4-Trichlorobenzene		50.0	50.5	ug/L	1.26	1.00	20	
1,1,1-Trichloroethane		50.0	48.4	ug/L	0.408	3.10	20	
1,1,2-Trichloroethane		50.0	48.7	ug/L	0.266	2.60	20	
Trichloroethene		50.0	45.9	ug/L	0.302	8.20	20	
Trichlorofluoromethane		50.0	31.3	ug/L	0.243	37.4	20	*
1,2,3-Trichloropropane		50.0	51.3	ug/L	0.151	2.70	20	
1,2,4-Trimethylbenzene		50.0	51.4	ug/L	2.95	2.80	20	
1,3,5-Trimethylbenzene		50.0	51.0	ug/L	2.94	2.10	20	
o-Xylene		50.0	46.8	ug/L	0.639	6.40	20	
m-,p-Xylene		100	99.1	ug/L	0.685	0.900	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

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Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051620 Run Date: 06/01/2015 Sample ID: WG525816-02
Instrument ID: HPMS17 Run Time: 15:38 Method: 8260B
File ID: 17M012417 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG525817 Cal ID: HPMS17 - 18-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.7	ug/L	0.467	1.36	20	
1,1-Dichloroethene	CCC	50.0	49.5	ug/L	0.384	0.924	20	
1,2-Dichloropropane	CCC	50.0	49.7	ug/L	0.288	0.661	20	
Ethylbenzene	CCC	50.0	50.9	ug/L	0.588	1.82	20	
Toluene	CCC	50.0	50.9	ug/L	1.65	1.75	20	
Vinyl Chloride	CCC	50.0	52.7	ug/L	0.341	5.44	20	
Bromoform	SPCC	50.0	54.1	ug/L	0.245	8.24	20	
Chlorobenzene	SPCC	50.0	49.7	ug/L	1.07	0.529	20	
Chloromethane	SPCC	50.0	51.4	ug/L	0.315	2.72	20	
1,1-Dichloroethane	SPCC	50.0	50.2	ug/L	0.482	0.437	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	50.1	ug/L	0.565	0.270	20	
Xylenes		150	154	ug/L	0.703	2.84	20	
Acetone		50.0	42.7	ug/L	0.0336	14.7	20	
Benzene		50.0	48.8	ug/L	1.08	2.31	20	
Bromobenzene		50.0	50.3	ug/L	0.910	0.577	20	
Bromochloromethane		50.0	50.6	ug/L	0.180	1.27	20	
Bromodichloromethane		50.0	51.1	ug/L	0.354	2.14	20	
Bromomethane		50.0	40.2	ug/L	0.154	19.5	20	
2-Butanone		50.0	44.5	ug/L	0.0568	10.9	20	
n-Butylbenzene		50.0	54.6	ug/L	2.93	9.19	20	
sec-Butylbenzene		50.0	52.7	ug/L	3.80	5.34	20	
tert-Butylbenzene		50.0	51.7	ug/L	0.557	3.30	20	
Carbon Disulfide		50.0	38.3	ug/L	0.549	23.4	20	*
Carbon Tetrachloride		50.0	54.3	ug/L	0.403	8.61	20	
Dibromochloromethane		50.0	52.2	ug/L	0.372	4.32	20	
Chloroethane		50.0	50.3	ug/L	0.157	0.656	20	
2-Chlorotoluene		50.0	50.8	ug/L	2.37	1.68	20	
4-Chlorotoluene		50.0	51.6	ug/L	2.42	3.27	20	
1,2-Dibromo-3-Chloropropane		50.0	48.9	ug/L	0.0937	2.10	20	
1,2-Dibromoethane		50.0	50.2	ug/L	0.267	0.346	20	
Dibromomethane		50.0	52.4	ug/L	0.144	4.87	20	
1,2-Dichlorobenzene		50.0	49.3	ug/L	1.59	1.43	20	
1,3-Dichlorobenzene		50.0	50.9	ug/L	1.74	1.73	20	
1,4-Dichlorobenzene		50.0	49.7	ug/L	1.71	0.608	20	
Dichlorodifluoromethane		50.0	66.1	ug/L	0.370	32.1	20	*
1,2-Dichloroethane		50.0	48.8	ug/L	0.286	2.46	20	
cis-1,2-Dichloroethene		50.0	50.2	ug/L	0.291	0.326	20	
trans-1,2-Dichloroethene		50.0	49.5	ug/L	0.260	0.926	20	
1,3-Dichloropropane		50.0	48.4	ug/L	0.426	3.23	20	
2,2-Dichloropropane		50.0	55.5	ug/L	0.408	10.9	20	
cis-1,3-Dichloropropene		50.0	52.4	ug/L	0.424	4.76	20	
trans-1,3-Dichloropropene		50.0	54.4	ug/L	0.343	8.76	20	

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051620 Run Date: 06/01/2015 Sample ID: WG525816-02
Instrument ID: HPMS17 Run Time: 15:38 Method: 8260B
File ID: 17M012417 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG525817 Cal ID: HPMS17 - 18-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	51.4	ug/L	0.365	2.73	20	
2-Hexanone		50.0	44.2	ug/L	0.120	11.5	20	
Hexachlorobutadiene		50.0	46.7	ug/L	0.718	6.69	20	
Isopropylbenzene		50.0	51.4	ug/L	1.83	2.77	20	
p-Isopropyltoluene		50.0	53.7	ug/L	3.30	7.34	20	
4-Methyl-2-Pentanone		50.0	42.0	ug/L	0.0481	16.0	20	
Methylene Chloride		50.0	48.3	ug/L	0.266	3.42	20	
Naphthalene		50.0	46.1	ug/L	1.95	7.74	20	
n-Propylbenzene		50.0	53.3	ug/L	4.03	6.54	20	
Styrene		50.0	51.3	ug/L	1.12	2.52	20	
1,1,1,2-Tetrachloroethane		50.0	51.4	ug/L	0.394	2.71	20	
Tetrachloroethene		50.0	51.4	ug/L	0.466	2.85	20	
1,2,3-Trichlorobenzene		50.0	47.1	ug/L	1.08	5.78	20	
1,2,4-Trichlorobenzene		50.0	49.2	ug/L	1.23	1.64	20	
1,1,1-Trichloroethane		50.0	50.9	ug/L	0.429	1.82	20	
1,1,2-Trichloroethane		50.0	48.5	ug/L	0.265	3.00	20	
Trichloroethene		50.0	47.3	ug/L	0.311	5.41	20	
Trichlorofluoromethane		50.0	55.9	ug/L	0.434	11.8	20	
1,2,3-Trichloropropane		50.0	50.2	ug/L	0.148	0.347	20	
1,2,4-Trimethylbenzene		50.0	52.4	ug/L	3.01	4.85	20	
1,3,5-Trimethylbenzene		50.0	52.5	ug/L	3.03	5.06	20	
o-Xylene		50.0	50.3	ug/L	0.686	0.536	20	
m-,p-Xylene		100	104	ug/L	0.719	4.00	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051620 Run Date: 06/02/2015 Sample ID: WG525986-02
Instrument ID: HPMS17 Run Time: 15:19 Method: 8260B
File ID: 17M012460 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG525997 Cal ID: HPMS17 - 18-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.1	ug/L	0.462	0.224	20	
1,1-Dichloroethene	CCC	50.0	49.4	ug/L	0.382	1.26	20	
1,2-Dichloropropane	CCC	50.0	48.4	ug/L	0.280	3.29	20	
Ethylbenzene	CCC	50.0	48.8	ug/L	0.564	2.44	20	
Toluene	CCC	50.0	49.3	ug/L	1.60	1.41	20	
Vinyl Chloride	CCC	50.0	50.8	ug/L	0.329	1.63	20	
Bromoform	SPCC	50.0	52.4	ug/L	0.237	4.74	20	
Chlorobenzene	SPCC	50.0	47.8	ug/L	1.03	4.30	20	
Chloromethane	SPCC	50.0	47.4	ug/L	0.291	5.15	20	
1,1-Dichloroethane	SPCC	50.0	49.5	ug/L	0.475	1.05	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	48.4	ug/L	0.546	3.11	20	
Xylenes		150	149	ug/L	0.678	0.559	20	
Acetone		50.0	40.1	ug/L	0.0316	19.7	20	
Benzene		50.0	47.5	ug/L	1.05	5.05	20	
Bromobenzene		50.0	49.0	ug/L	0.887	1.98	20	
Bromochloromethane		50.0	49.6	ug/L	0.176	0.873	20	
Bromodichloromethane		50.0	49.8	ug/L	0.346	0.409	20	
Bromomethane		50.0	42.1	ug/L	0.161	15.7	20	
2-Butanone		50.0	42.6	ug/L	0.0543	14.8	20	
n-Butylbenzene		50.0	52.0	ug/L	2.80	4.05	20	
sec-Butylbenzene		50.0	50.7	ug/L	3.66	1.45	20	
tert-Butylbenzene		50.0	49.8	ug/L	0.537	0.427	20	
Carbon Disulfide		50.0	36.0	ug/L	0.516	28.1	20	*
Carbon Tetrachloride		50.0	52.8	ug/L	0.391	5.53	20	
Dibromochloromethane		50.0	50.5	ug/L	0.360	1.04	20	
Chloroethane		50.0	56.1	ug/L	0.175	12.2	20	
2-Chlorotoluene		50.0	49.1	ug/L	2.29	1.79	20	
4-Chlorotoluene		50.0	49.7	ug/L	2.33	0.610	20	
1,2-Dibromo-3-Chloropropane		50.0	47.0	ug/L	0.0900	6.00	20	
1,2-Dibromoethane		50.0	48.5	ug/L	0.259	2.93	20	
Dibromomethane		50.0	51.1	ug/L	0.140	2.28	20	
1,2-Dichlorobenzene		50.0	47.4	ug/L	1.53	5.25	20	
1,3-Dichlorobenzene		50.0	48.9	ug/L	1.68	2.21	20	
1,4-Dichlorobenzene		50.0	47.9	ug/L	1.64	4.26	20	
Dichlorodifluoromethane		50.0	63.2	ug/L	0.354	26.4	20	*
1,2-Dichloroethane		50.0	48.0	ug/L	0.281	4.01	20	
cis-1,2-Dichloroethene		50.0	48.9	ug/L	0.284	2.12	20	
trans-1,2-Dichloroethene		50.0	48.3	ug/L	0.254	3.31	20	
1,3-Dichloropropane		50.0	47.0	ug/L	0.413	6.09	20	
2,2-Dichloropropane		50.0	53.4	ug/L	0.393	6.85	20	
cis-1,3-Dichloropropene		50.0	50.5	ug/L	0.408	0.921	20	
trans-1,3-Dichloropropene		50.0	52.2	ug/L	0.330	4.49	20	

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051620 Run Date: 06/02/2015 Sample ID: WG525986-02
Instrument ID: HPMS17 Run Time: 15:19 Method: 8260B
File ID: 17M012460 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG525997 Cal ID: HPMS17 - 18-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	49.7	ug/L	0.354	0.525	20	
2-Hexanone		50.0	42.3	ug/L	0.114	15.4	20	
Hexachlorobutadiene		50.0	45.2	ug/L	0.696	9.51	20	
Isopropylbenzene		50.0	49.2	ug/L	1.75	1.66	20	
p-Isopropyltoluene		50.0	51.8	ug/L	3.18	3.54	20	
4-Methyl-2-Pentanone		50.0	39.9	ug/L	0.0457	20.2	20	*
Methylene Chloride		50.0	47.8	ug/L	0.263	4.34	20	
Naphthalene		50.0	43.8	ug/L	1.85	12.4	20	
n-Propylbenzene		50.0	51.4	ug/L	3.89	2.86	20	
Styrene		50.0	49.5	ug/L	1.08	0.980	20	
1,1,1,2-Tetrachloroethane		50.0	49.9	ug/L	0.383	0.236	20	
Tetrachloroethene		50.0	49.2	ug/L	0.446	1.55	20	
1,2,3-Trichlorobenzene		50.0	45.1	ug/L	1.04	9.71	20	
1,2,4-Trichlorobenzene		50.0	46.9	ug/L	1.17	6.19	20	
1,1,1-Trichloroethane		50.0	49.8	ug/L	0.419	0.432	20	
1,1,2-Trichloroethane		50.0	47.2	ug/L	0.257	5.66	20	
Trichloroethene		50.0	45.6	ug/L	0.299	8.85	20	
Trichlorofluoromethane		50.0	55.9	ug/L	0.434	11.8	20	
1,2,3-Trichloropropane		50.0	49.0	ug/L	0.145	1.95	20	
1,2,4-Trimethylbenzene		50.0	50.6	ug/L	2.91	1.23	20	
1,3,5-Trimethylbenzene		50.0	50.7	ug/L	2.92	1.38	20	
o-Xylene		50.0	48.4	ug/L	0.660	3.30	20	
m-,p-Xylene		100	101	ug/L	0.697	0.809	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4211939
Report generated 06/10/2015 13:30

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051620 Run Date: 06/03/2015 Sample ID: WG526215-02
Instrument ID: HPMS17 Run Time: 16:26 Method: 8260B
File ID: 17M012490 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG526216 Cal ID: HPMS17 - 18-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	51.2	ug/L	0.471	2.32	20	
1,1-Dichloroethene	CCC	50.0	50.4	ug/L	0.390	0.794	20	
1,2-Dichloropropane	CCC	50.0	49.0	ug/L	0.284	2.05	20	
Ethylbenzene	CCC	50.0	50.3	ug/L	0.581	0.527	20	
Toluene	CCC	50.0	50.2	ug/L	1.63	0.374	20	
Vinyl Chloride	CCC	50.0	51.8	ug/L	0.335	3.58	20	
Bromoform	SPCC	50.0	50.9	ug/L	0.230	1.76	20	
Chlorobenzene	SPCC	50.0	49.0	ug/L	1.06	1.98	20	
Chloromethane	SPCC	50.0	50.3	ug/L	0.309	0.653	20	
1,1-Dichloroethane	SPCC	50.0	50.5	ug/L	0.485	0.967	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	46.4	ug/L	0.523	7.13	20	
Xylenes		150	153	ug/L	0.694	1.74	20	
Acetone		50.0	42.5	ug/L	0.0335	14.9	20	
Benzene		50.0	48.7	ug/L	1.08	2.51	20	
Bromobenzene		50.0	49.1	ug/L	0.889	1.76	20	
Bromochloromethane		50.0	49.7	ug/L	0.176	0.575	20	
Bromodichloromethane		50.0	50.1	ug/L	0.348	0.256	20	
Bromomethane		50.0	46.1	ug/L	0.176	7.73	20	
2-Butanone		50.0	44.1	ug/L	0.0562	11.8	20	
n-Butylbenzene		50.0	54.4	ug/L	2.92	8.84	20	
sec-Butylbenzene		50.0	51.9	ug/L	3.74	3.73	20	
tert-Butylbenzene		50.0	50.5	ug/L	0.545	0.991	20	
Carbon Disulfide		50.0	38.4	ug/L	0.551	23.2	20	*
Carbon Tetrachloride		50.0	53.7	ug/L	0.398	7.34	20	
Dibromochloromethane		50.0	49.8	ug/L	0.356	0.320	20	
Chloroethane		50.0	49.9	ug/L	0.155	0.177	20	
2-Chlorotoluene		50.0	49.9	ug/L	2.32	0.224	20	
4-Chlorotoluene		50.0	50.8	ug/L	2.38	1.68	20	
1,2-Dibromo-3-Chloropropane		50.0	44.4	ug/L	0.0851	11.1	20	
1,2-Dibromoethane		50.0	47.9	ug/L	0.255	4.23	20	
Dibromomethane		50.0	50.8	ug/L	0.139	1.58	20	
1,2-Dichlorobenzene		50.0	47.6	ug/L	1.54	4.71	20	
1,3-Dichlorobenzene		50.0	50.0	ug/L	1.71	0.0496	20	
1,4-Dichlorobenzene		50.0	48.8	ug/L	1.68	2.45	20	
Dichlorodifluoromethane		50.0	63.4	ug/L	0.356	26.8	20	*
1,2-Dichloroethane		50.0	48.4	ug/L	0.283	3.29	20	
cis-1,2-Dichloroethene		50.0	49.9	ug/L	0.289	0.204	20	
trans-1,2-Dichloroethene		50.0	49.7	ug/L	0.261	0.516	20	
1,3-Dichloropropane		50.0	46.4	ug/L	0.408	7.23	20	
2,2-Dichloropropane		50.0	54.7	ug/L	0.402	9.41	20	
cis-1,3-Dichloropropene		50.0	51.0	ug/L	0.413	2.03	20	
trans-1,3-Dichloropropene		50.0	52.8	ug/L	0.333	5.52	20	

CCV - Modified 03/05/2008
PDF File ID: 4211939
Report generated 06/10/2015 13:30

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051620 Run Date: 06/03/2015 Sample ID: WG526215-02
Instrument ID: HPMS17 Run Time: 16:26 Method: 8260B
File ID: 17M012490 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG526216 Cal ID: HPMS17 - 18-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	51.3	ug/L	0.365	2.62	20	
2-Hexanone		50.0	44.6	ug/L	0.120	10.9	20	
Hexachlorobutadiene		50.0	46.4	ug/L	0.713	7.29	20	
Isopropylbenzene		50.0	50.5	ug/L	1.79	0.935	20	
p-Isopropyltoluene		50.0	53.0	ug/L	3.26	6.10	20	
4-Methyl-2-Pentanone		50.0	42.4	ug/L	0.0485	15.2	20	
Methylene Chloride		50.0	48.6	ug/L	0.268	2.84	20	
Naphthalene		50.0	42.3	ug/L	1.79	15.3	20	
n-Propylbenzene		50.0	52.6	ug/L	3.98	5.12	20	
Styrene		50.0	50.7	ug/L	1.10	1.32	20	
1,1,1,2-Tetrachloroethane		50.0	50.3	ug/L	0.386	0.605	20	
Tetrachloroethene		50.0	50.5	ug/L	0.458	1.04	20	
1,2,3-Trichlorobenzene		50.0	44.6	ug/L	1.02	10.9	20	
1,2,4-Trichlorobenzene		50.0	47.5	ug/L	1.19	4.92	20	
1,1,1-Trichloroethane		50.0	50.7	ug/L	0.427	1.34	20	
1,1,2-Trichloroethane		50.0	46.5	ug/L	0.254	6.98	20	
Trichloroethene		50.0	47.2	ug/L	0.310	5.50	20	
Trichlorofluoromethane		50.0	57.0	ug/L	0.443	13.9	20	
1,2,3-Trichloropropane		50.0	47.4	ug/L	0.140	5.14	20	
1,2,4-Trimethylbenzene		50.0	51.6	ug/L	2.97	3.19	20	
1,3,5-Trimethylbenzene		50.0	51.7	ug/L	2.98	3.40	20	
o-Xylene		50.0	49.5	ug/L	0.675	1.06	20	
m-,p-Xylene		100	103	ug/L	0.713	3.14	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4211939
Report generated 06/10/2015 13:30

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO CCV)

Login Number: L15051620
Instrument ID: HPMS17
Workgroup (AAB#): WG525817

CCV Number: WG525816-02
CAL ID: HPMS17-18-MAY-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG525816-02	NA	NA	98813	188317	254277
Upper Limit	NA	NA	197626	376634	508554
Lower Limit	NA	NA	49407	94159	127139
L15051620-01	1.00	01	90191	169939	225272
L15051620-02	1.00	01	90949	175201	234522
L15051620-03	1.00	01	88149	175590	236422
L15051620-04	1.00	01	88193	169595	226677
L15051620-05	1.00	01	85112	166086	223546
L15051620-06	1.00	01	86746	166138	223763
L15051620-10	1.00	01	86841	172147	233140
L15051620-11	1.00	01	88576	168334	225044
L15051620-12	1.00	01	86780	169630	226346
L15051620-13	1.00	01	87556	167036	221973
WG525817-01	1.00	01	92628	184054	250006
WG525817-02	1.00	01	98563	182042	243296

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD - Modified 03/06/2008
PDF File ID: 4226526
Report generated 06/09/2015 14:48

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO CCV)

Login Number: L15051620
Instrument ID: HPMS17
Workgroup (AAB#): WG525997

CCV Number: WG525986-02
CAL ID: HPMS17-18-MAY-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG525986-02	NA	NA	93131	178063	238434
Upper Limit	NA	NA	186262	356126	476868
Lower Limit	NA	NA	46566	89032	119217
L15051620-07	1.00	01	84261	161851	215907
L15051620-08	1.00	01	87346	162200	215056
L15051620-09	1.00	01	89963	162753	215627
L15051620-14	1.00	01	85183	163464	217371
L15051620-15	1.00	01	86127	163402	216470
L15051620-16	1.00	01	85068	160380	211951
L15051620-17	1.00	01	85938	161254	215480
L15051620-18	1.00	01	89918	165384	218661
L15051620-19	1.00	01	89013	164383	219090
L15051620-20	1.00	01	84851	164334	220136
L15051620-21	1.00	01	83671	160853	213340
WG525997-01	1.00	01	87005	170652	230315
WG525997-02	1.00	01	91618	173157	230326

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD - Modified 03/06/2008
PDF File ID: 4226526
Report generated 06/09/2015 14:48

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO CCV)

Login Number: L15051620
Instrument ID: HPMS17
Workgroup (AAB#): WG526216

CCV Number: WG526215-02
CAL ID: HPMS17-18-MAY-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG526215-02	NA	NA	91020	172522	229688
Upper Limit	NA	NA	182040	345044	459376
Lower Limit	NA	NA	45510	86261	114844
L15051620-22	1.00	01	91823	171097	227750
L15051620-23	1.00	01	89836	167122	222505
WG526216-01	1.00	01	91046	170447	229038
WG526216-02	1.00	01	94737	168866	223077

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD - Modified 03/06/2008
PDF File ID: 4226526
Report generated 06/09/2015 14:48

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO CCV)

Login Number: L15051620
Instrument ID: HPMS17
Workgroup (AAB#): WG526427

CCV Number: WG526424-02
CAL ID: HPMS17-18-MAY-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG526424-02	NA	NA	93803	173851	228772
Upper Limit	NA	NA	187606	347702	457544
Lower Limit	NA	NA	46902	86926	114386
L15051620-14	1.00	02	97751	176061	229486
L15051620-20	1.00	02	91392	172050	225230
WG526427-01	1.00	01	94192	172234	228943
WG526427-02	1.00	01	96634	168908	218822
WG526427-03	1.00	01	95121	169601	222313

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD - Modified 03/06/2008
PDF File ID: 4226526
Report generated 06/09/2015 14:48

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15051620
Instrument ID: HPMS17
Workgroup (AAB#): WG525817

ICAL CCV Number: WG523986-02
CAL ID: HPMS17-18-MAY-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG523986-02	NA	NA	102061	187003	246932
Upper Limit	NA	NA	204122	374006	493864
Lower Limit	NA	NA	51031	93502	123466
L15051620-01	1.00	01	90191	169939	225272
L15051620-02	1.00	01	90949	175201	234522
L15051620-03	1.00	01	88149	175590	236422
L15051620-04	1.00	01	88193	169595	226677
L15051620-05	1.00	01	85112	166086	223546
L15051620-06	1.00	01	86746	166138	223763
L15051620-10	1.00	01	86841	172147	233140
L15051620-11	1.00	01	88576	168334	225044
L15051620-12	1.00	01	86780	169630	226346
L15051620-13	1.00	01	87556	167036	221973
WG525817-01	1.00	01	92628	184054	250006
WG525817-02	1.00	01	98563	182042	243296

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4211940
Report generated 06/10/2015 13:30

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15051620
Instrument ID: HPMS17
Workgroup (AAB#): WG525997

ICAL CCV Number: WG523986-02
CAL ID: HPMS17-18-MAY-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG523986-02	NA	NA	102061	187003	246932
Upper Limit	NA	NA	204122	374006	493864
Lower Limit	NA	NA	51031	93502	123466
L15051620-07	1.00	01	84261	161851	215907
L15051620-08	1.00	01	87346	162200	215056
L15051620-09	1.00	01	89963	162753	215627
L15051620-14	1.00	01	85183	163464	217371
L15051620-15	1.00	01	86127	163402	216470
L15051620-16	1.00	01	85068	160380	211951
L15051620-17	1.00	01	85938	161254	215480
L15051620-18	1.00	01	89918	165384	218661
L15051620-19	1.00	01	89013	164383	219090
L15051620-20	1.00	01	84851	164334	220136
L15051620-21	1.00	01	83671	160853	213340
WG525997-01	1.00	01	87005	170652	230315
WG525997-02	1.00	01	91618	173157	230326

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4211940
Report generated 06/10/2015 13:30

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15051620
Instrument ID: HPMS17
Workgroup (AAB#): WG526216

ICAL CCV Number: WG523986-02
CAL ID: HPMS17-18-MAY-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG523986-02	NA	NA	102061	187003	246932
Upper Limit	NA	NA	204122	374006	493864
Lower Limit	NA	NA	51031	93502	123466
L15051620-22	1.00	01	91823	171097	227750
L15051620-23	1.00	01	89836	167122	222505
WG526216-01	1.00	01	91046	170447	229038
WG526216-02	1.00	01	94737	168866	223077

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4211940
Report generated 06/10/2015 13:30

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO CCV)

Login Number: L15051620
Instrument ID: HPMS17
Workgroup (AAB#): WG525817

CCV Number: WG525816-02
CAL ID: HPMS17-18-MAY-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG525816-02	NA	NA	9.316	7.99	5.167
Upper Limit	NA	NA	9.816	8.49	5.667
Lower Limit	NA	NA	8.816	7.49	4.667
L15051620-01	1.00	01	9.31	7.99	5.17
L15051620-02	1.00	01	9.32	7.99	5.17
L15051620-03	1.00	01	9.31	7.99	5.17
L15051620-04	1.00	01	9.31	7.99	5.17
L15051620-05	1.00	01	9.32	7.99	5.17
L15051620-06	1.00	01	9.31	7.99	5.17
L15051620-10	1.00	01	9.31	7.99	5.17
L15051620-11	1.00	01	9.31	7.99	5.17
L15051620-12	1.00	01	9.31	7.99	5.17
L15051620-13	1.00	01	9.31	7.99	5.17
WG525817-01	1.00	01	9.32	7.99	5.17
WG525817-02	1.00	01	9.32	7.99	5.16

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT - Modified 03/06/2008
PDF File ID: 4226532
Report generated 06/09/2015 14:49

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO CCV)

Login Number: L15051620
Instrument ID: HPMS17
Workgroup (AAB#): WG525997

CCV Number: WG525986-02
CAL ID: HPMS17-18-MAY-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG525986-02	NA	NA	9.316	7.99	5.167
Upper Limit	NA	NA	9.816	8.49	5.667
Lower Limit	NA	NA	8.816	7.49	4.667
L15051620-07	1.00	01	9.32	7.99	5.17
L15051620-08	1.00	01	9.31	7.99	5.17
L15051620-09	1.00	01	9.31	7.99	5.17
L15051620-14	1.00	01	9.32	7.99	5.17
L15051620-15	1.00	01	9.31	7.99	5.17
L15051620-16	1.00	01	9.31	7.99	5.17
L15051620-17	1.00	01	9.31	7.99	5.17
L15051620-18	1.00	01	9.31	7.99	5.17
L15051620-19	1.00	01	9.31	7.99	5.17
L15051620-20	1.00	01	9.31	7.99	5.17
L15051620-21	1.00	01	9.31	7.99	5.17
WG525997-01	1.00	01	9.31	7.99	5.17
WG525997-02	1.00	01	9.32	7.99	5.17

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT - Modified 03/06/2008
PDF File ID: 4226532
Report generated 06/09/2015 14:49

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO CCV)

Login Number: L15051620
Instrument ID: HPMS17
Workgroup (AAB#): WG526216

CCV Number: WG526215-02
CAL ID: HPMS17-18-MAY-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG526215-02	NA	NA	9.316	7.99	5.167
Upper Limit	NA	NA	9.816	8.49	5.667
Lower Limit	NA	NA	8.816	7.49	4.667
L15051620-22	1.00	01	9.31	7.99	5.17
L15051620-23	1.00	01	9.32	7.99	5.17
WG526216-01	1.00	01	9.31	7.99	5.17
WG526216-02	1.00	01	9.32	7.99	5.17

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT - Modified 03/06/2008
PDF File ID: 4226532
Report generated 06/09/2015 14:49

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO CCV)

Login Number: L15051620
Instrument ID: HPMS17
Workgroup (AAB#): WG526427

CCV Number: WG526424-02
CAL ID: HPMS17-18-MAY-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG526424-02	NA	NA	9.316	7.99	5.167
Upper Limit	NA	NA	9.816	8.49	5.667
Lower Limit	NA	NA	8.816	7.49	4.667
L15051620-14	1.00	02	9.32	7.99	5.17
L15051620-20	1.00	02	9.32	7.99	5.17
WG526427-01	1.00	01	9.32	7.99	5.17
WG526427-02	1.00	01	9.32	7.99	5.17
WG526427-03	1.00	01	9.32	7.99	5.17

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT - Modified 03/06/2008
PDF File ID: 4226532
Report generated 06/09/2015 14:49

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15051620
Instrument ID: HPMS17
Workgroup (AAB#): WG525817

ICAL CCV Number: WG523986-02
CAL ID: HPMS17-18-MAY-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG523986-02	NA	NA	9.316	7.99	5.167
Upper Limit	NA	NA	9.816	8.49	5.667
Lower Limit	NA	NA	8.816	7.49	4.667
L15051620-01	1.00	01	9.31	7.99	5.17
L15051620-02	1.00	01	9.32	7.99	5.17
L15051620-03	1.00	01	9.31	7.99	5.17
L15051620-04	1.00	01	9.31	7.99	5.17
L15051620-05	1.00	01	9.32	7.99	5.17
L15051620-06	1.00	01	9.31	7.99	5.17
L15051620-10	1.00	01	9.31	7.99	5.17
L15051620-11	1.00	01	9.31	7.99	5.17
L15051620-12	1.00	01	9.31	7.99	5.17
L15051620-13	1.00	01	9.31	7.99	5.17
WG525817-01	1.00	01	9.32	7.99	5.17
WG525817-02	1.00	01	9.32	7.99	5.16

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4211942
Report generated: 06/10/2015 13:30

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15051620
Instrument ID: HPMS17
Workgroup (AAB#): WG525997

ICAL CCV Number: WG523986-02
CAL ID: HPMS17-18-MAY-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG523986-02	NA	NA	9.316	7.99	5.167
Upper Limit	NA	NA	9.816	8.49	5.667
Lower Limit	NA	NA	8.816	7.49	4.667
L15051620-07	1.00	01	9.32	7.99	5.17
L15051620-08	1.00	01	9.31	7.99	5.17
L15051620-09	1.00	01	9.31	7.99	5.17
L15051620-14	1.00	01	9.32	7.99	5.17
L15051620-15	1.00	01	9.31	7.99	5.17
L15051620-16	1.00	01	9.31	7.99	5.17
L15051620-17	1.00	01	9.31	7.99	5.17
L15051620-18	1.00	01	9.31	7.99	5.17
L15051620-19	1.00	01	9.31	7.99	5.17
L15051620-20	1.00	01	9.31	7.99	5.17
L15051620-21	1.00	01	9.31	7.99	5.17
WG525997-01	1.00	01	9.31	7.99	5.17
WG525997-02	1.00	01	9.32	7.99	5.17

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4211942
Report generated: 06/10/2015 13:30

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15051620
Instrument ID: HPMS17
Workgroup (AAB#): WG526216

ICAL CCV Number: WG523986-02
CAL ID: HPMS17-18-MAY-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG523986-02	NA	NA	9.316	7.99	5.167
Upper Limit	NA	NA	9.816	8.49	5.667
Lower Limit	NA	NA	8.816	7.49	4.667
L15051620-22	1.00	01	9.31	7.99	5.17
L15051620-23	1.00	01	9.32	7.99	5.17
WG526216-01	1.00	01	9.31	7.99	5.17
WG526216-02	1.00	01	9.32	7.99	5.17

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4211942
Report generated: 06/10/2015 13:30

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060115\
Data File : 17M012434.D
Acq On : 01 Jun 2015 21:19
Operator : ADC
Sample : L15051620-01 A 826-LOW
Misc : 1,1
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Jun 02 09:20:42 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	225272	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	169939	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.313	152	90191	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.203	111	61003	25.7946 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.178%		
32) 1,2-Dichloroethane-d4	4.840	65	56090	27.4082 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 109.633%		
44) Toluene-d8	6.734	98	234332	25.9714 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.886%		
63) p-Bromofluorobenzene	8.734	95	81882	26.2870 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.148%		
Target Compounds					Qvalue
15) Acetone	2.356	43	516	1.4547 ug/L #	43

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060115\
Data File : 17M012434.D
Acq On : 01 Jun 2015 21:19
Operator : ADC
Sample : L15051620-01 A 826-LOW
Misc : 1,1
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Jun 02 09:20:42 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

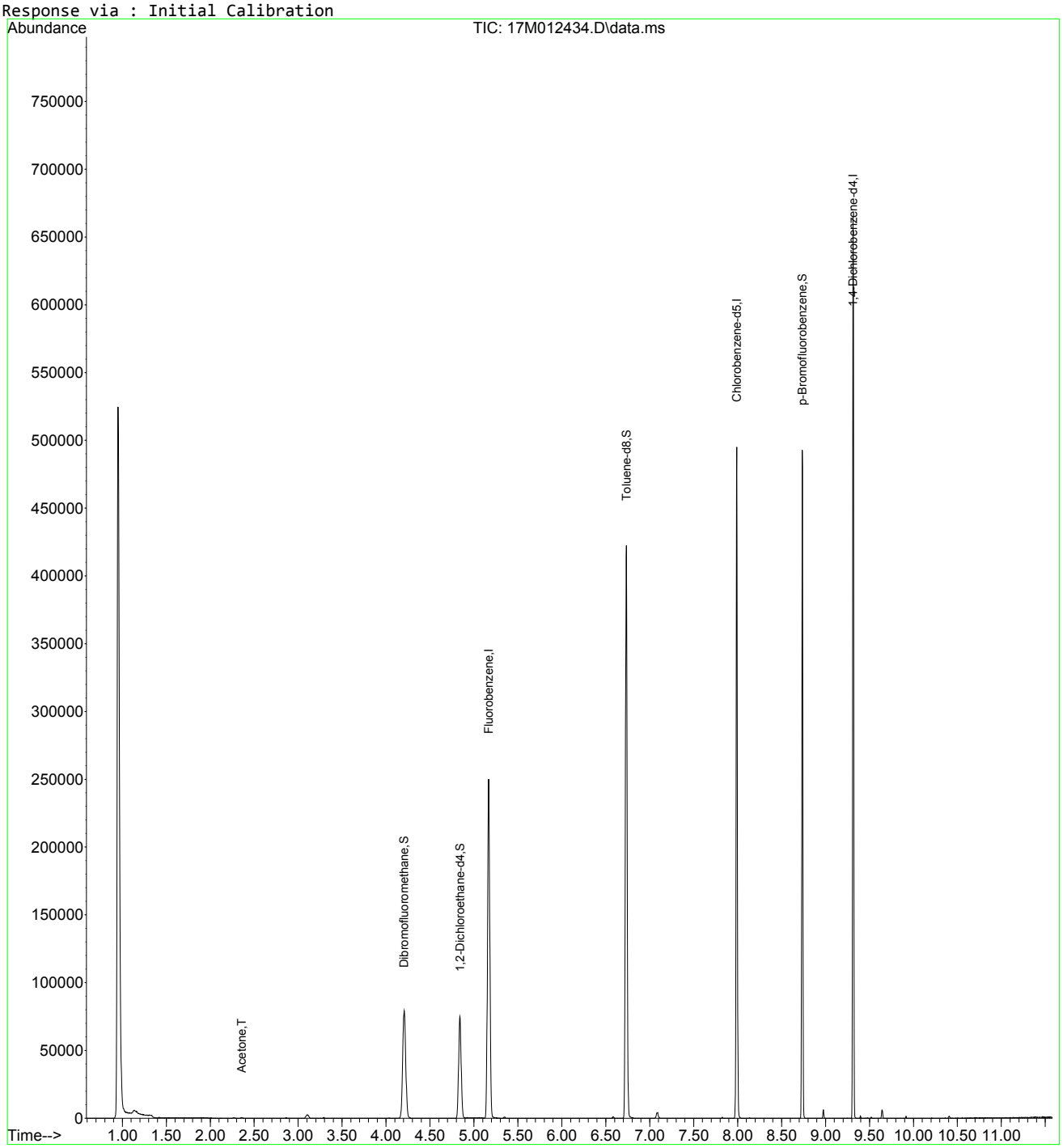

826_VMS.M Tue Jun 02 09:20:42 2015 Page: 2

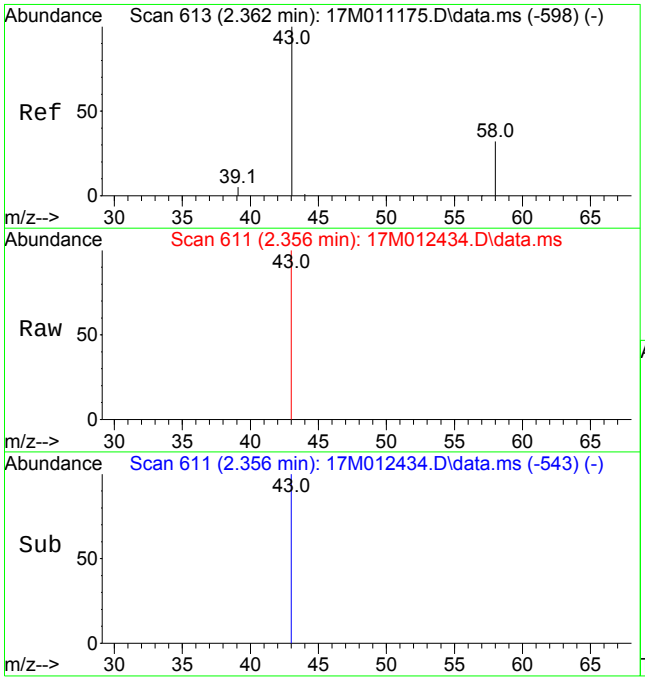

#15
Acetone
Concen: 1.4547 ug/L
RT: 2.356 min Scan# 611
Delta R.T. -0.003 min
Lab File: 17M012434.D
Acq: 01 Jun 2015 21:19

Tgt Ion: 43 Resp: 516

Ion	Ratio	Lower	Upper
43	100		
58	0.0	19.0	44.4#

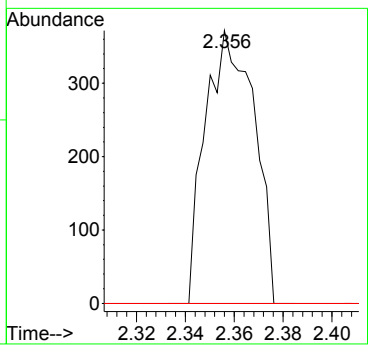

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060115\
Data File : 17M012435.D
Acq On : 01 Jun 2015 21:39
Operator : ADC
Sample : L15051620-02 A 826-LOW
Misc : 1,1
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Jun 02 09:20:45 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	234522	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	175201	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	90949	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.209	111	62884	25.5412 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.165%		
32) 1,2-Dichloroethane-d4	4.840	65	57610	27.0406 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 108.162%		
44) Toluene-d8	6.733	98	242925	26.1152 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.461%		
63) p-Bromofluorobenzene	8.737	95	85096	27.0911 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 108.364%		
Target Compounds					Qvalue
3) Chloromethane	1.154	50	681	0.2368 ug/L	79
15) Acetone	2.359	43	785	2.1257 ug/L #	43

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\060115\
Data File : 17M012435.D
Acq On : 01 Jun 2015 21:39
Operator : ADC
Sample : L15051620-02 A 826-LOW
Misc : 1,1
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Jun 02 09:20:45 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

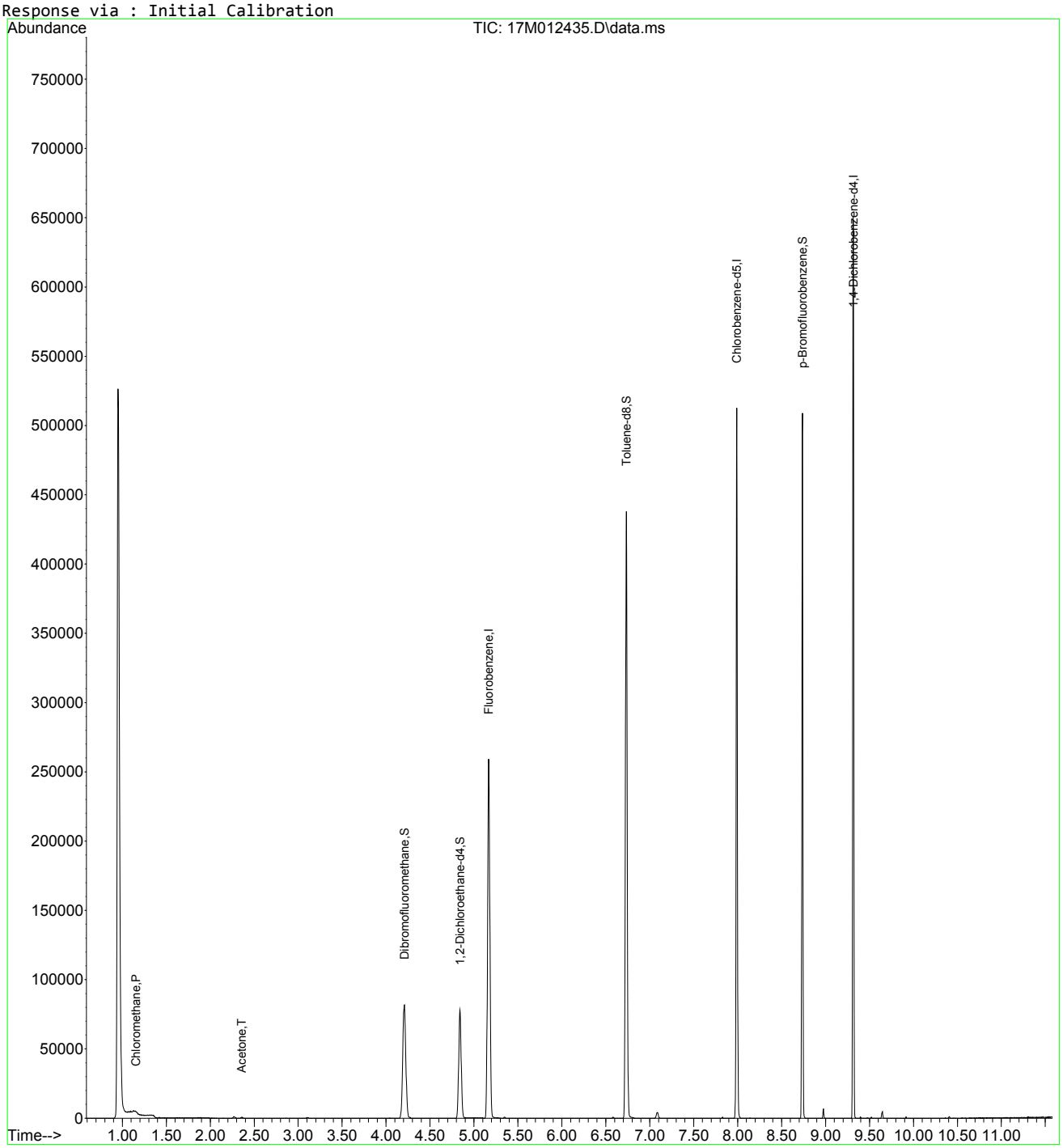

826_VMS.M Tue Jun 02 09:20:45 2015 Page: 2

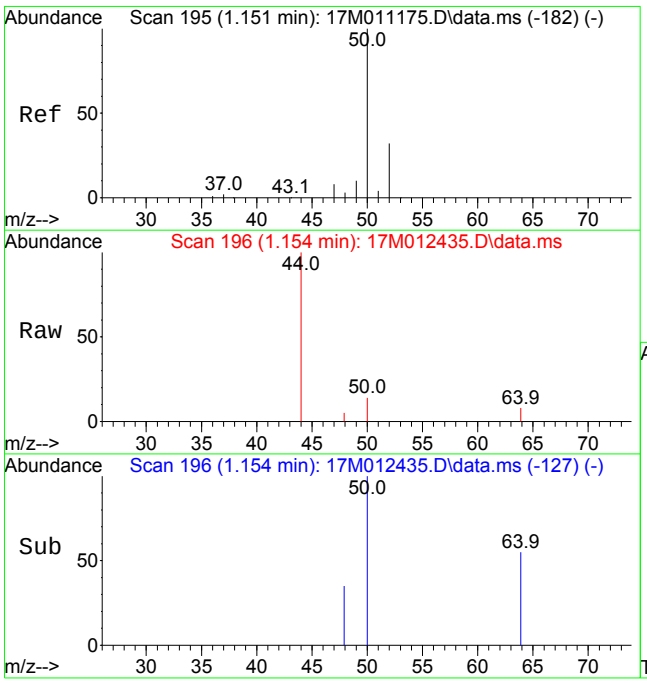

#3
Chloromethane
Concen: 0.2368 ug/L
RT: 1.154 min Scan# 196
Delta R.T. 0.000 min
Lab File: 17M012435.D
Acq: 01 Jun 2015 21:39

Tgt Ion: 50 Resp: 681

Ion	Ratio	Lower	Upper
50	100		
52	20.9	19.6	45.6

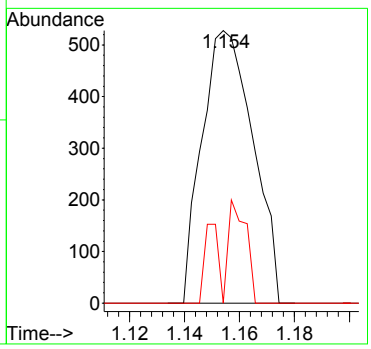

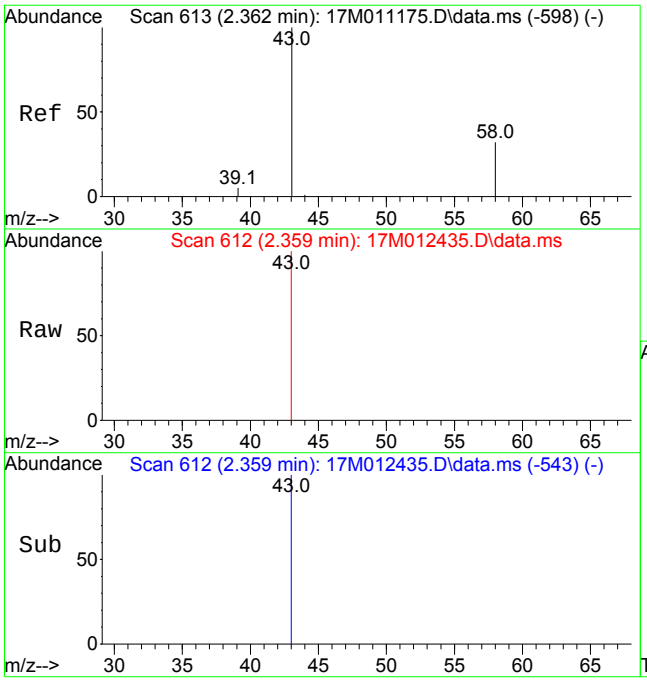

#15
Acetone
Concen: 2.1257 ug/L
RT: 2.359 min Scan# 612
Delta R.T. -0.000 min
Lab File: 17M012435.D
Acq: 01 Jun 2015 21:39

Tgt Ion: 43 Resp: 785

Ion	Ratio	Lower	Upper
43	100		
58	0.0	19.0	44.4#

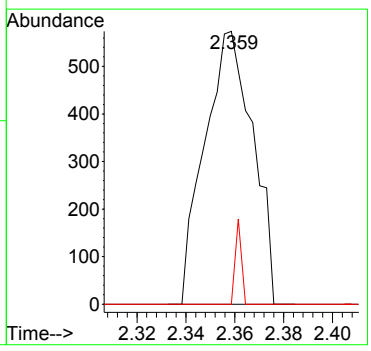

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060115\
Data File : 17M012436.D
Acq On : 01 Jun 2015 21:59
Operator : ADC
Sample : L15051620-03 A 826-LOW
Misc : 1,1
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Jun 02 09:20:48 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.170	96	236422	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	175590	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.313	152	88149	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.209	111	64086	25.8202 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.281%		
32) 1,2-Dichloroethane-d4	4.840	65	57027	26.5518 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 106.207%		
44) Toluene-d8	6.734	98	245815	26.3673 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.469%		
63) p-Bromofluorobenzene	8.734	95	84561	27.7759 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 111.104%		
Target Compounds					Qvalue
15) Acetone	2.362	43	277	0.7441 ug/L #	43

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060115\
Data File : 17M012436.D
Acq On : 01 Jun 2015 21:59
Operator : ADC
Sample : L15051620-03 A 826-LOW
Misc : 1,1
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Jun 02 09:20:48 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

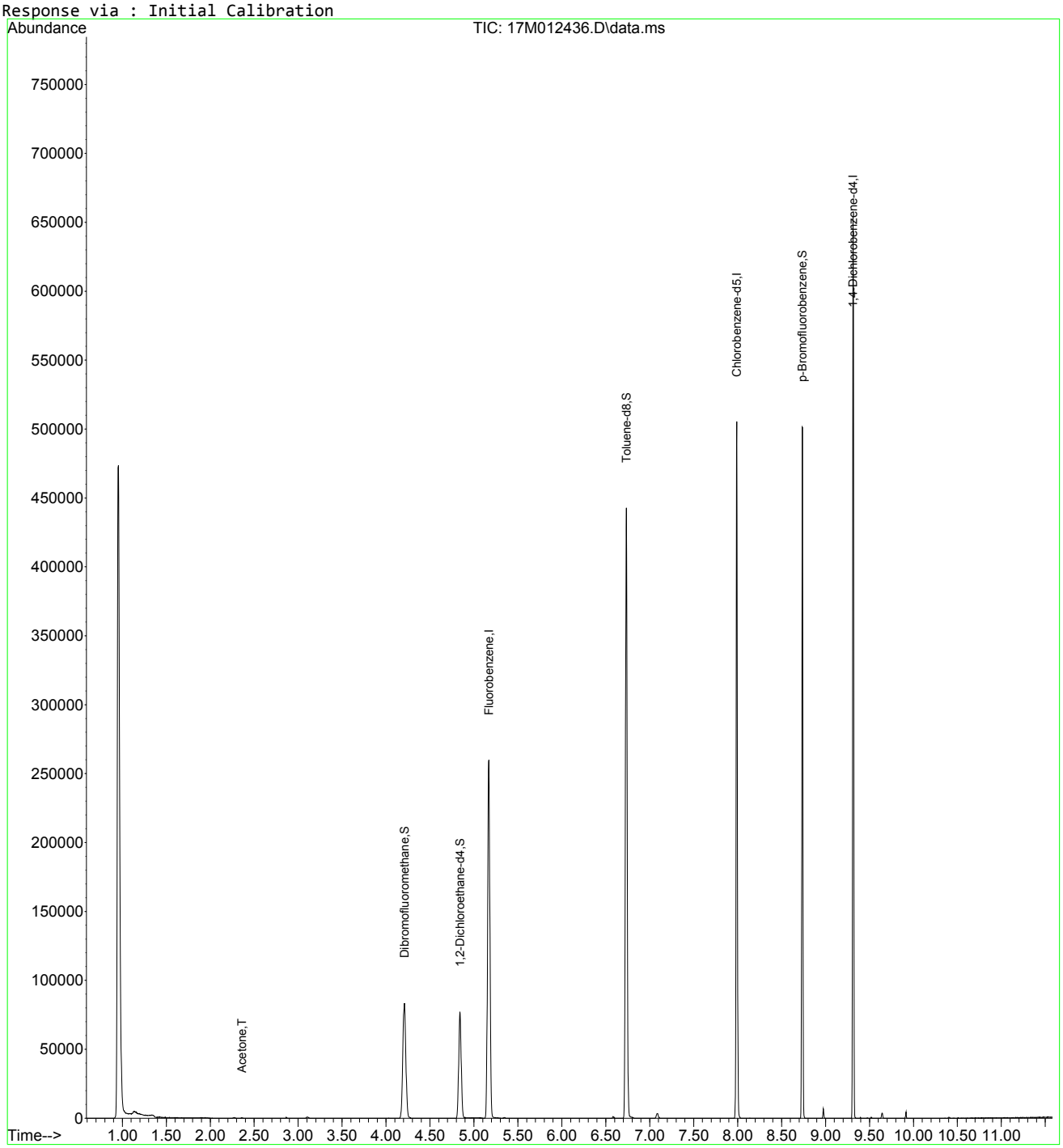

826_VMS.M Tue Jun 02 09:20:48 2015 Page: 2

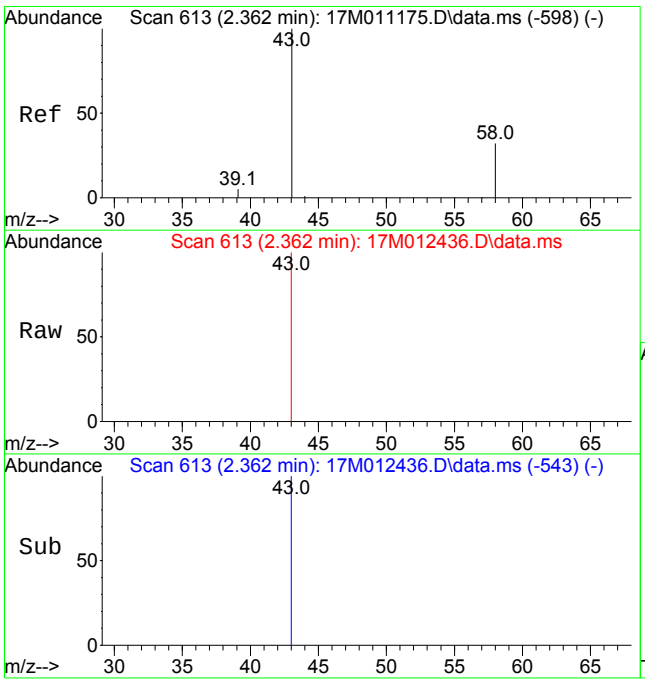

#15
Acetone
Concen: 0.7441 ug/L
RT: 2.362 min Scan# 613
Delta R.T. 0.003 min
Lab File: 17M012436.D
Acq: 01 Jun 2015 21:59

Tgt Ion: 43 Resp: 277

Ion	Ratio	Lower	Upper
43	100		
58	0.0	19.0	44.4#

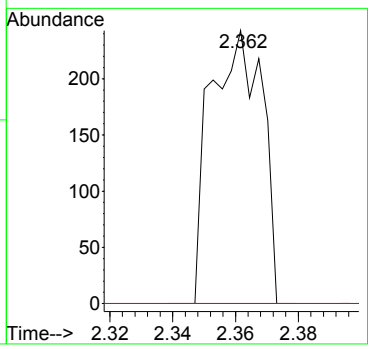

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060115\
Data File : 17M012437.D
Acq On : 01 Jun 2015 22:19
Operator : ADC
Sample : L15051620-04 A 826-LOW
Misc : 1,1
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Jun 02 09:20:51 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	226677	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	169595	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.313	152	88193	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.206	111	61160	25.7007 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.803%		
32) 1,2-Dichloroethane-d4	4.840	65	56604	27.4879 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 109.952%		
44) Toluene-d8	6.734	98	233797	25.9647 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.859%		
63) p-Bromofluorobenzene	8.734	95	82033	26.9321 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 107.728%		
Target Compounds					Qvalue
3) Chloromethane	1.154	50	1123	0.4040 ug/L	87
15) Acetone	2.359	43	1604	4.4939 ug/L	92

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060115\
Data File : 17M012437.D
Acq On : 01 Jun 2015 22:19
Operator : ADC
Sample : L15051620-04 A 826-LOW
Misc : 1,1
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Jun 02 09:20:51 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

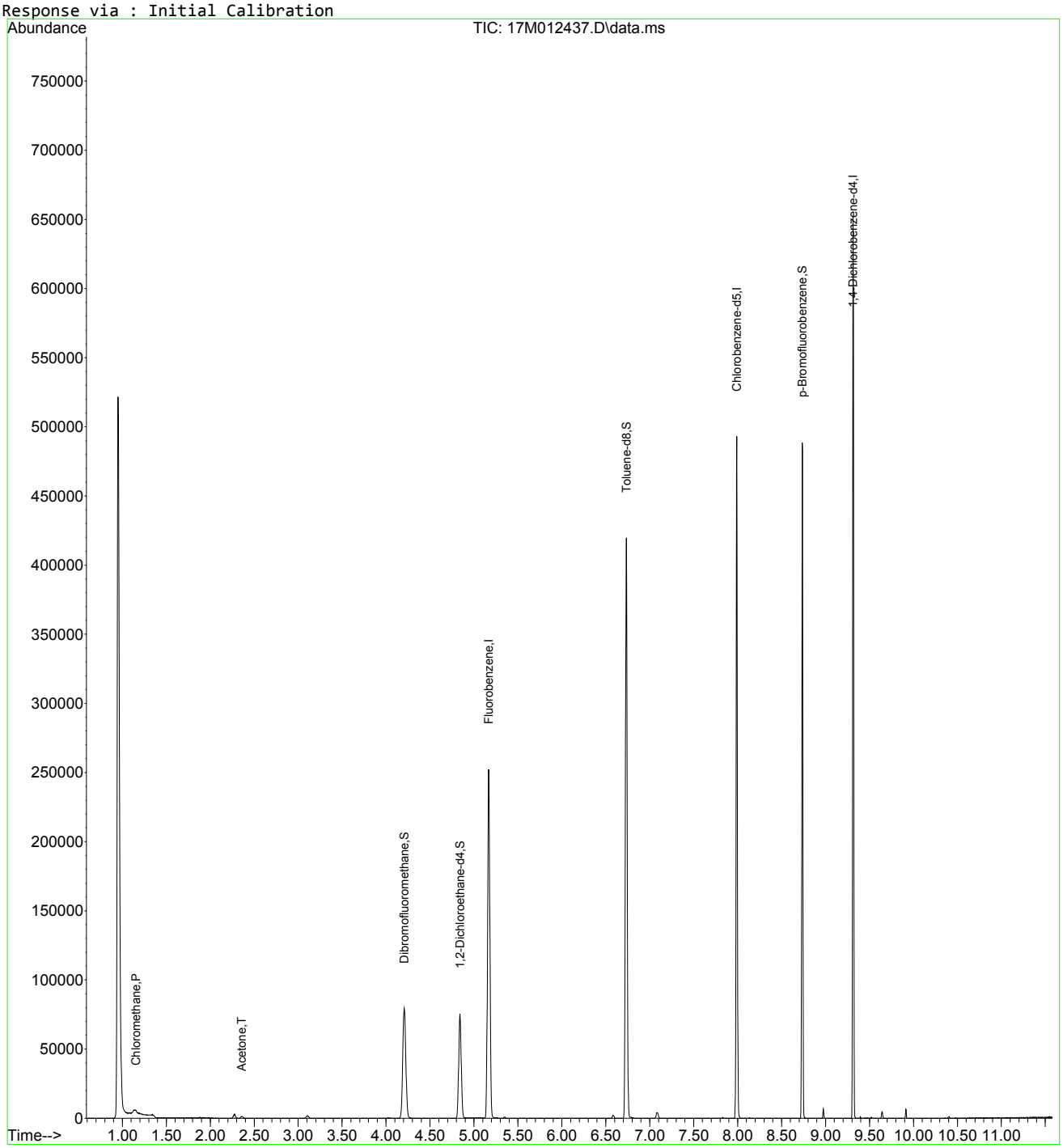

826_VMS.M Tue Jun 02 09:20:51 2015 Page: 2

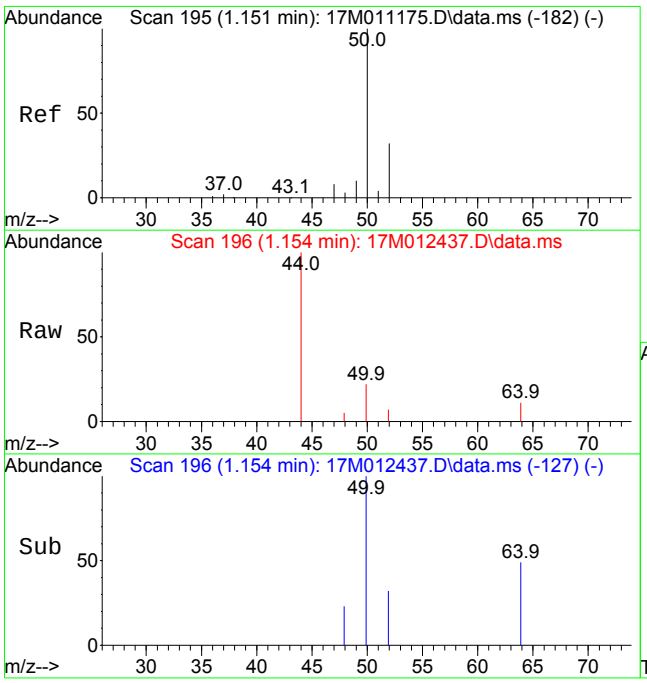

#3
Chloromethane
Concen: 0.4040 ug/L
RT: 1.154 min Scan# 196
Delta R.T. 0.000 min
Lab File: 17M012437.D
Acq: 01 Jun 2015 22:19

Tgt Ion: 50 Resp: 1123

Ion	Ratio	Lower	Upper
50	100		
52	25.0	19.6	45.6

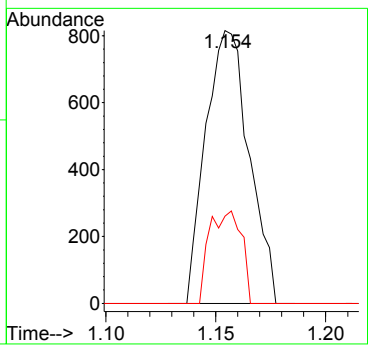

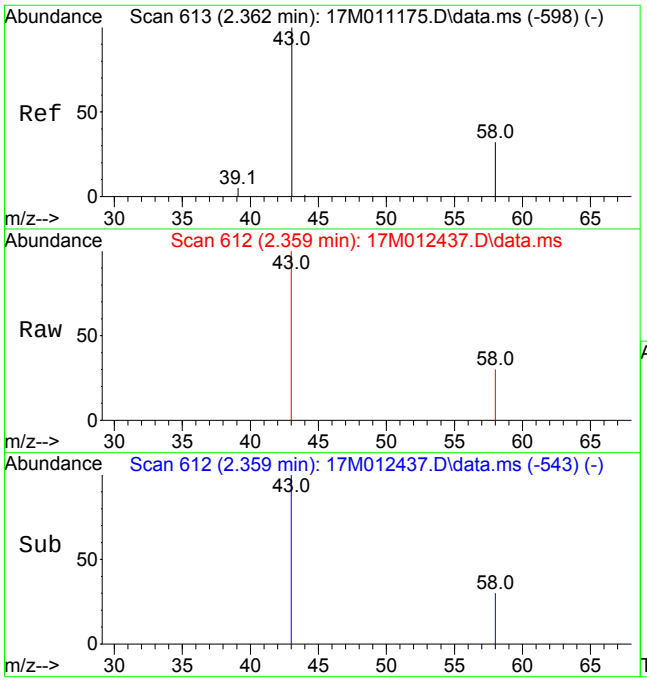

#15
Acetone
Concen: 4.4939 ug/L
RT: 2.359 min Scan# 612
Delta R.T. -0.000 min
Lab File: 17M012437.D
Acq: 01 Jun 2015 22:19

Tgt Ion: 43 Resp: 1604

Ion	Ratio	Lower	Upper
43	100		
58	27.5	19.0	44.4

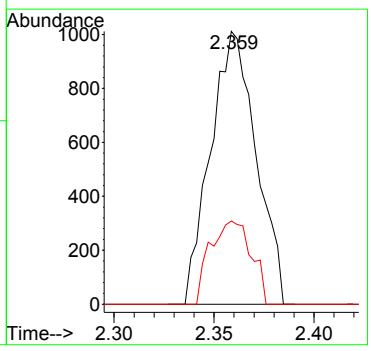

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060115\
Data File : 17M012438.D
Acq On : 01 Jun 2015 22:39
Operator : ADC
Sample : L15051620-05 A 826-LOW
Misc : 1,1
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Jun 02 09:20:54 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	223546	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	166086	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	85112	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.209	111	60101	25.6094 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.438%		
32) 1,2-Dichloroethane-d4	4.840	65	54636	26.9038 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.615%		
44) Toluene-d8	6.733	98	231329	26.2334 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.934%		
63) p-Bromofluorobenzene	8.737	95	80212	27.2875 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 109.150%		
Target Compounds					Qvalue
15) Acetone	2.364	43	1046	2.9716 ug/L #	69

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\060115\
Data File : 17M012438.D
Acq On : 01 Jun 2015 22:39
Operator : ADC
Sample : L15051620-05 A 826-LOW
Misc : 1,1
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Jun 02 09:20:54 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

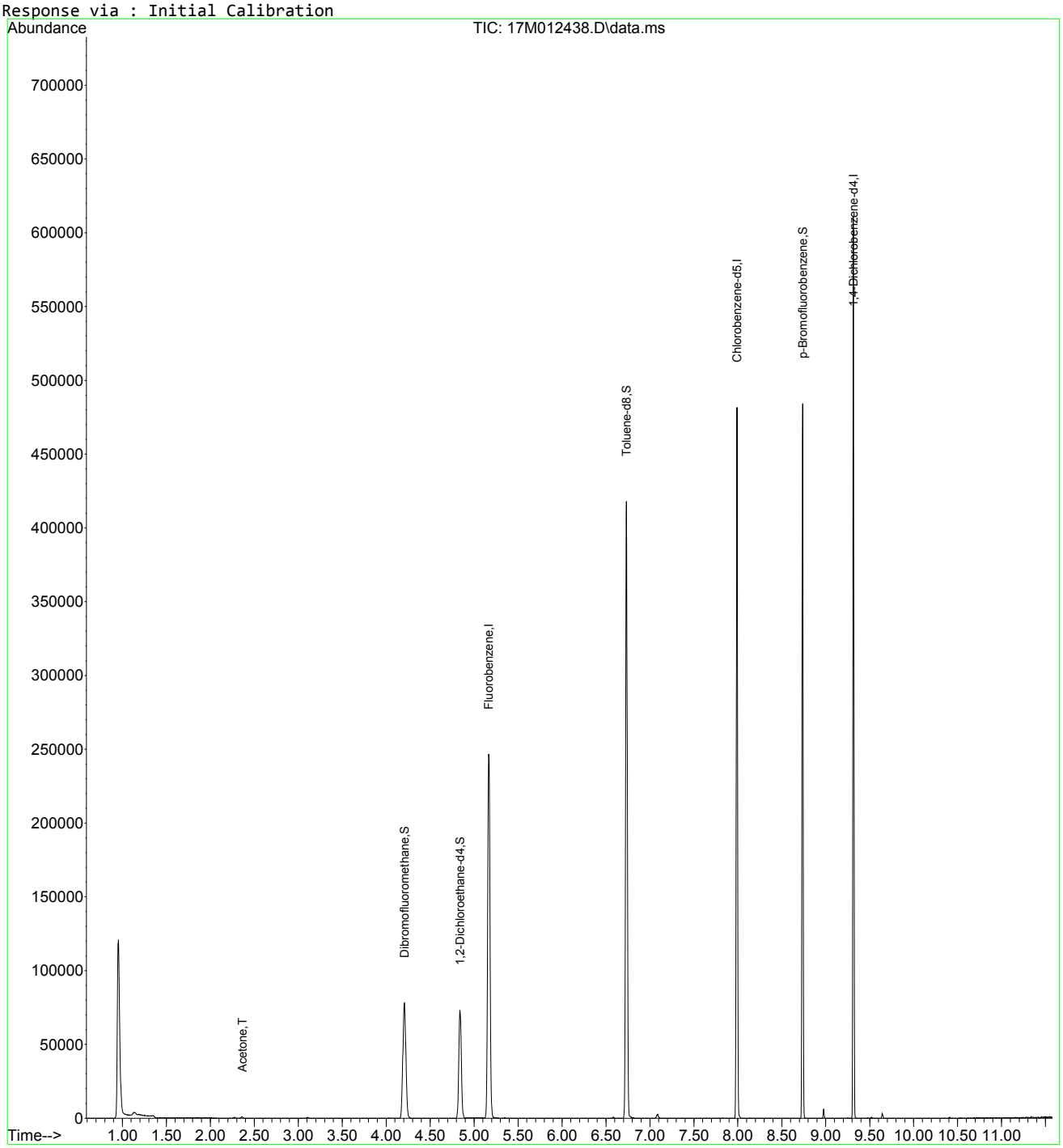

826_VMS.M Tue Jun 02 09:20:54 2015 Page: 2

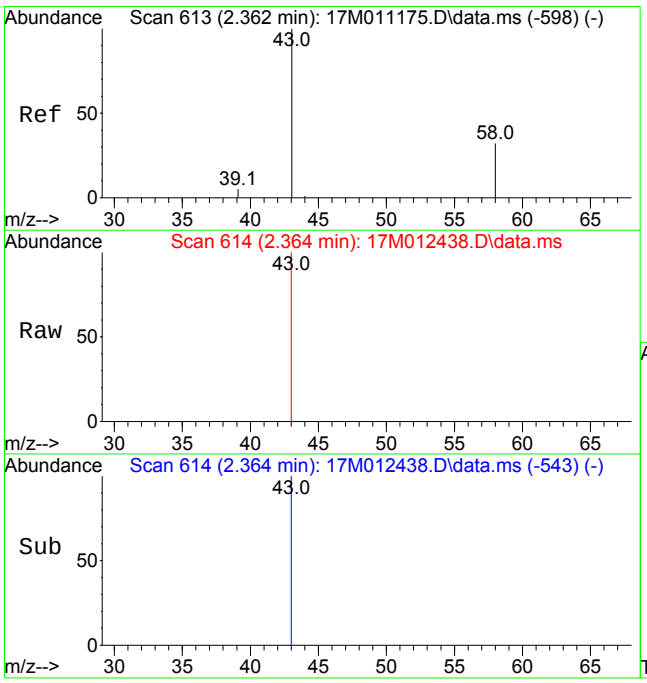

#15
Acetone
Concen: 2.9716 ug/L
RT: 2.364 min Scan# 614
Delta R.T. 0.005 min
Lab File: 17M012438.D
Acq: 01 Jun 2015 22:39

Tgt Ion: 43 Resp: 1046

Ion	Ratio	Lower	Upper
43	100		
58	14.6	19.0	44.4#

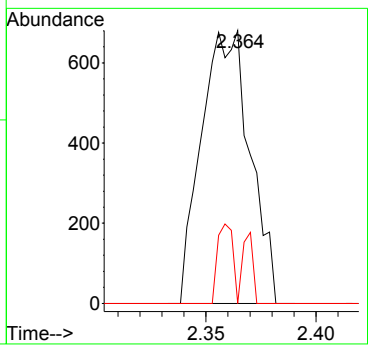

Data Path : D:\MassHunter\GCMS\1\data\060115\
Data File : 17M012439.D
Acq On : 01 Jun 2015 22:59
Operator : ADC
Sample : L15051620-06 A 826-LOW
Misc : 1,1
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Jun 02 09:20:57 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	223763	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	166138	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.313	152	86746	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.206	111	60319	25.6773 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.709%		
32) 1,2-Dichloroethane-d4	4.840	65	55786	27.4434 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 109.774%		
44) Toluene-d8	6.734	98	231716	26.2691 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.076%		
63) p-Bromofluorobenzene	8.737	95	81066	27.0586 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 108.234%		
Target Compounds					Qvalue
15) Acetone	2.359	43	1047	2.9715 ug/L	81

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\060115\
Data File : 17M012439.D
Acq On : 01 Jun 2015 22:59
Operator : ADC
Sample : L15051620-06 A 826-LOW
Misc : 1,1
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Jun 02 09:20:57 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

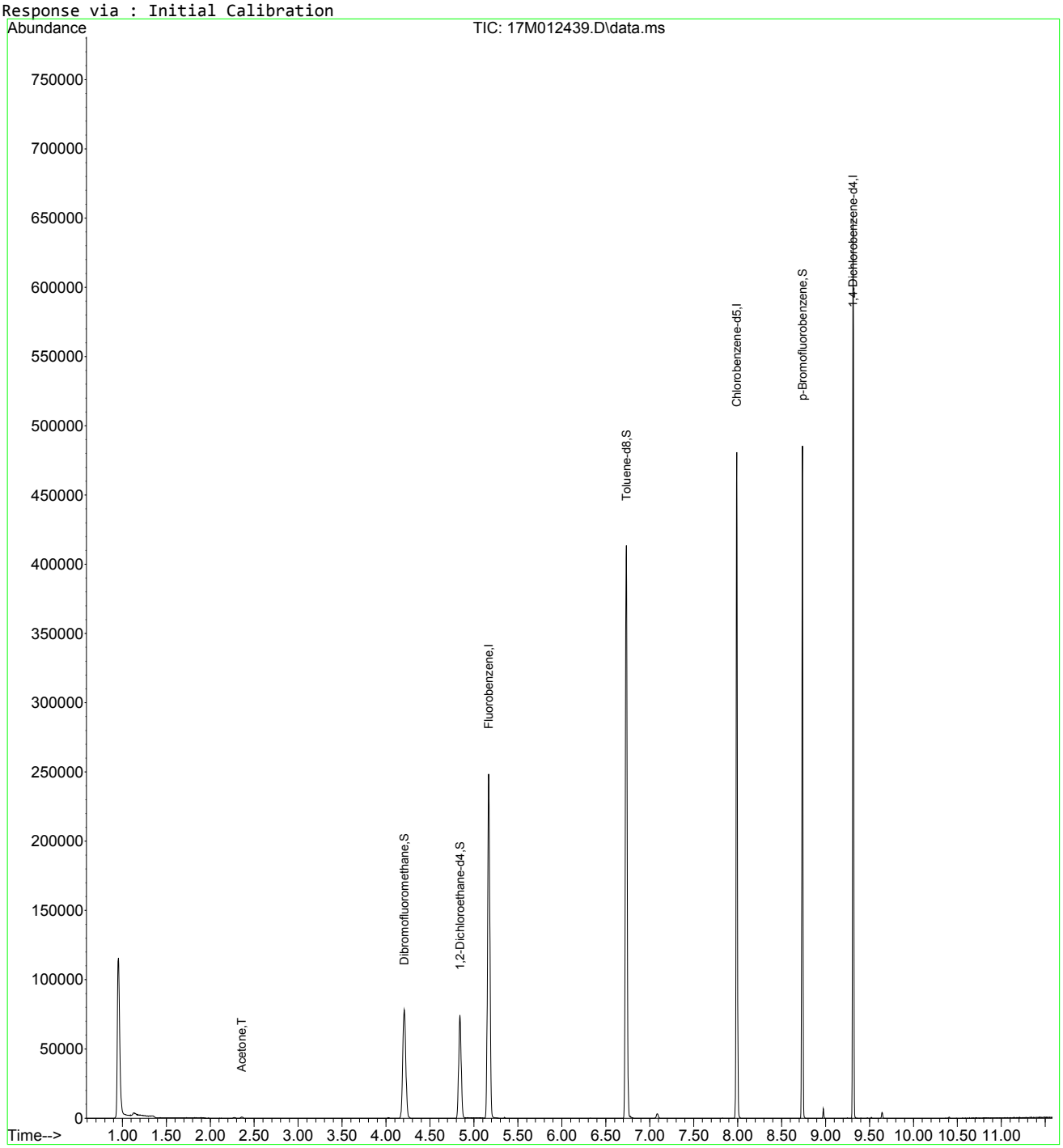

826_VMS.M Tue Jun 02 09:20:57 2015 Page: 2

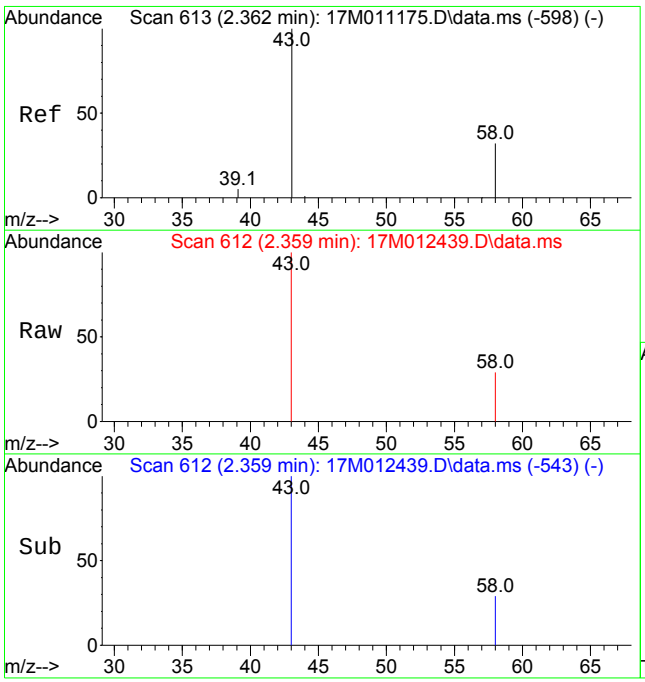

#15
Acetone
Concen: 2.9715 ug/L
RT: 2.359 min Scan# 612
Delta R.T. -0.000 min
Lab File: 17M012439.D
Acq: 01 Jun 2015 22:59

Tgt Ion: 43 Resp: 1047

Ion	Ratio	Lower	Upper
43	100		
58	20.9	19.0	44.4

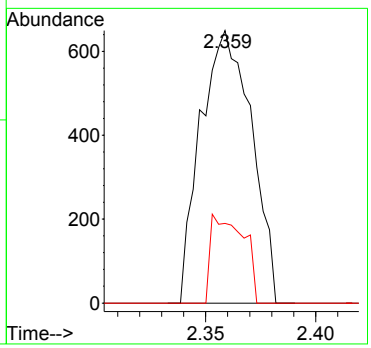

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060215\
Data File : 17M012475.D
Acq On : 02 Jun 2015 20:49
Operator : ADC
Sample : L15051620-07 A 826-LOW
Misc : 1,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jun 03 10:55:01 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	215907	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	161851	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	84261	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.206	111	59826	26.3941 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 105.576%		
32) 1,2-Dichloroethane-d4	4.840	65	54615	27.8450 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.380%		
44) Toluene-d8	6.733	98	227254	26.4456 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.782%		
63) p-Bromofluorobenzene	8.737	95	78695	27.0418 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 108.167%		
Target Compounds					Qvalue
10) 1,1-Dichloroethene	1.881	61	553	0.1654 ug/L	90
12) 1,1,2-Trichloro-1,2,2-...	1.910	101	484	0.2158 ug/L	94
15) Acetone	2.359	43	499	1.4678 ug/L #	43
18) 1,1-Dichloroethane	2.998	63	1449	0.3494 ug/L #	87
21) cis-1,2-Dichloroethene	3.592	96	49323	19.7083 ug/L	99
25) Chloroform	3.968	83	1084	0.2724 ug/L #	82
33) 1,2-Dichloroethane	4.921	62	2795	1.1056 ug/L #	92
34) Trichloroethene	5.349	130	573237	202.1332 ug/L	100
46) Tetrachloroethene	7.110	166	1242	0.4234 ug/L	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

826_VMS.M Wed Jun 03 10:55:01 2015 Page: 1

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060215\
Data File : 17M012475.D
Acq On : 02 Jun 2015 20:49
Operator : ADC
Sample : L15051620-07 A 826-LOW
Misc : 1,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jun 03 10:55:01 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

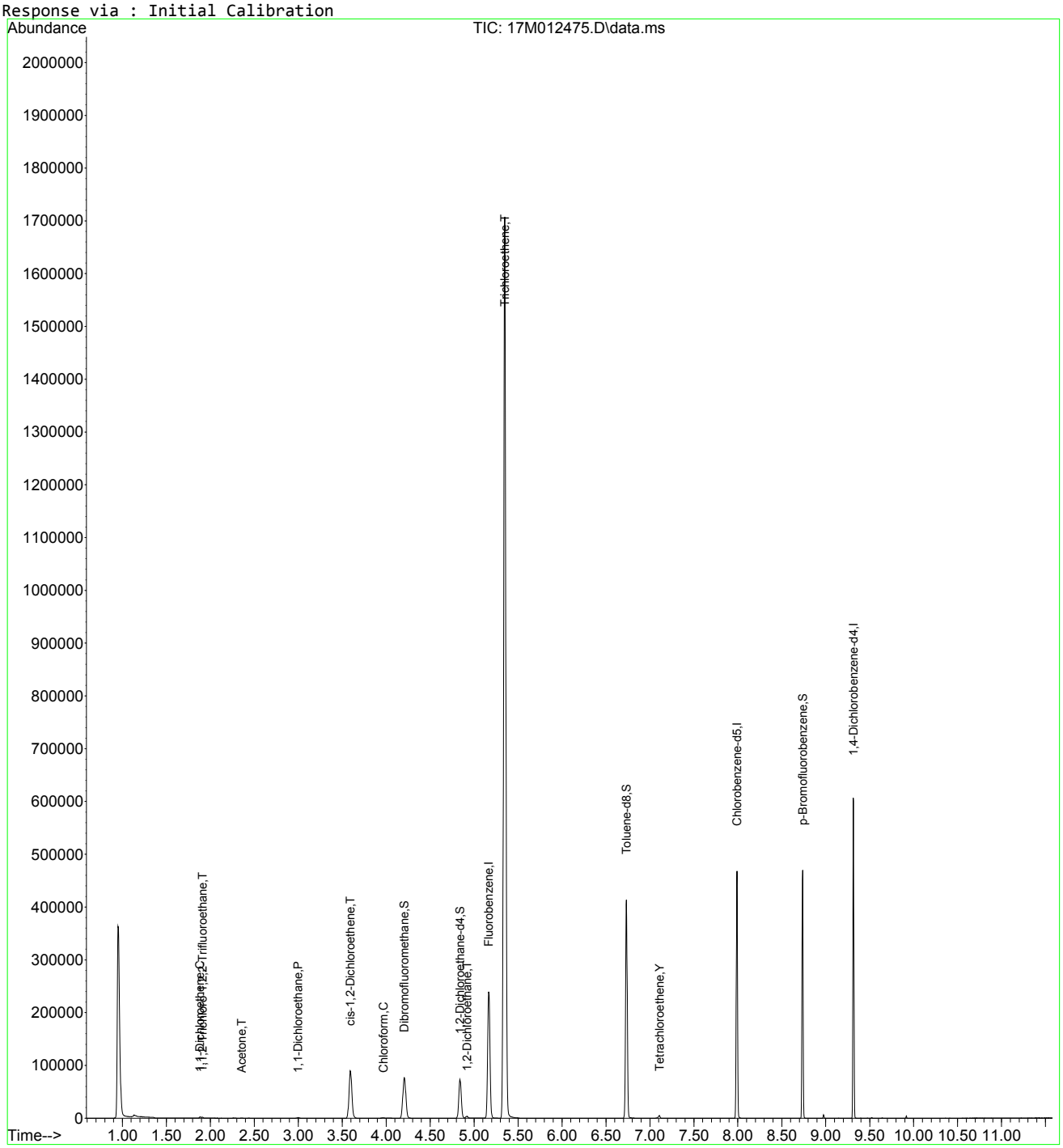

826_VMS.M Wed Jun 03 10:55:01 2015 Page: 2

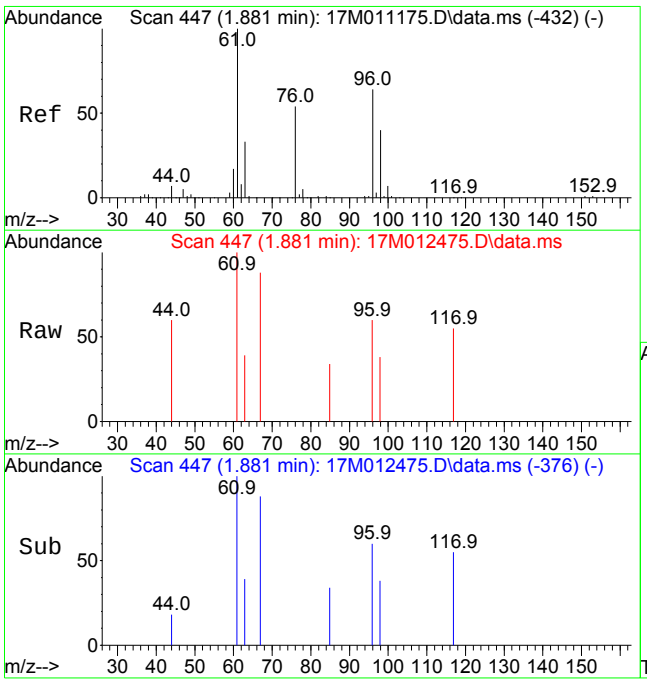

#10
1,1-Dichloroethene
Concen: 0.1654 ug/L
RT: 1.881 min Scan# 447
Delta R.T. 0.006 min
Lab File: 17M012475.D
Acq: 02 Jun 2015 20:49

Tgt Ion: 61 Resp: 553

Ion	Ratio	Lower	Upper
61	100		
96	55.5	50.8	76.2

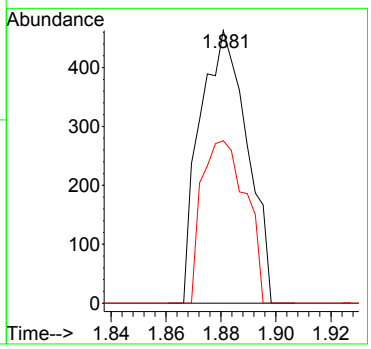

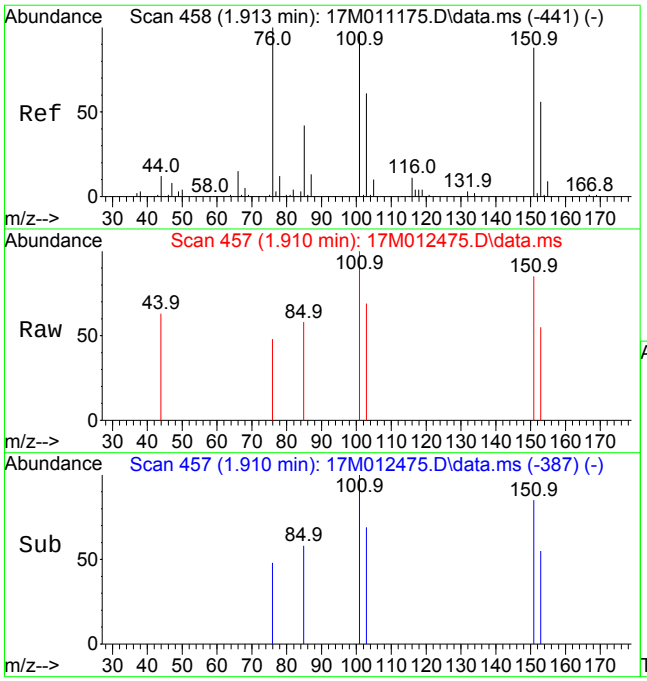

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 0.2158 ug/L
RT: 1.910 min Scan# 457
Delta R.T. 0.003 min
Lab File: 17M012475.D
Acq: 02 Jun 2015 20:49

Tgt Ion:101 Resp: 484

Ion	Ratio	Lower	Upper
101	100		
151	96.5	73.0	109.6
103	59.1	51.4	77.2

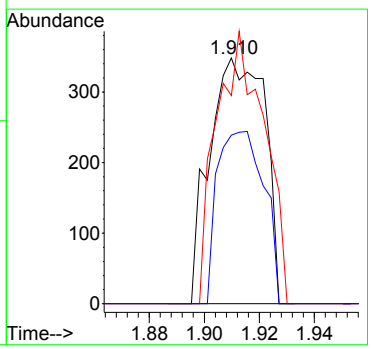

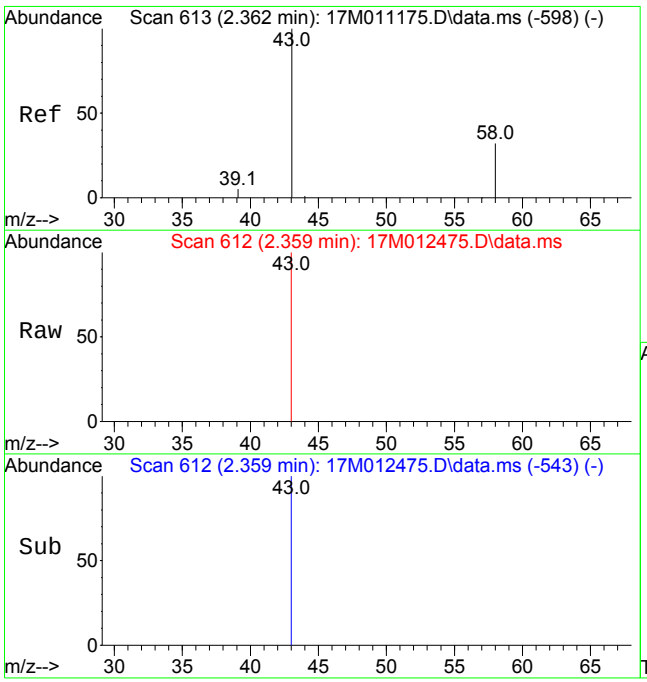

#15
Acetone
Concen: 1.4678 ug/L
RT: 2.359 min Scan# 612
Delta R.T. -0.000 min
Lab File: 17M012475.D
Acq: 02 Jun 2015 20:49

Tgt Ion: 43 Resp: 499

Ion	Ratio	Lower	Upper
43	100		
58	0.0	19.0	44.4#

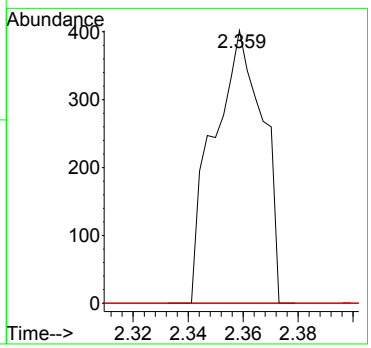

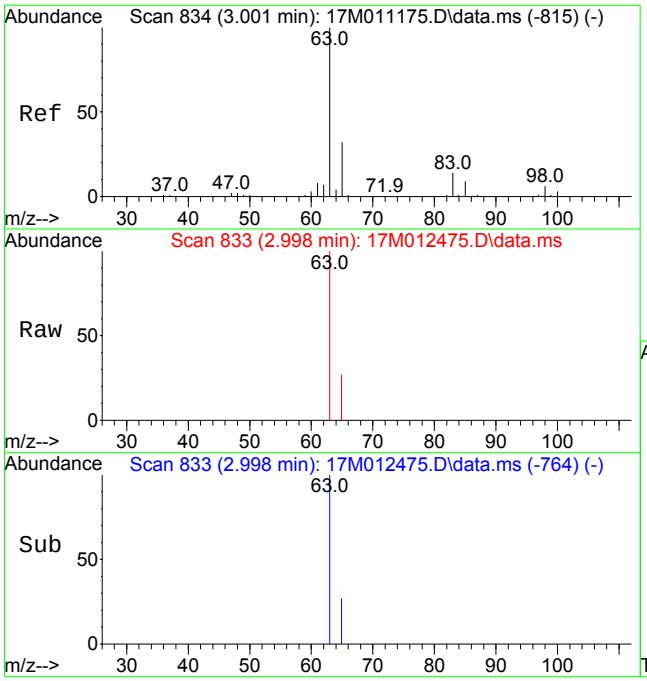

#18
1,1-Dichloroethane
Concen: 0.3494 ug/L
RT: 2.998 min Scan# 833
Delta R.T. -0.001 min
Lab File: 17M012475.D
Acq: 02 Jun 2015 20:49

Tgt Ion: 63 Resp: 1449

Ion	Ratio	Lower	Upper
63	100		
65	24.8	25.4	38.2#

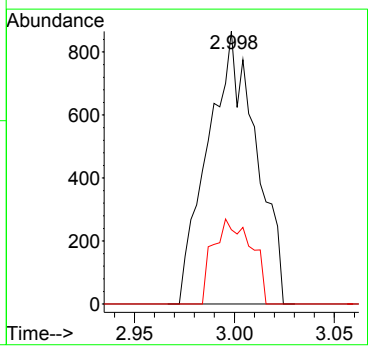

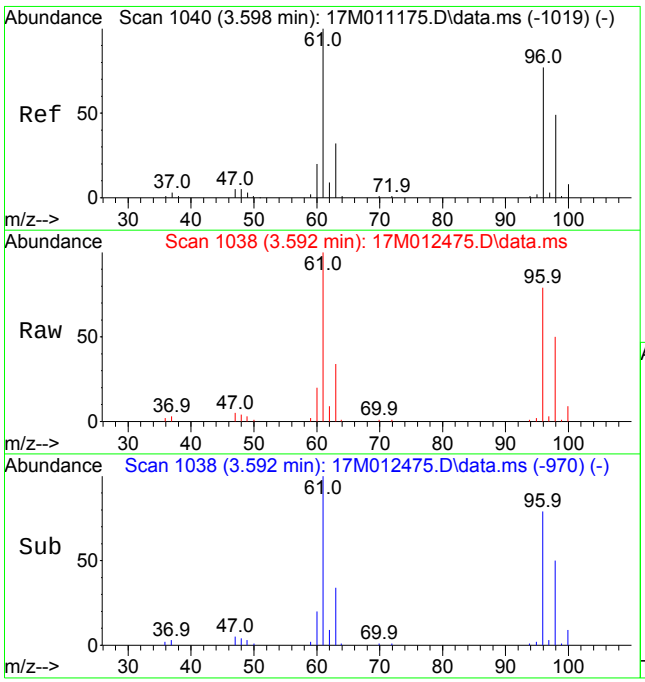

#21
cis-1,2-Dichloroethene
Concen: 19.7083 ug/L
RT: 3.592 min Scan# 1038
Delta R.T. -0.003 min
Lab File: 17M012475.D
Acq: 02 Jun 2015 20:49

Tgt Ion: 96 Resp: 49323

Ion	Ratio	Lower	Upper
96	100		
61	127.0	101.0	151.4

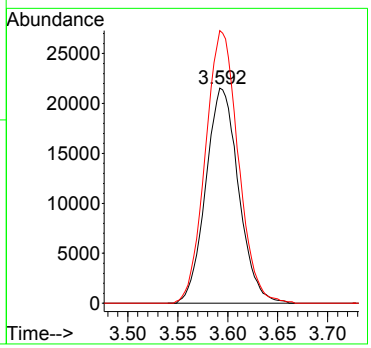

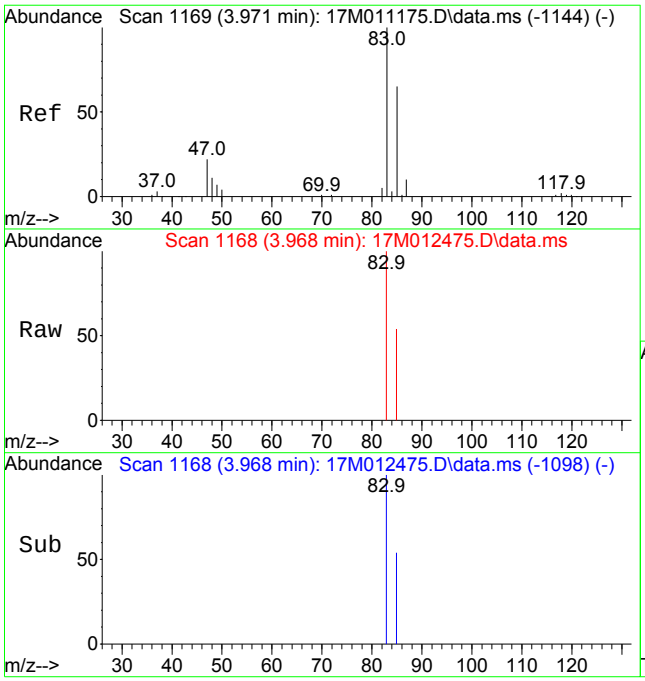

#25
Chloroform
Concen: 0.2724 ug/L
RT: 3.968 min Scan# 1168
Delta R.T. 0.002 min
Lab File: 17M012475.D
Acq: 02 Jun 2015 20:49

Tgt Ion: 83 Resp: 1084

Ion	Ratio	Lower	Upper
83	100		
85	57.4	39.0	91.0
47	0.0	12.7	29.5#

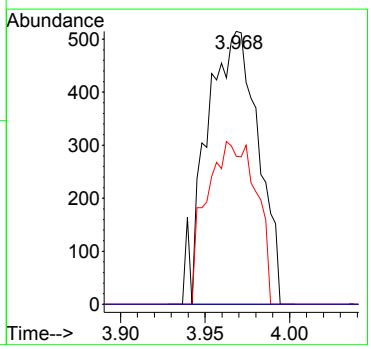

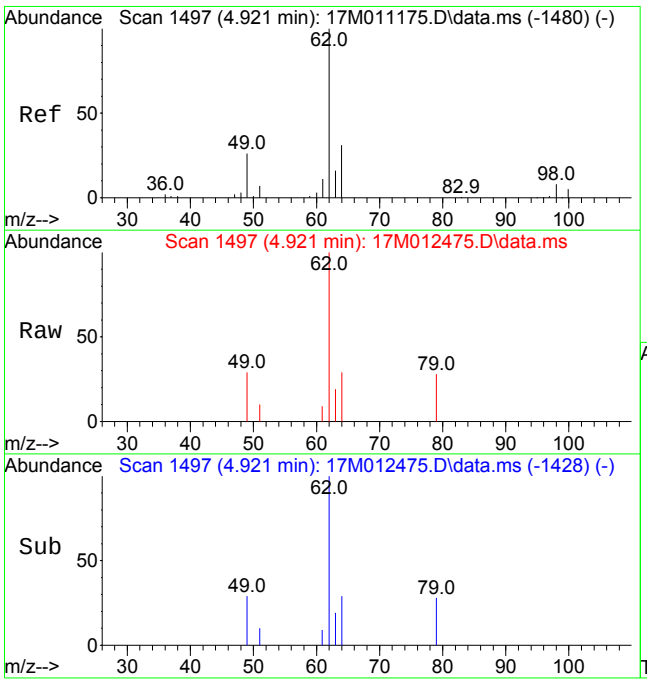

#33
1,2-Dichloroethane
Concen: 1.1056 ug/L
RT: 4.921 min Scan# 1497
Delta R.T. -0.000 min
Lab File: 17M012475.D
Acq: 02 Jun 2015 20:49

Tgt Ion: 62 Resp: 2795

Ion	Ratio	Lower	Upper
62	100		
49	26.1	16.6	38.6
98	0.0	5.2	12.0#

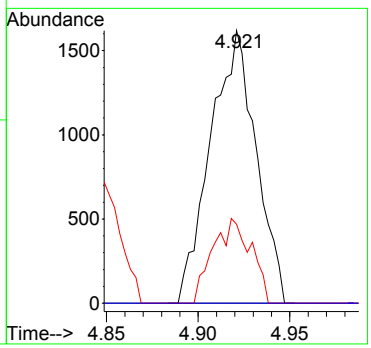

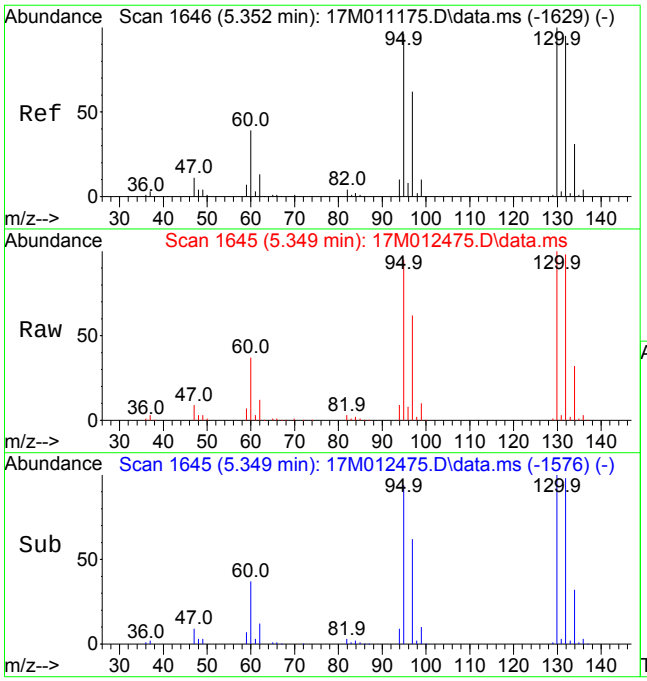

#34
Trichloroethene
Concen: 202.1332 ug/L
RT: 5.349 min Scan# 1645
Delta R.T. -0.000 min
Lab File: 17M012475.D
Acq: 02 Jun 2015 20:49

Tgt Ion:130 Resp: 573237

Ion	Ratio	Lower	Upper
130	100		
60	37.4	22.4	52.2

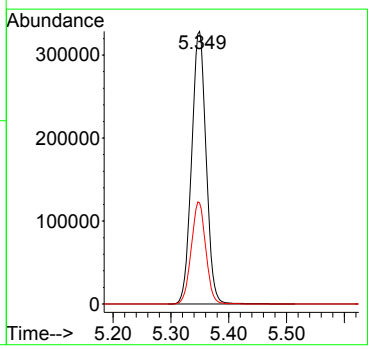

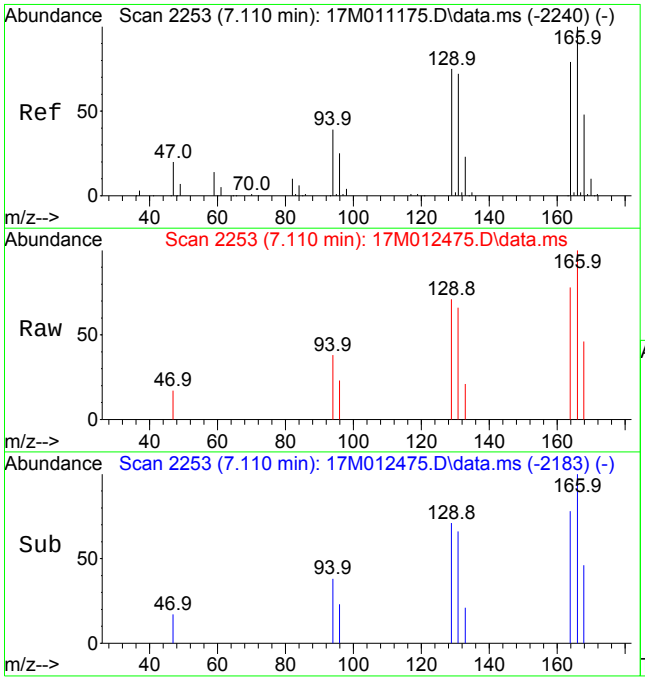

#46
Tetrachloroethene
Concen: 0.4234 ug/L
RT: 7.110 min Scan# 2253
Delta R.T. 0.003 min
Lab File: 17M012475.D
Acq: 02 Jun 2015 20:49

Tgt Ion:166 Resp: 1242

Ion	Ratio	Lower	Upper
166	100		
129	72.9	58.5	87.7
94	31.3	29.8	44.6

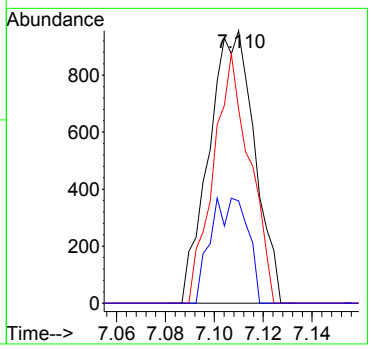

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060215\
Data File : 17M012482.D
Acq On : 02 Jun 2015 23:08
Operator : ADC
Sample : L15051620-08 A MS 826-LOW
Misc : 1,1 STD70797
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Jun 02 23:20:23 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	215056	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	162200	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.313	152	87346	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.206	111	59927	26.5433 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.173%		
32) 1,2-Dichloroethane-d4	4.840	65	54438	27.8646 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.458%		
44) Toluene-d8	6.734	98	225064	26.1344 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.538%		
63) p-Bromofluorobenzene	8.734	95	80907	26.8200 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 107.280%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.041	85	44532	18.4682 ug/L	99
3) Chloromethane	1.154	50	48755	18.4895 ug/L	99
4) Vinyl Chloride	1.201	62	50017	17.9903 ug/L	99
5) 1,3-Butadiene	1.212	54	601	0.4099 ug/L	95
6) Bromomethane	1.389	94	26578	16.1925 ug/L	99
7) Chloroethane	1.458	64	25050	18.7247 ug/L	98
8) Trichlorofluoromethane	1.545	101	58937	17.6389 ug/L	100
9) Diethyl ether	1.757	59	160901	115.4233 ug/L	100
10) 1,1-Dichloroethene	1.878	61	55601	16.6932 ug/L	99
11) Carbon Disulfide	1.893	76	68046	11.0377 ug/L	99
12) 1,1,2-Trichloro-1,2,2-...	1.910	101	35984	16.1041 ug/L	99
14) Methylene Chloride	2.304	84	45792	19.3317 ug/L	100
15) Acetone	2.359	43	8202	24.2210 ug/L	98
16) trans-1,2-Dichloroethene	2.434	96	41960	18.5939 ug/L	100
17) Methyl Tert Butyl Ether	2.544	73	113406	22.9294 ug/L	99
18) 1,1-Dichloroethane	2.996	63	78286	18.9544 ug/L	100
19) Acrylonitrile	3.057	53	9847	21.0520 ug/L	98
21) cis-1,2-Dichloroethene	3.592	96	91015	36.5114 ug/L	100
22) 2,2-Dichloropropane	3.725	77	55228	17.4725 ug/L	97
23) Cyclohexane	3.824	56	61819	17.1134 ug/L #	74
24) Bromochloromethane	3.833	130	31194	20.4510 ug/L	100
25) Chloroform	3.966	83	79579	20.0778 ug/L	100
26) Carbon Tetrachloride	4.113	117	57310	17.9758 ug/L	99
28) 1,1,1-Trichloroethane	4.206	97	66464	18.3603 ug/L	99
29) 1,1-Dichloropropene	4.377	75	54102	17.6828 ug/L	99
30) 2-Butanone	4.394	43	12454	22.7092 ug/L #	87
31) Benzene	4.678	78	177039	18.6008 ug/L	100
33) 1,2-Dichloroethane	4.918	62	54304	21.5658 ug/L	100
34) Trichloroethene	5.347	130	500282	177.1061 ug/L	100
35) Dibromomethane	5.764	93	25670	21.7973 ug/L	99
36) 1,2-Dichloropropane	5.874	63	48901	19.6280 ug/L	100
37) Bromodichloromethane	5.961	83	58115	19.4746 ug/L	100
38) 1,4-Dioxane	6.169	88	1470	103.7441 ug/L	99
39) 2-Chloroethyl Vinyl Ether	6.563	63	292	0.2667 ug/L #	43
40) cis-1,3-Dichloropropene	6.566	75	69114	19.8661 ug/L	100
41) 4-Methyl-2-Pentanone	7.831	58	10332	20.9750 ug/L	99
42) trans-1,3-Dichloropropene	7.165	75	56146	20.6892 ug/L	100
45) Toluene	6.777	91	198764	18.8552 ug/L	99
46) Tetrachloroethene	7.107	166	51593	17.5487 ug/L	99
47) 1,1,2-Trichloroethane	7.295	97	36430	20.5769 ug/L	99
48) Dibromochloromethane	7.434	129	47160	20.3828 ug/L	100
49) 1,3-Dichloropropane	7.518	76	59088	20.6965 ug/L	100
50) 1,2-Dibromoethane	7.602	107	35932	20.7792 ug/L	99
51) 2-Hexanone	7.831	43	19407	22.1531 ug/L	99

Data Path : D:\MassHunter\GCMS\1\data\060215\
Data File : 17M012482.D
Acq On : 02 Jun 2015 23:08
Operator : ADC
Sample : L15051620-08 A MS 826-LOW
Misc : 1,1 STD70797
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Jun 02 23:20:23 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
52) Chlorobenzene	8.002	112	124211	17.7214 ug/L	99
53) 1-Chlorohexane	8.013	69	11193	18.2880 ug/L	90
54) Ethylbenzene	8.037	106	70026	18.6791 ug/L	98
55) 1,1,1,2-Tetrachloroethane	8.054	131	47985	19.2786 ug/L	100
56) m-,p-Xylene	8.138	106	165404	36.8913 ug/L	99
57) o-Xylene	8.398	106	78111	17.6352 ug/L	98
58) Styrene	8.430	104	137389	19.4469 ug/L	100
59) Bromoform	8.433	173	34111	23.2714 ug/L	100
60) Isopropylbenzene	8.587	105	200212	17.3720 ug/L	100
62) 1,3,5-Trimethylbenzene	8.925	105	195707	19.4349 ug/L	100
64) Bromobenzene	8.786	156	60572	19.1657 ug/L	99
65) n-Propylbenzene	8.815	91	229987	17.4072 ug/L	99
66) 1,1,2,2-Tetrachloroethane	8.856	83	45007	22.8685 ug/L	100
67) 2-Chlorotoluene	8.891	91	142719	17.5463 ug/L	100
68) 1,2,3-Trichloropropane	8.920	110	11665	22.6596 ug/L	99
69) 1,2,4-Trimethylbenzene	9.122	105	195266	19.4398 ug/L	100
70) 4-Chlorotoluene	8.980	91	144670	17.6541 ug/L	99
71) tert-Butylbenzene	9.088	134	32775	17.3992 ug/L	97
72) sec-Butylbenzene	9.177	105	217039	17.2371 ug/L	99
73) p-Isopropyltoluene	9.250	119	186616	17.3718 ug/L	100
74) 1,3-Dichlorobenzene	9.276	146	104300	17.4243 ug/L	100
75) 1,4-Dichlorobenzene	9.322	146	112859	18.8031 ug/L	99
76) n-Butylbenzene	9.452	91	172068	18.3340 ug/L	100
77) 1,2-Dichlorobenzene	9.525	146	103021	18.2841 ug/L	100
78) 1,2-Dibromo-3-Chloropr...	9.901	75	7660	22.9066 ug/L	99
79) Hexachlorobutadiene	10.194	225	44464	16.5499 ug/L	99
80) 1,2,4-Trichlorobenzene	10.208	180	84135	19.2529 ug/L	99
81) Naphthalene	10.359	128	155231	21.0276 ug/L	100
82) 1,2,3-Trichlorobenzene	10.443	180	79801	19.9110 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\060215\
Data File : 17M012482.D
Acq On : 02 Jun 2015 23:08
Operator : ADC
Sample : L15051620-08 A MS 826-LOW
Misc : 1,1 STD70797
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Jun 02 23:20:23 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

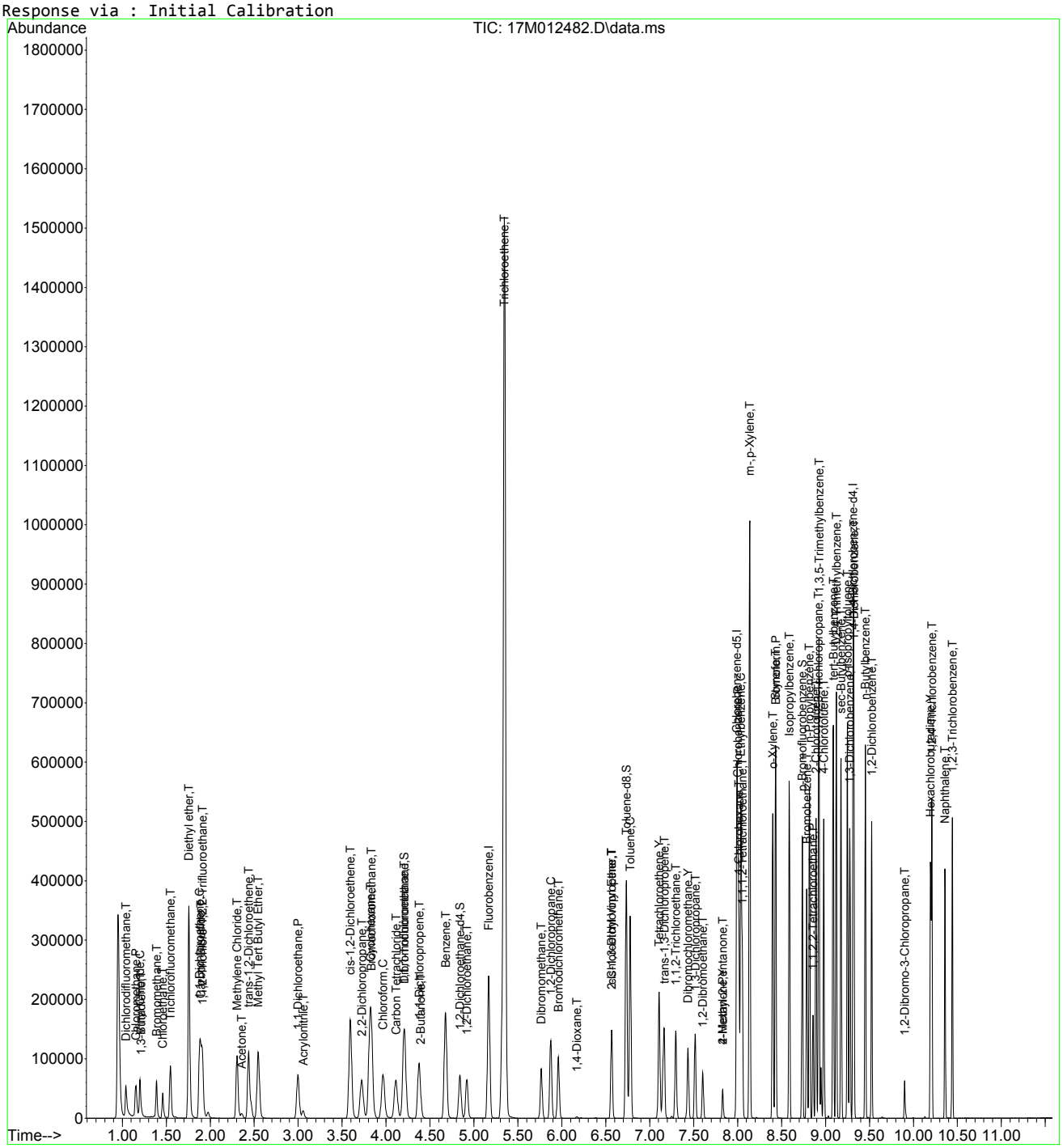

826_VMS.M Tue Jun 02 23:20:24 2015 Page: 3

Data Path : D:\MassHunter\GCMS\1\data\060215\
Data File : 17M012483.D
Acq On : 02 Jun 2015 23:28
Operator : ADC
Sample : L15051620-09 A MSD 826-LOW
Misc : 1,1 STD70797
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Jun 02 23:40:12 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	215627	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	162753	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.313	152	89963	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.206	111	58998	26.0626 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.250%		
32) 1,2-Dichloroethane-d4	4.840	65	52983	27.0480 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 108.192%		
44) Toluene-d8	6.734	98	222746	25.7774 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.110%		
63) p-Bromofluorobenzene	8.734	95	79141	25.4714 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.886%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.041	85	42886	17.7385 ug/L	98
3) Chloromethane	1.151	50	47299	17.8899 ug/L	100
4) Vinyl Chloride	1.201	62	49522	17.7651 ug/L	99
5) 1,3-Butadiene	1.215	54	577	0.3925 ug/L	95
6) Bromomethane	1.389	94	28031	17.0325 ug/L	100
7) Chloroethane	1.458	64	24703	18.4165 ug/L	99
8) Trichlorofluoromethane	1.545	101	57111	17.0472 ug/L	100
9) Diethyl ether	1.756	59	157650	112.7917 ug/L	100
10) 1,1-Dichloroethene	1.878	61	54274	16.2516 ug/L	100
11) Carbon Disulfide	1.893	76	66019	10.6805 ug/L	99
12) 1,1,2-Trichloro-1,2,2-...	1.910	101	34802	15.5338 ug/L	99
14) Methylene Chloride	2.304	84	45064	18.9740 ug/L	100
15) Acetone	2.359	43	7766	22.8728 ug/L	99
16) trans-1,2-Dichloroethene	2.437	96	41895	18.5160 ug/L	99
17) Methyl Tert Butyl Ether	2.547	73	111632	22.5109 ug/L	100
18) 1,1-Dichloroethane	2.999	63	77014	18.5970 ug/L	100
19) Acrylonitrile	3.056	53	9689	20.6593 ug/L	99
21) cis-1,2-Dichloroethene	3.595	96	91991	36.8052 ug/L	100
22) 2,2-Dichloropropane	3.725	77	54136	17.0816 ug/L	98
23) Cyclohexane	3.824	56	58991	16.2873 ug/L #	73
24) Bromochloromethane	3.838	130	30482	19.9313 ug/L	99
25) Chloroform	3.966	83	78674	19.7969 ug/L	100
26) Carbon Tetrachloride	4.110	117	56707	17.7396 ug/L	99
28) 1,1,1-Trichloroethane	4.209	97	65558	18.0620 ug/L	99
29) 1,1-Dichloropropene	4.377	75	53308	17.3772 ug/L	100
30) 2-Butanone	4.397	43	12096	21.9980 ug/L	89
31) Benzene	4.675	78	175244	18.3635 ug/L	100
33) 1,2-Dichloroethane	4.918	62	53867	21.3356 ug/L	100
34) Trichloroethene	5.347	130	508027	179.3716 ug/L	100
35) Dibromomethane	5.766	93	25554	21.6413 ug/L	99
36) 1,2-Dichloropropane	5.874	63	48088	19.2506 ug/L	98
37) Bromodichloromethane	5.960	83	57783	19.3121 ug/L	100
38) 1,4-Dioxane	6.172	88	1514	106.5664 ug/L	95
39) 2-Chloroethyl Vinyl Ether	6.566	63	266	0.2423 ug/L #	43
40) cis-1,3-Dichloropropene	6.566	75	69299	19.8665 ug/L	100
41) 4-Methyl-2-Pentanone	7.831	58	10083	20.4153 ug/L	100
42) trans-1,3-Dichloropropene	7.165	75	55999	20.5803 ug/L	100
45) Toluene	6.777	91	196698	18.5959 ug/L	100
46) Tetrachloroethene	7.107	166	51679	17.5182 ug/L	99
47) 1,1,2-Trichloroethane	7.295	97	36091	20.3162 ug/L	100
48) Dibromochloromethane	7.434	129	46701	20.1158 ug/L	100
49) 1,3-Dichloropropane	7.515	76	58596	20.4544 ug/L	99
50) 1,2-Dibromoethane	7.602	107	35953	20.7207 ug/L	99
51) 2-Hexanone	7.831	43	18973	21.5841 ug/L	99

Data Path : D:\MassHunter\GCMS\1\data\060215\
Data File : 17M012483.D
Acq On : 02 Jun 2015 23:28
Operator : ADC
Sample : L15051620-09 A MSD 826-LOW
Misc : 1,1 STD70797
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Jun 02 23:40:12 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
52) Chlorobenzene	8.002	112	123939	17.6225 ug/L	99
53) 1-Chlorohexane	8.013	69	10857	17.6788 ug/L	84
54) Ethylbenzene	8.036	106	70039	18.6191 ug/L	97
55) 1,1,1,2-Tetrachloroethane	8.054	131	48498	19.4185 ug/L	99
56) m-,p-Xylene	8.138	106	165300	36.7429 ug/L	99
57) o-Xylene	8.398	106	78491	17.6608 ug/L	100
58) Styrene	8.430	104	136525	19.2589 ug/L	100
59) Bromoform	8.433	173	34228	23.2719 ug/L	99
60) Isopropylbenzene	8.587	105	199686	17.2675 ug/L	100
62) 1,3,5-Trimethylbenzene	8.925	105	193540	18.6606 ug/L	100
64) Bromobenzene	8.786	156	60008	18.4350 ug/L	99
65) n-Propylbenzene	8.815	91	228260	16.7739 ug/L	99
66) 1,1,2,2-Tetrachloroethane	8.856	83	44387	21.8974 ug/L	99
67) 2-Chlorotoluene	8.891	91	141890	16.9369 ug/L	100
68) 1,2,3-Trichloropropane	8.922	110	11407	21.5138 ug/L	99
69) 1,2,4-Trimethylbenzene	9.122	105	194897	18.8386 ug/L	100
70) 4-Chlorotoluene	8.980	91	143557	17.0087 ug/L	99
71) tert-Butylbenzene	9.085	134	32825	16.9189 ug/L	99
72) sec-Butylbenzene	9.174	105	214291	16.5238 ug/L	99
73) p-Isopropyltoluene	9.250	119	185450	16.7611 ug/L	99
74) 1,3-Dichlorobenzene	9.276	146	103525	16.7917 ug/L	100
75) 1,4-Dichlorobenzene	9.322	146	113398	18.3433 ug/L	99
76) n-Butylbenzene	9.452	91	171155	17.7062 ug/L	99
77) 1,2-Dichlorobenzene	9.525	146	101875	17.5547 ug/L	100
78) 1,2-Dibromo-3-Chloropr...	9.898	75	7635	22.1677 ug/L	98
79) Hexachlorobutadiene	10.193	225	43809	15.8317 ug/L	99
80) 1,2,4-Trichlorobenzene	10.208	180	83646	18.5841 ug/L	99
81) Naphthalene	10.359	128	154504	20.3203 ug/L	99
82) 1,2,3-Trichlorobenzene	10.442	180	79738	19.3165 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060215\
Data File : 17M012483.D
Acq On : 02 Jun 2015 23:28
Operator : ADC
Sample : L15051620-09 A MSD 826-LOW
Misc : 1,1 STD70797
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Jun 02 23:40:12 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

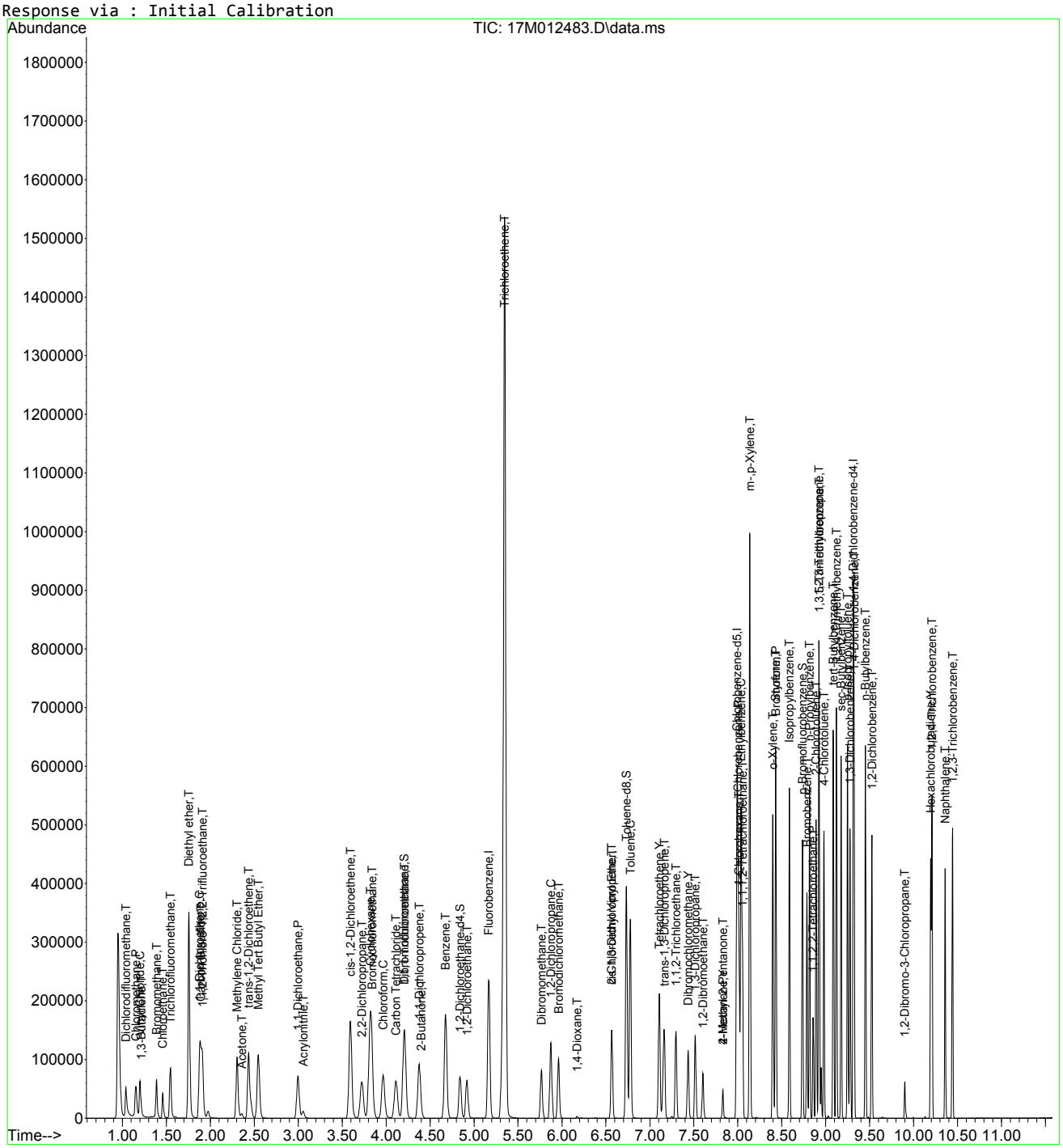

826_VMS.M Tue Jun 02 23:40:13 2015 Page: 3

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060115\
Data File : 17M012440.D
Acq On : 01 Jun 2015 23:19
Operator : ADC
Sample : L15051620-10 A 826-LOW
Misc : 1,1
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Jun 02 09:21:00 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	233140	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	172147	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.313	152	86841	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.206	111	63829	26.0787 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.315%		
32) 1,2-Dichloroethane-d4	4.840	65	56354	26.6078 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 106.431%		
44) Toluene-d8	6.734	98	242294	26.5095 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 106.038%		
63) p-Bromofluorobenzene	8.734	95	83044	27.6885 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 110.754%		
Target Compounds					Qvalue
3) Chloromethane	1.169	50	1370	0.4793 ug/L #	42
11) Carbon Disulfide	1.896	76	9206	1.3775 ug/L #	90
15) Acetone	2.356	43	643	1.7515 ug/L #	43
34) Trichloroethene	5.350	130	1680	0.5486 ug/L	90

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\060115\
Data File : 17M012440.D
Acq On : 01 Jun 2015 23:19
Operator : ADC
Sample : L15051620-10 A 826-LOW
Misc : 1,1
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Jun 02 09:21:00 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

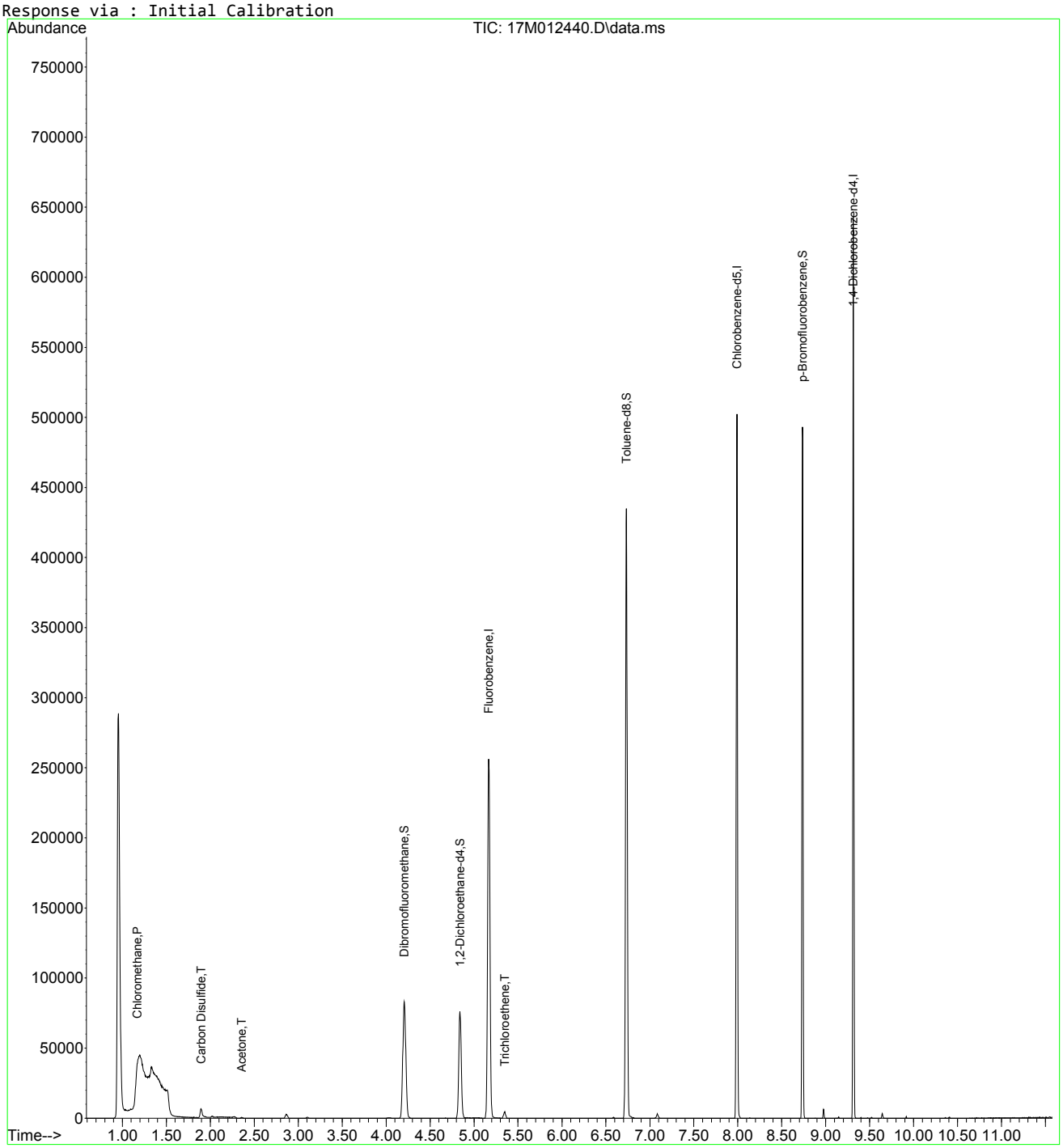

826_VMS.M Tue Jun 02 09:21:00 2015 Page: 2

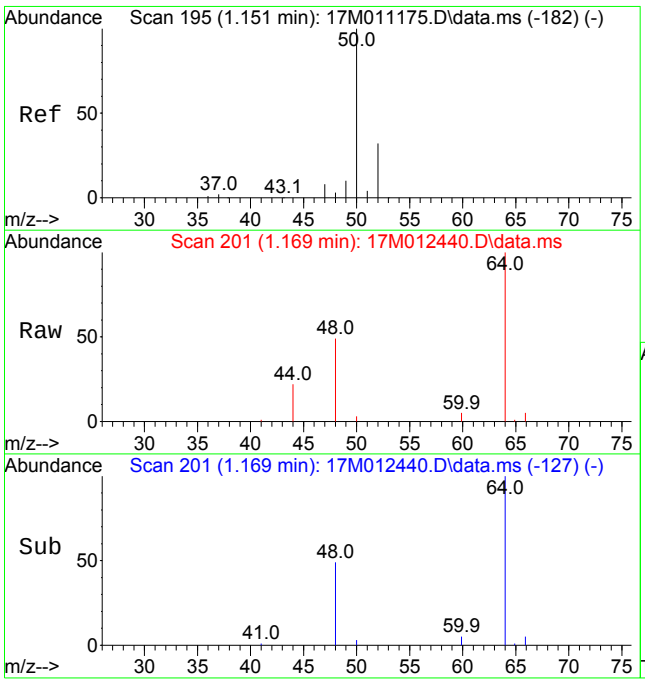

#3
Chloromethane
Concen: 0.4793 ug/L
RT: 1.169 min Scan# 201
Delta R.T. 0.015 min
Lab File: 17M012440.D
Acq: 01 Jun 2015 23:19

Tgt Ion: 50 Resp: 1370

Ion	Ratio	Lower	Upper
50	100		
52	0.0	19.6	45.6#

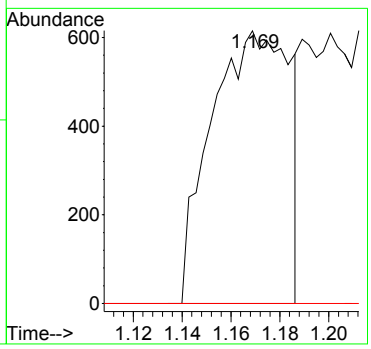

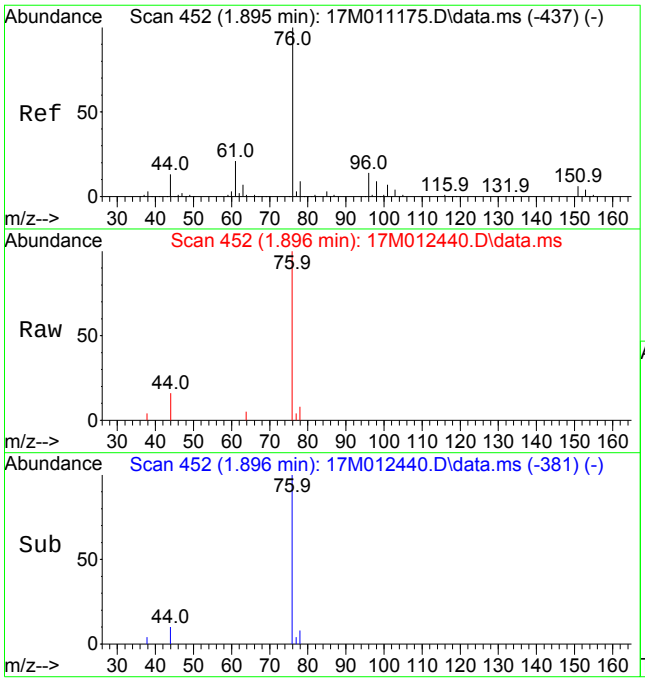

#11
Carbon Disulfide
Concen: 1.3775 ug/L
RT: 1.896 min Scan# 452
Delta R.T. 0.006 min
Lab File: 17M012440.D
Acq: 01 Jun 2015 23:19

Tgt Ion: 76 Resp: 9206

Ion	Ratio	Lower	Upper
76	100		
78	6.4	8.0	12.0#

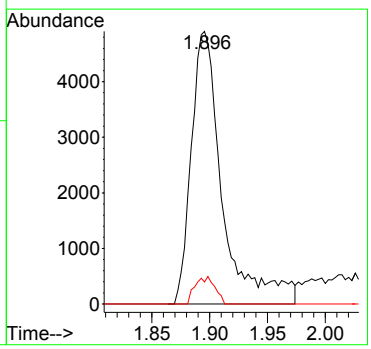

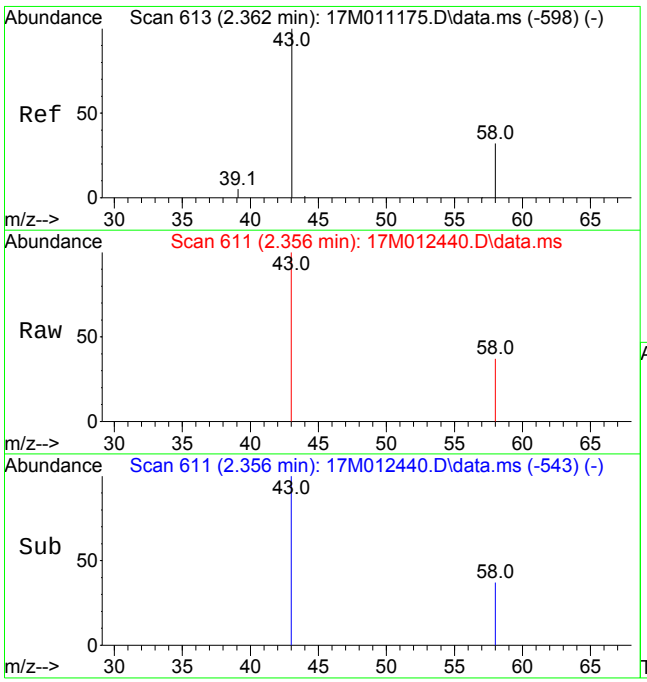

#15
Acetone
Concen: 1.7515 ug/L
RT: 2.356 min Scan# 611
Delta R.T. -0.003 min
Lab File: 17M012440.D
Acq: 01 Jun 2015 23:19

Tgt Ion: 43 Resp: 643

Ion	Ratio	Lower	Upper
43	100		
58	0.0	19.0	44.4#

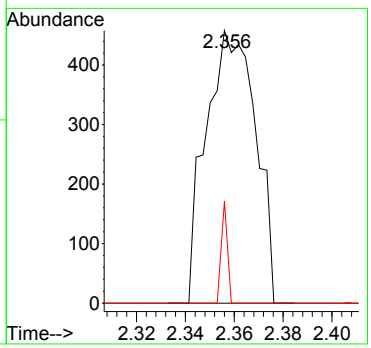

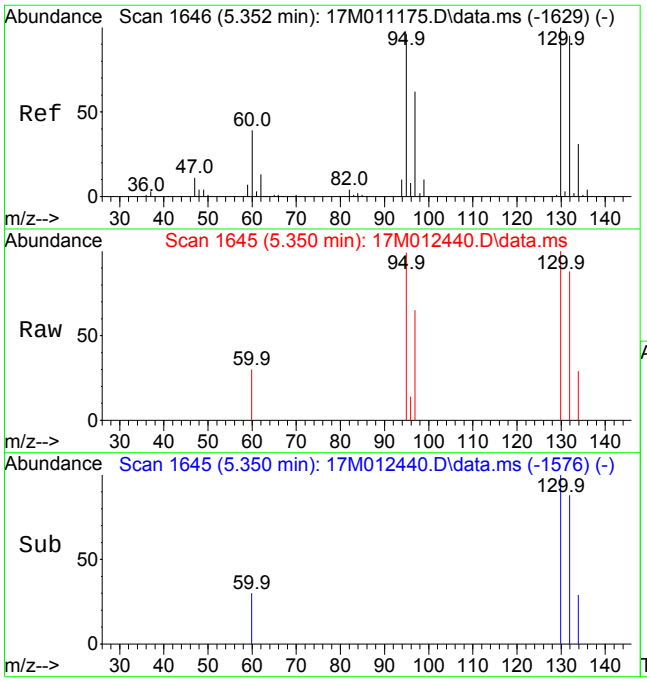

#34
Trichloroethene
Concen: 0.5486 ug/L
RT: 5.350 min Scan# 1645
Delta R.T. -0.000 min
Lab File: 17M012440.D
Acq: 01 Jun 2015 23:19

Tgt Ion:130 Resp: 1680

Ion	Ratio	Lower	Upper
130	100		
60	31.5	22.4	52.2

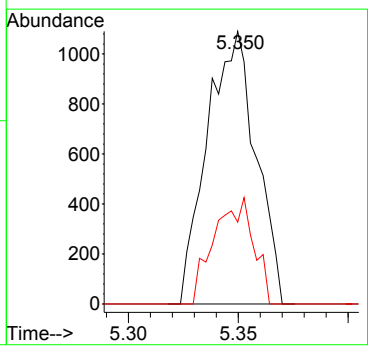

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060115\
Data File : 17M012441.D
Acq On : 01 Jun 2015 23:39
Operator : ADC
Sample : L15051620-11 A 826-LOW
Misc : 1,1
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Jun 02 09:21:03 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	225044	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	168334	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.313	152	88576	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.209	111	60927	25.7885 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.154%		
32) 1,2-Dichloroethane-d4	4.840	65	56935	27.8493 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.397%		
44) Toluene-d8	6.734	98	231078	25.8550 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.420%		
63) p-Bromofluorobenzene	8.734	95	81398	26.6081 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 106.432%		
Target Compounds					Qvalue
11) Carbon Disulfide	1.896	76	953	0.1477 ug/L #	73
15) Acetone	2.365	43	859	2.4241 ug/L #	67
21) cis-1,2-Dichloroethene	3.598	96	1849	0.7088 ug/L	99
34) Trichloroethene	5.347	130	510	0.1725 ug/L #	38

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\060115\
Data File : 17M012441.D
Acq On : 01 Jun 2015 23:39
Operator : ADC
Sample : L15051620-11 A 826-LOW
Misc : 1,1
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Jun 02 09:21:03 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

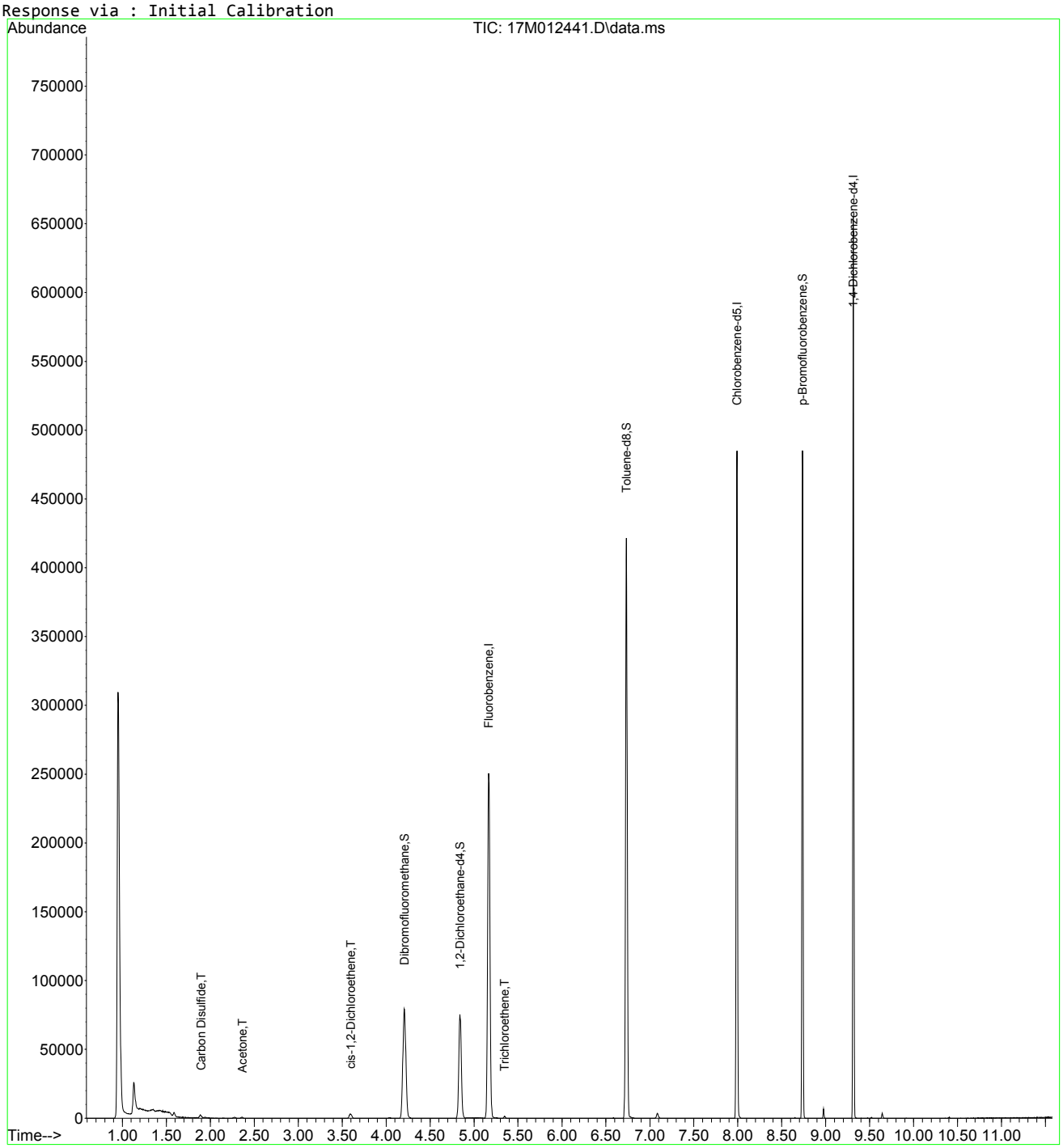

826_VMS.M Tue Jun 02 09:21:03 2015 Page: 2

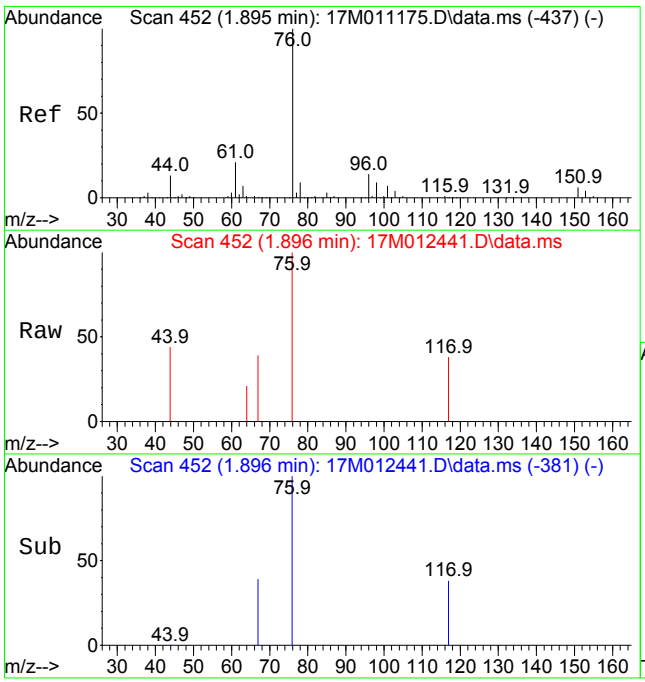

#11
Carbon Disulfide
Concen: 0.1477 ug/L
RT: 1.896 min Scan# 452
Delta R.T. 0.006 min
Lab File: 17M012441.D
Acq: 01 Jun 2015 23:39

Tgt Ion: 76 Resp: 953

Ion	Ratio	Lower	Upper
76	100		
78	0.0	8.0	12.0#

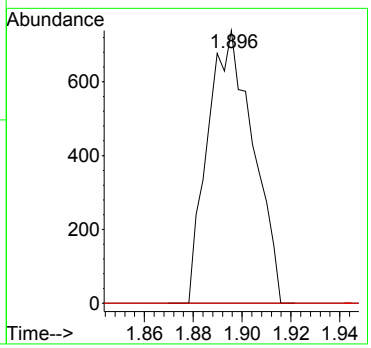

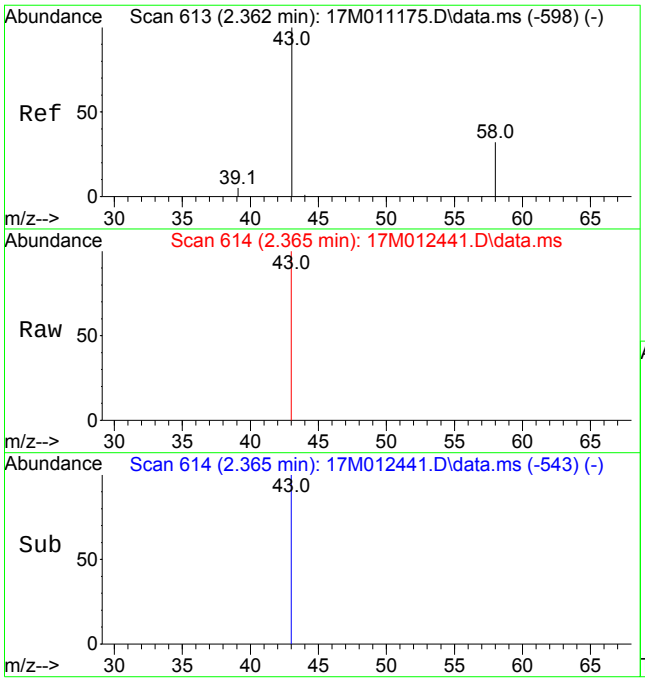

#15
Acetone
Concen: 2.4241 ug/L
RT: 2.365 min Scan# 614
Delta R.T. 0.006 min
Lab File: 17M012441.D
Acq: 01 Jun 2015 23:39

Tgt Ion: 43 Resp: 859

Ion	Ratio	Lower	Upper
43	100		
58	13.3	19.0	44.4#

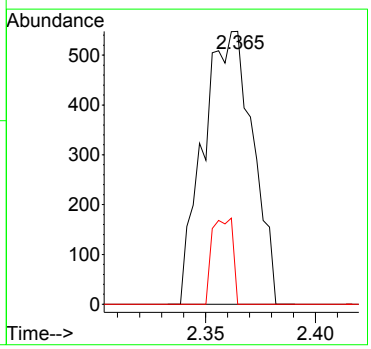

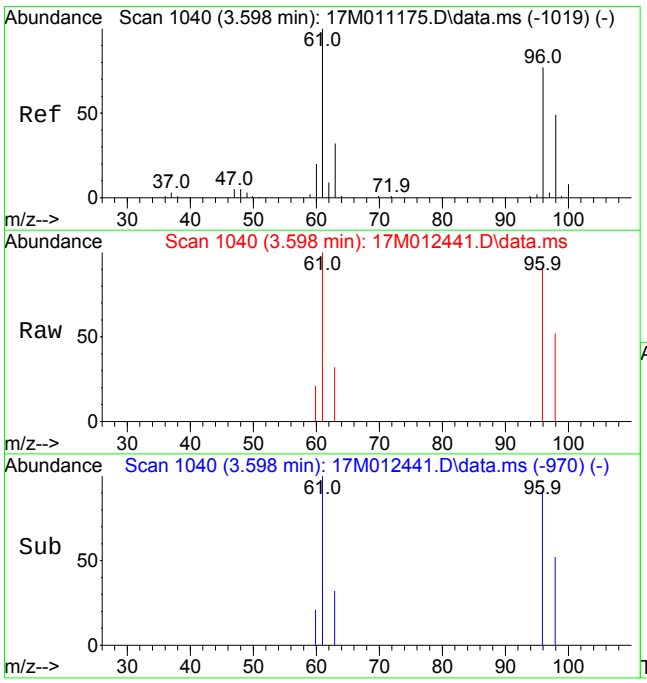

#21
cis-1,2-Dichloroethene
Concen: 0.7088 ug/L
RT: 3.598 min Scan# 1040
Delta R.T. 0.003 min
Lab File: 17M012441.D
Acq: 01 Jun 2015 23:39

Tgt Ion: 96 Resp: 1849

Ion	Ratio	Lower	Upper
96	100		
61	124.7	101.0	151.4

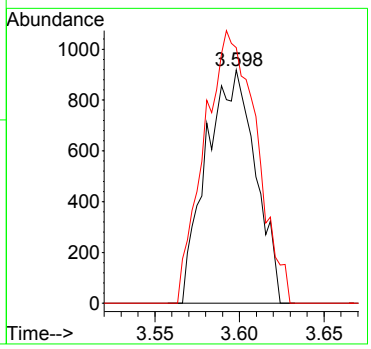

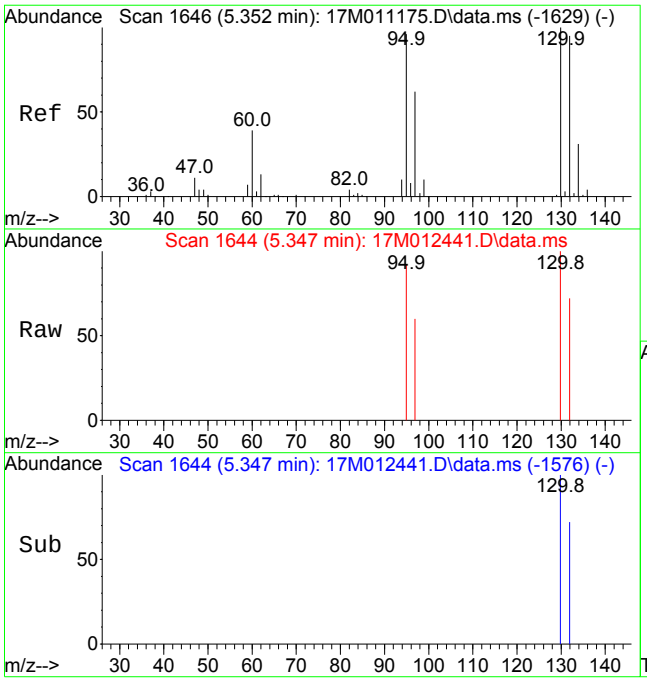

#34
Trichloroethene
Concen: 0.1725 ug/L
RT: 5.347 min Scan# 1644
Delta R.T. -0.003 min
Lab File: 17M012441.D
Acq: 01 Jun 2015 23:39

Tgt Ion:130 Resp: 510

Ion	Ratio	Lower	Upper
130	100		
60	0.0	22.4	52.2#

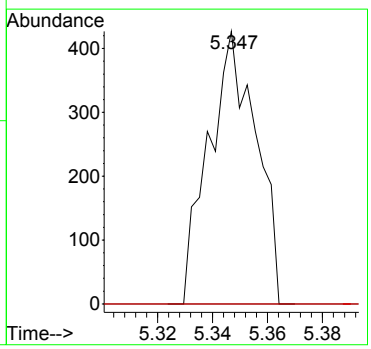

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060115\
Data File : 17M012442.D
Acq On : 01 Jun 2015 23:58
Operator : ADC
Sample : L15051620-12 A 826-LOW
Misc : 1,1
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Jun 02 09:21:06 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	226346	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	169630	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.313	152	86780	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.203	111	61453	25.8615 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.446%		
32) 1,2-Dichloroethane-d4	4.840	65	56106	27.2859 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 109.144%		
44) Toluene-d8	6.734	98	235074	26.1011 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.404%		
63) p-Bromofluorobenzene	8.734	95	82553	27.5441 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 110.176%		
Target Compounds					Qvalue
3) Chloromethane	1.140	50	496	0.1787 ug/L #	42
4) Vinyl Chloride	1.201	62	5593	1.9114 ug/L	94
15) Acetone	2.353	43	416	1.1672 ug/L #	43
21) cis-1,2-Dichloroethene	3.592	96	28450	10.8437 ug/L	100
34) Trichloroethene	5.350	130	38754	13.0351 ug/L	100
46) Tetrachloroethene	7.107	166	9094	2.9577 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060115\
Data File : 17M012442.D
Acq On : 01 Jun 2015 23:58
Operator : ADC
Sample : L15051620-12 A 826-LOW
Misc : 1,1
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Jun 02 09:21:06 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

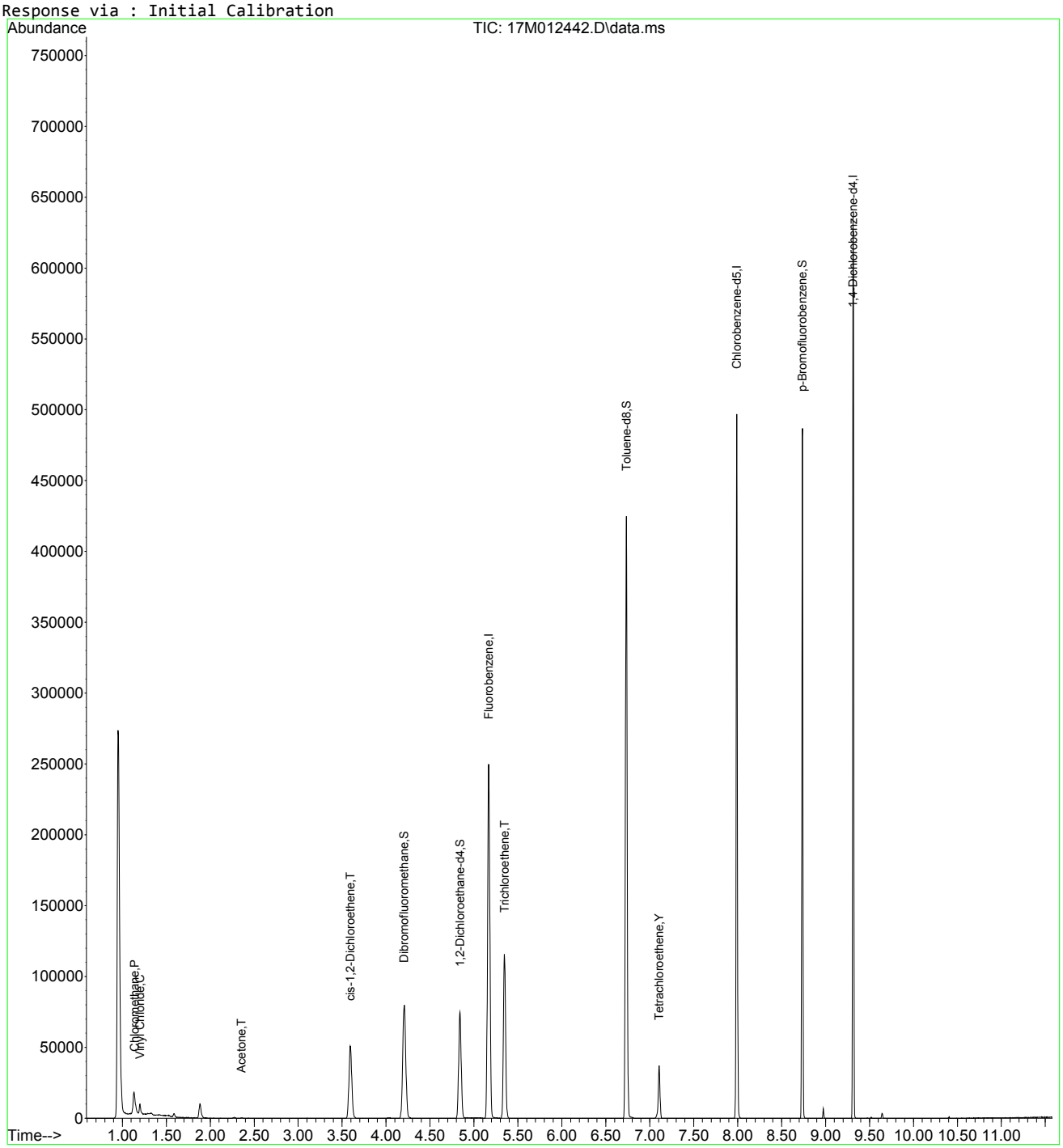

826_VMS.M Tue Jun 02 09:21:06 2015 Page: 2

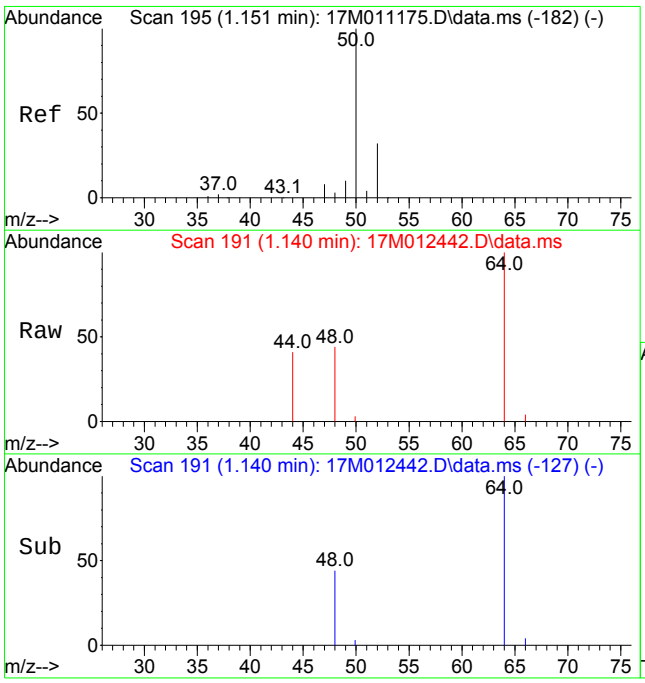

#3
Chloromethane
Concen: 0.1787 ug/L
RT: 1.140 min Scan# 191
Delta R.T. -0.014 min
Lab File: 17M012442.D
Acq: 01 Jun 2015 23:58

Tgt Ion: 50 Resp: 496

Ion	Ratio	Lower	Upper
50	100		
52	0.0	19.6	45.6#

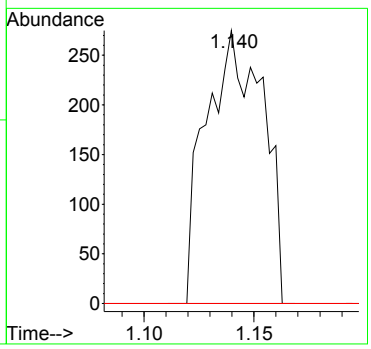

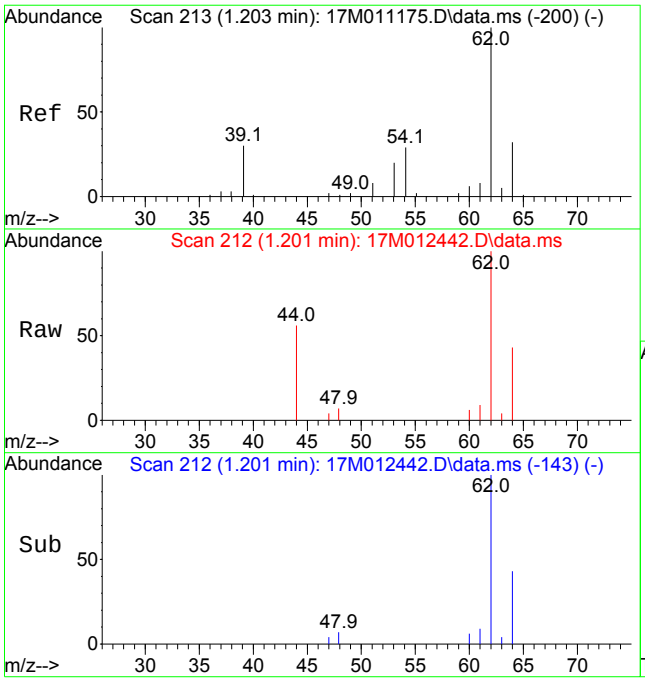

#4
Vinyl Chloride
Concen: 1.9114 ug/L
RT: 1.201 min Scan# 212
Delta R.T. -0.000 min
Lab File: 17M012442.D
Acq: 01 Jun 2015 23:58

Tgt Ion: 62 Resp: 5593

Ion	Ratio	Lower	Upper
62	100		
64	28.5	19.1	44.7

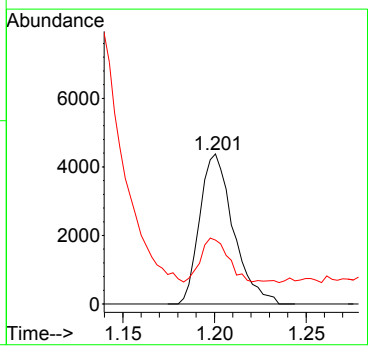

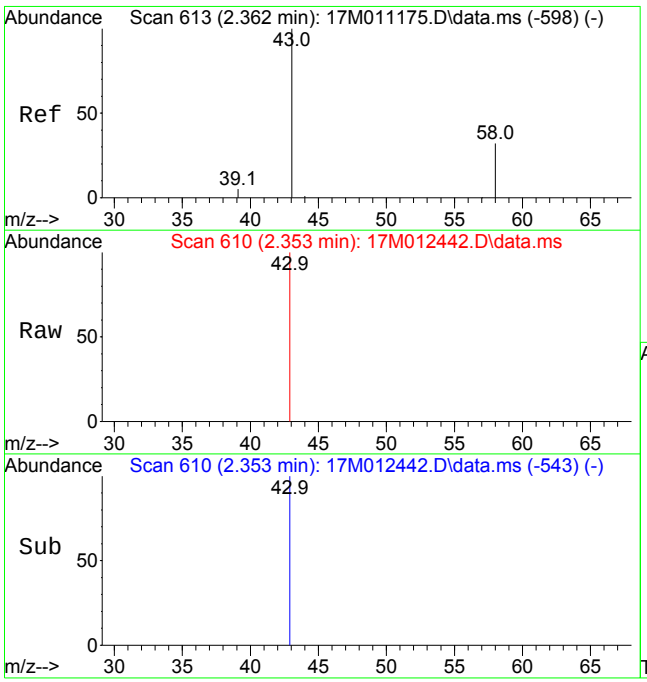

#15
Acetone
Concen: 1.1672 ug/L
RT: 2.353 min Scan# 610
Delta R.T. -0.006 min
Lab File: 17M012442.D
Acq: 01 Jun 2015 23:58

Tgt Ion: 43 Resp: 416

Ion	Ratio	Lower	Upper
43	100		
58	0.0	19.0	44.4#

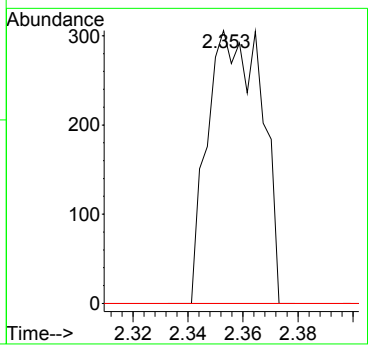

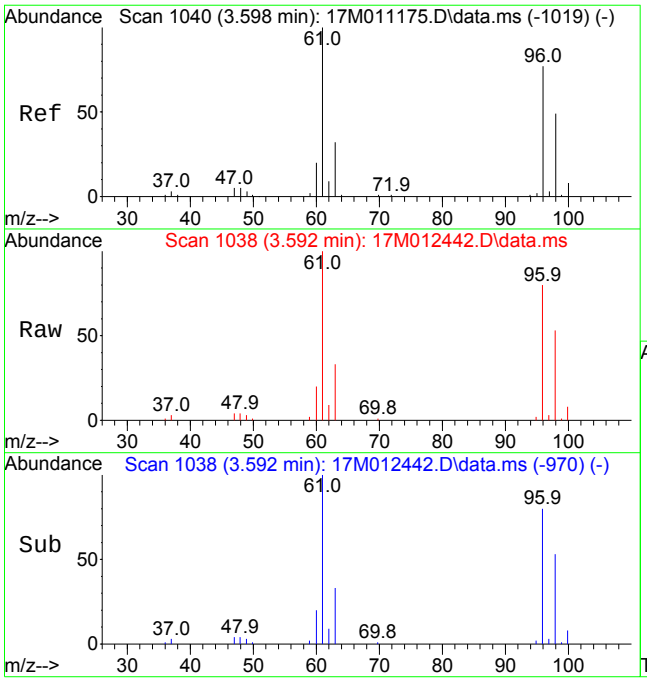

#21
cis-1,2-Dichloroethene
Concen: 10.8437 ug/L
RT: 3.592 min Scan# 1038
Delta R.T. -0.003 min
Lab File: 17M012442.D
Acq: 01 Jun 2015 23:58

Tgt Ion: 96 Resp: 28450

Ion	Ratio	Lower	Upper
96	100		
61	126.0	101.0	151.4

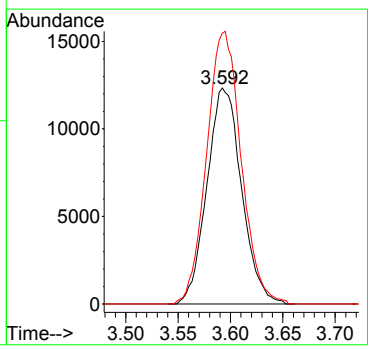

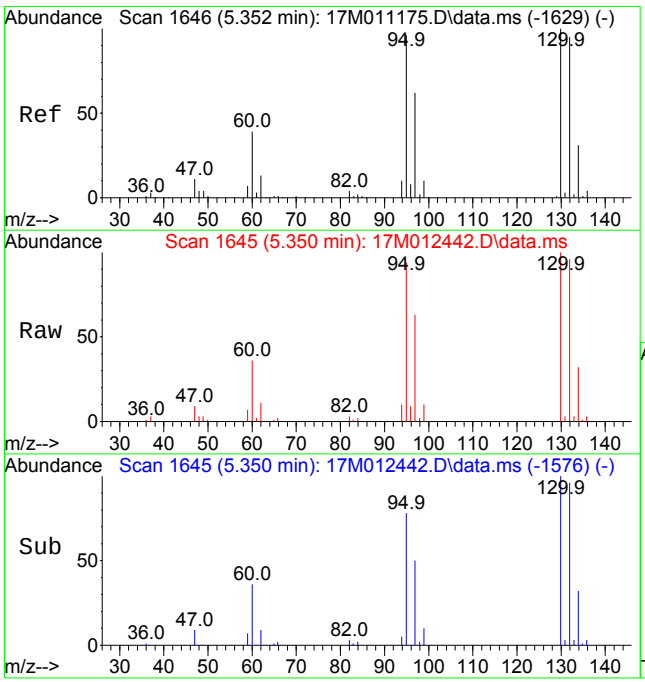

#34
Trichloroethene
Concen: 13.0351 ug/L
RT: 5.350 min Scan# 1645
Delta R.T. -0.000 min
Lab File: 17M012442.D
Acq: 01 Jun 2015 23:58

Tgt Ion:130 Resp: 38754

Ion	Ratio	Lower	Upper
130	100		
60	37.4	22.4	52.2

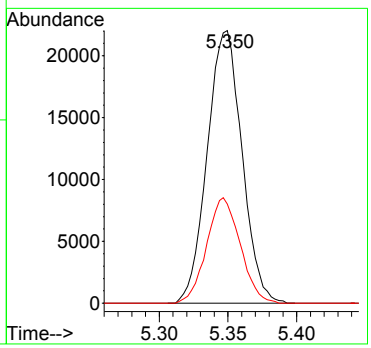

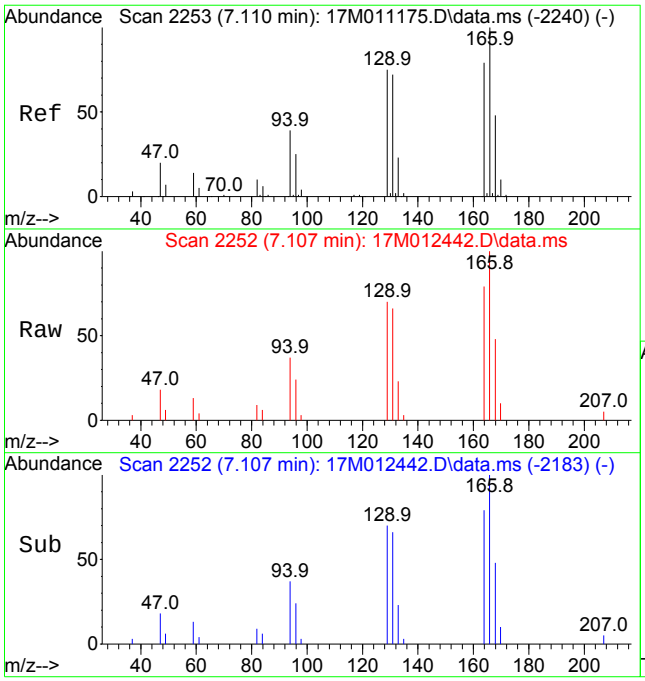

#46
Tetrachloroethene
Concen: 2.9577 ug/L
RT: 7.107 min Scan# 2252
Delta R.T. 0.000 min
Lab File: 17M012442.D
Acq: 01 Jun 2015 23:58

Tgt Ion:166 Resp: 9094

Ion	Ratio	Lower	Upper
166	100		
129	72.7	58.5	87.7
94	38.1	29.8	44.6

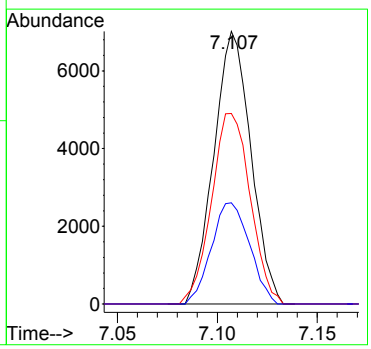

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060115\
Data File : 17M012443.D
Acq On : 02 Jun 2015 00:18
Operator : ADC
Sample : L15051620-13 A 826-LOW
Misc : 1,1
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Jun 02 09:21:09 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	221973	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	167036	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.313	152	87556	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.206	111	61257	26.2869 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 105.148%		
32) 1,2-Dichloroethane-d4	4.837	65	56667	28.1016 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.406%		
44) Toluene-d8	6.734	98	232578	26.2250 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.900%		
63) p-Bromofluorobenzene	8.737	95	81400	26.9187 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 107.675%		
Target Compounds					Qvalue
7) Chloroethane	1.421	64	2607	1.8880 ug/L #	48
15) Acetone	2.356	43	380	1.0872 ug/L #	43

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060115\
Data File : 17M012443.D
Acq On : 02 Jun 2015 00:18
Operator : ADC
Sample : L15051620-13 A 826-LOW
Misc : 1,1
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Jun 02 09:21:09 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

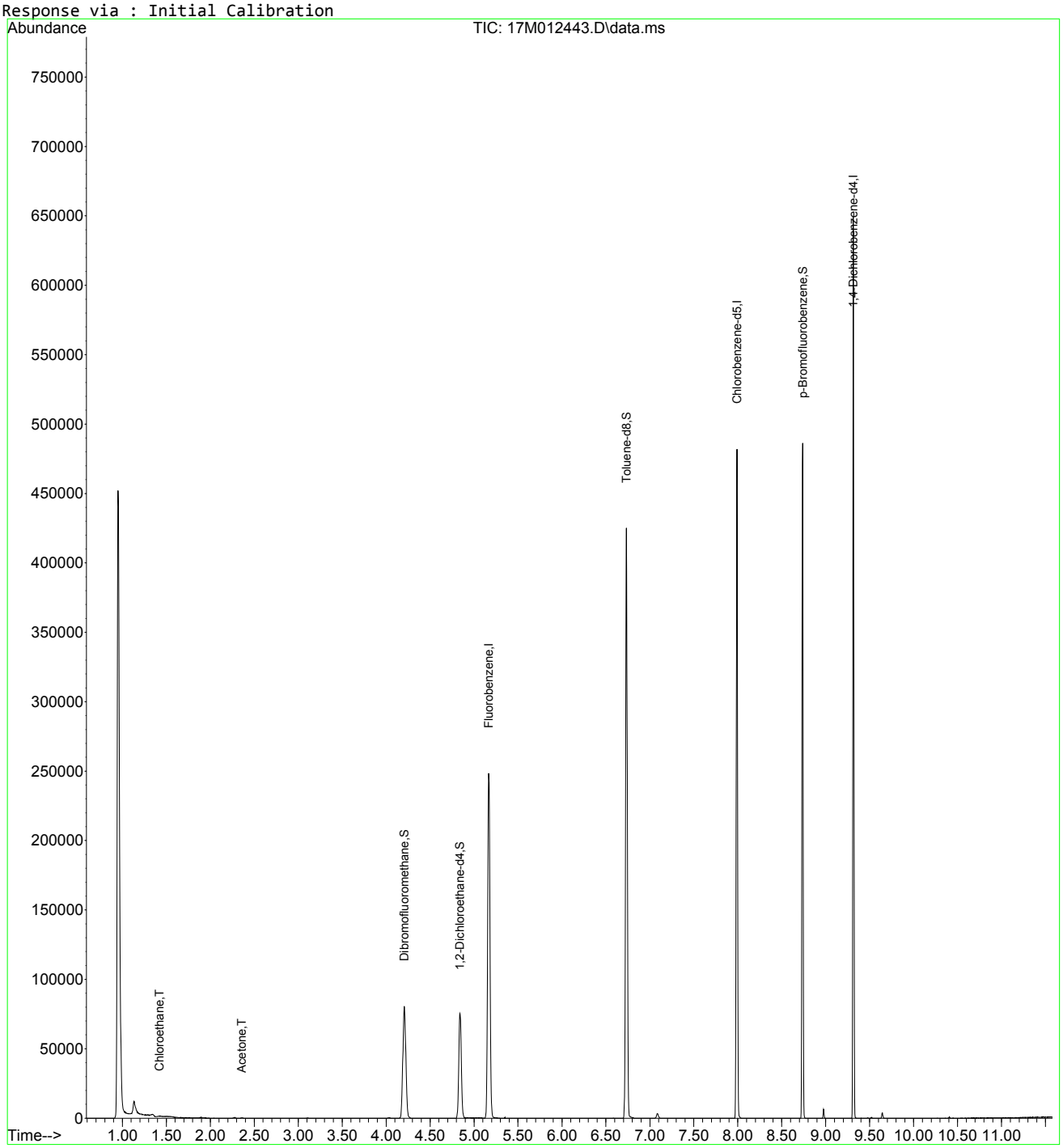

826_VMS.M Tue Jun 02 09:21:09 2015 Page: 2

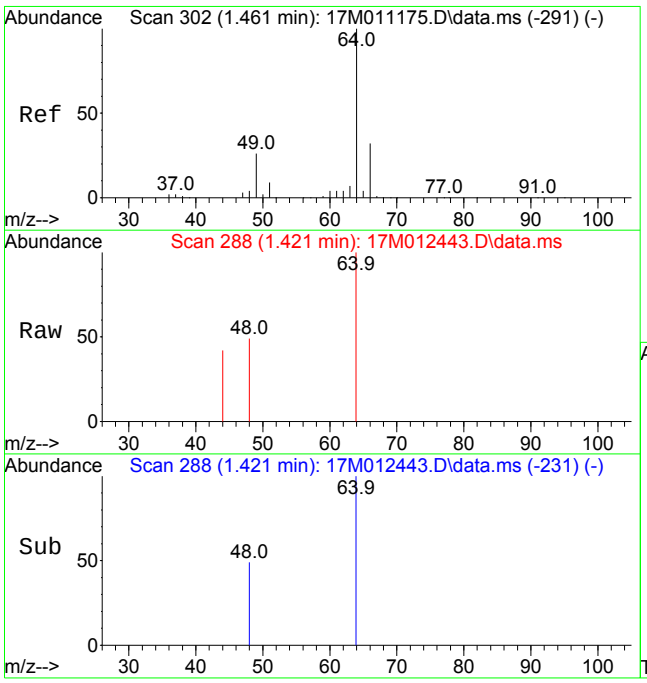

#7
Chloroethane
Concen: 1.8880 ug/L
RT: 1.421 min Scan# 288
Delta R.T. -0.034 min
Lab File: 17M012443.D
Acq: 02 Jun 2015 00:18

Tgt Ion: 64 Resp: 2607

Ion	Ratio	Lower	Upper
64	100		
49	0.0	16.2	37.8#

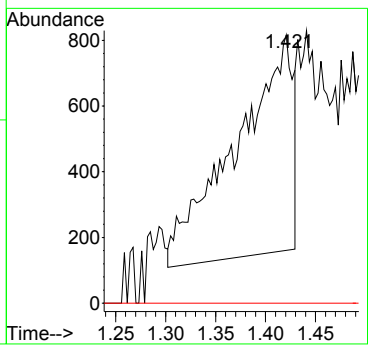

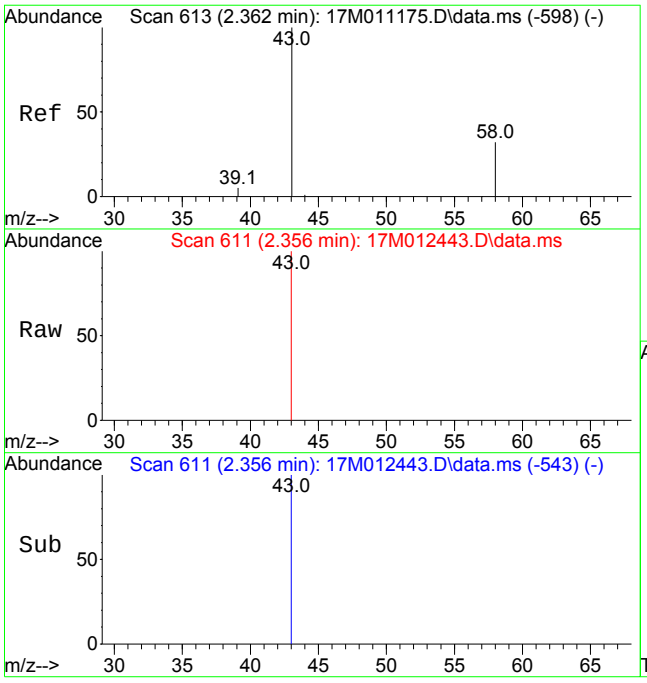

#15
Acetone
Concen: 1.0872 ug/L
RT: 2.356 min Scan# 611
Delta R.T. -0.003 min
Lab File: 17M012443.D
Acq: 02 Jun 2015 00:18

Tgt Ion: 43 Resp: 380

Ion	Ratio	Lower	Upper
43	100		
58	0.0	19.0	44.4#

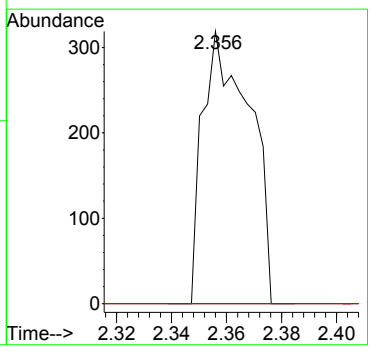

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060215\
Data File : 17M012476.D
Acq On : 02 Jun 2015 21:09
Operator : ADC
Sample : L15051620-14 B 826-LOW
Misc : 1,1
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Jun 03 10:55:04 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	217371	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	163464	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	85183	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.206	111	59160	25.9245 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.698%		
32) 1,2-Dichloroethane-d4	4.840	65	54819	27.7607 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.043%		
44) Toluene-d8	6.734	98	225333	25.9633 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.853%		
63) p-Bromofluorobenzene	8.737	95	78327	26.6240 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 106.496%		
Target Compounds					Qvalue
15) Acetone	2.359	43	701	2.0481 ug/L #	43
34) Trichloroethene	5.347	130	1277	0.4473 ug/L	91

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060215\
Data File : 17M012476.D
Acq On : 02 Jun 2015 21:09
Operator : ADC
Sample : L15051620-14 B 826-LOW
Misc : 1,1
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Jun 03 10:55:04 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

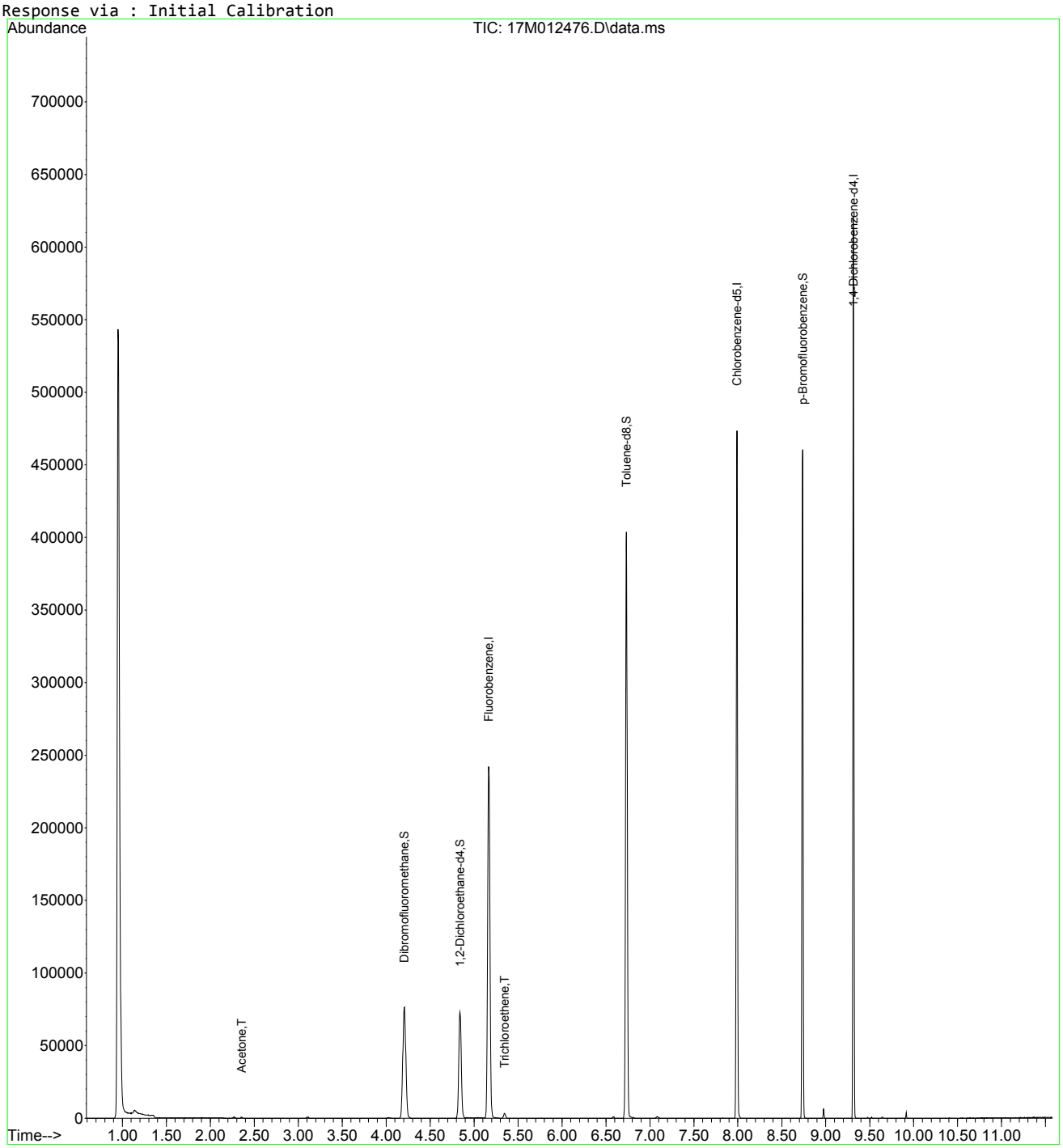

826_VMS.M Wed Jun 03 10:55:04 2015 Page: 2

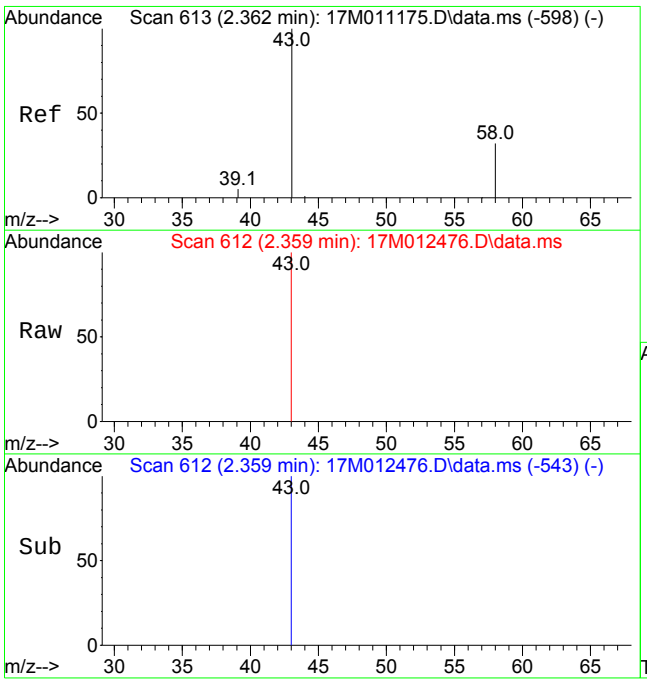

#15
Acetone
Concen: 2.0481 ug/L
RT: 2.359 min Scan# 612
Delta R.T. -0.000 min
Lab File: 17M012476.D
Acq: 02 Jun 2015 21:09

Tgt Ion: 43 Resp: 701

Ion	Ratio	Lower	Upper
43	100		
58	0.0	19.0	44.4#

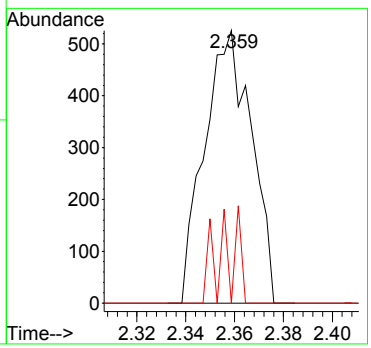

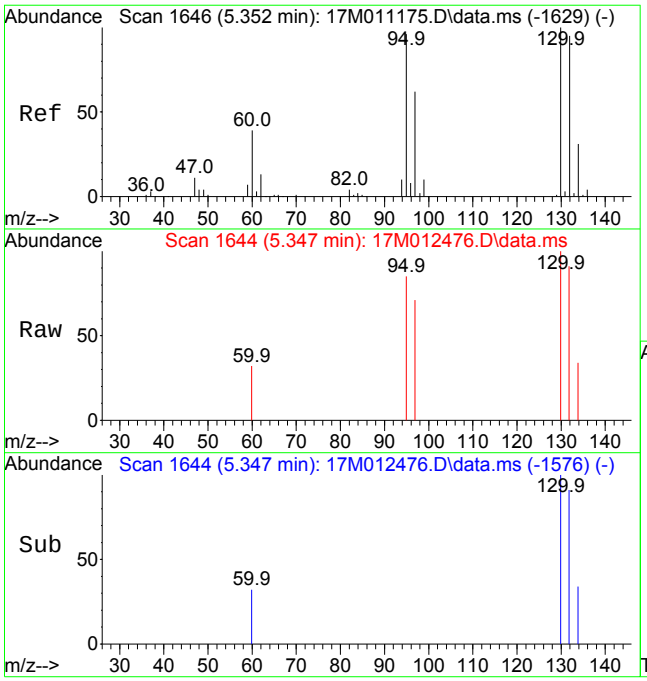

#34
Trichloroethene
Concen: 0.4473 ug/L
RT: 5.347 min Scan# 1644
Delta R.T. -0.003 min
Lab File: 17M012476.D
Acq: 02 Jun 2015 21:09

Tgt Ion:130 Resp: 1277

Ion	Ratio	Lower	Upper
130	100		
60	31.7	22.4	52.2

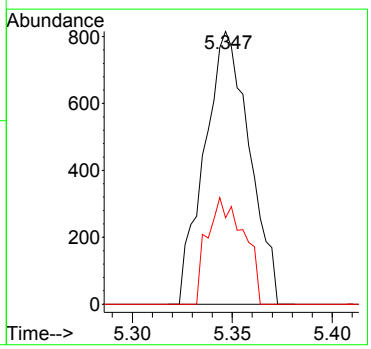

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060215\
Data File : 17M012477.D
Acq On : 02 Jun 2015 21:29
Operator : ADC
Sample : L15051620-15 A 826-LOW
Misc : 1,1
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Jun 03 10:55:07 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	216470	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	163402	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.313	152	86127	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.206	111	58374	25.6866 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.746%		
32) 1,2-Dichloroethane-d4	4.840	65	54700	27.8158 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.263%		
44) Toluene-d8	6.734	98	222349	25.6292 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.517%		
63) p-Bromofluorobenzene	8.734	95	77779	26.1480 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.592%		
Target Compounds					Qvalue
15) Acetone	2.356	43	581	1.7045 ug/L #	43
34) Trichloroethene	5.344	130	407	0.1431 ug/L #	38

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060215\
Data File : 17M012477.D
Acq On : 02 Jun 2015 21:29
Operator : ADC
Sample : L15051620-15 A 826-LOW
Misc : 1,1
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Jun 03 10:55:07 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

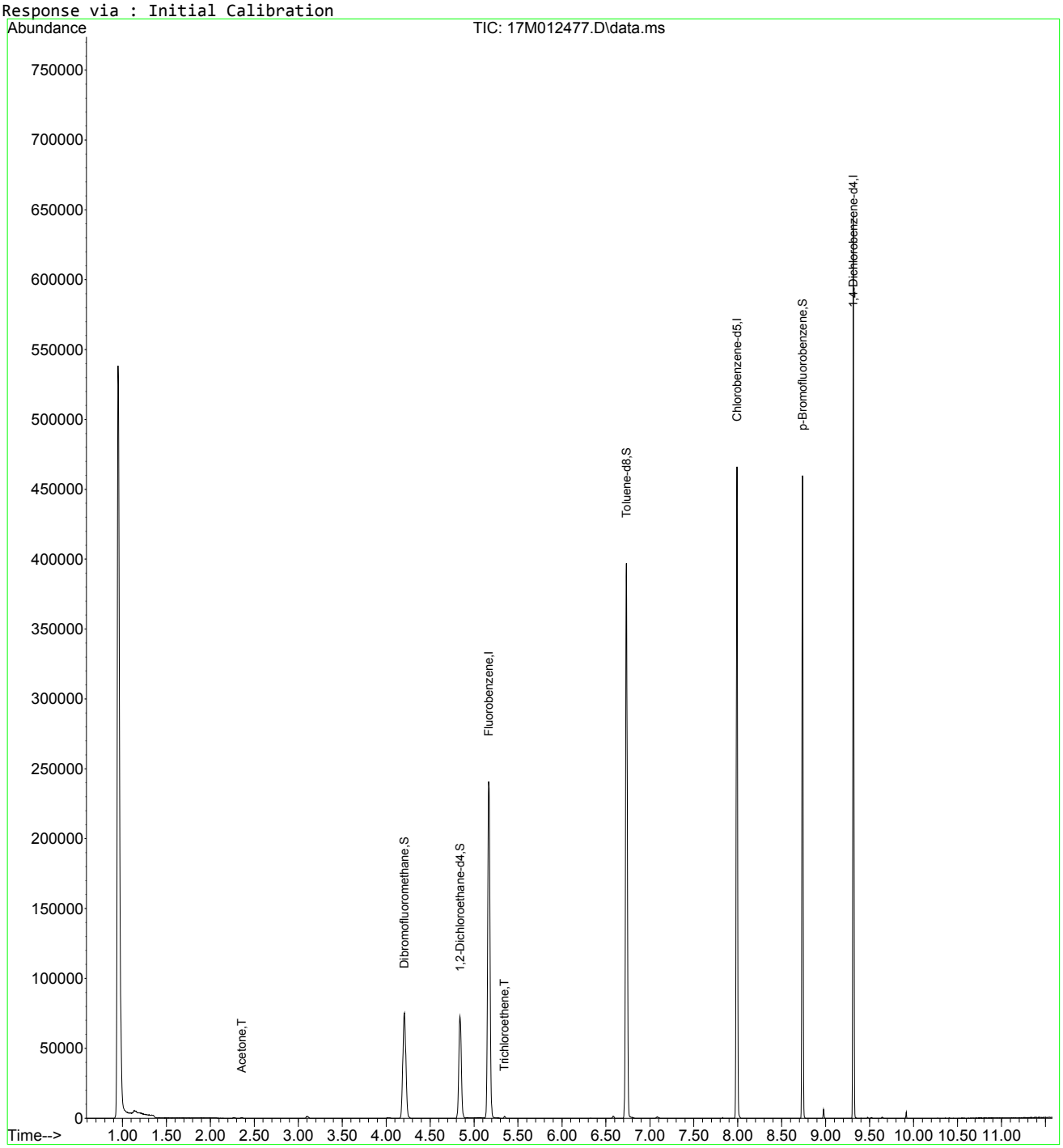

826_VMS.M Wed Jun 03 10:55:07 2015 Page: 2

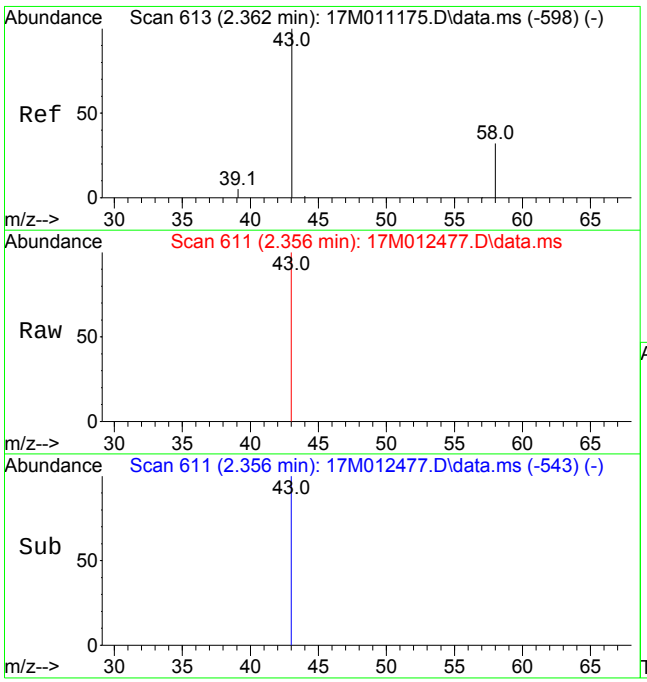

#15
Acetone
Concen: 1.7045 ug/L
RT: 2.356 min Scan# 611
Delta R.T. -0.003 min
Lab File: 17M012477.D
Acq: 02 Jun 2015 21:29

Tgt Ion: 43 Resp: 581

Ion	Ratio	Lower	Upper
43	100		
58	0.0	19.0	44.4#

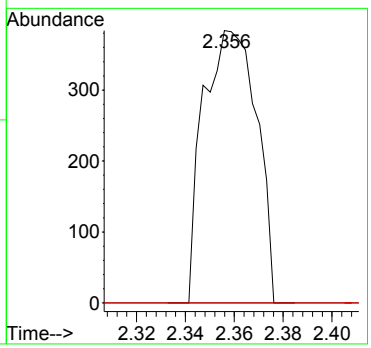

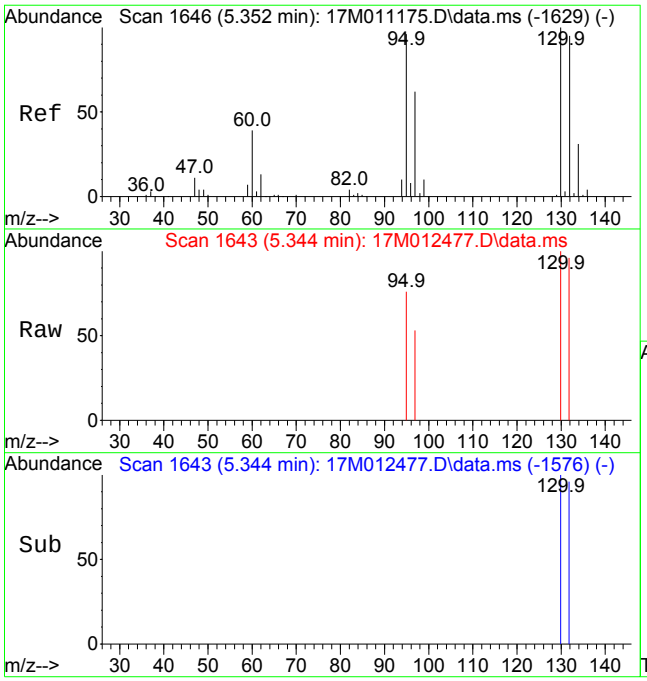

#34
Trichloroethene
Concen: 0.1431 ug/L
RT: 5.344 min Scan# 1643
Delta R.T. -0.006 min
Lab File: 17M012477.D
Acq: 02 Jun 2015 21:29

Tgt Ion:130 Resp: 407

Ion	Ratio	Lower	Upper
130	100		
60	0.0	22.4	52.2#

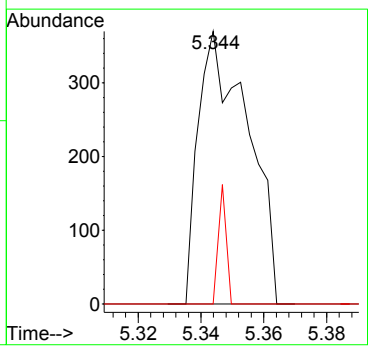

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060215\
Data File : 17M012478.D
Acq On : 02 Jun 2015 21:49
Operator : ADC
Sample : L15051620-16 A 826-LOW
Misc : 1,1
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Jun 03 10:55:10 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	211951	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	160380	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.313	152	85068	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.209	111	57907	26.0243 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.097%		
32) 1,2-Dichloroethane-d4	4.843	65	54502	28.3060 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 113.224%		
44) Toluene-d8	6.734	98	223119	26.2026 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.810%		
63) p-Bromofluorobenzene	8.734	95	77739	26.4599 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.840%		
Target Compounds					Qvalue
15) Acetone	2.356	43	481	1.4412 ug/L #	43

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060215\
Data File : 17M012478.D
Acq On : 02 Jun 2015 21:49
Operator : ADC
Sample : L15051620-16 A 826-LOW
Misc : 1,1
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Jun 03 10:55:10 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

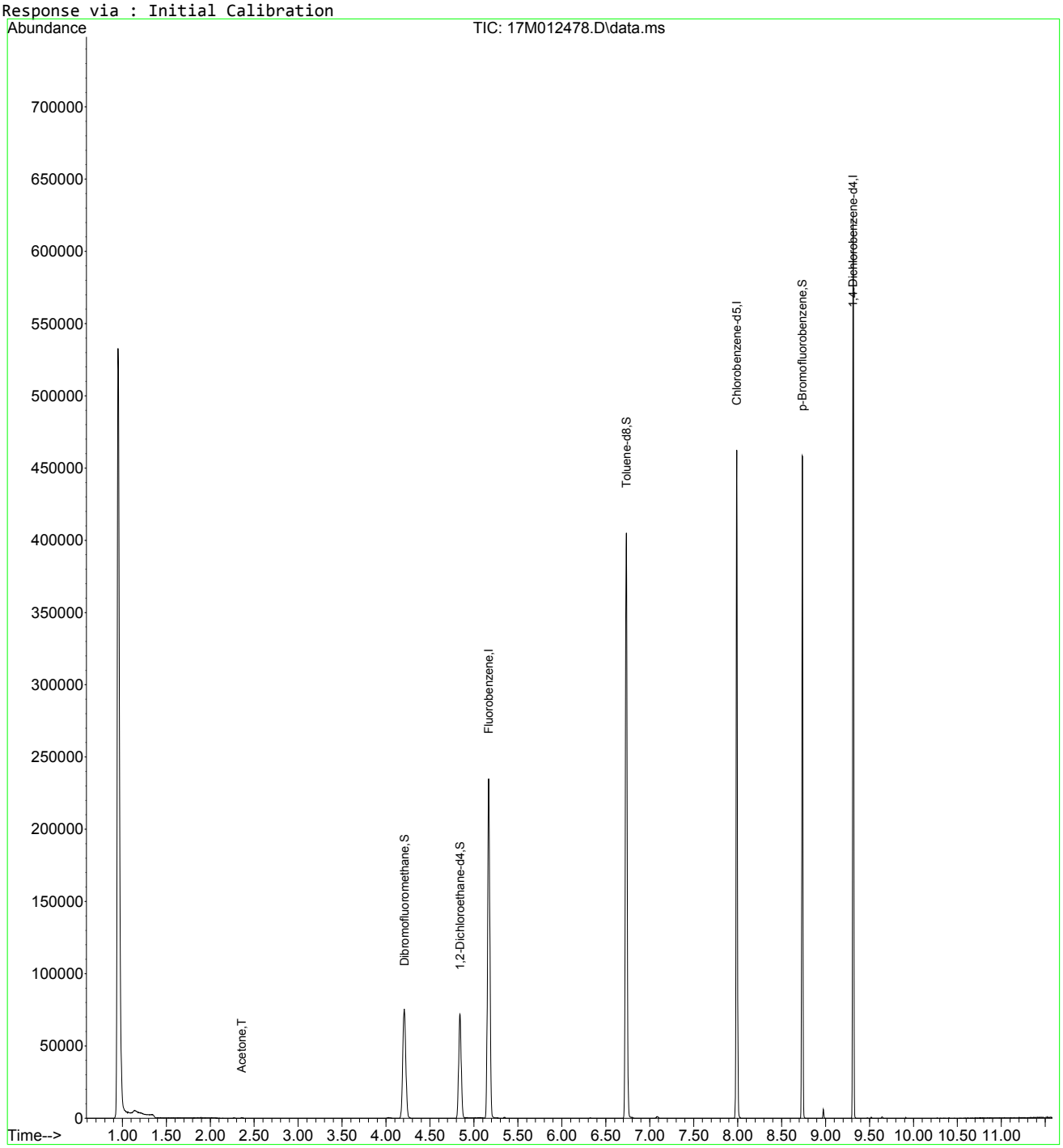

826_VMS.M Wed Jun 03 10:55:10 2015 Page: 2

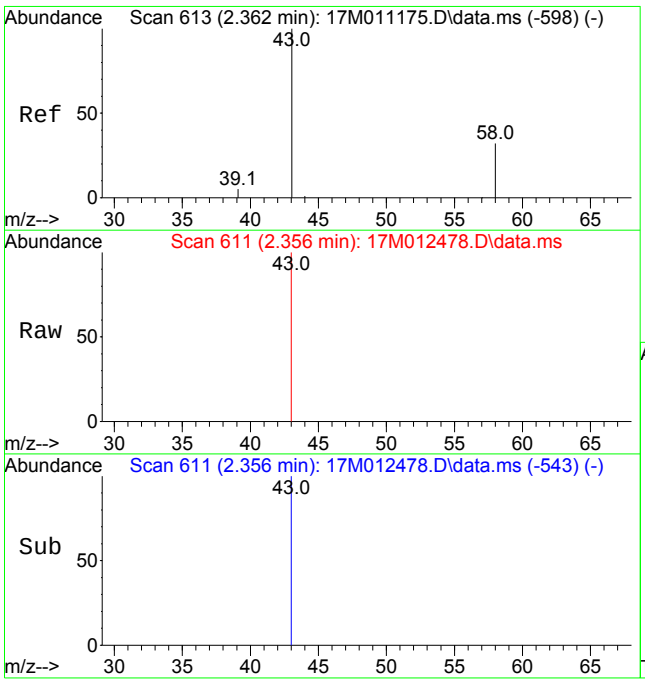

#15
Acetone
Concen: 1.4412 ug/L
RT: 2.356 min Scan# 611
Delta R.T. -0.003 min
Lab File: 17M012478.D
Acq: 02 Jun 2015 21:49

Tgt Ion: 43 Resp: 481

Ion	Ratio	Lower	Upper
43	100		
58	0.0	19.0	44.4#

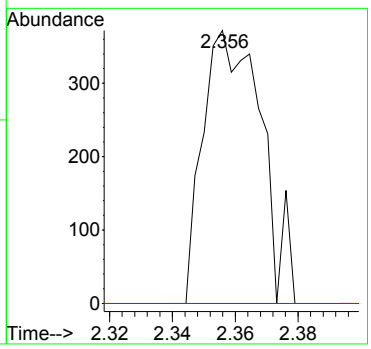

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060215\
Data File : 17M012479.D
Acq On : 02 Jun 2015 22:09
Operator : ADC
Sample : L15051620-17 A 826-LOW
Misc : 1,1
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Jun 03 10:55:13 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	215480	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	161254	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.313	152	85938	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.206	111	58632	25.9186 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.674%		
32) 1,2-Dichloroethane-d4	4.840	65	54678	27.9323 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.729%		
44) Toluene-d8	6.734	98	223905	26.1524 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.610%		
63) p-Bromofluorobenzene	8.734	95	77233	26.0215 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.086%		
Target Compounds					Qvalue
4) Vinyl Chloride	1.198	62	335	0.1203 ug/L #	1
10) 1,1-Dichloroethene	1.881	61	5895	1.7664 ug/L	100
15) Acetone	2.356	43	352	1.0374 ug/L #	43
18) 1,1-Dichloroethane	3.001	63	628	0.1518 ug/L #	43
21) cis-1,2-Dichloroethene	3.592	96	24496	9.8074 ug/L	100
33) 1,2-Dichloroethane	4.918	62	4787	1.8973 ug/L	96
34) Trichloroethene	5.350	130	557837	197.0927 ug/L	100
46) Tetrachloroethene	7.110	166	2513	0.8598 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\060215\
Data File : 17M012479.D
Acq On : 02 Jun 2015 22:09
Operator : ADC
Sample : L15051620-17 A 826-LOW
Misc : 1,1
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Jun 03 10:55:13 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

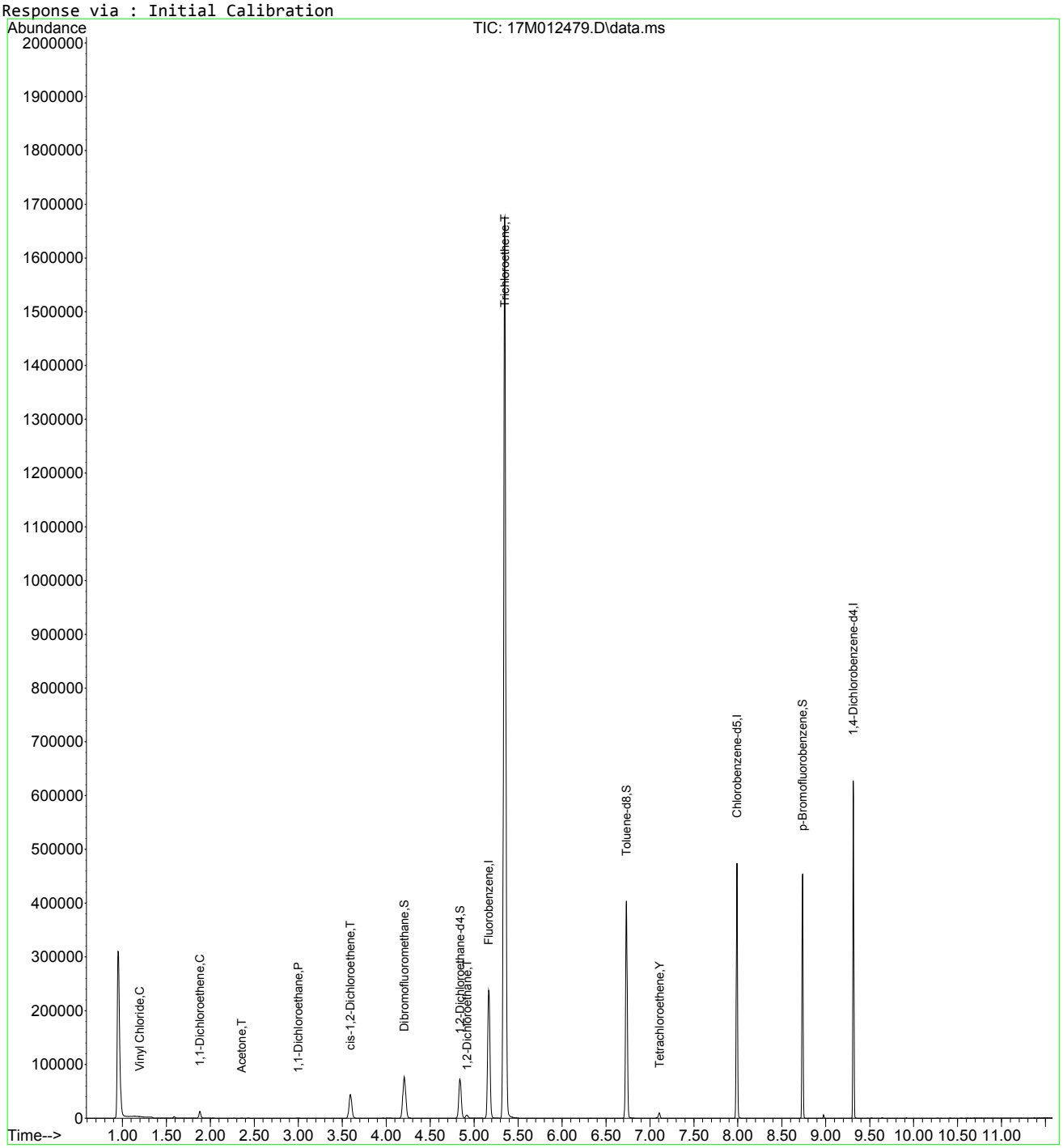

826_VMS.M Wed Jun 03 10:55:13 2015 Page: 2

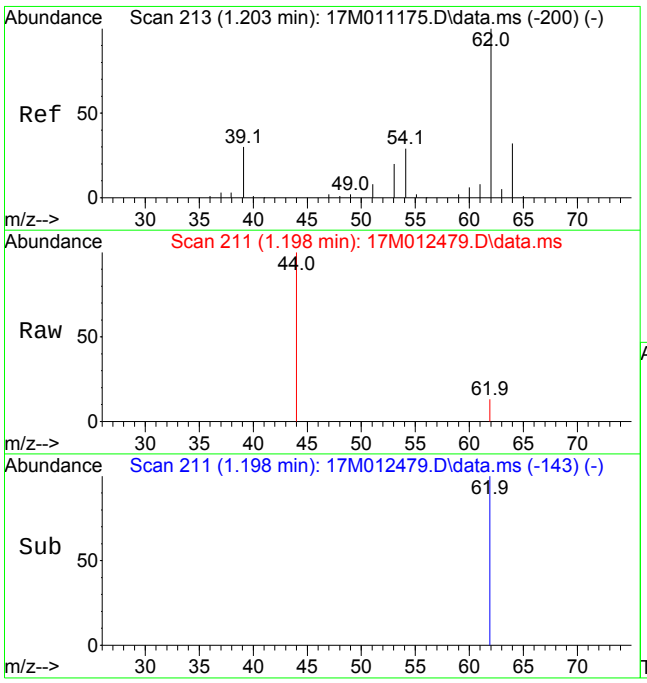

#4
Vinyl Chloride
Concen: 0.1203 ug/L
RT: 1.198 min Scan# 211
Delta R.T. -0.003 min
Lab File: 17M012479.D
Acq: 02 Jun 2015 22:09

Tgt Ion: 62 Resp: 335

Ion	Ratio	Lower	Upper
62	100		
64	105.4	19.1	44.7#

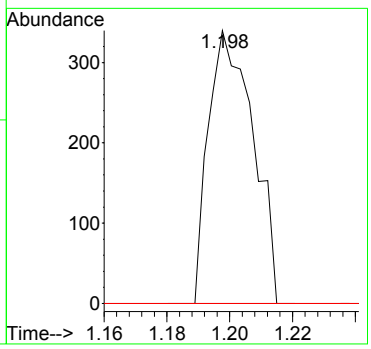

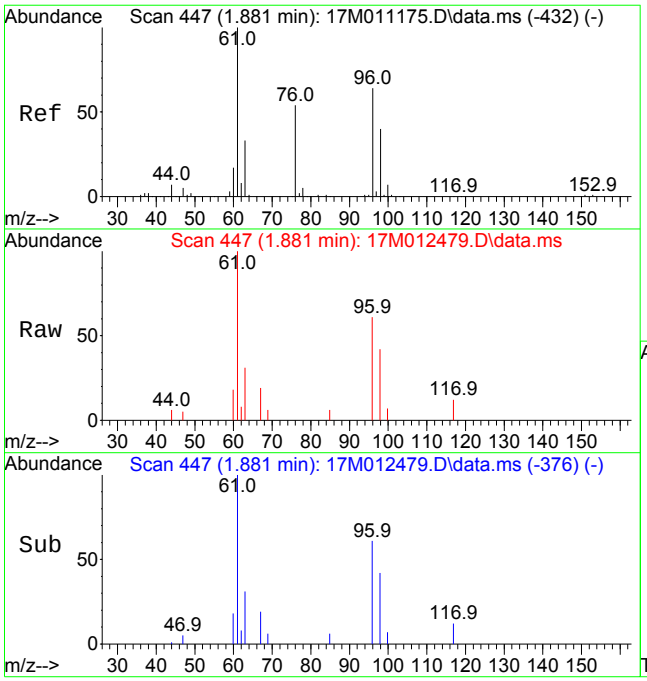

#10
1,1-Dichloroethene
Concen: 1.7664 ug/L
RT: 1.881 min Scan# 447
Delta R.T. 0.006 min
Lab File: 17M012479.D
Acq: 02 Jun 2015 22:09

Tgt Ion: 61 Resp: 5895

Ion	Ratio	Lower	Upper
61	100		
96	63.2	50.8	76.2

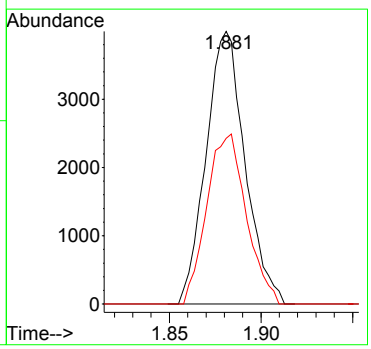

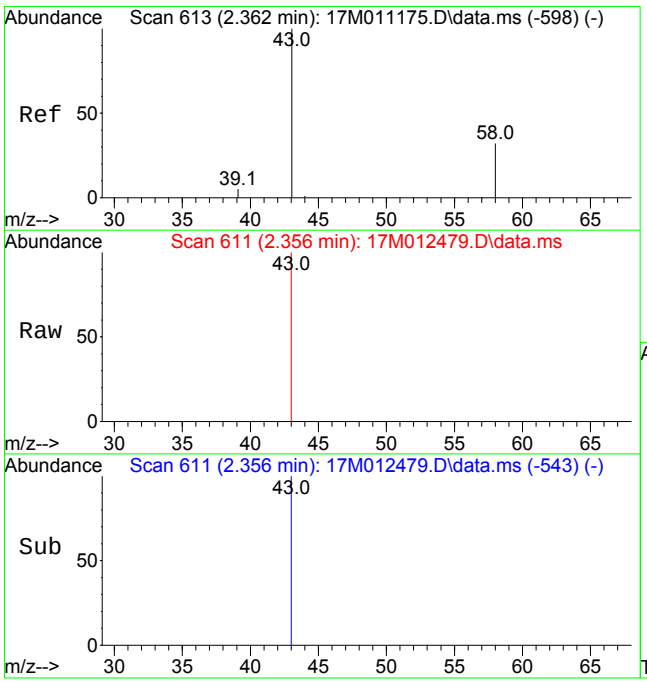

#15
Acetone
Concen: 1.0374 ug/L
RT: 2.356 min Scan# 611
Delta R.T. -0.003 min
Lab File: 17M012479.D
Acq: 02 Jun 2015 22:09

Tgt Ion: 43 Resp: 352

Ion	Ratio	Lower	Upper
43	100		
58	0.0	19.0	44.4#

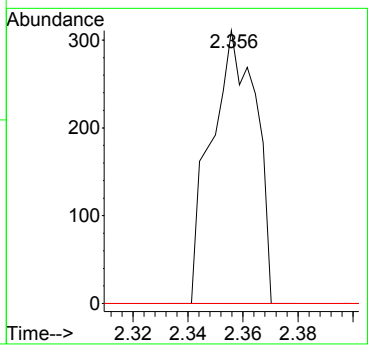

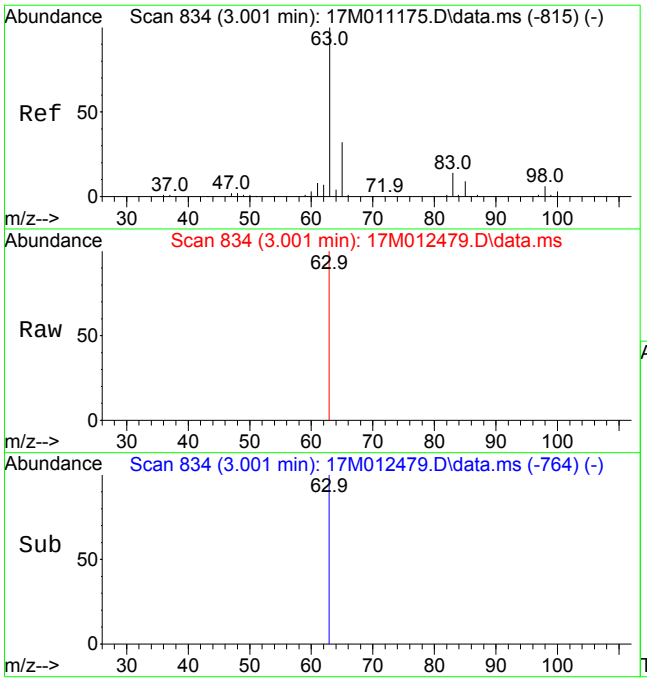

#18
1,1-Dichloroethane
Concen: 0.1518 ug/L
RT: 3.001 min Scan# 834
Delta R.T. 0.002 min
Lab File: 17M012479.D
Acq: 02 Jun 2015 22:09

Tgt Ion: 63 Resp: 628

Ion	Ratio	Lower	Upper
63	100		
65	0.0	25.4	38.2#

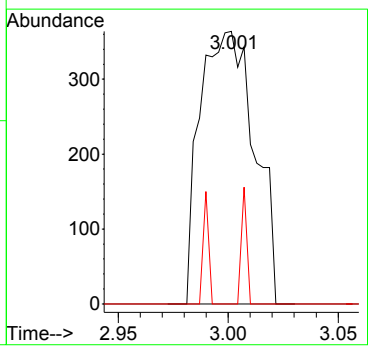

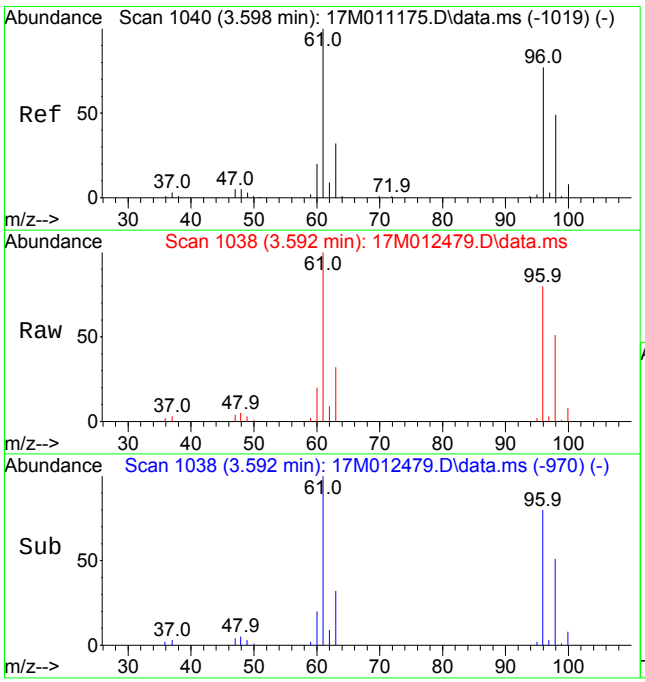

#21
cis-1,2-Dichloroethene
Concen: 9.8074 ug/L
RT: 3.592 min Scan# 1038
Delta R.T. -0.003 min
Lab File: 17M012479.D
Acq: 02 Jun 2015 22:09

Tgt Ion: 96 Resp: 24496

Ion	Ratio	Lower	Upper
96	100		
61	125.8	101.0	151.4

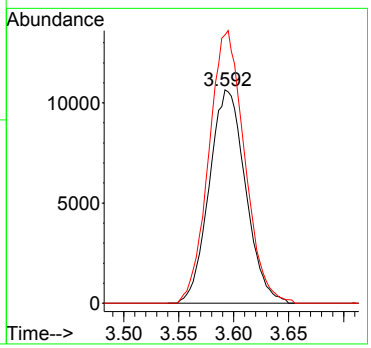

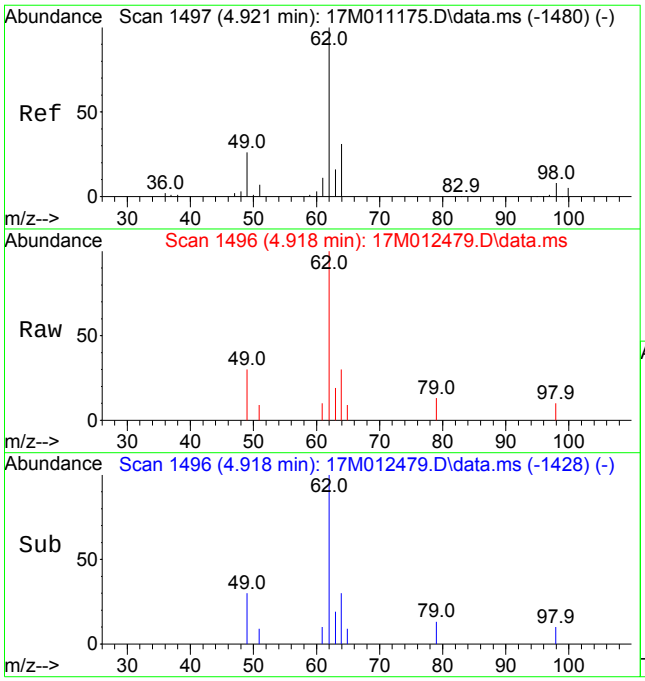

#33
1,2-Dichloroethane
Concen: 1.8973 ug/L
RT: 4.918 min Scan# 1496
Delta R.T. -0.003 min
Lab File: 17M012479.D
Acq: 02 Jun 2015 22:09

Tgt Ion: 62 Resp: 4787

Ion	Ratio	Lower	Upper
62	100		
49	26.6	16.6	38.6
98	5.5	5.2	12.0

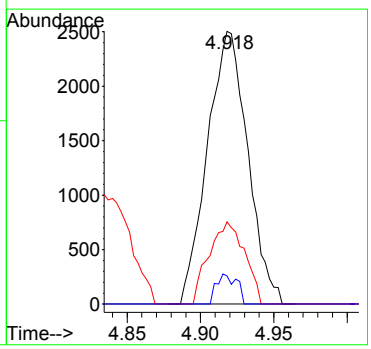

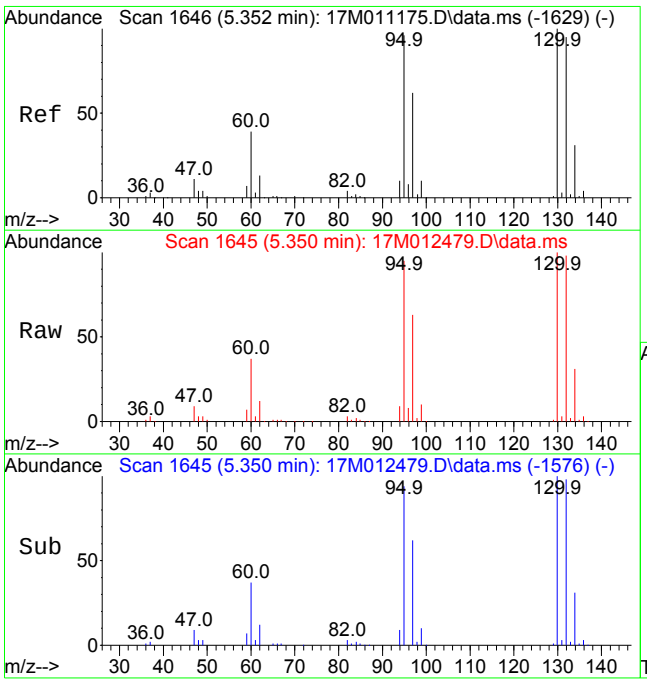

#34
Trichloroethene
Concen: 197.0927 ug/L
RT: 5.350 min Scan# 1645
Delta R.T. -0.000 min
Lab File: 17M012479.D
Acq: 02 Jun 2015 22:09

Tgt Ion:130 Resp: 557837

Ion	Ratio	Lower	Upper
130	100		
60	37.4	22.4	52.2

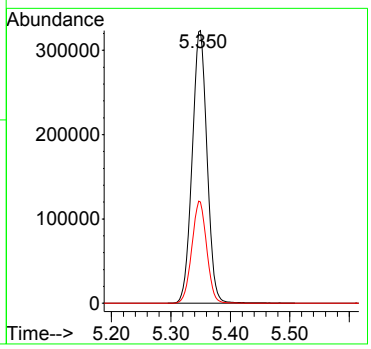

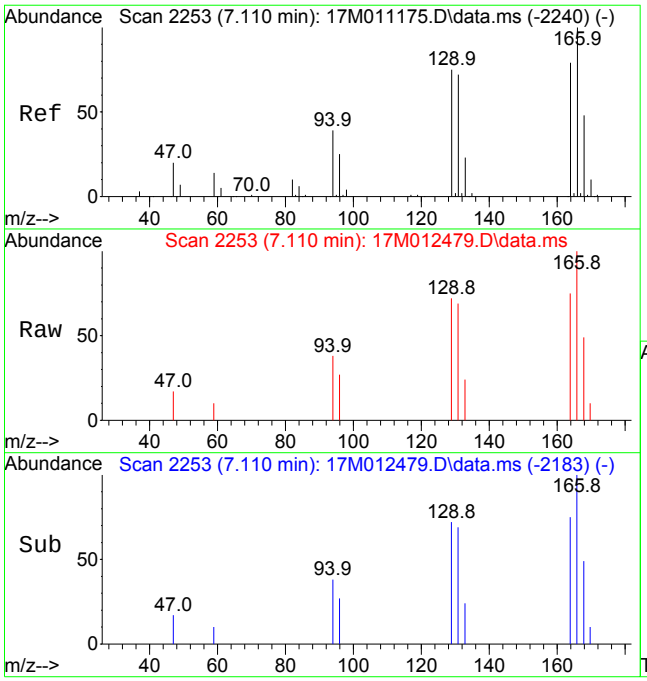

#46
Tetrachloroethene
Concen: 0.8598 ug/L
RT: 7.110 min Scan# 2253
Delta R.T. 0.003 min
Lab File: 17M012479.D
Acq: 02 Jun 2015 22:09

Tgt Ion:166 Resp: 2513

Ion	Ratio	Lower	Upper
166	100		
129	71.8	58.5	87.7
94	36.7	29.8	44.6

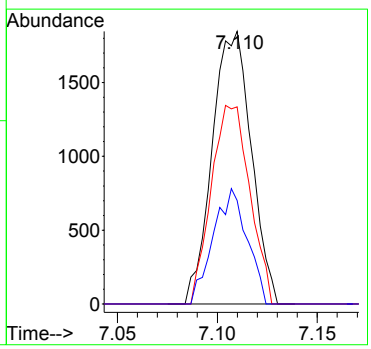

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060215\
Data File : 17M012484.D
Acq On : 02 Jun 2015 23:48
Operator : ADC
Sample : L15051620-18 A MS 826-LOW
Misc : 1,1 STD70797
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Jun 03 00:00:03 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	218661	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	165384	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.313	152	89918	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.206	111	59427	25.8879 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.552%		
32) 1,2-Dichloroethane-d4	4.840	65	53237	26.8006 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.202%		
44) Toluene-d8	6.734	98	225269	25.6546 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.618%		
63) p-Bromofluorobenzene	8.734	95	80371	25.8802 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.521%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.041	85	43705	17.8264 ug/L	99
3) Chloromethane	1.151	50	46880	17.4854 ug/L	99
4) Vinyl Chloride	1.201	62	50473	17.8551 ug/L	100
5) 1,3-Butadiene	1.212	54	642	0.4307 ug/L	97
6) Bromomethane	1.389	94	28428	17.0340 ug/L	99
7) Chloroethane	1.458	64	24713	18.1683 ug/L	100
8) Trichlorofluoromethane	1.545	101	58155	17.1180 ug/L	99
9) Diethyl ether	1.757	59	155320	109.5828 ug/L	100
10) 1,1-Dichloroethene	1.878	61	59715	17.6327 ug/L	100
11) Carbon Disulfide	1.893	76	67492	10.7673 ug/L	99
12) 1,1,2-Trichloro-1,2,2-...	1.910	101	34924	15.3720 ug/L	100
14) Methylene Chloride	2.304	84	44917	18.6497 ug/L	100
15) Acetone	2.356	43	8255	23.9756 ug/L	100
16) trans-1,2-Dichloroethene	2.434	96	42121	18.3576 ug/L	99
17) Methyl Tert Butyl Ether	2.544	73	110261	21.9260 ug/L	100
18) 1,1-Dichloroethane	2.999	63	76936	18.3204 ug/L	100
19) Acrylonitrile	3.057	53	9490	19.9543 ug/L	99
21) cis-1,2-Dichloroethene	3.592	96	70607	27.8576 ug/L	100
22) 2,2-Dichloropropane	3.722	77	54282	16.8900 ug/L	98
23) Cyclohexane	3.821	56	60541	16.4833 ug/L #	73
24) Bromochloromethane	3.835	130	30544	19.6947 ug/L	99
25) Chloroform	3.966	83	78643	19.5146 ug/L	100
26) Carbon Tetrachloride	4.110	117	57299	17.6761 ug/L	100
28) 1,1,1-Trichloroethane	4.206	97	66418	18.0451 ug/L	100
29) 1,1-Dichloropropene	4.374	75	53957	17.3447 ug/L	99
30) 2-Butanone	4.397	43	12057	21.6229 ug/L	88
31) Benzene	4.675	78	177290	18.3201 ug/L	100
33) 1,2-Dichloroethane	4.918	62	55292	21.5962 ug/L	100
34) Trichloroethene	5.347	130	538933	187.6435 ug/L	100
35) Dibromomethane	5.767	93	25142	20.9970 ug/L	98
36) 1,2-Dichloropropane	5.874	63	48426	19.1169 ug/L	99
37) Bromodichloromethane	5.961	83	57788	19.0457 ug/L	100
38) 1,4-Dioxane	6.169	88	1468	101.8948 ug/L	98
39) 2-Chloroethyl Vinyl Ether	6.566	63	333	0.2991 ug/L #	43
40) cis-1,3-Dichloropropene	6.566	75	68848	19.4634 ug/L	100
41) 4-Methyl-2-Pentanone	7.831	58	9935	19.8365 ug/L	99
42) trans-1,3-Dichloropropene	7.165	75	54850	19.8784 ug/L	100
45) Toluene	6.777	91	198502	18.4679 ug/L	100
46) Tetrachloroethene	7.107	166	53500	17.8470 ug/L	99
47) 1,1,2-Trichloroethane	7.295	97	35332	19.5725 ug/L	100
48) Dibromochloromethane	7.434	129	46192	19.5801 ug/L	100
49) 1,3-Dichloropropane	7.515	76	57527	19.7618 ug/L	99
50) 1,2-Dibromoethane	7.602	107	35100	19.9073 ug/L	100
51) 2-Hexanone	7.831	43	18564	20.7829 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\060215\
Data File : 17M012484.D
Acq On : 02 Jun 2015 23:48
Operator : ADC
Sample : L15051620-18 A MS 826-LOW
Misc : 1,1 STD70797
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Jun 03 00:00:03 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
52) Chlorobenzene	8.002	112	123923	17.3399 ug/L	100
53) 1-Chlorohexane	8.013	69	10892	17.4536 ug/L	82
54) Ethylbenzene	8.037	106	70760	18.5115 ug/L	97
55) 1,1,1,2-Tetrachloroethane	8.054	131	48555	19.1320 ug/L	100
56) m-,p-Xylene	8.138	106	165606	36.2253 ug/L	99
57) o-Xylene	8.398	106	78325	17.3431 ug/L	99
58) Styrene	8.430	104	136479	18.9462 ug/L	100
59) Bromoform	8.433	173	33322	22.2955 ug/L	99
60) Isopropylbenzene	8.587	105	201940	17.1846 ug/L	100
62) 1,3,5-Trimethylbenzene	8.925	105	195043	18.8150 ug/L	100
64) Bromobenzene	8.786	156	59942	18.4239 ug/L	99
65) n-Propylbenzene	8.815	91	230294	16.9319 ug/L	100
66) 1,1,2,2-Tetrachloroethane	8.856	83	43251	21.3476 ug/L	99
67) 2-Chlorotoluene	8.891	91	142870	17.0624 ug/L	100
68) 1,2,3-Trichloropropane	8.923	110	10889	20.5471 ug/L	95
69) 1,2,4-Trimethylbenzene	9.122	105	194760	18.8348 ug/L	100
70) 4-Chlorotoluene	8.980	91	144750	17.1586 ug/L	99
71) tert-Butylbenzene	9.088	134	32993	17.0140 ug/L	98
72) sec-Butylbenzene	9.174	105	217356	16.7686 ug/L	100
73) p-Isopropyltoluene	9.250	119	188199	17.0181 ug/L	100
74) 1,3-Dichlorobenzene	9.276	146	104613	16.9766 ug/L	100
75) 1,4-Dichlorobenzene	9.322	146	112981	18.2850 ug/L	99
76) n-Butylbenzene	9.452	91	174192	18.0294 ug/L	100
77) 1,2-Dichlorobenzene	9.525	146	101455	17.4911 ug/L	100
78) 1,2-Dibromo-3-Chloropr...	9.901	75	7448	21.6356 ug/L	97
79) Hexachlorobutadiene	10.196	225	45032	16.2818 ug/L	100
80) 1,2,4-Trichlorobenzene	10.208	180	83333	18.5239 ug/L	99
81) Naphthalene	10.359	128	149905	19.7253 ug/L	100
82) 1,2,3-Trichlorobenzene	10.443	180	78963	19.1383 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\060215\
Data File : 17M012484.D
Acq On : 02 Jun 2015 23:48
Operator : ADC
Sample : L15051620-18 A MS 826-LOW
Misc : 1,1 STD70797
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Jun 03 00:00:03 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

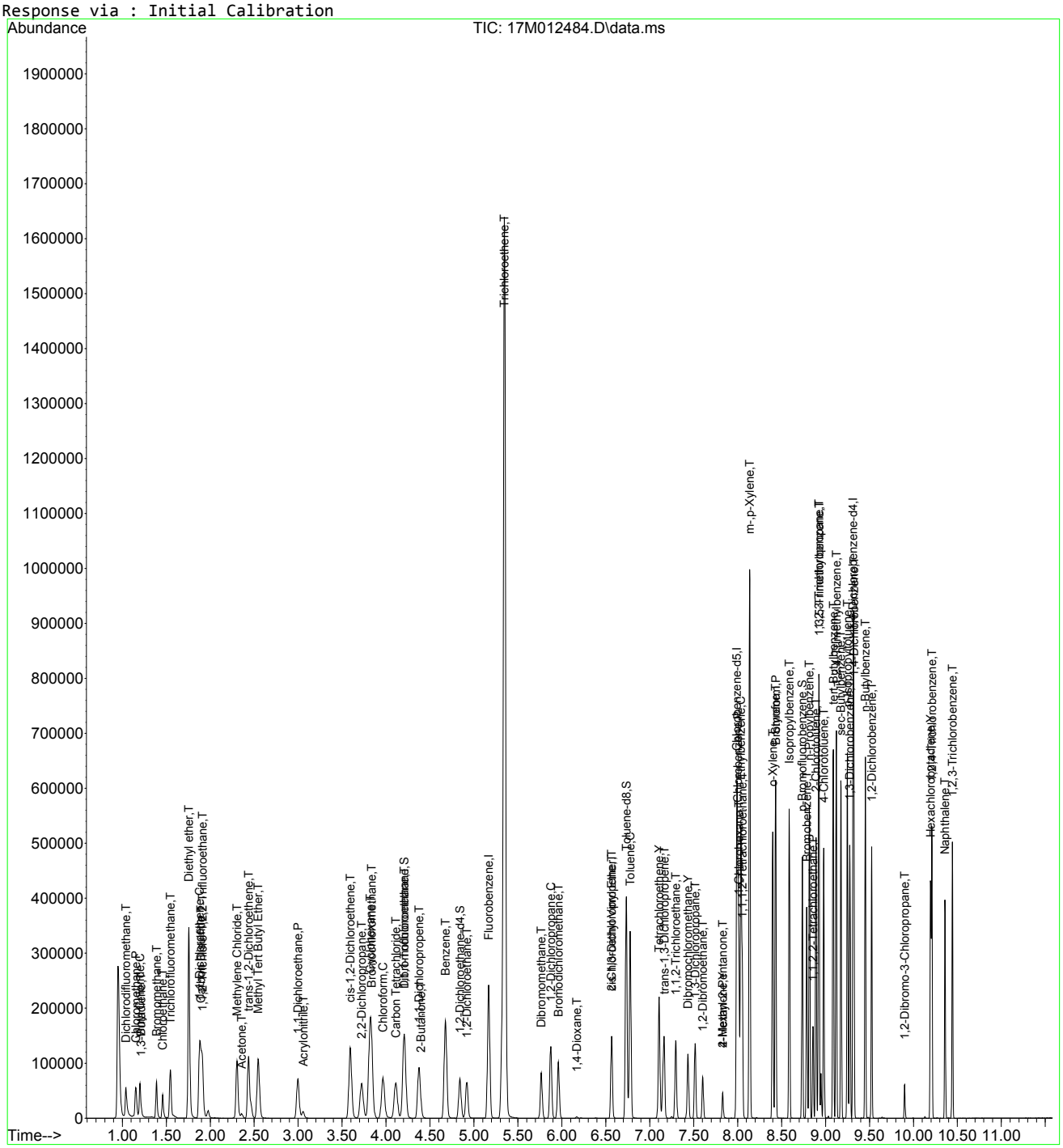

826_VMS.M Wed Jun 03 00:00:04 2015 Page: 3

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060215\
Data File : 17M012485.D
Acq On : 03 Jun 2015 00:08
Operator : ADC
Sample : L15051620-19 A MSD 826-LOW
Misc : 1,1 STD70797
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Jun 03 00:19:45 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	219090	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	164383	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.313	152	89013	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.206	111	59997	26.0850 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.340%		
32) 1,2-Dichloroethane-d4	4.840	65	53803	27.0325 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 108.130%		
44) Toluene-d8	6.734	98	225971	25.8913 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.565%		
63) p-Bromofluorobenzene	8.734	95	80661	26.2377 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.951%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.042	85	43154	17.5672 ug/L	99
3) Chloromethane	1.154	50	48183	17.9362 ug/L	99
4) Vinyl Chloride	1.201	62	50418	17.8007 ug/L	100
5) 1,3-Butadiene	1.215	54	713	0.4774 ug/L	93
6) Bromomethane	1.389	94	28981	17.3314 ug/L	100
7) Chloroethane	1.458	64	25526	18.7292 ug/L	99
8) Trichlorofluoromethane	1.545	101	58000	17.0389 ug/L	99
9) Diethyl ether	1.757	59	156735	110.3646 ug/L	99
10) 1,1-Dichloroethene	1.878	61	59644	17.5773 ug/L	100
11) Carbon Disulfide	1.893	76	66765	10.6305 ug/L	99
12) 1,1,2-Trichloro-1,2,2-...	1.910	101	34782	15.2795 ug/L	100
14) Methylene Chloride	2.304	84	45014	18.6533 ug/L	100
15) Acetone	2.359	43	7859	22.7808 ug/L	97
16) trans-1,2-Dichloroethene	2.434	96	42111	18.3173 ug/L	100
17) Methyl Tert Butyl Ether	2.547	73	110924	22.0146 ug/L	100
18) 1,1-Dichloroethane	2.996	63	76628	18.2113 ug/L	100
19) Acrylonitrile	3.057	53	9584	20.1124 ug/L	100
21) cis-1,2-Dichloroethene	3.592	96	69762	27.4703 ug/L	99
22) 2,2-Dichloropropane	3.723	77	53707	16.6784 ug/L	98
23) Cyclohexane	3.827	56	61191	16.6276 ug/L #	74
24) Bromochloromethane	3.833	130	30310	19.5055 ug/L	99
25) Chloroform	3.966	83	78445	19.4273 ug/L	100
26) Carbon Tetrachloride	4.111	117	57677	17.7579 ug/L	99
28) 1,1,1-Trichloroethane	4.206	97	66544	18.0439 ug/L	99
29) 1,1-Dichloropropene	4.377	75	54102	17.3573 ug/L	99
30) 2-Butanone	4.400	43	11869	21.2440 ug/L	88
31) Benzene	4.678	78	176410	18.1935 ug/L	100
33) 1,2-Dichloroethane	4.918	62	55268	21.5445 ug/L	100
34) Trichloroethene	5.347	130	525940	182.7611 ug/L	100
35) Dibromomethane	5.764	93	25307	21.0934 ug/L	99
36) 1,2-Dichloropropane	5.874	63	48430	19.0810 ug/L	100
37) Bromodichloromethane	5.961	83	57753	18.9969 ug/L	100
38) 1,4-Dioxane	6.169	88	1426	98.7858 ug/L	96
39) 2-Chloroethyl Vinyl Ether	6.566	63	269	0.2412 ug/L #	43
40) cis-1,3-Dichloropropene	6.566	75	68876	19.4332 ug/L	100
41) 4-Methyl-2-Pentanone	7.831	58	9805	19.5386 ug/L	99
42) trans-1,3-Dichloropropene	7.165	75	54795	19.8196 ug/L	100
45) Toluene	6.777	91	197972	18.5307 ug/L	99
46) Tetrachloroethene	7.107	166	53371	17.9124 ug/L	99
47) 1,1,2-Trichloroethane	7.295	97	35419	19.7402 ug/L	99
48) Dibromochloromethane	7.434	129	46863	19.9854 ug/L	99
49) 1,3-Dichloropropane	7.515	76	57818	19.9827 ug/L	99
50) 1,2-Dibromoethane	7.602	107	35098	20.0274 ug/L	99
51) 2-Hexanone	7.831	43	18574	20.9207 ug/L	99

Data Path : D:\MassHunter\GCMS\1\data\060215\
Data File : 17M012485.D
Acq On : 03 Jun 2015 00:08
Operator : ADC
Sample : L15051620-19 A MSD 826-LOW
Misc : 1,1 STD70797
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Jun 03 00:19:45 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
52) Chlorobenzene	8.002	112	124144	17.4766 ug/L	100
53) 1-Chlorohexane	8.013	69	10965	17.6776 ug/L	83
54) Ethylbenzene	8.037	106	70625	18.5887 ug/L	98
55) 1,1,1,2-Tetrachloroethane	8.054	131	48686	19.3004 ug/L	100
56) m-,p-Xylene	8.138	106	165702	36.4670 ug/L	99
57) o-Xylene	8.399	106	78530	17.4943 ug/L	99
58) Styrene	8.430	104	96516	13.4801 ug/L	99
59) Bromoform	8.433	173	33169	22.3283 ug/L	99
60) Isopropylbenzene	8.587	105	201867	17.2830 ug/L	100
62) 1,3,5-Trimethylbenzene	8.926	105	196219	19.1209 ug/L	99
64) Bromobenzene	8.787	156	60229	18.7003 ug/L	99
65) n-Propylbenzene	8.815	91	229941	17.0778 ug/L	100
66) 1,1,2,2-Tetrachloroethane	8.859	83	42947	21.4131 ug/L	99
67) 2-Chlorotoluene	8.891	91	141937	17.1233 ug/L	100
68) 1,2,3-Trichloropropane	8.923	110	11251	21.4461 ug/L	98
69) 1,2,4-Trimethylbenzene	9.122	105	194460	18.9970 ug/L	100
70) 4-Chlorotoluene	8.981	91	144592	17.3142 ug/L	99
71) tert-Butylbenzene	9.088	134	33041	17.2120 ug/L	98
72) sec-Butylbenzene	9.177	105	218568	17.0335 ug/L	100
73) p-Isopropyltoluene	9.250	119	187529	17.1299 ug/L	100
74) 1,3-Dichlorobenzene	9.276	146	104569	17.1420 ug/L	99
75) 1,4-Dichlorobenzene	9.322	146	112625	18.4127 ug/L	98
76) n-Butylbenzene	9.452	91	174371	18.2314 ug/L	99
77) 1,2-Dichlorobenzene	9.525	146	101941	17.7536 ug/L	99
78) 1,2-Dibromo-3-Chloropr...	9.901	75	7374	21.6384 ug/L	97
79) Hexachlorobutadiene	10.197	225	45877	16.7560 ug/L	99
80) 1,2,4-Trichlorobenzene	10.208	180	83577	18.7670 ug/L	99
81) Naphthalene	10.359	128	150646	20.0243 ug/L	100
82) 1,2,3-Trichlorobenzene	10.443	180	78978	19.3366 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060215\
Data File : 17M012485.D
Acq On : 03 Jun 2015 00:08
Operator : ADC
Sample : L15051620-19 A MSD 826-LOW
Misc : 1,1 STD70797
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Jun 03 00:19:45 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

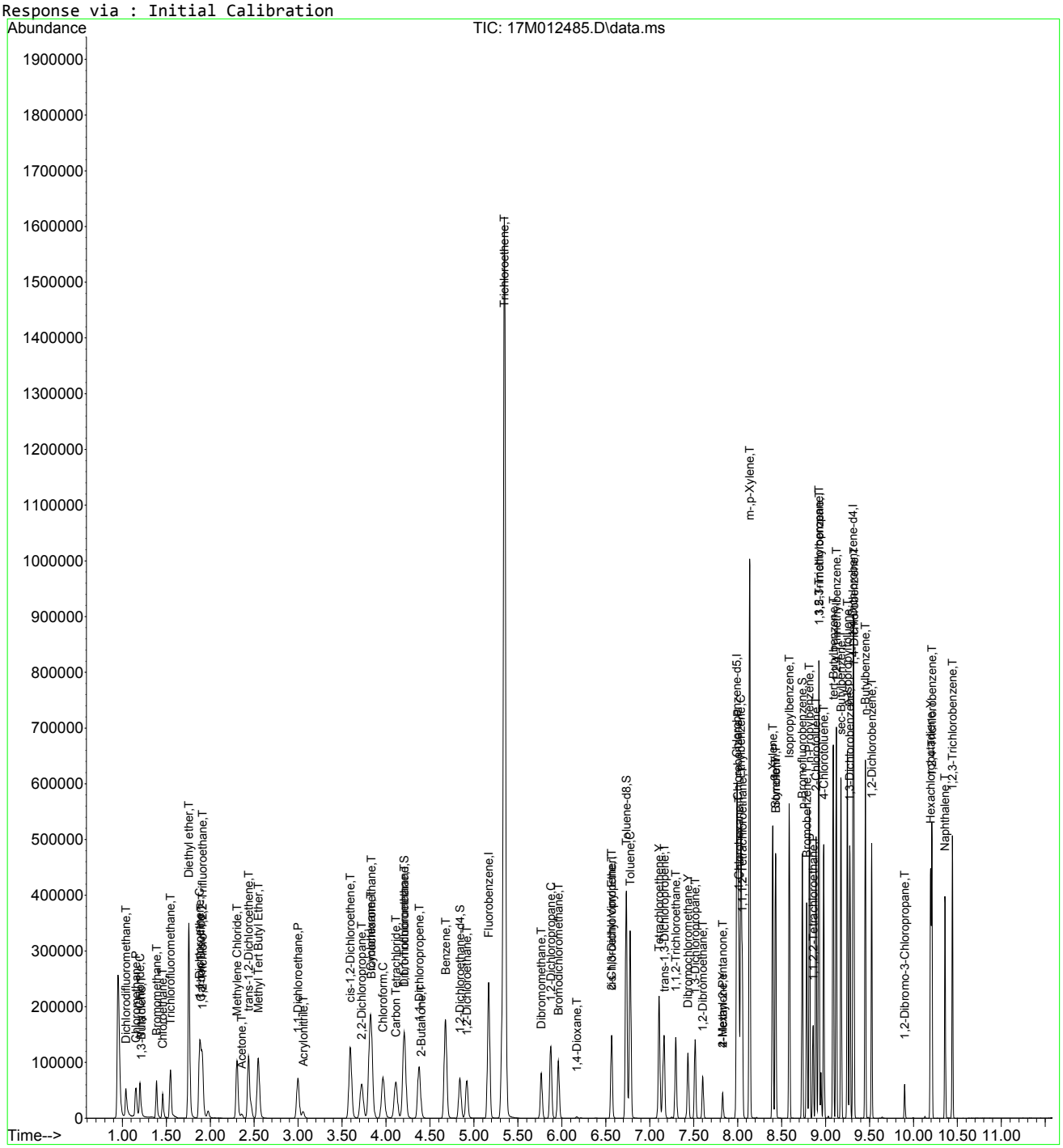

826_VMS.M Wed Jun 03 00:19:47 2015 Page: 3

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060215\
Data File : 17M012480.D
Acq On : 02 Jun 2015 22:28
Operator : ADC
Sample : L15051620-20 A 826-LOW
Misc : 1,1
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Jun 03 10:55:16 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	220136	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	164334	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.313	152	84851	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.206	111	60066	25.9909 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.964%		
32) 1,2-Dichloroethane-d4	4.840	65	55132	27.5686 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 110.274%		
44) Toluene-d8	6.734	98	228622	26.2028 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.811%		
63) p-Bromofluorobenzene	8.734	95	79250	27.0432 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 108.173%		
Target Compounds					Qvalue
15) Acetone	2.356	43	968	2.7926 ug/L	83
34) Trichloroethene	5.347	130	1214	0.4199 ug/L	90

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\060215\
Data File : 17M012480.D
Acq On : 02 Jun 2015 22:28
Operator : ADC
Sample : L15051620-20 A 826-LOW
Misc : 1,1
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Jun 03 10:55:16 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

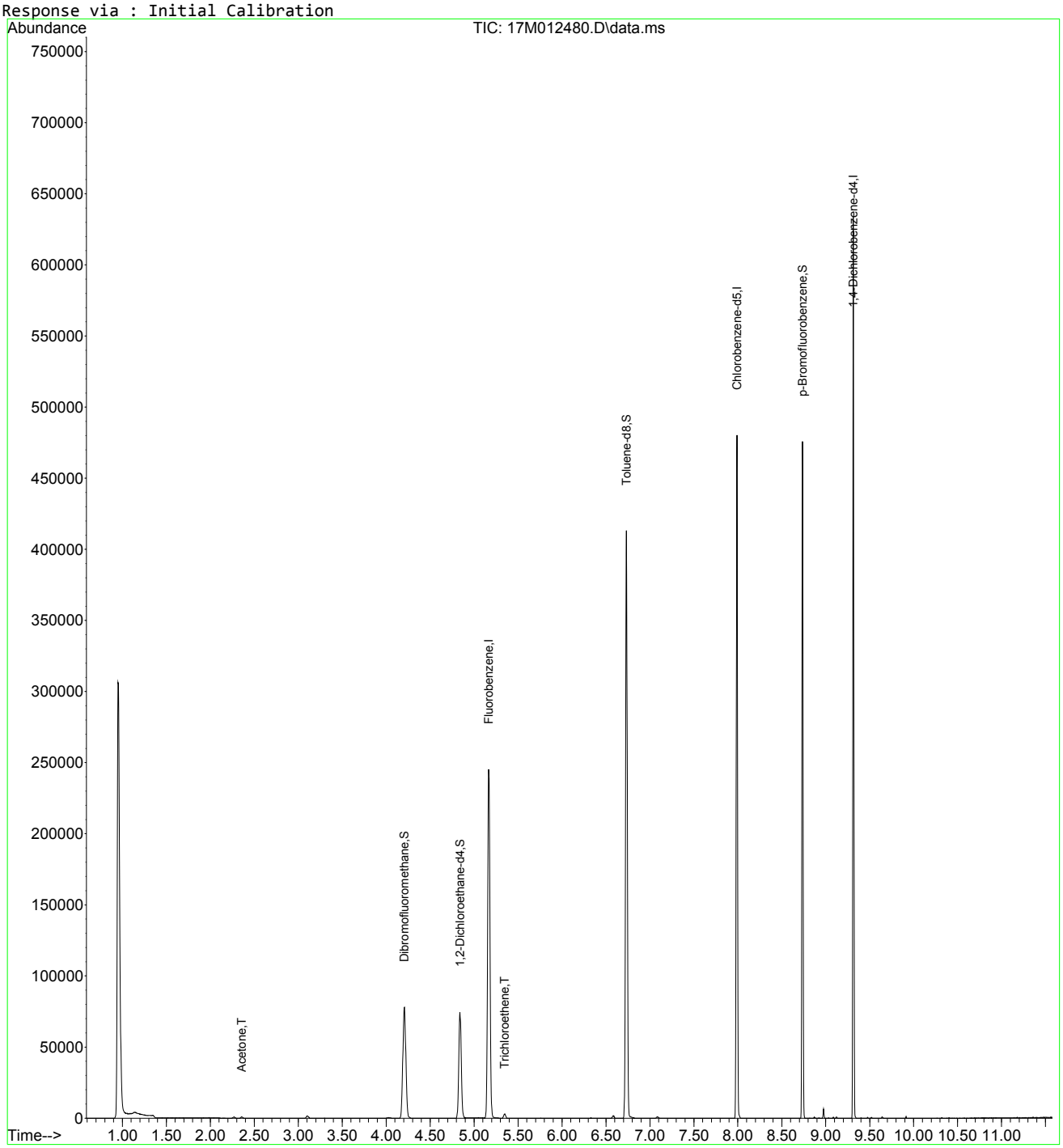

826_VMS.M Wed Jun 03 10:55:16 2015 Page: 2

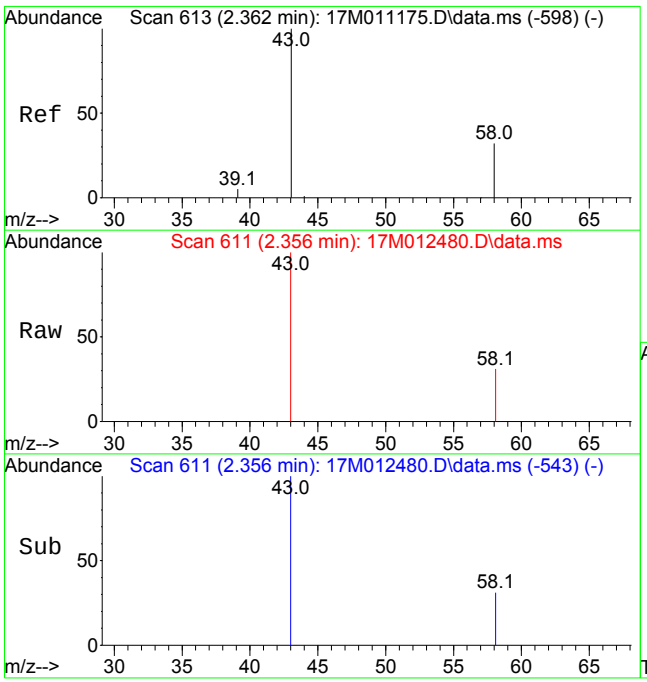

#15
Acetone
Concen: 2.7926 ug/L
RT: 2.356 min Scan# 611
Delta R.T. -0.003 min
Lab File: 17M012480.D
Acq: 02 Jun 2015 22:28

Tgt Ion: 43 Resp: 968

Ion	Ratio	Lower	Upper
43	100		
58	22.4	19.0	44.4

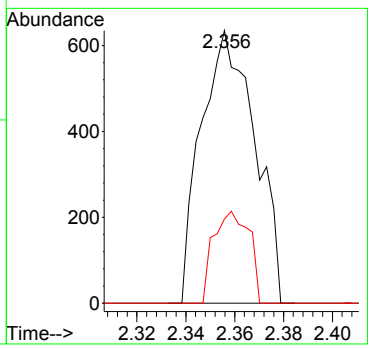

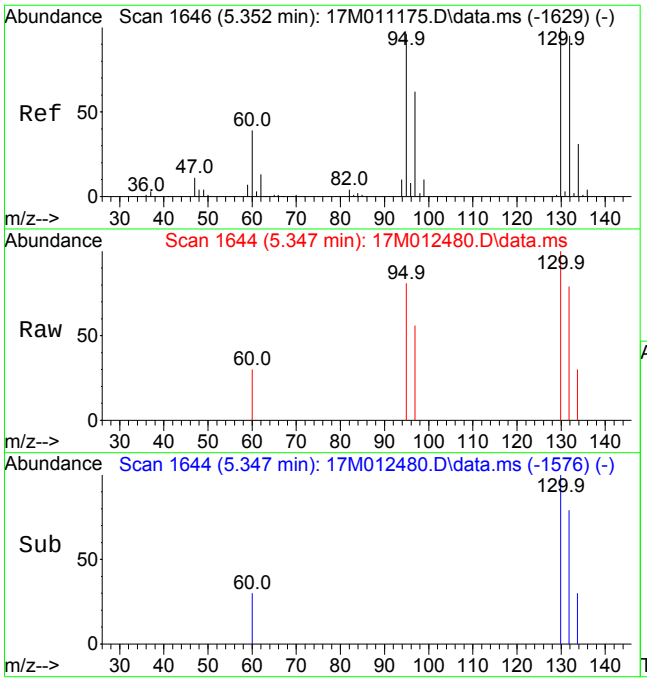

#34
Trichloroethene
Concen: 0.4199 ug/L
RT: 5.347 min Scan# 1644
Delta R.T. -0.003 min
Lab File: 17M012480.D
Acq: 02 Jun 2015 22:28

Tgt Ion:130 Resp: 1214

Ion	Ratio	Lower	Upper
130	100		
60	31.1	22.4	52.2

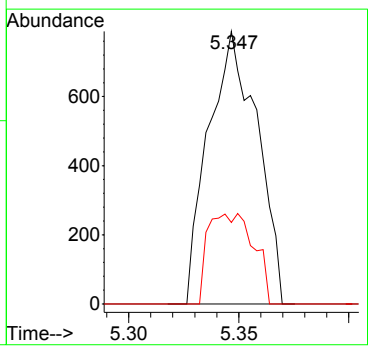

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060215\
Data File : 17M012481.D
Acq On : 02 Jun 2015 22:48
Operator : ADC
Sample : L15051620-21 A 826-LOW
Misc : 1,1
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Jun 03 10:55:19 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	213340	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	160853	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.313	152	83671	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.206	111	58423	26.0853 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.341%		
32) 1,2-Dichloroethane-d4	4.843	65	54200	27.9659 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.864%		
44) Toluene-d8	6.733	98	223220	26.1374 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.550%		
63) p-Bromofluorobenzene	8.734	95	77013	26.6504 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 106.602%		
Target Compounds					Qvalue
15) Acetone	2.359	43	649	1.9320 ug/L #	43
34) Trichloroethene	5.349	130	521	0.1859 ug/L #	38

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\060215\
Data File : 17M012481.D
Acq On : 02 Jun 2015 22:48
Operator : ADC
Sample : L15051620-21 A 826-LOW
Misc : 1,1
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Jun 03 10:55:19 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

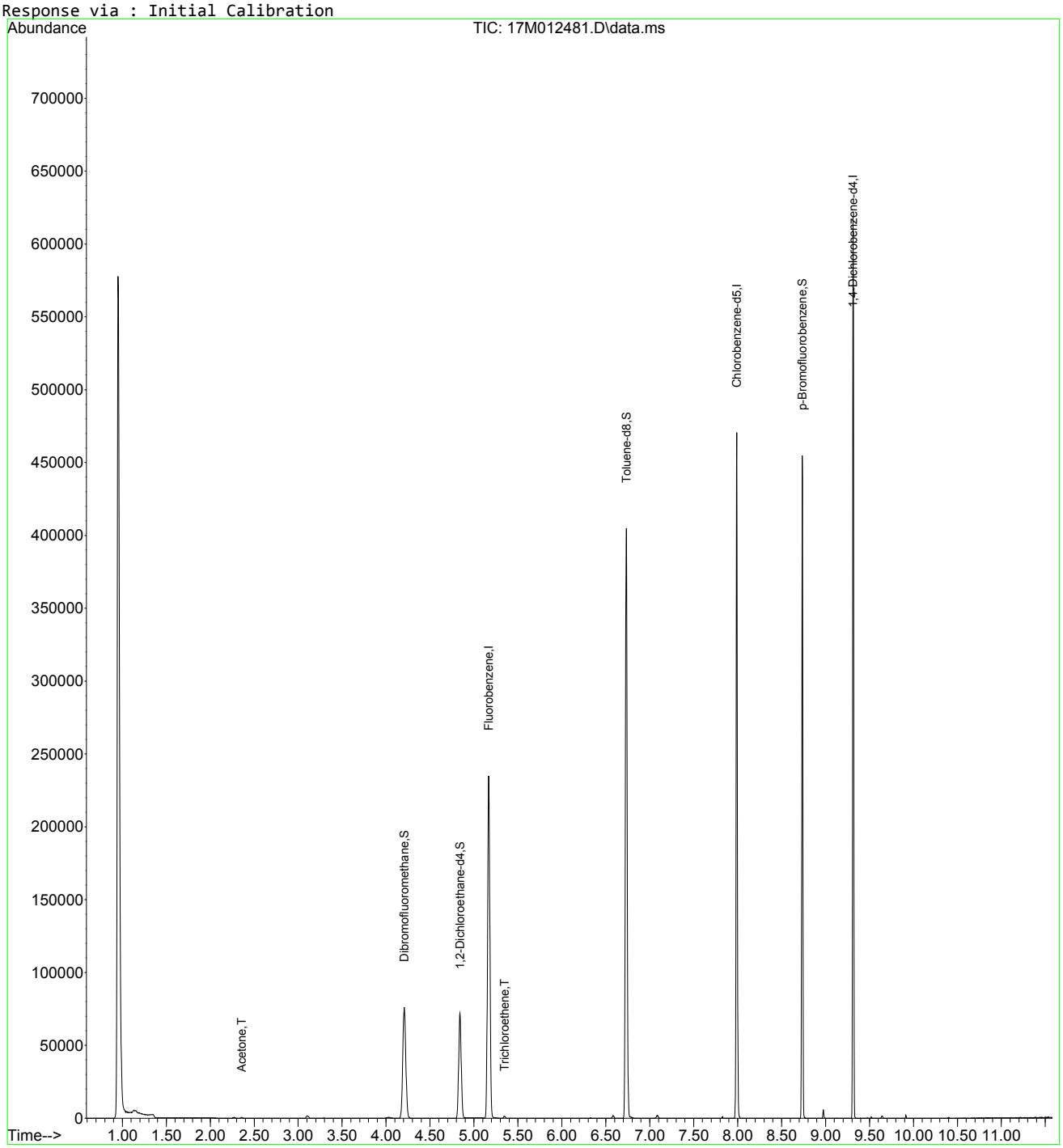

826_VMS.M Wed Jun 03 10:55:19 2015 Page: 2

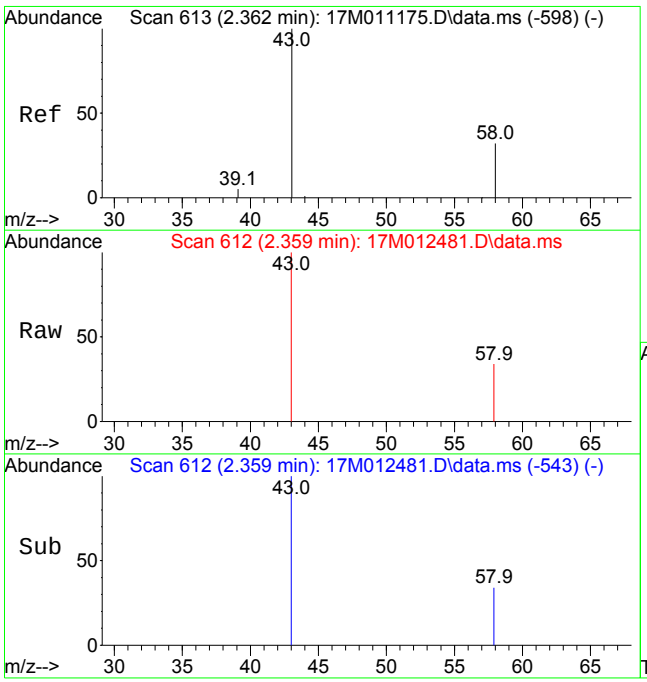

#15
Acetone
Concen: 1.9320 ug/L
RT: 2.359 min Scan# 612
Delta R.T. -0.000 min
Lab File: 17M012481.D
Acq: 02 Jun 2015 22:48

Tgt Ion: 43 Resp: 649

Ion	Ratio	Lower	Upper
43	100		
58	0.0	19.0	44.4#

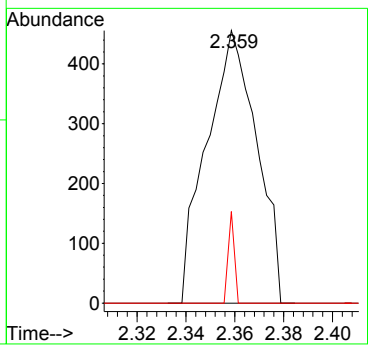

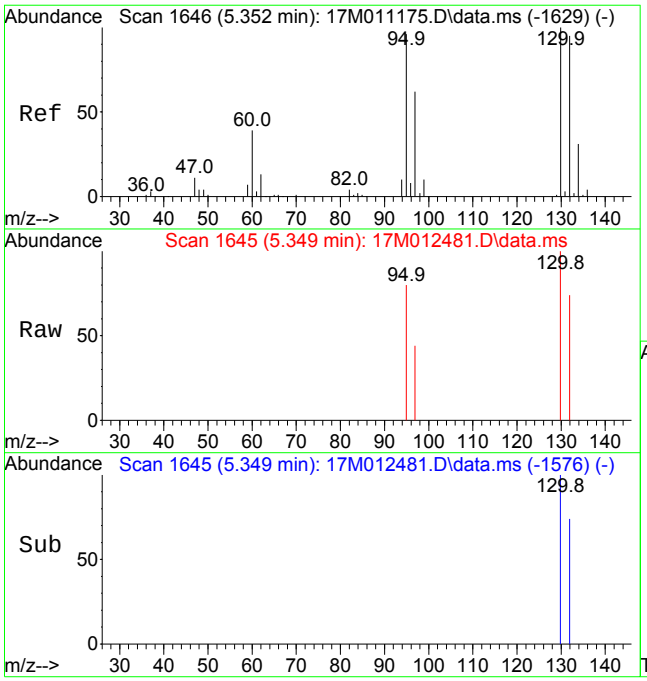

#34
Trichloroethene
Concen: 0.1859 ug/L
RT: 5.349 min Scan# 1645
Delta R.T. -0.001 min
Lab File: 17M012481.D
Acq: 02 Jun 2015 22:48

Tgt Ion:130 Resp: 521

Ion	Ratio	Lower	Upper
130	100		
60	0.0	22.4	52.2#

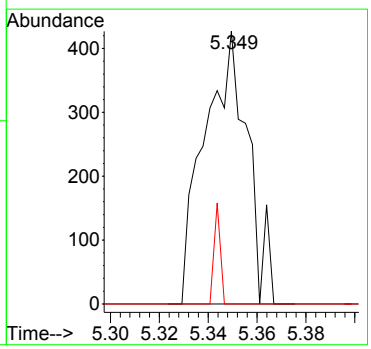

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060315\
Data File : 17M012502.D
Acq On : 03 Jun 2015 20:59
Operator : ADC
Sample : L15051620-22 A 826-LOW
Misc : 1,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jun 08 16:02:05 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	227750	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	171097	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.314	152	91823	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.206	111	60253	25.2002 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.801%		
32) 1,2-Dichloroethane-d4	4.840	65	54386	26.2864 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 105.146%		
44) Toluene-d8	6.734	98	234159	25.7766 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.106%		
63) p-Bromofluorobenzene	8.734	95	82248	25.9352 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.741%		
Target Compounds					Qvalue
15) Acetone	2.356	43	636	1.7735 ug/L #	43

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060315\
Data File : 17M012502.D
Acq On : 03 Jun 2015 20:59
Operator : ADC
Sample : L15051620-22 A 826-LOW
Misc : 1,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jun 08 16:02:05 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

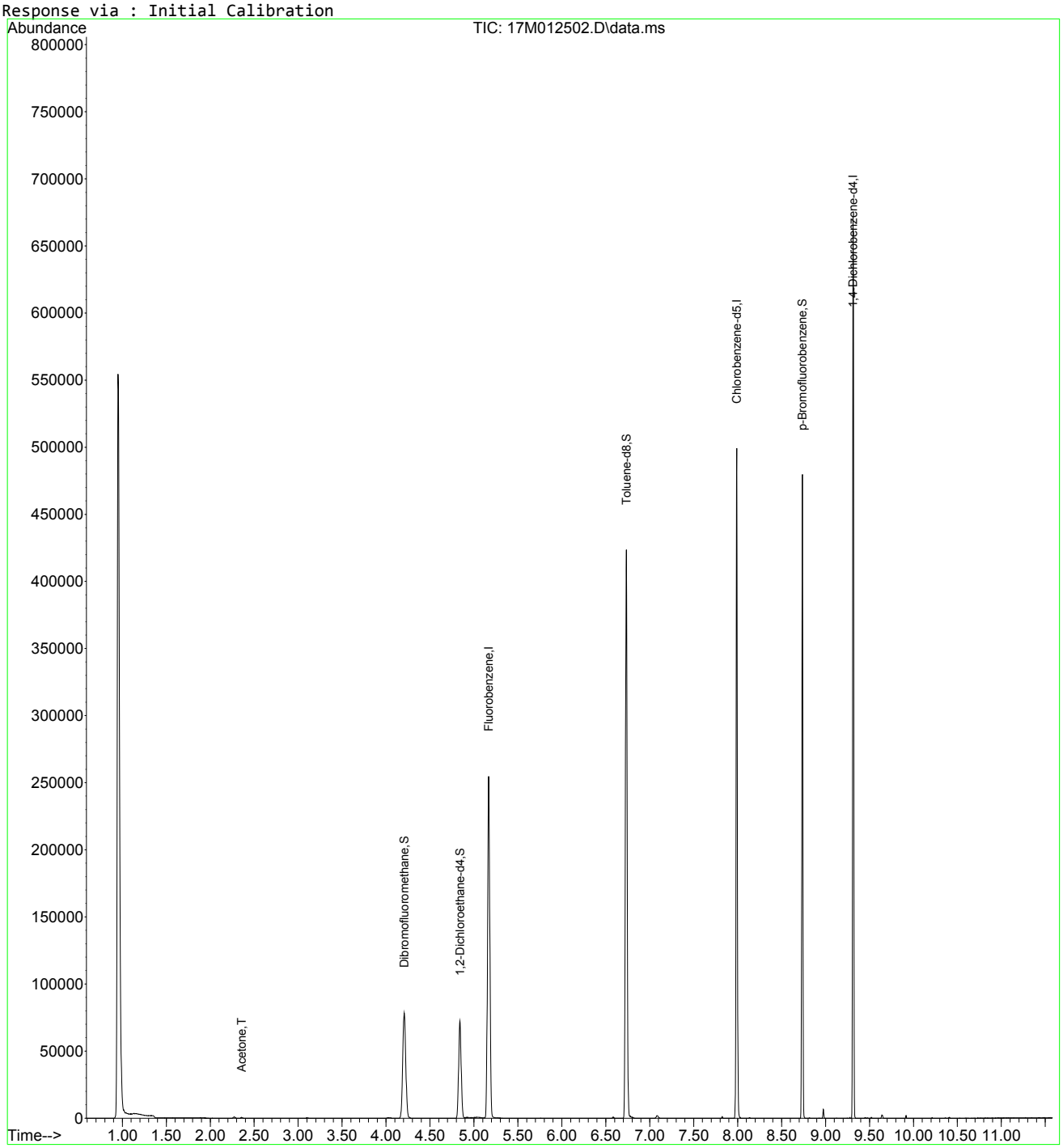

826_VMS.M Mon Jun 08 16:02:06 2015 Page: 2

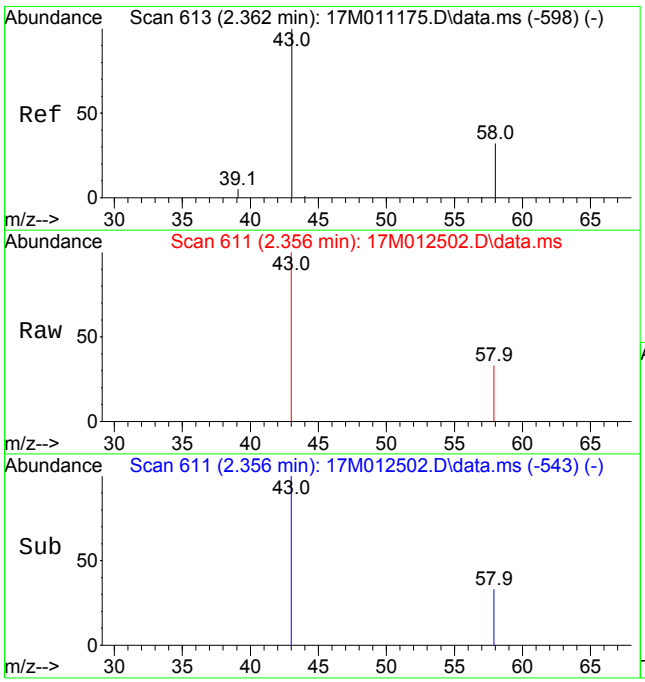

#15
Acetone
Concen: 1.7735 ug/L
RT: 2.356 min Scan# 611
Delta R.T. -0.003 min
Lab File: 17M012502.D
Acq: 03 Jun 2015 20:59

Tgt Ion: 43 Resp: 636

Ion	Ratio	Lower	Upper
43	100		
58	0.0	19.0	44.4#

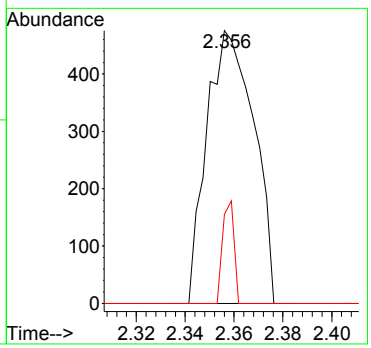

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060315\
Data File : 17M012499.D
Acq On : 03 Jun 2015 20:00
Operator : ADC
Sample : L15051620-23 A 826-LOW
Misc : 1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 08 16:01:56 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	222505	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	167122	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	89836	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.206	111	60126	25.7399 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.960%		
32) 1,2-Dichloroethane-d4	4.843	65	54698	27.0603 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 108.241%		
44) Toluene-d8	6.734	98	233382	26.3022 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.209%		
63) p-Bromofluorobenzene	8.734	95	81251	26.1875 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.750%		
Target Compounds					Qvalue
14) Methylene Chloride	2.307	84	1910	0.7793 ug/L	98
15) Acetone	2.359	43	273	0.7792 ug/L #	43

(#) = qualifier out of range (m) = manual integration (+) = signals summed

826_VMS.M Mon Jun 08 16:01:56 2015 Page: 1

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060315\
Data File : 17M012499.D
Acq On : 03 Jun 2015 20:00
Operator : ADC
Sample : L15051620-23 A 826-LOW
Misc : 1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 08 16:01:56 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

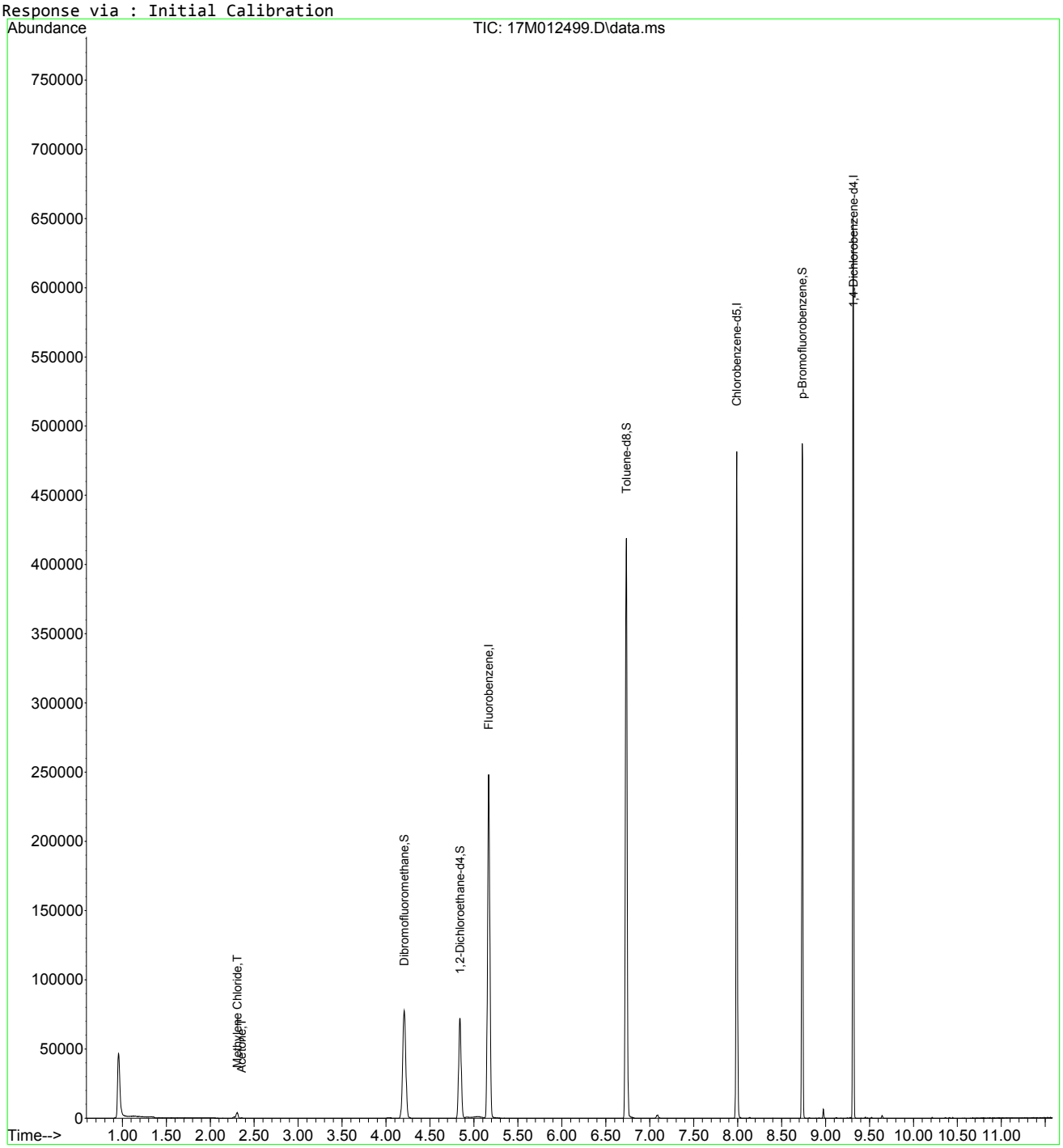

826_VMS.M Mon Jun 08 16:01:57 2015 Page: 2

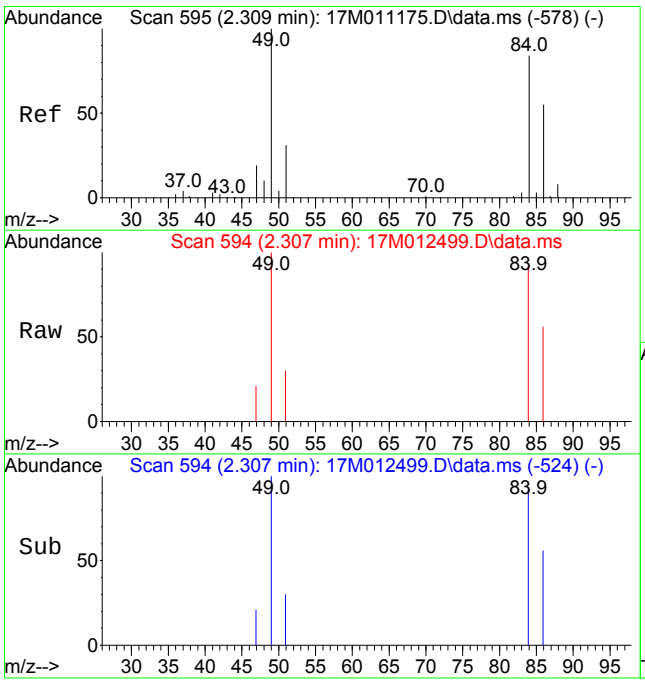

#14
Methylene Chloride
Concen: 0.7793 ug/L
RT: 2.307 min Scan# 594
Delta R.T. 0.003 min
Lab File: 17M012499.D
Acq: 03 Jun 2015 20:00

Tgt Ion: 84 Resp: 1910

Ion	Ratio	Lower	Upper
84	100		
49	116.1	94.5	141.7

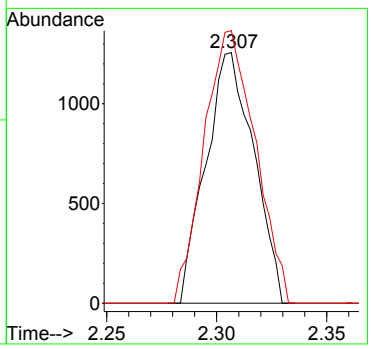

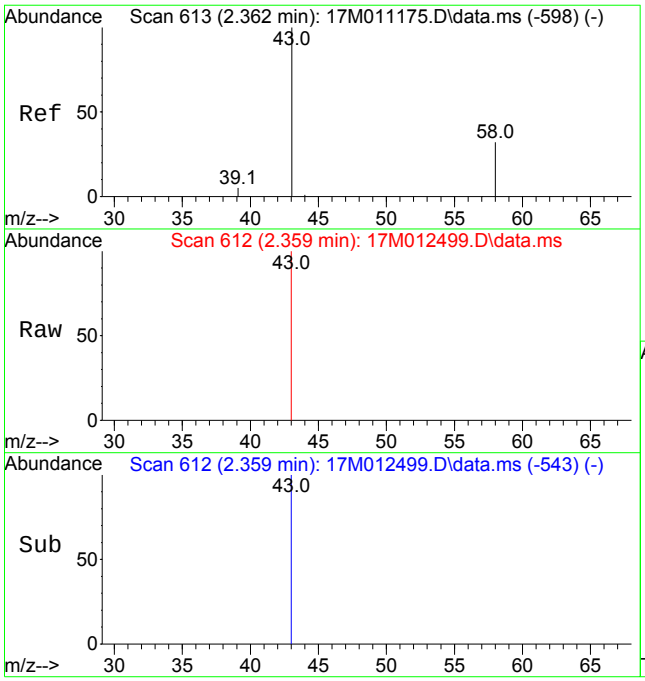

#15
Acetone
Concen: 0.7792 ug/L
RT: 2.359 min Scan# 612
Delta R.T. -0.000 min
Lab File: 17M012499.D
Acq: 03 Jun 2015 20:00

Tgt Ion: 43 Resp: 273

Ion	Ratio	Lower	Upper
43	100		
58	0.0	19.0	44.4#

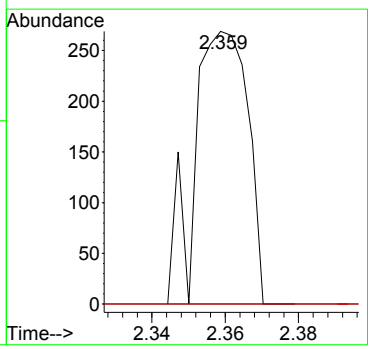

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011945.D
Acq On : 18 May 2015 11:17
Operator : ADC
Sample : WG523986-02 50ug/L CCV 8260
Misc : 1,1 STD70529
ALS Vial : 1 Sample Multiplier: 1

Quant Time: May 18 15:26:46 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	246932	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	187003	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	102061	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.206	111	67595	26.0748 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.299%		
32) 1,2-Dichloroethane-d4	4.840	65	56748	25.2973 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.189%		
44) Toluene-d8	6.734	98	259215	26.1077 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.431%		
63) p-Bromofluorobenzene	8.737	95	89362	25.3518 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.407%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.041	85	149687	54.0644 ug/L	100
3) Chloromethane	1.154	50	150930	49.8490 ug/L	100
4) Vinyl Chloride	1.201	62	162746	50.9808 ug/L	100
5) 1,3-Butadiene	1.209	54	86264	51.2455 ug/L	100
6) Bromomethane	1.389	94	91457	48.5269 ug/L	100
7) Chloroethane	1.455	64	74398	48.4332 ug/L	100
8) Trichlorofluoromethane	1.542	101	215576	56.1900 ug/L	100
9) Diethyl ether	1.757	59	76185	47.5969 ug/L	100
10) 1,1-Dichloroethene	1.875	61	196577	51.4000 ug/L	100
11) Carbon Disulfide	1.890	76	352659	49.8201 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.907	101	132957	51.8216 ug/L	100
13) Acrolein	2.124	56	9480	45.4635 ug/L	100
14) Methylene Chloride	2.304	84	132746	48.8063 ug/L	100
15) Acetone	2.359	43	17179	44.1820 ug/L	100
16) trans-1,2-Dichloroethene	2.434	96	130428	50.3363 ug/L	100
17) Methyl Tert Butyl Ether	2.547	73	269784	47.5058 ug/L	100
18) 1,1-Dichloroethane	2.999	63	242453	51.1243 ug/L	100
19) Acrylonitrile	3.057	53	24506	45.6284 ug/L	100
20) Vinyl Acetate	3.300	86	11053	47.5672 ug/L	100
21) cis-1,2-Dichloroethene	3.595	96	145895	50.9718 ug/L	100
22) 2,2-Dichloropropane	3.722	77	202066	55.6753 ug/L	100
23) Cyclohexane	3.824	56	213782	51.5418 ug/L	100
24) Bromochloromethane	3.835	130	89001	50.8173 ug/L	100
25) Chloroform	3.966	83	236175	51.8951 ug/L	100
26) Carbon Tetrachloride	4.113	117	197141	53.8530 ug/L	100
28) 1,1,1-Trichloroethane	4.209	97	213660	51.4031 ug/L	100
29) 1,1-Dichloropropene	4.377	75	183411	52.2081 ug/L	100
30) 2-Butanone	4.400	43	27529	43.7178 ug/L	100
31) Benzene	4.678	78	543309	49.7146 ug/L	100
33) 1,2-Dichloroethane	4.921	62	143706	49.7031 ug/L	100
34) Trichloroethene	5.350	130	156473	48.2428 ug/L	100
35) Dibromomethane	5.767	93	70497	52.1341 ug/L	100
36) 1,2-Dichloropropane	5.874	63	143994	50.3358 ug/L	100
37) Bromodichloromethane	5.963	83	175712	51.2809 ug/L	100
38) 1,4-Dioxane	6.175	88	1445	88.8153 ug/L	100
39) 2-Chloroethyl Vinyl Ether	6.551	63	120326	95.7146 ug/L	100
40) cis-1,3-Dichloropropene	6.569	75	208997	52.3192 ug/L	100
41) 4-Methyl-2-Pentanone	7.831	58	23443	41.4481 ug/L	100
42) trans-1,3-Dichloropropene	7.165	75	168536	54.0867 ug/L	100
45) Toluene	6.780	91	617866	50.8383 ug/L	100
46) Tetrachloroethene	7.107	166	172614	50.9252 ug/L	100
47) 1,1,2-Trichloroethane	7.298	97	97101	47.5716 ug/L	100
48) Dibromochloromethane	7.437	129	134687	50.4914 ug/L	100
49) 1,3-Dichloropropane	7.518	76	157335	47.7997 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011945.D
Acq On : 18 May 2015 11:17
Operator : ADC
Sample : WG523986-02 50ug/L CCV 8260
Misc : 1,1 STD70529
ALS Vial : 1 Sample Multiplier: 1

Quant Time: May 18 15:26:46 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
50)	1,2-Dibromoethane	7.605	107	97188	48.7487	ug/L	100
51)	2-Hexanone	7.831	43	43557	43.1257	ug/L	100
52)	Chlorobenzene	8.002	112	406742	50.3338	ug/L	100
53)	1-Chlorohexane	8.016	69	37260	52.8038	ug/L	100
54)	Ethylbenzene	8.039	106	222026	51.3692	ug/L	100
55)	1,1,1,2-Tetrachloroethane	8.057	131	146437	51.0296	ug/L	100
56)	m-,p-Xylene	8.141	106	548550	106.1199	ug/L	100
57)	o-Xylene	8.401	106	262170	51.3397	ug/L	100
58)	Styrene	8.433	104	427816	52.5240	ug/L	100
59)	Bromoform	8.436	173	88724	52.5015	ug/L	100
60)	Isopropylbenzene	8.590	105	695489	52.3424	ug/L	100
62)	1,3,5-Trimethylbenzene	8.928	105	618268	52.5456	ug/L	100
64)	Bromobenzene	8.789	156	182766	49.4917	ug/L	100
65)	n-Propylbenzene	8.818	91	811779	52.5831	ug/L	100
66)	1,1,2,2-Tetrachloroethane	8.859	83	108560	47.2074	ug/L	100
67)	2-Chlorotoluene	8.894	91	477051	50.1940	ug/L	100
68)	1,2,3-Trichloropropane	8.925	110	29317	48.7383	ug/L	100
69)	1,2,4-Trimethylbenzene	9.125	105	613330	52.2568	ug/L	100
70)	4-Chlorotoluene	8.983	91	489941	51.1676	ug/L	100
71)	tert-Butylbenzene	9.090	134	114095	51.8367	ug/L	100
72)	sec-Butylbenzene	9.180	105	776065	52.7483	ug/L	100
73)	p-Isopropyltoluene	9.253	119	679145	54.1056	ug/L	100
74)	1,3-Dichlorobenzene	9.282	146	352653	50.4198	ug/L	100
75)	1,4-Dichlorobenzene	9.325	146	347011	49.4788	ug/L	100
76)	n-Butylbenzene	9.455	91	606703	55.3243	ug/L	100
77)	1,2-Dichlorobenzene	9.528	146	321027	48.7610	ug/L	100
78)	1,2-Dibromo-3-Chloropr...	9.907	75	17804	45.5652	ug/L	100
79)	Hexachlorobutadiene	10.208	225	161438	51.4251	ug/L	100
80)	1,2,4-Trichlorobenzene	10.223	180	255989	50.1329	ug/L	100
81)	Naphthalene	10.376	128	395780	45.8826	ug/L	100
82)	1,2,3-Trichlorobenzene	10.460	180	222612	47.5353	ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011945.D
Acq On : 18 May 2015 11:17
Operator : ADC
Sample : WG523986-02 50ug/L CCV 8260
Misc : 1,1 STD70529
ALS Vial : 1 Sample Multiplier: 1

Quant Time: May 18 15:26:46 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

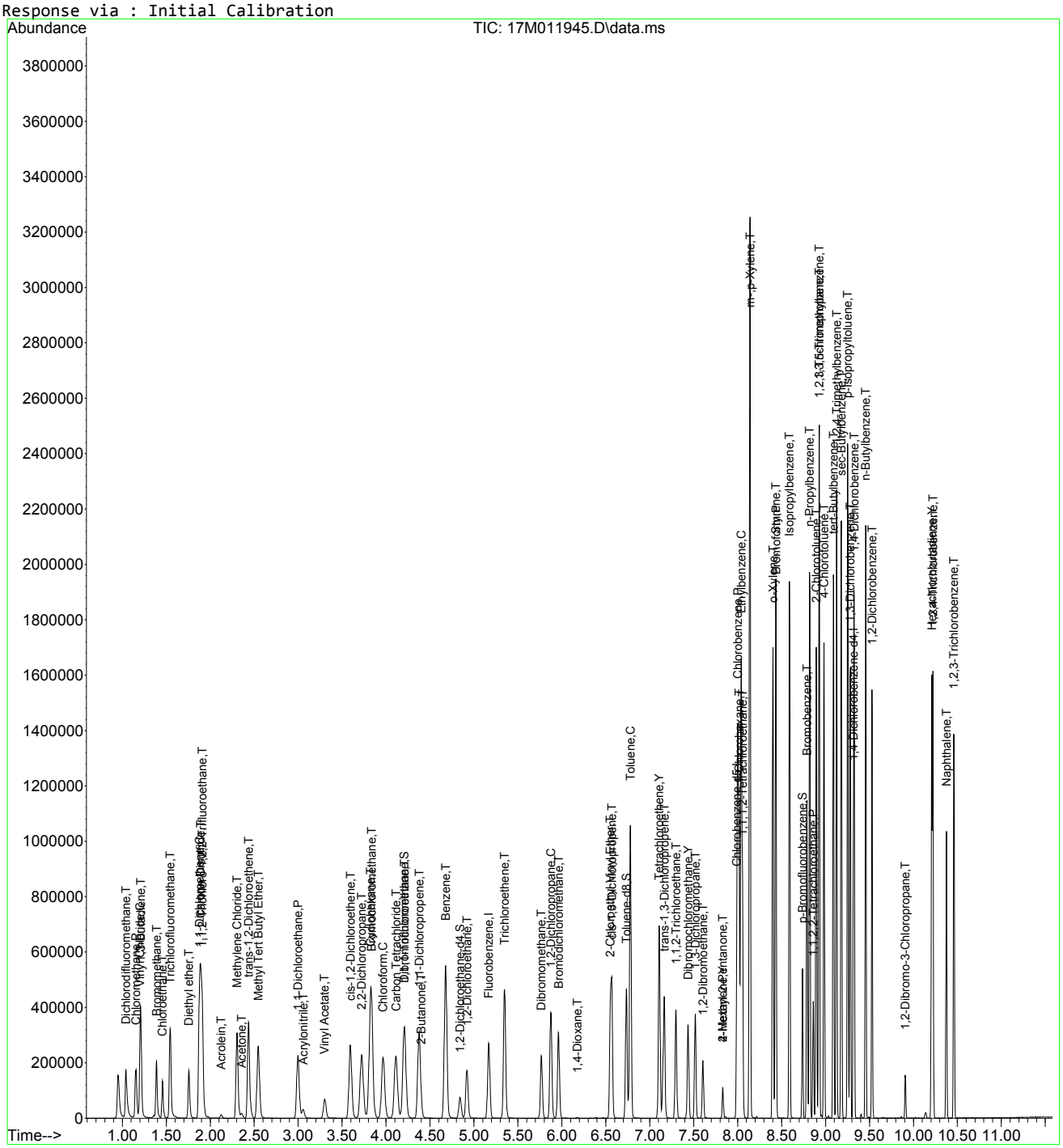

826_VMS.M Mon May 18 15:26:47 2015 Page: 3

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011947.D
Acq On : 18 May 2015 11:56
Operator : ADC
Sample : WG523986-03 0.3ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 18 15:04:22 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	5.167	96	234712	25.00000	ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	172661	25.00000	ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	89855	25.00000	ug/L	0.0000
System Monitoring Compounds						
27) Dibromofluoromethane	0.000	111	0	0.0000	ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	=	0.000%#	
32) 1,2-Dichloroethane-d4	0.000	65	0	0.0000	ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	=	0.000%#	
44) Toluene-d8	6.736	98	549	0.0599	ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery	=	0.240%#	
63) p-Bromofluorobenzene	8.734	95	207	0.0667	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery	=	0.267%#	
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.041	85	570	0.2166	ug/L #	72
3) Chloromethane	1.154	50	804	0.2794	ug/L #	75
4) Vinyl Chloride	1.198	62	869	0.2864	ug/L	85
5) 1,3-Butadiene	1.215	54	402	0.2512	ug/L	90
6) Bromomethane	1.395	94	565	0.3154	ug/L	83
7) Chloroethane	1.464	64	357	0.2445	ug/L #	48
8) Trichlorofluoromethane	1.557	101	1043	0.2860	ug/L #	95
9) Diethyl ether	1.756	59	373	0.2452	ug/L	85
10) 1,1-Dichloroethene	1.881	61	983	0.2704	ug/L	98
11) Carbon Disulfide	1.895	76	2275	0.3381	ug/L #	73
12) 1,1,2-Trichloro-1,2,2-...	1.916	101	642	0.2633	ug/L	98
14) Methylene Chloride	2.304	84	824	0.3187	ug/L	100
16) trans-1,2-Dichloroethene	2.440	96	680	0.2761	ug/L	95
17) Methyl Tert Butyl Ether	2.547	73	1525	0.2825	ug/L #	72
18) 1,1-Dichloroethane	3.001	63	1191	0.2642	ug/L #	87
21) cis-1,2-Dichloroethene	3.598	96	750	0.2757	ug/L	99
22) 2,2-Dichloropropane	3.725	77	805	0.2333	ug/L #	86
23) Cyclohexane	3.827	56	980	0.2486	ug/L	94
25) Chloroform	3.971	83	1144	0.2645	ug/L #	84
26) Carbon Tetrachloride	4.116	117	770	0.2213	ug/L #	84
28) 1,1,1-Trichloroethane	4.212	97	1016	0.2572	ug/L #	86
29) 1,1-Dichloropropene	4.377	75	898	0.2689	ug/L	85
31) Benzene	4.678	78	3358	0.3233	ug/L #	89
33) 1,2-Dichloroethane	4.918	62	671	0.2442	ug/L #	54
34) Trichloroethene	5.350	130	1207	0.3915	ug/L	84
35) Dibromomethane	5.766	93	284	0.2210	ug/L #	69
36) 1,2-Dichloropropane	5.871	63	719	0.2644	ug/L #	41
37) Bromodichloromethane	5.963	83	872	0.2677	ug/L	91
39) 2-Chloroethyl Vinyl Ether	6.551	63	527	0.4410	ug/L #	43
40) cis-1,3-Dichloropropene	6.568	75	970	0.2555	ug/L #	76
42) trans-1,3-Dichloropropene	7.165	75	754	0.2546	ug/L #	67
45) Toluene	6.780	91	3362	0.2996	ug/L	98
46) Tetrachloroethene	7.107	166	913	0.2917	ug/L #	92
47) 1,1,2-Trichloroethane	7.298	97	539	0.2860	ug/L	87
48) Dibromochloromethane	7.431	129	577	0.2343	ug/L	100
49) 1,3-Dichloropropane	7.518	76	811	0.2669	ug/L	97
50) 1,2-Dibromoethane	7.605	107	495	0.2689	ug/L	96
51) 2-Hexanone	7.831	43	154	0.1651	ug/L #	25
52) Chlorobenzene	7.999	112	2327	0.3119	ug/L #	15
54) Ethylbenzene	8.036	106	1146	0.2872	ug/L	100
55) 1,1,1,2-Tetrachloroethane	8.054	131	717	0.2706	ug/L	81
56) m-,p-Xylene	8.138	106	2788	0.5842	ug/L	100
57) o-Xylene	8.398	106	1323	0.2806	ug/L	92
58) Styrene	8.433	104	1985	0.2639	ug/L	98

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011947.D
Acq On : 18 May 2015 11:56
Operator : ADC
Sample : WG523986-03 0.3ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 18 15:04:22 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc Units		Dev(Min)
59)	Bromoform	8.433	173	369	0.2365 ug/L	#	79
60)	Isopropylbenzene	8.589	105	3430	0.2796 ug/L		96
62)	1,3,5-Trimethylbenzene	8.925	105	2881	0.2781 ug/L		99
64)	Bromobenzene	8.789	156	1004	0.3088 ug/L		100
65)	n-Propylbenzene	8.818	91	3865	0.2844 ug/L	#	97
66)	1,1,2,2-Tetrachloroethane	8.859	83	512	0.2529 ug/L		88
67)	2-Chlorotoluene	8.893	91	2399	0.2867 ug/L		98
68)	1,2,3-Trichloropropane	8.922	110	129	0.2436 ug/L	#	58
69)	1,2,4-Trimethylbenzene	9.125	105	2883	0.2790 ug/L		99
70)	4-Chlorotoluene	8.983	91	2462	0.2920 ug/L		98
71)	tert-Butylbenzene	9.090	134	549	0.2833 ug/L		95
72)	sec-Butylbenzene	9.180	105	3549	0.2740 ug/L		97
73)	p-Isopropyltoluene	9.252	119	2908	0.2631 ug/L		99
74)	1,3-Dichlorobenzene	9.279	146	1886	0.3063 ug/L		98
75)	1,4-Dichlorobenzene	9.325	146	1996	0.3233 ug/L		91
76)	n-Butylbenzene	9.455	91	2513	0.2603 ug/L		99
77)	1,2-Dichlorobenzene	9.528	146	1742	0.3005 ug/L		98
79)	Hexachlorobutadiene	10.208	225	764	0.2764 ug/L		98
80)	1,2,4-Trichlorobenzene	10.222	180	1375	0.3059 ug/L		96
81)	Naphthalene	10.376	128	2537	0.3341 ug/L		92
82)	1,2,3-Trichlorobenzene	10.460	180	1246	0.3022 ug/L		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011947.D
Acq On : 18 May 2015 11:56
Operator : ADC
Sample : WG523986-03 0.3ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 18 15:04:22 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

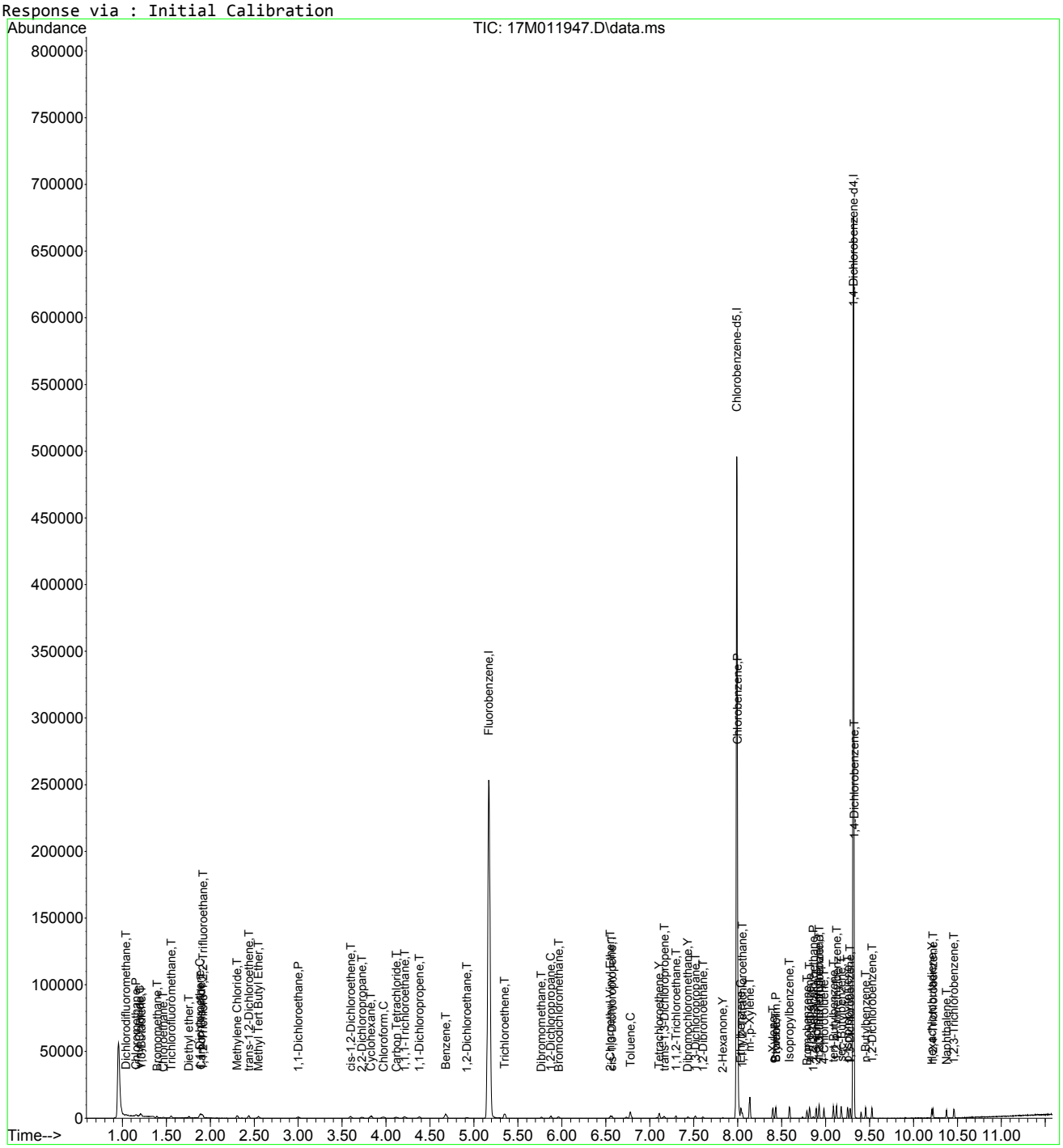

826_VMS.M Mon May 18 15:05:10 2015 Page: 3

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011947.D
Acq On : 18 May 2015 11:56
Operator : ADC
Sample : WG523986-03 0.3ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 18 15:04:22 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	100	0.000
2	T	Dichlorodifluoromethane	-1.000	0.217	0.0	0	0.000
3	P	Chloromethane	-1.000	0.279	0.0	0	0.000
4	C	Vinyl Chloride	-1.000	0.286	0.0	0	0.000
5	T	1,3-Butadiene	-1.000	0.251	0.0	0	0.000
6	T	Bromomethane	-1.000	0.315	0.0	0	0.000
7	T	Chloroethane	-1.000	0.245	0.0	0	0.000
8	T	Trichlorofluoromethane	-1.000	0.286	0.0	0	0.015
9	T	Diethyl ether	-1.000	0.245	0.0	0	0.000
10	C	1,1-Dichloroethene	-1.000	0.270	0.0	0	0.000
11	T	Carbon Disulfide	-1.000	0.338	0.0	0	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.000	0.263	0.0	0	0.000
13	T	Acrolein	-1.000	0.000	0.0	0	-2.124#
14	T	Methylene Chloride	-1.000	0.319	0.0	0	0.000
15	T	Acetone	-1.000	0.000	0.0	0	-2.359#
16	T	trans-1,2-Dichloroethene	-1.000	0.276	0.0	0	0.000
17	T	Methyl Tert Butyl Ether	-1.000	0.283	0.0	0	0.000
18	P	1,1-Dichloroethane	-1.000	0.264	0.0	0	0.000
19	T	Acrylonitrile	-1.000	0.000	0.0	0	-3.057#
20	T	Vinyl Acetate	-1.000	0.000	0.0	0	-3.300#
21	T	cis-1,2-Dichloroethene	-1.000	0.276	0.0	0	0.000
22	T	2,2-Dichloropropane	-1.000	0.233	0.0	0	0.000
23	T	Cyclohexane	-1.000	0.249	0.0	0	0.000
24	T	Bromochloromethane	-1.000	0.000	0.0	0	-3.835#
25	C	Chloroform	0.300	0.264	12.0#	100	0.000
26	T	Carbon Tetrachloride	-1.000	0.221	0.0	0	0.000
27	S	Dibromofluoromethane	-1.000	0.000	0.0	0	-4.206#
28	T	1,1,1-Trichloroethane	-1.000	0.257	0.0	0	0.000
29	T	1,1-Dichloropropene	-1.000	0.269	0.0	0	0.000
30	T	2-Butanone	-1.000	0.000	0.0	0	-4.400#
31	T	Benzene	-1.000	0.323	0.0	0	0.000
32	S	1,2-Dichloroethane-d4	-1.000	0.000	0.0	0	-4.840#
33	T	1,2-Dichloroethane	-1.000	0.244	0.0	0	0.000
34	T	Trichloroethene	-1.000	0.392	0.0	0	0.000
35	T	Dibromomethane	-1.000	0.221	0.0	0	0.000
36	C	1,2-Dichloropropane	-1.000	0.264	0.0	0	0.000
37	T	Bromodichloromethane	-1.000	0.268	0.0	0	0.000
38	T	1,4-Dioxane	-1.000	0.000	0.0	0	-6.175#
39	T	2-Chloroethyl Vinyl Ether	-1.000	0.441	0.0	0	0.000
40	T	cis-1,3-Dichloropropene	-1.000	0.255	0.0	0	0.000
41	T	4-Methyl-2-Pentanone	-1.000	0.000	0.0	0	-7.831#
42	T	trans-1,3-Dichloropropene	-1.000	0.255	0.0	0	0.000
43	I	Chlorobenzene-d5	25.000	25.000	0.0	100	0.000
44	S	Toluene-d8	-1.000	0.060	0.0	0	0.000
45	C	Toluene	-1.000	0.300	0.0	0	0.000
46	Y	Tetrachloroethene	-1.000	0.292	0.0	0	0.000
47	T	1,1,2-Trichloroethane	-1.000	0.286	0.0	0	0.000
48	Y	Dibromochloromethane	-1.000	0.234	0.0	0	0.000
49	T	1,3-Dichloropropane	-1.000	0.267	0.0	0	0.000
50	T	1,2-Dibromoethane	-1.000	0.269	0.0	0	0.000
51	Y	2-Hexanone	-1.000	0.165	0.0	0	0.000
52	P	Chlorobenzene	-1.000	0.312	0.0	0	0.000
53	T	1-Chlorohexane	-1.000	0.000	0.0	0	-8.016#
54	C	Ethylbenzene	-1.000	0.287	0.0	0	0.000
55	T	1,1,1,2-Tetrachloroethane	-1.000	0.271	0.0	0	0.000

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011947.D
Acq On : 18 May 2015 11:56
Operator : ADC
Sample : WG523986-03 0.3ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 18 15:04:22 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	m-,p-Xylene	-1.000	0.584	0.0	0	0.000
57	T	o-Xylene	-1.000	0.281	0.0	0	0.000
58	T	Styrene	-1.000	0.264	0.0	0	0.000
59	P	Bromoform	-1.000	0.236	0.0	0	0.000
60	T	Isopropylbenzene	-1.000	0.280	0.0	0	0.000
61	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	100	0.000
62	T	1,3,5-Trimethylbenzene	-1.000	0.278	0.0	0	0.000
63	S	p-Bromofluorobenzene	-1.000	0.067	0.0	0	0.000
64	T	Bromobenzene	0.300	0.309	-3.0	100	0.000
65	T	n-Propylbenzene	-1.000	0.284	0.0	0	0.000
66	P	1,1,2,2-Tetrachloroethane	-1.000	0.253	0.0	0	0.000
67	T	2-Chlorotoluene	-1.000	0.287	0.0	0	0.000
68	T	1,2,3-Trichloropropane	-1.000	0.244	0.0	0	0.000
69	T	1,2,4-Trimethylbenzene	-1.000	0.279	0.0	0	0.000
70	T	4-Chlorotoluene	-1.000	0.292	0.0	0	0.000
71	T	tert-Butylbenzene	-1.000	0.283	0.0	0	0.000
72	T	sec-Butylbenzene	-1.000	0.274	0.0	0	0.000
73	T	p-Isopropyltoluene	-1.000	0.263	0.0	0	0.000
74	T	1,3-Dichlorobenzene	-1.000	0.306	0.0	0	0.000
75	T	1,4-Dichlorobenzene	0.300	0.323	-7.7	100	0.000
76	T	n-Butylbenzene	-1.000	0.260	0.0	0	0.000
77	T	1,2-Dichlorobenzene	0.300	0.301	-0.3	100	0.000
78	T	1,2-Dibromo-3-Chloropropane	-1.000	0.000	0.0	0	-9.907#
79	Y	Hexachlorobutadiene	-1.000	0.276	0.0	0	0.000
80	T	1,2,4-Trichlorobenzene	-1.000	0.306	0.0	0	0.000
81	T	Naphthalene	-1.000	0.334	0.0	0	0.000
82	T	1,2,3-Trichlorobenzene	-1.000	0.302	0.0	0	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 1

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011948.D
Acq On : 18 May 2015 12:16
Operator : ADC
Sample : WG523986-04 0.4ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 18 15:04:24 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	5.170	96	236357	25.00000	ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	173067	25.00000	ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	89349	25.00000	ug/L	0.0000
System Monitoring Compounds						
27) Dibromofluoromethane	0.000	111	0	0.0000	ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	=	0.000%#	
32) 1,2-Dichloroethane-d4	0.000	65	0	0.0000	ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	=	0.000%#	
44) Toluene-d8	6.736	98	400	0.0435	ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery	=	0.174%#	
63) p-Bromofluorobenzene	8.734	95	115	0.0373	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery	=	0.149%#	
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.038	85	751	0.2834	ug/L #	72
3) Chloromethane	1.154	50	1075	0.3709	ug/L	88
4) Vinyl Chloride	1.203	62	1172	0.3836	ug/L	85
5) 1,3-Butadiene	1.212	54	617	0.3829	ug/L	93
6) Bromomethane	1.389	94	684	0.3792	ug/L	100
7) Chloroethane	1.467	64	590	0.4013	ug/L #	48
8) Trichlorofluoromethane	1.551	101	1530	0.4166	ug/L #	89
9) Diethyl ether	1.756	59	521	0.3401	ug/L	94
10) 1,1-Dichloroethene	1.881	61	1374	0.3753	ug/L	97
11) Carbon Disulfide	1.895	76	2759	0.4072	ug/L #	88
12) 1,1,2-Trichloro-1,2,2-...	1.907	101	925	0.3767	ug/L	97
14) Methylene Chloride	2.307	84	1017	0.3906	ug/L	97
15) Acetone	2.356	43	210	0.5643	ug/L #	43
16) trans-1,2-Dichloroethene	2.434	96	990	0.3992	ug/L	94
17) Methyl Tert Butyl Ether	2.544	73	2055	0.3781	ug/L #	86
18) 1,1-Dichloroethane	3.001	63	1671	0.3681	ug/L #	87
21) cis-1,2-Dichloroethene	3.604	96	970	0.3541	ug/L	96
22) 2,2-Dichloropropane	3.719	77	1175	0.3382	ug/L	96
23) Cyclohexane	3.829	56	1357	0.3418	ug/L	98
24) Bromochloromethane	3.838	130	336	0.2004	ug/L #	66
25) Chloroform	3.968	83	1558	0.3577	ug/L #	86
26) Carbon Tetrachloride	4.113	117	1134	0.3236	ug/L #	89
28) 1,1,1-Trichloroethane	4.209	97	1499	0.3768	ug/L	85
29) 1,1-Dichloropropene	4.380	75	1213	0.3607	ug/L #	85
31) Benzene	4.675	78	4223	0.4037	ug/L	94
33) 1,2-Dichloroethane	4.915	62	1000	0.3613	ug/L #	71
34) Trichloroethene	5.347	130	1407	0.4532	ug/L	88
35) Dibromomethane	5.766	93	359	0.2774	ug/L	93
36) 1,2-Dichloropropane	5.879	63	976	0.3564	ug/L	84
37) Bromodichloromethane	5.960	83	1117	0.3406	ug/L	99
39) 2-Chloroethyl Vinyl Ether	6.551	63	814	0.6765	ug/L #	69
40) cis-1,3-Dichloropropene	6.566	75	1261	0.3298	ug/L	92
42) trans-1,3-Dichloropropene	7.168	75	968	0.3246	ug/L #	73
45) Toluene	6.777	91	4473	0.3977	ug/L	95
46) Tetrachloroethene	7.110	166	1259	0.4013	ug/L	91
47) 1,1,2-Trichloroethane	7.298	97	708	0.3748	ug/L	92
48) Dibromochloromethane	7.434	129	828	0.3354	ug/L	99
49) 1,3-Dichloropropane	7.518	76	1210	0.3972	ug/L	97
50) 1,2-Dibromoethane	7.605	107	641	0.3474	ug/L	97
51) 2-Hexanone	7.834	43	303	0.3242	ug/L #	25
52) Chlorobenzene	8.002	112	2919	0.3903	ug/L #	26
53) 1-Chlorohexane	8.016	69	209	0.3200	ug/L #	17
54) Ethylbenzene	8.036	106	1535	0.3837	ug/L	87
55) 1,1,1,2-Tetrachloroethane	8.057	131	938	0.3532	ug/L	85

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011948.D
Acq On : 18 May 2015 12:16
Operator : ADC
Sample : WG523986-04 0.4ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 18 15:04:24 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
56) m-,p-Xylene	8.138	106	3653	0.7636 ug/L	97
57) o-Xylene	8.401	106	1831	0.3874 ug/L	99
58) Styrene	8.433	104	2665	0.3535 ug/L	98
59) Bromoform	8.436	173	508	0.3248 ug/L #	76
60) Isopropylbenzene	8.589	105	4639	0.3772 ug/L	100
62) 1,3,5-Trimethylbenzene	8.928	105	3831	0.3719 ug/L	97
64) Bromobenzene	8.789	156	1314	0.4064 ug/L	99
65) n-Propylbenzene	8.818	91	5082	0.3760 ug/L #	97
66) 1,1,2,2-Tetrachloroethane	8.862	83	721	0.3581 ug/L	100
67) 2-Chlorotoluene	8.893	91	3236	0.3889 ug/L	96
68) 1,2,3-Trichloropropane	8.922	110	143	0.2716 ug/L #	11
69) 1,2,4-Trimethylbenzene	9.125	105	3797	0.3695 ug/L	98
70) 4-Chlorotoluene	8.983	91	3199	0.3816 ug/L	97
71) tert-Butylbenzene	9.087	134	667	0.3462 ug/L	80
72) sec-Butylbenzene	9.177	105	4707	0.3654 ug/L	99
73) p-Isopropyltoluene	9.252	119	3968	0.3611 ug/L	99
74) 1,3-Dichlorobenzene	9.281	146	2377	0.3882 ug/L	100
75) 1,4-Dichlorobenzene	9.325	146	2486	0.4049 ug/L	87
76) n-Butylbenzene	9.455	91	3319	0.3457 ug/L	95
77) 1,2-Dichlorobenzene	9.528	146	2319	0.4023 ug/L	95
79) Hexachlorobutadiene	10.208	225	1093	0.3977 ug/L	93
80) 1,2,4-Trichlorobenzene	10.222	180	1659	0.3711 ug/L	95
81) Naphthalene	10.376	128	3040	0.4026 ug/L	99
82) 1,2,3-Trichlorobenzene	10.460	180	1580	0.3854 ug/L	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011948.D
Acq On : 18 May 2015 12:16
Operator : ADC
Sample : WG523986-04 0.4ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 18 15:04:24 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

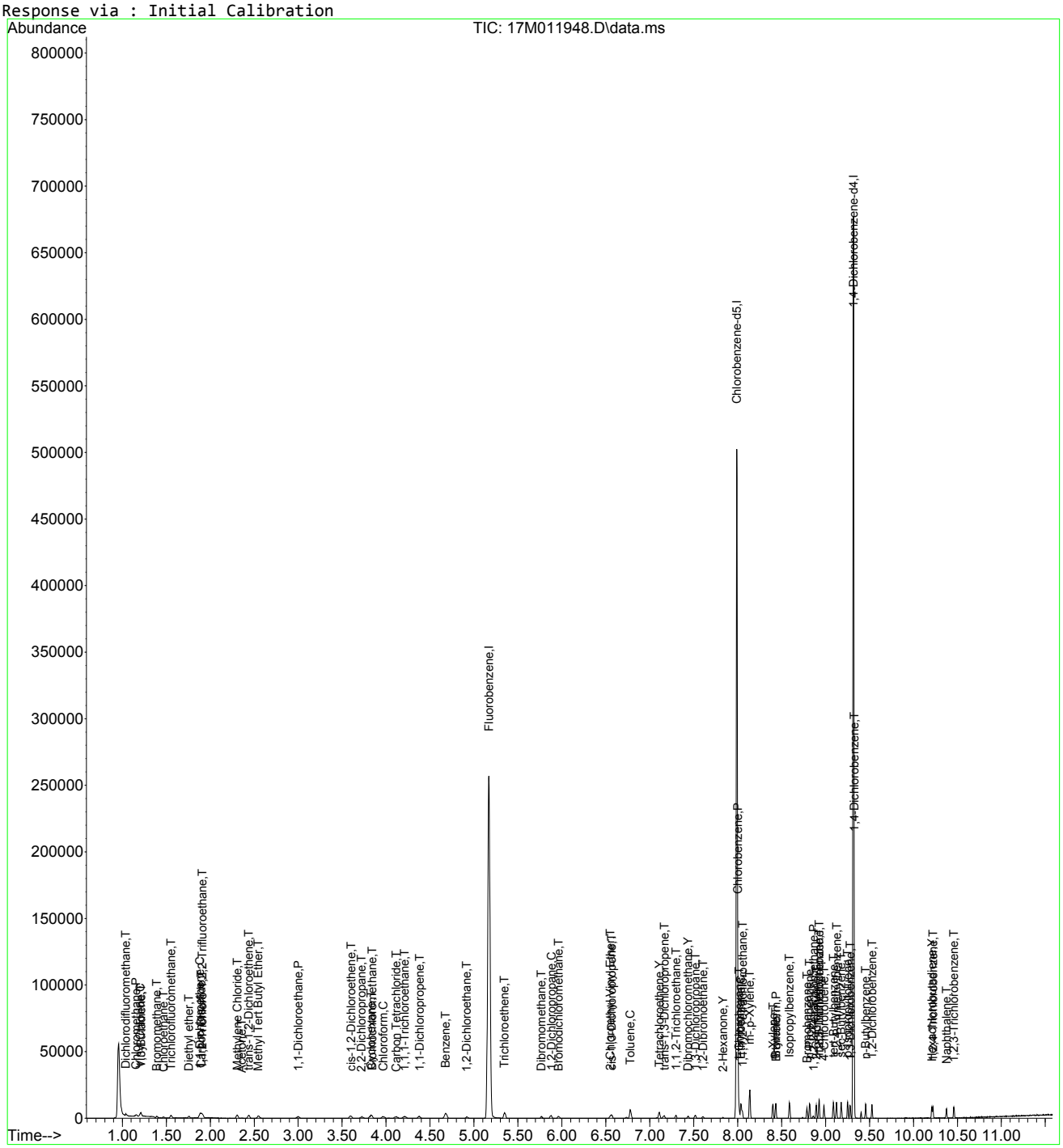

826_VMS.M Mon May 18 15:05:38 2015 Page: 3

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011948.D
Acq On : 18 May 2015 12:16
Operator : ADC
Sample : WG523986-04 0.4ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 18 15:04:24 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	100	0.000
2	T	Dichlorodifluoromethane	-1.000	0.283	0.0	100	0.000
3	P	Chloromethane	-1.000	0.371	0.0	0	0.000
4	C	Vinyl Chloride	0.400	0.384	4.0#	100	0.000
5	T	1,3-Butadiene	0.400	0.383	4.3	100	0.000
6	T	Bromomethane	-1.000	0.379	0.0	0	0.000
7	T	Chloroethane	-1.000	0.401	0.0	0	0.012
8	T	Trichlorofluoromethane	0.400	0.417	-4.2	100	0.000
9	T	Diethyl ether	0.400	0.340	15.0	100	0.000
10	C	1,1-Dichloroethene	0.400	0.375	6.3#	100	0.000
11	T	Carbon Disulfide	0.400	0.407	-1.7	100	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.400	0.377	5.8	100	0.000
13	T	Acrolein	-1.000	0.000	0.0	0	-2.124#
14	T	Methylene Chloride	0.400	0.391	2.3	100	0.000
15	T	Acetone	-1.000	0.564	0.0	0	0.000
16	T	trans-1,2-Dichloroethene	0.400	0.399	0.3	100	0.000
17	T	Methyl Tert Butyl Ether	0.400	0.378	5.5	100	0.000
18	P	1,1-Dichloroethane	0.400	0.368	8.0	100	0.000
19	T	Acrylonitrile	-1.000	0.000	0.0	0	-3.057#
20	T	Vinyl Acetate	-1.000	0.000	0.0	0	-3.300#
21	T	cis-1,2-Dichloroethene	0.400	0.354	11.5	100	0.000
22	T	2,2-Dichloropropane	0.400	0.338	15.5	100	0.000
23	T	Cyclohexane	0.400	0.342	14.5	100	0.000
24	T	Bromochloromethane	-1.000	0.200	0.0	0	0.000
25	C	Chloroform	0.400	0.358	10.5#	100	0.000
26	T	Carbon Tetrachloride	0.400	0.324	19.0	100	0.000
27	S	Dibromofluoromethane	-1.000	0.000	0.0	0	-4.206#
28	T	1,1,1-Trichloroethane	0.400	0.377	5.8	100	0.000
29	T	1,1-Dichloropropene	0.400	0.361	9.8	100	0.000
30	T	2-Butanone	-1.000	0.000	0.0	0	-4.400#
31	T	Benzene	0.400	0.404	-1.0	100	0.000
32	S	1,2-Dichloroethane-d4	-1.000	0.000	0.0	0	-4.840#
33	T	1,2-Dichloroethane	0.400	0.361	9.8	100	0.000
34	T	Trichloroethene	0.400	0.453	-13.2	100	0.000
35	T	Dibromomethane	0.400	0.277	30.8#	100	0.000
36	C	1,2-Dichloropropane	0.400	0.356	11.0#	100	0.000
37	T	Bromodichloromethane	0.400	0.341	14.8	100	0.000
38	T	1,4-Dioxane	-1.000	0.000	0.0	0	-6.175#
39	T	2-Chloroethyl Vinyl Ether	-1.000	0.676	0.0	0	0.000
40	T	cis-1,3-Dichloropropene	0.400	0.330	17.5	100	0.000
41	T	4-Methyl-2-Pentanone	-1.000	0.000	0.0	0	-7.831#
42	T	trans-1,3-Dichloropropene	0.400	0.325	18.8	100	0.000
43	I	Chlorobenzene-d5	25.000	25.000	0.0	100	0.000
44	S	Toluene-d8	-1.000	0.044	0.0	0	0.000
45	C	Toluene	0.400	0.398	0.5#	100	0.000
46	Y	Tetrachloroethene	0.400	0.401	-0.3	100	0.000
47	T	1,1,2-Trichloroethane	0.400	0.375	6.3	100	0.000
48	Y	Dibromochloromethane	0.400	0.335	16.3	100	0.000
49	T	1,3-Dichloropropane	0.400	0.397	0.8	100	0.000
50	T	1,2-Dibromoethane	0.400	0.347	13.3	100	0.000
51	Y	2-Hexanone	-1.000	0.324	0.0	0	0.000
52	P	Chlorobenzene	0.400	0.390	2.5	100	0.000
53	T	1-Chlorohexane	0.400	0.320	20.0	100	0.000
54	C	Ethylbenzene	0.400	0.384	4.0#	100	0.000
55	T	1,1,1,2-Tetrachloroethane	0.400	0.353	11.8	100	0.000

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011948.D
Acq On : 18 May 2015 12:16
Operator : ADC
Sample : WG523986-04 0.4ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 18 15:04:24 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	m-,p-Xylene	0.800	0.764	4.5	100	0.000
57	T	o-Xylene	0.400	0.387	3.3	100	0.000
58	T	Styrene	0.400	0.354	11.5	100	0.000
59	P	Bromoform	0.400	0.325	18.8	100	0.000
60	T	Isopropylbenzene	0.400	0.377	5.8	100	0.000
61	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	100	0.000
62	T	1,3,5-Trimethylbenzene	0.400	0.372	7.0	100	0.000
63	S	p-Bromofluorobenzene	-1.000	0.037	0.0	0	0.000
64	T	Bromobenzene	0.400	0.406	-1.5	100	0.000
65	T	n-Propylbenzene	0.400	0.376	6.0	100	0.000
66	P	1,1,2,2-Tetrachloroethane	0.400	0.358	10.5	100	0.000
67	T	2-Chlorotoluene	0.400	0.389	2.8	100	0.000
68	T	1,2,3-Trichloropropane	0.400	0.272	32.0#	100	0.000
69	T	1,2,4-Trimethylbenzene	0.400	0.370	7.5	100	0.000
70	T	4-Chlorotoluene	0.400	0.382	4.5	100	0.000
71	T	tert-Butylbenzene	0.400	0.346	13.5	100	0.000
72	T	sec-Butylbenzene	0.400	0.365	8.8	100	0.000
73	T	p-Isopropyltoluene	0.400	0.361	9.8	100	0.000
74	T	1,3-Dichlorobenzene	0.400	0.388	3.0	100	0.000
75	T	1,4-Dichlorobenzene	0.400	0.405	-1.3	100	0.000
76	T	n-Butylbenzene	0.400	0.346	13.5	100	0.000
77	T	1,2-Dichlorobenzene	0.400	0.402	-0.5	100	0.000
78	T	1,2-Dibromo-3-Chloropropane	-1.000	0.000	0.0	0	-9.907#
79	Y	Hexachlorobutadiene	0.400	0.398	0.5	100	0.000
80	T	1,2,4-Trichlorobenzene	0.400	0.371	7.3	100	0.000
81	T	Naphthalene	0.400	0.403	-0.8	100	0.000
82	T	1,2,3-Trichlorobenzene	0.400	0.385	3.8	100	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011949.D
Acq On : 18 May 2015 12:36
Operator : ADC
Sample : WG523986-05 1.0ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 18 15:04:26 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	5.170	96	229181	25.00000	ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	167309	25.00000	ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	87048	25.00000	ug/L	0.0000
System Monitoring Compounds						
27) Dibromofluoromethane	0.000	111	0	0.0000	ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	=	0.000%#	
32) 1,2-Dichloroethane-d4	0.000	65	0	0.0000	ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	=	0.000%#	
44) Toluene-d8	6.736	98	321	0.0361	ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery	=	0.144%#	
63) p-Bromofluorobenzene	0.000	95	0	0.0000	ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery	=	0.000%#	
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.041	85	2219	0.8635	ug/L #	72
3) Chloromethane	1.160	50	2680	0.9537	ug/L	97
4) Vinyl Chloride	1.201	62	2744	0.9261	ug/L	96
5) 1,3-Butadiene	1.212	54	1403	0.8980	ug/L	96
6) Bromomethane	1.392	94	1663	0.9507	ug/L	97
7) Chloroethane	1.467	64	1537	1.0781	ug/L	87
8) Trichlorofluoromethane	1.551	101	3874	1.0880	ug/L	97
9) Diethyl ether	1.759	59	1438	0.9680	ug/L	92
10) 1,1-Dichloroethene	1.881	61	3460	0.9748	ug/L	99
11) Carbon Disulfide	1.895	76	6338	0.9647	ug/L	98
12) 1,1,2-Trichloro-1,2,2-...	1.913	101	2347	0.9856	ug/L	97
14) Methylene Chloride	2.307	84	2565	1.0161	ug/L	99
15) Acetone	2.362	43	425	1.1777	ug/L #	43
16) trans-1,2-Dichloroethene	2.434	96	2347	0.9759	ug/L	95
17) Methyl Tert Butyl Ether	2.547	73	5102	0.9680	ug/L	94
18) 1,1-Dichloroethane	3.002	63	4186	0.9510	ug/L	100
19) Acrylonitrile	3.054	53	324	0.6500	ug/L	100
21) cis-1,2-Dichloroethene	3.601	96	2572	0.9682	ug/L	100
22) 2,2-Dichloropropane	3.722	77	3070	0.9114	ug/L	100
23) Cyclohexane	3.830	56	3685	0.9572	ug/L	99
24) Bromochloromethane	3.832	130	1301	0.8004	ug/L	100
25) Chloroform	3.966	83	4124	0.9764	ug/L	95
26) Carbon Tetrachloride	4.110	117	3027	0.8909	ug/L	98
28) 1,1,1-Trichloroethane	4.215	97	3652	0.9467	ug/L	96
29) 1,1-Dichloropropene	4.383	75	3002	0.9207	ug/L	98
30) 2-Butanone	4.403	43	358	0.6126	ug/L #	33
31) Benzene	4.675	78	10254	1.0109	ug/L	97
33) 1,2-Dichloroethane	4.918	62	2547	0.9492	ug/L #	90
34) Trichloroethene	5.350	130	3042	1.0105	ug/L	98
35) Dibromomethane	5.767	93	1208	0.9625	ug/L	99
36) 1,2-Dichloropropane	5.874	63	2519	0.9488	ug/L	95
37) Bromodichloromethane	5.963	83	2883	0.9066	ug/L	99
39) 2-Chloroethyl Vinyl Ether	6.551	63	1973	1.6910	ug/L	96
40) cis-1,3-Dichloropropene	6.569	75	3232	0.8717	ug/L	99
41) 4-Methyl-2-Pentanone	7.831	58	366	0.6972	ug/L #	60
42) trans-1,3-Dichloropropene	7.165	75	2525	0.8731	ug/L	98
45) Toluene	6.780	91	10604	0.9752	ug/L	99
46) Tetrachloroethene	7.110	166	2956	0.9747	ug/L	97
47) 1,1,2-Trichloroethane	7.298	97	1781	0.9753	ug/L	98
48) Dibromochloromethane	7.434	129	2124	0.8900	ug/L	98
49) 1,3-Dichloropropane	7.515	76	2863	0.9722	ug/L	99
50) 1,2-Dibromoethane	7.605	107	1655	0.9278	ug/L	99
51) 2-Hexanone	7.834	43	779	0.8621	ug/L	90
52) Chlorobenzene	8.002	112	7145	0.9883	ug/L	74

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011949.D
Acq On : 18 May 2015 12:36
Operator : ADC
Sample : WG523986-05 1.0ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 18 15:04:26 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) 1-Chlorohexane	8.013	69	575	0.9108 ug/L	74
54) Ethylbenzene	8.037	106	3616	0.9351 ug/L	92
55) 1,1,1,2-Tetrachloroethane	8.054	131	2434	0.9480 ug/L	95
56) m-,p-Xylene	8.138	106	8777	1.8978 ug/L	98
57) o-Xylene	8.401	106	4273	0.9353 ug/L	95
58) Styrene	8.433	104	6592	0.9046 ug/L	99
59) Bromoform	8.436	173	1248	0.8254 ug/L	97
60) Isopropylbenzene	8.589	105	11203	0.9424 ug/L	100
62) 1,3,5-Trimethylbenzene	8.925	105	9447	0.9414 ug/L	100
64) Bromobenzene	8.789	156	3055	0.9699 ug/L	98
65) n-Propylbenzene	8.818	91	12346	0.9376 ug/L	100
66) 1,1,2,2-Tetrachloroethane	8.859	83	1874	0.9555 ug/L	97
67) 2-Chlorotoluene	8.894	91	7956	0.9815 ug/L	99
68) 1,2,3-Trichloropropane	8.925	110	473	0.9220 ug/L	81
69) 1,2,4-Trimethylbenzene	9.125	105	9444	0.9434 ug/L	98
70) 4-Chlorotoluene	8.983	91	7755	0.9496 ug/L	99
71) tert-Butylbenzene	9.090	134	1793	0.9551 ug/L	96
72) sec-Butylbenzene	9.177	105	11851	0.9444 ug/L	100
73) p-Isopropyltoluene	9.253	119	9819	0.9172 ug/L	100
74) 1,3-Dichlorobenzene	9.279	146	5816	0.9749 ug/L	98
75) 1,4-Dichlorobenzene	9.325	146	5801	0.9698 ug/L	95
76) n-Butylbenzene	9.455	91	8185	0.8751 ug/L	100
77) 1,2-Dichlorobenzene	9.528	146	5546	0.9877 ug/L	98
78) 1,2-Dibromo-3-Chloropr...	9.910	75	216	0.6481 ug/L	76
79) Hexachlorobutadiene	10.208	225	2438	0.9106 ug/L	98
80) 1,2,4-Trichlorobenzene	10.222	180	4092	0.9396 ug/L	97
81) Naphthalene	10.376	128	7000	0.9515 ug/L	99
82) 1,2,3-Trichlorobenzene	10.460	180	3829	0.9586 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011949.D
Acq On : 18 May 2015 12:36
Operator : ADC
Sample : WG523986-05 1.0ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 18 15:04:26 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

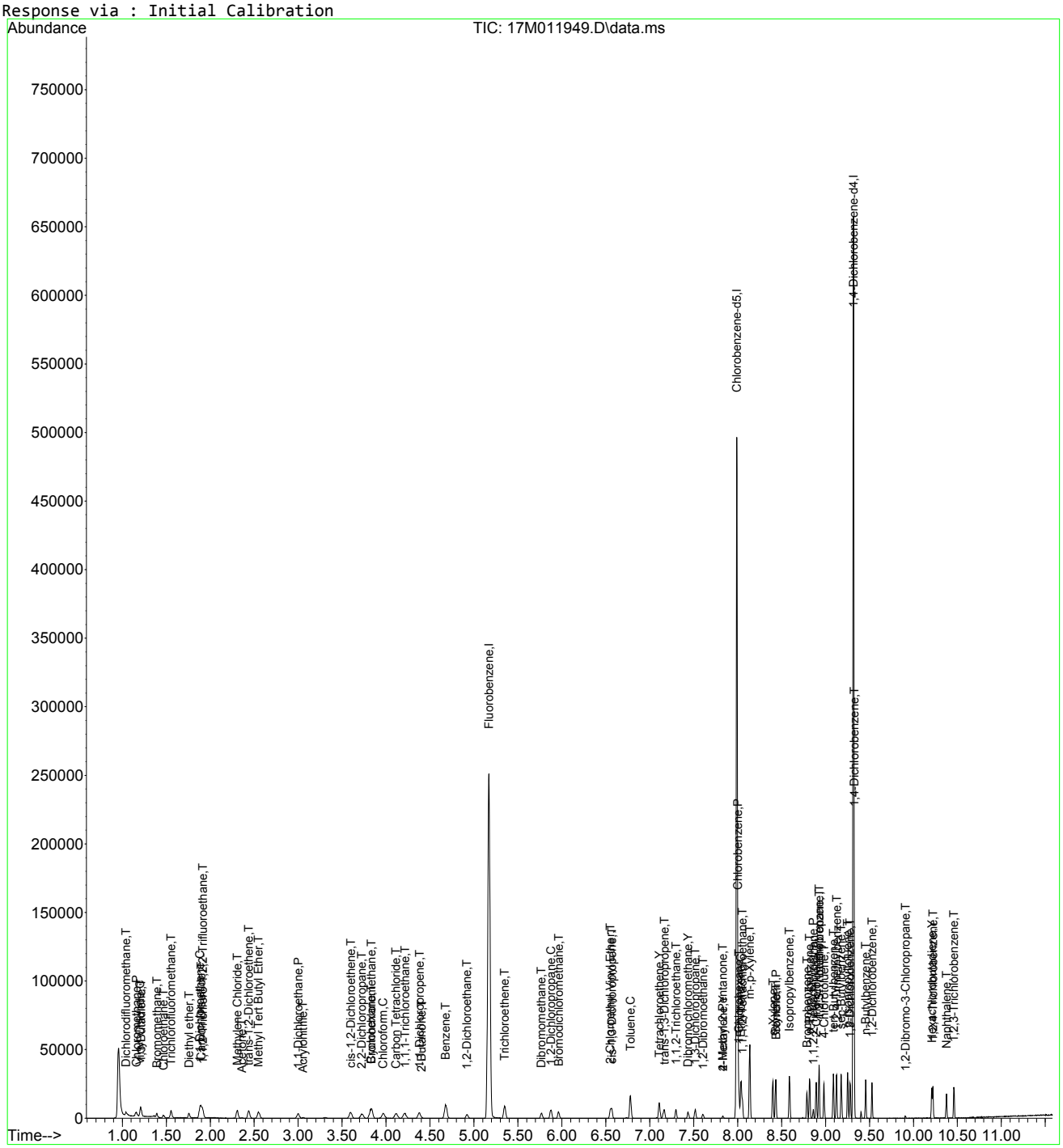

826_VMS.M Mon May 18 15:06:04 2015 Page: 3

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011949.D
Acq On : 18 May 2015 12:36
Operator : ADC
Sample : WG523986-05 1.0ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 18 15:04:26 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	100	0.000
2	T	Dichlorodifluoromethane	1.000	0.864	13.6	100	0.000
3	P	Chloromethane	1.000	0.954	4.6	100	0.000
4	C	Vinyl Chloride	1.000	0.926	7.4#	100	0.000
5	T	1,3-Butadiene	1.000	0.898	10.2	100	0.000
6	T	Bromomethane	1.000	0.951	4.9	100	0.000
7	T	Chloroethane	1.000	1.078	-7.8	100	0.012
8	T	Trichlorofluoromethane	1.000	1.088	-8.8	100	0.000
9	T	Diethyl ether	1.000	0.968	3.2	100	0.000
10	C	1,1-Dichloroethene	1.000	0.975	2.5#	100	0.000
11	T	Carbon Disulfide	1.000	0.965	3.5	100	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.000	0.986	1.4	100	0.000
13	T	Acrolein	-1.000	0.000	0.0	0	-2.124#
14	T	Methylene Chloride	1.000	1.016	-1.6	100	0.000
15	T	Acetone	-1.000	1.178	0.0	0	0.000
16	T	trans-1,2-Dichloroethene	1.000	0.976	2.4	100	0.000
17	T	Methyl Tert Butyl Ether	1.000	0.968	3.2	100	0.000
18	P	1,1-Dichloroethane	1.000	0.951	4.9	100	0.000
19	T	Acrylonitrile	-1.000	0.650	0.0	100	0.000
20	T	Vinyl Acetate	-1.000	0.000	0.0	0	-3.300#
21	T	cis-1,2-Dichloroethene	1.000	0.968	3.2	100	0.000
22	T	2,2-Dichloropropane	1.000	0.911	8.9	100	0.000
23	T	Cyclohexane	1.000	0.957	4.3	100	0.000
24	T	Bromochloromethane	1.000	0.800	20.0	100	0.000
25	C	Chloroform	1.000	0.976	2.4#	100	0.000
26	T	Carbon Tetrachloride	1.000	0.891	10.9	100	0.000
27	S	Dibromofluoromethane	-1.000	0.000	0.0	0	-4.206#
28	T	1,1,1-Trichloroethane	1.000	0.947	5.3	100	0.000
29	T	1,1-Dichloropropene	1.000	0.921	7.9	100	0.000
30	T	2-Butanone	-1.000	0.613	0.0	0	0.000
31	T	Benzene	1.000	1.011	-1.1	100	0.000
32	S	1,2-Dichloroethane-d4	-1.000	0.000	0.0	0	-4.840#
33	T	1,2-Dichloroethane	1.000	0.949	5.1	100	0.000
34	T	Trichloroethene	1.000	1.011	-1.1	100	0.000
35	T	Dibromomethane	1.000	0.963	3.7	100	0.000
36	C	1,2-Dichloropropane	1.000	0.949	5.1#	100	0.000
37	T	Bromodichloromethane	1.000	0.907	9.3	100	0.000
38	T	1,4-Dioxane	-1.000	0.000	0.0	0	-6.175#
39	T	2-Chloroethyl Vinyl Ether	2.000	1.691	15.4	100	0.000
40	T	cis-1,3-Dichloropropene	1.000	0.872	12.8	100	0.000
41	T	4-Methyl-2-Pentanone	-1.000	0.697	0.0	0	0.000
42	T	trans-1,3-Dichloropropene	1.000	0.873	12.7	100	0.000
43	I	Chlorobenzene-d5	25.000	25.000	0.0	100	0.000
44	S	Toluene-d8	-1.000	0.036	0.0	0	0.000
45	C	Toluene	1.000	0.975	2.5#	100	0.000
46	Y	Tetrachloroethene	1.000	0.975	2.5	100	0.000
47	T	1,1,2-Trichloroethane	1.000	0.975	2.5	100	0.000
48	Y	Dibromochloromethane	1.000	0.890	11.0	100	0.000
49	T	1,3-Dichloropropane	1.000	0.972	2.8	100	0.000
50	T	1,2-Dibromoethane	1.000	0.928	7.2	100	0.000
51	Y	2-Hexanone	-1.000	0.862	0.0	0	0.000
52	P	Chlorobenzene	1.000	0.988	1.2	100	0.000
53	T	1-Chlorohexane	1.000	0.911	8.9	100	0.000
54	C	Ethylbenzene	1.000	0.935	6.5#	100	0.000
55	T	1,1,1,2-Tetrachloroethane	1.000	0.948	5.2	100	0.000

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011949.D
Acq On : 18 May 2015 12:36
Operator : ADC
Sample : WG523986-05 1.0ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 18 15:04:26 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	m-,p-Xylene	2.000	1.898	5.1	100	0.000
57	T	o-Xylene	1.000	0.935	6.5	100	0.000
58	T	Styrene	1.000	0.905	9.5	100	0.000
59	P	Bromoform	1.000	0.825	17.5	100	0.000
60	T	Isopropylbenzene	1.000	0.942	5.8	100	0.000
61	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	100	0.000
62	T	1,3,5-Trimethylbenzene	1.000	0.941	5.9	100	0.000
63	S	p-Bromofluorobenzene	-1.000	0.000	0.0	0	-8.737#
64	T	Bromobenzene	1.000	0.970	3.0	100	0.000
65	T	n-Propylbenzene	1.000	0.938	6.2	100	0.000
66	P	1,1,2,2-Tetrachloroethane	1.000	0.955	4.5	100	0.000
67	T	2-Chlorotoluene	1.000	0.981	1.9	100	0.000
68	T	1,2,3-Trichloropropane	1.000	0.922	7.8	100	0.000
69	T	1,2,4-Trimethylbenzene	1.000	0.943	5.7	100	0.000
70	T	4-Chlorotoluene	1.000	0.950	5.0	100	0.000
71	T	tert-Butylbenzene	1.000	0.955	4.5	100	0.000
72	T	sec-Butylbenzene	1.000	0.944	5.6	100	0.000
73	T	p-Isopropyltoluene	1.000	0.917	8.3	100	0.000
74	T	1,3-Dichlorobenzene	1.000	0.975	2.5	100	0.000
75	T	1,4-Dichlorobenzene	1.000	0.970	3.0	100	0.000
76	T	n-Butylbenzene	1.000	0.875	12.5	100	0.000
77	T	1,2-Dichlorobenzene	1.000	0.988	1.2	100	0.000
78	T	1,2-Dibromo-3-Chloropropane	-1.000	0.648	0.0	100	0.000
79	Y	Hexachlorobutadiene	1.000	0.911	8.9	100	0.000
80	T	1,2,4-Trichlorobenzene	1.000	0.940	6.0	100	0.000
81	T	Naphthalene	1.000	0.951	4.9	100	0.000
82	T	1,2,3-Trichlorobenzene	1.000	0.959	4.1	100	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011950.D
Acq On : 18 May 2015 12:55
Operator : ADC
Sample : WG523986-06 2.0ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 18 15:04:28 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	5.170	96	229826	25.00000	ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	169620	25.00000	ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	88520	25.00000	ug/L	0.0000
System Monitoring Compounds						
27) Dibromofluoromethane	0.000	111	0	0.0000	ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	=	0.000%#	
32) 1,2-Dichloroethane-d4	0.000	65	0	0.0000	ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	=	0.000%#	
44) Toluene-d8	6.737	98	415	0.0461	ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery	=	0.184%#	
63) p-Bromofluorobenzene	0.000	95	0	0.0000	ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery	=	0.000%#	
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.038	85	4441	1.7234	ug/L	93
3) Chloromethane	1.157	50	5346	1.8971	ug/L	95
4) Vinyl Chloride	1.204	62	5355	1.8023	ug/L	99
5) 1,3-Butadiene	1.212	54	2784	1.7769	ug/L	99
6) Bromomethane	1.389	94	3189	1.8180	ug/L	99
7) Chloroethane	1.467	64	3077	2.1522	ug/L	91
8) Trichlorofluoromethane	1.554	101	7233	2.0256	ug/L	99
9) Diethyl ether	1.759	59	2904	1.9493	ug/L	97
10) 1,1-Dichloroethene	1.881	61	6706	1.8840	ug/L	98
11) Carbon Disulfide	1.896	76	12237	1.8574	ug/L	99
12) 1,1,2-Trichloro-1,2,2-...	1.913	101	4427	1.8539	ug/L	97
13) Acrolein	2.127	56	239	1.2315	ug/L #	13
14) Methylene Chloride	2.310	84	4831	1.9084	ug/L	100
15) Acetone	2.362	43	783	2.1637	ug/L #	43
16) trans-1,2-Dichloroethene	2.437	96	4480	1.8577	ug/L	100
17) Methyl Tert Butyl Ether	2.550	73	10087	1.9084	ug/L	98
18) 1,1-Dichloroethane	2.999	63	8448	1.9140	ug/L	99
19) Acrylonitrile	3.057	53	866	1.7324	ug/L	90
21) cis-1,2-Dichloroethene	3.601	96	4958	1.8611	ug/L	98
22) 2,2-Dichloropropane	3.728	77	6134	1.8159	ug/L	98
23) Cyclohexane	3.827	56	7112	1.8423	ug/L	100
24) Bromochloromethane	3.833	130	2843	1.7441	ug/L	98
25) Chloroform	3.966	83	8250	1.9477	ug/L	97
26) Carbon Tetrachloride	4.113	117	6164	1.8091	ug/L	99
28) 1,1,1-Trichloroethane	4.209	97	7273	1.8800	ug/L	99
29) 1,1-Dichloropropene	4.377	75	6110	1.8687	ug/L	98
30) 2-Butanone	4.403	43	943	1.6090	ug/L #	60
31) Benzene	4.678	78	19357	1.9031	ug/L	100
33) 1,2-Dichloroethane	4.921	62	5176	1.9234	ug/L	96
34) Trichloroethene	5.350	130	5660	1.8749	ug/L	98
35) Dibromomethane	5.767	93	2435	1.9348	ug/L	98
36) 1,2-Dichloropropane	5.880	63	5107	1.9181	ug/L	97
37) Bromodichloromethane	5.961	83	5850	1.8344	ug/L	99
39) 2-Chloroethyl Vinyl Ether	6.548	63	4068	3.4768	ug/L	96
40) cis-1,3-Dichloropropene	6.569	75	6593	1.7733	ug/L	99
41) 4-Methyl-2-Pentanone	7.831	58	796	1.5121	ug/L #	60
42) trans-1,3-Dichloropropene	7.168	75	5187	1.7885	ug/L	99
45) Toluene	6.780	91	21020	1.9068	ug/L	99
46) Tetrachloroethene	7.107	166	5779	1.8797	ug/L	99
47) 1,1,2-Trichloroethane	7.298	97	3697	1.9968	ug/L	96
48) Dibromochloromethane	7.434	129	4370	1.8061	ug/L	98
49) 1,3-Dichloropropane	7.515	76	5765	1.9309	ug/L	98
50) 1,2-Dibromoethane	7.605	107	3394	1.8769	ug/L	100
51) 2-Hexanone	7.834	43	1650	1.8011	ug/L	92

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011950.D
Acq On : 18 May 2015 12:55
Operator : ADC
Sample : WG523986-06 2.0ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 18 15:04:28 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
52)	Chlorobenzene	8.002	112	13904	1.8969 ug/L	86
53)	1-Chlorohexane	8.016	69	1155	1.8046 ug/L #	77
54)	Ethylbenzene	8.037	106	7302	1.8626 ug/L	100
55)	1,1,1,2-Tetrachloroethane	8.054	131	4948	1.9010 ug/L	99
56)	m-,p-Xylene	8.138	106	17446	3.7209 ug/L	99
57)	o-Xylene	8.398	106	8530	1.8416 ug/L	97
58)	Styrene	8.433	104	13049	1.7662 ug/L	99
59)	Bromoform	8.436	173	2803	1.8286 ug/L	97
60)	Isopropylbenzene	8.590	105	22305	1.8507 ug/L	100
62)	1,3,5-Trimethylbenzene	8.925	105	19023	1.8640 ug/L	98
64)	Bromobenzene	8.789	156	6239	1.9479 ug/L	98
65)	n-Propylbenzene	8.818	91	24966	1.8646 ug/L	99
66)	1,1,2,2-Tetrachloroethane	8.859	83	3797	1.9037 ug/L	98
67)	2-Chlorotoluene	8.894	91	15638	1.8971 ug/L	99
68)	1,2,3-Trichloropropane	8.925	110	1055	2.0222 ug/L	97
69)	1,2,4-Trimethylbenzene	9.125	105	18708	1.8378 ug/L	99
70)	4-Chlorotoluene	8.983	91	15633	1.8824 ug/L	100
71)	tert-Butylbenzene	9.090	134	3589	1.8800 ug/L	99
72)	sec-Butylbenzene	9.177	105	24512	1.9209 ug/L	99
73)	p-Isopropyltoluene	9.253	119	19807	1.8194 ug/L	99
74)	1,3-Dichlorobenzene	9.279	146	11353	1.8715 ug/L	100
75)	1,4-Dichlorobenzene	9.325	146	11471	1.8858 ug/L	96
76)	n-Butylbenzene	9.455	91	16618	1.7472 ug/L	99
77)	1,2-Dichlorobenzene	9.528	146	10958	1.9190 ug/L	99
78)	1,2-Dibromo-3-Chloropr...	9.907	75	616	1.8177 ug/L	91
79)	Hexachlorobutadiene	10.208	225	4980	1.8290 ug/L	98
80)	1,2,4-Trichlorobenzene	10.223	180	7957	1.7967 ug/L	100
81)	Naphthalene	10.376	128	13979	1.8685 ug/L	100
82)	1,2,3-Trichlorobenzene	10.463	180	7547	1.8581 ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011950.D
Acq On : 18 May 2015 12:55
Operator : ADC
Sample : WG523986-06 2.0ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 18 15:04:28 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

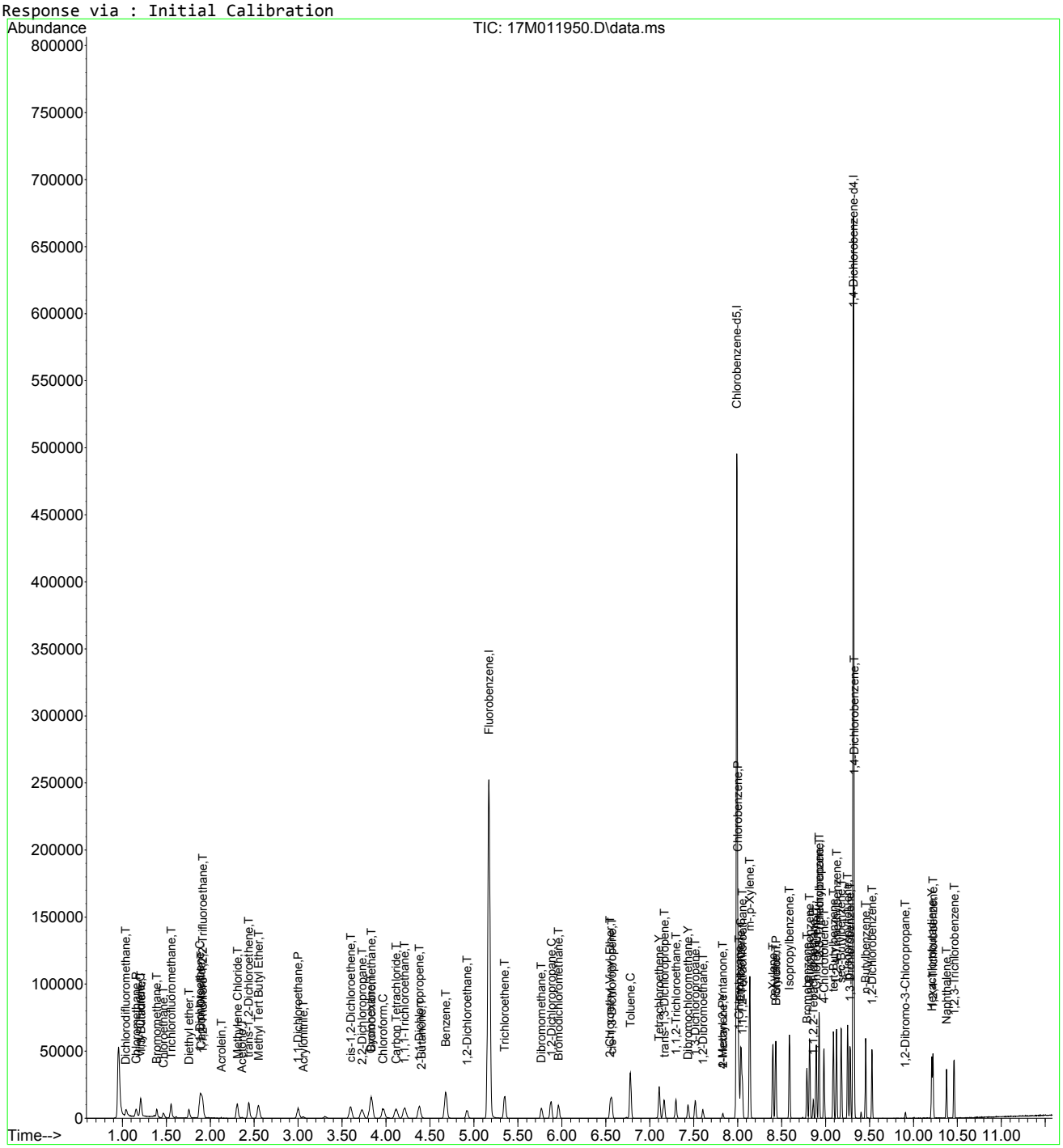

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011950.D
Acq On : 18 May 2015 12:55
Operator : ADC
Sample : WG523986-06 2.0ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 18 15:04:28 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	100	0.000
2	T	Dichlorodifluoromethane	2.000	1.723	13.8	100	0.000
3	P	Chloromethane	2.000	1.897	5.1	100	0.000
4	C	Vinyl Chloride	2.000	1.802	9.9#	100	0.000
5	T	1,3-Butadiene	2.000	1.777	11.2	100	0.000
6	T	Bromomethane	2.000	1.818	9.1	100	0.000
7	T	Chloroethane	2.000	2.152	-7.6	100	0.012
8	T	Trichlorofluoromethane	2.000	2.026	-1.3	100	0.012
9	T	Diethyl ether	2.000	1.949	2.5	100	0.000
10	C	1,1-Dichloroethene	2.000	1.884	5.8#	100	0.000
11	T	Carbon Disulfide	2.000	1.857	7.2	100	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.000	1.854	7.3	100	0.000
13	T	Acrolein	-1.000	1.231	0.0	100	0.000
14	T	Methylene Chloride	2.000	1.908	4.6	100	0.000
15	T	Acetone	-1.000	2.164	0.0	0	0.000
16	T	trans-1,2-Dichloroethene	2.000	1.858	7.1	100	0.000
17	T	Methyl Tert Butyl Ether	2.000	1.908	4.6	100	0.000
18	P	1,1-Dichloroethane	2.000	1.914	4.3	100	0.000
19	T	Acrylonitrile	2.000	1.732	13.4	100	0.000
20	T	Vinyl Acetate	-1.000	0.000	0.0	0	-3.300#
21	T	cis-1,2-Dichloroethene	2.000	1.861	7.0	100	0.000
22	T	2,2-Dichloropropane	2.000	1.816	9.2	100	0.000
23	T	Cyclohexane	2.000	1.842	7.9	100	0.000
24	T	Bromochloromethane	2.000	1.744	12.8	100	0.000
25	C	Chloroform	2.000	1.948	2.6#	100	0.000
26	T	Carbon Tetrachloride	2.000	1.809	9.6	100	0.000
27	S	Dibromofluoromethane	-1.000	0.000	0.0	0	-4.206#
28	T	1,1,1-Trichloroethane	2.000	1.880	6.0	100	0.000
29	T	1,1-Dichloropropene	2.000	1.869	6.6	100	0.000
30	T	2-Butanone	-1.000	1.609	0.0	0	0.000
31	T	Benzene	2.000	1.903	4.8	100	0.000
32	S	1,2-Dichloroethane-d4	-1.000	0.000	0.0	0	-4.840#
33	T	1,2-Dichloroethane	2.000	1.923	3.8	100	0.000
34	T	Trichloroethene	2.000	1.875	6.3	100	0.000
35	T	Dibromomethane	2.000	1.935	3.2	100	0.000
36	C	1,2-Dichloropropane	2.000	1.918	4.1#	100	0.000
37	T	Bromodichloromethane	2.000	1.834	8.3	100	0.000
38	T	1,4-Dioxane	-1.000	0.000	0.0	0	-6.175#
39	T	2-Chloroethyl Vinyl Ether	4.000	3.477	13.1	100	0.000
40	T	cis-1,3-Dichloropropene	2.000	1.773	11.4	100	0.000
41	T	4-Methyl-2-Pentanone	-1.000	1.512	0.0	0	0.000
42	T	trans-1,3-Dichloropropene	2.000	1.789	10.6	100	0.000
43	I	Chlorobenzene-d5	25.000	25.000	0.0	100	0.000
44	S	Toluene-d8	-1.000	0.046	0.0	0	0.000
45	C	Toluene	2.000	1.907	4.6#	100	0.000
46	Y	Tetrachloroethene	2.000	1.880	6.0	100	0.000
47	T	1,1,2-Trichloroethane	2.000	1.997	0.1	100	0.000
48	Y	Dibromochloromethane	2.000	1.806	9.7	100	0.000
49	T	1,3-Dichloropropane	2.000	1.931	3.4	100	0.000
50	T	1,2-Dibromoethane	2.000	1.877	6.2	100	0.000
51	Y	2-Hexanone	2.000	1.801	10.0	100	0.000
52	P	Chlorobenzene	2.000	1.897	5.1	100	0.000
53	T	1-Chlorohexane	2.000	1.805	9.8	100	0.000
54	C	Ethylbenzene	2.000	1.863	6.9#	100	0.000
55	T	1,1,1,2-Tetrachloroethane	2.000	1.901	4.9	100	0.000

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011950.D
Acq On : 18 May 2015 12:55
Operator : ADC
Sample : WG523986-06 2.0ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 18 15:04:28 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	m-,p-Xylene	4.000	3.721	7.0	100	0.000
57	T	o-Xylene	2.000	1.842	7.9	100	0.000
58	T	Styrene	2.000	1.766	11.7	100	0.000
59	P	Bromoform	2.000	1.829	8.6	100	0.000
60	T	Isopropylbenzene	2.000	1.851	7.5	100	0.000
61	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	100	0.000
62	T	1,3,5-Trimethylbenzene	2.000	1.864	6.8	100	0.000
63	S	p-Bromofluorobenzene	-1.000	0.000	0.0	0	-8.737#
64	T	Bromobenzene	2.000	1.948	2.6	100	0.000
65	T	n-Propylbenzene	2.000	1.865	6.8	100	0.000
66	P	1,1,2,2-Tetrachloroethane	2.000	1.904	4.8	100	0.000
67	T	2-Chlorotoluene	2.000	1.897	5.1	100	0.000
68	T	1,2,3-Trichloropropane	2.000	2.022	-1.1	100	0.000
69	T	1,2,4-Trimethylbenzene	2.000	1.838	8.1	100	0.000
70	T	4-Chlorotoluene	2.000	1.882	5.9	100	0.000
71	T	tert-Butylbenzene	2.000	1.880	6.0	100	0.000
72	T	sec-Butylbenzene	2.000	1.921	3.9	100	0.000
73	T	p-Isopropyltoluene	2.000	1.819	9.1	100	0.000
74	T	1,3-Dichlorobenzene	2.000	1.871	6.5	100	0.000
75	T	1,4-Dichlorobenzene	2.000	1.886	5.7	100	0.000
76	T	n-Butylbenzene	2.000	1.747	12.6	100	0.000
77	T	1,2-Dichlorobenzene	2.000	1.919	4.0	100	0.000
78	T	1,2-Dibromo-3-Chloropropane	2.000	1.818	9.1	100	0.000
79	Y	Hexachlorobutadiene	2.000	1.829	8.6	100	0.000
80	T	1,2,4-Trichlorobenzene	2.000	1.797	10.2	100	0.000
81	T	Naphthalene	2.000	1.868	6.6	100	0.000
82	T	1,2,3-Trichlorobenzene	2.000	1.858	7.1	100	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011951.D
Acq On : 18 May 2015 13:15
Operator : ADC
Sample : WG523986-07 5.0ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 18 15:26:52 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.170	96	229936	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	169170	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	88905	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.209	111	12093	5.0097 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 20.039%#		
32) 1,2-Dichloroethane-d4	4.843	65	10892	5.2144 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 20.858%#		
44) Toluene-d8	6.734	98	47071	5.2407 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 20.963%#		
63) p-Bromofluorobenzene	8.737	95	15601	5.0809 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 20.324%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.041	85	11138	4.3202 ug/L	95
3) Chloromethane	1.154	50	13177	4.6738 ug/L	100
4) Vinyl Chloride	1.201	62	13915	4.6811 ug/L	100
5) 1,3-Butadiene	1.212	54	7185	4.5838 ug/L	99
6) Bromomethane	1.389	94	7856	4.4765 ug/L	99
7) Chloroethane	1.464	64	7920	5.5370 ug/L	97
8) Trichlorofluoromethane	1.554	101	18689	5.2314 ug/L	100
9) Diethyl ether	1.760	59	7551	5.0662 ug/L	98
10) 1,1-Dichloroethene	1.878	61	17239	4.8408 ug/L	100
11) Carbon Disulfide	1.896	76	30767	4.6677 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.910	101	11832	4.9525 ug/L	98
13) Acrolein	2.124	56	837	4.3107 ug/L	98
14) Methylene Chloride	2.304	84	12467	4.9225 ug/L	97
15) Acetone	2.359	43	1862	5.1428 ug/L	89
16) trans-1,2-Dichloroethene	2.437	96	11435	4.7393 ug/L	100
17) Methyl Tert Butyl Ether	2.547	73	25745	4.8685 ug/L	98
18) 1,1-Dichloroethane	2.999	63	21523	4.8739 ug/L	100
19) Acrylonitrile	3.057	53	2373	4.7449 ug/L	100
20) Vinyl Acetate	3.314	86	602	5.9856 ug/L	73
21) cis-1,2-Dichloroethene	3.595	96	13011	4.8817 ug/L	99
22) 2,2-Dichloropropane	3.725	77	15975	4.7269 ug/L	97
23) Cyclohexane	3.824	56	18600	4.8158 ug/L	99
24) Bromochloromethane	3.838	130	7788	4.7754 ug/L	99
25) Chloroform	3.969	83	21175	4.9967 ug/L	100
26) Carbon Tetrachloride	4.113	117	16264	4.7712 ug/L	99
28) 1,1,1-Trichloroethane	4.209	97	18487	4.7764 ug/L	100
29) 1,1-Dichloropropene	4.377	75	15409	4.7104 ug/L	100
30) 2-Butanone	4.403	43	2618	4.4649 ug/L #	82
31) Benzene	4.681	78	48831	4.7985 ug/L	100
33) 1,2-Dichloroethane	4.921	62	13331	4.9516 ug/L	97
34) Trichloroethene	5.350	130	14026	4.6441 ug/L	99
35) Dibromomethane	5.767	93	6371	5.0598 ug/L	100
36) 1,2-Dichloropropane	5.874	63	12781	4.7981 ug/L	99
37) Bromodichloromethane	5.961	83	15368	4.8166 ug/L	99
39) 2-Chloroethyl Vinyl Ether	6.548	63	10716	9.1542 ug/L	99
40) cis-1,3-Dichloropropene	6.566	75	17235	4.6334 ug/L	100
41) 4-Methyl-2-Pentanone	7.834	58	2270	4.3101 ug/L	99
42) trans-1,3-Dichloropropene	7.165	75	13821	4.7633 ug/L	99
45) Toluene	6.777	91	54031	4.9143 ug/L	100
46) Tetrachloroethene	7.107	166	14821	4.8335 ug/L	99
47) 1,1,2-Trichloroethane	7.298	97	9106	4.9315 ug/L	99
48) Dibromochloromethane	7.437	129	11583	4.8000 ug/L	99
49) 1,3-Dichloropropane	7.518	76	14626	4.9119 ug/L	99
50) 1,2-Dibromoethane	7.605	107	8883	4.9253 ug/L	99

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011951.D
Acq On : 18 May 2015 13:15
Operator : ADC
Sample : WG523986-07 5.0ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 18 15:26:52 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
51)	2-Hexanone	7.831	43	4391	4.8058 ug/L	97
52)	Chlorobenzene	8.002	112	35648	4.8764 ug/L	95
53)	1-Chlorohexane	8.016	69	3125	4.8955 ug/L	95
54)	Ethylbenzene	8.040	106	18853	4.8218 ug/L	100
55)	1,1,1,2-Tetrachloroethane	8.054	131	12527	4.8255 ug/L	98
56)	m-,p-Xylene	8.138	106	45990	9.8349 ug/L	99
57)	o-Xylene	8.401	106	22120	4.7883 ug/L	98
58)	Styrene	8.433	104	35285	4.7887 ug/L	100
59)	Bromoform	8.436	173	7495	4.9026 ug/L	99
60)	Isopropylbenzene	8.590	105	58770	4.8893 ug/L	99
62)	1,3,5-Trimethylbenzene	8.925	105	50542	4.9311 ug/L	100
64)	Bromobenzene	8.789	156	15910	4.9458 ug/L	99
65)	n-Propylbenzene	8.818	91	65803	4.8931 ug/L	100
66)	1,1,2,2-Tetrachloroethane	8.859	83	9781	4.8827 ug/L	99
67)	2-Chlorotoluene	8.894	91	40981	4.9500 ug/L	98
68)	1,2,3-Trichloropropane	8.925	110	2775	5.2960 ug/L	98
69)	1,2,4-Trimethylbenzene	9.125	105	50854	4.9740 ug/L	100
70)	4-Chlorotoluene	8.983	91	40469	4.8518 ug/L	100
71)	tert-Butylbenzene	9.091	134	9435	4.9209 ug/L	97
72)	sec-Butylbenzene	9.177	105	64236	5.0121 ug/L	99
73)	p-Isopropyltoluene	9.253	119	54206	4.9575 ug/L	100
74)	1,3-Dichlorobenzene	9.282	146	30060	4.9337 ug/L	98
75)	1,4-Dichlorobenzene	9.325	146	29593	4.8439 ug/L	99
76)	n-Butylbenzene	9.455	91	45450	4.7578 ug/L	99
77)	1,2-Dichlorobenzene	9.531	146	28467	4.9637 ug/L	99
78)	1,2-Dibromo-3-Chloropr...	9.910	75	1562	4.5891 ug/L	100
79)	Hexachlorobutadiene	10.211	225	13270	4.8526 ug/L	98
80)	1,2,4-Trichlorobenzene	10.225	180	21448	4.8219 ug/L	100
81)	Naphthalene	10.379	128	37158	4.9452 ug/L	99
82)	1,2,3-Trichlorobenzene	10.466	180	20345	4.9872 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011951.D
Acq On : 18 May 2015 13:15
Operator : ADC
Sample : WG523986-07 5.0ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 18 15:26:52 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

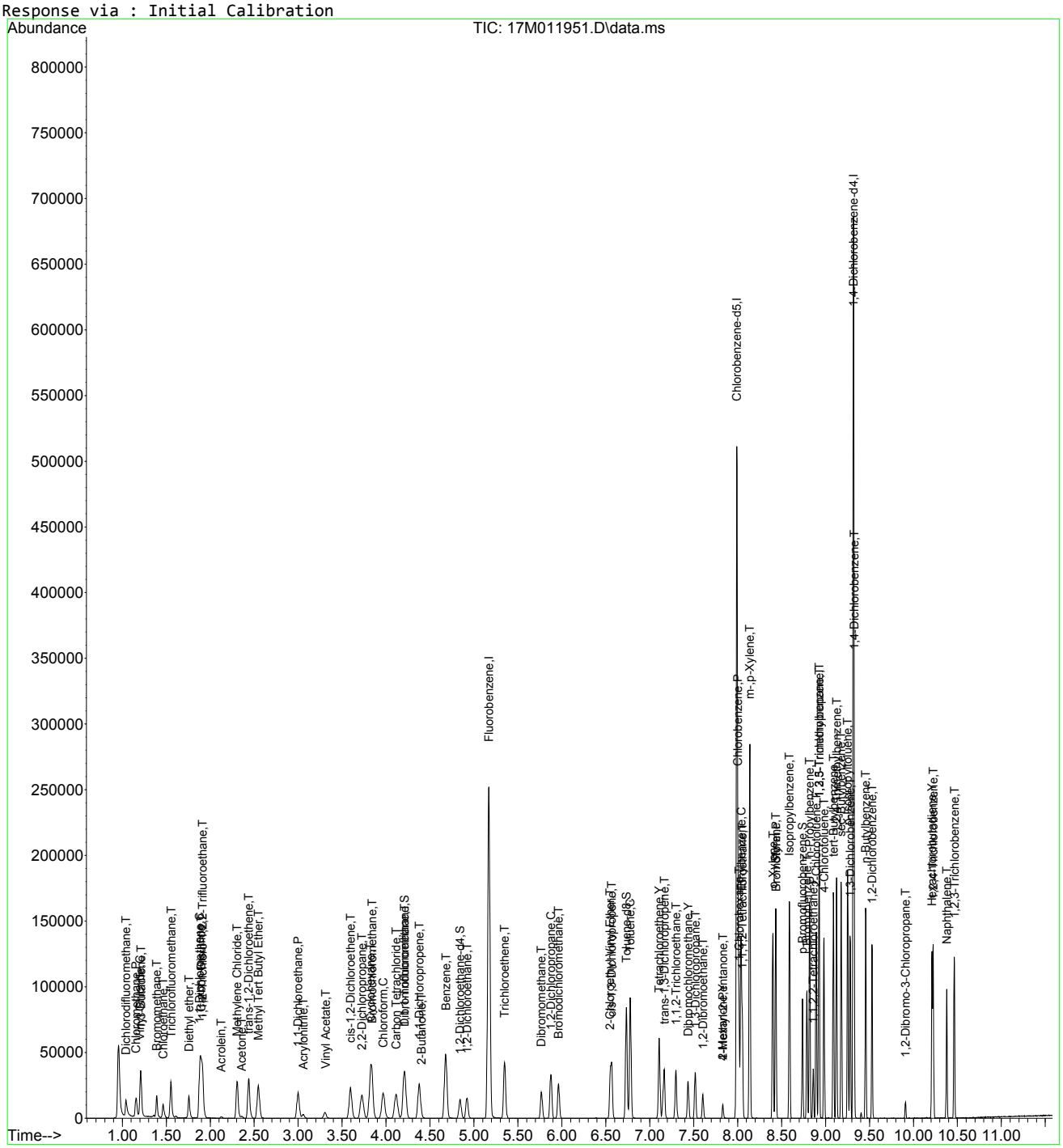

826_VMS.M Mon May 18 15:26:53 2015 Page: 3

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011951.D
Acq On : 18 May 2015 13:15
Operator : ADC
Sample : WG523986-07 5.0ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 18 15:04:30 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	100	0.000
2	T	Dichlorodifluoromethane	5.000	4.320	13.6	100	0.000
3	P	Chloromethane	5.000	4.674	6.5	100	0.000
4	C	Vinyl Chloride	5.000	4.681	6.4#	100	0.000
5	T	1,3-Butadiene	5.000	4.584	8.3	100	0.000
6	T	Bromomethane	5.000	4.476	10.5	100	0.000
7	T	Chloroethane	5.000	5.537	-10.7	100	0.000
8	T	Trichlorofluoromethane	5.000	5.231	-4.6	100	0.012
9	T	Diethyl ether	5.000	5.066	-1.3	100	0.000
10	C	1,1-Dichloroethene	5.000	4.841	3.2#	100	0.000
11	T	Carbon Disulfide	5.000	4.668	6.6	100	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.000	4.953	0.9	100	0.000
13	T	Acrolein	5.000	4.311	13.8	100	0.000
14	T	Methylene Chloride	5.000	4.923	1.5	100	0.000
15	T	Acetone	5.000	5.143	-2.9	100	0.000
16	T	trans-1,2-Dichloroethene	5.000	4.739	5.2	100	0.000
17	T	Methyl Tert Butyl Ether	5.000	4.868	2.6	100	0.000
18	P	1,1-Dichloroethane	5.000	4.874	2.5	100	0.000
19	T	Acrylonitrile	5.000	4.745	5.1	100	0.000
20	T	Vinyl Acetate	5.000	5.986	-19.7	100	0.014
21	T	cis-1,2-Dichloroethene	5.000	4.882	2.4	100	0.000
22	T	2,2-Dichloropropane	5.000	4.727	5.5	100	0.000
23	T	Cyclohexane	5.000	4.816	3.7	100	0.000
24	T	Bromochloromethane	5.000	4.775	4.5	100	0.000
25	C	Chloroform	5.000	4.997	0.1#	100	0.000
26	T	Carbon Tetrachloride	5.000	4.771	4.6	100	0.000
27	S	Dibromofluoromethane	5.000	5.010	-0.2	100	0.000
28	T	1,1,1-Trichloroethane	5.000	4.776	4.5	100	0.000
29	T	1,1-Dichloropropene	5.000	4.710	5.8	100	0.000
30	T	2-Butanone	5.000	4.465	10.7	100	0.000
31	T	Benzene	5.000	4.798	4.0	100	0.000
32	S	1,2-Dichloroethane-d4	5.000	5.214	-4.3	100	0.000
33	T	1,2-Dichloroethane	5.000	4.952	1.0	100	0.000
34	T	Trichloroethene	5.000	4.644	7.1	100	0.000
35	T	Dibromomethane	5.000	5.060	-1.2	100	0.000
36	C	1,2-Dichloropropane	5.000	4.798	4.0#	100	0.000
37	T	Bromodichloromethane	5.000	4.817	3.7	100	0.000
38	T	1,4-Dioxane	-1.000	0.000	0.0	0	-6.175#
39	T	2-Chloroethyl Vinyl Ether	10.000	9.154	8.5	100	0.000
40	T	cis-1,3-Dichloropropene	5.000	4.633	7.3	100	0.000
41	T	4-Methyl-2-Pentanone	5.000	4.310	13.8	100	0.000
42	T	trans-1,3-Dichloropropene	5.000	4.763	4.7	100	0.000
43	I	Chlorobenzene-d5	25.000	25.000	0.0	100	0.000
44	S	Toluene-d8	5.000	5.241	-4.8	100	0.000
45	C	Toluene	5.000	4.914	1.7#	100	0.000
46	Y	Tetrachloroethene	5.000	4.833	3.3	100	0.000
47	T	1,1,2-Trichloroethane	5.000	4.931	1.4	100	0.000
48	Y	Dibromochloromethane	5.000	4.800	4.0	100	0.000
49	T	1,3-Dichloropropane	5.000	4.912	1.8	100	0.000
50	T	1,2-Dibromoethane	5.000	4.925	1.5	100	0.000
51	Y	2-Hexanone	5.000	4.806	3.9	100	0.000
52	P	Chlorobenzene	5.000	4.876	2.5	100	0.000
53	T	1-Chlorohexane	5.000	4.896	2.1	100	0.000
54	C	Ethylbenzene	5.000	4.822	3.6#	100	0.000
55	T	1,1,1,2-Tetrachloroethane	5.000	4.826	3.5	100	0.000

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011951.D
Acq On : 18 May 2015 13:15
Operator : ADC
Sample : WG523986-07 5.0ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 18 15:04:30 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	m-,p-Xylene	10.000	9.835	1.6	100	0.000
57	T	o-Xylene	5.000	4.788	4.2	100	0.000
58	T	Styrene	5.000	4.789	4.2	100	0.000
59	P	Bromoform	5.000	4.903	1.9	100	0.000
60	T	Isopropylbenzene	5.000	4.889	2.2	100	0.000
61	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	100	0.000
62	T	1,3,5-Trimethylbenzene	5.000	4.931	1.4	100	0.000
63	S	p-Bromofluorobenzene	5.000	5.081	-1.6	100	0.000
64	T	Bromobenzene	5.000	4.946	1.1	100	0.000
65	T	n-Propylbenzene	5.000	4.893	2.1	100	0.000
66	P	1,1,2,2-Tetrachloroethane	5.000	4.883	2.3	100	0.000
67	T	2-Chlorotoluene	5.000	4.950	1.0	100	0.000
68	T	1,2,3-Trichloropropane	5.000	5.296	-5.9	100	0.000
69	T	1,2,4-Trimethylbenzene	5.000	4.974	0.5	100	0.000
70	T	4-Chlorotoluene	5.000	4.852	3.0	100	0.000
71	T	tert-Butylbenzene	5.000	4.921	1.6	100	0.000
72	T	sec-Butylbenzene	5.000	5.012	-0.2	100	0.000
73	T	p-Isopropyltoluene	5.000	4.957	0.9	100	0.000
74	T	1,3-Dichlorobenzene	5.000	4.934	1.3	100	0.000
75	T	1,4-Dichlorobenzene	5.000	4.844	3.1	100	0.000
76	T	n-Butylbenzene	5.000	4.758	4.8	100	0.000
77	T	1,2-Dichlorobenzene	5.000	4.964	0.7	100	0.000
78	T	1,2-Dibromo-3-Chloropropane	5.000	4.589	8.2	100	0.000
79	Y	Hexachlorobutadiene	5.000	4.853	2.9	100	0.000
80	T	1,2,4-Trichlorobenzene	5.000	4.822	3.6	100	0.000
81	T	Naphthalene	5.000	4.945	1.1	100	0.000
82	T	1,2,3-Trichlorobenzene	5.000	4.987	0.3	100	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011952.D
Acq On : 18 May 2015 13:35
Operator : ADC
Sample : WG523986-08 20.0ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 18 15:26:55 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.170	96	238513	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	176001	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.319	152	94780	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.209	111	22909	9.1491 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 36.596%#		
32) 1,2-Dichloroethane-d4	4.840	65	20446	9.4362 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 37.745%#		
44) Toluene-d8	6.733	98	88516	9.4725 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 37.890%#		
63) p-Bromofluorobenzene	8.737	95	30352	9.2723 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 37.089%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.041	85	55916	20.9088 ug/L	100
3) Chloromethane	1.154	50	58999	20.1740 ug/L	99
4) Vinyl Chloride	1.200	62	61669	19.9999 ug/L	100
5) 1,3-Butadiene	1.212	54	32090	19.7361 ug/L	100
6) Bromomethane	1.389	94	36567	20.0872 ug/L	99
7) Chloroethane	1.461	64	34153	23.0185 ug/L	99
8) Trichlorofluoromethane	1.551	101	81391	21.9634 ug/L	99
9) Diethyl ether	1.756	59	31084	20.1053 ug/L	100
10) 1,1-Dichloroethene	1.878	61	73675	19.9442 ug/L	100
11) Carbon Disulfide	1.892	76	131237	19.1943 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.910	101	49940	20.1518 ug/L	99
13) Acrolein	2.127	56	3758	18.6585 ug/L	98
14) Methylene Chloride	2.307	84	51654	19.6618 ug/L	99
15) Acetone	2.359	43	7562	20.1349 ug/L	99
16) trans-1,2-Dichloroethene	2.437	96	49220	19.6661 ug/L	99
17) Methyl Tert Butyl Ether	2.547	73	110504	20.1453 ug/L	100
18) 1,1-Dichloroethane	2.998	63	91820	20.0448 ug/L	100
19) Acrylonitrile	3.059	53	10407	20.0611 ug/L	97
20) Vinyl Acetate	3.305	86	3490	17.8397 ug/L	91
21) cis-1,2-Dichloroethene	3.595	96	55921	20.2269 ug/L	99
22) 2,2-Dichloropropane	3.722	77	70688	20.1642 ug/L	98
23) Cyclohexane	3.824	56	80071	19.9861 ug/L	100
24) Bromochloromethane	3.835	130	34722	20.5252 ug/L	100
25) Chloroform	3.968	83	90825	20.6616 ug/L	100
26) Carbon Tetrachloride	4.113	117	72041	20.3741 ug/L	100
28) 1,1,1-Trichloroethane	4.209	97	80204	19.9769 ug/L	100
29) 1,1-Dichloropropene	4.377	75	67678	19.9446 ug/L	100
30) 2-Butanone	4.397	43	11966	19.6735 ug/L	92
31) Benzene	4.678	78	207108	19.6200 ug/L	100
33) 1,2-Dichloroethane	4.921	62	56598	20.2663 ug/L	99
34) Trichloroethene	5.350	130	59443	18.9740 ug/L	99
35) Dibromomethane	5.766	93	27996	21.4345 ug/L	100
36) 1,2-Dichloropropane	5.874	63	55178	19.9694 ug/L	100
37) Bromodichloromethane	5.963	83	66407	20.0647 ug/L	100
38) 1,4-Dioxane	6.178	88	529	33.6621 ug/L	80
39) 2-Chloroethyl Vinyl Ether	6.551	63	48525	39.9622 ug/L	100
40) cis-1,3-Dichloropropene	6.568	75	77869	20.1814 ug/L	100
41) 4-Methyl-2-Pentanone	7.831	58	10322	18.8939 ug/L	99
42) trans-1,3-Dichloropropene	7.165	75	63834	21.2088 ug/L	100
45) Toluene	6.780	91	232460	20.3226 ug/L	100
46) Tetrachloroethene	7.107	166	64164	20.1132 ug/L	100
47) 1,1,2-Trichloroethane	7.298	97	39405	20.5120 ug/L	99
48) Dibromochloromethane	7.434	129	51394	20.4709 ug/L	99
49) 1,3-Dichloropropane	7.518	76	62859	20.2909 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011952.D
Acq On : 18 May 2015 13:35
Operator : ADC
Sample : WG523986-08 20.0ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 18 15:26:55 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50) 1,2-Dibromoethane	7.605	107	39152	20.8659 ug/L	100
51) 2-Hexanone	7.831	43	19128	20.1225 ug/L	100
52) Chlorobenzene	8.002	112	152317	20.0273 ug/L	100
53) 1-Chlorohexane	8.016	69	13389	20.1606 ug/L	93
54) Ethylbenzene	8.039	106	81764	20.0999 ug/L	99
55) 1,1,1,2-Tetrachloroethane	8.054	131	54874	20.3176 ug/L	100
56) m-,p-Xylene	8.138	106	199659	41.0396 ug/L	99
57) o-Xylene	8.401	106	97033	20.1894 ug/L	100
58) Styrene	8.433	104	157078	20.4904 ug/L	100
59) Bromoform	8.436	173	33931	21.3334 ug/L	99
60) Isopropylbenzene	8.589	105	255193	20.4063 ug/L	100
62) 1,3,5-Trimethylbenzene	8.928	105	225279	20.6169 ug/L	100
64) Bromobenzene	8.789	156	68967	20.1104 ug/L	100
65) n-Propylbenzene	8.818	91	293192	20.4505 ug/L	100
66) 1,1,2,2-Tetrachloroethane	8.859	83	43871	20.5429 ug/L	99
67) 2-Chlorotoluene	8.893	91	174937	19.8204 ug/L	99
68) 1,2,3-Trichloropropane	8.922	110	11835	21.1866 ug/L	99
69) 1,2,4-Trimethylbenzene	9.125	105	225728	20.7099 ug/L	99
70) 4-Chlorotoluene	8.983	91	178319	20.0536 ug/L	100
71) tert-Butylbenzene	9.090	134	41682	20.3921 ug/L	98
72) sec-Butylbenzene	9.180	105	283841	20.7744 ug/L	100
73) p-Isopropyltoluene	9.252	119	245684	21.0766 ug/L	100
74) 1,3-Dichlorobenzene	9.281	146	130219	20.0480 ug/L	100
75) 1,4-Dichlorobenzene	9.325	146	127218	19.5329 ug/L	99
76) n-Butylbenzene	9.458	91	213870	21.0006 ug/L	100
77) 1,2-Dichlorobenzene	9.530	146	123036	20.1236 ug/L	100
78) 1,2-Dibromo-3-Chloropr...	9.910	75	7264	20.0187 ug/L	99
79) Hexachlorobutadiene	10.211	225	60614	20.7915 ug/L	99
80) 1,2,4-Trichlorobenzene	10.225	180	99944	21.0766 ug/L	99
81) Naphthalene	10.382	128	169588	21.1706 ug/L	100
82) 1,2,3-Trichlorobenzene	10.466	180	92790	21.3359 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011952.D
Acq On : 18 May 2015 13:35
Operator : ADC
Sample : WG523986-08 20.0ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 18 15:26:55 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

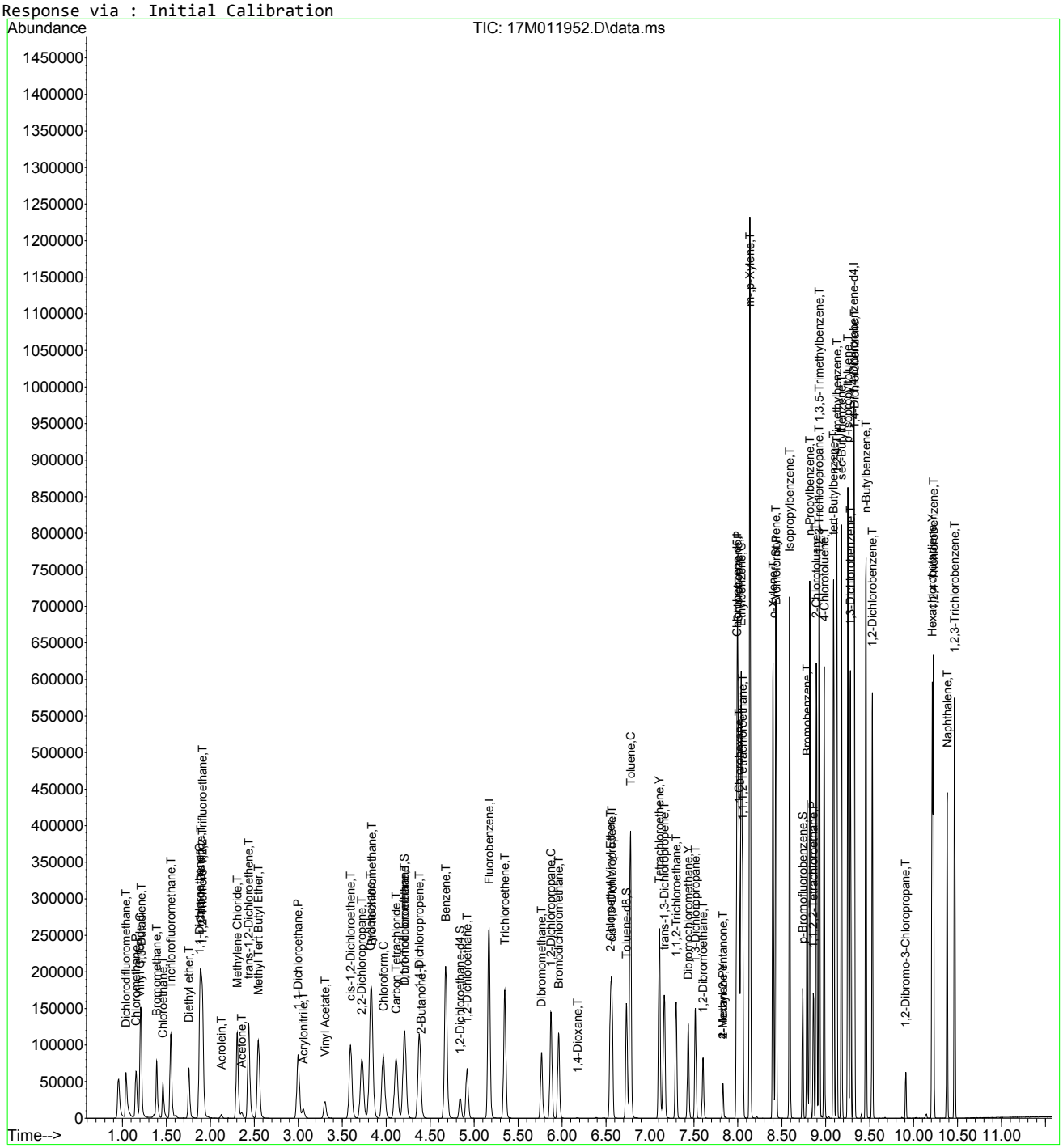

826_VMS.M Mon May 18 15:26:56 2015 Page: 3

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011953.D
Acq On : 18 May 2015 13:55
Operator : ADC
Sample : WG523986-09 100.0ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 18 15:26:58 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.170	96	236493	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.993	117	182786	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.319	152	100874	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.212	111	128734	51.8512 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 207.405%#		
32) 1,2-Dichloroethane-d4	4.840	65	109276	50.8637 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 203.455%#		
44) Toluene-d8	6.734	98	492217	50.7191 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 202.876%#		
63) p-Bromofluorobenzene	8.737	95	181594	52.1240 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 208.496%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.041	85	282116	106.3932 ug/L	99
3) Chloromethane	1.154	50	301123	103.8447 ug/L	99
4) Vinyl Chloride	1.201	62	320448	104.8124 ug/L	100
5) 1,3-Butadiene	1.209	54	169101	104.8893 ug/L	99
6) Bromomethane	1.389	94	192710	106.7650 ug/L	100
7) Chloroethane	1.458	64	131790	89.5826 ug/L	100
8) Trichlorofluoromethane	1.537	101	396316	107.8598 ug/L	100
9) Diethyl ether	1.760	59	160214	104.5125 ug/L	99
10) 1,1-Dichloroethene	1.875	61	373205	101.8913 ug/L	99
11) Carbon Disulfide	1.887	76	695583	102.6025 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.904	101	247320	100.6510 ug/L	100
13) Acrolein	2.127	56	20889	104.6000 ug/L	97
14) Methylene Chloride	2.304	84	264191	101.4218 ug/L	98
15) Acetone	2.362	43	36394	97.7318 ug/L	98
16) trans-1,2-Dichloroethene	2.434	96	253018	101.9579 ug/L	100
17) Methyl Tert Butyl Ether	2.550	73	562051	103.3393 ug/L	100
18) 1,1-Dichloroethane	2.999	63	468696	103.1929 ug/L	100
19) Acrylonitrile	3.060	53	54148	105.2700 ug/L	100
20) Vinyl Acetate	3.306	86	21730	94.0622 ug/L	99
21) cis-1,2-Dichloroethene	3.595	96	284580	103.8134 ug/L	99
22) 2,2-Dichloropropane	3.723	77	370602	106.6193 ug/L	99
23) Cyclohexane	3.824	56	415040	104.4810 ug/L	100
24) Bromochloromethane	3.835	130	180555	107.6429 ug/L	100
25) Chloroform	3.966	83	454398	104.2529 ug/L	100
26) Carbon Tetrachloride	4.113	117	374354	106.7762 ug/L	100
28) 1,1,1-Trichloroethane	4.209	97	409569	102.8851 ug/L	100
29) 1,1-Dichloropropene	4.377	75	351999	104.6197 ug/L	99
30) 2-Butanone	4.397	43	62004	102.8127 ug/L	95
31) Benzene	4.678	78	1047096	100.0421 ug/L	100
33) 1,2-Dichloroethane	4.921	62	285776	103.2032 ug/L	100
34) Trichloroethene	5.350	130	306027	98.5171 ug/L	99
35) Dibromomethane	5.767	93	145430	112.2960 ug/L	99
36) 1,2-Dichloropropane	5.877	63	283187	103.3630 ug/L	100
37) Bromodichloromethane	5.964	83	348648	106.2430 ug/L	100
38) 1,4-Dioxane	6.178	88	3245	208.2542 ug/L	99
39) 2-Chloroethyl Vinyl Ether	6.551	63	259910	215.8742 ug/L	100
40) cis-1,3-Dichloropropene	6.569	75	415159	108.5161 ug/L	100
41) 4-Methyl-2-Pentanone	7.831	58	56253	103.8476 ug/L	99
42) trans-1,3-Dichloropropene	7.168	75	343605	115.1375 ug/L	100
45) Toluene	6.780	91	1199304	100.9558 ug/L	100
46) Tetrachloroethene	7.110	166	332412	100.3319 ug/L	100
47) 1,1,2-Trichloroethane	7.298	97	202069	101.2813 ug/L	100
48) Dibromochloromethane	7.437	129	282001	108.1554 ug/L	100
49) 1,3-Dichloropropane	7.518	76	325431	101.1496 ug/L	99

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011953.D
Acq On : 18 May 2015 13:55
Operator : ADC
Sample : WG523986-09 100.0ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 18 15:26:58 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50) 1,2-Dibromoethane	7.605	107	204827	105.1098 ug/L	100
51) 2-Hexanone	7.831	43	102016	103.3362 ug/L	98
52) Chlorobenzene	8.005	112	805286	101.9521 ug/L	99
53) 1-Chlorohexane	8.019	69	74278	107.6932 ug/L	97
54) Ethylbenzene	8.042	106	440860	104.3531 ug/L	99
55) 1,1,1,2-Tetrachloroethane	8.057	131	295315	105.2840 ug/L	100
56) m-,p-Xylene	8.141	106	1073579	212.4811 ug/L	100
57) o-Xylene	8.401	106	522582	104.6961 ug/L	99
58) Styrene	8.433	104	868876	109.1350 ug/L	100
59) Bromoform	8.436	173	193512	117.1505 ug/L	100
60) Isopropylbenzene	8.590	105	1376949	106.0197 ug/L	100
62) 1,3,5-Trimethylbenzene	8.928	105	1230529	105.8113 ug/L	100
64) Bromobenzene	8.789	156	374549	102.6186 ug/L	100
65) n-Propylbenzene	8.821	91	1609068	105.4542 ug/L	100
66) 1,1,2,2-Tetrachloroethane	8.862	83	238573	104.9645 ug/L	100
67) 2-Chlorotoluene	8.897	91	958935	102.0837 ug/L	100
68) 1,2,3-Trichloropropane	8.925	110	64004	107.6560 ug/L	98
69) 1,2,4-Trimethylbenzene	9.125	105	1229442	105.9833 ug/L	100
70) 4-Chlorotoluene	8.983	91	978169	103.3583 ug/L	99
71) tert-Butylbenzene	9.091	134	228969	105.2514 ug/L	99
72) sec-Butylbenzene	9.180	105	1532599	105.3950 ug/L	100
73) p-Isopropyltoluene	9.256	119	1336879	107.7587 ug/L	99
74) 1,3-Dichlorobenzene	9.282	146	715647	103.5220 ug/L	100
75) 1,4-Dichlorobenzene	9.328	146	704542	101.6397 ug/L	99
76) n-Butylbenzene	9.458	91	1190597	109.8462 ug/L	100
77) 1,2-Dichlorobenzene	9.531	146	664132	102.0624 ug/L	100
78) 1,2-Dibromo-3-Chloropr...	9.910	75	40736	105.4811 ug/L	100
79) Hexachlorobutadiene	10.211	225	306698	98.8464 ug/L	99
80) 1,2,4-Trichlorobenzene	10.226	180	519504	102.9369 ug/L	100
81) Naphthalene	10.379	128	870844	102.1446 ug/L	100
82) 1,2,3-Trichlorobenzene	10.466	180	463809	100.2045 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011953.D
Acq On : 18 May 2015 13:55
Operator : ADC
Sample : WG523986-09 100.0ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 18 15:26:58 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

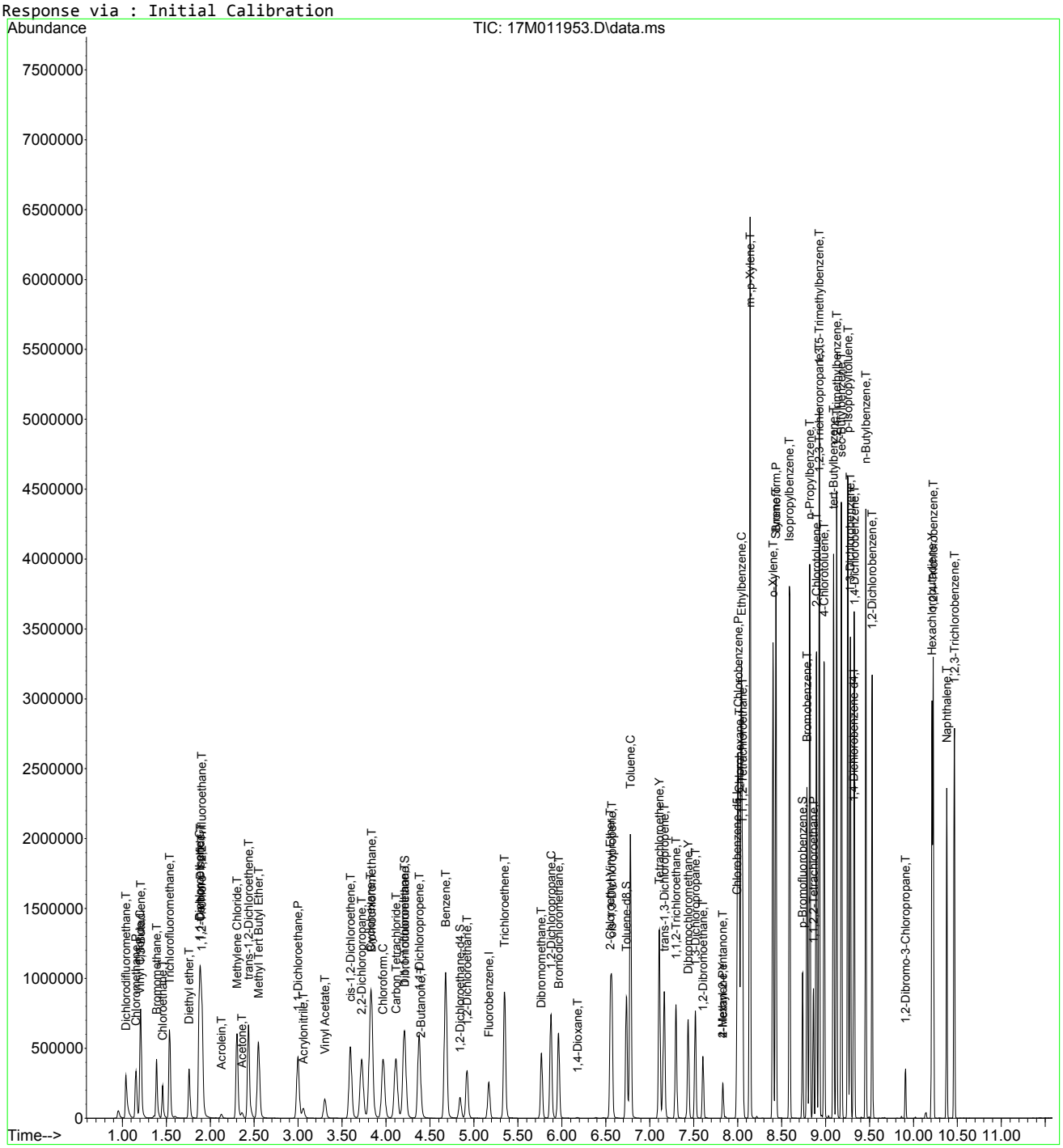

826_VMS.M Mon May 18 15:26:59 2015 Page: 3

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011954.D
Acq On : 18 May 2015 14:15
Operator : ADC
Sample : WG523986-10 200.0ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 18 15:27:01 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	224954	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.993	117	181055	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.322	152	101794	25.00000 ug/L	# 0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.209	111	236902	100.3134 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 401.254%#		
32) 1,2-Dichloroethane-d4	4.843	65	201157	98.4335 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 393.734%#		
44) Toluene-d8	6.736	98	907988	94.4555 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 377.822%#		
63) p-Bromofluorobenzene	8.740	95	351522	99.9875 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 399.950%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.041	85	542140	214.9425 ug/L	99
3) Chloromethane	1.151	50	558195	202.3721 ug/L	99
4) Vinyl Chloride	1.201	62	617771	212.4258 ug/L	100
5) 1,3-Butadiene	1.209	54	332820	217.0296 ug/L	98
6) Bromomethane	1.389	94	360921	210.2138 ug/L	100
7) Chloroethane	1.458	64	235522	168.3051 ug/L	99
8) Trichlorofluoromethane	1.531	101	510501	146.0626 ug/L	100
9) Diethyl ether	1.762	59	301469	206.7451 ug/L	100
10) 1,1-Dichloroethene	1.869	61	707620	203.1020 ug/L	99
11) Carbon Disulfide	1.881	76	1330399	206.3077 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.901	101	472613	202.2038 ug/L	100
13) Acrolein	2.130	56	40382	212.5819 ug/L	100
14) Methylene Chloride	2.304	84	491403	198.3241 ug/L	98
15) Acetone	2.367	43	69546	196.3374 ug/L	97
16) trans-1,2-Dichloroethene	2.431	96	478949	202.9005 ug/L	99
17) Methyl Tert Butyl Ether	2.553	73	1060940	205.0715 ug/L	100
18) 1,1-Dichloroethane	2.996	63	875652	202.6818 ug/L	100
19) Acrylonitrile	3.062	53	103363	211.2574 ug/L	100
20) Vinyl Acetate	3.303	86	43081	192.3604 ug/L	99
21) cis-1,2-Dichloroethene	3.592	96	534567	205.0103 ug/L	99
22) 2,2-Dichloropropane	3.722	77	689939	208.6716 ug/L	99
23) Cyclohexane	3.824	56	799604	211.6153 ug/L	99
24) Bromochloromethane	3.835	130	338683	212.2726 ug/L	100
25) Chloroform	3.969	83	848294	204.6080 ug/L	99
26) Carbon Tetrachloride	4.110	117	717109	215.0314 ug/L	100
28) 1,1,1-Trichloroethane	4.209	97	778747	205.6584 ug/L	99
29) 1,1-Dichloropropene	4.374	75	670608	209.5392 ug/L	99
30) 2-Butanone	4.403	43	120674	210.3611 ug/L	95
31) Benzene	4.678	78	1972291	198.1033 ug/L	100
33) 1,2-Dichloroethane	4.921	62	535894	203.4561 ug/L	99
34) Trichloroethene	5.350	130	583034	197.3196 ug/L	99
35) Dibromomethane	5.769	93	277662	225.3986 ug/L	99
36) 1,2-Dichloropropane	5.877	63	538568	206.6603 ug/L	99
37) Bromodichloromethane	5.963	83	665998	213.3589 ug/L	100
38) 1,4-Dioxane	6.183	88	6310	425.7288 ug/L	97
39) 2-Chloroethyl Vinyl Ether	6.557	63	504053	440.1276 ug/L	100
40) cis-1,3-Dichloropropene	6.571	75	803264	220.7306 ug/L	100
41) 4-Methyl-2-Pentanone	7.837	58	114604	222.4206 ug/L	100
42) trans-1,3-Dichloropropene	7.168	75	667142	235.0174 ug/L	100
45) Toluene	6.783	91	2263654	192.3732 ug/L	99
46) Tetrachloroethene	7.110	166	638689	194.6185 ug/L	99
47) 1,1,2-Trichloroethane	7.301	97	389520	197.1023 ug/L	100
48) Dibromochloromethane	7.437	129	551530	213.5498 ug/L	100
49) 1,3-Dichloropropane	7.521	76	626661	196.6393 ug/L	99

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011954.D
Acq On : 18 May 2015 14:15
Operator : ADC
Sample : WG523986-10 200.0ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 18 15:27:01 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50) 1,2-Dibromoethane	7.608	107	398062	206.2239 ug/L	100
51) 2-Hexanone	7.837	43	207311	212.0015 ug/L	98
52) Chlorobenzene	8.005	112	1545868	197.5835 ug/L	100
53) 1-Chlorohexane	8.022	69	145540	213.0310 ug/L	92
54) Ethylbenzene	8.045	106	848411	202.7419 ug/L	99
55) 1,1,1,2-Tetrachloroethane	8.060	131	568110	204.4757 ug/L	99
56) m-,p-Xylene	8.144	106	1998807	399.3829 ug/L	97
57) o-Xylene	8.404	106	1012040	204.6944 ug/L	99
58) Styrene	8.439	104	1682251	213.3190 ug/L	99
59) Bromoform	8.439	173	385647	235.6995 ug/L	100
60) Isopropylbenzene	8.592	105	2621622	203.7845 ug/L	98
62) 1,3,5-Trimethylbenzene	8.931	105	2322739	197.9237 ug/L	99
64) Bromobenzene	8.792	156	737320	200.1846 ug/L	100
65) n-Propylbenzene	8.824	91	3040218	197.4473 ug/L	98
66) 1,1,2,2-Tetrachloroethane	8.862	83	467124	203.6621 ug/L	99
67) 2-Chlorotoluene	8.899	91	1855289	195.7203 ug/L	100
68) 1,2,3-Trichloropropane	8.928	110	125586	209.3289 ug/L	99
69) 1,2,4-Trimethylbenzene	9.128	105	2330967	199.1235 ug/L	99
70) 4-Chlorotoluene	8.986	91	1909297	199.9226 ug/L	99
71) tert-Butylbenzene	9.093	134	444338	202.4052 ug/L	97
72) sec-Butylbenzene	9.183	105	2890159	196.9564 ug/L	98
73) p-Isopropyltoluene	9.255	119	2514585	200.8555 ug/L	98
74) 1,3-Dichlorobenzene	9.284	146	1379156	197.6988 ug/L	98
75) 1,4-Dichlorobenzene	9.328	146	1355123	193.7279 ug/L	99
76) n-Butylbenzene	9.461	91	2305088	210.7486 ug/L	98
77) 1,2-Dichlorobenzene	9.533	146	1269641	193.3524 ug/L	98
78) 1,2-Dibromo-3-Chloropr...	9.910	75	79682	204.4625 ug/L	99
79) Hexachlorobutadiene	10.211	225	630230	201.2825 ug/L	100
80) 1,2,4-Trichlorobenzene	10.225	180	1035607	203.3453 ug/L	99
81) Naphthalene	10.379	128	1700985	197.7118 ug/L	100
82) 1,2,3-Trichlorobenzene	10.466	180	924992	198.0356 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011954.D
Acq On : 18 May 2015 14:15
Operator : ADC
Sample : WG523986-10 200.0ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 18 15:27:01 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

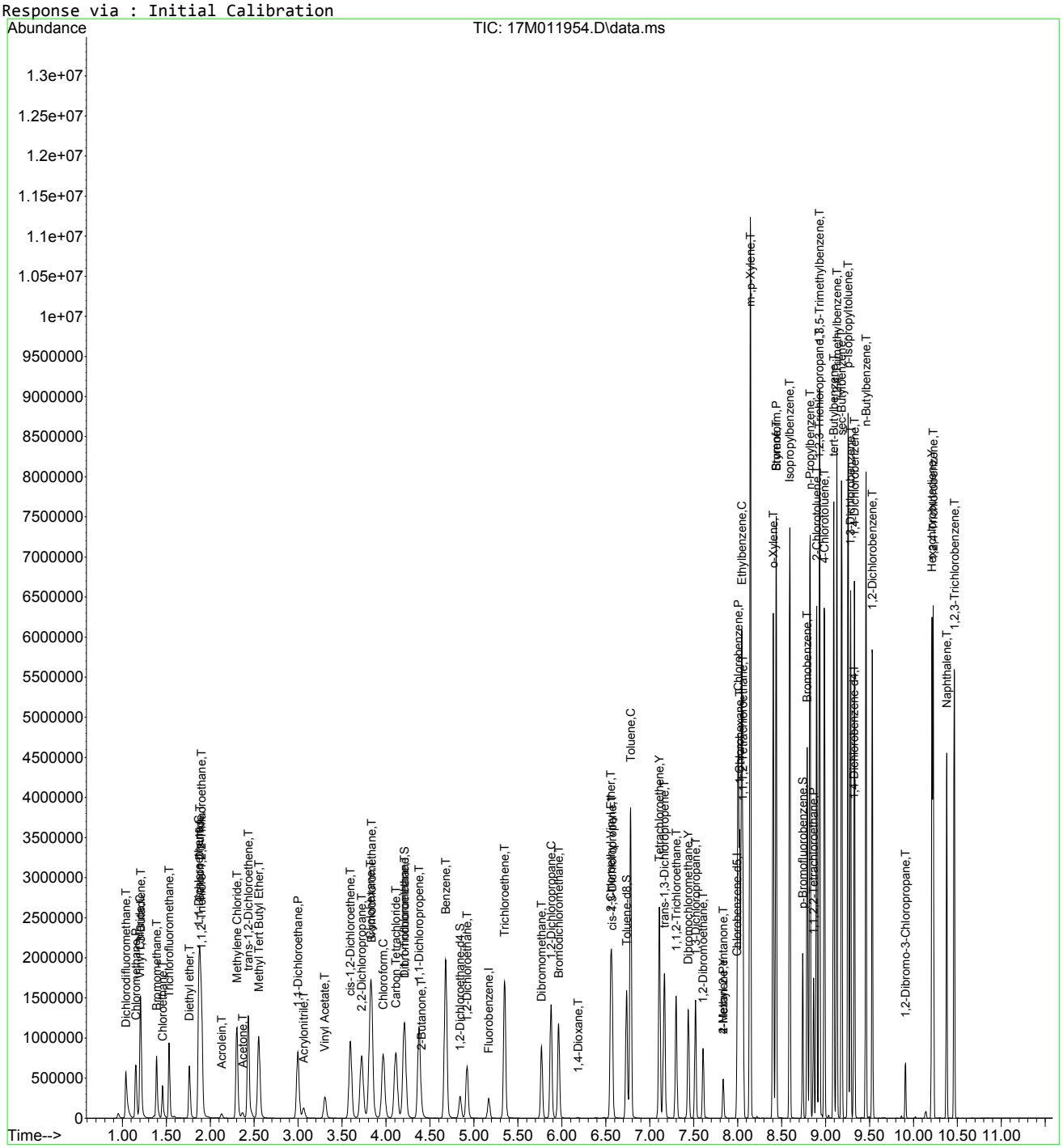

826_VMS.M Mon May 18 15:27:02 2015 Page: 3

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011955.D
Acq On : 18 May 2015 14:34
Operator : ADC
Sample : WG523986-11 300ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 11 Sample Multiplier: 1

Quant Time: May 18 15:27:04 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	5.167	96	215762	25.00000	ug/L	0.0000
43) Chlorobenzene-d5	7.996	117	169645	25.00000	ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.322	152	88940	25.00000	ug/L	# 0.0000
System Monitoring Compounds						
27) Dibromofluoromethane	4.215	111	516	0.2278	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 0.911%#			
32) 1,2-Dichloroethane-d4	4.924	65	39447	20.1252	ug/L	0.0840
Spiked Amount 25.000	Range 80 - 120		Recovery = 80.501%			
44) Toluene-d8	6.737	98	3094	0.3435	ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 1.374%#			
63) p-Bromofluorobenzene	8.740	95	1667	0.5427	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 2.171%#			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.041	85	831244	343.6039	ug/L	99
3) Chloromethane	1.154	50	879123	332.3022	ug/L	99
4) Vinyl Chloride	1.201	62	960564	344.3696	ug/L	100
5) 1,3-Butadiene	1.209	54	526279	357.8033	ug/L	98
6) Bromomethane	1.389	94	568800	345.4041	ug/L	100
7) Chloroethane	1.458	64	354923	264.4349	ug/L	99
8) Trichlorofluoromethane	1.531	101	784560	234.0385	ug/L	100
9) Diethyl ether	1.762	59	486362	347.7530	ug/L	99
10) 1,1-Dichloroethene	1.869	61	1119509	335.0121	ug/L	99
11) Carbon Disulfide	1.881	76	2116534	342.1981	ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.898	101	735564	328.1125	ug/L	99
13) Acrolein	2.130	56	64848	355.9212	ug/L	99
14) Methylene Chloride	2.304	84	786764	331.0557	ug/L	98
15) Acetone	2.367	43	111957	329.5345	ug/L	96
16) trans-1,2-Dichloroethene	2.431	96	764042	337.4659	ug/L	100
17) Methyl Tert Butyl Ether	2.553	73	1701284	342.8546	ug/L	100
18) 1,1-Dichloroethane	2.996	63	1399570	337.7510	ug/L	99
19) Acrylonitrile	3.062	53	163458	348.3147	ug/L	99
20) Vinyl Acetate	3.306	86	68607	317.1401	ug/L	98
21) cis-1,2-Dichloroethene	3.595	96	859841	343.8035	ug/L	99
22) 2,2-Dichloropropane	3.725	77	1102090	347.5270	ug/L	98
23) Cyclohexane	3.827	56	1273054	351.2673	ug/L	99
24) Bromochloromethane	3.838	130	547181	357.5612	ug/L	99
25) Chloroform	3.969	83	1357836	341.4619	ug/L	100
26) Carbon Tetrachloride	4.113	117	1148762	359.1414	ug/L	100
28) 1,1,1-Trichloroethane	4.209	97	1233467	339.6224	ug/L	100
29) 1,1-Dichloropropene	4.377	75	1072950	349.5383	ug/L	99
30) 2-Butanone	4.406	43	192452	349.7783	ug/L	95
31) Benzene	4.681	78	3155491	330.4506	ug/L	100
33) 1,2-Dichloroethane	4.921	62	863072	341.6313	ug/L	99
34) Trichloroethene	5.353	130	940516	331.8649	ug/L	99
35) Dibromomethane	5.769	93	452777	383.2110	ug/L	99
36) 1,2-Dichloropropane	5.879	63	873943	349.6377	ug/L	99
37) Bromodichloromethane	5.963	83	1080875	361.0207	ug/L	100
38) 1,4-Dioxane	6.183	88	9934	698.7899	ug/L	100
39) 2-Chloroethyl Vinyl Ether	6.560	63	813281	740.3921	ug/L	100
40) cis-1,3-Dichloropropene	6.574	75	1304888	373.8491	ug/L	99
41) 4-Methyl-2-Pentanone	7.837	58	179951	364.1232	ug/L	100
42) trans-1,3-Dichloropropene	7.171	75	1084477	398.3097	ug/L	99
45) Toluene	6.786	91	3603192	326.8071	ug/L	99
46) Tetrachloroethene	7.113	166	1027888	334.2797	ug/L	99
47) 1,1,2-Trichloroethane	7.301	97	626215	338.1855	ug/L	100
48) Dibromochloromethane	7.440	129	889566	367.6019	ug/L	100
49) 1,3-Dichloropropane	7.524	76	1004440	336.3808	ug/L	99

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011955.D
Acq On : 18 May 2015 14:34
Operator : ADC
Sample : WG523986-11 300ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 11 Sample Multiplier: 1

Quant Time: May 18 15:27:04 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50) 1,2-Dibromoethane	7.611	107	639811	353.7606 ug/L	100
51) 2-Hexanone	7.837	43	323226	352.7706 ug/L	97
52) Chlorobenzene	8.008	112	2410578	328.8282 ug/L	98
53) 1-Chlorohexane	8.025	69	230825	360.5892 ug/L	85
54) Ethylbenzene	8.051	106	1317684	336.0609 ug/L	97
55) 1,1,1,2-Tetrachloroethane	8.065	131	891305	342.3775 ug/L	99
56) m-,p-Xylene	8.149	106	2910052	620.5672 ug/L	95
57) o-Xylene	8.407	106	1543353	333.1525 ug/L	99
58) Styrene	8.442	104	2520959	341.1725 ug/L	97
59) Bromoform	8.445	173	583747	380.7701 ug/L	99
60) Isopropylbenzene	8.595	105	3849364	319.3446 ug/L	97
62) 1,3,5-Trimethylbenzene	8.937	105	3325452	324.3196 ug/L	98
64) Bromobenzene	8.792	156	1126692	350.1103 ug/L	99
65) n-Propylbenzene	8.824	91	4420922	328.6127 ug/L	97
66) 1,1,2,2-Tetrachloroethane	8.865	83	709761	354.1729 ug/L	99
67) 2-Chlorotoluene	8.899	91	2766166	333.9854 ug/L	99
68) 1,2,3-Trichloropropane	8.928	110	184231	351.4599 ug/L	97
69) 1,2,4-Trimethylbenzene	9.131	105	3322758	324.8703 ug/L	98
70) 4-Chlorotoluene	8.989	91	2817446	337.6519 ug/L	99
71) tert-Butylbenzene	9.096	134	652758	340.3185 ug/L	94
72) sec-Butylbenzene	9.186	105	4025609	313.9822 ug/L	97
73) p-Isopropyltoluene	9.258	119	3480003	318.1428 ug/L	96
74) 1,3-Dichlorobenzene	9.287	146	2006865	329.2562 ug/L	97
75) 1,4-Dichlorobenzene	9.331	146	1975449	323.2245 ug/L	99
76) n-Butylbenzene	9.461	91	3230104	338.0016 ug/L	97
77) 1,2-Dichlorobenzene	9.533	146	1865029	325.0718 ug/L	97
78) 1,2-Dibromo-3-Chloropr...	9.910	75	120913	355.1007 ug/L	99
79) Hexachlorobutadiene	10.214	225	941465	344.1408 ug/L	100
80) 1,2,4-Trichlorobenzene	10.228	180	1558148	350.1652 ug/L	99
81) Naphthalene	10.382	128	2555833	340.0084 ug/L	99
82) 1,2,3-Trichlorobenzene	10.469	180	1398589	342.7050 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011955.D
Acq On : 18 May 2015 14:34
Operator : ADC
Sample : WG523986-11 300ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 11 Sample Multiplier: 1

Quant Time: May 18 15:27:04 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

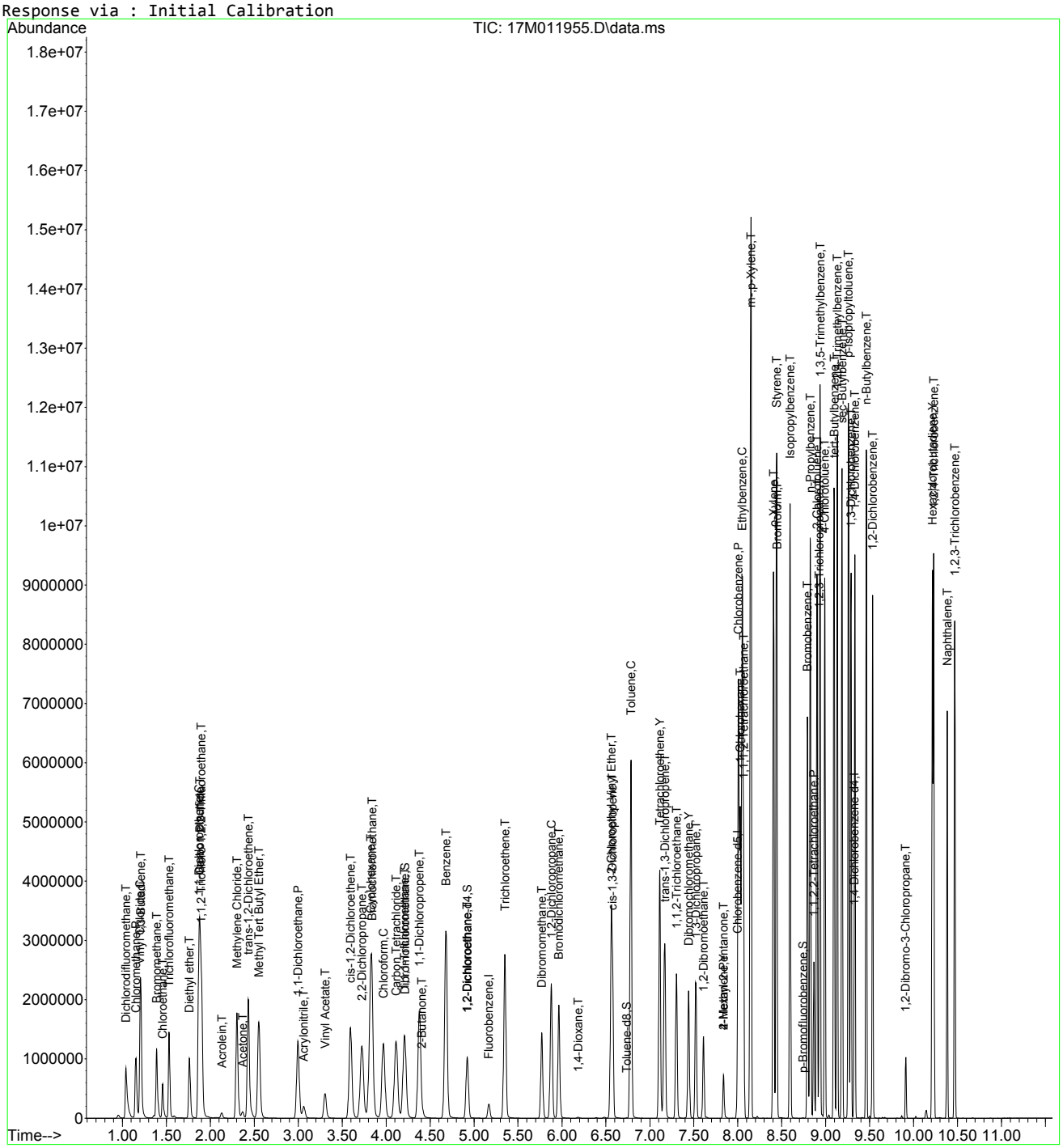

826_VMS.M Mon May 18 15:27:05 2015 Page: 3

Vinyl Acetate

00641731

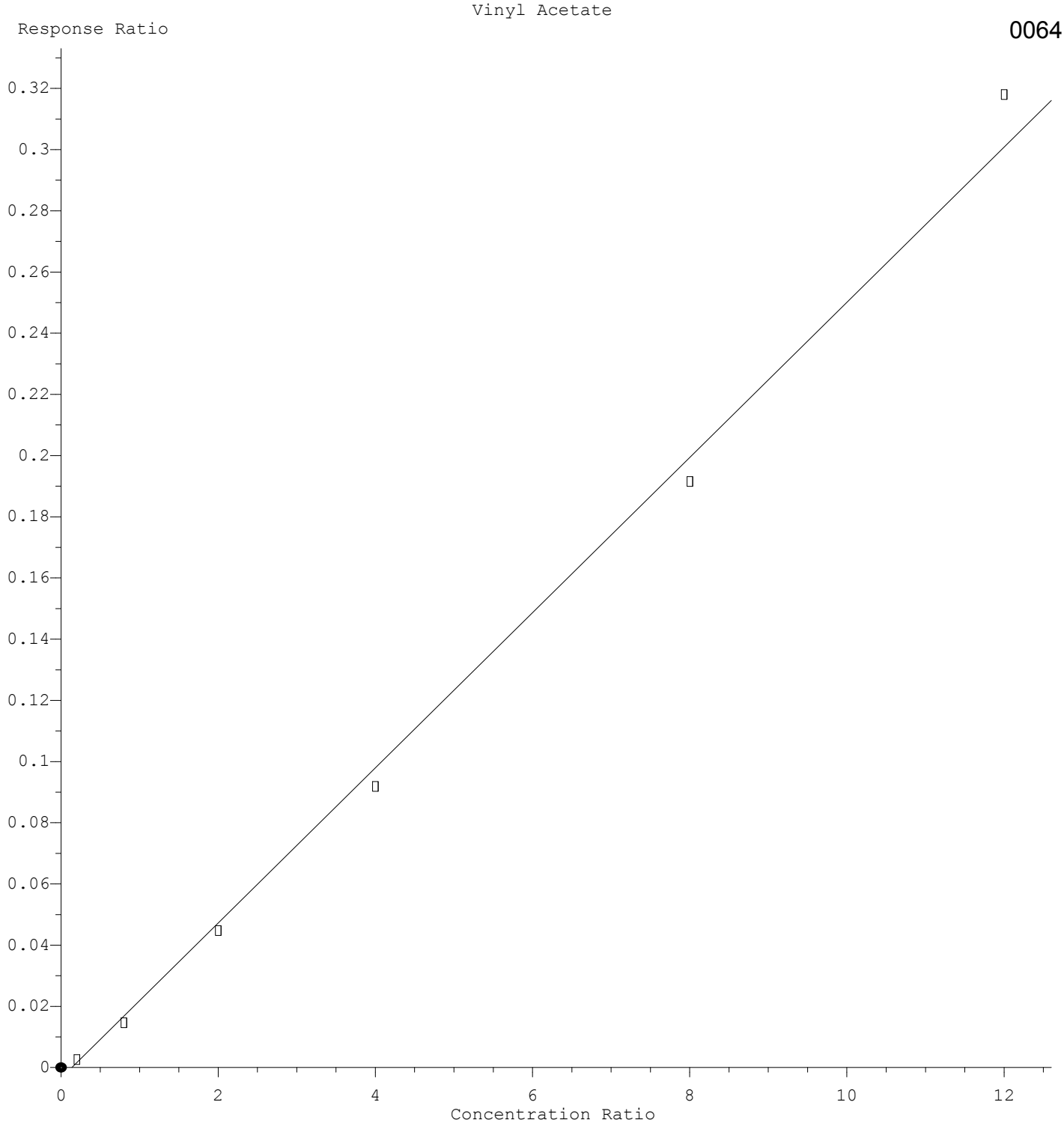

Response = 2.534e-002 * Amt - 3.448e-003
Coef of Det (r^2) = 0.996071 Curve Fit: wlr(1/a)
Method Name: D:\MassHunter\GCMS\1\methods\826_VMS.M
Calibration Table Last Updated: Mon May 18 15:03:59 2015

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011959.D
Acq On : 18 May 2015 16:07
Operator : ADC
Sample : WG523986-12 50ug/L ALT SRC
Misc : 1,1 STD70455
ALS Vial : 15 Sample Multiplier: 1

Quant Time: May 18 16:19:30 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	242463	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.993	117	182260	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.319	152	100677	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.209	111	64852	25.4778 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.911%		
32) 1,2-Dichloroethane-d4	4.843	65	55803	25.3346 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.338%		
44) Toluene-d8	6.734	98	248604	25.6906 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.762%		
63) p-Bromofluorobenzene	8.737	95	90350	25.9844 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.938%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.041	85	151659	55.7863 ug/L	100
3) Chloromethane	1.154	50	145746	49.0241 ug/L	100
4) Vinyl Chloride	1.201	62	158830	50.6711 ug/L	100
5) 1,3-Butadiene	1.209	54	106521	64.4456 ug/L	100
6) Bromomethane	1.389	94	95330	51.5142 ug/L	100
7) Chloroethane	1.458	64	62051	41.1399 ug/L	97
8) Trichlorofluoromethane	1.531	101	117902	31.2977 ug/L	100
9) Diethyl ether	1.768	59	440924	280.5463 ug/L	99
10) 1,1-Dichloroethene	1.864	61	169738	45.2003 ug/L	100
11) Carbon Disulfide	1.875	76	217222	31.2526 ug/L	99
12) 1,1,2-Trichloro-1,2,2-...	1.893	101	118910	47.2009 ug/L	100
13) Acrolein	2.136	56	24102	117.7172 ug/L	99
14) Methylene Chloride	2.301	84	125403	46.9563 ug/L	99
15) Acetone	2.379	43	20532	53.7787 ug/L	99
16) trans-1,2-Dichloroethene	2.431	96	124177	48.8071 ug/L	99
17) Methyl Tert Butyl Ether	2.558	73	307159	55.0841 ug/L	100
18) 1,1-Dichloroethane	2.996	63	218582	46.9403 ug/L	100
19) Acrylonitrile	3.065	53	25996	49.2949 ug/L	99
20) Vinyl Acetate	3.305	86	14268	61.4642 ug/L	97
21) cis-1,2-Dichloroethene	3.595	96	138915	49.4277 ug/L	100
22) 2,2-Dichloropropane	3.722	77	186097	52.2204 ug/L	100
23) Cyclohexane	3.815	56	221965	54.5010 ug/L #	78
24) Bromochloromethane	3.835	130	84388	49.0715 ug/L	100
25) Chloroform	3.969	83	221164	49.4924 ug/L	100
26) Carbon Tetrachloride	4.110	117	174595	48.5732 ug/L	100
28) 1,1,1-Trichloroethane	4.206	97	197722	48.4455 ug/L	100
29) 1,1-Dichloropropene	4.374	75	169114	49.0258 ug/L	100
30) 2-Butanone	4.412	43	32498	52.5601 ug/L #	69
31) Benzene	4.675	78	511952	47.7088 ug/L	100
33) 1,2-Dichloroethane	4.921	62	137976	48.6008 ug/L	100
34) Trichloroethene	5.347	130	146203	45.9072 ug/L	100
35) Dibromomethane	5.767	93	68407	51.5209 ug/L	100
36) 1,2-Dichloropropane	5.877	63	138468	49.2963 ug/L	100
37) Bromodichloromethane	5.963	83	162868	48.4085 ug/L	100
38) 1,4-Dioxane	6.183	88	8432	527.8160 ug/L	96
39) 2-Chloroethyl Vinyl Ether	6.551	63	65978	53.4503 ug/L	100
40) cis-1,3-Dichloropropene	6.569	75	207801	52.9786 ug/L	100
41) 4-Methyl-2-Pentanone	7.837	58	28724	51.7212 ug/L	100
42) trans-1,3-Dichloropropene	7.168	75	161450	52.7677 ug/L	100
45) Toluene	6.780	91	583749	49.2810 ug/L	100
46) Tetrachloroethene	7.107	166	157925	47.8041 ug/L	100
47) 1,1,2-Trichloroethane	7.298	97	96856	48.6864 ug/L	100
48) Dibromochloromethane	7.437	129	129039	49.6330 ug/L	100
49) 1,3-Dichloropropane	7.518	76	158080	49.2758 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011959.D
Acq On : 18 May 2015 16:07
Operator : ADC
Sample : WG523986-12 50ug/L ALT SRC
Misc : 1,1 STD70455
ALS Vial : 15 Sample Multiplier: 1

Quant Time: May 18 16:19:30 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50) 1,2-Dibromoethane	7.605	107	96393	49.6081 ug/L	100
51) 2-Hexanone	7.837	43	52748	53.5848 ug/L	99
52) Chlorobenzene	8.002	112	365534	46.4115 ug/L	99
53) 1-Chlorohexane	8.016	69	36830	53.5527 ug/L	93
54) Ethylbenzene	8.039	106	211073	50.1059 ug/L	98
55) 1,1,1,2-Tetrachloroethane	8.057	131	139608	49.9159 ug/L	100
56) m-,p-Xylene	8.138	106	499509	99.1473 ug/L	99
57) o-Xylene	8.401	106	232998	46.8144 ug/L	99
58) Styrene	8.433	104	410215	51.6737 ug/L	100
59) Bromoform	8.439	173	93246	56.6133 ug/L	100
60) Isopropylbenzene	8.589	105	614249	47.4313 ug/L	100
62) 1,3,5-Trimethylbenzene	8.928	105	592358	51.0356 ug/L	100
64) Bromobenzene	8.789	156	177118	48.6216 ug/L	100
65) n-Propylbenzene	8.818	91	710399	46.6488 ug/L	100
66) 1,1,2,2-Tetrachloroethane	8.862	83	116371	51.2997 ug/L	100
67) 2-Chlorotoluene	8.893	91	428696	45.7262 ug/L	100
68) 1,2,3-Trichloropropane	8.925	110	30468	51.3480 ug/L	98
69) 1,2,4-Trimethylbenzene	9.125	105	594883	51.3819 ug/L	100
70) 4-Chlorotoluene	8.983	91	434309	45.9811 ug/L	99
71) tert-Butylbenzene	9.090	134	102413	47.1689 ug/L	98
72) sec-Butylbenzene	9.180	105	689257	47.4921 ug/L	100
73) p-Isopropyltoluene	9.253	119	597593	48.2631 ug/L	100
74) 1,3-Dichlorobenzene	9.281	146	319412	46.2950 ug/L	100
75) 1,4-Dichlorobenzene	9.325	146	343940	49.7151 ug/L	100
76) n-Butylbenzene	9.458	91	587892	54.3459 ug/L	100
77) 1,2-Dichlorobenzene	9.530	146	300951	46.3400 ug/L	100
78) 1,2-Dibromo-3-Chloropr...	9.910	75	19052	49.4295 ug/L	99
79) Hexachlorobutadiene	10.211	225	161253	52.0723 ug/L	99
80) 1,2,4-Trichlorobenzene	10.225	180	254454	50.5173 ug/L	99
81) Naphthalene	10.379	128	409296	48.1018 ug/L	100
82) 1,2,3-Trichlorobenzene	10.466	180	224752	48.6520 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011959.D
Acq On : 18 May 2015 16:07
Operator : ADC
Sample : WG523986-12 50ug/L ALT SRC
Misc : 1,1 STD70455
ALS Vial : 15 Sample Multiplier: 1

Quant Time: May 18 16:19:30 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

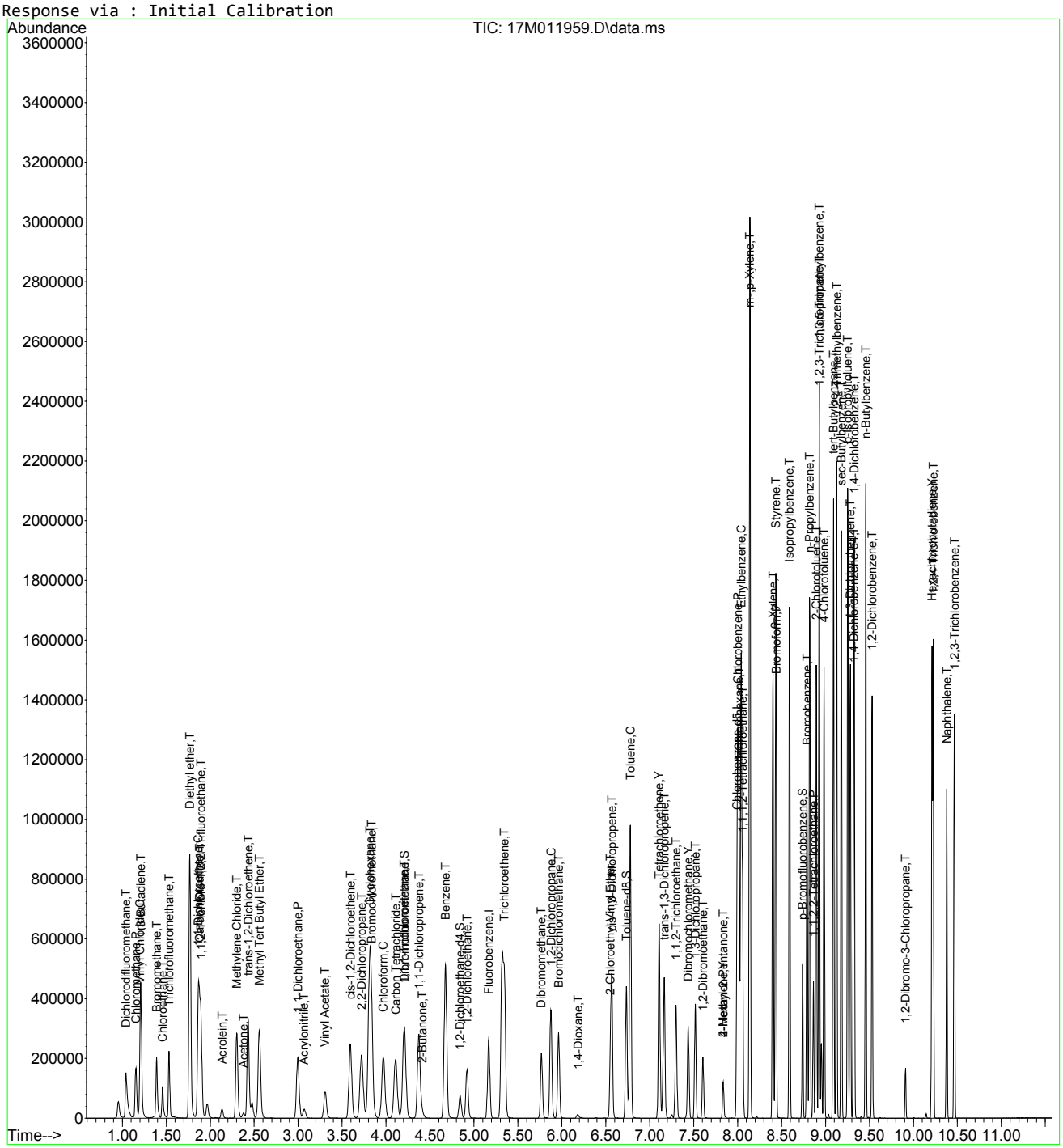

826_VMS.M Mon May 18 16:19:31 2015 Page: 3

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011959.D
Acq On : 18 May 2015 16:07
Operator : ADC
Sample : WG523986-12 50ug/L ALT SRC
Misc : 1,1 STD70455
ALS Vial : 15 Sample Multiplier: 1

Quant Time: May 18 16:19:30 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	98	0.000
2	T	Dichlorodifluoromethane	50.000	55.786	-11.6	101	0.000
3	P	Chloromethane	50.000	49.024	2.0	97	0.000
4	C	Vinyl Chloride	50.000	50.671	-1.3#	98	0.000
5	T	1,3-Butadiene	50.000	64.446	-28.9#	123	0.000
6	T	Bromomethane	50.000	51.514	-3.0	104	0.000
7	T	Chloroethane	50.000	41.140	17.7	83	0.000
8	T	Trichlorofluoromethane	50.000	31.298	37.4#	55	-0.011
9	T	Diethyl ether	50.000	280.546	-461.1#	579	0.011
10	C	1,1-Dichloroethene	50.000	45.200	9.6#	86	-0.011
11	T	Carbon Disulfide	50.000	31.253	37.5#	62	-0.015
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.000	47.201	5.6	89	-0.014
13	T	Acrolein	50.000	117.717	-135.4#	254	0.012
14	T	Methylene Chloride	50.000	46.956	6.1	94	0.000
15	T	Acetone	50.000	53.779	-7.6	120	0.020
16	T	trans-1,2-Dichloroethene	50.000	48.807	2.4	95	0.000
17	T	Methyl Tert Butyl Ether	50.000	55.084	-10.2	114	0.011
18	P	1,1-Dichloroethane	50.000	46.940	6.1	90	0.000
19	T	Acrylonitrile	50.000	49.295	1.4	106	0.000
20	T	Vinyl Acetate	50.000	61.464	-22.9	129	0.000
21	T	cis-1,2-Dichloroethene	50.000	49.428	1.1	95	0.000
22	T	2,2-Dichloropropane	50.000	52.220	-4.4	92	0.000
23	T	Cyclohexane	50.000	54.501	-9.0	104	0.000
24	T	Bromochloromethane	50.000	49.072	1.9	95	0.000
25	C	Chloroform	50.000	49.492	1.0#	94	0.000
26	T	Carbon Tetrachloride	50.000	48.573	2.9	88	0.000
27	S	Dibromofluoromethane	25.000	25.478	-1.9	96	0.000
28	T	1,1,1-Trichloroethane	50.000	48.445	3.1	93	0.000
29	T	1,1-Dichloropropene	50.000	49.026	1.9	92	0.000
30	T	2-Butanone	50.000	52.560	-5.1	118	0.011
31	T	Benzene	50.000	47.709	4.6	94	0.000
32	S	1,2-Dichloroethane-d4	25.000	25.335	-1.3	98	0.000
33	T	1,2-Dichloroethane	50.000	48.601	2.8	96	0.000
34	T	Trichloroethene	50.000	45.907	8.2	94	0.000
35	T	Dibromomethane	50.000	51.521	-3.0	97	0.000
36	C	1,2-Dichloropropane	50.000	49.296	1.4#	96	0.000
37	T	Bromodichloromethane	50.000	48.409	3.2	93	0.000
38	T	1,4-Dioxane	100.000	527.816	-427.8#	584	0.000
39	T	2-Chloroethyl Vinyl Ether	100.000	53.450	46.5#	55	0.000
40	T	cis-1,3-Dichloropropene	50.000	52.979	-6.0	99	0.000
41	T	4-Methyl-2-Pentanone	50.000	51.721	-3.4	123	0.000
42	T	trans-1,3-Dichloropropene	50.000	52.768	-5.5	96	0.000
43	I	Chlorobenzene-d5	25.000	25.000	0.0	98	0.000
44	S	Toluene-d8	25.000	25.691	-2.8	96	0.000
45	C	Toluene	50.000	49.281	1.4#	94	0.000
46	Y	Tetrachloroethene	50.000	47.804	4.4	91	0.000
47	T	1,1,2-Trichloroethane	50.000	48.686	2.6	100	0.000
48	Y	Dibromochloromethane	50.000	49.633	0.7	96	0.000
49	T	1,3-Dichloropropane	50.000	49.276	1.4	100	0.000
50	T	1,2-Dibromoethane	50.000	49.608	0.8	99	0.000
51	Y	2-Hexanone	50.000	53.585	-7.2	121	0.000
52	P	Chlorobenzene	50.000	46.411	7.2	90	0.000
53	T	1-Chlorohexane	50.000	53.553	-7.1	99	0.000
54	C	Ethylbenzene	50.000	50.106	-0.2#	95	0.000
55	T	1,1,1,2-Tetrachloroethane	50.000	49.916	0.2	95	0.000

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011959.D
Acq On : 18 May 2015 16:07
Operator : ADC
Sample : WG523986-12 50ug/L ALT SRC
Misc : 1,1 STD70455
ALS Vial : 15 Sample Multiplier: 1

Quant Time: May 18 16:19:30 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	m-,p-Xylene	100.000	99.147	0.9	91	0.000
57	T	o-Xylene	50.000	46.814	6.4	89	0.000
58	T	Styrene	50.000	51.674	-3.3	96	0.000
59	P	Bromoform	50.000	56.613	-13.2	105	0.000
60	T	Isopropylbenzene	50.000	47.431	5.1	88	0.000
61	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	99	0.000
62	T	1,3,5-Trimethylbenzene	50.000	51.036	-2.1	96	0.000
63	S	p-Bromofluorobenzene	25.000	25.984	-3.9	101	0.000
64	T	Bromobenzene	50.000	48.622	2.8	97	0.000
65	T	n-Propylbenzene	50.000	46.649	6.7	88	0.000
66	P	1,1,2,2-Tetrachloroethane	50.000	51.300	-2.6	107	0.000
67	T	2-Chlorotoluene	50.000	45.726	8.5	90	0.000
68	T	1,2,3-Trichloropropane	50.000	51.348	-2.7	104	0.000
69	T	1,2,4-Trimethylbenzene	50.000	51.382	-2.8	97	0.000
70	T	4-Chlorotoluene	50.000	45.981	8.0	89	0.000
71	T	tert-Butylbenzene	50.000	47.169	5.7	90	0.000
72	T	sec-Butylbenzene	50.000	47.492	5.0	89	0.000
73	T	p-Isopropyltoluene	50.000	48.263	3.5	88	0.000
74	T	1,3-Dichlorobenzene	50.000	46.295	7.4	91	0.000
75	T	1,4-Dichlorobenzene	50.000	49.715	0.6	99	0.000
76	T	n-Butylbenzene	50.000	54.346	-8.7	97	0.000
77	T	1,2-Dichlorobenzene	50.000	46.340	7.3	94	0.000
78	T	1,2-Dibromo-3-Chloropropane	50.000	49.429	1.1	107	0.000
79	Y	Hexachlorobutadiene	50.000	52.072	-4.1	100	0.000
80	T	1,2,4-Trichlorobenzene	50.000	50.517	-1.0	99	0.000
81	T	Naphthalene	50.000	48.102	3.8	103	0.000
82	T	1,2,3-Trichlorobenzene	50.000	48.652	2.7	101	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060115\
Data File : 17M012417.D
Acq On : 01 Jun 2015 15:38
Operator : ADC
Sample : WG525816-02 50ug/L CCV 8260
Misc : 1,1 STD70762
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 01 15:49:58 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	254277	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	188317	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	98813	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.206	111	67116	25.1422 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.569%		
32) 1,2-Dichloroethane-d4	4.840	65	56698	24.5450 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.180%		
44) Toluene-d8	6.734	98	259197	25.9238 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.695%		
63) p-Bromofluorobenzene	8.737	95	89142	26.1206 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.482%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.041	85	188330	66.0567 ug/L	99
3) Chloromethane	1.154	50	160124	51.3580 ug/L	100
4) Vinyl Chloride	1.201	62	173305	52.7203 ug/L	100
5) 1,3-Butadiene	1.212	54	44527	25.6874 ug/L	98
6) Bromomethane	1.389	94	78066	40.2252 ug/L	99
7) Chloroethane	1.458	64	79608	50.3279 ug/L	97
8) Trichlorofluoromethane	1.545	101	220846	55.9009 ug/L	99
9) Diethyl ether	1.757	59	71564	43.4184 ug/L	100
10) 1,1-Dichloroethene	1.878	61	195092	49.5382 ug/L	100
11) Carbon Disulfide	1.893	76	279068	38.2851 ug/L	99
12) 1,1,2-Trichloro-1,2,2-...	1.910	101	134798	51.0216 ug/L	100
13) Acrolein	2.121	56	7240	33.7181 ug/L	97
14) Methylene Chloride	2.304	84	135249	48.2901 ug/L	100
15) Acetone	2.359	43	17084	42.6685 ug/L	99
16) trans-1,2-Dichloroethene	2.434	96	132175	49.5370 ug/L	100
17) Methyl Tert Butyl Ether	2.544	73	282421	48.2945 ug/L	100
18) 1,1-Dichloroethane	2.996	63	245242	50.2186 ug/L	100
19) Acrylonitrile	3.057	53	25734	46.5308 ug/L	99
20) Vinyl Acetate	3.303	86	13957	57.5598 ug/L	99
21) cis-1,2-Dichloroethene	3.592	96	147851	50.1631 ug/L	100
22) 2,2-Dichloropropane	3.723	77	207321	55.4731 ug/L	99
23) Cyclohexane	3.824	56	202507	47.4131 ug/L	100
24) Bromochloromethane	3.835	130	91323	50.6369 ug/L	100
25) Chloroform	3.966	83	237509	50.6807 ug/L	100
26) Carbon Tetrachloride	4.111	117	204700	54.3027 ug/L	100
28) 1,1,1-Trichloroethane	4.209	97	217912	50.9117 ug/L	99
29) 1,1-Dichloropropene	4.374	75	185813	51.3641 ug/L	100
30) 2-Butanone	4.394	43	28882	44.5416 ug/L	98
31) Benzene	4.675	78	549681	48.8448 ug/L	100
33) 1,2-Dichloroethane	4.918	62	145197	48.7681 ug/L	99
34) Trichloroethene	5.347	130	157961	47.2947 ug/L	100
35) Dibromomethane	5.767	93	73014	52.4358 ug/L	99
36) 1,2-Dichloropropane	5.874	63	146314	49.6694 ug/L	100
37) Bromodichloromethane	5.961	83	180193	51.0696 ug/L	100
38) 1,4-Dioxane	6.169	88	1677	100.0975 ug/L	95
39) 2-Chloroethyl Vinyl Ether	6.548	63	114661	88.5737 ug/L	100
40) cis-1,3-Dichloropropene	6.566	75	215471	52.3817 ug/L	100
41) 4-Methyl-2-Pentanone	7.831	58	24462	42.0004 ug/L	99
42) trans-1,3-Dichloropropene	7.165	75	174485	54.3784 ug/L	100
45) Toluene	6.777	91	622646	50.8741 ug/L	100
46) Tetrachloroethene	7.107	166	175525	51.4227 ug/L	100
47) 1,1,2-Trichloroethane	7.295	97	99693	48.5007 ug/L	99
48) Dibromochloromethane	7.434	129	140116	52.1602 ug/L	100
49) 1,3-Dichloropropane	7.515	76	160376	48.3836 ug/L	99

Data Path : D:\MassHunter\GCMS\1\data\060115\
Data File : 17M012417.D
Acq On : 01 Jun 2015 15:38
Operator : ADC
Sample : WG525816-02 50ug/L CCV 8260
Misc : 1,1 STD70762
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 01 15:49:58 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50) 1,2-Dibromoethane	7.605	107	100730	50.1728 ug/L	100
51) 2-Hexanone	7.831	43	44990	44.2337 ug/L	99
52) Chlorobenzene	8.002	112	404732	49.7355 ug/L	99
53) 1-Chlorohexane	8.016	69	37546	52.8378 ug/L	98
54) Ethylbenzene	8.040	106	221579	50.9081 ug/L	99
55) 1,1,1,2-Tetrachloroethane	8.054	131	148399	51.3525 ug/L	100
56) m-,p-Xylene	8.138	106	541349	103.9961 ug/L	100
57) o-Xylene	8.399	106	258500	50.2678 ug/L	100
58) Styrene	8.433	104	420439	51.2581 ug/L	100
59) Bromoform	8.436	173	92098	54.1178 ug/L	100
60) Isopropylbenzene	8.590	105	687597	51.3873 ug/L	100
62) 1,3,5-Trimethylbenzene	8.925	105	598405	52.5292 ug/L	100
64) Bromobenzene	8.789	156	179799	50.2887 ug/L	99
65) n-Propylbenzene	8.818	91	796201	53.2693 ug/L	100
66) 1,1,2,2-Tetrachloroethane	8.859	83	111623	50.1349 ug/L	99
67) 2-Chlorotoluene	8.894	91	467806	50.8391 ug/L	100
68) 1,2,3-Trichloropropane	8.923	110	29220	50.1737 ug/L	100
69) 1,2,4-Trimethylbenzene	9.125	105	595708	52.4237 ug/L	100
70) 4-Chlorotoluene	8.980	91	478677	51.6344 ug/L	99
71) tert-Butylbenzene	9.088	134	110068	51.6509 ug/L	99
72) sec-Butylbenzene	9.177	105	750254	52.6702 ug/L	100
73) p-Isopropyltoluene	9.253	119	652237	53.6699 ug/L	100
74) 1,3-Dichlorobenzene	9.279	146	344448	50.8654 ug/L	100
75) 1,4-Dichlorobenzene	9.325	146	337443	49.6961 ug/L	99
76) n-Butylbenzene	9.455	91	579639	54.5938 ug/L	100
77) 1,2-Dichlorobenzene	9.528	146	314147	49.2844 ug/L	100
78) 1,2-Dibromo-3-Chloropr...	9.904	75	18517	48.9477 ug/L	100
79) Hexachlorobutadiene	10.205	225	141797	46.6533 ug/L	99
80) 1,2,4-Trichlorobenzene	10.220	180	243123	49.1783 ug/L	99
81) Naphthalene	10.373	128	385261	46.1312 ug/L	100
82) 1,2,3-Trichlorobenzene	10.457	180	213610	47.1124 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\060115\
Data File : 17M012417.D
Acq On : 01 Jun 2015 15:38
Operator : ADC
Sample : WG525816-02 50ug/L CCV 8260
Misc : 1,1 STD70762
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 01 15:49:58 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

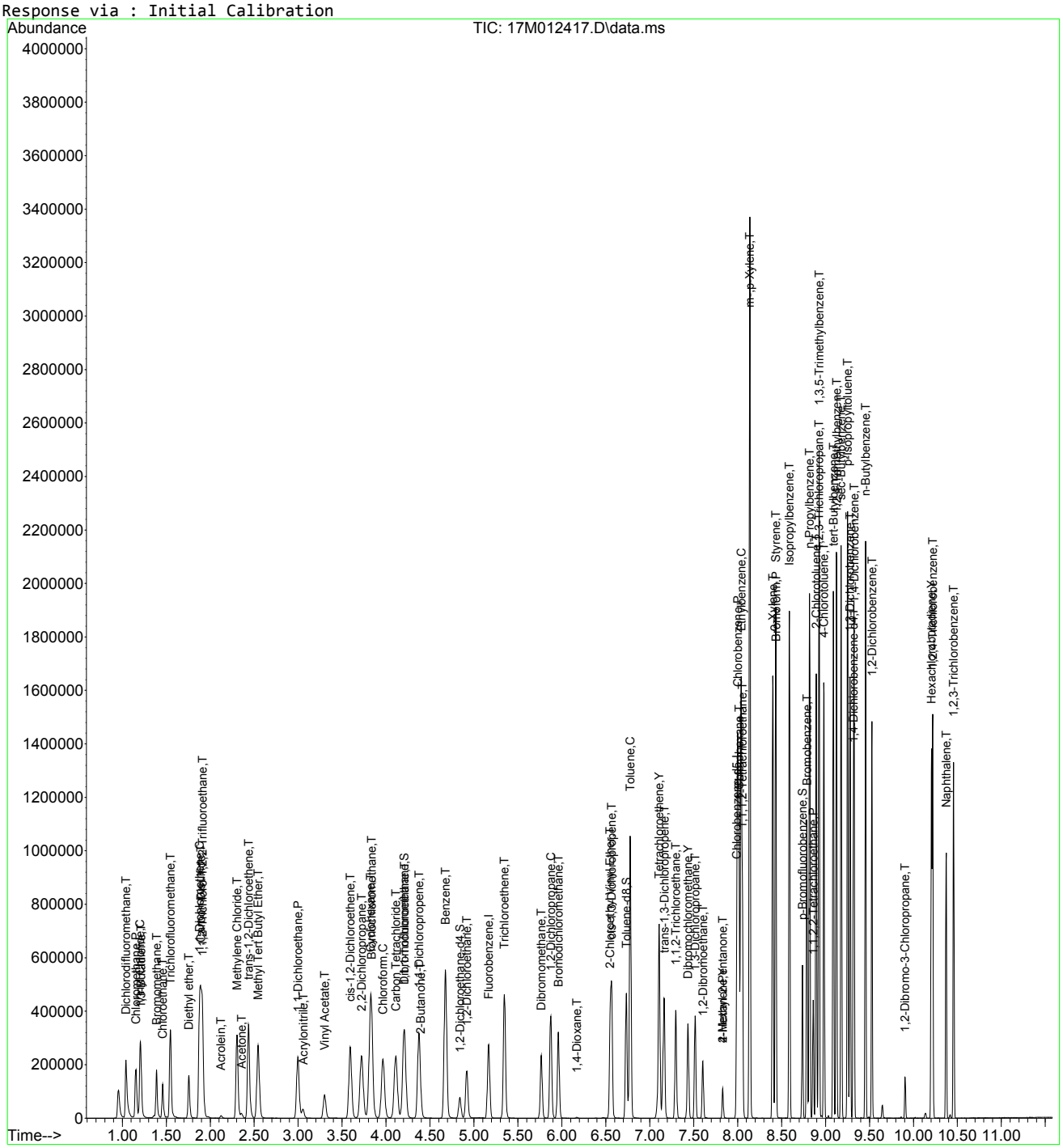

826_VMS.M Mon Jun 01 15:49:59 2015 Page: 3

Data Path : D:\MassHunter\GCMS\1\data\060115\
Data File : 17M012417.D
Acq On : 01 Jun 2015 15:38
Operator : ADC
Sample : WG525816-02 50ug/L CCV 8260
Misc : 1,1 STD70762
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 01 15:49:58 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.000	1.000	0.0	103	0.000
2	T	Dichlorodifluoromethane	0.280	0.370	-32.1#	126	0.000
3	P	Chloromethane	0.307	0.315	-2.6	106	0.000
4	C	Vinyl Chloride	0.323	0.341	-5.6#	107	0.000
5	T	1,3-Butadiene	0.170	0.088	48.2#	52	0.000
6	T	Bromomethane	0.191	0.154	19.4	85	0.000
7	T	Chloroethane	0.156	0.157	-0.6	107	0.000
8	T	Trichlorofluoromethane	0.388	0.434	-11.9	102	0.000
9	T	Diethyl ether	0.162	0.141	13.0	94	0.000
10	C	1,1-Dichloroethene	0.387	0.384	0.8#	99	0.000
11	T	Carbon Disulfide	0.717	0.549	23.4	79	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.260	0.265	-1.9	101	0.000
13	T	Acrolein	0.021	0.014	33.3#	76	0.000
14	T	Methylene Chloride	0.275	0.266	3.3	102	0.000
15	T	Acetone	0.039	0.034	12.8	99	0.000
16	T	trans-1,2-Dichloroethene	0.262	0.260	0.8	101	0.000
17	T	Methyl Tert Butyl Ether	0.575	0.555	3.5	105	0.000
18	P	1,1-Dichloroethane	0.480	0.482	-0.4	101	0.000
19	T	Acrylonitrile	0.054	0.051	5.6	105	0.000
20	T	Vinyl Acetate	0.021	0.027	-28.6#	126	0.000
21	T	cis-1,2-Dichloroethene	0.290	0.291	-0.3	101	0.000
22	T	2,2-Dichloropropane	0.367	0.408	-11.2	103	0.000
23	T	Cyclohexane	0.420	0.398	5.2	95	0.000
24	T	Bromochloromethane	0.177	0.180	-1.7	103	0.000
25	C	Chloroform	0.461	0.467	-1.3#	101	0.000
26	T	Carbon Tetrachloride	0.371	0.403	-8.6	104	0.000
27	S	Dibromofluoromethane	0.262	0.264	-0.8	99	0.000
28	T	1,1,1-Trichloroethane	0.421	0.428	-1.7	102	0.000
29	T	1,1-Dichloropropene	0.356	0.365	-2.5	101	0.000
30	T	2-Butanone	0.064	0.057	10.9	105	0.000
31	T	Benzene	1.106	1.081	2.3	101	0.000
32	S	1,2-Dichloroethane-d4	0.227	0.223	1.8	100	0.000
33	T	1,2-Dichloroethane	0.293	0.286	2.4	101	0.000
34	T	Trichloroethene	0.328	0.311	5.2	101	0.000
35	T	Dibromomethane	0.137	0.144	-5.1	104	0.000
36	C	1,2-Dichloropropane	0.290	0.288	0.7#	101	0.000
37	T	Bromodichloromethane	0.347	0.354	-2.0	103	0.000
38	T	1,4-Dioxane	0.002	0.002	0.0	116	0.000
39	T	2-Chloroethyl Vinyl Ether	0.127	0.113	11.0	95	0.000
40	T	cis-1,3-Dichloropropene	0.404	0.424	-5.0	103	0.000
41	T	4-Methyl-2-Pentanone	0.057	0.048	15.8	104	0.000
42	T	trans-1,3-Dichloropropene	0.315	0.343	-8.9	104	0.000
43	I	Chlorobenzene-d5	1.000	1.000	0.0	101	0.000
44	S	Toluene-d8	1.327	1.376	-3.7	100	0.000
45	C	Toluene	1.625	1.653	-1.7#	101	0.000
46	Y	Tetrachloroethene	0.453	0.466	-2.9	102	0.000
47	T	1,1,2-Trichloroethane	0.273	0.265	2.9	103	0.000
48	Y	Dibromochloromethane	0.357	0.372	-4.2	104	0.000
49	T	1,3-Dichloropropane	0.440	0.426	3.2	102	0.000
50	T	1,2-Dibromoethane	0.267	0.267	0.0	104	0.000
51	Y	2-Hexanone	0.135	0.119	11.9	103	0.000
52	P	Chlorobenzene	1.080	1.075	0.5	100	0.000
53	T	1-Chlorohexane	0.094	0.100	-6.4	101	0.000
54	C	Ethylbenzene	0.578	0.588	-1.7#	100	0.000
55	T	1,1,1,2-Tetrachloroethane	0.384	0.394	-2.6	101	0.000

Data Path : D:\MassHunter\GCMS\1\data\060115\
Data File : 17M012417.D
Acq On : 01 Jun 2015 15:38
Operator : ADC
Sample : WG525816-02 50ug/L CCV 8260
Misc : 1,1 STD70762
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 01 15:49:58 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
56	T	m-,p-Xylene	0.691	0.719	-4.1	99	0.000
57	T	o-Xylene	0.683	0.686	-0.4	99	0.000
58	T	Styrene	1.089	1.116	-2.5	98	0.000
59	P	Bromoform	0.226	0.245	-8.4	104	0.000
60	T	Isopropylbenzene	1.776	1.826	-2.8	99	0.000
61	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	97	0.000
62	T	1,3,5-Trimethylbenzene	2.882	3.028	-5.1	97	0.000
63	S	p-Bromofluorobenzene	0.863	0.902	-4.5	100	0.000
64	T	Bromobenzene	0.905	0.910	-0.6	98	0.000
65	T	n-Propylbenzene	3.782	4.029	-6.5	98	0.000
66	P	1,1,2,2-Tetrachloroethane	0.563	0.565	-0.4	103	0.000
67	T	2-Chlorotoluene	2.328	2.367	-1.7	98	0.000
68	T	1,2,3-Trichloropropane	0.147	0.148	-0.7	100	0.000
69	T	1,2,4-Trimethylbenzene	2.875	3.014	-4.8	97	0.000
70	T	4-Chlorotoluene	2.345	2.422	-3.3	98	0.000
71	T	tert-Butylbenzene	0.539	0.557	-3.3	96	0.000
72	T	sec-Butylbenzene	3.604	3.796	-5.3	97	0.000
73	T	p-Isopropyltoluene	3.075	3.300	-7.3	96	0.000
74	T	1,3-Dichlorobenzene	1.713	1.743	-1.8	98	0.000
75	T	1,4-Dichlorobenzene	1.718	1.707	0.6	97	0.000
76	T	n-Butylbenzene	2.686	2.933	-9.2	96	0.000
77	T	1,2-Dichlorobenzene	1.613	1.590	1.4	98	0.000
78	T	1,2-Dibromo-3-Chloropropane	0.096	0.094	2.1	104	0.000
79	Y	Hexachlorobutadiene	0.769	0.718	6.6	88	0.000
80	T	1,2,4-Trichlorobenzene	1.251	1.230	1.7	95	0.000
81	T	Naphthalene	2.113	1.949	7.8	97	0.000
82	T	1,2,3-Trichlorobenzene	1.147	1.081	5.8	96	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Data Path : D:\MassHunter\GCMS\1\data\060115\
Data File : 17M012417.D
Acq On : 01 Jun 2015 15:38
Operator : ADC
Sample : WG525816-02 50ug/L CCV 8260
Misc : 1,1 STD70762
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 01 15:49:58 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	103	0.000
2	T	Dichlorodifluoromethane	50.000	66.057	-32.1#	126	0.000
3	P	Chloromethane	50.000	51.358	-2.7	106	0.000
4	C	Vinyl Chloride	50.000	52.720	-5.4#	107	0.000
5	T	1,3-Butadiene	50.000	25.687	48.6#	52	0.000
6	T	Bromomethane	50.000	40.225	19.5	85	0.000
7	T	Chloroethane	50.000	50.328	-0.7	107	0.000
8	T	Trichlorofluoromethane	50.000	55.901	-11.8	102	0.000
9	T	Diethyl ether	50.000	43.418	13.2	94	0.000
10	C	1,1-Dichloroethene	50.000	49.538	0.9#	99	0.000
11	T	Carbon Disulfide	50.000	38.285	23.4	79	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.000	51.022	-2.0	101	0.000
13	T	Acrolein	50.000	33.718	32.6#	76	0.000
14	T	Methylene Chloride	50.000	48.290	3.4	102	0.000
15	T	Acetone	50.000	42.668	14.7	99	0.000
16	T	trans-1,2-Dichloroethene	50.000	49.537	0.9	101	0.000
17	T	Methyl Tert Butyl Ether	50.000	48.295	3.4	105	0.000
18	P	1,1-Dichloroethane	50.000	50.219	-0.4	101	0.000
19	T	Acrylonitrile	50.000	46.531	6.9	105	0.000
20	T	Vinyl Acetate	50.000	57.560	-15.1	126	0.000
21	T	cis-1,2-Dichloroethene	50.000	50.163	-0.3	101	0.000
22	T	2,2-Dichloropropane	50.000	55.473	-10.9	103	0.000
23	T	Cyclohexane	50.000	47.413	5.2	95	0.000
24	T	Bromochloromethane	50.000	50.637	-1.3	103	0.000
25	C	Chloroform	50.000	50.681	-1.4#	101	0.000
26	T	Carbon Tetrachloride	50.000	54.303	-8.6	104	0.000
27	S	Dibromofluoromethane	25.000	25.142	-0.6	99	0.000
28	T	1,1,1-Trichloroethane	50.000	50.912	-1.8	102	0.000
29	T	1,1-Dichloropropene	50.000	51.364	-2.7	101	0.000
30	T	2-Butanone	50.000	44.542	10.9	105	0.000
31	T	Benzene	50.000	48.845	2.3	101	0.000
32	S	1,2-Dichloroethane-d4	25.000	24.545	1.8	100	0.000
33	T	1,2-Dichloroethane	50.000	48.768	2.5	101	0.000
34	T	Trichloroethene	50.000	47.295	5.4	101	0.000
35	T	Dibromomethane	50.000	52.436	-4.9	104	0.000
36	C	1,2-Dichloropropane	50.000	49.669	0.7#	101	0.000
37	T	Bromodichloromethane	50.000	51.070	-2.1	103	0.000
38	T	1,4-Dioxane	100.000	100.098	-0.1	116	0.000
39	T	2-Chloroethyl Vinyl Ether	100.000	88.574	11.4	95	0.000
40	T	cis-1,3-Dichloropropene	50.000	52.382	-4.8	103	0.000
41	T	4-Methyl-2-Pentanone	50.000	42.000	16.0	104	0.000
42	T	trans-1,3-Dichloropropene	50.000	54.378	-8.8	104	0.000
43	I	Chlorobenzene-d5	25.000	25.000	0.0	101	0.000
44	S	Toluene-d8	25.000	25.924	-3.7	100	0.000
45	C	Toluene	50.000	50.874	-1.7#	101	0.000
46	Y	Tetrachloroethene	50.000	51.423	-2.8	102	0.000
47	T	1,1,2-Trichloroethane	50.000	48.501	3.0	103	0.000
48	Y	Dibromochloromethane	50.000	52.160	-4.3	104	0.000
49	T	1,3-Dichloropropane	50.000	48.384	3.2	102	0.000
50	T	1,2-Dibromoethane	50.000	50.173	-0.3	104	0.000
51	Y	2-Hexanone	50.000	44.234	11.5	103	0.000
52	P	Chlorobenzene	50.000	49.736	0.5	100	0.000
53	T	1-Chlorohexane	50.000	52.838	-5.7	101	0.000
54	C	Ethylbenzene	50.000	50.908	-1.8#	100	0.000
55	T	1,1,1,2-Tetrachloroethane	50.000	51.352	-2.7	101	0.000

Data Path : D:\MassHunter\GCMS\1\data\060115\
Data File : 17M012417.D
Acq On : 01 Jun 2015 15:38
Operator : ADC
Sample : WG525816-02 50ug/L CCV 8260
Misc : 1,1 STD70762
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 01 15:49:58 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	m-,p-Xylene	100.000	103.996	-4.0	99	0.000
57	T	o-Xylene	50.000	50.268	-0.5	99	0.000
58	T	Styrene	50.000	51.258	-2.5	98	0.000
59	P	Bromoform	50.000	54.118	-8.2	104	0.000
60	T	Isopropylbenzene	50.000	51.387	-2.8	99	0.000
61	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	97	0.000
62	T	1,3,5-Trimethylbenzene	50.000	52.529	-5.1	97	0.000
63	S	p-Bromofluorobenzene	25.000	26.121	-4.5	100	0.000
64	T	Bromobenzene	50.000	50.289	-0.6	98	0.000
65	T	n-Propylbenzene	50.000	53.269	-6.5	98	0.000
66	P	1,1,2,2-Tetrachloroethane	50.000	50.135	-0.3	103	0.000
67	T	2-Chlorotoluene	50.000	50.839	-1.7	98	0.000
68	T	1,2,3-Trichloropropane	50.000	50.174	-0.3	100	0.000
69	T	1,2,4-Trimethylbenzene	50.000	52.424	-4.8	97	0.000
70	T	4-Chlorotoluene	50.000	51.634	-3.3	98	0.000
71	T	tert-Butylbenzene	50.000	51.651	-3.3	96	0.000
72	T	sec-Butylbenzene	50.000	52.670	-5.3	97	0.000
73	T	p-Isopropyltoluene	50.000	53.670	-7.3	96	0.000
74	T	1,3-Dichlorobenzene	50.000	50.865	-1.7	98	0.000
75	T	1,4-Dichlorobenzene	50.000	49.696	0.6	97	0.000
76	T	n-Butylbenzene	50.000	54.594	-9.2	96	0.000
77	T	1,2-Dichlorobenzene	50.000	49.284	1.4	98	0.000
78	T	1,2-Dibromo-3-Chloropropane	50.000	48.948	2.1	104	0.000
79	Y	Hexachlorobutadiene	50.000	46.653	6.7	88	0.000
80	T	1,2,4-Trichlorobenzene	50.000	49.178	1.6	95	0.000
81	T	Naphthalene	50.000	46.131	7.7	97	0.000
82	T	1,2,3-Trichlorobenzene	50.000	47.112	5.8	96	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Data Path : D:\MassHunter\GCMS\1\data\060215\
Data File : 17M012460.D
Acq On : 02 Jun 2015 15:19
Operator : ADC
Sample : WG525986-02 50ug/L CCV 8260
Misc : 1,1 STD70762
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 02 15:31:21 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	238434	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	178063	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	93131	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.209	111	65099	26.0070 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.028%		
32) 1,2-Dichloroethane-d4	4.843	65	56049	25.8762 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.505%		
44) Toluene-d8	6.734	98	249256	26.3651 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.460%		
63) p-Bromofluorobenzene	8.737	95	85590	26.6100 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 106.440%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.042	85	168951	63.1971 ug/L	100
3) Chloromethane	1.154	50	138645	47.4236 ug/L	100
4) Vinyl Chloride	1.201	62	156632	50.8143 ug/L	100
5) 1,3-Butadiene	1.212	54	37052	22.7954 ug/L	100
6) Bromomethane	1.389	94	76673	42.1325 ug/L	100
7) Chloroethane	1.461	64	83223	56.1093 ug/L	100
8) Trichlorofluoromethane	1.551	101	207057	55.8931 ug/L	100
9) Diethyl ether	1.757	59	66406	42.9660 ug/L	99
10) 1,1-Dichloroethene	1.878	61	182315	49.3699 ug/L	100
11) Carbon Disulfide	1.893	76	245806	35.9626 ug/L	99
12) 1,1,2-Trichloro-1,2,2-...	1.910	101	126074	50.8903 ug/L	100
13) Acrolein	2.121	56	6337	31.4737 ug/L	98
14) Methylene Chloride	2.307	84	125616	47.8309 ug/L	100
15) Acetone	2.356	43	15071	40.1420 ug/L	99
16) trans-1,2-Dichloroethene	2.437	96	120955	48.3441 ug/L	100
17) Methyl Tert Butyl Ether	2.544	73	259247	47.2774 ug/L	100
18) 1,1-Dichloroethane	2.999	63	226546	49.4727 ug/L	100
19) Acrylonitrile	3.057	53	23316	44.9600 ug/L	100
20) Vinyl Acetate	3.303	86	11298	50.1551 ug/L	96
21) cis-1,2-Dichloroethene	3.595	96	135252	48.9376 ug/L	100
22) 2,2-Dichloropropane	3.725	77	187229	53.4258 ug/L	99
23) Cyclohexane	3.827	56	180706	45.1201 ug/L	100
24) Bromochloromethane	3.838	130	83818	49.5637 ug/L	100
25) Chloroform	3.966	83	220212	50.1121 ug/L	100
26) Carbon Tetrachloride	4.111	117	186506	52.7637 ug/L	100
28) 1,1,1-Trichloroethane	4.206	97	199808	49.7838 ug/L	99
29) 1,1-Dichloropropene	4.377	75	168718	49.7374 ug/L	100
30) 2-Butanone	4.397	43	25901	42.5984 ug/L	98
31) Benzene	4.678	78	500993	47.4764 ug/L	100
33) 1,2-Dichloroethane	4.918	62	133993	47.9954 ug/L	99
34) Trichloroethene	5.347	130	142740	45.5772 ug/L	99
35) Dibromomethane	5.767	93	66775	51.1416 ug/L	99
36) 1,2-Dichloropropane	5.874	63	133572	48.3568 ug/L	99
37) Bromodichloromethane	5.961	83	164750	49.7954 ug/L	100
38) 1,4-Dioxane	6.175	88	711	45.2584 ug/L	98
39) 2-Chloroethyl Vinyl Ether	6.548	63	107435	88.5062 ug/L	100
40) cis-1,3-Dichloropropene	6.566	75	194635	50.4604 ug/L	100
41) 4-Methyl-2-Pentanone	7.831	58	21799	39.9151 ug/L	100
42) trans-1,3-Dichloropropene	7.165	75	157200	52.2468 ug/L	100
45) Toluene	6.780	91	570450	49.2934 ug/L	100
46) Tetrachloroethene	7.107	166	158873	49.2245 ug/L	100
47) 1,1,2-Trichloroethane	7.295	97	91681	47.1713 ug/L	99
48) Dibromochloromethane	7.434	129	128326	50.5221 ug/L	99
49) 1,3-Dichloropropane	7.515	76	147173	46.9573 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\060215\
Data File : 17M012460.D
Acq On : 02 Jun 2015 15:19
Operator : ADC
Sample : WG525986-02 50ug/L CCV 8260
Misc : 1,1 STD70762
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 02 15:31:21 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50)	1,2-Dibromoethane	7.602	107	92134	48.5339 ug/L	100
51)	2-Hexanone	7.831	43	40692	42.3119 ug/L	100
52)	Chlorobenzene	8.002	112	368181	47.8494 ug/L	100
53)	1-Chlorohexane	8.016	69	34148	50.8233 ug/L	98
54)	Ethylbenzene	8.040	106	200748	48.7781 ug/L	99
55)	1,1,1,2-Tetrachloroethane	8.054	131	136301	49.8822 ug/L	100
56)	m-,p-Xylene	8.138	106	496187	100.8094 ug/L	99
57)	o-Xylene	8.399	106	235109	48.3520 ug/L	99
58)	Styrene	8.433	104	383987	49.5099 ug/L	100
59)	Bromoform	8.433	173	84273	52.3714 ug/L	99
60)	Isopropylbenzene	8.587	105	622089	49.1689 ug/L	100
62)	1,3,5-Trimethylbenzene	8.926	105	544233	50.6886 ug/L	100
64)	Bromobenzene	8.787	156	165149	49.0093 ug/L	99
65)	n-Propylbenzene	8.818	91	724499	51.4295 ug/L	100
66)	1,1,2,2-Tetrachloroethane	8.859	83	101658	48.4448 ug/L	99
67)	2-Chlorotoluene	8.894	91	425860	49.1042 ug/L	100
68)	1,2,3-Trichloropropane	8.923	110	26908	49.0227 ug/L	100
69)	1,2,4-Trimethylbenzene	9.122	105	542104	50.6170 ug/L	100
70)	4-Chlorotoluene	8.981	91	434207	49.6951 ug/L	100
71)	tert-Butylbenzene	9.088	134	99994	49.7863 ug/L	98
72)	sec-Butylbenzene	9.177	105	681016	50.7263 ug/L	100
73)	p-Isopropyltoluene	9.250	119	592969	51.7699 ug/L	100
74)	1,3-Dichlorobenzene	9.279	146	312063	48.8946 ug/L	100
75)	1,4-Dichlorobenzene	9.322	146	306364	47.8717 ug/L	99
76)	n-Butylbenzene	9.452	91	520619	52.0266 ug/L	100
77)	1,2-Dichlorobenzene	9.525	146	284598	47.3727 ug/L	100
78)	1,2-Dibromo-3-Chloropr...	9.901	75	16758	47.0006 ug/L	98
79)	Hexachlorobutadiene	10.199	225	129614	45.2467 ug/L	99
80)	1,2,4-Trichlorobenzene	10.214	180	218542	46.9032 ug/L	99
81)	Naphthalene	10.365	128	344847	43.8113 ug/L	100
82)	1,2,3-Trichlorobenzene	10.448	180	192928	45.1470 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\060215\
Data File : 17M012460.D
Acq On : 02 Jun 2015 15:19
Operator : ADC
Sample : WG525986-02 50ug/L CCV 8260
Misc : 1,1 STD70762
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 02 15:31:21 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

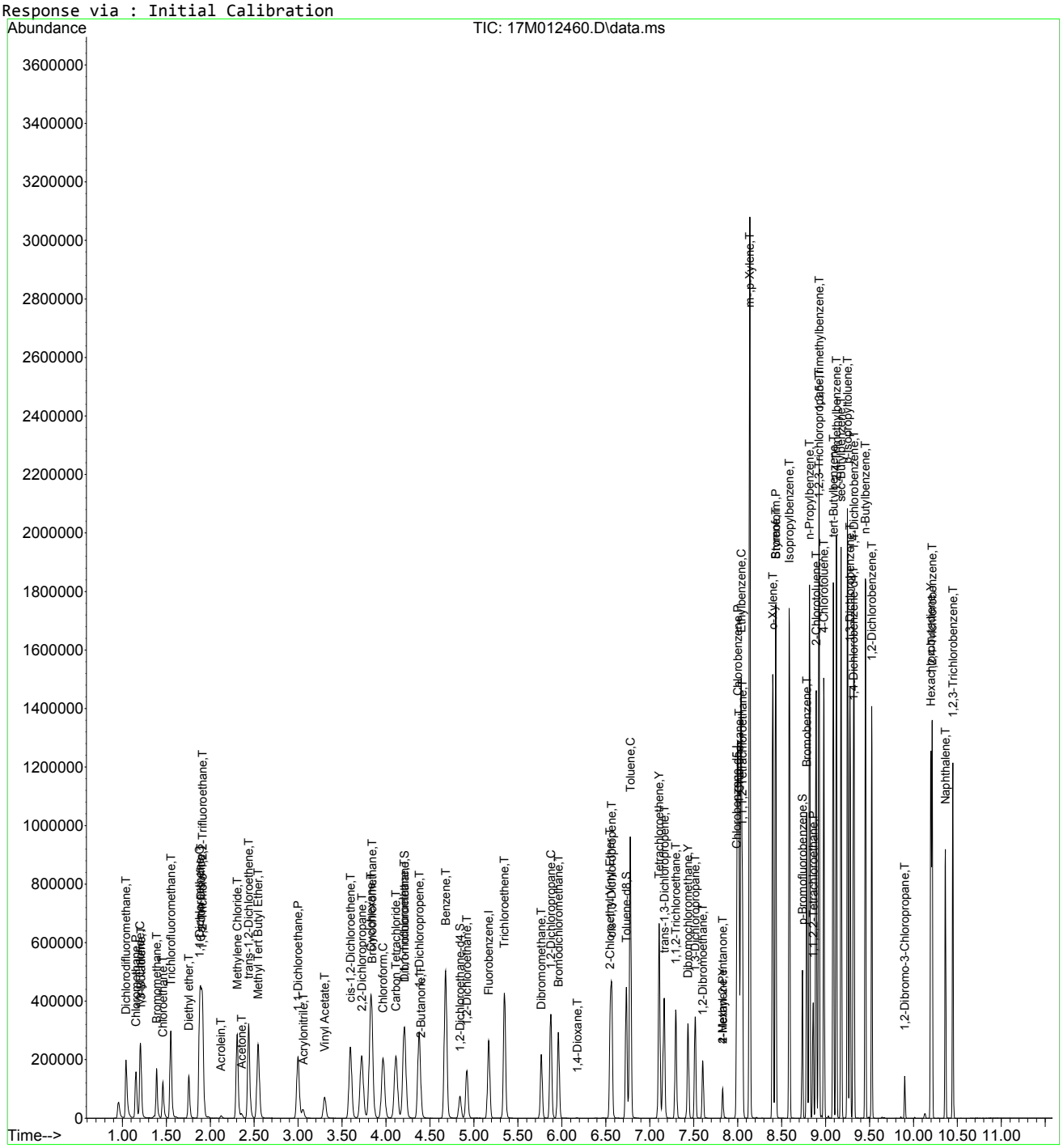

826_VMS.M Tue Jun 02 15:31:22 2015 Page: 3

Data Path : D:\MassHunter\GCMS\1\data\060215\
Data File : 17M012460.D
Acq On : 02 Jun 2015 15:19
Operator : ADC
Sample : WG525986-02 50ug/L CCV 8260
Misc : 1,1 STD70762
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 02 15:31:21 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.000	1.000	0.0	97	0.000
2	T	Dichlorodifluoromethane	0.280	0.354	-26.4#	113	0.000
3	P	Chloromethane	0.307	0.291	5.2	92	0.000
4	C	Vinyl Chloride	0.323	0.328	-1.5#	96	0.000
5	T	1,3-Butadiene	0.170	0.078	54.1#	43#	0.000
6	T	Bromomethane	0.191	0.161	15.7	84	0.000
7	T	Chloroethane	0.156	0.175	-12.2	112	0.000
8	T	Trichlorofluoromethane	0.388	0.434	-11.9	96	0.000
9	T	Diethyl ether	0.162	0.139	14.2	87	0.000
10	C	1,1-Dichloroethene	0.387	0.382	1.3#	93	0.000
11	T	Carbon Disulfide	0.717	0.515	28.2#	70	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.260	0.264	-1.5	95	0.000
13	T	Acrolein	0.021	0.013	38.1#	67	0.000
14	T	Methylene Chloride	0.275	0.263	4.4	95	0.000
15	T	Acetone	0.039	0.032	17.9	88	0.000
16	T	trans-1,2-Dichloroethene	0.262	0.254	3.1	93	0.000
17	T	Methyl Tert Butyl Ether	0.575	0.544	5.4	96	0.000
18	P	1,1-Dichloroethane	0.480	0.475	1.0	93	0.000
19	T	Acrylonitrile	0.054	0.049	9.3	95	0.000
20	T	Vinyl Acetate	0.021	0.024	-14.3	102	0.000
21	T	cis-1,2-Dichloroethene	0.290	0.284	2.1	93	0.000
22	T	2,2-Dichloropropane	0.367	0.393	-7.1	93	0.000
23	T	Cyclohexane	0.420	0.379	9.8	85	0.000
24	T	Bromochloromethane	0.177	0.176	0.6	94	0.000
25	C	Chloroform	0.461	0.462	-0.2#	93	0.000
26	T	Carbon Tetrachloride	0.371	0.391	-5.4	94	0.000
27	S	Dibromofluoromethane	0.262	0.273	-4.2	96	0.000
28	T	1,1,1-Trichloroethane	0.421	0.419	0.5	94	0.000
29	T	1,1-Dichloropropene	0.356	0.354	0.6	92	0.000
30	T	2-Butanone	0.064	0.054	15.6	94	0.000
31	T	Benzene	1.106	1.051	5.0	92	0.000
32	S	1,2-Dichloroethane-d4	0.227	0.235	-3.5	99	0.000
33	T	1,2-Dichloroethane	0.293	0.281	4.1	93	0.000
34	T	Trichloroethene	0.328	0.299	8.8	91	0.000
35	T	Dibromomethane	0.137	0.140	-2.2	95	0.000
36	C	1,2-Dichloropropane	0.290	0.280	3.4#	93	0.000
37	T	Bromodichloromethane	0.347	0.345	0.6	94	0.000
38	T	1,4-Dioxane	0.002	0.001	50.0#	49#	0.000
39	T	2-Chloroethyl Vinyl Ether	0.127	0.113	11.0	89	0.000
40	T	cis-1,3-Dichloropropene	0.404	0.408	-1.0	93	0.000
41	T	4-Methyl-2-Pentanone	0.057	0.046	19.3	93	0.000
42	T	trans-1,3-Dichloropropene	0.315	0.330	-4.8	93	0.000
43	I	Chlorobenzene-d5	1.000	1.000	0.0	95	0.000
44	S	Toluene-d8	1.327	1.400	-5.5	96	0.000
45	C	Toluene	1.625	1.602	1.4#	92	0.000
46	Y	Tetrachloroethene	0.453	0.446	1.5	92	0.000
47	T	1,1,2-Trichloroethane	0.273	0.257	5.9	94	0.000
48	Y	Dibromochloromethane	0.357	0.360	-0.8	95	0.000
49	T	1,3-Dichloropropane	0.440	0.413	6.1	94	0.000
50	T	1,2-Dibromoethane	0.267	0.259	3.0	95	0.000
51	Y	2-Hexanone	0.135	0.114	15.6	93	0.000
52	P	Chlorobenzene	1.080	1.034	4.3	91	0.000
53	T	1-Chlorohexane	0.094	0.096	-2.1	92	0.000
54	C	Ethylbenzene	0.578	0.564	2.4#	90	0.000
55	T	1,1,1,2-Tetrachloroethane	0.384	0.383	0.3	93	0.000

Data Path : D:\MassHunter\GCMS\1\data\060215\
Data File : 17M012460.D
Acq On : 02 Jun 2015 15:19
Operator : ADC
Sample : WG525986-02 50ug/L CCV 8260
Misc : 1,1 STD70762
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 02 15:31:21 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
56	T	m-,p-Xylene	0.691	0.697	-0.9	90	0.000
57	T	o-Xylene	0.683	0.660	3.4	90	0.000
58	T	Styrene	1.089	1.078	1.0	90	0.000
59	P	Bromoform	0.226	0.237	-4.9	95	0.000
60	T	Isopropylbenzene	1.776	1.747	1.6	89	0.000
61	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	91	0.000
62	T	1,3,5-Trimethylbenzene	2.882	2.922	-1.4	88	0.000
63	S	p-Bromofluorobenzene	0.863	0.919	-6.5	96	0.000
64	T	Bromobenzene	0.905	0.887	2.0	90	0.000
65	T	n-Propylbenzene	3.782	3.890	-2.9	89	0.000
66	P	1,1,2,2-Tetrachloroethane	0.563	0.546	3.0	94	0.000
67	T	2-Chlorotoluene	2.328	2.286	1.8	89	0.000
68	T	1,2,3-Trichloropropane	0.147	0.144	2.0	92	0.000
69	T	1,2,4-Trimethylbenzene	2.875	2.910	-1.2	88	0.000
70	T	4-Chlorotoluene	2.345	2.331	0.6	89	0.000
71	T	tert-Butylbenzene	0.539	0.537	0.4	88	0.000
72	T	sec-Butylbenzene	3.604	3.656	-1.4	88	0.000
73	T	p-Isopropyltoluene	3.075	3.184	-3.5	87	0.000
74	T	1,3-Dichlorobenzene	1.713	1.675	2.2	88	0.000
75	T	1,4-Dichlorobenzene	1.718	1.645	4.2	88	0.000
76	T	n-Butylbenzene	2.686	2.795	-4.1	86	0.000
77	T	1,2-Dichlorobenzene	1.613	1.528	5.3	89	0.000
78	T	1,2-Dibromo-3-Chloropropane	0.096	0.090	6.3	94	0.000
79	Y	Hexachlorobutadiene	0.769	0.696	9.5	80	0.000
80	T	1,2,4-Trichlorobenzene	1.251	1.173	6.2	85	0.000
81	T	Naphthalene	2.113	1.851	12.4	87	-0.011
82	T	1,2,3-Trichlorobenzene	1.147	1.036	9.7	87	-0.012

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Data Path : D:\MassHunter\GCMS\1\data\060215\
Data File : 17M012460.D
Acq On : 02 Jun 2015 15:19
Operator : ADC
Sample : WG525986-02 50ug/L CCV 8260
Misc : 1,1 STD70762
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 02 15:31:21 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	97	0.000
2	T	Dichlorodifluoromethane	50.000	63.197	-26.4#	113	0.000
3	P	Chloromethane	50.000	47.424	5.2	92	0.000
4	C	Vinyl Chloride	50.000	50.814	-1.6#	96	0.000
5	T	1,3-Butadiene	50.000	22.795	54.4#	43	0.000
6	T	Bromomethane	50.000	42.132	15.7	84	0.000
7	T	Chloroethane	50.000	56.109	-12.2	112	0.000
8	T	Trichlorofluoromethane	50.000	55.893	-11.8	96	0.000
9	T	Diethyl ether	50.000	42.966	14.1	87	0.000
10	C	1,1-Dichloroethene	50.000	49.370	1.3#	93	0.000
11	T	Carbon Disulfide	50.000	35.963	28.1#	70	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.000	50.890	-1.8	95	0.000
13	T	Acrolein	50.000	31.474	37.1#	67	0.000
14	T	Methylene Chloride	50.000	47.831	4.3	95	0.000
15	T	Acetone	50.000	40.142	19.7	88	0.000
16	T	trans-1,2-Dichloroethene	50.000	48.344	3.3	93	0.000
17	T	Methyl Tert Butyl Ether	50.000	47.277	5.4	96	0.000
18	P	1,1-Dichloroethane	50.000	49.473	1.1	93	0.000
19	T	Acrylonitrile	50.000	44.960	10.1	95	0.000
20	T	Vinyl Acetate	50.000	50.155	-0.3	102	0.000
21	T	cis-1,2-Dichloroethene	50.000	48.938	2.1	93	0.000
22	T	2,2-Dichloropropane	50.000	53.426	-6.9	93	0.000
23	T	Cyclohexane	50.000	45.120	9.8	85	0.000
24	T	Bromochloromethane	50.000	49.564	0.9	94	0.000
25	C	Chloroform	50.000	50.112	-0.2#	93	0.000
26	T	Carbon Tetrachloride	50.000	52.764	-5.5	94	0.000
27	S	Dibromofluoromethane	25.000	26.007	-4.0	96	0.000
28	T	1,1,1-Trichloroethane	50.000	49.784	0.4	94	0.000
29	T	1,1-Dichloropropene	50.000	49.737	0.5	92	0.000
30	T	2-Butanone	50.000	42.598	14.8	94	0.000
31	T	Benzene	50.000	47.476	5.0	92	0.000
32	S	1,2-Dichloroethane-d4	25.000	25.876	-3.5	99	0.000
33	T	1,2-Dichloroethane	50.000	47.995	4.0	93	0.000
34	T	Trichloroethene	50.000	45.577	8.8	91	0.000
35	T	Dibromomethane	50.000	51.142	-2.3	95	0.000
36	C	1,2-Dichloropropane	50.000	48.357	3.3#	93	0.000
37	T	Bromodichloromethane	50.000	49.795	0.4	94	0.000
38	T	1,4-Dioxane	100.000	45.258	54.7#	49	0.000
39	T	2-Chloroethyl Vinyl Ether	100.000	88.506	11.5	89	0.000
40	T	cis-1,3-Dichloropropene	50.000	50.460	-0.9	93	0.000
41	T	4-Methyl-2-Pentanone	50.000	39.915	20.2	93	0.000
42	T	trans-1,3-Dichloropropene	50.000	52.247	-4.5	93	0.000
43	I	Chlorobenzene-d5	25.000	25.000	0.0	95	0.000
44	S	Toluene-d8	25.000	26.365	-5.5	96	0.000
45	C	Toluene	50.000	49.293	1.4#	92	0.000
46	Y	Tetrachloroethene	50.000	49.225	1.5	92	0.000
47	T	1,1,2-Trichloroethane	50.000	47.171	5.7	94	0.000
48	Y	Dibromochloromethane	50.000	50.522	-1.0	95	0.000
49	T	1,3-Dichloropropane	50.000	46.957	6.1	94	0.000
50	T	1,2-Dibromoethane	50.000	48.534	2.9	95	0.000
51	Y	2-Hexanone	50.000	42.312	15.4	93	0.000
52	P	Chlorobenzene	50.000	47.849	4.3	91	0.000
53	T	1-Chlorohexane	50.000	50.823	-1.6	92	0.000
54	C	Ethylbenzene	50.000	48.778	2.4#	90	0.000
55	T	1,1,1,2-Tetrachloroethane	50.000	49.882	0.2	93	0.000

Data Path : D:\MassHunter\GCMS\1\data\060215\
Data File : 17M012460.D
Acq On : 02 Jun 2015 15:19
Operator : ADC
Sample : WG525986-02 50ug/L CCV 8260
Misc : 1,1 STD70762
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 02 15:31:21 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	m-,p-Xylene	100.000	100.809	-0.8	90	0.000
57	T	o-Xylene	50.000	48.352	3.3	90	0.000
58	T	Styrene	50.000	49.510	1.0	90	0.000
59	P	Bromoform	50.000	52.371	-4.7	95	0.000
60	T	Isopropylbenzene	50.000	49.169	1.7	89	0.000
61	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	91	0.000
62	T	1,3,5-Trimethylbenzene	50.000	50.689	-1.4	88	0.000
63	S	p-Bromofluorobenzene	25.000	26.610	-6.4	96	0.000
64	T	Bromobenzene	50.000	49.009	2.0	90	0.000
65	T	n-Propylbenzene	50.000	51.429	-2.9	89	0.000
66	P	1,1,2,2-Tetrachloroethane	50.000	48.445	3.1	94	0.000
67	T	2-Chlorotoluene	50.000	49.104	1.8	89	0.000
68	T	1,2,3-Trichloropropane	50.000	49.023	2.0	92	0.000
69	T	1,2,4-Trimethylbenzene	50.000	50.617	-1.2	88	0.000
70	T	4-Chlorotoluene	50.000	49.695	0.6	89	0.000
71	T	tert-Butylbenzene	50.000	49.786	0.4	88	0.000
72	T	sec-Butylbenzene	50.000	50.726	-1.5	88	0.000
73	T	p-Isopropyltoluene	50.000	51.770	-3.5	87	0.000
74	T	1,3-Dichlorobenzene	50.000	48.895	2.2	88	0.000
75	T	1,4-Dichlorobenzene	50.000	47.872	4.3	88	0.000
76	T	n-Butylbenzene	50.000	52.027	-4.1	86	0.000
77	T	1,2-Dichlorobenzene	50.000	47.373	5.3	89	0.000
78	T	1,2-Dibromo-3-Chloropropane	50.000	47.001	6.0	94	0.000
79	Y	Hexachlorobutadiene	50.000	45.247	9.5	80	0.000
80	T	1,2,4-Trichlorobenzene	50.000	46.903	6.2	85	0.000
81	T	Naphthalene	50.000	43.811	12.4	87	-0.011
82	T	1,2,3-Trichlorobenzene	50.000	45.147	9.7	87	-0.012

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060315\
Data File : 17M012490.D
Acq On : 03 Jun 2015 16:26
Operator : ADC
Sample : WG526215-02 50ug/L CCV 8260
Misc : 1,1 STD70762
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 03 16:37:57 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	229688	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	172522	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	91020	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.206	111	61223	25.3899 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.560%		
32) 1,2-Dichloroethane-d4	4.843	65	51142	24.5099 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.040%		
44) Toluene-d8	6.734	98	236144	25.7804 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.122%		
63) p-Bromofluorobenzene	8.737	95	80259	25.5313 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.125%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.041	85	163333	63.4220 ug/L	99
3) Chloromethane	1.154	50	141735	50.3266 ug/L	100
4) Vinyl Chloride	1.200	62	153789	51.7917 ug/L	100
5) 1,3-Butadiene	1.212	54	36858	23.5395 ug/L	100
6) Bromomethane	1.389	94	80876	46.1343 ug/L	100
7) Chloroethane	1.458	64	71315	49.9117 ug/L	100
8) Trichlorofluoromethane	1.548	101	203256	56.9562 ug/L	100
9) Diethyl ether	1.756	59	64756	43.4939 ug/L	100
10) 1,1-Dichloroethene	1.878	61	179281	50.3969 ug/L	99
11) Carbon Disulfide	1.892	76	252963	38.4190 ug/L	99
12) 1,1,2-Trichloro-1,2,2-...	1.910	101	122890	51.4939 ug/L	100
13) Acrolein	2.124	56	6166	31.7905 ug/L	99
14) Methylene Chloride	2.307	84	122909	48.5822 ug/L	100
15) Acetone	2.359	43	15388	42.5470 ug/L	99
16) trans-1,2-Dichloroethene	2.437	96	119888	49.7422 ug/L	99
17) Methyl Tert Butyl Ether	2.547	73	243150	46.0303 ug/L	100
18) 1,1-Dichloroethane	2.998	63	222696	50.4837 ug/L	100
19) Acrylonitrile	3.056	53	23334	46.7080 ug/L	99
20) Vinyl Acetate	3.300	86	10622	49.0314 ug/L	94
21) cis-1,2-Dichloroethene	3.592	96	132848	49.8981 ug/L	99
22) 2,2-Dichloropropane	3.719	77	184686	54.7069 ug/L	99
23) Cyclohexane	3.824	56	187927	48.7098 ug/L	99
24) Bromochloromethane	3.835	130	80986	49.7125 ug/L	100
25) Chloroform	3.966	83	216569	51.1597 ug/L	100
26) Carbon Tetrachloride	4.110	117	182748	53.6692 ug/L	100
28) 1,1,1-Trichloroethane	4.206	97	195909	50.6710 ug/L	100
29) 1,1-Dichloropropene	4.374	75	167660	51.3076 ug/L	100
30) 2-Butanone	4.394	43	25822	44.0856 ug/L	99
31) Benzene	4.678	78	495499	48.7438 ug/L	100
33) 1,2-Dichloroethane	4.918	62	130049	48.3564 ug/L	100
34) Trichloroethene	5.347	130	142547	47.2487 ug/L	99
35) Dibromomethane	5.766	93	63885	50.7913 ug/L	99
36) 1,2-Dichloropropane	5.874	63	130321	48.9763 ug/L	99
37) Bromodichloromethane	5.960	83	159767	50.1280 ug/L	99
38) 1,4-Dioxane	6.172	88	1382	91.3203 ug/L	93
39) 2-Chloroethyl Vinyl Ether	6.548	63	110306	94.3315 ug/L	100
40) cis-1,3-Dichloropropene	6.566	75	189563	51.0168 ug/L	100
41) 4-Methyl-2-Pentanone	7.831	58	22299	42.3854 ug/L	98
42) trans-1,3-Dichloropropene	7.165	75	152925	52.7613 ug/L	100
45) Toluene	6.777	91	562716	50.1868 ug/L	100
46) Tetrachloroethene	7.107	166	157987	50.5222 ug/L	100
47) 1,1,2-Trichloroethane	7.295	97	87582	46.5096 ug/L	99
48) Dibromochloromethane	7.434	129	122654	49.8400 ug/L	100
49) 1,3-Dichloropropane	7.518	76	140850	46.3832 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\060315\
Data File : 17M012490.D
Acq On : 03 Jun 2015 16:26
Operator : ADC
Sample : WG526215-02 50ug/L CCV 8260
Misc : 1,1 STD70762
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 03 16:37:57 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
50) 1,2-Dibromoethane	7.605	107	88072	47.8842	ug/L	100
51) 2-Hexanone	7.831	43	41532	44.5724	ug/L	100
52) Chlorobenzene	8.002	112	365370	49.0092	ug/L	100
53) 1-Chlorohexane	8.016	69	36083	55.4280	ug/L	87
54) Ethylbenzene	8.039	106	200423	50.2633	ug/L	97
55) 1,1,1,2-Tetrachloroethane	8.054	131	133173	50.3027	ug/L	100
56) m-,p-Xylene	8.138	106	491840	103.1356	ug/L	99
57) o-Xylene	8.401	106	233050	49.4679	ug/L	99
58) Styrene	8.433	104	380677	50.6596	ug/L	100
59) Bromoform	8.436	173	79325	50.8797	ug/L	100
60) Isopropylbenzene	8.589	105	618651	50.4676	ug/L	100
62) 1,3,5-Trimethylbenzene	8.925	105	542516	51.7006	ug/L	100
64) Bromobenzene	8.789	156	161776	49.1218	ug/L	99
65) n-Propylbenzene	8.818	91	723651	52.5607	ug/L	100
66) 1,1,2,2-Tetrachloroethane	8.859	83	95237	46.4375	ug/L	99
67) 2-Chlorotoluene	8.893	91	422850	49.8880	ug/L	100
68) 1,2,3-Trichloropropane	8.922	110	25443	47.4288	ug/L	99
69) 1,2,4-Trimethylbenzene	9.122	105	540073	51.5970	ug/L	100
70) 4-Chlorotoluene	8.980	91	434126	50.8381	ug/L	100
71) tert-Butylbenzene	9.087	134	99119	50.4953	ug/L	98
72) sec-Butylbenzene	9.177	105	680493	51.8630	ug/L	100
73) p-Isopropyltoluene	9.252	119	593851	53.0494	ug/L	100
74) 1,3-Dichlorobenzene	9.278	146	312039	50.0248	ug/L	100
75) 1,4-Dichlorobenzene	9.325	146	305059	48.7734	ug/L	100
76) n-Butylbenzene	9.455	91	532239	54.4213	ug/L	100
77) 1,2-Dichlorobenzene	9.527	146	279746	47.6451	ug/L	100
78) 1,2-Dibromo-3-Chloropr...	9.904	75	15487	44.4433	ug/L	99
79) Hexachlorobutadiene	10.205	225	129779	46.3550	ug/L	99
80) 1,2,4-Trichlorobenzene	10.219	180	216498	47.5421	ug/L	99
81) Naphthalene	10.370	128	325692	42.3374	ug/L	100
82) 1,2,3-Trichlorobenzene	10.457	180	186092	44.5572	ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060315\
Data File : 17M012490.D
Acq On : 03 Jun 2015 16:26
Operator : ADC
Sample : WG526215-02 50ug/L CCV 8260
Misc : 1,1 STD70762
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 03 16:37:57 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

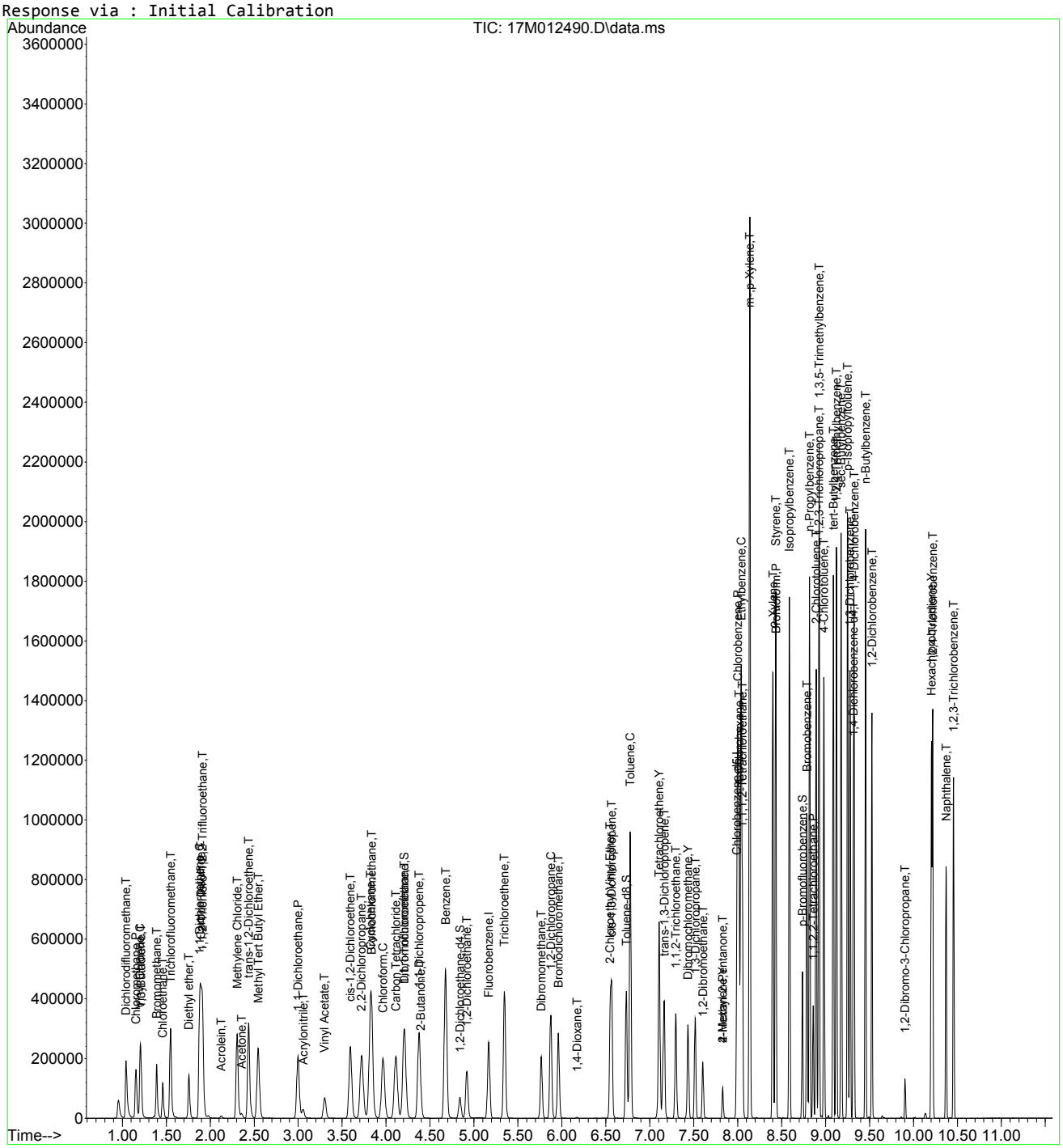

826_VMS.M Wed Jun 03 16:37:59 2015 Page: 3

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\060315\
Data File : 17M012490.D
Acq On : 03 Jun 2015 16:26
Operator : ADC
Sample : WG526215-02 50ug/L CCV 8260
Misc : 1,1 STD70762
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 03 16:37:57 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.000	1.000	0.0	93	0.000
2	T	Dichlorodifluoromethane	0.280	0.356	-27.1#	109	0.000
3	P	Chloromethane	0.307	0.309	-0.7	94	0.000
4	C	Vinyl Chloride	0.323	0.335	-3.7#	95	0.000
5	T	1,3-Butadiene	0.170	0.080	52.9#	43#	0.000
6	T	Bromomethane	0.191	0.176	7.9	88	0.000
7	T	Chloroethane	0.156	0.155	0.6	96	0.000
8	T	Trichlorofluoromethane	0.388	0.442	-13.9	94	0.000
9	T	Diethyl ether	0.162	0.141	13.0	85	0.000
10	C	1,1-Dichloroethene	0.387	0.390	-0.8#	91	0.000
11	T	Carbon Disulfide	0.717	0.551	23.2	72	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.260	0.268	-3.1	92	0.000
13	T	Acrolein	0.021	0.013	38.1#	65	0.000
14	T	Methylene Chloride	0.275	0.268	2.5	93	0.000
15	T	Acetone	0.039	0.033	15.4	90	0.000
16	T	trans-1,2-Dichloroethene	0.262	0.261	0.4	92	0.000
17	T	Methyl Tert Butyl Ether	0.575	0.529	8.0	90	0.000
18	P	1,1-Dichloroethane	0.480	0.485	-1.0	92	0.000
19	T	Acrylonitrile	0.054	0.051	5.6	95	0.000
20	T	Vinyl Acetate	0.021	0.023	-9.5	96	0.000
21	T	cis-1,2-Dichloroethene	0.290	0.289	0.3	91	0.000
22	T	2,2-Dichloropropane	0.367	0.402	-9.5	91	0.000
23	T	Cyclohexane	0.420	0.409	2.6	88	0.000
24	T	Bromochloromethane	0.177	0.176	0.6	91	0.000
25	C	Chloroform	0.461	0.471	-2.2#	92	0.000
26	T	Carbon Tetrachloride	0.371	0.398	-7.3	93	0.000
27	S	Dibromofluoromethane	0.262	0.267	-1.9	91	0.000
28	T	1,1,1-Trichloroethane	0.421	0.426	-1.2	92	0.000
29	T	1,1-Dichloropropene	0.356	0.365	-2.5	91	0.000
30	T	2-Butanone	0.064	0.056	12.5	94	0.000
31	T	Benzene	1.106	1.079	2.4	91	0.000
32	S	1,2-Dichloroethane-d4	0.227	0.223	1.8	90	0.000
33	T	1,2-Dichloroethane	0.293	0.283	3.4	90	0.000
34	T	Trichloroethene	0.328	0.310	5.5	91	0.000
35	T	Dibromomethane	0.137	0.139	-1.5	91	0.000
36	C	1,2-Dichloropropane	0.290	0.284	2.1#	90	0.000
37	T	Bromodichloromethane	0.347	0.348	-0.3	91	0.000
38	T	1,4-Dioxane	0.002	0.002	0.0	96	0.000
39	T	2-Chloroethyl Vinyl Ether	0.127	0.120	5.5	92	0.000
40	T	cis-1,3-Dichloropropene	0.404	0.413	-2.2	91	0.000
41	T	4-Methyl-2-Pentanone	0.057	0.049	14.0	95	0.000
42	T	trans-1,3-Dichloropropene	0.315	0.333	-5.7	91	0.000
43	I	Chlorobenzene-d5	1.000	1.000	0.0	92	0.000
44	S	Toluene-d8	1.327	1.369	-3.2	91	0.000
45	C	Toluene	1.625	1.631	-0.4#	91	0.000
46	Y	Tetrachloroethene	0.453	0.458	-1.1	92	0.000
47	T	1,1,2-Trichloroethane	0.273	0.254	7.0	90	0.000
48	Y	Dibromochloromethane	0.357	0.355	0.6	91	0.000
49	T	1,3-Dichloropropane	0.440	0.408	7.3	90	0.000
50	T	1,2-Dibromoethane	0.267	0.255	4.5	91	0.000
51	Y	2-Hexanone	0.135	0.120	11.1	95	0.000
52	P	Chlorobenzene	1.080	1.059	1.9	90	0.000
53	T	1-Chlorohexane	0.094	0.105	-11.7	97	0.000
54	C	Ethylbenzene	0.578	0.581	-0.5#	90	0.000
55	T	1,1,1,2-Tetrachloroethane	0.384	0.386	-0.5	91	0.000

Data Path : D:\MassHunter\GCMS\1\data\060315\
Data File : 17M012490.D
Acq On : 03 Jun 2015 16:26
Operator : ADC
Sample : WG526215-02 50ug/L CCV 8260
Misc : 1,1 STD70762
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 03 16:37:57 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
56	T	m-,p-Xylene	0.691	0.713	-3.2	90	0.000
57	T	o-Xylene	0.683	0.675	1.2	89	0.000
58	T	Styrene	1.089	1.103	-1.3	89	0.000
59	P	Bromoform	0.226	0.230	-1.8	89	0.000
60	T	Isopropylbenzene	1.776	1.793	-1.0	89	0.000
61	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	89	0.000
62	T	1,3,5-Trimethylbenzene	2.882	2.980	-3.4	88	0.000
63	S	p-Bromofluorobenzene	0.863	0.882	-2.2	90	0.000
64	T	Bromobenzene	0.905	0.889	1.8	89	0.000
65	T	n-Propylbenzene	3.782	3.975	-5.1	89	0.000
66	P	1,1,2,2-Tetrachloroethane	0.563	0.523	7.1	88	0.000
67	T	2-Chlorotoluene	2.328	2.323	0.2	89	0.000
68	T	1,2,3-Trichloropropane	0.147	0.140	4.8	87	0.000
69	T	1,2,4-Trimethylbenzene	2.875	2.967	-3.2	88	0.000
70	T	4-Chlorotoluene	2.345	2.385	-1.7	89	0.000
71	T	tert-Butylbenzene	0.539	0.544	-0.9	87	0.000
72	T	sec-Butylbenzene	3.604	3.738	-3.7	88	0.000
73	T	p-Isopropyltoluene	3.075	3.262	-6.1	87	0.000
74	T	1,3-Dichlorobenzene	1.713	1.714	-0.1	88	0.000
75	T	1,4-Dichlorobenzene	1.718	1.676	2.4	88	0.000
76	T	n-Butylbenzene	2.686	2.924	-8.9	88	0.000
77	T	1,2-Dichlorobenzene	1.613	1.537	4.7	87	0.000
78	T	1,2-Dibromo-3-Chloropropane	0.096	0.085	11.5	87	0.000
79	Y	Hexachlorobutadiene	0.769	0.713	7.3	80	0.000
80	T	1,2,4-Trichlorobenzene	1.251	1.189	5.0	85	0.000
81	T	Naphthalene	2.113	1.789	15.3	82	0.000
82	T	1,2,3-Trichlorobenzene	1.147	1.022	10.9	84	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Data Path : D:\MassHunter\GCMS\1\data\060315\
Data File : 17M012490.D
Acq On : 03 Jun 2015 16:26
Operator : ADC
Sample : WG526215-02 50ug/L CCV 8260
Misc : 1,1 STD70762
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 03 16:37:57 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	93	0.000
2	T	Dichlorodifluoromethane	50.000	63.422	-26.8#	109	0.000
3	P	Chloromethane	50.000	50.327	-0.7	94	0.000
4	C	Vinyl Chloride	50.000	51.792	-3.6#	95	0.000
5	T	1,3-Butadiene	50.000	23.539	52.9#	43	0.000
6	T	Bromomethane	50.000	46.134	7.7	88	0.000
7	T	Chloroethane	50.000	49.912	0.2	96	0.000
8	T	Trichlorofluoromethane	50.000	56.956	-13.9	94	0.000
9	T	Diethyl ether	50.000	43.494	13.0	85	0.000
10	C	1,1-Dichloroethene	50.000	50.397	-0.8#	91	0.000
11	T	Carbon Disulfide	50.000	38.419	23.2	72	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.000	51.494	-3.0	92	0.000
13	T	Acrolein	50.000	31.791	36.4#	65	0.000
14	T	Methylene Chloride	50.000	48.582	2.8	93	0.000
15	T	Acetone	50.000	42.547	14.9	90	0.000
16	T	trans-1,2-Dichloroethene	50.000	49.742	0.5	92	0.000
17	T	Methyl Tert Butyl Ether	50.000	46.030	7.9	90	0.000
18	P	1,1-Dichloroethane	50.000	50.484	-1.0	92	0.000
19	T	Acrylonitrile	50.000	46.708	6.6	95	0.000
20	T	Vinyl Acetate	50.000	49.031	1.9	96	0.000
21	T	cis-1,2-Dichloroethene	50.000	49.898	0.2	91	0.000
22	T	2,2-Dichloropropane	50.000	54.707	-9.4	91	0.000
23	T	Cyclohexane	50.000	48.710	2.6	88	0.000
24	T	Bromochloromethane	50.000	49.713	0.6	91	0.000
25	C	Chloroform	50.000	51.160	-2.3#	92	0.000
26	T	Carbon Tetrachloride	50.000	53.669	-7.3	93	0.000
27	S	Dibromofluoromethane	25.000	25.390	-1.6	91	0.000
28	T	1,1,1-Trichloroethane	50.000	50.671	-1.3	92	0.000
29	T	1,1-Dichloropropene	50.000	51.308	-2.6	91	0.000
30	T	2-Butanone	50.000	44.086	11.8	94	0.000
31	T	Benzene	50.000	48.744	2.5	91	0.000
32	S	1,2-Dichloroethane-d4	25.000	24.510	2.0	90	0.000
33	T	1,2-Dichloroethane	50.000	48.356	3.3	90	0.000
34	T	Trichloroethene	50.000	47.249	5.5	91	0.000
35	T	Dibromomethane	50.000	50.791	-1.6	91	0.000
36	C	1,2-Dichloropropane	50.000	48.976	2.0#	90	0.000
37	T	Bromodichloromethane	50.000	50.128	-0.3	91	0.000
38	T	1,4-Dioxane	100.000	91.320	8.7	96	0.000
39	T	2-Chloroethyl Vinyl Ether	100.000	94.332	5.7	92	0.000
40	T	cis-1,3-Dichloropropene	50.000	51.017	-2.0	91	0.000
41	T	4-Methyl-2-Pentanone	50.000	42.385	15.2	95	0.000
42	T	trans-1,3-Dichloropropene	50.000	52.761	-5.5	91	0.000
43	I	Chlorobenzene-d5	25.000	25.000	0.0	92	0.000
44	S	Toluene-d8	25.000	25.780	-3.1	91	0.000
45	C	Toluene	50.000	50.187	-0.4#	91	0.000
46	Y	Tetrachloroethene	50.000	50.522	-1.0	92	0.000
47	T	1,1,2-Trichloroethane	50.000	46.510	7.0	90	0.000
48	Y	Dibromochloromethane	50.000	49.840	0.3	91	0.000
49	T	1,3-Dichloropropane	50.000	46.383	7.2	90	0.000
50	T	1,2-Dibromoethane	50.000	47.884	4.2	91	0.000
51	Y	2-Hexanone	50.000	44.572	10.9	95	0.000
52	P	Chlorobenzene	50.000	49.009	2.0	90	0.000
53	T	1-Chlorohexane	50.000	55.428	-10.9	97	0.000
54	C	Ethylbenzene	50.000	50.263	-0.5#	90	0.000
55	T	1,1,1,2-Tetrachloroethane	50.000	50.303	-0.6	91	0.000

Data Path : D:\MassHunter\GCMS\1\data\060315\
Data File : 17M012490.D
Acq On : 03 Jun 2015 16:26
Operator : ADC
Sample : WG526215-02 50ug/L CCV 8260
Misc : 1,1 STD70762
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 03 16:37:57 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	m-,p-Xylene	100.000	103.136	-3.1	90	0.000
57	T	o-Xylene	50.000	49.468	1.1	89	0.000
58	T	Styrene	50.000	50.660	-1.3	89	0.000
59	P	Bromoform	50.000	50.880	-1.8	89	0.000
60	T	Isopropylbenzene	50.000	50.468	-0.9	89	0.000
61	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	89	0.000
62	T	1,3,5-Trimethylbenzene	50.000	51.701	-3.4	88	0.000
63	S	p-Bromofluorobenzene	25.000	25.531	-2.1	90	0.000
64	T	Bromobenzene	50.000	49.122	1.8	89	0.000
65	T	n-Propylbenzene	50.000	52.561	-5.1	89	0.000
66	P	1,1,2,2-Tetrachloroethane	50.000	46.438	7.1	88	0.000
67	T	2-Chlorotoluene	50.000	49.888	0.2	89	0.000
68	T	1,2,3-Trichloropropane	50.000	47.429	5.1	87	0.000
69	T	1,2,4-Trimethylbenzene	50.000	51.597	-3.2	88	0.000
70	T	4-Chlorotoluene	50.000	50.838	-1.7	89	0.000
71	T	tert-Butylbenzene	50.000	50.495	-1.0	87	0.000
72	T	sec-Butylbenzene	50.000	51.863	-3.7	88	0.000
73	T	p-Isopropyltoluene	50.000	53.049	-6.1	87	0.000
74	T	1,3-Dichlorobenzene	50.000	50.025	-0.0	88	0.000
75	T	1,4-Dichlorobenzene	50.000	48.773	2.5	88	0.000
76	T	n-Butylbenzene	50.000	54.421	-8.8	88	0.000
77	T	1,2-Dichlorobenzene	50.000	47.645	4.7	87	0.000
78	T	1,2-Dibromo-3-Chloropropane	50.000	44.443	11.1	87	0.000
79	Y	Hexachlorobutadiene	50.000	46.355	7.3	80	0.000
80	T	1,2,4-Trichlorobenzene	50.000	47.542	4.9	85	0.000
81	T	Naphthalene	50.000	42.337	15.3	82	0.000
82	T	1,2,3-Trichlorobenzene	50.000	44.557	10.9	84	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

2.1.1.5 Raw QC Data

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011944.D
Acq On : 18 May 2015 10:58
Operator : ADC
Sample : WG523986-01 50ng BFB 8260
Misc : 1,1 STD70032
ALS Vial : 1 Sample Multiplier: 1

Integration File: lscint.p

Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
Last Update : Mon May 18 15:03:59 2015

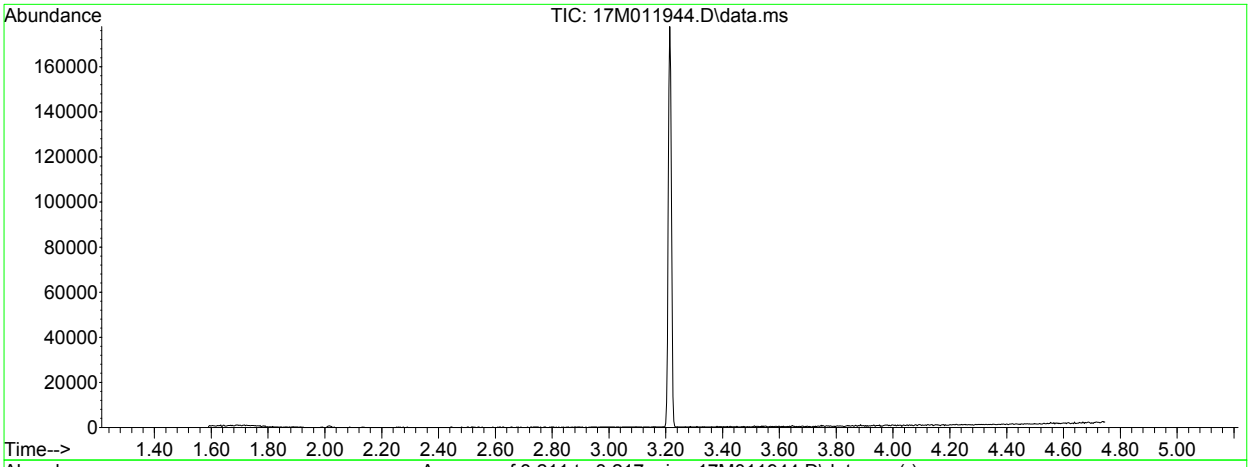

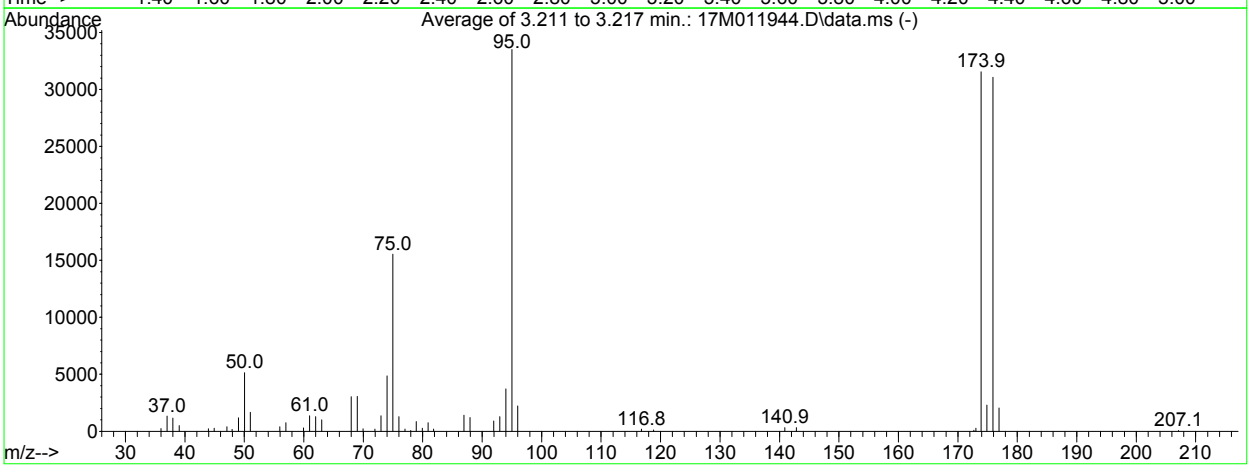

AutoFind: Scans 561, 562, 563; Background Corrected with Scan 552

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	15.4	5148	PASS
75	95	30	60	46.4	15549	PASS
95	95	100	100	100.0	33515	PASS
96	95	5	9	6.6	2212	PASS
173	174	0.00	2	0.9	278	PASS
174	95	50	100	94.1	31549	PASS
175	174	5	9	7.3	2299	PASS
176	174	95	101	98.5	31069	PASS
177	176	5	9	6.5	2034	PASS

Data Path : D:\MassHunter\GCMS\1\data\060115\
Data File : 17M012416.D
Acq On : 01 Jun 2015 15:19
Operator : ADC
Sample : WG525816-01 50ng BFB 8260
Misc : 1,1 STD70707
ALS Vial : 1 Sample Multiplier: 1

Integration File: lscint.p

Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
Last Update : Mon May 18 15:03:59 2015

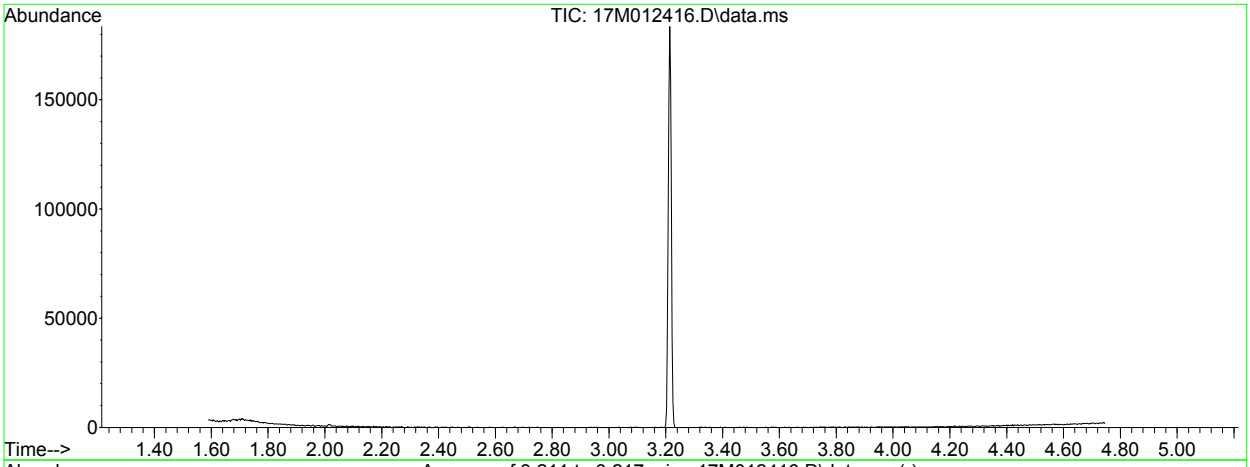

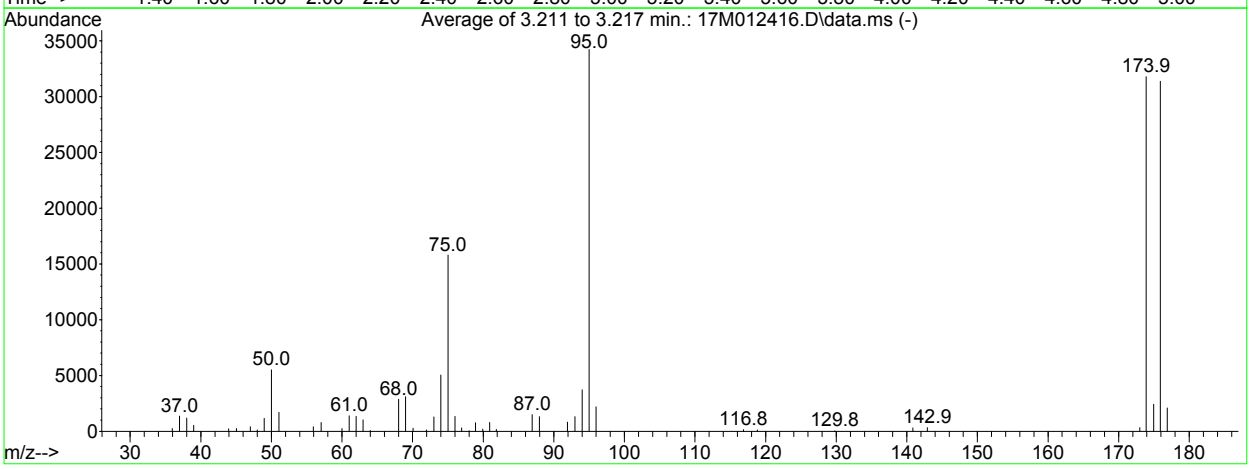

AutoFind: Scans 561, 562, 563; Background Corrected with Scan 552

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.1	5506	PASS
75	95	30	60	46.1	15792	PASS
95	95	100	100	100.0	34243	PASS
96	95	5	9	6.4	2187	PASS
173	174	0.00	2	1.0	329	PASS
174	95	50	100	92.9	31797	PASS
175	174	5	9	7.6	2432	PASS
176	174	95	101	98.7	31379	PASS
177	176	5	9	6.7	2090	PASS

Data Path : D:\MassHunter\GCMS\1\data\060215\
Data File : 17M012459.D
Acq On : 02 Jun 2015 15:01
Operator : ADC
Sample : WG525986-01 50ng BFB 8260
Misc : 1,1 STD70707
ALS Vial : 1 Sample Multiplier: 1

Integration File: lscint.p

Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
Last Update : Mon May 18 15:03:59 2015

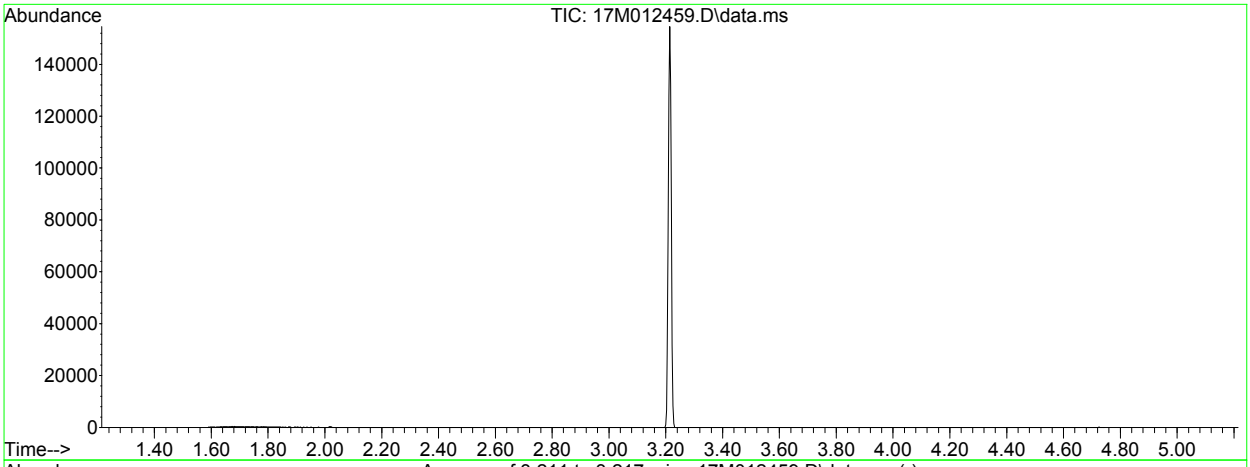

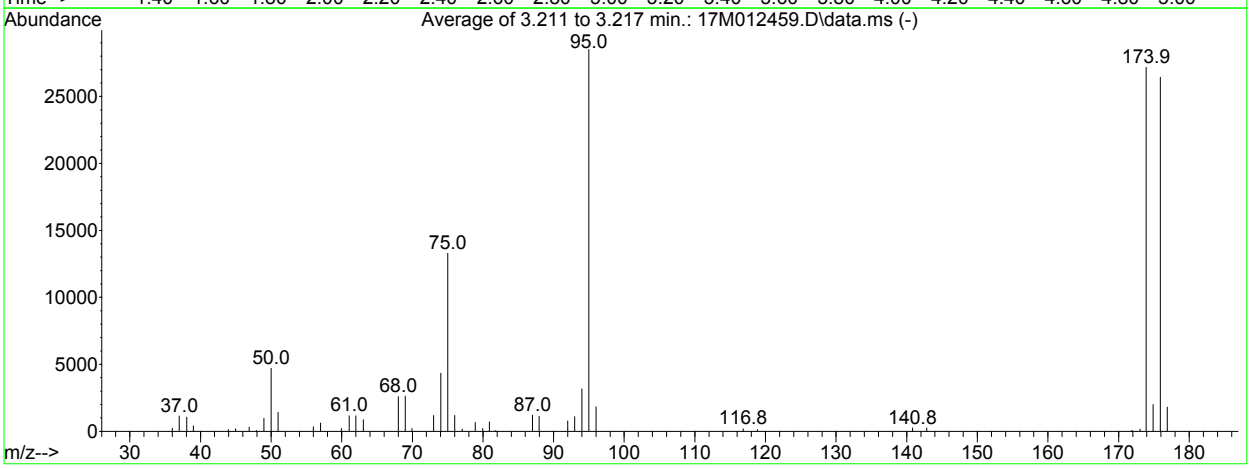

AutoFind: Scans 561, 562, 563; Background Corrected with Scan 552

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.5	4693	PASS
75	95	30	60	46.6	13298	PASS
95	95	100	100	100.0	28515	PASS
96	95	5	9	6.4	1815	PASS
173	174	0.00	2	0.6	172	PASS
174	95	50	100	95.3	27173	PASS
175	174	5	9	7.4	2008	PASS
176	174	95	101	97.3	26443	PASS
177	176	5	9	6.8	1802	PASS

Data Path : D:\MassHunter\GCMS\1\data\060315\
Data File : 17M012489.D
Acq On : 03 Jun 2015 16:07
Operator : ADC
Sample : WG526215-01 50ng BFB 8260
Misc : 1,1 STD70707
ALS Vial : 1 Sample Multiplier: 1

Integration File: lscint.p

Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
Last Update : Mon May 18 15:03:59 2015

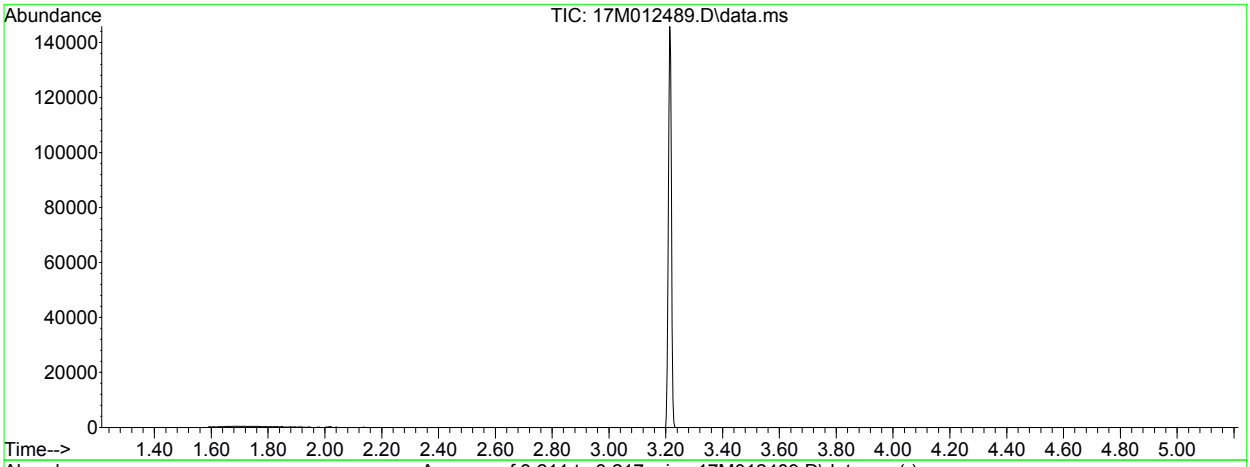

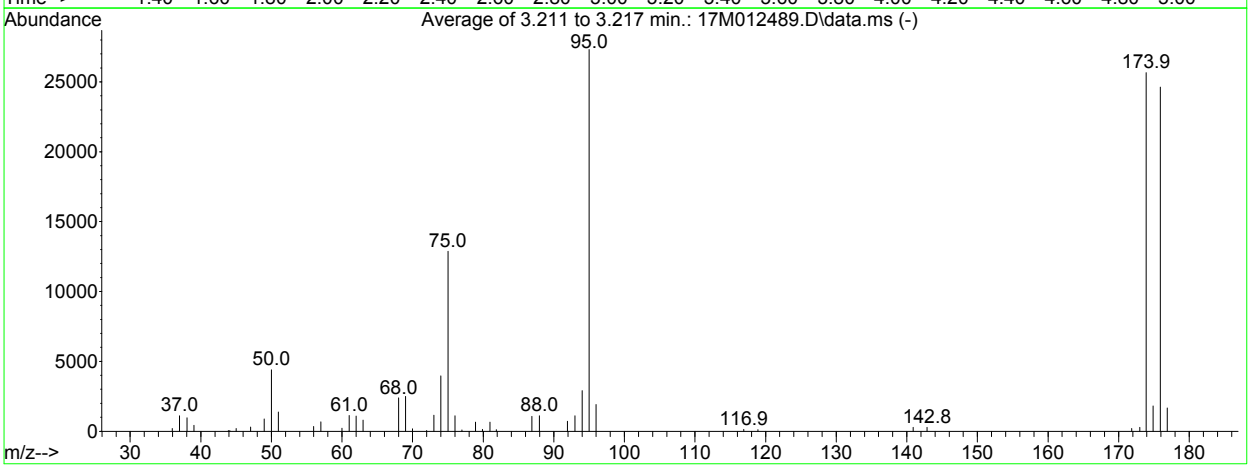

AutoFind: Scans 561, 562, 563; Background Corrected with Scan 552

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.1	4391	PASS
75	95	30	60	47.1	12881	PASS
95	95	100	100	100.0	27323	PASS
96	95	5	9	7.0	1907	PASS
173	174	0.00	2	1.1	272	PASS
174	95	50	100	93.9	25659	PASS
175	174	5	9	7.1	1811	PASS
176	174	95	101	96.0	24632	PASS
177	176	5	9	6.8	1676	PASS

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060115\
Data File : 17M012419.D
Acq On : 01 Jun 2015 16:22
Operator : ADC
Sample : WG525817-01 BLANK 8260
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 02 09:19:48 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	250006	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	184054	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	92628	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.209	111	66369	25.2871 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.148%		
32) 1,2-Dichloroethane-d4	4.840	65	58209	25.6296 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.518%		
44) Toluene-d8	6.734	98	257184	26.3182 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.273%		
63) p-Bromofluorobenzene	8.737	95	88219	27.5763 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 110.305%		
Target Compounds					Qvalue
7) Chloroethane	1.481	64	1008	0.6481 ug/L #	48

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\060115\
Data File : 17M012419.D
Acq On : 01 Jun 2015 16:22
Operator : ADC
Sample : WG525817-01 BLANK 8260
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 02 09:19:48 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

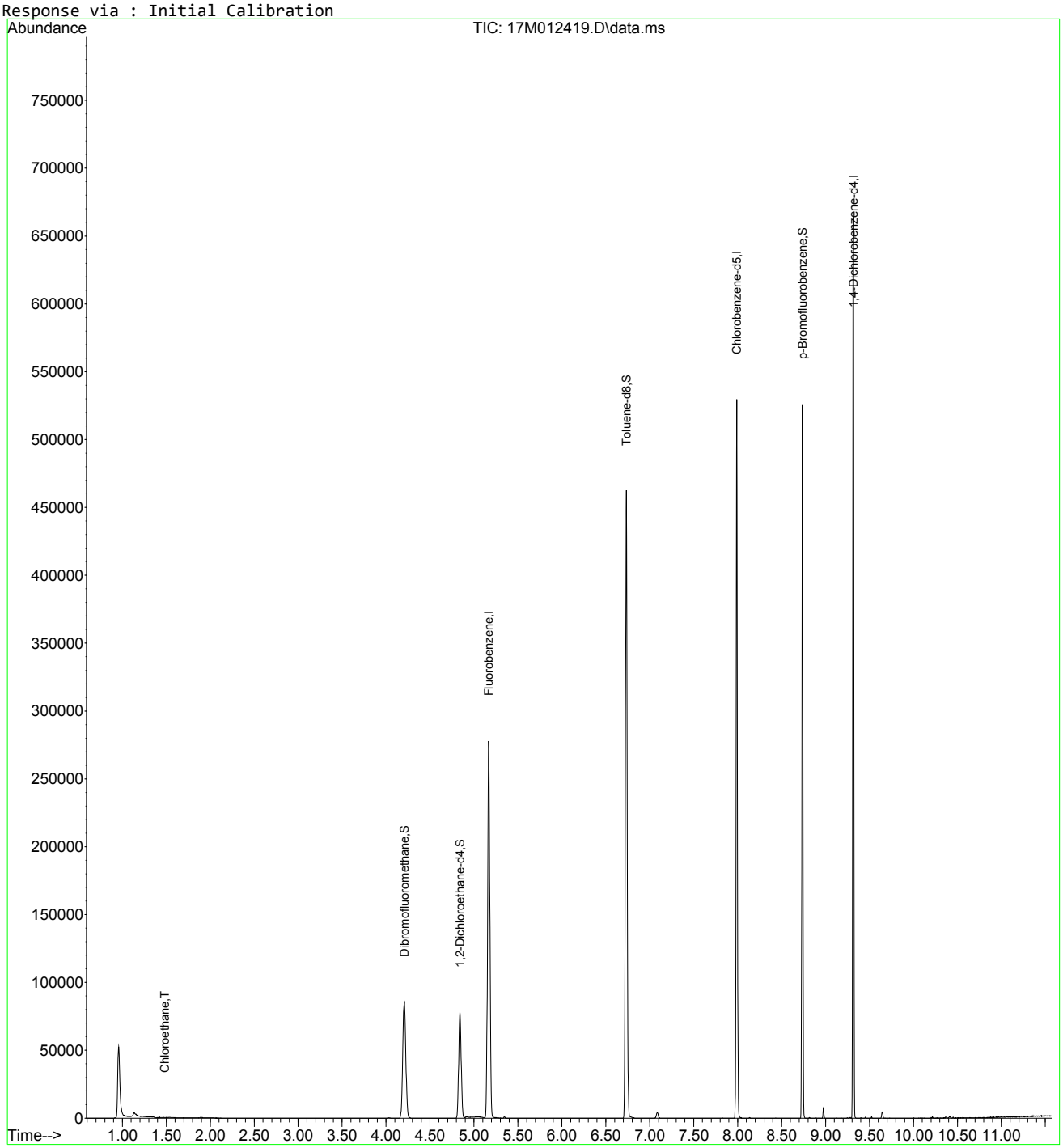

826_VMS.M Tue Jun 02 09:19:48 2015 Page: 2

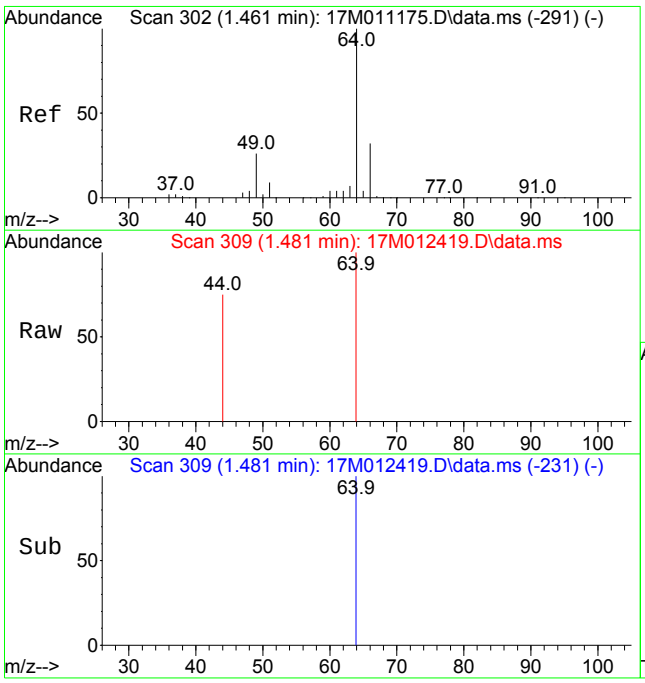

#7
Chloroethane
Concen: 0.6481 ug/L
RT: 1.481 min Scan# 309
Delta R.T. 0.026 min
Lab File: 17M012419.D
Acq: 01 Jun 2015 16:22

Tgt Ion: 64 Resp: 1008

Ion	Ratio	Lower	Upper
64	100		
49	0.0	16.2	37.8#

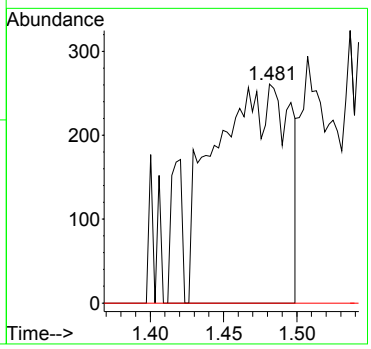

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060215\
Data File : 17M012462.D
Acq On : 02 Jun 2015 16:01
Operator : ADC
Sample : WG525997-01 BLANK 8260
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 03 10:54:25 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	230315	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	170652	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.313	152	87005	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.206	111	61670	25.5056 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.022%		
32) 1,2-Dichloroethane-d4	4.840	65	55088	26.3291 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 105.316%		
44) Toluene-d8	6.734	98	239507	26.4341 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.736%		
63) p-Bromofluorobenzene	8.734	95	82021	27.2958 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 109.183%		

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\060215\
Data File : 17M012462.D
Acq On : 02 Jun 2015 16:01
Operator : ADC
Sample : WG525997-01 BLANK 8260
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 03 10:54:25 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

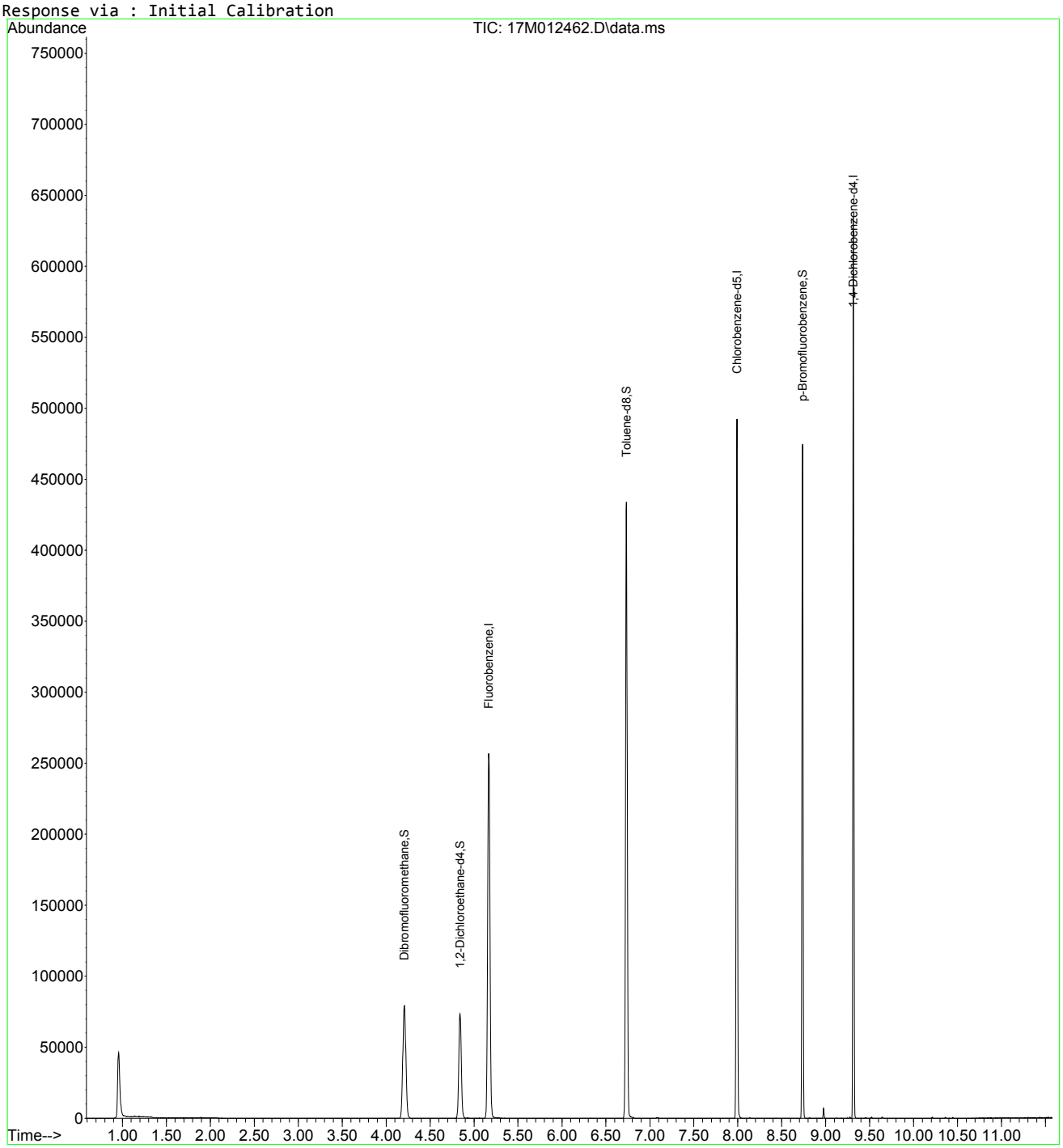

826_VMS.M Wed Jun 03 10:54:26 2015 Page: 2

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060315\
Data File : 17M012492.D
Acq On : 03 Jun 2015 17:41
Operator : ADC
Sample : WG526216-01 BLANK 8260
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 08 16:01:43 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	229038	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	170447	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.313	152	91046	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.206	111	59845	24.8888 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.555%		
32) 1,2-Dichloroethane-d4	4.840	65	52803	25.3777 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.511%		
44) Toluene-d8	6.734	98	235135	25.9828 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.931%		
63) p-Bromofluorobenzene	8.734	95	80243	25.5189 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.076%		

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060315\
Data File : 17M012492.D
Acq On : 03 Jun 2015 17:41
Operator : ADC
Sample : WG526216-01 BLANK 8260
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 08 16:01:43 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

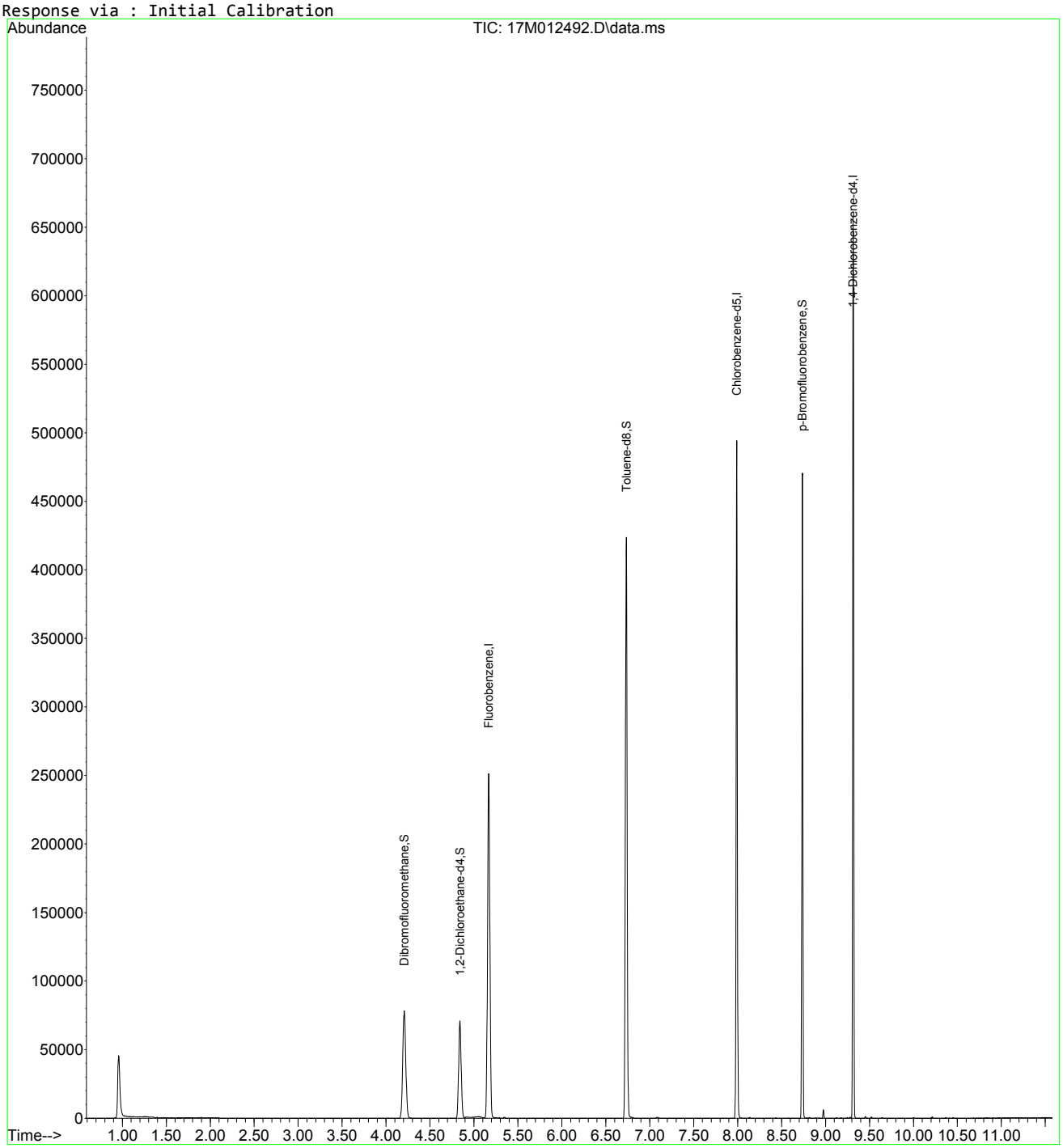

826_VMS.M Mon Jun 08 16:01:45 2015 Page: 2

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060115\
Data File : 17M012420.D
Acq On : 01 Jun 2015 16:42
Operator : ADC
Sample : WG525817-02 20ug/L LCS 8260
Misc : 1,1 STD70797
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 01 16:54:20 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.164	96	243296	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	182042	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	98563	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.206	111	65000	25.4485 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.794%		
32) 1,2-Dichloroethane-d4	4.840	65	55927	25.3039 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.216%		
44) Toluene-d8	6.734	98	250264	25.8931 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.572%		
63) p-Bromofluorobenzene	8.734	95	86262	25.3408 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.363%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.041	85	68824	25.2295 ug/L	99
3) Chloromethane	1.154	50	58616	19.6490 ug/L	99
4) Vinyl Chloride	1.201	62	63575	20.2127 ug/L	98
5) 1,3-Butadiene	1.212	54	41459	24.9970 ug/L	100
6) Bromomethane	1.389	94	30429	16.3869 ug/L	98
7) Chloroethane	1.458	64	26883	17.7624 ug/L	98
8) Trichlorofluoromethane	1.545	101	75807	20.0544 ug/L	100
9) Diethyl ether	1.757	59	162527	103.0568 ug/L	99
10) 1,1-Dichloroethene	1.878	61	66105	17.5431 ug/L	100
11) Carbon Disulfide	1.890	76	74831	10.7294 ug/L	98
12) 1,1,2-Trichloro-1,2,2-...	1.907	101	46973	18.5819 ug/L	99
13) Acrolein	2.124	56	19505	94.9387 ug/L	97
14) Methylene Chloride	2.304	84	50729	18.9301 ug/L	98
15) Acetone	2.359	43	6555	17.1105 ug/L	100
16) trans-1,2-Dichloroethene	2.434	96	48562	19.0217 ug/L	99
17) Methyl Tert Butyl Ether	2.544	73	115768	20.6901 ug/L	100
18) 1,1-Dichloroethane	2.996	63	85967	18.3981 ug/L	100
19) Acrylonitrile	3.054	53	9500	17.9527 ug/L	97
20) Vinyl Acetate	3.300	86	6411	29.4018 ug/L	96
21) cis-1,2-Dichloroethene	3.592	96	54700	19.3963 ug/L	99
22) 2,2-Dichloropropane	3.722	77	71899	20.1064 ug/L	98
23) Cyclohexane	3.821	56	78023	19.0921 ug/L #	77
24) Bromochloromethane	3.835	130	34034	19.7230 ug/L	100
25) Chloroform	3.963	83	87327	19.4753 ug/L	100
26) Carbon Tetrachloride	4.110	117	70673	19.5943 ug/L	99
28) 1,1,1-Trichloroethane	4.209	97	77955	19.0350 ug/L	100
29) 1,1-Dichloropropene	4.374	75	64448	18.6194 ug/L	99
30) 2-Butanone	4.397	43	10896	17.5621 ug/L	95
31) Benzene	4.675	78	202407	18.7977 ug/L	99
33) 1,2-Dichloroethane	4.918	62	55394	19.4452 ug/L	100
34) Trichloroethene	5.347	130	57432	17.9717 ug/L	99
35) Dibromomethane	5.764	93	27269	20.4674 ug/L	99
36) 1,2-Dichloropropane	5.871	63	54442	19.3156 ug/L	100
37) Bromodichloromethane	5.961	83	64180	19.0106 ug/L	100
38) 1,4-Dioxane	6.178	88	1141	71.1784 ug/L	95
39) 2-Chloroethyl Vinyl Ether	6.548	63	22667	18.3002 ug/L	100
40) cis-1,3-Dichloropropene	6.566	75	80918	20.5593 ug/L	100
41) 4-Methyl-2-Pentanone	7.831	58	9451	16.9595 ug/L	100
42) trans-1,3-Dichloropropene	7.162	75	62829	20.4645 ug/L	100
45) Toluene	6.777	91	227271	19.2096 ug/L	99
46) Tetrachloroethene	7.107	166	61122	18.5239 ug/L	100
47) 1,1,2-Trichloroethane	7.295	97	38502	19.3769 ug/L	99
48) Dibromochloromethane	7.434	129	51389	19.7897 ug/L	99
49) 1,3-Dichloropropane	7.515	76	62297	19.4421 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\060115\
Data File : 17M012420.D
Acq On : 01 Jun 2015 16:42
Operator : ADC
Sample : WG525817-02 20ug/L LCS 8260
Misc : 1,1 STD70797
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 01 16:54:20 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
50)	1,2-Dibromoethane	7.602	107	38258	19.7129	ug/L	99
51)	2-Hexanone	7.831	43	17468	17.7664	ug/L	100
52)	Chlorobenzene	7.999	112	139006	17.6706	ug/L	99
53)	1-Chlorohexane	8.013	69	12822	18.6662	ug/L	90
54)	Ethylbenzene	8.037	106	80349	19.0966	ug/L	98
55)	1,1,1,2-Tetrachloroethane	8.051	131	54287	19.4332	ug/L	99
56)	m-,p-Xylene	8.138	106	189674	37.6934	ug/L	100
57)	o-Xylene	8.398	106	89265	17.9568	ug/L	99
58)	Styrene	8.430	104	153052	19.3026	ug/L	100
59)	Bromoform	8.433	173	35787	21.7537	ug/L	100
60)	Isopropylbenzene	8.587	105	234008	18.0913	ug/L	100
62)	1,3,5-Trimethylbenzene	8.925	105	221880	19.5265	ug/L	100
64)	Bromobenzene	8.786	156	66729	18.7110	ug/L	99
65)	n-Propylbenzene	8.815	91	264585	17.7468	ug/L	100
66)	1,1,2,2-Tetrachloroethane	8.859	83	44198	19.9016	ug/L	99
67)	2-Chlorotoluene	8.891	91	160683	17.5066	ug/L	100
68)	1,2,3-Trichloropropane	8.923	110	11535	19.8570	ug/L	98
69)	1,2,4-Trimethylbenzene	9.122	105	221225	19.5177	ug/L	100
70)	4-Chlorotoluene	8.980	91	159479	17.2465	ug/L	100
71)	tert-Butylbenzene	9.088	134	38183	17.9633	ug/L	98
72)	sec-Butylbenzene	9.177	105	253467	17.8393	ug/L	100
73)	p-Isopropyltoluene	9.250	119	217651	17.9550	ug/L	100
74)	1,3-Dichlorobenzene	9.279	146	115854	17.1518	ug/L	99
75)	1,4-Dichlorobenzene	9.322	146	124223	18.3410	ug/L	99
76)	n-Butylbenzene	9.452	91	202451	19.1164	ug/L	100
77)	1,2-Dichlorobenzene	9.525	146	111581	17.5496	ug/L	99
78)	1,2-Dibromo-3-Chloropr...	9.901	75	7435	19.7035	ug/L	99
79)	Hexachlorobutadiene	10.199	225	53862	17.7663	ug/L	99
80)	1,2,4-Trichlorobenzene	10.214	180	91119	18.4781	ug/L	99
81)	Naphthalene	10.364	128	155781	18.7006	ug/L	99
82)	1,2,3-Trichlorobenzene	10.448	180	84554	18.6960	ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\060115\
Data File : 17M012420.D
Acq On : 01 Jun 2015 16:42
Operator : ADC
Sample : WG525817-02 20ug/L LCS 8260
Misc : 1,1 STD70797
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 01 16:54:20 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

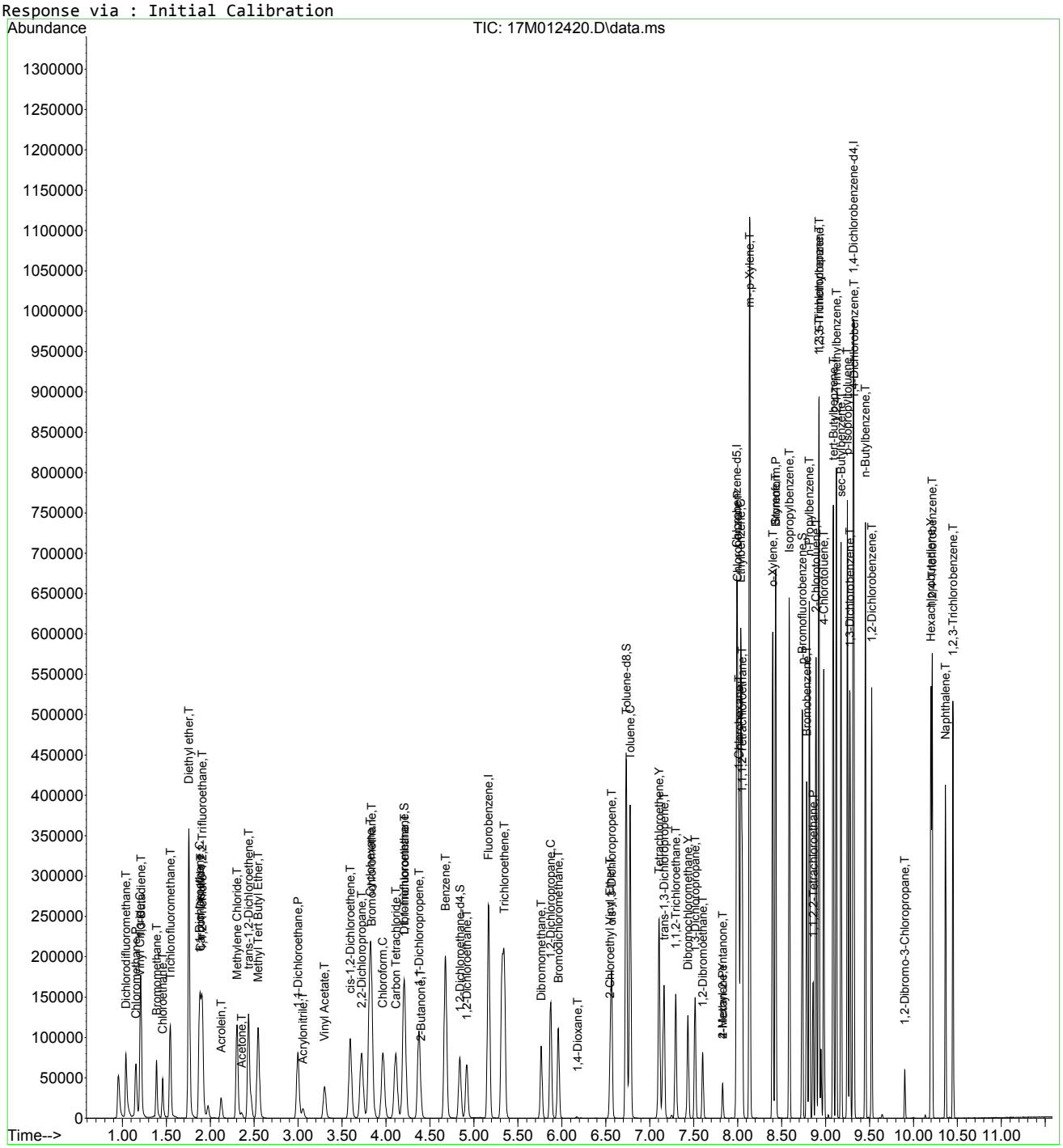

826_VMS.M Mon Jun 01 16:54:21 2015 Page: 3

Data Path : D:\MassHunter\GCMS\1\data\060215\
Data File : 17M012463.D
Acq On : 02 Jun 2015 16:20
Operator : ADC
Sample : WG525997-02 20ug/L LCS 8260
Misc : 1,1 STD70797
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 02 16:32:28 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	230326	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	173157	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	91618	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.206	111	62580	25.8807 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.523%		
32) 1,2-Dichloroethane-d4	4.840	65	54813	26.1964 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 104.786%		
44) Toluene-d8	6.734	98	239349	26.0345 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.138%		
63) p-Bromofluorobenzene	8.734	95	82588	26.1007 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.403%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.041	85	67289	26.0559 ug/L	99
3) Chloromethane	1.154	50	52459	18.5753 ug/L	99
4) Vinyl Chloride	1.201	62	61369	20.6101 ug/L	99
5) 1,3-Butadiene	1.212	54	30161	19.2091 ug/L	99
6) Bromomethane	1.389	94	31469	17.9012 ug/L	100
7) Chloroethane	1.458	64	26599	18.5644 ug/L	97
8) Trichlorofluoromethane	1.545	101	76076	21.2589 ug/L	100
9) Diethyl ether	1.756	59	156126	104.5727 ug/L	99
10) 1,1-Dichloroethene	1.875	61	65637	18.3998 ug/L	100
11) Carbon Disulfide	1.893	76	73507	11.1330 ug/L	98
12) 1,1,2-Trichloro-1,2,2-...	1.910	101	46526	19.4415 ug/L	99
13) Acrolein	2.124	56	18116	93.1433 ug/L	100
14) Methylene Chloride	2.304	84	49224	19.4028 ug/L	100
15) Acetone	2.359	43	6649	18.3332 ug/L	100
16) trans-1,2-Dichloroethene	2.434	96	47445	19.6307 ug/L	100
17) Methyl Tert Butyl Ether	2.547	73	109324	20.6386 ug/L	100
18) 1,1-Dichloroethane	2.999	63	84842	19.1798 ug/L	100
19) Acrylonitrile	3.056	53	9002	17.9695 ug/L	100
20) Vinyl Acetate	3.305	86	5212	25.7296 ug/L	96
21) cis-1,2-Dichloroethene	3.592	96	52560	19.6870 ug/L	100
22) 2,2-Dichloropropane	3.722	77	69333	20.4806 ug/L	99
23) Cyclohexane	3.821	56	77193	19.9527 ug/L #	77
24) Bromochloromethane	3.835	130	32508	19.8995 ug/L	99
25) Chloroform	3.966	83	85428	20.1246 ug/L	99
26) Carbon Tetrachloride	4.110	117	69181	20.2607 ug/L	99
28) 1,1,1-Trichloroethane	4.206	97	76798	19.8085 ug/L	99
29) 1,1-Dichloropropene	4.371	75	63057	19.2433 ug/L	99
30) 2-Butanone	4.394	43	10700	18.2174 ug/L	96
31) Benzene	4.675	78	196366	19.2636 ug/L	100
33) 1,2-Dichloroethane	4.918	62	53541	19.8531 ug/L	99
34) Trichloroethene	5.347	130	56126	18.5520 ug/L	100
35) Dibromomethane	5.764	93	26198	20.7708 ug/L	100
36) 1,2-Dichloropropane	5.874	63	52585	19.7074 ug/L	99
37) Bromodichloromethane	5.961	83	62258	19.4798 ug/L	100
38) 1,4-Dioxane	6.178	88	1134	74.7253 ug/L	96
39) 2-Chloroethyl Vinyl Ether	6.548	63	21327	18.1879 ug/L	100
40) cis-1,3-Dichloropropene	6.566	75	77391	20.7704 ug/L	100
41) 4-Methyl-2-Pentanone	7.831	58	8946	16.9572 ug/L	98
42) trans-1,3-Dichloropropene	7.165	75	59509	20.4746 ug/L	100
45) Toluene	6.777	91	221732	19.7030 ug/L	99
46) Tetrachloroethene	7.107	166	59774	19.0449 ug/L	99
47) 1,1,2-Trichloroethane	7.295	97	36642	19.3870 ug/L	100
48) Dibromochloromethane	7.434	129	48577	19.6667 ug/L	100
49) 1,3-Dichloropropane	7.518	76	60155	19.7369 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\060215\
Data File : 17M012463.D
Acq On : 02 Jun 2015 16:20
Operator : ADC
Sample : WG525997-02 20ug/L LCS 8260
Misc : 1,1 STD70797
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 02 16:32:28 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50) 1,2-Dibromoethane	7.602	107	36389	19.7119 ug/L	100
51) 2-Hexanone	7.831	43	16729	17.8878 ug/L	100
52) Chlorobenzene	8.002	112	135119	18.0578 ug/L	100
53) 1-Chlorohexane	8.013	69	12635	19.3378 ug/L	91
54) Ethylbenzene	8.036	106	77835	19.4483 ug/L	100
55) 1,1,1,2-Tetrachloroethane	8.054	131	51958	19.5538 ug/L	100
56) m-,p-Xylene	8.138	106	183908	38.4229 ug/L	99
57) o-Xylene	8.398	106	85861	18.1583 ug/L	99
58) Styrene	8.430	104	148291	19.6618 ug/L	100
59) Bromoform	8.433	173	33578	21.4582 ug/L	99
60) Isopropylbenzene	8.587	105	225158	18.3003 ug/L	100
62) 1,3,5-Trimethylbenzene	8.925	105	213882	20.2494 ug/L	100
64) Bromobenzene	8.786	156	63609	19.1882 ug/L	99
65) n-Propylbenzene	8.815	91	256545	18.5119 ug/L	100
66) 1,1,2,2-Tetrachloroethane	8.859	83	41893	20.2937 ug/L	99
67) 2-Chlorotoluene	8.891	91	155069	18.1757 ug/L	100
68) 1,2,3-Trichloropropane	8.922	110	11028	20.4233 ug/L	98
69) 1,2,4-Trimethylbenzene	9.122	105	212122	20.1332 ug/L	100
70) 4-Chlorotoluene	8.980	91	154289	17.9500 ug/L	100
71) tert-Butylbenzene	9.087	134	37035	18.7440 ug/L	99
72) sec-Butylbenzene	9.177	105	245024	18.5523 ug/L	100
73) p-Isopropyltoluene	9.250	119	208261	18.4828 ug/L	100
74) 1,3-Dichlorobenzene	9.279	146	111198	17.7104 ug/L	100
75) 1,4-Dichlorobenzene	9.322	146	118663	18.8482 ug/L	98
76) n-Butylbenzene	9.452	91	195518	19.8612 ug/L	100
77) 1,2-Dichlorobenzene	9.525	146	105200	17.8002 ug/L	100
78) 1,2-Dibromo-3-Chloropr...	9.901	75	6738	19.2099 ug/L	99
79) Hexachlorobutadiene	10.196	225	52037	18.4655 ug/L	99
80) 1,2,4-Trichlorobenzene	10.211	180	86622	18.8977 ug/L	99
81) Naphthalene	10.359	128	141541	18.2791 ug/L	99
82) 1,2,3-Trichlorobenzene	10.443	180	79539	18.9202 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060215\
Data File : 17M012463.D
Acq On : 02 Jun 2015 16:20
Operator : ADC
Sample : WG525997-02 20ug/L LCS 8260
Misc : 1,1 STD70797
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 02 16:32:28 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

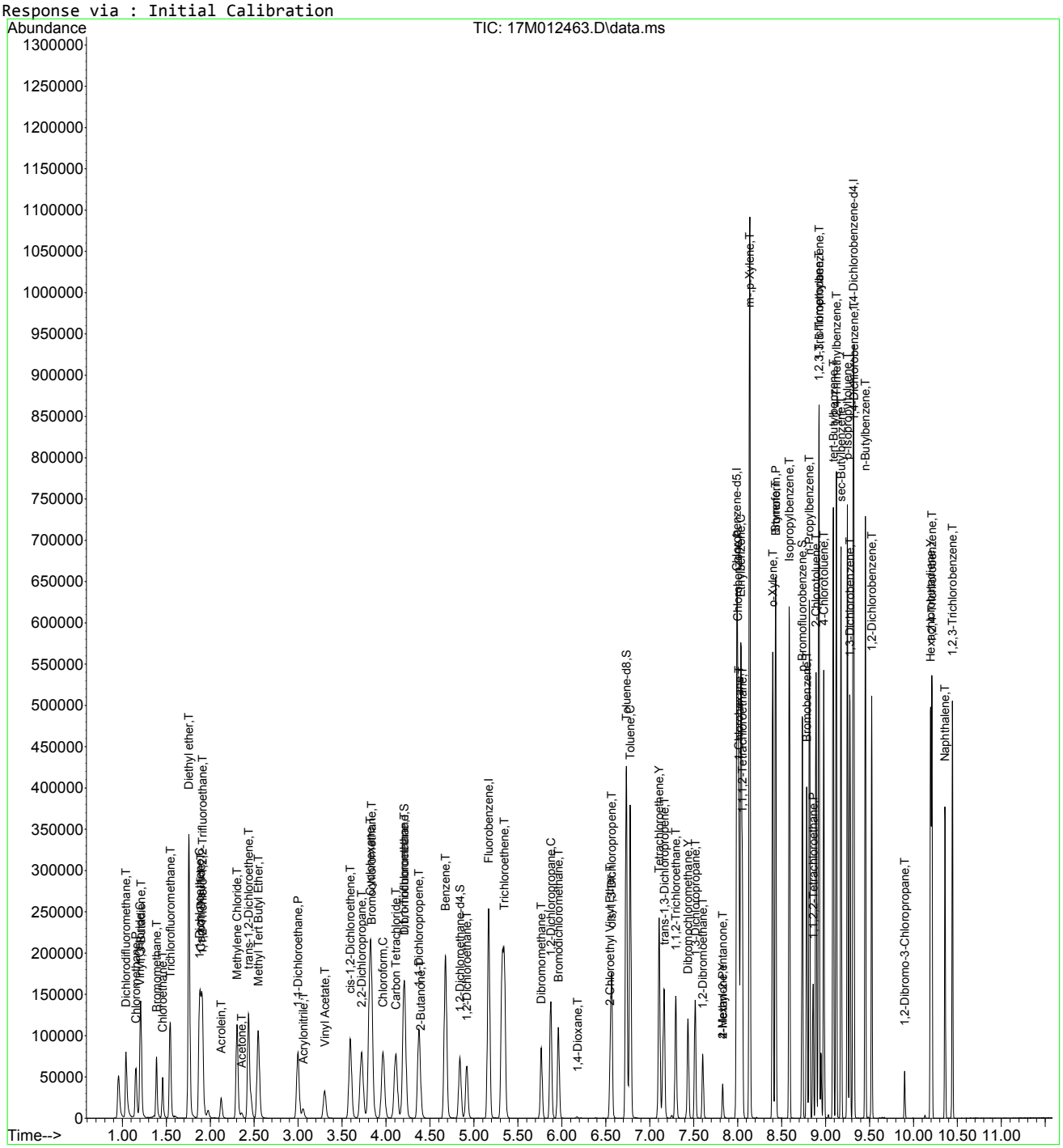

826_VMS.M Tue Jun 02 16:32:30 2015 Page: 3

Data Path : D:\MassHunter\GCMS\1\data\060315\
Data File : 17M012493.D
Acq On : 03 Jun 2015 18:01
Operator : ADC
Sample : WG526216-02 20ug/L LCS 8260
Misc : 1,1 STD70797
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 03 18:13:23 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	223077	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	168866	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	94737	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.203	111	59772	25.5227 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.091%		
32) 1,2-Dichloroethane-d4	4.840	65	52310	25.8126 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.250%		
44) Toluene-d8	6.734	98	230557	25.7154 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.862%		
63) p-Bromofluorobenzene	8.734	95	82015	25.0662 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.265%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.041	85	64827	25.9182 ug/L	99
3) Chloromethane	1.154	50	53885	19.7002 ug/L	100
4) Vinyl Chloride	1.201	62	59969	20.7944 ug/L	99
5) 1,3-Butadiene	1.212	54	40713	26.7720 ug/L	100
6) Bromomethane	1.386	94	31834	18.6973 ug/L	98
7) Chloroethane	1.458	64	25725	18.5379 ug/L	95
8) Trichlorofluoromethane	1.539	101	72115	20.8069 ug/L	99
9) Diethyl ether	1.759	59	153796	106.3595 ug/L	100
10) 1,1-Dichloroethene	1.875	61	62929	18.2139 ug/L	100
11) Carbon Disulfide	1.890	76	71309	11.1511 ug/L	98
12) 1,1,2-Trichloro-1,2,2-...	1.907	101	44524	19.2095 ug/L	99
13) Acrolein	2.127	56	17512	92.9636 ug/L	100
14) Methylene Chloride	2.304	84	47229	19.2214 ug/L	100
15) Acetone	2.362	43	7330	20.8677 ug/L	99
16) trans-1,2-Dichloroethene	2.434	96	45910	19.6128 ug/L	100
17) Methyl Tert Butyl Ether	2.547	73	107927	21.0370 ug/L	100
18) 1,1-Dichloroethane	2.996	63	81137	18.9383 ug/L	100
19) Acrylonitrile	3.056	53	9091	18.7369 ug/L	99
20) Vinyl Acetate	3.305	86	5294	26.8178 ug/L	94
21) cis-1,2-Dichloroethene	3.592	96	50848	19.6647 ug/L	100
22) 2,2-Dichloropropane	3.719	77	65653	20.0238 ug/L	99
23) Cyclohexane	3.821	56	74962	20.0056 ug/L #	76
24) Bromochloromethane	3.832	130	31463	19.8856 ug/L	99
25) Chloroform	3.963	83	82617	20.0948 ug/L	100
26) Carbon Tetrachloride	4.110	117	65546	19.8199 ug/L	99
28) 1,1,1-Trichloroethane	4.206	97	73034	19.4497 ug/L	100
29) 1,1-Dichloropropene	4.374	75	61046	19.2350 ug/L	99
30) 2-Butanone	4.400	43	11553	20.3088 ug/L	93
31) Benzene	4.675	78	188605	19.1035 ug/L	100
33) 1,2-Dichloroethane	4.918	62	51904	19.8715 ug/L	100
34) Trichloroethene	5.347	130	54428	18.5754 ug/L	99
35) Dibromomethane	5.764	93	25320	20.7270 ug/L	99
36) 1,2-Dichloropropane	5.874	63	50684	19.6122 ug/L	99
37) Bromodichloromethane	5.960	83	59733	19.2971 ug/L	100
38) 1,4-Dioxane	6.172	88	1814	123.4184 ug/L	97
39) 2-Chloroethyl Vinyl Ether	6.548	63	21927	19.3073 ug/L	99
40) cis-1,3-Dichloropropene	6.566	75	74564	20.6620 ug/L	100
41) 4-Methyl-2-Pentanone	7.831	58	9242	18.0876 ug/L	99
42) trans-1,3-Dichloropropene	7.165	75	57739	20.5111 ug/L	99
45) Toluene	6.777	91	213499	19.4535 ug/L	100
46) Tetrachloroethene	7.107	166	58104	18.9832 ug/L	99
47) 1,1,2-Trichloroethane	7.295	97	35538	19.2807 ug/L	99
48) Dibromochloromethane	7.434	129	47115	19.5595 ug/L	100
49) 1,3-Dichloropropane	7.515	76	58040	19.5269 ug/L	99

Data Path : D:\MassHunter\GCMS\1\data\060315\
Data File : 17M012493.D
Acq On : 03 Jun 2015 18:01
Operator : ADC
Sample : WG526216-02 20ug/L LCS 8260
Misc : 1,1 STD70797
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 03 18:13:23 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50) 1,2-Dibromoethane	7.602	107	35449	19.6907 ug/L	100
51) 2-Hexanone	7.831	43	17644	19.3456 ug/L	98
52) Chlorobenzene	8.002	112	131659	18.0425 ug/L	100
53) 1-Chlorohexane	8.013	69	12877	20.2089 ug/L	98
54) Ethylbenzene	8.036	106	75297	19.2923 ug/L	98
55) 1,1,1,2-Tetrachloroethane	8.054	131	50064	19.3198 ug/L	100
56) m-,p-Xylene	8.138	106	178292	38.1961 ug/L	99
57) o-Xylene	8.398	106	82882	17.9737 ug/L	99
58) Styrene	8.430	104	144751	19.6802 ug/L	100
59) Bromoform	8.433	173	32434	21.2538 ug/L	99
60) Isopropylbenzene	8.587	105	218429	18.2045 ug/L	100
62) 1,3,5-Trimethylbenzene	8.925	105	207181	18.9692 ug/L	100
64) Bromobenzene	8.786	156	62310	18.1775 ug/L	99
65) n-Propylbenzene	8.818	91	252234	17.6016 ug/L	99
66) 1,1,2,2-Tetrachloroethane	8.859	83	40001	18.7392 ug/L	99
67) 2-Chlorotoluene	8.891	91	151752	17.2013 ug/L	99
68) 1,2,3-Trichloropropane	8.922	110	10776	19.2996 ug/L	96
69) 1,2,4-Trimethylbenzene	9.122	105	207713	19.0657 ug/L	100
70) 4-Chlorotoluene	8.980	91	151614	17.0581 ug/L	100
71) tert-Butylbenzene	9.087	134	35358	17.3061 ug/L	98
72) sec-Butylbenzene	9.177	105	239611	17.5452 ug/L	99
73) p-Isopropyltoluene	9.250	119	205080	17.6012 ug/L	100
74) 1,3-Dichlorobenzene	9.279	146	110419	17.0074 ug/L	99
75) 1,4-Dichlorobenzene	9.322	146	119453	18.3490 ug/L	99
76) n-Butylbenzene	9.452	91	196783	19.3316 ug/L	99
77) 1,2-Dichlorobenzene	9.525	146	104340	17.0735 ug/L	100
78) 1,2-Dibromo-3-Chloropr...	9.904	75	6913	19.0600 ug/L	99
79) Hexachlorobutadiene	10.199	225	50181	17.2206 ug/L	99
80) 1,2,4-Trichlorobenzene	10.214	180	86970	18.3490 ug/L	99
81) Naphthalene	10.367	128	141473	17.6688 ug/L	100
82) 1,2,3-Trichlorobenzene	10.451	180	78997	18.1727 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060315\
Data File : 17M012493.D
Acq On : 03 Jun 2015 18:01
Operator : ADC
Sample : WG526216-02 20ug/L LCS 8260
Misc : 1,1 STD70797
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 03 18:13:23 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

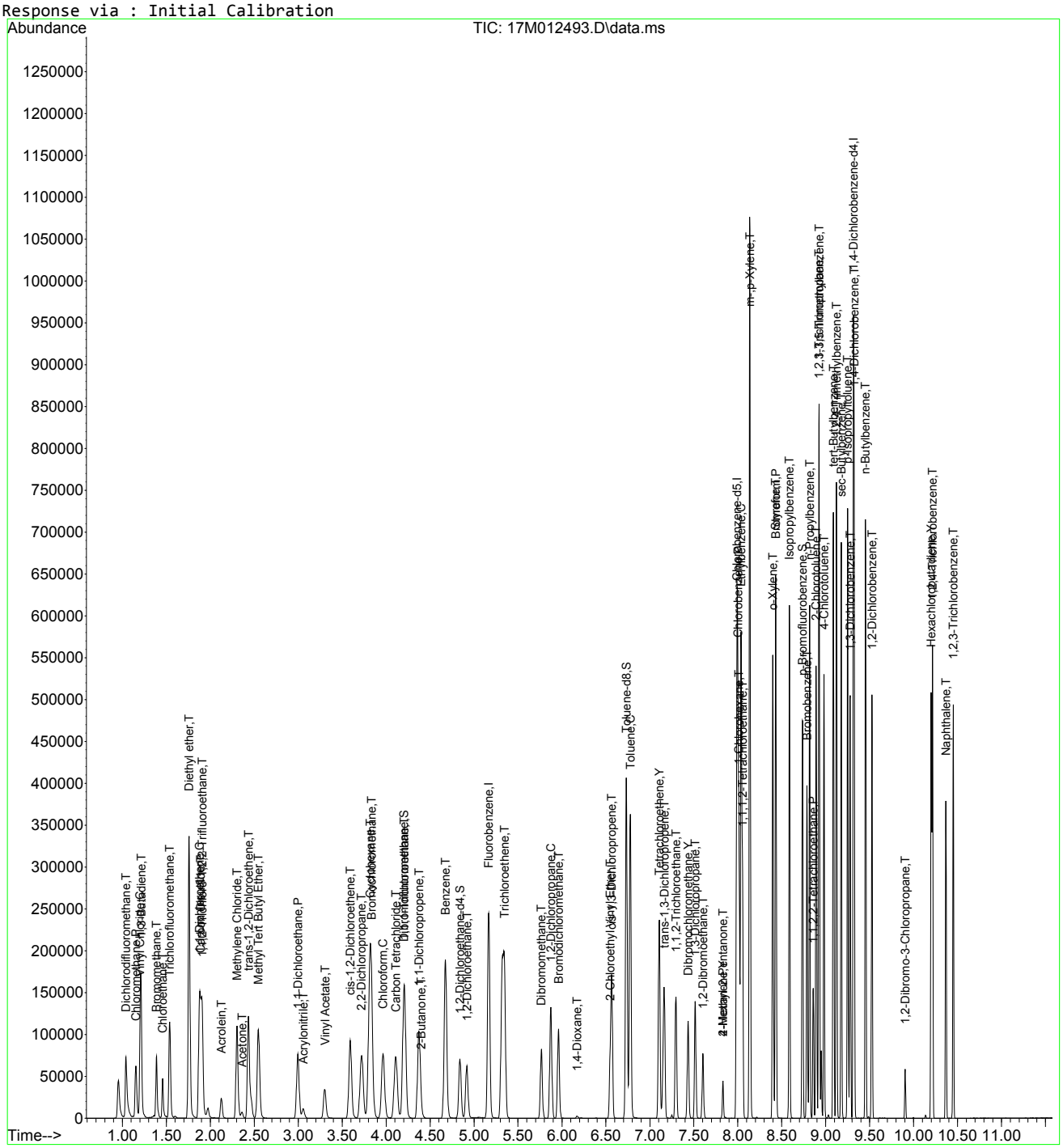

826_VMS.M Wed Jun 03 18:13:25 2015 Page: 3

2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW19-052215	**Prep Method:**	6850	**Prep Date:**	06/01/2015 13:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG525760	**Analyst:**	JWR	**Run Date:**	06/01/2015 21:43
Collect Date:	05/22/2015 08:45	**Dilution:**	1	**File ID:**	1LM.LM29968
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.305	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW19FD-052215	**Prep Method:**	6850	**Prep Date:**	06/01/2015 13:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG525760	**Analyst:**	JWR	**Run Date:**	06/01/2015 22:02
Collect Date:	05/22/2015 08:45	**Dilution:**	1	**File ID:**	1LM.LM29969
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.198	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW17-052215	**Prep Method:**	6850	**Prep Date:**	06/01/2015 13:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG525760	**Analyst:**	JWR	**Run Date:**	06/01/2015 22:20
Collect Date:	05/22/2015 10:05	**Dilution:**	1	**File ID:**	1LM.LM29970
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW16-052215	**Prep Method:**	6850	**Prep Date:**	06/01/2015 13:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG525760	**Analyst:**	JWR	**Run Date:**	06/01/2015 22:39
Collect Date:	05/22/2015 11:30	**Dilution:**	1	**File ID:**	1LM.LM29971
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	GPW1-052215	**Prep Method:**	6850	**Prep Date:**	06/01/2015 13:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG525760	**Analyst:**	JWR	**Run Date:**	06/01/2015 22:58
Collect Date:	05/22/2015 13:05	**Dilution:**	1	**File ID:**	1LM.LM29972
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.213	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50SW06-052215	**Prep Method:**	6850	**Prep Date:**	06/01/2015 13:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG525760	**Analyst:**	JWR	**Run Date:**	06/01/2015 23:17
Collect Date:	05/22/2015 13:25	**Dilution:**	1	**File ID:**	1LM.LM29973
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.218	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW09-052315	**Prep Method:**	6850	**Prep Date:**	06/01/2015 13:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG525760	**Analyst:**	JWR	**Run Date:**	06/02/2015 00:51
Collect Date:	05/23/2015 08:00	**Dilution:**	1	**File ID:**	1LM.LM29978
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.196	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW09MS-052315	**Prep Method:**	6850	**Prep Date:**	06/01/2015 13:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG525760	**Analyst:**	JWR	**Run Date:**	06/02/2015 01:10
Collect Date:	05/23/2015 08:00	**Dilution:**	1	**File ID:**	1LM.LM29979
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.378	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-09	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW09MSD-052315	**Prep Method:**	6850	**Prep Date:**	06/01/2015 13:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG525760	**Analyst:**	JWR	**Run Date:**	06/02/2015 01:29
Collect Date:	05/23/2015 08:00	**Dilution:**	1	**File ID:**	1LM.LM29980
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.393	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-10	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW10-052315	**Prep Method:**	6850	**Prep Date:**	06/01/2015 13:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG525760	**Analyst:**	JWR	**Run Date:**	06/01/2015 23:36
Collect Date:	05/23/2015 09:15	**Dilution:**	1	**File ID:**	1LM.LM29974
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-11	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW27-052315	**Prep Method:**	6850	**Prep Date:**	06/01/2015 13:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG525760	**Analyst:**	JWR	**Run Date:**	06/02/2015 01:48
Collect Date:	05/23/2015 10:40	**Dilution:**	1	**File ID:**	1LM.LM29981
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-12	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW15-052315	**Prep Method:**	6850	**Prep Date:**	06/01/2015 13:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG525760	**Analyst:**	JWR	**Run Date:**	06/02/2015 02:07
Collect Date:	05/23/2015 11:40	**Dilution:**	1	**File ID:**	1LM.LM29982
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-13	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW26-052315	**Prep Method:**	6850	**Prep Date:**	06/01/2015 13:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG525760	**Analyst:**	JWR	**Run Date:**	06/02/2015 02:26
Collect Date:	05/23/2015 14:15	**Dilution:**	1	**File ID:**	1LM.LM29983
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-14	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW21-052315	**Prep Method:**	6850	**Prep Date:**	06/01/2015 13:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG525760	**Analyst:**	JWR	**Run Date:**	06/02/2015 02:45
Collect Date:	05/23/2015 15:30	**Dilution:**	1	**File ID:**	1LM.LM29984
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.502		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15051620-15	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW21FD-052315	**Prep Method:**	6850	**Prep Date:**	06/01/2015 13:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG525760	**Analyst:**	JWR	**Run Date:**	06/02/2015 03:04
Collect Date:	05/23/2015 15:30	**Dilution:**	1	**File ID:**	1LM.LM29985
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.516		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15051620-16	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW20-052615	**Prep Method:**	6850	**Prep Date:**	06/01/2015 13:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG525760	**Analyst:**	JWR	**Run Date:**	06/02/2015 03:23
Collect Date:	05/26/2015 09:35	**Dilution:**	1	**File ID:**	1LM.LM29986
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-17	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW05-052615	**Prep Method:**	6850	**Prep Date:**	06/03/2015 13:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG526155	**Analyst:**	JWR	**Run Date:**	06/03/2015 17:33
Collect Date:	05/26/2015 10:45	**Dilution:**	1	**File ID:**	1LM.LM30005
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.0288	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-18	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW05MS-052615	**Prep Method:**	6850	**Prep Date:**	06/03/2015 13:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG526155	**Analyst:**	JWR	**Run Date:**	06/03/2015 17:52
Collect Date:	05/26/2015 10:45	**Dilution:**	1	**File ID:**	1LM.LM30006
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.286	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-19	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW05MSD-052615	**Prep Method:**	6850	**Prep Date:**	06/03/2015 13:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG526155	**Analyst:**	JWR	**Run Date:**	06/03/2015 18:11
Collect Date:	05/26/2015 10:45	**Dilution:**	1	**File ID:**	1LM.LM30007
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.222	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-20	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW07-052615	**Prep Method:**	6850	**Prep Date:**	06/01/2015 13:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG525760	**Analyst:**	JWR	**Run Date:**	06/02/2015 04:38
Collect Date:	05/26/2015 13:40	**Dilution:**	1	**File ID:**	1LM.LM29990
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051620
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051620-21	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW28-052615	**Prep Method:**	6850	**Prep Date:**	06/01/2015 13:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG525760	**Analyst:**	JWR	**Run Date:**	06/02/2015 04:57
Collect Date:	05/26/2015 15:05	**Dilution:**	1	**File ID:**	1LM.LM29991
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1.04		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15051620-22	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW28FD-052615	**Prep Method:**	6850	**Prep Date:**	06/01/2015 13:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG525760	**Analyst:**	JWR	**Run Date:**	06/02/2015 05:16
Collect Date:	05/26/2015 15:05	**Dilution:**	1	**File ID:**	1LM.LM29992
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1.05		0.400	0.200	0.100

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1429 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG525760-01 MCT	10,030.	
-02 Blank	0.60	
-03 LCS	0.63	
L15051620-01	1,320.	
-02	1,318.	
-03	2,560.	
-04	296.	
-05	61.7	
-06	62.0	
-07 RS	2,630.	
-08 MS	2,600.	
-09 MSD	2,590.	
-10	1,345.	
-11	1,577.	
-12	1,734.	
-13	4,510.	
-14	9,040.	
-15	9,030.	
-16	2,510.	
-20	1,312.	
-21	122.7	
-22	120.8	
L15051754-01	1,678.	

Analyst: John Richards

Date/Time: 06/03/15 12:00

DCN#110964

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1441 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG526155-01 MCT	10,180.	
-02 Blank	0.54	
-03 LCS	0.65	
L15051620-17 RS	1,591.	
-18 MS	1,584.	
-19 MSD	1,581.	
L15051780-01	462.	
-02	1,733.	
-03	849.	
-04	5,770.	
-05 RS	3,870.	
-06 MS	3,480.	
-07 MSD	3,520.	
-08	68.0	
-09	67.9	
-10	67.9	
-11	164.3	
-12	1,870.	
-13	50.0	
-14	26.5	

Analyst: John Richards

Date/Time: 06/04/15 11:30

DCN#111043

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 060115_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 140701254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG525760 (waters)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD69537 (06/01/2015)

CCV STD: STD69537 LCS STD: STD69913 MS/MSD STD: STD69913

Comments: ICAL WG525828 : Alternate Source STD69913

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM29953	WG525828-01 CCB	1	1		06/01/15 16:59
2	1LM.LM29954	WG525828-02 STD (0.1 ug/L)	1	1	STD69537	06/01/15 17:18
3	1LM.LM29955	WG525828-03 STD (0.2 ug/L)	1	1	STD69537	06/01/15 17:36
4	1LM.LM29956	WG525828-04 STD (0.5 ug/L)	1	1	STD69537	06/01/15 17:55
5	1LM.LM29957	WG525828-05 STD (1.0 ug/L)	1	1	STD69537	06/01/15 18:14
6	1LM.LM29958	WG525828-06 STD (2.0 ug/L)	1	1	STD69537	06/01/15 18:33
7	1LM.LM29959	WG525828-07 STD (5.0 ug/L)	1	1	STD69537	06/01/15 18:52
8	1LM.LM29960	WG525828-08 STD (10 ug/L)	1	1	STD69537	06/01/15 19:11
9	1LM.LM29961	WG525828-09 SSCV (1.0 ug/L)	1	1	STD69913	06/01/15 19:30
10	1LM.LM29962	WG525763-01 CCB	1	1		06/01/15 19:49
11	1LM.LM29963	WG525763-02 CCV (1.0ug/L)	1	1	STD69537	06/01/15 20:08
12	1LM.LM29964	WG525760-07 MRL (0.2ug/L)	1	1	STD69537	06/01/15 20:27
13	1LM.LM29965	WG525760-01 MCT (0.2ug/L)	1	1	STD69913	06/01/15 20:46
14	1LM.LM29966	WG525760-02 BLANK	1	1		06/01/15 21:05
15	1LM.LM29967	WG525760-03 LCS (0.2ug/L)	1	1	STD69913	06/01/15 21:24
16	1LM.LM29968	L15051620-01	1	1		06/01/15 21:43
17	1LM.LM29969	L15051620-02	1	1		06/01/15 22:02
18	1LM.LM29970	L15051620-03	1	1		06/01/15 22:20
19	1LM.LM29971	L15051620-04	1	1		06/01/15 22:39
20	1LM.LM29972	L15051620-05	1	1		06/01/15 22:58
21	1LM.LM29973	L15051620-06	1	1		06/01/15 23:17
22	1LM.LM29974	L15051620-10	1	1		06/01/15 23:36
23	1LM.LM29975	WG525763-03 CCV (1.0ug/L)	1	1	STD69537	06/01/15 23:55
24	1LM.LM29976	WG525760-08 MRL (0.2ug/L)	1	1	STD69537	06/02/15 00:13
25	1LM.LM29977	WG525763-04 CCB	1	1		06/02/15 00:32
26	1LM.LM29978	L15051620-07 RS	1	1		06/02/15 00:51
27	1LM.LM29979	L15051620-08 MS	1	1	STD69913	06/02/15 01:10
28	1LM.LM29980	L15051620-09 MSD	1	1	STD69913	06/02/15 01:29
29	1LM.LM29981	L15051620-11	1	1		06/02/15 01:48
30	1LM.LM29982	L15051620-12	1	1		06/02/15 02:07
31	1LM.LM29983	L15051620-13	1	1		06/02/15 02:26
32	1LM.LM29984	L15051620-14	1	1		06/02/15 02:45
33	1LM.LM29985	L15051620-15	1	1		06/02/15 03:04

Page: 1 Approved: 03-JUN-15

Wadei D

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 060115_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 140701254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG525760 (waters)

Internal STD: COA18071 Surrogate STD: NA STD69537 (06/01/2015)

CCV STD: STD69537 LCS STD: STD69913 STD69913

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM29986	L15051620-16	1	1		06/02/15 03:23
35	1LM.LM29987	WG525763-05 CCV (1.0ug/L)	1	1	STD69537	06/02/15 03:42
36	1LM.LM29988	WG525760-09 MRL (0.2ug/L)	1	1	STD69537	06/02/15 04:01
37	1LM.LM29989	WG525763-06 CCB	1	1		06/02/15 04:19
38	1LM.LM29990	L15051620-20	1	1		06/02/15 04:38
39	1LM.LM29991	L15051620-21	1	1		06/02/15 04:57
40	1LM.LM29992	L15051620-22	1	1		06/02/15 05:16
41	1LM.LM29993	L15051754-01 (NR)	1	1		06/02/15 05:35
42	1LM.LM29994	L15051754-01 (10x)	1	10		06/02/15 05:54
43	1LM.LM29995	L15051754-01 (100x) (NR)	1	100		06/02/15 06:13
44	1LM.LM29996	WG525763-07 CCV (1.0ug/L)	1	1	STD69537	06/02/15 06:32
45	1LM.LM29997	WG525760-10 MRL (0.2ug/L)	1	1	STD69537	06/02/15 06:51
46	1LM.LM29998	WG525763-08 CCB	1	1		06/02/15 07:10

Comments

Seq.	Rerun	Dil.	Reason	Analytes
41	X	10	Over Calibration Range	
	L15051754-01 (NR) : Results for this sample will be reported from the analysis of this sample at its 10x dilution.			
43				
	L15051754-01 (100x) (NR) : Results for this sample will be reported from the analysis of this sample at its 10x dilution.			

Page: 2 Approved: 03-JUN-15

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 060315_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 140701254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG526155 (waters)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD69537 (06/01/2015)

CCV STD: STD69537 LCS STD: STD69913 MS/MSD STD: STD69913

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM29999	WG526156-01 CCB	1	1		06/03/15 15:12
2	1LM.LM30000	WG526156-02 CCV (1.0ug/L)	1	1	STD69537	06/03/15 15:31
3	1LM.LM30001	WG526155-10 MRL (0.2ug/L)	1	1	STD69537	06/03/15 15:50
4	1LM.LM30002	WG526155-01 MCT (0.2ug/L)	1	1	STD69913	06/03/15 16:36
5	1LM.LM30003	WG526155-02 BLANK	1	1		06/03/15 16:55
6	1LM.LM30004	WG526155-03 LCS (0.2ug/L)	1	1	STD69913	06/03/15 17:14
7	1LM.LM30005	L15051620-17 RS	1	1		06/03/15 17:33
8	1LM.LM30006	L15051620-18 MS	1	1	STD69913	06/03/15 17:52
9	1LM.LM30007	L15051620-19 MSD	1	1	STD69913	06/03/15 18:11
10	1LM.LM30008	L15051780-01	1	1		06/03/15 18:30
11	1LM.LM30009	L15051780-02	1	1		06/03/15 18:49
12	1LM.LM30010	L15051780-03	1	1		06/03/15 19:08
13	1LM.LM30011	L15051780-04	1	1		06/03/15 19:27
14	1LM.LM30012	WG526156-03 CCV (1.0ug/L)	1	1	STD69537	06/03/15 19:46
15	1LM.LM30013	WG526155-11 MRL (0.2ug/L)	1	1	STD69537	06/03/15 20:04
16	1LM.LM30014	WG526156-04 CCB	1	1		06/03/15 20:23
17	1LM.LM30015	L15051780-05 RS	1	1		06/03/15 20:42
18	1LM.LM30016	L15051780-06 MS	1	1	STD69913	06/03/15 21:01
19	1LM.LM30017	L15051780-07 MSD	1	1	STD69913	06/03/15 21:20
20	1LM.LM30018	L15051780-08	1	1		06/03/15 21:39
21	1LM.LM30019	L15051780-09	1	1		06/03/15 21:58
22	1LM.LM30020	L15051780-10	1	1		06/03/15 22:17
23	1LM.LM30021	L15051780-11	1	1		06/03/15 22:36
24	1LM.LM30022	L15051780-12	1	1		06/03/15 22:55
25	1LM.LM30023	L15051780-13	1	1		06/03/15 23:14
26	1LM.LM30024	L15051780-14	1	1		06/03/15 23:33
27	1LM.LM30025	WG526156-05 CCV (1.0ug/L)	1	1	STD69537	06/03/15 23:52
28	1LM.LM30026	WG526155-12 MRL (0.2ug/L)	1	1	STD69537	06/04/15 00:10
29	1LM.LM30027	WG526156-06 CCB	1	1		06/04/15 00:29

Comments

Seq.	Rerun	Dil.	Reason	Analytes
8				

Page: 1 Approved: 04-JUN-15

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 060315_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 140701254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG526155 (waters)

Internal STD: COA18071 Surrogate STD: NA STD69537 (06/01/2015)

CCV STD: STD69537 LCS STD: STD69913 STD69913

Comments

Seq.	Rerun	Dil.	Reason	Analytes
	L15051620-18 MS : Perchlorate failed marginally high due to the presence of perchlorate in the reference sample.			

Page: 2 Approved: 04-JUN-15

Microbac Laboratories Inc.

Data Checklist

Date: 01-JUN-2015
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG525828
Runlog ID: 68358
Analytical Workgroups: L15051620(01-16, 20-22) L15051754-01

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 02-JUN-2015 John Richards

Secondary Reviewer: 03-JUN-2015 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-03-2015 10:26:43

Microbac Laboratories Inc.

Data Checklist

Date: 03-JUN-2015
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 68397
Analytical Workgroups: L15051620, L15051780

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer:
04-JUN-2015
John Richards

Secondary Reviewer:
04-JUN-2015
Eric C. Zum

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-04-2015 14:55:12

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG525760

Login Number: L15051620

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW19-052215	01	05/22/15					06/01/2015	10.2	28		06/01/15	.4	28	
50WW19FD-052215	02	05/22/15					06/01/2015	10.2	28		06/01/15	.4	28	
50WW17-052215	03	05/22/15					06/01/2015	10.1	28		06/01/15	.4	28	
50WW16-052215	04	05/22/15					06/01/2015	10.1	28		06/01/15	.4	28	
GPW1-052215	05	05/22/15					06/01/2015	10	28		06/01/15	.4	28	
50SW06-052215	06	05/22/15					06/01/2015	10	28		06/01/15	.4	28	
50WW09-052315	07	05/23/15					06/01/2015	9.2	28		06/02/15	.5	28	
50WW09MS-052315	08	05/23/15					06/01/2015	9.2	28		06/02/15	.5	28	
50WW09MSD-052315	09	05/23/15					06/01/2015	9.2	28		06/02/15	.5	28	
50WW10-052315	10	05/23/15					06/01/2015	9.2	28		06/01/15	.4	28	
50WW27-052315	11	05/23/15					06/01/2015	9.1	28		06/02/15	.5	28	
50WW15-052315	12	05/23/15					06/01/2015	9.1	28		06/02/15	.5	28	
50WW26-052315	13	05/23/15					06/01/2015	8.9	28		06/02/15	.6	28	
50WW21-052315	14	05/23/15					06/01/2015	8.9	28		06/02/15	.6	28	
50WW21FD-052315	15	05/23/15					06/01/2015	8.9	28		06/02/15	.6	28	
50WW20-052615	16	05/26/15					06/01/2015	6.1	28		06/02/15	.6	28	
50WW07-052615	20	05/26/15					06/01/2015	6	28		06/02/15	.7	28	
50WW28-052615	21	05/26/15					06/01/2015	5.9	28		06/02/15	.7	28	
50WW28FD-052615	22	05/26/15					06/01/2015	5.9	28		06/02/15	.7	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4212987
Report generated 06/04/2015 15:01

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG526155

Login Number: L15051620

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW05-052615	17	05/26/15					06/03/2015	8.1	28		06/03/15	.2	28	
50WW05MS-052615	18	05/26/15					06/03/2015	8.1	28		06/03/15	.2	28	
50WW05MSD-052615	19	05/26/15					06/03/2015	8.1	28		06/03/15	.2	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4212987
Report generated 06/04/2015 15:01

METHOD BLANK SUMMARY

Login Number: L15051620
Blank File ID: 1LM.LM29966
Prep Date: 06/01/15 13:00
Analyzed Date: 06/01/15 21:05
Analyst: JWR

Work Group: WG525760
Blank Sample ID: WG525760-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG525760-07	1LM.LM29964	06/01/15 20:27	01
MCT	WG525760-01	1LM.LM29965	06/01/15 20:46	01
LCS	WG525760-03	1LM.LM29967	06/01/15 21:24	01
50WW19-052215	L15051620-01	1LM.LM29968	06/01/15 21:43	01
50WW19FD-052215	L15051620-02	1LM.LM29969	06/01/15 22:02	01
50WW17-052215	L15051620-03	1LM.LM29970	06/01/15 22:20	01
50WW16-052215	L15051620-04	1LM.LM29971	06/01/15 22:39	01
GPW1-052215	L15051620-05	1LM.LM29972	06/01/15 22:58	01
50SW06-052215	L15051620-06	1LM.LM29973	06/01/15 23:17	01
50WW10-052315	L15051620-10	1LM.LM29974	06/01/15 23:36	01
QCMRL	WG525760-08	1LM.LM29976	06/02/15 00:13	01
50WW09-052315	L15051620-07	1LM.LM29978	06/02/15 00:51	01
50WW09MS-052315	L15051620-08	1LM.LM29979	06/02/15 01:10	01
50WW09MSD-052315	L15051620-09	1LM.LM29980	06/02/15 01:29	01
50WW27-052315	L15051620-11	1LM.LM29981	06/02/15 01:48	01
50WW15-052315	L15051620-12	1LM.LM29982	06/02/15 02:07	01
50WW26-052315	L15051620-13	1LM.LM29983	06/02/15 02:26	01
50WW21-052315	L15051620-14	1LM.LM29984	06/02/15 02:45	01
50WW21FD-052315	L15051620-15	1LM.LM29985	06/02/15 03:04	01
50WW20-052615	L15051620-16	1LM.LM29986	06/02/15 03:23	01
QCMRL	WG525760-09	1LM.LM29988	06/02/15 04:01	01
50WW07-052615	L15051620-20	1LM.LM29990	06/02/15 04:38	01
50WW28-052615	L15051620-21	1LM.LM29991	06/02/15 04:57	01
50WW28FD-052615	L15051620-22	1LM.LM29992	06/02/15 05:16	01
QCMRL	WG525760-10	1LM.LM29997	06/02/15 06:51	01

Report Name: BLANK_SUMMARY
PDF File ID: 4212988
Report generated 06/04/2015 15:01

METHOD BLANK SUMMARY

Login Number: L15051620
Blank File ID: 1LM.LM30003
Prep Date: 06/03/15 13:00
Analyzed Date: 06/03/15 16:55
Analyst: JWR

Work Group: WG526155
Blank Sample ID: WG526155-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG526155-10	1LM.LM30001	06/03/15 15:50	01
MCT	WG526155-01	1LM.LM30002	06/03/15 16:36	01
LCS	WG526155-03	1LM.LM30004	06/03/15 17:14	01
50WW05-052615	L15051620-17	1LM.LM30005	06/03/15 17:33	01
50WW05MS-052615	L15051620-18	1LM.LM30006	06/03/15 17:52	01
50WW05MSD-052615	L15051620-19	1LM.LM30007	06/03/15 18:11	01
QCMRL	WG526155-11	1LM.LM30013	06/03/15 20:04	01
QCMRL	WG526155-12	1LM.LM30026	06/04/15 00:10	01

Report Name: BLANK_SUMMARY
PDF File ID: 4212988
Report generated 06/04/2015 15:01

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051620 Prep Date: 06/01/15 13:00 Sample ID: WG525760-02
Instrument ID: LCMS1 Run Date: 06/01/15 21:05 Prep Method: 6850
File ID: 1LM.LM29966 Analyst: JWR Method: 6850
Workgroup (AAB#): WG525760 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-01-JUN-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4212989
04-JUN-2015 15:01

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051620 Prep Date: 06/03/15 13:00 Sample ID: WG526155-02
Instrument ID: LCMS1 Run Date: 06/03/15 16:55 Prep Method: 6850
File ID: 1LM.LM30003 Analyst: JWR Method: 6850
Workgroup (AAB#): WG526155 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-01-JUN-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4212989
04-JUN-2015 15:01

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051620 Run Date: 06/01/2015 Sample ID: WG525760-03
Instrument ID: LCMS1 Run Time: 21:24 Prep Method: 6850
File ID: 1LM.LM29967 Analyst: JWR Method: 6850
Workgroup (AAB#): WG525760 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD69913 Cal ID: LCMS1-01-JUN-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	0.200	0.197	98.5	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4212990
Report generated: 06/04/2015 15:01

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051620 Run Date: 06/03/2015 Sample ID: WG526155-03
Instrument ID: LCMS1 Run Time: 17:14 Prep Method: 6850
File ID: 1LM.LM30004 Analyst: JWR Method: 6850
Workgroup (AAB#): WG526155 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD69913 Cal ID: LCMS1-01-JUN-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	0.200	0.196	98.0	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4212990
Report generated: 06/04/2015 15:01

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L15051620 Cal ID: LCMS1- 01-JUN-15 Worknum: WG525760
Instrument ID: LCMS1 Contract #: Prep Method: 6850
Parent ID: L15051620-07 File ID: 1LM.LM29978 Dil: 1 Method: 6850
Sample ID: L15051620-08 MS File ID: 1LM.LM29979 Dil: 1 Matrix: Water
Sample ID: L15051620-09 MSD File ID: 1LM.LM29980 Dil: 1 Units: ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Perchlorate	0.196	0.200	0.378	91	0.200	0.393	98.5	3.89	80 - 120	15	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4212991
Report generated 06/04/2015 15:01

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L15051620 Cal ID: LCMS1- 01-JUN-15 Worknum: WG526155
Instrument ID: LCMS1 Contract #: Prep Method: 6850
Parent ID: L15051620-17 File ID: 1LM.LM30005 Dil: 1 Method: 6850
Sample ID: L15051620-18 MS File ID: 1LM.LM30006 Dil: 1 Matrix: Water
Sample ID: L15051620-19 MSD File ID: 1LM.LM30007 Dil: 1 Units: ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Perchlorate	0.0288	0.200	0.286	129	0.200	0.222	96.6	25.2	80 - 120	15	*#

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4212991
Report generated 06/04/2015 15:01

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L15051620
Analytical Method: 6850
ICAL Workgroup: WG525828

Instrument ID: LCMS1
Initial Calibration Date: 01-JUN-15 19:11
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.087	4.95	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4212993
Report generated 06/04/2015 15:02

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15051620

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 01-JUN-15 19:11

Column ID: F

Analyte	WG525828-02			WG525828-03			WG525828-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	7580.00000	1.164	0.200	15200.0000	1.105	0.500	35800.0000	1.063

INT_CAL - Modified 03/06/2008
PDF File ID: 4212993
Report generated 06/04/2015 15:02

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15051620

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 01-JUN-15 19:11

Column ID: F

Analyte	WG525828-05			WG525828-06			WG525828-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	75000.0000	1.076	2.00	144000.000	1.071	5.00	343000.000	1.059

INT_CAL - Modified 03/06/2008
PDF File ID: 4212993
Report generated 06/04/2015 15:02

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15051620

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 01-JUN-15 19:11

Column ID: F

Analyte	WG525828-08		
	CONC	RESP	RF
Perchlorate	10.0	669000.000	1.073

INT_CAL - Modified 03/06/2008

PDF File ID: 4212993

Report generated 06/04/2015 15:02

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15051620 Run Date: 06/01/2015 Sample ID: WG525828-09
Instrument ID: LCMS1 Run Time: 19:30 Method: 6850
File ID: 1LM.LM29961 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG525828 Cal ID: LCMS1 - 01-JUN-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.966	ug/L	1.04	3.40	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4212994
Report generated 06/04/2015 15:02

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051620
Run Date: 06/01/2015
Sample ID: WG525763-01
Instrument ID: LCMS1
Run Time: 19:49
Method: 6850
File ID: 1LM.LM29962
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG525760
Cal ID: LCMS1 - 01-JUN-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4212996
Report generated 06/04/2015 15:02

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051620
Run Date: 06/02/2015
Sample ID: WG525763-04
Instrument ID: LCMS1
Run Time: 00:32
Method: 6850
File ID: 1LM.LM29977
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG525760
Cal ID: LCMS1 - 01-JUN-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4212996
Report generated 06/04/2015 15:02

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051620
Run Date: 06/02/2015
Sample ID: WG525763-06
Instrument ID: LCMS1
Run Time: 04:19
Method: 6850
File ID: 1LM.LM29989
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG525760
Cal ID: LCMS1 - 01-JUN-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4212996
Report generated 06/04/2015 15:02

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051620
Run Date: 06/02/2015
Sample ID: WG525763-08
Instrument ID: LCMS1
Run Time: 07:10
Method: 6850
File ID: 1LM.LM29998
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG525760
Cal ID: LCMS1 - 01-JUN-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4212996
Report generated 06/04/2015 15:02

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051620
Run Date: 06/03/2015
Sample ID: WG526156-01
Instrument ID: LCMS1
Run Time: 15:12
Method: 6850
File ID: 1LM.LM29999
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG526155
Cal ID: LCMS1 - 01-JUN-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4212996
Report generated 06/04/2015 15:02

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051620
Run Date: 06/03/2015
Sample ID: WG526156-04
Instrument ID: LCMS1
Run Time: 20:23
Method: 6850
File ID: 1LM.LM30014
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG526155
Cal ID: LCMS1 - 01-JUN-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4212996
Report generated 06/04/2015 15:02

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051620
Run Date: 06/04/2015
Sample ID: WG526156-06
Instrument ID: LCMS1
Run Time: 00:29
Method: 6850
File ID: 1LM.LM30027
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG526155
Cal ID: LCMS1 - 01-JUN-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4212996
Report generated 06/04/2015 15:02

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051620
Run Date: 06/01/2015
Sample ID: WG525763-02
Instrument ID: LCMS1
Run Time: 20:08
Method: 6850
File ID: 1LM.LM29963
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG525760
Cal ID: LCMS1 - 01-JUN-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.10	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4212995
Report generated 06/04/2015 15:02

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051620
Run Date: 06/01/2015
Sample ID: WG525763-03
Instrument ID: LCMS1
Run Time: 23:55
Method: 6850
File ID: 1LM.LM29975
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG525760
Cal ID: LCMS1 - 01-JUN-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.00	ug/L	1.08	0	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4212995
Report generated 06/04/2015 15:02

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051620
Run Date: 06/02/2015
Sample ID: WG525763-05
Instrument ID: LCMS1
Run Time: 03:42
Method: 6850
File ID: 1LM.LM29987
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG525760
Cal ID: LCMS1 - 01-JUN-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.995	ug/L	1.07	0.500	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4212995
Report generated 06/04/2015 15:02

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051620
Run Date: 06/02/2015
Sample ID: WG525763-07
Instrument ID: LCMS1
Run Time: 06:32
Method: 6850
File ID: 1LM.LM29996
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG525760
Cal ID: LCMS1 - 01-JUN-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.988	ug/L	1.06	1.20	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4212995
Report generated 06/04/2015 15:02

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051620
Run Date: 06/03/2015
Sample ID: WG526156-02
Instrument ID: LCMS1
Run Time: 15:31
Method: 6850
File ID: 1LM.LM30000
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG526155
Cal ID: LCMS1 - 01-JUN-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.06	ug/L	1.14	6.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4212995
Report generated 06/04/2015 15:02

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051620
Run Date: 06/03/2015
Sample ID: WG526156-03
Instrument ID: LCMS1
Run Time: 19:46
Method: 6850
File ID: 1LM.LM30012
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG526155
Cal ID: LCMS1 - 01-JUN-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.981	ug/L	1.05	1.90	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4212995
Report generated 06/04/2015 15:02

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051620
Run Date: 06/03/2015
Sample ID: WG526156-05
Instrument ID: LCMS1
Run Time: 23:52
Method: 6850
File ID: 1LM.LM30025
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG526155
Cal ID: LCMS1 - 01-JUN-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.00	ug/L	1.08	0	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4212995
Report generated 06/04/2015 15:02

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15051620 Run Date: 06/01/2015 Sample ID: WG525760-07
Instrument ID: LCMS1 Run Time: 20:27 Prep Method: 6850
File ID: 1LM.LM29964 Analyst: JWR Method: 6850
Workgroup (AAB#): WG525760 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-01-JUN-15

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4212992
Report generated 06/04/2015 15:01

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15051620 Run Date: 06/02/2015 Sample ID: WG525760-08

Instrument ID: LCMS1 Run Time: 00:13 Prep Method: 6850

File ID: 1LM.LM29976 Analyst: JWR Method: 6850

Workgroup (AAB#): WG525760 Matrix: Water Units: ug/L

Contract #: Cal ID: LCMS1-01-JUN-15

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.192	96.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4212992
Report generated 06/04/2015 15:01

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15051620 Run Date: 06/02/2015 Sample ID: WG525760-09

Instrument ID: LCMS1 Run Time: 04:01 Prep Method: 6850

File ID: 1LM.LM29988 Analyst: JWR Method: 6850

Workgroup (AAB#): WG525760 Matrix: Water Units: ug/L

Contract #: Cal ID: LCMS1-01-JUN-15

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.201	101	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4212992
Report generated 06/04/2015 15:01

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15051620 Run Date: 06/02/2015 Sample ID: WG525760-10

Instrument ID: LCMS1 Run Time: 06:51 Prep Method: 6850

File ID: 1LM.LM29997 Analyst: JWR Method: 6850

Workgroup (AAB#): WG525760 Matrix: Water Units: ug/L

Contract #: Cal ID: LCMS1-01-JUN-15

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.196	98.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4212992
Report generated 06/04/2015 15:01

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15051620 Run Date: 06/03/2015 Sample ID: WG526155-10
Instrument ID: LCMS1 Run Time: 15:50 Prep Method: 6850
File ID: 1LM.LM30001 Analyst: JWR Method: 6850
Workgroup (AAB#): WG526155 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-01-JUN-15

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.202	101	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4212992
Report generated 06/04/2015 15:01

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15051620 Run Date: 06/03/2015 Sample ID: WG526155-11
Instrument ID: LCMS1 Run Time: 20:04 Prep Method: 6850
File ID: 1LM.LM30013 Analyst: JWR Method: 6850
Workgroup (AAB#): WG526155 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-01-JUN-15

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.205	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4212992
Report generated 06/04/2015 15:01

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15051620 Run Date: 06/04/2015 Sample ID: WG526155-12
Instrument ID: LCMS1 Run Time: 00:10 Prep Method: 6850
File ID: 1LM.LM30026 Analyst: JWR Method: 6850
Workgroup (AAB#): WG526155 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-01-JUN-15

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.193	96.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4212992
Report generated 06/04/2015 15:01

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L15051620
Instrument ID: LCMS1
Workgroup (AAB#): WG525760

ICAL CCV Number: WG525828-05
CAL ID: LCMS1-01-JUN-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG525828	NA	NA	333000
Upper Limit	NA	NA	499500
Lower Limit	NA	NA	166500
L15051620-10	1.00	01	394000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4212997
Report generated 06/04/2015 15:02

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L15051620
Instrument ID: LCMS1
Workgroup (AAB#): WG525760

ICAL CCV Number: WG525828-05
CAL ID: LCMS1-01-JUN-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG525828	NA	NA	333000
Upper Limit	NA	NA	499500
Lower Limit	NA	NA	166500
L15051620-01	1.00	01	370000
L15051620-02	1.00	01	375000
L15051620-03	1.00	01	382000
L15051620-04	1.00	01	364000
L15051620-05	1.00	01	346000
L15051620-06	1.00	01	337000
L15051620-07	1.00	01	381000
L15051620-08	1.00	01	379000
L15051620-09	1.00	01	374000
L15051620-11	1.00	01	370000
L15051620-12	1.00	01	367000
L15051620-13	1.00	01	375000
L15051620-14	1.00	01	381000
L15051620-15	1.00	01	380000
L15051620-16	1.00	01	375000
L15051620-20	1.00	01	367000
L15051620-21	1.00	01	396000
L15051620-22	1.00	01	367000
WG525760-02	1.00	01	399000
WG525760-03	1.00	01	263000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4212997
Report generated 06/04/2015 15:02

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L15051620
Instrument ID: LCMS1
Workgroup (AAB#): WG526155

ICAL CCV Number: WG525828-05
CAL ID: LCMS1-01-JUN-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG525828	NA	NA	333000
Upper Limit	NA	NA	499500
Lower Limit	NA	NA	166500
L15051620-17	1.00	01	325000
L15051620-18	1.00	01	344000
L15051620-19	1.00	01	344000
WG526155-02	1.00	01	363000
WG526155-03	1.00	01	399000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4212997
Report generated 06/04/2015 15:02

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**	6850	**Samplenum:**	L15051620-01
Instrument:	LCMS1	**Prep Date:**	06/01/2015 13:00	**File ID:**	1LM.LM29968
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525760	**Analysis Date:**	06/01/2015 21:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	24700	8150	3.03	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**	6850	**Samplenum:**	L15051620-02
Instrument:	LCMS1	**Prep Date:**	06/01/2015 13:00	**File ID:**	1LM.LM29969
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525760	**Analysis Date:**	06/01/2015 22:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	16400	5460	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**	6850	**Samplenum:**	L15051620-03
Instrument:	LCMS1	**Prep Date:**	06/01/2015 13:00	**File ID:**	1LM.LM29970
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525760	**Analysis Date:**	06/01/2015 22:20	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	4320	1610	2.68	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**	6850	**Samplenum:**	L15051620-04
Instrument:	LCMS1	**Prep Date:**	06/01/2015 13:00	**File ID:**	1LM.LM29971
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525760	**Analysis Date:**	06/01/2015 22:39	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	2840	729	3.90	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**	6850	**Samplenum:**	L15051620-05
Instrument:	LCMS1	**Prep Date:**	06/01/2015 13:00	**File ID:**	1LM.LM29972
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525760	**Analysis Date:**	06/01/2015 22:58	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	16200	5970	2.71	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**	6850	**Samplenum:**	L15051620-06
Instrument:	LCMS1	**Prep Date:**	06/01/2015 13:00	**File ID:**	1LM.LM29973
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525760	**Analysis Date:**	06/01/2015 23:17	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	16200	5590	2.90	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**	6850	**Samplenum:**	L15051620-07
Instrument:	LCMS1	**Prep Date:**	06/01/2015 13:00	**File ID:**	1LM.LM29978
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525760	**Analysis Date:**	06/02/2015 00:51	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	16500	6320	2.61	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**	6850	**Samplenum:**	L15051620-08
Instrument:	LCMS1	**Prep Date:**	06/01/2015 13:00	**File ID:**	1LM.LM29979
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525760	**Analysis Date:**	06/02/2015 01:10	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	31100	11200	2.78	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**	6850	**Samplenum:**	L15051620-09
Instrument:	LCMS1	**Prep Date:**	06/01/2015 13:00	**File ID:**	1LM.LM29980
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525760	**Analysis Date:**	06/02/2015 01:29	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	31900	11100	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**	6850	**Samplenum:**	L15051620-10
Instrument:	LCMS1	**Prep Date:**	06/01/2015 13:00	**File ID:**	1LM.LM29974
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525760	**Analysis Date:**	06/01/2015 23:36	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	6780	2690	2.52	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**	6850	**Samplenum:**	L15051620-11
Instrument:	LCMS1	**Prep Date:**	06/01/2015 13:00	**File ID:**	1LM.LM29981
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525760	**Analysis Date:**	06/02/2015 01:48	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	4620	1620	2.85	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**	6850	**Samplenum:**	L15051620-12
Instrument:	LCMS1	**Prep Date:**	06/01/2015 13:00	**File ID:**	1LM.LM29982
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525760	**Analysis Date:**	06/02/2015 02:07	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	4820	658	7.33	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**	6850	**Samplenum:**	L15051620-13
Instrument:	LCMS1	**Prep Date:**	06/01/2015 13:00	**File ID:**	1LM.LM29983
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525760	**Analysis Date:**	06/02/2015 02:26	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	2250	1030	2.18	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**	6850	**Samplenum:**	L15051620-14
Instrument:	LCMS1	**Prep Date:**	06/01/2015 13:00	**File ID:**	1LM.LM29984
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525760	**Analysis Date:**	06/02/2015 02:45	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	41400	14400	2.88	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**	6850	**Samplenum:**	L15051620-15
Instrument:	LCMS1	**Prep Date:**	06/01/2015 13:00	**File ID:**	1LM.LM29985
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525760	**Analysis Date:**	06/02/2015 03:04	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	42500	15800	2.69	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**	6850	**Samplenum:**	L15051620-16
Instrument:	LCMS1	**Prep Date:**	06/01/2015 13:00	**File ID:**	1LM.LM29986
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525760	**Analysis Date:**	06/02/2015 03:23	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1410	439	3.21	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**	6850	**Samplenum:**	L15051620-17
Instrument:	LCMS1	**Prep Date:**	06/03/2015 13:00	**File ID:**	1LM.LM30005
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526155	**Analysis Date:**	06/03/2015 17:33	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	2480	721	3.44	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**	6850	**Samplenum:**	L15051620-18
Instrument:	LCMS1	**Prep Date:**	06/03/2015 13:00	**File ID:**	1LM.LM30006
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526155	**Analysis Date:**	06/03/2015 17:52	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	21500	7170	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**	6850	**Samplenum:**	L15051620-19
Instrument:	LCMS1	**Prep Date:**	06/03/2015 13:00	**File ID:**	1LM.LM30007
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526155	**Analysis Date:**	06/03/2015 18:11	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	16800	6620	2.54	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**	6850	**Samplenum:**	L15051620-20
Instrument:	LCMS1	**Prep Date:**	06/01/2015 13:00	**File ID:**	1LM.LM29990
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525760	**Analysis Date:**	06/02/2015 04:38	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1410	527	2.68	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**	6850	**Samplenum:**	L15051620-21
Instrument:	LCMS1	**Prep Date:**	06/01/2015 13:00	**File ID:**	1LM.LM29991
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525760	**Analysis Date:**	06/02/2015 04:57	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	88300	31800	2.78	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**	6850	**Samplenum:**	L15051620-22
Instrument:	LCMS1	**Prep Date:**	06/01/2015 13:00	**File ID:**	1LM.LM29992
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525760	**Analysis Date:**	06/02/2015 05:16	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82600	28400	2.91	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**	6850	**Samplenum:**	WG525760-01
Instrument:	LCMS1	**Prep Date:**	06/01/2015 13:00	**File ID:**	1LM.LM29965
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525760	**Analysis Date:**	06/01/2015 20:46	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17800	6550	2.72	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**	6850	**Samplenum:**	WG525760-02
Instrument:	LCMS1	**Prep Date:**	06/01/2015 13:00	**File ID:**	1LM.LM29966
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525760	**Analysis Date:**	06/01/2015 21:05	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1190	335	3.55	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**	6850	**Samplenum:**	WG525760-03
Instrument:	LCMS1	**Prep Date:**	06/01/2015 13:00	**File ID:**	1LM.LM29967
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525760	**Analysis Date:**	06/01/2015 21:24	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	11400	3830	2.98	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**	6850	**Samplenum:**	WG525760-07
Instrument:	LCMS1	**Prep Date:**	06/01/2015 13:00	**File ID:**	1LM.LM29964
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525760	**Analysis Date:**	06/01/2015 20:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	12200	4380	2.79	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**	6850	**Samplenum:**	WG525760-08
Instrument:	LCMS1	**Prep Date:**	06/01/2015 13:00	**File ID:**	1LM.LM29976
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525760	**Analysis Date:**	06/02/2015 00:13	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	15100	5520	2.74	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**	6850	**Samplenum:**	WG525760-09
Instrument:	LCMS1	**Prep Date:**	06/01/2015 13:00	**File ID:**	1LM.LM29988
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525760	**Analysis Date:**	06/02/2015 04:01	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	16700	5580	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**	6850	**Samplenum:**	WG525760-10
Instrument:	LCMS1	**Prep Date:**	06/01/2015 13:00	**File ID:**	1LM.LM29997
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525760	**Analysis Date:**	06/02/2015 06:51	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	16000	5520	2.90	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**		**Samplenum:**	WG525763-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29962
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525760	**Analysis Date:**	06/01/2015 19:49	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	831	428	1.94	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**		**Samplenum:**	WG525763-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29963
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525760	**Analysis Date:**	06/01/2015 20:08	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	56000	18600	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**		**Samplenum:**	WG525763-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29975
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525760	**Analysis Date:**	06/01/2015 23:55	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	78900	26400	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**		**Samplenum:**	WG525763-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29977
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525760	**Analysis Date:**	06/02/2015 00:32	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1170	458	2.55	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**		**Samplenum:**	WG525763-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29987
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525760	**Analysis Date:**	06/02/2015 03:42	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	83600	29700	2.81	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**		**Samplenum:**	WG525763-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29989
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525760	**Analysis Date:**	06/02/2015 04:19	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	719	63.0	11.4	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**		**Samplenum:**	WG525763-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29996
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525760	**Analysis Date:**	06/02/2015 06:32	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	76400	26000	2.94	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**		**Samplenum:**	WG525763-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29998
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525760	**Analysis Date:**	06/02/2015 07:10	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	795	289	2.75	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**		**Samplenum:**	WG525828-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29954
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525760	**Analysis Date:**	06/01/2015 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	7580	2950	2.57	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**		**Samplenum:**	WG525828-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29954
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526155	**Analysis Date:**	06/01/2015 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	7580	2950	2.57	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**		**Samplenum:**	WG525828-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29955
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525760	**Analysis Date:**	06/01/2015 17:36	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	15200	5160	2.95	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**		**Samplenum:**	WG525828-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29955
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526155	**Analysis Date:**	06/01/2015 17:36	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	15200	5160	2.95	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**		**Samplenum:**	WG525828-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29956
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525760	**Analysis Date:**	06/01/2015 17:55	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35800	11900	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**		**Samplenum:**	WG525828-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29956
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526155	**Analysis Date:**	06/01/2015 17:55	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35800	11900	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**		**Samplenum:**	WG525828-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29957
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525760	**Analysis Date:**	06/01/2015 18:14	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	75000	27600	2.72	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**		**Samplenum:**	WG525828-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29957
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526155	**Analysis Date:**	06/01/2015 18:14	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	75000	27600	2.72	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**		**Samplenum:**	WG525828-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29958
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525760	**Analysis Date:**	06/01/2015 18:33	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	144000	50600	2.85	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**		**Samplenum:**	WG525828-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29958
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526155	**Analysis Date:**	06/01/2015 18:33	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	144000	50600	2.85	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**		**Samplenum:**	WG525828-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29959
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525760	**Analysis Date:**	06/01/2015 18:52	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	343000	121000	2.83	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**		**Samplenum:**	WG525828-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29959
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526155	**Analysis Date:**	06/01/2015 18:52	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	343000	121000	2.83	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**		**Samplenum:**	WG525828-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29960
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525760	**Analysis Date:**	06/01/2015 19:11	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	669000	224000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**		**Samplenum:**	WG525828-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29960
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526155	**Analysis Date:**	06/01/2015 19:11	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	669000	224000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**		**Samplenum:**	WG525828-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29961
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG525760	**Analysis Date:**	06/01/2015 19:30	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	70500	25400	2.78	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**		**Samplenum:**	WG525828-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29961
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526155	**Analysis Date:**	06/01/2015 19:30	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	70500	25400	2.78	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**	6850	**Samplenum:**	WG526155-01
Instrument:	LCMS1	**Prep Date:**	06/03/2015 13:00	**File ID:**	1LM.LM30002
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526155	**Analysis Date:**	06/03/2015 16:36	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17800	5900	3.02	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**	6850	**Samplenum:**	WG526155-02
Instrument:	LCMS1	**Prep Date:**	06/03/2015 13:00	**File ID:**	1LM.LM30003
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526155	**Analysis Date:**	06/03/2015 16:55	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	398	206	1.93	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**	6850	**Samplenum:**	WG526155-03
Instrument:	LCMS1	**Prep Date:**	06/03/2015 13:00	**File ID:**	1LM.LM30004
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526155	**Analysis Date:**	06/03/2015 17:14	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17300	6650	2.60	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**	6850	**Samplenum:**	WG526155-10
Instrument:	LCMS1	**Prep Date:**	06/03/2015 13:00	**File ID:**	1LM.LM30001
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526155	**Analysis Date:**	06/03/2015 15:50	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	15300	4920	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**	6850	**Samplenum:**	WG526155-11
Instrument:	LCMS1	**Prep Date:**	06/03/2015 13:00	**File ID:**	1LM.LM30013
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526155	**Analysis Date:**	06/03/2015 20:04	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	15900	5030	3.16	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**	6850	**Samplenum:**	WG526155-12
Instrument:	LCMS1	**Prep Date:**	06/03/2015 13:00	**File ID:**	1LM.LM30026
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526155	**Analysis Date:**	06/04/2015 00:10	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	15000	5310	2.82	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**		**Samplenum:**	WG526156-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29999
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526155	**Analysis Date:**	06/03/2015 15:12	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	537	343	1.57	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**		**Samplenum:**	WG526156-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM30000
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526155	**Analysis Date:**	06/03/2015 15:31	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	80500	26100	3.08	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**		**Samplenum:**	WG526156-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM30012
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526155	**Analysis Date:**	06/03/2015 19:46	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	77700	28400	2.74	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**		**Samplenum:**	WG526156-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM30014
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526155	**Analysis Date:**	06/03/2015 20:23	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	728	314	2.32	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**		**Samplenum:**	WG526156-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM30025
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526155	**Analysis Date:**	06/03/2015 23:52	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	78200	27100	2.89	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051620	**Prep Method:**		**Samplenum:**	WG526156-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM30027
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526155	**Analysis Date:**	06/04/2015 00:29	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	763	281	2.72	2.3	3.8	

2.2.1.3 Sample Data

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Printed: 6/2/2015 4:01 PM

Data File	LM29968.wiff	**Result Table**	060115_JWR.rdb
Acquisition Date	6/1/2015 9:43:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15051620-01	**Injection Vial**	13.00
Data File	LM29968.wiff	**Injection Volume**	10.00
Acquisition Date	6/1/2015 9:43:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060115_JWR.rdb
Sample ID	L15051620-01	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.700e+05	10.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.470e+04	10.80	N/A	0.305
Perchlorate conf	8.150e+03	10.80	N/A	0.282

O18LP (Internal Standard)

RT (Exp. RT): 10.80(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

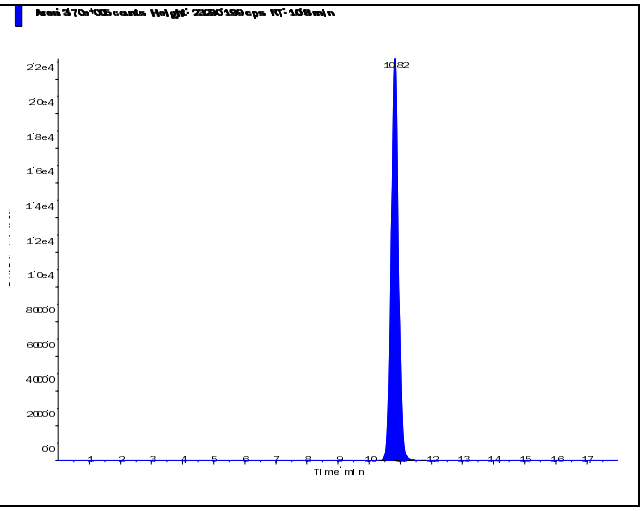

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Created with Analyst Reporter
Printed: 6/2/2015 4:01 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.80 (11.00) min
Calculated conc:	0.305 ng/ml
Area Ratio:	0.067
Sample Type:	(Unknown)

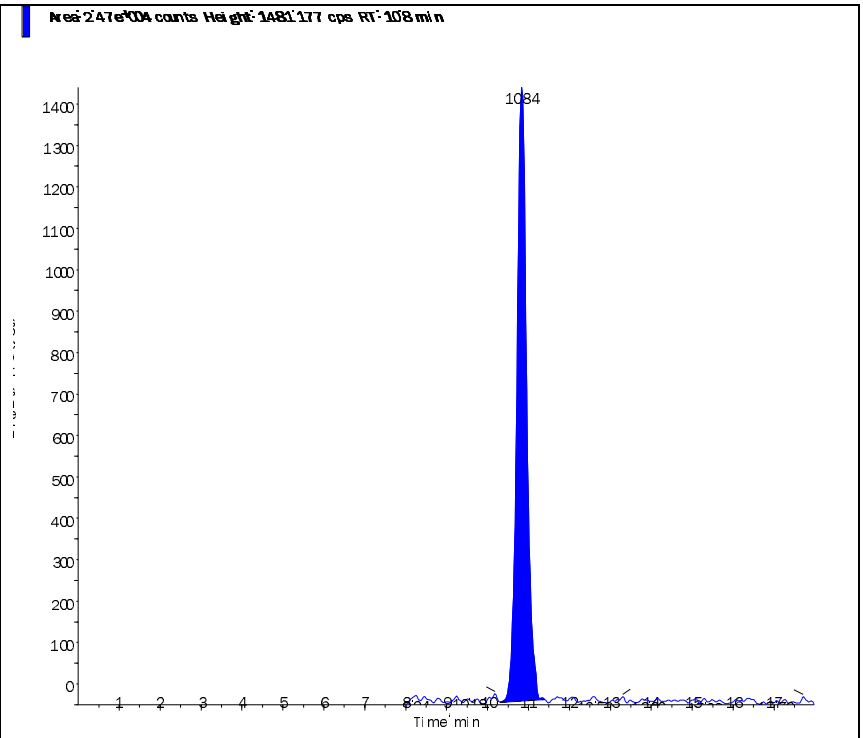

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.80 (11.00) min
Calculated conc:	0.282 ng/ml
Area Ratio:	0.022
Sample Type:	(Unknown)

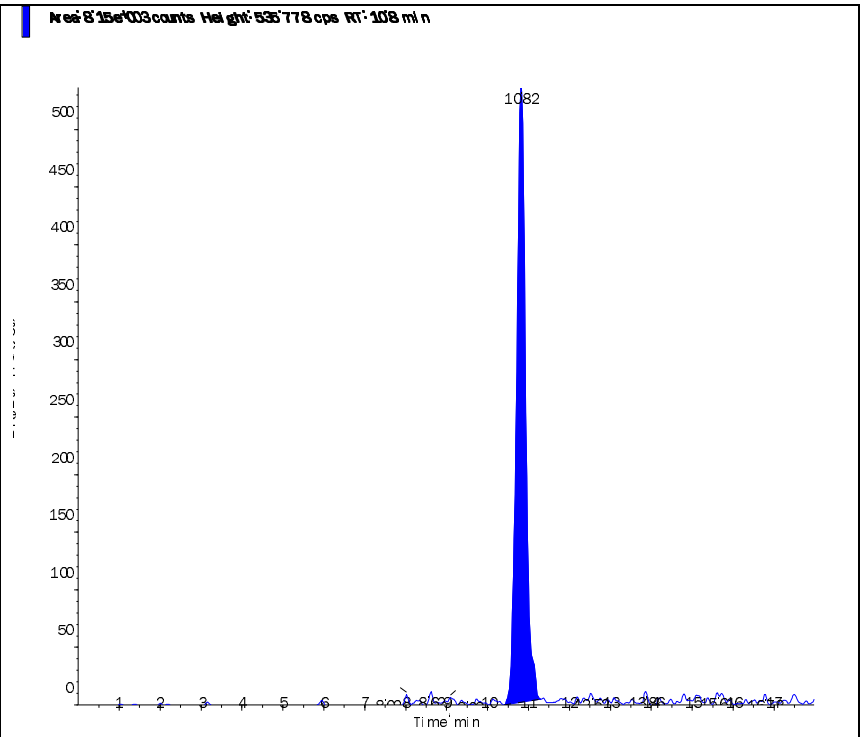

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Created with Analyst Reporter
Printed: 6/2/2015 4:01 PM

Data File	LM29969.wiff	**Result Table**	060115_JWR.rdb
Acquisition Date	6/1/2015 10:02:10 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15051620-02	**Injection Vial**	14.00
Data File	LM29969.wiff	**Injection Volume**	10.00
Acquisition Date	6/1/2015 10:02:10 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060115_JWR.rdb
Sample ID	L15051620-02	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.750e+05	10.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.640e+04	10.80	N/A	0.198
Perchlorate conf	5.460e+03	10.80	N/A	0.18

O18LP (Internal Standard)

RT (Exp. RT): 10.80(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

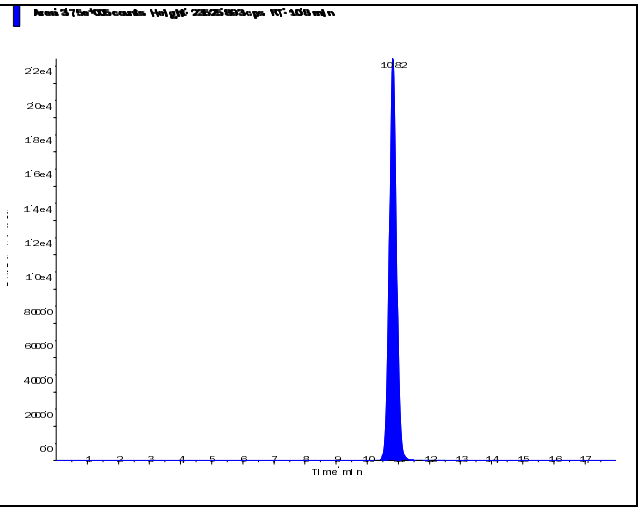

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.80 (11.00) min
Calculated conc:	0.198 ng/ml
Area Ratio:	0.044
Sample Type:	(Unknown)

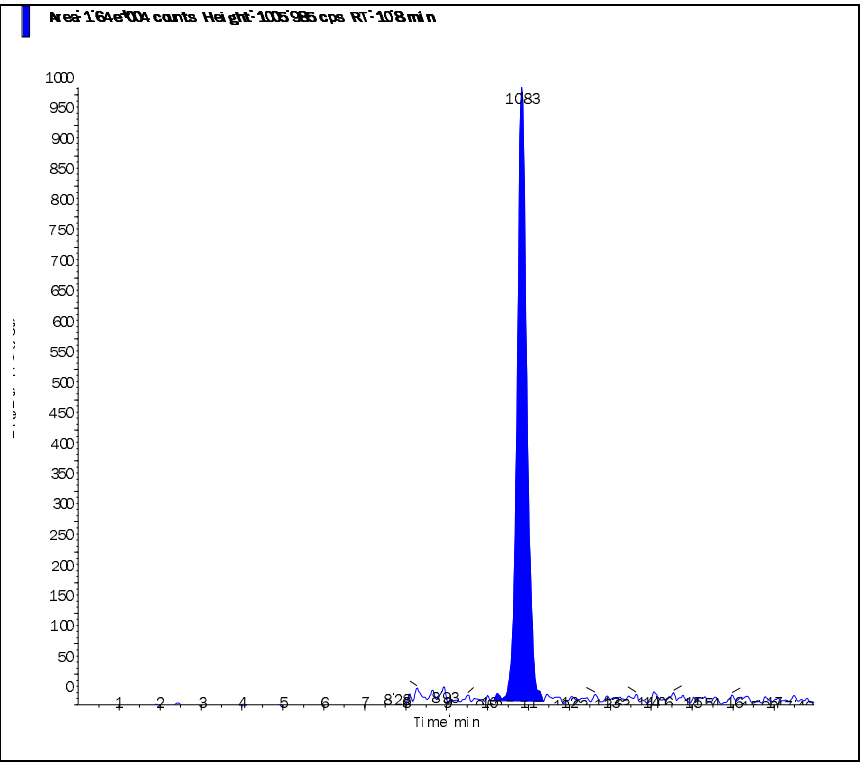

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.80 (11.00) min
Calculated conc:	0.18 ng/ml
Area Ratio:	0.015
Sample Type:	(Unknown)

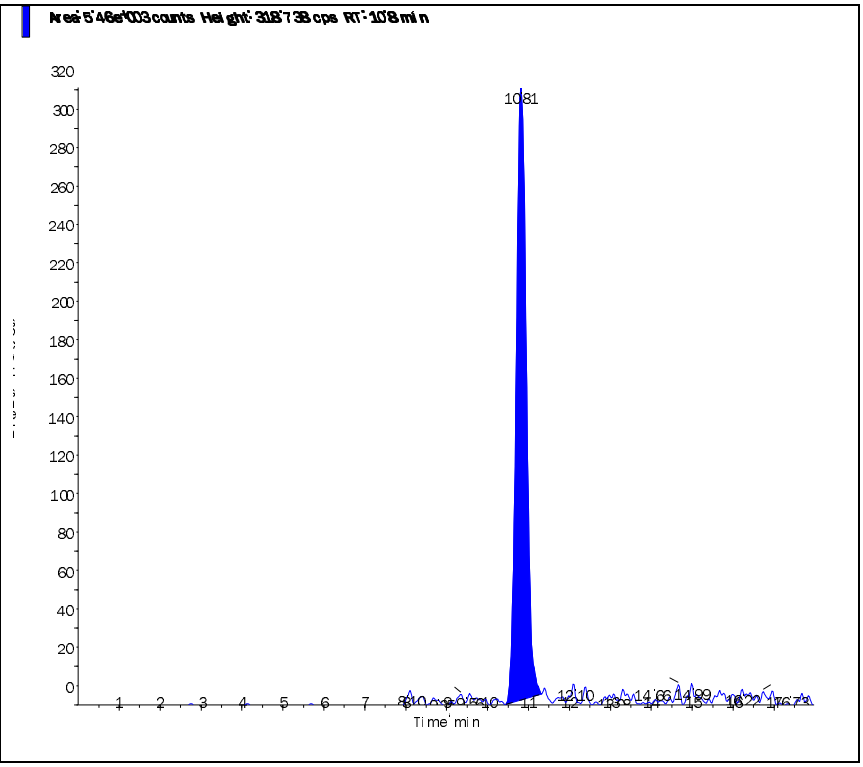

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Printed: 6/2/2015 4:02 PM

Data File	LM29970.wiff	**Result Table**	060115_JWR.rdb
Acquisition Date	6/1/2015 10:20:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15051620-03	**Injection Vial**	15.00
Data File	LM29970.wiff	**Injection Volume**	10.00
Acquisition Date	6/1/2015 10:20:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060115_JWR.rdb
Sample ID	L15051620-03	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.820e+05	10.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.320e+03	10.80	N/A	0.0461
Perchlorate conf	1.610e+03	10.80	N/A	0.0385

O18LP (Internal Standard)

RT (Exp. RT): 10.80(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

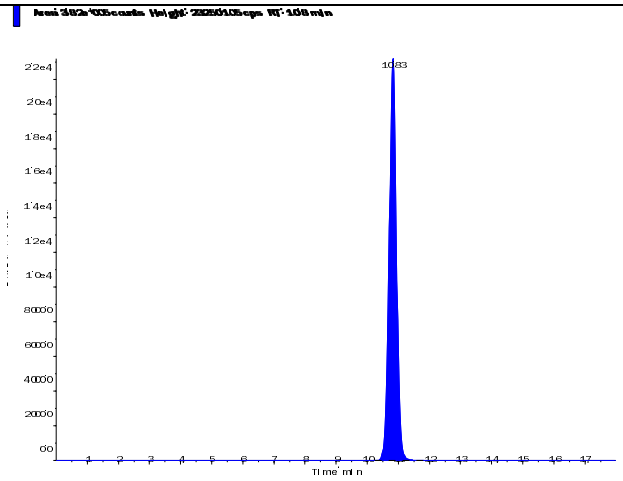

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Created with Analyst Reporter
Printed: 6/2/2015 4:02 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.80 (11.00) min Calculated conc: 0.0461 ng/ml Area Ratio: 0.011 Sample Type: (Unknown)	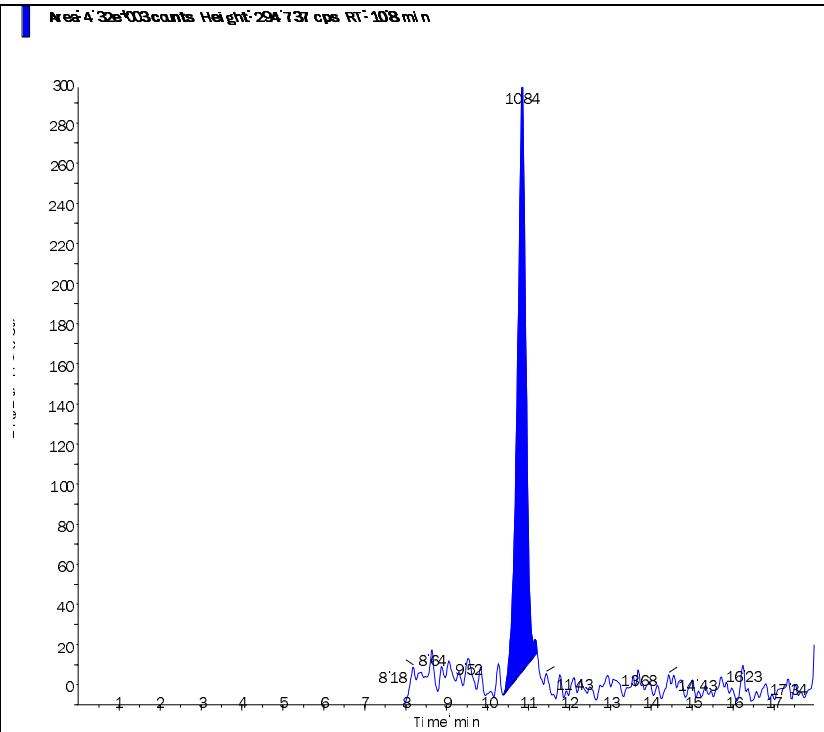
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 10.80 (11.00) min Calculated conc: 0.0385 ng/ml Area Ratio: 0.004 Sample Type: (Unknown)	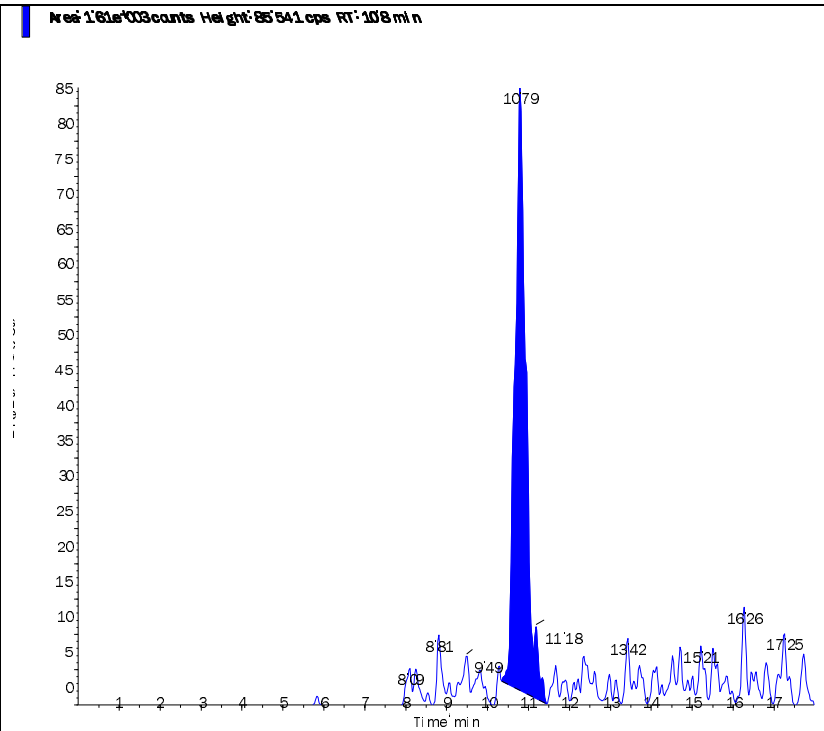

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Data File	LM29971.wiff	**Result Table**	060115_JWR.rdb
Acquisition Date	6/1/2015 10:39:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15051620-04	**Injection Vial**	16.00
Data File	LM29971.wiff	**Injection Volume**	10.00
Acquisition Date	6/1/2015 10:39:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060115_JWR.rdb
Sample ID	L15051620-04	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.640e+05	10.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.840e+03	10.90	N/A	0.0296
Perchlorate conf	7.290e+02	10.90	N/A	0.0082

O18LP (Internal Standard)

RT (Exp. RT): 10.90(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

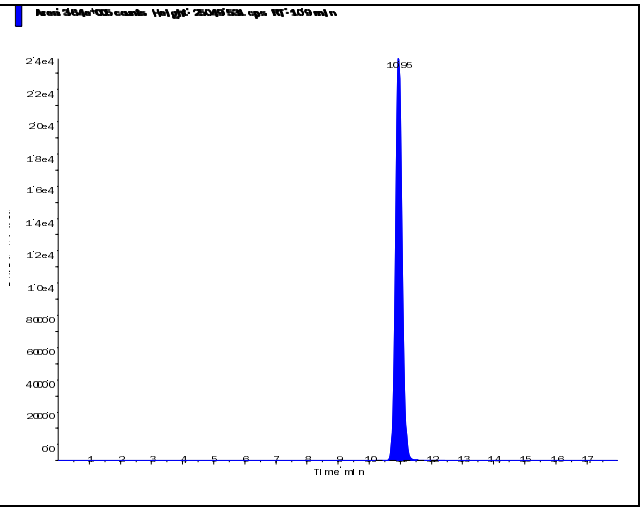

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.90 (11.00) min Calculated conc: 0.0296 ng/ml Area Ratio: 0.008 Sample Type: (Unknown)	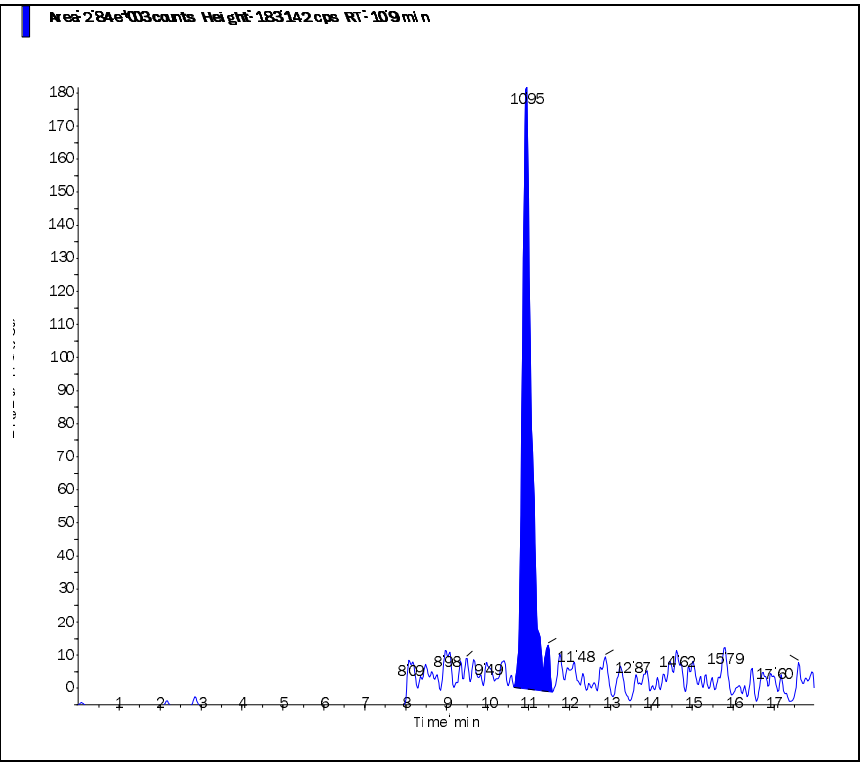
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 10.90 (11.00) min Calculated conc: 0.0082 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	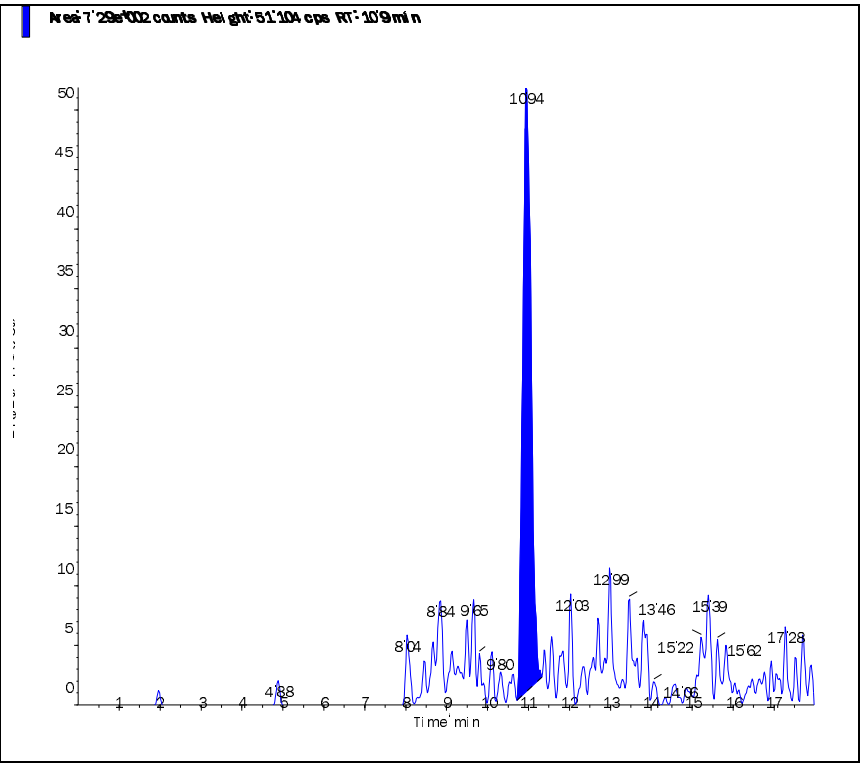

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Data File	LM29972.wiff	**Result Table**	060115_JWR.rdb
Acquisition Date	6/1/2015 10:58:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15051620-05	**Injection Vial**	17.00
Data File	LM29972.wiff	**Injection Volume**	10.00
Acquisition Date	6/1/2015 10:58:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060115_JWR.rdb
Sample ID	L15051620-05	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.460e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.620e+04	11.00	N/A	0.213
Perchlorate conf	5.970e+03	11.00	N/A	0.217

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

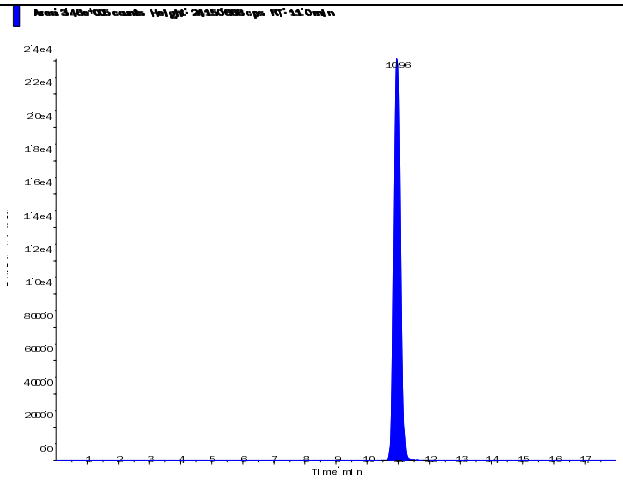

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.00 (11.00) min
Calculated conc:	0.213 ng/ml
Area Ratio:	0.047
Sample Type:	(Unknown)

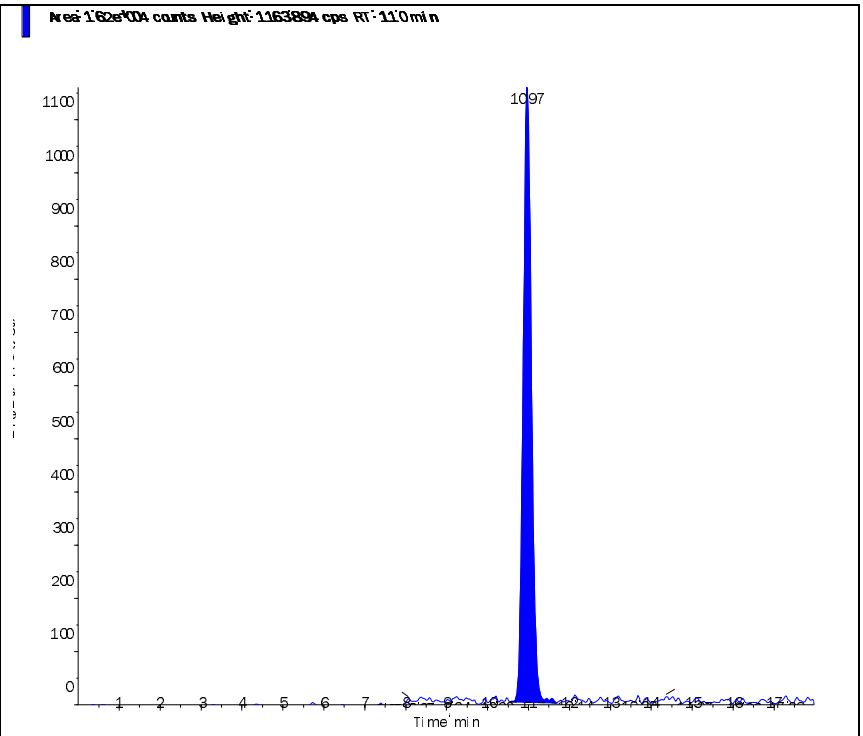

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.00 (11.00) min
Calculated conc:	0.217 ng/ml
Area Ratio:	0.017
Sample Type:	(Unknown)

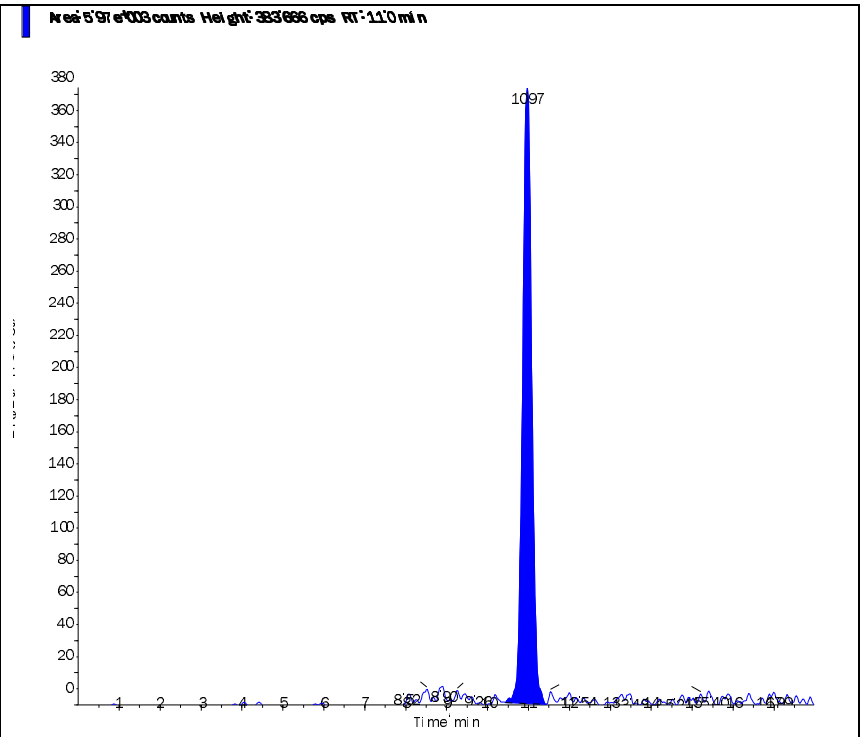

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Data File	LM29973.wiff	**Result Table**	060115_JWR.rdb
Acquisition Date	6/1/2015 11:17:10 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15051620-06	**Injection Vial**	18.00
Data File	LM29973.wiff	**Injection Volume**	10.00
Acquisition Date	6/1/2015 11:17:10 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060115_JWR.rdb
Sample ID	L15051620-06	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.370e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.620e+04	11.00	N/A	0.218
Perchlorate conf	5.590e+03	11.00	N/A	0.208

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

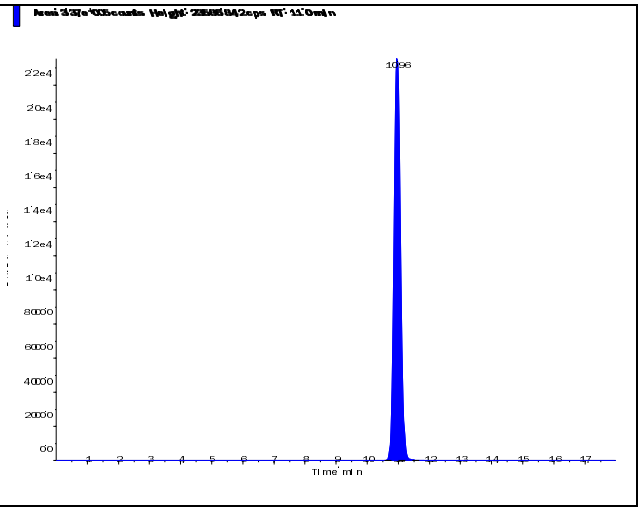

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.00 (11.00) min
Calculated conc:	0.218 ng/ml
Area Ratio:	0.048
Sample Type:	(Unknown)

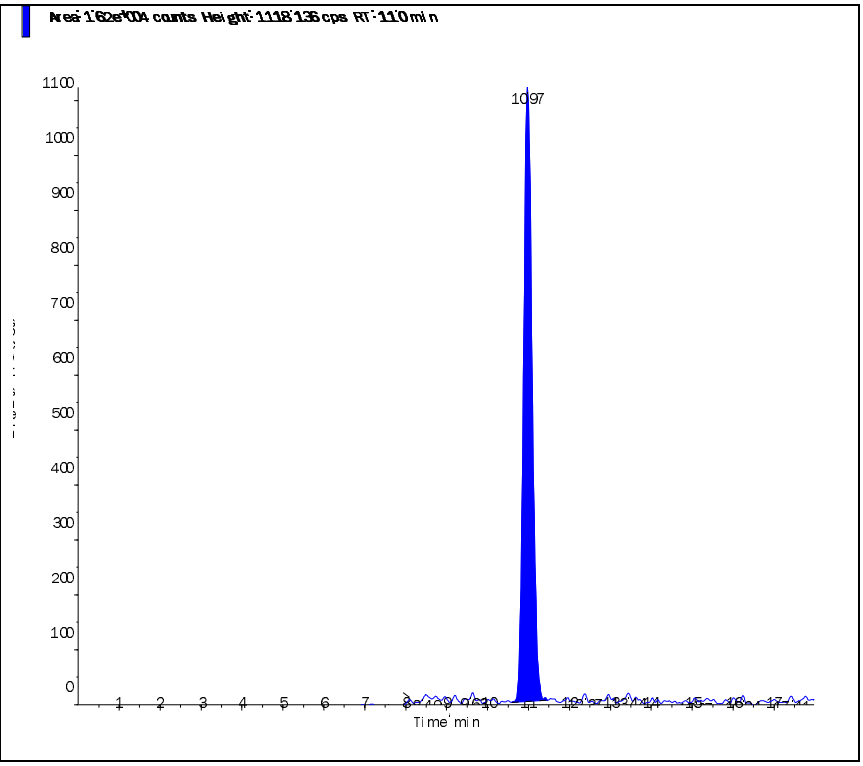

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.00 (11.00) min
Calculated conc:	0.208 ng/ml
Area Ratio:	0.017
Sample Type:	(Unknown)

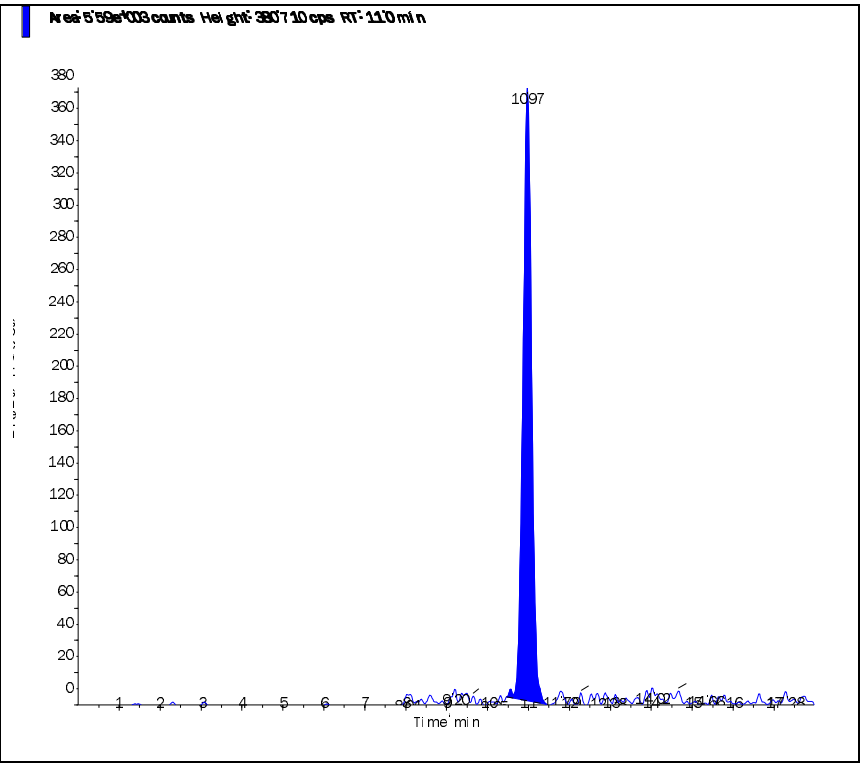

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Data File	LM29978.wiff	**Result Table**	060115_JWR.rdb
Acquisition Date	6/2/2015 12:51:46 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15051620-07 RS	**Injection Vial**	20.00
Data File	LM29978.wiff	**Injection Volume**	10.00
Acquisition Date	6/2/2015 12:51:46 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060115_JWR.rdb
Sample ID	WG525760-04	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.810e+05	10.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.650e+04	10.80	N/A	0.196
Perchlorate conf	6.320e+03	10.80	N/A	0.208

O18LP (Internal Standard)

RT (Exp. RT): 10.80(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

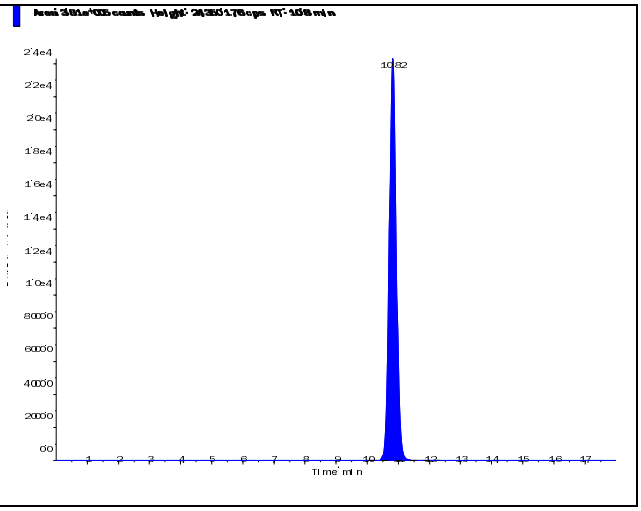

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.80 (11.00) min Calculated conc: 0.196 ng/ml Area Ratio: 0.043 Sample Type: (Unknown)	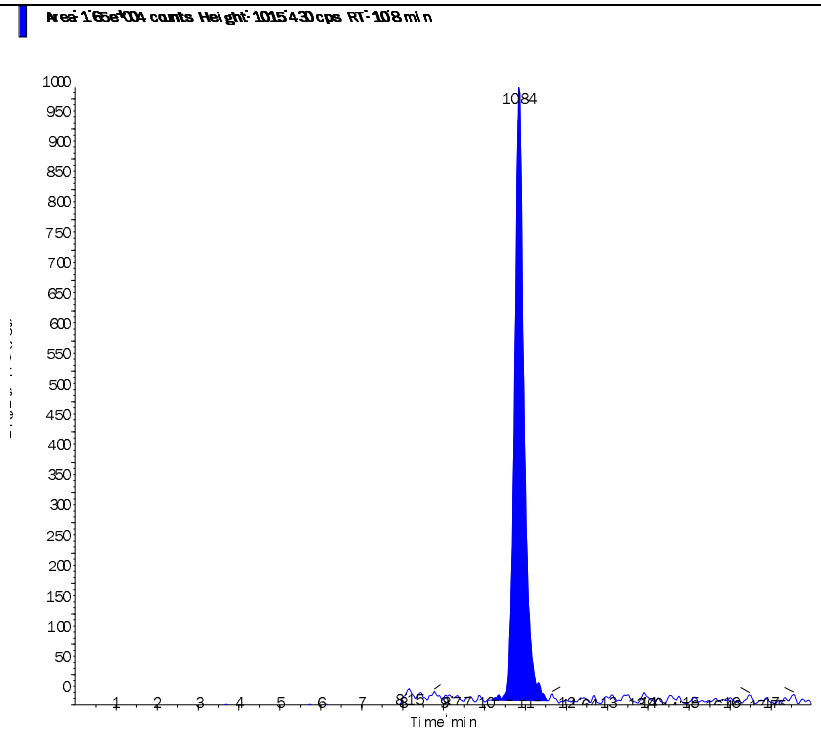
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 10.80 (11.00) min Calculated conc: 0.208 ng/ml Area Ratio: 0.017 Sample Type: (Unknown)	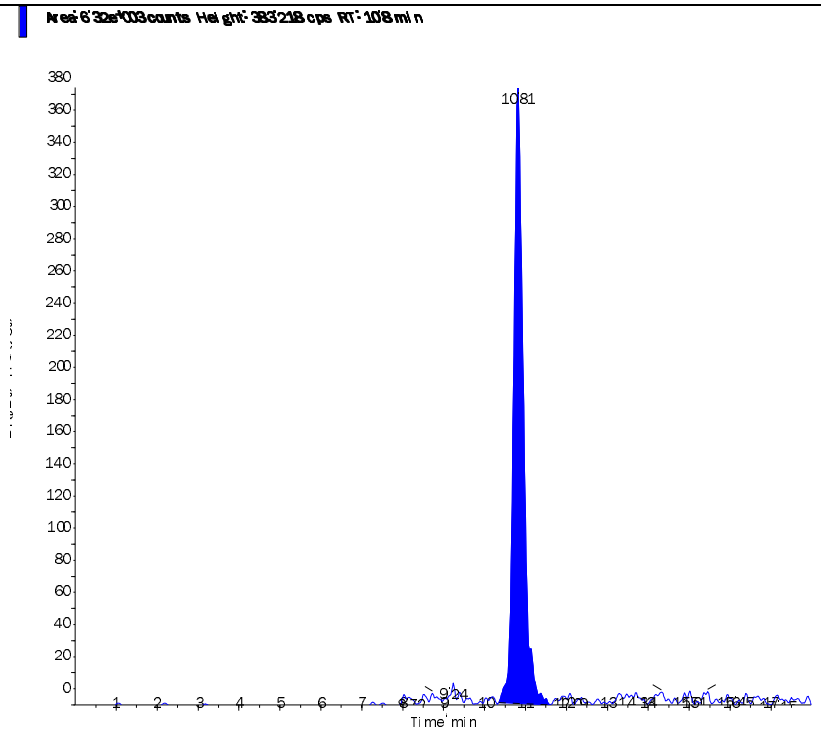

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Data File	LM29979.wiff	**Result Table**	060115_JWR.rdb
Acquisition Date	6/2/2015 1:10:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15051620-08 MS	**Injection Vial**	21.00
Data File	LM29979.wiff	**Injection Volume**	10.00
Acquisition Date	6/2/2015 1:10:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060115_JWR.rdb
Sample ID	WG525760-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD69913	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.790e+05	10.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.110e+04	10.90	N/A	0.378
Perchlorate conf	1.120e+04	10.90	N/A	0.384

O18LP (Internal Standard)

RT (Exp. RT): 10.90(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

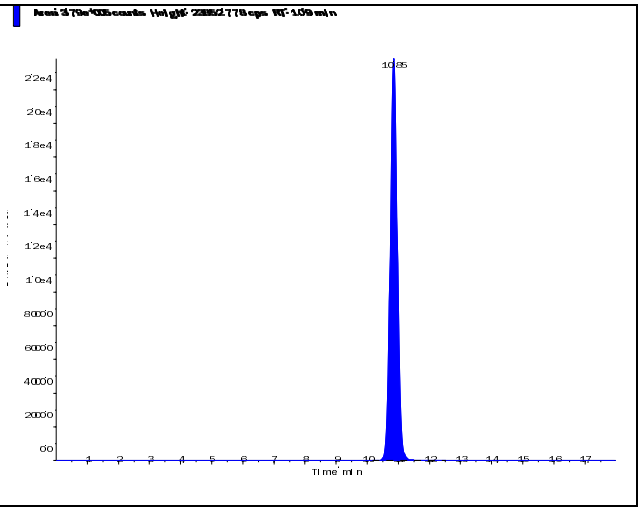

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.90 (11.00) min
Calculated conc:	0.378 ng/ml
Area Ratio:	0.082
Sample Type:	(Unknown)

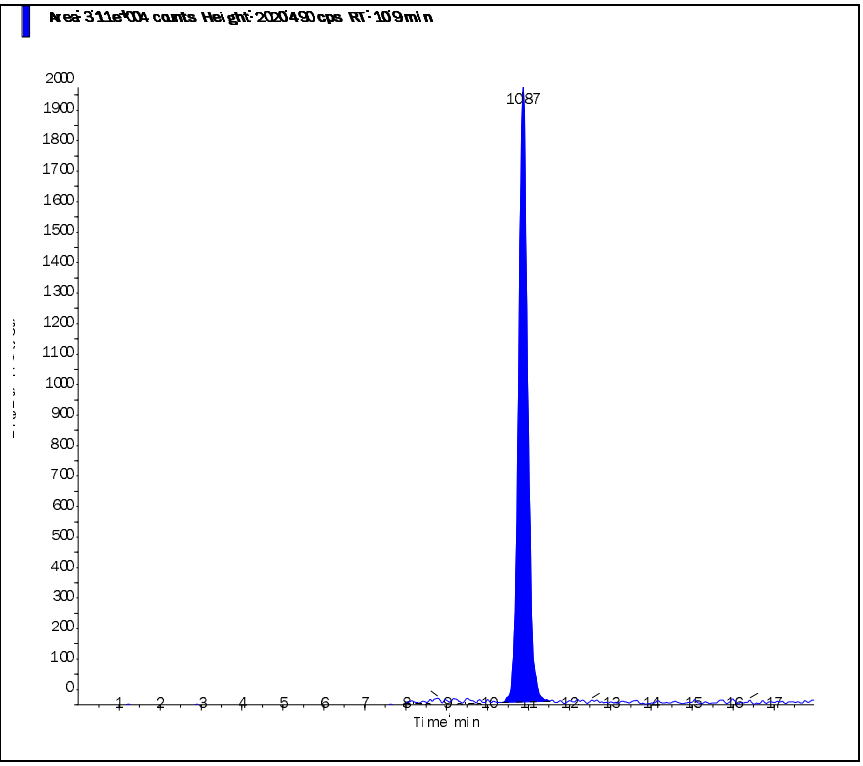

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.90 (11.00) min
Calculated conc:	0.384 ng/ml
Area Ratio:	0.029
Sample Type:	(Unknown)

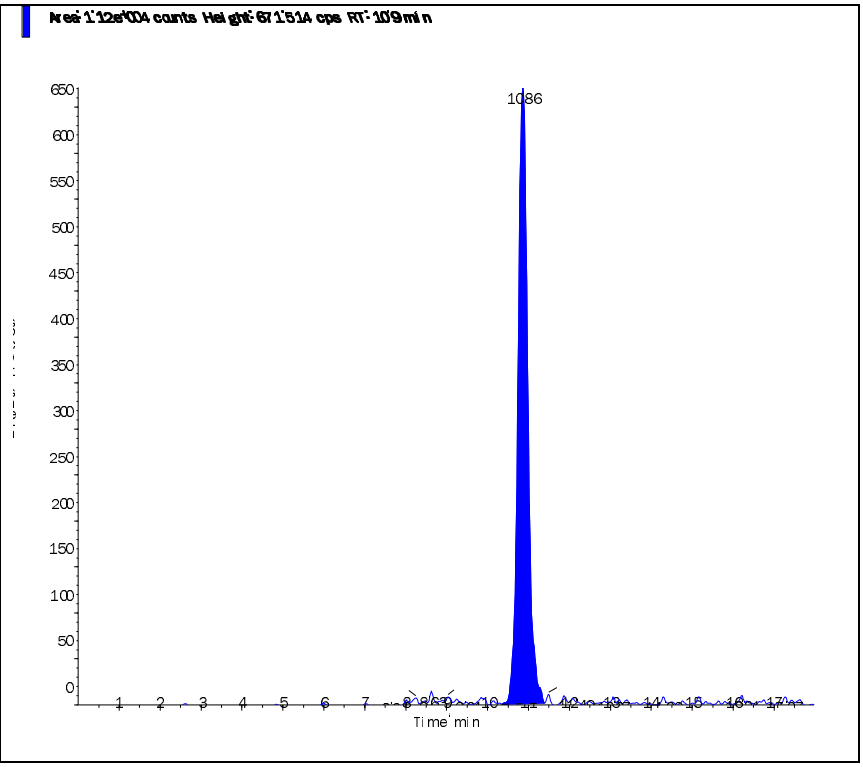

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Data File	LM29980.wiff	**Result Table**	060115_JWR.rdb
Acquisition Date	6/2/2015 1:29:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15051620-09 MSD	**Injection Vial**	22.00
Data File	LM29980.wiff	**Injection Volume**	10.00
Acquisition Date	6/2/2015 1:29:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060115_JWR.rdb
Sample ID	WG525760-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD69913	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.740e+05	10.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.190e+04	10.90	N/A	0.393
Perchlorate conf	1.110e+04	10.90	N/A	0.389

O18LP (Internal Standard)

RT (Exp. RT): 10.90(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

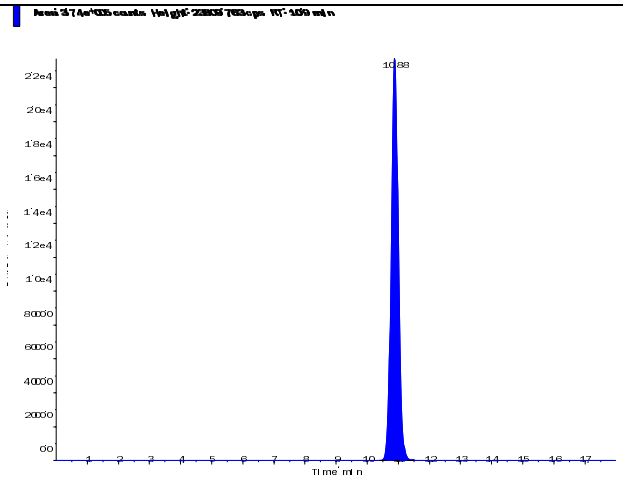

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.90 (11.00) min Calculated conc: 0.393 ng/ml Area Ratio: 0.085 Sample Type: (Unknown)	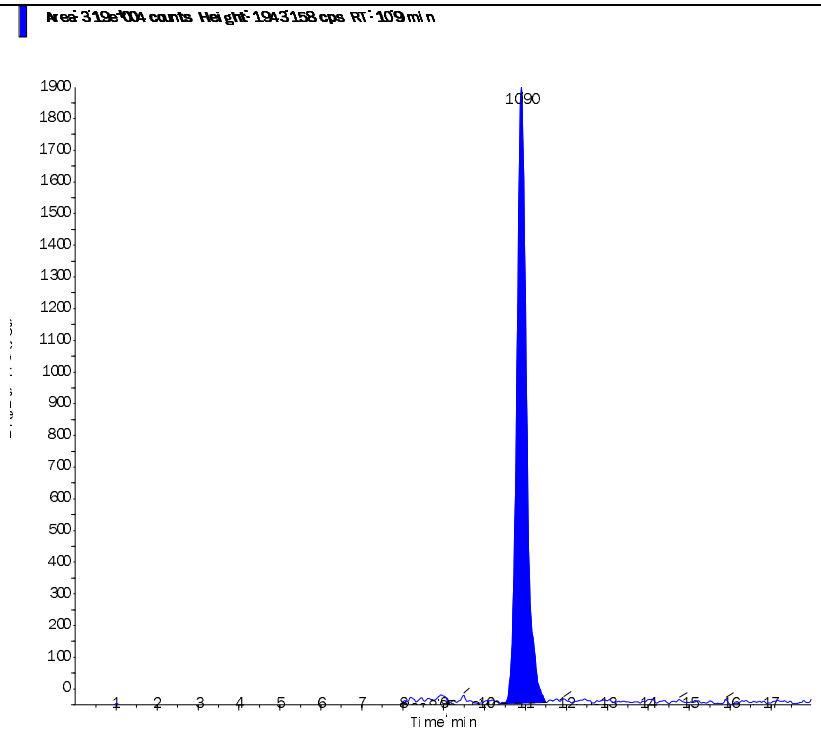
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 10.90 (11.00) min Calculated conc: 0.389 ng/ml Area Ratio: 0.03 Sample Type: (Unknown)	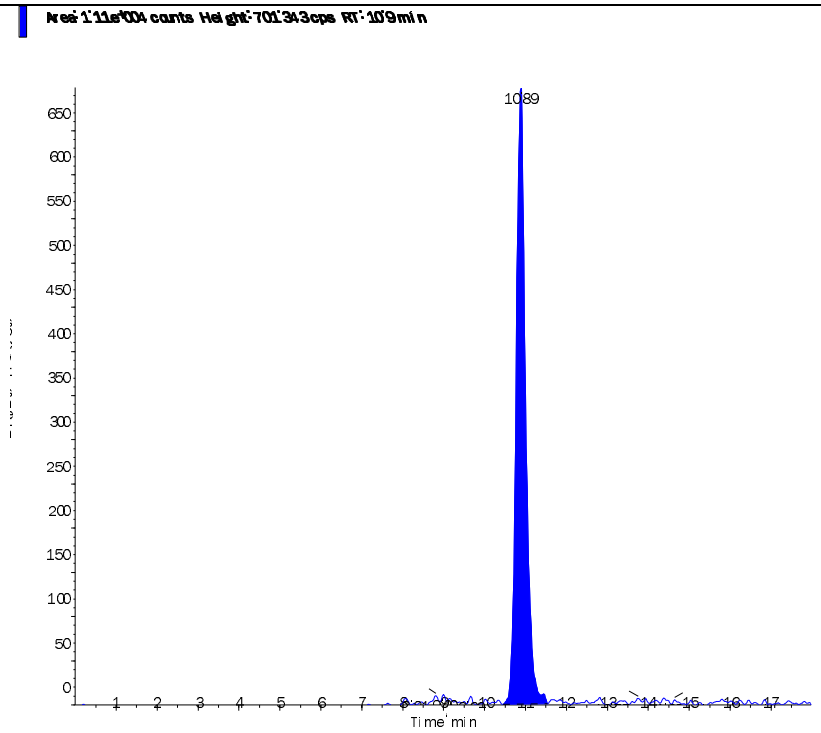

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Created with Analyst Reporter
Printed: 6/2/2015 4:03 PM

Data File	LM29974.wiff	**Result Table**	060115_JWR.rdb
Acquisition Date	6/1/2015 11:36:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15051620-10	**Injection Vial**	19.00
Data File	LM29974.wiff	**Injection Volume**	10.00
Acquisition Date	6/1/2015 11:36:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060115_JWR.rdb
Sample ID	L15051620-10	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.940e+05	10.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	6.780e+03	10.90	N/A	0.0735
Perchlorate conf	2.690e+03	10.90	N/A	0.0741

O18LP (Internal Standard)

RT (Exp. RT): 10.90(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

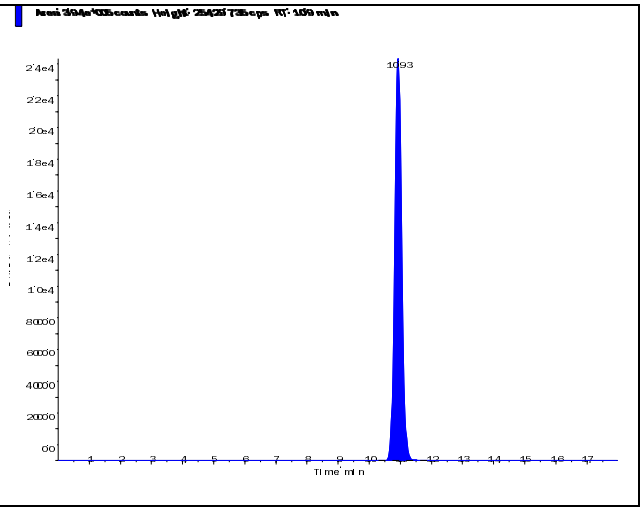

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.90 (11.00) min Calculated conc: 0.0735 ng/ml Area Ratio: 0.017 Sample Type: (Unknown)	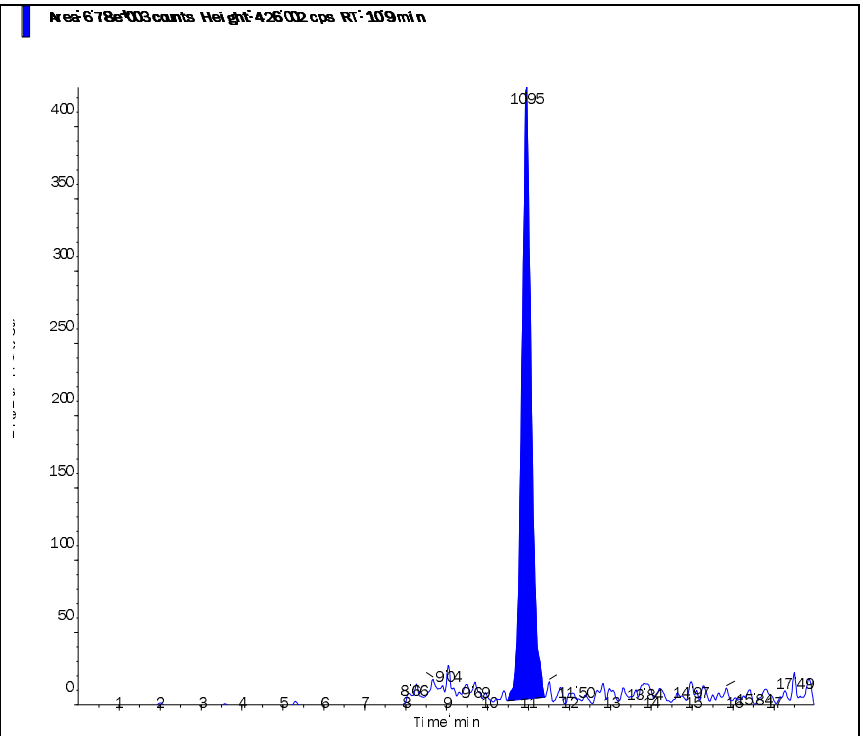
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 10.90 (11.00) min Calculated conc: 0.0741 ng/ml Area Ratio: 0.007 Sample Type: (Unknown)	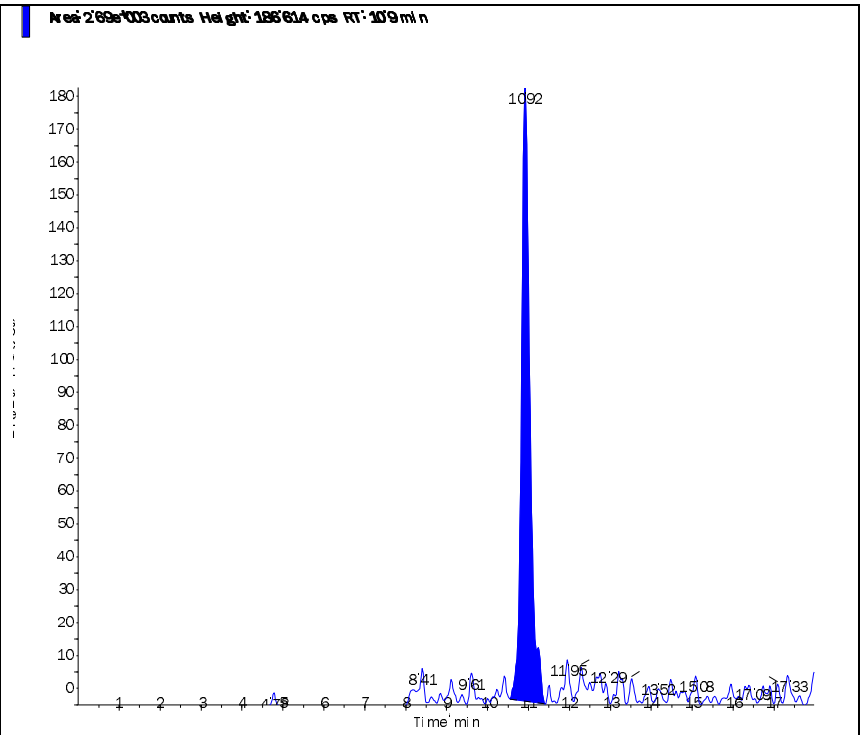

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Data File	LM29981.wiff	**Result Table**	060115_JWR.rdb
Acquisition Date	6/2/2015 1:48:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15051620-11	**Injection Vial**	23.00
Data File	LM29981.wiff	**Injection Volume**	10.00
Acquisition Date	6/2/2015 1:48:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060115_JWR.rdb
Sample ID	L15051620-11	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.700e+05	10.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.620e+03	11.00	N/A	0.0515
Perchlorate conf	1.620e+03	11.10	N/A	0.0406

O18LP (Internal Standard)

RT (Exp. RT): 10.90(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

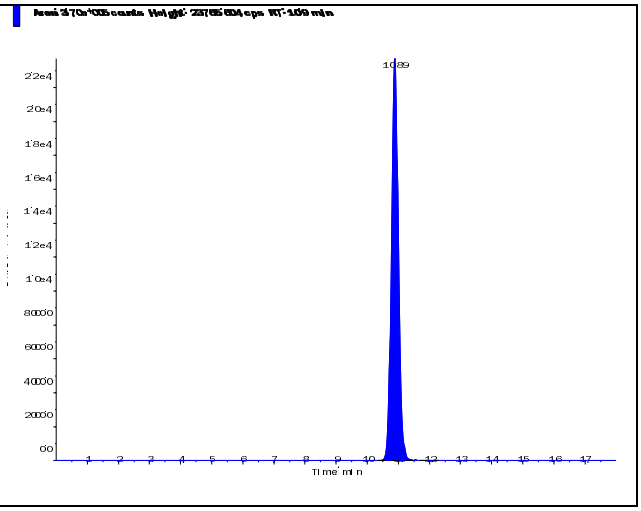

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.00 (11.00) min Calculated conc: 0.0515 ng/ml Area Ratio: 0.012 Sample Type: (Unknown)	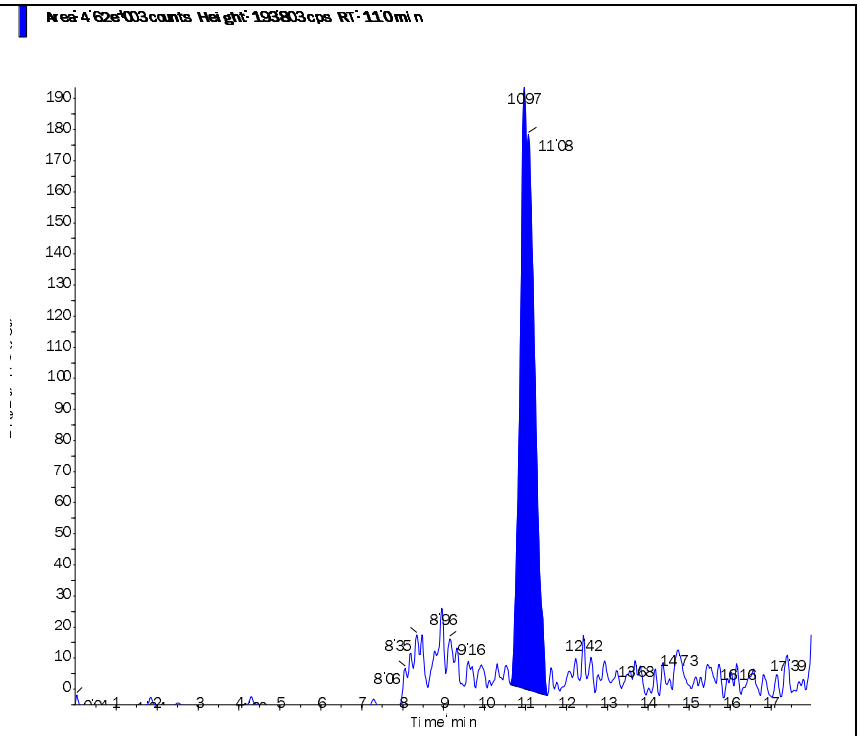
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.10 (11.00) min Calculated conc: 0.0406 ng/ml Area Ratio: 0.004 Sample Type: (Unknown)	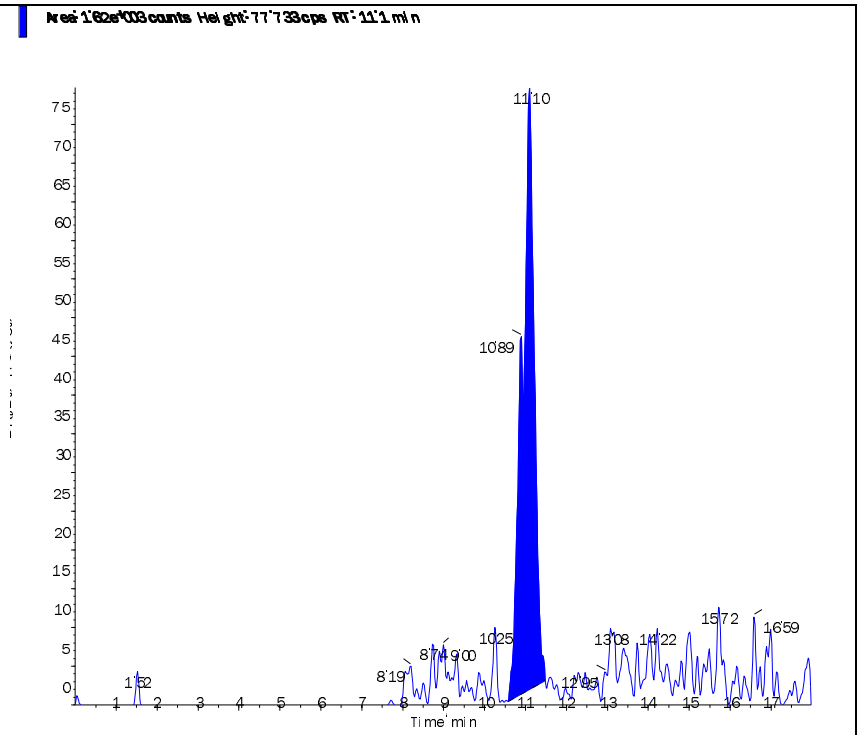

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Data File	LM29982.wiff	**Result Table**	060115_JWR.rdb
Acquisition Date	6/2/2015 2:07:30 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15051620-12	**Injection Vial**	24.00
Data File	LM29982.wiff	**Injection Volume**	10.00
Acquisition Date	6/2/2015 2:07:30 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060115_JWR.rdb
Sample ID	L15051620-12	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.670e+05	10.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.820e+03	11.00	N/A	0.0546
Perchlorate conf	6.580e+02	10.90	N/A	0.0054

O18LP (Internal Standard)

RT (Exp. RT): 10.90(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

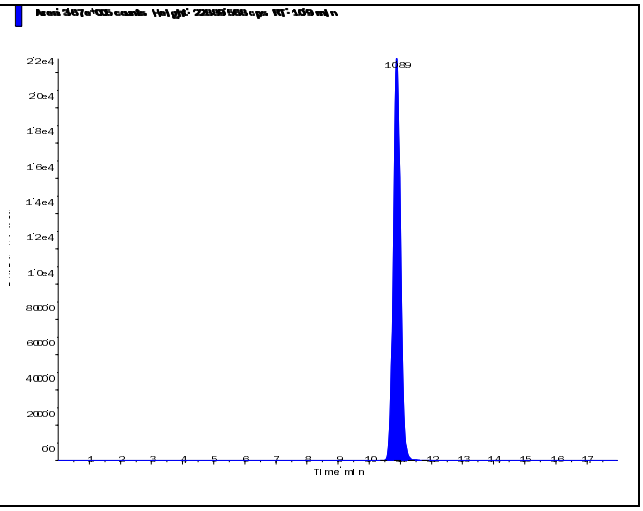

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Created with Analyst Reporter
Printed: 6/2/2015 4:05 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.00 (11.00) min Calculated conc: 0.0546 ng/ml Area Ratio: 0.013 Sample Type: (Unknown)	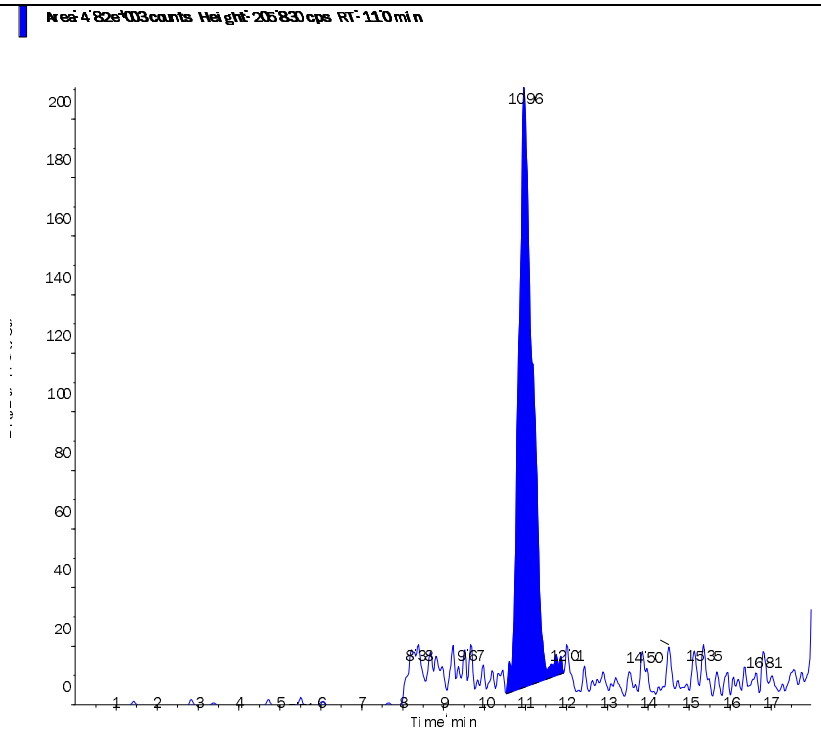
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 10.90 (11.00) min Calculated conc: 0.0054 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	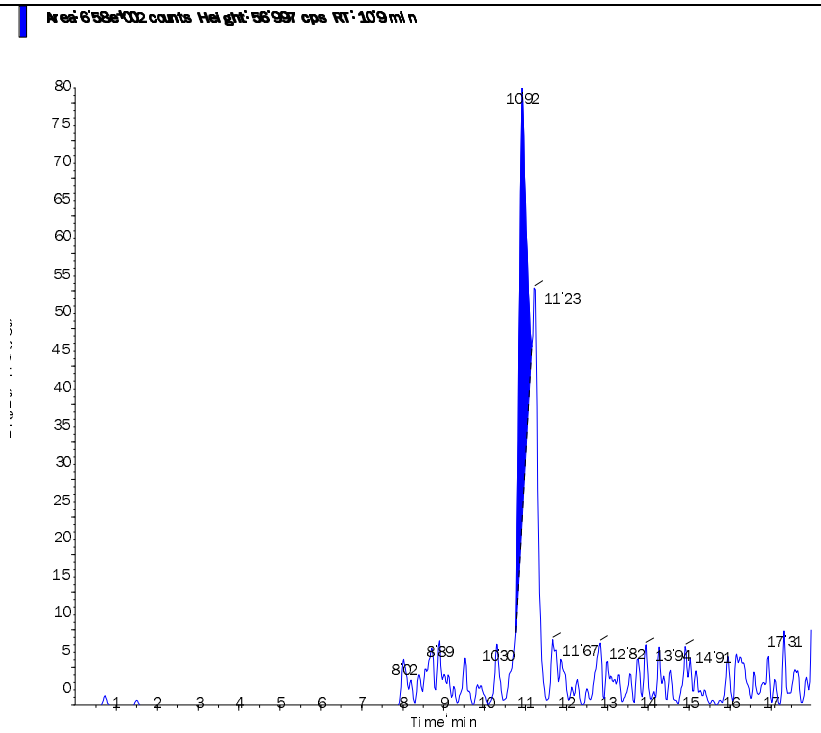

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Data File	LM29983.wiff	**Result Table**	060115_JWR.rdb
Acquisition Date	6/2/2015 2:26:24 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15051620-13	**Injection Vial**	25.00
Data File	LM29983.wiff	**Injection Volume**	10.00
Acquisition Date	6/2/2015 2:26:24 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060115_JWR.rdb
Sample ID	L15051620-13	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.750e+05	10.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.250e+03	11.00	N/A	0.0211
Perchlorate conf	1.030e+03	11.00	N/A	0.0183

O18LP (Internal Standard)

RT (Exp. RT): 10.90(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

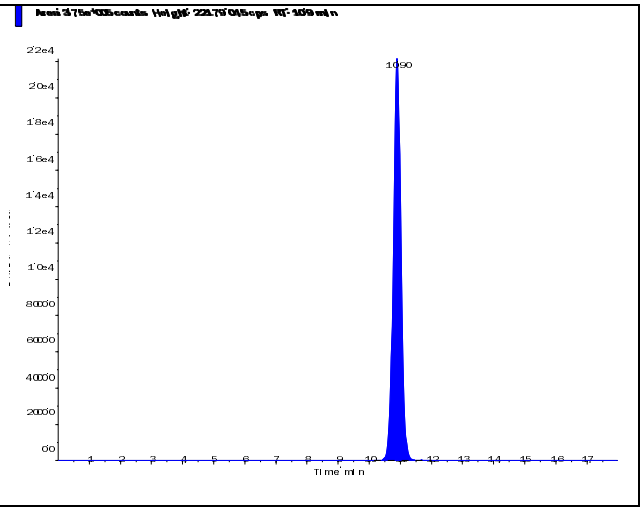

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.00 (11.00) min
Calculated conc:	0.0211 ng/ml
Area Ratio:	0.006
Sample Type:	(Unknown)

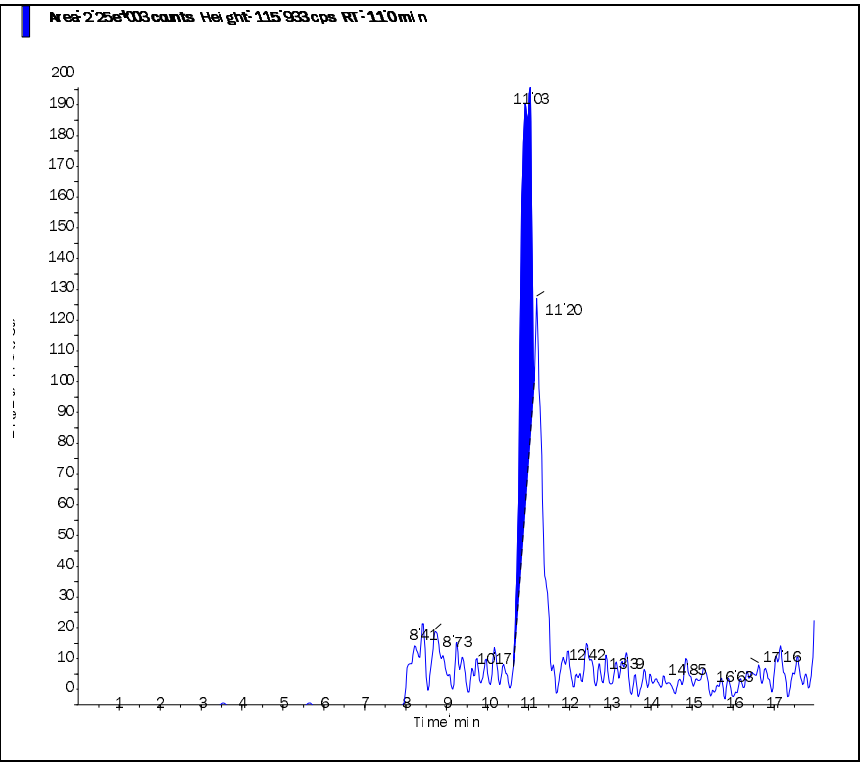

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.00 (11.00) min
Calculated conc:	0.0183 ng/ml
Area Ratio:	0.003
Sample Type:	(Unknown)

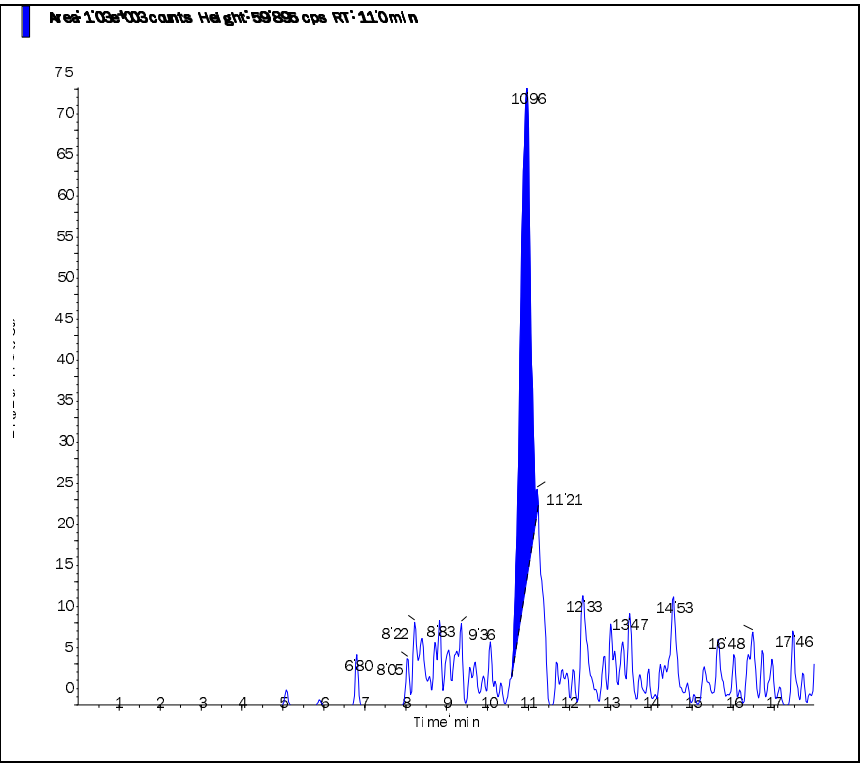

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Data File	LM29984.wiff	**Result Table**	060115_JWR.rdb
Acquisition Date	6/2/2015 2:45:18 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15051620-14	**Injection Vial**	26.00
Data File	LM29984.wiff	**Injection Volume**	10.00
Acquisition Date	6/2/2015 2:45:18 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060115_JWR.rdb
Sample ID	L15051620-14	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.810e+05	10.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.140e+04	10.80	N/A	0.502
Perchlorate conf	1.440e+04	10.80	N/A	0.497

O18LP (Internal Standard)

RT (Exp. RT): 10.80(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

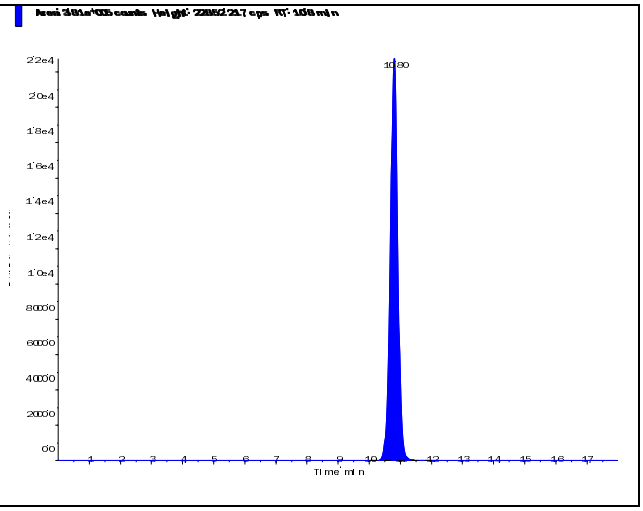

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.80 (11.00) min Calculated conc: 0.502 ng/ml Area Ratio: 0.109 Sample Type: (Unknown)	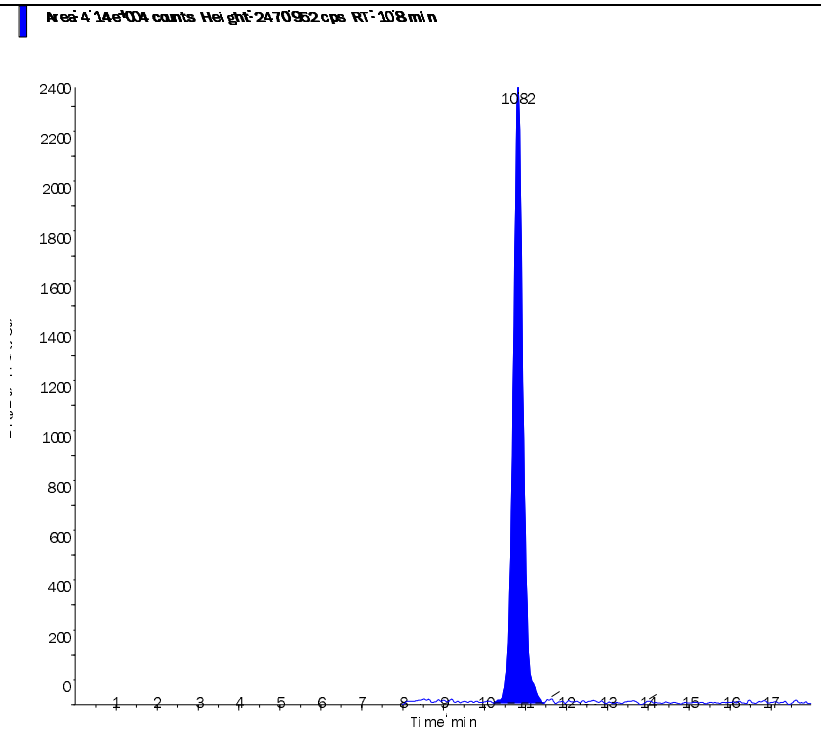
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 10.80 (11.00) min Calculated conc: 0.497 ng/ml Area Ratio: 0.038 Sample Type: (Unknown)	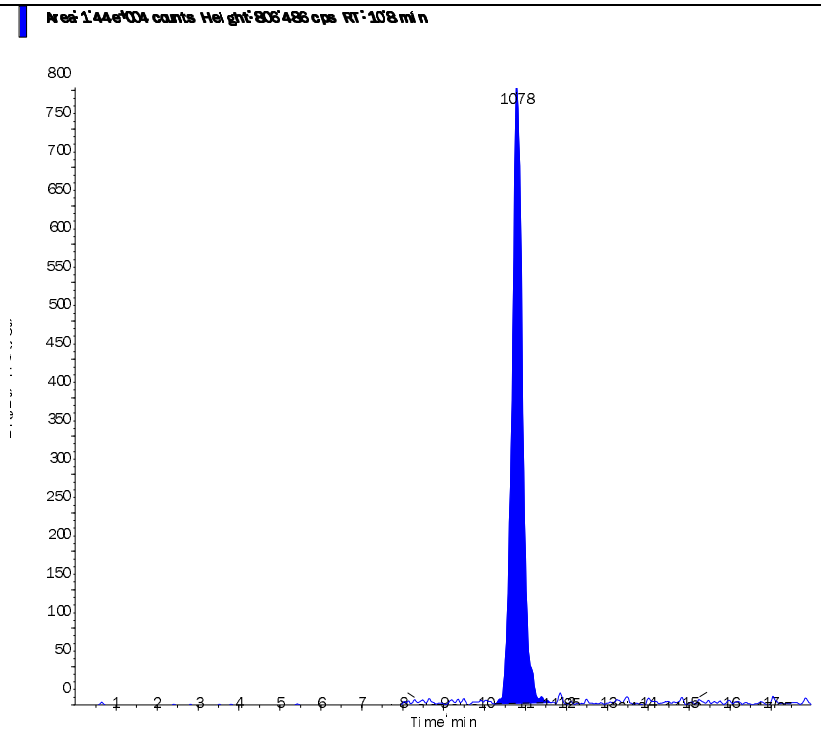

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Data File	LM29985.wiff	**Result Table**	060115_JWR.rdb
Acquisition Date	6/2/2015 3:04:14 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15051620-15	**Injection Vial**	27.00
Data File	LM29985.wiff	**Injection Volume**	10.00
Acquisition Date	6/2/2015 3:04:14 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060115_JWR.rdb
Sample ID	L15051620-15	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.800e+05	10.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.250e+04	10.80	N/A	0.516
Perchlorate conf	1.580e+04	10.80	N/A	0.549

O18LP (Internal Standard)

RT (Exp. RT): 10.80(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

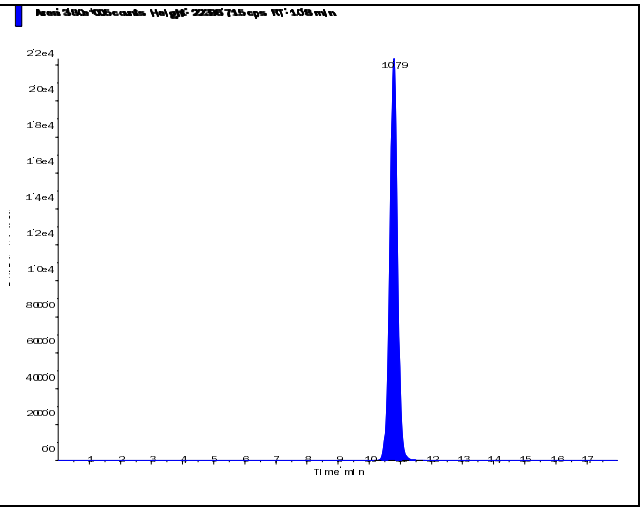

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.80 (11.00) min
Calculated conc:	0.516 ng/ml
Area Ratio:	0.112
Sample Type:	(Unknown)

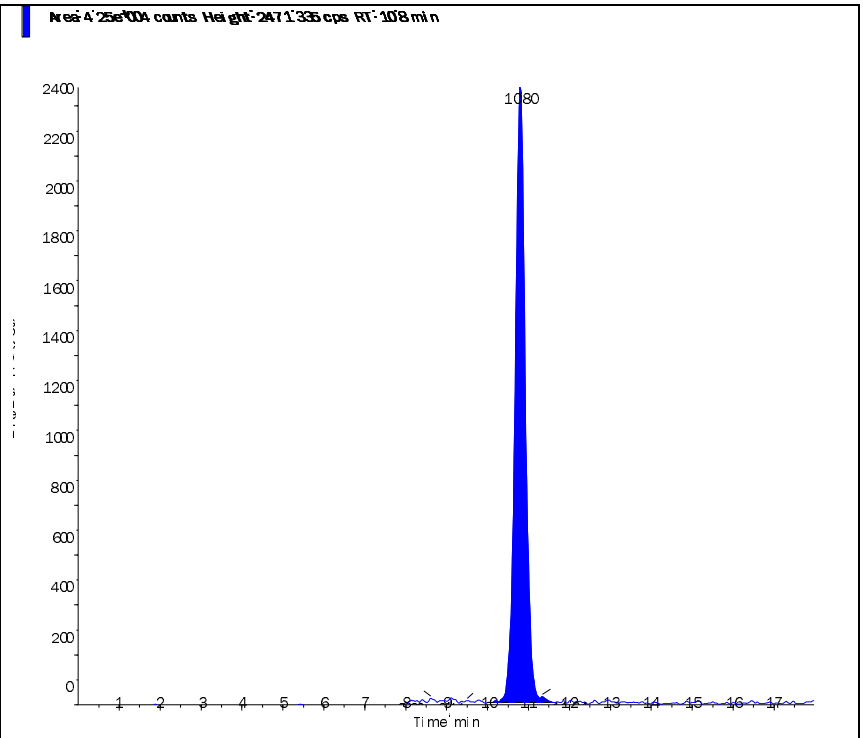

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.80 (11.00) min
Calculated conc:	0.549 ng/ml
Area Ratio:	0.041
Sample Type:	(Unknown)

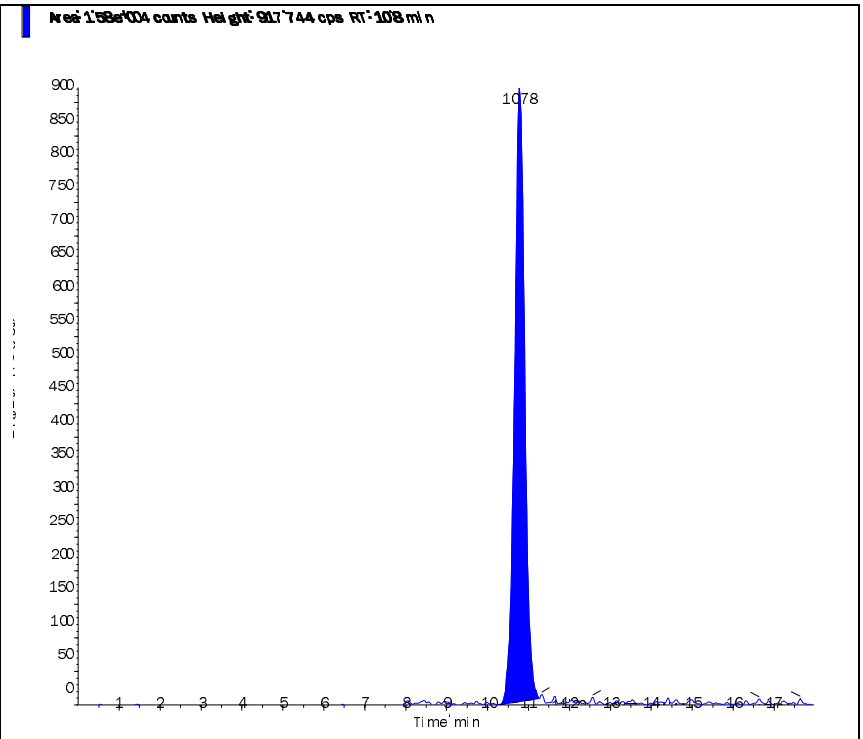

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Data File	LM29986.wiff	**Result Table**	060115_JWR.rdb
Acquisition Date	6/2/2015 3:23:11 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15051620-16	**Injection Vial**	28.00
Data File	LM29986.wiff	**Injection Volume**	10.00
Acquisition Date	6/2/2015 3:23:11 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060115_JWR.rdb
Sample ID	L15051620-16	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.750e+05	10.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.410e+03	10.90	N/A	0.0106
Perchlorate conf	4.390e+02	11.00	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 10.90(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

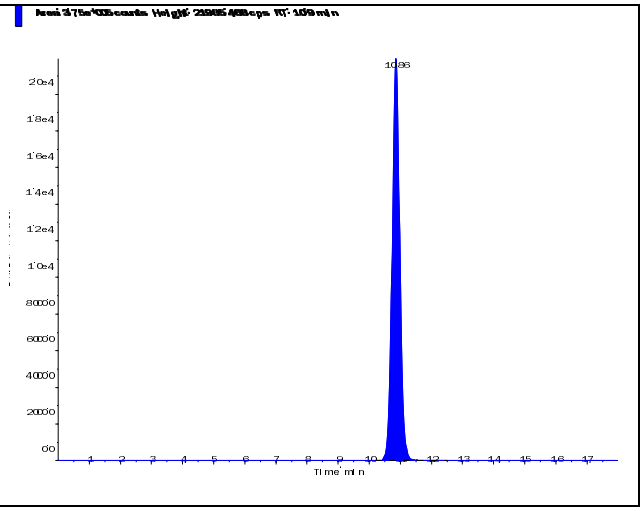

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.90 (11.00) min Calculated conc: 0.0106 ng/ml Area Ratio: 0.004 Sample Type: (Unknown)	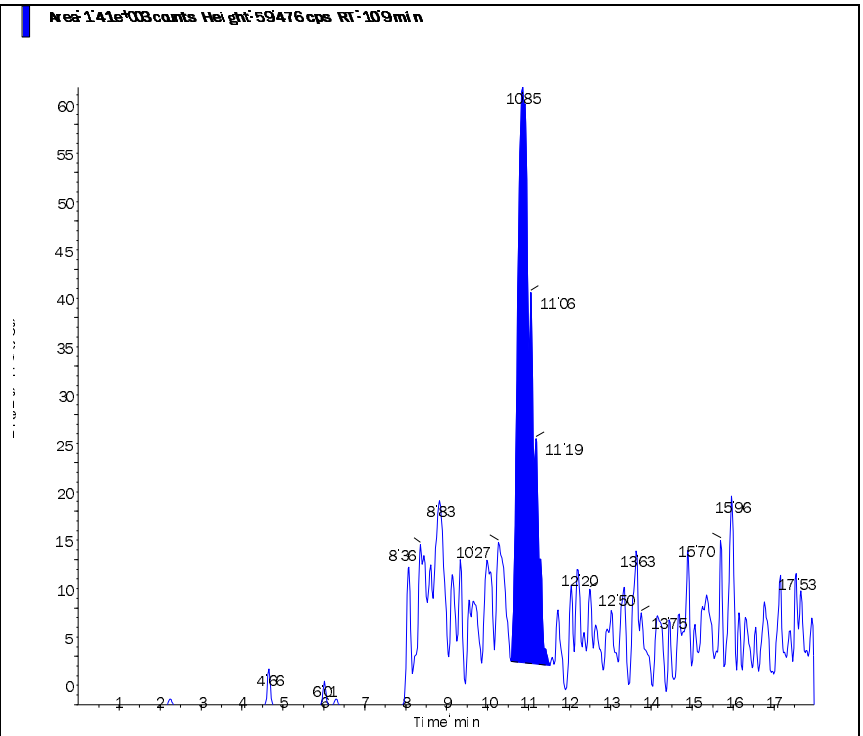
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.00 (11.00) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	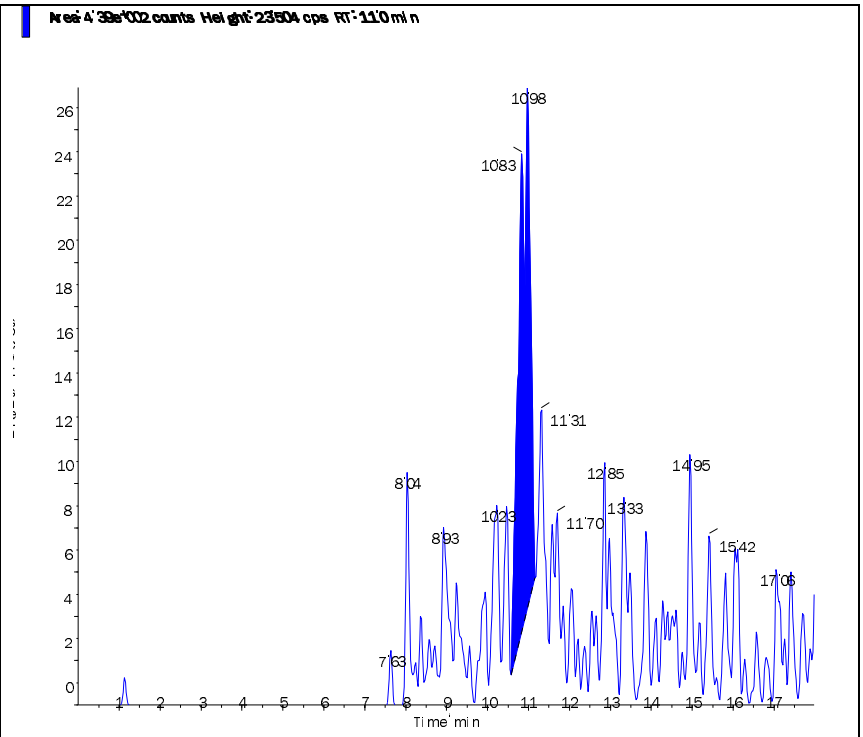

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Printed: 6/4/2015 10:34 AM

Data File	LM30005.wiff	**Result Table**	060315_JWR.rdb
Acquisition Date	6/3/2015 5:33:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15051620-17 RS	**Injection Vial**	7.00
Data File	LM30005.wiff	**Injection Volume**	10.00
Acquisition Date	6/3/2015 5:33:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060315_JWR.rdb
Sample ID	WG526155-04	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.250e+05	11.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.480e+03	11.20	N/A	0.0288
Perchlorate conf	7.210e+02	11.10	N/A	0.0111

O18LP (Internal Standard)

RT (Exp. RT): 11.10(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

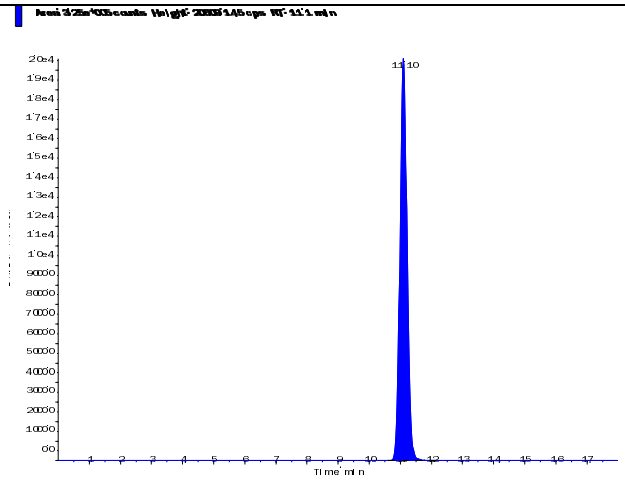

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Printed: 6/4/2015 10:34 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.20 (11.00) min Calculated conc: 0.0288 ng/ml Area Ratio: 0.008 Sample Type: (Unknown)	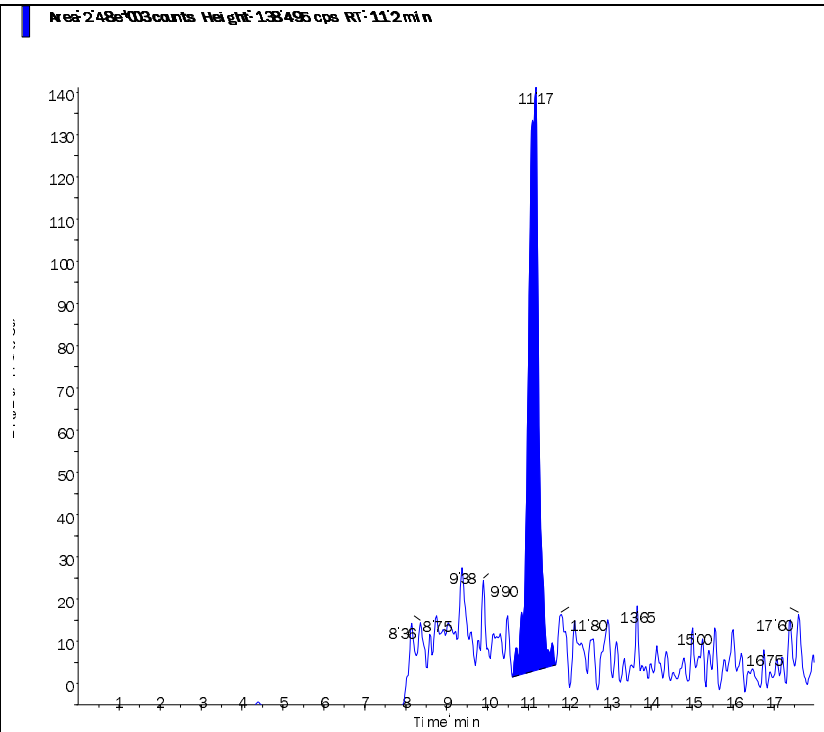
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.10 (11.00) min Calculated conc: 0.0111 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	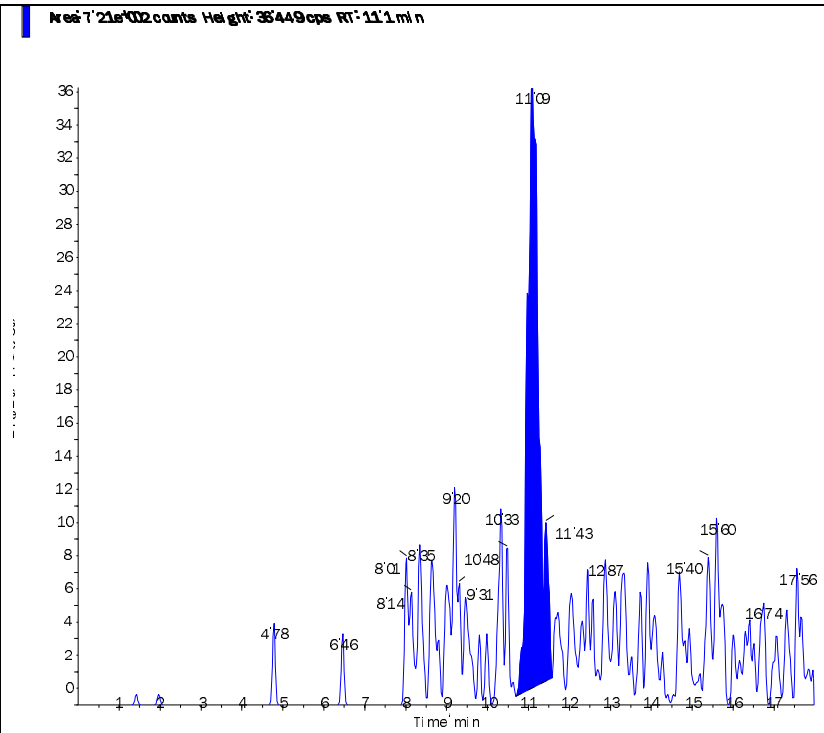

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Created with Analyst Reporter
Printed: 6/4/2015 10:34 AM

Data File	LM30006.wiff	**Result Table**	060315_JWR.rdb
Acquisition Date	6/3/2015 5:52:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15051620-18 MS	**Injection Vial**	8.00
Data File	LM30006.wiff	**Injection Volume**	10.00
Acquisition Date	6/3/2015 5:52:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060315_JWR.rdb
Sample ID	WG526155-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD69913	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.440e+05	11.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.150e+04	11.10	N/A	0.286
Perchlorate conf	7.170e+03	11.10	N/A	0.266

O18LP (Internal Standard)

RT (Exp. RT): 11.10(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

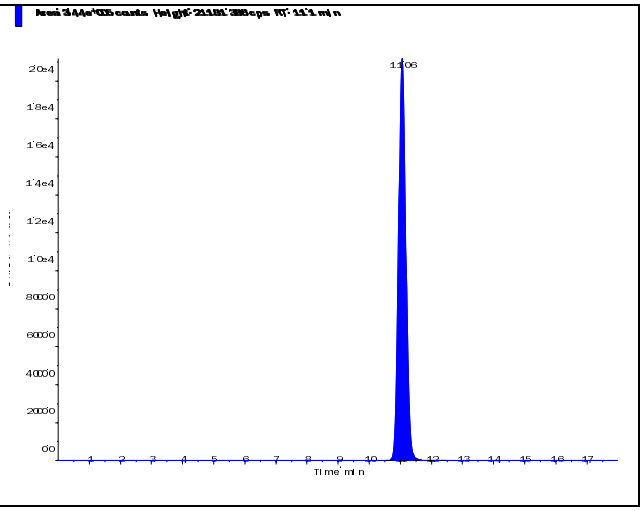

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.10 (11.00) min Calculated conc: 0.286 ng/ml Area Ratio: 0.062 Sample Type: (Unknown)	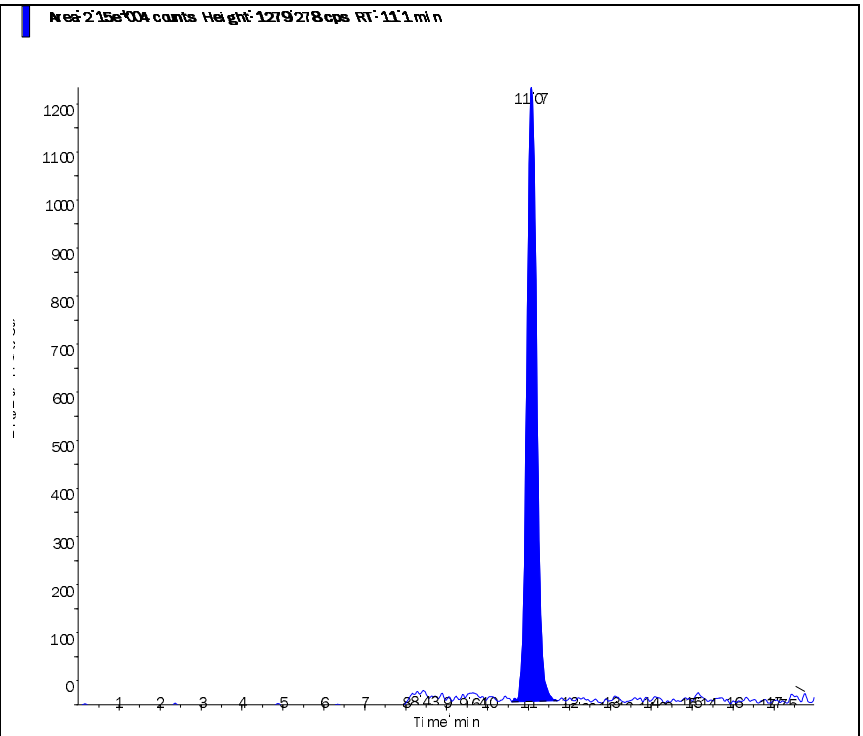
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.10 (11.00) min Calculated conc: 0.266 ng/ml Area Ratio: 0.021 Sample Type: (Unknown)	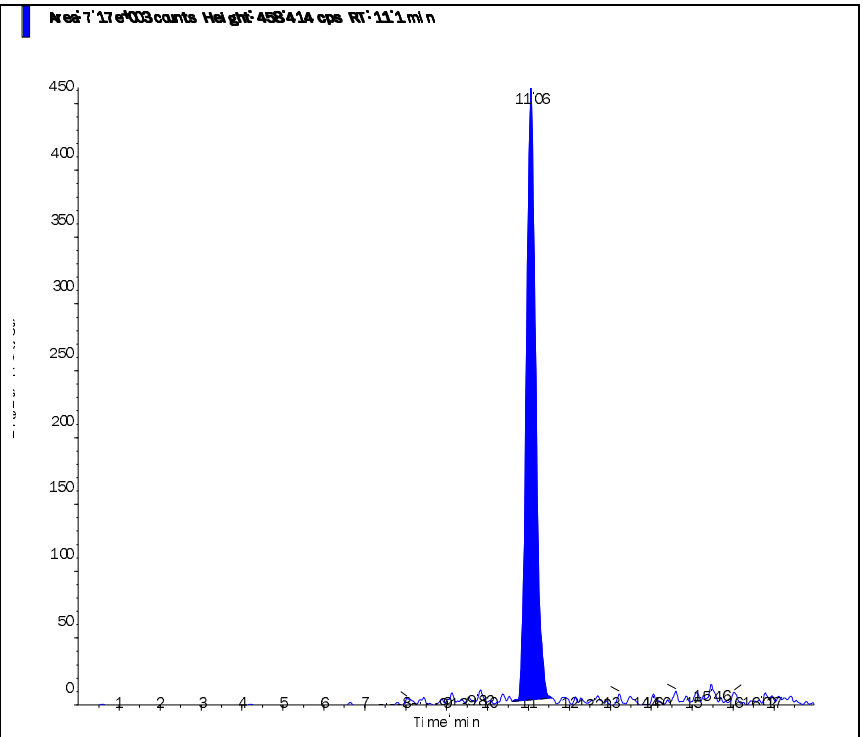

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Created with Analyst Reporter
Printed: 6/4/2015 10:34 AM

Data File	LM30007.wiff	**Result Table**	060315_JWR.rdb
Acquisition Date	6/3/2015 6:11:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15051620-19 MSD	**Injection Vial**	9.00
Data File	LM30007.wiff	**Injection Volume**	10.00
Acquisition Date	6/3/2015 6:11:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060315_JWR.rdb
Sample ID	WG526155-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD69913	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.440e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+04	11.00	N/A	0.222
Perchlorate conf	6.620e+03	11.00	N/A	0.244

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

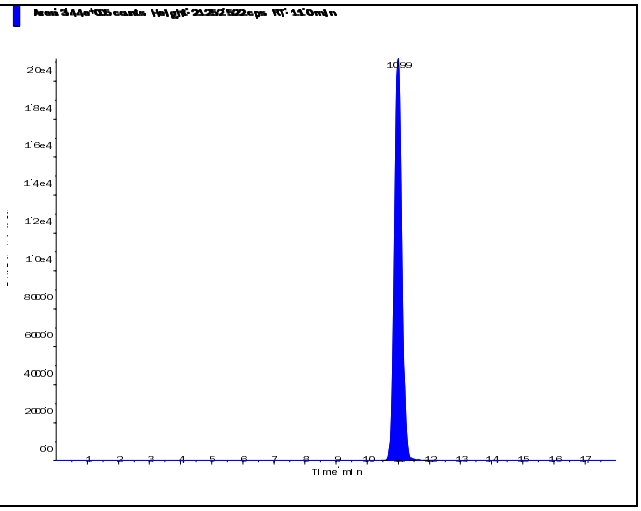

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.00 (11.00) min Calculated conc: 0.222 ng/ml Area Ratio: 0.049 Sample Type: (Unknown)	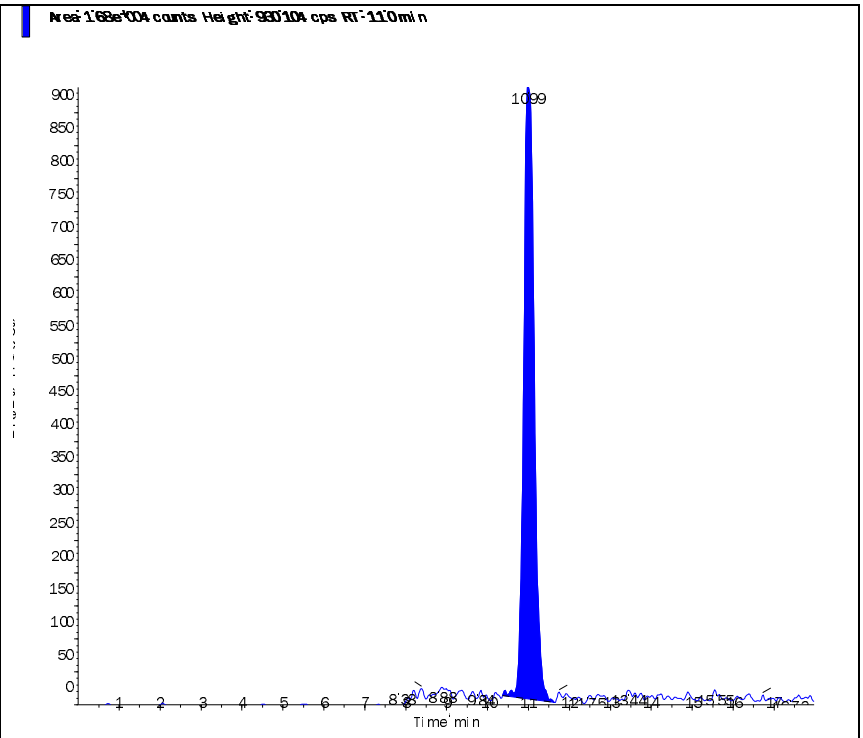
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.00 (11.00) min Calculated conc: 0.244 ng/ml Area Ratio: 0.019 Sample Type: (Unknown)	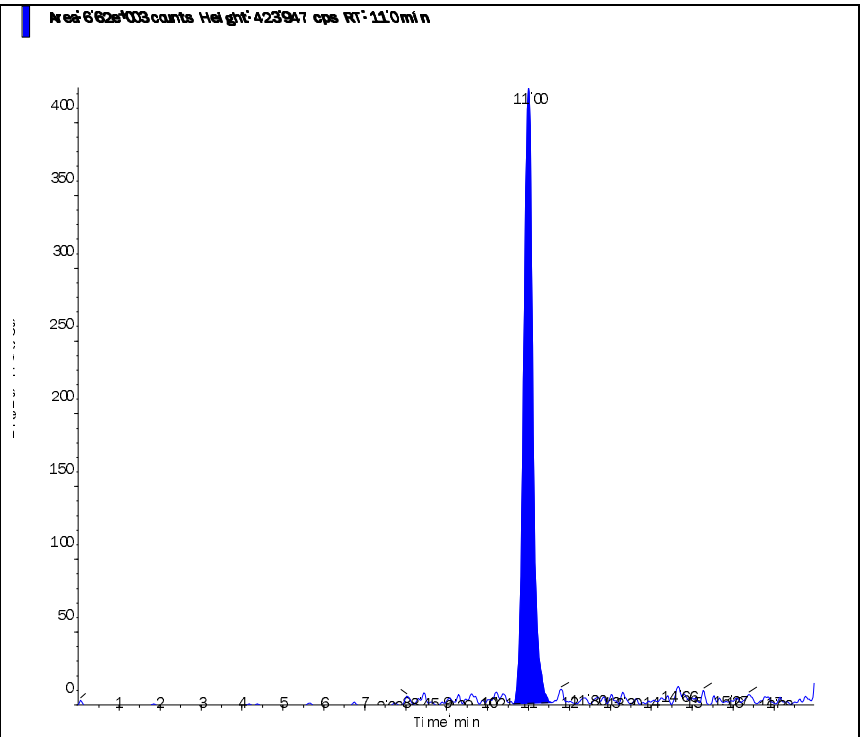

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Printed: 6/2/2015 4:08 PM

Data File	LM29990.wiff	**Result Table**	060115_JWR.rdb
Acquisition Date	6/2/2015 4:38:52 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15051620-20	**Injection Vial**	29.00
Data File	LM29990.wiff	**Injection Volume**	10.00
Acquisition Date	6/2/2015 4:38:52 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060115_JWR.rdb
Sample ID	L15051620-20	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.670e+05	10.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.410e+03	10.90	N/A	0.0109
Perchlorate conf	5.270e+02	10.80	N/A	0.0004

O18LP (Internal Standard)

RT (Exp. RT): 10.80(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

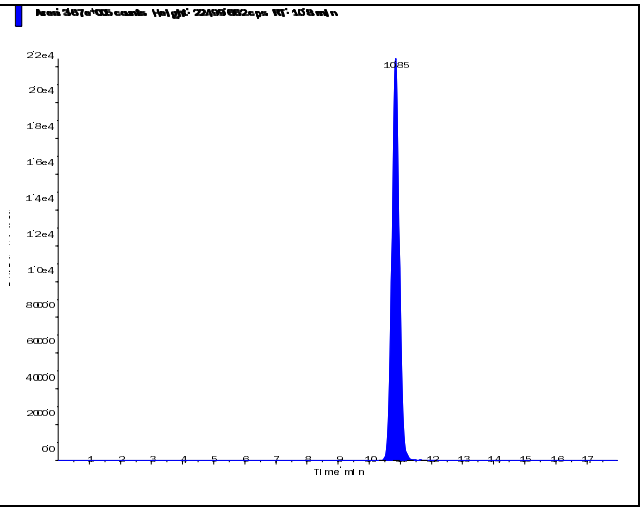

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.90 (11.00) min
Calculated conc:	0.0109 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)

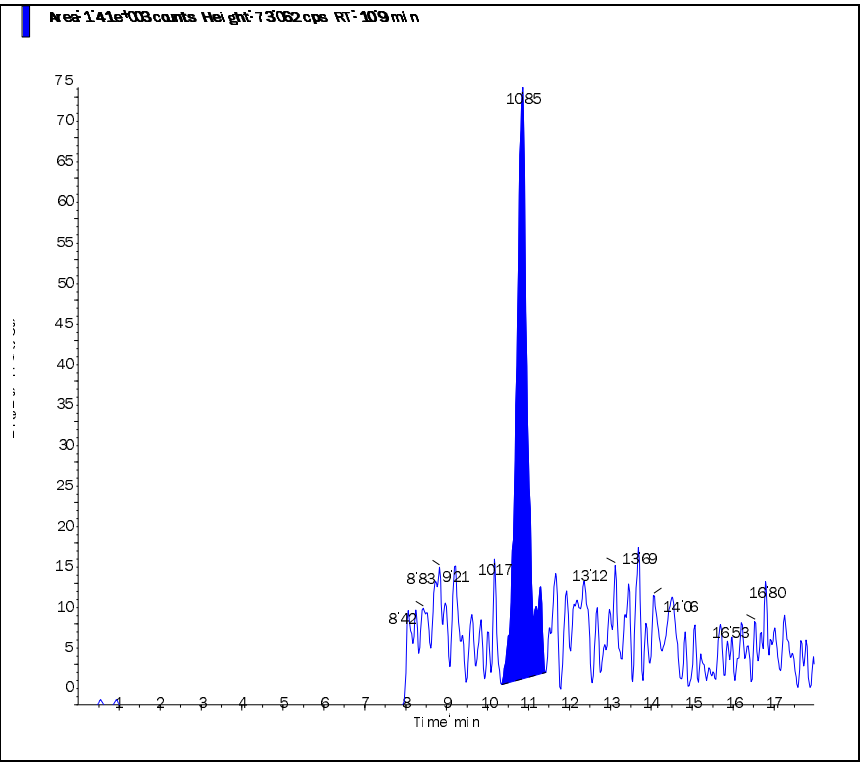

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.80 (11.00) min
Calculated conc:	0.0004 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

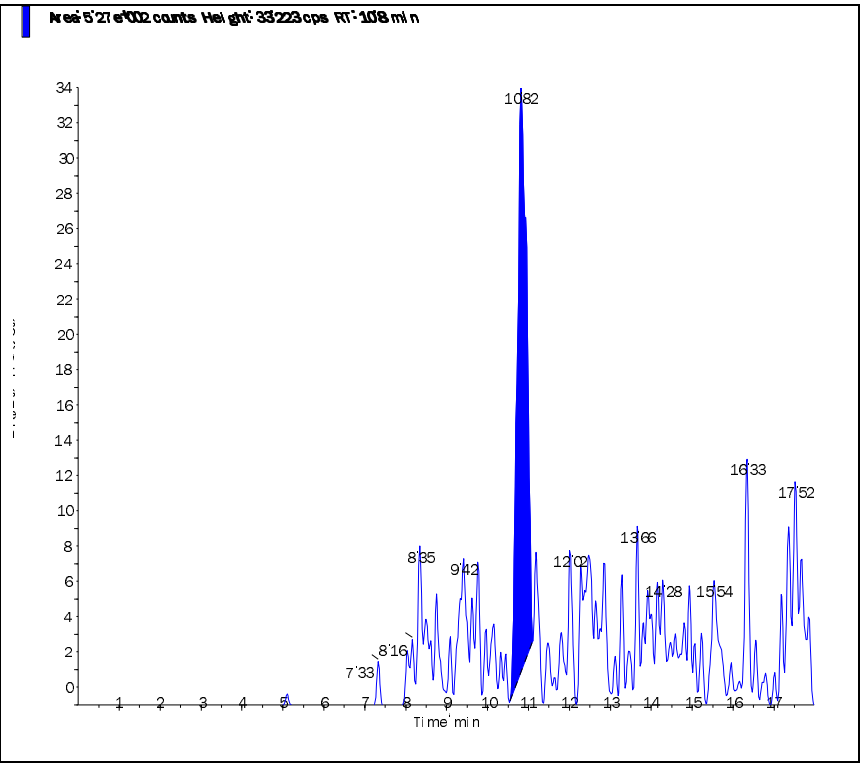

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Created with Analyst Reporter
Printed: 6/2/2015 4:09 PM

Data File	LM29991.wiff	**Result Table**	060115_JWR.rdb
Acquisition Date	6/2/2015 4:57:46 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15051620-21	**Injection Vial**	30.00
Data File	LM29991.wiff	**Injection Volume**	10.00
Acquisition Date	6/2/2015 4:57:46 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060115_JWR.rdb
Sample ID	L15051620-21	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.960e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.830e+04	11.00	N/A	1.04
Perchlorate conf	3.180e+04	11.00	N/A	1.08

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

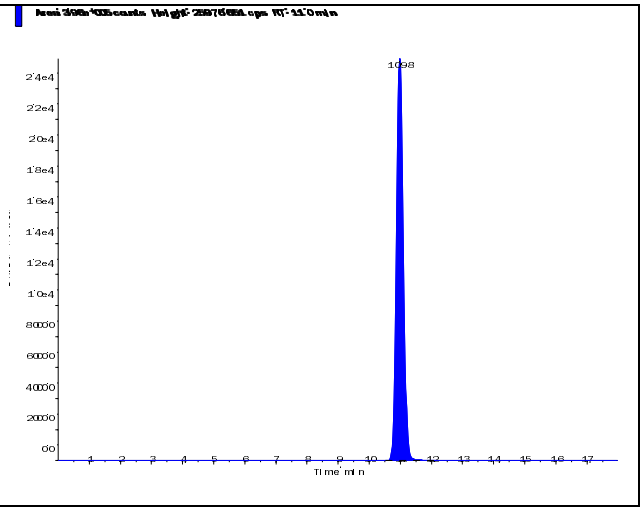

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.00 (11.00) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.223
Sample Type:	(Unknown)

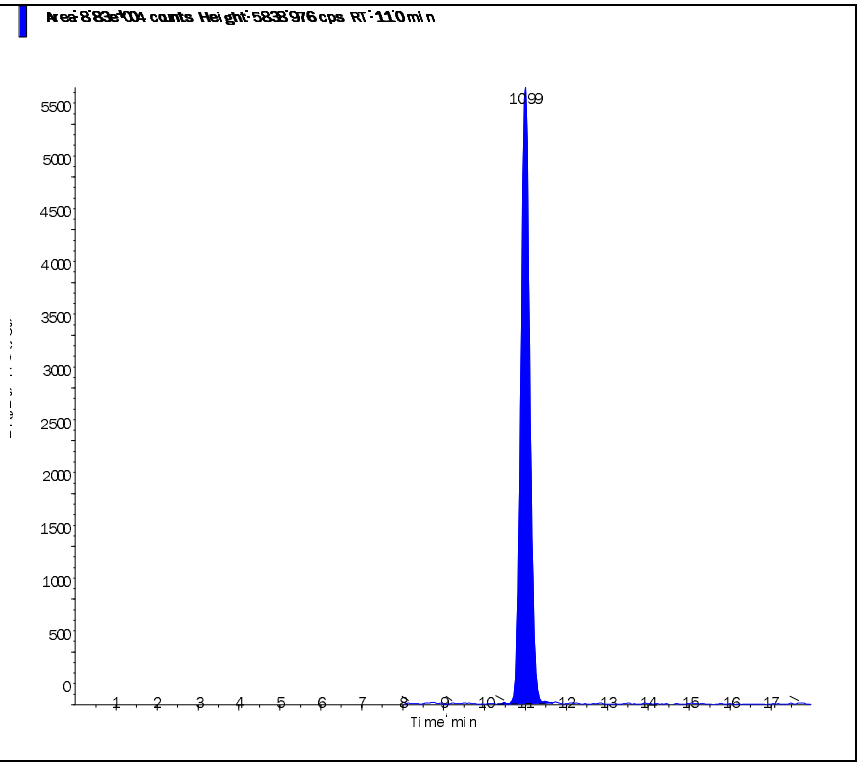

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.00 (11.00) min
Calculated conc:	1.08 ng/ml
Area Ratio:	0.08
Sample Type:	(Unknown)

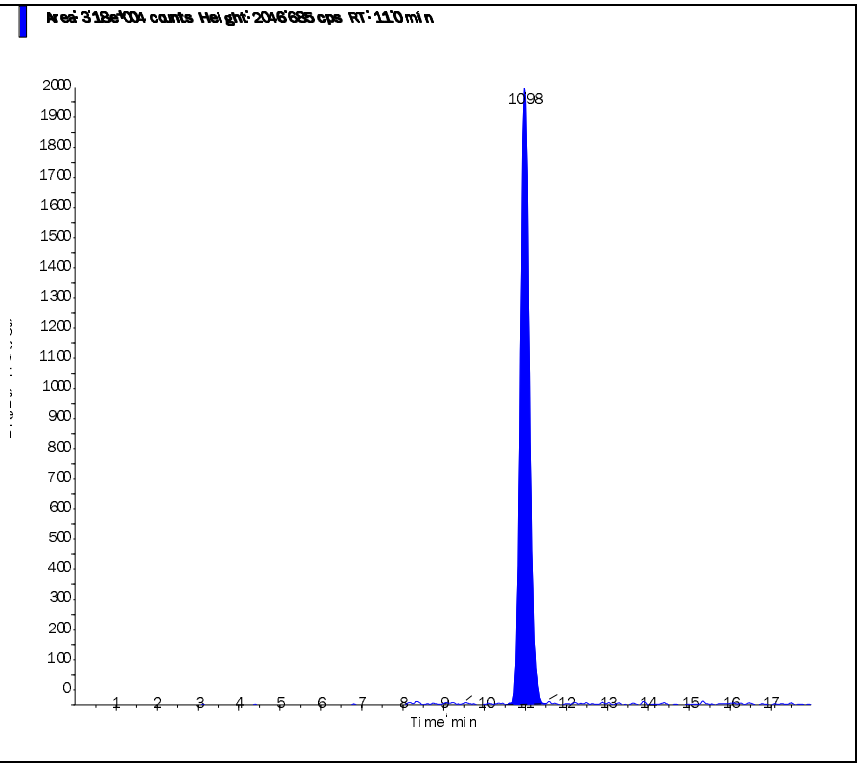

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Data File	LM29992.wiff	**Result Table**	060115_JWR.rdb
Acquisition Date	6/2/2015 5:16:43 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15051620-22	**Injection Vial**	31.00
Data File	LM29992.wiff	**Injection Volume**	10.00
Acquisition Date	6/2/2015 5:16:43 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060115_JWR.rdb
Sample ID	L15051620-22	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.670e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.260e+04	11.00	N/A	1.05
Perchlorate conf	2.840e+04	11.00	N/A	1.04

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

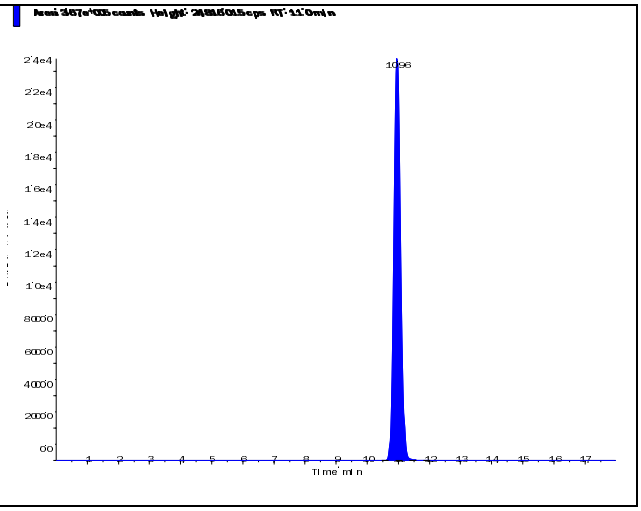

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.00 (11.00) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.225
Sample Type:	(Unknown)

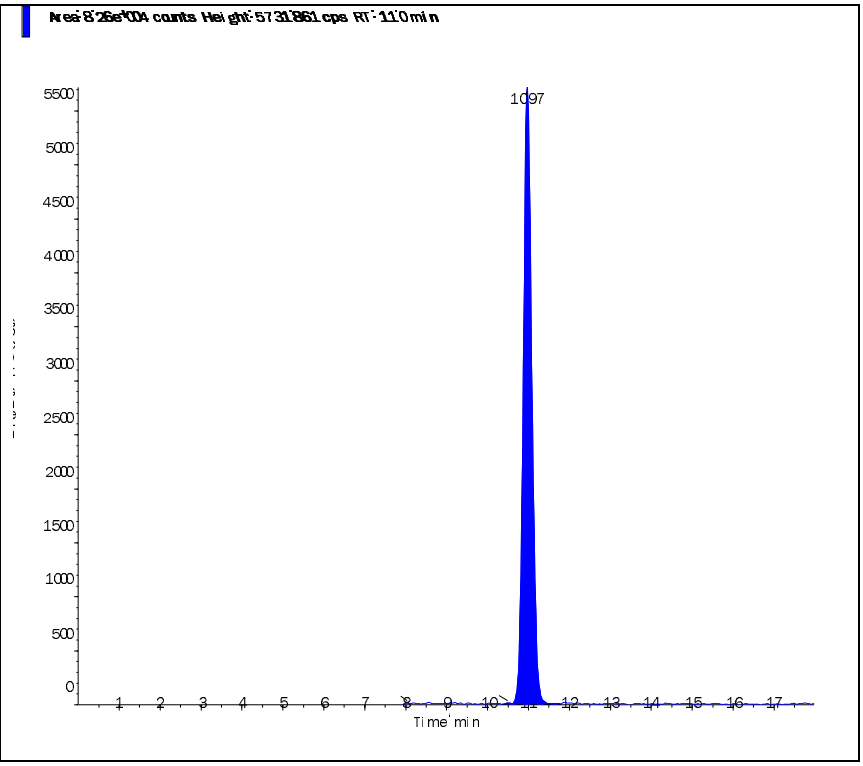

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.00 (11.00) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.077
Sample Type:	(Unknown)

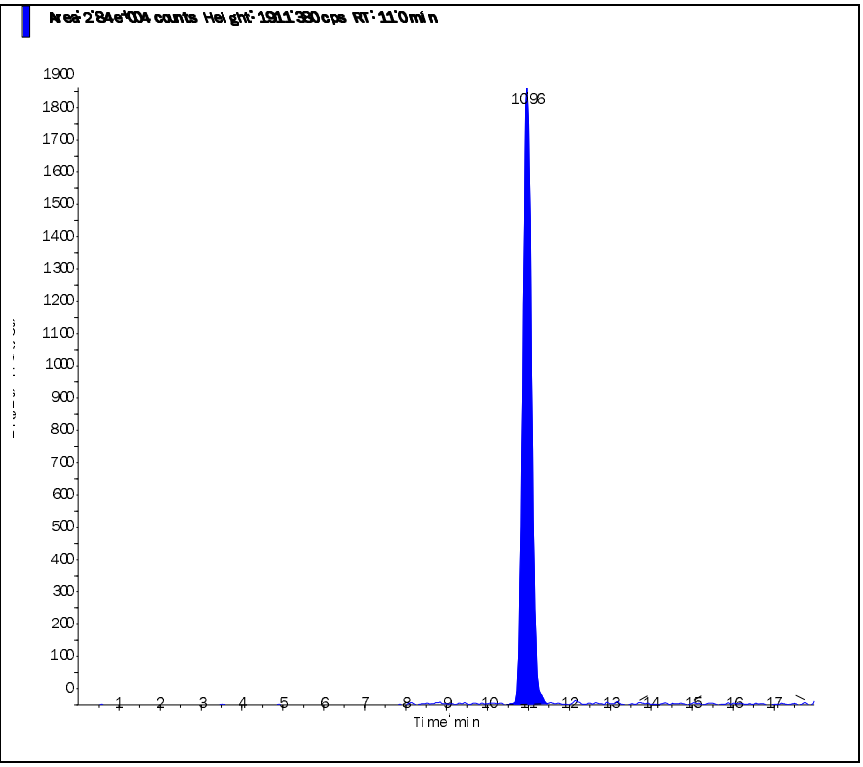

2.2.1.4 Standards Data

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Printed: 6/4/2015 10:29 AM

Data File	LM29953.wiff	**Result Table**	060315_JWR.rdb
Acquisition Date	6/1/2015 4:59:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525828-01 CCB	**Injection Vial**	1.00
Data File	LM29953.wiff	**Injection Volume**	10.00
Acquisition Date	6/1/2015 4:59:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060315_JWR.rdb
Sample ID	WG525828-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.870e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.570e+02	11.00	N/A	0.0005
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.00) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

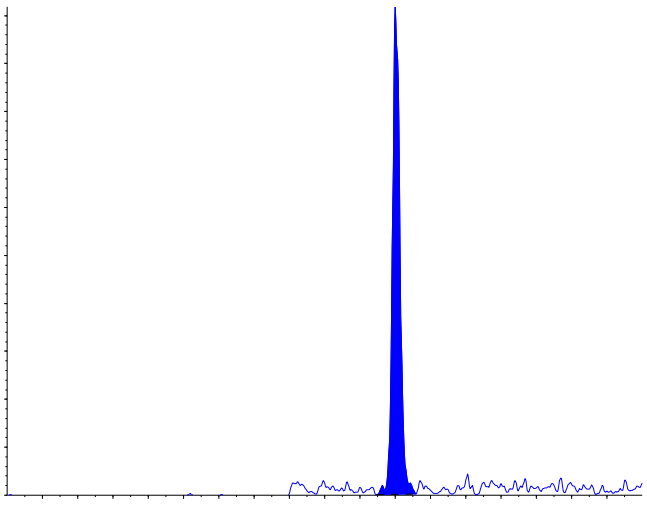

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.00 (11.00) min
Calculated conc:	0.0005 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

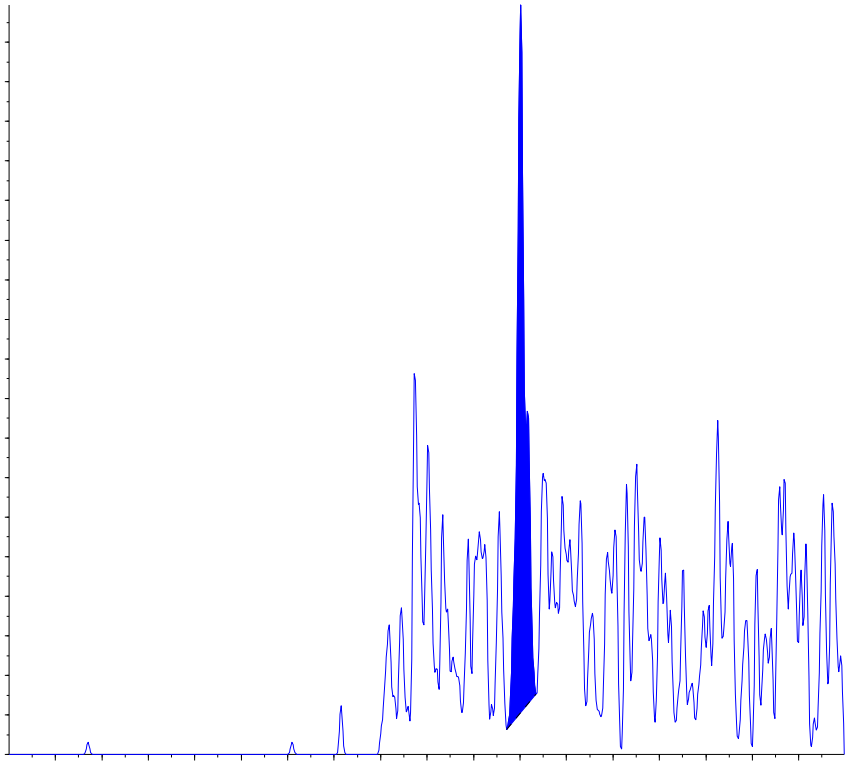

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (11.00) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

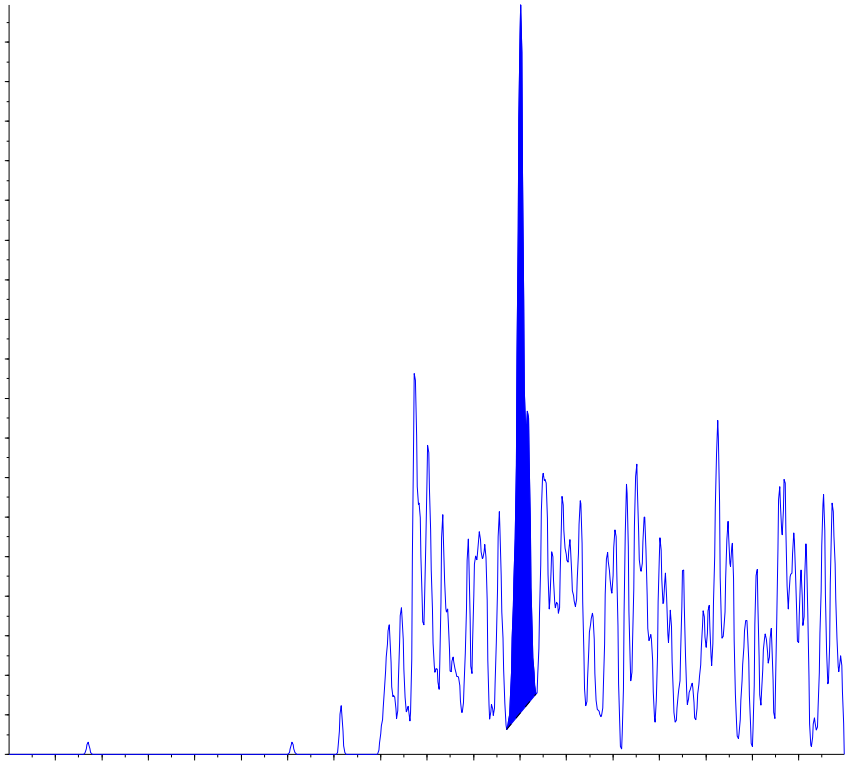

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Created with Analyst Reporter
Printed: 6/2/2015 3:55 PM

Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM29953.wiff	**Result Table**	060115_JWR.rdb
Acquisition Date	6/1/2015 4:59:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.07 x + 0.0015 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.1	N/A	N/A
0.20	1	0.20	100.0	N/A	N/A
0.50	1	0.49	98.2	N/A	N/A
1.00	1	1.00	100.1	N/A	N/A
2.00	1	2.00	100.0	N/A	N/A
5.00	1	4.95	99.1	N/A	N/A
10.00	1	10.05	100.5	N/A	N/A

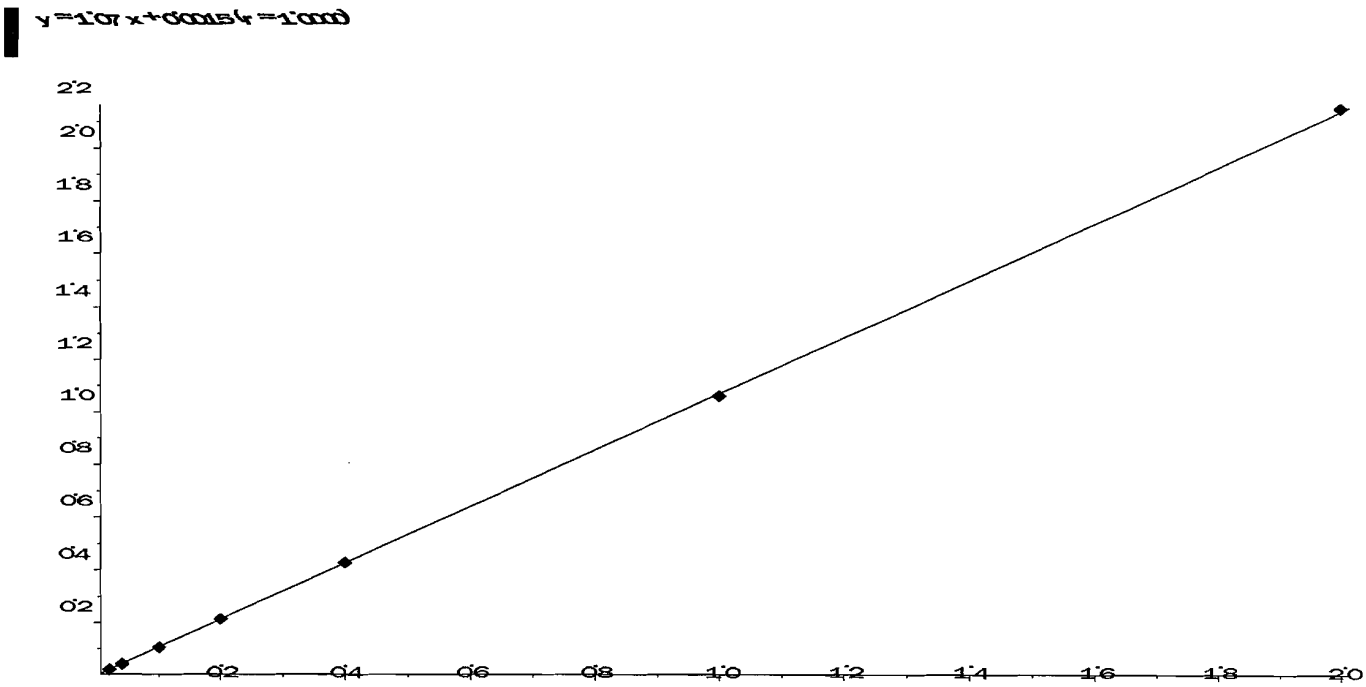

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Created with Analyst Reporter
Printed: 6/2/2015 3:55 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM29953.wiff	**Result Table**	060115_JWR.rdb
Acquisition Date	6/1/2015 4:59:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.365 x + 0.0014 (r = 0.9996)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.8	N/A	N/A
0.20	1	0.19	93.3	N/A	N/A
0.50	1	0.46	92.7	N/A	N/A
1.00	1	1.07	106.6	N/A	N/A
2.00	1	2.04	102.2	N/A	N/A
5.00	1	5.10	102.1	N/A	N/A
10.00	1	9.83	98.3	N/A	N/A

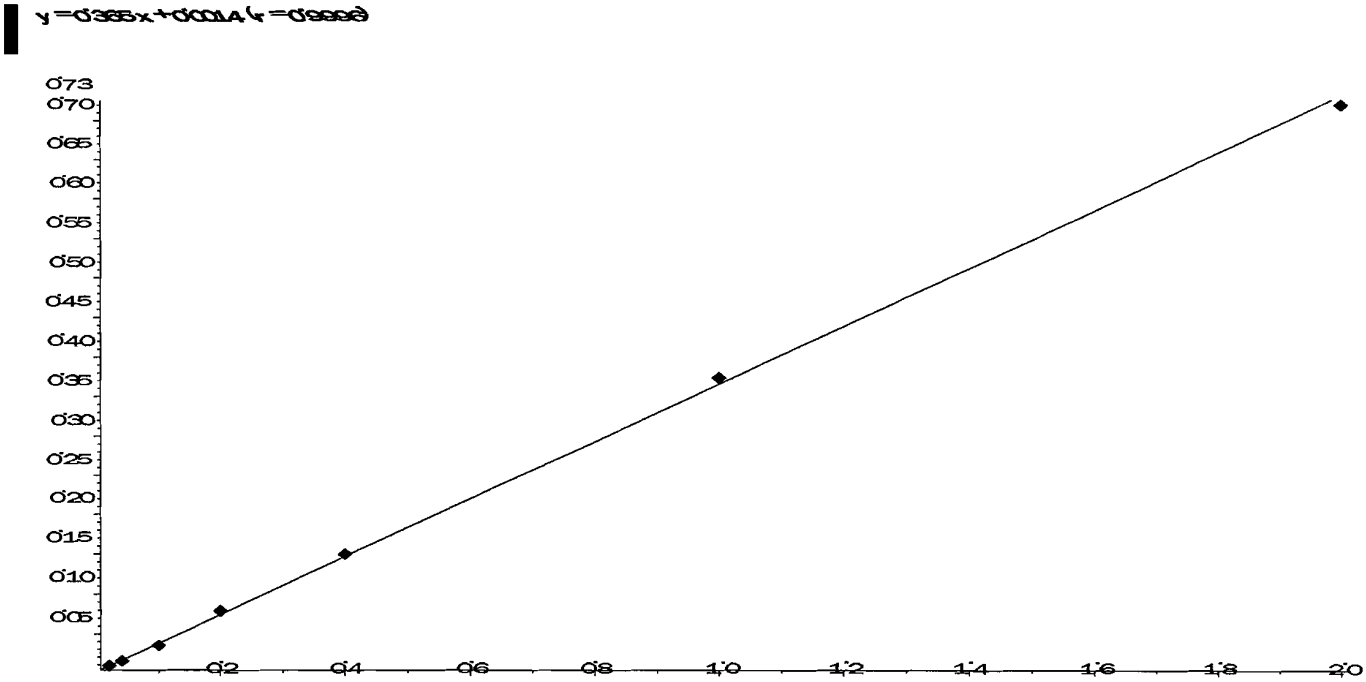

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Printed: 6/4/2015 10:29 AM

Data File	LM29954.wiff	**Result Table**	060315_JWR.rdb
Acquisition Date	6/1/2015 5:18:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525828-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM29954.wiff	**Injection Volume**	10.00
Acquisition Date	6/1/2015 5:18:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	060315_JWR.rdb
Sample ID	WG525828-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.260e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.580e+03	11.00	0.10	0.102
Perchlorate conf	2.950e+03	11.00	0.10	0.105

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

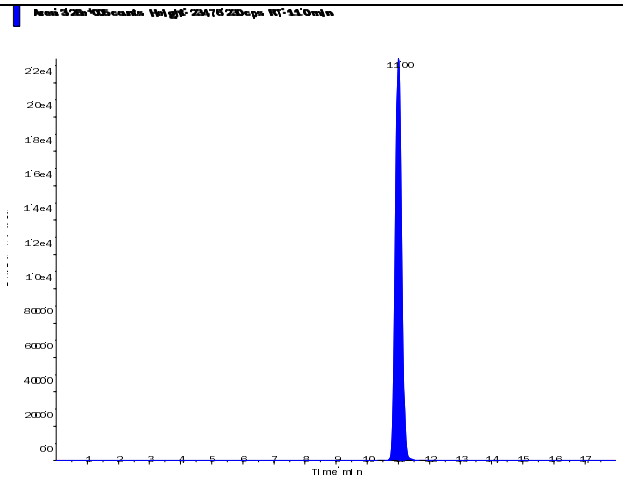

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.00 (11.00) min Calculated conc: 0.102 ng/ml Area Ratio: 0.023 Sample Type: (Standard)	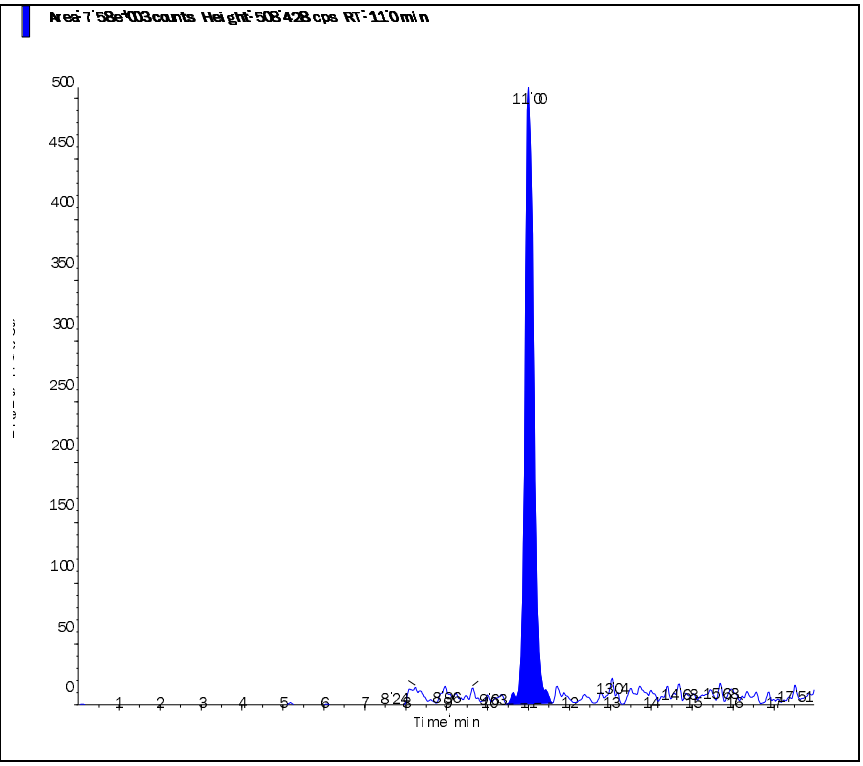
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.00 (11.00) min Calculated conc: 0.105 ng/ml Area Ratio: 0.009 Sample Type: (Standard)	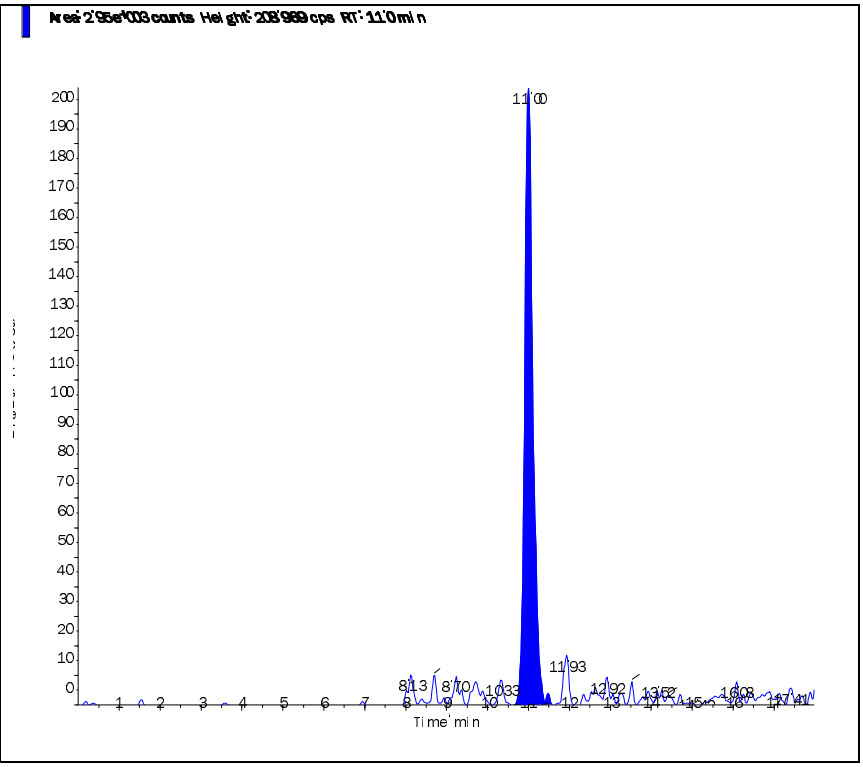

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Printed: 6/4/2015 10:29 AM

Data File	LM29955.wiff	**Result Table**	060315_JWR.rdb
Acquisition Date	6/1/2015 5:36:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525828-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM29955.wiff	**Injection Volume**	10.00
Acquisition Date	6/1/2015 5:36:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	060315_JWR.rdb
Sample ID	WG525828-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.440e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.520e+04	11.00	0.20	0.20
Perchlorate conf	5.160e+03	11.00	0.20	0.187

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

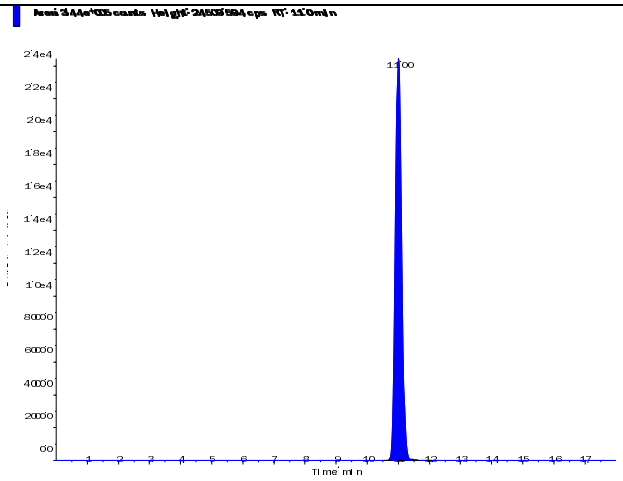

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Printed: 6/4/2015 10:29 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.00 (11.00) min
Calculated conc:	0.20 ng/ml
Area Ratio:	0.044
Sample Type:	(Standard)

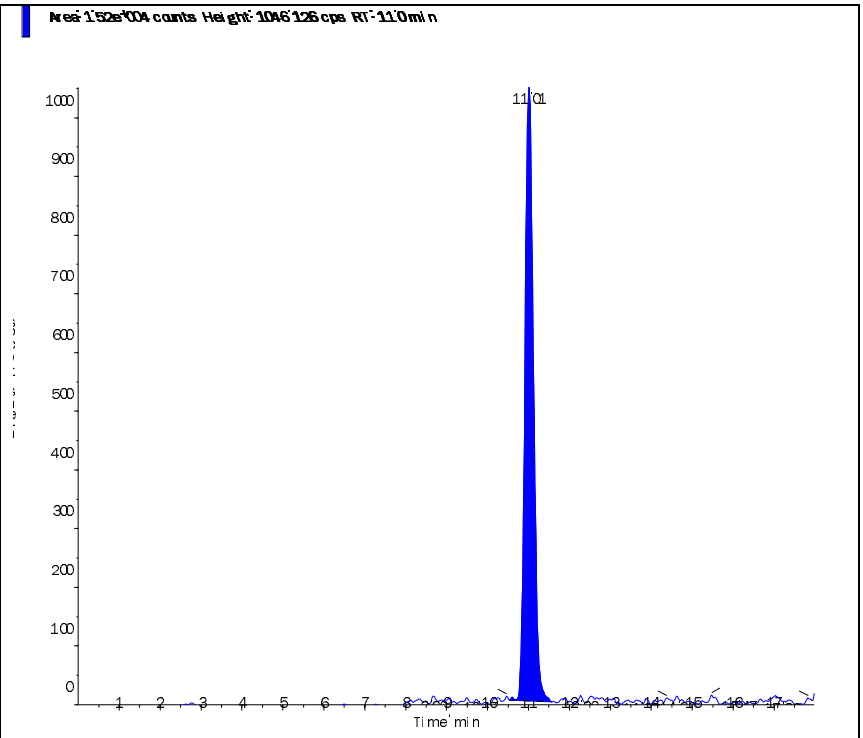

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.00 (11.00) min
Calculated conc:	0.187 ng/ml
Area Ratio:	0.015
Sample Type:	(Standard)

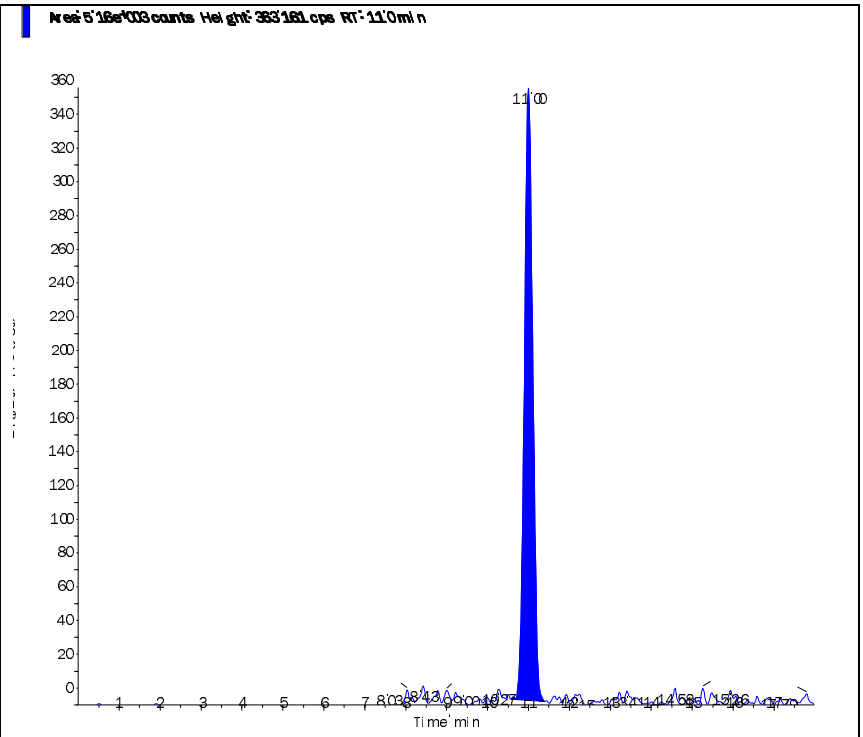

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Created with Analyst Reporter
Printed: 6/4/2015 10:30 AM

Data File	LM29956.wiff	**Result Table**	060315_JWR.rdb
Acquisition Date	6/1/2015 5:55:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525828-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM29956.wiff	**Injection Volume**	10.00
Acquisition Date	6/1/2015 5:55:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	060315_JWR.rdb
Sample ID	WG525828-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.370e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.580e+04	11.00	0.50	0.491
Perchlorate conf	1.190e+04	11.00	0.50	0.464

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

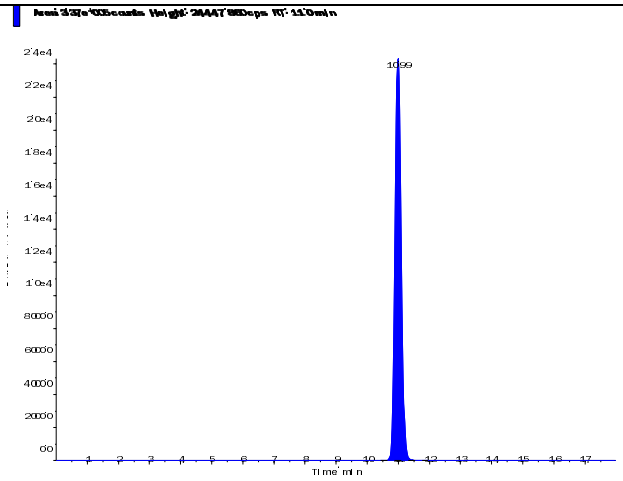

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.00 (11.00) min Calculated conc: 0.491 ng/ml Area Ratio: 0.106 Sample Type: (Standard)	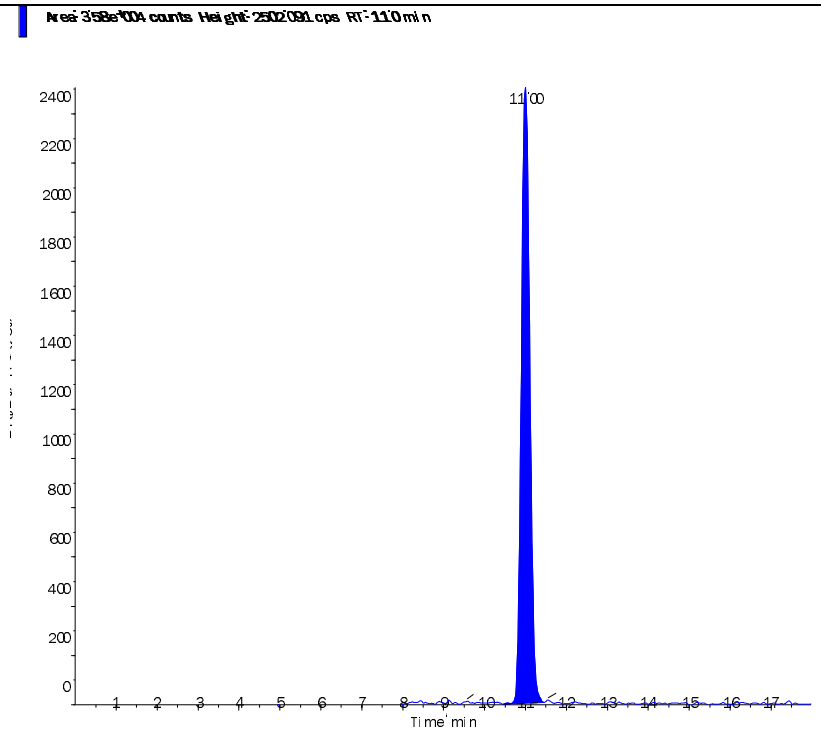
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.00 (11.00) min Calculated conc: 0.464 ng/ml Area Ratio: 0.035 Sample Type: (Standard)	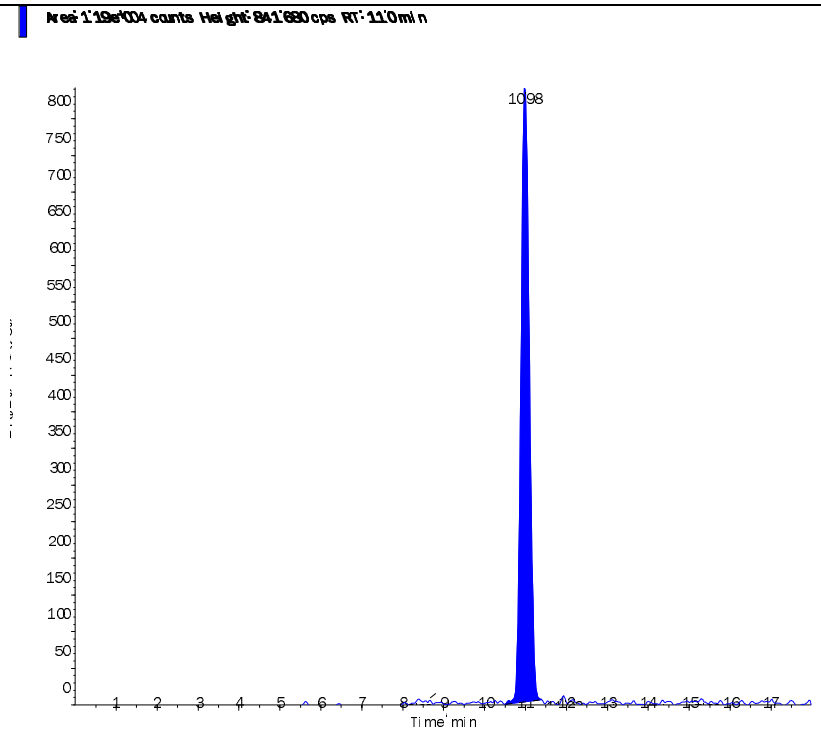

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Data File	LM29957.wiff	**Result Table**	060315_JWR.rdb
Acquisition Date	6/1/2015 6:14:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525828-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM29957.wiff	**Injection Volume**	10.00
Acquisition Date	6/1/2015 6:14:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	060315_JWR.rdb
Sample ID	WG525828-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.490e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.500e+04	11.00	1.00	1.00
Perchlorate conf	2.760e+04	11.00	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

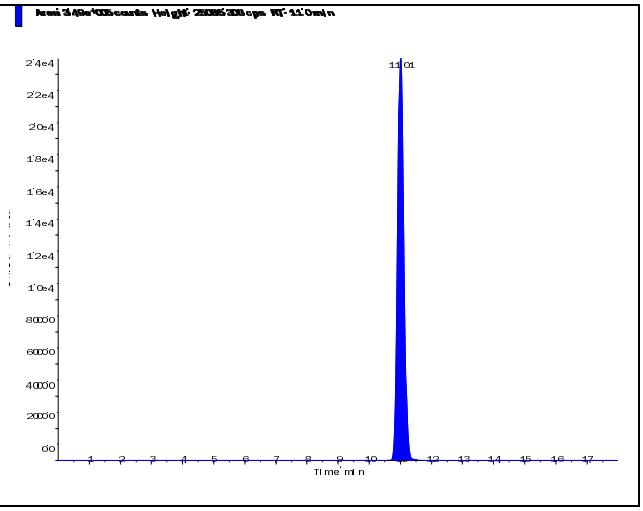

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.00 (11.00) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.215
Sample Type:	(Standard)

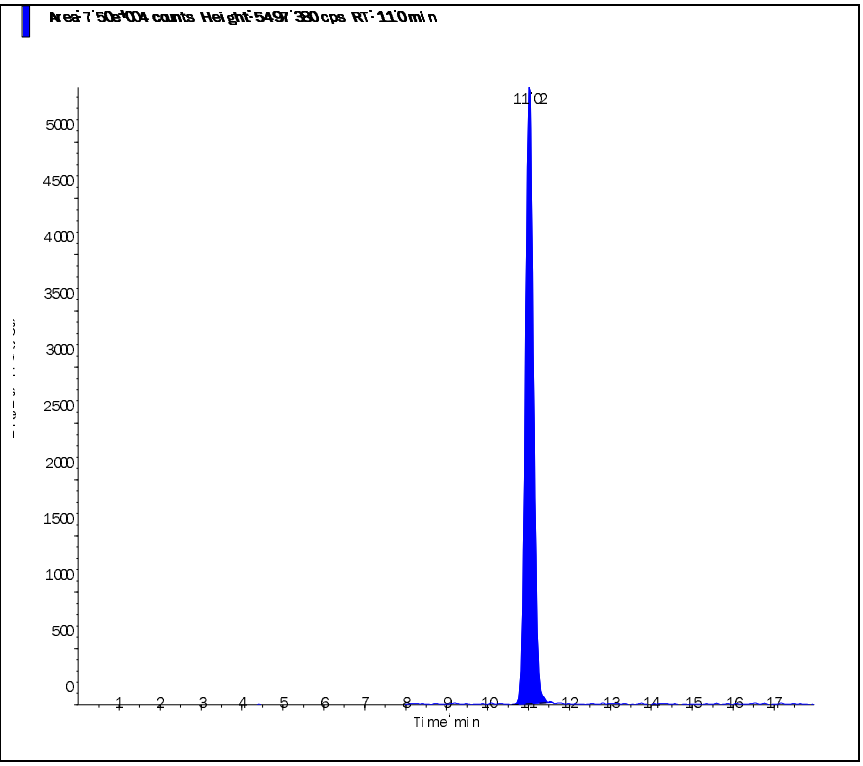

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.00 (11.00) min
Calculated conc:	1.07 ng/ml
Area Ratio:	0.079
Sample Type:	(Standard)

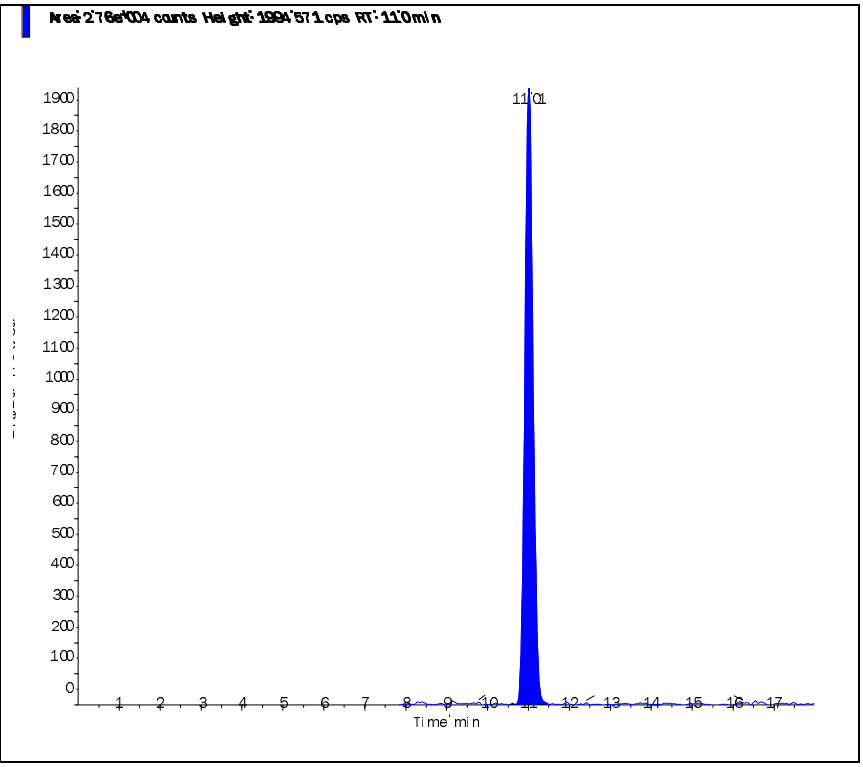

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Data File	LM29958.wiff	**Result Table**	060315_JWR.rdb
Acquisition Date	6/1/2015 6:33:44 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525828-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM29958.wiff	**Injection Volume**	10.00
Acquisition Date	6/1/2015 6:33:44 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	060315_JWR.rdb
Sample ID	WG525828-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.360e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.440e+05	11.00	2.00	2.00
Perchlorate conf	5.060e+04	11.00	2.00	2.04

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

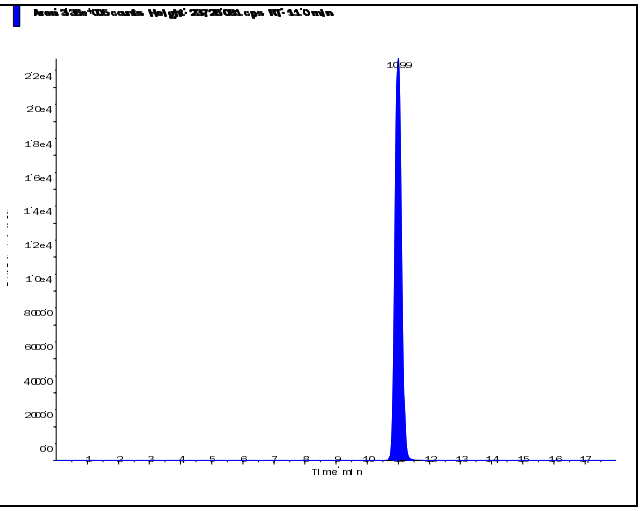

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.00 (11.00) min Calculated conc: 2.00 ng/ml Area Ratio: 0.429 Sample Type: (Standard)	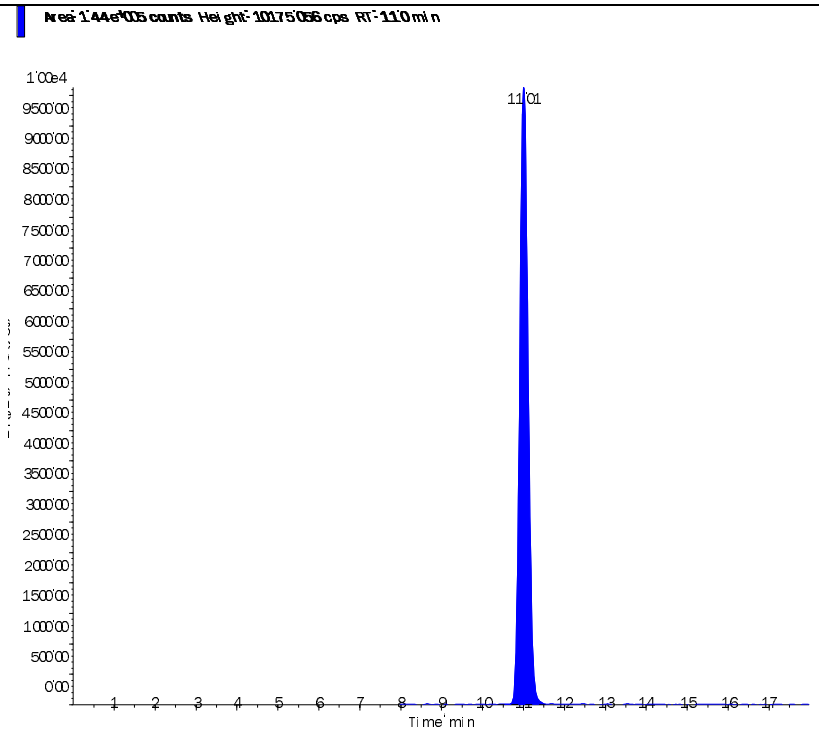
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.00 (11.00) min Calculated conc: 2.04 ng/ml Area Ratio: 0.15 Sample Type: (Standard)	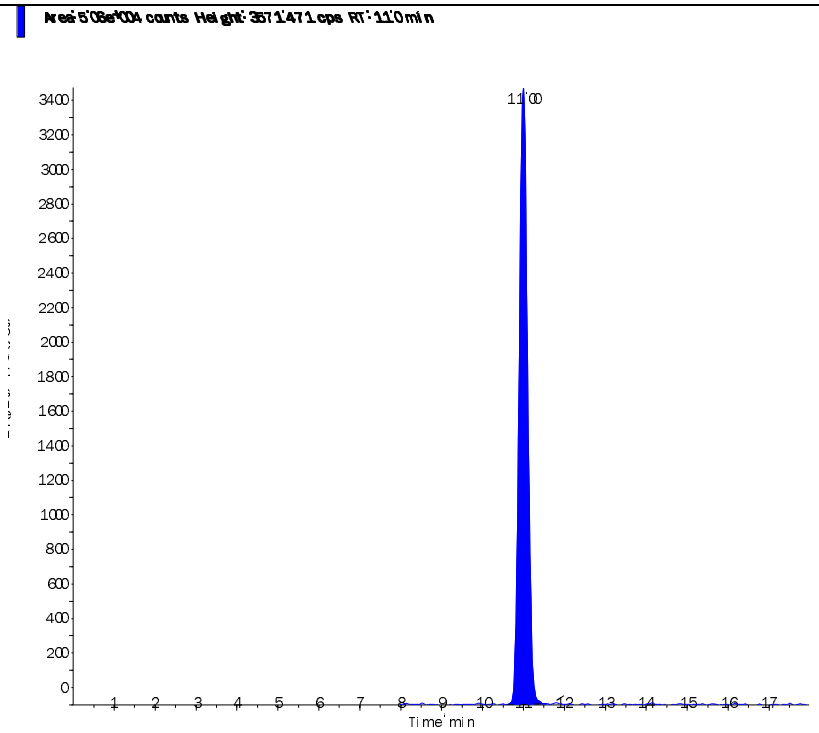

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Data File	LM29959.wiff	**Result Table**	060315_JWR.rdb
Acquisition Date	6/1/2015 6:52:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525828-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM29959.wiff	**Injection Volume**	10.00
Acquisition Date	6/1/2015 6:52:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	060315_JWR.rdb
Sample ID	WG525828-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.240e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.430e+05	11.00	5.00	4.95
Perchlorate conf	1.210e+05	11.00	5.00	5.10

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

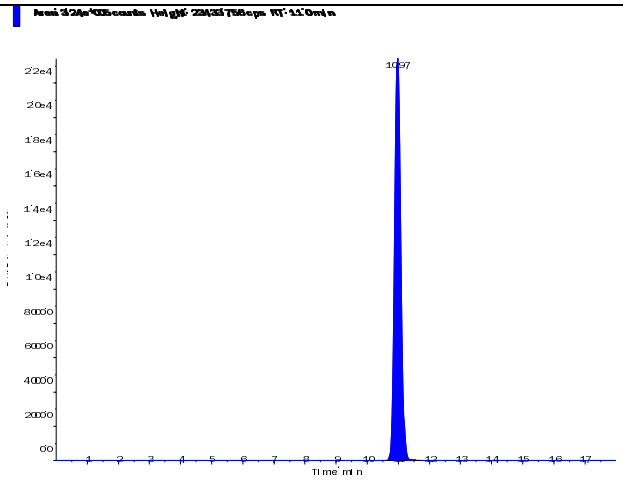

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.00 (11.00) min Calculated conc: 4.95 ng/ml Area Ratio: 1.059 Sample Type: (Standard)	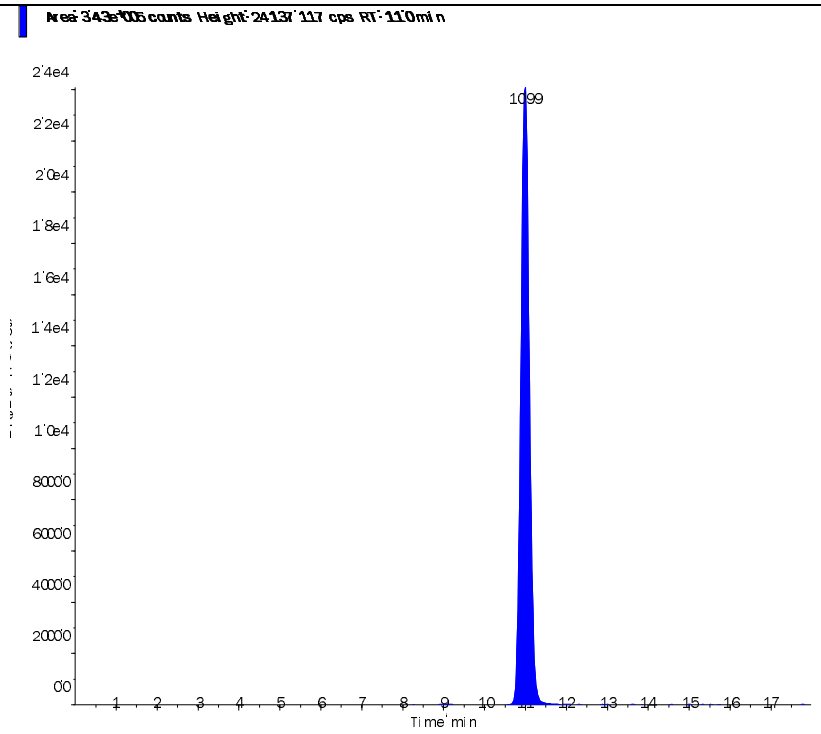
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.00 (11.00) min Calculated conc: 5.10 ng/ml Area Ratio: 0.374 Sample Type: (Standard)	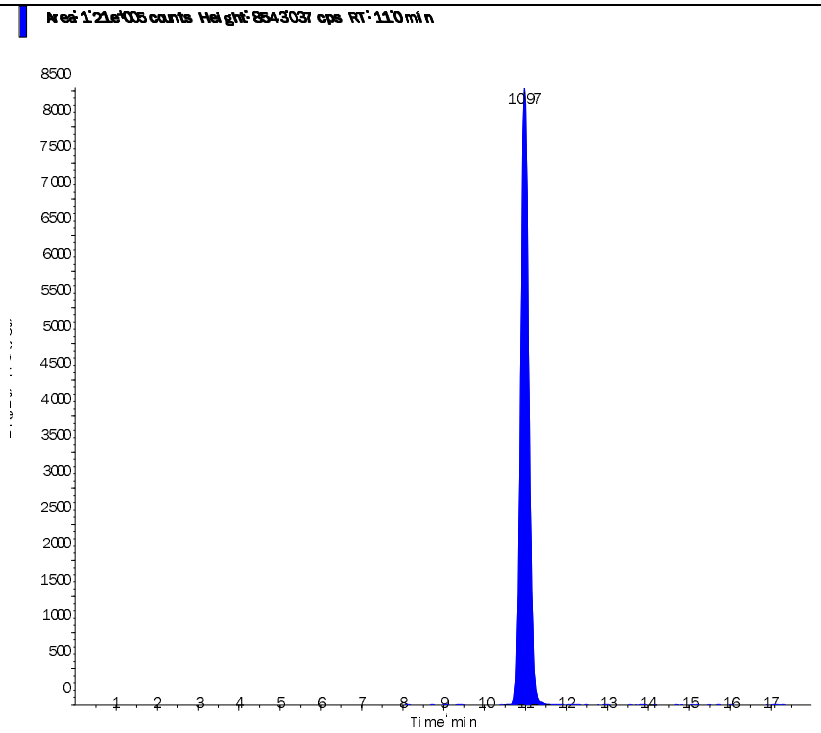

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Data File	LM29960.wiff	**Result Table**	060315_JWR.rdb
Acquisition Date	6/1/2015 7:11:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525828-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM29960.wiff	**Injection Volume**	10.00
Acquisition Date	6/1/2015 7:11:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	060315_JWR.rdb
Sample ID	WG525828-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.120e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	6.690e+05	11.00	10.00	10.10
Perchlorate conf	2.240e+05	11.00	10.00	9.83

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

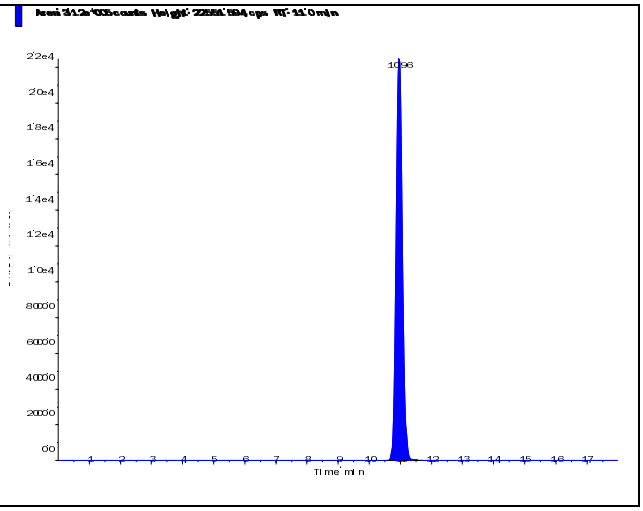

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.00 (11.00) min
Calculated conc:	10.10 ng/ml
Area Ratio:	2.147
Sample Type:	(Standard)

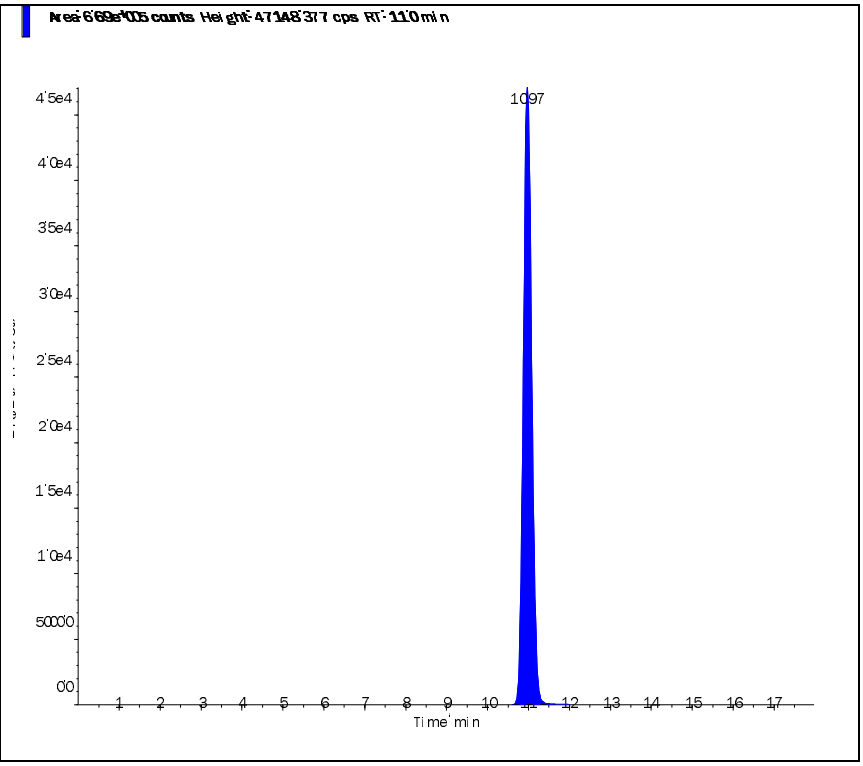

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.00 (11.00) min
Calculated conc:	9.83 ng/ml
Area Ratio:	0.719
Sample Type:	(Standard)

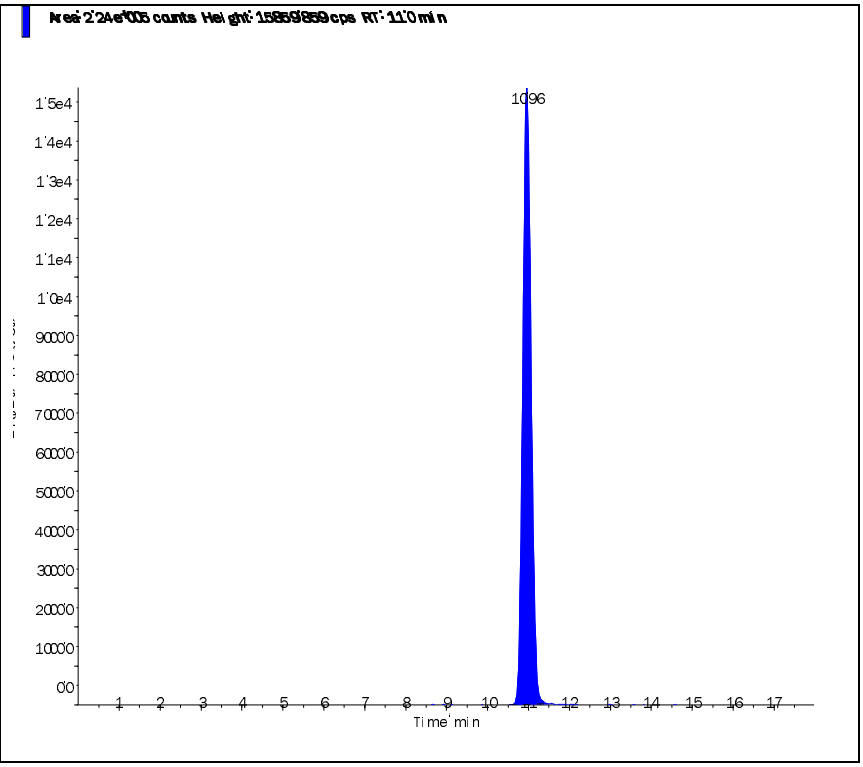

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Printed: 6/2/2015 3:59 PM

Data File	LM29961.wiff	**Result Table**	060115_JWR.rdb
Acquisition Date	6/1/2015 7:30:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525828-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM29961.wiff	**Injection Volume**	10.00
Acquisition Date	6/1/2015 7:30:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	060115_JWR.rdb
Sample ID	WG525828-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD69913	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.390e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.050e+04	11.00	1.00	0.966
Perchlorate conf	2.540e+04	11.00	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

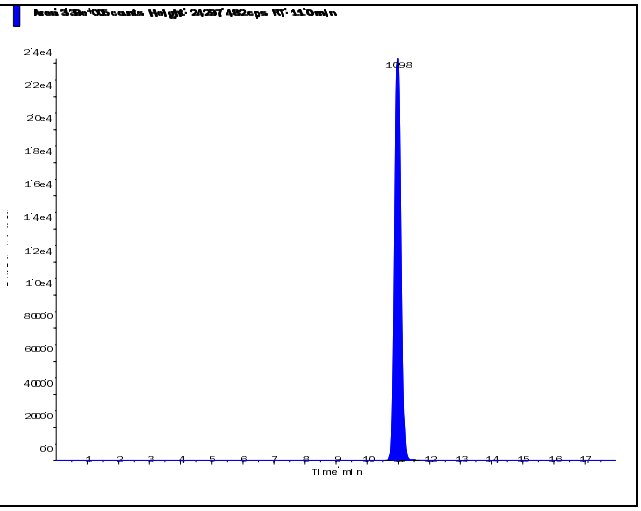

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.00 (11.00) min Calculated conc: 0.966 ng/ml Area Ratio: 0.208 Sample Type: (Quality Control)	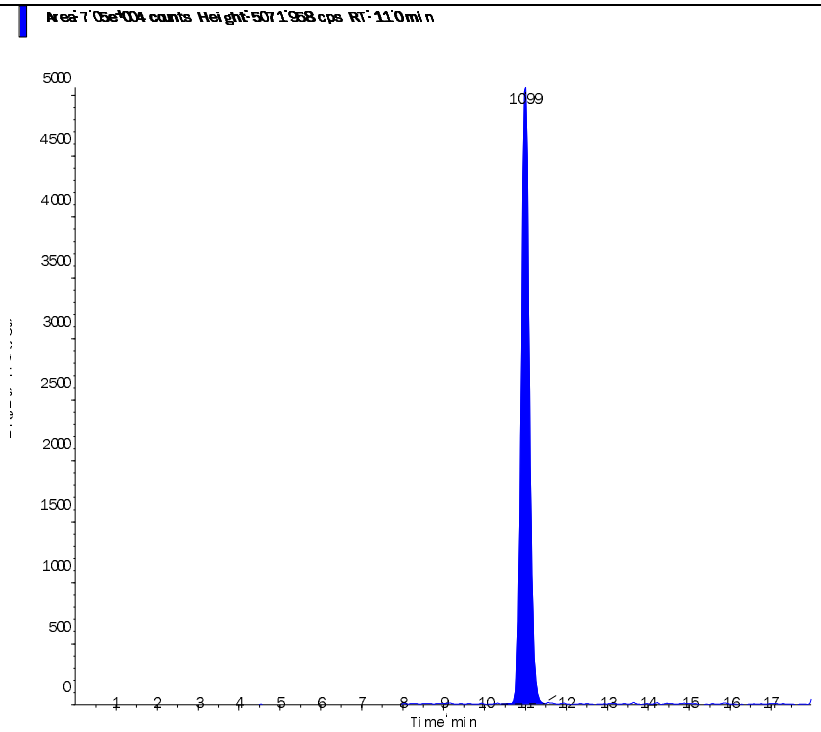
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.00 (11.00) min Calculated conc: 1.01 ng/ml Area Ratio: 0.075 Sample Type: (Quality Control)	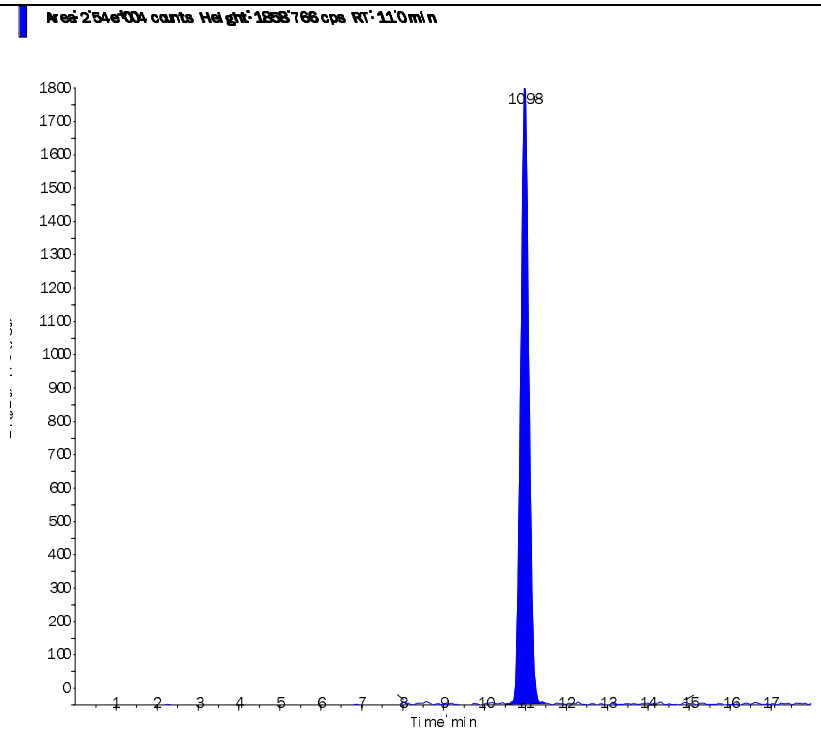

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Data File	LM29963.wiff	**Result Table**	060115_JWR.rdb
Acquisition Date	6/1/2015 8:08:31 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525763-02 CCV (1.0ug/L)	**Injection Vial**	5.00
Data File	LM29963.wiff	**Injection Volume**	10.00
Acquisition Date	6/1/2015 8:08:31 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	060115_JWR.rdb
Sample ID	WG525763-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.560e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.600e+04	11.00	1.00	1.02
Perchlorate conf	1.860e+04	11.00	1.00	0.979

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

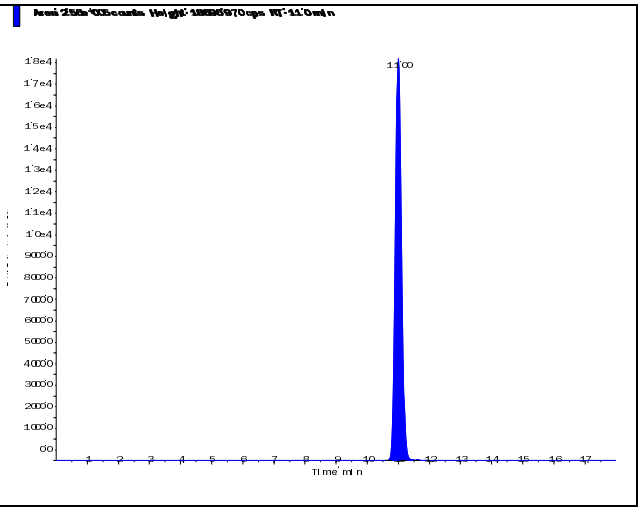

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.00 (11.00) min Calculated conc: 1.02 ng/ml Area Ratio: 0.219 Sample Type: (Quality Control)	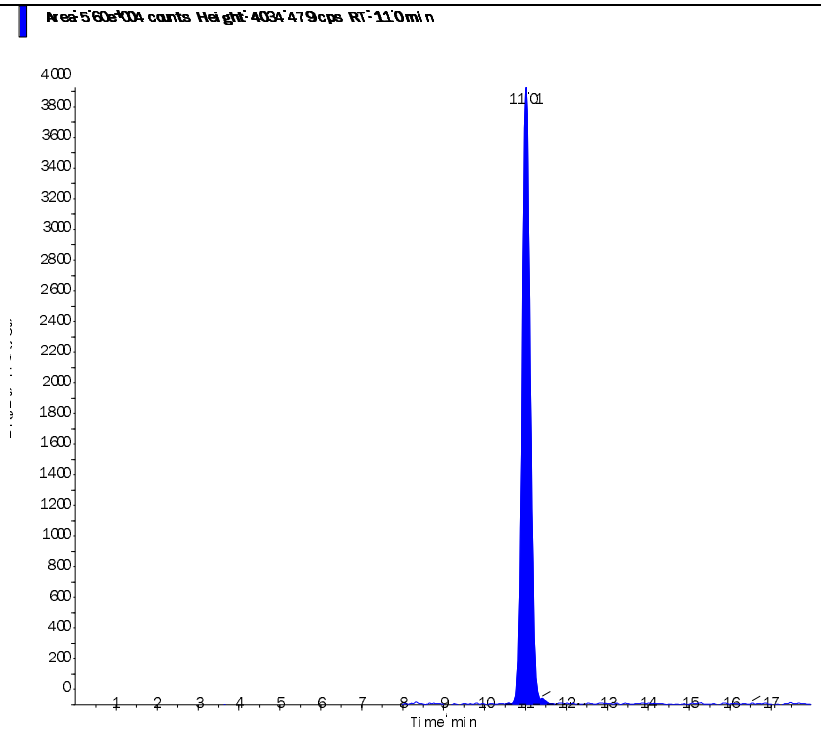
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.00 (11.00) min Calculated conc: 0.979 ng/ml Area Ratio: 0.073 Sample Type: (Quality Control)	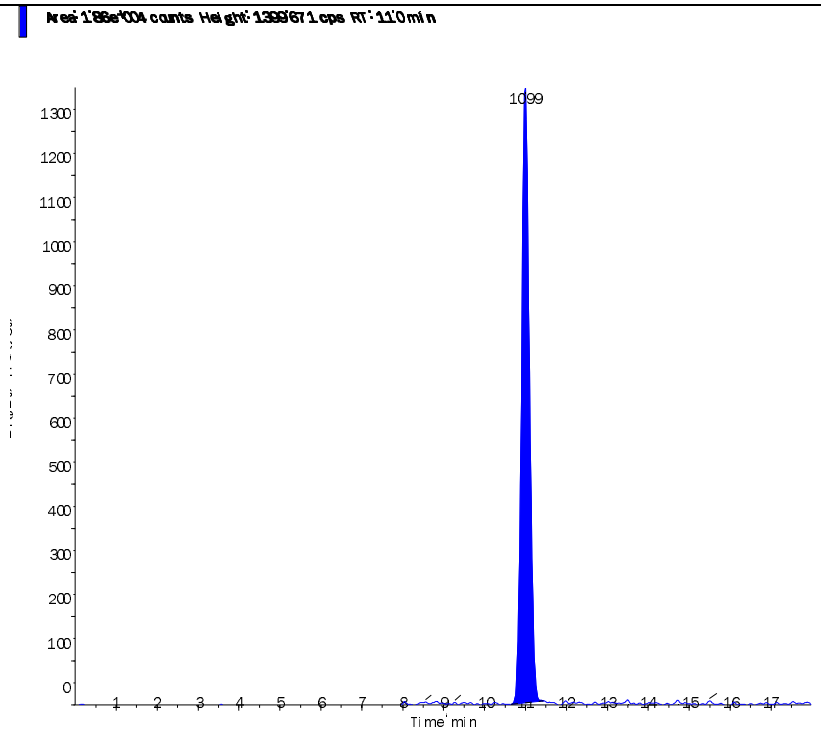

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Printed: 6/2/2015 4:03 PM

Data File	LM29975.wiff	**Result Table**	060115_JWR.rdb
Acquisition Date	6/1/2015 11:55:02 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525763-03 CCV (1.0ug/L)	**Injection Vial**	5.00
Data File	LM29975.wiff	**Injection Volume**	10.00
Acquisition Date	6/1/2015 11:55:02 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	060115_JWR.rdb
Sample ID	WG525763-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.660e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.890e+04	11.10	1.00	1.00
Perchlorate conf	2.640e+04	11.00	1.00	0.969

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

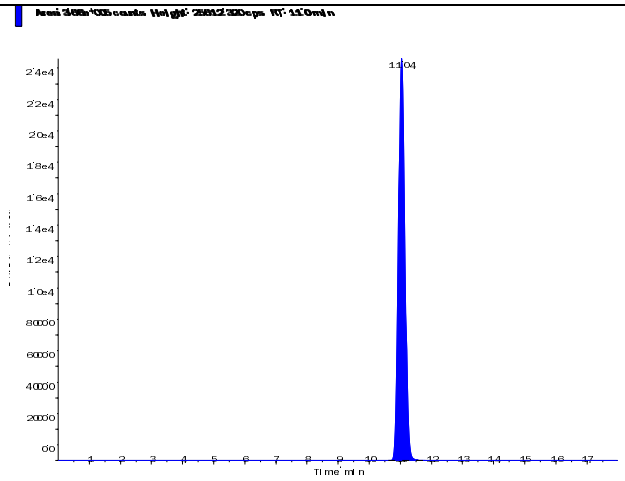

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.10 (11.00) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.216
Sample Type:	(Quality Control)

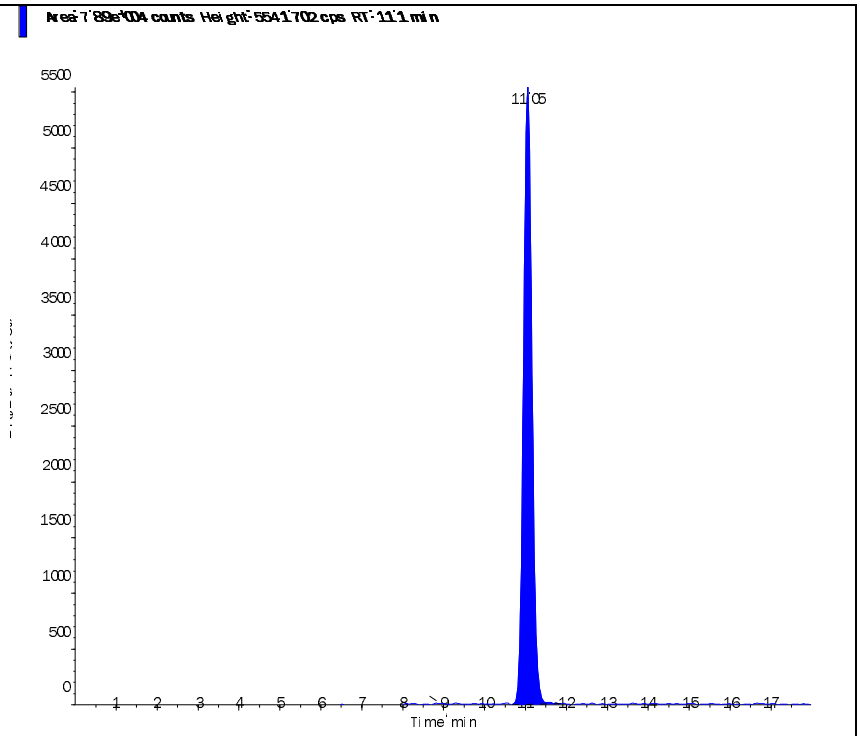

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.00 (11.00) min
Calculated conc:	0.969 ng/ml
Area Ratio:	0.072
Sample Type:	(Quality Control)

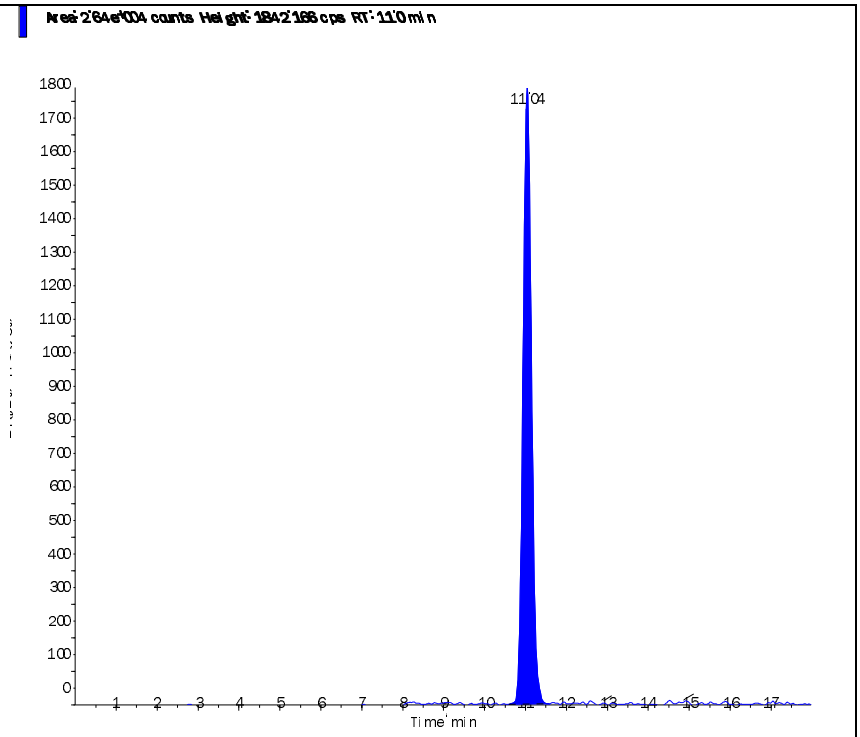

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Printed: 6/2/2015 4:07 PM

Data File	LM29987.wiff	**Result Table**	060115_JWR.rdb
Acquisition Date	6/2/2015 3:42:05 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525763-05 CCV (1.0ug/L)	**Injection Vial**	5.00
Data File	LM29987.wiff	**Injection Volume**	10.00
Acquisition Date	6/2/2015 3:42:05 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	060115_JWR.rdb
Sample ID	WG525763-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.910e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.360e+04	11.00	1.00	0.995
Perchlorate conf	2.970e+04	11.00	1.00	1.02

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

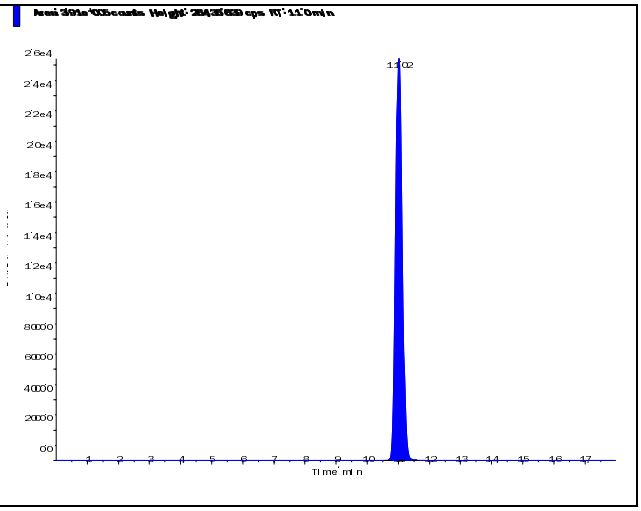

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.00 (11.00) min
Calculated conc:	0.995 ng/ml
Area Ratio:	0.214
Sample Type:	(Quality Control)

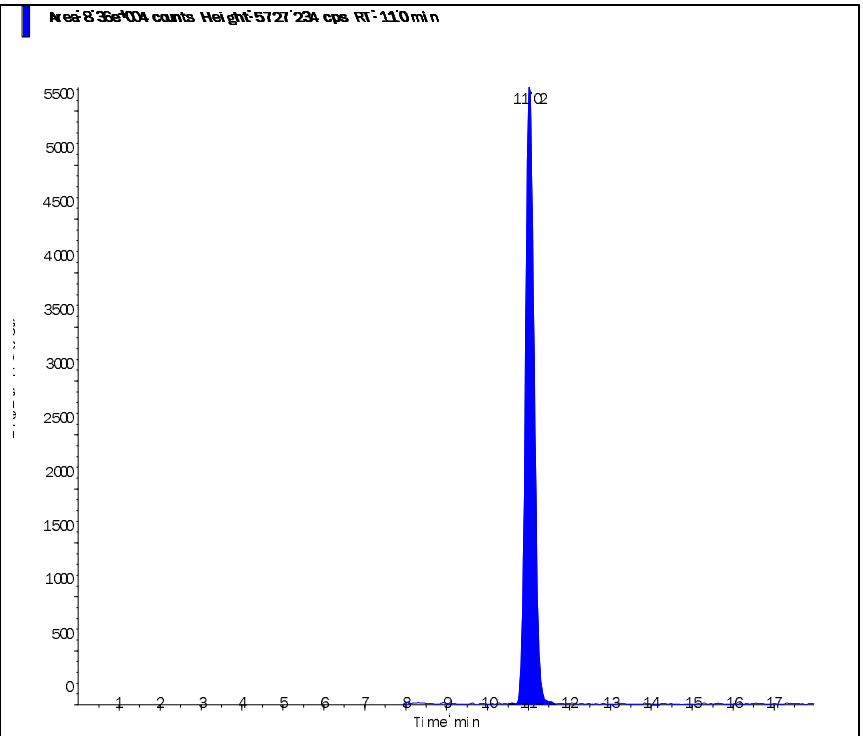

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.00 (11.00) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.076
Sample Type:	(Quality Control)

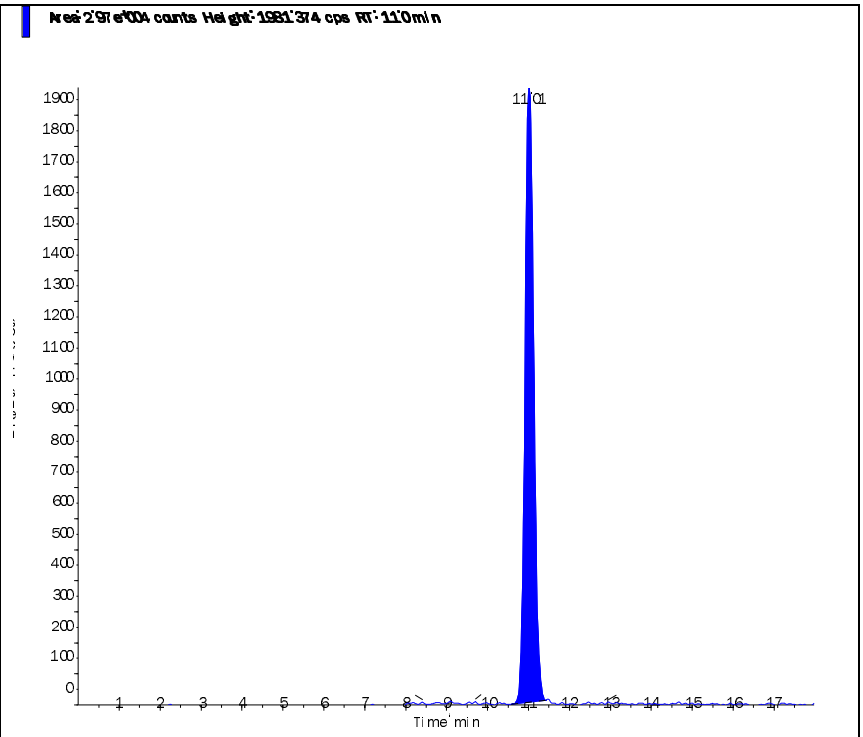

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Data File	LM29996.wiff	**Result Table**	060115_JWR.rdb
Acquisition Date	6/2/2015 6:32:22 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525763-07 CCV (1.0ug/L)	**Injection Vial**	5.00
Data File	LM29996.wiff	**Injection Volume**	10.00
Acquisition Date	6/2/2015 6:32:22 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	060115_JWR.rdb
Sample ID	WG525763-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.600e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.640e+04	11.00	1.00	0.988
Perchlorate conf	2.600e+04	11.00	1.00	0.97

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

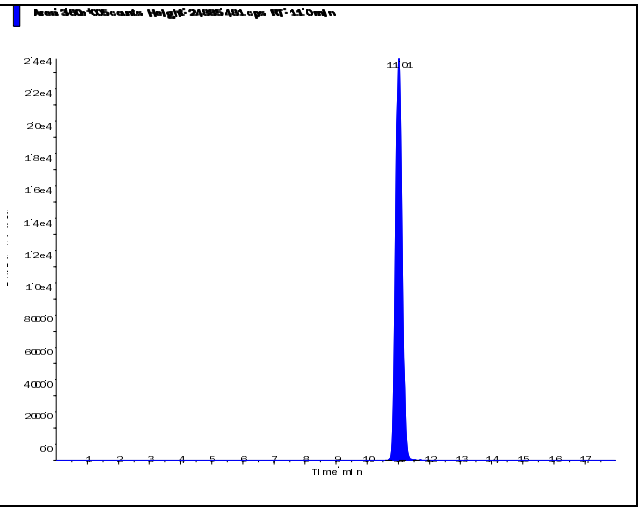

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.00 (11.00) min
Calculated conc:	0.988 ng/ml
Area Ratio:	0.212
Sample Type:	(Quality Control)

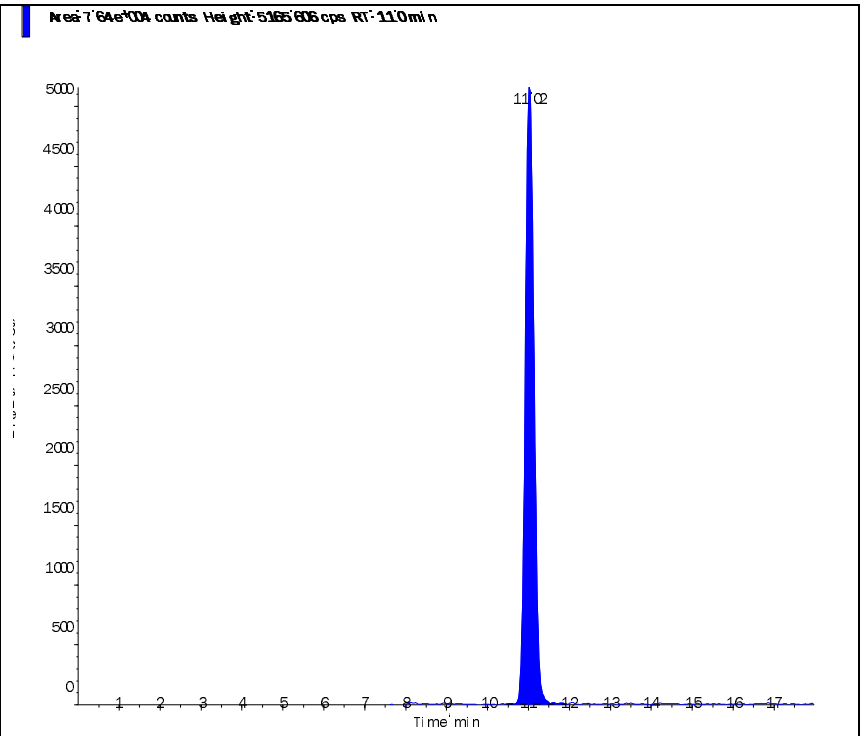

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.00 (11.00) min
Calculated conc:	0.97 ng/ml
Area Ratio:	0.072
Sample Type:	(Quality Control)

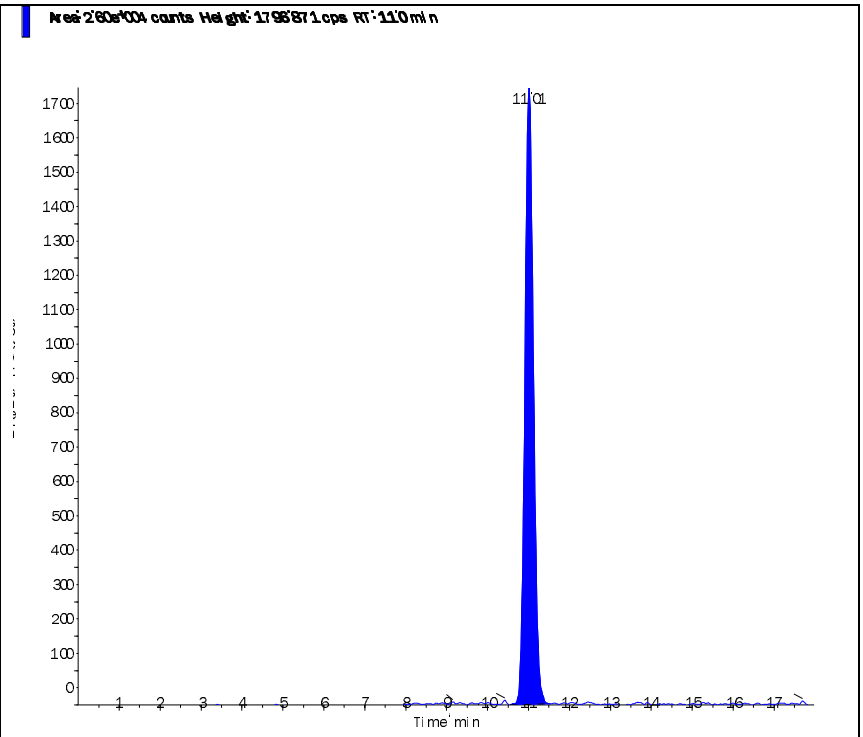

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Printed: 6/4/2015 10:32 AM

Data File	LM30000.wiff	**Result Table**	060315_JWR.rdb
Acquisition Date	6/3/2015 3:31:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG526156-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM30000.wiff	**Injection Volume**	10.00
Acquisition Date	6/3/2015 3:31:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	060315_JWR.rdb
Sample ID	WG526156-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.550e+05	11.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.050e+04	11.10	1.00	1.06
Perchlorate conf	2.610e+04	11.10	1.00	0.99

O18LP (Internal Standard)

RT (Exp. RT): 11.10(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

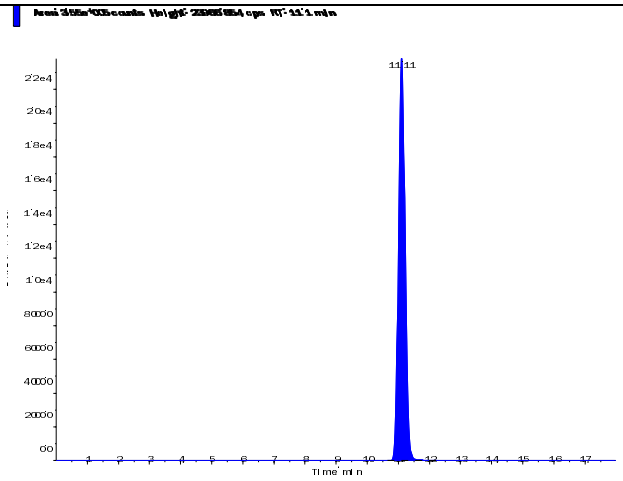

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.10 (11.00) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.227
Sample Type:	(Quality Control)

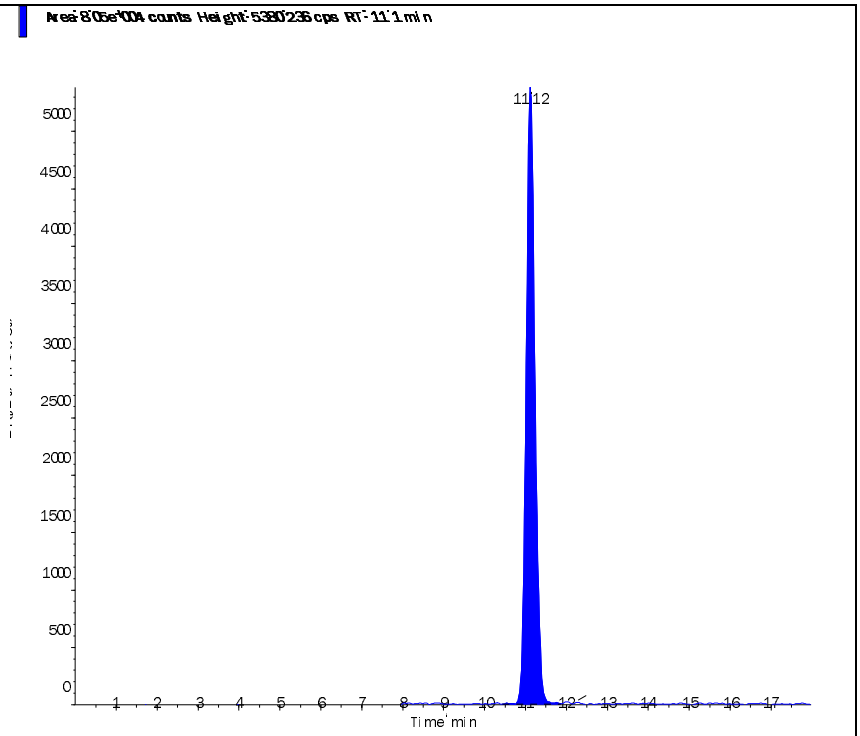

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.10 (11.00) min
Calculated conc:	0.99 ng/ml
Area Ratio:	0.074
Sample Type:	(Quality Control)

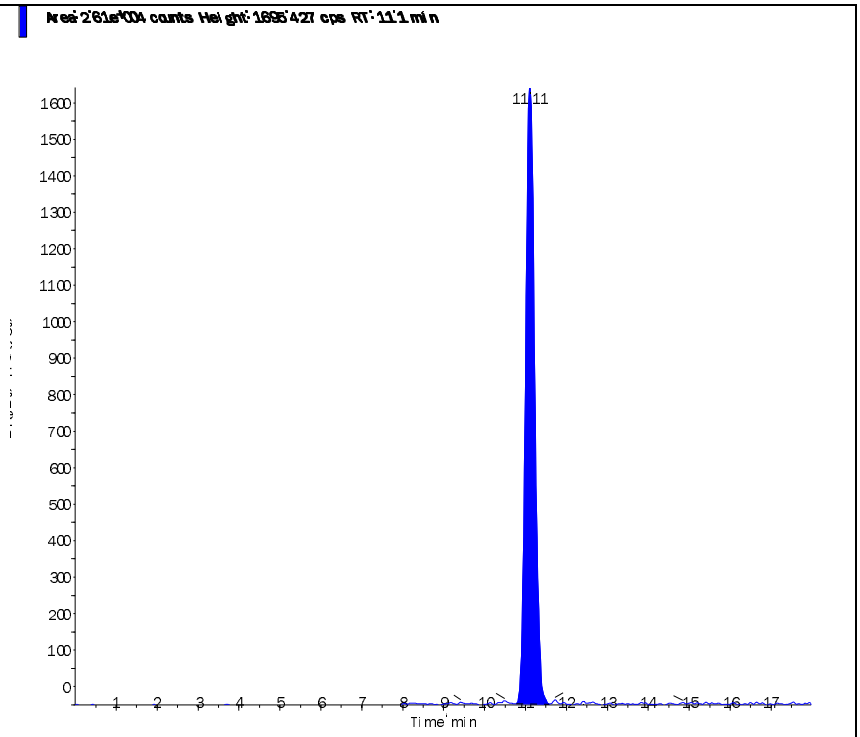

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Data File	LM30012.wiff	**Result Table**	060315_JWR.rdb
Acquisition Date	6/3/2015 7:46:02 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG526156-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM30012.wiff	**Injection Volume**	10.00
Acquisition Date	6/3/2015 7:46:02 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	060315_JWR.rdb
Sample ID	WG526156-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.690e+05	11.20	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.770e+04	11.20	1.00	0.981
Perchlorate conf	2.840e+04	11.20	1.00	1.04

O18LP (Internal Standard)

RT (Exp. RT): 11.20(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

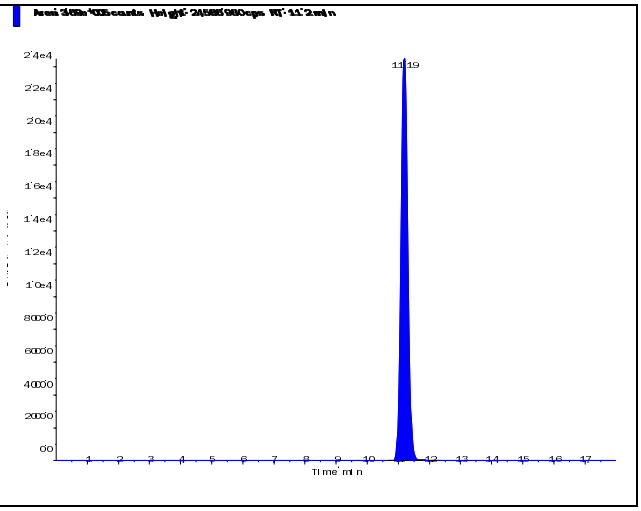

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.20 (11.00) min
Calculated conc:	0.981 ng/ml
Area Ratio:	0.211
Sample Type:	(Quality Control)

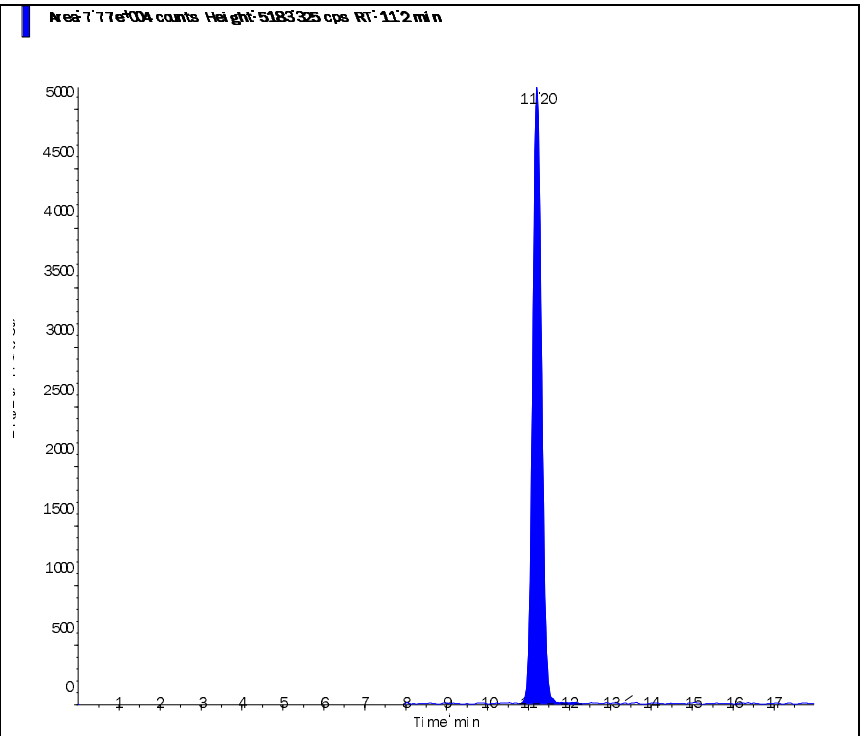

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.20 (11.00) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.077
Sample Type:	(Quality Control)

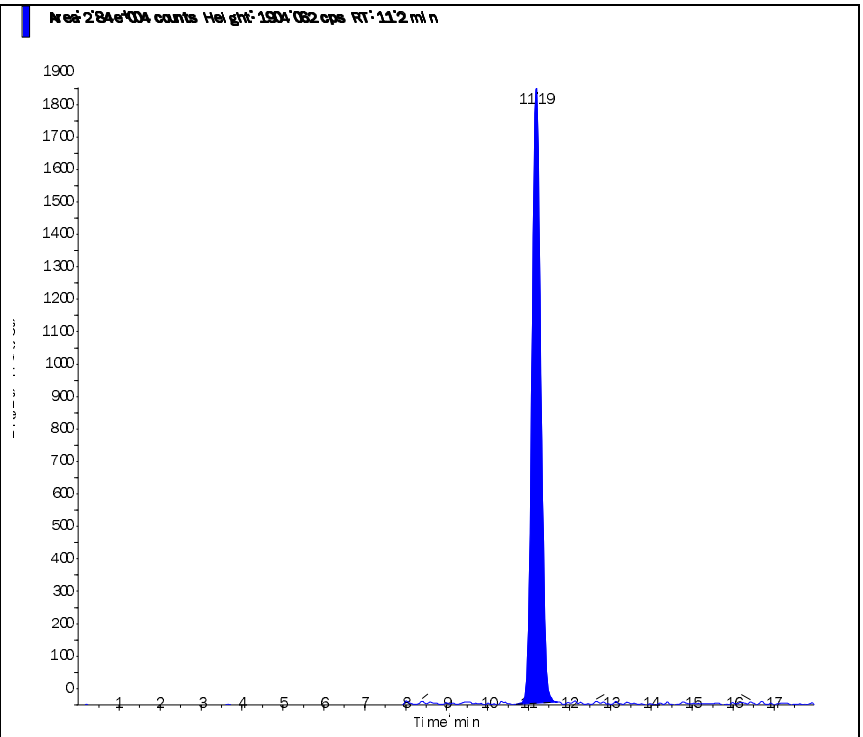

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Data File	LM30025.wiff	**Result Table**	060315_JWR.rdb
Acquisition Date	6/3/2015 11:52:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG526156-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM30025.wiff	**Injection Volume**	10.00
Acquisition Date	6/3/2015 11:52:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	060315_JWR.rdb
Sample ID	WG526156-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.630e+05	11.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.820e+04	11.30	1.00	1.00
Perchlorate conf	2.710e+04	11.30	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 11.30(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

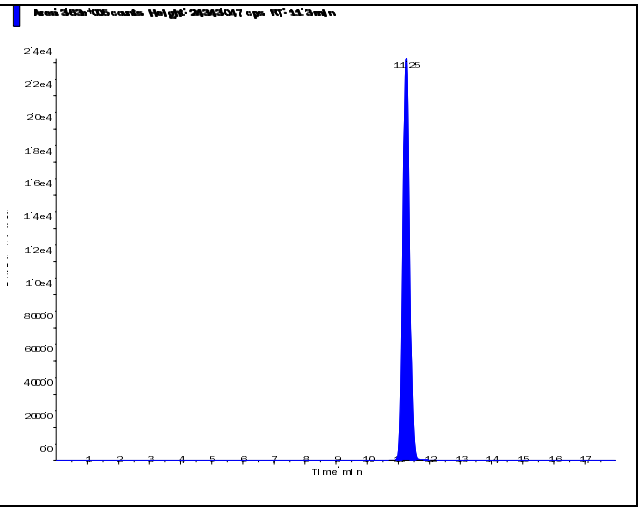

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.30 (11.00) min Calculated conc: 1.00 ng/ml Area Ratio: 0.215 Sample Type: (Quality Control)	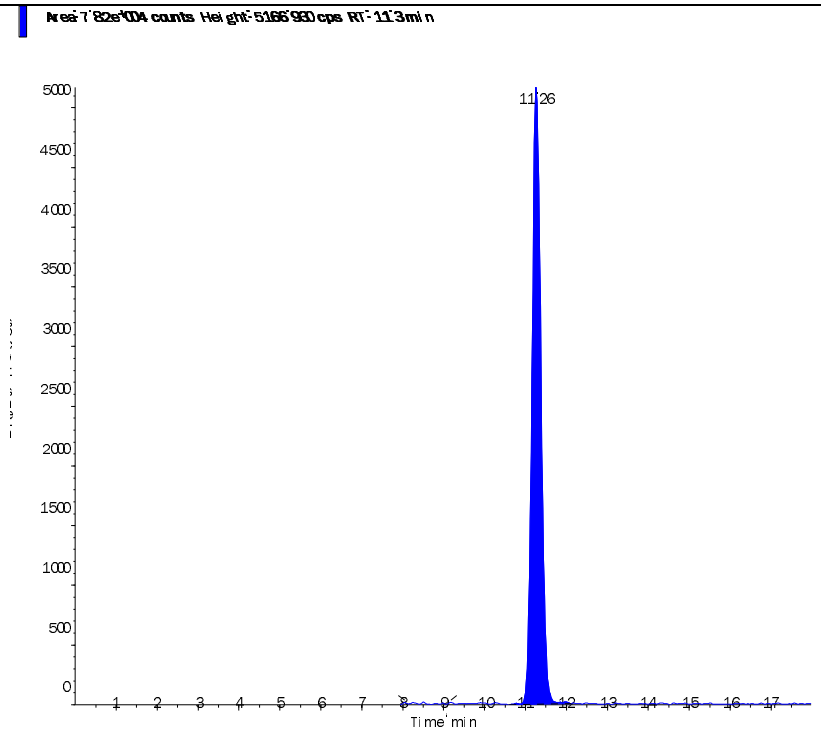
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.30 (11.00) min Calculated conc: 1.00 ng/ml Area Ratio: 0.075 Sample Type: (Quality Control)	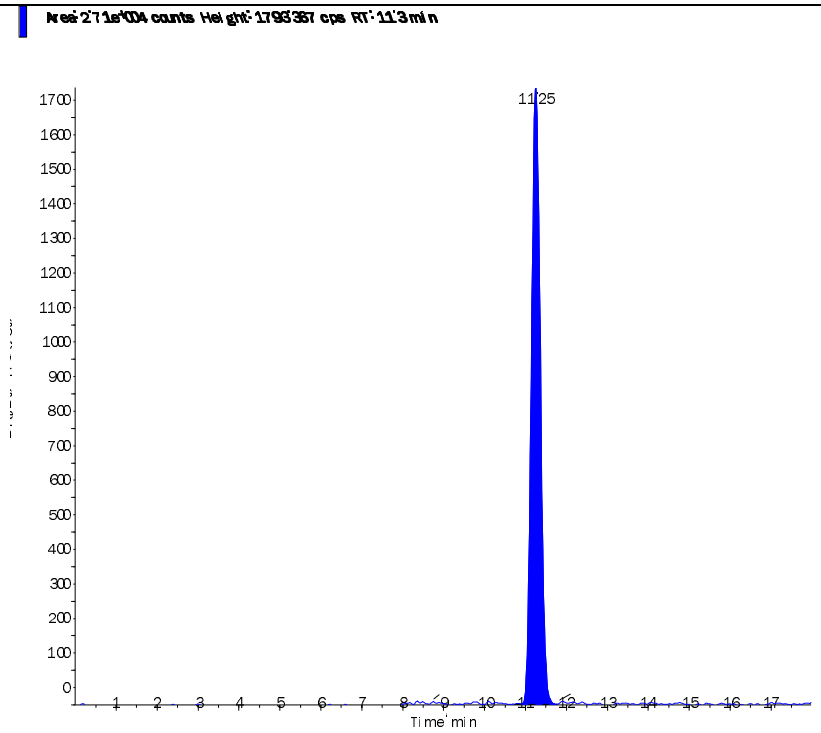

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Created with Analyst Reporter
Printed: 6/2/2015 4:00 PM

Data File	LM29964.wiff	**Result Table**	060115_JWR.rdb
Acquisition Date	6/1/2015 8:27:26 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525760-07 MRL (0.2ug/L)	**Injection Vial**	3.00
Data File	LM29964.wiff	**Injection Volume**	10.00
Acquisition Date	6/1/2015 8:27:26 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060115_JWR.rdb
Sample ID	WG525760-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.690e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.220e+04	11.00	N/A	0.206
Perchlorate conf	4.380e+03	11.00	N/A	0.204

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

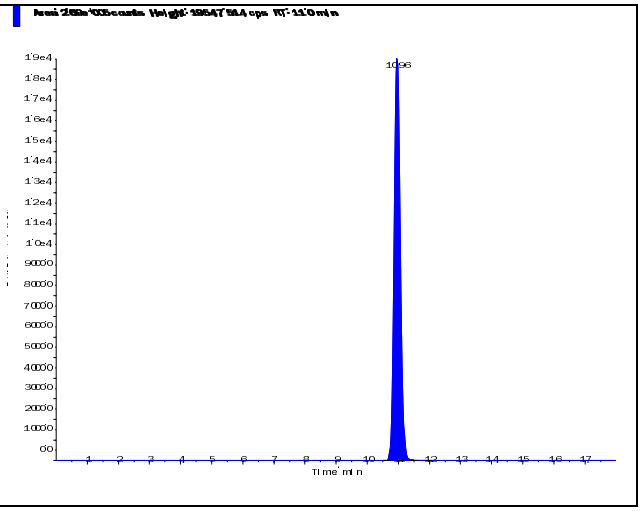

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.00 (11.00) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.045
Sample Type:	(Unknown)

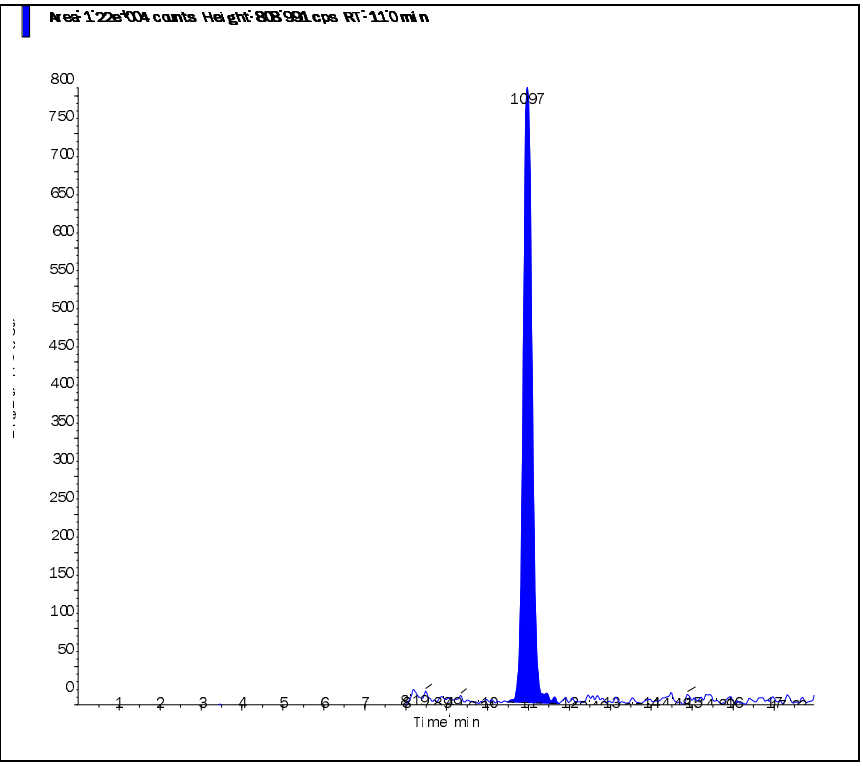

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.00 (11.00) min
Calculated conc:	0.204 ng/ml
Area Ratio:	0.016
Sample Type:	(Unknown)

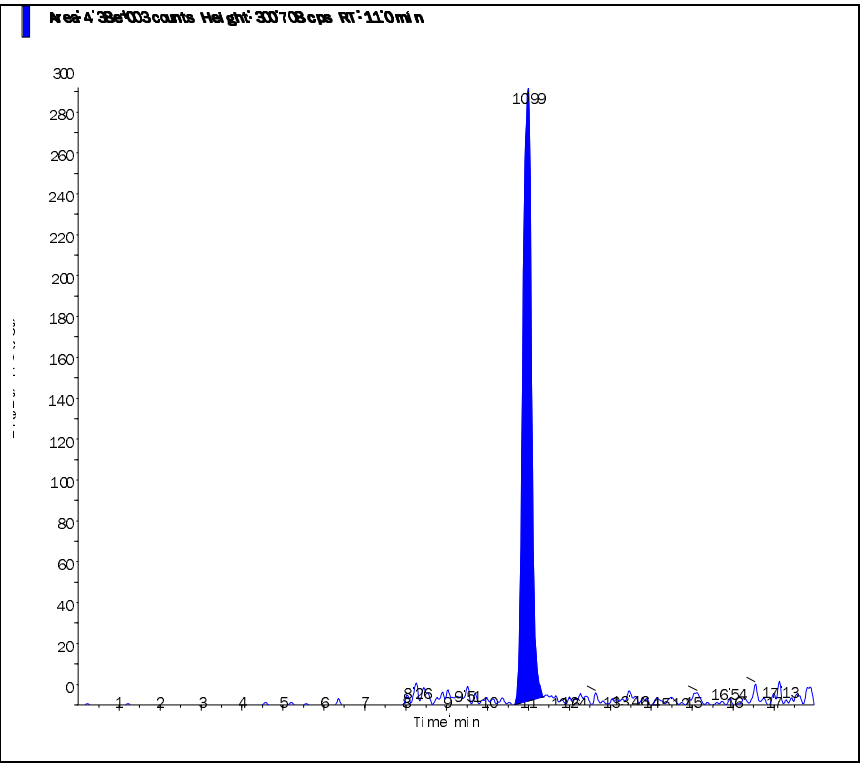

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Data File	LM29976.wiff	**Result Table**	060115_JWR.rdb
Acquisition Date	6/2/2015 12:13:57 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525760-08 MRL (0.2ug/L)	**Injection Vial**	3.00
Data File	LM29976.wiff	**Injection Volume**	10.00
Acquisition Date	6/2/2015 12:13:57 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060115_JWR.rdb
Sample ID	WG525760-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.570e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.510e+04	11.00	N/A	0.192
Perchlorate conf	5.520e+03	11.00	N/A	0.193

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

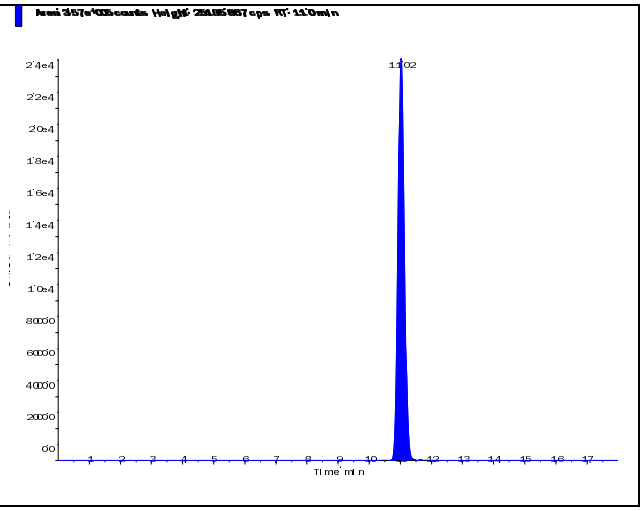

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.00 (11.00) min
Calculated conc:	0.192 ng/ml
Area Ratio:	0.042
Sample Type:	(Unknown)

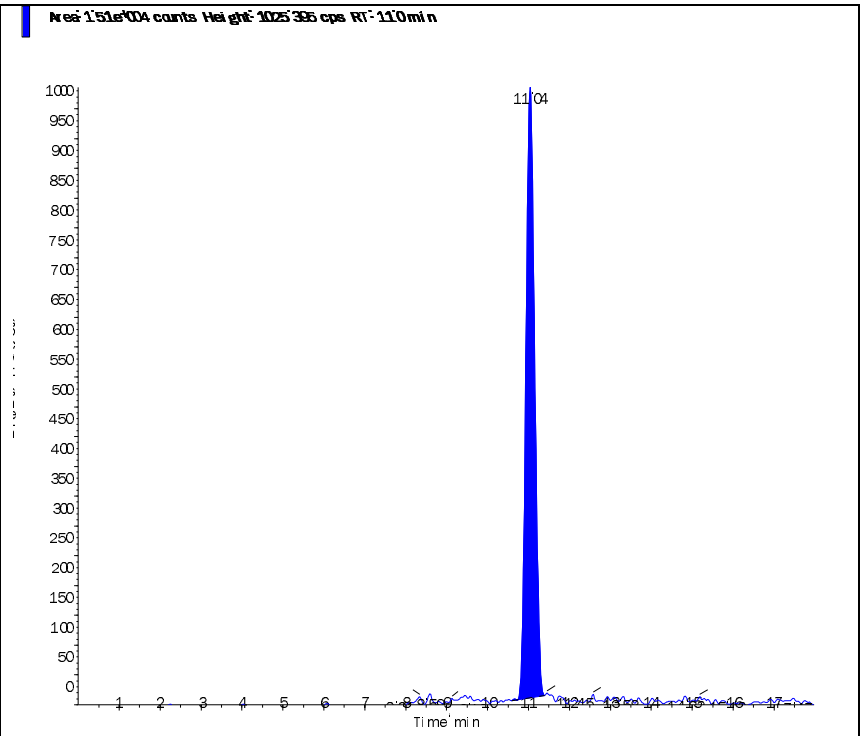

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.00 (11.00) min
Calculated conc:	0.193 ng/ml
Area Ratio:	0.015
Sample Type:	(Unknown)

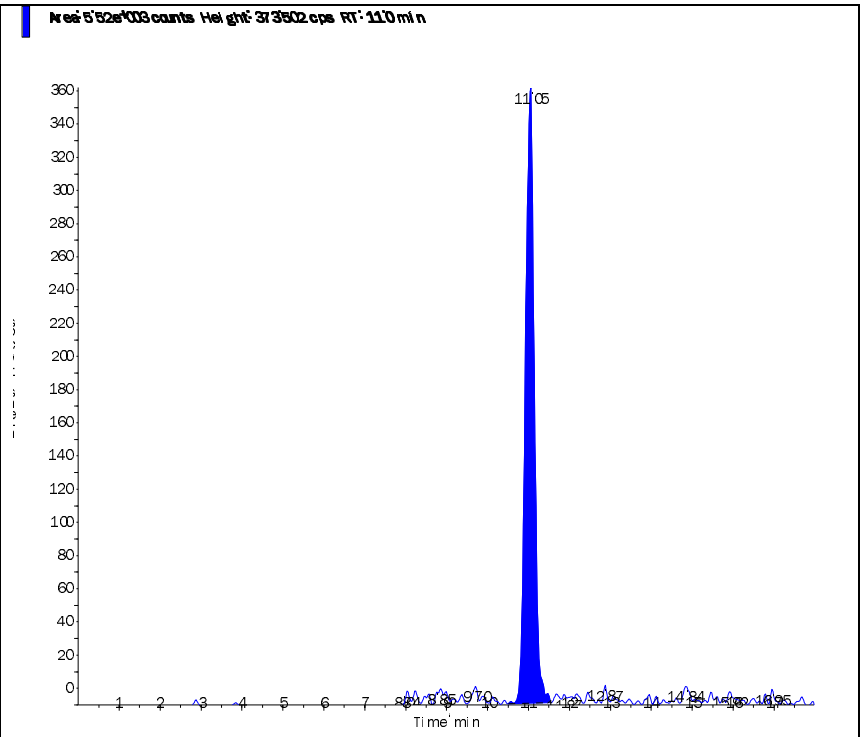

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Printed: 6/2/2015 4:08 PM

Data File	LM29988.wiff	**Result Table**	060115_JWR.rdb
Acquisition Date	6/2/2015 4:01:02 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525760-09 MRL (0.2ug/L)	**Injection Vial**	3.00
Data File	LM29988.wiff	**Injection Volume**	10.00
Acquisition Date	6/2/2015 4:01:02 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060115_JWR.rdb
Sample ID	WG525760-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.770e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.670e+04	11.10	N/A	0.201
Perchlorate conf	5.580e+03	11.00	N/A	0.184

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

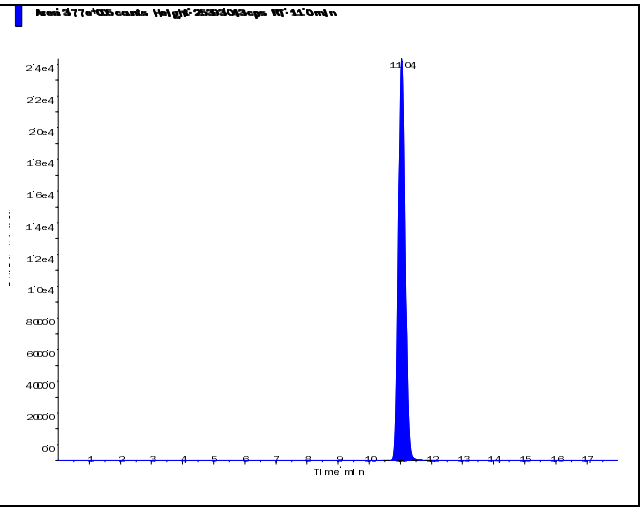

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.10 (11.00) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.044
Sample Type:	(Unknown)

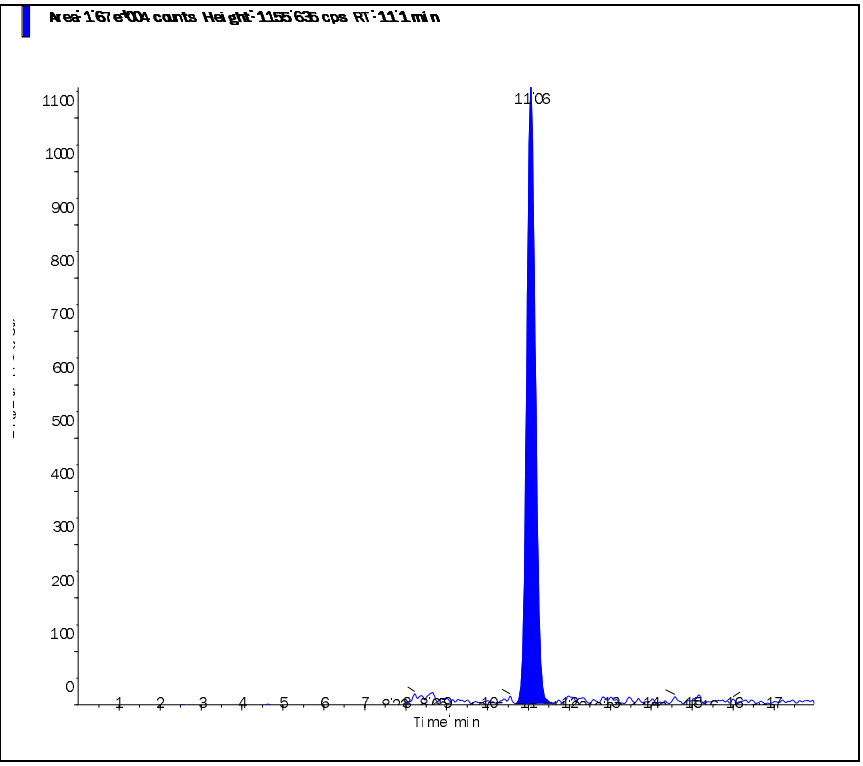

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.00 (11.00) min
Calculated conc:	0.184 ng/ml
Area Ratio:	0.015
Sample Type:	(Unknown)

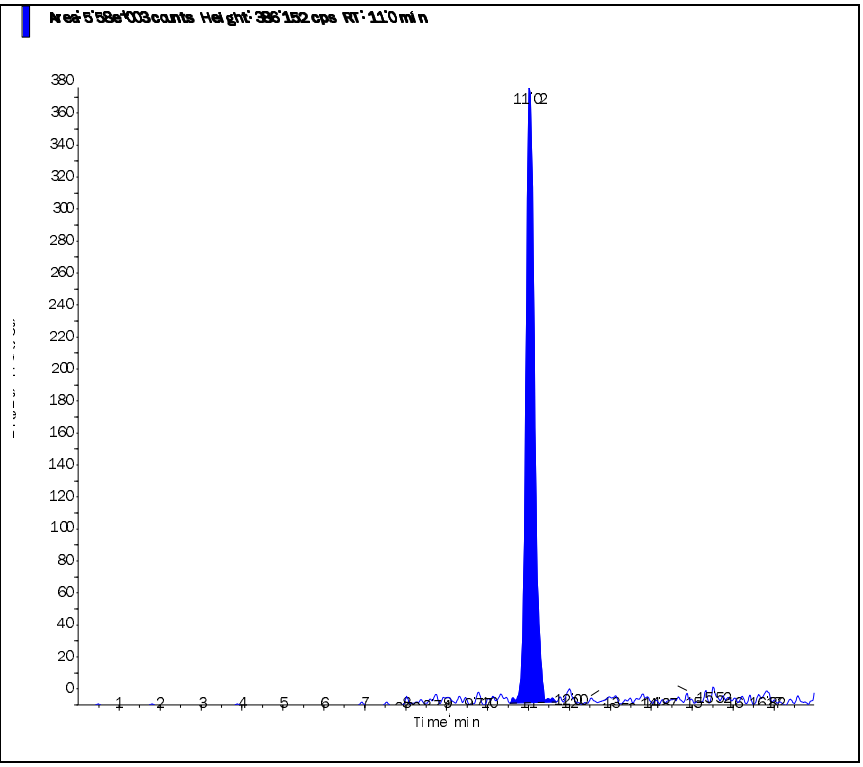

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Created with Analyst Reporter
Printed: 6/2/2015 4:11 PM

Data File	LM29997.wiff	**Result Table**	060115_JWR.rdb
Acquisition Date	6/2/2015 6:51:17 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525760-10 MRL (0.2ug/L)	**Injection Vial**	3.00
Data File	LM29997.wiff	**Injection Volume**	10.00
Acquisition Date	6/2/2015 6:51:17 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060115_JWR.rdb
Sample ID	WG525760-10	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.690e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.600e+04	11.00	N/A	0.196
Perchlorate conf	5.520e+03	11.00	N/A	0.186

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

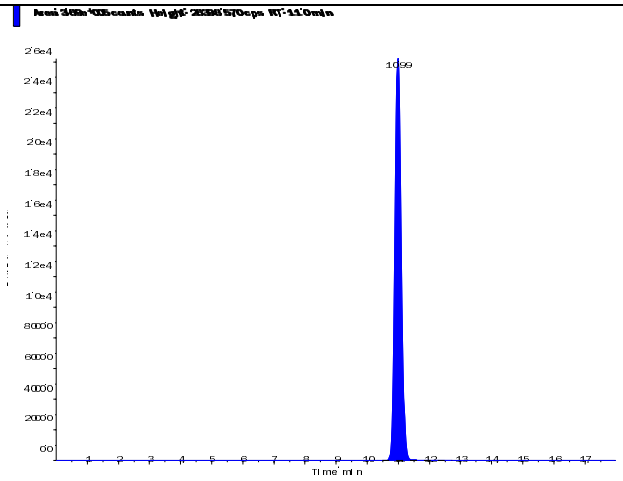

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.00 (11.00) min
Calculated conc:	0.196 ng/ml
Area Ratio:	0.043
Sample Type:	(Unknown)

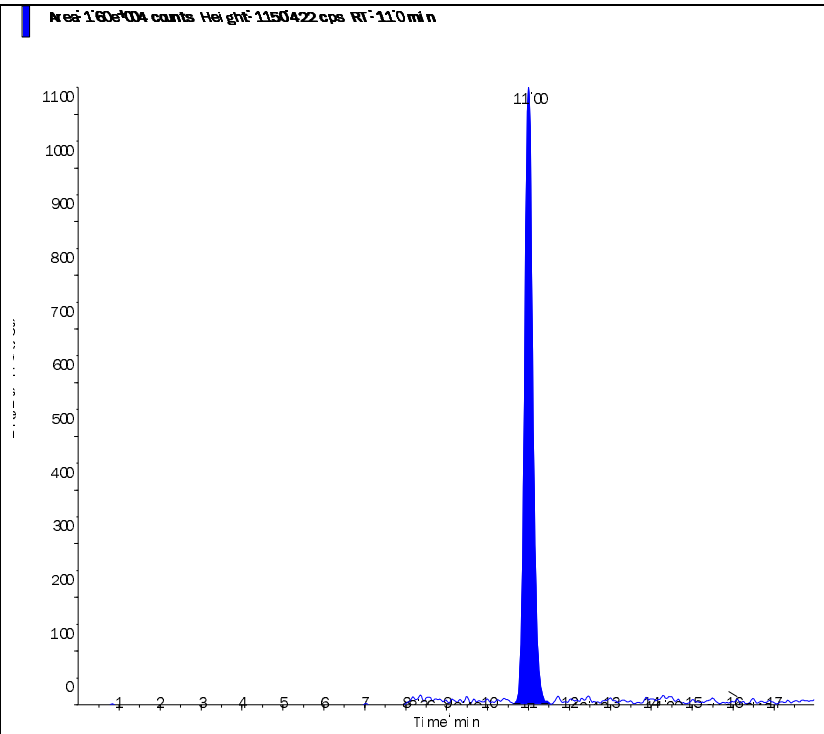

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.00 (11.00) min
Calculated conc:	0.186 ng/ml
Area Ratio:	0.015
Sample Type:	(Unknown)

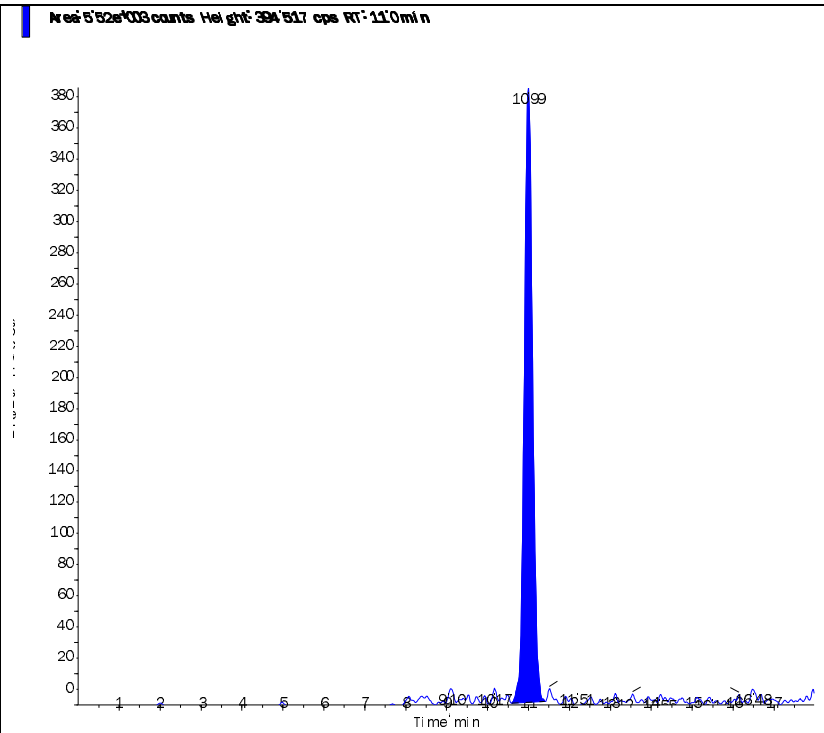

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Created with Analyst Reporter
Printed: 6/4/2015 10:32 AM

Data File	LM30001.wiff	**Result Table**	060315_JWR.rdb
Acquisition Date	6/3/2015 3:50:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG526155-10 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM30001.wiff	**Injection Volume**	10.00
Acquisition Date	6/3/2015 3:50:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060315_JWR.rdb
Sample ID	WG526155-10	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.430e+05	11.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+04	11.20	N/A	0.202
Perchlorate conf	4.920e+03	11.10	N/A	0.177

O18LP (Internal Standard)

RT (Exp. RT): 11.10(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

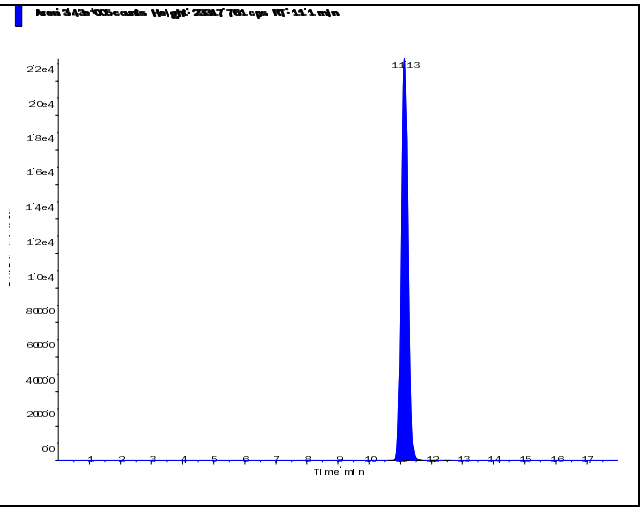

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.20 (11.00) min Calculated conc: 0.202 ng/ml Area Ratio: 0.045 Sample Type: (Unknown)	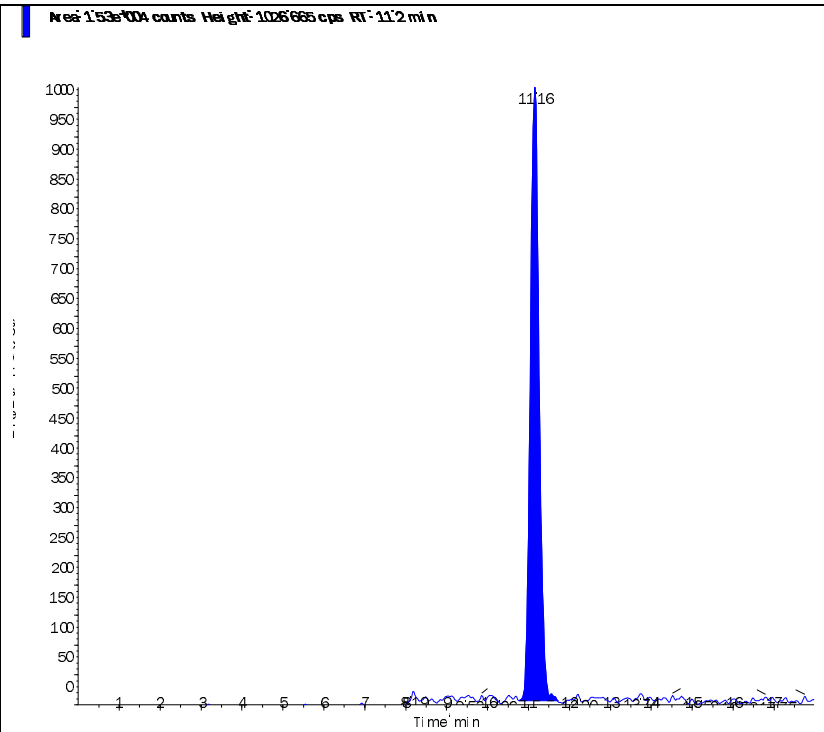
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.10 (11.00) min Calculated conc: 0.177 ng/ml Area Ratio: 0.014 Sample Type: (Unknown)	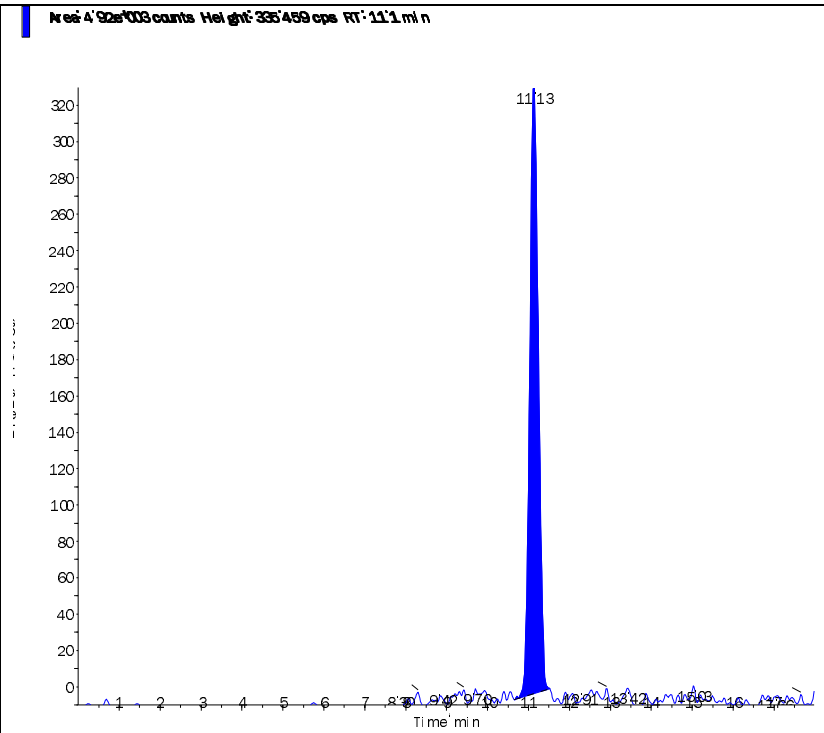

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Created with Analyst Reporter
Printed: 6/4/2015 10:36 AM

Data File	LM30013.wiff	**Result Table**	060315_JWR.rdb
Acquisition Date	6/3/2015 8:04:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG526155-11 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM30013.wiff	**Injection Volume**	10.00
Acquisition Date	6/3/2015 8:04:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060315_JWR.rdb
Sample ID	WG526155-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.530e+05	11.20	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.590e+04	11.20	N/A	0.205
Perchlorate conf	5.030e+03	11.20	N/A	0.176

O18LP (Internal Standard)

RT (Exp. RT): 11.20(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

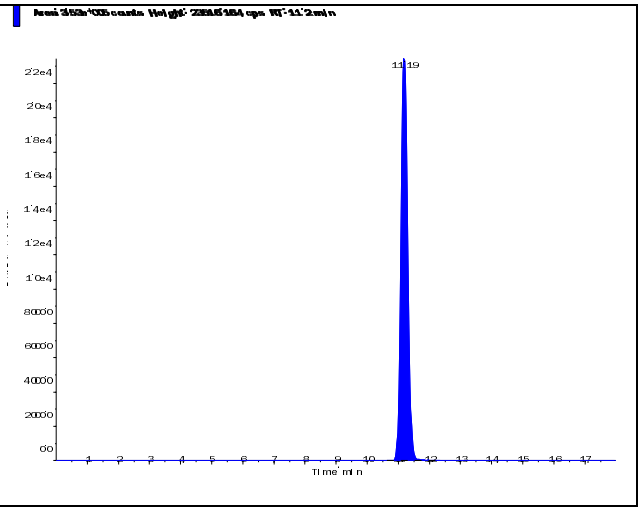

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Printed: 6/4/2015 10:36 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.20 (11.00) min
Calculated conc:	0.205 ng/ml
Area Ratio:	0.045
Sample Type:	(Unknown)

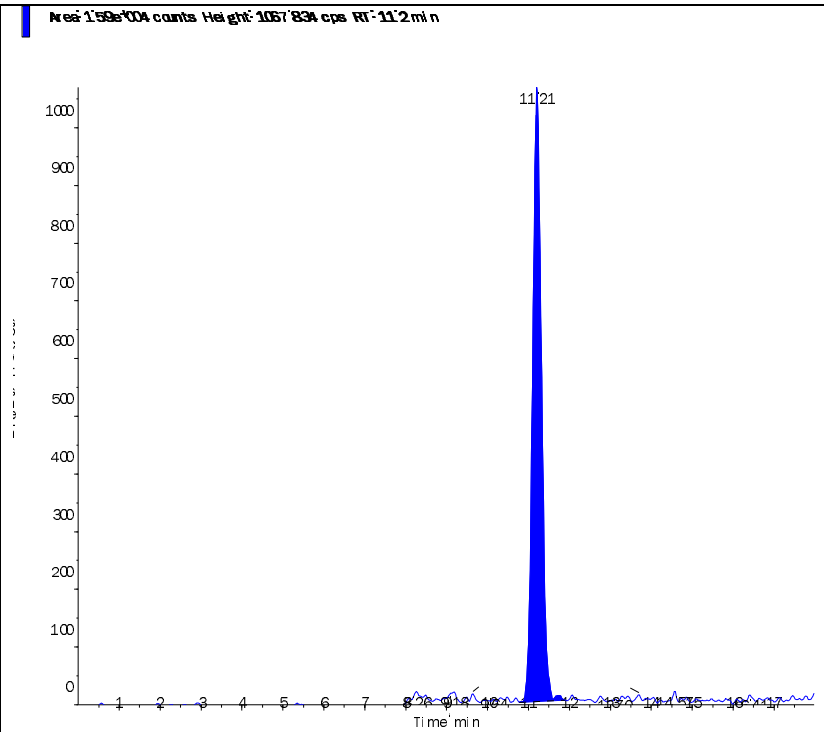

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.20 (11.00) min
Calculated conc:	0.176 ng/ml
Area Ratio:	0.014
Sample Type:	(Unknown)

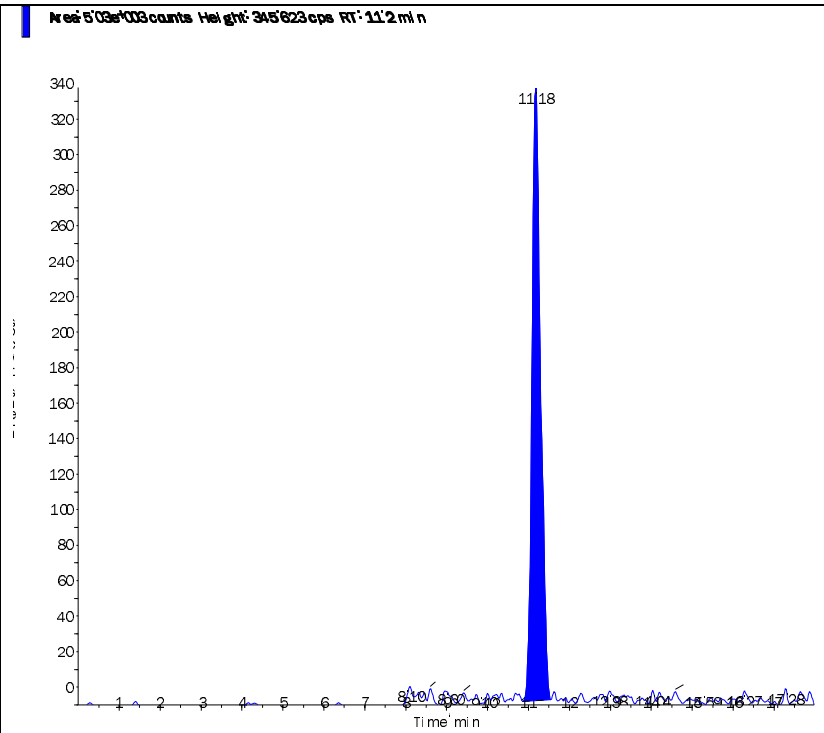

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Created with Analyst Reporter
Printed: 6/4/2015 10:41 AM

Data File	LM30026.wiff	**Result Table**	060315_JWR.rdb
Acquisition Date	6/4/2015 12:10:59 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG526155-12 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM30026.wiff	**Injection Volume**	10.00
Acquisition Date	6/4/2015 12:10:59 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060315_JWR.rdb
Sample ID	WG526155-12	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.520e+05	11.20	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.500e+04	11.20	N/A	0.193
Perchlorate conf	5.310e+03	11.20	N/A	0.187

O18LP (Internal Standard)

RT (Exp. RT): 11.20(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

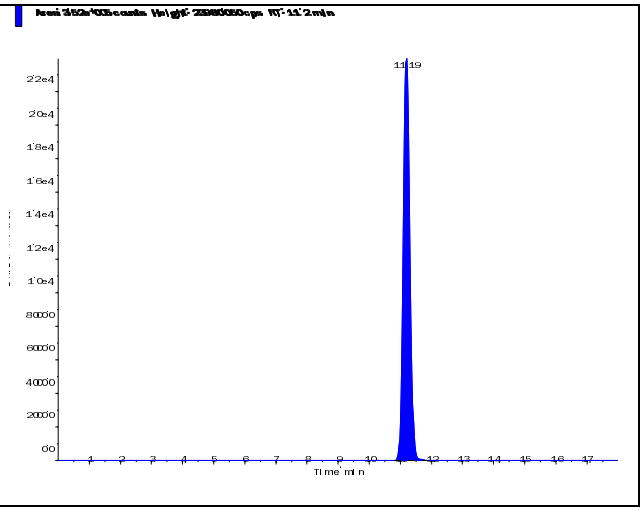

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Created with Analyst Reporter
Printed: 6/4/2015 10:41 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.20 (11.00) min Calculated conc: 0.193 ng/ml Area Ratio: 0.043 Sample Type: (Unknown)	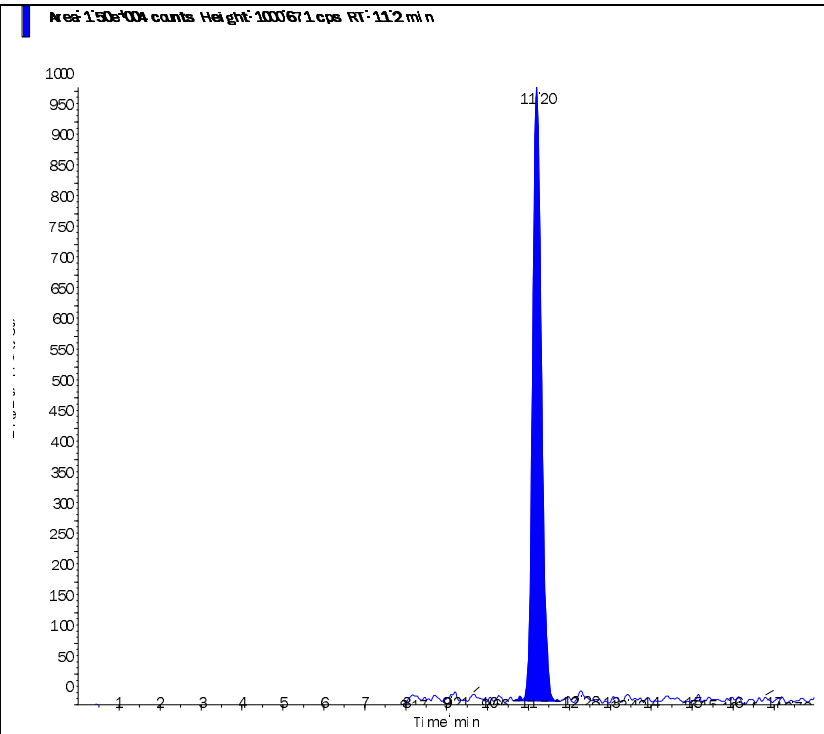
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.20 (11.00) min Calculated conc: 0.187 ng/ml Area Ratio: 0.015 Sample Type: (Unknown)	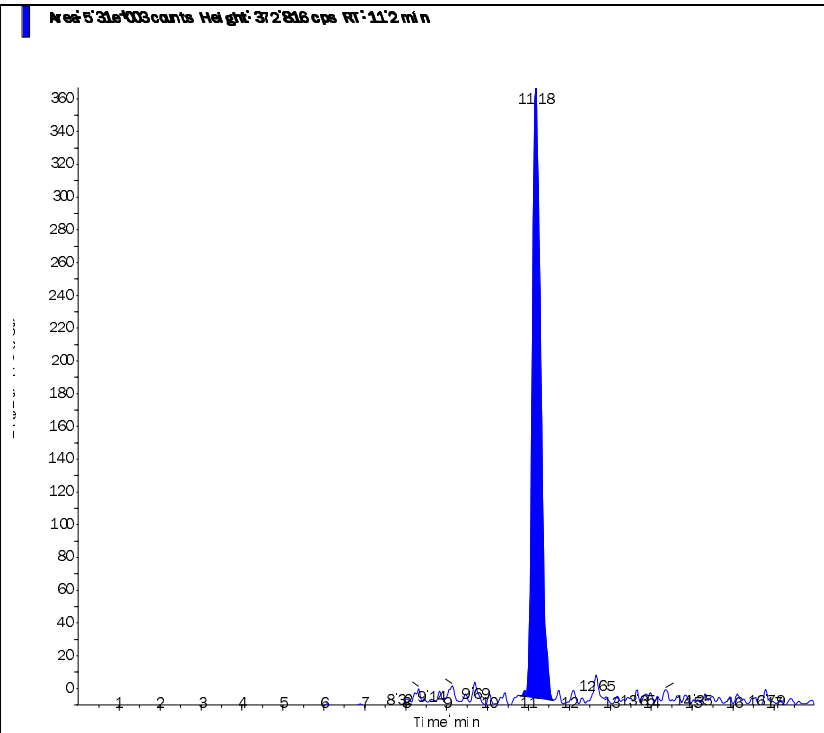

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Created with Analyst Reporter
Printed: 6/2/2015 3:59 PM

Data File	LM29962.wiff	**Result Table**	060115_JWR.rdb
Acquisition Date	6/1/2015 7:49:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525763-01 CCB	**Injection Vial**	1.00
Data File	LM29962.wiff	**Injection Volume**	10.00
Acquisition Date	6/1/2015 7:49:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060115_JWR.rdb
Sample ID	WG525763-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.500e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.310e+02	11.10	N/A	0.0041
Perchlorate conf	4.280e+02	11.00	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

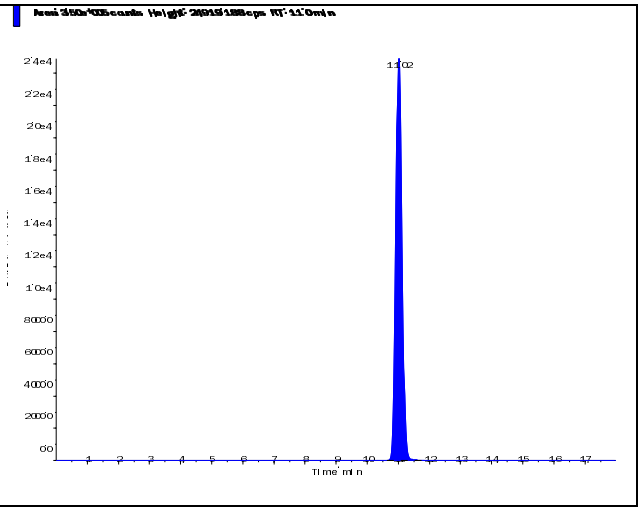

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Printed: 6/2/2015 3:59 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.10 (11.00) min
Calculated conc:	0.0041 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

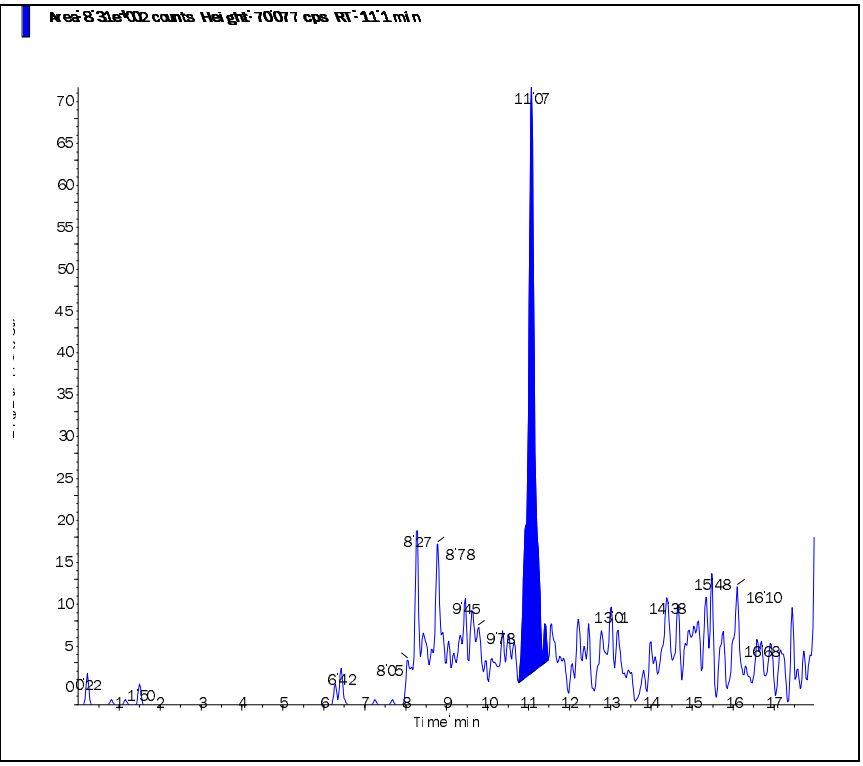

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.00 (11.00) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

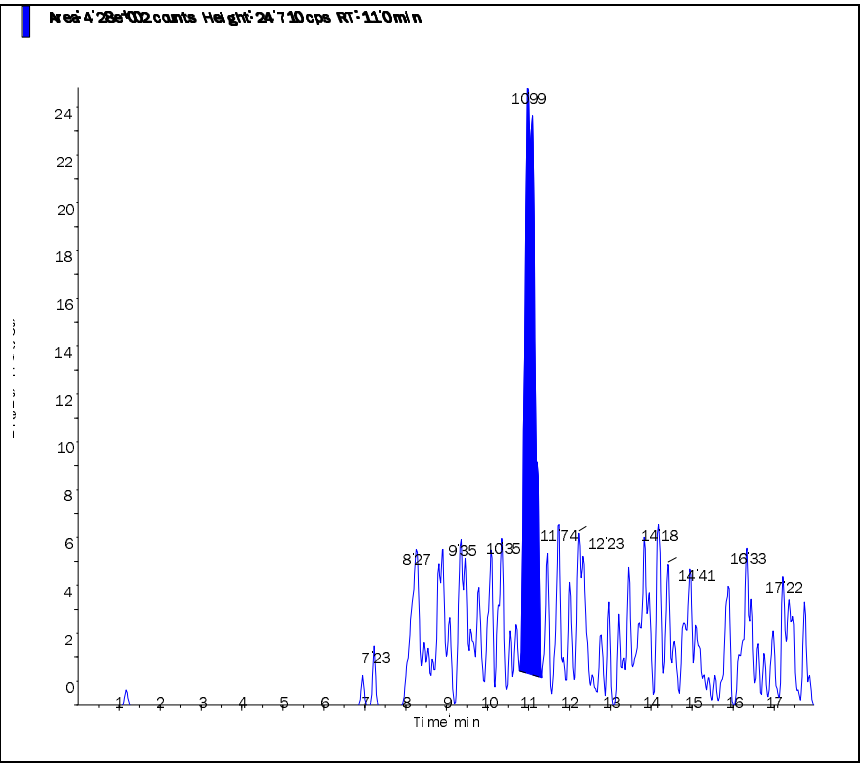

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Data File	LM29977.wiff	**Result Table**	060115_JWR.rdb
Acquisition Date	6/2/2015 12:32:51 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525763-04 CCB	**Injection Vial**	1.00
Data File	LM29977.wiff	**Injection Volume**	10.00
Acquisition Date	6/2/2015 12:32:51 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060115_JWR.rdb
Sample ID	WG525763-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.750e+05	11.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.170e+03	11.20	N/A	0.0075
Perchlorate conf	4.580e+02	11.10	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 11.10(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

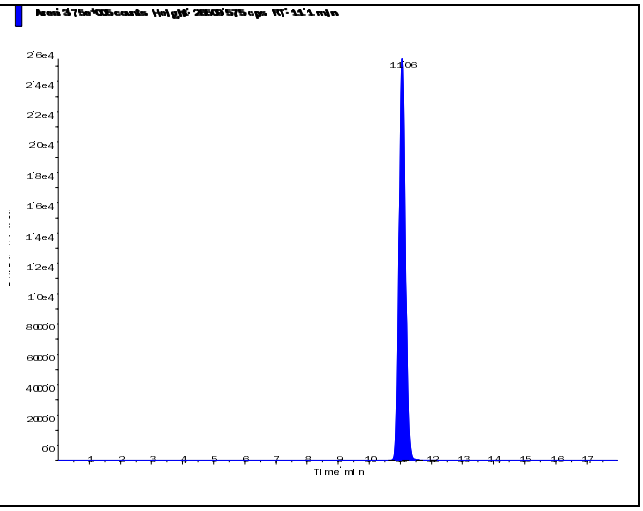

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Printed: 6/2/2015 4:04 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.20 (11.00) min Calculated conc: 0.0075 ng/ml Area Ratio: 0.003 Sample Type: (Unknown)	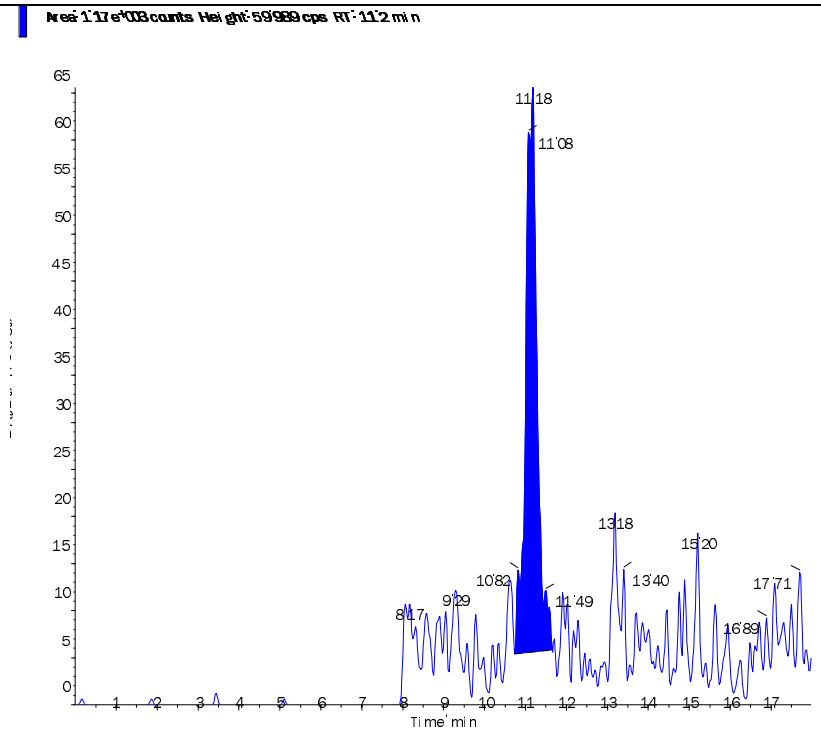
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.10 (11.00) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	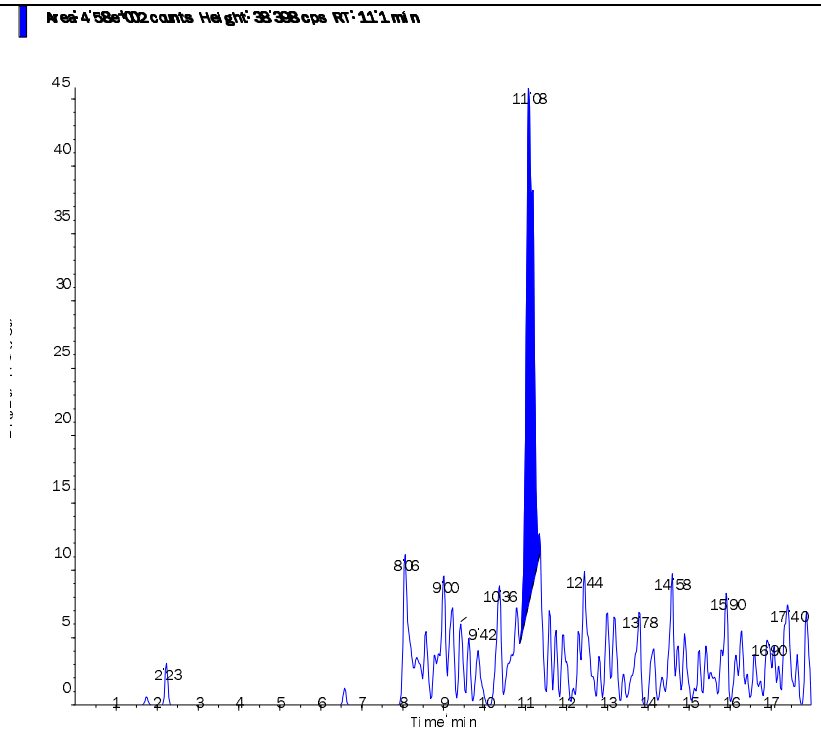

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Data File	LM29989.wiff	**Result Table**	060115_JWR.rdb
Acquisition Date	6/2/2015 4:19:55 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525763-06 CCB	**Injection Vial**	1.00
Data File	LM29989.wiff	**Injection Volume**	10.00
Acquisition Date	6/2/2015 4:19:55 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060115_JWR.rdb
Sample ID	WG525763-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.850e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.190e+02	11.10	N/A	0.0018
Perchlorate conf	6.300e+01	11.20	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

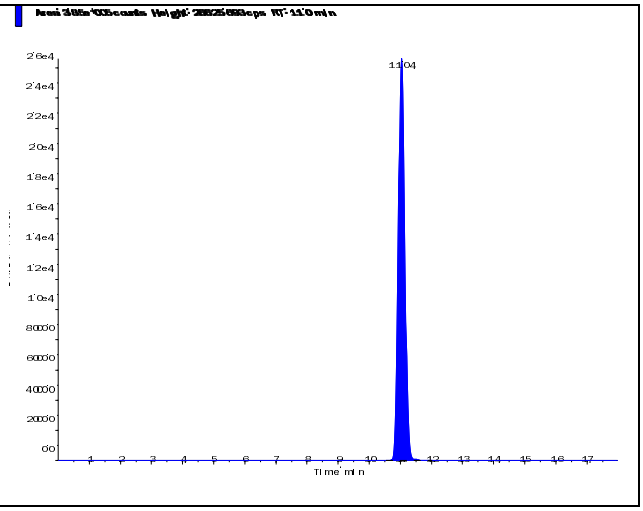

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.10 (11.00) min Calculated conc: 0.0018 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	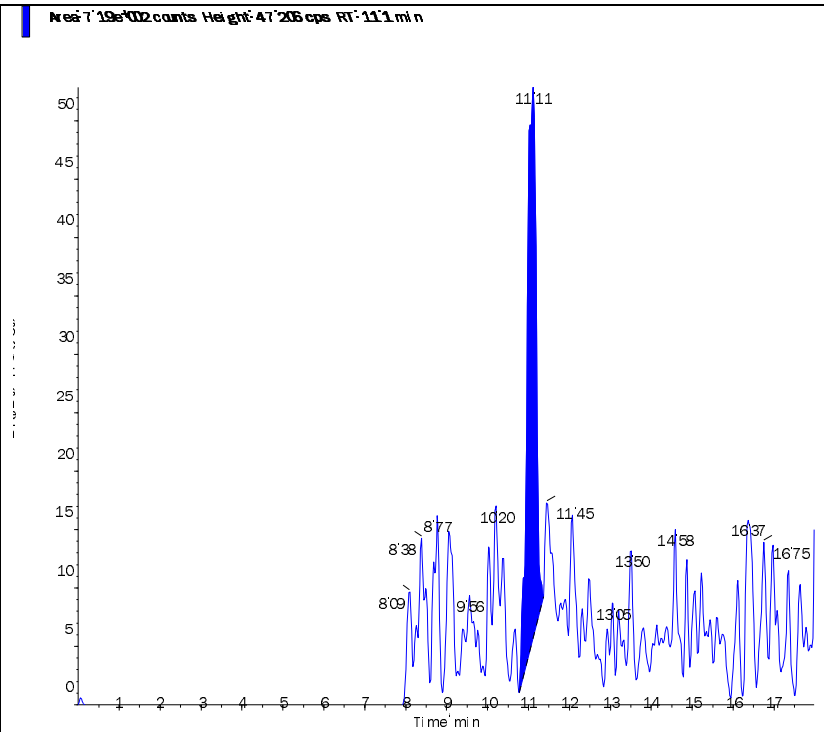
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.20 (11.00) min Calculated conc: < 0 ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	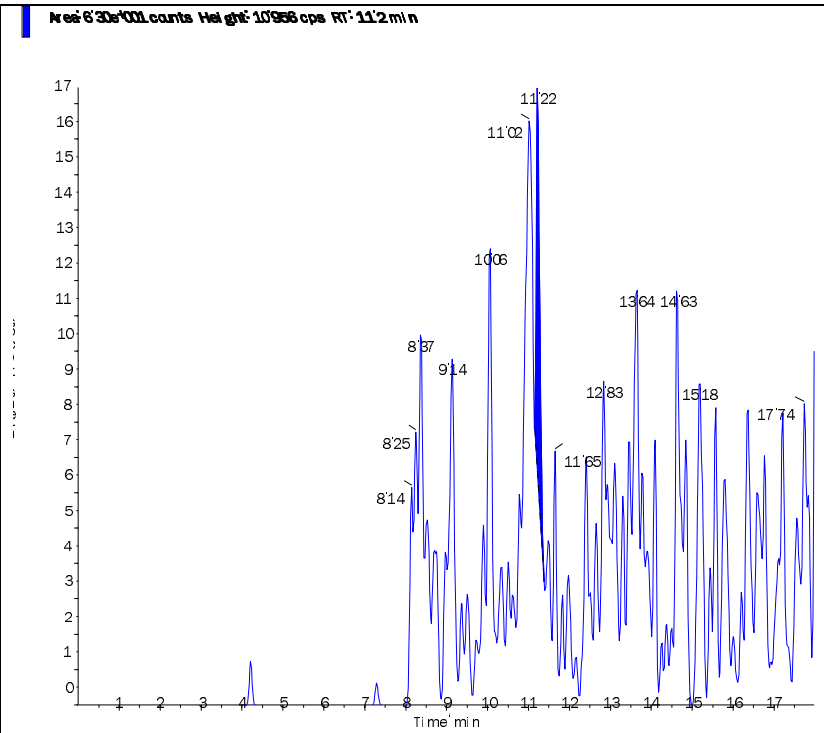

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Printed: 6/2/2015 4:11 PM

Data File	LM29998.wiff	**Result Table**	060115_JWR.rdb
Acquisition Date	6/2/2015 7:10:14 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525763-08 CCB	**Injection Vial**	1.00
Data File	LM29998.wiff	**Injection Volume**	10.00
Acquisition Date	6/2/2015 7:10:14 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060115_JWR.rdb
Sample ID	WG525763-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.770e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.950e+02	11.00	N/A	0.0029
Perchlorate conf	2.890e+02	11.00	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

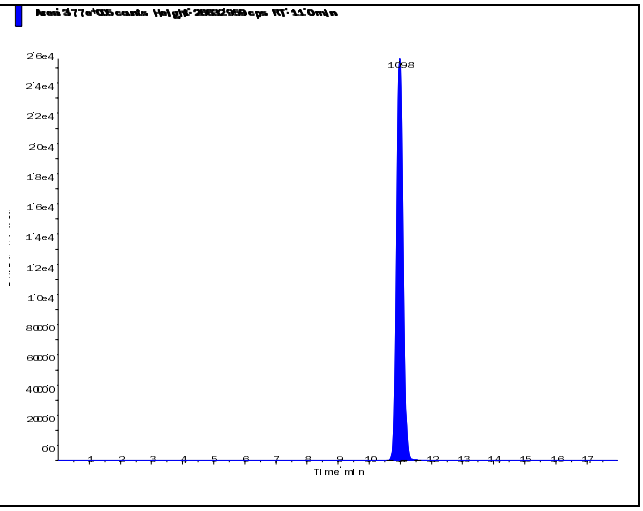

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Printed: 6/2/2015 4:11 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.00 (11.00) min
Calculated conc:	0.0029 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

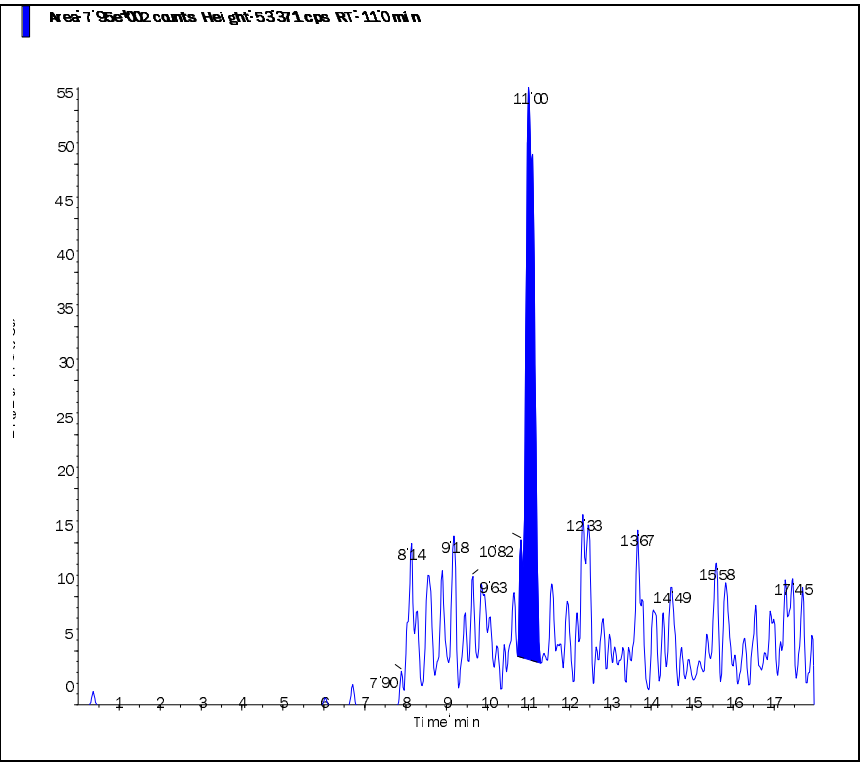

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.00 (11.00) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

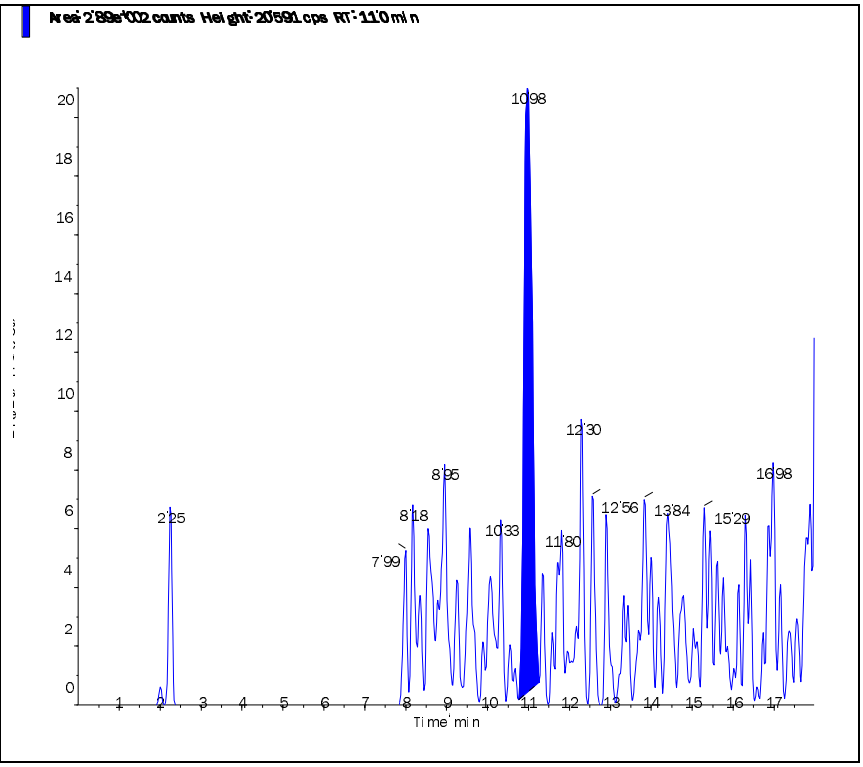

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Created with Analyst Reporter
Printed: 6/4/2015 10:32 AM

Data File	LM29999.wiff	**Result Table**	060315_JWR.rdb
Acquisition Date	6/3/2015 3:12:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG526156-01 CCB	**Injection Vial**	1.00
Data File	LM29999.wiff	**Injection Volume**	10.00
Acquisition Date	6/3/2015 3:12:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060315_JWR.rdb
Sample ID	WG526156-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.480e+05	11.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.370e+02	11.40	N/A	0.0002
Perchlorate conf	3.430e+02	11.30	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 11.30(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

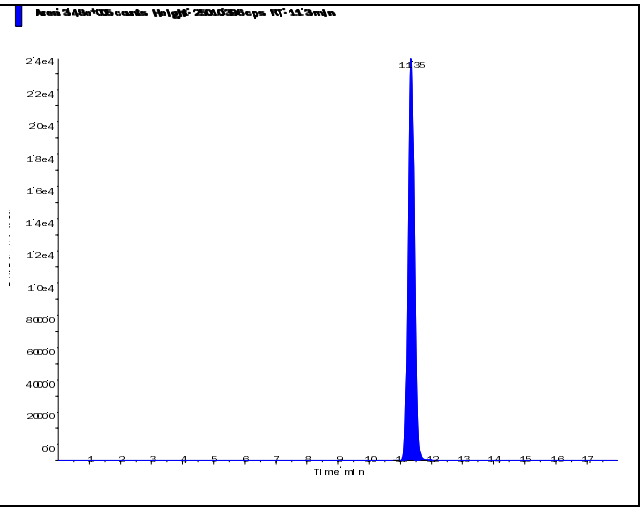

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Created with Analyst Reporter
Printed: 6/4/2015 10:32 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.40 (11.00) min Calculated conc: 0.0002 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	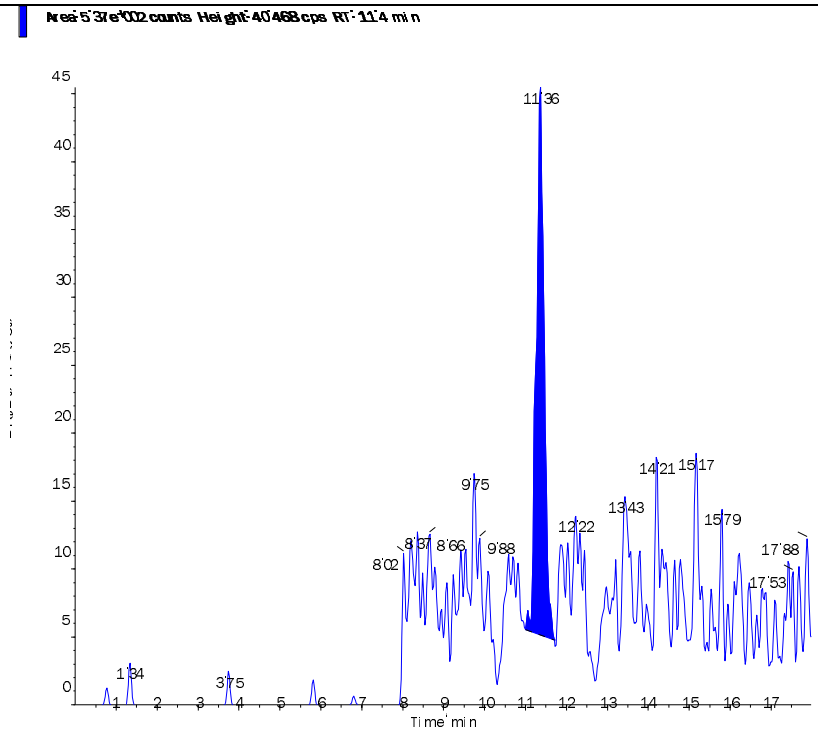
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.30 (11.00) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	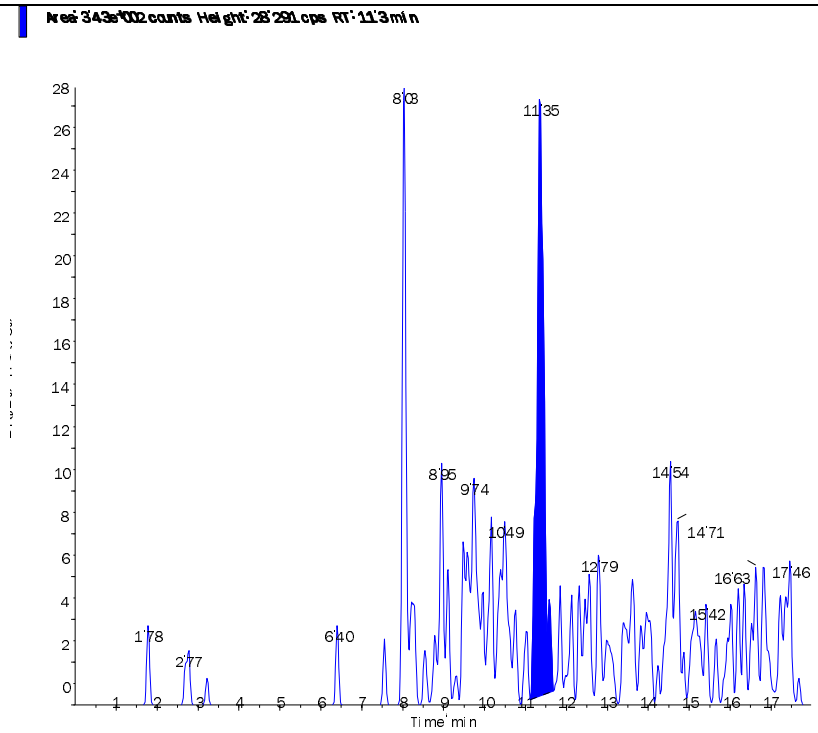

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Created with Analyst Reporter
Printed: 6/4/2015 10:37 AM

Data File	LM30014.wiff	**Result Table**	060315_JWR.rdb
Acquisition Date	6/3/2015 8:23:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG526156-04 CCB	**Injection Vial**	1.00
Data File	LM30014.wiff	**Injection Volume**	10.00
Acquisition Date	6/3/2015 8:23:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060315_JWR.rdb
Sample ID	WG526156-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.430e+05	11.20	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.280e+02	11.30	N/A	0.0029
Perchlorate conf	3.140e+02	11.20	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 11.20(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

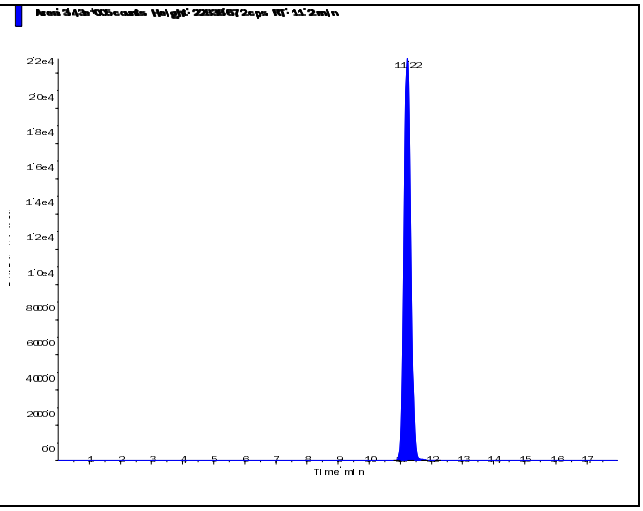

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.30 (11.00) min
Calculated conc:	0.0029 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

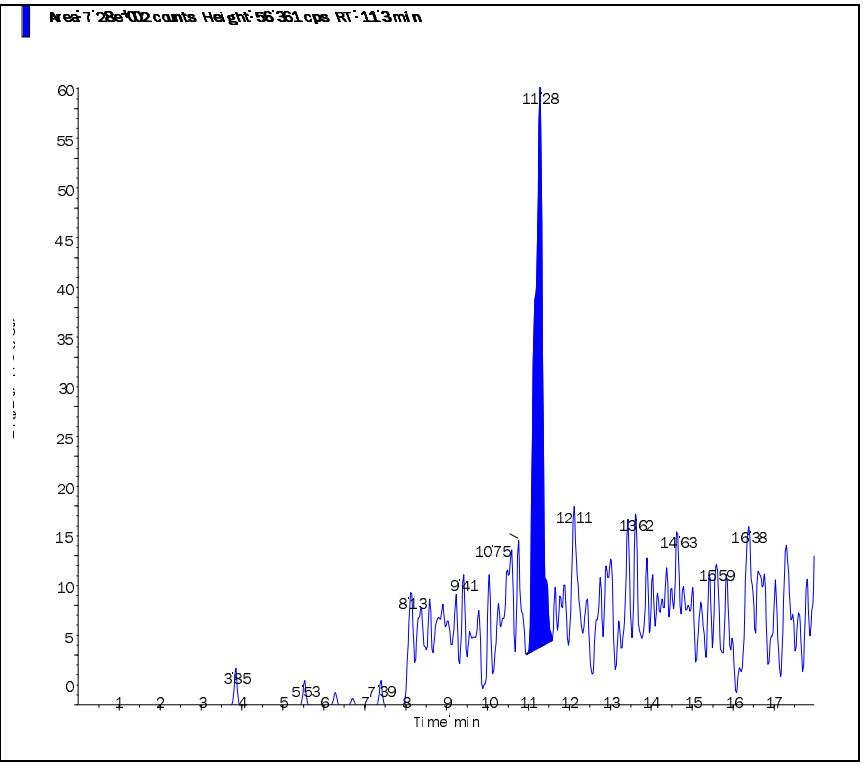

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.20 (11.00) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

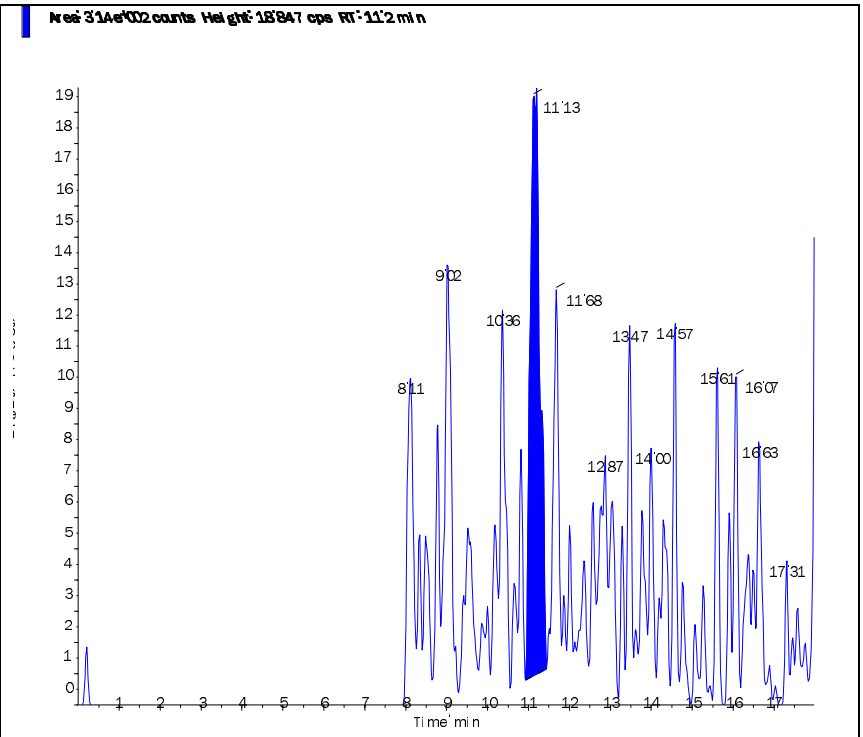

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Created with Analyst Reporter
Printed: 6/4/2015 10:41 AM

Data File	LM30027.wiff	**Result Table**	060315_JWR.rdb
Acquisition Date	6/4/2015 12:29:54 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG526156-06 CCB	**Injection Vial**	1.00
Data File	LM30027.wiff	**Injection Volume**	10.00
Acquisition Date	6/4/2015 12:29:54 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060315_JWR.rdb
Sample ID	WG526156-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.540e+05	11.20	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.630e+02	11.30	N/A	0.0031
Perchlorate conf	2.810e+02	11.30	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 11.20(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

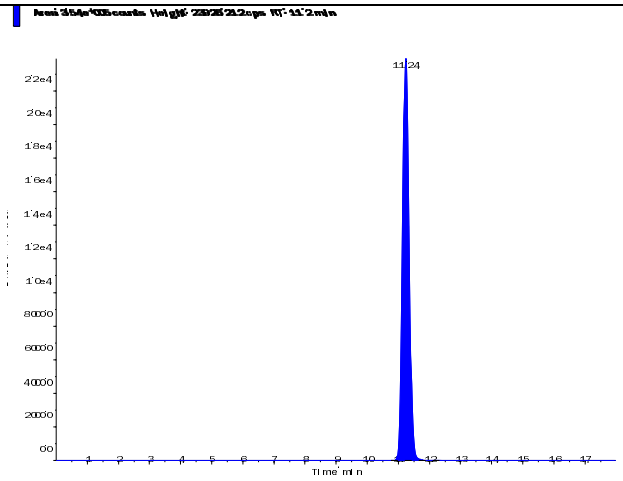

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Created with Analyst Reporter
Printed: 6/4/2015 10:41 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.30 (11.00) min Calculated conc: 0.0031 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	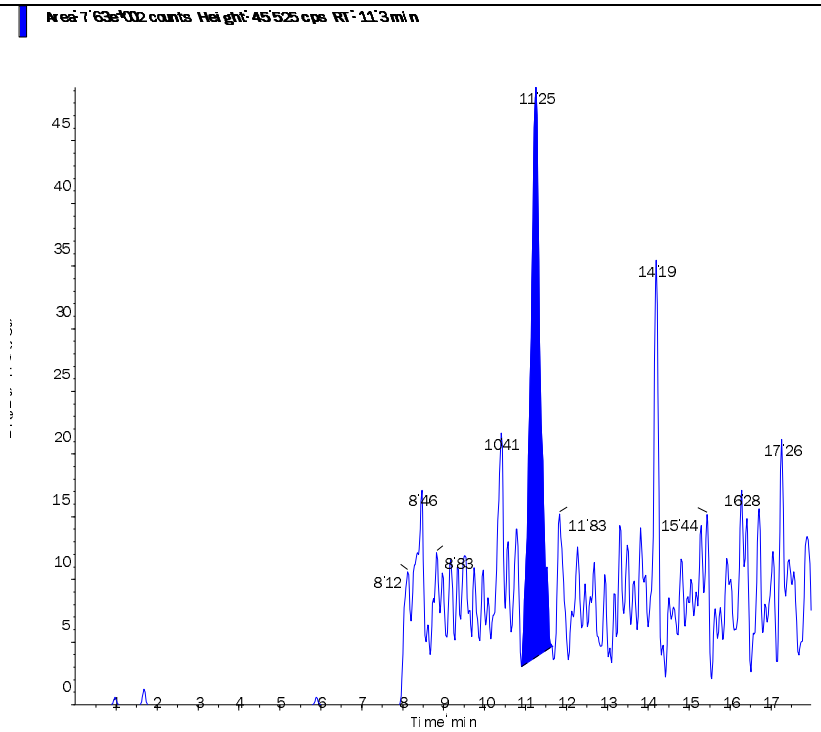
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.30 (11.00) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	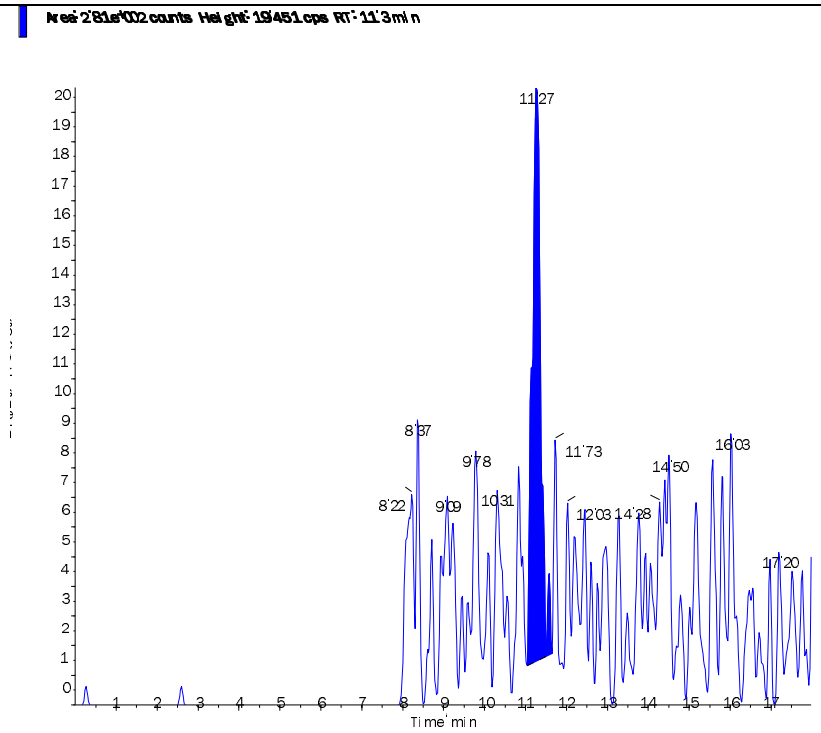

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Created with Analyst Reporter
Printed: 6/2/2015 4:00 PM

Data File	LM29965.wiff	**Result Table**	060115_JWR.rdb
Acquisition Date	6/1/2015 8:46:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525760-01 MCT (0.2ug/L)	**Injection Vial**	10.00
Data File	LM29965.wiff	**Injection Volume**	10.00
Acquisition Date	6/1/2015 8:46:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060115_JWR.rdb
Sample ID	WG525760-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD69913	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.920e+05	10.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.780e+04	10.80	N/A	0.206
Perchlorate conf	6.550e+03	10.80	N/A	0.21

O18LP (Internal Standard)

RT (Exp. RT): 10.80(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

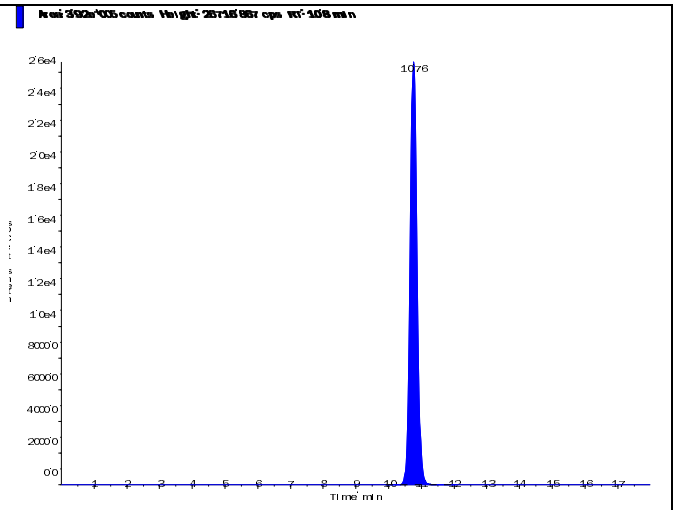

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Printed: 6/2/2015 4:00 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.80 (11.00) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.046
Sample Type:	(Unknown)

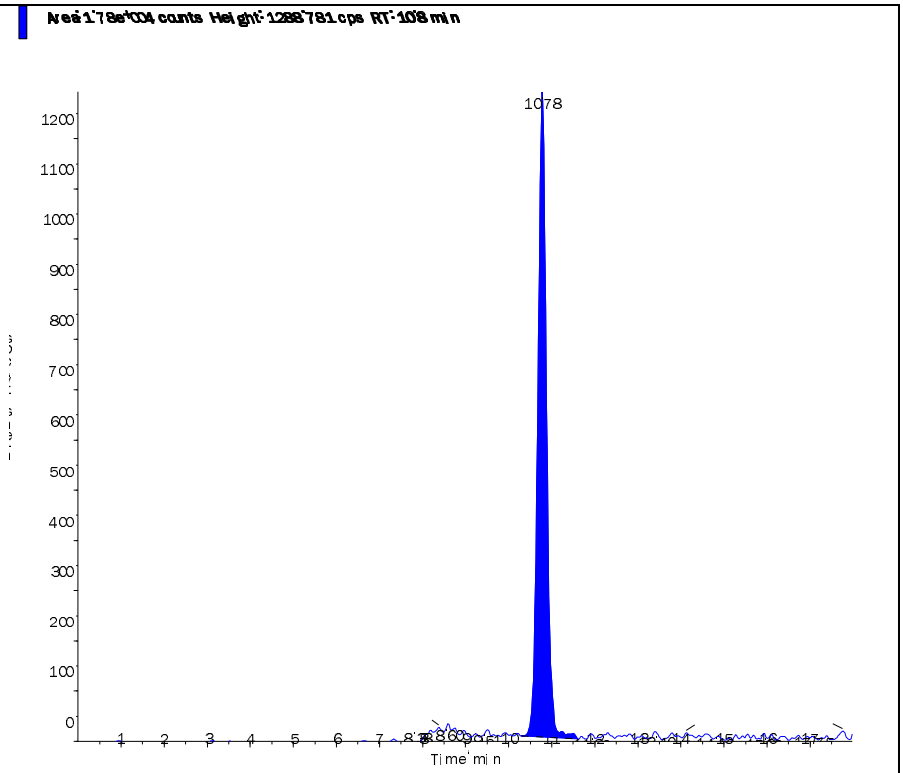

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.80 (11.00) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.017
Sample Type:	(Unknown)

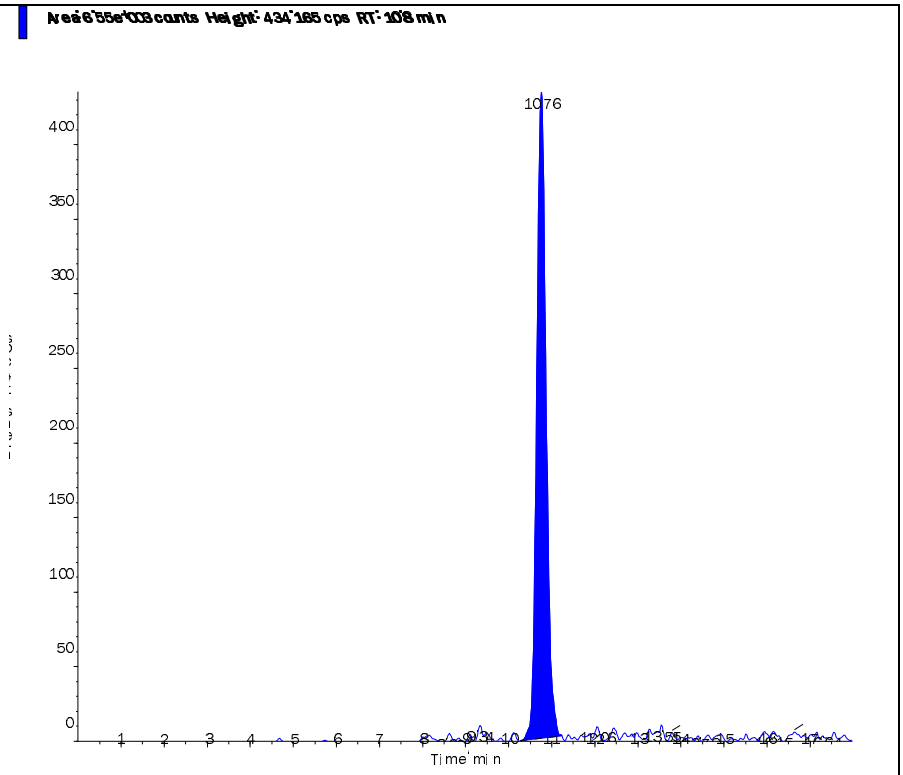

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Created with Analyst Reporter
Printed: 6/4/2015 10:33 AM

Data File	LM30002.wiff	**Result Table**	060315_JWR.rdb
Acquisition Date	6/3/2015 4:36:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG526155-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM30002.wiff	**Injection Volume**	10.00
Acquisition Date	6/3/2015 4:36:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060315_JWR.rdb
Sample ID	WG526155-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD69913	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.640e+05	11.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.780e+04	11.10	N/A	0.222
Perchlorate conf	5.900e+03	11.10	N/A	0.203

O18LP (Internal Standard)

RT (Exp. RT): 11.10(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

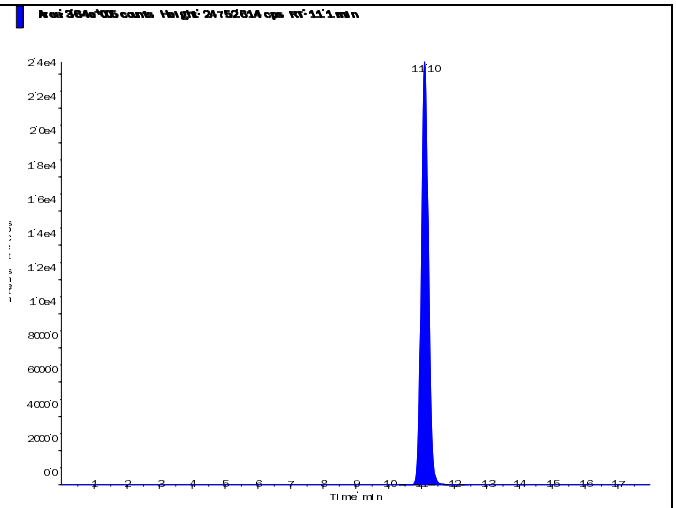

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Printed: 6/4/2015 10:33 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.10 (11.00) min
Calculated conc:	0.222 ng/ml
Area Ratio:	0.049
Sample Type:	(Unknown)

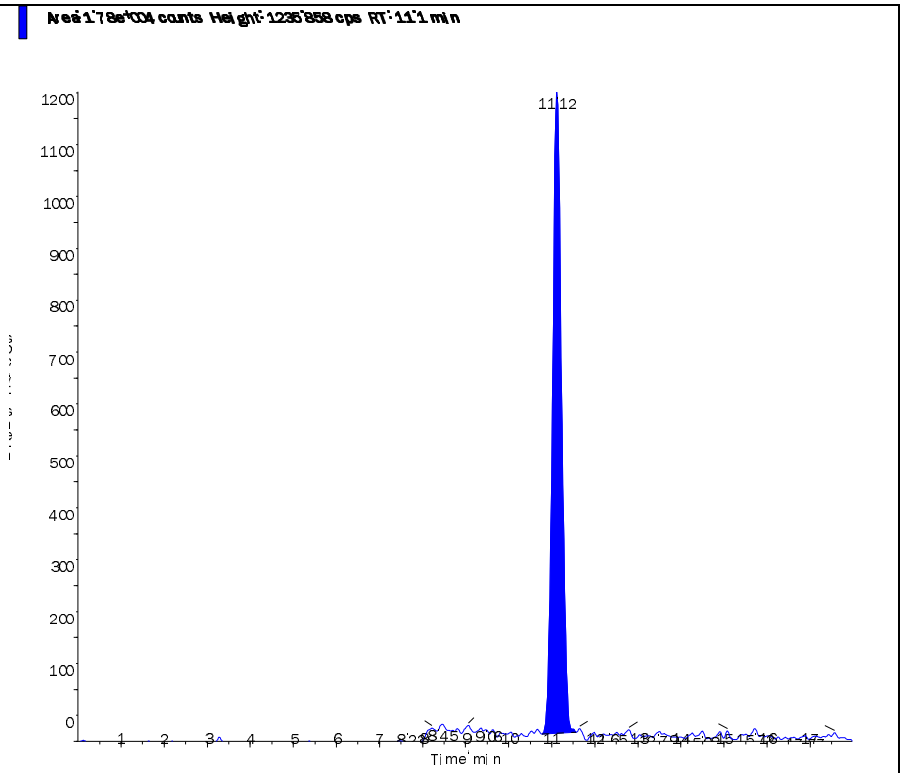

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.10 (11.00) min
Calculated conc:	0.203 ng/ml
Area Ratio:	0.016
Sample Type:	(Unknown)

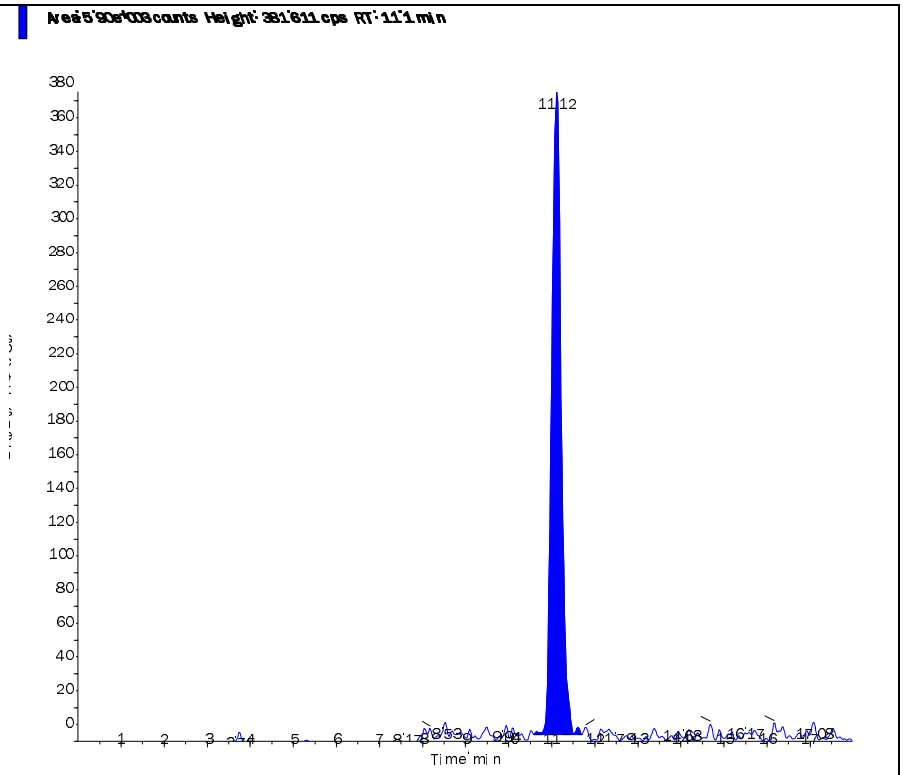

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2.2.1.5 Raw QC Data

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Created with Analyst Reporter
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Data File	LM29966.wiff	**Result Table**	060115_JWR.rdb
Acquisition Date	6/1/2015 9:05:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525760-02 BLANK	**Injection Vial**	11.00
Data File	LM29966.wiff	**Injection Volume**	10.00
Acquisition Date	6/1/2015 9:05:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060115_JWR.rdb
Sample ID	WG525760-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.990e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.190e+03	11.10	N/A	0.0069
Perchlorate conf	3.350e+02	11.10	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

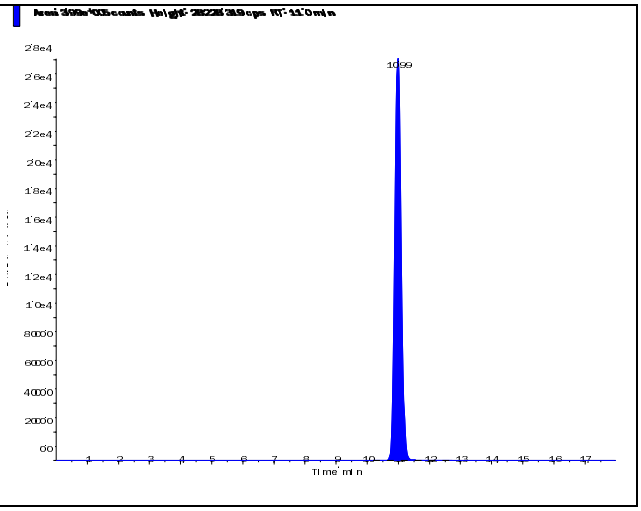

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Created with Analyst Reporter
Printed: 6/2/2015 4:00 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.10 (11.00) min Calculated conc: 0.0069 ng/ml Area Ratio: 0.003 Sample Type: (Unknown)	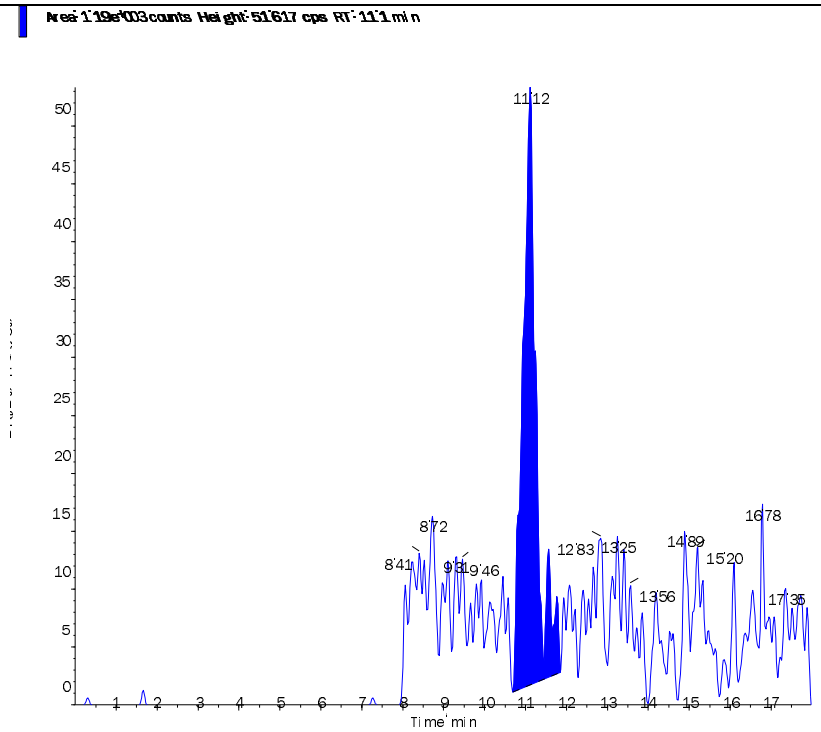
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.10 (11.00) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	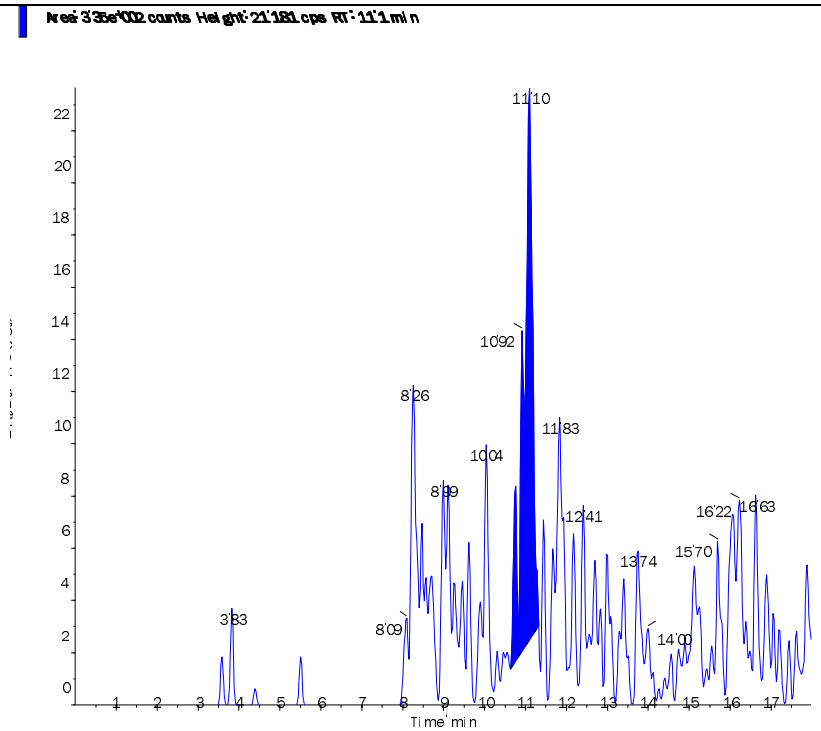

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Created with Analyst Reporter
Printed: 6/4/2015 10:33 AM

Data File	LM30003.wiff	**Result Table**	060315_JWR.rdb
Acquisition Date	6/3/2015 4:55:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG526155-02 BLANK	**Injection Vial**	5.00
Data File	LM30003.wiff	**Injection Volume**	10.00
Acquisition Date	6/3/2015 4:55:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060315_JWR.rdb
Sample ID	WG526155-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.630e+05	11.20	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.980e+02	11.20	N/A	< 0
Perchlorate conf	2.060e+02	11.10	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 11.20(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

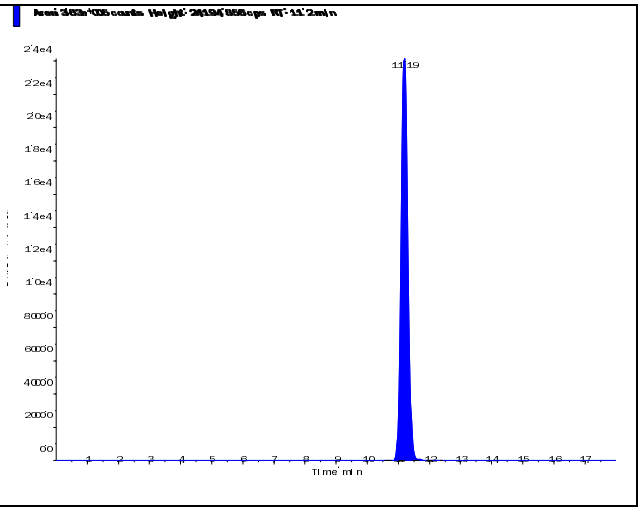

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Created with Analyst Reporter
Printed: 6/4/2015 10:33 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.20 (11.00) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	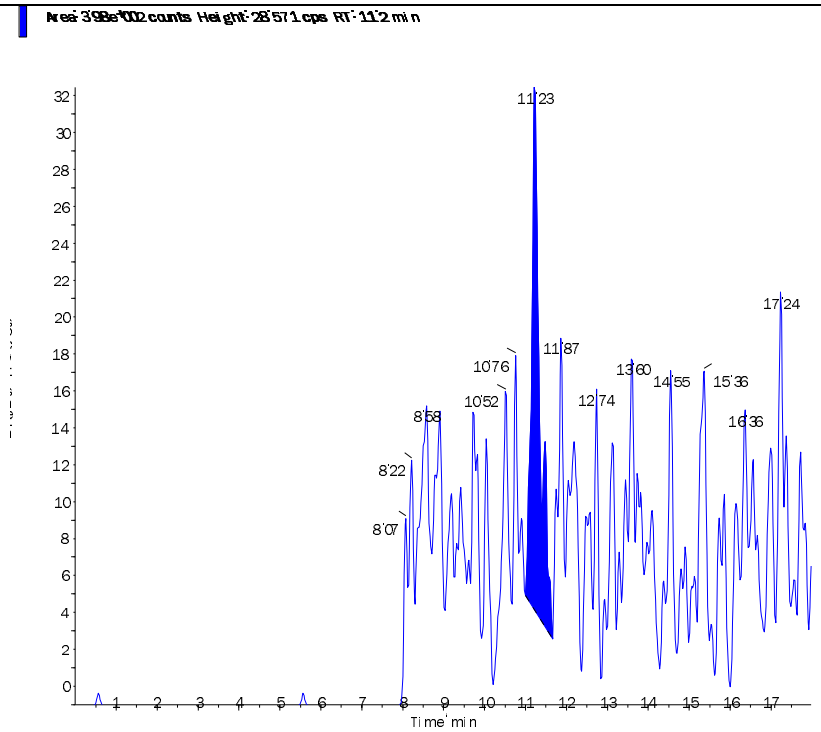
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.10 (11.00) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	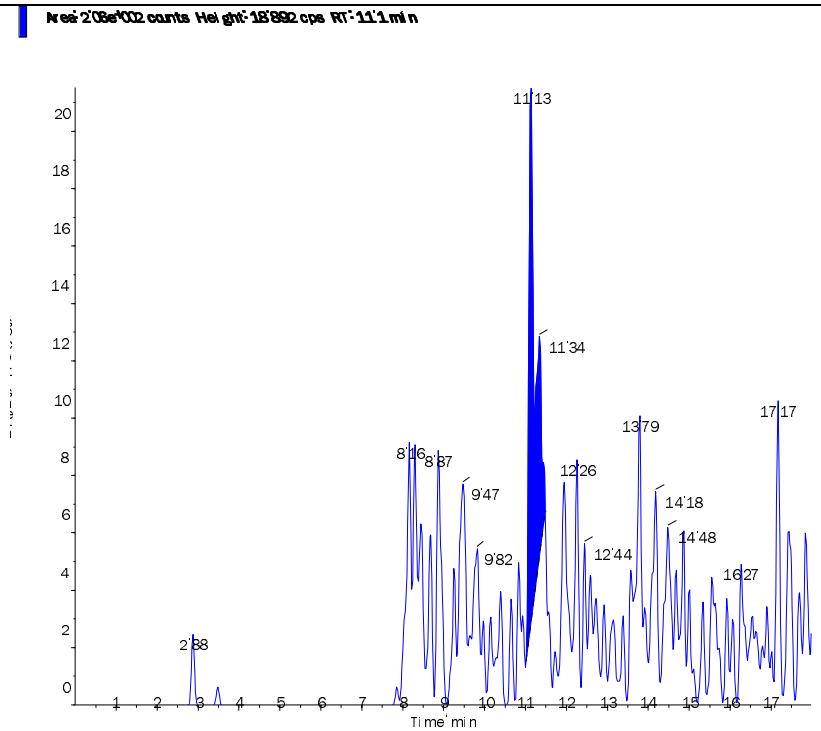

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/2/2015 4:01 PM

Data File	LM29967.wiff	**Result Table**	060115_JWR.rdb
Acquisition Date	6/1/2015 9:24:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525760-03 LCS (0.2ug/L)	**Injection Vial**	12.00
Data File	LM29967.wiff	**Injection Volume**	10.00
Acquisition Date	6/1/2015 9:24:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060115_JWR.rdb
Sample ID	WG525760-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD69913	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.630e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.140e+04	11.00	N/A	0.197
Perchlorate conf	3.830e+03	11.00	N/A	0.18

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

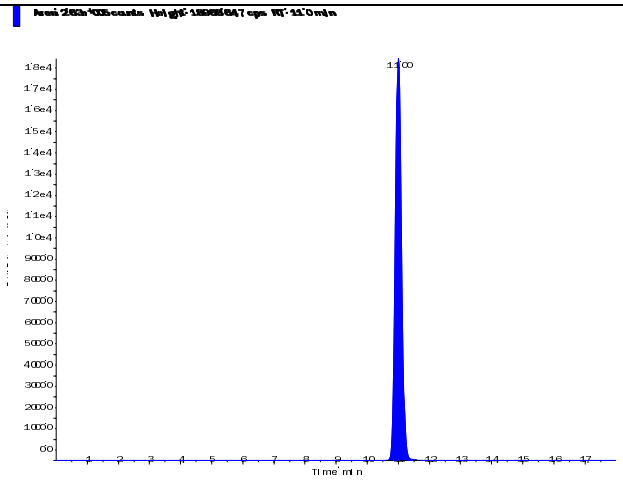

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/2/2015 4:01 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.00 (11.00) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.043
Sample Type:	(Unknown)

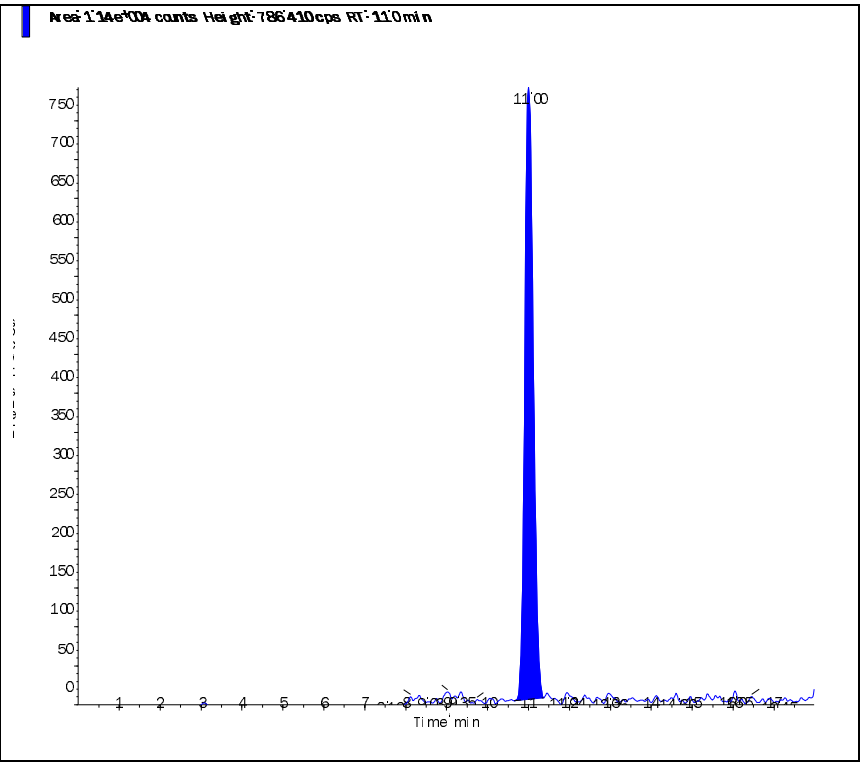

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.00 (11.00) min
Calculated conc:	0.18 ng/ml
Area Ratio:	0.015
Sample Type:	(Unknown)

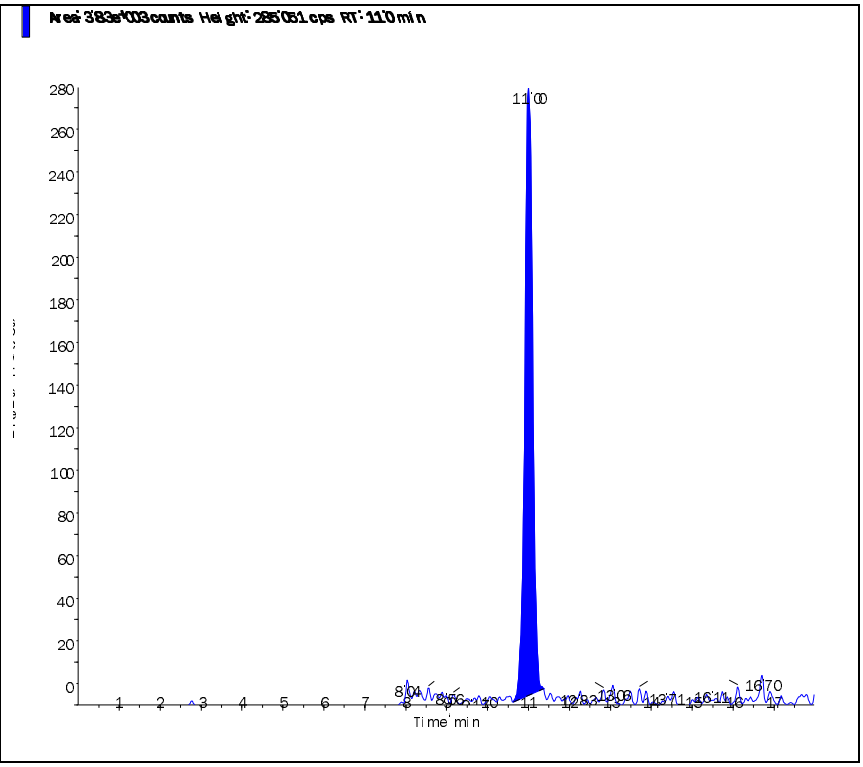

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/4/2015 10:33 AM

Data File	LM30004.wiff	**Result Table**	060315_JWR.rdb
Acquisition Date	6/3/2015 5:14:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG526155-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM30004.wiff	**Injection Volume**	10.00
Acquisition Date	6/3/2015 5:14:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060315_JWR.rdb
Sample ID	WG526155-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD69913	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.990e+05	11.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.730e+04	11.10	N/A	0.196
Perchlorate conf	6.650e+03	11.10	N/A	0.21

O18LP (Internal Standard)

RT (Exp. RT): 11.10(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

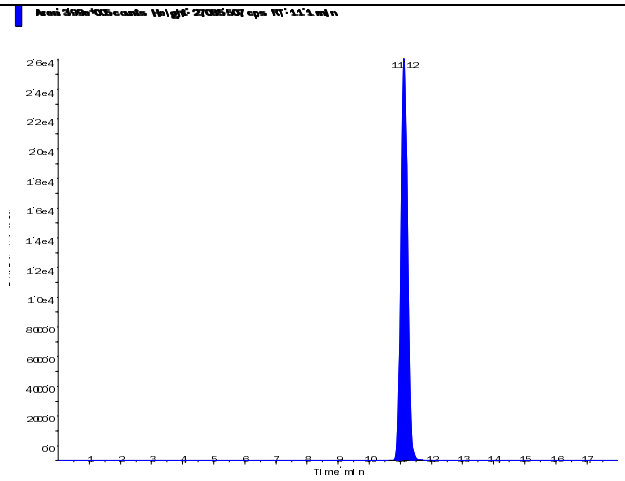

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/4/2015 10:33 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.10 (11.00) min Calculated conc: 0.196 ng/ml Area Ratio: 0.043 Sample Type: (Unknown)	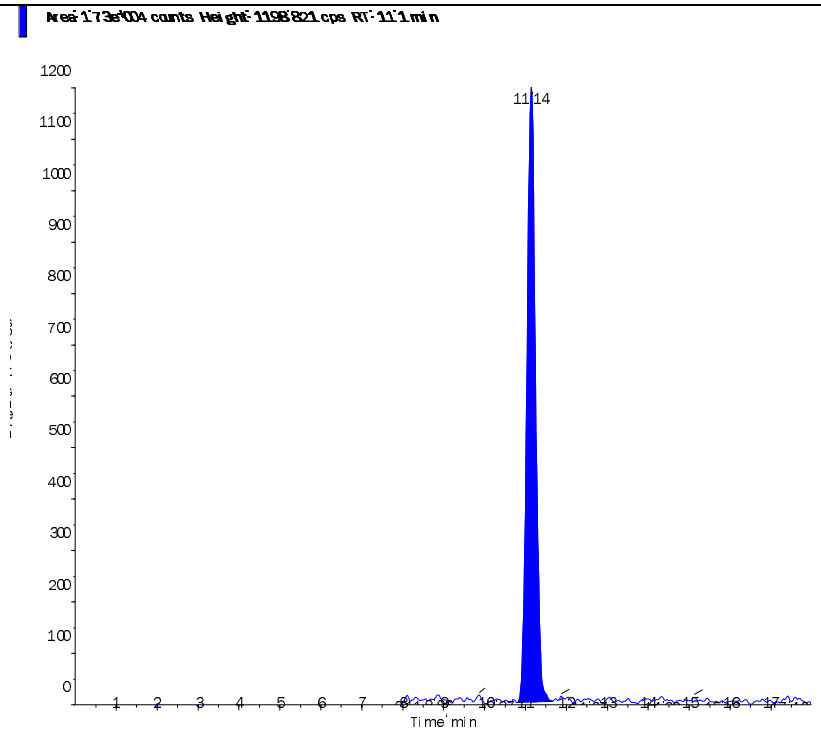
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.10 (11.00) min Calculated conc: 0.21 ng/ml Area Ratio: 0.017 Sample Type: (Unknown)	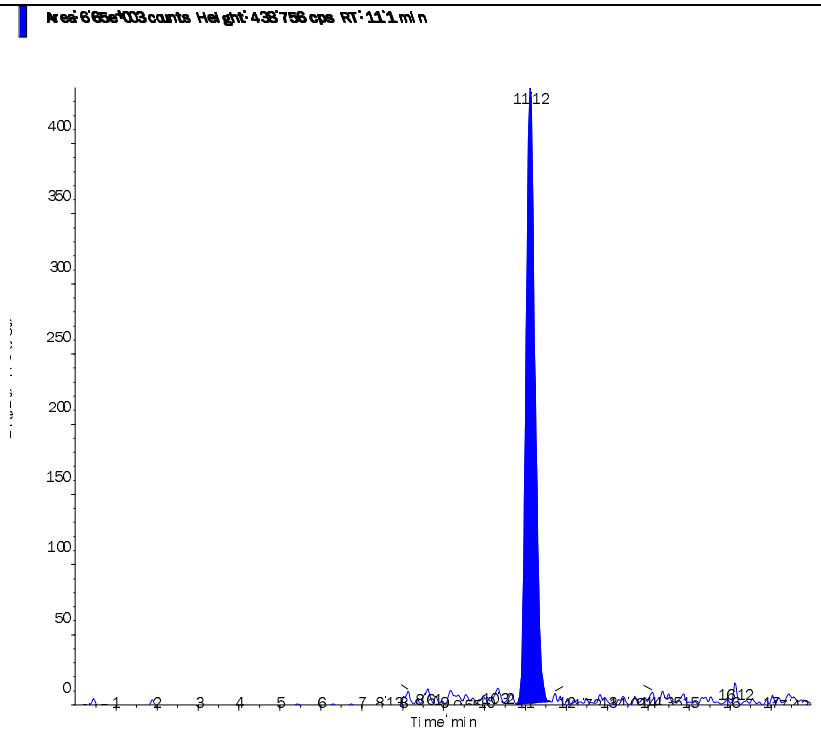

s.dataFile Page 2 of 2

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
June 12, 2015

001 - BIO-CHEM TESTING WVDEP 220	002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental	004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES	006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES	008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND	AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER	ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS	ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG	AZH - AFTER HOURS
BJO - BRIAN J. OGDEN	BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT	BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN	CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES	CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD	CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS	CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL	DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE	DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON	DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE	DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR	ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK	EPT - ETHAN P. TIDD
ERP - ERIN R. PORTER	FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY	JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH	JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS	JLL - JOHN L. LENT
JMW - JEANA M. WHITE	JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS	JWS - JACK W. SHEAVES
JYH - JI Y. HU	KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER	KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES	KHR - KIM H. RHODES
KKB - KERRI K. BUCK	KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER	KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER	LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS	LSB - LESLIE S. BUCINA
MBK - MORGAN B. KNOWLTON	MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN	MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE	MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR	MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS	PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB	PSW - PEGGY S. WEBB
QX - QIN XU	RAH - ROY A. HALSTEAD
REK - BOB E. KYER	RLB - BOB BUCHANAN
RM - RAYMOND MALEKE	RNP - RICK N. PETTY
RST - ROBIN S. TURNER	SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN	SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG	SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE	TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY	TMM - TAMMY M. MORRIS
VC - VICKI COLLIER	WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS	WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT	

Microbac Laboratories Inc.
List of Valid Qualifiers
June 12, 2015

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL/MDL).
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count
TNTC, B	Too numerous to count. Analyte present in method blank.

Microbac Laboratories Inc.
List of Valid Qualifiers
June 12, 2015

Qualkey: DOD

TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Mark Heaston	Mail to:	Linda Raabe
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000		112 East Pecan STE. 400
	Marietta, OH 45750	Sampler (print):	Scott Beesinger		San Antonio, TX 78205
Phone:	1-800-373-4071				210-296-2000
Client:	AECOM	Signature:	Scott Beesinger	Fed Ex Airbill No:	
Address:	112 East Pecan Ste. 400				
	San Antonio, TX 78205	pH:		Program:	
Turn Around Time:	STANDARD				
Project Name/Location:	Longhorn				
Project Number:	60256135.0002GA				

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
Site 50	50WW19-052215			5/22/15	0845		✓	W	4	✓	✓					
	50WW19FD-052215			5/22/15	0845		✓	W	4	✓	✓					
	50WW17-052215			5/22/15	1005		✓	W	4	✓	✓					
	50WW16-052215			5/22/15	1130		✓	W	4	✓	✓					
	GPW1-052215			5/22/15	1305		✓	W	4	✓	✓					
	50SW06-052215			5/22/15	1325		✓	W	4	✓	✓					
	50WW09-052315			5/23/15	0800		✓	W	4	✓	✓					
	50WW09MS-052315			5/23/15	0800		✓	W	4	✓	✓					
	50WW09MSD-052315			5/23/15	0800		✓	W	4	✓	✓					
	50WW10-052315			5/23/15	0915		✓	W	4	✓	✓					
	50WW27-052315			5/23/15	1040		✓	W	4	✓	✓					
	50WW15-052315			5/23/15	1140		✓	W	4	✓	✓					
	50WW26-052315			5/22/15	1415		✓	W	4	✓	✓					
	50WW21-052315			5/23/15	1530		✓	W	4	✓	✓					

ERPIMS REQUIRED FIELDS

Comments: STANDARD TAT

Relinquished by: (Signature) Scott Beesinger	Date 5/26/15	Time 1600	Received by: (Signature)	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory (Signature)	Remarks:

Microbac OVD
Received: 05/27/2015 09:55
By: BRENDA GREGORY 221000070364
Brenda Gregory

*Homogenize all composite samples prior to analysis

QA/QC Manager

00642040

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Mark Heaston	Mail to:	Linda Raabe
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000		112 East Pecan STE. 400
	Marietta, OH 45750	Sampler (print):	Scott Beesinger		San Antonio, TX 78205
Phone:	1-800-373-4071				210-296-2000
Client:	AECOM	Signature:	Scott Beesinger	Fed Ex Airbill No:	
Address:	112 East Pecan Ste. 400				
	San Antonio, TX 78205			Program:	
Turn Around Time:	STANDARD	pH:			
Project Name/Location:	Longhorn				
Project Number:	60256135.0002GA				

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
Site 50	50WW21FD-052315			5/23/15	1530		✓	W	4	✓	✓					
	50WW20-052615			5/26/15	0935		✓	W	4	✓	✓					
	50WW05-052615			5/26/15	1045		✓	W	4	✓	✓					
	50WW05MS-052615			5/26/15	1045		✓	W	4	✓	✓					
	50WW05MSD-052615			5/26/15	1045		✓	W	4	✓	✓					
	50WW07-052615			5/26/15	1340		✓	W	4	✓	✓					
	50WW28-052615			5/26/15	1505		✓	W	4	✓	✓					
	50WW28FD-052615			5/26/15	1505		✓	W	4	✓	✓					
	TRIP BLANK			5/26/15			✓	W	2	✓						

ERPIMS REQUIRED FIELDS

Comments: STANDARD TAT

Relinquished by: (Signature)	Scott Beesinger	Date 5/26/15	Time 1600	Received by: (Sign	Relinquished by: (Signature)
Relinquished by: (Signature)		Date	Time	Received for Labor (Signature)	Remarks:

Microbac OVD
Received: 05/27/2015 09:55
By: BRENDA GREGORY
221000070364
Brenda Gregory

*Homogenize all composite samples prior to analysis

Distribution: White to Lab; Yellow ... QA/QC Manager

00642041

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051620
Account: 2551
Project: 2551.096
Samples: 23
Due Date: 05-JUN-2015

Samplenum	Container ID	Products
L15051620-01	578600	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:36	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:46	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:37	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:36	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:46	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:37	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:36	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:46	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:37	CLS	AWE	

Samplenum	Container ID	Products
L15051620-01	578601	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-MAY-2015 14:36	CLS		
2	ANALYZ	W1	SEM	01-JUN-2015 11:52	JWR	CLS	
3	STORE	SEM	A1	03-JUN-2015 12:38	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051620
Account: 2551
Project: 2551.096
Samples: 23
Due Date: 05-JUN-2015

Samplenum	Container ID	Products
L15051620-02	578602	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:36	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:46	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:37	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:36	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:46	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:36	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:46	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:37	CLS	AWE	

Samplenum	Container ID	Products
L15051620-02	578603	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-MAY-2015 14:36	CLS		
2	ANALYZ	W1	SEM	01-JUN-2015 11:52	JWR	CLS	
3	STORE	SEM	A1	03-JUN-2015 12:38	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051620
Account: 2551
Project: 2551.096
Samples: 23
Due Date: 05-JUN-2015

Samplenum	Container ID	Products
L15051620-03	578604	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:36	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:46	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:37	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:36	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:46	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:37	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:36	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:46	AWE	CLS	

Samplenum	Container ID	Products
L15051620-03	578605	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-MAY-2015 14:36	CLS		
2	ANALYZ	W1	SEM	01-JUN-2015 11:52	JWR	CLS	
3	STORE	SEM	A1	03-JUN-2015 12:38	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051620
Account: 2551
Project: 2551.096
Samples: 23
Due Date: 05-JUN-2015

Samplenum	Container ID	Products
L15051620-04	578606	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:36	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:46	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:37	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:36	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:46	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:37	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:36	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:46	AWE	CLS	

Samplenum	Container ID	Products
L15051620-04	578607	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-MAY-2015 14:36	CLS		
2	ANALYZ	W1	SEM	01-JUN-2015 11:52	JWR	CLS	
3	STORE	SEM	A1	03-JUN-2015 12:38	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051620
Account: 2551
Project: 2551.096
Samples: 23
Due Date: 05-JUN-2015

Samplenum	Container ID	Products
L15051620-05	578608	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:36	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:46	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:37	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:36	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:46	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:37	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:36	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:46	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:37	CLS	AWE	

Samplenum	Container ID	Products
L15051620-05	578609	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-MAY-2015 14:36	CLS		
2	ANALYZ	W1	SEM	01-JUN-2015 11:53	JWR	CLS	
3	STORE	SEM	A1	03-JUN-2015 12:38	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051620
Account: 2551
Project: 2551.096
Samples: 23
Due Date: 05-JUN-2015

Samplenum	Container ID	Products
L15051620-06	578610	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:36	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:46	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:36	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:46	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:37	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:36	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:46	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:37	CLS	AWE	

Samplenum	Container ID	Products
L15051620-06	578611	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-MAY-2015 14:36	CLS		
2	ANALYZ	W1	SEM	01-JUN-2015 11:53	JWR	CLS	
3	STORE	SEM	A1	03-JUN-2015 12:38	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051620
Account: 2551
Project: 2551.096
Samples: 23
Due Date: 05-JUN-2015

Samplenum	Container ID	Products
L15051620-07	578612	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:36	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:46	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:36	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:46	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:37	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:36	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:46	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:37	CLS	AWE	

Samplenum	Container ID	Products
L15051620-07	578613	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-MAY-2015 14:36	CLS		
2	ANALYZ	W1	SEM	01-JUN-2015 11:53	JWR	CLS	
3	STORE	SEM	A1	03-JUN-2015 12:38	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051620
Account: 2551
Project: 2551.096
Samples: 23
Due Date: 05-JUN-2015

Samplenum	Container ID	Products
L15051620-08	578614	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:36	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:45	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:37	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:36	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:45	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:37	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:36	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:45	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:37	CLS	AWE	

Samplenum	Container ID	Products
L15051620-08	578615	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-MAY-2015 14:36	CLS		
2	ANALYZ	W1	SEM	01-JUN-2015 11:53	JWR	CLS	
3	STORE	SEM	A1	03-JUN-2015 12:38	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051620
Account: 2551
Project: 2551.096
Samples: 23
Due Date: 05-JUN-2015

Samplenum	Container ID	Products
L15051620-09	578616	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:36	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:45	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:36	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:45	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:37	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:36	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:45	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:37	CLS	AWE	

Samplenum	Container ID	Products
L15051620-09	578617	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-MAY-2015 14:36	CLS		
2	ANALYZ	W1	SEM	01-JUN-2015 11:53	JWR	CLS	
3	STORE	SEM	A1	03-JUN-2015 12:38	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051620
Account: 2551
Project: 2551.096
Samples: 23
Due Date: 05-JUN-2015

Samplenum	Container ID	Products
L15051620-10	578618	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:36	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:45	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:37	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:36	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:45	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:36	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:45	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:37	CLS	AWE	

Samplenum	Container ID	Products
L15051620-10	578619	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-MAY-2015 14:36	CLS		
2	ANALYZ	W1	SEM	01-JUN-2015 11:53	JWR	CLS	
3	STORE	SEM	A1	03-JUN-2015 12:38	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051620
Account: 2551
Project: 2551.096
Samples: 23
Due Date: 05-JUN-2015

Samplenum	Container ID	Products
L15051620-11	578620	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:36	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:45	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:37	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:36	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:45	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:37	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:36	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:45	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:37	CLS	AWE	

Samplenum	Container ID	Products
L15051620-11	578621	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-MAY-2015 14:36	CLS		
2	ANALYZ	W1	SEM	01-JUN-2015 11:53	JWR	CLS	
3	STORE	SEM	A1	03-JUN-2015 12:38	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051620
Account: 2551
Project: 2551.096
Samples: 23
Due Date: 05-JUN-2015

Samplenum	Container ID	Products
L15051620-12	578622	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:36	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:45	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:37	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:36	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:45	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:36	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:45	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:37	CLS	AWE	

Samplenum	Container ID	Products
L15051620-12	578623	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-MAY-2015 14:36	CLS		
2	ANALYZ	W1	SEM	01-JUN-2015 11:53	JWR	CLS	
3	STORE	SEM	A1	03-JUN-2015 12:38	CLS	JWR	

Samplenum	Container ID	Products
L15051620-13	578624	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	ORG4	27-MAY-2015 14:36	CLS		
2	STORE	ORG4	A1	10-JUN-2015 07:36	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:36	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:45	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:36	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:45	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:37	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051620
Account: 2551
Project: 2551.096
Samples: 23
Due Date: 05-JUN-2015

Samplenum	Container ID	Products
L15051620-13	578625	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-MAY-2015 14:37	CLS		
2	ANALYZ	W1	SEM	01-JUN-2015 11:53	JWR	CLS	
3	STORE	SEM	A1	03-JUN-2015 12:38	CLS	JWR	

Samplenum	Container ID	Products
L15051620-14	578626	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:37	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:45	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:37	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:37	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:45	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:37	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:37	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:45	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:37	CLS	AWE	

Samplenum	Container ID	Products
L15051620-14	578627	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-MAY-2015 14:37	CLS		
2	ANALYZ	W1	SEM	01-JUN-2015 11:53	JWR	CLS	
3	STORE	SEM	A1	03-JUN-2015 12:38	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051620
Account: 2551
Project: 2551.096
Samples: 23
Due Date: 05-JUN-2015

Samplenum	Container ID	Products
L15051620-15	578628	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:37	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:45	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:37	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:45	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:37	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:45	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:36	CLS	AWE	

Samplenum	Container ID	Products
L15051620-15	578629	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-MAY-2015 14:37	CLS		
2	ANALYZ	W1	SEM	01-JUN-2015 11:53	JWR	CLS	
3	STORE	SEM	A1	03-JUN-2015 12:39	CLS	JWR	

Samplenum	Container ID	Products
L15051620-16	578630	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:37	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:45	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:37	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:45	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:36	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:37	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:45	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:36	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051620
Account: 2551
Project: 2551.096
Samples: 23
Due Date: 05-JUN-2015

Samplenum	Container ID	Products
L15051620-16	578631	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-MAY-2015 14:37	CLS		
2	ANALYZ	W1	SEM	01-JUN-2015 11:53	JWR	CLS	
3	STORE	SEM	A1	03-JUN-2015 12:39	CLS	JWR	

Samplenum	Container ID	Products
L15051620-17	578632	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:37	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:45	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:36	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:37	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:45	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:36	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:37	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:45	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:36	CLS	AWE	

Samplenum	Container ID	Products
L15051620-17	578633	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-MAY-2015 14:37	CLS		
2	ANALYZ	W1	SEM	01-JUN-2015 11:53	JWR	CLS	
3	STORE	SEM	A1	04-JUN-2015 15:04	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051620
Account: 2551
Project: 2551.096
Samples: 23
Due Date: 05-JUN-2015

Samplenum	Container ID	Products
L15051620-18	578634	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:37	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:45	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:36	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:37	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:45	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:36	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:37	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:45	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:36	CLS	AWE	

Samplenum	Container ID	Products
L15051620-18	578635	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-MAY-2015 14:37	CLS		
2	ANALYZ	W1	SEM	01-JUN-2015 11:53	JWR	CLS	
3	STORE	SEM	A1	04-JUN-2015 15:04	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051620
Account: 2551
Project: 2551.096
Samples: 23
Due Date: 05-JUN-2015

Samplenum	Container ID	Products
L15051620-19	578636	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:37	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:45	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:37	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:45	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:36	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:37	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:45	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:36	CLS	AWE	

Samplenum	Container ID	Products
L15051620-19	578637	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-MAY-2015 14:37	CLS		
2	ANALYZ	W1	SEM	01-JUN-2015 11:53	JWR	CLS	
3	STORE	SEM	A1	04-JUN-2015 15:04	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051620
Account: 2551
Project: 2551.096
Samples: 23
Due Date: 05-JUN-2015

Samplenum	Container ID	Products
L15051620-20	578638	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:37	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:45	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:36	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:37	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:45	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:36	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:37	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:45	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:36	CLS	AWE	

Samplenum	Container ID	Products
L15051620-20	578639	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-MAY-2015 14:37	CLS		
2	ANALYZ	W1	SEM	01-JUN-2015 11:53	JWR	CLS	
3	STORE	SEM	A1	03-JUN-2015 12:39	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051620
Account: 2551
Project: 2551.096
Samples: 23
Due Date: 05-JUN-2015

Samplenum	Container ID	Products
L15051620-21	578640	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:37	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:45	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:36	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:37	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:45	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:36	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:37	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:45	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:36	CLS	AWE	

Samplenum	Container ID	Products
L15051620-21	578641	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-MAY-2015 14:37	CLS		
2	ANALYZ	W1	SEM	01-JUN-2015 11:54	JWR	CLS	
3	STORE	SEM	A1	03-JUN-2015 12:39	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051620
Account: 2551
Project: 2551.096
Samples: 23
Due Date: 05-JUN-2015

Samplenum	Container ID	Products
L15051620-22	578642	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:37	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:45	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:36	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:37	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:45	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:36	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:37	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:45	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:36	CLS	AWE	

Samplenum	Container ID	Products
L15051620-22	578643	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-MAY-2015 14:37	CLS		
2	ANALYZ	W1	SEM	01-JUN-2015 11:54	JWR	CLS	
3	STORE	SEM	A1	03-JUN-2015 12:39	CLS	JWR	

Samplenum	Container ID	Products
L15051620-23	578644	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:37	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:45	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:36	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-MAY-2015 14:37	CLS		
2	ANALYZ	V1	ORG4	28-MAY-2015 07:45	AWE	CLS	
3	STORE	ORG4	A1	10-JUN-2015 07:36	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - June 5, 2015

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVL NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Formate (HPLC-UV)
Propionaldehyde (HPLC-UV)
Fluoroborate (ISE)
n-Butane (RSK175)
Acetylene (RSK175)
Propane (RSK175)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVL MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene

Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL MSV0I/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVL HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVL HPLC12/HPLC/UV
Acetate

SOLID AND HAZARDOUS CHEMICALS

OVL MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVL MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene

Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L15051752

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on June 15 2015

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00112056	H	4.0		J2317161674	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
50WW01-052715	L15051752-01	05/27/2015 07:40	05/29/2015 09:54
47WW38-052715	L15051752-02	05/27/2015 09:00	05/29/2015 09:54
LHSMW54-052715	L15051752-03	05/27/2015 10:20	05/29/2015 09:54
50WW24-052815	L15051752-04	05/28/2015 08:15	05/29/2015 09:54
50WW24FF-052815	L15051752-05	05/28/2015 08:15	05/29/2015 09:54
50WW25-052815	L15051752-06	05/28/2015 09:40	05/29/2015 09:54
50WW25FF-052815	L15051752-07	05/28/2015 09:40	05/29/2015 09:54
50WW18-052815	L15051752-08	05/28/2015 11:00	05/29/2015 09:54
50WW18FF-052815	L15051752-09	05/28/2015 11:00	05/29/2015 09:54
TRIP BLANK	L15051752-10	05/28/2015 00:01	05/29/2015 09:54

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L15051752
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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2.4.3 Phosphorus Data 1129
2.4.3.1 Summary Data 1130
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1.1 Narratives

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	8260
Prep Batch Number(s):	526427, 526673	**Reviewer Name:**	Michael Albertson
LRC Date:	2015-06-11 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Michael Albertson		Volatiles Supervisor	2015-06-11 19:18:10

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	8260
Prep Batch Number(s):	526427, 526673	**Reviewer Name:**	Michael Albertson
LRC Date:	2015-06-11 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	8260
Prep Batch Number(s):	526427, 526673	**Reviewer Name:**	Michael Albertson
LRC Date:	2015-06-11 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	8260
Prep Batch Number(s):	526427, 526673	**Reviewer Name:**	Michael Albertson
LRC Date:	2015-06-11 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			2
Was the ICAL curve verified for each analyte?		X			1
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	8260
Prep Batch Number(s):	526427, 526673	**Reviewer Name:**	Michael Albertson
LRC Date:	2015-06-11 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	8260
Prep Batch Number(s):	526427, 526673	**Reviewer Name:**	Michael Albertson
LRC Date:	2015-06-11 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) carbon disulfide and trichlorfluoromethane exceed the UCL in the ICV anakyzed 05/18/2015 on HPMS17.

2)Bromomethane, carbon disulfide, dichlorodifluoromethane and 4-methyl-2-pentanone exceeded the UCL in the CCV analyzed 6/05/2015 on HPMS17. Carbon disulfide and dichlorofluoromethane exceeded the UCL in the CCV analyzed 6/08/2015 on HPMS17.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	WG525710	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-06-04 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden	Franci Bolden	Analyst I	2015-06-04 20:01:29

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	WG525710	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-06-04 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	WG525710	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-06-04 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	WG525710	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-06-04 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	WG525710	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-06-04 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	WG525710	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-06-04 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There were no exceptions.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG526362	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-06-09 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2015-06-09 19:27:43

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG526362	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-06-09 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG526362	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-06-09 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG526362	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-06-09 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG526362	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-06-09 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG526362	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-06-09 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG526149	**Reviewer Name:**	Maren Beery
LRC Date:	2015-06-10 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Maren Beery	Maren Beery	Metals Supervisor	2015-06-10 16:21:20

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG526149	**Reviewer Name:**	Maren Beery
LRC Date:	2015-06-10 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?			X		
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG526149	**Reviewer Name:**	Maren Beery
LRC Date:	2015-06-10 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG526149	**Reviewer Name:**	Maren Beery
LRC Date:	2015-06-10 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG526149	**Reviewer Name:**	Maren Beery
LRC Date:	2015-06-10 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG526149	**Reviewer Name:**	Maren Beery
LRC Date:	2015-06-10 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG525687	**Reviewer Name:**	Maren Beery
LRC Date:	2015-06-10 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Maren Beery	Maren Beery	Metals Supervisor	2015-06-10 16:17:11

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG525687	**Reviewer Name:**	Maren Beery
LRC Date:	2015-06-10 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG525687	**Reviewer Name:**	Maren Beery
LRC Date:	2015-06-10 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG525687	**Reviewer Name:**	Maren Beery
LRC Date:	2015-06-10 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG525687	**Reviewer Name:**	Maren Beery
LRC Date:	2015-06-10 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG525687	**Reviewer Name:**	Maren Beery
LRC Date:	2015-06-10 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG525588	**Reviewer Name:**	John W. Richards Jr.
LRC Date:	2015-06-02 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
John W. Richards Jr.	John Richards	Chemist II	2015-06-02 18:45:49

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG525588	**Reviewer Name:**	John W. Richards Jr.
LRC Date:	2015-06-02 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?	X				
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG525588	**Reviewer Name:**	John W. Richards Jr.
LRC Date:	2015-06-02 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					1
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG525588	**Reviewer Name:**	John W. Richards Jr.
LRC Date:	2015-06-02 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG525588	**Reviewer Name:**	John W. Richards Jr.
LRC Date:	2015-06-02 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG525588	**Reviewer Name:**	John W. Richards Jr.
LRC Date:	2015-06-02 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. Fractions -04 and -08 were analyzed at dilutions only due to their high analyte concentrations (Cl and/or SO4) which were over 200 ppm. Any sample that has a single anion load greater than 200 ppm (or a total anion load greater than 400 ppm) will be diluted in order to prevent damage to the IC from repeated overloading of the analytical column and oversaturation of the suppressor membranes.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG526339	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-06-09 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-06-09 15:25:28

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG526339	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-06-09 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG526339	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-06-09 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG526339	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-06-09 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG526339	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-06-09 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG526339	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-06-09 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG525853	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-06-09 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-06-09 15:26:07

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG525853	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-06-09 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG525853	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-06-09 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG525853	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-06-09 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG525853	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-06-09 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG525853	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-06-09 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	S
Prep Batch Number(s):	WG526128	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-06-09 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-06-09 15:24:52

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	S
Prep Batch Number(s):	WG526128	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-06-09 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	S
Prep Batch Number(s):	WG526128	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-06-09 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	S
Prep Batch Number(s):	WG526128	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-06-09 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	S
Prep Batch Number(s):	WG526128	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-06-09 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	S
Prep Batch Number(s):	WG526128	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-06-09 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG525590	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-06-09 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-06-09 15:26:34

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG525590	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-06-09 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG525590	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-06-09 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG525590	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-06-09 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
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Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG525590	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-06-09 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

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Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15051752
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG525590	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-06-09 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW01-052715	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG526427	**Analyst:**	ADC	**Run Date:**	06/05/2015 15:54
Collect Date:	05/27/2015 07:40	**Dilution:**	1	**File ID:**	17M012538
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.427	J	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.132	J	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.351	J	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.372	J	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.685	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	106	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	103	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW01-052715	**Prep Method:**	6850	**Prep Date:**	06/04/2015 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG526362	**Analyst:**	JWR	**Run Date:**	06/04/2015 18:27
Collect Date:	05/27/2015 07:40	**Dilution:**	1	**File ID:**	1LM.LM30035
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	47WW38-052715	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG526427	**Analyst:**	ADC	**Run Date:**	06/05/2015 16:14
Collect Date:	05/27/2015 09:00	**Dilution:**	1	**File ID:**	17M012539
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.198	J	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.155	J	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

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Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	105	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	100	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	47WW38-052715	**Prep Method:**	6850	**Prep Date:**	06/04/2015 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG526362	**Analyst:**	JWR	**Run Date:**	06/05/2015 13:14
Collect Date:	05/27/2015 09:00	**Dilution:**	10	**File ID:**	1LM.LM30047
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	18.0		4.00	2.00	1.00

Certificate of Analysis

Sample #:	L15051752-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	LHSMW54-052715	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG526427	**Analyst:**	ADC	**Run Date:**	06/05/2015 16:34
Collect Date:	05/27/2015 10:20	**Dilution:**	1	**File ID:**	17M012540
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	3.50	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

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Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.261	J	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	95.9		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

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Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	106	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	103	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	LHSMW54-052715	**Prep Method:**	6850	**Prep Date:**	06/04/2015 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG526362	**Analyst:**	JWR	**Run Date:**	06/04/2015 19:05
Collect Date:	05/27/2015 10:20	**Dilution:**	1	**File ID:**	1LM.LM30037
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW24-052815	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG526427	**Analyst:**	ADC	**Run Date:**	06/05/2015 16:54
Collect Date:	05/28/2015 08:15	**Dilution:**	1	**File ID:**	17M012541
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

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Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.268	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	107	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	100	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-04	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW24-052815	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG525710	**Analyst:**	JDS	**Run Date:**	06/01/2015 13:15
Collect Date:	05/28/2015 08:15	**Dilution:**	1	**File ID:**	16G47697
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-04	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW24-052815	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG525710	**Analyst:**	JDS	**Run Date:**	06/01/2015 15:00
Collect Date:	05/28/2015 08:15	**Dilution:**	5	**File ID:**	16G47706
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	544000		50000	25000	12500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW24-052815	**Prep Method:**	6850	**Prep Date:**	06/04/2015 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG526362	**Analyst:**	JWR	**Run Date:**	06/04/2015 19:24
Collect Date:	05/28/2015 08:15	**Dilution:**	1	**File ID:**	1LM.LM30038
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-04	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW24-052815	**Prep Method:**	9056	**Prep Date:**	05/29/2015 13:56
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG525588	**Analyst:**	ALS	**Run Date:**	05/29/2015 17:08
Collect Date:	05/28/2015 08:15	**Dilution:**	2	**File ID:**	I1_052915-14
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	0.400	U	0.800	0.400	0.200
Nitrite	14797-65-0	0.418	J	0.800	0.400	0.200
Sulfate	14808-79-8	95.0		4.00	2.00	1.00

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-04	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW24-052815	**Prep Method:**	9056	**Prep Date:**	05/29/2015 13:56
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG525588	**Analyst:**	ALS	**Run Date:**	05/29/2015 18:01
Collect Date:	05/28/2015 08:15	**Dilution:**	20	**File ID:**	I1_052915-17
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	342		8.00	4.00	2.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-04	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW24-052815	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	06/04/2015 18:39
Workgroup #:	WG526339	**Analyst:**	DCM	**Run Date:**	06/04/2015 18:45
Collect Date:	05/28/2015 08:15	**Dilution:**	1	**File ID:**	S2150604005.017
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	278		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L15051752-04	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW24-052815	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	06/02/2015 10:09
Workgroup #:	WG525853	**Analyst:**	DCM	**Run Date:**	06/02/2015 10:21
Collect Date:	05/28/2015 08:15	**Dilution:**	1	**File ID:**	SC150602002.027
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-04	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW24-052815	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG526128	**Analyst:**	EPT	**Run Date:**	06/03/2015 13:50
Collect Date:	05/28/2015 08:15	**Dilution:**	1	**File ID:**	ET.1506031350-04
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-04	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW24-052815	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	05/27/2015 15:47
Workgroup #:	WG525590	**Analyst:**	EPT	**Run Date:**	05/29/2015 17:22
Collect Date:	05/28/2015 08:15	**Dilution:**	10	**File ID:**	TC05292015.009
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	10.0	U	20.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-05	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	50WW24FF-052815	**Prep Method:**	3015	**Prep Date:**	06/03/2015 12:34
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/05/2015 09:27
Workgroup #:	WG526248	**Analyst:**	KHR	**Run Date:**	06/05/2015 10:37
Collect Date:	05/28/2015 08:15	**Dilution:**	1	**File ID:**	P2.060515.103701
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.100	U	0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW24FF-052815	**Prep Method:**	3015	**Prep Date:**	06/01/2015 08:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/08/2015 10:32
Workgroup #:	WG525967	**Analyst:**	BKT	**Run Date:**	06/08/2015 11:28
Collect Date:	05/28/2015 08:15	**Dilution:**	1	**File ID:**	NI.060815.112842
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0170		0.00400	0.00200	0.00100

Certificate of Analysis

Sample #:	L15051752-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW25-052815	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG526427	**Analyst:**	ADC	**Run Date:**	06/05/2015 17:13
Collect Date:	05/28/2015 09:40	**Dilution:**	1	**File ID:**	17M012542
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	3.27	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	106	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	102	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-06	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW25-052815	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG525710	**Analyst:**	JDS	**Run Date:**	06/01/2015 13:27
Collect Date:	05/28/2015 09:40	**Dilution:**	1	**File ID:**	16G47698
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	5000	U	10000	5000	2500
Methane	74-82-8	31.6		5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW25-052815	**Prep Method:**	6850	**Prep Date:**	06/04/2015 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG526362	**Analyst:**	JWR	**Run Date:**	06/04/2015 19:43
Collect Date:	05/28/2015 09:40	**Dilution:**	10	**File ID:**	1LM.LM30039
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	15.0		4.00	2.00	1.00

Certificate of Analysis

Sample #:	L15051752-06	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW25-052815	**Prep Method:**	9056	**Prep Date:**	05/29/2015 13:56
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG525588	**Analyst:**	ALS	**Run Date:**	05/29/2015 18:19
Collect Date:	05/28/2015 09:40	**Dilution:**	1	**File ID:**	I1_052915-18
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	13.8		0.400	0.200	0.100
Nitrate	14797-55-8	0.200	U	0.400	0.200	0.100
Nitrite	14797-65-0	0.200	U	0.400	0.200	0.100
Sulfate	14808-79-8	69.4		2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-06	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW25-052815	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	06/02/2015 12:35
Workgroup #:	WG525887	**Analyst:**	TB	**Run Date:**	06/02/2015 12:41
Collect Date:	05/28/2015 09:40	**Dilution:**	1	**File ID:**	S2150602002.018
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	61.7		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L15051752-06	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW25-052815	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	06/02/2015 10:09
Workgroup #:	WG525853	**Analyst:**	DCM	**Run Date:**	06/02/2015 10:22
Collect Date:	05/28/2015 09:40	**Dilution:**	1	**File ID:**	SC150602002.028
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	1.72		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15051752-06	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW25-052815	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG526128	**Analyst:**	EPT	**Run Date:**	06/03/2015 13:50
Collect Date:	05/28/2015 09:40	**Dilution:**	1	**File ID:**	ET.1506031350-05
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-06	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW25-052815	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	05/27/2015 15:47
Workgroup #:	WG525590	**Analyst:**	EPT	**Run Date:**	05/29/2015 17:37
Collect Date:	05/28/2015 09:40	**Dilution:**	2	**File ID:**	TC05292015.010
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	3.27	J	4.00	2.00	1.00

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-07	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	50WW25FF-052815	**Prep Method:**	3015	**Prep Date:**	06/03/2015 12:34
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/05/2015 09:27
Workgroup #:	WG526248	**Analyst:**	KHR	**Run Date:**	06/05/2015 10:52
Collect Date:	05/28/2015 09:40	**Dilution:**	1	**File ID:**	P2.060515.105205
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.223		0.200	0.100	0.0500

Certificate of Analysis

Sample #:	L15051752-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW25FF-052815	**Prep Method:**	3015	**Prep Date:**	06/01/2015 08:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/08/2015 10:32
Workgroup #:	WG525967	**Analyst:**	BKT	**Run Date:**	06/08/2015 11:31
Collect Date:	05/28/2015 09:40	**Dilution:**	1	**File ID:**	NI.060815.113154
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0393		0.00400	0.00200	0.00100

Certificate of Analysis

Sample #:	L15051752-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW18-052815	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG526673	**Analyst:**	ADC	**Run Date:**	06/08/2015 17:44
Collect Date:	05/28/2015 11:00	**Dilution:**	1	**File ID:**	17M012582
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250

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Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125

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Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	85	115	
1,2-Dichloroethane-d4	106	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	108	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-08	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW18-052815	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG525710	**Analyst:**	JDS	**Run Date:**	06/01/2015 13:39
Collect Date:	05/28/2015 11:00	**Dilution:**	1	**File ID:**	16G47699
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	114000		10000	5000	2500
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW18-052815	**Prep Method:**	6850	**Prep Date:**	06/04/2015 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG526362	**Analyst:**	JWR	**Run Date:**	06/04/2015 20:02
Collect Date:	05/28/2015 11:00	**Dilution:**	1	**File ID:**	1LM.LM30040
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-08	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW18-052815	**Prep Method:**	9056	**Prep Date:**	05/29/2015 13:56
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG525588	**Analyst:**	ALS	**Run Date:**	05/29/2015 18:36
Collect Date:	05/28/2015 11:00	**Dilution:**	3	**File ID:**	I1_052915-19
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	0.600	U	1.20	0.600	0.300
Nitrite	14797-65-0	0.999	J	1.20	0.600	0.300
Sulfate	14808-79-8	152		6.00	3.00	1.50

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-08	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW18-052815	**Prep Method:**	9056	**Prep Date:**	05/29/2015 13:56
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG525588	**Analyst:**	ALS	**Run Date:**	05/29/2015 18:54
Collect Date:	05/28/2015 11:00	**Dilution:**	50	**File ID:**	I1_052915-20
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	668		20.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-08	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW18-052815	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	06/05/2015 07:47
Workgroup #:	WG526393	**Analyst:**	DCM	**Run Date:**	06/05/2015 07:51
Collect Date:	05/28/2015 11:00	**Dilution:**	2	**File ID:**	S2150605001.016
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	412		80.0	40.0	20.0

Certificate of Analysis

Sample #:	L15051752-08	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW18-052815	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	06/02/2015 10:09
Workgroup #:	WG525853	**Analyst:**	DCM	**Run Date:**	06/02/2015 10:41
Collect Date:	05/28/2015 11:00	**Dilution:**	2	**File ID:**	SC150602002.044
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	1.52		0.800	0.400	0.200

Certificate of Analysis

Sample #:	L15051752-08	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW18-052815	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG526128	**Analyst:**	EPT	**Run Date:**	06/03/2015 13:50
Collect Date:	05/28/2015 11:00	**Dilution:**	1	**File ID:**	ET.1506031350-06
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-08	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW18-052815	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	05/27/2015 15:47
Workgroup #:	WG525590	**Analyst:**	EPT	**Run Date:**	05/29/2015 17:53
Collect Date:	05/28/2015 11:00	**Dilution:**	3	**File ID:**	TC05292015.011
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	3.00	U	6.00	3.00	1.50

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-09	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	50WW18FF-052815	**Prep Method:**	3015	**Prep Date:**	06/03/2015 12:34
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/05/2015 09:27
Workgroup #:	WG526248	**Analyst:**	KHR	**Run Date:**	06/05/2015 10:55
Collect Date:	05/28/2015 11:00	**Dilution:**	1	**File ID:**	P2.060515.105527
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.0757	J	0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.

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Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-09	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW18FF-052815	**Prep Method:**	3015	**Prep Date:**	06/01/2015 08:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/08/2015 10:32
Workgroup #:	WG525967	**Analyst:**	BKT	**Run Date:**	06/08/2015 11:35
Collect Date:	05/28/2015 11:00	**Dilution:**	1	**File ID:**	NI.060815.113505
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0609		0.00400	0.00200	0.00100

Certificate of Analysis

Sample #:	L15051752-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG526673	**Analyst:**	ADC	**Run Date:**	06/08/2015 15:06
Collect Date:	05/28/2015 00:01	**Dilution:**	1	**File ID:**	17M012574
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

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Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.891	J	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	105	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	111	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW01-052715	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG526427	**Analyst:**	ADC	**Run Date:**	06/05/2015 15:54
Collect Date:	05/27/2015 07:40	**Dilution:**	1	**File ID:**	17M012538
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.427	J	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.132	J	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.351	J	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.372	J	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.685	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	106	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	103	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	47WW38-052715	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG526427	**Analyst:**	ADC	**Run Date:**	06/05/2015 16:14
Collect Date:	05/27/2015 09:00	**Dilution:**	1	**File ID:**	17M012539
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.198	J	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.155	J	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	105	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	100	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	LHSMW54-052715	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG526427	**Analyst:**	ADC	**Run Date:**	06/05/2015 16:34
Collect Date:	05/27/2015 10:20	**Dilution:**	1	**File ID:**	17M012540
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	3.50	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.261	J	1.00	0.500	0.250

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	95.9		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	106	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	103	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW24-052815	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG526427	**Analyst:**	ADC	**Run Date:**	06/05/2015 16:54
Collect Date:	05/28/2015 08:15	**Dilution:**	1	**File ID:**	17M012541
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.268	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	107	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	100	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW25-052815	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG526427	**Analyst:**	ADC	**Run Date:**	06/05/2015 17:13
Collect Date:	05/28/2015 09:40	**Dilution:**	1	**File ID:**	17M012542
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	3.27	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

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Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	106	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	102	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW18-052815	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG526673	**Analyst:**	ADC	**Run Date:**	06/08/2015 17:44
Collect Date:	05/28/2015 11:00	**Dilution:**	1	**File ID:**	17M012582
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	85	115	
1,2-Dichloroethane-d4	106	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	108	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/18/2015 14:34
Workgroup #:	WG526673	**Analyst:**	ADC	**Run Date:**	06/08/2015 15:06
Collect Date:	05/28/2015 00:01	**Dilution:**	1	**File ID:**	17M012574
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

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Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.891	J	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	105	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	111	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS17 Dataset: 051815
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 21
Method: 5030C/5030B/5035 SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD70450 Surrogate Standard: STD70451
CCV: STD70453 LCS: STD70455 MS/MSD: STD70455

Column 1 ID: RTX-VMS Column 2 ID: NA
Workgroups: WG524148, WG523986 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
17M011944	WG523986-01 50ng BFB 8260	NA	1	1	STD70032	05/18/15 10:58
17M011945	WG523986-02 50ug/L CCV 8260	NA	1	1	STD70529	05/18/15 11:17
17M011946	RINSE	NA	1	1	STD70529	05/18/15 11:37
17M011947	WG523986-03 0.3ug/L STD 8260	NA	1	1	STD70529	05/18/15 11:56
17M011948	WG523986-04 0.4ug/L STD 8260	NA	1	1	STD70529	05/18/15 12:16
17M011949	WG523986-05 1.0ug/L STD 8260	NA	1	1	STD70529	05/18/15 12:36
17M011950	WG523986-06 2.0ug/L STD 8260	NA	1	1	STD70529	05/18/15 12:55
17M011951	WG523986-07 5.0ug/L STD 8260	NA	1	1	STD70529	05/18/15 13:15
17M011952	WG523986-08 20.0ug/L STD 8260	NA	1	1	STD70529	05/18/15 13:35
17M011953	WG523986-09 100.0ug/L STD 8260	NA	1	1	STD70529	05/18/15 13:55
17M011954	WG523986-10 200.0ug/L STD 8260	NA	1	1	STD70529	05/18/15 14:15
17M011955	WG523986-11 300ug/L STD 8260	NA	1	1	STD70529	05/18/15 14:34
17M011956	RINSE	NA	1	1		05/18/15 14:54
17M011957	WG523986-12 50ug/L ALT SRC	NA	1	1	STD70455	05/18/15 15:14
17M011958	RINSE	NA	1	1		05/18/15 15:48
17M011959	WG523986-12 50ug/L ALT SRC	NA	1	1	STD70455	05/18/15 16:07
17M011960	RINSE	NA	1	1		05/18/15 16:27
17M011961	WG524148-01 BLK 8260	NA	1	1		05/18/15 16:47
17M011962	WG524148-02 20ug/L LCS 8260	NA	1	1	STD70455	05/18/15 17:07
17M011963	WG524148-03 20ug/L LCS2 8260	NA	1	1	STD70455	05/18/15 17:27
17M011964	L15050743-01 A 10X 826-TC	NA	17	10		05/18/15 17:46
17M011965	L15050744-01 A 10X 826-TC	NA	17	10		05/18/15 18:06
17M011966	L15050794-01 A 10X 826-TC	NA	17	10		05/18/15 18:26
17M011967	L15050890-25 A 826-SPE	<2	1	1		05/18/15 18:46
17M011968	L15050890-05 A 826-SPE	<2	1	1		05/18/15 19:06
17M011969	L15050890-07 A 826-SPE	<2	1	1		05/18/15 19:25
17M011970	L15050890-09 A 826-SPE	<2	1	1		05/18/15 19:45
17M011971	L15050890-11 A 826-SPE	<2	1	1		05/18/15 20:05
17M011972	L15050890-13 A 826-SPE	<2	1	1		05/18/15 20:24
17M011973	L15050890-15 A 826-SPE	<2	1	1		05/18/15 20:44
17M011974	L15050890-17 A 826-SPE	<2	1	1		05/18/15 21:04
17M011975	L15050890-19 A 826-SPE	<2	1	1		05/18/15 21:24
17M011976	L15050890-21 A 826-SPE	<2	1	1		05/18/15 21:44
17M011977	L15050890-23 A 826-SPE	<2	1	1		05/18/15 22:04

Approved: May 20, 2015

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Instrument Run Log

Instrument: HPMS17 Dataset: 051815
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 21
Method: 5030C/5030B/5035 SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD70450 Surrogate Standard: STD70451
CCV: STD70453 LCS: STD70455 MS/MSD: STD70455

Column 1 ID: RTX-VMS Column 2 ID: NA
Workgroups: WG524148, WG523986 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
17M011978	L15050373-04 C 5000X 826-SPE4	<2	1	1		05/18/15 22:24
17M011979	WG523438-01 FBLK	NA	17	10		05/18/15 22:44
17M011980	WG524148-04 624-BLK	NA	2	1		05/18/15 23:04
17M011981	L15050962-01 A 10x 624-SPE1	<2	2	10		05/18/15 23:24
17M011982	L15050962-02 B 10X 624-SPE	<2	2	10		05/18/15 23:44
17M011983	L15050962-04 B 10X 624-SPE	<2	2	10		05/19/15 00:03
17M011984	L15050962-06 B 2X 624-SPE	<2	2	2		05/19/15 00:23
17M011985	L15050853-01 624-SPE	<2	2	1		05/19/15 00:43
17M011986	RINSE	NA	2	1		05/19/15 01:03
17M011987	RINSE	NA	2	1		05/19/15 01:23

Comments

Seq.	Rerun	Dil.	Reason	Analytes
14				
File ID: 17M011957				
			WG523986-12 RR, DNR. BAD LCS MIX USED.	

Approved: May 20, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS17 Dataset: 060515
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 21
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD70450 Surrogate Standard: STD70451
CCV: STD70762 LCS: STD70797 MS/MSD: STD70797

Column 1 ID: RTX-VMS Column 2 ID: NA
Workgroups: WG526427, WG526498

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
17M012519	WG526424-01 50ng BFB 8260	NA	1	1	STD70707	06/05/15 09:30
17M012520	WG526424-02 50ug/L CCV 8260	NA	1	1	STD70762	06/05/15 09:49
17M012521	RINSE	NA	1	1		06/05/15 10:13
17M012522	WG526427-01 BLANK 8260	NA	1	1		06/05/15 10:33
17M012523	WG526427-02 20ug/L LCS 8260	NA	1	1	STD70797	06/05/15 10:52
17M012524	WG526427-03 20ug/L LCSDUP 8260	NA	1	1	STD70797	06/05/15 11:17
17M012525	L15051605-08 B 10X 826-SPE	<2	1	10		06/05/15 11:37
17M012526	L15051605-16 B 5X 826-SPE	<2	1	5		06/05/15 11:56
17M012527	L15051710-05 A 826-SPE TB	<2	1	1		06/05/15 12:16
17M012528	L15051709-01 A 826-SPE	<2	1	1		06/05/15 12:36
17M012529	L15051620-14 C 826-LOW	<2	1	1		06/05/15 12:56
17M012530	L15051620-20 B 826-LOW	<2	1	1		06/05/15 13:16
17M012531	L15051605-09 B 826-SPE	<2	1	1		06/05/15 13:35
17M012532	L15051605-10 B 826-SPE	<2	1	1		06/05/15 13:55
17M012533	L15051605-14 B 826-SPE	<2	1	1		06/05/15 14:15
17M012534	L15051709-02 A 826-SPE	<2	1	1		06/05/15 14:35
17M012535	L15051709-05 A 826-SPE	<2	1	1		06/05/15 14:55
17M012536	L15051570-04 B 826-SPE1	4	1	1		06/05/15 15:14
17M012537	L15051710-01 B 2X 826-SPE	3	1	2		06/05/15 15:34
17M012538	L15051752-01 A 826-LOW	<2	1	1		06/05/15 15:54
17M012539	L15051752-02 A 826-LOW	<2	1	1		06/05/15 16:14
17M012540	L15051752-03 A 826-LOW	<2	1	1		06/05/15 16:34
17M012541	L15051752-04 A 826-LOW	<2	1	1		06/05/15 16:54
17M012542	L15051752-06 A 826-LOW	<2	1	1		06/05/15 17:13
17M012543	L15051709-04 A 10X 826-SPE	<2	1	10		06/05/15 17:33
17M012544	L15051709-03 A 5X 826-SPE	<2	1	5		06/05/15 17:53
17M012545	RINSE	NA	1	1		06/05/15 18:13
17M012546	WG526498-01 VBLK 8260	NA	1	1		06/05/15 18:33
17M012547	WG526498-02 20ug/L LCS	NA	1	1	STD70797	06/05/15 18:52
17M012548	L15051753-04 A MS 826-SPE	<2	1	1	STD70797	06/05/15 19:12
17M012549	L15051753-05 A MSD 826-SPE	<2	1	1	STD70797	06/05/15 19:32
17M012550	RINSE	NA	1	1		06/05/15 19:52
17M012551	L15051753-06 A 826-SPE	<2	1	1		06/05/15 20:12
17M012552	L15051753-03 A 826-SPE	<2	1	1		06/05/15 20:32

Approved: June 09, 2015

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Instrument Run Log

Instrument: HPMS17 Dataset: 060515
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 21
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD70450 Surrogate Standard: STD70451
CCV: STD70762 LCS: STD70797 MS/MSD: STD70797

Column 1 ID: RTX-VMS Column 2 ID: NA
Workgroups: WG526427, WG526498

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
17M012553	L15051753-02 A 826-SPE	<2	1	1		06/05/15 20:51
17M012554	L15051753-01 A 826-SPE	<2	1	1		06/05/15 21:11
17M012555	L15050310-01 A 10X 826-SPE	<2	1	10		06/05/15 21:31
17M012556	RINSE	NA	1	1		06/05/15 21:51
17M012557	WG526498-06 624-BLK	NA	1	1		06/05/15 22:11
17M012558	L15060307-01 A 624-SPE	<2	1	1		06/05/15 22:31
17M012559	L15060304-01 A 624-SPE	<2	1	1		06/05/15 22:51
17M012560	L15060304-02 A 624-SPE	<2	1	1		06/05/15 23:11
17M012561	L15060305-01 A 624-SPE	<2	1	1		06/05/15 23:31
17M012562	RINSE	NA	1	1		06/05/15 23:51
17M012563	RINSE	NA	1	1		06/06/15 00:11

Approved: June 09, 2015

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Instrument Run Log

Instrument: HPMS17 Dataset: 060815
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 22
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Method: 624 SOP: MSV10 Rev: 13
Maintenance Log ID:

Internal Standard: STD70450 Surrogate Standard: STD70451
CCV: STD70762 LCS: STD70797 MS/MSD: STD70797

Column 1 ID: RTX-VMS Column 2 ID: NA
Workgroups: WG526673, WG526811

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
17M012564	WG526670-01 50ng BFB 8260	NA	1	1	STD70707	06/08/15 11:45
17M012565	WG526670-02 50ug/L CCV 8260	NA	1	1	STD70762	06/08/15 12:04
17M012566	RINSE	NA	1	1		06/08/15 12:28
17M012567	WG526673-01 BLANK 8260	NA	1	1		06/08/15 12:48
17M012568	WG526673-02 20ug/L LCS 8260	NA	1	1	STD70797	06/08/15 13:08
17M012569	L15060015-02 A 100X MS 826-SPE	<2	1	100	STD70797	06/08/15 13:27
17M012570	L15060015-03 A 100X MSD 826-SPE	<2	1	100	STD70797	06/08/15 13:47
17M012571	L15060013-04 A 826-SPE	<2	1	1		06/08/15 14:07
17M012572	L15060015-05 A 826-SPE	<2	1	1		06/08/15 14:27
17M012573	L15060016-03 A 826-SPE	<2	1	1		06/08/15 14:46
17M012574	L15051752-10 A 826-LOW	<2	1	1		06/08/15 15:06
17M012575	L15060013-03 A 826-SPE	<2	1	1		06/08/15 15:26
17M012576	L15060145-01 A 826-SPE	<2	1	1		06/08/15 15:46
17M012577	L15060145-02 A 826-SPE	<2	1	1		06/08/15 16:06
17M012578	L15060145-04 A 826-SPE	<2	1	1		06/08/15 16:25
17M012579	L15060145-06 A 826-SPE	<2	1	1		06/08/15 16:45
17M012580	L15060145-07 A 826-SPE	<2	1	1		06/08/15 17:05
17M012581	L15060145-09 A 826-SPE	<2	1	1		06/08/15 17:25
17M012582	L15051752-08 A 826-LOW	<2	1	1		06/08/15 17:44
17M012583	L15060013-02 A 826-SPE	<2	1	1		06/08/15 18:04
17M012584	L15060013-01 A 50X 826-SPE	<2	1	50		06/08/15 18:24
17M012585	L15060015-01 A 100X 826-SPE	<2	1	100		06/08/15 18:44
17M012586	L15060015-04 A 50X 826-SPE	<2	1	50		06/08/15 19:04
17M012587	L15060016-01 A 200X 826-SPE	<2	1	200		06/08/15 19:23
17M012588	L15060016-02 A 200X 826-SPE	<2	1	200		06/08/15 19:43
17M012589	RINSE	NA	1	1		06/08/15 20:03
17M012590	RINSE	NA	1	1		06/08/15 20:23
17M012591	RINSE	NA	1	1		06/08/15 20:42
17M012592	WG526811-01 VBLK 8260	NA	1	1		06/08/15 21:02
17M012593	WG526811-02 20ug/L LCS 8260	NA	1	1	STD70797	06/08/15 21:22
17M012594	WG526811-03 20ug/L LCSDUP 8260	NA	1	1	STD70797	06/08/15 21:42
17M012595	RINSE	NA	1	1		06/08/15 22:02
17M012596	L15060310-01 B 10X 826-SPE	<2	1	10		06/08/15 22:22
17M012597	RINSE	NA	1	1		06/08/15 22:42

Approved: June 11, 2015

Microbac

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS17 Dataset: 060815
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 22
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Method: 624 SOP: MSV10 Rev: 13
Maintenance Log ID:

Internal Standard: STD70450 Surrogate Standard: STD70451
CCV: STD70762 LCS: STD70797 MS/MSD: STD70797

Column 1 ID: RTX-VMS Column 2 ID: NA
Workgroups: WG526673, WG526811

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
17M012598	WG526811-04 624-BLK	NA	2	1		06/08/15 23:02
17M012599	L15060362-03 A 624-SPE1	<2	2	1		06/08/15 23:22
17M012600	L15060362-04 A 624-SPE1	<2	2	1		06/08/15 23:41
17M012601	L15060362-05 A 624-SPE1	<2	2	1		06/09/15 00:01
17M012602	L15060423-01 A 624-SPE	<2	2	1		06/09/15 00:21
17M012603	L15060424-01 A 624-SPE	<2	2	1		06/09/15 00:41
17M012604	L15060424-02 A 624-SPE	<2	2	1		06/09/15 01:01
17M012605	L15060424-03 A 624-SPE	<2	2	1		06/09/15 01:21
17M012606	L15060424-04 A 624-SPE	<2	2	1		06/09/15 01:41
17M012607	L15060424-05 A 624-SPE	<2	2	1		06/09/15 02:01
17M012608	L15060424-06 A 624-SPE	<2	2	1		06/09/15 02:21
17M012609	L15060424-07 A 624-SPE	<2	2	1		06/09/15 02:41
17M012610	L15060424-08 A 624-SPE	<2	2	1		06/09/15 03:01
17M012611	L15060424-09 A 624-SPE	<2	2	1		06/09/15 03:21
17M012612	L15060427-01 A 624-SPE	7	2	1		06/09/15 03:41
17M012613	L15060428-01 A 624-SPE	6	2	1		06/09/15 04:01
17M012614	L15060455-01 A 624-SPE	6	2	1		06/09/15 04:21
17M012615	RINSE	NA	2	1		06/09/15 04:41
17M012616	RINSE	NA	2	1		06/09/15 05:01
17M012617	RINSE	NA	2	1		06/09/15 05:21

Comments

Seq.	Rerun	Dil.	Reason	Analytes
21				
File ID: 17M012584				
L15060013-01 Not running any more concentrated. Any higher level of Napthalene would results in carry over contamination.				
57	X	500	Over Calibration Range	BEN
File ID: 17M012585				
L15060015-01				
24	X	9	Analyzed too dilute	
File ID: 17M012587				
L15060016-01 DNR				
25	X	50	Analyzed too dilute	
File ID: 17M012588				

Approved: June 11, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS17	Dataset:	060815		
Analyst1:	ADC	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	22
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Method:	624	SOP:	MSV10	Rev:	13
Maintenance Log ID:					

Internal Standard: STD70450 Surrogate Standard: STD70451

CCV: STD70762 LCS: STD70797 MS/MSD: STD70797

Column 1 ID: RTX-VMS Column 2 ID: NA

Workgroups: WG526673, WG526811

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
L15060016-02 DNR				
38	X	5	Over Calibration Range	TCFM
File ID: 17M012601				
L15060362-05				

Approved: June 11, 2015

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Microbac Laboratories Inc.

Data Checklist

Date: 20-MAY-2015
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS17
Curve Workgroup: NA
Runlog ID: 68079
Analytical Workgroups: WG524148, WG523986 (ICAL)

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
20-MAY-2015

Secondary Reviewer:
20-MAY-2015

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2015 13:49:51

Microbac Laboratories Inc.

Data Checklist

Date: 05-JUN-2015
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS17
Curve Workgroup: NA
Runlog ID: 68478
Analytical Workgroups: WG526427, WG526498

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer: 09-JUN-2015

Secondary Reviewer: 10-JUN-2015

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-10-2015 06:59:11

Microbac Laboratories Inc.

Data Checklist

Date: 08-JUN-2015
Analyst: ADC
Analyst: NA
Method: 8260/624
Instrument: HPMS17
Curve Workgroup: NA
Runlog ID: 68527
Analytical Workgroups: WG526673, WG526811

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
10-JUN-2015

Secondary Reviewer:
11-JUN-2015

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-11-2015 08:36:29

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG526427

Login Number: L15051752

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW01-052715	01	05/27/15					06/05/2015	9.3	14		06/05/15	9.3	14	
47WW38-052715	02	05/27/15					06/05/2015	9.3	14		06/05/15	9.3	14	
LHSMW54-052715	03	05/27/15					06/05/2015	9.3	14		06/05/15	9.3	14	
50WW24-052815	04	05/28/15					06/05/2015	8.4	14		06/05/15	8.4	14	
50WW25-052815	06	05/28/15					06/05/2015	8.3	14		06/05/15	8.3	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4224980
Report generated 06/10/2015 14:54

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG526673

Login Number: L15051752

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW18-052815	08	05/28/15					06/08/2015	11.3	14		06/08/15	11.3	14	
TRIP BLANK	10	05/28/15					06/08/2015	11.6	14		06/08/15	11.6	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4224980
Report generated 06/10/2015 14:54

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L15051752
Instrument Id: HPMS17
Workgroup (AAB#): WG526427

Method: 8260
CAL ID: HPMS17-18-MAY-15
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L15051752-01	1.00	01	106	103	103	104
L15051752-02	1.00	01	105	101	100	102
L15051752-03	1.00	01	106	103	103	103
L15051752-04	1.00	01	107	103	100	103
L15051752-06	1.00	01	106	103	102	103
WG526427-01	1.00	01	105	102	102	104
WG526427-02	1.00	01	102	103	96.4	101
WG526427-03	1.00	01	100	102	99.2	103

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4224988
Report generated: 06/10/2015 14:58

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L15051752
Instrument Id: HPMS17
Workgroup (AAB#): WG526673

Method: 8260
CAL ID: HPMS17-18-MAY-15
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L15051752-08	1.00	01	106	105	108	105
L15051752-10	1.00	01	105	102	111	105
WG526673-01	1.00	01	104	101	104	103
WG526673-02	1.00	01	105	104	103	105

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4224988
Report generated: 06/10/2015 14:58

METHOD BLANK SUMMARY

Login Number: L15051752
Blank File ID: 17M012522
Prep Date: 06/05/15 10:33
Analyzed Date: 06/05/15 10:33
Analyst: ADC

Work Group: WG526427
Blank Sample ID: WG526427-01
Instrument ID: HPMS17
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG526427-02	17M012523	06/05/15 10:52	01
LCS2	WG526427-03	17M012524	06/05/15 11:17	01
50WW01-052715	L15051752-01	17M012538	06/05/15 15:54	01
47WW38-052715	L15051752-02	17M012539	06/05/15 16:14	01
LHSMW54-052715	L15051752-03	17M012540	06/05/15 16:34	01
50WW24-052815	L15051752-04	17M012541	06/05/15 16:54	01
50WW25-052815	L15051752-06	17M012542	06/05/15 17:13	01

Report Name: BLANK_SUMMARY
PDF File ID: 4224981
Report generated 06/10/2015 14:54

METHOD BLANK SUMMARY

Login Number: L15051752
Blank File ID: 17M012567
Prep Date: 06/08/15 12:48
Analyzed Date: 06/08/15 12:48
Analyst: ADC

Work Group: WG526673
Blank Sample ID: WG526673-01
Instrument ID: HPMS17
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG526673-02	17M012568	06/08/15 13:08	01
TRIP BLANK	L15051752-10	17M012574	06/08/15 15:06	01
50WW18-052815	L15051752-08	17M012582	06/08/15 17:44	01

Report Name: BLANK_SUMMARY
PDF File ID: 4224981
Report generated 06/10/2015 14:54

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L15051752 Prep Date: 06/05/15 10:33 Sample ID: WG526427-01
Instrument ID: HPMS17 Run Date: 06/05/15 10:33 Prep Method: 5030B/5030C/503
File ID: 17M012522 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG526427 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS17-18-MAY-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 4224982
10-JUN-2015 14:54

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051752 Prep Date: 06/05/15 10:33 Sample ID: WG526427-01
Instrument ID: HPMS17 Run Date: 06/05/15 10:33 Prep Method: 5030B/5030C/503
File ID: 17M012522 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG526427 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS17-18-MAY-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	102	85 - 115	PASS
1,2-Dichloroethane-d4	105	70 - 120	PASS
Toluene-d8	104	85 - 120	PASS
4-Bromofluorobenzene	102	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4224982
10-JUN-2015 14:54

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L15051752 Prep Date: 06/08/15 12:48 Sample ID: WG526673-01
Instrument ID: HPMS17 Run Date: 06/08/15 12:48 Prep Method: 5030B/5030C/503
File ID: 17M012567 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG526673 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS17-18-MAY-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
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Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051752 Prep Date: 06/08/15 12:48 Sample ID: WG526673-01
Instrument ID: HPMS17 Run Date: 06/08/15 12:48 Prep Method: 5030B/5030C/503
File ID: 17M012567 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG526673 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS17-18-MAY-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	-2.52	85 - 115	FAIL
1,2-Dichloroethane-d4	-2.60	70 - 120	FAIL
Toluene-d8	-2.58	85 - 120	FAIL
4-Bromofluorobenzene	-2.61	75 - 120	FAIL

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4224982
10-JUN-2015 14:54

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051752 Run Date: 06/08/2015 Sample ID: WG526673-02
Instrument ID: HPMS17 Run Time: 13:08 Prep Method: 5030B/5030C/503
File ID: 17M012568 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG526673 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD70905 Cal ID: HPMS17-18-MAY-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	17.0	85.0	40 - 140	
Benzene	20.0	19.6	97.9	80 - 120	
Bromobenzene	20.0	19.4	96.9	75 - 125	
Bromochloromethane	20.0	20.8	104	65 - 130	
Bromodichloromethane	20.0	19.8	99.2	75 - 120	
Bromoform	20.0	22.5	112	70 - 130	
Bromomethane	20.0	20.3	101	30 - 145	
2-Butanone	20.0	18.1	90.5	30 - 150	
n-Butylbenzene	20.0	20.2	101	70 - 135	
sec-Butylbenzene	20.0	18.8	94.0	70 - 125	
tert-Butylbenzene	20.0	18.8	94.1	70 - 130	
Carbon disulfide	20.0	11.9	59.6	35 - 160	
Carbon tetrachloride	20.0	20.4	102	65 - 140	
Chlorobenzene	20.0	18.4	91.8	80 - 120	
Chlorodibromomethane	20.0	20.3	101	60 - 135	
Chloroethane	20.0	20.7	103	60 - 135	
Chloroform	20.0	20.5	102	65 - 135	
Chloromethane	20.0	22.5	112	40 - 125	
2-Chlorotoluene	20.0	18.2	90.8	75 - 125	
4-Chlorotoluene	20.0	17.9	89.5	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	19.9	99.3	50 - 130	
1,2-Dibromoethane	20.0	20.3	101	80 - 120	
Dibromomethane	20.0	21.6	108	75 - 125	
1,2-Dichlorobenzene	20.0	18.3	91.6	70 - 120	
1,3-Dichlorobenzene	20.0	17.9	89.6	75 - 125	
1,4-Dichlorobenzene	20.0	19.3	96.4	75 - 125	
Dichlorodifluoromethane	20.0	30.1	150	30 - 155	
1,1-Dichloroethane	20.0	19.4	96.9	70 - 135	
1,2-Dichloroethane	20.0	20.2	101	70 - 130	
1,1-Dichloroethene	20.0	18.6	92.9	70 - 130	
cis-1,2-Dichloroethene	20.0	20.0	100	70 - 125	
trans-1,2-Dichloroethene	20.0	20.3	101	60 - 140	
1,2-Dichloropropane	20.0	20.0	99.8	75 - 125	
1,3-Dichloropropane	20.0	20.2	101	75 - 125	
2,2-Dichloropropane	20.0	20.9	104	70 - 135	
cis-1,3-Dichloropropene	20.0	21.3	107	70 - 130	
trans-1,3-Dichloropropene	20.0	21.3	106	55 - 140	
1,1-Dichloropropene	20.0	19.5	97.4	75 - 130	
Ethylbenzene	20.0	19.8	99.0	75 - 125	
2-Hexanone	20.0	18.2	91.2	55 - 130	
Hexachlorobutadiene	20.0	20.0	100	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4228621
Report generated: 06/10/2015 14:58

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051752 Run Date: 06/08/2015 Sample ID: WG526673-02
Instrument ID: HPMS17 Run Time: 13:08 Prep Method: 5030B/5030C/503
File ID: 17M012568 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG526673 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD70905 Cal ID: HPMS17 - 18-MAY-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	18.7	93.5	75 - 125	
p-Isopropyltoluene	20.0	18.9	94.3	75 - 130	
4-Methyl-2-pentanone	20.0	17.1	85.6	60 - 135	
Methylene chloride	20.0	19.9	99.6	55 - 140	
Naphthalene	20.0	19.1	95.5	55 - 140	
n-Propylbenzene	20.0	18.6	92.9	70 - 130	
Styrene	20.0	20.1	100	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	19.9	99.3	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	20.1	101	65 - 130	
Tetrachloroethene	20.0	19.3	96.4	45 - 150	
Toluene	20.0	19.9	99.3	75 - 120	
1,2,3-Trichlorobenzene	20.0	19.4	97.2	55 - 140	
1,2,4-Trichlorobenzene	20.0	19.4	97.1	65 - 135	
1,1,1-Trichloroethane	20.0	20.1	100	65 - 130	
1,1,2-Trichloroethane	20.0	19.9	99.7	75 - 125	
Trichloroethene	20.0	18.9	94.4	70 - 125	
Trichlorofluoromethane	20.0	21.5	108	60 - 145	
1,2,3-Trichloropropane	20.0	20.5	102	75 - 125	
1,2,4-Trimethylbenzene	20.0	20.3	102	75 - 130	
1,3,5-Trimethylbenzene	20.0	20.3	101	75 - 130	
Vinyl chloride	20.0	22.0	110	50 - 145	
o-Xylene	20.0	18.6	93.1	80 - 120	
m-,p-Xylene	40.0	39.1	97.9	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	104	85 - 115	PASS
1,2-Dichloroethane-d4	105	70 - 120	PASS
Toluene-d8	105	85 - 120	PASS
4-Bromofluorobenzene	103	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4228621
Report generated: 06/10/2015 14:58

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051752 Analyst: ADC Prep Method: 5030B/5030C/503
Instrument ID: HPMS17 Matrix: Water Method: 8260B
Workgroup (AAB#): WG526427 Units: ug/L
QC Key: DOD4 Lot #: STD70694

Sample ID: WG526427-02 LCS File ID: 17M012523 Run Date: 06/05/2015 10:52
Sample ID: WG526427-03 LCS2 File ID: 17M012524 Run Date: 06/05/2015 11:17

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	19.7	98.5	20.0	19.2	96.2	2.35	80 - 130	30	
1,1,1-Trichloroethane	20.0	20.0	100	20.0	19.4	97.1	3.10	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	19.0	94.8	20.0	18.0	89.9	5.33	65 - 130	30	
1,1,2-Trichloroethane	20.0	19.4	96.9	20.0	18.7	93.4	3.76	75 - 125	30	
1,1-Dichloroethane	20.0	19.5	97.5	20.0	18.7	93.5	4.24	70 - 135	30	
1,1-Dichloroethene	20.0	18.8	93.9	20.0	18.0	90.2	3.94	70 - 130	30	
1,1-Dichloropropene	20.0	20.0	100	20.0	19.4	97.2	2.96	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	18.5	92.4	20.0	17.9	89.7	2.96	55 - 140	30	
1,2,3-Trichloropropane	20.0	19.0	95.0	20.0	18.6	92.8	2.31	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	19.1	95.5	20.0	19.0	95.1	0.354	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	19.3	96.4	20.0	19.3	96.6	0.150	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	19.3	96.6	20.0	17.5	87.7	9.55	50 - 130	30	
1,2-Dibromoethane	20.0	19.7	98.4	20.0	19.2	95.9	2.55	80 - 120	30	
1,2-Dichlorobenzene	20.0	17.3	86.4	20.0	17.1	85.6	0.994	70 - 120	30	
1,2-Dichloroethane	20.0	20.2	101	20.0	19.5	97.3	3.89	70 - 130	30	
1,2-Dichloropropane	20.0	20.1	101	20.0	19.6	97.8	2.93	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	19.2	96.0	20.0	19.2	96.1	0.135	75 - 130	30	
1,3-Dichlorobenzene	20.0	17.3	86.6	20.0	17.4	87.2	0.735	75 - 125	30	
1,3-Dichloropropane	20.0	19.7	98.4	20.0	19.0	95.2	3.25	75 - 125	30	
1,4-Dichlorobenzene	20.0	18.8	94.1	20.0	18.7	93.4	0.746	75 - 125	30	
2,2-Dichloropropane	20.0	21.0	105	20.0	19.8	98.9	5.83	70 - 135	30	
2-Butanone	20.0	20.5	102	20.0	18.2	90.8	12.0	30 - 150	30	
2-Chlorotoluene	20.0	17.2	85.8	20.0	17.2	86.2	0.465	75 - 125	30	
2-Hexanone	20.0	18.7	93.4	20.0	16.9	84.4	10.1	55 - 130	30	
4-Chlorotoluene	20.0	17.3	86.6	20.0	17.7	88.7	2.39	75 - 130	30	
4-Methyl-2-pentanone	20.0	18.0	89.8	20.0	16.3	81.6	9.53	60 - 135	30	
Acetone	20.0	21.3	107	20.0	19.0	95.1	11.5	40 - 140	30	
Benzene	20.0	19.7	98.6	20.0	19.0	95.1	3.58	80 - 120	30	
Bromobenzene	20.0	18.3	91.5	20.0	18.3	91.4	0.162	75 - 125	30	
Bromochloromethane	20.0	20.3	102	20.0	19.7	98.6	3.02	65 - 130	30	
Bromodichloromethane	20.0	20.0	100	20.0	19.3	96.6	3.42	75 - 120	30	
Bromoform	20.0	21.7	109	20.0	21.0	105	3.06	70 - 130	30	
Bromomethane	20.0	15.9	79.3	20.0	16.2	80.9	1.95	30 - 145	30	
Carbon disulfide	20.0	10.9	54.5	20.0	10.5	52.3	4.12	35 - 160	30	
Carbon tetrachloride	20.0	20.6	103	20.0	19.8	99.0	3.76	65 - 140	30	
Chlorobenzene	20.0	18.5	92.5	20.0	18.1	90.3	2.35	80 - 120	30	
Chloroethane	20.0	19.1	95.6	20.0	18.4	91.9	3.89	60 - 135	30	
Chloroform	20.0	20.7	104	20.0	20.0	99.9	3.63	65 - 135	30	
Chloromethane	20.0	19.2	95.8	20.0	19.0	94.9	0.945	40 - 125	30	
cis-1,2-Dichloroethene	20.0	20.3	101	20.0	19.6	98.2	3.23	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4224983
Report generated: 06/10/2015 14:54

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051752 Analyst: ADC Prep Method: 5030B/5030C/503
Instrument ID: HPMS17 Matrix: Water Method: 8260B
Workgroup (AAB#): WG526427 Units: ug/L
QC Key: DOD4 Lot #: STD70694

Sample ID: WG526427-02 LCS File ID: 17M012523 Run Date: 06/05/2015 10:52
Sample ID: WG526427-03 LCS2 File ID: 17M012524 Run Date: 06/05/2015 11:17

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	21.3	107	20.0	20.6	103	3.50	70 - 130	30	
Chlorodibromomethane	20.0	19.8	98.8	20.0	19.0	95.1	3.83	60 - 135	30	
Dibromomethane	20.0	21.4	107	20.0	20.4	102	4.55	75 - 125	30	
Dichlorodifluoromethane	20.0	26.7	134	20.0	25.7	128	3.98	30 - 155	30	
Ethylbenzene	20.0	19.9	99.4	20.0	19.4	97.2	2.18	75 - 125	30	
Hexachlorobutadiene	20.0	18.8	94.2	20.0	19.1	95.5	1.35	50 - 140	30	
Isopropylbenzene	20.0	18.5	92.7	20.0	18.3	91.3	1.47	75 - 125	30	
m-,p-Xylene	40.0	39.1	97.7	40.0	38.4	96.0	1.79	75 - 130	30	
Methylene chloride	20.0	19.9	99.7	20.0	19.3	96.7	2.97	55 - 140	30	
n-Butylbenzene	20.0	20.3	102	20.0	20.4	102	0.626	70 - 135	30	
n-Propylbenzene	20.0	17.8	89.1	20.0	17.8	89.2	0.123	70 - 130	30	
Naphthalene	20.0	17.9	89.5	20.0	17.0	85.0	5.20	55 - 140	30	
o-Xylene	20.0	18.3	91.5	20.0	18.0	90.2	1.50	80 - 120	30	
p-Isopropyltoluene	20.0	18.0	90.2	20.0	18.0	90.1	0.137	75 - 130	30	
sec-Butylbenzene	20.0	17.9	89.5	20.0	18.0	89.8	0.334	70 - 125	30	
Styrene	20.0	20.2	101	20.0	19.9	99.3	1.80	65 - 135	30	
tert-Butylbenzene	20.0	17.8	88.8	20.0	17.6	87.8	1.19	70 - 130	30	
Tetrachloroethene	20.0	19.2	96.0	20.0	19.1	95.5	0.510	45 - 150	30	
Toluene	20.0	19.8	98.9	20.0	19.3	96.6	2.30	75 - 120	30	
trans-1,2-Dichloroethene	20.0	20.3	101	20.0	19.6	97.9	3.55	60 - 140	30	
trans-1,3-Dichloropropene	20.0	21.1	106	20.0	20.3	101	4.28	55 - 140	30	
Trichloroethene	20.0	19.3	96.4	20.0	18.8	93.9	2.63	70 - 125	30	
Trichlorofluoromethane	20.0	21.4	107	20.0	20.7	103	3.43	60 - 145	30	
Vinyl chloride	20.0	21.1	105	20.0	20.1	100	4.84	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	102	100	70 - 120	PASS
Dibromofluoromethane	103	102	85 - 115	PASS
4-Bromofluorobenzene	96.4	99.2	75 - 120	PASS
Toluene-d8	101	103	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4224983
Report generated: 06/10/2015 14:54

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15051752
Instrument: HPMS17
Analyst: ADC
Workgroup: WG523986

Tune ID: WG523986-01
Run Date: 05/18/2015
Run Time: 10:58
File ID: 17M011944
Cal ID: HPMS17 - 18-MAY-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	15.4	5148	PASS
75.0	95.0	30.0	60.0	46.4	15549	PASS
95.0	95.0	100	100	100	33515	PASS
96.0	95.0	5.00	9.00	6.60	2212	PASS
173	174	0	2.00	0.881	278	PASS
174	95.0	50.0	100	94.1	31549	PASS
175	174	5.00	9.00	7.29	2299	PASS
176	174	95.0	101	98.5	31069	PASS
177	176	5.00	9.00	6.55	2034	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG523986-02	STD-CCV	01	05/18/2015 11:17	
WG523986-03	STD	01	05/18/2015 11:56	
WG523986-04	STD	01	05/18/2015 12:16	
WG523986-05	STD	01	05/18/2015 12:36	
WG523986-06	STD	01	05/18/2015 12:55	
WG523986-07	STD	01	05/18/2015 13:15	
WG523986-08	STD	01	05/18/2015 13:35	
WG523986-09	STD	01	05/18/2015 13:55	
WG523986-10	STD	01	05/18/2015 14:15	
WG523986-11	STD	01	05/18/2015 14:34	
WG523986-12	SSCV	01	05/18/2015 16:07	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4224985
Report generated 06/10/2015 14:55

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15051752
Instrument: HPMS17
Analyst: ADC
Workgroup: WG526424

Tune ID: WG526424-01
Run Date: 06/05/2015
Run Time: 09:30
File ID: 17M012519
Cal ID: HPMS17 - 18-MAY-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	15.8	4758	PASS
75.0	95.0	30.0	60.0	45.2	13649	PASS
95.0	95.0	100	100	100	30179	PASS
96.0	95.0	5.00	9.00	6.56	1981	PASS
173	174	0	2.00	0.556	158	PASS
174	95.0	50.0	100	94.2	28421	PASS
175	174	5.00	9.00	7.58	2155	PASS
176	174	95.0	101	97.3	27640	PASS
177	176	5.00	9.00	6.55	1810	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG526424-02	CCV	01	06/05/2015 09:49	
WG526427-01	BLANK	01	06/05/2015 10:33	
WG526427-02	LCS	01	06/05/2015 10:52	
WG526427-03	LCS2	01	06/05/2015 11:17	
L15051752-01	50WW01-052715	01	06/05/2015 15:54	
L15051752-02	47WW38-052715	01	06/05/2015 16:14	
L15051752-03	LHSMW54-052715	01	06/05/2015 16:34	
L15051752-04	50WW24-052815	01	06/05/2015 16:54	
L15051752-06	50WW25-052815	01	06/05/2015 17:13	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4224985
Report generated 06/10/2015 14:55

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15051752
Instrument: HPMS17
Analyst: ADC
Workgroup: WG526670

Tune ID: WG526670-01
Run Date: 06/08/2015
Run Time: 11:45
File ID: 17M012564
Cal ID: HPMS17 - 18-MAY-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	16.0	4760	PASS
75.0	95.0	30.0	60.0	46.2	13766	PASS
95.0	95.0	100	100	100	29816	PASS
96.0	95.0	5.00	9.00	6.56	1956	PASS
173	174	0	2.00	0.363	101	PASS
174	95.0	50.0	100	93.3	27813	PASS
175	174	5.00	9.00	7.43	2066	PASS
176	174	95.0	101	97.2	27045	PASS
177	176	5.00	9.00	6.69	1808	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG526670-02	CCV	01	06/08/2015 12:04	
WG526673-01	BLANK	01	06/08/2015 12:48	
WG526673-02	LCS	01	06/08/2015 13:08	
L15051752-10	TRIP BLANK	01	06/08/2015 15:06	
L15051752-08	50WW18-052815	01	06/08/2015 17:44	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4224985
Report generated 06/10/2015 14:55

Response Factor Report HPMS17

Method Path : D:\MassHunter\GCMS\1\methods\
Method File : 826_VMS.M
Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
Last Update : Mon May 18 15:03:59 2015
Response Via : Initial Calibration
Curve: WG523986
Calibration Files
0.3 =17M011947.D 0.4 =17M011948.D 1 =17M011949.D 2 =17M011950.D 5 =17M011951.D 20 =17M011952.D 50 =17M011945.D
100 =17M011953.D 200 =17M011954.D 300 =17M011955.D

		Compound	0.3	0.4	1	2	5	20	50	100	200	300	Avg	%RSD	Linear R^2
1)	I	Fluorobenzene	----------ISTD----------												
2)	T	Dichlorodifluo...			0.242	0.242	0.242	0.293	0.303	0.298	0.301	0.321	0.280	11.69	
3)	P	Chloromethane			0.292	0.291	0.287	0.310	0.305	0.319	0.309	0.338	0.307	5.51	
4)	C	Vinyl Chloride		0.310	0.299	0.291	0.303	0.323	0.329	0.339	0.343	0.371	0.323	7.86#	
5)	T	1,3-Butadiene		0.163	0.153	0.151	0.156	0.168	0.175	0.179	0.185	0.203	0.170	9.95	
6)	T	Bromomethane			0.181	0.173	0.171	0.192	0.185	0.204	0.201	0.220	0.191	8.67	
7)	T	Chloroethane			0.168	0.167	0.172	0.179	0.151	0.139	0.131	0.137	0.156	11.78	
8)	T	Trichlorofluor...		0.404	0.423	0.394	0.406	0.427	0.436	0.419	0.284	0.303	0.388	14.32	
9)	T	Diethyl ether		0.138	0.157	0.158	0.164	0.163	0.154	0.169	0.167	0.188	0.162	8.29	
10)	C	1,1-Dichloroet...		0.363	0.377	0.365	0.375	0.386	0.398	0.395	0.393	0.432	0.387	5.46#	
11)	T	Carbon Disulfide		0.730	0.691	0.666	0.669	0.688	0.714	0.736	0.739	0.818	0.717	6.54	
12)	T	1,1,2-Trichlor...		0.245	0.256	0.241	0.257	0.262	0.269	0.261	0.263	0.284	0.260	4.92	
13)	T	Acrolein					0.018	0.020	0.019	0.022	0.022	0.025	0.021	12.05	
14)	T	Methylene Chlo...		0.269	0.280	0.263	0.271	0.271	0.269	0.279	0.273	0.304	0.275	4.33	
15)	T	Acetone					0.040	0.040	0.035	0.039	0.039	0.043	0.039	6.97	
16)	T	trans-1,2-Dich...		0.262	0.256	0.244	0.249	0.258	0.264	0.267	0.266	0.295	0.262	5.58	
17)	T	Methyl Tert Bu...		0.543	0.557	0.549	0.560	0.579	0.546	0.594	0.590	0.657	0.575	6.28	
18)	P	1,1-Dichloroet...		0.442	0.457	0.459	0.468	0.481	0.491	0.497	0.487	0.541	0.480	6.02	
19)	T	Acrylonitrile				0.047	0.052	0.055	0.050	0.057	0.057	0.063	0.054	9.99	
20)	T	Vinyl Acetate					0.013	0.018	0.022	0.023	0.024	0.026	0.021	22.57	0.996
21)	T	cis-1,2-Dichlo...		0.256	0.281	0.270	0.283	0.293	0.295	0.301	0.297	0.332	0.290	7.37	
22)	T	2,2-Dichloropr...		0.311	0.335	0.334	0.347	0.370	0.409	0.392	0.383	0.426	0.367	10.46	
23)	T	Cyclohexane		0.359	0.402	0.387	0.405	0.420	0.433	0.439	0.444	0.492	0.420	9.10	
24)	T	Bromochloromet...			0.142	0.155	0.169	0.182	0.180	0.191	0.188	0.211	0.177	12.29	
25)	C	Chloroform	0.406	0.412	0.450	0.449	0.460	0.476	0.478	0.480	0.471	0.524	0.461	7.49#	
26)	T	Carbon Tetrach...		0.300	0.330	0.335	0.353	0.377	0.400	0.397	0.399	0.445	0.371	12.09	
27)	S	Dibromofluorom...					0.263	0.240	0.274	0.272	0.263		0.262	5.12	
28)	T	1,1,1-Trichlor...		0.396	0.398	0.396	0.402	0.420	0.433	0.433	0.433	0.476	0.421	6.29	
29)	T	1,1-Dichloropr...		0.321	0.327	0.332	0.335	0.355	0.371	0.372	0.373	0.415	0.356	8.47	
30)	T	2-Butanone					0.057	0.063	0.056	0.066	0.067	0.075	0.064	10.93	
31)	T	Benzene		1.117	1.119	1.053	1.062	1.085	1.100	1.107	1.096	1.219	1.106	4.33	
32)	S	1,2-Dichloroet...					0.237	0.214	0.230	0.231	0.224		0.227	3.78	
33)	T	1,2-Dichloroet...		0.264	0.278	0.282	0.290	0.297	0.291	0.302	0.298	0.333	0.293	6.55	
34)	T	Trichloroethene		0.372	0.332	0.308	0.305	0.312	0.317	0.323	0.324	0.363	0.328	7.28	
35)	T	Dibromomethane		0.095	0.132	0.132	0.139	0.147	0.143	0.154	0.154		0.137	13.88	
36)	C	1,2-Dichloropr...		0.258	0.275	0.278	0.278	0.289	0.292	0.299	0.299	0.339	0.290	7.82#	
37)	T	Bromodichlorom...		0.295	0.314	0.318	0.334	0.348	0.356	0.369	0.370	0.417	0.347	10.57	
38)	T	1,4-Dioxane						0.001	0.001	0.002	0.002	0.002	0.002	13.28	
39)	T	2-Chloroethyl ...			0.108	0.111	0.117	0.127	0.122	0.137	0.140	0.157	0.127	13.15	

40)	T	cis-1,3-Dichlo...		0.333	0.353	0.359	0.375	0.408	0.423	0.439	0.446	0.504	0.404	13.52
41)	T	4-Methyl-2-Pen...					0.049	0.054	0.047	0.059	0.064	0.070	0.057	14.91
42)	T	trans-1,3-Dich...		0.256	0.275	0.282	0.301	0.335	0.341	0.363	0.371		0.315	13.58
43)	I	Chlorobenzene-d5	----------ISTD----------											
44)	S	Toluene-d8					1.392	1.257	1.387	1.347	1.254		1.327	5.11
45)	C	Toluene		1.616	1.585	1.548	1.598	1.650	1.653	1.641	1.563	1.769	1.625	4.05#
46)	Y	Tetrachloroethene		0.455	0.442	0.426	0.438	0.456	0.462	0.455	0.441	0.505	0.453	4.94
47)	T	1,1,2-Trichlor...		0.256	0.266	0.272	0.269	0.280	0.260	0.276	0.269	0.307	0.273	5.49
48)	Y	Dibromochlorom...		0.299	0.317	0.322	0.343	0.365	0.360	0.386	0.381	0.437	0.357	11.82
49)	T	1,3-Dichloropr...		0.437	0.428	0.425	0.433	0.446	0.421	0.445	0.433	0.493	0.440	4.93
50)	T	1,2-Dibromoethane		0.232	0.247	0.250	0.263	0.278	0.260	0.280	0.275	0.314	0.267	8.98
51)	Y	2-Hexanone				0.122	0.130	0.136	0.117	0.140	0.143	0.159	0.135	10.47
52)	P	Chlorobenzene		1.054	1.067	1.025	1.054	1.081	1.088	1.102	1.068	1.184	1.080	4.14
53)	T	1-Chlorohexane		0.075	0.086	0.085	0.092	0.095	0.100	0.102	0.101	0.113	0.094	11.83
54)	C	Ethylbenzene		0.554	0.540	0.538	0.558	0.580	0.594	0.603	0.586	0.647	0.578	6.04#
55)	T	1,1,1,2-Tetrac...		0.339	0.364	0.364	0.370	0.390	0.392	0.404	0.392	0.438	0.384	7.41
56)	T	m-,p-Xylene		0.660	0.656	0.643	0.680	0.709	0.734	0.734	0.690	0.714	0.691	4.92
57)	T	o-Xylene		0.661	0.638	0.628	0.654	0.689	0.701	0.715	0.699	0.758	0.683	6.02
58)	T	Styrene		0.963	0.985	0.961	1.043	1.115	1.144	1.189	1.162	1.238	1.089	9.54
59)	P	Bromoform		0.183	0.186	0.206	0.222	0.241	0.237	0.265	0.266		0.226	14.25
60)	T	Isopropylbenzene		1.676	1.674	1.643	1.738	1.812	1.861	1.884	1.811	1.890	1.776	5.41
61)	I	1,4-Dichlorobenzen...	----------ISTD----------											
62)	T	1,3,5-Trimethy...		2.680	2.713	2.686	2.842	2.972	3.028	3.050	2.853	3.116	2.882	5.79
63)	S	p-Bromofluorob...					0.877	0.801	0.875	0.900	0.863		0.863	4.34
64)	T	Bromobenzene	0.931	0.919	0.877	0.881	0.895	0.910	0.895	0.928			0.905	2.29
65)	T	n-Propylbenzene		3.555	3.545	3.525	3.701	3.867	3.976	3.988	3.734	4.142	3.782	5.91
66)	P	1,1,2,2-Tetrac...		0.504	0.538	0.536	0.550	0.579	0.532	0.591	0.574	0.665	0.563	8.30
67)	T	2-Chlorotoluene		2.264	2.285	2.208	2.305	2.308	2.337	2.377	2.279	2.592	2.328	4.70
68)	T	1,2,3-Trichlor...		0.100	0.136	0.149	0.156	0.156	0.144	0.159	0.154	0.173	0.147	13.89
69)	T	1,2,4-Trimethy...		2.656	2.712	2.641	2.860	2.977	3.004	3.047	2.863	3.113	2.875	6.06
70)	T	4-Chlorotoluene		2.238	2.227	2.207	2.276	2.352	2.400	2.424	2.345	2.640	2.345	5.75
71)	T	tert-Butylbenzene		0.467	0.515	0.507	0.531	0.550	0.559	0.567	0.546	0.612	0.539	7.64
72)	T	sec-Butylbenzene		3.293	3.403	3.461	3.613	3.744	3.801	3.798	3.550	3.772	3.604	5.24
73)	T	p-Isopropyltol...		2.775	2.820	2.797	3.049	3.241	3.327	3.314	3.089	3.260	3.075	7.41
74)	T	1,3-Dichlorobe...		1.663	1.670	1.603	1.691	1.718	1.727	1.774	1.694	1.880	1.713	4.58
75)	T	1,4-Dichlorobe...	1.851	1.739	1.666	1.620	1.664	1.678	1.700	1.746	1.664	1.851	1.718	4.62
76)	T	n-Butylbenzene		2.322	2.350	2.346	2.556	2.821	2.972	2.951	2.831	3.026	2.686	10.89
77)	T	1,2-Dichlorobe...	1.616	1.622	1.593	1.547	1.601	1.623	1.573	1.646	1.559	1.747	1.613	3.51
78)	T	1,2-Dibromo-3-...				0.087	0.088	0.096	0.087	0.101	0.098	0.113	0.096	10.02
79)	Y	Hexachlorobuta...		0.765	0.700	0.703	0.746	0.800	0.791	0.760	0.774	0.882	0.769	7.11
80)	T	1,2,4-Trichlor...		1.161	1.175	1.123	1.206	1.318	1.254	1.288	1.272	1.460	1.251	8.10
81)	T	Naphthalene		2.126	2.010	1.973	2.090	2.237	1.939	2.158	2.089	2.395	2.113	6.66
82)	T	1,2,3-Trichlor...		1.105	1.100	1.066	1.144	1.224	1.090	1.149	1.136	1.310	1.147	6.65

(#) = Out of Range

826_VMS.M Tue May 19 16:27:06 2015

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15051752 Run Date: 05/18/2015 Sample ID: WG523986-12
Instrument ID: HPMS17 Run Time: 16:07 Method: 8260B
File ID: 17M011959 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG523986 Cal ID: HPMS17 - 18-MAY-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	49.5	ug/L	0.456	1.00	20	
1,1-Dichloroethene	CCC	50.0	45.2	ug/L	0.350	9.60	20	
1,2-Dichloropropane	CCC	50.0	49.3	ug/L	0.286	1.40	20	
Ethylbenzene	CCC	50.0	50.1	ug/L	0.579	0.200	20	
Toluene	CCC	50.0	49.3	ug/L	1.60	1.40	20	
Vinyl Chloride	CCC	50.0	50.7	ug/L	0.328	1.30	20	
Bromoform	SPCC	50.0	56.6	ug/L	0.256	13.2	20	
Chlorobenzene	SPCC	50.0	46.4	ug/L	1.00	7.20	20	
Chloromethane	SPCC	50.0	49.0	ug/L	0.301	2.00	20	
1,1-Dichloroethane	SPCC	50.0	46.9	ug/L	0.451	6.10	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	51.3	ug/L	0.578	2.60	20	
Acetone		50.0	53.8	ug/L	0.0423	7.60	20	
Benzene		50.0	47.7	ug/L	1.06	4.60	20	
Bromobenzene		50.0	48.6	ug/L	0.880	2.80	20	
Bromochloromethane		50.0	49.1	ug/L	0.174	1.90	20	
Bromodichloromethane		50.0	48.4	ug/L	0.336	3.20	20	
Bromomethane		50.0	51.5	ug/L	0.197	3.00	20	
2-Butanone		50.0	52.6	ug/L	0.0670	5.10	20	
n-Butylbenzene		50.0	54.3	ug/L	2.92	8.70	20	
sec-Butylbenzene		50.0	47.5	ug/L	3.42	5.00	20	
tert-Butylbenzene		50.0	47.2	ug/L	0.509	5.70	20	
Carbon Disulfide		50.0	31.3	ug/L	0.448	37.5	20	*
Carbon Tetrachloride		50.0	48.6	ug/L	0.360	2.90	20	
Dibromochloromethane		50.0	49.6	ug/L	0.354	0.700	20	
Chloroethane		50.0	41.1	ug/L	0.128	17.7	20	
2-Chlorotoluene		50.0	45.7	ug/L	2.13	8.50	20	
4-Chlorotoluene		50.0	46.0	ug/L	2.16	8.00	20	
1,2-Dibromo-3-Chloropropane		50.0	49.4	ug/L	0.0946	1.10	20	
1,2-Dibromoethane		50.0	49.6	ug/L	0.264	0.800	20	
Dibromomethane		50.0	51.5	ug/L	0.141	3.00	20	
1,2-Dichlorobenzene		50.0	46.3	ug/L	1.49	7.30	20	
1,3-Dichlorobenzene		50.0	46.3	ug/L	1.59	7.40	20	
1,4-Dichlorobenzene		50.0	49.7	ug/L	1.71	0.600	20	
Dichlorodifluoromethane		50.0	55.8	ug/L	0.313	11.6	20	
1,2-Dichloroethane		50.0	48.6	ug/L	0.285	2.80	20	
cis-1,2-Dichloroethene		50.0	49.4	ug/L	0.287	1.10	20	
trans-1,2-Dichloroethene		50.0	48.8	ug/L	0.256	2.40	20	
1,3-Dichloropropane		50.0	49.3	ug/L	0.434	1.40	20	
2,2-Dichloropropane		50.0	52.2	ug/L	0.384	4.40	20	
cis-1,3-Dichloropropene		50.0	53.0	ug/L	0.429	6.00	20	
trans-1,3-Dichloropropene		50.0	52.8	ug/L	0.333	5.50	20	
1,1-Dichloropropene		50.0	49.0	ug/L	0.349	1.90	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4224984
Report generated 06/10/2015 14:54

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15051752 Run Date: 05/18/2015 Sample ID: WG523986-12
Instrument ID: HPMS17 Run Time: 16:07 Method: 8260B
File ID: 17M011959 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG523986 Cal ID: HPMS17 - 18-MAY-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	53.6	ug/L	0.145	7.20	20	
Hexachlorobutadiene		50.0	52.1	ug/L	0.801	4.10	20	
Isopropylbenzene		50.0	47.4	ug/L	1.69	5.10	20	
p-Isopropyltoluene		50.0	48.3	ug/L	2.97	3.50	20	
4-Methyl-2-Pentanone		50.0	51.7	ug/L	0.0592	3.40	20	
Methylene Chloride		50.0	47.0	ug/L	0.259	6.10	20	
Naphthalene		50.0	48.1	ug/L	2.03	3.80	20	
n-Propylbenzene		50.0	46.6	ug/L	3.53	6.70	20	
Styrene		50.0	51.7	ug/L	1.13	3.30	20	
1,1,1,2-Tetrachloroethane		50.0	49.9	ug/L	0.383	0.200	20	
Tetrachloroethene		50.0	47.8	ug/L	0.433	4.40	20	
1,2,3-Trichlorobenzene		50.0	48.7	ug/L	1.12	2.70	20	
1,2,4-Trichlorobenzene		50.0	50.5	ug/L	1.26	1.00	20	
1,1,1-Trichloroethane		50.0	48.4	ug/L	0.408	3.10	20	
1,1,2-Trichloroethane		50.0	48.7	ug/L	0.266	2.60	20	
Trichloroethene		50.0	45.9	ug/L	0.302	8.20	20	
Trichlorofluoromethane		50.0	31.3	ug/L	0.243	37.4	20	*
1,2,3-Trichloropropane		50.0	51.3	ug/L	0.151	2.70	20	
1,2,4-Trimethylbenzene		50.0	51.4	ug/L	2.95	2.80	20	
1,3,5-Trimethylbenzene		50.0	51.0	ug/L	2.94	2.10	20	
o-Xylene		50.0	46.8	ug/L	0.639	6.40	20	
m-,p-Xylene		100	99.1	ug/L	0.685	0.900	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4224984
Report generated 06/10/2015 14:54

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051752 Run Date: 06/05/2015 Sample ID: WG526424-02
Instrument ID: HPMS17 Run Time: 09:49 Method: 8260B
File ID: 17M012520 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG526427 Cal ID: HPMS17 - 18-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	52.3	ug/L	0.482	4.61	20	
1,1-Dichloroethene	CCC	50.0	51.5	ug/L	0.399	3.07	20	
1,2-Dichloropropane	CCC	50.0	50.6	ug/L	0.293	1.21	20	
Ethylbenzene	CCC	50.0	50.9	ug/L	0.588	1.84	20	
Toluene	CCC	50.0	51.0	ug/L	1.66	1.97	20	
Vinyl Chloride	CCC	50.0	51.3	ug/L	0.332	2.59	20	
Bromoform	SPCC	50.0	52.5	ug/L	0.237	5.02	20	
Chlorobenzene	SPCC	50.0	50.1	ug/L	1.08	0.174	20	
Chloromethane	SPCC	50.0	47.1	ug/L	0.289	5.83	20	
1,1-Dichloroethane	SPCC	50.0	51.9	ug/L	0.498	3.81	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	46.6	ug/L	0.525	6.77	20	
Xylenes		150	156	ug/L	0.708	3.82	20	
Acetone		50.0	41.3	ug/L	0.0325	17.4	20	
Benzene		50.0	50.2	ug/L	1.11	0.329	20	
Bromobenzene		50.0	49.3	ug/L	0.891	1.49	20	
Bromochloromethane		50.0	51.8	ug/L	0.184	3.55	20	
Bromodichloromethane		50.0	52.0	ug/L	0.361	4.07	20	
Bromomethane		50.0	34.4	ug/L	0.131	31.1	20	*
2-Butanone		50.0	42.7	ug/L	0.0544	14.6	20	
n-Butylbenzene		50.0	54.8	ug/L	2.94	9.54	20	
sec-Butylbenzene		50.0	51.8	ug/L	3.73	3.62	20	
tert-Butylbenzene		50.0	50.5	ug/L	0.545	1.06	20	
Carbon Disulfide		50.0	37.5	ug/L	0.538	25.0	20	*
Carbon Tetrachloride		50.0	55.5	ug/L	0.411	10.9	20	
Dibromochloromethane		50.0	51.3	ug/L	0.366	2.60	20	
Chloroethane		50.0	54.5	ug/L	0.170	9.05	20	
2-Chlorotoluene		50.0	49.8	ug/L	2.32	0.316	20	
4-Chlorotoluene		50.0	50.8	ug/L	2.39	1.69	20	
1,2-Dibromo-3-Chloropropane		50.0	45.0	ug/L	0.0862	9.92	20	
1,2-Dibromoethane		50.0	49.2	ug/L	0.262	1.61	20	
Dibromomethane		50.0	52.9	ug/L	0.145	5.79	20	
1,2-Dichlorobenzene		50.0	47.8	ug/L	1.54	4.43	20	
1,3-Dichlorobenzene		50.0	50.1	ug/L	1.72	0.237	20	
1,4-Dichlorobenzene		50.0	48.9	ug/L	1.68	2.26	20	
Dichlorodifluoromethane		50.0	64.6	ug/L	0.362	29.3	20	*
1,2-Dichloroethane		50.0	50.1	ug/L	0.293	0.190	20	
cis-1,2-Dichloroethene		50.0	52.0	ug/L	0.301	3.90	20	
trans-1,2-Dichloroethene		50.0	51.3	ug/L	0.269	2.58	20	
1,3-Dichloropropane		50.0	47.6	ug/L	0.419	4.83	20	
2,2-Dichloropropane		50.0	56.5	ug/L	0.415	13.0	20	
cis-1,3-Dichloropropene		50.0	53.1	ug/L	0.429	6.11	20	
trans-1,3-Dichloropropene		50.0	55.0	ug/L	0.347	10.0	20	

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051752 Run Date: 06/05/2015 Sample ID: WG526424-02
Instrument ID: HPMS17 Run Time: 09:49 Method: 8260B
File ID: 17M012520 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG526427 Cal ID: HPMS17 - 18-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	53.0	ug/L	0.377	5.92	20	
2-Hexanone		50.0	40.5	ug/L	0.109	19.1	20	
Hexachlorobutadiene		50.0	47.0	ug/L	0.722	6.09	20	
Isopropylbenzene		50.0	51.4	ug/L	1.83	2.87	20	
p-Isopropyltoluene		50.0	53.0	ug/L	3.26	6.09	20	
4-Methyl-2-Pentanone		50.0	38.9	ug/L	0.0445	22.2	20	*
Methylene Chloride		50.0	50.2	ug/L	0.276	0.307	20	
Naphthalene		50.0	42.1	ug/L	1.78	15.9	20	
n-Propylbenzene		50.0	52.5	ug/L	3.97	5.09	20	
Styrene		50.0	51.7	ug/L	1.13	3.39	20	
1,1,1,2-Tetrachloroethane		50.0	51.2	ug/L	0.393	2.32	20	
Tetrachloroethene		50.0	51.5	ug/L	0.467	3.03	20	
1,2,3-Trichlorobenzene		50.0	44.2	ug/L	1.01	11.7	20	
1,2,4-Trichlorobenzene		50.0	47.8	ug/L	1.19	4.50	20	
1,1,1-Trichloroethane		50.0	52.2	ug/L	0.439	4.39	20	
1,1,2-Trichloroethane		50.0	47.5	ug/L	0.259	4.93	20	
Trichloroethene		50.0	48.9	ug/L	0.321	2.14	20	
Trichlorofluoromethane		50.0	57.7	ug/L	0.448	15.4	20	
1,2,3-Trichloropropane		50.0	47.4	ug/L	0.140	5.29	20	
1,2,4-Trimethylbenzene		50.0	51.3	ug/L	2.95	2.67	20	
1,3,5-Trimethylbenzene		50.0	51.4	ug/L	2.96	2.72	20	
o-Xylene		50.0	50.5	ug/L	0.690	1.04	20	
m-,p-Xylene		100	105	ug/L	0.727	5.21	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4224986
Report generated 06/10/2015 14:55

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051752 Run Date: 06/08/2015 Sample ID: WG526670-02
Instrument ID: HPMS17 Run Time: 12:04 Method: 8260B
File ID: 17M012565 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG526673 Cal ID: HPMS17 - 18-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.3	ug/L	0.464	0.605	20	
1,1-Dichloroethene	CCC	50.0	49.1	ug/L	0.380	1.87	20	
1,2-Dichloropropane	CCC	50.0	48.2	ug/L	0.279	3.68	20	
Ethylbenzene	CCC	50.0	49.1	ug/L	0.568	1.72	20	
Toluene	CCC	50.0	48.8	ug/L	1.59	2.33	20	
Vinyl Chloride	CCC	50.0	50.9	ug/L	0.329	1.84	20	
Bromoform	SPCC	50.0	51.8	ug/L	0.234	3.51	20	
Chlorobenzene	SPCC	50.0	48.0	ug/L	1.04	3.91	20	
Chloromethane	SPCC	50.0	52.0	ug/L	0.319	3.98	20	
1,1-Dichloroethane	SPCC	50.0	49.7	ug/L	0.477	0.603	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	45.7	ug/L	0.515	8.66	20	
Xylenes		150	150	ug/L	0.681	0.157	20	
Acetone		50.0	44.9	ug/L	0.0354	10.2	20	
Benzene		50.0	47.9	ug/L	1.06	4.20	20	
Bromobenzene		50.0	46.7	ug/L	0.844	6.68	20	
Bromochloromethane		50.0	50.2	ug/L	0.178	0.447	20	
Bromodichloromethane		50.0	49.8	ug/L	0.346	0.413	20	
Bromomethane		50.0	46.0	ug/L	0.176	7.92	20	
2-Butanone		50.0	46.2	ug/L	0.0589	7.64	20	
n-Butylbenzene		50.0	52.3	ug/L	2.81	4.53	20	
sec-Butylbenzene		50.0	49.7	ug/L	3.58	0.592	20	
tert-Butylbenzene		50.0	48.5	ug/L	0.523	3.00	20	
Carbon Disulfide		50.0	33.0	ug/L	0.472	34.1	20	*
Carbon Tetrachloride		50.0	53.5	ug/L	0.396	6.91	20	
Dibromochloromethane		50.0	50.0	ug/L	0.357	0.0778	20	
Chloroethane		50.0	47.8	ug/L	0.149	4.48	20	
2-Chlorotoluene		50.0	47.1	ug/L	2.19	5.80	20	
4-Chlorotoluene		50.0	47.8	ug/L	2.24	4.47	20	
1,2-Dibromo-3-Chloropropane		50.0	44.8	ug/L	0.0858	10.4	20	
1,2-Dibromoethane		50.0	47.9	ug/L	0.255	4.16	20	
Dibromomethane		50.0	51.5	ug/L	0.141	3.03	20	
1,2-Dichlorobenzene		50.0	46.1	ug/L	1.49	7.84	20	
1,3-Dichlorobenzene		50.0	47.6	ug/L	1.63	4.87	20	
1,4-Dichlorobenzene		50.0	46.6	ug/L	1.60	6.90	20	
Dichlorodifluoromethane		50.0	61.2	ug/L	0.343	22.4	20	*
1,2-Dichloroethane		50.0	48.0	ug/L	0.281	3.94	20	
cis-1,2-Dichloroethene		50.0	49.7	ug/L	0.288	0.582	20	
trans-1,2-Dichloroethene		50.0	49.5	ug/L	0.260	1.08	20	
1,3-Dichloropropane		50.0	46.4	ug/L	0.408	7.20	20	
2,2-Dichloropropane		50.0	54.4	ug/L	0.400	8.89	20	
cis-1,3-Dichloropropene		50.0	50.9	ug/L	0.411	1.70	20	
trans-1,3-Dichloropropene		50.0	53.3	ug/L	0.336	6.61	20	

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051752 Run Date: 06/08/2015 Sample ID: WG526670-02
Instrument ID: HPMS17 Run Time: 12:04 Method: 8260B
File ID: 17M012565 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG526673 Cal ID: HPMS17 - 18-MAY-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	50.8	ug/L	0.361	1.61	20	
2-Hexanone		50.0	44.5	ug/L	0.120	11.1	20	
Hexachlorobutadiene		50.0	46.5	ug/L	0.715	7.01	20	
Isopropylbenzene		50.0	50.1	ug/L	1.78	0.294	20	
p-Isopropyltoluene		50.0	51.0	ug/L	3.14	1.99	20	
4-Methyl-2-Pentanone		50.0	43.1	ug/L	0.0493	13.8	20	
Methylene Chloride		50.0	48.0	ug/L	0.264	4.00	20	
Naphthalene		50.0	42.1	ug/L	1.78	15.8	20	
n-Propylbenzene		50.0	49.7	ug/L	3.76	0.506	20	
Styrene		50.0	49.9	ug/L	1.09	0.219	20	
1,1,1,2-Tetrachloroethane		50.0	49.2	ug/L	0.377	1.70	20	
Tetrachloroethene		50.0	49.8	ug/L	0.451	0.380	20	
1,2,3-Trichlorobenzene		50.0	43.7	ug/L	1.00	12.6	20	
1,2,4-Trichlorobenzene		50.0	46.5	ug/L	1.16	7.04	20	
1,1,1-Trichloroethane		50.0	50.1	ug/L	0.422	0.243	20	
1,1,2-Trichloroethane		50.0	46.5	ug/L	0.254	6.96	20	
Trichloroethene		50.0	46.9	ug/L	0.308	6.29	20	
Trichlorofluoromethane		50.0	55.4	ug/L	0.431	10.8	20	
1,2,3-Trichloropropane		50.0	46.3	ug/L	0.136	7.46	20	
1,2,4-Trimethylbenzene		50.0	48.9	ug/L	2.81	2.22	20	
1,3,5-Trimethylbenzene		50.0	49.2	ug/L	2.83	1.69	20	
o-Xylene		50.0	48.5	ug/L	0.662	3.08	20	
m-,p-Xylene		100	101	ug/L	0.700	1.30	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4224986
Report generated 06/10/2015 14:55

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15051752
Instrument ID: HPMS17
Workgroup (AAB#): WG526427

ICAL CCV Number: WG523986-02
CAL ID: HPMS17-18-MAY-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG523986-02	NA	NA	102061	187003	246932
Upper Limit	NA	NA	204122	374006	493864
Lower Limit	NA	NA	51031	93502	123466
L15051752-01	1.00	01	91650	167609	222361
L15051752-02	1.00	01	92932	170422	225301
L15051752-03	1.00	01	92274	170491	223118
L15051752-04	1.00	01	95966	173838	225815
L15051752-06	1.00	01	92703	169138	223139
WG526427-01	1.00	01	94192	172234	228943
WG526427-02	1.00	01	96634	168908	218822
WG526427-03	1.00	01	95121	169601	222313

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4224987
Report generated 06/10/2015 14:55

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15051752
Instrument ID: HPMS17
Workgroup (AAB#): WG526673

ICAL CCV Number: WG523986-02
CAL ID: HPMS17-18-MAY-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG523986-02	NA	NA	102061	187003	246932
Upper Limit	NA	NA	204122	374006	493864
Lower Limit	NA	NA	51031	93502	123466
L15051752-08	1.00	01	87263	168215	223143
L15051752-10	1.00	01	85066	168329	225882
WG526673-01	1.00	01	87298	165711	219760
WG526673-02	1.00	01	88519	163222	216044

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4224987
Report generated 06/10/2015 14:55

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15051752
Instrument ID: HPMS17
Workgroup (AAB#): WG526427

ICAL CCV Number: WG523986-02
CAL ID: HPMS17-18-MAY-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG523986-02	NA	NA	9.316	7.99	5.167
Upper Limit	NA	NA	9.816	8.49	5.667
Lower Limit	NA	NA	8.816	7.49	4.667
L15051752-01	1.00	01	9.32	7.99	5.17
L15051752-02	1.00	01	9.32	7.99	5.17
L15051752-03	1.00	01	9.32	7.99	5.17
L15051752-04	1.00	01	9.32	7.99	5.17
L15051752-06	1.00	01	9.32	7.99	5.17
WG526427-01	1.00	01	9.32	7.99	5.17
WG526427-02	1.00	01	9.32	7.99	5.17
WG526427-03	1.00	01	9.32	7.99	5.17

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4224989
Report generated: 06/10/2015 14:56

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15051752
Instrument ID: HPMS17
Workgroup (AAB#): WG526673

ICAL CCV Number: WG523986-02
CAL ID: HPMS17-18-MAY-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG523986-02	NA	NA	9.316	7.99	5.167
Upper Limit	NA	NA	9.816	8.49	5.667
Lower Limit	NA	NA	8.816	7.49	4.667
L15051752-08	1.00	01	9.32	7.99	5.17
L15051752-10	1.00	01	9.32	7.99	5.17
WG526673-01	1.00	01	9.32	7.99	5.17
WG526673-02	1.00	01	9.32	7.99	5.17

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4224989
Report generated: 06/10/2015 14:56

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060515\
Data File : 17M012538.D
Acq On : 05 Jun 2015 15:54
Operator : ADC
Sample : L15051752-01 A 826-LOW
Misc : 1,1
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Jun 08 16:04:13 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	222361	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	167609	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	91650	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.209	111	60132	25.7591 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.036%		
32) 1,2-Dichloroethane-d4	4.840	65	53535	26.5021 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 106.008%		
44) Toluene-d8	6.734	98	231730	26.0401 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.160%		
63) p-Bromofluorobenzene	8.737	95	81826	25.8508 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.403%		
Target Compounds					Qvalue
7) Chloroethane	1.426	64	322	0.2328 ug/L #	48
15) Acetone	2.353	43	303	0.8654 ug/L #	43
21) cis-1,2-Dichloroethene	3.595	96	958	0.3717 ug/L	93
34) Trichloroethene	5.347	130	2000	0.6848 ug/L	96
52) Chlorobenzene	7.999	112	3093	0.4270 ug/L #	39
74) 1,3-Dichlorobenzene	9.325	146	2213	0.3523 ug/L #	28
75) 1,4-Dichlorobenzene	9.325	146	2213	0.3514 ug/L	86
77) 1,2-Dichlorobenzene	9.528	146	783	0.1324 ug/L	90

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\060515\
Data File : 17M012538.D
Acq On : 05 Jun 2015 15:54
Operator : ADC
Sample : L15051752-01 A 826-LOW
Misc : 1,1
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Jun 08 16:04:13 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

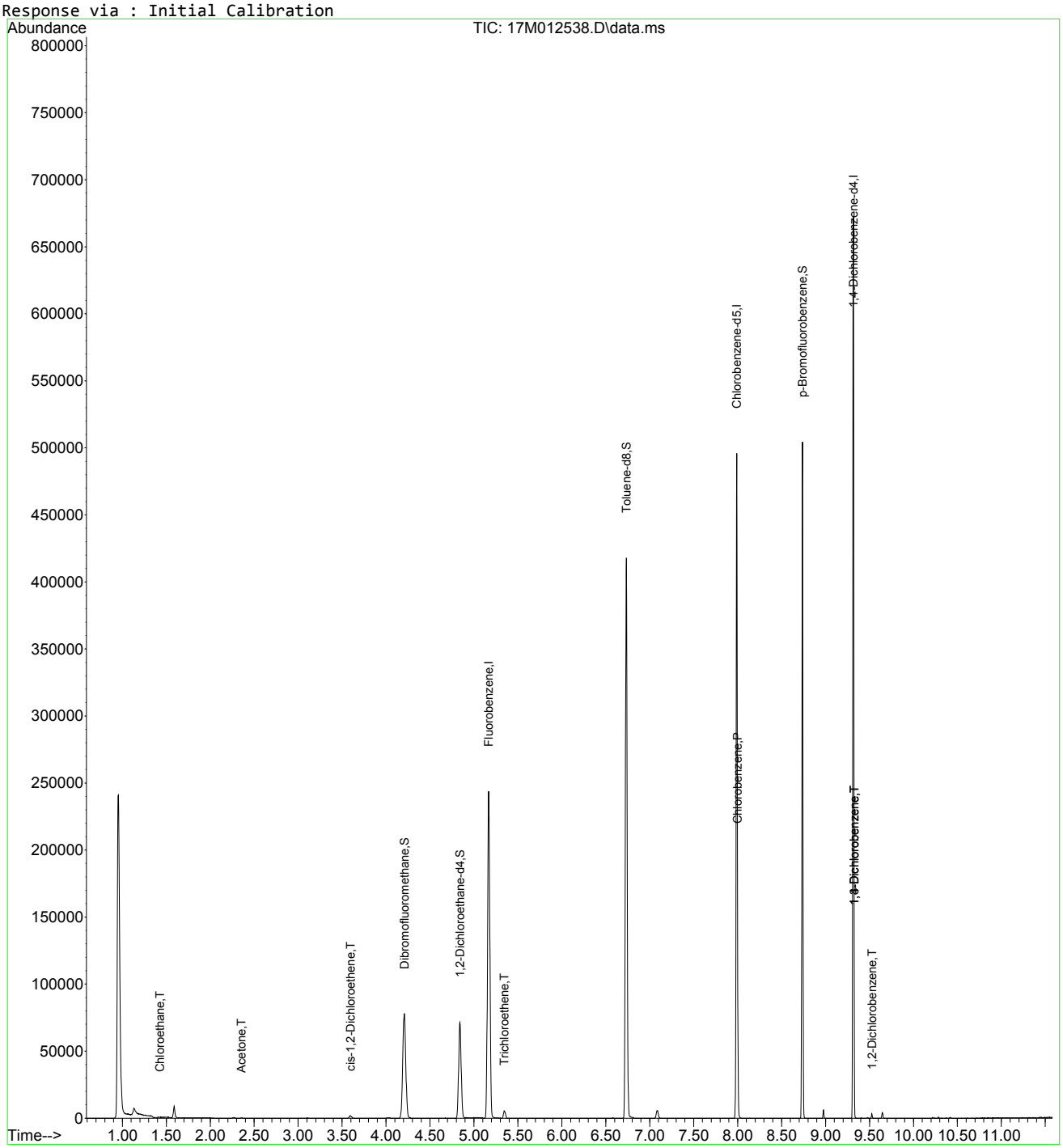

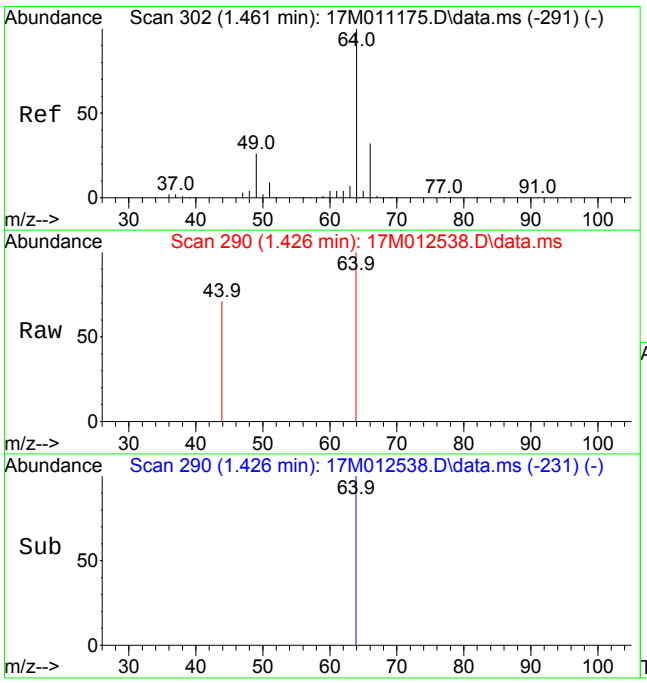

#7
Chloroethane
Concen: 0.2328 ug/L
RT: 1.426 min Scan# 290
Delta R.T. -0.029 min
Lab File: 17M012538.D
Acq: 05 Jun 2015 15:54

Tgt Ion: 64 Resp: 322

Ion	Ratio	Lower	Upper
64	100		
49	0.0	16.2	37.8#

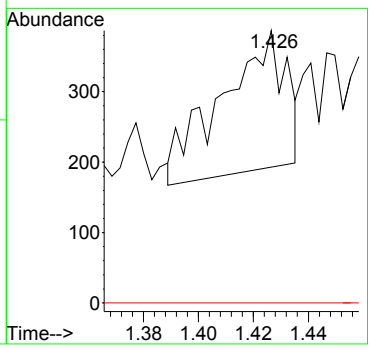

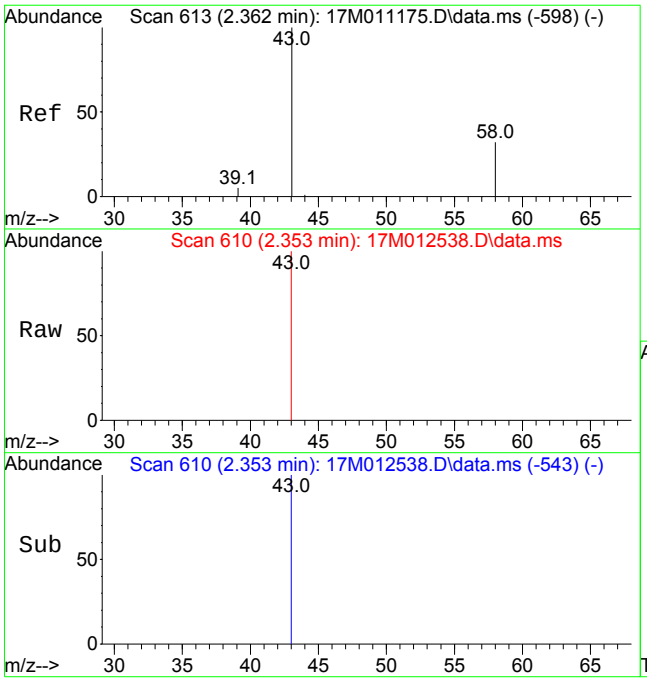

#15
Acetone
Concen: 0.8654 ug/L
RT: 2.353 min Scan# 610
Delta R.T. -0.006 min
Lab File: 17M012538.D
Acq: 05 Jun 2015 15:54

Tgt Ion: 43 Resp: 303

Ion	Ratio	Lower	Upper
43	100		
58	0.0	19.0	44.4#

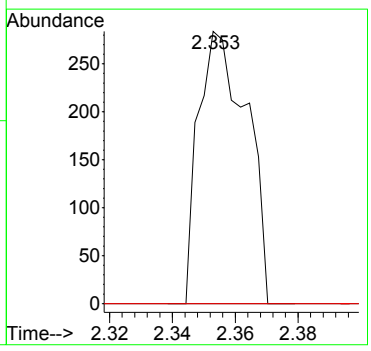

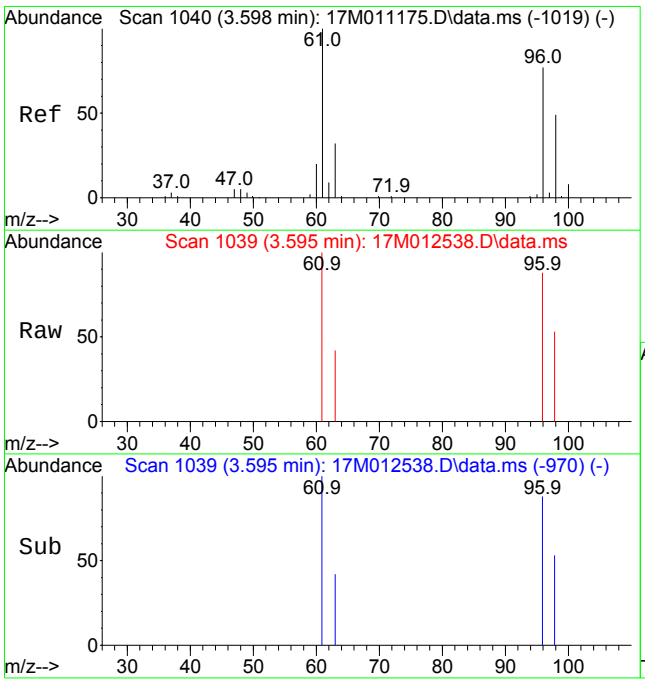

#21
cis-1,2-Dichloroethene
Concen: 0.3717 ug/L
RT: 3.595 min Scan# 1039
Delta R.T. 0.000 min
Lab File: 17M012538.D
Acq: 05 Jun 2015 15:54

Tgt Ion: 96 Resp: 958

Ion	Ratio	Lower	Upper
96	100		
61	133.9	101.0	151.4

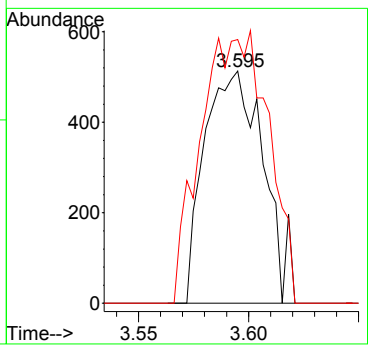

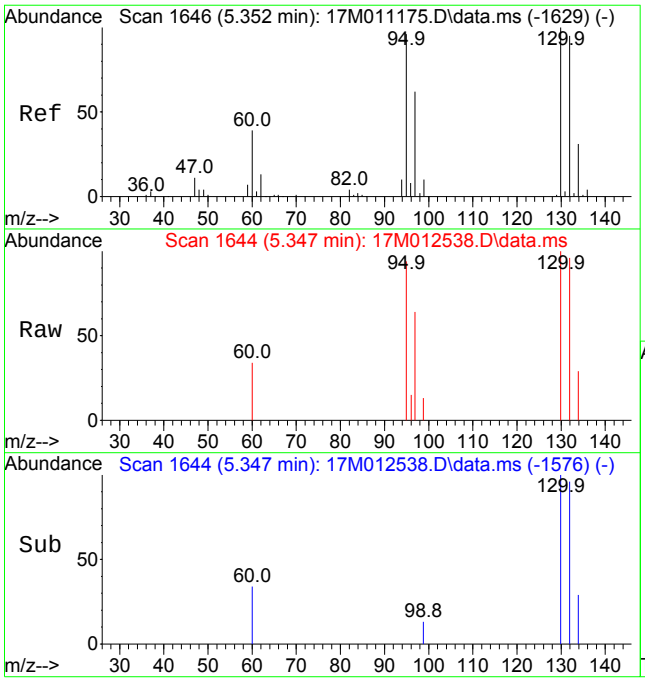

#34
Trichloroethene
Concen: 0.6848 ug/L
RT: 5.347 min Scan# 1644
Delta R.T. -0.003 min
Lab File: 17M012538.D
Acq: 05 Jun 2015 15:54

Tgt Ion:130 Resp: 2000

Ion	Ratio	Lower	Upper
130	100		
60	35.0	22.4	52.2

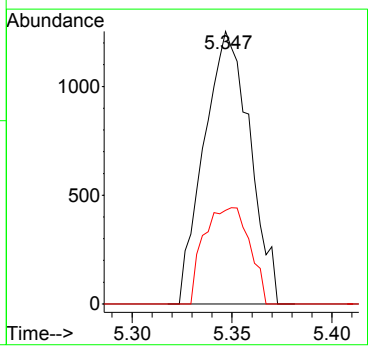

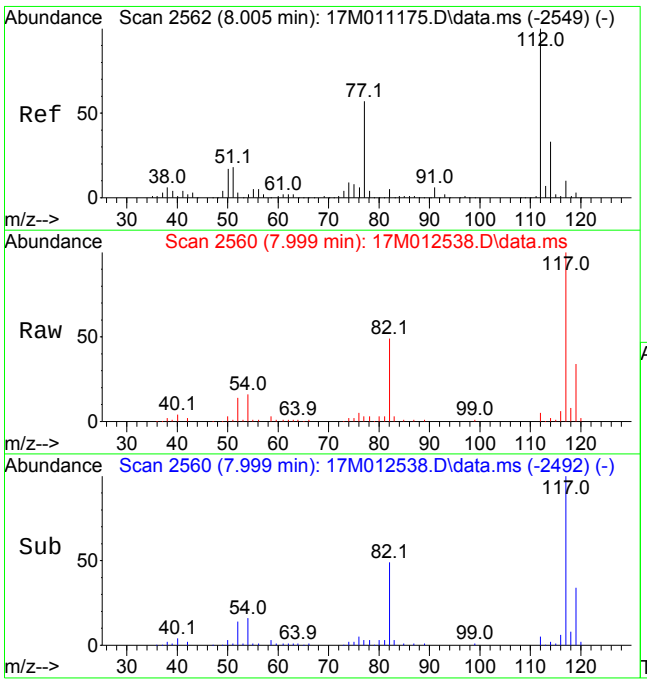

#52
Chlorobenzene
Concen: 0.4270 ug/L
RT: 7.999 min Scan# 2560
Delta R.T. -0.003 min
Lab File: 17M012538.D
Acq: 05 Jun 2015 15:54

Tgt Ion:112 Resp: 3093

Ion	Ratio	Lower	Upper
112	100		
77	101.3	33.9	79.1#

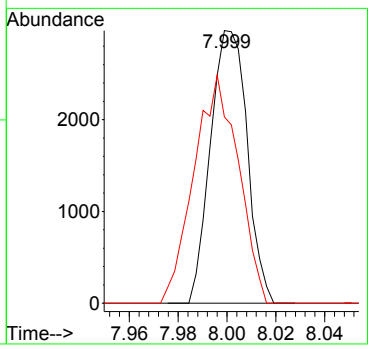

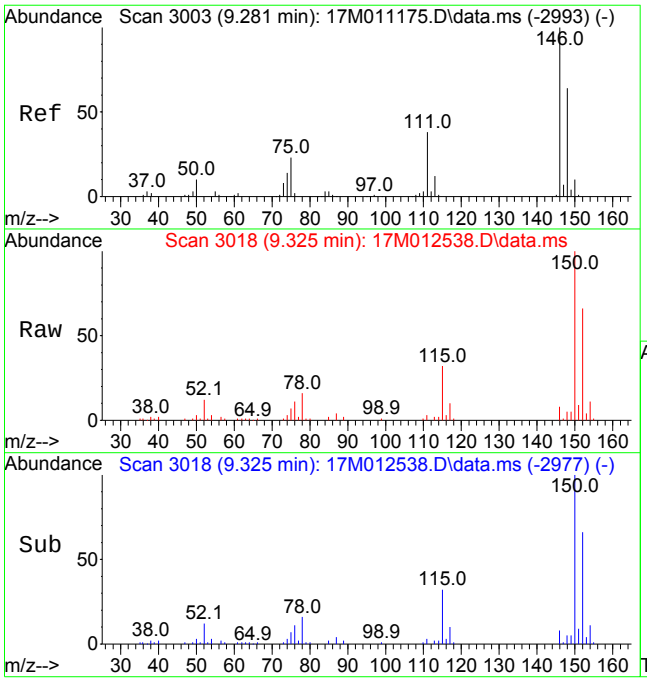

#74
1,3-Dichlorobenzene
Concen: 0.3523 ug/L
RT: 9.325 min Scan# 3018
Delta R.T. 0.043 min
Lab File: 17M012538.D
Acq: 05 Jun 2015 15:54

Tgt Ion:146 Resp: 2213

Ion	Ratio	Lower	Upper
146	100		
111	81.7	23.0	53.6#

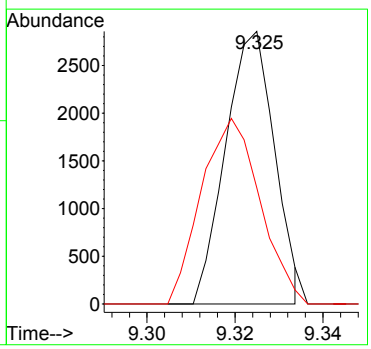

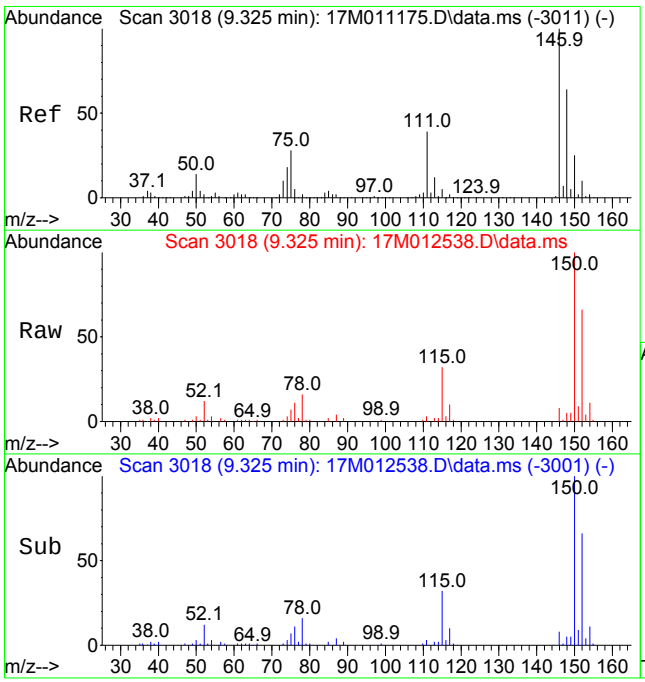

#75
1,4-Dichlorobenzene
Concen: 0.3514 ug/L
RT: 9.325 min Scan# 3018
Delta R.T. -0.000 min
Lab File: 17M012538.D
Acq: 05 Jun 2015 15:54

Tgt Ion:146 Resp: 2213

Ion	Ratio	Lower	Upper
146	100		
148	74.4	51.0	76.4

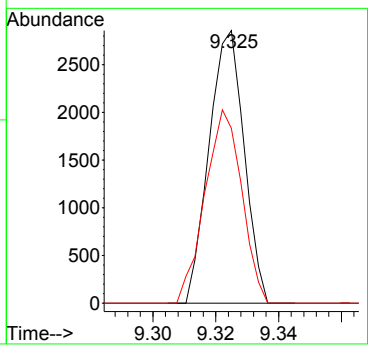

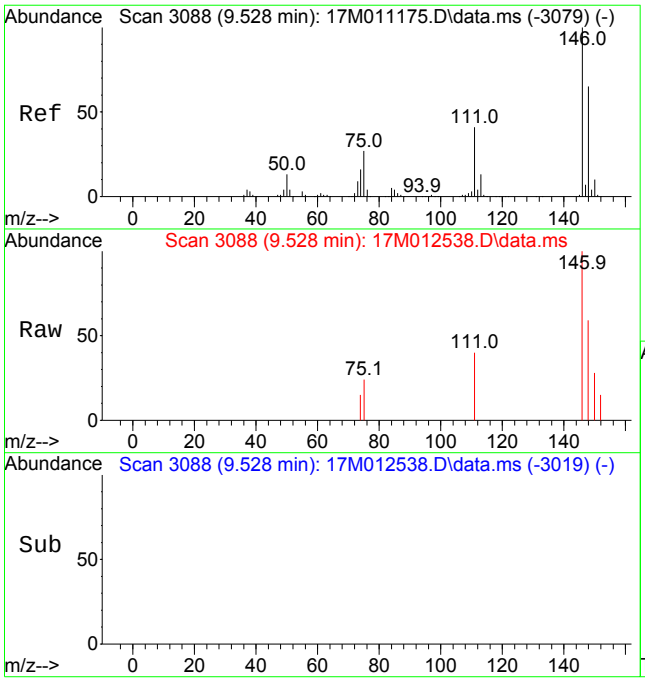

#77
1,2-Dichlorobenzene
Concen: 0.1324 ug/L
RT: 9.528 min Scan# 3088
Delta R.T. -0.000 min
Lab File: 17M012538.D
Acq: 05 Jun 2015 15:54

Tgt Ion:146 Resp: 783

Ion	Ratio	Lower	Upper
146	100		
111	33.5	23.6	55.0

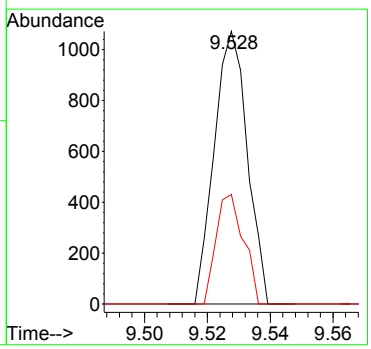

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060515\
Data File : 17M012539.D
Acq On : 05 Jun 2015 16:14
Operator : ADC
Sample : L15051752-02 A 826-LOW
Misc : 1,1
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Jun 08 16:04:17 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	225301	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	170422	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	92932	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.206	111	59610	25.2023 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.809%		
32) 1,2-Dichloroethane-d4	4.840	65	53749	26.2609 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 105.044%		
44) Toluene-d8	6.734	98	230641	25.4899 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.960%		
63) p-Bromofluorobenzene	8.737	95	80608	25.1147 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.459%		
Target Compounds					Qvalue
15) Acetone	2.359	43	783	2.2071 ug/L #	43
52) Chlorobenzene	7.999	112	1457	0.1978 ug/L #	1
74) 1,3-Dichlorobenzene	9.325	146	993	0.1559 ug/L #	1
75) 1,4-Dichlorobenzene	9.325	146	993	0.1555 ug/L #	74

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\060515\
Data File : 17M012539.D
Acq On : 05 Jun 2015 16:14
Operator : ADC
Sample : L15051752-02 A 826-LOW
Misc : 1,1
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Jun 08 16:04:17 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

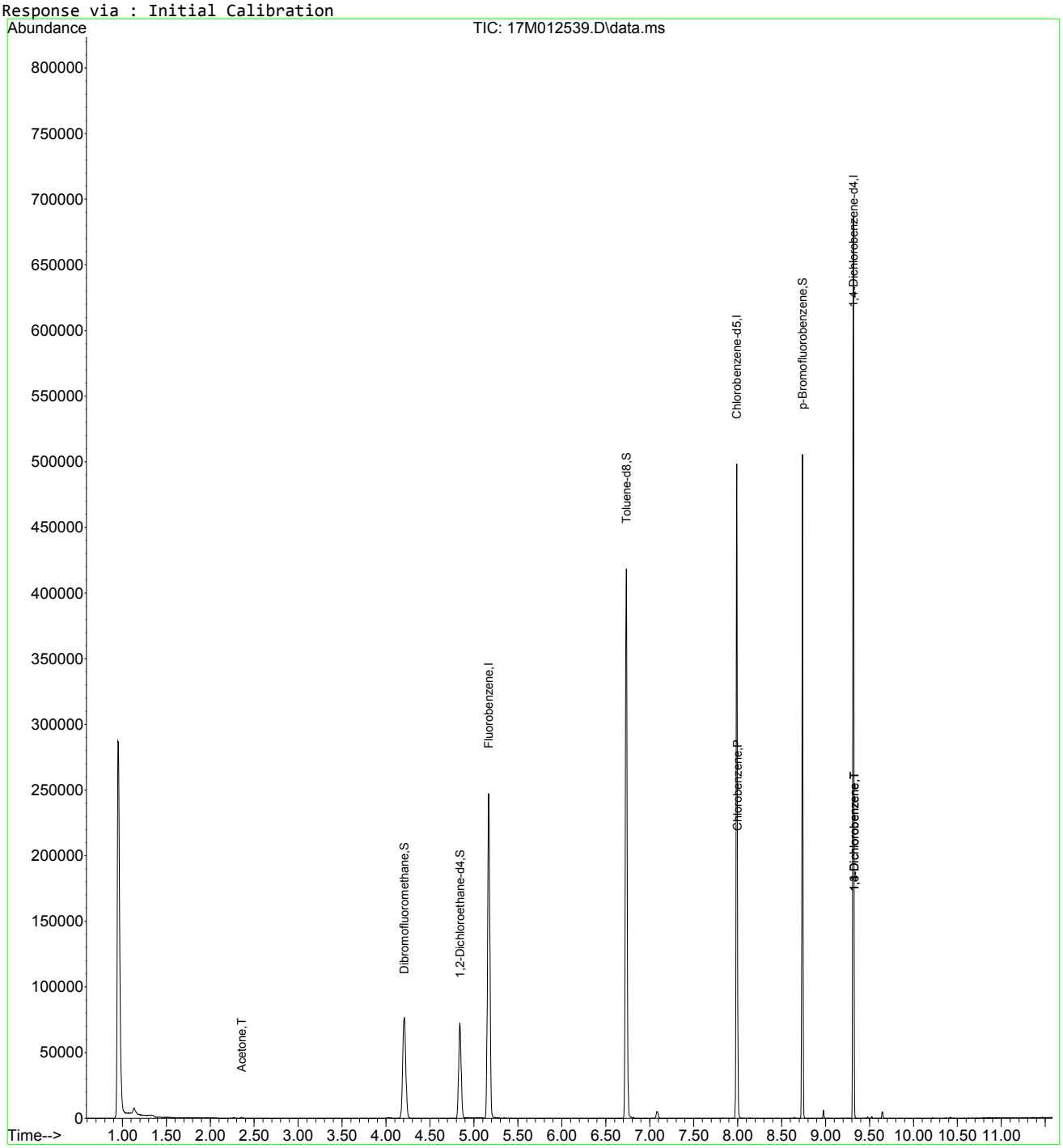

826_VMS.M Mon Jun 08 16:04:18 2015 Page: 2

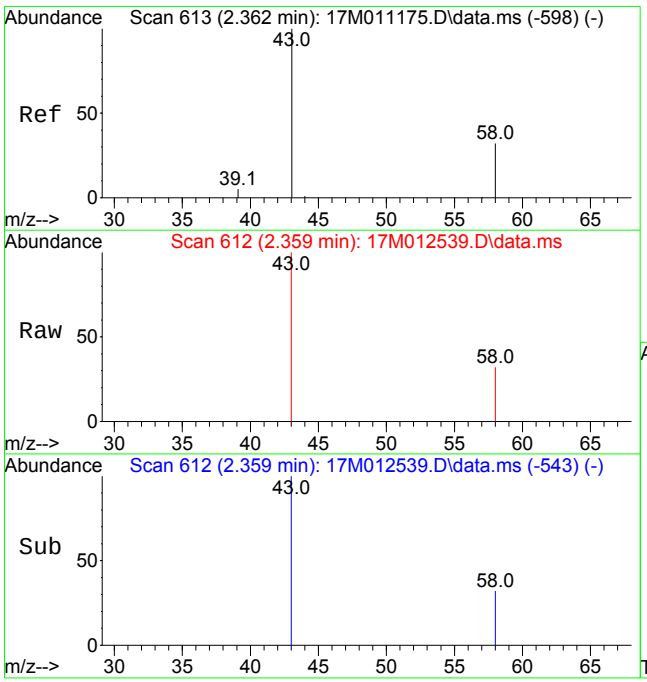

#15
Acetone
Concen: 2.2071 ug/L
RT: 2.359 min Scan# 612
Delta R.T. -0.000 min
Lab File: 17M012539.D
Acq: 05 Jun 2015 16:14

Tgt Ion: 43 Resp: 783

Ion	Ratio	Lower	Upper
43	100		
58	0.0	19.0	44.4#

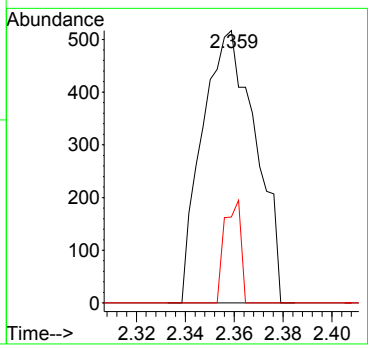

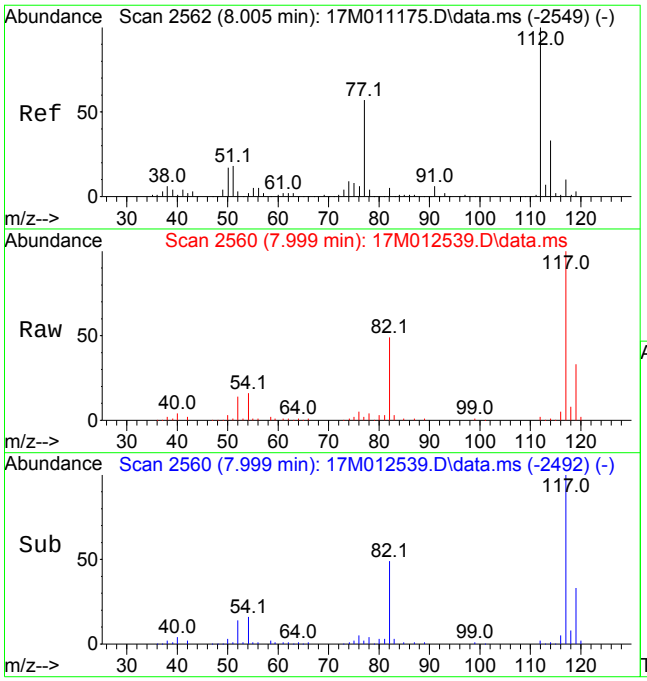

#52
Chlorobenzene
Concen: 0.1978 ug/L
RT: 7.999 min Scan# 2560
Delta R.T. -0.003 min
Lab File: 17M012539.D
Acq: 05 Jun 2015 16:14

Tgt Ion:112 Resp: 1457

Ion	Ratio	Lower	Upper
112	100		
77	152.4	33.9	79.1#

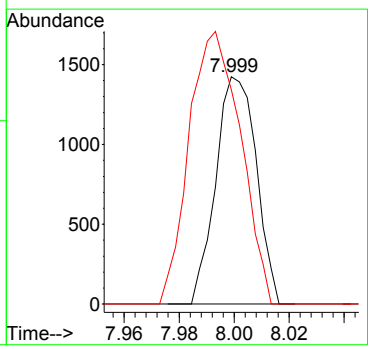

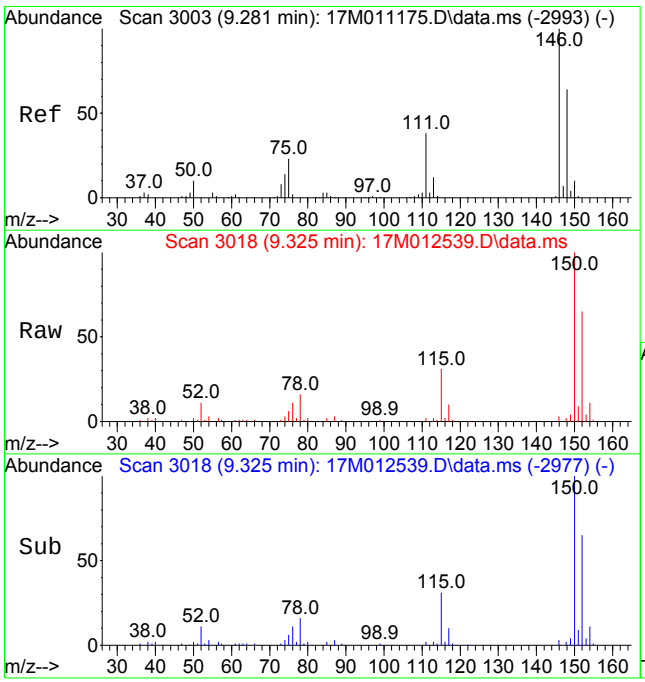

#74
1,3-Dichlorobenzene
Concen: 0.1559 ug/L
RT: 9.325 min Scan# 3018
Delta R.T. 0.043 min
Lab File: 17M012539.D
Acq: 05 Jun 2015 16:14

Tgt Ion:146 Resp: 993

Ion	Ratio	Lower	Upper
146	100		
111	133.0	23.0	53.6#

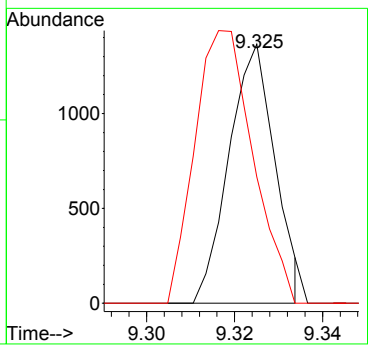

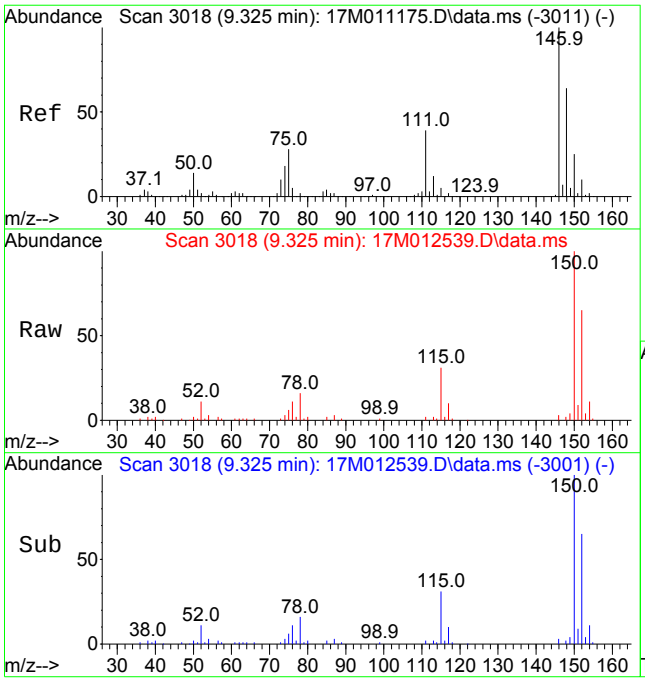

#75
1,4-Dichlorobenzene
Concen: 0.1555 ug/L
RT: 9.325 min Scan# 3018
Delta R.T. 0.000 min
Lab File: 17M012539.D
Acq: 05 Jun 2015 16:14

Tgt Ion:146 Resp: 993

Ion	Ratio	Lower	Upper
146	100		
148	83.9	51.0	76.4#

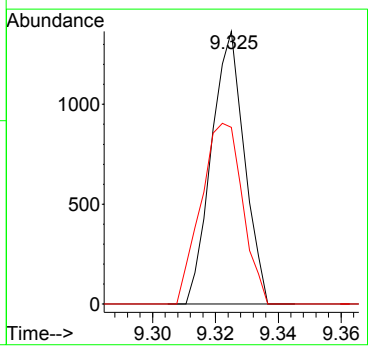

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060515\
Data File : 17M012540.D
Acq On : 05 Jun 2015 16:34
Operator : ADC
Sample : L15051752-03 A 826-LOW
Misc : 1,1
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Jun 08 16:04:20 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	223118	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	170491	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	92274	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.206	111	60542	25.8468 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.387%		
32) 1,2-Dichloroethane-d4	4.840	65	53917	26.6007 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 106.403%		
44) Toluene-d8	6.734	98	232155	25.6469 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.588%		
63) p-Bromofluorobenzene	8.737	95	81788	25.6641 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.656%		
Target Compounds					Qvalue
15) Acetone	2.356	43	1228	3.4953 ug/L	87
21) cis-1,2-Dichloroethene	3.598	96	675	0.2610 ug/L	93
30) 2-Butanone	4.406	43	278	0.4886 ug/L #	33
34) Trichloroethene	5.347	130	280925	95.8575 ug/L	100
52) Chlorobenzene	7.999	112	899	0.1220 ug/L #	1

(#) = qualifier out of range (m) = manual integration (+) = signals summed

826_VMS.M Mon Jun 08 16:04:20 2015 Page: 1

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060515\
Data File : 17M012540.D
Acq On : 05 Jun 2015 16:34
Operator : ADC
Sample : L15051752-03 A 826-LOW
Misc : 1,1
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Jun 08 16:04:20 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

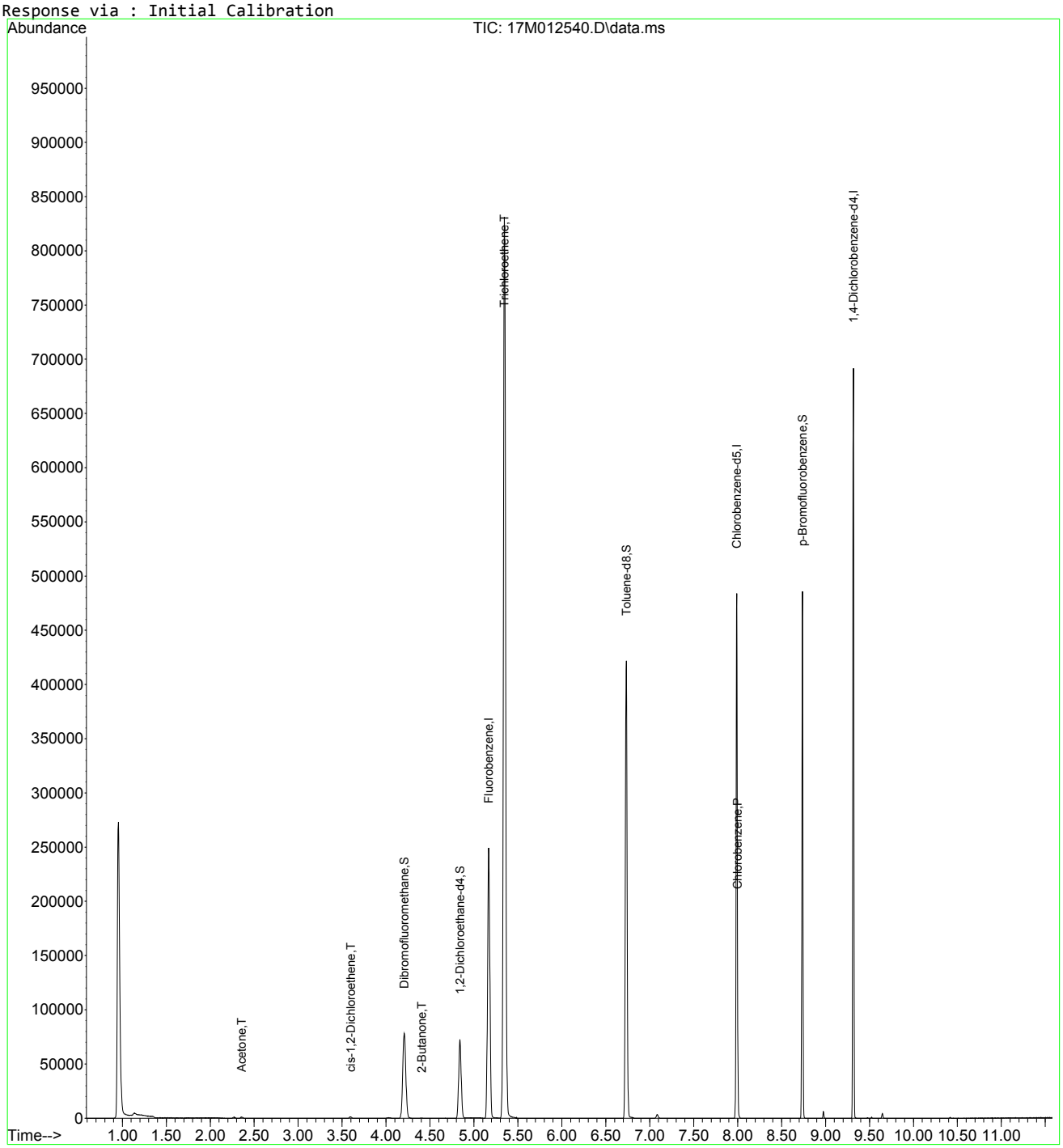

826_VMS.M Mon Jun 08 16:04:21 2015 Page: 2

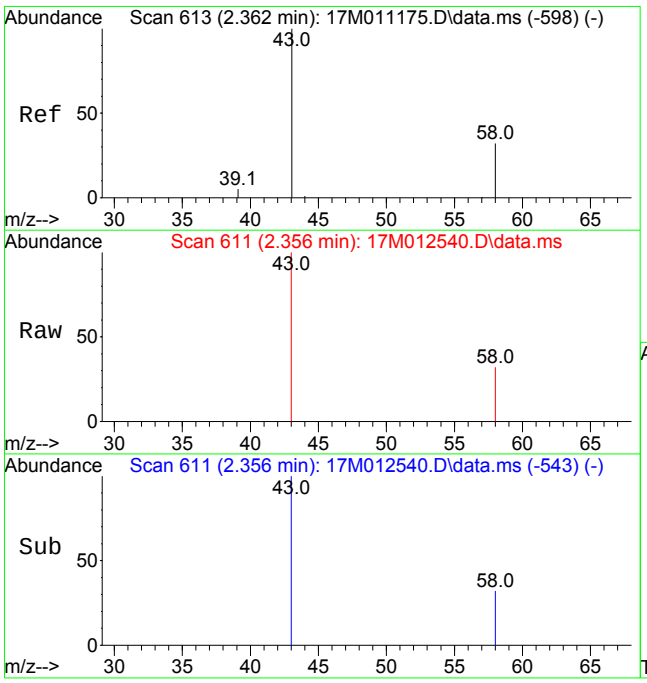

#15
Acetone
Concen: 3.4953 ug/L
RT: 2.356 min Scan# 611
Delta R.T. -0.003 min
Lab File: 17M012540.D
Acq: 05 Jun 2015 16:34

Tgt Ion: 43 Resp: 1228

Ion	Ratio	Lower	Upper
43	100		
58	24.5	19.0	44.4

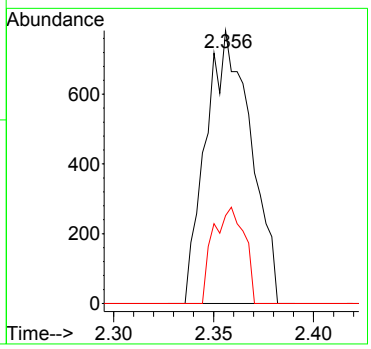

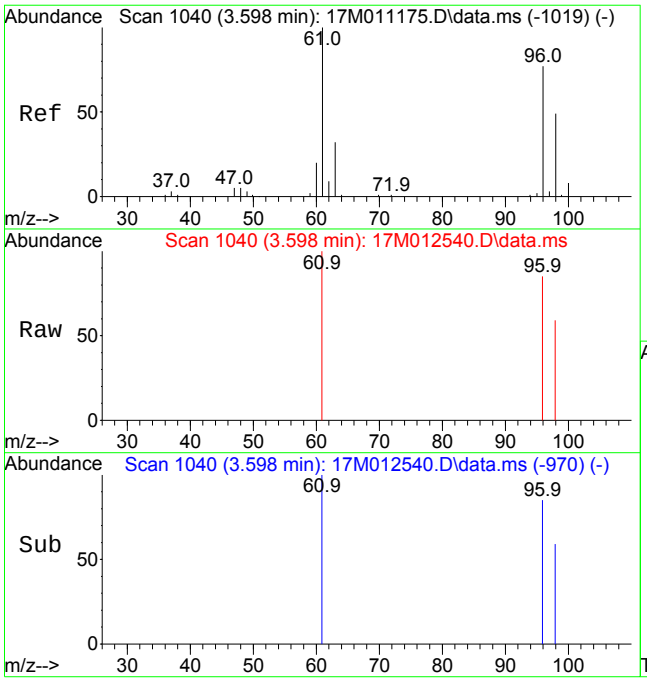

#21
cis-1,2-Dichloroethene
Concen: 0.2610 ug/L
RT: 3.598 min Scan# 1040
Delta R.T. 0.003 min
Lab File: 17M012540.D
Acq: 05 Jun 2015 16:34

Tgt Ion: 96 Resp: 675

Ion	Ratio	Lower	Upper
96	100		
61	134.5	101.0	151.4

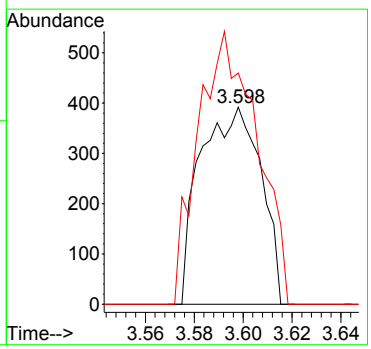

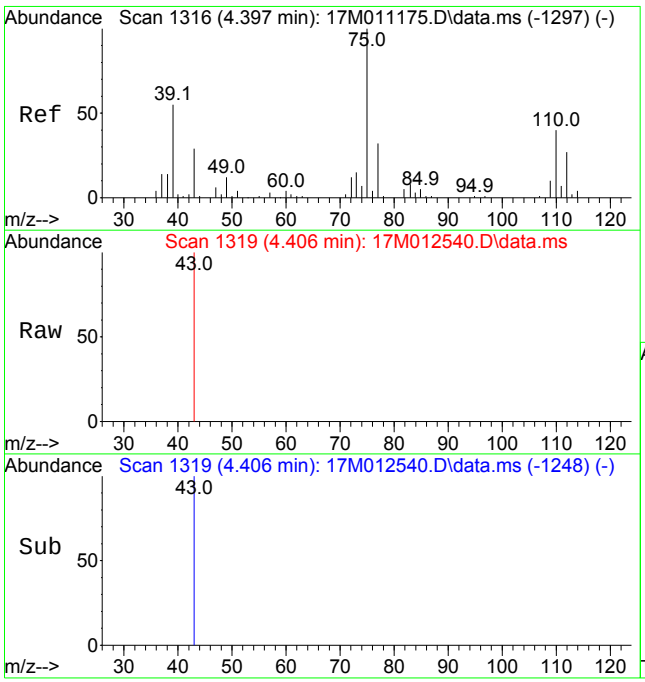

#30
2-Butanone
Concen: 0.4886 ug/L
RT: 4.406 min Scan# 1319
Delta R.T. 0.006 min
Lab File: 17M012540.D
Acq: 05 Jun 2015 16:34

Tgt Ion: 43 Resp: 278

Ion	Ratio	Lower	Upper
43	100		
72	0.0	41.8	62.8#
57	0.0	6.6	10.0#

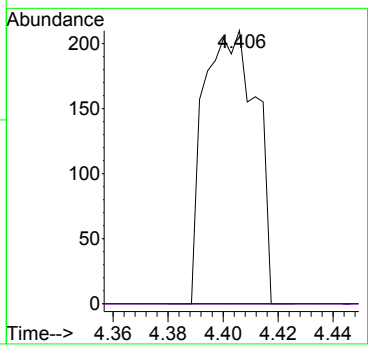

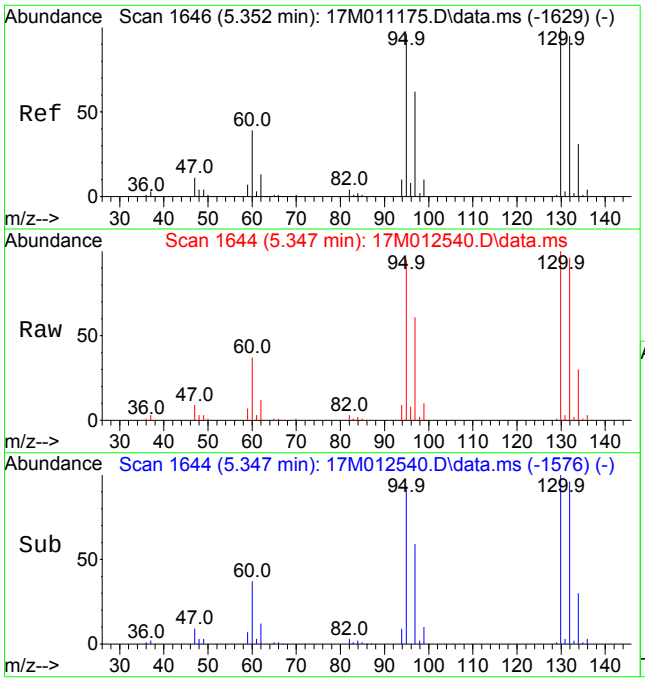

#34
Trichloroethene
Concen: 95.8575 ug/L
RT: 5.347 min Scan# 1644
Delta R.T. -0.003 min
Lab File: 17M012540.D
Acq: 05 Jun 2015 16:34

Tgt Ion:130 Resp: 280925

Ion	Ratio	Lower	Upper
130	100		
60	37.3	22.4	52.2

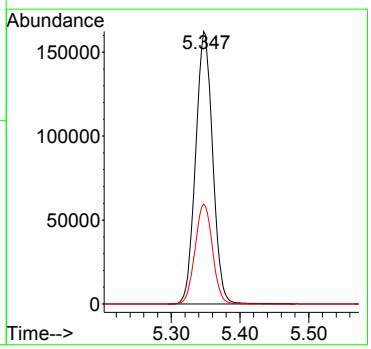

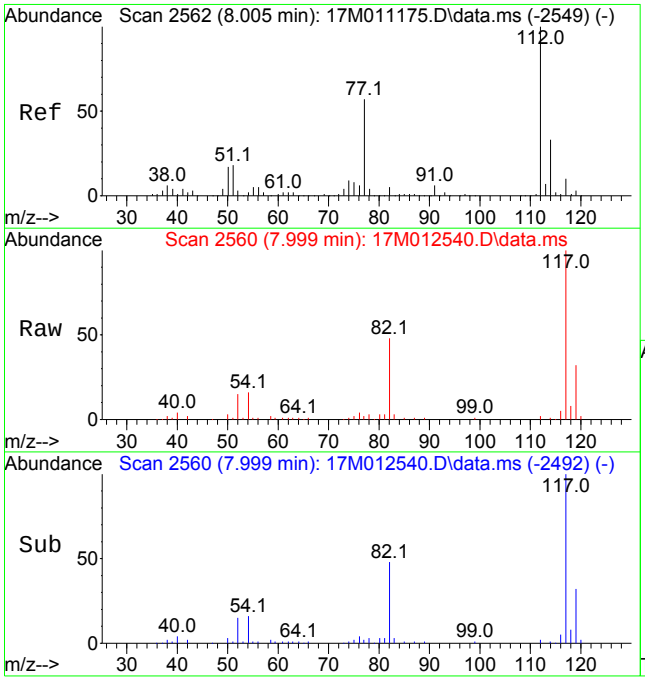

#52
Chlorobenzene
Concen: 0.1220 ug/L
RT: 7.999 min Scan# 2560
Delta R.T. -0.003 min
Lab File: 17M012540.D
Acq: 05 Jun 2015 16:34

Tgt Ion:112 Resp: 899

Ion	Ratio	Lower	Upper
112	100		
77	215.1	33.9	79.1#

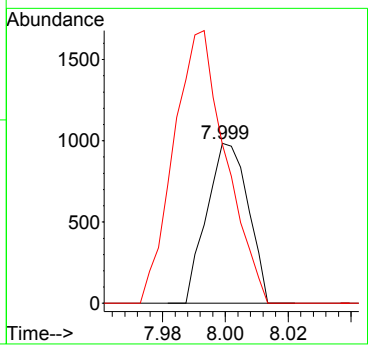

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060515\
Data File : 17M012541.D
Acq On : 05 Jun 2015 16:54
Operator : ADC
Sample : L15051752-04 A 826-LOW
Misc : 1,1
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Jun 08 16:04:23 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	225815	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	173838	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	95966	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.209	111	61206	25.8182 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.273%		
32) 1,2-Dichloroethane-d4	4.840	65	54935	26.7792 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.117%		
44) Toluene-d8	6.734	98	237241	25.7041 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.816%		
63) p-Bromofluorobenzene	8.734	95	83156	25.0895 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.358%		
Target Compounds					Qvalue
15) Acetone	2.353	43	662	1.8618 ug/L #	43
34) Trichloroethene	5.347	130	796	0.2684 ug/L	78

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\060515\
Data File : 17M012541.D
Acq On : 05 Jun 2015 16:54
Operator : ADC
Sample : L15051752-04 A 826-LOW
Misc : 1,1
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Jun 08 16:04:23 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

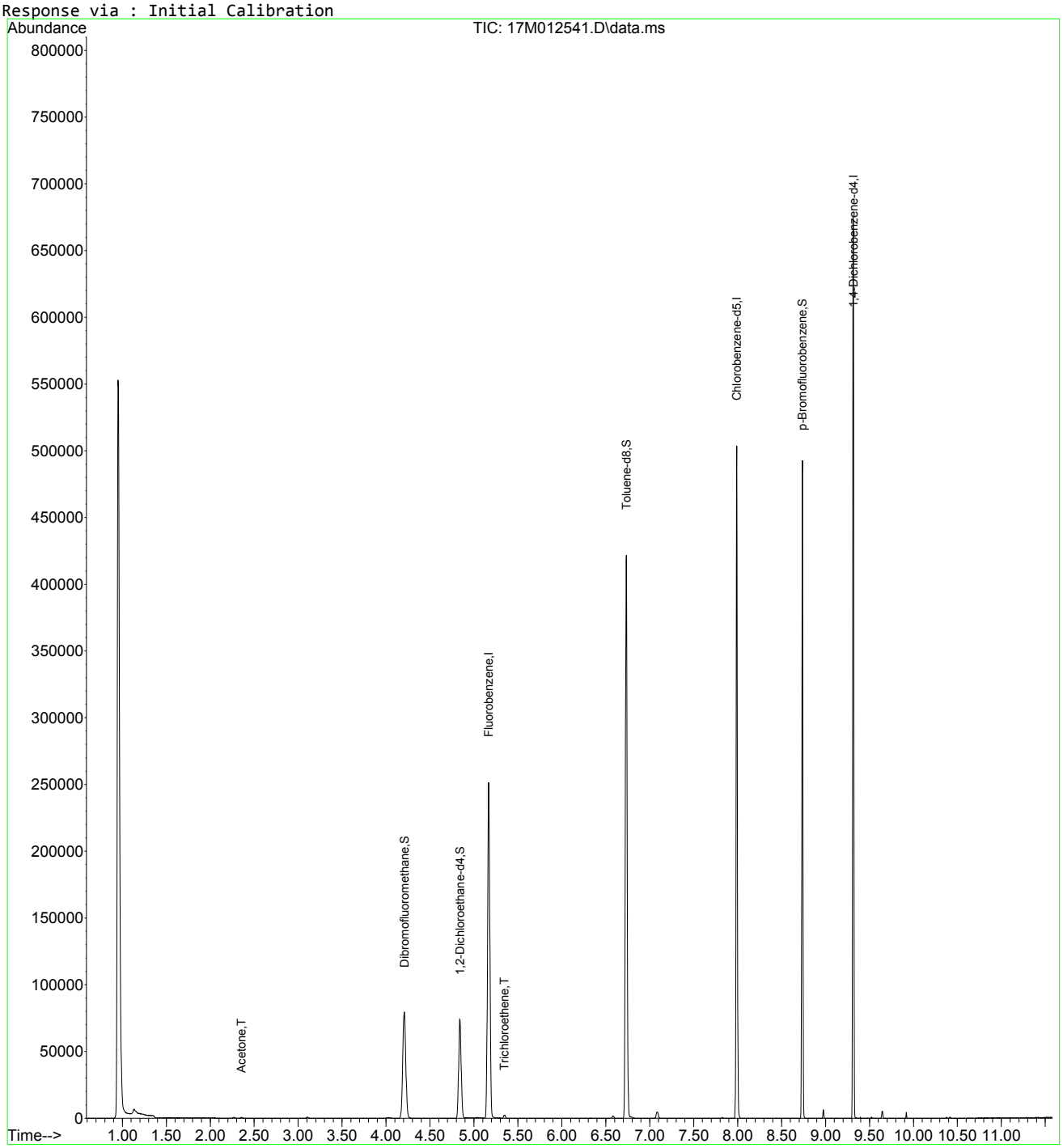

826_VMS.M Mon Jun 08 16:04:24 2015 Page: 2

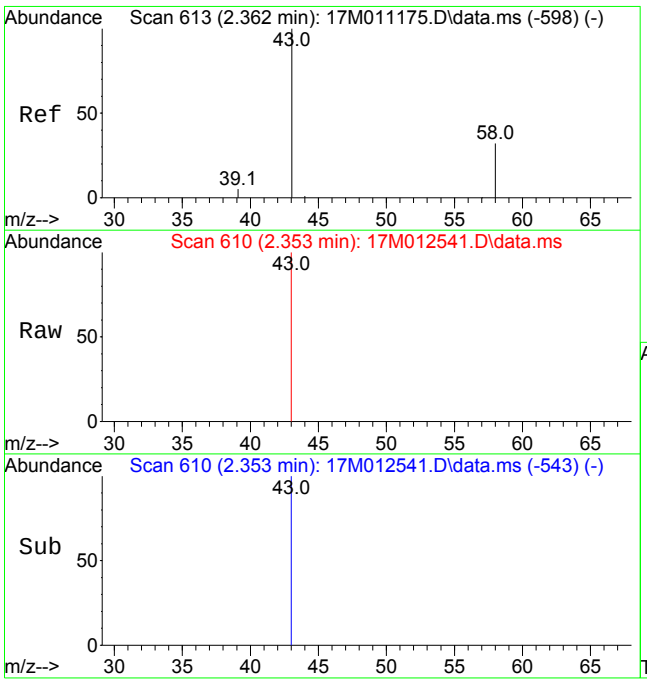

#15
Acetone
Concen: 1.8618 ug/L
RT: 2.353 min Scan# 610
Delta R.T. -0.006 min
Lab File: 17M012541.D
Acq: 05 Jun 2015 16:54

Tgt Ion: 43 Resp: 662

Ion	Ratio	Lower	Upper
43	100		
58	0.0	19.0	44.4#

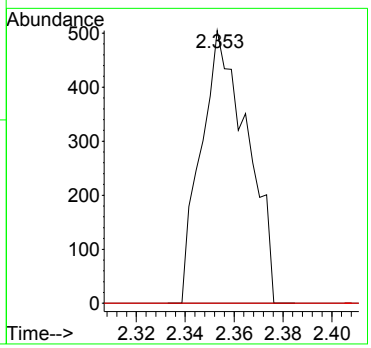

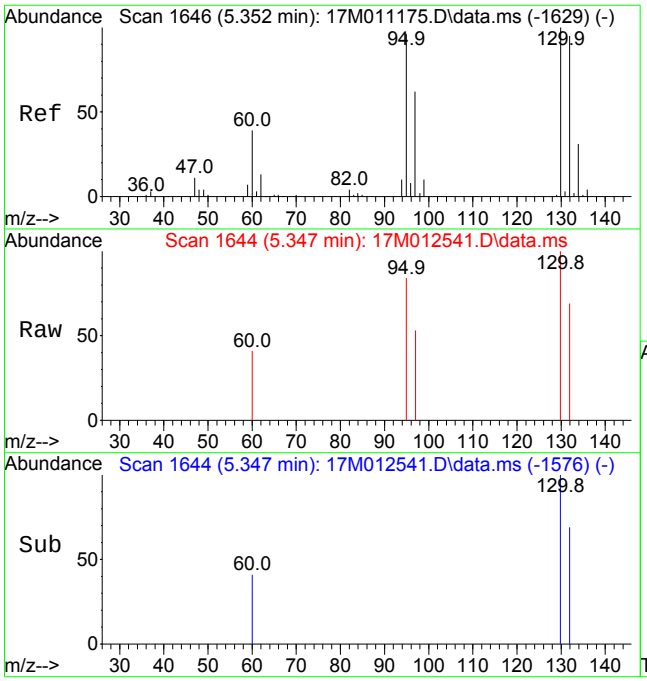

#34
Trichloroethene
Concen: 0.2684 ug/L
RT: 5.347 min Scan# 1644
Delta R.T. -0.003 min
Lab File: 17M012541.D
Acq: 05 Jun 2015 16:54

Tgt Ion:130 Resp: 796

Ion	Ratio	Lower	Upper
130	100		
60	24.2	22.4	52.2

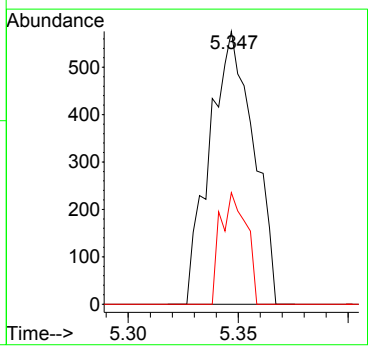

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060515\
Data File : 17M012542.D
Acq On : 05 Jun 2015 17:13
Operator : ADC
Sample : L15051752-06 A 826-LOW
Misc : 1,1
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Jun 08 16:04:26 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	223139	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	169138	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	92703	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.206	111	60250	25.7197 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.879%		
32) 1,2-Dichloroethane-d4	4.840	65	53604	26.4438 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 105.775%		
44) Toluene-d8	6.734	98	231371	25.7647 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.059%		
63) p-Bromofluorobenzene	8.737	95	81674	25.5097 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.039%		
Target Compounds					Qvalue
15) Acetone	2.353	43	1150	3.2730 ug/L	81
34) Trichloroethene	5.344	130	353	0.1204 ug/L #	38

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060515\
Data File : 17M012542.D
Acq On : 05 Jun 2015 17:13
Operator : ADC
Sample : L15051752-06 A 826-LOW
Misc : 1,1
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Jun 08 16:04:26 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

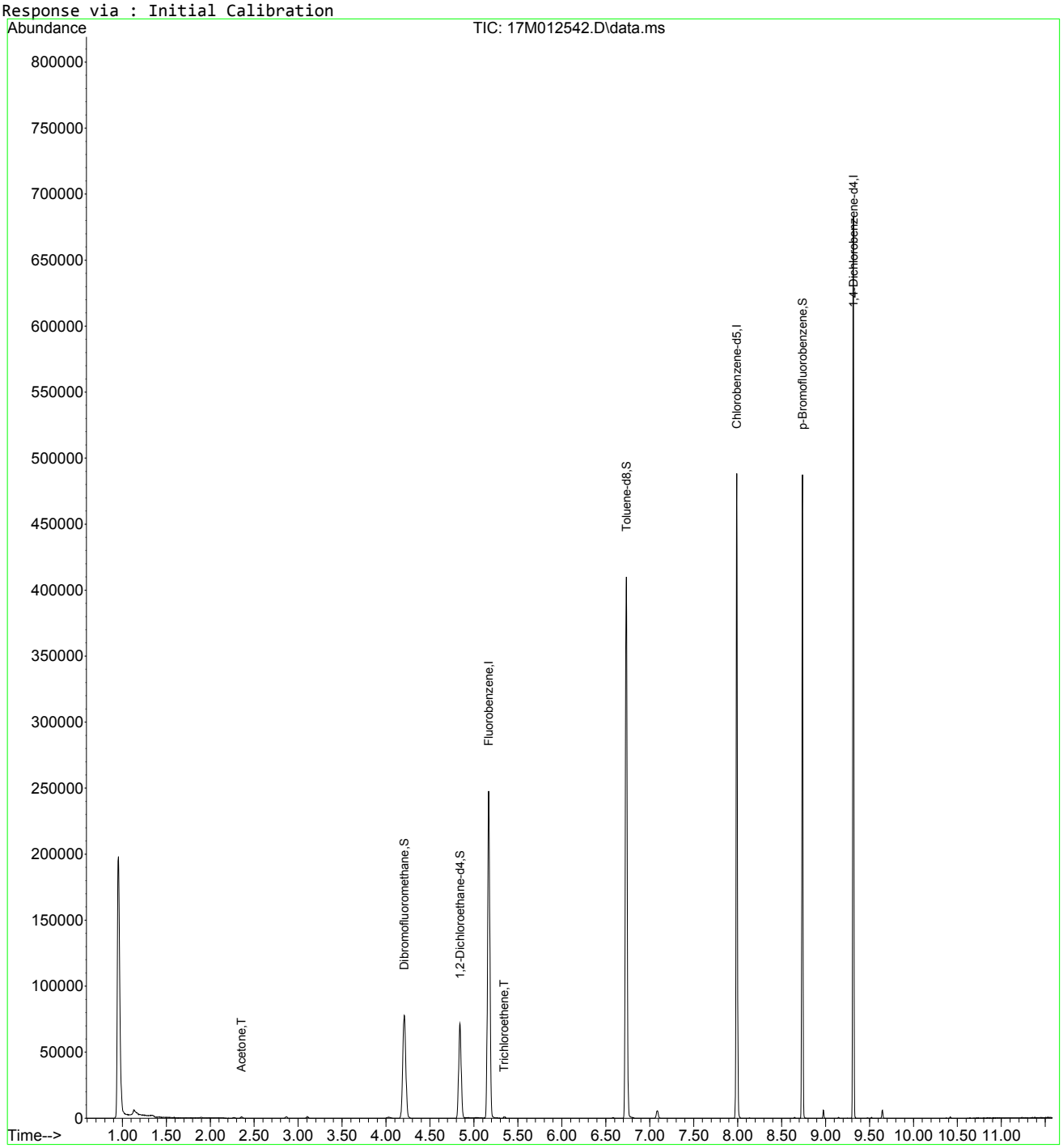

826_VMS.M Mon Jun 08 16:04:27 2015 Page: 2

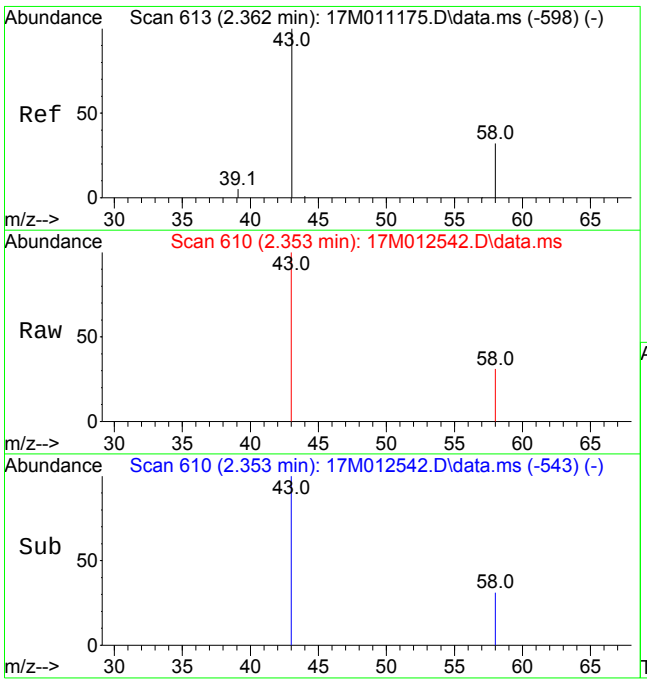

#15
Acetone
Concen: 3.2730 ug/L
RT: 2.353 min Scan# 610
Delta R.T. -0.006 min
Lab File: 17M012542.D
Acq: 05 Jun 2015 17:13

Tgt Ion: 43 Resp: 1150

Ion	Ratio	Lower	Upper
43	100		
58	21.2	19.0	44.4

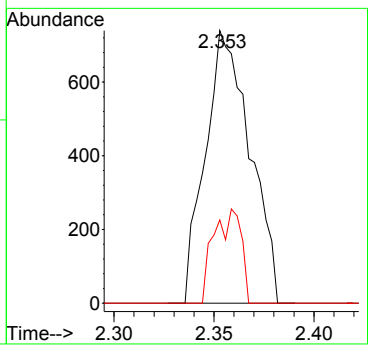

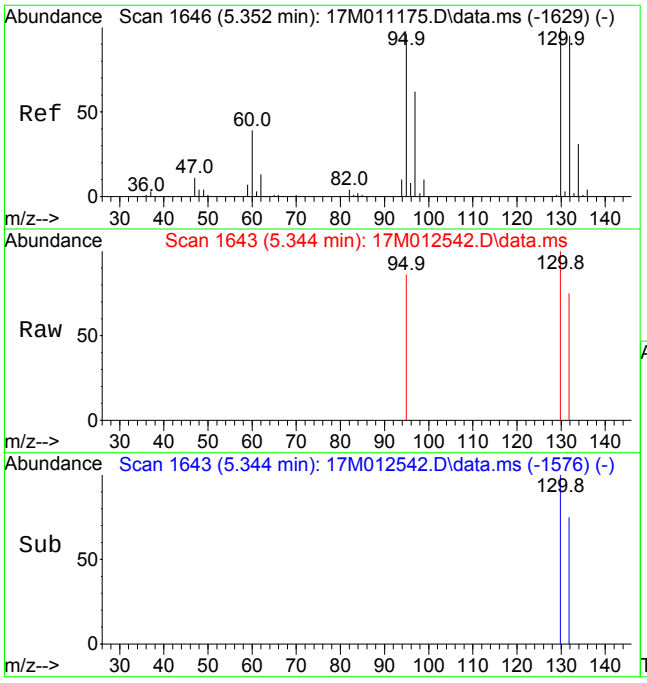

#34
Trichloroethene
Concen: 0.1204 ug/L
RT: 5.344 min Scan# 1643
Delta R.T. -0.006 min
Lab File: 17M012542.D
Acq: 05 Jun 2015 17:13

Tgt Ion:130 Resp: 353

Ion	Ratio	Lower	Upper
130	100		
60	0.0	22.4	52.2#

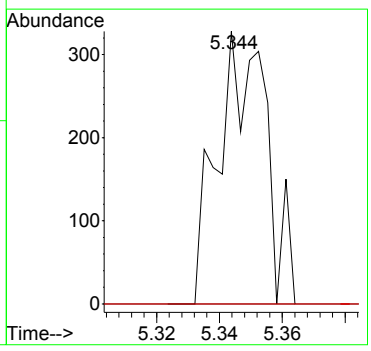

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060815\
Data File : 17M012582.D
Acq On : 08 Jun 2015 17:44
Operator : ADC
Sample : L15051752-08 A 826-LOW
Misc : 1,1
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Jun 09 16:39:47 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	223143	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	168215	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	87263	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.206	111	61316	26.1743 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.697%		
32) 1,2-Dichloroethane-d4	4.840	65	53803	26.5415 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 106.166%		
44) Toluene-d8	6.734	98	233371	26.1300 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.520%		
63) p-Bromofluorobenzene	8.737	95	81102	26.9102 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 107.641%		
Target Compounds					Qvalue
3) Chloromethane	1.134	50	2333	0.8527 ug/L #	42
11) Carbon Disulfide	1.895	76	1685	0.2634 ug/L #	73
15) Acetone	2.359	43	335	0.9534 ug/L #	43

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\060815\
Data File : 17M012582.D
Acq On : 08 Jun 2015 17:44
Operator : ADC
Sample : L15051752-08 A 826-LOW
Misc : 1,1
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Jun 09 16:39:47 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

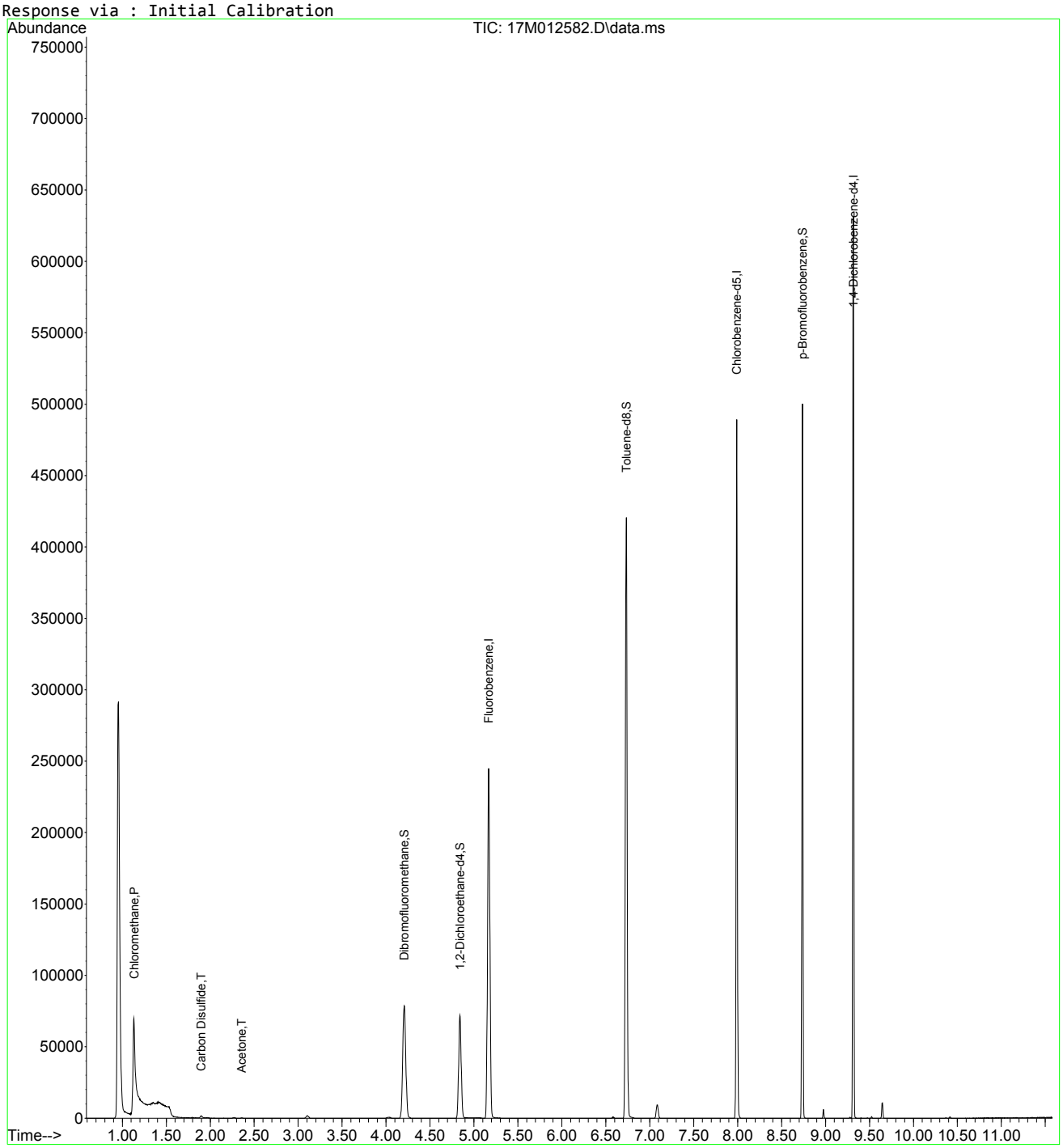

826_VMS.M Tue Jun 09 16:39:48 2015 Page: 2

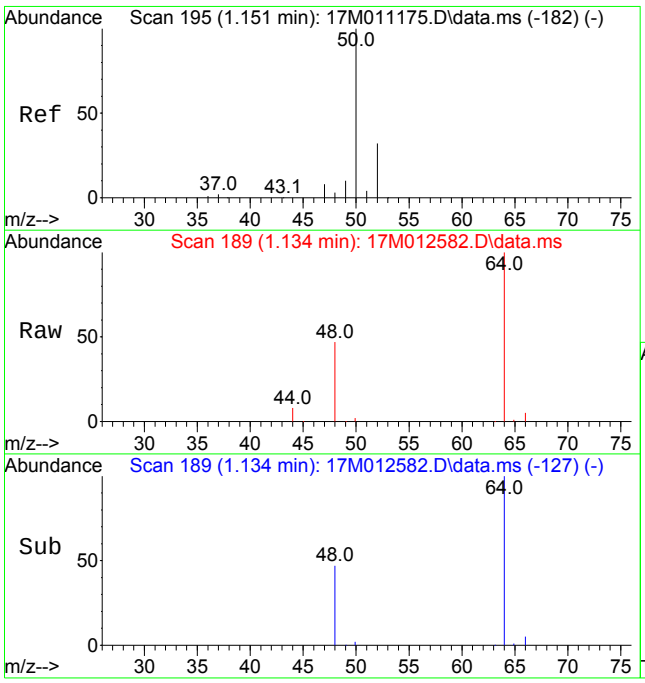

#3
Chloromethane
Concen: 0.8527 ug/L
RT: 1.134 min Scan# 189
Delta R.T. -0.020 min
Lab File: 17M012582.D
Acq: 08 Jun 2015 17:44

Tgt Ion: 50 Resp: 2333

Ion	Ratio	Lower	Upper
50	100		
52	0.0	19.6	45.6#

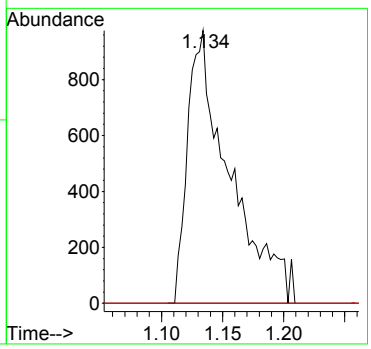

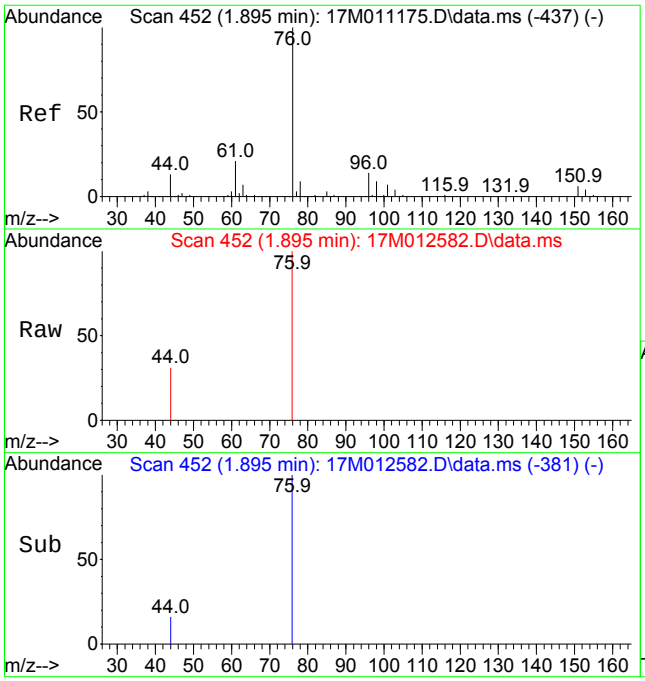

#11
Carbon Disulfide
Concen: 0.2634 ug/L
RT: 1.895 min Scan# 452
Delta R.T. 0.005 min
Lab File: 17M012582.D
Acq: 08 Jun 2015 17:44

Tgt Ion: 76 Resp: 1685

Ion	Ratio	Lower	Upper
76	100		
78	0.0	8.0	12.0#

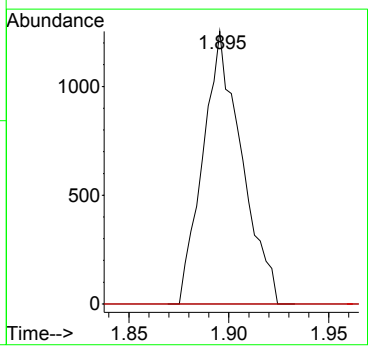

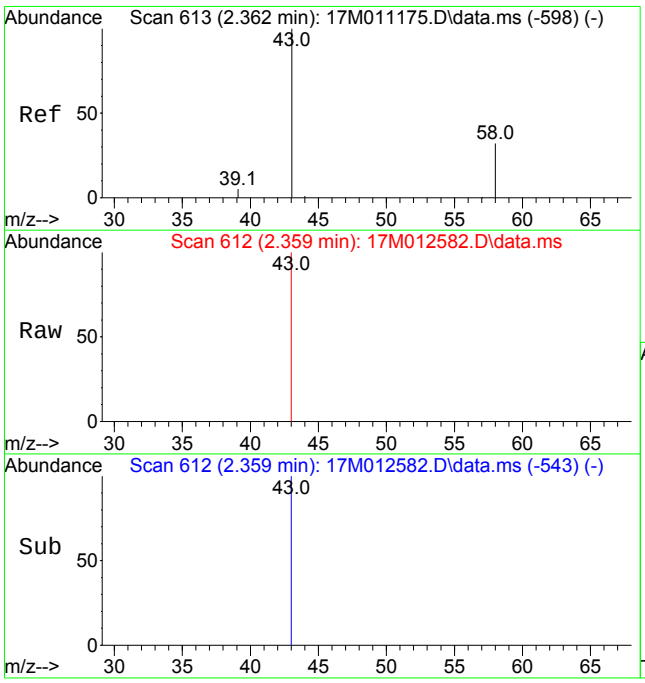

#15
Acetone
Concen: 0.9534 ug/L
RT: 2.359 min Scan# 612
Delta R.T. -0.000 min
Lab File: 17M012582.D
Acq: 08 Jun 2015 17:44

Tgt Ion: 43 Resp: 335

Ion	Ratio	Lower	Upper
43	100		
58	0.0	19.0	44.4#

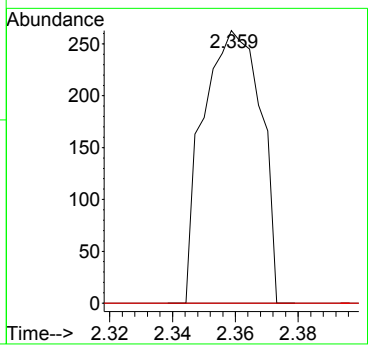

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060815\
Data File : 17M012574.D
Acq On : 08 Jun 2015 15:06
Operator : ADC
Sample : L15051752-10 A 826-LOW
Misc : 1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 09 16:39:20 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	225882	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	168329	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	85066	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.206	111	60287	25.4230 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.692%		
32) 1,2-Dichloroethane-d4	4.837	65	53974	26.3030 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 105.212%		
44) Toluene-d8	6.734	98	233579	26.1356 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.542%		
63) p-Bromofluorobenzene	8.737	95	81501	27.7410 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 110.964%		
Target Compounds					Qvalue
14) Methylene Chloride	2.307	84	2218	0.8915 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060815\
Data File : 17M012574.D
Acq On : 08 Jun 2015 15:06
Operator : ADC
Sample : L15051752-10 A 826-LOW
Misc : 1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 09 16:39:20 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

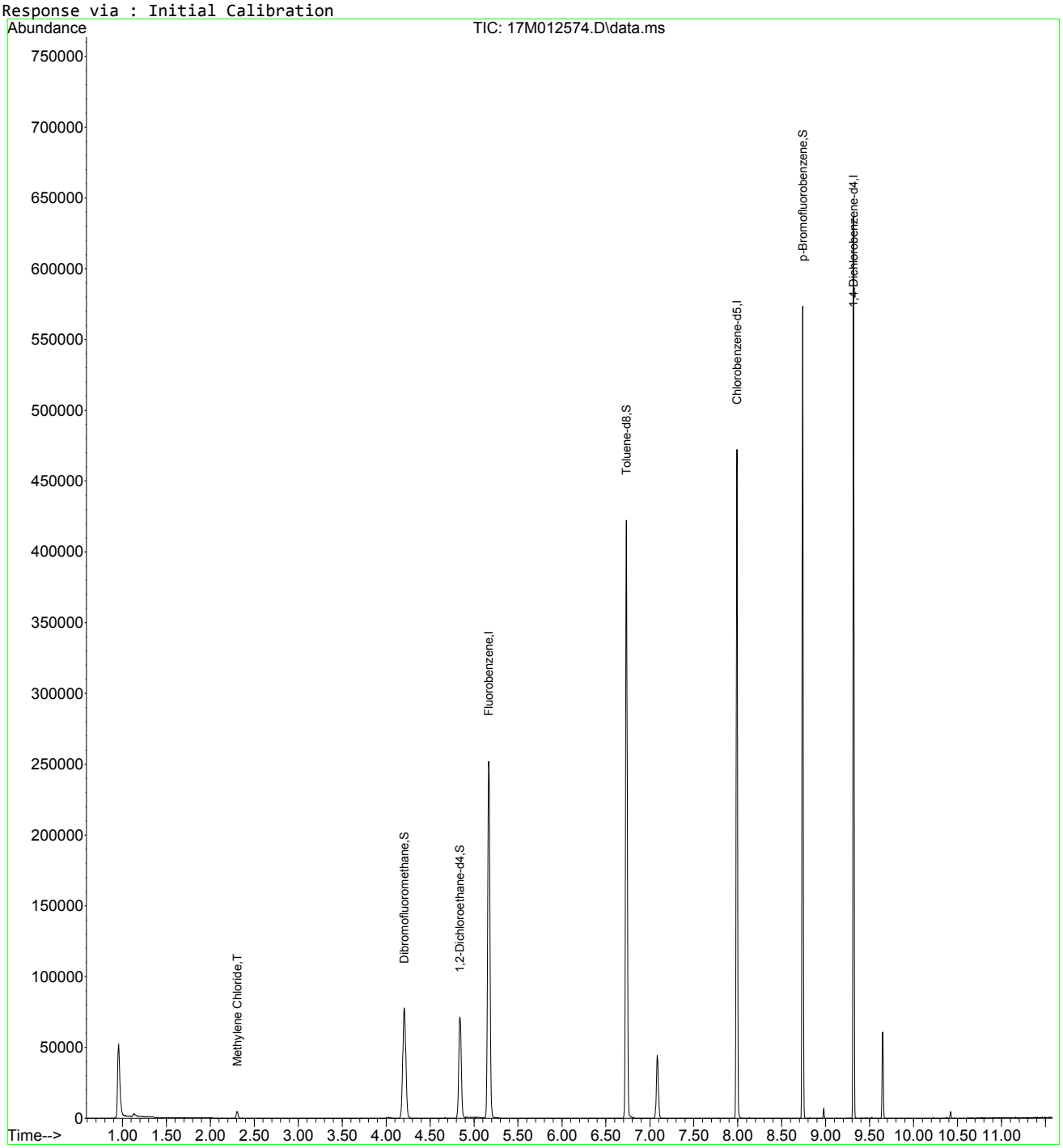

826_VMS.M Tue Jun 09 16:39:21 2015 Page: 2

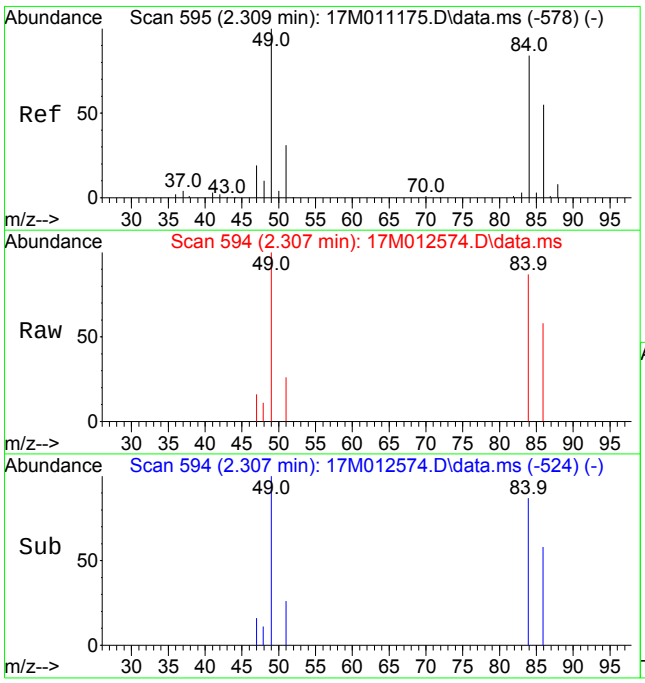

#14
Methylene Chloride
Concen: 0.8915 ug/L
RT: 2.307 min Scan# 594
Delta R.T. 0.003 min
Lab File: 17M012574.D
Acq: 08 Jun 2015 15:06

Tgt Ion: 84 Resp: 2218

Ion	Ratio	Lower	Upper
84	100		
49	117.9	94.5	141.7

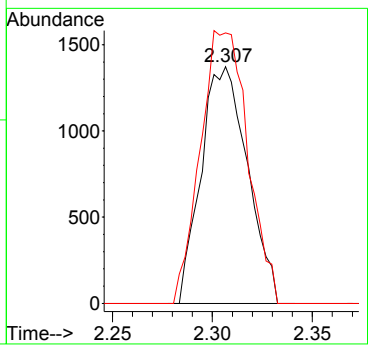

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011945.D
Acq On : 18 May 2015 11:17
Operator : ADC
Sample : WG523986-02 50ug/L CCV 8260
Misc : 1,1 STD70529
ALS Vial : 1 Sample Multiplier: 1

Quant Time: May 18 15:26:46 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	246932	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	187003	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	102061	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.206	111	67595	26.0748 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.299%		
32) 1,2-Dichloroethane-d4	4.840	65	56748	25.2973 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.189%		
44) Toluene-d8	6.734	98	259215	26.1077 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.431%		
63) p-Bromofluorobenzene	8.737	95	89362	25.3518 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.407%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.041	85	149687	54.0644 ug/L	100
3) Chloromethane	1.154	50	150930	49.8490 ug/L	100
4) Vinyl Chloride	1.201	62	162746	50.9808 ug/L	100
5) 1,3-Butadiene	1.209	54	86264	51.2455 ug/L	100
6) Bromomethane	1.389	94	91457	48.5269 ug/L	100
7) Chloroethane	1.455	64	74398	48.4332 ug/L	100
8) Trichlorofluoromethane	1.542	101	215576	56.1900 ug/L	100
9) Diethyl ether	1.757	59	76185	47.5969 ug/L	100
10) 1,1-Dichloroethene	1.875	61	196577	51.4000 ug/L	100
11) Carbon Disulfide	1.890	76	352659	49.8201 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.907	101	132957	51.8216 ug/L	100
13) Acrolein	2.124	56	9480	45.4635 ug/L	100
14) Methylene Chloride	2.304	84	132746	48.8063 ug/L	100
15) Acetone	2.359	43	17179	44.1820 ug/L	100
16) trans-1,2-Dichloroethene	2.434	96	130428	50.3363 ug/L	100
17) Methyl Tert Butyl Ether	2.547	73	269784	47.5058 ug/L	100
18) 1,1-Dichloroethane	2.999	63	242453	51.1243 ug/L	100
19) Acrylonitrile	3.057	53	24506	45.6284 ug/L	100
20) Vinyl Acetate	3.300	86	11053	47.5672 ug/L	100
21) cis-1,2-Dichloroethene	3.595	96	145895	50.9718 ug/L	100
22) 2,2-Dichloropropane	3.722	77	202066	55.6753 ug/L	100
23) Cyclohexane	3.824	56	213782	51.5418 ug/L	100
24) Bromochloromethane	3.835	130	89001	50.8173 ug/L	100
25) Chloroform	3.966	83	236175	51.8951 ug/L	100
26) Carbon Tetrachloride	4.113	117	197141	53.8530 ug/L	100
28) 1,1,1-Trichloroethane	4.209	97	213660	51.4031 ug/L	100
29) 1,1-Dichloropropene	4.377	75	183411	52.2081 ug/L	100
30) 2-Butanone	4.400	43	27529	43.7178 ug/L	100
31) Benzene	4.678	78	543309	49.7146 ug/L	100
33) 1,2-Dichloroethane	4.921	62	143706	49.7031 ug/L	100
34) Trichloroethene	5.350	130	156473	48.2428 ug/L	100
35) Dibromomethane	5.767	93	70497	52.1341 ug/L	100
36) 1,2-Dichloropropane	5.874	63	143994	50.3358 ug/L	100
37) Bromodichloromethane	5.963	83	175712	51.2809 ug/L	100
38) 1,4-Dioxane	6.175	88	1445	88.8153 ug/L	100
39) 2-Chloroethyl Vinyl Ether	6.551	63	120326	95.7146 ug/L	100
40) cis-1,3-Dichloropropene	6.569	75	208997	52.3192 ug/L	100
41) 4-Methyl-2-Pentanone	7.831	58	23443	41.4481 ug/L	100
42) trans-1,3-Dichloropropene	7.165	75	168536	54.0867 ug/L	100
45) Toluene	6.780	91	617866	50.8383 ug/L	100
46) Tetrachloroethene	7.107	166	172614	50.9252 ug/L	100
47) 1,1,2-Trichloroethane	7.298	97	97101	47.5716 ug/L	100
48) Dibromochloromethane	7.437	129	134687	50.4914 ug/L	100
49) 1,3-Dichloropropane	7.518	76	157335	47.7997 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011945.D
Acq On : 18 May 2015 11:17
Operator : ADC
Sample : WG523986-02 50ug/L CCV 8260
Misc : 1,1 STD70529
ALS Vial : 1 Sample Multiplier: 1

Quant Time: May 18 15:26:46 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50) 1,2-Dibromoethane	7.605	107	97188	48.7487 ug/L	100
51) 2-Hexanone	7.831	43	43557	43.1257 ug/L	100
52) Chlorobenzene	8.002	112	406742	50.3338 ug/L	100
53) 1-Chlorohexane	8.016	69	37260	52.8038 ug/L	100
54) Ethylbenzene	8.039	106	222026	51.3692 ug/L	100
55) 1,1,1,2-Tetrachloroethane	8.057	131	146437	51.0296 ug/L	100
56) m-,p-Xylene	8.141	106	548550	106.1199 ug/L	100
57) o-Xylene	8.401	106	262170	51.3397 ug/L	100
58) Styrene	8.433	104	427816	52.5240 ug/L	100
59) Bromoform	8.436	173	88724	52.5015 ug/L	100
60) Isopropylbenzene	8.590	105	695489	52.3424 ug/L	100
62) 1,3,5-Trimethylbenzene	8.928	105	618268	52.5456 ug/L	100
64) Bromobenzene	8.789	156	182766	49.4917 ug/L	100
65) n-Propylbenzene	8.818	91	811779	52.5831 ug/L	100
66) 1,1,2,2-Tetrachloroethane	8.859	83	108560	47.2074 ug/L	100
67) 2-Chlorotoluene	8.894	91	477051	50.1940 ug/L	100
68) 1,2,3-Trichloropropane	8.925	110	29317	48.7383 ug/L	100
69) 1,2,4-Trimethylbenzene	9.125	105	613330	52.2568 ug/L	100
70) 4-Chlorotoluene	8.983	91	489941	51.1676 ug/L	100
71) tert-Butylbenzene	9.090	134	114095	51.8367 ug/L	100
72) sec-Butylbenzene	9.180	105	776065	52.7483 ug/L	100
73) p-Isopropyltoluene	9.253	119	679145	54.1056 ug/L	100
74) 1,3-Dichlorobenzene	9.282	146	352653	50.4198 ug/L	100
75) 1,4-Dichlorobenzene	9.325	146	347011	49.4788 ug/L	100
76) n-Butylbenzene	9.455	91	606703	55.3243 ug/L	100
77) 1,2-Dichlorobenzene	9.528	146	321027	48.7610 ug/L	100
78) 1,2-Dibromo-3-Chloropr...	9.907	75	17804	45.5652 ug/L	100
79) Hexachlorobutadiene	10.208	225	161438	51.4251 ug/L	100
80) 1,2,4-Trichlorobenzene	10.223	180	255989	50.1329 ug/L	100
81) Naphthalene	10.376	128	395780	45.8826 ug/L	100
82) 1,2,3-Trichlorobenzene	10.460	180	222612	47.5353 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011945.D
Acq On : 18 May 2015 11:17
Operator : ADC
Sample : WG523986-02 50ug/L CCV 8260
Misc : 1,1 STD70529
ALS Vial : 1 Sample Multiplier: 1

Quant Time: May 18 15:26:46 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

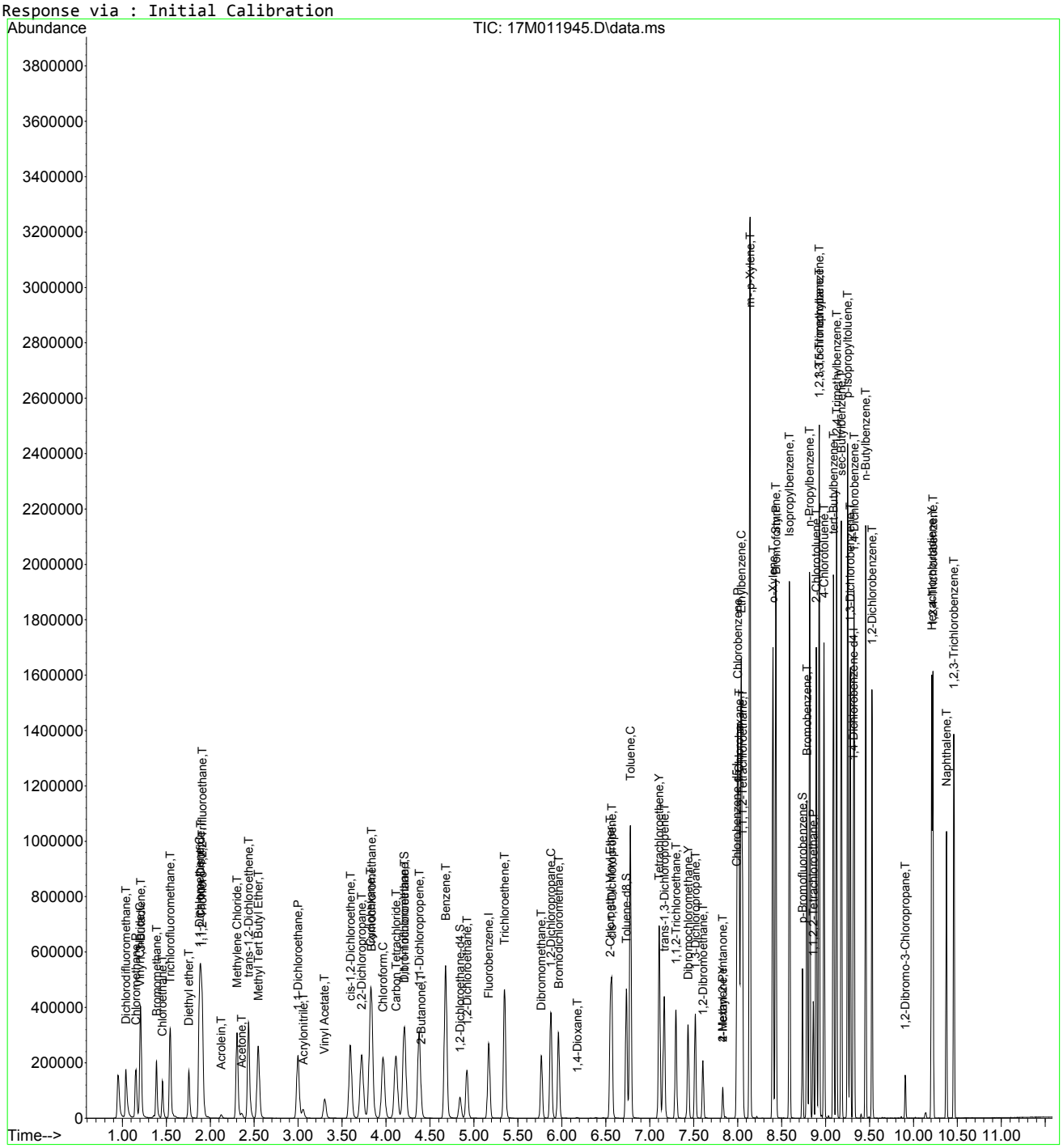

826_VMS.M Mon May 18 15:26:47 2015 Page: 3

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011947.D
Acq On : 18 May 2015 11:56
Operator : ADC
Sample : WG523986-03 0.3ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 18 15:04:22 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	5.167	96	234712	25.00000	ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	172661	25.00000	ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	89855	25.00000	ug/L	0.0000
System Monitoring Compounds						
27) Dibromofluoromethane	0.000	111	0	0.0000	ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	=	0.000%#	
32) 1,2-Dichloroethane-d4	0.000	65	0	0.0000	ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	=	0.000%#	
44) Toluene-d8	6.736	98	549	0.0599	ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery	=	0.240%#	
63) p-Bromofluorobenzene	8.734	95	207	0.0667	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery	=	0.267%#	
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.041	85	570	0.2166	ug/L #	72
3) Chloromethane	1.154	50	804	0.2794	ug/L #	75
4) Vinyl Chloride	1.198	62	869	0.2864	ug/L	85
5) 1,3-Butadiene	1.215	54	402	0.2512	ug/L	90
6) Bromomethane	1.395	94	565	0.3154	ug/L	83
7) Chloroethane	1.464	64	357	0.2445	ug/L #	48
8) Trichlorofluoromethane	1.557	101	1043	0.2860	ug/L #	95
9) Diethyl ether	1.756	59	373	0.2452	ug/L	85
10) 1,1-Dichloroethene	1.881	61	983	0.2704	ug/L	98
11) Carbon Disulfide	1.895	76	2275	0.3381	ug/L #	73
12) 1,1,2-Trichloro-1,2,2-...	1.916	101	642	0.2633	ug/L	98
14) Methylene Chloride	2.304	84	824	0.3187	ug/L	100
16) trans-1,2-Dichloroethene	2.440	96	680	0.2761	ug/L	95
17) Methyl Tert Butyl Ether	2.547	73	1525	0.2825	ug/L #	72
18) 1,1-Dichloroethane	3.001	63	1191	0.2642	ug/L #	87
21) cis-1,2-Dichloroethene	3.598	96	750	0.2757	ug/L	99
22) 2,2-Dichloropropane	3.725	77	805	0.2333	ug/L #	86
23) Cyclohexane	3.827	56	980	0.2486	ug/L	94
25) Chloroform	3.971	83	1144	0.2645	ug/L #	84
26) Carbon Tetrachloride	4.116	117	770	0.2213	ug/L #	84
28) 1,1,1-Trichloroethane	4.212	97	1016	0.2572	ug/L #	86
29) 1,1-Dichloropropene	4.377	75	898	0.2689	ug/L	85
31) Benzene	4.678	78	3358	0.3233	ug/L #	89
33) 1,2-Dichloroethane	4.918	62	671	0.2442	ug/L #	54
34) Trichloroethene	5.350	130	1207	0.3915	ug/L	84
35) Dibromomethane	5.766	93	284	0.2210	ug/L #	69
36) 1,2-Dichloropropane	5.871	63	719	0.2644	ug/L #	41
37) Bromodichloromethane	5.963	83	872	0.2677	ug/L	91
39) 2-Chloroethyl Vinyl Ether	6.551	63	527	0.4410	ug/L #	43
40) cis-1,3-Dichloropropene	6.568	75	970	0.2555	ug/L #	76
42) trans-1,3-Dichloropropene	7.165	75	754	0.2546	ug/L #	67
45) Toluene	6.780	91	3362	0.2996	ug/L	98
46) Tetrachloroethene	7.107	166	913	0.2917	ug/L #	92
47) 1,1,2-Trichloroethane	7.298	97	539	0.2860	ug/L	87
48) Dibromochloromethane	7.431	129	577	0.2343	ug/L	100
49) 1,3-Dichloropropane	7.518	76	811	0.2669	ug/L	97
50) 1,2-Dibromoethane	7.605	107	495	0.2689	ug/L	96
51) 2-Hexanone	7.831	43	154	0.1651	ug/L #	25
52) Chlorobenzene	7.999	112	2327	0.3119	ug/L #	15
54) Ethylbenzene	8.036	106	1146	0.2872	ug/L	100
55) 1,1,1,2-Tetrachloroethane	8.054	131	717	0.2706	ug/L	81
56) m-,p-Xylene	8.138	106	2788	0.5842	ug/L	100
57) o-Xylene	8.398	106	1323	0.2806	ug/L	92
58) Styrene	8.433	104	1985	0.2639	ug/L	98

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011947.D
Acq On : 18 May 2015 11:56
Operator : ADC
Sample : WG523986-03 0.3ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 18 15:04:22 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc Units		Dev(Min)
59)	Bromoform	8.433	173	369	0.2365 ug/L	#	79
60)	Isopropylbenzene	8.589	105	3430	0.2796 ug/L		96
62)	1,3,5-Trimethylbenzene	8.925	105	2881	0.2781 ug/L		99
64)	Bromobenzene	8.789	156	1004	0.3088 ug/L		100
65)	n-Propylbenzene	8.818	91	3865	0.2844 ug/L	#	97
66)	1,1,2,2-Tetrachloroethane	8.859	83	512	0.2529 ug/L		88
67)	2-Chlorotoluene	8.893	91	2399	0.2867 ug/L		98
68)	1,2,3-Trichloropropane	8.922	110	129	0.2436 ug/L	#	58
69)	1,2,4-Trimethylbenzene	9.125	105	2883	0.2790 ug/L		99
70)	4-Chlorotoluene	8.983	91	2462	0.2920 ug/L		98
71)	tert-Butylbenzene	9.090	134	549	0.2833 ug/L		95
72)	sec-Butylbenzene	9.180	105	3549	0.2740 ug/L		97
73)	p-Isopropyltoluene	9.252	119	2908	0.2631 ug/L		99
74)	1,3-Dichlorobenzene	9.279	146	1886	0.3063 ug/L		98
75)	1,4-Dichlorobenzene	9.325	146	1996	0.3233 ug/L		91
76)	n-Butylbenzene	9.455	91	2513	0.2603 ug/L		99
77)	1,2-Dichlorobenzene	9.528	146	1742	0.3005 ug/L		98
79)	Hexachlorobutadiene	10.208	225	764	0.2764 ug/L		98
80)	1,2,4-Trichlorobenzene	10.222	180	1375	0.3059 ug/L		96
81)	Naphthalene	10.376	128	2537	0.3341 ug/L		92
82)	1,2,3-Trichlorobenzene	10.460	180	1246	0.3022 ug/L		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011947.D
Acq On : 18 May 2015 11:56
Operator : ADC
Sample : WG523986-03 0.3ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 18 15:04:22 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

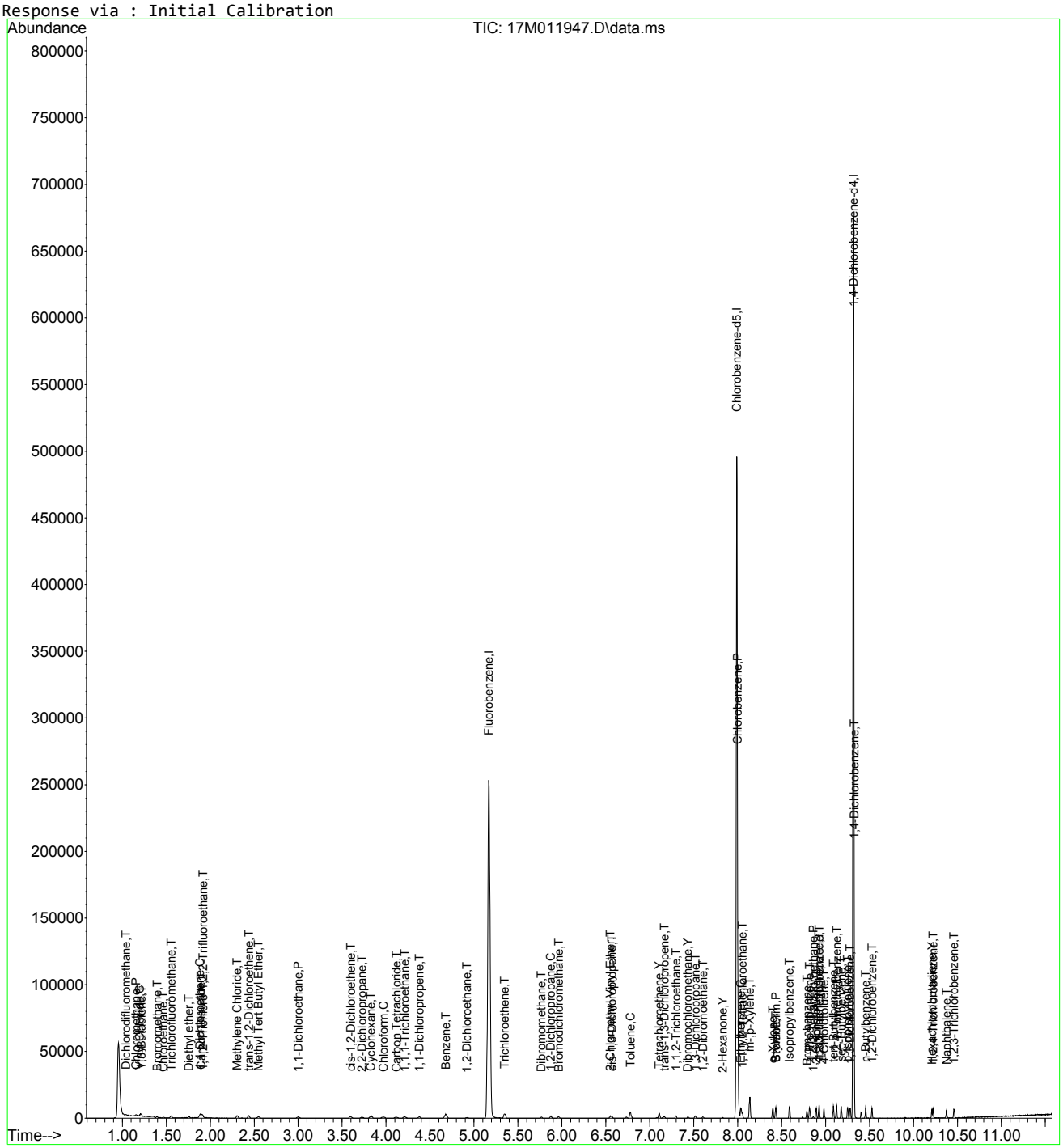

826_VMS.M Mon May 18 15:05:10 2015 Page: 3

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011947.D
Acq On : 18 May 2015 11:56
Operator : ADC
Sample : WG523986-03 0.3ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 18 15:04:22 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	100	0.000
2	T	Dichlorodifluoromethane	-1.000	0.217	0.0	0	0.000
3	P	Chloromethane	-1.000	0.279	0.0	0	0.000
4	C	Vinyl Chloride	-1.000	0.286	0.0	0	0.000
5	T	1,3-Butadiene	-1.000	0.251	0.0	0	0.000
6	T	Bromomethane	-1.000	0.315	0.0	0	0.000
7	T	Chloroethane	-1.000	0.245	0.0	0	0.000
8	T	Trichlorofluoromethane	-1.000	0.286	0.0	0	0.015
9	T	Diethyl ether	-1.000	0.245	0.0	0	0.000
10	C	1,1-Dichloroethene	-1.000	0.270	0.0	0	0.000
11	T	Carbon Disulfide	-1.000	0.338	0.0	0	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.000	0.263	0.0	0	0.000
13	T	Acrolein	-1.000	0.000	0.0	0	-2.124#
14	T	Methylene Chloride	-1.000	0.319	0.0	0	0.000
15	T	Acetone	-1.000	0.000	0.0	0	-2.359#
16	T	trans-1,2-Dichloroethene	-1.000	0.276	0.0	0	0.000
17	T	Methyl Tert Butyl Ether	-1.000	0.283	0.0	0	0.000
18	P	1,1-Dichloroethane	-1.000	0.264	0.0	0	0.000
19	T	Acrylonitrile	-1.000	0.000	0.0	0	-3.057#
20	T	Vinyl Acetate	-1.000	0.000	0.0	0	-3.300#
21	T	cis-1,2-Dichloroethene	-1.000	0.276	0.0	0	0.000
22	T	2,2-Dichloropropane	-1.000	0.233	0.0	0	0.000
23	T	Cyclohexane	-1.000	0.249	0.0	0	0.000
24	T	Bromochloromethane	-1.000	0.000	0.0	0	-3.835#
25	C	Chloroform	0.300	0.264	12.0#	100	0.000
26	T	Carbon Tetrachloride	-1.000	0.221	0.0	0	0.000
27	S	Dibromofluoromethane	-1.000	0.000	0.0	0	-4.206#
28	T	1,1,1-Trichloroethane	-1.000	0.257	0.0	0	0.000
29	T	1,1-Dichloropropene	-1.000	0.269	0.0	0	0.000
30	T	2-Butanone	-1.000	0.000	0.0	0	-4.400#
31	T	Benzene	-1.000	0.323	0.0	0	0.000
32	S	1,2-Dichloroethane-d4	-1.000	0.000	0.0	0	-4.840#
33	T	1,2-Dichloroethane	-1.000	0.244	0.0	0	0.000
34	T	Trichloroethene	-1.000	0.392	0.0	0	0.000
35	T	Dibromomethane	-1.000	0.221	0.0	0	0.000
36	C	1,2-Dichloropropane	-1.000	0.264	0.0	0	0.000
37	T	Bromodichloromethane	-1.000	0.268	0.0	0	0.000
38	T	1,4-Dioxane	-1.000	0.000	0.0	0	-6.175#
39	T	2-Chloroethyl Vinyl Ether	-1.000	0.441	0.0	0	0.000
40	T	cis-1,3-Dichloropropene	-1.000	0.255	0.0	0	0.000
41	T	4-Methyl-2-Pentanone	-1.000	0.000	0.0	0	-7.831#
42	T	trans-1,3-Dichloropropene	-1.000	0.255	0.0	0	0.000
43	I	Chlorobenzene-d5	25.000	25.000	0.0	100	0.000
44	S	Toluene-d8	-1.000	0.060	0.0	0	0.000
45	C	Toluene	-1.000	0.300	0.0	0	0.000
46	Y	Tetrachloroethene	-1.000	0.292	0.0	0	0.000
47	T	1,1,2-Trichloroethane	-1.000	0.286	0.0	0	0.000
48	Y	Dibromochloromethane	-1.000	0.234	0.0	0	0.000
49	T	1,3-Dichloropropane	-1.000	0.267	0.0	0	0.000
50	T	1,2-Dibromoethane	-1.000	0.269	0.0	0	0.000
51	Y	2-Hexanone	-1.000	0.165	0.0	0	0.000
52	P	Chlorobenzene	-1.000	0.312	0.0	0	0.000
53	T	1-Chlorohexane	-1.000	0.000	0.0	0	-8.016#
54	C	Ethylbenzene	-1.000	0.287	0.0	0	0.000
55	T	1,1,1,2-Tetrachloroethane	-1.000	0.271	0.0	0	0.000

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011947.D
Acq On : 18 May 2015 11:56
Operator : ADC
Sample : WG523986-03 0.3ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 18 15:04:22 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	m-,p-Xylene	-1.000	0.584	0.0	0	0.000
57	T	o-Xylene	-1.000	0.281	0.0	0	0.000
58	T	Styrene	-1.000	0.264	0.0	0	0.000
59	P	Bromoform	-1.000	0.236	0.0	0	0.000
60	T	Isopropylbenzene	-1.000	0.280	0.0	0	0.000
61	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	100	0.000
62	T	1,3,5-Trimethylbenzene	-1.000	0.278	0.0	0	0.000
63	S	p-Bromofluorobenzene	-1.000	0.067	0.0	0	0.000
64	T	Bromobenzene	0.300	0.309	-3.0	100	0.000
65	T	n-Propylbenzene	-1.000	0.284	0.0	0	0.000
66	P	1,1,2,2-Tetrachloroethane	-1.000	0.253	0.0	0	0.000
67	T	2-Chlorotoluene	-1.000	0.287	0.0	0	0.000
68	T	1,2,3-Trichloropropane	-1.000	0.244	0.0	0	0.000
69	T	1,2,4-Trimethylbenzene	-1.000	0.279	0.0	0	0.000
70	T	4-Chlorotoluene	-1.000	0.292	0.0	0	0.000
71	T	tert-Butylbenzene	-1.000	0.283	0.0	0	0.000
72	T	sec-Butylbenzene	-1.000	0.274	0.0	0	0.000
73	T	p-Isopropyltoluene	-1.000	0.263	0.0	0	0.000
74	T	1,3-Dichlorobenzene	-1.000	0.306	0.0	0	0.000
75	T	1,4-Dichlorobenzene	0.300	0.323	-7.7	100	0.000
76	T	n-Butylbenzene	-1.000	0.260	0.0	0	0.000
77	T	1,2-Dichlorobenzene	0.300	0.301	-0.3	100	0.000
78	T	1,2-Dibromo-3-Chloropropane	-1.000	0.000	0.0	0	-9.907#
79	Y	Hexachlorobutadiene	-1.000	0.276	0.0	0	0.000
80	T	1,2,4-Trichlorobenzene	-1.000	0.306	0.0	0	0.000
81	T	Naphthalene	-1.000	0.334	0.0	0	0.000
82	T	1,2,3-Trichlorobenzene	-1.000	0.302	0.0	0	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 1

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011948.D
Acq On : 18 May 2015 12:16
Operator : ADC
Sample : WG523986-04 0.4ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 18 15:04:24 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	5.170	96	236357	25.00000	ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	173067	25.00000	ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	89349	25.00000	ug/L	0.0000
System Monitoring Compounds						
27) Dibromofluoromethane	0.000	111	0	0.0000	ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	=	0.000%#	
32) 1,2-Dichloroethane-d4	0.000	65	0	0.0000	ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	=	0.000%#	
44) Toluene-d8	6.736	98	400	0.0435	ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery	=	0.174%#	
63) p-Bromofluorobenzene	8.734	95	115	0.0373	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery	=	0.149%#	
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.038	85	751	0.2834	ug/L #	72
3) Chloromethane	1.154	50	1075	0.3709	ug/L	88
4) Vinyl Chloride	1.203	62	1172	0.3836	ug/L	85
5) 1,3-Butadiene	1.212	54	617	0.3829	ug/L	93
6) Bromomethane	1.389	94	684	0.3792	ug/L	100
7) Chloroethane	1.467	64	590	0.4013	ug/L #	48
8) Trichlorofluoromethane	1.551	101	1530	0.4166	ug/L #	89
9) Diethyl ether	1.756	59	521	0.3401	ug/L	94
10) 1,1-Dichloroethene	1.881	61	1374	0.3753	ug/L	97
11) Carbon Disulfide	1.895	76	2759	0.4072	ug/L #	88
12) 1,1,2-Trichloro-1,2,2-...	1.907	101	925	0.3767	ug/L	97
14) Methylene Chloride	2.307	84	1017	0.3906	ug/L	97
15) Acetone	2.356	43	210	0.5643	ug/L #	43
16) trans-1,2-Dichloroethene	2.434	96	990	0.3992	ug/L	94
17) Methyl Tert Butyl Ether	2.544	73	2055	0.3781	ug/L #	86
18) 1,1-Dichloroethane	3.001	63	1671	0.3681	ug/L #	87
21) cis-1,2-Dichloroethene	3.604	96	970	0.3541	ug/L	96
22) 2,2-Dichloropropane	3.719	77	1175	0.3382	ug/L	96
23) Cyclohexane	3.829	56	1357	0.3418	ug/L	98
24) Bromochloromethane	3.838	130	336	0.2004	ug/L #	66
25) Chloroform	3.968	83	1558	0.3577	ug/L #	86
26) Carbon Tetrachloride	4.113	117	1134	0.3236	ug/L #	89
28) 1,1,1-Trichloroethane	4.209	97	1499	0.3768	ug/L	85
29) 1,1-Dichloropropene	4.380	75	1213	0.3607	ug/L #	85
31) Benzene	4.675	78	4223	0.4037	ug/L	94
33) 1,2-Dichloroethane	4.915	62	1000	0.3613	ug/L #	71
34) Trichloroethene	5.347	130	1407	0.4532	ug/L	88
35) Dibromomethane	5.766	93	359	0.2774	ug/L	93
36) 1,2-Dichloropropane	5.879	63	976	0.3564	ug/L	84
37) Bromodichloromethane	5.960	83	1117	0.3406	ug/L	99
39) 2-Chloroethyl Vinyl Ether	6.551	63	814	0.6765	ug/L #	69
40) cis-1,3-Dichloropropene	6.566	75	1261	0.3298	ug/L	92
42) trans-1,3-Dichloropropene	7.168	75	968	0.3246	ug/L #	73
45) Toluene	6.777	91	4473	0.3977	ug/L	95
46) Tetrachloroethene	7.110	166	1259	0.4013	ug/L	91
47) 1,1,2-Trichloroethane	7.298	97	708	0.3748	ug/L	92
48) Dibromochloromethane	7.434	129	828	0.3354	ug/L	99
49) 1,3-Dichloropropane	7.518	76	1210	0.3972	ug/L	97
50) 1,2-Dibromoethane	7.605	107	641	0.3474	ug/L	97
51) 2-Hexanone	7.834	43	303	0.3242	ug/L #	25
52) Chlorobenzene	8.002	112	2919	0.3903	ug/L #	26
53) 1-Chlorohexane	8.016	69	209	0.3200	ug/L #	17
54) Ethylbenzene	8.036	106	1535	0.3837	ug/L	87
55) 1,1,1,2-Tetrachloroethane	8.057	131	938	0.3532	ug/L	85

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011948.D
Acq On : 18 May 2015 12:16
Operator : ADC
Sample : WG523986-04 0.4ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 18 15:04:24 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
56) m-,p-Xylene	8.138	106	3653	0.7636 ug/L	97
57) o-Xylene	8.401	106	1831	0.3874 ug/L	99
58) Styrene	8.433	104	2665	0.3535 ug/L	98
59) Bromoform	8.436	173	508	0.3248 ug/L #	76
60) Isopropylbenzene	8.589	105	4639	0.3772 ug/L	100
62) 1,3,5-Trimethylbenzene	8.928	105	3831	0.3719 ug/L	97
64) Bromobenzene	8.789	156	1314	0.4064 ug/L	99
65) n-Propylbenzene	8.818	91	5082	0.3760 ug/L #	97
66) 1,1,2,2-Tetrachloroethane	8.862	83	721	0.3581 ug/L	100
67) 2-Chlorotoluene	8.893	91	3236	0.3889 ug/L	96
68) 1,2,3-Trichloropropane	8.922	110	143	0.2716 ug/L #	11
69) 1,2,4-Trimethylbenzene	9.125	105	3797	0.3695 ug/L	98
70) 4-Chlorotoluene	8.983	91	3199	0.3816 ug/L	97
71) tert-Butylbenzene	9.087	134	667	0.3462 ug/L	80
72) sec-Butylbenzene	9.177	105	4707	0.3654 ug/L	99
73) p-Isopropyltoluene	9.252	119	3968	0.3611 ug/L	99
74) 1,3-Dichlorobenzene	9.281	146	2377	0.3882 ug/L	100
75) 1,4-Dichlorobenzene	9.325	146	2486	0.4049 ug/L	87
76) n-Butylbenzene	9.455	91	3319	0.3457 ug/L	95
77) 1,2-Dichlorobenzene	9.528	146	2319	0.4023 ug/L	95
79) Hexachlorobutadiene	10.208	225	1093	0.3977 ug/L	93
80) 1,2,4-Trichlorobenzene	10.222	180	1659	0.3711 ug/L	95
81) Naphthalene	10.376	128	3040	0.4026 ug/L	99
82) 1,2,3-Trichlorobenzene	10.460	180	1580	0.3854 ug/L	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011948.D
Acq On : 18 May 2015 12:16
Operator : ADC
Sample : WG523986-04 0.4ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 18 15:04:24 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

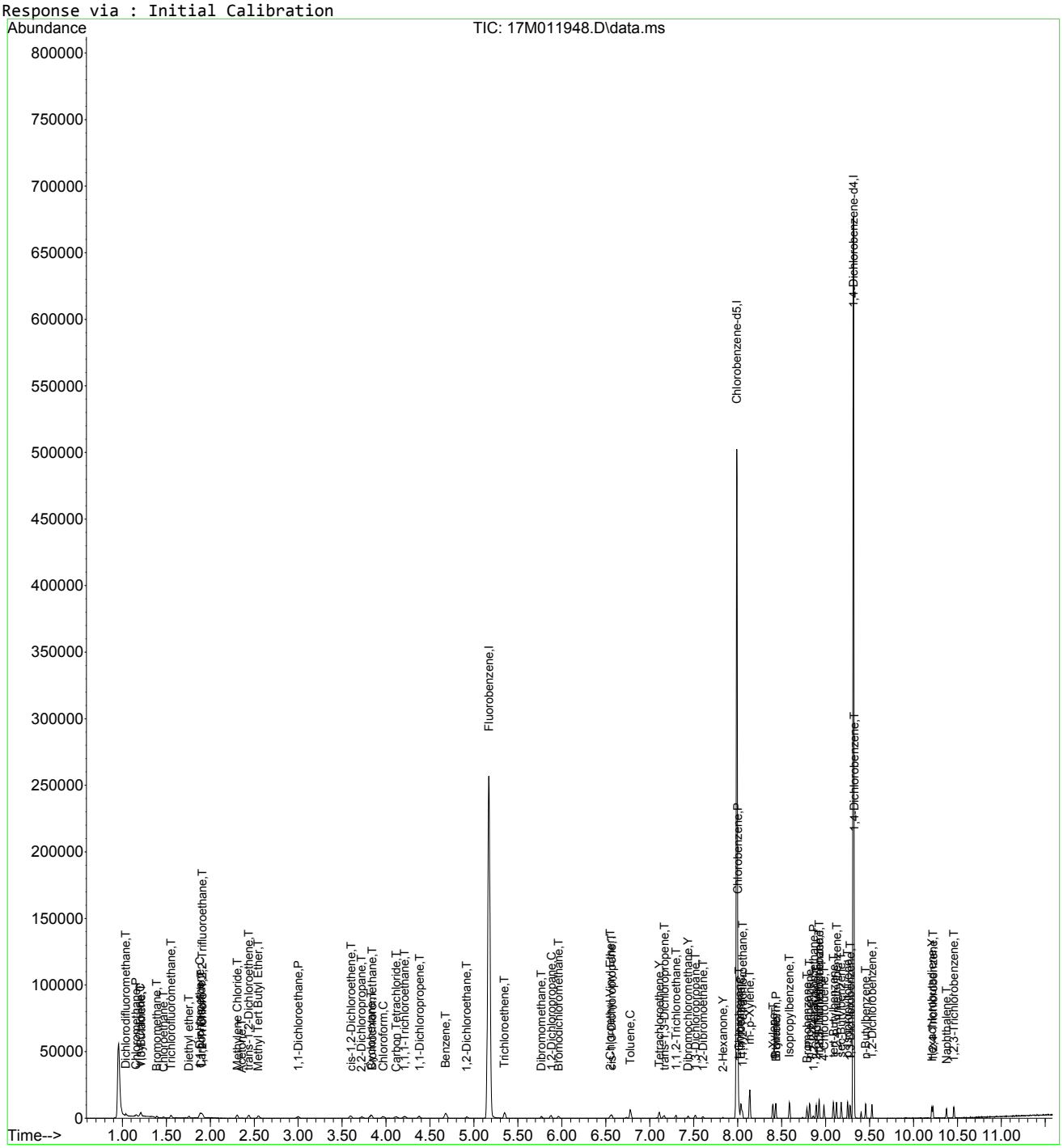

826_VMS.M Mon May 18 15:05:38 2015 Page: 3

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011948.D
Acq On : 18 May 2015 12:16
Operator : ADC
Sample : WG523986-04 0.4ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 18 15:04:24 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	100	0.000
2	T	Dichlorodifluoromethane	-1.000	0.283	0.0	100	0.000
3	P	Chloromethane	-1.000	0.371	0.0	0	0.000
4	C	Vinyl Chloride	0.400	0.384	4.0#	100	0.000
5	T	1,3-Butadiene	0.400	0.383	4.3	100	0.000
6	T	Bromomethane	-1.000	0.379	0.0	0	0.000
7	T	Chloroethane	-1.000	0.401	0.0	0	0.012
8	T	Trichlorofluoromethane	0.400	0.417	-4.2	100	0.000
9	T	Diethyl ether	0.400	0.340	15.0	100	0.000
10	C	1,1-Dichloroethene	0.400	0.375	6.3#	100	0.000
11	T	Carbon Disulfide	0.400	0.407	-1.7	100	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.400	0.377	5.8	100	0.000
13	T	Acrolein	-1.000	0.000	0.0	0	-2.124#
14	T	Methylene Chloride	0.400	0.391	2.3	100	0.000
15	T	Acetone	-1.000	0.564	0.0	0	0.000
16	T	trans-1,2-Dichloroethene	0.400	0.399	0.3	100	0.000
17	T	Methyl Tert Butyl Ether	0.400	0.378	5.5	100	0.000
18	P	1,1-Dichloroethane	0.400	0.368	8.0	100	0.000
19	T	Acrylonitrile	-1.000	0.000	0.0	0	-3.057#
20	T	Vinyl Acetate	-1.000	0.000	0.0	0	-3.300#
21	T	cis-1,2-Dichloroethene	0.400	0.354	11.5	100	0.000
22	T	2,2-Dichloropropane	0.400	0.338	15.5	100	0.000
23	T	Cyclohexane	0.400	0.342	14.5	100	0.000
24	T	Bromochloromethane	-1.000	0.200	0.0	0	0.000
25	C	Chloroform	0.400	0.358	10.5#	100	0.000
26	T	Carbon Tetrachloride	0.400	0.324	19.0	100	0.000
27	S	Dibromofluoromethane	-1.000	0.000	0.0	0	-4.206#
28	T	1,1,1-Trichloroethane	0.400	0.377	5.8	100	0.000
29	T	1,1-Dichloropropene	0.400	0.361	9.8	100	0.000
30	T	2-Butanone	-1.000	0.000	0.0	0	-4.400#
31	T	Benzene	0.400	0.404	-1.0	100	0.000
32	S	1,2-Dichloroethane-d4	-1.000	0.000	0.0	0	-4.840#
33	T	1,2-Dichloroethane	0.400	0.361	9.8	100	0.000
34	T	Trichloroethene	0.400	0.453	-13.2	100	0.000
35	T	Dibromomethane	0.400	0.277	30.8#	100	0.000
36	C	1,2-Dichloropropane	0.400	0.356	11.0#	100	0.000
37	T	Bromodichloromethane	0.400	0.341	14.8	100	0.000
38	T	1,4-Dioxane	-1.000	0.000	0.0	0	-6.175#
39	T	2-Chloroethyl Vinyl Ether	-1.000	0.676	0.0	0	0.000
40	T	cis-1,3-Dichloropropene	0.400	0.330	17.5	100	0.000
41	T	4-Methyl-2-Pentanone	-1.000	0.000	0.0	0	-7.831#
42	T	trans-1,3-Dichloropropene	0.400	0.325	18.8	100	0.000
43	I	Chlorobenzene-d5	25.000	25.000	0.0	100	0.000
44	S	Toluene-d8	-1.000	0.044	0.0	0	0.000
45	C	Toluene	0.400	0.398	0.5#	100	0.000
46	Y	Tetrachloroethene	0.400	0.401	-0.3	100	0.000
47	T	1,1,2-Trichloroethane	0.400	0.375	6.3	100	0.000
48	Y	Dibromochloromethane	0.400	0.335	16.3	100	0.000
49	T	1,3-Dichloropropane	0.400	0.397	0.8	100	0.000
50	T	1,2-Dibromoethane	0.400	0.347	13.3	100	0.000
51	Y	2-Hexanone	-1.000	0.324	0.0	0	0.000
52	P	Chlorobenzene	0.400	0.390	2.5	100	0.000
53	T	1-Chlorohexane	0.400	0.320	20.0	100	0.000
54	C	Ethylbenzene	0.400	0.384	4.0#	100	0.000
55	T	1,1,1,2-Tetrachloroethane	0.400	0.353	11.8	100	0.000

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011948.D
Acq On : 18 May 2015 12:16
Operator : ADC
Sample : WG523986-04 0.4ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 4 Sample Multiplier: 1

Quant Time: May 18 15:04:24 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	m-,p-Xylene	0.800	0.764	4.5	100	0.000
57	T	o-Xylene	0.400	0.387	3.3	100	0.000
58	T	Styrene	0.400	0.354	11.5	100	0.000
59	P	Bromoform	0.400	0.325	18.8	100	0.000
60	T	Isopropylbenzene	0.400	0.377	5.8	100	0.000
61	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	100	0.000
62	T	1,3,5-Trimethylbenzene	0.400	0.372	7.0	100	0.000
63	S	p-Bromofluorobenzene	-1.000	0.037	0.0	0	0.000
64	T	Bromobenzene	0.400	0.406	-1.5	100	0.000
65	T	n-Propylbenzene	0.400	0.376	6.0	100	0.000
66	P	1,1,2,2-Tetrachloroethane	0.400	0.358	10.5	100	0.000
67	T	2-Chlorotoluene	0.400	0.389	2.8	100	0.000
68	T	1,2,3-Trichloropropane	0.400	0.272	32.0#	100	0.000
69	T	1,2,4-Trimethylbenzene	0.400	0.370	7.5	100	0.000
70	T	4-Chlorotoluene	0.400	0.382	4.5	100	0.000
71	T	tert-Butylbenzene	0.400	0.346	13.5	100	0.000
72	T	sec-Butylbenzene	0.400	0.365	8.8	100	0.000
73	T	p-Isopropyltoluene	0.400	0.361	9.8	100	0.000
74	T	1,3-Dichlorobenzene	0.400	0.388	3.0	100	0.000
75	T	1,4-Dichlorobenzene	0.400	0.405	-1.3	100	0.000
76	T	n-Butylbenzene	0.400	0.346	13.5	100	0.000
77	T	1,2-Dichlorobenzene	0.400	0.402	-0.5	100	0.000
78	T	1,2-Dibromo-3-Chloropropane	-1.000	0.000	0.0	0	-9.907#
79	Y	Hexachlorobutadiene	0.400	0.398	0.5	100	0.000
80	T	1,2,4-Trichlorobenzene	0.400	0.371	7.3	100	0.000
81	T	Naphthalene	0.400	0.403	-0.8	100	0.000
82	T	1,2,3-Trichlorobenzene	0.400	0.385	3.8	100	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011949.D
Acq On : 18 May 2015 12:36
Operator : ADC
Sample : WG523986-05 1.0ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 18 15:04:26 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	5.170	96	229181	25.00000	ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	167309	25.00000	ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	87048	25.00000	ug/L	0.0000
System Monitoring Compounds						
27) Dibromofluoromethane	0.000	111	0	0.0000	ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	=	0.000%#	
32) 1,2-Dichloroethane-d4	0.000	65	0	0.0000	ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	=	0.000%#	
44) Toluene-d8	6.736	98	321	0.0361	ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery	=	0.144%#	
63) p-Bromofluorobenzene	0.000	95	0	0.0000	ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery	=	0.000%#	
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.041	85	2219	0.8635	ug/L #	72
3) Chloromethane	1.160	50	2680	0.9537	ug/L	97
4) Vinyl Chloride	1.201	62	2744	0.9261	ug/L	96
5) 1,3-Butadiene	1.212	54	1403	0.8980	ug/L	96
6) Bromomethane	1.392	94	1663	0.9507	ug/L	97
7) Chloroethane	1.467	64	1537	1.0781	ug/L	87
8) Trichlorofluoromethane	1.551	101	3874	1.0880	ug/L	97
9) Diethyl ether	1.759	59	1438	0.9680	ug/L	92
10) 1,1-Dichloroethene	1.881	61	3460	0.9748	ug/L	99
11) Carbon Disulfide	1.895	76	6338	0.9647	ug/L	98
12) 1,1,2-Trichloro-1,2,2-...	1.913	101	2347	0.9856	ug/L	97
14) Methylene Chloride	2.307	84	2565	1.0161	ug/L	99
15) Acetone	2.362	43	425	1.1777	ug/L #	43
16) trans-1,2-Dichloroethene	2.434	96	2347	0.9759	ug/L	95
17) Methyl Tert Butyl Ether	2.547	73	5102	0.9680	ug/L	94
18) 1,1-Dichloroethane	3.002	63	4186	0.9510	ug/L	100
19) Acrylonitrile	3.054	53	324	0.6500	ug/L	100
21) cis-1,2-Dichloroethene	3.601	96	2572	0.9682	ug/L	100
22) 2,2-Dichloropropane	3.722	77	3070	0.9114	ug/L	100
23) Cyclohexane	3.830	56	3685	0.9572	ug/L	99
24) Bromochloromethane	3.832	130	1301	0.8004	ug/L	100
25) Chloroform	3.966	83	4124	0.9764	ug/L	95
26) Carbon Tetrachloride	4.110	117	3027	0.8909	ug/L	98
28) 1,1,1-Trichloroethane	4.215	97	3652	0.9467	ug/L	96
29) 1,1-Dichloropropene	4.383	75	3002	0.9207	ug/L	98
30) 2-Butanone	4.403	43	358	0.6126	ug/L #	33
31) Benzene	4.675	78	10254	1.0109	ug/L	97
33) 1,2-Dichloroethane	4.918	62	2547	0.9492	ug/L #	90
34) Trichloroethene	5.350	130	3042	1.0105	ug/L	98
35) Dibromomethane	5.767	93	1208	0.9625	ug/L	99
36) 1,2-Dichloropropane	5.874	63	2519	0.9488	ug/L	95
37) Bromodichloromethane	5.963	83	2883	0.9066	ug/L	99
39) 2-Chloroethyl Vinyl Ether	6.551	63	1973	1.6910	ug/L	96
40) cis-1,3-Dichloropropene	6.569	75	3232	0.8717	ug/L	99
41) 4-Methyl-2-Pentanone	7.831	58	366	0.6972	ug/L #	60
42) trans-1,3-Dichloropropene	7.165	75	2525	0.8731	ug/L	98
45) Toluene	6.780	91	10604	0.9752	ug/L	99
46) Tetrachloroethene	7.110	166	2956	0.9747	ug/L	97
47) 1,1,2-Trichloroethane	7.298	97	1781	0.9753	ug/L	98
48) Dibromochloromethane	7.434	129	2124	0.8900	ug/L	98
49) 1,3-Dichloropropane	7.515	76	2863	0.9722	ug/L	99
50) 1,2-Dibromoethane	7.605	107	1655	0.9278	ug/L	99
51) 2-Hexanone	7.834	43	779	0.8621	ug/L	90
52) Chlorobenzene	8.002	112	7145	0.9883	ug/L	74

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011949.D
Acq On : 18 May 2015 12:36
Operator : ADC
Sample : WG523986-05 1.0ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 18 15:04:26 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) 1-Chlorohexane	8.013	69	575	0.9108 ug/L	74
54) Ethylbenzene	8.037	106	3616	0.9351 ug/L	92
55) 1,1,1,2-Tetrachloroethane	8.054	131	2434	0.9480 ug/L	95
56) m-,p-Xylene	8.138	106	8777	1.8978 ug/L	98
57) o-Xylene	8.401	106	4273	0.9353 ug/L	95
58) Styrene	8.433	104	6592	0.9046 ug/L	99
59) Bromoform	8.436	173	1248	0.8254 ug/L	97
60) Isopropylbenzene	8.589	105	11203	0.9424 ug/L	100
62) 1,3,5-Trimethylbenzene	8.925	105	9447	0.9414 ug/L	100
64) Bromobenzene	8.789	156	3055	0.9699 ug/L	98
65) n-Propylbenzene	8.818	91	12346	0.9376 ug/L	100
66) 1,1,2,2-Tetrachloroethane	8.859	83	1874	0.9555 ug/L	97
67) 2-Chlorotoluene	8.894	91	7956	0.9815 ug/L	99
68) 1,2,3-Trichloropropane	8.925	110	473	0.9220 ug/L	81
69) 1,2,4-Trimethylbenzene	9.125	105	9444	0.9434 ug/L	98
70) 4-Chlorotoluene	8.983	91	7755	0.9496 ug/L	99
71) tert-Butylbenzene	9.090	134	1793	0.9551 ug/L	96
72) sec-Butylbenzene	9.177	105	11851	0.9444 ug/L	100
73) p-Isopropyltoluene	9.253	119	9819	0.9172 ug/L	100
74) 1,3-Dichlorobenzene	9.279	146	5816	0.9749 ug/L	98
75) 1,4-Dichlorobenzene	9.325	146	5801	0.9698 ug/L	95
76) n-Butylbenzene	9.455	91	8185	0.8751 ug/L	100
77) 1,2-Dichlorobenzene	9.528	146	5546	0.9877 ug/L	98
78) 1,2-Dibromo-3-Chloropr...	9.910	75	216	0.6481 ug/L	76
79) Hexachlorobutadiene	10.208	225	2438	0.9106 ug/L	98
80) 1,2,4-Trichlorobenzene	10.222	180	4092	0.9396 ug/L	97
81) Naphthalene	10.376	128	7000	0.9515 ug/L	99
82) 1,2,3-Trichlorobenzene	10.460	180	3829	0.9586 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011949.D
Acq On : 18 May 2015 12:36
Operator : ADC
Sample : WG523986-05 1.0ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 18 15:04:26 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

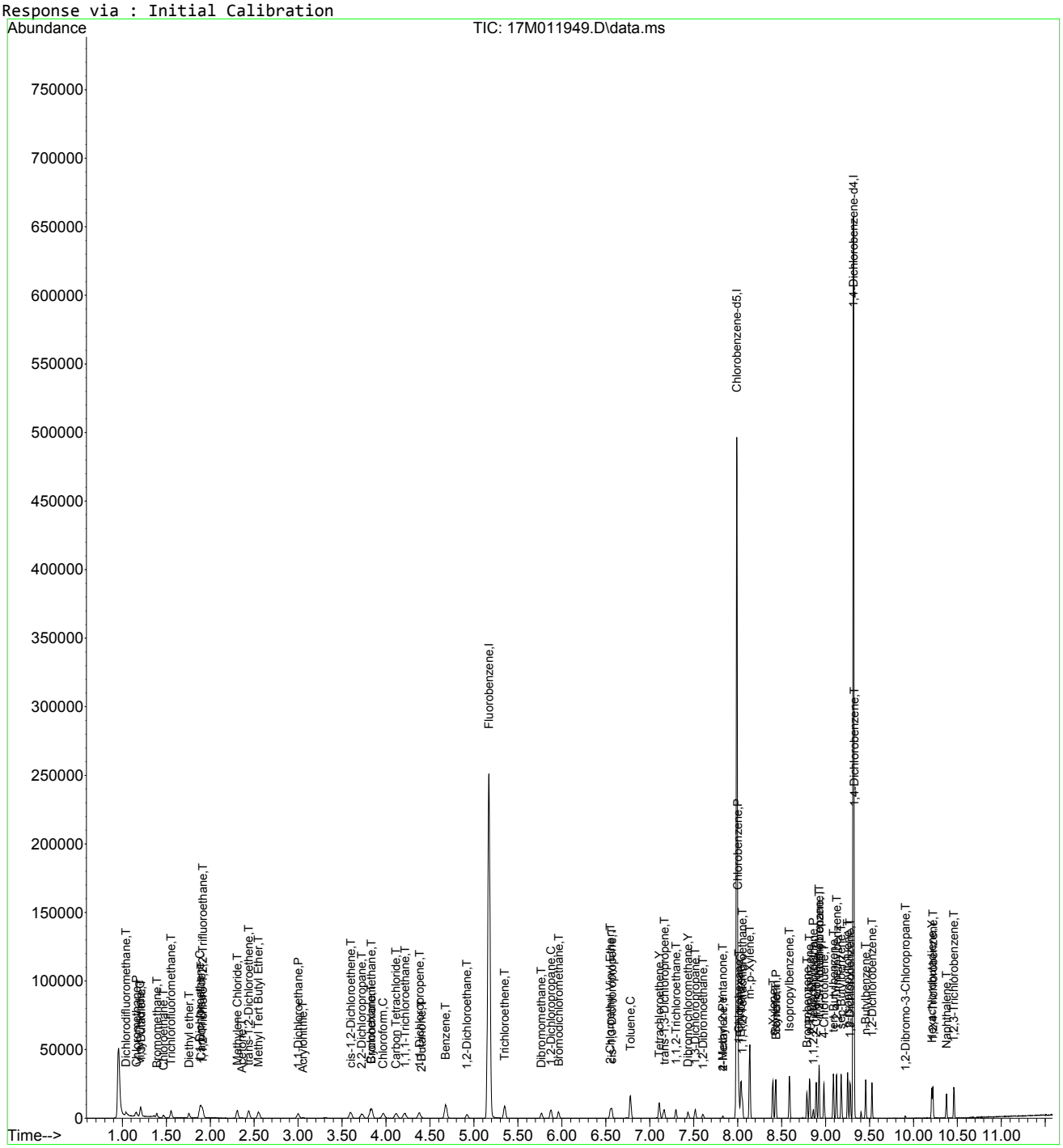

826_VMS.M Mon May 18 15:06:04 2015 Page: 3

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011949.D
Acq On : 18 May 2015 12:36
Operator : ADC
Sample : WG523986-05 1.0ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 18 15:04:26 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	100	0.000
2	T	Dichlorodifluoromethane	1.000	0.864	13.6	100	0.000
3	P	Chloromethane	1.000	0.954	4.6	100	0.000
4	C	Vinyl Chloride	1.000	0.926	7.4#	100	0.000
5	T	1,3-Butadiene	1.000	0.898	10.2	100	0.000
6	T	Bromomethane	1.000	0.951	4.9	100	0.000
7	T	Chloroethane	1.000	1.078	-7.8	100	0.012
8	T	Trichlorofluoromethane	1.000	1.088	-8.8	100	0.000
9	T	Diethyl ether	1.000	0.968	3.2	100	0.000
10	C	1,1-Dichloroethene	1.000	0.975	2.5#	100	0.000
11	T	Carbon Disulfide	1.000	0.965	3.5	100	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.000	0.986	1.4	100	0.000
13	T	Acrolein	-1.000	0.000	0.0	0	-2.124#
14	T	Methylene Chloride	1.000	1.016	-1.6	100	0.000
15	T	Acetone	-1.000	1.178	0.0	0	0.000
16	T	trans-1,2-Dichloroethene	1.000	0.976	2.4	100	0.000
17	T	Methyl Tert Butyl Ether	1.000	0.968	3.2	100	0.000
18	P	1,1-Dichloroethane	1.000	0.951	4.9	100	0.000
19	T	Acrylonitrile	-1.000	0.650	0.0	100	0.000
20	T	Vinyl Acetate	-1.000	0.000	0.0	0	-3.300#
21	T	cis-1,2-Dichloroethene	1.000	0.968	3.2	100	0.000
22	T	2,2-Dichloropropane	1.000	0.911	8.9	100	0.000
23	T	Cyclohexane	1.000	0.957	4.3	100	0.000
24	T	Bromochloromethane	1.000	0.800	20.0	100	0.000
25	C	Chloroform	1.000	0.976	2.4#	100	0.000
26	T	Carbon Tetrachloride	1.000	0.891	10.9	100	0.000
27	S	Dibromofluoromethane	-1.000	0.000	0.0	0	-4.206#
28	T	1,1,1-Trichloroethane	1.000	0.947	5.3	100	0.000
29	T	1,1-Dichloropropene	1.000	0.921	7.9	100	0.000
30	T	2-Butanone	-1.000	0.613	0.0	0	0.000
31	T	Benzene	1.000	1.011	-1.1	100	0.000
32	S	1,2-Dichloroethane-d4	-1.000	0.000	0.0	0	-4.840#
33	T	1,2-Dichloroethane	1.000	0.949	5.1	100	0.000
34	T	Trichloroethene	1.000	1.011	-1.1	100	0.000
35	T	Dibromomethane	1.000	0.963	3.7	100	0.000
36	C	1,2-Dichloropropane	1.000	0.949	5.1#	100	0.000
37	T	Bromodichloromethane	1.000	0.907	9.3	100	0.000
38	T	1,4-Dioxane	-1.000	0.000	0.0	0	-6.175#
39	T	2-Chloroethyl Vinyl Ether	2.000	1.691	15.4	100	0.000
40	T	cis-1,3-Dichloropropene	1.000	0.872	12.8	100	0.000
41	T	4-Methyl-2-Pentanone	-1.000	0.697	0.0	0	0.000
42	T	trans-1,3-Dichloropropene	1.000	0.873	12.7	100	0.000
43	I	Chlorobenzene-d5	25.000	25.000	0.0	100	0.000
44	S	Toluene-d8	-1.000	0.036	0.0	0	0.000
45	C	Toluene	1.000	0.975	2.5#	100	0.000
46	Y	Tetrachloroethene	1.000	0.975	2.5	100	0.000
47	T	1,1,2-Trichloroethane	1.000	0.975	2.5	100	0.000
48	Y	Dibromochloromethane	1.000	0.890	11.0	100	0.000
49	T	1,3-Dichloropropane	1.000	0.972	2.8	100	0.000
50	T	1,2-Dibromoethane	1.000	0.928	7.2	100	0.000
51	Y	2-Hexanone	-1.000	0.862	0.0	0	0.000
52	P	Chlorobenzene	1.000	0.988	1.2	100	0.000
53	T	1-Chlorohexane	1.000	0.911	8.9	100	0.000
54	C	Ethylbenzene	1.000	0.935	6.5#	100	0.000
55	T	1,1,1,2-Tetrachloroethane	1.000	0.948	5.2	100	0.000

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011949.D
Acq On : 18 May 2015 12:36
Operator : ADC
Sample : WG523986-05 1.0ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 5 Sample Multiplier: 1

Quant Time: May 18 15:04:26 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	m-,p-Xylene	2.000	1.898	5.1	100	0.000
57	T	o-Xylene	1.000	0.935	6.5	100	0.000
58	T	Styrene	1.000	0.905	9.5	100	0.000
59	P	Bromoform	1.000	0.825	17.5	100	0.000
60	T	Isopropylbenzene	1.000	0.942	5.8	100	0.000
61	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	100	0.000
62	T	1,3,5-Trimethylbenzene	1.000	0.941	5.9	100	0.000
63	S	p-Bromofluorobenzene	-1.000	0.000	0.0	0	-8.737#
64	T	Bromobenzene	1.000	0.970	3.0	100	0.000
65	T	n-Propylbenzene	1.000	0.938	6.2	100	0.000
66	P	1,1,2,2-Tetrachloroethane	1.000	0.955	4.5	100	0.000
67	T	2-Chlorotoluene	1.000	0.981	1.9	100	0.000
68	T	1,2,3-Trichloropropane	1.000	0.922	7.8	100	0.000
69	T	1,2,4-Trimethylbenzene	1.000	0.943	5.7	100	0.000
70	T	4-Chlorotoluene	1.000	0.950	5.0	100	0.000
71	T	tert-Butylbenzene	1.000	0.955	4.5	100	0.000
72	T	sec-Butylbenzene	1.000	0.944	5.6	100	0.000
73	T	p-Isopropyltoluene	1.000	0.917	8.3	100	0.000
74	T	1,3-Dichlorobenzene	1.000	0.975	2.5	100	0.000
75	T	1,4-Dichlorobenzene	1.000	0.970	3.0	100	0.000
76	T	n-Butylbenzene	1.000	0.875	12.5	100	0.000
77	T	1,2-Dichlorobenzene	1.000	0.988	1.2	100	0.000
78	T	1,2-Dibromo-3-Chloropropane	-1.000	0.648	0.0	100	0.000
79	Y	Hexachlorobutadiene	1.000	0.911	8.9	100	0.000
80	T	1,2,4-Trichlorobenzene	1.000	0.940	6.0	100	0.000
81	T	Naphthalene	1.000	0.951	4.9	100	0.000
82	T	1,2,3-Trichlorobenzene	1.000	0.959	4.1	100	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011950.D
Acq On : 18 May 2015 12:55
Operator : ADC
Sample : WG523986-06 2.0ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 18 15:04:28 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	5.170	96	229826	25.00000	ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	169620	25.00000	ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	88520	25.00000	ug/L	0.0000
System Monitoring Compounds						
27) Dibromofluoromethane	0.000	111	0	0.0000	ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	=	0.000%#	
32) 1,2-Dichloroethane-d4	0.000	65	0	0.0000	ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	=	0.000%#	
44) Toluene-d8	6.737	98	415	0.0461	ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery	=	0.184%#	
63) p-Bromofluorobenzene	0.000	95	0	0.0000	ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery	=	0.000%#	
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.038	85	4441	1.7234	ug/L	93
3) Chloromethane	1.157	50	5346	1.8971	ug/L	95
4) Vinyl Chloride	1.204	62	5355	1.8023	ug/L	99
5) 1,3-Butadiene	1.212	54	2784	1.7769	ug/L	99
6) Bromomethane	1.389	94	3189	1.8180	ug/L	99
7) Chloroethane	1.467	64	3077	2.1522	ug/L	91
8) Trichlorofluoromethane	1.554	101	7233	2.0256	ug/L	99
9) Diethyl ether	1.759	59	2904	1.9493	ug/L	97
10) 1,1-Dichloroethene	1.881	61	6706	1.8840	ug/L	98
11) Carbon Disulfide	1.896	76	12237	1.8574	ug/L	99
12) 1,1,2-Trichloro-1,2,2-...	1.913	101	4427	1.8539	ug/L	97
13) Acrolein	2.127	56	239	1.2315	ug/L #	13
14) Methylene Chloride	2.310	84	4831	1.9084	ug/L	100
15) Acetone	2.362	43	783	2.1637	ug/L #	43
16) trans-1,2-Dichloroethene	2.437	96	4480	1.8577	ug/L	100
17) Methyl Tert Butyl Ether	2.550	73	10087	1.9084	ug/L	98
18) 1,1-Dichloroethane	2.999	63	8448	1.9140	ug/L	99
19) Acrylonitrile	3.057	53	866	1.7324	ug/L	90
21) cis-1,2-Dichloroethene	3.601	96	4958	1.8611	ug/L	98
22) 2,2-Dichloropropane	3.728	77	6134	1.8159	ug/L	98
23) Cyclohexane	3.827	56	7112	1.8423	ug/L	100
24) Bromochloromethane	3.833	130	2843	1.7441	ug/L	98
25) Chloroform	3.966	83	8250	1.9477	ug/L	97
26) Carbon Tetrachloride	4.113	117	6164	1.8091	ug/L	99
28) 1,1,1-Trichloroethane	4.209	97	7273	1.8800	ug/L	99
29) 1,1-Dichloropropene	4.377	75	6110	1.8687	ug/L	98
30) 2-Butanone	4.403	43	943	1.6090	ug/L #	60
31) Benzene	4.678	78	19357	1.9031	ug/L	100
33) 1,2-Dichloroethane	4.921	62	5176	1.9234	ug/L	96
34) Trichloroethene	5.350	130	5660	1.8749	ug/L	98
35) Dibromomethane	5.767	93	2435	1.9348	ug/L	98
36) 1,2-Dichloropropane	5.880	63	5107	1.9181	ug/L	97
37) Bromodichloromethane	5.961	83	5850	1.8344	ug/L	99
39) 2-Chloroethyl Vinyl Ether	6.548	63	4068	3.4768	ug/L	96
40) cis-1,3-Dichloropropene	6.569	75	6593	1.7733	ug/L	99
41) 4-Methyl-2-Pentanone	7.831	58	796	1.5121	ug/L #	60
42) trans-1,3-Dichloropropene	7.168	75	5187	1.7885	ug/L	99
45) Toluene	6.780	91	21020	1.9068	ug/L	99
46) Tetrachloroethene	7.107	166	5779	1.8797	ug/L	99
47) 1,1,2-Trichloroethane	7.298	97	3697	1.9968	ug/L	96
48) Dibromochloromethane	7.434	129	4370	1.8061	ug/L	98
49) 1,3-Dichloropropane	7.515	76	5765	1.9309	ug/L	98
50) 1,2-Dibromoethane	7.605	107	3394	1.8769	ug/L	100
51) 2-Hexanone	7.834	43	1650	1.8011	ug/L	92

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011950.D
Acq On : 18 May 2015 12:55
Operator : ADC
Sample : WG523986-06 2.0ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 18 15:04:28 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
52)	Chlorobenzene	8.002	112	13904	1.8969 ug/L	86
53)	1-Chlorohexane	8.016	69	1155	1.8046 ug/L #	77
54)	Ethylbenzene	8.037	106	7302	1.8626 ug/L	100
55)	1,1,1,2-Tetrachloroethane	8.054	131	4948	1.9010 ug/L	99
56)	m-,p-Xylene	8.138	106	17446	3.7209 ug/L	99
57)	o-Xylene	8.398	106	8530	1.8416 ug/L	97
58)	Styrene	8.433	104	13049	1.7662 ug/L	99
59)	Bromoform	8.436	173	2803	1.8286 ug/L	97
60)	Isopropylbenzene	8.590	105	22305	1.8507 ug/L	100
62)	1,3,5-Trimethylbenzene	8.925	105	19023	1.8640 ug/L	98
64)	Bromobenzene	8.789	156	6239	1.9479 ug/L	98
65)	n-Propylbenzene	8.818	91	24966	1.8646 ug/L	99
66)	1,1,2,2-Tetrachloroethane	8.859	83	3797	1.9037 ug/L	98
67)	2-Chlorotoluene	8.894	91	15638	1.8971 ug/L	99
68)	1,2,3-Trichloropropane	8.925	110	1055	2.0222 ug/L	97
69)	1,2,4-Trimethylbenzene	9.125	105	18708	1.8378 ug/L	99
70)	4-Chlorotoluene	8.983	91	15633	1.8824 ug/L	100
71)	tert-Butylbenzene	9.090	134	3589	1.8800 ug/L	99
72)	sec-Butylbenzene	9.177	105	24512	1.9209 ug/L	99
73)	p-Isopropyltoluene	9.253	119	19807	1.8194 ug/L	99
74)	1,3-Dichlorobenzene	9.279	146	11353	1.8715 ug/L	100
75)	1,4-Dichlorobenzene	9.325	146	11471	1.8858 ug/L	96
76)	n-Butylbenzene	9.455	91	16618	1.7472 ug/L	99
77)	1,2-Dichlorobenzene	9.528	146	10958	1.9190 ug/L	99
78)	1,2-Dibromo-3-Chloropr...	9.907	75	616	1.8177 ug/L	91
79)	Hexachlorobutadiene	10.208	225	4980	1.8290 ug/L	98
80)	1,2,4-Trichlorobenzene	10.223	180	7957	1.7967 ug/L	100
81)	Naphthalene	10.376	128	13979	1.8685 ug/L	100
82)	1,2,3-Trichlorobenzene	10.463	180	7547	1.8581 ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011950.D
Acq On : 18 May 2015 12:55
Operator : ADC
Sample : WG523986-06 2.0ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 18 15:04:28 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

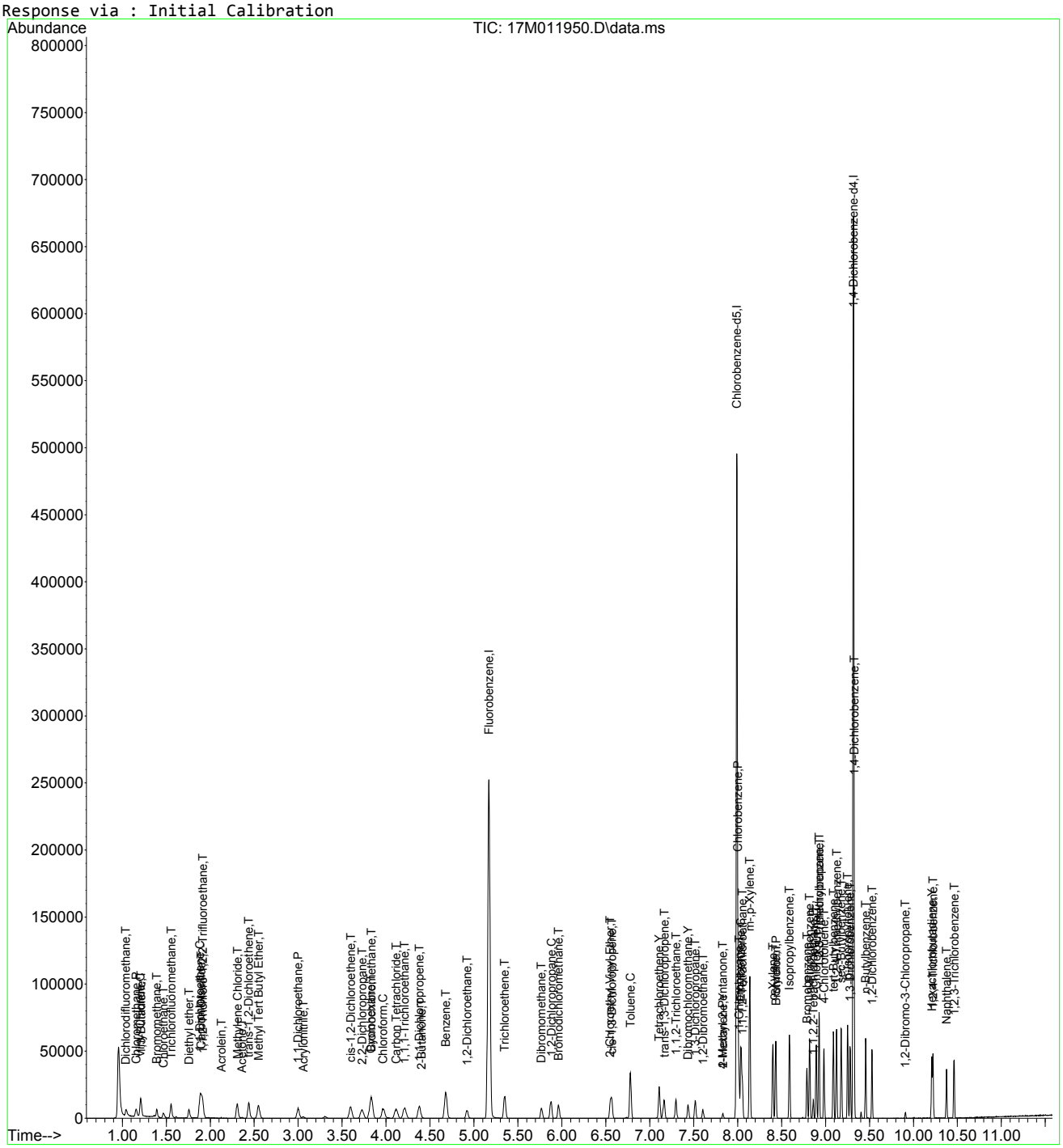

826_VMS.M Mon May 18 15:06:23 2015 Page: 3

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011950.D
Acq On : 18 May 2015 12:55
Operator : ADC
Sample : WG523986-06 2.0ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 18 15:04:28 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	100	0.000
2	T	Dichlorodifluoromethane	2.000	1.723	13.8	100	0.000
3	P	Chloromethane	2.000	1.897	5.1	100	0.000
4	C	Vinyl Chloride	2.000	1.802	9.9#	100	0.000
5	T	1,3-Butadiene	2.000	1.777	11.2	100	0.000
6	T	Bromomethane	2.000	1.818	9.1	100	0.000
7	T	Chloroethane	2.000	2.152	-7.6	100	0.012
8	T	Trichlorofluoromethane	2.000	2.026	-1.3	100	0.012
9	T	Diethyl ether	2.000	1.949	2.5	100	0.000
10	C	1,1-Dichloroethene	2.000	1.884	5.8#	100	0.000
11	T	Carbon Disulfide	2.000	1.857	7.2	100	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.000	1.854	7.3	100	0.000
13	T	Acrolein	-1.000	1.231	0.0	100	0.000
14	T	Methylene Chloride	2.000	1.908	4.6	100	0.000
15	T	Acetone	-1.000	2.164	0.0	0	0.000
16	T	trans-1,2-Dichloroethene	2.000	1.858	7.1	100	0.000
17	T	Methyl Tert Butyl Ether	2.000	1.908	4.6	100	0.000
18	P	1,1-Dichloroethane	2.000	1.914	4.3	100	0.000
19	T	Acrylonitrile	2.000	1.732	13.4	100	0.000
20	T	Vinyl Acetate	-1.000	0.000	0.0	0	-3.300#
21	T	cis-1,2-Dichloroethene	2.000	1.861	7.0	100	0.000
22	T	2,2-Dichloropropane	2.000	1.816	9.2	100	0.000
23	T	Cyclohexane	2.000	1.842	7.9	100	0.000
24	T	Bromochloromethane	2.000	1.744	12.8	100	0.000
25	C	Chloroform	2.000	1.948	2.6#	100	0.000
26	T	Carbon Tetrachloride	2.000	1.809	9.6	100	0.000
27	S	Dibromofluoromethane	-1.000	0.000	0.0	0	-4.206#
28	T	1,1,1-Trichloroethane	2.000	1.880	6.0	100	0.000
29	T	1,1-Dichloropropene	2.000	1.869	6.6	100	0.000
30	T	2-Butanone	-1.000	1.609	0.0	0	0.000
31	T	Benzene	2.000	1.903	4.8	100	0.000
32	S	1,2-Dichloroethane-d4	-1.000	0.000	0.0	0	-4.840#
33	T	1,2-Dichloroethane	2.000	1.923	3.8	100	0.000
34	T	Trichloroethene	2.000	1.875	6.3	100	0.000
35	T	Dibromomethane	2.000	1.935	3.2	100	0.000
36	C	1,2-Dichloropropane	2.000	1.918	4.1#	100	0.000
37	T	Bromodichloromethane	2.000	1.834	8.3	100	0.000
38	T	1,4-Dioxane	-1.000	0.000	0.0	0	-6.175#
39	T	2-Chloroethyl Vinyl Ether	4.000	3.477	13.1	100	0.000
40	T	cis-1,3-Dichloropropene	2.000	1.773	11.4	100	0.000
41	T	4-Methyl-2-Pentanone	-1.000	1.512	0.0	0	0.000
42	T	trans-1,3-Dichloropropene	2.000	1.789	10.6	100	0.000
43	I	Chlorobenzene-d5	25.000	25.000	0.0	100	0.000
44	S	Toluene-d8	-1.000	0.046	0.0	0	0.000
45	C	Toluene	2.000	1.907	4.6#	100	0.000
46	Y	Tetrachloroethene	2.000	1.880	6.0	100	0.000
47	T	1,1,2-Trichloroethane	2.000	1.997	0.1	100	0.000
48	Y	Dibromochloromethane	2.000	1.806	9.7	100	0.000
49	T	1,3-Dichloropropane	2.000	1.931	3.4	100	0.000
50	T	1,2-Dibromoethane	2.000	1.877	6.2	100	0.000
51	Y	2-Hexanone	2.000	1.801	10.0	100	0.000
52	P	Chlorobenzene	2.000	1.897	5.1	100	0.000
53	T	1-Chlorohexane	2.000	1.805	9.8	100	0.000
54	C	Ethylbenzene	2.000	1.863	6.9#	100	0.000
55	T	1,1,1,2-Tetrachloroethane	2.000	1.901	4.9	100	0.000

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011950.D
Acq On : 18 May 2015 12:55
Operator : ADC
Sample : WG523986-06 2.0ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 6 Sample Multiplier: 1

Quant Time: May 18 15:04:28 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	m-,p-Xylene	4.000	3.721	7.0	100	0.000
57	T	o-Xylene	2.000	1.842	7.9	100	0.000
58	T	Styrene	2.000	1.766	11.7	100	0.000
59	P	Bromoform	2.000	1.829	8.6	100	0.000
60	T	Isopropylbenzene	2.000	1.851	7.5	100	0.000
61	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	100	0.000
62	T	1,3,5-Trimethylbenzene	2.000	1.864	6.8	100	0.000
63	S	p-Bromofluorobenzene	-1.000	0.000	0.0	0	-8.737#
64	T	Bromobenzene	2.000	1.948	2.6	100	0.000
65	T	n-Propylbenzene	2.000	1.865	6.8	100	0.000
66	P	1,1,2,2-Tetrachloroethane	2.000	1.904	4.8	100	0.000
67	T	2-Chlorotoluene	2.000	1.897	5.1	100	0.000
68	T	1,2,3-Trichloropropane	2.000	2.022	-1.1	100	0.000
69	T	1,2,4-Trimethylbenzene	2.000	1.838	8.1	100	0.000
70	T	4-Chlorotoluene	2.000	1.882	5.9	100	0.000
71	T	tert-Butylbenzene	2.000	1.880	6.0	100	0.000
72	T	sec-Butylbenzene	2.000	1.921	3.9	100	0.000
73	T	p-Isopropyltoluene	2.000	1.819	9.1	100	0.000
74	T	1,3-Dichlorobenzene	2.000	1.871	6.5	100	0.000
75	T	1,4-Dichlorobenzene	2.000	1.886	5.7	100	0.000
76	T	n-Butylbenzene	2.000	1.747	12.6	100	0.000
77	T	1,2-Dichlorobenzene	2.000	1.919	4.0	100	0.000
78	T	1,2-Dibromo-3-Chloropropane	2.000	1.818	9.1	100	0.000
79	Y	Hexachlorobutadiene	2.000	1.829	8.6	100	0.000
80	T	1,2,4-Trichlorobenzene	2.000	1.797	10.2	100	0.000
81	T	Naphthalene	2.000	1.868	6.6	100	0.000
82	T	1,2,3-Trichlorobenzene	2.000	1.858	7.1	100	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011951.D
Acq On : 18 May 2015 13:15
Operator : ADC
Sample : WG523986-07 5.0ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 18 15:26:52 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.170	96	229936	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	169170	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	88905	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.209	111	12093	5.0097 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 20.039%#		
32) 1,2-Dichloroethane-d4	4.843	65	10892	5.2144 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 20.858%#		
44) Toluene-d8	6.734	98	47071	5.2407 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 20.963%#		
63) p-Bromofluorobenzene	8.737	95	15601	5.0809 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 20.324%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.041	85	11138	4.3202 ug/L	95
3) Chloromethane	1.154	50	13177	4.6738 ug/L	100
4) Vinyl Chloride	1.201	62	13915	4.6811 ug/L	100
5) 1,3-Butadiene	1.212	54	7185	4.5838 ug/L	99
6) Bromomethane	1.389	94	7856	4.4765 ug/L	99
7) Chloroethane	1.464	64	7920	5.5370 ug/L	97
8) Trichlorofluoromethane	1.554	101	18689	5.2314 ug/L	100
9) Diethyl ether	1.760	59	7551	5.0662 ug/L	98
10) 1,1-Dichloroethene	1.878	61	17239	4.8408 ug/L	100
11) Carbon Disulfide	1.896	76	30767	4.6677 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.910	101	11832	4.9525 ug/L	98
13) Acrolein	2.124	56	837	4.3107 ug/L	98
14) Methylene Chloride	2.304	84	12467	4.9225 ug/L	97
15) Acetone	2.359	43	1862	5.1428 ug/L	89
16) trans-1,2-Dichloroethene	2.437	96	11435	4.7393 ug/L	100
17) Methyl Tert Butyl Ether	2.547	73	25745	4.8685 ug/L	98
18) 1,1-Dichloroethane	2.999	63	21523	4.8739 ug/L	100
19) Acrylonitrile	3.057	53	2373	4.7449 ug/L	100
20) Vinyl Acetate	3.314	86	602	5.9856 ug/L	73
21) cis-1,2-Dichloroethene	3.595	96	13011	4.8817 ug/L	99
22) 2,2-Dichloropropane	3.725	77	15975	4.7269 ug/L	97
23) Cyclohexane	3.824	56	18600	4.8158 ug/L	99
24) Bromochloromethane	3.838	130	7788	4.7754 ug/L	99
25) Chloroform	3.969	83	21175	4.9967 ug/L	100
26) Carbon Tetrachloride	4.113	117	16264	4.7712 ug/L	99
28) 1,1,1-Trichloroethane	4.209	97	18487	4.7764 ug/L	100
29) 1,1-Dichloropropene	4.377	75	15409	4.7104 ug/L	100
30) 2-Butanone	4.403	43	2618	4.4649 ug/L #	82
31) Benzene	4.681	78	48831	4.7985 ug/L	100
33) 1,2-Dichloroethane	4.921	62	13331	4.9516 ug/L	97
34) Trichloroethene	5.350	130	14026	4.6441 ug/L	99
35) Dibromomethane	5.767	93	6371	5.0598 ug/L	100
36) 1,2-Dichloropropane	5.874	63	12781	4.7981 ug/L	99
37) Bromodichloromethane	5.961	83	15368	4.8166 ug/L	99
39) 2-Chloroethyl Vinyl Ether	6.548	63	10716	9.1542 ug/L	99
40) cis-1,3-Dichloropropene	6.566	75	17235	4.6334 ug/L	100
41) 4-Methyl-2-Pentanone	7.834	58	2270	4.3101 ug/L	99
42) trans-1,3-Dichloropropene	7.165	75	13821	4.7633 ug/L	99
45) Toluene	6.777	91	54031	4.9143 ug/L	100
46) Tetrachloroethene	7.107	166	14821	4.8335 ug/L	99
47) 1,1,2-Trichloroethane	7.298	97	9106	4.9315 ug/L	99
48) Dibromochloromethane	7.437	129	11583	4.8000 ug/L	99
49) 1,3-Dichloropropane	7.518	76	14626	4.9119 ug/L	99
50) 1,2-Dibromoethane	7.605	107	8883	4.9253 ug/L	99

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011951.D
Acq On : 18 May 2015 13:15
Operator : ADC
Sample : WG523986-07 5.0ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 18 15:26:52 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
51)	2-Hexanone	7.831	43	4391	4.8058 ug/L	97
52)	Chlorobenzene	8.002	112	35648	4.8764 ug/L	95
53)	1-Chlorohexane	8.016	69	3125	4.8955 ug/L	95
54)	Ethylbenzene	8.040	106	18853	4.8218 ug/L	100
55)	1,1,1,2-Tetrachloroethane	8.054	131	12527	4.8255 ug/L	98
56)	m-,p-Xylene	8.138	106	45990	9.8349 ug/L	99
57)	o-Xylene	8.401	106	22120	4.7883 ug/L	98
58)	Styrene	8.433	104	35285	4.7887 ug/L	100
59)	Bromoform	8.436	173	7495	4.9026 ug/L	99
60)	Isopropylbenzene	8.590	105	58770	4.8893 ug/L	99
62)	1,3,5-Trimethylbenzene	8.925	105	50542	4.9311 ug/L	100
64)	Bromobenzene	8.789	156	15910	4.9458 ug/L	99
65)	n-Propylbenzene	8.818	91	65803	4.8931 ug/L	100
66)	1,1,2,2-Tetrachloroethane	8.859	83	9781	4.8827 ug/L	99
67)	2-Chlorotoluene	8.894	91	40981	4.9500 ug/L	98
68)	1,2,3-Trichloropropane	8.925	110	2775	5.2960 ug/L	98
69)	1,2,4-Trimethylbenzene	9.125	105	50854	4.9740 ug/L	100
70)	4-Chlorotoluene	8.983	91	40469	4.8518 ug/L	100
71)	tert-Butylbenzene	9.091	134	9435	4.9209 ug/L	97
72)	sec-Butylbenzene	9.177	105	64236	5.0121 ug/L	99
73)	p-Isopropyltoluene	9.253	119	54206	4.9575 ug/L	100
74)	1,3-Dichlorobenzene	9.282	146	30060	4.9337 ug/L	98
75)	1,4-Dichlorobenzene	9.325	146	29593	4.8439 ug/L	99
76)	n-Butylbenzene	9.455	91	45450	4.7578 ug/L	99
77)	1,2-Dichlorobenzene	9.531	146	28467	4.9637 ug/L	99
78)	1,2-Dibromo-3-Chloropr...	9.910	75	1562	4.5891 ug/L	100
79)	Hexachlorobutadiene	10.211	225	13270	4.8526 ug/L	98
80)	1,2,4-Trichlorobenzene	10.225	180	21448	4.8219 ug/L	100
81)	Naphthalene	10.379	128	37158	4.9452 ug/L	99
82)	1,2,3-Trichlorobenzene	10.466	180	20345	4.9872 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011951.D
Acq On : 18 May 2015 13:15
Operator : ADC
Sample : WG523986-07 5.0ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 18 15:26:52 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

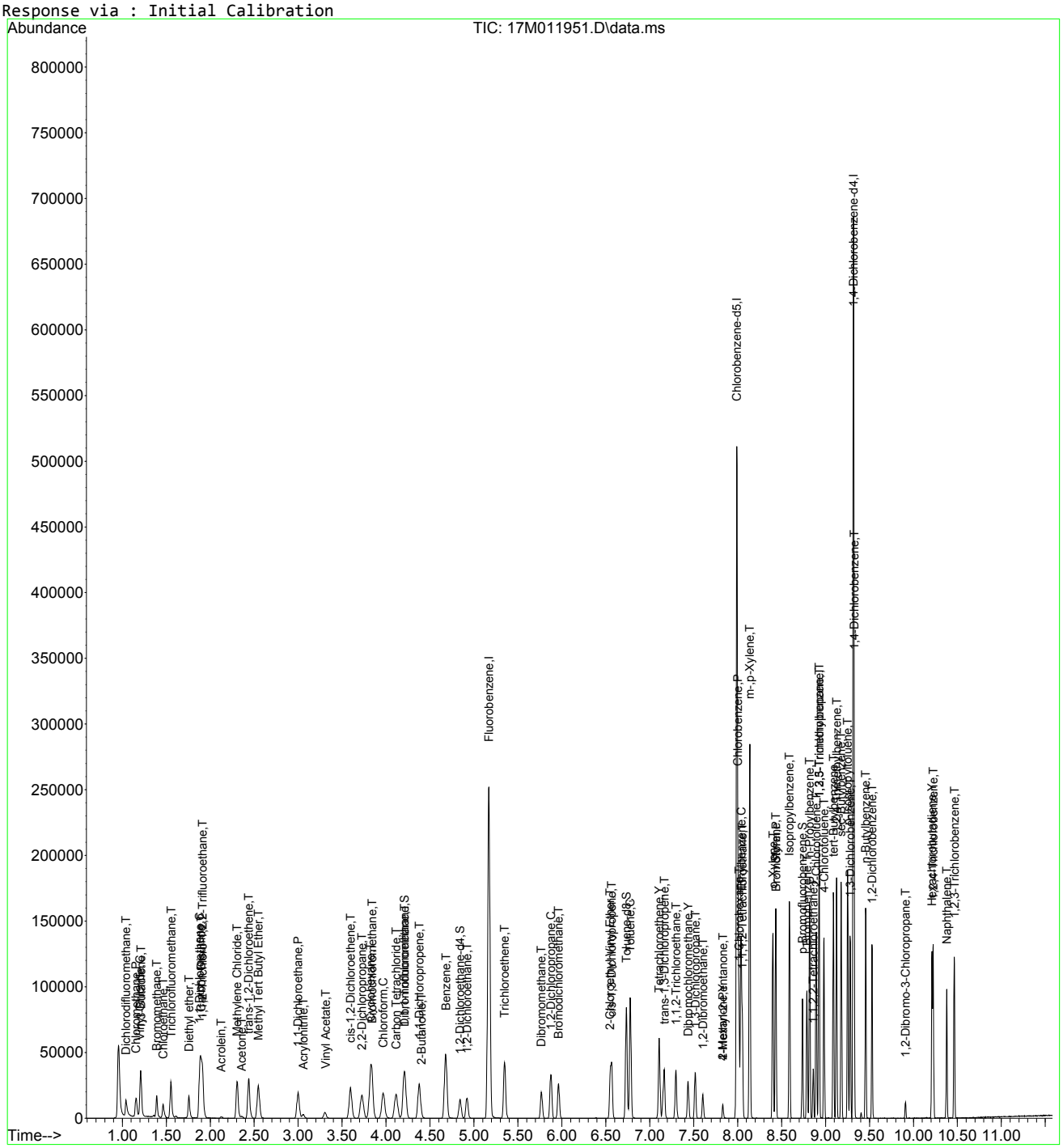

826_VMS.M Mon May 18 15:26:53 2015 Page: 3

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011951.D
Acq On : 18 May 2015 13:15
Operator : ADC
Sample : WG523986-07 5.0ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 18 15:04:30 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	100	0.000
2	T	Dichlorodifluoromethane	5.000	4.320	13.6	100	0.000
3	P	Chloromethane	5.000	4.674	6.5	100	0.000
4	C	Vinyl Chloride	5.000	4.681	6.4#	100	0.000
5	T	1,3-Butadiene	5.000	4.584	8.3	100	0.000
6	T	Bromomethane	5.000	4.476	10.5	100	0.000
7	T	Chloroethane	5.000	5.537	-10.7	100	0.000
8	T	Trichlorofluoromethane	5.000	5.231	-4.6	100	0.012
9	T	Diethyl ether	5.000	5.066	-1.3	100	0.000
10	C	1,1-Dichloroethene	5.000	4.841	3.2#	100	0.000
11	T	Carbon Disulfide	5.000	4.668	6.6	100	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.000	4.953	0.9	100	0.000
13	T	Acrolein	5.000	4.311	13.8	100	0.000
14	T	Methylene Chloride	5.000	4.923	1.5	100	0.000
15	T	Acetone	5.000	5.143	-2.9	100	0.000
16	T	trans-1,2-Dichloroethene	5.000	4.739	5.2	100	0.000
17	T	Methyl Tert Butyl Ether	5.000	4.868	2.6	100	0.000
18	P	1,1-Dichloroethane	5.000	4.874	2.5	100	0.000
19	T	Acrylonitrile	5.000	4.745	5.1	100	0.000
20	T	Vinyl Acetate	5.000	5.986	-19.7	100	0.014
21	T	cis-1,2-Dichloroethene	5.000	4.882	2.4	100	0.000
22	T	2,2-Dichloropropane	5.000	4.727	5.5	100	0.000
23	T	Cyclohexane	5.000	4.816	3.7	100	0.000
24	T	Bromochloromethane	5.000	4.775	4.5	100	0.000
25	C	Chloroform	5.000	4.997	0.1#	100	0.000
26	T	Carbon Tetrachloride	5.000	4.771	4.6	100	0.000
27	S	Dibromofluoromethane	5.000	5.010	-0.2	100	0.000
28	T	1,1,1-Trichloroethane	5.000	4.776	4.5	100	0.000
29	T	1,1-Dichloropropene	5.000	4.710	5.8	100	0.000
30	T	2-Butanone	5.000	4.465	10.7	100	0.000
31	T	Benzene	5.000	4.798	4.0	100	0.000
32	S	1,2-Dichloroethane-d4	5.000	5.214	-4.3	100	0.000
33	T	1,2-Dichloroethane	5.000	4.952	1.0	100	0.000
34	T	Trichloroethene	5.000	4.644	7.1	100	0.000
35	T	Dibromomethane	5.000	5.060	-1.2	100	0.000
36	C	1,2-Dichloropropane	5.000	4.798	4.0#	100	0.000
37	T	Bromodichloromethane	5.000	4.817	3.7	100	0.000
38	T	1,4-Dioxane	-1.000	0.000	0.0	0	-6.175#
39	T	2-Chloroethyl Vinyl Ether	10.000	9.154	8.5	100	0.000
40	T	cis-1,3-Dichloropropene	5.000	4.633	7.3	100	0.000
41	T	4-Methyl-2-Pentanone	5.000	4.310	13.8	100	0.000
42	T	trans-1,3-Dichloropropene	5.000	4.763	4.7	100	0.000
43	I	Chlorobenzene-d5	25.000	25.000	0.0	100	0.000
44	S	Toluene-d8	5.000	5.241	-4.8	100	0.000
45	C	Toluene	5.000	4.914	1.7#	100	0.000
46	Y	Tetrachloroethene	5.000	4.833	3.3	100	0.000
47	T	1,1,2-Trichloroethane	5.000	4.931	1.4	100	0.000
48	Y	Dibromochloromethane	5.000	4.800	4.0	100	0.000
49	T	1,3-Dichloropropane	5.000	4.912	1.8	100	0.000
50	T	1,2-Dibromoethane	5.000	4.925	1.5	100	0.000
51	Y	2-Hexanone	5.000	4.806	3.9	100	0.000
52	P	Chlorobenzene	5.000	4.876	2.5	100	0.000
53	T	1-Chlorohexane	5.000	4.896	2.1	100	0.000
54	C	Ethylbenzene	5.000	4.822	3.6#	100	0.000
55	T	1,1,1,2-Tetrachloroethane	5.000	4.826	3.5	100	0.000

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011951.D
Acq On : 18 May 2015 13:15
Operator : ADC
Sample : WG523986-07 5.0ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 18 15:04:30 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	m-,p-Xylene	10.000	9.835	1.6	100	0.000
57	T	o-Xylene	5.000	4.788	4.2	100	0.000
58	T	Styrene	5.000	4.789	4.2	100	0.000
59	P	Bromoform	5.000	4.903	1.9	100	0.000
60	T	Isopropylbenzene	5.000	4.889	2.2	100	0.000
61	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	100	0.000
62	T	1,3,5-Trimethylbenzene	5.000	4.931	1.4	100	0.000
63	S	p-Bromofluorobenzene	5.000	5.081	-1.6	100	0.000
64	T	Bromobenzene	5.000	4.946	1.1	100	0.000
65	T	n-Propylbenzene	5.000	4.893	2.1	100	0.000
66	P	1,1,2,2-Tetrachloroethane	5.000	4.883	2.3	100	0.000
67	T	2-Chlorotoluene	5.000	4.950	1.0	100	0.000
68	T	1,2,3-Trichloropropane	5.000	5.296	-5.9	100	0.000
69	T	1,2,4-Trimethylbenzene	5.000	4.974	0.5	100	0.000
70	T	4-Chlorotoluene	5.000	4.852	3.0	100	0.000
71	T	tert-Butylbenzene	5.000	4.921	1.6	100	0.000
72	T	sec-Butylbenzene	5.000	5.012	-0.2	100	0.000
73	T	p-Isopropyltoluene	5.000	4.957	0.9	100	0.000
74	T	1,3-Dichlorobenzene	5.000	4.934	1.3	100	0.000
75	T	1,4-Dichlorobenzene	5.000	4.844	3.1	100	0.000
76	T	n-Butylbenzene	5.000	4.758	4.8	100	0.000
77	T	1,2-Dichlorobenzene	5.000	4.964	0.7	100	0.000
78	T	1,2-Dibromo-3-Chloropropane	5.000	4.589	8.2	100	0.000
79	Y	Hexachlorobutadiene	5.000	4.853	2.9	100	0.000
80	T	1,2,4-Trichlorobenzene	5.000	4.822	3.6	100	0.000
81	T	Naphthalene	5.000	4.945	1.1	100	0.000
82	T	1,2,3-Trichlorobenzene	5.000	4.987	0.3	100	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011952.D
Acq On : 18 May 2015 13:35
Operator : ADC
Sample : WG523986-08 20.0ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 18 15:26:55 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.170	96	238513	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	176001	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.319	152	94780	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.209	111	22909	9.1491 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 36.596%#		
32) 1,2-Dichloroethane-d4	4.840	65	20446	9.4362 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 37.745%#		
44) Toluene-d8	6.733	98	88516	9.4725 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 37.890%#		
63) p-Bromofluorobenzene	8.737	95	30352	9.2723 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 37.089%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.041	85	55916	20.9088 ug/L	100
3) Chloromethane	1.154	50	58999	20.1740 ug/L	99
4) Vinyl Chloride	1.200	62	61669	19.9999 ug/L	100
5) 1,3-Butadiene	1.212	54	32090	19.7361 ug/L	100
6) Bromomethane	1.389	94	36567	20.0872 ug/L	99
7) Chloroethane	1.461	64	34153	23.0185 ug/L	99
8) Trichlorofluoromethane	1.551	101	81391	21.9634 ug/L	99
9) Diethyl ether	1.756	59	31084	20.1053 ug/L	100
10) 1,1-Dichloroethene	1.878	61	73675	19.9442 ug/L	100
11) Carbon Disulfide	1.892	76	131237	19.1943 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.910	101	49940	20.1518 ug/L	99
13) Acrolein	2.127	56	3758	18.6585 ug/L	98
14) Methylene Chloride	2.307	84	51654	19.6618 ug/L	99
15) Acetone	2.359	43	7562	20.1349 ug/L	99
16) trans-1,2-Dichloroethene	2.437	96	49220	19.6661 ug/L	99
17) Methyl Tert Butyl Ether	2.547	73	110504	20.1453 ug/L	100
18) 1,1-Dichloroethane	2.998	63	91820	20.0448 ug/L	100
19) Acrylonitrile	3.059	53	10407	20.0611 ug/L	97
20) Vinyl Acetate	3.305	86	3490	17.8397 ug/L	91
21) cis-1,2-Dichloroethene	3.595	96	55921	20.2269 ug/L	99
22) 2,2-Dichloropropane	3.722	77	70688	20.1642 ug/L	98
23) Cyclohexane	3.824	56	80071	19.9861 ug/L	100
24) Bromochloromethane	3.835	130	34722	20.5252 ug/L	100
25) Chloroform	3.968	83	90825	20.6616 ug/L	100
26) Carbon Tetrachloride	4.113	117	72041	20.3741 ug/L	100
28) 1,1,1-Trichloroethane	4.209	97	80204	19.9769 ug/L	100
29) 1,1-Dichloropropene	4.377	75	67678	19.9446 ug/L	100
30) 2-Butanone	4.397	43	11966	19.6735 ug/L	92
31) Benzene	4.678	78	207108	19.6200 ug/L	100
33) 1,2-Dichloroethane	4.921	62	56598	20.2663 ug/L	99
34) Trichloroethene	5.350	130	59443	18.9740 ug/L	99
35) Dibromomethane	5.766	93	27996	21.4345 ug/L	100
36) 1,2-Dichloropropane	5.874	63	55178	19.9694 ug/L	100
37) Bromodichloromethane	5.963	83	66407	20.0647 ug/L	100
38) 1,4-Dioxane	6.178	88	529	33.6621 ug/L	80
39) 2-Chloroethyl Vinyl Ether	6.551	63	48525	39.9622 ug/L	100
40) cis-1,3-Dichloropropene	6.568	75	77869	20.1814 ug/L	100
41) 4-Methyl-2-Pentanone	7.831	58	10322	18.8939 ug/L	99
42) trans-1,3-Dichloropropene	7.165	75	63834	21.2088 ug/L	100
45) Toluene	6.780	91	232460	20.3226 ug/L	100
46) Tetrachloroethene	7.107	166	64164	20.1132 ug/L	100
47) 1,1,2-Trichloroethane	7.298	97	39405	20.5120 ug/L	99
48) Dibromochloromethane	7.434	129	51394	20.4709 ug/L	99
49) 1,3-Dichloropropane	7.518	76	62859	20.2909 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011952.D
Acq On : 18 May 2015 13:35
Operator : ADC
Sample : WG523986-08 20.0ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 18 15:26:55 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
50)	1,2-Dibromoethane	7.605	107	39152	20.8659	ug/L	100
51)	2-Hexanone	7.831	43	19128	20.1225	ug/L	100
52)	Chlorobenzene	8.002	112	152317	20.0273	ug/L	100
53)	1-Chlorohexane	8.016	69	13389	20.1606	ug/L	93
54)	Ethylbenzene	8.039	106	81764	20.0999	ug/L	99
55)	1,1,1,2-Tetrachloroethane	8.054	131	54874	20.3176	ug/L	100
56)	m-,p-Xylene	8.138	106	199659	41.0396	ug/L	99
57)	o-Xylene	8.401	106	97033	20.1894	ug/L	100
58)	Styrene	8.433	104	157078	20.4904	ug/L	100
59)	Bromoform	8.436	173	33931	21.3334	ug/L	99
60)	Isopropylbenzene	8.589	105	255193	20.4063	ug/L	100
62)	1,3,5-Trimethylbenzene	8.928	105	225279	20.6169	ug/L	100
64)	Bromobenzene	8.789	156	68967	20.1104	ug/L	100
65)	n-Propylbenzene	8.818	91	293192	20.4505	ug/L	100
66)	1,1,2,2-Tetrachloroethane	8.859	83	43871	20.5429	ug/L	99
67)	2-Chlorotoluene	8.893	91	174937	19.8204	ug/L	99
68)	1,2,3-Trichloropropane	8.922	110	11835	21.1866	ug/L	99
69)	1,2,4-Trimethylbenzene	9.125	105	225728	20.7099	ug/L	99
70)	4-Chlorotoluene	8.983	91	178319	20.0536	ug/L	100
71)	tert-Butylbenzene	9.090	134	41682	20.3921	ug/L	98
72)	sec-Butylbenzene	9.180	105	283841	20.7744	ug/L	100
73)	p-Isopropyltoluene	9.252	119	245684	21.0766	ug/L	100
74)	1,3-Dichlorobenzene	9.281	146	130219	20.0480	ug/L	100
75)	1,4-Dichlorobenzene	9.325	146	127218	19.5329	ug/L	99
76)	n-Butylbenzene	9.458	91	213870	21.0006	ug/L	100
77)	1,2-Dichlorobenzene	9.530	146	123036	20.1236	ug/L	100
78)	1,2-Dibromo-3-Chloropr...	9.910	75	7264	20.0187	ug/L	99
79)	Hexachlorobutadiene	10.211	225	60614	20.7915	ug/L	99
80)	1,2,4-Trichlorobenzene	10.225	180	99944	21.0766	ug/L	99
81)	Naphthalene	10.382	128	169588	21.1706	ug/L	100
82)	1,2,3-Trichlorobenzene	10.466	180	92790	21.3359	ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011952.D
Acq On : 18 May 2015 13:35
Operator : ADC
Sample : WG523986-08 20.0ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 18 15:26:55 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

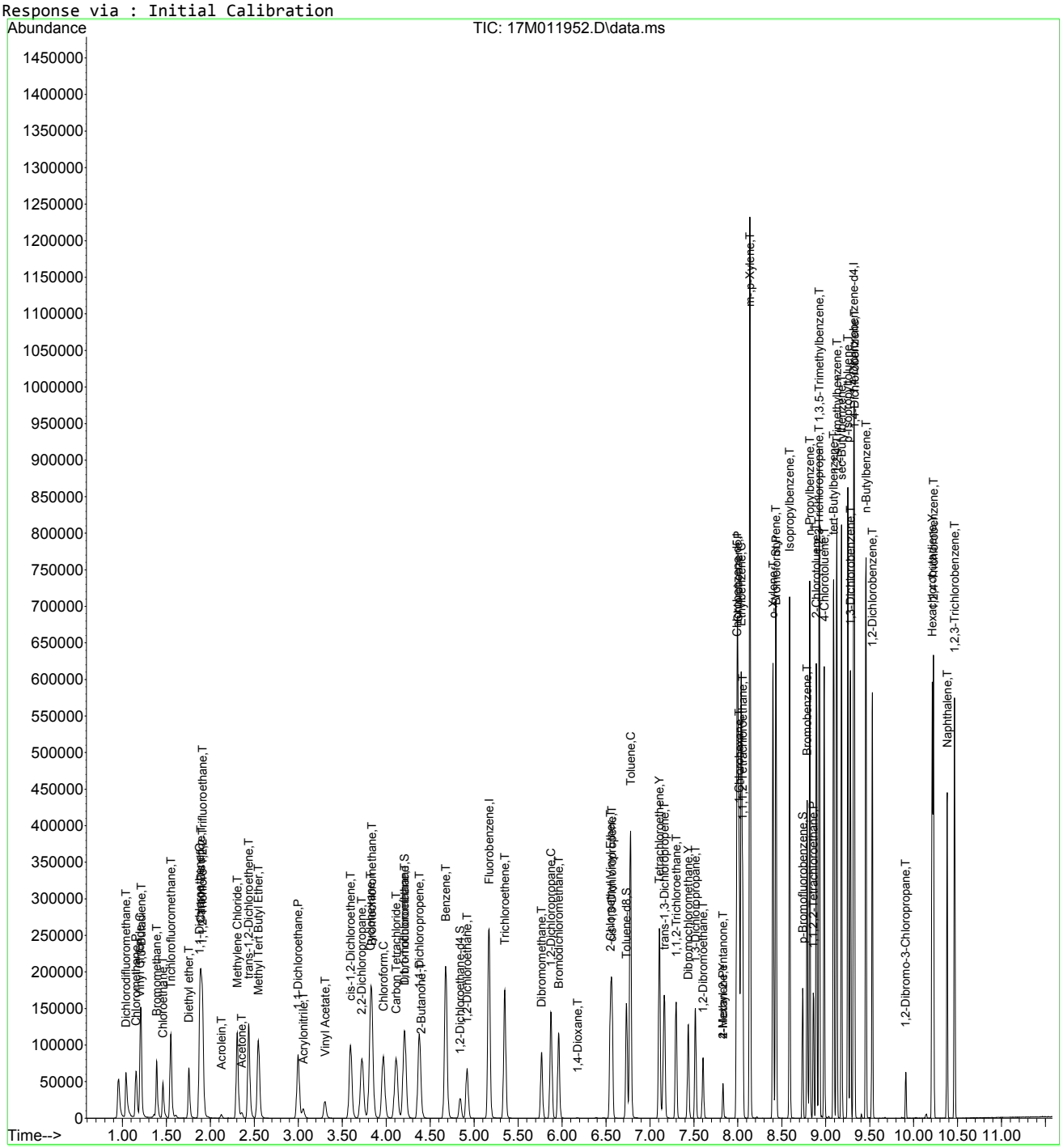

826_VMS.M Mon May 18 15:26:56 2015 Page: 3

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011953.D
Acq On : 18 May 2015 13:55
Operator : ADC
Sample : WG523986-09 100.0ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 18 15:26:58 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.170	96	236493	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.993	117	182786	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.319	152	100874	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.212	111	128734	51.8512 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 207.405%#		
32) 1,2-Dichloroethane-d4	4.840	65	109276	50.8637 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 203.455%#		
44) Toluene-d8	6.734	98	492217	50.7191 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 202.876%#		
63) p-Bromofluorobenzene	8.737	95	181594	52.1240 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 208.496%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.041	85	282116	106.3932 ug/L	99
3) Chloromethane	1.154	50	301123	103.8447 ug/L	99
4) Vinyl Chloride	1.201	62	320448	104.8124 ug/L	100
5) 1,3-Butadiene	1.209	54	169101	104.8893 ug/L	99
6) Bromomethane	1.389	94	192710	106.7650 ug/L	100
7) Chloroethane	1.458	64	131790	89.5826 ug/L	100
8) Trichlorofluoromethane	1.537	101	396316	107.8598 ug/L	100
9) Diethyl ether	1.760	59	160214	104.5125 ug/L	99
10) 1,1-Dichloroethene	1.875	61	373205	101.8913 ug/L	99
11) Carbon Disulfide	1.887	76	695583	102.6025 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.904	101	247320	100.6510 ug/L	100
13) Acrolein	2.127	56	20889	104.6000 ug/L	97
14) Methylene Chloride	2.304	84	264191	101.4218 ug/L	98
15) Acetone	2.362	43	36394	97.7318 ug/L	98
16) trans-1,2-Dichloroethene	2.434	96	253018	101.9579 ug/L	100
17) Methyl Tert Butyl Ether	2.550	73	562051	103.3393 ug/L	100
18) 1,1-Dichloroethane	2.999	63	468696	103.1929 ug/L	100
19) Acrylonitrile	3.060	53	54148	105.2700 ug/L	100
20) Vinyl Acetate	3.306	86	21730	94.0622 ug/L	99
21) cis-1,2-Dichloroethene	3.595	96	284580	103.8134 ug/L	99
22) 2,2-Dichloropropane	3.723	77	370602	106.6193 ug/L	99
23) Cyclohexane	3.824	56	415040	104.4810 ug/L	100
24) Bromochloromethane	3.835	130	180555	107.6429 ug/L	100
25) Chloroform	3.966	83	454398	104.2529 ug/L	100
26) Carbon Tetrachloride	4.113	117	374354	106.7762 ug/L	100
28) 1,1,1-Trichloroethane	4.209	97	409569	102.8851 ug/L	100
29) 1,1-Dichloropropene	4.377	75	351999	104.6197 ug/L	99
30) 2-Butanone	4.397	43	62004	102.8127 ug/L	95
31) Benzene	4.678	78	1047096	100.0421 ug/L	100
33) 1,2-Dichloroethane	4.921	62	285776	103.2032 ug/L	100
34) Trichloroethene	5.350	130	306027	98.5171 ug/L	99
35) Dibromomethane	5.767	93	145430	112.2960 ug/L	99
36) 1,2-Dichloropropane	5.877	63	283187	103.3630 ug/L	100
37) Bromodichloromethane	5.964	83	348648	106.2430 ug/L	100
38) 1,4-Dioxane	6.178	88	3245	208.2542 ug/L	99
39) 2-Chloroethyl Vinyl Ether	6.551	63	259910	215.8742 ug/L	100
40) cis-1,3-Dichloropropene	6.569	75	415159	108.5161 ug/L	100
41) 4-Methyl-2-Pentanone	7.831	58	56253	103.8476 ug/L	99
42) trans-1,3-Dichloropropene	7.168	75	343605	115.1375 ug/L	100
45) Toluene	6.780	91	1199304	100.9558 ug/L	100
46) Tetrachloroethene	7.110	166	332412	100.3319 ug/L	100
47) 1,1,2-Trichloroethane	7.298	97	202069	101.2813 ug/L	100
48) Dibromochloromethane	7.437	129	282001	108.1554 ug/L	100
49) 1,3-Dichloropropane	7.518	76	325431	101.1496 ug/L	99

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011953.D
Acq On : 18 May 2015 13:55
Operator : ADC
Sample : WG523986-09 100.0ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 18 15:26:58 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50) 1,2-Dibromoethane	7.605	107	204827	105.1098 ug/L	100
51) 2-Hexanone	7.831	43	102016	103.3362 ug/L	98
52) Chlorobenzene	8.005	112	805286	101.9521 ug/L	99
53) 1-Chlorohexane	8.019	69	74278	107.6932 ug/L	97
54) Ethylbenzene	8.042	106	440860	104.3531 ug/L	99
55) 1,1,1,2-Tetrachloroethane	8.057	131	295315	105.2840 ug/L	100
56) m-,p-Xylene	8.141	106	1073579	212.4811 ug/L	100
57) o-Xylene	8.401	106	522582	104.6961 ug/L	99
58) Styrene	8.433	104	868876	109.1350 ug/L	100
59) Bromoform	8.436	173	193512	117.1505 ug/L	100
60) Isopropylbenzene	8.590	105	1376949	106.0197 ug/L	100
62) 1,3,5-Trimethylbenzene	8.928	105	1230529	105.8113 ug/L	100
64) Bromobenzene	8.789	156	374549	102.6186 ug/L	100
65) n-Propylbenzene	8.821	91	1609068	105.4542 ug/L	100
66) 1,1,2,2-Tetrachloroethane	8.862	83	238573	104.9645 ug/L	100
67) 2-Chlorotoluene	8.897	91	958935	102.0837 ug/L	100
68) 1,2,3-Trichloropropane	8.925	110	64004	107.6560 ug/L	98
69) 1,2,4-Trimethylbenzene	9.125	105	1229442	105.9833 ug/L	100
70) 4-Chlorotoluene	8.983	91	978169	103.3583 ug/L	99
71) tert-Butylbenzene	9.091	134	228969	105.2514 ug/L	99
72) sec-Butylbenzene	9.180	105	1532599	105.3950 ug/L	100
73) p-Isopropyltoluene	9.256	119	1336879	107.7587 ug/L	99
74) 1,3-Dichlorobenzene	9.282	146	715647	103.5220 ug/L	100
75) 1,4-Dichlorobenzene	9.328	146	704542	101.6397 ug/L	99
76) n-Butylbenzene	9.458	91	1190597	109.8462 ug/L	100
77) 1,2-Dichlorobenzene	9.531	146	664132	102.0624 ug/L	100
78) 1,2-Dibromo-3-Chloropr...	9.910	75	40736	105.4811 ug/L	100
79) Hexachlorobutadiene	10.211	225	306698	98.8464 ug/L	99
80) 1,2,4-Trichlorobenzene	10.226	180	519504	102.9369 ug/L	100
81) Naphthalene	10.379	128	870844	102.1446 ug/L	100
82) 1,2,3-Trichlorobenzene	10.466	180	463809	100.2045 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011953.D
Acq On : 18 May 2015 13:55
Operator : ADC
Sample : WG523986-09 100.0ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 18 15:26:58 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

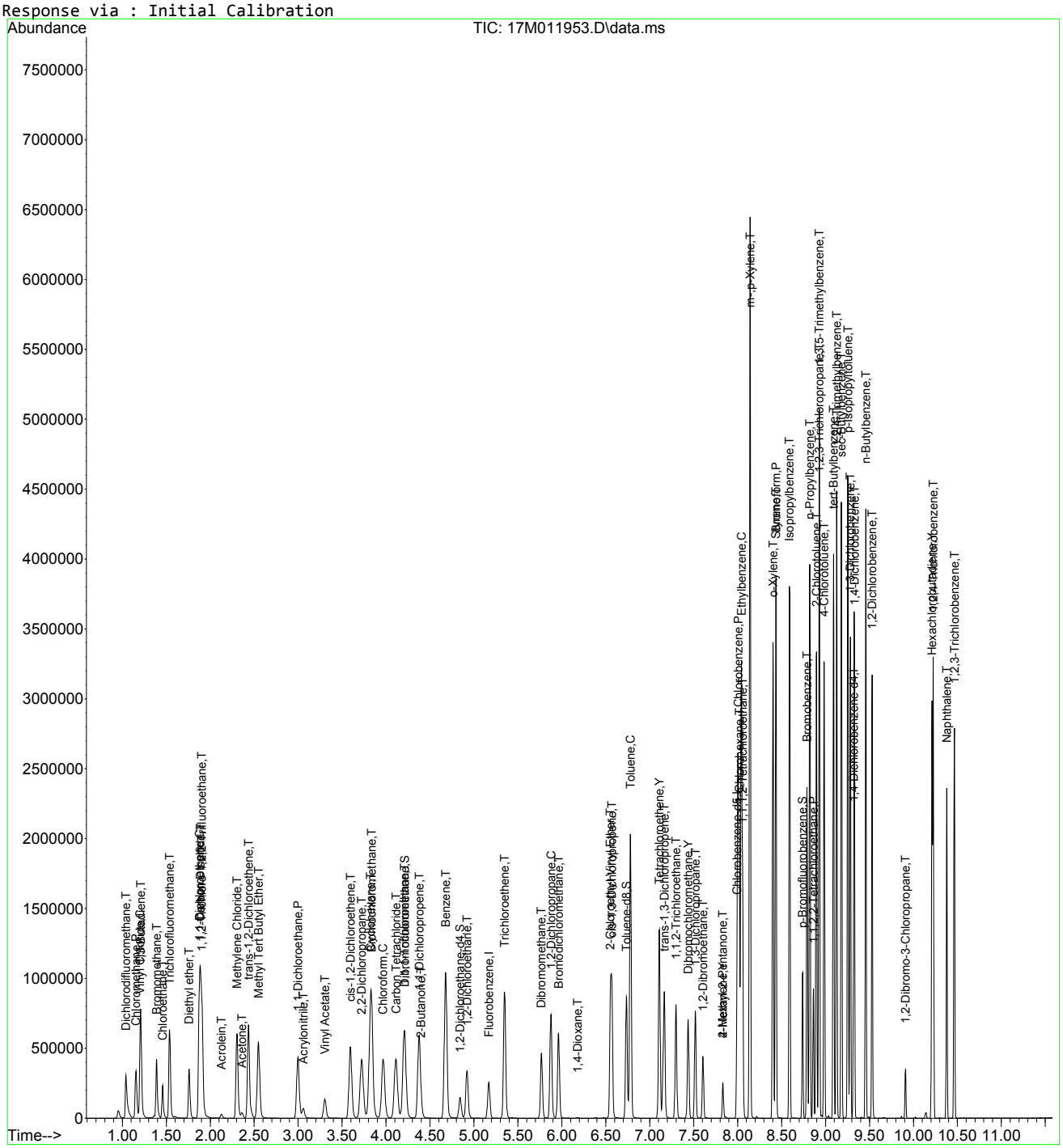

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011954.D
Acq On : 18 May 2015 14:15
Operator : ADC
Sample : WG523986-10 200.0ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 18 15:27:01 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	224954	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.993	117	181055	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.322	152	101794	25.00000 ug/L	# 0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.209	111	236902	100.3134 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 401.254%#		
32) 1,2-Dichloroethane-d4	4.843	65	201157	98.4335 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 393.734%#		
44) Toluene-d8	6.736	98	907988	94.4555 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 377.822%#		
63) p-Bromofluorobenzene	8.740	95	351522	99.9875 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 399.950%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.041	85	542140	214.9425 ug/L	99
3) Chloromethane	1.151	50	558195	202.3721 ug/L	99
4) Vinyl Chloride	1.201	62	617771	212.4258 ug/L	100
5) 1,3-Butadiene	1.209	54	332820	217.0296 ug/L	98
6) Bromomethane	1.389	94	360921	210.2138 ug/L	100
7) Chloroethane	1.458	64	235522	168.3051 ug/L	99
8) Trichlorofluoromethane	1.531	101	510501	146.0626 ug/L	100
9) Diethyl ether	1.762	59	301469	206.7451 ug/L	100
10) 1,1-Dichloroethene	1.869	61	707620	203.1020 ug/L	99
11) Carbon Disulfide	1.881	76	1330399	206.3077 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.901	101	472613	202.2038 ug/L	100
13) Acrolein	2.130	56	40382	212.5819 ug/L	100
14) Methylene Chloride	2.304	84	491403	198.3241 ug/L	98
15) Acetone	2.367	43	69546	196.3374 ug/L	97
16) trans-1,2-Dichloroethene	2.431	96	478949	202.9005 ug/L	99
17) Methyl Tert Butyl Ether	2.553	73	1060940	205.0715 ug/L	100
18) 1,1-Dichloroethane	2.996	63	875652	202.6818 ug/L	100
19) Acrylonitrile	3.062	53	103363	211.2574 ug/L	100
20) Vinyl Acetate	3.303	86	43081	192.3604 ug/L	99
21) cis-1,2-Dichloroethene	3.592	96	534567	205.0103 ug/L	99
22) 2,2-Dichloropropane	3.722	77	689939	208.6716 ug/L	99
23) Cyclohexane	3.824	56	799604	211.6153 ug/L	99
24) Bromochloromethane	3.835	130	338683	212.2726 ug/L	100
25) Chloroform	3.969	83	848294	204.6080 ug/L	99
26) Carbon Tetrachloride	4.110	117	717109	215.0314 ug/L	100
28) 1,1,1-Trichloroethane	4.209	97	778747	205.6584 ug/L	99
29) 1,1-Dichloropropene	4.374	75	670608	209.5392 ug/L	99
30) 2-Butanone	4.403	43	120674	210.3611 ug/L	95
31) Benzene	4.678	78	1972291	198.1033 ug/L	100
33) 1,2-Dichloroethane	4.921	62	535894	203.4561 ug/L	99
34) Trichloroethene	5.350	130	583034	197.3196 ug/L	99
35) Dibromomethane	5.769	93	277662	225.3986 ug/L	99
36) 1,2-Dichloropropane	5.877	63	538568	206.6603 ug/L	99
37) Bromodichloromethane	5.963	83	665998	213.3589 ug/L	100
38) 1,4-Dioxane	6.183	88	6310	425.7288 ug/L	97
39) 2-Chloroethyl Vinyl Ether	6.557	63	504053	440.1276 ug/L	100
40) cis-1,3-Dichloropropene	6.571	75	803264	220.7306 ug/L	100
41) 4-Methyl-2-Pentanone	7.837	58	114604	222.4206 ug/L	100
42) trans-1,3-Dichloropropene	7.168	75	667142	235.0174 ug/L	100
45) Toluene	6.783	91	2263654	192.3732 ug/L	99
46) Tetrachloroethene	7.110	166	638689	194.6185 ug/L	99
47) 1,1,2-Trichloroethane	7.301	97	389520	197.1023 ug/L	100
48) Dibromochloromethane	7.437	129	551530	213.5498 ug/L	100
49) 1,3-Dichloropropane	7.521	76	626661	196.6393 ug/L	99

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011954.D
Acq On : 18 May 2015 14:15
Operator : ADC
Sample : WG523986-10 200.0ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 18 15:27:01 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50) 1,2-Dibromoethane	7.608	107	398062	206.2239 ug/L	100
51) 2-Hexanone	7.837	43	207311	212.0015 ug/L	98
52) Chlorobenzene	8.005	112	1545868	197.5835 ug/L	100
53) 1-Chlorohexane	8.022	69	145540	213.0310 ug/L	92
54) Ethylbenzene	8.045	106	848411	202.7419 ug/L	99
55) 1,1,1,2-Tetrachloroethane	8.060	131	568110	204.4757 ug/L	99
56) m-,p-Xylene	8.144	106	1998807	399.3829 ug/L	97
57) o-Xylene	8.404	106	1012040	204.6944 ug/L	99
58) Styrene	8.439	104	1682251	213.3190 ug/L	99
59) Bromoform	8.439	173	385647	235.6995 ug/L	100
60) Isopropylbenzene	8.592	105	2621622	203.7845 ug/L	98
62) 1,3,5-Trimethylbenzene	8.931	105	2322739	197.9237 ug/L	99
64) Bromobenzene	8.792	156	737320	200.1846 ug/L	100
65) n-Propylbenzene	8.824	91	3040218	197.4473 ug/L	98
66) 1,1,2,2-Tetrachloroethane	8.862	83	467124	203.6621 ug/L	99
67) 2-Chlorotoluene	8.899	91	1855289	195.7203 ug/L	100
68) 1,2,3-Trichloropropane	8.928	110	125586	209.3289 ug/L	99
69) 1,2,4-Trimethylbenzene	9.128	105	2330967	199.1235 ug/L	99
70) 4-Chlorotoluene	8.986	91	1909297	199.9226 ug/L	99
71) tert-Butylbenzene	9.093	134	444338	202.4052 ug/L	97
72) sec-Butylbenzene	9.183	105	2890159	196.9564 ug/L	98
73) p-Isopropyltoluene	9.255	119	2514585	200.8555 ug/L	98
74) 1,3-Dichlorobenzene	9.284	146	1379156	197.6988 ug/L	98
75) 1,4-Dichlorobenzene	9.328	146	1355123	193.7279 ug/L	99
76) n-Butylbenzene	9.461	91	2305088	210.7486 ug/L	98
77) 1,2-Dichlorobenzene	9.533	146	1269641	193.3524 ug/L	98
78) 1,2-Dibromo-3-Chloropr...	9.910	75	79682	204.4625 ug/L	99
79) Hexachlorobutadiene	10.211	225	630230	201.2825 ug/L	100
80) 1,2,4-Trichlorobenzene	10.225	180	1035607	203.3453 ug/L	99
81) Naphthalene	10.379	128	1700985	197.7118 ug/L	100
82) 1,2,3-Trichlorobenzene	10.466	180	924992	198.0356 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011954.D
Acq On : 18 May 2015 14:15
Operator : ADC
Sample : WG523986-10 200.0ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 10 Sample Multiplier: 1

Quant Time: May 18 15:27:01 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

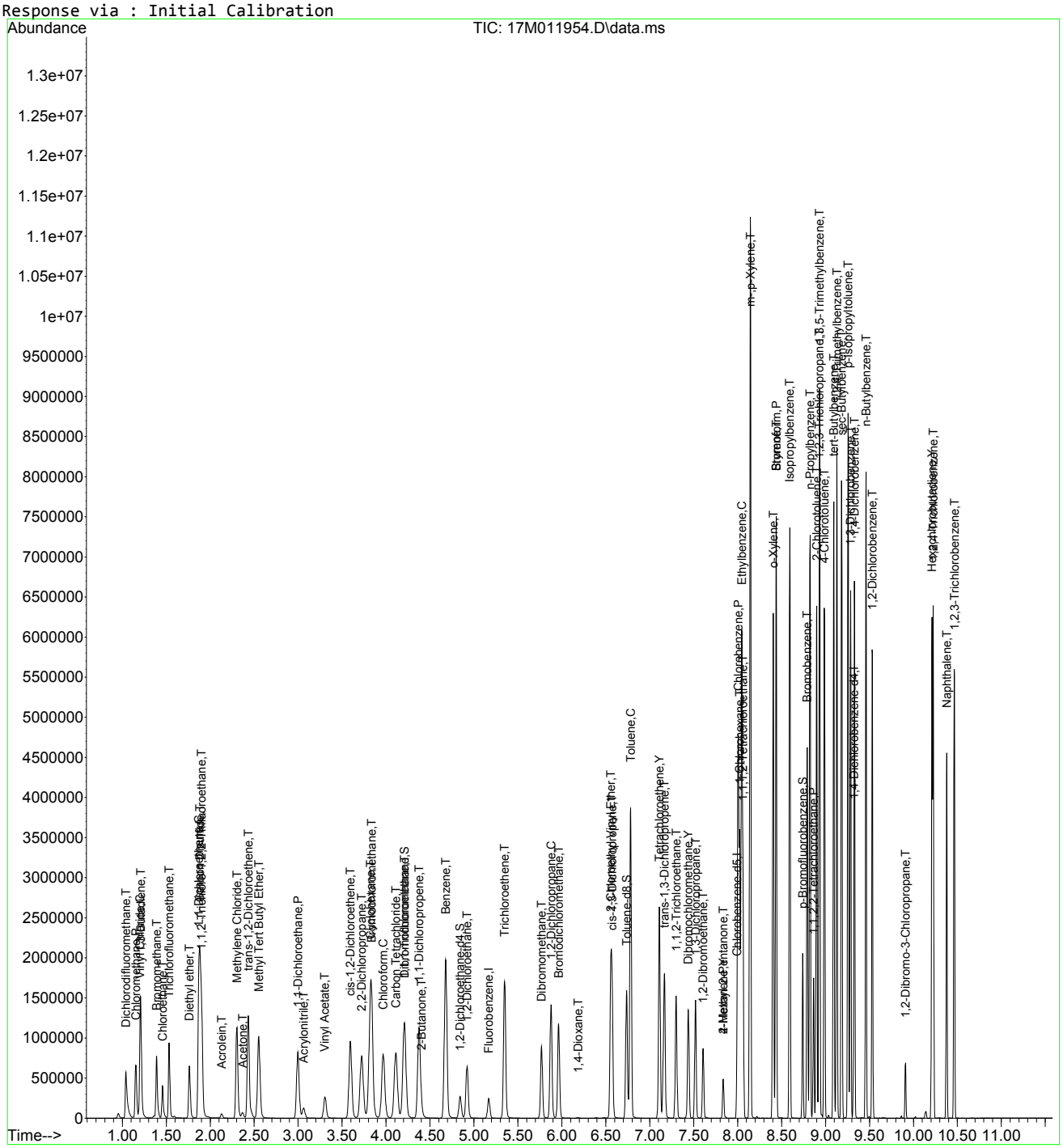

826_VMS.M Mon May 18 15:27:02 2015 Page: 3

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011955.D
Acq On : 18 May 2015 14:34
Operator : ADC
Sample : WG523986-11 300ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 11 Sample Multiplier: 1

Quant Time: May 18 15:27:04 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	5.167	96	215762	25.00000	ug/L	0.0000
43) Chlorobenzene-d5	7.996	117	169645	25.00000	ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.322	152	88940	25.00000	ug/L	# 0.0000
System Monitoring Compounds						
27) Dibromofluoromethane	4.215	111	516	0.2278	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 0.911%#			
32) 1,2-Dichloroethane-d4	4.924	65	39447	20.1252	ug/L	0.0840
Spiked Amount 25.000	Range 80 - 120		Recovery = 80.501%			
44) Toluene-d8	6.737	98	3094	0.3435	ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 1.374%#			
63) p-Bromofluorobenzene	8.740	95	1667	0.5427	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 2.171%#			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.041	85	831244	343.6039	ug/L	99
3) Chloromethane	1.154	50	879123	332.3022	ug/L	99
4) Vinyl Chloride	1.201	62	960564	344.3696	ug/L	100
5) 1,3-Butadiene	1.209	54	526279	357.8033	ug/L	98
6) Bromomethane	1.389	94	568800	345.4041	ug/L	100
7) Chloroethane	1.458	64	354923	264.4349	ug/L	99
8) Trichlorofluoromethane	1.531	101	784560	234.0385	ug/L	100
9) Diethyl ether	1.762	59	486362	347.7530	ug/L	99
10) 1,1-Dichloroethene	1.869	61	1119509	335.0121	ug/L	99
11) Carbon Disulfide	1.881	76	2116534	342.1981	ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.898	101	735564	328.1125	ug/L	99
13) Acrolein	2.130	56	64848	355.9212	ug/L	99
14) Methylene Chloride	2.304	84	786764	331.0557	ug/L	98
15) Acetone	2.367	43	111957	329.5345	ug/L	96
16) trans-1,2-Dichloroethene	2.431	96	764042	337.4659	ug/L	100
17) Methyl Tert Butyl Ether	2.553	73	1701284	342.8546	ug/L	100
18) 1,1-Dichloroethane	2.996	63	1399570	337.7510	ug/L	99
19) Acrylonitrile	3.062	53	163458	348.3147	ug/L	99
20) Vinyl Acetate	3.306	86	68607	317.1401	ug/L	98
21) cis-1,2-Dichloroethene	3.595	96	859841	343.8035	ug/L	99
22) 2,2-Dichloropropane	3.725	77	1102090	347.5270	ug/L	98
23) Cyclohexane	3.827	56	1273054	351.2673	ug/L	99
24) Bromochloromethane	3.838	130	547181	357.5612	ug/L	99
25) Chloroform	3.969	83	1357836	341.4619	ug/L	100
26) Carbon Tetrachloride	4.113	117	1148762	359.1414	ug/L	100
28) 1,1,1-Trichloroethane	4.209	97	1233467	339.6224	ug/L	100
29) 1,1-Dichloropropene	4.377	75	1072950	349.5383	ug/L	99
30) 2-Butanone	4.406	43	192452	349.7783	ug/L	95
31) Benzene	4.681	78	3155491	330.4506	ug/L	100
33) 1,2-Dichloroethane	4.921	62	863072	341.6313	ug/L	99
34) Trichloroethene	5.353	130	940516	331.8649	ug/L	99
35) Dibromomethane	5.769	93	452777	383.2110	ug/L	99
36) 1,2-Dichloropropane	5.879	63	873943	349.6377	ug/L	99
37) Bromodichloromethane	5.963	83	1080875	361.0207	ug/L	100
38) 1,4-Dioxane	6.183	88	9934	698.7899	ug/L	100
39) 2-Chloroethyl Vinyl Ether	6.560	63	813281	740.3921	ug/L	100
40) cis-1,3-Dichloropropene	6.574	75	1304888	373.8491	ug/L	99
41) 4-Methyl-2-Pentanone	7.837	58	179951	364.1232	ug/L	100
42) trans-1,3-Dichloropropene	7.171	75	1084477	398.3097	ug/L	99
45) Toluene	6.786	91	3603192	326.8071	ug/L	99
46) Tetrachloroethene	7.113	166	1027888	334.2797	ug/L	99
47) 1,1,2-Trichloroethane	7.301	97	626215	338.1855	ug/L	100
48) Dibromochloromethane	7.440	129	889566	367.6019	ug/L	100
49) 1,3-Dichloropropane	7.524	76	1004440	336.3808	ug/L	99

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011955.D
Acq On : 18 May 2015 14:34
Operator : ADC
Sample : WG523986-11 300ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 11 Sample Multiplier: 1

Quant Time: May 18 15:27:04 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50) 1,2-Dibromoethane	7.611	107	639811	353.7606 ug/L	100
51) 2-Hexanone	7.837	43	323226	352.7706 ug/L	97
52) Chlorobenzene	8.008	112	2410578	328.8282 ug/L	98
53) 1-Chlorohexane	8.025	69	230825	360.5892 ug/L	85
54) Ethylbenzene	8.051	106	1317684	336.0609 ug/L	97
55) 1,1,1,2-Tetrachloroethane	8.065	131	891305	342.3775 ug/L	99
56) m-,p-Xylene	8.149	106	2910052	620.5672 ug/L	95
57) o-Xylene	8.407	106	1543353	333.1525 ug/L	99
58) Styrene	8.442	104	2520959	341.1725 ug/L	97
59) Bromoform	8.445	173	583747	380.7701 ug/L	99
60) Isopropylbenzene	8.595	105	3849364	319.3446 ug/L	97
62) 1,3,5-Trimethylbenzene	8.937	105	3325452	324.3196 ug/L	98
64) Bromobenzene	8.792	156	1126692	350.1103 ug/L	99
65) n-Propylbenzene	8.824	91	4420922	328.6127 ug/L	97
66) 1,1,2,2-Tetrachloroethane	8.865	83	709761	354.1729 ug/L	99
67) 2-Chlorotoluene	8.899	91	2766166	333.9854 ug/L	99
68) 1,2,3-Trichloropropane	8.928	110	184231	351.4599 ug/L	97
69) 1,2,4-Trimethylbenzene	9.131	105	3322758	324.8703 ug/L	98
70) 4-Chlorotoluene	8.989	91	2817446	337.6519 ug/L	99
71) tert-Butylbenzene	9.096	134	652758	340.3185 ug/L	94
72) sec-Butylbenzene	9.186	105	4025609	313.9822 ug/L	97
73) p-Isopropyltoluene	9.258	119	3480003	318.1428 ug/L	96
74) 1,3-Dichlorobenzene	9.287	146	2006865	329.2562 ug/L	97
75) 1,4-Dichlorobenzene	9.331	146	1975449	323.2245 ug/L	99
76) n-Butylbenzene	9.461	91	3230104	338.0016 ug/L	97
77) 1,2-Dichlorobenzene	9.533	146	1865029	325.0718 ug/L	97
78) 1,2-Dibromo-3-Chloropr...	9.910	75	120913	355.1007 ug/L	99
79) Hexachlorobutadiene	10.214	225	941465	344.1408 ug/L	100
80) 1,2,4-Trichlorobenzene	10.228	180	1558148	350.1652 ug/L	99
81) Naphthalene	10.382	128	2555833	340.0084 ug/L	99
82) 1,2,3-Trichlorobenzene	10.469	180	1398589	342.7050 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011955.D
Acq On : 18 May 2015 14:34
Operator : ADC
Sample : WG523986-11 300ug/L STD 8260
Misc : 1,1 STD70529
ALS Vial : 11 Sample Multiplier: 1

Quant Time: May 18 15:27:04 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

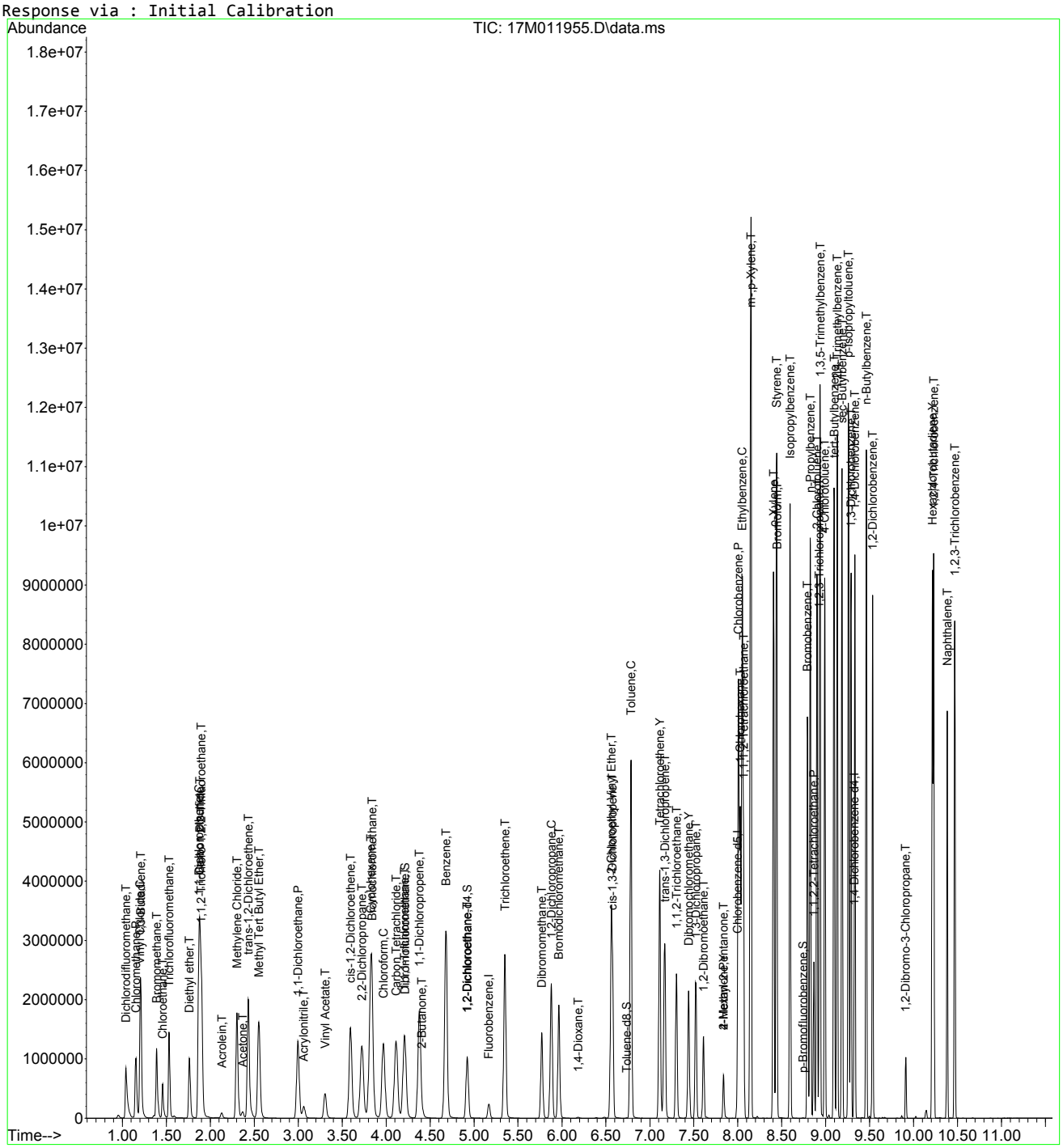

Vinyl Acetate

00642315

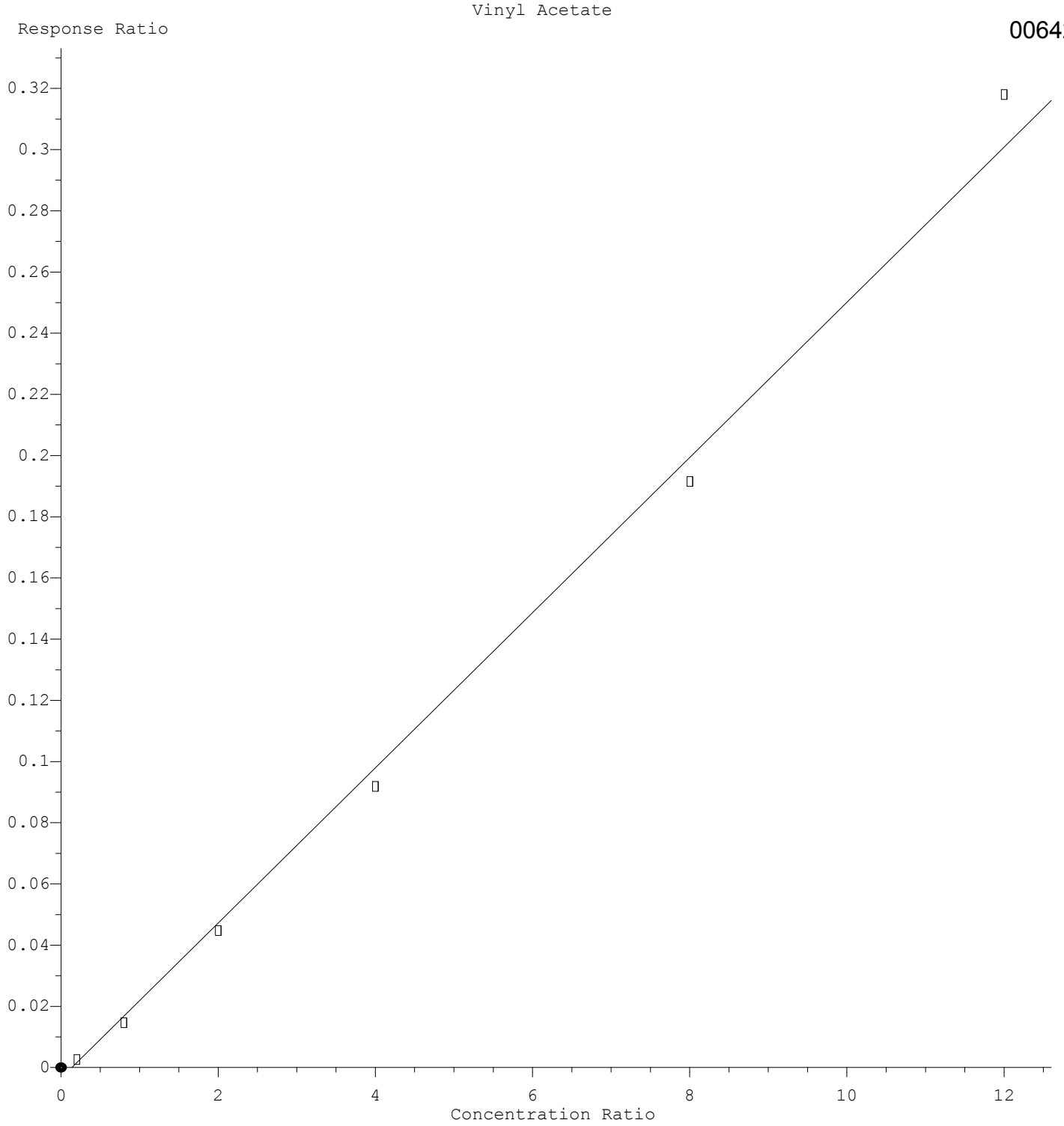

Response = 2.534e-002 * Amt - 3.448e-003
Coef of Det (r^2) = 0.996071 Curve Fit: wlr(1/a)
Method Name: D:\MassHunter\GCMS\1\methods\826_VMS.M
Calibration Table Last Updated: Mon May 18 15:03:59 2015

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011959.D
Acq On : 18 May 2015 16:07
Operator : ADC
Sample : WG523986-12 50ug/L ALT SRC
Misc : 1,1 STD70455
ALS Vial : 15 Sample Multiplier: 1

Quant Time: May 18 16:19:30 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	242463	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.993	117	182260	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.319	152	100677	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.209	111	64852	25.4778 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.911%		
32) 1,2-Dichloroethane-d4	4.843	65	55803	25.3346 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.338%		
44) Toluene-d8	6.734	98	248604	25.6906 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.762%		
63) p-Bromofluorobenzene	8.737	95	90350	25.9844 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.938%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.041	85	151659	55.7863 ug/L	100
3) Chloromethane	1.154	50	145746	49.0241 ug/L	100
4) Vinyl Chloride	1.201	62	158830	50.6711 ug/L	100
5) 1,3-Butadiene	1.209	54	106521	64.4456 ug/L	100
6) Bromomethane	1.389	94	95330	51.5142 ug/L	100
7) Chloroethane	1.458	64	62051	41.1399 ug/L	97
8) Trichlorofluoromethane	1.531	101	117902	31.2977 ug/L	100
9) Diethyl ether	1.768	59	440924	280.5463 ug/L	99
10) 1,1-Dichloroethene	1.864	61	169738	45.2003 ug/L	100
11) Carbon Disulfide	1.875	76	217222	31.2526 ug/L	99
12) 1,1,2-Trichloro-1,2,2-...	1.893	101	118910	47.2009 ug/L	100
13) Acrolein	2.136	56	24102	117.7172 ug/L	99
14) Methylene Chloride	2.301	84	125403	46.9563 ug/L	99
15) Acetone	2.379	43	20532	53.7787 ug/L	99
16) trans-1,2-Dichloroethene	2.431	96	124177	48.8071 ug/L	99
17) Methyl Tert Butyl Ether	2.558	73	307159	55.0841 ug/L	100
18) 1,1-Dichloroethane	2.996	63	218582	46.9403 ug/L	100
19) Acrylonitrile	3.065	53	25996	49.2949 ug/L	99
20) Vinyl Acetate	3.305	86	14268	61.4642 ug/L	97
21) cis-1,2-Dichloroethene	3.595	96	138915	49.4277 ug/L	100
22) 2,2-Dichloropropane	3.722	77	186097	52.2204 ug/L	100
23) Cyclohexane	3.815	56	221965	54.5010 ug/L #	78
24) Bromochloromethane	3.835	130	84388	49.0715 ug/L	100
25) Chloroform	3.969	83	221164	49.4924 ug/L	100
26) Carbon Tetrachloride	4.110	117	174595	48.5732 ug/L	100
28) 1,1,1-Trichloroethane	4.206	97	197722	48.4455 ug/L	100
29) 1,1-Dichloropropene	4.374	75	169114	49.0258 ug/L	100
30) 2-Butanone	4.412	43	32498	52.5601 ug/L #	69
31) Benzene	4.675	78	511952	47.7088 ug/L	100
33) 1,2-Dichloroethane	4.921	62	137976	48.6008 ug/L	100
34) Trichloroethene	5.347	130	146203	45.9072 ug/L	100
35) Dibromomethane	5.767	93	68407	51.5209 ug/L	100
36) 1,2-Dichloropropane	5.877	63	138468	49.2963 ug/L	100
37) Bromodichloromethane	5.963	83	162868	48.4085 ug/L	100
38) 1,4-Dioxane	6.183	88	8432	527.8160 ug/L	96
39) 2-Chloroethyl Vinyl Ether	6.551	63	65978	53.4503 ug/L	100
40) cis-1,3-Dichloropropene	6.569	75	207801	52.9786 ug/L	100
41) 4-Methyl-2-Pentanone	7.837	58	28724	51.7212 ug/L	100
42) trans-1,3-Dichloropropene	7.168	75	161450	52.7677 ug/L	100
45) Toluene	6.780	91	583749	49.2810 ug/L	100
46) Tetrachloroethene	7.107	166	157925	47.8041 ug/L	100
47) 1,1,2-Trichloroethane	7.298	97	96856	48.6864 ug/L	100
48) Dibromochloromethane	7.437	129	129039	49.6330 ug/L	100
49) 1,3-Dichloropropane	7.518	76	158080	49.2758 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011959.D
Acq On : 18 May 2015 16:07
Operator : ADC
Sample : WG523986-12 50ug/L ALT SRC
Misc : 1,1 STD70455
ALS Vial : 15 Sample Multiplier: 1

Quant Time: May 18 16:19:30 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50) 1,2-Dibromoethane	7.605	107	96393	49.6081 ug/L	100
51) 2-Hexanone	7.837	43	52748	53.5848 ug/L	99
52) Chlorobenzene	8.002	112	365534	46.4115 ug/L	99
53) 1-Chlorohexane	8.016	69	36830	53.5527 ug/L	93
54) Ethylbenzene	8.039	106	211073	50.1059 ug/L	98
55) 1,1,1,2-Tetrachloroethane	8.057	131	139608	49.9159 ug/L	100
56) m-,p-Xylene	8.138	106	499509	99.1473 ug/L	99
57) o-Xylene	8.401	106	232998	46.8144 ug/L	99
58) Styrene	8.433	104	410215	51.6737 ug/L	100
59) Bromoform	8.439	173	93246	56.6133 ug/L	100
60) Isopropylbenzene	8.589	105	614249	47.4313 ug/L	100
62) 1,3,5-Trimethylbenzene	8.928	105	592358	51.0356 ug/L	100
64) Bromobenzene	8.789	156	177118	48.6216 ug/L	100
65) n-Propylbenzene	8.818	91	710399	46.6488 ug/L	100
66) 1,1,2,2-Tetrachloroethane	8.862	83	116371	51.2997 ug/L	100
67) 2-Chlorotoluene	8.893	91	428696	45.7262 ug/L	100
68) 1,2,3-Trichloropropane	8.925	110	30468	51.3480 ug/L	98
69) 1,2,4-Trimethylbenzene	9.125	105	594883	51.3819 ug/L	100
70) 4-Chlorotoluene	8.983	91	434309	45.9811 ug/L	99
71) tert-Butylbenzene	9.090	134	102413	47.1689 ug/L	98
72) sec-Butylbenzene	9.180	105	689257	47.4921 ug/L	100
73) p-Isopropyltoluene	9.253	119	597593	48.2631 ug/L	100
74) 1,3-Dichlorobenzene	9.281	146	319412	46.2950 ug/L	100
75) 1,4-Dichlorobenzene	9.325	146	343940	49.7151 ug/L	100
76) n-Butylbenzene	9.458	91	587892	54.3459 ug/L	100
77) 1,2-Dichlorobenzene	9.530	146	300951	46.3400 ug/L	100
78) 1,2-Dibromo-3-Chloropr...	9.910	75	19052	49.4295 ug/L	99
79) Hexachlorobutadiene	10.211	225	161253	52.0723 ug/L	99
80) 1,2,4-Trichlorobenzene	10.225	180	254454	50.5173 ug/L	99
81) Naphthalene	10.379	128	409296	48.1018 ug/L	100
82) 1,2,3-Trichlorobenzene	10.466	180	224752	48.6520 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011959.D
Acq On : 18 May 2015 16:07
Operator : ADC
Sample : WG523986-12 50ug/L ALT SRC
Misc : 1,1 STD70455
ALS Vial : 15 Sample Multiplier: 1

Quant Time: May 18 16:19:30 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

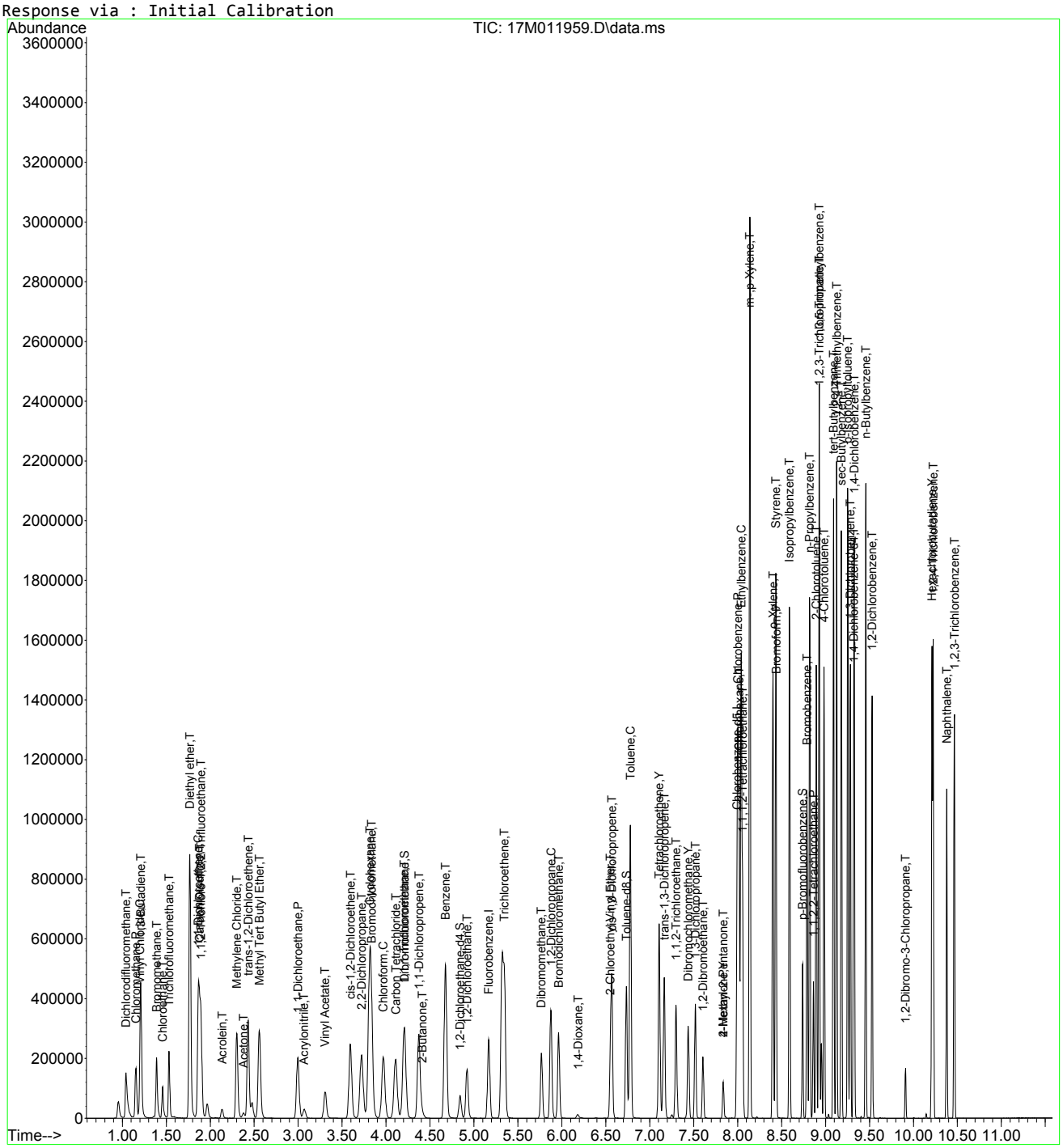

826_VMS.M Mon May 18 16:19:31 2015 Page: 3

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011959.D
Acq On : 18 May 2015 16:07
Operator : ADC
Sample : WG523986-12 50ug/L ALT SRC
Misc : 1,1 STD70455
ALS Vial : 15 Sample Multiplier: 1

Quant Time: May 18 16:19:30 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	98	0.000
2	T	Dichlorodifluoromethane	50.000	55.786	-11.6	101	0.000
3	P	Chloromethane	50.000	49.024	2.0	97	0.000
4	C	Vinyl Chloride	50.000	50.671	-1.3#	98	0.000
5	T	1,3-Butadiene	50.000	64.446	-28.9#	123	0.000
6	T	Bromomethane	50.000	51.514	-3.0	104	0.000
7	T	Chloroethane	50.000	41.140	17.7	83	0.000
8	T	Trichlorofluoromethane	50.000	31.298	37.4#	55	-0.011
9	T	Diethyl ether	50.000	280.546	-461.1#	579	0.011
10	C	1,1-Dichloroethene	50.000	45.200	9.6#	86	-0.011
11	T	Carbon Disulfide	50.000	31.253	37.5#	62	-0.015
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.000	47.201	5.6	89	-0.014
13	T	Acrolein	50.000	117.717	-135.4#	254	0.012
14	T	Methylene Chloride	50.000	46.956	6.1	94	0.000
15	T	Acetone	50.000	53.779	-7.6	120	0.020
16	T	trans-1,2-Dichloroethene	50.000	48.807	2.4	95	0.000
17	T	Methyl Tert Butyl Ether	50.000	55.084	-10.2	114	0.011
18	P	1,1-Dichloroethane	50.000	46.940	6.1	90	0.000
19	T	Acrylonitrile	50.000	49.295	1.4	106	0.000
20	T	Vinyl Acetate	50.000	61.464	-22.9	129	0.000
21	T	cis-1,2-Dichloroethene	50.000	49.428	1.1	95	0.000
22	T	2,2-Dichloropropane	50.000	52.220	-4.4	92	0.000
23	T	Cyclohexane	50.000	54.501	-9.0	104	0.000
24	T	Bromochloromethane	50.000	49.072	1.9	95	0.000
25	C	Chloroform	50.000	49.492	1.0#	94	0.000
26	T	Carbon Tetrachloride	50.000	48.573	2.9	88	0.000
27	S	Dibromofluoromethane	25.000	25.478	-1.9	96	0.000
28	T	1,1,1-Trichloroethane	50.000	48.445	3.1	93	0.000
29	T	1,1-Dichloropropene	50.000	49.026	1.9	92	0.000
30	T	2-Butanone	50.000	52.560	-5.1	118	0.011
31	T	Benzene	50.000	47.709	4.6	94	0.000
32	S	1,2-Dichloroethane-d4	25.000	25.335	-1.3	98	0.000
33	T	1,2-Dichloroethane	50.000	48.601	2.8	96	0.000
34	T	Trichloroethene	50.000	45.907	8.2	94	0.000
35	T	Dibromomethane	50.000	51.521	-3.0	97	0.000
36	C	1,2-Dichloropropane	50.000	49.296	1.4#	96	0.000
37	T	Bromodichloromethane	50.000	48.409	3.2	93	0.000
38	T	1,4-Dioxane	100.000	527.816	-427.8#	584	0.000
39	T	2-Chloroethyl Vinyl Ether	100.000	53.450	46.5#	55	0.000
40	T	cis-1,3-Dichloropropene	50.000	52.979	-6.0	99	0.000
41	T	4-Methyl-2-Pentanone	50.000	51.721	-3.4	123	0.000
42	T	trans-1,3-Dichloropropene	50.000	52.768	-5.5	96	0.000
43	I	Chlorobenzene-d5	25.000	25.000	0.0	98	0.000
44	S	Toluene-d8	25.000	25.691	-2.8	96	0.000
45	C	Toluene	50.000	49.281	1.4#	94	0.000
46	Y	Tetrachloroethene	50.000	47.804	4.4	91	0.000
47	T	1,1,2-Trichloroethane	50.000	48.686	2.6	100	0.000
48	Y	Dibromochloromethane	50.000	49.633	0.7	96	0.000
49	T	1,3-Dichloropropane	50.000	49.276	1.4	100	0.000
50	T	1,2-Dibromoethane	50.000	49.608	0.8	99	0.000
51	Y	2-Hexanone	50.000	53.585	-7.2	121	0.000
52	P	Chlorobenzene	50.000	46.411	7.2	90	0.000
53	T	1-Chlorohexane	50.000	53.553	-7.1	99	0.000
54	C	Ethylbenzene	50.000	50.106	-0.2#	95	0.000
55	T	1,1,1,2-Tetrachloroethane	50.000	49.916	0.2	95	0.000

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011959.D
Acq On : 18 May 2015 16:07
Operator : ADC
Sample : WG523986-12 50ug/L ALT SRC
Misc : 1,1 STD70455
ALS Vial : 15 Sample Multiplier: 1

Quant Time: May 18 16:19:30 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	m-,p-Xylene	100.000	99.147	0.9	91	0.000
57	T	o-Xylene	50.000	46.814	6.4	89	0.000
58	T	Styrene	50.000	51.674	-3.3	96	0.000
59	P	Bromoform	50.000	56.613	-13.2	105	0.000
60	T	Isopropylbenzene	50.000	47.431	5.1	88	0.000
61	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	99	0.000
62	T	1,3,5-Trimethylbenzene	50.000	51.036	-2.1	96	0.000
63	S	p-Bromofluorobenzene	25.000	25.984	-3.9	101	0.000
64	T	Bromobenzene	50.000	48.622	2.8	97	0.000
65	T	n-Propylbenzene	50.000	46.649	6.7	88	0.000
66	P	1,1,2,2-Tetrachloroethane	50.000	51.300	-2.6	107	0.000
67	T	2-Chlorotoluene	50.000	45.726	8.5	90	0.000
68	T	1,2,3-Trichloropropane	50.000	51.348	-2.7	104	0.000
69	T	1,2,4-Trimethylbenzene	50.000	51.382	-2.8	97	0.000
70	T	4-Chlorotoluene	50.000	45.981	8.0	89	0.000
71	T	tert-Butylbenzene	50.000	47.169	5.7	90	0.000
72	T	sec-Butylbenzene	50.000	47.492	5.0	89	0.000
73	T	p-Isopropyltoluene	50.000	48.263	3.5	88	0.000
74	T	1,3-Dichlorobenzene	50.000	46.295	7.4	91	0.000
75	T	1,4-Dichlorobenzene	50.000	49.715	0.6	99	0.000
76	T	n-Butylbenzene	50.000	54.346	-8.7	97	0.000
77	T	1,2-Dichlorobenzene	50.000	46.340	7.3	94	0.000
78	T	1,2-Dibromo-3-Chloropropane	50.000	49.429	1.1	107	0.000
79	Y	Hexachlorobutadiene	50.000	52.072	-4.1	100	0.000
80	T	1,2,4-Trichlorobenzene	50.000	50.517	-1.0	99	0.000
81	T	Naphthalene	50.000	48.102	3.8	103	0.000
82	T	1,2,3-Trichlorobenzene	50.000	48.652	2.7	101	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060515\
Data File : 17M012520.D
Acq On : 05 Jun 2015 09:49
Operator : ADC
Sample : WG526424-02 50ug/L CCV 8260
Misc : 1,1 STD70762
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 05 10:01:31 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	228772	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	173851	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	93803	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.203	111	61918	25.7809 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.124%		
32) 1,2-Dichloroethane-d4	4.840	65	51909	24.9771 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.908%		
44) Toluene-d8	6.734	98	237991	25.7834 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.134%		
63) p-Bromofluorobenzene	8.737	95	82425	25.4424 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.770%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.041	85	165813	64.6428 ug/L	99
3) Chloromethane	1.154	50	132083	47.0872 ug/L	99
4) Vinyl Chloride	1.201	62	151712	51.2968 ug/L	100
5) 1,3-Butadiene	1.212	54	33789	21.6659 ug/L	98
6) Bromomethane	1.389	94	60113	34.4277 ug/L	100
7) Chloroethane	1.458	64	77597	54.5257 ug/L	95
8) Trichlorofluoromethane	1.545	101	205132	57.7121 ug/L	100
9) Diethyl ether	1.757	59	63694	42.9519 ug/L	100
10) 1,1-Dichloroethene	1.878	61	182593	51.5334 ug/L	99
11) Carbon Disulfide	1.893	76	245909	37.4972 ug/L	99
12) 1,1,2-Trichloro-1,2,2-...	1.907	101	125670	52.8696 ug/L	100
13) Acrolein	2.127	56	5923	30.6599 ug/L	100
14) Methylene Chloride	2.304	84	126378	50.1534 ug/L	100
15) Acetone	2.356	43	14872	41.2849 ug/L	99
16) trans-1,2-Dichloroethene	2.437	96	123130	51.2919 ug/L	100
17) Methyl Tert Butyl Ether	2.544	73	251770	47.8530 ug/L	100
18) 1,1-Dichloroethane	2.999	63	228061	51.9069 ug/L	100
19) Acrylonitrile	3.057	53	23044	46.3122 ug/L	99
20) Vinyl Acetate	3.300	86	22314	99.6407 ug/L	98
21) cis-1,2-Dichloroethene	3.592	96	137761	51.9506 ug/L	100
22) 2,2-Dichloropropane	3.723	77	189979	56.5001 ug/L	100
23) Cyclohexane	3.824	56	184842	48.1021 ug/L	100
24) Bromochloromethane	3.838	130	84008	51.7740 ug/L	100
25) Chloroform	3.966	83	220525	52.3028 ug/L	100
26) Carbon Tetrachloride	4.113	117	188063	55.4512 ug/L	100
28) 1,1,1-Trichloroethane	4.209	97	200994	52.1944 ug/L	100
29) 1,1-Dichloropropene	4.374	75	172375	52.9617 ug/L	100
30) 2-Butanone	4.397	43	24913	42.7040 ug/L	99
31) Benzene	4.675	78	507907	50.1644 ug/L	100
33) 1,2-Dichloroethane	4.918	62	134187	50.0949 ug/L	100
34) Trichloroethene	5.347	130	147024	48.9278 ug/L	100
35) Dibromomethane	5.767	93	66263	52.8928 ug/L	99
36) 1,2-Dichloropropane	5.874	63	134124	50.6074 ug/L	100
37) Bromodichloromethane	5.961	83	165178	52.0332 ug/L	100
38) 1,4-Dioxane	6.172	88	1335	88.5678 ug/L	91
39) 2-Chloroethyl Vinyl Ether	6.551	63	107018	91.8862 ug/L	100
40) cis-1,3-Dichloropropene	6.566	75	196343	53.0531 ug/L	100
41) 4-Methyl-2-Pentanone	7.831	58	20374	38.8815 ug/L	100
42) trans-1,3-Dichloropropene	7.165	75	158847	55.0239 ug/L	100
45) Toluene	6.777	91	576066	50.9847 ug/L	100
46) Tetrachloroethene	7.107	166	162334	51.5155 ug/L	100
47) 1,1,2-Trichloroethane	7.295	97	90203	47.5353 ug/L	100
48) Dibromochloromethane	7.434	129	127214	51.2978 ug/L	100
49) 1,3-Dichloropropane	7.518	76	145617	47.5864 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\060515\
Data File : 17M012520.D
Acq On : 05 Jun 2015 09:49
Operator : ADC
Sample : WG526424-02 50ug/L CCV 8260
Misc : 1,1 STD70762
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 05 10:01:31 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50)	1,2-Dibromoethane	7.605	107	91181	49.1956 ug/L	100
51)	2-Hexanone	7.831	43	37997	40.4668 ug/L	100
52)	Chlorobenzene	8.002	112	376283	50.0871 ug/L	99
53)	1-Chlorohexane	8.016	69	35900	54.7253 ug/L	93
54)	Ethylbenzene	8.040	106	204598	50.9181 ug/L	97
55)	1,1,1,2-Tetrachloroethane	8.054	131	136482	51.1585 ug/L	100
56)	m-,p-Xylene	8.138	106	505577	105.2057 ug/L	100
57)	o-Xylene	8.399	106	239841	50.5202 ug/L	100
58)	Styrene	8.433	104	391457	51.6959 ug/L	100
59)	Bromoform	8.433	173	82498	52.5104 ug/L	100
60)	Isopropylbenzene	8.590	105	635344	51.4332 ug/L	100
62)	1,3,5-Trimethylbenzene	8.925	105	555394	51.3575 ug/L	99
64)	Bromobenzene	8.787	156	167172	49.2542 ug/L	99
65)	n-Propylbenzene	8.818	91	745523	52.5428 ug/L	100
66)	1,1,2,2-Tetrachloroethane	8.859	83	98520	46.6131 ug/L	99
67)	2-Chlorotoluene	8.894	91	435377	49.8420 ug/L	100
68)	1,2,3-Trichloropropane	8.923	110	26181	47.3565 ug/L	99
69)	1,2,4-Trimethylbenzene	9.122	105	553775	51.3364 ug/L	100
70)	4-Chlorotoluene	8.980	91	447466	50.8457 ug/L	100
71)	tert-Butylbenzene	9.088	134	102217	50.5286 ug/L	99
72)	sec-Butylbenzene	9.177	105	700577	51.8095 ug/L	100
73)	p-Isopropyltoluene	9.250	119	611963	53.0454 ug/L	100
74)	1,3-Dichlorobenzene	9.279	146	322181	50.1183 ug/L	100
75)	1,4-Dichlorobenzene	9.325	146	314996	48.8679 ug/L	99
76)	n-Butylbenzene	9.455	91	552018	54.7691 ug/L	100
77)	1,2-Dichlorobenzene	9.528	146	289143	47.7845 ug/L	99
78)	1,2-Dibromo-3-Chloropr...	9.904	75	16175	45.0405 ug/L	98
79)	Hexachlorobutadiene	10.202	225	135472	46.9528 ug/L	100
80)	1,2,4-Trichlorobenzene	10.217	180	224104	47.7523 ug/L	100
81)	Naphthalene	10.367	128	333513	42.0678 ug/L	100
82)	1,2,3-Trichlorobenzene	10.451	180	190037	44.1518 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\060515\
Data File : 17M012520.D
Acq On : 05 Jun 2015 09:49
Operator : ADC
Sample : WG526424-02 50ug/L CCV 8260
Misc : 1,1 STD70762
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 05 10:01:31 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

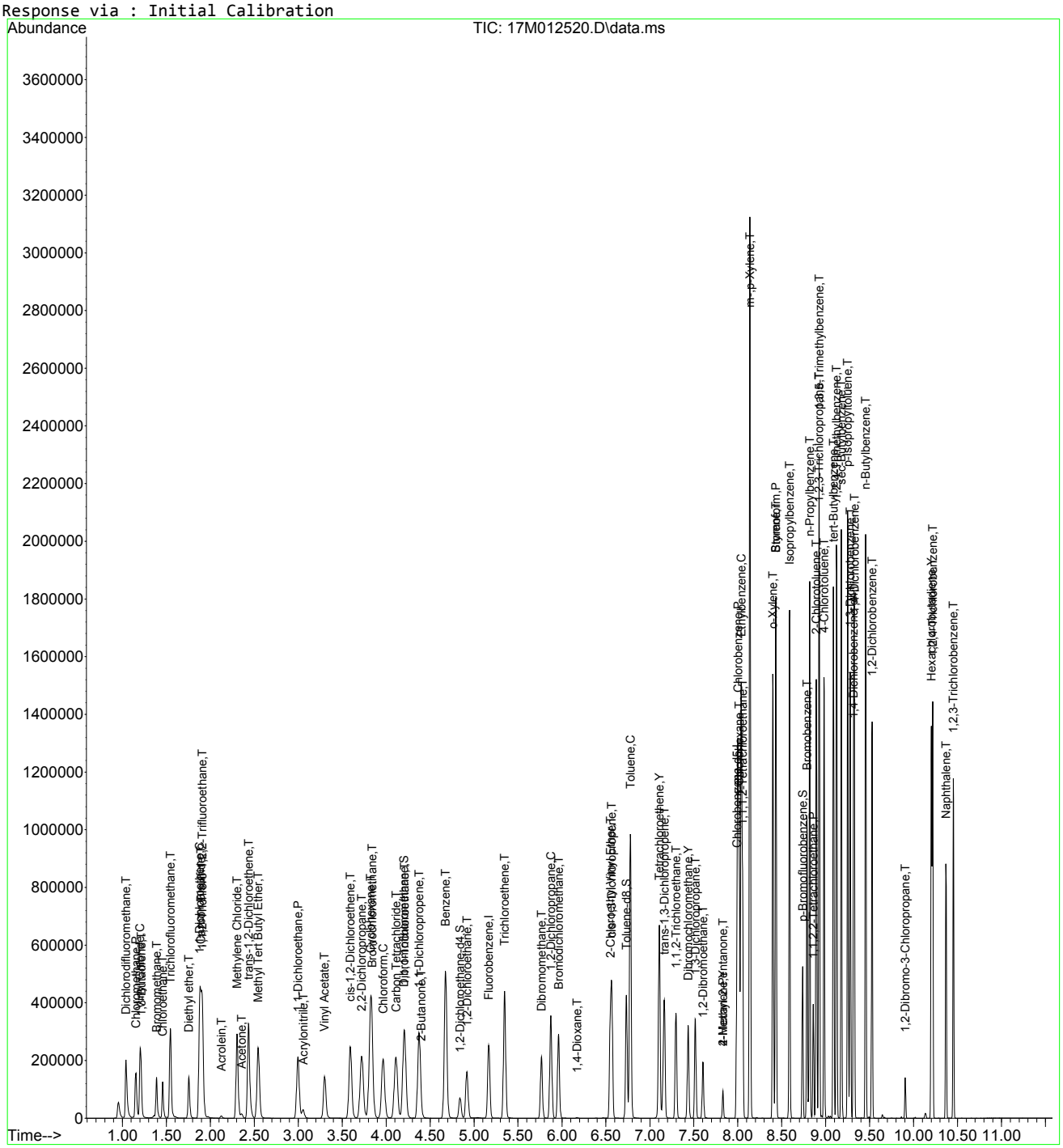

Data Path : D:\MassHunter\GCMS\1\data\060515\
Data File : 17M012520.D
Acq On : 05 Jun 2015 09:49
Operator : ADC
Sample : WG526424-02 50ug/L CCV 8260
Misc : 1,1 STD70762
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 05 10:01:31 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.000	1.000	0.0	93	0.000
2	T	Dichlorodifluoromethane	0.280	0.362	-29.3#	111	0.000
3	P	Chloromethane	0.307	0.289	5.9	88	0.000
4	C	Vinyl Chloride	0.323	0.332	-2.8#	93	0.000
5	T	1,3-Butadiene	0.170	0.074	56.5#	39#	0.000
6	T	Bromomethane	0.191	0.131	31.4#	66	0.000
7	T	Chloroethane	0.156	0.170	-9.0	104	0.000
8	T	Trichlorofluoromethane	0.388	0.448	-15.5	95	0.000
9	T	Diethyl ether	0.162	0.139	14.2	84	0.000
10	C	1,1-Dichloroethene	0.387	0.399	-3.1#	93	0.000
11	T	Carbon Disulfide	0.717	0.537	25.1#	70	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.260	0.275	-5.8	95	0.000
13	T	Acrolein	0.021	0.013	38.1#	62	0.000
14	T	Methylene Chloride	0.275	0.276	-0.4	95	0.000
15	T	Acetone	0.039	0.033	15.4	87	0.000
16	T	trans-1,2-Dichloroethene	0.262	0.269	-2.7	94	0.000
17	T	Methyl Tert Butyl Ether	0.575	0.550	4.3	93	0.000
18	P	1,1-Dichloroethane	0.480	0.498	-3.8	94	0.000
19	T	Acrylonitrile	0.054	0.050	7.4	94	0.000
20	T	Vinyl Acetate	0.021	0.049	-133.3#	202#	0.000
21	T	cis-1,2-Dichloroethene	0.290	0.301	-3.8	94	0.000
22	T	2,2-Dichloropropane	0.367	0.415	-13.1	94	0.000
23	T	Cyclohexane	0.420	0.404	3.8	86	0.000
24	T	Bromochloromethane	0.177	0.184	-4.0	94	0.000
25	C	Chloroform	0.461	0.482	-4.6#	93	0.000
26	T	Carbon Tetrachloride	0.371	0.411	-10.8	95	0.000
27	S	Dibromofluoromethane	0.262	0.271	-3.4	92	0.000
28	T	1,1,1-Trichloroethane	0.421	0.439	-4.3	94	0.000
29	T	1,1-Dichloropropene	0.356	0.377	-5.9	94	0.000
30	T	2-Butanone	0.064	0.054	15.6	91	0.000
31	T	Benzene	1.106	1.110	-0.4	93	0.000
32	S	1,2-Dichloroethane-d4	0.227	0.227	0.0	91	0.000
33	T	1,2-Dichloroethane	0.293	0.293	0.0	93	0.000
34	T	Trichloroethene	0.328	0.321	2.1	94	0.000
35	T	Dibromomethane	0.137	0.145	-5.8	94	0.000
36	C	1,2-Dichloropropane	0.290	0.293	-1.0#	93	0.000
37	T	Bromodichloromethane	0.347	0.361	-4.0	94	0.000
38	T	1,4-Dioxane	0.002	0.001	50.0#	92	0.000
39	T	2-Chloroethyl Vinyl Ether	0.127	0.117	7.9	89	0.000
40	T	cis-1,3-Dichloropropene	0.404	0.429	-6.2	94	0.000
41	T	4-Methyl-2-Pentanone	0.057	0.045	21.1	87	0.000
42	T	trans-1,3-Dichloropropene	0.315	0.347	-10.2	94	0.000
43	I	Chlorobenzene-d5	1.000	1.000	0.0	93	0.000
44	S	Toluene-d8	1.327	1.369	-3.2	92	0.000
45	C	Toluene	1.625	1.657	-2.0#	93	0.000
46	Y	Tetrachloroethene	0.453	0.467	-3.1	94	0.000
47	T	1,1,2-Trichloroethane	0.273	0.259	5.1	93	0.000
48	Y	Dibromochloromethane	0.357	0.366	-2.5	94	0.000
49	T	1,3-Dichloropropane	0.440	0.419	4.8	93	0.000
50	T	1,2-Dibromoethane	0.267	0.262	1.9	94	0.000
51	Y	2-Hexanone	0.135	0.109	19.3	87	0.000
52	P	Chlorobenzene	1.080	1.082	-0.2	93	0.000
53	T	1-Chlorohexane	0.094	0.103	-9.6	96	0.000
54	C	Ethylbenzene	0.578	0.588	-1.7#	92	0.000
55	T	1,1,1,2-Tetrachloroethane	0.384	0.393	-2.3	93	0.000

Data Path : D:\MassHunter\GCMS\1\data\060515\
Data File : 17M012520.D
Acq On : 05 Jun 2015 09:49
Operator : ADC
Sample : WG526424-02 50ug/L CCV 8260
Misc : 1,1 STD70762
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 05 10:01:31 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
56	T	m-,p-Xylene	0.691	0.727	-5.2	92	0.000
57	T	o-Xylene	0.683	0.690	-1.0	91	0.000
58	T	Styrene	1.089	1.126	-3.4	92	0.000
59	P	Bromoform	0.226	0.237	-4.9	93	0.000
60	T	Isopropylbenzene	1.776	1.827	-2.9	91	0.000
61	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	92	0.000
62	T	1,3,5-Trimethylbenzene	2.882	2.960	-2.7	90	0.000
63	S	p-Bromofluorobenzene	0.863	0.879	-1.9	92	0.000
64	T	Bromobenzene	0.905	0.891	1.5	91	0.000
65	T	n-Propylbenzene	3.782	3.974	-5.1	92	0.000
66	P	1,1,2,2-Tetrachloroethane	0.563	0.525	6.7	91	0.000
67	T	2-Chlorotoluene	2.328	2.321	0.3	91	0.000
68	T	1,2,3-Trichloropropane	0.147	0.140	4.8	89	0.000
69	T	1,2,4-Trimethylbenzene	2.875	2.952	-2.7	90	0.000
70	T	4-Chlorotoluene	2.345	2.385	-1.7	91	0.000
71	T	tert-Butylbenzene	0.539	0.545	-1.1	90	0.000
72	T	sec-Butylbenzene	3.604	3.734	-3.6	90	0.000
73	T	p-Isopropyltoluene	3.075	3.262	-6.1	90	0.000
74	T	1,3-Dichlorobenzene	1.713	1.717	-0.2	91	0.000
75	T	1,4-Dichlorobenzene	1.718	1.679	2.3	91	0.000
76	T	n-Butylbenzene	2.686	2.942	-9.5	91	0.000
77	T	1,2-Dichlorobenzene	1.613	1.541	4.5	90	0.000
78	T	1,2-Dibromo-3-Chloropropane	0.096	0.086	10.4	91	0.000
79	Y	Hexachlorobutadiene	0.769	0.722	6.1	84	0.000
80	T	1,2,4-Trichlorobenzene	1.251	1.195	4.5	88	0.000
81	T	Naphthalene	2.113	1.778	15.9	84	0.000
82	T	1,2,3-Trichlorobenzene	1.147	1.013	11.7	85	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Data Path : D:\MassHunter\GCMS\1\data\060515\
Data File : 17M012520.D
Acq On : 05 Jun 2015 09:49
Operator : ADC
Sample : WG526424-02 50ug/L CCV 8260
Misc : 1,1 STD70762
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 05 10:01:31 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	93	0.000
2	T	Dichlorodifluoromethane	50.000	64.643	-29.3#	111	0.000
3	P	Chloromethane	50.000	47.087	5.8	88	0.000
4	C	Vinyl Chloride	50.000	51.297	-2.6#	93	0.000
5	T	1,3-Butadiene	50.000	21.666	56.7#	39	0.000
6	T	Bromomethane	50.000	34.428	31.1#	66	0.000
7	T	Chloroethane	50.000	54.526	-9.1	104	0.000
8	T	Trichlorofluoromethane	50.000	57.712	-15.4	95	0.000
9	T	Diethyl ether	50.000	42.952	14.1	84	0.000
10	C	1,1-Dichloroethene	50.000	51.533	-3.1#	93	0.000
11	T	Carbon Disulfide	50.000	37.497	25.0#	70	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.000	52.870	-5.7	95	0.000
13	T	Acrolein	50.000	30.660	38.7#	62	0.000
14	T	Methylene Chloride	50.000	50.153	-0.3	95	0.000
15	T	Acetone	50.000	41.285	17.4	87	0.000
16	T	trans-1,2-Dichloroethene	50.000	51.292	-2.6	94	0.000
17	T	Methyl Tert Butyl Ether	50.000	47.853	4.3	93	0.000
18	P	1,1-Dichloroethane	50.000	51.907	-3.8	94	0.000
19	T	Acrylonitrile	50.000	46.312	7.4	94	0.000
20	T	Vinyl Acetate	50.000	99.641	-99.3#	202	0.000
21	T	cis-1,2-Dichloroethene	50.000	51.951	-3.9	94	0.000
22	T	2,2-Dichloropropane	50.000	56.500	-13.0	94	0.000
23	T	Cyclohexane	50.000	48.102	3.8	86	0.000
24	T	Bromochloromethane	50.000	51.774	-3.5	94	0.000
25	C	Chloroform	50.000	52.303	-4.6#	93	0.000
26	T	Carbon Tetrachloride	50.000	55.451	-10.9	95	0.000
27	S	Dibromofluoromethane	25.000	25.781	-3.1	92	0.000
28	T	1,1,1-Trichloroethane	50.000	52.194	-4.4	94	0.000
29	T	1,1-Dichloropropene	50.000	52.962	-5.9	94	0.000
30	T	2-Butanone	50.000	42.704	14.6	91	0.000
31	T	Benzene	50.000	50.164	-0.3	93	0.000
32	S	1,2-Dichloroethane-d4	25.000	24.977	0.1	91	0.000
33	T	1,2-Dichloroethane	50.000	50.095	-0.2	93	0.000
34	T	Trichloroethene	50.000	48.928	2.1	94	0.000
35	T	Dibromomethane	50.000	52.893	-5.8	94	0.000
36	C	1,2-Dichloropropane	50.000	50.607	-1.2#	93	0.000
37	T	Bromodichloromethane	50.000	52.033	-4.1	94	0.000
38	T	1,4-Dioxane	100.000	88.568	11.4	92	0.000
39	T	2-Chloroethyl Vinyl Ether	100.000	91.886	8.1	89	0.000
40	T	cis-1,3-Dichloropropene	50.000	53.053	-6.1	94	0.000
41	T	4-Methyl-2-Pentanone	50.000	38.881	22.2	87	0.000
42	T	trans-1,3-Dichloropropene	50.000	55.024	-10.0	94	0.000
43	I	Chlorobenzene-d5	25.000	25.000	0.0	93	0.000
44	S	Toluene-d8	25.000	25.783	-3.1	92	0.000
45	C	Toluene	50.000	50.985	-2.0#	93	0.000
46	Y	Tetrachloroethene	50.000	51.515	-3.0	94	0.000
47	T	1,1,2-Trichloroethane	50.000	47.535	4.9	93	0.000
48	Y	Dibromochloromethane	50.000	51.298	-2.6	94	0.000
49	T	1,3-Dichloropropane	50.000	47.586	4.8	93	0.000
50	T	1,2-Dibromoethane	50.000	49.196	1.6	94	0.000
51	Y	2-Hexanone	50.000	40.467	19.1	87	0.000
52	P	Chlorobenzene	50.000	50.087	-0.2	93	0.000
53	T	1-Chlorohexane	50.000	54.725	-9.5	96	0.000
54	C	Ethylbenzene	50.000	50.918	-1.8#	92	0.000
55	T	1,1,1,2-Tetrachloroethane	50.000	51.159	-2.3	93	0.000

Data Path : D:\MassHunter\GCMS\1\data\060515\
Data File : 17M012520.D
Acq On : 05 Jun 2015 09:49
Operator : ADC
Sample : WG526424-02 50ug/L CCV 8260
Misc : 1,1 STD70762
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 05 10:01:31 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	m-,p-Xylene	100.000	105.206	-5.2	92	0.000
57	T	o-Xylene	50.000	50.520	-1.0	91	0.000
58	T	Styrene	50.000	51.696	-3.4	92	0.000
59	P	Bromoform	50.000	52.510	-5.0	93	0.000
60	T	Isopropylbenzene	50.000	51.433	-2.9	91	0.000
61	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	92	0.000
62	T	1,3,5-Trimethylbenzene	50.000	51.358	-2.7	90	0.000
63	S	p-Bromofluorobenzene	25.000	25.442	-1.8	92	0.000
64	T	Bromobenzene	50.000	49.254	1.5	91	0.000
65	T	n-Propylbenzene	50.000	52.543	-5.1	92	0.000
66	P	1,1,2,2-Tetrachloroethane	50.000	46.613	6.8	91	0.000
67	T	2-Chlorotoluene	50.000	49.842	0.3	91	0.000
68	T	1,2,3-Trichloropropane	50.000	47.357	5.3	89	0.000
69	T	1,2,4-Trimethylbenzene	50.000	51.336	-2.7	90	0.000
70	T	4-Chlorotoluene	50.000	50.846	-1.7	91	0.000
71	T	tert-Butylbenzene	50.000	50.529	-1.1	90	0.000
72	T	sec-Butylbenzene	50.000	51.810	-3.6	90	0.000
73	T	p-Isopropyltoluene	50.000	53.045	-6.1	90	0.000
74	T	1,3-Dichlorobenzene	50.000	50.118	-0.2	91	0.000
75	T	1,4-Dichlorobenzene	50.000	48.868	2.3	91	0.000
76	T	n-Butylbenzene	50.000	54.769	-9.5	91	0.000
77	T	1,2-Dichlorobenzene	50.000	47.784	4.4	90	0.000
78	T	1,2-Dibromo-3-Chloropropane	50.000	45.041	9.9	91	0.000
79	Y	Hexachlorobutadiene	50.000	46.953	6.1	84	0.000
80	T	1,2,4-Trichlorobenzene	50.000	47.752	4.5	88	0.000
81	T	Naphthalene	50.000	42.068	15.9	84	0.000
82	T	1,2,3-Trichlorobenzene	50.000	44.152	11.7	85	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060815\
Data File : 17M012565.D
Acq On : 08 Jun 2015 12:04
Operator : ADC
Sample : WG526670-02 50ug/L CCV 8260
Misc : 1,1 STD70762
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 08 12:16:35 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	227557	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	173083	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	95108	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.206	111	60826	25.4615 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.846%		
32) 1,2-Dichloroethane-d4	4.840	65	52172	25.2377 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.951%		
44) Toluene-d8	6.734	98	234949	25.5668 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.267%		
63) p-Bromofluorobenzene	8.737	95	81309	24.7535 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.014%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.041	85	156111	61.1854 ug/L	99
3) Chloromethane	1.151	50	145061	51.9899 ug/L	100
4) Vinyl Chloride	1.201	62	149791	50.9177 ug/L	100
5) 1,3-Butadiene	1.209	54	24502	15.7948 ug/L	98
6) Bromomethane	1.389	94	79959	46.0384 ug/L	100
7) Chloroethane	1.458	64	67605	47.7582 ug/L	98
8) Trichlorofluoromethane	1.545	101	195918	55.4141 ug/L	100
9) Diethyl ether	1.757	59	59907	40.6138 ug/L	100
10) 1,1-Dichloroethene	1.878	61	172931	49.0671 ug/L	100
11) Carbon Disulfide	1.890	76	214948	32.9511 ug/L	99
12) 1,1,2-Trichloro-1,2,2-...	1.907	101	119528	50.5541 ug/L	100
13) Acrolein	2.124	56	5386	28.0290 ug/L	99
14) Methylene Chloride	2.304	84	120313	48.0014 ug/L	99
15) Acetone	2.356	43	16095	44.9185 ug/L	98
16) trans-1,2-Dichloroethene	2.434	96	118101	49.4596 ug/L	100
17) Methyl Tert Butyl Ether	2.544	73	244360	46.6926 ug/L	100
18) 1,1-Dichloroethane	2.996	63	217199	49.6987 ug/L	100
19) Acrylonitrile	3.057	53	22984	46.4383 ug/L	100
20) Vinyl Acetate	3.303	86	10089	47.1477 ug/L	99
21) cis-1,2-Dichloroethene	3.592	96	131117	49.7091 ug/L	100
22) 2,2-Dichloropropane	3.720	77	182104	54.4472 ug/L	100
23) Cyclohexane	3.824	56	174019	45.5273 ug/L	100
24) Bromochloromethane	3.835	130	81059	50.2233 ug/L	100
25) Chloroform	3.966	83	210965	50.3026 ug/L	100
26) Carbon Tetrachloride	4.111	117	180338	53.4574 ug/L	100
28) 1,1,1-Trichloroethane	4.206	97	191987	50.1216 ug/L	100
29) 1,1-Dichloropropene	4.374	75	164474	50.8039 ug/L	100
30) 2-Butanone	4.394	43	26799	46.1821 ug/L	97
31) Benzene	4.675	78	482387	47.8983 ug/L	100
33) 1,2-Dichloroethane	4.915	62	127977	48.0316 ug/L	100
34) Trichloroethene	5.344	130	140052	46.8564 ug/L	100
35) Dibromomethane	5.764	93	64192	51.5133 ug/L	100
36) 1,2-Dichloropropane	5.874	63	126965	48.1619 ug/L	99
37) Bromodichloromethane	5.961	83	157229	49.7937 ug/L	100
38) 1,4-Dioxane	6.172	88	1364	90.9749 ug/L	99
39) 2-Chloroethyl Vinyl Ether	6.548	63	108084	93.2969 ug/L	100
40) cis-1,3-Dichloropropene	6.566	75	187194	50.8510 ug/L	100
41) 4-Methyl-2-Pentanone	7.831	58	22459	43.0893 ug/L	99
42) trans-1,3-Dichloropropene	7.165	75	153070	53.3059 ug/L	100
45) Toluene	6.777	91	549350	48.8360 ug/L	100
46) Tetrachloroethene	7.107	166	156267	49.8102 ug/L	100
47) 1,1,2-Trichloroethane	7.295	97	87882	46.5177 ug/L	99
48) Dibromochloromethane	7.434	129	123544	50.0389 ug/L	100
49) 1,3-Dichloropropane	7.515	76	141359	46.3999 ug/L	99

Data Path : D:\MassHunter\GCMS\1\data\060815\
Data File : 17M012565.D
Acq On : 08 Jun 2015 12:04
Operator : ADC
Sample : WG526670-02 50ug/L CCV 8260
Misc : 1,1 STD70762
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 08 12:16:35 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
50) 1,2-Dibromoethane	7.602	107	88423	47.9192	ug/L	99
51) 2-Hexanone	7.831	43	41569	44.4675	ug/L	100
52) Chlorobenzene	8.002	112	359352	48.0457	ug/L	99
53) 1-Chlorohexane	8.016	69	34852	53.3635	ug/L	90
54) Ethylbenzene	8.040	106	196574	49.1382	ug/L	98
55) 1,1,1,2-Tetrachloroethane	8.054	131	130548	49.1514	ug/L	100
56) m-,p-Xylene	8.138	106	484675	101.3037	ug/L	99
57) o-Xylene	8.399	106	229046	48.4604	ug/L	99
58) Styrene	8.433	104	376116	49.8904	ug/L	100
59) Bromoform	8.433	173	80952	51.7550	ug/L	99
60) Isopropylbenzene	8.590	105	616722	50.1472	ug/L	100
62) 1,3,5-Trimethylbenzene	8.925	105	538975	49.1554	ug/L	100
64) Bromobenzene	8.789	156	160576	46.6617	ug/L	99
65) n-Propylbenzene	8.818	91	715673	49.7469	ug/L	100
66) 1,1,2,2-Tetrachloroethane	8.859	83	97865	45.6679	ug/L	99
67) 2-Chlorotoluene	8.894	91	417157	47.1009	ug/L	100
68) 1,2,3-Trichloropropane	8.923	110	25937	46.2714	ug/L	99
69) 1,2,4-Trimethylbenzene	9.125	105	534699	48.8878	ug/L	100
70) 4-Chlorotoluene	8.983	91	426181	47.7626	ug/L	100
71) tert-Butylbenzene	9.088	134	99476	48.4989	ug/L	100
72) sec-Butylbenzene	9.177	105	681454	49.7039	ug/L	100
73) p-Isopropyltoluene	9.253	119	596508	50.9963	ug/L	100
74) 1,3-Dichlorobenzene	9.279	146	310032	47.5666	ug/L	100
75) 1,4-Dichlorobenzene	9.325	146	304234	46.5507	ug/L	100
76) n-Butylbenzene	9.455	91	534120	52.2662	ug/L	100
77) 1,2-Dichlorobenzene	9.528	146	282696	46.0780	ug/L	100
78) 1,2-Dibromo-3-Chloropr...	9.907	75	16316	44.8097	ug/L	99
79) Hexachlorobutadiene	10.208	225	136018	46.4952	ug/L	99
80) 1,2,4-Trichlorobenzene	10.223	180	221160	46.4784	ug/L	99
81) Naphthalene	10.376	128	338335	42.0905	ug/L	100
82) 1,2,3-Trichlorobenzene	10.463	180	190711	43.7005	ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\060815\
Data File : 17M012565.D
Acq On : 08 Jun 2015 12:04
Operator : ADC
Sample : WG526670-02 50ug/L CCV 8260
Misc : 1,1 STD70762
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 08 12:16:35 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

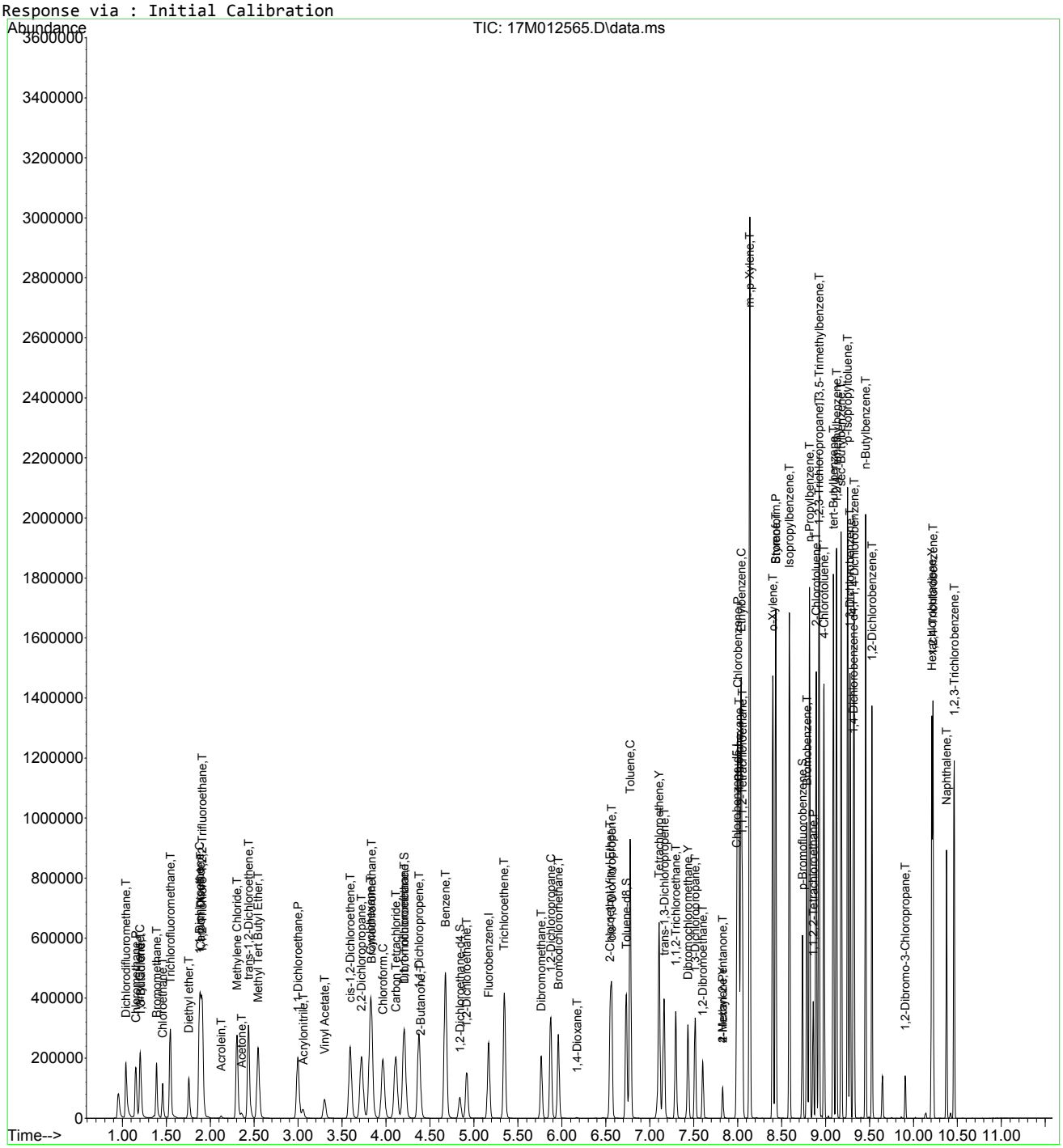

826_VMS.M Mon Jun 08 12:16:36 2015 Page: 3

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\060815\
Data File : 17M012565.D
Acq On : 08 Jun 2015 12:04
Operator : ADC
Sample : WG526670-02 50ug/L CCV 8260
Misc : 1,1 STD70762
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 08 12:16:35 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.000	1.000	0.0	92	0.000
2	T	Dichlorodifluoromethane	0.280	0.343	-22.5	104	0.000
3	P	Chloromethane	0.307	0.319	-3.9	96	0.000
4	C	Vinyl Chloride	0.323	0.329	-1.9#	92	0.000
5	T	1,3-Butadiene	0.170	0.054	68.2#	28#	0.000
6	T	Bromomethane	0.191	0.176	7.9	87	0.000
7	T	Chloroethane	0.156	0.149	4.5	91	0.000
8	T	Trichlorofluoromethane	0.388	0.430	-10.8	91	0.000
9	T	Diethyl ether	0.162	0.132	18.5	79	0.000
10	C	1,1-Dichloroethene	0.387	0.380	1.8#	88	0.000
11	T	Carbon Disulfide	0.717	0.472	34.2#	61	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.260	0.263	-1.2	90	0.000
13	T	Acrolein	0.021	0.012	42.9#	57	0.000
14	T	Methylene Chloride	0.275	0.264	4.0	91	0.000
15	T	Acetone	0.039	0.035	10.3	94	0.000
16	T	trans-1,2-Dichloroethene	0.262	0.259	1.1	91	0.000
17	T	Methyl Tert Butyl Ether	0.575	0.537	6.6	91	0.000
18	P	1,1-Dichloroethane	0.480	0.477	0.6	90	0.000
19	T	Acrylonitrile	0.054	0.051	5.6	94	0.000
20	T	Vinyl Acetate	0.021	0.022	-4.8	91	0.000
21	T	cis-1,2-Dichloroethene	0.290	0.288	0.7	90	0.000
22	T	2,2-Dichloropropane	0.367	0.400	-9.0	90	0.000
23	T	Cyclohexane	0.420	0.382	9.0	81	0.000
24	T	Bromochloromethane	0.177	0.178	-0.6	91	0.000
25	C	Chloroform	0.461	0.464	-0.7#	89	0.000
26	T	Carbon Tetrachloride	0.371	0.396	-6.7	91	0.000
27	S	Dibromofluoromethane	0.262	0.267	-1.9	90	0.000
28	T	1,1,1-Trichloroethane	0.421	0.422	-0.2	90	0.000
29	T	1,1-Dichloropropene	0.356	0.361	-1.4	90	0.000
30	T	2-Butanone	0.064	0.059	7.8	97	0.000
31	T	Benzene	1.106	1.060	4.2	89	0.000
32	S	1,2-Dichloroethane-d4	0.227	0.229	-0.9	92	0.000
33	T	1,2-Dichloroethane	0.293	0.281	4.1	89	0.000
34	T	Trichloroethene	0.328	0.308	6.1	90	0.000
35	T	Dibromomethane	0.137	0.141	-2.9	91	0.000
36	C	1,2-Dichloropropane	0.290	0.279	3.8#	88	0.000
37	T	Bromodichloromethane	0.347	0.345	0.6	89	0.000
38	T	1,4-Dioxane	0.002	0.001	50.0#	94	0.000
39	T	2-Chloroethyl Vinyl Ether	0.127	0.119	6.3	90	0.000
40	T	cis-1,3-Dichloropropene	0.404	0.411	-1.7	90	0.000
41	T	4-Methyl-2-Pentanone	0.057	0.049	14.0	96	0.000
42	T	trans-1,3-Dichloropropene	0.315	0.336	-6.7	91	0.000
43	I	Chlorobenzene-d5	1.000	1.000	0.0	93	0.000
44	S	Toluene-d8	1.327	1.357	-2.3	91	0.000
45	C	Toluene	1.625	1.587	2.3#	89	0.000
46	Y	Tetrachloroethene	0.453	0.451	0.4	91	0.000
47	T	1,1,2-Trichloroethane	0.273	0.254	7.0	91	0.000
48	Y	Dibromochloromethane	0.357	0.357	0.0	92	0.000
49	T	1,3-Dichloropropane	0.440	0.408	7.3	90	0.000
50	T	1,2-Dibromoethane	0.267	0.255	4.5	91	0.000
51	Y	2-Hexanone	0.135	0.120	11.1	95	0.000
52	P	Chlorobenzene	1.080	1.038	3.9	88	0.000
53	T	1-Chlorohexane	0.094	0.101	-7.4	94	0.000
54	C	Ethylbenzene	0.578	0.568	1.7#	89	0.000
55	T	1,1,1,2-Tetrachloroethane	0.384	0.377	1.8	89	0.000

Data Path : D:\MassHunter\GCMS\1\data\060815\
Data File : 17M012565.D
Acq On : 08 Jun 2015 12:04
Operator : ADC
Sample : WG526670-02 50ug/L CCV 8260
Misc : 1,1 STD70762
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 08 12:16:35 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
56	T	m-,p-Xylene	0.691	0.700	-1.3	88	0.000
57	T	o-Xylene	0.683	0.662	3.1	87	0.000
58	T	Styrene	1.089	1.087	0.2	88	0.000
59	P	Bromoform	0.226	0.234	-3.5	91	0.000
60	T	Isopropylbenzene	1.776	1.782	-0.3	89	0.000
61	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	93	0.000
62	T	1,3,5-Trimethylbenzene	2.882	2.833	1.7	87	0.000
63	S	p-Bromofluorobenzene	0.863	0.855	0.9	91	0.000
64	T	Bromobenzene	0.905	0.844	6.7	88	0.000
65	T	n-Propylbenzene	3.782	3.762	0.5	88	0.000
66	P	1,1,2,2-Tetrachloroethane	0.563	0.514	8.7	90	0.000
67	T	2-Chlorotoluene	2.328	2.193	5.8	87	0.000
68	T	1,2,3-Trichloropropane	0.147	0.136	7.5	88	0.000
69	T	1,2,4-Trimethylbenzene	2.875	2.811	2.2	87	0.000
70	T	4-Chlorotoluene	2.345	2.241	4.4	87	0.000
71	T	tert-Butylbenzene	0.539	0.523	3.0	87	0.000
72	T	sec-Butylbenzene	3.604	3.583	0.6	88	0.000
73	T	p-Isopropyltoluene	3.075	3.136	-2.0	88	0.000
74	T	1,3-Dichlorobenzene	1.713	1.630	4.8	88	0.000
75	T	1,4-Dichlorobenzene	1.718	1.599	6.9	88	0.000
76	T	n-Butylbenzene	2.686	2.808	-4.5	88	0.000
77	T	1,2-Dichlorobenzene	1.613	1.486	7.9	88	0.000
78	T	1,2-Dibromo-3-Chloropropane	0.096	0.086	10.4	92	0.000
79	Y	Hexachlorobutadiene	0.769	0.715	7.0	84	0.000
80	T	1,2,4-Trichlorobenzene	1.251	1.163	7.0	86	0.000
81	T	Naphthalene	2.113	1.779	15.8	85	0.000
82	T	1,2,3-Trichlorobenzene	1.147	1.003	12.6	86	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Data Path : D:\MassHunter\GCMS\1\data\060815\
Data File : 17M012565.D
Acq On : 08 Jun 2015 12:04
Operator : ADC
Sample : WG526670-02 50ug/L CCV 8260
Misc : 1,1 STD70762
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 08 12:16:35 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	92	0.000
2	T	Dichlorodifluoromethane	50.000	61.185	-22.4	104	0.000
3	P	Chloromethane	50.000	51.990	-4.0	96	0.000
4	C	Vinyl Chloride	50.000	50.918	-1.8#	92	0.000
5	T	1,3-Butadiene	50.000	15.795	68.4#	28	0.000
6	T	Bromomethane	50.000	46.038	7.9	87	0.000
7	T	Chloroethane	50.000	47.758	4.5	91	0.000
8	T	Trichlorofluoromethane	50.000	55.414	-10.8	91	0.000
9	T	Diethyl ether	50.000	40.614	18.8	79	0.000
10	C	1,1-Dichloroethene	50.000	49.067	1.9#	88	0.000
11	T	Carbon Disulfide	50.000	32.951	34.1#	61	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.000	50.554	-1.1	90	0.000
13	T	Acrolein	50.000	28.029	43.9#	57	0.000
14	T	Methylene Chloride	50.000	48.001	4.0	91	0.000
15	T	Acetone	50.000	44.919	10.2	94	0.000
16	T	trans-1,2-Dichloroethene	50.000	49.460	1.1	91	0.000
17	T	Methyl Tert Butyl Ether	50.000	46.693	6.6	91	0.000
18	P	1,1-Dichloroethane	50.000	49.699	0.6	90	0.000
19	T	Acrylonitrile	50.000	46.438	7.1	94	0.000
20	T	Vinyl Acetate	50.000	47.148	5.7	91	0.000
21	T	cis-1,2-Dichloroethene	50.000	49.709	0.6	90	0.000
22	T	2,2-Dichloropropane	50.000	54.447	-8.9	90	0.000
23	T	Cyclohexane	50.000	45.527	8.9	81	0.000
24	T	Bromochloromethane	50.000	50.223	-0.4	91	0.000
25	C	Chloroform	50.000	50.303	-0.6#	89	0.000
26	T	Carbon Tetrachloride	50.000	53.457	-6.9	91	0.000
27	S	Dibromofluoromethane	25.000	25.461	-1.8	90	0.000
28	T	1,1,1-Trichloroethane	50.000	50.122	-0.2	90	0.000
29	T	1,1-Dichloropropene	50.000	50.804	-1.6	90	0.000
30	T	2-Butanone	50.000	46.182	7.6	97	0.000
31	T	Benzene	50.000	47.898	4.2	89	0.000
32	S	1,2-Dichloroethane-d4	25.000	25.238	-1.0	92	0.000
33	T	1,2-Dichloroethane	50.000	48.032	3.9	89	0.000
34	T	Trichloroethene	50.000	46.856	6.3	90	0.000
35	T	Dibromomethane	50.000	51.513	-3.0	91	0.000
36	C	1,2-Dichloropropane	50.000	48.162	3.7#	88	0.000
37	T	Bromodichloromethane	50.000	49.794	0.4	89	0.000
38	T	1,4-Dioxane	100.000	90.975	9.0	94	0.000
39	T	2-Chloroethyl Vinyl Ether	100.000	93.297	6.7	90	0.000
40	T	cis-1,3-Dichloropropene	50.000	50.851	-1.7	90	0.000
41	T	4-Methyl-2-Pentanone	50.000	43.089	13.8	96	0.000
42	T	trans-1,3-Dichloropropene	50.000	53.306	-6.6	91	0.000
43	I	Chlorobenzene-d5	25.000	25.000	0.0	93	0.000
44	S	Toluene-d8	25.000	25.567	-2.3	91	0.000
45	C	Toluene	50.000	48.836	2.3#	89	0.000
46	Y	Tetrachloroethene	50.000	49.810	0.4	91	0.000
47	T	1,1,2-Trichloroethane	50.000	46.518	7.0	91	0.000
48	Y	Dibromochloromethane	50.000	50.039	-0.1	92	0.000
49	T	1,3-Dichloropropane	50.000	46.400	7.2	90	0.000
50	T	1,2-Dibromoethane	50.000	47.919	4.2	91	0.000
51	Y	2-Hexanone	50.000	44.467	11.1	95	0.000
52	P	Chlorobenzene	50.000	48.046	3.9	88	0.000
53	T	1-Chlorohexane	50.000	53.363	-6.7	94	0.000
54	C	Ethylbenzene	50.000	49.138	1.7#	89	0.000
55	T	1,1,1,2-Tetrachloroethane	50.000	49.151	1.7	89	0.000

Data Path : D:\MassHunter\GCMS\1\data\060815\
Data File : 17M012565.D
Acq On : 08 Jun 2015 12:04
Operator : ADC
Sample : WG526670-02 50ug/L CCV 8260
Misc : 1,1 STD70762
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 08 12:16:35 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	m-,p-Xylene	100.000	101.304	-1.3	88	0.000
57	T	o-Xylene	50.000	48.460	3.1	87	0.000
58	T	Styrene	50.000	49.890	0.2	88	0.000
59	P	Bromoform	50.000	51.755	-3.5	91	0.000
60	T	Isopropylbenzene	50.000	50.147	-0.3	89	0.000
61	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	93	0.000
62	T	1,3,5-Trimethylbenzene	50.000	49.155	1.7	87	0.000
63	S	p-Bromofluorobenzene	25.000	24.754	1.0	91	0.000
64	T	Bromobenzene	50.000	46.662	6.7	88	0.000
65	T	n-Propylbenzene	50.000	49.747	0.5	88	0.000
66	P	1,1,2,2-Tetrachloroethane	50.000	45.668	8.7	90	0.000
67	T	2-Chlorotoluene	50.000	47.101	5.8	87	0.000
68	T	1,2,3-Trichloropropane	50.000	46.271	7.5	88	0.000
69	T	1,2,4-Trimethylbenzene	50.000	48.888	2.2	87	0.000
70	T	4-Chlorotoluene	50.000	47.763	4.5	87	0.000
71	T	tert-Butylbenzene	50.000	48.499	3.0	87	0.000
72	T	sec-Butylbenzene	50.000	49.704	0.6	88	0.000
73	T	p-Isopropyltoluene	50.000	50.996	-2.0	88	0.000
74	T	1,3-Dichlorobenzene	50.000	47.567	4.9	88	0.000
75	T	1,4-Dichlorobenzene	50.000	46.551	6.9	88	0.000
76	T	n-Butylbenzene	50.000	52.266	-4.5	88	0.000
77	T	1,2-Dichlorobenzene	50.000	46.078	7.8	88	0.000
78	T	1,2-Dibromo-3-Chloropropane	50.000	44.810	10.4	92	0.000
79	Y	Hexachlorobutadiene	50.000	46.495	7.0	84	0.000
80	T	1,2,4-Trichlorobenzene	50.000	46.478	7.0	86	0.000
81	T	Naphthalene	50.000	42.091	15.8	85	0.000
82	T	1,2,3-Trichlorobenzene	50.000	43.700	12.6	86	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

2.1.1.5 Raw QC Data

Data Path : D:\MassHunter\GCMS\1\data\051815\
Data File : 17M011944.D
Acq On : 18 May 2015 10:58
Operator : ADC
Sample : WG523986-01 50ng BFB 8260
Misc : 1,1 STD70032
ALS Vial : 1 Sample Multiplier: 1

Integration File: lscint.p

Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
Last Update : Mon May 18 15:03:59 2015

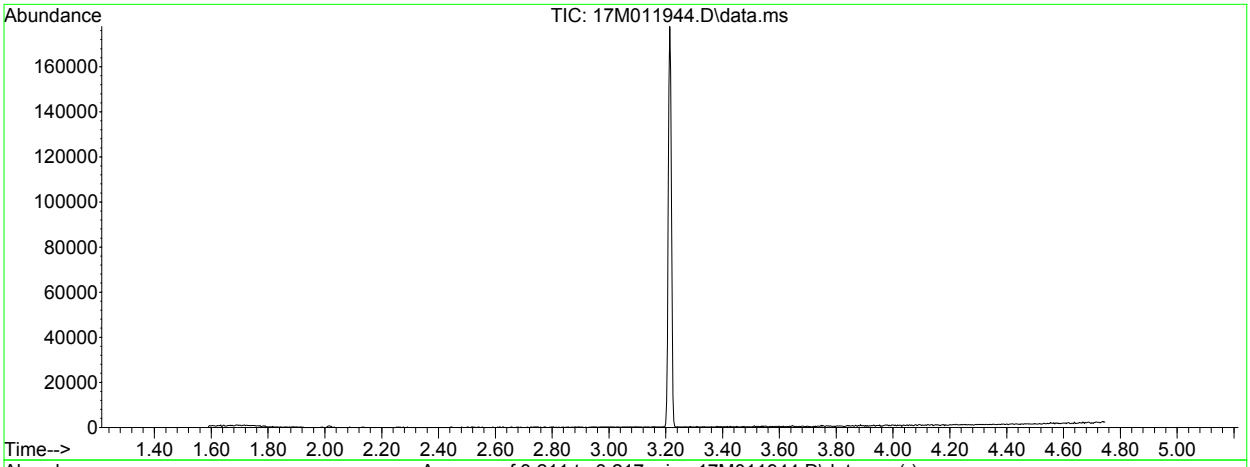

AutoFind: Scans 561, 562, 563; Background Corrected with Scan 552

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	15.4	5148	PASS
75	95	30	60	46.4	15549	PASS
95	95	100	100	100.0	33515	PASS
96	95	5	9	6.6	2212	PASS
173	174	0.00	2	0.9	278	PASS
174	95	50	100	94.1	31549	PASS
175	174	5	9	7.3	2299	PASS
176	174	95	101	98.5	31069	PASS
177	176	5	9	6.5	2034	PASS

Data Path : D:\MassHunter\GCMS\1\data\060515\
Data File : 17M012519.D
Acq On : 05 Jun 2015 09:30
Operator : ADC
Sample : WG526424-01 50ng BFB 8260
Misc : 1,1 STD70707
ALS Vial : 1 Sample Multiplier: 1

Integration File: lscint.p

Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
Last Update : Mon May 18 15:03:59 2015

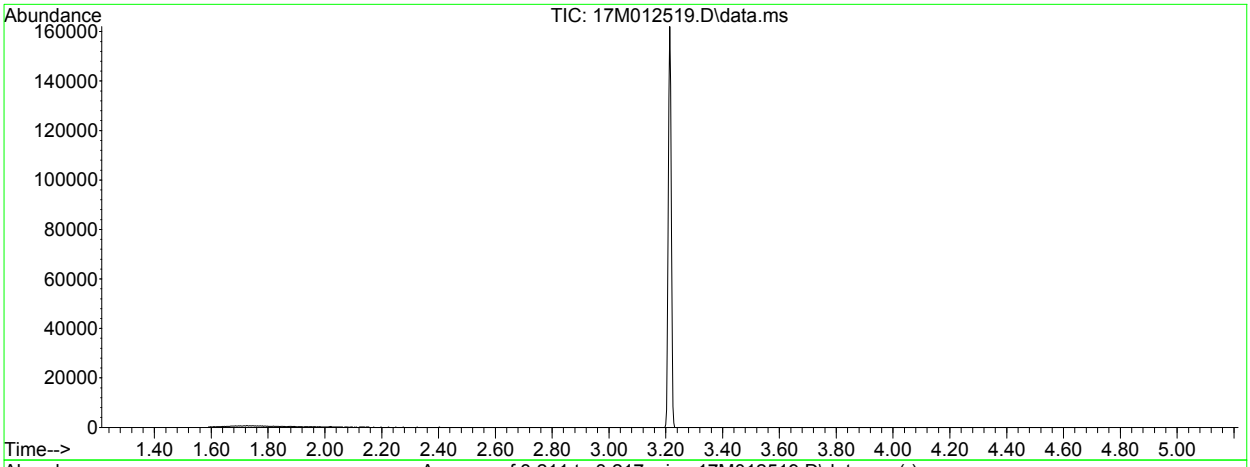

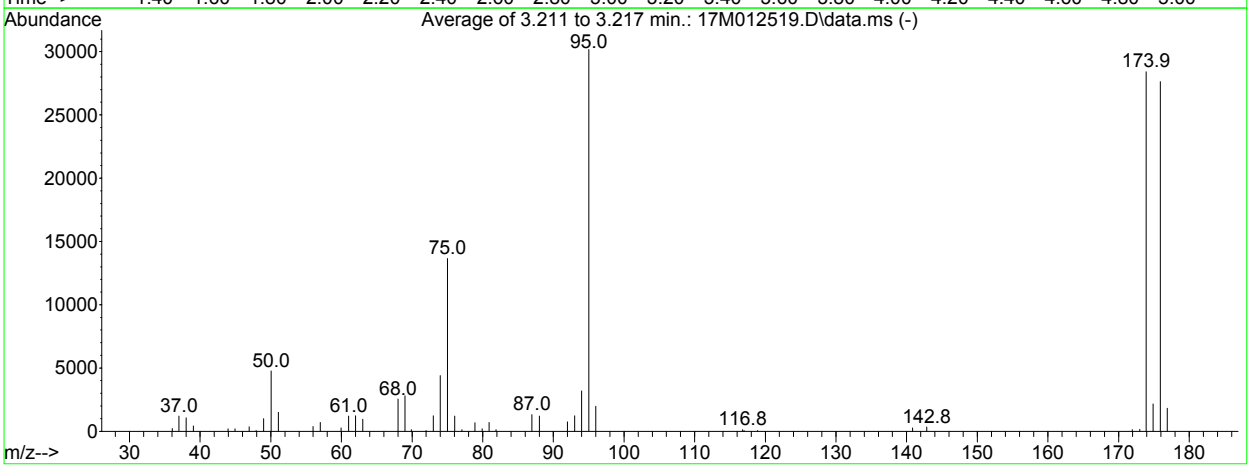

AutoFind: Scans 561, 562, 563; Background Corrected with Scan 552

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	15.8	4758	PASS
75	95	30	60	45.2	13649	PASS
95	95	100	100	100.0	30179	PASS
96	95	5	9	6.6	1981	PASS
173	174	0.00	2	0.6	158	PASS
174	95	50	100	94.2	28421	PASS
175	174	5	9	7.6	2155	PASS
176	174	95	101	97.3	27640	PASS
177	176	5	9	6.5	1810	PASS

Data Path : D:\MassHunter\GCMS\1\data\060815\
Data File : 17M012564.D
Acq On : 08 Jun 2015 11:45
Operator : ADC
Sample : WG526670-01 50ng BFB 8260
Misc : 1,1 STD70707
ALS Vial : 1 Sample Multiplier: 1

Integration File: lscint.p

Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
Last Update : Mon May 18 15:03:59 2015

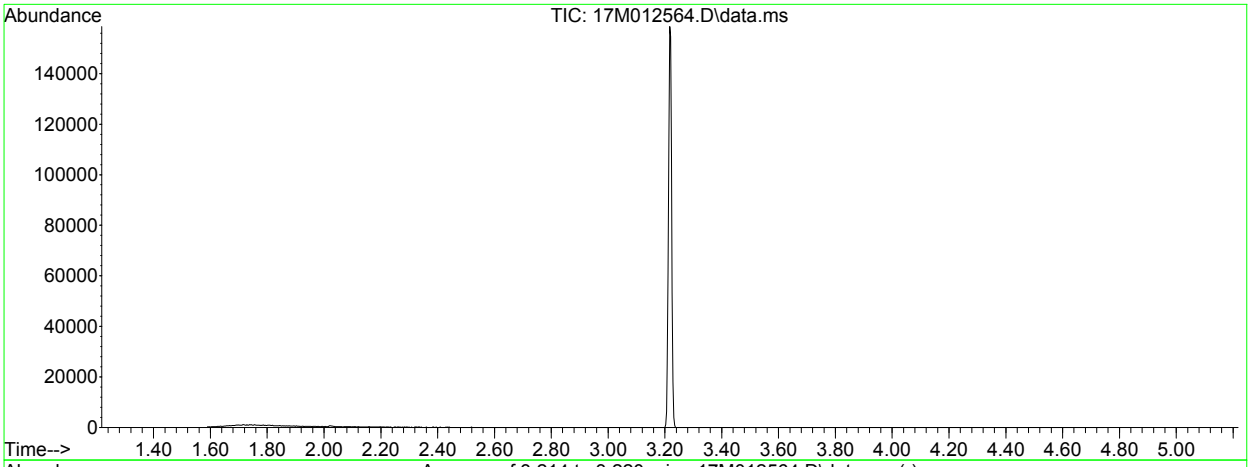

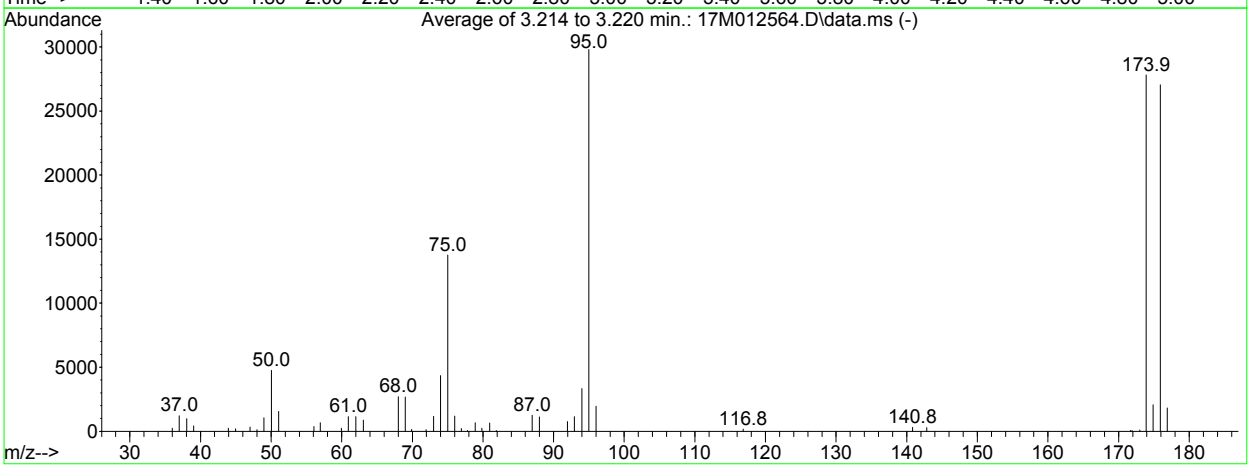

AutoFind: Scans 562, 563, 564; Background Corrected with Scan 554

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.0	4760	PASS
75	95	30	60	46.2	13766	PASS
95	95	100	100	100.0	29816	PASS
96	95	5	9	6.6	1956	PASS
173	174	0.00	2	0.4	101	PASS
174	95	50	100	93.3	27813	PASS
175	174	5	9	7.4	2066	PASS
176	174	95	101	97.2	27045	PASS
177	176	5	9	6.7	1808	PASS

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060515\
Data File : 17M012522.D
Acq On : 05 Jun 2015 10:33
Operator : ADC
Sample : WG526427-01 BLANK 8260
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 08 16:03:20 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	228943	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	172234	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	94192	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.206	111	61051	25.4009 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.604%		
32) 1,2-Dichloroethane-d4	4.840	65	54771	26.3345 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 105.338%		
44) Toluene-d8	6.734	98	237004	25.9176 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.670%		
63) p-Bromofluorobenzene	8.737	95	82969	25.5045 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.018%		
Target Compounds					Qvalue
7) Chloroethane	1.421	64	757	0.5315 ug/L #	48

(#) = qualifier out of range (m) = manual integration (+) = signals summed

826_VMS.M Mon Jun 08 16:03:20 2015 Page: 1

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060515\
Data File : 17M012522.D
Acq On : 05 Jun 2015 10:33
Operator : ADC
Sample : WG526427-01 BLANK 8260
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 08 16:03:20 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

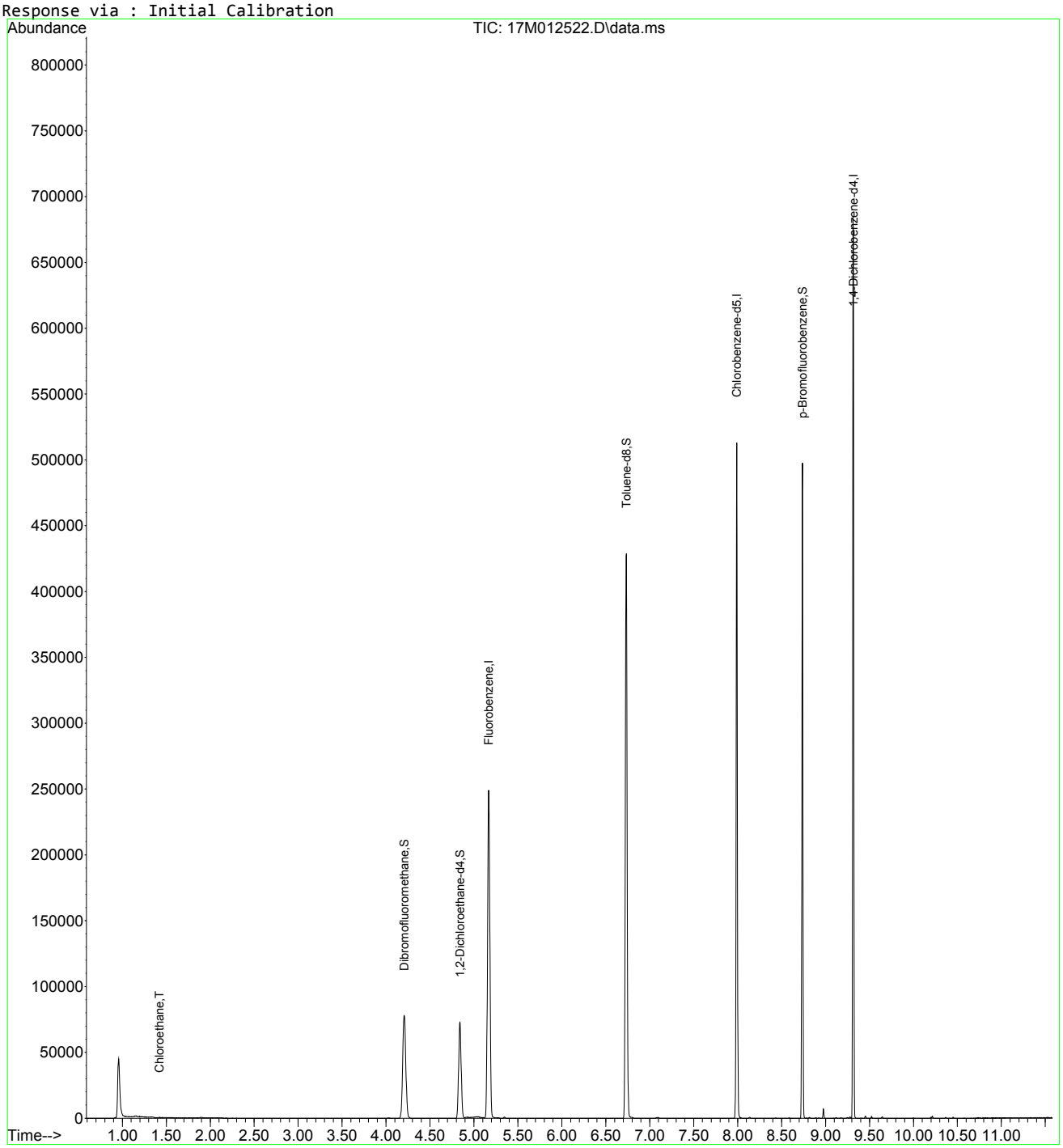

826_VMS.M Mon Jun 08 16:03:21 2015 Page: 2

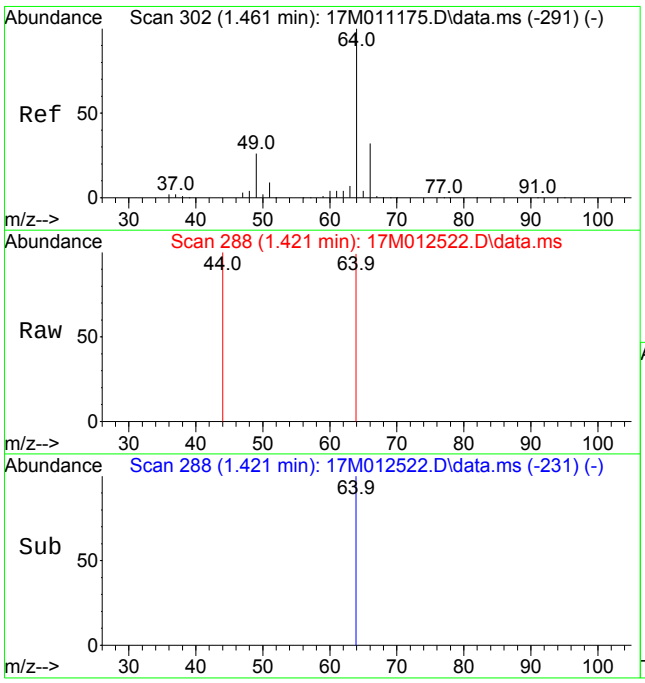

#7
Chloroethane
Concen: 0.5315 ug/L
RT: 1.421 min Scan# 288
Delta R.T. -0.034 min
Lab File: 17M012522.D
Acq: 05 Jun 2015 10:33

Tgt Ion: 64 Resp: 757

Ion	Ratio	Lower	Upper
64	100		
49	0.0	16.2	37.8#

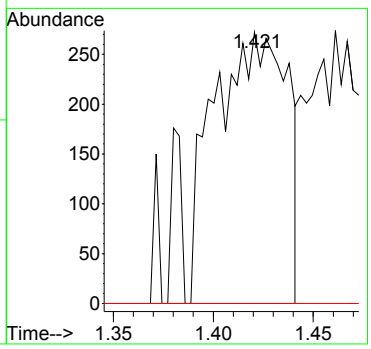

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060815\
Data File : 17M012567.D
Acq On : 08 Jun 2015 12:48
Operator : ADC
Sample : WG526673-01 BLANK 8260
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 09 16:38:43 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	219760	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	165711	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	87298	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.206	111	58075	25.1724 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.690%		
32) 1,2-Dichloroethane-d4	4.840	65	51942	26.0179 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 104.072%		
44) Toluene-d8	6.734	98	226755	25.7729 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.092%		
63) p-Bromofluorobenzene	8.737	95	78551	26.0533 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.213%		

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

826_VMS.M Tue Jun 09 16:38:44 2015 Page: 1

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060815\
Data File : 17M012567.D
Acq On : 08 Jun 2015 12:48
Operator : ADC
Sample : WG526673-01 BLANK 8260
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 09 16:38:43 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

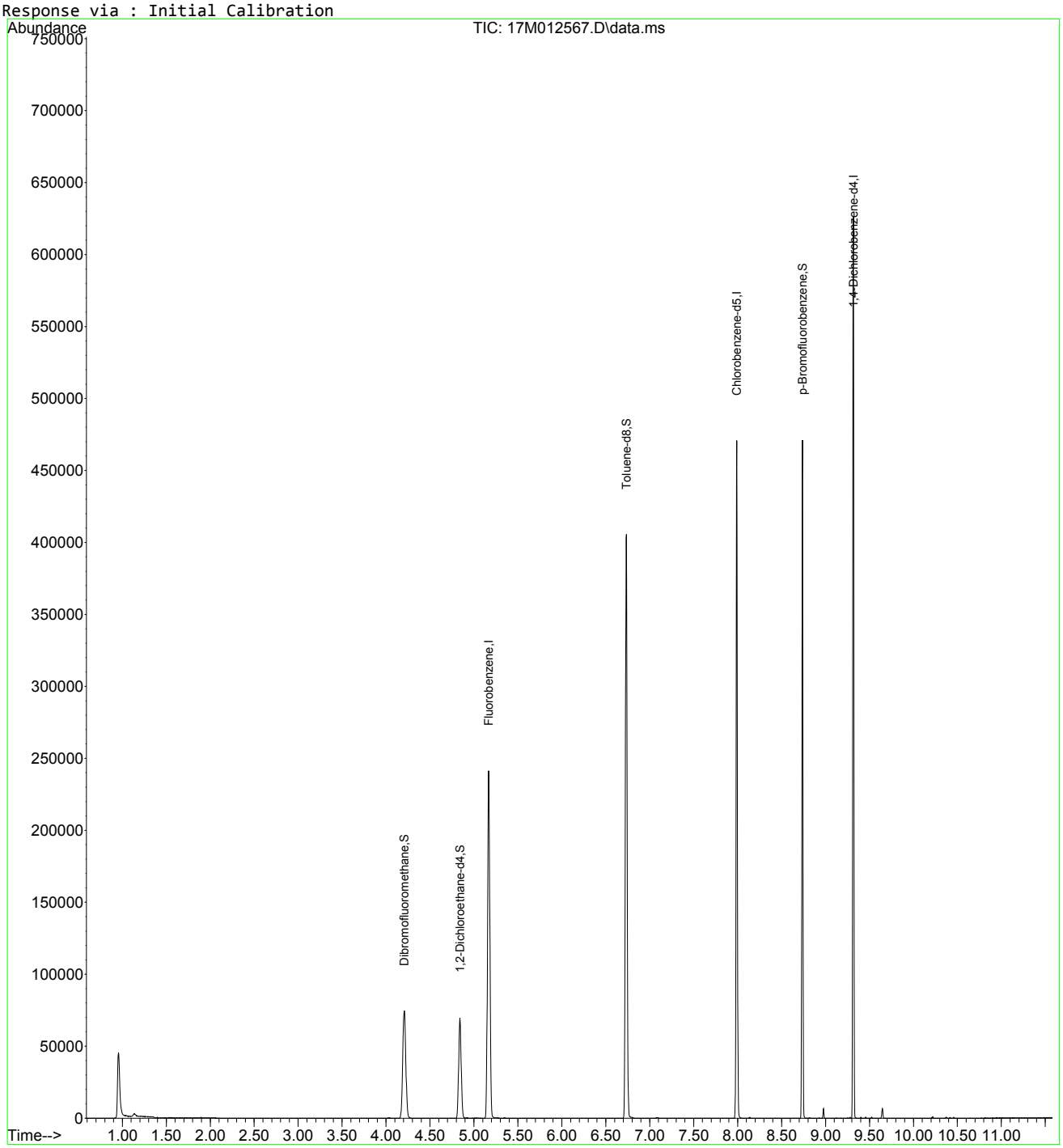

826_VMS.M Tue Jun 09 16:38:44 2015 Page: 2

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060515\
Data File : 17M012523.D
Acq On : 05 Jun 2015 10:52
Operator : ADC
Sample : WG526427-02 20ug/L LCS 8260
Misc : 1,1 STD70797
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 05 11:04:29 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	218822	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	168908	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	96634	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.206	111	58920	25.6481 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.592%		
32) 1,2-Dichloroethane-d4	4.837	65	50793	25.5514 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.206%		
44) Toluene-d8	6.733	98	226765	25.2862 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.145%		
63) p-Bromofluorobenzene	8.737	95	80458	24.1076 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.430%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.038	85	65583	26.7304 ug/L	99
3) Chloromethane	1.151	50	51390	19.1534 ug/L	100
4) Vinyl Chloride	1.200	62	59642	21.0831 ug/L	99
5) 1,3-Butadiene	1.209	54	18255	12.2375 ug/L	100
6) Bromomethane	1.386	94	26496	15.8647 ug/L	99
7) Chloroethane	1.458	64	26015	19.1114 ug/L	95
8) Trichlorofluoromethane	1.536	101	72662	21.3724 ug/L	100
9) Diethyl ether	1.756	59	147162	103.7507 ug/L	100
10) 1,1-Dichloroethene	1.872	61	63622	18.7726 ug/L	100
11) Carbon Disulfide	1.887	76	68386	10.9019 ug/L	98
12) 1,1,2-Trichloro-1,2,2-...	1.904	101	44762	19.6877 ug/L	100
13) Acrolein	2.124	56	17342	93.8513 ug/L	100
14) Methylene Chloride	2.301	84	48037	19.9304 ug/L	99
15) Acetone	2.361	43	7353	21.3402 ug/L	98
16) trans-1,2-Dichloroethene	2.431	96	46584	20.2877 ug/L	100
17) Methyl Tert Butyl Ether	2.547	73	103620	20.5902 ug/L	100
18) 1,1-Dichloroethane	2.993	63	81958	19.5019 ug/L	100
19) Acrylonitrile	3.053	53	8973	18.8533 ug/L	99
20) Vinyl Acetate	3.300	86	4736	24.7571 ug/L	99
21) cis-1,2-Dichloroethene	3.589	96	51463	20.2895 ug/L	100
22) 2,2-Dichloropropane	3.719	77	67426	20.9644 ug/L	98
23) Cyclohexane	3.821	56	71911	19.5646 ug/L #	76
24) Bromochloromethane	3.835	130	31531	20.3161 ug/L	99
25) Chloroform	3.966	83	83561	20.7197 ug/L	100
26) Carbon Tetrachloride	4.110	117	66673	20.5527 ug/L	100
28) 1,1,1-Trichloroethane	4.206	97	73804	20.0370 ug/L	99
29) 1,1-Dichloropropene	4.371	75	62314	20.0164 ug/L	100
30) 2-Butanone	4.394	43	11425	20.4744 ug/L	93
31) Benzene	4.675	78	190939	19.7160 ug/L	100
33) 1,2-Dichloroethane	4.918	62	51849	20.2365 ug/L	100
34) Trichloroethene	5.347	130	55419	19.2814 ug/L	100
35) Dibromomethane	5.766	93	25587	21.3529 ug/L	98
36) 1,2-Dichloropropane	5.874	63	51050	20.1379 ug/L	99
37) Bromodichloromethane	5.960	83	60703	19.9917 ug/L	100
38) 1,4-Dioxane	6.178	88	1913	132.6849 ug/L	99
39) 2-Chloroethyl Vinyl Ether	6.548	63	21175	19.0077 ug/L	99
40) cis-1,3-Dichloropropene	6.566	75	75498	21.3276 ug/L	100
41) 4-Methyl-2-Pentanone	7.831	58	8999	17.9545 ug/L	99
42) trans-1,3-Dichloropropene	7.165	75	58390	21.1457 ug/L	100
45) Toluene	6.777	91	217055	19.7726 ug/L	99
46) Tetrachloroethene	7.107	166	58756	19.1914 ug/L	100
47) 1,1,2-Trichloroethane	7.295	97	35748	19.3898 ug/L	100
48) Dibromochloromethane	7.434	129	47595	19.7538 ug/L	100
49) 1,3-Dichloropropane	7.515	76	58502	19.6774 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\060515\
Data File : 17M012523.D
Acq On : 05 Jun 2015 10:52
Operator : ADC
Sample : WG526427-02 20ug/L LCS 8260
Misc : 1,1 STD70797
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 05 11:04:29 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50)	1,2-Dibromoethane	7.602	107	35436	19.6786 ug/L	100
51)	2-Hexanone	7.831	43	17041	18.6798 ug/L	99
52)	Chlorobenzene	8.002	112	134977	18.4926 ug/L	100
53)	1-Chlorohexane	8.013	69	12509	19.6265 ug/L	91
54)	Ethylbenzene	8.036	106	77579	19.8720 ug/L	99
55)	1,1,1,2-Tetrachloroethane	8.054	131	51077	19.7058 ug/L	99
56)	m-,p-Xylene	8.138	106	182493	39.0864 ug/L	99
57)	o-Xylene	8.398	106	84425	18.3037 ug/L	99
58)	Styrene	8.433	104	148800	20.2256 ug/L	100
59)	Bromoform	8.433	173	33125	21.7013 ug/L	99
60)	Isopropylbenzene	8.589	105	222403	18.5311 ug/L	99
62)	1,3,5-Trimethylbenzene	8.925	105	213856	19.1960 ug/L	100
64)	Bromobenzene	8.786	156	63993	18.3020 ug/L	99
65)	n-Propylbenzene	8.818	91	260438	17.8173 ug/L	99
66)	1,1,2,2-Tetrachloroethane	8.859	83	41273	18.9556 ug/L	100
67)	2-Chlorotoluene	8.890	91	154356	17.1530 ug/L	100
68)	1,2,3-Trichloropropane	8.922	110	10817	18.9927 ug/L	95
69)	1,2,4-Trimethylbenzene	9.122	105	214327	19.2866 ug/L	99
70)	4-Chlorotoluene	8.980	91	157078	17.3259 ug/L	100
71)	tert-Butylbenzene	9.087	134	37024	17.7658 ug/L	100
72)	sec-Butylbenzene	9.177	105	249388	17.9026 ug/L	100
73)	p-Isopropyltoluene	9.250	119	214350	18.0357 ug/L	100
74)	1,3-Dichlorobenzene	9.278	146	114701	17.3201 ug/L	100
75)	1,4-Dichlorobenzene	9.322	146	125033	18.8291 ug/L	100
76)	n-Butylbenzene	9.455	91	210867	20.3085 ug/L	100
77)	1,2-Dichlorobenzene	9.525	146	107741	17.2839 ug/L	100
78)	1,2-Dibromo-3-Chloropr...	9.904	75	7144	19.3102 ug/L	98
79)	Hexachlorobutadiene	10.202	225	55999	18.8399 ug/L	99
80)	1,2,4-Trichlorobenzene	10.217	180	92303	19.0918 ug/L	99
81)	Naphthalene	10.370	128	146261	17.9082 ug/L	100
82)	1,2,3-Trichlorobenzene	10.454	180	81969	18.4862 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\060515\
Data File : 17M012523.D
Acq On : 05 Jun 2015 10:52
Operator : ADC
Sample : WG526427-02 20ug/L LCS 8260
Misc : 1,1 STD70797
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 05 11:04:29 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

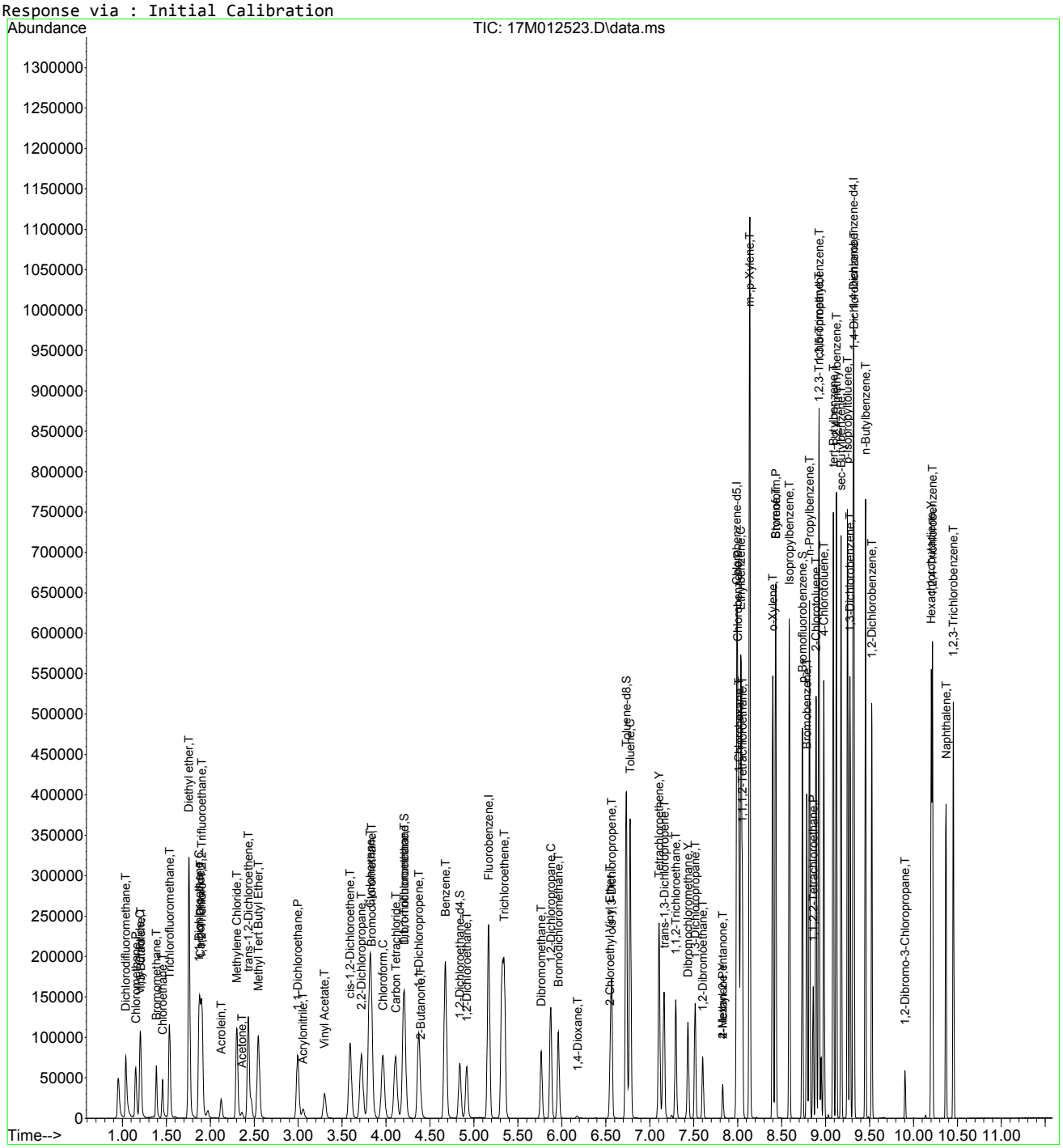

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060815\
Data File : 17M012568.D
Acq On : 08 Jun 2015 13:08
Operator : ADC
Sample : WG526673-02 20ug/L LCS 8260
Misc : 1,1 STD70797
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 08 13:19:48 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	216044	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	163222	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	88519	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.206	111	59037	26.0295 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.118%		
32) 1,2-Dichloroethane-d4	4.840	65	51303	26.1398 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 104.559%		
44) Toluene-d8	6.734	98	226558	26.1432 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.573%		
63) p-Bromofluorobenzene	8.737	95	78989	25.8372 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.349%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.041	85	72888	30.0897 ug/L	99
3) Chloromethane	1.154	50	59581	22.4918 ug/L	100
4) Vinyl Chloride	1.201	62	61356	21.9679 ug/L	99
5) 1,3-Butadiene	1.212	54	6796	4.6144 ug/L	99
6) Bromomethane	1.389	94	33399	20.2551 ug/L	99
7) Chloroethane	1.458	64	27772	20.6645 ug/L	99
8) Trichlorofluoromethane	1.545	101	72273	21.5313 ug/L	100
9) Diethyl ether	1.757	59	153399	109.5384 ug/L	100
10) 1,1-Dichloroethene	1.878	61	62165	18.5785 ug/L	99
11) Carbon Disulfide	1.893	76	73835	11.9220 ug/L	99
12) 1,1,2-Trichloro-1,2,2-...	1.910	101	43802	19.5132 ug/L	100
13) Acrolein	2.124	56	22287	122.1635 ug/L	100
14) Methylene Chloride	2.304	84	47388	19.9140 ug/L	100
15) Acetone	2.359	43	5783	16.9995 ug/L	99
16) trans-1,2-Dichloroethene	2.434	96	45985	20.2844 ug/L	99
17) Methyl Tert Butyl Ether	2.547	73	108291	21.7951 ug/L	100
18) 1,1-Dichloroethane	2.999	63	80431	19.3847 ug/L	100
19) Acrylonitrile	3.057	53	8939	19.0234 ug/L	99
20) Vinyl Acetate	3.303	86	4043	21.8668 ug/L	98
21) cis-1,2-Dichloroethene	3.595	96	50199	20.0456 ug/L	100
22) 2,2-Dichloropropane	3.725	77	66350	20.8951 ug/L	99
23) Cyclohexane	3.821	56	75368	20.7688 ug/L #	78
24) Bromochloromethane	3.838	130	31913	20.8267 ug/L	99
25) Chloroform	3.966	83	81584	20.4896 ug/L	99
26) Carbon Tetrachloride	4.110	117	65238	20.3690 ug/L	100
28) 1,1,1-Trichloroethane	4.209	97	72915	20.0502 ug/L	99
29) 1,1-Dichloropropene	4.374	75	59898	19.4877 ug/L	99
30) 2-Butanone	4.397	43	9969	18.0948 ug/L	96
31) Benzene	4.675	78	187218	19.5803 ug/L	100
33) 1,2-Dichloroethane	4.918	62	51058	20.1840 ug/L	100
34) Trichloroethene	5.347	130	53581	18.8816 ug/L	100
35) Dibromomethane	5.767	93	25514	21.5658 ug/L	99
36) 1,2-Dichloropropane	5.874	63	49960	19.9614 ug/L	99
37) Bromodichloromethane	5.961	83	59484	19.8422 ug/L	100
38) 1,4-Dioxane	6.172	88	829	58.2384 ug/L	94
39) 2-Chloroethyl Vinyl Ether	6.548	63	21261	19.3303 ug/L	100
40) cis-1,3-Dichloropropene	6.566	75	74591	21.3423 ug/L	99
41) 4-Methyl-2-Pentanone	7.831	58	8472	17.1204 ug/L	99
42) trans-1,3-Dichloropropene	7.162	75	57944	21.2541 ug/L	99
45) Toluene	6.777	91	210704	19.8627 ug/L	100
46) Tetrachloroethene	7.107	166	57056	19.2854 ug/L	99
47) 1,1,2-Trichloroethane	7.295	97	35523	19.9390 ug/L	100
48) Dibromochloromethane	7.434	129	47221	20.2814 ug/L	100
49) 1,3-Dichloropropane	7.515	76	57894	20.1513 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\060815\
Data File : 17M012568.D
Acq On : 08 Jun 2015 13:08
Operator : ADC
Sample : WG526673-02 20ug/L LCS 8260
Misc : 1,1 STD70797
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 08 13:19:48 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50)	1,2-Dibromoethane	7.602	107	35239	20.2509 ug/L	100
51)	2-Hexanone	7.831	43	16087	18.2483 ug/L	98
52)	Chlorobenzene	8.002	112	129468	18.3558 ug/L	100
53)	1-Chlorohexane	8.013	69	12120	19.6786 ug/L	91
54)	Ethylbenzene	8.037	106	74712	19.8043 ug/L	100
55)	1,1,1,2-Tetrachloroethane	8.054	131	49719	19.8501 ug/L	99
56)	m-,p-Xylene	8.138	106	176628	39.1480 ug/L	100
57)	o-Xylene	8.398	106	83033	18.6291 ug/L	100
58)	Styrene	8.430	104	142688	20.0705 ug/L	99
59)	Bromoform	8.433	173	33121	22.4545 ug/L	100
60)	Isopropylbenzene	8.587	105	216946	18.7062 ug/L	100
62)	1,3,5-Trimethylbenzene	8.925	105	206963	20.2804 ug/L	100
64)	Bromobenzene	8.786	156	62065	19.3779 ug/L	99
65)	n-Propylbenzene	8.818	91	248828	18.5837 ug/L	100
66)	1,1,2,2-Tetrachloroethane	8.859	83	40126	20.1182 ug/L	100
67)	2-Chlorotoluene	8.891	91	149665	18.1564 ug/L	100
68)	1,2,3-Trichloropropane	8.922	110	10692	20.4943 ug/L	97
69)	1,2,4-Trimethylbenzene	9.122	105	206979	20.3329 ug/L	100
70)	4-Chlorotoluene	8.980	91	148602	17.8936 ug/L	100
71)	tert-Butylbenzene	9.088	134	35920	18.8161 ug/L	98
72)	sec-Butylbenzene	9.177	105	239788	18.7915 ug/L	100
73)	p-Isopropyltoluene	9.250	119	205320	18.8597 ug/L	100
74)	1,3-Dichlorobenzene	9.279	146	108695	17.9179 ug/L	99
75)	1,4-Dichlorobenzene	9.322	146	117312	19.2860 ug/L	100
76)	n-Butylbenzene	9.455	91	192423	20.2311 ug/L	100
77)	1,2-Dichlorobenzene	9.528	146	104576	18.3141 ug/L	99
78)	1,2-Dibromo-3-Chloropr...	9.907	75	6733	19.8677 ug/L	99
79)	Hexachlorobutadiene	10.205	225	54487	20.0118 ug/L	99
80)	1,2,4-Trichlorobenzene	10.220	180	86045	19.4290 ug/L	99
81)	Naphthalene	10.373	128	142862	19.0957 ug/L	100
82)	1,2,3-Trichlorobenzene	10.457	180	78926	19.4317 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060815\
Data File : 17M012568.D
Acq On : 08 Jun 2015 13:08
Operator : ADC
Sample : WG526673-02 20ug/L LCS 8260
Misc : 1,1 STD70797
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 08 13:19:48 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

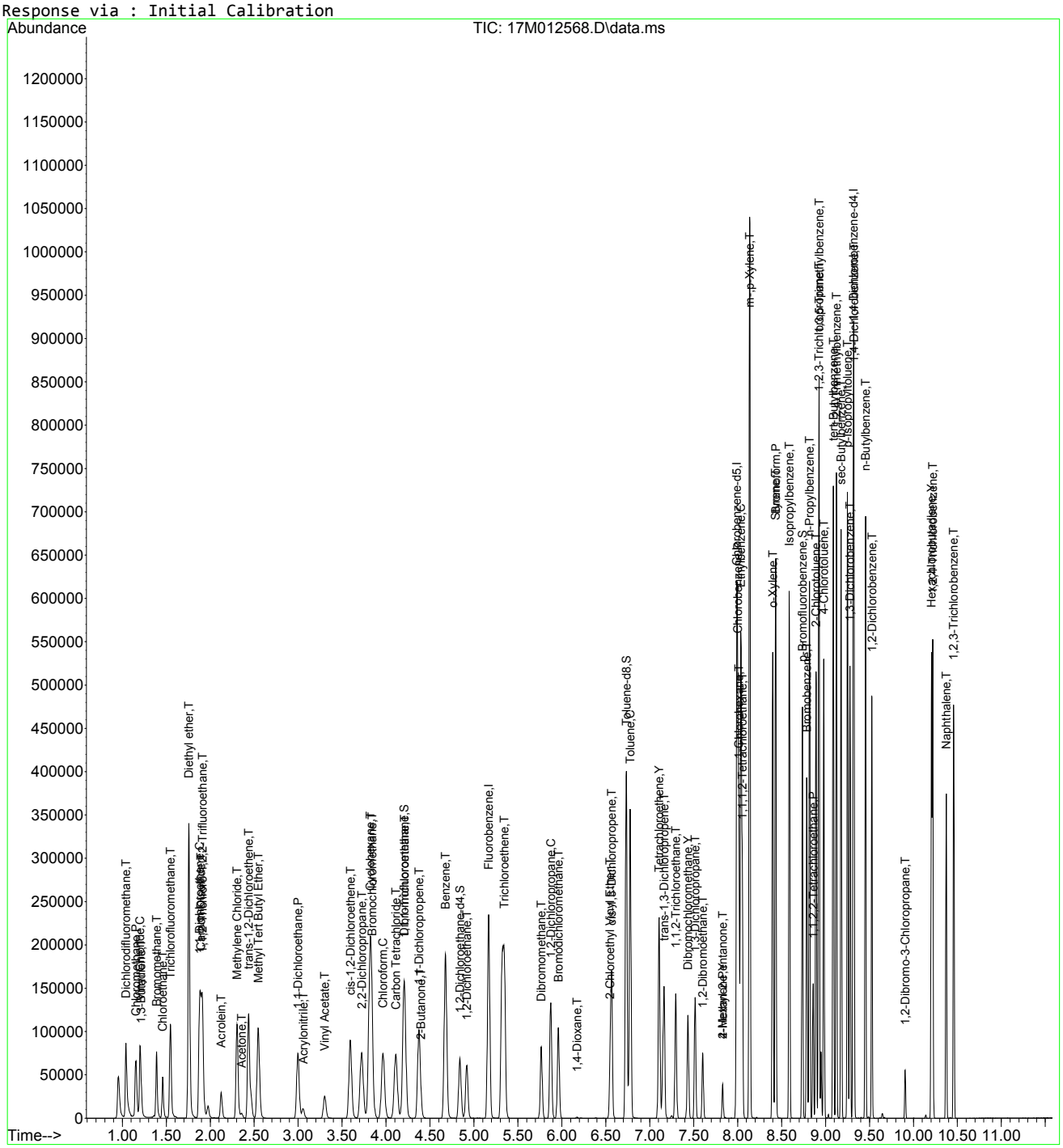

826_VMS.M Mon Jun 08 13:19:49 2015 Page: 3

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\060515\
Data File : 17M012524.D
Acq On : 05 Jun 2015 11:17
Operator : ADC
Sample : WG526427-03 20ug/L LCSDUP 8260
Misc : 1,1 STD70797
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 05 11:29:08 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.167	96	222313	25.00000 ug/L	0.0000
43) Chlorobenzene-d5	7.990	117	169601	25.00000 ug/L	0.0000
61) 1,4-Dichlorobenzene-d4	9.316	152	95121	25.00000 ug/L	0.0000
System Monitoring Compounds					
27) Dibromofluoromethane	4.203	111	59505	25.4960 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.984%		
32) 1,2-Dichloroethane-d4	4.840	65	50719	25.1135 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.454%		
44) Toluene-d8	6.733	98	230800	25.6310 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.524%		
63) p-Bromofluorobenzene	8.737	95	81441	24.7903 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.161%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.041	85	64030	25.6876 ug/L	99
3) Chloromethane	1.151	50	51719	18.9733 ug/L	99
4) Vinyl Chloride	1.200	62	57729	20.0864 ug/L	99
5) 1,3-Butadiene	1.212	54	18071	11.9240 ug/L	98
6) Bromomethane	1.389	94	27450	16.1778 ug/L	99
7) Chloroethane	1.458	64	25422	18.3825 ug/L	95
8) Trichlorofluoromethane	1.539	101	71333	20.6520 ug/L	100
9) Diethyl ether	1.756	59	140647	97.6005 ug/L	99
10) 1,1-Dichloroethene	1.875	61	62140	18.0474 ug/L	100
11) Carbon Disulfide	1.890	76	66675	10.4623 ug/L	98
12) 1,1,2-Trichloro-1,2,2-...	1.907	101	44345	19.1980 ug/L	100
13) Acrolein	2.124	56	16405	87.3863 ug/L	100
14) Methylene Chloride	2.304	84	47377	19.3479 ug/L	99
15) Acetone	2.362	43	6659	19.0226 ug/L	100
16) trans-1,2-Dichloroethene	2.434	96	45678	19.5808 ug/L	100
17) Methyl Tert Butyl Ether	2.547	73	99251	19.4124 ug/L	100
18) 1,1-Dichloroethane	2.993	63	79808	18.6921 ug/L	99
19) Acrylonitrile	3.056	53	8464	17.5046 ug/L	100
20) Vinyl Acetate	3.300	86	4188	21.9896 ug/L	90
21) cis-1,2-Dichloroethene	3.592	96	50620	19.6438 ug/L	100
22) 2,2-Dichloropropane	3.722	77	64621	19.7768 ug/L	99
23) Cyclohexane	3.824	56	71080	19.0348 ug/L #	77
24) Bromochloromethane	3.832	130	31082	19.7124 ug/L	100
25) Chloroform	3.966	83	81864	19.9801 ug/L	100
26) Carbon Tetrachloride	4.107	117	65234	19.7934 ug/L	99
28) 1,1,1-Trichloroethane	4.206	97	72694	19.4257 ug/L	99
29) 1,1-Dichloropropene	4.371	75	61462	19.4327 ug/L	99
30) 2-Butanone	4.397	43	10297	18.1632 ug/L	96
31) Benzene	4.675	78	187166	19.0229 ug/L	100
33) 1,2-Dichloroethane	4.918	62	50665	19.4639 ug/L	100
34) Trichloroethene	5.347	130	54839	18.7800 ug/L	100
35) Dibromomethane	5.764	93	24839	20.4032 ug/L	98
36) 1,2-Dichloropropane	5.874	63	50368	19.5569 ug/L	100
37) Bromodichloromethane	5.960	83	59600	19.3203 ug/L	100
38) 1,4-Dioxane	6.175	88	1790	122.2041 ug/L	95
39) 2-Chloroethyl Vinyl Ether	6.548	63	20216	17.8619 ug/L	100
40) cis-1,3-Dichloropropene	6.566	75	74066	20.5945 ug/L	99
41) 4-Methyl-2-Pentanone	7.831	58	8311	16.3214 ug/L	98
42) trans-1,3-Dichloropropene	7.165	75	56833	20.2587 ug/L	99
45) Toluene	6.777	91	212986	19.3227 ug/L	100
46) Tetrachloroethene	7.107	166	58697	19.0938 ug/L	99
47) 1,1,2-Trichloroethane	7.295	97	34571	18.6748 ug/L	100
48) Dibromochloromethane	7.434	129	45993	19.0110 ug/L	100
49) 1,3-Dichloropropane	7.515	76	56863	19.0480 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\060515\
Data File : 17M012524.D
Acq On : 05 Jun 2015 11:17
Operator : ADC
Sample : WG526427-03 20ug/L LCSDUP 8260
Misc : 1,1 STD70797
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 05 11:29:08 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
50)	1,2-Dibromoethane	7.605	107	34686	19.1834 ug/L	99
51)	2-Hexanone	7.831	43	15459	16.8764 ug/L	100
52)	Chlorobenzene	8.002	112	132378	18.0624 ug/L	100
53)	1-Chlorohexane	8.016	69	12478	19.4979 ug/L	95
54)	Ethylbenzene	8.036	106	76214	19.4426 ug/L	99
55)	1,1,1,2-Tetrachloroethane	8.054	131	50093	19.2472 ug/L	100
56)	m-,p-Xylene	8.138	106	179989	38.3925 ug/L	99
57)	o-Xylene	8.398	106	83511	18.0316 ug/L	99
58)	Styrene	8.433	104	146739	19.8640 ug/L	100
59)	Bromoform	8.433	173	32258	21.0469 ug/L	99
60)	Isopropylbenzene	8.589	105	220047	18.2599 ug/L	100
62)	1,3,5-Trimethylbenzene	8.925	105	210793	19.2220 ug/L	100
64)	Bromobenzene	8.789	156	62889	18.2724 ug/L	99
65)	n-Propylbenzene	8.818	91	256675	17.8392 ug/L	100
66)	1,1,2,2-Tetrachloroethane	8.859	83	38516	17.9707 ug/L	99
67)	2-Chlorotoluene	8.893	91	152648	17.2330 ug/L	100
68)	1,2,3-Trichloropropane	8.922	110	10404	18.5581 ug/L	97
69)	1,2,4-Trimethylbenzene	9.122	105	211287	19.3155 ug/L	99
70)	4-Chlorotoluene	8.980	91	158357	17.7448 ug/L	99
71)	tert-Butylbenzene	9.087	134	36014	17.5560 ug/L	98
72)	sec-Butylbenzene	9.177	105	246305	17.9625 ug/L	99
73)	p-Isopropyltoluene	9.250	119	210705	18.0110 ug/L	100
74)	1,3-Dichlorobenzene	9.278	146	113738	17.4479 ug/L	100
75)	1,4-Dichlorobenzene	9.322	146	122161	18.6892 ug/L	98
76)	n-Butylbenzene	9.455	91	208869	20.4361 ug/L	100
77)	1,2-Dichlorobenzene	9.527	146	105005	17.1129 ug/L	99
78)	1,2-Dibromo-3-Chloropr...	9.904	75	6391	17.5496 ug/L	100
79)	Hexachlorobutadiene	10.205	225	55874	19.0969 ug/L	99
80)	1,2,4-Trichlorobenzene	10.219	180	90537	19.0244 ug/L	99
81)	Naphthalene	10.370	128	136681	17.0015 ug/L	100
82)	1,2,3-Trichlorobenzene	10.457	180	78335	17.9476 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\060515\
Data File : 17M012524.D
Acq On : 05 Jun 2015 11:17
Operator : ADC
Sample : WG526427-03 20ug/L LCSDUP 8260
Misc : 1,1 STD70797
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 05 11:29:08 2015
Quant Method : D:\MassHunter\GCMS\1\methods\826_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 05/18/15 HPMS17
QLast Update : Mon May 18 15:03:59 2015
Response via : Initial Calibration

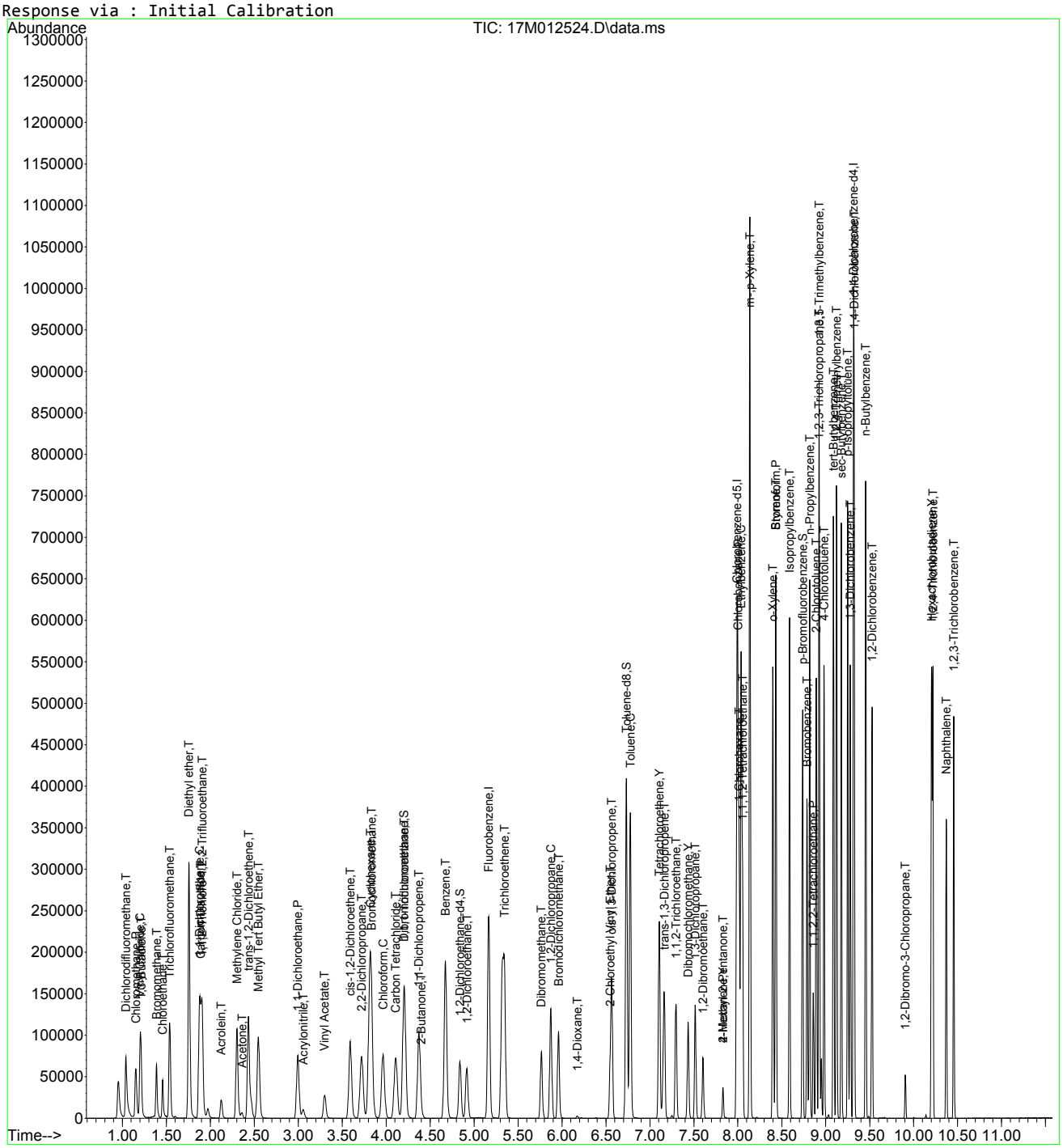

826_VMS.M Fri Jun 05 11:29:10 2015 Page: 3

2.1.2 RSK 175

2.1.2.1 Summary Data

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-04	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW24-052815	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG525710	**Analyst:**	JDS	**Run Date:**	06/01/2015 13:15
Collect Date:	05/28/2015 08:15	**Dilution:**	1	**File ID:**	16G47697
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	619000	J	10000	5000	2500
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-04	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW24-052815	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG525710	**Analyst:**	JDS	**Run Date:**	06/01/2015 15:00
Collect Date:	05/28/2015 08:15	**Dilution:**	5	**File ID:**	16G47706
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	544000		50000	25000	12500
Methane	74-82-8	10.0	U	25.0	10.0	5.00
ethene	74-85-1	10.0	U	25.0	10.0	5.00
ethane	74-84-0	10.0	U	25.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-06	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW25-052815	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG525710	**Analyst:**	JDS	**Run Date:**	06/01/2015 13:27
Collect Date:	05/28/2015 09:40	**Dilution:**	1	**File ID:**	16G47698
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	5000	U	10000	5000	2500
Methane	74-82-8	31.6		5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-08	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW18-052815	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG525710	**Analyst:**	JDS	**Run Date:**	06/01/2015 13:39
Collect Date:	05/28/2015 11:00	**Dilution:**	1	**File ID:**	16G47699
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	114000		10000	5000	2500
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.2.2 QC Summary Data

RSK-175 - Example Calculation for Methane

1.0 Linear Calibration Models

Option A - Average RF Method

ICAL_x	ICAL_r		RF
1.67	19901		11917
6.67	69174		10371
16.7	176923		10594
66.7	685135		10272
133	1324853		9961
300	2845104		9484
		Average RF:	**10433**

Where:
ICAL_x = the ICAL concentration
ICAL_r = the ICAL response (area)
RF = calibration factor = ICAL_r / ICAL_x

Option B - Agilent Linear Regression Constant

ICAL_x	ICAL_r	[ICAL_r}^2	[ICAL-x][ICAL-r]
1.67	19901	396049801	33235
6.67	69174	4785042276	461391
16.7	176923	31301747929	2954614
66.7	685135	4.6941E+11	45698505
133	1324853	1.75524E+12	176205449
300	2845104	8.09462E+12	853531200
Summation:		**1.03557E+13**	**1078884393**

Agilent Linear Regression Constant : 9598.567853
(1.03557E+13)/1078884393)

2.0 Calculate the concentration in extract, Cx

Where:

y = area response of methane from quant report	**1157414**
a = average RF (or Agilent regression constant)	**10433.00**
Cx = y/a	**110.9377935**

3.0 Calculate the concentration in sample

Cs = Cx (MW/Tf) (HS/S) (DF)

Where:

Cx = Concentration in extract	**110.9377935**	umol/mol
MW = molecular weight of analyte	**16.04**	ug/umol
TF = temperature factor = (22.4)(313/273)	**25.68**	L/mol
HS = headspace volume	**0.015**	L
S = sample volume remaining after headspace removal	**0.00547**	L
DF = dilution factor	**2**	
Cs = calculated sample concentration	**380.034301**	ug/L

RSK-175 - Example Calculation for Carbon Dioxide

ICAL Plot - Quadratic Regression (y = Ax^2 + Bx +C)

Ax^2 + Bx + (C - y) = 0

Step 1 - Calculate the concentration in extract, Cx

Data from quadratic regression plot:		
Value of A from plot:	**0.916**	
Value of B from plot:	**1540**	
Value of C from plot:	**0**	
Response for methane from quantitation report (y):	**8763828**	
Value of C - y	**-8763828**	
Solving for Cx using the quadratic formula:		
Root 1 - Computed Cx1:	**2364.716284**	umol/mol
Root 2 - Computed Cx2:	**-4045.938991**	

Step 2 - Calculate the concentration in sample

Cs = Cx (MW/Tf) (HS/S) (DF)

Where:

Cx = Concentration in extract :	**2364.716284**	umol/mol
MW = molecular weight of analyte:	**44.0**	ug/umol
TF = temperature factor = (22.4)(313/273):	**25.68**	L/mol
HS = initial headspace volume (extraction log):	**0.015**	L
S = final volume (extraction log):	**0.00547**	L
DF = dilution factor:	**10**	
Cs = calculated sample concentration:	**111106.798**	ug/L

Other Notes:

Temperature of headspace = 40 C = 313 K

Analyte	**MW (g/mol)**
Methane	16.04
Ethane	30.07
Ethene	28.05
Propane	44.1
Carbon Dioxide	44.0

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 030315
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG514119

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G46874	RINSE	NA	1	1		03/03/15 14:05
16G46875	WG514119-01 0.67umol/mol STD RSK175	NA	1	1	STD67276	03/03/15 14:17
16G46876	WG514119-02 1.67umol/mol STD RSK175	NA	1	1	STD67276	03/03/15 14:30
16G46877	WG514119-03 33.3umol/mol STD RSK175	NA	1	1	STD67276	03/03/15 14:42
16G46878	WG514119-04 66.7umol/mol STD RSK175	NA	1	1	STD67274	03/03/15 14:53
16G46879	WG514119-05 133umol/mol STD RSK175	NA	1	1	STD67274	03/03/15 15:05
16G46880	WG514119-06 333umol/mol STD RSK175	NA	1	1	STD67274	03/03/15 15:17
16G46881	WG514119-07 533umol/mol STD RSK175	NA	1	1	STD67274	03/03/15 15:29
16G46882	RINSE	NA	1	1		03/03/15 15:41
16G46883	WG514119-08 133umol/mol ALT SRC STD	NA	1	1	STD68250	03/03/15 16:14
16G46884	WG514119-08 133umol/mol ALT SRC STD	NA	1	1	STD68250	03/03/15 17:10

Comments

Seq.	Rerun	Dil.	Reason	Analytes
10	X			
File ID: 16G46883				
	Wrong vial taken up by HT3 autosampler			

Approved: March 11, 2015

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 060115
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG5257110

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G47693	WG525709-01 133umol/mol CCV RSK175	NA	1	1	STD67274	06/01/15 09:34
16G47694	WG525710-01 BLANK RSK175	NA	1	1		06/01/15 09:50
16G47695	WG525710-02 67umol/mol LCS RSK175	NA	1	1	STD68250	06/01/15 10:03
16G47696	WG525710-03 67umol/mol LCS RSK175	NA	1	1	STD68250	06/01/15 10:14
16G47697	L15051752-04 A RSK175	7	1	1		06/01/15 13:15
16G47698	L15051752-06 A RSK175	7	1	1		06/01/15 13:27
16G47699	L15051752-08 A RSK175	7	1	1		06/01/15 13:39
16G47700	L15051763-01 A RSK175	7	1	1		06/01/15 13:50
16G47701	L15051763-03 A RSK175	7	1	1		06/01/15 14:02
16G47702	L15051763-04 A RSK175	7	1	1		06/01/15 14:13
16G47703	L15051763-02 A RSK175	6	1	1		06/01/15 14:25
16G47704	WG525709-02 133umol/mol CCV RSK175	NA	1	1	STD67274	06/01/15 14:36
16G47705	L15051763-05 A RSK175	7	1	1		06/01/15 14:48
16G47706	L15051752-04 B D1 5X RSK175	7	1	5		06/01/15 15:00
16G47707	L15051763-01 B D1 10X RSK175	7	1	10		06/01/15 15:11
16G47708	L15051763-03 B A1 RSK175	7	1	1		06/01/15 15:23
16G47709	L15051763-02 B D1 2X RSK175	6	1	2		06/01/15 15:34
16G47710	L15051763-05 B D1 20X RSK175	7	1	20		06/01/15 15:46
16G47711	WG525709-03 133umol/mol CCV RSK175	NA	1	1	STD67274	06/01/15 15:58

Comments

Seq.	Rerun	Dil.	Reason	Analytes
5	X	5	Over Calibration Range	CO2
File ID: 16G47697				
8	X	10	Over Calibration Range	m, ethene
File ID: 16G47700				
9	X		Carry-over contamination	m
File ID: 16G47701				
11	X	2	Over Calibration Range	m
File ID: 16G47703				

Approved: June 04, 2015

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 060115
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG5257110

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
13	X	20	Over Calibration Range	m
File ID: 16G47705				

Approved: June 04, 2015

Page: 2

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B202656

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG514119-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-04	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-05	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-06	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-07	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-08	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B207020

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG525709-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG525709-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG525709-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051752-06	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051763-04	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051752-04	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051763-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051752-08	15	mL	15	mL					5.47	mL	5.47	mL	40
WG525710-03	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L15051763-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG525710-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15051763-05	15	mL	15	mL					5.47	mL	5.47	mL	40
WG525710-02	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L15051763-01	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAR-2015
Analyst: JDS
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 66688
Analytical Workgroups: WG514119

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	NA
Project/Client Specific Requirements	NA
Special Standards	NA
Blanks	NA
TCL's	NA
Surrogates	NA
LCS (Laboratory Control Sample)	NA
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	NA
Surrogates	NA
Calculations & Correct Factors	NA
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
06-MAR-2015

Secondary Reviewer:
11-MAR-2015

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-11-2015 12:34:12

Microbac Laboratories Inc.

Data Checklist

Date: 01-JUN-2015
Analyst: JDS
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 68338
Analytical Workgroups: WG525710

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	NA
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	X
Surrogates	NA
Calculations & Correct Factors	NA
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	NA
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
02-JUN-2015

Secondary Reviewer:
04-JUN-2015

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-04-2015 15:29:59

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: RSK175 AAB#: WG525710

Login Number: L15051752

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW24-052815	04	05/28/15					06/01/2015	4.3	7		06/01/15	4.3	7	
50WW24-052815	04	05/28/15					06/01/2015	4.2	7		06/01/15	4.2	7	
50WW25-052815	06	05/28/15					06/01/2015	4.2	7		06/01/15	4.2	7	
50WW18-052815	08	05/28/15					06/01/2015	4.1	7		06/01/15	4.1	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4211485
Report generated 06/04/2015 15:31

METHOD BLANK SUMMARY

Login Number: L15051752
Blank File ID: 16G47694
Prep Date: 06/01/15 09:50
Analyzed Date: 06/01/15 09:50
Analyst: JDS

Work Group: WG525710
Blank Sample ID: WG525710-01
Instrument ID: HP16
Method: RSK175

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG525710-02	16G47695	06/01/15 10:03	01
LCS2	WG525710-03	16G47696	06/01/15 10:14	01
50WW24-052815	L15051752-04	16G47697	06/01/15 13:15	01
50WW25-052815	L15051752-06	16G47698	06/01/15 13:27	01
50WW18-052815	L15051752-08	16G47699	06/01/15 13:39	01
50WW24-052815	L15051752-04	16G47706	06/01/15 15:00	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4211486
Report generated 06/04/2015 15:31

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051752 Prep Date: 06/01/15 09:50 Sample ID: WG525710-01
Instrument ID: HP16 Run Date: 06/01/15 09:50 Prep Method: 5021
File ID: 16G47694 Analyst: JDS Method: RSK175
Workgroup (AAB#): WG525710 Matrix: Water Units: ug/L
Contract #: Cal ID: HP16 - 03-MAR-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Carbon Dioxide	2500	10000	2500	1	U
Methane	1.00	5.00	1.00	1	U
ethene	1.00	5.00	1.00	1	U
ethane	1.00	5.00	1.00	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4211487
04-JUN-2015 15:31

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051752 Analyst: JDS Prep Method: 5021
Instrument ID: HP16 Matrix: Water Method: RSK175
Workgroup (AAB#): WG525710 Units: ug/L
QC Key: DOD4 Lot #: STD68250

Sample ID: WG525710-02 LCS File ID: 16G47695 Run Date: 06/01/2015 10:03
Sample ID: WG525710-03 LCS2 File ID: 16G47696 Run Date: 06/01/2015 10:14

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Methane	114	107	93.4	114	106	92.5	0.969	85 - 115	20	
ethene	200	186	93.4	200	183	91.6	1.86	85 - 115	20	
ethane	214	193	90.2	214	189	88.4	1.98	85 - 115	20	
Carbon Dioxide	31300	30000	95.7	31300	28700	91.7	4.36	10 - 200	40	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4211488
Report generated: 06/04/2015 15:31

Calibration Table Report
Method: RSKEXT1.M
Title: RSK175 HP16 (SOP: OVL RSK01) 030315
Last Calibration: Fri Mar 06 11:52:33 2015
Curve:WG514119
Calibration Files

		0.67	1.67	33.3	66.7	133	333	533			
		16G46875.	16G46876.	16G46877.	16G46878.	16G46879.	16G46880.	16G46881.D			
	Compound								Avg	%RSD	Linear
T	methane		442542.3	201716.7	175611.6	187516.9	186065.3	188702.9	230359.0	45.3	0.999
T	ethene		322209.5	334124.6	295911.1	313430.8	319356.4	318282.1	317219.0	3.9	
T	acetylene		316851.9	343603.6	313507.6	354933.8	357109.5	344601.6	338435.0	5.6	
T	ethane	381661.4	339569.9	346403.4	312338.4	328333.4	335709.7	335266.3	339897.0	6.3	
T	propane	528069.3	481580.8	518227.1	469331.7	483950.9	500133.6	493547.4	496406.0	4.2	
T	n-butane	686564.3	616037.4	680754.9	613926.5	634552.4	659898.4	646188.9	648275.0	4.5	
	Signal #2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
T	carbon dioxide		3977.4	5604.2	5581.8	6054.5	6060.7	5810.7	5514.9	14.2	

Fri Mar 06 11:59:12 2015

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15051752 Run Date: 03/03/2015 Sample ID: WG514119-08
Instrument ID: HP16 Run Time: 17:10 Method: RSK175
File ID: 16G46884 Analyst: JDS QC Key: DOD4
ICal Workgroup: WG514119 Cal ID: HP16 - 03-MAR-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
carbon dioxide		62500	65100	ug/L	5740	4.10	15	
methane		228	236	ug/L	195000	3.50	15	
ethene		398	407	ug/L	324000	2.20	15	
ethane		427	423	ug/L	337000	0.900	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4211489
Report generated 06/04/2015 15:31

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051752
Run Date: 06/01/2015
Sample ID: WG525709-01
Instrument ID: HP16
Run Time: 09:34
Method: RSK175
File ID: 16G47693
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG525710
Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62500	64700	ug/L	5710	3.54	15	
methane		228	210	ug/L	174000	7.82	15	
ethene		398	366	ug/L	291000	8.13	15	
ethane		427	381	ug/L	304000	10.7	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4211490
Report generated 06/04/2015 15:31

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051752
Run Date: 06/01/2015
Sample ID: WG525709-02
Instrument ID: HP16
Run Time: 14:36
Method: RSK175
File ID: 16G47704
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG525710
Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62500	61100	ug/L	5390	2.29	15	
methane		228	212	ug/L	176000	6.75	15	
ethene		398	365	ug/L	291000	8.30	15	
ethane		427	383	ug/L	305000	10.2	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4211490
Report generated 06/04/2015 15:31

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051752
Run Date: 06/01/2015
Sample ID: WG525709-03
Instrument ID: HP16
Run Time: 15:58
Method: RSK175
File ID: 16G47711
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG525710
Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62500	62800	ug/L	5540	0.481	15	
methane		228	212	ug/L	175000	7.11	15	
ethene		398	369	ug/L	294000	7.40	15	
ethane		427	388	ug/L	309000	9.19	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4211490
Report generated 06/04/2015 15:31

2.1.2.3 Sample Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\060115\16G47697.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\060115\16G47697.D\TCD2B.CH
Acq On : 01 Jun 2015 13:15 Operator: JDS
Sample : L15051752-04 A RSK175 Inst : HP16
Misc : 1,1 received with small amnt headspace Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Jun 02 08:29:02 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	267647	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.40	8986	0.026	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.19	726589849	131750.895	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47697.D RSKEXT1.M Tue Jun 02 08:29:03 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\060115\16G47697.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\060115\16G47697.D\TCD2B.CH
Acq On : 01 Jun 2015 13:15 Operator: JDS
Sample : L15051752-04 A RSK175 Inst : HP16
Misc : 1,1 received with small amnt headspace Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Jun 2 8:29 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

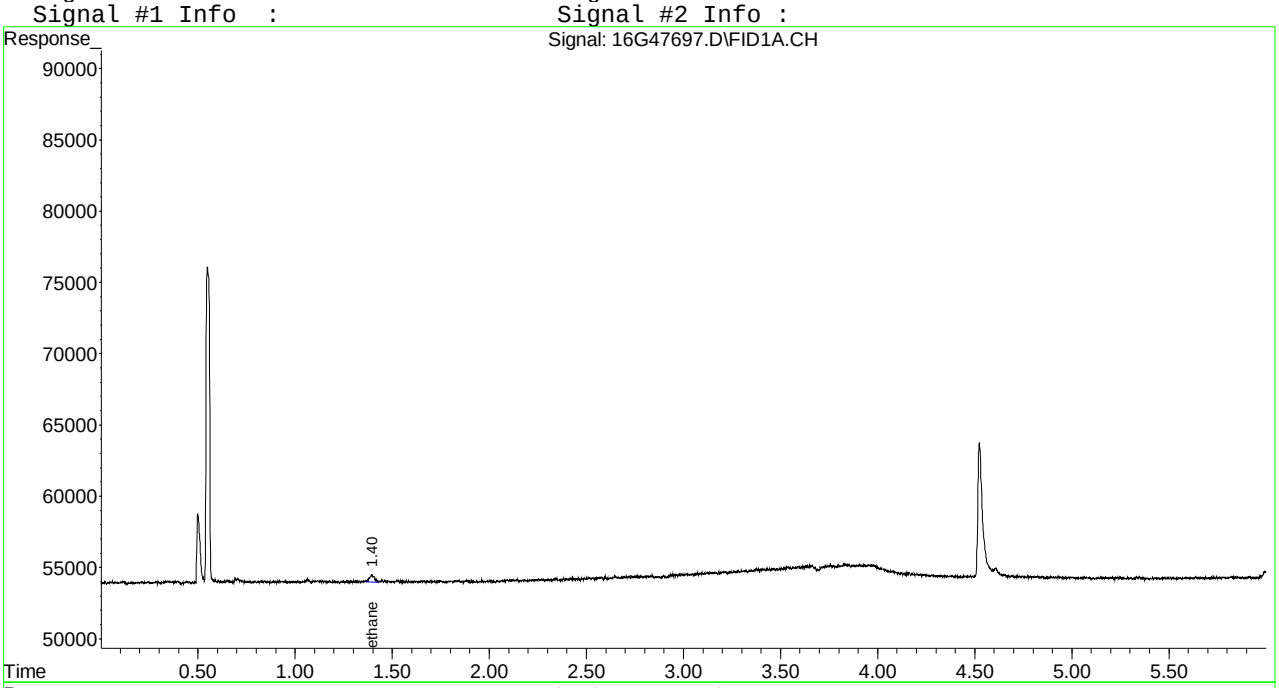

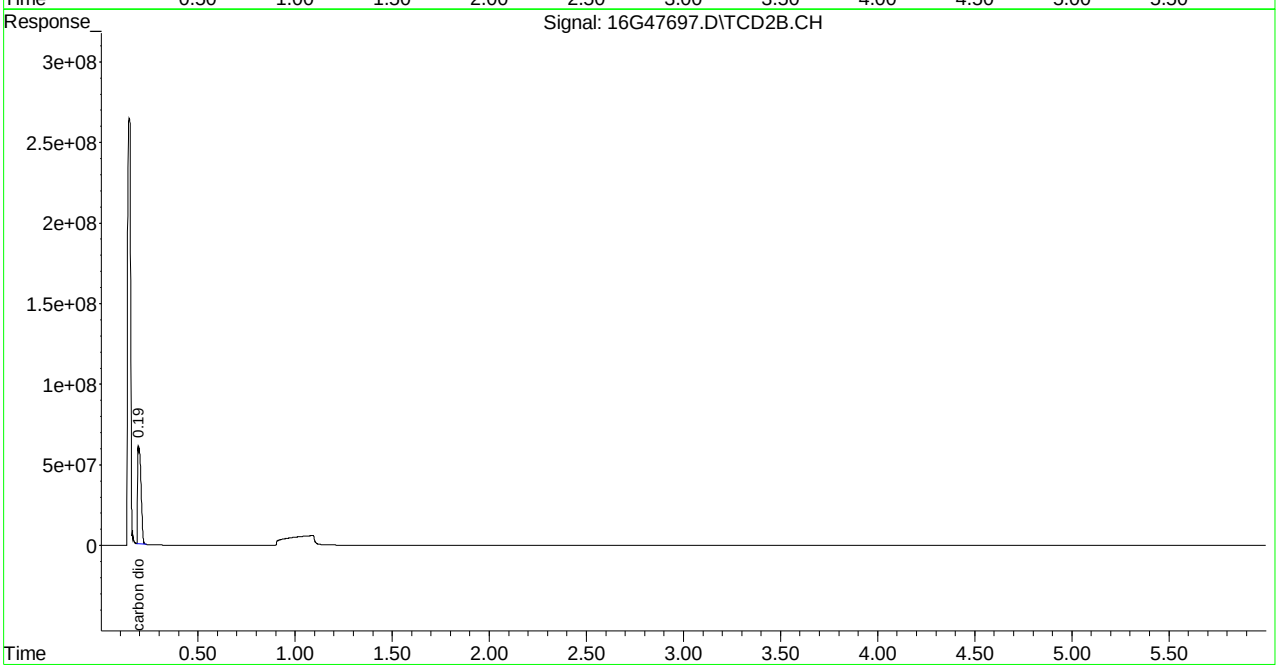

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\060115\16G47706.D\FID1A.CH Vial: 14
Signal #2 : C:\MSDCHEM\1\DATA\060115\16G47706.D\TCD2B.CH
Acq On : 01 Jun 2015 15:00 Operator: JDS
Sample : L15051752-04 B D1 5X RSK175 Inst : HP16
Misc : 1,5 received with small amnt headspace Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Jun 02 08:29:06 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.56	368812	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.39	13010	0.038	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	127746255	23163.940	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47706.D RSKEXT1.M Tue Jun 02 08:29:06 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\060115\16G47706.D\FID1A.CH Vial: 14
Signal #2 : C:\MSDCHEM\1\DATA\060115\16G47706.D\TCD2B.CH
Acq On : 01 Jun 2015 15:00 Operator: JDS
Sample : L15051752-04 B D1 5X RSK175 Inst : HP16
Misc : 1,5 received with small amnt headspace Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Jun 2 8:29 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

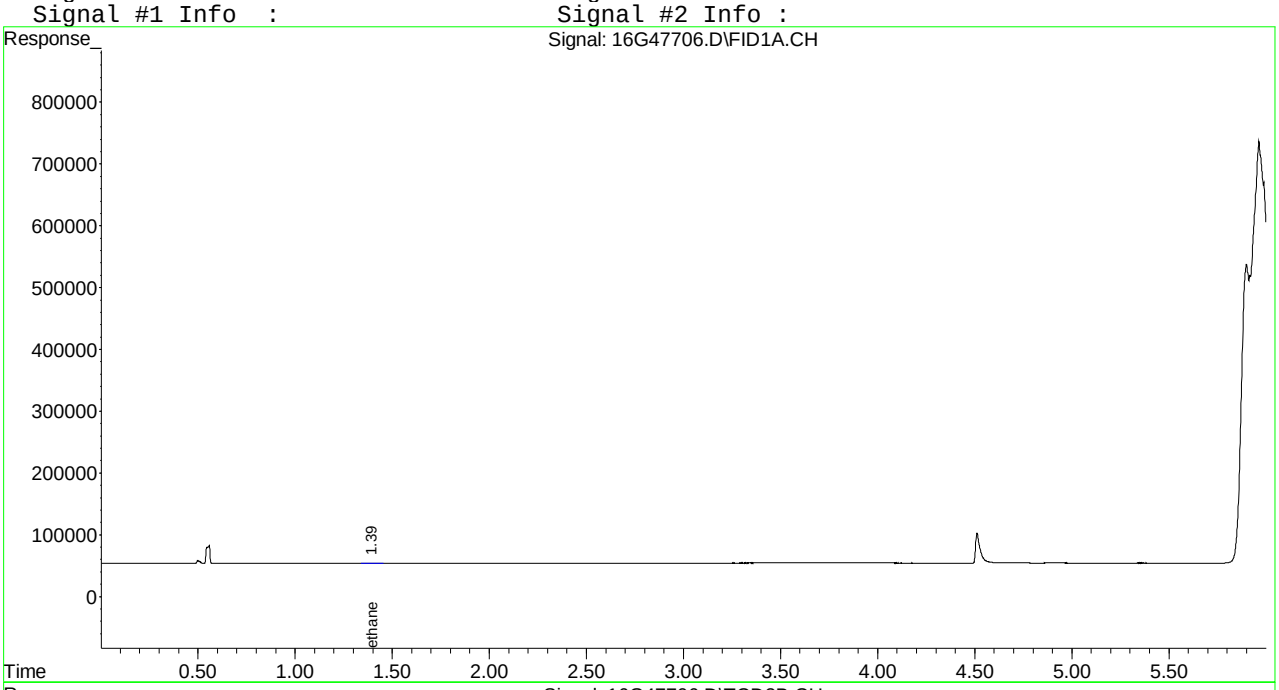

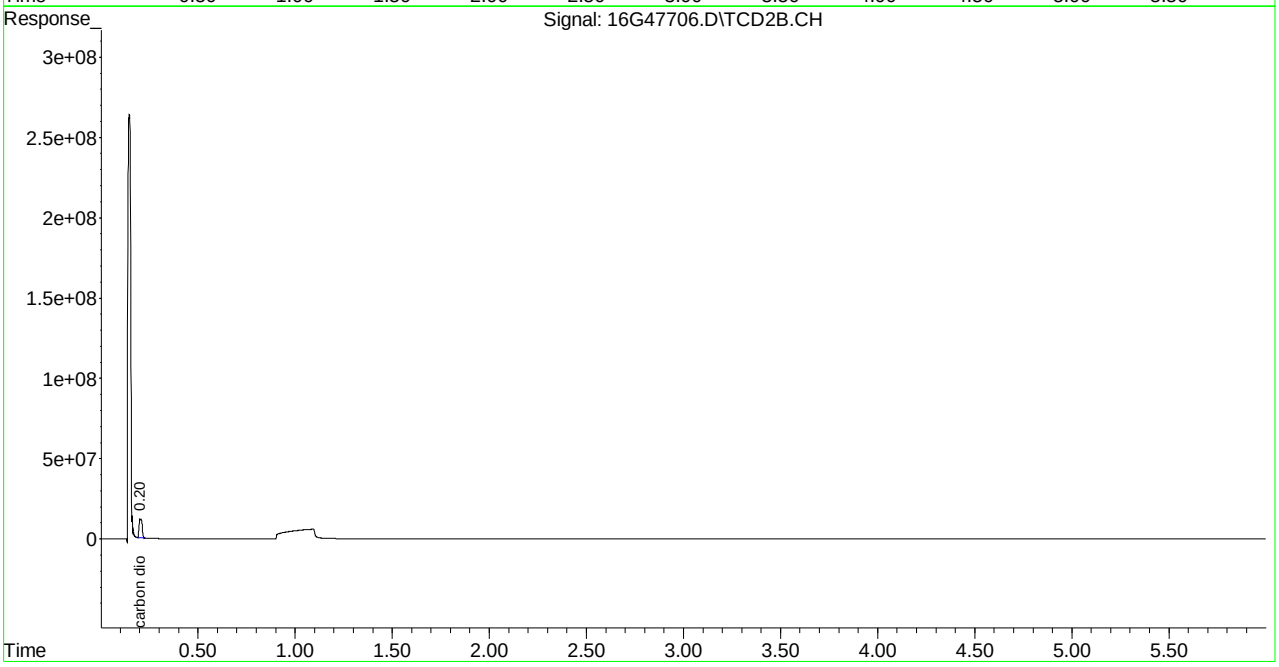

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\060115\16G47698.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\060115\16G47698.D\TCD2B.CH
Acq On : 01 Jun 2015 13:27 Operator: JDS
Sample : L15051752-06 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Jun 02 08:29:05 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	3837047	18.473	umol/
2) T	ethene	1.06	34864	0.110	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	1980015	359.032	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47698.D RSKEXT1.M Tue Jun 02 08:29:05 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\060115\16G47698.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\060115\16G47698.D\TCD2B.CH
Acq On    : 01 Jun 2015  13:27                        Operator: JDS
Sample    : L15051752-06 A RSK175                     Inst    : HP16
Misc      : 1,1                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Jun  2  8:29 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

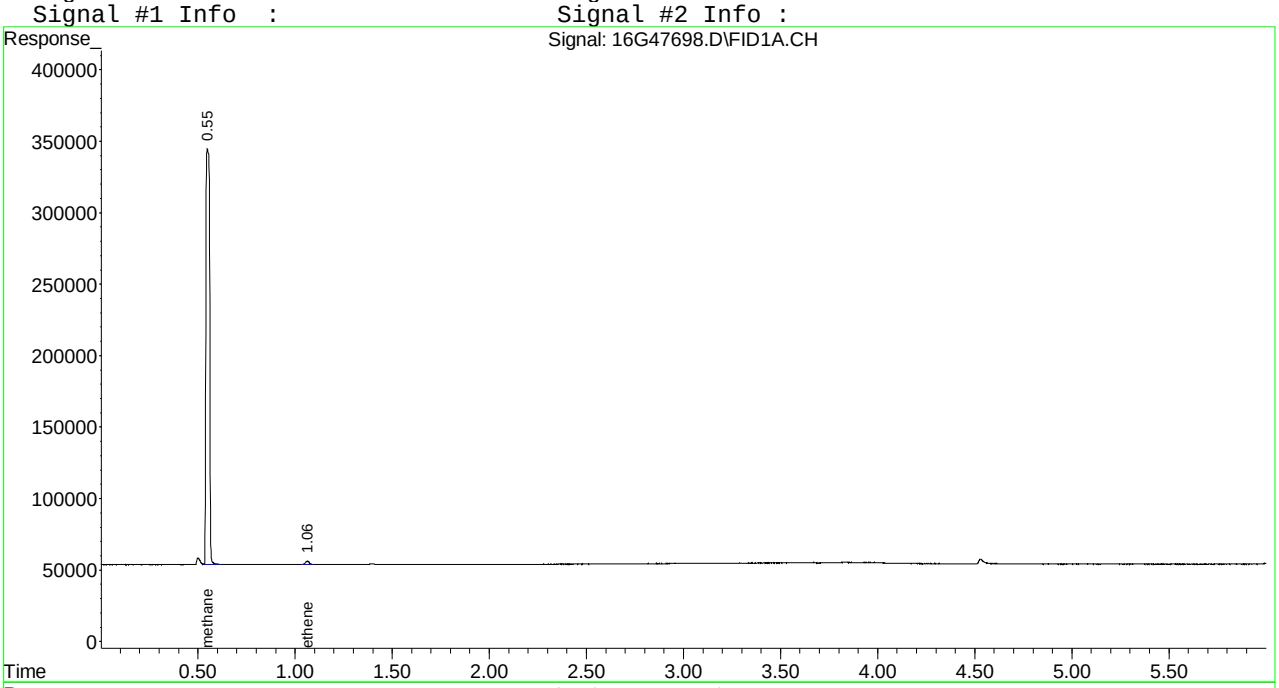

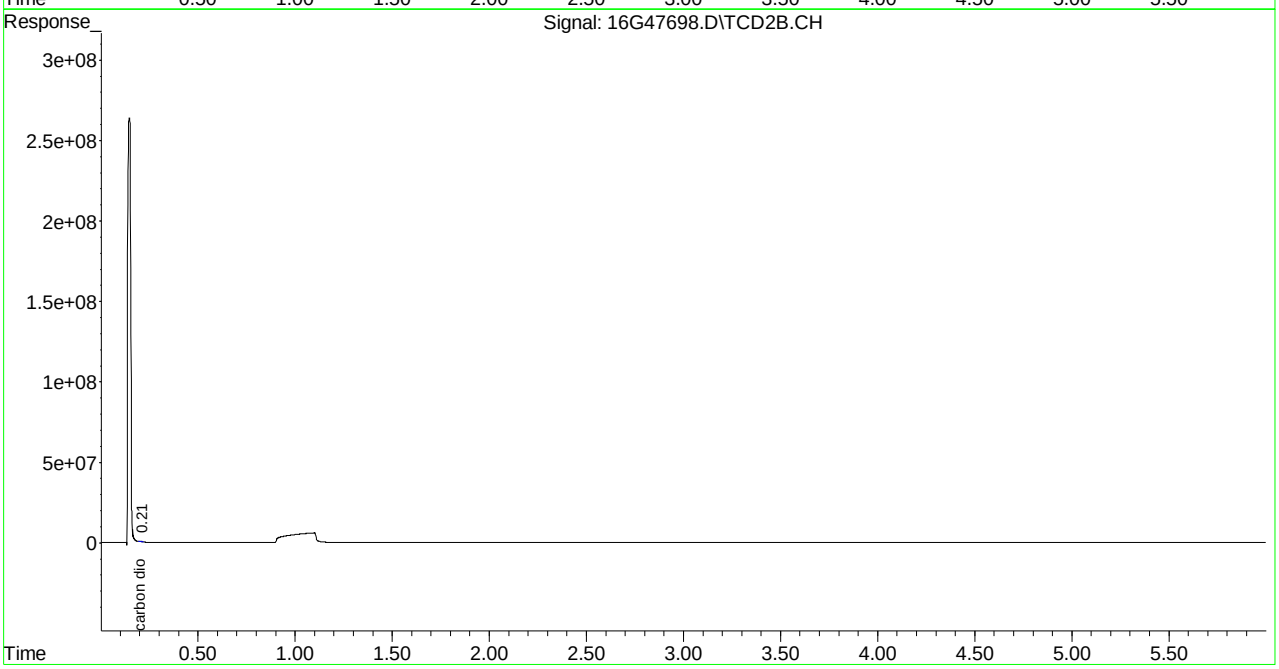

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\060115\16G47699.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\060115\16G47699.D\TCD2B.CH
Acq On : 01 Jun 2015 13:39 Operator: JDS
Sample : L15051752-08 A RSK175 Inst : HP16
Misc : 1,1 received with small amnt headspace Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Jun 02 08:29:05 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	298897	N.D.	umol/
2) T	ethene	1.06	7233	0.023	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	134050336	24307.044	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47699.D RSKEXT1.M Tue Jun 02 08:29:06 2015 Page 1

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\060115\16G47699.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\060115\16G47699.D\TCD2B.CH
Acq On    : 01 Jun 2015  13:39                      Operator: JDS
Sample    : L15051752-08 A RSK175                   Inst    : HP16
Misc      : 1,1 received with small amnt headspace  Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Jun  2  8:29 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

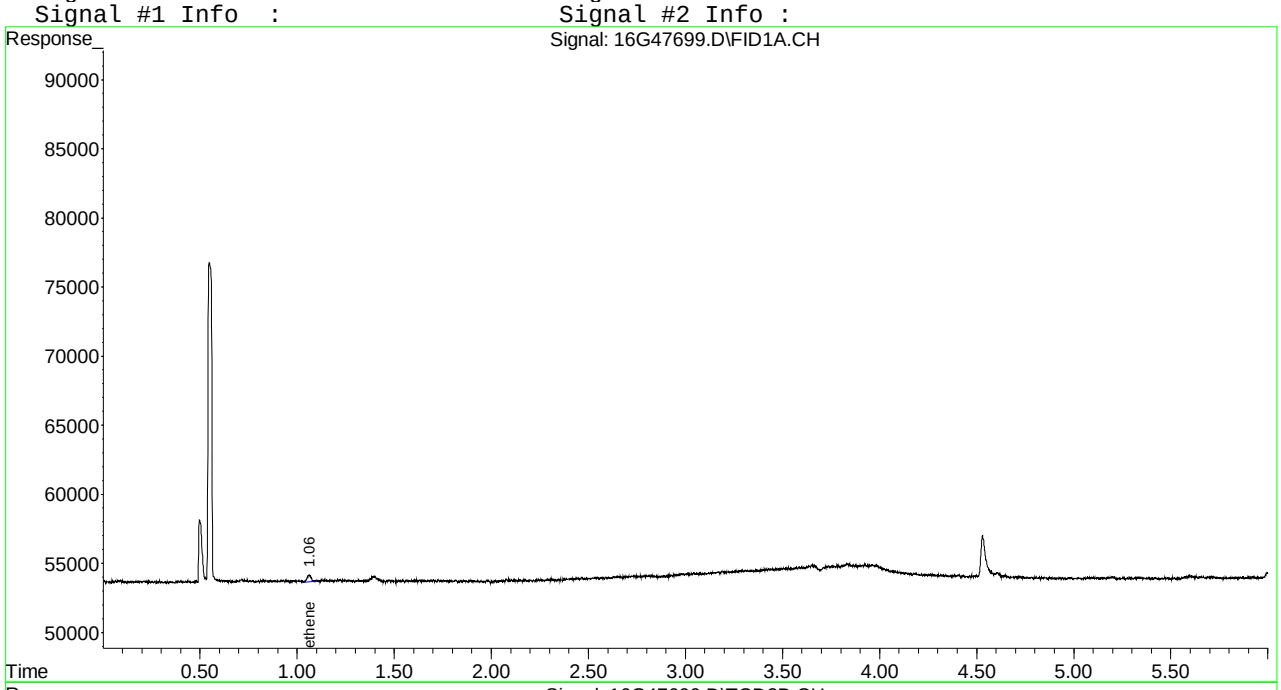

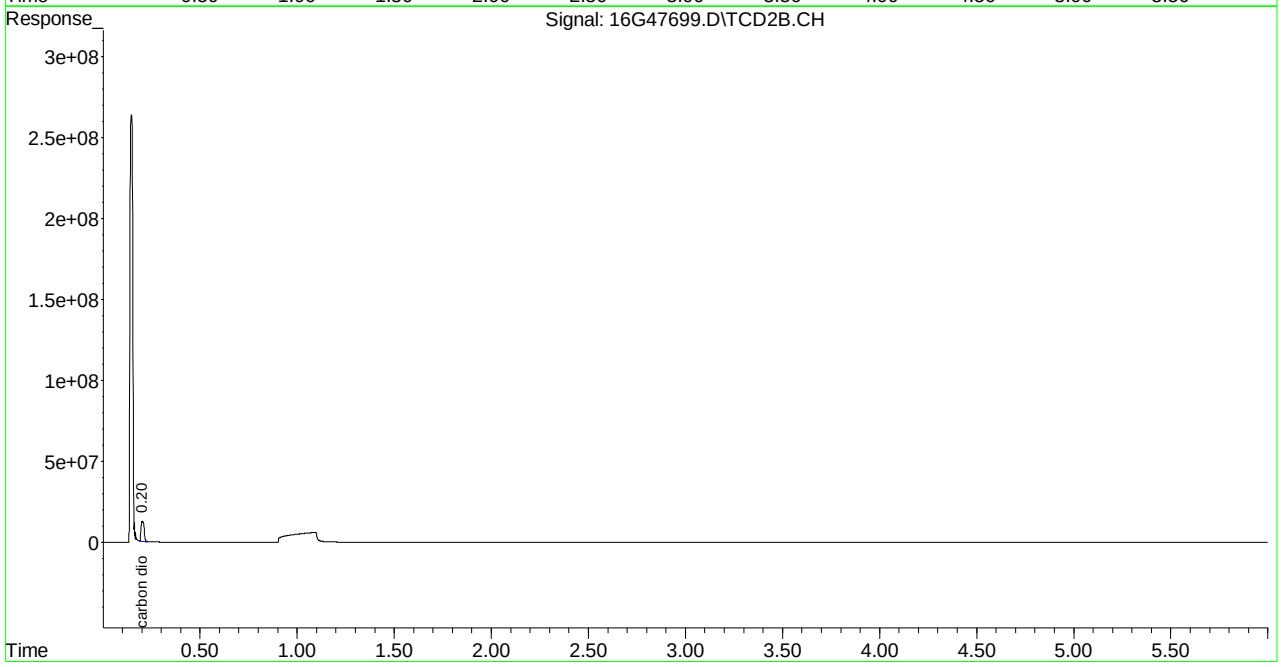

2.1.2.4 Standards Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46875.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46875.D\TCD2B.CH
Acq On : 03 Mar 2015 14:17 Operator: JDS
Sample : WG514119-01 0.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:54:08 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	566979	0.846	umol/
2) T	ethene	1.06	233416	0.736	umol/
3) T	acetylene	1.14	213812	0.632	umol/
4) T	ethane	1.39	254568	0.749	umol/
5) T	propane	3.83	352222	0.710	umol/
6) T	n-butane	5.34	457938	0.706	umol/
8) T	carbon dioxide	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46875.D RSKEXT1.M Fri Mar 06 11:56:43 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46875.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46875.D\TCD2B.CH
Acq On : 03 Mar 2015 14:17 Operator: JDS
Sample : WG514119-01 0.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:54 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

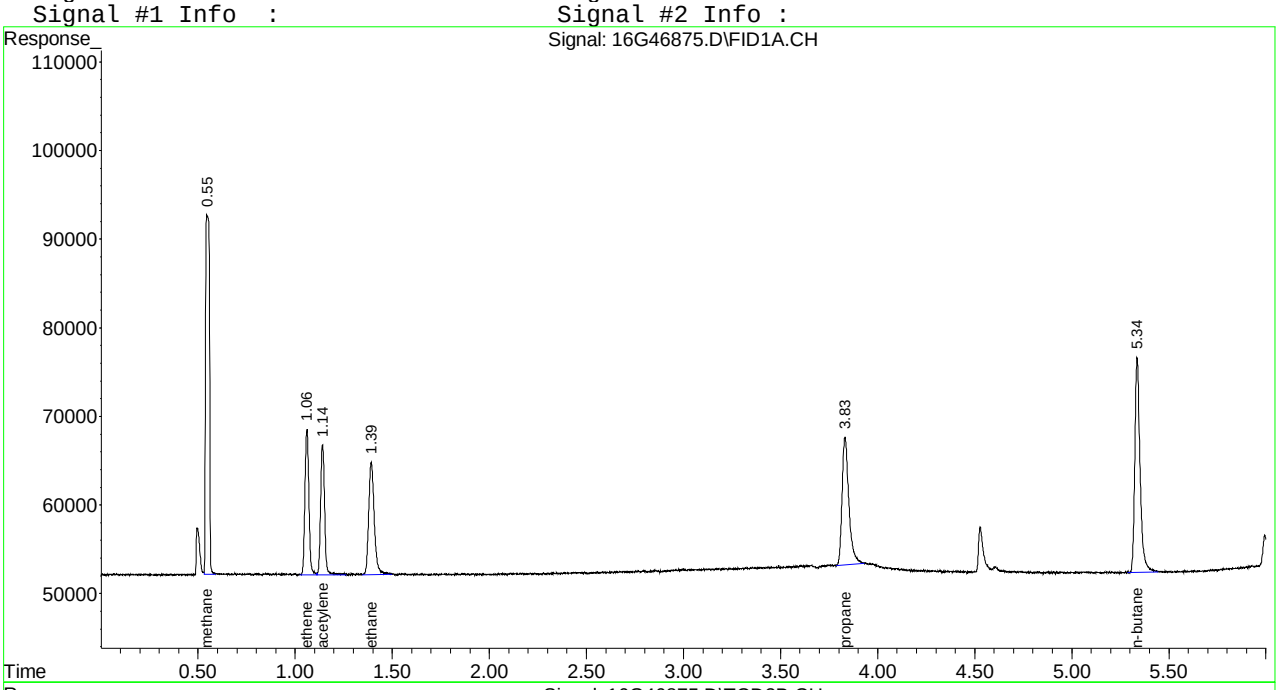

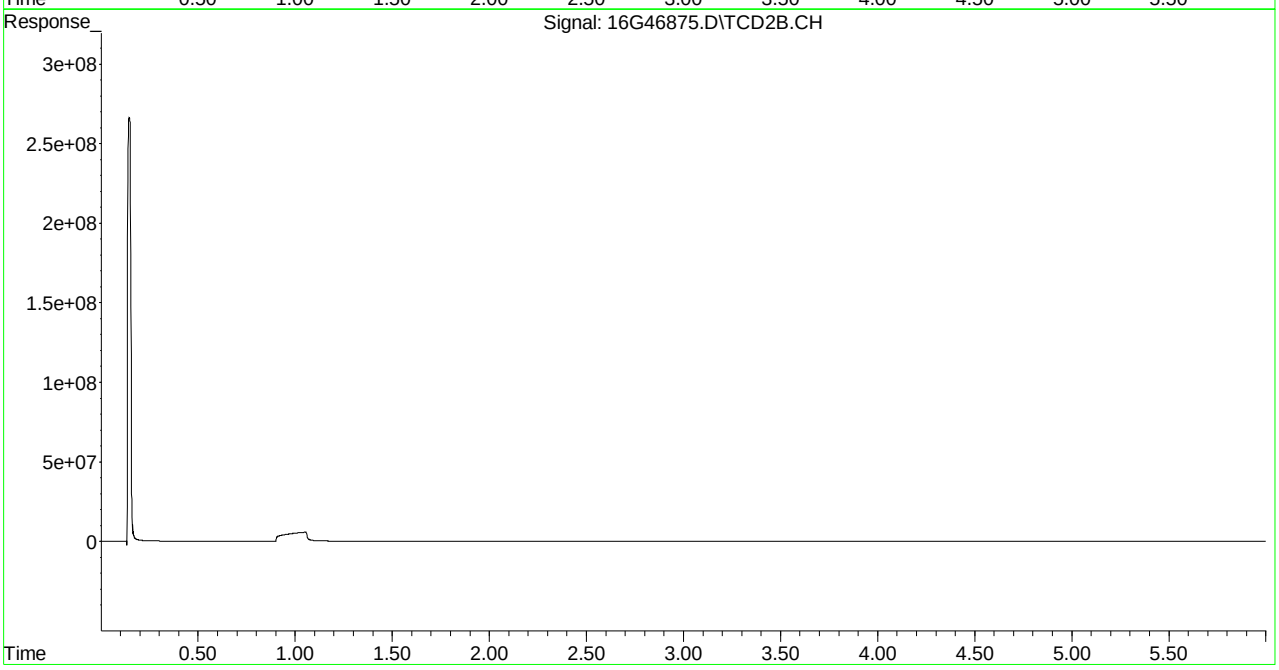

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46875.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46875.D\TCD2B.CH
Acq On : 03 Mar 2015 14:17 Operator: JDS
Sample : WG514119-01 0.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	-1.000	0.846	0.0	0	0.00
2	T	ethene	-1.000	0.736	0.0	100	0.00
3	T	acetylene	-1.000	0.632	0.0	100	0.00
4	T	ethane	0.667	0.749	-12.3	100	0.00
5	T	propane	0.667	0.710	-6.4	100	0.00
6	T	n-butane	0.667	0.706	-5.8	100	0.00

Signal #2

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46875.D RSKEXT1.M Fri Mar 06 11:55:53 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46875.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46875.D\TCD2B.CH
Acq On    : 03 Mar 2015  14:17                        Operator: JDS
Sample    : WG514119-01 0.67umol/mol STD RSK175       Inst    : HP16
Misc      : 1,1 STD67276                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%
```

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
	Signal #2					
8 T	carbon dioxide	-1.000	0.000	0.0	0	-0.21

```
---------------------------------------------------------------------------
(#) = Out of Range            SPCC's out = 0  CCC's out = 0
16G46875.D  RSKEXT1.M      Fri Mar 06 11:55:53 2015                    Page 2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46876.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46876.D\TCD2B.CH
Acq On : 03 Mar 2015 14:30 Operator: JDS
Sample : WG514119-02 1.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:08 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	739046	1.773	umol/
2) T	ethene	1.06	538090	1.696	umol/
3) T	acetylene	1.14	529143	1.564	umol/
4) T	ethane	1.39	567082	1.668	umol/
5) T	propane	3.83	804240	1.620	umol/
6) T	n-butane	5.34	1028782	1.587	umol/
8) T	carbon dioxide	0.20	7954783	1442.423	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46876.D RSKEXT1.M Fri Mar 06 11:57:08 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46876.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46876.D\TCD2B.CH
Acq On : 03 Mar 2015 14:30 Operator: JDS
Sample : WG514119-02 1.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

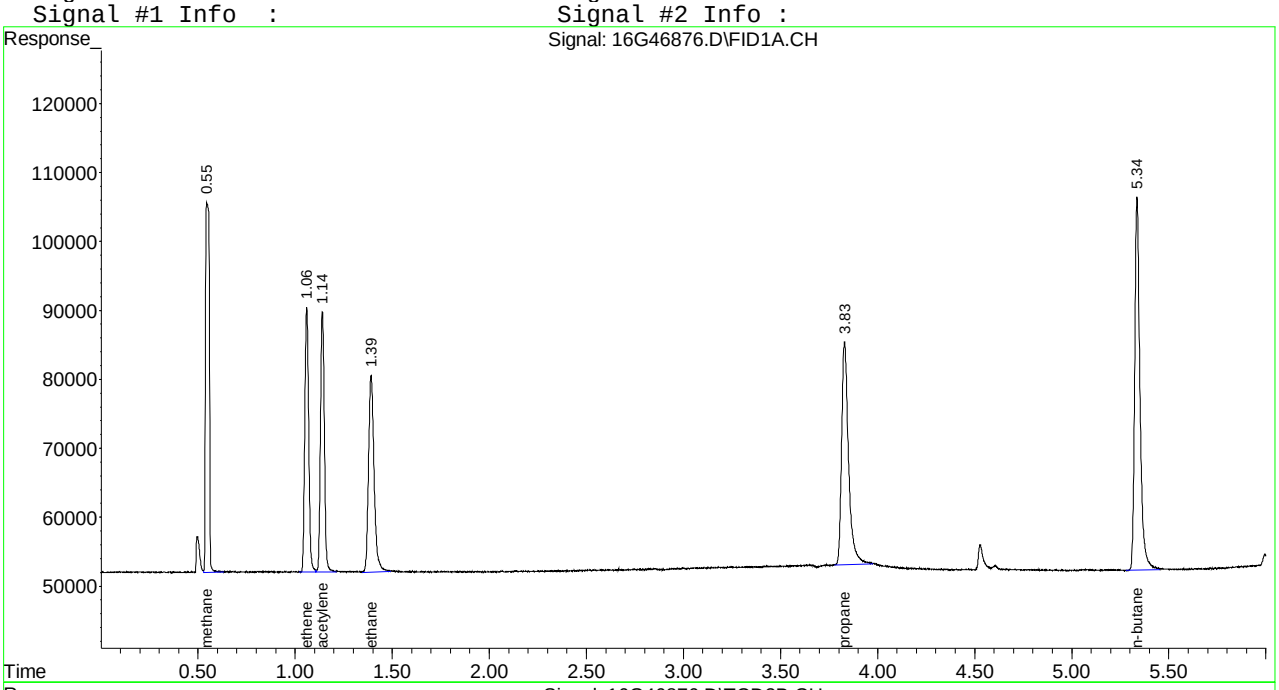

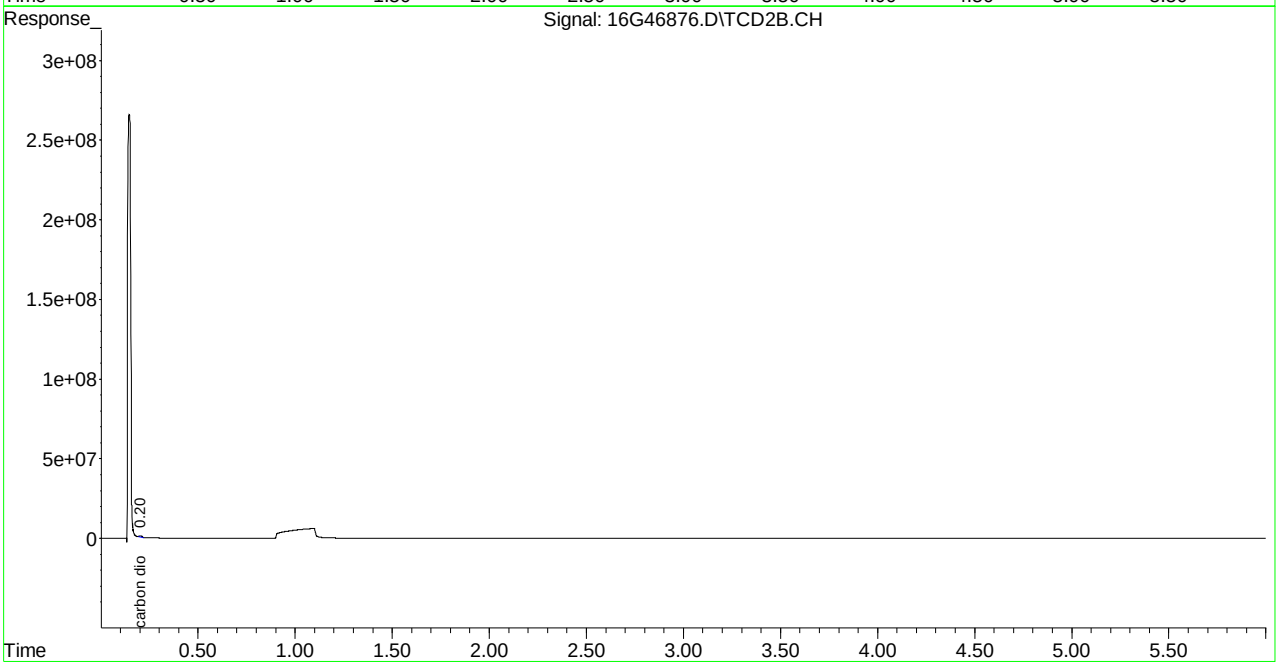

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46876.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46876.D\TCD2B.CH
Acq On : 03 Mar 2015 14:30 Operator: JDS
Sample : WG514119-02 1.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	1.670	1.773	-6.2	100	0.00
2	T	ethene	1.670	1.696	-1.6	100	0.00
3	T	acetylene	1.670	1.564	6.3	100	0.00
4	T	ethane	1.670	1.668	0.1	100	0.00
5	T	propane	1.670	1.620	3.0	100	0.00
6	T	n-butane	1.670	1.587	5.0	100	0.00

Signal #2

8	T	carbon dioxide	2000.000	1442.423	27.9#	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46876.D RSKEXT1.M Fri Mar 06 11:52:49 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46876.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46876.D\TCD2B.CH
Acq On    : 03 Mar 2015  14:30                        Operator: JDS
Sample    : WG514119-02 1.67umol/mol STD RSK175       Inst    : HP16
Misc      : 1,1 STD67276                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46877.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46877.D\TCD2B.CH
Acq On : 03 Mar 2015 14:42 Operator: JDS
Sample : WG514119-03 33.3umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:10 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	6717167	33.998	umol/
2) T	ethene	1.06	11126351	35.075	umol/
3) T	acetylene	1.14	11442001	33.809	umol/
4) T	ethane	1.39	11535235	33.937	umol/
5) T	propane	3.83	17256964	34.764	umol/
6) T	n-butane	5.34	22669140	34.968	umol/
8) T	carbon dioxide	0.20	18661832	3383.908	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46877.D RSKEXT1.M Fri Mar 06 11:57:10 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46877.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46877.D\TCD2B.CH
Acq On : 03 Mar 2015 14:42 Operator: JDS
Sample : WG514119-03 33.3umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

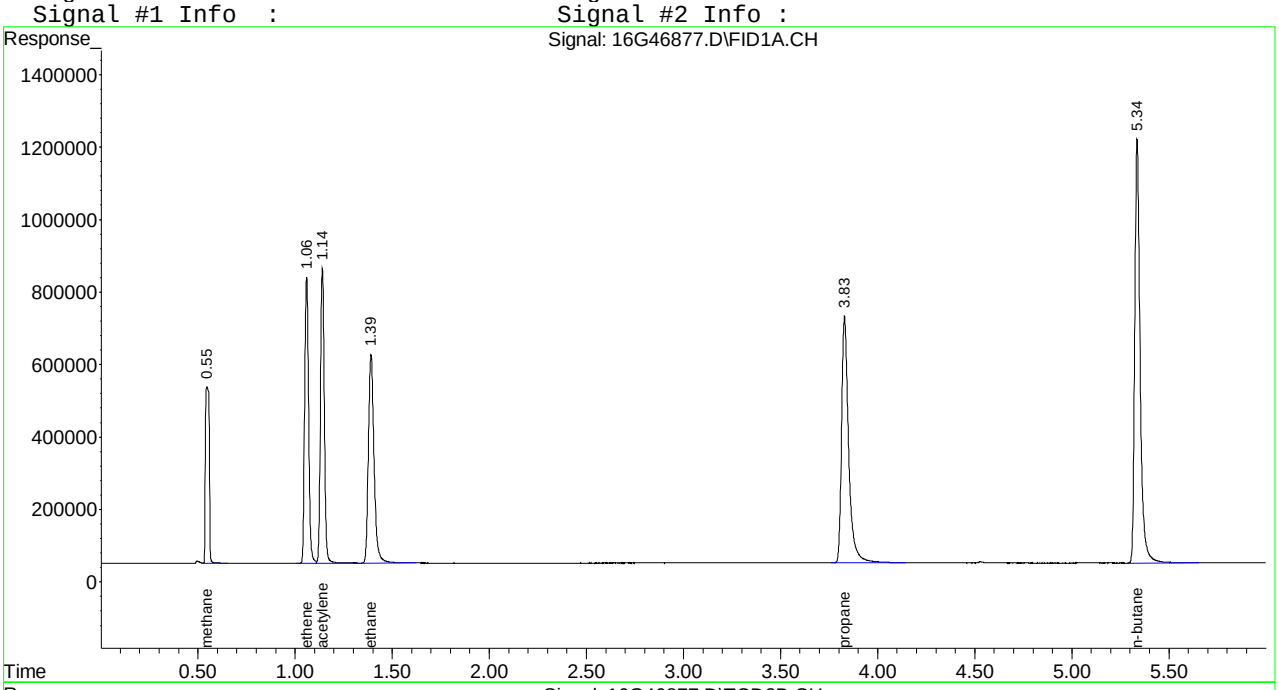

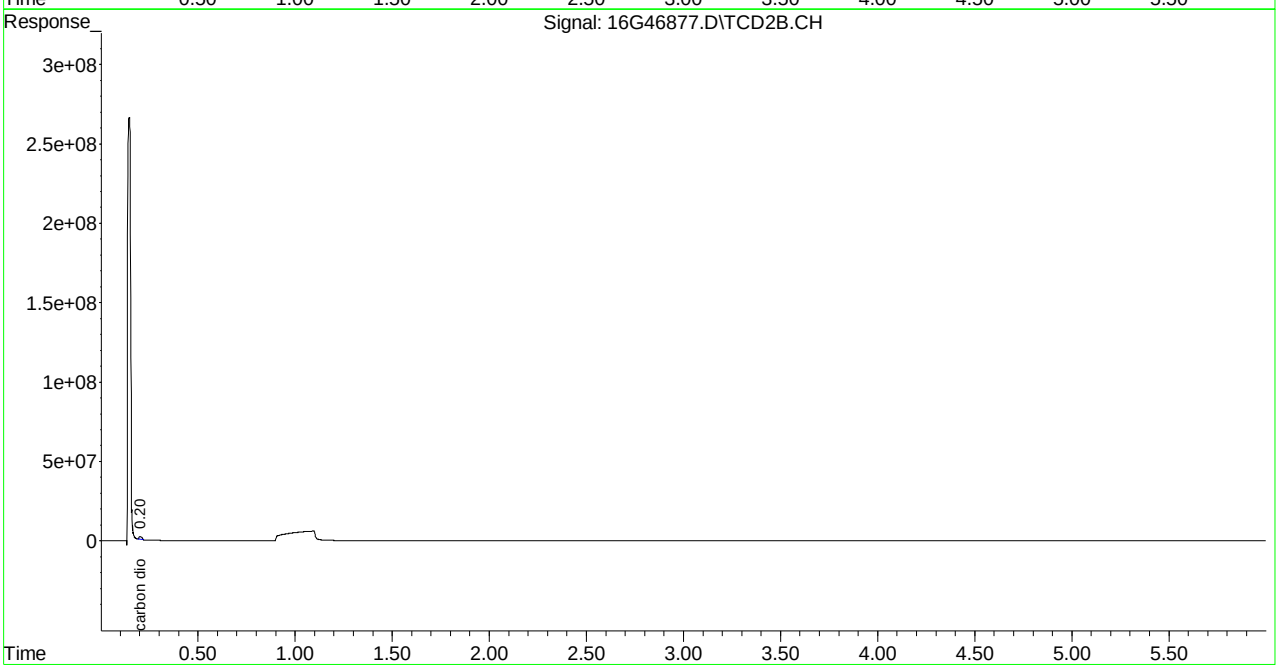

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46878.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46878.D\TCD2B.CH
Acq On : 03 Mar 2015 14:53 Operator: JDS
Sample : WG514119-04 66.7umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:11 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	11713293	60.930	umol/
2) T	ethene	1.06	19737271	62.220	umol/
3) T	acetylene	1.14	20910957	61.787	umol/
4) T	ethane	1.39	20832969	61.292	umol/
5) T	propane	3.83	31304425	63.062	umol/
6) T	n-butane	5.33	40948894	63.166	umol/
8) T	carbon dioxide	0.20	37230879	6750.991	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46878.D RSKEXT1.M Fri Mar 06 11:57:11 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46878.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46878.D\TCD2B.CH
Acq On : 03 Mar 2015 14:53 Operator: JDS
Sample : WG514119-04 66.7umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

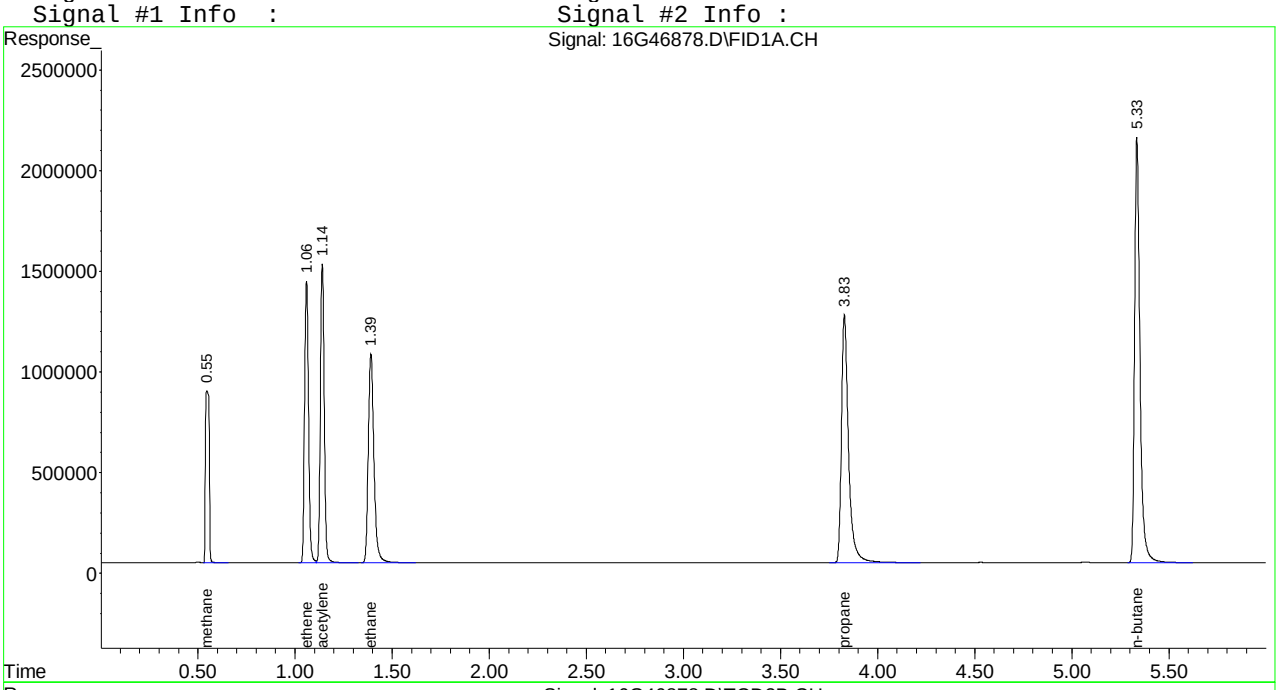

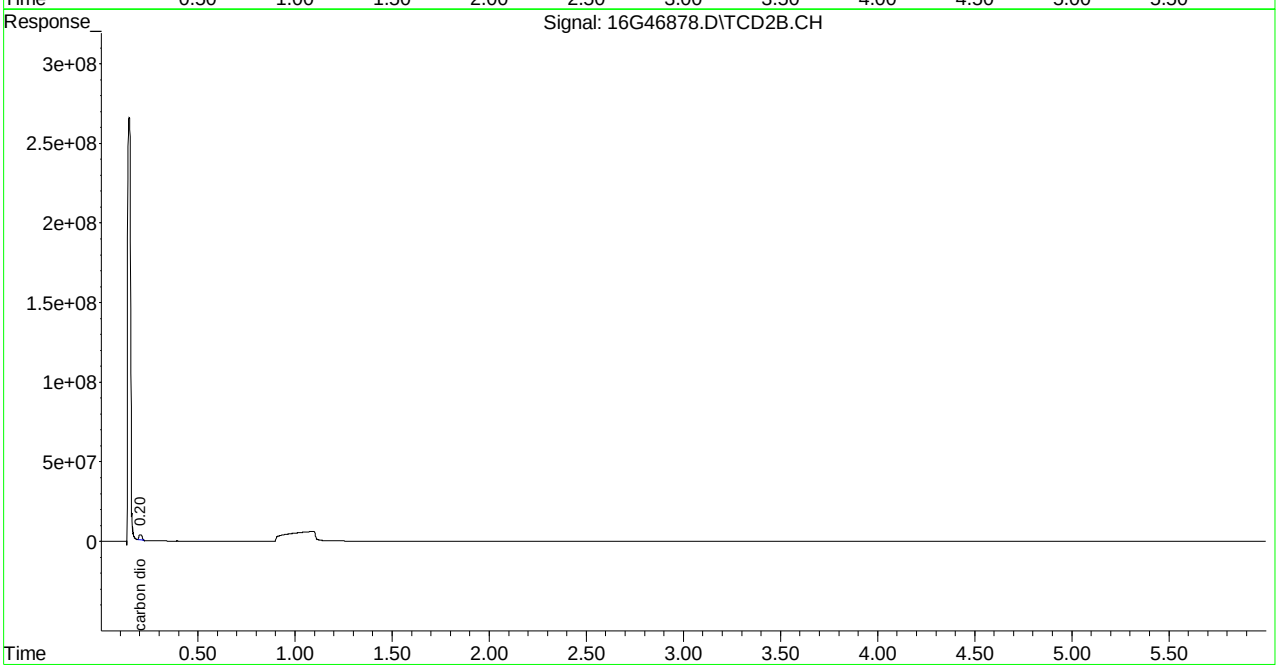

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46879.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46879.D\TCD2B.CH
Acq On : 03 Mar 2015 15:05 Operator: JDS
Sample : WG514119-05 133umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:11 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	24939741	132.227	umol/
2) T	ethene	1.06	41686300	131.412	umol/
3) T	acetylene	1.14	47206199	139.484	umol/
4) T	ethane	1.39	43668346	128.475	umol/
5) T	propane	3.83	64365472	129.663	umol/
6) T	n-butane	5.33	84395468	130.185	umol/
8) T	carbon dioxide	0.20	80524699	14601.362	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46879.D RSKEXT1.M Fri Mar 06 11:57:12 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46879.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46879.D\TCD2B.CH
Acq On : 03 Mar 2015 15:05 Operator: JDS
Sample : WG514119-05 133umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

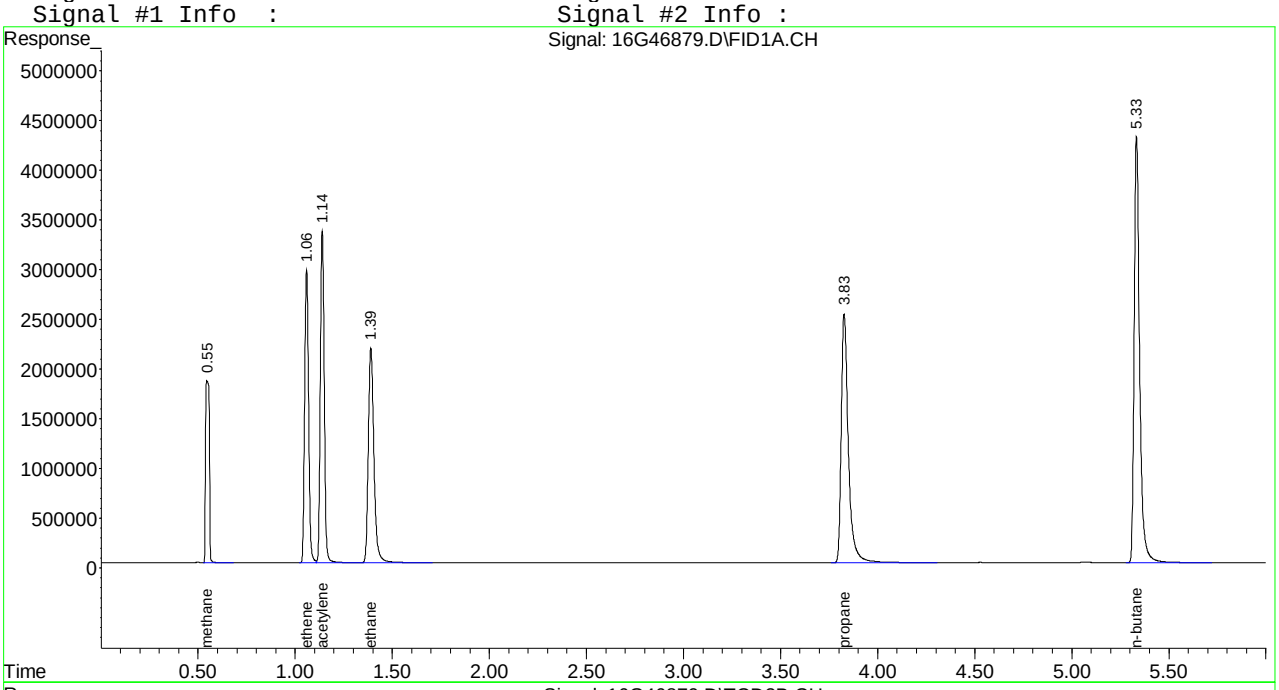

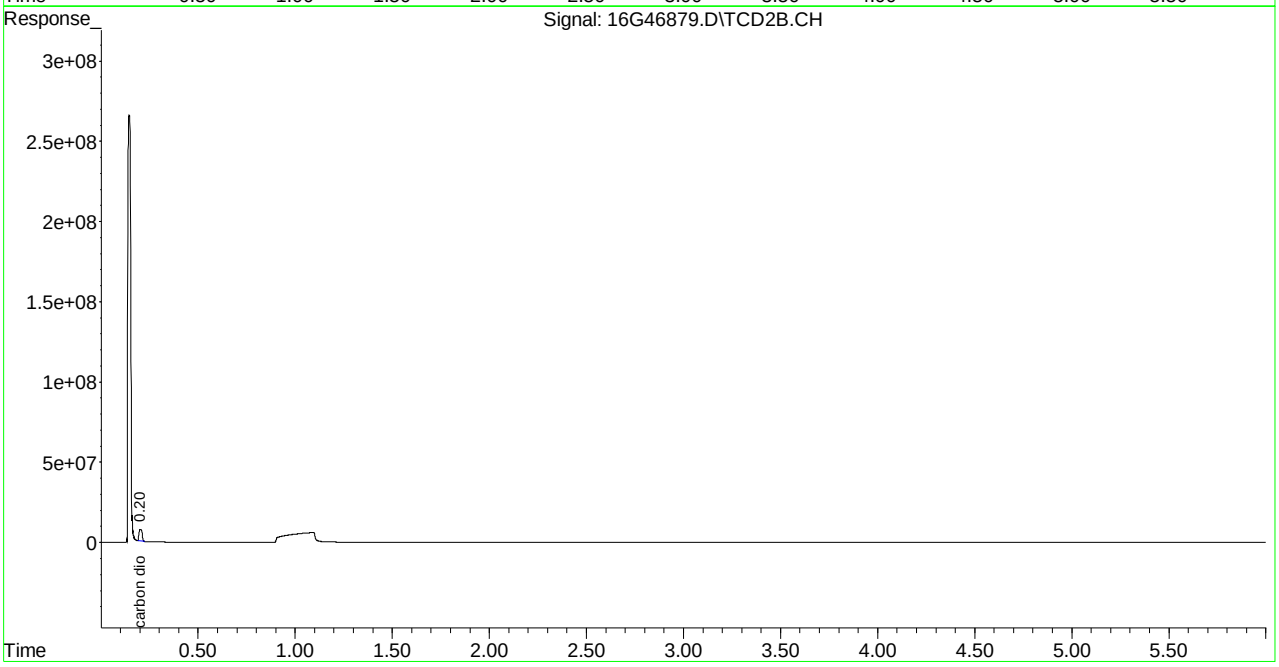

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46880.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46880.D\TCD2B.CH
Acq On : 03 Mar 2015 15:17 Operator: JDS
Sample : WG514119-06 333umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:12 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	61959752	331.783	umol/
2) T	ethene	1.06	106345688	335.244	umol/
3) T	acetylene	1.14	118917475	351.375	umol/
4) T	ethane	1.39	111791323	328.897	umol/
5) T	propane	3.83	166544491	335.501	umol/
6) T	n-butane	5.33	219746160	338.971	umol/
8) T	carbon dioxide	0.20	201820251	36595.610	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46880.D RSKEXT1.M Fri Mar 06 11:57:12 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46880.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46880.D\TCD2B.CH
Acq On : 03 Mar 2015 15:17 Operator: JDS
Sample : WG514119-06 333umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

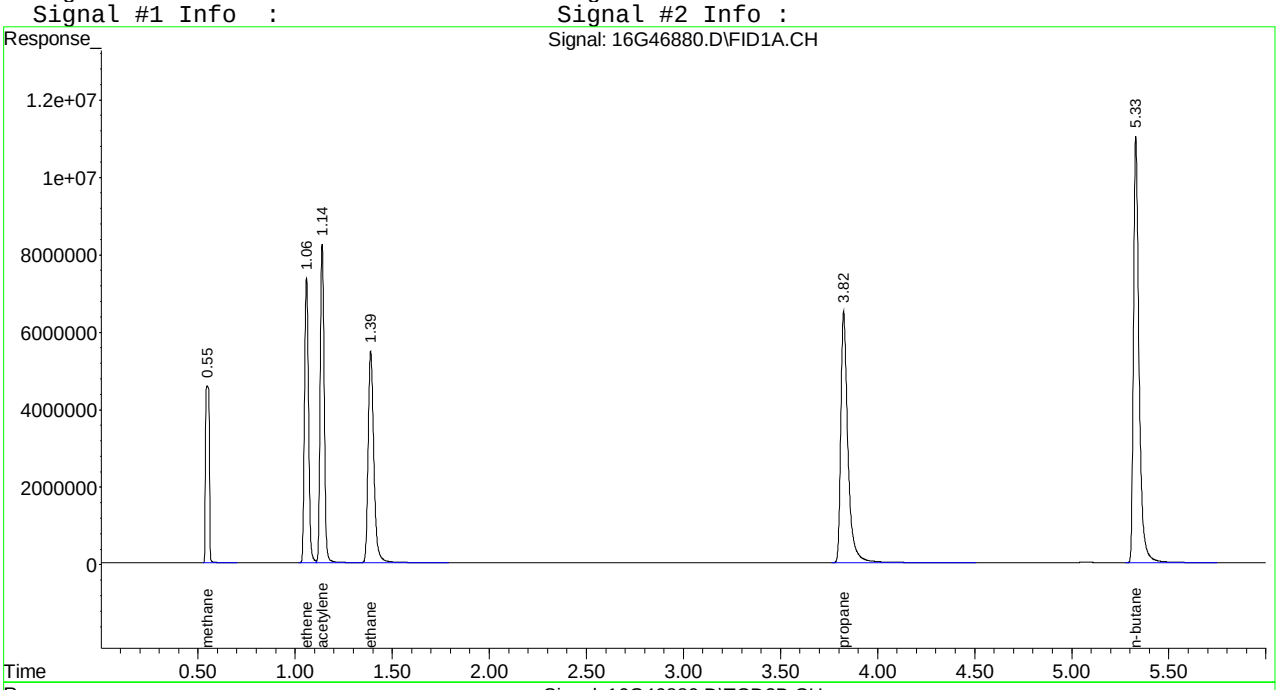

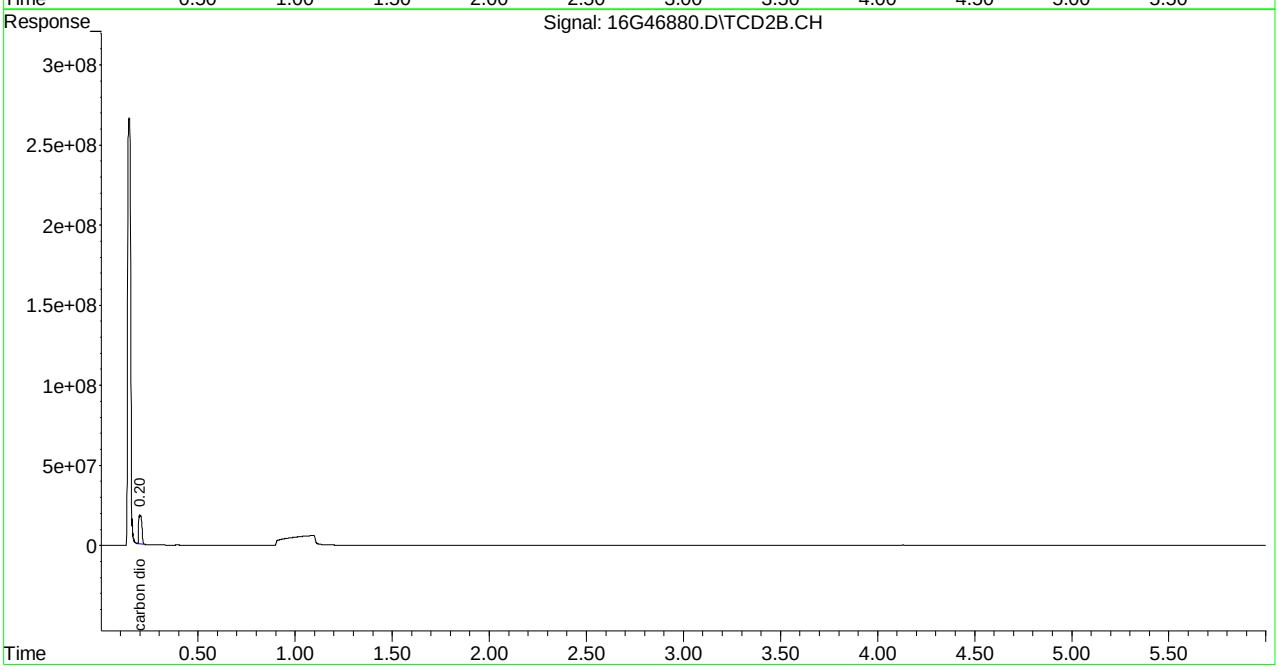

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46881.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46881.D\TCD2B.CH
Acq On : 03 Mar 2015 15:29 Operator: JDS
Sample : WG514119-07 533umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:13 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	100578633	539.958	umol/
2) T	ethene	1.06	169644372	534.786	umol/
3) T	acetylene	1.14	183672662	542.712	umol/
4) T	ethane	1.39	178696917	525.738	umol/
5) T	propane	3.82	263060772	529.931	umol/
6) T	n-butane	5.33	344418707	531.285	umol/
8) T	carbon dioxide	0.20	309711021	56159.199	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46881.D RSKEXT1.M Fri Mar 06 11:57:13 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46881.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46881.D\TCD2B.CH
Acq On : 03 Mar 2015 15:29 Operator: JDS
Sample : WG514119-07 533umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

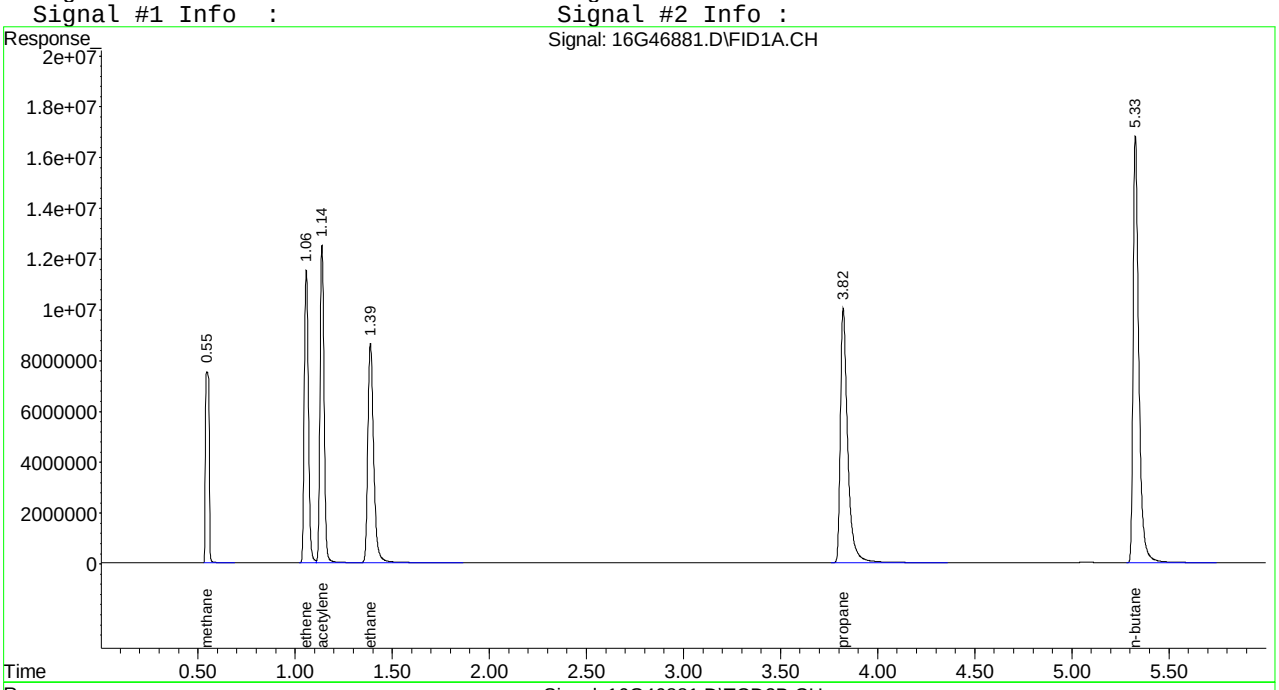

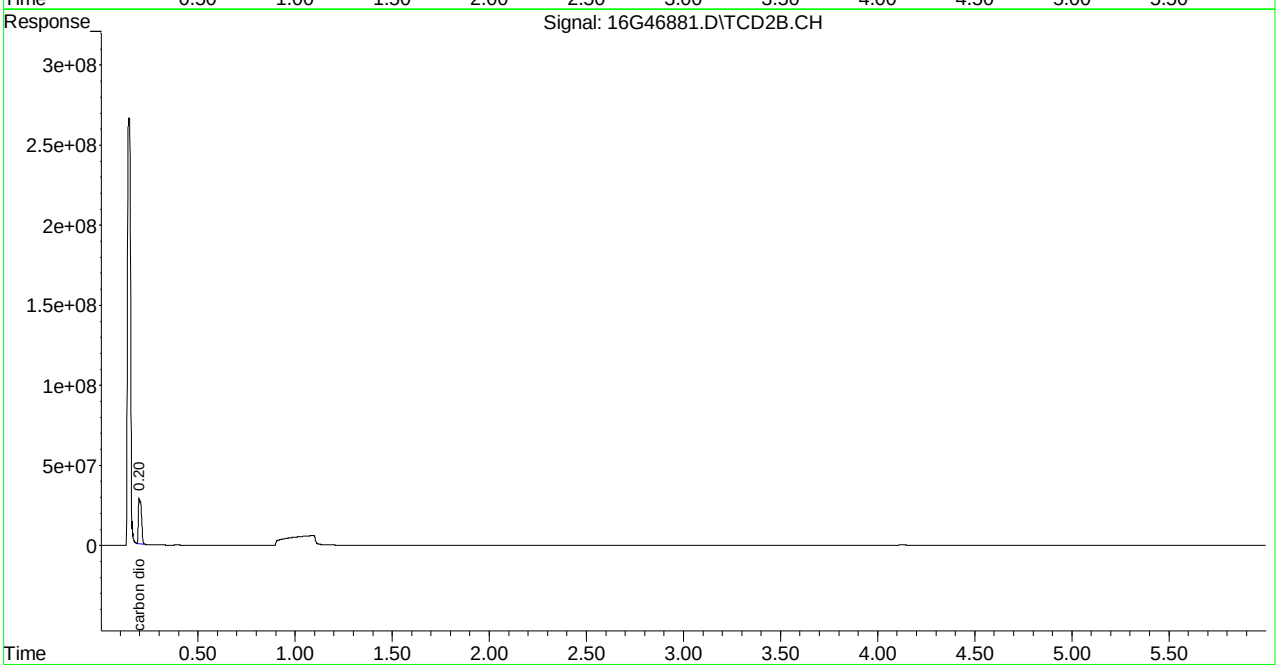

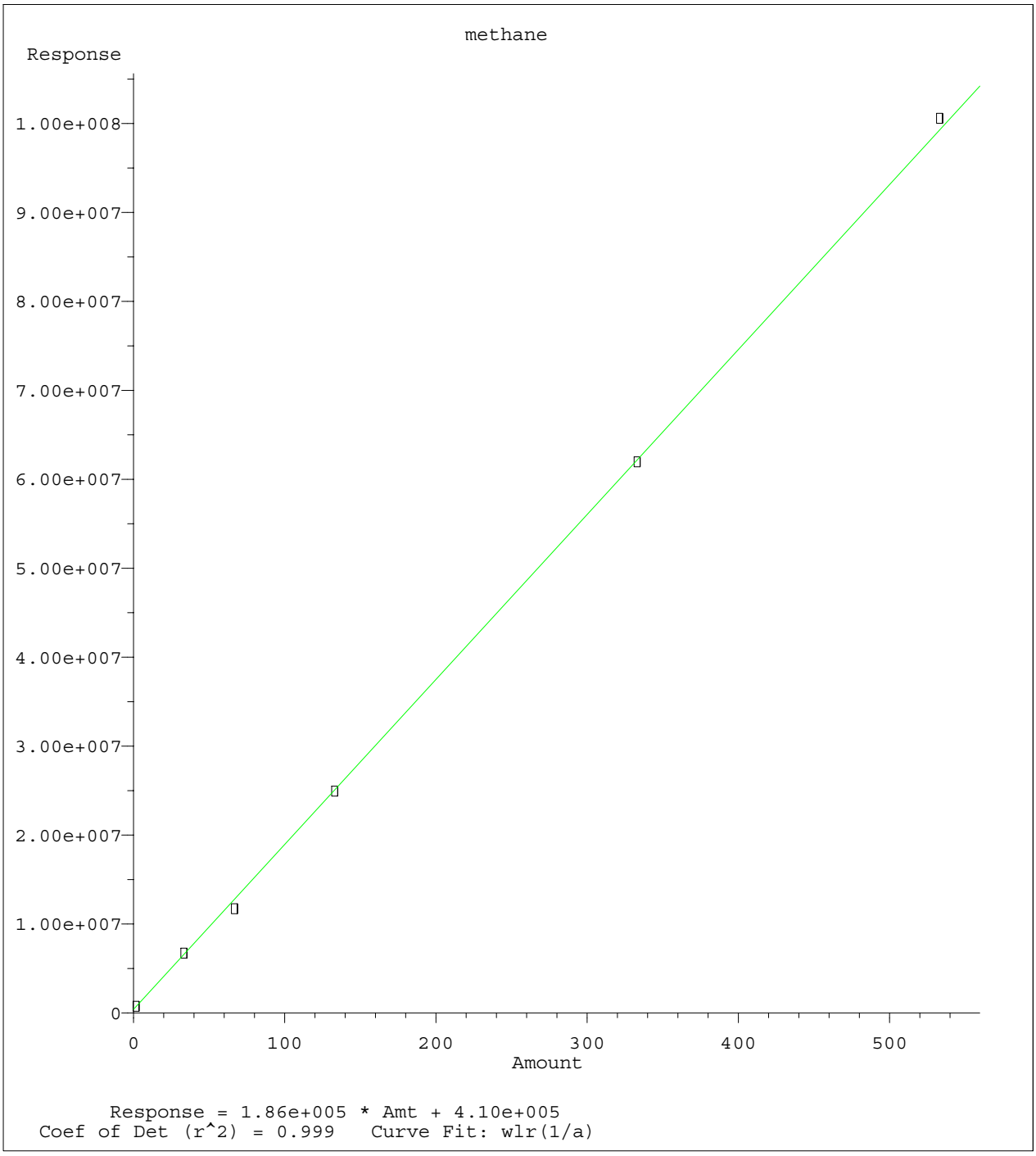

Method Name: C:\MSDCHEM\1\METHODS\RSKEXT1.M
Calibration Table Last Updated: Fri Mar 06 11:52:33 2015

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46884.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46884.D\TCD2B.CH
Acq On : 03 Mar 2015 17:10 Operator: JDS
Sample : WG514119-08 133umol/mol ALT SRC STD RSK1 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:58:49 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	25936090	137.598	umol/
2) T	ethene	1.06	43111404	135.904	umol/
3) T	acetylene	1.14	47098795	139.167	umol/
4) T	ethane	1.39	44778091	131.740	umol/
5) T	propane	3.83	64822008	130.583	umol/
6) T	n-butane	5.33	82856392	127.811	umol/
8) T	carbon dioxide	0.20	76359751	13846.141	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46884.D RSKEXT1.M Fri Mar 06 11:58:49 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46884.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46884.D\TCD2B.CH
Acq On : 03 Mar 2015 17:10 Operator: JDS
Sample : WG514119-08 133umol/mol ALT SRC STD RSK1 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:58 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

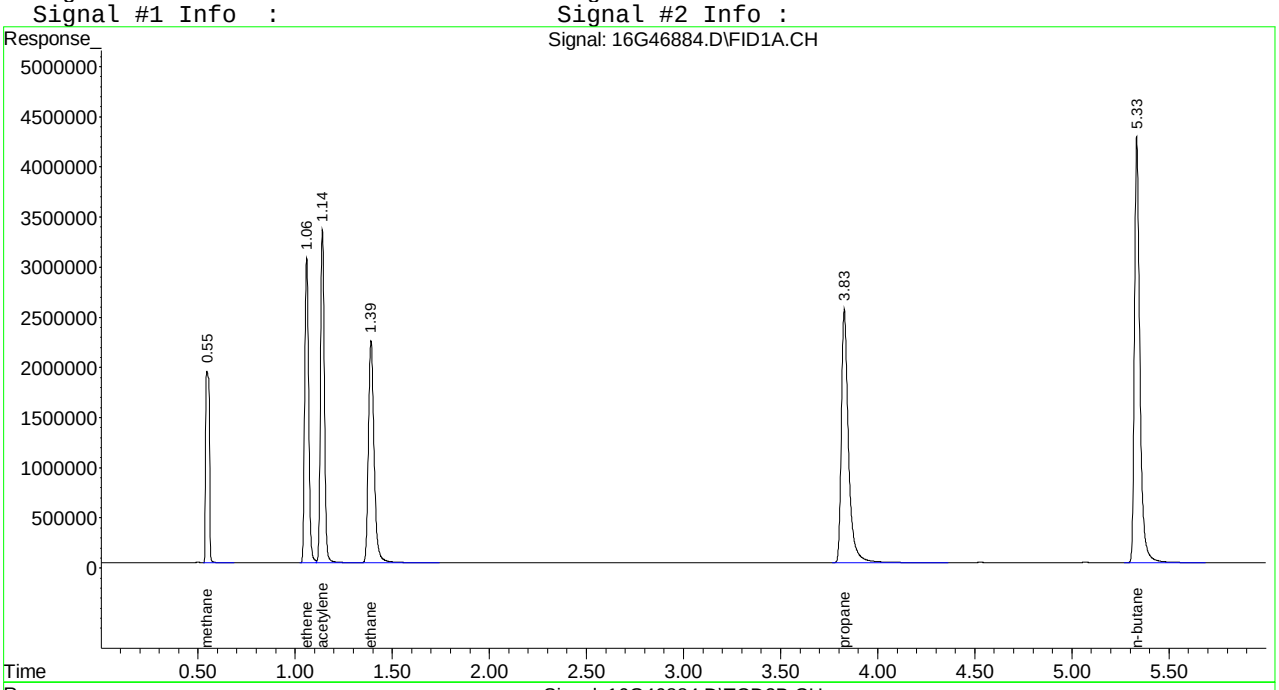

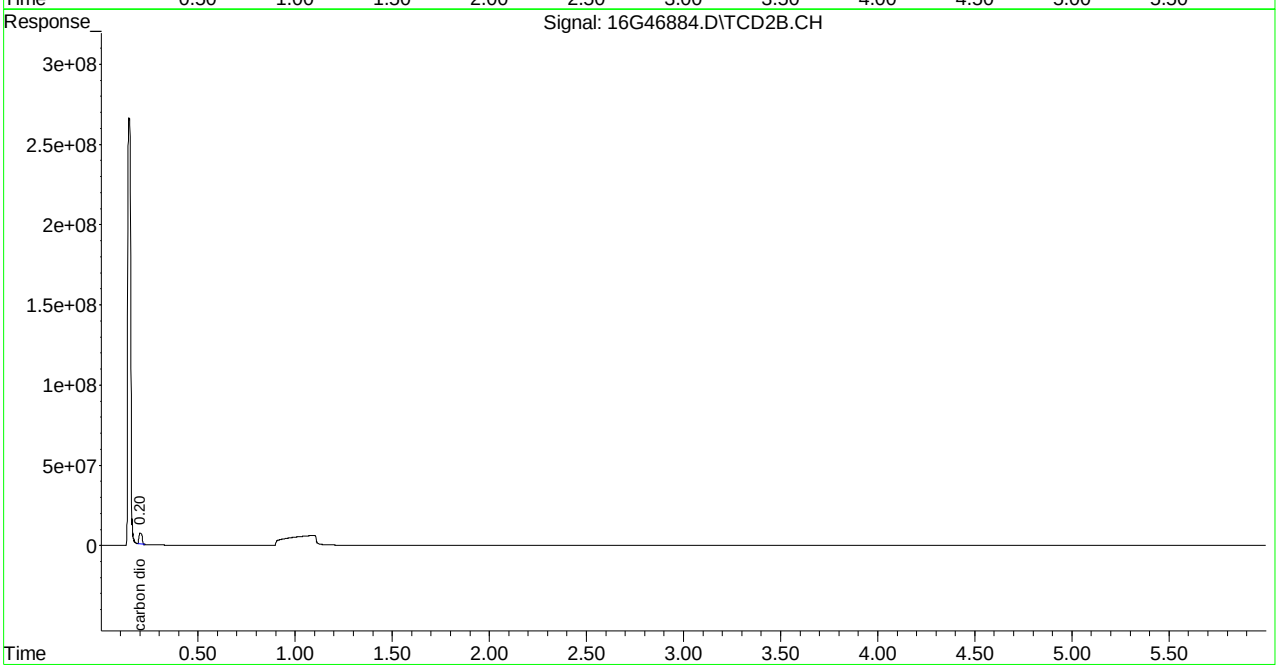

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46884.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46884.D\TCD2B.CH
Acq On : 03 Mar 2015 17:10 Operator: JDS
Sample : WG514119-08 133umol/mol ALT SRC STD RSK1 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	137.598	-3.5	104	0.00
2	T	ethene	133.000	135.904	-2.2	103	0.00
3	T	acetylene	133.000	139.167	-4.6	100	0.00
4	T	ethane	133.000	131.740	0.9	103	0.00
5	T	propane	133.000	130.583	1.8	101	0.00
6	T	n-butane	133.000	127.811	3.9	98	0.00

Signal #2

8	T	carbon dioxide	13300.000	13846.141	-4.1	95	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46884.D RSKEXT1.M Fri Mar 06 11:59:02 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46884.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46884.D\TCD2B.CH
Acq On    : 03 Mar 2015  17:10                        Operator: JDS
Sample    : WG514119-08 133umol/mol ALT SRC STD RSK1 Inst    : HP16
Misc      : 1,1 STD68250                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\060115\16G47693.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDchem\1\DATA\060115\16G47693.D\TCD2B.CH
Acq On : 01 Jun 2015 9:34 Operator: JDS
Sample : WG525709-01 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Jun 01 09:40:23 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	23154507	122.604	umol/
2) T	ethene	1.06	38758662	122.183	umol/
3) T	acetylene	1.14	44883883	132.622	umol/
4) T	ethane	1.39	40369593	118.770	umol/
5) T	propane	3.83	59146658	119.150	umol/
6) T	n-butane	5.34	76832385	118.518	umol/
8) T	carbon dioxide	0.20	75946925	13771.284	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47693.D RSKEXT1.M Mon Jun 01 09:40:23 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\060115\16G47693.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDchem\1\DATA\060115\16G47693.D\TCD2B.CH
Acq On : 01 Jun 2015 9:34 Operator: JDS
Sample : WG525709-01 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Jun 1 9:40 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

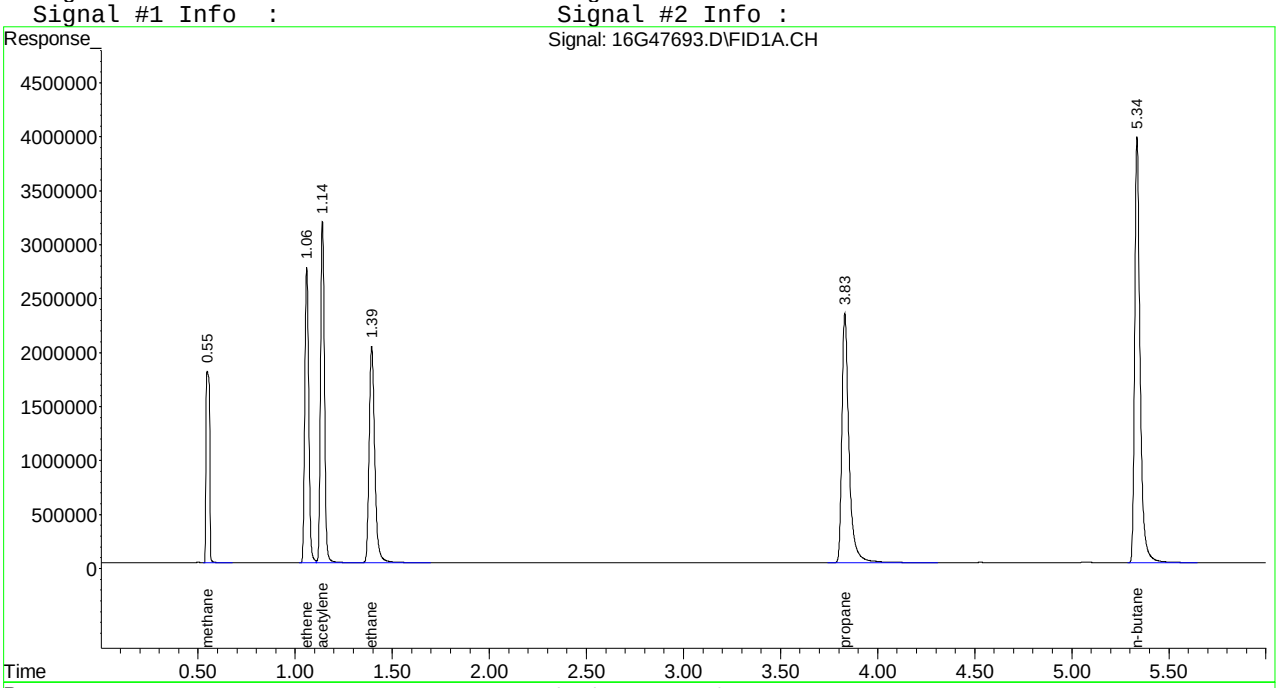

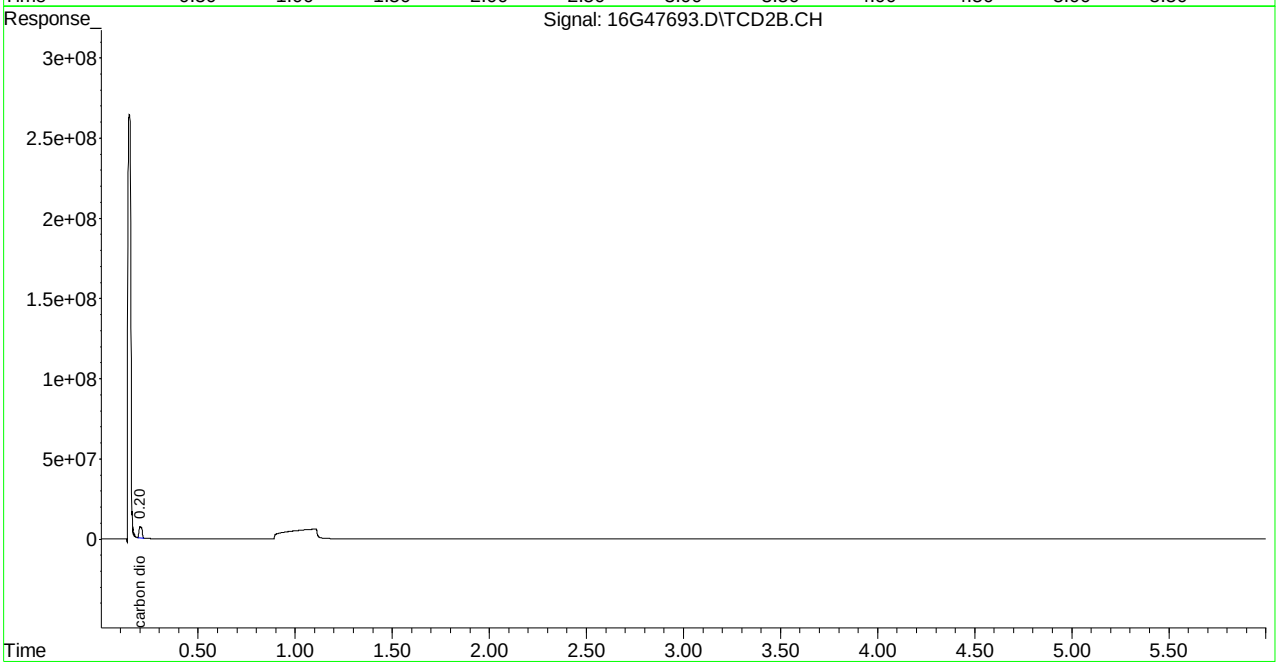

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\060115\16G47693.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\060115\16G47693.D\TCD2B.CH
Acq On : 01 Jun 2015 9:34 Operator: JDS
Sample : WG525709-01 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	122.604	7.8	93	0.00
2	T	ethene	133.000	122.183	8.1	93	0.00
3	T	acetylene	133.000	132.622	0.3	95	0.00
4	T	ethane	133.000	118.770	10.7	92	0.00
5	T	propane	133.000	119.150	10.4	92	0.00
6	T	n-butane	133.000	118.518	10.9	91	0.00
		Signal #2					
8	T	carbon dioxide	13300.000	13771.284	-3.5	94	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G47693.D RSKEXT1.M Mon Jun 01 16:16:07 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\060115\16G47693.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\060115\16G47693.D\TCD2B.CH
Acq On    : 01 Jun 2015   9:34                      Operator: JDS
Sample    : WG525709-01 133umol/mol CCV RSK175      Inst    : HP16
Misc      : 1,1 STD67274                            Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\060115\16G47704.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\060115\16G47704.D\TCD2B.CH
Acq On : 01 Jun 2015 14:36 Operator: JDS
Sample : WG525709-02 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Jun 01 14:42:49 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	23417667	124.022	umol/
2) T	ethene	1.06	38690043	121.966	umol/
3) T	acetylene	1.14	40673375	120.181	umol/
4) T	ethane	1.39	40596657	119.438	umol/
5) T	propane	3.83	60526365	121.929	umol/
6) T	n-butane	5.34	77640876	119.765	umol/
8) T	carbon dioxide	0.20	71671468	12996.025	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47704.D RSKEXT1.M Mon Jun 01 14:42:49 2015 Page 1

Signal #1 : C:\MSDchem\1\DATA\060115\16G47704.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\060115\16G47704.D\TCD2B.CH
Acq On : 01 Jun 2015 14:36 Operator: JDS
Sample : WG525709-02 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Jun 1 14:42 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

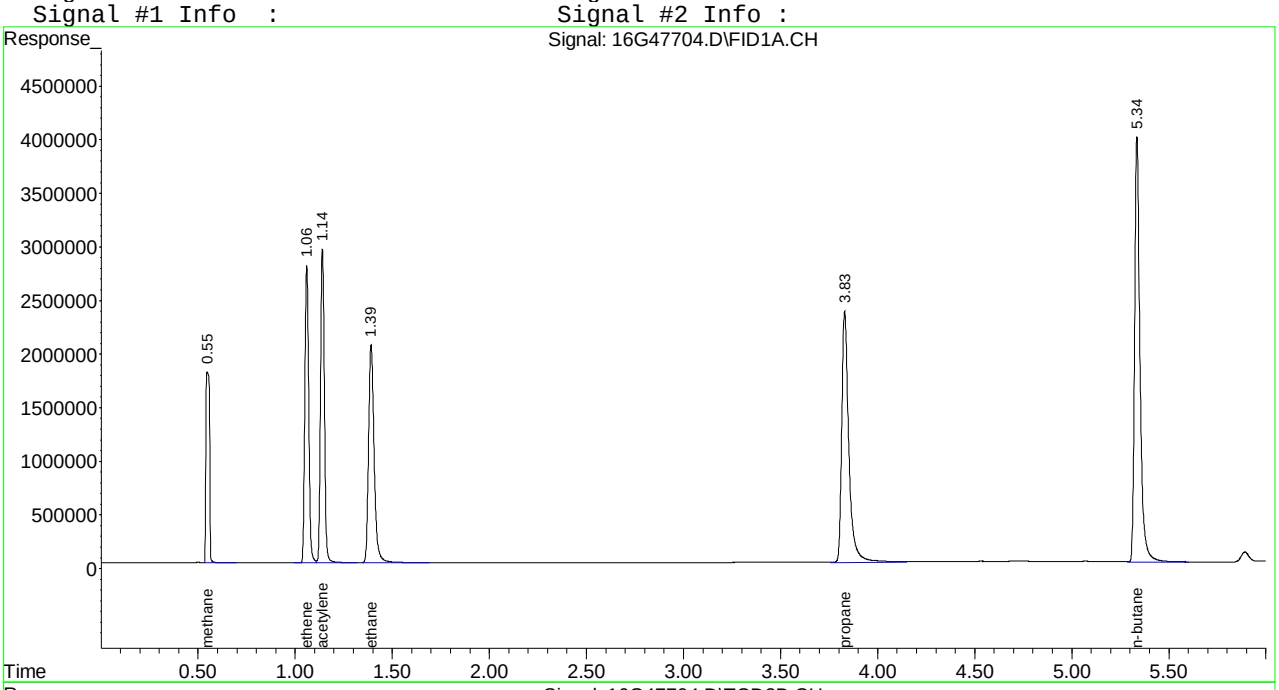

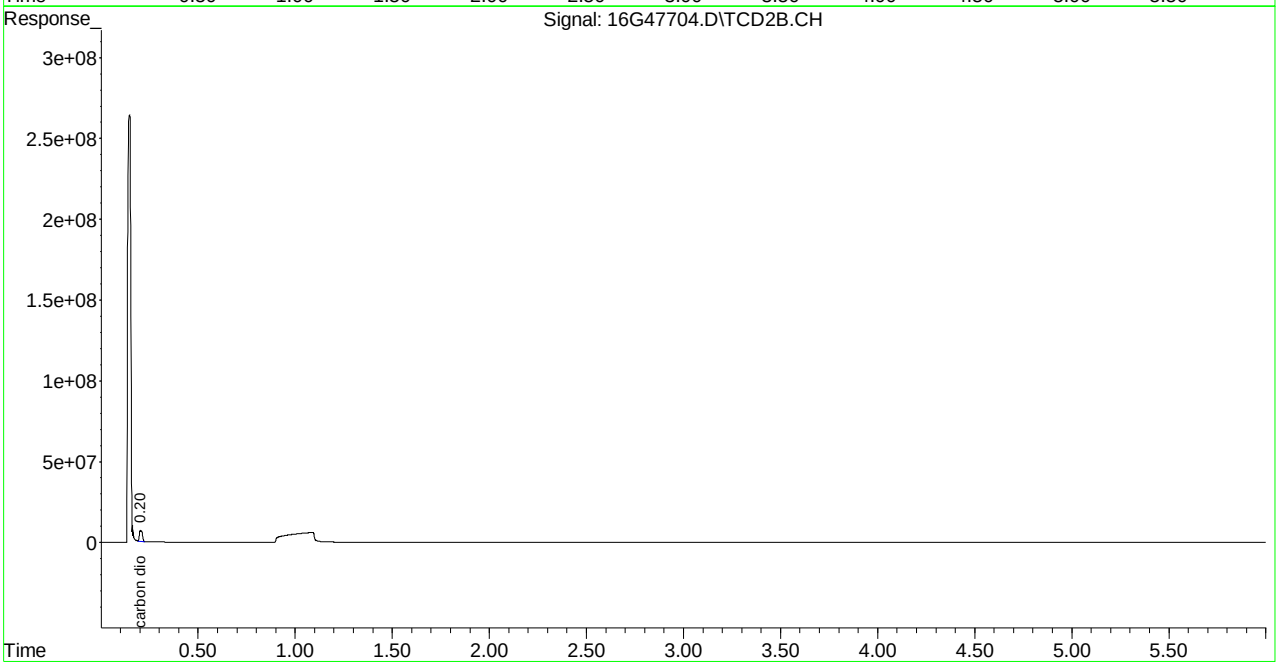

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\060115\16G47704.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\060115\16G47704.D\TCD2B.CH
Acq On : 01 Jun 2015 14:36 Operator: JDS
Sample : WG525709-02 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	124.022	6.8	94	0.00
2	T	ethene	133.000	121.966	8.3	93	0.00
3	T	acetylene	133.000	120.181	9.6	86	0.00
4	T	ethane	133.000	119.438	10.2	93	0.00
5	T	propane	133.000	121.929	8.3	94	0.00
6	T	n-butane	133.000	119.765	10.0	92	0.00

Signal #2

8	T	carbon dioxide	13300.000	12996.025	2.3	89	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G47704.D RSKEXT1.M Mon Jun 01 16:16:14 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\060115\16G47704.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\060115\16G47704.D\TCD2B.CH
Acq On    : 01 Jun 2015  14:36                        Operator: JDS
Sample    : WG525709-02 133umol/mol CCV RSK175        Inst    : HP16
Misc      : 1,1 STD67274                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\060115\16G47711.D\FID1A.CH Vial: 19
Signal #2 : C:\MSDchem\1\DATA\060115\16G47711.D\TCD2B.CH
Acq On : 01 Jun 2015 15:58 Operator: JDS
Sample : WG525709-03 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Jun 01 16:04:09 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	23328110	123.540	umol/
2) T	ethene	1.06	39067960	123.158	umol/
3) T	acetylene	1.14	41699527	123.213	umol/
4) T	ethane	1.39	41050883	120.774	umol/
5) T	propane	3.83	60605650	122.089	umol/
6) T	n-butane	5.34	79362098	122.420	umol/
8) T	carbon dioxide	0.20	73700791	13363.998	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47711.D RSKEXT1.M Mon Jun 01 16:04:10 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\060115\16G47711.D\FID1A.CH Vial: 19
Signal #2 : C:\MSDchem\1\DATA\060115\16G47711.D\TCD2B.CH
Acq On : 01 Jun 2015 15:58 Operator: JDS
Sample : WG525709-03 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Jun 1 16:04 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

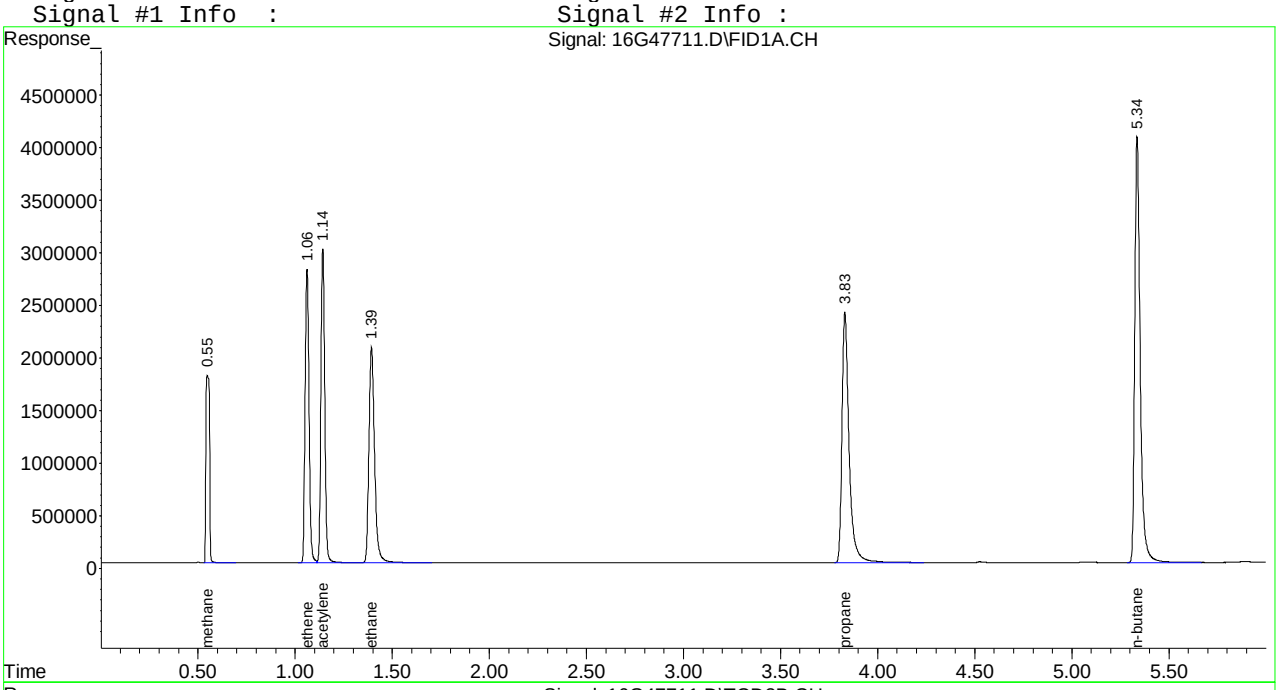

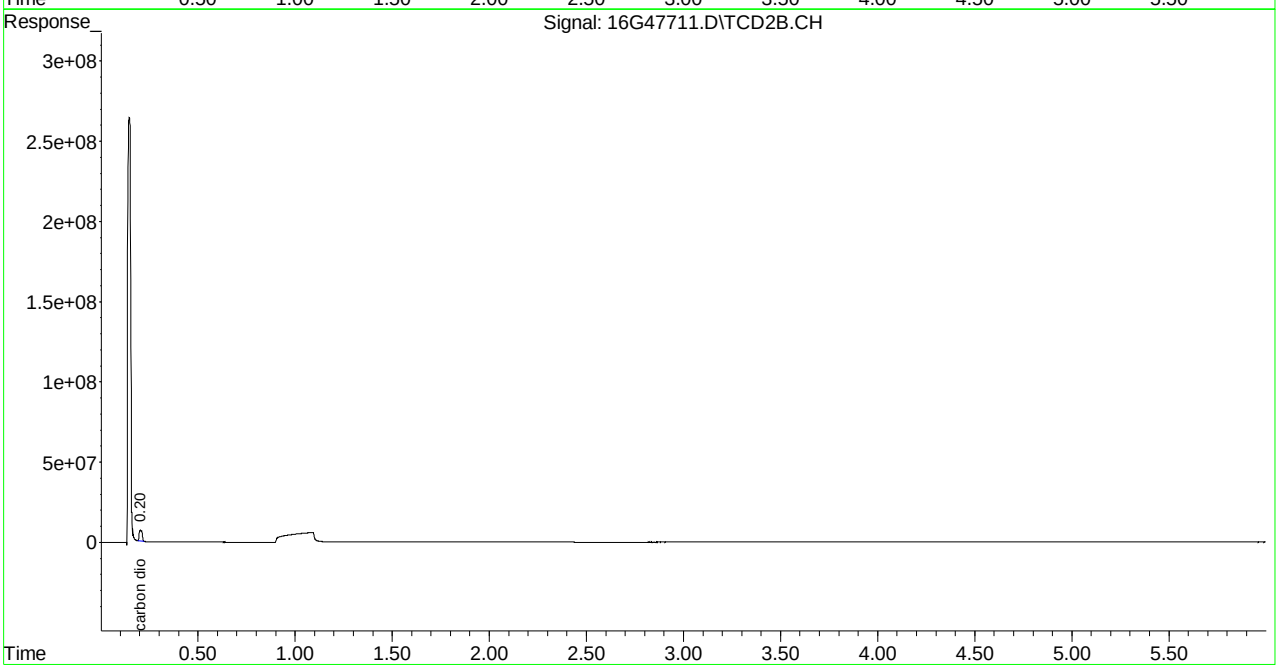

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\060115\16G47711.D\FID1A.CH Vial: 19
Signal #2 : C:\MSDCHEM\1\DATA\060115\16G47711.D\TCD2B.CH
Acq On : 01 Jun 2015 15:58 Operator: JDS
Sample : WG525709-03 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	123.540	7.1	94	0.00
2	T	ethene	133.000	123.158	7.4	94	0.00
3	T	acetylene	133.000	123.213	7.4	88	0.00
4	T	ethane	133.000	120.774	9.2	94	0.00
5	T	propane	133.000	122.089	8.2	94	0.00
6	T	n-butane	133.000	122.420	8.0	94	0.00

Signal #2

8	T	carbon dioxide	13300.000	13363.998	-0.5	92	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G47711.D RSKEXT1.M Mon Jun 01 16:16:23 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\060115\16G47711.D\FID1A.CH Vial: 19
Signal #2 : C:\MSDCHEM\1\DATA\060115\16G47711.D\TCD2B.CH
Acq On    : 01 Jun 2015  15:58                      Operator: JDS
Sample    : WG525709-03 133umol/mol CCV RSK175      Inst    : HP16
Misc      : 1,1 STD67274                            Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Microbac Laboratories Inc.
Daily Retention Time Window Determination

Login #: L15051752 **Run Date:** 06/01/2015 **Sample ID:** WG525709-01
Instrument: HP16 **Run Time:** 09:34 **Method:** RSK175
Workgroup (AAB#): WG525710 **File ID:** 16G47693

RT Standard	Analysis Date	File ID	Analyst
WG507817-01	01/13/2015	16G46159	JDS
WG507448-01	01/09/2015	16G46148	JDS
WG507013-01	01/06/2015	16G46125	JDS

Analyte	RT #1	RT #2	RT #3	STD	Lower	Upper
METHANE	.54	.55	.55	.55	0.520	0.580
ETHENE	1.06	1.06	1.06	1.06	1.030	1.090
ETHANE	1.39	1.39	1.39	1.39	1.360	1.420
PROPANE	3.82	3.83	3.83	3.83	3.800	3.860
N-BUTANE	5.33	5.34	5.34	5.34	5.310	5.370
CARBON DIOXIDE	.2	.2	.2	.2	0.170	0.230
ACETYLENE	1.14	1.14	1.14	1.14	1.110	1.170

RT_WIN - Modified 01/06/2010
PDF File ID: 4211491
Report generated 06/04/2015 15:31

2.1.2.5 Raw QC Data

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\060115\16G47694.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\060115\16G47694.D\TCD2B.CH
Acq On    : 01 Jun 2015   9:50                        Operator: JDS
Sample    : WG525710-01 BLANK RSK175                  Inst    : HP16
Misc      : 1,1                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Jun 01 09:56:58 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                   Signal #2 Phase:
Signal #1 Info  :                   Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	309497	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.00	0	N.D.	umol/

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\060115\16G47694.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\060115\16G47694.D\TCD2B.CH
Acq On : 01 Jun 2015 9:50 Operator: JDS
Sample : WG525710-01 BLANK RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Jun 1 9:56 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

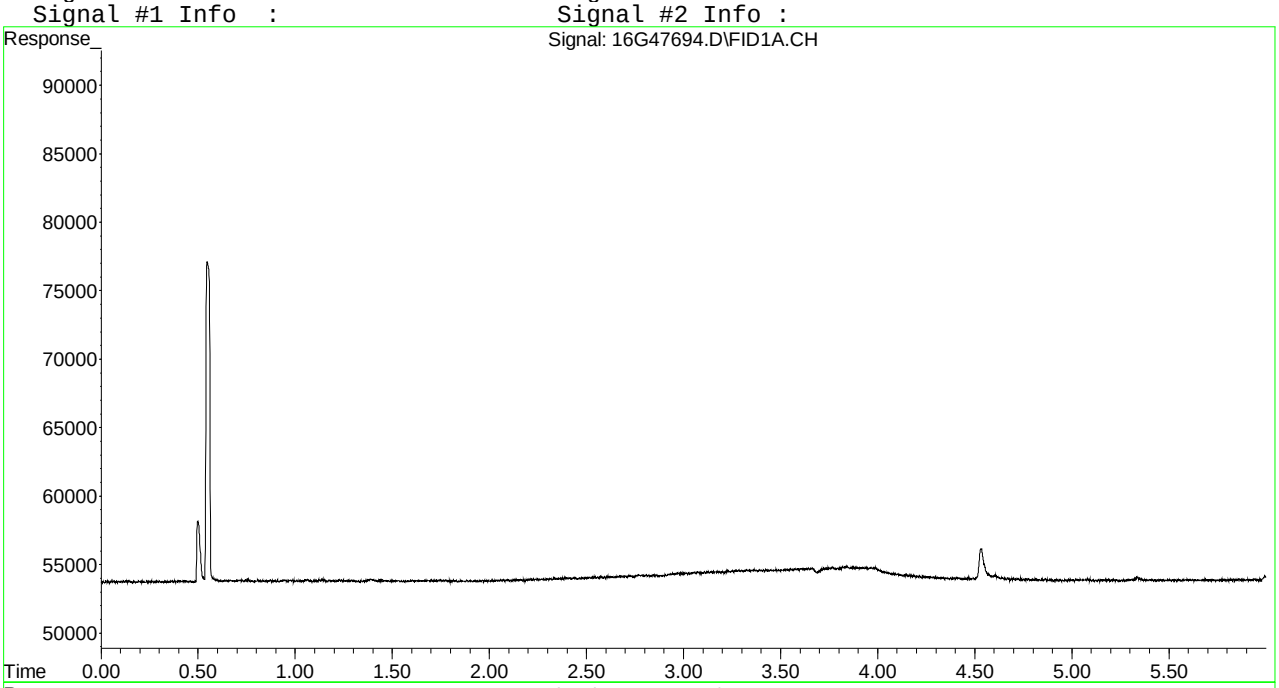

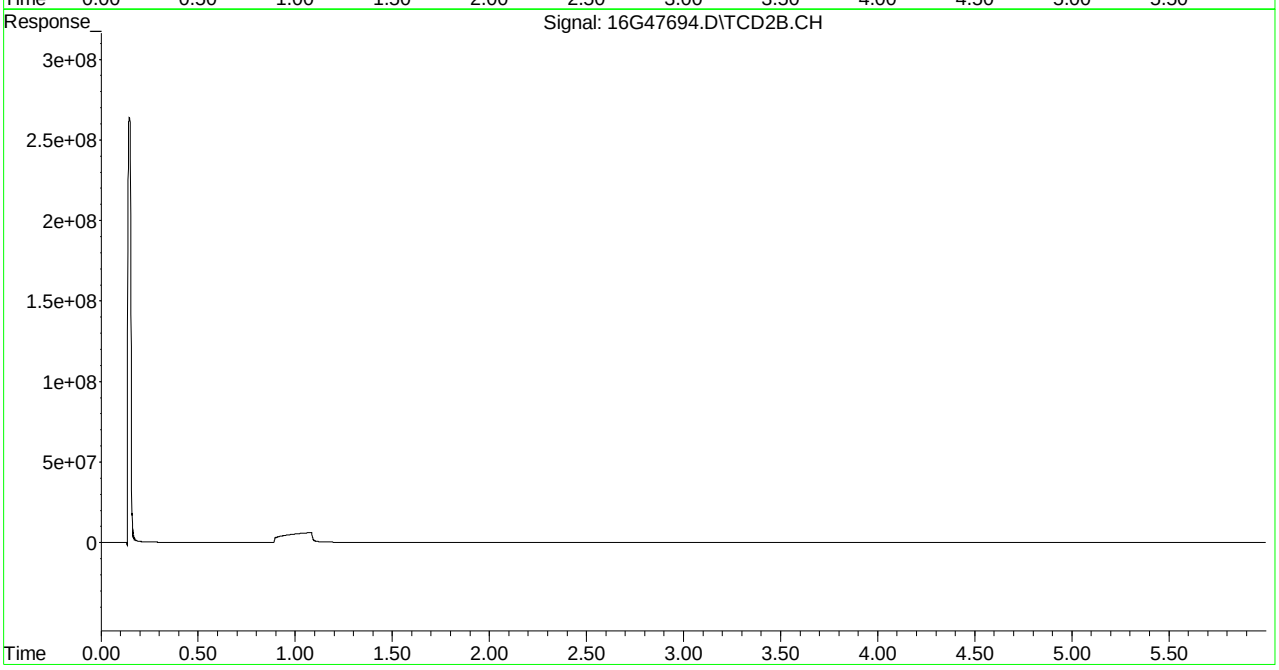

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\060115\16G47695.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDchem\1\DATA\060115\16G47695.D\TCD2B.CH
Acq On : 01 Jun 2015 10:03 Operator: JDS
Sample : WG525710-02 67umol/mol LCS RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Jun 01 10:09:09 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	11957435	62.246	umol/
2) T	ethene	1.06	19743006	62.238	umol/
3) T	acetylene	1.14	21107925	62.369	umol/
4) T	ethane	1.40	20428595	60.102	umol/
5) T	propane	3.83	29730737	59.892	umol/
6) T	n-butane	5.34	38478428	59.355	umol/
8) T	carbon dioxide	0.20	35201232	6382.960	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47695.D RSKEXT1.M Mon Jun 01 10:09:10 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\060115\16G47695.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDchem\1\DATA\060115\16G47695.D\TCD2B.CH
Acq On : 01 Jun 2015 10:03 Operator: JDS
Sample : WG525710-02 67umol/mol LCS RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Jun 1 10:09 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

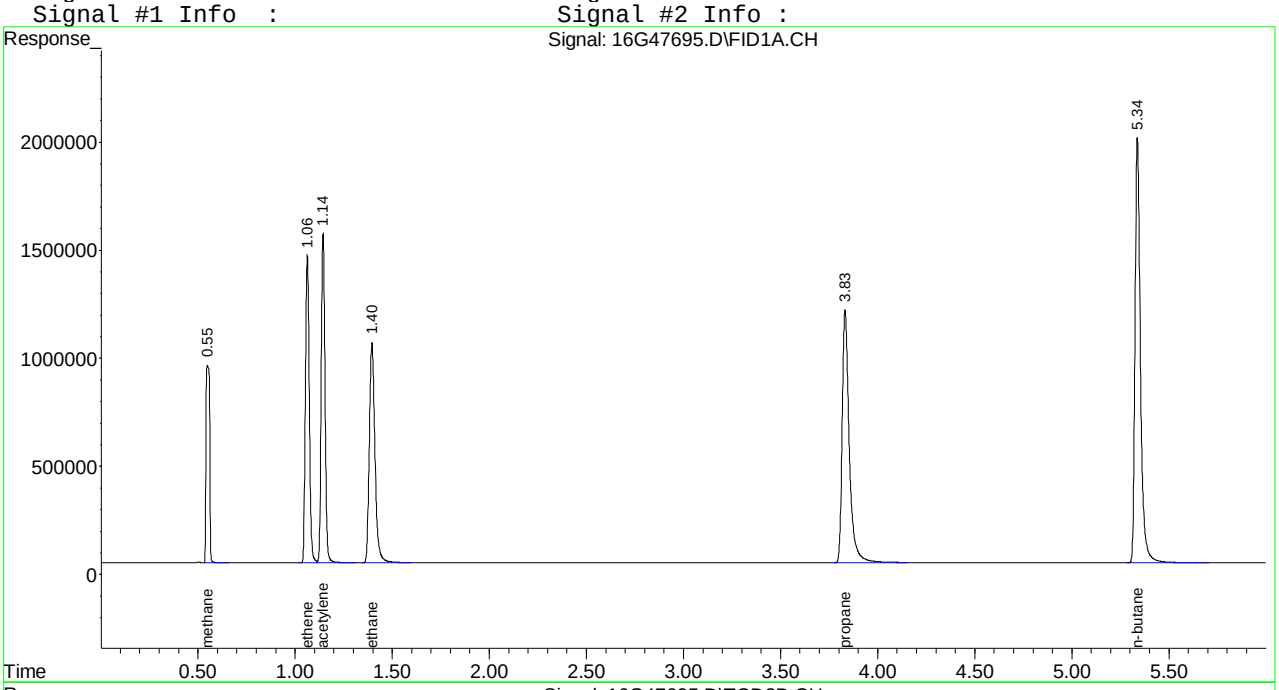

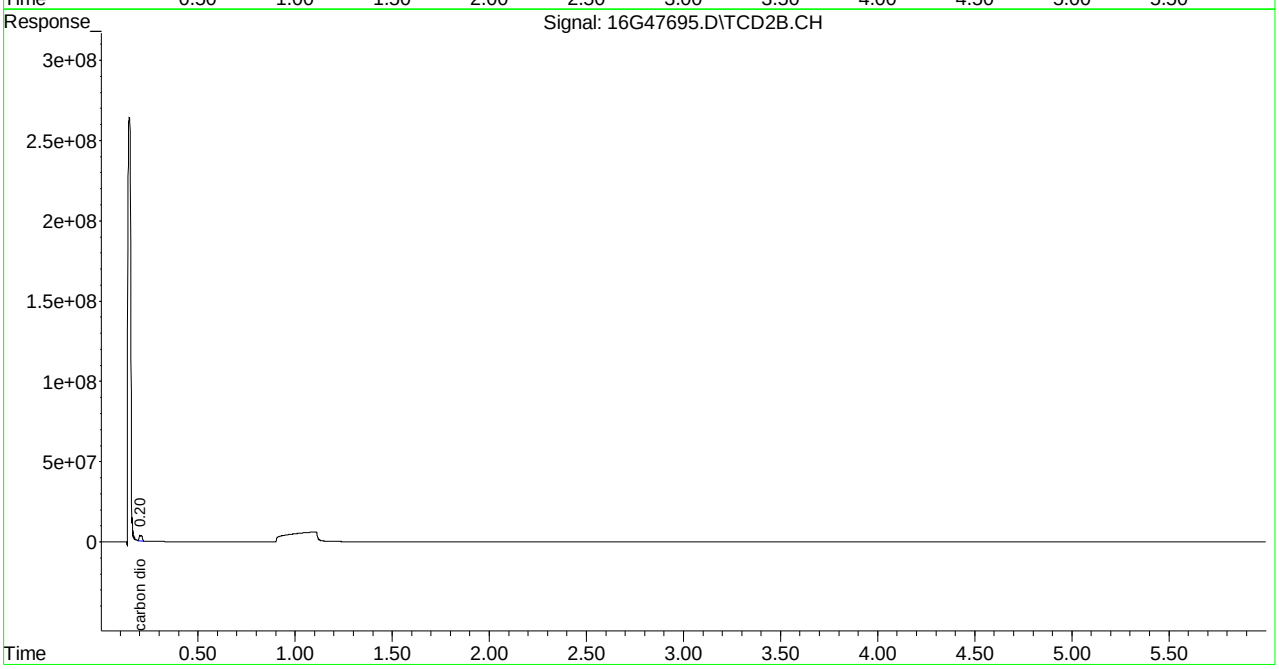

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\060115\16G47696.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDchem\1\DATA\060115\16G47696.D\TCD2B.CH
Acq On : 01 Jun 2015 10:14 Operator: JDS
Sample : WG525710-03 67umol/mol LCS RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Jun 01 10:20:34 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	11846195	61.646	umol/
2) T	ethene	1.06	19379196	61.091	umol/
3) T	acetylene	1.14	20779847	61.400	umol/
4) T	ethane	1.39	20026464	58.919	umol/
5) T	propane	3.83	28995263	58.410	umol/
6) T	n-butane	5.34	37212265	57.402	umol/
8) T	carbon dioxide	0.20	33698850	6110.536	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G47696.D RSKEXT1.M Mon Jun 01 10:20:34 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\060115\16G47696.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDchem\1\DATA\060115\16G47696.D\TCD2B.CH
Acq On : 01 Jun 2015 10:14 Operator: JDS
Sample : WG525710-03 67umol/mol LCS RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Jun 1 10:20 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

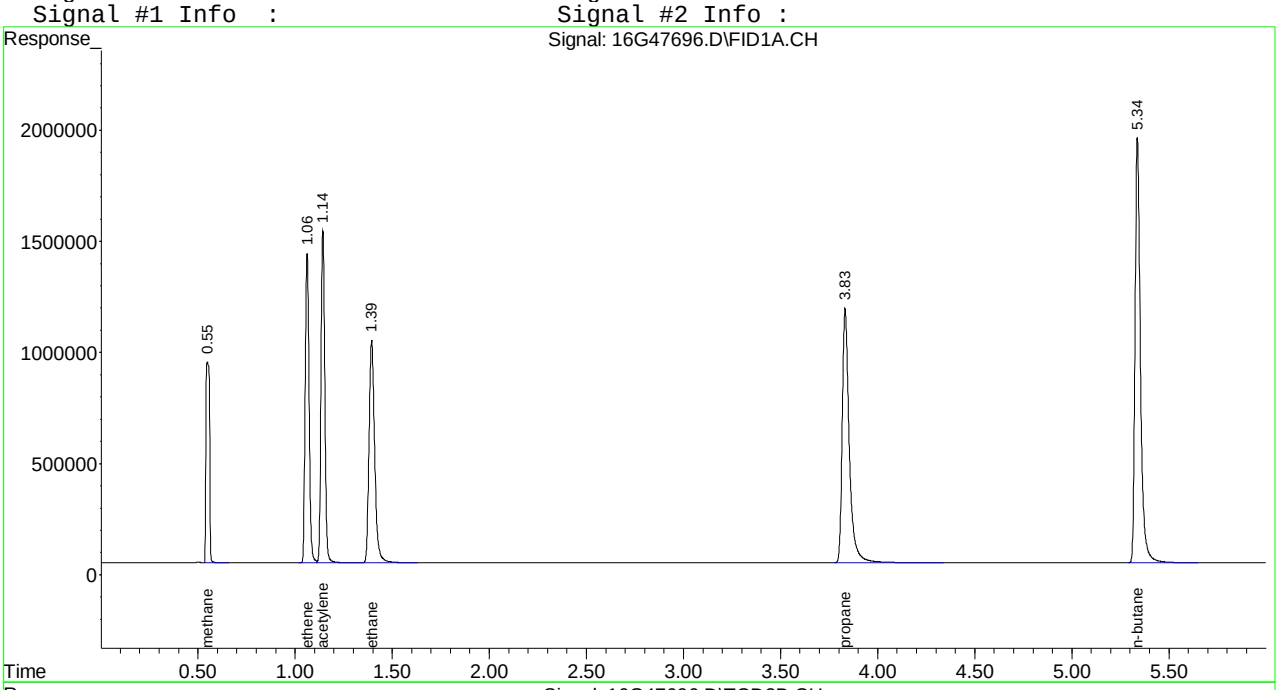

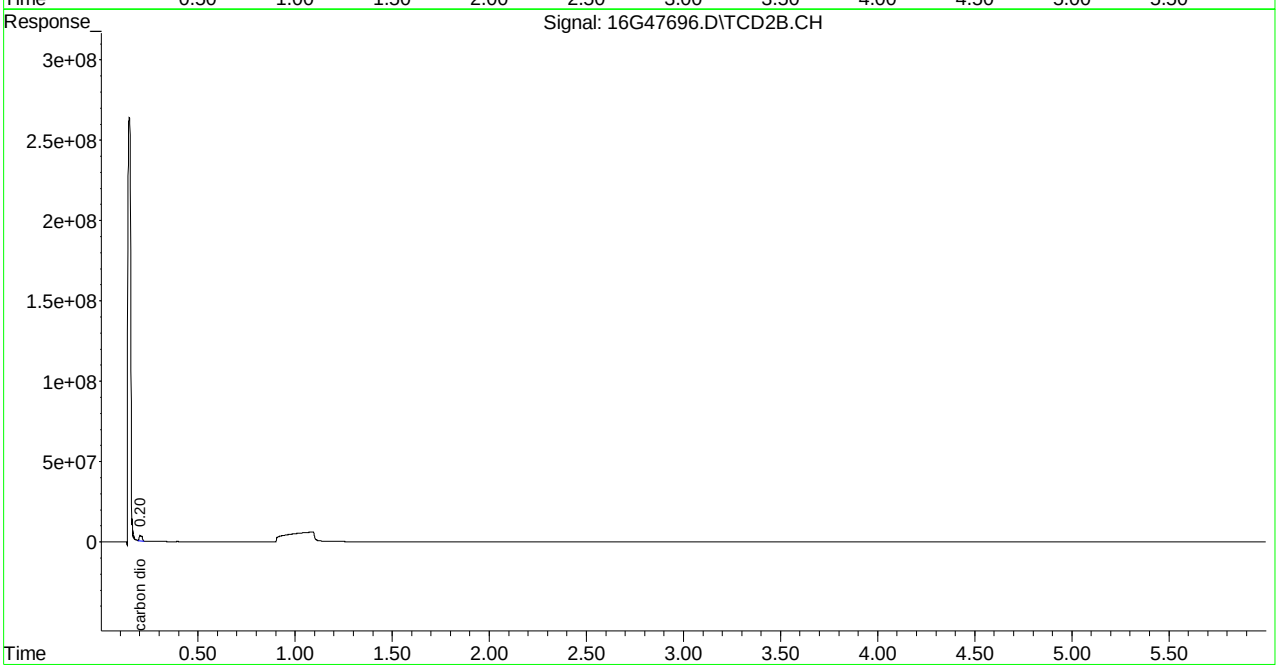

2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW01-052715	**Prep Method:**	6850	**Prep Date:**	06/04/2015 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG526362	**Analyst:**	JWR	**Run Date:**	06/04/2015 18:27
Collect Date:	05/27/2015 07:40	**Dilution:**	1	**File ID:**	1LM.LM30035
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	47WW38-052715	**Prep Method:**	6850	**Prep Date:**	06/04/2015 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG526362	**Analyst:**	JWR	**Run Date:**	06/05/2015 13:14
Collect Date:	05/27/2015 09:00	**Dilution:**	10	**File ID:**	1LM.LM30047
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	18.0		4.00	2.00	1.00

Certificate of Analysis

Sample #:	L15051752-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	LHSMW54-052715	**Prep Method:**	6850	**Prep Date:**	06/04/2015 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG526362	**Analyst:**	JWR	**Run Date:**	06/04/2015 19:05
Collect Date:	05/27/2015 10:20	**Dilution:**	1	**File ID:**	1LM.LM30037
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW24-052815	**Prep Method:**	6850	**Prep Date:**	06/04/2015 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG526362	**Analyst:**	JWR	**Run Date:**	06/04/2015 19:24
Collect Date:	05/28/2015 08:15	**Dilution:**	1	**File ID:**	1LM.LM30038
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW25-052815	**Prep Method:**	6850	**Prep Date:**	06/04/2015 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG526362	**Analyst:**	JWR	**Run Date:**	06/04/2015 19:43
Collect Date:	05/28/2015 09:40	**Dilution:**	10	**File ID:**	1LM.LM30039
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	15.0		4.00	2.00	1.00

Certificate of Analysis

Sample #:	L15051752-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW18-052815	**Prep Method:**	6850	**Prep Date:**	06/04/2015 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	06/01/2015 19:11
Workgroup #:	WG526362	**Analyst:**	JWR	**Run Date:**	06/04/2015 20:02
Collect Date:	05/28/2015 11:00	**Dilution:**	1	**File ID:**	1LM.LM30040
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1446 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG526362-01 MCT	10,400.	
-02 Blank	0.45	
-03 LCS	0.61	
-04 LCS2	0.53	
L15051752-01	919.	
-02	1,251.	
-03	1,499.	
-04	1,741.	
-06	713.	
-08	3,430.	

Analyst: John Richards

Date/Time: 06/05/15 14:00

DCN#111105

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 060115_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 140701254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG525760 (waters)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD69537 (06/01/2015)

CCV STD: STD69537 LCS STD: STD69913 MS/MSD STD: STD69913

Comments: ICAL WG525828 : Alternate Source STD69913

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM29953	WG525828-01 CCB	1	1		06/01/15 16:59
2	1LM.LM29954	WG525828-02 STD (0.1 ug/L)	1	1	STD69537	06/01/15 17:18
3	1LM.LM29955	WG525828-03 STD (0.2 ug/L)	1	1	STD69537	06/01/15 17:36
4	1LM.LM29956	WG525828-04 STD (0.5 ug/L)	1	1	STD69537	06/01/15 17:55
5	1LM.LM29957	WG525828-05 STD (1.0 ug/L)	1	1	STD69537	06/01/15 18:14
6	1LM.LM29958	WG525828-06 STD (2.0 ug/L)	1	1	STD69537	06/01/15 18:33
7	1LM.LM29959	WG525828-07 STD (5.0 ug/L)	1	1	STD69537	06/01/15 18:52
8	1LM.LM29960	WG525828-08 STD (10 ug/L)	1	1	STD69537	06/01/15 19:11
9	1LM.LM29961	WG525828-09 SSCV (1.0 ug/L)	1	1	STD69913	06/01/15 19:30
10	1LM.LM29962	WG525763-01 CCB	1	1		06/01/15 19:49
11	1LM.LM29963	WG525763-02 CCV (1.0ug/L)	1	1	STD69537	06/01/15 20:08
12	1LM.LM29964	WG525760-07 MRL (0.2ug/L)	1	1	STD69537	06/01/15 20:27
13	1LM.LM29965	WG525760-01 MCT (0.2ug/L)	1	1	STD69913	06/01/15 20:46
14	1LM.LM29966	WG525760-02 BLANK	1	1		06/01/15 21:05
15	1LM.LM29967	WG525760-03 LCS (0.2ug/L)	1	1	STD69913	06/01/15 21:24
16	1LM.LM29968	L15051620-01	1	1		06/01/15 21:43
17	1LM.LM29969	L15051620-02	1	1		06/01/15 22:02
18	1LM.LM29970	L15051620-03	1	1		06/01/15 22:20
19	1LM.LM29971	L15051620-04	1	1		06/01/15 22:39
20	1LM.LM29972	L15051620-05	1	1		06/01/15 22:58
21	1LM.LM29973	L15051620-06	1	1		06/01/15 23:17
22	1LM.LM29974	L15051620-10	1	1		06/01/15 23:36
23	1LM.LM29975	WG525763-03 CCV (1.0ug/L)	1	1	STD69537	06/01/15 23:55
24	1LM.LM29976	WG525760-08 MRL (0.2ug/L)	1	1	STD69537	06/02/15 00:13
25	1LM.LM29977	WG525763-04 CCB	1	1		06/02/15 00:32
26	1LM.LM29978	L15051620-07 RS	1	1		06/02/15 00:51
27	1LM.LM29979	L15051620-08 MS	1	1	STD69913	06/02/15 01:10
28	1LM.LM29980	L15051620-09 MSD	1	1	STD69913	06/02/15 01:29
29	1LM.LM29981	L15051620-11	1	1		06/02/15 01:48
30	1LM.LM29982	L15051620-12	1	1		06/02/15 02:07
31	1LM.LM29983	L15051620-13	1	1		06/02/15 02:26
32	1LM.LM29984	L15051620-14	1	1		06/02/15 02:45
33	1LM.LM29985	L15051620-15	1	1		06/02/15 03:04

Page: 1 Approved: 03-JUN-15

Wadei D

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 060115_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 140701254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG525760 (waters)

Internal STD: COA18071 Surrogate STD: NA STD69537 (06/01/2015)

CCV STD: STD69537 LCS STD: STD69913 STD69913

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM29986	L15051620-16	1	1		06/02/15 03:23
35	1LM.LM29987	WG525763-05 CCV (1.0ug/L)	1	1	STD69537	06/02/15 03:42
36	1LM.LM29988	WG525760-09 MRL (0.2ug/L)	1	1	STD69537	06/02/15 04:01
37	1LM.LM29989	WG525763-06 CCB	1	1		06/02/15 04:19
38	1LM.LM29990	L15051620-20	1	1		06/02/15 04:38
39	1LM.LM29991	L15051620-21	1	1		06/02/15 04:57
40	1LM.LM29992	L15051620-22	1	1		06/02/15 05:16
41	1LM.LM29993	L15051754-01 (NR)	1	1		06/02/15 05:35
42	1LM.LM29994	L15051754-01 (10x)	1	10		06/02/15 05:54
43	1LM.LM29995	L15051754-01 (100x) (NR)	1	100		06/02/15 06:13
44	1LM.LM29996	WG525763-07 CCV (1.0ug/L)	1	1	STD69537	06/02/15 06:32
45	1LM.LM29997	WG525760-10 MRL (0.2ug/L)	1	1	STD69537	06/02/15 06:51
46	1LM.LM29998	WG525763-08 CCB	1	1		06/02/15 07:10

Comments

Seq.	Rerun	Dil.	Reason	Analytes
41	X	10	Over Calibration Range	
	L15051754-01 (NR) : Results for this sample will be reported from the analysis of this sample at its 10x dilution.			
43				
	L15051754-01 (100x) (NR) : Results for this sample will be reported from the analysis of this sample at its 10x dilution.			

Page: 2 Approved: 03-JUN-15

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 060415_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 140701254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG526362 (waters)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD69537 (06/01/2015)

CCV STD: STD69537 LCS STD: STD69913 MS/MSD STD: STD69913

Comments: Samples L15051752 (-02, -06) were initially analyzed at dilutions based on their historical results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM30028	WG526363-01 CCB	1	1		06/04/15 16:14
2	1LM.LM30029	WG526363-02 CCV (1.0ug/L)	1	1	STD69537	06/04/15 16:33
3	1LM.LM30030	WG526362-05 MRL (0.2ug/L)	1	1	STD69537	06/04/15 16:52
4	1LM.LM30031	WG526362-01 MCT (0.2ug/L)	1	1	STD69913	06/04/15 17:11
5	1LM.LM30032	WG526362-02 BLANK	1	1		06/04/15 17:30
6	1LM.LM30033	WG526362-03 LCS (0.2ug/L)	1	1	STD69913	06/04/15 17:49
7	1LM.LM30034	WG526362-04 LCS2 (0.2ug/L)	1	1	STD69913	06/04/15 18:08
8	1LM.LM30035	L15051752-01	1	1		06/04/15 18:27
9	1LM.LM30036	L15051752-02 (500x) (NR)	1	500		06/04/15 18:46
10	1LM.LM30037	L15051752-03	1	1		06/04/15 19:05
11	1LM.LM30038	L15051752-04	1	1		06/04/15 19:24
12	1LM.LM30039	L15051752-06 (10x)	1	10		06/04/15 19:43
13	1LM.LM30040	L15051752-08	1	1		06/04/15 20:02
14	1LM.LM30041	WG526363-03 CCV (1.0ug/L)	1	1	STD69537	06/04/15 20:21
15	1LM.LM30042	WG526362-06 MRL (0.2ug/L)	1	1	STD69537	06/04/15 20:39
16	1LM.LM30043	WG526363-04 CCB	1	1		06/04/15 20:58
17	1LM.LM30044	WG526363-05 CCV (1.0ug/L)	1	1	STD69537	06/05/15 12:17
18	1LM.LM30045	WG526362-07 MRL (0.2ug/L)	1	1	STD69537	06/05/15 12:36
19	1LM.LM30046	WG526363-06 CCB	1	1		06/05/15 12:55
20	1LM.LM30047	L15051752-02 (RR 10x)	1	10		06/05/15 13:14
21	1LM.LM30048	WG526363-07 CCV (1.0ug/L)	1	1	STD69537	06/05/15 13:33
22	1LM.LM30049	WG526362-08 MRL (0.2ug/L)	1	1	STD69537	06/05/15 13:52
23	1LM.LM30050	WG526363-08 CCB	1	1		06/05/15 14:12

Comments

Seq.	Rerun	Dil.	Reason	Analytes
9	X	10	Analyzed too dilute	
	L15051752-02 (500x) (NR) : This sample was reanalyzed at a 10x dilution on the end of this run.			

Page: 1 Approved: 09-JUN-15

Microbac Laboratories Inc.

Data Checklist

Date: 01-JUN-2015
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG525828
Runlog ID: 68358
Analytical Workgroups: L15051620(01-16, 20-22) L15051754-01

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 02-JUN-2015 John Richards

Secondary Reviewer: 03-JUN-2015 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-03-2015 10:26:43

Microbac Laboratories Inc.

Data Checklist

Date: 04-JUN-2015
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 68440
Analytical Workgroups: L15051752

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	LSB

Primary Reviewer: 05-JUN-2015 John Richards

Secondary Reviewer: 09-JUN-2015 Leslie Bucisa

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-09-2015 14:00:23

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG526362

Login Number: L15051752

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW01-052715	01	05/27/15					06/04/2015	8.3	28		06/04/15	.1	28	
47WW38-052715	02	05/27/15					06/04/2015	8.3	28		06/05/15	.9	28	
LHSMW54-052715	03	05/27/15					06/04/2015	8.2	28		06/04/15	.2	28	
50WW24-052815	04	05/28/15					06/04/2015	7.3	28		06/04/15	.2	28	
50WW25-052815	06	05/28/15					06/04/2015	7.2	28		06/04/15	.2	28	
50WW18-052815	08	05/28/15					06/04/2015	7.2	28		06/04/15	.2	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4221016
Report generated 06/09/2015 14:54

METHOD BLANK SUMMARY

Login Number: L15051752
Blank File ID: 1LM.LM30032
Prep Date: 06/04/15 15:00
Analyzed Date: 06/04/15 17:30
Analyst: JWR

Work Group: WG526362
Blank Sample ID: WG526362-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG526362-05	1LM.LM30030	06/04/15 16:52	01
MCT	WG526362-01	1LM.LM30031	06/04/15 17:11	01
LCS	WG526362-03	1LM.LM30033	06/04/15 17:49	01
LCS2	WG526362-04	1LM.LM30034	06/04/15 18:08	01
50WW01-052715	L15051752-01	1LM.LM30035	06/04/15 18:27	01
LHSMW54-052715	L15051752-03	1LM.LM30037	06/04/15 19:05	01
50WW24-052815	L15051752-04	1LM.LM30038	06/04/15 19:24	01
50WW25-052815	L15051752-06	1LM.LM30039	06/04/15 19:43	DL01
50WW18-052815	L15051752-08	1LM.LM30040	06/04/15 20:02	01
QCMRL	WG526362-06	1LM.LM30042	06/04/15 20:39	01
QCMRL	WG526362-07	1LM.LM30045	06/05/15 12:36	01
47WW38-052715	L15051752-02	1LM.LM30047	06/05/15 13:14	DL01
QCMRL	WG526362-08	1LM.LM30049	06/05/15 13:52	01

Report Name: BLANK_SUMMARY
PDF File ID: 4221017
Report generated 06/09/2015 14:54

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051752 Prep Date: 06/04/15 15:00 Sample ID: WG526362-02
Instrument ID: LCMS1 Run Date: 06/04/15 17:30 Prep Method: 6850
File ID: 1LM.LM30032 Analyst: JWR Method: 6850
Workgroup (AAB#): WG526362 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-01-JUN-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4221018
09-JUN-2015 14:55

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051752 Analyst: JWR Prep Method: 6850
Instrument ID: LCMS1 Matrix: Water Method: 6850
Workgroup (AAB#): WG526362 Units: ug/L
QC Key: DOD4 Lot #: STD69913

Sample ID: WG526362-03 LCS File ID: 1LM.LM30033 Run Date: 06/04/2015 17:49
Sample ID: WG526362-04 LCS2 File ID: 1LM.LM30034 Run Date: 06/04/2015 18:08

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Perchlorate	0.200	0.210	105	0.200	0.204	102	2.90	80 - 120	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4221019
Report generated: 06/09/2015 14:55

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L15051752
Analytical Method: 6850
ICAL Workgroup: WG525828

Instrument ID: LCMS1
Initial Calibration Date: 01-JUN-15 19:11
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.087	4.95	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4226148
Report generated 06/09/2015 14:55

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15051752

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 01-JUN-15 19:11

Column ID: F

Analyte	WG525828-02			WG525828-03			WG525828-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	7580.00000	1.164	0.200	15200.0000	1.105	0.500	35800.0000	1.063

INT_CAL - Modified 03/06/2008
PDF File ID: 4226148
Report generated 06/09/2015 14:55

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15051752

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 01-JUN-15 19:11

Column ID: F

Analyte	WG525828-05			WG525828-06			WG525828-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	75000.0000	1.076	2.00	144000.000	1.071	5.00	343000.000	1.059

INT_CAL - Modified 03/06/2008
PDF File ID: 4226148
Report generated 06/09/2015 14:55

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15051752

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 01-JUN-15 19:11

Column ID: F

Analyte	WG525828-08		
	CONC	RESP	RF
Perchlorate	10.0	669000.000	1.073

INT_CAL - Modified 03/06/2008

PDF File ID: 4226148

Report generated 06/09/2015 14:55

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15051752 Run Date: 06/01/2015 Sample ID: WG525828-09
Instrument ID: LCMS1 Run Time: 19:30 Method: 6850
File ID: 1LM.LM29961 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG525828 Cal ID: LCMS1 - 01-JUN-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.966	ug/L	1.04	3.40	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4226149
Report generated 06/09/2015 14:55

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051752
Run Date: 06/04/2015
Sample ID: WG526363-01
Instrument ID: LCMS1
Run Time: 16:14
Method: 6850
File ID: 1LM.LM30028
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG526362
Cal ID: LCMS1 - 01-JUN-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4221022
Report generated 06/09/2015 14:55

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051752
Run Date: 06/04/2015
Sample ID: WG526363-04
Instrument ID: LCMS1
Run Time: 20:58
Method: 6850
File ID: 1LM.LM30043
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG526362
Cal ID: LCMS1 - 01-JUN-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4221022
Report generated 06/09/2015 14:55

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051752
Run Date: 06/05/2015
Sample ID: WG526363-06
Instrument ID: LCMS1
Run Time: 12:55
Method: 6850
File ID: 1LM.LM30046
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG526362
Cal ID: LCMS1 - 01-JUN-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4221022
Report generated 06/09/2015 14:55

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051752
Run Date: 06/05/2015
Sample ID: WG526363-08
Instrument ID: LCMS1
Run Time: 14:12
Method: 6850
File ID: 1LM.LM30050
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG526362
Cal ID: LCMS1 - 01-JUN-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4221022
Report generated 06/09/2015 14:55

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051752
Run Date: 06/04/2015
Sample ID: WG526363-02
Instrument ID: LCMS1
Run Time: 16:33
Method: 6850
File ID: 1LM.LM30029
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG526362
Cal ID: LCMS1 - 01-JUN-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.12	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4221021
Report generated 06/09/2015 14:55

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051752
Run Date: 06/04/2015
Sample ID: WG526363-03
Instrument ID: LCMS1
Run Time: 20:21
Method: 6850
File ID: 1LM.LM30041
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG526362
Cal ID: LCMS1 - 01-JUN-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.10	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4221021
Report generated 06/09/2015 14:55

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051752
Run Date: 06/05/2015
Sample ID: WG526363-05
Instrument ID: LCMS1
Run Time: 12:17
Method: 6850
File ID: 1LM.LM30044
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG526362
Cal ID: LCMS1 - 01-JUN-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.08	ug/L	1.16	8.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4221021
Report generated 06/09/2015 14:55

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051752
Run Date: 06/05/2015
Sample ID: WG526363-07
Instrument ID: LCMS1
Run Time: 13:33
Method: 6850
File ID: 1LM.LM30048
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG526362
Cal ID: LCMS1 - 01-JUN-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.12	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4221021
Report generated 06/09/2015 14:55

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15051752 Run Date: 06/04/2015 Sample ID: WG526362-05
Instrument ID: LCMS1 Run Time: 16:52 Prep Method: 6850
File ID: 1LM.LM30030 Analyst: JWR Method: 6850
Workgroup (AAB#): WG526362 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-01-JUN-15

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.203	102	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4221020
Report generated 06/09/2015 14:55

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15051752 Run Date: 06/04/2015 Sample ID: WG526362-06
Instrument ID: LCMS1 Run Time: 20:39 Prep Method: 6850
File ID: 1LM.LM30042 Analyst: JWR Method: 6850
Workgroup (AAB#): WG526362 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-01-JUN-15

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.196	98.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4221020
Report generated 06/09/2015 14:55

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15051752 Run Date: 06/05/2015 Sample ID: WG526362-07
Instrument ID: LCMS1 Run Time: 12:36 Prep Method: 6850
File ID: 1LM.LM30045 Analyst: JWR Method: 6850
Workgroup (AAB#): WG526362 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-01-JUN-15

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.215	108	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4221020
Report generated 06/09/2015 14:55

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15051752 Run Date: 06/05/2015 Sample ID: WG526362-08
Instrument ID: LCMS1 Run Time: 13:52 Prep Method: 6850
File ID: 1LM.LM30049 Analyst: JWR Method: 6850
Workgroup (AAB#): WG526362 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-01-JUN-15

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.209	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4221020
Report generated 06/09/2015 14:55

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L15051752
Instrument ID: LCMS1
Workgroup (AAB#): WG526362

ICAL CCV Number: WG525828-05
CAL ID: LCMS1-01-JUN-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG525828	NA	NA	333000
Upper Limit	NA	NA	499500
Lower Limit	NA	NA	166500
L15051752-01	1.00	01	305000
L15051752-02	10.0	DL01	275000
L15051752-03	1.00	01	353000
L15051752-04	1.00	01	369000
L15051752-06	10.0	DL01	360000
L15051752-08	1.00	01	372000
WG526362-02	1.00	01	367000
WG526362-03	1.00	01	362000
WG526362-04	1.00	01	288000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4221023
Report generated 06/09/2015 14:55

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051752	**Prep Method:**	6850	**Samplenum:**	L15051752-01
Instrument:	LCMS1	**Prep Date:**	06/04/2015 15:00	**File ID:**	1LM.LM30035
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526362	**Analysis Date:**	06/04/2015 18:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051752	**Prep Method:**	6850	**Samplenum:**	L15051752-02
Instrument:	LCMS1	**Prep Date:**	06/04/2015 15:00	**File ID:**	1LM.LM30047
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526362	**Analysis Date:**	06/05/2015 13:14	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	106000	36500	2.90	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051752	**Prep Method:**	6850	**Samplenum:**	L15051752-03
Instrument:	LCMS1	**Prep Date:**	06/04/2015 15:00	**File ID:**	1LM.LM30037
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526362	**Analysis Date:**	06/04/2015 19:05	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	3490	951	3.67	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051752	**Prep Method:**	6850	**Samplenum:**	L15051752-04
Instrument:	LCMS1	**Prep Date:**	06/04/2015 15:00	**File ID:**	1LM.LM30038
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526362	**Analysis Date:**	06/04/2015 19:24	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	2350	922	2.55	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051752	**Prep Method:**	6850	**Samplenum:**	L15051752-06
Instrument:	LCMS1	**Prep Date:**	06/04/2015 15:00	**File ID:**	1LM.LM30039
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526362	**Analysis Date:**	06/04/2015 19:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	115000	39200	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051752	**Prep Method:**	6850	**Samplenum:**	L15051752-08
Instrument:	LCMS1	**Prep Date:**	06/04/2015 15:00	**File ID:**	1LM.LM30040
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526362	**Analysis Date:**	06/04/2015 20:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	4890	1320	3.70	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051752	**Prep Method:**		**Samplenum:**	WG525828-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29954
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526362	**Analysis Date:**	06/01/2015 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	7580	2950	2.57	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051752	**Prep Method:**		**Samplenum:**	WG525828-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29955
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526362	**Analysis Date:**	06/01/2015 17:36	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	15200	5160	2.95	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051752	**Prep Method:**		**Samplenum:**	WG525828-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29956
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526362	**Analysis Date:**	06/01/2015 17:55	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35800	11900	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051752	**Prep Method:**		**Samplenum:**	WG525828-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29957
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526362	**Analysis Date:**	06/01/2015 18:14	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	75000	27600	2.72	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051752	**Prep Method:**		**Samplenum:**	WG525828-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29958
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526362	**Analysis Date:**	06/01/2015 18:33	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	144000	50600	2.85	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051752	**Prep Method:**		**Samplenum:**	WG525828-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29959
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526362	**Analysis Date:**	06/01/2015 18:52	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	343000	121000	2.83	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051752	**Prep Method:**		**Samplenum:**	WG525828-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29960
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526362	**Analysis Date:**	06/01/2015 19:11	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	669000	224000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051752	**Prep Method:**		**Samplenum:**	WG525828-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM29961
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526362	**Analysis Date:**	06/01/2015 19:30	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	70500	25400	2.78	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051752	**Prep Method:**	6850	**Samplenum:**	WG526362-01
Instrument:	LCMS1	**Prep Date:**	06/04/2015 15:00	**File ID:**	1LM.LM30031
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526362	**Analysis Date:**	06/04/2015 17:11	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	16300	5850	2.79	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051752	**Prep Method:**	6850	**Samplenum:**	WG526362-02
Instrument:	LCMS1	**Prep Date:**	06/04/2015 15:00	**File ID:**	1LM.LM30032
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526362	**Analysis Date:**	06/04/2015 17:30	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	266	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051752	**Prep Method:**	6850	**Samplenum:**	WG526362-03
Instrument:	LCMS1	**Prep Date:**	06/04/2015 15:00	**File ID:**	1LM.LM30033
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526362	**Analysis Date:**	06/04/2015 17:49	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	16700	5800	2.88	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051752	**Prep Method:**	6850	**Samplenum:**	WG526362-04
Instrument:	LCMS1	**Prep Date:**	06/04/2015 15:00	**File ID:**	1LM.LM30034
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526362	**Analysis Date:**	06/04/2015 18:08	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	13000	4800	2.71	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051752	**Prep Method:**	6850	**Samplenum:**	WG526362-05
Instrument:	LCMS1	**Prep Date:**	06/04/2015 15:00	**File ID:**	1LM.LM30030
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526362	**Analysis Date:**	06/04/2015 16:52	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	14000	4850	2.89	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051752	**Prep Method:**	6850	**Samplenum:**	WG526362-06
Instrument:	LCMS1	**Prep Date:**	06/04/2015 15:00	**File ID:**	1LM.LM30042
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526362	**Analysis Date:**	06/04/2015 20:39	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	13700	4700	2.91	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051752	**Prep Method:**	6850	**Samplenum:**	WG526362-07
Instrument:	LCMS1	**Prep Date:**	06/04/2015 15:00	**File ID:**	1LM.LM30045
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526362	**Analysis Date:**	06/05/2015 12:36	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	15400	5690	2.71	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051752	**Prep Method:**	6850	**Samplenum:**	WG526362-08
Instrument:	LCMS1	**Prep Date:**	06/04/2015 15:00	**File ID:**	1LM.LM30049
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526362	**Analysis Date:**	06/05/2015 13:52	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	14800	5000	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051752	**Prep Method:**		**Samplenum:**	WG526363-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM30028
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526362	**Analysis Date:**	06/04/2015 16:14	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051752	**Prep Method:**		**Samplenum:**	WG526363-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM30029
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526362	**Analysis Date:**	06/04/2015 16:33	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	71000	24500	2.90	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051752	**Prep Method:**		**Samplenum:**	WG526363-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM30041
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526362	**Analysis Date:**	06/04/2015 20:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	81000	27800	2.91	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051752	**Prep Method:**		**Samplenum:**	WG526363-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM30043
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526362	**Analysis Date:**	06/04/2015 20:58	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	618	61.2	10.1	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051752	**Prep Method:**		**Samplenum:**	WG526363-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM30044
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526362	**Analysis Date:**	06/05/2015 12:17	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	68600	22500	3.05	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051752	**Prep Method:**		**Samplenum:**	WG526363-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM30046
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526362	**Analysis Date:**	06/05/2015 12:55	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	703	227	3.10	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051752	**Prep Method:**		**Samplenum:**	WG526363-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM30048
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526362	**Analysis Date:**	06/05/2015 13:33	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	80100	26500	3.02	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15051752	**Prep Method:**		**Samplenum:**	WG526363-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM30050
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG526362	**Analysis Date:**	06/05/2015 14:12	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	530	175	3.03	2.3	3.8	

2.2.1.3 Sample Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/5/2015 3:04 PM

Data File	LM30035.wiff	**Result Table**	060415_JWR.rdb
Acquisition Date	6/4/2015 6:27:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15051752-01	**Injection Vial**	8.00
Data File	LM30035.wiff	**Injection Volume**	10.00
Acquisition Date	6/4/2015 6:27:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060415_JWR.rdb
Sample ID	L15051752-01	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.050e+05	11.20	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 11.20(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

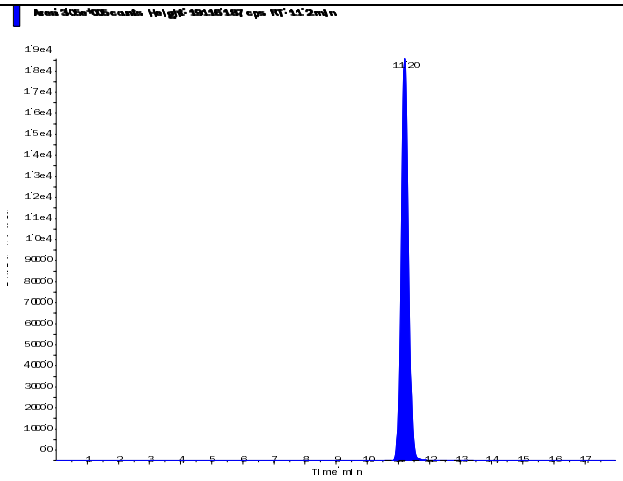

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/5/2015 3:04 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (11.00) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	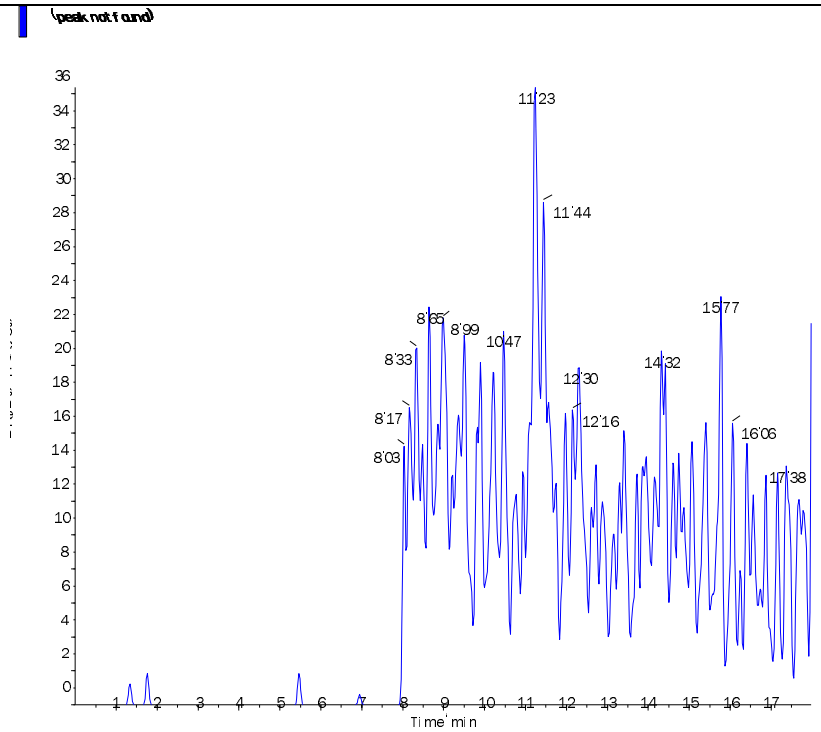
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (11.00) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	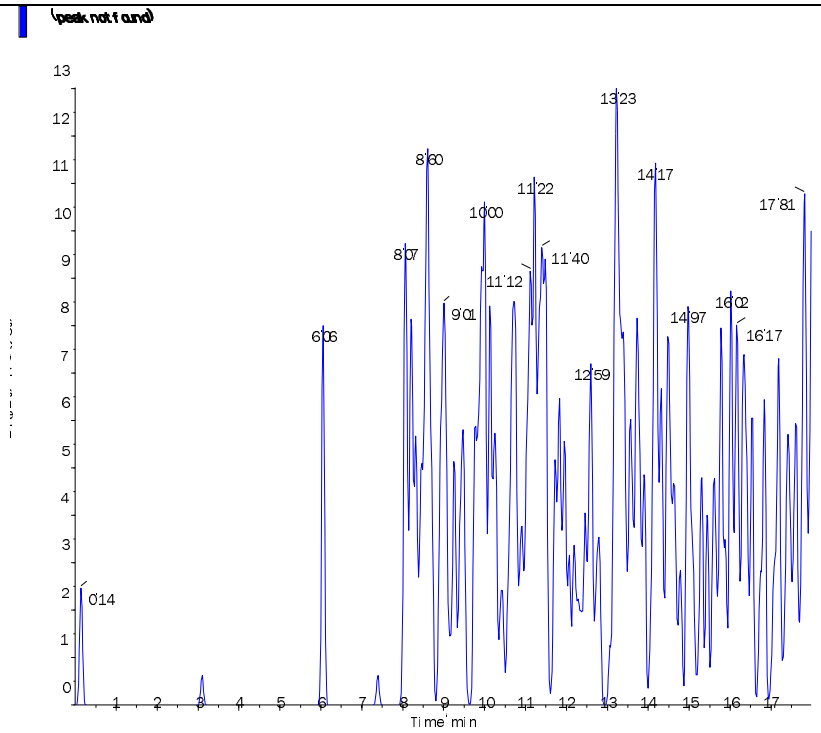

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/5/2015 3:07 PM

Data File	LM30047.wiff	**Result Table**	060415_JWR.rdb
Acquisition Date	6/5/2015 1:14:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15051752-02 (RR 10x)	**Injection Vial**	14.00
Data File	LM30047.wiff	**Injection Volume**	10.00
Acquisition Date	6/5/2015 1:14:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060415_JWR.rdb
Sample ID	L15051752-02	**Dilution Factor**	1.00
Sample Comment	110.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.750e+05	11.40	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.060e+05	11.40	N/A	1.80
Perchlorate conf	3.650e+04	11.40	N/A	1.80

O18LP (Internal Standard)

RT (Exp. RT): 11.40(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

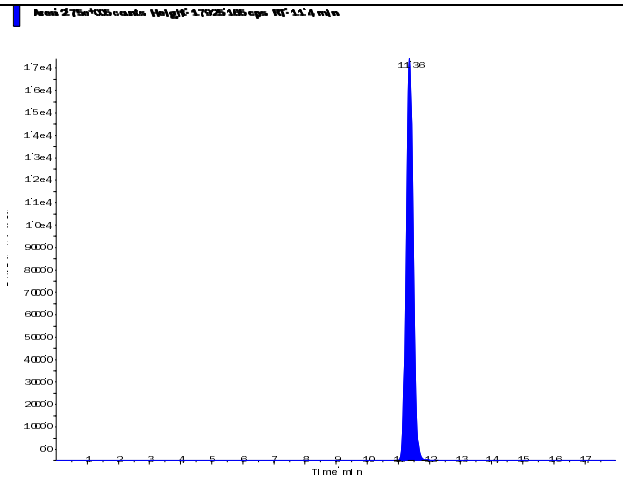

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.40 (11.00) min
Calculated conc:	1.80 ng/ml
Area Ratio:	0.385
Sample Type:	(Unknown)

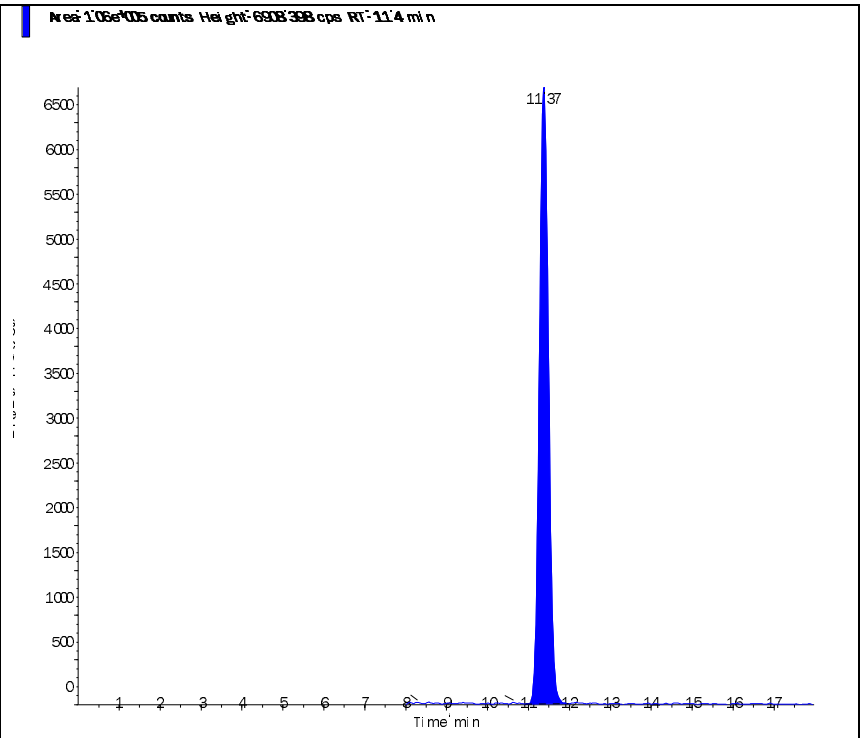

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.40 (11.00) min
Calculated conc:	1.80 ng/ml
Area Ratio:	0.133
Sample Type:	(Unknown)

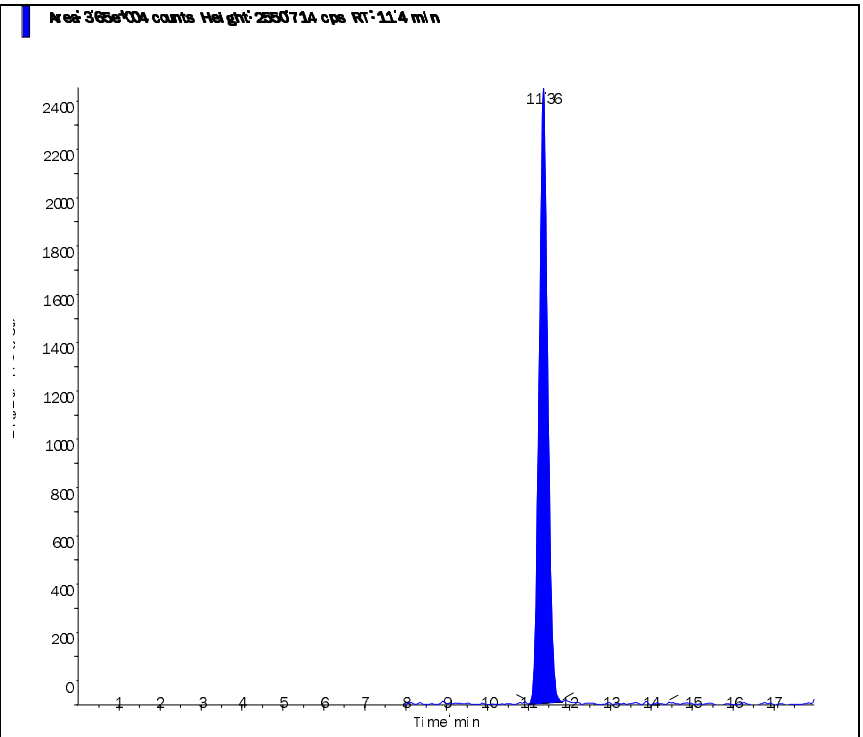

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Created with Analyst Reporter
Printed: 6/5/2015 3:05 PM

Data File	LM30037.wiff	**Result Table**	060415_JWR.rdb
Acquisition Date	6/4/2015 7:05:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15051752-03	**Injection Vial**	10.00
Data File	LM30037.wiff	**Injection Volume**	10.00
Acquisition Date	6/4/2015 7:05:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060415_JWR.rdb
Sample ID	L15051752-03	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.530e+05	11.20	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.490e+03	11.20	N/A	0.0394
Perchlorate conf	9.510e+02	11.20	N/A	0.0177

O18LP (Internal Standard)

RT (Exp. RT): 11.20(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

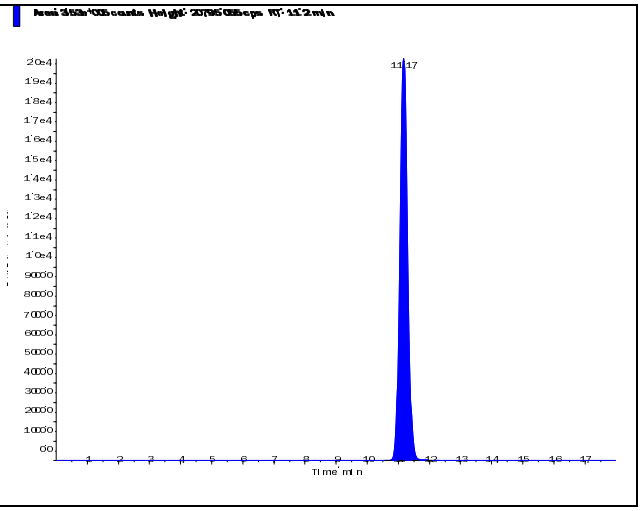

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.20 (11.00) min Calculated conc: 0.0394 ng/ml Area Ratio: 0.01 Sample Type: (Unknown)	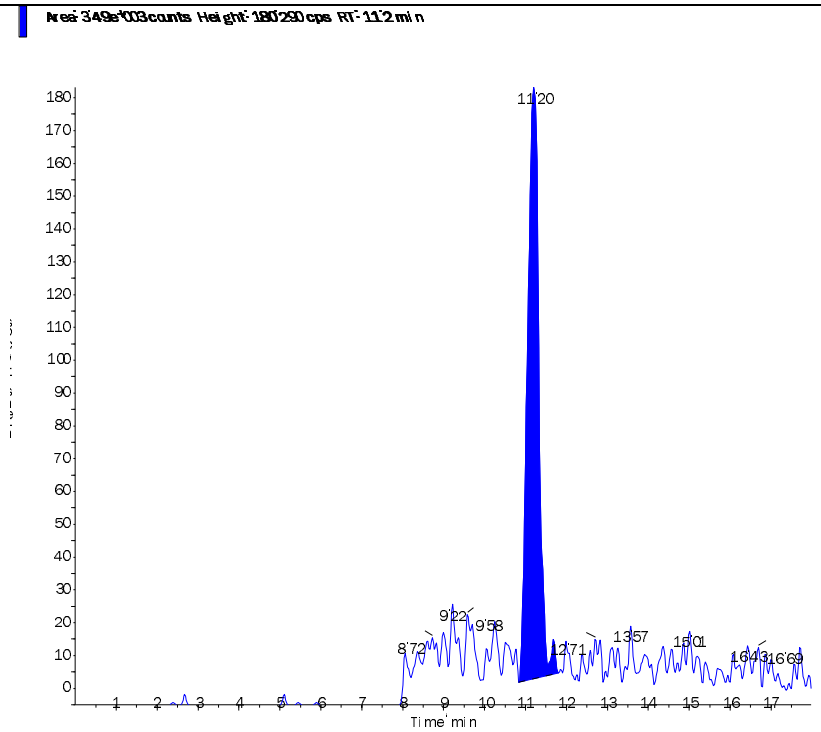
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.20 (11.00) min Calculated conc: 0.0177 ng/ml Area Ratio: 0.003 Sample Type: (Unknown)	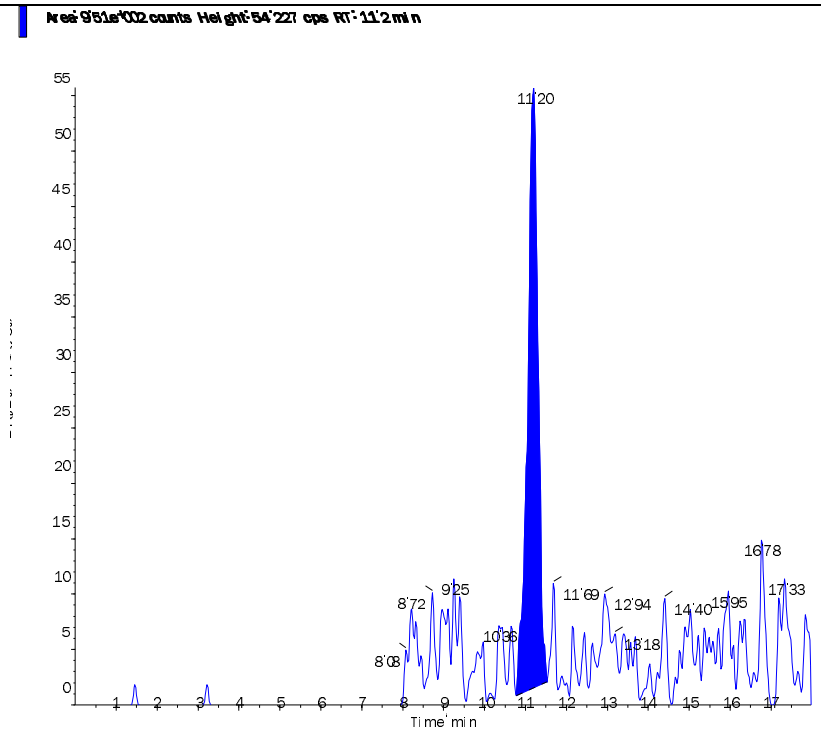

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Printed: 6/5/2015 3:05 PM

Data File	LM30038.wiff	**Result Table**	060415_JWR.rdb
Acquisition Date	6/4/2015 7:24:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15051752-04	**Injection Vial**	11.00
Data File	LM30038.wiff	**Injection Volume**	10.00
Acquisition Date	6/4/2015 7:24:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060415_JWR.rdb
Sample ID	L15051752-04	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.690e+05	11.20	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.350e+03	11.20	N/A	0.0228
Perchlorate conf	9.220e+02	11.20	N/A	0.015

O18LP (Internal Standard)

RT (Exp. RT): 11.20(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

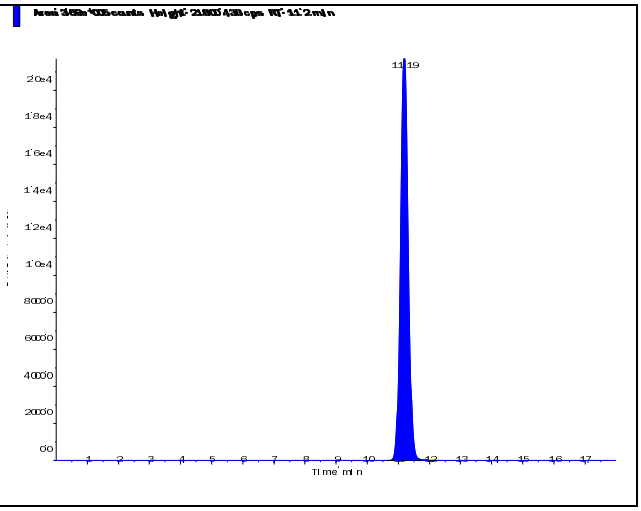

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.20 (11.00) min Calculated conc: 0.0228 ng/ml Area Ratio: 0.006 Sample Type: (Unknown)	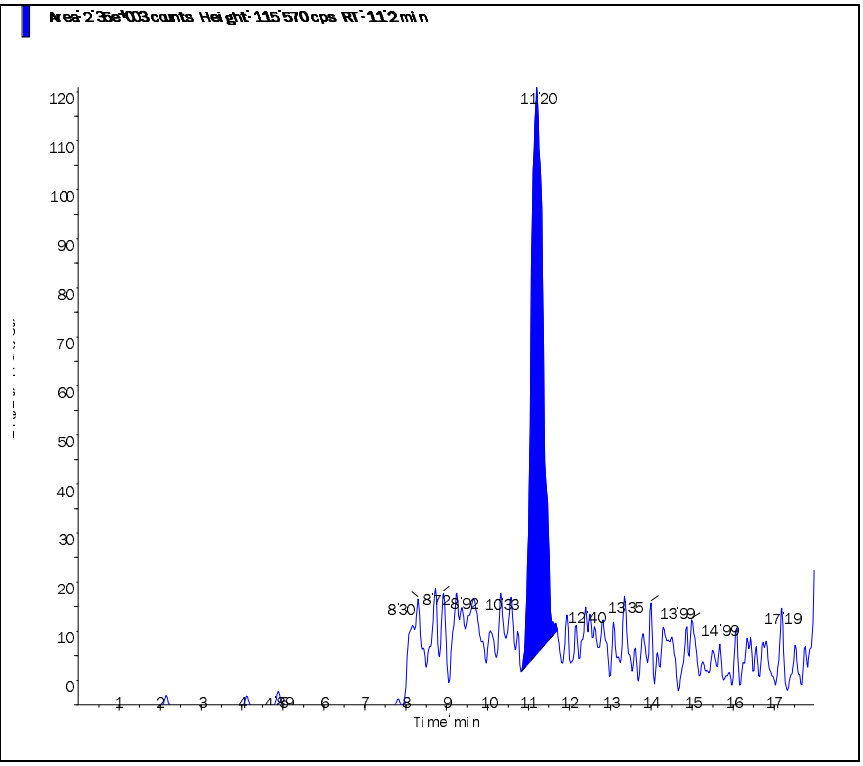
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.20 (11.00) min Calculated conc: 0.015 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	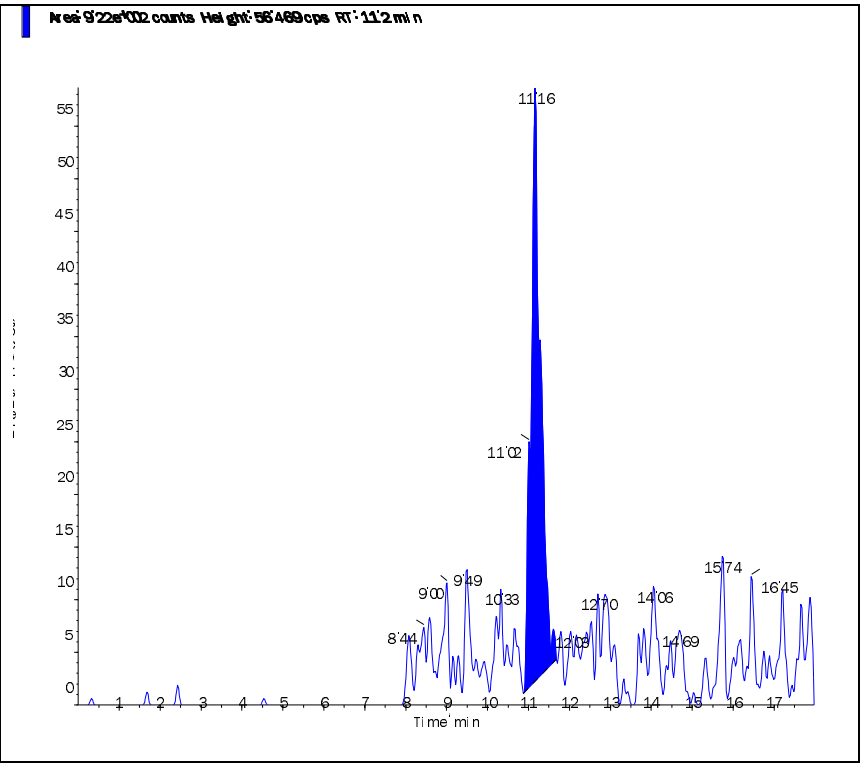

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Created with Analyst Reporter
Printed: 6/5/2015 3:05 PM

Data File	LM30039.wiff	**Result Table**	060415_JWR.rdb
Acquisition Date	6/4/2015 7:43:11 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15051752-06 (10x)	**Injection Vial**	12.00
Data File	LM30039.wiff	**Injection Volume**	10.00
Acquisition Date	6/4/2015 7:43:11 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060415_JWR.rdb
Sample ID	L15051752-06	**Dilution Factor**	1.00
Sample Comment	1,10 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.600e+05	11.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.150e+05	11.30	N/A	1.50
Perchlorate conf	3.920e+04	11.30	N/A	1.47

O18LP (Internal Standard)

RT (Exp. RT): 11.30(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

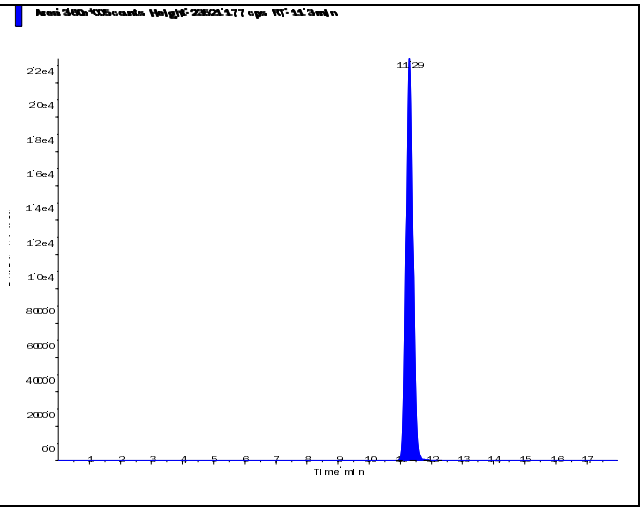

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.30 (11.00) min Calculated conc: 1.50 ng/ml Area Ratio: 0.321 Sample Type: (Unknown)	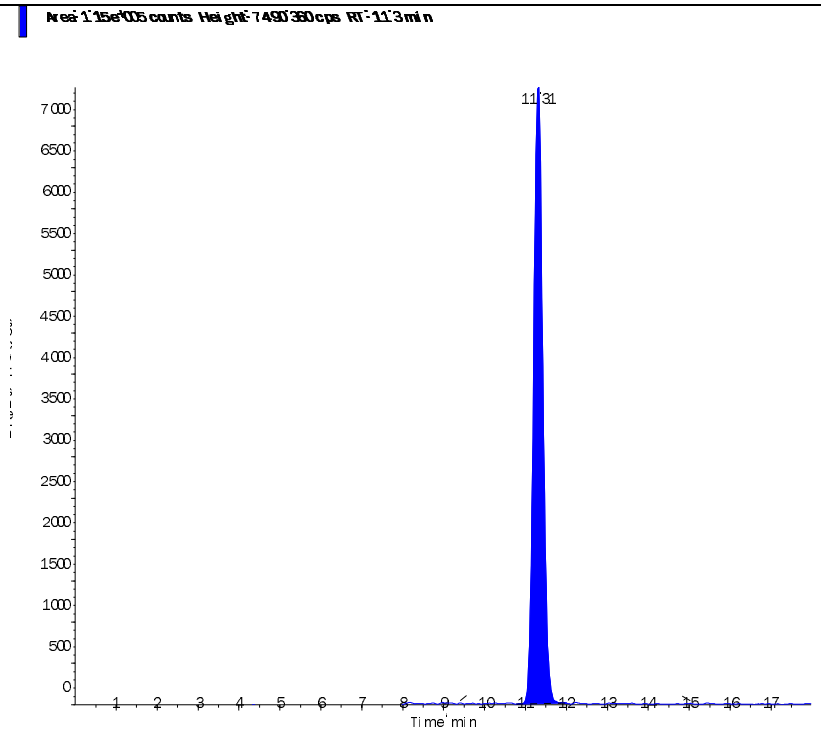
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.30 (11.00) min Calculated conc: 1.47 ng/ml Area Ratio: 0.109 Sample Type: (Unknown)	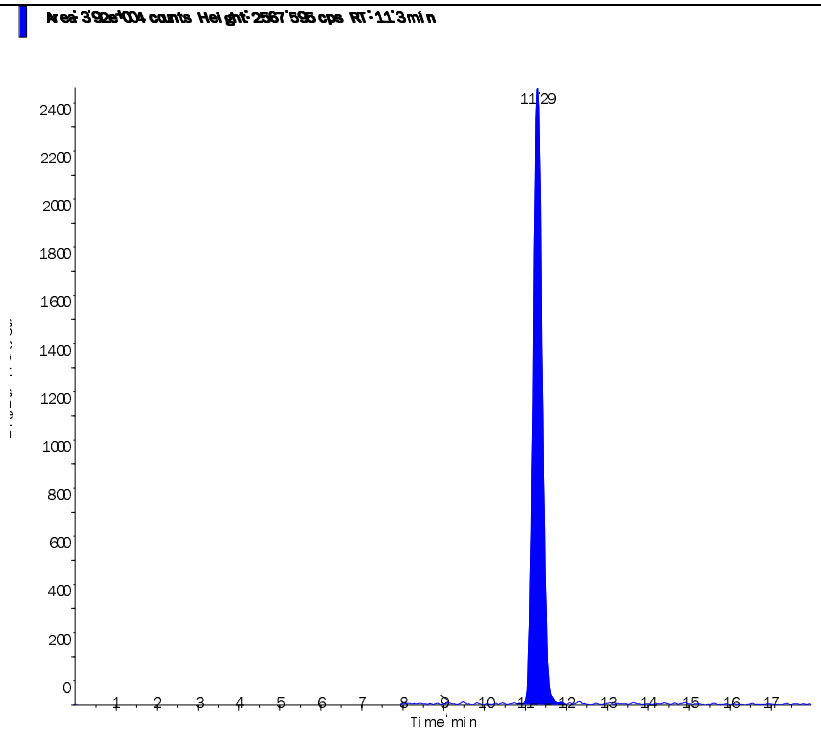

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Data File	LM30040.wiff	**Result Table**	060415_JWR.rdb
Acquisition Date	6/4/2015 8:02:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15051752-08	**Injection Vial**	13.00
Data File	LM30040.wiff	**Injection Volume**	10.00
Acquisition Date	6/4/2015 8:02:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060415_JWR.rdb
Sample ID	L15051752-08	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.720e+05	11.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.890e+03	11.10	N/A	0.0546
Perchlorate conf	1.320e+03	11.20	N/A	0.0295

O18LP (Internal Standard)

RT (Exp. RT): 11.10(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

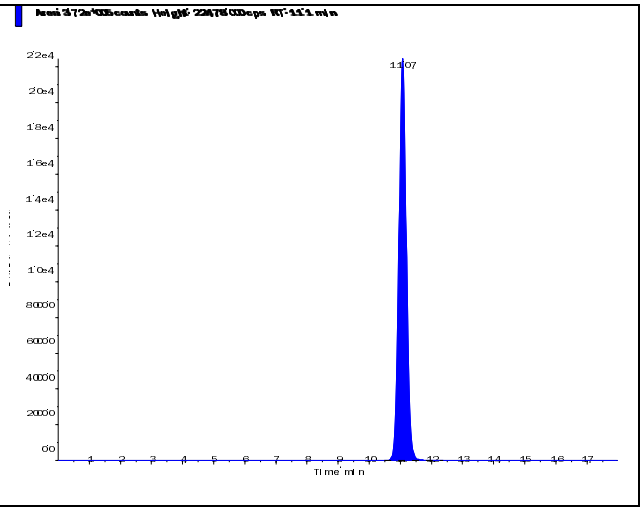

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Printed: 6/5/2015 3:05 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.10 (11.00) min Calculated conc: 0.0546 ng/ml Area Ratio: 0.013 Sample Type: (Unknown)	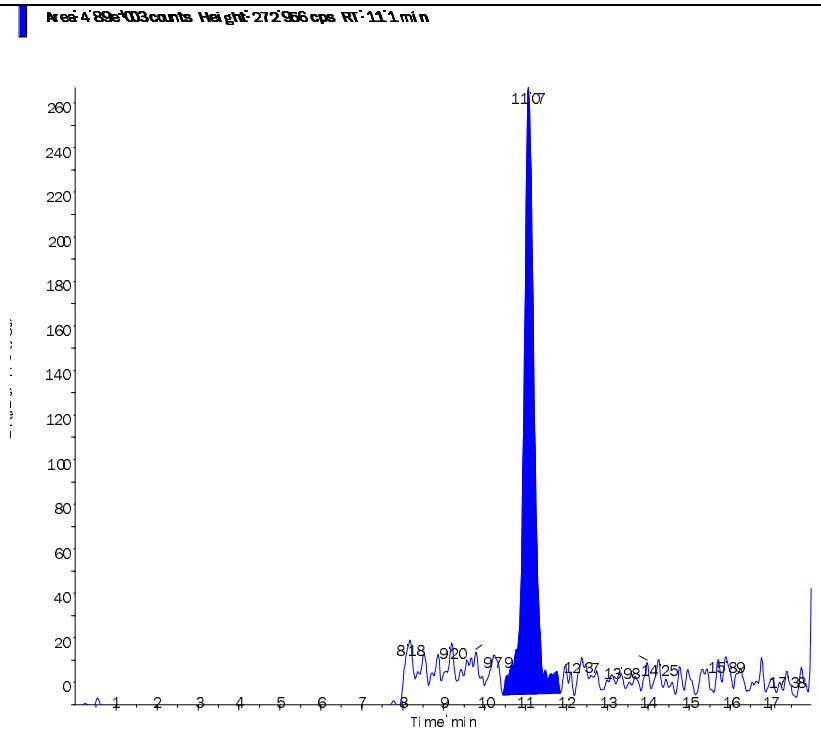
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.20 (11.00) min Calculated conc: 0.0295 ng/ml Area Ratio: 0.004 Sample Type: (Unknown)	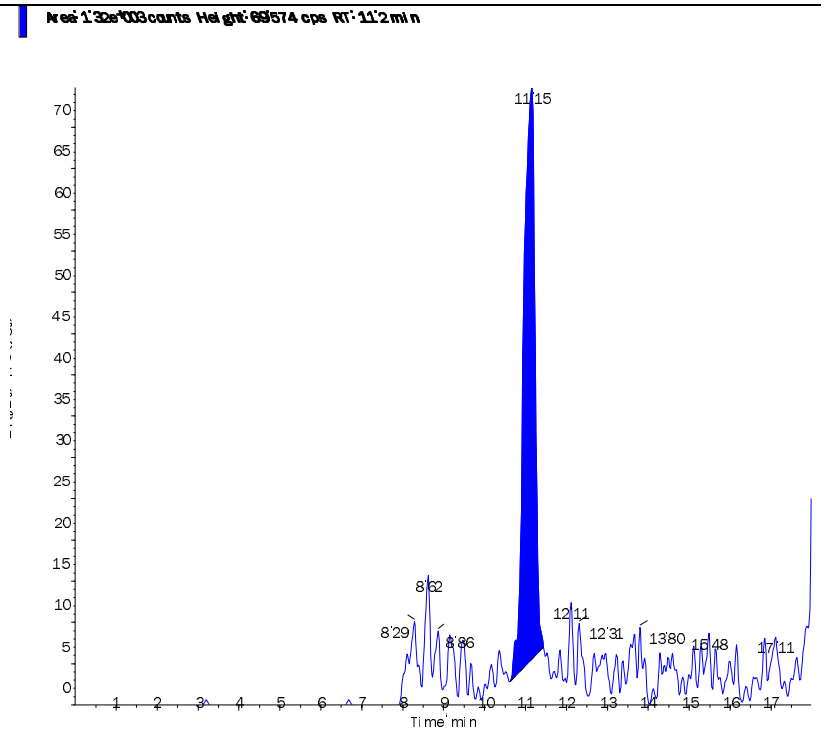

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2.2.1.4 Standards Data

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Data File	LM29953.wiff	**Result Table**	060415_JWR.rdb
Acquisition Date	6/1/2015 4:59:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525828-01 CCB	**Injection Vial**	1.00
Data File	LM29953.wiff	**Injection Volume**	10.00
Acquisition Date	6/1/2015 4:59:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060415_JWR.rdb
Sample ID	WG525828-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.870e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.570e+02	11.00	N/A	0.0005
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

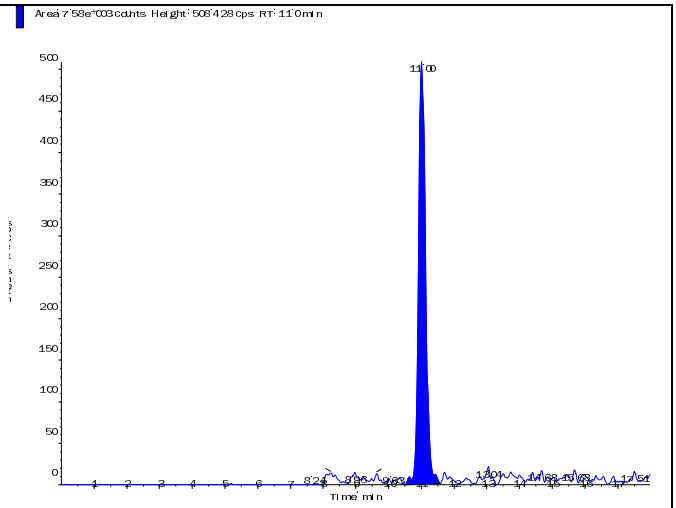

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Printed: 6/5/2015 2:59 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.00 (11.00) min
Calculated conc:	0.0005 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

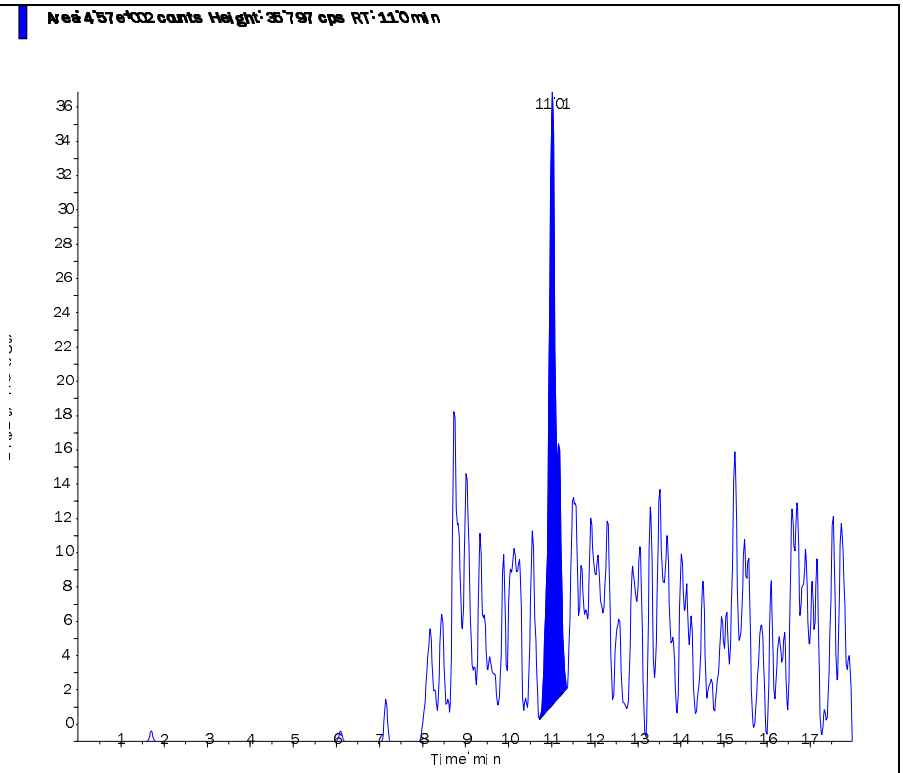

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (11.00) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

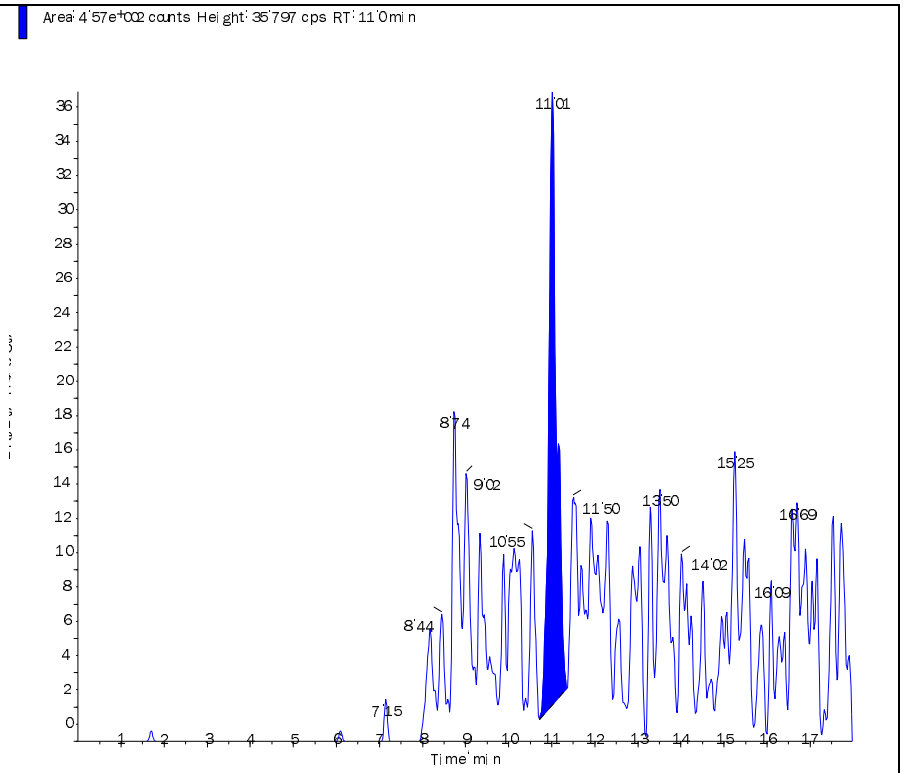

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Printed: 6/2/2015 3:55 PM

Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM29953.wiff	**Result Table**	060115_JWR.rdb
Acquisition Date	6/1/2015 4:59:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.07 x + 0.0015 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.1	N/A	N/A
0.20	1	0.20	100.0	N/A	N/A
0.50	1	0.49	98.2	N/A	N/A
1.00	1	1.00	100.1	N/A	N/A
2.00	1	2.00	100.0	N/A	N/A
5.00	1	4.95	99.1	N/A	N/A
10.00	1	10.05	100.5	N/A	N/A

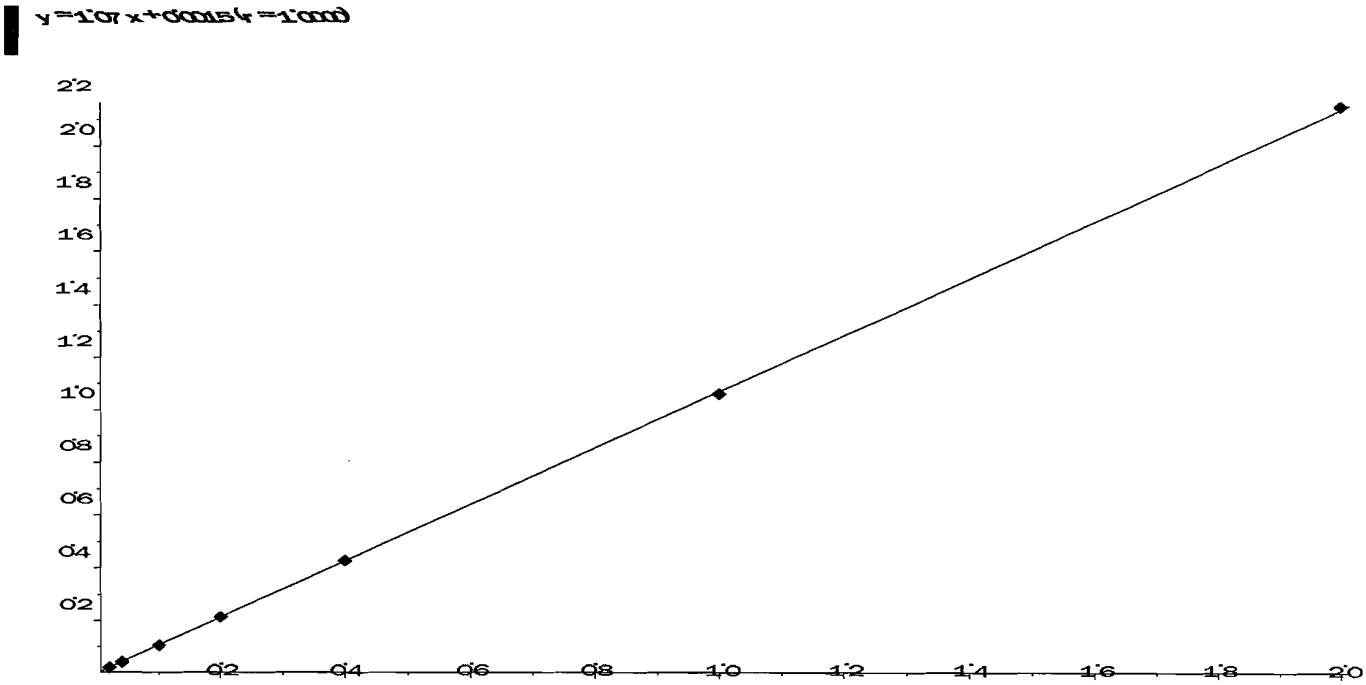

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Created with Analyst Reporter
Printed: 6/2/2015 3:55 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM29953.wiff	**Result Table**	060115_JWR.rdb
Acquisition Date	6/1/2015 4:59:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.365 x + 0.0014 (r = 0.9996)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.8	N/A	N/A
0.20	1	0.19	93.3	N/A	N/A
0.50	1	0.46	92.7	N/A	N/A
1.00	1	1.07	106.6	N/A	N/A
2.00	1	2.04	102.2	N/A	N/A
5.00	1	5.10	102.1	N/A	N/A
10.00	1	9.83	98.3	N/A	N/A

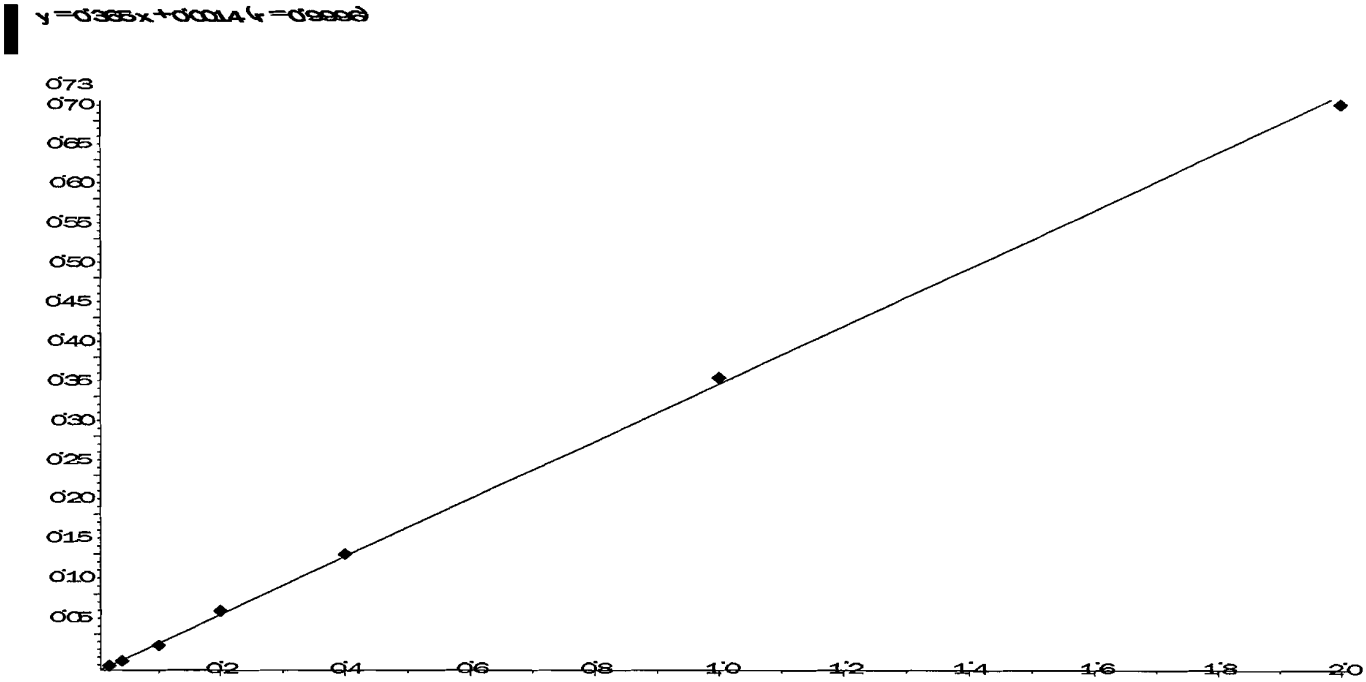

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Printed: 6/5/2015 3:00 PM

Data File	LM29954.wiff	**Result Table**	060415_JWR.rdb
Acquisition Date	6/1/2015 5:18:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525828-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM29954.wiff	**Injection Volume**	10.00
Acquisition Date	6/1/2015 5:18:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	060415_JWR.rdb
Sample ID	WG525828-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.260e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.580e+03	11.00	0.10	0.102
Perchlorate conf	2.950e+03	11.00	0.10	0.105

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

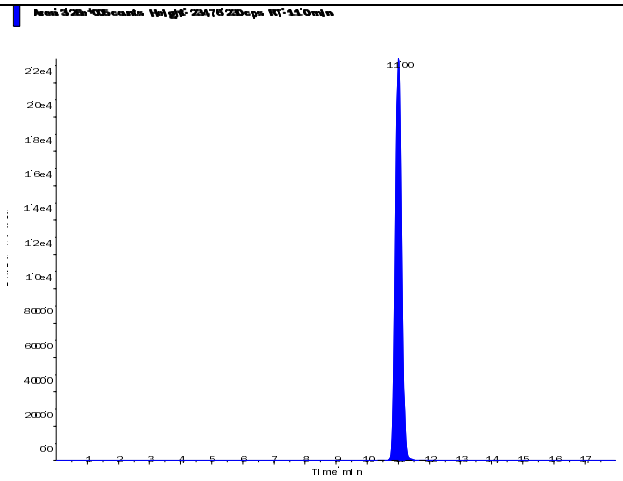

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.00 (11.00) min
Calculated conc:	0.102 ng/ml
Area Ratio:	0.023
Sample Type:	(Standard)

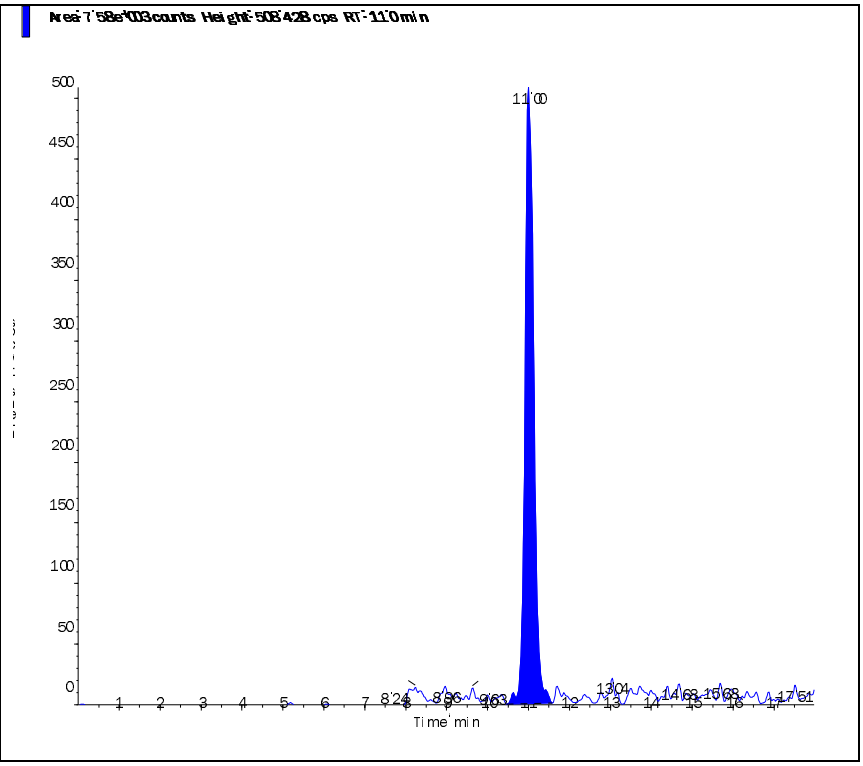

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.00 (11.00) min
Calculated conc:	0.105 ng/ml
Area Ratio:	0.009
Sample Type:	(Standard)

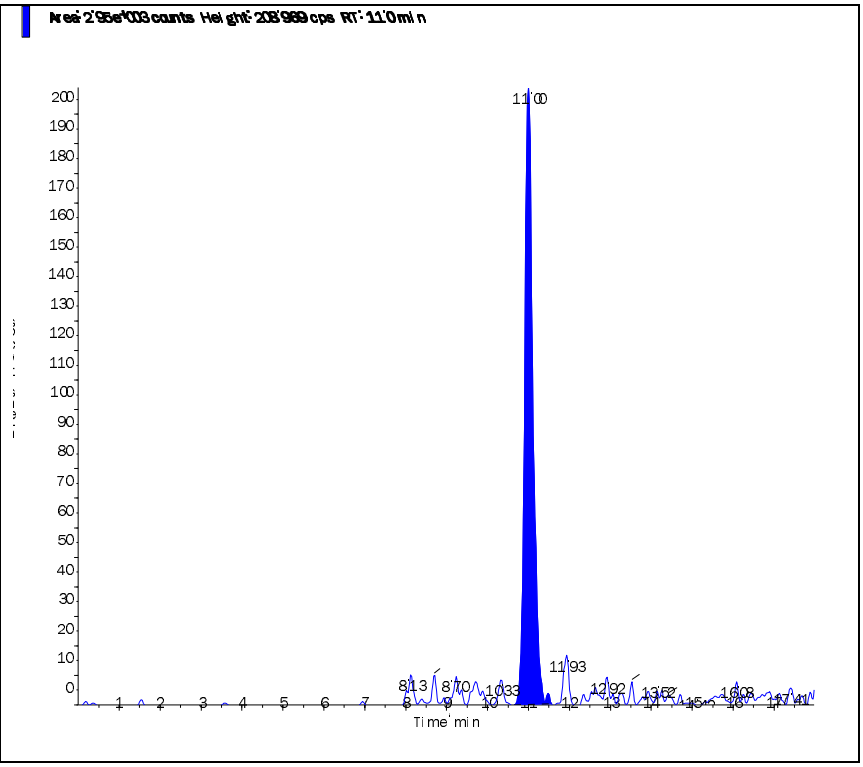

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Data File	LM29955.wiff	**Result Table**	060415_JWR.rdb
Acquisition Date	6/1/2015 5:36:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525828-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM29955.wiff	**Injection Volume**	10.00
Acquisition Date	6/1/2015 5:36:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	060415_JWR.rdb
Sample ID	WG525828-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.440e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.520e+04	11.00	0.20	0.20
Perchlorate conf	5.160e+03	11.00	0.20	0.187

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

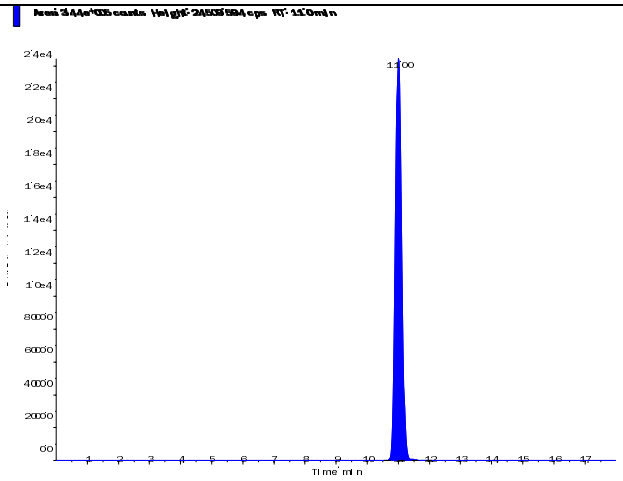

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.00 (11.00) min Calculated conc: 0.20 ng/ml Area Ratio: 0.044 Sample Type: (Standard)	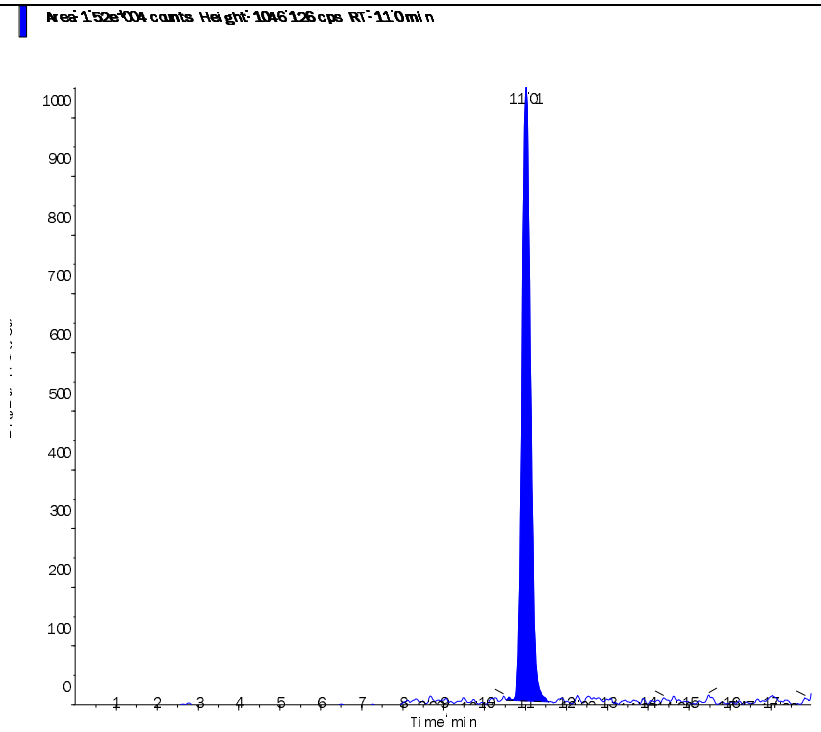
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.00 (11.00) min Calculated conc: 0.187 ng/ml Area Ratio: 0.015 Sample Type: (Standard)	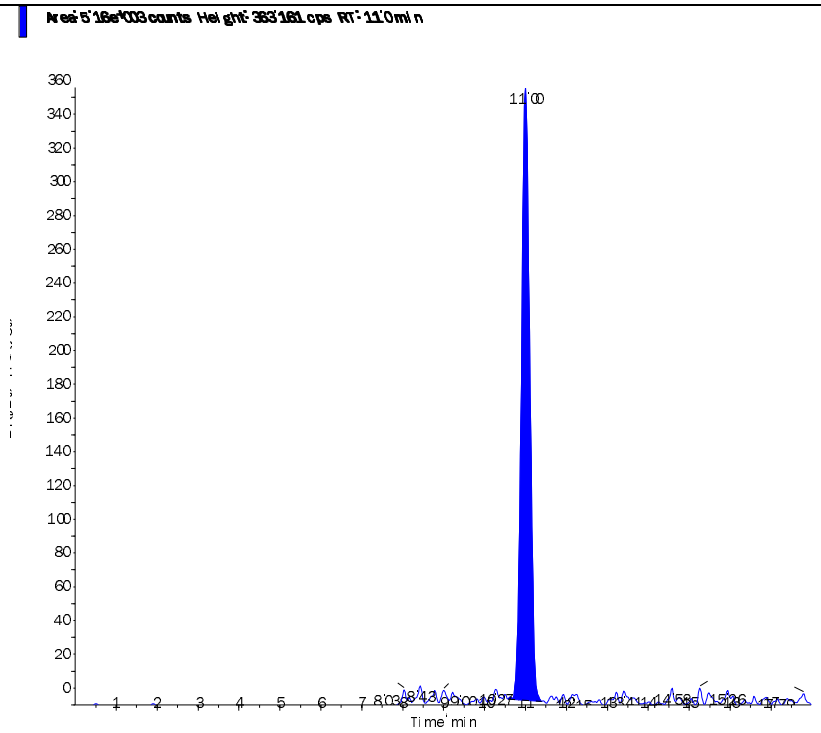

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Created with Analyst Reporter
Printed: 6/5/2015 3:00 PM

Data File	LM29956.wiff	**Result Table**	060415_JWR.rdb
Acquisition Date	6/1/2015 5:55:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525828-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM29956.wiff	**Injection Volume**	10.00
Acquisition Date	6/1/2015 5:55:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	060415_JWR.rdb
Sample ID	WG525828-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.370e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.580e+04	11.00	0.50	0.491
Perchlorate conf	1.190e+04	11.00	0.50	0.464

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

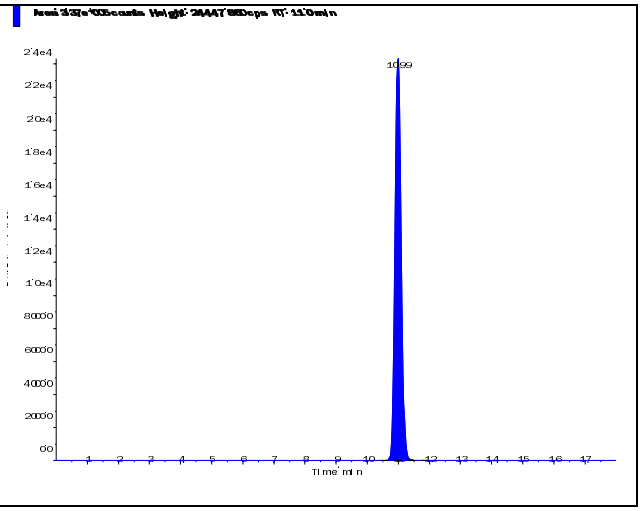

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.00 (11.00) min Calculated conc: 0.491 ng/ml Area Ratio: 0.106 Sample Type: (Standard)	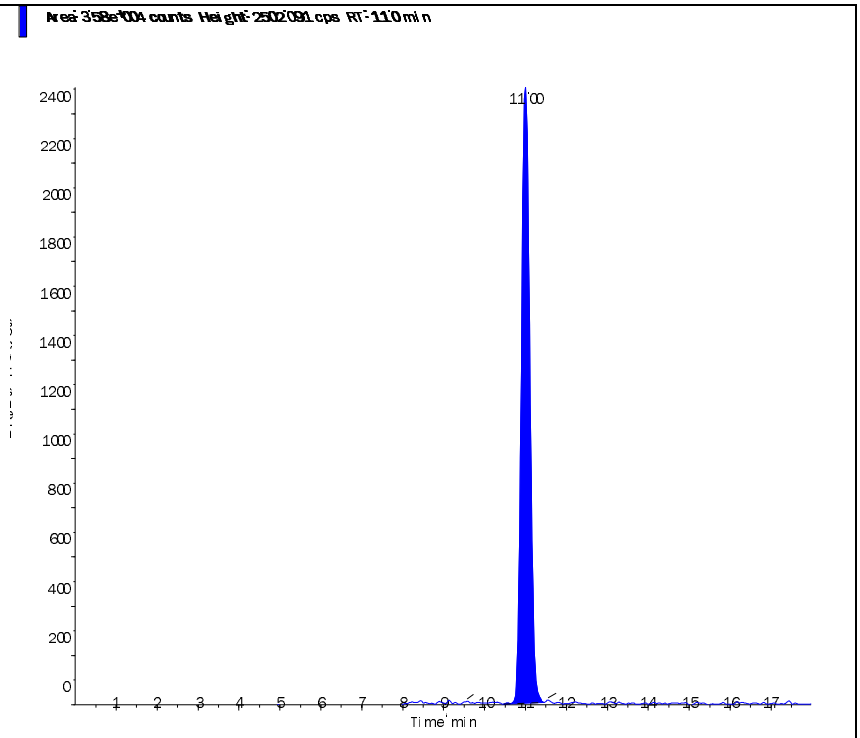
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.00 (11.00) min Calculated conc: 0.464 ng/ml Area Ratio: 0.035 Sample Type: (Standard)	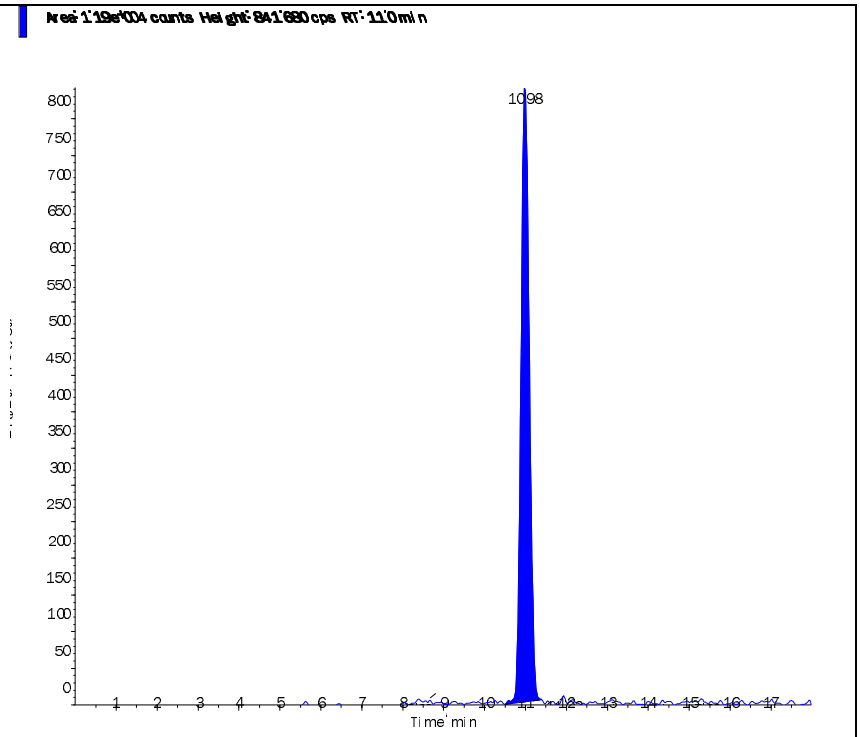

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Printed: 6/5/2015 3:00 PM

Data File	LM29957.wiff	**Result Table**	060415_JWR.rdb
Acquisition Date	6/1/2015 6:14:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525828-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM29957.wiff	**Injection Volume**	10.00
Acquisition Date	6/1/2015 6:14:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	060415_JWR.rdb
Sample ID	WG525828-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.490e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.500e+04	11.00	1.00	1.00
Perchlorate conf	2.760e+04	11.00	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

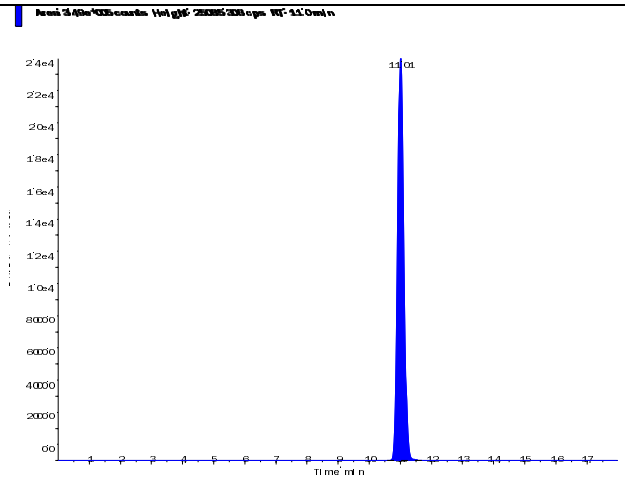

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.00 (11.00) min Calculated conc: 1.00 ng/ml Area Ratio: 0.215 Sample Type: (Standard)	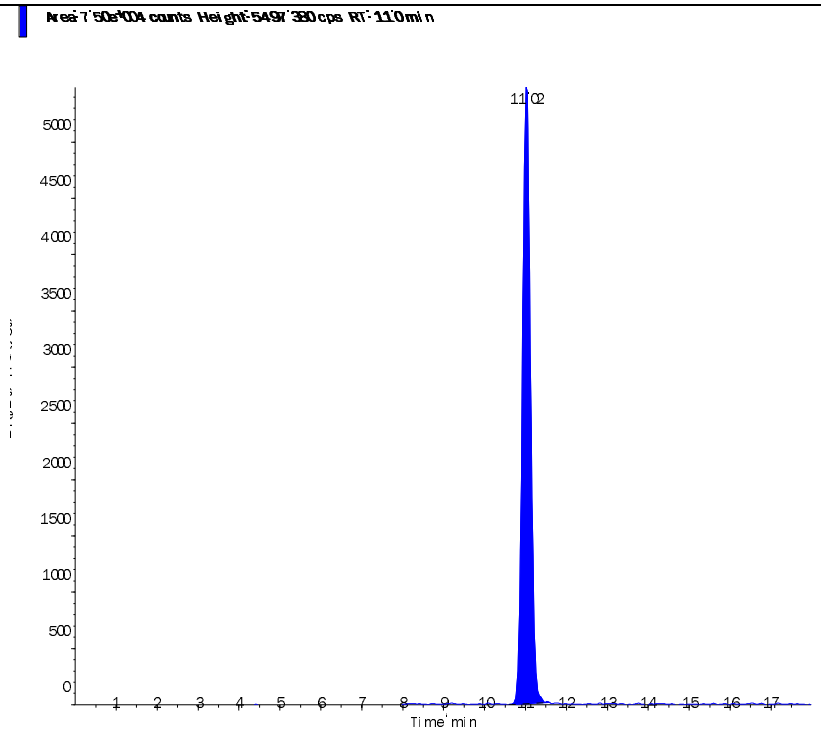
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.00 (11.00) min Calculated conc: 1.07 ng/ml Area Ratio: 0.079 Sample Type: (Standard)	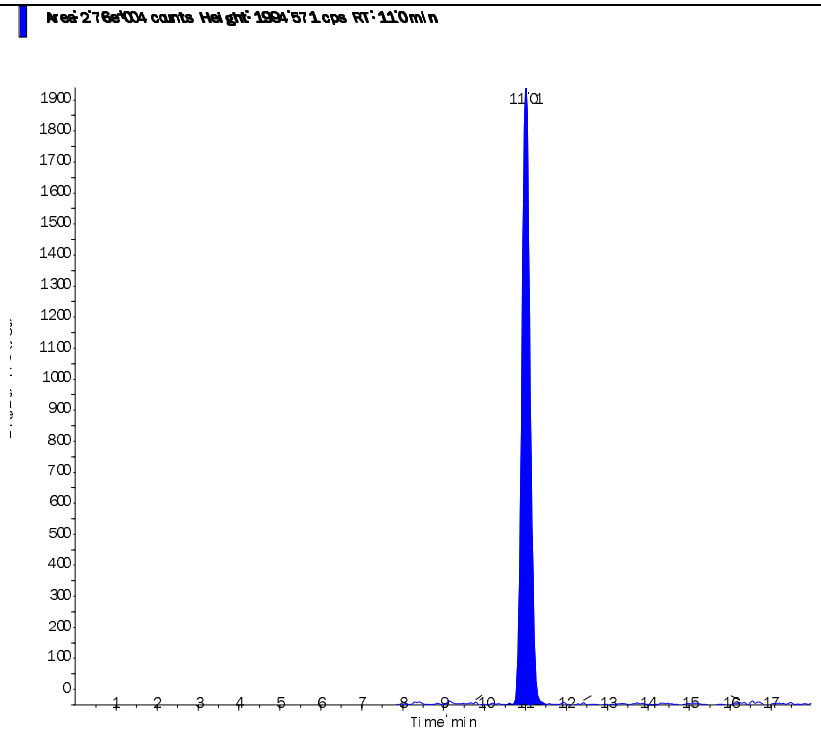

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Printed: 6/5/2015 3:01 PM

Data File	LM29958.wiff	**Result Table**	060415_JWR.rdb
Acquisition Date	6/1/2015 6:33:44 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525828-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM29958.wiff	**Injection Volume**	10.00
Acquisition Date	6/1/2015 6:33:44 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	060415_JWR.rdb
Sample ID	WG525828-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.360e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.440e+05	11.00	2.00	2.00
Perchlorate conf	5.060e+04	11.00	2.00	2.04

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

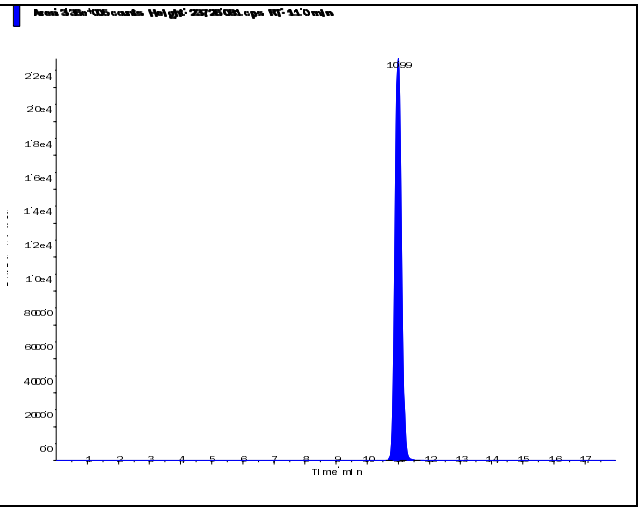

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.00 (11.00) min Calculated conc: 2.00 ng/ml Area Ratio: 0.429 Sample Type: (Standard)	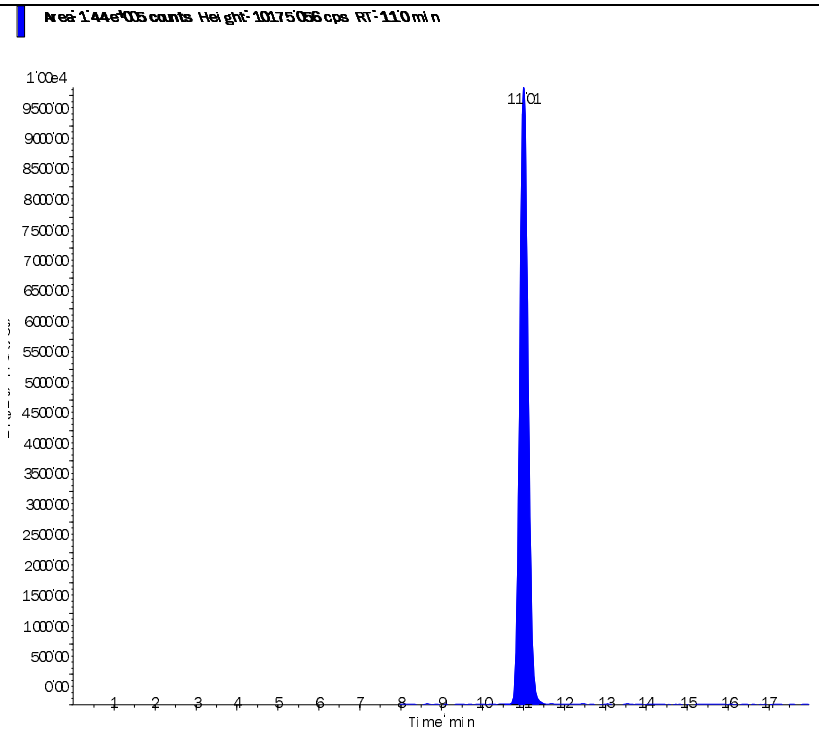
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.00 (11.00) min Calculated conc: 2.04 ng/ml Area Ratio: 0.15 Sample Type: (Standard)	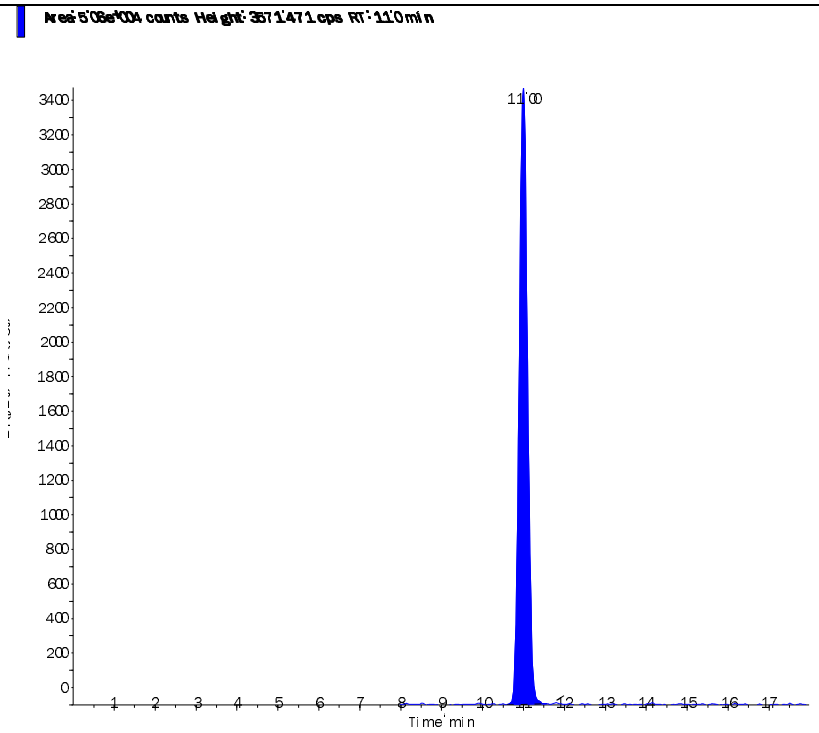

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Printed: 6/5/2015 3:01 PM

Data File	LM29959.wiff	**Result Table**	060415_JWR.rdb
Acquisition Date	6/1/2015 6:52:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525828-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM29959.wiff	**Injection Volume**	10.00
Acquisition Date	6/1/2015 6:52:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	060415_JWR.rdb
Sample ID	WG525828-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.240e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.430e+05	11.00	5.00	4.95
Perchlorate conf	1.210e+05	11.00	5.00	5.10

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

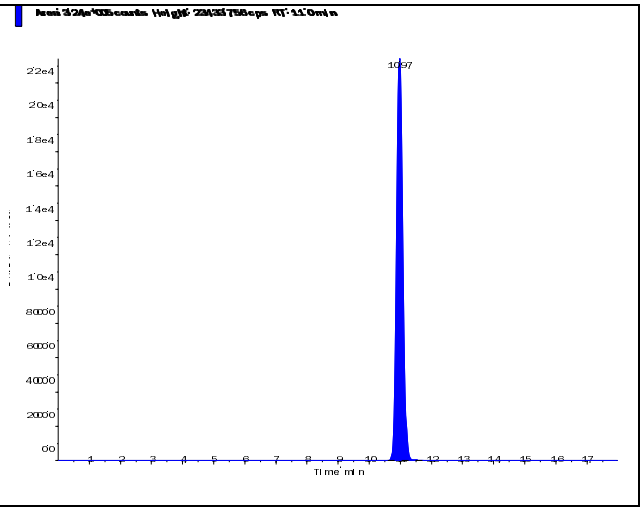

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Printed: 6/5/2015 3:01 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.00 (11.00) min Calculated conc: 4.95 ng/ml Area Ratio: 1.059 Sample Type: (Standard)	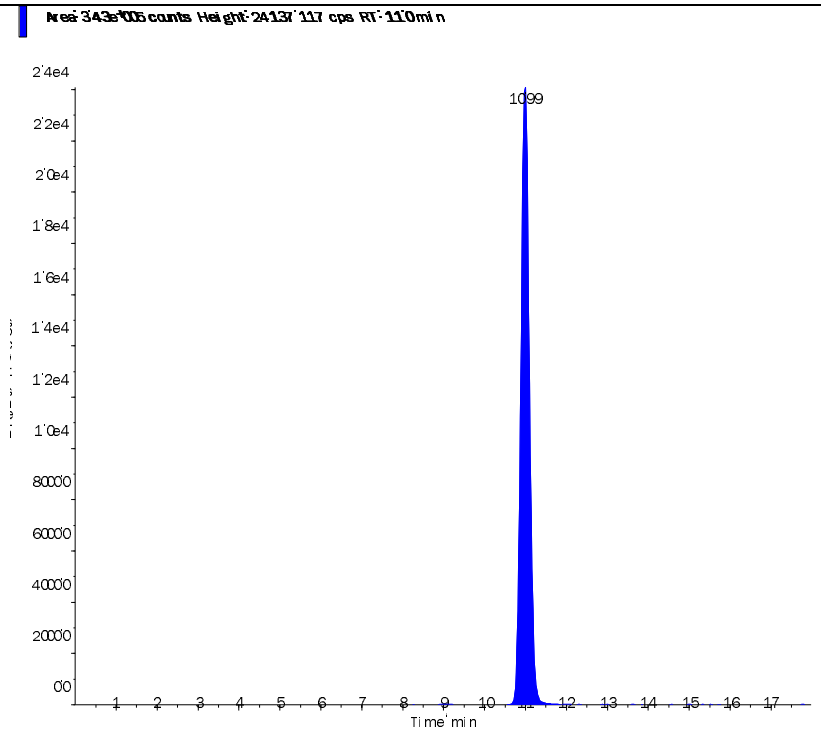
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.00 (11.00) min Calculated conc: 5.10 ng/ml Area Ratio: 0.374 Sample Type: (Standard)	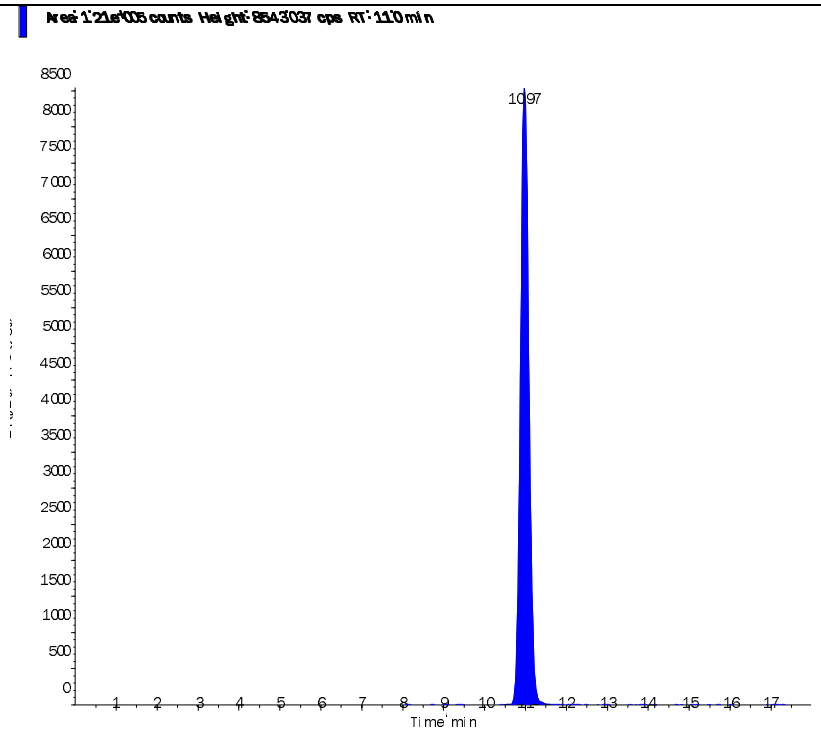

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Created with Analyst Reporter
Printed: 6/5/2015 3:02 PM

Data File	LM29960.wiff	**Result Table**	060415_JWR.rdb
Acquisition Date	6/1/2015 7:11:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525828-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM29960.wiff	**Injection Volume**	10.00
Acquisition Date	6/1/2015 7:11:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	060415_JWR.rdb
Sample ID	WG525828-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.120e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	6.690e+05	11.00	10.00	10.10
Perchlorate conf	2.240e+05	11.00	10.00	9.83

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

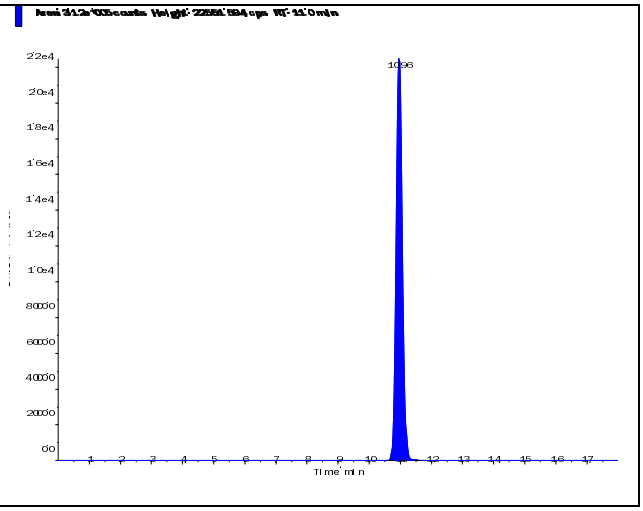

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Created with Analyst Reporter
Printed: 6/5/2015 3:02 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.00 (11.00) min
Calculated conc:	10.10 ng/ml
Area Ratio:	2.147
Sample Type:	(Standard)

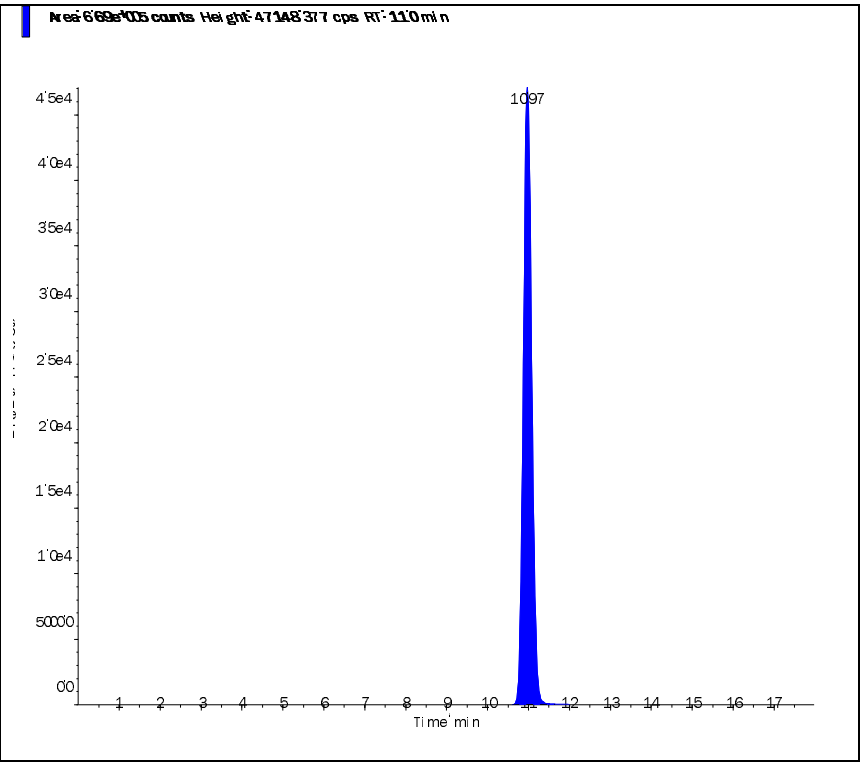

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.00 (11.00) min
Calculated conc:	9.83 ng/ml
Area Ratio:	0.719
Sample Type:	(Standard)

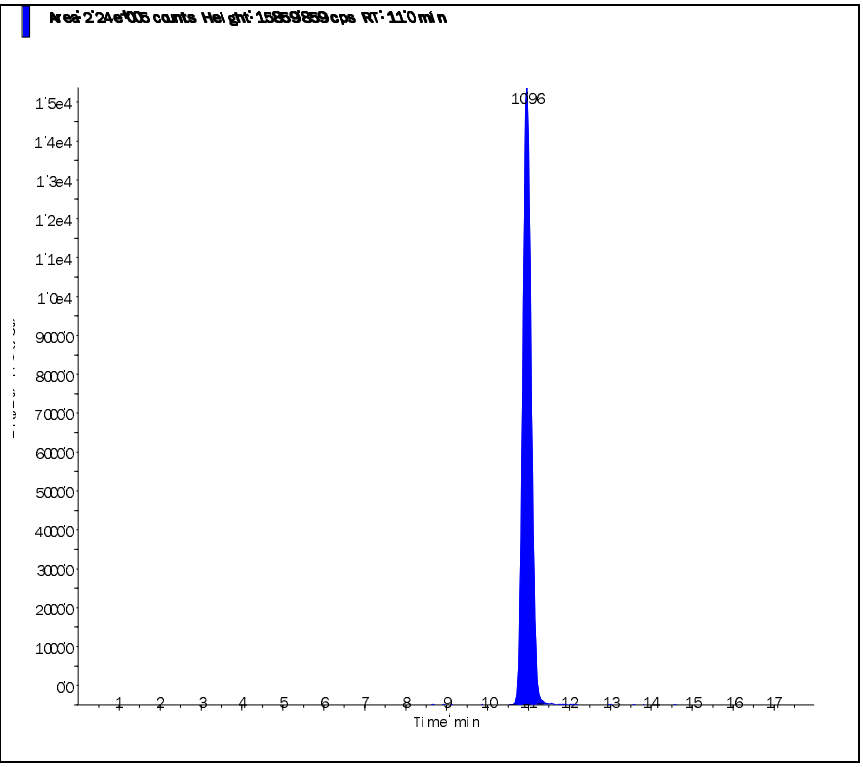

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Created with Analyst Reporter
Printed: 6/2/2015 3:59 PM

Data File	LM29961.wiff	**Result Table**	060115_JWR.rdb
Acquisition Date	6/1/2015 7:30:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG525828-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM29961.wiff	**Injection Volume**	10.00
Acquisition Date	6/1/2015 7:30:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	060115_JWR.rdb
Sample ID	WG525828-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD69913	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.390e+05	11.00	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.050e+04	11.00	1.00	0.966
Perchlorate conf	2.540e+04	11.00	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 11.00(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

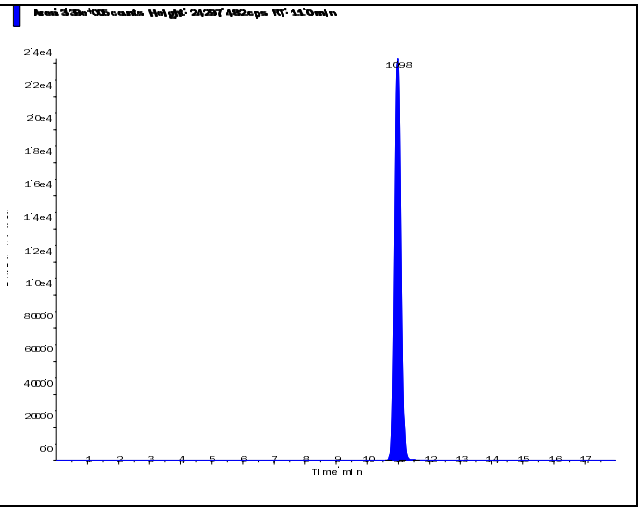

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Printed: 6/2/2015 3:59 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.00 (11.00) min Calculated conc: 0.966 ng/ml Area Ratio: 0.208 Sample Type: (Quality Control)	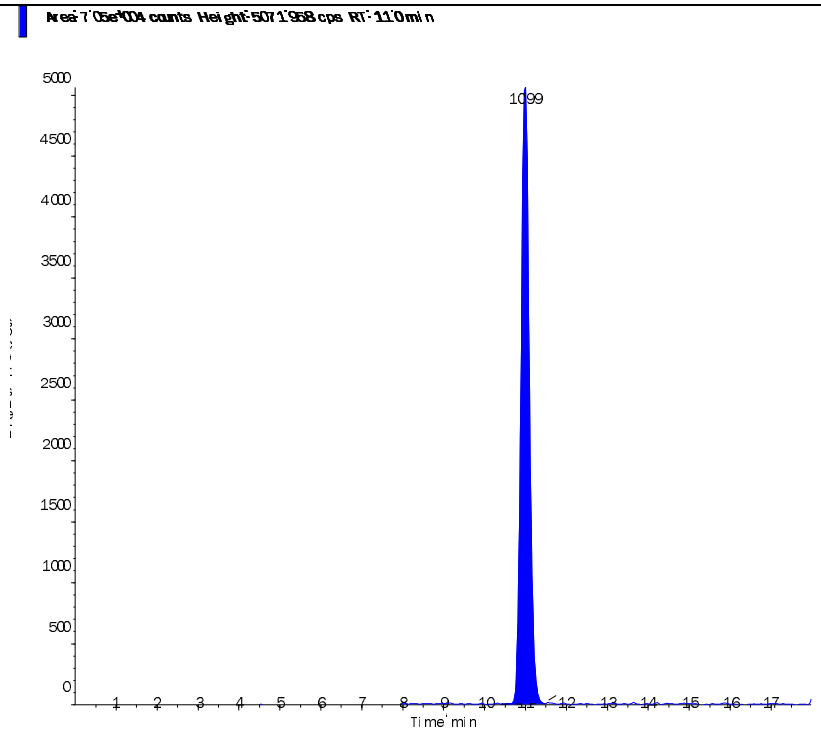
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.00 (11.00) min Calculated conc: 1.01 ng/ml Area Ratio: 0.075 Sample Type: (Quality Control)	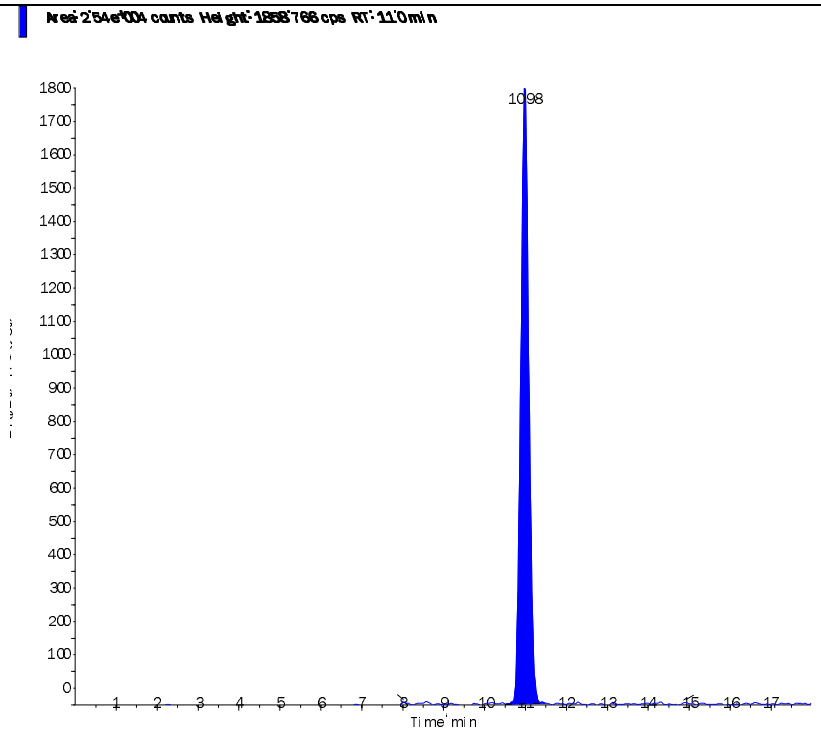

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Data File	LM30029.wiff	**Result Table**	060415_JWR.rdb
Acquisition Date	6/4/2015 4:33:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG526363-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM30029.wiff	**Injection Volume**	10.00
Acquisition Date	6/4/2015 4:33:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	060415_JWR.rdb
Sample ID	WG526363-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.170e+05	11.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.100e+04	11.40	1.00	1.04
Perchlorate conf	2.450e+04	11.40	1.00	1.04

O18LP (Internal Standard)

RT (Exp. RT): 11.30(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

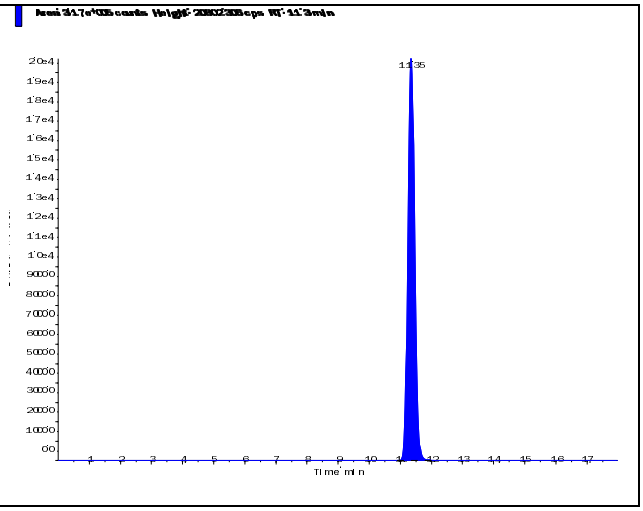

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Printed: 6/5/2015 3:02 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.40 (11.00) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.224
Sample Type:	(Quality Control)

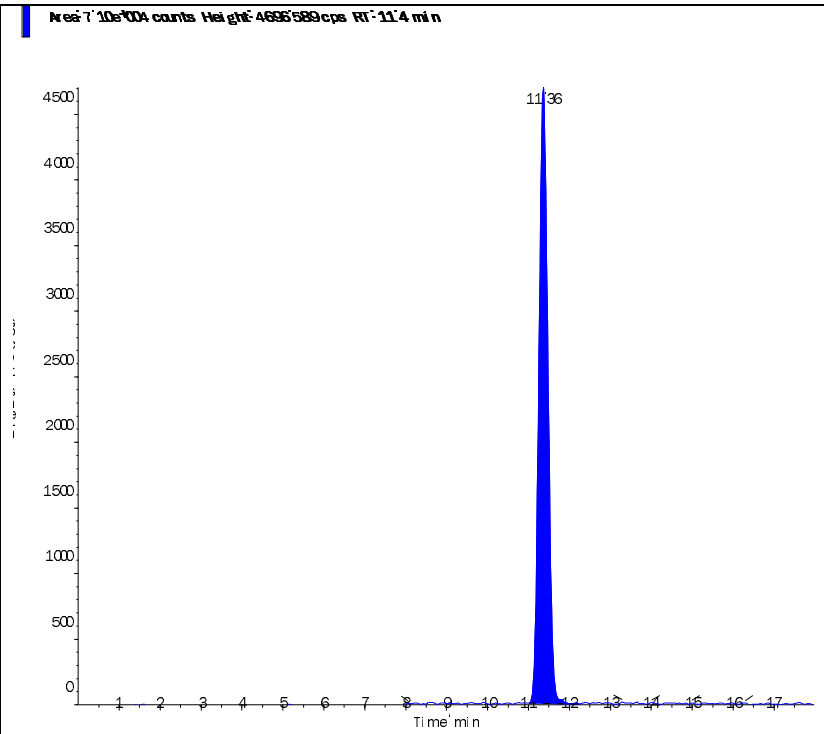

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.40 (11.00) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.077
Sample Type:	(Quality Control)

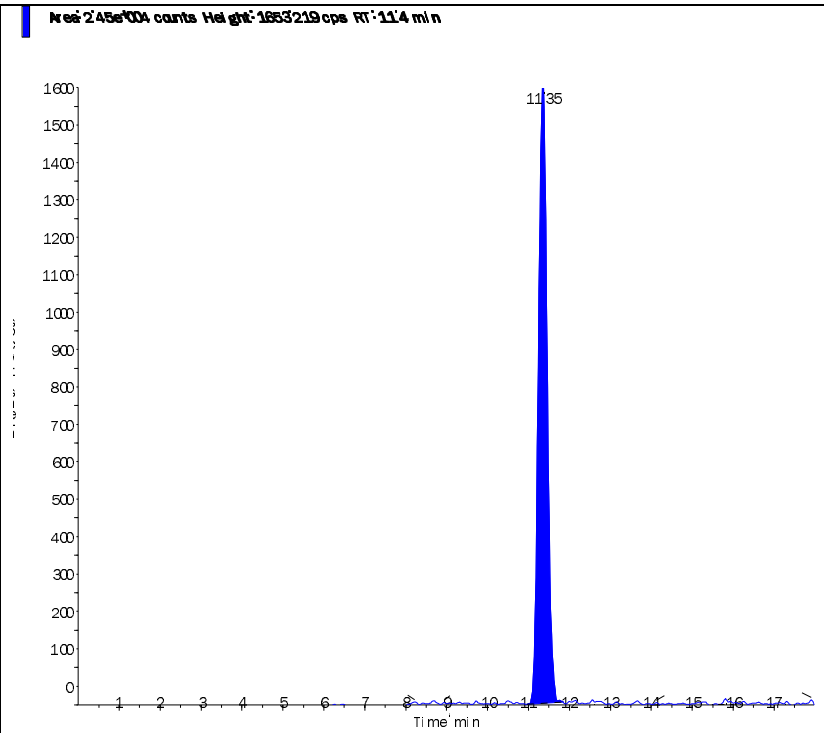

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Created with Analyst Reporter
Printed: 6/5/2015 3:05 PM

Data File	LM30041.wiff	**Result Table**	060415_JWR.rdb
Acquisition Date	6/4/2015 8:21:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG526363-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM30041.wiff	**Injection Volume**	10.00
Acquisition Date	6/4/2015 8:21:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	060415_JWR.rdb
Sample ID	WG526363-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.690e+05	11.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+04	11.30	1.00	1.02
Perchlorate conf	2.780e+04	11.30	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 11.30(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

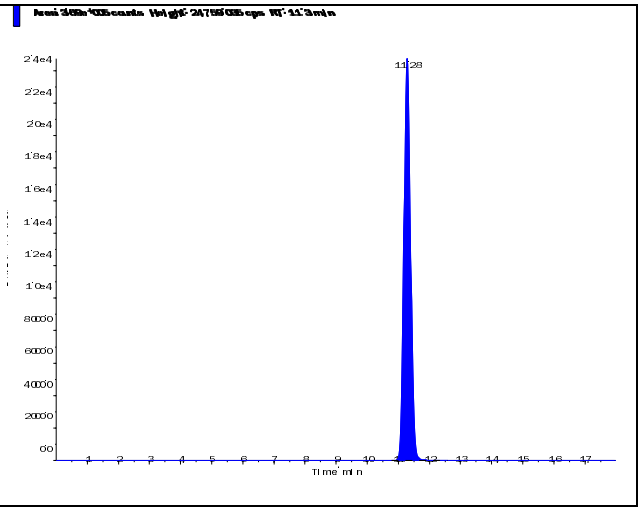

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.30 (11.00) min Calculated conc: 1.02 ng/ml Area Ratio: 0.219 Sample Type: (Quality Control)	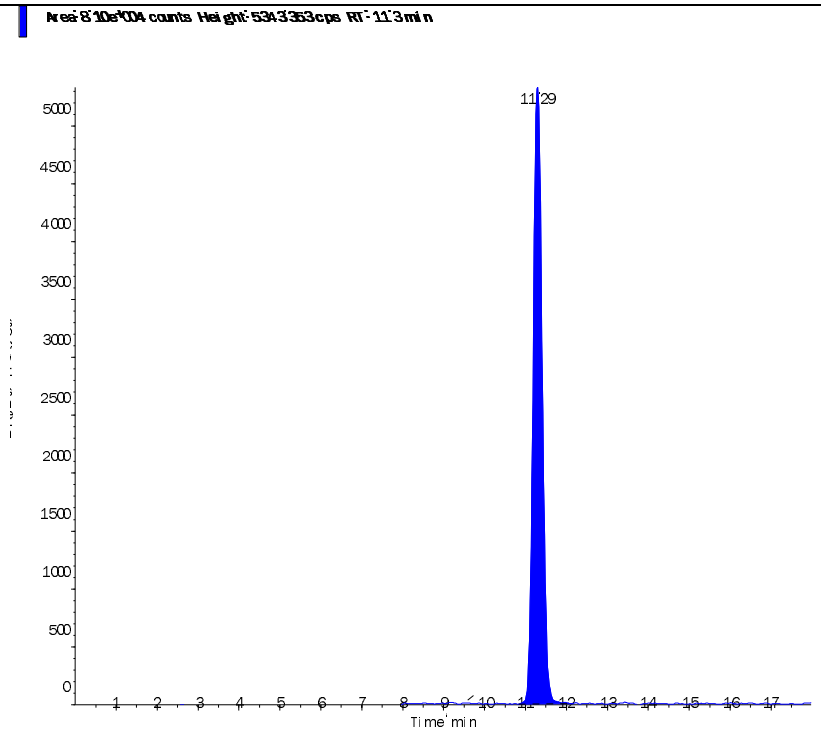
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.30 (11.00) min Calculated conc: 1.01 ng/ml Area Ratio: 0.075 Sample Type: (Quality Control)	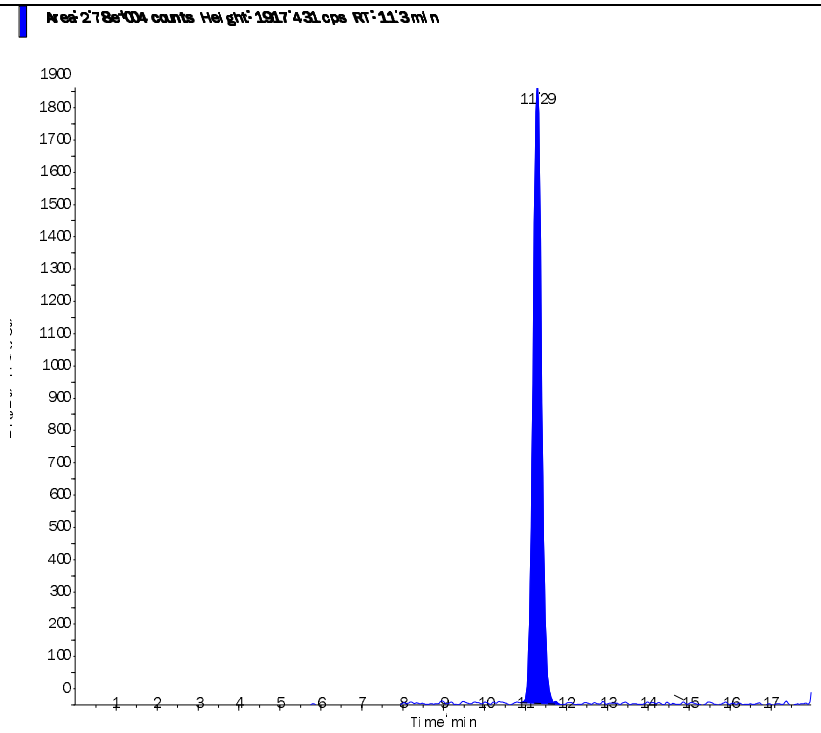

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Data File	LM30044.wiff	**Result Table**	060415_JWR.rdb
Acquisition Date	6/5/2015 12:17:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG526363-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM30044.wiff	**Injection Volume**	10.00
Acquisition Date	6/5/2015 12:17:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	060415_JWR.rdb
Sample ID	WG526363-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.950e+05	11.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	6.860e+04	11.70	1.00	1.08
Perchlorate conf	2.250e+04	11.70	1.00	1.03

O18LP (Internal Standard)

RT (Exp. RT): 11.70(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

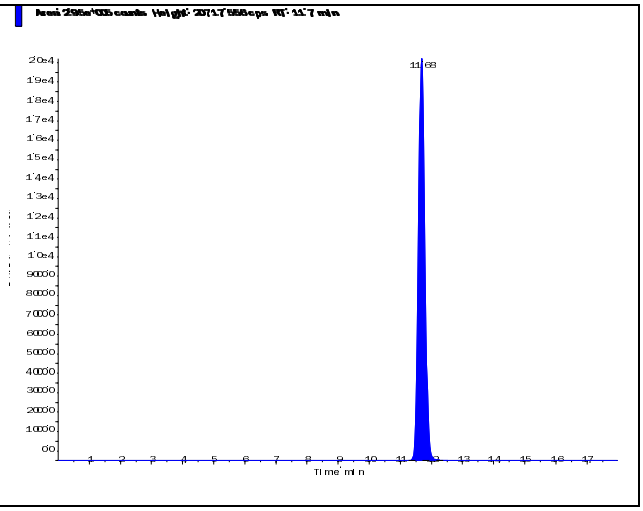

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.70 (11.00) min Calculated conc: 1.08 ng/ml Area Ratio: 0.233 Sample Type: (Quality Control)	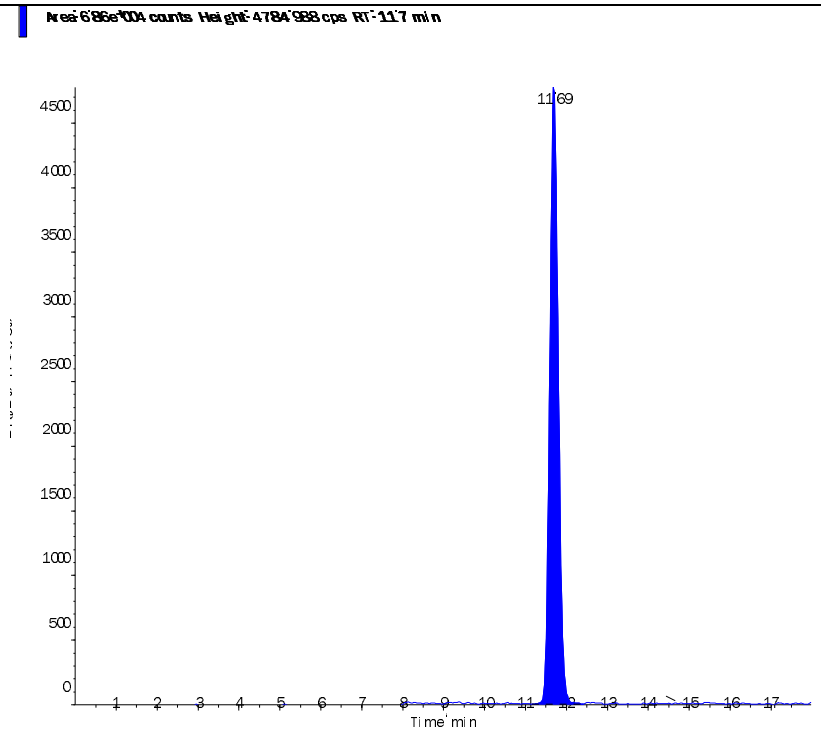
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.70 (11.00) min Calculated conc: 1.03 ng/ml Area Ratio: 0.076 Sample Type: (Quality Control)	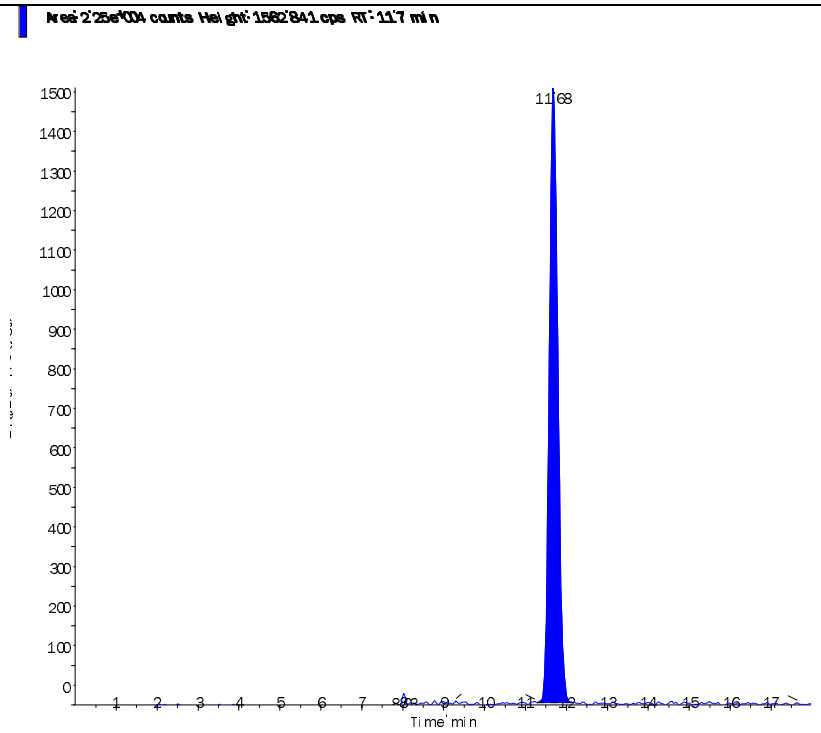

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Printed: 6/5/2015 3:08 PM

Data File	LM30048.wiff	**Result Table**	060415_JWR.rdb
Acquisition Date	6/5/2015 1:33:26 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG526363-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM30048.wiff	**Injection Volume**	10.00
Acquisition Date	6/5/2015 1:33:26 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	060415_JWR.rdb
Sample ID	WG526363-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.580e+05	11.40	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.010e+04	11.50	1.00	1.04
Perchlorate conf	2.650e+04	11.40	1.00	0.996

O18LP (Internal Standard)

RT (Exp. RT): 11.40(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

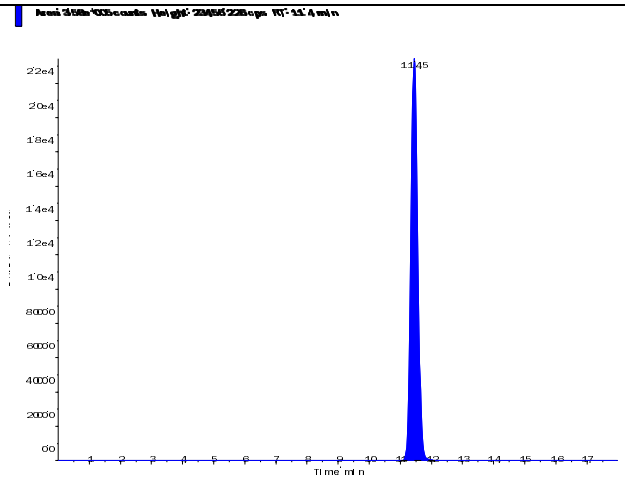

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.50 (11.00) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.224
Sample Type:	(Quality Control)

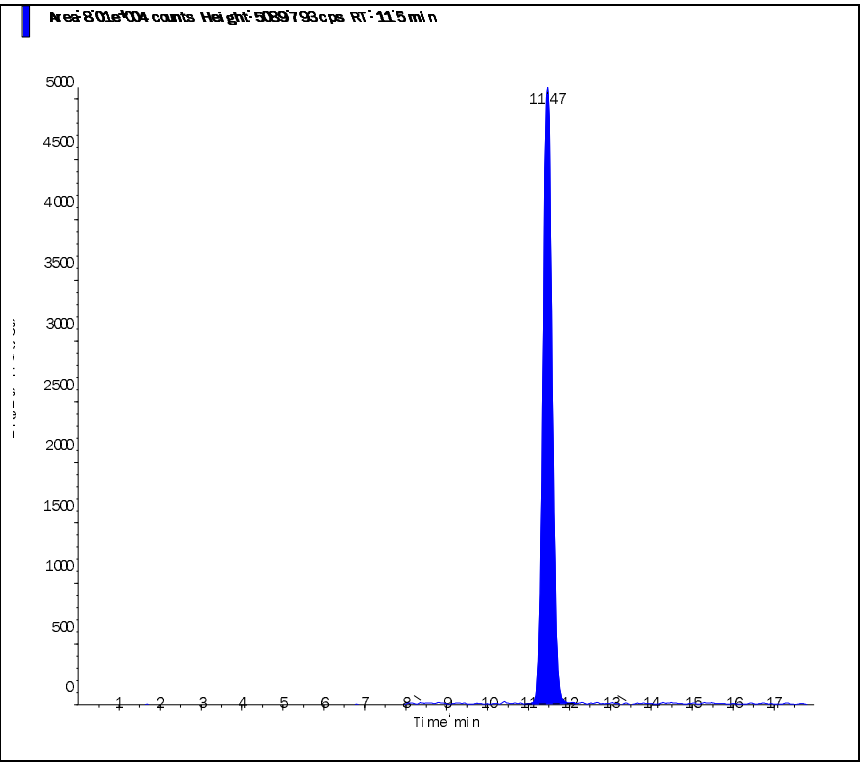

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.40 (11.00) min
Calculated conc:	0.996 ng/ml
Area Ratio:	0.074
Sample Type:	(Quality Control)

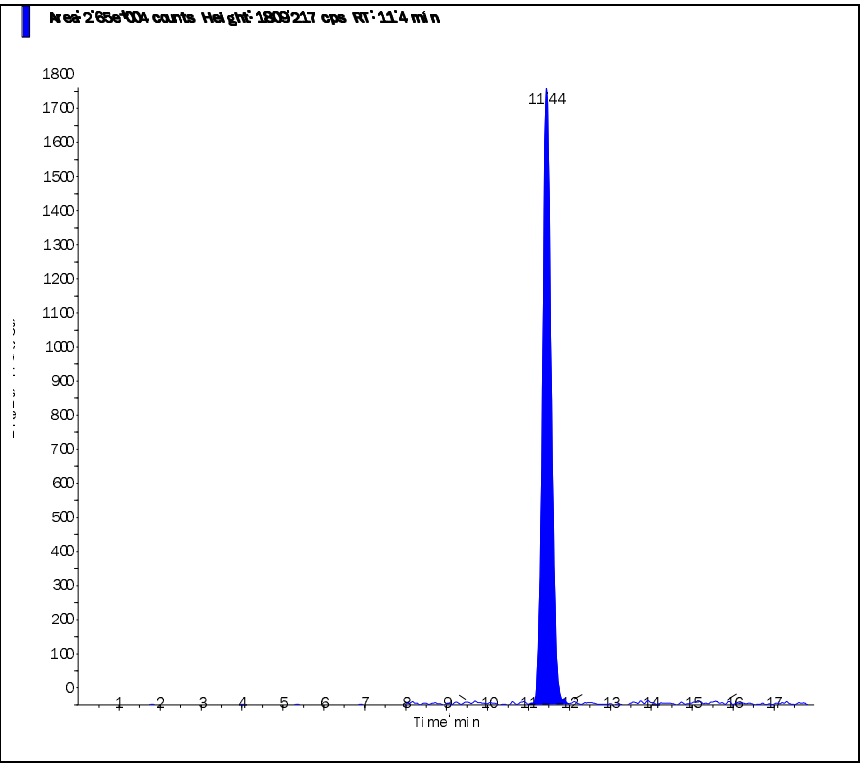

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Data File	LM30030.wiff	**Result Table**	060415_JWR.rdb
Acquisition Date	6/4/2015 4:52:44 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG526362-05 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM30030.wiff	**Injection Volume**	10.00
Acquisition Date	6/4/2015 4:52:44 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060415_JWR.rdb
Sample ID	WG526362-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.120e+05	11.40	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.400e+04	11.40	N/A	0.203
Perchlorate conf	4.850e+03	11.30	N/A	0.194

O18LP (Internal Standard)

RT (Exp. RT): 11.40(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

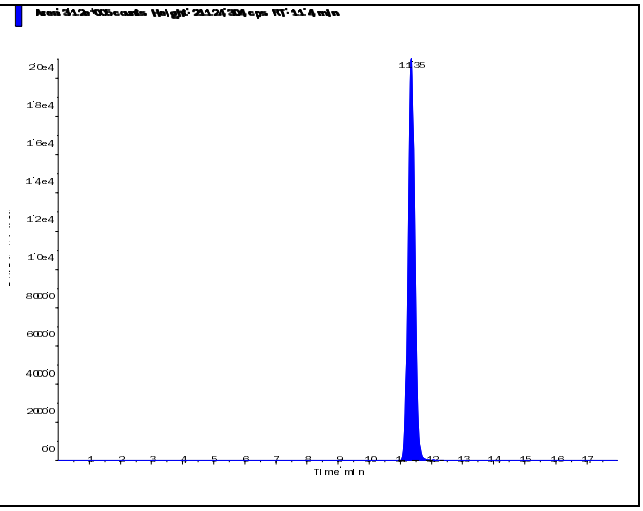

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.40 (11.00) min Calculated conc: 0.203 ng/ml Area Ratio: 0.045 Sample Type: (Unknown)	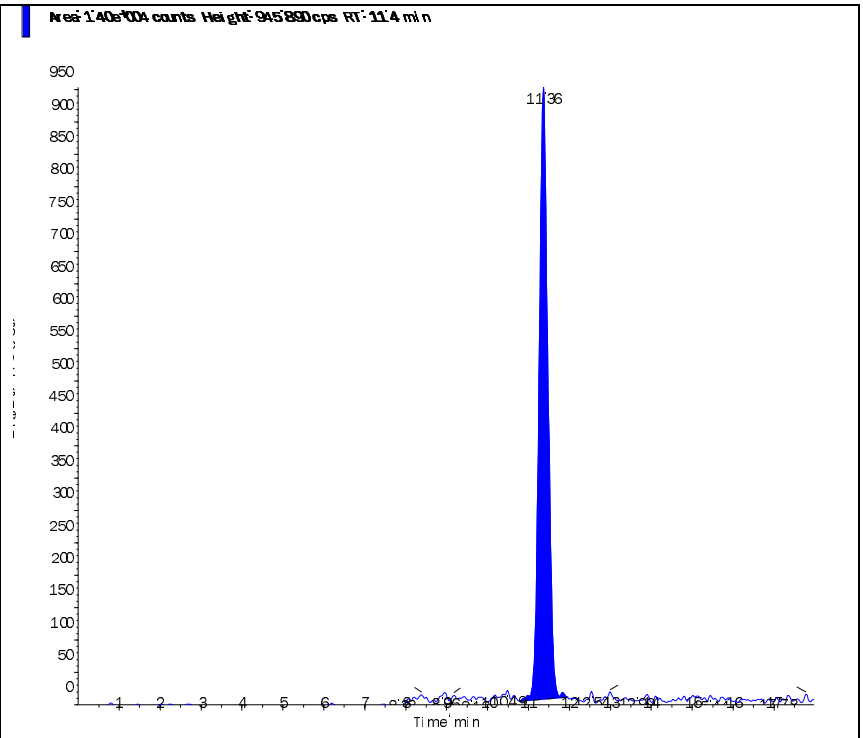
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.30 (11.00) min Calculated conc: 0.194 ng/ml Area Ratio: 0.016 Sample Type: (Unknown)	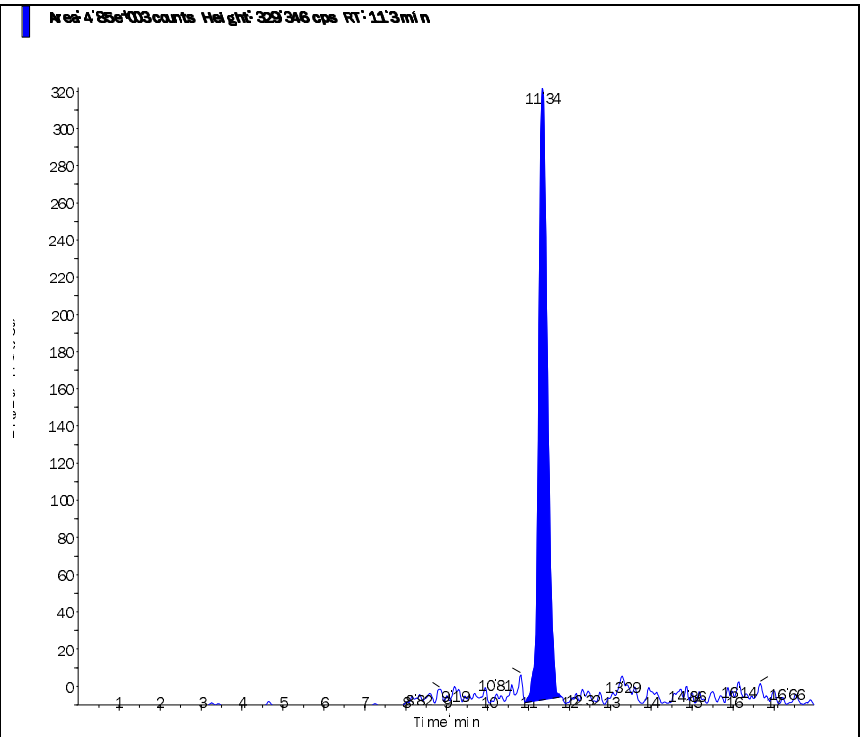

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Data File	LM30042.wiff	**Result Table**	060415_JWR.rdb
Acquisition Date	6/4/2015 8:39:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG526362-06 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM30042.wiff	**Injection Volume**	10.00
Acquisition Date	6/4/2015 8:39:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060415_JWR.rdb
Sample ID	WG526362-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.160e+05	11.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.370e+04	11.30	N/A	0.196
Perchlorate conf	4.700e+03	11.30	N/A	0.185

O18LP (Internal Standard)

RT (Exp. RT): 11.30(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

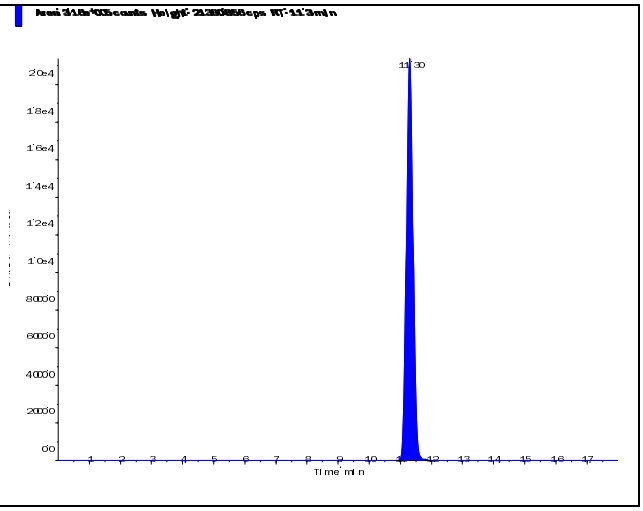

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.30 (11.00) min Calculated conc: 0.196 ng/ml Area Ratio: 0.043 Sample Type: (Unknown)	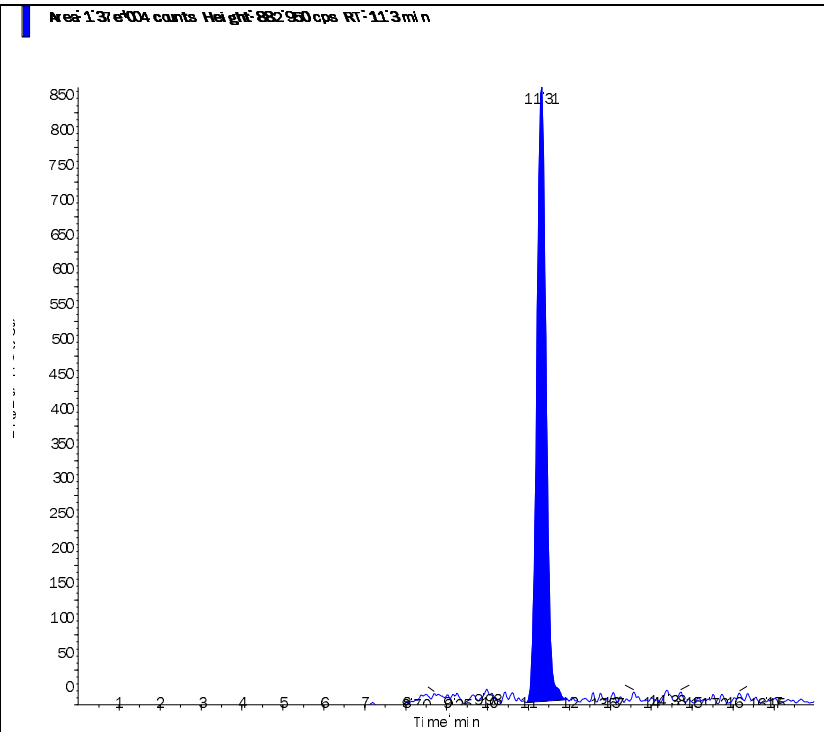
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.30 (11.00) min Calculated conc: 0.185 ng/ml Area Ratio: 0.015 Sample Type: (Unknown)	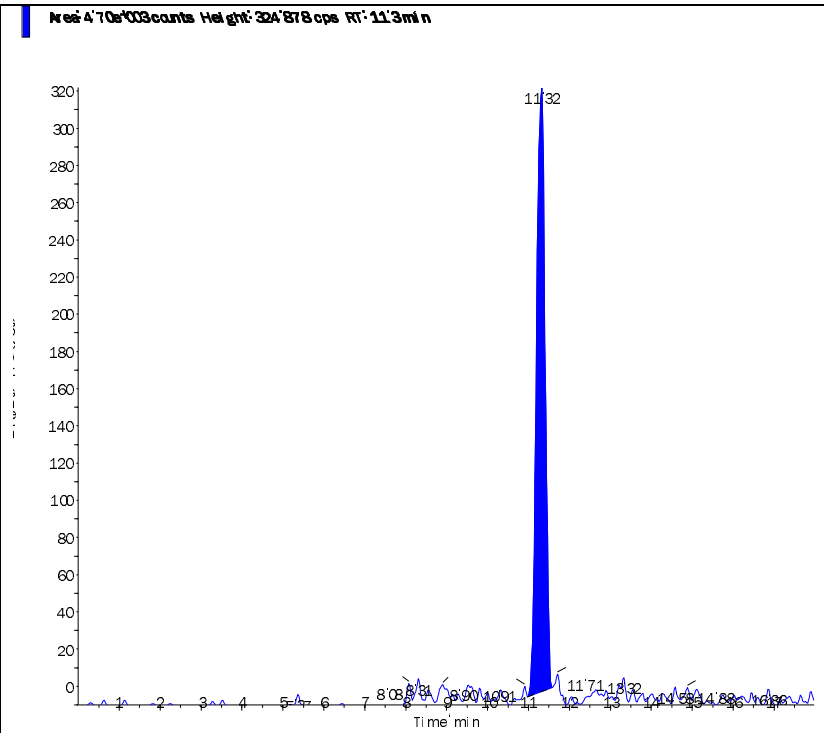

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Data File	LM30045.wiff	**Result Table**	060415_JWR.rdb
Acquisition Date	6/5/2015 12:36:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG526362-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM30045.wiff	**Injection Volume**	10.00
Acquisition Date	6/5/2015 12:36:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060415_JWR.rdb
Sample ID	WG526362-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.260e+05	11.40	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.540e+04	11.50	N/A	0.215
Perchlorate conf	5.690e+03	11.40	N/A	0.22

O18LP (Internal Standard)

RT (Exp. RT): 11.40(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

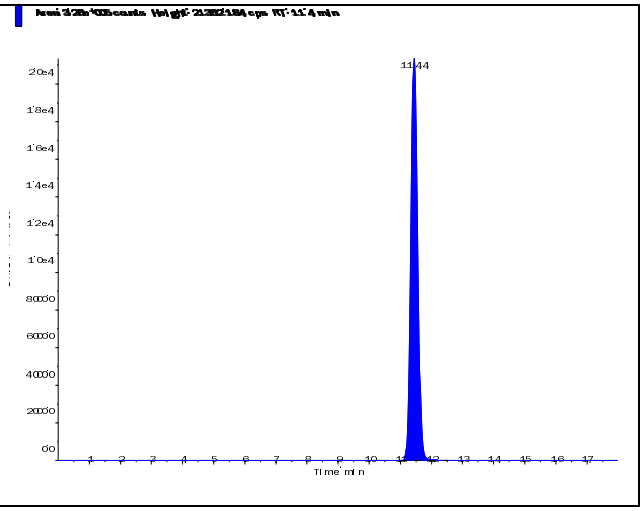

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.50 (11.00) min Calculated conc: 0.215 ng/ml Area Ratio: 0.047 Sample Type: (Unknown)	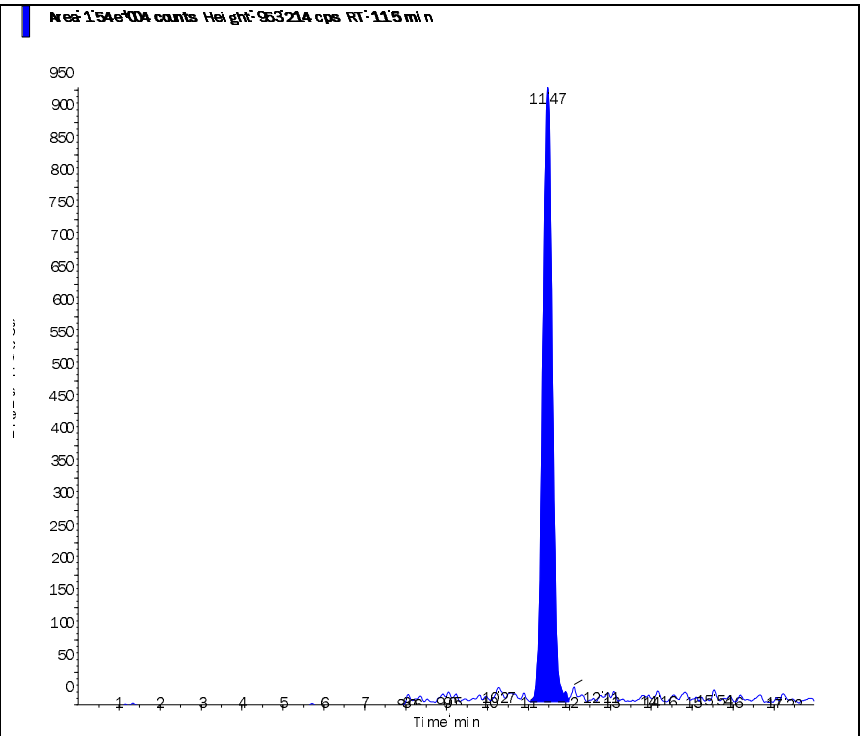
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.40 (11.00) min Calculated conc: 0.22 ng/ml Area Ratio: 0.017 Sample Type: (Unknown)	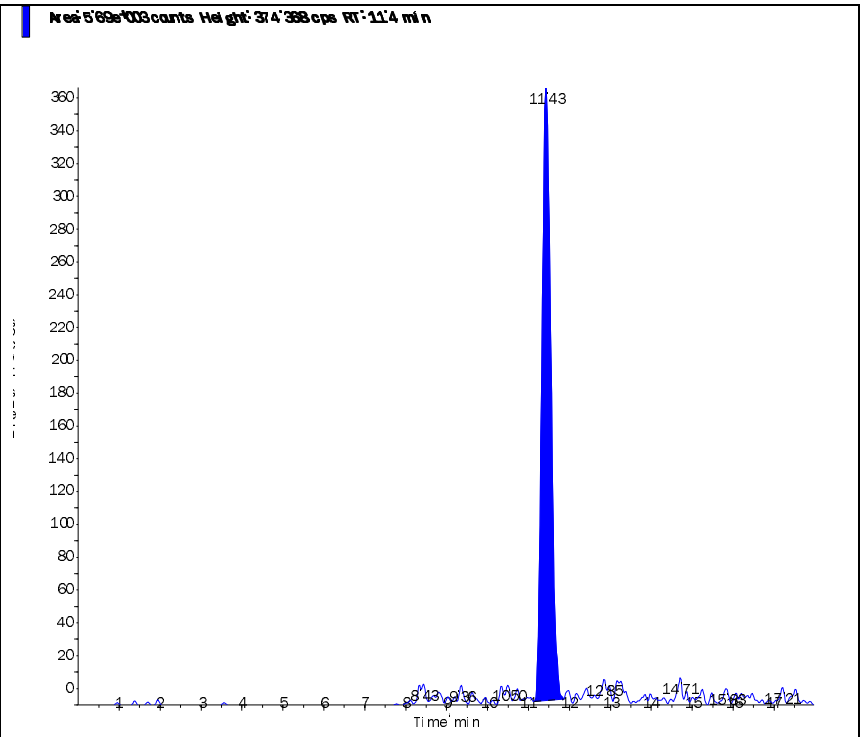

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Data File	LM30049.wiff	**Result Table**	060415_JWR.rdb
Acquisition Date	6/5/2015 1:52:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG526362-08 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM30049.wiff	**Injection Volume**	10.00
Acquisition Date	6/5/2015 1:52:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060415_JWR.rdb
Sample ID	WG526362-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.220e+05	11.50	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.480e+04	11.50	N/A	0.209
Perchlorate conf	5.000e+03	11.50	N/A	0.194

O18LP (Internal Standard)

RT (Exp. RT): 11.50(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

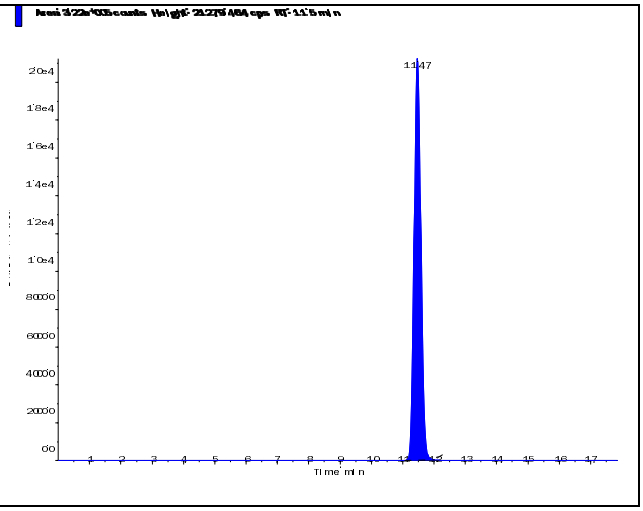

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.50 (11.00) min
Calculated conc:	0.209 ng/ml
Area Ratio:	0.046
Sample Type:	(Unknown)

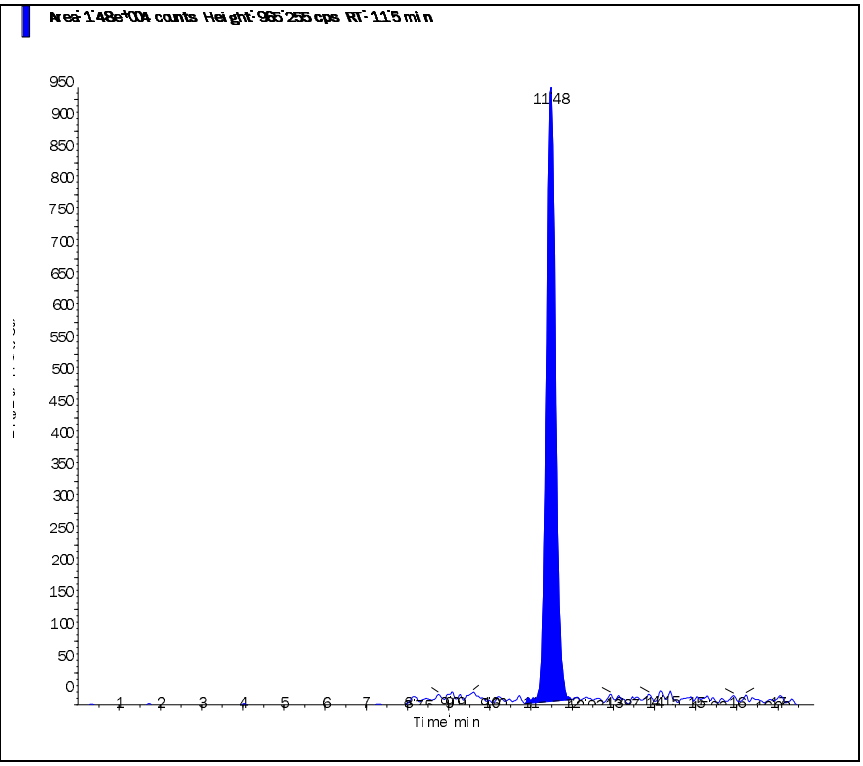

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.50 (11.00) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.016
Sample Type:	(Unknown)

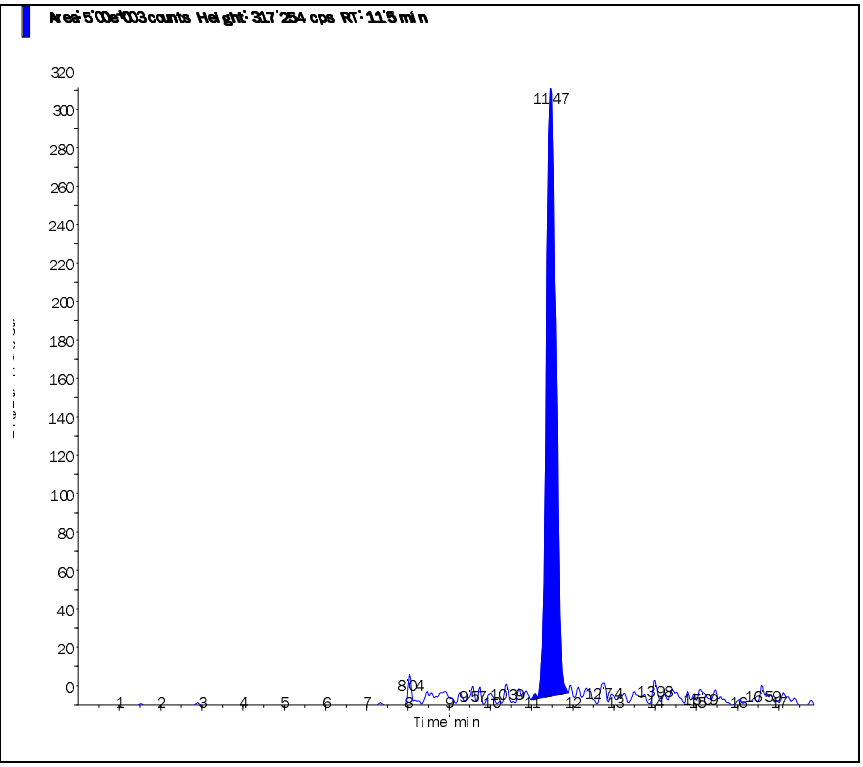

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Data File	LM30028.wiff	**Result Table**	060415_JWR.rdb
Acquisition Date	6/4/2015 4:14:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG526363-01 CCB	**Injection Vial**	1.00
Data File	LM30028.wiff	**Injection Volume**	10.00
Acquisition Date	6/4/2015 4:14:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060415_JWR.rdb
Sample ID	WG526363-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.920e+05	11.60	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 11.60(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

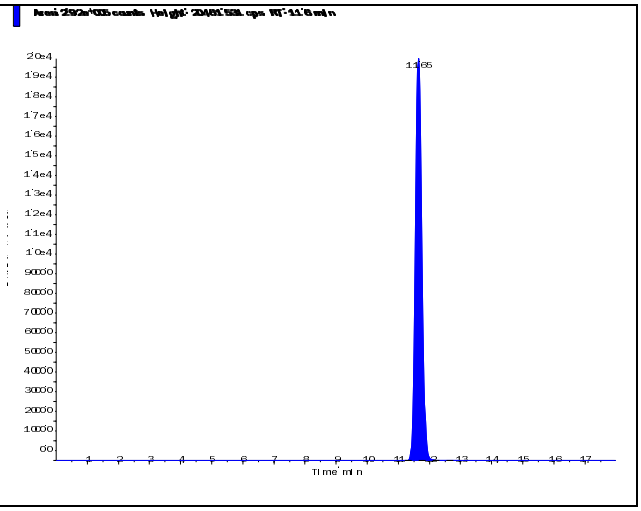

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (11.00) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

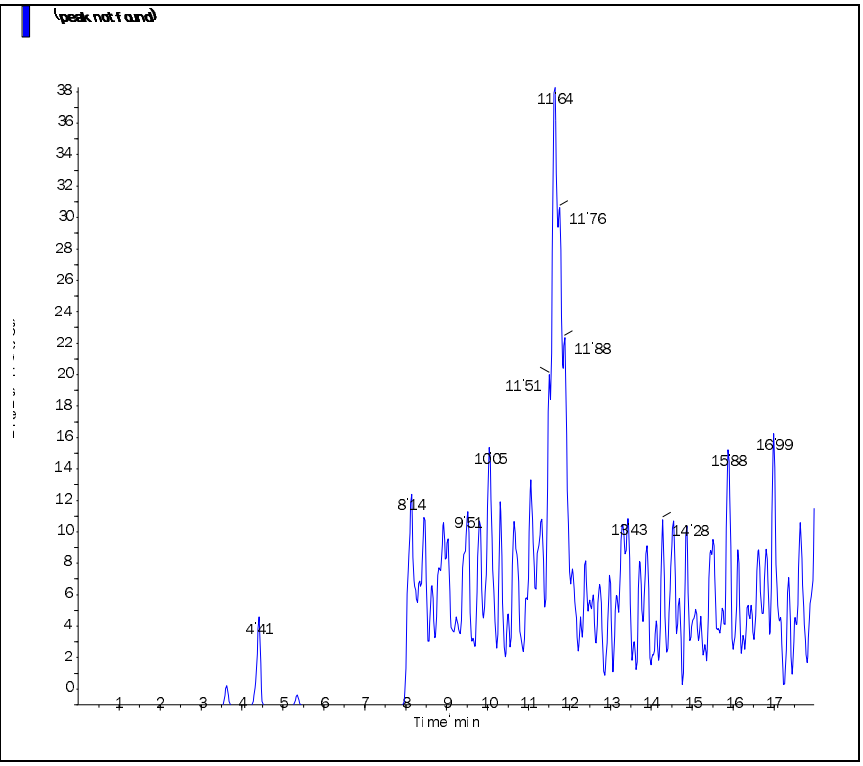

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (11.00) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

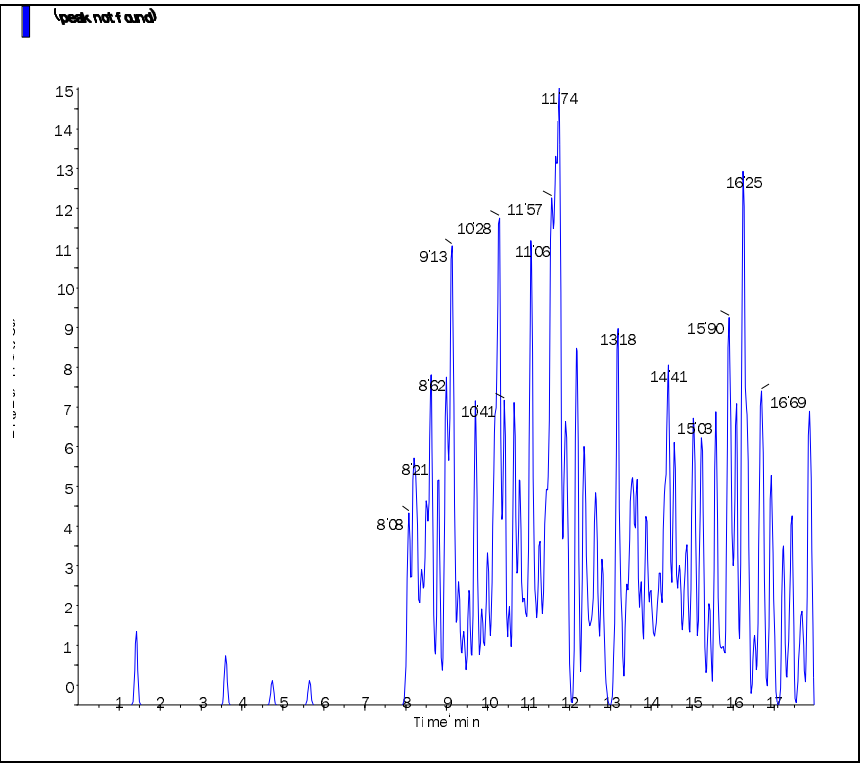

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Data File	LM30043.wiff	**Result Table**	060415_JWR.rdb
Acquisition Date	6/4/2015 8:58:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG526363-04 CCB	**Injection Vial**	1.00
Data File	LM30043.wiff	**Injection Volume**	10.00
Acquisition Date	6/4/2015 8:58:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060415_JWR.rdb
Sample ID	WG526363-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.150e+05	11.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	6.180e+02	11.30	N/A	0.0022
Perchlorate conf	6.120e+01	11.10	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 11.30(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

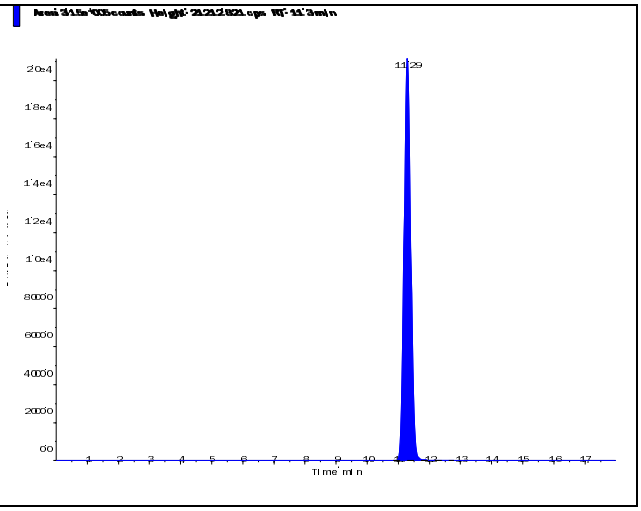

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Created with Analyst Reporter
Printed: 6/5/2015 3:06 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.30 (11.00) min Calculated conc: 0.0022 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	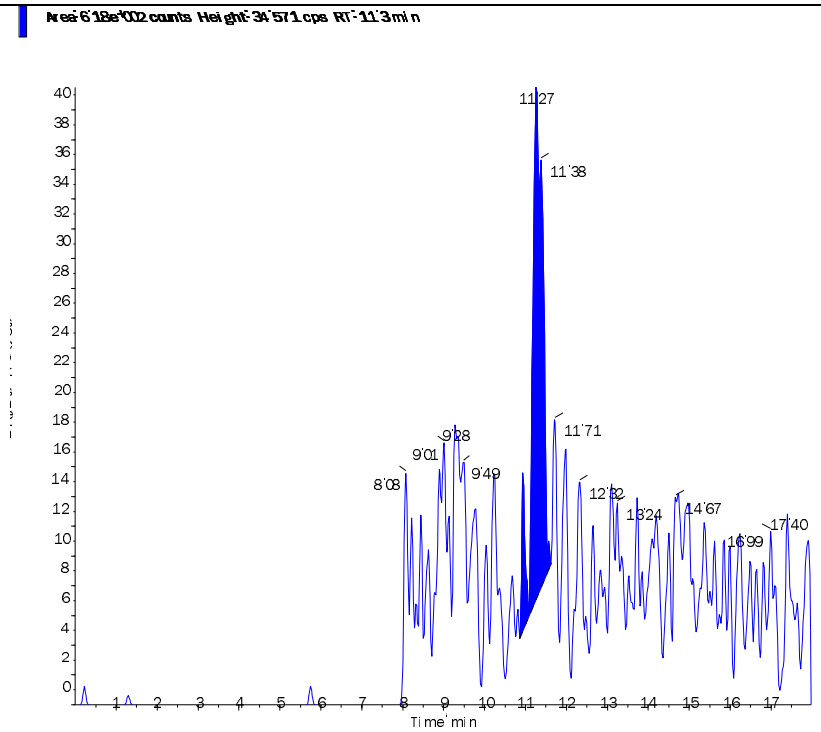
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.10 (11.00) min Calculated conc: < 0 ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	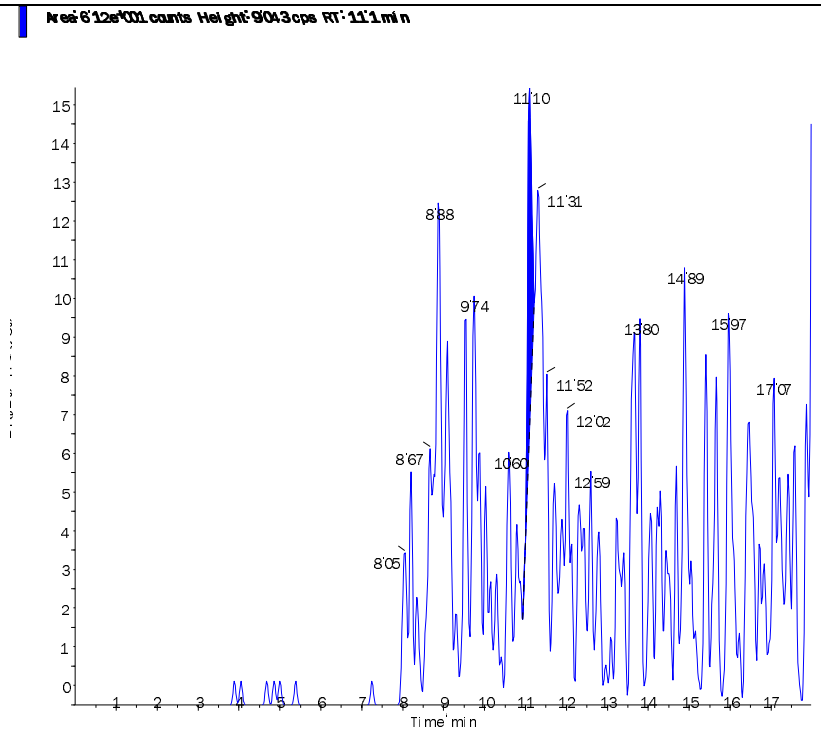

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Created with Analyst Reporter
Printed: 6/5/2015 3:07 PM

Data File	LM30046.wiff	**Result Table**	060415_JWR.rdb
Acquisition Date	6/5/2015 12:55:31 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG526363-06 CCB	**Injection Vial**	1.00
Data File	LM30046.wiff	**Injection Volume**	10.00
Acquisition Date	6/5/2015 12:55:31 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060415_JWR.rdb
Sample ID	WG526363-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.190e+05	11.40	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.030e+02	11.40	N/A	0.0033
Perchlorate conf	2.270e+02	11.50	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 11.40(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

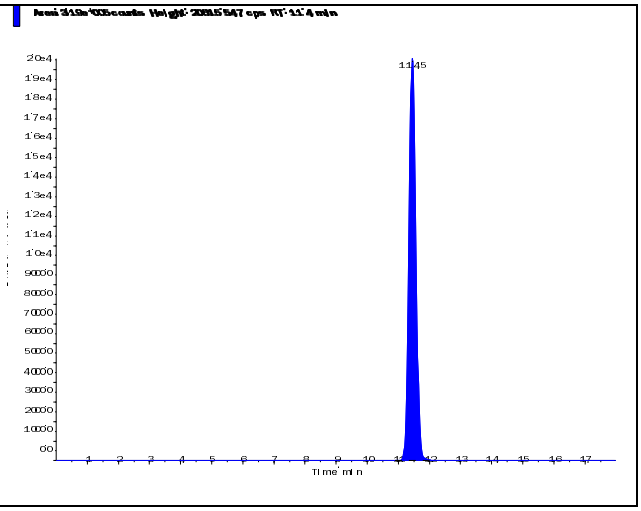

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Created with Analyst Reporter
Printed: 6/5/2015 3:07 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.40 (11.00) min Calculated conc: 0.0033 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	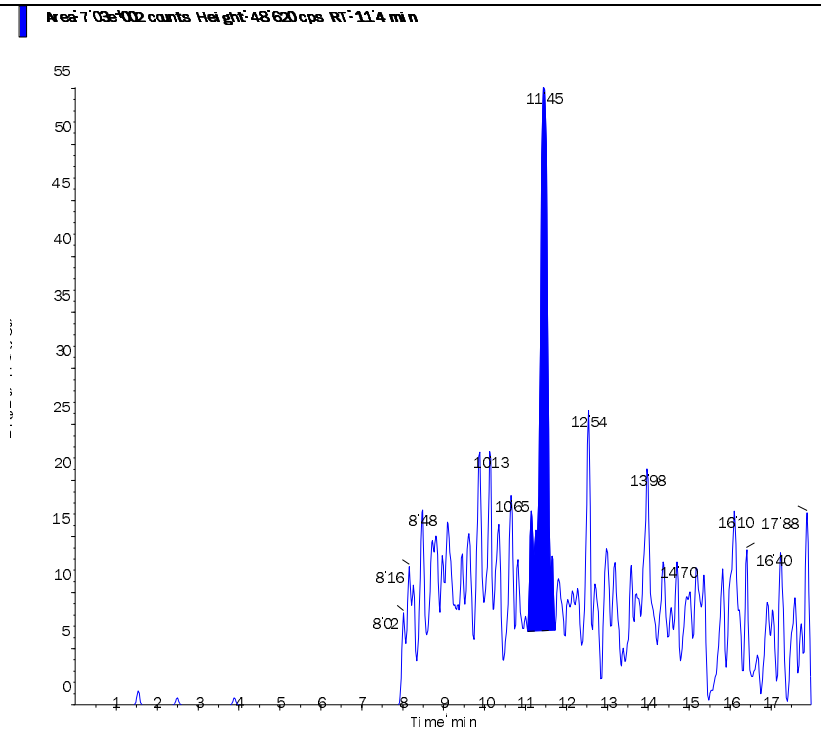
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.50 (11.00) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	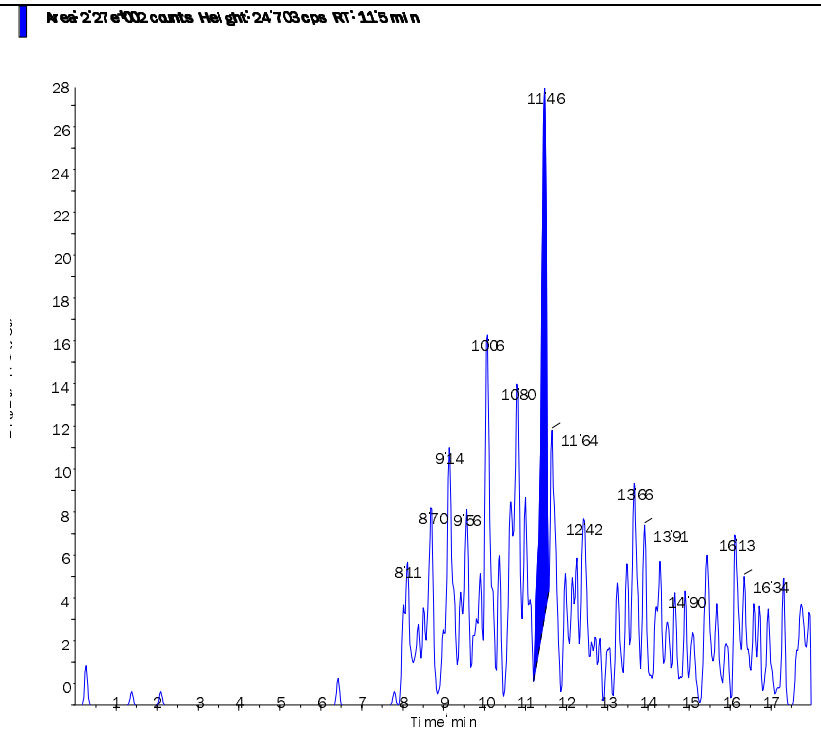

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/5/2015 3:09 PM

Data File	LM30050.wiff	**Result Table**	060415_JWR.rdb
Acquisition Date	6/5/2015 2:12:02 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG526363-08 CCB	**Injection Vial**	1.00
Data File	LM30050.wiff	**Injection Volume**	10.00
Acquisition Date	6/5/2015 2:12:02 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060415_JWR.rdb
Sample ID	WG526363-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.150e+05	11.50	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.300e+02	11.40	N/A	0.0009
Perchlorate conf	1.750e+02	11.50	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 11.50(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

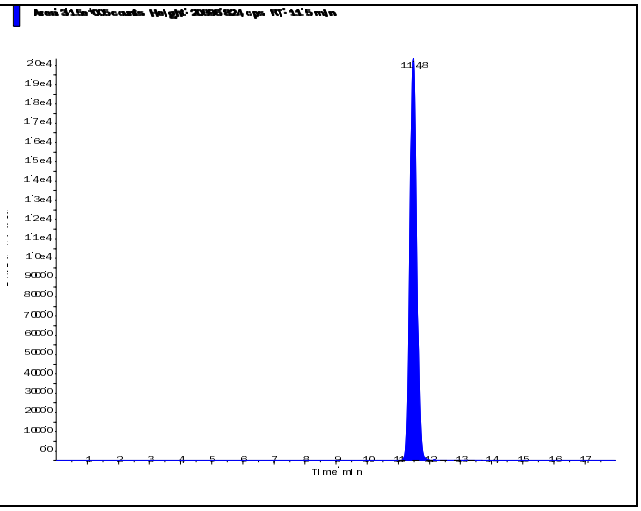

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/5/2015 3:09 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.40 (11.00) min
Calculated conc:	0.0009 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

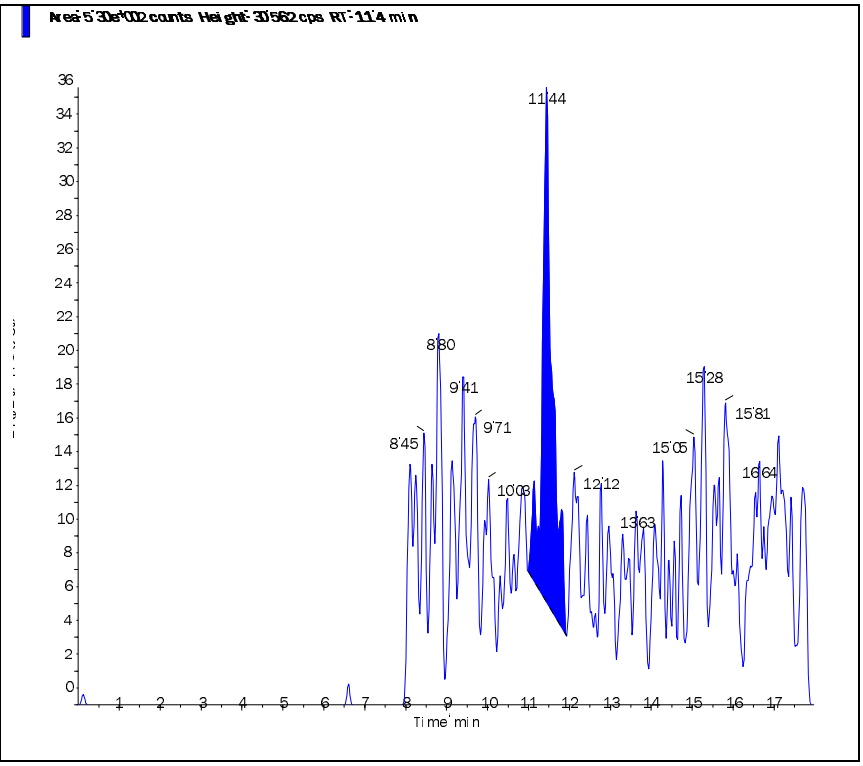

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.50 (11.00) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

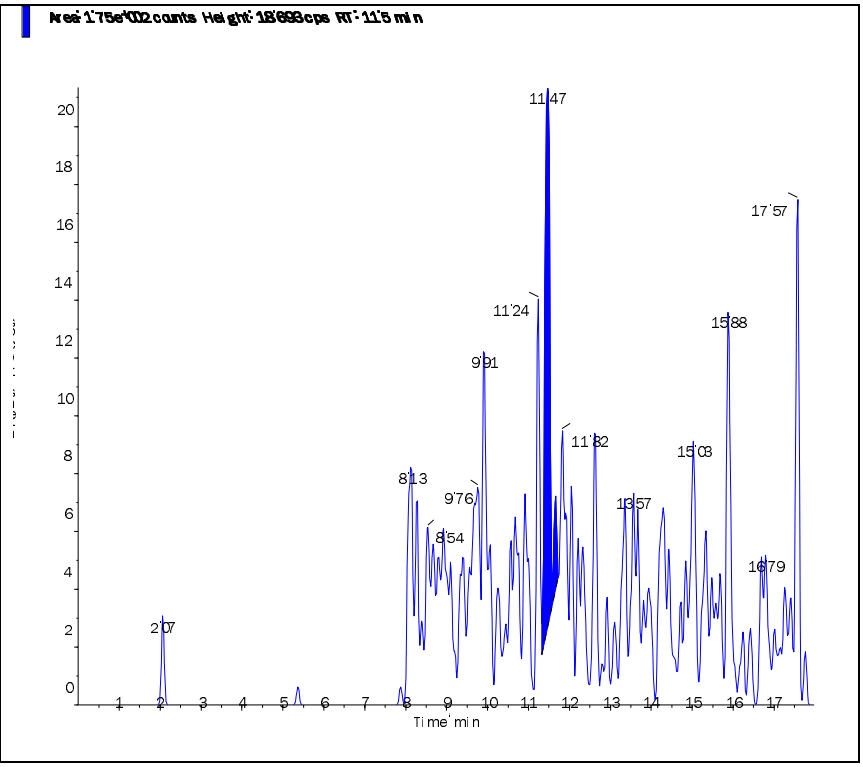

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Created with Analyst Reporter
Printed: 6/5/2015 3:02 PM

Data File	LM30031.wiff	**Result Table**	060415_JWR.rdb
Acquisition Date	6/4/2015 5:11:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG526362-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM30031.wiff	**Injection Volume**	10.00
Acquisition Date	6/4/2015 5:11:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060415_JWR.rdb
Sample ID	WG526362-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD69913	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.520e+05	11.20	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.630e+04	11.20	N/A	0.211
Perchlorate conf	5.850e+03	11.20	N/A	0.209

O18LP (Internal Standard)

RT (Exp. RT): 11.20(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

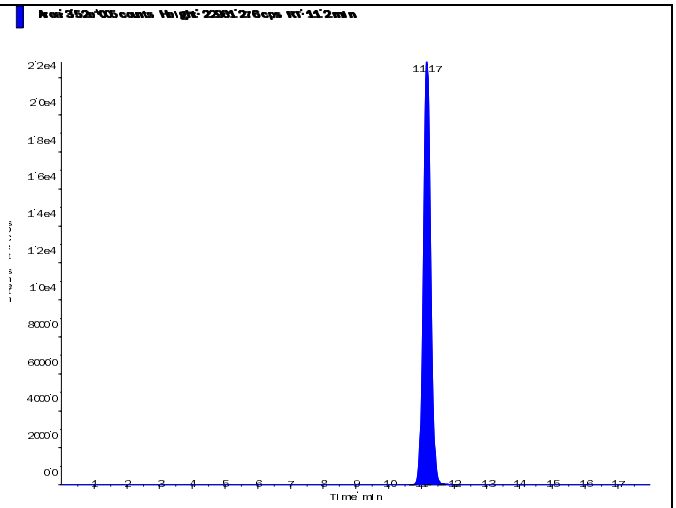

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/5/2015 3:02 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	11.20 (11.00) min
Calculated conc:	0.211 ng/ml
Area Ratio:	0.046
Sample Type:	(Unknown)

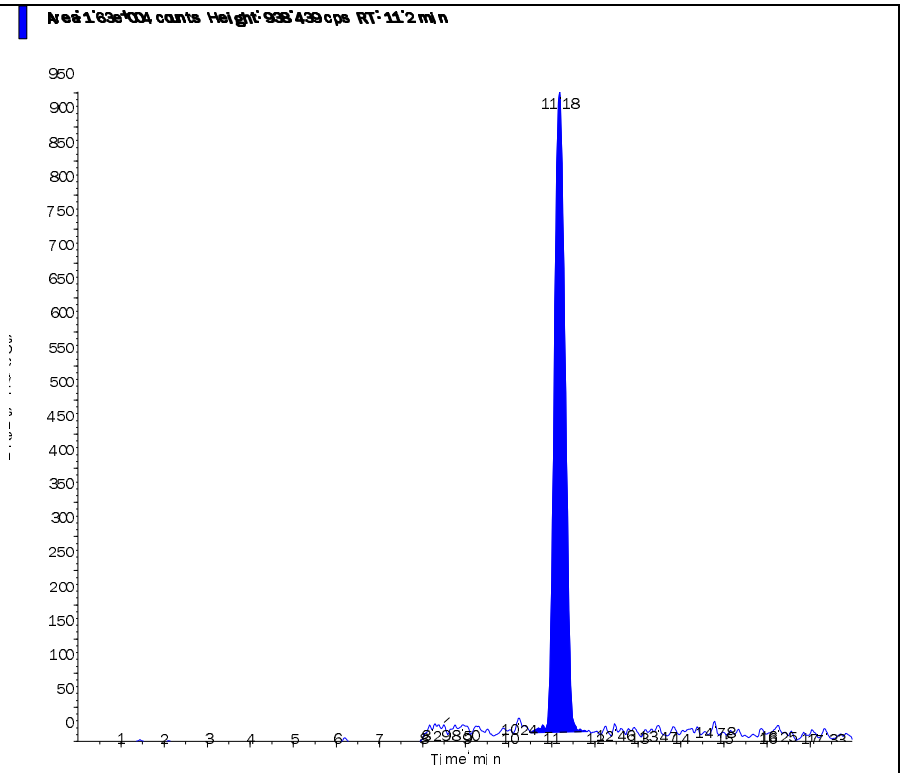

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	11.20 (11.00) min
Calculated conc:	0.209 ng/ml
Area Ratio:	0.017
Sample Type:	(Unknown)

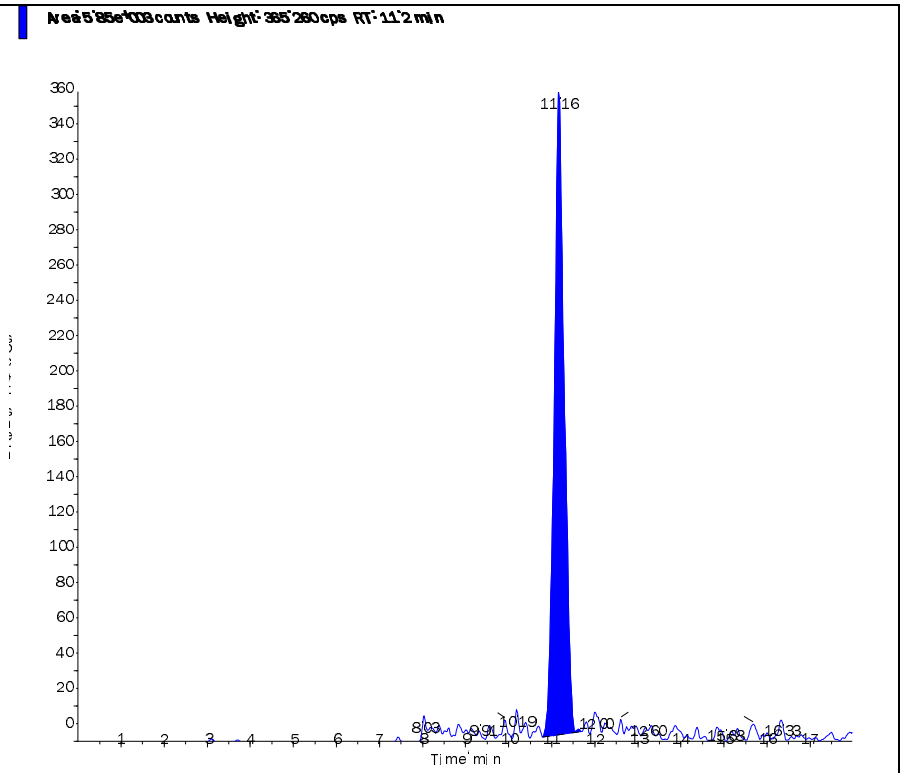

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2.2.1.5 Raw QC Data

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Created with Analyst Reporter
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Data File	LM30032.wiff	**Result Table**	060415_JWR.rdb
Acquisition Date	6/4/2015 5:30:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG526362-02 BLANK	**Injection Vial**	5.00
Data File	LM30032.wiff	**Injection Volume**	10.00
Acquisition Date	6/4/2015 5:30:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060415_JWR.rdb
Sample ID	WG526362-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.670e+05	11.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	2.660e+02	11.30	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 11.30(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

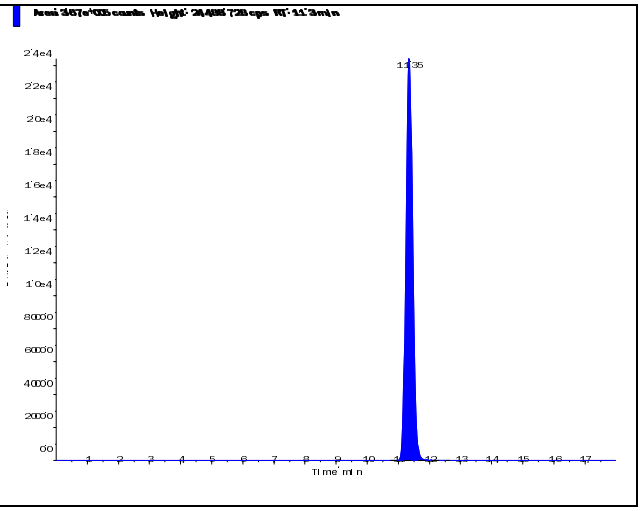

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (11.00) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	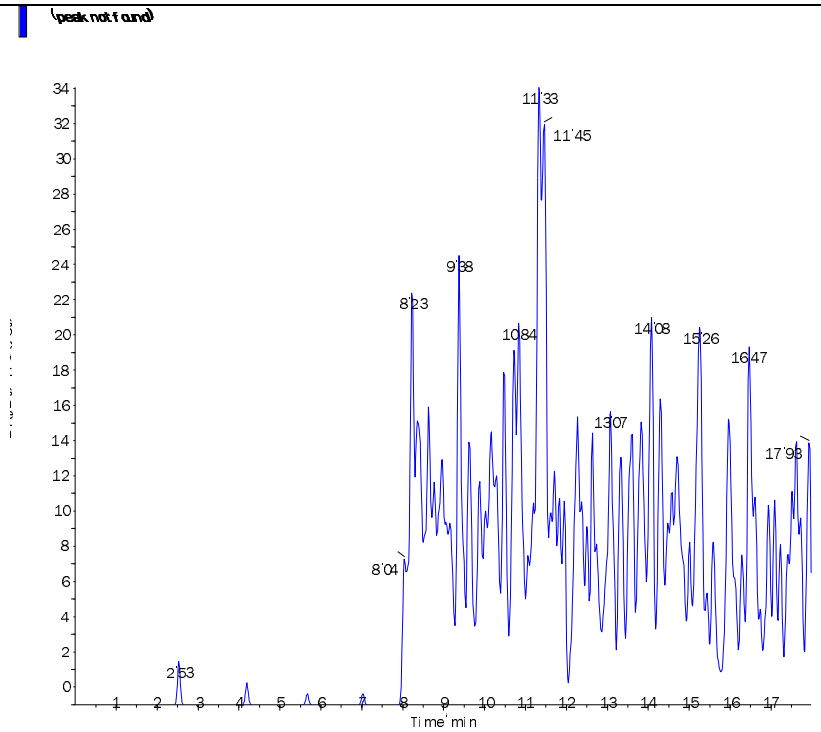
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.30 (11.00) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	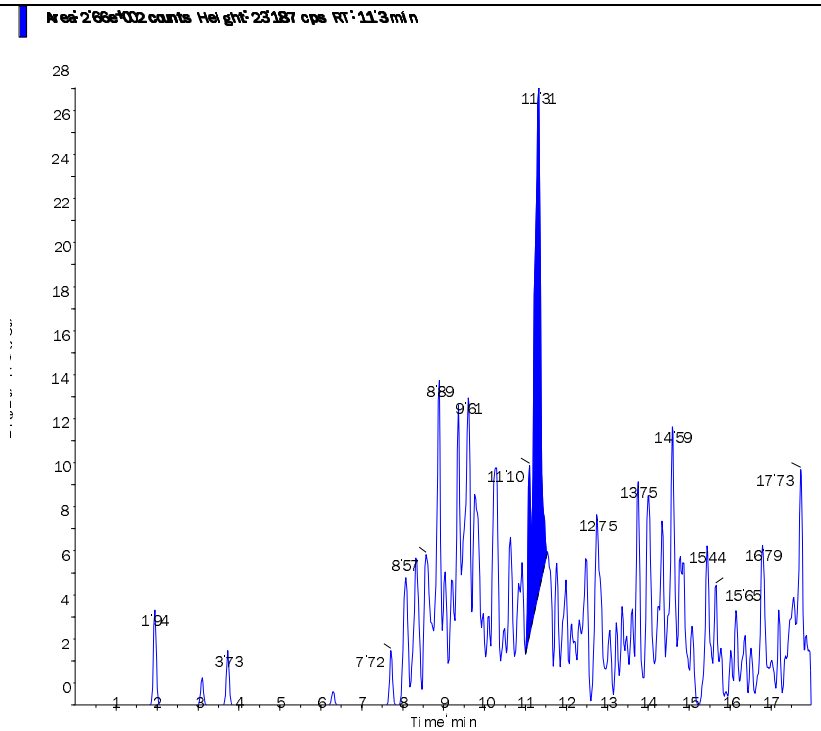

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Created with Analyst Reporter
Printed: 6/5/2015 3:03 PM

Data File	LM30033.wiff	**Result Table**	060415_JWR.rdb
Acquisition Date	6/4/2015 5:49:31 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG526362-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM30033.wiff	**Injection Volume**	10.00
Acquisition Date	6/4/2015 5:49:31 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060415_JWR.rdb
Sample ID	WG526362-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD69913	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.620e+05	11.40	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.670e+04	11.40	N/A	0.21
Perchlorate conf	5.800e+03	11.40	N/A	0.201

O18LP (Internal Standard)

RT (Exp. RT): 11.40(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

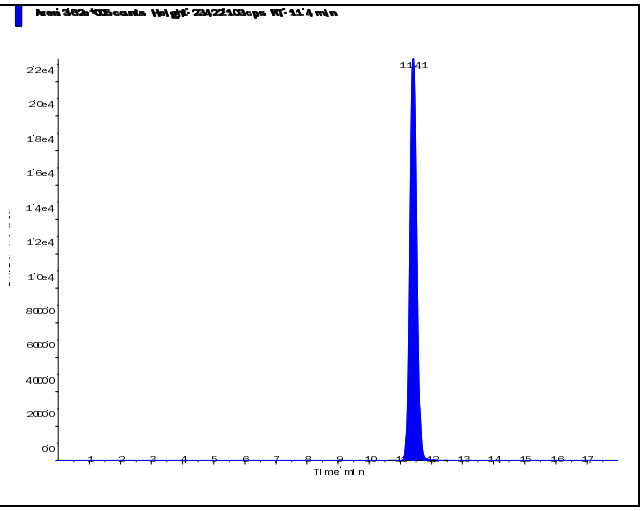

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.40 (11.00) min Calculated conc: 0.21 ng/ml Area Ratio: 0.046 Sample Type: (Unknown)	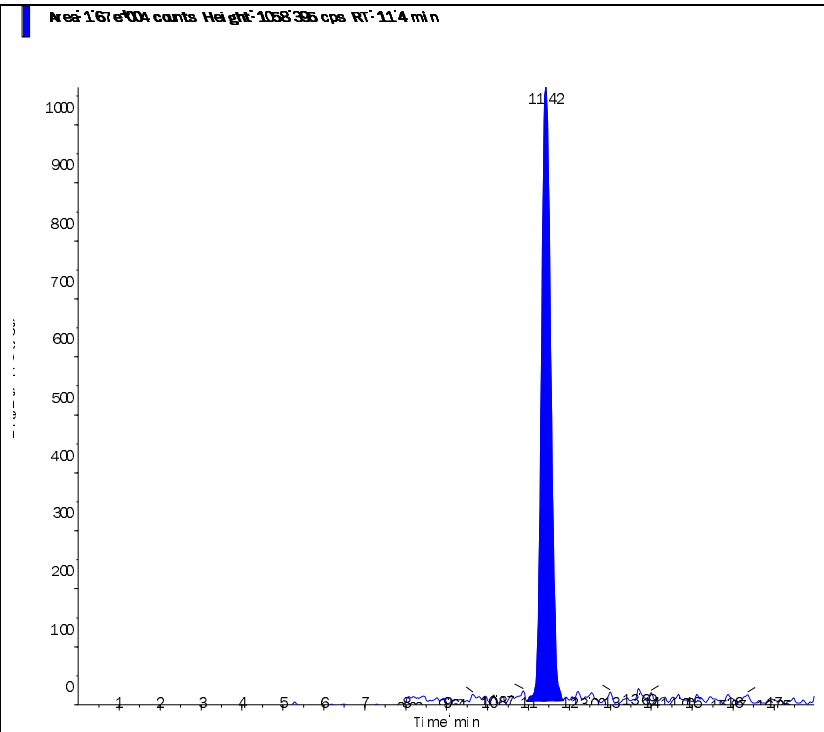
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.40 (11.00) min Calculated conc: 0.201 ng/ml Area Ratio: 0.016 Sample Type: (Unknown)	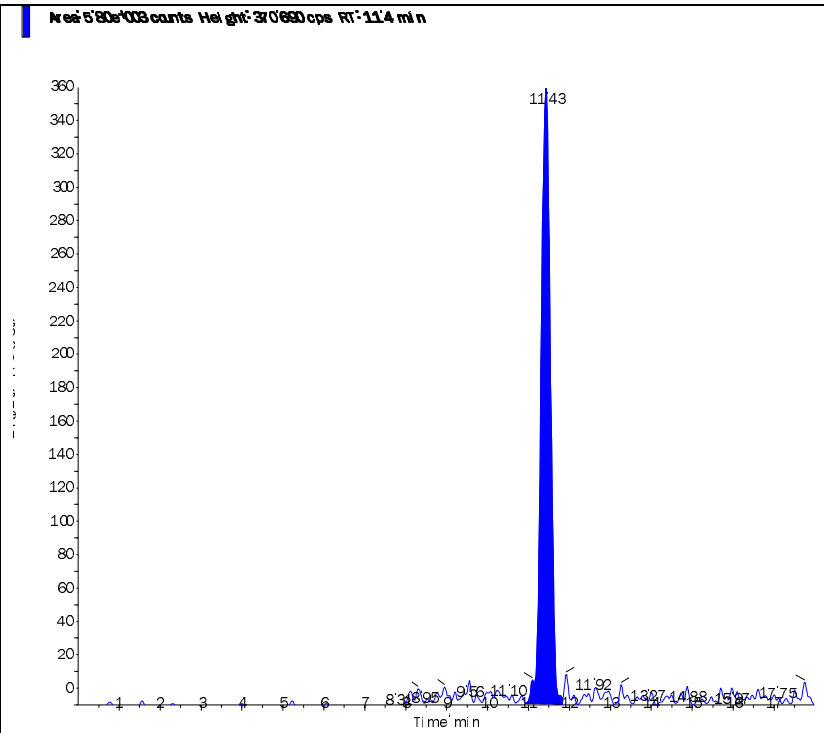

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Created with Analyst Reporter
Printed: 6/5/2015 3:03 PM

Data File	LM30034.wiff	**Result Table**	060415_JWR.rdb
Acquisition Date	6/4/2015 6:08:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG526362-04 LCS2 (0.2ug/L)	**Injection Vial**	7.00
Data File	LM30034.wiff	**Injection Volume**	10.00
Acquisition Date	6/4/2015 6:08:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	060415_JWR.rdb
Sample ID	WG526362-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD69913	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	2.880e+05	11.40	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.300e+04	11.40	N/A	0.204
Perchlorate conf	4.800e+03	11.40	N/A	0.209

O18LP (Internal Standard)

RT (Exp. RT): 11.40(11.00) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

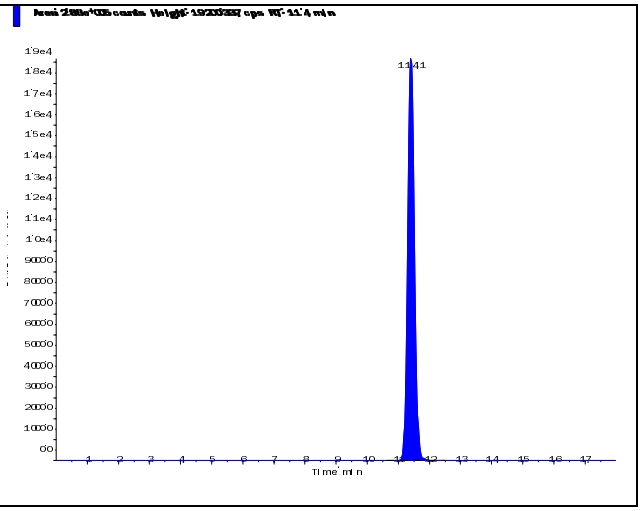

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Created with Analyst Reporter
Printed: 6/5/2015 3:03 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 11.40 (11.00) min Calculated conc: 0.204 ng/ml Area Ratio: 0.045 Sample Type: (Unknown)	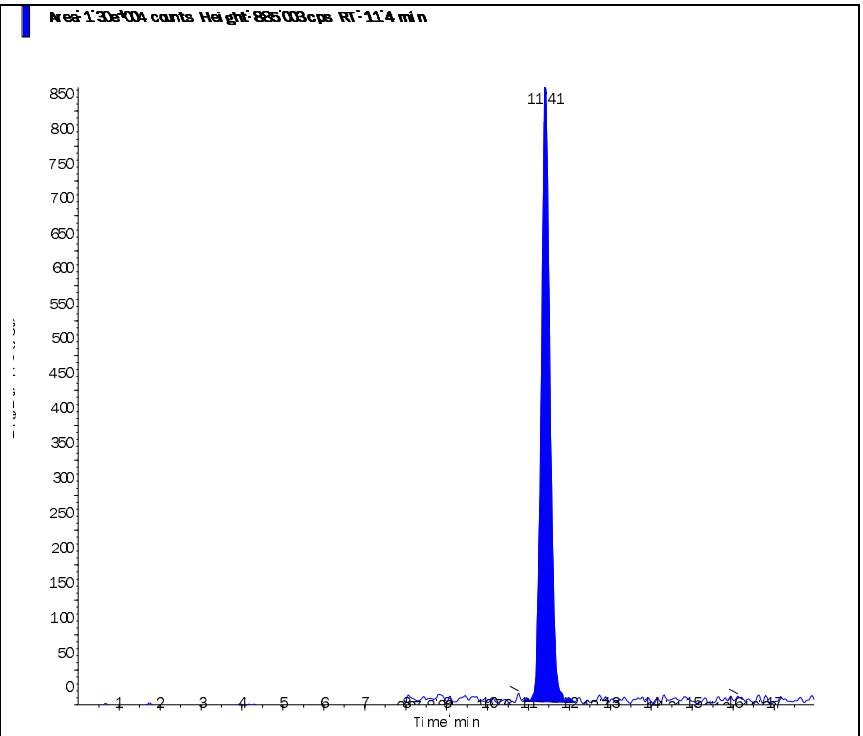
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 11.40 (11.00) min Calculated conc: 0.209 ng/ml Area Ratio: 0.017 Sample Type: (Unknown)	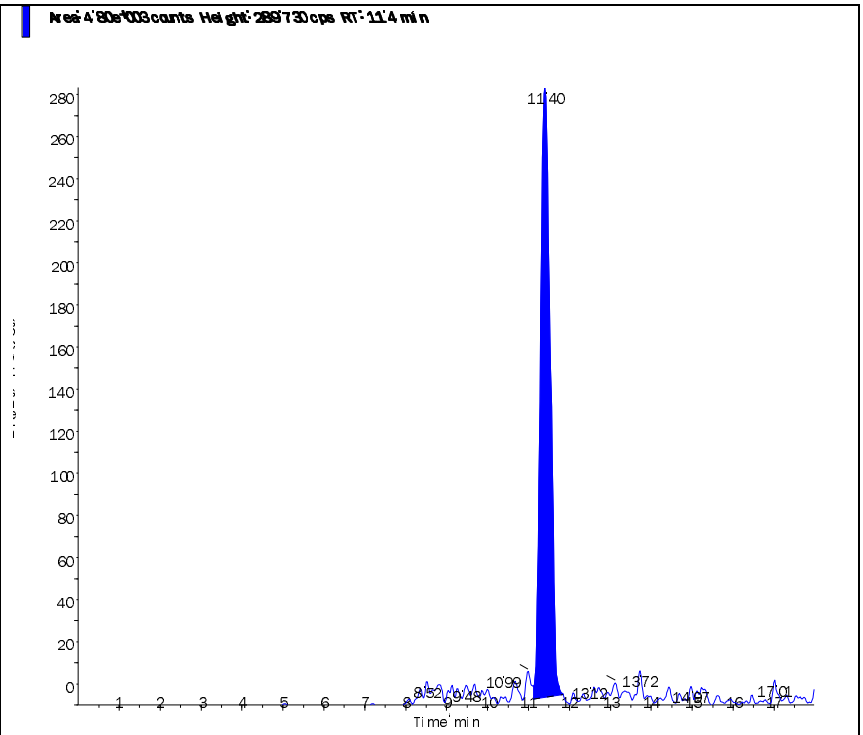

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2.3 Metals Data

2.3.1 Metals I C P Data

2.3.1.1 Summary Data

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-05	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	50WW24FF-052815	**Prep Method:**	3015	**Prep Date:**	06/03/2015 12:34
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/05/2015 09:27
Workgroup #:	WG526248	**Analyst:**	KHR	**Run Date:**	06/05/2015 10:37
Collect Date:	05/28/2015 08:15	**Dilution:**	1	**File ID:**	P2.060515.103701
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.100	U	0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-07	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	50WW25FF-052815	**Prep Method:**	3015	**Prep Date:**	06/03/2015 12:34
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/05/2015 09:27
Workgroup #:	WG526248	**Analyst:**	KHR	**Run Date:**	06/05/2015 10:52
Collect Date:	05/28/2015 09:40	**Dilution:**	1	**File ID:**	P2.060515.105205
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.223		0.200	0.100	0.0500

Certificate of Analysis

Sample #:	L15051752-09	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	50WW18FF-052815	**Prep Method:**	3015	**Prep Date:**	06/03/2015 12:34
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/05/2015 09:27
Workgroup #:	WG526248	**Analyst:**	KHR	**Run Date:**	06/05/2015 10:55
Collect Date:	05/28/2015 11:00	**Dilution:**	1	**File ID:**	P2.060515.105527
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.0757	J	0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.3.1.2 QC Summary Data

Example 6010 Calculations
Perkin Elmer Optima 4300 DV

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG526149
Analyst: ERP
Spike Analyst: ERP
Run Date: 06/03/2015 12:34
Method: 3015
Balance: BAL019
Instrument: MW-1
Instrument Start: 06/03/2015 12:59

SOP: ME407 Revison 17
Spike Solution: STD70570
Spike Witness: REK
HNO3 Lot #: COA18221
HCL Lot #: COA18196
40 & 50 ML. DIGESTION TU COA18222
ICP Filters- fisher-Lot# RGT32945

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG526149-04	BLANK	1	40 mL	50 mL	203.851 g	203.834 g		
2	WG525914-01	FBLK	17	5 mL	50 mL	207.414 g	207.396 g		
3	WG526149-05	LCS	1	40 mL	50 mL	209.78 g	209.779 g	5 mL	
4	L15051105-05	SAMP	1	40 mL	50 mL	204.611 g	204.607 g		06/11/15
5	L15051105-10	SAMP	1	40 mL	50 mL	204.302 g	204.278 g		06/11/15
6	L15051752-05	SAMP	1	40 mL	50 mL	204.486 g	204.477 g		06/09/15
7	L15051752-07	SAMP	1	40 mL	50 mL	204.107 g	204.09 g		06/09/15
8	L15051752-09	SAMP	1	40 mL	50 mL	204.268 g	204.252 g		06/09/15
9	L15051753-01	SAMP	1	40 mL	50 mL	204.124 g	204.109 g		06/09/15
10	L15051753-02	SAMP	1	40 mL	50 mL	204.636 g	204.635 g		06/09/15
11	WG526149-01	REF	1	40 mL	50 mL	207.621 g	207.602 g		
12	L15051753-03	RS01	1	40 mL	50 mL	207.621 g	207.602 g		06/09/15
13	WG526149-06	MS	1	40 mL	50 mL	213.337 g	213.326 g	5 mL	
14	L15051753-04	MS01	1	40 mL	50 mL	213.337 g	213.326 g	5 mL	06/09/15
15	WG526149-07	MSD	1	40 mL	50 mL	209.57 g	209.557 g	5 mL	
16	L15051753-05	SD01	1	40 mL	50 mL	209.57 g	209.557 g	5 mL	06/09/15
17	L15060024-01	SAMP	1	40 mL	50 mL	204.363 g	204.352 g		06/08/15
18	L15060024-02	SAMP	1	40 mL	50 mL	203.01 g	202.993 g		06/08/15
19	L15060024-03	SAMP	1	40 mL	50 mL	204.661 g	204.634 g		06/08/15
20	L15060040-01	SAMP	17	5 mL	50 mL	205.826 g	205.803 g		06/09/15
21	L15060041-01	SAMP	17	5 mL	50 mL	206.943 g	206.91 g		06/09/15
22	WG526149-02	REF	1	40 mL	50 mL	204.151 g	204.124 g		
23	L15060051-01	RS01	1	40 mL	50 mL	204.151 g	204.124 g		06/09/15
24	WG526149-03	REF	1	40 mL	50 mL	206.6 g	206.573 g		
25	L15060051-02	RS02	1	40 mL	50 mL	206.6 g	206.573 g		06/09/15
26	WG526149-08	MS	1	40 mL	50 mL	211.415 g	211.397 g	5 mL	
27	L15060051-03	MS01	1	40 mL	50 mL	211.415 g	211.397 g	5 mL	06/09/15
28	WG526149-10	MS	1	40 mL	50 mL	209.032 g	209.015 g	5 mL	
29	L15060051-04	MS02	1	40 mL	50 mL	209.032 g	209.015 g	5 mL	06/09/15
30	WG526149-09	MSD	1	40 mL	50 mL	208.956 g	208.928 g	5 mL	
31	L15060051-05	SD01	1	40 mL	50 mL	208.956 g	208.928 g	5 mL	06/09/15
32	WG526149-11	MSD	1	40 mL	50 mL	209.829 g	209.812 g	5 mL	
33	L15060051-06	SD02	1	40 mL	50 mL	209.829 g	209.812 g	5 mL	06/09/15

Analyst: Erin Potter

Reviewer: Vicki Collins

MW_DIG - Modified 09/30/2009
PDF ID: 4214413
Report generated: 06/03/2015 13:40

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: PE-ICP2 Dataset: 060515HR.CSV

Analyst1: KHR Analyst2: N/A

Method: 6010/200.7 SOP: ME600E Rev: 18

Maintenance Log ID:

Calibration Std: STD70857 ICV Std: STD70790 Post Spike: STD70196

ICSA: STD70829 ICSAB: STD70827 Int. Std: RGT33135

CCV: STD70856 LLCCV: STD70857 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 526248

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	P2.060515.091453	WG526539-01	Calibration Point		1		06/05/15 09:14
2	P2.060515.091815	WG526539-02	Calibration Point		1		06/05/15 09:18
3	P2.060515.092136	WG526539-03	Calibration Point		1		06/05/15 09:21
4	P2.060515.092458	WG526539-04	Calibration Point		1		06/05/15 09:24
5	P2.060515.092727	WG526539-05	Calibration Point		1		06/05/15 09:27
6	P2.060515.092952	WG526539-06	Initial Calibration Verification		1		06/05/15 09:29
7	P2.060515.093217	WG526539-07	Initial Calib Blank		1		06/05/15 09:32
8	P2.060515.093538	WG526539-08	LLICV		1		06/05/15 09:35
9	P2.060515.093859	WG526539-09	Low Level Initial Calibration V		1		06/05/15 09:38
10	P2.060515.094220	WG526539-10	Interference Check		1		06/05/15 09:42
11	P2.060515.094443	WG526539-11	Interference Check		1		06/05/15 09:44
12	P2.060515.094706	WG526539-12	CCV		1		06/05/15 09:47
13	P2.060515.094932	WG526539-13	CCB		1		06/05/15 09:49
14	P2.060515.101617	WG526149-04	Method/Prep Blank	40/50	1		06/05/15 10:16
15	P2.060515.101939	WG526149-05	Laboratory Control S	40/50	1		06/05/15 10:19
16	P2.060515.102205	WG525914-01	Fluid Blank		1		06/05/15 10:22
17	P2.060515.102527	L15051105-05	P244-525	40/50	1		06/05/15 10:25
18	P2.060515.102849	WG526248-03	Serial Dilution		5	L15051105-05	06/05/15 10:28
19	P2.060515.103211	L15051105-10	P244-500	40/50	1		06/05/15 10:32
20	P2.060515.103436	WG526248-04	Serial Dilution		5	L15051105-10	06/05/15 10:34
21	P2.060515.103701	L15051752-05	50WW24FF-052815	40/50	1		06/05/15 10:37
22	P2.060515.104028	WG526248-01	Post Digestion Spike		1	L15051752-05	06/05/15 10:40
23	P2.060515.104253	WG526248-02	Serial Dilution		5	L15051752-05	06/05/15 10:42
24	P2.060515.104615	WG526539-14	CCV		1		06/05/15 10:46
25	P2.060515.104844	WG526539-15	CCB		1		06/05/15 10:48
26	P2.060515.105205	L15051752-07	50WW25FF-052815	40/50	1		06/05/15 10:52
27	P2.060515.105527	L15051752-09	50WW18FF-052815	40/50	1		06/05/15 10:55
28	P2.060515.105853	L15051753-01	FT02PTS-EFFLUENT-28MA	40/50	1		06/05/15 10:58
29	P2.060515.110214	L15051753-02	FT02PTS-INTERMEDIATE-2	40/50	1		06/05/15 11:02
30	P2.060515.110536	L15051753-03	FT02PTS-INLUENT-28MAY2		1	WG526149-01	06/05/15 11:05
31	P2.060515.110901	L15051753-04	FT02PTS-INLUENT-28MAY2	40/50	1	WG526149-06	06/05/15 11:09
32	P2.060515.111127	L15051753-05	FT02PTS-INLUENT-28MAY2	40/50	1	WG526149-07	06/05/15 11:11
33	P2.060515.111353	L15060024-01	17729-G013-WQ-W0032	40/50	1		06/05/15 11:13
34	P2.060515.111715	L15060024-02	17729-G253-WQ-W0317	40/50	1		06/05/15 11:17

Page: 1 Approved: June 08, 2015

Maren Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: PE-ICP2 Dataset: 060515HR.CSV

Analyst1: KHR Analyst2: N/A

Method: 6010/200.7 SOP: ME600E Rev: 18

Maintenance Log ID:

Calibration Std: STD70857 ICV Std: STD70790 Post Spike: STD70196

ICSA: STD70829 ICSAB: STD70827 Int. Std: RGT33135

CCV: STD70856 LLCCV: STD70857 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 526248

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	P2.060515.112037	L15060024-03	17729-G644-WQ-W0774	40/50	1		06/05/15 11:20
36	P2.060515.112359	WG526539-16	CCV		1		06/05/15 11:23
37	P2.060515.112625	WG526539-17	CCB		1		06/05/15 11:26
38	P2.060515.112946	WG526539-18	Low Level Continuing Calibra		1		06/05/15 11:29
39	P2.060515.113307	L15060040-01	KAISER 9 BAGS	5/50	1		06/05/15 11:33
40	P2.060515.113632	L15060041-01	ALAN 11 BAGS	5/50	1		06/05/15 11:36
41	P2.060515.113958	L15060051-01	SWITZ 11-PR-DS-KINZY-01		1	WG526149-02	06/05/15 11:39
42	P2.060515.114345	L15060051-02	SWITZ 11-PR-DS-KINZY-01		1	WG526149-03	06/05/15 11:43
43	P2.060515.114730	L15060051-03	SWITZ11-PR-DS-KINZY-MS	40/50	1	WG526149-08	06/05/15 11:47
44	P2.060515.115020	L15060051-04	SWITZ 11-PR-DS-KINZY-MS	40/50	1	WG526149-10	06/05/15 11:50
45	P2.060515.115309	L15060051-05	SWITZ 11-PR-DS-KINZY-MS	40/50	1	WG526149-09	06/05/15 11:53
46	P2.060515.115601	L15060051-06	SWITZ 11-PR-DS-KINZY-MS	40/50	1	WG526149-11	06/05/15 11:56
47	P2.060515.115850	WG526539-19	CCV		1		06/05/15 11:58
48	P2.060515.120144	WG526539-20	CCB		1		06/05/15 12:01

Page: 2 Approved: June 08, 2015

Maren Berry

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 05-JUN-2015
Analyst: KHR
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: PE-ICP2
Curve Workgroup: 526539
Runlog ID: 68435
Analytical Workgroups: 526248

Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	
Level 4	1105, 1752, 1753, 0024, 0051
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	KHR
Secondary Reviewer	MMB
Comments	

Primary Reviewer: 05-JUN-2015 Kym H. Rhoden

Secondary Reviewer: 08-JUN-2015 Maren Berry

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-08-2015 16:14:36

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010C

AAB#: WG526248

Login Number: L15051752

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW24FF-052815	05	05/28/15					06/03/2015	6.2	180		06/05/15	8.1	180	
50WW25FF-052815	07	05/28/15					06/03/2015	6.1	180		06/05/15	8.1	180	
50WW18FF-052815	09	05/28/15					06/03/2015	6.1	180		06/05/15	8	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4220296
Report generated 06/05/2015 14:38

METHOD BLANK SUMMARY

Login Number: L15051752
Blank File ID: P2.060515.101617
Prep Date: 06/03/15 12:34
Analyzed Date: 06/05/15 10:16
Analyst: KHR

Work Group: WG526248
Blank Sample ID: WG526149-04
Instrument ID: PE-ICP2
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG526149-05	P2.060515.101939	06/05/15 10:19	01
50WW24FF-052815	L15051752-05	P2.060515.103701	06/05/15 10:37	01
50WW25FF-052815	L15051752-07	P2.060515.105205	06/05/15 10:52	01
50WW18FF-052815	L15051752-09	P2.060515.105527	06/05/15 10:55	01

Report Name: BLANK_SUMMARY
PDF File ID: 4220297
Report generated 06/05/2015 14:49

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051752 Prep Date: 06/03/15 12:34 Sample ID: WG526149-04
Instrument ID: PE-ICP2 Run Date: 06/05/15 10:16 Prep Method: 3015
File ID: P2.060515.101617 Analyst: KHR Method: 6010C
Workgroup (AAB#): WG526248 Matrix: Water Units: mg/L
Contract #: Cal ID: PE-ICP - 05-JUN-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Iron, Dissolved	0.0500	0.200	0.0500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4220298
05-JUN-2015 14:49

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051752 Run Date: 06/05/2015 Sample ID: WG526149-05
Instrument ID: PE-ICP2 Run Time: 10:19 Prep Method: 3015
File ID: P2.060515.101939 Analyst: KHR Method: 6010C
Workgroup (AAB#): WG526248 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD70570 Cal ID: PE-ICP-05-JUN-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Iron, Dissolved	2.50	2.54	102	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4220299
Report generated: 06/05/2015 14:49

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L15051752 Cal ID: PE-ICP2- Worknum: WG526248
Instrument ID: PE-ICP2 Contract #: Method: 6010C
Parent ID: WG526149-02 File ID: P2.060515.113958 Dil: 1 Matrix: WATER
Sample ID: WG526149-08 MS File ID: P2.060515.114730 Dil: 1 Units: mg/L
Sample ID: WG526149-09 MSD File ID: P2.060515.115309 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Iron	0.167	2.50	2.43	90.6	2.50	2.51	93.7	3.17	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4220300
Report generated 06/05/2015 14:49

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L15051752 Cal ID: PE-ICP2 - Worknum: WG526248
Instrument ID: PE-ICP2 Contract #: Method: 6010C
Parent ID: WG526149-03 File ID: P2.060515.114345 Dil: 1 Matrix: WATER
Sample ID: WG526149-10 MS File ID: P2.060515.115020 Dil: 1 Units: mg/L
Sample ID: WG526149-11 MSD File ID: P2.060515.115601 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Iron	ND	2.50	2.44	97.7	2.50	2.43	97.2	0.511	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4220300
Report generated 06/05/2015 14:49

Microbac Laboratories Inc.
Serial Dilution Report

Login: L15051752 **Worknum:** WG526248
Instrument: PE-ICP2 **Method:** 6010C
Serial Dil: WG526248-02 **File ID:** P2.060515.104253 **Dil:** 5 **Units:** mg/L
Sample: L15051752-05 **File ID:** P2.060515.103701 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Iron	ND	U	ND	U		

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 50 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 50 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4220294
06/05/2015 14:59

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L15051752 **Worknum:** WG526248
Instrument ID: PE-ICP2 **Method:** 6010C
Post Spike ID: WG526248-01 **File ID:** P2.060515.104028 **Dil:** 1 **Units:** mg/L
Sample ID: L15051752-05 **File ID:** P2.060515.103701 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
IRON	2.01		0	U	2	100.3	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4220295
Report generated: 06/05/2015 14:59

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L15051752	Workgroup (AAB#):	WG526248
Analytical Method:	6010C	Instrument ID:	PE-ICP2
ICAL Worknum:	WG526539	Initial Calibration Date:	05-JUN-2015 09:27

	WG526539-01		WG526539-02		WG526539-03		WG526539-04		WG526539-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
IRON	0	12.0	.04	251	.08	510	4	30200	8	60000	.999997	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4220303
Report generated: 05-JUN-2015 14:49

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L15051752
Instrument ID: PE-ICP2
File ID: P2.060515.093217
Workgroup (AAB#): WG526248
Matrix: WATER

Run Date: 06/05/2015
Run Time: 09:32
Analyst: KHR
Cal ID: PE-ICP2 - 05-JUN-15

Sample ID: WG526539-07
Method: 6010C
Units: mg/L

Analytes	MDL	RDL	Concentration	Qualifier
IRON	.04	.16	.04	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4220305
Report generated 06/05/2015 14:50

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051752
Run Date: 06/05/2015
Sample ID: WG526539-13
Instrument ID: PE-ICP2
Run Time: 09:49
Method: 6010C
File ID: P2.060515.094932
Analyst: KHR
Units: mg/L
Workgroup (AAB#): WG526248
Cal ID: PE-ICP - 05-JUN-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4220308
Report generated 06/05/2015 14:50

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051752
Run Date: 06/05/2015
Sample ID: WG526539-15
Instrument ID: PE-ICP2
Run Time: 10:48
Method: 6010C
File ID: P2.060515.104844
Analyst: KHR
Units: mg/L
Workgroup (AAB#): WG526248
Cal ID: PE-ICP - 05-JUN-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4220308
Report generated 06/05/2015 14:50

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051752
Run Date: 06/05/2015
Sample ID: WG526539-17
Instrument ID: PE-ICP2
Run Time: 11:26
Method: 6010C
File ID: P2.060515.112625
Analyst: KHR
Units: mg/L
Workgroup (AAB#): WG526248
Cal ID: PE-ICP - 05-JUN-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4220308
Report generated 06/05/2015 14:50

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L15051752
Run Date: 06/05/2015
Sample ID: WG526539-06
Instrument ID: PE-ICP2
Run Time: 09:29
Method: 6010C
File ID: P2.060515.092952
Analyst: KHR
Units: mg/L
Workgroup (AAB#): WG526248
Cal ID: PE-ICP - 05-JUN-15
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Iron		4	4.12	103	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4220304
Report generated 06/05/2015 14:49

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051752
Run Date: 06/05/2015
Sample ID: WG526539-12
Instrument ID: PE-ICP2
Run Time: 09:47
Method: 6010C
File ID: P2.060515.094706
Analyst: KHR
QC Key: DOD4
Workgroup (AAB#): WG526248
Cal ID: PE-ICP - 05-JUN-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.15	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4220307
Report generated 06/05/2015 14:50

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051752
Run Date: 06/05/2015
Sample ID: WG526539-14
Instrument ID: PE-ICP2
Run Time: 10:46
Method: 6010C
File ID: P2.060515.104615
Analyst: KHR
QC Key: DOD4
Workgroup (AAB#): WG526248
Cal ID: PE-ICP - 05-JUN-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.17	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4220307
Report generated 06/05/2015 14:50

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051752
Run Date: 06/05/2015
Sample ID: WG526539-16
Instrument ID: PE-ICP2
Run Time: 11:23
Method: 6010C
File ID: P2.060515.112359
Analyst: KHR
QC Key: DOD4
Workgroup (AAB#): WG526248
Cal ID: PE-ICP - 05-JUN-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.15	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4220307
Report generated 06/05/2015 14:50

Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15051752
Run Date: 06/05/2015
Sample ID: WG526539-09
Instrument ID: PE-ICP2
Run Time: 09:38
Method: 6010C
File ID: P2.060515.093859
Analyst: KHR
QC Key: DOD4
Workgroup (AAB#): WG526248
Cal ID: PE-ICP - 05-JUN-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		0.160	0.170	mg/L	106	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4220309
Report generated 06/05/2015 14:50

Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15051752
Run Date: 06/05/2015
Sample ID: WG526539-18
Instrument ID: PE-ICP2
Run Time: 11:29
Method: 6010C
File ID: P2.060515.112946
Analyst: KHR
QC Key: DOD4
Workgroup (AAB#): WG526248
Cal ID: PE-ICP - 05-JUN-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		0.160	0.171	mg/L	107	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4220309
Report generated 06/05/2015 14:50

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L15051752
Instrument ID: PE-ICP2
Sol. A : WG526539-10 **File ID:** P2.060515.094220
Sol. AB : WG526539-11 **File ID:** P2.060515.094443

Workgroup (AAB#): WG526248
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Iron	100	98.6	98.6	100	95.9	95.9	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4220306
Report generated 06/05/2015 14:50

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15051752 **Date:** 01/02/2015
Insturment ID: PE-ICP2 **Method:** 6010C

Analyte	Wave Length	AG	AL	AS	B	BA
ALUMINUM	396.15	0	0	0.206	0	0
ANTIMONY	206.84	0	0	-0.740	0	0
ARSENIC	188.98	0	0.0709	0	0	0
BARIUM	233.53	0	0	0	0	0
BERYLLIUM	234.86	0	0	0	0	0
BORON	249.68	0	0	0	0	0
CADMIUM	228.80	0	0	5.00	0	0
CALCIUM	227.55	0	0	0	0	0
CHROMIUM	267.72	0	0	0	0	0
COBALT	228.62	0	0	0	0	0.337
COPPER	327.39	0	0	0	0	0
IRON	239.56	0	0	0	0	0
LEAD	220.35	0	-0.160	0	0	0
LITHIUM	670.78	0	0	0	0	0
MAGNESIUM	279.08	0	0	0	0	0
MANGANESE	257.61	0	0	0	0	0
MOLYBDENUM	202.03	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
POTASSIUM	766.49	0	0	0	0	0
SELENIUM	196.03	0	-0.0380	0	0	0
SILICON	251.61	0	0	0	0	0
SILVER	328.07	0	0	0	0	0
SODIUM	589.59	0	0	0	0	0
STRONTIUM	407.77	0	0	0	0	0
THALLIUM	190.80	0	0.000100	0	0	0
TIN	189.93	0	0	0	0	0
TITANIUM	334.94	0	0	0	0	0
VANADIUM	290.88	0	0	0.200	0	0.0400
ZINC	206.20	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4220302
Report generated: 06/05/2015 14:49

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15051752 **Date:** 01/02/2015
Insturment ID: PE-ICP2 **Method:** 6010C

Analyte	Wave Length	BE	CA	CD	CO	CR
ALUMINUM	396.15	0	0	0	0	0
ANTIMONY	206.84	0	0	0	0.730	8.46
ARSENIC	188.98	0	-0.0220	0	0	-0.490
BARIUM	233.53	0	0	0	-0.192	0
BERYLLIUM	234.86	0	0	0	0	-0.0220
BORON	249.68	0	0	24.1	5.90	1.50
CADMIUM	228.80	0	0	0	-3.64	0
CALCIUM	227.55	0	0	0	0	0
CHROMIUM	267.72	0	0	0	0	0
COBALT	228.62	0	0	0	0	-0.200
COPPER	327.39	0	0	0	0.280	-0.0400
IRON	239.56	0	0	0	2.77	0
LEAD	220.35	0	0	0	0.462	0.0550
LITHIUM	670.78	0	0	0	0	0
MAGNESIUM	279.08	0	0	0	0	0
MANGANESE	257.61	0	0	0	0	0
MOLYBDENUM	202.03	0	0	0	0	0
NICKEL	231.60	0	0	0	1.05	0
POTASSIUM	766.49	0	0	0	0	0
SELENIUM	196.03	0	0	0	-0.250	0
SILICON	251.61	0	0	0	0	0
SILVER	328.07	0	0	0	0	0
SODIUM	589.59	0	0	0	0	0
STRONTIUM	407.77	0	0.0319	0	0	0
THALLIUM	190.80	0	0	0	1.00	0
TIN	189.93	0	0	0	0	0
TITANIUM	334.94	0	-0.150	0	0	0.297
VANADIUM	290.88	0	0	0	0	0
ZINC	206.20	0	0	0	0	-8.16

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4220302
Report generated: 06/05/2015 14:49

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15051752 **Date:** 01/02/2015
Insturment ID: PE-ICP2 **Method:** 6010C

Analyte	Wave Length	CU	FE	K	LI	MG
ALUMINUM	396.15	0	-0.119	0	0	0
ANTIMONY	206.84	0	-0.0366	0	0	0
ARSENIC	188.98	0	-0.250	0	0	0
BARIUM	233.53	0	0.0703	0	0	0
BERYLLIUM	234.86	0	0.224	0	0	0
BORON	249.68	0	-3.19	0	0	0
CADMIUM	228.80	0	0.00436	0	0	0
CALCIUM	227.55	0	0	0	0	0
CHROMIUM	267.72	0	0.0292	0	0	0
COBALT	228.62	0	0.0262	0	0	0
COPPER	327.39	0	-0.0434	0	0.154	0
IRON	239.56	0	0	0	0	0.0200
LEAD	220.35	0	0.0327	0	0	0
LITHIUM	670.78	0	0	0	0	0
MAGNESIUM	279.08	0	0.540	0	0	0
MANGANESE	257.61	0	-0.0240	0	0	0
MOLYBDENUM	202.03	0	-0.0159	0	0	0
NICKEL	231.60	0	0	0	0	0
POTASSIUM	766.49	0	0	0	0	0
SELENIUM	196.03	0	-0.253	0	0	0
SILICON	251.61	0	0	0	0	0
SILVER	328.07	0.0710	-0.421	0	0	0
SODIUM	589.59	0	0	0	0	0
STRONTIUM	407.77	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.93	0	0	0	0	0
TITANIUM	334.94	0	0	0	0	0
VANADIUM	290.88	0	-0.0729	0	0	0.0260
ZINC	206.20	-0.200	0.00660	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4220302
Report generated: 06/05/2015 14:49

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15051752 **Date:** 01/02/2015
Insturment ID: PE-ICP2 **Method:** 6010C

Analyte	Wave Length	MN	MO	NA	NI	PB
ALUMINUM	396.15	0	69.0	0	0	0
ANTIMONY	206.84	0	-1.46	0	-0.745	0
ARSENIC	188.98	0	5.34	0	0	0
BARIUM	233.53	0	-0.750	0	0	0
BERYLLIUM	234.86	-0.100	-0.376	0	-0.00970	0
BORON	249.68	0	-1.00	0	0	0
CADMIUM	228.80	0	0.0420	0	-0.0400	0
CALCIUM	227.55	0	-10.0	0	-150	0
CHROMIUM	267.72	0	0.170	0	0	0
COBALT	228.62	0	-1.80	0	0.129	0
COPPER	327.39	0	-0.0774	0	0.150	0
IRON	239.56	0	0	0	0	0
LEAD	220.35	0.600	-0.500	0	-0.190	0
LITHIUM	670.78	0	0	0	0	0
MAGNESIUM	279.08	0	0	0	0	0
MANGANESE	257.61	0	-0.0200	0	0	0
MOLYBDENUM	202.03	-0.209	0	0	0	0
NICKEL	231.60	0	0	0	0	0
POTASSIUM	766.49	0	0	1.00	0	0
SELENIUM	196.03	0.300	0	0	-0.376	0
SILICON	251.61	0	11.1	0	0	0
SILVER	328.07	0.130	0	0	0	0
SODIUM	589.59	0	0	0	0	0
STRONTIUM	407.77	0	0	0	0	0
THALLIUM	190.80	1.00	0.00100	0	0	0
TIN	189.93	0	0	0	0	0
TITANIUM	334.94	0	0	0	0	0
VANADIUM	290.88	0	0.178	0	0	0
ZINC	206.20	0	0	0	-0.200	-0.100

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4220302
Report generated: 06/05/2015 14:49

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15051752 **Date:** 01/02/2015
Insturment ID: PE-ICP2 **Method:** 6010C

Analyte	Wave Length	SB	SE	SI	SN	SR
ALUMINUM	396.15	0	0	0	0	0
ANTIMONY	206.84	0	0	0	0	0
ARSENIC	188.98	0	0	0	0	0
BARIUM	233.53	0	0	0	0	0
BERYLLIUM	234.86	0	0	0	0	0
BORON	249.68	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	227.55	0	0	0	0	0
CHROMIUM	267.72	0	0	0	0	0
COBALT	228.62	0	0	0	0	0
COPPER	327.39	0	0.0700	0	0	0
IRON	239.56	0	0	0	0	0
LEAD	220.35	-0.0100	0	0	0	0
LITHIUM	670.78	0	0	0	0	0
MAGNESIUM	279.08	0	0	0	0	0
MANGANESE	257.61	0	0	0	0	0
MOLYBDENUM	202.03	0	0	0	0	0
NICKEL	231.60	-0.0500	0	0	0	0
POTASSIUM	766.49	0	0	0	0	0
SELENIUM	196.03	0	0	0	0	0
SILICON	251.61	0	0	0	0	0
SILVER	328.07	0	0	0	0	0.200
SODIUM	589.59	0	0	0	0	0
STRONTIUM	407.77	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.93	0	0	0	0	0
TITANIUM	334.94	0	0	0	0	0
VANADIUM	290.88	0	0	0	0	0
ZINC	206.20	-0.300	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4220302
Report generated: 06/05/2015 14:49

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15051752 **Date:** 01/02/2015
Insturment ID: PE-ICP2 **Method:** 6010C

Analyte	Wave Length	TI	TL	V	ZN
ALUMINUM	396.15	0	0	0	0
ANTIMONY	206.84	0	0	-0.920	0
ARSENIC	188.98	0	0	0.0990	0
BARIUM	233.53	0	0	0.360	0
BERYLLIUM	234.86	0	0	0	0
BORON	249.68	0	0	0	0
CADMIUM	228.80	0	0	0.0800	0
CALCIUM	227.55	0	0	0	0
CHROMIUM	267.72	0	0	-0.567	-0.0400
COBALT	228.62	2.21	0	0	0
COPPER	327.39	-1.05	0	-0.440	-0.0600
IRON	239.56	0	0	0	0
LEAD	220.35	0	0	-0.224	0
LITHIUM	670.78	0	0	0	0
MAGNESIUM	279.08	0	0	0	0
MANGANESE	257.61	0	0	0.00100	0
MOLYBDENUM	202.03	0	0	-0.480	0
NICKEL	231.60	0	0.400	0	0
POTASSIUM	766.49	0	0	0	0
SELENIUM	196.03	-0.220	0	-0.100	0
SILICON	251.61	0	0	0	0
SILVER	328.07	0	0	-2.05	0
SODIUM	589.59	0	0	0	0
STRONTIUM	407.77	0	0	0	0
THALLIUM	190.80	-8.00	0	-2.76	0
TIN	189.93	0	0	0	0
TITANIUM	334.94	0	0	0	0
VANADIUM	290.88	0	0	0	0
ZINC	206.20	0	0	-0.100	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4220302
Report generated: 06/05/2015 14:49

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L15051752 **Date:** 05/01/2015
Insturment ID: PE-ICP2 **Method:** 6010C

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	630.0
Antimony	10.00	45.0
Arsenic	10.00	36.0
Barium	10.00	72.0
Beryllium	10.00	4.5
Boron	10.00	45.0
Cadmium	10.00	4.5
Calcium	10.00	900.0
Chromium	10.00	45.0
Cobalt	10.00	45.0
Copper	10.00	90.0
Iron	10.00	900.0
Lead	10.00	162.0
Lithium	10.00	0.9
Magnesium	10.00	900.0
Manganese	10.00	18.0
Molybdenum	10.00	45.0
Nickel	10.00	90.0
Phosphorus	10.00	72.0
Potassium	10.00	90.0
Selenium	10.00	45.0
Silicon	10.00	22.5
Silver	10.00	1.8
Sodium	10.00	180.0
Strontium	10.00	4.5
Thallium	10.00	9.0
Tin	10.00	45.0
Titanium	10.00	18.0
Vanadium	10.00	90.0
Zinc	10.00	45.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4220301
Report generated: 06/05/2015 14:49

2.3.1.3 Raw Data

Reprocessing Begun
Logged In Analyst: peicp2 Technique: ICP Continuous

Results Data Set (original): 060515H
Results Library (original): C:\pe\peicp2\Results\results2.mdb
Results Data Set (reprocessed): 060515HR
Results Library (reprocessed): C:\pe\peicp2\Results\results2.mdb

Sequence No.: 1 Autosampler Location: 1
Sample ID: S0 Date Collected: 6/5/2015 9:14:53 AM
Analyst: Data Type: Reprocessed on 6/5/2015 9:59:45 AM
Logged In Analyst (Original) : peicp2
Initial Sample Wt: Initial Sample Vol:
Dilution: Sample Prep Vol:

Nebulizer Parameters: S0

Analyte	Back Pressure	Flow
All	234.0 kPa	0.40 L/min

Mean Data: S0

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Calib Conc.	Units
Y 371.029	3359039.6	127020.47	3.78%		
YRADIAL	285441.2	5386.62	1.89%		
Ga 417.206	1120589.8	41540.62	3.71%		
GaRADIAL	61404.0	1482.30	2.41%		
Ag 328.068†	182.0	421.98	231.85%	[0.00]	mg/L
Al 396.153†	-19.9	11.06	55.48%	[0.00]	mg/L
As 188.979†	8.5	6.04	71.20%	[0.00]	mg/L
Ba 233.527†	-1.1	5.38	471.02%	[0.00]	mg/L
Be 234.861†	-536.2	34.16	6.37%	[0.00]	mg/L
B 249.677†	216.9	15.43	7.12%	[0.00]	mg/L
Ca 227.546†	-34.0	8.09	23.79%	[0.00]	mg/L
Cd 228.802†	14.1	2.14	15.13%	[0.00]	mg/L
Co 228.616†	-19.8	5.08	25.69%	[0.00]	mg/L
Cr 267.716†	270.7	33.61	12.42%	[0.00]	mg/L
Cu 327.393†	-526.0	99.19	18.86%	[0.00]	mg/L
Fe 239.562†	12.0	0.89	7.44%	[0.00]	mg/L
Mg 279.077†	65.2	12.51	19.17%	[0.00]	mg/L
Mn 257.610†	333.5	43.41	13.02%	[0.00]	mg/L
Mo 202.031†	43.1	9.74	22.60%	[0.00]	mg/L
Ni 231.604†	-62.5	15.09	24.14%	[0.00]	mg/L
Pb 220.353†	-44.7	17.67	39.52%	[0.00]	mg/L
Sb 206.836†	16.4	2.51	15.33%	[0.00]	mg/L
Se 196.026†	0.6	2.34	395.22%	[0.00]	mg/L
Si 251.611†	554.9	68.10	12.27%	[0.00]	mg/L
Sn 189.927†	18.7	6.42	34.42%	[0.00]	mg/L
Ti 334.940†	1571.2	88.62	5.64%	[0.00]	mg/L
Tl 190.801†	-19.3	2.36	12.22%	[0.00]	mg/L
V 290.880†	8100.0	392.52	4.85%	[0.00]	mg/L
Zn 206.200†	12.3	5.40	44.05%	[0.00]	mg/L
K 766.490†	236.4	99.63	42.14%	[0.00]	mg/L
Na 589.592†	1418.6	130.43	9.19%	[0.00]	mg/L
Sr 407.771†	-808.2	94.53	11.70%	[0.00]	mg/L
Li 670.784†	46.6	102.59	220.29%	[0.00]	mg/L
P 214.914†	-24.7	5.56	22.51%	[0.00]	mg/L

Sequence No.: 2 Autosampler Location: 2
Sample ID: S1 Date Collected: 6/5/2015 9:18:15 AM
Analyst: Data Type: Reprocessed on 6/5/2015 9:59:47 AM
Logged In Analyst (Original) : peicp2
Initial Sample Wt: Initial Sample Vol:
Dilution: Sample Prep Vol:

Nebulizer Parameters: S1

Approved: June 05, 2015
Lynn H. Rhoden

Analyte	Back Pressure	Flow
All	234.0 kPa	0.40 L/min

Mean Data: S1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	3430666.2	16894.10	0.49%		
YRADIAL	288316.5	5464.54	1.90%		
Ga 417.206	1152145.3	11021.28	0.96%		
GaRADIAL	61972.5	1274.02	2.06%		
Ag 328.068†	995.7	130.74	13.13%	[0.0032]	mg/L
Al 396.153†	323.6	6.90	2.13%	[0.08]	mg/L
Ba 233.527†	502.7	12.03	2.39%	[0.008]	mg/L
Be 234.861†	244.7	9.96	4.07%	[0.0004]	mg/L
Cd 228.802†	5.8	2.76	47.39%	[0.0004]	mg/L
Co 228.616†	26.5	2.98	11.21%	[0.0016]	mg/L
Cr 267.716†	538.3	7.40	1.37%	[0.004]	mg/L
Cu 327.393†	1120.4	239.17	21.35%	[0.004]	mg/L
Fe 239.562†	251.0	11.62	4.63%	[0.032]	mg/L
Mg 279.077†	272.3	10.73	3.94%	[0.08]	mg/L
Mn 257.610†	2912.5	4.79	0.16%	[0.004]	mg/L
Mo 202.031†	93.2	12.06	12.95%	[0.008]	mg/L
Ni 231.604†	125.7	16.76	13.34%	[0.004]	mg/L
Pb 220.353†	24.5	4.84	19.76%	[0.004]	mg/L
Sb 206.836†	9.5	2.52	26.52%	[0.0096]	mg/L
Si 251.611†	1225.0	64.71	5.28%	[0.04]	mg/L
Sn 189.927†	52.6	5.44	10.36%	[0.008]	mg/L
Ti 334.940†	8267.7	190.40	2.30%	[0.008]	mg/L
V 290.880†	1536.5	128.06	8.34%	[0.008]	mg/L
Zn 206.200†	229.5	9.26	4.03%	[0.008]	mg/L
K 766.490†	757.7	54.32	7.17%	[0.4]	mg/L
Na 589.592†	4597.9	110.17	2.40%	[0.4]	mg/L
Sr 407.771†	10260.6	144.02	1.40%	[0.008]	mg/L
Li 670.784†	564.0	39.75	7.05%	[0.008]	mg/L
P 214.914†	43.2	4.88	11.30%	[0.08]	mg/L

Sequence No.: 3
Sample ID: S2
Analyst:
Logged In Analyst (Original) : peicp2
Initial Sample Wt:
Dilution:

Autosampler Location: 3
Date Collected: 6/5/2015 9:21:36 AM
Data Type: Reprocessed on 6/5/2015 9:59:48 AM
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: S2

Analyte	Back Pressure	Flow
All	234.0 kPa	0.40 L/min

Mean Data: S2

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	3341674.6	38733.09	1.16%		
YRADIAL	283230.5	5139.03	1.81%		
Ga 417.206	1127665.1	7015.14	0.62%		
GaRADIAL	61028.0	1090.91	1.79%		
Ag 328.068†	2222.2	122.86	5.53%	[0.0064]	mg/L
Al 396.153†	684.6	8.64	1.26%	[0.16]	mg/L
As 188.979†	12.9	6.42	49.62%	[0.0064]	mg/L
Ba 233.527†	1056.1	18.48	1.75%	[0.016]	mg/L
Be 234.861†	438.2	25.46	5.81%	[0.0008]	mg/L
B 249.677†	433.7	4.15	0.96%	[0.008]	mg/L
Ca 227.546†	22.6	7.81	34.51%	[0.16]	mg/L
Cd 228.802†	13.3	3.45	25.99%	[0.0008]	mg/L
Co 228.616†	45.1	9.29	20.62%	[0.0032]	mg/L
Cr 267.716†	1179.4	13.83	1.17%	[0.008]	mg/L
Cu 327.393†	1813.7	190.82	10.52%	[0.008]	mg/L
Fe 239.562†	510.0	8.24	1.62%	[0.064]	mg/L
Mg 279.077†	551.0	13.43	2.44%	[0.16]	mg/L
Mn 257.610†	5971.2	109.37	1.83%	[0.008]	mg/L

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Mo 202.031†	202.7	2.86	1.41%	[0.016]	mg/L
Ni 231.604†	261.1	6.14	2.35%	[0.008]	mg/L
Pb 220.353†	43.5	3.73	8.58%	[0.008]	mg/L
Sb 206.836†	24.5	3.37	13.73%	[0.0192]	mg/L
Se 196.026†	4.7	3.10	65.74%	[0.0062]	mg/L
Si 251.611†	2459.9	37.43	1.52%	[0.08]	mg/L
Sn 189.927†	102.4	3.17	3.10%	[0.016]	mg/L
Ti 334.940†	17870.5	166.64	0.93%	[0.016]	mg/L
Tl 190.801†	1.7	1.94	114.20%	[0.008]	mg/L
V 290.880†	3395.9	342.69	10.09%	[0.016]	mg/L
Zn 206.200†	465.7	10.46	2.25%	[0.016]	mg/L
K 766.490†	1706.7	65.58	3.84%	[0.8]	mg/L
Na 589.592†	9225.5	59.70	0.65%	[0.8]	mg/L
Sr 407.771†	20903.8	165.82	0.79%	[0.016]	mg/L
Li 670.784†	1169.8	88.36	7.55%	[0.016]	mg/L
P 214.914†	91.9	2.85	3.10%	[0.16]	mg/L

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Sequence No.: 4 **Autosampler Location: 4**
Sample ID: S3 **Date Collected: 6/5/2015 9:24:58 AM**
Analyst: **Data Type: Reprocessed on 6/5/2015 9:59:49 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: S3

Analyte	Back Pressure	Flow
All	234.0 kPa	0.40 L/min

Mean Data: S3

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	3349172.9	62508.48	1.87%		
YRADIAL	285140.6	5641.98	1.98%		
Ga 417.206	1163819.7	16863.67	1.45%		
GaRADIAL	61318.6	1153.73	1.88%		
Ag 328.068†	120331.4	1277.68	1.06%	[0.40]	mg/L
Al 396.153†	42003.6	398.17	0.95%	[10.00]	mg/L
As 188.979†	548.0	4.68	0.85%	[0.40]	mg/L
Ba 233.527†	61437.0	789.70	1.29%	[1.00]	mg/L
Be 234.861†	24243.5	276.99	1.14%	[0.05]	mg/L
B 249.677†	25166.8	331.69	1.32%	[0.50]	mg/L
Ca 227.546†	896.1	5.79	0.65%	[10.00]	mg/L
Cd 228.802†	729.2	7.65	1.05%	[0.05]	mg/L
Co 228.616†	2938.2	19.81	0.67%	[0.20]	mg/L
Cr 267.716†	66151.7	1281.47	1.94%	[0.50]	mg/L
Cu 327.393†	100556.7	1301.97	1.29%	[0.50]	mg/L
Fe 239.562†	30178.0	126.69	0.42%	[4.00]	mg/L
Mg 279.077†	31999.9	250.55	0.78%	[10.00]	mg/L
Mn 257.610†	340821.4	4901.97	1.44%	[0.50]	mg/L
Mo 202.031†	12613.0	250.87	1.99%	[1.00]	mg/L
Ni 231.604†	15511.6	104.31	0.67%	[0.50]	mg/L
Pb 220.353†	2166.6	9.99	0.46%	[0.50]	mg/L
Sb 206.836†	1376.3	4.90	0.36%	[1.20]	mg/L
Se 196.026†	210.2	5.89	2.80%	[0.40]	mg/L
Si 251.611†	139181.1	1867.67	1.34%	[5.00]	mg/L
Sn 189.927†	5941.9	42.46	0.71%	[1.00]	mg/L
Ti 334.940†	1043705.6	3616.96	0.35%	[1.00]	mg/L
Tl 190.801†	669.3	1.29	0.19%	[0.50]	mg/L
V 290.880†	200221.4	3551.45	1.77%	[1.00]	mg/L
Zn 206.200†	27613.4	449.36	1.63%	[1.00]	mg/L
K 766.490†	99396.7	1013.94	1.02%	[50.00]	mg/L
Na 589.592†	543133.4	15560.56	2.86%	[50.00]	mg/L
Sr 407.771†	1265360.8	35300.66	2.79%	[1.00]	mg/L
Li 670.784†	61158.9	493.76	0.81%	[1.00]	mg/L
P 214.914†	5936.0	44.24	0.75%	[10]	mg/L

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Sequence No.: 5 **Autosampler Location: 5**
Sample ID: S4 **Date Collected: 6/5/2015 9:27:27 AM**

Approved: June 05, 2015

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Analyst:
Logged In Analyst (Original) : peicp2
Initial Sample Wt:
Dilution:

Data Type: Reprocessed on 6/5/2015 9:59:49 AM
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: S4

Analyte	Back Pressure	Flow
All	234.0 kPa	0.40 L/min

Mean Data: S4

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	3339772.8	15055.97	0.45%		
YRADIAL	283854.9	4538.57	1.60%		
Ga 417.206	1152977.4	3624.16	0.31%		
GaRADIAL	61834.1	804.75	1.30%		
Ag 328.068†	243764.8	2807.05	1.15%	[0.80]	mg/L
Al 396.153†	83909.6	580.02	0.69%	[20.00]	mg/L
As 188.979†	1120.7	18.11	1.62%	[0.80]	mg/L
Ba 233.527†	125263.4	936.85	0.75%	[2.00]	mg/L
Be 234.861†	50025.5	452.98	0.91%	[0.10]	mg/L
B 249.677†	52739.7	538.79	1.02%	[1.00]	mg/L
Ca 227.546†	1836.9	27.03	1.47%	[20.00]	mg/L
Cd 228.802†	1472.3	19.97	1.36%	[0.10]	mg/L
Co 228.616†	5900.1	56.17	0.95%	[0.40]	mg/L
Cr 267.716†	135155.2	1567.56	1.16%	[1.00]	mg/L
Cu 327.393†	204894.3	2414.97	1.18%	[1.00]	mg/L
Fe 239.562†	60024.4	749.71	1.25%	[8.00]	mg/L
Mg 279.077†	63877.6	418.29	0.65%	[20.00]	mg/L
Mn 257.610†	682156.8	6414.65	0.94%	[1.00]	mg/L
Mo 202.031†	26229.5	280.86	1.07%	[2.00]	mg/L
Ni 231.604†	30693.7	298.06	0.97%	[1.00]	mg/L
Pb 220.353†	4311.4	57.62	1.34%	[1.00]	mg/L
Sb 206.836†	2811.3	38.60	1.37%	[2.40]	mg/L
Se 196.026†	435.9	16.56	3.80%	[0.80]	mg/L
Si 251.611†	284552.1	3631.50	1.28%	[10.00]	mg/L
Sn 189.927†	11906.9	123.70	1.04%	[2.00]	mg/L
Ti 334.940†	2152179.2	24554.47	1.14%	[2.00]	mg/L
Tl 190.801†	1332.7	26.27	1.97%	[1.00]	mg/L
V 290.880†	408415.2	4072.95	1.00%	[2.00]	mg/L
Zn 206.200†	55860.9	459.96	0.82%	[2.00]	mg/L
K 766.490†	199991.9	1516.08	0.76%	[100.00]	mg/L
Na 589.592†	1078214.5	11174.92	1.04%	[100.00]	mg/L
Sr 407.771†	2561249.9	34426.57	1.34%	[2.00]	mg/L
Li 670.784†	122051.5	935.88	0.77%	[2.00]	mg/L
P 214.914†	12132.0	156.15	1.29%	[20]	mg/L

Calibration Summary

Analyte	Stds.	Equation	Intercept	Slope	Curvature	Corr. Coef.	Reslope
Ag 328.068	4	Lin, Calc Int	-101.9	304100	0.00000	0.999979	
Al 396.153	4	Lin, Calc Int	6.4	4196	0.00000	1.000000	
As 188.979	3	Wt. Lin	4.1	1378	0.00000	0.999913	
Ba 233.527	4	Lin, Calc Int	-131.5	62470	0.00000	0.999956	
Be 234.861	4	Lin, Calc Int	-70.0	498000	0.00000	0.999883	
B 249.677	3	Lin, Calc Int	-213.6	52520	0.00000	0.999718	
Ca 227.546	3	Lin, Calc Int	-0.5	91.43	0.00000	0.999899	
Cd 228.802	4	Lin, Calc Int	-0.4	14700	0.00000	0.999988	
Co 228.616	4	Lin, Calc Int	-1.2	14740	0.00000	0.999998	
Cr 267.716	4	Lin, Calc Int	-147.8	134800	0.00000	0.999946	
Cu 327.393	4	Lin, Calc Int	-86.7	204200	0.00000	0.999955	
Fe 239.562	4	Lin, Calc Int	33.4	7506	0.00000	0.999997	
Mg 279.077	4	Lin, Calc Int	25.4	3194	0.00000	1.000000	
Mn 257.610	4	Lin, Calc Int	186.2	681800	0.00000	1.000000	
Mo 202.031	4	Lin, Calc Int	-68.4	13060	0.00000	0.999827	
Ni 231.604	4	Lin, Calc Int	26.3	30730	0.00000	0.999987	
Pb 220.353	4	Lin, Calc Int	6.5	4308	0.00000	0.999997	
Sb 206.836	4	Lin, Calc Int	-3.6	1168	0.00000	0.999947	
Se 196.026	3	Wt. Lin	1.4	532.5	0.00000	0.999797	

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Si 251.611	4	Lin, Calc Int	-301.2	28370	0.00000	0.999942
Sn 189.927	4	Lin, Calc Int	2.3	5950	0.00000	0.999999
Ti 334.940	4	Lin, Calc Int	-3939.2	1072000	0.00000	0.999892
Tl 190.801	3	Lin, Calc Int	-3.5	1338	0.00000	0.999975
V 290.880	4	Lin, Calc Int	-487.2	203700	0.00000	0.999954
Zn 206.200	4	Lin, Calc Int	-31.7	27890	0.00000	0.999984
K 766.490	4	Non Lin, Calc Int	30.8	1975	0.24495	1.000000
Na 589.592	4	Non Lin, Calc Int	231.7	10940	-1.56758	1.000000
Sr 407.771	4	Lin, Calc Int	-1768.3	1279000	0.00000	0.999983
Li 670.784	4	Lin, Calc Int	100.8	60990	0.00000	0.999999
P 214.914	4	Lin, Calc Int	-19.5	605.2	0.00000	0.999947

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Sequence No.: 6 **Autosampler Location: 11**
Sample ID: ICV **Date Collected: 6/5/2015 9:29:52 AM**
Analyst: **Data Type: Reprocessed on 6/5/2015 9:59:50 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: ICV

Analyte	Back Pressure	Flow
All	234.0 kPa	0.40 L/min

Mean Data: ICV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3395029.1						49010.32	1.44%
YRADIAL	293339.1						7049.43	2.40%
Ga 417.206	1174176.1						15449.21	1.32%
GaRADIAL	62810.5						1090.28	1.74%
Ag 328.068†	124448.5	0.413	mg/L	0.0105	0.413	mg/L	0.0105	2.55%
QC value within limits for Ag 328.068 Recovery = 103.32%								
Al 396.153†	43224.2	10.3	mg/L	0.04	10.3	mg/L	0.04	0.42%
QC value within limits for Al 396.153 Recovery = 102.61%								
As 188.979†	564.8	0.403	mg/L	0.0026	0.403	mg/L	0.0026	0.66%
QC value within limits for As 188.979 Recovery = 100.66%								
Ba 233.527†	63069.9	1.01	mg/L	0.027	1.01	mg/L	0.027	2.66%
QC value within limits for Ba 233.527 Recovery = 101.19%								
Be 234.861†	24841.7	0.0495	mg/L	0.00126	0.0495	mg/L	0.00126	2.54%
QC value within limits for Be 234.861 Recovery = 98.90%								
B 249.677†	26127.5	0.515	mg/L	0.0104	0.515	mg/L	0.0104	2.01%
QC value within limits for B 249.677 Recovery = 103.01%								
Ca 227.546†	934.2	10.3	mg/L	0.12	10.3	mg/L	0.12	1.18%
QC value within limits for Ca 227.546 Recovery = 102.93%								
Cd 228.802†	751.1	0.0497	mg/L	0.00086	0.0497	mg/L	0.00086	1.73%
QC value within limits for Cd 228.802 Recovery = 99.47%								
Co 228.616†	3029.8	0.205	mg/L	0.0023	0.205	mg/L	0.0023	1.15%
QC value within limits for Co 228.616 Recovery = 102.37%								
Cr 267.716†	67379.1	0.502	mg/L	0.0132	0.502	mg/L	0.0132	2.63%
QC value within limits for Cr 267.716 Recovery = 100.30%								
Cu 327.393†	102667.9	0.505	mg/L	0.0130	0.505	mg/L	0.0130	2.58%
QC value within limits for Cu 327.393 Recovery = 100.97%								
Fe 239.562†	30989.1	4.12	mg/L	0.034	4.12	mg/L	0.034	0.82%
QC value within limits for Fe 239.562 Recovery = 103.08%								
Mg 279.077†	32396.8	10.1	mg/L	0.02	10.1	mg/L	0.02	0.18%
QC value within limits for Mg 279.077 Recovery = 101.34%								
Mn 257.610†	341028.4	0.500	mg/L	0.0120	0.500	mg/L	0.0120	2.40%
QC value within limits for Mn 257.610 Recovery = 100.00%								
Mo 202.031†	12636.1	0.974	mg/L	0.0217	0.974	mg/L	0.0217	2.23%
QC value within limits for Mo 202.031 Recovery = 97.36%								
Ni 231.604†	15588.7	0.506	mg/L	0.0050	0.506	mg/L	0.0050	0.98%
QC value within limits for Ni 231.604 Recovery = 101.22%								
Pb 220.353†	2152.0	0.500	mg/L	0.0051	0.500	mg/L	0.0051	1.03%
QC value within limits for Pb 220.353 Recovery = 100.02%								
Sb 206.836†	1433.6	1.23	mg/L	0.008	1.23	mg/L	0.008	0.62%
QC value within limits for Sb 206.836 Recovery = 102.41%								
Se 196.026†	219.2	0.411	mg/L	0.0071	0.411	mg/L	0.0071	1.72%
QC value within limits for Se 196.026 Recovery = 102.72%								
Si 251.611†	142821.9	5.03	mg/L	0.131	5.03	mg/L	0.131	2.60%

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QC value within limits for Si 251.611 Recovery = 100.69%

Sn 189.927†	6179.4	1.04 mg/L	0.009	1.04 mg/L	0.009	0.84%
QC value within limits for Sn 189.927 Recovery = 103.82%						
Ti 334.940†	1063960.3	0.997 mg/L	0.0044	0.997 mg/L	0.0044	0.44%
QC value within limits for Ti 334.940 Recovery = 99.67%						
Tl 190.801†	675.6	0.518 mg/L	0.0062	0.518 mg/L	0.0062	1.20%
QC value within limits for Tl 190.801 Recovery = 103.51%						
V 290.880†	206490.2	1.02 mg/L	0.025	1.02 mg/L	0.025	2.42%
QC value within limits for V 290.880 Recovery = 101.61%						
Zn 206.200†	28049.0	1.01 mg/L	0.024	1.01 mg/L	0.024	2.39%
QC value within limits for Zn 206.200 Recovery = 101.19%						
K 766.490†	101823.1	51.2 mg/L	0.06	51.2 mg/L	0.06	0.11%
QC value within limits for K 766.490 Recovery = 102.32%						
Na 589.592†	547722.9	50.4 mg/L	1.71	50.4 mg/L	1.71	3.39%
QC value within limits for Na 589.592 Recovery = 100.85%						
Sr 407.771†	1263938.0	0.990 mg/L	0.0404	0.990 mg/L	0.0404	4.08%
QC value within limits for Sr 407.771 Recovery = 98.96%						
Li 670.784†	63095.2	1.03 mg/L	0.005	1.03 mg/L	0.005	0.49%
QC value within limits for Li 670.784 Recovery = 103.28%						
P 214.914†	6114.6	10.1 mg/L	0.10	10.1 mg/L	0.10	0.94%
QC value within limits for P 214.914 Recovery = 101.36%						

All analyte(s) passed QC.

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Sequence No.: 7 **Autosampler Location: 1**
Sample ID: ICB **Date Collected: 6/5/2015 9:32:17 AM**
Analyst: **Data Type: Reprocessed on 6/5/2015 9:59:52 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: ICB

Analyte	Back Pressure	Flow
All	234.0 kPa	0.40 L/min

Mean Data: ICB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3381852.6						73183.19	2.16%
YRADIAL	294907.2						3317.97	1.13%
Ga 417.206	1137021.0						20469.08	1.80%
GaRADIAL	63171.1						838.92	1.33%
Ag 328.068†	80.1	0.00060	mg/L	0.000092	0.00060	mg/L	0.000092	15.22%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	0.5	-0.00167	mg/L	0.000791	-0.00167	mg/L	0.000791	47.49%
QC value within limits for Al 396.153 Recovery = Not calculated								
As 188.979†	1.8	-0.00172	mg/L	0.005090	-0.00172	mg/L	0.005090	296.56%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	2.3	0.00215	mg/L	0.000112	0.00215	mg/L	0.000112	5.24%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 234.861†	35.6	0.00021	mg/L	0.000017	0.00021	mg/L	0.000017	7.72%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	387.0	0.0114	mg/L	0.00106	0.0114	mg/L	0.00106	9.28%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	8.3	0.0958	mg/L	0.04980	0.0958	mg/L	0.04980	51.96%
QC value within limits for Ca 227.546 Recovery = Not calculated								
Cd 228.802†	6.1	0.00045	mg/L	0.000214	0.00045	mg/L	0.000214	47.47%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	-3.4	-0.00015	mg/L	0.000217	-0.00015	mg/L	0.000217	147.28%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	8.1	0.00116	mg/L	0.000300	0.00116	mg/L	0.000300	25.91%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	379.5	0.00229	mg/L	0.001593	0.00229	mg/L	0.001593	69.58%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	22.1	-0.00150	mg/L	0.000799	-0.00150	mg/L	0.000799	53.21%
QC value within limits for Fe 239.562 Recovery = Not calculated								
Mg 279.077†	-15.1	-0.0127	mg/L	0.00471	-0.0127	mg/L	0.00471	37.13%
QC value within limits for Mg 279.077 Recovery = Not calculated								
Mn 257.610†	507.4	0.00047	mg/L	0.000062	0.00047	mg/L	0.000062	13.10%
QC value within limits for Mn 257.610 Recovery = Not calculated								

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Mo 202.031†	12.9	0.00623	mg/L	0.000197	0.00623	mg/L	0.000197	3.16%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	-4.8	-0.00101	mg/L	0.000398	-0.00101	mg/L	0.000398	39.47%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	14.6	0.00190	mg/L	0.000826	0.00190	mg/L	0.000826	43.52%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	0.4	0.00341	mg/L	0.001696	0.00341	mg/L	0.001696	49.71%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	-4.9	-0.0119	mg/L	0.00726	-0.0119	mg/L	0.00726	61.26%
QC value within limits for Se 196.026 Recovery = Not calculated								
Si 251.611†	90.3	0.0137	mg/L	0.00065	0.0137	mg/L	0.00065	4.71%
QC value within limits for Si 251.611 Recovery = Not calculated								
Sn 189.927†	26.4	0.00404	mg/L	0.000267	0.00404	mg/L	0.000267	6.60%
QC value within limits for Sn 189.927 Recovery = Not calculated								
Ti 334.940†	1003.2	0.00462	mg/L	0.001717	0.00462	mg/L	0.001717	37.19%
QC value within limits for Ti 334.940 Recovery = Not calculated								
Tl 190.801†	-8.4	-0.00362	mg/L	0.001060	-0.00362	mg/L	0.001060	29.32%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 290.880†	141.2	0.00308	mg/L	0.003116	0.00308	mg/L	0.003116	101.05%
QC value within limits for V 290.880 Recovery = Not calculated								
Zn 206.200†	3.0	0.00126	mg/L	0.000225	0.00126	mg/L	0.000225	17.93%
QC value within limits for Zn 206.200 Recovery = Not calculated								
K 766.490†	436.6	0.205	mg/L	0.0625	0.205	mg/L	0.0625	30.42%
QC value within limits for K 766.490 Recovery = Not calculated								
Na 589.592†	1179.6	0.0867	mg/L	0.02688	0.0867	mg/L	0.02688	31.01%
QC value within limits for Na 589.592 Recovery = Not calculated								
Sr 407.771†	114.6	0.00147	mg/L	0.000033	0.00147	mg/L	0.000033	2.22%
QC value within limits for Sr 407.771 Recovery = Not calculated								
Li 670.784†	302.1	0.00330	mg/L	0.000362	0.00330	mg/L	0.000362	10.96%
QC value within limits for Li 670.784 Recovery = Not calculated								
P 214.914†	-2.0	0.0290	mg/L	0.00388	0.0290	mg/L	0.00388	13.40%
QC value within limits for P 214.914 Recovery = Not calculated								

All analyte(s) passed QC.

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Sequence No.: 8 **Autosampler Location: 14**
Sample ID: LLICV **Date Collected: 6/5/2015 9:35:38 AM**
Analyst: KHR **Data Type: Reprocessed on 6/5/2015 9:59:53 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: LLICV

Analyte	**Back Pressure**	**Flow**
All	234.0 kPa	0.40 L/min

Mean Data: LLICV

Analyte	**Mean Corrected Intensity**	**Calib. Conc.**	**Units**	**Std.Dev.**	**Sample Conc.**	**Units**	**Std.Dev.**	**RSD**
Y 371.029	3504880.7						40715.49	1.16%
YRADIAL	286160.4						5029.21	1.76%
Ga 417.206	1170719.7						13566.38	1.16%
GaRADIAL	61387.8						961.58	1.57%
Ag 328.068†	3829.5	0.0129	mg/L	0.00098	0.0129	mg/L	0.00098	7.56%
Al 396.153†	-18.2	-0.00609	mg/L	0.001838	-0.00609	mg/L	0.001838	30.15%
As 188.979†	149.4	0.105	mg/L	0.0063	0.105	mg/L	0.0063	5.98%
Ba 233.527†	746.8	0.0141	mg/L	0.00015	0.0141	mg/L	0.00015	1.09%
Be 234.861†	28.4	0.00020	mg/L	0.000025	0.00020	mg/L	0.000025	12.69%
B 249.677†	148.9	0.00656	mg/L	0.000591	0.00656	mg/L	0.000591	9.00%
Ca 227.546†	8.7	0.0997	mg/L	0.05951	0.0997	mg/L	0.05951	59.69%
Cd 228.802†	181.7	0.0119	mg/L	0.00005	0.0119	mg/L	0.00005	0.45%
Co 228.616†	-0.7	0.00003	mg/L	0.000256	0.00003	mg/L	0.000256	743.05%
Cr 267.716†	3162.6	0.0246	mg/L	0.00041	0.0246	mg/L	0.00041	1.65%
Cu 327.393†	232.5	0.00156	mg/L	0.000788	0.00156	mg/L	0.000788	50.46%
Fe 239.562†	15.2	-0.00243	mg/L	0.000867	-0.00243	mg/L	0.000867	35.73%
Mg 279.077†	-6.4	-0.00994	mg/L	0.002912	-0.00994	mg/L	0.002912	29.30%
Mn 257.610†	403.6	0.00032	mg/L	0.000012	0.00032	mg/L	0.000012	3.87%
Mo 202.031†	-5.1	0.00485	mg/L	0.000244	0.00485	mg/L	0.000244	5.04%
Ni 231.604†	14.6	-0.00038	mg/L	0.000204	-0.00038	mg/L	0.000204	53.68%
Pb 220.353†	488.7	0.112	mg/L	0.0005	0.112	mg/L	0.0005	0.45%

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Sb 206.836†	2.4	0.00495 mg/L	0.001062	0.00495 mg/L	0.001062	21.47%
Se 196.026†	47.0	0.0855 mg/L	0.00320	0.0855 mg/L	0.00320	3.75%
Si 251.611†	39.9	0.0120 mg/L	0.00050	0.0120 mg/L	0.00050	4.20%
Sn 189.927†	14.0	0.00197 mg/L	0.001171	0.00197 mg/L	0.001171	59.57%
Ti 334.940†	122.1	0.00379 mg/L	0.000085	0.00379 mg/L	0.000085	2.23%
Tl 190.801†	-10.1	-0.00484 mg/L	0.000947	-0.00484 mg/L	0.000947	19.57%
V 290.880†	-281.6	0.00099 mg/L	0.001391	0.00099 mg/L	0.001391	141.02%
Zn 206.200†	52.3	0.00323 mg/L	0.000127	0.00323 mg/L	0.000127	3.93%
K 766.490†	251.4	0.112 mg/L	0.0287	0.112 mg/L	0.0287	25.69%
Na 589.592†	399.9	0.0154 mg/L	0.01494	0.0154 mg/L	0.01494	97.11%
Sr 407.771†	40.7	0.00141 mg/L	0.000012	0.00141 mg/L	0.000012	0.83%
Li 670.784†	302.2	0.00330 mg/L	0.001145	0.00330 mg/L	0.001145	34.67%
P 214.914†	0.7	0.0334 mg/L	0.00920	0.0334 mg/L	0.00920	27.58%

Sequence No.: 9 **Autosampler Location: 15**
Sample ID: LLICV **Date Collected: 6/5/2015 9:38:59 AM**
Analyst: KHR **Data Type: Reprocessed on 6/5/2015 9:59:54 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: LLICV

Analyte	Back Pressure	Flow
All	234.0 kPa	0.40 L/min

Mean Data: LLICV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3425058.9						91857.85	2.68%
YRADIAL	287346.7						1829.80	0.64%
Ga 417.206	1166491.1						33574.72	2.88%
GaRADIAL	61754.3						340.67	0.55%
Ag 328.068†	5215.2	0.0176	mg/L	0.00074	0.0176	mg/L	0.00074	4.17%
Al 396.153†	1762.5	0.417	mg/L	0.0041	0.417	mg/L	0.0041	0.97%
As 188.979†	23.0	0.0135	mg/L	0.00208	0.0135	mg/L	0.00208	15.39%
Ba 233.527†	2658.3	0.0447	mg/L	0.00088	0.0447	mg/L	0.00088	1.98%
Be 234.861†	1071.1	0.00227	mg/L	0.000060	0.00227	mg/L	0.000060	2.66%
B 249.677†	1184.0	0.0272	mg/L	0.00071	0.0272	mg/L	0.00071	2.62%
Ca 227.546†	50.4	0.560	mg/L	0.0173	0.560	mg/L	0.0173	3.09%
Cd 228.802†	34.3	0.00232	mg/L	0.000230	0.00232	mg/L	0.000230	9.91%
Co 228.616†	130.4	0.00890	mg/L	0.000253	0.00890	mg/L	0.000253	2.84%
Cr 267.716†	2981.4	0.0232	mg/L	0.00029	0.0232	mg/L	0.00029	1.26%
Cu 327.393†	4606.8	0.0231	mg/L	0.00183	0.0231	mg/L	0.00183	7.93%
Fe 239.562†	1308.4	0.170	mg/L	0.0016	0.170	mg/L	0.0016	0.97%
Mg 279.077†	1388.3	0.427	mg/L	0.0058	0.427	mg/L	0.0058	1.35%
Mn 257.610†	14883.7	0.0216	mg/L	0.00082	0.0216	mg/L	0.00082	3.82%
Mo 202.031†	525.5	0.0455	mg/L	0.00093	0.0455	mg/L	0.00093	2.05%
Ni 231.604†	668.4	0.0209	mg/L	0.00121	0.0209	mg/L	0.00121	5.80%
Pb 220.353†	109.4	0.0240	mg/L	0.00130	0.0240	mg/L	0.00130	5.43%
Sb 206.836†	59.8	0.0542	mg/L	0.00813	0.0542	mg/L	0.00813	15.00%
Se 196.026†	9.4	0.0151	mg/L	0.00414	0.0151	mg/L	0.00414	27.31%
Si 251.611†	6182.2	0.228	mg/L	0.0066	0.228	mg/L	0.0066	2.87%
Sn 189.927†	275.7	0.0459	mg/L	0.00070	0.0459	mg/L	0.00070	1.52%
Ti 334.940†	43932.9	0.0447	mg/L	0.00128	0.0447	mg/L	0.00128	2.87%
Tl 190.801†	18.3	0.0168	mg/L	0.00271	0.0168	mg/L	0.00271	16.20%
V 290.880†	8217.2	0.0427	mg/L	0.00427	0.0427	mg/L	0.00427	9.99%
Zn 206.200†	1504.1	0.0553	mg/L	0.00101	0.0553	mg/L	0.00101	1.83%
K 766.490†	4337.3	2.18	mg/L	0.037	2.18	mg/L	0.037	1.69%
Na 589.592†	23681.1	2.14	mg/L	0.012	2.14	mg/L	0.012	0.54%
Sr 407.771†	52546.3	0.0425	mg/L	0.00020	0.0425	mg/L	0.00020	0.47%
Li 670.784†	2728.3	0.0431	mg/L	0.00287	0.0431	mg/L	0.00287	6.67%
P 214.914†	245.3	0.438	mg/L	0.0067	0.438	mg/L	0.0067	1.53%

Sequence No.: 10 **Autosampler Location: 12**
Sample ID: ICSA **Date Collected: 6/5/2015 9:42:20 AM**
Analyst: **Data Type: Reprocessed on 6/5/2015 9:59:55 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**

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Lynn H. Rhoden

Dilution: Sample Prep Vol:

Nebulizer Parameters: ICSA

Analyte	Back Pressure	Flow
All	235.0 kPa	0.40 L/min

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3108110.6						4845.80	0.16%
YRADIAL	272831.7						7321.73	2.68%
Ga 417.206	1112044.0						3852.12	0.35%
GaRADIAL	59956.0						1401.23	2.34%
Ag 328.068†	-13552.4	0.00119	mg/L	0.000711	0.00119	mg/L	0.000711	59.88%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	1082430.8	258	mg/L	6.1	258	mg/L	6.1	2.35%
QC value within limits for Al 396.153 Recovery = 103.19%								
As 188.979†	-15.3	0.00472	mg/L	0.007792	0.00472	mg/L	0.007792	165.14%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	309.4	0.00380	mg/L	0.000144	0.00380	mg/L	0.000144	3.79%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 234.861†	11880.7	0.00005	mg/L	0.000648	0.00005	mg/L	0.000648	>999.9%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	-18004.1	0.0357	mg/L	0.00635	0.0357	mg/L	0.00635	17.75%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	26190.0	286	mg/L	1.3	286	mg/L	1.3	0.44%
QC value within limits for Ca 227.546 Recovery = 114.58%								
Cd 228.802†	1.3	0.00015	mg/L	0.000570	0.00015	mg/L	0.000570	388.41%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	3.5	-0.00221	mg/L	0.000298	-0.00221	mg/L	0.000298	13.47%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	164.4	0.00181	mg/L	0.000446	0.00181	mg/L	0.000446	24.66%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	-2058.9	0.00047	mg/L	0.000557	0.00047	mg/L	0.000557	117.30%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	739834.0	98.6	mg/L	3.00	98.6	mg/L	3.00	3.05%
QC value within limits for Fe 239.562 Recovery = 98.55%								
Mg 279.077†	796118.1	249	mg/L	2.4	249	mg/L	2.4	0.98%
QC value within limits for Mg 279.077 Recovery = 99.69%								
Mn 257.610†	953.2	0.00349	mg/L	0.000054	0.00349	mg/L	0.000054	1.54%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	-22.6	0.00183	mg/L	0.000962	0.00183	mg/L	0.000962	52.73%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	-11.7	-0.00123	mg/L	0.000476	-0.00123	mg/L	0.000476	38.75%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	-175.4	0.00022	mg/L	0.004908	0.00022	mg/L	0.004908	>999.9%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	-2.2	0.00472	mg/L	0.002626	0.00472	mg/L	0.002626	55.60%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	-19.1	-0.00008	mg/L	0.007931	-0.00008	mg/L	0.007931	>999.9%
QC value within limits for Se 196.026 Recovery = Not calculated								
Si 251.611†	1736.4	0.0718	mg/L	0.00191	0.0718	mg/L	0.00191	2.65%
QC value within limits for Si 251.611 Recovery = Not calculated								
Sn 189.927†	-19.1	-0.00361	mg/L	0.003001	-0.00361	mg/L	0.003001	83.19%
QC value within limits for Sn 189.927 Recovery = Not calculated								
Ti 334.940†	-25282.2	-0.00152	mg/L	0.000405	-0.00152	mg/L	0.000405	26.62%
QC value within limits for Ti 334.940 Recovery = Not calculated								
Tl 190.801†	-39.4	-0.0270	mg/L	0.00304	-0.0270	mg/L	0.00304	11.25%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 290.880†	-1979.9	-0.00001	mg/L	0.000850	-0.00001	mg/L	0.000850	>999.9%
QC value within limits for V 290.880 Recovery = Not calculated								
Zn 206.200†	82.0	0.00647	mg/L	0.000260	0.00647	mg/L	0.000260	4.02%
QC value within limits for Zn 206.200 Recovery = Not calculated								
K 766.490†	155.1	0.0628	mg/L	0.05191	0.0628	mg/L	0.05191	82.62%
QC value within limits for K 766.490 Recovery = Not calculated								
Na 589.592†	855.1	0.0570	mg/L	0.00887	0.0570	mg/L	0.00887	15.56%
QC value within limits for Na 589.592 Recovery = Not calculated								
Sr 407.771†	2846.5	-0.00553	mg/L	0.000069	-0.00553	mg/L	0.000069	1.25%
QC value within limits for Sr 407.771 Recovery = Not calculated								
Li 670.784†	204.9	0.00171	mg/L	0.002498	0.00171	mg/L	0.002498	146.30%

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QC value within limits for Li 670.784 Recovery = Not calculated

P 214.914†	44.6	0.106 mg/L	0.0034	0.106 mg/L	0.0034	3.23%

QC value within limits for P 214.914 Recovery = Not calculated

All analyte(s) passed QC.

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Sequence No.: 11 **Autosampler Location: 13**
Sample ID: ICSAB **Date Collected: 6/5/2015 9:44:43 AM**
Analyst: **Data Type: Reprocessed on 6/5/2015 9:59:56 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: ICSAB

Analyte	**Back Pressure**	**Flow**
All	234.0 kPa	0.40 L/min

Mean Data: ICSAB

Analyte	**Mean Corrected Intensity**	**Calib. Conc.**	**Units**	**Std.Dev.**	**Sample Conc.**	**Units**	**Std.Dev.**	**RSD**
Y 371.029	3148475.1						29692.08	0.94%
YRADIAL	278756.2						4094.28	1.47%
Ga 417.206	1116260.6						12081.42	1.08%
GaRADIAL	60654.5						692.86	1.14%
Ag 328.068†	143834.0	0.518	mg/L	0.0086	0.518	mg/L	0.0086	1.65%
QC value within limits for Ag 328.068 Recovery = 103.60%								
Al 396.153†	1065342.7	254	mg/L	1.7	254	mg/L	1.7	0.68%
QC value within limits for Al 396.153 Recovery = 101.56%								
As 188.979†	313.4	0.243	mg/L	0.0058	0.243	mg/L	0.0058	2.39%
QC value within limits for As 188.979 Recovery = 97.10%								
Ba 233.527†	16091.0	0.256	mg/L	0.0038	0.256	mg/L	0.0038	1.49%
QC value within limits for Ba 233.527 Recovery = 102.58%								
Be 234.861†	136990.9	0.252	mg/L	0.0051	0.252	mg/L	0.0051	2.03%
QC value within limits for Be 234.861 Recovery = 100.78%								
B 249.677†	-17470.3	0.0230	mg/L	0.00530	0.0230	mg/L	0.00530	23.08%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	25664.1	281	mg/L	5.0	281	mg/L	5.0	1.79%
QC value within limits for Ca 227.546 Recovery = 112.30%								
Cd 228.802†	6711.4	0.456	mg/L	0.0081	0.456	mg/L	0.0081	1.76%
QC value within limits for Cd 228.802 Recovery = 91.25%								
Co 228.616†	3437.9	0.231	mg/L	0.0026	0.231	mg/L	0.0026	1.12%
QC value within limits for Co 228.616 Recovery = 92.29%								
Cr 267.716†	33221.1	0.247	mg/L	0.0039	0.247	mg/L	0.0039	1.59%
QC value within limits for Cr 267.716 Recovery = 98.91%								
Cu 327.393†	48335.3	0.247	mg/L	0.0045	0.247	mg/L	0.0045	1.81%
QC value within limits for Cu 327.393 Recovery = 98.77%								
Fe 239.562†	719711.2	95.9	mg/L	0.48	95.9	mg/L	0.48	0.51%
QC value within limits for Fe 239.562 Recovery = 95.87%								
Mg 279.077†	787414.9	247	mg/L	1.8	247	mg/L	1.8	0.75%
QC value within limits for Mg 279.077 Recovery = 98.60%								
Mn 257.610†	163015.4	0.241	mg/L	0.0036	0.241	mg/L	0.0036	1.51%
QC value within limits for Mn 257.610 Recovery = 96.44%								
Mo 202.031†	-4.7	0.00341	mg/L	0.000332	0.00341	mg/L	0.000332	9.74%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	13999.2	0.454	mg/L	0.0057	0.454	mg/L	0.0057	1.26%
QC value within limits for Ni 231.604 Recovery = 90.86%								
Pb 220.353†	1903.2	0.482	mg/L	0.0030	0.482	mg/L	0.0030	0.63%
QC value within limits for Pb 220.353 Recovery = 96.40%								
Sb 206.836†	577.8	0.500	mg/L	0.0125	0.500	mg/L	0.0125	2.50%
QC value within limits for Sb 206.836 Recovery = 99.92%								
Se 196.026†	109.4	0.241	mg/L	0.0105	0.241	mg/L	0.0105	4.34%
QC value within limits for Se 196.026 Recovery = 96.31%								
Si 251.611†	471.4	0.0272	mg/L	0.00354	0.0272	mg/L	0.00354	13.01%
QC value within limits for Si 251.611 Recovery = Not calculated								
Sn 189.927†	-20.3	-0.00381	mg/L	0.002687	-0.00381	mg/L	0.002687	70.52%
QC value within limits for Sn 189.927 Recovery = Not calculated								
Ti 334.940†	-25170.3	-0.00186	mg/L	0.000403	-0.00186	mg/L	0.000403	21.68%
QC value within limits for Ti 334.940 Recovery = Not calculated								
Tl 190.801†	632.9	0.476	mg/L	0.0109	0.476	mg/L	0.0109	2.29%
QC value within limits for Tl 190.801 Recovery = 95.13%								

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V 290.880†	49497.7	0.252 mg/L	0.0027	0.252 mg/L	0.0027	1.06%
QC value within limits for V 290.880 Recovery = 100.93%						
Zn 206.200†	13315.3	0.483 mg/L	0.0070	0.483 mg/L	0.0070	1.46%
QC value within limits for Zn 206.200 Recovery = 96.66%						
K 766.490†	10749.7	5.42 mg/L	0.077	5.42 mg/L	0.077	1.43%
QC value within limits for K 766.490 Recovery = 108.36%						
Na 589.592†	57852.0	5.27 mg/L	0.047	5.27 mg/L	0.047	0.90%
QC value within limits for Na 589.592 Recovery = 105.45%						
Sr 407.771†	2832.7	-0.00536 mg/L	0.000129	-0.00536 mg/L	0.000129	2.41%
QC value within limits for Sr 407.771 Recovery = Not calculated						
Li 670.784†	280.9	0.00295 mg/L	0.000280	0.00295 mg/L	0.000280	9.47%
QC value within limits for Li 670.784 Recovery = Not calculated						
P 214.914†	-92.8	-0.121 mg/L	0.0057	-0.121 mg/L	0.0057	4.74%
QC value within limits for P 214.914 Recovery = Not calculated						

All analyte(s) passed QC.

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Sequence No.: 12 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 6/5/2015 9:47:06 AM**
Analyst: **Data Type: Reprocessed on 6/5/2015 9:59:57 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	234.0 kPa	0.40 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3326308.7						48150.65	1.45%
YRADIAL	290853.8						6162.44	2.12%
Ga 417.206	1150283.7						18304.47	1.59%
GaRADIAL	62631.6						920.69	1.47%
Ag 328.068†	125035.3	0.415	mg/L	0.0189	0.415	mg/L	0.0189	4.56%
QC value within limits for Ag 328.068 Recovery = 103.81%								
Al 396.153†	43143.7	10.2	mg/L	0.12	10.2	mg/L	0.12	1.17%
QC value within limits for Al 396.153 Recovery = 102.41%								
As 188.979†	575.6	0.410	mg/L	0.0044	0.410	mg/L	0.0044	1.07%
QC value within limits for As 188.979 Recovery = 102.60%								
Ba 233.527†	63431.4	1.02	mg/L	0.043	1.02	mg/L	0.043	4.18%
QC value within limits for Ba 233.527 Recovery = 101.77%								
Be 234.861†	25240.2	0.0503	mg/L	0.00219	0.0503	mg/L	0.00219	4.35%
QC value within limits for Be 234.861 Recovery = 100.51%								
B 249.677†	25863.3	0.510	mg/L	0.0238	0.510	mg/L	0.0238	4.66%
QC value within limits for B 249.677 Recovery = 102.02%								
Ca 227.546†	941.3	10.4	mg/L	0.23	10.4	mg/L	0.23	2.25%
QC value within limits for Ca 227.546 Recovery = 103.73%								
Cd 228.802†	764.8	0.0506	mg/L	0.00109	0.0506	mg/L	0.00109	2.15%
QC value within limits for Cd 228.802 Recovery = 101.28%								
Co 228.616†	3074.6	0.208	mg/L	0.0030	0.208	mg/L	0.0030	1.44%
QC value within limits for Co 228.616 Recovery = 103.89%								
Cr 267.716†	68550.7	0.510	mg/L	0.0245	0.510	mg/L	0.0245	4.80%
QC value within limits for Cr 267.716 Recovery = 102.04%								
Cu 327.393†	104576.4	0.514	mg/L	0.0223	0.514	mg/L	0.0223	4.34%
QC value within limits for Cu 327.393 Recovery = 102.84%								
Fe 239.562†	31205.0	4.15	mg/L	0.068	4.15	mg/L	0.068	1.65%
QC value within limits for Fe 239.562 Recovery = 103.80%								
Mg 279.077†	32991.0	10.3	mg/L	0.12	10.3	mg/L	0.12	1.18%
QC value within limits for Mg 279.077 Recovery = 103.20%								
Mn 257.610†	352868.3	0.517	mg/L	0.0217	0.517	mg/L	0.0217	4.19%
QC value within limits for Mn 257.610 Recovery = 103.47%								
Mo 202.031†	13010.1	1.00	mg/L	0.051	1.00	mg/L	0.051	5.11%
QC value within limits for Mo 202.031 Recovery = 100.23%								
Ni 231.604†	16160.5	0.525	mg/L	0.0086	0.525	mg/L	0.0086	1.64%
QC value within limits for Ni 231.604 Recovery = 104.94%								
Pb 220.353†	2266.5	0.527	mg/L	0.0068	0.527	mg/L	0.0068	1.28%
QC value within limits for Pb 220.353 Recovery = 105.34%								
Sb 206.836†	1456.0	1.25	mg/L	0.022	1.25	mg/L	0.022	1.73%

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   QC value within limits for Sb 206.836  Recovery = 104.01%
Se 196.026†              224.6       0.421 mg/L        0.0117       0.421 mg/L        0.0117   2.77%
   QC value within limits for Se 196.026  Recovery = 105.27%
Si 251.611†           145387.4        5.12 mg/L         0.208        5.12 mg/L         0.208   4.07%
   QC value within limits for Si 251.611  Recovery = 102.49%
Sn 189.927†             6190.6        1.04 mg/L         0.017        1.04 mg/L         0.017   1.68%
   QC value within limits for Sn 189.927  Recovery = 104.01%
Ti 334.940†          1087333.1        1.02 mg/L         0.004        1.02 mg/L         0.004   0.40%
   QC value within limits for Ti 334.940  Recovery = 101.85%
Tl 190.801†              690.2       0.529 mg/L        0.0146       0.529 mg/L        0.0146   2.76%
   QC value within limits for Tl 190.801  Recovery = 105.73%
V 290.880†            208092.1        1.02 mg/L         0.043        1.02 mg/L         0.043   4.23%
   QC value within limits for V 290.880  Recovery = 102.39%
Zn 206.200†            28313.2        1.02 mg/L         0.044        1.02 mg/L         0.044   4.34%
   QC value within limits for Zn 206.200  Recovery = 102.14%
K 766.490†            102955.3        51.7 mg/L          0.42        51.7 mg/L          0.42   0.82%
   QC value within limits for K 766.490  Recovery = 103.46%
Na 589.592†           538092.7        49.5 mg/L          0.08        49.5 mg/L          0.08   0.16%
   QC value within limits for Na 589.592  Recovery = 99.06%
Sr 407.771†          1242244.4       0.973 mg/L        0.0110       0.973 mg/L        0.0110   1.13%
   QC value within limits for Sr 407.771  Recovery = 97.26%
Li 670.784†            63036.4        1.03 mg/L         0.004        1.03 mg/L         0.004   0.43%
   QC value within limits for Li 670.784  Recovery = 103.19%
P 214.914†              6198.6        10.3 mg/L          0.16        10.3 mg/L          0.16   1.54%
   QC value within limits for P 214.914  Recovery = 102.75%
All analyte(s) passed QC.

==========================================================================================
Sequence No.: 13                                    Autosampler Location: 1
Sample ID: CCB                                      Date Collected: 6/5/2015 9:49:32 AM
Analyst:                                            Data Type: Reprocessed on 6/5/2015 9:59:58 AM
Logged In Analyst (Original) : peicp2
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

------------------------------------------------------------------------------------------
Nebulizer Parameters: CCB
Analyte                  Back Pressure    Flow
All                       234.0 kPa       0.40 L/min

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Mean Data: CCB
                    Mean Corrected        Calib.                          Sample
Analyte                Intensity     Conc. Units      Std.Dev.     Conc. Units      Std.Dev.   RSD
Y 371.029            3418263.7                                                     42998.74   1.26%
YRADIAL               290601.1                                                      8512.89   2.93%
Ga 417.206           1141626.3                                                     12018.09   1.05%
GaRADIAL               61962.3                                                      1461.16   2.36%
Ag 328.068†               91.4     0.00064 mg/L      0.000641     0.00064 mg/L      0.000641 100.13%
   QC value within limits for Ag 328.068  Recovery = Not calculated
Al 396.153†                5.8    -0.00038 mg/L      0.003386    -0.00038 mg/L      0.003386 881.41%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†                3.7    -0.00033 mg/L      0.002760    -0.00033 mg/L      0.002760 824.20%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†               -1.3     0.00209 mg/L      0.000056     0.00209 mg/L      0.000056   2.70%
   QC value within limits for Ba 233.527  Recovery = Not calculated
Be 234.861†               26.5     0.00019 mg/L      0.000044     0.00019 mg/L      0.000044  22.68%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†               207.6     0.00804 mg/L      0.000853     0.00804 mg/L      0.000853  10.61%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†                7.8      0.0906 mg/L       0.09121      0.0906 mg/L       0.09121 100.73%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†                3.9     0.00030 mg/L      0.000309     0.00030 mg/L      0.000309 104.36%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†                0.6     0.00013 mg/L      0.000338     0.00013 mg/L      0.000338 263.28%
   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†              -28.9     0.00088 mg/L      0.000135     0.00088 mg/L      0.000135  15.28%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†              281.3     0.00181 mg/L      0.000435     0.00181 mg/L      0.000435  24.06%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†               79.4     0.00613 mg/L      0.001632     0.00613 mg/L      0.001632  26.62%
   QC value within limits for Fe 239.562  Recovery = Not calculated
```

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Mg 279.077†              15.4    -0.00314 mg/L      0.004591    -0.00314 mg/L      0.004591 146.42%
   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†             694.5     0.00075 mg/L      0.000037     0.00075 mg/L      0.000037   5.01%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†              10.4     0.00604 mg/L      0.000300     0.00604 mg/L      0.000300   4.97%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†              10.5    -0.00051 mg/L      0.000436    -0.00051 mg/L      0.000436  84.91%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†               9.8     0.00078 mg/L      0.002466     0.00078 mg/L      0.002466 315.92%
   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†               2.1     0.00489 mg/L      0.000830     0.00489 mg/L      0.000830  16.99%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†              -3.1    -0.00843 mg/L      0.002577    -0.00843 mg/L      0.002577  30.57%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†              42.0      0.0120 mg/L       0.00242      0.0120 mg/L       0.00242  20.09%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†              11.3     0.00150 mg/L      0.001455     0.00150 mg/L      0.001455  96.92%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†               6.8     0.00369 mg/L      0.000040     0.00369 mg/L      0.000040   1.09%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†              -8.0    -0.00333 mg/L      0.001203    -0.00333 mg/L      0.001203  36.11%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†              -234.7     0.00124 mg/L      0.000615     0.00124 mg/L      0.000615  49.65%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†               9.5     0.00149 mg/L      0.000177     0.00149 mg/L      0.000177  11.93%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†               249.5       0.111 mg/L        0.0204       0.111 mg/L        0.0204  18.46%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†              988.1      0.0692 mg/L       0.02225      0.0692 mg/L       0.02225  32.17%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†              59.3     0.00143 mg/L      0.000049     0.00143 mg/L      0.000049   3.45%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†              236.9     0.00223 mg/L      0.001132     0.00223 mg/L      0.001132  50.71%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†               -3.1      0.0271 mg/L       0.00643      0.0271 mg/L       0.00643  23.73%
   QC value within limits for P 214.914  Recovery = Not calculated
All analyte(s) passed QC.
```

Approved: June 05, 2015

Lynn H. Rhoden

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Analysis Begun

Start Time: 6/5/2015 10:16:15 AM **Plasma On Time: 6/5/2015 7:30:23 AM**
Logged In Analyst: peicp2 **Technique: ICP Continuous**
Spectrometer Model: Optima 4300 DV, S/N 077N4011401 **Autosampler Model: Cetac**

Sample Information File: C:\pe\peicp2\Sample Information\FRIDAY1.sif
Batch ID:
Results Data Set: 060515HR
Results Library: C:\pe\peicp2\Results\results2.mdb

==========

Method Loaded
Method Name: 200.7-6010-3015 ASX **Method Last Saved: 5/28/2015 10:39:58 AM**
IEC File: PLUS-P.iec **SMF File:**
Method Description: STANDARD

==========

Sequence No.: 1 **Autosampler Location: 27**
Sample ID: PBW 4P WG526149-04 **Date Collected: 6/5/2015 10:16:17 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: PBW 4P WG526149-04

Analyte	Back Pressure	Flow
All	234.0 kPa	0.40 L/min

Mean Data: PBW 4P WG526149-04

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3501669.8						27733.78	0.79%
YRADIAL	291306.1						1934.13	0.66%
Ga 417.206	1155861.3						9735.52	0.84%
GaRADIAL	62218.0						677.89	1.09%
Ag 328.068†	42.8	0.00048	mg/L	0.000773	0.00048	mg/L	0.000773	161.51%
Al 396.153†	27.1	0.00471	mg/L	0.001603	0.00471	mg/L	0.001603	34.05%
As 188.979†	-3.4	-0.00547	mg/L	0.002565	-0.00547	mg/L	0.002565	46.92%
Ba 233.527†	1.7	0.00214	mg/L	0.000026	0.00214	mg/L	0.000026	1.23%
Be 234.861†	-18.7	0.00010	mg/L	0.000040	0.00010	mg/L	0.000040	38.31%
B 249.677†	10.5	0.00427	mg/L	0.000121	0.00427	mg/L	0.000121	2.83%
Ca 227.546†	-0.6	-0.00187	mg/L	0.068148	-0.00187	mg/L	0.068148	>999.9%
Cd 228.802†	7.6	0.00057	mg/L	0.000254	0.00057	mg/L	0.000254	44.17%
Co 228.616†	4.4	0.00039	mg/L	0.000053	0.00039	mg/L	0.000053	13.73%
Cr 267.716†	-2.3	0.00108	mg/L	0.000193	0.00108	mg/L	0.000193	17.91%
Cu 327.393†	170.8	0.00127	mg/L	0.000672	0.00127	mg/L	0.000672	53.11%
Fe 239.562†	57.5	0.00321	mg/L	0.000470	0.00321	mg/L	0.000470	14.64%
Mg 279.077†	20.4	-0.00156	mg/L	0.003602	-0.00156	mg/L	0.003602	231.19%
Mn 257.610†	146.5	-0.00006	mg/L	0.000043	-0.00006	mg/L	0.000043	74.55%
Mo 202.031†	1.3	0.00534	mg/L	0.000330	0.00534	mg/L	0.000330	6.17%
Ni 231.604†	9.8	-0.00054	mg/L	0.000105	-0.00054	mg/L	0.000105	19.69%
Pb 220.353†	-1.6	-0.00186	mg/L	0.002187	-0.00186	mg/L	0.002187	117.33%
Sb 206.836†	1.0	0.00389	mg/L	0.001402	0.00389	mg/L	0.001402	36.03%
Se 196.026†	0.9	-0.00091	mg/L	0.019136	-0.00091	mg/L	0.019136	>999.9%
Si 251.611†	90.6	0.0138	mg/L	0.00185	0.0138	mg/L	0.00185	13.48%
Sn 189.927†	2.1	-0.00004	mg/L	0.001576	-0.00004	mg/L	0.001576	>999.9%
Ti 334.940†	4.6	0.00368	mg/L	0.000139	0.00368	mg/L	0.000139	3.78%
Tl 190.801†	-12.2	-0.00646	mg/L	0.004917	-0.00646	mg/L	0.004917	76.08%
V 290.880†	-317.0	0.00084	mg/L	0.000905	0.00084	mg/L	0.000905	108.27%
Zn 206.200†	46.4	0.00281	mg/L	0.000256	0.00281	mg/L	0.000256	9.09%
K 766.490†	75.1	0.0224	mg/L	0.03778	0.0224	mg/L	0.03778	168.71%
Na 589.592†	221.0	-0.00097	mg/L	0.002222	-0.00097	mg/L	0.002222	228.98%
Sr 407.771†	281.3	0.00160	mg/L	0.000053	0.00160	mg/L	0.000053	3.33%
Li 670.784†	91.7	-0.00015	mg/L	0.000850	-0.00015	mg/L	0.000850	572.16%
P 214.914†	-15.4	0.00674	mg/L	0.003634	0.00674	mg/L	0.003634	53.91%

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Sequence No.: 2 **Autosampler Location: 28**

Approved: June 05, 2015

Lynn H. Rhoden

Sample ID: LCSW 4P WG526149-05
Analyst: KHR
Initial Sample Wt:
Dilution:

Date Collected: 6/5/2015 10:19:39 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: LCSW 4P WG526149-05

Analyte	Back Pressure	Flow
All	234.0 kPa	0.40 L/min

Mean Data: LCSW 4P WG526149-05

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3432289.6						32376.09	0.94%
YRADIAL	290714.0						5729.07	1.97%
Ga 417.206	1169268.5						12806.13	1.10%
GaRADIAL	62045.8						960.36	1.55%
Ag 328.068†	63459.1	0.211	mg/L	0.0020	0.211	mg/L	0.0020	0.95%
Al 396.153†	21602.4	5.13	mg/L	0.093	5.13	mg/L	0.093	1.82%
As 188.979†	277.5	0.196	mg/L	0.0033	0.196	mg/L	0.0033	1.70%
Ba 233.527†	31732.5	0.510	mg/L	0.0044	0.510	mg/L	0.0044	0.86%
Be 234.861†	12107.2	0.0242	mg/L	0.00019	0.0242	mg/L	0.00019	0.80%
B 249.677†	51769.3	0.996	mg/L	0.0159	0.996	mg/L	0.0159	1.60%
Ca 227.546†	455.9	5.03	mg/L	0.047	5.03	mg/L	0.047	0.93%
Cd 228.802†	372.5	0.0247	mg/L	0.00044	0.0247	mg/L	0.00044	1.78%
Co 228.616†	1515.3	0.102	mg/L	0.0015	0.102	mg/L	0.0015	1.44%
Cr 267.716†	34197.9	0.255	mg/L	0.0027	0.255	mg/L	0.0027	1.05%
Cu 327.393†	52705.4	0.259	mg/L	0.0038	0.259	mg/L	0.0038	1.45%
Fe 239.562†	15299.7	2.03	mg/L	0.029	2.03	mg/L	0.029	1.41%
Mg 279.077†	16228.4	5.07	mg/L	0.058	5.07	mg/L	0.058	1.15%
Mn 257.610†	172213.8	0.252	mg/L	0.0026	0.252	mg/L	0.0026	1.04%
Mo 202.031†	6651.3	0.515	mg/L	0.0061	0.515	mg/L	0.0061	1.19%
Ni 231.604†	7688.1	0.249	mg/L	0.0027	0.249	mg/L	0.0027	1.08%
Pb 220.353†	1098.6	0.255	mg/L	0.0023	0.255	mg/L	0.0023	0.91%
Sb 206.836†	711.5	0.611	mg/L	0.0145	0.611	mg/L	0.0145	2.36%
Se 196.026†	110.1	0.205	mg/L	0.0136	0.205	mg/L	0.0136	6.65%
Si 251.611†	72300.3	2.55	mg/L	0.019	2.55	mg/L	0.019	0.76%
Sn 189.927†	3070.2	0.516	mg/L	0.0079	0.516	mg/L	0.0079	1.54%
Ti 334.940†	537671.8	0.505	mg/L	0.0017	0.505	mg/L	0.0017	0.34%
Tl 190.801†	326.3	0.252	mg/L	0.0037	0.252	mg/L	0.0037	1.47%
V 290.880†	102932.2	0.508	mg/L	0.0038	0.508	mg/L	0.0038	0.75%
Zn 206.200†	13951.0	0.504	mg/L	0.0043	0.504	mg/L	0.0043	0.85%
K 766.490†	51106.7	25.8	mg/L	0.44	25.8	mg/L	0.44	1.69%
Na 589.592†	278112.7	25.5	mg/L	1.14	25.5	mg/L	1.14	4.45%
Sr 407.771†	635321.0	0.498	mg/L	0.0280	0.498	mg/L	0.0280	5.62%
Li 670.784†	31714.0	0.518	mg/L	0.0109	0.518	mg/L	0.0109	2.10%
P 214.914†	2945.8	4.90	mg/L	0.047	4.90	mg/L	0.047	0.96%

Sequence No.: 3
Sample ID: FBLK WG525914-01
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 29
Date Collected: 6/5/2015 10:22:05 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: FBLK WG525914-01

Analyte	Back Pressure	Flow
All	234.0 kPa	0.40 L/min

Mean Data: FBLK WG525914-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3415750.9						35426.44	1.04%
YRADIAL	284294.3						3530.36	1.24%
Ga 417.206	1124278.4						13075.81	1.16%
GaRADIAL	61059.0						534.30	0.88%
Ag 328.068†	-98.5	0.00002	mg/L	0.000468	0.00002	mg/L	0.000468	>999.9%
Al 396.153†	12.0	0.00109	mg/L	0.000998	0.00109	mg/L	0.000998	91.21%
As 188.979†	7.0	0.00207	mg/L	0.002684	0.00207	mg/L	0.002684	129.75%

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Ba 233.527†	13.5	0.00233 mg/L	0.000131	0.00233 mg/L	0.000131	5.62%
Be 234.861†	-43.4	0.00005 mg/L	0.000034	0.00005 mg/L	0.000034	61.68%
B 249.677†	319.9	0.0102 mg/L	0.00056	0.0102 mg/L	0.00056	5.53%
Ca 227.546†	4.5	0.0542 mg/L	0.04802	0.0542 mg/L	0.04802	88.61%
Cd 228.802†	3.0	0.00022 mg/L	0.000439	0.00022 mg/L	0.000439	196.62%
Co 228.616†	1.5	0.00019 mg/L	0.000155	0.00019 mg/L	0.000155	82.41%
Cr 267.716†	17.4	0.00123 mg/L	0.000172	0.00123 mg/L	0.000172	14.01%
Cu 327.393†	56.1	0.00070 mg/L	0.000643	0.00070 mg/L	0.000643	91.21%
Fe 239.562†	69.1	0.00476 mg/L	0.001306	0.00476 mg/L	0.001306	27.46%
Mg 279.077†	34.2	0.00277 mg/L	0.005931	0.00277 mg/L	0.005931	214.21%
Mn 257.610†	371.8	0.00027 mg/L	0.000027	0.00027 mg/L	0.000027	9.94%
Mo 202.031†	5.7	0.00568 mg/L	0.000653	0.00568 mg/L	0.000653	11.50%
Ni 231.604†	-5.2	-0.00102 mg/L	0.000231	-0.00102 mg/L	0.000231	22.60%
Pb 220.353†	6.3	-0.00004 mg/L	0.001683	-0.00004 mg/L	0.001683	>999.9%
Sb 206.836†	3.0	0.00563 mg/L	0.003949	0.00563 mg/L	0.003949	70.10%
Se 196.026†	4.2	0.00516 mg/L	0.007243	0.00516 mg/L	0.007243	140.48%
Si 251.611†	740.3	0.0367 mg/L	0.00120	0.0367 mg/L	0.00120	3.26%
Sn 189.927†	9.2	0.00115 mg/L	0.001098	0.00115 mg/L	0.001098	95.83%
Ti 334.940†	15.4	0.00369 mg/L	0.000155	0.00369 mg/L	0.000155	4.19%
Tl 190.801†	-6.4	-0.00213 mg/L	0.001404	-0.00213 mg/L	0.001404	65.78%
V 290.880†	-220.8	0.00131 mg/L	0.000694	0.00131 mg/L	0.000694	53.07%
Zn 206.200†	90.2	0.00439 mg/L	0.000260	0.00439 mg/L	0.000260	5.92%
K 766.490†	178.5	0.0747 mg/L	0.01027	0.0747 mg/L	0.01027	13.76%
Na 589.592†	1140.0	0.0831 mg/L	0.00891	0.0831 mg/L	0.00891	10.73%
Sr 407.771†	401.8	0.00170 mg/L	0.000071	0.00170 mg/L	0.000071	4.22%
Li 670.784†	162.3	0.00101 mg/L	0.000373	0.00101 mg/L	0.000373	37.04%
P 214.914†	-13.2	0.0104 mg/L	0.00570	0.0104 mg/L	0.00570	54.80%

Sequence No.: 4 **Autosampler Location: 30**
Sample ID: L1505110505 **Date Collected: 6/5/2015 10:25:27 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505110505

Analyte	Back Pressure	Flow
All	234.0 kPa	0.40 L/min

Mean Data: L1505110505

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3388509.7						74147.17	2.19%
YRADIAL	286803.3						5638.11	1.97%
Ga 417.206	1148647.6						25897.54	2.25%
GaRADIAL	61918.8						617.71	1.00%
Ag 328.068†	72.3	0.00058	mg/L	0.000844	0.00058	mg/L	0.000844	146.55%
Al 396.153†	34.4	0.00643	mg/L	0.001952	0.00643	mg/L	0.001952	30.36%
As 188.979†	-0.5	-0.00337	mg/L	0.005502	-0.00337	mg/L	0.005502	163.46%
Ba 233.527†	22.1	0.00246	mg/L	0.000101	0.00246	mg/L	0.000101	4.11%
Be 234.861†	-12.1	0.00012	mg/L	0.000012	0.00012	mg/L	0.000012	10.46%
B 249.677†	2595.4	0.0535	mg/L	0.00154	0.0535	mg/L	0.00154	2.89%
Ca 227.546†	8.2	0.0945	mg/L	0.09506	0.0945	mg/L	0.09506	100.62%
Cd 228.802†	1.2	0.00012	mg/L	0.000504	0.00012	mg/L	0.000504	414.25%
Co 228.616†	-6.3	-0.00035	mg/L	0.000083	-0.00035	mg/L	0.000083	24.05%
Cr 267.716†	122.9	0.00201	mg/L	0.000018	0.00201	mg/L	0.000018	0.91%
Cu 327.393†	368.0	0.00223	mg/L	0.000480	0.00223	mg/L	0.000480	21.52%
Fe 239.562†	54.9	0.00286	mg/L	0.000305	0.00286	mg/L	0.000305	10.65%
Mg 279.077†	14.0	-0.00355	mg/L	0.002226	-0.00355	mg/L	0.002226	62.63%
Mn 257.610†	197.8	0.00002	mg/L	0.000015	0.00002	mg/L	0.000015	87.14%
Mo 202.031†	4.5	0.00559	mg/L	0.000254	0.00559	mg/L	0.000254	4.53%
Ni 231.604†	14.4	-0.00039	mg/L	0.000165	-0.00039	mg/L	0.000165	42.62%
Pb 220.353†	-1.4	-0.00183	mg/L	0.000543	-0.00183	mg/L	0.000543	29.67%
Sb 206.836†	1.9	0.00470	mg/L	0.001550	0.00470	mg/L	0.001550	33.01%
Se 196.026†	2.8	0.00258	mg/L	0.002166	0.00258	mg/L	0.002166	83.85%
Si 251.611†	156521.3	5.53	mg/L	0.126	5.53	mg/L	0.126	2.28%
Sn 189.927†	8.2	0.00098	mg/L	0.001156	0.00098	mg/L	0.001156	118.24%
Ti 334.940†	185.1	0.00385	mg/L	0.000190	0.00385	mg/L	0.000190	4.92%
Tl 190.801†	-9.2	-0.00424	mg/L	0.001014	-0.00424	mg/L	0.001014	23.93%
V 290.880†	-262.5	0.00110	mg/L	0.001573	0.00110	mg/L	0.001573	142.61%

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Zn 206.200†	58.1	0.00324 mg/L	0.000052	0.00324 mg/L	0.000052	1.59%
K 766.490†	135.2	0.0451 mg/L	0.03369	0.0451 mg/L	0.03369	74.68%
Na 589.592†	84725.2	7.73 mg/L	0.032	7.73 mg/L	0.032	0.42%
Sr 407.771†	155.1	0.00150 mg/L	0.000026	0.00150 mg/L	0.000026	1.75%
Li 670.784†	140.1	0.00065 mg/L	0.002635	0.00065 mg/L	0.002635	408.23%
P 214.914†	3051.3	5.07 mg/L	0.130	5.07 mg/L	0.130	2.57%

Sequence No.: 5 **Autosampler Location: 31**
Sample ID: L1505110505DL WG526248-03 **Date Collected: 6/5/2015 10:28:49 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505110505DL WG526248-03

Analyte	Back Pressure	Flow
All	234.0 kPa	0.40 L/min

Mean Data: L1505110505DL WG526248-03

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3366104.0						50583.69	1.50%
YRADIAL	286412.2						4359.14	1.52%
Ga 417.206	1137409.4						12016.30	1.06%
GaRADIAL	62312.6						1014.86	1.63%
Ag 328.068†	-14.9	0.00029	mg/L	0.000376	0.00029	mg/L	0.000376	129.70%
Al 396.153†	13.0	0.00140	mg/L	0.002976	0.00140	mg/L	0.002976	212.99%
As 188.979†	1.9	-0.00165	mg/L	0.001587	-0.00165	mg/L	0.001587	96.29%
Ba 233.527†	8.5	0.00224	mg/L	0.000090	0.00224	mg/L	0.000090	4.03%
Be 234.861†	46.9	0.00024	mg/L	0.000044	0.00024	mg/L	0.000044	18.49%
B 249.677†	597.4	0.0154	mg/L	0.00012	0.0154	mg/L	0.00012	0.79%
Ca 227.546†	13.8	0.155	mg/L	0.0640	0.155	mg/L	0.0640	41.17%
Cd 228.802†	4.1	0.00032	mg/L	0.000088	0.00032	mg/L	0.000088	27.61%
Co 228.616†	-1.0	0.00002	mg/L	0.000573	0.00002	mg/L	0.000573	>999.9%
Cr 267.716†	12.8	0.00119	mg/L	0.000077	0.00119	mg/L	0.000077	6.44%
Cu 327.393†	162.1	0.00122	mg/L	0.000222	0.00122	mg/L	0.000222	18.14%
Fe 239.562†	25.7	-0.00103	mg/L	0.000722	-0.00103	mg/L	0.000722	69.95%
Mg 279.077†	-1.3	-0.00834	mg/L	0.001057	-0.00834	mg/L	0.001057	12.67%
Mn 257.610†	211.5	0.00004	mg/L	0.000035	0.00004	mg/L	0.000035	94.81%
Mo 202.031†	-11.7	0.00435	mg/L	0.000155	0.00435	mg/L	0.000155	3.57%
Ni 231.604†	5.5	-0.00067	mg/L	0.000500	-0.00067	mg/L	0.000500	74.37%
Pb 220.353†	7.3	0.00020	mg/L	0.001837	0.00020	mg/L	0.001837	904.69%
Sb 206.836†	-1.8	0.00153	mg/L	0.003956	0.00153	mg/L	0.003956	257.86%
Se 196.026†	3.5	0.00401	mg/L	0.010528	0.00401	mg/L	0.010528	262.79%
Si 251.611†	32846.4	1.17	mg/L	0.011	1.17	mg/L	0.011	0.95%
Sn 189.927†	2.6	0.00005	mg/L	0.001525	0.00005	mg/L	0.001525	>999.9%
Ti 334.940†	4.1	0.00369	mg/L	0.000147	0.00369	mg/L	0.000147	3.98%
Tl 190.801†	-17.1	-0.0101	mg/L	0.00216	-0.0101	mg/L	0.00216	21.40%
V 290.880†	6.2	0.00242	mg/L	0.001650	0.00242	mg/L	0.001650	68.15%
Zn 206.200†	101.1	0.00478	mg/L	0.000282	0.00478	mg/L	0.000282	5.90%
K 766.490†	110.8	0.0389	mg/L	0.02493	0.0389	mg/L	0.02493	64.16%
Na 589.592†	17720.4	1.60	mg/L	0.017	1.60	mg/L	0.017	1.05%
Sr 407.771†	47.0	0.00141	mg/L	0.000014	0.00141	mg/L	0.000014	0.99%
Li 670.784†	173.4	0.00119	mg/L	0.000758	0.00119	mg/L	0.000758	63.65%
P 214.914†	635.1	1.08	mg/L	0.018	1.08	mg/L	0.018	1.65%

Sequence No.: 6 **Autosampler Location: 32**
Sample ID: L1505110510 **Date Collected: 6/5/2015 10:32:11 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505110510

Analyte	Back Pressure	Flow
All	234.0 kPa	0.40 L/min

Mean Data: L1505110510

Approved: June 05, 2015

Kym H. Rhoden

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3445853.4						52498.21	1.52%
YRADIAL	286093.9						3655.33	1.28%
Ga 417.206	1156570.0						17625.23	1.52%
GaRADIAL	63149.3						884.23	1.40%
Ag 328.068†	108871.7	0.361	mg/L	0.0074	0.361	mg/L	0.0074	2.05%
Al 396.153†	4179.9	0.991	mg/L	0.0128	0.991	mg/L	0.0128	1.29%
As 188.979†	619.0	0.446	mg/L	0.0080	0.446	mg/L	0.0080	1.79%
Ba 233.527†	57065.4	0.915	mg/L	0.0171	0.915	mg/L	0.0171	1.87%
Be 234.861†	143611.9	0.288	mg/L	0.0071	0.288	mg/L	0.0071	2.47%
B 249.677†	51789.5	0.978	mg/L	0.0240	0.978	mg/L	0.0240	2.45%
Ca 227.546†	-210.0	-2.11	mg/L	0.124	-2.11	mg/L	0.124	5.86%
Cd 228.802†	8547.7	0.581	mg/L	0.0083	0.581	mg/L	0.0083	1.43%
Co 228.616†	6787.0	0.460	mg/L	0.0082	0.460	mg/L	0.0082	1.78%
Cr 267.716†	47467.4	0.354	mg/L	0.0064	0.354	mg/L	0.0064	1.82%
Cu 327.393†	60758.0	0.298	mg/L	0.0073	0.298	mg/L	0.0073	2.46%
Fe 239.562†	8987.5	1.19	mg/L	0.014	1.19	mg/L	0.014	1.17%
Mg 279.077†	191.7	0.0514	mg/L	0.00893	0.0514	mg/L	0.00893	17.36%
Mn 257.610†	852821.0	1.25	mg/L	0.014	1.25	mg/L	0.014	1.16%
Mo 202.031†	999.3	0.0826	mg/L	0.00099	0.0826	mg/L	0.00099	1.20%
Ni 231.604†	46256.9	1.50	mg/L	0.028	1.50	mg/L	0.028	1.86%
Pb 220.353†	3243.5	0.751	mg/L	0.0125	0.751	mg/L	0.0125	1.66%
Sb 206.836†	648.0	0.557	mg/L	0.0111	0.557	mg/L	0.0111	1.99%
Se 196.026†	173.3	0.323	mg/L	0.0067	0.323	mg/L	0.0067	2.06%
Si 251.611†	243529.5	8.59	mg/L	0.212	8.59	mg/L	0.212	2.46%
Sn 189.927†	10.7	0.00141	mg/L	0.000305	0.00141	mg/L	0.000305	21.70%
Ti 334.940†	302.7	0.00370	mg/L	0.000128	0.00370	mg/L	0.000128	3.44%
Tl 190.801†	402.8	0.305	mg/L	0.0038	0.305	mg/L	0.0038	1.26%
V 290.880†	231669.0	1.14	mg/L	0.023	1.14	mg/L	0.023	1.98%
Zn 206.200†	43334.3	1.56	mg/L	0.027	1.56	mg/L	0.027	1.76%
K 766.490†	-3.6	-0.0175	mg/L	0.04147	-0.0175	mg/L	0.04147	237.24%
Na 589.592†	602.1	0.0339	mg/L	0.01653	0.0339	mg/L	0.01653	48.79%
Sr 407.771†	209100.3	0.165	mg/L	0.0015	0.165	mg/L	0.0015	0.92%
Li 670.784†	111.3	0.00017	mg/L	0.000160	0.00017	mg/L	0.000160	92.68%
P 214.914†	-195.9	-0.292	mg/L	0.0094	-0.292	mg/L	0.0094	3.23%

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Sequence No.: 7
Sample ID: L1505110510DL WG526248-04
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 33
Date Collected: 6/5/2015 10:34:36 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1505110510DL WG526248-04

Analyte	Back Pressure	Flow
All	234.0 kPa	0.40 L/min

Mean Data: L1505110510DL WG526248-04

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3404272.2						35751.97	1.05%
YRADIAL	280502.3						3924.15	1.40%
Ga 417.206	1163156.4						15782.48	1.36%
GaRADIAL	61593.9						888.32	1.44%
Ag 328.068†	22436.4	0.0747	mg/L	0.00226	0.0747	mg/L	0.00226	3.03%
Al 396.153†	874.9	0.206	mg/L	0.0112	0.206	mg/L	0.0112	5.43%
As 188.979†	128.2	0.0900	mg/L	0.00535	0.0900	mg/L	0.00535	5.94%
Ba 233.527†	12035.4	0.195	mg/L	0.0034	0.195	mg/L	0.0034	1.72%
Be 234.861†	30230.2	0.0608	mg/L	0.00150	0.0608	mg/L	0.00150	2.47%
B 249.677†	11214.4	0.215	mg/L	0.0054	0.215	mg/L	0.0054	2.50%
Ca 227.546†	-28.6	-0.269	mg/L	0.0295	-0.269	mg/L	0.0295	10.94%
Cd 228.802†	1748.9	0.119	mg/L	0.0032	0.119	mg/L	0.0032	2.68%
Co 228.616†	1405.1	0.0953	mg/L	0.00126	0.0953	mg/L	0.00126	1.32%
Cr 267.716†	9690.8	0.0731	mg/L	0.00183	0.0731	mg/L	0.00183	2.50%
Cu 327.393†	12203.7	0.0603	mg/L	0.00139	0.0603	mg/L	0.00139	2.30%
Fe 239.562†	1811.6	0.237	mg/L	0.0118	0.237	mg/L	0.0118	4.97%
Mg 279.077†	38.0	0.00383	mg/L	0.008431	0.00383	mg/L	0.008431	220.39%
Mn 257.610†	175652.5	0.257	mg/L	0.0068	0.257	mg/L	0.0068	2.65%
Mo 202.031†	184.6	0.0195	mg/L	0.00107	0.0195	mg/L	0.00107	5.47%

Approved: June 05, 2015

Kym H. Rhoden

Ni 231.604†	9941.1	0.323	mg/L	0.0052	0.323	mg/L	0.0052	1.61%
Pb 220.353†	675.3	0.155	mg/L	0.0037	0.155	mg/L	0.0037	2.41%
Sb 206.836†	129.0	0.113	mg/L	0.0047	0.113	mg/L	0.0047	4.13%
Se 196.026†	36.8	0.0665	mg/L	0.00960	0.0665	mg/L	0.00960	14.44%
Si 251.611†	50157.0	1.78	mg/L	0.051	1.78	mg/L	0.051	2.88%
Sn 189.927†	3.1	0.00013	mg/L	0.001360	0.00013	mg/L	0.001360	>999.9%
Ti 334.940†	-47.5	0.00359	mg/L	0.000037	0.00359	mg/L	0.000037	1.04%
Tl 190.801†	77.7	0.0610	mg/L	0.00283	0.0610	mg/L	0.00283	4.64%
V 290.880†	47078.5	0.234	mg/L	0.0056	0.234	mg/L	0.0056	2.42%
Zn 206.200†	9388.3	0.339	mg/L	0.0053	0.339	mg/L	0.0053	1.58%
K 766.490†	-32.6	-0.0321	mg/L	0.02992	-0.0321	mg/L	0.02992	93.28%
Na 589.592†	-100.2	-0.0303	mg/L	0.00633	-0.0303	mg/L	0.00633	20.86%
Sr 407.771†	41508.8	0.0339	mg/L	0.00064	0.0339	mg/L	0.00064	1.89%
Li 670.784†	-41.5	-0.00233	mg/L	0.001365	-0.00233	mg/L	0.001365	58.49%
P 214.914†	-43.6	-0.0399	mg/L	0.00640	-0.0399	mg/L	0.00640	16.04%

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Sequence No.: 8 **Autosampler Location: 34**
Sample ID: L1505175205 **Date Collected: 6/5/2015 10:37:01 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505175205

Analyte	Back Pressure	Flow
All	234.0 kPa	0.40 L/min

Mean Data: L1505175205

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3288455.5						72679.28	2.21%
YRADIAL	278754.1						3387.19	1.22%
Ga 417.206	1136686.2						22255.25	1.96%
GaRADIAL	60470.7						368.64	0.61%
Ag 328.068†	808.3	0.00286	mg/L	0.000342	0.00286	mg/L	0.000342	11.96%
Al 396.153†	8.9	0.00007	mg/L	0.001334	0.00007	mg/L	0.001334	>999.9%
As 188.979†	-3.8	-0.00410	mg/L	0.002003	-0.00410	mg/L	0.002003	48.83%
Ba 233.527†	2604.0	0.0438	mg/L	0.00063	0.0438	mg/L	0.00063	1.43%
Be 234.861†	29.8	0.00020	mg/L	0.000033	0.00020	mg/L	0.000033	15.95%
B 249.677†	1035.2	0.0238	mg/L	0.00076	0.0238	mg/L	0.00076	3.19%
Ca 227.546†	7056.9	77.2	mg/L	0.73	77.2	mg/L	0.73	0.95%
Cd 228.802†	7.8	0.00059	mg/L	0.000593	0.00059	mg/L	0.000593	101.19%
Co 228.616†	-2.3	-0.00006	mg/L	0.000443	-0.00006	mg/L	0.000443	786.49%
Cr 267.716†	416.2	0.00418	mg/L	0.000134	0.00418	mg/L	0.000134	3.20%
Cu 327.393†	597.2	0.00334	mg/L	0.001727	0.00334	mg/L	0.001727	51.65%
Fe 239.562†	111.9	0.00988	mg/L	0.000631	0.00988	mg/L	0.000631	6.39%
Mg 279.077†	92590.6	29.0	mg/L	0.28	29.0	mg/L	0.28	0.96%
Mn 257.610†	9044.7	0.0130	mg/L	0.00014	0.0130	mg/L	0.00014	1.09%
Mo 202.031†	98.0	0.0127	mg/L	0.00048	0.0127	mg/L	0.00048	3.74%
Ni 231.604†	31.8	0.00019	mg/L	0.000354	0.00019	mg/L	0.000354	188.55%
Pb 220.353†	36.5	0.00697	mg/L	0.002583	0.00697	mg/L	0.002583	37.07%
Sb 206.836†	3.3	0.00583	mg/L	0.001620	0.00583	mg/L	0.001620	27.77%
Se 196.026†	-11.8	-0.0248	mg/L	0.00634	-0.0248	mg/L	0.00634	25.61%
Si 251.611†	462879.1	16.3	mg/L	0.32	16.3	mg/L	0.32	1.99%
Sn 189.927†	-0.7	-0.00051	mg/L	0.001224	-0.00051	mg/L	0.001224	239.37%
Ti 334.940†	-7108.1	0.00200	mg/L	0.000122	0.00200	mg/L	0.000122	6.11%
Tl 190.801†	-34.9	-0.0235	mg/L	0.00495	-0.0235	mg/L	0.00495	21.12%
V 290.880†	-1192.0	-0.00422	mg/L	0.001437	-0.00422	mg/L	0.001437	34.08%
Zn 206.200†	168.2	0.00721	mg/L	0.000522	0.00721	mg/L	0.000522	7.24%
K 766.490†	2875.9	1.26	mg/L	0.050	1.26	mg/L	0.050	4.00%
Na 589.592†	1915925.9	180	mg/L	4.8	180	mg/L	4.8	2.69%
Sr 407.771†	828399.9	0.647	mg/L	0.0211	0.647	mg/L	0.0211	3.27%
Li 670.784†	2032.6	0.0317	mg/L	0.00044	0.0317	mg/L	0.00044	1.40%
P 214.914†	101.0	0.199	mg/L	0.0138	0.199	mg/L	0.0138	6.92%

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Sequence No.: 9 **Autosampler Location: 35**
Sample ID: L1505175205PS WG526248-01 **Date Collected: 6/5/2015 10:40:28 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**

Approved: June 05, 2015

Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505175205PS WG526248-01

Analyte	Back Pressure	Flow
All	234.0 kPa	0.40 L/min

Mean Data: L1505175205PS WG526248-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3225298.0						48848.88	1.51%
YRADIAL	282563.7						2555.16	0.90%
Ga 417.206	1121151.8						17036.53	1.52%
GaRADIAL	60813.0						465.68	0.77%
Ag 328.068†	62825.2	0.209	mg/L	0.0042	0.209	mg/L	0.0042	2.01%
Al 396.153†	21115.2	5.01	mg/L	0.028	5.01	mg/L	0.028	0.55%
As 188.979†	277.6	0.198	mg/L	0.0126	0.198	mg/L	0.0126	6.39%
Ba 233.527†	33387.7	0.537	mg/L	0.0076	0.537	mg/L	0.0076	1.42%
Be 234.861†	12375.9	0.0247	mg/L	0.00036	0.0247	mg/L	0.00036	1.46%
B 249.677†	53751.6	1.03	mg/L	0.026	1.03	mg/L	0.026	2.55%
Ca 227.546†	6877.5	75.3	mg/L	1.56	75.3	mg/L	1.56	2.07%
Cd 228.802†	369.5	0.0245	mg/L	0.00072	0.0245	mg/L	0.00072	2.96%
Co 228.616†	1464.2	0.0990	mg/L	0.00184	0.0990	mg/L	0.00184	1.86%
Cr 267.716†	34253.6	0.255	mg/L	0.0037	0.255	mg/L	0.0037	1.44%
Cu 327.393†	50745.4	0.250	mg/L	0.0046	0.250	mg/L	0.0046	1.86%
Fe 239.562†	15100.9	2.01	mg/L	0.022	2.01	mg/L	0.022	1.12%
Mg 279.077†	96430.3	30.2	mg/L	0.25	30.2	mg/L	0.25	0.82%
Mn 257.610†	175516.5	0.257	mg/L	0.0040	0.257	mg/L	0.0040	1.57%
Mo 202.031†	6983.6	0.540	mg/L	0.0105	0.540	mg/L	0.0105	1.95%
Ni 231.604†	7414.8	0.240	mg/L	0.0052	0.240	mg/L	0.0052	2.15%
Pb 220.353†	1098.6	0.255	mg/L	0.0040	0.255	mg/L	0.0040	1.58%
Sb 206.836†	726.4	0.624	mg/L	0.0099	0.624	mg/L	0.0099	1.59%
Se 196.026†	100.4	0.187	mg/L	0.0110	0.187	mg/L	0.0110	5.89%
Si 251.611†	488732.2	17.2	mg/L	0.21	17.2	mg/L	0.21	1.20%
Sn 189.927†	3140.2	0.527	mg/L	0.0126	0.527	mg/L	0.0126	2.39%
Ti 334.940†	535517.3	0.508	mg/L	0.0046	0.508	mg/L	0.0046	0.91%
Tl 190.801†	299.6	0.232	mg/L	0.0097	0.232	mg/L	0.0097	4.17%
V 290.880†	105024.7	0.517	mg/L	0.0073	0.517	mg/L	0.0073	1.41%
Zn 206.200†	13728.7	0.496	mg/L	0.0075	0.496	mg/L	0.0075	1.51%
K 766.490†	53218.0	26.7	mg/L	0.12	26.7	mg/L	0.12	0.46%
Na 589.592†	1909584.2	179	mg/L	4.0	179	mg/L	4.0	2.24%
Sr 407.771†	1320163.5	1.03	mg/L	0.030	1.03	mg/L	0.030	2.90%
Li 670.784†	32254.9	0.527	mg/L	0.0047	0.527	mg/L	0.0047	0.89%
P 214.914†	3275.4	5.44	mg/L	0.092	5.44	mg/L	0.092	1.69%

Sequence No.: 10 **Autosampler Location: 36**
Sample ID: L1505175205DL WG526248-02 **Date Collected: 6/5/2015 10:42:53 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505175205DL WG526248-02

Analyte	Back Pressure	Flow
All	233.0 kPa	0.40 L/min

Mean Data: L1505175205DL WG526248-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3384488.0						17569.50	0.52%
YRADIAL	282233.9						3116.82	1.10%
Ga 417.206	1189620.0						7550.65	0.63%
GaRADIAL	61533.1						715.46	1.16%
Ag 328.068†	410.1	0.00166	mg/L	0.000556	0.00166	mg/L	0.000556	33.52%
Al 396.153†	-19.4	-0.00644	mg/L	0.001007	-0.00644	mg/L	0.001007	15.64%
As 188.979†	1.8	-0.00135	mg/L	0.003359	-0.00135	mg/L	0.003359	247.91%
Ba 233.527†	534.4	0.0107	mg/L	0.00003	0.0107	mg/L	0.00003	0.26%
Be 234.861†	87.7	0.00032	mg/L	0.000068	0.00032	mg/L	0.000068	21.26%
B 249.677†	621.6	0.0159	mg/L	0.00086	0.0159	mg/L	0.00086	5.40%

Approved: June 05, 2015

Kym H. Rhoden

Ca 227.546†	1399.2	15.3	mg/L	0.14	15.3	mg/L	0.14	0.90%
Cd 228.802†	0.7	0.00008	mg/L	0.000146	0.00008	mg/L	0.000146	177.84%
Co 228.616†	-2.2	-0.00007	mg/L	0.000193	-0.00007	mg/L	0.000193	293.93%
Cr 267.716†	47.5	0.00145	mg/L	0.000045	0.00145	mg/L	0.000045	3.08%
Cu 327.393†	359.6	0.00219	mg/L	0.001257	0.00219	mg/L	0.001257	57.42%
Fe 239.562†	34.5	0.00003	mg/L	0.000890	0.00003	mg/L	0.000890	>999.9%
Mg 279.077†	19382.0	6.06	mg/L	0.081	6.06	mg/L	0.081	1.33%
Mn 257.610†	1815.8	0.00239	mg/L	0.000020	0.00239	mg/L	0.000020	0.82%
Mo 202.031†	20.8	0.00684	mg/L	0.000784	0.00684	mg/L	0.000784	11.46%
Ni 231.604†	12.8	-0.00044	mg/L	0.000337	-0.00044	mg/L	0.000337	77.43%
Pb 220.353†	14.9	0.00197	mg/L	0.001762	0.00197	mg/L	0.001762	89.46%
Sb 206.836†	-1.2	0.00202	mg/L	0.000937	0.00202	mg/L	0.000937	46.43%
Se 196.026†	-5.5	-0.0130	mg/L	0.01571	-0.0130	mg/L	0.01571	120.66%
Si 251.611†	93108.4	3.29	mg/L	0.031	3.29	mg/L	0.031	0.94%
Sn 189.927†	-6.9	-0.00156	mg/L	0.000488	-0.00156	mg/L	0.000488	31.27%
Ti 334.940†	-1262.0	0.00348	mg/L	0.000219	0.00348	mg/L	0.000219	6.30%
Tl 190.801†	-14.2	-0.00796	mg/L	0.001009	-0.00796	mg/L	0.001009	12.67%
V 290.880†	-317.6	0.00067	mg/L	0.000568	0.00067	mg/L	0.000568	84.34%
Zn 206.200†	46.5	0.00282	mg/L	0.000129	0.00282	mg/L	0.000129	4.58%
K 766.490†	695.0	0.300	mg/L	0.0203	0.300	mg/L	0.0203	6.79%
Na 589.592†	399262.9	36.7	mg/L	0.20	36.7	mg/L	0.20	0.53%
Sr 407.771†	166377.6	0.131	mg/L	0.0003	0.131	mg/L	0.0003	0.26%
Li 670.784†	493.4	0.00644	mg/L	0.000119	0.00644	mg/L	0.000119	1.84%
P 214.914†	15.6	0.0580	mg/L	0.01339	0.0580	mg/L	0.01339	23.11%

Sequence No.: 11 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 6/5/2015 10:46:15 AM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	234.0 kPa	0.40 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3318794.9						48842.15	1.47%
YRADIAL	277489.8						6290.49	2.27%
Ga 417.206	1141001.6						17226.84	1.51%
GaRADIAL	59563.7						1279.90	2.15%
Ag 328.068†	126264.5	0.419	mg/L	0.0040	0.419	mg/L	0.0040	0.96%
QC value within limits for Ag 328.068 Recovery = 104.82%								
Al 396.153†	43931.5	10.4	mg/L	0.13	10.4	mg/L	0.13	1.27%
QC value within limits for Al 396.153 Recovery = 104.28%								
As 188.979†	573.0	0.408	mg/L	0.0001	0.408	mg/L	0.0001	0.01%
QC value within limits for As 188.979 Recovery = 102.10%								
Ba 233.527†	63661.6	1.02	mg/L	0.007	1.02	mg/L	0.007	0.72%
QC value within limits for Ba 233.527 Recovery = 102.14%								
Be 234.861†	25460.1	0.0507	mg/L	0.00031	0.0507	mg/L	0.00031	0.61%
QC value within limits for Be 234.861 Recovery = 101.39%								
B 249.677†	26597.4	0.524	mg/L	0.0056	0.524	mg/L	0.0056	1.06%
QC value within limits for B 249.677 Recovery = 104.83%								
Ca 227.546†	939.9	10.4	mg/L	0.08	10.4	mg/L	0.08	0.79%
QC value within limits for Ca 227.546 Recovery = 103.58%								
Cd 228.802†	764.6	0.0506	mg/L	0.00111	0.0506	mg/L	0.00111	2.19%
QC value within limits for Cd 228.802 Recovery = 101.27%								
Co 228.616†	3091.1	0.209	mg/L	0.0027	0.209	mg/L	0.0027	1.30%
QC value within limits for Co 228.616 Recovery = 104.46%								
Cr 267.716†	68950.7	0.513	mg/L	0.0042	0.513	mg/L	0.0042	0.81%
QC value within limits for Cr 267.716 Recovery = 102.63%								
Cu 327.393†	105306.8	0.518	mg/L	0.0042	0.518	mg/L	0.0042	0.82%
QC value within limits for Cu 327.393 Recovery = 103.56%								
Fe 239.562†	31350.2	4.17	mg/L	0.085	4.17	mg/L	0.085	2.04%
QC value within limits for Fe 239.562 Recovery = 104.28%								
Mg 279.077†	33531.8	10.5	mg/L	0.21	10.5	mg/L	0.21	2.00%
QC value within limits for Mg 279.077 Recovery = 104.90%								
Mn 257.610†	352569.8	0.517	mg/L	0.0044	0.517	mg/L	0.0044	0.85%

Approved: June 05, 2015

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   QC value within limits for Mn 257.610  Recovery = 103.39%
Mo 202.031†            13089.5        1.01 mg/L        0.017        1.01 mg/L         0.017   1.66%
   QC value within limits for Mo 202.031  Recovery = 100.84%
Ni 231.604†            16171.5       0.525 mg/L       0.0067       0.525 mg/L        0.0067   1.27%
   QC value within limits for Ni 231.604  Recovery = 105.01%
Pb 220.353†             2258.8       0.525 mg/L       0.0089       0.525 mg/L        0.0089   1.69%
   QC value within limits for Pb 220.353  Recovery = 104.99%
Sb 206.836†             1458.3        1.25 mg/L        0.017        1.25 mg/L         0.017   1.35%
   QC value within limits for Sb 206.836  Recovery = 104.18%
Se 196.026†              221.3       0.415 mg/L       0.0039       0.415 mg/L        0.0039   0.94%
   QC value within limits for Se 196.026  Recovery = 103.71%
Si 251.611†           146869.8        5.18 mg/L        0.053        5.18 mg/L         0.053   1.03%
   QC value within limits for Si 251.611  Recovery = 103.53%
Sn 189.927†             6231.2        1.05 mg/L        0.015        1.05 mg/L         0.015   1.39%
   QC value within limits for Sn 189.927  Recovery = 104.69%
Ti 334.940†          1085058.7        1.02 mg/L        0.016        1.02 mg/L         0.016   1.60%
   QC value within limits for Ti 334.940  Recovery = 101.64%
Tl 190.801†              679.3       0.521 mg/L       0.0100       0.521 mg/L        0.0100   1.93%
   QC value within limits for Tl 190.801  Recovery = 104.11%
V 290.880†            209525.8        1.03 mg/L        0.009        1.03 mg/L         0.009   0.84%
   QC value within limits for V 290.880  Recovery = 103.10%
Zn 206.200†            28664.4        1.03 mg/L        0.010        1.03 mg/L         0.010   1.01%
   QC value within limits for Zn 206.200  Recovery = 103.41%
K 766.490†            104282.7        52.4 mg/L         0.80        52.4 mg/L          0.80   1.52%
   QC value within limits for K 766.490  Recovery = 104.78%
Na 589.592†           570805.2        52.6 mg/L         0.70        52.6 mg/L          0.70   1.32%
   QC value within limits for Na 589.592  Recovery = 105.13%
Sr 407.771†          1302226.2        1.02 mg/L        0.014        1.02 mg/L         0.014   1.33%
   QC value within limits for Sr 407.771  Recovery = 101.95%
Li 670.784†            63533.1        1.04 mg/L        0.020        1.04 mg/L         0.020   1.93%
   QC value within limits for Li 670.784  Recovery = 104.00%
P 214.914†              6215.1        10.3 mg/L         0.11        10.3 mg/L          0.11   1.08%
   QC value within limits for P 214.914  Recovery = 103.02%
All analyte(s) passed QC.

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Sequence No.: 12                                    Autosampler Location: 1
Sample ID: CCB                                      Date Collected: 6/5/2015 10:48:44 AM
Analyst:                                            Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

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Nebulizer Parameters: CCB
Analyte                  Back Pressure     Flow
All                      234.0 kPa         0.40 L/min

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Mean Data: CCB
                    Mean Corrected          Calib.                          Sample
Analyte                Intensity      Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029            3315299.1                                                        65895.00   1.99%
YRADIAL               273596.8                                                          701.40   0.26%
Ga 417.206           1116648.5                                                        24975.22   2.24%
GaRADIAL               58922.5                                                          180.16   0.31%
Ag 328.068†               50.7     0.00051 mg/L      0.000989     0.00051 mg/L      0.000989 195.44%
   QC value within limits for Ag 328.068  Recovery = Not calculated
Al 396.153†               -4.4    -0.00282 mg/L      0.004733    -0.00282 mg/L      0.004733 167.55%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†                6.5     0.00167 mg/L      0.002417     0.00167 mg/L      0.002417 144.71%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†                3.5     0.00217 mg/L      0.000092     0.00217 mg/L      0.000092   4.27%
   QC value within limits for Ba 233.527  Recovery = Not calculated
Be 234.861†               24.2     0.00019 mg/L      0.000039     0.00019 mg/L      0.000039  20.29%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†               329.5      0.0104 mg/L       0.00052      0.0104 mg/L       0.00052   5.03%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†               10.7       0.122 mg/L        0.0201       0.122 mg/L        0.0201  16.47%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†                0.5     0.00005 mg/L      0.000246     0.00005 mg/L      0.000246 508.21%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†              -10.9    -0.00065 mg/L      0.000209    -0.00065 mg/L      0.000209  32.07%
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   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†              24.4     0.00128 mg/L      0.000211     0.00128 mg/L      0.000211  16.48%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†             356.8     0.00218 mg/L      0.001349     0.00218 mg/L      0.001349  61.95%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†              39.6     0.00082 mg/L      0.000593     0.00082 mg/L      0.000593  71.94%
   QC value within limits for Fe 239.562  Recovery = Not calculated
Mg 279.077†              13.4    -0.00374 mg/L      0.003293    -0.00374 mg/L      0.003293  87.99%
   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†             311.1     0.00018 mg/L      0.000022     0.00018 mg/L      0.000022  11.94%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†              13.6     0.00628 mg/L      0.000265     0.00628 mg/L      0.000265   4.22%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†               7.1    -0.00062 mg/L      0.000530    -0.00062 mg/L      0.000530  84.99%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†               5.8    -0.00016 mg/L      0.001191    -0.00016 mg/L      0.001191 750.52%
   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†              -1.7     0.00160 mg/L      0.001702     0.00160 mg/L      0.001702 106.28%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†              -4.5     -0.0111 mg/L       0.00929     -0.0111 mg/L       0.00929  83.59%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†             105.0      0.0142 mg/L       0.00093      0.0142 mg/L       0.00093   6.51%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†              12.7     0.00175 mg/L      0.001139     0.00175 mg/L      0.001139  65.12%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†              61.1     0.00374 mg/L      0.000028     0.00374 mg/L      0.000028   0.74%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†              -8.2    -0.00347 mg/L      0.002050    -0.00347 mg/L      0.002050  59.05%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†              -82.5     0.00199 mg/L      0.000384     0.00199 mg/L      0.000384  19.36%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†               3.8     0.00129 mg/L      0.000134     0.00129 mg/L      0.000134  10.38%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†              223.2      0.0973 mg/L       0.04218      0.0973 mg/L       0.04218  43.36%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†            1512.0       0.117 mg/L        0.0213       0.117 mg/L        0.0213  18.21%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†             -47.5     0.00134 mg/L      0.000010     0.00134 mg/L      0.000010   0.78%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†             277.6     0.00290 mg/L      0.001561     0.00290 mg/L      0.001561  53.85%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†               -9.7      0.0161 mg/L       0.00628      0.0161 mg/L       0.00628  39.04%
   QC value within limits for P 214.914  Recovery = Not calculated
All analyte(s) passed QC.

==============================================================================================
Sequence No.: 13                                    Autosampler Location: 37
Sample ID: L1505175207                              Date Collected: 6/5/2015 10:52:05 AM
Analyst: KHR                                        Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

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Nebulizer Parameters: L1505175207
Analyte                 Back Pressure    Flow
All                    234.0 kPa        0.40 L/min

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Mean Data: L1505175207
                   Mean Corrected         Calib.                          Sample
Analyte               Intensity     Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029            3348798.5                                                    44502.88   1.33%
YRADIAL               279296.8                                                     4062.10   1.45%
Ga 417.206           1171487.3                                                    17133.75   1.46%
GaRADIAL               60893.9                                                      869.68   1.43%
Ag 328.068†              240.9     0.00100 mg/L      0.000429     0.00100 mg/L      0.000429  42.79%
Al 396.153†               11.8     0.00091 mg/L      0.002264     0.00091 mg/L      0.002264 247.79%
As 188.979†                9.1     0.00391 mg/L      0.000820     0.00391 mg/L      0.000820  20.94%
Ba 233.527†             5131.3      0.0842 mg/L       0.00147      0.0842 mg/L       0.00147   1.74%
Be 234.861†               22.6     0.00015 mg/L      0.000029     0.00015 mg/L      0.000029  19.50%
B 249.677†              2122.9      0.0452 mg/L       0.00091      0.0452 mg/L       0.00091   2.01%
Ca 227.546†             1359.1        14.9 mg/L          0.22        14.9 mg/L          0.22   1.48%
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Cd 228.802†	4.5	0.00032	mg/L	0.000080	0.00032	mg/L	0.000080	25.35%
Co 228.616†	0.2	0.00008	mg/L	0.000355	0.00008	mg/L	0.000355	461.87%
Cr 267.716†	333.7	0.00357	mg/L	0.000146	0.00357	mg/L	0.000146	4.10%
Cu 327.393†	722.2	0.00397	mg/L	0.000875	0.00397	mg/L	0.000875	22.02%
Fe 239.562†	1375.8	0.179	mg/L	0.0018	0.179	mg/L	0.0018	1.02%
Mg 279.077†	28130.3	8.80	mg/L	0.064	8.80	mg/L	0.064	0.73%
Mn 257.610†	22893.7	0.0333	mg/L	0.00043	0.0333	mg/L	0.00043	1.29%
Mo 202.031†	54.2	0.00940	mg/L	0.000503	0.00940	mg/L	0.000503	5.35%
Ni 231.604†	19.6	-0.00021	mg/L	0.000227	-0.00021	mg/L	0.000227	105.97%
Pb 220.353†	15.4	0.00206	mg/L	0.002522	0.00206	mg/L	0.002522	122.58%
Sb 206.836†	-2.5	0.00092	mg/L	0.000995	0.00092	mg/L	0.000995	107.94%
Se 196.026†	3.5	0.00384	mg/L	0.006151	0.00384	mg/L	0.006151	160.04%
Si 251.611†	370973.4	13.1	mg/L	0.23	13.1	mg/L	0.23	1.79%
Sn 189.927†	5.8	0.00058	mg/L	0.001275	0.00058	mg/L	0.001275	221.61%
Ti 334.940†	-1230.9	0.00348	mg/L	0.000165	0.00348	mg/L	0.000165	4.75%
Tl 190.801†	-15.6	-0.00903	mg/L	0.001848	-0.00903	mg/L	0.001848	20.45%
V 290.880†	-399.6	0.00022	mg/L	0.000469	0.00022	mg/L	0.000469	213.34%
Zn 206.200†	242.8	0.00988	mg/L	0.000239	0.00988	mg/L	0.000239	2.42%
K 766.490†	16643.9	8.31	mg/L	0.093	8.31	mg/L	0.093	1.12%
Na 589.592†	1036274.4	96.1	mg/L	1.01	96.1	mg/L	1.01	1.05%
Sr 407.771†	1290283.1	1.01	mg/L	0.011	1.01	mg/L	0.011	1.12%
Li 670.784†	3665.5	0.0584	mg/L	0.00274	0.0584	mg/L	0.00274	4.69%
P 214.914†	8.6	0.0464	mg/L	0.00581	0.0464	mg/L	0.00581	12.51%

Sequence No.: 14 **Autosampler Location: 38**
Sample ID: L1505175209 **Date Collected: 6/5/2015 10:55:27 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505175209

Analyte	Back Pressure	Flow
All	233.0 kPa	0.40 L/min

Mean Data: L1505175209

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3160751.4						29521.65	0.93%
YRADIAL	273576.9						8392.41	3.07%
Ga 417.206	1110470.8						11453.41	1.03%
GaRADIAL	59145.2						1876.54	3.17%
Ag 328.068†	1346.8	0.00404	mg/L	0.000518	0.00404	mg/L	0.000518	12.83%
Al 396.153†	97.6	0.0213	mg/L	0.00428	0.0213	mg/L	0.00428	20.09%
As 188.979†	-3.8	-0.00289	mg/L	0.001139	-0.00289	mg/L	0.001139	39.37%
Ba 233.527†	9362.3	0.152	mg/L	0.0017	0.152	mg/L	0.0017	1.09%
Be 234.861†	3.3	0.00014	mg/L	0.000047	0.00014	mg/L	0.000047	33.23%
B 249.677†	666.1	0.0170	mg/L	0.00038	0.0170	mg/L	0.00038	2.22%
Ca 227.546†	12061.1	132	mg/L	1.7	132	mg/L	1.7	1.30%
Cd 228.802†	7.0	0.00053	mg/L	0.000245	0.00053	mg/L	0.000245	45.79%
Co 228.616†	-3.0	-0.00014	mg/L	0.000472	-0.00014	mg/L	0.000472	336.35%
Cr 267.716†	572.5	0.00534	mg/L	0.000173	0.00534	mg/L	0.000173	3.24%
Cu 327.393†	311.1	0.00194	mg/L	0.000536	0.00194	mg/L	0.000536	27.68%
Fe 239.562†	495.9	0.0605	mg/L	0.00199	0.0605	mg/L	0.00199	3.28%
Mg 279.077†	172836.5	54.1	mg/L	0.64	54.1	mg/L	0.64	1.19%
Mn 257.610†	33449.6	0.0488	mg/L	0.00111	0.0488	mg/L	0.00111	2.28%
Mo 202.031†	70.7	0.0107	mg/L	0.00091	0.0107	mg/L	0.00091	8.56%
Ni 231.604†	54.5	0.00093	mg/L	0.000163	0.00093	mg/L	0.000163	17.64%
Pb 220.353†	45.1	0.00895	mg/L	0.000757	0.00895	mg/L	0.000757	8.46%
Sb 206.836†	-4.6	-0.00092	mg/L	0.007709	-0.00092	mg/L	0.007709	834.12%
Se 196.026†	-12.0	-0.0252	mg/L	0.01200	-0.0252	mg/L	0.01200	47.53%
Si 251.611†	478533.3	16.9	mg/L	0.40	16.9	mg/L	0.40	2.39%
Sn 189.927†	-27.0	-0.00492	mg/L	0.001385	-0.00492	mg/L	0.001385	28.12%
Ti 334.940†	-11477.2	0.00144	mg/L	0.000120	0.00144	mg/L	0.000120	8.34%
Tl 190.801†	-32.6	-0.0218	mg/L	0.00421	-0.0218	mg/L	0.00421	19.28%
V 290.880†	-1535.8	-0.00655	mg/L	0.001489	-0.00655	mg/L	0.001489	22.73%
Zn 206.200†	136.4	0.00608	mg/L	0.000203	0.00608	mg/L	0.000203	3.34%
K 766.490†	5658.5	2.55	mg/L	0.068	2.55	mg/L	0.068	2.68%
Na 589.592†	3074911.1	293	mg/L	6.2	293	mg/L	6.2	2.12%
Sr 407.771†	4727730.9	3.69	mg/L	0.077	3.69	mg/L	0.077	2.09%

Approved: June 05, 2015

Li 670.784†	3983.8	0.0637	mg/L	0.00224	0.0637	mg/L	0.00224 3.52%
P 214.914†	53.3	0.120	mg/L	0.0156	0.120	mg/L	0.0156 13.00%

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Sequence No.: 15 **Autosampler Location: 39**
Sample ID: L1505175301 **Date Collected: 6/5/2015 10:58:53 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505175301

Analyte	Back Pressure	Flow
All	234.0 kPa	0.40 L/min

Mean Data: L1505175301

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3368061.9						35480.64	1.05%
YRADIAL	282989.5						3386.76	1.20%
Ga 417.206	1161818.9						13575.77	1.17%
GaRADIAL	61336.2						766.07	1.25%
Ag 328.068†	432.1	0.00175	mg/L	0.000588	0.00175	mg/L	0.000588	33.60%
Al 396.153†	91.3	0.0199	mg/L	0.00546	0.0199	mg/L	0.00546	27.44%
As 188.979†	0.5	-0.00187	mg/L	0.003732	-0.00187	mg/L	0.003732	199.39%
Ba 233.527†	514.6	0.0103	mg/L	0.00004	0.0103	mg/L	0.00004	0.43%
Be 234.861†	-14.1	0.00011	mg/L	0.000027	0.00011	mg/L	0.000027	23.86%
B 249.677†	42.7	0.00490	mg/L	0.000060	0.00490	mg/L	0.000060	1.22%
Ca 227.546†	3395.5	37.1	mg/L	0.46	37.1	mg/L	0.46	1.24%
Cd 228.802†	1.5	0.00014	mg/L	0.000244	0.00014	mg/L	0.000244	175.17%
Co 228.616†	-5.8	-0.00030	mg/L	0.000304	-0.00030	mg/L	0.000304	100.04%
Cr 267.716†	81.8	0.00170	mg/L	0.000131	0.00170	mg/L	0.000131	7.70%
Cu 327.393†	-22.4	0.00032	mg/L	0.000127	0.00032	mg/L	0.000127	39.78%
Fe 239.562†	66.9	0.00435	mg/L	0.000714	0.00435	mg/L	0.000714	16.43%
Mg 279.077†	18220.1	5.70	mg/L	0.058	5.70	mg/L	0.058	1.02%
Mn 257.610†	1902.9	0.00252	mg/L	0.000021	0.00252	mg/L	0.000021	0.84%
Mo 202.031†	36.5	0.00804	mg/L	0.000951	0.00804	mg/L	0.000951	11.83%
Ni 231.604†	19.6	-0.00021	mg/L	0.000241	-0.00021	mg/L	0.000241	113.64%
Pb 220.353†	25.1	0.00432	mg/L	0.001602	0.00432	mg/L	0.001602	37.06%
Sb 206.836†	0.2	0.00322	mg/L	0.004259	0.00322	mg/L	0.004259	132.19%
Se 196.026†	-7.4	-0.0165	mg/L	0.01687	-0.0165	mg/L	0.01687	102.29%
Si 251.611†	69798.4	2.47	mg/L	0.060	2.47	mg/L	0.060	2.42%
Sn 189.927†	-13.5	-0.00266	mg/L	0.000397	-0.00266	mg/L	0.000397	14.91%
Ti 334.940†	-3465.9	0.00283	mg/L	0.000255	0.00283	mg/L	0.000255	9.04%
Tl 190.801†	-20.0	-0.0123	mg/L	0.00571	-0.0123	mg/L	0.00571	46.27%
V 290.880†	-388.3	0.00034	mg/L	0.000882	0.00034	mg/L	0.000882	262.32%
Zn 206.200†	68.1	0.00360	mg/L	0.000053	0.00360	mg/L	0.000053	1.47%
K 766.490†	969.2	0.473	mg/L	0.0491	0.473	mg/L	0.0491	10.38%
Na 589.592†	23517.3	2.13	mg/L	0.129	2.13	mg/L	0.129	6.08%
Sr 407.771†	44622.7	0.0351	mg/L	0.00010	0.0351	mg/L	0.00010	0.29%
Li 670.784†	-16.7	-0.00193	mg/L	0.001029	-0.00193	mg/L	0.001029	53.39%
P 214.914†	-7.9	0.0192	mg/L	0.00429	0.0192	mg/L	0.00429	22.30%

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Sequence No.: 16 **Autosampler Location: 40**
Sample ID: L1505175302 **Date Collected: 6/5/2015 11:02:14 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505175302

Analyte	Back Pressure	Flow
All	233.0 kPa	0.40 L/min

Mean Data: L1505175302

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3412283.3						14758.47	0.43%
YRADIAL	287300.9						9238.89	3.22%

Approved: June 05, 2015

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Ga 417.206	1177860.5						1229.08	0.10%
GaRADIAL	61820.0						1887.68	3.05%
Ag 328.068†	407.5	0.00167	mg/L	0.000687	0.00167	mg/L	0.000687	41.07%
Al 396.153†	106.3	0.0235	mg/L	0.00184	0.0235	mg/L	0.00184	7.83%
As 188.979†	-1.8	-0.00359	mg/L	0.008000	-0.00359	mg/L	0.008000	223.01%
Ba 233.527†	456.3	0.00941	mg/L	0.000329	0.00941	mg/L	0.000329	3.49%
Be 234.861†	-0.9	0.00014	mg/L	0.000017	0.00014	mg/L	0.000017	11.92%
B 249.677†	255.7	0.00897	mg/L	0.000103	0.00897	mg/L	0.000103	1.15%
Ca 227.546†	3213.3	35.1	mg/L	0.35	35.1	mg/L	0.35	1.01%
Cd 228.802†	2.5	0.00022	mg/L	0.000088	0.00022	mg/L	0.000088	40.21%
Co 228.616†	-5.9	-0.00030	mg/L	0.000184	-0.00030	mg/L	0.000184	60.32%
Cr 267.716†	101.8	0.00185	mg/L	0.000065	0.00185	mg/L	0.000065	3.49%
Cu 327.393†	187.0	0.00134	mg/L	0.000127	0.00134	mg/L	0.000127	9.49%
Fe 239.562†	97.9	0.00849	mg/L	0.000328	0.00849	mg/L	0.000328	3.86%
Mg 279.077†	17103.0	5.35	mg/L	0.150	5.35	mg/L	0.150	2.81%
Mn 257.610†	3803.6	0.00531	mg/L	0.000048	0.00531	mg/L	0.000048	0.91%
Mo 202.031†	38.2	0.00817	mg/L	0.000123	0.00817	mg/L	0.000123	1.51%
Ni 231.604†	1.6	-0.00080	mg/L	0.000147	-0.00080	mg/L	0.000147	18.32%
Pb 220.353†	36.6	0.00700	mg/L	0.000747	0.00700	mg/L	0.000747	10.67%
Sb 206.836†	0.8	0.00370	mg/L	0.003516	0.00370	mg/L	0.003516	94.92%
Se 196.026†	-3.4	-0.00897	mg/L	0.007404	-0.00897	mg/L	0.007404	82.53%
Si 251.611†	67905.4	2.40	mg/L	0.022	2.40	mg/L	0.022	0.90%
Sn 189.927†	-13.8	-0.00271	mg/L	0.000436	-0.00271	mg/L	0.000436	16.08%
Ti 334.940†	-3250.9	0.00290	mg/L	0.000103	0.00290	mg/L	0.000103	3.57%
Tl 190.801†	-17.7	-0.0106	mg/L	0.00550	-0.0106	mg/L	0.00550	51.81%
V 290.880†	-385.7	0.00036	mg/L	0.000381	0.00036	mg/L	0.000381	106.08%
Zn 206.200†	167.1	0.00715	mg/L	0.000188	0.00715	mg/L	0.000188	2.64%
K 766.490†	920.3	0.449	mg/L	0.0167	0.449	mg/L	0.0167	3.73%
Na 589.592†	19309.6	1.74	mg/L	0.012	1.74	mg/L	0.012	0.66%
Sr 407.771†	41505.1	0.0327	mg/L	0.00020	0.0327	mg/L	0.00020	0.60%
Li 670.784†	52.2	-0.00080	mg/L	0.000981	-0.00080	mg/L	0.000981	123.12%
P 214.914†	-11.4	0.0134	mg/L	0.00679	0.0134	mg/L	0.00679	50.79%

Sequence No.: 17 **Autosampler Location: 41**
Sample ID: L1505175303 WG526149-01 **Date Collected: 6/5/2015 11:05:36 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505175303 WG526149-01

Analyte	Back Pressure	Flow
All	233.0 kPa	0.40 L/min

Mean Data: L1505175303 WG526149-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3452588.6						9722.59	0.28%
YRADIAL	285900.9						6357.14	2.22%
Ga 417.206	1193786.3						2683.99	0.22%
GaRADIAL	61895.5						916.25	1.48%
Ag 328.068†	397.0	0.00168	mg/L	0.000345	0.00168	mg/L	0.000345	20.54%
Al 396.153†	9.5	0.00041	mg/L	0.002862	0.00041	mg/L	0.002862	701.40%
As 188.979†	-4.7	-0.00561	mg/L	0.001389	-0.00561	mg/L	0.001389	24.73%
Ba 233.527†	432.1	0.00902	mg/L	0.000136	0.00902	mg/L	0.000136	1.51%
Be 234.861†	15.3	0.00015	mg/L	0.000037	0.00015	mg/L	0.000037	24.31%
B 249.677†	379.7	0.0117	mg/L	0.00047	0.0117	mg/L	0.00047	4.07%
Ca 227.546†	3282.8	35.9	mg/L	0.40	35.9	mg/L	0.40	1.13%
Cd 228.802†	0.5	0.00009	mg/L	0.000505	0.00009	mg/L	0.000505	535.80%
Co 228.616†	-2.9	-0.00011	mg/L	0.000256	-0.00011	mg/L	0.000256	238.22%
Cr 267.716†	106.5	0.00189	mg/L	0.000300	0.00189	mg/L	0.000300	15.89%
Cu 327.393†	67.0	0.00077	mg/L	0.000539	0.00077	mg/L	0.000539	70.37%
Fe 239.562†	758.5	0.0965	mg/L	0.00363	0.0965	mg/L	0.00363	3.77%
Mg 279.077†	17517.7	5.48	mg/L	0.165	5.48	mg/L	0.165	3.01%
Mn 257.610†	9910.7	0.0143	mg/L	0.00051	0.0143	mg/L	0.00051	3.59%
Mo 202.031†	40.2	0.00832	mg/L	0.000468	0.00832	mg/L	0.000468	5.62%
Ni 231.604†	12.7	-0.00044	mg/L	0.000579	-0.00044	mg/L	0.000579	132.80%
Pb 220.353†	23.2	0.00389	mg/L	0.004370	0.00389	mg/L	0.004370	112.43%
Sb 206.836†	0.4	0.00338	mg/L	0.000784	0.00338	mg/L	0.000784	23.21%
Se 196.026†	-3.2	-0.00872	mg/L	0.007538	-0.00872	mg/L	0.007538	86.45%

Approved: June 05, 2015

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Si 251.611†	67966.9	2.41	mg/L	0.095	2.41	mg/L	0.095	3.94%
Sn 189.927†	-11.7	-0.00235	mg/L	0.001187	-0.00235	mg/L	0.001187	50.43%
Ti 334.940†	-3019.3	0.00316	mg/L	0.000466	0.00316	mg/L	0.000466	14.73%
Tl 190.801†	-24.7	-0.0158	mg/L	0.00259	-0.0158	mg/L	0.00259	16.31%
V 290.880†	-319.1	0.00070	mg/L	0.001517	0.00070	mg/L	0.001517	218.11%
Zn 206.200†	90.7	0.00441	mg/L	0.000064	0.00441	mg/L	0.000064	1.45%
K 766.490†	869.1	0.423	mg/L	0.0382	0.423	mg/L	0.0382	9.03%
Na 589.592†	18901.9	1.71	mg/L	0.034	1.71	mg/L	0.034	2.01%
Sr 407.771†	41885.1	0.0330	mg/L	0.00052	0.0330	mg/L	0.00052	1.58%
Li 670.784†	84.5	-0.00027	mg/L	0.001089	-0.00027	mg/L	0.001089	408.00%
P 214.914†	-5.0	0.0240	mg/L	0.00813	0.0240	mg/L	0.00813	33.90%

Sequence No.: 18 **Autosampler Location: 42**
Sample ID: L1505175304MS WG526149-06 **Date Collected: 6/5/2015 11:09:01 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505175304MS WG526149-06

Analyte	Back Pressure	Flow
All	234.0 kPa	0.40 L/min

Mean Data: L1505175304MS WG526149-06

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3409580.2						7539.74	0.22%
YRADIAL	289638.8						3687.88	1.27%
Ga 417.206	1184400.9						5502.84	0.46%
GaRADIAL	62062.3						712.10	1.15%
Ag 328.068†	62529.9	0.208	mg/L	0.0004	0.208	mg/L	0.0004	0.17%
Al 396.153†	21462.1	5.09	mg/L	0.023	5.09	mg/L	0.023	0.44%
As 188.979†	266.3	0.189	mg/L	0.0062	0.189	mg/L	0.0062	3.26%
Ba 233.527†	31676.8	0.509	mg/L	0.0031	0.509	mg/L	0.0031	0.61%
Be 234.861†	12153.2	0.0243	mg/L	0.00009	0.0243	mg/L	0.00009	0.36%
B 249.677†	51855.9	0.999	mg/L	0.0008	0.999	mg/L	0.0008	0.09%
Ca 227.546†	3811.1	41.7	mg/L	0.14	41.7	mg/L	0.14	0.34%
Cd 228.802†	358.2	0.0237	mg/L	0.00035	0.0237	mg/L	0.00035	1.49%
Co 228.616†	1451.2	0.0982	mg/L	0.00069	0.0982	mg/L	0.00069	0.71%
Cr 267.716†	34210.7	0.255	mg/L	0.0009	0.255	mg/L	0.0009	0.34%
Cu 327.393†	50450.7	0.248	mg/L	0.0009	0.248	mg/L	0.0009	0.35%
Fe 239.562†	15975.9	2.12	mg/L	0.021	2.12	mg/L	0.021	0.98%
Mg 279.077†	33179.7	10.4	mg/L	0.03	10.4	mg/L	0.03	0.29%
Mn 257.610†	178058.6	0.261	mg/L	0.0017	0.261	mg/L	0.0017	0.64%
Mo 202.031†	6847.7	0.530	mg/L	0.0047	0.530	mg/L	0.0047	0.89%
Ni 231.604†	7400.2	0.240	mg/L	0.0028	0.240	mg/L	0.0028	1.17%
Pb 220.353†	1100.8	0.255	mg/L	0.0031	0.255	mg/L	0.0031	1.23%
Sb 206.836†	705.6	0.606	mg/L	0.0036	0.606	mg/L	0.0036	0.59%
Se 196.026†	95.6	0.178	mg/L	0.0041	0.178	mg/L	0.0041	2.33%
Si 251.611†	139998.6	4.94	mg/L	0.027	4.94	mg/L	0.027	0.54%
Sn 189.927†	3089.2	0.519	mg/L	0.0058	0.519	mg/L	0.0058	1.12%
Ti 334.940†	535934.4	0.506	mg/L	0.0064	0.506	mg/L	0.0064	1.27%
Tl 190.801†	313.0	0.242	mg/L	0.0012	0.242	mg/L	0.0012	0.50%
V 290.880†	104770.0	0.517	mg/L	0.0047	0.517	mg/L	0.0047	0.90%
Zn 206.200†	13467.5	0.487	mg/L	0.0035	0.487	mg/L	0.0035	0.73%
K 766.490†	51484.3	25.9	mg/L	0.15	25.9	mg/L	0.15	0.59%
Na 589.592†	289360.5	26.5	mg/L	0.43	26.5	mg/L	0.43	1.62%
Sr 407.771†	657569.6	0.514	mg/L	0.0101	0.514	mg/L	0.0101	1.97%
Li 670.784†	31025.6	0.507	mg/L	0.0019	0.507	mg/L	0.0019	0.38%
P 214.914†	3044.4	5.06	mg/L	0.071	5.06	mg/L	0.071	1.40%

Sequence No.: 19 **Autosampler Location: 43**
Sample ID: L1505175305SD WG526149-07 **Date Collected: 6/5/2015 11:11:27 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1505175305SD WG526149-07

Approved: June 05, 2015
Kym H. Rhoden

Analyte	Back Pressure	Flow
All	234.0 kPa	0.40 L/min

Mean Data: L1505175305SD WG526149-07

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3436045.0						58829.29	1.71%
YRADIAL	299392.6						1952.16	0.65%
Ga 417.206	1191489.4						24887.43	2.09%
GaRADIAL	64053.4						174.60	0.27%
Ag 328.068†	63831.8	0.212	mg/L	0.0049	0.212	mg/L	0.0049	2.31%
Al 396.153†	21752.3	5.16	mg/L	0.011	5.16	mg/L	0.011	0.21%
As 188.979†	279.6	0.198	mg/L	0.0089	0.198	mg/L	0.0089	4.48%
Ba 233.527†	32332.1	0.520	mg/L	0.0112	0.520	mg/L	0.0112	2.15%
Be 234.861†	12480.8	0.0249	mg/L	0.00049	0.0249	mg/L	0.00049	1.98%
B 249.677†	53791.7	1.04	mg/L	0.028	1.04	mg/L	0.028	2.73%
Ca 227.546†	3727.2	40.8	mg/L	1.01	40.8	mg/L	1.01	2.47%
Cd 228.802†	366.1	0.0242	mg/L	0.00106	0.0242	mg/L	0.00106	4.38%
Co 228.616†	1495.1	0.101	mg/L	0.0022	0.101	mg/L	0.0022	2.19%
Cr 267.716†	35008.7	0.261	mg/L	0.0055	0.261	mg/L	0.0055	2.11%
Cu 327.393†	51468.0	0.253	mg/L	0.0072	0.253	mg/L	0.0072	2.84%
Fe 239.562†	16181.6	2.15	mg/L	0.027	2.15	mg/L	0.027	1.26%
Mg 279.077†	32983.6	10.3	mg/L	0.04	10.3	mg/L	0.04	0.43%
Mn 257.610†	181446.1	0.266	mg/L	0.0053	0.266	mg/L	0.0053	1.98%
Mo 202.031†	6983.6	0.540	mg/L	0.0143	0.540	mg/L	0.0143	2.64%
Ni 231.604†	7568.2	0.245	mg/L	0.0063	0.245	mg/L	0.0063	2.58%
Pb 220.353†	1129.8	0.262	mg/L	0.0073	0.262	mg/L	0.0073	2.80%
Sb 206.836†	722.5	0.621	mg/L	0.0193	0.621	mg/L	0.0193	3.11%
Se 196.026†	98.8	0.184	mg/L	0.0042	0.184	mg/L	0.0042	2.31%
Si 251.611†	139524.7	4.92	mg/L	0.096	4.92	mg/L	0.096	1.96%
Sn 189.927†	3160.7	0.531	mg/L	0.0137	0.531	mg/L	0.0137	2.58%
Ti 334.940†	547684.2	0.517	mg/L	0.0022	0.517	mg/L	0.0022	0.43%
Tl 190.801†	321.0	0.248	mg/L	0.0147	0.248	mg/L	0.0147	5.95%
V 290.880†	106616.9	0.526	mg/L	0.0104	0.526	mg/L	0.0104	1.98%
Zn 206.200†	13852.1	0.500	mg/L	0.0083	0.500	mg/L	0.0083	1.65%
K 766.490†	52204.1	26.3	mg/L	0.25	26.3	mg/L	0.25	0.96%
Na 589.592†	292179.0	26.8	mg/L	0.18	26.8	mg/L	0.18	0.66%
Sr 407.771†	670624.6	0.525	mg/L	0.0068	0.525	mg/L	0.0068	1.30%
Li 670.784†	31508.0	0.515	mg/L	0.0050	0.515	mg/L	0.0050	0.97%
P 214.914†	3121.9	5.19	mg/L	0.132	5.19	mg/L	0.132	2.55%

Sequence No.: 20
Sample ID: L1506002401
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 44
Date Collected: 6/5/2015 11:13:53 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1506002401

Analyte	Back Pressure	Flow
All	234.0 kPa	0.40 L/min

Mean Data: L1506002401

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3566021.7						46010.20	1.29%
YRADIAL	297411.0						5928.84	1.99%
Ga 417.206	1185549.2						22824.49	1.93%
GaRADIAL	63688.2						1295.94	2.03%
Ag 328.068†	-110.7	0.00003	mg/L	0.000376	0.00003	mg/L	0.000376	>999.9%
Al 396.153†	617.8	0.145	mg/L	0.0055	0.145	mg/L	0.0055	3.76%
As 188.979†	-3.1	-0.00518	mg/L	0.003246	-0.00518	mg/L	0.003246	62.63%
Ba 233.527†	278.3	0.00656	mg/L	0.000099	0.00656	mg/L	0.000099	1.51%
Be 234.861†	23.6	0.00016	mg/L	0.000033	0.00016	mg/L	0.000033	21.39%
B 249.677†	557.7	0.0152	mg/L	0.00073	0.0152	mg/L	0.00073	4.80%
Ca 227.546†	103.4	1.14	mg/L	0.034	1.14	mg/L	0.034	3.03%
Cd 228.802†	4.2	0.00034	mg/L	0.000142	0.00034	mg/L	0.000142	41.73%
Co 228.616†	-4.7	-0.00024	mg/L	0.000160	-0.00024	mg/L	0.000160	65.27%
Cr 267.716†	42.4	0.00141	mg/L	0.000189	0.00141	mg/L	0.000189	13.38%

Approved: June 05, 2015

Cu 327.393†	18781.6	0.0924	mg/L	0.00101	0.0924	mg/L	0.00101	1.09%
Fe 239.562†	1121.9	0.145	mg/L	0.0041	0.145	mg/L	0.0041	2.82%
Mg 279.077†	242.7	0.0680	mg/L	0.00873	0.0680	mg/L	0.00873	12.84%
Mn 257.610†	4144.9	0.00581	mg/L	0.000065	0.00581	mg/L	0.000065	1.12%
Mo 202.031†	6.7	0.00575	mg/L	0.000193	0.00575	mg/L	0.000193	3.36%
Ni 231.604†	5.0	-0.00069	mg/L	0.000400	-0.00069	mg/L	0.000400	57.98%
Pb 220.353†	18.9	0.00291	mg/L	0.001282	0.00291	mg/L	0.001282	43.97%
Sb 206.836†	2.9	0.00554	mg/L	0.001048	0.00554	mg/L	0.001048	18.92%
Se 196.026†	-1.1	-0.00463	mg/L	0.010176	-0.00463	mg/L	0.010176	219.99%
Si 251.611†	8916.7	0.325	mg/L	0.0078	0.325	mg/L	0.0078	2.39%
Sn 189.927†	3.4	0.00018	mg/L	0.000664	0.00018	mg/L	0.000664	372.64%
Ti 334.940†	3747.2	0.00724	mg/L	0.000311	0.00724	mg/L	0.000311	4.29%
Tl 190.801†	-9.3	-0.00426	mg/L	0.006658	-0.00426	mg/L	0.006658	156.32%
V 290.880†	-335.1	0.00076	mg/L	0.001460	0.00076	mg/L	0.001460	190.90%
Zn 206.200†	499.4	0.0191	mg/L	0.00058	0.0191	mg/L	0.00058	3.03%
K 766.490†	762.8	0.370	mg/L	0.0329	0.370	mg/L	0.0329	8.88%
Na 589.592†	3235.3	0.275	mg/L	0.0105	0.275	mg/L	0.0105	3.82%
Sr 407.771†	2466.8	0.00328	mg/L	0.000086	0.00328	mg/L	0.000086	2.61%
Li 670.784†	164.1	0.00104	mg/L	0.001230	0.00104	mg/L	0.001230	118.56%
P 214.914†	-55.0	-0.0587	mg/L	0.01246	-0.0587	mg/L	0.01246	21.23%

Sequence No.: 21
Sample ID: L1506002402
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 45
Date Collected: 6/5/2015 11:17:15 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1506002402

Analyte	Back Pressure	Flow
All	234.0 kPa	0.40 L/min

Mean Data: L1506002402

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3462290.4						96047.76	2.77%
YRADIAL	295074.3						7364.87	2.50%
Ga 417.206	1154391.6						28060.62	2.43%
GaRADIAL	63361.5						1596.52	2.52%
Ag 328.068†	34.1	0.00050	mg/L	0.000100	0.00050	mg/L	0.000100	19.79%
Al 396.153†	522.6	0.123	mg/L	0.0019	0.123	mg/L	0.0019	1.57%
As 188.979†	-0.5	-0.00332	mg/L	0.003243	-0.00332	mg/L	0.003243	97.56%
Ba 233.527†	148.6	0.00448	mg/L	0.000037	0.00448	mg/L	0.000037	0.84%
Be 234.861†	11.1	0.00013	mg/L	0.000025	0.00013	mg/L	0.000025	18.26%
B 249.677†	285.9	0.00999	mg/L	0.000573	0.00999	mg/L	0.000573	5.73%
Ca 227.546†	63.7	0.702	mg/L	0.1148	0.702	mg/L	0.1148	16.36%
Cd 228.802†	2.5	0.00022	mg/L	0.000273	0.00022	mg/L	0.000273	125.83%
Co 228.616†	-3.4	-0.00016	mg/L	0.000705	-0.00016	mg/L	0.000705	439.57%
Cr 267.716†	41.2	0.00140	mg/L	0.000226	0.00140	mg/L	0.000226	16.13%
Cu 327.393†	12035.1	0.0594	mg/L	0.00175	0.0594	mg/L	0.00175	2.95%
Fe 239.562†	987.6	0.127	mg/L	0.0017	0.127	mg/L	0.0017	1.35%
Mg 279.077†	199.3	0.0544	mg/L	0.00347	0.0544	mg/L	0.00347	6.38%
Mn 257.610†	4392.9	0.00617	mg/L	0.000240	0.00617	mg/L	0.000240	3.88%
Mo 202.031†	0.3	0.00527	mg/L	0.000677	0.00527	mg/L	0.000677	12.85%
Ni 231.604†	1.3	-0.00081	mg/L	0.000095	-0.00081	mg/L	0.000095	11.78%
Pb 220.353†	13.1	0.00156	mg/L	0.002246	0.00156	mg/L	0.002246	143.61%
Sb 206.836†	2.6	0.00528	mg/L	0.000788	0.00528	mg/L	0.000788	14.92%
Se 196.026†	1.2	-0.00034	mg/L	0.004753	-0.00034	mg/L	0.004753	>999.9%
Si 251.611†	7652.3	0.280	mg/L	0.0077	0.280	mg/L	0.0077	2.74%
Sn 189.927†	14.0	0.00196	mg/L	0.000541	0.00196	mg/L	0.000541	27.60%
Ti 334.940†	3459.5	0.00695	mg/L	0.000522	0.00695	mg/L	0.000522	7.51%
Tl 190.801†	-8.6	-0.00374	mg/L	0.009019	-0.00374	mg/L	0.009019	240.99%
V 290.880†	-148.6	0.00168	mg/L	0.000586	0.00168	mg/L	0.000586	34.90%
Zn 206.200†	315.9	0.0125	mg/L	0.00013	0.0125	mg/L	0.00013	1.02%
K 766.490†	846.6	0.412	mg/L	0.0415	0.412	mg/L	0.0415	10.07%
Na 589.592†	6164.6	0.543	mg/L	0.0045	0.543	mg/L	0.0045	0.83%
Sr 407.771†	3025.3	0.00373	mg/L	0.000084	0.00373	mg/L	0.000084	2.24%
Li 670.784†	84.8	-0.00026	mg/L	0.000897	-0.00026	mg/L	0.000897	343.28%
P 214.914†	-32.0	-0.0207	mg/L	0.01131	-0.0207	mg/L	0.01131	54.59%

Approved: June 05, 2015

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Sequence No.: 22 **Autosampler Location: 46**
Sample ID: L1506002403 **Date Collected: 6/5/2015 11:20:37 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1506002403

Analyte	Back Pressure	Flow
All	233.0 kPa	0.40 L/min

Mean Data: L1506002403

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3468209.3						82908.50	2.39%
YRADIAL	287535.9						5620.35	1.95%
Ga 417.206	1141042.6						25900.19	2.27%
GaRADIAL	61825.6						1113.78	1.80%
Ag 328.068†	-29.5	0.00033	mg/L	0.000497	0.00033	mg/L	0.000497	151.64%
Al 396.153†	305.7	0.0711	mg/L	0.00454	0.0711	mg/L	0.00454	6.38%
As 188.979†	4.0	-0.00006	mg/L	0.002048	-0.00006	mg/L	0.002048	>999.9%
Ba 233.527†	48.4	0.00288	mg/L	0.000158	0.00288	mg/L	0.000158	5.49%
Be 234.861†	-14.0	0.00007	mg/L	0.000016	0.00007	mg/L	0.000016	23.13%
B 249.677†	180.7	0.00823	mg/L	0.000818	0.00823	mg/L	0.000818	9.95%
Ca 227.546†	24.0	0.267	mg/L	0.0495	0.267	mg/L	0.0495	18.53%
Cd 228.802†	4.3	0.00032	mg/L	0.000287	0.00032	mg/L	0.000287	90.19%
Co 228.616†	-3.2	-0.00014	mg/L	0.000157	-0.00014	mg/L	0.000157	110.58%
Cr 267.716†	144.3	0.00217	mg/L	0.000154	0.00217	mg/L	0.000154	7.12%
Cu 327.393†	6180.2	0.0307	mg/L	0.00079	0.0307	mg/L	0.00079	2.59%
Fe 239.562†	1461.6	0.190	mg/L	0.0034	0.190	mg/L	0.0034	1.81%
Mg 279.077†	95.1	0.0217	mg/L	0.00276	0.0217	mg/L	0.00276	12.68%
Mn 257.610†	2314.5	0.00313	mg/L	0.000065	0.00313	mg/L	0.000065	2.09%
Mo 202.031†	-4.3	0.00491	mg/L	0.000454	0.00491	mg/L	0.000454	9.25%
Ni 231.604†	6.1	-0.00066	mg/L	0.000745	-0.00066	mg/L	0.000745	113.36%
Pb 220.353†	6.2	-0.00006	mg/L	0.001948	-0.00006	mg/L	0.001948	>999.9%
Sb 206.836†	-0.0	0.00304	mg/L	0.001983	0.00304	mg/L	0.001983	65.30%
Se 196.026†	3.3	0.00355	mg/L	0.007503	0.00355	mg/L	0.007503	211.63%
Si 251.611†	5039.9	0.188	mg/L	0.0052	0.188	mg/L	0.0052	2.75%
Sn 189.927†	-3.9	-0.00105	mg/L	0.001842	-0.00105	mg/L	0.001842	175.21%
Ti 334.940†	2245.8	0.00579	mg/L	0.000253	0.00579	mg/L	0.000253	4.37%
Tl 190.801†	-7.0	-0.00251	mg/L	0.003488	-0.00251	mg/L	0.003488	139.02%
V 290.880†	16.9	0.00250	mg/L	0.000625	0.00250	mg/L	0.000625	25.00%
Zn 206.200†	195.7	0.00818	mg/L	0.000101	0.00818	mg/L	0.000101	1.23%
K 766.490†	430.1	0.202	mg/L	0.0265	0.202	mg/L	0.0265	13.13%
Na 589.592†	2121.5	0.173	mg/L	0.0143	0.173	mg/L	0.0143	8.25%
Sr 407.771†	1305.8	0.00240	mg/L	0.000005	0.00240	mg/L	0.000005	0.21%
Li 670.784†	15.0	-0.00141	mg/L	0.001232	-0.00141	mg/L	0.001232	87.63%
P 214.914†	-30.6	-0.0183	mg/L	0.00565	-0.0183	mg/L	0.00565	30.87%

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Sequence No.: 23 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 6/5/2015 11:23:59 AM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	234.0 kPa	0.40 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3090237.3						63289.55	2.05%
YRADIAL	272159.5						2923.44	1.07%
Ga 417.206	1068206.2						20410.35	1.91%
GaRADIAL	58556.8						809.48	1.38%
Ag 328.068†	131942.2	0.438	mg/L	0.0225	0.438	mg/L	0.0225	5.13%

Approved: June 05, 2015

Kym H. Rhoden

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   QC value within limits for Ag 328.068  Recovery = 109.51%
Al 396.153†            43772.6        10.4 mg/L          0.07        10.4 mg/L          0.07   0.63%
   QC value within limits for Al 396.153  Recovery = 103.88%
As 188.979†              603.3       0.430 mg/L        0.0102       0.430 mg/L        0.0102   2.37%
   QC value within limits for As 188.979  Recovery = 107.55%
Ba 233.527†            66627.9        1.07 mg/L         0.054        1.07 mg/L         0.054   5.07%
   QC value within limits for Ba 233.527  Recovery = 106.89%
Be 234.861†            26337.1      0.0525 mg/L       0.00274      0.0525 mg/L       0.00274   5.22%
   QC value within limits for Be 234.861  Recovery = 104.97%
B 249.677†             27385.2       0.539 mg/L        0.0333       0.539 mg/L        0.0333   6.18%
   QC value within limits for B 249.677  Recovery = 107.79%
Ca 227.546†              989.9        10.9 mg/L          0.29        10.9 mg/L          0.29   2.62%
   QC value within limits for Ca 227.546  Recovery = 109.09%
Cd 228.802†              801.5      0.0531 mg/L       0.00118      0.0531 mg/L       0.00118   2.21%
   QC value within limits for Cd 228.802  Recovery = 106.14%
Co 228.616†             3238.8       0.219 mg/L        0.0048       0.219 mg/L        0.0048   2.19%
   QC value within limits for Co 228.616  Recovery = 109.47%
Cr 267.716†            72242.6       0.538 mg/L        0.0275       0.538 mg/L        0.0275   5.11%
   QC value within limits for Cr 267.716  Recovery = 107.52%
Cu 327.393†           109468.2       0.538 mg/L        0.0290       0.538 mg/L        0.0290   5.38%
   QC value within limits for Cu 327.393  Recovery = 107.64%
Fe 239.562†            31218.4        4.15 mg/L         0.059        4.15 mg/L         0.059   1.41%
   QC value within limits for Fe 239.562  Recovery = 103.84%
Mg 279.077†            33364.8        10.4 mg/L          0.08        10.4 mg/L          0.08   0.74%
   QC value within limits for Mg 279.077  Recovery = 104.37%
Mn 257.610†           368898.3       0.541 mg/L        0.0284       0.541 mg/L        0.0284   5.26%
   QC value within limits for Mn 257.610  Recovery = 108.18%
Mo 202.031†            13743.7        1.06 mg/L         0.052        1.06 mg/L         0.052   4.91%
   QC value within limits for Mo 202.031  Recovery = 105.85%
Ni 231.604†            16998.9       0.552 mg/L        0.0124       0.552 mg/L        0.0124   2.25%
   QC value greater than the upper limit for Ni 231.604  Recovery = 110.39%
Pb 220.353†             2374.7       0.552 mg/L        0.0087       0.552 mg/L        0.0087   1.57%
   QC value greater than the upper limit for Pb 220.353  Recovery = 110.37%
Sb 206.836†             1532.1        1.31 mg/L         0.024        1.31 mg/L         0.024   1.80%
   QC value within limits for Sb 206.836  Recovery = 109.43%
Se 196.026†              223.0       0.418 mg/L        0.0185       0.418 mg/L        0.0185   4.43%
   QC value within limits for Se 196.026  Recovery = 104.53%
Si 251.611†           152494.4        5.37 mg/L         0.272        5.37 mg/L         0.272   5.07%
   QC value within limits for Si 251.611  Recovery = 107.49%
Sn 189.927†             6565.5        1.10 mg/L         0.026        1.10 mg/L         0.026   2.34%
   QC value greater than the upper limit for Sn 189.927  Recovery = 110.31%
Ti 334.940†          1117722.2        1.05 mg/L         0.014        1.05 mg/L         0.014   1.36%
   QC value within limits for Ti 334.940  Recovery = 104.69%
Tl 190.801†              706.8       0.541 mg/L        0.0173       0.541 mg/L        0.0173   3.19%
   QC value within limits for Tl 190.801  Recovery = 108.28%
V 290.880†            219248.0        1.08 mg/L         0.061        1.08 mg/L         0.061   5.61%
   QC value within limits for V 290.880  Recovery = 107.87%
Zn 206.200†            29851.4        1.08 mg/L         0.054        1.08 mg/L         0.054   4.99%
   QC value within limits for Zn 206.200  Recovery = 107.69%
K 766.490†            104202.9        52.4 mg/L          0.18        52.4 mg/L          0.18   0.35%
   QC value within limits for K 766.490  Recovery = 104.70%
Na 589.592†           555542.0        51.2 mg/L          1.23        51.2 mg/L          1.23   2.41%
   QC value within limits for Na 589.592  Recovery = 102.30%
Sr 407.771†          1272924.2       0.997 mg/L        0.0221       0.997 mg/L        0.0221   2.22%
   QC value within limits for Sr 407.771  Recovery = 99.66%
Li 670.784†            63539.6        1.04 mg/L         0.004        1.04 mg/L         0.004   0.38%
   QC value within limits for Li 670.784  Recovery = 104.01%
P 214.914†              6496.2        10.8 mg/L          0.25        10.8 mg/L          0.25   2.35%
   QC value within limits for P 214.914  Recovery = 107.67%
QC Failed.  Continue with analysis.

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Sequence No.: 24                                  Autosampler Location: 1
Sample ID: CCB                                    Date Collected: 6/5/2015 11:26:25 AM
Analyst:                                          Data Type: Original
Initial Sample Wt:                                Initial Sample Vol:
Dilution:                                         Sample Prep Vol:

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Nebulizer Parameters: CCB
Analyte                  Back Pressure    Flow
All                    234.0 kPa         0.40 L/min
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Approved: June 05, 2015

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3278231.6						27238.96	0.83%
YRADIAL	271681.9						5198.61	1.91%
Ga 417.206	1102175.3						11473.22	1.04%
GaRADIAL	58613.6						1236.82	2.11%
Ag 328.068†	144.3	0.00082	mg/L	0.000341	0.00082	mg/L	0.000341	41.83%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	-10.7	-0.00433	mg/L	0.003539	-0.00433	mg/L	0.003539	81.71%
QC value within limits for Al 396.153 Recovery = Not calculated								
As 188.979†	2.7	-0.00106	mg/L	0.006419	-0.00106	mg/L	0.006419	608.35%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	5.4	0.00220	mg/L	0.000168	0.00220	mg/L	0.000168	7.63%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 234.861†	43.6	0.00023	mg/L	0.000010	0.00023	mg/L	0.000010	4.19%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	252.2	0.00887	mg/L	0.000588	0.00887	mg/L	0.000588	6.63%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	9.3	0.106	mg/L	0.0094	0.106	mg/L	0.0094	8.81%
QC value within limits for Ca 227.546 Recovery = Not calculated								
Cd 228.802†	-1.8	-0.00009	mg/L	0.000213	-0.00009	mg/L	0.000213	241.10%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	3.2	0.00030	mg/L	0.000803	0.00030	mg/L	0.000803	267.87%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	-16.4	0.00098	mg/L	0.000145	0.00098	mg/L	0.000145	14.91%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	370.7	0.00225	mg/L	0.000722	0.00225	mg/L	0.000722	32.14%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	25.9	-0.00101	mg/L	0.000464	-0.00101	mg/L	0.000464	46.10%
QC value within limits for Fe 239.562 Recovery = Not calculated								
Mg 279.077†	22.9	-0.00078	mg/L	0.005464	-0.00078	mg/L	0.005464	700.00%
QC value within limits for Mg 279.077 Recovery = Not calculated								
Mn 257.610†	196.4	0.00002	mg/L	0.000045	0.00002	mg/L	0.000045	300.74%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	14.7	0.00637	mg/L	0.000619	0.00637	mg/L	0.000619	9.72%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	1.3	-0.00081	mg/L	0.000317	-0.00081	mg/L	0.000317	38.97%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	11.0	0.00107	mg/L	0.003083	0.00107	mg/L	0.003083	289.24%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	2.3	0.00501	mg/L	0.002271	0.00501	mg/L	0.002271	45.38%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	3.3	0.00360	mg/L	0.008523	0.00360	mg/L	0.008523	236.91%
QC value within limits for Se 196.026 Recovery = Not calculated								
Si 251.611†	146.9	0.0157	mg/L	0.00096	0.0157	mg/L	0.00096	6.10%
QC value within limits for Si 251.611 Recovery = Not calculated								
Sn 189.927†	14.3	0.00202	mg/L	0.001126	0.00202	mg/L	0.001126	55.81%
QC value within limits for Sn 189.927 Recovery = Not calculated								
Ti 334.940†	303.5	0.00396	mg/L	0.000111	0.00396	mg/L	0.000111	2.79%
QC value within limits for Ti 334.940 Recovery = Not calculated								
Tl 190.801†	-7.7	-0.00308	mg/L	0.003303	-0.00308	mg/L	0.003303	107.28%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 290.880†	227.4	0.00351	mg/L	0.001138	0.00351	mg/L	0.001138	32.45%
QC value within limits for V 290.880 Recovery = Not calculated								
Zn 206.200†	4.7	0.00132	mg/L	0.000051	0.00132	mg/L	0.000051	3.84%
QC value within limits for Zn 206.200 Recovery = Not calculated								
K 766.490†	245.2	0.108	mg/L	0.0493	0.108	mg/L	0.0493	45.48%
QC value within limits for K 766.490 Recovery = Not calculated								
Na 589.592†	1114.2	0.0807	mg/L	0.03545	0.0807	mg/L	0.03545	43.92%
QC value within limits for Na 589.592 Recovery = Not calculated								
Sr 407.771†	103.7	0.00146	mg/L	0.000067	0.00146	mg/L	0.000067	4.59%
QC value within limits for Sr 407.771 Recovery = Not calculated								
Li 670.784†	216.0	0.00189	mg/L	0.001380	0.00189	mg/L	0.001380	73.11%
QC value within limits for Li 670.784 Recovery = Not calculated								
P 214.914†	-8.7	0.0178	mg/L	0.00699	0.0178	mg/L	0.00699	39.36%
QC value within limits for P 214.914 Recovery = Not calculated								

All analyte(s) passed QC.

Approved: June 05, 2015

Lynn H. Rhoden

Sequence No.: 25
Sample ID: LLCCV
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 47
Date Collected: 6/5/2015 11:29:46 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: LLCCV

Analyte	Back Pressure	Flow
All	234.0 kPa	0.40 L/min

Mean Data: LLCCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3415875.8						54598.89	1.60%
YRADIAL	290470.5						3300.01	1.14%
Ga 417.206	1165928.4						17131.85	1.47%
GaRADIAL	62019.3						718.76	1.16%
Ag 328.068†	5378.5	0.0182	mg/L	0.00060	0.0182	mg/L	0.00060	3.32%
Al 396.153†	1784.1	0.422	mg/L	0.0034	0.422	mg/L	0.0034	0.82%
As 188.979†	24.4	0.0145	mg/L	0.00185	0.0145	mg/L	0.00185	12.79%
Ba 233.527†	2712.4	0.0455	mg/L	0.00058	0.0455	mg/L	0.00058	1.26%
Be 234.861†	1128.3	0.00238	mg/L	0.000030	0.00238	mg/L	0.000030	1.28%
B 249.677†	1183.1	0.0272	mg/L	0.00091	0.0272	mg/L	0.00091	3.34%
Ca 227.546†	52.6	0.583	mg/L	0.0257	0.583	mg/L	0.0257	4.41%
Cd 228.802†	30.3	0.00204	mg/L	0.000411	0.00204	mg/L	0.000411	20.12%
Co 228.616†	124.6	0.00850	mg/L	0.000314	0.00850	mg/L	0.000314	3.70%
Cr 267.716†	3021.1	0.0235	mg/L	0.00047	0.0235	mg/L	0.00047	2.00%
Cu 327.393†	4573.9	0.0229	mg/L	0.00037	0.0229	mg/L	0.00037	1.61%
Fe 239.562†	1316.8	0.171	mg/L	0.0042	0.171	mg/L	0.0042	2.43%
Mg 279.077†	1416.8	0.436	mg/L	0.0017	0.436	mg/L	0.0017	0.40%
Mn 257.610†	14628.7	0.0212	mg/L	0.00014	0.0212	mg/L	0.00014	0.65%
Mo 202.031†	536.4	0.0464	mg/L	0.00061	0.0464	mg/L	0.00061	1.32%
Ni 231.604†	668.4	0.0209	mg/L	0.00069	0.0209	mg/L	0.00069	3.32%
Pb 220.353†	105.1	0.0230	mg/L	0.00171	0.0230	mg/L	0.00171	7.44%
Sb 206.836†	60.2	0.0545	mg/L	0.00327	0.0545	mg/L	0.00327	5.99%
Se 196.026†	13.3	0.0223	mg/L	0.00373	0.0223	mg/L	0.00373	16.74%
Si 251.611†	6295.0	0.232	mg/L	0.0036	0.232	mg/L	0.0036	1.53%
Sn 189.927†	266.6	0.0444	mg/L	0.00169	0.0444	mg/L	0.00169	3.81%
Ti 334.940†	44241.0	0.0450	mg/L	0.00055	0.0450	mg/L	0.00055	1.22%
Tl 190.801†	20.8	0.0186	mg/L	0.00731	0.0186	mg/L	0.00731	39.24%
V 290.880†	8358.9	0.0434	mg/L	0.00149	0.0434	mg/L	0.00149	3.42%
Zn 206.200†	1239.2	0.0458	mg/L	0.00060	0.0458	mg/L	0.00060	1.31%
K 766.490†	4398.5	2.21	mg/L	0.024	2.21	mg/L	0.024	1.09%
Na 589.592†	24343.5	2.21	mg/L	0.012	2.21	mg/L	0.012	0.55%
Sr 407.771†	53330.2	0.0431	mg/L	0.00018	0.0431	mg/L	0.00018	0.42%
Li 670.784†	2805.7	0.0443	mg/L	0.00076	0.0443	mg/L	0.00076	1.70%
P 214.914†	250.3	0.446	mg/L	0.0067	0.446	mg/L	0.0067	1.50%

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Sequence No.: 26
Sample ID: L1506004001
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 48
Date Collected: 6/5/2015 11:33:07 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1506004001

Analyte	Back Pressure	Flow
All	234.0 kPa	0.40 L/min

Mean Data: L1506004001

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3188903.4						19373.99	0.61%
YRADIAL	278548.1						5472.14	1.96%
Ga 417.206	1078272.7						11950.20	1.11%
GaRADIAL	58379.7						997.82	1.71%
Ag 328.068†	2466.7	0.00838	mg/L	0.000692	0.00838	mg/L	0.000692	8.25%
Al 396.153†	13455.7	3.20	mg/L	0.022	3.20	mg/L	0.022	0.67%

Approved: June 05, 2015

Kym H. Rhoden

As 188.979†	-12.2	-0.00699	mg/L	0.001030	-0.00699	mg/L	0.001030 14.73%
Ba 233.527†	32119.6	0.516	mg/L	0.0033	0.516	mg/L	0.0033 0.64%
Be 234.861†	-17.6	0.00012	mg/L	0.000028	0.00012	mg/L	0.000028 23.09%
B 249.677†	883.3	0.0209	mg/L	0.00021	0.0209	mg/L	0.00021 0.98%
Ca 227.546†	21701.7	237	mg/L	0.8	237	mg/L	0.8 0.35%
Cd 228.802†	-0.2	0.00007	mg/L	0.000590	0.00007	mg/L	0.000590 817.91%
Co 228.616†	-5.7	-0.00036	mg/L	0.000419	-0.00036	mg/L	0.000419 115.62%
Cr 267.716†	138.8	0.00212	mg/L	0.000286	0.00212	mg/L	0.000286 13.45%
Cu 327.393†	1325.8	0.00689	mg/L	0.000448	0.00689	mg/L	0.000448 6.50%
Fe 239.562†	51.7	0.00244	mg/L	0.001714	0.00244	mg/L	0.001714 70.18%
Mg 279.077†	58.0	0.0102	mg/L	0.00242	0.0102	mg/L	0.00242 23.73%
Mn 257.610†	194.6	0.00001	mg/L	0.000021	0.00001	mg/L	0.000021 156.98%
Mo 202.031†	505.5	0.0440	mg/L	0.00065	0.0440	mg/L	0.00065 1.47%
Ni 231.604†	10.8	-0.00049	mg/L	0.000413	-0.00049	mg/L	0.000413 84.23%
Pb 220.353†	58.3	0.0126	mg/L	0.00163	0.0126	mg/L	0.00163 12.92%
Sb 206.836†	-4.1	-0.00043	mg/L	0.004004	-0.00043	mg/L	0.004004 936.71%
Se 196.026†	1.8	0.00126	mg/L	0.007145	0.00126	mg/L	0.007145 567.71%
Si 251.611†	2096.5	0.0840	mg/L	0.00006	0.0840	mg/L	0.00006 0.08%
Sn 189.927†	-25.8	-0.00472	mg/L	0.001370	-0.00472	mg/L	0.001370 29.01%
Ti 334.940†	-20792.8	-0.00048	mg/L	0.000167	-0.00048	mg/L	0.000167 34.56%
Tl 190.801†	-44.6	-0.0308	mg/L	0.00512	-0.0308	mg/L	0.00512 16.61%
V 290.880†	330.2	0.00399	mg/L	0.000956	0.00399	mg/L	0.000956 23.99%
Zn 206.200†	238.0	0.00969	mg/L	0.000388	0.00969	mg/L	0.000388 4.00%
K 766.490†	415744.4	205	mg/L	2.6	205	mg/L	2.6 1.25%
Na 589.592†	2991799.3	285	mg/L	4.9	285	mg/L	4.9 1.71%
Sr 407.771†	490346.3	0.377	mg/L	0.0099	0.377	mg/L	0.0099 2.63%
Li 670.784†	4163.2	0.0666	mg/L	0.00155	0.0666	mg/L	0.00155 2.32%
P 214.914†	2.5	0.0363	mg/L	0.00671	0.0363	mg/L	0.00671 18.49%

Sequence No.: 27
Sample ID: L1506004101
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 49
Date Collected: 6/5/2015 11:36:32 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1506004101

Analyte	Back Pressure	Flow
All	234.0 kPa	0.40 L/min

Mean Data: L1506004101

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3186020.0						27922.13	0.88%
YRADIAL	270949.9						6422.17	2.37%
Ga 417.206	1052808.0						7079.18	0.67%
GaRADIAL	56190.8						1390.36	2.47%
Ag 328.068†	3077.0	0.0104	mg/L	0.00033	0.0104	mg/L	0.00033	3.17%
Al 396.153†	-77.4	-0.0205	mg/L	0.00397	-0.0205	mg/L	0.00397	19.36%
As 188.979†	-8.7	-0.00251	mg/L	0.004634	-0.00251	mg/L	0.004634	184.96%
Ba 233.527†	12467.1	0.202	mg/L	0.0026	0.202	mg/L	0.0026	1.27%
Be 234.861†	-32.7	0.00008	mg/L	0.000054	0.00008	mg/L	0.000054	67.87%
B 249.677†	206.6	0.00800	mg/L	0.000203	0.00800	mg/L	0.000203	2.53%
Ca 227.546†	28546.8	312	mg/L	0.7	312	mg/L	0.7	0.24%
Cd 228.802†	10.0	0.00075	mg/L	0.000666	0.00075	mg/L	0.000666	88.50%
Co 228.616†	-7.2	-0.00040	mg/L	0.000221	-0.00040	mg/L	0.000221	55.39%
Cr 267.716†	111.2	0.00192	mg/L	0.000169	0.00192	mg/L	0.000169	8.76%
Cu 327.393†	-387.4	-0.00150	mg/L	0.000848	-0.00150	mg/L	0.000848	56.72%
Fe 239.562†	31.2	-0.00029	mg/L	0.000470	-0.00029	mg/L	0.000470	163.24%
Mg 279.077†	23.6	-0.00056	mg/L	0.005219	-0.00056	mg/L	0.005219	937.06%
Mn 257.610†	193.2	0.00001	mg/L	0.000022	0.00001	mg/L	0.000022	211.47%
Mo 202.031†	111.9	0.0138	mg/L	0.00051	0.0138	mg/L	0.00051	3.66%
Ni 231.604†	3.6	-0.00073	mg/L	0.000432	-0.00073	mg/L	0.000432	59.54%
Pb 220.353†	159.6	0.0356	mg/L	0.00497	0.0356	mg/L	0.00497	13.96%
Sb 206.836†	-0.9	0.00225	mg/L	0.001910	0.00225	mg/L	0.001910	84.80%
Se 196.026†	25.8	0.0458	mg/L	0.01325	0.0458	mg/L	0.01325	28.92%
Si 251.611†	2407.1	0.0953	mg/L	0.00033	0.0953	mg/L	0.00033	0.35%
Sn 189.927†	-37.7	-0.00673	mg/L	0.001129	-0.00673	mg/L	0.001129	16.78%
Ti 334.940†	-25943.6	-0.00048	mg/L	0.000221	-0.00048	mg/L	0.000221	45.84%
Tl 190.801†	-38.5	-0.0263	mg/L	0.00141	-0.0263	mg/L	0.00141	5.37%

Approved: June 05, 2015

V 290.880†	672.5	0.00568 mg/L	0.000820	0.00568 mg/L	0.000820	14.42%
Zn 206.200†	1339.6	0.0492 mg/L	0.00033	0.0492 mg/L	0.00033	0.67%
K 766.490†	366894.4	181 mg/L	1.1	181 mg/L	1.1	0.61%
Na 589.592†	2611703.5	248 mg/L	3.5	248 mg/L	3.5	1.42%
Sr 407.771†	347720.3	0.263 mg/L	0.0047	0.263 mg/L	0.0047	1.77%
Li 670.784†	2389.6	0.0375 mg/L	0.00160	0.0375 mg/L	0.00160	4.26%
P 214.914†	15.6	0.0581 mg/L	0.00962	0.0581 mg/L	0.00962	16.58%

Sequence No.: 28 **Autosampler Location: 50**
Sample ID: L1506005101 WG526149-02 **Date Collected: 6/5/2015 11:39:58 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1506005101 WG526149-02

Analyte	Back Pressure	Flow
All	234.0 kPa	0.40 L/min

Mean Data: L1506005101 WG526149-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3016200.9						28555.63	0.95%
YRADIAL	241835.9						3367.22	1.39%
Ga 417.206	1144118.8						4256.38	0.37%
GaRADIAL	54616.2						640.63	1.17%
Ag 328.068†	685.5	0.00256	mg/L	0.000173	0.00256	mg/L	0.000173	6.76%
Al 396.153†	499.8	0.117	mg/L	0.0032	0.117	mg/L	0.0032	2.71%
As 188.979†	-7.7	-0.00728	mg/L	0.004887	-0.00728	mg/L	0.004887	67.14%
Ba 233.527†	5472.6	0.0897	mg/L	0.00083	0.0897	mg/L	0.00083	0.92%
Be 234.861†	231.4	0.00058	mg/L	0.000015	0.00058	mg/L	0.000015	2.66%
B 249.677†	1537.9	0.0339	mg/L	0.00039	0.0339	mg/L	0.00039	1.17%
Ca 227.546†	5615.6	61.4	mg/L	0.50	61.4	mg/L	0.50	0.81%
Cd 228.802†	-6.6	-0.00038	mg/L	0.000174	-0.00038	mg/L	0.000174	46.24%
Co 228.616†	10.3	0.00077	mg/L	0.000025	0.00077	mg/L	0.000025	3.26%
Cr 267.716†	54.1	0.00149	mg/L	0.000168	0.00149	mg/L	0.000168	11.23%
Cu 327.393†	-33.8	0.00027	mg/L	0.000393	0.00027	mg/L	0.000393	144.17%
Fe 239.562†	1036.7	0.134	mg/L	0.0026	0.134	mg/L	0.0026	1.93%
Mg 279.077†	25153.9	7.87	mg/L	0.036	7.87	mg/L	0.036	0.46%
Mn 257.610†	14666.6	0.0212	mg/L	0.00023	0.0212	mg/L	0.00023	1.07%
Mo 202.031†	55.7	0.00951	mg/L	0.000399	0.00951	mg/L	0.000399	4.20%
Ni 231.604†	13.5	-0.00041	mg/L	0.000488	-0.00041	mg/L	0.000488	118.51%
Pb 220.353†	41.6	0.00817	mg/L	0.000608	0.00817	mg/L	0.000608	7.44%
Sb 206.836†	-11.2	-0.00657	mg/L	0.003787	-0.00657	mg/L	0.003787	57.60%
Se 196.026†	-4.9	-0.0119	mg/L	0.00209	-0.0119	mg/L	0.00209	17.51%
Si 251.611†	80978.2	2.87	mg/L	0.028	2.87	mg/L	0.028	0.99%
Sn 189.927†	-20.7	-0.00387	mg/L	0.001391	-0.00387	mg/L	0.001391	35.91%
Ti 334.940†	-4580.8	0.00334	mg/L	0.000276	0.00334	mg/L	0.000276	8.27%
Tl 190.801†	-22.0	-0.0138	mg/L	0.00232	-0.0138	mg/L	0.00232	16.78%
V 290.880†	-817.4	-0.00181	mg/L	0.000452	-0.00181	mg/L	0.000452	24.97%
Zn 206.200†	44.5	0.00275	mg/L	0.000283	0.00275	mg/L	0.000283	10.31%
K 766.490†	2129.8	1.04	mg/L	0.027	1.04	mg/L	0.027	2.60%
Na 589.592†	298164.4	27.3	mg/L	0.18	27.3	mg/L	0.18	0.65%
Sr 407.771†	513131.2	0.401	mg/L	0.0027	0.401	mg/L	0.0027	0.68%
Li 670.784†	217.5	0.00191	mg/L	0.001128	0.00191	mg/L	0.001128	58.94%
P 214.914†	6.1	0.0423	mg/L	0.00999	0.0423	mg/L	0.00999	23.61%

Sequence No.: 29 **Autosampler Location: 51**
Sample ID: L1506005102 WG526149-03 **Date Collected: 6/5/2015 11:43:45 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1506005102 WG526149-03

Analyte	Back Pressure	Flow
All	234.0 kPa	0.40 L/min

Approved: June 05, 2015

Kym H. Rhoden

Mean Data: L1506005102 WG526149-03

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	2974072.3						34589.09	1.16%
YRADIAL	239891.3						5461.63	2.28%
Ga 417.206	1137738.1						9069.53	0.80%
GaRADIAL	54184.2						1405.64	2.59%
Ag 328.068†	531.8	0.00201	mg/L	0.000538	0.00201	mg/L	0.000538	26.78%
Al 396.153†	51.7	0.0104	mg/L	0.00288	0.0104	mg/L	0.00288	27.69%
As 188.979†	-7.1	-0.00678	mg/L	0.001557	-0.00678	mg/L	0.001557	22.98%
Ba 233.527†	5595.8	0.0917	mg/L	0.00092	0.0917	mg/L	0.00092	1.00%
Be 234.861†	196.3	0.00054	mg/L	0.000022	0.00054	mg/L	0.000022	4.08%
B 249.677†	1615.7	0.0349	mg/L	0.00057	0.0349	mg/L	0.00057	1.63%
Ca 227.546†	5749.4	62.9	mg/L	0.52	62.9	mg/L	0.52	0.82%
Cd 228.802†	1.4	0.00016	mg/L	0.000252	0.00016	mg/L	0.000252	154.25%
Co 228.616†	6.6	0.00052	mg/L	0.000801	0.00052	mg/L	0.000801	153.26%
Cr 267.716†	38.7	0.00138	mg/L	0.000268	0.00138	mg/L	0.000268	19.39%
Cu 327.393†	278.8	0.00179	mg/L	0.000877	0.00179	mg/L	0.000877	48.96%
Fe 239.562†	155.7	0.0161	mg/L	0.00076	0.0161	mg/L	0.00076	4.73%
Mg 279.077†	25402.5	7.95	mg/L	0.292	7.95	mg/L	0.292	3.67%
Mn 257.610†	13276.5	0.0192	mg/L	0.00013	0.0192	mg/L	0.00013	0.67%
Mo 202.031†	58.3	0.00971	mg/L	0.000268	0.00971	mg/L	0.000268	2.76%
Ni 231.604†	31.3	0.00017	mg/L	0.000231	0.00017	mg/L	0.000231	137.47%
Pb 220.353†	49.0	0.00988	mg/L	0.001030	0.00988	mg/L	0.001030	10.43%
Sb 206.836†	-7.7	-0.00353	mg/L	0.000852	-0.00353	mg/L	0.000852	24.14%
Se 196.026†	-9.5	-0.0205	mg/L	0.00686	-0.0205	mg/L	0.00686	33.44%
Si 251.611†	76131.9	2.69	mg/L	0.035	2.69	mg/L	0.035	1.30%
Sn 189.927†	-26.3	-0.00481	mg/L	0.000986	-0.00481	mg/L	0.000986	20.49%
Ti 334.940†	-6473.6	0.00167	mg/L	0.000321	0.00167	mg/L	0.000321	19.20%
Tl 190.801†	-21.4	-0.0134	mg/L	0.00276	-0.0134	mg/L	0.00276	20.59%
V 290.880†	-491.8	-0.00023	mg/L	0.001006	-0.00023	mg/L	0.001006	435.69%
Zn 206.200†	113.4	0.00522	mg/L	0.000199	0.00522	mg/L	0.000199	3.81%
K 766.490†	2077.0	1.01	mg/L	0.052	1.01	mg/L	0.052	5.20%
Na 589.592†	303629.7	27.9	mg/L	0.61	27.9	mg/L	0.61	2.17%
Sr 407.771†	516327.7	0.403	mg/L	0.0097	0.403	mg/L	0.0097	2.39%
Li 670.784†	327.3	0.00371	mg/L	0.001464	0.00371	mg/L	0.001464	39.41%
P 214.914†	1.2	0.0341	mg/L	0.00496	0.0341	mg/L	0.00496	14.55%

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Sequence No.: 30 **Autosampler Location: 52**
Sample ID: L1506005103MS WG526149-08 **Date Collected: 6/5/2015 11:47:30 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1506005103MS WG526149-08

Analyte	Back Pressure	Flow
All	233.0 kPa	0.40 L/min

Mean Data: L1506005103MS WG526149-08

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	2918679.8						28292.69	0.97%
YRADIAL	237680.6						2762.12	1.16%
Ga 417.206	1115853.9						5561.24	0.50%
GaRADIAL	54354.8						617.09	1.14%
Ag 328.068†	57297.2	0.190	mg/L	0.0015	0.190	mg/L	0.0015	0.80%
Al 396.153†	20369.9	4.83	mg/L	0.078	4.83	mg/L	0.078	1.62%
As 188.979†	243.0	0.172	mg/L	0.0030	0.172	mg/L	0.0030	1.72%
Ba 233.527†	36296.3	0.583	mg/L	0.0081	0.583	mg/L	0.0081	1.39%
Be 234.861†	10406.1	0.0208	mg/L	0.00019	0.0208	mg/L	0.00019	0.92%
B 249.677†	47634.4	0.918	mg/L	0.0173	0.918	mg/L	0.0173	1.89%
Ca 227.546†	6081.8	66.6	mg/L	0.58	66.6	mg/L	0.58	0.87%
Cd 228.802†	316.4	0.0210	mg/L	0.00034	0.0210	mg/L	0.00034	1.60%
Co 228.616†	1400.7	0.0947	mg/L	0.00087	0.0947	mg/L	0.00087	0.92%
Cr 267.716†	33426.7	0.249	mg/L	0.0045	0.249	mg/L	0.0045	1.81%
Cu 327.393†	47938.1	0.236	mg/L	0.0034	0.236	mg/L	0.0034	1.42%
Fe 239.562†	14636.4	1.94	mg/L	0.024	1.94	mg/L	0.024	1.21%
Mg 279.077†	37778.7	11.8	mg/L	0.22	11.8	mg/L	0.22	1.85%
Mn 257.610†	178767.2	0.262	mg/L	0.0039	0.262	mg/L	0.0039	1.48%

Approved: June 05, 2015

Mo 202.031†	6647.6	0.515 mg/L	0.0072	0.515 mg/L	0.0072	1.40%
Ni 231.604†	7048.0	0.228 mg/L	0.0029	0.228 mg/L	0.0029	1.29%
Pb 220.353†	1047.7	0.243 mg/L	0.0030	0.243 mg/L	0.0030	1.22%
Sb 206.836†	631.6	0.543 mg/L	0.0060	0.543 mg/L	0.0060	1.10%
Se 196.026†	86.7	0.161 mg/L	0.0072	0.161 mg/L	0.0072	4.49%
Si 251.611†	144265.8	5.09 mg/L	0.026	5.09 mg/L	0.026	0.51%
Sn 189.927†	2967.6	0.498 mg/L	0.0087	0.498 mg/L	0.0087	1.75%
Ti 334.940†	530673.1	0.503 mg/L	0.0104	0.503 mg/L	0.0104	2.08%
Tl 190.801†	312.8	0.241 mg/L	0.0001	0.241 mg/L	0.0001	0.04%
V 290.880†	103167.3	0.509 mg/L	0.0066	0.509 mg/L	0.0066	1.30%
Zn 206.200†	12841.9	0.464 mg/L	0.0047	0.464 mg/L	0.0047	1.02%
K 766.490†	54047.4	27.2 mg/L	0.34	27.2 mg/L	0.34	1.24%
Na 589.592†	550385.0	50.7 mg/L	0.90	50.7 mg/L	0.90	1.78%
Sr 407.771†	1161605.4	0.908 mg/L	0.0167	0.908 mg/L	0.0167	1.84%
Li 670.784†	28704.6	0.469 mg/L	0.0064	0.469 mg/L	0.0064	1.36%
P 214.914†	2958.2	4.92 mg/L	0.058	4.92 mg/L	0.058	1.18%

Sequence No.: 31 **Autosampler Location: 53**
Sample ID: L1506005104MS WG526149-10 **Date Collected: 6/5/2015 11:50:20 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1506005104MS WG526149-10

Analyte	Back Pressure	Flow
All	233.0 kPa	0.40 L/min

Mean Data: L1506005104MS WG526149-10

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2863617.6						16385.52	0.57%
YRADIAL	230800.4						3304.71	1.43%
Ga 417.206	1098770.4						6922.56	0.63%
GaRADIAL	52941.5						781.09	1.48%
Ag 328.068†	57740.7	0.192	mg/L	0.0024	0.192	mg/L	0.0024	1.25%
Al 396.153†	20910.8	4.96	mg/L	0.066	4.96	mg/L	0.066	1.33%
As 188.979†	242.7	0.172	mg/L	0.0036	0.172	mg/L	0.0036	2.07%
Ba 233.527†	36389.2	0.585	mg/L	0.0107	0.585	mg/L	0.0107	1.84%
Be 234.861†	10474.2	0.0209	mg/L	0.00037	0.0209	mg/L	0.00037	1.79%
B 249.677†	48296.4	0.930	mg/L	0.0185	0.930	mg/L	0.0185	1.99%
Ca 227.546†	6013.1	65.8	mg/L	0.52	65.8	mg/L	0.52	0.79%
Cd 228.802†	324.3	0.0215	mg/L	0.00025	0.0215	mg/L	0.00025	1.17%
Co 228.616†	1424.2	0.0963	mg/L	0.00036	0.0963	mg/L	0.00036	0.38%
Cr 267.716†	33615.9	0.251	mg/L	0.0047	0.251	mg/L	0.0047	1.86%
Cu 327.393†	48134.5	0.237	mg/L	0.0033	0.237	mg/L	0.0033	1.41%
Fe 239.562†	14702.5	1.95	mg/L	0.071	1.95	mg/L	0.071	3.62%
Mg 279.077†	38970.3	12.2	mg/L	0.36	12.2	mg/L	0.36	2.94%
Mn 257.610†	179534.2	0.263	mg/L	0.0043	0.263	mg/L	0.0043	1.62%
Mo 202.031†	6791.0	0.526	mg/L	0.0041	0.526	mg/L	0.0041	0.78%
Ni 231.604†	7184.8	0.233	mg/L	0.0006	0.233	mg/L	0.0006	0.24%
Pb 220.353†	1079.7	0.250	mg/L	0.0024	0.250	mg/L	0.0024	0.94%
Sb 206.836†	637.3	0.548	mg/L	0.0031	0.548	mg/L	0.0031	0.57%
Se 196.026†	89.2	0.166	mg/L	0.0031	0.166	mg/L	0.0031	1.90%
Si 251.611†	139393.4	4.92	mg/L	0.094	4.92	mg/L	0.094	1.92%
Sn 189.927†	3031.6	0.509	mg/L	0.0027	0.509	mg/L	0.0027	0.52%
Ti 334.940†	539617.8	0.511	mg/L	0.0025	0.511	mg/L	0.0025	0.48%
Tl 190.801†	315.4	0.243	mg/L	0.0038	0.243	mg/L	0.0038	1.55%
V 290.880†	104254.1	0.514	mg/L	0.0093	0.514	mg/L	0.0093	1.81%
Zn 206.200†	13149.3	0.475	mg/L	0.0034	0.475	mg/L	0.0034	0.71%
K 766.490†	55558.9	28.0	mg/L	0.39	28.0	mg/L	0.39	1.39%
Na 589.592†	560337.8	51.6	mg/L	0.67	51.6	mg/L	0.67	1.30%
Sr 407.771†	1183614.0	0.925	mg/L	0.0029	0.925	mg/L	0.0029	0.31%
Li 670.784†	29577.6	0.483	mg/L	0.0068	0.483	mg/L	0.0068	1.41%
P 214.914†	3004.5	5.00	mg/L	0.019	5.00	mg/L	0.019	0.39%

Sequence No.: 32 **Autosampler Location: 54**
Sample ID: L1506005105SD WG526149-09 **Date Collected: 6/5/2015 11:53:09 AM**
Analyst: KHR **Data Type: Original**

Approved: June 05, 2015

Kym H. Rhoden

Initial Sample Wt: Initial Sample Vol:
Dilution: Sample Prep Vol:

Nebulizer Parameters: L1506005105SD WG526149-09

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1506005105SD WG526149-09

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	2845203.9						5843.07	0.21%
YRADIAL	233730.0						5837.95	2.50%
Ga 417.206	1092803.0						2463.27	0.23%
GaRADIAL	53565.8						1288.99	2.41%
Ag 328.068†	57863.5	0.192	mg/L	0.0023	0.192	mg/L	0.0023	1.20%
Al 396.153†	20644.2	4.90	mg/L	0.021	4.90	mg/L	0.021	0.43%
As 188.979†	245.3	0.174	mg/L	0.0040	0.174	mg/L	0.0040	2.30%
Ba 233.527†	36589.9	0.588	mg/L	0.0049	0.588	mg/L	0.0049	0.83%
Be 234.861†	10446.4	0.0209	mg/L	0.00018	0.0209	mg/L	0.00018	0.84%
B 249.677†	48815.1	0.940	mg/L	0.0086	0.940	mg/L	0.0086	0.92%
Ca 227.546†	5921.0	64.8	mg/L	0.28	64.8	mg/L	0.28	0.43%
Cd 228.802†	325.7	0.0216	mg/L	0.00013	0.0216	mg/L	0.00013	0.60%
Co 228.616†	1437.4	0.0972	mg/L	0.00101	0.0972	mg/L	0.00101	1.04%
Cr 267.716†	33892.3	0.253	mg/L	0.0029	0.253	mg/L	0.0029	1.15%
Cu 327.393†	48663.4	0.240	mg/L	0.0013	0.240	mg/L	0.0013	0.56%
Fe 239.562†	15107.4	2.01	mg/L	0.016	2.01	mg/L	0.016	0.78%
Mg 279.077†	37272.8	11.7	mg/L	0.04	11.7	mg/L	0.04	0.39%
Mn 257.610†	182494.8	0.267	mg/L	0.0023	0.267	mg/L	0.0023	0.88%
Mo 202.031†	6792.2	0.526	mg/L	0.0010	0.526	mg/L	0.0010	0.19%
Ni 231.604†	7195.7	0.233	mg/L	0.0002	0.233	mg/L	0.0002	0.09%
Pb 220.353†	1091.3	0.253	mg/L	0.0048	0.253	mg/L	0.0048	1.92%
Sb 206.836†	643.4	0.553	mg/L	0.0009	0.553	mg/L	0.0009	0.17%
Se 196.026†	88.1	0.164	mg/L	0.0081	0.164	mg/L	0.0081	4.96%
Si 251.611†	143195.4	5.05	mg/L	0.045	5.05	mg/L	0.045	0.89%
Sn 189.927†	3039.6	0.510	mg/L	0.0029	0.510	mg/L	0.0029	0.57%
Ti 334.940†	531789.3	0.504	mg/L	0.0063	0.504	mg/L	0.0063	1.25%
Tl 190.801†	316.6	0.244	mg/L	0.0053	0.244	mg/L	0.0053	2.17%
V 290.880†	104654.0	0.516	mg/L	0.0047	0.516	mg/L	0.0047	0.92%
Zn 206.200†	13180.4	0.476	mg/L	0.0020	0.476	mg/L	0.0020	0.43%
K 766.490†	54335.1	27.4	mg/L	0.09	27.4	mg/L	0.09	0.33%
Na 589.592†	539503.1	49.7	mg/L	1.45	49.7	mg/L	1.45	2.91%
Sr 407.771†	1143934.0	0.894	mg/L	0.0302	0.894	mg/L	0.0302	3.38%
Li 670.784†	28819.3	0.471	mg/L	0.0010	0.471	mg/L	0.0010	0.22%
P 214.914†	3002.9	4.99	mg/L	0.015	4.99	mg/L	0.015	0.31%

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Sequence No.: 33 Autosampler Location: 55
Sample ID: L1506005106SD WG526149-11 Date Collected: 6/5/2015 11:56:01 AM
Analyst: KHR Data Type: Original
Initial Sample Wt: Initial Sample Vol:
Dilution: Sample Prep Vol:

Nebulizer Parameters: L1506005106SD WG526149-11

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: L1506005106SD WG526149-11

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	2917628.6						31549.55	1.08%
YRADIAL	236283.7						934.61	0.40%
Ga 417.206	1117190.0						7195.93	0.64%
GaRADIAL	53890.6						194.37	0.36%
Ag 328.068†	56583.9	0.188	mg/L	0.0077	0.188	mg/L	0.0077	4.08%
Al 396.153†	20565.3	4.88	mg/L	0.008	4.88	mg/L	0.008	0.16%
As 188.979†	239.8	0.170	mg/L	0.0068	0.170	mg/L	0.0068	4.02%
Ba 233.527†	35598.5	0.572	mg/L	0.0242	0.572	mg/L	0.0242	4.23%
Be 234.861†	10292.2	0.0206	mg/L	0.00093	0.0206	mg/L	0.00093	4.52%

Approved: June 05, 2015

Kym H. Rhoden

B 249.677†	47794.6	0.921 mg/L	0.0386	0.921 mg/L	0.0386	4.19%
Ca 227.546†	5956.6	65.2 mg/L	0.36	65.2 mg/L	0.36	0.55%
Cd 228.802†	316.8	0.0210 mg/L	0.00015	0.0210 mg/L	0.00015	0.72%
Co 228.616†	1418.6	0.0959 mg/L	0.00112	0.0959 mg/L	0.00112	1.16%
Cr 267.716†	33015.4	0.246 mg/L	0.0104	0.246 mg/L	0.0104	4.21%
Cu 327.393†	47131.0	0.232 mg/L	0.0106	0.232 mg/L	0.0106	4.57%
Fe 239.562†	14627.7	1.94 mg/L	0.025	1.94 mg/L	0.025	1.31%
Mg 279.077†	38473.3	12.0 mg/L	0.09	12.0 mg/L	0.09	0.72%
Mn 257.610†	175404.2	0.257 mg/L	0.0116	0.257 mg/L	0.0116	4.50%
Mo 202.031†	6734.4	0.521 mg/L	0.0057	0.521 mg/L	0.0057	1.09%
Ni 231.604†	7130.8	0.231 mg/L	0.0026	0.231 mg/L	0.0026	1.12%
Pb 220.353†	1076.6	0.249 mg/L	0.0012	0.249 mg/L	0.0012	0.48%
Sb 206.836†	636.3	0.547 mg/L	0.0025	0.547 mg/L	0.0025	0.45%
Se 196.026†	89.6	0.166 mg/L	0.0037	0.166 mg/L	0.0037	2.23%
Si 251.611†	136008.2	4.80 mg/L	0.218	4.80 mg/L	0.218	4.54%
Sn 189.927†	3008.4	0.505 mg/L	0.0054	0.505 mg/L	0.0054	1.07%
Ti 334.940†	536956.9	0.509 mg/L	0.0068	0.509 mg/L	0.0068	1.33%
Tl 190.801†	314.4	0.243 mg/L	0.0028	0.243 mg/L	0.0028	1.14%
V 290.880†	101643.0	0.501 mg/L	0.0232	0.501 mg/L	0.0232	4.62%
Zn 206.200†	13085.5	0.473 mg/L	0.0043	0.473 mg/L	0.0043	0.91%
K 766.490†	55537.9	28.0 mg/L	0.10	28.0 mg/L	0.10	0.35%
Na 589.592†	553391.3	51.0 mg/L	0.34	51.0 mg/L	0.34	0.67%
Sr 407.771†	1164608.7	0.910 mg/L	0.0046	0.910 mg/L	0.0046	0.50%
Li 670.784†	29284.4	0.478 mg/L	0.0035	0.478 mg/L	0.0035	0.73%
P 214.914†	2972.2	4.94 mg/L	0.040	4.94 mg/L	0.040	0.82%

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Sequence No.: 34 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 6/5/2015 11:58:50 AM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	232.0 kPa	0.40 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	2833196.1						43474.74	1.53%
YRADIAL	227805.7						923.56	0.41%
Ga 417.206	1072982.5						17587.08	1.64%
GaRADIAL	51173.7						84.93	0.17%
Ag 328.068†	118583.9	0.394	mg/L	0.0064	0.394	mg/L	0.0064	1.63%
QC value within limits for Ag 328.068 Recovery = 98.47%								
Al 396.153†	41916.2	9.95	mg/L	0.074	9.95	mg/L	0.074	0.74%
QC value within limits for Al 396.153 Recovery = 99.47%								
As 188.979†	513.8	0.365	mg/L	0.0039	0.365	mg/L	0.0039	1.08%
QC value within limits for As 188.979 Recovery = 91.32%								
Ba 233.527†	64755.3	1.04	mg/L	0.014	1.04	mg/L	0.014	1.37%
QC value within limits for Ba 233.527 Recovery = 103.90%								
Be 234.861†	22041.9	0.0439	mg/L	0.00087	0.0439	mg/L	0.00087	1.99%
QC value less than the lower limit for Be 234.861 Recovery = 87.85%								
B 249.677†	24772.7	0.488	mg/L	0.0065	0.488	mg/L	0.0065	1.34%
QC value within limits for B 249.677 Recovery = 97.66%								
Ca 227.546†	967.6	10.7	mg/L	0.09	10.7	mg/L	0.09	0.83%
QC value within limits for Ca 227.546 Recovery = 106.60%								
Cd 228.802†	679.0	0.0450	mg/L	0.00042	0.0450	mg/L	0.00042	0.93%
QC value within limits for Cd 228.802 Recovery = 90.01%								
Co 228.616†	3029.7	0.205	mg/L	0.0020	0.205	mg/L	0.0020	0.99%
QC value within limits for Co 228.616 Recovery = 102.39%								
Cr 267.716†	69363.2	0.516	mg/L	0.0059	0.516	mg/L	0.0059	1.15%
QC value within limits for Cr 267.716 Recovery = 103.25%								
Cu 327.393†	102110.8	0.502	mg/L	0.0078	0.502	mg/L	0.0078	1.55%
QC value within limits for Cu 327.393 Recovery = 100.43%								
Fe 239.562†	28844.2	3.84	mg/L	0.028	3.84	mg/L	0.028	0.74%
QC value within limits for Fe 239.562 Recovery = 95.94%								
Mg 279.077†	28537.4	8.93	mg/L	0.024	8.93	mg/L	0.024	0.27%
QC value less than the lower limit for Mg 279.077 Recovery = 89.26%								

Approved: June 05, 2015

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Mn 257.610†          353735.9       0.519 mg/L        0.0073       0.519 mg/L        0.0073   1.42%
   QC value within limits for Mn 257.610  Recovery = 103.73%
Mo 202.031†           13460.9        1.04 mg/L         0.008        1.04 mg/L         0.008   0.77%
   QC value within limits for Mo 202.031  Recovery = 103.68%
Ni 231.604†           15753.8       0.511 mg/L        0.0048       0.511 mg/L        0.0048   0.93%
   QC value within limits for Ni 231.604  Recovery = 102.29%
Pb 220.353†            2220.2       0.516 mg/L        0.0029       0.516 mg/L        0.0029   0.55%
   QC value within limits for Pb 220.353  Recovery = 103.19%
Sb 206.836†            1334.0        1.14 mg/L         0.011        1.14 mg/L         0.011   0.95%
   QC value within limits for Sb 206.836  Recovery = 95.31%
Se 196.026†             200.2       0.375 mg/L        0.0034       0.375 mg/L        0.0034   0.91%
   QC value within limits for Se 196.026  Recovery = 93.80%
Si 251.611†          134873.3        4.75 mg/L         0.090        4.75 mg/L         0.090   1.90%
   QC value within limits for Si 251.611  Recovery = 95.07%
Sn 189.927†            6185.4        1.04 mg/L         0.005        1.04 mg/L         0.005   0.45%
   QC value within limits for Sn 189.927  Recovery = 103.92%
Ti 334.940†         1100479.3        1.03 mg/L         0.009        1.03 mg/L         0.009   0.87%
   QC value within limits for Ti 334.940  Recovery = 103.08%
Tl 190.801†             710.3       0.544 mg/L        0.0049       0.544 mg/L        0.0049   0.90%
   QC value within limits for Tl 190.801  Recovery = 108.76%
V 290.880†           212112.6        1.04 mg/L         0.016        1.04 mg/L         0.016   1.57%
   QC value within limits for V 290.880  Recovery = 104.37%
Zn 206.200†           27366.1       0.987 mg/L        0.0131       0.987 mg/L        0.0131   1.33%
   QC value within limits for Zn 206.200  Recovery = 98.75%
K 766.490†           108228.4        54.4 mg/L          0.32        54.4 mg/L          0.32   0.59%
   QC value within limits for K 766.490  Recovery = 108.72%
Na 589.592†          554724.8        51.1 mg/L          1.34        51.1 mg/L          1.34   2.63%
   QC value within limits for Na 589.592  Recovery = 102.15%
Sr 407.771†         1353223.1        1.06 mg/L         0.029        1.06 mg/L         0.029   2.75%
   QC value within limits for Sr 407.771  Recovery = 105.94%
Li 670.784†           58832.4       0.963 mg/L        0.0113       0.963 mg/L        0.0113   1.17%
   QC value within limits for Li 670.784  Recovery = 96.29%
P 214.914†             6092.0        10.1 mg/L          0.10        10.1 mg/L          0.10   0.97%
   QC value within limits for P 214.914  Recovery = 100.99%
QC Failed.  Continue with analysis.

==========================================================================================================
Sequence No.: 35                                    Autosampler Location: 1
Sample ID: CCB                                      Date Collected: 6/5/2015 12:01:44 PM
Analyst:                                            Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

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Nebulizer Parameters: CCB
Analyte                  Back Pressure    Flow
All                     232.0 kPa        0.40 L/min

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Mean Data: CCB
                   Mean Corrected         Calib.                          Sample
Analyte               Intensity     Conc. Units      Std.Dev.      Conc. Units      Std.Dev.   RSD
Y 371.029            3045377.7                                                     45223.69   1.48%
YRADIAL               234052.0                                                      2094.68   0.89%
Ga 417.206           1145819.5                                                     14968.89   1.31%
GaRADIAL               52808.5                                                       462.32   0.88%
Ag 328.068†               -6.0     0.00031 mg/L      0.000796     0.00031 mg/L      0.000796 253.22%
   QC value within limits for Ag 328.068  Recovery = Not calculated
Al 396.153†               -6.1    -0.00318 mg/L      0.005360    -0.00318 mg/L      0.005360 168.42%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†               -2.4    -0.00475 mg/L      0.003809    -0.00475 mg/L      0.003809  80.17%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†               29.7     0.00258 mg/L      0.000032     0.00258 mg/L      0.000032   1.22%
   QC value within limits for Ba 233.527  Recovery = Not calculated
Be 234.861†              274.1     0.00069 mg/L      0.000028     0.00069 mg/L      0.000028   4.10%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†               401.3      0.0117 mg/L       0.00065      0.0117 mg/L       0.00065   5.54%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†               25.9       0.289 mg/L        0.0177       0.289 mg/L        0.0177   6.12%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†               -2.8    -0.00014 mg/L      0.000403    -0.00014 mg/L      0.000403 290.07%
   QC value within limits for Cd 228.802  Recovery = Not calculated
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Co 228.616†              12.5     0.00093 mg/L      0.000101     0.00093 mg/L      0.000101  10.88%
   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†             -48.9     0.00073 mg/L      0.000621     0.00073 mg/L      0.000621  84.70%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†             161.1     0.00122 mg/L      0.000678     0.00122 mg/L      0.000678  55.71%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†               5.7    -0.00370 mg/L      0.000787    -0.00370 mg/L      0.000787  21.26%
   QC value within limits for Fe 239.562  Recovery = Not calculated
Mg 279.077†               9.2    -0.00505 mg/L      0.006266    -0.00505 mg/L      0.006266 124.14%
   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†            -178.6    -0.00053 mg/L      0.000024    -0.00053 mg/L      0.000024   4.56%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†              -6.8     0.00473 mg/L      0.000391     0.00473 mg/L      0.000391   8.28%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†              30.3     0.00013 mg/L      0.000301     0.00013 mg/L      0.000301 234.64%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†              19.1     0.00294 mg/L      0.002009     0.00294 mg/L      0.002009  68.40%
   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†              -7.4    -0.00331 mg/L      0.003039    -0.00331 mg/L      0.003039  91.76%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†              -0.9    -0.00437 mg/L      0.003243    -0.00437 mg/L      0.003243  74.26%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†             120.3      0.0148 mg/L       0.00320      0.0148 mg/L       0.00320  21.65%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†               6.1     0.00063 mg/L      0.001636     0.00063 mg/L      0.001636 261.14%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†             -65.7     0.00363 mg/L      0.000123     0.00363 mg/L      0.000123   3.39%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†               0.2     0.00279 mg/L      0.001348     0.00279 mg/L      0.001348  48.32%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†              -362.2     0.00061 mg/L      0.001336     0.00061 mg/L      0.001336 218.03%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†               4.0     0.00129 mg/L      0.000083     0.00129 mg/L      0.000083   6.46%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†              184.4      0.0777 mg/L       0.04778      0.0777 mg/L       0.04778  61.47%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†             320.7     0.00815 mg/L      0.007936     0.00815 mg/L      0.007936  97.42%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†             230.8     0.00155 mg/L      0.000059     0.00155 mg/L      0.000059   3.78%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†             164.0     0.00104 mg/L      0.000473     0.00104 mg/L      0.000473  45.62%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†                4.1      0.0390 mg/L       0.01804      0.0390 mg/L       0.01804  46.25%
   QC value within limits for P 214.914  Recovery = Not calculated
All analyte(s) passed QC.
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Approved: June 05, 2015

Lynn H. Rhoden

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Analysis Begun

Start Time: 6/5/2015 1:13:32 PM **Plasma On Time: 6/5/2015 7:30:23 AM**
Logged In Analyst: peicp2 **Technique: ICP Continuous**
Spectrometer Model: Optima 4300 DV, S/N 077N4011401 Autosampler Model: Cetac

Sample Information File: C:\pe\peicp2\Sample Information\FRIDAY1.sif
Batch ID:
Results Data Set: 060515HR
Results Library: C:\pe\peicp2\Results\results2.mdb

==========

Sequence No.: 1 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 6/5/2015 1:14:12 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	**Back Pressure**	**Flow**
All	230.0 kPa	0.40 L/min

Mean Data: CCV

Analyte	**Mean Corrected Intensity**	**Calib. Conc. Units**	**Std.Dev.**	**Sample Conc. Units**	**Std.Dev.**	**RSD**
Y 371.029	2776108.7				41465.16	1.49%
YRADIAL	226379.4				2816.30	1.24%
Ga 417.206	1054413.3				16970.61	1.61%
GaRADIAL	51300.3				471.97	0.92%
Ag 328.068†	116597.3	0.387 mg/L	0.0055	0.387 mg/L	0.0055	1.43%
QC value within limits for Ag 328.068 Recovery = 96.83%						
Al 396.153†	40770.0	9.67 mg/L	0.034	9.67 mg/L	0.034	0.35%
QC value within limits for Al 396.153 Recovery = 96.74%						
As 188.979†	511.6	0.364 mg/L	0.0060	0.364 mg/L	0.0060	1.65%
QC value within limits for As 188.979 Recovery = 90.93%						
Ba 233.527†	63982.8	1.03 mg/L	0.017	1.03 mg/L	0.017	1.64%
QC value within limits for Ba 233.527 Recovery = 102.66%						
Be 234.861†	21667.5	0.0432 mg/L	0.00074	0.0432 mg/L	0.00074	1.71%
QC value less than the lower limit for Be 234.861 Recovery = 86.36%						
B 249.677†	23500.3	0.464 mg/L	0.0091	0.464 mg/L	0.0091	1.95%
QC value within limits for B 249.677 Recovery = 92.78%						
Ca 227.546†	963.7	10.6 mg/L	0.16	10.6 mg/L	0.16	1.48%
QC value within limits for Ca 227.546 Recovery = 106.17%						
Cd 228.802†	684.4	0.0454 mg/L	0.00054	0.0454 mg/L	0.00054	1.19%
QC value within limits for Cd 228.802 Recovery = 90.77%						
Co 228.616†	3018.0	0.204 mg/L	0.0037	0.204 mg/L	0.0037	1.82%
QC value within limits for Co 228.616 Recovery = 102.00%						
Cr 267.716†	68043.8	0.506 mg/L	0.0070	0.506 mg/L	0.0070	1.39%
QC value within limits for Cr 267.716 Recovery = 101.29%						
Cu 327.393†	100251.5	0.493 mg/L	0.0080	0.493 mg/L	0.0080	1.63%
QC value within limits for Cu 327.393 Recovery = 98.61%						
Fe 239.562†	28530.1	3.80 mg/L	0.031	3.80 mg/L	0.031	0.81%
QC value within limits for Fe 239.562 Recovery = 94.89%						
Mg 279.077†	28158.1	8.81 mg/L	0.043	8.81 mg/L	0.043	0.49%
QC value less than the lower limit for Mg 279.077 Recovery = 88.07%						
Mn 257.610†	349027.7	0.512 mg/L	0.0074	0.512 mg/L	0.0074	1.45%
QC value within limits for Mn 257.610 Recovery = 102.35%						
Mo 202.031†	13393.5	1.03 mg/L	0.017	1.03 mg/L	0.017	1.60%
QC value within limits for Mo 202.031 Recovery = 103.16%						
Ni 231.604†	15687.3	0.509 mg/L	0.0078	0.509 mg/L	0.0078	1.54%
QC value within limits for Ni 231.604 Recovery = 101.86%						
Pb 220.353†	2218.5	0.515 mg/L	0.0066	0.515 mg/L	0.0066	1.28%
QC value within limits for Pb 220.353 Recovery = 103.10%						
Sb 206.836†	1320.6	1.13 mg/L	0.019	1.13 mg/L	0.019	1.64%
QC value within limits for Sb 206.836 Recovery = 94.35%						
Se 196.026†	203.0	0.380 mg/L	0.0152	0.380 mg/L	0.0152	4.00%
QC value within limits for Se 196.026 Recovery = 95.09%						
Si 251.611†	132388.7	4.67 mg/L	0.069	4.67 mg/L	0.069	1.48%

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```
   QC value within limits for Si 251.611  Recovery = 93.32%
Sn 189.927†            6158.4        1.03 mg/L        0.017        1.03 mg/L        0.017   1.65%
   QC value within limits for Sn 189.927  Recovery = 103.47%
Ti 334.940†         1087341.3        1.02 mg/L        0.004        1.02 mg/L        0.004   0.42%
   QC value within limits for Ti 334.940  Recovery = 101.85%
Tl 190.801†             716.5       0.548 mg/L       0.0143       0.548 mg/L       0.0143   2.60%
   QC value within limits for Tl 190.801  Recovery = 109.66%
V 290.880†           208784.8        1.03 mg/L        0.014        1.03 mg/L        0.014   1.35%
   QC value within limits for V 290.880  Recovery = 102.73%
Zn 206.200†           27007.1       0.975 mg/L       0.0196       0.975 mg/L       0.0196   2.01%
   QC value within limits for Zn 206.200  Recovery = 97.45%
K 766.490†           106805.9        53.7 mg/L         0.48        53.7 mg/L         0.48   0.90%
   QC value within limits for K 766.490  Recovery = 107.31%
Na 589.592†          540655.4        49.8 mg/L         0.80        49.8 mg/L         0.80   1.62%
   QC value within limits for Na 589.592  Recovery = 99.54%
Sr 407.771†         1317341.6        1.03 mg/L        0.017        1.03 mg/L        0.017   1.65%
   QC value within limits for Sr 407.771  Recovery = 103.13%
Li 670.784†           57429.9       0.940 mg/L       0.0047       0.940 mg/L       0.0047   0.50%
   QC value within limits for Li 670.784  Recovery = 93.99%
P 214.914†             6061.5        10.0 mg/L         0.17        10.0 mg/L         0.17   1.65%
   QC value within limits for P 214.914  Recovery = 100.48%
QC Failed.  Continue with analysis.

==========================================================================================
Sequence No.: 2                                    Autosampler Location: 1
Sample ID: CCB                                     Date Collected: 6/5/2015 1:17:03 PM
Analyst:                                           Data Type: Original
Initial Sample Wt:                                 Initial Sample Vol:
Dilution:                                          Sample Prep Vol:

------------------------------------------------------------------------------------------
Nebulizer Parameters: CCB
Analyte                 Back Pressure    Flow
All                    230.0 kPa        0.40 L/min

------------------------------------------------------------------------------------------
Mean Data: CCB
                   Mean Corrected        Calib.                          Sample
Analyte               Intensity     Conc. Units     Std.Dev.     Conc. Units     Std.Dev.   RSD
Y 371.029            2973138.7                                                  41917.26   1.41%
YRADIAL               236176.4                                                   2930.60   1.24%
Ga 417.206           1112586.6                                                  15358.84   1.38%
GaRADIAL               53456.7                                                    755.24   1.41%
Ag 328.068†               -4.4     0.00032 mg/L      0.000589     0.00032 mg/L      0.000589 183.09%
   QC value within limits for Ag 328.068  Recovery = Not calculated
Al 396.153†               -8.6    -0.00379 mg/L      0.001161    -0.00379 mg/L      0.001161  30.64%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†                0.7    -0.00248 mg/L      0.003985    -0.00248 mg/L      0.003985 160.70%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†               25.7     0.00252 mg/L      0.000058     0.00252 mg/L      0.000058   2.30%
   QC value within limits for Ba 233.527  Recovery = Not calculated
Be 234.861†              251.1     0.00065 mg/L      0.000015     0.00065 mg/L      0.000015   2.33%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†                59.2     0.00518 mg/L      0.001001     0.00518 mg/L      0.001001  19.30%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†               20.1       0.224 mg/L        0.1391       0.224 mg/L        0.1391  61.96%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†               -3.4    -0.00019 mg/L      0.000144    -0.00019 mg/L      0.000144  76.52%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†                9.3     0.00071 mg/L      0.000258     0.00071 mg/L      0.000258  36.16%
   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†               13.7     0.00120 mg/L      0.000301     0.00120 mg/L      0.000301  25.09%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†              255.0     0.00168 mg/L      0.000429     0.00168 mg/L      0.000429  25.56%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†                8.1    -0.00337 mg/L      0.001107    -0.00337 mg/L      0.001107  32.85%
   QC value within limits for Fe 239.562  Recovery = Not calculated
Mg 279.077†                3.4    -0.00687 mg/L      0.003293    -0.00687 mg/L      0.003293  47.95%
   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†             -117.2    -0.00044 mg/L      0.000026    -0.00044 mg/L      0.000026   5.81%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†               -5.4     0.00483 mg/L      0.000471     0.00483 mg/L      0.000471   9.76%
```

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```
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†                19.5    -0.00022 mg/L      0.000447    -0.00022 mg/L      0.000447 200.83%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†                13.3     0.00158 mg/L      0.000750     0.00158 mg/L      0.000750  47.42%
   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†                -7.0    -0.00297 mg/L      0.003098    -0.00297 mg/L      0.003098 104.37%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†                -0.4    -0.00338 mg/L      0.007854    -0.00338 mg/L      0.007854 232.28%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†               -77.1     0.00785 mg/L      0.001064     0.00785 mg/L      0.001064  13.57%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†                 7.5     0.00088 mg/L      0.000502     0.00088 mg/L      0.000502  57.28%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†              -260.7     0.00345 mg/L      0.000222     0.00345 mg/L      0.000222   6.43%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†                -1.5     0.00153 mg/L      0.003295     0.00153 mg/L      0.003295 215.96%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†               -190.0     0.00146 mg/L      0.000646     0.00146 mg/L      0.000646  44.31%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†                -2.4     0.00106 mg/L      0.000287     0.00106 mg/L      0.000287  26.97%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†                118.4      0.0444 mg/L       0.01239      0.0444 mg/L       0.01239  27.93%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†               -50.7     -0.0258 mg/L       0.00687     -0.0258 mg/L       0.00687  26.60%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†                29.1     0.00140 mg/L      0.000130     0.00140 mg/L      0.000130   9.32%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†                80.9    -0.00033 mg/L      0.000951    -0.00033 mg/L      0.000951 292.47%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†                 -0.4      0.0316 mg/L       0.01411      0.0316 mg/L       0.01411  44.70%
   QC value within limits for P 214.914  Recovery = Not calculated
All analyte(s) passed QC.
User canceled analysis.
```

Approved: June 05, 2015

Lynn H. Rhoden

2.3.2 Metals ICP-MS Data

2.3.2.1 Summary Data

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW24FF-052815	**Prep Method:**	3015	**Prep Date:**	06/01/2015 08:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/08/2015 10:32
Workgroup #:	WG525967	**Analyst:**	BKT	**Run Date:**	06/08/2015 11:28
Collect Date:	05/28/2015 08:15	**Dilution:**	1	**File ID:**	NI.060815.112842
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0170		0.00400	0.00200	0.00100

Certificate of Analysis

Sample #:	L15051752-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW25FF-052815	**Prep Method:**	3015	**Prep Date:**	06/01/2015 08:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/08/2015 10:32
Workgroup #:	WG525967	**Analyst:**	BKT	**Run Date:**	06/08/2015 11:31
Collect Date:	05/28/2015 09:40	**Dilution:**	1	**File ID:**	NI.060815.113154
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0393		0.00400	0.00200	0.00100

Certificate of Analysis

Sample #:	L15051752-09	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW18FF-052815	**Prep Method:**	3015	**Prep Date:**	06/01/2015 08:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/08/2015 10:32
Workgroup #:	WG525967	**Analyst:**	BKT	**Run Date:**	06/08/2015 11:35
Collect Date:	05/28/2015 11:00	**Dilution:**	1	**File ID:**	NI.060815.113505
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0609		0.00400	0.00200	0.00100

2.3.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer NexION 300X

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	100
Vi = Initial volume	40
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/L)	0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	200
Vi = Initial volume	0.5
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/kg)	40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	40
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	50

50 ug/kg = 0.050 mg/kg

Perkin Elmer NexION ICP/MS

STANDARDS KEY

QC Std 1 - ICV
QC Std 2 - ICB
QC Std 3 - LLICV
QC Std 4 - ICSA
QC Std 5 - ICSAB
QC Std 6 - CCV
QC Std 7 - CCB
QC Std 8 - LLCCV

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.00005	0.05	0.1
Sb	10	0	0.00005	0.05	0.1
As	10	0	0.00005	0.05	0.1
Ba	10	0	0.00005	0.05	0.1
Be	10	0	0.00005	0.05	0.1
Ca	1000	0	0.005	5	10
Cd	10	0	0.0005	0.05	0.1
Cr	10	0	0.0005	0.05	0.1
Co	10	0	0.0005	0.05	0.1
Cu	10	0	0.0005	0.05	0.1
Fe	1000	0	0.005	5	10
Pb	10	0	0.00005	0.05	0.1
Mg	1000	0	0.005	5	10
Mn	10	0	0.00005	0.05	0.1
Ni	10	0	0.00005	0.05	0.1
K	1000	0	0.005	5	10
Se	10	0	0.00005	0.05	0.1
Ag	10	0	0.00005	0.05	0.1
Na	1000	0	0.005	5	10
Tl	10	0	0.00005	0.05	0.1
V	10	0	0.00005	0.05	0.1
U	1000	0	0.00005	0.05	0.1
Zn	10	0	0.00005	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG525687
Analyst: ERP
Spike Analyst: ERP
Run Date: 06/01/2015 08:54
Method: 3015
Balance: BAL019
Instrument: MW-1
Instrument Start: 06/01/2015 09:19

SOP: ME407 Revison 17
Spike Solution: STD68313
Spike Witness: AC
HNO3 Lot #: COA18221
40 & 50 ML. DIGESTION TU COA18222
MS Filters- fisher-Lot#r RGT32947

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG525687-03	BLANK	1	20 mL	50 mL	184.565 g	184.56 g		
2	WG525687-04	LCS	1	20 mL	50 mL	182.708 g	182.704 g	.25 mL	
3	WG525687-01	REF	1	20 mL	50 mL	183.292 g	183.281 g		
4	L15051333-04	RS02	1	20 mL	50 mL	183.292 g	183.281 g		06/04/15
5	WG525687-05	MS	1	20 mL	50 mL	182.272 g	182.269 g	.25 mL	
6	L15051333-05	MS02	1	20 mL	50 mL	182.272 g	182.269 g	.25 mL	06/04/15
7	WG525687-06	MSD	1	20 mL	50 mL	185.503 g	185.503 g	.25 mL	
8	L15051333-06	SD02	1	20 mL	50 mL	185.503 g	185.503 g	.25 mL	06/04/15
9	L15051333-11	SAMP	1	20 mL	50 mL	185.236 g	185.227 g		06/04/15
10	L15051333-14	SAMP	1	20 mL	50 mL	182.801 g	182.782 g		06/04/15
11	L15051333-17	SAMP	1	20 mL	50 mL	182.615 g	182.594 g		06/04/15
12	L15051333-20	SAMP	1	20 mL	50 mL	183.338 g	183.336 g		06/04/15
13	L15051333-23	SAMP	1	20 mL	50 mL	182.611 g	182.592 g		06/04/15
14	L15051333-26	SAMP	1	20 mL	50 mL	182.284 g	182.268 g		06/04/15
15	L15051333-29	SAMP	1	20 mL	50 mL	182.445 g	182.428 g		06/04/15
16	L15051457-01	SAMP	1	20 mL	50 mL	184.272 g	184.27 g		06/01/15
17	L15051491-01	SAMP	1	20 mL	50 mL	183.247 g	183.221 g		05/29/15
18	L15051491-02	SAMP	1	20 mL	50 mL	183.642 g	183.634 g		05/29/15
19	L15051491-03	SAMP	1	20 mL	50 mL	183.666 g	183.647 g		05/29/15
20	L15051491-04	SAMP	1	20 mL	50 mL	185.432 g	185.412 g		05/29/15
21	L15051680-01	SAMP	1	20 mL	50 mL	186.684 g	186.683 g		06/08/15
22	L15051743-01	SAMP	2	20 mL	50 mL	186.286 g	186.255 g		06/04/15
23	WG525687-02	REF	2	20 mL	50 mL	184.322 g	184.276 g		
24	L15051743-02	SAMP	2	20 mL	50 mL	184.322 g	184.276 g		06/04/15
25	L15051752-05	SAMP	1	20 mL	50 mL	184.792 g	184.758 g		06/09/15
26	L15051752-07	SAMP	1	20 mL	50 mL	180.48 g	180.435 g		06/09/15
27	L15051752-09	SAMP	1	20 mL	50 mL	181.547 g	181.481 g		06/09/15
28	WG525687-07	DUP	1	20 mL	50 mL	182.831 g	182.816 g		

Analyst: Erin Potter

Reviewer:

MW_DIG - Modified 09/30/2009
PDF ID: 4208497
Report generated: 06/01/2015 11:31

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 060815A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 1
Maintenance Log ID:

Calibration Std: STD70733 ICV Std: STD70879 Post Spike: STD69341
ICSA: STD70878 ICSAB: STD70321 Int. Std: RGT31676
CCV: STD70886 LLCCV: STD70320 Tuning Sol : STD70366
Stannous : Hydroxylamine :

Workgroups: 525539,525967,526663,526664,526665,526328,526784

Comments: Sequences 65 through 67 were analyzed to confirm previous results, and were not uploaded at this time.

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.060815.101924	Blank	Blank		1		06/08/15 10:19
2	NI.060815.102235	WG526669-01	Calibration Point		1		06/08/15 10:22
3	NI.060815.102547	WG526669-02	Calibration Point		1		06/08/15 10:25
4	NI.060815.102858	WG526669-03	Calibration Point		1		06/08/15 10:28
5	NI.060815.103209	WG526669-04	Calibration Point		1		06/08/15 10:32
6	NI.060815.103523	WG526669-05	Initial Calibration Verification		1		06/08/15 10:35
7	NI.060815.103836	WG526669-06	Initial Calib Blank		1		06/08/15 10:38
8	NI.060815.104149	WG526669-07	Low Level Initial Calibration V		1		06/08/15 10:41
9	NI.060815.104500	WG526669-08	Interference Check		1		06/08/15 10:45
10	NI.060815.104811	WG526669-09	Interference Check		1		06/08/15 10:48
11	NI.060815.105125	WG526669-10	CCV		1		06/08/15 10:51
12	NI.060815.105436	WG526669-11	CCB		1		06/08/15 10:54
13	NI.060815.105747	L15051549-02	5051530-03	20/50	10		06/08/15 10:57
14	NI.060815.110059	L15051549-03	5051530-04	20/50	50		06/08/15 11:00
15	NI.060815.110412	WG526669-12	CCV		1		06/08/15 11:04
16	NI.060815.110723	WG526669-13	CCB		1		06/08/15 11:07
17	NI.060815.111245	WG525687-03	Method/Prep Blank	20/50	1		06/08/15 11:12
18	NI.060815.111556	WG525687-04	Laboratory Control S	20/50	1		06/08/15 11:15
19	NI.060815.111908	WG525687-01	Reference Sample		1	L15051333-04	06/08/15 11:19
20	NI.060815.112219	WG525687-05	Matrix Spike	20/50	1	L15051333-04	06/08/15 11:22
21	NI.060815.112531	WG525687-06	Matrix Spike Duplica	20/50	1	L15051333-04	06/08/15 11:25
22	NI.060815.112842	L15051752-05	50WW24FF-052815	20/50	1		06/08/15 11:28
23	NI.060815.113154	L15051752-07	50WW25FF-052815	20/50	1		06/08/15 11:31
24	NI.060815.113505	L15051752-09	50WW18FF-052815	20/50	1		06/08/15 11:35
25	NI.060815.113816	WG525967-03	Post Digestion Spike		1	L15051752-09	06/08/15 11:38
26	NI.060815.114128	WG525967-04	Serial Dilution		5	L15051752-09	06/08/15 11:41
27	NI.060815.114440	WG526669-14	CCV		1		06/08/15 11:44
28	NI.060815.114752	WG526669-15	CCB		1		06/08/15 11:47
29	NI.060815.115105	WG526669-16	Low Level Continuing Calibra		1		06/08/15 11:51
30	NI.060815.124211	WG525374-02	Method/Prep Blank	40/50	50		06/08/15 12:42
31	NI.060815.124522	WG525374-03	Laboratory Control S	40/50	50		06/08/15 12:45
32	NI.060815.124833	WG525223-01	Fluid Blank 1		50		06/08/15 12:48
33	NI.060815.125145	WG525374-01	Reference Sample	5/50	50	L15051561-01	06/08/15 12:51
34	NI.060815.125456	WG525374-04	Matrix Spike	5/50	50	L15051561-01	06/08/15 12:54

Page: 1 Approved: June 09, 2015

Marcia Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 060815A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 1
Maintenance Log ID:

Calibration Std: STD70733 ICV Std: STD70879 Post Spike: STD69341
ICSA: STD70878 ICSAB: STD70321 Int. Std: RGT31676
CCV: STD70886 LLCCV: STD70320 Tuning Sol : STD70366
Stannous : Hydroxylamine :

Workgroups: 525539,525967,526663,526664,526665,526328,526784

Comments: Sequences 65 through 67 were analyzed to confirm previous results, and were not uploaded at this time.

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.060815.125807	WG525374-05	Matrix Spike Duplica	5/50	50	L15051561-01	06/08/15 12:58
36	NI.060815.130546	L15051562-01	AWV-17 BAGS 5/21-12 BAG	5/50	50		06/08/15 13:05
37	NI.060815.130857	WG526663-01	Post Digestion Spike		50	L15051562-01	06/08/15 13:08
38	NI.060815.131209	WG526663-02	Serial Dilution		250	L15051562-01	06/08/15 13:12
39	NI.060815.131523	WG526669-17	CCV		1		06/08/15 13:15
40	NI.060815.131834	WG526669-18	CCB		1		06/08/15 13:18
41	NI.060815.132147	WG525730-02	Method/Prep Blank	40/50	50		06/08/15 13:21
42	NI.060815.132459	WG525730-03	Laboratory Control S	40/50	50		06/08/15 13:24
43	NI.060815.132810	WG525730-04	Filter Blank		50		06/08/15 13:28
44	NI.060815.133122	WG525558-01	Fluid Blank 1		50		06/08/15 13:31
45	NI.060815.133433	WG525730-01	Reference Sample		50	L15051624-01	06/08/15 13:34
46	NI.060815.133745	WG525730-05	Matrix Spike	5/50	50	L15051624-01	06/08/15 13:37
47	NI.060815.134056	WG525730-06	Matrix Spike Duplica	5/50	50	L15051624-01	06/08/15 13:40
48	NI.060815.134407	L15051634-01	ALAN 6 BAGS	5/50	50		06/08/15 13:44
49	NI.060815.134718	WG526664-01	Post Digestion Spike		50	L15051634-01	06/08/15 13:47
50	NI.060815.135030	WG526664-02	Serial Dilution		250	L15051634-01	06/08/15 13:50
51	NI.060815.135343	WG526669-19	CCV		1		06/08/15 13:53
52	NI.060815.135655	WG526669-20	CCB		1		06/08/15 13:56
53	NI.060815.140008	WG526149-04	Method/Prep Blank	40/50	50		06/08/15 14:00
54	NI.060815.140319	WG526149-05	Laboratory Control S	40/50	50		06/08/15 14:03
55	NI.060815.140631	WG525914-01	Fluid Blank		50		06/08/15 14:06
56	NI.060815.140942	WG526149-01	Reference Sample		50	L15051753-03	06/08/15 14:09
57	NI.060815.141254	WG526149-06	Matrix Spike	40/50	50	L15051753-03	06/08/15 14:12
58	NI.060815.141605	WG526149-07	Matrix Spike Duplica	40/50	50	L15051753-03	06/08/15 14:16
59	NI.060815.141917	L15060040-01	KAISER 9 BAGS	5/50	50		06/08/15 14:19
60	NI.060815.142229	L15060041-01	ALAN 11 BAGS	5/50	50		06/08/15 14:22
61	NI.060815.142540	WG526665-01	Post Digestion Spike		50	L15060041-01	06/08/15 14:25
62	NI.060815.142852	WG526665-02	Serial Dilution		250	L15060041-01	06/08/15 14:28
63	NI.060815.143204	WG526669-21	CCV		1		06/08/15 14:32
64	NI.060815.143516	WG526669-22	CCB		1		06/08/15 14:35
65	NI.060815.145834	L15051272-01	5051181-01		2		06/08/15 14:58
66	NI.060815.150145	L15051272-02	5051181-02		2		06/08/15 15:01
67	NI.060815.150457	L15051272-05	5051181-05		2		06/08/15 15:04
68	NI.060815.150810	WG526669-23	QC Std 6		1		06/08/15 15:08

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Maren Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 060815A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 1
Maintenance Log ID:

Calibration Std: STD70733 ICV Std: STD70879 Post Spike: STD69341
ICSA: STD70878 ICSAB: STD70321 Int. Std: RGT31676
CCV: STD70886 LLCCV: STD70320 Tuning Sol : STD70366
Stannous : Hydroxylamine :

Workgroups: 525539,525967,526663,526664,526665,526328,526784

Comments: Sequences 65 through 67 were analyzed to confirm previous results, and were not uploaded at this time.

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.060815.151121	WG526669-24	QC Std 7		1		06/08/15 15:11
70	NI.060815.152456	WG526669-25	QC Std 8		1		06/08/15 15:24
71	NI.060815.155812	WG525521-03	Method/Prep Blank		1		06/08/15 15:58
72	NI.060815.160123	WG525521-04	Laboratory Control S		1		06/08/15 16:01
73	NI.060815.160435	WG525521-01	Reference Sample		1	L15051605-02	06/08/15 16:04
74	NI.060815.160746	WG525521-05	Matrix Spike		1	L15051605-02	06/08/15 16:07
75	NI.060815.161057	WG525521-06	Matrix Spike Duplica		1	L15051605-02	06/08/15 16:10
76	NI.060815.161409	L15051605-05	AG4515		1		06/08/15 16:14
77	NI.060815.162319	WG525958-03	Post Digestion Spike		1	L15051605-05	06/08/15 16:23
78	NI.060815.162629	WG525958-04	Serial Dilution		5	L15051605-05	06/08/15 16:26
79	NI.060815.162941	WG525958-04	Serial Dilution		25	L15051605-05	06/08/15 16:29
80	NI.060815.163254	WG526669-26	QC Std 6		1		06/08/15 16:32
81	NI.060815.163605	WG526669-27	QC Std 7		1		06/08/15 16:36
82	NI.060815.163918	L15051605-09	AG4519		1		06/08/15 16:39
83	NI.060815.164230	L15051605-10	AG4521		1		06/08/15 16:42
84	NI.060815.164541	L15051605-11	AG4522		1		06/08/15 16:45
85	NI.060815.164852	L15051605-12	AG4525		1		06/08/15 16:48
86	NI.060815.165204	L15051605-13	AG4526		1		06/08/15 16:52
87	NI.060815.165515	L15051605-14	AG4527		1		06/08/15 16:55
88	NI.060815.165826	L15051605-15	AG4528		1		06/08/15 16:58
89	NI.060815.170137	L15051605-16	AG4529		1		06/08/15 17:01
90	NI.060815.170448	L15051605-17	AG4530		1		06/08/15 17:04
91	NI.060815.170801	WG526669-28	CCV		1		06/08/15 17:08
92	NI.060815.171113	WG526669-29	CCB		1		06/08/15 17:11
93	NI.060815.171425	WG526669-30	QC Std 8		1		06/08/15 17:14
94	NI.060815.171737	L15051784-36	ORG-S01-309-14	20/50	1		06/08/15 17:17
95	NI.060815.172048	L15051784-38	ORG-S02-309-14	20/50	1		06/08/15 17:20
96	NI.060815.172400	L15051788-01	WETLAND 2	20/50	10		06/08/15 17:24
97	NI.060815.172711	L15051788-02	WETLAND 1	20/50	10		06/08/15 17:27
98	NI.060815.173022	L15051788-03	EASTERN DITCH DRAINAG	20/50	10		06/08/15 17:30
99	NI.060815.173334	L15051788-07	W-5	20/50	10		06/08/15 17:33
100	NI.060815.173646	L15051788-08	DUP-1	20/50	10		06/08/15 17:36
101	NI.060815.173957	L15051788-09	W-11	20/50	10		06/08/15 17:39
102	NI.060815.174308	L15051788-10	P-12B	20/50	10		06/08/15 17:43

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Maren Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 060815A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 1
Maintenance Log ID:

Calibration Std: STD70733 ICV Std: STD70879 Post Spike: STD69341
ICSA: STD70878 ICSAB: STD70321 Int. Std: RGT31676
CCV: STD70886 LLCCV: STD70320 Tuning Sol : STD70366
Stannous : Hydroxylamine :

Workgroups: 525539,525967,526663,526664,526665,526328,526784

Comments: Sequences 65 through 67 were analyzed to confirm previous results, and were not uploaded at this time.

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.060815.174620	L15051788-11	W-12	20/50	10		06/08/15 17:46
104	NI.060815.174933	WG526669-31	CCV		1		06/08/15 17:49
105	NI.060815.175244	WG526669-32	CCB		1		06/08/15 17:52
106	NI.060815.175558	L15051788-12	EQB-1	20/50	10		06/08/15 17:55
107	NI.060815.175909	L15060163-02	OUTFALL 002	20/50	10		06/08/15 17:59
108	NI.060815.180221	L15060163-03	OUTFALL 901	20/50	10		06/08/15 18:02
109	NI.060815.180532	L15060163-04	OUTFALL 003	20/50	10		06/08/15 18:05
110	NI.060815.180845	WG526669-33	CCV		1		06/08/15 18:08
111	NI.060815.181157	WG526669-34	CCB		1		06/08/15 18:11
112	NI.060815.181510	WG526679-02	Method/Prep Blank	.25/100	1		06/08/15 18:15
113	NI.060815.181821	WG526679-03	Laboratory Control S	.25/100	1		06/08/15 18:18
114	NI.060815.182133	L15060309-14	SED DUP		1	WG526679-01	06/08/15 18:21
115	NI.060815.182445	WG526679-04	Matrix Spike	.256/100	1	L15060309-14	06/08/15 18:24
116	NI.060815.182756	WG526679-05	Matrix Spike Duplica	.256/100	1	L15060309-14	06/08/15 18:27
117	NI.060815.183107	L15060400-02	SED-02	.254/100	1		06/08/15 18:31
118	NI.060815.183418	L15060246-01	1519069-01	.252/100	1		06/08/15 18:34
119	NI.060815.183730	WG526784-01	Post Digestion Spike		1	L15060246-01	06/08/15 18:37
120	NI.060815.184041	WG526784-02	Serial Dilution		5	L15060246-01	06/08/15 18:40
121	NI.060815.184352	WG526784-02	Serial Dilution		25	L15060246-01	06/08/15 18:43
122	NI.060815.184704	WG526669-35	CCV		1		06/08/15 18:47
123	NI.060815.185016	WG526669-36	CCB		1		06/08/15 18:50
124	NI.060815.185329	L15060309-01	SED 07	.251/100	1		06/08/15 18:53
125	NI.060815.185640	L15060309-02	SED 08	.258/100	1		06/08/15 18:56
126	NI.060815.185951	L15060309-03	SED 05	.25/100	1		06/08/15 18:59
127	NI.060815.190303	L15060309-06	SED 04	.261/100	1		06/08/15 19:03
128	NI.060815.190614	L15060309-08	SED 03	.255/100	1		06/08/15 19:06
129	NI.060815.190926	L15060309-10	SED 06	.256/100	1		06/08/15 19:09
130	NI.060815.191238	L15060309-11	SED 01	.258/100	1		06/08/15 19:12
131	NI.060815.191551	WG526669-37	CCV		1		06/08/15 19:15
132	NI.060815.191902	WG526669-38	CCB		1		06/08/15 19:19

Comments

Seq.	Rerun	Dil.	Reason	Analytes
80			Due to a nonompliant CCV at sequence 80, sequences 71 through 90 were not uploaded at this time.	

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Maren Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 060815A.REP

Analyst1: BKT Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 1

Maintenance Log ID:

Calibration Std: STD70733 ICV Std: STD70879 Post Spike: STD69341

ICSA: STD70878 ICSAB: STD70321 Int. Std: RGT31676

CCV: STD70886 LLCCV: STD70320 Tuning Sol : STD70366

Stannous : Hydroxylamine :

Workgroups: 525539,525967,526663,526664,526665,526328,526784

Comments: Sequences 65 through 67 were analyzed to confirm previous results, and were not uploaded at this time.

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time

Seq.	Rerun	Dil.	Reason	Analytes

Page: 5 Approved: June 09, 2015

Maren Berry

Microbac Laboratories Inc.

Data Checklist

Date: 08-JUN-2015
Analyst: BKT
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 526669
Runlog ID: 68455
Analytical Workgroups: 525539,525967,526663,526664,526665,526328,526784

Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	
Level 4	1752,1788,309,400
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BKT
Secondary Reviewer	MMB
Comments	

Primary Reviewer:
09-JUN-2015

Secondary Reviewer:
09-JUN-2015

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-09-2015 16:49:39

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG525967

Login Number: L15051752

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW24FF-052815	05	05/28/15					06/01/2015	4	180		06/08/15	11.1	180	
50WW25FF-052815	07	05/28/15					06/01/2015	4	180		06/08/15	11.1	180	
50WW18FF-052815	09	05/28/15					06/01/2015	3.9	180		06/08/15	11	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4223128
Report generated 06/08/2015 12:07

METHOD BLANK SUMMARY

Login Number: L15051752
Blank File ID: NI.060815.111245
Prep Date: 06/01/15 08:54
Analyzed Date: 06/08/15 11:12
Analyst: BKT

Work Group: WG525967
Blank Sample ID: WG525687-03
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG525687-04	NI.060415.125538	06/04/15 12:55	01
DUP	WG525687-07	NI.060415.215016	06/04/15 21:50	01
LCS	WG525687-04	NI.060815.111556	06/08/15 11:15	02
50WW24FF-052815	L15051752-05	NI.060815.112842	06/08/15 11:28	01
50WW25FF-052815	L15051752-07	NI.060815.113154	06/08/15 11:31	01
50WW18FF-052815	L15051752-09	NI.060815.113505	06/08/15 11:35	01

Report Name: BLANK_SUMMARY
PDF File ID: 4223129
Report generated 06/08/2015 12:07

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051752 Prep Date: 06/01/15 08:54 Sample ID: WG525687-03
Instrument ID: ICP-MS2 Run Date: 06/08/15 11:12 Prep Method: 3015
File ID: NI.060815.111245 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG525967 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-08-JUN-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Manganese, Dissolved	0.00100	0.00400	0.00100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4223130
08-JUN-2015 12:07

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051752 Run Date: 06/08/2015 Sample ID: WG525687-04
Instrument ID: ICP-MS2 Run Time: 11:15 Prep Method: 3015
File ID: NI.060815.111556 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG525967 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD68313 Cal ID: ICP-MS-08-JUN-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Manganese, Dissolved	0.125	0.131	105	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4223131
Report generated: 06/08/2015 12:07

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L15051752 Cal ID: ICP-MS2 - Worknum: WG525967
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG525687-01 File ID: NI.060815.111908 Dil: 5 Matrix: WATER
Sample ID: WG525687-05 MS File ID: NI.060815.112219 Dil: 5 Units: mg/L
Sample ID: WG525687-06 MSD File ID: NI.060815.112531 Dil: 5

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Manganese	0.0174	0.125	0.156	111	0.125	0.154	109	1.16	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4223132
Report generated 06/08/2015 12:12

Microbac Laboratories Inc.
Serial Dilution Report

Login: L15051752 **Worknum:** WG525967
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG525967-04 **File ID:** NI.060815.114128 **Dil:** 5 **Units:** ug/L
Sample: L15051752-09 **File ID:** NI.060815.113505 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Manganese	24.4	X	24.8	X	1.90	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4223126
06/08/2015 12:07

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L15051752 **Worknum:** WG525967
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG525967-03 **File ID:** NI.060815.113816 **Dil:** 1 **Units:** ug/L
Sample ID: L15051752-09 **File ID:** NI.060815.113505 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MANGANESE	73.5		24.4		50	98.2	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4223127
Report generated: 06/08/2015 12:07

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L15051752	Workgroup (AAB#):	WG525967
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG526669	Initial Calibration Date:	08-JUN-2015 10:32

	WG526669-01		WG526669-02		WG526669-03		WG526669-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
MANGANESE	0	880	.4	1710	50	606000	100	1170000	.999987	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4223135
Report generated: 08-JUN-2015 12:07

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L15051752
Instrument ID: ICP-MS2
File ID: NI.060815.103836
Workgroup (AAB#): WG525967
Matrix: WATER

Run Date: 06/08/2015
Run Time: 10:38
Analyst: BKT
Cal ID: ICP-MS2 - 08-JUN-15

Sample ID: WG526669-06
Method: 6020A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
MANGANESE	.4	1.6	.4	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4223137
Report generated 06/08/2015 12:07

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051752
Run Date: 06/08/2015
Sample ID: WG526669-11
Instrument ID: ICP-MS2
Run Time: 10:54
Method: 6020A
File ID: NI.060815.105436
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG525967
Cal ID: ICP-MS - 08-JUN-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4223140
Report generated 06/08/2015 12:07

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051752
Run Date: 06/08/2015
Sample ID: WG526669-13
Instrument ID: ICP-MS2
Run Time: 11:07
Method: 6020A
File ID: NI.060815.110723
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG525967
Cal ID: ICP-MS - 08-JUN-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4223140
Report generated 06/08/2015 12:07

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051752
Run Date: 06/08/2015
Sample ID: WG526669-15
Instrument ID: ICP-MS2
Run Time: 11:47
Method: 6020A
File ID: NI.060815.114752
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG525967
Cal ID: ICP-MS - 08-JUN-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4223140
Report generated 06/08/2015 12:07

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L15051752
Run Date: 06/08/2015
Sample ID: WG526669-05
Instrument ID: ICP-MS2
Run Time: 10:35
Method: 6020A
File ID: NI.060815.103523
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG525967
Cal ID: ICP-MS - 08-JUN-15
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Manganese		50	47.9	95.8	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4223136
Report generated 06/08/2015 12:07

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051752
Run Date: 06/08/2015
Sample ID: WG526669-10
Instrument ID: ICP-MS2
Run Time: 10:51
Method: 6020A
File ID: NI.060815.105125
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG525967
Cal ID: ICP-MS - 08-JUN-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0500	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4223139
Report generated 06/08/2015 12:07

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051752
Run Date: 06/08/2015
Sample ID: WG526669-12
Instrument ID: ICP-MS2
Run Time: 11:04
Method: 6020A
File ID: NI.060815.110412
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG525967
Cal ID: ICP-MS - 08-JUN-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0488	mg/L	97.7	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4223139
Report generated 06/08/2015 12:07

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051752
Run Date: 06/08/2015
Sample ID: WG526669-14
Instrument ID: ICP-MS2
Run Time: 11:44
Method: 6020A
File ID: NI.060815.114440
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG525967
Cal ID: ICP-MS - 08-JUN-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0478	mg/L	95.5	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4223139
Report generated 06/08/2015 12:07

Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15051752
Run Date: 06/08/2015
Sample ID: WG526669-07
Instrument ID: ICP-MS2
Run Time: 10:41
Method: 6020A
File ID: NI.060815.104149
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG525967
Cal ID: ICP-MS - 08-JUN-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.500	0.453	ug/L	90.6	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4223141
Report generated 06/08/2015 12:07

Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15051752
Run Date: 06/08/2015
Sample ID: WG526669-16
Instrument ID: ICP-MS2
Run Time: 11:51
Method: 6020A
File ID: NI.060815.115105
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG525967
Cal ID: ICP-MS - 08-JUN-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.500	0.471	ug/L	94.1	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4223141
Report generated 06/08/2015 12:07

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L15051752
Instrument ID: ICP-MS2
Sol. A : WG526669-08 **File ID:** NI.060815.104500
Sol. AB : WG526669-09 **File ID:** NI.060815.104811

Workgroup (AAB#): WG525967
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Manganese	NS	0.0203	NS	100	99.5	99.5	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4223138
Report generated 06/08/2015 12:07

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L15051752 **Analytical Method:** 6020
Analytical Workgroup: WG525967 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 08-JUN-2015 10:22

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L15051752-05	SAMP	08-JUN-2015 11:28	102.736	107.842	107.666
L15051752-07	SAMP	08-JUN-2015 11:31	99.959	104.201	102.068
L15051752-09	SAMP	08-JUN-2015 11:35	96.392	102.868	104.348
WG525687-03	BLANK	08-JUN-2015 11:12	109.765	110.852	109.396
WG525687-04	LCS	08-JUN-2015 11:15	107.818	108.631	107.798
WG525967-03	PSPK	08-JUN-2015 11:38	97.274	103.869	105.889
WG525967-04	SERIAL	08-JUN-2015 11:41	105.743	109.749	109.553
WG526669-05	ICV	08-JUN-2015 10:35	105.229	104.229	107.303
WG526669-06	ICB	08-JUN-2015 10:38	107.086	104.213	107.467
WG526669-07	LLICV	08-JUN-2015 10:41	106.079	104.03	105.845
WG526669-08	ICS	08-JUN-2015 10:45	102.033	102.54	106.621
WG526669-09	ICS	08-JUN-2015 10:48	102.937	105.318	107.484
WG526669-10	CCV	08-JUN-2015 10:51	105.552	105.988	107.888
WG526669-11	CCB	08-JUN-2015 10:54	106.972	106.365	106.733
WG526669-12	CCV	08-JUN-2015 11:04	108.249	110.581	110.569
WG526669-13	CCB	08-JUN-2015 11:07	110.236	111.481	110.498
WG526669-14	CCV	08-JUN-2015 11:44	109.552	111.427	112.915
WG526669-15	CCB	08-JUN-2015 11:47	109.623	110.672	109.678
WG526669-16	LLCCV	08-JUN-2015 11:51	112.533	113.98	112.553

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4223134
Report generated: 06/08/2015 12:07

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L15051752 **Date:** 04/07/2015
Insturment ID: ICP-MS2 **Method:** 6020A

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Uranium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4223133
Report generated: 06/08/2015 12:07

2.3.2.3 Raw Data

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Monday, June 08, 2015 10:01:06

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1324	2025	0.687	
Mg	23.985	23.975	4503	2019	0.699	
Co	58.933	58.925	11694	2022	0.681	
In	114.904	114.925	22865	2027	0.696	
U	238.050	238.025	47457	2042	0.675	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	5.442
5.575	3.615
5.625	2.491
5.675	0.737
5.725	2.675
5.775	0.925
5.825	1.564
5.875	1.898
5.925	2.180
5.975	1.500
6.025	1.677
6.075	1.771
6.125	1.532
6.175	1.570
6.225	2.697
6.275	6.323
6.325	54.735
6.375	94.786
6.425	29.881
6.475	60.009
6.525	22.383
6.575	5.936
6.625	1.694
6.675	1.766
6.725	0.863
6.775	1.340
6.825	1.618

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6.875	1.157
6.925	0.795
6.975	1.171
7.025	1.046
7.075	1.295
7.125	1.225
7.175	2.264
7.225	2.410
7.275	1.193
7.325	4.074
7.375	34.244
7.425	53.926
7.475	70.711
7.525	31.672
7.575	36.377
7.625	40.745
7.675	71.148
7.725	46.481
7.775	39.123
7.825	66.105
7.875	39.491
7.925	50.000
7.975	64.359
8.025	43.241
8.075	63.888
8.125	32.969
8.175	39.123
8.225	70.711
8.275	73.193
8.325	46.566
8.375	20.328
8.425	75.691
8.475	59.266
22.525	136.931
22.575	64.358
22.625	51.602
22.675	88.127
22.725	34.468
22.775	31.672
22.825	36.377
22.875	80.027
22.925	37.417
22.975	45.432
23.025	23.697
23.075	58.600
23.125	56.398
23.175	67.536

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23.225	52.489
23.275	25.650
23.325	27.794
23.375	20.039
23.425	28.464
23.475	13.183
23.525	3.027
23.575	2.082
23.625	1.383
23.675	2.171
23.725	1.124
23.775	0.799
23.825	0.704
23.875	1.250
23.925	1.359
23.975	1.222
24.025	1.454
24.075	0.977
24.125	0.780
24.175	1.107
24.225	1.375
24.275	2.524
24.325	40.825
24.375	37.378
24.425	14.286
24.475	6.979
24.525	4.014
24.575	2.062
24.625	2.442
24.675	1.878
24.725	1.250
24.775	1.425
24.825	2.335
24.875	2.694
24.925	2.741
24.975	1.979
25.025	2.249
25.075	2.526
25.125	1.956
25.175	1.918
25.225	4.657
25.275	20.384
25.325	75.052
25.375	37.268
25.425	24.052
25.475	14.254
57.525	5.653

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57.575	4.308
57.625	4.178
57.675	1.338
57.725	0.761
57.775	2.188
57.825	2.304
57.875	2.175
57.925	2.604
57.975	2.263
58.025	2.837
58.075	1.637
58.125	2.081
58.175	2.996
58.225	4.296
58.275	38.886
58.325	55.902
58.375	40.745
58.425	16.983
58.475	8.283
58.525	8.439
58.575	3.273
58.625	1.927
58.675	1.885
58.725	0.544
58.775	2.570
58.825	0.533
58.875	1.714
58.925	2.287
58.975	2.091
59.025	1.178
59.075	3.112
59.125	2.463
59.175	2.366
59.225	7.515
59.275	35.315
59.325	37.268
59.375	46.566
59.425	24.786
59.475	15.309
59.525	13.645
59.575	3.364
59.625	5.558
59.675	3.387
59.725	3.889
59.775	4.911
59.825	3.088
59.875	1.678

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59.925	2.258
59.975	5.242
60.025	3.745
60.075	5.322
60.125	2.493
60.175	5.659
60.225	20.513
60.275	51.618
60.325	37.268
60.375	34.233
60.425	34.233
60.475	34.468
113.525	15.710
113.575	3.724
113.625	5.068
113.675	2.534
113.725	1.647
113.775	2.307
113.825	3.396
113.875	4.794
113.925	0.447
113.975	2.326
114.025	3.236
114.075	2.071
114.125	3.446
114.175	5.079
114.225	9.085
114.275	12.362
114.325	43.853
114.375	50.234
114.425	12.327
114.475	5.990
114.525	6.184
114.575	3.071
114.625	2.756
114.675	1.809
114.725	2.099
114.775	1.770
114.825	1.700
114.875	1.339
114.925	1.160
114.975	1.991
115.025	1.694
115.075	2.001
115.125	0.811
115.175	1.114
115.225	1.981

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115.275	5.296
115.325	23.084
115.375	31.672
115.425	33.535
115.475	38.528
115.525	16.666
115.575	12.597
115.625	6.605
115.675	9.122
115.725	7.920
115.775	4.440
115.825	4.755
115.875	5.299
115.925	8.985
115.975	4.482
116.025	3.378
116.075	7.593
116.125	3.588
116.175	4.479
116.225	16.594
116.275	18.988
116.325	79.756
116.375	46.351
116.425	63.191
116.475	67.748
236.525	
236.575	40.825
236.625	29.881
236.675	33.503
236.725	38.870
236.775	26.716
236.825	57.014
236.875	26.702
236.925	28.384
236.975	42.111
237.025	20.601
237.075	38.528
237.125	22.612
237.175	32.401
237.225	32.545
237.275	18.055
237.325	33.086
237.375	29.533
237.425	33.185
237.475	28.135
237.525	16.723
237.575	21.903

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237.625	11.091
237.675	6.722
237.725	4.281
237.775	3.722
237.825	2.330
237.875	2.115
237.925	2.153
237.975	0.977
238.025	1.709
238.075	1.564
238.125	0.908
238.175	1.864
238.225	1.898
238.275	2.830
238.325	6.115
238.375	2.997
238.425	14.171
238.475	5.058
238.525	22.652
238.575	40.497
238.625	35.761
238.675	35.460
238.725	29.536
238.775	58.029
238.825	48.445
238.875	19.016
238.925	30.951
238.975	14.374
239.025	37.769
239.075	22.822
239.125	15.408
239.175	38.088
239.225	13.243
239.275	22.222
239.325	30.162
239.375	33.195
239.425	41.612
239.475	46.967

Approved: June 09, 2015

SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 6/8/2015 10:07:04 AM
End Time: 6/8/2015 10:09:26 AM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 5476.79
        Obtained Intensity (Mg 23.985): 264177.76
        Obtained Intensity (In 114.904): 72650.04
        Obtained Intensity (U 238.05): 49379.47
        Obtained Intensity (Bkgd 220): 0.07
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.024 (=3245.15 / 135289.02)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.011 (=1488.81 / 135289.02)
```

Report Date/Time: Monday, June 08, 2015 10:09:26
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SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 6/8/2015 10:07:04 AM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 5476.79
                Obtained Intensity (Mg 23.985): 264177.76
                Obtained Intensity (In 114.904): 72650.04
                Obtained Intensity (U 238.05): 49379.47
                Obtained Intensity (Bkgd 220): 0.07
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.024 (=3245.15 / 135289.02)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.011 (=1488.81 / 135289.02)
[Passed]  Optimum value(s): N/A

End Time: 6/8/2015 10:09:26 AM
```


Approved: June 09, 2015

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Monday, June 08, 2015 10:19:24
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	159929.6	0.5				ug/L		Standard
	Be	9	5.0	100.0				ug/L		Standard
	Al	27	623.3	9.2				ug/L		Standard
	Sc	45	72122.9	1.1				ug/L		Standard
	Ti	47	15.0	24.0				ug/L		Standard
	V	51	779.4	7.1				ug/L		Standard
	Cr	52	4182.2	1.5				ug/L		Standard
	Cr	53	255.0	14.1				ug/L		Standard
	Mn	55	869.7	1.8				ug/L		Standard
	Co	59	43.7	23.5				ug/L		Standard
	Ni	60	376.3	9.6				ug/L		Standard
	Cu	65	270.7	5.2				ug/L		Standard
	Zn	66	600.7	1.3				ug/L		Standard
>	**Ge**	72	607654.8	1.5				ug/L		Standard
	As	75	-37.4	7.6				ug/L		Standard
	Se	82	22.2	19.4				ug/L		Standard
	Se-1	77	38.0	2.6				ug/L		Standard
>	**Ga**	71	38.3	58.8				mg/L		Standard
	Rb	85	15.0	88.2				ug/L		Standard
	Y	89	733256.3	0.9				ug/L		Standard
>	**Rh**	103	0.0					ug/L		Standard
	Mo	98	10.0	26.5				ug/L		Standard
	Ag	107	69.7	6.6				ug/L		Standard
	Cd	111	1.6	92.5				mg/L		Standard
	Cd	114	-3.3	146.5				ug/L		Standard
>	**In**	115	555850.9	1.0				ug/L		Standard
	Sn	118	495.0	10.9				ug/L		Standard
	Sb	123	41.2	11.3				ug/L		Standard
	Ba	135	14.0	12.4				ug/L		Standard
	Ce	140	18.3	56.8				ug/L		Standard
>	**Tb**	159	712214.9	1.3				ug/L		Standard
	Ho	165	0.0					ug/L		Standard
	Tl	203	1.3	86.6				ug/L		Standard
	Tl	205	3.3	173.2				ug/L		Standard
	Pb	206	160.7	2.0				ug/L		Standard
	Pb	207	140.7	20.6				ug/L		Standard
	Pb	208	607.7	3.1				ug/L		Standard
	U	238	3.7	173.2				ug/L		Standard
>	**Bi**	209	481177.6	0.9				ug/L		Standard

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	Na	23	0.0		mg/L	Standard
	Mg	24	15.0	33.3	mg/L	Standard
	K	39	1.7	173.2	mg/L	Standard
	Ca	43	20.0	66.1	mg/L	Standard
	Fe	54	259.5	9.7	mg/L	Standard
	Fe	57	25.0	34.6	mg/L	Standard
>	**Sc-1**	45	72122.9	1.1	mg/L	Standard
	Cl	35	26728.2	0.6	ug/L	Standard
	Kr	83	0.0		ug/L	Standard
	Br	81	733.4	5.5	ug/L	Standard
	P	31	17254.8	1.9	ug/L	Standard
	S	34	1680.1	4.1	ug/L	Standard
	Sr	88	6.7	86.6	ug/L	Standard
	C	12	66.7	22.9	mg/L	Standard
	N	14	0.0		mg/L	Standard
	Hg	202	0.0		mg/L	Standard
	Dy	164	2.7	204.8	mg/L	Standard
	Ho-1	165	0.0		mg/L	Standard
	Er	166	13.3	86.6	mg/L	Standard
	I	127	141.7	14.3	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Monday, June 08, 2015 10:22:35
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	164553.9	1.6				ug/L	159930	Standard
	Be	9	8.3	34.6				ug/L	5	Standard
	Al	27	625.0	4.9				ug/L	623	Standard
	Sc	45	73134.4	1.6				ug/L	72123	Standard
	Ti	47	13.7	25.7				ug/L	15	Standard
	V	51	827.4	10.4				ug/L	779	Standard
	Cr	52	4269.9	1.0				ug/L	4182	Standard
	Cr	53	280.0	18.9				ug/L	255	Standard
	Mn	55	880.0	2.6				ug/L	870	Standard
	Co	59	39.7	15.2				ug/L	44	Standard
	Ni	60	388.3	5.5				ug/L	376	Standard
	Cu	65	262.7	7.0				ug/L	271	Standard
	Zn	66	603.7	1.0				ug/L	601	Standard
>	**Ge**	72	630937.2	1.4				ug/L	607655	Standard
	As	75	-45.9	19.8				ug/L	-37	Standard
	Se	82	16.2	29.1				ug/L	22	Standard
	Se-1	77	38.3	15.3				ug/L	38	Standard
>	**Ga**	71	23.3	32.7				mg/L	38	Standard
	Rb	85	33.3	17.3				ug/L	15	Standard
	Y	89	749016.3	1.4				ug/L	733256	Standard
>	**Rh**	103	0.0					ug/L	0	Standard
	Mo	98	9.0	40.1				ug/L	10	Standard
	Ag	107	72.0	6.4				ug/L	70	Standard
	Cd	111	0.3	178.6				mg/L	2	Standard
	Cd	114	-3.2	343.6				ug/L	-3	Standard
>	**In**	115	576890.0	1.3				ug/L	555851	Standard
	Sn	118	430.0	7.0				ug/L	495	Standard
	Sb	123	15.0	46.7				ug/L	41	Standard
	Ba	135	12.0	8.3				ug/L	14	Standard
	Ce	140	18.3	150.2				ug/L	18	Standard
>	**Tb**	159	742548.5	1.2				ug/L	712215	Standard
	Ho	165	5.0	173.2				ug/L	0	Standard
	Tl	203	4.3	74.2				ug/L	1	Standard
	Tl	205	3.3	86.6				ug/L	3	Standard
	Pb	206	164.0	2.8				ug/L	161	Standard
	Pb	207	143.0	3.7				ug/L	141	Standard
	Pb	208	633.3	5.2				ug/L	608	Standard
	U	238	1.0	173.2				ug/L	4	Standard
>	**Bi**	209	502434.1	0.9				ug/L	481178	Standard

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Na	23	0.0		mg/L	0	Standard
Mg	24	16.7	45.8	mg/L	15	Standard
K	39	3.3	86.6	mg/L	2	Standard
Ca	43	13.3	43.3	mg/L	20	Standard
Fe	54	291.2	13.7	mg/L	260	Standard
Fe	57	30.0	16.7	mg/L	25	Standard
Sc-1	45	73134.4	1.6	mg/L	72123	Standard
Cl	35	26437.0	0.5	ug/L	26728	Standard
Kr	83	0.3	173.2	ug/L	0	Standard
Br	81	783.4	13.1	ug/L	733	Standard
P	31	16500.6	0.8	ug/L	17255	Standard
S	34	1565.1	4.5	ug/L	1680	Standard
Sr	88	10.0	50.0	ug/L	7	Standard
C	12	73.3	20.8	mg/L	67	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	3.3	173.2	mg/L	0	Standard
Dy	164	6.3	186.3	mg/L	3	Standard
Ho-1	165	5.0	173.2	mg/L	0	Standard
Er	166	6.7	86.6	mg/L	13	Standard
I	127	91.7	42.4	mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Monday, June 08, 2015 10:25:47
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	166769.8	2.3				ug/L	159930	Standard
	Be	9	61.7	4.7				ug/L	5	Standard
	Al	27	5084.2	3.1				ug/L	623	Standard
	Sc	45	73710.5	1.3				ug/L	72123	Standard
	Ti	47	41.0	21.7				ug/L	15	Standard
	V	51	1143.8	2.3				ug/L	779	Standard
	Cr	52	4516.7	2.1				ug/L	4182	Standard
	Cr	53	331.7	0.9				ug/L	255	Standard
	Mn	55	1706.4	0.8				ug/L	870	Standard
	Co	59	468.7	1.7				ug/L	44	Standard
	Ni	60	491.7	2.1				ug/L	376	Standard
	Cu	65	574.3	3.1				ug/L	271	Standard
	Zn	66	754.0	6.7				ug/L	601	Standard
>	**Ge**	72	636001.9	1.0				ug/L	607655	Standard
	As	75	54.5	19.7				ug/L	-37	Standard
	Se	82	31.0	33.0				ug/L	22	Standard
	Se-1	77	41.3	39.2				ug/L	38	Standard
>	**Ga**	71	50.0	17.3				mg/L	38	Standard
	Rb	85	28.3	79.6				ug/L	15	Standard
	Y	89	765236.2	1.5				ug/L	733256	Standard
>	**Rh**	103	0.0					ug/L	0	Standard
	Mo	98	304.6	5.8				ug/L	10	Standard
	Ag	107	367.3	2.7				ug/L	70	Standard
	Cd	111	62.2	1.0				mg/L	2	Standard
	Cd	114	172.6	18.1				ug/L	-3	Standard
>	**In**	115	586591.2	1.2				ug/L	555851	Standard
	Sn	118	648.3	9.8				ug/L	495	Standard
	Sb	123	175.6	13.2				ug/L	41	Standard
	Ba	135	61.7	16.3				ug/L	14	Standard
	Ce	140	11.7	99.0				ug/L	18	Standard
>	**Tb**	159	757429.8	2.8				ug/L	712215	Standard
	Ho	165	6.7	86.6				ug/L	0	Standard
	Tl	203	258.7	5.1				ug/L	1	Standard
	Tl	205	258.3	4.0				ug/L	3	Standard
	Pb	206	362.7	7.4				ug/L	161	Standard
	Pb	207	289.3	6.4				ug/L	141	Standard
	Pb	208	1319.7	1.0				ug/L	608	Standard
	U	238	255.0	2.2				ug/L	4	Standard
>	**Bi**	209	509291.6	1.7				ug/L	481178	Standard

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	Na	23	0.0		mg/L	0	Standard
	Mg	24	18.3	41.7	mg/L	15	Standard
	K	39	1.7	173.2	mg/L	2	Standard
	Ca	43	13.3	78.1	mg/L	20	Standard
	Fe	54	281.0	10.5	mg/L	260	Standard
	Fe	57	41.7	6.9	mg/L	25	Standard
>	**Sc-1**	45	73710.5	1.3	mg/L	72123	Standard
	Cl	35	25735.2	1.7	ug/L	26728	Standard
	Kr	83	1.0	0.0	ug/L	0	Standard
	Br	81	690.0	5.2	ug/L	733	Standard
	P	31	16423.9	3.7	ug/L	17255	Standard
	S	34	1551.7	1.1	ug/L	1680	Standard
	Sr	88	10.0	100.0	ug/L	7	Standard
	C	12	36.7	110.2	mg/L	67	Standard
	N	14	3.3	173.2	mg/L	0	Standard
	Hg	202	0.0		mg/L	0	Standard
	Dy	164	6.5	179.6	mg/L	3	Standard
	Ho-1	165	6.7	86.6	mg/L	0	Standard
	Er	166	3.3	173.2	mg/L	13	Standard
	I	127	115.0	19.9	mg/L	142	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Monday, June 08, 2015 10:28:58
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	163096.6	1.4				ug/L	159930	Standard
	Be	9	51102.7	2.6	**50.0000**	1.138	2.3	ug/L	5	Standard
	Al	27	2893249.0	1.7	**50.0000**	0.330	0.7	ug/L	623	Standard
	Sc	45	72876.5	0.9				ug/L	72123	Standard
	Ti	47	28278.4	1.3	**100.0000**	1.155	1.2	ug/L	15	Standard
	V	51	324697.3	2.0	**50.0000**	0.924	1.8	ug/L	779	Standard
	Cr	52	360727.8	2.4	**50.0000**	1.145	2.3	ug/L	4182	Standard
	Cr	53	51801.8	3.4	**50.0000**	1.624	3.2	ug/L	255	Standard
	Mn	55	606259.8	1.1	**50.0000**	0.472	0.9	ug/L	870	Standard
	Co	59	374004.2	2.5	**50.0000**	1.180	2.4	ug/L	44	Standard
	Ni	60	118934.7	1.6	**50.0000**	0.724	1.4	ug/L	376	Standard
	Cu	65	121556.1	1.5	**50.0000**	0.704	1.4	ug/L	271	Standard
	Zn	66	74568.7	1.2	**50.0000**	0.562	1.1	ug/L	601	Standard
>	**Ge**	72	625032.8	0.1				ug/L	607655	Standard
	As	75	67877.1	0.7	**50.0000**	0.346	0.7	ug/L	-37	Standard
	Se	82	6099.8	0.2	**50.0000**	0.035	0.1	ug/L	22	Standard
	Se-1	77	4706.7	4.1	**50.0000**	1.995	4.0	ug/L	38	Standard
>	**Ga**	71	63.3	57.1				mg/L	38	Standard
	Rb	85	831.7	7.9				ug/L	15	Standard
	Y	89	750232.3	0.5				ug/L	733256	Standard
>	**Rh**	103	11.7	24.7				ug/L	0	Standard
	Mo	98	281897.2	1.6	**100.0000**	0.867	0.9	ug/L	10	Standard
	Ag	107	295584.9	1.7	**50.0000**	0.560	1.1	ug/L	70	Standard
	Cd	111	66040.2	2.0	**50.0000**	0.568	1.1	mg/L	2	Standard
	Cd	114	160776.7	1.5	**50.0000**	0.326	0.7	ug/L	-3	Standard
>	**In**	115	582108.1	0.9				ug/L	555851	Standard
	Sn	118	202731.4	3.0	**50.0000**	1.086	2.2	ug/L	495	Standard
	Sb	123	158338.1	1.6	**50.0000**	0.358	0.7	ug/L	41	Standard
	Ba	135	47968.8	2.3	**50.0000**	0.716	1.4	ug/L	14	Standard
	Ce	140	13.3	21.7				ug/L	18	Standard
>	**Tb**	159	761616.0	0.2				ug/L	712215	Standard
	Ho	165	5.0	100.0				ug/L	0	Standard
	Tl	203	241595.5	1.4	**50.0000**	1.003	2.0	ug/L	1	Standard
	Tl	205	249955.2	1.4	**50.0000**	1.043	2.1	ug/L	3	Standard
	Pb	206	157072.0	0.7	**50.0000**	0.702	1.4	ug/L	161	Standard
	Pb	207	144038.1	1.1	**50.0000**	0.905	1.8	ug/L	141	Standard
	Pb	208	604176.4	1.3	**50.0000**	1.006	2.0	ug/L	608	Standard
	U	238	249579.5	0.8	**50.0000**	0.721	1.4	ug/L	4	Standard
>	**Bi**	209	495365.4	0.7				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	1860.1	2.3	**5.0000**	0.085	1.7	mg/L	15	Standard
K	39	210.0	30.4	**5.0000**	1.531	30.6	mg/L	2	Standard
Ca	43	73.3	20.8	**5.0000**	1.226	24.5	mg/L	20	Standard
Fe	54	11965.6	3.1	**5.0000**	0.182	3.6	mg/L	260	Standard
Fe	57	3618.8	4.5	**5.0000**	0.184	3.7	mg/L	25	Standard
Sc-1	45	72876.5	0.9				mg/L	72123	Standard
Cl	35	26276.1	1.0				ug/L	26728	Standard
Kr	83	1.3	43.3				ug/L	0	Standard
Br	81	700.0	8.7				ug/L	733	Standard
P	31	16869.4	2.7				ug/L	17255	Standard
S	34	1636.8	5.9				ug/L	1680	Standard
Sr	88	6.7	43.3				ug/L	7	Standard
C	12	70.0	24.7				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.2	119.1				mg/L	3	Standard
Ho-1	165	5.0	100.0				mg/L	0	Standard
Er	166	16.7	124.9				mg/L	13	Standard
I	127	146.7	7.1				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Monday, June 08, 2015 10:32:09
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	160600.1	1.2				ug/L	159930	Standard
	Be	9	98851.4	1.0	**99.1104**	1.069	1.1	ug/L	5	Standard
	Al	27	5536687.5	1.0	**98.5927**	2.231	2.3	ug/L	623	Standard
	Sc	45	72017.4	0.7				ug/L	72123	Standard
	Ti	47	54935.1	1.1	**200.0084**	4.741	2.4	ug/L	15	Standard
	V	51	628211.9	1.2	**99.8522**	2.474	2.5	ug/L	779	Standard
	Cr	52	694583.4	0.9	**99.8272**	1.207	1.2	ug/L	4182	Standard
	Cr	53	99250.8	2.2	**99.4382**	3.390	3.4	ug/L	255	Standard
	Mn	55	1165063.5	1.3	**99.4954**	2.412	2.4	ug/L	870	Standard
	Co	59	719674.1	0.7	**99.5178**	1.187	1.2	ug/L	44	Standard
	Ni	60	229102.3	1.5	**99.6471**	2.582	2.6	ug/L	376	Standard
	Cu	65	234013.2	1.4	**99.6316**	2.515	2.5	ug/L	271	Standard
	Zn	66	143171.0	1.3	**99.6286**	2.410	2.4	ug/L	601	Standard
>	Ge	72	607319.1	1.3				ug/L	607655	Standard
	As	75	132147.3	0.6	**100.0928**	1.703	1.7	ug/L	-37	Standard
	Se	82	11808.7	0.6	**99.9154**	1.695	1.7	ug/L	22	Standard
	Se-1	77	9139.4	0.7	**100.1593**	1.465	1.5	ug/L	38	Standard
>	Ga	71	68.3	40.3				mg/L	38	Standard
	Rb	85	1623.4	6.8				ug/L	15	Standard
	Y	89	738771.0	0.7				ug/L	733256	Standard
>	Rh	103	31.7	18.2				ug/L	0	Standard
	Mo	98	552424.2	0.2	**198.0166**	0.804	0.4	ug/L	10	Standard
	Ag	107	570574.6	1.1	**98.2585**	1.206	1.2	ug/L	70	Standard
	Cd	111	131206.7	0.8	**99.6939**	1.100	1.1	mg/L	2	Standard
	Cd	114	318887.1	1.3	**99.6115**	1.603	1.6	ug/L	-3	Standard
>	In	115	581843.1	0.3				ug/L	555851	Standard
	Sn	118	404493.3	0.5	**99.9636**	0.701	0.7	ug/L	495	Standard
	Sb	123	310746.8	0.5	**99.0834**	0.775	0.8	ug/L	41	Standard
	Ba	135	95687.5	0.9	**99.9045**	1.194	1.2	ug/L	14	Standard
	Ce	140	50.0	10.0				ug/L	18	Standard
>	Tb	159	754732.4	0.2				ug/L	712215	Standard
	Ho	165	8.3	69.3				ug/L	0	Standard
	Tl	203	472731.8	0.2	**100.1224**	0.671	0.7	ug/L	1	Standard
	Tl	205	489914.7	0.6	**100.2059**	1.046	1.0	ug/L	3	Standard
	Pb	206	305696.8	0.4	**99.8842**	0.398	0.4	ug/L	161	Standard
	Pb	207	279217.6	0.5	**99.6781**	0.892	0.9	ug/L	141	Standard
	Pb	208	1176173.9	0.9	**99.8945**	1.295	1.3	ug/L	608	Standard
	U	238	489975.2	0.5	**100.2880**	0.958	1.0	ug/L	4	Standard
>	Bi	209	483437.5	0.5				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	3545.4	4.0	**9.8413**	0.461	4.7	mg/L	15	Standard
K	39	381.7	5.0	**9.5963**	0.535	5.6	mg/L	2	Standard
Ca	43	86.7	38.4	**7.6448**	3.403	44.5	mg/L	20	Standard
Fe	54	22600.9	2.0	**9.8265**	0.172	1.8	mg/L	260	Standard
Fe	57	6998.3	2.8	**9.9183**	0.302	3.0	mg/L	25	Standard
> **Sc-1**	45	72017.4	0.7				mg/L	72123	Standard
Cl	35	25713.8	1.2				ug/L	26728	Standard
Kr	83	1.3	43.3				ug/L	0	Standard
Br	81	696.7	3.0				ug/L	733	Standard
P	31	17249.8	2.1				ug/L	17255	Standard
S	34	1798.4	4.2				ug/L	1680	Standard
Sr	88	5.0	173.2				ug/L	7	Standard
C	12	80.0	54.5				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	12.9	89.9				mg/L	3	Standard
Ho-1	165	8.3	69.3				mg/L	0	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	208.3	10.8				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998
Corr. Coef.	Ca	43	Correlation coefficient < 0.998

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Monday, June 08, 2015 10:35:23
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	167717.3	3.7				ug/L	159930	Standard
	Be	9	49196.5	3.5	**47.3026**	3.310	7.0	ug/L	5	Standard
	Al	27	2817631.9	1.3	**48.0702**	2.214	4.6	ug/L	623	Standard
	Sc	45	74407.3	0.7				ug/L	72123	Standard
	Ti	47	27696.3	1.5	**96.6634**	2.236	2.3	ug/L	15	Standard
	V	51	314617.4	2.8	**47.8848**	1.626	3.4	ug/L	779	Standard
	Cr	52	351169.7	2.8	**48.1030**	1.586	3.3	ug/L	4182	Standard
	Cr	53	50524.1	0.4	**48.3921**	0.670	1.4	ug/L	255	Standard
	Mn	55	585452.4	1.9	**47.8922**	1.213	2.5	ug/L	870	Standard
	Co	59	362692.0	2.2	**48.0891**	1.412	2.9	ug/L	44	Standard
	Ni	60	116082.8	2.4	**48.3308**	1.410	2.9	ug/L	376	Standard
	Cu	65	118962.2	1.4	**48.4666**	0.921	1.9	ug/L	271	Standard
	Zn	66	74434.1	1.7	**49.4377**	1.234	2.5	ug/L	601	Standard
>	**Ge**	72	633354.0	1.0				ug/L	607655	Standard
	As	75	67590.0	1.0	**49.0936**	0.833	1.7	ug/L	-37	Standard
	Se	82	5936.3	1.0	**48.0585**	0.896	1.9	ug/L	22	Standard
	Se-1	77	4712.7	2.7	**49.3286**	1.489	3.0	ug/L	38	Standard
>	**Ga**	71	111.7	30.5				mg/L	38	Standard
	Rb	85	733.4	6.9				ug/L	15	Standard
	Y	89	766436.5	1.0				ug/L	733256	Standard
>	**Rh**	103	21.7	35.3				ug/L	0	Standard
	Mo	98	284670.9	2.0	**99.5495**	2.647	2.7	ug/L	10	Standard
	Ag	107	290252.1	1.5	**48.7571**	0.945	1.9	ug/L	70	Standard
	Cd	111	65315.1	1.7	**48.4186**	1.137	2.3	mg/L	2	Standard
	Cd	114	158037.5	1.1	**48.1590**	0.889	1.8	ug/L	-3	Standard
>	**In**	115	596443.2	0.8				ug/L	555851	Standard
	Sn	118	205918.6	2.1	**49.5925**	1.286	2.6	ug/L	495	Standard
	Sb	123	151644.1	1.6	**47.1696**	1.011	2.1	ug/L	41	Standard
	Ba	135	47611.4	2.3	**48.4896**	1.368	2.8	ug/L	14	Standard
	Ce	140	86.7	28.5				ug/L	18	Standard
>	**Tb**	159	769121.5	0.5				ug/L	712215	Standard
	Ho	165	10.0	86.6				ug/L	0	Standard
	Tl	203	236176.4	1.5	**47.7666**	1.269	2.7	ug/L	1	Standard
	Tl	205	245862.7	2.2	**48.0217**	1.461	3.0	ug/L	3	Standard
	Pb	206	152199.2	2.3	**47.4601**	1.625	3.4	ug/L	161	Standard
	Pb	207	139247.9	2.5	**47.4498**	1.766	3.7	ug/L	141	Standard
	Pb	208	586429.7	1.4	**47.5319**	1.201	2.5	ug/L	608	Standard
	U	238	240886.8	0.6	**47.0803**	0.827	1.8	ug/L	4	Standard
>	**Bi**	209	506337.2	1.2				ug/L	481178	Standard

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Na	23	3.3	86.6				mg/L	0	Standard
Mg	24	1863.4	3.9	**4.9843**	0.229	4.6	mg/L	15	Standard
K	39	201.7	13.7	**4.8912**	0.694	14.2	mg/L	2	Standard
Ca	43	60.0	33.3	**4.6932**	2.032	43.3	mg/L	20	Standard
Fe	54	11520.6	2.2	**4.7899**	0.126	2.6	mg/L	260	Standard
Fe	57	3643.8	5.2	**4.9723**	0.276	5.6	mg/L	25	Standard
> **Sc-1**	45	74407.3	0.7				mg/L	72123	Standard
Cl	35	25427.3	1.2				ug/L	26728	Standard
Kr	83	1.0	100.0				ug/L	0	Standard
Br	81	636.7	20.5				ug/L	733	Standard
P	31	16490.6	2.5				ug/L	17255	Standard
S	34	1615.1	4.3				ug/L	1680	Standard
Sr	88	3.3	86.6				ug/L	7	Standard
C	12	90.0	19.2				mg/L	67	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.3	91.8				mg/L	3	Standard
Ho-1	165	10.0	86.6				mg/L	0	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	116.7	16.2				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	94.605		
Al	27	96.140		
Sc	45			
Ti	47	96.663		
V	51	95.770		
Cr	52	96.206		
Cr	53			
Mn	55	95.784		
Co	59	96.178		
Ni	60	96.662		
Cu	65	96.933		
Zn	66	98.875		
> Ge	72		104.229	
As	75	98.187		
Se	82	96.117		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	99.550		
Ag	107	97.514		
Cd	111	96.837		
Cd	114			
In	115		107.303	
Sn	118	99.185		
Sb	123	94.339		
Ba	135	96.979		
Ce	140			
Tb	159			
Ho	165			
Tl	203	95.533		
Tl	205			
Pb	206	94.920		
Pb	207	94.900		
Pb	208	95.064		
U	238	94.161		
Bi	209		105.229	
Na	23			
Mg	24	99.687		
K	39	97.823		
Ca	43	93.863		
Fe	54	95.799		
Fe	57	99.446		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Monday, June 08, 2015 10:38:36
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	168355.7	3.0				ug/L	159930	Standard
	Be	9	56.7	10.2	**0.0447**	0.006	13.9	ug/L	5	Standard
	Al	27	2690.3	54.0	**0.0081**	0.023	290.1	ug/L	623	Standard
	Sc	45	73916.6	2.6				ug/L	72123	Standard
	Ti	47	28.3	45.9	**0.0552**	0.043	77.0	ug/L	15	Standard
	V	51	807.6	12.8	**-0.0006**	0.014	2302.7	ug/L	779	Standard
	Cr	52	3981.5	2.3	**-0.0212**	0.023	107.6	ug/L	4182	Standard
	Cr	53	246.7	17.2	**-0.0308**	0.037	119.0	ug/L	255	Standard
	Mn	55	954.0	13.4	**-0.0110**	0.010	93.3	ug/L	870	Standard
	Co	59	142.7	44.3	**0.0070**	0.008	116.6	ug/L	44	Standard
	Ni	60	401.3	11.0	**0.0129**	0.013	104.8	ug/L	376	Standard
	Cu	65	411.0	8.7	**-0.0160**	0.011	67.5	ug/L	271	Standard
	Zn	66	623.7	14.8	**-0.0361**	0.050	139.6	ug/L	601	Standard
>	**Ge**	72	633255.5	3.5				ug/L	607655	Standard
	As	75	29.0	172.0	**0.0309**	0.036	116.6	ug/L	-37	Standard
	Se	82	25.3	37.5	**0.0035**	0.072	2059.4	ug/L	22	Standard
	Se-1	77	35.3	30.3	**-0.0133**	0.106	792.3	ug/L	38	Standard
>	**Ga**	71	35.0	24.7				mg/L	38	Standard
	Rb	85	23.3	44.6				ug/L	15	Standard
	Y	89	768601.7	3.4				ug/L	733256	Standard
>	**Rh**	103	3.3	173.2				ug/L	0	Standard
	Mo	98	129.6	48.6	**0.0371**	0.022	59.6	ug/L	10	Standard
	Ag	107	193.0	65.8	**0.0196**	0.021	108.4	ug/L	70	Standard
	Cd	111	25.4	75.1	**0.0218**	0.014	64.4	mg/L	2	Standard
	Cd	114	62.6	80.8	**0.0154**	0.015	99.4	ug/L	-3	Standard
>	**In**	115	597354.5	3.0				ug/L	555851	Standard
	Sn	118	586.7	7.7	**0.0324**	0.013	41.1	ug/L	495	Standard
	Sb	123	450.0	16.0	**0.1347**	0.027	19.7	ug/L	41	Standard
	Ba	135	28.0	30.9	**0.0147**	0.009	59.8	ug/L	14	Standard
	Ce	140	15.0	0.0				ug/L	18	Standard
>	**Tb**	159	767240.9	2.6				ug/L	712215	Standard
	Ho	165	5.0	100.0				ug/L	0	Standard
	Tl	203	111.3	99.8	**0.0200**	0.022	110.1	ug/L	1	Standard
	Tl	205	136.7	83.8	**0.0256**	0.021	82.0	ug/L	3	Standard
	Pb	206	227.0	33.4	**0.0070**	0.023	329.1	ug/L	161	Standard
	Pb	207	204.0	25.0	**0.0203**	0.017	85.6	ug/L	141	Standard
	Pb	208	856.7	8.4	**0.0118**	0.005	40.2	ug/L	608	Standard
	U	238	121.0	65.5	**0.0234**	0.014	61.7	ug/L	4	Standard
>	**Bi**	209	515275.7	3.1				ug/L	481178	Standard

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Na	23	1.7	173.2				mg/L	0	Standard
Mg	24	8.3	91.7	**-0.0224**	0.020	90.9	mg/L	15	Standard
K	39	3.3	86.6	**0.0470**	0.072	153.2	mg/L	2	Standard
Ca	43	20.0	25.0	**0.6867**	0.535	77.9	mg/L	20	Standard
Fe	54	286.3	17.8	**0.0066**	0.019	280.5	mg/L	260	Standard
Fe	57	35.0	74.2	**-0.0049**	0.034	695.9	mg/L	25	Standard
> **Sc-1**	45	73916.6	2.6				mg/L	72123	Standard
Cl	35	26039.7	0.7				ug/L	26728	Standard
Kr	83	0.7	86.6				ug/L	0	Standard
Br	81	676.7	3.1				ug/L	733	Standard
P	31	16804.3	2.9				ug/L	17255	Standard
S	34	1643.4	6.3				ug/L	1680	Standard
Sr	88	6.7	114.6				ug/L	7	Standard
C	12	60.0	16.7				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.5	93.0				mg/L	3	Standard
Ho-1	165	5.0	100.0				mg/L	0	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	113.3	15.5				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.213	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.467
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.086
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Monday, June 08, 2015 10:41:49
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	169120.5	1.8				ug/L	159930	Standard
	Be	9	236.7	11.6	**0.2161**	0.029	13.5	ug/L	5	Standard
	Al	27	575.0	17.6	**-0.0276**	0.002	5.7	ug/L	623	Standard
	Sc	45	73306.9	1.4				ug/L	72123	Standard
	Ti	47	12.0	16.7	**-0.0008**	0.007	935.4	ug/L	15	Standard
	V	51	3053.6	2.2	**0.3430**	0.011	3.1	ug/L	779	Standard
	Cr	52	9278.2	1.6	**0.7149**	0.023	3.2	ug/L	4182	Standard
	Cr	53	1080.0	4.4	**0.7740**	0.047	6.0	ug/L	255	Standard
	Mn	55	6605.4	0.8	**0.4531**	0.006	1.3	ug/L	870	Standard
	Co	59	2919.6	1.7	**0.3760**	0.007	2.0	ug/L	44	Standard
	Ni	60	3904.5	2.1	**1.4793**	0.038	2.6	ug/L	376	Standard
	Cu	65	2275.5	1.2	**0.7483**	0.010	1.4	ug/L	271	Standard
	Zn	66	9813.8	0.7	**6.1364**	0.061	1.0	ug/L	601	Standard
>	**Ge**	72	632140.8	0.3				ug/L	607655	Standard
	As	75	457.9	1.7	**0.3438**	0.005	1.5	ug/L	-37	Standard
	Se	82	59.2	9.7	**0.2820**	0.045	16.1	ug/L	22	Standard
	Se-1	77	72.3	14.2	**0.3799**	0.110	29.0	ug/L	38	Standard
>	**Ga**	71	33.3	8.7				mg/L	38	Standard
	Rb	85	15.0	57.7				ug/L	15	Standard
	Y	89	760604.8	1.9				ug/L	733256	Standard
>	**Rh**	103	0.0					ug/L	0	Standard
	Mo	98	30.0	36.7	**0.0023**	0.004	162.7	ug/L	10	Standard
	Ag	107	2364.9	0.6	**0.3901**	0.004	1.1	ug/L	70	Standard
	Cd	111	302.0	5.0	**0.2300**	0.013	5.5	mg/L	2	Standard
	Cd	114	724.8	10.2	**0.2206**	0.025	11.5	ug/L	-3	Standard
>	**In**	115	588338.7	1.3				ug/L	555851	Standard
	Sn	118	690.0	6.9	**0.0596**	0.011	18.6	ug/L	495	Standard
	Sb	123	1316.6	3.6	**0.4098**	0.019	4.7	ug/L	41	Standard
	Ba	135	674.0	6.2	**0.6826**	0.050	7.4	ug/L	14	Standard
	Ce	140	6.7	173.2				ug/L	18	Standard
>	**Tb**	159	754776.5	0.5				ug/L	712215	Standard
	Ho	165	3.3	86.6				ug/L	0	Standard
	Tl	203	378.7	0.8	**0.0739**	0.000	0.5	ug/L	1	Standard
	Tl	205	368.3	12.3	**0.0712**	0.008	11.9	ug/L	3	Standard
	Pb	206	794.7	3.5	**0.1835**	0.008	4.5	ug/L	161	Standard
	Pb	207	713.7	2.5	**0.1933**	0.007	3.6	ug/L	141	Standard
	Pb	208	3005.5	3.6	**0.1854**	0.009	4.6	ug/L	608	Standard
	U	238	1953.1	1.6	**0.3791**	0.006	1.6	ug/L	4	Standard
>	**Bi**	209	510429.1	0.4				ug/L	481178	Standard

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Na	23	1.7	173.2				mg/L	0	Standard
Mg	24	10.0	132.3	**-0.0178**	0.036	201.0	mg/L	15	Standard
K	39	6.7	86.6	**0.1294**	0.143	110.8	mg/L	2	Standard
Ca	43	30.0	88.2	**1.6976**	2.651	156.2	mg/L	20	Standard
Fe	54	278.8	17.0	**0.0047**	0.020	426.5	mg/L	260	Standard
Fe	57	28.3	40.8	**-0.0132**	0.017	125.1	mg/L	25	Standard
> **Sc-1**	45	73306.9	1.4				mg/L	72123	Standard
Cl	35	26401.7	1.8				ug/L	26728	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	686.7	4.7				ug/L	733	Standard
P	31	16151.9	1.9				ug/L	17255	Standard
S	34	1601.8	7.3				ug/L	1680	Standard
Sr	88	3.3	173.2				ug/L	7	Standard
C	12	96.7	6.0				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.0	87.0				mg/L	3	Standard
Ho-1	165	3.3	86.6				mg/L	0	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	138.3	31.2				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	108.034		
Al	27	-2.756		
Sc	45			
Ti	47			
V	51	85.743		
Cr	52	89.363		
Cr	53			
Mn	55	90.614		
Co	59	94.004		
Ni	60	92.456		
Cu	65	93.543		
Zn	66	98.182		
> Ge	72		104.030	
As	75	85.939		
Se	82	70.507		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	97.515		
Cd	111	95.853		
Cd	114			
> In	115			105.845
Sn	118			
Sb	123	102.438		
Ba	135	91.013		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	92.404		
Tl	205			
Pb	206			
Pb	207			
Pb	208	92.710		
U	238	94.764		
> Bi	209			106.079
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Monday, June 08, 2015 10:45:00
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	161572.0	1.2				ug/L	159930	Standard
	Be	9	20.0	90.1	**0.0105**	0.018	173.8	ug/L	5	Standard
	Al	27	2968804.8	0.7	**52.5270**	0.857	1.6	ug/L	623	Standard
	Sc	45	73330.4	1.0				ug/L	72123	Standard
	Ti	47	32739.0	1.0	**116.1366**	0.610	0.5	ug/L	15	Standard
	V	51	165.5	131.3	**-0.0981**	0.034	34.5	ug/L	779	Standard
	Cr	52	5253.9	3.1	**0.1667**	0.024	14.7	ug/L	4182	Standard
	Cr	53	2640.2	5.1	**2.3168**	0.142	6.1	ug/L	255	Standard
	Mn	55	1314.7	6.6	**0.0203**	0.008	37.9	ug/L	870	Standard
	Co	59	217.3	11.4	**0.0174**	0.003	19.7	ug/L	44	Standard
	Ni	60	1454.7	4.7	**0.4631**	0.031	6.6	ug/L	376	Standard
	Cu	65	1048.4	1.1	**0.2518**	0.005	1.9	ug/L	271	Standard
	Zn	66	1845.8	4.8	**0.8039**	0.055	6.8	ug/L	601	Standard
>	**Ge**	72	623088.6	0.4				ug/L	607655	Standard
	As	75	-10.3	411.6	**0.0030**	0.031	1045.6	ug/L	-37	Standard
	Se	82	18.1	29.9	**-0.0512**	0.045	87.2	ug/L	22	Standard
	Se-1	77	392.0	4.7	**3.8184**	0.203	5.3	ug/L	38	Standard
>	**Ga**	71	151.7	21.4				mg/L	38	Standard
	Rb	85	825.0	4.4				ug/L	15	Standard
	Y	89	742454.8	0.7				ug/L	733256	Standard
>	**Rh**	103	1.7	173.2				ug/L	0	Standard
	Mo	98	293384.8	0.3	**103.2479**	1.198	1.2	ug/L	10	Standard
	Ag	107	95.0	11.9	**0.0033**	0.002	53.6	ug/L	70	Standard
	Cd	111	-111.8	5.1	**-0.0803**	0.004	4.8	mg/L	2	Standard
	Cd	114	553.0	3.8	**0.1661**	0.007	4.3	ug/L	-3	Standard
>	**In**	115	592652.7	0.9				ug/L	555851	Standard
	Sn	118	695.0	8.6	**0.0597**	0.016	26.4	ug/L	495	Standard
	Sb	123	87.9	7.9	**0.0219**	0.002	8.8	ug/L	41	Standard
	Ba	135	35.0	20.0	**0.0221**	0.007	31.3	ug/L	14	Standard
	Ce	140	28.3	20.4				ug/L	18	Standard
>	**Tb**	159	770462.4	0.7				ug/L	712215	Standard
	Ho	165	13.3	21.7				ug/L	0	Standard
	Tl	203	70.0	18.6	**0.0126**	0.003	21.5	ug/L	1	Standard
	Tl	205	116.7	23.6	**0.0233**	0.005	23.1	ug/L	3	Standard
	Pb	206	307.3	4.7	**0.0363**	0.004	10.9	ug/L	161	Standard
	Pb	207	249.0	6.1	**0.0394**	0.005	11.9	ug/L	141	Standard
	Pb	208	1165.7	11.8	**0.0410**	0.011	26.3	ug/L	608	Standard
	U	238	36.7	166.1	**0.0078**	0.012	156.6	ug/L	4	Standard
>	**Bi**	209	490959.5	0.7				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	4789.1	1.4	**13.0694**	0.312	2.4	mg/L	15	Standard
K	39	226.7	8.4	**5.5793**	0.440	7.9	mg/L	2	Standard
Ca	43	123.3	16.4	**11.2537**	2.179	19.4	mg/L	20	Standard
Fe	54	29724.8	3.0	**12.7258**	0.327	2.6	mg/L	260	Standard
Fe	57	9189.5	2.3	**12.8070**	0.376	2.9	mg/L	25	Standard
> **Sc-1**	45	73330.4	1.0				mg/L	72123	Standard
Cl	35	26614.7	0.3				ug/L	26728	Standard
Kr	83	1.3	43.3				ug/L	0	Standard
Br	81	756.7	9.4				ug/L	733	Standard
P	31	16125.2	2.4				ug/L	17255	Standard
S	34	1595.1	1.1				ug/L	1680	Standard
Sr	88	10.0	50.0				ug/L	7	Standard
C	12	156.7	28.8				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	-0.2	173.2				mg/L	3	Standard
Ho-1	165	13.3	21.7				mg/L	0	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	126.7	18.2				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27	1.051		
Sc	45			
Ti	47	116.137		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.540	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	103.248		
Ag	107			
Cd	111			
Cd	114			
> In	115			106.621
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209			102.033
Na	23			
Mg	24	261.388		
K	39	111.586		
Ca	43	75.024		
Fe	54	101.807		
Fe	57	102.456		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Mg	24	
QC Std 4	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Monday, June 08, 2015 10:48:11
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	165263.1	0.6				ug/L	159930	Standard
	Be	9	103351.4	1.7	**100.6958**	1.826	1.8	ug/L	5	Standard
	Al	27	3047121.7	2.1	**52.7015**	0.974	1.8	ug/L	623	Standard
	Sc	45	74759.0	0.9				ug/L	72123	Standard
	Ti	47	33317.3	2.0	**115.0866**	2.980	2.6	ug/L	15	Standard
	V	51	656292.2	1.2	**98.9743**	1.118	1.1	ug/L	779	Standard
	Cr	52	723893.4	1.3	**98.7237**	1.537	1.6	ug/L	4182	Standard
	Cr	53	105160.4	2.0	**99.9684**	2.567	2.6	ug/L	255	Standard
	Mn	55	1228059.1	1.5	**99.5044**	0.964	1.0	ug/L	870	Standard
	Co	59	758458.4	1.5	**99.5242**	1.432	1.4	ug/L	44	Standard
	Ni	60	240972.3	1.2	**99.4468**	1.337	1.3	ug/L	376	Standard
	Cu	65	247103.6	1.3	**99.8211**	1.233	1.2	ug/L	271	Standard
	Zn	66	153509.8	1.1	**101.3726**	1.837	1.8	ug/L	601	Standard
>	**Ge**	72	639971.8	1.1				ug/L	607655	Standard
	As	75	143683.6	0.9	**103.2670**	0.927	0.9	ug/L	-37	Standard
	Se	82	12671.5	1.2	**101.7384**	1.160	1.1	ug/L	22	Standard
	Se-1	77	10142.4	0.6	**105.4982**	1.418	1.3	ug/L	38	Standard
>	**Ga**	71	196.7	14.0				mg/L	38	Standard
	Rb	85	910.0	3.3				ug/L	15	Standard
	Y	89	757511.7	0.7				ug/L	733256	Standard
>	**Rh**	103	31.7	32.9				ug/L	0	Standard
	Mo	98	297224.6	0.7	**103.7715**	2.060	2.0	ug/L	10	Standard
	Ag	107	561289.6	3.4	**94.1765**	4.526	4.8	ug/L	70	Standard
	Cd	111	138095.2	0.4	**102.1953**	1.142	1.1	mg/L	2	Standard
	Cd	114	329939.6	1.8	**100.3808**	2.206	2.2	ug/L	-3	Standard
>	**In**	115	597452.7	1.5				ug/L	555851	Standard
	Sn	118	756.7	7.6	**0.0730**	0.011	15.5	ug/L	495	Standard
	Sb	123	322296.5	0.7	**100.0960**	1.810	1.8	ug/L	41	Standard
	Ba	135	101488.1	0.4	**103.2011**	1.136	1.1	ug/L	14	Standard
	Ce	140	28.3	40.8				ug/L	18	Standard
>	**Tb**	159	781774.1	0.9				ug/L	712215	Standard
	Ho	165	5.0	100.0				ug/L	0	Standard
	Tl	203	489088.7	1.0	**101.1056**	0.725	0.7	ug/L	1	Standard
	Tl	205	511737.6	1.3	**102.1590**	0.721	0.7	ug/L	3	Standard
	Pb	206	314540.8	0.6	**100.3230**	1.609	1.6	ug/L	161	Standard
	Pb	207	287147.8	0.6	**100.0607**	1.414	1.4	ug/L	141	Standard
	Pb	208	1204340.4	0.7	**99.8412**	1.324	1.3	ug/L	608	Standard
	U	238	498959.1	0.5	**99.6828**	0.764	0.8	ug/L	4	Standard
>	**Bi**	209	495308.5	1.3				ug/L	481178	Standard

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Na	23	1.7	173.2				mg/L	0	Standard
Mg	24	4772.4	1.5	**12.7716**	0.115	0.9	mg/L	15	Standard
K	39	215.0	17.6	**5.1934**	0.942	18.1	mg/L	2	Standard
Ca	43	126.7	23.8	**11.3430**	3.069	27.1	mg/L	20	Standard
Fe	54	30027.8	2.9	**12.6088**	0.315	2.5	mg/L	260	Standard
Fe	57	9254.5	5.2	**12.6510**	0.712	5.6	mg/L	25	Standard
Sc-1	45	74759.0	0.9				mg/L	72123	Standard
Cl	35	26360.9	0.3				ug/L	26728	Standard
Kr	83	0.7	173.2				ug/L	0	Standard
Br	81	746.7	15.2				ug/L	733	Standard
P	31	15945.1	2.2				ug/L	17255	Standard
S	34	1558.4	8.3				ug/L	1680	Standard
Sr	88	8.3	124.9				ug/L	7	Standard
C	12	133.3	8.7				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.3	86.6				mg/L	3	Standard
Ho-1	165	5.0	100.0				mg/L	0	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	150.0	18.6				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	100.696		
Al	27	1.054		
Sc	45			
Ti	47	115.087		
V	51	98.974		
Cr	52	98.724		
Cr	53			
Mn	55	99.504		
Co	59	99.524		
Ni	60	99.447		
Cu	65	99.821		
Zn	66	101.373		
> Ge	72		105.318	
As	75	103.267		
Se	82	101.738		
Se-1	77			
> Ga	71			

Sample ID: QC Std 5
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Rb	85			
Y	89			
Rh	103			
Mo	98	103.772		
Ag	107	94.177		
Cd	111	102.195		
Cd	114			
In	115		107.484	
Sn	118			
Sb	123	100.096		
Ba	135	103.201		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.106		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.841		
U	238	99.683		
Bi	209		102.937	
Na	23			
Mg	24	255.433		
K	39	103.868		
Ca	43	75.620		
Fe	54	100.871		
Fe	57	101.208		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Mg	24	
QC Std 5	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, June 08, 2015 10:51:25
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	168861.2	2.8				ug/L	159930	Standard
	Be	9	52062.7	3.0	**49.6564**	1.784	3.6	ug/L	5	Standard
	Al	27	2999035.2	2.0	**50.7716**	0.477	0.9	ug/L	623	Standard
	Sc	45	73971.9	2.4				ug/L	72123	Standard
	Ti	47	29018.4	0.8	**99.5843**	0.633	0.6	ug/L	15	Standard
	V	51	334061.6	1.9	**49.9970**	0.867	1.7	ug/L	779	Standard
	Cr	52	371058.0	1.2	**49.9994**	0.461	0.9	ug/L	4182	Standard
	Cr	53	53654.9	1.9	**50.5439**	0.829	1.6	ug/L	255	Standard
	Mn	55	621481.9	1.0	**49.9935**	0.460	0.9	ug/L	870	Standard
	Co	59	386362.8	1.0	**50.3698**	0.397	0.8	ug/L	44	Standard
	Ni	60	122620.9	1.3	**50.2050**	0.567	1.1	ug/L	376	Standard
	Cu	65	125934.6	1.6	**50.4581**	0.697	1.4	ug/L	271	Standard
	Zn	66	76023.6	1.2	**49.6498**	0.497	1.0	ug/L	601	Standard
>	Ge	72	644040.9	0.3				ug/L	607655	Standard
	As	75	69977.6	0.9	**49.9791**	0.310	0.6	ug/L	-37	Standard
	Se	82	6315.6	2.4	**50.2833**	1.125	2.2	ug/L	22	Standard
	Se-1	77	4833.1	3.8	**49.7451**	1.793	3.6	ug/L	38	Standard
>	Ga	71	48.3	23.9				mg/L	38	Standard
	Rb	85	908.4	9.1				ug/L	15	Standard
	Y	89	769627.9	0.5				ug/L	733256	Standard
>	Rh	103	16.7	17.3				ug/L	0	Standard
	Mo	98	291207.7	0.7	**101.2707**	0.307	0.3	ug/L	10	Standard
	Ag	107	303549.8	1.1	**50.7104**	0.328	0.6	ug/L	70	Standard
	Cd	111	68313.0	1.6	**50.3601**	0.695	1.4	mg/L	2	Standard
	Cd	114	164442.2	2.5	**49.8326**	1.088	2.2	ug/L	-3	Standard
>	In	115	599694.0	0.4				ug/L	555851	Standard
	Sn	118	204240.8	1.2	**48.9155**	0.516	1.1	ug/L	495	Standard
	Sb	123	162635.9	1.0	**50.3097**	0.364	0.7	ug/L	41	Standard
	Ba	135	49322.8	1.9	**49.9544**	0.824	1.6	ug/L	14	Standard
	Ce	140	50.0	30.0				ug/L	18	Standard
>	Tb	159	777840.2	0.6				ug/L	712215	Standard
	Ho	165	3.3	86.6				ug/L	0	Standard
	Tl	203	248000.4	1.4	**49.9971**	0.875	1.8	ug/L	1	Standard
	Tl	205	255952.2	0.8	**49.8331**	0.741	1.5	ug/L	3	Standard
	Pb	206	159815.8	0.8	**49.6756**	0.667	1.3	ug/L	161	Standard
	Pb	207	146751.0	1.2	**49.8446**	0.855	1.7	ug/L	141	Standard
	Pb	208	616685.8	1.2	**49.8283**	0.897	1.8	ug/L	608	Standard
	U	238	252271.1	1.3	**49.1516**	0.947	1.9	ug/L	4	Standard
>	Bi	209	507891.5	0.8				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	1815.1	5.3	**4.8804**	0.193	4.0	mg/L	15	Standard
K	39	226.7	14.4	**5.5221**	0.671	12.2	mg/L	2	Standard
Ca	43	56.7	33.4	**4.3766**	1.859	42.5	mg/L	20	Standard
Fe	54	11842.9	1.0	**4.9590**	0.165	3.3	mg/L	260	Standard
Fe	57	3747.1	1.7	**5.1474**	0.189	3.7	mg/L	25	Standard
> **Sc-1**	45	73971.9	2.4				mg/L	72123	Standard
Cl	35	26399.0	0.5				ug/L	26728	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	710.0	6.5				ug/L	733	Standard
P	31	16547.4	2.3				ug/L	17255	Standard
S	34	1608.4	2.2				ug/L	1680	Standard
Sr	88	6.7	86.6				ug/L	7	Standard
C	12	70.0	24.7				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	2.9	202.3				mg/L	3	Standard
Ho-1	165	3.3	86.6				mg/L	0	Standard
Er	166	10.0					mg/L	13	Standard
I	127	178.3	30.8				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	99.313		
Al	27	101.543		
Sc	45			
Ti	47	99.584		
V	51	99.994		
Cr	52	99.999		
Cr	53			
Mn	55	99.987		
Co	59	100.740		
Ni	60	100.410		
Cu	65	100.916		
Zn	66	99.300		
> Ge	72		105.988	
As	75	99.958		
Se	82	100.567		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.271		
Ag	107	101.421		
Cd	111	100.720		
Cd	114			
In	115			107.888
Sn	118	97.831		
Sb	123	100.619		
Ba	135	99.909		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.994		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.657		
U	238	98.303		
Bi	209			105.552
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, June 08, 2015 10:54:36
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	172049.9	2.1				ug/L	159930	Standard
	Be	9	41.7	34.6	**0.0293**	0.013	44.9	ug/L	5	Standard
	Al	27	1353.4	44.1	**-0.0148**	0.010	67.2	ug/L	623	Standard
	Sc	45	74459.2	1.6				ug/L	72123	Standard
	Ti	47	16.3	17.7	**0.0132**	0.010	77.6	ug/L	15	Standard
	V	51	882.9	20.9	**0.0081**	0.027	335.7	ug/L	779	Standard
	Cr	52	4281.9	6.0	**0.0080**	0.033	415.6	ug/L	4182	Standard
	Cr	53	360.0	2.8	**0.0716**	0.009	13.1	ug/L	255	Standard
	Mn	55	1085.4	19.7	**-0.0021**	0.017	804.5	ug/L	870	Standard
	Co	59	222.0	51.9	**0.0169**	0.015	88.2	ug/L	44	Standard
	Ni	60	342.7	2.1	**-0.0143**	0.003	21.6	ug/L	376	Standard
	Cu	65	385.3	5.7	**-0.0295**	0.008	28.3	ug/L	271	Standard
	Zn	66	594.3	3.3	**-0.0631**	0.010	16.5	ug/L	601	Standard
>	**Ge**	72	646329.3	0.7				ug/L	607655	Standard
	As	75	-36.8	57.4	**-0.0156**	0.015	97.6	ug/L	-37	Standard
	Se	82	16.4	33.5	**-0.0699**	0.043	62.0	ug/L	22	Standard
	Se-1	77	36.7	5.7	**-0.0058**	0.019	321.6	ug/L	38	Standard
>	**Ga**	71	8.3	34.6				mg/L	38	Standard
	Rb	85	21.7	13.3				ug/L	15	Standard
	Y	89	779357.0	0.6				ug/L	733256	Standard
>	**Rh**	103	0.0					ug/L	0	Standard
	Mo	98	207.3	59.7	**0.0647**	0.044	67.7	ug/L	10	Standard
	Ag	107	223.3	57.7	**0.0250**	0.022	87.9	ug/L	70	Standard
	Cd	111	5.9	89.8	**0.0075**	0.004	53.0	mg/L	2	Standard
	Cd	114	23.0	93.4	**0.0035**	0.007	187.3	ug/L	-3	Standard
>	**In**	115	593275.7	0.6				ug/L	555851	Standard
	Sn	118	448.3	12.3	**-0.0004**	0.014	3773.4	ug/L	495	Standard
	Sb	123	318.6	26.1	**0.0941**	0.026	28.1	ug/L	41	Standard
	Ba	135	15.0	29.1	**0.0016**	0.005	288.9	ug/L	14	Standard
	Ce	140	6.7	43.3				ug/L	18	Standard
>	**Tb**	159	762444.3	2.0				ug/L	712215	Standard
	Ho	165	8.3	124.9				ug/L	0	Standard
	Tl	203	76.3	122.3	**0.0133**	0.019	142.0	ug/L	1	Standard
	Tl	205	70.0	74.6	**0.0133**	0.010	75.8	ug/L	3	Standard
	Pb	206	259.7	43.6	**0.0173**	0.036	205.7	ug/L	161	Standard
	Pb	207	238.3	28.1	**0.0319**	0.023	73.1	ug/L	141	Standard
	Pb	208	856.0	16.1	**0.0119**	0.011	95.1	ug/L	608	Standard
	U	238	68.3	74.4	**0.0136**	0.010	72.7	ug/L	4	Standard
>	**Bi**	209	514724.7	1.3				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	15.0	66.7	**-0.0045**	0.027	599.4	mg/L	15	Standard
K	39	6.7	114.6	**0.1277**	0.187	146.5	mg/L	2	Standard
Ca	43	25.0	34.6	**1.1684**	0.864	73.9	mg/L	20	Standard
Fe	54	276.1	22.1	**0.0016**	0.025	1596.3	mg/L	260	Standard
Fe	57	41.7	34.6	**0.0047**	0.021	442.5	mg/L	25	Standard
> **Sc-1**	45	74459.2	1.6				mg/L	72123	Standard
Cl	35	26676.8	1.4				ug/L	26728	Standard
Kr	83	1.7	34.6				ug/L	0	Standard
Br	81	663.3	8.6				ug/L	733	Standard
P	31	17385.0	3.3				ug/L	17255	Standard
S	34	1628.4	5.7				ug/L	1680	Standard
Sr	88	6.7	114.6				ug/L	7	Standard
C	12	70.0	14.3				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	-1.3	78.1				mg/L	3	Standard
Ho-1	165	8.3	124.9				mg/L	0	Standard
Er	166	26.7	78.1				mg/L	13	Standard
I	127	105.0	20.8				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.365	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.733
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.972
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1505154902
Sample Date/Time: Monday, June 08, 2015 10:57:47
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	174254.7	0.9				ug/L	159930	Standard
	Be	9	53.3	14.3	**0.0397**	0.007	16.7	ug/L	5	Standard
	Al	27	8607699.1	2.2	**141.2819**	4.341	3.1	ug/L	623	Standard
	Sc	45	77350.3	0.6				ug/L	72123	Standard
	Ti	47	984.0	2.3	**3.1994**	0.101	3.2	ug/L	15	Standard
	V	51	53072.8	2.3	**7.5179**	0.230	3.1	ug/L	779	Standard
	Cr	52	50878.3	1.6	**6.0808**	0.143	2.4	ug/L	4182	Standard
	Cr	53	7893.7	0.4	**6.9053**	0.087	1.3	ug/L	255	Standard
	Mn	55	2529745.5	2.1	**195.5417**	5.316	2.7	ug/L	870	Standard
	Co	59	9257.8	2.8	**1.1466**	0.040	3.5	ug/L	44	Standard
	Ni	60	37541.1	0.9	**14.6406**	0.260	1.8	ug/L	376	Standard
	Cu	65	6454.4	2.8	**2.3068**	0.084	3.6	ug/L	271	Standard
	Zn	66	61357.0	0.9	**38.3503**	0.645	1.7	ug/L	601	Standard
>	**Ge**	72	671220.8	0.8				ug/L	607655	Standard
	As	75	1843.3	7.7	**1.2742**	0.108	8.5	ug/L	-37	Standard
	Se	82	933.3	1.4	**6.9589**	0.145	2.1	ug/L	22	Standard
	Se-1	77	777.4	3.5	**7.3531**	0.308	4.2	ug/L	38	Standard
>	**Ga**	71	976.7	2.4				mg/L	38	Standard
	Rb	85	14151.6	3.6				ug/L	15	Standard
	Y	89	837605.2	0.7				ug/L	733256	Standard
>	**Rh**	103	98.3	7.8				ug/L	0	Standard
	Mo	98	7661.4	0.7	**2.6171**	0.019	0.7	ug/L	10	Standard
	Ag	107	162.3	0.9	**0.0140**	0.000	1.7	ug/L	70	Standard
	Cd	111	1053.6	4.9	**0.7684**	0.037	4.8	mg/L	2	Standard
	Cd	114	2678.6	1.1	**0.7964**	0.013	1.6	ug/L	-3	Standard
>	**In**	115	608660.9	0.5				ug/L	555851	Standard
	Sn	118	745.0	8.2	**0.0670**	0.015	23.0	ug/L	495	Standard
	Sb	123	838.3	3.8	**0.2499**	0.009	3.6	ug/L	41	Standard
	Ba	135	7760.0	1.8	**7.7321**	0.137	1.8	ug/L	14	Standard
	Ce	140	12651.9	1.0				ug/L	18	Standard
>	**Tb**	159	787970.7	1.3				ug/L	712215	Standard
	Ho	165	948.4	4.4				ug/L	0	Standard
	Tl	203	526.7	4.1	**0.1016**	0.005	4.6	ug/L	1	Standard
	Tl	205	513.3	12.7	**0.0974**	0.012	12.2	ug/L	3	Standard
	Pb	206	4814.1	1.2	**1.4001**	0.018	1.3	ug/L	161	Standard
	Pb	207	2205.2	2.3	**0.6837**	0.013	2.0	ug/L	141	Standard
	Pb	208	11616.3	1.8	**0.8608**	0.013	1.5	ug/L	608	Standard
	U	238	31319.3	1.4	**5.9572**	0.056	0.9	ug/L	4	Standard
>	**Bi**	209	520222.9	0.5				ug/L	481178	Standard

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Na	23	1.7	173.2				mg/L	0	Standard
Mg	24	803.4	7.4	**2.0399**	0.145	7.1	mg/L	15	Standard
K	39	11.7	24.7	**0.2378**	0.067	28.0	mg/L	2	Standard
Ca	43	153.3	10.5	**13.4891**	1.596	11.8	mg/L	20	Standard
Fe	54	2405.3	1.3	**0.8695**	0.018	2.1	mg/L	260	Standard
Fe	57	803.4	2.0	**1.0126**	0.015	1.5	mg/L	25	Standard
> **Sc-1**	45	77350.3	0.6				mg/L	72123	Standard
Cl	35	29894.8	0.8				ug/L	26728	Standard
Kr	83	0.7	173.2				ug/L	0	Standard
Br	81	6391.3	1.3				ug/L	733	Standard
P	31	17493.4	1.3				ug/L	17255	Standard
S	34	1573.4	8.2				ug/L	1680	Standard
Sr	88	1066.7	3.0				ug/L	7	Standard
C	12	70.0	79.5				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	520.0	6.9				mg/L	0	Standard
Dy	164	1197.1	14.1				mg/L	3	Standard
Ho-1	165	948.4	4.4				mg/L	0	Standard
Er	166	966.7	7.6				mg/L	13	Standard
I	127	54002.9	4.7				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.957	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.461	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	109.501
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	108.115
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1505154903
Sample Date/Time: Monday, June 08, 2015 11:00:59
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	178004.5	0.6				ug/L	159930	Standard
	Be	9	81.7	21.5	**0.0644**	0.016	25.3	ug/L	5	Standard
	Al	27	14259714.5	1.4	**229.0985**	2.008	0.9	ug/L	623	Standard
	Sc	45	77983.5	1.0				ug/L	72123	Standard
	Ti	47	1473.1	0.5	**4.8109**	0.010	0.2	ug/L	15	Standard
	V	51	89883.2	1.0	**12.8187**	0.137	1.1	ug/L	779	Standard
	Cr	52	84957.5	0.4	**10.5394**	0.063	0.6	ug/L	4182	Standard
	Cr	53	13254.1	2.3	**11.7785**	0.282	2.4	ug/L	255	Standard
	Mn	55	4061444.8	1.2	**314.0420**	5.995	1.9	ug/L	870	Standard
	Co	59	13111.0	1.0	**1.6290**	0.025	1.5	ug/L	44	Standard
	Ni	60	61156.5	0.4	**23.9509**	0.226	0.9	ug/L	376	Standard
	Cu	65	9985.3	1.0	**3.6700**	0.065	1.8	ug/L	271	Standard
	Zn	66	89181.0	0.7	**55.9567**	0.804	1.4	ug/L	601	Standard
>	Ge	72	671091.8	0.7				ug/L	607655	Standard
	As	75	3237.9	1.1	**2.2297**	0.036	1.6	ug/L	-37	Standard
	Se	82	1609.4	0.6	**12.1470**	0.166	1.4	ug/L	22	Standard
	Se-1	77	1355.4	0.7	**13.1077**	0.009	0.1	ug/L	38	Standard
>	Ga	71	1688.4	3.0				mg/L	38	Standard
	Rb	85	16433.9	2.4				ug/L	15	Standard
	Y	89	882731.9	0.6				ug/L	733256	Standard
>	Rh	103	211.7	1.4				ug/L	0	Standard
	Mo	98	12930.9	0.3	**4.4300**	0.025	0.6	ug/L	10	Standard
	Ag	107	205.3	4.9	**0.0211**	0.002	7.4	ug/L	70	Standard
	Cd	111	1685.0	1.3	**1.2290**	0.015	1.3	mg/L	2	Standard
	Cd	114	4097.5	4.1	**1.2221**	0.053	4.3	ug/L	-3	Standard
>	In	115	607664.5	0.3				ug/L	555851	Standard
	Sn	118	921.7	5.8	**0.1091**	0.012	11.1	ug/L	495	Standard
	Sb	123	1256.6	2.4	**0.3781**	0.010	2.6	ug/L	41	Standard
	Ba	135	11178.5	1.7	**11.1629**	0.205	1.8	ug/L	14	Standard
	Ce	140	22017.7	1.3				ug/L	18	Standard
>	Tb	159	791297.3	1.6				ug/L	712215	Standard
	Ho	165	1658.4	5.1				ug/L	0	Standard
	Tl	203	794.4	3.5	**0.1573**	0.005	3.4	ug/L	1	Standard
	Tl	205	845.0	15.4	**0.1634**	0.023	14.1	ug/L	3	Standard
	Pb	206	8203.9	0.1	**2.4786**	0.034	1.4	ug/L	161	Standard
	Pb	207	3661.1	0.1	**1.1906**	0.016	1.3	ug/L	141	Standard
	Pb	208	19194.8	1.1	**1.4889**	0.026	1.7	ug/L	608	Standard
	U	238	51390.0	1.2	**9.9665**	0.240	2.4	ug/L	4	Standard
>	Bi	209	510322.0	1.3				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	1455.1	2.4	**3.7014**	0.090	2.4	mg/L	15	Standard
K	39	25.0	40.0	**0.5470**	0.236	43.2	mg/L	2	Standard
Ca	43	210.0	12.4	**18.8145**	2.661	14.1	mg/L	20	Standard
Fe	54	4088.7	3.3	**1.5456**	0.066	4.3	mg/L	260	Standard
Fe	57	1445.1	6.0	**1.8478**	0.097	5.2	mg/L	25	Standard
> **Sc-1**	45	77983.5	1.0				mg/L	72123	Standard
Cl	35	34127.1	1.4				ug/L	26728	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	10363.6	6.7				ug/L	733	Standard
P	31	18085.8	2.1				ug/L	17255	Standard
S	34	1665.1	1.4				ug/L	1680	Standard
Sr	88	1966.8	6.9				ug/L	7	Standard
C	12	63.3	24.1				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	810.0	10.1				mg/L	0	Standard
Dy	164	2053.8	3.5				mg/L	3	Standard
Ho-1	165	1658.4	5.1				mg/L	0	Standard
Er	166	1733.4	5.9				mg/L	13	Standard
I	127	112770.1	8.5				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.302	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.440	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	109.321
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	106.057
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1505154903
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, June 08, 2015 11:04:12
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	175103.3	3.1				ug/L	159930	Standard
	Be	9	52897.2	2.4	**48.6571**	1.487	3.1	ug/L	5	Standard
	Al	27	3098675.1	1.6	**50.6006**	1.095	2.2	ug/L	623	Standard
	Sc	45	76144.2	1.8				ug/L	72123	Standard
	Ti	47	29353.7	1.8	**96.5605**	2.078	2.2	ug/L	15	Standard
	V	51	340899.9	0.4	**48.9049**	0.618	1.3	ug/L	779	Standard
	Cr	52	378970.2	1.5	**48.9361**	0.770	1.6	ug/L	4182	Standard
	Cr	53	53531.1	1.6	**48.3224**	0.419	0.9	ug/L	255	Standard
	Mn	55	633402.4	1.5	**48.8337**	0.285	0.6	ug/L	870	Standard
	Co	59	395939.7	2.1	**49.4753**	0.866	1.8	ug/L	44	Standard
	Ni	60	123623.7	1.4	**48.5089**	0.353	0.7	ug/L	376	Standard
	Cu	65	128744.4	1.7	**49.4373**	0.263	0.5	ug/L	271	Standard
	Zn	66	78028.1	1.1	**48.8367**	0.232	0.5	ug/L	601	Standard
>	Ge	72	671948.2	1.2				ug/L	607655	Standard
	As	75	71601.7	1.2	**49.0177**	0.486	1.0	ug/L	-37	Standard
	Se	82	6388.7	2.3	**48.7446**	0.722	1.5	ug/L	22	Standard
	Se-1	77	5022.5	1.4	**49.5485**	0.220	0.4	ug/L	38	Standard
>	Ga	71	80.0	22.5				mg/L	38	Standard
	Rb	85	800.0	2.3				ug/L	15	Standard
	Y	89	799130.7	1.0				ug/L	733256	Standard
>	Rh	103	13.3	78.1				ug/L	0	Standard
	Mo	98	297295.5	1.6	**100.8905**	2.126	2.1	ug/L	10	Standard
	Ag	107	305474.3	1.2	**49.7999**	0.935	1.9	ug/L	70	Standard
	Cd	111	68904.9	0.7	**49.5704**	0.758	1.5	mg/L	2	Standard
	Cd	114	165774.3	1.6	**49.0222**	0.817	1.7	ug/L	-3	Standard
>	In	115	614600.6	1.0				ug/L	555851	Standard
	Sn	118	204339.0	2.0	**47.7552**	1.198	2.5	ug/L	495	Standard
	Sb	123	161740.4	1.5	**48.8253**	1.048	2.1	ug/L	41	Standard
	Ba	135	49469.6	0.9	**48.8925**	0.724	1.5	ug/L	14	Standard
	Ce	140	28.3	20.4				ug/L	18	Standard
>	Tb	159	804845.5	1.2				ug/L	712215	Standard
	Ho	165	13.3	43.3				ug/L	0	Standard
	Tl	203	248261.9	1.0	**48.8022**	0.732	1.5	ug/L	1	Standard
	Tl	205	257629.6	2.8	**48.9085**	1.444	3.0	ug/L	3	Standard
	Pb	206	161592.2	1.4	**48.9749**	0.887	1.8	ug/L	161	Standard
	Pb	207	147225.2	0.5	**48.7567**	0.495	1.0	ug/L	141	Standard
	Pb	208	623390.3	1.1	**49.1119**	0.696	1.4	ug/L	608	Standard
	U	238	255462.5	1.2	**48.5315**	0.787	1.6	ug/L	4	Standard
>	Bi	209	520871.0	0.5				ug/L	481178	Standard

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Na	23	1.7	173.2				mg/L	0	Standard
Mg	24	1801.8	6.2	**4.7061**	0.282	6.0	mg/L	15	Standard
K	39	195.0	17.9	**4.6148**	0.802	17.4	mg/L	2	Standard
Ca	43	63.3	9.1	**4.8882**	0.686	14.0	mg/L	20	Standard
Fe	54	12598.1	0.4	**5.1274**	0.116	2.3	mg/L	260	Standard
Fe	57	3862.2	4.0	**5.1505**	0.148	2.9	mg/L	25	Standard
> **Sc-1**	45	76144.2	1.8				mg/L	72123	Standard
Cl	35	27836.2	1.1				ug/L	26728	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	730.0	17.2				ug/L	733	Standard
P	31	17406.7	1.6				ug/L	17255	Standard
S	34	1711.8	1.4				ug/L	1680	Standard
Sr	88	15.0	33.3				ug/L	7	Standard
C	12	113.3	33.4				mg/L	67	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	2.5	205.9				mg/L	3	Standard
Ho-1	165	13.3	43.3				mg/L	0	Standard
Er	166	16.7	69.3				mg/L	13	Standard
I	127	2640.3	43.7				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	97.314		
Al	27	101.201		
Sc	45			
Ti	47	96.561		
V	51	97.810		
Cr	52	97.872		
Cr	53			
Mn	55	97.667		
Co	59	98.951		
Ni	60	97.018		
Cu	65	98.875		
Zn	66	97.673		
> Ge	72		110.581	
As	75	98.035		
Se	82	97.489		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	100.890		
Ag	107	99.600		
Cd	111	99.141		
Cd	114			
In	115			110.569
Sn	118	95.510		
Sb	123	97.651		
Ba	135	97.785		
Ce	140			
Tb	159			
Ho	165			
Tl	203	97.604		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.224		
U	238	97.063		
Bi	209			108.249
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, June 08, 2015 11:07:23
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	175354.1	2.0				ug/L	159930	Standard
	Be	9	30.0	60.1	**0.0178**	0.016	91.0	ug/L	5	Standard
	Al	27	2442.0	102.9	**0.0022**	0.040	1813.7	ug/L	623	Standard
	Sc	45	77254.8	1.6				ug/L	72123	Standard
	Ti	47	15.0	63.6	**0.0062**	0.031	500.4	ug/L	15	Standard
	V	51	863.1	10.6	**-0.0007**	0.013	1945.9	ug/L	779	Standard
	Cr	52	4366.3	2.0	**-0.0077**	0.014	179.4	ug/L	4182	Standard
	Cr	53	301.7	9.1	**0.0036**	0.025	716.2	ug/L	255	Standard
	Mn	55	1258.4	15.4	**0.0072**	0.015	209.1	ug/L	870	Standard
	Co	59	110.0	29.6	**0.0017**	0.004	229.2	ug/L	44	Standard
	Ni	60	368.7	15.3	**-0.0106**	0.022	208.7	ug/L	376	Standard
	Cu	65	373.7	24.6	**-0.0412**	0.035	83.9	ug/L	271	Standard
	Zn	66	675.0	13.1	**-0.0306**	0.054	175.8	ug/L	601	Standard
>	**Ge**	72	677420.4	0.5				ug/L	607655	Standard
	As	75	-25.5	158.8	**-0.0066**	0.027	412.2	ug/L	-37	Standard
	Se	82	16.7	19.3	**-0.0732**	0.024	32.8	ug/L	22	Standard
	Se-1	77	43.0	30.2	**0.0393**	0.128	324.9	ug/L	38	Standard
>	**Ga**	71	36.7	15.7				mg/L	38	Standard
	Rb	85	21.7	13.3				ug/L	15	Standard
	Y	89	815646.1	1.7				ug/L	733256	Standard
>	**Rh**	103	1.7	173.2				ug/L	0	Standard
	Mo	98	112.3	38.2	**0.0300**	0.015	50.1	ug/L	10	Standard
	Ag	107	173.0	35.0	**0.0155**	0.010	65.7	ug/L	70	Standard
	Cd	111	24.2	88.8	**0.0206**	0.016	75.5	mg/L	2	Standard
	Cd	114	39.4	76.0	**0.0082**	0.009	109.6	ug/L	-3	Standard
>	**In**	115	614206.2	1.2				ug/L	555851	Standard
	Sn	118	581.7	7.7	**0.0271**	0.011	38.7	ug/L	495	Standard
	Sb	123	127.7	27.1	**0.0331**	0.011	33.0	ug/L	41	Standard
	Ba	135	27.0	67.0	**0.0131**	0.018	139.2	ug/L	14	Standard
	Ce	140	20.0	43.3				ug/L	18	Standard
>	**Tb**	159	794155.2	1.8				ug/L	712215	Standard
	Ho	165	0.0					ug/L	0	Standard
	Tl	203	77.0	78.8	**0.0129**	0.012	91.7	ug/L	1	Standard
	Tl	205	31.7	63.8	**0.0058**	0.004	66.4	ug/L	3	Standard
	Pb	206	221.0	12.9	**0.0033**	0.009	279.6	ug/L	161	Standard
	Pb	207	180.7	13.3	**0.0107**	0.008	79.2	ug/L	141	Standard
	Pb	208	712.0	5.8	**-0.0013**	0.004	289.4	ug/L	608	Standard
	U	238	31.3	84.8	**0.0063**	0.005	79.4	ug/L	4	Standard
>	**Bi**	209	530428.9	1.3				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	11.7	99.0	**-0.0147**	0.030	201.9	mg/L	15	Standard
K	39	1.7	173.2	**0.0038**	0.069	1808.2	mg/L	2	Standard
Ca	43	25.0	69.3	**1.0977**	1.732	157.8	mg/L	20	Standard
Fe	54	249.4	17.9	**-0.0134**	0.019	139.8	mg/L	260	Standard
Fe	57	36.7	20.8	**-0.0042**	0.011	263.6	mg/L	25	Standard
> **Sc-1**	45	77254.8	1.6				mg/L	72123	Standard
Cl	35	27490.3	0.9				ug/L	26728	Standard
Kr	83	0.7	86.6				ug/L	0	Standard
Br	81	700.0	12.4				ug/L	733	Standard
P	31	17256.5	1.7				ug/L	17255	Standard
S	34	1636.8	2.6				ug/L	1680	Standard
Sr	88	6.7	86.6				ug/L	7	Standard
C	12	83.3	60.4				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	3.2	186.4				mg/L	3	Standard
Ho-1	165	0.0					mg/L	0	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	788.4	10.1				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.481	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.498
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.236
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Monday, June 08, 2015 11:09:40
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Method 6020 - Summary Report

Sample ID: PBW 73 WG525687-03
Sample Date/Time: Monday, June 08, 2015 11:12:45
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	179795.6	1.4				ug/L	159930	Standard
	Be	9	28.3	27.0	**0.0158**	0.007	41.8	ug/L	5	Standard
	Al	27	16131.9	1.9	**0.2194**	0.001	0.6	ug/L	623	Standard
	Sc	45	78072.4	3.1				ug/L	72123	Standard
	Ti	47	42.7	2.7	**0.0973**	0.003	3.6	ug/L	15	Standard
	V	51	1050.7	7.8	**0.0269**	0.011	40.0	ug/L	779	Standard
	Cr	52	4931.1	1.6	**0.0691**	0.006	8.4	ug/L	4182	Standard
	Cr	53	376.7	4.3	**0.0729**	0.014	18.6	ug/L	255	Standard
	Mn	55	5048.2	3.3	**0.2996**	0.010	3.3	ug/L	870	Standard
	Co	59	86.0	1.2	**-0.0012**	0.000	13.3	ug/L	44	Standard
	Ni	60	478.3	2.6	**0.0333**	0.004	11.0	ug/L	376	Standard
	Cu	65	882.4	3.8	**0.1553**	0.011	7.4	ug/L	271	Standard
	Zn	66	7588.6	2.3	**4.3281**	0.078	1.8	ug/L	601	Standard
>	**Ge**	72	673599.2	0.8				ug/L	607655	Standard
	As	75	-15.5	166.0	**0.0001**	0.018	12101.7	ug/L	-37	Standard
	Se	82	20.5	10.5	**-0.0434**	0.018	40.5	ug/L	22	Standard
	Se-1	77	37.3	21.7	**-0.0148**	0.078	525.7	ug/L	38	Standard
>	**Ga**	71	328.3	9.8				mg/L	38	Standard
	Rb	85	741.7	5.7				ug/L	15	Standard
	Y	89	799656.6	1.7				ug/L	733256	Standard
>	**Rh**	103	1.7	173.2				ug/L	0	Standard
	Mo	98	34.3	8.3	**0.0035**	0.001	27.0	ug/L	10	Standard
	Ag	107	85.3	3.6	**0.0013**	0.000	36.2	ug/L	70	Standard
	Cd	111	1.6	128.4	**0.0043**	0.002	35.2	mg/L	2	Standard
	Cd	114	-1.2	871.9	**-0.0039**	0.003	79.5	ug/L	-3	Standard
>	**In**	115	608080.1	0.4				ug/L	555851	Standard
	Sn	118	603.3	2.1	**0.0336**	0.003	8.4	ug/L	495	Standard
	Sb	123	72.3	10.5	**0.0165**	0.002	14.4	ug/L	41	Standard
	Ba	135	555.0	4.7	**0.5407**	0.024	4.4	ug/L	14	Standard
	Ce	140	460.0	7.6				ug/L	18	Standard
>	**Tb**	159	786234.5	0.9				ug/L	712215	Standard
	Ho	165	21.7	13.3				ug/L	0	Standard
	Tl	203	10.3	22.3	**-0.0000**	0.000	1453.6	ug/L	1	Standard
	Tl	205	16.7	45.8	**0.0029**	0.001	49.0	ug/L	3	Standard
	Pb	206	309.0	2.3	**0.0299**	0.002	5.8	ug/L	161	Standard
	Pb	207	258.0	5.0	**0.0362**	0.005	13.0	ug/L	141	Standard
	Pb	208	1101.0	3.5	**0.0292**	0.002	8.5	ug/L	608	Standard
	U	238	20.0	18.0	**0.0042**	0.001	16.5	ug/L	4	Standard
>	**Bi**	209	528163.8	0.7				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	20.0	43.3	**0.0062**	0.021	343.2	mg/L	15	Standard
K	39	0.0		**-0.0361**	0.000	0.0	mg/L	2	Standard
Ca	43	28.3	27.0	**1.3899**	0.809	58.2	mg/L	20	Standard
Fe	54	291.1	13.2	**0.0023**	0.014	632.1	mg/L	260	Standard
Fe	57	26.7	43.3	**-0.0179**	0.015	86.3	mg/L	25	Standard
Sc-1	45	78072.4	3.1				mg/L	72123	Standard
Cl	35	26613.4	2.1				ug/L	26728	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	870.0	9.1				ug/L	733	Standard
P	31	17505.1	2.3				ug/L	17255	Standard
S	34	1615.1	6.2				ug/L	1680	Standard
Sr	88	6.7	43.3				ug/L	7	Standard
C	12	100.0	26.5				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	31.9	33.6				mg/L	3	Standard
Ho-1	165	21.7	13.3				mg/L	0	Standard
Er	166	30.0	66.7				mg/L	13	Standard
I	127	530.0	13.2				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.422	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.852	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.396
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.765
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 73 WG525687-04
Sample Date/Time: Monday, June 08, 2015 11:15:56
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	173562.2	2.6				ug/L	159930	Standard
	Be	9	56006.7	1.9	**51.9670**	1.242	2.4	ug/L	5	Standard
	Al	27	13417.6	1.2	**0.1840**	0.008	4.5	ug/L	623	Standard
	Sc	45	76132.5	1.3				ug/L	72123	Standard
	Ti	47	38.0	7.0	**0.0845**	0.008	9.8	ug/L	15	Standard
	V	51	353692.7	1.7	**51.6549**	1.030	2.0	ug/L	779	Standard
	Cr	52	401562.7	1.3	**52.8276**	0.823	1.6	ug/L	4182	Standard
	Cr	53	56784.5	0.8	**52.2024**	0.603	1.2	ug/L	255	Standard
	Mn	55	668884.2	1.5	**52.5019**	0.706	1.3	ug/L	870	Standard
	Co	59	408386.0	2.6	**51.9467**	1.349	2.6	ug/L	44	Standard
	Ni	60	129443.3	1.2	**51.7164**	0.820	1.6	ug/L	376	Standard
	Cu	65	136182.7	1.4	**53.2483**	0.746	1.4	ug/L	271	Standard
	Zn	66	88616.8	1.9	**56.5306**	1.145	2.0	ug/L	601	Standard
>	**Ge**	72	660103.3	0.5				ug/L	607655	Standard
	As	75	73127.3	2.5	**50.9589**	1.267	2.5	ug/L	-37	Standard
	Se	82	6520.0	2.9	**50.6509**	1.537	3.0	ug/L	22	Standard
	Se-1	77	5179.2	2.4	**52.0334**	1.366	2.6	ug/L	38	Standard
>	**Ga**	71	285.0	9.8				mg/L	38	Standard
	Rb	85	608.3	3.8				ug/L	15	Standard
	Y	89	788476.8	1.0				ug/L	733256	Standard
>	**Rh**	103	8.3	34.6				ug/L	0	Standard
	Mo	98	93.2	13.5	**0.0242**	0.004	18.5	ug/L	10	Standard
	Ag	107	319219.1	1.4	**53.3748**	0.824	1.5	ug/L	70	Standard
	Cd	111	70304.0	1.4	**51.8720**	0.727	1.4	mg/L	2	Standard
	Cd	114	170601.9	2.0	**51.7447**	1.034	2.0	ug/L	-3	Standard
>	**In**	115	599194.8	0.3				ug/L	555851	Standard
	Sn	118	570.0	15.2	**0.0278**	0.021	76.0	ug/L	495	Standard
	Sb	123	171514.0	1.2	**53.1016**	0.691	1.3	ug/L	41	Standard
	Ba	135	51381.7	1.7	**52.0849**	0.913	1.8	ug/L	14	Standard
	Ce	140	381.7	12.7				ug/L	18	Standard
>	**Tb**	159	775560.0	1.5				ug/L	712215	Standard
	Ho	165	8.3	34.6				ug/L	0	Standard
	Tl	203	260209.4	0.7	**51.3531**	0.339	0.7	ug/L	1	Standard
	Tl	205	271821.8	1.1	**51.8068**	0.578	1.1	ug/L	3	Standard
	Pb	206	172594.3	1.5	**52.5206**	0.814	1.5	ug/L	161	Standard
	Pb	207	151310.3	2.0	**50.3097**	0.970	1.9	ug/L	141	Standard
	Pb	208	652505.9	1.0	**51.6123**	0.511	1.0	ug/L	608	Standard
	U	238	262135.3	1.1	**49.9960**	0.524	1.0	ug/L	4	Standard
>	**Bi**	209	518794.4	0.1				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	23.3	12.4	**0.0166**	0.007	41.5	mg/L	15	Standard
K	39	6.7	43.3	**0.1227**	0.068	55.2	mg/L	2	Standard
Ca	43	18.3	41.7	**0.4542**	0.733	161.5	mg/L	20	Standard
Fe	54	350.5	14.3	**0.0300**	0.020	67.1	mg/L	260	Standard
Fe	57	33.3	37.7	**-0.0080**	0.017	210.4	mg/L	25	Standard
> **Sc-1**	45	76132.5	1.3				mg/L	72123	Standard
Cl	35	27195.7	0.6				ug/L	26728	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	790.0	4.4				ug/L	733	Standard
P	31	16814.3	1.4				ug/L	17255	Standard
S	34	1636.8	4.1				ug/L	1680	Standard
Sr	88	11.7	65.5				ug/L	7	Standard
C	12	123.3	26.1				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	18.6	137.7				mg/L	3	Standard
Ho-1	165	8.3	34.6				mg/L	0	Standard
Er	166	30.0	66.7				mg/L	13	Standard
I	127	373.3	11.5				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.524	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.631	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.798
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.818
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 73 WG525687-04
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Method 6020 - Summary Report

Sample ID: L1505133304 WG525687-01
Sample Date/Time: Monday, June 08, 2015 11:19:08
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	176687.8	1.8				ug/L	159930	Standard
	Be	9	36.7	15.7	**0.0238**	0.005	20.9	ug/L	5	Standard
	Al	27	30049.8	0.7	**0.4493**	0.012	2.6	ug/L	623	Standard
	Sc	45	75418.9	0.3				ug/L	72123	Standard
	Ti	47	25.7	6.0	**0.0428**	0.005	11.0	ug/L	15	Standard
	V	51	826.7	11.8	**-0.0034**	0.014	408.1	ug/L	779	Standard
	Cr	52	4708.4	3.3	**0.0497**	0.019	38.9	ug/L	4182	Standard
	Cr	53	353.3	9.6	**0.0568**	0.030	52.6	ug/L	255	Standard
	Mn	55	18889.8	1.4	**1.3890**	0.023	1.6	ug/L	870	Standard
	Co	59	414.0	19.8	**0.0405**	0.010	25.5	ug/L	44	Standard
	Ni	60	632.7	2.1	**0.0978**	0.006	6.6	ug/L	376	Standard
	Cu	65	536.3	8.5	**0.0255**	0.018	70.2	ug/L	271	Standard
	Zn	66	4007.5	2.0	**2.1116**	0.059	2.8	ug/L	601	Standard
>	**Ge**	72	663206.9	0.5				ug/L	607655	Standard
	As	75	8.0	175.8	**0.0162**	0.010	60.2	ug/L	-37	Standard
	Se	82	20.2	11.3	**-0.0437**	0.018	41.4	ug/L	22	Standard
	Se-1	77	37.7	28.1	**-0.0053**	0.107	2007.6	ug/L	38	Standard
>	**Ga**	71	65.0	13.3				mg/L	38	Standard
	Rb	85	945.0	5.4				ug/L	15	Standard
	Y	89	786137.8	2.4				ug/L	733256	Standard
>	**Rh**	103	6.7	114.6				ug/L	0	Standard
	Mo	98	34.7	10.1	**0.0037**	0.001	30.8	ug/L	10	Standard
	Ag	107	130.0	41.8	**0.0089**	0.009	102.7	ug/L	70	Standard
	Cd	111	16.6	117.3	**0.0153**	0.014	93.7	mg/L	2	Standard
	Cd	114	25.9	73.5	**0.0043**	0.006	134.3	ug/L	-3	Standard
>	**In**	115	602353.2	0.7				ug/L	555851	Standard
	Sn	118	525.0	8.7	**0.0162**	0.010	64.1	ug/L	495	Standard
	Sb	123	183.3	34.8	**0.0509**	0.020	39.0	ug/L	41	Standard
	Ba	135	1310.4	2.2	**1.3079**	0.029	2.2	ug/L	14	Standard
	Ce	140	373.3	10.1				ug/L	18	Standard
>	**Tb**	159	773974.2	1.7				ug/L	712215	Standard
	Ho	165	23.3	24.7				ug/L	0	Standard
	Tl	203	67.3	90.0	**0.0112**	0.012	106.5	ug/L	1	Standard
	Tl	205	50.0	60.8	**0.0093**	0.006	62.3	ug/L	3	Standard
	Pb	206	265.3	17.1	**0.0177**	0.014	79.9	ug/L	161	Standard
	Pb	207	203.7	24.9	**0.0192**	0.017	88.6	ug/L	141	Standard
	Pb	208	902.3	15.6	**0.0145**	0.011	77.2	ug/L	608	Standard
	U	238	42.3	73.7	**0.0085**	0.006	70.1	ug/L	4	Standard
>	**Bi**	209	522554.5	0.9				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	85.0	23.5	**0.1814**	0.053	29.4	mg/L	15	Standard
K	39	5.0	100.0	**0.0843**	0.120	142.6	mg/L	2	Standard
Ca	43	23.3	12.4	**0.9729**	0.287	29.5	mg/L	20	Standard
Fe	54	306.2	6.2	**0.0129**	0.008	61.8	mg/L	260	Standard
Fe	57	6.7	43.3	**-0.0439**	0.004	8.9	mg/L	25	Standard
Sc-1	45	75418.9	0.3				mg/L	72123	Standard
Cl	35	26638.1	0.6				ug/L	26728	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	863.4	11.1				ug/L	733	Standard
P	31	17636.9	2.6				ug/L	17255	Standard
S	34	1683.4	7.6				ug/L	1680	Standard
Sr	88	15.0	88.2				ug/L	7	Standard
C	12	83.3	66.1				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.4	122.2				mg/L	3	Standard
Ho-1	165	23.3	24.7				mg/L	0	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	1511.7	3.8				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		110.478	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		109.142	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.366
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.599
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1505133305S WG525687-05
Sample Date/Time: Monday, June 08, 2015 11:22:19
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	177663.9	0.4				ug/L	159930	Standard
	Be	9	11487.7	2.2	**10.4031**	0.267	2.6	ug/L	5	Standard
	Al	27	29852.7	1.9	**0.4433**	0.007	1.7	ug/L	623	Standard
	Sc	45	77140.9	1.8				ug/L	72123	Standard
	Ti	47	165.7	6.7	**0.5065**	0.043	8.4	ug/L	15	Standard
	V	51	72820.3	1.2	**10.4206**	0.105	1.0	ug/L	779	Standard
	Cr	52	84345.8	0.6	**10.5218**	0.141	1.3	ug/L	4182	Standard
	Cr	53	11377.6	2.8	**10.1289**	0.153	1.5	ug/L	255	Standard
	Mn	55	161457.7	0.8	**12.4688**	0.211	1.7	ug/L	870	Standard
	Co	59	83095.3	1.1	**10.4474**	0.258	2.5	ug/L	44	Standard
	Ni	60	26522.5	0.7	**10.3581**	0.073	0.7	ug/L	376	Standard
	Cu	65	28041.6	0.9	**10.6993**	0.127	1.2	ug/L	271	Standard
	Zn	66	19779.9	1.1	**12.1294**	0.282	2.3	ug/L	601	Standard
>	**Ge**	72	667373.6	1.4				ug/L	607655	Standard
	As	75	14846.6	0.7	**10.2435**	0.208	2.0	ug/L	-37	Standard
	Se	82	1345.4	1.0	**10.1792**	0.087	0.9	ug/L	22	Standard
	Se-1	77	1041.7	4.3	**10.0416**	0.370	3.7	ug/L	38	Standard
>	**Ga**	71	210.0	8.6				mg/L	38	Standard
	Rb	85	1900.1	6.9				ug/L	15	Standard
	Y	89	800356.9	0.5				ug/L	733256	Standard
>	**Rh**	103	1.7	173.2				ug/L	0	Standard
	Mo	98	62.6	11.2	**0.0134**	0.003	19.4	ug/L	10	Standard
	Ag	107	64071.5	0.6	**10.6279**	0.144	1.4	ug/L	70	Standard
	Cd	111	14014.1	1.2	**10.2705**	0.200	1.9	mg/L	2	Standard
	Cd	114	34003.5	1.9	**10.2388**	0.233	2.3	ug/L	-3	Standard
>	**In**	115	603447.7	0.8				ug/L	555851	Standard
	Sn	118	421.7	14.3	**-0.0086**	0.015	174.5	ug/L	495	Standard
	Sb	123	34465.7	1.3	**10.5921**	0.221	2.1	ug/L	41	Standard
	Ba	135	11957.4	0.8	**12.0251**	0.083	0.7	ug/L	14	Standard
	Ce	140	1925.1	2.9				ug/L	18	Standard
>	**Tb**	159	782257.5	1.3				ug/L	712215	Standard
	Ho	165	31.7	39.7				ug/L	0	Standard
	Tl	203	52261.7	1.3	**10.2339**	0.113	1.1	ug/L	1	Standard
	Tl	205	54847.4	1.0	**10.3743**	0.155	1.5	ug/L	3	Standard
	Pb	206	35105.3	0.4	**10.5516**	0.083	0.8	ug/L	161	Standard
	Pb	207	30777.9	1.2	**10.1172**	0.101	1.0	ug/L	141	Standard
	Pb	208	132013.1	0.5	**10.3177**	0.074	0.7	ug/L	608	Standard
	U	238	52718.9	0.9	**9.9788**	0.075	0.8	ug/L	4	Standard
>	**Bi**	209	522769.4	0.5				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	75.0	6.7	**0.1502**	0.010	6.7	mg/L	15	Standard
K	39	8.3	34.6	**0.1598**	0.067	41.7	mg/L	2	Standard
Ca	43	21.7	48.0	**0.7566**	1.008	133.3	mg/L	20	Standard
Fe	54	421.5	5.8	**0.0573**	0.008	13.8	mg/L	260	Standard
Fe	57	53.3	14.3	**0.0180**	0.010	56.2	mg/L	25	Standard
> **Sc-1**	45	77140.9	1.8				mg/L	72123	Standard
Cl	35	26308.2	0.5				ug/L	26728	Standard
Kr	83	0.7	173.2				ug/L	0	Standard
Br	81	1036.7	9.1				ug/L	733	Standard
P	31	17318.2	0.2				ug/L	17255	Standard
S	34	1681.8	4.1				ug/L	1680	Standard
Sr	88	6.7	114.6				ug/L	7	Standard
C	12	76.7	39.8				mg/L	67	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	44.9	77.8				mg/L	3	Standard
Ho-1	165	31.7	39.7				mg/L	0	Standard
Er	166	36.7	41.7				mg/L	13	Standard
I	127	1155.0	12.0				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.089	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.828	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.563
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.644
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1505133306SD WG525687-06
Sample Date/Time: Monday, June 08, 2015 11:25:31
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	179576.4	1.3				ug/L	159930	Standard
	Be	9	11242.5	4.6	**10.0689**	0.341	3.4	ug/L	5	Standard
	Al	27	29363.5	6.1	**0.4307**	0.033	7.6	ug/L	623	Standard
	Sc	45	74934.9	1.2				ug/L	72123	Standard
	Ti	47	54.3	18.8	**0.1396**	0.035	24.9	ug/L	15	Standard
	V	51	70727.6	3.0	**10.2447**	0.350	3.4	ug/L	779	Standard
	Cr	52	82524.8	1.3	**10.4157**	0.165	1.6	ug/L	4182	Standard
	Cr	53	11215.8	1.3	**10.1098**	0.178	1.8	ug/L	255	Standard
	Mn	55	157676.3	1.6	**12.3251**	0.215	1.7	ug/L	870	Standard
	Co	59	81124.0	1.3	**10.3234**	0.129	1.2	ug/L	44	Standard
	Ni	60	25819.6	0.7	**10.2056**	0.052	0.5	ug/L	376	Standard
	Cu	65	26947.3	1.2	**10.4041**	0.205	2.0	ug/L	271	Standard
	Zn	66	18662.5	1.4	**11.5644**	0.255	2.2	ug/L	601	Standard
>	**Ge**	72	659217.3	0.8				ug/L	607655	Standard
	As	75	14355.5	1.0	**10.0263**	0.169	1.7	ug/L	-37	Standard
	Se	82	1258.4	4.0	**9.6278**	0.420	4.4	ug/L	22	Standard
	Se-1	77	1008.7	3.2	**9.8371**	0.304	3.1	ug/L	38	Standard
>	**Ga**	71	86.7	3.3				mg/L	38	Standard
	Rb	85	1243.4	3.5				ug/L	15	Standard
	Y	89	801995.4	0.6				ug/L	733256	Standard
>	**Rh**	103	5.0	0.0				ug/L	0	Standard
	Mo	98	53.3	15.7	**0.0102**	0.003	29.1	ug/L	10	Standard
	Ag	107	62662.7	1.2	**10.4069**	0.158	1.5	ug/L	70	Standard
	Cd	111	13938.3	0.9	**10.2272**	0.104	1.0	mg/L	2	Standard
	Cd	114	33486.4	1.7	**10.0957**	0.212	2.1	ug/L	-3	Standard
>	**In**	115	602677.1	0.4				ug/L	555851	Standard
	Sn	118	581.7	7.8	**0.0297**	0.011	36.3	ug/L	495	Standard
	Sb	123	33216.3	0.7	**10.2202**	0.109	1.1	ug/L	41	Standard
	Ba	135	11450.0	1.6	**11.5294**	0.226	2.0	ug/L	14	Standard
	Ce	140	1881.8	4.7				ug/L	18	Standard
>	**Tb**	159	781362.7	0.2				ug/L	712215	Standard
	Ho	165	23.3	12.4				ug/L	0	Standard
	Tl	203	51534.2	2.1	**10.0497**	0.265	2.6	ug/L	1	Standard
	Tl	205	54205.1	0.9	**10.2093**	0.128	1.3	ug/L	3	Standard
	Pb	206	34270.7	1.2	**10.2559**	0.187	1.8	ug/L	161	Standard
	Pb	207	29926.9	1.6	**9.7951**	0.216	2.2	ug/L	141	Standard
	Pb	208	128658.1	1.0	**10.0117**	0.162	1.6	ug/L	608	Standard
	U	238	51839.5	0.8	**9.7713**	0.143	1.5	ug/L	4	Standard
>	**Bi**	209	524995.5	0.7				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	71.7	22.4	**0.1469**	0.041	27.8	mg/L	15	Standard
K	39	3.3	173.2	**0.0448**	0.140	312.8	mg/L	2	Standard
Ca	43	31.7	18.2	**1.8196**	0.576	31.6	mg/L	20	Standard
Fe	54	361.3	15.3	**0.0368**	0.021	58.2	mg/L	260	Standard
Fe	57	45.0	40.1	**0.0088**	0.025	288.9	mg/L	25	Standard
> **Sc-1**	45	74934.9	1.2				mg/L	72123	Standard
Cl	35	26192.6	0.6				ug/L	26728	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	880.0	16.4				ug/L	733	Standard
P	31	17657.0	2.4				ug/L	17255	Standard
S	34	1503.4	6.0				ug/L	1680	Standard
Sr	88	10.0	50.0				ug/L	7	Standard
C	12	60.0	33.3				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	61.7	18.5				mg/L	3	Standard
Ho-1	165	23.3	12.4				mg/L	0	Standard
Er	166	33.3	45.8				mg/L	13	Standard
I	127	1348.4	9.8				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.285	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.485	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		108.424
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		109.106
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1505175205
Sample Date/Time: Monday, June 08, 2015 11:28:42
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	178099.0	0.0				ug/L	159930	Standard
	Be	9	30.0	28.9	**0.0176**	0.008	44.5	ug/L	5	Standard
	Al	27	8538197.7	2.8	**137.0915**	3.818	2.8	ug/L	623	Standard
	Sc	45	78621.8	2.0				ug/L	72123	Standard
	Ti	47	291.0	10.9	**0.9387**	0.100	10.7	ug/L	15	Standard
	V	51	2121.2	3.0	**0.1890**	0.011	6.0	ug/L	779	Standard
	Cr	52	11771.6	2.6	**1.0033**	0.031	3.1	ug/L	4182	Standard
	Cr	53	4530.7	10.3	**3.9456**	0.381	9.7	ug/L	255	Standard
	Mn	55	87001.2	3.2	**6.8009**	0.175	2.6	ug/L	870	Standard
	Co	59	799.4	4.0	**0.0906**	0.004	4.8	ug/L	44	Standard
	Ni	60	5270.6	5.4	**1.9725**	0.099	5.0	ug/L	376	Standard
	Cu	65	4843.1	4.5	**1.7298**	0.068	4.0	ug/L	271	Standard
	Zn	66	6794.2	4.6	**3.9471**	0.180	4.6	ug/L	601	Standard
>	**Ge**	72	655306.8	1.5				ug/L	607655	Standard
	As	75	1987.0	4.8	**1.4052**	0.066	4.7	ug/L	-37	Standard
	Se	82	777.0	4.3	**5.9041**	0.254	4.3	ug/L	22	Standard
	Se-1	77	621.3	3.3	**5.9497**	0.193	3.2	ug/L	38	Standard
>	**Ga**	71	70.0	7.1				mg/L	38	Standard
	Rb	85	1780.1	7.8				ug/L	15	Standard
	Y	89	789519.8	2.0				ug/L	733256	Standard
>	**Rh**	103	160.0	14.3				ug/L	0	Standard
	Mo	98	194.5	8.2	**0.0595**	0.005	7.6	ug/L	10	Standard
	Ag	107	83.7	18.1	**0.0013**	0.003	217.3	ug/L	70	Standard
	Cd	111	26.1	17.3	**0.0224**	0.003	15.6	mg/L	2	Standard
	Cd	114	63.9	39.9	**0.0160**	0.008	50.5	ug/L	-3	Standard
>	**In**	115	598463.8	1.7				ug/L	555851	Standard
	Sn	118	786.7	7.1	**0.0800**	0.013	15.8	ug/L	495	Standard
	Sb	123	170.3	5.6	**0.0472**	0.003	7.1	ug/L	41	Standard
	Ba	135	20017.2	2.4	**20.3094**	0.503	2.5	ug/L	14	Standard
	Ce	140	128.3	13.7				ug/L	18	Standard
>	**Tb**	159	781043.5	1.2				ug/L	712215	Standard
	Ho	165	13.3	21.7				ug/L	0	Standard
	Tl	203	65.3	20.4	**0.0115**	0.003	25.5	ug/L	1	Standard
	Tl	205	86.7	18.5	**0.0172**	0.003	19.9	ug/L	3	Standard
	Pb	206	303.0	1.8	**0.0343**	0.003	7.4	ug/L	161	Standard
	Pb	207	261.0	6.0	**0.0429**	0.004	10.1	ug/L	141	Standard
	Pb	208	1145.0	4.6	**0.0387**	0.004	11.2	ug/L	608	Standard
	U	238	5836.5	2.7	**1.1687**	0.032	2.7	ug/L	4	Standard
>	**Bi**	209	494342.8	1.3				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	32386.3	6.1	**82.6140**	3.466	4.2	mg/L	15	Standard
K	39	31.7	36.5	**0.6941**	0.258	37.2	mg/L	2	Standard
Ca	43	293.3	11.3	**26.5630**	3.058	11.5	mg/L	20	Standard
Fe	54	348.8	15.2	**0.0246**	0.020	79.5	mg/L	260	Standard
Fe	57	270.0	3.7	**0.2995**	0.015	4.9	mg/L	25	Standard
Sc-1	45	78621.8	2.0				mg/L	72123	Standard
Cl	35	29663.0	3.7				ug/L	26728	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	48410.6	4.3				ug/L	733	Standard
P	31	23269.5	3.9				ug/L	17255	Standard
S	34	1550.1	4.5				ug/L	1680	Standard
Sr	88	1796.8	3.0				ug/L	7	Standard
C	12	220.0	22.7				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.4	46.7				mg/L	3	Standard
Ho-1	165	13.3	21.7				mg/L	0	Standard
Er	166	20.0	0.0				mg/L	13	Standard
I	127	37514.8	3.6				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.361	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.842	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	107.666
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.736
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1505175207
Sample Date/Time: Monday, June 08, 2015 11:31:54
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	175386.0	1.1				ug/L	159930	Standard
	Be	9	31.7	18.2	**0.0195**	0.005	27.8	ug/L	5	Standard
	Al	27	2251260.4	5.0	**36.6747**	1.664	4.5	ug/L	623	Standard
	Sc	45	73832.8	1.7				ug/L	72123	Standard
	Ti	47	165.0	8.5	**0.5331**	0.040	7.6	ug/L	15	Standard
	V	51	1231.5	27.6	**0.0637**	0.049	77.1	ug/L	779	Standard
	Cr	52	10374.9	4.8	**0.8645**	0.052	6.0	ug/L	4182	Standard
	Cr	53	1658.4	3.1	**1.3295**	0.049	3.6	ug/L	255	Standard
	Mn	55	193143.1	5.6	**15.7365**	0.670	4.3	ug/L	870	Standard
	Co	59	846.7	9.1	**0.1004**	0.010	10.3	ug/L	44	Standard
	Ni	60	1939.5	7.0	**0.6553**	0.046	7.0	ug/L	376	Standard
	Cu	65	4302.9	9.8	**1.5748**	0.147	9.3	ug/L	271	Standard
	Zn	66	8996.0	4.7	**5.5757**	0.211	3.8	ug/L	601	Standard
>	**Ge**	72	633179.8	1.4				ug/L	607655	Standard
	As	75	3494.3	5.2	**2.5478**	0.098	3.8	ug/L	-37	Standard
	Se	82	134.2	10.3	**0.8897**	0.100	11.2	ug/L	22	Standard
	Se-1	77	87.3	13.6	**0.5357**	0.111	20.8	ug/L	38	Standard
>	**Ga**	71	68.3	30.5				mg/L	38	Standard
	Rb	85	110172.9	4.1				ug/L	15	Standard
	Y	89	746895.5	1.9				ug/L	733256	Standard
>	**Rh**	103	191.7	9.2				ug/L	0	Standard
	Mo	98	2587.4	7.9	**0.9428**	0.073	7.7	ug/L	10	Standard
	Ag	107	82.3	37.5	**0.0018**	0.005	308.9	ug/L	70	Standard
	Cd	111	4.0	75.3	**0.0062**	0.002	38.0	mg/L	2	Standard
	Cd	114	12.5	27.2	**0.0005**	0.001	229.1	ug/L	-3	Standard
>	**In**	115	567346.8	0.3				ug/L	555851	Standard
	Sn	118	653.3	23.3	**0.0566**	0.039	68.7	ug/L	495	Standard
	Sb	123	231.3	16.0	**0.0701**	0.012	17.3	ug/L	41	Standard
	Ba	135	34211.6	4.1	**36.6198**	1.399	3.8	ug/L	14	Standard
	Ce	140	130.0	13.9				ug/L	18	Standard
>	**Tb**	159	741815.8	0.3				ug/L	712215	Standard
	Ho	165	6.7	114.6				ug/L	0	Standard
	Tl	203	41.7	13.9	**0.0068**	0.001	16.4	ug/L	1	Standard
	Tl	205	43.3	63.5	**0.0087**	0.006	64.5	ug/L	3	Standard
	Pb	206	251.3	5.1	**0.0200**	0.004	20.1	ug/L	161	Standard
	Pb	207	215.0	8.2	**0.0290**	0.006	20.2	ug/L	141	Standard
	Pb	208	926.3	8.4	**0.0226**	0.006	25.8	ug/L	608	Standard
	U	238	2722.9	4.9	**0.5604**	0.020	3.5	ug/L	4	Standard
>	**Bi**	209	480980.0	1.4				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	15648.1	6.6	**42.4869**	2.210	5.2	mg/L	15	Standard
K	39	148.3	25.7	**3.6057**	0.883	24.5	mg/L	2	Standard
Ca	43	66.7	4.3	**5.4113**	0.222	4.1	mg/L	20	Standard
Fe	54	498.5	1.7	**0.0981**	0.001	1.2	mg/L	260	Standard
Fe	57	131.7	14.4	**0.1298**	0.024	18.3	mg/L	25	Standard
> **Sc-1**	45	73832.8	1.7				mg/L	72123	Standard
Cl	35	26661.5	5.0				ug/L	26728	Standard
Kr	83	0.7	86.6				ug/L	0	Standard
Br	81	9529.7	5.0				ug/L	733	Standard
P	31	20604.0	5.7				ug/L	17255	Standard
S	34	1381.7	5.2				ug/L	1680	Standard
Sr	88	2396.9	9.5				ug/L	7	Standard
C	12	143.3	8.1				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	13.0	40.1				mg/L	3	Standard
Ho-1	165	6.7	114.6				mg/L	0	Standard
Er	166	6.7	173.2				mg/L	13	Standard
I	127	263627.2	5.9				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.664	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.201	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.068	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.959	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1505175209
Sample Date/Time: Monday, June 08, 2015 11:35:05
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	176286.4	1.6				ug/L	159930	Standard
	Be	9	21.7	70.5	**0.0104**	0.014	136.3	ug/L	5	Standard
	Al	27	15906784.7	0.3	**258.1057**	4.167	1.6	ug/L	623	Standard
	Sc	45	77370.4	0.8				ug/L	72123	Standard
	Ti	47	256.0	3.7	**0.8628**	0.034	3.9	ug/L	15	Standard
	V	51	-45.8	365.9	**-0.1309**	0.026	19.8	ug/L	779	Standard
	Cr	52	12558.9	1.7	**1.1901**	0.029	2.5	ug/L	4182	Standard
	Cr	53	7165.0	2.7	**6.7233**	0.189	2.8	ug/L	255	Standard
	Mn	55	294507.4	0.6	**24.3638**	0.146	0.6	ug/L	870	Standard
	Co	59	2615.9	0.9	**0.3396**	0.003	1.0	ug/L	44	Standard
	Ni	60	7979.8	0.6	**3.2222**	0.019	0.6	ug/L	376	Standard
	Cu	65	4479.3	1.3	**1.6720**	0.025	1.5	ug/L	271	Standard
	Zn	66	7390.5	1.7	**4.5651**	0.085	1.9	ug/L	601	Standard
>	**Ge**	72	625080.7	0.0				ug/L	607655	Standard
	As	75	3493.9	4.4	**2.5812**	0.112	4.4	ug/L	-37	Standard
	Se	82	1254.8	4.4	**10.1342**	0.456	4.5	ug/L	22	Standard
	Se-1	77	1023.4	4.7	**10.5523**	0.514	4.9	ug/L	38	Standard
>	**Ga**	71	68.3	4.2				mg/L	38	Standard
	Rb	85	22306.4	1.9				ug/L	15	Standard
	Y	89	757832.8	2.0				ug/L	733256	Standard
>	**Rh**	103	941.7	13.2				ug/L	0	Standard
	Mo	98	779.4	3.5	**0.2721**	0.012	4.4	ug/L	10	Standard
	Ag	107	92.7	14.0	**0.0032**	0.002	73.1	ug/L	70	Standard
	Cd	111	35.9	17.4	**0.0305**	0.005	16.0	mg/L	2	Standard
	Cd	114	96.3	2.3	**0.0266**	0.001	2.3	ug/L	-3	Standard
>	**In**	115	580019.0	0.9				ug/L	555851	Standard
	Sn	118	636.7	5.1	**0.0488**	0.009	17.5	ug/L	495	Standard
	Sb	123	144.9	4.5	**0.0408**	0.002	4.9	ug/L	41	Standard
	Ba	135	67461.2	0.9	**70.6529**	0.823	1.2	ug/L	14	Standard
	Ce	140	153.3	22.9				ug/L	18	Standard
>	**Tb**	159	773432.2	1.0				ug/L	712215	Standard
	Ho	165	20.0	90.1				ug/L	0	Standard
	Tl	203	55.3	20.6	**0.0102**	0.002	24.0	ug/L	1	Standard
	Tl	205	66.7	24.1	**0.0140**	0.004	25.0	ug/L	3	Standard
	Pb	206	415.3	9.6	**0.0790**	0.014	18.2	ug/L	161	Standard
	Pb	207	334.7	2.7	**0.0764**	0.004	5.4	ug/L	141	Standard
	Pb	208	1485.4	2.3	**0.0751**	0.003	3.6	ug/L	608	Standard
	U	238	14636.4	0.6	**3.1229**	0.011	0.4	ug/L	4	Standard
>	**Bi**	209	463816.0	0.7				ug/L	481178	Standard

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Na	23	11.7	24.7				mg/L	0	Standard
Mg	24	52214.8	1.2	**135.4608**	2.457	1.8	mg/L	15	Standard
K	39	45.0	38.5	**1.0200**	0.405	39.7	mg/L	2	Standard
Ca	43	453.3	6.1	**42.4928**	2.865	6.7	mg/L	20	Standard
Fe	54	426.6	6.5	**0.0589**	0.012	20.7	mg/L	260	Standard
Fe	57	391.7	9.2	**0.4663**	0.046	9.8	mg/L	25	Standard
Sc-1	45	77370.4	0.8				mg/L	72123	Standard
Cl	35	32515.5	1.5				ug/L	26728	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	94581.2	3.7				ug/L	733	Standard
P	31	23286.2	2.0				ug/L	17255	Standard
S	34	1545.1	0.0				ug/L	1680	Standard
Sr	88	9386.2	1.8				ug/L	7	Standard
C	12	176.7	19.9				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	26.2	60.1				mg/L	3	Standard
Ho-1	165	20.0	90.1				mg/L	0	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	456585.1	5.0				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.227	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.868	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.348
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.392
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1505175209PS WG525967-03
Sample Date/Time: Monday, June 08, 2015 11:38:16
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	176794.1	2.3				ug/L	159930	Standard
	Be	9	52209.9	3.6	**47.5672**	2.261	4.8	ug/L	5	Standard
	Al	27	15751204.1	1.4	**254.8500**	3.832	1.5	ug/L	623	Standard
	Sc	45	77785.8	0.7				ug/L	72123	Standard
	Ti	47	243.3	9.7	**0.8093**	0.074	9.2	ug/L	15	Standard
	V	51	326009.9	1.6	**49.7998**	1.067	2.1	ug/L	779	Standard
	Cr	52	370447.6	1.6	**50.9591**	1.072	2.1	ug/L	4182	Standard
	Cr	53	58748.7	1.4	**56.5204**	1.282	2.3	ug/L	255	Standard
	Mn	55	894214.2	2.2	**73.4546**	1.595	2.2	ug/L	870	Standard
	Co	59	372211.1	2.1	**49.5273**	1.276	2.6	ug/L	44	Standard
	Ni	60	122386.4	1.5	**51.1444**	0.840	1.6	ug/L	376	Standard
	Cu	65	120345.4	1.2	**49.2127**	1.069	2.2	ug/L	271	Standard
	Zn	66	79481.0	2.0	**53.0091**	1.220	2.3	ug/L	601	Standard
>	**Ge**	72	631164.8	2.3				ug/L	607655	Standard
	As	75	73969.2	2.0	**53.9171**	1.123	2.1	ug/L	-37	Standard
	Se	82	7385.7	2.3	**60.0531**	1.386	2.3	ug/L	22	Standard
	Se-1	77	5717.4	1.9	**60.1404**	1.128	1.9	ug/L	38	Standard
>	**Ga**	71	93.3	20.3				mg/L	38	Standard
	Rb	85	22585.2	4.5				ug/L	15	Standard
	Y	89	759497.0	2.9				ug/L	733256	Standard
>	**Rh**	103	905.0	8.0				ug/L	0	Standard
	Mo	98	765.7	4.5	**0.2634**	0.018	7.0	ug/L	10	Standard
	Ag	107	278531.8	2.4	**47.4258**	1.526	3.2	ug/L	70	Standard
	Cd	111	66079.4	2.1	**49.6585**	1.793	3.6	mg/L	2	Standard
	Cd	114	159466.0	2.0	**49.2531**	1.275	2.6	ug/L	-3	Standard
>	**In**	115	588584.2	2.5				ug/L	555851	Standard
	Sn	118	590.0	12.7	**0.0349**	0.015	43.6	ug/L	495	Standard
	Sb	123	158636.3	1.5	**50.0234**	1.636	3.3	ug/L	41	Standard
	Ba	135	116472.0	1.7	**120.2597**	3.575	3.0	ug/L	14	Standard
	Ce	140	105.0	4.8				ug/L	18	Standard
>	**Tb**	159	796831.3	2.3				ug/L	712215	Standard
	Ho	165	23.3	32.7				ug/L	0	Standard
	Tl	203	231933.2	1.1	**50.7561**	1.568	3.1	ug/L	1	Standard
	Tl	205	242692.2	2.2	**51.2926**	1.917	3.7	ug/L	3	Standard
	Pb	206	151995.1	2.2	**51.2890**	1.952	3.8	ug/L	161	Standard
	Pb	207	138801.3	1.8	**51.1747**	1.668	3.3	ug/L	141	Standard
	Pb	208	571137.1	1.8	**50.0873**	1.431	2.9	ug/L	608	Standard
	U	238	260719.9	2.0	**55.1353**	1.728	3.1	ug/L	4	Standard
>	**Bi**	209	468059.5	2.2				ug/L	481178	Standard

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Na	23	11.7	24.7				mg/L	0	Standard
Mg	24	51698.1	2.6	**133.4052**	4.069	3.0	mg/L	15	Standard
K	39	51.7	72.6	**1.1673**	0.866	74.2	mg/L	2	Standard
Ca	43	446.7	10.6	**41.6032**	4.499	10.8	mg/L	20	Standard
Fe	54	319.2	12.6	**0.0142**	0.016	110.7	mg/L	260	Standard
Fe	57	351.7	8.7	**0.4110**	0.042	10.3	mg/L	25	Standard
Sc-1	45	77785.8	0.7				mg/L	72123	Standard
Cl	35	32690.6	1.1				ug/L	26728	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	92169.5	1.7				ug/L	733	Standard
P	31	22650.3	3.1				ug/L	17255	Standard
S	34	1493.4	1.4				ug/L	1680	Standard
Sr	88	9491.3	4.0				ug/L	7	Standard
C	12	176.7	11.8				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	8.9	115.3				mg/L	3	Standard
Ho-1	165	23.3	32.7				mg/L	0	Standard
Er	166	23.3	24.7				mg/L	13	Standard
I	127	466719.8	2.9				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.545	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.869	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	105.889	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.274	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1505175209PS WG525967-03
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Method 6020 - Summary Report

Sample ID: L1505175209SDL WG525967-04
Sample Date/Time: Monday, June 08, 2015 11:41:28
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	179551.3	2.3				ug/L	159930	Standard
	Be	9	41.7	38.6	**0.0278**	0.014	50.7	ug/L	5	Standard
	Al	27	3494269.0	2.1	**55.6330**	0.517	0.9	ug/L	623	Standard
	Sc	45	79116.1	1.8				ug/L	72123	Standard
	Ti	47	62.7	9.6	**0.1654**	0.025	15.0	ug/L	15	Standard
	V	51	443.9	75.8	**-0.0595**	0.048	80.7	ug/L	779	Standard
	Cr	52	6839.2	3.0	**0.3268**	0.020	6.1	ug/L	4182	Standard
	Cr	53	2795.3	3.4	**2.2898**	0.121	5.3	ug/L	255	Standard
	Mn	55	64938.9	1.4	**4.9653**	0.048	1.0	ug/L	870	Standard
	Co	59	689.3	6.0	**0.0749**	0.003	4.5	ug/L	44	Standard
	Ni	60	2240.2	4.9	**0.7336**	0.024	3.3	ug/L	376	Standard
	Cu	65	1342.1	6.6	**0.3370**	0.024	7.2	ug/L	271	Standard
	Zn	66	3266.0	3.6	**1.6251**	0.043	2.7	ug/L	601	Standard
>	**Ge**	72	666892.7	2.3				ug/L	607655	Standard
	As	75	708.4	9.7	**0.4988**	0.040	8.0	ug/L	-37	Standard
	Se	82	281.6	5.6	**1.9728**	0.093	4.7	ug/L	22	Standard
	Se-1	77	290.3	5.0	**2.5269**	0.214	8.5	ug/L	38	Standard
>	**Ga**	71	58.3	40.5				mg/L	38	Standard
	Rb	85	5130.9	7.7				ug/L	15	Standard
	Y	89	799803.3	1.9				ug/L	733256	Standard
>	**Rh**	103	248.3	7.1				ug/L	0	Standard
	Mo	98	175.5	6.5	**0.0518**	0.004	7.8	ug/L	10	Standard
	Ag	107	407.0	8.0	**0.0542**	0.006	10.8	ug/L	70	Standard
	Cd	111	18.4	38.0	**0.0164**	0.005	29.8	mg/L	2	Standard
	Cd	114	49.0	92.2	**0.0110**	0.013	120.3	ug/L	-3	Standard
>	**In**	115	608951.7	1.6				ug/L	555851	Standard
	Sn	118	533.3	9.4	**0.0168**	0.011	65.4	ug/L	495	Standard
	Sb	123	427.9	18.1	**0.1246**	0.022	17.4	ug/L	41	Standard
	Ba	135	14363.8	1.9	**14.3170**	0.145	1.0	ug/L	14	Standard
	Ce	140	21.7	48.0				ug/L	18	Standard
>	**Tb**	159	790223.3	2.0				ug/L	712215	Standard
	Ho	165	6.7	43.3				ug/L	0	Standard
	Tl	203	107.7	31.4	**0.0196**	0.006	33.2	ug/L	1	Standard
	Tl	205	123.3	18.7	**0.0238**	0.004	18.7	ug/L	3	Standard
	Pb	206	493.3	5.0	**0.0906**	0.007	7.8	ug/L	161	Standard
	Pb	207	406.0	0.4	**0.0896**	0.003	2.8	ug/L	141	Standard
	Pb	208	1761.4	4.3	**0.0857**	0.004	4.8	ug/L	608	Standard
	U	238	3174.3	2.2	**0.6177**	0.005	0.9	ug/L	4	Standard
>	**Bi**	209	508812.1	1.5				ug/L	481178	Standard

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Na	23	3.3	173.2				mg/L	0	Standard
Mg	24	11055.7	1.4	**28.0125**	0.126	0.4	mg/L	15	Standard
K	39	20.0	25.0	**0.4233**	0.114	26.8	mg/L	2	Standard
Ca	43	116.7	17.8	**9.6735**	1.825	18.9	mg/L	20	Standard
Fe	54	299.5	8.4	**0.0042**	0.010	248.2	mg/L	260	Standard
Fe	57	105.0	20.8	**0.0831**	0.027	32.5	mg/L	25	Standard
> **Sc-1**	45	79116.1	1.8				mg/L	72123	Standard
Cl	35	28983.0	2.3				ug/L	26728	Standard
Kr	83	0.7	86.6				ug/L	0	Standard
Br	81	20233.5	2.0				ug/L	733	Standard
P	31	18664.8	4.9				ug/L	17255	Standard
S	34	1566.7	1.0				ug/L	1680	Standard
Sr	88	1990.1	10.4				ug/L	7	Standard
C	12	103.3	11.2				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.7	43.3				mg/L	3	Standard
Ho-1	165	6.7	43.3				mg/L	0	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	101666.7	2.0				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.269	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.749	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.553
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.743
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, June 08, 2015 11:44:40
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	178839.5	1.8				ug/L	159930	Standard
	Be	9	53432.4	2.8	**48.1155**	1.798	3.7	ug/L	5	Standard
	Al	27	3052726.0	1.4	**48.7993**	1.137	2.3	ug/L	623	Standard
	Sc	45	78610.1	2.5				ug/L	72123	Standard
	Ti	47	28721.2	1.2	**93.7787**	2.112	2.3	ug/L	15	Standard
	V	51	333889.9	0.8	**47.5488**	1.441	3.0	ug/L	779	Standard
	Cr	52	374010.9	1.1	**47.9370**	1.523	3.2	ug/L	4182	Standard
	Cr	53	52566.1	2.3	**47.1118**	2.006	4.3	ug/L	255	Standard
	Mn	55	624066.4	0.8	**47.7688**	1.444	3.0	ug/L	870	Standard
	Co	59	385113.3	1.2	**47.7809**	1.635	3.4	ug/L	44	Standard
	Ni	60	122074.5	0.7	**47.5550**	1.393	2.9	ug/L	376	Standard
	Cu	65	125283.5	0.9	**47.7605**	1.485	3.1	ug/L	271	Standard
	Zn	66	76077.9	0.9	**47.2619**	1.520	3.2	ug/L	601	Standard
>	**Ge**	72	677090.4	2.3				ug/L	607655	Standard
	As	75	69931.4	0.9	**47.5315**	1.480	3.1	ug/L	-37	Standard
	Se	82	6331.1	1.3	**47.9630**	1.679	3.5	ug/L	22	Standard
	Se-1	77	4900.8	0.8	**47.9903**	1.439	3.0	ug/L	38	Standard
>	**Ga**	71	78.3	29.5				mg/L	38	Standard
	Rb	85	863.4	5.9				ug/L	15	Standard
	Y	89	812984.4	1.1				ug/L	733256	Standard
>	**Rh**	103	15.0	33.3				ug/L	0	Standard
	Mo	98	290815.8	0.9	**96.6734**	2.919	3.0	ug/L	10	Standard
	Ag	107	301965.7	0.1	**48.2158**	1.111	2.3	ug/L	70	Standard
	Cd	111	67765.4	0.9	**47.7518**	1.333	2.8	mg/L	2	Standard
	Cd	114	162818.9	0.4	**47.1626**	1.191	2.5	ug/L	-3	Standard
>	**In**	115	627641.3	2.2				ug/L	555851	Standard
	Sn	118	200661.7	0.6	**45.9304**	1.274	2.8	ug/L	495	Standard
	Sb	123	161129.6	0.7	**47.6438**	1.347	2.8	ug/L	41	Standard
	Ba	135	49043.6	1.4	**47.4770**	1.334	2.8	ug/L	14	Standard
	Ce	140	35.0	28.6				ug/L	18	Standard
>	**Tb**	159	810645.2	1.8				ug/L	712215	Standard
	Ho	165	8.3	91.7				ug/L	0	Standard
	Tl	203	247321.8	1.4	**48.0548**	1.398	2.9	ug/L	1	Standard
	Tl	205	256359.3	1.8	**48.1100**	1.760	3.7	ug/L	3	Standard
	Pb	206	160449.8	1.3	**48.0670**	1.500	3.1	ug/L	161	Standard
	Pb	207	145526.3	1.4	**47.6377**	1.487	3.1	ug/L	141	Standard
	Pb	208	610471.2	1.1	**47.5388**	1.462	3.1	ug/L	608	Standard
	U	238	252121.5	1.1	**47.3427**	1.337	2.8	ug/L	4	Standard
>	**Bi**	209	527137.9	2.1				ug/L	481178	Standard

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Na	23	1.7	173.2				mg/L	0	Standard
Mg	24	1835.1	3.4	**4.6464**	0.269	5.8	mg/L	15	Standard
K	39	211.7	16.1	**4.8458**	0.658	13.6	mg/L	2	Standard
Ca	43	60.0	8.3	**4.3628**	0.349	8.0	mg/L	20	Standard
Fe	54	11680.3	0.8	**4.5932**	0.098	2.1	mg/L	260	Standard
Fe	57	3768.8	2.5	**4.8670**	0.107	2.2	mg/L	25	Standard
> **Sc-1**	45	78610.1	2.5				mg/L	72123	Standard
Cl	35	28664.4	1.0				ug/L	26728	Standard
Kr	83	1.0	0.0				ug/L	0	Standard
Br	81	1183.4	4.0				ug/L	733	Standard
P	31	18054.1	2.5				ug/L	17255	Standard
S	34	1716.8	8.1				ug/L	1680	Standard
Sr	88	10.0	50.0				ug/L	7	Standard
C	12	100.0	60.8				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	9.4	182.1				mg/L	3	Standard
Ho-1	165	8.3	91.7				mg/L	0	Standard
Er	166	13.3	86.6				mg/L	13	Standard
I	127	4180.6	24.6				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	96.231		
Al	27	97.599		
Sc	45			
Ti	47	93.779		
V	51	95.098		
Cr	52	95.874		
Cr	53			
Mn	55	95.538		
Co	59	95.562		
Ni	60	95.110		
Cu	65	95.521		
Zn	66	94.524		
> Ge	72		111.427	
As	75	95.063		
Se	82	95.926		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	96.673		
Ag	107	96.432		
Cd	111	95.504		
Cd	114			
In	115			112.915
Sn	118	91.861		
Sb	123	95.288		
Ba	135	94.954		
Ce	140			
Tb	159			
Ho	165			
Tl	203	96.110		
Tl	205			
Pb	206			
Pb	207			
Pb	208	95.078		
U	238	94.685		
Bi	209			109.552
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, June 08, 2015 11:47:52
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	178141.2	1.2				ug/L	159930	Standard
	Be	9	33.3	31.2	**0.0205**	0.009	44.8	ug/L	5	Standard
	Al	27	1488.4	59.8	**-0.0134**	0.014	105.0	ug/L	623	Standard
	Sc	45	78261.7	2.0				ug/L	72123	Standard
	Ti	47	16.0	6.3	**0.0099**	0.003	31.6	ug/L	15	Standard
	V	51	712.4	7.7	**-0.0215**	0.007	34.1	ug/L	779	Standard
	Cr	52	4175.9	3.7	**-0.0285**	0.017	60.5	ug/L	4182	Standard
	Cr	53	501.7	3.0	**0.1869**	0.012	6.6	ug/L	255	Standard
	Mn	55	1053.4	15.0	**-0.0080**	0.012	146.2	ug/L	870	Standard
	Co	59	113.3	61.6	**0.0022**	0.009	384.7	ug/L	44	Standard
	Ni	60	501.0	0.2	**0.0425**	0.001	2.6	ug/L	376	Standard
	Cu	65	370.7	3.8	**-0.0412**	0.006	14.2	ug/L	271	Standard
	Zn	66	627.3	8.3	**-0.0575**	0.030	52.7	ug/L	601	Standard
>	**Ge**	72	672506.4	0.6				ug/L	607655	Standard
	As	75	-41.5	86.7	**-0.0178**	0.025	138.7	ug/L	-37	Standard
	Se	82	16.8	36.4	**-0.0723**	0.046	63.3	ug/L	22	Standard
	Se-1	77	53.3	10.3	**0.1449**	0.052	36.1	ug/L	38	Standard
>	**Ga**	71	51.7	11.2				mg/L	38	Standard
	Rb	85	23.3	49.5				ug/L	15	Standard
	Y	89	795202.5	0.5				ug/L	733256	Standard
>	**Rh**	103	0.0					ug/L	0	Standard
	Mo	98	94.6	69.7	**0.0239**	0.022	92.3	ug/L	10	Standard
	Ag	107	139.7	24.4	**0.0102**	0.005	53.2	ug/L	70	Standard
	Cd	111	6.6	53.0	**0.0078**	0.002	31.6	mg/L	2	Standard
	Cd	114	15.7	7.8	**0.0011**	0.000	27.6	ug/L	-3	Standard
>	**In**	115	609647.5	1.1				ug/L	555851	Standard
	Sn	118	471.7	14.7	**0.0021**	0.016	752.7	ug/L	495	Standard
	Sb	123	136.9	6.5	**0.0361**	0.003	7.1	ug/L	41	Standard
	Ba	135	17.7	3.3	**0.0038**	0.001	14.9	ug/L	14	Standard
	Ce	140	3.3	86.6				ug/L	18	Standard
>	**Tb**	159	788677.5	0.3				ug/L	712215	Standard
	Ho	165	8.3	34.6				ug/L	0	Standard
	Tl	203	33.0	58.5	**0.0044**	0.004	85.8	ug/L	1	Standard
	Tl	205	45.0	69.4	**0.0083**	0.006	70.8	ug/L	3	Standard
	Pb	206	200.3	17.6	**-0.0026**	0.010	405.8	ug/L	161	Standard
	Pb	207	167.0	11.4	**0.0065**	0.006	97.5	ug/L	141	Standard
	Pb	208	746.7	18.6	**0.0017**	0.011	640.8	ug/L	608	Standard
	U	238	32.0	79.8	**0.0064**	0.005	74.3	ug/L	4	Standard
>	**Bi**	209	527479.4	0.3				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	31.7	9.1	**0.0363**	0.006	15.7	mg/L	15	Standard
K	39	0.0		**-0.0361**	0.000	0.0	mg/L	2	Standard
Ca	43	13.3	78.1	**-0.0587**	1.009	1717.9	mg/L	20	Standard
Fe	54	332.5	4.8	**0.0189**	0.009	47.6	mg/L	260	Standard
Fe	57	23.3	81.1	**-0.0223**	0.025	112.8	mg/L	25	Standard
Sc-1	45	78261.7	2.0				mg/L	72123	Standard
Cl	35	29482.0	0.7				ug/L	26728	Standard
Kr	83	1.3	43.3				ug/L	0	Standard
Br	81	1003.4	14.3				ug/L	733	Standard
P	31	18392.8	2.1				ug/L	17255	Standard
S	34	1891.8	8.2				ug/L	1680	Standard
Sr	88	15.0	88.2				ug/L	7	Standard
C	12	86.7	17.6				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.0	93.6				mg/L	3	Standard
Ho-1	165	8.3	34.6				mg/L	0	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	1938.5	14.7				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		110.672	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.678
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.623
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Monday, June 08, 2015 11:51:05
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	185512.4	2.0				ug/L	159930	Standard
	Be	9	231.7	14.4	**0.1918**	0.031	16.3	ug/L	5	Standard
	Al	27	1520.1	48.1	**-0.0138**	0.011	82.6	ug/L	623	Standard
	Sc	45	79741.0	2.6				ug/L	72123	Standard
	Ti	47	13.0	30.8	**-0.0011**	0.013	1198.5	ug/L	15	Standard
	V	51	3582.4	2.2	**0.3761**	0.010	2.8	ug/L	779	Standard
	Cr	52	10298.8	2.2	**0.7319**	0.012	1.7	ug/L	4182	Standard
	Cr	53	1270.1	1.0	**0.8510**	0.039	4.6	ug/L	255	Standard
	Mn	55	7472.5	2.6	**0.4707**	0.002	0.4	ug/L	870	Standard
	Co	59	3235.7	2.2	**0.3805**	0.002	0.6	ug/L	44	Standard
	Ni	60	4462.3	3.0	**1.5496**	0.016	1.1	ug/L	376	Standard
	Cu	65	2520.9	2.5	**0.7587**	0.001	0.2	ug/L	271	Standard
	Zn	66	10807.9	1.4	**6.1717**	0.097	1.6	ug/L	601	Standard
>	**Ge**	72	692602.0	2.6				ug/L	607655	Standard
	As	75	546.0	6.1	**0.3730**	0.013	3.5	ug/L	-37	Standard
	Se	82	63.1	9.5	**0.2681**	0.035	12.9	ug/L	22	Standard
	Se-1	77	78.3	5.2	**0.3718**	0.058	15.7	ug/L	38	Standard
>	**Ga**	71	35.0	0.0				mg/L	38	Standard
	Rb	85	18.3	56.8				ug/L	15	Standard
	Y	89	823457.3	1.8				ug/L	733256	Standard
>	**Rh**	103	3.3	86.6				ug/L	0	Standard
	Mo	98	46.0	41.6	**0.0070**	0.006	88.5	ug/L	10	Standard
	Ag	107	2566.2	3.0	**0.3982**	0.004	1.0	ug/L	70	Standard
	Cd	111	339.9	0.8	**0.2433**	0.004	1.7	mg/L	2	Standard
	Cd	114	775.2	16.9	**0.2212**	0.034	15.2	ug/L	-3	Standard
>	**In**	115	625626.5	2.0				ug/L	555851	Standard
	Sn	118	676.7	18.5	**0.0464**	0.028	59.4	ug/L	495	Standard
	Sb	123	1356.4	2.4	**0.3967**	0.009	2.2	ug/L	41	Standard
	Ba	135	746.4	7.8	**0.7104**	0.042	6.0	ug/L	14	Standard
	Ce	140	13.3	57.3				ug/L	18	Standard
>	**Tb**	159	813945.5	1.0				ug/L	712215	Standard
	Ho	165	6.7	86.6				ug/L	0	Standard
	Tl	203	453.7	14.4	**0.0836**	0.011	13.3	ug/L	1	Standard
	Tl	205	453.3	8.8	**0.0826**	0.007	8.6	ug/L	3	Standard
	Pb	206	938.4	2.6	**0.2113**	0.005	2.5	ug/L	161	Standard
	Pb	207	767.0	4.2	**0.1964**	0.008	4.1	ug/L	141	Standard
	Pb	208	3270.8	1.9	**0.1917**	0.001	0.7	ug/L	608	Standard
	U	238	2100.1	1.6	**0.3843**	0.009	2.4	ug/L	4	Standard
>	**Bi**	209	541485.1	1.6				ug/L	481178	Standard

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Na	23	1.7	173.2				mg/L	0	Standard
Mg	24	25.0	40.0	**0.0184**	0.026	142.3	mg/L	15	Standard
K	39	3.3	86.6	**0.0410**	0.067	162.9	mg/L	2	Standard
Ca	43	18.3	83.3	**0.3801**	1.454	382.5	mg/L	20	Standard
Fe	54	275.6	24.3	**-0.0063**	0.026	418.7	mg/L	260	Standard
Fe	57	35.0	37.8	**-0.0078**	0.018	229.0	mg/L	25	Standard
> **Sc-1**	45	79741.0	2.6				mg/L	72123	Standard
Cl	35	29460.0	1.8				ug/L	26728	Standard
Kr	83	1.3	43.3				ug/L	0	Standard
Br	81	866.7	12.7				ug/L	733	Standard
P	31	18389.5	1.1				ug/L	17255	Standard
S	34	1783.4	4.1				ug/L	1680	Standard
Sr	88	5.0	100.0				ug/L	7	Standard
C	12	50.0	60.0				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.5	239.4				mg/L	3	Standard
Ho-1	165	6.7	86.6				mg/L	0	Standard
Er	166	16.7	69.3				mg/L	13	Standard
I	127	1278.4	12.9				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	95.892		
Al	27			
Sc	45			
Ti	47			
V	51	94.022		
Cr	52	91.485		
Cr	53			
Mn	55	94.138		
Co	59	95.124		
Ni	60	96.849		
Cu	65	94.842		
Zn	66	98.748		
> Ge	72		113.980	
As	75	93.242		
Se	82	67.021		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	99.556		
Cd	111	101.393		
Cd	114			
> In	115		112.553	
Sn	118			
Sb	123	99.173		
Ba	135	94.724		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	104.542		
Tl	205			
Pb	206			
Pb	207			
Pb	208	95.837		
U	238	96.070		
> Bi	209		112.533	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 8	Se	82	

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Method 6020 - Summary Report

Sample ID: PBW 03 WG525374-02
Sample Date/Time: Monday, June 08, 2015 12:42:11
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	187980.2	4.1				ug/L	159930	Standard
	Be	9	20.0	66.1	**0.0076**	0.011	147.6	ug/L	5	Standard
	Al	27	885.0	6.2	**-0.0238**	0.001	2.7	ug/L	623	Standard
	Sc	45	79059.1	2.5				ug/L	72123	Standard
	Ti	47	14.0	24.7	**0.0027**	0.012	430.4	ug/L	15	Standard
	V	51	-997.7	16.3	**-0.2652**	0.024	9.0	ug/L	779	Standard
	Cr	52	4688.4	0.9	**0.0298**	0.007	23.3	ug/L	4182	Standard
	Cr	53	6813.2	4.2	**5.8231**	0.235	4.0	ug/L	255	Standard
	Mn	55	1473.1	0.4	**0.0228**	0.001	2.8	ug/L	870	Standard
	Co	59	44.0	21.7	**-0.0065**	0.001	18.7	ug/L	44	Standard
	Ni	60	458.0	2.5	**0.0231**	0.004	17.8	ug/L	376	Standard
	Cu	65	383.0	10.1	**-0.0385**	0.015	38.6	ug/L	271	Standard
	Zn	66	1856.8	1.9	**0.7021**	0.030	4.3	ug/L	601	Standard
>	**Ge**	72	682187.3	0.8				ug/L	607655	Standard
	As	75	77.2	45.7	**0.0627**	0.024	37.9	ug/L	-37	Standard
	Se	82	15.5	15.5	**-0.0836**	0.018	21.7	ug/L	22	Standard
	Se-1	77	720.7	6.1	**6.6720**	0.410	6.1	ug/L	38	Standard
>	**Ga**	71	33.3	34.6				mg/L	38	Standard
	Rb	85	21.7	26.6				ug/L	15	Standard
	Y	89	824343.9	1.8				ug/L	733256	Standard
>	**Rh**	103	3.3	86.6				ug/L	0	Standard
	Mo	98	28.7	12.3	**0.0012**	0.001	93.4	ug/L	10	Standard
	Ag	107	80.7	13.6	**-0.0000**	0.002	6718.8	ug/L	70	Standard
	Cd	111	1.6	126.7	**0.0042**	0.001	34.3	mg/L	2	Standard
	Cd	114	1.9	202.1	**-0.0030**	0.001	37.8	ug/L	-3	Standard
>	**In**	115	633519.5	1.0				ug/L	555851	Standard
	Sn	118	486.7	10.4	**0.0013**	0.010	791.7	ug/L	495	Standard
	Sb	123	85.2	11.2	**0.0194**	0.003	13.3	ug/L	41	Standard
	Ba	135	15.3	15.1	**0.0009**	0.002	230.1	ug/L	14	Standard
	Ce	140	8.3	124.9				ug/L	18	Standard
>	**Tb**	159	809360.4	0.7				ug/L	712215	Standard
	Ho	165	3.3	173.2				ug/L	0	Standard
	Tl	203	36.0	21.0	**0.0048**	0.001	30.2	ug/L	1	Standard
	Tl	205	51.7	20.1	**0.0093**	0.002	21.4	ug/L	3	Standard
	Pb	206	300.3	4.0	**0.0249**	0.002	10.0	ug/L	161	Standard
	Pb	207	272.7	6.0	**0.0386**	0.006	14.6	ug/L	141	Standard
	Pb	208	1143.7	3.6	**0.0301**	0.004	13.3	ug/L	608	Standard
	U	238	1.3	43.3	**0.0007**	0.000	15.6	ug/L	4	Standard
>	**Bi**	209	542628.2	1.1				ug/L	481178	Standard

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	Na	23	0.0				mg/L	0	Standard
	Mg	24	10.0		**-0.0195**	0.001	3.3	mg/L	15	Standard
	K	39	1.7	173.2	**0.0033**	0.068	2095.2	mg/L	2	Standard
	Ca	43	21.7	58.1	**0.6902**	1.140	165.1	mg/L	20	Standard
	Fe	54	309.3	25.1	**0.0078**	0.028	362.7	mg/L	260	Standard
	Fe	57	26.7	47.2	**-0.0181**	0.017	95.7	mg/L	25	Standard
>	**Sc-1**	45	79059.1	2.5				mg/L	72123	Standard
	Cl	35	29506.7	0.7				ug/L	26728	Standard
	Kr	83	0.7	173.2				ug/L	0	Standard
	Br	81	820.0	6.3				ug/L	733	Standard
	P	31	18538.0	1.7				ug/L	17255	Standard
	S	34	1700.1	4.2				ug/L	1680	Standard
	Sr	88	10.0	50.0				ug/L	7	Standard
	C	12	93.3	32.7				mg/L	67	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	0	Standard
	Dy	164	2.9	187.9				mg/L	3	Standard
	Ho-1	165	3.3	173.2				mg/L	0	Standard
	Er	166	10.0	100.0				mg/L	13	Standard
	I	127	213.3	7.2				mg/L	142	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		117.539	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		112.266	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.973
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		112.771
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 03 WG525374-02
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Method 6020 - Summary Report

Sample ID: LCSW 03 WG525374-03
Sample Date/Time: Monday, June 08, 2015 12:45:22
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	196590.5	0.5				ug/L	159930	Standard
	Be	9	553.3	3.8	**0.4438**	0.019	4.4	ug/L	5	Standard
	Al	27	96031.7	1.3	**1.3600**	0.013	0.9	ug/L	623	Standard
	Sc	45	81058.0	1.8				ug/L	72123	Standard
	Ti	47	3133.3	4.5	**9.9835**	0.609	6.1	ug/L	15	Standard
	V	51	67556.9	3.4	**9.3224**	0.481	5.2	ug/L	779	Standard
	Cr	52	44254.6	2.5	**5.0470**	0.232	4.6	ug/L	4182	Standard
	Cr	53	21974.3	1.6	**19.1156**	0.127	0.7	ug/L	255	Standard
	Mn	55	67908.6	2.8	**5.0104**	0.229	4.6	ug/L	870	Standard
	Co	59	16520.3	3.2	**1.9957**	0.098	4.9	ug/L	44	Standard
	Ni	60	13455.0	2.5	**4.9947**	0.212	4.2	ug/L	376	Standard
	Cu	65	14029.2	2.1	**5.0725**	0.183	3.6	ug/L	271	Standard
	Zn	66	17925.6	3.2	**10.5545**	0.483	4.6	ug/L	601	Standard
>	**Ge**	72	691464.1	1.6				ug/L	607655	Standard
	As	75	5930.0	1.5	**3.9557**	0.108	2.7	ug/L	-37	Standard
	Se	82	536.5	3.7	**3.7963**	0.215	5.7	ug/L	22	Standard
	Se-1	77	2074.5	2.0	**19.6615**	0.534	2.7	ug/L	38	Standard
>	**Ga**	71	63.3	25.4				mg/L	38	Standard
	Rb	85	126.7	26.3				ug/L	15	Standard
	Y	89	844719.9	2.3				ug/L	733256	Standard
>	**Rh**	103	6.7	114.6				ug/L	0	Standard
	Mo	98	30963.2	1.9	**10.0361**	0.307	3.1	ug/L	10	Standard
	Ag	107	26053.1	2.2	**4.0480**	0.135	3.3	ug/L	70	Standard
	Cd	111	683.5	3.2	**0.4731**	0.019	4.0	mg/L	2	Standard
	Cd	114	1615.6	6.3	**0.4533**	0.033	7.2	ug/L	-3	Standard
>	**In**	115	643094.6	1.2				ug/L	555851	Standard
	Sn	118	41984.8	3.1	**9.2912**	0.385	4.1	ug/L	495	Standard
	Sb	123	40952.6	1.9	**11.8120**	0.361	3.1	ug/L	41	Standard
	Ba	135	10221.4	3.7	**9.6464**	0.474	4.9	ug/L	14	Standard
	Ce	140	21.7	35.3				ug/L	18	Standard
>	**Tb**	159	822270.8	1.0				ug/L	712215	Standard
	Ho	165	8.3	34.6				ug/L	0	Standard
	Tl	203	25926.2	1.5	**4.8449**	0.149	3.1	ug/L	1	Standard
	Tl	205	27349.7	2.7	**4.9379**	0.203	4.1	ug/L	3	Standard
	Pb	206	17591.5	1.8	**5.0143**	0.170	3.4	ug/L	161	Standard
	Pb	207	15467.6	2.4	**4.8286**	0.196	4.1	ug/L	141	Standard
	Pb	208	66534.2	1.4	**4.9342**	0.152	3.1	ug/L	608	Standard
	U	238	1.3	86.6	**0.0007**	0.000	30.7	ug/L	4	Standard
>	**Bi**	209	547857.2	1.6				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	258.3	19.9	**0.5964**	0.138	23.2	mg/L	15	Standard
K	39	25.0	40.0	**0.5252**	0.225	42.9	mg/L	2	Standard
Ca	43	11.7	49.5	**-0.2629**	0.537	204.2	mg/L	20	Standard
Fe	54	443.3	3.0	**0.0575**	0.006	10.5	mg/L	260	Standard
Fe	57	51.7	39.1	**0.0122**	0.025	200.8	mg/L	25	Standard
> **Sc-1**	45	81058.0	1.8				mg/L	72123	Standard
Cl	35	30802.6	1.9				ug/L	26728	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	816.7	22.7				ug/L	733	Standard
P	31	18975.2	1.9				ug/L	17255	Standard
S	34	1903.5	3.0				ug/L	1680	Standard
Sr	88	60.0	14.4				ug/L	7	Standard
C	12	53.3	60.3				mg/L	67	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	15.5	41.6				mg/L	3	Standard
Ho-1	165	8.3	34.6				mg/L	0	Standard
Er	166	23.3	65.5				mg/L	13	Standard
I	127	143.3	19.2				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		122.923	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		113.792	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	115.696
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	113.858
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: LCSW 03 WG525374-03
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Method 6020 - Summary Report

Sample ID: FBLANK 03 WG525223-01
Sample Date/Time: Monday, June 08, 2015 12:48:33
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	185691.2	1.9				ug/L	159930	Standard
	Be	9	10.0	50.0	**-0.0009**	0.004	457.9	ug/L	5	Standard
	Al	27	845.0	3.3	**-0.0243**	0.000	0.8	ug/L	623	Standard
	Sc	45	80349.2	0.8				ug/L	72123	Standard
	Ti	47	14.7	37.6	**0.0042**	0.018	417.9	ug/L	15	Standard
	V	51	-1241.8	11.7	**-0.2976**	0.021	6.9	ug/L	779	Standard
	Cr	52	4935.8	3.0	**0.0540**	0.020	36.5	ug/L	4182	Standard
	Cr	53	8819.2	1.8	**7.5216**	0.118	1.6	ug/L	255	Standard
	Mn	55	1359.1	4.9	**0.0129**	0.005	40.3	ug/L	870	Standard
	Co	59	49.7	17.1	**-0.0058**	0.001	17.8	ug/L	44	Standard
	Ni	60	465.7	5.9	**0.0238**	0.010	42.8	ug/L	376	Standard
	Cu	65	433.7	7.5	**-0.0213**	0.012	58.5	ug/L	271	Standard
	Zn	66	2140.5	0.7	**0.8624**	0.011	1.3	ug/L	601	Standard
>	**Ge**	72	690527.8	0.2				ug/L	607655	Standard
	As	75	-14.0	787.4	**0.0012**	0.074	5964.7	ug/L	-37	Standard
	Se	82	15.2	24.2	**-0.0871**	0.027	31.4	ug/L	22	Standard
	Se-1	77	882.0	2.9	**8.1487**	0.262	3.2	ug/L	38	Standard
>	**Ga**	71	70.0	21.4				mg/L	38	Standard
	Rb	85	38.3	19.9				ug/L	15	Standard
	Y	89	821837.6	1.3				ug/L	733256	Standard
>	**Rh**	103	1.7	173.2				ug/L	0	Standard
	Mo	98	21.0	31.6	**-0.0014**	0.002	157.5	ug/L	10	Standard
	Ag	107	89.7	8.4	**0.0014**	0.001	95.1	ug/L	70	Standard
	Cd	111	0.6	91.9	**0.0035**	0.000	11.5	mg/L	2	Standard
	Cd	114	3.0	161.1	**-0.0027**	0.001	50.3	ug/L	-3	Standard
>	**In**	115	633125.7	1.5				ug/L	555851	Standard
	Sn	118	573.3	8.8	**0.0212**	0.011	53.9	ug/L	495	Standard
	Sb	123	31.7	15.9	**0.0037**	0.001	38.7	ug/L	41	Standard
	Ba	135	17.7	25.5	**0.0031**	0.004	131.6	ug/L	14	Standard
	Ce	140	8.3	69.3				ug/L	18	Standard
>	**Tb**	159	816735.0	1.1				ug/L	712215	Standard
	Ho	165	8.3	69.3				ug/L	0	Standard
	Tl	203	38.0	21.5	**0.0051**	0.002	29.5	ug/L	1	Standard
	Tl	205	33.3	22.9	**0.0059**	0.001	23.8	ug/L	3	Standard
	Pb	206	270.7	1.8	**0.0161**	0.002	10.7	ug/L	161	Standard
	Pb	207	229.3	9.0	**0.0247**	0.007	27.6	ug/L	141	Standard
	Pb	208	1007.0	4.0	**0.0196**	0.003	14.1	ug/L	608	Standard
	U	238	0.0		**0.0004**	0.000	0.0	ug/L	4	Standard
>	**Bi**	209	543696.1	0.4				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	1110.0	8.9	**2.7300**	0.263	9.6	mg/L	15	Standard
K	39	0.0		**-0.0361**	0.000	0.0	mg/L	2	Standard
Ca	43	23.3	12.4	**0.8324**	0.285	34.2	mg/L	20	Standard
Fe	54	286.0	39.2	**-0.0030**	0.044	1452.4	mg/L	260	Standard
Fe	57	21.7	70.5	**-0.0252**	0.020	77.9	mg/L	25	Standard
> **Sc-1**	45	80349.2	0.8				mg/L	72123	Standard
Cl	35	29480.7	0.1				ug/L	26728	Standard
Kr	83	0.7	86.6				ug/L	0	Standard
Br	81	850.0	7.7				ug/L	733	Standard
P	31	18417.9	0.9				ug/L	17255	Standard
S	34	1700.1	4.6				ug/L	1680	Standard
Sr	88	8.3	34.6				ug/L	7	Standard
C	12	96.7	41.8				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.2	93.6				mg/L	3	Standard
Ho-1	165	8.3	69.3				mg/L	0	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	233.3	21.1				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.108	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		113.638	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		113.902
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		112.993
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1505156101 WG525374-01
Sample Date/Time: Monday, June 08, 2015 12:51:45
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	185028.1	1.6				ug/L	159930	Standard
	Be	9	13.3	114.6	**0.0022**	0.014	618.2	ug/L	5	Standard
	Al	27	1383.4	4.9	**-0.0159**	0.001	7.0	ug/L	623	Standard
	Sc	45	79705.8	0.1				ug/L	72123	Standard
	Ti	47	19.0	9.1	**0.0196**	0.005	26.9	ug/L	15	Standard
	V	51	-1443.1	11.6	**-0.3309**	0.023	6.9	ug/L	779	Standard
	Cr	52	4936.1	0.3	**0.0702**	0.004	6.4	ug/L	4182	Standard
	Cr	53	8392.3	3.9	**7.3351**	0.252	3.4	ug/L	255	Standard
	Mn	55	1784.4	3.9	**0.0483**	0.006	11.9	ug/L	870	Standard
	Co	59	100.7	18.4	**0.0007**	0.002	351.7	ug/L	44	Standard
	Ni	60	872.4	3.3	**0.1883**	0.014	7.3	ug/L	376	Standard
	Cu	65	472.3	8.9	**-0.0022**	0.017	755.4	ug/L	271	Standard
	Zn	66	2648.2	1.9	**1.2167**	0.044	3.6	ug/L	601	Standard
>	**Ge**	72	673155.1	0.7				ug/L	607655	Standard
	As	75	-23.1	475.8	**-0.0052**	0.075	1453.5	ug/L	-37	Standard
	Se	82	131.9	10.0	**0.8079**	0.099	12.2	ug/L	22	Standard
	Se-1	77	1002.0	5.5	**9.5576**	0.487	5.1	ug/L	38	Standard
>	**Ga**	71	1163.4	9.8				mg/L	38	Standard
	Rb	85	11679.5	2.3				ug/L	15	Standard
	Y	89	815566.9	0.7				ug/L	733256	Standard
>	**Rh**	103	1.7	173.2				ug/L	0	Standard
	Mo	98	204.9	7.4	**0.0606**	0.006	9.5	ug/L	10	Standard
	Ag	107	77.7	6.5	**-0.0002**	0.001	353.7	ug/L	70	Standard
	Cd	111	2.0	75.4	**0.0046**	0.001	24.2	mg/L	2	Standard
	Cd	114	-4.7	172.0	**-0.0049**	0.002	48.1	ug/L	-3	Standard
>	**In**	115	621089.9	1.1				ug/L	555851	Standard
	Sn	118	486.7	8.2	**0.0036**	0.009	261.6	ug/L	495	Standard
	Sb	123	54.7	19.7	**0.0107**	0.003	28.2	ug/L	41	Standard
	Ba	135	2587.6	3.2	**2.5175**	0.084	3.3	ug/L	14	Standard
	Ce	140	6.7	86.6				ug/L	18	Standard
>	**Tb**	159	805431.7	1.6				ug/L	712215	Standard
	Ho	165	8.3	69.3				ug/L	0	Standard
	Tl	203	67.0	20.7	**0.0108**	0.003	24.8	ug/L	1	Standard
	Tl	205	66.7	11.5	**0.0122**	0.001	12.0	ug/L	3	Standard
	Pb	206	352.7	8.8	**0.0419**	0.010	23.2	ug/L	161	Standard
	Pb	207	309.7	7.3	**0.0521**	0.007	13.9	ug/L	141	Standard
	Pb	208	1311.7	1.6	**0.0445**	0.001	1.6	ug/L	608	Standard
	U	238	0.7	86.6	**0.0006**	0.000	19.1	ug/L	4	Standard
>	**Bi**	209	533435.4	1.0				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	2115.1	2.5	**5.2830**	0.132	2.5	mg/L	15	Standard
K	39	160.0	14.3	**3.6114**	0.521	14.4	mg/L	2	Standard
Ca	43	55.0	15.7	**3.8200**	0.812	21.3	mg/L	20	Standard
Fe	54	304.4	12.9	**0.0052**	0.016	298.6	mg/L	260	Standard
Fe	57	58.3	34.6	**0.0221**	0.026	117.7	mg/L	25	Standard
> **Sc-1**	45	79705.8	0.1				mg/L	72123	Standard
Cl	35	29468.0	1.0				ug/L	26728	Standard
Kr	83	1.0	0.0				ug/L	0	Standard
Br	81	1073.4	1.9				ug/L	733	Standard
P	31	18404.5	0.9				ug/L	17255	Standard
S	34	1668.4	4.5				ug/L	1680	Standard
Sr	88	33.3	37.7				ug/L	7	Standard
C	12	146.7	21.9				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	22.9	101.1				mg/L	3	Standard
Ho-1	165	8.3	69.3				mg/L	0	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	853.4	3.9				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.693	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.779	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.737
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.860
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1505156101S WG525374-04
Sample Date/Time: Monday, June 08, 2015 12:54:56
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	192870.0	1.6				ug/L	159930	Standard
	Be	9	608.3	11.8	**0.4978**	0.052	10.4	ug/L	5	Standard
	Al	27	93501.0	1.8	**1.3497**	0.034	2.5	ug/L	623	Standard
	Sc	45	81342.8	0.9				ug/L	72123	Standard
	Ti	47	3241.0	1.1	**10.3128**	0.247	2.4	ug/L	15	Standard
	V	51	67521.4	1.3	**9.3048**	0.262	2.8	ug/L	779	Standard
	Cr	52	44084.7	0.3	**5.0180**	0.096	1.9	ug/L	4182	Standard
	Cr	53	20847.7	2.5	**18.1015**	0.311	1.7	ug/L	255	Standard
	Mn	55	67665.5	2.2	**4.9860**	0.176	3.5	ug/L	870	Standard
	Co	59	16427.2	2.4	**1.9820**	0.075	3.8	ug/L	44	Standard
	Ni	60	13618.8	1.0	**5.0507**	0.116	2.3	ug/L	376	Standard
	Cu	65	13738.6	2.2	**4.9582**	0.178	3.6	ug/L	271	Standard
	Zn	66	17915.3	1.6	**10.5358**	0.337	3.2	ug/L	601	Standard
>	**Ge**	72	692191.0	1.5				ug/L	607655	Standard
	As	75	5842.6	2.5	**3.8934**	0.133	3.4	ug/L	-37	Standard
	Se	82	630.5	7.8	**4.4901**	0.385	8.6	ug/L	22	Standard
	Se-1	77	2194.8	3.4	**20.7964**	0.580	2.8	ug/L	38	Standard
>	**Ga**	71	1175.0	3.4				mg/L	38	Standard
	Rb	85	11514.4	2.2				ug/L	15	Standard
	Y	89	825550.6	1.5				ug/L	733256	Standard
>	**Rh**	103	8.3	34.6				ug/L	0	Standard
	Mo	98	31129.8	0.9	**10.2142**	0.348	3.4	ug/L	10	Standard
	Ag	107	25315.8	1.3	**3.9815**	0.139	3.5	ug/L	70	Standard
	Cd	111	664.8	4.4	**0.4660**	0.031	6.6	mg/L	2	Standard
	Cd	114	1683.2	7.3	**0.4778**	0.030	6.3	ug/L	-3	Standard
>	**In**	115	635491.7	2.5				ug/L	555851	Standard
	Sn	118	41329.6	1.0	**9.2579**	0.325	3.5	ug/L	495	Standard
	Sb	123	40804.2	0.6	**11.9130**	0.356	3.0	ug/L	41	Standard
	Ba	135	12642.6	1.3	**12.0797**	0.421	3.5	ug/L	14	Standard
	Ce	140	18.3	56.8				ug/L	18	Standard
>	**Tb**	159	820412.1	2.4				ug/L	712215	Standard
	Ho	165	3.3	173.2				ug/L	0	Standard
	Tl	203	25298.1	1.5	**4.8313**	0.177	3.7	ug/L	1	Standard
	Tl	205	26304.5	2.8	**4.8509**	0.114	2.3	ug/L	3	Standard
	Pb	206	17205.1	1.6	**5.0121**	0.206	4.1	ug/L	161	Standard
	Pb	207	15196.3	0.7	**4.8472**	0.142	2.9	ug/L	141	Standard
	Pb	208	65258.0	1.4	**4.9464**	0.203	4.1	ug/L	608	Standard
	U	238	0.3	173.2	**0.0005**	0.000	21.3	ug/L	4	Standard
>	**Bi**	209	536257.5	2.8				ug/L	481178	Standard

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Na	23	1.7	173.2				mg/L	0	Standard
Mg	24	2275.2	6.6	**5.5709**	0.371	6.7	mg/L	15	Standard
K	39	200.0	11.5	**4.4292**	0.479	10.8	mg/L	2	Standard
Ca	43	56.7	27.0	**3.8619**	1.367	35.4	mg/L	20	Standard
Fe	54	423.6	18.0	**0.0493**	0.031	62.4	mg/L	260	Standard
Fe	57	65.0	13.3	**0.0291**	0.011	38.9	mg/L	25	Standard
Sc-1	45	81342.8	0.9				mg/L	72123	Standard
Cl	35	29802.6	0.4				ug/L	26728	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	1160.0	4.3				ug/L	733	Standard
P	31	19420.8	7.9				ug/L	17255	Standard
S	34	1755.1	5.2				ug/L	1680	Standard
Sr	88	108.3	17.5				ug/L	7	Standard
C	12	136.7	49.8				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	16.2	33.1				mg/L	3	Standard
Ho-1	165	3.3	173.2				mg/L	0	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	793.4	10.7				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		120.597	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		113.912	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1505156101S WG525374-04
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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	114.328
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	111.447
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 09, 2015

Method 6020 - Summary Report

Sample ID: L1505156101SD WG525374-05
Sample Date/Time: Monday, June 08, 2015 12:58:07
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	195932.4	2.1				ug/L	159930	Standard
	Be	9	660.0	3.5	**0.5333**	0.030	5.6	ug/L	5	Standard
	Al	27	98817.9	1.1	**1.4056**	0.021	1.5	ug/L	623	Standard
	Sc	45	82705.1	1.0				ug/L	72123	Standard
	Ti	47	3201.7	2.2	**10.0333**	0.323	3.2	ug/L	15	Standard
	V	51	69722.1	1.5	**9.4642**	0.204	2.2	ug/L	779	Standard
	Cr	52	45526.0	1.8	**5.1145**	0.175	3.4	ug/L	4182	Standard
	Cr	53	21939.2	1.4	**18.7775**	0.513	2.7	ug/L	255	Standard
	Mn	55	70100.8	1.6	**5.0892**	0.153	3.0	ug/L	870	Standard
	Co	59	17042.9	2.3	**2.0254**	0.070	3.4	ug/L	44	Standard
	Ni	60	14485.9	1.5	**5.2990**	0.150	2.8	ug/L	376	Standard
	Cu	65	14229.7	1.3	**5.0615**	0.142	2.8	ug/L	271	Standard
	Zn	66	19246.5	0.5	**11.1731**	0.217	1.9	ug/L	601	Standard
>	**Ge**	72	702771.9	1.4				ug/L	607655	Standard
	As	75	6159.5	2.7	**4.0414**	0.095	2.4	ug/L	-37	Standard
	Se	82	687.7	2.3	**4.8368**	0.051	1.0	ug/L	22	Standard
	Se-1	77	2328.5	2.0	**21.7567**	0.740	3.4	ug/L	38	Standard
>	**Ga**	71	1178.4	9.2				mg/L	38	Standard
	Rb	85	12124.9	4.3				ug/L	15	Standard
	Y	89	841226.6	3.0				ug/L	733256	Standard
>	**Rh**	103	16.7	17.3				ug/L	0	Standard
	Mo	98	31748.1	2.3	**10.2564**	0.421	4.1	ug/L	10	Standard
	Ag	107	26142.5	1.3	**4.0478**	0.124	3.1	ug/L	70	Standard
	Cd	111	696.2	9.3	**0.4804**	0.050	10.5	mg/L	2	Standard
	Cd	114	1853.5	5.7	**0.5186**	0.032	6.2	ug/L	-3	Standard
>	**In**	115	645397.8	1.7				ug/L	555851	Standard
	Sn	118	42126.8	2.6	**9.2914**	0.408	4.4	ug/L	495	Standard
	Sb	123	42220.0	1.8	**12.1363**	0.425	3.5	ug/L	41	Standard
	Ba	135	13028.3	3.1	**12.2573**	0.590	4.8	ug/L	14	Standard
	Ce	140	21.7	48.0				ug/L	18	Standard
>	**Tb**	159	835245.9	1.8				ug/L	712215	Standard
	Ho	165	10.0	86.6				ug/L	0	Standard
	Tl	203	26370.3	0.9	**4.9452**	0.101	2.0	ug/L	1	Standard
	Tl	205	26942.3	3.7	**4.8820**	0.234	4.8	ug/L	3	Standard
	Pb	206	17736.4	0.6	**5.0738**	0.087	1.7	ug/L	161	Standard
	Pb	207	15753.9	2.4	**4.9362**	0.170	3.4	ug/L	141	Standard
	Pb	208	67551.1	0.8	**5.0281**	0.096	1.9	ug/L	608	Standard
	U	238	3.3	17.3	**0.0010**	0.000	10.6	ug/L	4	Standard
>	**Bi**	209	545856.2	1.2				ug/L	481178	Standard

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Na	23	1.7	173.2				mg/L	0	Standard
Mg	24	2316.8	0.8	**5.5801**	0.101	1.8	mg/L	15	Standard
K	39	208.3	13.2	**4.5396**	0.588	13.0	mg/L	2	Standard
Ca	43	60.0	38.2	**4.0793**	2.043	50.1	mg/L	20	Standard
Fe	54	431.2	12.9	**0.0496**	0.023	46.5	mg/L	260	Standard
Fe	57	101.7	34.5	**0.0734**	0.044	60.2	mg/L	25	Standard
> **Sc-1**	45	82705.1	1.0				mg/L	72123	Standard
Cl	35	30646.3	0.8				ug/L	26728	Standard
Kr	83	1.0	100.0				ug/L	0	Standard
Br	81	1126.7	3.7				ug/L	733	Standard
P	31	18526.3	2.2				ug/L	17255	Standard
S	34	1766.8	3.2				ug/L	1680	Standard
Sr	88	110.0	55.3				ug/L	7	Standard
C	12	100.0	17.3				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.2	86.7				mg/L	3	Standard
Ho-1	165	10.0	86.6				mg/L	0	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	746.7	16.7				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		122.512	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		115.653	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		116.110
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		113.442
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1505156201
Sample Date/Time: Monday, June 08, 2015 13:05:46
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	188144.8	2.6				ug/L	159930	Standard
	Be	9	13.3	21.7	**0.0018**	0.002	124.9	ug/L	5	Standard
	Al	27	1813.4	5.2	**-0.0097**	0.001	15.4	ug/L	623	Standard
	Sc	45	80186.6	0.8				ug/L	72123	Standard
	Ti	47	15.7	14.7	**0.0078**	0.008	97.0	ug/L	15	Standard
	V	51	-1432.7	5.5	**-0.3258**	0.010	3.0	ug/L	779	Standard
	Cr	52	4894.8	2.7	**0.0537**	0.023	43.1	ug/L	4182	Standard
	Cr	53	7945.4	1.6	**6.8060**	0.172	2.5	ug/L	255	Standard
	Mn	55	1389.7	3.6	**0.0160**	0.005	28.3	ug/L	870	Standard
	Co	59	166.0	9.6	**0.0085**	0.002	25.4	ug/L	44	Standard
	Ni	60	1343.7	5.2	**0.3644**	0.031	8.6	ug/L	376	Standard
	Cu	65	1224.7	1.3	**0.2790**	0.006	2.0	ug/L	271	Standard
	Zn	66	2211.5	1.4	**0.9169**	0.032	3.5	ug/L	601	Standard
>	**Ge**	72	685156.5	1.0				ug/L	607655	Standard
	As	75	-50.0	89.8	**-0.0227**	0.030	132.1	ug/L	-37	Standard
	Se	82	43.1	19.5	**0.1238**	0.063	50.6	ug/L	22	Standard
	Se-1	77	902.4	1.3	**8.4142**	0.150	1.8	ug/L	38	Standard
>	**Ga**	71	943.4	10.4				mg/L	38	Standard
	Rb	85	20904.4	3.9				ug/L	15	Standard
	Y	89	827032.8	1.8				ug/L	733256	Standard
>	**Rh**	103	11.7	65.5				ug/L	0	Standard
	Mo	98	557.9	2.1	**0.1756**	0.003	1.8	ug/L	10	Standard
	Ag	107	78.7	11.4	**-0.0003**	0.001	424.3	ug/L	70	Standard
	Cd	111	4.5	12.7	**0.0063**	0.000	7.5	mg/L	2	Standard
	Cd	114	0.1	4438.8	**-0.0035**	0.001	28.4	ug/L	-3	Standard
>	**In**	115	632884.6	1.9				ug/L	555851	Standard
	Sn	118	618.3	7.3	**0.0314**	0.009	30.2	ug/L	495	Standard
	Sb	123	211.0	8.2	**0.0563**	0.006	10.4	ug/L	41	Standard
	Ba	135	10266.1	2.2	**9.8467**	0.410	4.2	ug/L	14	Standard
	Ce	140	5.0	0.0				ug/L	18	Standard
>	**Tb**	159	825126.5	1.8				ug/L	712215	Standard
	Ho	165	6.7	43.3				ug/L	0	Standard
	Tl	203	103.7	10.2	**0.0176**	0.002	10.2	ug/L	1	Standard
	Tl	205	118.3	12.9	**0.0215**	0.003	14.8	ug/L	3	Standard
	Pb	206	270.0	6.6	**0.0162**	0.005	29.9	ug/L	161	Standard
	Pb	207	218.7	7.3	**0.0216**	0.005	21.3	ug/L	141	Standard
	Pb	208	968.0	4.7	**0.0171**	0.004	25.3	ug/L	608	Standard
	U	238	1.0	100.0	**0.0006**	0.000	28.9	ug/L	4	Standard
>	**Bi**	209	541191.2	1.7				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	2373.5	0.6	**5.8984**	0.078	1.3	mg/L	15	Standard
K	39	261.7	4.8	**5.8945**	0.309	5.2	mg/L	2	Standard
Ca	43	95.0	29.3	**7.5098**	2.532	33.7	mg/L	20	Standard
Fe	54	323.9	17.3	**0.0121**	0.021	175.6	mg/L	260	Standard
Fe	57	56.7	22.2	**0.0196**	0.016	83.9	mg/L	25	Standard
> **Sc-1**	45	80186.6	0.8				mg/L	72123	Standard
Cl	35	29613.6	3.4				ug/L	26728	Standard
Kr	83	0.7	173.2				ug/L	0	Standard
Br	81	1390.1	11.3				ug/L	733	Standard
P	31	18010.7	3.5				ug/L	17255	Standard
S	34	1790.1	4.1				ug/L	1680	Standard
Sr	88	71.7	20.1				ug/L	7	Standard
C	12	86.7	54.5				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	13.2	116.4				mg/L	3	Standard
Ho-1	165	6.7	43.3				mg/L	0	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	2321.8	2.7				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.642	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		112.754	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.859
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		112.472
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1505156201PS WG526663-01
Sample Date/Time: Monday, June 08, 2015 13:08:57
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	184796.8	0.4				ug/L	159930	Standard
	Be	9	55173.6	1.9	**48.0675**	0.895	1.9	ug/L	5	Standard
	Al	27	1928.5	4.6	**-0.0074**	0.001	19.0	ug/L	623	Standard
	Sc	45	78900.0	2.0				ug/L	72123	Standard
	Ti	47	17.7	29.0	**0.0149**	0.017	116.3	ug/L	15	Standard
	V	51	341068.1	2.2	**48.3914**	1.444	3.0	ug/L	779	Standard
	Cr	52	383390.4	1.5	**48.9697**	1.405	2.9	ug/L	4182	Standard
	Cr	53	62471.9	1.1	**55.8263**	1.525	2.7	ug/L	255	Standard
	Mn	55	643306.1	1.2	**49.0637**	1.381	2.8	ug/L	870	Standard
	Co	59	403570.8	0.6	**49.8816**	1.088	2.2	ug/L	44	Standard
	Ni	60	127529.8	1.1	**49.5033**	1.271	2.6	ug/L	376	Standard
	Cu	65	133034.5	0.7	**50.5363**	1.142	2.3	ug/L	271	Standard
	Zn	66	80340.1	0.9	**49.7472**	1.233	2.5	ug/L	601	Standard
>	**Ge**	72	679475.3	1.6				ug/L	607655	Standard
	As	75	73268.3	1.4	**49.6165**	1.469	3.0	ug/L	-37	Standard
	Se	82	6450.1	0.6	**48.6765**	0.552	1.1	ug/L	22	Standard
	Se-1	77	5856.8	2.5	**57.2221**	2.321	4.1	ug/L	38	Standard
>	**Ga**	71	1010.0	5.7				mg/L	38	Standard
	Rb	85	20402.1	0.7				ug/L	15	Standard
	Y	89	817595.8	2.1				ug/L	733256	Standard
>	**Rh**	103	18.3	31.5				ug/L	0	Standard
	Mo	98	584.5	4.9	**0.1861**	0.011	5.7	ug/L	10	Standard
	Ag	107	306631.5	0.8	**48.9694**	1.196	2.4	ug/L	70	Standard
	Cd	111	69008.3	1.5	**48.6362**	1.510	3.1	mg/L	2	Standard
	Cd	114	168571.3	0.6	**48.8329**	0.957	2.0	ug/L	-3	Standard
>	**In**	115	627497.7	1.7				ug/L	555851	Standard
	Sn	118	615.0	6.3	**0.0318**	0.007	23.1	ug/L	495	Standard
	Sb	123	162757.5	1.6	**48.1349**	1.578	3.3	ug/L	41	Standard
	Ba	135	60536.7	1.0	**58.6167**	1.569	2.7	ug/L	14	Standard
	Ce	140	8.3	124.9				ug/L	18	Standard
>	**Tb**	159	819620.6	1.3				ug/L	712215	Standard
	Ho	165	8.3	91.7				ug/L	0	Standard
	Tl	203	254759.0	0.6	**48.4861**	0.970	2.0	ug/L	1	Standard
	Tl	205	264415.7	0.8	**48.5973**	0.776	1.6	ug/L	3	Standard
	Pb	206	165927.5	2.1	**48.6944**	1.690	3.5	ug/L	161	Standard
	Pb	207	149889.5	1.6	**48.0614**	1.273	2.6	ug/L	141	Standard
	Pb	208	630394.4	1.0	**48.0844**	1.123	2.3	ug/L	608	Standard
	U	238	260874.1	0.8	**47.9834**	1.034	2.2	ug/L	4	Standard
>	**Bi**	209	538057.8	1.4				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	2363.5	6.3	**5.9759**	0.490	8.2	mg/L	15	Standard
K	39	210.0	15.6	**4.8027**	0.779	16.2	mg/L	2	Standard
Ca	43	90.0	24.2	**7.1755**	1.973	27.5	mg/L	20	Standard
Fe	54	284.5	12.1	**-0.0017**	0.011	675.0	mg/L	260	Standard
Fe	57	88.3	21.4	**0.0620**	0.026	41.4	mg/L	25	Standard
> **Sc-1**	45	78900.0	2.0				mg/L	72123	Standard
Cl	35	29017.8	0.8				ug/L	26728	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	1410.1	9.4				ug/L	733	Standard
P	31	17541.8	1.5				ug/L	17255	Standard
S	34	1720.1	4.3				ug/L	1680	Standard
Sr	88	81.7	49.5				ug/L	7	Standard
C	12	103.3	29.6				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	6.3	93.2				mg/L	3	Standard
Ho-1	165	8.3	91.7				mg/L	0	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	2365.2	8.0				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.549	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.819	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.890
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		111.821
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1505156201SDL WG526663-02
Sample Date/Time: Monday, June 08, 2015 13:12:09
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 250
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	175539.4	0.6				ug/L	159930	Standard
	Be	9	10.0	50.0	**-0.0004**	0.005	1226.5	ug/L	5	Standard
	Al	27	1135.0	2.3	**-0.0188**	0.000	2.6	ug/L	623	Standard
	Sc	45	75271.6	2.1				ug/L	72123	Standard
	Ti	47	14.3	28.2	**0.0055**	0.014	250.3	ug/L	15	Standard
	V	51	208.1	123.1	**-0.0932**	0.038	40.5	ug/L	779	Standard
	Cr	52	4568.0	2.0	**0.0364**	0.013	34.7	ug/L	4182	Standard
	Cr	53	2530.2	2.6	**2.0791**	0.055	2.7	ug/L	255	Standard
	Mn	55	1589.4	8.1	**0.0362**	0.010	27.2	ug/L	870	Standard
	Co	59	127.7	44.5	**0.0044**	0.007	163.7	ug/L	44	Standard
	Ni	60	628.7	4.0	**0.0984**	0.010	9.8	ug/L	376	Standard
	Cu	65	532.0	7.3	**0.0256**	0.015	58.2	ug/L	271	Standard
	Zn	66	2570.6	0.2	**1.2062**	0.003	0.3	ug/L	601	Standard
>	**Ge**	72	657467.8	0.3				ug/L	607655	Standard
	As	75	-17.5	204.4	**-0.0016**	0.025	1613.1	ug/L	-37	Standard
	Se	82	25.6	29.3	**-0.0001**	0.059	57699.1	ug/L	22	Standard
	Se-1	77	245.0	1.1	**2.1047**	0.022	1.1	ug/L	38	Standard
>	**Ga**	71	218.3	9.3				mg/L	38	Standard
	Rb	85	4215.6	2.2				ug/L	15	Standard
	Y	89	788770.9	0.6				ug/L	733256	Standard
>	**Rh**	103	1.7	173.2				ug/L	0	Standard
	Mo	98	120.0	8.2	**0.0336**	0.003	10.3	ug/L	10	Standard
	Ag	107	95.7	18.6	**0.0033**	0.003	90.4	ug/L	70	Standard
	Cd	111	6.8	81.7	**0.0082**	0.004	50.6	mg/L	2	Standard
	Cd	114	18.9	121.7	**0.0022**	0.007	315.3	ug/L	-3	Standard
>	**In**	115	597052.5	0.1				ug/L	555851	Standard
	Sn	118	476.7	17.1	**0.0057**	0.020	343.6	ug/L	495	Standard
	Sb	123	478.9	22.6	**0.1432**	0.033	23.4	ug/L	41	Standard
	Ba	135	2155.5	2.1	**2.1796**	0.047	2.2	ug/L	14	Standard
	Ce	140	10.0	86.6				ug/L	18	Standard
>	**Tb**	159	772496.1	1.0				ug/L	712215	Standard
	Ho	165	8.3	34.6				ug/L	0	Standard
	Tl	203	86.3	36.9	**0.0150**	0.006	41.3	ug/L	1	Standard
	Tl	205	108.3	64.7	**0.0204**	0.013	65.0	ug/L	3	Standard
	Pb	206	252.3	11.9	**0.0141**	0.009	61.9	ug/L	161	Standard
	Pb	207	237.3	5.3	**0.0307**	0.004	13.5	ug/L	141	Standard
	Pb	208	1022.7	15.1	**0.0243**	0.012	48.4	ug/L	608	Standard
	U	238	46.7	117.7	**0.0093**	0.010	111.7	ug/L	4	Standard
>	**Bi**	209	519668.4	0.6				ug/L	481178	Standard

Sample ID: L1505156201SDL WG526663-02
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Na	23	0.0					mg/L	0	Standard
Mg	24	515.0	7.3	**1.3281**	0.080	6.0	mg/L	15	Standard
K	39	48.3	11.9	**1.1301**	0.128	11.3	mg/L	2	Standard
Ca	43	21.7	48.0	**0.8224**	1.066	129.6	mg/L	20	Standard
Fe	54	301.2	19.9	**0.0107**	0.023	214.9	mg/L	260	Standard
Fe	57	33.3	17.3	**-0.0076**	0.007	97.4	mg/L	25	Standard
> **Sc-1**	45	75271.6	2.1				mg/L	72123	Standard
Cl	35	28536.9	1.4				ug/L	26728	Standard
Kr	83	0.7	173.2				ug/L	0	Standard
Br	81	893.4	3.2				ug/L	733	Standard
P	31	17189.8	2.7				ug/L	17255	Standard
S	34	1720.1	0.6				ug/L	1680	Standard
Sr	88	26.7	43.3				ug/L	7	Standard
C	12	70.0	42.9				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.3	173.2				mg/L	3	Standard
Ho-1	165	8.3	34.6				mg/L	0	Standard
Er	166	6.7	173.2				mg/L	13	Standard
I	127	651.7	11.5				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.760	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.198	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.412
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.999
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 09, 2015

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, June 08, 2015 13:15:23
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	173191.6	3.2				ug/L	159930	Standard
	Be	9	52962.4	0.7	**49.2607**	1.287	2.6	ug/L	5	Standard
	Al	27	3001581.7	1.3	**49.5752**	1.924	3.9	ug/L	623	Standard
	Sc	45	74593.2	1.7				ug/L	72123	Standard
	Ti	47	28118.4	1.3	**94.7051**	1.609	1.7	ug/L	15	Standard
	V	51	329561.4	1.2	**48.4026**	0.344	0.7	ug/L	779	Standard
	Cr	52	362480.2	0.8	**47.9152**	0.682	1.4	ug/L	4182	Standard
	Cr	53	51336.8	1.3	**47.4478**	0.727	1.5	ug/L	255	Standard
	Mn	55	612988.6	0.5	**48.3913**	0.298	0.6	ug/L	870	Standard
	Co	59	380633.6	0.6	**48.7005**	0.149	0.3	ug/L	44	Standard
	Ni	60	119755.1	0.1	**48.1158**	0.415	0.9	ug/L	376	Standard
	Cu	65	122757.0	1.0	**48.2644**	0.575	1.2	ug/L	271	Standard
	Zn	66	75049.7	0.5	**48.0898**	0.335	0.7	ug/L	601	Standard
>	**Ge**	72	656253.1	0.9				ug/L	607655	Standard
	As	75	68648.3	0.9	**48.1194**	0.425	0.9	ug/L	-37	Standard
	Se	82	6160.8	1.7	**48.1282**	0.471	1.0	ug/L	22	Standard
	Se-1	77	4829.4	3.5	**48.7781**	1.689	3.5	ug/L	38	Standard
>	**Ga**	71	51.7	31.1				mg/L	38	Standard
	Rb	85	876.7	4.3				ug/L	15	Standard
	Y	89	785605.5	1.6				ug/L	733256	Standard
>	**Rh**	103	20.0	25.0				ug/L	0	Standard
	Mo	98	287984.1	0.6	**99.3856**	2.054	2.1	ug/L	10	Standard
	Ag	107	293188.6	0.7	**48.6039**	0.866	1.8	ug/L	70	Standard
	Cd	111	66862.9	1.2	**48.9131**	0.911	1.9	mg/L	2	Standard
	Cd	114	160890.3	0.3	**48.3830**	0.706	1.5	ug/L	-3	Standard
>	**In**	115	604446.1	1.7				ug/L	555851	Standard
	Sn	118	198554.4	1.6	**47.1857**	1.115	2.4	ug/L	495	Standard
	Sb	123	158515.8	0.8	**48.6578**	0.750	1.5	ug/L	41	Standard
	Ba	135	48494.5	1.5	**48.7367**	0.880	1.8	ug/L	14	Standard
	Ce	140	23.3	44.6				ug/L	18	Standard
>	**Tb**	159	786473.9	2.3				ug/L	712215	Standard
	Ho	165	3.3	86.6				ug/L	0	Standard
	Tl	203	244400.4	0.5	**48.6359**	1.230	2.5	ug/L	1	Standard
	Tl	205	254944.0	1.6	**49.0049**	1.837	3.7	ug/L	3	Standard
	Pb	206	158861.8	0.6	**48.7347**	0.811	1.7	ug/L	161	Standard
	Pb	207	144780.1	0.1	**48.5370**	1.085	2.2	ug/L	141	Standard
	Pb	208	614047.0	1.3	**48.9771**	1.574	3.2	ug/L	608	Standard
	U	238	252672.5	1.7	**48.6033**	1.872	3.9	ug/L	4	Standard
>	**Bi**	209	514687.9	2.2				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	1911.8	4.5	**5.1030**	0.279	5.5	mg/L	15	Standard
K	39	251.7	12.8	**6.0886**	0.705	11.6	mg/L	2	Standard
Ca	43	46.7	12.4	**3.3344**	0.530	15.9	mg/L	20	Standard
Fe	54	12095.0	0.4	**5.0221**	0.074	1.5	mg/L	260	Standard
Fe	57	3742.1	0.6	**5.0952**	0.071	1.4	mg/L	25	Standard
> **Sc-1**	45	74593.2	1.7				mg/L	72123	Standard
Cl	35	28575.6	1.5				ug/L	26728	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	776.7	32.1				ug/L	733	Standard
P	31	17326.6	2.8				ug/L	17255	Standard
S	34	1670.1	3.2				ug/L	1680	Standard
Sr	88	5.0	100.0				ug/L	7	Standard
C	12	66.7	37.7				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	13.0	43.3				mg/L	3	Standard
Ho-1	165	3.3	86.6				mg/L	0	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	188.3	20.1				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	98.521		
Al	27	99.150		
Sc	45			
Ti	47	94.705		
V	51	96.805		
Cr	52	95.830		
Cr	53			
Mn	55	96.783		
Co	59	97.401		
Ni	60	96.232		
Cu	65	96.529		
Zn	66	96.180		
> Ge	72		107.998	
As	75	96.239		
Se	82	96.256		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
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Rb	85			
Y	89			
Rh	103			
Mo	98	99.386		
Ag	107	97.208		
Cd	111	97.826		
Cd	114			
In	115			108.742
Sn	118	94.371		
Sb	123	97.316		
Ba	135	97.473		
Ce	140			
Tb	159			
Ho	165			
Tl	203	97.272		
Tl	205			
Pb	206			
Pb	207			
Pb	208	97.954		
U	238	97.207		
Bi	209			106.964
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, June 08, 2015 13:18:34
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	177688.1	2.8				ug/L	159930	Standard
	Be	9	30.0	16.7	**0.0177**	0.005	28.3	ug/L	5	Standard
	Al	27	861.7	41.1	**-0.0234**	0.006	24.8	ug/L	623	Standard
	Sc	45	75053.8	0.6				ug/L	72123	Standard
	Ti	47	13.7	18.4	**0.0029**	0.009	298.1	ug/L	15	Standard
	V	51	581.7	20.7	**-0.0392**	0.016	40.7	ug/L	779	Standard
	Cr	52	3972.9	1.0	**-0.0473**	0.008	16.7	ug/L	4182	Standard
	Cr	53	600.0	9.3	**0.2840**	0.050	17.7	ug/L	255	Standard
	Mn	55	897.7	0.8	**-0.0190**	0.002	8.3	ug/L	870	Standard
	Co	59	90.7	31.4	**-0.0004**	0.003	820.2	ug/L	44	Standard
	Ni	60	407.7	4.5	**0.0081**	0.005	59.9	ug/L	376	Standard
	Cu	65	336.3	8.7	**-0.0524**	0.014	26.0	ug/L	271	Standard
	Zn	66	612.0	2.0	**-0.0614**	0.007	11.1	ug/L	601	Standard
>	**Ge**	72	662837.9	1.8				ug/L	607655	Standard
	As	75	-26.3	38.8	**-0.0075**	0.007	89.1	ug/L	-37	Standard
	Se	82	17.6	20.4	**-0.0633**	0.029	46.4	ug/L	22	Standard
	Se-1	77	53.7	14.1	**0.1558**	0.073	46.8	ug/L	38	Standard
>	**Ga**	71	40.0	12.5				mg/L	38	Standard
	Rb	85	23.3	44.6				ug/L	15	Standard
	Y	89	791666.5	1.4				ug/L	733256	Standard
>	**Rh**	103	3.3	86.6				ug/L	0	Standard
	Mo	98	81.3	14.7	**0.0200**	0.004	21.8	ug/L	10	Standard
	Ag	107	134.0	37.4	**0.0095**	0.008	82.7	ug/L	70	Standard
	Cd	111	16.8	60.1	**0.0154**	0.007	47.0	mg/L	2	Standard
	Cd	114	34.7	96.6	**0.0069**	0.010	146.2	ug/L	-3	Standard
>	**In**	115	600928.2	2.0				ug/L	555851	Standard
	Sn	118	510.0	6.4	**0.0131**	0.010	76.2	ug/L	495	Standard
	Sb	123	142.6	4.8	**0.0384**	0.002	4.9	ug/L	41	Standard
	Ba	135	25.7	53.2	**0.0120**	0.013	111.3	ug/L	14	Standard
	Ce	140	16.7	62.4				ug/L	18	Standard
>	**Tb**	159	780237.5	0.7				ug/L	712215	Standard
	Ho	165	8.3	34.6				ug/L	0	Standard
	Tl	203	60.7	71.4	**0.0098**	0.008	85.0	ug/L	1	Standard
	Tl	205	31.7	55.5	**0.0058**	0.003	56.1	ug/L	3	Standard
	Pb	206	199.7	11.7	**-0.0024**	0.007	282.7	ug/L	161	Standard
	Pb	207	168.3	9.7	**0.0073**	0.005	65.4	ug/L	141	Standard
	Pb	208	726.0	4.1	**0.0005**	0.002	376.9	ug/L	608	Standard
	U	238	26.0	55.9	**0.0053**	0.003	50.5	ug/L	4	Standard
>	**Bi**	209	523826.8	1.1				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	11.7	89.2	**-0.0136**	0.028	205.6	mg/L	15	Standard
K	39	1.7	173.2	**0.0045**	0.070	1560.3	mg/L	2	Standard
Ca	43	16.7	34.6	**0.3206**	0.578	180.4	mg/L	20	Standard
Fe	54	274.4	12.7	**0.0000**	0.014	37122.9	mg/L	260	Standard
Fe	57	28.3	20.4	**-0.0143**	0.008	54.7	mg/L	25	Standard
> **Sc-1**	45	75053.8	0.6				mg/L	72123	Standard
Cl	35	28421.3	0.2				ug/L	26728	Standard
Kr	83	1.3	86.6				ug/L	0	Standard
Br	81	760.0	9.2				ug/L	733	Standard
P	31	18102.5	2.5				ug/L	17255	Standard
S	34	1726.8	8.9				ug/L	1680	Standard
Sr	88	10.0	50.0				ug/L	7	Standard
C	12	50.0	40.0				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.9	48.5				mg/L	3	Standard
Ho-1	165	8.3	34.6				mg/L	0	Standard
Er	166	10.0	173.2				mg/L	13	Standard
I	127	131.7	13.3				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.081	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.110
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.864
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Monday, June 08, 2015 13:20:51
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Approved: June 09, 2015

Method 6020 - Summary Report

Sample ID: PBW 13 WG525730-02
Sample Date/Time: Monday, June 08, 2015 13:21:47
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	182951.3	0.6				ug/L	159930	Standard
	Be	9	18.3	56.8	**0.0066**	0.009	140.1	ug/L	5	Standard
	Al	27	1050.0	14.2	**-0.0209**	0.002	11.0	ug/L	623	Standard
	Sc	45	78950.2	1.2				ug/L	72123	Standard
	Ti	47	11.3	13.5	**-0.0061**	0.005	81.3	ug/L	15	Standard
	V	51	-941.4	19.5	**-0.2569**	0.025	9.9	ug/L	779	Standard
	Cr	52	4593.0	2.7	**0.0166**	0.014	87.5	ug/L	4182	Standard
	Cr	53	5699.4	9.8	**4.8190**	0.485	10.1	ug/L	255	Standard
	Mn	55	1547.1	5.1	**0.0283**	0.006	23.0	ug/L	870	Standard
	Co	59	83.3	38.3	**-0.0016**	0.004	245.4	ug/L	44	Standard
	Ni	60	472.3	8.1	**0.0283**	0.014	50.2	ug/L	376	Standard
	Cu	65	364.0	3.8	**-0.0459**	0.006	13.6	ug/L	271	Standard
	Zn	66	2574.6	1.4	**1.1460**	0.010	0.9	ug/L	601	Standard
>	**Ge**	72	683240.5	0.8				ug/L	607655	Standard
	As	75	-66.5	28.8	**-0.0341**	0.013	37.3	ug/L	-37	Standard
	Se	82	16.0	53.5	**-0.0796**	0.065	82.1	ug/L	22	Standard
	Se-1	77	561.7	3.3	**5.1072**	0.181	3.5	ug/L	38	Standard
>	**Ga**	71	26.7	28.6				mg/L	38	Standard
	Rb	85	38.3	39.8				ug/L	15	Standard
	Y	89	810272.7	2.4				ug/L	733256	Standard
>	**Rh**	103	1.7	173.2				ug/L	0	Standard
	Mo	98	36.9	43.4	**0.0040**	0.005	131.9	ug/L	10	Standard
	Ag	107	94.7	25.6	**0.0024**	0.004	159.0	ug/L	70	Standard
	Cd	111	3.0	33.8	**0.0052**	0.001	13.2	mg/L	2	Standard
	Cd	114	6.2	125.5	**-0.0017**	0.002	133.7	ug/L	-3	Standard
>	**In**	115	625188.1	1.1				ug/L	555851	Standard
	Sn	118	513.3	9.1	**0.0090**	0.010	112.8	ug/L	495	Standard
	Sb	123	88.5	11.0	**0.0207**	0.003	12.9	ug/L	41	Standard
	Ba	135	23.3	17.8	**0.0089**	0.004	43.2	ug/L	14	Standard
	Ce	140	8.3	91.7				ug/L	18	Standard
>	**Tb**	159	805122.9	2.0				ug/L	712215	Standard
	Ho	165	10.0	50.0				ug/L	0	Standard
	Tl	203	49.3	38.0	**0.0073**	0.004	49.4	ug/L	1	Standard
	Tl	205	46.7	30.9	**0.0084**	0.003	32.3	ug/L	3	Standard
	Pb	206	288.0	8.4	**0.0215**	0.007	33.2	ug/L	161	Standard
	Pb	207	265.7	13.5	**0.0367**	0.012	33.0	ug/L	141	Standard
	Pb	208	1018.7	1.0	**0.0209**	0.001	3.9	ug/L	608	Standard
	U	238	13.7	110.1	**0.0030**	0.003	94.0	ug/L	4	Standard
>	**Bi**	209	541039.2	0.9				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	11.7	65.5	**-0.0151**	0.020	131.4	mg/L	15	Standard
K	39	1.7	173.2	**0.0022**	0.066	3006.2	mg/L	2	Standard
Ca	43	15.0	33.3	**0.0778**	0.467	599.6	mg/L	20	Standard
Fe	54	327.6	5.9	**0.0157**	0.007	42.1	mg/L	260	Standard
Fe	57	28.3	73.5	**-0.0159**	0.027	171.9	mg/L	25	Standard
> **Sc-1**	45	78950.2	1.2				mg/L	72123	Standard
Cl	35	29978.3	0.2				ug/L	26728	Standard
Kr	83	0.7	86.6				ug/L	0	Standard
Br	81	846.7	12.6				ug/L	733	Standard
P	31	18426.2	0.9				ug/L	17255	Standard
S	34	1860.1	5.2				ug/L	1680	Standard
Sr	88	5.0	100.0				ug/L	7	Standard
C	12	56.7	53.9				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.0	105.0				mg/L	3	Standard
Ho-1	165	10.0	50.0				mg/L	0	Standard
Er	166	20.0	0.0				mg/L	13	Standard
I	127	125.0	14.4				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.395	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		112.439	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.474
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		112.441
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 13 WG525730-02
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Method 6020 - Summary Report

Sample ID: LCSW 13 WG525730-03
Sample Date/Time: Monday, June 08, 2015 13:24:59
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	187015.8	2.3				ug/L	159930	Standard
	Be	9	510.0	11.6	**0.4304**	0.060	14.0	ug/L	5	Standard
	Al	27	88318.3	0.5	**1.3140**	0.031	2.4	ug/L	623	Standard
	Sc	45	77114.2	2.7				ug/L	72123	Standard
	Ti	47	2947.0	1.2	**9.8101**	0.186	1.9	ug/L	15	Standard
	V	51	62535.3	0.3	**9.0134**	0.137	1.5	ug/L	779	Standard
	Cr	52	40714.6	0.6	**4.8307**	0.098	2.0	ug/L	4182	Standard
	Cr	53	17732.1	8.5	**16.0818**	1.360	8.5	ug/L	255	Standard
	Mn	55	63409.4	0.9	**4.8871**	0.093	1.9	ug/L	870	Standard
	Co	59	15487.6	1.7	**1.9551**	0.055	2.8	ug/L	44	Standard
	Ni	60	12528.8	0.5	**4.8561**	0.036	0.7	ug/L	376	Standard
	Cu	65	12965.5	0.6	**4.8935**	0.077	1.6	ug/L	271	Standard
	Zn	66	17198.8	0.7	**10.5845**	0.130	1.2	ug/L	601	Standard
>	**Ge**	72	661426.3	1.2				ug/L	607655	Standard
	As	75	5438.4	2.2	**3.7917**	0.038	1.0	ug/L	-37	Standard
	Se	82	508.3	1.8	**3.7559**	0.027	0.7	ug/L	22	Standard
	Se-1	77	1707.1	3.2	**16.8603**	0.658	3.9	ug/L	38	Standard
>	**Ga**	71	40.0	33.1				mg/L	38	Standard
	Rb	85	111.7	15.7				ug/L	15	Standard
	Y	89	789551.7	1.3				ug/L	733256	Standard
>	**Rh**	103	10.0	100.0				ug/L	0	Standard
	Mo	98	28601.5	1.5	**9.5712**	0.092	1.0	ug/L	10	Standard
	Ag	107	23927.5	1.1	**3.8377**	0.010	0.2	ug/L	70	Standard
	Cd	111	648.3	1.6	**0.4634**	0.003	0.7	mg/L	2	Standard
	Cd	114	1569.6	18.4	**0.4550**	0.088	19.3	ug/L	-3	Standard
>	**In**	115	622718.3	1.0				ug/L	555851	Standard
	Sn	118	38669.3	1.2	**8.8296**	0.048	0.5	ug/L	495	Standard
	Sb	123	38370.2	0.8	**11.4266**	0.042	0.4	ug/L	41	Standard
	Ba	135	9472.3	1.0	**9.2279**	0.051	0.5	ug/L	14	Standard
	Ce	140	21.7	35.3				ug/L	18	Standard
>	**Tb**	159	801166.8	0.7				ug/L	712215	Standard
	Ho	165	11.7	65.5				ug/L	0	Standard
	Tl	203	24317.2	0.4	**4.6874**	0.061	1.3	ug/L	1	Standard
	Tl	205	25461.4	3.2	**4.7407**	0.120	2.5	ug/L	3	Standard
	Pb	206	16523.0	0.8	**4.8561**	0.074	1.5	ug/L	161	Standard
	Pb	207	14634.1	0.6	**4.7105**	0.033	0.7	ug/L	141	Standard
	Pb	208	62482.3	0.8	**4.7779**	0.069	1.4	ug/L	608	Standard
	U	238	9.0	72.9	**0.0021**	0.001	56.7	ug/L	4	Standard
>	**Bi**	209	531008.1	1.3				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	213.3	1.4	**0.5109**	0.021	4.2	mg/L	15	Standard
K	39	25.0	52.9	**0.5570**	0.318	57.1	mg/L	2	Standard
Ca	43	23.3	44.6	**0.9162**	0.993	108.4	mg/L	20	Standard
Fe	54	394.9	12.8	**0.0464**	0.019	41.5	mg/L	260	Standard
Fe	57	61.7	32.8	**0.0294**	0.028	96.6	mg/L	25	Standard
> **Sc-1**	45	77114.2	2.7				mg/L	72123	Standard
Cl	35	29171.4	0.3				ug/L	26728	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	696.7	17.5				ug/L	733	Standard
P	31	17421.7	2.9				ug/L	17255	Standard
S	34	1815.1	2.4				ug/L	1680	Standard
Sr	88	61.7	32.8				ug/L	7	Standard
C	12	60.0	28.9				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	15.5	72.7				mg/L	3	Standard
Ho-1	165	11.7	65.5				mg/L	0	Standard
Er	166	23.3	89.2				mg/L	13	Standard
I	127	156.7	11.2				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.936	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.849	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.030
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.356
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: FBLANK 13 WG525730-04
Sample Date/Time: Monday, June 08, 2015 13:28:10
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	181488.0	3.5				ug/L	159930	Standard
	Be	9	11.7	89.2	**0.0008**	0.009	1159.3	ug/L	5	Standard
	Al	27	678.3	10.0	**-0.0266**	0.001	4.0	ug/L	623	Standard
	Sc	45	77889.7	1.9				ug/L	72123	Standard
	Ti	47	17.7	26.7	**0.0152**	0.015	97.8	ug/L	15	Standard
	V	51	-1322.9	21.7	**-0.3131**	0.037	11.7	ug/L	779	Standard
	Cr	52	4616.0	5.5	**0.0279**	0.018	64.0	ug/L	4182	Standard
	Cr	53	8155.5	5.5	**7.1149**	0.204	2.9	ug/L	255	Standard
	Mn	55	1101.7	2.5	**-0.0044**	0.001	20.0	ug/L	870	Standard
	Co	59	83.0	28.2	**-0.0015**	0.003	183.0	ug/L	44	Standard
	Ni	60	446.0	7.2	**0.0206**	0.009	45.8	ug/L	376	Standard
	Cu	65	324.7	6.3	**-0.0592**	0.004	7.4	ug/L	271	Standard
	Zn	66	2170.8	4.0	**0.9146**	0.019	2.0	ug/L	601	Standard
>	**Ge**	72	673429.7	2.9				ug/L	607655	Standard
	As	75	43.8	98.9	**0.0400**	0.029	72.2	ug/L	-37	Standard
	Se	82	18.7	32.0	**-0.0586**	0.042	71.6	ug/L	22	Standard
	Se-1	77	776.4	5.1	**7.3144**	0.217	3.0	ug/L	38	Standard
>	**Ga**	71	58.3	43.1				mg/L	38	Standard
	Rb	85	13.3	78.1				ug/L	15	Standard
	Y	89	799429.1	4.2				ug/L	733256	Standard
>	**Rh**	103	1.7	173.2				ug/L	0	Standard
	Mo	98	35.9	56.7	**0.0039**	0.007	175.1	ug/L	10	Standard
	Ag	107	99.7	29.1	**0.0035**	0.005	134.8	ug/L	70	Standard
	Cd	111	1.6	93.4	**0.0043**	0.001	26.1	mg/L	2	Standard
	Cd	114	16.4	83.6	**0.0013**	0.004	302.6	ug/L	-3	Standard
>	**In**	115	614833.7	2.4				ug/L	555851	Standard
	Sn	118	506.7	4.4	**0.0094**	0.004	42.2	ug/L	495	Standard
	Sb	123	78.2	43.9	**0.0179**	0.010	56.3	ug/L	41	Standard
	Ba	135	19.3	10.8	**0.0053**	0.002	30.6	ug/L	14	Standard
	Ce	140	8.3	91.7				ug/L	18	Standard
>	**Tb**	159	793739.4	2.4				ug/L	712215	Standard
	Ho	165	1.7	173.2				ug/L	0	Standard
	Tl	203	48.0	57.9	**0.0073**	0.005	74.0	ug/L	1	Standard
	Tl	205	55.0	32.8	**0.0101**	0.003	31.5	ug/L	3	Standard
	Pb	206	229.7	15.4	**0.0060**	0.009	156.2	ug/L	161	Standard
	Pb	207	210.7	18.6	**0.0206**	0.012	60.5	ug/L	141	Standard
	Pb	208	881.0	2.3	**0.0120**	0.001	11.5	ug/L	608	Standard
	U	238	5.0	124.9	**0.0014**	0.001	85.3	ug/L	4	Standard
>	**Bi**	209	528392.8	2.2				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	16.7	17.3	**-0.0020**	0.007	340.8	mg/L	15	Standard
K	39	1.7	173.2	**0.0021**	0.066	3146.9	mg/L	2	Standard
Ca	43	26.7	28.6	**1.2221**	0.739	60.5	mg/L	20	Standard
Fe	54	311.0	21.2	**0.0106**	0.025	240.9	mg/L	260	Standard
Fe	57	26.7	21.7	**-0.0178**	0.008	43.3	mg/L	25	Standard
> **Sc-1**	45	77889.7	1.9				mg/L	72123	Standard
Cl	35	29262.9	3.7				ug/L	26728	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	683.3	19.1				ug/L	733	Standard
P	31	18059.1	4.4				ug/L	17255	Standard
S	34	1676.8	6.6				ug/L	1680	Standard
Sr	88	10.0	50.0				ug/L	7	Standard
C	12	43.3	35.3				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.0	113.3				mg/L	3	Standard
Ho-1	165	1.7	173.2				mg/L	0	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	125.0	22.3				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.480	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.824	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.611
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.812
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: FBLANK 13 WG525730-04
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Method 6020 - Summary Report

Sample ID: FBLANK 13 WG525558-01
Sample Date/Time: Monday, June 08, 2015 13:31:22
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	191331.2	3.0				ug/L	159930	Standard
	Be	9	18.3	56.8	**0.0058**	0.008	144.1	ug/L	5	Standard
	Al	27	753.4	13.6	**-0.0260**	0.001	5.7	ug/L	623	Standard
	Sc	45	81753.3	0.2				ug/L	72123	Standard
	Ti	47	15.7	28.8	**0.0060**	0.014	228.6	ug/L	15	Standard
	V	51	-1367.3	9.0	**-0.3101**	0.018	5.8	ug/L	779	Standard
	Cr	52	5020.5	2.0	**0.0475**	0.011	22.2	ug/L	4182	Standard
	Cr	53	8143.9	1.9	**6.7318**	0.100	1.5	ug/L	255	Standard
	Mn	55	1041.4	3.9	**-0.0131**	0.004	27.6	ug/L	870	Standard
	Co	59	54.3	10.5	**-0.0055**	0.001	12.1	ug/L	44	Standard
	Ni	60	481.7	2.9	**0.0250**	0.005	18.9	ug/L	376	Standard
	Cu	65	362.0	3.6	**-0.0518**	0.005	10.5	ug/L	271	Standard
	Zn	66	3466.1	1.4	**1.6200**	0.028	1.7	ug/L	601	Standard
>	**Ge**	72	709596.4	0.9				ug/L	607655	Standard
	As	75	39.2	84.7	**0.0360**	0.022	59.7	ug/L	-37	Standard
	Se	82	20.8	12.5	**-0.0496**	0.020	40.6	ug/L	22	Standard
	Se-1	77	807.7	1.4	**7.2192**	0.070	1.0	ug/L	38	Standard
>	**Ga**	71	35.0	65.5				mg/L	38	Standard
	Rb	85	21.7	35.3				ug/L	15	Standard
	Y	89	843197.4	1.1				ug/L	733256	Standard
>	**Rh**	103	1.7	173.2				ug/L	0	Standard
	Mo	98	12.9	47.3	**-0.0041**	0.002	48.8	ug/L	10	Standard
	Ag	107	79.7	9.3	**-0.0004**	0.001	311.5	ug/L	70	Standard
	Cd	111	2.3	99.6	**0.0047**	0.002	33.9	mg/L	2	Standard
	Cd	114	7.4	76.5	**-0.0014**	0.002	110.2	ug/L	-3	Standard
>	**In**	115	644674.1	0.5				ug/L	555851	Standard
	Sn	118	470.0	10.1	**-0.0042**	0.011	262.8	ug/L	495	Standard
	Sb	123	54.3	15.7	**0.0101**	0.002	24.1	ug/L	41	Standard
	Ba	135	15.0	40.6	**0.0003**	0.006	1714.8	ug/L	14	Standard
	Ce	140	15.0	33.3				ug/L	18	Standard
>	**Tb**	159	838579.8	1.2				ug/L	712215	Standard
	Ho	165	8.3	34.6				ug/L	0	Standard
	Tl	203	27.7	15.0	**0.0031**	0.001	26.1	ug/L	1	Standard
	Tl	205	43.3	81.0	**0.0075**	0.006	83.1	ug/L	3	Standard
	Pb	206	213.3	4.4	**-0.0020**	0.003	146.9	ug/L	161	Standard
	Pb	207	191.3	3.7	**0.0112**	0.002	16.4	ug/L	141	Standard
	Pb	208	826.0	1.9	**0.0045**	0.001	22.6	ug/L	608	Standard
	U	238	5.3	142.0	**0.0014**	0.001	97.2	ug/L	4	Standard
>	**Bi**	209	556680.3	0.7				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	1083.4	9.3	**2.6161**	0.253	9.7	mg/L	15	Standard
K	39	5.0	0.0	**0.0750**	0.000	0.3	mg/L	2	Standard
Ca	43	16.7	45.8	**0.1835**	0.699	380.9	mg/L	20	Standard
Fe	54	320.9	8.6	**0.0086**	0.010	122.1	mg/L	260	Standard
Fe	57	26.7	28.6	**-0.0195**	0.010	49.4	mg/L	25	Standard
> **Sc-1**	45	81753.3	0.2				mg/L	72123	Standard
Cl	35	30827.3	1.1				ug/L	26728	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	836.7	9.6				ug/L	733	Standard
P	31	19118.7	4.5				ug/L	17255	Standard
S	34	1853.4	5.5				ug/L	1680	Standard
Sr	88	6.7	43.3				ug/L	7	Standard
C	12	63.3	63.8				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.7	181.8				mg/L	3	Standard
Ho-1	165	8.3	34.6				mg/L	0	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	123.3	29.9				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.635	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		116.776	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		115.980
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		115.691
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1505162401 WG525730-01
Sample Date/Time: Monday, June 08, 2015 13:34:33
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	183083.0	1.4				ug/L	159930	Standard
	Be	9	16.7	45.8	**0.0050**	0.006	128.7	ug/L	5	Standard
	Al	27	5922.8	4.5	**0.0553**	0.004	6.8	ug/L	623	Standard
	Sc	45	78461.0	2.1				ug/L	72123	Standard
	Ti	47	21.3	35.2	**0.0263**	0.024	92.9	ug/L	15	Standard
	V	51	-1222.0	17.0	**-0.2965**	0.030	10.0	ug/L	779	Standard
	Cr	52	4810.4	1.4	**0.0439**	0.007	16.3	ug/L	4182	Standard
	Cr	53	7780.3	7.6	**6.6704**	0.515	7.7	ug/L	255	Standard
	Mn	55	26205.0	0.6	**1.8995**	0.015	0.8	ug/L	870	Standard
	Co	59	102.3	10.9	**0.0007**	0.001	204.3	ug/L	44	Standard
	Ni	60	511.3	8.3	**0.0433**	0.017	38.9	ug/L	376	Standard
	Cu	65	361.0	3.9	**-0.0472**	0.006	11.9	ug/L	271	Standard
	Zn	66	3259.7	1.4	**1.5698**	0.025	1.6	ug/L	601	Standard
>	**Ge**	72	683873.3	0.2				ug/L	607655	Standard
	As	75	-130.4	31.3	**-0.0770**	0.028	35.8	ug/L	-37	Standard
	Se	82	21.5	30.4	**-0.0385**	0.049	127.5	ug/L	22	Standard
	Se-1	77	785.7	2.2	**7.2902**	0.167	2.3	ug/L	38	Standard
>	**Ga**	71	36.7	7.9				mg/L	38	Standard
	Rb	85	93.3	24.2				ug/L	15	Standard
	Y	89	811077.1	1.7				ug/L	733256	Standard
>	**Rh**	103	3.3	86.6				ug/L	0	Standard
	Mo	98	19.9	21.9	**-0.0016**	0.001	86.3	ug/L	10	Standard
	Ag	107	81.0	4.5	**0.0003**	0.001	268.0	ug/L	70	Standard
	Cd	111	0.3	184.8	**0.0033**	0.000	12.3	mg/L	2	Standard
	Cd	114	2.0	446.9	**-0.0029**	0.003	92.2	ug/L	-3	Standard
>	**In**	115	622973.8	0.9				ug/L	555851	Standard
	Sn	118	545.0	27.8	**0.0167**	0.035	209.7	ug/L	495	Standard
	Sb	123	39.7	24.7	**0.0062**	0.003	46.9	ug/L	41	Standard
	Ba	135	115.3	11.3	**0.0987**	0.012	12.4	ug/L	14	Standard
	Ce	140	16.7	75.5				ug/L	18	Standard
>	**Tb**	159	808101.8	1.1				ug/L	712215	Standard
	Ho	165	6.7	114.6				ug/L	0	Standard
	Tl	203	33.0	5.2	**0.0043**	0.000	8.4	ug/L	1	Standard
	Tl	205	38.3	52.7	**0.0069**	0.004	53.6	ug/L	3	Standard
	Pb	206	254.3	3.8	**0.0122**	0.004	28.8	ug/L	161	Standard
	Pb	207	229.0	2.9	**0.0254**	0.002	8.0	ug/L	141	Standard
	Pb	208	932.7	1.6	**0.0149**	0.001	7.8	ug/L	608	Standard
	U	238	2.0	86.6	**0.0008**	0.000	39.5	ug/L	4	Standard
>	**Bi**	209	537228.2	0.9				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	1005.0	1.7	**2.5270**	0.015	0.6	mg/L	15	Standard
K	39	1.7	173.2	**0.0031**	0.068	2161.0	mg/L	2	Standard
Ca	43	21.7	48.0	**0.7180**	0.970	135.1	mg/L	20	Standard
Fe	54	261.0	8.6	**-0.0105**	0.007	71.4	mg/L	260	Standard
Fe	57	30.0	60.1	**-0.0134**	0.024	178.7	mg/L	25	Standard
> **Sc-1**	45	78461.0	2.1				mg/L	72123	Standard
Cl	35	29896.8	1.5				ug/L	26728	Standard
Kr	83	1.0	100.0				ug/L	0	Standard
Br	81	846.7	14.2				ug/L	733	Standard
P	31	18915.1	2.1				ug/L	17255	Standard
S	34	1805.1	8.7				ug/L	1680	Standard
Sr	88	3.3	86.6				ug/L	7	Standard
C	12	83.3	36.7				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.4	106.9				mg/L	3	Standard
Ho-1	165	6.7	114.6				mg/L	0	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	913.4	4.3				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.477	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		112.543	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.076
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		111.649
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1505162401S WG525730-05
Sample Date/Time: Monday, June 08, 2015 13:37:45
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	203019.7	1.7				ug/L	159930	Standard
	Be	9	608.3	6.4	**0.4733**	0.037	7.8	ug/L	5	Standard
	Al	27	101737.1	0.4	**1.3964**	0.029	2.1	ug/L	623	Standard
	Sc	45	82939.7	1.4				ug/L	72123	Standard
	Ti	47	3204.7	1.1	**9.8664**	0.055	0.6	ug/L	15	Standard
	V	51	69317.0	1.1	**9.2439**	0.175	1.9	ug/L	779	Standard
	Cr	52	45076.0	0.8	**4.9601**	0.082	1.6	ug/L	4182	Standard
	Cr	53	21501.9	2.9	**18.0700**	0.395	2.2	ug/L	255	Standard
	Mn	55	95127.4	0.7	**6.8152**	0.063	0.9	ug/L	870	Standard
	Co	59	17010.5	0.8	**1.9861**	0.032	1.6	ug/L	44	Standard
	Ni	60	13782.9	0.8	**4.9437**	0.010	0.2	ug/L	376	Standard
	Cu	65	14135.3	0.6	**4.9360**	0.075	1.5	ug/L	271	Standard
	Zn	66	19767.9	1.3	**11.2808**	0.171	1.5	ug/L	601	Standard
>	**Ge**	72	715092.5	0.8				ug/L	607655	Standard
	As	75	5977.2	2.1	**3.8551**	0.102	2.7	ug/L	-37	Standard
	Se	82	550.1	2.7	**3.7595**	0.088	2.3	ug/L	22	Standard
	Se-1	77	1990.5	4.0	**18.2076**	0.606	3.3	ug/L	38	Standard
>	**Ga**	71	73.3	14.2				mg/L	38	Standard
	Rb	85	190.0	4.6				ug/L	15	Standard
	Y	89	841557.2	2.0				ug/L	733256	Standard
>	**Rh**	103	3.3	173.2				ug/L	0	Standard
	Mo	98	31252.5	1.5	**9.9551**	0.232	2.3	ug/L	10	Standard
	Ag	107	26027.0	1.0	**3.9737**	0.061	1.5	ug/L	70	Standard
	Cd	111	689.4	2.2	**0.4689**	0.007	1.6	mg/L	2	Standard
	Cd	114	1724.2	6.5	**0.4753**	0.028	5.8	ug/L	-3	Standard
>	**In**	115	654313.8	1.0				ug/L	555851	Standard
	Sn	118	42225.4	2.0	**9.1805**	0.174	1.9	ug/L	495	Standard
	Sb	123	41362.0	0.8	**11.7234**	0.153	1.3	ug/L	41	Standard
	Ba	135	10426.6	1.1	**9.6682**	0.134	1.4	ug/L	14	Standard
	Ce	140	16.7	45.8				ug/L	18	Standard
>	**Tb**	159	843044.4	1.2				ug/L	712215	Standard
	Ho	165	6.7	43.3				ug/L	0	Standard
	Tl	203	26380.3	0.8	**4.8362**	0.080	1.7	ug/L	1	Standard
	Tl	205	27221.1	0.5	**4.8208**	0.055	1.1	ug/L	3	Standard
	Pb	206	17684.6	1.6	**4.9443**	0.116	2.3	ug/L	161	Standard
	Pb	207	15579.0	1.6	**4.7695**	0.052	1.1	ug/L	141	Standard
	Pb	208	66689.7	0.4	**4.8507**	0.047	1.0	ug/L	608	Standard
	U	238	2.7	142.0	**0.0009**	0.001	73.1	ug/L	4	Standard
>	**Bi**	209	558335.8	0.9				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	1343.4	12.0	**3.2067**	0.382	11.9	mg/L	15	Standard
K	39	25.0	60.0	**0.5104**	0.323	63.3	mg/L	2	Standard
Ca	43	23.3	32.7	**0.7570**	0.663	87.5	mg/L	20	Standard
Fe	54	432.1	7.1	**0.0492**	0.010	21.0	mg/L	260	Standard
Fe	57	38.3	61.6	**-0.0053**	0.030	567.8	mg/L	25	Standard
> **Sc-1**	45	82939.7	1.4				mg/L	72123	Standard
Cl	35	31122.6	1.3				ug/L	26728	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	776.7	13.2				ug/L	733	Standard
P	31	19123.7	3.8				ug/L	17255	Standard
S	34	1746.8	0.6				ug/L	1680	Standard
Sr	88	80.0	16.5				ug/L	7	Standard
C	12	106.7	44.3				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.3	93.2				mg/L	3	Standard
Ho-1	165	6.7	43.3				mg/L	0	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	765.0	2.8				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		126.943	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		117.681	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		117.714
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		116.035
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1505162401SD WG525730-06
Sample Date/Time: Monday, June 08, 2015 13:40:56
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	197763.4	3.7				ug/L	159930	Standard
	Be	9	638.3	3.5	**0.5110**	0.034	6.6	ug/L	5	Standard
	Al	27	99047.8	2.7	**1.3965**	0.062	4.4	ug/L	623	Standard
	Sc	45	80570.3	1.0				ug/L	72123	Standard
	Ti	47	3120.7	1.9	**9.8344**	0.095	1.0	ug/L	15	Standard
	V	51	66491.5	1.1	**9.0747**	0.164	1.8	ug/L	779	Standard
	Cr	52	43823.3	0.6	**4.9336**	0.073	1.5	ug/L	4182	Standard
	Cr	53	21295.0	1.8	**18.3260**	0.379	2.1	ug/L	255	Standard
	Mn	55	93276.6	1.2	**6.8412**	0.098	1.4	ug/L	870	Standard
	Co	59	16547.0	0.9	**1.9775**	0.019	1.0	ug/L	44	Standard
	Ni	60	13366.9	0.4	**4.9076**	0.103	2.1	ug/L	376	Standard
	Cu	65	13806.3	1.6	**4.9346**	0.052	1.0	ug/L	271	Standard
	Zn	66	19083.0	1.0	**11.1424**	0.153	1.4	ug/L	601	Standard
>	**Ge**	72	698614.5	1.7				ug/L	607655	Standard
	As	75	5828.3	3.5	**3.8477**	0.134	3.5	ug/L	-37	Standard
	Se	82	545.6	2.8	**3.8206**	0.088	2.3	ug/L	22	Standard
	Se-1	77	2032.8	2.3	**19.0569**	0.519	2.7	ug/L	38	Standard
>	**Ga**	71	63.3	19.9				mg/L	38	Standard
	Rb	85	183.3	28.0				ug/L	15	Standard
	Y	89	840908.1	1.8				ug/L	733256	Standard
>	**Rh**	103	11.7	89.2				ug/L	0	Standard
	Mo	98	30549.4	1.2	**9.9152**	0.237	2.4	ug/L	10	Standard
	Ag	107	25282.4	0.6	**3.9326**	0.034	0.9	ug/L	70	Standard
	Cd	111	705.0	1.8	**0.4884**	0.010	2.0	mg/L	2	Standard
	Cd	114	1764.8	1.4	**0.4960**	0.008	1.5	ug/L	-3	Standard
>	**In**	115	642215.6	1.4				ug/L	555851	Standard
	Sn	118	40774.8	1.0	**9.0321**	0.210	2.3	ug/L	495	Standard
	Sb	123	40497.9	0.3	**11.6959**	0.204	1.7	ug/L	41	Standard
	Ba	135	10236.5	0.6	**9.6710**	0.093	1.0	ug/L	14	Standard
	Ce	140	20.0	25.0				ug/L	18	Standard
>	**Tb**	159	827460.2	0.9				ug/L	712215	Standard
	Ho	165	6.7	43.3				ug/L	0	Standard
	Tl	203	25419.0	0.8	**4.7566**	0.051	1.1	ug/L	1	Standard
	Tl	205	26880.5	0.7	**4.8597**	0.073	1.5	ug/L	3	Standard
	Pb	206	17465.7	1.6	**4.9856**	0.142	2.8	ug/L	161	Standard
	Pb	207	15269.7	0.7	**4.7723**	0.036	0.8	ug/L	141	Standard
	Pb	208	65342.8	0.4	**4.8518**	0.072	1.5	ug/L	608	Standard
	U	238	2.3	65.5	**0.0009**	0.000	31.5	ug/L	4	Standard
>	**Bi**	209	546965.1	1.2				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	1275.1	9.0	**3.1307**	0.255	8.1	mg/L	15	Standard
K	39	30.0	66.7	**0.6393**	0.451	70.5	mg/L	2	Standard
Ca	43	28.3	66.8	**1.2980**	1.787	137.6	mg/L	20	Standard
Fe	54	434.7	11.1	**0.0552**	0.019	35.1	mg/L	260	Standard
Fe	57	88.3	31.2	**0.0594**	0.035	58.5	mg/L	25	Standard
> **Sc-1**	45	80570.3	1.0				mg/L	72123	Standard
Cl	35	30371.7	1.4				ug/L	26728	Standard
Kr	83	0.7	86.6				ug/L	0	Standard
Br	81	783.4	9.6				ug/L	733	Standard
P	31	18531.3	2.5				ug/L	17255	Standard
S	34	1765.1	1.2				ug/L	1680	Standard
Sr	88	60.0	30.0				ug/L	7	Standard
C	12	60.0	16.7				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.7	235.5				mg/L	3	Standard
Ho-1	165	6.7	43.3				mg/L	0	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	791.7	8.8				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.657	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.969	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1505162401SD WG525730-06
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		115.537
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		113.672
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: L1505162401SD WG525730-06
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Method 6020 - Summary Report

Sample ID: L1505163401
Sample Date/Time: Monday, June 08, 2015 13:44:07
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	183406.9	1.7				ug/L	159930	Standard
	Be	9	18.3	56.8	**0.0065**	0.009	136.8	ug/L	5	Standard
	Al	27	2341.8	6.7	**-0.0008**	0.002	275.3	ug/L	623	Standard
	Sc	45	79776.2	2.1				ug/L	72123	Standard
	Ti	47	20.7	35.0	**0.0242**	0.024	99.1	ug/L	15	Standard
	V	51	-1698.0	7.0	**-0.3637**	0.017	4.8	ug/L	779	Standard
	Cr	52	4856.8	2.0	**0.0498**	0.009	18.3	ug/L	4182	Standard
	Cr	53	8385.7	3.3	**7.2114**	0.309	4.3	ug/L	255	Standard
	Mn	55	1976.1	1.6	**0.0607**	0.003	4.8	ug/L	870	Standard
	Co	59	149.7	3.9	**0.0065**	0.001	13.3	ug/L	44	Standard
	Ni	60	1155.0	5.7	**0.2923**	0.028	9.7	ug/L	376	Standard
	Cu	65	490.0	3.5	**0.0016**	0.005	313.4	ug/L	271	Standard
	Zn	66	2588.9	0.9	**1.1532**	0.013	1.1	ug/L	601	Standard
>	**Ge**	72	683990.4	0.8				ug/L	607655	Standard
	As	75	6.9	885.9	**0.0155**	0.041	262.8	ug/L	-37	Standard
	Se	82	98.2	4.4	**0.5386**	0.038	7.1	ug/L	22	Standard
	Se-1	77	934.4	1.7	**8.7423**	0.227	2.6	ug/L	38	Standard
>	**Ga**	71	1091.7	5.7				mg/L	38	Standard
	Rb	85	13796.3	2.0				ug/L	15	Standard
	Y	89	810759.9	1.9				ug/L	733256	Standard
>	**Rh**	103	5.0	100.0				ug/L	0	Standard
	Mo	98	276.3	6.4	**0.0843**	0.004	5.2	ug/L	10	Standard
	Ag	107	77.7	4.5	**-0.0003**	0.000	127.0	ug/L	70	Standard
	Cd	111	5.3	54.5	**0.0069**	0.002	29.0	mg/L	2	Standard
	Cd	114	28.8	15.3	**0.0049**	0.001	27.8	ug/L	-3	Standard
>	**In**	115	622480.3	1.8				ug/L	555851	Standard
	Sn	118	543.3	11.5	**0.0164**	0.013	80.5	ug/L	495	Standard
	Sb	123	73.2	16.2	**0.0162**	0.003	20.1	ug/L	41	Standard
	Ba	135	4419.0	3.1	**4.3017**	0.211	4.9	ug/L	14	Standard
	Ce	140	15.0	88.2				ug/L	18	Standard
>	**Tb**	159	807018.4	1.3				ug/L	712215	Standard
	Ho	165	5.0	0.0				ug/L	0	Standard
	Tl	203	94.3	10.2	**0.0162**	0.002	12.0	ug/L	1	Standard
	Tl	205	101.7	2.8	**0.0187**	0.000	2.2	ug/L	3	Standard
	Pb	206	285.0	10.4	**0.0221**	0.008	36.6	ug/L	161	Standard
	Pb	207	254.7	3.6	**0.0346**	0.004	10.8	ug/L	141	Standard
	Pb	208	1034.3	3.2	**0.0235**	0.002	8.4	ug/L	608	Standard
	U	238	2.0	86.6	**0.0008**	0.000	39.2	ug/L	4	Standard
>	**Bi**	209	531240.3	1.0				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	2048.5	2.9	**5.1142**	0.261	5.1	mg/L	15	Standard
K	39	171.7	24.3	**3.8799**	0.971	25.0	mg/L	2	Standard
Ca	43	73.3	23.9	**5.5367**	1.636	29.6	mg/L	20	Standard
Fe	54	271.1	5.3	**-0.0081**	0.007	89.5	mg/L	260	Standard
Fe	57	75.0	17.6	**0.0438**	0.019	44.0	mg/L	25	Standard
> **Sc-1**	45	79776.2	2.1				mg/L	72123	Standard
Cl	35	29973.6	1.8				ug/L	26728	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	1323.4	3.7				ug/L	733	Standard
P	31	18462.9	2.2				ug/L	17255	Standard
S	34	1713.4	7.2				ug/L	1680	Standard
Sr	88	41.7	13.9				ug/L	7	Standard
C	12	96.7	26.0				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	15.5	102.0				mg/L	3	Standard
Ho-1	165	5.0	0.0				mg/L	0	Standard
Er	166	23.3	65.5				mg/L	13	Standard
I	127	1125.0	11.4				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.680	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		112.562	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.987
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.404
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 09, 2015

Method 6020 - Summary Report

Sample ID: L1505163401PS WG526664-01
Sample Date/Time: Monday, June 08, 2015 13:47:18
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	183035.6	0.7				ug/L	159930	Standard
	Be	9	57786.7	3.0	**50.8375**	1.856	3.7	ug/L	5	Standard
	Al	27	2393.5	3.6	**0.0001**	0.001	1024.9	ug/L	623	Standard
	Sc	45	78094.1	1.3				ug/L	72123	Standard
	Ti	47	13.7	11.2	**0.0017**	0.005	313.1	ug/L	15	Standard
	V	51	364604.4	0.6	**51.6691**	0.426	0.8	ug/L	779	Standard
	Cr	52	409545.0	0.6	**52.2764**	0.665	1.3	ug/L	4182	Standard
	Cr	53	65511.3	1.5	**58.4676**	0.444	0.8	ug/L	255	Standard
	Mn	55	683795.9	1.0	**52.0893**	1.208	2.3	ug/L	870	Standard
	Co	59	428571.4	0.3	**52.9016**	0.615	1.2	ug/L	44	Standard
	Ni	60	135203.6	0.7	**52.4221**	0.942	1.8	ug/L	376	Standard
	Cu	65	140409.9	0.4	**53.2761**	0.572	1.1	ug/L	271	Standard
	Zn	66	85889.1	0.3	**53.1436**	0.871	1.6	ug/L	601	Standard
>	**Ge**	72	680302.1	1.5				ug/L	607655	Standard
	As	75	78003.0	0.5	**52.7488**	0.800	1.5	ug/L	-37	Standard
	Se	82	7057.4	0.2	**53.2153**	0.895	1.7	ug/L	22	Standard
	Se-1	77	6285.3	0.6	**61.3471**	1.162	1.9	ug/L	38	Standard
>	**Ga**	71	1218.4	9.5				mg/L	38	Standard
	Rb	85	14515.3	2.7				ug/L	15	Standard
	Y	89	798120.9	0.9				ug/L	733256	Standard
>	**Rh**	103	16.7	17.3				ug/L	0	Standard
	Mo	98	262.3	13.8	**0.0810**	0.013	15.5	ug/L	10	Standard
	Ag	107	321350.5	2.0	**52.5406**	1.065	2.0	ug/L	70	Standard
	Cd	111	72723.1	0.7	**52.4677**	0.248	0.5	mg/L	2	Standard
	Cd	114	176576.3	1.2	**52.3693**	0.417	0.8	ug/L	-3	Standard
>	**In**	115	612771.0	0.4				ug/L	555851	Standard
	Sn	118	568.3	9.7	**0.0243**	0.013	52.5	ug/L	495	Standard
	Sb	123	171817.6	0.6	**52.0175**	0.474	0.9	ug/L	41	Standard
	Ba	135	57311.5	1.0	**56.8115**	0.771	1.4	ug/L	14	Standard
	Ce	140	16.7	69.3				ug/L	18	Standard
>	**Tb**	159	796722.6	1.2				ug/L	712215	Standard
	Ho	165	10.0	86.6				ug/L	0	Standard
	Tl	203	269582.1	0.1	**52.1155**	0.206	0.4	ug/L	1	Standard
	Tl	205	280493.0	1.7	**52.3684**	1.049	2.0	ug/L	3	Standard
	Pb	206	175328.3	0.4	**52.2626**	0.484	0.9	ug/L	161	Standard
	Pb	207	159948.5	0.8	**52.0984**	0.694	1.3	ug/L	141	Standard
	Pb	208	671052.9	0.9	**51.9936**	0.185	0.4	ug/L	608	Standard
	U	238	273720.4	0.6	**51.1382**	0.281	0.6	ug/L	4	Standard
>	**Bi**	209	529627.2	0.5				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	2110.1	6.1	**5.3834**	0.398	7.4	mg/L	15	Standard
K	39	191.7	15.3	**4.4213**	0.651	14.7	mg/L	2	Standard
Ca	43	80.0	45.1	**6.3478**	3.564	56.1	mg/L	20	Standard
Fe	54	317.4	6.4	**0.0130**	0.009	66.9	mg/L	260	Standard
Fe	57	90.0	11.1	**0.0652**	0.012	18.1	mg/L	25	Standard
> **Sc-1**	45	78094.1	1.3				mg/L	72123	Standard
Cl	35	30908.2	1.1				ug/L	26728	Standard
Kr	83	1.0	0.0				ug/L	0	Standard
Br	81	1283.4	4.6				ug/L	733	Standard
P	31	20076.7	9.4				ug/L	17255	Standard
S	34	1826.8	8.9				ug/L	1680	Standard
Sr	88	56.7	41.7				ug/L	7	Standard
C	12	110.0	45.5				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	5.5	94.5				mg/L	3	Standard
Ho-1	165	10.0	86.6				mg/L	0	Standard
Er	166	23.3	65.5				mg/L	13	Standard
I	127	1270.1	3.5				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.448	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.955	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.240
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.069
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1505163401PS WG526664-01
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Method 6020 - Summary Report

Sample ID: L1505163401SDL WG526664-02
Sample Date/Time: Monday, June 08, 2015 13:50:30
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 250
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	182642.6	1.0				ug/L	159930	Standard
	Be	9	35.0	42.9	**0.0212**	0.013	61.5	ug/L	5	Standard
	Al	27	1073.4	3.4	**-0.0205**	0.000	2.4	ug/L	623	Standard
	Sc	45	77727.2	1.1				ug/L	72123	Standard
	Ti	47	13.0	26.6	**-0.0004**	0.011	2491.4	ug/L	15	Standard
	V	51	290.3	57.5	**-0.0824**	0.024	29.1	ug/L	779	Standard
	Cr	52	4462.0	3.5	**0.0036**	0.024	676.2	ug/L	4182	Standard
	Cr	53	2625.2	6.2	**2.0913**	0.162	7.7	ug/L	255	Standard
	Mn	55	1611.8	7.2	**0.0340**	0.010	28.5	ug/L	870	Standard
	Co	59	144.3	61.6	**0.0060**	0.011	185.2	ug/L	44	Standard
	Ni	60	587.3	6.5	**0.0744**	0.016	22.0	ug/L	376	Standard
	Cu	65	385.3	13.9	**-0.0368**	0.021	58.1	ug/L	271	Standard
	Zn	66	3122.7	1.6	**1.4992**	0.038	2.5	ug/L	601	Standard
>	**Ge**	72	678859.3	0.7				ug/L	607655	Standard
	As	75	-45.0	16.8	**-0.0198**	0.005	24.9	ug/L	-37	Standard
	Se	82	23.3	38.2	**-0.0237**	0.066	279.8	ug/L	22	Standard
	Se-1	77	235.0	3.1	**1.9280**	0.076	4.0	ug/L	38	Standard
>	**Ga**	71	220.0	19.8				mg/L	38	Standard
	Rb	85	3002.0	4.1				ug/L	15	Standard
	Y	89	815405.4	0.8				ug/L	733256	Standard
>	**Rh**	103	1.7	173.2				ug/L	0	Standard
	Mo	98	66.6	16.0	**0.0142**	0.004	25.9	ug/L	10	Standard
	Ag	107	128.3	68.1	**0.0081**	0.014	176.7	ug/L	70	Standard
	Cd	111	16.9	148.4	**0.0152**	0.018	118.3	mg/L	2	Standard
	Cd	114	48.3	173.1	**0.0107**	0.025	230.0	ug/L	-3	Standard
>	**In**	115	617832.1	0.5				ug/L	555851	Standard
	Sn	118	500.0	14.0	**0.0073**	0.017	229.5	ug/L	495	Standard
	Sb	123	476.0	29.0	**0.1375**	0.042	30.6	ug/L	41	Standard
	Ba	135	906.7	4.5	**0.8777**	0.037	4.3	ug/L	14	Standard
	Ce	140	15.0	66.7				ug/L	18	Standard
>	**Tb**	159	808147.7	0.3				ug/L	712215	Standard
	Ho	165	6.7	43.3				ug/L	0	Standard
	Tl	203	115.0	71.8	**0.0199**	0.016	78.8	ug/L	1	Standard
	Tl	205	103.3	69.5	**0.0189**	0.013	69.8	ug/L	3	Standard
	Pb	206	246.0	13.4	**0.0100**	0.010	95.1	ug/L	161	Standard
	Pb	207	225.7	19.0	**0.0246**	0.014	55.3	ug/L	141	Standard
	Pb	208	951.7	15.3	**0.0165**	0.011	65.9	ug/L	608	Standard
	U	238	41.3	148.1	**0.0081**	0.011	139.9	ug/L	4	Standard
>	**Bi**	209	535372.5	0.4				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	378.3	3.3	**0.9327**	0.042	4.5	mg/L	15	Standard
K	39	36.7	51.6	**0.8226**	0.445	54.1	mg/L	2	Standard
Ca	43	43.3	54.5	**2.8228**	2.244	79.5	mg/L	20	Standard
Fe	54	337.8	9.0	**0.0220**	0.013	58.6	mg/L	260	Standard
Fe	57	36.7	15.7	**-0.0045**	0.008	173.3	mg/L	25	Standard
Sc-1	45	77727.2	1.1				mg/L	72123	Standard
Cl	35	30178.0	1.3				ug/L	26728	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	780.0	11.4				ug/L	733	Standard
P	31	18441.2	1.5				ug/L	17255	Standard
S	34	1875.1	7.4				ug/L	1680	Standard
Sr	88	11.7	65.5				ug/L	7	Standard
C	12	76.7	19.9				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.2	102.9				mg/L	3	Standard
Ho-1	165	6.7	43.3				mg/L	0	Standard
Er	166	16.7	34.6				mg/L	13	Standard
I	127	333.3	3.1				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		114.202	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		111.718	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1505163401SDL WG526664-02
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Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		111.151
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		111.263
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 09, 2015

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, June 08, 2015 13:53:43
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	182632.5	0.7				ug/L	159930	Standard
	Be	9	54004.4	1.8	**47.6096**	1.079	2.3	ug/L	5	Standard
	Al	27	3007206.5	1.1	**47.0651**	0.807	1.7	ug/L	623	Standard
	Sc	45	77360.3	1.4				ug/L	72123	Standard
	Ti	47	28376.5	0.4	**91.7283**	0.861	0.9	ug/L	15	Standard
	V	51	333542.7	0.5	**47.0179**	0.632	1.3	ug/L	779	Standard
	Cr	52	366247.3	1.0	**46.4509**	0.891	1.9	ug/L	4182	Standard
	Cr	53	52810.2	0.5	**46.8437**	0.505	1.1	ug/L	255	Standard
	Mn	55	620736.8	0.9	**47.0309**	0.573	1.2	ug/L	870	Standard
	Co	59	387729.4	0.4	**47.6158**	0.584	1.2	ug/L	44	Standard
	Ni	60	121915.2	1.0	**47.0104**	0.615	1.3	ug/L	376	Standard
	Cu	65	124659.4	1.0	**47.0387**	0.750	1.6	ug/L	271	Standard
	Zn	66	76098.0	0.4	**46.7884**	0.246	0.5	ug/L	601	Standard
>	**Ge**	72	683746.8	0.9				ug/L	607655	Standard
	As	75	69398.6	0.3	**46.6902**	0.320	0.7	ug/L	-37	Standard
	Se	82	6299.0	1.6	**47.2280**	0.688	1.5	ug/L	22	Standard
	Se-1	77	4896.1	1.0	**47.4556**	0.704	1.5	ug/L	38	Standard
>	**Ga**	71	68.3	16.9				mg/L	38	Standard
	Rb	85	768.4	16.1				ug/L	15	Standard
	Y	89	820665.6	1.0				ug/L	733256	Standard
>	**Rh**	103	18.3	56.8				ug/L	0	Standard
	Mo	98	292540.8	0.4	**96.6258**	1.380	1.4	ug/L	10	Standard
	Ag	107	292448.7	0.3	**46.4034**	0.755	1.6	ug/L	70	Standard
	Cd	111	66831.2	0.4	**46.7943**	0.602	1.3	mg/L	2	Standard
	Cd	114	162866.9	1.3	**46.8737**	0.279	0.6	ug/L	-3	Standard
>	**In**	115	631483.8	1.4				ug/L	555851	Standard
	Sn	118	198182.8	1.0	**45.0706**	0.532	1.2	ug/L	495	Standard
	Sb	123	157903.5	1.1	**46.3970**	1.098	2.4	ug/L	41	Standard
	Ba	135	48482.1	0.8	**46.6393**	0.907	1.9	ug/L	14	Standard
	Ce	140	33.3	48.2				ug/L	18	Standard
>	**Tb**	159	823151.9	1.0				ug/L	712215	Standard
	Ho	165	5.0	100.0				ug/L	0	Standard
	Tl	203	245246.6	0.5	**46.7768**	0.717	1.5	ug/L	1	Standard
	Tl	205	254135.4	1.1	**46.8179**	1.269	2.7	ug/L	3	Standard
	Pb	206	160574.7	0.5	**47.2193**	0.839	1.8	ug/L	161	Standard
	Pb	207	146996.6	0.5	**47.2371**	1.017	2.2	ug/L	141	Standard
	Pb	208	617079.2	0.2	**47.1696**	0.809	1.7	ug/L	608	Standard
	U	238	253861.8	0.5	**46.7979**	1.018	2.2	ug/L	4	Standard
>	**Bi**	209	536883.8	1.7				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	1856.8	5.9	**4.7761**	0.326	6.8	mg/L	15	Standard
K	39	211.7	5.9	**4.9383**	0.345	7.0	mg/L	2	Standard
Ca	43	81.7	36.9	**6.5496**	2.914	44.5	mg/L	20	Standard
Fe	54	11998.7	1.0	**4.7987**	0.087	1.8	mg/L	260	Standard
Fe	57	3725.5	1.1	**4.8893**	0.119	2.4	mg/L	25	Standard
> **Sc-1**	45	77360.3	1.4				mg/L	72123	Standard
Cl	35	30134.6	1.7				ug/L	26728	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	770.0	13.2				ug/L	733	Standard
P	31	18105.8	2.8				ug/L	17255	Standard
S	34	1773.4	2.0				ug/L	1680	Standard
Sr	88	11.7	49.5				ug/L	7	Standard
C	12	56.7	27.0				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.8	2.8				mg/L	3	Standard
Ho-1	165	5.0	100.0				mg/L	0	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	208.3	15.4				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	95.219		
Al	27	94.130		
Sc	45			
Ti	47	91.728		
V	51	94.036		
Cr	52	92.902		
Cr	53			
Mn	55	94.062		
Co	59	95.232		
Ni	60	94.021		
Cu	65	94.077		
Zn	66	93.577		
> Ge	72		112.522	
As	75	93.380		
Se	82	94.456		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	96.626		
Ag	107	92.807		
Cd	111	93.589		
Cd	114			
In	115			113.607
Sn	118	90.141		
Sb	123	92.794		
Ba	135	93.279		
Ce	140			
Tb	159			
Ho	165			
Tl	203	93.554		
Tl	205			
Pb	206			
Pb	207			
Pb	208	94.339		
U	238	93.596		
Bi	209			111.577
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, June 08, 2015 13:56:55
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	178345.7	2.8				ug/L	159930	Standard
	Be	9	30.0	44.1	**0.0174**	0.011	65.7	ug/L	5	Standard
	Al	27	903.4	52.1	**-0.0229**	0.007	30.8	ug/L	623	Standard
	Sc	45	73884.8	2.9				ug/L	72123	Standard
	Ti	47	14.3	10.7	**0.0051**	0.005	94.4	ug/L	15	Standard
	V	51	730.8	24.5	**-0.0174**	0.024	138.5	ug/L	779	Standard
	Cr	52	4026.9	2.7	**-0.0395**	0.019	49.3	ug/L	4182	Standard
	Cr	53	660.0	13.1	**0.3410**	0.092	27.0	ug/L	255	Standard
	Mn	55	1267.7	20.3	**0.0099**	0.018	184.9	ug/L	870	Standard
	Co	59	198.7	95.0	**0.0131**	0.023	178.4	ug/L	44	Standard
	Ni	60	445.3	4.8	**0.0234**	0.007	28.5	ug/L	376	Standard
	Cu	65	320.0	8.7	**-0.0589**	0.009	14.9	ug/L	271	Standard
	Zn	66	643.0	4.8	**-0.0411**	0.020	49.9	ug/L	601	Standard
>	**Ge**	72	662103.1	2.0				ug/L	607655	Standard
	As	75	-30.4	108.3	**-0.0103**	0.022	217.8	ug/L	-37	Standard
	Se	82	13.5	78.9	**-0.0952**	0.083	86.8	ug/L	22	Standard
	Se-1	77	47.0	11.8	**0.0901**	0.064	70.7	ug/L	38	Standard
>	**Ga**	71	41.7	38.6				mg/L	38	Standard
	Rb	85	26.7	28.6				ug/L	15	Standard
	Y	89	795173.0	1.8				ug/L	733256	Standard
>	**Rh**	103	3.3	86.6				ug/L	0	Standard
	Mo	98	112.0	69.2	**0.0306**	0.027	87.9	ug/L	10	Standard
	Ag	107	145.3	60.9	**0.0115**	0.015	128.6	ug/L	70	Standard
	Cd	111	8.6	87.2	**0.0094**	0.005	58.3	mg/L	2	Standard
	Cd	114	25.4	47.6	**0.0041**	0.004	87.3	ug/L	-3	Standard
>	**In**	115	601126.3	1.6				ug/L	555851	Standard
	Sn	118	543.3	11.1	**0.0208**	0.012	59.0	ug/L	495	Standard
	Sb	123	141.3	32.8	**0.0381**	0.015	38.1	ug/L	41	Standard
	Ba	135	19.3	26.5	**0.0057**	0.005	89.5	ug/L	14	Standard
	Ce	140	8.3	69.3				ug/L	18	Standard
>	**Tb**	159	782154.9	1.0				ug/L	712215	Standard
	Ho	165	8.3	34.6				ug/L	0	Standard
	Tl	203	23.7	49.0	**0.0026**	0.002	88.0	ug/L	1	Standard
	Tl	205	53.3	141.0	**0.0099**	0.014	143.5	ug/L	3	Standard
	Pb	206	221.0	27.4	**0.0041**	0.018	452.1	ug/L	161	Standard
	Pb	207	205.7	38.6	**0.0197**	0.026	134.4	ug/L	141	Standard
	Pb	208	778.0	24.1	**0.0046**	0.015	327.9	ug/L	608	Standard
	U	238	62.7	122.4	**0.0123**	0.015	118.1	ug/L	4	Standard
>	**Bi**	209	524034.8	1.3				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	11.7	99.0	**-0.0133**	0.031	233.3	mg/L	15	Standard
K	39	1.7	173.2	**0.0062**	0.073	1177.2	mg/L	2	Standard
Ca	43	16.7	69.3	**0.3414**	1.153	337.7	mg/L	20	Standard
Fe	54	292.6	14.6	**0.0099**	0.019	197.2	mg/L	260	Standard
Fe	57	31.7	32.9	**-0.0093**	0.013	144.3	mg/L	25	Standard
> **Sc-1**	45	73884.8	2.9				mg/L	72123	Standard
Cl	35	29505.4	0.5				ug/L	26728	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	723.4	4.9				ug/L	733	Standard
P	31	18122.5	2.7				ug/L	17255	Standard
S	34	1806.8	4.2				ug/L	1680	Standard
Sr	88	11.7	49.5				ug/L	7	Standard
C	12	70.0	24.7				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.4	90.0				mg/L	3	Standard
Ho-1	165	8.3	34.6				mg/L	0	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	141.7	19.4				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.960	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.145
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.907
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW 4P WG526149-04
Sample Date/Time: Monday, June 08, 2015 14:00:08
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	173126.8	0.5				ug/L	159930	Standard
	Be	9	20.0	25.0	**0.0091**	0.005	52.0	ug/L	5	Standard
	Al	27	720.0	4.9	**-0.0254**	0.001	2.5	ug/L	623	Standard
	Sc	45	73727.3	2.5				ug/L	72123	Standard
	Ti	47	16.0	10.8	**0.0127**	0.006	49.8	ug/L	15	Standard
	V	51	-946.1	21.4	**-0.2668**	0.030	11.1	ug/L	779	Standard
	Cr	52	4266.9	2.4	**0.0130**	0.020	150.6	ug/L	4182	Standard
	Cr	53	6109.6	7.1	**5.5643**	0.375	6.7	ug/L	255	Standard
	Mn	55	1025.0	3.7	**-0.0060**	0.004	67.5	ug/L	870	Standard
	Co	59	82.3	25.5	**-0.0010**	0.003	278.5	ug/L	44	Standard
	Ni	60	436.3	7.3	**0.0262**	0.013	49.8	ug/L	376	Standard
	Cu	65	355.0	6.0	**-0.0400**	0.008	20.5	ug/L	271	Standard
	Zn	66	2066.8	1.5	**0.9201**	0.024	2.6	ug/L	601	Standard
>	**Ge**	72	638777.0	1.1				ug/L	607655	Standard
	As	75	-62.7	117.5	**-0.0349**	0.054	154.5	ug/L	-37	Standard
	Se	82	18.4	25.3	**-0.0521**	0.036	69.5	ug/L	22	Standard
	Se-1	77	620.0	2.2	**6.1010**	0.208	3.4	ug/L	38	Standard
>	**Ga**	71	43.3	29.0				mg/L	38	Standard
	Rb	85	10.0	50.0				ug/L	15	Standard
	Y	89	769616.3	2.2				ug/L	733256	Standard
>	**Rh**	103	1.7	173.2				ug/L	0	Standard
	Mo	98	33.6	42.0	**0.0036**	0.005	144.1	ug/L	10	Standard
	Ag	107	103.0	23.3	**0.0047**	0.004	91.6	ug/L	70	Standard
	Cd	111	2.9	121.9	**0.0053**	0.003	49.9	mg/L	2	Standard
	Cd	114	16.0	115.5	**0.0014**	0.006	411.0	ug/L	-3	Standard
>	**In**	115	591521.7	2.1				ug/L	555851	Standard
	Sn	118	460.0	3.8	**0.0027**	0.004	129.2	ug/L	495	Standard
	Sb	123	100.6	25.3	**0.0261**	0.009	33.3	ug/L	41	Standard
	Ba	135	16.0	6.3	**0.0027**	0.001	50.7	ug/L	14	Standard
	Ce	140	6.7	114.6				ug/L	18	Standard
>	**Tb**	159	766348.3	2.2				ug/L	712215	Standard
	Ho	165	5.0	100.0				ug/L	0	Standard
	Tl	203	45.3	30.1	**0.0071**	0.003	36.5	ug/L	1	Standard
	Tl	205	43.3	24.0	**0.0083**	0.002	27.0	ug/L	3	Standard
	Pb	206	210.3	10.2	**0.0027**	0.007	249.4	ug/L	161	Standard
	Pb	207	178.3	9.3	**0.0124**	0.007	56.9	ug/L	141	Standard
	Pb	208	754.7	2.9	**0.0045**	0.001	31.6	ug/L	608	Standard
	U	238	11.0	77.7	**0.0026**	0.002	66.1	ug/L	4	Standard
>	**Bi**	209	508936.9	2.3				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	15.0	33.3	**-0.0042**	0.013	304.3	mg/L	15	Standard
K	39	10.0	50.0	**0.2104**	0.121	57.7	mg/L	2	Standard
Ca	43	23.3	12.4	**1.0292**	0.324	31.4	mg/L	20	Standard
Fe	54	284.7	4.6	**0.0067**	0.007	110.1	mg/L	260	Standard
Fe	57	16.7	45.8	**-0.0296**	0.011	38.2	mg/L	25	Standard
> **Sc-1**	45	73727.3	2.5				mg/L	72123	Standard
Cl	35	28813.4	1.7				ug/L	26728	Standard
Kr	83	0.7	86.6				ug/L	0	Standard
Br	81	750.0	8.3				ug/L	733	Standard
P	31	17665.3	3.5				ug/L	17255	Standard
S	34	1796.8	11.9				ug/L	1680	Standard
Sr	88	10.0	100.0				ug/L	7	Standard
C	12	46.7	24.7				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.7	103.3				mg/L	3	Standard
Ho-1	165	5.0	100.0				mg/L	0	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	120.0	16.7				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.252	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.122	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: PBW 4P WG526149-04
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.417
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.769
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 4P WG526149-04
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Method 6020 - Summary Report

Sample ID: LCSW 4P WG526149-05
Sample Date/Time: Monday, June 08, 2015 14:03:19
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	192661.0	2.5				ug/L	159930	Standard
	Be	9	520.0	9.6	**0.4257**	0.049	11.5	ug/L	5	Standard
	Al	27	91086.4	2.3	**1.3152**	0.025	1.9	ug/L	623	Standard
	Sc	45	76385.5	2.1				ug/L	72123	Standard
	Ti	47	3021.3	2.4	**9.9156**	0.422	4.3	ug/L	15	Standard
	V	51	64768.6	2.5	**9.2031**	0.311	3.4	ug/L	779	Standard
	Cr	52	41668.2	1.8	**4.8763**	0.085	1.7	ug/L	4182	Standard
	Cr	53	18079.1	4.4	**16.1542**	0.355	2.2	ug/L	255	Standard
	Mn	55	65247.2	2.1	**4.9566**	0.118	2.4	ug/L	870	Standard
	Co	59	15827.9	4.0	**1.9682**	0.056	2.8	ug/L	44	Standard
	Ni	60	12843.1	2.8	**4.9060**	0.046	0.9	ug/L	376	Standard
	Cu	65	13267.5	2.6	**4.9350**	0.061	1.2	ug/L	271	Standard
	Zn	66	17428.7	2.9	**10.5700**	0.348	3.3	ug/L	601	Standard
>	**Ge**	72	671318.1	2.8				ug/L	607655	Standard
	As	75	5569.5	4.4	**3.8252**	0.083	2.2	ug/L	-37	Standard
	Se	82	504.5	6.3	**3.6677**	0.200	5.4	ug/L	22	Standard
	Se-1	77	1677.1	4.3	**16.3015**	0.399	2.4	ug/L	38	Standard
>	**Ga**	71	63.3	18.2				mg/L	38	Standard
	Rb	85	133.3	5.7				ug/L	15	Standard
	Y	89	806258.6	2.9				ug/L	733256	Standard
>	**Rh**	103	10.0	50.0				ug/L	0	Standard
	Mo	98	29491.9	1.8	**9.9095**	0.115	1.2	ug/L	10	Standard
	Ag	107	24670.4	1.6	**3.9736**	0.062	1.6	ug/L	70	Standard
	Cd	111	640.0	0.7	**0.4594**	0.009	2.0	mg/L	2	Standard
	Cd	114	1626.6	2.1	**0.4732**	0.012	2.4	ug/L	-3	Standard
>	**In**	115	620294.8	2.4				ug/L	555851	Standard
	Sn	118	39773.8	0.6	**9.1242**	0.212	2.3	ug/L	495	Standard
	Sb	123	39350.0	1.2	**11.7668**	0.182	1.5	ug/L	41	Standard
	Ba	135	9776.8	1.5	**9.5638**	0.104	1.1	ug/L	14	Standard
	Ce	140	20.0	43.3				ug/L	18	Standard
>	**Tb**	159	799780.1	0.9				ug/L	712215	Standard
	Ho	165	5.0	100.0				ug/L	0	Standard
	Tl	203	24863.4	1.7	**4.8096**	0.119	2.5	ug/L	1	Standard
	Tl	205	25583.3	2.7	**4.7797**	0.078	1.6	ug/L	3	Standard
	Pb	206	16702.9	2.0	**4.9265**	0.089	1.8	ug/L	161	Standard
	Pb	207	15002.4	1.1	**4.8478**	0.110	2.3	ug/L	141	Standard
	Pb	208	62828.8	2.4	**4.8208**	0.068	1.4	ug/L	608	Standard
	U	238	1.7	124.9	**0.0007**	0.000	51.7	ug/L	4	Standard
>	**Bi**	209	529243.3	2.4				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	220.0	36.6	**0.5318**	0.203	38.2	mg/L	15	Standard
K	39	16.7	105.4	**0.3561**	0.407	114.4	mg/L	2	Standard
Ca	43	33.3	8.7	**1.9228**	0.277	14.4	mg/L	20	Standard
Fe	54	374.0	2.5	**0.0394**	0.005	13.8	mg/L	260	Standard
Fe	57	43.3	37.1	**0.0051**	0.021	416.9	mg/L	25	Standard
> **Sc-1**	45	76385.5	2.1				mg/L	72123	Standard
Cl	35	29232.9	2.7				ug/L	26728	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	646.7	11.7				ug/L	733	Standard
P	31	18175.9	5.3				ug/L	17255	Standard
S	34	1743.4	5.2				ug/L	1680	Standard
Sr	88	58.3	17.8				ug/L	7	Standard
C	12	63.3	39.7				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.9	217.0				mg/L	3	Standard
Ho-1	165	5.0	100.0				mg/L	0	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	126.7	8.2				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		120.466	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.477	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.594
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.989
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: FBLANK 4P WG525914-01
Sample Date/Time: Monday, June 08, 2015 14:06:31
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	181765.4	4.8				ug/L	159930	Standard
	Be	9	20.0	66.1	**0.0085**	0.013	148.9	ug/L	5	Standard
	Al	27	776.7	3.2	**-0.0250**	0.001	2.2	ug/L	623	Standard
	Sc	45	75229.7	2.6				ug/L	72123	Standard
	Ti	47	14.7	25.8	**0.0060**	0.013	211.3	ug/L	15	Standard
	V	51	-1507.2	13.2	**-0.3426**	0.029	8.5	ug/L	779	Standard
	Cr	52	4688.1	2.3	**0.0447**	0.018	39.8	ug/L	4182	Standard
	Cr	53	7745.3	6.3	**6.8240**	0.325	4.8	ug/L	255	Standard
	Mn	55	1109.4	4.5	**-0.0028**	0.002	87.8	ug/L	870	Standard
	Co	59	69.3	15.4	**-0.0031**	0.001	45.6	ug/L	44	Standard
	Ni	60	463.7	1.3	**0.0298**	0.006	21.5	ug/L	376	Standard
	Cu	65	310.7	6.2	**-0.0630**	0.008	13.3	ug/L	271	Standard
	Zn	66	2258.5	3.4	**0.9862**	0.018	1.8	ug/L	601	Standard
>	**Ge**	72	665796.6	2.2				ug/L	607655	Standard
	As	75	-19.7	383.3	**-0.0023**	0.052	2286.9	ug/L	-37	Standard
	Se	82	22.9	34.3	**-0.0236**	0.060	252.9	ug/L	22	Standard
	Se-1	77	734.0	4.8	**6.9853**	0.456	6.5	ug/L	38	Standard
>	**Ga**	71	30.0	50.0				mg/L	38	Standard
	Rb	85	28.3	36.7				ug/L	15	Standard
	Y	89	800093.0	1.6				ug/L	733256	Standard
>	**Rh**	103	0.0					ug/L	0	Standard
	Mo	98	21.7	9.6	**-0.0008**	0.001	90.1	ug/L	10	Standard
	Ag	107	96.3	0.6	**0.0033**	0.000	3.6	ug/L	70	Standard
	Cd	111	1.6	35.4	**0.0043**	0.000	10.1	mg/L	2	Standard
	Cd	114	5.0	314.9	**-0.0020**	0.005	236.5	ug/L	-3	Standard
>	**In**	115	602032.2	1.1				ug/L	555851	Standard
	Sn	118	496.7	9.1	**0.0095**	0.010	100.8	ug/L	495	Standard
	Sb	123	109.3	12.4	**0.0281**	0.004	14.0	ug/L	41	Standard
	Ba	135	15.3	18.8	**0.0017**	0.003	167.3	ug/L	14	Standard
	Ce	140	8.3	34.6				ug/L	18	Standard
>	**Tb**	159	776487.4	1.5				ug/L	712215	Standard
	Ho	165	13.3	78.1				ug/L	0	Standard
	Tl	203	30.3	16.9	**0.0039**	0.001	27.4	ug/L	1	Standard
	Tl	205	35.0	37.8	**0.0065**	0.003	39.6	ug/L	3	Standard
	Pb	206	197.0	3.1	**-0.0029**	0.002	86.0	ug/L	161	Standard
	Pb	207	160.0	6.5	**0.0048**	0.004	85.0	ug/L	141	Standard
	Pb	208	733.0	4.1	**0.0013**	0.003	198.8	ug/L	608	Standard
	U	238	1.0	100.0	**0.0006**	0.000	30.4	ug/L	4	Standard
>	**Bi**	209	521378.5	1.3				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	23.3	44.6	**0.0169**	0.026	152.8	mg/L	15	Standard
K	39	3.3	86.6	**0.0456**	0.071	155.2	mg/L	2	Standard
Ca	43	23.3	44.6	**0.9868**	1.055	106.9	mg/L	20	Standard
Fe	54	327.6	10.4	**0.0222**	0.013	60.6	mg/L	260	Standard
Fe	57	18.3	41.7	**-0.0279**	0.011	38.2	mg/L	25	Standard
Sc-1	45	75229.7	2.6				mg/L	72123	Standard
Cl	35	29492.0	3.3				ug/L	26728	Standard
Kr	83	0.7	86.6				ug/L	0	Standard
Br	81	763.4	18.6				ug/L	733	Standard
P	31	18307.7	4.3				ug/L	17255	Standard
S	34	1686.8	4.2				ug/L	1680	Standard
Sr	88	6.7	43.3				ug/L	7	Standard
C	12	56.7	62.0				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.8	99.2				mg/L	3	Standard
Ho-1	165	13.3	78.1				mg/L	0	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	245.0	0.0				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.653	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.568	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.308
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.355
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 09, 2015

Method 6020 - Summary Report

Sample ID: L1505175303 WG526149-01
Sample Date/Time: Monday, June 08, 2015 14:09:42
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	179030.4	2.7				ug/L	159930	Standard
	Be	9	25.0	20.0	**0.0129**	0.004	31.1	ug/L	5	Standard
	Al	27	96176.0	1.6	**1.4998**	0.033	2.2	ug/L	623	Standard
	Sc	45	75368.7	1.4				ug/L	72123	Standard
	Ti	47	13.3	22.9	**0.0022**	0.010	474.8	ug/L	15	Standard
	V	51	-1225.0	18.6	**-0.3038**	0.030	9.9	ug/L	779	Standard
	Cr	52	4472.0	1.9	**0.0247**	0.010	40.6	ug/L	4182	Standard
	Cr	53	7188.4	3.2	**6.4118**	0.069	1.1	ug/L	255	Standard
	Mn	55	4775.4	4.4	**0.2883**	0.010	3.3	ug/L	870	Standard
	Co	59	71.0	12.5	**-0.0028**	0.001	46.0	ug/L	44	Standard
	Ni	60	511.3	1.0	**0.0517**	0.006	12.5	ug/L	376	Standard
	Cu	65	313.3	7.0	**-0.0603**	0.009	14.6	ug/L	271	Standard
	Zn	66	2238.2	2.9	**0.9941**	0.016	1.6	ug/L	601	Standard
>	**Ge**	72	656287.0	2.3				ug/L	607655	Standard
	As	75	26.0	470.7	**0.0276**	0.084	305.0	ug/L	-37	Standard
	Se	82	26.4	20.5	**0.0062**	0.038	617.6	ug/L	22	Standard
	Se-1	77	725.7	5.9	**7.0036**	0.445	6.4	ug/L	38	Standard
>	**Ga**	71	46.7	37.6				mg/L	38	Standard
	Rb	85	80.0	16.5				ug/L	15	Standard
	Y	89	778445.4	2.1				ug/L	733256	Standard
>	**Rh**	103	1.7	173.2				ug/L	0	Standard
	Mo	98	44.0	0.1	**0.0070**	0.000	6.5	ug/L	10	Standard
	Ag	107	69.7	4.6	**-0.0011**	0.001	54.9	ug/L	70	Standard
	Cd	111	1.3	120.9	**0.0040**	0.001	26.8	mg/L	2	Standard
	Cd	114	10.6	90.1	**-0.0003**	0.003	817.7	ug/L	-3	Standard
>	**In**	115	599929.7	3.1				ug/L	555851	Standard
	Sn	118	413.3	8.1	**-0.0100**	0.008	76.2	ug/L	495	Standard
	Sb	123	50.3	4.1	**0.0100**	0.001	6.0	ug/L	41	Standard
	Ba	135	153.0	1.1	**0.1413**	0.006	4.5	ug/L	14	Standard
	Ce	140	28.3	10.2				ug/L	18	Standard
>	**Tb**	159	772806.2	1.5				ug/L	712215	Standard
	Ho	165	6.7	43.3				ug/L	0	Standard
	Tl	203	36.3	40.1	**0.0051**	0.003	54.6	ug/L	1	Standard
	Tl	205	21.7	96.1	**0.0039**	0.004	99.6	ug/L	3	Standard
	Pb	206	235.7	11.7	**0.0089**	0.008	85.8	ug/L	161	Standard
	Pb	207	198.3	3.8	**0.0176**	0.002	10.3	ug/L	141	Standard
	Pb	208	821.3	4.6	**0.0083**	0.002	28.1	ug/L	608	Standard
	U	238	11.3	18.4	**0.0026**	0.000	14.8	ug/L	4	Standard
>	**Bi**	209	520766.3	1.0				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	38.3	15.1	**0.0572**	0.015	26.7	mg/L	15	Standard
K	39	1.7	173.2	**0.0035**	0.069	1940.5	mg/L	2	Standard
Ca	43	18.3	56.8	**0.4722**	1.008	213.5	mg/L	20	Standard
Fe	54	274.5	0.1	**-0.0004**	0.002	408.3	mg/L	260	Standard
Fe	57	31.7	9.1	**-0.0098**	0.005	46.1	mg/L	25	Standard
> **Sc-1**	45	75368.7	1.4				mg/L	72123	Standard
Cl	35	28979.7	1.3				ug/L	26728	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	666.7	10.0				ug/L	733	Standard
P	31	18099.1	1.9				ug/L	17255	Standard
S	34	1733.4	8.7				ug/L	1680	Standard
Sr	88	6.7	114.6				ug/L	7	Standard
C	12	80.0	37.5				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	-1.1	107.9				mg/L	3	Standard
Ho-1	165	6.7	43.3				mg/L	0	Standard
Er	166	23.3	107.9				mg/L	13	Standard
I	127	321.7	5.5				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.943	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.003	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.930
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.227
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 09, 2015

Method 6020 - Summary Report

Sample ID: L1505175304S WG526149-06
Sample Date/Time: Monday, June 08, 2015 14:12:54
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	181594.3	3.5				ug/L	159930	Standard
	Be	9	578.3	5.0	**0.5033**	0.021	4.1	ug/L	5	Standard
	Al	27	185817.6	1.2	**2.8924**	0.123	4.2	ug/L	623	Standard
	Sc	45	75062.1	0.6				ug/L	72123	Standard
	Ti	47	2930.3	1.1	**9.8711**	0.141	1.4	ug/L	15	Standard
	V	51	63946.8	0.4	**9.3311**	0.130	1.4	ug/L	779	Standard
	Cr	52	41810.6	0.9	**5.0426**	0.119	2.4	ug/L	4182	Standard
	Cr	53	18920.1	3.4	**17.3952**	0.850	4.9	ug/L	255	Standard
	Mn	55	67420.4	1.2	**5.2653**	0.129	2.5	ug/L	870	Standard
	Co	59	15470.2	1.6	**1.9759**	0.017	0.8	ug/L	44	Standard
	Ni	60	12871.8	0.7	**5.0553**	0.102	2.0	ug/L	376	Standard
	Cu	65	12923.5	0.6	**4.9378**	0.104	2.1	ug/L	271	Standard
	Zn	66	17052.9	1.2	**10.6223**	0.222	2.1	ug/L	601	Standard
>	**Ge**	72	653625.9	1.4				ug/L	607655	Standard
	As	75	5612.5	1.9	**3.9608**	0.130	3.3	ug/L	-37	Standard
	Se	82	523.7	8.6	**3.9282**	0.414	10.5	ug/L	22	Standard
	Se-1	77	1801.1	3.2	**18.0317**	0.846	4.7	ug/L	38	Standard
>	**Ga**	71	51.7	11.2				mg/L	38	Standard
	Rb	85	166.7	33.0				ug/L	15	Standard
	Y	89	786507.8	2.4				ug/L	733256	Standard
>	**Rh**	103	13.3	57.3				ug/L	0	Standard
	Mo	98	29073.6	0.1	**9.9955**	0.164	1.6	ug/L	10	Standard
	Ag	107	24477.4	0.9	**4.0341**	0.097	2.4	ug/L	70	Standard
	Cd	111	627.2	5.0	**0.4607**	0.029	6.2	mg/L	2	Standard
	Cd	114	1576.1	3.5	**0.4692**	0.022	4.6	ug/L	-3	Standard
>	**In**	115	606273.7	1.7				ug/L	555851	Standard
	Sn	118	39479.7	0.4	**9.2662**	0.151	1.6	ug/L	495	Standard
	Sb	123	39010.1	1.1	**11.9359**	0.324	2.7	ug/L	41	Standard
	Ba	135	9832.9	0.9	**9.8420**	0.211	2.1	ug/L	14	Standard
	Ce	140	81.7	17.7				ug/L	18	Standard
>	**Tb**	159	780277.5	2.4				ug/L	712215	Standard
	Ho	165	8.3	91.7				ug/L	0	Standard
	Tl	203	24658.7	0.9	**4.8997**	0.076	1.6	ug/L	1	Standard
	Tl	205	25449.7	3.2	**4.8860**	0.198	4.1	ug/L	3	Standard
	Pb	206	16723.9	0.4	**5.0692**	0.067	1.3	ug/L	161	Standard
	Pb	207	14820.6	0.8	**4.9199**	0.083	1.7	ug/L	141	Standard
	Pb	208	62374.4	0.2	**4.9181**	0.053	1.1	ug/L	608	Standard
	U	238	13.7	21.1	**0.0031**	0.001	18.8	ug/L	4	Standard
>	**Bi**	209	515129.2	0.9				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	213.3	11.6	**0.5259**	0.068	12.9	mg/L	15	Standard
K	39	38.3	39.8	**0.8905**	0.365	40.9	mg/L	2	Standard
Ca	43	23.3	53.9	**0.9836**	1.249	127.0	mg/L	20	Standard
Fe	54	420.3	10.7	**0.0617**	0.020	32.4	mg/L	260	Standard
Fe	57	41.7	56.7	**0.0039**	0.032	832.3	mg/L	25	Standard
> **Sc-1**	45	75062.1	0.6				mg/L	72123	Standard
Cl	35	28941.6	1.1				ug/L	26728	Standard
Kr	83	0.7	86.6				ug/L	0	Standard
Br	81	740.0	7.2				ug/L	733	Standard
P	31	17848.8	1.2				ug/L	17255	Standard
S	34	1723.4	3.4				ug/L	1680	Standard
Sr	88	66.7	41.3				ug/L	7	Standard
C	12	53.3	78.1				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	8.9	120.9				mg/L	3	Standard
Ho-1	165	8.3	91.7				mg/L	0	Standard
Er	166	23.3	89.2				mg/L	13	Standard
I	127	360.0	14.5				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.546	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.565	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.071
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.056
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 09, 2015

Method 6020 - Summary Report

Sample ID: L1505175305SD WG526149-07
Sample Date/Time: Monday, June 08, 2015 14:16:05
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	184434.2	1.2				ug/L	159930	Standard
	Be	9	598.3	10.4	**0.5127**	0.051	9.9	ug/L	5	Standard
	Al	27	186403.6	3.0	**2.8533**	0.052	1.8	ug/L	623	Standard
	Sc	45	73863.1	4.2				ug/L	72123	Standard
	Ti	47	3071.0	2.5	**10.5269**	0.464	4.4	ug/L	15	Standard
	V	51	65816.2	3.2	**9.7721**	0.350	3.6	ug/L	779	Standard
	Cr	52	42973.9	1.4	**5.2968**	0.163	3.1	ug/L	4182	Standard
	Cr	53	19991.5	4.5	**18.6943**	0.414	2.2	ug/L	255	Standard
	Mn	55	69320.6	2.4	**5.5090**	0.164	3.0	ug/L	870	Standard
	Co	59	16048.5	2.3	**2.0859**	0.085	4.1	ug/L	44	Standard
	Ni	60	13134.4	3.7	**5.2500**	0.160	3.0	ug/L	376	Standard
	Cu	65	13409.9	2.5	**5.2196**	0.128	2.5	ug/L	271	Standard
	Zn	66	17847.5	2.5	**11.3350**	0.383	3.4	ug/L	601	Standard
>	**Ge**	72	642865.6	2.6				ug/L	607655	Standard
	As	75	5687.0	1.5	**4.0801**	0.074	1.8	ug/L	-37	Standard
	Se	82	508.9	2.1	**3.8762**	0.117	3.0	ug/L	22	Standard
	Se-1	77	1877.4	2.5	**19.1327**	0.653	3.4	ug/L	38	Standard
>	**Ga**	71	65.0	35.3				mg/L	38	Standard
	Rb	85	161.7	34.2				ug/L	15	Standard
	Y	89	769820.8	1.3				ug/L	733256	Standard
>	**Rh**	103	16.7	69.3				ug/L	0	Standard
	Mo	98	30114.7	1.3	**10.5712**	0.283	2.7	ug/L	10	Standard
	Ag	107	24950.2	2.0	**4.1982**	0.105	2.5	ug/L	70	Standard
	Cd	111	704.0	1.7	**0.5274**	0.018	3.3	mg/L	2	Standard
	Cd	114	1687.6	7.2	**0.5135**	0.047	9.1	ug/L	-3	Standard
>	**In**	115	593869.4	1.9				ug/L	555851	Standard
	Sn	118	40358.7	3.0	**9.6757**	0.344	3.6	ug/L	495	Standard
	Sb	123	40308.8	2.7	**12.5891**	0.355	2.8	ug/L	41	Standard
	Ba	135	10071.7	2.5	**10.2905**	0.210	2.0	ug/L	14	Standard
	Ce	140	30.0	16.7				ug/L	18	Standard
>	**Tb**	159	763819.6	2.7				ug/L	712215	Standard
	Ho	165	5.0	100.0				ug/L	0	Standard
	Tl	203	25559.9	1.0	**5.1475**	0.091	1.8	ug/L	1	Standard
	Tl	205	26196.0	2.4	**5.0955**	0.064	1.3	ug/L	3	Standard
	Pb	206	16994.9	1.8	**5.2225**	0.089	1.7	ug/L	161	Standard
	Pb	207	15190.3	1.9	**5.1119**	0.064	1.2	ug/L	141	Standard
	Pb	208	64216.4	2.2	**5.1342**	0.121	2.4	ug/L	608	Standard
	U	238	12.0	14.4	**0.0028**	0.000	12.0	ug/L	4	Standard
>	**Bi**	209	508310.9	2.0				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	238.3	11.6	**0.6030**	0.069	11.5	mg/L	15	Standard
K	39	26.7	39.0	**0.6262**	0.278	44.4	mg/L	2	Standard
Ca	43	31.7	24.1	**1.8540**	0.689	37.1	mg/L	20	Standard
Fe	54	363.3	12.5	**0.0401**	0.019	46.2	mg/L	260	Standard
Fe	57	60.0		**0.0305**	0.004	11.7	mg/L	25	Standard
> **Sc-1**	45	73863.1	4.2				mg/L	72123	Standard
Cl	35	28709.9	2.4				ug/L	26728	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	610.0	16.6				ug/L	733	Standard
P	31	17760.4	0.8				ug/L	17255	Standard
S	34	1666.8	1.1				ug/L	1680	Standard
Sr	88	76.7	3.8				ug/L	7	Standard
C	12	66.7	62.5				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	3.2	173.2				mg/L	3	Standard
Ho-1	165	5.0	100.0				mg/L	0	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	290.0	17.0				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.322	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.795	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.840
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.639
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 09, 2015

Method 6020 - Summary Report

Sample ID: L1506004001
Sample Date/Time: Monday, June 08, 2015 14:19:17
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	177615.3	2.1				ug/L	159930	Standard
	Be	9	11.7	49.5	**0.0010**	0.005	527.3	ug/L	5	Standard
	Al	27	893.4	7.6	**-0.0229**	0.001	5.2	ug/L	623	Standard
	Sc	45	75373.8	2.7				ug/L	72123	Standard
	Ti	47	14.0	21.4	**0.0046**	0.010	216.6	ug/L	15	Standard
	V	51	-1037.9	26.0	**-0.2770**	0.039	13.9	ug/L	779	Standard
	Cr	52	4403.6	2.7	**0.0177**	0.007	38.0	ug/L	4182	Standard
	Cr	53	7175.0	0.9	**6.4267**	0.059	0.9	ug/L	255	Standard
	Mn	55	1338.7	0.4	**0.0170**	0.002	13.3	ug/L	870	Standard
	Co	59	104.0	12.6	**0.0015**	0.002	117.8	ug/L	44	Standard
	Ni	60	746.7	5.7	**0.1476**	0.015	10.5	ug/L	376	Standard
	Cu	65	696.3	5.1	**0.0918**	0.011	11.5	ug/L	271	Standard
	Zn	66	2473.5	1.9	**1.1526**	0.010	0.8	ug/L	601	Standard
>	**Ge**	72	653743.2	1.7				ug/L	607655	Standard
	As	75	-14.3	550.6	**-0.0000**	0.0	3608587.4	ug/L	-37	Standard
	Se	82	88.3	9.0	**0.4942**	0.052	10.5	ug/L	22	Standard
	Se-1	77	843.0	2.2	**8.2338**	0.340	4.1	ug/L	38	Standard
>	**Ga**	71	390.0	7.8				mg/L	38	Standard
	Rb	85	12341.7	3.6				ug/L	15	Standard
	Y	89	786725.7	1.8				ug/L	733256	Standard
>	**Rh**	103	5.0	100.0				ug/L	0	Standard
	Mo	98	1817.4	0.1	**0.6234**	0.011	1.7	ug/L	10	Standard
	Ag	107	77.3	8.3	**0.0001**	0.001	805.7	ug/L	70	Standard
	Cd	111	1.1	188.8	**0.0039**	0.001	38.2	mg/L	2	Standard
	Cd	114	2.1	414.2	**-0.0029**	0.003	91.1	ug/L	-3	Standard
>	**In**	115	600190.5	1.8				ug/L	555851	Standard
	Sn	118	480.0	9.5	**0.0059**	0.010	169.2	ug/L	495	Standard
	Sb	123	55.2	28.5	**0.0115**	0.005	41.7	ug/L	41	Standard
	Ba	135	9640.4	0.5	**9.7463**	0.126	1.3	ug/L	14	Standard
	Ce	140	5.0	100.0				ug/L	18	Standard
>	**Tb**	159	780253.3	2.1				ug/L	712215	Standard
	Ho	165	6.7	43.3				ug/L	0	Standard
	Tl	203	61.7	18.9	**0.0101**	0.002	23.5	ug/L	1	Standard
	Tl	205	68.3	55.9	**0.0128**	0.007	55.5	ug/L	3	Standard
	Pb	206	254.0	3.9	**0.0147**	0.004	26.2	ug/L	161	Standard
	Pb	207	218.7	1.6	**0.0245**	0.001	3.5	ug/L	141	Standard
	Pb	208	958.0	4.8	**0.0193**	0.002	12.3	ug/L	608	Standard
	U	238	1.7	34.6	**0.0008**	0.000	14.7	ug/L	4	Standard
>	**Bi**	209	519420.7	1.8				ug/L	481178	Standard

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Na	23	1.7	173.2				mg/L	0	Standard
Mg	24	1908.5	5.2	**5.0442**	0.366	7.3	mg/L	15	Standard
K	39	156.7	30.3	**3.7403**	1.120	30.0	mg/L	2	Standard
Ca	43	65.0	7.7	**5.1198**	0.657	12.8	mg/L	20	Standard
Fe	54	291.5	15.9	**0.0065**	0.016	254.1	mg/L	260	Standard
Fe	57	30.0	28.9	**-0.0119**	0.013	110.3	mg/L	25	Standard
> **Sc-1**	45	75373.8	2.7				mg/L	72123	Standard
Cl	35	27975.1	2.6				ug/L	26728	Standard
Kr	83	0.7	86.6				ug/L	0	Standard
Br	81	2006.8	2.4				ug/L	733	Standard
P	31	17248.1	1.2				ug/L	17255	Standard
S	34	1696.8	3.0				ug/L	1680	Standard
Sr	88	53.3	42.3				ug/L	7	Standard
C	12	86.7	48.0				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.2	113.9				mg/L	3	Standard
Ho-1	165	6.7	43.3				mg/L	0	Standard
Er	166	16.7	69.3				mg/L	13	Standard
I	127	868.4	7.9				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.058	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.585	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.977
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.948
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 09, 2015

Method 6020 - Summary Report

Sample ID: L1506004101
Sample Date/Time: Monday, June 08, 2015 14:22:29
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	176819.3	1.7				ug/L	159930	Standard
	Be	9	15.0	0.0	**0.0041**	0.000	5.5	ug/L	5	Standard
	Al	27	728.4	8.2	**-0.0255**	0.001	3.4	ug/L	623	Standard
	Sc	45	74876.3	2.5				ug/L	72123	Standard
	Ti	47	14.3	10.7	**0.0058**	0.005	77.6	ug/L	15	Standard
	V	51	-956.5	27.2	**-0.2657**	0.038	14.5	ug/L	779	Standard
	Cr	52	4448.3	1.4	**0.0256**	0.012	46.4	ug/L	4182	Standard
	Cr	53	6693.1	1.2	**5.9957**	0.118	2.0	ug/L	255	Standard
	Mn	55	1087.0	4.5	**-0.0027**	0.005	203.2	ug/L	870	Standard
	Co	59	115.0	6.3	**0.0029**	0.001	40.0	ug/L	44	Standard
	Ni	60	837.7	4.0	**0.1856**	0.018	9.6	ug/L	376	Standard
	Cu	65	385.0	2.7	**-0.0309**	0.005	17.1	ug/L	271	Standard
	Zn	66	3147.0	0.7	**1.5964**	0.050	3.1	ug/L	601	Standard
>	**Ge**	72	651905.6	2.3				ug/L	607655	Standard
	As	75	-101.4	81.3	**-0.0604**	0.057	93.8	ug/L	-37	Standard
	Se	82	167.4	4.8	**1.1234**	0.095	8.5	ug/L	22	Standard
	Se-1	77	856.7	4.2	**8.4008**	0.517	6.2	ug/L	38	Standard
>	**Ga**	71	56.7	27.0				mg/L	38	Standard
	Rb	85	10408.6	0.8				ug/L	15	Standard
	Y	89	788784.6	1.7				ug/L	733256	Standard
>	**Rh**	103	3.3	86.6				ug/L	0	Standard
	Mo	98	186.6	4.9	**0.0564**	0.003	5.0	ug/L	10	Standard
	Ag	107	71.3	4.3	**-0.0009**	0.001	68.2	ug/L	70	Standard
	Cd	111	1.4	150.0	**0.0041**	0.002	38.0	mg/L	2	Standard
	Cd	114	0.3	2195.2	**-0.0034**	0.002	62.7	ug/L	-3	Standard
>	**In**	115	601430.6	1.8				ug/L	555851	Standard
	Sn	118	485.0	10.5	**0.0070**	0.014	202.7	ug/L	495	Standard
	Sb	123	47.3	22.0	**0.0090**	0.003	34.0	ug/L	41	Standard
	Ba	135	3812.5	0.6	**3.8382**	0.062	1.6	ug/L	14	Standard
	Ce	140	8.3	69.3				ug/L	18	Standard
>	**Tb**	159	780626.1	1.6				ug/L	712215	Standard
	Ho	165	5.0	100.0				ug/L	0	Standard
	Tl	203	41.0	29.7	**0.0059**	0.002	38.1	ug/L	1	Standard
	Tl	205	31.7	48.2	**0.0058**	0.003	49.3	ug/L	3	Standard
	Pb	206	2055.1	1.4	**0.5566**	0.017	3.1	ug/L	161	Standard
	Pb	207	1714.4	1.6	**0.5160**	0.007	1.4	ug/L	141	Standard
	Pb	208	7260.0	1.7	**0.5121**	0.018	3.5	ug/L	608	Standard
	U	238	2.7	142.0	**0.0010**	0.001	76.7	ug/L	4	Standard
>	**Bi**	209	524766.9	1.7				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	1740.1	1.0	**4.6238**	0.166	3.6	mg/L	15	Standard
K	39	148.3	7.0	**3.5634**	0.224	6.3	mg/L	2	Standard
Ca	43	58.3	26.2	**4.4661**	1.399	31.3	mg/L	20	Standard
Fe	54	241.2	24.0	**-0.0134**	0.026	192.3	mg/L	260	Standard
Fe	57	53.3	57.3	**0.0206**	0.043	210.3	mg/L	25	Standard
> **Sc-1**	45	74876.3	2.5				mg/L	72123	Standard
Cl	35	28296.4	1.1				ug/L	26728	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	1083.4	18.1				ug/L	733	Standard
P	31	17531.8	5.1				ug/L	17255	Standard
S	34	1745.1	6.2				ug/L	1680	Standard
Sr	88	35.0	14.3				ug/L	7	Standard
C	12	100.0	10.0				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.2	41.6				mg/L	3	Standard
Ho-1	165	5.0	100.0				mg/L	0	Standard
Er	166	23.3	65.5				mg/L	13	Standard
I	127	681.7	13.6				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.561	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.282	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.200
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.059
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 09, 2015

Method 6020 - Summary Report

Sample ID: L1506004101PS WG526665-01
Sample Date/Time: Monday, June 08, 2015 14:25:40
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	177812.3	0.3				ug/L	159930	Standard
	Be	9	51579.3	2.3	**46.7007**	1.048	2.2	ug/L	5	Standard
	Al	27	841.7	4.5	**-0.0237**	0.001	2.4	ug/L	623	Standard
	Sc	45	74378.8	2.0				ug/L	72123	Standard
	Ti	47	16.7	24.2	**0.0137**	0.014	104.4	ug/L	15	Standard
	V	51	322497.0	1.1	**47.5382**	0.998	2.1	ug/L	779	Standard
	Cr	52	364847.9	0.5	**48.4063**	0.656	1.4	ug/L	4182	Standard
	Cr	53	57716.4	1.3	**53.5750**	1.313	2.5	ug/L	255	Standard
	Mn	55	615870.7	1.1	**48.7980**	1.001	2.1	ug/L	870	Standard
	Co	59	377812.0	1.4	**48.5192**	1.192	2.5	ug/L	44	Standard
	Ni	60	120650.6	2.0	**48.6580**	1.488	3.1	ug/L	376	Standard
	Cu	65	125705.7	1.4	**49.6101**	1.141	2.3	ug/L	271	Standard
	Zn	66	78379.2	0.8	**50.4280**	0.882	1.7	ug/L	601	Standard
>	Ge	72	653927.1	1.1				ug/L	607655	Standard
	As	75	69722.4	1.4	**49.0512**	1.076	2.2	ug/L	-37	Standard
	Se	82	6323.6	2.3	**49.5913**	1.464	3.0	ug/L	22	Standard
	Se-1	77	5679.4	0.6	**57.6380**	0.366	0.6	ug/L	38	Standard
>	Ga	71	113.3	10.2				mg/L	38	Standard
	Rb	85	10416.9	3.0				ug/L	15	Standard
	Y	89	780247.4	2.6				ug/L	733256	Standard
>	Rh	103	28.3	36.7				ug/L	0	Standard
	Mo	98	200.0	2.5	**0.0610**	0.002	4.0	ug/L	10	Standard
	Ag	107	289533.6	0.7	**48.1813**	0.885	1.8	ug/L	70	Standard
	Cd	111	65578.0	1.7	**48.1595**	1.283	2.7	mg/L	2	Standard
	Cd	114	159248.9	1.0	**48.0709**	0.748	1.6	ug/L	-3	Standard
>	In	115	602115.8	1.1				ug/L	555851	Standard
	Sn	118	516.7	2.2	**0.0143**	0.004	29.2	ug/L	495	Standard
	Sb	123	155979.4	0.8	**48.0633**	0.895	1.9	ug/L	41	Standard
	Ba	135	51767.0	0.6	**52.2275**	0.912	1.7	ug/L	14	Standard
	Ce	140	13.3	43.3				ug/L	18	Standard
>	Tb	159	776421.1	1.1				ug/L	712215	Standard
	Ho	165	10.0	50.0				ug/L	0	Standard
	Tl	203	243891.5	1.4	**47.6870**	1.043	2.2	ug/L	1	Standard
	Tl	205	253574.6	1.4	**47.8844**	1.217	2.5	ug/L	3	Standard
	Pb	206	159451.0	0.9	**48.0673**	0.983	2.0	ug/L	161	Standard
	Pb	207	146626.1	1.0	**48.3001**	1.015	2.1	ug/L	141	Standard
	Pb	208	612491.9	1.2	**47.9956**	1.036	2.2	ug/L	608	Standard
	U	238	248803.4	1.3	**47.0162**	1.136	2.4	ug/L	4	Standard
>	Bi	209	523715.2	1.2				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	1648.4	3.9	**4.4077**	0.245	5.6	mg/L	15	Standard
K	39	145.0	17.2	**3.5023**	0.575	16.4	mg/L	2	Standard
Ca	43	61.7	73.6	**4.8016**	4.481	93.3	mg/L	20	Standard
Fe	54	290.4	23.1	**0.0076**	0.026	343.7	mg/L	260	Standard
Fe	57	50.0	10.0	**0.0160**	0.006	38.9	mg/L	25	Standard
> **Sc-1**	45	74378.8	2.0				mg/L	72123	Standard
Cl	35	28514.1	0.7				ug/L	26728	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	923.4	9.8				ug/L	733	Standard
P	31	17553.5	0.4				ug/L	17255	Standard
S	34	1733.4	4.8				ug/L	1680	Standard
Sr	88	43.3	17.6				ug/L	7	Standard
C	12	73.3	31.5				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.4	96.7				mg/L	3	Standard
Ho-1	165	10.0	50.0				mg/L	0	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	713.4	9.8				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.182	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.615	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.323
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.840
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 09, 2015

Method 6020 - Summary Report

Sample ID: L1506004101SDL WG526665-02
Sample Date/Time: Monday, June 08, 2015 14:28:52
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 250
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	176945.6	0.6				ug/L	159930	Standard
	Be	9	20.0	66.1	**0.0086**	0.012	139.5	ug/L	5	Standard
	Al	27	658.3	16.0	**-0.0266**	0.002	6.5	ug/L	623	Standard
	Sc	45	72849.7	1.0				ug/L	72123	Standard
	Ti	47	14.0	7.1	**0.0046**	0.003	70.5	ug/L	15	Standard
	V	51	343.7	31.3	**-0.0731**	0.016	21.3	ug/L	779	Standard
	Cr	52	4065.2	0.1	**-0.0279**	0.004	15.4	ug/L	4182	Standard
	Cr	53	2216.8	2.7	**1.7993**	0.063	3.5	ug/L	255	Standard
	Mn	55	1211.4	10.9	**0.0069**	0.011	154.9	ug/L	870	Standard
	Co	59	130.7	40.1	**0.0049**	0.007	138.4	ug/L	44	Standard
	Ni	60	468.3	3.5	**0.0349**	0.006	17.3	ug/L	376	Standard
	Cu	65	325.7	5.1	**-0.0550**	0.006	11.2	ug/L	271	Standard
	Zn	66	2463.2	3.4	**1.1451**	0.054	4.7	ug/L	601	Standard
>	**Ge**	72	654063.6	0.7				ug/L	607655	Standard
	As	75	-9.6	118.1	**0.0039**	0.008	203.6	ug/L	-37	Standard
	Se	82	50.5	14.3	**0.1972**	0.059	29.7	ug/L	22	Standard
	Se-1	77	208.7	3.9	**1.7470**	0.097	5.5	ug/L	38	Standard
>	**Ga**	71	30.0	44.1				mg/L	38	Standard
	Rb	85	2210.2	6.6				ug/L	15	Standard
	Y	89	777086.4	1.3				ug/L	733256	Standard
>	**Rh**	103	1.7	173.2				ug/L	0	Standard
	Mo	98	41.9	2.6	**0.0063**	0.000	6.1	ug/L	10	Standard
	Ag	107	136.3	65.9	**0.0101**	0.015	149.8	ug/L	70	Standard
	Cd	111	17.3	138.9	**0.0159**	0.018	111.8	mg/L	2	Standard
	Cd	114	52.5	142.6	**0.0125**	0.023	183.1	ug/L	-3	Standard
>	**In**	115	598227.9	0.3				ug/L	555851	Standard
	Sn	118	403.3	8.8	**-0.0122**	0.008	68.2	ug/L	495	Standard
	Sb	123	482.6	26.9	**0.1441**	0.041	28.1	ug/L	41	Standard
	Ba	135	782.0	7.8	**0.7805**	0.064	8.3	ug/L	14	Standard
	Ce	140	6.7	43.3				ug/L	18	Standard
>	**Tb**	159	774592.1	0.8				ug/L	712215	Standard
	Ho	165	11.7	24.7				ug/L	0	Standard
	Tl	203	129.7	87.3	**0.0233**	0.022	95.1	ug/L	1	Standard
	Tl	205	76.7	24.7	**0.0143**	0.004	25.3	ug/L	3	Standard
	Pb	206	614.7	9.4	**0.1226**	0.018	14.6	ug/L	161	Standard
	Pb	207	479.3	3.8	**0.1095**	0.006	5.7	ug/L	141	Standard
	Pb	208	2121.4	5.6	**0.1096**	0.010	9.0	ug/L	608	Standard
	U	238	36.0	60.3	**0.0072**	0.004	56.7	ug/L	4	Standard
>	**Bi**	209	524756.6	0.4				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	330.0	11.8	**0.8644**	0.105	12.1	mg/L	15	Standard
K	39	23.3	89.2	**0.5442**	0.516	94.8	mg/L	2	Standard
Ca	43	15.0	33.3	**0.1959**	0.499	254.5	mg/L	20	Standard
Fe	54	314.6	21.9	**0.0209**	0.029	138.9	mg/L	260	Standard
Fe	57	33.3	22.9	**-0.0060**	0.011	179.7	mg/L	25	Standard
> **Sc-1**	45	72849.7	1.0				mg/L	72123	Standard
Cl	35	27742.0	1.6				ug/L	26728	Standard
Kr	83	1.0	173.2				ug/L	0	Standard
Br	81	700.0	26.0				ug/L	733	Standard
P	31	16417.2	1.3				ug/L	17255	Standard
S	34	1581.7	3.6				ug/L	1680	Standard
Sr	88	15.0	0.0				ug/L	7	Standard
C	12	73.3	7.9				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.4	52.9				mg/L	3	Standard
Ho-1	165	11.7	24.7				mg/L	0	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	213.3	20.2				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.640	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.637	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1506004101SDL WG526665-02
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.624
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.057
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 09, 2015

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, June 08, 2015 14:32:04
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	177116.4	2.7				ug/L	159930	Standard
	Be	9	50020.8	3.6	**45.4629**	0.752	1.7	ug/L	5	Standard
	Al	27	2855900.7	2.4	**46.1064**	1.625	3.5	ug/L	623	Standard
	Sc	45	74176.2	1.8				ug/L	72123	Standard
	Ti	47	26908.2	2.2	**88.9681**	3.356	3.8	ug/L	15	Standard
	V	51	314801.9	3.2	**45.3927**	2.284	5.0	ug/L	779	Standard
	Cr	52	347851.7	2.0	**45.1076**	1.692	3.8	ug/L	4182	Standard
	Cr	53	50244.9	3.5	**45.5861**	2.358	5.2	ug/L	255	Standard
	Mn	55	583191.3	0.5	**45.1853**	0.960	2.1	ug/L	870	Standard
	Co	59	363127.1	1.3	**45.6106**	1.443	3.2	ug/L	44	Standard
	Ni	60	114926.8	2.9	**45.3251**	1.995	4.4	ug/L	376	Standard
	Cu	65	117655.2	2.1	**45.4044**	1.743	3.8	ug/L	271	Standard
	Zn	66	72335.0	1.6	**45.4763**	1.441	3.2	ug/L	601	Standard
>	Ge	72	668715.0	1.8				ug/L	607655	Standard
	As	75	66228.1	1.7	**45.5753**	1.566	3.4	ug/L	-37	Standard
	Se	82	5954.3	1.2	**45.6529**	1.181	2.6	ug/L	22	Standard
	Se-1	77	4655.0	1.2	**46.1313**	1.123	2.4	ug/L	38	Standard
>	Ga	71	61.7	24.8				mg/L	38	Standard
	Rb	85	831.7	7.0				ug/L	15	Standard
	Y	89	807830.6	1.4				ug/L	733256	Standard
>	Rh	103	26.7	43.3				ug/L	0	Standard
	Mo	98	275484.5	2.2	**94.4383**	3.158	3.3	ug/L	10	Standard
	Ag	107	279009.2	1.6	**45.9445**	1.257	2.7	ug/L	70	Standard
	Cd	111	63624.2	1.0	**46.2331**	1.021	2.2	mg/L	2	Standard
	Cd	114	154209.7	1.9	**46.0674**	1.420	3.1	ug/L	-3	Standard
>	In	115	608520.0	1.3				ug/L	555851	Standard
	Sn	118	191445.4	1.3	**45.1883**	1.180	2.6	ug/L	495	Standard
	Sb	123	151254.9	1.8	**46.1192**	1.240	2.7	ug/L	41	Standard
	Ba	135	46187.3	1.7	**46.1108**	1.317	2.9	ug/L	14	Standard
	Ce	140	43.3	46.6				ug/L	18	Standard
>	Tb	159	794455.8	1.9				ug/L	712215	Standard
	Ho	165	8.3	91.7				ug/L	0	Standard
	Tl	203	234077.7	1.0	**46.1386**	1.223	2.7	ug/L	1	Standard
	Tl	205	242774.6	0.4	**46.2098**	0.916	2.0	ug/L	3	Standard
	Pb	206	153334.1	1.9	**46.5989**	1.631	3.5	ug/L	161	Standard
	Pb	207	140004.7	1.8	**46.4945**	1.653	3.6	ug/L	141	Standard
	Pb	208	583038.0	1.0	**46.0560**	1.315	2.9	ug/L	608	Standard
	U	238	240119.9	1.2	**45.7419**	1.331	2.9	ug/L	4	Standard
>	Bi	209	519603.0	1.9				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	1806.8	3.9	**4.8486**	0.273	5.6	mg/L	15	Standard
K	39	190.0	19.0	**4.6155**	0.847	18.3	mg/L	2	Standard
Ca	43	41.7	25.0	**2.8664**	1.074	37.5	mg/L	20	Standard
Fe	54	11133.6	2.3	**4.6398**	0.092	2.0	mg/L	260	Standard
Fe	57	3522.1	3.8	**4.8192**	0.172	3.6	mg/L	25	Standard
> **Sc-1**	45	74176.2	1.8				mg/L	72123	Standard
Cl	35	28297.1	1.4				ug/L	26728	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	690.0	9.5				ug/L	733	Standard
P	31	17633.6	3.8				ug/L	17255	Standard
S	34	1753.4	4.7				ug/L	1680	Standard
Sr	88	6.7	114.6				ug/L	7	Standard
C	12	60.0	50.0				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	22.1	51.3				mg/L	3	Standard
Ho-1	165	8.3	91.7				mg/L	0	Standard
Er	166	26.7	78.1				mg/L	13	Standard
I	127	170.0	2.9				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	90.926		
Al	27	92.213		
Sc	45			
Ti	47	88.968		
V	51	90.785		
Cr	52	90.215		
Cr	53			
Mn	55	90.371		
Co	59	91.221		
Ni	60	90.650		
Cu	65	90.809		
Zn	66	90.953		
> Ge	72		110.048	
As	75	91.151		
Se	82	91.306		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	94.438		
Ag	107	91.889		
Cd	111	92.466		
Cd	114			
In	115		109.475	
Sn	118	90.377		
Sb	123	92.238		
Ba	135	92.222		
Ce	140			
Tb	159			
Ho	165			
Tl	203	92.277		
Tl	205			
Pb	206			
Pb	207			
Pb	208	92.112		
U	238	91.484		
Bi	209		107.986	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Ti	47	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, June 08, 2015 14:35:16
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	168350.3	1.8				ug/L	159930	Standard
	Be	9	20.0	75.0	**0.0095**	0.014	151.1	ug/L	5	Standard
	Al	27	745.0	22.9	**-0.0246**	0.003	12.4	ug/L	623	Standard
	Sc	45	69967.9	1.0				ug/L	72123	Standard
	Ti	47	13.3	30.3	**0.0041**	0.014	338.6	ug/L	15	Standard
	V	51	589.5	6.2	**-0.0331**	0.007	22.2	ug/L	779	Standard
	Cr	52	3700.5	3.6	**-0.0570**	0.016	27.9	ug/L	4182	Standard
	Cr	53	691.7	16.7	**0.4043**	0.126	31.1	ug/L	255	Standard
	Mn	55	1117.4	5.6	**0.0030**	0.007	225.2	ug/L	870	Standard
	Co	59	123.0	16.4	**0.0046**	0.003	65.7	ug/L	44	Standard
	Ni	60	364.0	8.1	**-0.0013**	0.013	979.5	ug/L	376	Standard
	Cu	65	300.0	5.4	**-0.0603**	0.009	15.0	ug/L	271	Standard
	Zn	66	584.3	1.5	**-0.0588**	0.013	22.0	ug/L	601	Standard
>	**Ge**	72	628835.5	1.9				ug/L	607655	Standard
	As	75	-29.9	32.1	**-0.0111**	0.007	60.1	ug/L	-37	Standard
	Se	82	16.5	37.9	**-0.0657**	0.049	74.5	ug/L	22	Standard
	Se-1	77	48.3	29.0	**0.1282**	0.144	112.5	ug/L	38	Standard
>	**Ga**	71	28.3	10.2				mg/L	38	Standard
	Rb	85	20.0	66.1				ug/L	15	Standard
	Y	89	746005.0	0.9				ug/L	733256	Standard
>	**Rh**	103	0.0					ug/L	0	Standard
	Mo	98	80.9	36.1	**0.0213**	0.011	51.6	ug/L	10	Standard
	Ag	107	117.0	29.9	**0.0077**	0.006	78.5	ug/L	70	Standard
	Cd	111	10.8	103.9	**0.0115**	0.009	75.5	mg/L	2	Standard
	Cd	114	31.4	96.0	**0.0065**	0.010	147.3	ug/L	-3	Standard
>	**In**	115	571271.2	1.4				ug/L	555851	Standard
	Sn	118	508.3	13.4	**0.0187**	0.015	82.2	ug/L	495	Standard
	Sb	123	132.0	22.9	**0.0373**	0.010	26.2	ug/L	41	Standard
	Ba	135	15.0	70.6	**0.0021**	0.011	522.2	ug/L	14	Standard
	Ce	140	8.3	69.3				ug/L	18	Standard
>	**Tb**	159	744833.1	1.6				ug/L	712215	Standard
	Ho	165	5.0	0.0				ug/L	0	Standard
	Tl	203	49.3	98.1	**0.0080**	0.010	122.0	ug/L	1	Standard
	Tl	205	31.7	63.8	**0.0060**	0.004	65.1	ug/L	3	Standard
	Pb	206	190.7	10.2	**-0.0024**	0.006	242.9	ug/L	161	Standard
	Pb	207	174.7	18.9	**0.0121**	0.011	93.7	ug/L	141	Standard
	Pb	208	685.7	3.9	**-0.0002**	0.003	1739.5	ug/L	608	Standard
	U	238	33.0	23.7	**0.0070**	0.002	23.6	ug/L	4	Standard
>	**Bi**	209	500552.2	1.4				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	10.0		**-0.0162**	0.000	1.8	mg/L	15	Standard
K	39	8.3	124.9	**0.1821**	0.274	150.2	mg/L	2	Standard
Ca	43	20.0	25.0	**0.7960**	0.526	66.1	mg/L	20	Standard
Fe	54	264.4	16.9	**0.0040**	0.020	508.5	mg/L	260	Standard
Fe	57	38.3	71.8	**0.0035**	0.041	1172.2	mg/L	25	Standard
> **Sc-1**	45	69967.9	1.0				mg/L	72123	Standard
Cl	35	27469.5	0.9				ug/L	26728	Standard
Kr	83	0.7	173.2				ug/L	0	Standard
Br	81	630.0	15.1				ug/L	733	Standard
P	31	16929.5	1.3				ug/L	17255	Standard
S	34	1786.8	5.1				ug/L	1680	Standard
Sr	88	6.7	86.6				ug/L	7	Standard
C	12	56.7	53.9				mg/L	67	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.7	188.8				mg/L	3	Standard
Ho-1	165	5.0	0.0				mg/L	0	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	136.7	9.2				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.486	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.774
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.027
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1505127201
Sample Date/Time: Monday, June 08, 2015 14:58:34
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	171804.0	2.5				ug/L	159930	Standard
	Be	9	20.0	43.3	**0.0093**	0.008	91.3	ug/L	5	Standard
	Al	27	3491231.6	5.3	**58.0710**	2.042	3.5	ug/L	623	Standard
	Sc	45	71764.6	2.5				ug/L	72123	Standard
	Ti	47	443.3	3.4	**1.4987**	0.052	3.5	ug/L	15	Standard
	V	51	1955.3	3.0	**0.1733**	0.008	4.7	ug/L	779	Standard
	Cr	52	4668.7	4.2	**0.0708**	0.024	34.2	ug/L	4182	Standard
	Cr	53	640.0	10.2	**0.3456**	0.061	17.6	ug/L	255	Standard
	Mn	55	1202729.0	3.5	**98.0575**	3.050	3.1	ug/L	870	Standard
	Co	59	839.0	3.0	**0.0989**	0.003	2.9	ug/L	44	Standard
	Ni	60	1937.5	5.8	**0.6512**	0.043	6.5	ug/L	376	Standard
	Cu	65	1472.1	4.4	**0.4155**	0.023	5.6	ug/L	271	Standard
	Zn	66	4405.6	3.4	**2.4868**	0.088	3.5	ug/L	601	Standard
>	**Ge**	72	635956.8	0.5				ug/L	607655	Standard
	As	75	6779.4	3.4	**4.9129**	0.152	3.1	ug/L	-37	Standard
	Se	82	84.9	11.2	**0.4871**	0.081	16.6	ug/L	22	Standard
	Se-1	77	44.7	6.5	**0.0846**	0.033	38.7	ug/L	38	Standard
>	**Ga**	71	251.7	14.1				mg/L	38	Standard
	Rb	85	2932.0	4.4				ug/L	15	Standard
	Y	89	754568.9	1.0				ug/L	733256	Standard
>	**Rh**	103	10.0	86.6				ug/L	0	Standard
	Mo	98	897.6	4.9	**0.3159**	0.016	5.1	ug/L	10	Standard
	Ag	107	74.7	16.7	**0.0002**	0.002	1185.3	ug/L	70	Standard
	Cd	111	2.4	126.0	**0.0049**	0.002	47.0	mg/L	2	Standard
	Cd	114	10.7	138.9	**-0.0001**	0.005	3167.4	ug/L	-3	Standard
>	**In**	115	577441.4	0.5				ug/L	555851	Standard
	Sn	118	533.3	11.3	**0.0237**	0.015	61.9	ug/L	495	Standard
	Sb	123	92.6	17.8	**0.0242**	0.005	21.3	ug/L	41	Standard
	Ba	135	11693.5	3.5	**12.2904**	0.466	3.8	ug/L	14	Standard
	Ce	140	1658.4	4.0				ug/L	18	Standard
>	**Tb**	159	754945.7	1.1				ug/L	712215	Standard
	Ho	165	55.0	48.1				ug/L	0	Standard
	Tl	203	19.3	11.9	**0.0019**	0.001	27.2	ug/L	1	Standard
	Tl	205	21.7	48.0	**0.0041**	0.002	50.9	ug/L	3	Standard
	Pb	206	762.0	0.7	**0.1788**	0.003	1.8	ug/L	161	Standard
	Pb	207	691.0	4.3	**0.1910**	0.012	6.4	ug/L	141	Standard
	Pb	208	2803.8	3.0	**0.1743**	0.007	3.9	ug/L	608	Standard
	U	238	518.3	2.8	**0.1032**	0.003	3.1	ug/L	4	Standard
>	**Bi**	209	499060.0	1.2				ug/L	481178	Standard

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Na	23	1.7	173.2				mg/L	0	Standard
Mg	24	496.7	17.4	**1.3415**	0.207	15.4	mg/L	15	Standard
K	39	10.0	100.0	**0.2208**	0.257	116.3	mg/L	2	Standard
Ca	43	141.7	7.3	**13.4253**	1.066	7.9	mg/L	20	Standard
Fe	54	4468.2	4.1	**1.8565**	0.047	2.5	mg/L	260	Standard
Fe	57	1386.7	8.0	**1.9279**	0.107	5.5	mg/L	25	Standard
> **Sc-1**	45	71764.6	2.5				mg/L	72123	Standard
Cl	35	27035.4	2.9				ug/L	26728	Standard
Kr	83	1.0	100.0				ug/L	0	Standard
Br	81	5654.4	5.6				ug/L	733	Standard
P	31	17843.8	4.3				ug/L	17255	Standard
S	34	1536.7	5.0				ug/L	1680	Standard
Sr	88	126.7	2.3				ug/L	7	Standard
C	12	106.7	30.1				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	87.4	20.1				mg/L	3	Standard
Ho-1	165	55.0	48.1				mg/L	0	Standard
Er	166	53.3	21.7				mg/L	13	Standard
I	127	67448.2	2.3				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.425	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.658	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.884
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.716
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1505127202
Sample Date/Time: Monday, June 08, 2015 15:01:45
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	173102.9	4.5				ug/L	159930	Standard
	Be	9	41.7	45.4	**0.0294**	0.018	62.2	ug/L	5	Standard
	Al	27	33602546.8	4.4	**556.2568**	40.617	7.3	ug/L	623	Standard
	Sc	45	70780.0	1.7				ug/L	72123	Standard
	Ti	47	868.7	4.6	**2.9598**	0.236	8.0	ug/L	15	Standard
	V	51	2712.0	8.1	**0.2859**	0.043	15.2	ug/L	779	Standard
	Cr	52	6799.9	2.5	**0.3584**	0.029	8.2	ug/L	4182	Standard
	Cr	53	3343.7	8.5	**2.9132**	0.224	7.7	ug/L	255	Standard
	Mn	55	2872542.3	2.5	**232.9259**	14.909	6.4	ug/L	870	Standard
	Co	59	8324.3	5.3	**1.0809**	0.089	8.2	ug/L	44	Standard
	Ni	60	11187.8	4.8	**4.4730**	0.393	8.8	ug/L	376	Standard
	Cu	65	6096.2	5.8	**2.2860**	0.240	10.5	ug/L	271	Standard
	Zn	66	7470.2	2.9	**4.5037**	0.353	7.8	ug/L	601	Standard
>	Ge	72	640986.7	4.4				ug/L	607655	Standard
	As	75	2460.2	4.9	**1.7804**	0.159	9.0	ug/L	-37	Standard
	Se	82	945.6	3.3	**7.4106**	0.565	7.6	ug/L	22	Standard
	Se-1	77	424.7	5.8	**4.0472**	0.333	8.2	ug/L	38	Standard
>	Ga	71	521.7	2.2				mg/L	38	Standard
	Rb	85	9372.9	4.0				ug/L	15	Standard
	Y	89	764245.2	6.0				ug/L	733256	Standard
>	Rh	103	36.7	68.6				ug/L	0	Standard
	Mo	98	253.6	11.4	**0.0846**	0.013	15.2	ug/L	10	Standard
	Ag	107	70.3	4.3	**-0.0004**	0.000	68.6	ug/L	70	Standard
	Cd	111	22.3	18.1	**0.0205**	0.004	18.1	mg/L	2	Standard
	Cd	114	36.5	56.4	**0.0083**	0.007	83.0	ug/L	-3	Standard
>	In	115	570780.5	3.9				ug/L	555851	Standard
	Sn	118	626.7	19.2	**0.0490**	0.032	65.4	ug/L	495	Standard
	Sb	123	104.3	8.1	**0.0283**	0.001	5.1	ug/L	41	Standard
	Ba	135	20133.1	4.9	**21.4566**	1.708	8.0	ug/L	14	Standard
	Ce	140	6369.7	2.4				ug/L	18	Standard
>	Tb	159	753819.0	2.8				ug/L	712215	Standard
	Ho	165	153.3	23.6				ug/L	0	Standard
	Tl	203	98.3	3.9	**0.0187**	0.002	8.2	ug/L	1	Standard
	Tl	205	96.7	16.6	**0.0194**	0.003	13.0	ug/L	3	Standard
	Pb	206	1180.4	3.4	**0.3206**	0.025	7.9	ug/L	161	Standard
	Pb	207	993.7	0.9	**0.3039**	0.010	3.2	ug/L	141	Standard
	Pb	208	4395.3	4.6	**0.3143**	0.025	8.0	ug/L	608	Standard
	U	238	952.0	5.3	**0.1939**	0.015	7.5	ug/L	4	Standard
>	Bi	209	487607.4	3.7				ug/L	481178	Standard

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Na	23	13.3	108.3				mg/L	0	Standard
Mg	24	5687.7	2.1	**16.0883**	0.141	0.9	mg/L	15	Standard
K	39	98.3	2.9	**2.4895**	0.109	4.4	mg/L	2	Standard
Ca	43	761.7	13.2	**79.0782**	9.812	12.4	mg/L	20	Standard
Fe	54	1164.1	4.1	**0.4054**	0.022	5.5	mg/L	260	Standard
Fe	57	795.0	6.0	**1.0996**	0.068	6.1	mg/L	25	Standard
> **Sc-1**	45	70780.0	1.7				mg/L	72123	Standard
Cl	35	55248.6	3.7				ug/L	26728	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	70845.3	3.0				ug/L	733	Standard
P	31	17476.7	2.7				ug/L	17255	Standard
S	34	1610.1	10.3				ug/L	1680	Standard
Sr	88	531.7	13.0				ug/L	7	Standard
C	12	73.3	20.8				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	232.5	27.4				mg/L	3	Standard
Ho-1	165	153.3	23.6				mg/L	0	Standard
Er	166	156.7	18.4				mg/L	13	Standard
I	127	29806.0	1.9				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.237	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.485	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	102.686
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.336
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1505127205
Sample Date/Time: Monday, June 08, 2015 15:04:57
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	189768.3	2.9				ug/L	159930	Standard
	Be	9	20.0	25.0	**0.0074**	0.004	55.3	ug/L	5	Standard
	Al	27	41721455.1	3.0	**629.3884**	32.822	5.2	ug/L	623	Standard
	Sc	45	75157.7	3.3				ug/L	72123	Standard
	Ti	47	82.7	17.5	**0.2263**	0.048	21.3	ug/L	15	Standard
	V	51	722.4	28.2	**-0.0213**	0.028	132.7	ug/L	779	Standard
	Cr	52	6931.9	5.0	**0.3219**	0.058	17.9	ug/L	4182	Standard
	Cr	53	3547.1	5.8	**2.9150**	0.211	7.2	ug/L	255	Standard
	Mn	55	70624.4	3.6	**5.3036**	0.260	4.9	ug/L	870	Standard
	Co	59	3193.0	2.9	**0.3826**	0.016	4.3	ug/L	44	Standard
	Ni	60	13330.5	7.1	**5.0346**	0.435	8.6	ug/L	376	Standard
	Cu	65	6871.2	3.4	**2.4342**	0.121	5.0	ug/L	271	Standard
	Zn	66	5258.2	1.9	**2.8299**	0.107	3.8	ug/L	601	Standard
>	**Ge**	72	679971.2	1.4				ug/L	607655	Standard
	As	75	2619.6	4.0	**1.7833**	0.096	5.4	ug/L	-37	Standard
	Se	82	1120.5	4.9	**8.2881**	0.531	6.4	ug/L	22	Standard
	Se-1	77	465.0	5.8	**4.1868**	0.330	7.9	ug/L	38	Standard
>	**Ga**	71	70.0	31.1				mg/L	38	Standard
	Rb	85	3322.0	8.6				ug/L	15	Standard
	Y	89	802349.1	2.5				ug/L	733256	Standard
>	**Rh**	103	21.7	58.1				ug/L	0	Standard
	Mo	98	140.9	3.1	**0.0422**	0.002	3.8	ug/L	10	Standard
	Ag	107	80.3	21.0	**0.0011**	0.003	283.8	ug/L	70	Standard
	Cd	111	38.8	18.0	**0.0326**	0.005	15.7	mg/L	2	Standard
	Cd	114	94.3	29.7	**0.0261**	0.010	36.8	ug/L	-3	Standard
>	**In**	115	581912.0	2.9				ug/L	555851	Standard
	Sn	118	771.7	10.6	**0.0822**	0.026	31.7	ug/L	495	Standard
	Sb	123	67.6	14.1	**0.0160**	0.004	22.7	ug/L	41	Standard
	Ba	135	3299.0	2.5	**3.4342**	0.187	5.5	ug/L	14	Standard
	Ce	140	403.3	10.4				ug/L	18	Standard
>	**Tb**	159	778208.1	2.9				ug/L	712215	Standard
	Ho	165	11.7	65.5				ug/L	0	Standard
	Tl	203	63.3	10.0	**0.0109**	0.002	14.6	ug/L	1	Standard
	Tl	205	61.7	24.8	**0.0120**	0.003	26.0	ug/L	3	Standard
	Pb	206	314.3	5.6	**0.0359**	0.002	6.7	ug/L	161	Standard
	Pb	207	252.3	2.6	**0.0383**	0.003	8.1	ug/L	141	Standard
	Pb	208	1117.0	2.2	**0.0347**	0.004	12.2	ug/L	608	Standard
	U	238	1169.7	2.9	**0.2304**	0.013	5.8	ug/L	4	Standard
>	**Bi**	209	503997.7	3.3				ug/L	481178	Standard

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Na	23	6.7	43.3				mg/L	0	Standard
Mg	24	4717.4	4.9	**12.5571**	0.464	3.7	mg/L	15	Standard
K	39	46.7	40.6	**1.0850**	0.434	40.0	mg/L	2	Standard
Ca	43	940.0	15.2	**92.4357**	16.278	17.6	mg/L	20	Standard
Fe	54	312.6	7.2	**0.0163**	0.014	83.8	mg/L	260	Standard
Fe	57	690.0	3.8	**0.8904**	0.064	7.2	mg/L	25	Standard
> **Sc-1**	45	75157.7	3.3				mg/L	72123	Standard
Cl	35	67488.8	3.4				ug/L	26728	Standard
Kr	83	1.0	100.0				ug/L	0	Standard
Br	81	81478.7	3.6				ug/L	733	Standard
P	31	18930.2	2.5				ug/L	17255	Standard
S	34	1618.4	10.4				ug/L	1680	Standard
Sr	88	228.3	2.5				ug/L	7	Standard
C	12	96.7	36.3				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	32.4	63.6				mg/L	3	Standard
Ho-1	165	11.7	65.5				mg/L	0	Standard
Er	166	20.0	86.6				mg/L	13	Standard
I	127	19243.9	3.1				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.657	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.901	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.689
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.743
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, June 08, 2015 15:08:10
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	179709.8	2.3				ug/L	159930	Standard
	Be	9	59135.3	4.4	**52.9649**	1.334	2.5	ug/L	5	Standard
	Al	27	3299806.0	4.4	**52.4714**	1.293	2.5	ug/L	623	Standard
	Sc	45	70904.1	4.5				ug/L	72123	Standard
	Ti	47	29541.8	3.5	**99.3781**	1.261	1.3	ug/L	15	Standard
	V	51	359179.6	3.3	**52.7051**	0.756	1.4	ug/L	779	Standard
	Cr	52	394775.9	2.7	**52.1769**	0.432	0.8	ug/L	4182	Standard
	Cr	53	55504.9	3.1	**51.2616**	0.395	0.8	ug/L	255	Standard
	Mn	55	666834.0	1.8	**52.6013**	0.529	1.0	ug/L	870	Standard
	Co	59	413390.6	3.7	**52.8291**	0.913	1.7	ug/L	44	Standard
	Ni	60	129185.7	2.9	**51.8580**	0.316	0.6	ug/L	376	Standard
	Cu	65	133487.7	2.5	**52.4441**	0.275	0.5	ug/L	271	Standard
	Zn	66	82419.0	2.1	**52.8032**	0.212	0.4	ug/L	601	Standard
>	**Ge**	72	656909.1	2.3				ug/L	607655	Standard
	As	75	73767.1	1.7	**51.6593**	0.485	0.9	ug/L	-37	Standard
	Se	82	6621.6	2.8	**51.6896**	0.342	0.7	ug/L	22	Standard
	Se-1	77	5404.3	3.1	**54.5688**	0.613	1.1	ug/L	38	Standard
>	**Ga**	71	55.0	24.1				mg/L	38	Standard
	Rb	85	886.7	13.6				ug/L	15	Standard
	Y	89	767621.1	3.3				ug/L	733256	Standard
>	**Rh**	103	11.7	24.7				ug/L	0	Standard
	Mo	98	305241.5	2.6	**110.4257**	1.944	1.8	ug/L	10	Standard
	Ag	107	301487.4	2.0	**52.4027**	1.176	2.2	ug/L	70	Standard
	Cd	111	69356.6	3.1	**53.1804**	0.574	1.1	mg/L	2	Standard
	Cd	114	168517.1	3.2	**53.1170**	0.726	1.4	ug/L	-3	Standard
>	**In**	115	576615.6	3.2				ug/L	555851	Standard
	Sn	118	208563.9	4.0	**51.9484**	0.569	1.1	ug/L	495	Standard
	Sb	123	166148.9	2.2	**53.4681**	0.825	1.5	ug/L	41	Standard
	Ba	135	49791.1	2.7	**52.4571**	0.697	1.3	ug/L	14	Standard
	Ce	140	45.0	33.3				ug/L	18	Standard
>	**Tb**	159	755193.5	2.5				ug/L	712215	Standard
	Ho	165	6.7	43.3				ug/L	0	Standard
	Tl	203	258948.3	2.0	**53.1036**	0.506	1.0	ug/L	1	Standard
	Tl	205	269982.2	3.0	**53.4607**	0.596	1.1	ug/L	3	Standard
	Pb	206	170339.1	2.3	**53.8621**	0.552	1.0	ug/L	161	Standard
	Pb	207	155761.1	2.2	**53.8169**	0.372	0.7	ug/L	141	Standard
	Pb	208	642411.3	2.7	**52.7974**	0.512	1.0	ug/L	608	Standard
	U	238	266034.6	3.0	**52.7165**	0.522	1.0	ug/L	4	Standard
>	**Bi**	209	499275.5	2.0				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	1990.1	5.9	**5.5881**	0.095	1.7	mg/L	15	Standard
K	39	205.0	13.6	**5.2096**	0.573	11.0	mg/L	2	Standard
Ca	43	46.7	43.3	**3.6443**	2.341	64.2	mg/L	20	Standard
Fe	54	12734.7	2.4	**5.5838**	0.336	6.0	mg/L	260	Standard
Fe	57	3887.2	4.5	**5.5802**	0.364	6.5	mg/L	25	Standard
> **Sc-1**	45	70904.1	4.5				mg/L	72123	Standard
Cl	35	29606.9	3.3				ug/L	26728	Standard
Kr	83	0.7	86.6				ug/L	0	Standard
Br	81	1366.7	16.5				ug/L	733	Standard
P	31	19360.7	2.0				ug/L	17255	Standard
S	34	1788.4	2.7				ug/L	1680	Standard
Sr	88	8.3	173.2				ug/L	7	Standard
C	12	70.0	42.9				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.2	3.0				mg/L	3	Standard
Ho-1	165	6.7	43.3				mg/L	0	Standard
Er	166	16.7	34.6				mg/L	13	Standard
I	127	560.0	27.5				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	105.930		
Al	27	104.943		
Sc	45			
Ti	47	99.378		
V	51	105.410		
Cr	52	104.354		
Cr	53			
Mn	55	105.203		
Co	59	105.658		
Ni	60	103.716		
Cu	65	104.888		
Zn	66	105.606		
> Ge	72		108.106	
As	75	103.319		
Se	82	103.379		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	110.426		
Ag	107	104.805		
Cd	111	106.361		
Cd	114			
In	115			103.736
Sn	118	103.897		
Sb	123	106.936		
Ba	135	104.914		
Ce	140			
Tb	159			
Ho	165			
Tl	203	106.207		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.595		
U	238	105.433		
Bi	209			103.761
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Mo	98	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, June 08, 2015 15:11:21
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	182136.6	1.3				ug/L	159930	Standard
	Be	9	16.7	17.3	**0.0052**	0.003	51.8	ug/L	5	Standard
	Al	27	2081.8	34.7	**-0.0045**	0.012	255.8	ug/L	623	Standard
	Sc	45	72948.6	1.9				ug/L	72123	Standard
	Ti	47	12.0	8.3	**-0.0025**	0.003	131.3	ug/L	15	Standard
	V	51	807.5	6.5	**-0.0056**	0.008	135.6	ug/L	779	Standard
	Cr	52	4395.0	3.3	**0.0111**	0.016	140.7	ug/L	4182	Standard
	Cr	53	506.7	9.7	**0.2002**	0.044	22.1	ug/L	255	Standard
	Mn	55	1339.7	3.4	**0.0161**	0.004	26.8	ug/L	870	Standard
	Co	59	61.0	15.6	**-0.0041**	0.001	29.9	ug/L	44	Standard
	Ni	60	414.7	2.7	**0.0117**	0.004	34.4	ug/L	376	Standard
	Cu	65	359.3	1.3	**-0.0429**	0.003	6.0	ug/L	271	Standard
	Zn	66	686.0	1.6	**-0.0120**	0.010	85.7	ug/L	601	Standard
>	**Ge**	72	659820.3	0.7				ug/L	607655	Standard
	As	75	-40.6	38.9	**-0.0177**	0.011	63.3	ug/L	-37	Standard
	Se	82	20.6	24.8	**-0.0400**	0.039	97.1	ug/L	22	Standard
	Se-1	77	46.7	18.2	**0.0881**	0.089	101.1	ug/L	38	Standard
>	**Ga**	71	35.0	37.8				mg/L	38	Standard
	Rb	85	30.0	44.1				ug/L	15	Standard
	Y	89	781743.2	0.1				ug/L	733256	Standard
>	**Rh**	103	1.7	173.2				ug/L	0	Standard
	Mo	98	59.6	28.5	**0.0133**	0.006	46.2	ug/L	10	Standard
	Ag	107	89.0	1.1	**0.0027**	0.000	4.7	ug/L	70	Standard
	Cd	111	4.6	50.4	**0.0066**	0.002	26.7	mg/L	2	Standard
	Cd	114	1.0	505.6	**-0.0032**	0.002	47.6	ug/L	-3	Standard
>	**In**	115	576407.1	0.8				ug/L	555851	Standard
	Sn	118	523.3	9.9	**0.0216**	0.014	64.1	ug/L	495	Standard
	Sb	123	75.9	25.0	**0.0188**	0.006	32.5	ug/L	41	Standard
	Ba	135	14.3	47.5	**0.0013**	0.007	552.1	ug/L	14	Standard
	Ce	140	6.7	43.3				ug/L	18	Standard
>	**Tb**	159	760957.7	0.5				ug/L	712215	Standard
	Ho	165	5.0	100.0				ug/L	0	Standard
	Tl	203	17.3	23.3	**0.0014**	0.001	57.2	ug/L	1	Standard
	Tl	205	23.3	65.5	**0.0043**	0.003	68.8	ug/L	3	Standard
	Pb	206	194.0	9.6	**-0.0028**	0.006	226.8	ug/L	161	Standard
	Pb	207	156.0	10.0	**0.0044**	0.006	131.7	ug/L	141	Standard
	Pb	208	701.7	5.8	**-0.0003**	0.003	1120.4	ug/L	608	Standard
	U	238	19.3	53.8	**0.0042**	0.002	48.5	ug/L	4	Standard
>	**Bi**	209	512942.3	1.0				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	13.3	21.7	**-0.0082**	0.008	98.6	mg/L	15	Standard
K	39	3.3	173.2	**0.0468**	0.144	306.9	mg/L	2	Standard
Ca	43	21.7	48.0	**0.8702**	1.046	120.2	mg/L	20	Standard
Fe	54	279.3	12.5	**0.0054**	0.013	240.1	mg/L	260	Standard
Fe	57	20.0	66.1	**-0.0246**	0.019	78.1	mg/L	25	Standard
> **Sc-1**	45	72948.6	1.9				mg/L	72123	Standard
Cl	35	30168.0	0.7				ug/L	26728	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	1000.0	3.0				ug/L	733	Standard
P	31	19414.1	3.8				ug/L	17255	Standard
S	34	1790.1	6.5				ug/L	1680	Standard
Sr	88	3.3	86.6				ug/L	7	Standard
C	12	43.3	35.3				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.5	86.7				mg/L	3	Standard
Ho-1	165	5.0	100.0				mg/L	0	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	308.3	16.2				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.585	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.698
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.601
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 09, 2015

Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Monday, June 08, 2015 15:24:56
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	180412.1	3.7				ug/L	159930	Standard
	Be	9	265.0	24.7	**0.2259**	0.051	22.5	ug/L	5	Standard
	Al	27	563.3	6.0	**-0.0283**	0.000	1.2	ug/L	623	Standard
	Sc	45	70969.2	0.3				ug/L	72123	Standard
	Ti	47	9.0	11.1	**-0.0114**	0.003	30.5	ug/L	15	Standard
	V	51	3268.2	4.4	**0.3739**	0.021	5.6	ug/L	779	Standard
	Cr	52	9969.3	1.1	**0.8059**	0.015	1.9	ug/L	4182	Standard
	Cr	53	1123.4	8.7	**0.8119**	0.093	11.4	ug/L	255	Standard
	Mn	55	7086.0	2.6	**0.4904**	0.015	3.0	ug/L	870	Standard
	Co	59	3218.7	4.3	**0.4142**	0.017	4.2	ug/L	44	Standard
	Ni	60	4235.3	0.8	**1.6113**	0.013	0.8	ug/L	376	Standard
	Cu	65	2401.9	3.8	**0.7966**	0.036	4.6	ug/L	271	Standard
	Zn	66	10240.1	1.8	**6.3978**	0.114	1.8	ug/L	601	Standard
>	**Ge**	72	634415.3	0.2				ug/L	607655	Standard
	As	75	522.9	8.1	**0.3898**	0.031	8.0	ug/L	-37	Standard
	Se	82	60.9	6.5	**0.2934**	0.032	11.0	ug/L	22	Standard
	Se-1	77	72.0	18.2	**0.3736**	0.140	37.4	ug/L	38	Standard
>	**Ga**	71	40.0	37.5				mg/L	38	Standard
	Rb	85	20.0	0.0				ug/L	15	Standard
	Y	89	754067.1	0.1				ug/L	733256	Standard
>	**Rh**	103	1.7	173.2				ug/L	0	Standard
	Mo	98	18.6	11.1	**-0.0014**	0.001	54.2	ug/L	10	Standard
	Ag	107	2336.8	0.9	**0.4057**	0.002	0.5	ug/L	70	Standard
	Cd	111	313.0	5.0	**0.2504**	0.012	4.9	mg/L	2	Standard
	Cd	114	736.9	7.6	**0.2358**	0.017	7.3	ug/L	-3	Standard
>	**In**	115	559530.7	0.4				ug/L	555851	Standard
	Sn	118	611.7	11.7	**0.0482**	0.018	38.3	ug/L	495	Standard
	Sb	123	1267.7	0.8	**0.4148**	0.005	1.1	ug/L	41	Standard
	Ba	135	691.3	1.6	**0.7369**	0.010	1.4	ug/L	14	Standard
	Ce	140	1.7	173.2				ug/L	18	Standard
>	**Tb**	159	727797.2	0.9				ug/L	712215	Standard
	Ho	165	6.7	86.6				ug/L	0	Standard
	Tl	203	396.0	3.2	**0.0794**	0.003	3.5	ug/L	1	Standard
	Tl	205	468.3	2.2	**0.0928**	0.002	2.6	ug/L	3	Standard
	Pb	206	866.7	0.7	**0.2124**	0.002	1.2	ug/L	161	Standard
	Pb	207	705.0	7.7	**0.1961**	0.018	9.1	ug/L	141	Standard
	Pb	208	3146.1	0.4	**0.2030**	0.002	0.8	ug/L	608	Standard
	U	238	2049.1	2.6	**0.4074**	0.009	2.3	ug/L	4	Standard
>	**Bi**	209	498161.0	0.4				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	6.7	86.6	**-0.0260**	0.016	62.9	mg/L	15	Standard
K	39	1.7	173.2	**0.0065**	0.074	1139.2	mg/L	2	Standard
Ca	43	18.3	15.7	**0.5914**	0.307	52.0	mg/L	20	Standard
Fe	54	274.1	12.6	**0.0065**	0.015	231.0	mg/L	260	Standard
Fe	57	25.0	20.0	**-0.0168**	0.007	42.8	mg/L	25	Standard
> **Sc-1**	45	70969.2	0.3				mg/L	72123	Standard
Cl	35	28988.4	2.1				ug/L	26728	Standard
Kr	83	0.7	173.2				ug/L	0	Standard
Br	81	673.3	6.7				ug/L	733	Standard
P	31	18164.2	3.8				ug/L	17255	Standard
S	34	1625.1	1.6				ug/L	1680	Standard
Sr	88	3.3	86.6				ug/L	7	Standard
C	12	53.3	39.0				mg/L	67	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.3	86.9				mg/L	3	Standard
Ho-1	165	6.7	86.6				mg/L	0	Standard
Er	166	6.7	173.2				mg/L	13	Standard
I	127	171.7	21.9				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	112.933		
Al	27			
Sc	45			
Ti	47			
V	51	93.486		
Cr	52	100.735		
Cr	53			
Mn	55	98.084		
Co	59	103.544		
Ni	60	100.705		
Cu	65	99.571		
Zn	66	102.365		
> Ge	72		104.404	
As	75	97.444		
Se	82	73.358		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	101.436		
Cd	111	104.325		
Cd	114			
> In	115			100.662
Sn	118			
Sb	123	103.692		
Ba	135	98.250		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.202		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.492		
U	238	101.857		
> Bi	209			103.530
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW 1A WG525521-03
Sample Date/Time: Monday, June 08, 2015 15:58:12
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	180117.8	1.6				ug/L	159930	Standard
	Be	9	8.3	91.7	**-0.0020**	0.007	336.2	ug/L	5	Standard
	Al	27	1035.0	4.6	**-0.0208**	0.001	3.5	ug/L	623	Standard
	Sc	45	69417.0	1.3				ug/L	72123	Standard
	Ti	47	25.0	4.0	**0.0443**	0.004	8.6	ug/L	15	Standard
	V	51	723.3	10.1	**-0.0138**	0.011	77.9	ug/L	779	Standard
	Cr	52	4341.0	2.0	**0.0267**	0.014	53.3	ug/L	4182	Standard
	Cr	53	423.3	14.3	**0.1387**	0.059	42.5	ug/L	255	Standard
	Mn	55	1560.7	1.7	**0.0383**	0.002	5.6	ug/L	870	Standard
	Co	59	36.3	15.2	**-0.0071**	0.001	10.4	ug/L	44	Standard
	Ni	60	392.0	3.9	**0.0088**	0.007	79.3	ug/L	376	Standard
	Cu	65	820.7	0.7	**0.1508**	0.003	2.2	ug/L	271	Standard
	Zn	66	2031.1	3.2	**0.9045**	0.047	5.2	ug/L	601	Standard
>	**Ge**	72	634937.6	0.4				ug/L	607655	Standard
	As	75	-30.9	41.3	**-0.0117**	0.009	78.3	ug/L	-37	Standard
	Se	82	17.8	13.1	**-0.0560**	0.019	34.5	ug/L	22	Standard
	Se-1	77	45.0	10.2	**0.0888**	0.050	56.2	ug/L	38	Standard
>	**Ga**	71	38.3	45.8				mg/L	38	Standard
	Rb	85	115.0	37.7				ug/L	15	Standard
	Y	89	747850.4	0.6				ug/L	733256	Standard
>	**Rh**	103	0.0					ug/L	0	Standard
	Mo	98	22.3	27.1	**-0.0001**	0.002	1599.2	ug/L	10	Standard
	Ag	107	69.3	7.4	**-0.0006**	0.001	151.6	ug/L	70	Standard
	Cd	111	2.3	25.2	**0.0049**	0.000	9.5	mg/L	2	Standard
	Cd	114	5.9	96.7	**-0.0016**	0.002	112.1	ug/L	-3	Standard
>	**In**	115	570833.3	0.7				ug/L	555851	Standard
	Sn	118	461.7	6.5	**0.0072**	0.007	94.9	ug/L	495	Standard
	Sb	123	47.0	19.0	**0.0097**	0.003	29.6	ug/L	41	Standard
	Ba	135	30.0	12.0	**0.0181**	0.004	21.8	ug/L	14	Standard
	Ce	140	33.3	67.6				ug/L	18	Standard
>	**Tb**	159	737995.8	0.3				ug/L	712215	Standard
	Ho	165	8.3	69.3				ug/L	0	Standard
	Tl	203	4.0	25.0	**-0.0012**	0.000	16.9	ug/L	1	Standard
	Tl	205	1.7	173.2	**0.0001**	0.001	377.2	ug/L	3	Standard
	Pb	206	264.3	3.7	**0.0201**	0.003	13.5	ug/L	161	Standard
	Pb	207	220.3	2.9	**0.0272**	0.002	9.0	ug/L	141	Standard
	Pb	208	911.7	3.7	**0.0177**	0.003	16.1	ug/L	608	Standard
	U	238	0.7	86.6	**0.0006**	0.000	19.8	ug/L	4	Standard
>	**Bi**	209	504902.5	0.5				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	15.0	33.3	**-0.0014**	0.015	1100.6	mg/L	15	Standard
K	39	5.0	100.0	**0.0946**	0.130	137.0	mg/L	2	Standard
Ca	43	20.0	50.0	**0.8064**	1.060	131.4	mg/L	20	Standard
Fe	54	302.8	20.8	**0.0224**	0.028	126.6	mg/L	260	Standard
Fe	57	26.7	43.3	**-0.0136**	0.017	122.1	mg/L	25	Standard
> **Sc-1**	45	69417.0	1.3				mg/L	72123	Standard
Cl	35	27134.9	1.0				ug/L	26728	Standard
Kr	83	0.7	173.2				ug/L	0	Standard
Br	81	536.7	12.4				ug/L	733	Standard
P	31	18139.2	1.4				ug/L	17255	Standard
S	34	1575.1	9.1				ug/L	1680	Standard
Sr	88	6.7	173.2				ug/L	7	Standard
C	12	90.0	22.2				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.2	93.6				mg/L	3	Standard
Ho-1	165	8.3	69.3				mg/L	0	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	185.0	7.2				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.623	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.490	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.695
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.931
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 1A WG525521-04
Sample Date/Time: Monday, June 08, 2015 16:01:23
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	180144.0	3.9				ug/L	159930	Standard
	Be	9	56421.5	1.4	**50.4791**	2.205	4.4	ug/L	5	Standard
	Al	27	2163.5	1.5	**-0.0029**	0.001	35.4	ug/L	623	Standard
	Sc	45	72848.1	1.9				ug/L	72123	Standard
	Ti	47	32.0	8.3	**0.0661**	0.008	11.8	ug/L	15	Standard
	V	51	340789.7	0.8	**50.5914**	0.958	1.9	ug/L	779	Standard
	Cr	52	382238.0	0.8	**51.0993**	0.946	1.9	ug/L	4182	Standard
	Cr	53	53041.0	1.9	**49.5587**	1.469	3.0	ug/L	255	Standard
	Mn	55	647419.3	2.0	**51.6650**	1.686	3.3	ug/L	870	Standard
	Co	59	400728.4	1.7	**51.8190**	1.293	2.5	ug/L	44	Standard
	Ni	60	123463.7	1.6	**50.1438**	1.464	2.9	ug/L	376	Standard
	Cu	65	131847.9	0.8	**52.4043**	0.923	1.8	ug/L	271	Standard
	Zn	66	80753.0	1.6	**52.3382**	1.487	2.8	ug/L	601	Standard
>	**Ge**	72	649429.9	1.3				ug/L	607655	Standard
	As	75	70144.9	1.4	**49.6947**	1.306	2.6	ug/L	-37	Standard
	Se	82	6210.4	2.9	**49.0493**	2.060	4.2	ug/L	22	Standard
	Se-1	77	4981.2	3.0	**50.8715**	2.126	4.2	ug/L	38	Standard
>	**Ga**	71	55.0	39.6				mg/L	38	Standard
	Rb	85	136.7	4.2				ug/L	15	Standard
	Y	89	768487.6	0.8				ug/L	733256	Standard
>	**Rh**	103	8.3	124.9				ug/L	0	Standard
	Mo	98	64.7	17.0	**0.0150**	0.004	25.4	ug/L	10	Standard
	Ag	107	298259.6	1.8	**51.6805**	1.589	3.1	ug/L	70	Standard
	Cd	111	65813.9	1.8	**50.3230**	1.576	3.1	mg/L	2	Standard
	Cd	114	159076.4	0.9	**49.9976**	1.117	2.2	ug/L	-3	Standard
>	**In**	115	578347.9	1.3				ug/L	555851	Standard
	Sn	118	415.0	12.2	**-0.0058**	0.014	238.6	ug/L	495	Standard
	Sb	123	164036.3	1.5	**52.6290**	1.464	2.8	ug/L	41	Standard
	Ba	135	48196.5	1.4	**50.6282**	1.354	2.7	ug/L	14	Standard
	Ce	140	56.7	25.5				ug/L	18	Standard
>	**Tb**	159	754479.2	0.7				ug/L	712215	Standard
	Ho	165	5.0	0.0				ug/L	0	Standard
	Tl	203	252763.7	1.8	**50.1680**	1.354	2.7	ug/L	1	Standard
	Tl	205	265107.0	2.8	**50.8174**	1.830	3.6	ug/L	3	Standard
	Pb	206	170830.7	0.9	**52.2773**	0.952	1.8	ug/L	161	Standard
	Pb	207	148339.7	1.5	**49.6019**	1.194	2.4	ug/L	141	Standard
	Pb	208	635134.1	1.3	**50.5220**	1.098	2.2	ug/L	608	Standard
	U	238	258746.9	1.4	**49.6290**	1.070	2.2	ug/L	4	Standard
>	**Bi**	209	515935.0	0.9				ug/L	481178	Standard

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Na	23	1.7	173.2				mg/L	0	Standard
Mg	24	10.0	50.0	**-0.0175**	0.013	76.3	mg/L	15	Standard
K	39	1.7	173.2	**0.0051**	0.071	1392.7	mg/L	2	Standard
Ca	43	23.3	32.7	**1.0618**	0.819	77.1	mg/L	20	Standard
Fe	54	313.0	7.8	**0.0203**	0.009	43.5	mg/L	260	Standard
Fe	57	23.3	49.5	**-0.0203**	0.016	77.9	mg/L	25	Standard
> **Sc-1**	45	72848.1	1.9				mg/L	72123	Standard
Cl	35	27361.3	0.3				ug/L	26728	Standard
Kr	83	1.0	173.2				ug/L	0	Standard
Br	81	646.7	8.5				ug/L	733	Standard
P	31	18267.7	3.5				ug/L	17255	Standard
S	34	1668.4	4.2				ug/L	1680	Standard
Sr	88	3.3	86.6				ug/L	7	Standard
C	12	86.7	43.7				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.8	101.7				mg/L	3	Standard
Ho-1	165	5.0	0.0				mg/L	0	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	198.3	9.5				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.640	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.875	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.047
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.223
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1505160502 WG525521-01
Sample Date/Time: Monday, June 08, 2015 16:04:35
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	174597.2	2.2				ug/L	159930	Standard
	Be	9	116.7	13.8	**0.0979**	0.013	13.7	ug/L	5	Standard
	Al	27	1730855.0	3.5	**28.3247**	1.055	3.7	ug/L	623	Standard
	Sc	45	71265.6	2.3				ug/L	72123	Standard
	Ti	47	89.3	20.8	**0.2653**	0.064	24.0	ug/L	15	Standard
	V	51	1414.4	4.6	**0.0894**	0.012	13.3	ug/L	779	Standard
	Cr	52	5038.8	3.3	**0.1164**	0.029	24.7	ug/L	4182	Standard
	Cr	53	546.7	5.2	**0.2520**	0.031	12.2	ug/L	255	Standard
	Mn	55	169082.3	1.5	**13.5979**	0.395	2.9	ug/L	870	Standard
	Co	59	3160.3	3.4	**0.4021**	0.018	4.4	ug/L	44	Standard
	Ni	60	2286.8	6.6	**0.7893**	0.073	9.3	ug/L	376	Standard
	Cu	65	1352.4	4.0	**0.3623**	0.022	6.1	ug/L	271	Standard
	Zn	66	4374.0	1.5	**2.4422**	0.078	3.2	ug/L	601	Standard
>	**Ge**	72	641316.1	1.4				ug/L	607655	Standard
	As	75	2378.3	2.7	**1.7167**	0.067	3.9	ug/L	-37	Standard
	Se	82	41.1	15.5	**0.1304**	0.055	42.2	ug/L	22	Standard
	Se-1	77	54.0	16.7	**0.1787**	0.101	56.8	ug/L	38	Standard
>	**Ga**	71	141.7	10.8				mg/L	38	Standard
	Rb	85	5681.1	2.2				ug/L	15	Standard
	Y	89	775038.7	0.6				ug/L	733256	Standard
>	**Rh**	103	11.7	49.5				ug/L	0	Standard
	Mo	98	144.4	7.6	**0.0444**	0.005	10.4	ug/L	10	Standard
	Ag	107	105.0	13.2	**0.0056**	0.003	47.4	ug/L	70	Standard
	Cd	111	87.1	5.8	**0.0703**	0.003	4.8	mg/L	2	Standard
	Cd	114	232.6	17.4	**0.0703**	0.013	18.9	ug/L	-3	Standard
>	**In**	115	572743.1	1.5				ug/L	555851	Standard
	Sn	118	650.0	7.3	**0.0543**	0.014	26.6	ug/L	495	Standard
	Sb	123	206.9	10.8	**0.0615**	0.008	13.4	ug/L	41	Standard
	Ba	135	15804.2	1.4	**16.7558**	0.478	2.9	ug/L	14	Standard
	Ce	140	30696.1	1.2				ug/L	18	Standard
>	**Tb**	159	742711.3	1.2				ug/L	712215	Standard
	Ho	165	831.7	5.5				ug/L	0	Standard
	Tl	203	91.0	5.7	**0.0166**	0.001	7.7	ug/L	1	Standard
	Tl	205	108.3	55.4	**0.0214**	0.012	57.3	ug/L	3	Standard
	Pb	206	477.3	3.5	**0.0886**	0.008	8.7	ug/L	161	Standard
	Pb	207	412.0	4.5	**0.0943**	0.007	6.9	ug/L	141	Standard
	Pb	208	1851.7	3.2	**0.0959**	0.007	7.4	ug/L	608	Standard
	U	238	1040.7	3.3	**0.2067**	0.010	4.6	ug/L	4	Standard
>	**Bi**	209	499343.2	1.6				ug/L	481178	Standard

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Na	23	1.7	173.2				mg/L	0	Standard
Mg	24	908.4	10.2	**2.5178**	0.306	12.2	mg/L	15	Standard
K	39	5.0	0.0	**0.0914**	0.003	3.2	mg/L	2	Standard
Ca	43	58.3	24.7	**4.7779**	1.483	31.0	mg/L	20	Standard
Fe	54	7346.2	2.7	**3.1515**	0.130	4.1	mg/L	260	Standard
Fe	57	2448.5	3.0	**3.4726**	0.085	2.4	mg/L	25	Standard
> **Sc-1**	45	71265.6	2.3				mg/L	72123	Standard
Cl	35	29504.7	0.3				ug/L	26728	Standard
Kr	83	0.7	86.6				ug/L	0	Standard
Br	81	1930.1	4.4				ug/L	733	Standard
P	31	19263.9	1.7				ug/L	17255	Standard
S	34	1646.8	5.5				ug/L	1680	Standard
Sr	88	285.0	5.3				ug/L	7	Standard
C	12	130.0	35.3				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	1126.0	3.6				mg/L	3	Standard
Ho-1	165	831.7	5.5				mg/L	0	Standard
Er	166	710.0	9.9				mg/L	13	Standard
I	127	24590.0	7.7				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.171	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.540	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.039
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.775
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 09, 2015

Method 6020 - Summary Report

Sample ID: L1505160503S WG525521-05
Sample Date/Time: Monday, June 08, 2015 16:07:46
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	178465.6	3.2				ug/L	159930	Standard
	Be	9	56374.7	1.6	**50.9063**	2.366	4.6	ug/L	5	Standard
	Al	27	1609178.3	0.2	**25.7698**	0.748	2.9	ug/L	623	Standard
	Sc	45	72355.7	0.3				ug/L	72123	Standard
	Ti	47	149.0	5.2	**0.4601**	0.031	6.8	ug/L	15	Standard
	V	51	341492.0	1.9	**50.2366**	1.573	3.1	ug/L	779	Standard
	Cr	52	379658.5	1.5	**50.2856**	1.409	2.8	ug/L	4182	Standard
	Cr	53	53419.0	1.4	**49.4548**	1.334	2.7	ug/L	255	Standard
	Mn	55	785598.9	1.8	**62.1361**	1.907	3.1	ug/L	870	Standard
	Co	59	396112.4	1.5	**50.7563**	1.376	2.7	ug/L	44	Standard
	Ni	60	124035.3	1.2	**49.9121**	1.214	2.4	ug/L	376	Standard
	Cu	65	128954.5	1.0	**50.7822**	1.122	2.2	ug/L	271	Standard
	Zn	66	84082.0	1.1	**54.0103**	1.313	2.4	ug/L	601	Standard
>	**Ge**	72	655424.2	1.3				ug/L	607655	Standard
	As	75	74447.0	0.7	**52.2554**	0.937	1.8	ug/L	-37	Standard
	Se	82	6288.6	0.8	**49.2042**	1.016	2.1	ug/L	22	Standard
	Se-1	77	4987.5	1.1	**50.4605**	1.161	2.3	ug/L	38	Standard
>	**Ga**	71	161.7	21.1				mg/L	38	Standard
	Rb	85	5189.2	4.0				ug/L	15	Standard
	Y	89	802249.8	1.2				ug/L	733256	Standard
>	**Rh**	103	31.7	39.7				ug/L	0	Standard
	Mo	98	212.0	3.3	**0.0672**	0.003	3.9	ug/L	10	Standard
	Ag	107	290326.5	1.4	**49.6523**	0.828	1.7	ug/L	70	Standard
	Cd	111	66395.9	1.2	**50.1131**	1.108	2.2	mg/L	2	Standard
	Cd	114	161811.8	2.2	**50.2008**	1.188	2.4	ug/L	-3	Standard
>	**In**	115	585841.6	1.2				ug/L	555851	Standard
	Sn	118	675.0	0.7	**0.0567**	0.001	1.8	ug/L	495	Standard
	Sb	123	163969.3	0.4	**51.9286**	0.821	1.6	ug/L	41	Standard
	Ba	135	62930.8	0.4	**65.2564**	0.960	1.5	ug/L	14	Standard
	Ce	140	29518.8	3.8				ug/L	18	Standard
>	**Tb**	159	770647.9	1.3				ug/L	712215	Standard
	Ho	165	666.7	12.8				ug/L	0	Standard
	Tl	203	248883.6	0.8	**49.4963**	0.909	1.8	ug/L	1	Standard
	Tl	205	260897.6	2.0	**50.1091**	1.344	2.7	ug/L	3	Standard
	Pb	206	167332.0	1.4	**51.3104**	1.112	2.2	ug/L	161	Standard
	Pb	207	147065.7	1.6	**49.2781**	1.360	2.8	ug/L	141	Standard
	Pb	208	626452.9	1.8	**49.9339**	1.344	2.7	ug/L	608	Standard
	U	238	257883.4	1.5	**49.5651**	1.174	2.4	ug/L	4	Standard
>	**Bi**	209	514900.4	1.2				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	930.0	7.1	**2.5361**	0.190	7.5	mg/L	15	Standard
K	39	5.0	100.0	**0.0897**	0.126	140.4	mg/L	2	Standard
Ca	43	51.7	27.9	**3.9992**	1.490	37.3	mg/L	20	Standard
Fe	54	7005.3	5.6	**2.9517**	0.175	5.9	mg/L	260	Standard
Fe	57	2215.2	8.1	**3.0888**	0.262	8.5	mg/L	25	Standard
> **Sc-1**	45	72355.7	0.3				mg/L	72123	Standard
Cl	35	28808.0	1.6				ug/L	26728	Standard
Kr	83	0.7	173.2				ug/L	0	Standard
Br	81	3700.5	10.3				ug/L	733	Standard
P	31	19596.0	2.2				ug/L	17255	Standard
S	34	1748.4	5.9				ug/L	1680	Standard
Sr	88	260.0	10.7				ug/L	7	Standard
C	12	140.0	44.6				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	1121.6	5.2				mg/L	3	Standard
Ho-1	165	666.7	12.8				mg/L	0	Standard
Er	166	733.4	6.4				mg/L	13	Standard
I	127	18164.2	3.0				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.590	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.861	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.395
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.008
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 09, 2015

Method 6020 - Summary Report

Sample ID: L1505160504SD WG525521-06
Sample Date/Time: Monday, June 08, 2015 16:10:57
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	172776.2	0.6				ug/L	159930	Standard
	Be	9	58253.4	1.3	**54.2825**	0.610	1.1	ug/L	5	Standard
	Al	27	1729743.4	1.9	**28.5986**	0.454	1.6	ug/L	623	Standard
	Sc	45	70145.4	1.8				ug/L	72123	Standard
	Ti	47	129.3	4.7	**0.4000**	0.024	6.0	ug/L	15	Standard
	V	51	357773.0	1.4	**53.4006**	1.449	2.7	ug/L	779	Standard
	Cr	52	397289.8	1.3	**53.4210**	1.550	2.9	ug/L	4182	Standard
	Cr	53	55692.2	0.7	**52.3220**	1.269	2.4	ug/L	255	Standard
	Mn	55	829916.8	0.9	**66.5983**	1.738	2.6	ug/L	870	Standard
	Co	59	417366.1	0.5	**54.2491**	0.764	1.4	ug/L	44	Standard
	Ni	60	129320.5	0.4	**52.7978**	0.830	1.6	ug/L	376	Standard
	Cu	65	134427.0	0.4	**53.7138**	0.991	1.8	ug/L	271	Standard
	Zn	66	87352.8	0.7	**56.9493**	1.319	2.3	ug/L	601	Standard
>	**Ge**	72	646089.9	1.7				ug/L	607655	Standard
	As	75	77914.2	0.6	**55.4799**	0.896	1.6	ug/L	-37	Standard
	Se	82	6600.1	0.2	**52.3998**	0.794	1.5	ug/L	22	Standard
	Se-1	77	5219.2	1.2	**53.5845**	0.281	0.5	ug/L	38	Standard
>	**Ga**	71	170.0	20.4				mg/L	38	Standard
	Rb	85	5537.7	3.4				ug/L	15	Standard
	Y	89	779408.3	0.8				ug/L	733256	Standard
>	**Rh**	103	28.3	44.4				ug/L	0	Standard
	Mo	98	208.8	2.7	**0.0683**	0.002	2.6	ug/L	10	Standard
	Ag	107	305790.9	0.2	**53.8639**	0.603	1.1	ug/L	70	Standard
	Cd	111	70411.3	1.5	**54.7320**	1.173	2.1	mg/L	2	Standard
	Cd	114	169305.8	2.9	**54.1025**	1.859	3.4	ug/L	-3	Standard
>	**In**	115	568816.9	1.1				ug/L	555851	Standard
	Sn	118	645.0	7.6	**0.0541**	0.013	24.4	ug/L	495	Standard
	Sb	123	171687.0	0.8	**55.9992**	0.863	1.5	ug/L	41	Standard
	Ba	135	67306.2	1.3	**71.8809**	1.172	1.6	ug/L	14	Standard
	Ce	140	32187.5	2.5				ug/L	18	Standard
>	**Tb**	159	737060.1	2.1				ug/L	712215	Standard
	Ho	165	858.4	5.1				ug/L	0	Standard
	Tl	203	262572.4	1.0	**53.8711**	0.630	1.2	ug/L	1	Standard
	Tl	205	274643.5	0.5	**54.4171**	0.468	0.9	ug/L	3	Standard
	Pb	206	175460.2	0.9	**55.5109**	0.736	1.3	ug/L	161	Standard
	Pb	207	153837.4	0.3	**53.1788**	0.534	1.0	ug/L	141	Standard
	Pb	208	655536.7	0.4	**53.9097**	0.726	1.3	ug/L	608	Standard
	U	238	268213.8	0.4	**53.1829**	0.738	1.4	ug/L	4	Standard
>	**Bi**	209	499060.7	1.0				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	950.0	3.5	**2.6759**	0.141	5.3	mg/L	15	Standard
K	39	10.0		**0.2230**	0.005	2.1	mg/L	2	Standard
Ca	43	60.0	44.1	**5.0910**	2.962	58.2	mg/L	20	Standard
Fe	54	7821.0	1.7	**3.4167**	0.010	0.3	mg/L	260	Standard
Fe	57	2271.8	11.4	**3.2667**	0.328	10.0	mg/L	25	Standard
> **Sc-1**	45	70145.4	1.8				mg/L	72123	Standard
Cl	35	29600.2	1.5				ug/L	26728	Standard
Kr	83	1.3	43.3				ug/L	0	Standard
Br	81	3307.0	0.9				ug/L	733	Standard
P	31	19215.5	0.7				ug/L	17255	Standard
S	34	1865.1	5.0				ug/L	1680	Standard
Sr	88	276.7	23.0				ug/L	7	Standard
C	12	120.0	30.0				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	1172.0	7.5				mg/L	3	Standard
Ho-1	165	858.4	5.1				mg/L	0	Standard
Er	166	863.4	10.5				mg/L	13	Standard
I	127	18160.9	2.6				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.033	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.325	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1505160504SD WG525521-06
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.333
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.717
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 09, 2015

Method 6020 - Summary Report

Sample ID: L1505160505
Sample Date/Time: Monday, June 08, 2015 16:14:09
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	176696.1	1.2				ug/L	159930	Standard
	Be	9	75.0	24.0	**0.0587**	0.016	26.7	ug/L	5	Standard
	Al	27	924542.2	1.3	**14.9315**	0.325	2.2	ug/L	623	Standard
	Sc	45	70337.9	0.3				ug/L	72123	Standard
	Ti	47	303.3	3.5	**1.0080**	0.035	3.5	ug/L	15	Standard
	V	51	6358.0	3.4	**0.8386**	0.028	3.4	ug/L	779	Standard
	Cr	52	6733.2	2.4	**0.3524**	0.016	4.4	ug/L	4182	Standard
	Cr	53	788.4	1.9	**0.4852**	0.007	1.4	ug/L	255	Standard
	Mn	55	67942.3	0.8	**5.4357**	0.086	1.6	ug/L	870	Standard
	Co	59	368.3	21.9	**0.0365**	0.010	27.5	ug/L	44	Standard
	Ni	60	800.7	6.4	**0.1772**	0.020	11.3	ug/L	376	Standard
	Cu	65	1900.5	3.0	**0.5872**	0.021	3.5	ug/L	271	Standard
	Zn	66	6127.6	0.9	**3.6218**	0.069	1.9	ug/L	601	Standard
>	**Ge**	72	638302.1	1.1				ug/L	607655	Standard
	As	75	1214.0	2.1	**0.8853**	0.015	1.7	ug/L	-37	Standard
	Se	82	48.8	10.7	**0.1931**	0.038	19.6	ug/L	22	Standard
	Se-1	77	61.0	9.1	**0.2534**	0.052	20.7	ug/L	38	Standard
>	**Ga**	71	210.0	15.6				mg/L	38	Standard
	Rb	85	5167.5	1.2				ug/L	15	Standard
	Y	89	768002.2	0.8				ug/L	733256	Standard
>	**Rh**	103	6.7	114.6				ug/L	0	Standard
	Mo	98	342.3	4.9	**0.1170**	0.007	6.3	ug/L	10	Standard
	Ag	107	154.0	52.8	**0.0143**	0.014	99.2	ug/L	70	Standard
	Cd	111	27.6	59.3	**0.0245**	0.013	51.5	mg/L	2	Standard
	Cd	114	70.2	76.1	**0.0189**	0.017	89.7	ug/L	-3	Standard
>	**In**	115	569834.1	1.3				ug/L	555851	Standard
	Sn	118	550.0	3.6	**0.0297**	0.005	16.7	ug/L	495	Standard
	Sb	123	138.0	31.1	**0.0393**	0.014	35.4	ug/L	41	Standard
	Ba	135	5107.5	3.3	**5.4340**	0.252	4.6	ug/L	14	Standard
	Ce	140	14273.4	2.3				ug/L	18	Standard
>	**Tb**	159	742793.3	1.1				ug/L	712215	Standard
	Ho	165	573.3	7.0				ug/L	0	Standard
	Tl	203	84.7	83.3	**0.0152**	0.014	93.1	ug/L	1	Standard
	Tl	205	71.7	72.6	**0.0139**	0.010	72.3	ug/L	3	Standard
	Pb	206	610.0	8.1	**0.1297**	0.013	10.2	ug/L	161	Standard
	Pb	207	540.3	6.3	**0.1380**	0.012	8.4	ug/L	141	Standard
	Pb	208	2227.1	3.1	**0.1261**	0.004	3.4	ug/L	608	Standard
	U	238	425.7	15.0	**0.0844**	0.012	14.0	ug/L	4	Standard
>	**Bi**	209	501029.2	1.3				ug/L	481178	Standard

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Na	23	1.7	173.2				mg/L	0	Standard
Mg	24	770.0	4.9	**2.1532**	0.111	5.2	mg/L	15	Standard
K	39	10.0		**0.2222**	0.001	0.3	mg/L	2	Standard
Ca	43	31.7	32.9	**2.0263**	1.108	54.7	mg/L	20	Standard
Fe	54	4415.0	1.0	**1.8729**	0.024	1.3	mg/L	260	Standard
Fe	57	1478.4	1.3	**2.1036**	0.022	1.1	mg/L	25	Standard
> **Sc-1**	45	70337.9	0.3				mg/L	72123	Standard
Cl	35	28226.3	0.7				ug/L	26728	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	2436.9	4.8				ug/L	733	Standard
P	31	19854.7	2.3				ug/L	17255	Standard
S	34	1796.8	4.5				ug/L	1680	Standard
Sr	88	133.3	28.6				ug/L	7	Standard
C	12	103.3	14.8				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	726.0	17.2				mg/L	3	Standard
Ho-1	165	573.3	7.0				mg/L	0	Standard
Er	166	640.0	14.3				mg/L	13	Standard
I	127	8105.5	6.7				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.484	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.044	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.516
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.126
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 09, 2015

Method 6020 - Summary Report

Sample ID: L1505160505PS WG525958-03
Sample Date/Time: Monday, June 08, 2015 16:23:19
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	177578.1	1.7				ug/L	159930	Standard
	Be	9	59110.1	1.8	**53.5949**	0.778	1.5	ug/L	5	Standard
	Al	27	947480.5	2.6	**15.2230**	0.144	0.9	ug/L	623	Standard
	Sc	45	69740.2	1.4				ug/L	72123	Standard
	Ti	47	314.7	5.1	**1.0558**	0.049	4.6	ug/L	15	Standard
	V	51	366579.9	1.7	**55.8191**	1.220	2.2	ug/L	779	Standard
	Cr	52	399942.4	1.0	**54.8707**	0.930	1.7	ug/L	4182	Standard
	Cr	53	56115.4	1.0	**53.7830**	0.593	1.1	ug/L	255	Standard
	Mn	55	739045.7	0.9	**60.4845**	0.591	1.0	ug/L	870	Standard
	Co	59	425400.2	0.3	**56.4085**	0.387	0.7	ug/L	44	Standard
	Ni	60	130289.1	0.6	**54.2706**	0.709	1.3	ug/L	376	Standard
	Cu	65	138753.8	0.5	**56.5663**	0.219	0.4	ug/L	271	Standard
	Zn	66	88092.7	0.6	**58.5980**	0.724	1.2	ug/L	601	Standard
>	**Ge**	72	633242.4	0.7				ug/L	607655	Standard
	As	75	76551.5	0.6	**55.6080**	0.554	1.0	ug/L	-37	Standard
	Se	82	6636.9	0.1	**53.7590**	0.391	0.7	ug/L	22	Standard
	Se-1	77	5293.6	1.4	**55.4589**	0.414	0.7	ug/L	38	Standard
>	**Ga**	71	293.3	10.3				mg/L	38	Standard
	Rb	85	5012.5	3.2				ug/L	15	Standard
	Y	89	760493.3	1.2				ug/L	733256	Standard
>	**Rh**	103	21.7	74.2				ug/L	0	Standard
	Mo	98	355.3	6.1	**0.1229**	0.008	6.5	ug/L	10	Standard
	Ag	107	312580.6	1.1	**55.4377**	0.250	0.5	ug/L	70	Standard
	Cd	111	69421.9	0.1	**54.3331**	0.324	0.6	mg/L	2	Standard
	Cd	114	169360.6	1.7	**54.4936**	1.280	2.3	ug/L	-3	Standard
>	**In**	115	564889.1	0.7				ug/L	555851	Standard
	Sn	118	596.7	7.8	**0.0428**	0.012	27.7	ug/L	495	Standard
	Sb	123	166269.0	0.4	**54.6045**	0.253	0.5	ug/L	41	Standard
	Ba	135	56318.8	0.6	**60.5618**	0.738	1.2	ug/L	14	Standard
	Ce	140	14710.5	2.1				ug/L	18	Standard
>	**Tb**	159	738897.6	1.0				ug/L	712215	Standard
	Ho	165	555.0	11.7				ug/L	0	Standard
	Tl	203	265177.1	0.1	**54.6415**	0.582	1.1	ug/L	1	Standard
	Tl	205	275254.4	0.5	**54.7746**	0.632	1.2	ug/L	3	Standard
	Pb	206	172888.8	0.7	**54.9312**	0.422	0.8	ug/L	161	Standard
	Pb	207	159402.1	0.3	**55.3421**	0.555	1.0	ug/L	141	Standard
	Pb	208	661888.1	0.6	**54.6647**	0.336	0.6	ug/L	608	Standard
	U	238	271214.9	0.5	**54.0103**	0.803	1.5	ug/L	4	Standard
>	**Bi**	209	496917.3	1.0				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	718.4	5.2	**2.0241**	0.128	6.3	mg/L	15	Standard
K	39	6.7	86.6	**0.1365**	0.149	109.5	mg/L	2	Standard
Ca	43	33.3	22.9	**2.2300**	0.799	35.8	mg/L	20	Standard
Fe	54	4569.4	3.7	**1.9596**	0.050	2.5	mg/L	260	Standard
Fe	57	1473.4	5.3	**2.1143**	0.095	4.5	mg/L	25	Standard
> **Sc-1**	45	69740.2	1.4				mg/L	72123	Standard
Cl	35	28932.3	1.4				ug/L	26728	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	2393.5	3.7				ug/L	733	Standard
P	31	19767.9	2.9				ug/L	17255	Standard
S	34	1835.1	2.1				ug/L	1680	Standard
Sr	88	121.7	16.6				ug/L	7	Standard
C	12	140.0	35.7				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	762.1	12.9				mg/L	3	Standard
Ho-1	165	555.0	11.7				mg/L	0	Standard
Er	166	583.3	9.4				mg/L	13	Standard
I	127	7857.0	6.3				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.035	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.211	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.626
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.271
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 09, 2015

Method 6020 - Summary Report

Sample ID: L1505160505SDL WG525958-04
Sample Date/Time: Monday, June 08, 2015 16:26:29
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	179029.9	1.1				ug/L	159930	Standard
	Be	9	35.0	37.8	**0.0219**	0.012	53.8	ug/L	5	Standard
	Al	27	185660.6	0.7	**2.9293**	0.043	1.5	ug/L	623	Standard
	Sc	45	72179.9	1.5				ug/L	72123	Standard
	Ti	47	71.0	14.9	**0.1967**	0.034	17.5	ug/L	15	Standard
	V	51	1873.7	6.5	**0.1523**	0.015	10.1	ug/L	779	Standard
	Cr	52	4437.7	2.8	**0.0210**	0.024	114.0	ug/L	4182	Standard
	Cr	53	445.0	16.3	**0.1465**	0.072	49.2	ug/L	255	Standard
	Mn	55	14272.1	1.5	**1.0410**	0.025	2.4	ug/L	870	Standard
	Co	59	151.0	28.2	**0.0074**	0.005	71.2	ug/L	44	Standard
	Ni	60	453.7	8.5	**0.0287**	0.018	61.7	ug/L	376	Standard
	Cu	65	635.0	3.1	**0.0670**	0.008	11.8	ug/L	271	Standard
	Zn	66	3098.0	2.7	**1.5527**	0.044	2.9	ug/L	601	Standard
>	**Ge**	72	655470.8	1.2				ug/L	607655	Standard
	As	75	199.9	12.7	**0.1511**	0.019	12.6	ug/L	-37	Standard
	Se	82	21.0	12.0	**-0.0357**	0.021	59.5	ug/L	22	Standard
	Se-1	77	44.3	14.7	**0.0676**	0.071	105.1	ug/L	38	Standard
>	**Ga**	71	55.0	15.7				mg/L	38	Standard
	Rb	85	1023.4	10.8				ug/L	15	Standard
	Y	89	781211.7	1.6				ug/L	733256	Standard
>	**Rh**	103	8.3	91.7				ug/L	0	Standard
	Mo	98	94.9	17.5	**0.0259**	0.006	21.8	ug/L	10	Standard
	Ag	107	114.3	31.1	**0.0070**	0.006	85.5	ug/L	70	Standard
	Cd	111	11.6	92.6	**0.0119**	0.008	67.9	mg/L	2	Standard
	Cd	114	20.4	141.0	**0.0028**	0.009	318.3	ug/L	-3	Standard
>	**In**	115	579105.2	1.1				ug/L	555851	Standard
	Sn	118	545.0	6.6	**0.0263**	0.010	39.6	ug/L	495	Standard
	Sb	123	471.3	17.1	**0.1454**	0.025	17.5	ug/L	41	Standard
	Ba	135	1046.4	3.3	**1.0840**	0.034	3.1	ug/L	14	Standard
	Ce	140	2873.6	3.7				ug/L	18	Standard
>	**Tb**	159	764796.2	0.9				ug/L	712215	Standard
	Ho	165	111.7	27.4				ug/L	0	Standard
	Tl	203	46.7	113.9	**0.0072**	0.010	145.3	ug/L	1	Standard
	Tl	205	28.3	27.0	**0.0053**	0.002	28.7	ug/L	3	Standard
	Pb	206	302.3	5.0	**0.0301**	0.004	14.9	ug/L	161	Standard
	Pb	207	259.0	7.5	**0.0385**	0.006	14.9	ug/L	141	Standard
	Pb	208	1062.0	0.7	**0.0282**	0.001	4.9	ug/L	608	Standard
	U	238	104.7	12.5	**0.0205**	0.002	11.3	ug/L	4	Standard
>	**Bi**	209	515472.4	1.0				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	156.7	29.0	**0.3901**	0.123	31.5	mg/L	15	Standard
K	39	1.7	173.2	**0.0052**	0.072	1381.4	mg/L	2	Standard
Ca	43	16.7	62.4	**0.3948**	1.090	276.1	mg/L	20	Standard
Fe	54	1121.5	11.9	**0.3771**	0.066	17.5	mg/L	260	Standard
Fe	57	338.3	12.4	**0.4286**	0.066	15.3	mg/L	25	Standard
> **Sc-1**	45	72179.9	1.5				mg/L	72123	Standard
Cl	35	27742.7	2.2				ug/L	26728	Standard
Kr	83	1.0	0.0				ug/L	0	Standard
Br	81	1123.4	18.3				ug/L	733	Standard
P	31	19480.9	6.2				ug/L	17255	Standard
S	34	1800.1	7.8				ug/L	1680	Standard
Sr	88	26.7	43.3				ug/L	7	Standard
C	12	83.3	38.6				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	111.7	14.9				mg/L	3	Standard
Ho-1	165	111.7	27.4				mg/L	0	Standard
Er	166	103.3	29.6				mg/L	13	Standard
I	127	1803.4	2.8				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.943	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.869	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1505160505SDL WG525958-04
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.184
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.127
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 09, 2015

Method 6020 - Summary Report

Sample ID: L1505160505SDL WG525958-04
Sample Date/Time: Monday, June 08, 2015 16:29:41
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	173914.9	3.5				ug/L	159930	Standard
	Be	9	25.0	40.0	**0.0137**	0.009	68.5	ug/L	5	Standard
	Al	27	38448.7	0.1	**0.5956**	0.022	3.7	ug/L	623	Standard
	Sc	45	69879.2	2.5				ug/L	72123	Standard
	Ti	47	22.3	18.1	**0.0363**	0.016	44.8	ug/L	15	Standard
	V	51	945.4	7.1	**0.0218**	0.007	33.9	ug/L	779	Standard
	Cr	52	3958.9	0.8	**-0.0191**	0.012	60.2	ug/L	4182	Standard
	Cr	53	358.3	5.8	**0.0803**	0.012	15.1	ug/L	255	Standard
	Mn	55	3834.5	1.8	**0.2282**	0.004	1.9	ug/L	870	Standard
	Co	59	72.3	9.7	**-0.0022**	0.001	41.3	ug/L	44	Standard
	Ni	60	398.3	0.5	**0.0136**	0.003	24.3	ug/L	376	Standard
	Cu	65	365.7	4.1	**-0.0329**	0.005	16.0	ug/L	271	Standard
	Zn	66	2355.5	0.8	**1.1417**	0.028	2.4	ug/L	601	Standard
>	**Ge**	72	627006.8	2.4				ug/L	607655	Standard
	As	75	13.8	21.8	**0.0208**	0.002	10.0	ug/L	-37	Standard
	Se	82	17.5	19.9	**-0.0562**	0.032	57.4	ug/L	22	Standard
	Se-1	77	38.7	9.1	**0.0268**	0.028	103.9	ug/L	38	Standard
>	**Ga**	71	38.3	49.4				mg/L	38	Standard
	Rb	85	211.7	3.6				ug/L	15	Standard
	Y	89	740782.4	1.8				ug/L	733256	Standard
>	**Rh**	103	0.0					ug/L	0	Standard
	Mo	98	28.0	12.6	**0.0022**	0.001	51.1	ug/L	10	Standard
	Ag	107	67.7	6.2	**-0.0005**	0.001	157.0	ug/L	70	Standard
	Cd	111	1.6	93.8	**0.0044**	0.001	27.5	mg/L	2	Standard
	Cd	114	14.2	74.2	**0.0012**	0.003	299.4	ug/L	-3	Standard
>	**In**	115	554538.4	1.9				ug/L	555851	Standard
	Sn	118	463.3	10.2	**0.0109**	0.010	92.4	ug/L	495	Standard
	Sb	123	132.3	6.1	**0.0387**	0.003	8.6	ug/L	41	Standard
	Ba	135	220.3	1.1	**0.2276**	0.003	1.3	ug/L	14	Standard
	Ce	140	560.0	4.1				ug/L	18	Standard
>	**Tb**	159	729905.4	1.6				ug/L	712215	Standard
	Ho	165	20.0	66.1				ug/L	0	Standard
	Tl	203	7.0	24.7	**-0.0006**	0.000	57.2	ug/L	1	Standard
	Tl	205	5.0	0.0	**0.0008**	0.000	2.9	ug/L	3	Standard
	Pb	206	217.7	8.4	**0.0072**	0.005	69.3	ug/L	161	Standard
	Pb	207	175.0	5.9	**0.0132**	0.004	30.2	ug/L	141	Standard
	Pb	208	786.3	4.0	**0.0091**	0.002	20.4	ug/L	608	Standard
	U	238	19.0	18.2	**0.0042**	0.001	14.7	ug/L	4	Standard
>	**Bi**	209	492585.6	2.4				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	36.7	15.7	**0.0602**	0.014	23.7	mg/L	15	Standard
K	39	3.3	173.2	**0.0487**	0.147	301.6	mg/L	2	Standard
Ca	43	26.7	10.8	**1.5104**	0.256	17.0	mg/L	20	Standard
Fe	54	489.4	5.4	**0.1063**	0.015	14.4	mg/L	260	Standard
Fe	57	85.0	5.9	**0.0718**	0.007	9.7	mg/L	25	Standard
> **Sc-1**	45	69879.2	2.5				mg/L	72123	Standard
Cl	35	28251.0	0.8				ug/L	26728	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	860.0	15.4				ug/L	733	Standard
P	31	18925.1	0.7				ug/L	17255	Standard
S	34	1760.1	5.7				ug/L	1680	Standard
Sr	88	10.0	50.0				ug/L	7	Standard
C	12	76.7	49.4				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	31.7	65.4				mg/L	3	Standard
Ho-1	165	20.0	66.1				mg/L	0	Standard
Er	166	33.3	17.3				mg/L	13	Standard
I	127	483.3	6.7				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.745	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.185	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.764
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.371
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 09, 2015

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, June 08, 2015 16:32:54
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	169673.3	2.1				ug/L	159930	Standard
	Be	9	57810.1	1.7	**54.8759**	1.768	3.2	ug/L	5	Standard
	Al	27	3266282.5	1.1	**55.0505**	1.756	3.2	ug/L	623	Standard
	Sc	45	67033.0	1.8				ug/L	72123	Standard
	Ti	47	29814.0	0.8	**107.7023**	1.913	1.8	ug/L	15	Standard
	V	51	352645.8	1.9	**55.5773**	1.739	3.1	ug/L	779	Standard
	Cr	52	388924.7	1.4	**55.2287**	1.443	2.6	ug/L	4182	Standard
	Cr	53	54344.0	1.0	**53.9084**	1.181	2.2	ug/L	255	Standard
	Mn	55	659013.7	0.8	**55.8134**	1.038	1.9	ug/L	870	Standard
	Co	59	412247.5	1.8	**56.5809**	1.709	3.0	ug/L	44	Standard
	Ni	60	128096.9	1.3	**55.2254**	1.289	2.3	ug/L	376	Standard
	Cu	65	132131.3	1.0	**55.7493**	1.211	2.2	ug/L	271	Standard
	Zn	66	80599.2	1.5	**55.4660**	1.504	2.7	ug/L	601	Standard
>	**Ge**	72	611927.2	1.2				ug/L	607655	Standard
	As	75	72794.0	1.6	**54.7303**	1.500	2.7	ug/L	-37	Standard
	Se	82	6625.2	1.2	**55.5470**	1.193	2.1	ug/L	22	Standard
	Se-1	77	5290.6	0.5	**57.3766**	0.411	0.7	ug/L	38	Standard
>	**Ga**	71	46.7	30.9				mg/L	38	Standard
	Rb	85	871.7	7.5				ug/L	15	Standard
	Y	89	724590.6	0.9				ug/L	733256	Standard
>	**Rh**	103	6.7	43.3				ug/L	0	Standard
	Mo	98	304866.5	1.4	**115.2522**	1.322	1.1	ug/L	10	Standard
	Ag	107	304326.1	1.1	**55.2690**	0.534	1.0	ug/L	70	Standard
	Cd	111	69510.1	1.5	**55.7063**	0.919	1.6	mg/L	2	Standard
	Cd	114	166908.4	1.8	**54.9860**	0.912	1.7	ug/L	-3	Standard
>	**In**	115	551659.5	0.5				ug/L	555851	Standard
	Sn	118	206676.9	1.4	**53.8199**	0.686	1.3	ug/L	495	Standard
	Sb	123	165515.7	0.7	**55.6601**	0.331	0.6	ug/L	41	Standard
	Ba	135	50521.8	1.0	**55.6275**	0.601	1.1	ug/L	14	Standard
	Ce	140	25.0	40.0				ug/L	18	Standard
>	**Tb**	159	726122.4	0.4				ug/L	712215	Standard
	Ho	165	3.3	173.2				ug/L	0	Standard
	Tl	203	259463.3	1.2	**55.9321**	0.840	1.5	ug/L	1	Standard
	Tl	205	271886.2	0.8	**56.6032**	0.841	1.5	ug/L	3	Standard
	Pb	206	169930.3	0.6	**56.4882**	0.774	1.4	ug/L	161	Standard
	Pb	207	155220.7	1.0	**56.3810**	0.930	1.7	ug/L	141	Standard
	Pb	208	650382.3	1.5	**56.1995**	1.140	2.0	ug/L	608	Standard
	U	238	267922.7	1.3	**55.8168**	0.986	1.8	ug/L	4	Standard
>	**Bi**	209	474980.7	0.7				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	1933.5	5.7	**5.7506**	0.417	7.3	mg/L	15	Standard
K	39	186.7	26.3	**5.0156**	1.287	25.7	mg/L	2	Standard
Ca	43	83.3	21.1	**7.9385**	1.810	22.8	mg/L	20	Standard
Fe	54	12758.3	3.1	**5.9155**	0.219	3.7	mg/L	260	Standard
Fe	57	4063.9	4.7	**6.1674**	0.265	4.3	mg/L	25	Standard
> **Sc-1**	45	67033.0	1.8				mg/L	72123	Standard
Cl	35	29515.4	0.5				ug/L	26728	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	786.7	21.9				ug/L	733	Standard
P	31	18835.0	1.8				ug/L	17255	Standard
S	34	1821.8	7.8				ug/L	1680	Standard
Sr	88	10.0	50.0				ug/L	7	Standard
C	12	53.3	10.8				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	-0.3	86.6				mg/L	3	Standard
Ho-1	165	3.3	173.2				mg/L	0	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	245.0	14.7				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	109.752		
Al	27	110.101		
Sc	45			
Ti	47	107.702		
V	51	111.155		
Cr	52	110.457		
Cr	53			
Mn	55	111.627		
Co	59	113.162		
Ni	60	110.451		
Cu	65	111.499		
Zn	66	110.932		
> Ge	72		100.703	
As	75	109.461		
Se	82	111.094		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	115.252		
Ag	107	110.538		
Cd	111	111.413		
Cd	114			
In	115		99.246	
Sn	118	107.640		
Sb	123	111.320		
Ba	135	111.255		
Ce	140			
Tb	159			
Ho	165			
Tl	203	111.864		
Tl	205			
Pb	206			
Pb	207			
Pb	208	112.399		
U	238	111.634		
Bi	209		98.712	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	
QC Std 6	V	51	
QC Std 6	Cr	52	

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QC Std 6	Mn	55
QC Std 6	Co	59
QC Std 6	Ni	60
QC Std 6	Cu	65
QC Std 6	Zn	66
QC Std 6	Se	82
QC Std 6	Mo	98
QC Std 6	Ag	107
QC Std 6	Cd	111
QC Std 6	Sb	123
QC Std 6	Ba	135
QC Std 6	Tl	203
QC Std 6	Pb	208
QC Std 6	U	238

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, June 08, 2015 16:36:05
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	175018.6	5.4				ug/L	159930	Standard
	Be	9	33.3	34.6	**0.0215**	0.012	55.4	ug/L	5	Standard
	Al	27	641.7	40.1	**-0.0266**	0.005	17.7	ug/L	623	Standard
	Sc	45	69596.3	3.6				ug/L	72123	Standard
	Ti	47	15.3	24.7	**0.0106**	0.014	128.3	ug/L	15	Standard
	V	51	702.6	13.7	**-0.0167**	0.019	114.6	ug/L	779	Standard
	Cr	52	3869.5	4.1	**-0.0385**	0.046	118.8	ug/L	4182	Standard
	Cr	53	365.0	11.0	**0.0833**	0.055	65.7	ug/L	255	Standard
	Mn	55	960.7	8.4	**-0.0106**	0.010	92.0	ug/L	870	Standard
	Co	59	93.3	42.4	**0.0006**	0.006	938.4	ug/L	44	Standard
	Ni	60	338.7	8.2	**-0.0139**	0.007	49.4	ug/L	376	Standard
	Cu	65	323.3	5.0	**-0.0520**	0.013	24.6	ug/L	271	Standard
	Zn	66	621.3	3.0	**-0.0387**	0.015	39.8	ug/L	601	Standard
>	**Ge**	72	636625.9	4.8				ug/L	607655	Standard
	As	75	-19.3	29.1	**-0.0032**	0.004	117.2	ug/L	-37	Standard
	Se	82	23.2	8.2	**-0.0119**	0.023	196.3	ug/L	22	Standard
	Se-1	77	42.0	25.8	**0.0531**	0.091	171.3	ug/L	38	Standard
>	**Ga**	71	21.7	13.3				mg/L	38	Standard
	Rb	85	21.7	66.6				ug/L	15	Standard
	Y	89	753780.6	4.4				ug/L	733256	Standard
>	**Rh**	103	0.0					ug/L	0	Standard
	Mo	98	77.8	43.8	**0.0206**	0.014	66.7	ug/L	10	Standard
	Ag	107	129.0	42.4	**0.0102**	0.011	102.8	ug/L	70	Standard
	Cd	111	9.6	47.8	**0.0106**	0.004	36.9	mg/L	2	Standard
	Cd	114	11.5	82.8	**0.0002**	0.003	1354.6	ug/L	-3	Standard
>	**In**	115	569578.8	4.3				ug/L	555851	Standard
	Sn	118	503.3	8.4	**0.0183**	0.015	80.3	ug/L	495	Standard
	Sb	123	136.6	23.4	**0.0393**	0.012	31.2	ug/L	41	Standard
	Ba	135	19.0	48.2	**0.0068**	0.011	158.9	ug/L	14	Standard
	Ce	140	8.3	91.7				ug/L	18	Standard
>	**Tb**	159	743349.9	4.2				ug/L	712215	Standard
	Ho	165	6.7	43.3				ug/L	0	Standard
	Tl	203	57.3	74.6	**0.0099**	0.009	92.2	ug/L	1	Standard
	Tl	205	15.0	88.2	**0.0028**	0.003	97.1	ug/L	3	Standard
	Pb	206	200.3	7.3	**0.0006**	0.007	1249.5	ug/L	161	Standard
	Pb	207	186.7	8.2	**0.0161**	0.007	46.5	ug/L	141	Standard
	Pb	208	737.0	0.1	**0.0038**	0.002	62.6	ug/L	608	Standard
	U	238	16.0	85.9	**0.0037**	0.003	76.5	ug/L	4	Standard
>	**Bi**	209	502751.0	3.9				ug/L	481178	Standard

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Na	23	1.7	173.2				mg/L	0	Standard
Mg	24	21.7	26.6	**0.0180**	0.018	101.3	mg/L	15	Standard
K	39	3.3	173.2	**0.0504**	0.150	297.2	mg/L	2	Standard
Ca	43	16.7	96.4	**0.4919**	1.819	369.9	mg/L	20	Standard
Fe	54	267.8	19.6	**0.0058**	0.022	371.8	mg/L	260	Standard
Fe	57	28.3	27.0	**-0.0112**	0.011	97.7	mg/L	25	Standard
> **Sc-1**	45	69596.3	3.6				mg/L	72123	Standard
Cl	35	28476.7	1.8				ug/L	26728	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	716.7	12.6				ug/L	733	Standard
P	31	18492.9	1.4				ug/L	17255	Standard
S	34	1786.8	3.6				ug/L	1680	Standard
Sr	88	11.7	24.7				ug/L	7	Standard
C	12	40.0	50.0				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.1	43.5				mg/L	3	Standard
Ho-1	165	6.7	43.3				mg/L	0	Standard
Er	166	26.7	57.3				mg/L	13	Standard
I	127	206.7	15.6				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.768	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.470
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.483
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Monday, June 08, 2015 16:38:22
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Method 6020 - Summary Report

Sample ID: L1505160509
Sample Date/Time: Monday, June 08, 2015 16:39:18
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	167972.9	2.1				ug/L	159930	Standard
	Be	9	146.7	10.4	**0.1309**	0.012	9.1	ug/L	5	Standard
	Al	27	790967.7	2.6	**13.4312**	0.111	0.8	ug/L	623	Standard
	Sc	45	68941.6	2.5				ug/L	72123	Standard
	Ti	47	197.3	7.6	**0.6593**	0.050	7.6	ug/L	15	Standard
	V	51	2410.7	9.1	**0.2510**	0.032	12.8	ug/L	779	Standard
	Cr	52	6006.5	1.9	**0.2751**	0.019	6.8	ug/L	4182	Standard
	Cr	53	730.0	9.0	**0.4482**	0.060	13.4	ug/L	255	Standard
	Mn	55	8912267.6	1.2	**744.3558**	13.507	1.8	ug/L	870	Standard
	Co	59	432.3	9.0	**0.0466**	0.005	11.5	ug/L	44	Standard
	Ni	60	1656.4	0.2	**0.5506**	0.005	0.8	ug/L	376	Standard
	Cu	65	26043.4	0.5	**10.6714**	0.129	1.2	ug/L	271	Standard
	Zn	66	107637.3	1.2	**73.0737**	0.992	1.4	ug/L	601	Standard
>	**Ge**	72	621394.1	0.8				ug/L	607655	Standard
	As	75	9259.5	1.2	**6.8635**	0.052	0.8	ug/L	-37	Standard
	Se	82	158.1	4.1	**1.1091**	0.046	4.2	ug/L	22	Standard
	Se-1	77	60.7	9.9	**0.2676**	0.067	25.2	ug/L	38	Standard
>	**Ga**	71	255.0	21.2				mg/L	38	Standard
	Rb	85	11811.3	3.0				ug/L	15	Standard
	Y	89	770971.4	2.3				ug/L	733256	Standard
>	**Rh**	103	20.0	50.0				ug/L	0	Standard
	Mo	98	252.2	3.6	**0.0870**	0.004	5.1	ug/L	10	Standard
	Ag	107	70.3	17.1	**-0.0000**	0.002	6671.3	ug/L	70	Standard
	Cd	111	43.0	9.4	**0.0375**	0.003	7.5	mg/L	2	Standard
	Cd	114	77.8	21.2	**0.0220**	0.005	23.1	ug/L	-3	Standard
>	**In**	115	552502.1	1.1				ug/L	555851	Standard
	Sn	118	826.7	6.1	**0.1061**	0.012	11.0	ug/L	495	Standard
	Sb	123	141.3	8.3	**0.0418**	0.004	8.8	ug/L	41	Standard
	Ba	135	18798.3	1.6	**20.6605**	0.481	2.3	ug/L	14	Standard
	Ce	140	20006.5	2.3				ug/L	18	Standard
>	**Tb**	159	720167.7	1.2				ug/L	712215	Standard
	Ho	165	1141.7	8.9				ug/L	0	Standard
	Tl	203	59.0	22.2	**0.0106**	0.003	25.2	ug/L	1	Standard
	Tl	205	68.3	36.1	**0.0141**	0.005	37.8	ug/L	3	Standard
	Pb	206	7794.3	0.5	**2.5236**	0.068	2.7	ug/L	161	Standard
	Pb	207	6761.2	2.9	**2.4024**	0.090	3.7	ug/L	141	Standard
	Pb	208	29074.0	0.8	**2.4506**	0.053	2.2	ug/L	608	Standard
	U	238	55.0	11.9	**0.0119**	0.001	10.7	ug/L	4	Standard
>	**Bi**	209	476538.5	2.2				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	4925.8	0.8	**14.3061**	0.385	2.7	mg/L	15	Standard
K	39	25.0	52.9	**0.6226**	0.345	55.4	mg/L	2	Standard
Ca	43	65.0	53.8	**5.6510**	3.671	65.0	mg/L	20	Standard
Fe	54	7774.6	2.7	**3.4579**	0.104	3.0	mg/L	260	Standard
Fe	57	2531.9	5.0	**3.7190**	0.268	7.2	mg/L	25	Standard
> **Sc-1**	45	68941.6	2.5				mg/L	72123	Standard
Cl	35	29280.3	0.8				ug/L	26728	Standard
Kr	83	0.7	173.2				ug/L	0	Standard
Br	81	10470.3	6.7				ug/L	733	Standard
P	31	21735.6	6.7				ug/L	17255	Standard
S	34	1756.8	4.6				ug/L	1680	Standard
Sr	88	200.0	17.5				ug/L	7	Standard
C	12	143.3	17.6				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	1325.6	13.1				mg/L	3	Standard
Ho-1	165	1141.7	8.9				mg/L	0	Standard
Er	166	1346.7	6.9				mg/L	13	Standard
I	127	94435.6	5.4				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.029	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.261	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.398
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.036
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1505160510
Sample Date/Time: Monday, June 08, 2015 16:42:30
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	176143.0	0.6				ug/L	159930	Standard
	Be	9	128.3	21.5	**0.1077**	0.025	22.9	ug/L	5	Standard
	Al	27	918238.0	3.0	**14.8732**	0.398	2.7	ug/L	623	Standard
	Sc	45	73260.1	2.2				ug/L	72123	Standard
	Ti	47	752.7	4.9	**2.5438**	0.139	5.5	ug/L	15	Standard
	V	51	3810.8	1.7	**0.4485**	0.016	3.5	ug/L	779	Standard
	Cr	52	7310.1	3.1	**0.4239**	0.043	10.2	ug/L	4182	Standard
	Cr	53	1286.7	6.3	**0.9517**	0.085	8.9	ug/L	255	Standard
	Mn	55	373079.0	1.9	**30.0044**	0.928	3.1	ug/L	870	Standard
	Co	59	343.7	12.1	**0.0330**	0.006	17.8	ug/L	44	Standard
	Ni	60	2115.5	3.3	**0.7152**	0.039	5.5	ug/L	376	Standard
	Cu	65	27769.1	2.1	**10.9938**	0.367	3.3	ug/L	271	Standard
	Zn	66	26099.8	2.1	**16.7630**	0.494	2.9	ug/L	601	Standard
>	**Ge**	72	643590.3	1.2				ug/L	607655	Standard
	As	75	3111.6	0.9	**2.2342**	0.013	0.6	ug/L	-37	Standard
	Se	82	1208.7	1.0	**9.4699**	0.194	2.0	ug/L	22	Standard
	Se-1	77	115.0	8.4	**0.8083**	0.086	10.6	ug/L	38	Standard
>	**Ga**	71	123.3	23.1				mg/L	38	Standard
	Rb	85	13119.0	3.4				ug/L	15	Standard
	Y	89	771990.1	1.7				ug/L	733256	Standard
>	**Rh**	103	41.7	18.3				ug/L	0	Standard
	Mo	98	70.9	19.7	**0.0177**	0.005	29.8	ug/L	10	Standard
	Ag	107	86.7	13.9	**0.0025**	0.002	87.3	ug/L	70	Standard
	Cd	111	14.6	37.7	**0.0144**	0.004	29.9	mg/L	2	Standard
	Cd	114	31.1	81.5	**0.0064**	0.008	125.6	ug/L	-3	Standard
>	**In**	115	568912.1	0.8				ug/L	555851	Standard
	Sn	118	641.7	5.2	**0.0532**	0.009	16.5	ug/L	495	Standard
	Sb	123	114.9	19.0	**0.0319**	0.007	23.1	ug/L	41	Standard
	Ba	135	57269.1	2.4	**61.1560**	1.989	3.3	ug/L	14	Standard
	Ce	140	5571.0	2.8				ug/L	18	Standard
>	**Tb**	159	745800.6	1.1				ug/L	712215	Standard
	Ho	165	460.0	9.4				ug/L	0	Standard
	Tl	203	59.3	37.5	**0.0104**	0.005	45.6	ug/L	1	Standard
	Tl	205	60.0	46.4	**0.0119**	0.005	45.9	ug/L	3	Standard
	Pb	206	3222.0	3.3	**0.9787**	0.045	4.6	ug/L	161	Standard
	Pb	207	2753.6	4.1	**0.9240**	0.050	5.4	ug/L	141	Standard
	Pb	208	11826.5	2.2	**0.9368**	0.031	3.3	ug/L	608	Standard
	U	238	81.7	39.2	**0.0169**	0.006	37.3	ug/L	4	Standard
>	**Bi**	209	489228.2	1.2				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	8163.9	7.5	**22.3225**	1.489	6.7	mg/L	15	Standard
K	39	80.0	16.5	**1.9521**	0.356	18.2	mg/L	2	Standard
Ca	43	106.7	31.2	**9.5100**	3.166	33.3	mg/L	20	Standard
Fe	54	5736.6	3.2	**2.3654**	0.076	3.2	mg/L	260	Standard
Fe	57	1798.4	3.5	**2.4666**	0.100	4.0	mg/L	25	Standard
> **Sc-1**	45	73260.1	2.2				mg/L	72123	Standard
Cl	35	28433.3	2.7				ug/L	26728	Standard
Kr	83	0.7	86.6				ug/L	0	Standard
Br	81	88511.2	2.8				ug/L	733	Standard
P	31	25160.9	3.1				ug/L	17255	Standard
S	34	1566.7	3.7				ug/L	1680	Standard
Sr	88	508.3	13.4				ug/L	7	Standard
C	12	163.3	24.7				mg/L	67	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	564.6	21.8				mg/L	3	Standard
Ho-1	165	460.0	9.4				mg/L	0	Standard
Er	166	460.0	26.4				mg/L	13	Standard
I	127	126521.4	3.2				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.138	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.914	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.350
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.673
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1505160511
Sample Date/Time: Monday, June 08, 2015 16:45:41
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	174508.0	2.6				ug/L	159930	Standard
	Be	9	65.0	20.4	**0.0505**	0.013	25.4	ug/L	5	Standard
	Al	27	1255540.9	2.3	**20.5439**	0.145	0.7	ug/L	623	Standard
	Sc	45	70349.7	2.4				ug/L	72123	Standard
	Ti	47	252.7	7.7	**0.8279**	0.054	6.6	ug/L	15	Standard
	V	51	5999.1	4.5	**0.7799**	0.029	3.7	ug/L	779	Standard
	Cr	52	6522.4	2.3	**0.3192**	0.009	2.8	ug/L	4182	Standard
	Cr	53	790.0	6.0	**0.4832**	0.043	8.9	ug/L	255	Standard
	Mn	55	119640.4	2.7	**9.5927**	0.180	1.9	ug/L	870	Standard
	Co	59	583.0	2.2	**0.0645**	0.001	1.1	ug/L	44	Standard
	Ni	60	2454.5	2.5	**0.8578**	0.018	2.1	ug/L	376	Standard
	Cu	65	1495.1	2.5	**0.4199**	0.016	3.8	ug/L	271	Standard
	Zn	66	4637.4	2.6	**2.6156**	0.037	1.4	ug/L	601	Standard
>	Ge	72	641303.7	1.4				ug/L	607655	Standard
	As	75	1345.2	1.5	**0.9755**	0.026	2.6	ug/L	-37	Standard
	Se	82	253.0	2.0	**1.8312**	0.045	2.5	ug/L	22	Standard
	Se-1	77	65.7	7.0	**0.2995**	0.052	17.4	ug/L	38	Standard
>	Ga	71	103.3	12.2				mg/L	38	Standard
	Rb	85	6966.6	2.1				ug/L	15	Standard
	Y	89	761167.1	1.0				ug/L	733256	Standard
>	Rh	103	65.0	7.7				ug/L	0	Standard
	Mo	98	188.6	5.1	**0.0613**	0.004	7.1	ug/L	10	Standard
	Ag	107	69.0	16.5	**-0.0005**	0.002	369.0	ug/L	70	Standard
	Cd	111	3.7	53.1	**0.0060**	0.002	26.1	mg/L	2	Standard
	Cd	114	5.1	187.8	**-0.0019**	0.003	166.3	ug/L	-3	Standard
>	In	115	565316.9	1.3				ug/L	555851	Standard
	Sn	118	740.0	6.2	**0.0793**	0.014	17.3	ug/L	495	Standard
	Sb	123	117.0	1.7	**0.0328**	0.001	3.5	ug/L	41	Standard
	Ba	135	36660.6	2.3	**39.3847**	0.645	1.6	ug/L	14	Standard
	Ce	140	3458.7	5.0				ug/L	18	Standard
>	Tb	159	745529.3	1.0				ug/L	712215	Standard
	Ho	165	161.7	6.4				ug/L	0	Standard
	Tl	203	32.0	11.3	**0.0046**	0.001	16.5	ug/L	1	Standard
	Tl	205	45.0	11.1	**0.0088**	0.001	10.8	ug/L	3	Standard
	Pb	206	407.3	3.3	**0.0672**	0.004	6.0	ug/L	161	Standard
	Pb	207	359.0	3.0	**0.0768**	0.003	4.0	ug/L	141	Standard
	Pb	208	1575.4	3.5	**0.0740**	0.004	5.5	ug/L	608	Standard
	U	238	188.7	3.8	**0.0381**	0.002	4.3	ug/L	4	Standard
>	Bi	209	495861.2	0.6				ug/L	481178	Standard

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Na	23	3.3	173.2				mg/L	0	Standard
Mg	24	1406.7	4.4	**3.9709**	0.189	4.8	mg/L	15	Standard
K	39	26.7	57.3	**0.6506**	0.394	60.6	mg/L	2	Standard
Ca	43	195.0	27.1	**19.3552**	5.405	27.9	mg/L	20	Standard
Fe	54	1342.8	8.5	**0.4889**	0.049	10.0	mg/L	260	Standard
Fe	57	516.7	7.9	**0.7005**	0.054	7.8	mg/L	25	Standard
> **Sc-1**	45	70349.7	2.4				mg/L	72123	Standard
Cl	35	28291.1	1.1				ug/L	26728	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	17032.9	3.9				ug/L	733	Standard
P	31	19943.1	2.3				ug/L	17255	Standard
S	34	1668.4	4.9				ug/L	1680	Standard
Sr	88	610.0	15.2				ug/L	7	Standard
C	12	150.0	29.1				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	196.5	38.3				mg/L	3	Standard
Ho-1	165	161.7	6.4				mg/L	0	Standard
Er	166	143.3	14.5				mg/L	13	Standard
I	127	38681.0	2.3				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.115	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.537	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.703
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.052
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1505160512
Sample Date/Time: Monday, June 08, 2015 16:48:52
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	182091.0	0.7				ug/L	159930	Standard
	Be	9	51.7	36.6	**0.0361**	0.017	45.8	ug/L	5	Standard
	Al	27	278782.1	2.1	**4.3423**	0.111	2.5	ug/L	623	Standard
	Sc	45	73965.1	1.4				ug/L	72123	Standard
	Ti	47	375.3	1.7	**1.2140**	0.033	2.7	ug/L	15	Standard
	V	51	2647.2	2.5	**0.2635**	0.008	2.9	ug/L	779	Standard
	Cr	52	6043.2	0.6	**0.2298**	0.014	6.1	ug/L	4182	Standard
	Cr	53	771.7	15.6	**0.4448**	0.112	25.2	ug/L	255	Standard
	Mn	55	30303.3	1.7	**2.2920**	0.036	1.6	ug/L	870	Standard
	Co	59	317.7	7.4	**0.0285**	0.002	8.7	ug/L	44	Standard
	Ni	60	801.7	2.9	**0.1665**	0.007	4.2	ug/L	376	Standard
	Cu	65	1773.4	1.5	**0.5116**	0.016	3.1	ug/L	271	Standard
	Zn	66	8004.4	1.9	**4.6908**	0.097	2.1	ug/L	601	Standard
>	**Ge**	72	660496.1	1.3				ug/L	607655	Standard
	As	75	3744.9	1.5	**2.6183**	0.033	1.2	ug/L	-37	Standard
	Se	82	71.4	9.6	**0.3556**	0.048	13.4	ug/L	22	Standard
	Se-1	77	67.0	9.0	**0.2925**	0.053	18.0	ug/L	38	Standard
>	**Ga**	71	76.7	10.0				mg/L	38	Standard
	Rb	85	4152.2	4.9				ug/L	15	Standard
	Y	89	780678.3	1.0				ug/L	733256	Standard
>	**Rh**	103	3.3	86.6				ug/L	0	Standard
	Mo	98	343.2	4.0	**0.1141**	0.005	4.1	ug/L	10	Standard
	Ag	107	69.0	26.4	**-0.0010**	0.003	322.8	ug/L	70	Standard
	Cd	111	11.5	30.0	**0.0118**	0.003	22.0	mg/L	2	Standard
	Cd	114	40.7	33.4	**0.0091**	0.004	46.2	ug/L	-3	Standard
>	**In**	115	584865.4	0.3				ug/L	555851	Standard
	Sn	118	531.7	12.2	**0.0217**	0.016	75.5	ug/L	495	Standard
	Sb	123	69.0	11.5	**0.0163**	0.003	15.5	ug/L	41	Standard
	Ba	135	2017.8	1.7	**2.0823**	0.035	1.7	ug/L	14	Standard
	Ce	140	2466.9	4.8				ug/L	18	Standard
>	**Tb**	159	772783.0	0.7				ug/L	712215	Standard
	Ho	165	125.0	14.4				ug/L	0	Standard
	Tl	203	18.7	6.2	**0.0017**	0.000	11.9	ug/L	1	Standard
	Tl	205	28.3	56.7	**0.0053**	0.003	58.3	ug/L	3	Standard
	Pb	206	409.3	5.4	**0.0649**	0.006	9.6	ug/L	161	Standard
	Pb	207	347.3	5.9	**0.0701**	0.008	11.3	ug/L	141	Standard
	Pb	208	1457.7	4.1	**0.0616**	0.004	7.2	ug/L	608	Standard
	U	238	30.7	15.4	**0.0064**	0.001	14.2	ug/L	4	Standard
>	**Bi**	209	507327.8	0.9				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	3132.0	2.4	**8.4595**	0.316	3.7	mg/L	15	Standard
K	39	30.0	44.1	**0.7039**	0.337	47.9	mg/L	2	Standard
Ca	43	23.3	12.4	**1.0160**	0.262	25.8	mg/L	20	Standard
Fe	54	10221.2	4.5	**4.2646**	0.259	6.1	mg/L	260	Standard
Fe	57	3317.0	1.4	**4.5496**	0.128	2.8	mg/L	25	Standard
> **Sc-1**	45	73965.1	1.4				mg/L	72123	Standard
Cl	35	29318.3	1.3				ug/L	26728	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	4050.5	5.4				ug/L	733	Standard
P	31	22228.0	1.2				ug/L	17255	Standard
S	34	1868.4	6.7				ug/L	1680	Standard
Sr	88	55.0	15.7				ug/L	7	Standard
C	12	136.7	23.5				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	160.1	31.5				mg/L	3	Standard
Ho-1	165	125.0	14.4				mg/L	0	Standard
Er	166	136.7	8.4				mg/L	13	Standard
I	127	48320.4	5.9				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.857	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.696	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.220
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.435
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 09, 2015

Method 6020 - Summary Report

Sample ID: L1505160513
Sample Date/Time: Monday, June 08, 2015 16:52:04
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	180075.7	1.8				ug/L	159930	Standard
	Be	9	30.0	92.8	**0.0173**	0.025	145.4	ug/L	5	Standard
	Al	27	1802540.8	2.9	**28.5946**	0.623	2.2	ug/L	623	Standard
	Sc	45	73216.6	2.7				ug/L	72123	Standard
	Ti	47	967.4	3.8	**3.1815**	0.155	4.9	ug/L	15	Standard
	V	51	3881.7	6.2	**0.4417**	0.041	9.3	ug/L	779	Standard
	Cr	52	6419.7	2.1	**0.2759**	0.030	11.0	ug/L	4182	Standard
	Cr	53	765.0	7.4	**0.4356**	0.062	14.2	ug/L	255	Standard
	Mn	55	904145.7	2.5	**70.6411**	2.587	3.7	ug/L	870	Standard
	Co	59	1118.0	4.3	**0.1297**	0.007	5.8	ug/L	44	Standard
	Ni	60	1546.7	1.1	**0.4620**	0.008	1.7	ug/L	376	Standard
	Cu	65	1395.1	2.9	**0.3607**	0.022	6.1	ug/L	271	Standard
	Zn	66	4919.5	2.5	**2.6932**	0.074	2.8	ug/L	601	Standard
>	**Ge**	72	663652.8	1.5				ug/L	607655	Standard
	As	75	2148.0	1.1	**1.4995**	0.033	2.2	ug/L	-37	Standard
	Se	82	591.2	4.7	**4.3864**	0.212	4.8	ug/L	22	Standard
	Se-1	77	88.3	8.5	**0.5040**	0.066	13.0	ug/L	38	Standard
>	**Ga**	71	200.0	11.5				mg/L	38	Standard
	Rb	85	21089.7	1.3				ug/L	15	Standard
	Y	89	784437.2	1.1				ug/L	733256	Standard
>	**Rh**	103	40.0	37.5				ug/L	0	Standard
	Mo	98	199.0	5.3	**0.0624**	0.003	5.5	ug/L	10	Standard
	Ag	107	85.7	27.7	**0.0018**	0.004	220.9	ug/L	70	Standard
	Cd	111	14.4	8.0	**0.0139**	0.001	6.3	mg/L	2	Standard
	Cd	114	31.7	27.5	**0.0063**	0.003	44.0	ug/L	-3	Standard
>	**In**	115	587419.8	0.8				ug/L	555851	Standard
	Sn	118	805.0	5.4	**0.0880**	0.009	10.4	ug/L	495	Standard
	Sb	123	101.7	11.7	**0.0265**	0.004	13.6	ug/L	41	Standard
	Ba	135	6872.6	1.8	**7.0949**	0.161	2.3	ug/L	14	Standard
	Ce	140	2987.0	3.3				ug/L	18	Standard
>	**Tb**	159	767627.7	1.5				ug/L	712215	Standard
	Ho	165	175.0	14.3				ug/L	0	Standard
	Tl	203	40.0	19.5	**0.0060**	0.002	25.7	ug/L	1	Standard
	Tl	205	45.0	40.1	**0.0086**	0.003	40.8	ug/L	3	Standard
	Pb	206	477.7	0.4	**0.0861**	0.001	1.7	ug/L	161	Standard
	Pb	207	400.0	4.7	**0.0879**	0.006	7.3	ug/L	141	Standard
	Pb	208	1710.7	1.3	**0.0820**	0.002	3.0	ug/L	608	Standard
	U	238	71.7	4.5	**0.0144**	0.001	4.3	ug/L	4	Standard
>	**Bi**	209	507667.7	0.6				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	3492.1	6.5	**9.5382**	0.732	7.7	mg/L	15	Standard
K	39	15.0	33.3	**0.3353**	0.118	35.2	mg/L	2	Standard
Ca	43	93.3	16.4	**8.2256**	1.824	22.2	mg/L	20	Standard
Fe	54	5753.7	3.2	**2.3757**	0.124	5.2	mg/L	260	Standard
Fe	57	1983.5	5.2	**2.7281**	0.167	6.1	mg/L	25	Standard
> **Sc-1**	45	73216.6	2.7				mg/L	72123	Standard
Cl	35	29116.6	2.1				ug/L	26728	Standard
Kr	83	0.7	86.6				ug/L	0	Standard
Br	81	40704.7	4.8				ug/L	733	Standard
P	31	20418.8	1.8				ug/L	17255	Standard
S	34	1775.1	4.9				ug/L	1680	Standard
Sr	88	506.7	12.9				ug/L	7	Standard
C	12	200.0	5.0				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	194.2	12.1				mg/L	3	Standard
Ho-1	165	175.0	14.3				mg/L	0	Standard
Er	166	330.0	72.8				mg/L	13	Standard
I	127	62866.9	1.9				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.597	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.215	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.679
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.505
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 09, 2015

Method 6020 - Summary Report

Sample ID: L1505160514
Sample Date/Time: Monday, June 08, 2015 16:55:15
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	169902.4	1.1				ug/L	159930	Standard
	Be	9	41.7	30.2	**0.0299**	0.012	39.0	ug/L	5	Standard
	Al	27	1806189.3	0.9	**30.3720**	0.275	0.9	ug/L	623	Standard
	Sc	45	70723.0	1.0				ug/L	72123	Standard
	Ti	47	531.7	2.3	**1.8528**	0.051	2.8	ug/L	15	Standard
	V	51	9546.3	0.3	**1.3634**	0.002	0.2	ug/L	779	Standard
	Cr	52	6007.5	2.2	**0.2767**	0.019	7.0	ug/L	4182	Standard
	Cr	53	796.7	5.3	**0.5154**	0.044	8.4	ug/L	255	Standard
	Mn	55	441858.0	0.4	**36.8850**	0.258	0.7	ug/L	870	Standard
	Co	59	947.0	4.7	**0.1163**	0.006	4.9	ug/L	44	Standard
	Ni	60	5591.7	1.8	**2.2302**	0.051	2.3	ug/L	376	Standard
	Cu	65	1688.8	2.0	**0.5213**	0.016	3.1	ug/L	271	Standard
	Zn	66	4152.2	1.0	**2.3883**	0.037	1.6	ug/L	601	Standard
>	**Ge**	72	620248.2	0.4				ug/L	607655	Standard
	As	75	1328.8	2.1	**0.9959**	0.021	2.1	ug/L	-37	Standard
	Se	82	414.6	2.1	**3.2408**	0.064	2.0	ug/L	22	Standard
	Se-1	77	69.0	6.3	**0.3583**	0.044	12.4	ug/L	38	Standard
>	**Ga**	71	115.0	4.3				mg/L	38	Standard
	Rb	85	44234.5	2.2				ug/L	15	Standard
	Y	89	738017.8	1.6				ug/L	733256	Standard
>	**Rh**	103	65.0	40.0				ug/L	0	Standard
	Mo	98	808.7	4.2	**0.2987**	0.015	5.0	ug/L	10	Standard
	Ag	107	80.0	7.6	**0.0018**	0.001	67.9	ug/L	70	Standard
	Cd	111	13.2	24.5	**0.0137**	0.003	18.3	mg/L	2	Standard
	Cd	114	29.3	31.9	**0.0062**	0.003	49.8	ug/L	-3	Standard
>	**In**	115	549569.6	0.9				ug/L	555851	Standard
	Sn	118	586.7	15.5	**0.0443**	0.022	50.5	ug/L	495	Standard
	Sb	123	2813.9	1.8	**0.9445**	0.021	2.2	ug/L	41	Standard
	Ba	135	22154.2	0.1	**24.4794**	0.248	1.0	ug/L	14	Standard
	Ce	140	831.7	5.1				ug/L	18	Standard
>	**Tb**	159	723131.4	0.7				ug/L	712215	Standard
	Ho	165	46.7	12.4				ug/L	0	Standard
	Tl	203	68.3	4.5	**0.0126**	0.001	4.8	ug/L	1	Standard
	Tl	205	55.0	9.1	**0.0112**	0.001	9.6	ug/L	3	Standard
	Pb	206	843.0	2.5	**0.2163**	0.008	3.9	ug/L	161	Standard
	Pb	207	698.7	4.7	**0.2043**	0.011	5.6	ug/L	141	Standard
	Pb	208	2991.8	1.6	**0.2008**	0.002	1.0	ug/L	608	Standard
	U	238	351.7	8.4	**0.0732**	0.006	7.7	ug/L	4	Standard
>	**Bi**	209	477793.9	0.8				ug/L	481178	Standard

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Na	23	10.0	50.0				mg/L	0	Standard
Mg	24	3785.5	5.7	**10.6997**	0.557	5.2	mg/L	15	Standard
K	39	50.0	26.5	**1.2477**	0.337	27.0	mg/L	2	Standard
Ca	43	336.7	7.3	**34.2750**	2.807	8.2	mg/L	20	Standard
Fe	54	1187.4	5.0	**0.4163**	0.030	7.2	mg/L	260	Standard
Fe	57	565.0	10.0	**0.7665**	0.077	10.1	mg/L	25	Standard
Sc-1	45	70723.0	1.0				mg/L	72123	Standard
Cl	35	28432.7	1.0				ug/L	26728	Standard
Kr	83	0.7	173.2				ug/L	0	Standard
Br	81	30507.4	5.7				ug/L	733	Standard
P	31	22705.3	1.5				ug/L	17255	Standard
S	34	1788.4	6.9				ug/L	1680	Standard
Sr	88	835.0	5.9				ug/L	7	Standard
C	12	103.3	22.3				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	67.8	38.0				mg/L	3	Standard
Ho-1	165	46.7	12.4				mg/L	0	Standard
Er	166	46.7	32.7				mg/L	13	Standard
I	127	111459.4	5.9				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.236	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.072	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.870
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.297
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1505160515
Sample Date/Time: Monday, June 08, 2015 16:58:26
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	177359.3	3.0				ug/L	159930	Standard
	Be	9	220.0	6.0	**0.1905**	0.017	9.1	ug/L	5	Standard
	Al	27	603546.3	0.5	**9.7026**	0.308	3.2	ug/L	623	Standard
	Sc	45	71280.7	2.7				ug/L	72123	Standard
	Ti	47	120.0	15.4	**0.3687**	0.058	15.7	ug/L	15	Standard
	V	51	1266.3	6.3	**0.0662**	0.013	19.7	ug/L	779	Standard
	Cr	52	5247.6	1.0	**0.1417**	0.009	6.4	ug/L	4182	Standard
	Cr	53	611.7	6.3	**0.3112**	0.038	12.3	ug/L	255	Standard
	Mn	55	60542.8	2.4	**4.7910**	0.186	3.9	ug/L	870	Standard
	Co	59	315.7	3.5	**0.0293**	0.001	4.5	ug/L	44	Standard
	Ni	60	520.7	3.9	**0.0594**	0.011	18.2	ug/L	376	Standard
	Cu	65	1281.4	1.1	**0.3314**	0.013	3.9	ug/L	271	Standard
	Zn	66	3913.2	1.1	**2.1257**	0.045	2.1	ug/L	601	Standard
>	**Ge**	72	644099.1	1.5				ug/L	607655	Standard
	As	75	96378.1	1.1	**68.8420**	1.732	2.5	ug/L	-37	Standard
	Se	82	74.6	8.8	**0.3958**	0.048	12.1	ug/L	22	Standard
	Se-1	77	61.0	14.8	**0.2472**	0.084	34.1	ug/L	38	Standard
>	**Ga**	71	63.3	9.1				mg/L	38	Standard
	Rb	85	2725.2	4.0				ug/L	15	Standard
	Y	89	764279.8	1.0				ug/L	733256	Standard
>	**Rh**	103	8.3	69.3				ug/L	0	Standard
	Mo	98	827.6	4.5	**0.2899**	0.018	6.2	ug/L	10	Standard
	Ag	107	67.3	3.1	**-0.0011**	0.000	36.5	ug/L	70	Standard
	Cd	111	5.2	40.2	**0.0071**	0.002	22.3	mg/L	2	Standard
	Cd	114	19.5	84.3	**0.0026**	0.005	198.0	ug/L	-3	Standard
>	**In**	115	579269.8	1.6				ug/L	555851	Standard
	Sn	118	453.3	14.2	**0.0036**	0.018	485.1	ug/L	495	Standard
	Sb	123	51.0	15.5	**0.0107**	0.002	21.8	ug/L	41	Standard
	Ba	135	12870.8	0.9	**13.4889**	0.326	2.4	ug/L	14	Standard
	Ce	140	2728.6	4.4				ug/L	18	Standard
>	**Tb**	159	755002.4	0.6				ug/L	712215	Standard
	Ho	165	58.3	21.6				ug/L	0	Standard
	Tl	203	14.3	46.5	**0.0009**	0.001	155.5	ug/L	1	Standard
	Tl	205	6.7	114.6	**0.0011**	0.001	132.2	ug/L	3	Standard
	Pb	206	546.3	3.8	**0.1093**	0.005	4.9	ug/L	161	Standard
	Pb	207	482.0	3.0	**0.1175**	0.006	5.0	ug/L	141	Standard
	Pb	208	2071.4	3.8	**0.1129**	0.005	4.7	ug/L	608	Standard
	U	238	51.0	5.2	**0.0105**	0.000	4.1	ug/L	4	Standard
>	**Bi**	209	502383.8	0.9				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	2741.9	2.3	**7.6824**	0.291	3.8	mg/L	15	Standard
K	39	6.7	43.3	**0.1338**	0.073	54.7	mg/L	2	Standard
Ca	43	21.7	35.3	**0.9197**	0.740	80.5	mg/L	20	Standard
Fe	54	14880.2	2.5	**6.4998**	0.181	2.8	mg/L	260	Standard
Fe	57	4644.0	3.2	**6.6388**	0.392	5.9	mg/L	25	Standard
> **Sc-1**	45	71280.7	2.7				mg/L	72123	Standard
Cl	35	28388.6	1.2				ug/L	26728	Standard
Kr	83	0.7	173.2				ug/L	0	Standard
Br	81	4337.3	0.3				ug/L	733	Standard
P	31	20190.1	3.4				ug/L	17255	Standard
S	34	1706.8	4.2				ug/L	1680	Standard
Sr	88	100.0	15.0				ug/L	7	Standard
C	12	140.0	31.1				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	93.5	40.3				mg/L	3	Standard
Ho-1	165	58.3	21.6				mg/L	0	Standard
Er	166	136.7	33.8				mg/L	13	Standard
I	127	50823.6	4.9				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.898	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.998	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.213
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.407
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 09, 2015

Method 6020 - Summary Report

Sample ID: L1505160516
Sample Date/Time: Monday, June 08, 2015 17:01:37
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	179554.6	2.1				ug/L	159930	Standard
	Be	9	161.7	7.8	**0.1353**	0.008	6.1	ug/L	5	Standard
	Al	27	838853.0	2.3	**13.3303**	0.431	3.2	ug/L	623	Standard
	Sc	45	71962.2	1.5				ug/L	72123	Standard
	Ti	47	245.3	2.7	**0.7823**	0.019	2.5	ug/L	15	Standard
	V	51	2297.3	0.9	**0.2138**	0.002	1.1	ug/L	779	Standard
	Cr	52	6308.6	0.5	**0.2688**	0.002	0.8	ug/L	4182	Standard
	Cr	53	823.4	2.1	**0.4957**	0.014	2.7	ug/L	255	Standard
	Mn	55	52238.9	1.1	**4.0346**	0.061	1.5	ug/L	870	Standard
	Co	59	958.4	2.8	**0.1105**	0.004	3.5	ug/L	44	Standard
	Ni	60	964.0	3.4	**0.2333**	0.014	5.8	ug/L	376	Standard
	Cu	65	2675.2	0.8	**0.8699**	0.009	1.1	ug/L	271	Standard
	Zn	66	3517.7	1.7	**1.8176**	0.032	1.8	ug/L	601	Standard
>	**Ge**	72	657478.0	0.4				ug/L	607655	Standard
	As	75	1041.5	2.1	**0.7392**	0.018	2.5	ug/L	-37	Standard
	Se	82	80.4	6.5	**0.4290**	0.040	9.4	ug/L	22	Standard
	Se-1	77	72.3	10.4	**0.3504**	0.079	22.5	ug/L	38	Standard
>	**Ga**	71	106.7	43.3				mg/L	38	Standard
	Rb	85	6789.9	2.5				ug/L	15	Standard
	Y	89	765433.9	0.9				ug/L	733256	Standard
>	**Rh**	103	5.0	100.0				ug/L	0	Standard
	Mo	98	61.2	12.9	**0.0137**	0.003	19.8	ug/L	10	Standard
	Ag	107	78.0	12.8	**0.0007**	0.002	234.9	ug/L	70	Standard
	Cd	111	7.2	15.9	**0.0086**	0.001	9.9	mg/L	2	Standard
	Cd	114	17.1	65.9	**0.0019**	0.004	193.0	ug/L	-3	Standard
>	**In**	115	579380.4	0.6				ug/L	555851	Standard
	Sn	118	605.0	14.3	**0.0411**	0.021	51.6	ug/L	495	Standard
	Sb	123	65.0	4.1	**0.0152**	0.001	5.9	ug/L	41	Standard
	Ba	135	4102.2	1.2	**4.2880**	0.061	1.4	ug/L	14	Standard
	Ce	140	3050.3	2.1				ug/L	18	Standard
>	**Tb**	159	759588.5	0.7				ug/L	712215	Standard
	Ho	165	235.0	11.3				ug/L	0	Standard
	Tl	203	28.0	17.9	**0.0036**	0.001	28.7	ug/L	1	Standard
	Tl	205	26.7	57.3	**0.0050**	0.003	59.4	ug/L	3	Standard
	Pb	206	396.3	2.7	**0.0614**	0.004	6.7	ug/L	161	Standard
	Pb	207	344.7	4.9	**0.0696**	0.006	8.4	ug/L	141	Standard
	Pb	208	1486.4	3.1	**0.0644**	0.003	4.6	ug/L	608	Standard
	U	238	29.0	28.2	**0.0061**	0.002	26.6	ug/L	4	Standard
>	**Bi**	209	505355.0	0.6				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	1143.4	3.1	**3.1454**	0.099	3.1	mg/L	15	Standard
K	39	8.3	124.9	**0.1740**	0.261	149.8	mg/L	2	Standard
Ca	43	23.3	75.3	**1.0885**	1.818	167.0	mg/L	20	Standard
Fe	54	2476.1	5.8	**0.9741**	0.056	5.7	mg/L	260	Standard
Fe	57	698.3	3.0	**0.9431**	0.041	4.3	mg/L	25	Standard
> **Sc-1**	45	71962.2	1.5				mg/L	72123	Standard
Cl	35	28842.1	0.3				ug/L	26728	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	4574.0	10.4				ug/L	733	Standard
P	31	20266.9	2.6				ug/L	17255	Standard
S	34	1811.8	6.7				ug/L	1680	Standard
Sr	88	120.0	19.1				ug/L	7	Standard
C	12	186.7	11.2				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	229.0	16.4				mg/L	3	Standard
Ho-1	165	235.0	11.3				mg/L	0	Standard
Er	166	230.0	15.7				mg/L	13	Standard
I	127	14350.1	3.5				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.271	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.199	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.233
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.025
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1505160517
Sample Date/Time: Monday, June 08, 2015 17:04:48
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	173427.0	1.0				ug/L	159930	Standard
	Be	9	116.7	23.6	**0.0988**	0.025	25.8	ug/L	5	Standard
	Al	27	1609557.7	1.2	**26.5097**	0.174	0.7	ug/L	623	Standard
	Sc	45	70649.4	1.7				ug/L	72123	Standard
	Ti	47	1043.7	3.9	**3.6578**	0.112	3.1	ug/L	15	Standard
	V	51	3820.7	1.4	**0.4684**	0.012	2.7	ug/L	779	Standard
	Cr	52	7399.1	0.4	**0.4683**	0.015	3.2	ug/L	4182	Standard
	Cr	53	1533.4	4.9	**1.2317**	0.065	5.3	ug/L	255	Standard
	Mn	55	321032.8	0.4	**26.6348**	0.291	1.1	ug/L	870	Standard
	Co	59	967.4	2.0	**0.1184**	0.003	2.1	ug/L	44	Standard
	Ni	60	2971.6	2.5	**1.1061**	0.030	2.7	ug/L	376	Standard
	Cu	65	1296.1	5.1	**0.3543**	0.023	6.5	ug/L	271	Standard
	Zn	66	3994.2	3.3	**2.2654**	0.073	3.2	ug/L	601	Standard
>	**Ge**	72	623521.2	1.0				ug/L	607655	Standard
	As	75	7077.6	2.4	**5.2310**	0.120	2.3	ug/L	-37	Standard
	Se	82	2650.3	2.6	**21.6832**	0.569	2.6	ug/L	22	Standard
	Se-1	77	139.7	15.2	**1.1103**	0.215	19.3	ug/L	38	Standard
>	**Ga**	71	226.7	17.8				mg/L	38	Standard
	Rb	85	13350.9	2.1				ug/L	15	Standard
	Y	89	754335.1	2.1				ug/L	733256	Standard
>	**Rh**	103	78.3	9.8				ug/L	0	Standard
	Mo	98	107.8	17.7	**0.0322**	0.007	22.9	ug/L	10	Standard
	Ag	107	77.3	0.7	**0.0012**	0.000	3.6	ug/L	70	Standard
	Cd	111	7.5	59.9	**0.0091**	0.004	39.7	mg/L	2	Standard
	Cd	114	16.6	53.9	**0.0019**	0.003	154.7	ug/L	-3	Standard
>	**In**	115	556476.4	0.5				ug/L	555851	Standard
	Sn	118	873.4	4.9	**0.1167**	0.012	10.3	ug/L	495	Standard
	Sb	123	74.9	10.1	**0.0194**	0.003	13.3	ug/L	41	Standard
	Ba	135	86059.4	0.9	**93.9459**	0.880	0.9	ug/L	14	Standard
	Ce	140	7660.3	2.2				ug/L	18	Standard
>	**Tb**	159	736663.6	0.6				ug/L	712215	Standard
	Ho	165	308.3	5.0				ug/L	0	Standard
	Tl	203	87.7	7.3	**0.0168**	0.001	8.2	ug/L	1	Standard
	Tl	205	73.3	23.9	**0.0151**	0.004	24.1	ug/L	3	Standard
	Pb	206	439.7	5.5	**0.0834**	0.008	9.8	ug/L	161	Standard
	Pb	207	378.7	5.3	**0.0892**	0.007	8.4	ug/L	141	Standard
	Pb	208	1645.7	2.9	**0.0856**	0.004	5.0	ug/L	608	Standard
	U	238	114.0	5.3	**0.0241**	0.001	5.2	ug/L	4	Standard
>	**Bi**	209	476022.8	0.1				ug/L	481178	Standard

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Na	23	1.7	173.2				mg/L	0	Standard
Mg	24	11245.8	0.5	**31.9220**	0.710	2.2	mg/L	15	Standard
K	39	18.3	87.7	**0.4347**	0.415	95.4	mg/L	2	Standard
Ca	43	168.3	7.5	**16.4848**	1.404	8.5	mg/L	20	Standard
Fe	54	3154.1	2.9	**1.2992**	0.061	4.7	mg/L	260	Standard
Fe	57	1083.4	6.2	**1.5209**	0.107	7.0	mg/L	25	Standard
> **Sc-1**	45	70649.4	1.7				mg/L	72123	Standard
Cl	35	28653.1	0.4				ug/L	26728	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	194427.3	3.8				ug/L	733	Standard
P	31	25202.6	2.3				ug/L	17255	Standard
S	34	1660.1	4.1				ug/L	1680	Standard
Sr	88	720.0	5.7				ug/L	7	Standard
C	12	166.7	25.0				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	354.7	24.8				mg/L	3	Standard
Ho-1	165	308.3	5.0				mg/L	0	Standard
Er	166	320.0	11.3				mg/L	13	Standard
I	127	92977.8	1.9				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.440	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.611	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.113
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.929
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, June 08, 2015 17:08:01
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	175032.5	3.1				ug/L	159930	Standard
	Be	9	54706.9	1.3	**50.3459**	1.362	2.7	ug/L	5	Standard
	Al	27	3099268.3	1.0	**50.6536**	2.072	4.1	ug/L	623	Standard
	Sc	45	70235.8	0.8				ug/L	72123	Standard
	Ti	47	28109.1	1.5	**96.9378**	1.539	1.6	ug/L	15	Standard
	V	51	329464.1	2.2	**49.5503**	1.046	2.1	ug/L	779	Standard
	Cr	52	366596.8	1.3	**49.6360**	0.474	1.0	ug/L	4182	Standard
	Cr	53	52510.9	1.6	**49.7085**	1.018	2.0	ug/L	255	Standard
	Mn	55	616559.9	1.3	**49.8435**	0.895	1.8	ug/L	870	Standard
	Co	59	383342.2	2.1	**50.2206**	0.981	2.0	ug/L	44	Standard
	Ni	60	121652.8	0.9	**50.0550**	0.681	1.4	ug/L	376	Standard
	Cu	65	123995.7	0.8	**49.9255**	0.596	1.2	ug/L	271	Standard
	Zn	66	75947.5	1.0	**49.8500**	0.925	1.9	ug/L	601	Standard
>	**Ge**	72	640914.4	0.9				ug/L	607655	Standard
	As	75	68883.8	1.0	**49.4444**	0.941	1.9	ug/L	-37	Standard
	Se	82	6212.2	0.9	**49.7053**	0.917	1.8	ug/L	22	Standard
	Se-1	77	4958.1	1.6	**51.3015**	1.153	2.2	ug/L	38	Standard
>	**Ga**	71	40.0	21.7				mg/L	38	Standard
	Rb	85	845.0	4.6				ug/L	15	Standard
	Y	89	754336.8	0.2				ug/L	733256	Standard
>	**Rh**	103	21.7	53.3				ug/L	0	Standard
	Mo	98	283815.5	1.9	**103.4457**	1.827	1.8	ug/L	10	Standard
	Ag	107	288730.6	0.9	**50.5581**	0.800	1.6	ug/L	70	Standard
	Cd	111	66159.9	0.3	**51.1205**	0.446	0.9	mg/L	2	Standard
	Cd	114	160104.4	1.6	**50.8566**	1.054	2.1	ug/L	-3	Standard
>	**In**	115	572187.2	0.7				ug/L	555851	Standard
	Sn	118	196139.8	1.3	**49.2394**	0.975	2.0	ug/L	495	Standard
	Sb	123	156330.2	0.8	**50.6875**	0.710	1.4	ug/L	41	Standard
	Ba	135	47787.6	0.6	**50.7307**	0.668	1.3	ug/L	14	Standard
	Ce	140	36.7	28.4				ug/L	18	Standard
>	**Tb**	159	748372.3	1.5				ug/L	712215	Standard
	Ho	165	6.7	43.3				ug/L	0	Standard
	Tl	203	242524.0	1.0	**50.3784**	0.800	1.6	ug/L	1	Standard
	Tl	205	254845.6	1.3	**51.1215**	0.656	1.3	ug/L	3	Standard
	Pb	206	160003.4	0.3	**51.2442**	0.222	0.4	ug/L	161	Standard
	Pb	207	146146.8	0.8	**51.1456**	0.467	0.9	ug/L	141	Standard
	Pb	208	608420.4	0.7	**50.6526**	0.602	1.2	ug/L	608	Standard
	U	238	251052.2	0.5	**50.3973**	0.473	0.9	ug/L	4	Standard
>	**Bi**	209	492922.0	0.7				ug/L	481178	Standard

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Na	23	1.7	173.2				mg/L	0	Standard
Mg	24	1890.1	6.6	**5.3600**	0.398	7.4	mg/L	15	Standard
K	39	188.3	12.5	**4.8356**	0.598	12.4	mg/L	2	Standard
Ca	43	46.7	27.0	**3.6279**	1.330	36.7	mg/L	20	Standard
Fe	54	12040.8	1.5	**5.3157**	0.090	1.7	mg/L	260	Standard
Fe	57	3852.2	1.4	**5.5746**	0.074	1.3	mg/L	25	Standard
> **Sc-1**	45	70235.8	0.8				mg/L	72123	Standard
Cl	35	28096.7	0.6				ug/L	26728	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	1640.1	20.0				ug/L	733	Standard
P	31	18549.7	1.9				ug/L	17255	Standard
S	34	1698.4	6.7				ug/L	1680	Standard
Sr	88	8.3	69.3				ug/L	7	Standard
C	12	70.0	37.8				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.9	48.2				mg/L	3	Standard
Ho-1	165	6.7	43.3				mg/L	0	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	1678.4	33.8				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	100.692		
Al	27	101.307		
Sc	45			
Ti	47	96.938		
V	51	99.101		
Cr	52	99.272		
Cr	53			
Mn	55	99.687		
Co	59	100.441		
Ni	60	100.110		
Cu	65	99.851		
Zn	66	99.700		
> Ge	72		105.473	
As	75	98.889		
Se	82	99.411		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	103.446		
Ag	107	101.116		
Cd	111	102.241		
Cd	114			
> In	115			102.939
Sn	118	98.479		
Sb	123	101.375		
Ba	135	101.461		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.757		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.305		
U	238	100.795		
> Bi	209			102.441
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, June 08, 2015 17:11:13
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	178701.3	2.1				ug/L	159930	Standard
	Be	9	21.7	70.5	**0.0100**	0.014	139.5	ug/L	5	Standard
	Al	27	531.7	8.7	**-0.0288**	0.001	2.6	ug/L	623	Standard
	Sc	45	71736.1	0.5				ug/L	72123	Standard
	Ti	47	15.3	16.4	**0.0101**	0.009	85.4	ug/L	15	Standard
	V	51	683.7	6.8	**-0.0209**	0.007	31.4	ug/L	779	Standard
	Cr	52	4027.2	2.2	**-0.0229**	0.012	50.5	ug/L	4182	Standard
	Cr	53	311.7	13.8	**0.0279**	0.040	144.1	ug/L	255	Standard
	Mn	55	983.4	1.5	**-0.0098**	0.001	15.3	ug/L	870	Standard
	Co	59	61.0	19.9	**-0.0039**	0.002	41.1	ug/L	44	Standard
	Ni	60	343.3	6.0	**-0.0131**	0.009	68.1	ug/L	376	Standard
	Cu	65	321.7	1.3	**-0.0542**	0.001	1.6	ug/L	271	Standard
	Zn	66	590.0	5.9	**-0.0634**	0.021	33.3	ug/L	601	Standard
>	**Ge**	72	642032.9	0.6				ug/L	607655	Standard
	As	75	-32.7	82.4	**-0.0128**	0.019	151.3	ug/L	-37	Standard
	Se	82	22.3	5.2	**-0.0213**	0.008	38.5	ug/L	22	Standard
	Se-1	77	42.0	6.3	**0.0522**	0.026	49.5	ug/L	38	Standard
>	**Ga**	71	33.3	17.3				mg/L	38	Standard
	Rb	85	18.3	15.7				ug/L	15	Standard
	Y	89	756537.6	2.1				ug/L	733256	Standard
>	**Rh**	103	3.3	173.2				ug/L	0	Standard
	Mo	98	69.2	16.9	**0.0170**	0.004	23.5	ug/L	10	Standard
	Ag	107	77.0	21.5	**0.0007**	0.003	360.7	ug/L	70	Standard
	Cd	111	4.9	73.0	**0.0069**	0.003	39.6	mg/L	2	Standard
	Cd	114	3.2	204.7	**-0.0025**	0.002	83.1	ug/L	-3	Standard
>	**In**	115	570099.5	2.2				ug/L	555851	Standard
	Sn	118	501.7	7.0	**0.0176**	0.011	64.5	ug/L	495	Standard
	Sb	123	77.6	28.9	**0.0196**	0.007	34.8	ug/L	41	Standard
	Ba	135	11.7	26.2	**-0.0014**	0.003	212.0	ug/L	14	Standard
	Ce	140	16.7	62.4				ug/L	18	Standard
>	**Tb**	159	746626.8	2.4				ug/L	712215	Standard
	Ho	165	8.3	34.6				ug/L	0	Standard
	Tl	203	13.7	59.6	**0.0007**	0.002	218.3	ug/L	1	Standard
	Tl	205	18.3	41.7	**0.0034**	0.001	42.4	ug/L	3	Standard
	Pb	206	172.7	7.2	**-0.0084**	0.003	33.4	ug/L	161	Standard
	Pb	207	141.3	12.2	**0.0003**	0.006	1756.5	ug/L	141	Standard
	Pb	208	665.0	4.8	**-0.0022**	0.002	90.4	ug/L	608	Standard
	U	238	8.7	52.0	**0.0021**	0.001	41.9	ug/L	4	Standard
>	**Bi**	209	502958.6	2.1				ug/L	481178	Standard

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Na	23	3.3	173.2				mg/L	0	Standard
Mg	24	16.7	45.8	**0.0018**	0.021	1198.5	mg/L	15	Standard
K	39	1.7	173.2	**0.0061**	0.073	1204.2	mg/L	2	Standard
Ca	43	18.3	31.5	**0.5723**	0.612	107.0	mg/L	20	Standard
Fe	54	302.4	20.4	**0.0178**	0.027	152.8	mg/L	260	Standard
Fe	57	31.7	59.8	**-0.0078**	0.027	347.4	mg/L	25	Standard
> **Sc-1**	45	71736.1	0.5				mg/L	72123	Standard
Cl	35	28864.1	0.3				ug/L	26728	Standard
Kr	83	0.7	86.6				ug/L	0	Standard
Br	81	993.4	11.0				ug/L	733	Standard
P	31	20445.6	13.9				ug/L	17255	Standard
S	34	1788.4	6.4				ug/L	1680	Standard
Sr	88	10.0	50.0				ug/L	7	Standard
C	12	60.0					mg/L	67	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.8	2.8				mg/L	3	Standard
Ho-1	165	8.3	34.6				mg/L	0	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	710.0	19.6				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.657	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.563
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.527
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Monday, June 08, 2015 17:14:25
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	179058.7	1.6				ug/L	159930	Standard
	Be	9	241.7	13.3	**0.2078**	0.029	13.9	ug/L	5	Standard
	Al	27	498.3	8.2	**-0.0293**	0.001	2.6	ug/L	623	Standard
	Sc	45	70637.6	1.3				ug/L	72123	Standard
	Ti	47	12.0	14.4	**-0.0019**	0.007	343.4	ug/L	15	Standard
	V	51	3231.7	1.9	**0.3558**	0.018	5.0	ug/L	779	Standard
	Cr	52	9546.7	3.9	**0.7139**	0.074	10.4	ug/L	4182	Standard
	Cr	53	1116.7	4.2	**0.7773**	0.030	3.9	ug/L	255	Standard
	Mn	55	7082.7	2.7	**0.4754**	0.026	5.5	ug/L	870	Standard
	Co	59	3127.7	4.2	**0.3917**	0.025	6.3	ug/L	44	Standard
	Ni	60	4169.6	3.6	**1.5397**	0.094	6.1	ug/L	376	Standard
	Cu	65	2410.2	3.6	**0.7748**	0.048	6.2	ug/L	271	Standard
	Zn	66	10137.7	2.9	**6.1559**	0.307	5.0	ug/L	601	Standard
>	**Ge**	72	651420.4	1.9				ug/L	607655	Standard
	As	75	523.8	6.9	**0.3809**	0.033	8.6	ug/L	-37	Standard
	Se	82	68.4	17.2	**0.3414**	0.102	29.8	ug/L	22	Standard
	Se-1	77	80.7	10.0	**0.4424**	0.079	17.8	ug/L	38	Standard
>	**Ga**	71	48.3	31.6				mg/L	38	Standard
	Rb	85	25.0	20.0				ug/L	15	Standard
	Y	89	776349.8	0.4				ug/L	733256	Standard
>	**Rh**	103	1.7	173.2				ug/L	0	Standard
	Mo	98	18.9	19.9	**-0.0015**	0.001	100.8	ug/L	10	Standard
	Ag	107	2359.2	1.8	**0.3965**	0.010	2.6	ug/L	70	Standard
	Cd	111	306.0	4.1	**0.2374**	0.014	5.9	mg/L	2	Standard
	Cd	114	734.3	6.3	**0.2276**	0.017	7.5	ug/L	-3	Standard
>	**In**	115	577780.8	2.0				ug/L	555851	Standard
	Sn	118	711.7	13.2	**0.0685**	0.027	39.8	ug/L	495	Standard
	Sb	123	1236.0	1.6	**0.3915**	0.014	3.6	ug/L	41	Standard
	Ba	135	707.3	1.7	**0.7304**	0.027	3.7	ug/L	14	Standard
	Ce	140	3.3	173.2				ug/L	18	Standard
>	**Tb**	159	758865.7	2.3				ug/L	712215	Standard
	Ho	165	8.3	34.6				ug/L	0	Standard
	Tl	203	412.7	1.7	**0.0805**	0.003	3.1	ug/L	1	Standard
	Tl	205	455.0	6.7	**0.0876**	0.005	5.4	ug/L	3	Standard
	Pb	206	837.7	5.5	**0.1961**	0.018	9.2	ug/L	161	Standard
	Pb	207	711.7	0.8	**0.1918**	0.005	2.5	ug/L	141	Standard
	Pb	208	3133.1	1.7	**0.1949**	0.008	4.1	ug/L	608	Standard
	U	238	2035.1	1.5	**0.3936**	0.003	0.7	ug/L	4	Standard
>	**Bi**	209	512243.6	1.7				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	25.0	52.9	**0.0260**	0.037	141.5	mg/L	15	Standard
K	39	3.3	86.6	**0.0501**	0.075	149.0	mg/L	2	Standard
Ca	43	23.3	32.7	**1.1243**	0.789	70.2	mg/L	20	Standard
Fe	54	255.8	8.1	**-0.0009**	0.011	1144.2	mg/L	260	Standard
Fe	57	26.7	10.8	**-0.0142**	0.004	28.9	mg/L	25	Standard
> **Sc-1**	45	70637.6	1.3				mg/L	72123	Standard
Cl	35	28998.4	1.5				ug/L	26728	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	833.4	8.0				ug/L	733	Standard
P	31	18806.7	1.4				ug/L	17255	Standard
S	34	1865.1	2.2				ug/L	1680	Standard
Sr	88	11.7	89.2				ug/L	7	Standard
C	12	70.0	37.8				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.5	36.7				mg/L	3	Standard
Ho-1	165	8.3	34.6				mg/L	0	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	530.0	24.6				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	103.884		
Al	27			
Sc	45			
Ti	47			
V	51	88.949		
Cr	52	89.233		
Cr	53			
Mn	55	95.073		
Co	59	97.915		
Ni	60	96.233		
Cu	65	96.849		
Zn	66	98.495		
> Ge	72		107.202	
As	75	95.216		
Se	82	85.358		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	99.126		
Cd	111	98.907		
Cd	114			
> In	115			103.945
Sn	118			
Sb	123	97.871		
Ba	135	97.382		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.595		
Tl	205			
Pb	206			
Pb	207			
Pb	208	97.445		
U	238	98.392		
> Bi	209			106.456
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1505178436
Sample Date/Time: Monday, June 08, 2015 17:17:37
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	175041.3	3.8				ug/L	159930	Standard
	Be	9	13.3	57.3	**0.0025**	0.007	260.4	ug/L	5	Standard
	Al	27	6303.0	1.7	**0.0658**	0.002	3.4	ug/L	623	Standard
	Sc	45	69889.2	2.3				ug/L	72123	Standard
	Ti	47	43.3	16.2	**0.1098**	0.026	23.9	ug/L	15	Standard
	V	51	786.7	4.5	**-0.0029**	0.005	176.4	ug/L	779	Standard
	Cr	52	4662.7	1.2	**0.0775**	0.011	14.2	ug/L	4182	Standard
	Cr	53	393.3	1.9	**0.1134**	0.004	3.8	ug/L	255	Standard
	Mn	55	3896.8	1.3	**0.2324**	0.005	2.0	ug/L	870	Standard
	Co	59	52.3	17.8	**-0.0049**	0.001	25.9	ug/L	44	Standard
	Ni	60	529.3	2.9	**0.0682**	0.009	12.7	ug/L	376	Standard
	Cu	65	1454.1	8.3	**0.4149**	0.047	11.4	ug/L	271	Standard
	Zn	66	6359.7	1.7	**3.8397**	0.047	1.2	ug/L	601	Standard
>	**Ge**	72	628772.1	1.1				ug/L	607655	Standard
	As	75	-36.4	18.7	**-0.0160**	0.005	31.8	ug/L	-37	Standard
	Se	82	14.4	29.2	**-0.0828**	0.033	40.4	ug/L	22	Standard
	Se-1	77	45.7	16.1	**0.1002**	0.075	75.2	ug/L	38	Standard
>	**Ga**	71	60.0	30.0				mg/L	38	Standard
	Rb	85	186.7	20.8				ug/L	15	Standard
	Y	89	748173.7	1.2				ug/L	733256	Standard
>	**Rh**	103	1.7	173.2				ug/L	0	Standard
	Mo	98	43.3	7.3	**0.0078**	0.001	15.8	ug/L	10	Standard
	Ag	107	81.3	14.6	**0.0018**	0.002	118.1	ug/L	70	Standard
	Cd	111	4.3	54.0	**0.0065**	0.002	28.0	mg/L	2	Standard
	Cd	114	12.7	172.7	**0.0006**	0.007	1184.2	ug/L	-3	Standard
>	**In**	115	560208.9	0.3				ug/L	555851	Standard
	Sn	118	521.7	9.2	**0.0248**	0.012	48.2	ug/L	495	Standard
	Sb	123	54.3	18.4	**0.0124**	0.003	26.3	ug/L	41	Standard
	Ba	135	517.3	4.0	**0.5472**	0.021	3.9	ug/L	14	Standard
	Ce	140	136.7	32.0				ug/L	18	Standard
>	**Tb**	159	731771.6	0.7				ug/L	712215	Standard
	Ho	165	8.3	34.6				ug/L	0	Standard
	Tl	203	7.7	49.4	**-0.0005**	0.001	170.6	ug/L	1	Standard
	Tl	205	5.0	0.0	**0.0008**	0.000	0.9	ug/L	3	Standard
	Pb	206	257.7	3.8	**0.0197**	0.004	18.6	ug/L	161	Standard
	Pb	207	221.0	5.7	**0.0289**	0.005	16.8	ug/L	141	Standard
	Pb	208	999.7	8.1	**0.0265**	0.006	23.0	ug/L	608	Standard
	U	238	8.0	33.1	**0.0020**	0.001	26.5	ug/L	4	Standard
>	**Bi**	209	495110.0	0.7				ug/L	481178	Standard

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Na	23	1.7	173.2				mg/L	0	Standard
Mg	24	205.0	8.8	**0.5451**	0.065	11.9	mg/L	15	Standard
K	39	8.3	124.9	**0.1843**	0.276	150.0	mg/L	2	Standard
Ca	43	25.0	91.7	**1.3052**	2.373	181.8	mg/L	20	Standard
Fe	54	267.6	2.1	**0.0055**	0.001	15.5	mg/L	260	Standard
Fe	57	41.7	13.9	**0.0081**	0.008	93.2	mg/L	25	Standard
> **Sc-1**	45	69889.2	2.3				mg/L	72123	Standard
Cl	35	27988.5	1.7				ug/L	26728	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	956.7	10.5				ug/L	733	Standard
P	31	20290.2	2.2				ug/L	17255	Standard
S	34	1670.1	5.2				ug/L	1680	Standard
Sr	88	10.0	50.0				ug/L	7	Standard
C	12	100.0	26.5				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.7	221.0				mg/L	3	Standard
Ho-1	165	8.3	34.6				mg/L	0	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	871.7	7.8				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.449	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.475	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.784
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.895
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 09, 2015

Method 6020 - Summary Report

Sample ID: L1505178438
Sample Date/Time: Monday, June 08, 2015 17:20:48
Number of Replicates: 3
Autosampler Position: 227
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	174676.2	1.3				ug/L	159930	Standard
	Be	9	15.0	66.7	**0.0042**	0.009	216.1	ug/L	5	Standard
	Al	27	7298.4	9.6	**0.0822**	0.011	13.7	ug/L	623	Standard
	Sc	45	69688.3	2.0				ug/L	72123	Standard
	Ti	47	51.3	7.4	**0.1378**	0.014	10.3	ug/L	15	Standard
	V	51	752.9	4.4	**-0.0081**	0.005	64.5	ug/L	779	Standard
	Cr	52	4739.4	1.5	**0.0882**	0.017	18.9	ug/L	4182	Standard
	Cr	53	408.3	8.2	**0.1282**	0.036	28.4	ug/L	255	Standard
	Mn	55	3991.5	0.9	**0.2402**	0.005	2.0	ug/L	870	Standard
	Co	59	65.7	10.1	**-0.0031**	0.001	30.3	ug/L	44	Standard
	Ni	60	536.0	5.3	**0.0709**	0.011	15.1	ug/L	376	Standard
	Cu	65	1345.7	4.4	**0.3706**	0.030	8.1	ug/L	271	Standard
	Zn	66	5967.5	0.8	**3.5754**	0.067	1.9	ug/L	601	Standard
>	**Ge**	72	628783.8	1.0				ug/L	607655	Standard
	As	75	-13.6	86.8	**0.0007**	0.009	1306.9	ug/L	-37	Standard
	Se	82	19.0	41.6	**-0.0455**	0.064	139.4	ug/L	22	Standard
	Se-1	77	39.3	14.5	**0.0332**	0.061	182.4	ug/L	38	Standard
>	**Ga**	71	83.3	29.6				mg/L	38	Standard
	Rb	85	206.7	9.2				ug/L	15	Standard
	Y	89	750715.5	1.8				ug/L	733256	Standard
>	**Rh**	103	6.7	114.6				ug/L	0	Standard
	Mo	98	50.3	11.0	**0.0104**	0.002	20.1	ug/L	10	Standard
	Ag	107	71.3	9.0	**-0.0000**	0.001	6289.1	ug/L	70	Standard
	Cd	111	5.3	11.2	**0.0072**	0.000	6.0	mg/L	2	Standard
	Cd	114	-30.5	21.5	**-0.0134**	0.002	15.4	ug/L	-3	Standard
>	**In**	115	560422.5	0.7				ug/L	555851	Standard
	Sn	118	2566.9	5.7	**0.5503**	0.042	7.6	ug/L	495	Standard
	Sb	123	62.5	7.4	**0.0151**	0.001	9.3	ug/L	41	Standard
	Ba	135	689.7	5.6	**0.7340**	0.045	6.1	ug/L	14	Standard
	Ce	140	173.3	6.7				ug/L	18	Standard
>	**Tb**	159	731496.0	1.0				ug/L	712215	Standard
	Ho	165	11.7	24.7				ug/L	0	Standard
	Tl	203	5.0	40.0	**-0.0010**	0.000	43.4	ug/L	1	Standard
	Tl	205	21.7	153.7	**0.0042**	0.007	160.0	ug/L	3	Standard
	Pb	206	256.7	5.3	**0.0207**	0.005	24.4	ug/L	161	Standard
	Pb	207	227.7	2.2	**0.0325**	0.001	4.6	ug/L	141	Standard
	Pb	208	944.3	1.5	**0.0232**	0.001	4.2	ug/L	608	Standard
	U	238	13.0	127.1	**0.0031**	0.003	109.1	ug/L	4	Standard
>	**Bi**	209	487156.0	0.8				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	206.7	17.5	**0.5521**	0.115	20.9	mg/L	15	Standard
K	39	5.0	173.2	**0.0955**	0.228	238.7	mg/L	2	Standard
Ca	43	31.7	48.2	**2.0568**	1.653	80.4	mg/L	20	Standard
Fe	54	312.6	27.3	**0.0259**	0.036	139.0	mg/L	260	Standard
Fe	57	31.7	39.7	**-0.0062**	0.019	310.9	mg/L	25	Standard
> **Sc-1**	45	69688.3	2.0				mg/L	72123	Standard
Cl	35	28216.3	1.4				ug/L	26728	Standard
Kr	83	0.7	86.6				ug/L	0	Standard
Br	81	906.7	21.6				ug/L	733	Standard
P	31	20261.9	0.9				ug/L	17255	Standard
S	34	1728.4	2.5				ug/L	1680	Standard
Sr	88	13.3	57.3				ug/L	7	Standard
C	12	136.7	34.6				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.2	106.1				mg/L	3	Standard
Ho-1	165	11.7	24.7				mg/L	0	Standard
Er	166	16.7	34.6				mg/L	13	Standard
I	127	801.7	8.8				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.221	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.477	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.822
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.242
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 09, 2015

Method 6020 - Summary Report

Sample ID: L1505178801
Sample Date/Time: Monday, June 08, 2015 17:24:00
Number of Replicates: 3
Autosampler Position: 228
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	177446.6	1.7				ug/L	159930	Standard
	Be	9	20.0	90.1	**0.0087**	0.017	191.7	ug/L	5	Standard
	Al	27	683159.3	1.6	**10.9792**	0.368	3.3	ug/L	623	Standard
	Sc	45	71263.9	2.0				ug/L	72123	Standard
	Ti	47	58.3	35.7	**0.1558**	0.071	45.6	ug/L	15	Standard
	V	51	1630.6	5.0	**0.1188**	0.014	11.6	ug/L	779	Standard
	Cr	52	4098.9	1.7	**-0.0196**	0.010	53.3	ug/L	4182	Standard
	Cr	53	388.3	7.4	**0.0964**	0.025	26.0	ug/L	255	Standard
	Mn	55	126172.7	2.6	**9.9922**	0.322	3.2	ug/L	870	Standard
	Co	59	207.3	8.8	**0.0149**	0.002	15.3	ug/L	44	Standard
	Ni	60	832.0	3.5	**0.1843**	0.014	7.7	ug/L	376	Standard
	Cu	65	877.4	3.1	**0.1659**	0.014	8.2	ug/L	271	Standard
	Zn	66	3441.1	0.9	**1.7950**	0.019	1.1	ug/L	601	Standard
>	**Ge**	72	649648.1	0.9				ug/L	607655	Standard
	As	75	2676.0	2.9	**1.9053**	0.063	3.3	ug/L	-37	Standard
	Se	82	21.6	28.3	**-0.0292**	0.048	163.0	ug/L	22	Standard
	Se-1	77	36.0	24.1	**-0.0140**	0.092	653.0	ug/L	38	Standard
>	**Ga**	71	56.7	5.1				mg/L	38	Standard
	Rb	85	250.0	21.6				ug/L	15	Standard
	Y	89	751984.6	0.7				ug/L	733256	Standard
>	**Rh**	103	3.3	173.2				ug/L	0	Standard
	Mo	98	3612.7	0.7	**1.3068**	0.007	0.5	ug/L	10	Standard
	Ag	107	77.3	7.4	**0.0008**	0.001	145.5	ug/L	70	Standard
	Cd	111	1.4	335.7	**0.0042**	0.004	88.4	mg/L	2	Standard
	Cd	114	9.6	121.8	**-0.0005**	0.004	761.6	ug/L	-3	Standard
>	**In**	115	573009.4	1.2				ug/L	555851	Standard
	Sn	118	696.7	16.2	**0.0661**	0.031	46.3	ug/L	495	Standard
	Sb	123	95.3	6.7	**0.0253**	0.002	6.8	ug/L	41	Standard
	Ba	135	700.3	2.3	**0.7288**	0.016	2.1	ug/L	14	Standard
	Ce	140	116.7	34.9				ug/L	18	Standard
>	**Tb**	159	743507.5	0.5				ug/L	712215	Standard
	Ho	165	8.3	34.6				ug/L	0	Standard
	Tl	203	12.3	38.3	**0.0005**	0.001	206.4	ug/L	1	Standard
	Tl	205	18.3	68.6	**0.0034**	0.002	72.2	ug/L	3	Standard
	Pb	206	272.7	8.4	**0.0229**	0.007	31.7	ug/L	161	Standard
	Pb	207	236.0	5.0	**0.0327**	0.005	15.5	ug/L	141	Standard
	Pb	208	997.3	4.2	**0.0248**	0.003	12.3	ug/L	608	Standard
	U	238	279.7	1.8	**0.0554**	0.001	2.0	ug/L	4	Standard
>	**Bi**	209	503964.1	1.3				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	205.0	6.5	**0.5323**	0.026	4.8	mg/L	15	Standard
K	39	3.3	86.6	**0.0484**	0.073	151.3	mg/L	2	Standard
Ca	43	18.3	56.8	**0.5879**	1.115	189.7	mg/L	20	Standard
Fe	54	279.3	13.8	**0.0083**	0.016	193.1	mg/L	260	Standard
Fe	57	33.3	22.9	**-0.0050**	0.011	220.3	mg/L	25	Standard
> **Sc-1**	45	71263.9	2.0				mg/L	72123	Standard
Cl	35	27850.9	1.5				ug/L	26728	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	1296.7	8.3				ug/L	733	Standard
P	31	18691.5	1.5				ug/L	17255	Standard
S	34	1621.8	10.5				ug/L	1680	Standard
Sr	88	130.0	10.2				ug/L	7	Standard
C	12	96.7	31.6				mg/L	67	Standard
N	14	6.7	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.5	45.0				mg/L	3	Standard
Ho-1	165	8.3	34.6				mg/L	0	Standard
Er	166	16.7	34.6				mg/L	13	Standard
I	127	5257.6	4.2				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.953	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.911	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.087
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.736
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 09, 2015

Method 6020 - Summary Report

Sample ID: L1505178802
Sample Date/Time: Monday, June 08, 2015 17:27:11
Number of Replicates: 3
Autosampler Position: 229
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	166171.3	0.5				ug/L	159930	Standard
	Be	9	20.0	25.0	**0.0098**	0.005	49.2	ug/L	5	Standard
	Al	27	629452.5	1.5	**10.7986**	0.223	2.1	ug/L	623	Standard
	Sc	45	67394.6	0.5				ug/L	72123	Standard
	Ti	47	48.3	15.0	**0.1320**	0.028	21.0	ug/L	15	Standard
	V	51	1408.0	7.1	**0.0983**	0.014	14.5	ug/L	779	Standard
	Cr	52	4038.5	1.4	**0.0055**	0.012	227.4	ug/L	4182	Standard
	Cr	53	446.7	13.1	**0.1766**	0.056	31.7	ug/L	255	Standard
	Mn	55	404405.1	0.9	**34.1901**	0.633	1.9	ug/L	870	Standard
	Co	59	373.7	4.6	**0.0394**	0.003	6.9	ug/L	44	Standard
	Ni	60	1358.1	2.0	**0.4321**	0.013	3.1	ug/L	376	Standard
	Cu	65	535.0	0.2	**0.0423**	0.002	5.0	ug/L	271	Standard
	Zn	66	3216.7	1.4	**1.7766**	0.055	3.1	ug/L	601	Standard
>	**Ge**	72	612369.3	1.1				ug/L	607655	Standard
	As	75	2441.3	0.9	**1.8441**	0.008	0.4	ug/L	-37	Standard
	Se	82	30.2	19.3	**0.0537**	0.051	94.0	ug/L	22	Standard
	Se-1	77	51.0	5.2	**0.1715**	0.023	13.4	ug/L	38	Standard
>	**Ga**	71	55.0	27.3				mg/L	38	Standard
	Rb	85	1338.4	6.9				ug/L	15	Standard
	Y	89	731677.2	2.2				ug/L	733256	Standard
>	**Rh**	103	18.3	41.7				ug/L	0	Standard
	Mo	98	4692.9	1.6	**1.7745**	0.041	2.3	ug/L	10	Standard
	Ag	107	56.3	5.7	**-0.0025**	0.001	26.7	ug/L	70	Standard
	Cd	111	-2.1	49.0	**0.0014**	0.001	60.2	mg/L	2	Standard
	Cd	114	17.8	89.3	**0.0024**	0.005	222.5	ug/L	-3	Standard
>	**In**	115	549094.0	0.7				ug/L	555851	Standard
	Sn	118	1076.7	8.5	**0.1730**	0.022	12.9	ug/L	495	Standard
	Sb	123	138.7	7.6	**0.0413**	0.004	9.5	ug/L	41	Standard
	Ba	135	2659.6	3.3	**2.9286**	0.082	2.8	ug/L	14	Standard
	Ce	140	173.3	6.7				ug/L	18	Standard
>	**Tb**	159	719209.3	0.6				ug/L	712215	Standard
	Ho	165	10.0	132.3				ug/L	0	Standard
	Tl	203	21.0	33.0	**0.0024**	0.001	61.0	ug/L	1	Standard
	Tl	205	18.3	41.7	**0.0036**	0.002	44.3	ug/L	3	Standard
	Pb	206	268.3	2.3	**0.0254**	0.001	4.9	ug/L	161	Standard
	Pb	207	232.3	7.2	**0.0351**	0.007	18.9	ug/L	141	Standard
	Pb	208	983.7	3.9	**0.0274**	0.004	13.1	ug/L	608	Standard
	U	238	348.0	3.5	**0.0719**	0.002	3.4	ug/L	4	Standard
>	**Bi**	209	481897.9	1.0				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	476.7	5.8	**1.3754**	0.088	6.4	mg/L	15	Standard
K	39	13.3	43.3	**0.3229**	0.154	47.5	mg/L	2	Standard
Ca	43	25.0	34.6	**1.4348**	0.968	67.5	mg/L	20	Standard
Fe	54	289.5	17.3	**0.0204**	0.024	117.9	mg/L	260	Standard
Fe	57	26.7	28.6	**-0.0123**	0.012	95.3	mg/L	25	Standard
> **Sc-1**	45	67394.6	0.5				mg/L	72123	Standard
Cl	35	27781.4	1.2				ug/L	26728	Standard
Kr	83	0.7	86.6				ug/L	0	Standard
Br	81	1696.8	2.4				ug/L	733	Standard
P	31	18583.1	5.5				ug/L	17255	Standard
S	34	1628.4	6.9				ug/L	1680	Standard
Sr	88	185.0	14.3				ug/L	7	Standard
C	12	63.3	39.7				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.5	107.6				mg/L	3	Standard
Ho-1	165	10.0	132.3				mg/L	0	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	26883.9	4.8				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.903	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.776	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.784	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.150	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1505178803
Sample Date/Time: Monday, June 08, 2015 17:30:22
Number of Replicates: 3
Autosampler Position: 230
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	170377.8	2.0				ug/L	159930	Standard
	Be	9	10.0	50.0	-0.0002	0.005	2726.7	ug/L	5	Standard
	Al	27	1015799.6	1.5	17.0206	0.399	2.3	ug/L	623	Standard
	Sc	45	68785.8	2.0				ug/L	72123	Standard
	Ti	47	14.7	25.8	0.0090	0.013	144.9	ug/L	15	Standard
	V	51	788.9	9.6	-0.0020	0.011	572.9	ug/L	779	Standard
	Cr	52	4097.9	0.6	0.0014	0.008	549.2	ug/L	4182	Standard
	Cr	53	343.3	13.1	0.0665	0.043	64.2	ug/L	255	Standard
	Mn	55	5056.5	1.5	0.3302	0.009	2.8	ug/L	870	Standard
	Co	59	86.3	1.8	-0.0003	0.000	44.9	ug/L	44	Standard
	Ni	60	690.3	5.0	0.1372	0.012	8.8	ug/L	376	Standard
	Cu	65	415.3	4.1	-0.0120	0.006	53.1	ug/L	271	Standard
	Zn	66	3437.1	1.7	1.8782	0.032	1.7	ug/L	601	Standard
>	Ge	72	625717.1	0.8				ug/L	607655	Standard
	As	75	27.4	78.1	0.0309	0.016	51.5	ug/L	-37	Standard
	Se	82	17.1	44.8	-0.0592	0.064	108.2	ug/L	22	Standard
	Se-1	77	46.3	5.0	0.1099	0.023	21.2	ug/L	38	Standard
>	Ga	71	46.7	27.0				mg/L	38	Standard
	Rb	85	210.0	21.4				ug/L	15	Standard
	Y	89	737476.1	2.1				ug/L	733256	Standard
>	Rh	103	10.0	86.6				ug/L	0	Standard
	Mo	98	1184.6	3.2	0.4360	0.011	2.5	ug/L	10	Standard
	Ag	107	51.0	21.8	-0.0036	0.002	57.1	ug/L	70	Standard
	Cd	111	4.0	29.0	0.0063	0.001	14.8	mg/L	2	Standard
	Cd	114	3.1	157.8	-0.0025	0.002	64.7	ug/L	-3	Standard
>	In	115	556121.4	0.7				ug/L	555851	Standard
	Sn	118	566.7	14.6	0.0374	0.021	54.9	ug/L	495	Standard
	Sb	123	50.3	24.8	0.0112	0.004	36.4	ug/L	41	Standard
	Ba	135	2258.2	1.4	2.4535	0.054	2.2	ug/L	14	Standard
	Ce	140	20.0	25.0				ug/L	18	Standard
>	Tb	159	726509.8	1.1				ug/L	712215	Standard
	Ho	165	13.3	114.6				ug/L	0	Standard
	Tl	203	9.3	24.7	-0.0001	0.000	574.6	ug/L	1	Standard
	Tl	205	8.3	124.9	0.0015	0.002	139.3	ug/L	3	Standard
	Pb	206	235.0	3.4	0.0133	0.003	19.1	ug/L	161	Standard
	Pb	207	169.0	6.2	0.0114	0.003	28.5	ug/L	141	Standard
	Pb	208	826.7	2.4	0.0129	0.001	8.2	ug/L	608	Standard
	U	238	155.3	7.5	0.0318	0.003	7.9	ug/L	4	Standard
>	Bi	209	489644.7	0.9				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	201.7	27.6	**0.5440**	0.163	29.9	mg/L	15	Standard
K	39	3.3	86.6	**0.0521**	0.076	146.7	mg/L	2	Standard
Ca	43	45.0	66.7	**3.5370**	3.193	90.3	mg/L	20	Standard
Fe	54	299.5	11.8	**0.0224**	0.019	84.7	mg/L	260	Standard
Fe	57	26.7	21.7	**-0.0132**	0.009	66.5	mg/L	25	Standard
> **Sc-1**	45	68785.8	2.0				mg/L	72123	Standard
Cl	35	27737.4	1.0				ug/L	26728	Standard
Kr	83	0.7	86.6				ug/L	0	Standard
Br	81	873.4	5.4				ug/L	733	Standard
P	31	19522.7	11.1				ug/L	17255	Standard
S	34	1778.4	2.0				ug/L	1680	Standard
Sr	88	55.0	27.3				ug/L	7	Standard
C	12	76.7	15.1				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.7	181.8				mg/L	3	Standard
Ho-1	165	13.3	114.6				mg/L	0	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	903.4	22.6				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.533	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.972	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.049
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.760
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1505178807
Sample Date/Time: Monday, June 08, 2015 17:33:34
Number of Replicates: 3
Autosampler Position: 231
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	173457.4	1.4				ug/L	159930	Standard
	Be	9	18.3	15.7	**0.0074**	0.003	33.7	ug/L	5	Standard
	Al	27	990395.8	0.7	**16.2968**	0.241	1.5	ug/L	623	Standard
	Sc	45	69818.8	0.6				ug/L	72123	Standard
	Ti	47	18.7	34.4	**0.0222**	0.024	106.3	ug/L	15	Standard
	V	51	705.7	1.9	**-0.0169**	0.002	13.4	ug/L	779	Standard
	Cr	52	3998.2	2.1	**-0.0232**	0.007	29.2	ug/L	4182	Standard
	Cr	53	366.7	13.7	**0.0832**	0.054	65.2	ug/L	255	Standard
	Mn	55	43114.9	1.3	**3.4196**	0.035	1.0	ug/L	870	Standard
	Co	59	107.3	5.5	**0.0022**	0.001	33.7	ug/L	44	Standard
	Ni	60	676.7	5.6	**0.1260**	0.012	9.7	ug/L	376	Standard
	Cu	65	377.3	4.3	**-0.0307**	0.006	20.5	ug/L	271	Standard
	Zn	66	3169.0	1.5	**1.6559**	0.030	1.8	ug/L	601	Standard
>	**Ge**	72	637796.6	2.0				ug/L	607655	Standard
	As	75	39.4	13.4	**0.0390**	0.004	9.3	ug/L	-37	Standard
	Se	82	12.3	45.4	**-0.1012**	0.045	44.5	ug/L	22	Standard
	Se-1	77	41.7	8.4	**0.0516**	0.034	66.3	ug/L	38	Standard
>	**Ga**	71	46.7	27.0				mg/L	38	Standard
	Rb	85	568.3	6.2				ug/L	15	Standard
	Y	89	752087.5	1.3				ug/L	733256	Standard
>	**Rh**	103	3.3	86.6				ug/L	0	Standard
	Mo	98	1417.7	3.3	**0.5122**	0.020	3.9	ug/L	10	Standard
	Ag	107	55.7	18.9	**-0.0030**	0.002	62.2	ug/L	70	Standard
	Cd	111	1.1	243.7	**0.0039**	0.002	51.5	mg/L	2	Standard
	Cd	114	12.5	85.6	**0.0005**	0.003	712.4	ug/L	-3	Standard
>	**In**	115	568233.4	0.9				ug/L	555851	Standard
	Sn	118	715.0	14.7	**0.0720**	0.028	38.5	ug/L	495	Standard
	Sb	123	57.0	3.5	**0.0130**	0.001	6.1	ug/L	41	Standard
	Ba	135	4571.0	1.6	**4.8738**	0.087	1.8	ug/L	14	Standard
	Ce	140	21.7	48.0				ug/L	18	Standard
>	**Tb**	159	734033.8	0.6				ug/L	712215	Standard
	Ho	165	6.7	173.2				ug/L	0	Standard
	Tl	203	7.7	37.7	**-0.0005**	0.001	124.0	ug/L	1	Standard
	Tl	205	5.0	100.0	**0.0008**	0.001	120.8	ug/L	3	Standard
	Pb	206	205.0	2.2	**0.0023**	0.002	94.6	ug/L	161	Standard
	Pb	207	171.3	13.6	**0.0110**	0.007	67.6	ug/L	141	Standard
	Pb	208	793.0	1.3	**0.0087**	0.001	8.6	ug/L	608	Standard
	U	238	230.3	6.6	**0.0460**	0.003	5.7	ug/L	4	Standard
>	**Bi**	209	499693.4	1.2				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	168.3	3.4	**0.4392**	0.016	3.5	mg/L	15	Standard
K	39	10.0	132.3	**0.2235**	0.343	153.2	mg/L	2	Standard
Ca	43	51.7	43.6	**4.1847**	2.386	57.0	mg/L	20	Standard
Fe	54	427.6	6.4	**0.0783**	0.013	17.2	mg/L	260	Standard
Fe	57	76.7	39.8	**0.0597**	0.045	74.9	mg/L	25	Standard
> **Sc-1**	45	69818.8	0.6				mg/L	72123	Standard
Cl	35	27896.3	0.7				ug/L	26728	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	823.4	19.6				ug/L	733	Standard
P	31	18558.0	4.4				ug/L	17255	Standard
S	34	1701.8	4.0				ug/L	1680	Standard
Sr	88	78.3	16.1				ug/L	7	Standard
C	12	66.7	8.7				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.5	0.0				mg/L	3	Standard
Ho-1	165	6.7	173.2				mg/L	0	Standard
Er	166	10.0					mg/L	13	Standard
I	127	1390.1	4.4				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.459	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.960	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.228
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.848
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 09, 2015

Method 6020 - Summary Report

Sample ID: L1505178808
Sample Date/Time: Monday, June 08, 2015 17:36:46
Number of Replicates: 3
Autosampler Position: 232
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	178347.5	3.1				ug/L	159930	Standard
	Be	9	11.7	99.0	**0.0008**	0.010	1200.0	ug/L	5	Standard
	Al	27	941113.6	1.2	**15.0706**	0.671	4.5	ug/L	623	Standard
	Sc	45	70502.0	1.0				ug/L	72123	Standard
	Ti	47	26.7	20.7	**0.0486**	0.018	37.5	ug/L	15	Standard
	V	51	750.5	2.8	**-0.0113**	0.004	37.6	ug/L	779	Standard
	Cr	52	4012.9	0.9	**-0.0272**	0.007	24.7	ug/L	4182	Standard
	Cr	53	360.0	17.1	**0.0730**	0.063	86.9	ug/L	255	Standard
	Mn	55	41458.6	1.1	**3.2483**	0.087	2.7	ug/L	870	Standard
	Co	59	103.7	14.1	**0.0016**	0.002	124.1	ug/L	44	Standard
	Ni	60	672.0	3.2	**0.1212**	0.013	10.8	ug/L	376	Standard
	Cu	65	355.0	2.2	**-0.0413**	0.005	12.8	ug/L	271	Standard
	Zn	66	2953.3	2.4	**1.4913**	0.077	5.1	ug/L	601	Standard
>	**Ge**	72	644875.2	1.5				ug/L	607655	Standard
	As	75	40.5	56.7	**0.0396**	0.016	41.6	ug/L	-37	Standard
	Se	82	21.7	18.6	**-0.0270**	0.034	124.5	ug/L	22	Standard
	Se-1	77	40.0	2.5	**0.0296**	0.009	31.5	ug/L	38	Standard
>	**Ga**	71	36.7	34.3				mg/L	38	Standard
	Rb	85	535.0	7.4				ug/L	15	Standard
	Y	89	764549.5	1.5				ug/L	733256	Standard
>	**Rh**	103	3.3	86.6				ug/L	0	Standard
	Mo	98	1322.4	2.1	**0.4736**	0.014	3.1	ug/L	10	Standard
	Ag	107	59.7	17.0	**-0.0023**	0.002	77.6	ug/L	70	Standard
	Cd	111	2.2	0.5	**0.0048**	0.000	0.7	mg/L	2	Standard
	Cd	114	-2.8	214.9	**-0.0044**	0.002	43.7	ug/L	-3	Standard
>	**In**	115	572465.8	1.4				ug/L	555851	Standard
	Sn	118	913.4	8.7	**0.1206**	0.023	18.7	ug/L	495	Standard
	Sb	123	49.0	20.7	**0.0103**	0.004	34.1	ug/L	41	Standard
	Ba	135	4322.6	2.4	**4.5753**	0.168	3.7	ug/L	14	Standard
	Ce	140	20.0	90.1				ug/L	18	Standard
>	**Tb**	159	745313.2	1.8				ug/L	712215	Standard
	Ho	165	5.0	100.0				ug/L	0	Standard
	Tl	203	8.0	25.0	**-0.0004**	0.000	105.5	ug/L	1	Standard
	Tl	205	11.7	99.0	**0.0021**	0.002	106.2	ug/L	3	Standard
	Pb	206	208.0	1.3	**0.0026**	0.002	70.5	ug/L	161	Standard
	Pb	207	185.0	8.9	**0.0151**	0.005	35.0	ug/L	141	Standard
	Pb	208	768.7	5.1	**0.0061**	0.002	36.3	ug/L	608	Standard
	U	238	216.0	3.6	**0.0428**	0.001	2.0	ug/L	4	Standard
>	**Bi**	209	504396.5	1.7				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	150.0	5.8	**0.3824**	0.027	7.1	mg/L	15	Standard
K	39	5.0	100.0	**0.0920**	0.128	139.1	mg/L	2	Standard
Ca	43	36.7	20.8	**2.5537**	0.848	33.2	mg/L	20	Standard
Fe	54	374.5	20.1	**0.0523**	0.032	61.9	mg/L	260	Standard
Fe	57	66.7	24.1	**0.0439**	0.023	51.6	mg/L	25	Standard
> **Sc-1**	45	70502.0	1.0				mg/L	72123	Standard
Cl	35	27698.6	1.3				ug/L	26728	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	800.0	23.8				ug/L	733	Standard
P	31	17972.3	3.6				ug/L	17255	Standard
S	34	1781.8	1.6				ug/L	1680	Standard
Sr	88	61.7	12.4				ug/L	7	Standard
C	12	53.3	39.0				mg/L	67	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	13.2	44.9				mg/L	3	Standard
Ho-1	165	5.0	100.0				mg/L	0	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	1760.1	9.4				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.516	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.125	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.989
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.825
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 09, 2015

Method 6020 - Summary Report

Sample ID: L1505178809
Sample Date/Time: Monday, June 08, 2015 17:39:57
Number of Replicates: 3
Autosampler Position: 233
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	173263.6	1.8				ug/L	159930	Standard
	Be	9	21.7	74.2	**0.0106**	0.015	142.5	ug/L	5	Standard
	Al	27	876081.2	1.0	**14.4291**	0.313	2.2	ug/L	623	Standard
	Sc	45	70018.1	2.1				ug/L	72123	Standard
	Ti	47	23.0	15.7	**0.0376**	0.012	30.8	ug/L	15	Standard
	V	51	674.6	14.6	**-0.0208**	0.014	68.5	ug/L	779	Standard
	Cr	52	3957.2	1.8	**-0.0239**	0.004	17.3	ug/L	4182	Standard
	Cr	53	396.7	8.4	**0.1151**	0.037	32.3	ug/L	255	Standard
	Mn	55	112759.4	1.4	**9.1720**	0.153	1.7	ug/L	870	Standard
	Co	59	317.3	3.8	**0.0303**	0.001	3.4	ug/L	44	Standard
	Ni	60	686.0	0.9	**0.1326**	0.001	1.1	ug/L	376	Standard
	Cu	65	422.0	8.2	**-0.0110**	0.013	119.1	ug/L	271	Standard
	Zn	66	3263.7	0.9	**1.7389**	0.028	1.6	ug/L	601	Standard
>	**Ge**	72	631971.1	1.4				ug/L	607655	Standard
	As	75	848.6	2.9	**0.6281**	0.010	1.5	ug/L	-37	Standard
	Se	82	18.1	7.9	**-0.0527**	0.010	18.9	ug/L	22	Standard
	Se-1	77	40.0	9.0	**0.0383**	0.041	106.7	ug/L	38	Standard
>	**Ga**	71	30.0	50.0				mg/L	38	Standard
	Rb	85	2571.9	5.2				ug/L	15	Standard
	Y	89	743270.0	0.7				ug/L	733256	Standard
>	**Rh**	103	13.3	57.3				ug/L	0	Standard
	Mo	98	3483.3	1.2	**1.2877**	0.028	2.2	ug/L	10	Standard
	Ag	107	60.3	15.7	**-0.0020**	0.002	78.5	ug/L	70	Standard
	Cd	111	3.5	88.6	**0.0059**	0.002	41.7	mg/L	2	Standard
	Cd	114	6.6	126.7	**-0.0014**	0.003	194.0	ug/L	-3	Standard
>	**In**	115	560682.3	1.0				ug/L	555851	Standard
	Sn	118	563.3	9.8	**0.0355**	0.015	43.1	ug/L	495	Standard
	Sb	123	83.0	19.9	**0.0219**	0.005	23.8	ug/L	41	Standard
	Ba	135	8039.5	0.6	**8.6982**	0.083	1.0	ug/L	14	Standard
	Ce	140	26.7	21.7				ug/L	18	Standard
>	**Tb**	159	733676.0	1.5				ug/L	712215	Standard
	Ho	165	11.7	65.5				ug/L	0	Standard
	Tl	203	11.3	28.4	**0.0003**	0.001	222.9	ug/L	1	Standard
	Tl	205	10.0	50.0	**0.0018**	0.001	55.8	ug/L	3	Standard
	Pb	206	206.3	4.9	**0.0032**	0.003	107.3	ug/L	161	Standard
	Pb	207	181.7	8.2	**0.0151**	0.005	30.2	ug/L	141	Standard
	Pb	208	813.7	4.4	**0.0109**	0.002	19.9	ug/L	608	Standard
	U	238	34.3	8.4	**0.0073**	0.001	8.0	ug/L	4	Standard
>	**Bi**	209	495734.3	1.1				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	160.0	8.3	**0.4145**	0.047	11.3	mg/L	15	Standard
K	39	3.3	86.6	**0.0496**	0.074	149.7	mg/L	2	Standard
Ca	43	36.7	28.4	**2.5672**	1.077	41.9	mg/L	20	Standard
Fe	54	819.8	4.9	**0.2555**	0.026	10.1	mg/L	260	Standard
Fe	57	178.3	18.0	**0.2079**	0.042	20.2	mg/L	25	Standard
> **Sc-1**	45	70018.1	2.1				mg/L	72123	Standard
Cl	35	27923.7	0.1				ug/L	26728	Standard
Kr	83	1.0	100.0				ug/L	0	Standard
Br	81	883.4	9.2				ug/L	733	Standard
P	31	18876.8	1.2				ug/L	17255	Standard
S	34	1738.4	2.0				ug/L	1680	Standard
Sr	88	98.3	7.8				ug/L	7	Standard
C	12	66.7	56.8				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	-0.8	69.3				mg/L	3	Standard
Ho-1	165	11.7	65.5				mg/L	0	Standard
Er	166	16.7	69.3				mg/L	13	Standard
I	127	7897.1	7.6				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.337	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.002	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.869
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.025
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 09, 2015

Method 6020 - Summary Report

Sample ID: L1505178810
Sample Date/Time: Monday, June 08, 2015 17:43:08
Number of Replicates: 3
Autosampler Position: 234
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	170101.5	2.4				ug/L	159930	Standard
	Be	9	13.3	57.3	**0.0031**	0.007	233.1	ug/L	5	Standard
	Al	27	967059.6	2.2	**16.2290**	0.436	2.7	ug/L	623	Standard
	Sc	45	68064.2	2.0				ug/L	72123	Standard
	Ti	47	19.0	32.0	**0.0243**	0.022	92.0	ug/L	15	Standard
	V	51	693.3	13.3	**-0.0172**	0.013	77.8	ug/L	779	Standard
	Cr	52	4085.2	2.3	**-0.0026**	0.010	391.0	ug/L	4182	Standard
	Cr	53	390.0	6.4	**0.1107**	0.026	23.5	ug/L	255	Standard
	Mn	55	212307.6	1.3	**17.4574**	0.455	2.6	ug/L	870	Standard
	Co	59	103.0	12.7	**0.0019**	0.002	95.9	ug/L	44	Standard
	Ni	60	683.3	2.9	**0.1332**	0.007	5.6	ug/L	376	Standard
	Cu	65	366.3	6.1	**-0.0328**	0.010	31.1	ug/L	271	Standard
	Zn	66	2720.9	2.0	**1.3856**	0.045	3.3	ug/L	601	Standard
>	**Ge**	72	628116.8	1.3				ug/L	607655	Standard
	As	75	133.2	18.0	**0.1082**	0.017	16.1	ug/L	-37	Standard
	Se	82	13.3	54.8	**-0.0921**	0.059	63.9	ug/L	22	Standard
	Se-1	77	36.7	11.4	**0.0055**	0.047	855.9	ug/L	38	Standard
>	**Ga**	71	38.3	15.1				mg/L	38	Standard
	Rb	85	480.0	5.8				ug/L	15	Standard
	Y	89	732929.6	1.0				ug/L	733256	Standard
>	**Rh**	103	11.7	65.5				ug/L	0	Standard
	Mo	98	1470.4	3.5	**0.5425**	0.027	5.0	ug/L	10	Standard
	Ag	107	61.7	17.0	**-0.0017**	0.002	120.7	ug/L	70	Standard
	Cd	111	1.2	47.7	**0.0041**	0.000	11.9	mg/L	2	Standard
	Cd	114	1.7	355.1	**-0.0030**	0.002	66.0	ug/L	-3	Standard
>	**In**	115	557072.0	1.4				ug/L	555851	Standard
	Sn	118	496.7	7.6	**0.0191**	0.009	48.6	ug/L	495	Standard
	Sb	123	42.7	19.5	**0.0087**	0.003	34.6	ug/L	41	Standard
	Ba	135	5346.9	1.8	**5.8194**	0.183	3.2	ug/L	14	Standard
	Ce	140	25.0	52.9				ug/L	18	Standard
>	**Tb**	159	725978.3	1.6				ug/L	712215	Standard
	Ho	165	16.7	34.6				ug/L	0	Standard
	Tl	203	7.3	7.9	**-0.0005**	0.000	20.4	ug/L	1	Standard
	Tl	205	15.0	0.0	**0.0028**	0.000	1.4	ug/L	3	Standard
	Pb	206	213.0	9.1	**0.0061**	0.007	113.2	ug/L	161	Standard
	Pb	207	181.7	7.3	**0.0157**	0.004	26.3	ug/L	141	Standard
	Pb	208	755.3	11.8	**0.0068**	0.007	105.6	ug/L	608	Standard
	U	238	123.3	2.0	**0.0253**	0.000	0.7	ug/L	4	Standard
>	**Bi**	209	490529.5	1.4				ug/L	481178	Standard

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Na	23	1.7	173.2				mg/L	0	Standard
Mg	24	186.7	14.8	**0.5066**	0.089	17.6	mg/L	15	Standard
K	39	8.3	34.6	**0.1865**	0.078	41.6	mg/L	2	Standard
Ca	43	43.3	35.3	**3.4088**	1.605	47.1	mg/L	20	Standard
Fe	54	294.3	25.6	**0.0215**	0.036	168.6	mg/L	260	Standard
Fe	57	45.0	11.1	**0.0149**	0.008	54.5	mg/L	25	Standard
> **Sc-1**	45	68064.2	2.0				mg/L	72123	Standard
Cl	35	27843.6	0.4				ug/L	26728	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	783.4	5.3				ug/L	733	Standard
P	31	18694.9	3.1				ug/L	17255	Standard
S	34	1783.4	3.8				ug/L	1680	Standard
Sr	88	121.7	8.6				ug/L	7	Standard
C	12	90.0	40.1				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.2	93.4				mg/L	3	Standard
Ho-1	165	16.7	34.6				mg/L	0	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	1531.7	7.3				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.360	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.367	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.220
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.944
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 09, 2015

Method 6020 - Summary Report

Sample ID: L1505178811
Sample Date/Time: Monday, June 08, 2015 17:46:20
Number of Replicates: 3
Autosampler Position: 235
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	179935.1	4.4				ug/L	159930	Standard
	Be	9	10.0	50.0	**-0.0005**	0.005	828.3	ug/L	5	Standard
	Al	27	1032971.3	4.5	**16.4259**	1.458	8.9	ug/L	623	Standard
	Sc	45	71229.0	5.5				ug/L	72123	Standard
	Ti	47	22.7	24.3	**0.0335**	0.021	61.9	ug/L	15	Standard
	V	51	685.2	3.7	**-0.0236**	0.001	4.6	ug/L	779	Standard
	Cr	52	3919.5	0.3	**-0.0526**	0.017	32.1	ug/L	4182	Standard
	Cr	53	341.7	25.8	**0.0461**	0.075	163.6	ug/L	255	Standard
	Mn	55	6417.4	4.2	**0.4155**	0.038	9.0	ug/L	870	Standard
	Co	59	83.3	12.7	**-0.0013**	0.001	114.8	ug/L	44	Standard
	Ni	60	670.7	0.6	**0.1141**	0.008	6.8	ug/L	376	Standard
	Cu	65	447.3	6.0	**-0.0087**	0.006	72.2	ug/L	271	Standard
	Zn	66	2914.6	3.5	**1.4212**	0.126	8.9	ug/L	601	Standard
>	**Ge**	72	660940.6	3.4				ug/L	607655	Standard
	As	75	-12.4	160.9	**0.0018**	0.014	796.3	ug/L	-37	Standard
	Se	82	19.2	31.1	**-0.0514**	0.041	80.2	ug/L	22	Standard
	Se-1	77	39.0	15.4	**0.0084**	0.048	567.0	ug/L	38	Standard
>	**Ga**	71	41.7	18.3				mg/L	38	Standard
	Rb	85	143.3	4.0				ug/L	15	Standard
	Y	89	777294.0	3.0				ug/L	733256	Standard
>	**Rh**	103	5.0	100.0				ug/L	0	Standard
	Mo	98	1065.0	5.7	**0.3693**	0.034	9.3	ug/L	10	Standard
	Ag	107	71.7	9.3	**-0.0006**	0.002	273.6	ug/L	70	Standard
	Cd	111	1.9	123.1	**0.0045**	0.002	39.0	mg/L	2	Standard
	Cd	114	5.3	456.1	**-0.0017**	0.008	439.2	ug/L	-3	Standard
>	**In**	115	589611.3	3.5				ug/L	555851	Standard
	Sn	118	485.0	11.5	**0.0090**	0.009	103.9	ug/L	495	Standard
	Sb	123	54.3	10.3	**0.0115**	0.001	10.1	ug/L	41	Standard
	Ba	135	3658.4	3.7	**3.7621**	0.267	7.1	ug/L	14	Standard
	Ce	140	18.3	110.2				ug/L	18	Standard
>	**Tb**	159	769318.0	3.4				ug/L	712215	Standard
	Ho	165	15.0	33.3				ug/L	0	Standard
	Tl	203	18.7	34.4	**0.0017**	0.001	78.2	ug/L	1	Standard
	Tl	205	15.0	0.0	**0.0027**	0.000	3.3	ug/L	3	Standard
	Pb	206	224.0	8.8	**0.0058**	0.005	79.6	ug/L	161	Standard
	Pb	207	190.3	7.2	**0.0154**	0.003	19.9	ug/L	141	Standard
	Pb	208	785.3	1.4	**0.0060**	0.002	25.7	ug/L	608	Standard
	U	238	308.0	7.7	**0.0595**	0.006	10.6	ug/L	4	Standard
>	**Bi**	209	516888.9	3.1				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	195.0	21.0	**0.5016**	0.087	17.4	mg/L	15	Standard
K	39	10.0	50.0	**0.2242**	0.143	63.6	mg/L	2	Standard
Ca	43	45.0	33.3	**3.4512**	1.849	53.6	mg/L	20	Standard
Fe	54	307.6	10.6	**0.0218**	0.022	100.7	mg/L	260	Standard
Fe	57	38.3	15.1	**0.0026**	0.012	435.3	mg/L	25	Standard
> **Sc-1**	45	71229.0	5.5				mg/L	72123	Standard
Cl	35	27336.0	1.9				ug/L	26728	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	710.0	11.5				ug/L	733	Standard
P	31	17585.2	3.3				ug/L	17255	Standard
S	34	1643.4	6.4				ug/L	1680	Standard
Sr	88	76.7	16.4				ug/L	7	Standard
C	12	53.3	21.7				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.7	219.6				mg/L	3	Standard
Ho-1	165	15.0	33.3				mg/L	0	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	523.3	2.4				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.509	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.769	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.074
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.422
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 09, 2015

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, June 08, 2015 17:49:33
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	163703.1	1.8				ug/L	159930	Standard
	Be	9	53952.6	1.9	**53.0662**	0.949	1.8	ug/L	5	Standard
	Al	27	2988818.6	0.3	**52.1996**	1.081	2.1	ug/L	623	Standard
	Sc	45	66961.0	1.1				ug/L	72123	Standard
	Ti	47	27711.0	0.6	**101.0623**	1.219	1.2	ug/L	15	Standard
	V	51	326712.5	0.1	**51.9726**	0.892	1.7	ug/L	779	Standard
	Cr	52	359908.7	0.9	**51.5557**	0.596	1.2	ug/L	4182	Standard
	Cr	53	51117.8	2.2	**51.1686**	0.231	0.5	ug/L	255	Standard
	Mn	55	614459.6	1.6	**52.5285**	0.591	1.1	ug/L	870	Standard
	Co	59	377908.9	1.1	**52.3553**	0.372	0.7	ug/L	44	Standard
	Ni	60	119707.7	0.9	**52.0901**	0.469	0.9	ug/L	376	Standard
	Cu	65	122699.8	0.2	**52.2554**	0.885	1.7	ug/L	271	Standard
	Zn	66	75538.2	0.9	**52.4504**	0.462	0.9	ug/L	601	Standard
>	Ge	72	606123.4	1.8				ug/L	607655	Standard
	As	75	68390.2	0.3	**51.9134**	1.042	2.0	ug/L	-37	Standard
	Se	82	6119.8	1.7	**51.7798**	0.078	0.2	ug/L	22	Standard
	Se-1	77	4871.4	1.6	**53.3182**	1.304	2.4	ug/L	38	Standard
>	Ga	71	51.7	34.0				mg/L	38	Standard
	Rb	85	883.4	2.1				ug/L	15	Standard
	Y	89	726589.4	1.4				ug/L	733256	Standard
>	Rh	103	8.3	124.9				ug/L	0	Standard
	Mo	98	282981.0	0.2	**107.9619**	1.348	1.2	ug/L	10	Standard
	Ag	107	286027.8	1.3	**52.4166**	0.093	0.2	ug/L	70	Standard
	Cd	111	65448.0	0.1	**52.9305**	0.539	1.0	mg/L	2	Standard
	Cd	114	157545.4	1.2	**52.3749**	0.525	1.0	ug/L	-3	Standard
>	In	115	546694.0	1.2				ug/L	555851	Standard
	Sn	118	193929.9	0.4	**50.9589**	0.683	1.3	ug/L	495	Standard
	Sb	123	156744.5	1.0	**53.1905**	0.461	0.9	ug/L	41	Standard
	Ba	135	47642.1	1.5	**52.9316**	0.402	0.8	ug/L	14	Standard
	Ce	140	30.0	16.7				ug/L	18	Standard
>	Tb	159	715979.6	2.5				ug/L	712215	Standard
	Ho	165	10.0	50.0				ug/L	0	Standard
	Tl	203	241282.4	1.9	**52.0775**	0.310	0.6	ug/L	1	Standard
	Tl	205	254654.2	1.7	**53.0828**	0.543	1.0	ug/L	3	Standard
	Pb	206	159692.2	1.0	**53.1546**	0.859	1.6	ug/L	161	Standard
	Pb	207	145564.6	0.7	**52.9432**	0.776	1.5	ug/L	141	Standard
	Pb	208	609666.9	1.2	**52.7460**	0.531	1.0	ug/L	608	Standard
	U	238	249641.6	0.9	**52.0840**	1.108	2.1	ug/L	4	Standard
>	Bi	209	474363.2	1.7				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	1785.1	5.9	**5.3095**	0.358	6.7	mg/L	15	Standard
K	39	196.7	5.3	**5.3027**	0.327	6.2	mg/L	2	Standard
Ca	43	46.7	6.2	**3.8708**	0.299	7.7	mg/L	20	Standard
Fe	54	11788.9	2.2	**5.4625**	0.143	2.6	mg/L	260	Standard
Fe	57	3970.5	1.9	**6.0308**	0.054	0.9	mg/L	25	Standard
Sc-1	45	66961.0	1.1				mg/L	72123	Standard
Cl	35	28116.7	2.0				ug/L	26728	Standard
Kr	83	1.0	100.0				ug/L	0	Standard
Br	81	703.3	5.9				ug/L	733	Standard
P	31	18179.2	4.4				ug/L	17255	Standard
S	34	1746.8	6.8				ug/L	1680	Standard
Sr	88	10.0	50.0				ug/L	7	Standard
C	12	80.0	21.7				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	8.9	201.2				mg/L	3	Standard
Ho-1	165	10.0	50.0				mg/L	0	Standard
Er	166	23.3	49.5				mg/L	13	Standard
I	127	235.0	15.3				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	106.132		
Al	27	104.399		
Sc	45			
Ti	47	101.062		
V	51	103.945		
Cr	52	103.111		
Cr	53			
Mn	55	105.057		
Co	59	104.711		
Ni	60	104.180		
Cu	65	104.511		
Zn	66	104.901		
> Ge	72		99.748	
As	75	103.827		
Se	82	103.560		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	107.962		
Ag	107	104.833		
Cd	111	105.861		
Cd	114			
> In	115		98.353	
Sn	118	101.918		
Sb	123	106.381		
Ba	135	105.863		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	104.155		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.492		
U	238	104.168		
> Bi	209		98.584	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, June 08, 2015 17:52:44
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	168277.7	1.2				ug/L	159930	Standard
	Be	9	23.3	44.6	**0.0128**	0.010	78.8	ug/L	5	Standard
	Al	27	1703.5	65.2	**-0.0084**	0.019	225.6	ug/L	623	Standard
	Sc	45	67610.5	1.2				ug/L	72123	Standard
	Ti	47	16.3	49.5	**0.0160**	0.029	181.5	ug/L	15	Standard
	V	51	669.8	10.0	**-0.0185**	0.010	55.2	ug/L	779	Standard
	Cr	52	3735.5	2.8	**-0.0399**	0.013	32.3	ug/L	4182	Standard
	Cr	53	348.3	5.0	**0.0777**	0.018	23.1	ug/L	255	Standard
	Mn	55	1007.0	10.4	**-0.0042**	0.009	218.2	ug/L	870	Standard
	Co	59	66.7	4.3	**-0.0028**	0.000	13.2	ug/L	44	Standard
	Ni	60	373.7	2.8	**0.0063**	0.005	79.9	ug/L	376	Standard
	Cu	65	310.0	10.7	**-0.0533**	0.014	25.5	ug/L	271	Standard
	Zn	66	571.3	4.6	**-0.0587**	0.017	29.5	ug/L	601	Standard
>	**Ge**	72	614459.7	0.4				ug/L	607655	Standard
	As	75	-14.1	95.6	**0.0001**	0.010	10542.1	ug/L	-37	Standard
	Se	82	21.2	40.2	**-0.0224**	0.071	319.1	ug/L	22	Standard
	Se-1	77	34.7	22.4	**-0.0080**	0.083	1039.2	ug/L	38	Standard
>	**Ga**	71	26.7	39.0				mg/L	38	Standard
	Rb	85	8.3	91.7				ug/L	15	Standard
	Y	89	732801.2	1.4				ug/L	733256	Standard
>	**Rh**	103	1.7	173.2				ug/L	0	Standard
	Mo	98	63.9	25.0	**0.0159**	0.006	36.6	ug/L	10	Standard
	Ag	107	89.3	14.2	**0.0035**	0.002	61.9	ug/L	70	Standard
	Cd	111	3.9	110.8	**0.0062**	0.003	55.0	mg/L	2	Standard
	Cd	114	14.5	153.8	**0.0012**	0.007	593.2	ug/L	-3	Standard
>	**In**	115	550483.1	1.0				ug/L	555851	Standard
	Sn	118	453.3	5.7	**0.0093**	0.006	61.7	ug/L	495	Standard
	Sb	123	86.0	25.0	**0.0233**	0.007	29.9	ug/L	41	Standard
	Ba	135	12.7	38.9	**0.0002**	0.005	3049.8	ug/L	14	Standard
	Ce	140	8.3	34.6				ug/L	18	Standard
>	**Tb**	159	716759.9	1.2				ug/L	712215	Standard
	Ho	165	10.0					ug/L	0	Standard
	Tl	203	15.3	65.7	**0.0012**	0.002	176.5	ug/L	1	Standard
	Tl	205	46.7	111.5	**0.0093**	0.011	113.6	ug/L	3	Standard
	Pb	206	166.7	15.6	**-0.0083**	0.008	100.4	ug/L	161	Standard
	Pb	207	156.3	5.6	**0.0076**	0.003	44.7	ug/L	141	Standard
	Pb	208	687.0	13.5	**0.0018**	0.008	432.5	ug/L	608	Standard
	U	238	57.0	81.7	**0.0121**	0.009	78.6	ug/L	4	Standard
>	**Bi**	209	484430.1	0.5				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	16.7	34.6	**0.0048**	0.018	370.4	mg/L	15	Standard
K	39	3.3	173.2	**0.0538**	0.156	289.6	mg/L	2	Standard
Ca	43	16.7	17.3	**0.5004**	0.296	59.2	mg/L	20	Standard
Fe	54	269.4	19.4	**0.0106**	0.025	239.7	mg/L	260	Standard
Fe	57	33.3	37.7	**-0.0025**	0.019	754.9	mg/L	25	Standard
> **Sc-1**	45	67610.5	1.2				mg/L	72123	Standard
Cl	35	28118.7	0.3				ug/L	26728	Standard
Kr	83	0.7	86.6				ug/L	0	Standard
Br	81	673.3	29.0				ug/L	733	Standard
P	31	18431.2	2.9				ug/L	17255	Standard
S	34	1735.1	4.1				ug/L	1680	Standard
Sr	88	1.7	173.2				ug/L	7	Standard
C	12	46.7	44.6				mg/L	67	Standard
N	14	6.7	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	26.2	96.8				mg/L	3	Standard
Ho-1	165	10.0					mg/L	0	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	185.0	16.4				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.120	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.034	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.676	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1505178812
Sample Date/Time: Monday, June 08, 2015 17:55:58
Number of Replicates: 3
Autosampler Position: 236
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	165726.8	2.5				ug/L	159930	Standard
	Be	9	13.3	21.7	**0.0034**	0.003	85.3	ug/L	5	Standard
	Al	27	30540.8	1.7	**0.4900**	0.008	1.6	ug/L	623	Standard
	Sc	45	67185.3	0.7				ug/L	72123	Standard
	Ti	47	15.7	13.3	**0.0135**	0.007	53.2	ug/L	15	Standard
	V	51	683.5	5.5	**-0.0165**	0.006	36.6	ug/L	779	Standard
	Cr	52	3876.2	2.9	**-0.0207**	0.018	85.1	ug/L	4182	Standard
	Cr	53	316.7	15.9	**0.0458**	0.051	110.7	ug/L	255	Standard
	Mn	55	1760.8	4.6	**0.0592**	0.007	12.3	ug/L	870	Standard
	Co	59	61.3	16.0	**-0.0035**	0.001	37.3	ug/L	44	Standard
	Ni	60	434.0	4.4	**0.0320**	0.009	27.9	ug/L	376	Standard
	Cu	65	915.4	5.0	**0.2012**	0.018	9.0	ug/L	271	Standard
	Zn	66	2984.0	1.1	**1.6044**	0.031	2.0	ug/L	601	Standard
>	**Ge**	72	615529.5	0.5				ug/L	607655	Standard
	As	75	-51.0	43.8	**-0.0274**	0.017	60.4	ug/L	-37	Standard
	Se	82	10.5	48.9	**-0.1122**	0.043	38.8	ug/L	22	Standard
	Se-1	77	37.7	18.6	**0.0240**	0.076	316.4	ug/L	38	Standard
>	**Ga**	71	18.3	31.5				mg/L	38	Standard
	Rb	85	106.7	2.7				ug/L	15	Standard
	Y	89	719915.1	0.7				ug/L	733256	Standard
>	**Rh**	103	1.7	173.2				ug/L	0	Standard
	Mo	98	47.6	5.4	**0.0099**	0.001	7.1	ug/L	10	Standard
	Ag	107	67.3	25.6	**-0.0004**	0.003	718.3	ug/L	70	Standard
	Cd	111	5.6	84.1	**0.0076**	0.004	49.0	mg/L	2	Standard
	Cd	114	1.0	696.7	**-0.0032**	0.002	74.3	ug/L	-3	Standard
>	**In**	115	544949.1	1.6				ug/L	555851	Standard
	Sn	118	583.3	8.5	**0.0449**	0.013	29.1	ug/L	495	Standard
	Sb	123	49.6	12.8	**0.0113**	0.002	19.6	ug/L	41	Standard
	Ba	135	983.0	0.9	**1.0822**	0.008	0.8	ug/L	14	Standard
	Ce	140	11.7	65.5				ug/L	18	Standard
>	**Tb**	159	705614.8	1.2				ug/L	712215	Standard
	Ho	165	5.0	100.0				ug/L	0	Standard
	Tl	203	11.3	77.1	**0.0004**	0.002	494.8	ug/L	1	Standard
	Tl	205	1.7	173.2	**0.0002**	0.001	351.0	ug/L	3	Standard
	Pb	206	215.7	1.9	**0.0083**	0.002	24.2	ug/L	161	Standard
	Pb	207	201.7	1.7	**0.0242**	0.002	7.1	ug/L	141	Standard
	Pb	208	842.7	5.4	**0.0155**	0.003	19.4	ug/L	608	Standard
	U	238	34.3	4.4	**0.0075**	0.000	5.3	ug/L	4	Standard
>	**Bi**	209	480941.6	1.2				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	51.7	31.1	**0.1095**	0.048	43.7	mg/L	15	Standard
K	39	3.3	86.6	**0.0543**	0.078	144.2	mg/L	2	Standard
Ca	43	13.3	21.7	**0.1419**	0.313	220.8	mg/L	20	Standard
Fe	54	281.4	7.2	**0.0169**	0.010	56.2	mg/L	260	Standard
Fe	57	23.3	53.9	**-0.0173**	0.019	112.7	mg/L	25	Standard
> **Sc-1**	45	67185.3	0.7				mg/L	72123	Standard
Cl	35	27161.7	0.4				ug/L	26728	Standard
Kr	83	0.7	173.2				ug/L	0	Standard
Br	81	580.0	17.5				ug/L	733	Standard
P	31	18035.7	1.5				ug/L	17255	Standard
S	34	1738.4	3.8				ug/L	1680	Standard
Sr	88	5.0	100.0				ug/L	7	Standard
C	12	66.7	22.9				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	13.3	43.3				mg/L	3	Standard
Ho-1	165	5.0	100.0				mg/L	0	Standard
Er	166	0.0					mg/L	13	Standard
I	127	438.3	14.2				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.625	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.296	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.039
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.951
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1506016302
Sample Date/Time: Monday, June 08, 2015 17:59:09
Number of Replicates: 3
Autosampler Position: 237
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	169126.0	3.4				ug/L	159930	Standard
	Be	9	10.0	50.0	**-0.0000**	0.005	10166.4	ug/L	5	Standard
	Al	27	601001.6	1.7	**10.1367**	0.448	4.4	ug/L	623	Standard
	Sc	45	67839.9	0.9				ug/L	72123	Standard
	Ti	47	135.7	96.7	**0.4519**	0.486	107.6	ug/L	15	Standard
	V	51	157150.6	1.8	**24.6442**	0.875	3.5	ug/L	779	Standard
	Cr	52	3991.9	1.9	**-0.0020**	0.019	938.0	ug/L	4182	Standard
	Cr	53	350.0	18.7	**0.0794**	0.061	76.4	ug/L	255	Standard
	Mn	55	213622.7	0.2	**17.9909**	0.345	1.9	ug/L	870	Standard
	Co	59	197.3	9.1	**0.0152**	0.003	19.2	ug/L	44	Standard
	Ni	60	2552.9	1.4	**0.9465**	0.011	1.2	ug/L	376	Standard
	Cu	65	423.3	3.4	**-0.0051**	0.009	174.5	ug/L	271	Standard
	Zn	66	3166.0	1.0	**1.7382**	0.060	3.4	ug/L	601	Standard
>	**Ge**	72	613359.6	1.7				ug/L	607655	Standard
	As	75	224.2	9.4	**0.1788**	0.016	9.1	ug/L	-37	Standard
	Se	82	32.0	14.2	**0.0683**	0.035	50.6	ug/L	22	Standard
	Se-1	77	40.7	19.9	**0.0578**	0.084	145.3	ug/L	38	Standard
>	**Ga**	71	91.7	8.3				mg/L	38	Standard
	Rb	85	1051.7	13.2				ug/L	15	Standard
	Y	89	724977.3	1.7				ug/L	733256	Standard
>	**Rh**	103	6.7	173.2				ug/L	0	Standard
	Mo	98	54781.5	1.1	**21.0063**	0.511	2.4	ug/L	10	Standard
	Ag	107	58.3	12.0	**-0.0020**	0.001	74.6	ug/L	70	Standard
	Cd	111	-25.7	12.5	**-0.0178**	0.003	17.2	mg/L	2	Standard
	Cd	114	102.4	7.3	**0.0307**	0.002	5.8	ug/L	-3	Standard
>	**In**	115	543873.6	2.1				ug/L	555851	Standard
	Sn	118	531.7	13.7	**0.0318**	0.022	68.9	ug/L	495	Standard
	Sb	123	97.3	2.1	**0.0276**	0.000	0.7	ug/L	41	Standard
	Ba	135	2589.2	1.3	**2.8800**	0.099	3.4	ug/L	14	Standard
	Ce	140	198.3	10.2				ug/L	18	Standard
>	**Tb**	159	710681.8	1.7				ug/L	712215	Standard
	Ho	165	20.0	25.0				ug/L	0	Standard
	Tl	203	21.3	31.2	**0.0026**	0.002	59.7	ug/L	1	Standard
	Tl	205	21.7	48.0	**0.0043**	0.002	50.0	ug/L	3	Standard
	Pb	206	244.3	6.9	**0.0186**	0.005	28.9	ug/L	161	Standard
	Pb	207	207.7	7.2	**0.0272**	0.005	17.7	ug/L	141	Standard
	Pb	208	911.3	2.2	**0.0223**	0.003	14.5	ug/L	608	Standard
	U	238	145.3	6.4	**0.0307**	0.003	8.2	ug/L	4	Standard
>	**Bi**	209	475472.6	1.9				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	1935.1	5.4	**5.6810**	0.271	4.8	mg/L	15	Standard
K	39	11.7	24.7	**0.2765**	0.078	28.2	mg/L	2	Standard
Ca	43	30.0	16.7	**1.9655**	0.545	27.7	mg/L	20	Standard
Fe	54	389.3	12.2	**0.0659**	0.021	31.2	mg/L	260	Standard
Fe	57	56.7	50.2	**0.0326**	0.043	131.3	mg/L	25	Standard
> **Sc-1**	45	67839.9	0.9				mg/L	72123	Standard
Cl	35	27374.7	1.1				ug/L	26728	Standard
Kr	83	0.7	173.2				ug/L	0	Standard
Br	81	1136.7	5.7				ug/L	733	Standard
P	31	17918.9	1.6				ug/L	17255	Standard
S	34	1595.1	6.6				ug/L	1680	Standard
Sr	88	126.7	26.9				ug/L	7	Standard
C	12	76.7	7.5				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	93.3	34.4				mg/L	0	Standard
Dy	164	22.4	66.2				mg/L	3	Standard
Ho-1	165	20.0	25.0				mg/L	0	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	1550.1	6.3				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.750	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.939	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.845
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.814
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 09, 2015

Method 6020 - Summary Report

Sample ID: L1506016303
Sample Date/Time: Monday, June 08, 2015 18:02:21
Number of Replicates: 3
Autosampler Position: 238
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	167447.1	1.8				ug/L	159930	Standard
	Be	9	16.7	69.3	**0.0066**	0.011	173.3	ug/L	5	Standard
	Al	27	563760.4	0.8	**9.5947**	0.152	1.6	ug/L	623	Standard
	Sc	45	66735.0	2.1				ug/L	72123	Standard
	Ti	47	120.7	17.3	**0.3931**	0.077	19.5	ug/L	15	Standard
	V	51	3517.0	4.2	**0.4312**	0.025	5.8	ug/L	779	Standard
	Cr	52	4097.9	2.2	**0.0138**	0.010	74.4	ug/L	4182	Standard
	Cr	53	370.0	4.7	**0.1005**	0.019	18.9	ug/L	255	Standard
	Mn	55	124439.4	1.8	**10.4567**	0.157	1.5	ug/L	870	Standard
	Co	59	281.0	3.2	**0.0267**	0.001	5.3	ug/L	44	Standard
	Ni	60	703.3	3.3	**0.1493**	0.010	6.6	ug/L	376	Standard
	Cu	65	448.7	7.8	**0.0058**	0.014	240.2	ug/L	271	Standard
	Zn	66	2653.6	2.4	**1.3858**	0.040	2.9	ug/L	601	Standard
>	**Ge**	72	612400.8	0.5				ug/L	607655	Standard
	As	75	58.6	30.2	**0.0547**	0.013	24.4	ug/L	-37	Standard
	Se	82	23.9	18.5	**0.0004**	0.037	9299.9	ug/L	22	Standard
	Se-1	77	42.0	12.4	**0.0735**	0.058	78.6	ug/L	38	Standard
>	**Ga**	71	80.0	34.8				mg/L	38	Standard
	Rb	85	1228.4	5.1				ug/L	15	Standard
	Y	89	729198.6	1.9				ug/L	733256	Standard
>	**Rh**	103	5.0	173.2				ug/L	0	Standard
	Mo	98	410.9	6.7	**0.1483**	0.011	7.2	ug/L	10	Standard
	Ag	107	65.3	21.9	**-0.0008**	0.003	323.5	ug/L	70	Standard
	Cd	111	1.7	82.9	**0.0045**	0.001	25.9	mg/L	2	Standard
	Cd	114	15.2	140.3	**0.0015**	0.007	462.8	ug/L	-3	Standard
>	**In**	115	547476.1	0.1				ug/L	555851	Standard
	Sn	118	426.7	5.9	**0.0030**	0.007	221.0	ug/L	495	Standard
	Sb	123	56.2	14.4	**0.0135**	0.003	20.4	ug/L	41	Standard
	Ba	135	1820.1	1.2	**2.0060**	0.023	1.1	ug/L	14	Standard
	Ce	140	638.3	10.1				ug/L	18	Standard
>	**Tb**	159	705695.4	0.5				ug/L	712215	Standard
	Ho	165	26.7	10.8				ug/L	0	Standard
	Tl	203	20.0	74.0	**0.0022**	0.003	141.8	ug/L	1	Standard
	Tl	205	15.0	88.2	**0.0029**	0.003	94.0	ug/L	3	Standard
	Pb	206	265.3	7.9	**0.0243**	0.007	27.4	ug/L	161	Standard
	Pb	207	231.3	6.8	**0.0346**	0.005	15.7	ug/L	141	Standard
	Pb	208	985.0	2.5	**0.0274**	0.002	6.7	ug/L	608	Standard
	U	238	79.7	16.3	**0.0168**	0.003	15.6	ug/L	4	Standard
>	**Bi**	209	482661.0	0.5				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	575.0	4.6	**1.6847**	0.054	3.2	mg/L	15	Standard
K	39	6.7	86.6	**0.1474**	0.159	107.8	mg/L	2	Standard
Ca	43	30.0	28.9	**2.0110**	0.924	45.9	mg/L	20	Standard
Fe	54	333.0	14.2	**0.0424**	0.023	54.9	mg/L	260	Standard
Fe	57	63.3	29.9	**0.0448**	0.031	69.6	mg/L	25	Standard
> **Sc-1**	45	66735.0	2.1				mg/L	72123	Standard
Cl	35	27185.7	3.0				ug/L	26728	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	1063.4	6.1				ug/L	733	Standard
P	31	19252.3	11.4				ug/L	17255	Standard
S	34	1658.4	1.2				ug/L	1680	Standard
Sr	88	98.3	12.8				ug/L	7	Standard
C	12	70.0	51.5				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	15.9	96.6				mg/L	3	Standard
Ho-1	165	26.7	10.8				mg/L	0	Standard
Er	166	16.7	34.6				mg/L	13	Standard
I	127	1363.4	5.5				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.700	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.781	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.493
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.308
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 09, 2015

Method 6020 - Summary Report

Sample ID: L1506016304
Sample Date/Time: Monday, June 08, 2015 18:05:32
Number of Replicates: 3
Autosampler Position: 239
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	166933.1	1.8				ug/L	159930	Standard
	Be	9	23.3	12.4	**0.0130**	0.003	24.3	ug/L	5	Standard
	Al	27	1791711.2	1.1	**30.6717**	0.748	2.4	ug/L	623	Standard
	Sc	45	68216.6	1.3				ug/L	72123	Standard
	Ti	47	37.0	16.4	**0.0903**	0.022	24.6	ug/L	15	Standard
	V	51	1975.1	6.0	**0.1864**	0.019	10.4	ug/L	779	Standard
	Cr	52	4101.6	0.2	**0.0117**	0.000	3.8	ug/L	4182	Standard
	Cr	53	660.0	5.5	**0.3863**	0.038	9.7	ug/L	255	Standard
	Mn	55	162551.0	2.4	**13.6231**	0.298	2.2	ug/L	870	Standard
	Co	59	207.7	9.1	**0.0165**	0.002	15.2	ug/L	44	Standard
	Ni	60	902.0	1.7	**0.2333**	0.006	2.5	ug/L	376	Standard
	Cu	65	652.7	3.2	**0.0908**	0.009	10.3	ug/L	271	Standard
	Zn	66	3188.7	3.0	**1.7465**	0.060	3.4	ug/L	601	Standard
>	**Ge**	72	615228.2	0.3				ug/L	607655	Standard
	As	75	25.6	119.3	**0.0298**	0.023	76.6	ug/L	-37	Standard
	Se	82	37.8	20.9	**0.1158**	0.066	56.6	ug/L	22	Standard
	Se-1	77	92.3	22.0	**0.6182**	0.222	35.9	ug/L	38	Standard
>	**Ga**	71	21.7	26.6				mg/L	38	Standard
	Rb	85	1065.0	5.7				ug/L	15	Standard
	Y	89	728882.1	0.6				ug/L	733256	Standard
>	**Rh**	103	10.0	100.0				ug/L	0	Standard
	Mo	98	367.9	9.4	**0.1309**	0.014	10.8	ug/L	10	Standard
	Ag	107	77.0	23.5	**0.0012**	0.003	274.9	ug/L	70	Standard
	Cd	111	7.5	66.5	**0.0091**	0.004	43.9	mg/L	2	Standard
	Cd	114	27.6	67.4	**0.0055**	0.006	109.2	ug/L	-3	Standard
>	**In**	115	551712.1	0.8				ug/L	555851	Standard
	Sn	118	525.0	9.4	**0.0278**	0.014	49.2	ug/L	495	Standard
	Sb	123	70.0	4.3	**0.0180**	0.001	5.0	ug/L	41	Standard
	Ba	135	2859.9	1.2	**3.1360**	0.064	2.0	ug/L	14	Standard
	Ce	140	123.3	20.0				ug/L	18	Standard
>	**Tb**	159	726439.9	1.1				ug/L	712215	Standard
	Ho	165	16.7	45.8				ug/L	0	Standard
	Tl	203	59.7	10.2	**0.0107**	0.001	12.1	ug/L	1	Standard
	Tl	205	63.3	40.5	**0.0129**	0.005	41.5	ug/L	3	Standard
	Pb	206	224.0	5.8	**0.0110**	0.005	42.7	ug/L	161	Standard
	Pb	207	178.7	6.7	**0.0159**	0.004	24.2	ug/L	141	Standard
	Pb	208	834.3	5.8	**0.0148**	0.005	31.5	ug/L	608	Standard
	U	238	515.0	3.1	**0.1064**	0.004	3.8	ug/L	4	Standard
>	**Bi**	209	481155.7	0.8				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	2488.5	1.1	**7.2804**	0.148	2.0	mg/L	15	Standard
K	39	11.7	137.8	**0.2710**	0.421	155.4	mg/L	2	Standard
Ca	43	46.7	6.2	**3.7775**	0.356	9.4	mg/L	20	Standard
Fe	54	321.3	14.0	**0.0333**	0.019	57.8	mg/L	260	Standard
Fe	57	45.0	19.2	**0.0148**	0.014	91.7	mg/L	25	Standard
> **Sc-1**	45	68216.6	1.3				mg/L	72123	Standard
Cl	35	27818.9	1.1				ug/L	26728	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	1330.1	3.4				ug/L	733	Standard
P	31	18042.4	1.8				ug/L	17255	Standard
S	34	1738.4	6.2				ug/L	1680	Standard
Sr	88	100.0	13.2				ug/L	7	Standard
C	12	63.3	24.1				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	16.0	37.9				mg/L	3	Standard
Ho-1	165	16.7	45.8				mg/L	0	Standard
Er	166	13.3	86.6				mg/L	13	Standard
I	127	9066.0	2.0				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.379	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.246	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.255
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.995
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 09, 2015

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, June 08, 2015 18:08:45
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	166891.0	2.1				ug/L	159930	Standard
	Be	9	53470.9	1.6	**51.5963**	1.276	2.5	ug/L	5	Standard
	Al	27	3003647.5	0.8	**51.4534**	0.766	1.5	ug/L	623	Standard
	Sc	45	68409.1	2.0				ug/L	72123	Standard
	Ti	47	27705.0	0.7	**98.8686**	2.185	2.2	ug/L	15	Standard
	V	51	328199.9	1.1	**51.0754**	0.661	1.3	ug/L	779	Standard
	Cr	52	362828.3	1.7	**50.8456**	1.085	2.1	ug/L	4182	Standard
	Cr	53	50442.2	1.0	**49.3999**	0.434	0.9	ug/L	255	Standard
	Mn	55	613058.6	1.0	**51.2769**	0.449	0.9	ug/L	870	Standard
	Co	59	380906.2	0.3	**51.6384**	1.011	2.0	ug/L	44	Standard
	Ni	60	119716.8	1.4	**50.9660**	0.741	1.5	ug/L	376	Standard
	Cu	65	123711.0	0.9	**51.5455**	0.945	1.8	ug/L	271	Standard
	Zn	66	75124.8	1.6	**51.0232**	0.629	1.2	ug/L	601	Standard
>	Ge	72	619500.6	1.8				ug/L	607655	Standard
	As	75	68104.4	1.9	**50.5738**	0.995	2.0	ug/L	-37	Standard
	Se	82	6110.0	1.5	**50.5834**	1.040	2.1	ug/L	22	Standard
	Se-1	77	4808.8	1.7	**51.4742**	0.638	1.2	ug/L	38	Standard
>	Ga	71	50.0	36.1				mg/L	38	Standard
	Rb	85	805.0	7.8				ug/L	15	Standard
	Y	89	738751.3	3.0				ug/L	733256	Standard
>	Rh	103	8.3	34.6				ug/L	0	Standard
	Mo	98	285774.1	0.6	**105.5900**	1.730	1.6	ug/L	10	Standard
	Ag	107	287011.5	1.1	**50.9470**	1.220	2.4	ug/L	70	Standard
	Cd	111	65328.5	0.8	**51.1740**	1.225	2.4	mg/L	2	Standard
	Cd	114	159607.3	1.6	**51.3925**	1.250	2.4	ug/L	-3	Standard
>	In	115	564537.3	1.7				ug/L	555851	Standard
	Sn	118	195952.4	0.9	**49.8615**	0.584	1.2	ug/L	495	Standard
	Sb	123	156443.8	0.7	**51.4199**	1.031	2.0	ug/L	41	Standard
	Ba	135	47515.7	0.9	**51.1321**	0.955	1.9	ug/L	14	Standard
	Ce	140	35.0	37.8				ug/L	18	Standard
>	Tb	159	735264.3	2.7				ug/L	712215	Standard
	Ho	165	5.0	0.0				ug/L	0	Standard
	Tl	203	243363.7	0.9	**51.3660**	0.580	1.1	ug/L	1	Standard
	Tl	205	254115.0	0.9	**51.7983**	0.643	1.2	ug/L	3	Standard
	Pb	206	160447.8	1.0	**52.2246**	1.269	2.4	ug/L	161	Standard
	Pb	207	146277.4	0.8	**52.0200**	0.787	1.5	ug/L	141	Standard
	Pb	208	610991.1	0.8	**51.6882**	0.688	1.3	ug/L	608	Standard
	U	238	249889.9	0.8	**50.9741**	0.727	1.4	ug/L	4	Standard
>	Bi	209	485159.9	2.0				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	1768.4	8.6	**5.1485**	0.489	9.5	mg/L	15	Standard
K	39	176.7	22.7	**4.6704**	1.142	24.4	mg/L	2	Standard
Ca	43	68.3	29.6	**6.1365**	2.261	36.8	mg/L	20	Standard
Fe	54	12019.2	2.4	**5.4510**	0.120	2.2	mg/L	260	Standard
Fe	57	3762.1	2.8	**5.5904**	0.154	2.8	mg/L	25	Standard
> **Sc-1**	45	68409.1	2.0				mg/L	72123	Standard
Cl	35	27804.2	2.4				ug/L	26728	Standard
Kr	83	0.7	86.6				ug/L	0	Standard
Br	81	700.0	14.5				ug/L	733	Standard
P	31	18442.9	2.6				ug/L	17255	Standard
S	34	1828.4	4.5				ug/L	1680	Standard
Sr	88	3.3	86.6				ug/L	7	Standard
C	12	70.0	28.6				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.0	200.7				mg/L	3	Standard
Ho-1	165	5.0	0.0				mg/L	0	Standard
Er	166	13.3	86.6				mg/L	13	Standard
I	127	316.7	15.5				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	103.193		
Al	27	102.907		
Sc	45			
Ti	47	98.869		
V	51	102.151		
Cr	52	101.691		
Cr	53			
Mn	55	102.554		
Co	59	103.277		
Ni	60	101.932		
Cu	65	103.091		
Zn	66	102.046		
> Ge	72		101.949	
As	75	101.148		
Se	82	101.167		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	105.590		
Ag	107	101.894		
Cd	111	102.348		
Cd	114			
In	115			101.563
Sn	118	99.723		
Sb	123	102.840		
Ba	135	102.264		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.732		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.376		
U	238	101.948		
Bi	209			100.828
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, June 08, 2015 18:11:57
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	180230.8	1.6				ug/L	159930	Standard
	Be	9	28.3	88.8	**0.0160**	0.023	143.9	ug/L	5	Standard
	Al	27	745.0	30.5	**-0.0254**	0.004	15.0	ug/L	623	Standard
	Sc	45	71754.6	2.9				ug/L	72123	Standard
	Ti	47	14.7	23.9	**0.0076**	0.012	162.7	ug/L	15	Standard
	V	51	774.5	12.4	**-0.0079**	0.014	175.7	ug/L	779	Standard
	Cr	52	3913.5	2.7	**-0.0411**	0.013	31.0	ug/L	4182	Standard
	Cr	53	311.7	7.2	**0.0265**	0.021	80.5	ug/L	255	Standard
	Mn	55	1024.4	6.8	**-0.0069**	0.005	76.9	ug/L	870	Standard
	Co	59	97.0	51.8	**0.0007**	0.007	890.9	ug/L	44	Standard
	Ni	60	327.7	1.7	**-0.0202**	0.002	8.0	ug/L	376	Standard
	Cu	65	313.7	1.3	**-0.0580**	0.002	4.1	ug/L	271	Standard
	Zn	66	565.0	1.3	**-0.0816**	0.007	8.7	ug/L	601	Standard
>	**Ge**	72	645179.8	0.6				ug/L	607655	Standard
	As	75	-44.6	29.7	**-0.0211**	0.009	44.5	ug/L	-37	Standard
	Se	82	16.4	37.7	**-0.0696**	0.049	70.9	ug/L	22	Standard
	Se-1	77	36.3	4.2	**-0.0085**	0.016	184.3	ug/L	38	Standard
>	**Ga**	71	31.7	50.8				mg/L	38	Standard
	Rb	85	11.7	65.5				ug/L	15	Standard
	Y	89	776349.9	0.6				ug/L	733256	Standard
>	**Rh**	103	0.0					ug/L	0	Standard
	Mo	98	119.3	38.3	**0.0348**	0.016	46.6	ug/L	10	Standard
	Ag	107	170.0	81.5	**0.0166**	0.024	143.0	ug/L	70	Standard
	Cd	111	20.5	120.4	**0.0187**	0.019	100.1	mg/L	2	Standard
	Cd	114	54.9	131.4	**0.0137**	0.023	165.0	ug/L	-3	Standard
>	**In**	115	577150.8	0.7				ug/L	555851	Standard
	Sn	118	501.7	12.6	**0.0159**	0.015	97.2	ug/L	495	Standard
	Sb	123	127.3	50.3	**0.0353**	0.020	57.5	ug/L	41	Standard
	Ba	135	28.3	55.4	**0.0160**	0.016	102.0	ug/L	14	Standard
	Ce	140	8.3	34.6				ug/L	18	Standard
>	**Tb**	159	752278.4	0.5				ug/L	712215	Standard
	Ho	165	6.7	114.6				ug/L	0	Standard
	Tl	203	85.0	122.6	**0.0151**	0.021	138.8	ug/L	1	Standard
	Tl	205	40.0	69.6	**0.0076**	0.005	70.8	ug/L	3	Standard
	Pb	206	214.7	31.1	**0.0043**	0.020	479.9	ug/L	161	Standard
	Pb	207	173.3	27.9	**0.0108**	0.016	149.4	ug/L	141	Standard
	Pb	208	731.7	7.7	**0.0028**	0.004	157.6	ug/L	608	Standard
	U	238	26.3	55.3	**0.0056**	0.003	50.5	ug/L	4	Standard
>	**Bi**	209	506948.8	0.5				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	15.0	57.7	**-0.0033**	0.023	679.2	mg/L	15	Standard
K	39	6.7	86.6	**0.1356**	0.149	109.7	mg/L	2	Standard
Ca	43	31.7	32.9	**1.9805**	1.156	58.3	mg/L	20	Standard
Fe	54	306.2	8.9	**0.0197**	0.016	79.4	mg/L	260	Standard
Fe	57	26.7	21.7	**-0.0147**	0.009	62.7	mg/L	25	Standard
> **Sc-1**	45	71754.6	2.9				mg/L	72123	Standard
Cl	35	28263.0	1.1				ug/L	26728	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	706.7	18.5				ug/L	733	Standard
P	31	18099.1	3.9				ug/L	17255	Standard
S	34	1831.8	7.2				ug/L	1680	Standard
Sr	88	10.0	50.0				ug/L	7	Standard
C	12	60.0	28.9				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.5	206.8				mg/L	3	Standard
Ho-1	165	6.7	114.6				mg/L	0	Standard
Er	166	16.7	91.7				mg/L	13	Standard
I	127	163.3	11.6				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.175	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.832
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.356
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBS M1 WG526679-02
Sample Date/Time: Monday, June 08, 2015 18:15:10
Number of Replicates: 3
Autosampler Position: 240
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	172960.2	2.1				ug/L	159930	Standard
	Be	9	31.7	50.8	**0.0200**	0.015	75.9	ug/L	5	Standard
	Al	27	3758.8	5.9	**0.0249**	0.004	17.6	ug/L	623	Standard
	Sc	45	69962.8	1.4				ug/L	72123	Standard
	Ti	47	33.0	29.8	**0.0727**	0.035	48.4	ug/L	15	Standard
	V	51	676.4	2.0	**-0.0206**	0.002	7.6	ug/L	779	Standard
	Cr	52	4088.6	1.9	**-0.0065**	0.008	126.6	ug/L	4182	Standard
	Cr	53	313.3	4.0	**0.0338**	0.010	30.3	ug/L	255	Standard
	Mn	55	2632.6	2.6	**0.1266**	0.006	4.4	ug/L	870	Standard
	Co	59	59.0	11.9	**-0.0041**	0.001	21.8	ug/L	44	Standard
	Ni	60	581.3	4.9	**0.0884**	0.012	13.2	ug/L	376	Standard
	Cu	65	541.7	6.2	**0.0378**	0.015	39.0	ug/L	271	Standard
	Zn	66	3436.4	1.4	**1.8512**	0.029	1.6	ug/L	601	Standard
>	**Ge**	72	632913.3	0.6				ug/L	607655	Standard
	As	75	-49.2	56.9	**-0.0251**	0.020	80.9	ug/L	-37	Standard
	Se	82	13.1	29.5	**-0.0938**	0.032	34.2	ug/L	22	Standard
	Se-1	77	32.3	14.6	**-0.0436**	0.048	110.6	ug/L	38	Standard
>	**Ga**	71	43.3	13.3				mg/L	38	Standard
	Rb	85	83.3	18.3				ug/L	15	Standard
	Y	89	758326.2	0.9				ug/L	733256	Standard
>	**Rh**	103	3.3	173.2				ug/L	0	Standard
	Mo	98	39.6	17.8	**0.0064**	0.003	41.3	ug/L	10	Standard
	Ag	107	80.7	4.0	**0.0016**	0.001	35.7	ug/L	70	Standard
	Cd	111	2.9	116.9	**0.0054**	0.003	49.6	mg/L	2	Standard
	Cd	114	23.5	69.1	**0.0041**	0.005	128.9	ug/L	-3	Standard
>	**In**	115	563318.9	0.5				ug/L	555851	Standard
	Sn	118	490.0	17.7	**0.0160**	0.022	137.2	ug/L	495	Standard
	Sb	123	66.2	3.6	**0.0162**	0.001	4.9	ug/L	41	Standard
	Ba	135	96.7	9.8	**0.0904**	0.010	11.1	ug/L	14	Standard
	Ce	140	95.0	32.9				ug/L	18	Standard
>	**Tb**	159	737249.6	0.7				ug/L	712215	Standard
	Ho	165	6.7	114.6				ug/L	0	Standard
	Tl	203	8.0	78.1	**-0.0004**	0.001	342.1	ug/L	1	Standard
	Tl	205	5.0	100.0	**0.0008**	0.001	121.6	ug/L	3	Standard
	Pb	206	270.7	7.1	**0.0239**	0.006	27.0	ug/L	161	Standard
	Pb	207	224.3	3.7	**0.0301**	0.003	8.5	ug/L	141	Standard
	Pb	208	955.7	5.0	**0.0229**	0.004	18.8	ug/L	608	Standard
	U	238	3.7	31.5	**0.0012**	0.000	19.7	ug/L	4	Standard
>	**Bi**	209	494533.8	0.5				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	18.3	31.5	**0.0079**	0.017	220.6	mg/L	15	Standard
K	39	8.3	91.7	**0.1789**	0.198	110.4	mg/L	2	Standard
Ca	43	1.7	173.2	**-1.1635**	0.308	26.4	mg/L	20	Standard
Fe	54	274.4	31.7	**0.0089**	0.041	466.4	mg/L	260	Standard
Fe	57	21.7	26.6	**-0.0211**	0.009	41.5	mg/L	25	Standard
> **Sc-1**	45	69962.8	1.4				mg/L	72123	Standard
Cl	35	28697.2	2.5				ug/L	26728	Standard
Kr	83	1.0	173.2				ug/L	0	Standard
Br	81	830.0	11.0				ug/L	733	Standard
P	31	19517.6	4.1				ug/L	17255	Standard
S	34	1795.1	2.4				ug/L	1680	Standard
Sr	88	6.7	114.6				ug/L	7	Standard
C	12	76.7	58.8				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.9	115.2				mg/L	3	Standard
Ho-1	165	6.7	114.6				mg/L	0	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	221.7	5.7				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.148	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.157	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.344
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.776
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSS M1 WG526679-03
Sample Date/Time: Monday, June 08, 2015 18:18:21
Number of Replicates: 3
Autosampler Position: 241
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	176918.9	2.3				ug/L	159930	Standard
	Be	9	27815.5	2.0	**25.3223**	1.030	4.1	ug/L	5	Standard
	Al	27	3402.0	5.2	**0.0177**	0.003	15.8	ug/L	623	Standard
	Sc	45	68993.4	1.6				ug/L	72123	Standard
	Ti	47	19.0	29.3	**0.0235**	0.020	83.6	ug/L	15	Standard
	V	51	172196.8	1.7	**26.1064**	0.193	0.7	ug/L	779	Standard
	Cr	52	190908.2	2.0	**25.8437**	0.380	1.5	ug/L	4182	Standard
	Cr	53	27012.4	3.7	**25.7050**	0.929	3.6	ug/L	255	Standard
	Mn	55	324569.0	3.1	**26.4629**	0.533	2.0	ug/L	870	Standard
	Co	59	199433.3	2.0	**26.3932**	0.524	2.0	ug/L	44	Standard
	Ni	60	61945.4	1.9	**25.6745**	0.313	1.2	ug/L	376	Standard
	Cu	65	65138.8	2.2	**26.4105**	0.429	1.6	ug/L	271	Standard
	Zn	66	42177.3	1.4	**27.7699**	0.376	1.4	ug/L	601	Standard
>	**Ge**	72	634368.1	1.6				ug/L	607655	Standard
	As	75	35230.2	2.9	**25.5506**	0.601	2.4	ug/L	-37	Standard
	Se	82	3109.9	3.1	**25.0386**	0.721	2.9	ug/L	22	Standard
	Se-1	77	2455.5	2.9	**25.4722**	0.491	1.9	ug/L	38	Standard
>	**Ga**	71	40.0	50.0				mg/L	38	Standard
	Rb	85	48.3	6.0				ug/L	15	Standard
	Y	89	765450.5	0.2				ug/L	733256	Standard
>	**Rh**	103	6.7	43.3				ug/L	0	Standard
	Mo	98	52.2	9.8	**0.0108**	0.002	17.5	ug/L	10	Standard
	Ag	107	146388.4	2.4	**25.6468**	0.699	2.7	ug/L	70	Standard
	Cd	111	33002.2	2.0	**25.5219**	0.573	2.2	mg/L	2	Standard
	Cd	114	79329.2	1.7	**25.2159**	0.508	2.0	ug/L	-3	Standard
>	**In**	115	571735.5	0.3				ug/L	555851	Standard
	Sn	118	486.7	11.0	**0.0133**	0.013	99.1	ug/L	495	Standard
	Sb	123	81659.1	1.7	**26.4944**	0.542	2.0	ug/L	41	Standard
	Ba	135	24294.5	2.4	**25.8041**	0.698	2.7	ug/L	14	Standard
	Ce	140	48.3	23.9				ug/L	18	Standard
>	**Tb**	159	740118.9	1.2				ug/L	712215	Standard
	Ho	165	6.7	43.3				ug/L	0	Standard
	Tl	203	125818.0	1.8	**25.5150**	0.484	1.9	ug/L	1	Standard
	Tl	205	130555.1	1.2	**25.5693**	0.328	1.3	ug/L	3	Standard
	Pb	206	84710.2	2.2	**26.4578**	0.589	2.2	ug/L	161	Standard
	Pb	207	73704.9	2.2	**25.1589**	0.575	2.3	ug/L	141	Standard
	Pb	208	316296.5	1.7	**25.6809**	0.446	1.7	ug/L	608	Standard
	U	238	127410.3	2.0	**24.9713**	0.496	2.0	ug/L	4	Standard
>	**Bi**	209	504862.7	0.1				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	13.3	57.3	**-0.0060**	0.023	380.2	mg/L	15	Standard
K	39	5.0	100.0	**0.0951**	0.130	136.5	mg/L	2	Standard
Ca	43	28.3	44.4	**1.7204**	1.340	77.9	mg/L	20	Standard
Fe	54	296.8	14.2	**0.0205**	0.018	90.0	mg/L	260	Standard
Fe	57	23.3	49.5	**-0.0182**	0.017	94.6	mg/L	25	Standard
> **Sc-1**	45	68993.4	1.6				mg/L	72123	Standard
Cl	35	26907.2	1.9				ug/L	26728	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	793.4	8.6				ug/L	733	Standard
P	31	18569.7	4.4				ug/L	17255	Standard
S	34	1720.1	2.5				ug/L	1680	Standard
Sr	88	5.0	0.0				ug/L	7	Standard
C	12	33.3	34.6				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.5	107.6				mg/L	3	Standard
Ho-1	165	6.7	43.3				mg/L	0	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	168.3	17.1				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.623	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.396	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.858
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.922
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1506030914 WG526679-01
Sample Date/Time: Monday, June 08, 2015 18:21:33
Number of Replicates: 3
Autosampler Position: 242
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	184450.9	0.4				ug/L	159930	Standard
	Be	9	3722.1	4.3	**3.2403**	0.153	4.7	ug/L	5	Standard
	Al	27	5003481.6	0.7	**77.5540**	0.287	0.4	ug/L	623	Standard
	Sc	45	85661.6	2.7				ug/L	72123	Standard
	Ti	47	11675.5	1.9	**40.8337**	0.955	2.3	ug/L	15	Standard
	V	51	307941.2	2.8	**46.9906**	1.418	3.0	ug/L	779	Standard
	Cr	52	318119.8	2.3	**43.6405**	1.176	2.7	ug/L	4182	Standard
	Cr	53	45316.0	2.6	**43.4984**	1.431	3.3	ug/L	255	Standard
	Mn	55	33509372.1	1.4	**2753.6638**	57.873	2.1	ug/L	870	Standard
	Co	59	355782.5	1.3	**47.2970**	0.769	1.6	ug/L	44	Standard
	Ni	60	152040.1	2.8	**63.5216**	2.010	3.2	ug/L	376	Standard
	Cu	65	131944.1	1.2	**53.9250**	1.124	2.1	ug/L	271	Standard
	Zn	66	256112.2	1.7	**171.6669**	3.368	2.0	ug/L	601	Standard
>	**Ge**	72	631650.7	1.3				ug/L	607655	Standard
	As	75	35788.9	1.4	**26.0691**	0.336	1.3	ug/L	-37	Standard
	Se	82	107.0	13.6	**0.6711**	0.114	16.9	ug/L	22	Standard
	Se-1	77	216.7	2.4	**1.9075**	0.084	4.4	ug/L	38	Standard
>	**Ga**	71	65693.8	1.5				mg/L	38	Standard
	Rb	85	295998.8	1.6				ug/L	15	Standard
	Y	89	1276796.9	3.1				ug/L	733256	Standard
>	**Rh**	103	36.7	61.5				ug/L	0	Standard
	Mo	98	3441.2	1.4	**1.1796**	0.034	2.9	ug/L	10	Standard
	Ag	107	696.7	1.1	**0.1028**	0.003	2.6	ug/L	70	Standard
	Cd	111	1055.2	2.7	**0.7749**	0.016	2.1	mg/L	2	Standard
	Cd	114	2401.6	3.6	**0.7188**	0.028	3.9	ug/L	-3	Standard
>	**In**	115	604430.2	1.8				ug/L	555851	Standard
	Sn	118	691.7	3.6	**0.0555**	0.004	6.4	ug/L	495	Standard
	Sb	123	100.1	2.7	**0.0251**	0.001	2.7	ug/L	41	Standard
	Ba	135	231429.9	1.0	**232.6498**	3.711	1.6	ug/L	14	Standard
	Ce	140	1129604.5	1.3				ug/L	18	Standard
>	**Tb**	159	816675.6	1.2				ug/L	712215	Standard
	Ho	165	24181.0	3.0				ug/L	0	Standard
	Tl	203	1309.7	1.2	**0.2757**	0.003	1.0	ug/L	1	Standard
	Tl	205	1398.4	8.8	**0.2862**	0.024	8.4	ug/L	3	Standard
	Pb	206	160963.4	1.9	**52.6366**	0.894	1.7	ug/L	161	Standard
	Pb	207	133151.3	1.7	**47.5727**	0.626	1.3	ug/L	141	Standard
	Pb	208	583513.9	1.8	**49.5979**	0.820	1.7	ug/L	608	Standard
	U	238	10859.9	1.9	**2.2262**	0.033	1.5	ug/L	4	Standard
>	**Bi**	209	482765.4	0.7				ug/L	481178	Standard

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Na	23	3.3	86.6				mg/L	0	Standard
Mg	24	56.7	35.7	**0.0887**	0.051	57.4	mg/L	15	Standard
K	39	83.3	3.5	**1.7316**	0.037	2.1	mg/L	2	Standard
Ca	43	56.7	27.0	**3.5862**	1.214	33.9	mg/L	20	Standard
Fe	54	168128.1	1.1	**62.0835**	0.986	1.6	mg/L	260	Standard
Fe	57	53598.0	2.4	**64.1529**	0.746	1.2	mg/L	25	Standard
> **Sc-1**	45	85661.6	2.7				mg/L	72123	Standard
Cl	35	27034.1	1.3				ug/L	26728	Standard
Kr	83	0.7	86.6				ug/L	0	Standard
Br	81	1396.7	7.1				ug/L	733	Standard
P	31	19587.7	1.9				ug/L	17255	Standard
S	34	1716.8	2.4				ug/L	1680	Standard
Sr	88	246.7	11.9				ug/L	7	Standard
C	12	163.3	25.5				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	60.0	76.4				mg/L	0	Standard
Dy	164	40869.4	3.1				mg/L	3	Standard
Ho-1	165	24181.0	3.0				mg/L	0	Standard
Er	166	21121.4	2.3				mg/L	13	Standard
I	127	8644.1	1.8				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.333	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.949	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.740
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.330
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1506030914S WG526679-04
Sample Date/Time: Monday, June 08, 2015 18:24:45
Number of Replicates: 3
Autosampler Position: 243
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	183487.9	1.9				ug/L	159930	Standard
	Be	9	33699.1	1.4	**29.5748**	0.895	3.0	ug/L	5	Standard
	Al	27	4669033.9	1.2	**72.7744**	2.162	3.0	ug/L	623	Standard
	Sc	45	84984.4	1.1				ug/L	72123	Standard
	Ti	47	14082.9	1.6	**48.8984**	0.941	1.9	ug/L	15	Standard
	V	51	437539.2	1.8	**66.3267**	1.429	2.2	ug/L	779	Standard
	Cr	52	472171.9	1.6	**64.5693**	1.344	2.1	ug/L	4182	Standard
	Cr	53	66147.4	1.0	**63.1379**	0.251	0.4	ug/L	255	Standard
	Mn	55	34102292.5	1.3	**2781.6646**	45.367	1.6	ug/L	870	Standard
	Co	59	529153.8	2.0	**69.8342**	1.574	2.3	ug/L	44	Standard
	Ni	60	220317.1	1.2	**91.4315**	1.042	1.1	ug/L	376	Standard
	Cu	65	181642.1	1.5	**73.7539**	1.341	1.8	ug/L	271	Standard
	Zn	66	276151.0	1.0	**183.7664**	2.267	1.2	ug/L	601	Standard
>	**Ge**	72	636304.0	0.9				ug/L	607655	Standard
	As	75	63430.7	1.0	**45.8589**	0.737	1.6	ug/L	-37	Standard
	Se	82	2611.5	1.0	**20.9313**	0.398	1.9	ug/L	22	Standard
	Se-1	77	2140.5	1.2	**22.0908**	0.474	2.1	ug/L	38	Standard
>	**Ga**	71	59058.3	3.0				mg/L	38	Standard
	Rb	85	281079.0	2.2				ug/L	15	Standard
	Y	89	1259261.7	0.2				ug/L	733256	Standard
>	**Rh**	103	60.0	38.2				ug/L	0	Standard
	Mo	98	3532.1	0.3	**1.2081**	0.015	1.2	ug/L	10	Standard
	Ag	107	153225.8	2.3	**25.3427**	0.825	3.3	ug/L	70	Standard
	Cd	111	39825.3	0.9	**29.0728**	0.527	1.8	mg/L	2	Standard
	Cd	114	91897.6	1.2	**27.5752**	0.562	2.0	ug/L	-3	Standard
>	**In**	115	605707.4	0.9				ug/L	555851	Standard
	Sn	118	698.3	8.6	**0.0568**	0.016	27.6	ug/L	495	Standard
	Sb	123	2380.3	3.6	**0.7237**	0.032	4.4	ug/L	41	Standard
	Ba	135	232463.7	1.7	**233.1975**	6.201	2.7	ug/L	14	Standard
	Ce	140	975368.8	2.1				ug/L	18	Standard
>	**Tb**	159	821244.6	1.2				ug/L	712215	Standard
	Ho	165	24675.1	1.6				ug/L	0	Standard
	Tl	203	129758.3	1.1	**27.3780**	0.140	0.5	ug/L	1	Standard
	Tl	205	134768.5	1.6	**27.4613**	0.295	1.1	ug/L	3	Standard
	Pb	206	204425.6	1.0	**66.5253**	0.263	0.4	ug/L	161	Standard
	Pb	207	172831.7	1.6	**61.4489**	0.684	1.1	ug/L	141	Standard
	Pb	208	749307.8	0.9	**63.3811**	0.207	0.3	ug/L	608	Standard
	U	238	141115.8	1.1	**28.7757**	0.127	0.4	ug/L	4	Standard
>	**Bi**	209	485231.2	0.6				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	51.7	20.1	**0.0770**	0.023	30.4	mg/L	15	Standard
K	39	61.7	16.9	**1.2837**	0.233	18.2	mg/L	2	Standard
Ca	43	75.0	43.7	**5.2802**	2.968	56.2	mg/L	20	Standard
Fe	54	140960.5	3.3	**52.4255**	1.186	2.3	mg/L	260	Standard
Fe	57	45214.0	0.3	**54.5399**	0.547	1.0	mg/L	25	Standard
> **Sc-1**	45	84984.4	1.1				mg/L	72123	Standard
Cl	35	27447.5	0.8				ug/L	26728	Standard
Kr	83	0.7	173.2				ug/L	0	Standard
Br	81	1123.4	8.1				ug/L	733	Standard
P	31	20078.3	2.0				ug/L	17255	Standard
S	34	1731.8	8.3				ug/L	1680	Standard
Sr	88	305.0	5.7				ug/L	7	Standard
C	12	86.7	29.0				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	72.1				mg/L	0	Standard
Dy	164	43571.4	0.6				mg/L	3	Standard
Ho-1	165	24675.1	1.6				mg/L	0	Standard
Er	166	21031.3	1.4				mg/L	13	Standard
I	127	6956.6	3.0				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.730	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.715	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	108.969
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.842
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1506030914SD WG526679-05
Sample Date/Time: Monday, June 08, 2015 18:27:56
Number of Replicates: 3
Autosampler Position: 244
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	185957.7	1.4				ug/L	159930	Standard
	Be	9	30995.1	5.0	**26.8410**	1.582	5.9	ug/L	5	Standard
	Al	27	5200358.1	1.2	**79.9730**	2.042	2.6	ug/L	623	Standard
	Sc	45	83060.4	1.3				ug/L	72123	Standard
	Ti	47	15158.6	1.7	**52.4503**	0.918	1.7	ug/L	15	Standard
	V	51	478562.6	0.4	**72.2991**	0.297	0.4	ug/L	779	Standard
	Cr	52	496083.8	0.8	**67.6235**	0.138	0.2	ug/L	4182	Standard
	Cr	53	69641.4	1.1	**66.2535**	0.487	0.7	ug/L	255	Standard
	Mn	55	40034065.8	0.8	**3253.9151**	7.559	0.2	ug/L	870	Standard
	Co	59	535401.0	1.5	**70.4070**	0.866	1.2	ug/L	44	Standard
	Ni	60	195727.8	0.3	**80.9262**	0.651	0.8	ug/L	376	Standard
	Cu	65	185089.3	0.6	**74.8900**	0.355	0.5	ug/L	271	Standard
	Zn	66	276527.7	0.8	**183.3676**	1.255	0.7	ug/L	601	Standard
>	**Ge**	72	638533.2	0.6				ug/L	607655	Standard
	As	75	67764.7	0.9	**48.8164**	0.137	0.3	ug/L	-37	Standard
	Se	82	2439.4	2.4	**19.4662**	0.374	1.9	ug/L	22	Standard
	Se-1	77	1962.8	3.6	**20.1507**	0.735	3.6	ug/L	38	Standard
>	**Ga**	71	67230.5	1.1				mg/L	38	Standard
	Rb	85	345322.6	0.6				ug/L	15	Standard
	Y	89	1157949.1	0.7				ug/L	733256	Standard
>	**Rh**	103	41.7	34.6				ug/L	0	Standard
	Mo	98	4562.9	1.8	**1.5637**	0.018	1.1	ug/L	10	Standard
	Ag	107	143003.0	0.1	**23.6599**	0.191	0.8	ug/L	70	Standard
	Cd	111	37912.3	0.6	**27.6886**	0.155	0.6	mg/L	2	Standard
	Cd	114	89072.9	1.3	**26.7384**	0.264	1.0	ug/L	-3	Standard
>	**In**	115	605381.2	0.7				ug/L	555851	Standard
	Sn	118	745.0	1.2	**0.0680**	0.003	3.7	ug/L	495	Standard
	Sb	123	1443.5	1.4	**0.4368**	0.009	2.0	ug/L	41	Standard
	Ba	135	277410.6	0.5	**278.3983**	1.677	0.6	ug/L	14	Standard
	Ce	140	1010526.0	0.2				ug/L	18	Standard
>	**Tb**	159	817432.8	1.9				ug/L	712215	Standard
	Ho	165	19824.6	1.9				ug/L	0	Standard
	Tl	203	123858.5	0.2	**26.0020**	0.287	1.1	ug/L	1	Standard
	Tl	205	128835.5	1.0	**26.1197**	0.213	0.8	ug/L	3	Standard
	Pb	206	249013.6	0.6	**80.6444**	1.284	1.6	ug/L	161	Standard
	Pb	207	210546.9	1.0	**74.4998**	1.559	2.1	ug/L	141	Standard
	Pb	208	919678.5	0.6	**77.4150**	1.107	1.4	ug/L	608	Standard
	U	238	137416.7	0.8	**27.8816**	0.456	1.6	ug/L	4	Standard
>	**Bi**	209	487728.0	1.1				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	51.7	20.1	**0.0799**	0.024	30.5	mg/L	15	Standard
K	39	53.3	23.6	**1.1327**	0.286	25.2	mg/L	2	Standard
Ca	43	43.3	6.7	**2.5609**	0.254	9.9	mg/L	20	Standard
Fe	54	159924.8	1.1	**60.8897**	0.863	1.4	mg/L	260	Standard
Fe	57	48345.4	1.5	**59.6801**	1.470	2.5	mg/L	25	Standard
Sc-1	45	83060.4	1.3				mg/L	72123	Standard
Cl	35	27657.9	0.8				ug/L	26728	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	2806.9	5.3				ug/L	733	Standard
P	31	20665.8	4.2				ug/L	17255	Standard
S	34	1745.1	2.9				ug/L	1680	Standard
Sr	88	246.7	18.8				ug/L	7	Standard
C	12	113.3	10.2				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	123.3	4.7				mg/L	0	Standard
Dy	164	33025.3	3.8				mg/L	3	Standard
Ho-1	165	19824.6	1.9				mg/L	0	Standard
Er	166	17797.1	0.8				mg/L	13	Standard
I	127	8370.6	1.5				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.275	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.082	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	108.911
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.361
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1506040002
Sample Date/Time: Monday, June 08, 2015 18:31:07
Number of Replicates: 3
Autosampler Position: 245
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	175657.6	1.9				ug/L	159930	Standard
	Be	9	2820.3	3.7	**2.5760**	0.094	3.7	ug/L	5	Standard
	Al	27	4661445.6	1.7	**75.8909**	2.113	2.8	ug/L	623	Standard
	Sc	45	82650.1	4.0				ug/L	72123	Standard
	Ti	47	7199.8	21.1	**25.2821**	6.049	23.9	ug/L	15	Standard
	V	51	114405.7	0.1	**17.4003**	0.484	2.8	ug/L	779	Standard
	Cr	52	173485.9	0.6	**23.5634**	0.508	2.2	ug/L	4182	Standard
	Cr	53	24259.4	1.5	**23.1932**	1.001	4.3	ug/L	255	Standard
	Mn	55	13685735.3	0.9	**1125.8086**	30.366	2.7	ug/L	870	Standard
	Co	59	180343.4	1.6	**23.9980**	0.810	3.4	ug/L	44	Standard
	Ni	60	116732.3	1.0	**48.7892**	1.417	2.9	ug/L	376	Standard
	Cu	65	70040.5	0.8	**28.5748**	1.017	3.6	ug/L	271	Standard
	Zn	66	139997.8	0.7	**93.7403**	2.570	2.7	ug/L	601	Standard
>	**Ge**	72	631166.0	2.7				ug/L	607655	Standard
	As	75	10855.7	0.2	**7.9246**	0.224	2.8	ug/L	-37	Standard
	Se	82	58.4	24.2	**0.2752**	0.110	39.9	ug/L	22	Standard
	Se-1	77	168.0	6.9	**1.3924**	0.083	6.0	ug/L	38	Standard
>	**Ga**	71	36669.3	1.2				mg/L	38	Standard
	Rb	85	255407.0	2.1				ug/L	15	Standard
	Y	89	1112500.2	2.7				ug/L	733256	Standard
>	**Rh**	103	55.0					ug/L	0	Standard
	Mo	98	546.8	3.2	**0.1881**	0.013	6.7	ug/L	10	Standard
	Ag	107	449.3	10.9	**0.0649**	0.011	17.2	ug/L	70	Standard
	Cd	111	182.9	12.0	**0.1426**	0.022	15.1	mg/L	2	Standard
	Cd	114	439.3	20.5	**0.1345**	0.033	24.7	ug/L	-3	Standard
>	**In**	115	581531.4	3.4				ug/L	555851	Standard
	Sn	118	461.7	12.3	**0.0052**	0.014	278.4	ug/L	495	Standard
	Sb	123	65.4	17.8	**0.0153**	0.004	27.9	ug/L	41	Standard
	Ba	135	219195.1	1.5	**229.0872**	4.438	1.9	ug/L	14	Standard
	Ce	140	897986.6	0.4				ug/L	18	Standard
>	**Tb**	159	783592.2	1.3				ug/L	712215	Standard
	Ho	165	16677.5	4.1				ug/L	0	Standard
	Tl	203	729.0	2.5	**0.1528**	0.006	4.0	ug/L	1	Standard
	Tl	205	820.0	10.4	**0.1682**	0.021	12.6	ug/L	3	Standard
	Pb	206	66085.5	0.4	**21.6013**	0.593	2.7	ug/L	161	Standard
	Pb	207	54347.6	1.0	**19.4118**	0.423	2.2	ug/L	141	Standard
	Pb	208	239881.4	1.0	**20.3798**	0.440	2.2	ug/L	608	Standard
	U	238	6889.9	1.2	**1.4140**	0.017	1.2	ug/L	4	Standard
>	**Bi**	209	482364.9	2.4				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	63.3	27.7	**0.1085**	0.040	37.2	mg/L	15	Standard
K	39	76.7	42.4	**1.6409**	0.667	40.7	mg/L	2	Standard
Ca	43	73.3	19.7	**5.3025**	1.329	25.1	mg/L	20	Standard
Fe	54	68721.0	2.4	**26.2506**	1.071	4.1	mg/L	260	Standard
Fe	57	21523.6	1.2	**26.6998**	1.235	4.6	mg/L	25	Standard
> **Sc-1**	45	82650.1	4.0				mg/L	72123	Standard
Cl	35	27119.6	1.0				ug/L	26728	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	866.7	5.7				ug/L	733	Standard
P	31	20126.7	1.6				ug/L	17255	Standard
S	34	1763.4	12.4				ug/L	1680	Standard
Sr	88	573.3	9.4				ug/L	7	Standard
C	12	70.0	28.6				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	28947.9	0.4				mg/L	3	Standard
Ho-1	165	16677.5	4.1				mg/L	0	Standard
Er	166	14426.9	1.1				mg/L	13	Standard
I	127	2105.1	8.8				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.834	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.869	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.620
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.247
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1506024601
Sample Date/Time: Monday, June 08, 2015 18:34:18
Number of Replicates: 3
Autosampler Position: 246
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	186993.5	0.3				ug/L	159930	Standard
	Be	9	768.4	19.7	**0.6518**	0.128	19.6	ug/L	5	Standard
	Al	27	3666826.1	0.4	**56.0532**	0.102	0.2	ug/L	623	Standard
	Sc	45	77283.3	2.3				ug/L	72123	Standard
	Ti	47	12019.4	1.9	**39.4037**	1.620	4.1	ug/L	15	Standard
	V	51	142149.6	1.0	**20.2600**	0.600	3.0	ug/L	779	Standard
	Cr	52	639472.7	0.0	**82.7197**	1.942	2.3	ug/L	4182	Standard
	Cr	53	89996.5	0.9	**81.1735**	1.292	1.6	ug/L	255	Standard
	Mn	55	16447746.4	0.9	**1266.4645**	21.409	1.7	ug/L	870	Standard
	Co	59	141725.4	0.6	**17.6483**	0.307	1.7	ug/L	44	Standard
	Ni	60	209490.7	1.0	**82.0556**	1.101	1.3	ug/L	376	Standard
	Cu	65	1985761.1	0.3	**762.9784**	19.064	2.5	ug/L	271	Standard
	Zn	66	6338999.3	0.4	**3992.0779**	93.926	2.4	ug/L	601	Standard
>	**Ge**	72	674157.5	2.3				ug/L	607655	Standard
	As	75	17046.9	0.7	**11.6447**	0.343	2.9	ug/L	-37	Standard
	Se	82	79.5	12.5	**0.4079**	0.085	20.9	ug/L	22	Standard
	Se-1	77	118.3	4.7	**0.7876**	0.039	4.9	ug/L	38	Standard
>	**Ga**	71	28645.4	2.3				mg/L	38	Standard
	Rb	85	53967.6	0.5				ug/L	15	Standard
	Y	89	944465.6	1.8				ug/L	733256	Standard
>	**Rh**	103	175.0	20.0				ug/L	0	Standard
	Mo	98	222442.8	0.8	**71.0475**	1.124	1.6	ug/L	10	Standard
	Ag	107	241274.7	1.0	**37.0158**	0.450	1.2	ug/L	70	Standard
	Cd	111	28549.0	0.9	**19.3320**	0.280	1.4	mg/L	2	Standard
	Cd	114	66087.0	0.8	**18.3924**	0.262	1.4	ug/L	-3	Standard
>	**In**	115	653036.8	1.7				ug/L	555851	Standard
	Sn	118	43064.4	0.7	**9.3860**	0.227	2.4	ug/L	495	Standard
	Sb	123	4415.4	2.1	**1.2492**	0.040	3.2	ug/L	41	Standard
	Ba	135	174296.8	0.1	**162.1735**	2.666	1.6	ug/L	14	Standard
	Ce	140	304149.1	0.5				ug/L	18	Standard
>	**Tb**	159	855284.6	0.7				ug/L	712215	Standard
	Ho	165	8604.1	6.1				ug/L	0	Standard
	Tl	203	324.7	7.9	**0.0631**	0.004	6.8	ug/L	1	Standard
	Tl	205	313.3	11.8	**0.0606**	0.007	11.5	ug/L	3	Standard
	Pb	206	759237.3	0.1	**235.2209**	3.642	1.5	ug/L	161	Standard
	Pb	207	627471.9	0.1	**212.3671**	3.126	1.5	ug/L	141	Standard
	Pb	208	2733923.8	0.3	**220.1493**	3.638	1.7	ug/L	608	Standard
	U	238	5559.4	2.8	**1.0792**	0.046	4.2	ug/L	4	Standard
>	**Bi**	209	510111.7	1.4				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	386.7	13.0	**0.9595**	0.128	13.3	mg/L	15	Standard
K	39	30.0	16.7	**0.6684**	0.107	16.1	mg/L	2	Standard
Ca	43	195.0	7.7	**17.5294**	1.364	7.8	mg/L	20	Standard
Fe	54	279623.8	1.5	**114.5455**	2.604	2.3	mg/L	260	Standard
Fe	57	89694.9	3.3	**119.0210**	1.995	1.7	mg/L	25	Standard
> **Sc-1**	45	77283.3	2.3				mg/L	72123	Standard
Cl	35	30841.4	1.3				ug/L	26728	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	1323.4	7.6				ug/L	733	Standard
P	31	21501.9	3.0				ug/L	17255	Standard
S	34	1895.1	1.2				ug/L	1680	Standard
Sr	88	523.3	6.5				ug/L	7	Standard
C	12	263.3	28.8				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3180.3	3.7				mg/L	0	Standard
Dy	164	13595.5	2.0				mg/L	3	Standard
Ho-1	165	8604.1	6.1				mg/L	0	Standard
Er	166	8022.1	5.3				mg/L	13	Standard
I	127	1973.5	3.6				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.922	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.944	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		117.484
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.013
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Cu 65 Upper, S, EEE	Cu	65	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135
Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1506024601PS WG526784-01
Sample Date/Time: Monday, June 08, 2015 18:37:30
Number of Replicates: 3
Autosampler Position: 247
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	188682.7	1.3				ug/L	159930	Standard
	Be	9	59428.0	1.3	**50.7184**	1.264	2.5	ug/L	5	Standard
	Al	27	3711159.4	0.6	**56.2270**	0.484	0.9	ug/L	623	Standard
	Sc	45	77392.2	0.6				ug/L	72123	Standard
	Ti	47	12283.3	3.1	**40.1461**	1.604	4.0	ug/L	15	Standard
	V	51	502016.4	1.1	**71.6499**	1.596	2.2	ug/L	779	Standard
	Cr	52	1030585.2	0.8	**133.2718**	2.617	2.0	ug/L	4182	Standard
	Cr	53	147519.8	1.6	**132.8322**	0.689	0.5	ug/L	255	Standard
	Mn	55	17291810.9	0.5	**1327.5966**	8.880	0.7	ug/L	870	Standard
	Co	59	565040.8	0.4	**70.1952**	0.992	1.4	ug/L	44	Standard
	Ni	60	341960.2	0.2	**133.6629**	1.724	1.3	ug/L	376	Standard
	Cu	65	2095145.6	0.2	**802.5994**	9.162	1.1	ug/L	271	Standard
	Zn	66	6451919.1	0.2	**4051.1675**	54.378	1.3	ug/L	601	Standard
>	Ge	72	675991.0	1.1				ug/L	607655	Standard
	As	75	91586.1	0.5	**62.3258**	0.964	1.5	ug/L	-37	Standard
	Se	82	6743.0	0.5	**51.1589**	0.749	1.5	ug/L	22	Standard
	Se-1	77	5162.9	0.7	**50.6394**	0.283	0.6	ug/L	38	Standard
>	Ga	71	28910.9	0.9				mg/L	38	Standard
	Rb	85	55156.9	2.3				ug/L	15	Standard
	Y	89	924344.5	0.3				ug/L	733256	Standard
>	Rh	103	166.7	7.5				ug/L	0	Standard
	Mo	98	225923.2	0.8	**72.5226**	0.998	1.4	ug/L	10	Standard
	Ag	107	558801.7	0.2	**86.1811**	0.717	0.8	ug/L	70	Standard
	Cd	111	109309.0	0.7	**74.3834**	0.862	1.2	mg/L	2	Standard
	Cd	114	251101.7	1.0	**70.2410**	0.261	0.4	ug/L	-3	Standard
>	In	115	649695.9	0.6				ug/L	555851	Standard
	Sn	118	43786.5	1.2	**9.5927**	0.153	1.6	ug/L	495	Standard
	Sb	123	176781.9	0.9	**50.4802**	0.716	1.4	ug/L	41	Standard
	Ba	135	232305.7	0.6	**217.2335**	2.539	1.2	ug/L	14	Standard
	Ce	140	309701.6	0.6				ug/L	18	Standard
>	Tb	159	854646.8	1.3				ug/L	712215	Standard
	Ho	165	8385.7	1.5				ug/L	0	Standard
	Tl	203	261939.2	0.7	**52.5728**	0.625	1.2	ug/L	1	Standard
	Tl	205	275633.0	1.0	**53.4249**	0.663	1.2	ug/L	3	Standard
	Pb	206	919300.9	0.4	**284.7679**	2.280	0.8	ug/L	161	Standard
	Pb	207	783377.7	0.7	**265.0869**	0.412	0.2	ug/L	141	Standard
	Pb	208	3410280.5	0.5	**274.5641**	0.691	0.3	ug/L	608	Standard
	U	238	274072.0	0.5	**53.1589**	0.304	0.6	ug/L	4	Standard
>	Bi	209	510150.0	0.5				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	435.0	4.0	**1.0835**	0.040	3.7	mg/L	15	Standard
K	39	25.0	72.1	**0.5510**	0.422	76.7	mg/L	2	Standard
Ca	43	191.7	13.4	**17.1838**	2.486	14.5	mg/L	20	Standard
Fe	54	286444.7	3.9	**117.1313**	3.906	3.3	mg/L	260	Standard
Fe	57	92536.7	0.6	**122.6364**	1.421	1.2	mg/L	25	Standard
> **Sc-1**	45	77392.2	0.6				mg/L	72123	Standard
Cl	35	30963.6	1.1				ug/L	26728	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	1130.0	13.4				ug/L	733	Standard
P	31	21710.5	1.9				ug/L	17255	Standard
S	34	1890.1	3.8				ug/L	1680	Standard
Sr	88	560.0	7.3				ug/L	7	Standard
C	12	323.3	19.9				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3170.3	10.1				mg/L	0	Standard
Dy	164	13357.6	1.7				mg/L	3	Standard
Ho-1	165	8385.7	1.5				mg/L	0	Standard
Er	166	7835.4	2.5				mg/L	13	Standard
I	127	2050.1	3.9				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.979	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.246	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		116.883
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.021
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

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Ni 60 Upper, S, EEE	Ni	60
Cu 65 Upper, S, EEE	Cu	65
Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135
Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1506024601SDL WG526784-02
Sample Date/Time: Monday, June 08, 2015 18:40:41
Number of Replicates: 3
Autosampler Position: 248
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	181384.7	2.4				ug/L	159930	Standard
	Be	9	210.0	8.6	**0.1768**	0.014	7.9	ug/L	5	Standard
	Al	27	1105852.8	1.6	**17.4076**	0.453	2.6	ug/L	623	Standard
	Sc	45	72709.1	3.0				ug/L	72123	Standard
	Ti	47	2713.3	21.3	**9.1418**	1.961	21.5	ug/L	15	Standard
	V	51	30033.5	1.8	**4.3186**	0.070	1.6	ug/L	779	Standard
	Cr	52	135738.3	0.9	**17.6661**	0.204	1.2	ug/L	4182	Standard
	Cr	53	18868.4	2.7	**17.3483**	0.437	2.5	ug/L	255	Standard
	Mn	55	3414871.6	1.0	**271.2249**	3.615	1.3	ug/L	870	Standard
	Co	59	29637.0	0.5	**3.7982**	0.011	0.3	ug/L	44	Standard
	Ni	60	44128.2	1.4	**17.7129**	0.242	1.4	ug/L	376	Standard
	Cu	65	428576.8	0.8	**169.7289**	1.230	0.7	ug/L	271	Standard
	Zn	66	1383908.2	0.7	**898.7319**	1.686	0.2	ug/L	601	Standard
>	**Ge**	72	653273.9	0.7				ug/L	607655	Standard
	As	75	3555.6	1.6	**2.5137**	0.035	1.4	ug/L	-37	Standard
	Se	82	27.6	23.1	**0.0170**	0.051	299.7	ug/L	22	Standard
	Se-1	77	60.7	8.1	**0.2355**	0.047	19.9	ug/L	38	Standard
>	**Ga**	71	6227.9	5.4				mg/L	38	Standard
	Rb	85	11526.0	0.7				ug/L	15	Standard
	Y	89	814565.6	2.6				ug/L	733256	Standard
>	**Rh**	103	41.7	13.9				ug/L	0	Standard
	Mo	98	46201.3	0.1	**15.7528**	0.160	1.0	ug/L	10	Standard
	Ag	107	50016.8	1.8	**8.1852**	0.165	2.0	ug/L	70	Standard
	Cd	111	5430.3	1.7	**3.9296**	0.082	2.1	mg/L	2	Standard
	Cd	114	13364.8	3.9	**3.9688**	0.129	3.2	ug/L	-3	Standard
>	**In**	115	611430.6	1.0				ug/L	555851	Standard
	Sn	118	8809.2	0.2	**1.9649**	0.026	1.3	ug/L	495	Standard
	Sb	123	1333.1	6.7	**0.3988**	0.024	5.9	ug/L	41	Standard
	Ba	135	35622.2	0.3	**35.3842**	0.255	0.7	ug/L	14	Standard
	Ce	140	62361.4	1.5				ug/L	18	Standard
>	**Tb**	159	792241.9	0.7				ug/L	712215	Standard
	Ho	165	1603.4	7.2				ug/L	0	Standard
	Tl	203	101.0	9.4	**0.0186**	0.002	10.8	ug/L	1	Standard
	Tl	205	111.7	27.4	**0.0219**	0.006	27.5	ug/L	3	Standard
	Pb	206	155903.7	0.9	**49.1301**	0.432	0.9	ug/L	161	Standard
	Pb	207	129079.5	0.7	**44.4443**	0.406	0.9	ug/L	141	Standard
	Pb	208	574735.8	1.0	**47.0786**	0.576	1.2	ug/L	608	Standard
	U	238	1184.4	4.7	**0.2344**	0.011	4.7	ug/L	4	Standard
>	**Bi**	209	500924.2	0.3				ug/L	481178	Standard

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Na	23	1.7	173.2				mg/L	0	Standard
Mg	24	85.0	5.9	**0.1900**	0.017	9.0	mg/L	15	Standard
K	39	8.3	91.7	**0.1725**	0.194	112.6	mg/L	2	Standard
Ca	43	51.7	24.4	**3.9930**	1.387	34.7	mg/L	20	Standard
Fe	54	59939.7	1.3	**26.0117**	0.531	2.0	mg/L	260	Standard
Fe	57	18666.5	1.0	**26.3006**	0.628	2.4	mg/L	25	Standard
Sc-1	45	72709.1	3.0				mg/L	72123	Standard
Cl	35	29545.5	2.1				ug/L	26728	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	976.7	14.0				ug/L	733	Standard
P	31	21141.4	2.1				ug/L	17255	Standard
S	34	2006.8	3.8				ug/L	1680	Standard
Sr	88	118.3	17.6				ug/L	7	Standard
C	12	103.3	14.8				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	656.7	20.8				mg/L	0	Standard
Dy	164	2557.3	2.4				mg/L	3	Standard
Ho-1	165	1603.4	7.2				mg/L	0	Standard
Er	166	1523.4	8.7				mg/L	13	Standard
I	127	571.7	5.6				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.415	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.507	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.999
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.104
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Cu 65 Upper, S, EEE	Cu	65	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1506024601SDL WG526784-02
Sample Date/Time: Monday, June 08, 2015 18:43:52
Number of Replicates: 3
Autosampler Position: 249
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	173283.7	1.2				ug/L	159930	Standard
	Be	9	40.0	57.3	**0.0277**	0.021	77.4	ug/L	5	Standard
	Al	27	208905.4	1.0	**3.4113**	0.041	1.2	ug/L	623	Standard
	Sc	45	69823.9	2.4				ug/L	72123	Standard
	Ti	47	477.7	3.9	**1.6031**	0.065	4.1	ug/L	15	Standard
	V	51	6348.1	4.5	**0.8322**	0.048	5.7	ug/L	779	Standard
	Cr	52	29013.1	1.3	**3.3948**	0.043	1.3	ug/L	4182	Standard
	Cr	53	3858.8	3.6	**3.3990**	0.114	3.3	ug/L	255	Standard
	Mn	55	668276.0	0.4	**53.9559**	0.129	0.2	ug/L	870	Standard
	Co	59	5704.4	0.8	**0.7346**	0.009	1.3	ug/L	44	Standard
	Ni	60	8646.8	0.8	**3.4093**	0.018	0.5	ug/L	376	Standard
	Cu	65	83469.6	1.4	**33.5018**	0.481	1.4	ug/L	271	Standard
	Zn	66	268085.3	0.5	**176.8581**	0.922	0.5	ug/L	601	Standard
>	**Ge**	72	641764.8	0.5				ug/L	607655	Standard
	As	75	627.1	0.4	**0.4601**	0.004	0.8	ug/L	-37	Standard
	Se	82	15.6	7.3	**-0.0755**	0.009	12.1	ug/L	22	Standard
	Se-1	77	36.7	15.5	**-0.0032**	0.057	1777.1	ug/L	38	Standard
>	**Ga**	71	1295.1	4.5				mg/L	38	Standard
	Rb	85	2320.2	6.3				ug/L	15	Standard
	Y	89	774784.3	1.3				ug/L	733256	Standard
>	**Rh**	103	16.7	45.8				ug/L	0	Standard
	Mo	98	8922.3	1.7	**3.2235**	0.084	2.6	ug/L	10	Standard
	Ag	107	9712.8	0.2	**1.6774**	0.016	0.9	ug/L	70	Standard
	Cd	111	960.4	0.6	**0.7404**	0.011	1.5	mg/L	2	Standard
	Cd	114	2398.2	4.4	**0.7532**	0.027	3.6	ug/L	-3	Standard
>	**In**	115	575893.7	0.9				ug/L	555851	Standard
	Sn	118	1940.1	3.4	**0.3758**	0.018	4.9	ug/L	495	Standard
	Sb	123	312.0	5.1	**0.0949**	0.005	5.7	ug/L	41	Standard
	Ba	135	6455.4	1.6	**6.7974**	0.167	2.5	ug/L	14	Standard
	Ce	140	11402.6	1.2				ug/L	18	Standard
>	**Tb**	159	749876.8	1.3				ug/L	712215	Standard
	Ho	165	288.3	23.5				ug/L	0	Standard
	Tl	203	19.0	15.8	**0.0019**	0.001	35.0	ug/L	1	Standard
	Tl	205	21.7	13.3	**0.0041**	0.001	12.9	ug/L	3	Standard
	Pb	206	30072.5	1.1	**9.4903**	0.168	1.8	ug/L	161	Standard
	Pb	207	24930.8	0.9	**8.6034**	0.170	2.0	ug/L	141	Standard
	Pb	208	110570.4	0.8	**9.0722**	0.094	1.0	ug/L	608	Standard
	U	238	201.0	7.2	**0.0404**	0.003	7.5	ug/L	4	Standard
>	**Bi**	209	497615.0	1.0				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	21.7	74.2	**0.0173**	0.045	263.2	mg/L	15	Standard
K	39	3.3	173.2	**0.0497**	0.149	299.0	mg/L	2	Standard
Ca	43	23.3	32.7	**1.1682**	0.865	74.0	mg/L	20	Standard
Fe	54	11327.5	0.9	**5.0267**	0.171	3.4	mg/L	260	Standard
Fe	57	3467.1	1.7	**5.0428**	0.081	1.6	mg/L	25	Standard
> **Sc-1**	45	69823.9	2.4				mg/L	72123	Standard
Cl	35	28407.3	0.8				ug/L	26728	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	753.4	8.6				ug/L	733	Standard
P	31	20836.0	2.6				ug/L	17255	Standard
S	34	1881.8	6.1				ug/L	1680	Standard
Sr	88	25.0	72.1				ug/L	7	Standard
C	12	70.0	37.8				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	156.7	16.1				mg/L	0	Standard
Dy	164	462.2	32.8				mg/L	3	Standard
Ho-1	165	288.3	23.5				mg/L	0	Standard
Er	166	233.3	8.9				mg/L	13	Standard
I	127	170.0	25.5				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.350	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.613	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.606
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.416
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, June 08, 2015 18:47:04
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	172112.2	1.6				ug/L	159930	Standard
	Be	9	54034.6	3.6	**50.5728**	2.598	5.1	ug/L	5	Standard
	Al	27	3027476.0	2.7	**50.2979**	2.050	4.1	ug/L	623	Standard
	Sc	45	70354.6	0.5				ug/L	72123	Standard
	Ti	47	27604.1	2.1	**96.2288**	3.353	3.5	ug/L	15	Standard
	V	51	323190.3	1.5	**49.1371**	1.700	3.5	ug/L	779	Standard
	Cr	52	358140.1	0.6	**49.0093**	1.303	2.7	ug/L	4182	Standard
	Cr	53	50778.3	1.7	**48.5856**	1.757	3.6	ug/L	255	Standard
	Mn	55	608291.2	0.9	**49.7054**	1.430	2.9	ug/L	870	Standard
	Co	59	383707.0	1.2	**50.8164**	1.589	3.1	ug/L	44	Standard
	Ni	60	119730.0	1.7	**49.7968**	1.672	3.4	ug/L	376	Standard
	Cu	65	122736.2	1.3	**49.9529**	1.523	3.0	ug/L	271	Standard
	Zn	66	73966.8	1.2	**49.0671**	1.558	3.2	ug/L	601	Standard
>	Ge	72	634267.3	2.0				ug/L	607655	Standard
	As	75	67420.6	1.4	**48.9174**	1.626	3.3	ug/L	-37	Standard
	Se	82	6069.6	1.0	**49.0848**	1.436	2.9	ug/L	22	Standard
	Se-1	77	4848.4	0.6	**50.6916**	0.724	1.4	ug/L	38	Standard
>	Ga	71	206.7	9.2				mg/L	38	Standard
	Rb	85	791.7	13.6				ug/L	15	Standard
	Y	89	751246.2	2.6				ug/L	733256	Standard
>	Rh	103	13.3	43.3				ug/L	0	Standard
	Mo	98	283894.7	1.7	**103.3423**	3.435	3.3	ug/L	10	Standard
	Ag	107	285343.1	1.3	**49.8955**	1.474	3.0	ug/L	70	Standard
	Cd	111	64617.0	1.5	**49.8666**	1.793	3.6	mg/L	2	Standard
	Cd	114	156073.3	2.4	**49.5193**	2.237	4.5	ug/L	-3	Standard
>	In	115	573159.6	2.1				ug/L	555851	Standard
	Sn	118	193808.4	1.0	**48.5864**	1.506	3.1	ug/L	495	Standard
	Sb	123	154348.9	1.2	**49.9760**	1.456	2.9	ug/L	41	Standard
	Ba	135	46973.7	1.2	**49.8002**	1.577	3.2	ug/L	14	Standard
	Ce	140	28.3	50.9				ug/L	18	Standard
>	Tb	159	754449.2	2.7				ug/L	712215	Standard
	Ho	165	8.3	124.9				ug/L	0	Standard
	Tl	203	240089.3	1.7	**49.5480**	1.457	2.9	ug/L	1	Standard
	Tl	205	249614.5	1.2	**49.7476**	1.261	2.5	ug/L	3	Standard
	Pb	206	156547.0	1.1	**49.8126**	1.388	2.8	ug/L	161	Standard
	Pb	207	142701.2	1.1	**49.6151**	1.296	2.6	ug/L	141	Standard
	Pb	208	602908.1	0.7	**49.8655**	1.157	2.3	ug/L	608	Standard
	U	238	244846.9	0.6	**48.8299**	1.004	2.1	ug/L	4	Standard
>	Bi	209	496267.7	1.8				ug/L	481178	Standard

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Na	23	1.7	173.2				mg/L	0	Standard
Mg	24	1763.4	2.0	**4.9877**	0.115	2.3	mg/L	15	Standard
K	39	186.7	14.8	**4.7872**	0.730	15.2	mg/L	2	Standard
Ca	43	60.0	8.3	**5.0387**	0.550	10.9	mg/L	20	Standard
Fe	54	11806.6	6.4	**5.2004**	0.328	6.3	mg/L	260	Standard
Fe	57	3587.1	5.8	**5.1778**	0.284	5.5	mg/L	25	Standard
Sc-1	45	70354.6	0.5				mg/L	72123	Standard
Cl	35	28173.5	1.2				ug/L	26728	Standard
Kr	83	1.0	0.0				ug/L	0	Standard
Br	81	750.0	15.4				ug/L	733	Standard
P	31	20095.0	0.8				ug/L	17255	Standard
S	34	1910.1	5.7				ug/L	1680	Standard
Sr	88	3.3	86.6				ug/L	7	Standard
C	12	56.7	44.4				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	16.0	99.9				mg/L	3	Standard
Ho-1	165	8.3	124.9				mg/L	0	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	196.7	27.4				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	101.146		
Al	27	100.596		
Sc	45			
Ti	47	96.229		
V	51	98.274		
Cr	52	98.019		
Cr	53			
Mn	55	99.411		
Co	59	101.633		
Ni	60	99.594		
Cu	65	99.906		
Zn	66	98.134		
Ge	72		104.380	
As	75	97.835		
Se	82	98.170		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	103.342		
Ag	107	99.791		
Cd	111	99.733		
Cd	114			
> In	115			103.114
Sn	118	97.173		
Sb	123	99.952		
Ba	135	99.600		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.096		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.731		
U	238	97.660		
> Bi	209			103.136
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, June 08, 2015 18:50:16
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	169415.7	2.8				ug/L	159930	Standard
	Be	9	25.0	52.9	**0.0145**	0.013	93.0	ug/L	5	Standard
	Al	27	2255.3	112.9	**0.0016**	0.045	2727.9	ug/L	623	Standard
	Sc	45	68357.2	1.8				ug/L	72123	Standard
	Ti	47	15.0	46.7	**0.0111**	0.026	232.1	ug/L	15	Standard
	V	51	673.0	8.9	**-0.0186**	0.010	56.0	ug/L	779	Standard
	Cr	52	3797.1	2.4	**-0.0342**	0.018	53.5	ug/L	4182	Standard
	Cr	53	298.3	9.2	**0.0264**	0.029	111.5	ug/L	255	Standard
	Mn	55	3421.8	57.9	**0.1993**	0.171	85.6	ug/L	870	Standard
	Co	59	105.3	69.9	**0.0025**	0.010	407.3	ug/L	44	Standard
	Ni	60	345.0	30.9	**-0.0065**	0.047	730.6	ug/L	376	Standard
	Cu	65	928.7	32.2	**0.2062**	0.129	62.7	ug/L	271	Standard
	Zn	66	1674.8	52.0	**0.7015**	0.608	86.7	ug/L	601	Standard
>	**Ge**	72	618180.4	1.3				ug/L	607655	Standard
	As	75	-32.2	89.6	**-0.0131**	0.021	161.1	ug/L	-37	Standard
	Se	82	14.1	48.5	**-0.0829**	0.056	68.0	ug/L	22	Standard
	Se-1	77	38.0	26.3	**0.0265**	0.111	417.3	ug/L	38	Standard
>	**Ga**	71	188.3	6.7				mg/L	38	Standard
	Rb	85	35.0	65.5				ug/L	15	Standard
	Y	89	744289.3	0.1				ug/L	733256	Standard
>	**Rh**	103	5.0	100.0				ug/L	0	Standard
	Mo	98	86.6	40.7	**0.0245**	0.014	55.1	ug/L	10	Standard
	Ag	107	141.3	45.8	**0.0129**	0.012	92.4	ug/L	70	Standard
	Cd	111	14.5	81.6	**0.0148**	0.010	64.4	mg/L	2	Standard
	Cd	114	29.4	91.3	**0.0062**	0.009	143.7	ug/L	-3	Standard
>	**In**	115	551669.3	0.6				ug/L	555851	Standard
	Sn	118	458.3	13.2	**0.0104**	0.016	156.3	ug/L	495	Standard
	Sb	123	120.3	28.1	**0.0349**	0.012	33.1	ug/L	41	Standard
	Ba	135	36.7	58.6	**0.0267**	0.024	89.6	ug/L	14	Standard
	Ce	140	55.0	110.6				ug/L	18	Standard
>	**Tb**	159	713039.1	0.4				ug/L	712215	Standard
	Ho	165	8.3	34.6				ug/L	0	Standard
	Tl	203	45.7	69.1	**0.0076**	0.007	87.5	ug/L	1	Standard
	Tl	205	58.3	114.1	**0.0117**	0.014	115.8	ug/L	3	Standard
	Pb	206	270.7	38.6	**0.0257**	0.034	132.2	ug/L	161	Standard
	Pb	207	216.7	34.9	**0.0291**	0.027	92.5	ug/L	141	Standard
	Pb	208	951.0	43.7	**0.0242**	0.035	145.4	ug/L	608	Standard
	U	238	49.3	131.1	**0.0105**	0.013	125.6	ug/L	4	Standard
>	**Bi**	209	484341.9	0.2				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	16.7	17.3	**0.0040**	0.008	188.5	mg/L	15	Standard
K	39	3.3	86.6	**0.0520**	0.076	146.8	mg/L	2	Standard
Ca	43	16.7	86.6	**0.4743**	1.573	331.6	mg/L	20	Standard
Fe	54	349.4	19.4	**0.0465**	0.034	72.6	mg/L	260	Standard
Fe	57	33.3	85.3	**-0.0025**	0.043	1702.6	mg/L	25	Standard
> **Sc-1**	45	68357.2	1.8				mg/L	72123	Standard
Cl	35	28872.2	2.3				ug/L	26728	Standard
Kr	83	0.7	86.6				ug/L	0	Standard
Br	81	703.4	20.3				ug/L	733	Standard
P	31	21355.0	0.6				ug/L	17255	Standard
S	34	1958.5	5.8				ug/L	1680	Standard
Sr	88	8.3	34.6				ug/L	7	Standard
C	12	33.3	34.6				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.7	105.8				mg/L	3	Standard
Ho-1	165	8.3	34.6				mg/L	0	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	130.0	7.7				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.732	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.248	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.658	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1506030901
Sample Date/Time: Monday, June 08, 2015 18:53:29
Number of Replicates: 3
Autosampler Position: 250
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	170861.8	2.9				ug/L	159930	Standard
	Be	9	1175.0	4.7	**1.0976**	0.031	2.8	ug/L	5	Standard
	Al	27	2438237.4	1.2	**40.8132**	1.681	4.1	ug/L	623	Standard
	Sc	45	74449.3	3.8				ug/L	72123	Standard
	Ti	47	10554.0	1.9	**38.7461**	2.118	5.5	ug/L	15	Standard
	V	51	127267.7	2.8	**20.3209**	1.286	6.3	ug/L	779	Standard
	Cr	52	121585.1	2.6	**17.1685**	1.081	6.3	ug/L	4182	Standard
	Cr	53	17189.8	4.0	**17.1576**	1.091	6.4	ug/L	255	Standard
	Mn	55	10345934.9	1.8	**892.2605**	43.666	4.9	ug/L	870	Standard
	Co	59	113941.6	1.7	**15.8912**	0.784	4.9	ug/L	44	Standard
	Ni	60	63341.5	1.5	**27.6867**	1.272	4.6	ug/L	376	Standard
	Cu	65	55704.6	1.5	**23.7932**	1.196	5.0	ug/L	271	Standard
	Zn	66	115807.3	1.4	**81.2326**	3.769	4.6	ug/L	601	Standard
>	**Ge**	72	602404.1	3.6				ug/L	607655	Standard
	As	75	9074.3	0.8	**6.9446**	0.273	3.9	ug/L	-37	Standard
	Se	82	105.7	7.1	**0.7051**	0.098	13.9	ug/L	22	Standard
	Se-1	77	140.0	8.2	**1.1661**	0.075	6.5	ug/L	38	Standard
>	**Ga**	71	27959.1	2.6				mg/L	38	Standard
	Rb	85	187207.8	0.7				ug/L	15	Standard
	Y	89	950002.0	3.4				ug/L	733256	Standard
>	**Rh**	103	20.0	75.0				ug/L	0	Standard
	Mo	98	1295.2	1.5	**0.4764**	0.013	2.7	ug/L	10	Standard
	Ag	107	467.0	2.1	**0.0712**	0.004	5.7	ug/L	70	Standard
	Cd	111	262.3	4.6	**0.2112**	0.013	6.1	mg/L	2	Standard
	Cd	114	590.1	6.7	**0.1887**	0.008	4.2	ug/L	-3	Standard
>	**In**	115	557636.6	3.4				ug/L	555851	Standard
	Sn	118	681.7	21.5	**0.0661**	0.033	50.2	ug/L	495	Standard
	Sb	123	137.3	3.7	**0.0401**	0.000	0.3	ug/L	41	Standard
	Ba	135	129853.1	1.2	**141.6064**	6.352	4.5	ug/L	14	Standard
	Ce	140	421177.4	1.1				ug/L	18	Standard
>	**Tb**	159	736144.5	4.3				ug/L	712215	Standard
	Ho	165	9949.9	3.9				ug/L	0	Standard
	Tl	203	778.4	0.4	**0.1704**	0.008	4.9	ug/L	1	Standard
	Tl	205	835.0	7.5	**0.1783**	0.013	7.6	ug/L	3	Standard
	Pb	206	55458.4	2.6	**18.9125**	1.325	7.0	ug/L	161	Standard
	Pb	207	46092.7	1.8	**17.1753**	1.052	6.1	ug/L	141	Standard
	Pb	208	205300.4	1.1	**18.1908**	0.933	5.1	ug/L	608	Standard
	U	238	5417.3	1.8	**1.1604**	0.068	5.9	ug/L	4	Standard
>	**Bi**	209	462890.4	4.4				ug/L	481178	Standard

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Na	23	6.7	43.3				mg/L	0	Standard
Mg	24	73.3	20.8	**0.1528**	0.039	25.5	mg/L	15	Standard
K	39	43.3	6.7	**1.0236**	0.099	9.7	mg/L	2	Standard
Ca	43	50.0	40.0	**3.6445**	1.879	51.6	mg/L	20	Standard
Fe	54	45816.0	1.0	**19.4048**	0.947	4.9	mg/L	260	Standard
Fe	57	14760.5	2.4	**20.3210**	1.257	6.2	mg/L	25	Standard
> **Sc-1**	45	74449.3	3.8				mg/L	72123	Standard
Cl	35	27712.0	2.4				ug/L	26728	Standard
Kr	83	0.3	173.2				ug/L	0	Standard
Br	81	2370.2	3.5				ug/L	733	Standard
P	31	20303.6	0.9				ug/L	17255	Standard
S	34	1815.1	1.7				ug/L	1680	Standard
Sr	88	188.3	20.6				ug/L	7	Standard
C	12	216.7	9.6				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	63.3	32.9				mg/L	0	Standard
Dy	164	16628.6	2.2				mg/L	3	Standard
Ho-1	165	9949.9	3.9				mg/L	0	Standard
Er	166	8719.2	1.6				mg/L	13	Standard
I	127	9873.2	6.1				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.836	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.136	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.321
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.199
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1506030901
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Method 6020 - Summary Report

Sample ID: L1506030902
Sample Date/Time: Monday, June 08, 2015 18:56:40
Number of Replicates: 3
Autosampler Position: 251
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	175549.6	1.6				ug/L	159930	Standard
	Be	9	3422.1	3.0	**3.1308**	0.139	4.4	ug/L	5	Standard
	Al	27	4411757.8	0.4	**71.8627**	1.435	2.0	ug/L	623	Standard
	Sc	45	82673.3	1.4				ug/L	72123	Standard
	Ti	47	12924.8	2.4	**47.2801**	0.880	1.9	ug/L	15	Standard
	V	51	273321.1	1.3	**43.6130**	0.611	1.4	ug/L	779	Standard
	Cr	52	277472.7	1.5	**39.7598**	0.543	1.4	ug/L	4182	Standard
	Cr	53	39449.6	1.1	**39.5764**	0.216	0.5	ug/L	255	Standard
	Mn	55	24450617.8	0.7	**2101.4621**	28.534	1.4	ug/L	870	Standard
	Co	59	315700.9	2.6	**43.8996**	1.404	3.2	ug/L	44	Standard
	Ni	60	136853.7	1.7	**59.7889**	0.903	1.5	ug/L	376	Standard
	Cu	65	98420.3	1.3	**42.0264**	0.428	1.0	ug/L	271	Standard
	Zn	66	203703.2	0.5	**142.7310**	1.099	0.8	ug/L	601	Standard
>	**Ge**	72	603886.6	0.9				ug/L	607655	Standard
	As	75	32934.4	0.3	**25.0928**	0.169	0.7	ug/L	-37	Standard
	Se	82	153.6	7.3	**1.1091**	0.092	8.3	ug/L	22	Standard
	Se-1	77	244.3	8.0	**2.3183**	0.218	9.4	ug/L	38	Standard
>	**Ga**	71	52733.3	1.2				mg/L	38	Standard
	Rb	85	232175.5	1.2				ug/L	15	Standard
	Y	89	1358036.3	1.1				ug/L	733256	Standard
>	**Rh**	103	40.0	12.5				ug/L	0	Standard
	Mo	98	2716.8	2.8	**0.9700**	0.036	3.7	ug/L	10	Standard
	Ag	107	583.3	1.6	**0.0882**	0.003	3.0	ug/L	70	Standard
	Cd	111	463.6	2.7	**0.3568**	0.004	1.2	mg/L	2	Standard
	Cd	114	1026.6	3.1	**0.3185**	0.005	1.5	ug/L	-3	Standard
>	**In**	115	579350.5	1.6				ug/L	555851	Standard
	Sn	118	500.0	10.1	**0.0151**	0.013	86.6	ug/L	495	Standard
	Sb	123	102.3	21.9	**0.0273**	0.008	28.3	ug/L	41	Standard
	Ba	135	176069.5	1.2	**184.6384**	1.746	0.9	ug/L	14	Standard
	Ce	140	908272.6	1.3				ug/L	18	Standard
>	**Tb**	159	790747.8	1.1				ug/L	712215	Standard
	Ho	165	30241.8	2.9				ug/L	0	Standard
	Tl	203	1011.7	3.6	**0.2218**	0.010	4.7	ug/L	1	Standard
	Tl	205	1010.0	4.5	**0.2156**	0.009	4.3	ug/L	3	Standard
	Pb	206	120014.8	1.1	**40.9219**	0.770	1.9	ug/L	161	Standard
	Pb	207	99161.8	0.5	**36.9435**	0.553	1.5	ug/L	141	Standard
	Pb	208	437567.4	1.1	**38.7838**	0.904	2.3	ug/L	608	Standard
	U	238	12192.9	1.1	**2.6069**	0.039	1.5	ug/L	4	Standard
>	**Bi**	209	462909.0	1.5				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	70.0	18.9	**0.1254**	0.035	27.6	mg/L	15	Standard
K	39	55.0	24.1	**1.1756**	0.309	26.3	mg/L	2	Standard
Ca	43	78.3	13.3	**5.7415**	0.888	15.5	mg/L	20	Standard
Fe	54	152304.1	1.5	**58.2557**	1.087	1.9	mg/L	260	Standard
Fe	57	48009.3	2.1	**59.5296**	0.745	1.3	mg/L	25	Standard
> **Sc-1**	45	82673.3	1.4				mg/L	72123	Standard
Cl	35	27763.4	0.1				ug/L	26728	Standard
Kr	83	0.7	173.2				ug/L	0	Standard
Br	81	1086.7	8.5				ug/L	733	Standard
P	31	20577.3	1.6				ug/L	17255	Standard
S	34	1926.8	9.0				ug/L	1680	Standard
Sr	88	285.0	11.5				ug/L	7	Standard
C	12	83.3	36.7				mg/L	67	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	46.7	12.4				mg/L	0	Standard
Dy	164	51301.5	2.8				mg/L	3	Standard
Ho-1	165	30241.8	2.9				mg/L	0	Standard
Er	166	24199.3	2.0				mg/L	13	Standard
I	127	3982.2	4.6				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.767	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.380	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	104.228
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	96.203
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1506030903
Sample Date/Time: Monday, June 08, 2015 18:59:51
Number of Replicates: 3
Autosampler Position: 252
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	171970.6	1.6				ug/L	159930	Standard
	Be	9	3542.1	6.5	**3.3071**	0.206	6.2	ug/L	5	Standard
	Al	27	4708785.6	1.6	**78.2863**	0.699	0.9	ug/L	623	Standard
	Sc	45	81106.5	1.3				ug/L	72123	Standard
	Ti	47	16435.6	2.2	**60.0990**	1.439	2.4	ug/L	15	Standard
	V	51	297708.4	1.9	**47.4822**	0.907	1.9	ug/L	779	Standard
	Cr	52	392746.0	1.6	**56.4795**	1.073	1.9	ug/L	4182	Standard
	Cr	53	55451.3	1.4	**55.7046**	1.083	1.9	ug/L	255	Standard
	Mn	55	31143157.6	1.5	**2674.7435**	42.452	1.6	ug/L	870	Standard
	Co	59	363699.5	2.5	**50.5419**	1.630	3.2	ug/L	44	Standard
	Ni	60	155837.9	2.3	**68.0611**	1.737	2.6	ug/L	376	Standard
	Cu	65	124185.6	1.9	**53.0426**	1.102	2.1	ug/L	271	Standard
	Zn	66	235337.3	0.8	**164.8564**	2.096	1.3	ug/L	601	Standard
>	**Ge**	72	604314.6	1.2				ug/L	607655	Standard
	As	75	29924.3	1.8	**22.7851**	0.453	2.0	ug/L	-37	Standard
	Se	82	91.9	17.3	**0.5815**	0.127	21.8	ug/L	22	Standard
	Se-1	77	164.3	4.6	**1.4318**	0.077	5.4	ug/L	38	Standard
>	**Ga**	71	60294.7	0.9				mg/L	38	Standard
	Rb	85	283616.7	0.9				ug/L	15	Standard
	Y	89	1171809.7	0.7				ug/L	733256	Standard
>	**Rh**	103	45.0	77.8				ug/L	0	Standard
	Mo	98	4939.6	3.5	**1.7869**	0.062	3.5	ug/L	10	Standard
	Ag	107	657.3	17.1	**0.1020**	0.020	19.1	ug/L	70	Standard
	Cd	111	522.5	9.3	**0.4056**	0.037	9.2	mg/L	2	Standard
	Cd	114	1161.2	8.8	**0.3642**	0.032	8.8	ug/L	-3	Standard
>	**In**	115	573878.5	0.1				ug/L	555851	Standard
	Sn	118	640.0	5.1	**0.0513**	0.008	16.0	ug/L	495	Standard
	Sb	123	91.8	30.6	**0.0241**	0.009	37.5	ug/L	41	Standard
	Ba	135	199485.5	1.3	**211.1761**	2.693	1.3	ug/L	14	Standard
	Ce	140	1097604.1	2.1				ug/L	18	Standard
>	**Tb**	159	769443.1	1.5				ug/L	712215	Standard
	Ho	165	20607.3	3.0				ug/L	0	Standard
	Tl	203	1117.4	4.8	**0.2442**	0.011	4.4	ug/L	1	Standard
	Tl	205	1155.0	7.9	**0.2456**	0.018	7.5	ug/L	3	Standard
	Pb	206	132197.3	1.2	**44.9090**	0.528	1.2	ug/L	161	Standard
	Pb	207	108710.0	1.8	**40.3513**	0.767	1.9	ug/L	141	Standard
	Pb	208	479741.5	1.4	**42.3621**	0.657	1.6	ug/L	608	Standard
	U	238	11123.1	1.6	**2.3694**	0.050	2.1	ug/L	4	Standard
>	**Bi**	209	464626.9	0.7				ug/L	481178	Standard

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Na	23	1.7	173.2				mg/L	0	Standard
Mg	24	58.3	40.5	**0.0994**	0.057	57.9	mg/L	15	Standard
K	39	63.3	4.6	**1.3832**	0.075	5.4	mg/L	2	Standard
Ca	43	50.0	17.3	**3.2633**	0.744	22.8	mg/L	20	Standard
Fe	54	161419.7	2.4	**62.9319**	0.678	1.1	mg/L	260	Standard
Fe	57	50529.1	2.3	**63.8677**	1.035	1.6	mg/L	25	Standard
> **Sc-1**	45	81106.5	1.3				mg/L	72123	Standard
Cl	35	27293.9	0.9				ug/L	26728	Standard
Kr	83	1.3	43.3				ug/L	0	Standard
Br	81	1300.1	3.5				ug/L	733	Standard
P	31	21385.1	0.7				ug/L	17255	Standard
S	34	1915.1	4.7				ug/L	1680	Standard
Sr	88	253.3	20.5				ug/L	7	Standard
C	12	93.3	22.3				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	0.0				mg/L	0	Standard
Dy	164	34604.3	0.7				mg/L	3	Standard
Ho-1	165	20607.3	3.0				mg/L	0	Standard
Er	166	17753.7	0.2				mg/L	13	Standard
I	127	3483.7	2.6				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.529	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.450	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.243
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.560
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1506030906
Sample Date/Time: Monday, June 08, 2015 19:03:03
Number of Replicates: 3
Autosampler Position: 253
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	178348.7	1.6				ug/L	159930	Standard
	Be	9	3158.7	8.0	**2.8449**	0.270	9.5	ug/L	5	Standard
	Al	27	5337193.0	1.5	**85.5862**	2.478	2.9	ug/L	623	Standard
	Sc	45	79087.5	0.4				ug/L	72123	Standard
	Ti	47	14175.0	1.6	**50.6571**	1.815	3.6	ug/L	15	Standard
	V	51	217723.4	4.1	**33.9188**	2.058	6.1	ug/L	779	Standard
	Cr	52	246770.6	3.9	**34.4757**	2.041	5.9	ug/L	4182	Standard
	Cr	53	35045.5	0.9	**34.3030**	0.857	2.5	ug/L	255	Standard
	Mn	55	28755012.7	2.9	**2414.3604**	116.239	4.8	ug/L	870	Standard
	Co	59	284283.5	3.1	**38.6153**	1.943	5.0	ug/L	44	Standard
	Ni	60	130620.9	2.6	**55.7393**	2.526	4.5	ug/L	376	Standard
	Cu	65	89166.1	3.0	**37.1784**	1.876	5.0	ug/L	271	Standard
	Zn	66	218210.9	2.8	**149.3923**	7.171	4.8	ug/L	601	Standard
>	**Ge**	72	618492.4	1.9				ug/L	607655	Standard
	As	75	20620.8	3.1	**15.3535**	0.776	5.1	ug/L	-37	Standard
	Se	82	68.2	21.0	**0.3684**	0.127	34.4	ug/L	22	Standard
	Se-1	77	155.3	4.8	**1.2945**	0.113	8.7	ug/L	38	Standard
>	**Ga**	71	61939.8	3.7				mg/L	38	Standard
	Rb	85	244103.6	3.2				ug/L	15	Standard
	Y	89	1017981.2	0.3				ug/L	733256	Standard
>	**Rh**	103	38.3	19.9				ug/L	0	Standard
	Mo	98	1776.6	3.3	**0.6241**	0.030	4.8	ug/L	10	Standard
	Ag	107	436.3	6.2	**0.0619**	0.006	10.0	ug/L	70	Standard
	Cd	111	678.4	5.4	**0.5152**	0.039	7.6	mg/L	2	Standard
	Cd	114	1474.3	7.6	**0.4536**	0.034	7.6	ug/L	-3	Standard
>	**In**	115	586281.0	2.3				ug/L	555851	Standard
	Sn	118	586.7	9.5	**0.0348**	0.013	35.9	ug/L	495	Standard
	Sb	123	65.4	10.0	**0.0151**	0.002	10.7	ug/L	41	Standard
	Ba	135	281352.3	2.2	**291.7429**	13.003	4.5	ug/L	14	Standard
	Ce	140	756442.3	2.8				ug/L	18	Standard
>	**Tb**	159	783791.0	2.2				ug/L	712215	Standard
	Ho	165	13507.7	3.0				ug/L	0	Standard
	Tl	203	984.4	1.6	**0.2106**	0.006	2.7	ug/L	1	Standard
	Tl	205	1021.7	1.1	**0.2130**	0.006	3.0	ug/L	3	Standard
	Pb	206	118991.7	3.2	**39.6340**	2.049	5.2	ug/L	161	Standard
	Pb	207	97597.1	2.5	**35.5159**	1.555	4.4	ug/L	141	Standard
	Pb	208	432048.4	2.8	**37.4036**	1.769	4.7	ug/L	608	Standard
	U	238	7908.1	2.7	**1.6519**	0.076	4.6	ug/L	4	Standard
>	**Bi**	209	474090.2	1.9				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	43.3	54.5	**0.0650**	0.059	91.5	mg/L	15	Standard
K	39	41.7	42.1	**0.9203**	0.400	43.4	mg/L	2	Standard
Ca	43	75.0	13.3	**5.7519**	0.949	16.5	mg/L	20	Standard
Fe	54	138411.3	3.9	**55.3347**	2.336	4.2	mg/L	260	Standard
Fe	57	42350.8	0.8	**54.8910**	0.295	0.5	mg/L	25	Standard
Sc-1	45	79087.5	0.4				mg/L	72123	Standard
Cl	35	27337.3	1.6				ug/L	26728	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	1066.7	1.1				ug/L	733	Standard
P	31	22086.1	0.9				ug/L	17255	Standard
S	34	1913.5	2.2				ug/L	1680	Standard
Sr	88	245.0	11.4				ug/L	7	Standard
C	12	93.3	27.0				mg/L	67	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	63.3	36.5				mg/L	0	Standard
Dy	164	23254.3	4.5				mg/L	3	Standard
Ho-1	165	13507.7	3.0				mg/L	0	Standard
Er	166	12131.5	3.2				mg/L	13	Standard
I	127	4083.9	5.7				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.517	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.784	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	105.475	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.527	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1506030908
Sample Date/Time: Monday, June 08, 2015 19:06:14
Number of Replicates: 3
Autosampler Position: 254
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	180778.9	1.3				ug/L	159930	Standard
	Be	9	3753.8	7.3	**3.3346**	0.250	7.5	ug/L	5	Standard
	Al	27	4499524.4	0.5	**71.1680**	1.298	1.8	ug/L	623	Standard
	Sc	45	81637.7	0.7				ug/L	72123	Standard
	Ti	47	20674.1	1.1	**74.0152**	1.641	2.2	ug/L	15	Standard
	V	51	327514.7	1.4	**51.1476**	1.246	2.4	ug/L	779	Standard
	Cr	52	308838.9	0.5	**43.3432**	0.690	1.6	ug/L	4182	Standard
	Cr	53	43136.3	1.6	**42.3557**	1.087	2.6	ug/L	255	Standard
	Mn	55	48954186.0	0.4	**4115.6530**	41.437	1.0	ug/L	870	Standard
	Co	59	459005.4	1.1	**62.4353**	1.090	1.7	ug/L	44	Standard
	Ni	60	185368.8	1.3	**79.2743**	1.619	2.0	ug/L	376	Standard
	Cu	65	130839.2	0.9	**54.7116**	1.045	1.9	ug/L	271	Standard
	Zn	66	269955.9	1.2	**185.1761**	4.032	2.2	ug/L	601	Standard
>	**Ge**	72	617373.5	1.1				ug/L	607655	Standard
	As	75	32146.2	0.8	**23.9600**	0.437	1.8	ug/L	-37	Standard
	Se	82	162.0	2.3	**1.1506**	0.018	1.5	ug/L	22	Standard
	Se-1	77	232.3	4.5	**2.1302**	0.136	6.4	ug/L	38	Standard
>	**Ga**	71	61263.6	0.4				mg/L	38	Standard
	Rb	85	296709.7	2.3				ug/L	15	Standard
	Y	89	1295303.5	0.3				ug/L	733256	Standard
>	**Rh**	103	43.3	46.6				ug/L	0	Standard
	Mo	98	4154.1	2.3	**1.4786**	0.044	3.0	ug/L	10	Standard
	Ag	107	669.7	9.4	**0.1025**	0.012	12.1	ug/L	70	Standard
	Cd	111	691.5	6.4	**0.5275**	0.031	5.8	mg/L	2	Standard
	Cd	114	1487.7	8.3	**0.4607**	0.043	9.3	ug/L	-3	Standard
>	**In**	115	582798.3	1.3				ug/L	555851	Standard
	Sn	118	523.3	9.6	**0.0201**	0.012	60.6	ug/L	495	Standard
	Sb	123	83.2	7.3	**0.0209**	0.002	10.9	ug/L	41	Standard
	Ba	135	220601.8	1.1	**229.9666**	1.447	0.6	ug/L	14	Standard
	Ce	140	1580318.3	0.3				ug/L	18	Standard
>	**Tb**	159	790316.8	1.3				ug/L	712215	Standard
	Ho	165	26898.9	0.9				ug/L	0	Standard
	Tl	203	1274.7	5.1	**0.2766**	0.013	4.7	ug/L	1	Standard
	Tl	205	1321.7	5.0	**0.2788**	0.013	4.6	ug/L	3	Standard
	Pb	206	176445.8	0.6	**59.4893**	0.942	1.6	ug/L	161	Standard
	Pb	207	144846.1	0.5	**53.3547**	0.727	1.4	ug/L	141	Standard
	Pb	208	641270.5	0.5	**56.1968**	0.836	1.5	ug/L	608	Standard
	U	238	14580.3	0.4	**3.0810**	0.041	1.3	ug/L	4	Standard
>	**Bi**	209	468355.7	1.0				ug/L	481178	Standard

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Na	23	1.7	173.2				mg/L	0	Standard
Mg	24	53.3	42.3	**0.0861**	0.055	64.0	mg/L	15	Standard
K	39	83.3	28.4	**1.8211**	0.539	29.6	mg/L	2	Standard
Ca	43	90.0	33.8	**6.9065**	2.796	40.5	mg/L	20	Standard
Fe	54	145152.9	0.3	**56.2161**	0.372	0.7	mg/L	260	Standard
Fe	57	46374.2	1.1	**58.2311**	0.322	0.6	mg/L	25	Standard
> **Sc-1**	45	81637.7	0.7				mg/L	72123	Standard
Cl	35	28814.0	1.6				ug/L	26728	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	1773.4	11.5				ug/L	733	Standard
P	31	23067.6	2.2				ug/L	17255	Standard
S	34	1991.8	6.8				ug/L	1680	Standard
Sr	88	370.0	12.9				ug/L	7	Standard
C	12	183.3	25.8				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	110.0	32.8				mg/L	0	Standard
Dy	164	46966.1	0.9				mg/L	3	Standard
Ho-1	165	26898.9	0.9				mg/L	0	Standard
Er	166	23034.2	1.2				mg/L	13	Standard
I	127	8474.0	3.7				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.036	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.599	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.848
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.335
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1506030910
Sample Date/Time: Monday, June 08, 2015 19:09:26
Number of Replicates: 3
Autosampler Position: 255
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	176895.1	1.5				ug/L	159930	Standard
	Be	9	2178.5	7.6	**1.9744**	0.164	8.3	ug/L	5	Standard
	Al	27	3409754.5	1.4	**55.1110**	1.399	2.5	ug/L	623	Standard
	Sc	45	78306.8	0.5				ug/L	72123	Standard
	Ti	47	10235.8	4.5	**35.8625**	1.779	5.0	ug/L	15	Standard
	V	51	200639.0	1.1	**30.6321**	0.632	2.1	ug/L	779	Standard
	Cr	52	195652.6	1.3	**26.6698**	0.496	1.9	ug/L	4182	Standard
	Cr	53	27373.0	2.1	**26.2186**	0.801	3.1	ug/L	255	Standard
	Mn	55	19823203.7	2.0	**1632.0872**	46.747	2.9	ug/L	870	Standard
	Co	59	236340.6	1.4	**31.4758**	0.726	2.3	ug/L	44	Standard
	Ni	60	99627.5	1.3	**41.6491**	0.901	2.2	ug/L	376	Standard
	Cu	65	84297.5	1.4	**34.4480**	0.637	1.9	ug/L	271	Standard
	Zn	66	168560.8	0.7	**113.0425**	1.877	1.7	ug/L	601	Standard
>	**Ge**	72	630461.0	1.0				ug/L	607655	Standard
	As	75	17391.3	0.8	**12.6982**	0.223	1.8	ug/L	-37	Standard
	Se	82	101.0	10.9	**0.6248**	0.096	15.3	ug/L	22	Standard
	Se-1	77	157.3	2.2	**1.2827**	0.051	4.0	ug/L	38	Standard
>	**Ga**	71	47312.1	1.4				mg/L	38	Standard
	Rb	85	235264.3	1.1				ug/L	15	Standard
	Y	89	1107741.0	0.9				ug/L	733256	Standard
>	**Rh**	103	30.0	28.9				ug/L	0	Standard
	Mo	98	1758.4	4.1	**0.6155**	0.033	5.3	ug/L	10	Standard
	Ag	107	604.0	3.1	**0.0902**	0.004	4.4	ug/L	70	Standard
	Cd	111	380.1	4.7	**0.2889**	0.015	5.3	mg/L	2	Standard
	Cd	114	886.0	5.5	**0.2702**	0.013	4.9	ug/L	-3	Standard
>	**In**	115	588215.4	1.2				ug/L	555851	Standard
	Sn	118	648.3	2.4	**0.0495**	0.004	8.6	ug/L	495	Standard
	Sb	123	77.9	8.7	**0.0190**	0.002	12.7	ug/L	41	Standard
	Ba	135	160918.8	1.4	**166.2283**	4.176	2.5	ug/L	14	Standard
	Ce	140	673685.7	1.0				ug/L	18	Standard
>	**Tb**	159	788320.3	1.4				ug/L	712215	Standard
	Ho	165	16333.8	1.3				ug/L	0	Standard
	Tl	203	982.4	4.5	**0.2065**	0.010	5.0	ug/L	1	Standard
	Tl	205	920.0	2.9	**0.1884**	0.006	2.9	ug/L	3	Standard
	Pb	206	113092.9	1.1	**36.9882**	0.633	1.7	ug/L	161	Standard
	Pb	207	93656.9	0.6	**33.4697**	0.440	1.3	ug/L	141	Standard
	Pb	208	415459.1	1.2	**35.3204**	0.675	1.9	ug/L	608	Standard
	U	238	7938.4	1.5	**1.6286**	0.033	2.0	ug/L	4	Standard
>	**Bi**	209	482486.7	0.7				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	50.0	52.0	**0.0835**	0.067	80.7	mg/L	15	Standard
K	39	53.3	14.3	**1.2021**	0.183	15.2	mg/L	2	Standard
Ca	43	58.3	42.3	**4.2306**	2.354	55.6	mg/L	20	Standard
Fe	54	90848.4	1.4	**36.6409**	0.591	1.6	mg/L	260	Standard
Fe	57	29325.1	5.6	**38.3743**	2.197	5.7	mg/L	25	Standard
Sc-1	45	78306.8	0.5				mg/L	72123	Standard
Cl	35	28098.0	0.8				ug/L	26728	Standard
Kr	83	0.7	86.6				ug/L	0	Standard
Br	81	2000.1	8.5				ug/L	733	Standard
P	31	22453.3	2.1				ug/L	17255	Standard
S	34	1943.5	2.5				ug/L	1680	Standard
Sr	88	175.0	8.6				ug/L	7	Standard
C	12	153.3	42.4				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	80.0	21.7				mg/L	0	Standard
Dy	164	26966.6	1.7				mg/L	3	Standard
Ho-1	165	16333.8	1.3				mg/L	0	Standard
Er	166	14026.5	2.2				mg/L	13	Standard
I	127	8870.9	1.1				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.608	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.753	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	105.823
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.272
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1506030911
Sample Date/Time: Monday, June 08, 2015 19:12:38
Number of Replicates: 3
Autosampler Position: 256
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	181772.6	2.5				ug/L	159930	Standard
	Be	9	3940.5	2.0	**3.4824**	0.095	2.7	ug/L	5	Standard
	Al	27	4195491.3	0.5	**66.0056**	1.380	2.1	ug/L	623	Standard
	Sc	45	84629.1	1.6				ug/L	72123	Standard
	Ti	47	19948.8	0.9	**68.9339**	2.175	3.2	ug/L	15	Standard
	V	51	391929.8	1.1	**59.1052**	2.171	3.7	ug/L	779	Standard
	Cr	52	351698.8	0.6	**47.7119**	1.892	4.0	ug/L	4182	Standard
	Cr	53	49412.1	2.4	**46.8517**	1.421	3.0	ug/L	255	Standard
	Mn	55	35439148.6	0.5	**2876.2490**	93.473	3.2	ug/L	870	Standard
	Co	59	344398.0	0.9	**45.2218**	1.608	3.6	ug/L	44	Standard
	Ni	60	142353.3	1.1	**58.7215**	1.675	2.9	ug/L	376	Standard
	Cu	65	134999.8	0.5	**54.4894**	1.605	2.9	ug/L	271	Standard
	Zn	66	251888.7	1.3	**166.7096**	4.039	2.4	ug/L	601	Standard
>	**Ge**	72	639916.6	3.3				ug/L	607655	Standard
	As	75	41016.0	0.6	**29.5093**	0.997	3.4	ug/L	-37	Standard
	Se	82	121.2	14.4	**0.7754**	0.145	18.7	ug/L	22	Standard
	Se-1	77	210.7	10.7	**1.8194**	0.288	15.8	ug/L	38	Standard
>	**Ga**	71	66026.9	1.3				mg/L	38	Standard
	Rb	85	336233.2	0.6				ug/L	15	Standard
	Y	89	1225306.1	2.9				ug/L	733256	Standard
>	**Rh**	103	56.7	13.5				ug/L	0	Standard
	Mo	98	6477.0	1.2	**2.2248**	0.067	3.0	ug/L	10	Standard
	Ag	107	824.7	8.7	**0.1237**	0.010	8.1	ug/L	70	Standard
	Cd	111	678.2	3.3	**0.4984**	0.005	0.9	mg/L	2	Standard
	Cd	114	1542.8	7.0	**0.4594**	0.022	4.8	ug/L	-3	Standard
>	**In**	115	605216.9	2.4				ug/L	555851	Standard
	Sn	118	706.7	7.6	**0.0588**	0.010	16.6	ug/L	495	Standard
	Sb	123	82.1	25.3	**0.0195**	0.006	30.1	ug/L	41	Standard
	Ba	135	251306.4	0.9	**252.3835**	7.799	3.1	ug/L	14	Standard
	Ce	140	1014004.6	1.7				ug/L	18	Standard
>	**Tb**	159	814183.9	2.3				ug/L	712215	Standard
	Ho	165	22191.2	1.2				ug/L	0	Standard
	Tl	203	1742.4	6.0	**0.3686**	0.012	3.1	ug/L	1	Standard
	Tl	205	1803.4	3.5	**0.3707**	0.014	3.8	ug/L	3	Standard
	Pb	206	153751.8	0.4	**50.4983**	2.034	4.0	ug/L	161	Standard
	Pb	207	126983.6	0.7	**45.5586**	1.436	3.2	ug/L	141	Standard
	Pb	208	567269.7	0.5	**48.4238**	1.755	3.6	ug/L	608	Standard
	U	238	17020.2	1.2	**3.5048**	0.165	4.7	ug/L	4	Standard
>	**Bi**	209	481094.6	3.5				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	86.7	12.0	**0.1607**	0.025	15.3	mg/L	15	Standard
K	39	53.3	14.3	**1.1074**	0.146	13.2	mg/L	2	Standard
Ca	43	50.0	34.6	**3.0629**	1.477	48.2	mg/L	20	Standard
Fe	54	189139.3	0.5	**70.6997**	0.888	1.3	mg/L	260	Standard
Fe	57	59824.6	2.2	**72.4876**	1.725	2.4	mg/L	25	Standard
Sc-1	45	84629.1	1.6				mg/L	72123	Standard
Cl	35	28439.3	1.8				ug/L	26728	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	2116.8	6.8				ug/L	733	Standard
P	31	23296.2	1.4				ug/L	17255	Standard
S	34	2025.1	8.4				ug/L	1680	Standard
Sr	88	230.0	11.3				ug/L	7	Standard
C	12	136.7	36.1				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	90.0	67.6				mg/L	0	Standard
Dy	164	37515.5	2.5				mg/L	3	Standard
Ho-1	165	22191.2	1.2				mg/L	0	Standard
Er	166	19482.5	0.4				mg/L	13	Standard
I	127	10805.5	2.8				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.658	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.309	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	108.881	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.983	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1506030911
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, June 08, 2015 19:15:51
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	156856.5	2.7				ug/L	159930	Standard
	Be	9	52378.7	0.4	**53.7855**	1.315	2.4	ug/L	5	Standard
	Al	27	2977078.3	1.3	**54.2690**	1.061	2.0	ug/L	623	Standard
	Sc	45	66140.8	3.8				ug/L	72123	Standard
	Ti	47	27267.8	0.6	**100.4348**	1.687	1.7	ug/L	15	Standard
	V	51	330060.9	1.7	**53.0369**	1.754	3.3	ug/L	779	Standard
	Cr	52	362266.9	1.0	**52.4286**	1.522	2.9	ug/L	4182	Standard
	Cr	53	50241.5	1.0	**50.8047**	1.316	2.6	ug/L	255	Standard
	Mn	55	614516.7	0.9	**53.0734**	1.692	3.2	ug/L	870	Standard
	Co	59	387798.2	0.7	**54.2640**	0.997	1.8	ug/L	44	Standard
	Ni	60	117633.9	1.0	**51.6946**	0.688	1.3	ug/L	376	Standard
	Cu	65	121582.2	0.9	**52.2946**	1.164	2.2	ug/L	271	Standard
	Zn	66	74044.5	0.5	**51.9289**	1.347	2.6	ug/L	601	Standard
>	Ge	72	600223.5	2.3				ug/L	607655	Standard
	As	75	67748.5	0.8	**51.9313**	0.777	1.5	ug/L	-37	Standard
	Se	82	6076.2	0.8	**51.9283**	0.809	1.6	ug/L	22	Standard
	Se-1	77	4934.1	1.0	**54.5430**	0.713	1.3	ug/L	38	Standard
>	Ga	71	1355.1	12.4				mg/L	38	Standard
	Rb	85	1033.4	17.2				ug/L	15	Standard
	Y	89	701605.7	3.7				ug/L	733256	Standard
>	Rh	103	16.7	17.3				ug/L	0	Standard
	Mo	98	288998.6	0.3	**112.6664**	3.031	2.7	ug/L	10	Standard
	Ag	107	284118.1	1.3	**53.2196**	2.021	3.8	ug/L	70	Standard
	Cd	111	64266.2	0.7	**53.1042**	1.036	2.0	mg/L	2	Standard
	Cd	114	155531.4	0.8	**52.8345**	1.235	2.3	ug/L	-3	Standard
>	In	115	535209.4	2.7				ug/L	555851	Standard
	Sn	118	193026.8	0.3	**51.8305**	1.358	2.6	ug/L	495	Standard
	Sb	123	154588.5	0.6	**53.6108**	1.610	3.0	ug/L	41	Standard
	Ba	135	46830.6	0.7	**53.1667**	1.140	2.1	ug/L	14	Standard
	Ce	140	35.0	14.3				ug/L	18	Standard
>	Tb	159	696775.6	2.8				ug/L	712215	Standard
	Ho	165	8.3	34.6				ug/L	0	Standard
	Tl	203	239938.0	0.7	**53.2463**	1.657	3.1	ug/L	1	Standard
	Tl	205	252279.7	0.7	**54.0666**	1.667	3.1	ug/L	3	Standard
	Pb	206	158452.0	1.1	**54.2220**	1.834	3.4	ug/L	161	Standard
	Pb	207	144380.1	1.3	**53.9911**	2.079	3.9	ug/L	141	Standard
	Pb	208	612556.2	0.5	**54.4858**	1.660	3.0	ug/L	608	Standard
	U	238	246401.5	0.9	**52.8462**	1.771	3.4	ug/L	4	Standard
>	Bi	209	461609.1	2.5				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	1758.4	3.4	**5.3011**	0.357	6.7	mg/L	15	Standard
K	39	168.3	13.4	**4.5822**	0.524	11.4	mg/L	2	Standard
Ca	43	48.3	52.1	**4.2018**	3.081	73.3	mg/L	20	Standard
Fe	54	12281.1	1.1	**5.7731**	0.256	4.4	mg/L	260	Standard
Fe	57	3712.1	3.7	**5.7075**	0.170	3.0	mg/L	25	Standard
> **Sc-1**	45	66140.8	3.8				mg/L	72123	Standard
Cl	35	28446.0	0.5				ug/L	26728	Standard
Kr	83	0.7	86.6				ug/L	0	Standard
Br	81	766.7	2.0				ug/L	733	Standard
P	31	22399.9	3.9				ug/L	17255	Standard
S	34	2013.5	2.3				ug/L	1680	Standard
Sr	88	11.7	24.7				ug/L	7	Standard
C	12	50.0	20.0				mg/L	67	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	23.2	66.2				mg/L	3	Standard
Ho-1	165	8.3	34.6				mg/L	0	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	236.7	10.8				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	107.571		
Al	27	108.538		
Sc	45			
Ti	47	100.435		
V	51	106.074		
Cr	52	104.857		
Cr	53			
Mn	55	106.147		
Co	59	108.528		
Ni	60	103.389		
Cu	65	104.589		
Zn	66	103.858		
> Ge	72		98.777	
As	75	103.863		
Se	82	103.857		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	112.666		
Ag	107	106.439		
Cd	111	106.208		
Cd	114			
In	115		96.286	
Sn	118	103.661		
Sb	123	107.222		
Ba	135	106.333		
Ce	140			
Tb	159			
Ho	165			
Tl	203	106.493		
Tl	205			
Pb	206			
Pb	207			
Pb	208	108.972		
U	238	105.692		
Bi	209		95.933	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Mo	98	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, June 08, 2015 19:19:02
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	161504.6	0.6				ug/L	159930	Standard
	Be	9	21.7	53.3	**0.0120**	0.011	95.1	ug/L	5	Standard
	Al	27	556.7	34.3	**-0.0274**	0.003	12.6	ug/L	623	Standard
	Sc	45	65698.8	1.5				ug/L	72123	Standard
	Ti	47	17.0	36.7	**0.0199**	0.023	114.8	ug/L	15	Standard
	V	51	596.8	2.5	**-0.0277**	0.002	8.9	ug/L	779	Standard
	Cr	52	3634.1	1.0	**-0.0416**	0.006	14.5	ug/L	4182	Standard
	Cr	53	245.0	24.5	**-0.0187**	0.063	335.1	ug/L	255	Standard
	Mn	55	7433.8	2.0	**0.5540**	0.010	1.7	ug/L	870	Standard
	Co	59	89.7	22.8	**0.0007**	0.003	425.2	ug/L	44	Standard
	Ni	60	275.7	6.0	**-0.0330**	0.007	19.9	ug/L	376	Standard
	Cu	65	399.7	4.0	**-0.0114**	0.006	55.1	ug/L	271	Standard
	Zn	66	606.7	4.8	**-0.0239**	0.023	95.7	ug/L	601	Standard
>	**Ge**	72	599736.9	0.6				ug/L	607655	Standard
	As	75	-46.5	15.3	**-0.0250**	0.005	21.2	ug/L	-37	Standard
	Se	82	14.1	21.4	**-0.0793**	0.027	33.7	ug/L	22	Standard
	Se-1	77	29.0	20.7	**-0.0615**	0.069	111.4	ug/L	38	Standard
>	**Ga**	71	1173.4	6.0				mg/L	38	Standard
	Rb	85	45.0	29.4				ug/L	15	Standard
	Y	89	716692.2	2.5				ug/L	733256	Standard
>	**Rh**	103	5.0	173.2				ug/L	0	Standard
	Mo	98	61.6	49.9	**0.0159**	0.012	75.8	ug/L	10	Standard
	Ag	107	83.7	18.8	**0.0030**	0.003	95.5	ug/L	70	Standard
	Cd	111	4.9	20.5	**0.0072**	0.001	12.2	mg/L	2	Standard
	Cd	114	0.7	1151.3	**-0.0033**	0.003	87.1	ug/L	-3	Standard
>	**In**	115	530928.6	1.0				ug/L	555851	Standard
	Sn	118	470.0	17.6	**0.0182**	0.022	122.7	ug/L	495	Standard
	Sb	123	76.0	19.9	**0.0210**	0.005	24.5	ug/L	41	Standard
	Ba	135	12.3	33.8	**0.0003**	0.005	1531.8	ug/L	14	Standard
	Ce	140	11.7	24.7				ug/L	18	Standard
>	**Tb**	159	687459.0	0.9				ug/L	712215	Standard
	Ho	165	5.0	100.0				ug/L	0	Standard
	Tl	203	30.7	53.8	**0.0047**	0.004	77.7	ug/L	1	Standard
	Tl	205	28.3	66.8	**0.0059**	0.004	69.3	ug/L	3	Standard
	Pb	206	176.7	8.4	**-0.0026**	0.005	200.2	ug/L	161	Standard
	Pb	207	148.3	8.2	**0.0068**	0.005	68.5	ug/L	141	Standard
	Pb	208	694.7	6.6	**0.0048**	0.004	87.6	ug/L	608	Standard
	U	238	12.3	63.0	**0.0031**	0.002	54.3	ug/L	4	Standard
>	**Bi**	209	465794.9	0.5				ug/L	481178	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	8.3	34.6	**-0.0195**	0.009	44.0	mg/L	15	Standard
K	39	8.3	69.3	**0.1958**	0.164	83.7	mg/L	2	Standard
Ca	43	10.0		**-0.2025**	0.017	8.5	mg/L	20	Standard
Fe	54	311.3	5.6	**0.0343**	0.007	20.9	mg/L	260	Standard
Fe	57	21.7	53.3	**-0.0193**	0.017	90.4	mg/L	25	Standard
Sc-1	45	65698.8	1.5				mg/L	72123	Standard
Cl	35	28429.3	1.8				ug/L	26728	Standard
Kr	83	0.0					ug/L	0	Standard
Br	81	813.4	14.1				ug/L	733	Standard
P	31	23171.0	2.3				ug/L	17255	Standard
S	34	2040.1	6.3				ug/L	1680	Standard
Sr	88	5.0	100.0				ug/L	7	Standard
C	12	73.3	47.9				mg/L	67	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.9	122.5				mg/L	3	Standard
Ho-1	165	5.0	100.0				mg/L	0	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	166.7	22.1				mg/L	142	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.697	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Monday, June 08, 2015 19:21:19
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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.516
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.803
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Mn	55	

Sample ID: QC Std 7
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2.4 General Chemistry Data

2.4.1 Method 9056

2.4.1.1 Summary Data

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-04	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW24-052815	**Prep Method:**	9056	**Prep Date:**	05/29/2015 13:56
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG525588	**Analyst:**	ALS	**Run Date:**	05/29/2015 17:08
Collect Date:	05/28/2015 08:15	**Dilution:**	2	**File ID:**	I1_052915-14
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	162	J	0.800	0.400	0.200
Nitrate	14797-55-8	0.400	U	0.800	0.400	0.200
Nitrite	14797-65-0	0.418	J	0.800	0.400	0.200
Sulfate	14808-79-8	95.0		4.00	2.00	1.00

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-04	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW24-052815	**Prep Method:**	9056	**Prep Date:**	05/29/2015 13:56
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG525588	**Analyst:**	ALS	**Run Date:**	05/29/2015 18:01
Collect Date:	05/28/2015 08:15	**Dilution:**	20	**File ID:**	I1_052915-17
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	342		8.00	4.00	2.00
Nitrate	14797-55-8	4.00	U	8.00	4.00	2.00
Nitrite	14797-65-0	4.00	U	8.00	4.00	2.00
Sulfate	14808-79-8	86.5		40.0	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-06	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW25-052815	**Prep Method:**	9056	**Prep Date:**	05/29/2015 13:56
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG525588	**Analyst:**	ALS	**Run Date:**	05/29/2015 18:19
Collect Date:	05/28/2015 09:40	**Dilution:**	1	**File ID:**	I1_052915-18
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	13.8		0.400	0.200	0.100
Nitrate	14797-55-8	0.200	U	0.400	0.200	0.100
Nitrite	14797-65-0	0.200	U	0.400	0.200	0.100
Sulfate	14808-79-8	69.4		2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-08	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW18-052815	**Prep Method:**	9056	**Prep Date:**	05/29/2015 13:56
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG525588	**Analyst:**	ALS	**Run Date:**	05/29/2015 18:36
Collect Date:	05/28/2015 11:00	**Dilution:**	3	**File ID:**	I1_052915-19
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	301	J	1.20	0.600	0.300
Nitrate	14797-55-8	0.600	U	1.20	0.600	0.300
Nitrite	14797-65-0	0.999	J	1.20	0.600	0.300
Sulfate	14808-79-8	152		6.00	3.00	1.50

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-08	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW18-052815	**Prep Method:**	9056	**Prep Date:**	05/29/2015 13:56
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	04/21/2015 15:58
Workgroup #:	WG525588	**Analyst:**	ALS	**Run Date:**	05/29/2015 18:54
Collect Date:	05/28/2015 11:00	**Dilution:**	50	**File ID:**	I1_052915-20
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	668		20.0	10.0	5.00
Nitrate	14797-55-8	10.0	U	20.0	10.0	5.00
Nitrite	14797-65-0	10.0	U	20.0	10.0	5.00
Sulfate	14808-79-8	108		100	50.0	25.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.4.1.2 QC Summary Data

Example Calculations - Ion Chromatography

A. Methods 9056/300.0 (Quadratic with Offset)

1. Retrieve Curve Data from the ICAL Curve

c2 = the value of curve constant
c1= the curve slope
c0 = the curve offset

2. Obtain the area, y , from the instrument raw data

3. Calculate the concentration of the analyte, f(y), where:

$$f(y) = \frac{1}{2 * c_2} * \left(-c_1 \pm \sqrt{c_1^2 - 4 * c_2 * (c_0 - y)}\right)$$

Example Calculation:

Value of constant, c2, (curve):	0.0003
Value of curve constant, c1, (slope):	0.0869
Value of curve constant, c0, (offset):	-0.0103
Area of target analyte, y, (uS*min):	2.993
Calculated concentration, f(y), (mg/L):	31.1998864
or:	-40.1161215 *
Dilution factor (D):	1.00
Concentration of analyte in sample (mg/L):	31.200

* There are two possible solutions, but only one is valid.

B. Method 314.0 - Perchlorate (Linear)

Retrieve Curve Data from Linear Plot

c1 = the curve slope

Obtain the area, y , from the quantitation report

Calculate the concentration of the analyte, f(y), where:

f (y) = y / c1

Example Calculation:

Value of c1, slope:	0.0034
Area of target analyte, y:	0.083
Calculated concentration:	24.4117647
Dilution Factor:	1
Concentration in sample:	24.4117647

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 042115 ICAL IC1.SEQ

Analyst1: AED Analyst2: NA

Method: 300/9056 SOP: IC01 Rev: 17

Maintenance Log ID: 53072 Syringe Filter Lot#: 00193905

Eluent ID#: RGT33321

Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM

Workgroups: WG520208

Internal STD: NA Surrogate STD: NA Calibration STD STD69215

CCV STD: STD69215 LCS STD: STD69216 MS/MSD STD: STD69216

Comments: 04/21/15 IC1 ICAL

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I1_042115-01	ELUENT	1	1		04/21/15 13:54
2	I1_042115-02	DI WATER	1	1		04/21/15 14:12
3	I1_042115-03	WG520208-01 STD \#6	1	1		04/21/15 14:29
4	I1_042115-04	WG520208-02 STD \#5	1	1		04/21/15 14:47
5	I1_042115-05	WG520208-03 STD \#4	1	1		04/21/15 15:05
6	I1_042115-06	WG520208-04 STD \#3	1	1		04/21/15 15:23
7	I1_042115-07	WG520208-05 STD \#2	1	1		04/21/15 15:40
8	I1_042115-08	WG520208-06 STD \#1	1	1		04/21/15 15:58
9	I1_042115-09	WG520208-07 ALT STD	1	1		04/21/15 16:16
10	I1_042115-10	LCR LEVEL 6	1	1		04/21/15 16:33
11	I1_042115-11	LCR LEVEL 2	1	1		04/21/15 16:51
12	I1_042115-12	LCR LEVEL 0	1	1		04/21/15 17:09
13	I1_042115-13	END	1	1		04/21/15 17:27

Comments

Seq.	Rerun	Dil.	Reason	Analytes

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 052915 IC1.SEQ
Analyst1: AED Analyst2: ALS
Method: 300/9056 SOP: IC01 Rev: 17

Maintenance Log ID: 53181 Syringe Filter Lot#: 00197629
Eluent ID#: RGT33709
Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
Workgroups: WG525588
Internal STD: NA Surrogate STD: NA Calibration STD STD69215
CCV STD: STD69215 LCS STD: STD69216 MS/MSD STD: STD69216

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I1_052915-01	ELUENT	1	1		05/29/15 13:18
2	I1_052915-02	DI WATER	1	1		05/29/15 13:35
3	I1_052915-03	WG525589-01 ANION CCV	1	1		05/29/15 13:53
4	I1_052915-04	WG525589-02 ANION CCB	1	1		05/29/15 14:11
5	I1_052915-05	WG525588-01 ANION BLANK	1	1		05/29/15 14:28
6	I1_052915-06	WG525588-02 ANION LCS	1	1		05/29/15 14:46
7	I1_052915-07	L15051746-01 1/3 (SO4)	2	3		05/29/15 15:04
8	I1_052915-08	L15051746-02 1/10 (SO4)	2	10		05/29/15 15:21
9	I1_052915-09	L15051748-01 1/2 (SO4)	2	2		05/29/15 15:39
10	I1_052915-10	L15051748-02 (SO4) REF	1	1		05/29/15 15:57
11	I1_052915-11	WG525588-04 DUP 1748-02	2	1		05/29/15 16:15
12	I1_052915-12	WG525588-05 MS	2	1		05/29/15 16:32
13	I1_052915-13	WG525588-06 MSD	2	1		05/29/15 16:50
14	I1_052915-14	L15051752-04 1/2 (CL,NO2,NO3,SO4)	1	2		05/29/15 17:08
15	I1_052915-15	WG525589-03 ANION CCV	1	1		05/29/15 17:25
16	I1_052915-16	WG525589-04 ANION CCB	1	1		05/29/15 17:43
17	I1_052915-17	L15051752-04 1/20 (CL,NO2,NO3,SO4)	1	20		05/29/15 18:01
18	I1_052915-18	L15051752-06 (CL,NO2,NO3,SO4)	1	1		05/29/15 18:19
19	I1_052915-19	L15051752-08 1/3 (CL,NO2,NO3,SO4)	1	3		05/29/15 18:36
20	I1_052915-20	L15051752-08 1/50 (CL,NO2,NO3,SO4)	1	50		05/29/15 18:54
21	I1_052915-21	L15051765-01 1/10 (CL)	2	10		05/29/15 19:12
22	I1_052915-22	L15051760-12 (SO4)	2	1		05/29/15 19:29
23	I1_052915-23	L15051760-13 (SO4)	2	1		05/29/15 19:47
24	I1_052915-24	L15051760-14 (SO4)	2	1		05/29/15 20:05
25	I1_052915-25	L15051760-15 (SO4)	2	1		05/29/15 20:22
26	I1_052915-26	L15051760-20 (SO4)	2	1		05/29/15 20:40
27	I1_052915-27	WG525589-05 ANION CCV	1	1		05/29/15 20:58
28	I1_052915-28	WG525589-06 ANION CCB	1	1		05/29/15 21:16
29	I1_052915-29	L15051760-23 (SO4)	2	1		05/29/15 21:33
30	I1_052915-30	L15051760-24 (SO4)	2	1		05/29/15 21:51
31	I1_052915-31	L15051760-25 (SO4)	2	1		05/29/15 22:09
32	I1_052915-32	L15051760-28 (SO4)	2	1		05/29/15 22:26
33	I1_052915-33	L15051760-30 (SO4)	2	1		05/29/15 22:44

Page: 1 Approved: 01-JUN-15

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 052915 IC1.SEQ

Analyst1: AED Analyst2: ALS

Method: 300/9056 SOP: IC01 Rev: 17

Maintenance Log ID: 53181 Syringe Filter Lot#: 00197629

Eluent ID#: RGT33709

Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM

Workgroups: WG525588

Internal STD: NA Surrogate STD: NA STD69215

CCV STD: STD69215 LCS STD: STD69216 STD69216

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	I1_052915-34	L15051760-31 (SO4)	2	1		05/29/15 23:02
35	I1_052915-35	L15051760-32 (SO4)	2	1		05/29/15 23:20
36	I1_052915-36	WG525589-07 ANION CCV	1	1		05/29/15 23:37
37	I1_052915-37	WG525589-08 ANION CCB	1	1		05/29/15 23:55
38	I1_052915-38	END	1	1		05/30/15 00:13

Comments

Seq.	Rerun	Dil.	Reason	Analytes
14	X	20	Over Calibration Range	
	L15051752-04 1/2 (CL,NO2,NO3,SO4): Analyzed at dilution due to high CL screen results.			
19	X	50	Over Calibration Range	
	L15051752-08 1/3 (CL,NO2,NO3,SO4): Analyzed at dilution due to high screen results.			
22	X	2	Over Calibration Range	
	L15051760-12 (SO4)			
23	X	2	Over Calibration Range	
	L15051760-13 (SO4)			
26	X	2	Over Calibration Range	
	L15051760-20 (SO4)			

Page: 2 Approved: 01-JUN-15

Microbac Laboratories Inc.

Data Checklist

Date: 21-APR-2015
Analyst: AED
Analyst: NA
Method: 300/9056
Instrument: IC1
Curve Workgroup: NA
Runlog ID: 67520
Analytical Workgroups: WG520208 ICAL

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	X
Special standards	NA
Blanks	X
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual Integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	AED
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
22-APR-2015

Secondary Reviewer:
24-APR-2015

CHECKLIST1 - Modified 03/05/2008
Generated: APR-24-2015 12:54:11

Microbac Laboratories Inc.

Data Checklist

Date: 29-MAY-2015
Analyst: AED
Analyst: ALS
Method: 300/9056
Instrument: IC1
Curve Workgroup: NA
Runlog ID: 68311
Analytical Workgroups: L15051746, L15051748, L15051752, L15051760

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	X
Special standards	NA
Blanks	X
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual Integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	X
Check for completeness	X
Primary Reviewer	AED
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer:
01-JUN-2015

Secondary Reviewer:
01-JUN-2015

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-01-2015 15:13:37

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 9056 AAB#: WG525588

Login Number: L15051752

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW24-052815	04	05/28/15					05/29/2015	1.2	2		05/29/15	1.4	2	
50WW24-052815	04	05/28/15					05/29/2015	1.2	2		05/29/15	1.4	2	
50WW25-052815	06	05/28/15					05/29/2015	1.2	2		05/29/15	1.4	2	
50WW18-052815	08	05/28/15					05/29/2015	1.1	2		05/29/15	1.3	2	
50WW18-052815	08	05/28/15					05/29/2015	1.1	2		05/29/15	1.3	2	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4207871
Report generated 06/02/2015 14:07

METHOD BLANK SUMMARY

Login Number: L15051752
Blank File ID: I1_052915-05
Prep Date: 05/29/15 13:56
Analyzed Date: 05/29/15 14:28
Analyst: ALS

Work Group: WG525588
Blank Sample ID: WG525588-01
Instrument ID: IC1
Method: 9056

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG525588-02	I1_052915-06	05/29/15 14:46	01
DUP	WG525588-04	I1_052915-11	05/29/15 16:15	01
50WW24-052815	L15051752-04	I1_052915-14	05/29/15 17:08	DL01
50WW24-052815	L15051752-04	I1_052915-17	05/29/15 18:01	DL02
50WW25-052815	L15051752-06	I1_052915-18	05/29/15 18:19	01
50WW18-052815	L15051752-08	I1_052915-19	05/29/15 18:36	DL01
50WW18-052815	L15051752-08	I1_052915-20	05/29/15 18:54	DL02

Report Name: BLANK_SUMMARY
PDF File ID: 4207872
Report generated 06/02/2015 14:07

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051752 Prep Date: 05/29/15 13:56 Sample ID: WG525588-01
Instrument ID: IC1 Run Date: 05/29/15 14:28 Prep Method: 9056
File ID: I1 052915-05 Analyst: ALS Method: 9056
Workgroup (AAB#): WG525588 Matrix: Water Units: mg/L
Contract #: Cal ID: IC1-21-APR-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Chloride	0.100	0.400	0.100	1	U
Nitrate	0.100	0.400	0.100	1	U
Nitrite	0.100	0.400	0.100	1	U
Sulfate	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4207873
02-JUN-2015 14:07

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051752 Run Date: 05/29/2015 Sample ID: WG525588-02
Instrument ID: IC1 Run Time: 14:46 Prep Method: 9056
File ID: I1 052915-06 Analyst: ALS Method: 9056
Workgroup (AAB#): WG525588 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD69215 Cal ID: IC1 - 21-APR-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Chloride	8.00	7.58	94.7	90 - 110	
Nitrate	5.42	5.33	98.4	90 - 110	
Nitrite	4.87	4.63	95.0	90 - 110	
Sulfate	40.0	38.7	96.9	90 - 110	

LCS - Modified 03/06/2008
PDF File ID: 4207874
Report generated: 06/02/2015 14:07

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L15051752
Analytical Method: 9056
ICAL Workgroup: WG520208

Instrument ID: IC1
Initial Calibration Date: 21-APR-15 15:58
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Chloride		5.585	7.66	0.99800	
Nitrate		2.277	8.84	0.99700	
Nitrite		2.770	4.28	0.99900	
Sulfate		7.395	11.2	0.99700	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4207876
Report generated 06/02/2015 14:07

Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number: L15051752
Analytical Method: 9056
Instrument ID: IC1
Initial Calibration Date: 21-APR-15 15:58
Column ID: F

Analyte	WG520208-01			WG520208-02			WG520208-03		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	24.0	4.89900000	4.899	12.0	2.24100000	5.355	8.00	1.43000000	5.594
Nitrate	16.3	8.29100000	1.962	8.13	3.76300000	2.161	5.42	2.38200000	2.276
Nitrite	14.6	5.59100000	2.614	7.31	2.74000000	2.667	4.87	1.77500000	2.744
Sulfate	120	19.2650000	6.229	60.0	8.80400000	6.815	40.0	5.51100000	7.258

INT_CAL - Modified 03/06/2008
PDF File ID: 4207876
Report generated 06/02/2015 14:07

Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number: L15051752
Analytical Method: 9056
Instrument ID: IC1
Initial Calibration Date: 21-APR-15 15:58
Column ID: F

Analyte	WG520208-04			WG520208-05			WG520208-06		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	4.00	0.691000000	5.789	1.00	0.167000000	5.988	0.200	0.0340000000	5.882
Nitrate	2.71	1.13800000	2.382	0.678	0.276000000	2.455	0.134	0.0550000000	2.428
Nitrite	2.44	0.872000000	2.793	0.609	0.210000000	2.900	0.122	0.0420000000	2.900
Sulfate	20.0	2.62800000	7.610	5.00	0.621000000	8.052	1.00	0.119000000	8.403

INT_CAL - Modified 03/06/2008
PDF File ID: 4207876
Report generated 06/02/2015 14:07

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15051752 Run Date: 04/21/2015 Sample ID: WG520208-07
Instrument ID: IC1 Run Time: 16:16 Method: 9056
File ID: I1 042115-09 Analyst: AED QC Key: DOD4
ICal Workgroup: WG520208 Cal ID: IC1 - 21-APR-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloride		8.00	7.93	mg/L	5.56	0.900	10	
Nitrate		5.42	5.53	mg/L	2.26	1.90	10	
Nitrite		4.87	4.86	mg/L	2.74	0.200	10	
Sulfate		40.0	39.9	mg/L	7.18	0.300	10	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4207877
Report generated 06/02/2015 14:07

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051752
Run Date: 05/29/2015
Sample ID: WG525589-02
Instrument ID: IC1
Run Time: 14:11
Method: 9056
File ID: I1 052915-04
Analyst: ALS
Units: mg/L
Workgroup (AAB#): WG525588
Cal ID: IC1 - 21-APR-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4207879
Report generated 06/02/2015 14:07

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051752
Run Date: 05/29/2015
Sample ID: WG525589-04
Instrument ID: IC1
Run Time: 17:43
Method: 9056
File ID: I1 052915-16
Analyst: ALS
Units: mg/L
Workgroup (AAB#): WG525588
Cal ID: IC1 - 21-APR-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4207879
Report generated 06/02/2015 14:07

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15051752
Run Date: 05/29/2015
Sample ID: WG525589-06
Instrument ID: IC1
Run Time: 21:16
Method: 9056
File ID: I1 052915-28
Analyst: ALS
Units: mg/L
Workgroup (AAB#): WG525588
Cal ID: IC1 - 21-APR-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4207879
Report generated 06/02/2015 14:07

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051752
Run Date: 05/29/2015
Sample ID: WG525589-01
Instrument ID: IC1
Run Time: 13:53
Method: 9056
File ID: I1 052915-03
Analyst: ALS
QC Key: DOD4
Workgroup (AAB#): WG525588
Cal ID: IC1 - 21-APR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.51	mg/L	5.88	6.18	10	
Nitrate		5.42	5.27	mg/L	2.37	2.83	10	
Nitrite		4.87	4.56	mg/L	2.92	6.47	10	
Sulfate		40.0	38.3	mg/L	7.47	4.16	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4207878
Report generated 06/02/2015 14:07

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051752
Run Date: 05/29/2015
Sample ID: WG525589-03
Instrument ID: IC1
Run Time: 17:25
Method: 9056
File ID: I1 052915-15
Analyst: ALS
QC Key: DOD4
Workgroup (AAB#): WG525588
Cal ID: IC1 - 21-APR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.63	mg/L	5.78	4.68	10	
Nitrate		5.42	5.36	mg/L	2.33	1.21	10	
Nitrite		4.87	4.70	mg/L	2.83	3.50	10	
Sulfate		40.0	38.9	mg/L	7.37	2.87	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4207878
Report generated 06/02/2015 14:07

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15051752
Run Date: 05/29/2015
Sample ID: WG525589-05
Instrument ID: IC1
Run Time: 20:58
Method: 9056
File ID: I1 052915-27
Analyst: ALS
QC Key: DOD4
Workgroup (AAB#): WG525588
Cal ID: IC1 - 21-APR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.62	mg/L	5.78	4.70	10	
Nitrate		5.42	5.35	mg/L	2.33	1.30	10	
Nitrite		4.87	4.67	mg/L	2.86	4.22	10	
Sulfate		40.0	38.8	mg/L	7.39	3.05	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4207878
Report generated 06/02/2015 14:07

2.4.1.3 Sample Data

14 L15051752-04 1/2 (CL,NO2,NO3,SO4)

1,2 ALS (CL>200PPM)

Sample Name:	**L15051752-04 1/2 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**14**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/29/2015 17:08**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

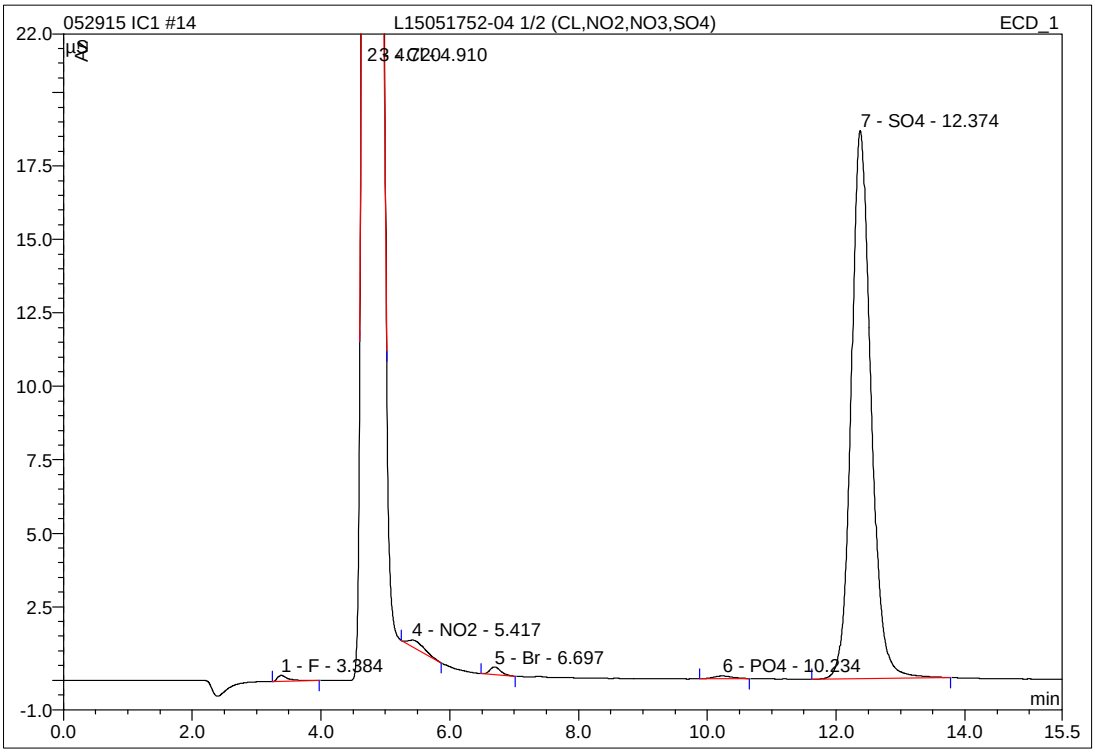

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.38	F	0.205	0.042	0.16	0.200	BMB
2	4.72	n.a.	63.473	5.429	20.09	n.a.	BMb
3	4.91	Cl	136.366	14.764	54.62	81.233	bMB
4	5.42	NO2	0.219	0.073	0.27	0.209	BMB
5	6.70	Br	0.266	0.051	0.19	0.710	BMB
6	10.23	PO4	0.096	0.033	0.12	n.a.	BMB
7	12.37	SO4	18.646	6.637	24.55	47.492	BMB
Total:			219.270	27.029	100.00	129.844	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

17 L15051752-04 1/20 (CL,NO2,NO3,SO4)

1,20 ALS (CL>ICAL)

Sample Name:	**L15051752-04 1/20 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**17**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/29/2015 18:01**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

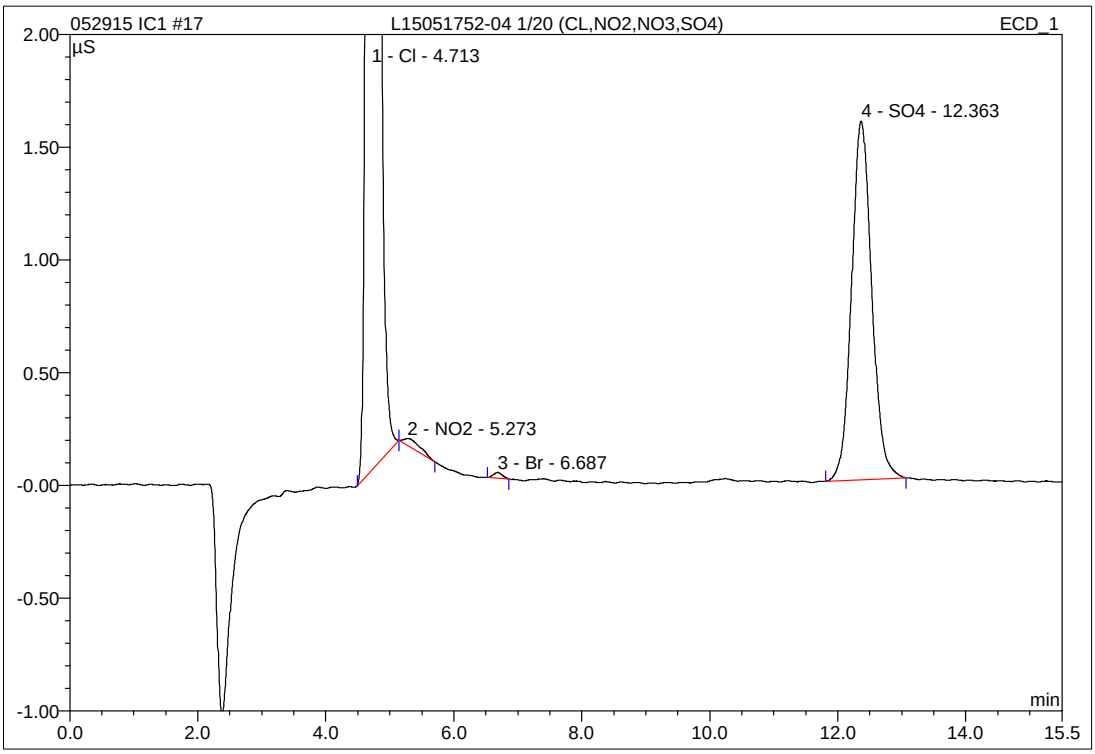

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	4.71	Cl	20.955	3.101	83.84	17.077	BMb
2	5.27	NO2	0.030	0.011	0.30	0.039	bMB
3	6.69	Br	0.027	0.004	0.12	0.057	BMB
4	12.36	SO4	1.592	0.582	15.74	4.323	BMB
Total:			22.603	3.699	100.00	21.496	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

18 L15051752-06 (CL,NO2,NO3,SO4)

1,1 ALS

Sample Name:	**L15051752-06 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**18**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/29/2015 18:19**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

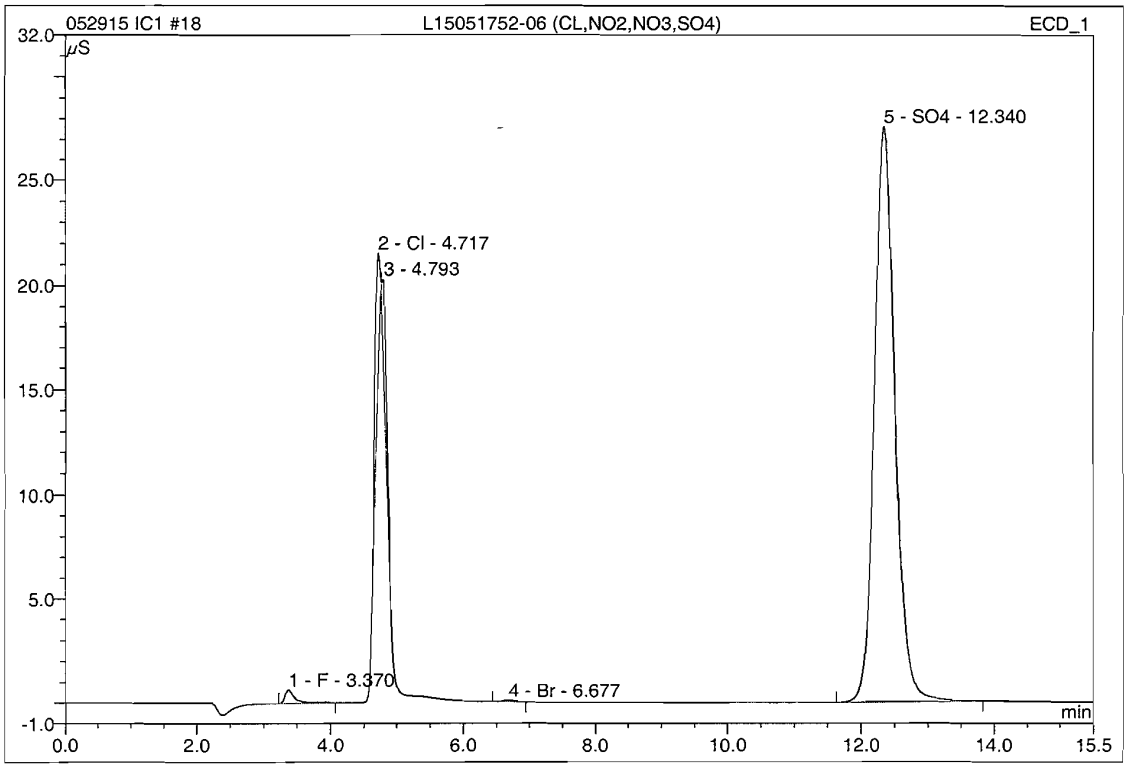

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.37	F	0.659	0.114	1.05	0.468	BMB
2	4.72	Cl	7.173	0.673	6.22	3.720	BMb
3	4.79	n.a.	2.926	0.302	2.79	n.a.	bMB
4	6.68	Br	0.086	0.018	0.17	0.246	BMB
5	12.34	SO4	27.575	9.714	89.77	69.437	BMB
Total:			38.419	10.821	100.00	73.872	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

00643128

18 L15051752-06 (CL,NO2,NO3,SO4)

1,1 ALS

Sample Name:	**L15051752-06 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**18**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/29/2015 18:19**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

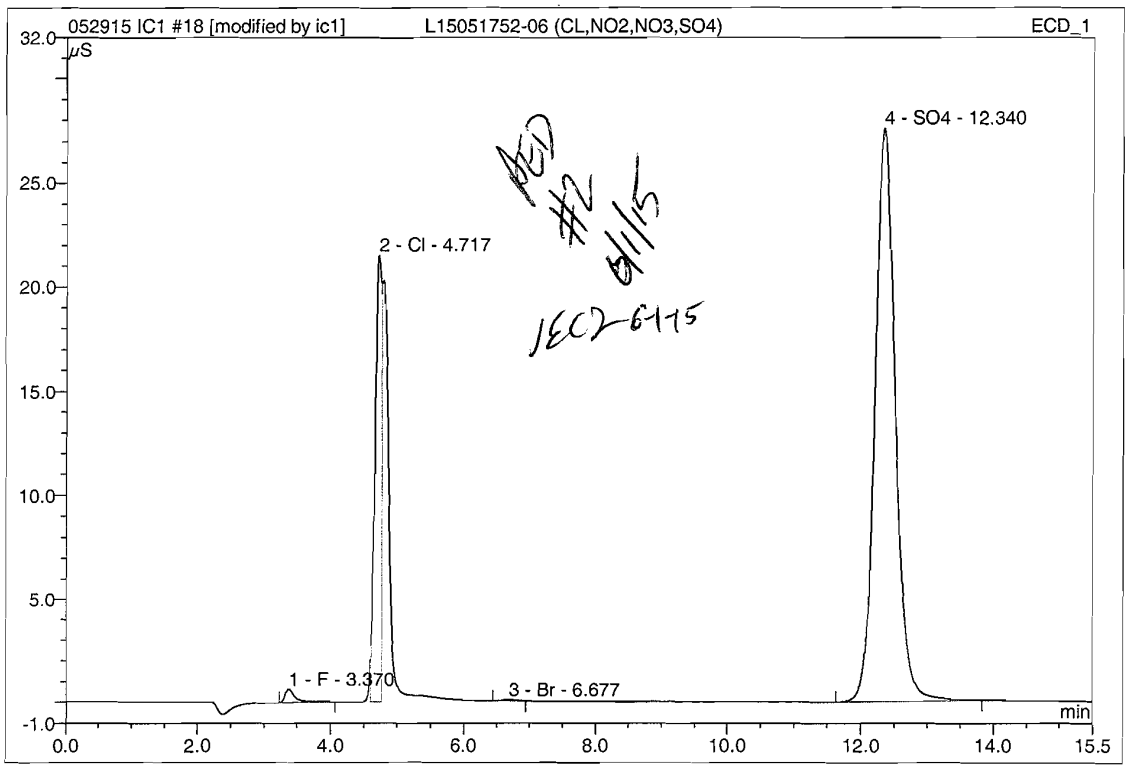

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.37	F	0.659	0.114	0.92	0.468	BMB
2	4.72	Cl	21.503	2.503	20.27	13.787	M *
3	6.68	Br	0.086	0.018	0.14	0.246	BMB
4	12.34	SO4	27.575	9.714	78.66	69.437	BMB
Total:			49.823	12.349	100.00	83.939	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

19 L15051752-08 1/3 (CL,NO2,NO3,SO4)

1,3 ALS (CL,SO4>200PPM)

Sample Name:	**L15051752-08 1/3 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**19**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/29/2015 18:36**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

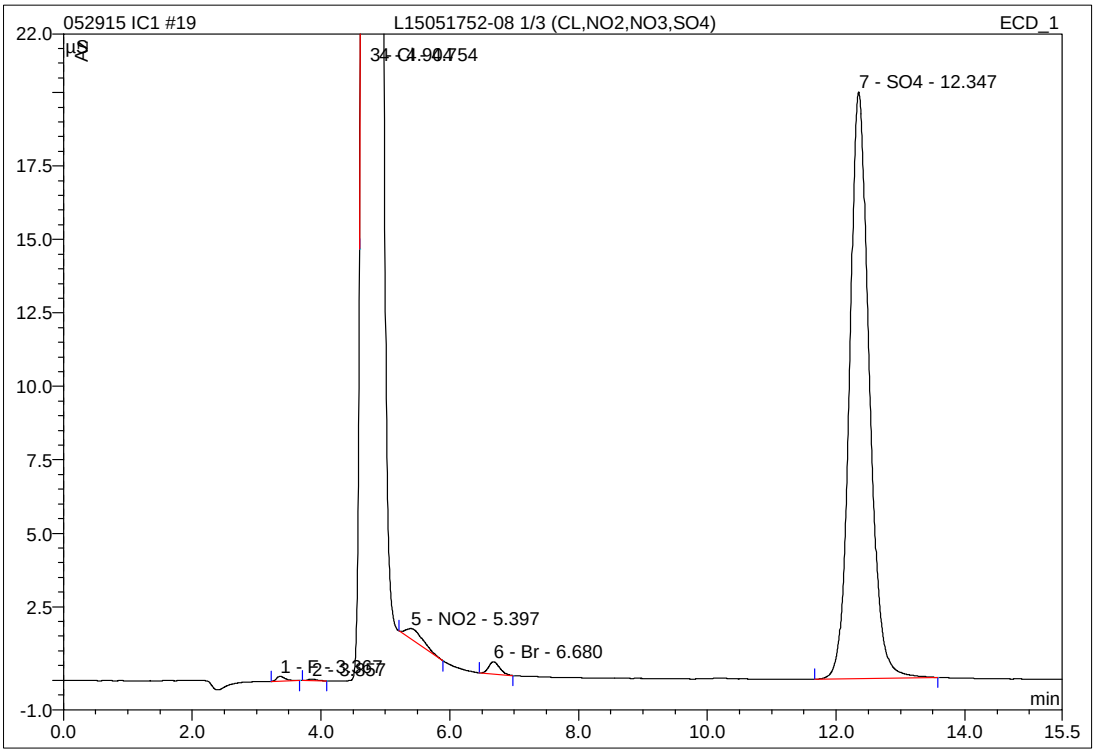

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.37	F	0.164	0.025	0.08	0.135	BMB
2	3.86	n.a.	0.058	0.008	0.03	n.a.	BMB
3	4.75	Cl	162.565	18.232	57.46	100.313	BMb
4	4.90	n.a.	88.042	6.204	19.55	n.a.	bMB
5	5.40	NO2	0.352	0.119	0.37	0.333	BMB
6	6.68	Br	0.412	0.081	0.26	1.135	BMB
7	12.35	SO4	19.964	7.060	22.25	50.513	BMB
Total:			271.557	31.730	100.00	152.430	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

20 L15051752-08 1/50 (CL,NO2,NO3,SO4)

1,50 ALS (CL>ICAL)

Sample Name:	**L15051752-08 1/50 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**20**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/29/2015 18:54**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

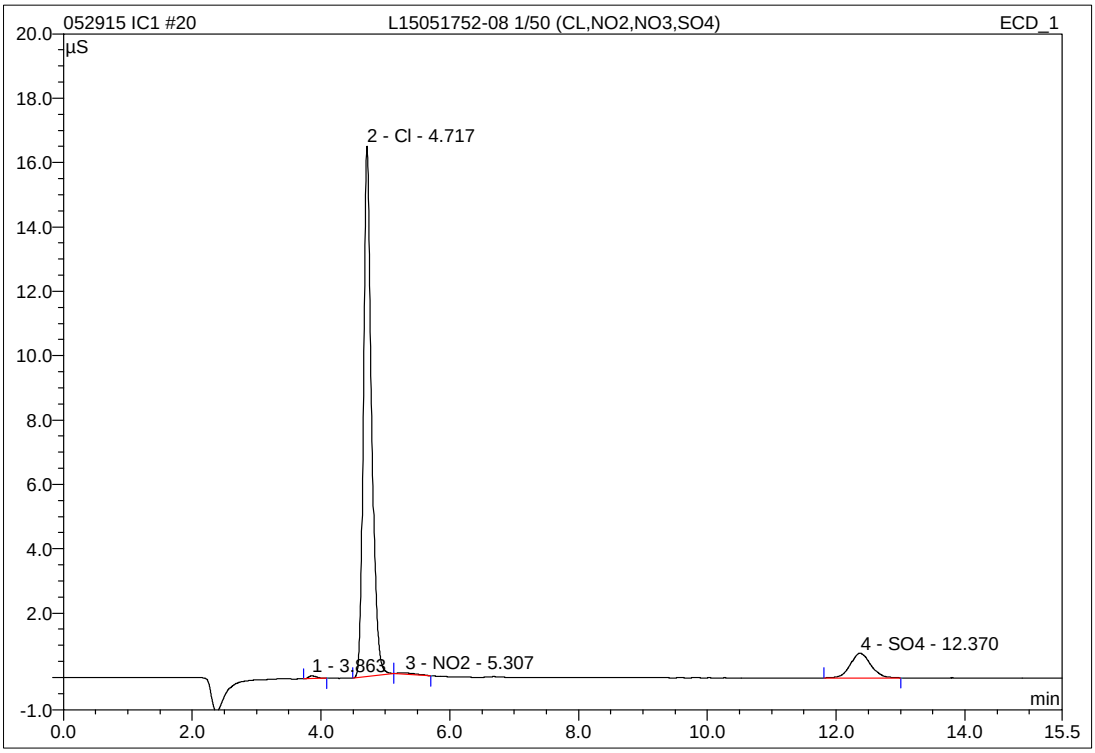

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.86	n.a.	0.088	0.013	0.48	n.a.	BMB
2	4.72	Cl	16.468	2.426	88.80	13.360	BMb
3	5.31	NO2	0.036	0.013	0.46	0.043	bMB
4	12.37	SO4	0.765	0.280	10.26	2.168	BMB
Total:			17.357	2.731	100.00	15.571	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

2.4.1.4 Standards Data

3 WG520208-01 STD #6

1,1 AED STD69215

Sample Name:	**WG520208-01 STD #6**	*Injection Volume:*	**20.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/21/2015 14:29**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

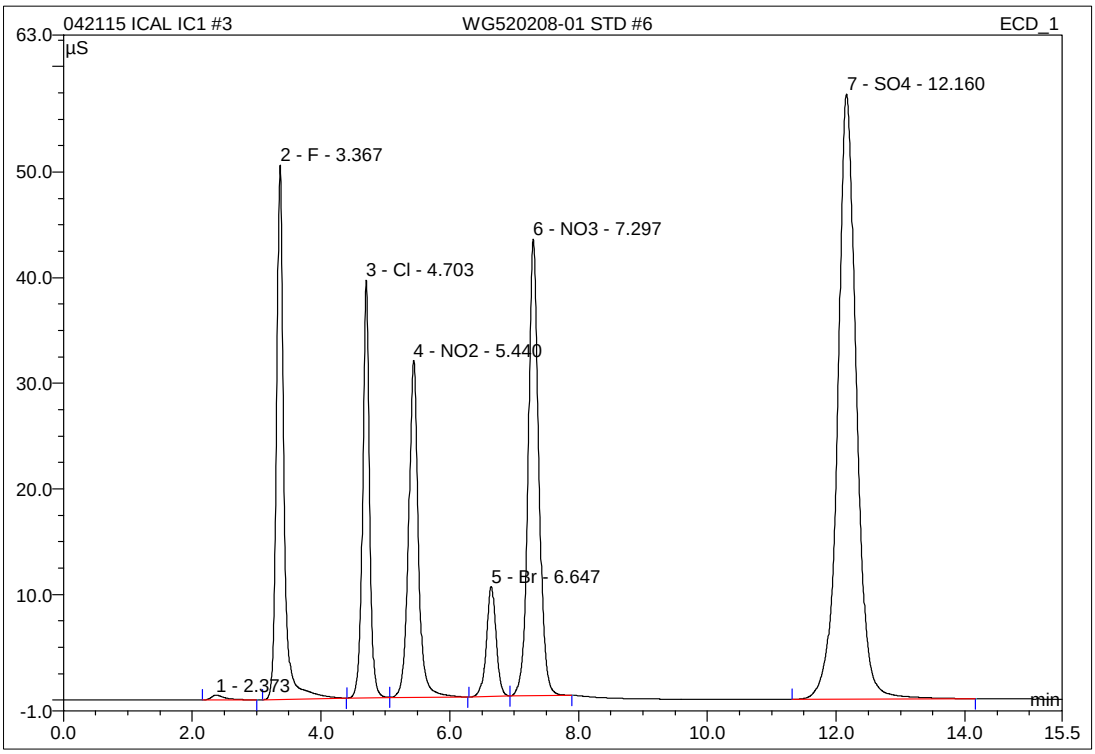

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.37	n.a.	0.448	0.111	0.24	n.a.	BMB
2	3.37	F	50.599	6.707	14.37	25.250	BMB
3	4.70	Cl	39.565	4.899	10.50	26.967	BMB
4	5.44	NO2	31.907	5.591	11.98	15.271	bMB
5	6.65	Br	10.441	1.816	3.89	25.554	BMB
6	7.30	NO3	43.238	8.291	17.76	19.067	BMB
7	12.16	SO4	57.303	19.265	41.27	137.537	BMB
Total:			233.501	46.680	100.00	249.646	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

4 WG520208-02 STD #5

1,1 AED STD69215

Sample Name:	**WG520208-02 STD #5**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/21/2015 14:47**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

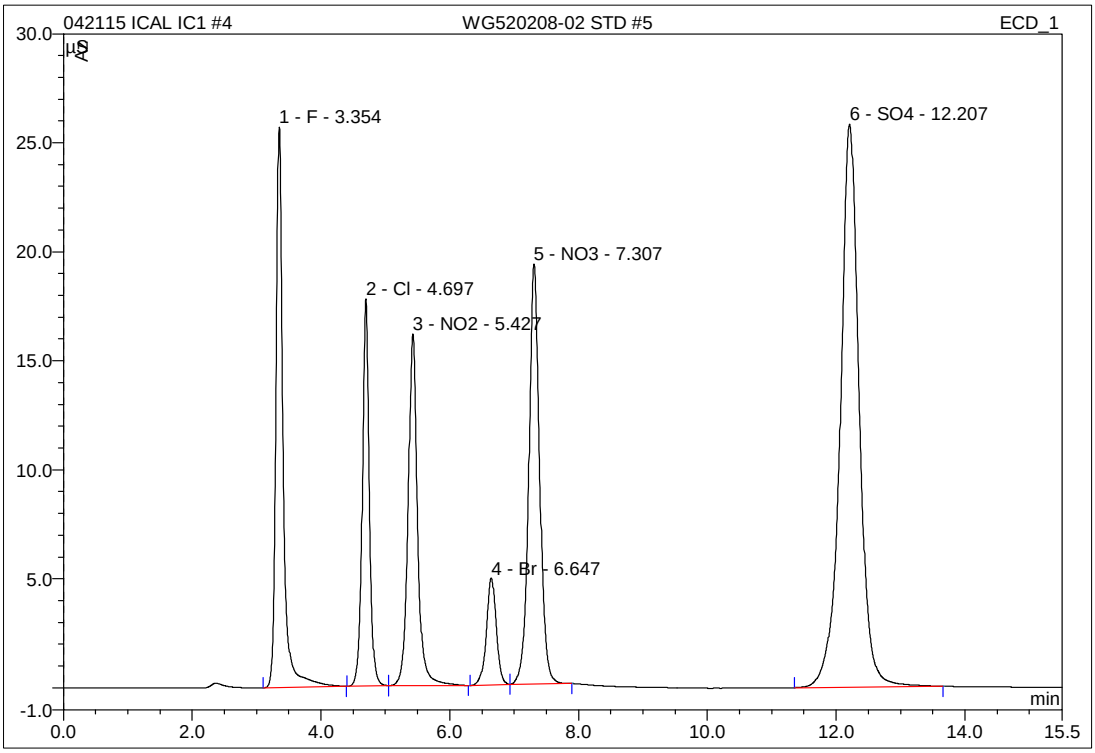

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.35	F	25.707	3.262	15.05	12.300	BMB
2	4.70	Cl	17.752	2.241	10.34	12.346	BMB
3	5.43	NO2	16.111	2.740	12.64	7.487	bMB
4	6.65	Br	4.905	0.868	4.00	12.206	BMB
5	7.31	NO3	19.267	3.763	17.36	8.658	BMB
6	12.21	SO4	25.818	8.804	40.61	62.945	BMB
Total:			109.561	21.676	100.00	115.941	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

4 WG520208-02 STD #5

1,1 AED STD69215

Sample Name:	**WG520208-02 STD #5**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/21/2015 14:47**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

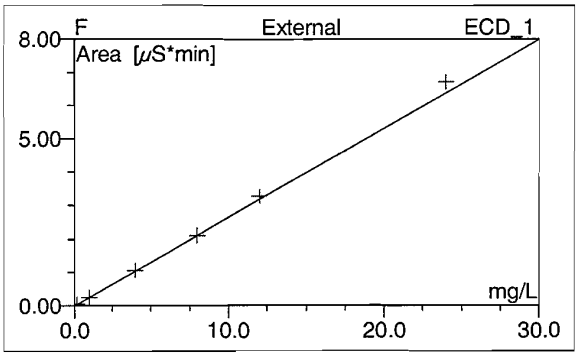

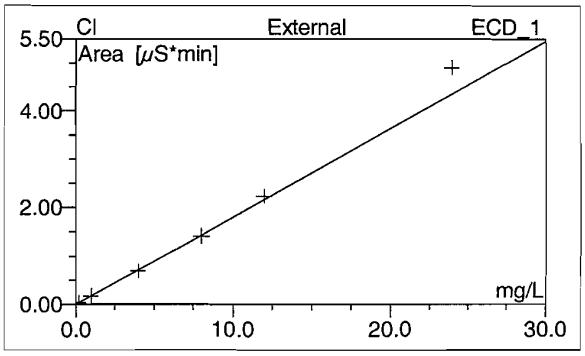

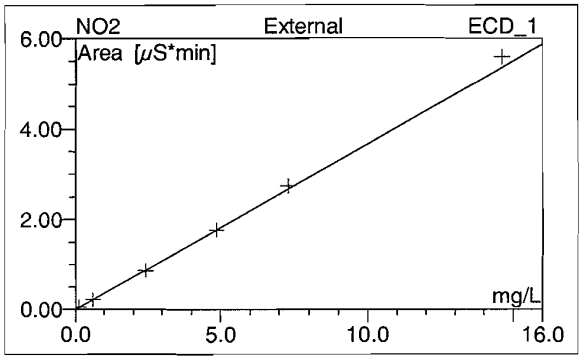

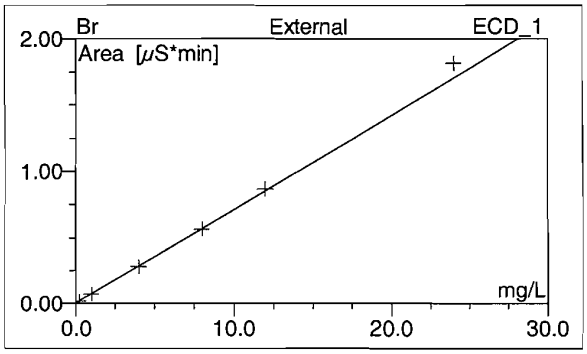

No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	3.35	F	YYLOff	6	99.9011	-0.0108	0.2661	0.0000
2	4.70	Cl	YYLOff	6	99.7641	-0.0031	0.1818	0.0000
3	5.43	NO2	YYLOff	6	99.9396	-0.0032	0.3664	0.0000
4	6.65	Br	YYLOff	6	99.9032	0.0004	0.0710	0.0000
5	7.31	NO3	YYLOff	6	99.6701	-0.0041	0.4350	0.0000
6	12.21	SO4	YYLOff	6	99.6529	-0.0238	0.1402	0.0000
Average:					99.8052	-0.0075	0.2434	0.0000

IC/Calibration(Batch)

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

4 WG520208-02 STD #5

1,1 AED STD69215

Sample Name:	**WG520208-02 STD #5**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/21/2015 14:47**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

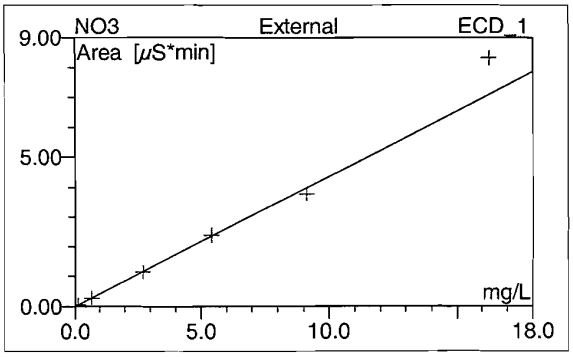

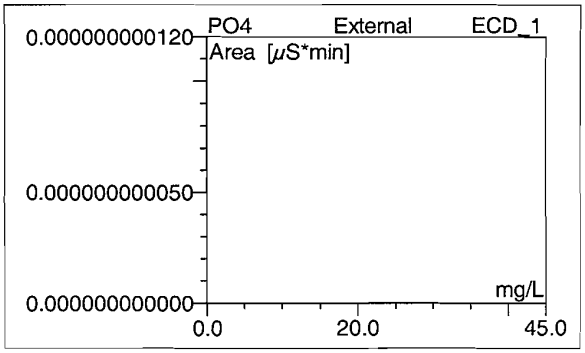

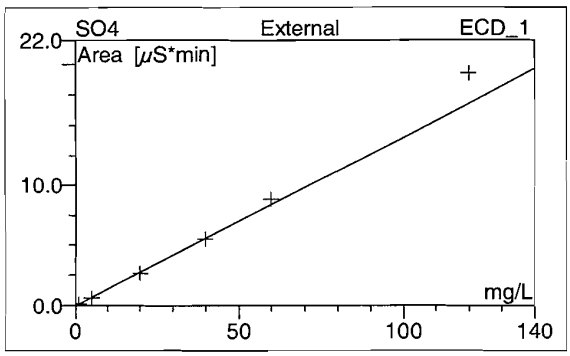

No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	3.35	F	YYLOff	6	99.9011	-0.0108	0.2661	0.0000
2	4.70	Cl	YYLOff	6	99.7641	-0.0031	0.1818	0.0000
3	5.43	NO2	YYLOff	6	99.9396	-0.0032	0.3664	0.0000
4	6.65	Br	YYLOff	6	99.9032	0.0004	0.0710	0.0000
5	7.31	NO3	YYLOff	6	99.6701	-0.0041	0.4350	0.0000
6	12.21	SO4	YYLOff	6	99.6529	-0.0238	0.1402	0.0000
Average:					99.8052	-0.0075	0.2434	0.0000

5 WG520208-03 STD #4

1,1 AED STD69215

Sample Name:	**WG520208-03 STD #4**	*Injection Volume:*	**20.0**
Vial Number:	**13**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/21/2015 15:05**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

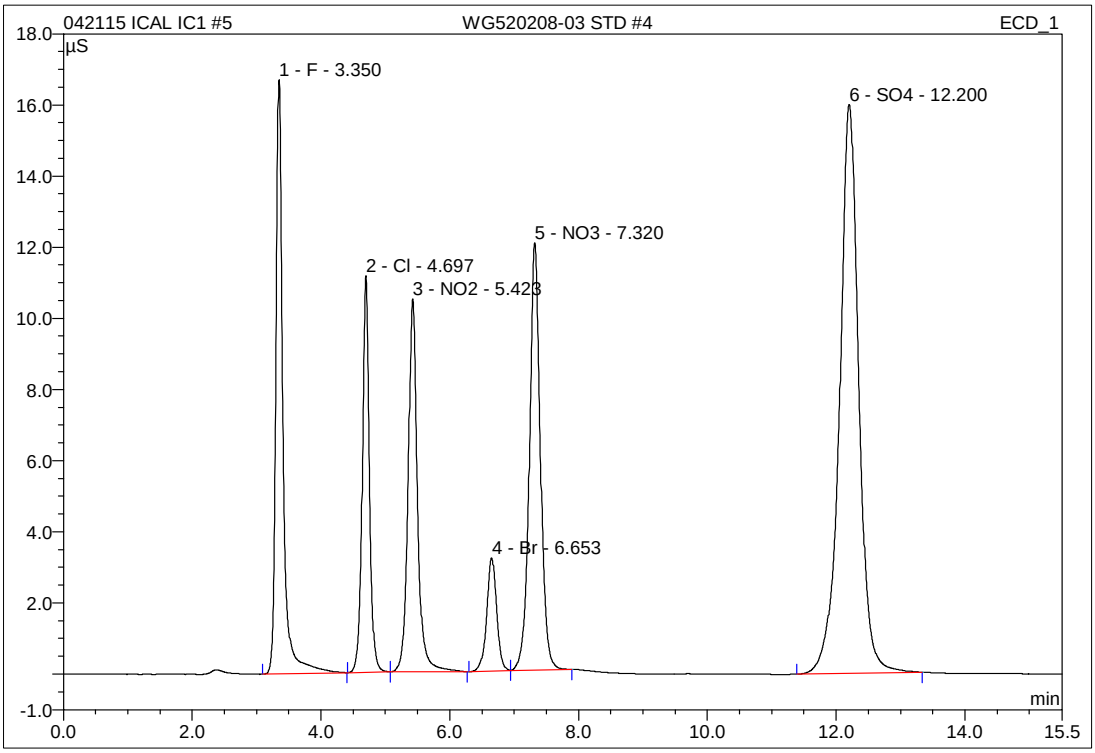

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.35	F	16.707	2.106	15.29	7.957	BMB
2	4.70	Cl	11.141	1.430	10.38	7.884	BMB
3	5.42	NO2	10.491	1.775	12.89	4.855	BMB
4	6.65	Br	3.173	0.567	4.12	7.978	BMB
5	7.32	NO3	12.011	2.382	17.30	5.485	BMB
6	12.20	SO4	15.994	5.511	40.02	39.468	BMB
Total:			69.517	13.772	100.00	73.626	

6 WG520208-04 STD #3

1,1 AED STD69215

Sample Name:	**WG520208-04 STD #3**	*Injection Volume:*	**20.0**
Vial Number:	**14**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/21/2015 15:23**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

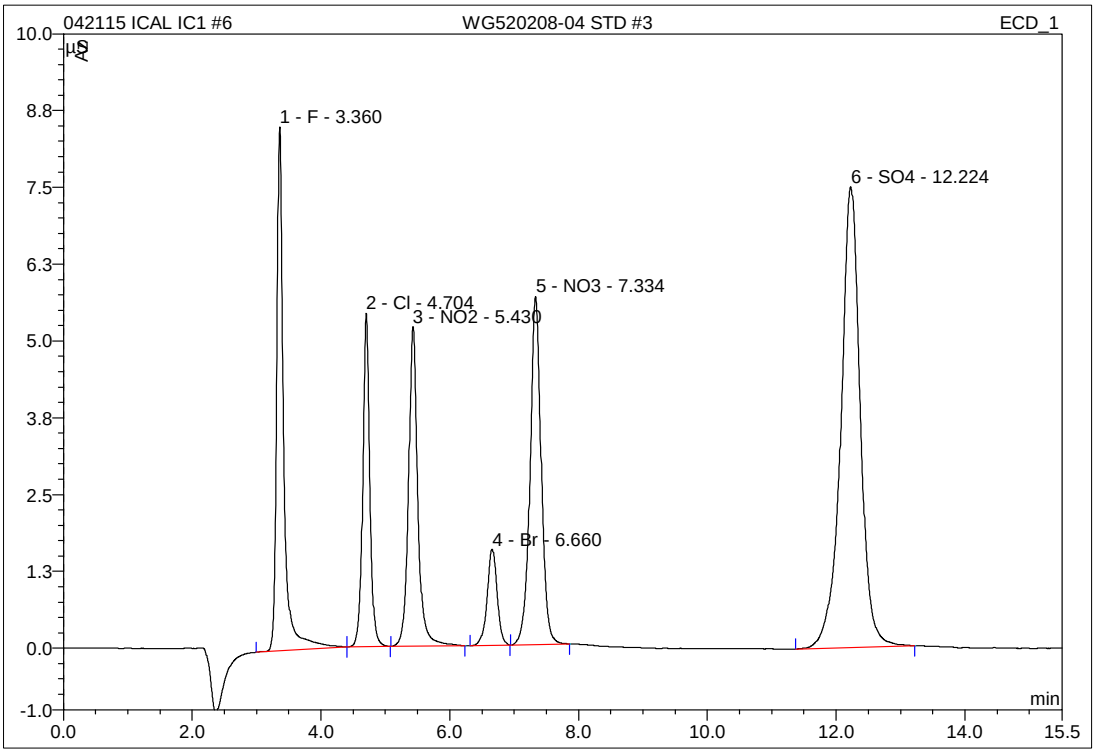

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.36	F	8.528	1.055	15.84	4.008	BMB
2	4.70	Cl	5.426	0.691	10.37	3.820	bMB
3	5.43	NO2	5.202	0.872	13.08	2.389	BMB
4	6.66	Br	1.564	0.279	4.19	3.928	BMB
5	7.33	NO3	5.667	1.138	17.08	2.626	BMB
6	12.22	SO4	7.499	2.628	39.43	18.906	BMB
Total:			33.887	6.664	100.00	35.676	

7 WG520208-05 STD #2

1,1 AED STD69215

Sample Name:	**WG520208-05 STD #2**	*Injection Volume:*	**20.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/21/2015 15:40**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

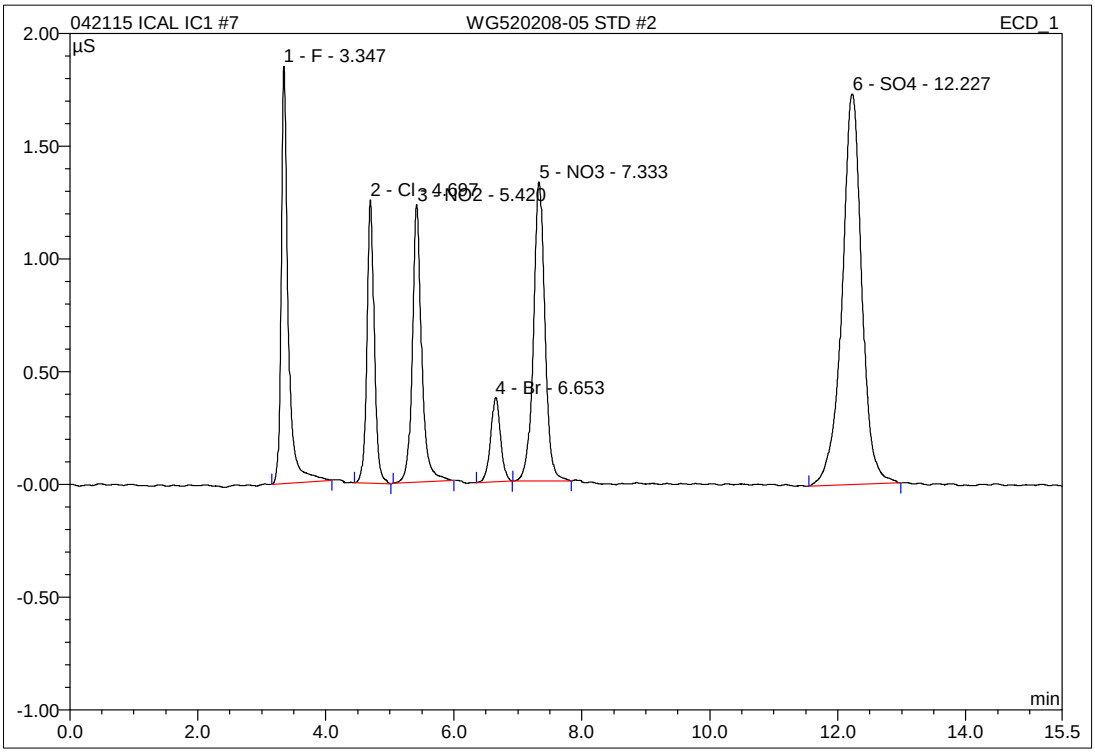

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.35	F	1.853	0.237	15.05	0.933	BMB
2	4.70	Cl	1.258	0.167	10.57	0.935	BMB
3	5.42	NO2	1.232	0.210	13.29	0.581	BMB
4	6.65	Br	0.373	0.067	4.26	0.941	BMB
5	7.33	NO3	1.327	0.276	17.47	0.643	BMB
6	12.23	SO4	1.732	0.621	39.36	4.598	BMB
Total:			7.774	1.578	100.00	8.631	

8 WG520208-06 STD #1

1,1 AED STD69215

Sample Name:	**WG520208-06 STD #1**	*Injection Volume:*	**20.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/21/2015 15:58**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

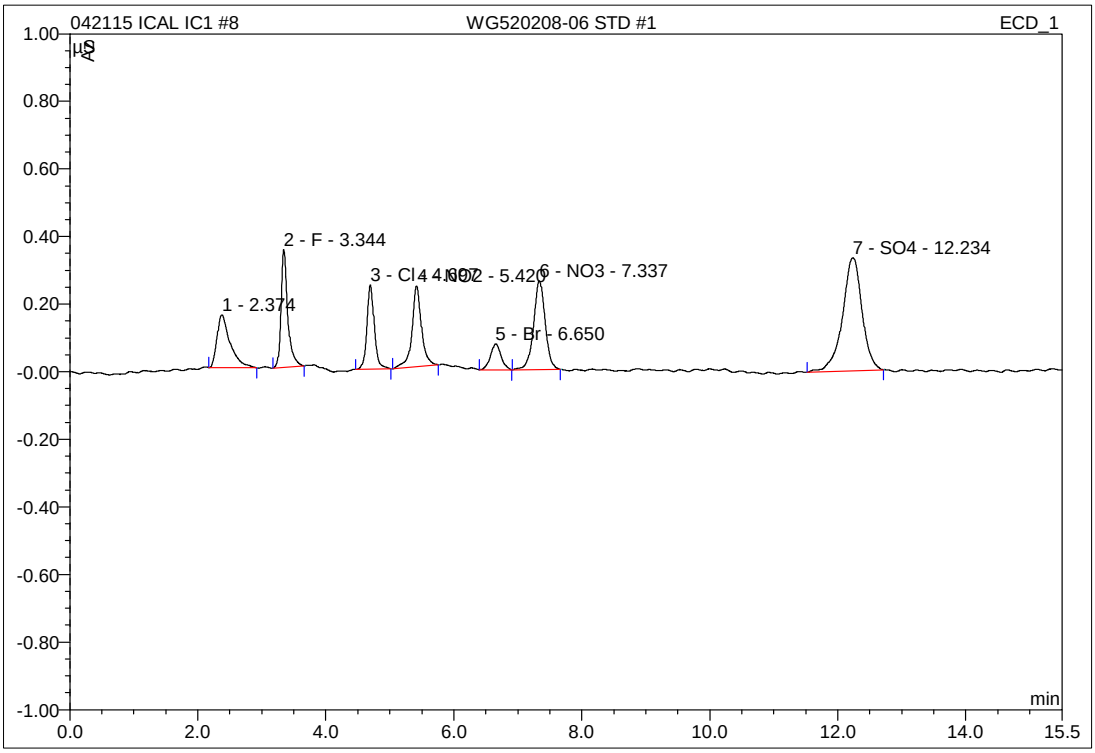

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.37	n.a.	0.156	0.037	10.80	n.a.	BMB
2	3.34	F	0.349	0.043	12.46	0.202	BMB
3	4.70	Cl	0.250	0.034	9.80	0.203	BMB
4	5.42	NO2	0.239	0.042	12.13	0.123	BMB
5	6.65	Br	0.077	0.015	4.29	0.203	BMB
6	7.34	NO3	0.262	0.055	16.10	0.137	BMB
7	12.23	SO4	0.334	0.119	34.44	1.016	BMB
Total:			1.667	0.345	100.00	1.884	

9 WG520208-07 ALT STD

1,1 AED STD69216

Sample Name:	**WG520208-07 ALT STD**	*Injection Volume:*	**20.0**
Vial Number:	**17**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/21/2015 16:16**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

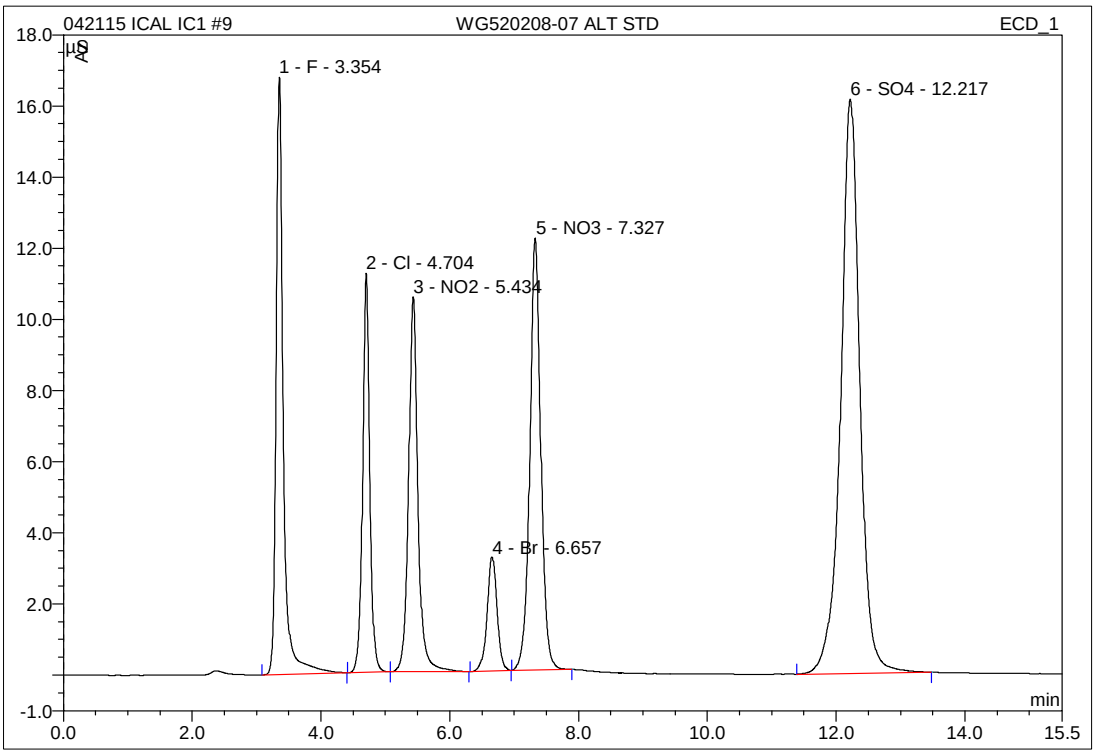

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.35	F	16.796	2.124	15.30	8.023	BMB
2	4.70	Cl	11.218	1.439	10.36	7.932	BMB
3	5.43	NO2	10.544	1.778	12.81	4.863	BMB
4	6.66	Br	3.210	0.573	4.13	8.062	BMB
5	7.33	NO3	12.140	2.400	17.29	5.526	BMB
6	12.22	SO4	16.146	5.570	40.12	39.884	BMB
Total:			70.055	13.884	100.00	74.290	

9 WG520208-07 ALT STD

1,1 AED STD69216

Sample Name:	**WG520208-07 ALT STD**	*Injection Volume:*	**20.0**
Vial Number:	**17**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/21/2015 16:16**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG520208-07 ALT S	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	8.0226	0.28	PASS
Cl	8.00	7.9321	-0.85	PASS
NO2-N	4.8714	4.8631	-0.17	PASS
Br	8.00	8.0623	0.78	PASS
NO3-N	5.4216	5.5263	1.93	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	39.8839	-0.29	PASS

3 WG525589-01 ANION CCV

1,1 ALS STD69215 (_____psi @___:___)

Sample Name:	**WG525589-01 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/29/2015 13:53**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

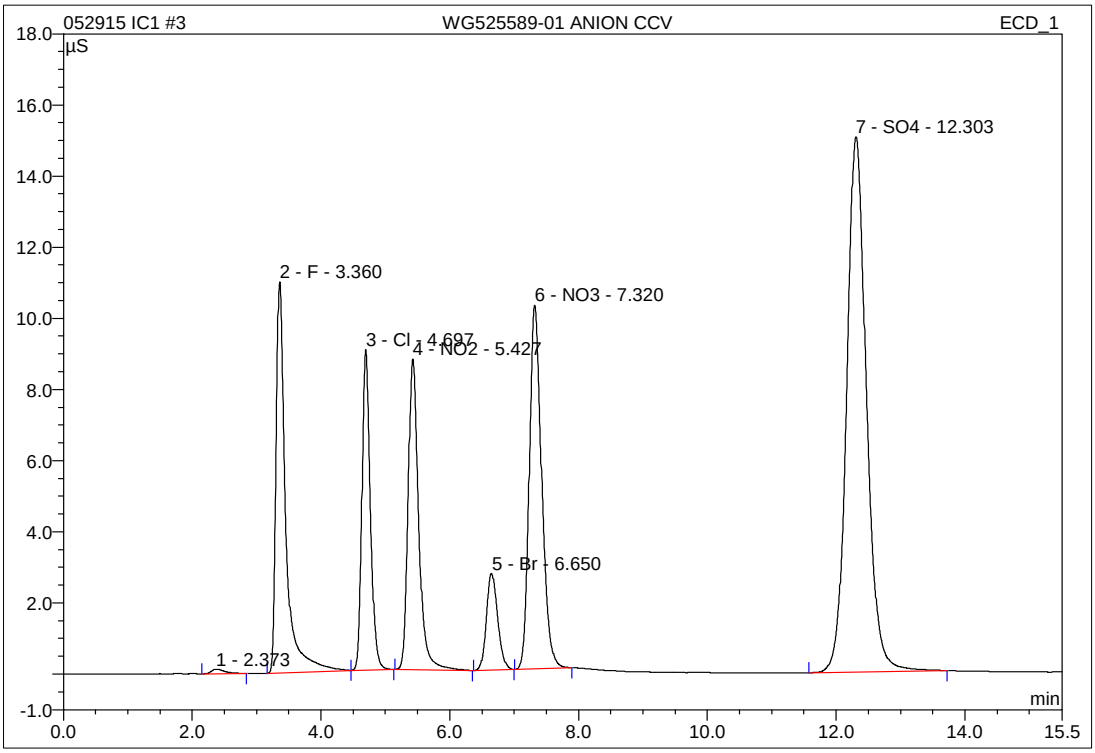

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.37	n.a.	0.129	0.032	0.24	n.a.	BMB
2	3.36	F	10.996	1.917	14.56	7.247	BMB
3	4.70	Cl	9.002	1.361	10.34	7.506	bMB
4	5.43	NO2	8.740	1.666	12.65	4.556	BMB
5	6.65	Br	2.716	0.553	4.20	7.773	BMB
6	7.32	NO3	10.229	2.288	17.37	5.268	BMB
7	12.30	SO4	15.052	5.352	40.64	38.335	BMB
Total:			56.865	13.169	100.00	70.685	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

3 WG525589-01 ANION CCV

1,1 ALS STD69215 (_____psi @___:___)

Sample Name:	**WG525589-01 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/29/2015 13:53**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG525589-01 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	7.2470	-9.41	PASS
Cl	8.00	7.5060	-6.18	PASS
NO2-N	4.8714	4.5564	-6.47	PASS
Br	8.00	7.7728	-2.84	PASS
NO3-N	5.4216	5.2677	-2.84	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	38.3350	-4.16	PASS

15 WG525589-03 ANION CCV

1,1 ALS STD69215

Sample Name:	**WG525589-03 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/29/2015 17:25**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

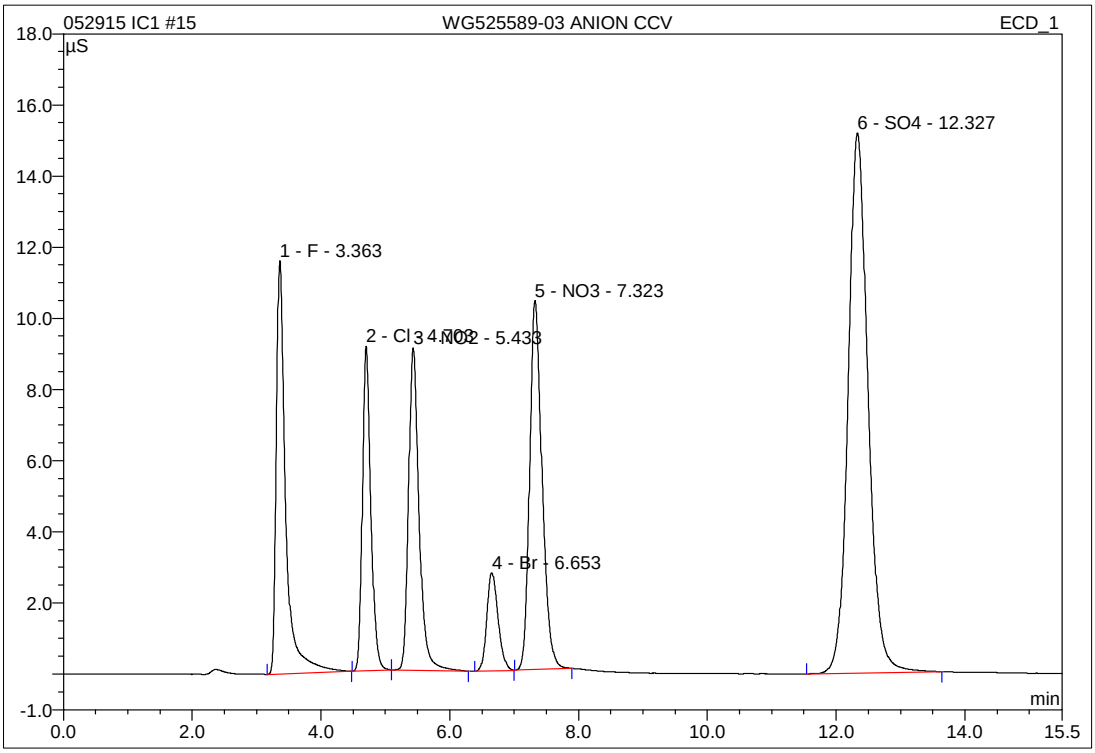

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.36	F	11.613	1.963	14.67	7.417	BMB
2	4.70	Cl	9.131	1.383	10.34	7.626	BMb
3	5.43	NO2	9.056	1.719	12.85	4.701	bMB
4	6.65	Br	2.756	0.560	4.18	7.870	BMB
5	7.32	NO3	10.377	2.326	17.39	5.356	BMB
6	12.33	SO4	15.193	5.425	40.56	38.852	BMB
Total:			58.127	13.375	100.00	71.823	

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15 WG525589-03 ANION CCV

1,1 ALS STD69215

Sample Name:	**WG525589-03 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/29/2015 17:25**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG525589-03 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	7.4173	-7.28	PASS
Cl	8.00	7.6260	-4.67	PASS
NO2-N	4.8714	4.7012	-3.49	PASS
Br	8.00	7.8702	-1.62	PASS
NO3-N	5.4216	5.3564	-1.20	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	38.8520	-2.87	PASS

27 WG525589-05 ANION CCV

1,1 ALS STD69215

Sample Name:	**WG525589-05 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**27**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/29/2015 20:58**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

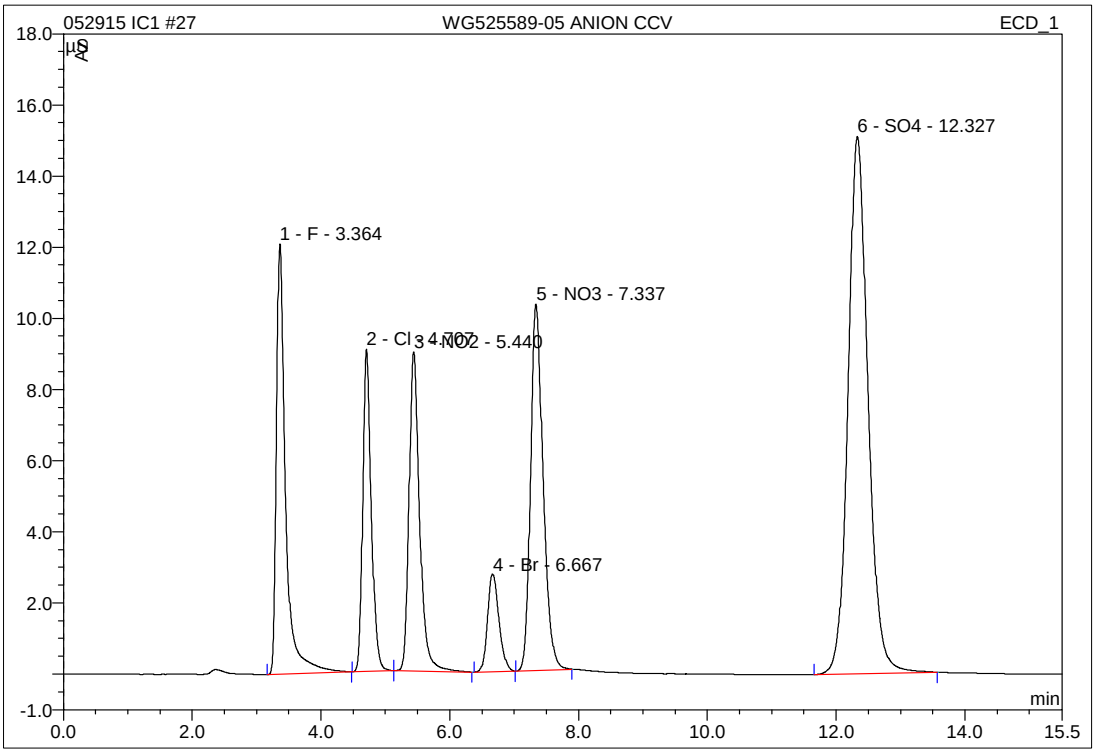

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.36	F	12.102	1.984	14.84	7.498	BMB
2	4.71	Cl	9.057	1.383	10.34	7.624	BMb
3	5.44	NO2	8.974	1.706	12.76	4.666	bMB
4	6.67	Br	2.740	0.561	4.19	7.885	BMB
5	7.34	NO3	10.295	2.324	17.38	5.351	BMB
6	12.33	SO4	15.104	5.415	40.49	38.779	BMB
Total:			58.271	13.372	100.00	71.803	

27 WG525589-05 ANION CCV

1,1 ALS STD69215

Sample Name:	**WG525589-05 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**27**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/29/2015 20:58**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG525589-05 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	7.4975	-6.28	PASS
Cl	8.00	7.6238	-4.70	PASS
NO2-N	4.8714	4.6664	-4.21	PASS
Br	8.00	7.8851	-1.44	PASS
NO3-N	5.4216	5.3511	-1.30	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	38.7795	-3.05	PASS

4 WG525589-02 ANION CCB

1,1 ALS

Sample Name:	**WG525589-02 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/29/2015 14:11**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

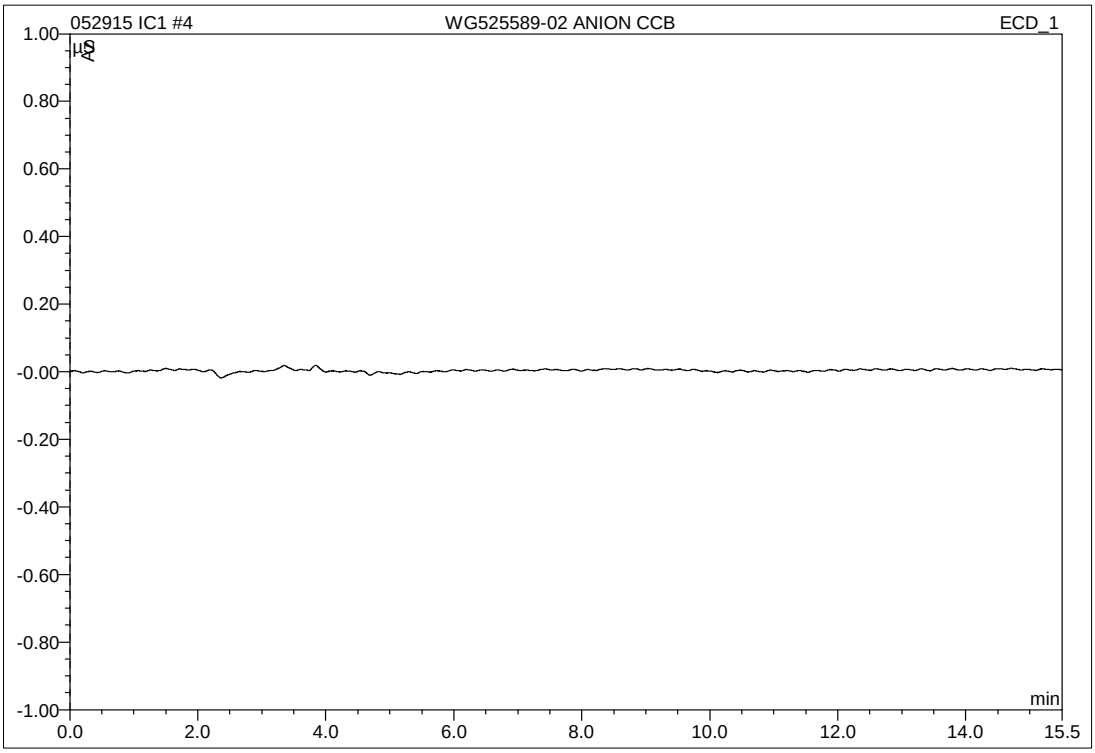

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

IC/Integration

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16 WG525589-04 ANION CCB

1,1 ALS

Sample Name:	**WG525589-04 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**16**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/29/2015 17:43**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

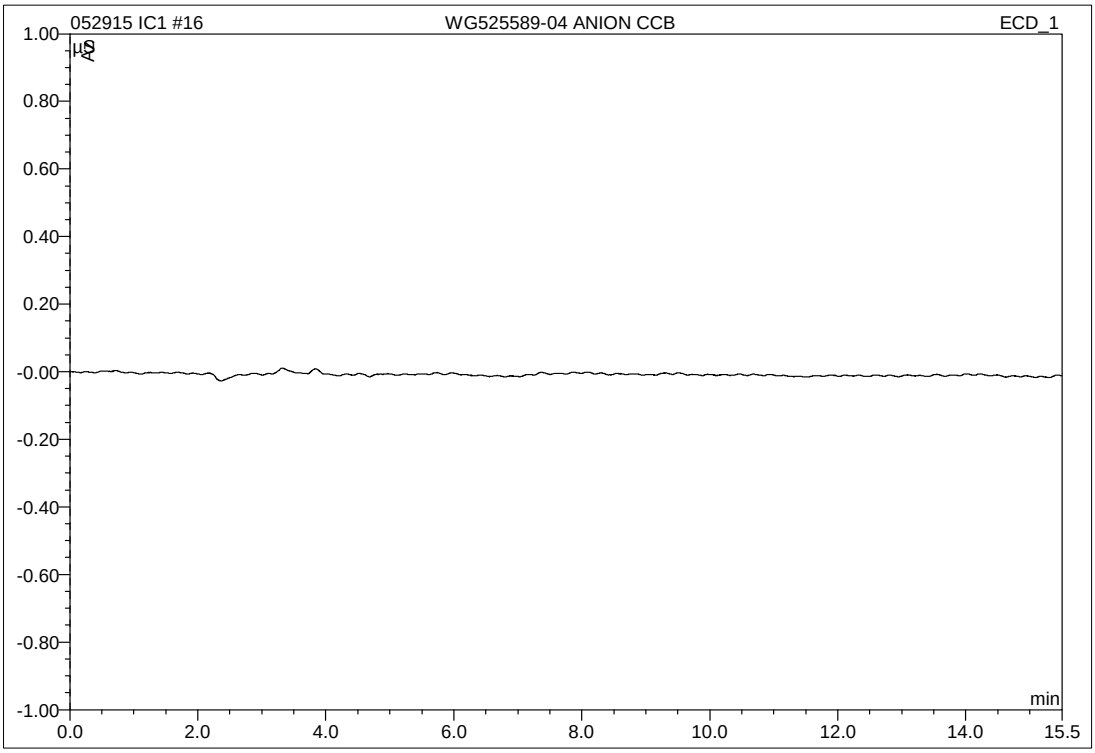

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

28 WG525589-06 ANION CCB

1,1 ALS

Sample Name:	**WG525589-06 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**28**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/29/2015 21:16**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

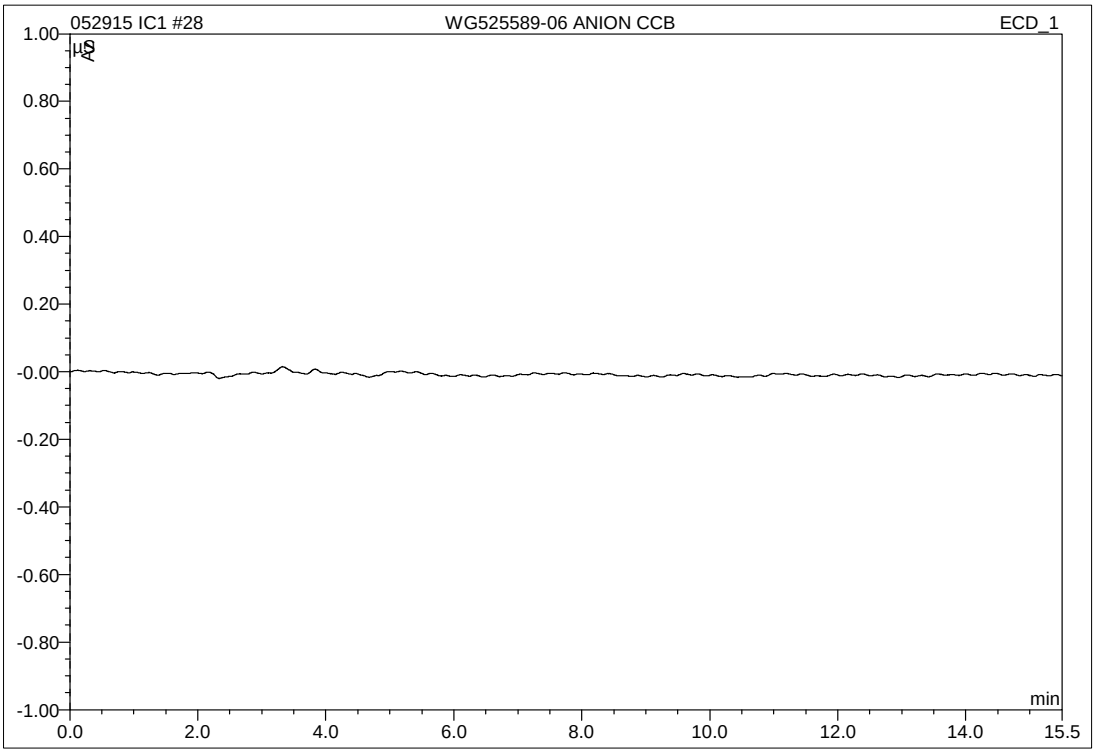

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

RETENTION TIME WINDOWS

Lab Name: MICROBAC Laboratories, Inc.

Instrument ID: IC1

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	6/5/2013	6/5/2013	6/6/2013
File #	WG432976-05	WG432976-07	WG433275-01
Time	16:16	18:25	16:50

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.41	3.40	3.41	0.017
Cl	4.87	4.87	4.88	0.017
NO2-N	5.67	5.66	5.67	0.017
Br	7.01	6.99	7.02	0.046
NO3-N	7.76	7.74	7.77	0.046
SO4	13.35	13.35	13.35	0.000

Instrument ID: IC2

IC Column: AS14A-4mm

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	3/2/2015	3/4/2015	3/5/2015
File #	WG514023-02	WG514341-02	WG514431-02
Time	23:15	18:47	17:41

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.33	3.33	3.32	0.017
Cl	4.75	4.78	4.76	0.043
NO2-N	5.54	5.59	5.56	0.082
Br	6.86	6.98	6.93	0.180
NO3-N	7.59	7.73	7.67	0.222
SO4	12.42	12.38	12.34	0.116

Instrument ID: IC3

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	5/20/2014	5/21/2014	5/21/2014
File #	WG476910-05	WG476934-01	WG476934-03
Time	12:41	9:54	13:59

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.41	3.41	3.41	0.000
Cl	5.11	5.09	5.07	0.050
NO2-N	6.14	6.11	6.07	0.101
Br	7.90	7.84	7.75	0.220
NO3-N	8.94	8.86	8.76	0.271
SO4	13.35	13.39	13.42	0.101

2.4.1.5 Raw QC Data

5 WG525588-01 ANION BLANK

1,1 ALS

Sample Name:	**WG525588-01 ANION BLANK**	*Injection Volume:*	**20.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/29/2015 14:28**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

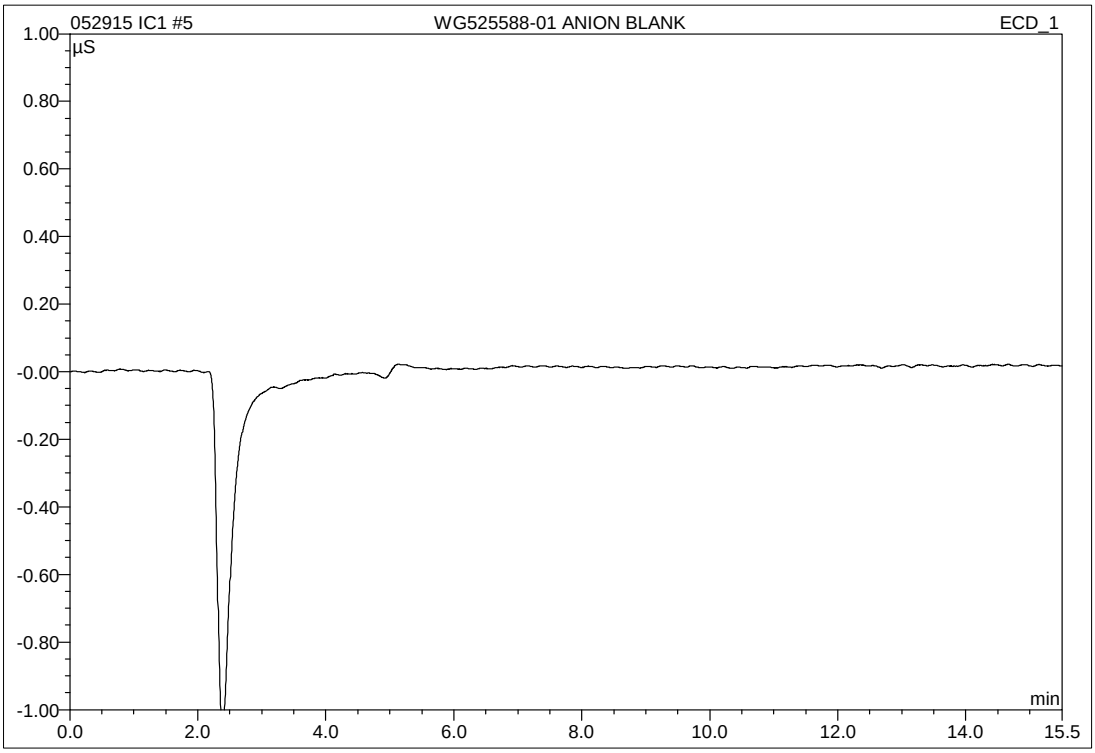

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

6 WG525588-02 ANION LCS

1,1 ALS

Sample Name:	**WG525588-02 ANION LCS**	*Injection Volume:*	**20.0**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/29/2015 14:46**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

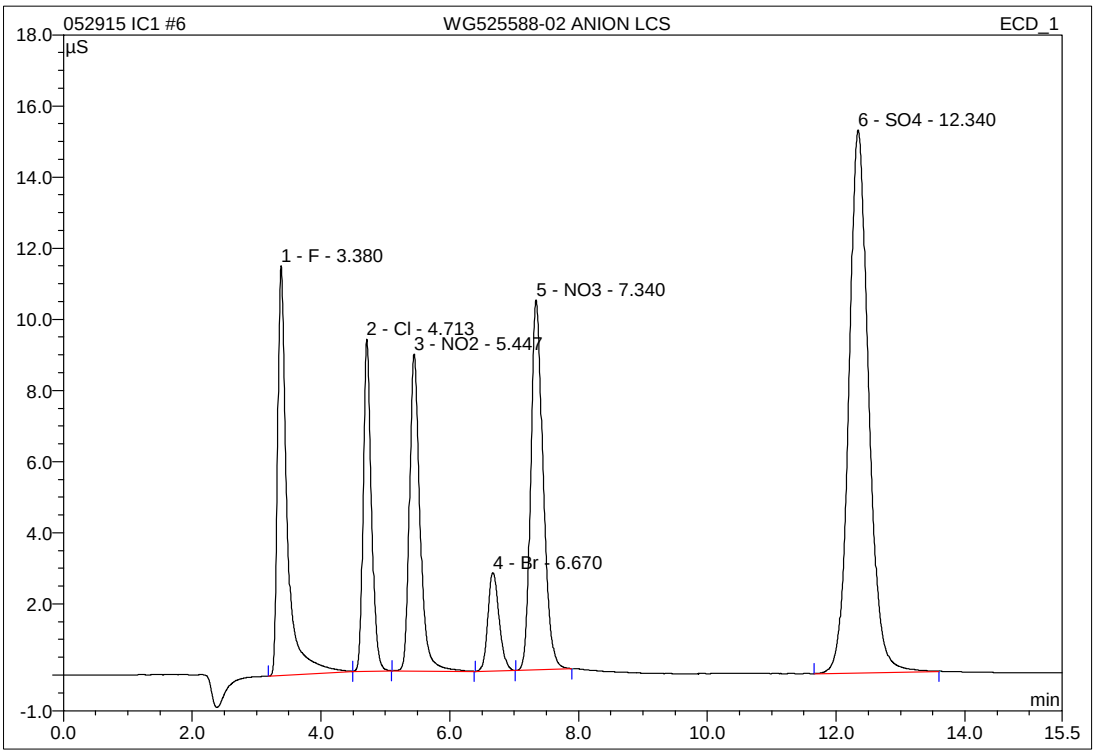

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.38	F	11.524	1.987	14.90	7.508	BMB
2	4.71	Cl	9.339	1.374	10.31	7.578	bMB
3	5.45	NO2	8.909	1.692	12.69	4.627	BMB
4	6.67	Br	2.759	0.557	4.18	7.841	BMB
5	7.34	NO3	10.402	2.315	17.36	5.331	BMB
6	12.34	SO4	15.264	5.409	40.57	38.740	BMB
Total:			58.196	13.335	100.00	71.625	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

2.4.2 Alkalinity Data

2.4.2.1 Summary Data

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-04	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW24-052815	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	06/04/2015 18:39
Workgroup #:	WG526339	**Analyst:**	DCM	**Run Date:**	06/04/2015 18:45
Collect Date:	05/28/2015 08:15	**Dilution:**	1	**File ID:**	S2150604005.017
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	278		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L15051752-06	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW25-052815	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	06/02/2015 12:35
Workgroup #:	WG525887	**Analyst:**	TB	**Run Date:**	06/02/2015 12:41
Collect Date:	05/28/2015 09:40	**Dilution:**	1	**File ID:**	S2150602002.018
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	61.7		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L15051752-08	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW18-052815	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	06/05/2015 07:47
Workgroup #:	WG526393	**Analyst:**	DCM	**Run Date:**	06/05/2015 07:51
Collect Date:	05/28/2015 11:00	**Dilution:**	2	**File ID:**	S2150605001.016
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	412		80.0	40.0	20.0

2.4.2.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809	
Value of b from plot:	0.0004135	
Absorbance of unknown from quantitation report (y):	0.31	
Calculated concentration (x):	0.03964483	
Dilution factor (D):	1.00	
Concentration of analyte in sample, Cy:	0.0396	mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796	
Value of B from plot:	318.9056	
Value of C from plot:	-2.2712	
Absorbance of unknown from quantitation report (x):	0.1583	
Calculated concentration (y):	50.7495108	
Dilution factor (D):	1.00	
Concentration of analyte in sample, Cy:	50.75	mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 02-JUN-2015
Analyst: TB
Analyst: NA
Method: ALK
Instrument: SC2
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG526003 WG525887

Calibration/Linearity	06/02/2015
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	TB
Secondary Reviewer	SAV
Comments	

Primary Reviewer: 02-JUN-2015 Todd Boyle

Secondary Reviewer: 04-JUN-2015 Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-04-2015 14:33:04

Microbac Laboratories Inc.

Data Checklist

Date: 04-JUN-2015
Analyst: DCM
Analyst: NA
Method: ALK
Instrument: SC
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG526339

Calibration/Linearity	06-04-2015
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DCM
Secondary Reviewer	SAV
Comments	

Primary Reviewer:
05-JUN-2015

Secondary Reviewer:
05-JUN-2015

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-05-2015 14:14:57

Microbac Laboratories Inc.

Data Checklist

Date: 05-JUN-2015
Analyst: DCM
Analyst: NA
Method: ALK
Instrument: SC
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG526393

Calibration/Linearity	06-05-2015
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DCM
Secondary Reviewer	SAV
Comments	

Primary Reviewer:
05-JUN-2015

Secondary Reviewer:
05-JUN-2015

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-05-2015 14:14:42

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 310.2 AAB#: WG525887

Login Number: L15051752

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW25-052815	06	05/28/15					06/02/2015	5.1	14		06/02/15	5.1	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4216785
Report generated 06/05/2015 10:51

Microbac Laboratories Inc.

00643164

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 310.2 AAB#: WG526339

Login Number: L15051752

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW24-052815	04	05/28/15					06/04/2015	7.4	14		06/04/15	7.4	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4216785
Report generated 06/05/2015 10:51

Microbac Laboratories Inc.

00643165

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 310.2 AAB#: WG526393

Login Number: L15051752

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW18-052815	08	05/28/15					06/05/2015	7.9	14		06/05/15	7.9	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4216785
Report generated 06/05/2015 10:51

METHOD BLANK SUMMARY

Login Number: L15051752
Blank File ID: S2150602002.012
Prep Date: 06/02/15 12:38
Analyzed Date: 06/02/15 12:38
Analyst: TB

Work Group: WG525887
Blank Sample ID: WG525887-01
Instrument ID: SMARTCHEM2
Method: 310.2

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG525887-02	S2150602002.013	06/02/15 12:38	01
LCS2	WG525887-03	S2150602002.014	06/02/15 12:39	01
50WW25-052815	L15051752-06	S2150602002.018	06/02/15 12:41	01
DUP	WG525887-05	S2150602002.028	06/02/15 12:47	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4216786
Report generated 06/05/2015 10:51

METHOD BLANK SUMMARY

Login Number: L15051752
Blank File ID: S2150604005.012
Prep Date: 06/04/15 18:41
Analyzed Date: 06/04/15 18:41
Analyst: DCM

Work Group: WG526339
Blank Sample ID: WG526339-01
Instrument ID: SMARTCHEM2
Method: 310.2

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG526339-02	S2150604005.013	06/04/15 18:42	01
LCS2	WG526339-03	S2150604005.014	06/04/15 18:42	01
50WW24-052815	L15051752-04	S2150604005.017	06/04/15 18:45	01
DUP	WG526339-05	S2150604005.029	06/04/15 18:52	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4216786
Report generated 06/05/2015 10:51

METHOD BLANK SUMMARY

Login Number: L15051752
Blank File ID: S2150605001.012
Prep Date: 06/05/15 07:49
Analyzed Date: 06/05/15 07:49
Analyst: DCM

Work Group: WG526393
Blank Sample ID: WG526393-01
Instrument ID: SMARTCHEM2
Method: 310.2

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG526393-02	S2150605001.013	06/05/15 07:50	01
LCS2	WG526393-03	S2150605001.014	06/05/15 07:50	01
50WW18-052815	L15051752-08	S2150605001.016	06/05/15 07:51	DL01
DUP	WG526393-05	S2150605001.024	06/05/15 07:57	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4216786
Report generated 06/05/2015 10:51

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051752 Prep Date: 06/02/15 12:38 Sample ID: WG525887-01
Instrument ID: SMARTCHEM2 Run Date: 06/02/15 12:38 Prep Method: 310.2
File ID: S2150602002.012 Analyst: TB Method: 310.2
Workgroup (AAB#): WG525887 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-02-JUN-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Alkalinity, Total (as CaCO3)	10.0	40.0	14.2	1	J

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4216787
05-JUN-2015 10:51

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051752 Prep Date: 06/04/15 18:41 Sample ID: WG526339-01
Instrument ID: SMARTCHEM2 Run Date: 06/04/15 18:41 Prep Method: 310.2
File ID: S2150604005.012 Analyst: DCM Method: 310.2
Workgroup (AAB#): WG526339 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-04-JUN-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Alkalinity, Total (as CaCO3)	10.0	40.0	10.0	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4216787
05-JUN-2015 10:51

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051752 Prep Date: 06/05/15 07:49 Sample ID: WG526393-01
Instrument ID: SMARTCHEM2 Run Date: 06/05/15 07:49 Prep Method: 310.2
File ID: S2150605001.012 Analyst: DCM Method: 310.2
Workgroup (AAB#): WG526393 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-05-JUN-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Alkalinity, Total (as CaCO3)	10.0	40.0	10.0	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4216787
05-JUN-2015 10:51

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051752 Analyst: TB Prep Method: 310.2
Instrument ID: SMARTCHEM2 Matrix: Water Method: 310.2
Workgroup (AAB#): WG525887 Units: mg/L
QC Key: DOD4 Lot #: STD70828

Sample ID: WG525887-02 LCS File ID: S2150602002.013 Run Date: 06/02/2015 12:38
Sample ID: WG525887-03 LCS2 File ID: S2150602002.014 Run Date: 06/02/2015 12:39

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Alkalinity, Total (as CaCO3)	200	201	100	200	206	103	2.71	85 - 115	20	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4216788
Report generated: 06/05/2015 10:51

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051752 Analyst: DCM Prep Method: 310.2
Instrument ID: SMARTCHEM2 Matrix: Water Method: 310.2
Workgroup (AAB#): WG526393 Units: mg/L
QC Key: DOD4 Lot #: STD70828

Sample ID: WG526393-02 LCS File ID: S2150605001.013 Run Date: 06/05/2015 07:50
Sample ID: WG526393-03 LCS2 File ID: S2150605001.014 Run Date: 06/05/2015 07:50

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Alkalinity, Total (as CaCO3)	200	203	102	200	202	101	0.629	85 - 115	20	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4216788
Report generated: 06/05/2015 10:51

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051752 Analyst: DCM Prep Method: 310.2
Instrument ID: SMARTCHEM2 Matrix: Water Method: 310.2
Workgroup (AAB#): WG526339 Units: mg/L
QC Key: DOD4 Lot #: STD70828

Sample ID: WG526339-02 LCS File ID: S2150604005.013 Run Date: 06/04/2015 18:42
Sample ID: WG526339-03 LCS2 File ID: S2150604005.014 Run Date: 06/04/2015 18:42

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Alkalinity, Total (as CaCO3)	200	198	99.0	200	195	97.6	1.36	85 - 115	20	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4216788
Report generated: 06/05/2015 10:51

2.4.2.3 Raw Data

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

WORKGROUP: WG525887

526003

Daily Check

- [x] Lamp On
- [x] Probe Rinse Full
- [x] DI Water > ½ Full
- [x] Wash Solution > ½ Full
- [ ] NO3 Reagent bottle connected / purged
- [ ] NO3 pH adj to pH 5-9

Syringe filter lot # _____

- [x] WBL Run
- [x] Reagents Full
- [x] Dilution H_2O Full
- [x] Waste Container Check

1) **Workgroup** 525887
   Plan # 20150602002
2) **Workgroup** 526003
   Plan # 20150602003
3) **Workgroup** _____
   Plan # _____

Instrument: SC1 [ ] SC2 [x]

	Analyte	1	2	3
		Alk		
		Dilution		
SC Prepared Curve				
Position				
1-1	ICV			
1-2	Blk			
1-3	HS			
1-4	LCS			
1-5	5-0002-18			
1-6	19			
1-7	1752-04	1/2		
1-8	06			
1-9	08	1/2		
1-10	1767-02	1/4		
1-11	03	1/4		
1-12	05	1/4		
1-13	06	1/4		
1-14	08	1/4		
1-15	09	1/4		
1-16	Dup	1/4		
1-17				
1-18				
1-19				
1-20				
1-21				
1-22				
2-1				
2-2				
2-3				

Position	Analyte	1	2	3
2-4 1	ICV			
2-5 2	Blk			
2-6 3	HS			
2-7 4	LCS			
2-8 5	5-1752-04			
2-9 6	08			
2-10 7	1767-03			
2-11 8	05	1/4		
2-12 9	06			
2-13 10	08	1/4		
2-14 11	09			
2-15 12	Dup			
2-16 13	1767-03	1/5		
2-17 15	06	1/5		
2-18 16	09	1/5		
2-19 17				
2-20				
2-21				
2-22				
2-23				
2-24				
2-25				
2-26				
3-1				
3-2				

NOTES:
* Run NO2 std on NO3 runs
* LCSD must be run if no MS or Duplicate
*MS(10% sample): NO3, TKN, NH3, PHOS

DCN#110983

SMARTCHEM RUN LOG
(smartchem2, smartchem3)

WORKGROUP: WG525887

Position	Analyte	1	2	3
3-3				
3-4				
3-5				
3-6				
3-7				
3-8				
3-9				
3-10				
3-11				
3-12				
3-13				
3-14				
3-15				

Position	Analyte	1	2	3
3-16				
3-17				
3-18				
3-19				
3-20				
3-21				
3-22				
3-23				
3-24				
3-25				
3-26				
3-27				
3-28				

	Chloride	EPA 325.2/SM 4500-Cl E-2000
	Nitrate-Nitrite	EPA 353.2/SM 4500-NO3 F-2000
✓	Alkalinity	EPA 310.2
	Sulfate	EPA 375.4/SM 426C (15th)/ SM4500-504 E-1997

	Ammonia	EPA 350.1/SM 4500-NH3 B-1997
	TKN	EPA 351.2
	Phos	EPA 365.4

Analyte	Alk		Reagents
SOP & Revision	H3102		
Curve Stock (SC made)	SKI 70552		33763
NO2 STD			
ICV	SKI 70444		
CCV	SKI 70445		
LCS	SKI 70828		
MS	Dilution		

Comments: _____

Analyst: Troy Boyle Date: 6/2/15

DCN#110983

MICROBAC (OVD)

SMARTCHEM200 INST2 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.0	0.7657	0.00		12:29:39 PM
DIL-1	RBL	0.0	0.7641	0.00		12:29:57 PM
DIL-1	RBL	0.0	0.7629	0.00		12:30:51 PM
DIL-1	Std-1	0.0	-0.0097	0.00		12:31:09 PM
SR5-1	Std-2	10.0	-0.0038	0.00		12:32:03 PM
SR5-2	Std-3	20.0	-0.0179	0.00		12:32:21 PM
SR5-3	Std-4	50.0	-0.0386	0.00		12:33:15 PM
SR5-4	Std-5	100.0	-0.0668	0.00		12:33:33 PM
SR5-5	Std-6	200.0	-0.1597	0.00		12:34:27 PM
SR5-6	Std-7	250.0	-0.2159	0.00		12:34:45 PM
SR5-7	Std-8	300.0	-0.2754	0.00		12:35:39 PM
ST-3	1CCV (150 mg/L)	156.6	-0.1190	104.40		12:35:57 PM
ST-2	2CCB (0 mg/L)	2.7	-0.0049	0.00		12:36:51 PM
1	ICV	246.4	-0.2075	0.00		12:37:09 PM
2	WG525887-01 BLK	14.2	-0.0125	0.00		12:38:03 PM
3	WG525887-02 LCS	200.5	-0.1591	0.00		12:38:21 PM
4	WG525887-03 LCSDUP	206.0	-0.1645	0.00		12:39:15 PM
5	L15050002-18	24.2	-0.0191	0.00		12:39:33 PM
6	L15050002-19	22.5	-0.0180	0.00		12:40:27 PM
7	L15051752-04 (2)	-19.0	0.0090	0.00	INV,><,LL	12:40:45 PM
8	L15051752-06	61.7	-0.0450	0.00		12:41:39 PM
9	L15051752-08 (2)	-55.8	0.0317	0.00	INV,><,LL	12:41:57 PM
10	L15051767-02 (4)	112.7	-0.0830	0.00		12:42:51 PM
ST-3	1CCV (150 mg/L)	166.8	-0.1279	111.21		12:43:09 PM
ST-2	2CCB (0 mg/L)	16.5	-0.0140	0.00		12:44:03 PM
11	L15051767-03 (4)	-93.5	0.0539	0.00	INV,><,LL	12:44:21 PM
12	L15051767-05 (4)	115.9	-0.0855	0.00		12:45:15 PM
13	L15051767-06 (4)	-108.6	0.0626	0.00	INV,><,LL	12:45:33 PM
14	L15051767-08 (4)	123.4	-0.0915	0.00		12:46:27 PM
15	L15051767-09 (4)	-93.5	0.0539	0.00	INV,><,LL	12:46:45 PM
16	WG525887-05 (4) DUP	-95.5	0.0551	0.00	INV,><,LL	12:47:39 PM
17	ID 17		0.6247	0.00	SS	12:47:57 PM

Report Date :06/02/2015 **Run Date :6/2/2015** **Operator : WESTCO** **Plan # :20150602002**

Plan Description : ALK-A2-TB/06/02/2015

MICROBAC (OVD)
SMARTCHEM200 INST2 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
18	ID 18	***	0.6661	0.00	SS	12:48:51 PM
19	ID 19	***	0.6211	0.00	SS	12:49:09 PM
20	ID 20	***	0.6130	0.00	SS	12:50:03 PM
ST-3	1CCV (150 mg/L)	195.1	-0.1539	130.08		12:50:21 PM
ST-2	2CCB (0 mg/L)	54.9	-0.0402	0.00		12:51:15 PM

Report Date :06/02/2015 **Run Date :6/2/2015** **Operator : WESTCO** **Plan # :20150602002**

Plan Description : ALK-A2-TB/06/02/2015

Calibrant Report - WALK -

Calib Lot #:010104 Exp Date:6/21/2020 User:MICROBAC

Plan # : 20150602002 Description : [ALK-A2-TB/06/02/2015] Unit

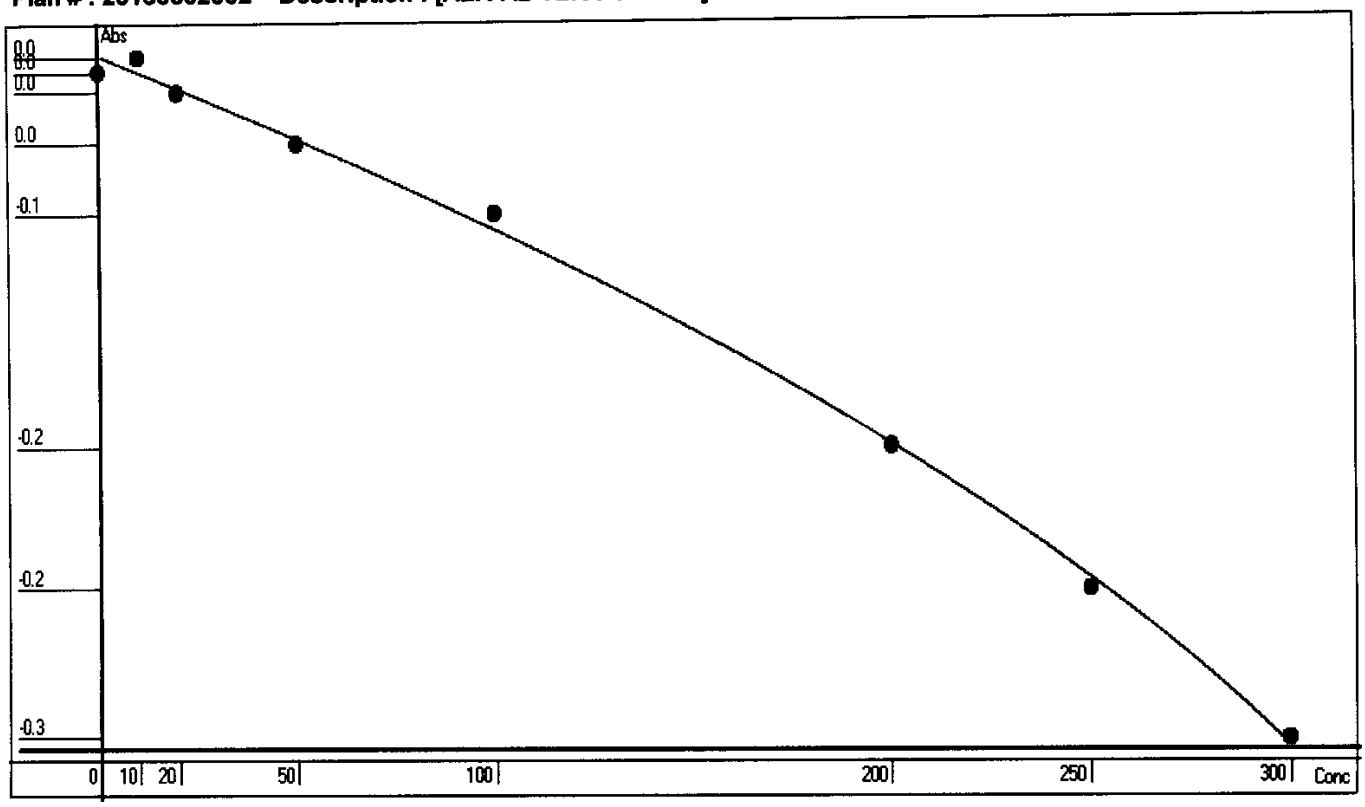

Point	OD	Conc	Recalc Conc	% Error
1	-0.0097	0	9.9984	999.84
2	-0.0038	10	0.9630	-90.37
3	-0.0179	20	22.3653	11.83
4	-0.0386	50	52.5971	5.19
5	-0.0668	100	91.5072	-8.49
6	-0.1597	200	201.1268	0.56
7	-0.2159	250	253.6154	1.45
8	-0.2754	300	297.8272	-0.72

Conc= -1649.993*Abso^2 -1553.698*Abso -4.9172 R^2=0.9971

RBL
0.7635
0

Report Date 6/2/2015 Run Date 6/2/2015

MICROBAC (OVD)

SMARTCHEM200 INST2 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.0	0.6057	0.00		2:18:10 PM
DIL-1	RBL	0.0	0.6170	0.00		2:18:27 PM
DIL-1	RBL	0.0	0.6074	0.00		2:19:22 PM
DIL-1	Std-1	0.0	-0.0026	0.00		2:19:40 PM
SR5-1	Std-2	10.0	-0.0080	0.00		2:20:34 PM
SR5-2	Std-3	20.0	-0.0109	0.00		2:20:52 PM
SR5-3	Std-4	50.0	-0.0349	0.00		2:21:46 PM
SR5-4	Std-5	100.0	-0.0624	0.00		2:22:04 PM
SR5-5	Std-6	200.0	-0.1407	0.00		2:22:58 PM
SR5-6	Std-7	250.0	-0.1916	0.00		2:23:16 PM
SR5-7	Std-8	300.0	-0.2342	0.00		2:24:10 PM
ST-3	1CCV (150 mg/L)	144.7	-0.0979	96.44		2:24:28 PM
ST-2	2CCB (0 mg/L)	2.6	-0.0027	0.00		2:25:22 PM
1	ICV 526003- TB 6/2/15	244.3	-0.1808	0.00		2:25:40 PM
2	WG52~~5 ?~~ -01	-0.4	-0.0009	0.00	LL	2:26:34 PM
3	WG52~~5 ?~~ -02 LCS	199.0	-0.1408	0.00		2:26:52 PM
4	WG52~~5 ?~~ -03 LCSDUP	202.5	-0.1438	0.00		2:27:46 PM
5	L15051752-04	u -143.7	0.0795	0.00	INV,><,LL	2:28:04 PM
6	L15051752-08	u -390.5	0.1969	0.00	INV,><,LL	2:28:58 PM
7	L15051767-03	x 388.3	-0.3688	0.00	><,LH	2:29:16 PM
8	L15051767-05 (4)	107.6	-0.0712	0.00		2:30:10 PM
9	L15051767-06	x 375.2	-0.3428	0.00	><,LH	2:30:28 PM
10	L15051767-08 (4)	101.9	-0.0672	0.00		2:31:22 PM
ST-3	1CCV (150 mg/L)	152.0	-0.1035	101.31		2:31:40 PM
ST-2	2CCB (0 mg/L)	12.3	-0.0087	0.00		2:32:34 PM
11	~~L15051767-09~~ Ref	x 382.9	-0.3576	0.00	><,LH	2:32:52 PM
12	WG52~~5 ? 05~~ DUP	x 382.6	-0.3570	0.00	><,LH	2:33:46 PM
13	ID 13 1767-03 (5)	x -68.3	0.0387	0.00	INV,><,LL	2:34:04 PM
14	ID 14 06 (5) 7	x -76.0	0.0430	0.00	INV,><,LL	2:34:58 PM
15	ID 15 1767-09 (5)	x -62.5	0.0354	0.00	INV,><,LL	2:35:16 PM
16	ID 16	***	0.5323	0.00	SS	2:36:10 PM
ST-3	1CCV (150 mg/L)	159.2	-0.1090	106.12		2:36:28 PM

Report Date :06/02/2015 **Run Date :6/2/2015** **Operator : WESTCO** **Plan # :20150602003**

Plan Description : ALK-B2/06/02/2015

MICROBAC (OVD)

SMARTCHEM200 INST2 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID		Conc	OD	%Recovery/RPD	Flag	Analysis Time
ST-2	2CCB (0 mg/L)		15.2	-0.0105	0.00		2:37:22 PM
7-[1/2]	L15051767-03	u	259.8	-0.0870	0.00		2:45:02 PM
9-[1/2]	L15051767-06	u	208.4	-0.0687	0.00		2:46:14 PM
11-[1/2]	~~L15051767-09~~ 526003 Ref	u	376.8	-0.1321	0.00	LH	2:47:26 PM
12-[1/2]	WG525~~1~~ -05 DUP TB 6/2/15		362.4	-0.1263	0.00	LH	2:48:38 PM
ST-3	1CCV (150 mg/L)		169.0	-0.1166	112.65		2:48:38 PM
ST-2	2CCB (0 mg/L)	x	33.9	-0.0221	0.00		2:49:32 PM

Report Date :06/02/2015 **Run Date :6/2/2015** **Operator : WESTCO** **Plan # :20150602003**

Plan Description : ALK-B2/06/02/2015

Calibrant Report - WALK -

Calib Lot #:010104 Exp Date:6/21/2020 User:MICROBAC

Plan # : 20150602003 Description : [ALK-B2/06/02/2015] Unit

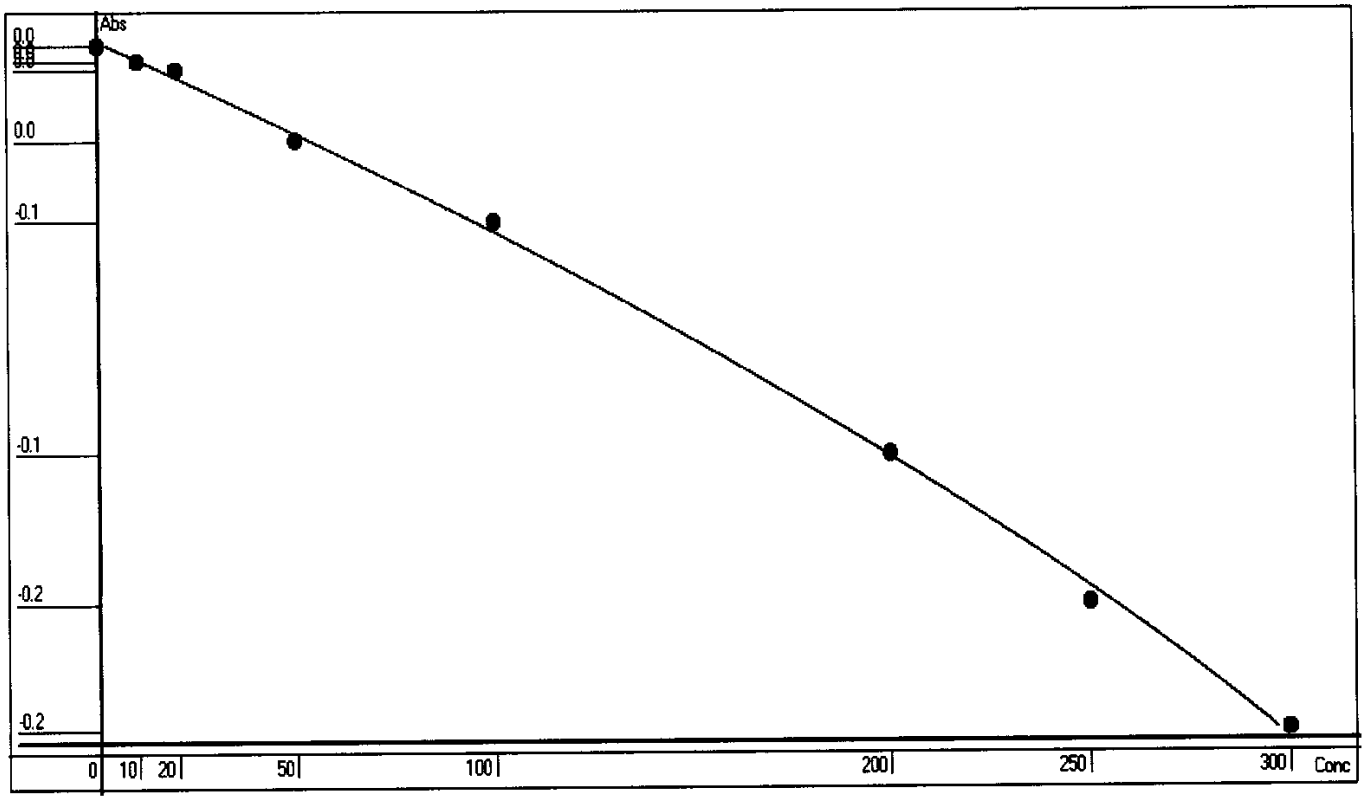

Point	OD	Conc	Recalc Conc	% Error
1	-0.0026	0	2.3524	235.24
2	-0.0080	10	11.1979	11.98
3	-0.0109	20	15.9092	-20.45
4	-0.0349	50	53.8547	7.71
5	-0.0624	100	95.0409	-4.96
6	-0.1407	200	198.8974	-0.55
7	-0.1916	250	255.7639	2.31
8	-0.2342	300	296.9088	-1.03

Conc= -1618.988*Abso^2 -1655.209*Abso -1.9402 R^2=0.9989

RBL
0.6065
0

Report Date 6/2/2015 Run Date 6/2/2015

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

WORKGROUP: WG526339

Daily Check

- [x] Lamp On
- [x] Probe Rinse Full
- [x] DI Water > ½ Full
- [x] Wash Solution > ½ Full
- [ ] NO3 Reagent bottle connected / purged
- [ ] NO3 pH adj to pH 5-9

Syringe filter lot # _____

- [x] WBL Run
- [x] Reagents Full
- [x] Dilution H_2O Full
- [x] Waste Container Check

1) **Workgroup** _____
Plan # 2015060406G
2) **Workgroup** _____
Plan # _____
3) **Workgroup** _____
Plan # _____

Instrument: SC1 [x] SC2 [x]

	Analyte	1	2	3
		Alk		
		Dilution		
SC Prepared Curve				
Position				
1-1	ICV			
1-2	Blk			
1-3	LCS			
1-4	LCSDUP			
1-5	6-0002-20			
1-6	21			
1-7	1752-04			
1-8	08			
1-9	1767-03	1/4		color
1-10	06	1/4		
1-11	09	1/4		
1-12	6-0095-02	1/4		
1-13	03	1/4		
1-14	05	1/4		
1-15	06	1/4		
1-16	07	1/100		
1-17	DUP 06-98-06	1/4		
1-18				
1-19				
1-20				
1-21				
1-22				
2-1				
2-2				
2-3				

	Analyte	1	2	3
Position				
2-4	ICV			
2-5	Blk			
2-6	LCS			
2-7	LCSDUP			
2-8	5-1767-09	1/4		color
2-9	6-0095-02	1/4		
2-10	03	1/4		
2-11	05	1/4		
2-12	06	1/4		
2-13	07	1/100		
2-14	DUP 1769-04	1/4		
2-15	1752-08	1/2		
2-16				
2-17				
2-18				
2-19				
2-20				
2-21				
2-22				
2-23				
2-24				
2-25				
2-26				
3-1				
3-2				

NOTES:
* Run NO2 std on NO3 runs
* LCSD must be run if no MS or Duplicate
*MS(10% sample): NO3, TKN, NH3, PHOS

DCN#111069

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

WORKGROUP: WG526339

Position	Analyte	1	2	3
3-3				
3-4				
3-5				
3-6				
3-7				
3-8				
3-9				
3-10				
3-11				
3-12				
3-13				
3-14				
3-15				

Position	Analyte	1	2	3
3-16				
3-17				
3-18				
3-19				
3-20				
3-21				
3-22				
3-23				
3-24				
3-25				
3-26				
3-27				
3-28				

	Chloride	EPA 325.2/SM 4500-CI E-2000
	Nitrate-Nitrite	EPA 353.2/SM 4500-NO3 F-2000
✓	Alkalinity	EPA 310.2
	Sulfate	EPA 375.4/SM 426C (15th)/ SM4500-504 E-1997

	Ammonia	EPA 350.1/SM 4500-NH3 B-1997
	TKN	EPA 351.2
	Phos	EPA 365.4

Analyte	Alk		Reagents
SOP & Revision	IS 3102 R17		
Curve Stock (SC made)	Std 70552		33801
NO2 STD			
ICV	Std 70444		
CCV	Std 70445		
LCS	Std 70828		
MS	~~Std~~ dm 6/5/15 Dilution	NA	

Comments: _____

Analyst: Tom Boyle Date: 6/4/15

DCN#111069

MICROBAC (OVD)

SMARTCHEM200 INST2 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.0	0.8624	0.00	R	6:33:18 PM
DIL-1	RBL	0.0	0.8647	0.00	R	6:33:36 PM
DIL-1	RBL	0.0	0.8517	0.00	R	6:34:30 PM
DIL-1	Std-1	0.0	0.0030	0.00	INV	6:34:48 PM
SR5-1	Std-2	10.0	-0.0152	0.00		6:35:42 PM
SR5-2	Std-3	20.0	-0.0253	0.00		6:36:00 PM
SR5-3	Std-4	50.0	-0.0813	0.00		6:36:54 PM
SR5-4	Std-5	100.0	-0.1220	0.00		6:37:12 PM
SR5-5	Std-6	200.0	-0.2870	0.00		6:38:06 PM
SR5-6	Std-7	250.0	-0.3719	0.00		6:38:24 PM
SR5-7	Std-8	300.0	-0.4521	0.00		6:39:18 PM
ST-3	1CCV (150 mg/L)	140.0	-0.1947	93.35		6:40:12 PM
ST-2	2CCB (0 mg/L)	4.7	-0.0063	0.00		6:40:30 PM
1	ICV	247.9	-0.3642	0.00		6:41:24 PM
2	WG526339-01 BLK	7.2	-0.0095	0.00		6:41:42 PM
3	WG526339-02 LCS	197.9	-0.2831	0.00		6:42:37 PM
4	WG526339-03 LCSDUP	195.2	-0.2789	0.00		6:42:55 PM
5	L15050002-20	29.3	-0.0389	0.00		6:43:49 PM
6	L15050002-21	26.4	-0.0350	0.00		6:44:07 PM
7	L15051752-04	277.8	-0.4153	0.00		6:45:01 PM
8	L15051752-08	X 383.1	-0.6146	0.00	><,LH	6:45:19 PM
9	L15051767-03 (4)	105.8	-0.1448	0.00		6:46:13 PM
10	L15051767-06 (4)	98.6	-0.1345	0.00		6:46:31 PM
ST-3	1CCV (150 mg/L)	154.9	-0.2169	103.27		6:47:25 PM
ST-2	2CCB (0 mg/L)	17.5	-0.0232	0.00		6:47:43 PM
11	L15051767-09 (4)	X 122.2	-0.1685	0.00		6:48:55 PM
12	L15060098-02 (4)	221.1	-0.3201	0.00		6:49:13 PM
13	L15060098-03 (4)	111.6	-0.1532	0.00		6:50:07 PM
14	L15060098-05 (4)	239.7	-0.3506	0.00		6:50:25 PM
15	L15060098-06 (4) WG-04 REF	ok 95.5	-0.1302	0.00		6:51:19 PM
16	L15060098-07 (100)	87.3	-0.1186	0.00		6:51:37 PM
17	WG526339-05 (4) DUP	ok 97.2	-0.1325	0.00		6:52:49 PM
18	ID 18	25.9	-0.0343	0.00		6:53:07 PM
ST-3	1CCV (150 mg/L)	163.2	-0.2294	108.78		6:54:01 PM
ST-2	2CCB (0 mg/L)	41.2	-0.0548	0.00		6:54:19 PM
8-[1/2]	L15051752-08	X 454.1	-0.3298	0.00	LH	7:01:59 PM

Report Date :06/05/2015 Run Date :06/04/2015 Operator : WESTCO Plan # :20150604005

Plan Description : ALK-C2-TB/DCM/06/04/2015

MICROBAC (OVD)
SMARTCHEM200 INST2 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
ST-3	**1CCV (150 mg/L)**	**171.2**	**-0.2416**	**114.12**		**7:01:59 PM**
ST-2	**2CCB (0 mg/L)**	**51.3**	**-0.0685**	**0.00**		**7:02:53 PM**

Report Date :06/05/2015 **Run Date :06/04/2015** **Operator : WESTCO** **Plan # :20150604005**

Plan Description : ALK-C2-TB/DCM/06/04/2015

Calibrant Report - WALK -

Calib Lot #:010104 Exp Date:6/21/2020 User:MICROBAC

Plan # : 20150604005 Description : [ALK-C2-TB/DCM/06/04/2015] Unit [mg/L]

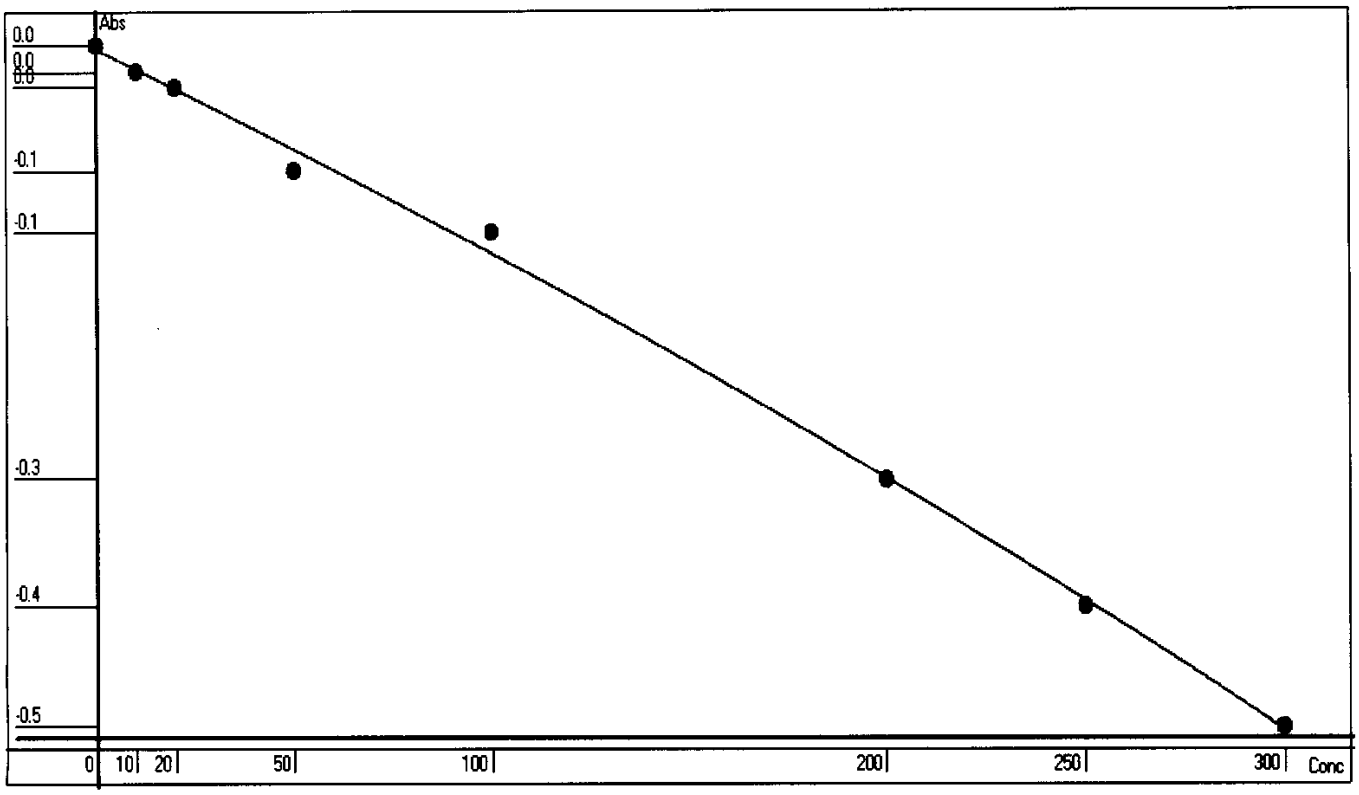

Point	OD	Conc	Recalc Conc	% Error
1	0.0030	0	-2.3150	-231.50
2	-0.0152	10	11.5402	15.40
3	-0.0253	20	19.1636	-4.18
4	-0.0813	50	60.5848	21.17
5	-0.1220	100	89.7882	-10.21
6	-0.2869	200	200.3480	0.17
7	-0.3719	250	252.4753	0.99
8	-0.4521	300	298.6262	-0.46

Conc= -228.9042*Abso^2 -764.0646*Abso -0.0207 R^2=0.9976

RBL
0.8636
0

Report Date 6/5/2015 Run Date 6/4/2015

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

WORKGROUP: WG526393

Daily Check

- [x] Lamp On
- [x] Probe Rinse Full
- [x] DI Water > ½ Full
- [x] Wash Solution > ½ Full
- [ ] NO3 Reagent bottle connected / purged
- [ ] NO3 pH adj to pH 5-9

Syringe filter lot # _____

- [x] WBL Run
- [x] Reagents Full
- [x] Dilution H_2O Full
- [x] Waste Container Check

1) **Workgroup** _____
   Plan # _____
2) **Workgroup** _____
   Plan # _____
3) **Workgroup** _____
   Plan # _____

Instrument: SC1 [ ] SC2 [x]

	Analyte	1	2	3
		Alk		
		Dilution		
SC Prepared Curve				
Position				
1-1	ICV			
1-2	Blk			
1-3	LCS			
1-4	LCSDUP			
1-5	05-176709	1/4		color
1-6	05-1752-08	1/2		
1-7	06-98-02	1/4		color
1-8	03	1/4		color
1-9	05	1/4		color
1-10	06	1/4		color
1-11	07	1/100		color
1-12	DUP 06-98-06	1/4		
1-13				
1-14				
1-15				
1-16				
1-17				
1-18				
1-19				
1-20				
1-21				
1-22				
2-1				
2-2				
2-3				

Position	Analyte	1	2	3
2-4				
2-5				
2-6				
2-7				
2-8				
2-9				
2-10				
2-11				
2-12				
2-13				
2-14				
2-15				
2-16				
2-17				
2-18				
2-19				
2-20				
2-21				
2-22				
2-23				
2-24				
2-25				
2-26				
3-1				
3-2				

NOTES:
* Run NO2 std on NO3 runs
* LCSD must be run if no MS or Duplicate
*MS(10% sample): NO3, TKN, NH3, PHOS

DCN#111078

SMARTCHEM RUN LOG
(smartchem2, smartchem3)

WORKGROUP: WG526393

Position	Analyte	1	2	3
3-3				
3-4				
3-5				
3-6				
3-7				
3-8				
3-9				
3-10				
3-11				
3-12				
3-13				
3-14				
3-15				

Position	Analyte	1	2	3
3-16				
3-17				
3-18				
3-19				
3-20				
3-21				
3-22				
3-23				
3-24				
3-25				
3-26				
3-27				
3-28				

	Chloride	EPA 325.2/SM 4500-CI E-2000
	Nitrate-Nitrite	EPA 353.2/SM 4500-NO3 F-2000
	Alkalinity	EPA 310.2
	Sulfate	EPA 375.4/SM 426C (15th)/ SM4500-504 E-1997

	Ammonia	EPA 350.1/SM 4500-NH3 B-1997
	TKN	EPA 351.2
	Phos	EPA 365.4

Analyte	Alk		Reagents
SOP & Revision	IC3102 R17		RGT 53801
Curve Stock (SC made)	Std 70552		
NO2 STD			
ICV	Std 70441		
CCV	Std 70445		
LCS	Std 70828		
MS	NA Dilution		

Comments: _____

Analyst: David Merchle Date: 6/5/15

DCN#111078

MICROBAC (OVD)

SMARTCHEM200 INST2 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.0	0.3127	0.00		7:41:10 AM
DIL-1	RBL	0.0	0.3136	0.00		7:41:28 AM
DIL-1	RBL	0.0	0.3103	0.00		7:42:22 AM
DIL-1	Std-1	0.0	0.0011	0.00	INV	7:42:40 AM
SR5-1	Std-2	10.0	-0.0035	0.00		7:43:34 AM
SR5-2	Std-3	20.0	-0.0080	0.00		7:43:52 AM
SR5-3	Std-4	50.0	-0.0210	0.00		7:44:46 AM
SR5-4	Std-5	100.0	-0.0447	0.00		7:45:05 AM
SR5-5	Std-6	200.0	-0.1013	0.00		7:45:58 AM
SR5-6	Std-7	250.0	-0.1379	0.00		7:46:53 AM
SR5-7	Std-8	300.0	-0.1738	0.00		7:47:11 AM
ST-3	1CCV (150 mg/L)	150.2	-0.0724	100.10		7:48:05 AM
ST-2	2CCB (0 mg/L)	6.2	-0.0015	0.00		7:48:23 AM
1	ICV	247.9	-0.1338	0.00		7:49:17 AM
2	WG526393-01 BLK	4.8	-0.0009	0.00		7:49:35 AM
3	WG526393-02 LCS	203.1	-0.1037	0.00		7:50:29 AM
4	WG526393-03 LCSDUP	201.9	-0.1029	0.00		7:50:47 AM
5	L15051767-09 (4)	81.5	-0.0365	0.00		7:51:41 AM
6	L15051752-08 (2)	206.0	-0.1055	0.00		7:51:59 AM
7	L15060098-02 (4)	208.7	-0.1072	0.00		7:52:53 AM
8	L15060098-03 (4)	99.6	-0.0455	0.00		7:53:11 AM
9	L15060098-05 (4)	213.5	-0.1103	0.00		7:54:05 AM
10	L15060098-06 (4)	72.9	-0.0323	0.00		7:54:23 AM
ST-3	1CCV (150 mg/L)	152.7	-0.0737	101.78		7:55:17 AM
ST-2	2CCB (0 mg/L)	2.6	0.0001	0.00	INV	7:55:35 AM
11	L15060098-07 (100)	91.2	-0.0413	0.00		7:56:47 AM
12	WG526393-05 (4) DUP	72.1	-0.0320	0.00		7:57:05 AM
13	ID 13	-4.1	0.0030	0.00	INV,><,LL	7:57:59 AM
ST-3	1CCV (150 mg/L)	157.3	-0.0763	104.86		7:58:17 AM
ST-2	2CCB (0 mg/L)	5.1	-0.0010	0.00		7:59:11 AM

Report Date :06/05/2015 **Run Date :06/05/2015** **Operator : WESTCO** **Plan # :20150605001**

Plan Description : ALK-A2-DCM/06/05/2015

Calibrant Report - WALK -

Calib Lot #:010104 Exp Date:6/21/2020 User:MICROBAC

Plan # : 20150605001 Description : [ALK-A2-DCM/06/05/2015] Unit [mg/L]

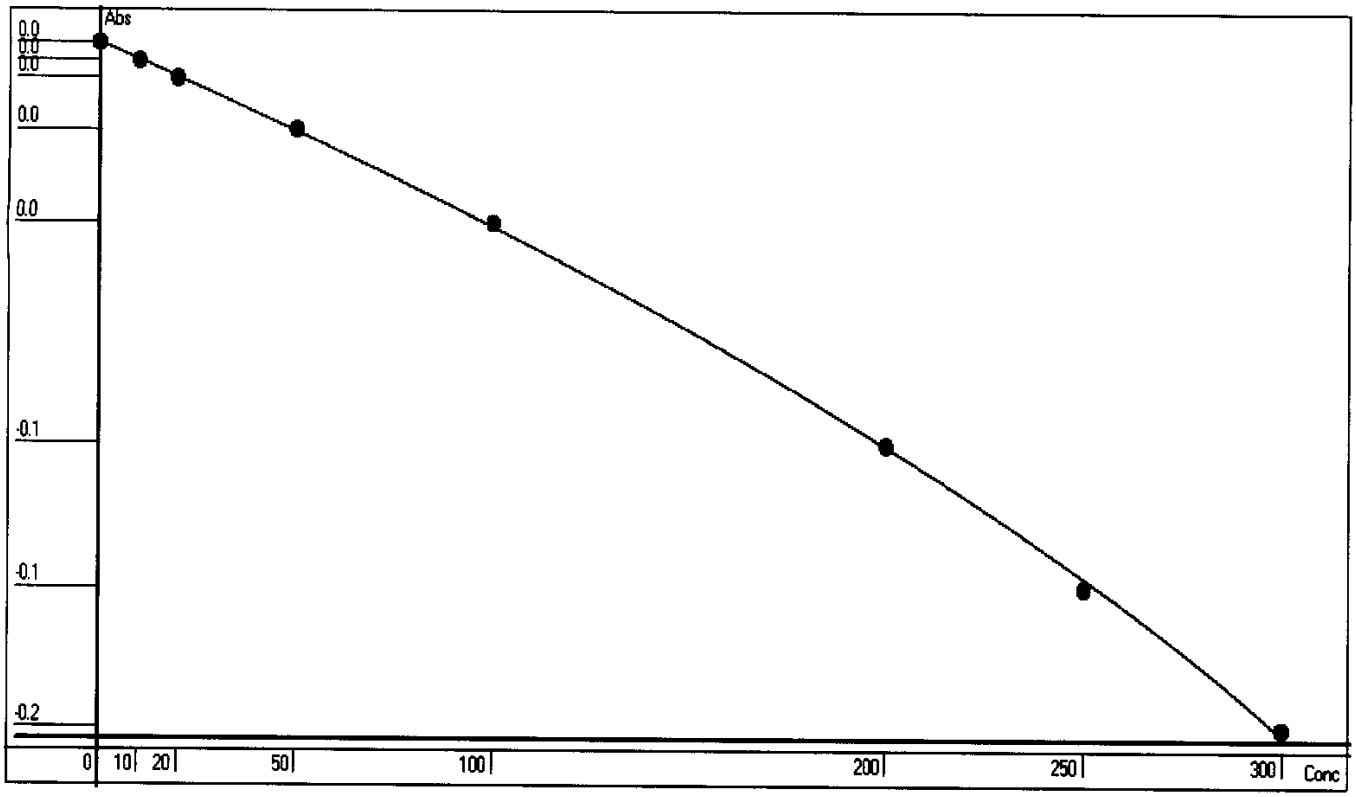

Point	OD	Conc	Recalc Conc	% Error
1	0.0011	0	0.1570	15.70
2	-0.0035	10	10.6069	6.07
3	-0.0080	20	20.6932	3.47
4	-0.0210	50	49.0730	-1.85
5	-0.0447	100	97.9115	-2.09
6	-0.1013	200	199.3941	-0.30
7	-0.1379	250	253.6445	1.46
8	-0.1737	300	298.0676	-0.64

Conc= -3333.983*Abso^2 -2279.74*Abso +2.6687 R^2=0.9998

RBL
0.3131
0

Report Date 6/5/2015 Run Date 6/5/2015

2.4.3 Phosphorus Data

2.4.3.1 Summary Data

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-04	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW24-052815	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	06/02/2015 10:09
Workgroup #:	WG525853	**Analyst:**	DCM	**Run Date:**	06/02/2015 10:21
Collect Date:	05/28/2015 08:15	**Dilution:**	1	**File ID:**	SC150602002.027
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-06	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW25-052815	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	06/02/2015 10:09
Workgroup #:	WG525853	**Analyst:**	DCM	**Run Date:**	06/02/2015 10:22
Collect Date:	05/28/2015 09:40	**Dilution:**	1	**File ID:**	SC150602002.028
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	1.72		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15051752-08	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW18-052815	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	06/02/2015 10:09
Workgroup #:	WG525853	**Analyst:**	DCM	**Run Date:**	06/02/2015 10:41
Collect Date:	05/28/2015 11:00	**Dilution:**	2	**File ID:**	SC150602002.044
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	1.52		0.800	0.400	0.200

2.4.3.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809	
Value of b from plot:	0.0004135	
Absorbance of unknown from quantitation report (y):	0.31	
Calculated concentration (x):	0.03964483	
Dilution factor (D):	1.00	
Concentration of analyte in sample, Cy:	0.0396	mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796	
Value of B from plot:	318.9056	
Value of C from plot:	-2.2712	
Absorbance of unknown from quantitation report (x):	0.1583	
Calculated concentration (y):	50.7495108	
Dilution factor (D):	1.00	
Concentration of analyte in sample, Cy:	50.75	mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 02-JUN-2015
Analyst: DCM
Analyst: NA
Method: PHOS
Instrument: SC
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG525853

Calibration/Linearity	06-02-2015
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DCM
Secondary Reviewer	SAV
Comments	

Primary Reviewer:
02-JUN-2015

Secondary Reviewer:
03-JUN-2015

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-03-2015 11:01:09

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 365.4 AAB#: WG525853

Login Number: L15051752

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW24-052815	04	05/28/15					06/02/2015	5.1	28		06/02/15	5.1	28	
50WW25-052815	06	05/28/15					06/02/2015	5	28		06/02/15	5	28	
50WW18-052815	08	05/28/15					06/02/2015	5	28		06/02/15	5	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4212788
Report generated 06/02/2015 16:02

METHOD BLANK SUMMARY

Login Number: L15051752
Blank File ID: SC150602002.010
Prep Date: 06/02/15 10:12
Analyzed Date: 06/02/15 10:12
Analyst: DCM

Work Group: WG525853
Blank Sample ID: WG525853-01
Instrument ID: SMARTCHEM
Method: 365.4

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG525853-02	SC150602002.011	06/02/15 10:12	01
LCS2	WG525853-03	SC150602002.012	06/02/15 10:13	01
50WW24-052815	L15051752-04	SC150602002.027	06/02/15 10:21	01
50WW25-052815	L15051752-06	SC150602002.028	06/02/15 10:22	01
DUP	WG525853-05	SC150602002.033	06/02/15 10:25	01
50WW18-052815	L15051752-08	SC150602002.044	06/02/15 10:41	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4212789
Report generated 06/02/2015 16:02

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051752 Prep Date: 06/02/15 10:12 Sample ID: WG525853-01
Instrument ID: SMARTCHEM Run Date: 06/02/15 10:12 Prep Method: 365.4
File ID: SC150602002.010 Analyst: DCM Method: 365.4
Workgroup (AAB#): WG525853 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-02-JUN-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Phosphorus, Total	0.100	0.400	-0.147	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4212790
02-JUN-2015 16:02

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051752 Analyst: DCM Prep Method: 365.4
Instrument ID: SMARTCHEM Matrix: Water Method: 365.4
Workgroup (AAB#): WG525853 Units: mg/L
QC Key: DOD4 Lot #: STD70631

Sample ID: WG525853-02 LCS File ID: SC150602002.011 Run Date: 06/02/2015 10:12
Sample ID: WG525853-03 LCS2 File ID: SC150602002.012 Run Date: 06/02/2015 10:13

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Phosphorus, Total	1.00	0.966	96.6	1.00	0.956	95.6	1.05	70 - 130	25	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4212791
Report generated: 06/02/2015 16:02

2.4.3.3 Raw Data

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

WORKGROUP: WG525853

Daily Check

- [x] Lamp On
- [x] Probe Rinse Full
- [x] DI Water > ½ Full
- [x] Wash Solution > ½ Full
- [ ] NO3 Reagent bottle connected / purged
- [ ] NO3 pH adj to pH 5-9

Syringe filter lot # _____

- [x] WBL Run
- [x] Reagents Full
- [x] Dilution H_2O Full
- [x] Waste Container Check

1) **Workgroup** _____
   Plan # 20150602002
2) **Workgroup** _____
   Plan # _____
3) **Workgroup** _____
   Plan # _____

Instrument: SC1 [x] SC2 [ ]

	Analyte	1	2	3
		PHOS		
		Dilution		
SC Prepared Curve				
Position				
1-1	JCV			
1-2	Blk			
1-3	LCS			
1-4	LCSDup			
1-5	05-1605-05	1ml/5		
1-6	06	1ml/10		
1-7	05-1635-01			
1-8	02			
1-9	05-1636-01			
1-10	02			
1-11	05-1666-01			
1-12	02			
1-13	03			
1-14	04			
1-15	05-1674-01			
1-16	05-1765-01			
1-17	05-1752-04			
1-18	06			
1-19	08			
1-20	05-1803-03	1ml/250		
1-21	DUP 05-1666-01			
1-22	MS ~~05-1666-01~~	05-1666-02		
2-1	MS ~~05-1666-02~~	05-1666-01		
2-2				
2-3				

dw 6/2/15

Position	Analyte	1	2	3
2-4				
2-5				
2-6				
2-7				
2-8				
2-9				
2-10				
2-11				
2-12				
2-13				
2-14				
2-15				
2-16				
2-17				
2-18				
2-19				
2-20				
2-21				
2-22				
2-23				
2-24				
2-25				
2-26				
3-1				
3-2				

NOTES:
* Run NO2 std on NO3 runs
* LCSD must be run if no MS or Duplicate
*MS(10% sample): NO3, TKN, NH3, PHOS

DCN#110978

SMARTCHEM RUN LOG
(smartchem2, smartchem3)

WORKGROUP: WG525853

Position	Analyte	1	2	3
3-3				
3-4				
3-5				
3-6				
3-7				
3-8				
3-9				
3-10				
3-11				
3-12				
3-13				
3-14				
3-15				

Position	Analyte	1	2	3
3-16				
3-17				
3-18				
3-19				
3-20				
3-21				
3-22				
3-23				
3-24				
3-25				
3-26				
3-27				
3-28				

	Chloride	EPA 325.2/SM 4500-CI E-2000
	Nitrate-Nitrite	EPA 353.2/SM 4500-NO3 F-2000
	Alkalinity	EPA 310.2
	Sulfate	EPA 375.4/SM 426C (15th)/ SM4500-504 E-1997

	Ammonia	EPA 350.1/SM 4500-NH3 B-1997
	TKN	EPA 351.2
✓	Phos	EPA 365.4

Analyte	PHOS		Reagents
SOP & Revision	K 3654 R 18		RGT 33515
Curve Stock (SC made)			RGT 33085
NO2 STD			RGT 33733
ICV	DIGEST		
CCV	get		
LCS	LOT		
MS	Dilution		

Comments: LCS AS ICV: MADE FROM SAME SOURCE

Analyst: David Merkle

Date: 6/2/15

DCN#110978

TKN/Phosphorus Digestion Log

TKN WG:
TKN Std: Std 70705
TKN CCV: 1/2 (Std 70705)
TKN ICV: Std 70519
TKN LCS: Std 70653

Phos WG:
Phos Std: Std 70705
Phos CCV: 1/2 (Std 70705)
Phos ICV: Std 70513
Phos LCS: Std 70631

MS/MSD: Std 70137
Daily Dilution: 1130 / 25 = 1

Block Digester Temperature: 380 °C
Digest Reagent: RG1 33703

	Sample	Volume	TKN Dilution	Phos Dilution		Sample	Volume	TKN Dilution	Phos Dilution
1	Std		5	2	26	DUP 05-1666-01		✓	✓
2	Std		5	2	27	MS 05-1666-01		✓	✓
3	ICV T		2		28	MS 05-1666-02		✓	
4	ICV P			1.5	29	LCS T		✓	
5	LCS T		1		30	LCS P			✓
6	LCS P			1	31				
7	05-1310-01	1/10	✓	NO	32				
8	02	1/10	✓	NO	33				
9	05-1635-01		✓	✓	34				
10	02		✓	✓	35				
11	05-1636-01		✓	✓	36				
12	02		✓	✓	37				
13	05-1663-05		✓		38				
14	05-1666-01		✓	✓	39				
15	02		✓	✓	40				
16	03		✓	✓	41				
17	04		✓	✓	42				
18	05-1674-01		✓	✓	43				
19	05-1765-01		✓	✓	44				
20	05-1752-04			✓	45				
21	06			✓	46				
22	08			✓	47				
23	05-1603-03	1/250		✓	48				
24	05-1105-05	1/5	✓	✓	49				
25	05	1/10	✓	✓	50				

Analyst: Daniel Meredith Date: 6/1/15

MICROBAC (OVD)
SMARTCHEM200 INST1 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WTPH -Unit [mg/L] - EPA 365.4 TOTAL PHOSPHORUS

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.000	0.0921	0.00	R	10:04:50 AM
DIL-1	RBL	0.000	0.0885	0.00	R	10:05:08 AM
DIL-1	RBL	0.000	0.0902	0.00	R	10:06:02 AM
SR5-1	Std-1	0.010	-0.0059	0.00	INV	10:06:21 AM
SR5-2	Std-2	0.200	0.0292	0.00		10:07:14 AM
SR5-3	Std-3	0.500	0.0762	0.00		10:07:32 AM
SR5-4	Std-4	1.000	0.1429	0.00		10:08:26 AM
SR5-5	Std-5	1.500	0.2173	0.00		10:08:45 AM
ST-1	Std-6	2.000	0.2958	0.00		10:09:39 AM
ST-3	1CCV (1 mg/L)	0.952	0.1384	95.21		10:09:58 AM
ST-2	2CCB (0 mg/L)	-0.123	-0.0216	0.00	INV,><,LL	10:10:51 AM
1	ICV	X 1.848	0.2717	0.00	EPL	10:11:09 AM
2	WG525853-01 BLK	-0.147	-0.0252	0.00	INV,><,LL	10:12:03 AM
3	WG525853-02 LCS	0.966	0.1404	0.00		10:12:21 AM
4	WG525853-03 LCSDUP	0.956	0.1389	0.00		10:13:15 AM
5	L15051105-05 (5)	X 1.429	0.2094	0.00		10:13:33 AM
6	L15051105-05 (10)	X 0.481	0.0683	0.00		10:14:27 AM
7	L15051635-01	1.522	0.2231	0.00	EPL	10:14:45 AM
8	L15051635-02	0.601	0.0862	0.00	EPL	10:15:39 AM
9	L15051636-01	X 3.211	0.4744	0.00	EPL,><,LH	10:15:57 AM
10	L15051636-02	1.063	0.1549	0.00	EPL	10:16:51 AM
ST-3	1CCV (1 mg/L)	0.907	0.1317	90.71		10:17:09 AM
ST-2	2CCB (0 mg/L)	-0.145	-0.0249	0.00	INV,><,LL	10:18:03 AM
11	L15051666-01	1.056	0.1538	0.00	EPL	10:18:21 AM
12	L15051666-02	X 2.319	0.3417	0.00	EPL,><,LH	10:19:16 AM
13	L15051666-03	1.620	0.2377	0.00	EPL	10:19:33 AM
14	L15051666-04	1.126	0.1643	0.00	EPL	10:20:27 AM
15	L15051674-01	0.680	0.0978	0.00	EPL	10:20:44 AM
16	L15051765-01	-0.059	-0.0121	0.00	INV,><,LL	10:21:39 AM
17	L15051752-04	0.023	0.0002	0.00		10:21:56 AM
18	L15051752-06	1.717	0.2522	0.00	EPL	10:22:51 AM
19	L15051752-08	X 5.283	0.7826	0.00	EPL,><,LH	10:23:08 AM

Report Date :06/02/2015 **Run Date :6/2/2015** **Operator : WESTCO** **Plan # :20150602002**

Plan Description : PHOS-A1-DCM/06/02/2015

MICROBAC (OVD)
SMARTCHEM200 INST1 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WTPH -Unit [mg/L] - EPA 365.4 TOTAL PHOSPHORUS

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
20	L15051603-03 (250)	4.605	0.6817	0.00	EPL,><,LH	10:24:02 AM
ST-3	1CCV (1 mg/L)	0.855	0.1239	85.47		10:24:20 AM
ST-2	2CCB (0 mg/L)	-0.173	-0.0290	0.00	INV,><,LL	10:25:14 AM
21	WG525853-05 DUP	0.791	0.1144	0.00	EPL	10:25:32 AM
22	WG525853-06 MS	2.411	0.3554	0.00	EPL,><,LH	10:26:26 AM
23	WG525853-08 MS	1.792	0.2633	0.00	EPL	10:26:44 AM
24	ID 24	0.937	0.1362	0.00		10:27:38 AM
25	ID 25	-0.230	-0.0376	0.00	INV,><,LL	10:27:56 AM
26	ID 26	-0.130	-0.0227	0.00	INV,><,LL	10:28:50 AM
ST-3	1CCV (1 mg/L)	0.900	0.1306	89.97		10:29:08 AM
ST-2	2CCB (0 mg/L)	-0.173	-0.0290	0.00	INV,><,LL	10:30:02 AM
1-[1/2]	ICV	1.350	0.0972	0.00		10:37:43 AM
9-[1/2]	L15051636-01	1.473	0.1063	0.00	EPL	10:38:54 AM
12-[1/2]	L15051666-02	1.247	0.0895	0.00	EPL	10:40:06 AM
19-[1/2]	L15051752-08	1.518	0.1097	0.00	EPL	10:41:18 AM
ST-3	1CCV (1 mg/L)	0.892	0.1295	89.23		10:41:18 AM
ST-2	2CCB (0 mg/L)	-0.217	-0.0356	0.00	INV,><,LL	10:42:12 AM
20-[1/2]	L15051603-03 (250)	1.629	0.1179	0.00	EPL	10:43:42 AM
22-[1/2]	WG525853-06 MS	1.673	0.1212	0.00		10:44:54 AM
ST-3	1CCV (1 mg/L)	0.896	0.1300	89.57		10:44:54 AM
ST-2	2CCB (0 mg/L)	-0.179	-0.0299	0.00	INV,><,LL	10:45:49 AM

dm 6/2/15

Report Date :06/02/2015 Run Date :6/2/2015 Operator : WESTCO Plan # :20150602002

Plan Description : PHOS-A1-DCM/06/02/2015

Calibrant Report - WTPH -

Calib Lot #:010104 Exp Date:6/18/2020 User:MICROBAC

Plan # : 20150602002 Description : [PHOS-A1-DCM/06/02/2015] Unit

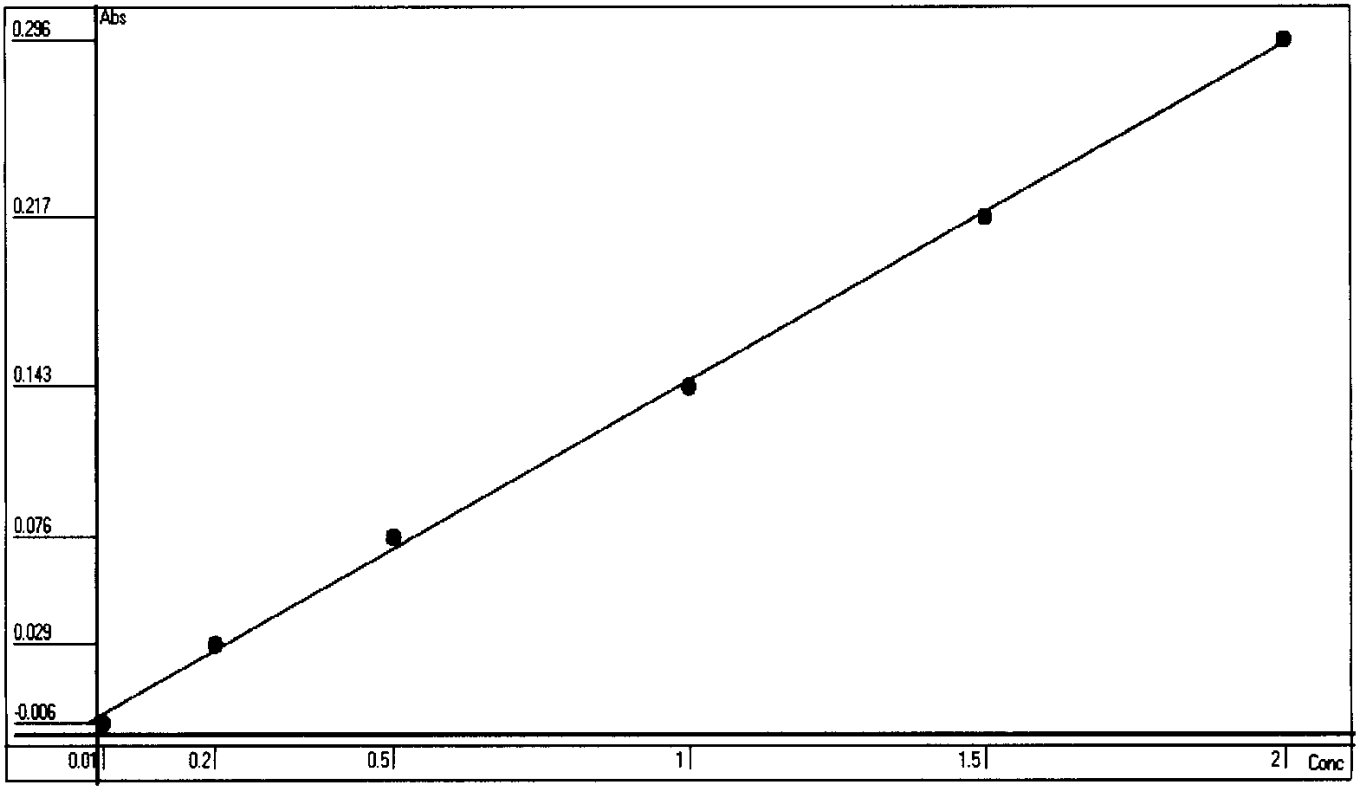

Point	OD	Conc	Recalc Conc	% Error
1	-0.0059	0.01	-0.0176	-276.00
2	0.0291	0.2	0.2177	8.85
3	0.0762	0.5	0.5344	6.88
4	0.1428	1	0.9821	-1.79
5	0.2173	1.5	1.4829	-1.14
6	0.2957	2	2.0099	0.50

Conc= +6.7225*Abso +0.0221 R^2=0.9990

RBL
0.0894
0

Report Date 6/2/2015 Run Date 6/2/2015

2.4.4 Sulfide Data

2.4.4.1 Summary Data

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-04	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW24-052815	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG526128	**Analyst:**	EPT	**Run Date:**	06/03/2015 13:50
Collect Date:	05/28/2015 08:15	**Dilution:**	1	**File ID:**	ET.1506031350-04
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-06	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW25-052815	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG526128	**Analyst:**	EPT	**Run Date:**	06/03/2015 13:50
Collect Date:	05/28/2015 09:40	**Dilution:**	1	**File ID:**	ET.1506031350-05
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-08	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW18-052815	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG526128	**Analyst:**	EPT	**Run Date:**	06/03/2015 13:50
Collect Date:	05/28/2015 11:00	**Dilution:**	1	**File ID:**	ET.1506031350-06
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.4.4.2 QC Summary Data

Example Total Sulfide(Liquid) Calculations

[mL Iodine * N Iodide) - (mL titrant * N titrant)] * 16000/(volume * dilution) = mg/L Sulfide

where:

mL Iodine = mL of Iodine used
N Iodine = normality of Iodine
mL titrant = mL of titrant used
N titrant = normality of titrant
16000 = factor: 1mL of 0.025 N iodine reacts with 0.4mg sulfide
volume = mL filtered of mL titrated(if not filtered)
dilution = dilution in decimal form (1/5 = 0.2)

Example Total Sulfide(Soil) Calculations

[(mL Iodine * N Iodine) - (mL titrant * N titrant)] * 16.03/weight = mg/kg sulfide

where:

mL Iodine = mL of Iodine used
N Iodine = normality of Iodine
mL titrant = normality of titrant
16.03 = 32.06 grams per 2 equivalents
weight = kg of sample used

Microbac Laboratories Inc.

Data Checklist

Date: 03-JUN-2015
Analyst: EPT
Analyst: NA
Method: SULFIDE
Instrument: BURET
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG526128

Calibration/Linearity	6/3/15
Second Source Check	
ICV/CCV (std)	
ICB/CCB	
Blank	X
LCS/LCS Dup	X
MS/MSD	
Duplicate	
Upload Results	X
Client Forms	
QC Violation Sheet	
Case Narratives	
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	
Primary Reviewer	EPT
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
08-JUN-2015
Ethan Tido

Secondary Reviewer:
09-JUN-2015
Dianna Hesson

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-09-2015 09:49:24

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: SM4500-S-(-2)-F-

AAB#: WG526128

Login Number: L15051752

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW24-052815	04	05/28/15					06/03/2015	6.2	7		06/03/15	6.2	7	
50WW25-052815	06	05/28/15					06/03/2015	6.2	7		06/03/15	6.2	7	
50WW18-052815	08	05/28/15					06/03/2015	6.1	7		06/03/15	6.1	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4224292
Report generated 06/09/2015 08:01

METHOD BLANK SUMMARY

Login Number: L15051752
Blank File ID: ET.1506031350-01
Prep Date: 06/03/15 13:50
Analyzed Date: 06/03/15 13:50
Analyst: EPT

Work Group: WG526128
Blank Sample ID: WG526128-01
Instrument ID: BURET
Method: SM4500-S-(-2)-F-

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG526128-02	ET.1506031350-02	06/03/15 13:50	
LCS2	WG526128-03	ET.1506031350-03	06/03/15 13:50	
50WW24-052815	L15051752-04	ET.1506031350-04	06/03/15 13:50	
50WW25-052815	L15051752-06	ET.1506031350-05	06/03/15 13:50	
50WW18-052815	L15051752-08	ET.1506031350-06	06/03/15 13:50	

Report Name: BLANK_SUMMARY
PDF File ID: 4224293
Report generated 06/09/2015 08:01

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051752 Prep Date: 06/03/15 13:50 Sample ID: WG526128-01
Instrument ID: BURET Run Date: 06/03/15 13:50 Prep Method: SM4500-S-(-2)-F
File ID: ET.1506031350-01 Analyst: EPT Method: SM4500-S-(-2)-F
Workgroup (AAB#): WG526128 Matrix: Water Units: mg/L
Contract #: Cal ID: BURET-

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Sulfide	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4224294
09-JUN-2015 08:01

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051752 Analyst: EPT Prep Method: SM4500-S-(-2)-F
Instrument ID: BURET Matrix: Water Method: SM4500-S-(-2)-F
Workgroup (AAB#): WG526128 Units: mg/L
QC Key: DOD4 Lot #: STD70866

Sample ID: WG526128-02 LCS File ID: ET.1506031350-02 Run Date: 06/03/2015 13:50
Sample ID: WG526128-03 LCS2 File ID: ET.1506031350-03 Run Date: 06/03/2015 13:50

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Sulfide	24.4	24.0	98.5	24.4	24.0	98.5	0.00	85 - 115	10	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4224295
Report generated: 06/09/2015 08:01

2.4.4.3 Raw Data

SULFIDE
(sulfide1)

WORKGROUP: WG526128

Water:
EPA 376.1 / SM4500-S(-2)-F
SOP K3761 Revision #: _____

Soil:
SM846 9030B/9034
SOP K9030 Revision #: _____

Instrument: Buret

LCS: Std 708616

Iodine standardization (0.025N) COA: 17891
mL 0.025N titrant: 10.0
Volume I: 10.0 mL
Normality I: 0.0250

(0.1 N I) COA: 18088
mL 0.025 N titrant: 8.6
Volume I: 2.0 mL
Normality I: 0.100

Stock standardization (in duplicate) 5.0 mL stock
mL I 1) 10.0 2) 10.0
N I 1) 0.100 2) 0.100
mL 0.025 titrant 1) 19.7 2) 19.7
LCS daily dilution: (3)(1624) / 200 = 24.36 mg/L

1624 = stock conc (mg/L)

Titrant: T- 1606-05-04

SAMPLE	Volume Filtered mL	mL Iodine	N Iodine	0.0250N Sodium Thiosulfate (mL)
BLANK	200	15.0	0.0250	15.0
LCS (mL)	200	15.0	0.0250	3.0
LCSDUP (mL)	200	15.0	0.0250	3.0
05-1752-04	540	15.0	0.0250	15.0
-06	480	15.0	0.0250	14.6
-08	520	15.0	0.0250	14.5

Analyst: Ethan Tidd Date/Time: 06/03/15 N 1350

DCN#111024

Microbac Laboratories Inc.
TITRAMETRIC REPORT

Workgroup (AAB#): WG526128
Analyst: EPT
Product: EPA 376.1\9034
Run Date: 06/03/2015 13:50
Analyte: Sulfide

SAMPLE NUMBER	Volume	Vol I	Nor I	Vol T	Nor T	Dil	Analytical	Reported	Units
WG526128-01	200.0	15	.025	15	.025	1	0	0	mg/L
WG526128-02	200.0	15	.025	3	.025	1	24.0	24.00	mg/L
WG526128-03	200.0	15	.025	3	.025	1	24.0	24.00	mg/L
L15051752-04	540.0	15	.025	15	.025	1	0	ND	mg/L
L15051752-06	480.0	15	.025	14.6	.025	1	0.333	ND	mg/L
L15051752-08	520.0	15	.025	14.5	.025	1	0.385	ND	mg/L

SULFIDE_REPORT - Modified 03/06/2008

Report generated 06/08/2015 10:25

2.4.5 Total Organic Carbon Data

2.4.5.1 Summary Data

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-04	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW24-052815	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	05/27/2015 15:47
Workgroup #:	WG525590	**Analyst:**	EPT	**Run Date:**	05/29/2015 17:22
Collect Date:	05/28/2015 08:15	**Dilution:**	10	**File ID:**	TC05292015.009
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	10.0	U	20.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-06	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW25-052815	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	05/27/2015 15:47
Workgroup #:	WG525590	**Analyst:**	EPT	**Run Date:**	05/29/2015 17:37
Collect Date:	05/28/2015 09:40	**Dilution:**	2	**File ID:**	TC05292015.010
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	3.27	J	4.00	2.00	1.00

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15051752-08	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW18-052815	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	05/27/2015 15:47
Workgroup #:	WG525590	**Analyst:**	EPT	**Run Date:**	05/29/2015 17:53
Collect Date:	05/28/2015 11:00	**Dilution:**	3	**File ID:**	TC05292015.011
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	3.00	U	6.00	3.00	1.50

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15051752
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.4.5.2 QC Summary Data

Total Organic Carbon Example Calculations
(Direct Readout Parameter)

(Readout)/(dilution) = mg/L

where:

Readout = direct readout from the instrument
dilution = dilution in decimal form (ex. 1/5 dilution = 0.2)

Microbac Laboratories Inc.

Data Checklist

Date: 29-MAY-2015
Analyst: EPT
Analyst: NA
Method: TOC
Instrument: TOC-VWP
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG525590

Calibration/Linearity	05/27/15
Second Source Check	
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	
QC Violation Sheet	
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	
Primary Reviewer	EPT
Secondary Reviewer	SAV
Comments	

Primary Reviewer:
01-JUN-2015
Ethan Tido

Secondary Reviewer:
01-JUN-2015
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-01-2015 13:51:03

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 415.1 AAB#: WG525590

Login Number: L15051752

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW24-052815	04	05/28/15					05/29/2015	1.4	28		05/29/15	1.4	28	
50WW25-052815	06	05/28/15					05/29/2015	1.3	28		05/29/15	1.3	28	
50WW18-052815	08	05/28/15					05/29/2015	1.3	28		05/29/15	1.3	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4208916
Report generated 06/01/2015 12:18

METHOD BLANK SUMMARY

Login Number: L15051752
Blank File ID: TC05292015.003
Prep Date: 05/29/15 15:27
Analyzed Date: 05/29/15 15:27
Analyst: EPT

Work Group: WG525590
Blank Sample ID: WG525590-01
Instrument ID: TOC-VWP
Method: 415.1

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG525590-02	TC05292015.004	05/29/15 15:41	01
LCS2	WG525590-03	TC05292015.005	05/29/15 15:57	01
50WW24-052815	L15051752-04	TC05292015.009	05/29/15 17:22	DL01
50WW25-052815	L15051752-06	TC05292015.010	05/29/15 17:37	DL01
50WW18-052815	L15051752-08	TC05292015.011	05/29/15 17:53	DL01
DUP	WG525590-05	TC05292015.013	05/29/15 18:20	01

Report Name: BLANK_SUMMARY
PDF File ID: 4208917
Report generated 06/01/2015 12:18

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15051752 Prep Date: 05/29/15 15:27 Sample ID: WG525590-01
Instrument ID: TOC-VWP Run Date: 05/29/15 15:27 Prep Method: 415.1
File ID: TC05292015.003 Analyst: EPT Method: 415.1
Workgroup (AAB#): WG525590 Matrix: Water Units: mg/L
Contract #: Cal ID: TOC-VW-27-MAY-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Total Organic Carbon	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4208918
01-JUN-2015 12:18

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15051752 Analyst: EPT Prep Method: 415.1
Instrument ID: TOC-VWP Matrix: Water Method: 415.1
Workgroup (AAB#): WG525590 Units: mg/L
QC Key: DOD4 Lot #: STD69935

Sample ID: WG525590-02 LCS File ID: TC05292015.004 Run Date: 05/29/2015 15:41
Sample ID: WG525590-03 LCS2 File ID: TC05292015.005 Run Date: 05/29/2015 15:57

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Total Organic Carbon	25.0	25.6	102	25.0	24.9	99.6	2.77	85 - 115	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4208919
Report generated: 06/01/2015 12:18

2.4.5.3 Raw Data

Curve wg525298

Total Organic Carbon

MAKE DAILY

CCV (TOC): _____ (5/200)(1000) = 25mg/L

LCS (TOC): _____ (5/200)(1000) = 25mg/L

CCV (TIC): _____ (5/200)(1000) = 25mg/L see below

MS (TOC): _____

Calibration Curve Date: _____

Reagent: ~~RGT 33399~~ 33691 ~~RGT 32721~~

☑ SM5310-C : Matrix 2 WG_____

☐ EPA 415.1/9060A(mod): Matrix 1 WG_____ SOP: K 4151 Rev. 18

WG_____ Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

- ☑ drain reservoir filled
- ☑ ASI water bottle full
- ☑ dilution water bottle full
- ☑ 3rd bottle full
- ☑ sufficient gas
- ☑ sufficient persulfate
- ☑ sufficient acid
- ☑ waste container

Position	Sample ID	Dilution	Position	Sample ID	Dilution	Position	Sample ID	Dilution
1	TC curve		26	TC curve		51		
2	TC curve		27	std 65368		52	see SOP for	
3	TC ICV		28			53	curve points	
4	~~TOC~~ TIC ICV		29	TIC curve		54		
5	on		30	std 68972		55		
6			31			56		
7			32			57		
8			33	TOC(TC)		58		
9			34	ICV		59	5/200(1000) = 25	
10			35	std 69935		60		
11			36			61		
12			37	TIC ICV		62		
13	all points		38	std 68222		63		
14	analyzed		39			64		
15	in duplicate		40			65		
16			41			66		
17			42			67		
18			43			68		
19			44			69		
20			45			70		
21			46			71		
22			47			72		
23			48			73		
24			49			74		
25			50			75		

Analyst: [signature] Date/Time: 5/27/15

DCN#110878

C:\TOC3201\Data\05-27-2015-DIH-CURVE.t32

	Analysis	Sample Name	Result	Status	Date / Time	Vial
1	TC	TCCURVE		Complete	5/27/2015 3:55:16 PM	0, 1, 2,
2	IC	TICCURVE		Complete	5/27/2015 5:11:46 PM	0, 6, 7,
3	TC	TC ICV	TC:24.70mg/L	Complete	5/27/2015 5:28:06 PM	11
4	IC	TIC ICV	IC:24.92mg/L	Complete	5/27/2015 5:40:34 PM	12

98.8%
99.7%

5/28/2015 7:38:55 AM

1/1

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Cal. Curve

Sample Name: TCCURVE
Sample ID: Untitled
Cal. Curve: TCCURVE-05-27-2015.2015_05_27_14_45_03.cal
Status Completed

Type	Anal.
Standard	TC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	14.21	500uL	1	*******		5/27/2015 2:48:37 PM
2	14.13	500uL	1	*******		5/27/2015 2:52:11 PM

Acid Add. 0.000%
Mean Area 14.17

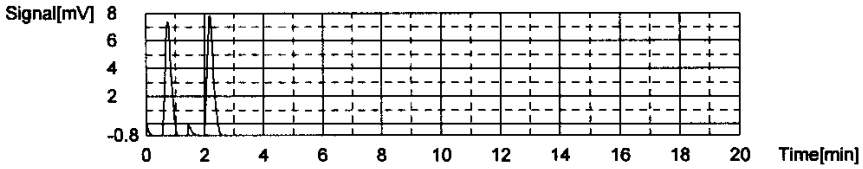

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	72.68	500uL	1	*******		5/27/2015 2:57:41 PM
2	73.82	500uL	1	*******		5/27/2015 3:01:49 PM

Acid Add. 0.000%
Mean Area 73.25

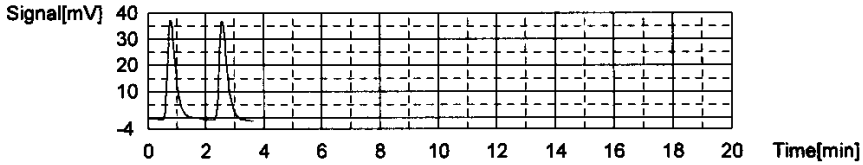

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	231.5	500uL	1	*******		5/27/2015 3:07:44 PM
2	231.3	500uL	1	*******		5/27/2015 3:12:05 PM

Acid Add. 0.000%
Mean Area 231.4

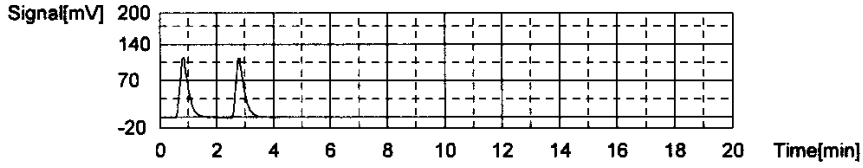

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	440.2	500uL	1	*******		5/27/2015 3:18:32 PM
2	435.3	500uL	1	*******		5/27/2015 3:23:03 PM

Acid Add. 0.000%
Mean Area 437.8

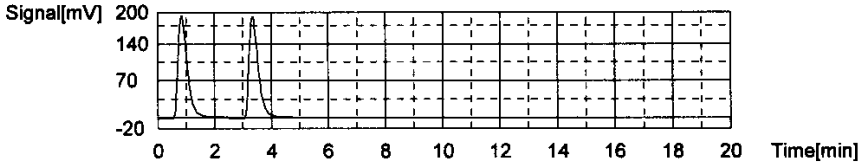

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1094	500uL	1	*******		5/27/2015 3:31:04 PM
2	1079	500uL	1	*******		5/27/2015 3:38:10 PM

Acid Add. 0.000%
Mean Area 1087

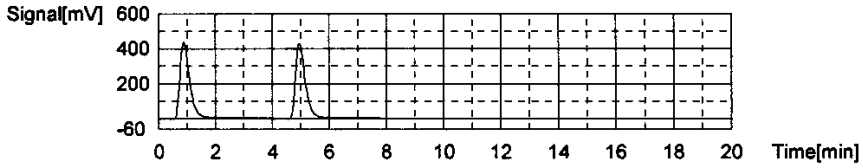

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	2210	500uL	1	T******		5/27/2015 3:47:01 PM
2	2208	500uL	1	T******		5/27/2015 3:55:16 PM

Acid Add. 0.000%
Mean Area 2209

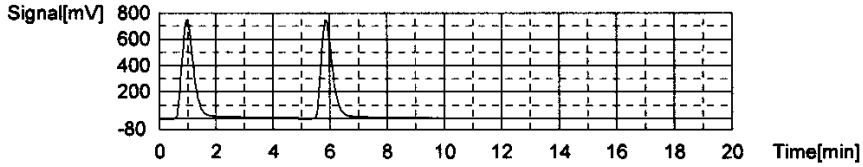

Slope: 43.70
Intercept 12.49
r^2 0.999746 ✓
Zero Shift No

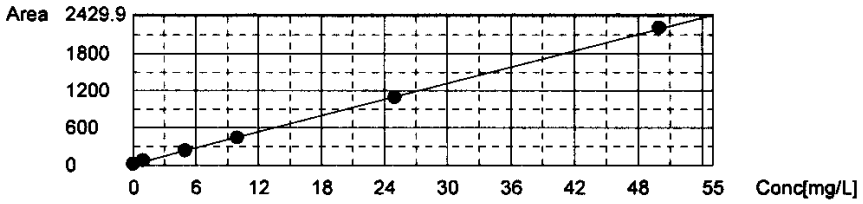

Cal. Curve

Sample Name: TICCURVE
Sample ID: Untitled
Cal. Curve: TICCURVE-05-27-2015.2015_05_27_15_55_16.cal
Status Completed

Type	Anal.
Standard	IC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	12.69	500uL	1	*******		5/27/2015 3:59:17 PM
2	12.56	500uL	1	*******		5/27/2015 4:03:21 PM

Acid Add. 10.00%
Mean Area 12.63

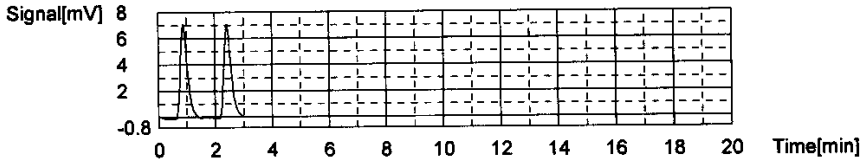

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	56.24	500uL	1	*******		5/27/2015 4:11:08 PM
2	56.43	500uL	1	*******		5/27/2015 4:15:44 PM

Acid Add. 10.00%
Mean Area 56.34

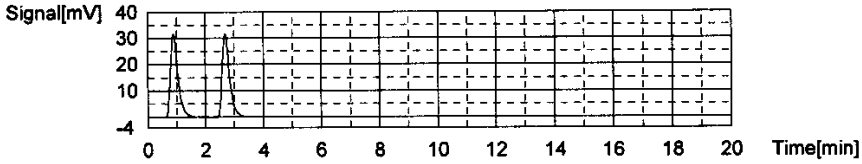

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	178.6	500uL	1	*******		5/27/2015 4:23:48 PM
2	185.6	500uL	1	*******		5/27/2015 4:28:40 PM

Acid Add. 10.00%
Mean Area 182.1

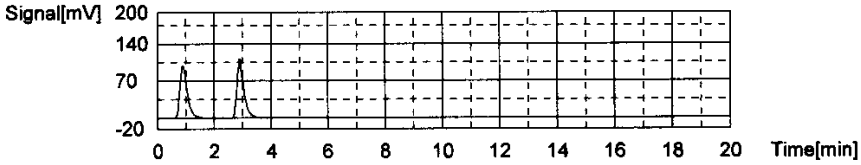

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	339.3	500uL	1	*******		5/27/2015 4:37:04 PM
2	343.0	500uL	1	*******		5/27/2015 4:42:04 PM

Acid Add. 10.00%
Mean Area 341.1

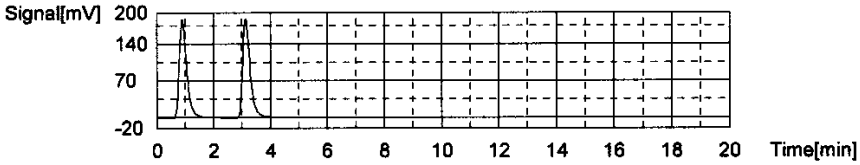

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	802.7	500uL	1	*******		5/27/2015 4:50:52 PM
2	804.1	500uL	1	*******		5/27/2015 4:56:25 PM

Acid Add. 10.00%
Mean Area 803.4

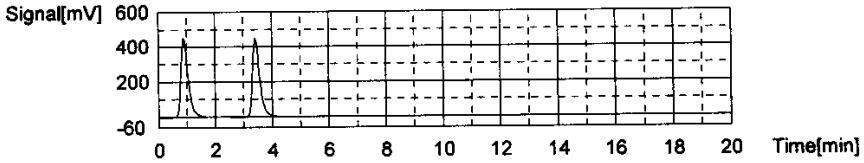

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1592	500uL	1	*******		5/27/2015 5:05:46 PM
2	1578	500uL	1	*******		5/27/2015 5:11:46 PM

Acid Add. 10.00%
Mean Area 1585

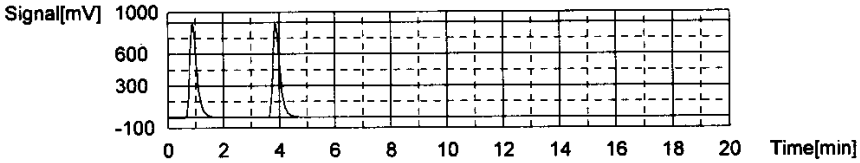

Slope: 31.27
Intercept 22.45
r^2 0.999917
Zero Shift No

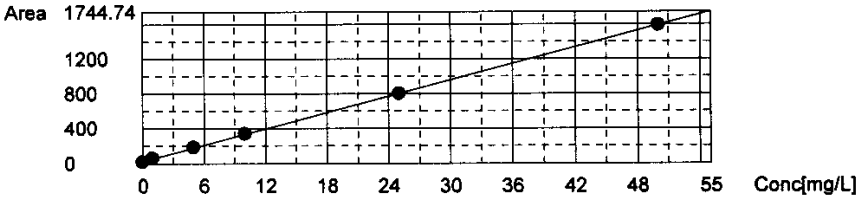

Sample

Sample Name: TC ICV
Sample ID: Untitled
Origin: TCCURVE-05-27-2015.cal
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TC	1.000	TC:24.70mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1111	25.13mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_05	5/27/2015 5:21:56 PM
2	1073	24.27mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_05	5/27/2015 5:28:06 PM

Mean Area 1092
Mean Conc. 24.70mg/L

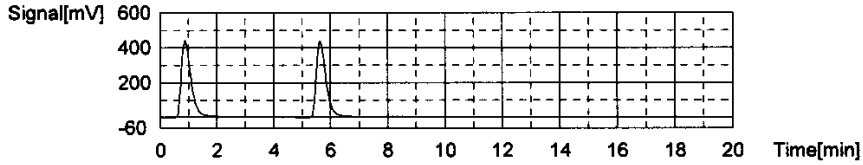

Sample

Sample Name:	TIC ICV
Sample ID:	Untitled
Origin:	TICCURVE-05-27-2015.cal
Status	Completed
Chk. Result	

Type	Anal.	Dil.	Result
Unknown	IC	1.000	IC:24.92mg/L

1. Det

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	800.1	24.87mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/27/2015 5:35:10 PM
2	803.2	24.97mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/27/2015 5:40:34 PM

Mean Area	801.7
Mean Conc.	24.92mg/L

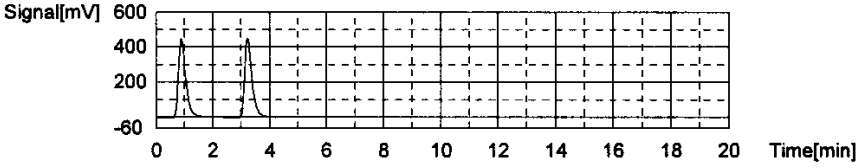

WORKGROUP: WG525590

Total Organic Carbon

MAKE DAILY

CCV (TOC): Std 65368
(5/200)(1000) = 25mg/L

LCS (TOC): Std 69935 Std 68227
(5/200)(1000) = 25mg/L

CCV (TIC): Std 68227
(5/200)(1000) = 25mg/L

MS (TOC): Std 69935
(.4)(1000)/40=10

Calibration Curve Date: 5/27/15

Reagent: 33691
32721

☐ SM5310-C : Matrix 2 WG

☒ EPA 415.1/9060A(mod) Matrix 1 WG 525590 SOP: K 4151 Rev. 17

WG Instrument: Shimadza TOC-VWP/ASI

☒ drain reservoir filled
☒ ASI water bottle full
☒ dilution water bottle full

DAILY CHECK
☒ 3rd bottle full
☒ sufficient gas
☒ sufficient persulfate

☒ sufficient acid
☒ waste container

Position	Sample ID	Dilution
1	TIC	
2	CCV	
3	Blk	
4	LCS	
5	LCSDUP	
6	05-1751-01	
7	-02	
8	-03	2pt 5/29/15
9	05-1752-04	1/10
10	-06	1/2
11	-08	1/3
12	05-1754-01	1/3
13	DUP 1751-01	
14	CCV	
15	CCB	
16	MS 1751-01	
17	CCV	
18	CCB	
19		
20		
21		
22		
23		
24		
25		

Position	Sample ID	Dilution
26		
27		
28		
29		
30		
31		
32		
33		
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50		

Position	Sample ID	Dilution
51		
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Analyst: Esther Tedd

Date/Time: 05/29/15 1505

DCN#110936

C:\TOC3201\Data\05-29-2015-EPT-TOC.t32

	Analysis	Sample Name	Result	Status	Date / Time	Vial
1	TOC	TIC	!!Error!! TOC:-0.7016mg/L TC:22.46mg/L IC:23.16mg/L	Complete	5/29/2015 3:08:11 PM	1
2	TOC	CCV	!!Error!! TOC:24.38mg/L TC:23.97mg/L IC:-0.4108mg/L	Complete	5/29/2015 3:22:19 PM	2
3	TOC	WG525590-01 BLK	!!Error!! TOC:0.3781mg/L TC:-0.02135mg/L IC:-0.3995mg/	Complete	5/29/2015 3:31:22 PM	0
4	TOC	WG525590-02 LCS	TOC:25.61mg/L TC:40.03mg/L IC:14.42mg/L	Complete	5/29/2015 3:46:59 PM	4
5	TOC	WG525590-03 LCSDUP	TOC:24.91mg/L TC:39.85mg/L IC:14.94mg/L	Complete	5/29/2015 4:02:45 PM	5
6	TOC	L15051751-01	!!Error!! TOC:-0.9050mg/L TC:19.09mg/L IC:20.00mg/L	Complete	5/29/2015 4:16:51 PM	6
7	TOC	L15051751-02	TOC:0.8235mg/L TC:20.32mg/L IC:19.50mg/L	Complete	5/29/2015 4:31:00 PM	7
8	TOC	L15051751-03	TOC:1.390mg/L TC:18.95mg/L IC:17.56mg/L	Complete	5/29/2015 4:44:58 PM	8
9	TOC	L15051752-04 (10)	TOC:0.3643mg/L TC:21.27mg/L IC:20.91mg/L	Complete	5/29/2015 5:28:31 PM	9
10	TOC	L15051752-06 (2)	TOC:1.637mg/L TC:23.51mg/L IC:21.87mg/L	Complete	5/29/2015 5:43:35 PM	10
11	TOC	L15051752-08 (3)	TOC:0.2544mg/L TC:27.26mg/L IC:27.01mg/L	Complete	5/29/2015 5:58:53 PM	11
12	TOC	L15051754-01 (3)	TOC:4.318mg/L TC:14.39mg/L IC:10.07mg/L	Complete	5/29/2015 6:12:18 PM	12
13	TOC	WG525590-05 DUP	TOC:0.2996mg/L TC:15.99mg/L IC:15.69mg/L	Complete	5/29/2015 6:25:44 PM	13
14	TOC	CCV	!!Error!! TOC:24.67mg/L TC:24.29mg/L IC:-0.3791mg/L	Complete	5/29/2015 6:40:09 PM	14
15	TOC	CCB	!!Error!! TOC:0.3749mg/L TC:-0.02204mg/L IC:-0.3970mg/	Complete	5/29/2015 6:49:17 PM	0
16	TOC	WG525590-06 MS	TOC:9.971mg/L TC:25.16mg/L IC:15.19mg/L	Complete	5/29/2015 7:03:49 PM	16
17	TOC	CCV	!!Error!! TOC:24.74mg/L TC:24.36mg/L IC:-0.3877mg/L	Complete	5/29/2015 7:17:28 PM	17
18	TOC	CCB	!!Error!! TOC:0.3828mg/L TC:-0.02135mg/L IC:-0.4042mg/	Complete	5/29/2015 7:26:36 PM	0

5/30/2015 9:18:44 AM

1/1

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Sample

Sample Name: TIC
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-0.7016mg/L TC:22.46mg/L IC:23.16mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	994.1	22.46mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_05	5/29/2015 3:02:33 PM

Mean Area 994.1
Mean Conc. 22.46mg/L

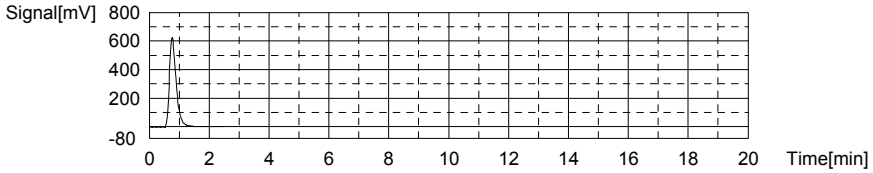

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	746.8	23.16mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_15	5/29/2015 3:08:11 PM

Mean Area 746.8
Mean Conc. 23.16mg/L

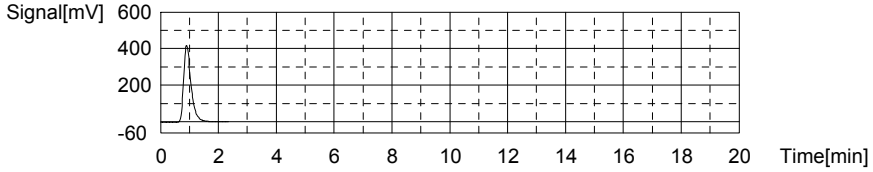

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.38mg/L TC:23.97mg/L IC:-0.4108mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1060	23.97mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/29/2015 3:17:46 PM

Mean Area 1060
Mean Conc. 23.97mg/L

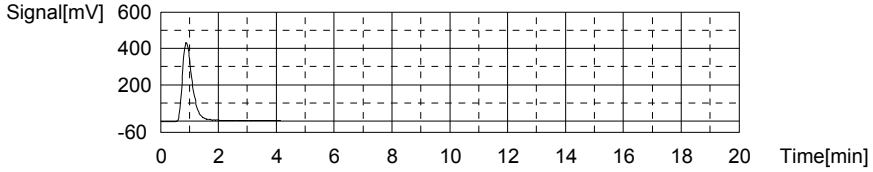

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.607	-0.4108mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/29/2015 3:22:19 PM

Mean Area 9.607
Mean Conc. -0.4108mg/L

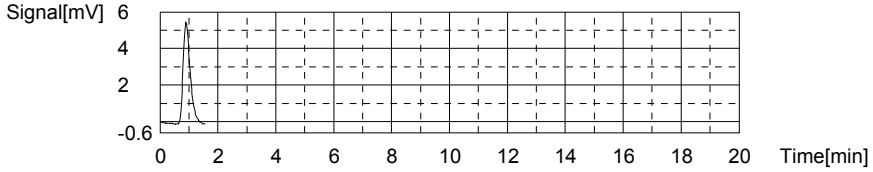

Sample

Sample Name: WG525590-01 BLK
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.3781mg/L TC:-0.02135mg/L IC:-0.3995mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.56	-0.02135mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/29/2015 3:27:19 PM

Mean Area 11.56
Mean Conc. -0.02135mg/L

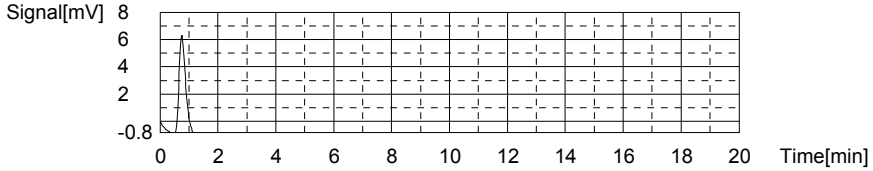

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.961	-0.3995mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/29/2015 3:31:22 PM

Mean Area 9.961
Mean Conc. -0.3995mg/L

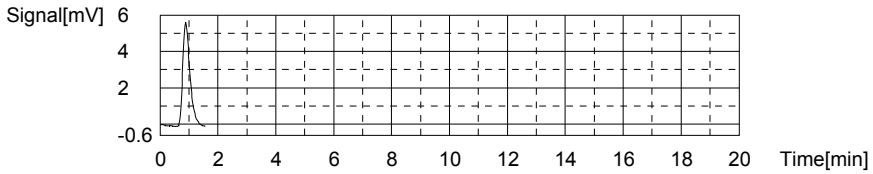

Sample

Sample Name: WG525590-02 LCS
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:25.61mg/L TC:40.03mg/L IC:14.42mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1762	40.03mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/29/2015 3:41:41 PM

Mean Area 1762
Mean Conc. 40.03mg/L

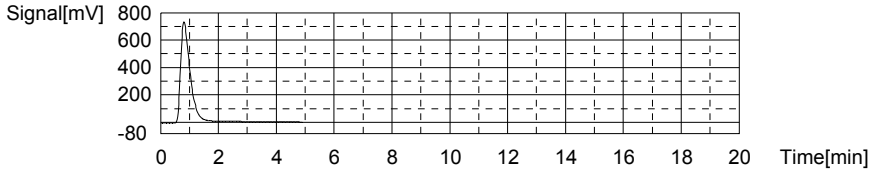

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	473.5	14.42mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/29/2015 3:46:59 PM

Mean Area 473.5
Mean Conc. 14.42mg/L

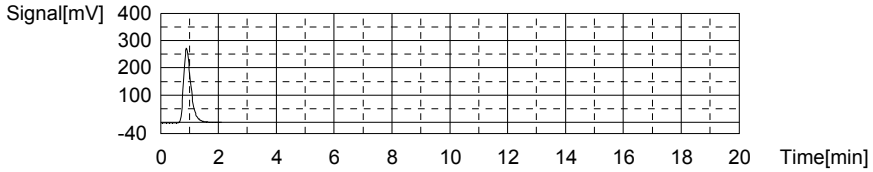

Sample

Sample Name: WG525590-03 LCSDUP
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:24.91mg/L TC:39.85mg/L IC:14.94mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1754	39.85mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/29/2015 3:57:19 PM

Mean Area 1754
Mean Conc. 39.85mg/L

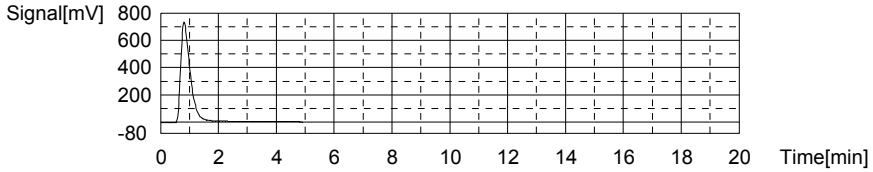

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	489.7	14.94mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/29/2015 4:02:45 PM

Mean Area 489.7
Mean Conc. 14.94mg/L

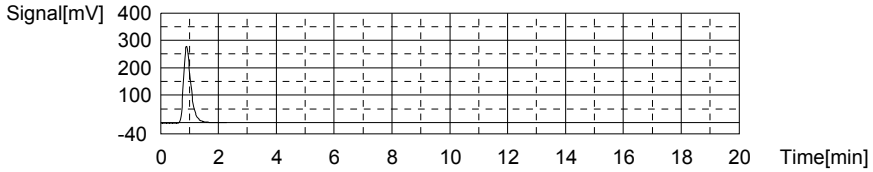

Sample

Sample Name: L15051751-01
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-0.9050mg/L TC:19.09mg/L IC:20.00mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	847.0	19.09mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/29/2015 4:11:17 PM

Mean Area 847.0
Mean Conc. 19.09mg/L

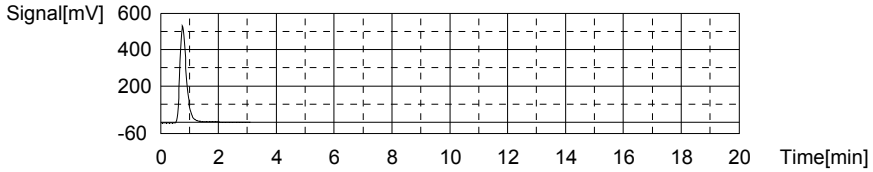

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	647.9	20.00mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/29/2015 4:16:51 PM

Mean Area 647.9
Mean Conc. 20.00mg/L

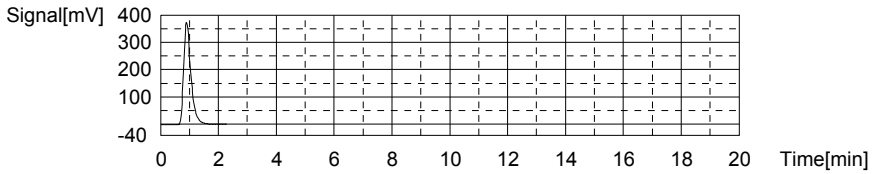

Sample

Sample Name: L15051751-02
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.8235mg/L TC:20.32mg/L IC:19.50mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	900.6	20.32mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/29/2015 4:25:26 PM

Mean Area 900.6
Mean Conc. 20.32mg/L

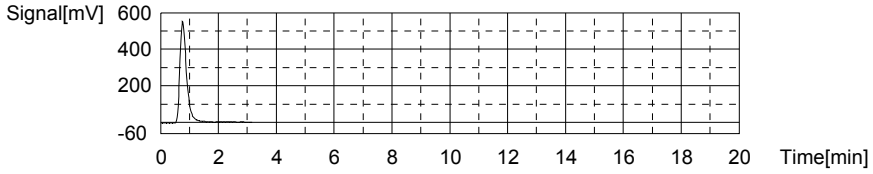

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	632.2	19.50mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/29/2015 4:31:00 PM

Mean Area 632.2
Mean Conc. 19.50mg/L

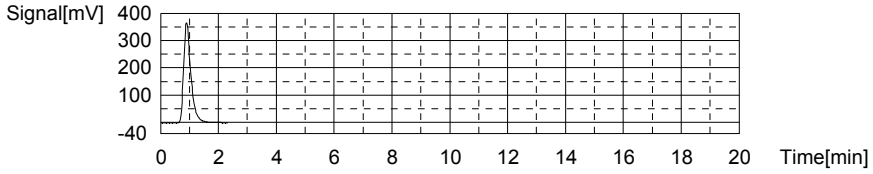

Sample

Sample Name: L15051751-03
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.390mg/L TC:18.95mg/L IC:17.56mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	840.8	18.95mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_05	5/29/2015 4:39:30 PM

Mean Area 840.8
Mean Conc. 18.95mg/L

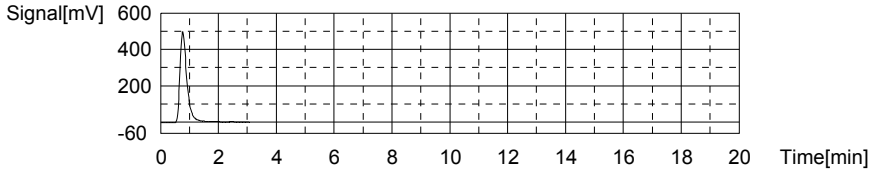

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	571.7	17.56mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_15	5/29/2015 4:44:58 PM

Mean Area 571.7
Mean Conc. 17.56mg/L

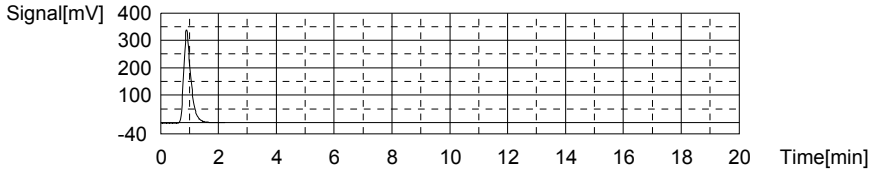

Sample

Sample Name: L15051752-04 (10)
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.3643mg/L TC:21.27mg/L IC:20.91mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	942.3	21.27mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_05	5/29/2015 5:22:44 PM

Mean Area 942.3
Mean Conc. 21.27mg/L

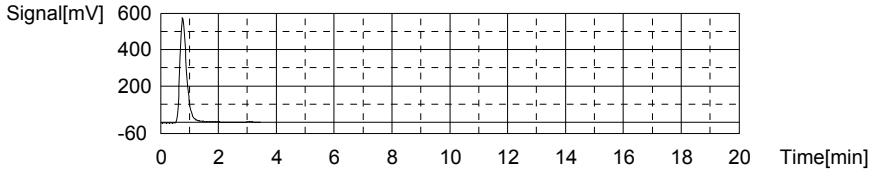

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	676.4	20.91mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_15	5/29/2015 5:28:31 PM

Mean Area 676.4
Mean Conc. 20.91mg/L

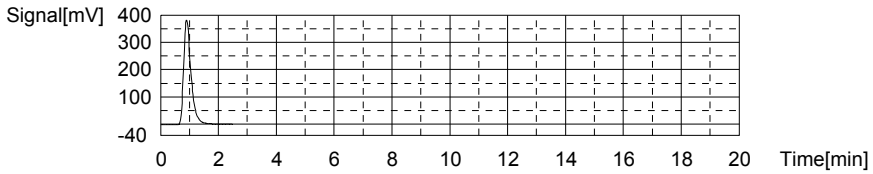

Sample

Sample Name: L15051752-06 (2)
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.637mg/L TC:23.51mg/L IC:21.87mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1040	23.51mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/29/2015 5:37:58 PM

Mean Area 1040
Mean Conc. 23.51mg/L

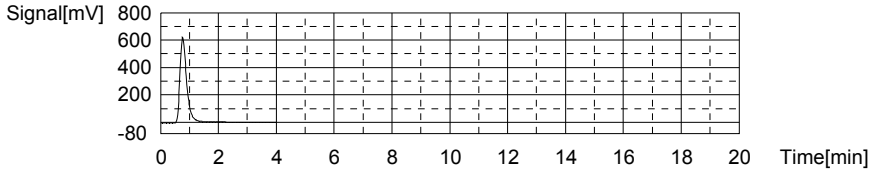

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	706.5	21.87mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/29/2015 5:43:35 PM

Mean Area 706.5
Mean Conc. 21.87mg/L

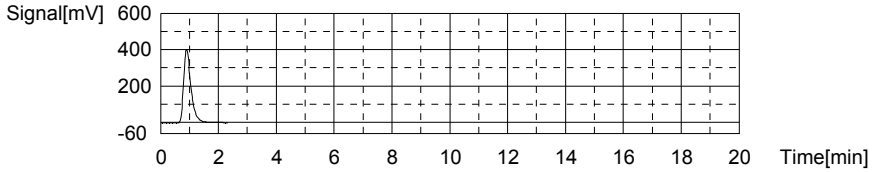

Sample

Sample Name: L15051752-08 (3)
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.2544mg/L TC:27.26mg/L IC:27.01mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1204	27.26mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/29/2015 5:53:20 PM

Mean Area 1204
Mean Conc. 27.26mg/L

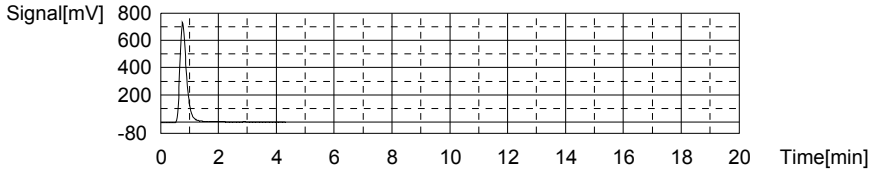

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	867.1	27.01mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/29/2015 5:58:53 PM

Mean Area 867.1
Mean Conc. 27.01mg/L

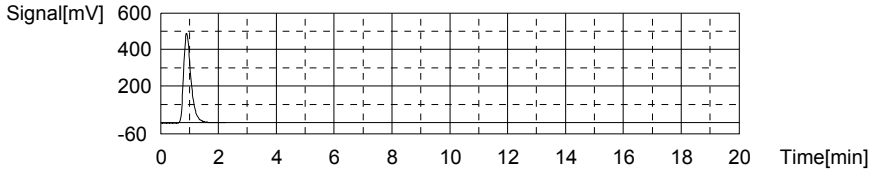

Sample

Sample Name: L15051754-01 (3)
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.318mg/L TC:14.39mg/L IC:10.07mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	641.5	14.39mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/29/2015 6:07:05 PM

Mean Area 641.5
Mean Conc. 14.39mg/L

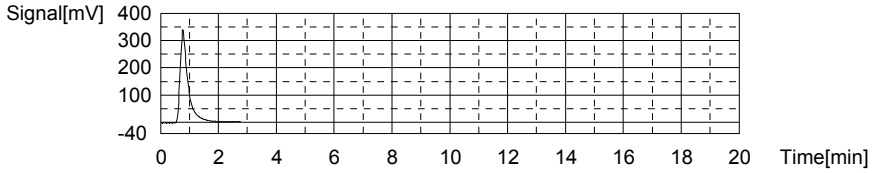

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	337.5	10.07mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/29/2015 6:12:18 PM

Mean Area 337.5
Mean Conc. 10.07mg/L

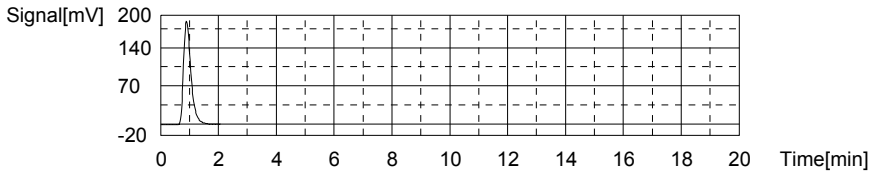

Sample

Sample Name: WG525590-05 DUP
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.2996mg/L TC:15.99mg/L IC:15.69mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	711.4	15.99mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/29/2015 6:20:22 PM

Mean Area 711.4
Mean Conc. 15.99mg/L

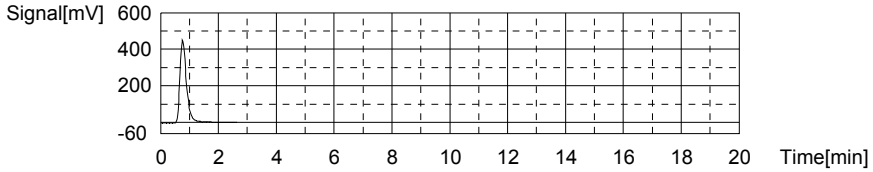

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	513.2	15.69mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/29/2015 6:25:44 PM

Mean Area 513.2
Mean Conc. 15.69mg/L

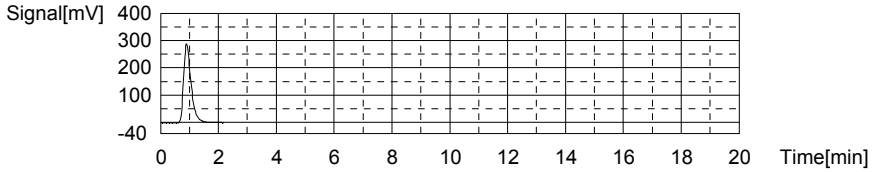

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.67mg/L TC:24.29mg/L IC:-0.3791mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1074	24.29mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/29/2015 6:35:39 PM

Mean Area 1074
Mean Conc. 24.29mg/L

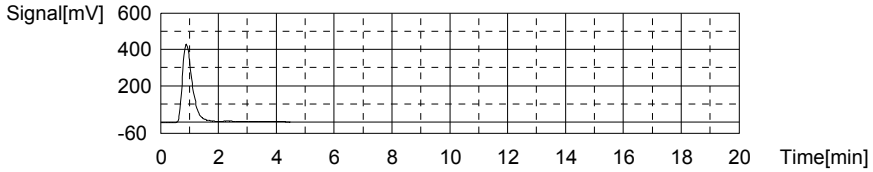

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.60	-0.3791mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/29/2015 6:40:09 PM

Mean Area 10.60
Mean Conc. -0.3791mg/L

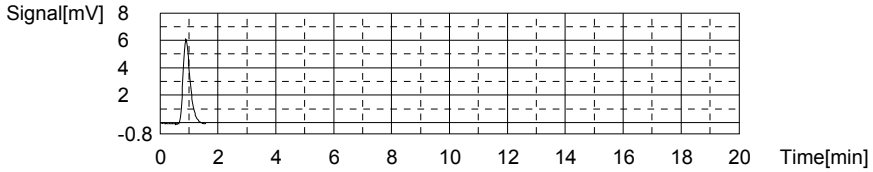

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.3749mg/L TC:-0.02204mg/L IC:-0.3970mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.53	-0.02204mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/29/2015 6:45:14 PM

Mean Area 11.53
Mean Conc. -0.02204mg/L

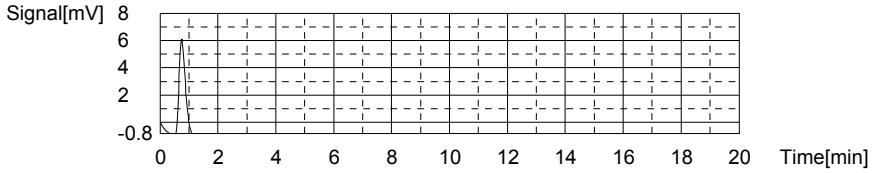

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.04	-0.3970mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/29/2015 6:49:17 PM

Mean Area 10.04
Mean Conc. -0.3970mg/L

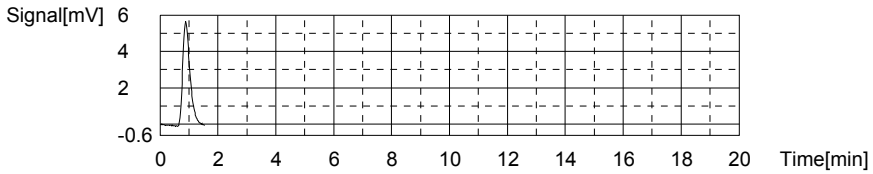

Sample

Sample Name: WG525590-06 MS
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:9.971mg/L TC:25.16mg/L IC:15.19mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1112	25.16mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/29/2015 6:58:34 PM

Mean Area 1112
Mean Conc. 25.16mg/L

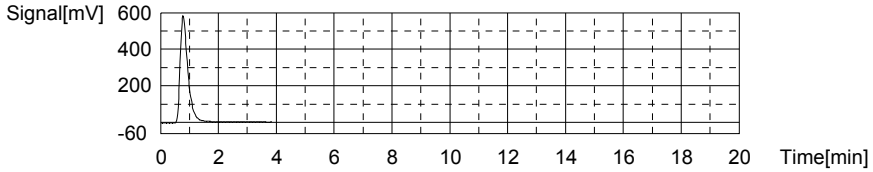

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	497.4	15.19mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/29/2015 7:03:49 PM

Mean Area 497.4
Mean Conc. 15.19mg/L

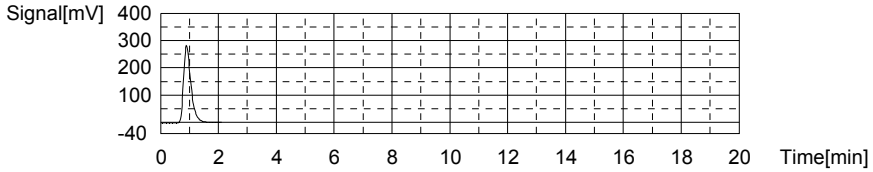

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.74mg/L TC:24.36mg/L IC:-0.3877mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1077	24.36mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/29/2015 7:12:55 PM

Mean Area 1077
Mean Conc. 24.36mg/L

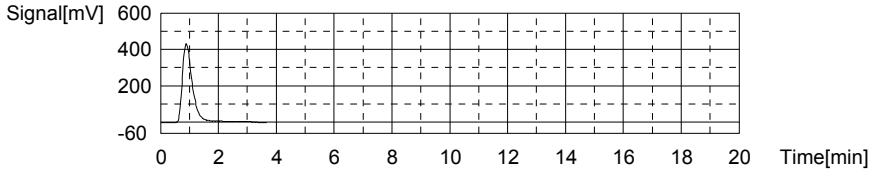

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.33	-0.3877mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/29/2015 7:17:28 PM

Mean Area 10.33
Mean Conc. -0.3877mg/L

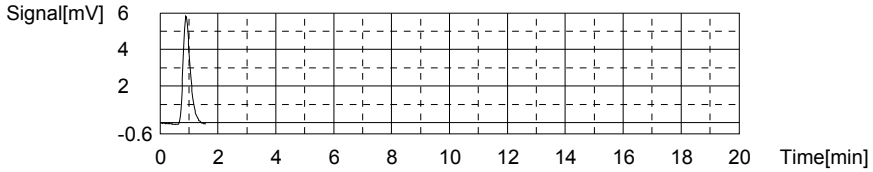

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.3828mg/L TC:-0.02135mg/L IC:-0.4042mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.56	-0.02135mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	5/29/2015 7:22:32 PM

Mean Area 11.56
Mean Conc. -0.02135mg/L

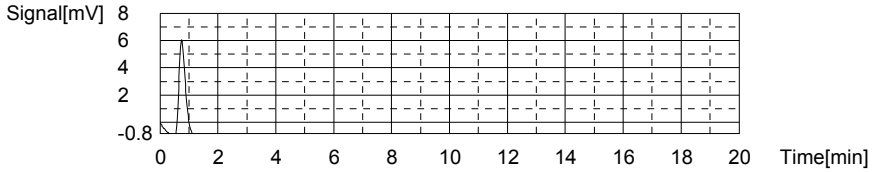

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.814	-0.4042mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/29/2015 7:26:36 PM

Mean Area	9.814
Mean Conc.	-0.4042mg/L

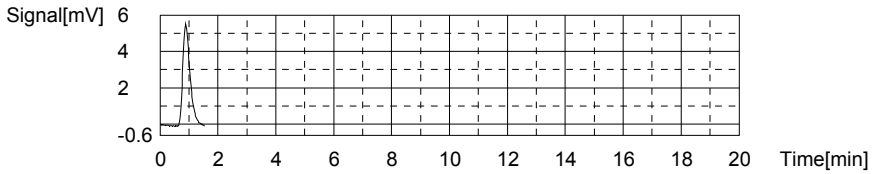

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
June 15, 2015

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001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK
EPT - ETHAN P. TIDD
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
June 15, 2015

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL/MDL).
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count
TNTC, B	Too numerous to count. Analyte present in method blank.

Microbac Laboratories Inc.
List of Valid Qualifiers
June 15, 2015

Qualkey: DOD

TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Mark Heaston
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD	pH:	
Project Name/Location:	Longhorn		
Project Number:	60256135.00026A		

Mail to:	Linda Raabe 112 East Pecan STE. 400 San Antonio, TX 78205 210-296-2000
Fed Ex Airbill No:	
Program:	

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp-	Grab	Matrix	Number of Containers	VOC	PERCHLORATE	Dissolved Gases Carbon Dioxide	ALKALINITY	Nitrate/Nitrite Chloride/Sulfate	Sulfide	TOC TOTAL PHOSPHORUS	Dissolved Iron Dissolved Manganese	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
Site 50	50WW01-052715			5/27/15	0740		✓	W	4	✓	✓											
	47WW38-052715			5/27/15	0900		✓	W	4	✓	✓											
	LHSMW54-052715			5/27/15	1020		✓	W	4	✓	✓											
	50WW24-052815			5/28/15	0815		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW24FF-052815			5/28/15	0815		✓	W	1								✓					
	50WW25-052815			5/28/15	0940		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW25FP-052815			5/28/15	0940		✓	W	1								✓					
	50WW18-052815			5/28/15	1100		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW18FF-052815			5/28/15	1100		✓	W	1								✓					
	TRIP BLANK			5/28/15			✓	W	2	✓												

Comments: STANDARD TAT

Relinquished by: (Signature) Scott Beesinger	Date 5/28/15	Time 1400	Received by: (Signa
Relinquished by: (Signature)	Date	Time	Received for Labor (Signature)

Microbac OVD
Received: 05/29/2015 09:54
By: CARA STRICKLER 221000070495
Cara Strickler

Relinquished by: (Signature)

Remarks:

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051752
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 09-JUN-2015

Samplenum	Container ID	Products
L15051752-01	579676	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-MAY-2015 11:03	BRG		
2	ANALYZ	V1	ORG4	29-MAY-2015 14:21	DLW	CLS	
3	STORE	ORG4	A1	12-JUN-2015 07:45	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-MAY-2015 11:03	BRG		
2	ANALYZ	V1	ORG4	29-MAY-2015 14:22	DLW	CLS	
3	STORE	ORG4	A1	12-JUN-2015 07:45	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-MAY-2015 11:03	BRG		
2	ANALYZ	V1	ORG4	29-MAY-2015 14:22	DLW	CLS	
3	STORE	ORG4	A1	12-JUN-2015 07:45	CLS	AWE	

Samplenum	Container ID	Products
L15051752-01	579677	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-MAY-2015 11:03	BRG		
2	ANALYZ	W1	SEM	04-JUN-2015 15:08	JWR	CLS	
3	STORE	SEM	A1	05-JUN-2015 16:19	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051752
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 09-JUN-2015

Samplenum	Container ID	Products
L15051752-02	579678	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-MAY-2015 11:03	BRG		
2	ANALYZ	V1	ORG4	29-MAY-2015 14:22	DLW	CLS	
3	STORE	ORG4	A1	12-JUN-2015 07:45	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-MAY-2015 11:03	BRG		
2	ANALYZ	V1	ORG4	29-MAY-2015 14:22	DLW	CLS	
3	STORE	ORG4	A1	12-JUN-2015 07:45	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-MAY-2015 11:03	BRG		
2	ANALYZ	V1	ORG4	29-MAY-2015 14:22	DLW	CLS	
3	STORE	ORG4	A1	12-JUN-2015 07:45	CLS	AWE	

Samplenum	Container ID	Products
L15051752-02	579679	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-MAY-2015 11:03	BRG		
2	ANALYZ	W1	SEM	04-JUN-2015 15:08	JWR	CLS	
3	STORE	SEM	A1	05-JUN-2015 16:19	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051752
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 09-JUN-2015

Samplenum	Container ID	Products
L15051752-03	579680	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-MAY-2015 11:03	BRG		
2	ANALYZ	V1	ORG4	29-MAY-2015 14:22	DLW	CLS	
3	STORE	ORG4	A1	12-JUN-2015 07:45	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-MAY-2015 11:03	BRG		
2	ANALYZ	V1	ORG4	29-MAY-2015 14:22	DLW	CLS	
3	STORE	ORG4	A1	12-JUN-2015 07:45	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-MAY-2015 11:03	BRG		
2	ANALYZ	V1	ORG4	29-MAY-2015 14:22	DLW	CLS	
3	STORE	ORG4	A1	12-JUN-2015 07:45	CLS	AWE	

Samplenum	Container ID	Products
L15051752-03	579681	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-MAY-2015 11:03	BRG		
2	ANALYZ	W1	SEM	04-JUN-2015 15:08	JWR	CLS	
3	STORE	SEM	A1	05-JUN-2015 16:19	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051752
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 09-JUN-2015

Samplenum	Container ID	Products
L15051752-04	579682	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-MAY-2015 11:03	BRG		
2	ANALYZ	V1	ORG4	29-MAY-2015 14:22	DLW	CLS	
3	STORE	ORG4	A1	12-JUN-2015 07:45	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-MAY-2015 11:03	BRG		
2	ANALYZ	V1	ORG4	29-MAY-2015 14:22	DLW	CLS	
3	STORE	ORG4	A1	12-JUN-2015 07:45	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-MAY-2015 11:03	BRG		
2	ANALYZ	V1	ORG4	29-MAY-2015 14:22	DLW	CLS	
3	STORE	ORG4	A1	12-JUN-2015 07:45	CLS	AWE	

Samplenum	Container ID	Products
L15051752-04	579683	RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-MAY-2015 11:03	BRG		
2	ANALYZ	V1	ORG1	29-MAY-2015 14:19	DLW	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-MAY-2015 11:03	BRG		
2	ANALYZ	V1	ORG1	29-MAY-2015 14:19	DLW	CLS	
3	STORE	ORG1	A1	12-JUN-2015 07:44	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-MAY-2015 11:03	BRG		
2	ANALYZ	V1	ORG1	29-MAY-2015 14:19	DLW	CLS	
3	STORE	ORG1	A1	12-JUN-2015 07:44	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051752
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 09-JUN-2015

Samplenum	Container ID	Products
L15051752-04	579684	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	29-MAY-2015 11:03	BRG		
2	PREP	L1	SEM	29-MAY-2015 11:09	ALS	BRG	
3	STORE	SEM	A1	02-JUN-2015 09:21	BRG	AED	

Samplenum	Container ID	Products
L15051752-04	579685	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-MAY-2015 11:03	BRG		
2	ANALYZ	W1	WET	02-JUN-2015 11:08	TB	CLS	
3	STORE	WET	A1	08-JUN-2015 15:26	CLS	BLR	

Samplenum	Container ID	Products
L15051752-04	579686	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-MAY-2015 11:03	BRG		
2	ANALYZ	W1	SEM	04-JUN-2015 15:08	JWR	CLS	
3	STORE	SEM	A1	05-JUN-2015 16:19	CLS	JWR	

Samplenum	Container ID	Products
L15051752-04	579687	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-MAY-2015 11:03	BRG		<2
2	ANALYZ	W1	WET	29-MAY-2015 11:06	EPT	CLS	
3	STORE	WET	A1	08-JUN-2015 08:33	CLS	EPT	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051752
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 09-JUN-2015

Samplenum	Container ID	Products
L15051752-04	579688	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-MAY-2015 11:03	BRG		
2	ANALYZ	W1	WET	03-JUN-2015 08:08	EPT	CLS	
3	STORE	WET	A1	04-JUN-2015 17:53	AZH	EPT	

Samplenum	Container ID	Products
L15051752-05	579689	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	DIG	29-MAY-2015 11:03	BRG		
2	STORE	DIG	A1	03-JUN-2015 14:31	CLS	ERP	

Samplenum	Container ID	Products
L15051752-06	579690	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-MAY-2015 11:03	BRG		
2	ANALYZ	V1	ORG4	29-MAY-2015 14:22	DLW	CLS	
3	STORE	ORG4	A1	12-JUN-2015 07:45	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-MAY-2015 11:03	BRG		
2	ANALYZ	V1	ORG4	29-MAY-2015 14:22	DLW	CLS	
3	STORE	ORG4	A1	12-JUN-2015 07:45	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-MAY-2015 11:03	BRG		
2	ANALYZ	V1	ORG4	29-MAY-2015 14:22	DLW	CLS	
3	STORE	ORG4	A1	12-JUN-2015 07:45	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051752
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 09-JUN-2015

Samplenum	Container ID	Products
L15051752-06	579691	RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-MAY-2015 11:03	BRG		
2	ANALYZ	V1	ORG1	29-MAY-2015 14:19	DLW	CLS	
3	STORE	ORG1	A1	12-JUN-2015 07:44	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-MAY-2015 11:03	BRG		
2	ANALYZ	V1	ORG1	29-MAY-2015 14:19	DLW	CLS	
3	STORE	ORG1	A1	12-JUN-2015 07:44	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-MAY-2015 11:03	BRG		
2	ANALYZ	V1	ORG1	29-MAY-2015 14:19	DLW	CLS	
3	STORE	ORG1	A1	12-JUN-2015 07:44	CLS	AWE	

Samplenum	Container ID	Products
L15051752-06	579692	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	29-MAY-2015 11:03	BRG		
2	PREP	L1	SEM	29-MAY-2015 11:09	ALS	BRG	
3	STORE	SEM	A1	02-JUN-2015 09:21	BRG	AED	

Samplenum	Container ID	Products
L15051752-06	579693	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-MAY-2015 11:03	BRG		
2	ANALYZ	W1	WET	02-JUN-2015 11:08	TB	CLS	
3	STORE	WET	A1	08-JUN-2015 15:26	CLS	BLR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051752
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 09-JUN-2015

Samplenum	Container ID	Products
L15051752-06	579694	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-MAY-2015 11:03	BRG		
2	ANALYZ	W1	SEM	04-JUN-2015 15:08	JWR	CLS	
3	STORE	SEM	A1	05-JUN-2015 16:19	CLS	JWR	

Samplenum	Container ID	Products
L15051752-06	579695	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-MAY-2015 11:03	BRG		<2
2	ANALYZ	W1	WET	29-MAY-2015 11:06	EPT	CLS	
3	STORE	WET	A1	08-JUN-2015 08:34	CLS	EPT	

Samplenum	Container ID	Products
L15051752-06	579696	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-MAY-2015 11:03	BRG		
2	ANALYZ	W1	WET	03-JUN-2015 08:08	EPT	CLS	
3	STORE	WET	A1	04-JUN-2015 17:53	AZH	EPT	

Samplenum	Container ID	Products
L15051752-07	579697	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-MAY-2015 11:03	BRG		
2	PREP	W1	DIG	29-MAY-2015 15:21	ERP	CLS	
3	STORE	DIG	A1	03-JUN-2015 14:31	CLS	ERP	
4	ANALYZ*	DIG	METALS	04-JUN-2015 06:51	KHR	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051752
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 09-JUN-2015

Samplenum	Container ID	Products
L15051752-08	579698	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-MAY-2015 11:03	BRG		
2	ANALYZ	V1	ORG4	29-MAY-2015 14:22	DLW	CLS	
3	STORE	ORG4	A1	12-JUN-2015 07:45	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-MAY-2015 11:03	BRG		
2	ANALYZ	V1	ORG4	29-MAY-2015 14:22	DLW	CLS	
3	STORE	ORG4	A1	12-JUN-2015 07:45	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-MAY-2015 11:03	BRG		
2	ANALYZ	V1	ORG4	29-MAY-2015 14:22	DLW	CLS	
3	STORE	ORG4	A1	12-JUN-2015 07:45	CLS	AWE	

Samplenum	Container ID	Products
L15051752-08	579699	RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-MAY-2015 11:03	BRG		
2	ANALYZ	V1	ORG1	29-MAY-2015 14:19	DLW	CLS	
3	STORE	ORG1	A1	12-JUN-2015 07:44	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-MAY-2015 11:03	BRG		
2	ANALYZ	V1	ORG1	29-MAY-2015 14:19	DLW	CLS	
3	STORE	ORG1	A1	12-JUN-2015 07:44	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-MAY-2015 11:03	BRG		
2	ANALYZ	V1	ORG1	29-MAY-2015 14:19	DLW	CLS	
3	STORE	ORG1	A1	12-JUN-2015 07:44	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051752
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 09-JUN-2015

Samplenum	Container ID	Products
L15051752-08	579700	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	29-MAY-2015 11:03	BRG		
2	PREP	L1	SEM	29-MAY-2015 11:09	ALS	BRG	
3	STORE	SEM	A1	02-JUN-2015 09:21	BRG	AED	

Samplenum	Container ID	Products
L15051752-08	579701	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-MAY-2015 11:03	BRG		
2	ANALYZ	W1	WET	02-JUN-2015 11:08	TB	CLS	
3	STORE	WET	A1	08-JUN-2015 15:26	CLS	BLR	

Samplenum	Container ID	Products
L15051752-08	579702	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-MAY-2015 11:03	BRG		
2	ANALYZ	W1	SEM	04-JUN-2015 15:08	JWR	CLS	
3	STORE	SEM	A1	05-JUN-2015 16:19	CLS	JWR	

Samplenum	Container ID	Products
L15051752-08	579703	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-MAY-2015 11:03	BRG		<2
2	ANALYZ	W1	WET	29-MAY-2015 11:06	EPT	CLS	
3	STORE	WET	A1	08-JUN-2015 08:34	CLS	EPT	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15051752
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 09-JUN-2015

Samplenum	Container ID	Products
L15051752-08	579704	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-MAY-2015 11:03	BRG		
2	ANALYZ	W1	WET	03-JUN-2015 08:08	EPT	CLS	
3	STORE	WET	A1	04-JUN-2015 17:53	AZH	EPT	

Samplenum	Container ID	Products
L15051752-09	579705	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-MAY-2015 11:03	BRG		
2	PREP	W1	DIG	29-MAY-2015 15:21	ERP	CLS	
3	STORE	DIG	A1	03-JUN-2015 14:31	CLS	ERP	
4	ANALYZ*	DIG	METALS	04-JUN-2015 06:51	KHR	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L15051752-10	579706	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-MAY-2015 11:03	BRG		
2	ANALYZ	V1	ORG4	29-MAY-2015 14:22	DLW	CLS	
3	STORE	ORG4	A1	12-JUN-2015 07:45	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-MAY-2015 11:03	BRG		
2	ANALYZ	V1	ORG4	29-MAY-2015 14:22	DLW	CLS	
3	STORE	ORG4	A1	12-JUN-2015 07:45	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - June 5, 2015

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVL NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Formate (HPLC-UV)
Propionaldehyde (HPLC-UV)
Fluoroborate (ISE)
n-Butane (RSK175)
Acetylene (RSK175)
Propane (RSK175)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVL MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene

Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL MSV0I/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVL HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVL HPLC12/HPLC/UV
Acetate

SOLID AND HAZARDOUS CHEMICALS

OVL MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVL MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene

Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L15080904

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on August 28 2015

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

The following discrepancies were noted:

Discrepancy	Resolution
50WW24-081715: 1 of 3 vials received with headspace >6mm. BRG Trip Blank:1 of 2 vials received w/headspace >6mm. BRG	Please proceed.

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00112677	I	4.0		J2317161987	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	No

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
50WW18-081715	L15080904-01	08/17/2015 08:30	08/18/2015 09:36
50WW18FF-081715	L15080904-02	08/17/2015 08:30	08/18/2015 09:36
50WW24-081715	L15080904-03	08/17/2015 09:55	08/18/2015 09:36
50WW24FF-081715	L15080904-04	08/17/2015 09:55	08/18/2015 09:36
50WW23-081715	L15080904-05	08/17/2015 11:20	08/18/2015 09:36
50WW23FF-081715	L15080904-06	08/17/2015 11:20	08/18/2015 09:36
50WW08-081715	L15080904-07	08/17/2015 14:50	08/18/2015 09:36
50WW08FF-081715	L15080904-08	08/17/2015 14:50	08/18/2015 09:36
TRIP BLANK	L15080904-09	08/17/2015 00:01	08/18/2015 09:36

Microbac REPORT L15080904
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.1 Narratives

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	8260
Prep Batch Number(s):	535431	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-08-28 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden	Franci Bolden	Analyst I	2015-08-28 03:06:19

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	8260
Prep Batch Number(s):	535431	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-08-28 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	8260
Prep Batch Number(s):	535431	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-08-28 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	8260
Prep Batch Number(s):	535431	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-08-28 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			2
Was the ICAL curve verified for each analyte?		X			1
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	8260
Prep Batch Number(s):	535431	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-08-28 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	8260
Prep Batch Number(s):	535431	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-08-28 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) Carbon disulfide was below the LCL in the ICV.
2) Bromomethane was below the LCL in the CCV.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	535476, 535545	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-08-28 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden	Franci Bolden	Analyst I	2015-08-28 03:39:57

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	535476, 535545	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-08-28 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	535476, 535545	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-08-28 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	535476, 535545	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-08-28 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	535476, 535545	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-08-28 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	535476, 535545	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-08-28 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There were no exceptions.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG536249	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-08-28 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2015-08-28 19:25:56

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG536249	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-08-28 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG536249	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-08-28 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG536249	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-08-28 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG536249	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-08-28 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG536249	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-08-28 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG535824	**Reviewer Name:**	Maren Beery
LRC Date:	2015-08-26 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Maren Beery	Maren Beery	Metals Supervisor	2015-08-26 16:00:59

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG535824	**Reviewer Name:**	Maren Beery
LRC Date:	2015-08-26 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG535824	**Reviewer Name:**	Maren Beery
LRC Date:	2015-08-26 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG535824	**Reviewer Name:**	Maren Beery
LRC Date:	2015-08-26 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG535824	**Reviewer Name:**	Maren Beery
LRC Date:	2015-08-26 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG535824	**Reviewer Name:**	Maren Beery
LRC Date:	2015-08-26 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG535577	**Reviewer Name:**	Maren Beery
LRC Date:	2015-08-26 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Maren Beery	Maren Beery	Metals Supervisor	2015-08-26 15:56:35

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG535577	**Reviewer Name:**	Maren Beery
LRC Date:	2015-08-26 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG535577	**Reviewer Name:**	Maren Beery
LRC Date:	2015-08-26 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				ER#1
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				ER#2
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG535577	**Reviewer Name:**	Maren Beery
LRC Date:	2015-08-26 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG535577	**Reviewer Name:**	Maren Beery
LRC Date:	2015-08-26 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

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Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG535577	**Reviewer Name:**	Maren Beery
LRC Date:	2015-08-26 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - Due to time contraints on 20-AUG-2015, all client samples were reanalyzed on a later calibration.

ER#2 - Due to high levels of nontarget analytes, all client samples were initially analyzed at ten fold dilutions for manganese. Due to a result for manganese below the LOQ, client sample 04 was reanalyzed for manganese at a lesser dilution on a later calibration.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG535546	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-08-18 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Adriane Steed	Adriane Steed		2015-08-19 13:31:52

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG535546	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-08-18 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?	X				
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG535546	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-08-18 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG535546	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-08-18 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG535546	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-08-18 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG535546	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-08-18 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. Fractions -01,03,05, and 07 were analyzed at dilutions only due to their high analyte concentrations (Cl and/or SO4) which were over 200 ppm. Any sample that has a single anion load greater than 200 ppm (or a total anion load greater than 400 ppm) will be diluted in order to prevent damage to the IC from repeated overloading of the analytical column and oversaturation of the suppressor membranes.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG535657	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-27 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-08-27 12:02:34

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG535657	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-27 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG535657	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-27 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG535657	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-27 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG535657	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-27 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG535657	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-27 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG535957	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-27 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-08-27 12:03:21

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG535957	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-27 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG535957	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-27 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG535957	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-27 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG535957	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-27 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG535957	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-27 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	S
Prep Batch Number(s):		**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-27 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-08-27 11:55:48

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	S
Prep Batch Number(s):		**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-27 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	S
Prep Batch Number(s):		**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-27 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	S
Prep Batch Number(s):		**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-27 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	S
Prep Batch Number(s):		**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-27 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

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Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	S
Prep Batch Number(s):		**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-27 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG535967	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-27 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-08-27 12:04:04

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG535967	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-27 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG535967	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-27 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG535967	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-27 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG535967	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-27 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080904
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG535967	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-27 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW18-081715	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG535451	**Analyst:**	TMB	**Run Date:**	08/19/2015 00:47
Collect Date:	08/17/2015 08:30	**Dilution:**	1	**File ID:**	8M406882
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	85	115	
1,2-Dichloroethane-d4	92.4	70	120	
Toluene-d8	97.0	85	120	
4-Bromofluorobenzene	92.7	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-01	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW18-081715	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG535476	**Analyst:**	JDS	**Run Date:**	08/18/2015 16:40
Collect Date:	08/17/2015 08:30	**Dilution:**	1	**File ID:**	16G48241
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	17.5		5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-01	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW18-081715	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG535545	**Analyst:**	JDS	**Run Date:**	08/19/2015 15:35
Collect Date:	08/17/2015 08:30	**Dilution:**	5	**File ID:**	16G48254
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	473000		50000	25000	12500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW18-081715	**Prep Method:**	6850	**Prep Date:**	08/24/2015 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG536249	**Analyst:**	JWR	**Run Date:**	08/24/2015 19:38
Collect Date:	08/17/2015 08:30	**Dilution:**	1	**File ID:**	1LM.LM31442
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.144	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-01	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW18-081715	**Prep Method:**	9056	**Prep Date:**	08/18/2015 13:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG535546	**Analyst:**	ALS	**Run Date:**	08/18/2015 19:09
Collect Date:	08/17/2015 08:30	**Dilution:**	5	**File ID:**	I2_081815-18
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	1.00	U	2.00	1.00	0.500
Nitrite	14797-65-0	1.00	U	2.00	1.00	0.500
Sulfate	14808-79-8	156		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-01	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW18-081715	**Prep Method:**	9056	**Prep Date:**	08/18/2015 13:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG535546	**Analyst:**	ALS	**Run Date:**	08/18/2015 19:27
Collect Date:	08/17/2015 08:30	**Dilution:**	50	**File ID:**	I2_081815-19
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	806		20.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW18-081715	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	08/19/2015 13:19
Workgroup #:	WG535657	**Analyst:**	DCM	**Run Date:**	08/19/2015 13:27
Collect Date:	08/17/2015 08:30	**Dilution:**	2	**File ID:**	SC150819004.020
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	330		80.0	40.0	20.0

Certificate of Analysis

Sample #:	L15080904-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW18-081715	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	08/21/2015 09:45
Workgroup #:	WG535957	**Analyst:**	DCM	**Run Date:**	08/21/2015 09:51
Collect Date:	08/17/2015 08:30	**Dilution:**	1	**File ID:**	S2150821002.016
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-01	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW18-081715	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG535595	**Analyst:**	TB	**Run Date:**	08/19/2015 15:01
Collect Date:	08/17/2015 08:30	**Dilution:**	1	**File ID:**	ET.1508191501-04
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-01	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW18-081715	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	05/27/2015 15:47
Workgroup #:	WG535967	**Analyst:**	DIH	**Run Date:**	08/22/2015 02:55
Collect Date:	08/17/2015 08:30	**Dilution:**	5	**File ID:**	TC08212015.059
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	5.00	U	10.0	5.00	2.50

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-02	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	50WW18FF-081715	**Prep Method:**	3015	**Prep Date:**	08/20/2015 11:21
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	08/23/2015 10:12
Workgroup #:	WG536024	**Analyst:**	KHR	**Run Date:**	08/23/2015 11:10
Collect Date:	08/17/2015 08:30	**Dilution:**	1	**File ID:**	P2.082315.111002
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.116	J	0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW18FF-081715	**Prep Method:**	3015	**Prep Date:**	08/19/2015 08:35
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	08/23/2015 15:28
Workgroup #:	WG535910	**Analyst:**	BKT	**Run Date:**	08/23/2015 17:04
Collect Date:	08/17/2015 08:30	**Dilution:**	10	**File ID:**	NI.082315.170455
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0631		0.0400	0.0200	0.0100

Certificate of Analysis

Sample #:	L15080904-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW24-081715	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG535451	**Analyst:**	TMB	**Run Date:**	08/19/2015 01:16
Collect Date:	08/17/2015 09:55	**Dilution:**	1	**File ID:**	8M406883
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

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Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

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Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	90.0	70	120	
Toluene-d8	98.2	85	120	
4-Bromofluorobenzene	94.3	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-03	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW24-081715	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG535476	**Analyst:**	JDS	**Run Date:**	08/18/2015 16:51
Collect Date:	08/17/2015 09:55	**Dilution:**	1	**File ID:**	16G48242
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

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Certificate of Analysis

Sample #:	L15080904-03	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW24-081715	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG535545	**Analyst:**	JDS	**Run Date:**	08/19/2015 15:47
Collect Date:	08/17/2015 09:55	**Dilution:**	5	**File ID:**	16G48255
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	580000		50000	25000	12500

U	Analyte was not detected. The concentration is below the reported LOD.

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Certificate of Analysis

Sample #:	L15080904-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW24-081715	**Prep Method:**	6850	**Prep Date:**	08/24/2015 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG536249	**Analyst:**	JWR	**Run Date:**	08/24/2015 19:57
Collect Date:	08/17/2015 09:55	**Dilution:**	1	**File ID:**	1LM.LM31443
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

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Certificate of Analysis

Sample #:	L15080904-03	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW24-081715	**Prep Method:**	9056	**Prep Date:**	08/18/2015 13:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG535546	**Analyst:**	ALS	**Run Date:**	08/18/2015 19:46
Collect Date:	08/17/2015 09:55	**Dilution:**	2	**File ID:**	I2_081815-20
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	0.400	U	0.800	0.400	0.200
Nitrite	14797-65-0	0.400	U	0.800	0.400	0.200
Sulfate	14808-79-8	101		4.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

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Certificate of Analysis

Sample #:	L15080904-03	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW24-081715	**Prep Method:**	9056	**Prep Date:**	08/18/2015 13:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG535546	**Analyst:**	ALS	**Run Date:**	08/18/2015 20:04
Collect Date:	08/17/2015 09:55	**Dilution:**	20	**File ID:**	I2_081815-21
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	427		8.00	4.00	2.00

U	Analyte was not detected. The concentration is below the reported LOD.

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Certificate of Analysis

Sample #:	L15080904-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW24-081715	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	08/19/2015 13:19
Workgroup #:	WG535657	**Analyst:**	DCM	**Run Date:**	08/19/2015 13:28
Collect Date:	08/17/2015 09:55	**Dilution:**	1	**File ID:**	SC150819004.023
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	272		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L15080904-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW24-081715	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	08/21/2015 09:45
Workgroup #:	WG535957	**Analyst:**	DCM	**Run Date:**	08/21/2015 09:51
Collect Date:	08/17/2015 09:55	**Dilution:**	1	**File ID:**	S2150821002.017
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

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Certificate of Analysis

Sample #:	L15080904-03	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW24-081715	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG535595	**Analyst:**	TB	**Run Date:**	08/19/2015 15:01
Collect Date:	08/17/2015 09:55	**Dilution:**	1	**File ID:**	ET.1508191501-05
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

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Certificate of Analysis

Sample #:	L15080904-03	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW24-081715	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	05/27/2015 15:47
Workgroup #:	WG535967	**Analyst:**	DIH	**Run Date:**	08/22/2015 03:08
Collect Date:	08/17/2015 09:55	**Dilution:**	4	**File ID:**	TC08212015.060
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	4.00	U	8.00	4.00	2.00

U	Analyte was not detected. The concentration is below the reported LOD.

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Certificate of Analysis

Sample #:	L15080904-04	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	50WW24FF-081715	**Prep Method:**	3015	**Prep Date:**	08/20/2015 11:21
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	08/23/2015 10:12
Workgroup #:	WG536024	**Analyst:**	KHR	**Run Date:**	08/23/2015 11:12
Collect Date:	08/17/2015 09:55	**Dilution:**	1	**File ID:**	P2.082315.111226
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.100	U	0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

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Sample #:	L15080904-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW24FF-081715	**Prep Method:**	3015	**Prep Date:**	08/19/2015 08:35
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	08/24/2015 12:17
Workgroup #:	WG535910	**Analyst:**	BKT	**Run Date:**	08/24/2015 14:32
Collect Date:	08/17/2015 09:55	**Dilution:**	2	**File ID:**	NI.082415.143203
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0351		0.00800	0.00400	0.00200

Certificate of Analysis

Sample #:	L15080904-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW23-081715	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG535451	**Analyst:**	TMB	**Run Date:**	08/19/2015 01:45
Collect Date:	08/17/2015 11:20	**Dilution:**	1	**File ID:**	8M406884
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

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Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	89.9	70	120	
Toluene-d8	97.3	85	120	
4-Bromofluorobenzene	95.2	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-05	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW23-081715	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG535476	**Analyst:**	JDS	**Run Date:**	08/18/2015 17:03
Collect Date:	08/17/2015 11:20	**Dilution:**	1	**File ID:**	16G48243
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	147000		10000	5000	2500
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW23-081715	**Prep Method:**	6850	**Prep Date:**	08/24/2015 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG536249	**Analyst:**	JWR	**Run Date:**	08/24/2015 21:12
Collect Date:	08/17/2015 11:20	**Dilution:**	1	**File ID:**	1LM.LM31447
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.527		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15080904-05	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW23-081715	**Prep Method:**	9056	**Prep Date:**	08/18/2015 13:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG535546	**Analyst:**	ALS	**Run Date:**	08/18/2015 20:22
Collect Date:	08/17/2015 11:20	**Dilution:**	10	**File ID:**	I2_081815-22
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	2.00	U	4.00	2.00	1.00
Nitrite	14797-65-0	2.00	U	4.00	2.00	1.00
Sulfate	14808-79-8	78.6		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-05	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW23-081715	**Prep Method:**	9056	**Prep Date:**	08/18/2015 13:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG535546	**Analyst:**	ALS	**Run Date:**	08/18/2015 20:40
Collect Date:	08/17/2015 11:20	**Dilution:**	100	**File ID:**	I2_081815-23
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	2070		40.0	20.0	10.0

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-05	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW23-081715	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	08/19/2015 13:19
Workgroup #:	WG535657	**Analyst:**	DCM	**Run Date:**	08/19/2015 13:29
Collect Date:	08/17/2015 11:20	**Dilution:**	1	**File ID:**	SC150819004.024
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	243		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L15080904-05	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW23-081715	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	08/21/2015 09:45
Workgroup #:	WG535957	**Analyst:**	DCM	**Run Date:**	08/21/2015 09:52
Collect Date:	08/17/2015 11:20	**Dilution:**	1	**File ID:**	S2150821002.018
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.347	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-05	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW23-081715	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG535595	**Analyst:**	TB	**Run Date:**	08/19/2015 15:01
Collect Date:	08/17/2015 11:20	**Dilution:**	1	**File ID:**	ET.1508191501-06
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-05	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW23-081715	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	05/27/2015 15:47
Workgroup #:	WG535967	**Analyst:**	DIH	**Run Date:**	08/21/2015 14:17
Collect Date:	08/17/2015 11:20	**Dilution:**	5	**File ID:**	TC08212015.018
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	5.00	U	10.0	5.00	2.50

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-06	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	50WW23FF-081715	**Prep Method:**	3015	**Prep Date:**	08/20/2015 11:21
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	08/23/2015 10:12
Workgroup #:	WG536024	**Analyst:**	KHR	**Run Date:**	08/23/2015 11:14
Collect Date:	08/17/2015 11:20	**Dilution:**	1	**File ID:**	P2.082315.111449
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.100	U	0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW23FF-081715	**Prep Method:**	3015	**Prep Date:**	08/19/2015 08:35
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	08/23/2015 15:28
Workgroup #:	WG535910	**Analyst:**	BKT	**Run Date:**	08/23/2015 17:17
Collect Date:	08/17/2015 11:20	**Dilution:**	10	**File ID:**	NI.082315.171742
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0623		0.0400	0.0200	0.0100

Certificate of Analysis

Sample #:	L15080904-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW08-081715	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG535451	**Analyst:**	TMB	**Run Date:**	08/19/2015 02:14
Collect Date:	08/17/2015 14:50	**Dilution:**	2.5	**File ID:**	8M406885
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	25.0	12.5	6.25
Benzene	71-43-2	0.626	U	2.50	0.626	0.313
Bromobenzene	108-86-1	0.626	U	2.50	0.626	0.313
Bromochloromethane	74-97-5	1.00	U	2.50	1.00	0.500
Bromodichloromethane	75-27-4	1.25	U	2.50	1.25	0.625
Bromoform	75-25-2	2.50	U	5.00	2.50	1.25
Bromomethane	74-83-9	2.50	Q	5.00	2.50	1.25
2-Butanone	78-93-3	12.5	U	25.0	12.5	6.25
n-Butylbenzene	104-51-8	1.25	U	2.50	1.25	0.625
sec-Butylbenzene	135-98-8	1.25	U	2.50	1.25	0.625
tert-Butylbenzene	98-06-6	1.25	U	2.50	1.25	0.625
Carbon disulfide	75-15-0	2.50	U	5.00	2.50	1.25
Carbon tetrachloride	56-23-5	1.25	U	2.50	1.25	0.625
Chlorobenzene	108-90-7	0.626	U	2.50	0.626	0.313
Chlorodibromomethane	124-48-1	1.25	U	2.50	1.25	0.625
Chloroethane	75-00-3	2.50	U	5.00	2.50	1.25
Chloroform	67-66-3	0.358	J	2.50	0.626	0.313
Chloromethane	74-87-3	2.50	U	5.00	2.50	1.25
2-Chlorotoluene	95-49-8	0.626	U	2.50	0.626	0.313
4-Chlorotoluene	106-43-4	1.25	U	2.50	1.25	0.625

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	5.00	U	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	2.50	1.25	0.625
Dibromomethane	74-95-3	1.25	U	2.50	1.25	0.625
1,2-Dichlorobenzene	95-50-1	0.626	U	2.50	0.626	0.313
1,3-Dichlorobenzene	541-73-1	1.25	U	2.50	1.25	0.625
1,4-Dichlorobenzene	106-46-7	0.626	U	2.50	0.626	0.313
Dichlorodifluoromethane	75-71-8	1.25	U	2.50	1.25	0.625
1,1-Dichloroethane	75-34-3	0.867	J	2.50	0.626	0.313
1,2-Dichloroethane	107-06-2	2.63		2.50	1.25	0.625
1,1-Dichloroethene	75-35-4	2.50	U	5.00	2.50	1.25
cis-1,2-Dichloroethene	156-59-2	45.4		2.50	1.25	0.625
trans-1,2-Dichloroethene	156-60-5	1.25	U	2.50	1.25	0.625
1,2-Dichloropropane	78-87-5	1.00	U	2.50	1.00	0.500
1,3-Dichloropropane	142-28-9	1.00	U	2.50	1.00	0.500
2,2-Dichloropropane	594-20-7	1.25	U	2.50	1.25	0.625
cis-1,3-Dichloropropene	10061-01-5	1.25	U	2.50	1.25	0.625
trans-1,3-Dichloropropene	10061-02-6	2.50	U	5.00	2.50	1.25
1,1-Dichloropropene	563-58-6	1.25	U	2.50	1.25	0.625
Ethylbenzene	100-41-4	1.25	U	2.50	1.25	0.625
2-Hexanone	591-78-6	12.5	U	25.0	12.5	6.25
Hexachlorobutadiene	87-68-3	1.25	U	2.50	1.25	0.625
Isopropylbenzene	98-82-8	1.25	U	2.50	1.25	0.625
p-Isopropyltoluene	99-87-6	1.25	U	2.50	1.25	0.625
4-Methyl-2-pentanone	108-10-1	12.5	U	25.0	12.5	6.25
Methylene chloride	75-09-2	1.25	U	2.50	1.25	0.625
Naphthalene	91-20-3	1.00	U	2.50	1.00	0.500
n-Propylbenzene	103-65-1	0.626	U	2.50	0.626	0.313
Styrene	100-42-5	0.626	U	2.50	0.626	0.313
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	2.50	1.25	0.625
1,1,2,2-Tetrachloroethane	79-34-5	1.00	U	2.50	1.00	0.500
Tetrachloroethene	127-18-4	1.20	J	2.50	1.25	0.625
Toluene	108-88-3	1.25	U	2.50	1.25	0.625
1,2,3-Trichlorobenzene	87-61-6	0.750	U	2.50	0.750	0.375
1,2,4-Trichlorobenzene	120-82-1	1.00	U	2.50	1.00	0.500
1,1,1-Trichloroethane	71-55-6	1.25	U	2.50	1.25	0.625
1,1,2-Trichloroethane	79-00-5	1.25	U	2.50	1.25	0.625
Trichloroethene	79-01-6	375		2.50	1.25	0.625
Trichlorofluoromethane	75-69-4	1.25	U	2.50	1.25	0.625
1,2,3-Trichloropropane	96-18-4	2.50	U	5.00	2.50	1.25

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.25	U	2.50	1.25	0.625
1,3,5-Trimethylbenzene	108-67-8	1.25	U	2.50	1.25	0.625
Vinyl chloride	75-01-4	1.25	U	2.50	1.25	0.625
o-Xylene	95-47-6	1.25	U	2.50	1.25	0.625
m-,p-Xylene	179601-23-1	2.50	U	5.00	2.50	1.25

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	89.6	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	93.2	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-07	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW08-081715	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG535476	**Analyst:**	JDS	**Run Date:**	08/18/2015 17:26
Collect Date:	08/17/2015 14:50	**Dilution:**	1	**File ID:**	16G48245
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	1.16	J	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-07	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW08-081715	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG535545	**Analyst:**	JDS	**Run Date:**	08/19/2015 15:59
Collect Date:	08/17/2015 14:50	**Dilution:**	5	**File ID:**	16G48256
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	618000		50000	25000	12500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW08-081715	**Prep Method:**	6850	**Prep Date:**	08/24/2015 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG536249	**Analyst:**	JWR	**Run Date:**	08/24/2015 21:50
Collect Date:	08/17/2015 14:50	**Dilution:**	50	**File ID:**	1LM.LM31449
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	157		20.0	10.0	5.00

Certificate of Analysis

Sample #:	L15080904-07	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW08-081715	**Prep Method:**	9056	**Prep Date:**	08/18/2015 13:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG535546	**Analyst:**	ALS	**Run Date:**	08/18/2015 20:58
Collect Date:	08/17/2015 14:50	**Dilution:**	5	**File ID:**	I2_081815-24
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	1.00	U	2.00	1.00	0.500
Nitrite	14797-65-0	1.00	U	2.00	1.00	0.500
Sulfate	14808-79-8	313		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-07	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW08-081715	**Prep Method:**	9056	**Prep Date:**	08/18/2015 13:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG535546	**Analyst:**	ALS	**Run Date:**	08/18/2015 21:17
Collect Date:	08/17/2015 14:50	**Dilution:**	20	**File ID:**	I2_081815-25
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	408		8.00	4.00	2.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-07	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW08-081715	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	08/19/2015 13:19
Workgroup #:	WG535657	**Analyst:**	DCM	**Run Date:**	08/19/2015 13:29
Collect Date:	08/17/2015 14:50	**Dilution:**	2	**File ID:**	SC150819004.025
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	414		80.0	40.0	20.0

Certificate of Analysis

Sample #:	L15080904-07	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW08-081715	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	08/21/2015 09:45
Workgroup #:	WG535957	**Analyst:**	DCM	**Run Date:**	08/21/2015 09:53
Collect Date:	08/17/2015 14:50	**Dilution:**	1	**File ID:**	S2150821002.021
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.256	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-07	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW08-081715	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG535595	**Analyst:**	TB	**Run Date:**	08/19/2015 15:01
Collect Date:	08/17/2015 14:50	**Dilution:**	1	**File ID:**	ET.1508191501-07
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-07	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW08-081715	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	05/27/2015 15:47
Workgroup #:	WG535967	**Analyst:**	DIH	**Run Date:**	08/22/2015 03:21
Collect Date:	08/17/2015 14:50	**Dilution:**	4	**File ID:**	TC08212015.061
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	4.00	U	8.00	4.00	2.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-08	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	50WW08FF-081715	**Prep Method:**	3015	**Prep Date:**	08/20/2015 11:21
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	08/23/2015 10:12
Workgroup #:	WG536024	**Analyst:**	KHR	**Run Date:**	08/23/2015 11:17
Collect Date:	08/17/2015 14:50	**Dilution:**	1	**File ID:**	P2.082315.111713
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.100	U	0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW08FF-081715	**Prep Method:**	3015	**Prep Date:**	08/19/2015 08:35
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	08/23/2015 15:28
Workgroup #:	WG535910	**Analyst:**	BKT	**Run Date:**	08/23/2015 17:20
Collect Date:	08/17/2015 14:50	**Dilution:**	10	**File ID:**	NI.082315.172054
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0444		0.0400	0.0200	0.0100

Certificate of Analysis

Sample #:	L15080904-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG535451	**Analyst:**	TMB	**Run Date:**	08/18/2015 23:21
Collect Date:	08/17/2015 00:01	**Dilution:**	1	**File ID:**	8M406879
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

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Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.334	J	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

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Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	93.7	70	120	
Toluene-d8	99.7	85	120	
4-Bromofluorobenzene	93.1	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW18-081715	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG535451	**Analyst:**	TMB	**Run Date:**	08/19/2015 00:47
Collect Date:	08/17/2015 08:30	**Dilution:**	1	**File ID:**	8M406882
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

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Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	85	115	
1,2-Dichloroethane-d4	92.4	70	120	
Toluene-d8	97.0	85	120	
4-Bromofluorobenzene	92.7	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW24-081715	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG535451	**Analyst:**	TMB	**Run Date:**	08/19/2015 01:16
Collect Date:	08/17/2015 09:55	**Dilution:**	1	**File ID:**	8M406883
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	90.0	70	120	
Toluene-d8	98.2	85	120	
4-Bromofluorobenzene	94.3	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW23-081715	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG535451	**Analyst:**	TMB	**Run Date:**	08/19/2015 01:45
Collect Date:	08/17/2015 11:20	**Dilution:**	1	**File ID:**	8M406884
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	89.9	70	120	
Toluene-d8	97.3	85	120	
4-Bromofluorobenzene	95.2	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW08-081715	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG535451	**Analyst:**	TMB	**Run Date:**	08/19/2015 02:14
Collect Date:	08/17/2015 14:50	**Dilution:**	2.5	**File ID:**	8M406885
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	25.0	12.5	6.25
Benzene	71-43-2	0.626	U	2.50	0.626	0.313
Bromobenzene	108-86-1	0.626	U	2.50	0.626	0.313
Bromochloromethane	74-97-5	1.00	U	2.50	1.00	0.500
Bromodichloromethane	75-27-4	1.25	U	2.50	1.25	0.625
Bromoform	75-25-2	2.50	U	5.00	2.50	1.25
Bromomethane	74-83-9	2.50	Q	5.00	2.50	1.25
2-Butanone	78-93-3	12.5	U	25.0	12.5	6.25
n-Butylbenzene	104-51-8	1.25	U	2.50	1.25	0.625
sec-Butylbenzene	135-98-8	1.25	U	2.50	1.25	0.625
tert-Butylbenzene	98-06-6	1.25	U	2.50	1.25	0.625
Carbon disulfide	75-15-0	2.50	U	5.00	2.50	1.25
Carbon tetrachloride	56-23-5	1.25	U	2.50	1.25	0.625
Chlorobenzene	108-90-7	0.626	U	2.50	0.626	0.313
Chlorodibromomethane	124-48-1	1.25	U	2.50	1.25	0.625
Chloroethane	75-00-3	2.50	U	5.00	2.50	1.25
Chloroform	67-66-3	0.358	J	2.50	0.626	0.313
Chloromethane	74-87-3	2.50	U	5.00	2.50	1.25
2-Chlorotoluene	95-49-8	0.626	U	2.50	0.626	0.313
4-Chlorotoluene	106-43-4	1.25	U	2.50	1.25	0.625
1,2-Dibromo-3-chloropropane	96-12-8	5.00	U	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	2.50	1.25	0.625
Dibromomethane	74-95-3	1.25	U	2.50	1.25	0.625
1,2-Dichlorobenzene	95-50-1	0.626	U	2.50	0.626	0.313
1,3-Dichlorobenzene	541-73-1	1.25	U	2.50	1.25	0.625
1,4-Dichlorobenzene	106-46-7	0.626	U	2.50	0.626	0.313
Dichlorodifluoromethane	75-71-8	1.25	U	2.50	1.25	0.625
1,1-Dichloroethane	75-34-3	0.867	J	2.50	0.626	0.313
1,2-Dichloroethane	107-06-2	2.63		2.50	1.25	0.625
1,1-Dichloroethene	75-35-4	2.50	U	5.00	2.50	1.25
cis-1,2-Dichloroethene	156-59-2	45.4		2.50	1.25	0.625

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.25	U	2.50	1.25	0.625
1,2-Dichloropropane	78-87-5	1.00	U	2.50	1.00	0.500
1,3-Dichloropropane	142-28-9	1.00	U	2.50	1.00	0.500
2,2-Dichloropropane	594-20-7	1.25	U	2.50	1.25	0.625
cis-1,3-Dichloropropene	10061-01-5	1.25	U	2.50	1.25	0.625
trans-1,3-Dichloropropene	10061-02-6	2.50	U	5.00	2.50	1.25
1,1-Dichloropropene	563-58-6	1.25	U	2.50	1.25	0.625
Ethylbenzene	100-41-4	1.25	U	2.50	1.25	0.625
2-Hexanone	591-78-6	12.5	U	25.0	12.5	6.25
Hexachlorobutadiene	87-68-3	1.25	U	2.50	1.25	0.625
Isopropylbenzene	98-82-8	1.25	U	2.50	1.25	0.625
p-Isopropyltoluene	99-87-6	1.25	U	2.50	1.25	0.625
4-Methyl-2-pentanone	108-10-1	12.5	U	25.0	12.5	6.25
Methylene chloride	75-09-2	1.25	U	2.50	1.25	0.625
Naphthalene	91-20-3	1.00	U	2.50	1.00	0.500
n-Propylbenzene	103-65-1	0.626	U	2.50	0.626	0.313
Styrene	100-42-5	0.626	U	2.50	0.626	0.313
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	2.50	1.25	0.625
1,1,2,2-Tetrachloroethane	79-34-5	1.00	U	2.50	1.00	0.500
Tetrachloroethene	127-18-4	1.20	J	2.50	1.25	0.625
Toluene	108-88-3	1.25	U	2.50	1.25	0.625
1,2,3-Trichlorobenzene	87-61-6	0.750	U	2.50	0.750	0.375
1,2,4-Trichlorobenzene	120-82-1	1.00	U	2.50	1.00	0.500
1,1,1-Trichloroethane	71-55-6	1.25	U	2.50	1.25	0.625
1,1,2-Trichloroethane	79-00-5	1.25	U	2.50	1.25	0.625
Trichloroethene	79-01-6	375		2.50	1.25	0.625
Trichlorofluoromethane	75-69-4	1.25	U	2.50	1.25	0.625
1,2,3-Trichloropropane	96-18-4	2.50	U	5.00	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	2.50	1.25	0.625
1,3,5-Trimethylbenzene	108-67-8	1.25	U	2.50	1.25	0.625
Vinyl chloride	75-01-4	1.25	U	2.50	1.25	0.625
o-Xylene	95-47-6	1.25	U	2.50	1.25	0.625
m-,p-Xylene	179601-23-1	2.50	U	5.00	2.50	1.25

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	89.6	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	93.2	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG535451	**Analyst:**	TMB	**Run Date:**	08/18/2015 23:21
Collect Date:	08/17/2015 00:01	**Dilution:**	1	**File ID:**	8M406879
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.334	J	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	93.7	70	120	
Toluene-d8	99.7	85	120	
4-Bromofluorobenzene	93.1	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 100214
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 19
Method: 624 SOP: MSV10 Rev: 12
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 16
Maintenance Log ID: 51878

Internal Standard: STD66600 Surrogate Standard: STD66600
CCV: STD66818; STD66687 LCS: STD66693; STD66677 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG494714; WG494980

Comments: File # 8m400369 and 70 were skipped and not used.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M400354	RINSE	NA	1	1		10/02/14 10:24
8M400355	WG494714-01 50ng BFB STD 8260	NA	1	1	STD66476	10/02/14 11:16
8M400356	WG494714-01 50ng BFB STD 8260	NA	1	1	STD66476	10/02/14 11:33
8M400357	WG494714-01 50ng BFB STD 8260	NA	1	1	STD66476	10/02/14 11:58
8M400358	WG494714-02 5ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 12:24
8M400359	WG494714-03 20ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 12:53
8M400360	WG494714-04 50ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 13:22
8M400361	WG494714-05 100ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 13:51
8M400362	WG494714-06 200ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 14:19
8M400363	WG494714-07 300ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 14:48
8M400364	WG494714-08 400ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 15:16
8M400365	WG494714-09 500ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 15:45
8M400366	RINSE	NA	1	1		10/02/14 16:14
8M400367	WG494714-10 100ug/L ALT SRC STD A9/F	NA	1	1	STD66677	10/02/14 16:47
8M400368	WG494979-01 50ug/L CCV STD 8260	NA	1	1	STD66687	10/02/14 17:22
8M400371	WG494980-02 20ug/L LCS STD 624	NA	2	1	STD66693	10/02/14 17:51
8M400372	WG494980-03 20ug/L LCSDUP STD 624	NA	2	1	STD66693	10/02/14 18:20
8M400373	RINSE	NA	2	1		10/02/14 18:49
8M400374	WG494980-01 VBLK1002 BLANK STD 624	NA	2	1		10/02/14 19:18
8M400375	L14100004-01 LOD 826-SPE A9/FOO	NA	1	1		10/02/14 19:47
8M400376	L14100006-01 LOQ 826-SPE A9/FOO	NA	1	1		10/02/14 20:16
8M400377	L14100004-01 LOD 826-SPE	NA	1	1		10/02/14 20:45
8M400378	L14100006-01 LOQ 826-SPE	NA	1	1		10/02/14 21:14
8M400379	L14100004-01 LOD 826-SPE	NA	1	1		10/02/14 21:42
8M400380	L14100006-01 LOQ 826-SPE	NA	1	1		10/02/14 22:12
8M400381	L14100098-10 A 624-SPE	5	2	1		10/02/14 22:40
8M400382	L14100089-02 A 624-SPE	5	2	1		10/02/14 23:09
8M400383	L14100098-04 A 624-SPE	<2	2	1		10/02/14 23:38
8M400384	L14100098-05 A 624-SPE	<2	2	1		10/03/14 00:06
8M400385	L14100098-06 A 624-SPE	<2	2	1		10/03/14 00:36
8M400386	L14100098-07 A 624-SPE	<2	2	1		10/03/14 01:06
8M400387	L14100098-08 A 624-SPE	<2	2	1		10/03/14 01:34
8M400388	L14100098-09 A 624-SPE	<2	2	1		10/03/14 02:04
8M400389	L14100110-01 A 624-SPE2	<2	2	1		10/03/14 02:32

Approved: October 03, 2014

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 100214
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 19
Method: 624 SOP: MSV10 Rev: 12
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 16
Maintenance Log ID: 51878

Internal Standard: STD66600 Surrogate Standard: STD66600
CCV: STD66818; STD66687 LCS: STD66693; STD66677 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG494714; WG494980

Comments: File # 8m400369 and 70 were skipped and not used.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M400390	L14100110-02 A 624-SPE1	<2	2	1		10/03/14 03:02
8M400391	RINSE	NA	1	1		10/03/14 03:30
8M400392	RINSE	NA	1	1		10/03/14 03:59

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 8M400355				
	Tune failed, DNR.			
3	X			
File ID: 8M400356				
	Tune failed, DNR.			
4				
File ID: 8M400357				
	Purged BFB.			
30	X	100	Over Calibration Range	TCE
File ID: 8M400385				
31	X	1	Carry-over contamination	
File ID: 8M400386				
	DNR.			
32	X	1	Carry-over contamination	
File ID: 8M400387				
	DNR.			
33	X	50	Over Calibration Range	TCE
File ID: 8M400388				
34	X	1	Carry-over contamination	
File ID: 8M400389				
	DNR.			

Approved: October 03, 2014

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 073015
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 22
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD71712 Surrogate Standard: STD71712
CCV: STD71744 LCS: STD71618 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG533051

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M406467	RINSE	NA	1	1		07/30/15 08:51
8M406468	RINSE	NA	1	1		07/30/15 09:26
8M406469	RINSE	NA	1	1		07/30/15 09:55
8M406470	RINSE	NA	1	1		07/30/15 10:39
8M406471	RINSE	NA	1	1		07/30/15 11:08
8M406472	RINSE	NA	1	1		07/30/15 11:36
8M406473	RINSE	NA	1	1		07/30/15 12:05
8M406474	RINSE	NA	1	1		07/30/15 12:50
8M406475	RINSE	NA	1	1		07/30/15 13:18
8M406476	RINSE	NA	1	1		07/30/15 13:47
8M406477	WG533051-01 50ng BFB STD 8260	NA	1	1	STD71644	07/30/15 14:17
8M406478	RINSE	NA	1	1		07/30/15 14:41
8M406479	WG533051-04 1ug/L STD 8260	NA	1	1	STD71744	07/30/15 15:09
8M406480	WG533051-05 2ug/L STD 8260	NA	1	1	STD71744	07/30/15 15:37
8M406481	WG533051-06 5ug/L STD 8260	NA	1	1	STD71744	07/30/15 16:06
8M406482	WG533051-07 20ug/L STD 8260	NA	1	1	STD71744	07/30/15 16:35
8M406483	WG533051-08 50ug/L STD 8260	NA	1	1	STD71744	07/30/15 17:04
8M406484	WG533051-09 100ug/L STD 8260	NA	1	1	STD71744	07/30/15 17:33
8M406485	WG533051-10 200ug/L STD 8260	NA	1	1	STD71744	07/30/15 18:01
8M406486	WG533051-11 300ug/L STD 8260	NA	1	1	STD71744	07/30/15 18:29
8M406487	RINSE W/MEOH	NA	1	1		07/30/15 18:58
8M406488	RINSE	NA	1	1		07/30/15 19:26
8M406489	RINSE	NA	1	1		07/30/15 19:54
8M406490	WG533051-02 0.3ug/L STD 8260	NA	1	1	STD71744	07/30/15 20:22
8M406491	WG533051-03 0.4ug/L STD 8260	NA	1	1	STD71744	07/30/15 20:51
8M406492	WG533051-12 50ug/L ALT SRC STD 8260	NA	1	1	STD71618	07/30/15 21:20
8M406493	WG533051-13 50ug/L CCV STD 8260 DOD	NA	1	1	STD71744	07/30/15 21:49
8M406494	RINSE	NA	1	1		07/30/15 22:18
8M406495	RINSE	NA	1	1		07/30/15 22:46
8M406496	RINSE	NA	1	1		07/30/15 23:16
8M406497	RINSE	NA	1	1		07/30/15 23:44
8M406498	RINSE	NA	1	1		07/31/15 00:13
8M406499	RINSE	NA	1	1		07/31/15 00:42
8M406500	RINSE	NA	1	1		07/31/15 01:11

Approved: July 31, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 073015
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 22
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD71712 Surrogate Standard: STD71712
CCV: STD71744 LCS: STD71618 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG533051

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M406501	RINSE	NA	1	1		07/31/15 01:39

Approved: July 31, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 081815
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 22
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID: 53361

Internal Standard: STD71712 Surrogate Standard: STD71712
CCV: STD71981 LCS: STD71810 MS/MSD: STD71810

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG535451

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M406855	WG535450-01 50ng BFB STD 8260	NA	1	1	STD71644	08/18/15 12:25
8M406856	WG535450-01 50ng BFB STD 8260	NA	1	1	STD71644	08/18/15 12:38
8M406857	WG535450-01 50ng BFB STD 8260	NA	1	1	STD71644	08/18/15 13:04
8M406858	WG535450-02 50ug/L CCV STD 8260	NA	1	1	STD71981	08/18/15 13:28
8M406859	WG535450-02 50ug/L CCV STD 8260	NA	1	1	STD71981	08/18/15 14:08
8M406860	WG535450-01 50ng BFB STD 8260	NA	1	1	STD71981	08/18/15 14:37
8M406861	WG535450-01 50ng BFB STD 8260	NA	1	1	STD71981	08/18/15 14:53
8M406862	WG535450-02 50ug/L CCV STD 8260	NA	1	1	STD71981	08/18/15 15:16
8M406863	RINSE	NA	1	1		08/18/15 15:45
8M406864	WG535451-01 VBLK0818 BLANK STD 826	NA	1	1		08/18/15 16:13
8M406865	L15071683-05 B 826-REF-BLK	<2	1	1		08/18/15 16:41
8M406866	WG535451-02 20ug/L LCS STD 8260	NA	1	1	STD71810	08/18/15 17:09
8M406867	L15080901-02 A MS 826-SPE	<2	1	1	STD71810	08/18/15 17:38
8M406868	L15080901-03 A MSD 826-SPE	<2	1	1	STD71810	08/18/15 18:06
8M406869	L15080776-03 B 25X 826-SPE D1	<2	1	25		08/18/15 18:34
8M406870	L15080776-06 B 2.5X 826-SPE 00	<2	1	2.5		08/18/15 19:03
8M406871	L15080776-07 B 5X 826-SPE 00	<2	1	5		08/18/15 19:32
8M406872	L15080776-08 B 5X 826-SPE 00	<2	1	5		08/18/15 20:00
8M406873	L15080776-09 B 20X 826-SPE 00	<2	1	20		08/18/15 20:29
8M406874	L15080776-10 B 10X 826-SPE D1	<2	1	10		08/18/15 20:59
8M406875	L15080788-02 B 5X 826-SPE D1	<2	1	5		08/18/15 21:27
8M406876	L15080901-04 A 826-SPE	<2	1	1		08/18/15 21:55
8M406877	L15080788-03 B 5X 826-SPE D1	2	1	5		08/18/15 22:24
8M406878	L15080901-06 TB A 826-SPE	<2	1	1		08/18/15 22:52
8M406879	L15080904-09 TB A 826-LOW	<2	1	1		08/18/15 23:21
8M406880	L15080901-01 REF A 826-SPE	<2	1	1		08/18/15 23:50
8M406881	L15080901-05 A 826-SPE	<2	1	1		08/19/15 00:19
8M406882	L15080904-01 A 826-LOW	<2	1	1		08/19/15 00:47
8M406883	L15080904-03 A 826-LOW	<2	1	1		08/19/15 01:16
8M406884	L15080904-05 A 826-LOW	<2	1	1		08/19/15 01:45
8M406885	L15080904-07 A 2.5X 826-LOW	<2	1	2.5		08/19/15 02:14
8M406886	CCV	NA	1	1		08/19/15 02:42
8M406887	RINSE	NA	1	1		08/19/15 03:11
8M406888	RINSE	NA	1	1		08/19/15 03:40

Approved: August 20, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 081815
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 22
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID: 53361

Internal Standard: STD71712 Surrogate Standard: STD71712
CCV: STD71981 LCS: STD71810 MS/MSD: STD71810

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG535451

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M406889	RINSE	NA	1	1		08/19/15 04:08

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1	X			
File ID: 8M406855				
	Tune failed, DNR.			
2	X			
File ID: 8M406856				
	Tune failed, DNR. Changed the liner and o-ring.			
4	X			
File ID: 8M406858				
	VC was high, DNR.			
5	X			
File ID: 8M406859				
	VC was high, DNR. Increased the volts by 20.			
6	X			
File ID: 8M406860				
	Tune failed, DNR.			
18	X	25	Over Calibration Range	PCE
File ID: 8M406872				

Approved: August 20, 2015

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Microbac Laboratories Inc.

Data Checklist

Date: 02-OCT-2014
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 63840
Analytical Workgroups: WG494714; WG494980

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
03-OCT-2014
Tiffany Bailey

Secondary Reviewer:
03-OCT-2014

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-03-2014 13:21:54

Microbac Laboratories Inc.

Data Checklist

Date: 30-JUL-2015
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 69569
Analytical Workgroups: WG533051

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
31-JUL-2015
Tiffany Bailey

Secondary Reviewer:
31-JUL-2015

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-31-2015 18:12:12

Microbac Laboratories Inc.

Data Checklist

Date: 18-AUG-2015
Analyst: TMB
Analyst: NA
Method: 8260B
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 69902
Analytical Workgroups: WG535451

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
19-AUG-2015
Tiffany Bailey

Secondary Reviewer:
20-AUG-2015
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-20-2015 09:49:47

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG535451

Login Number: L15080904

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW18-081715	01	08/17/15					08/19/2015	1.7	14		08/19/15	1.7	14	
50WW24-081715	03	08/17/15					08/19/2015	1.6	14		08/19/15	1.6	14	
50WW23-081715	05	08/17/15					08/19/2015	1.6	14		08/19/15	1.6	14	
50WW08-081715	07	08/17/15					08/19/2015	1.5	14		08/19/15	1.5	14	
TRIP BLANK	09	08/17/15					08/18/2015	2	14		08/18/15	2	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4341663
Report generated 08/27/2015 23:28

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L15080904
Instrument Id: HPMS8
Workgroup (AAB#): WG535451

Method: 8260
CAL ID: HPMS8-30-JUL-15
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L15080904-01	1.00	01	92.4	100	92.7	97.0
L15080904-03	1.00	01	90.0	101	94.3	98.2
L15080904-05	1.00	01	89.9	101	95.2	97.3
L15080904-07	2.50	DL01	89.6	102	93.2	100
L15080904-09	1.00	01	93.7	103	93.1	99.7
WG535451-01	1.00	01	88.9	101	97.9	101
WG535451-02	1.00	01	89.0	97.4	95.7	98.9

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4341670
Report generated: 08/27/2015 23:28

METHOD BLANK SUMMARY

Login Number: L15080904
Blank File ID: 8M406864
Prep Date: 08/18/15 16:13
Analyzed Date: 08/18/15 16:13
Analyst: TMB

Work Group: WG535451
Blank Sample ID: WG535451-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG535451-02	8M406866	08/18/15 17:09	01
TRIP BLANK	L15080904-09	8M406879	08/18/15 23:21	01
50WW18-081715	L15080904-01	8M406882	08/19/15 00:47	01
50WW24-081715	L15080904-03	8M406883	08/19/15 01:16	01
50WW23-081715	L15080904-05	8M406884	08/19/15 01:45	01
50WW08-081715	L15080904-07	8M406885	08/19/15 02:14	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4358698
Report generated 08/27/2015 23:28

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15080904 Prep Date: 08/18/15 16:13 Sample ID: WG535451-01
Instrument ID: HPMS8 Run Date: 08/18/15 16:13 Prep Method: 5030B/5030C/503
File ID: 8M406864 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG535451 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-30-JUL-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4358699
27-AUG-2015 23:28

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15080904 Prep Date: 08/18/15 16:13 Sample ID: WG535451-01
Instrument ID: HPMS8 Run Date: 08/18/15 16:13 Prep Method: 5030B/5030C/503
File ID: 8M406864 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG535451 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-30-JUL-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	101	85 - 115	PASS
1,2-Dichloroethane-d4	88.9	70 - 120	PASS
Toluene-d8	101	85 - 120	PASS
4-Bromofluorobenzene	97.9	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4358699
27-AUG-2015 23:28

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15080904 | Run Date: 08/18/2015 | Sample ID: WG535451-02
Instrument ID: HPMS8 | Run Time: 17:09 | Prep Method: 5030B/5030C/503
File ID: 8M406866 | Analyst: TMB | Method: 8260B
Workgroup (AAB#): WG535451 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD71810 | Cal ID: HPMS8-30-JUL-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	23.7	118	40 - 140	
Benzene	20.0	20.2	101	80 - 120	
Bromobenzene	20.0	18.1	90.4	75 - 125	
Bromochloromethane	20.0	19.3	96.5	65 - 130	
Bromodichloromethane	20.0	19.0	95.2	75 - 120	
Bromoform	20.0	19.3	96.7	70 - 130	
Bromomethane	20.0	9.78	48.9	30 - 145	
2-Butanone	20.0	22.8	114	30 - 150	
n-Butylbenzene	20.0	18.6	93.1	70 - 135	
sec-Butylbenzene	20.0	20.0	100	70 - 125	
tert-Butylbenzene	20.0	19.3	96.4	70 - 130	
Carbon disulfide	20.0	17.1	85.3	35 - 160	
Carbon tetrachloride	20.0	19.4	97.0	65 - 140	
Chlorobenzene	20.0	20.7	104	80 - 120	
Chlorodibromomethane	20.0	19.0	94.9	60 - 135	
Chloroethane	20.0	20.9	105	60 - 135	
Chloroform	20.0	19.4	97.0	65 - 135	
Chloromethane	20.0	19.6	98.0	40 - 125	
2-Chlorotoluene	20.0	20.4	102	75 - 125	
4-Chlorotoluene	20.0	19.1	95.5	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	17.3	86.4	50 - 130	
1,2-Dibromoethane	20.0	18.7	93.5	80 - 120	
Dibromomethane	20.0	19.6	98.0	75 - 125	
1,2-Dichlorobenzene	20.0	20.0	100	70 - 120	
1,3-Dichlorobenzene	20.0	19.1	95.7	75 - 125	
1,4-Dichlorobenzene	20.0	17.6	88.0	75 - 125	
Dichlorodifluoromethane	20.0	17.1	85.5	30 - 155	
1,1-Dichloroethane	20.0	19.0	94.8	70 - 135	
1,2-Dichloroethane	20.0	17.8	89.0	70 - 130	
1,1-Dichloroethene	20.0	16.8	84.2	70 - 130	
cis-1,2-Dichloroethene	20.0	19.6	97.8	70 - 125	
trans-1,2-Dichloroethene	20.0	18.7	93.4	60 - 140	
1,2-Dichloropropane	20.0	20.4	102	75 - 125	
1,3-Dichloropropane	20.0	19.3	96.6	75 - 125	
2,2-Dichloropropane	20.0	18.9	94.3	70 - 135	
cis-1,3-Dichloropropene	20.0	20.8	104	70 - 130	
trans-1,3-Dichloropropene	20.0	18.2	90.9	55 - 140	
1,1-Dichloropropene	20.0	18.8	94.1	75 - 130	
Ethylbenzene	20.0	19.8	99.0	75 - 125	
2-Hexanone	20.0	21.1	106	55 - 130	
Hexachlorobutadiene	20.0	16.9	84.5	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4341664
Report generated: 08/27/2015 23:28

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15080904 Run Date: 08/18/2015 Sample ID: WG535451-02
Instrument ID: HPMS8 Run Time: 17:09 Prep Method: 5030B/5030C/503
File ID: 8M406866 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG535451 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD71810 Cal ID: HPMS8-30-JUL-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	21.1	106	75 - 125	
p-Isopropyltoluene	20.0	18.7	93.4	75 - 130	
4-Methyl-2-pentanone	20.0	20.5	103	60 - 135	
Methylene chloride	20.0	19.4	96.9	55 - 140	
Naphthalene	20.0	18.3	91.6	55 - 140	
n-Propylbenzene	20.0	19.7	98.6	70 - 130	
Styrene	20.0	20.4	102	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	19.1	95.7	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	19.5	97.5	65 - 130	
Tetrachloroethene	20.0	19.7	98.6	45 - 150	
Toluene	20.0	19.8	99.2	75 - 120	
1,2,3-Trichlorobenzene	20.0	17.1	85.4	55 - 140	
1,2,4-Trichlorobenzene	20.0	17.3	86.3	65 - 135	
1,1,1-Trichloroethane	20.0	19.8	99.2	65 - 130	
1,1,2-Trichloroethane	20.0	19.4	97.0	75 - 125	
Trichloroethene	20.0	18.4	91.8	70 - 125	
Trichlorofluoromethane	20.0	17.8	88.9	60 - 145	
1,2,3-Trichloropropane	20.0	17.0	84.9	75 - 125	
1,2,4-Trimethylbenzene	20.0	18.8	94.2	75 - 130	
1,3,5-Trimethylbenzene	20.0	19.4	97.2	75 - 130	
Vinyl chloride	20.0	23.0	115	50 - 145	
o-Xylene	20.0	21.0	105	80 - 120	
m-,p-Xylene	40.0	41.5	104	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	97.4	85 - 115	PASS
1,2-Dichloroethane-d4	89.0	70 - 120	PASS
Toluene-d8	98.9	85 - 120	PASS
4-Bromofluorobenzene	95.7	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4341664
Report generated: 08/27/2015 23:28

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15080904
Instrument: HPMS8
Analyst: TMB
Workgroup: WG494714

Tune ID: WG494714-01
Run Date: 10/02/2014
Run Time: 11:58
File ID: 8M400357
Cal ID: HPMS8 - 02-OCT-14

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.7	5158	PASS
75.0	95.0	30.0	60.0	51.7	12312	PASS
95.0	95.0	100	100	100	23818	PASS
96.0	95.0	5.00	9.00	7.56	1800	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	69.7	16590	PASS
175	174	5.00	9.00	7.78	1290	PASS
176	174	95.0	101	97.3	16145	PASS
177	176	5.00	9.00	6.34	1023	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG494714-02	STD	01	10/02/2014 12:24	
WG494714-03	STD	01	10/02/2014 12:53	
WG494714-04	STD	01	10/02/2014 13:22	
WG494714-05	STD	01	10/02/2014 13:51	
WG494714-06	STD	01	10/02/2014 14:19	
WG494714-07	STD	01	10/02/2014 14:48	
WG494714-08	STD	01	10/02/2014 15:16	
WG494714-09	STD	01	10/02/2014 15:45	
WG494714-10	SSCV	01	10/02/2014 16:47	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4341666
Report generated 08/27/2015 23:28

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15080904
Instrument: HPMS8
Analyst: TMB
Workgroup: WG533051

Tune ID: WG533051-01
Run Date: 07/30/2015
Run Time: 14:17
File ID: 8M406477
Cal ID: HPMS8 - 30-JUL-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.2	6881	PASS
75.0	95.0	30.0	60.0	50.6	15643	PASS
95.0	95.0	100	100	100	30939	PASS
96.0	95.0	5.00	9.00	6.97	2155	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	76.8	23758	PASS
175	174	5.00	9.00	7.90	1877	PASS
176	174	95.0	101	95.4	22662	PASS
177	176	5.00	9.00	6.56	1487	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG533051-04	STD	01	07/30/2015 15:09	
WG533051-05	STD	01	07/30/2015 15:37	
WG533051-06	STD	01	07/30/2015 16:06	
WG533051-07	STD	01	07/30/2015 16:35	
WG533051-08	STD-CCV	01	07/30/2015 17:04	
WG533051-09	STD	01	07/30/2015 17:33	
WG533051-10	STD	01	07/30/2015 18:01	
WG533051-11	STD	01	07/30/2015 18:29	
WG533051-02	STD	01	07/30/2015 20:22	
WG533051-03	STD	01	07/30/2015 20:51	
WG533051-12	SSCV	01	07/30/2015 21:20	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4341666
Report generated 08/27/2015 23:28

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15080904
Instrument: HPMS8
Analyst: TMB
Workgroup: WG535450

Tune ID: WG535450-01
Run Date: 08/18/2015
Run Time: 14:53
File ID: 8M406861
Cal ID: HPMS8 - 30-JUL-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.2	8370	PASS
75.0	95.0	30.0	60.0	47.9	18931	PASS
95.0	95.0	100	100	100	39482	PASS
96.0	95.0	5.00	9.00	6.73	2659	PASS
173	174	0	2.00	0.402	145	PASS
174	95.0	50.0	100	91.4	36072	PASS
175	174	5.00	9.00	6.38	2301	PASS
176	174	95.0	101	99.3	35837	PASS
177	176	5.00	9.00	6.82	2443	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG535450-02	CCV	01	08/18/2015 15:16	
WG535451-01	BLANK	01	08/18/2015 16:13	
WG535451-02	LCS	01	08/18/2015 17:09	
L15080904-09	TRIP BLANK	01	08/18/2015 23:21	
L15080904-01	50WW18-081715	01	08/19/2015 00:47	
L15080904-03	50WW24-081715	01	08/19/2015 01:16	
L15080904-05	50WW23-081715	01	08/19/2015 01:45	
L15080904-07	50WW08-081715	DL01	08/19/2015 02:14	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4341666
Report generated 08/27/2015 23:28

Calibration Table Report
Method: A9FOOWTR.M
Title: A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Calibration: Fri Oct 03 12:32:07 2014
Curve: WG494714
Calibration Files

	Compound	5 8M400358.D	20 8M400359.D	50 8M400360.D	100 8M400361.D	200 8M400362.D	300 8M400363.D	400 8M400364.D	500 8M400365.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD											
T	Acetonitrile	0.015	0.015	0.015	0.016	0.017	0.016	0.015	0.016	0.016	4.015		
T	3-Chloro-1-propene	0.416	0.403	0.416	0.438	0.434	0.423	0.407	0.394	0.416	3.619		
T	2-Chloro-1,3-butadiene	0.467	0.479	0.496	0.520	0.522	0.508	0.485	0.462	0.493	4.640		
T	Ethyl Acetate	0.104	0.115	0.123	0.133	0.135	0.133	0.126	0.130	0.125	8.569		
T	Methacrylonitrile	0.062	0.065	0.072	0.077	0.080	0.080	0.077	0.081	0.074	9.397		
T	Isobutyl Alcohol			0.004	0.005	0.005	0.005	0.005	0.005	0.005	9.693		
T	1-Butanol			0.002	0.002	0.003	0.003	0.003	0.003	0.003	21.690	0.995	
T	Methyl methacrylate	0.115	0.123	0.137	0.147	0.154	0.151	0.145	0.150	0.140	10.193		
T	2-Nitropropane	0.032	0.035	0.039	0.043	0.047	0.046	0.046	0.048	0.042	14.057		
I	Chlorobenzene-d5	ISTD											
I	1,4-Dichlorobenzene-d4	ISTD											
T	Cyclohexanone			0.039	0.043	0.037	0.043	0.036	0.038	0.039	7.787		

Fri Oct 03 12:35:36 2014

Calibration Table Report
Method: 8260WT.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Calibration: Fri Jul 31 13:26:17 2015
Curve: WG533051
Calibration Files

	Compound	0.3 8M406490.D	0.4 8M406491.D	1 8M406479.D	2 8M406480.D	5 8M406481.D	20 8M406482.D	50 8M406483.D	100 8M406484.D	200 8M406485.D	300 8M406486.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane		0.369	0.335	0.337	0.352	0.419	0.438	0.375	0.398	0.415	0.382	9.830		
P	Chloromethane			0.496	0.461	0.454	0.420	0.428	0.381	0.387	0.383	0.426	9.858		
C	Vinyl Chloride	0.386	0.326	0.285	0.312	0.300	0.304	0.327	0.289	0.300	0.307	0.313	9.241		
T	1,3-Butadiene		0.275	0.268	0.278	0.264	0.279	0.290	0.287	0.264	0.269	0.275	3.453		
T	Bromomethane		0.210	0.220	0.207	0.204	0.191	0.206	0.196	0.212	0.233	0.209	6.087		
T	Chloroethane		0.197	0.190	0.189	0.195	0.192	0.201	0.186	0.195	0.212	0.195	3.891		
T	Trichlorofluoromethane		0.389	0.385	0.380	0.392	0.406	0.425	0.383	0.420	0.467	0.405	7.002		
T	Diethyl ether			0.159	0.150	0.147	0.148	0.150	0.152		0.167	0.153	4.796		
T	Isoprene		0.264	0.302	0.317	0.312	0.317	0.332	0.329	0.330	0.351	0.317	7.664		
T	Acrolein				0.008	0.007	0.008	0.008	0.009		0.012	0.009	18.571		0.999
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.209	0.208	0.239	0.230	0.249	0.218	0.240	0.259	0.231	8.057		
T	Acetone					0.038	0.031	0.030	0.028	0.030	0.032	0.032	11.525		
C	1,1-Dichloroethene		0.388	0.368	0.396	0.388	0.383	0.407	0.370	0.402	0.431	0.393	4.947		
T	Tert-Butyl Alcohol				0.009	0.008	0.008	0.008	0.008		0.009	0.008	7.482		
T	Dimethyl Sulfide		0.223	0.246	0.244	0.248	0.234	0.251	0.252	0.252	0.270	0.247	5.309		
T	Iodomethane			0.109	0.131	0.161	0.201	0.242	0.246	0.242	0.249	0.198	28.680	0.999	
T	Methyl acetate					0.123	0.114	0.117	0.120	0.119	0.140	0.122	7.548		
T	Methylene Chloride			0.265	0.259	0.247	0.241	0.255	0.237	0.241	0.256	0.250	3.986		
T	Carbon Disulfide			0.815	0.851	0.801	0.796	0.827	0.808	0.758	0.759	0.802	3.956		
T	Acrylonitrile			0.052	0.045	0.047	0.048	0.053	0.054		0.068	0.052	14.572		
T	Methyl Tert Butyl Ether			0.411	0.463	0.411	0.427	0.448	0.437	0.448	0.489	0.442	5.983		
T	trans-1,2-Dichloroethene		0.362	0.331	0.360	0.376	0.358	0.384	0.363	0.381	0.399	0.368	5.284		
T	n-Hexane					0.385	0.389	0.411	0.399	0.390	0.414	0.398	3.043		
T	Diisopropyl ether			0.955	0.899	0.890	0.887	0.892	0.870		0.866	0.894	3.291		
T	Vinyl Acetate		0.191	0.230	0.228	0.244	0.229	0.226	0.253	0.236	0.221	0.229	7.579		
P	1,1-Dichloroethane		0.493	0.494	0.508	0.486	0.488	0.509	0.473	0.490	0.506	0.494	2.419		
T	Ethyl-Tert-Butyl ether			0.691	0.657	0.649	0.655	0.657	0.666		0.695	0.667	2.747		
T	2-Butanone					0.048	0.049	0.054	0.054	0.054	0.061	0.053	8.650		
T	Propionitrile			0.015	0.017	0.016	0.017	0.017	0.017		0.020	0.017	9.548		
T	2,2-Dichloropropane		0.332	0.389	0.401	0.379	0.371	0.395	0.361	0.385	0.412	0.381	6.207		
T	cis-1,2-Dichloroethene		0.227	0.254	0.277	0.267	0.267	0.276	0.264	0.270	0.282	0.265	6.143		
C	Chloroform	0.429	0.474	0.436	0.452	0.454	0.433	0.455	0.432	0.439	0.452	0.446	3.208		
T	1-Bromopropane			0.037	0.051	0.047	0.046	0.048	0.047	0.048	0.052	0.047	9.309		
T	Bromochloromethane		0.131	0.140	0.136	0.134	0.136	0.138	0.134	0.135	0.143	0.137	2.506		
T	Tetrahydrofuran			0.037	0.037	0.035	0.035	0.035	0.037		0.042	0.037	6.632		
S	Dibromofluoromethane			0.192	0.213	0.221	0.222	0.228	0.211	0.230	0.247	0.220	7.264		
T	1,1,1-Trichloroethane		0.353	0.418	0.404	0.409	0.405	0.430	0.398	0.428	0.455	0.411	6.772		
T	Cyclohexane			0.444	0.457	0.479	0.481	0.503	0.486	0.482	0.505	0.480	4.363		
T	1,1-Dichloropropene			0.339	0.353	0.351	0.352	0.368	0.330	0.353	0.370	0.352	3.752		
T	Tert-Amyl-Methyl ether			0.526	0.487	0.486	0.485	0.488	0.496		0.529	0.499	3.912		
T	Carbon Tetrachloride		0.318	0.335	0.357	0.362	0.363	0.389	0.357	0.385	0.41	0.364	7.63917		
S	1,2-Dichloroethane-d4			0.209	0.22	0.215	0.223	0.214	0.206	0.222	0.243	0.2191	5.20847		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.307	0.297	0.281	0.286	0.286	0.306	0.296	0.305	0.324	0.2985	4.50732		
T	Benzene	1.133	1.057	1.046	1.001	1.012	0.994	1.017	0.923	0.857	0.8	0.984	10.0188		
T	Trichloroethene		0.368	0.314	0.267	0.272	0.262	0.272	0.249	0.255	0.27	0.2809	13.2826		
T	Methylcyclohexane					0.394	0.404	0.414	0.409	0.401	0.422	0.4073	2.41832		
C	1,2-Dichloropropane		0.234	0.258	0.268	0.28	0.278	0.291	0.276	0.279	0.291	0.2726	6.49559		
T	Bromodichloromethane		0.302	0.357	0.323	0.33	0.335	0.355	0.339	0.344	0.359	0.3383	5.45197		
T	1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.001	12.4415		
T	Dibromomethane		0.119	0.121	0.127	0.117	0.12	0.129	0.125	0.127	0.138	0.1247	5.15203		
T	2-Chloroethyl Vinyl Ether					0.104	0.103	0.117	0.116	0.117	0.126	0.1139	7.6344		
T	4-Methyl-2-Pentanone					0.043	0.048	0.051	0.052	0.052	0.057	0.0505	9.18805		
T	cis-1,3-Dichloropropene		0.371	0.358	0.365	0.359	0.368	0.392	0.378	0.375	0.386	0.3724	3.14004		

T	Dimethyl Disulfide					0.172	0.186	0.204	0.209	0.213	0.227	0.2017	9.86408	
I	Chlorobenzene-d5	ISTD												
S	Toluene-d8			1.285	1.243	1.202	1.261	1.223	1.083	1.173	1.179	1.206	5.24163	
C	Toluene		1.727	1.565	1.526	1.549	1.523	1.521	1.342	1.267	1.128	1.461	12.4282	
T	Ethyl Methacrylate			0.251	0.251	0.262	0.28	0.288	0.285	0.299	0.315	0.2788	8.25598	
T	Paraldehyde											0	0	
T	trans-1,3-Dichloropropene			0.375	0.408	0.425	0.439	0.451	0.436	0.455	0.468	0.4322	6.8352	
T	1,1,2-Trichloroethane		0.22	0.209	0.222	0.234	0.227	0.238	0.225	0.237	0.248	0.229	5.13936	
T	2-Hexanone					0.055	0.062	0.065	0.065	0.068	0.074	0.0647	10.2519	
T	1,3-Dichloropropane		0.361	0.393	0.415	0.394	0.395	0.414	0.391	0.408	0.416	0.3985	4.38549	
T	Tetrachloroethene		0.303	0.322	0.287	0.307	0.317	0.321	0.284	0.309	0.324	0.308	4.80669	
T	Dibromochloromethane		0.272	0.256	0.306	0.283	0.305	0.317	0.309	0.327	0.34	0.3016	8.85969	
T	1,2-Dibromoethane		0.194	0.213	0.224	0.228	0.221	0.226	0.221	0.233	0.243	0.2226	6.09499	
T	1-Chlorohexane		0.588	0.484	0.496	0.509	0.522	0.527	0.504	0.505	0.512	0.5163	5.78352	
P	Chlorobenzene		0.973	0.951	0.968	1.001	0.985	0.971	0.888	0.863	0.818	0.9354	6.74964	
T	1,1,1,2-Tetrachloroethane		0.276	0.283	0.325	0.341	0.341	0.36	0.335	0.357	0.372	0.3323	9.95609	
C	Ethylbenzene		0.52	0.558	0.509	0.543	0.535	0.541	0.498	0.519	0.528	0.528	3.49701	
T	m-,p-Xylene		0.66	0.665	0.664	0.68	0.652	0.655	0.58	0.552	0.506	0.624	9.8816	
T	o-Xylene			0.549	0.641	0.623	0.635	0.649	0.597	0.61	0.607	0.6141	5.19856	
T	Styrene		1.005	1.009	1.045	1.033	1.042	1.068	0.976	0.953	0.894	1.0029	5.40326	
P	Bromoform			0.154	0.17	0.176	0.175	0.186	0.183	0.199	0.21	0.1813	9.52014	
T	Isopropylbenzene		1.642	1.585	1.646	1.672	1.651	1.651	1.448	1.35	1.192	1.5372	11.0657	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.387	0.462	0.444	0.465	0.443	0.455	0.458	0.485	0.488	0.4542	6.48844	
S	p-Bromofluorobenzene			0.983	0.868	0.836	0.835	0.837	0.78	0.868	0.911	0.8647	7.01404	
T	1,2,3-Trichloropropane			0.099	0.133	0.137	0.121	0.128	0.126	0.133	0.143	0.1275	10.3847	
T	trans-1,4-Dichloro-2-Butene			0.092	0.112	0.14	0.147	0.16	0.165	0.176	0.191	0.148	22.1797	0.996
T	n-Propylbenzene		4.089	3.784	3.926	3.944	3.771	3.81	3.286	2.837		3.6808	11.2499	
T	Bromobenzene	0.855	0.749	0.738	0.784	0.729	0.711	0.739	0.707	0.718	0.725	0.7456	5.96592	
T	1,3,5-Trimethylbenzene		2.6	2.463	2.606	2.578	2.54	2.571	2.328	2.207	1.978	2.4301	8.96614	
T	2-Chlorotoluene		2.315	2.476	2.401	2.377	2.265	2.394	2.104	2.081	1.822	2.2483	9.27831	
T	4-Chlorotoluene		2.503	2.148	2.29	2.282	2.192	2.19	2.08	1.876	1.722	2.1425	10.7892	
T	a-Methylstyrene					1.329	1.324	1.364	1.339	1.296	1.266	1.3197	2.6258	
T	tert-Butylbenzene			0.522	0.535	0.533	0.52	0.538	0.498	0.526	0.54	0.5265	2.57613	
T	1,2,4-Trimethylbenzene		2.578	2.481	2.72	2.608	2.588	2.633	2.38	2.208	1.964	2.4621	9.79915	
T	sec-Butylbenzene			3.249	3.275	3.286	3.228	3.272	2.843	2.591	2.243	2.9984	13.2796	
T	p-Isopropyltoluene			2.713	2.812	2.791	2.738	2.805	2.468	2.285	2.015	2.5785	11.4555	
T	1,3-Dichlorobenzene		1.659	1.472	1.547	1.485	1.459	1.488	1.388	1.358	1.302	1.462	7.21195	
T	1,4-Dichlorobenzene	1.816	1.821	1.439	1.577	1.509	1.434	1.478	1.375	1.345	1.276	1.5071	12.2459	
T	n-Butylbenzene			2.506	2.674	2.705	2.642	2.745	2.433	2.235	1.951	2.4864	11.0376	
T	1,2-Dichlorobenzene	1.389	1.322	1.317	1.311	1.314	1.285	1.318	1.249	1.223	1.182	1.2908	4.55521	
T	1,2-Dibromo-3-Chloropropane				0.077	0.067	0.073	0.082	0.08	0.087	0.091	0.0795	10.0106	
T	1,2,4-Trichlorobenzene		1.183	0.94	0.996	0.951	0.974	1.023	0.967	0.966	0.94	0.9933	7.63182	
T	Hexachlorobutadiene		0.59	0.517	0.49	0.495	0.488	0.506	0.471	0.488	0.505	0.5055	6.81586	
T	Naphthalene		1.141	1.257	1.216	1.207	1.264	1.417	1.392	1.384	1.321	1.2888	7.39825	
T	1,2,3-Trichlorobenzene	0.945	1.047	0.737	0.843	0.819	0.821	0.866	0.841	0.831	0.821	0.8572	9.80847	

Fri Jul 31 14:00:52 2015

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15080904 Run Date: 07/30/2015 Sample ID: WG533051-12
Instrument ID: HPMS8 Run Time: 21:20 Method: 8260B
File ID: 8M406492 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG533051 Cal ID: HPMS8 - 30-JUL-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	48.3	ug/L	0.430	3.50	20	
1,1-Dichloroethene	CCC	50.0	44.0	ug/L	0.345	12.0	20	
1,2-Dichloropropane	CCC	50.0	49.2	ug/L	0.268	1.60	20	
Ethylbenzene	CCC	50.0	49.1	ug/L	0.519	1.80	20	
Toluene	CCC	50.0	48.3	ug/L	1.41	3.40	20	
Vinyl Chloride	CCC	50.0	47.8	ug/L	0.300	4.30	20	
Bromoform	SPCC	50.0	49.0	ug/L	0.178	2.00	20	
Chlorobenzene	SPCC	50.0	50.7	ug/L	0.948	1.40	20	
Chloromethane	SPCC	50.0	46.9	ug/L	0.400	6.20	20	
1,1-Dichloroethane	SPCC	50.0	46.9	ug/L	0.463	6.30	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.3	ug/L	0.448	1.50	20	
Acetone		50.0	50.1	ug/L	0.0316	0.100	20	
Benzene		50.0	48.0	ug/L	0.945	3.90	20	
Bromobenzene		50.0	47.7	ug/L	0.711	4.60	20	
Bromochloromethane		50.0	48.3	ug/L	0.132	3.40	20	
Bromodichloromethane		50.0	47.5	ug/L	0.321	5.10	20	
Bromomethane		50.0	45.7	ug/L	0.191	8.70	20	
2-Butanone		50.0	52.9	ug/L	0.0565	5.80	20	
n-Butylbenzene		50.0	51.6	ug/L	2.57	3.20	20	
sec-Butylbenzene		50.0	53.3	ug/L	3.20	6.60	20	
tert-Butylbenzene		50.0	52.0	ug/L	0.548	4.00	20	
Carbon Disulfide		50.0	34.2	ug/L	0.549	31.6	20	*
Carbon Tetrachloride		50.0	49.6	ug/L	0.361	0.700	20	
Dibromochloromethane		50.0	47.9	ug/L	0.289	4.10	20	
Chloroethane		50.0	50.6	ug/L	0.198	1.20	20	
2-Chlorotoluene		50.0	54.0	ug/L	2.43	8.10	20	
4-Chlorotoluene		50.0	52.5	ug/L	2.25	5.00	20	
1,2-Dibromo-3-Chloropropane		50.0	46.3	ug/L	0.0736	7.50	20	
1,2-Dibromoethane		50.0	47.5	ug/L	0.211	5.10	20	
Dibromomethane		50.0	47.1	ug/L	0.118	5.80	20	
1,2-Dichlorobenzene		50.0	50.4	ug/L	1.30	0.800	20	
1,3-Dichlorobenzene		50.0	50.0	ug/L	1.46	0	20	
1,4-Dichlorobenzene		50.0	46.7	ug/L	1.41	6.70	20	
Dichlorodifluoromethane		50.0	49.9	ug/L	0.381	0.300	20	
1,2-Dichloroethane		50.0	46.4	ug/L	0.277	7.20	20	
cis-1,2-Dichloroethene		50.0	47.6	ug/L	0.253	4.70	20	
trans-1,2-Dichloroethene		50.0	46.6	ug/L	0.344	6.70	20	
1,3-Dichloropropane		50.0	48.7	ug/L	0.388	2.60	20	
2,2-Dichloropropane		50.0	46.0	ug/L	0.350	8.00	20	
cis-1,3-Dichloropropene		50.0	50.3	ug/L	0.375	0.600	20	
trans-1,3-Dichloropropene		50.0	47.1	ug/L	0.407	5.80	20	
1,1-Dichloropropene		50.0	46.6	ug/L	0.328	6.90	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4341665
Report generated 08/27/2015 23:28

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15080904 Run Date: 07/30/2015 Sample ID: WG533051-12
Instrument ID: HPMS8 Run Time: 21:20 Method: 8260B
File ID: 8M406492 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG533051 Cal ID: HPMS8 - 30-JUL-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	52.8	ug/L	0.0683	5.60	20	
Hexachlorobutadiene		50.0	46.1	ug/L	0.466	7.80	20	
Isopropylbenzene		50.0	51.4	ug/L	1.58	2.80	20	
p-Isopropyltoluene		50.0	50.7	ug/L	2.62	1.40	20	
4-Methyl-2-Pentanone		50.0	50.6	ug/L	0.0511	1.20	20	
Methylene Chloride		50.0	46.2	ug/L	0.231	7.50	20	
Naphthalene		50.0	50.7	ug/L	1.31	1.30	20	
n-Propylbenzene		50.0	51.1	ug/L	3.76	2.20	20	
Styrene		50.0	50.0	ug/L	1.00	0	20	
1,1,1,2-Tetrachloroethane		50.0	49.1	ug/L	0.326	1.80	20	
Tetrachloroethene		50.0	47.9	ug/L	0.295	4.20	20	
1,2,3-Trichlorobenzene		50.0	47.3	ug/L	0.811	5.40	20	
1,2,4-Trichlorobenzene		50.0	47.7	ug/L	0.947	4.60	20	
1,1,1-Trichloroethane		50.0	48.9	ug/L	0.402	2.20	20	
1,1,2-Trichloroethane		50.0	47.4	ug/L	0.217	5.20	20	
Trichloroethene		50.0	43.8	ug/L	0.246	12.5	20	
Trichlorofluoromethane		50.0	45.9	ug/L	0.372	8.20	20	
1,2,3-Trichloropropane		50.0	48.2	ug/L	0.123	3.60	20	
1,2,4-Trimethylbenzene		50.0	51.3	ug/L	2.53	2.60	20	
1,3,5-Trimethylbenzene		50.0	52.2	ug/L	2.54	4.40	20	
o-Xylene		50.0	51.3	ug/L	0.631	2.70	20	
m-,p-Xylene		100	100	ug/L	0.626	0.200	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4341665
Report generated 08/27/2015 23:28

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080904 Run Date: 08/18/2015 Sample ID: WG535450-02
Instrument ID: HPMS8 Run Time: 15:16 Method: 8260B
File ID: 8M406862 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG535451 Cal ID: HPMS8 - 30-JUL-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.7	ug/L	0.425	4.58	20	
1,1-Dichloroethene	CCC	50.0	48.4	ug/L	0.380	3.26	20	
1,2-Dichloropropane	CCC	50.0	52.1	ug/L	0.284	4.29	20	
Ethylbenzene	CCC	50.0	49.4	ug/L	0.522	1.19	20	
Toluene	CCC	50.0	49.8	ug/L	1.45	0.432	20	
Vinyl Chloride	CCC	50.0	59.8	ug/L	0.375	19.5	20	
Bromoform	SPCC	50.0	47.6	ug/L	0.173	4.73	20	
Chlorobenzene	SPCC	50.0	49.4	ug/L	0.925	1.12	20	
Chloromethane	SPCC	50.0	55.0	ug/L	0.469	9.92	20	
1,1-Dichloroethane	SPCC	50.0	48.8	ug/L	0.482	2.47	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	48.1	ug/L	0.437	3.85	20	
Xylenes		150	151	ug/L	0.620	0.342	20	
Acetone		50.0	49.3	ug/L	0.0311	1.47	20	
Benzene		50.0	51.1	ug/L	1.01	2.29	20	
Bromobenzene		50.0	46.4	ug/L	0.692	7.17	20	
Bromochloromethane		50.0	48.2	ug/L	0.132	3.51	20	
Bromodichloromethane		50.0	49.0	ug/L	0.332	2.02	20	
Bromomethane		50.0	38.3	ug/L	0.160	23.4	20	*
2-Butanone		50.0	53.0	ug/L	0.0566	6.03	20	
n-Butylbenzene		50.0	50.1	ug/L	2.49	0.190	20	
sec-Butylbenzene		50.0	50.5	ug/L	3.03	0.995	20	
tert-Butylbenzene		50.0	48.9	ug/L	0.515	2.10	20	
Carbon Disulfide		50.0	49.8	ug/L	0.799	0.356	20	
Carbon Tetrachloride		50.0	51.1	ug/L	0.372	2.13	20	
Dibromochloromethane		50.0	49.0	ug/L	0.296	2.04	20	
Chloroethane		50.0	53.5	ug/L	0.209	6.99	20	
2-Chlorotoluene		50.0	50.0	ug/L	2.25	0.0836	20	
4-Chlorotoluene		50.0	47.0	ug/L	2.02	5.93	20	
1,2-Dibromo-3-Chloropropane		50.0	45.3	ug/L	0.0720	9.41	20	
1,2-Dibromoethane		50.0	47.5	ug/L	0.212	5.01	20	
Dibromomethane		50.0	48.4	ug/L	0.121	3.22	20	
1,2-Dichlorobenzene		50.0	48.0	ug/L	1.24	4.09	20	
1,3-Dichlorobenzene		50.0	48.7	ug/L	1.43	2.52	20	
1,4-Dichlorobenzene		50.0	46.3	ug/L	1.40	7.38	20	
Dichlorodifluoromethane		50.0	55.4	ug/L	0.423	10.8	20	
1,2-Dichloroethane		50.0	45.9	ug/L	0.274	8.18	20	
cis-1,2-Dichloroethene		50.0	50.0	ug/L	0.265	0.0594	20	
trans-1,2-Dichloroethene		50.0	50.2	ug/L	0.370	0.337	20	
1,3-Dichloropropane		50.0	48.1	ug/L	0.384	3.73	20	
2,2-Dichloropropane		50.0	51.5	ug/L	0.392	2.99	20	
cis-1,3-Dichloropropene		50.0	51.1	ug/L	0.380	2.11	20	
trans-1,3-Dichloropropene		50.0	48.8	ug/L	0.422	2.42	20	

CCV - Modified 03/05/2008
PDF File ID: 4341667
Report generated 08/27/2015 23:28

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080904 Run Date: 08/18/2015 Sample ID: WG535450-02
Instrument ID: HPMS8 Run Time: 15:16 Method: 8260B
File ID: 8M406862 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG535451 Cal ID: HPMS8 - 30-JUL-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	51.9	ug/L	0.366	3.89	20	
2-Hexanone		50.0	52.9	ug/L	0.0685	5.89	20	
Hexachlorobutadiene		50.0	45.8	ug/L	0.463	8.41	20	
Isopropylbenzene		50.0	50.8	ug/L	1.56	1.64	20	
p-Isopropyltoluene		50.0	49.7	ug/L	2.56	0.599	20	
4-Methyl-2-Pentanone		50.0	51.8	ug/L	0.0524	3.65	20	
Methylene Chloride		50.0	49.3	ug/L	0.246	1.50	20	
Naphthalene		50.0	47.8	ug/L	1.23	4.45	20	
n-Propylbenzene		50.0	48.8	ug/L	3.59	2.40	20	
Styrene		50.0	50.8	ug/L	1.02	1.64	20	
1,1,1,2-Tetrachloroethane		50.0	50.3	ug/L	0.335	0.655	20	
Tetrachloroethene		50.0	50.0	ug/L	0.308	0.00600	20	
1,2,3-Trichlorobenzene		50.0	45.9	ug/L	0.786	8.29	20	
1,2,4-Trichlorobenzene		50.0	46.4	ug/L	0.922	7.14	20	
1,1,1-Trichloroethane		50.0	50.4	ug/L	0.415	0.840	20	
1,1,2-Trichloroethane		50.0	48.2	ug/L	0.221	3.53	20	
Trichloroethene		50.0	47.6	ug/L	0.267	4.81	20	
Trichlorofluoromethane		50.0	49.0	ug/L	0.397	1.96	20	
1,2,3-Trichloropropane		50.0	42.9	ug/L	0.110	14.1	20	
1,2,4-Trimethylbenzene		50.0	49.5	ug/L	2.44	1.06	20	
1,3,5-Trimethylbenzene		50.0	49.8	ug/L	2.42	0.499	20	
o-Xylene		50.0	49.9	ug/L	0.613	0.189	20	
m-,p-Xylene		100	101	ug/L	0.628	0.608	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4341667
Report generated 08/27/2015 23:28

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15080904
Instrument ID: HPMS8
Workgroup (AAB#): WG535451

ICAL CCV Number: WG533051-08
CAL ID: HPMS8-30-JUL-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG533051-08	NA	NA	356726	645629	905123
Upper Limit	NA	NA	713452	1291258	1810246
Lower Limit	NA	NA	178363	322815	452562
L15080904-01	1.00	01	363553	645912	830664
L15080904-03	1.00	01	352015	632245	823711
L15080904-05	1.00	01	348532	639563	823974
L15080904-07	2.50	DL01	351578	621149	833039
L15080904-09	1.00	01	361353	639251	840409
WG535451-01	1.00	01	419973	749693	992933
WG535451-02	1.00	01	435225	756099	1008231

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4358700
Report generated 08/27/2015 23:28

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15080904
Instrument ID: HPMS8
Workgroup (AAB#): WG535451

ICAL CCV Number: WG533051-08
CAL ID: HPMS8-30-JUL-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG533051-08	NA	NA	17.6	14.58	10.71
Upper Limit	NA	NA	18.1	15.08	11.21
Lower Limit	NA	NA	17.1	14.08	10.21
L15080904-01	1.00	01	17.6	14.58	10.71
L15080904-03	1.00	01	17.6	14.58	10.71
L15080904-05	1.00	01	17.6	14.58	10.71
L15080904-07	2.50	DL01	17.6	14.58	10.71
L15080904-09	1.00	01	17.6	14.58	10.71
WG535451-01	1.00	01	17.6	14.58	10.71
WG535451-02	1.00	01	17.6	14.58	10.71

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4358701
Report generated: 08/27/2015 23:28

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\081815\8M406882.D Vial: 22
Acq On : 19 Aug 2015 00:47 Operator: TMB
Sample : L15080904-01 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 19 08:38:08 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	830664	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	645912	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	363553	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.68	111	182949	24.9949 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.96%		
43) 1,2-Dichloroethane-d4	10.31	65	168074	23.0916 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 92.36%		
58) Toluene-d8	12.69	98	755831	24.2571 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.04%		
80) p-Bromofluorobenzene	16.08	95	291345	23.1687 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.68%		

Target Compounds					Qvalue
3) Chloromethane	3.64	50	5483	0.3871 ug/L #	31
13) Acetone	6.25	43	766	0.7313 ug/L #	48

(#) = qualifier out of range (m) = manual integration
8M406882.D 8260WT.M Wed Aug 19 08:38:08 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\081815\8M406882.D Vial: 22
Acq On : 19 Aug 2015 00:47 Operator: TMB
Sample : L15080904-01 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 19 8:38 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

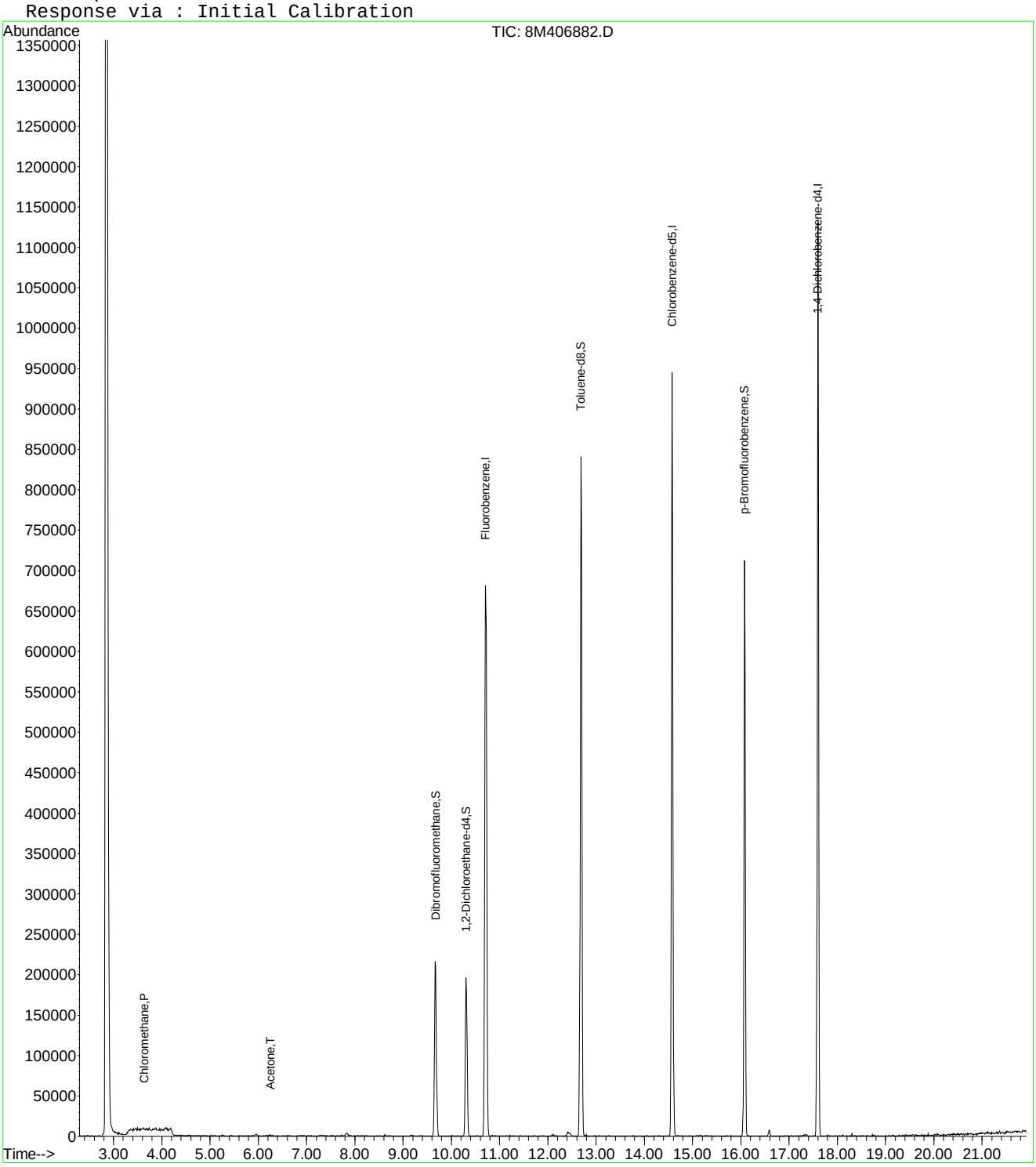

8M406882.D 8260WT.M Wed Aug 19 08:38:09 2015 Page 2

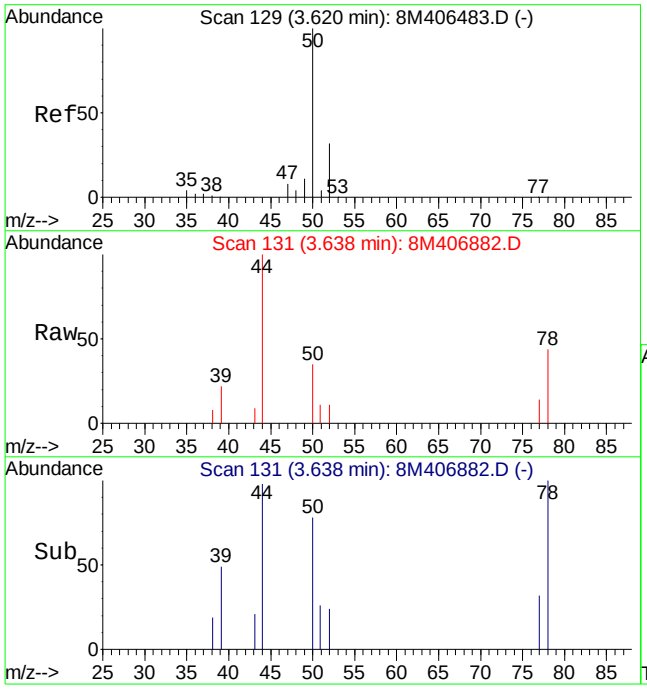

#3
Chloromethane
Concen: 0.39 ug/L
RT: 3.64 min Scan# 131
Delta R.T. 0.02 min
Lab File: 8M406882.D
Acq: 19 Aug 2015 00:47

Tgt Ion: 50 Resp: 5483

Ion	Ratio	Lower	Upper
50	100		
52	70.3	19.2	44.8#

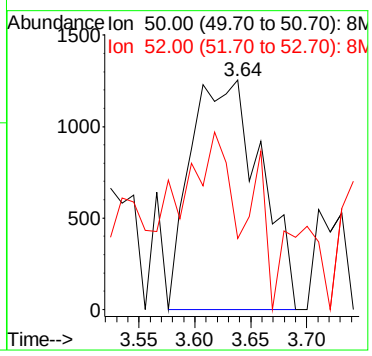

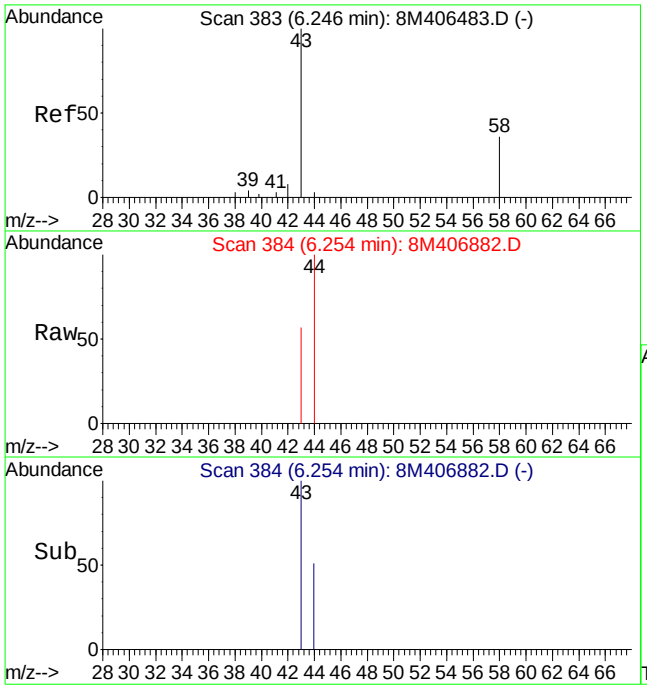

#13
Acetone
Concen: 0.73 ug/L
RT: 6.25 min Scan# 384
Delta R.T. 0.01 min
Lab File: 8M406882.D
Acq: 19 Aug 2015 00:47

Tgt Ion: 43 Resp: 766

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

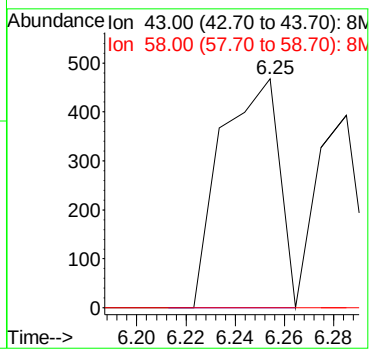

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\081815\8M406883.D Vial: 23
Acq On : 19 Aug 2015 1:16 Operator: TMB
Sample : L15080904-03 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 19 08:38:09 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	823711	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	632245	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	352015	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	184087	25.3626 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.44%		
43) 1,2-Dichloroethane-d4	10.31	65	162356	22.4943 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 89.96%		
58) Toluene-d8	12.69	98	748950	24.5559 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.24%		
80) p-Bromofluorobenzene	16.08	95	287130	23.5819 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.32%		

Target Compounds					Qvalue
3) Chloromethane	3.63	50	2874	0.2046 ug/L #	43
13) Acetone	6.26	43	1635	1.5741 ug/L #	72

(#) = qualifier out of range (m) = manual integration
8M406883.D 8260WT.M Wed Aug 19 08:38:10 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\081815\8M406883.D Vial: 23
Acq On : 19 Aug 2015 1:16 Operator: TMB
Sample : L15080904-03 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 19 8:38 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

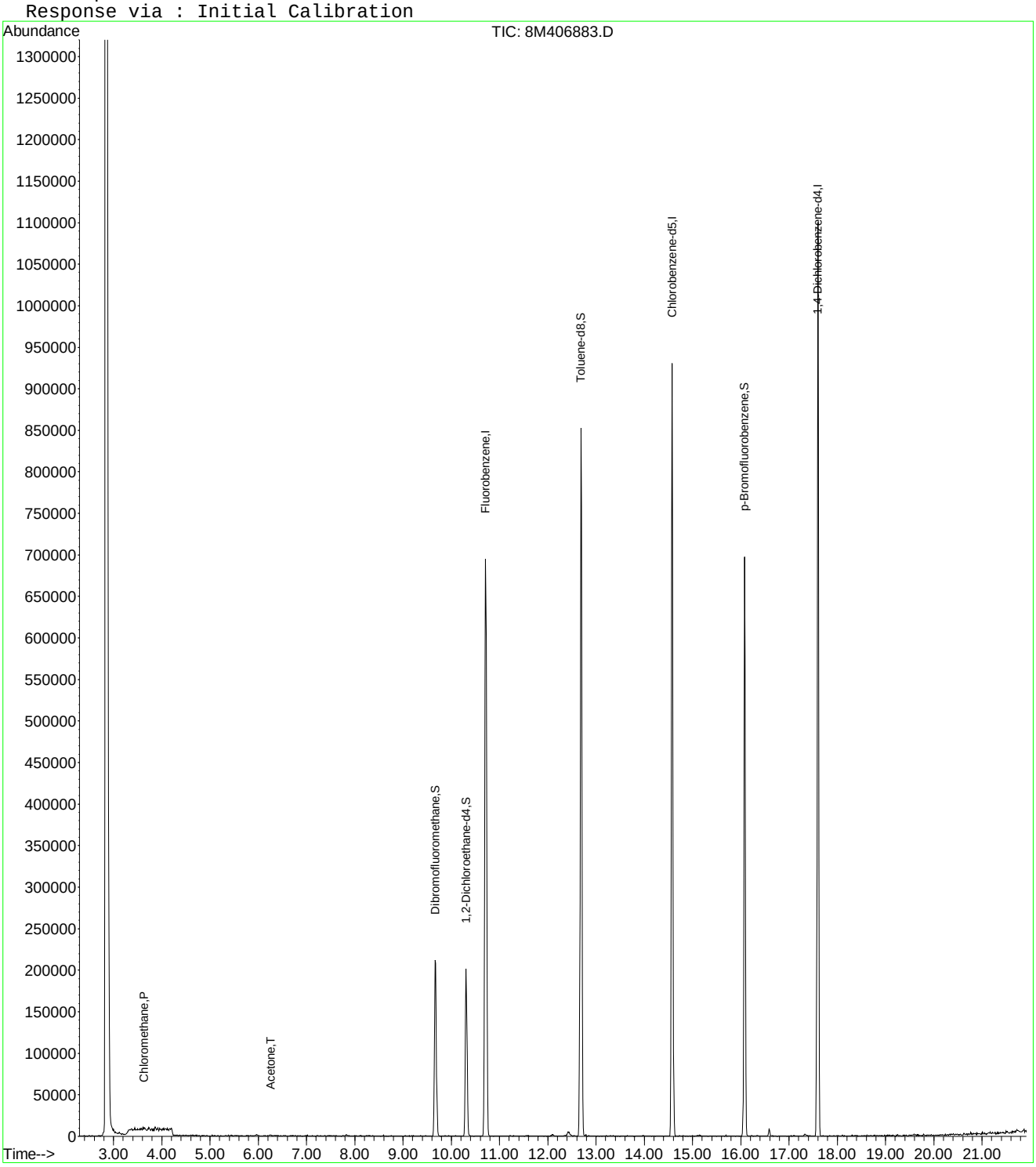

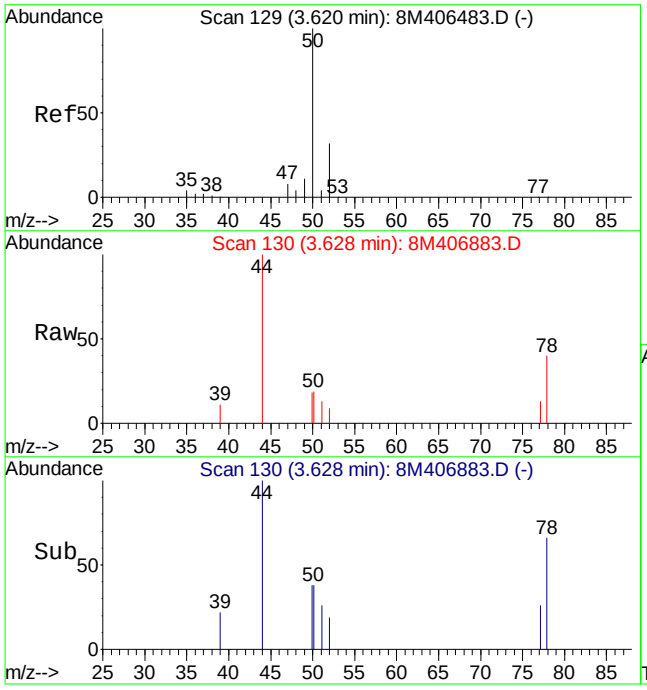

#3
Chloromethane
Concen: 0.20 ug/L
RT: 3.63 min Scan# 130
Delta R.T. 0.01 min
Lab File: 8M406883.D
Acq: 19 Aug 2015 1:16

Tgt Ion: 50 Resp: 2874

Ion	Ratio	Lower	Upper
50	100		
52	0.0	19.2	44.8#

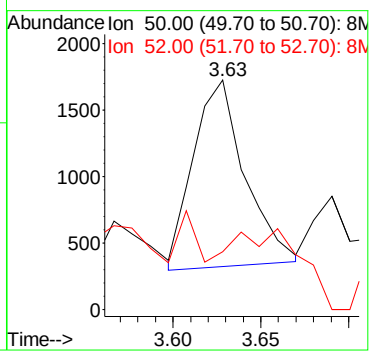

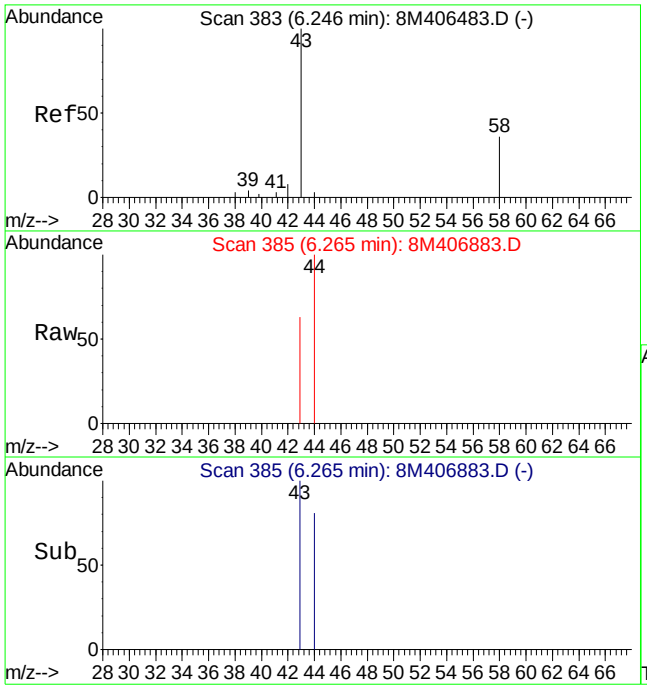

#13
Acetone
Concen: 1.57 ug/L
RT: 6.26 min Scan# 385
Delta R.T. 0.02 min
Lab File: 8M406883.D
Acq: 19 Aug 2015 1:16

Tgt Ion: 43 Resp: 1635

Ion	Ratio	Lower	Upper
43	100		
58	12.9	16.4	38.2#

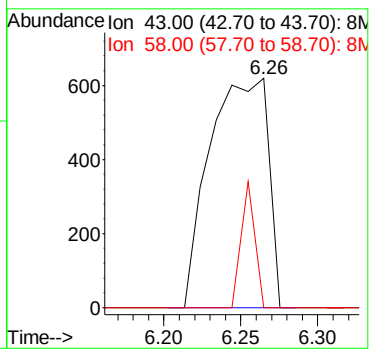

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\081815\8M406884.D Vial: 24
Acq On : 19 Aug 2015 1:45 Operator: TMB
Sample : L15080904-05 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 19 08:38:10 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	823974	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	639563	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	348532	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.68	111	183699	25.3011 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.20%		
43) 1,2-Dichloroethane-d4	10.31	65	162218	22.4680 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 89.88%		
58) Toluene-d8	12.69	98	750497	24.3251 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.32%		
80) p-Bromofluorobenzene	16.08	95	286913	23.7996 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.20%		

Target Compounds					Qvalue
13) Acetone	6.24	43	514	0.4947 ug/L #	59

(#) = qualifier out of range (m) = manual integration
8M406884.D 8260WT.M Wed Aug 19 08:38:11 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\081815\8M406884.D Vial: 24
Acq On : 19 Aug 2015 1:45 Operator: TMB
Sample : L15080904-05 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 19 8:38 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

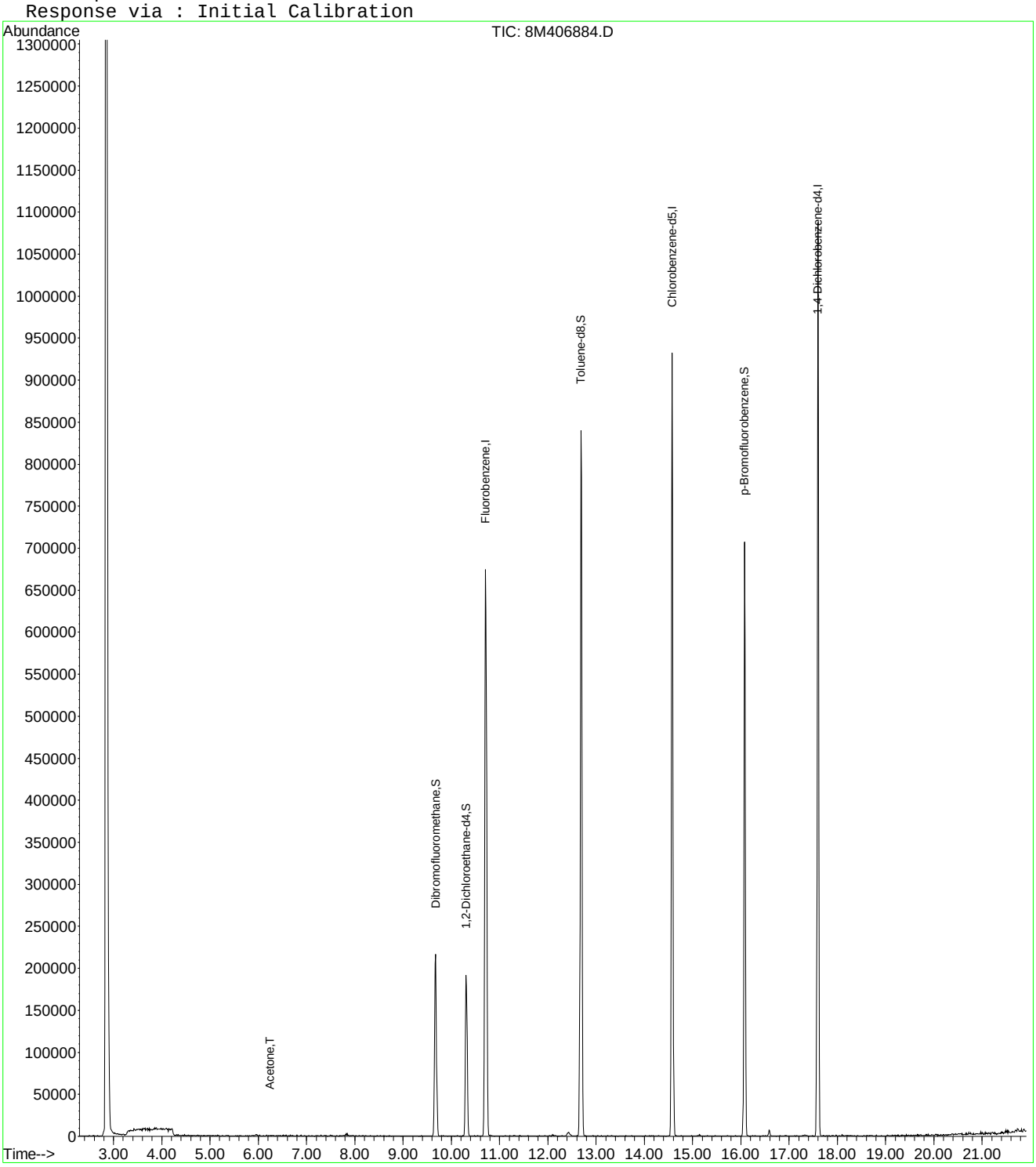

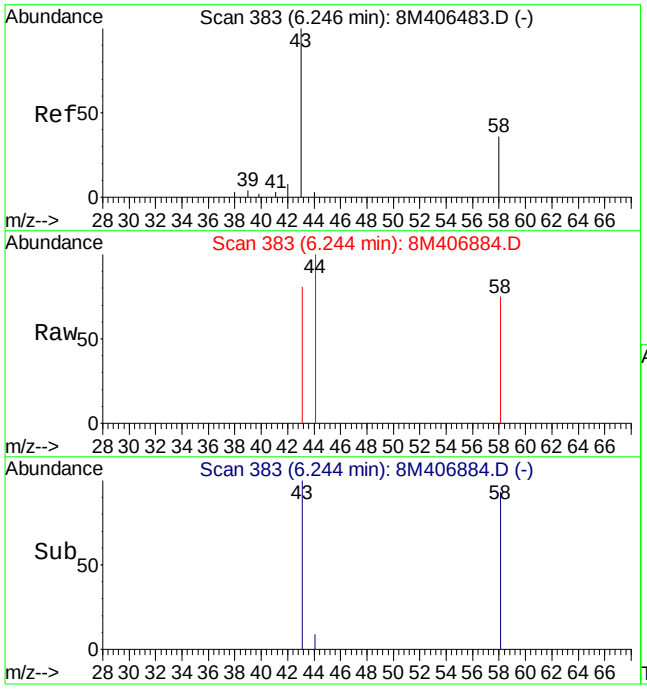

#13
Acetone
Concen: 0.49 ug/L
RT: 6.24 min Scan# 383
Delta R.T. -0.00 min
Lab File: 8M406884.D
Acq: 19 Aug 2015 1:45

Tgt Ion: 43 Resp: 514

Ion	Ratio	Lower	Upper
43	100		
58	48.6	16.4	38.2#

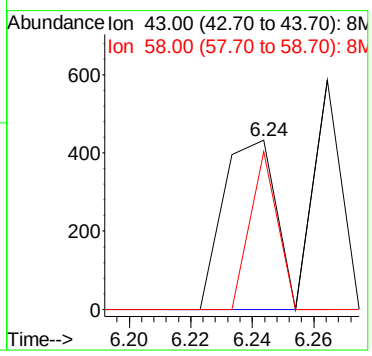

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\081815\8M406885.D Vial: 25
Acq On : 19 Aug 2015 2:14 Operator: TMB
Sample : L15080904-07 A 2.5X 826-LOW Inst : HPMS8
Misc : 1,2.5 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 19 08:38:11 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	833039	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	621149	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	351578	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.68	111	186635	25.4258 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.72%		
43) 1,2-Dichloroethane-d4	10.32	65	163578	22.4098 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 89.64%		
58) Toluene-d8	12.68	98	751796	25.0895 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.36%		
80) p-Bromofluorobenzene	16.08	95	283357	23.3010 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.20%		

Target Compounds

					Qvalue
3) Chloromethane	3.62	50	1863	0.1312 ug/L	93
4) Vinyl Chloride	3.86	62	1396	0.1336 ug/L #	44
12) 1,1,2-Trichloro-1,2,2-Trif	6.18	101	1983	0.2571 ug/L	67
13) Acetone	6.26	43	545	0.5188 ug/L #	48
14) 1,1-Dichloroethene	6.47	61	2697	0.2061 ug/L #	48
27) 1,1-Dichloroethane	8.34	63	5706	0.3467 ug/L #	86
32) cis-1,2-Dichloroethene	9.18	96	160493	18.1746 ug/L	81
33) Chloroform	9.39	83	2125	0.1431 ug/L	97
45) 1,2-Dichloroethane	10.42	62	10453	1.0508 ug/L	99
47) Trichloroethene	11.22	130	1405515	150.1855 ug/L	98
48) Methylcyclohexane	11.22	83	19061	1.4045 ug/L #	1
66) Tetrachloroethene	13.59	164	3668	0.4793 ug/L	91

(#) = qualifier out of range (m) = manual integration
8M406885.D 8260WT.M Wed Aug 19 08:38:12 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\081815\8M406885.D Vial: 25
Acq On : 19 Aug 2015 2:14 Operator: TMB
Sample : L15080904-07 A 2.5X 826-LOW Inst : HPMS8
Misc : 1,2.5 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 19 8:38 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

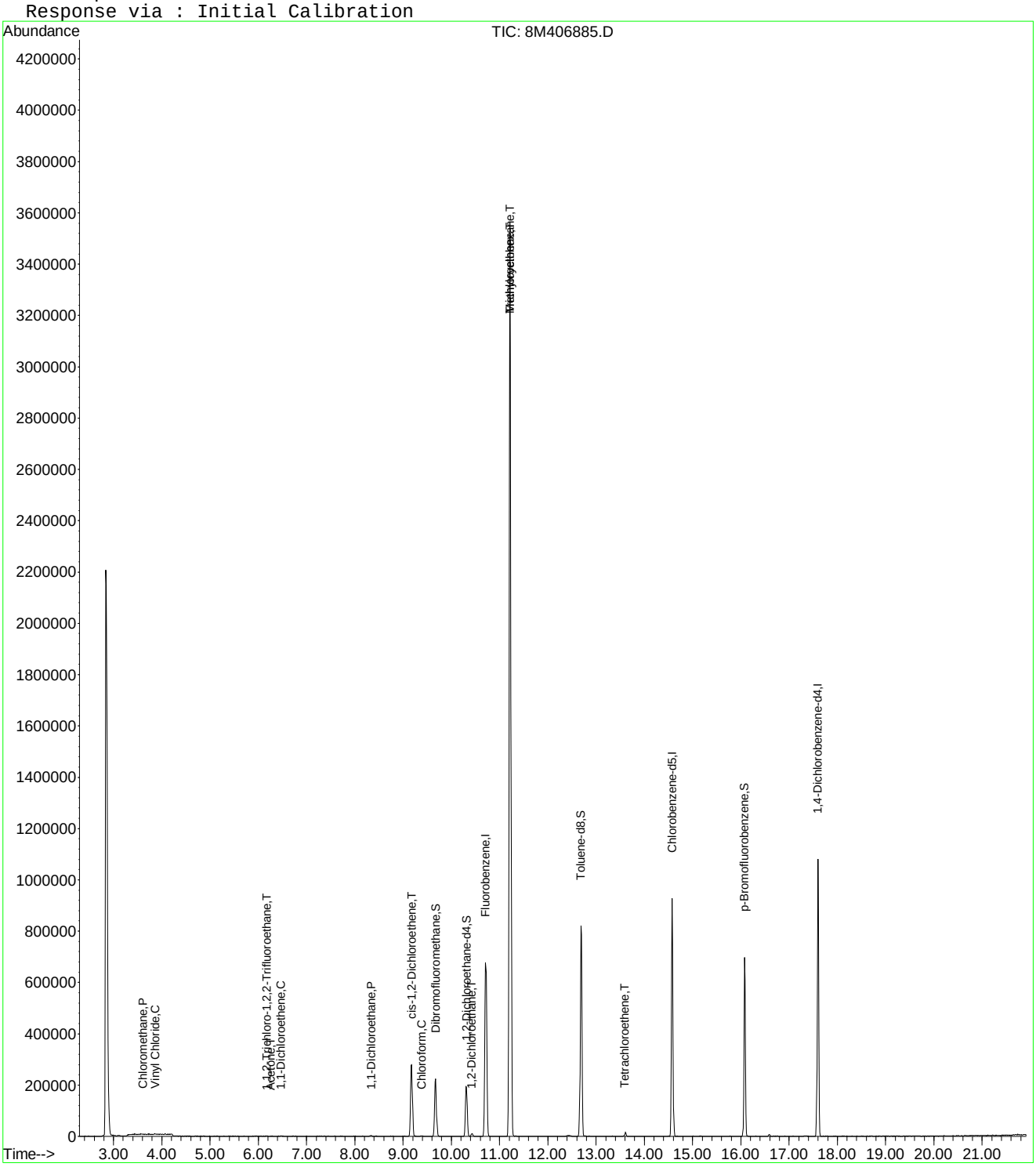

8M406885.D 8260WT.M Wed Aug 19 08:38:12 2015 Page 2

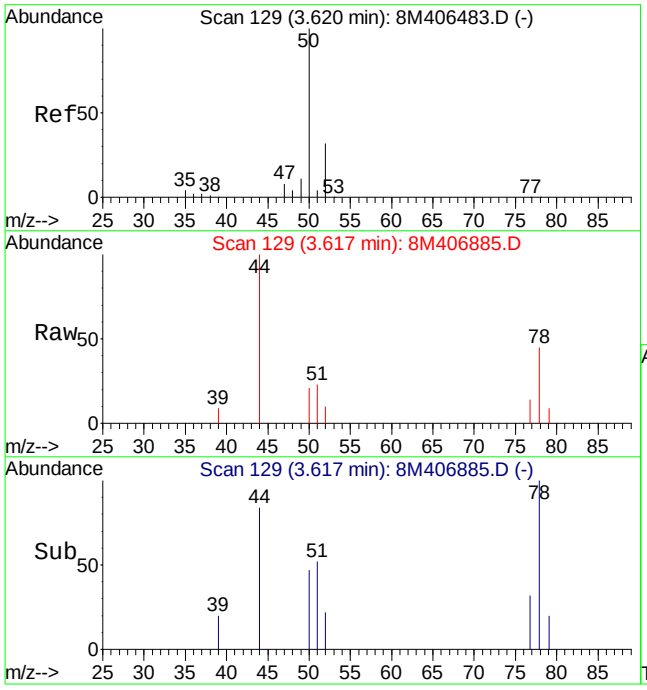

#3
Chloromethane
Concen: 0.13 ug/L
RT: 3.62 min Scan# 129
Delta R.T. -0.00 min
Lab File: 8M406885.D
Acq: 19 Aug 2015 2:14

Tgt Ion: 50 Resp: 1863

Ion	Ratio	Lower	Upper
50	100		
52	27.9	19.2	44.8

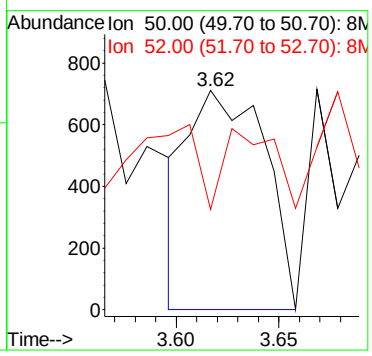

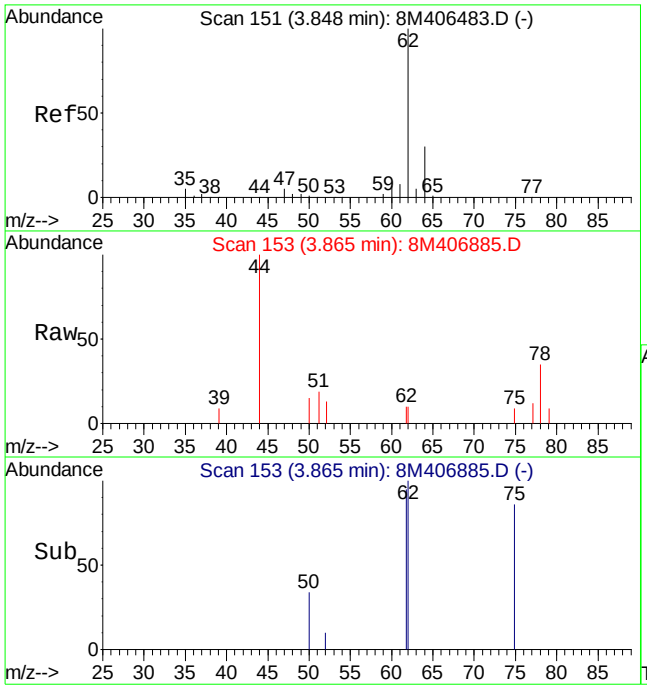

#4
Vinyl Chloride
Concen: 0.13 ug/L
RT: 3.86 min Scan# 153
Delta R.T. 0.02 min
Lab File: 8M406885.D
Acq: 19 Aug 2015 2:14

Tgt Ion: 62 Resp: 1396

Ion	Ratio	Lower	Upper
62	100		
64	0.0	18.2	42.6#

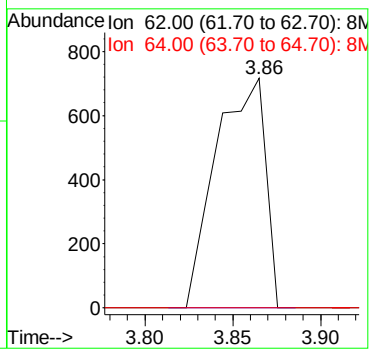

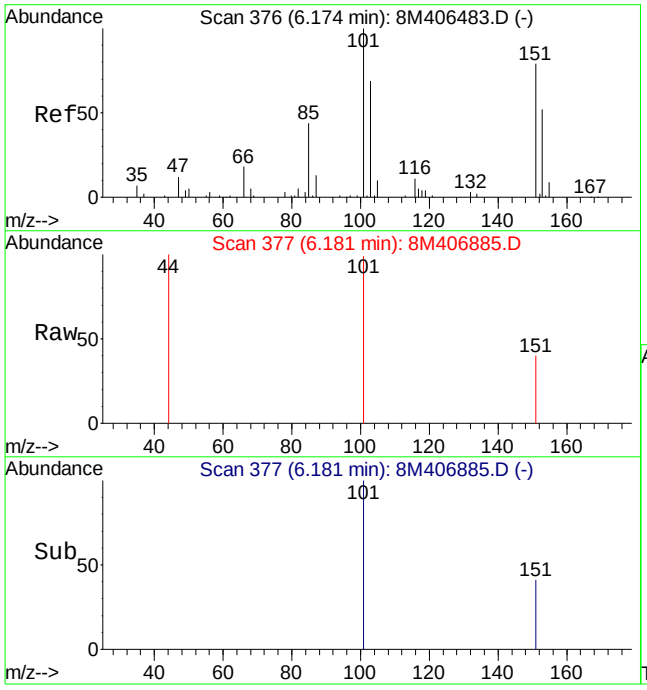

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 0.26 ug/L
RT: 6.18 min Scan# 377
Delta R.T. 0.02 min
Lab File: 8M406885.D
Acq: 19 Aug 2015 2:14

Tgt Ion:101 Resp: 1983

Ion	Ratio	Lower	Upper
101	100		
151	49.0	38.1	118.1

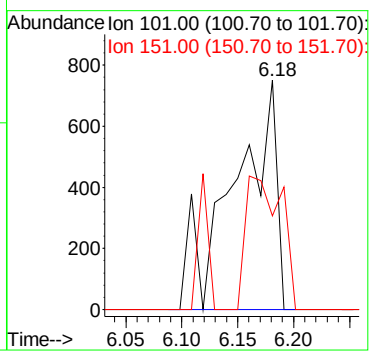

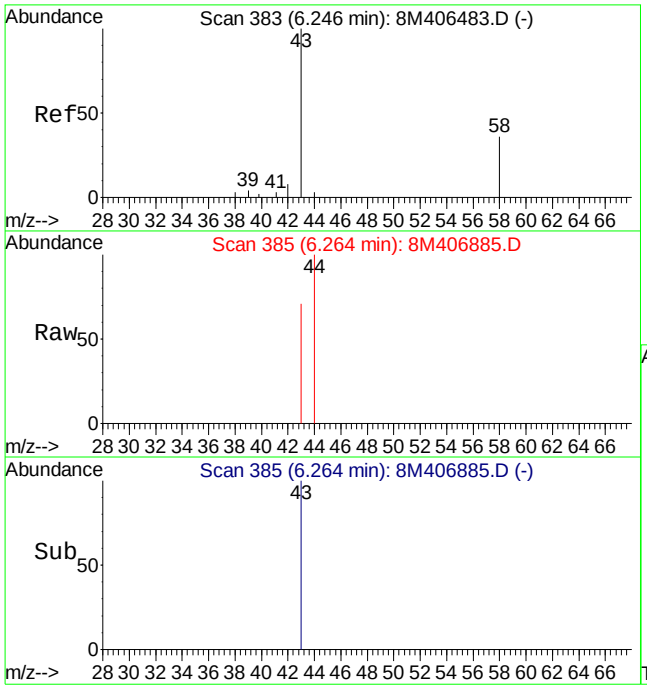

#13
Acetone
Concen: 0.52 ug/L
RT: 6.26 min Scan# 385
Delta R.T. 0.02 min
Lab File: 8M406885.D
Acq: 19 Aug 2015 2:14

Tgt Ion: 43 Resp: 545

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

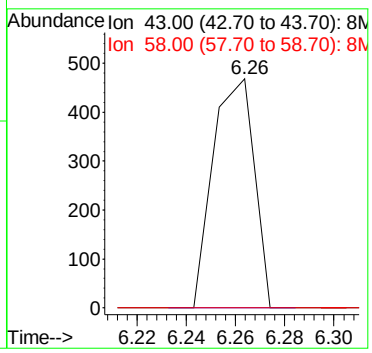

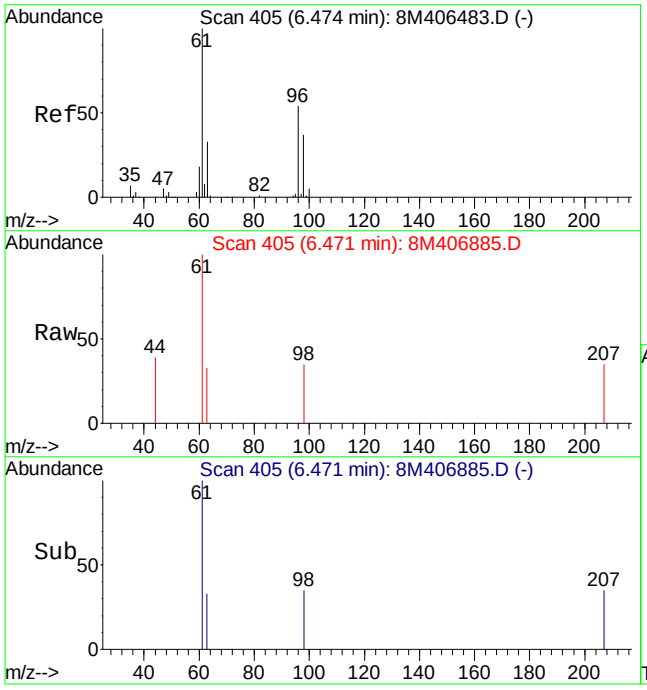

#14
1,1-Dichloroethene
Concen: 0.21 ug/L
RT: 6.47 min Scan# 405
Delta R.T. -0.00 min
Lab File: 8M406885.D
Acq: 19 Aug 2015 2:14

Tgt Ion: 61 Resp: 2697

Ion	Ratio	Lower	Upper
61	100		
96	16.9	32.3	75.3#

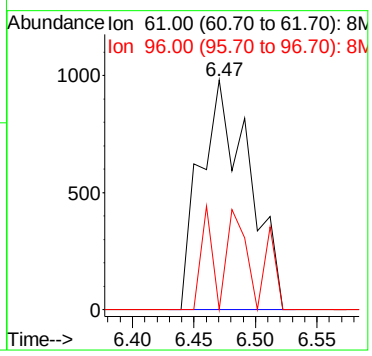

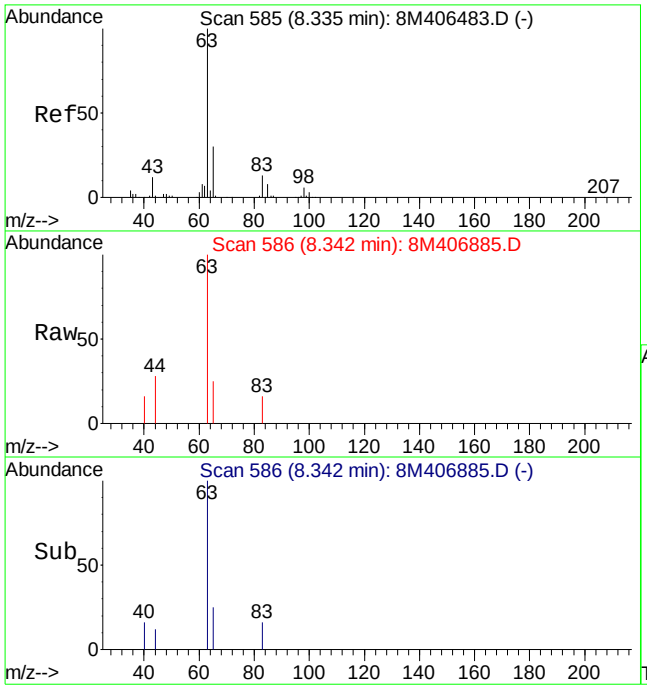

#27
1,1-Dichloroethane
Concen: 0.35 ug/L
RT: 8.34 min Scan# 586
Delta R.T. 0.01 min
Lab File: 8M406885.D
Acq: 19 Aug 2015 2:14

Tgt Ion: 63 Resp: 5706

Ion	Ratio	Lower	Upper
63	100		
65	27.7	18.4	43.0
83	0.0	7.7	18.1#

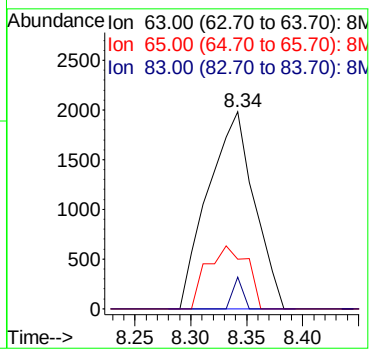

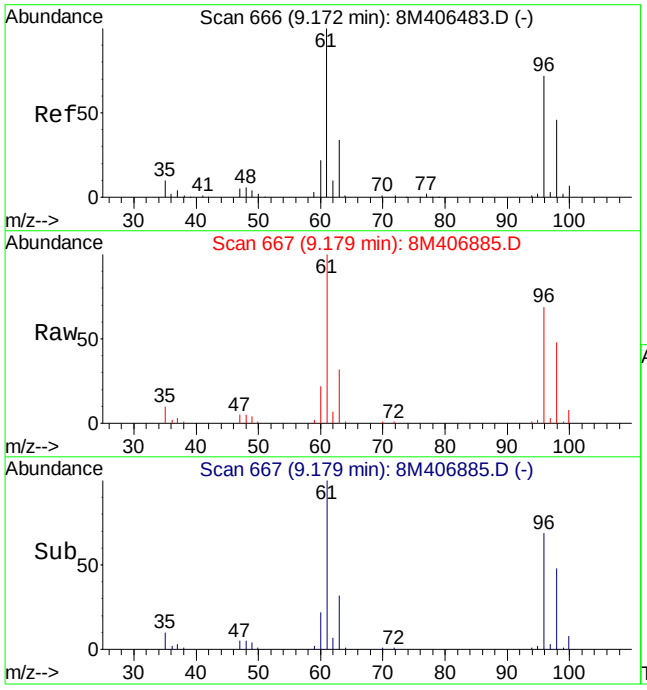

#32
cis-1,2-Dichloroethene
Concen: 18.17 ug/L
RT: 9.18 min Scan# 667
Delta R.T. 0.01 min
Lab File: 8M406885.D
Acq: 19 Aug 2015 2:14

Tgt Ion: 96 Resp: 160493

Ion	Ratio	Lower	Upper
96	100		
61	141.2	99.8	233.0

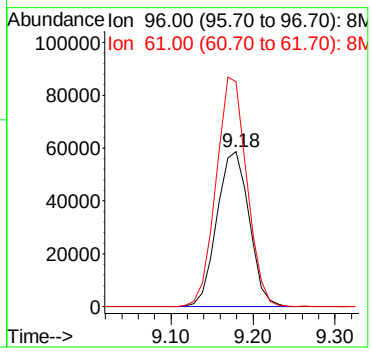

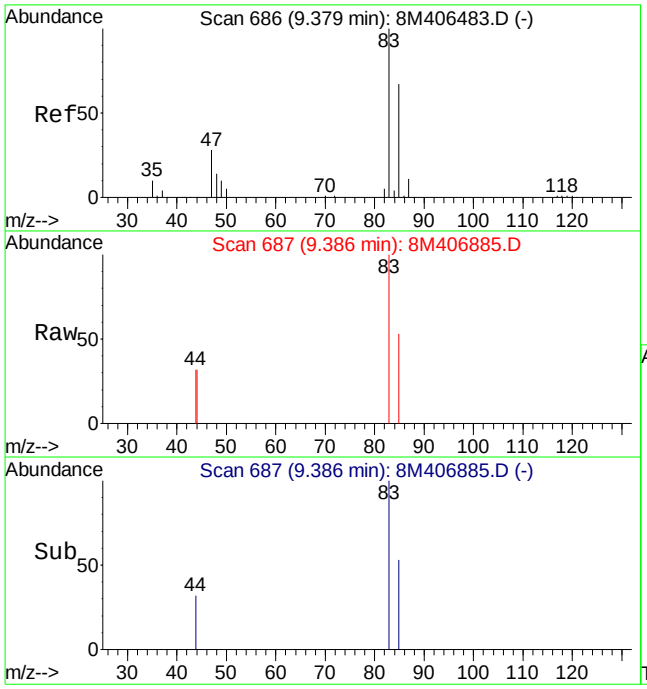

#33
Chloroform
Concen: 0.14 ug/L
RT: 9.39 min Scan# 687
Delta R.T. 0.01 min
Lab File: 8M406885.D
Acq: 19 Aug 2015 2:14

Tgt Ion: 83 Resp: 2125

Ion	Ratio	Lower	Upper
83	100		
85	66.7	38.8	90.4

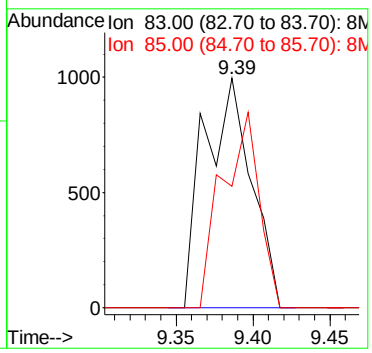

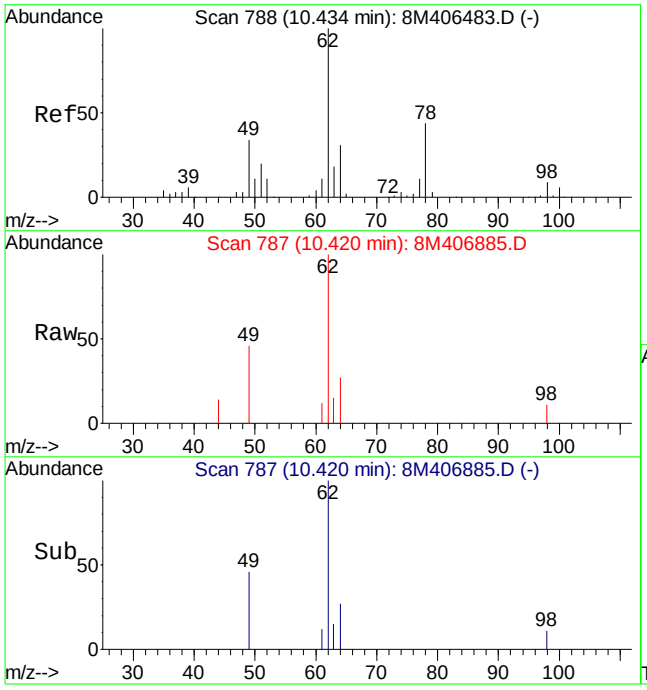

#45
1,2-Dichloroethane
Concen: 1.05 ug/L
RT: 10.42 min Scan# 787
Delta R.T. -0.01 min
Lab File: 8M406885.D
Acq: 19 Aug 2015 2:14

Tgt Ion: 62 Resp: 10453

Ion	Ratio	Lower	Upper
62	100		
64	30.9	18.8	44.0
49	40.9	25.3	58.9

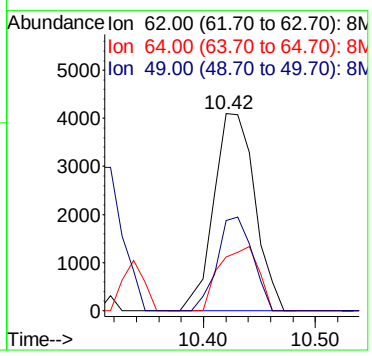

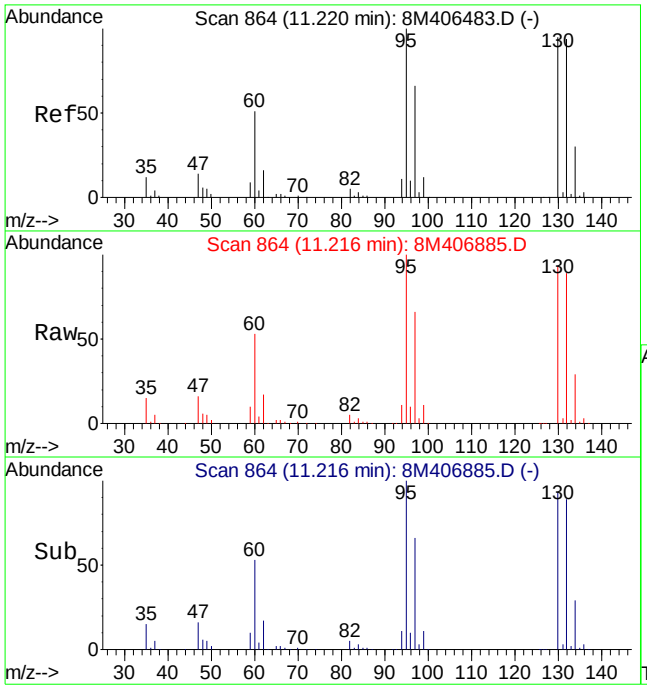

#47
Trichloroethene
Concen: 150.19 ug/L
RT: 11.22 min Scan# 864
Delta R.T. -0.00 min
Lab File: 8M406885.D
Acq: 19 Aug 2015 2:14

Tgt Ion:130 Resp: 1405515

Ion	Ratio	Lower	Upper
130	100		
132	96.9	59.0	137.6
95	105.2	65.0	151.8

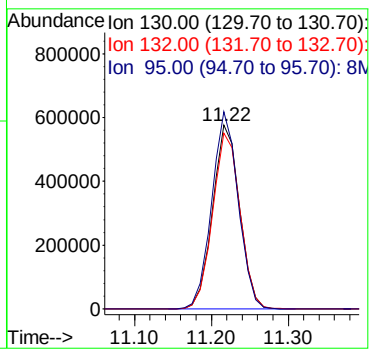

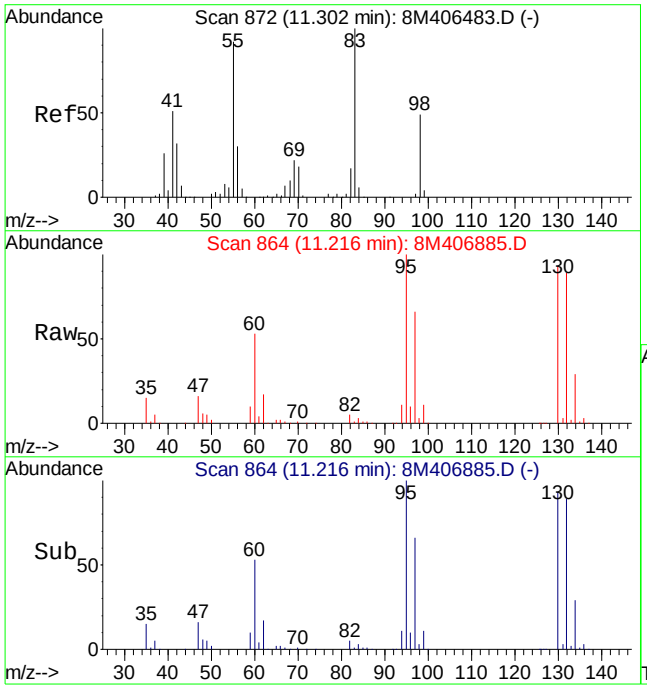

#48
Methylcyclohexane
Concen: 1.40 ug/L
RT: 11.22 min Scan# 864
Delta R.T. -0.08 min
Lab File: 8M406885.D
Acq: 19 Aug 2015 2:14

Tgt Ion: 83 Resp: 19061

Ion	Ratio	Lower	Upper
83	100		
55	0.0	54.8	128.0#
98	208.4	29.0	67.8#

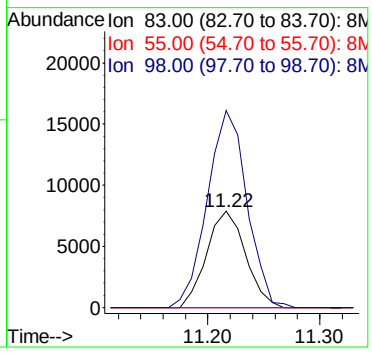

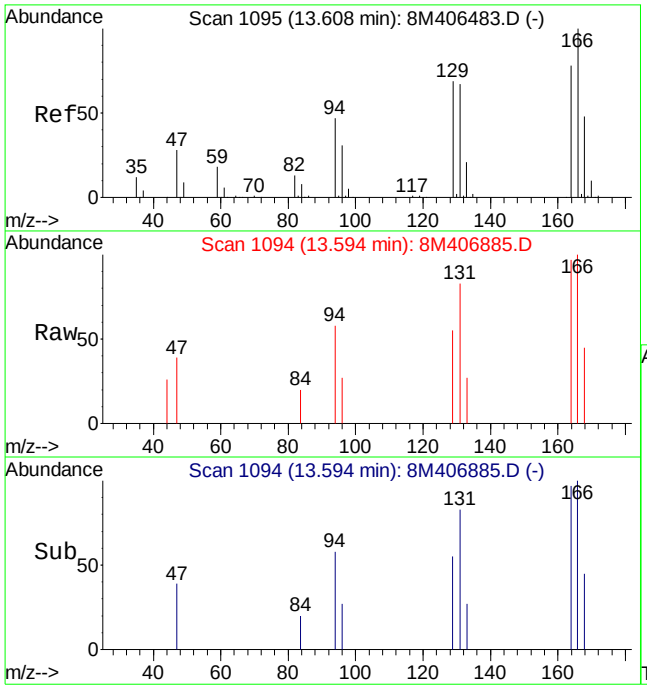

#66
Tetrachloroethene
Concen: 0.48 ug/L
RT: 13.59 min Scan# 1094
Delta R.T. -0.01 min
Lab File: 8M406885.D
Acq: 19 Aug 2015 2:14

Tgt Ion:164 Resp: 3668

Ion	Ratio	Lower	Upper
164	100		
129	95.7	54.3	126.7
94	74.4	38.3	89.5

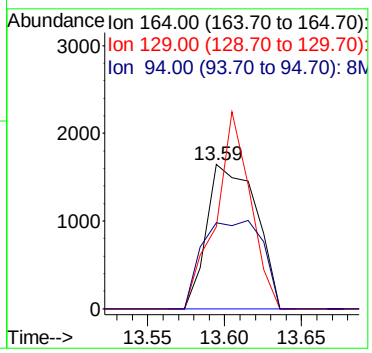

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\081815\8M406879.D Vial: 19
Acq On : 18 Aug 2015 23:21 Operator: TMB
Sample : L15080904-09 TB A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 19 08:38:01 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	840409	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	639251	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	361353	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	190018	25.6596 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.64%		
43) 1,2-Dichloroethane-d4	10.31	65	172509	23.4261 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 93.72%		
58) Toluene-d8	12.69	98	768307	24.9145 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.64%		
80) p-Bromofluorobenzene	16.08	95	290866	23.2714 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.08%		

Target Compounds					Qvalue
13) Acetone	6.23	43	627	0.5916 ug/L #	48
19) Methylene Chloride	7.27	84	2809	0.3341 ug/L	99
36) Tetrahydrofuran	9.64	42	238	0.1928 ug/L #	40

(#) = qualifier out of range (m) = manual integration
8M406879.D 8260WT.M Wed Aug 19 08:38:02 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\081815\8M406879.D Vial: 19
Acq On : 18 Aug 2015 23:21 Operator: TMB
Sample : L15080904-09 TB A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 19 8:38 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

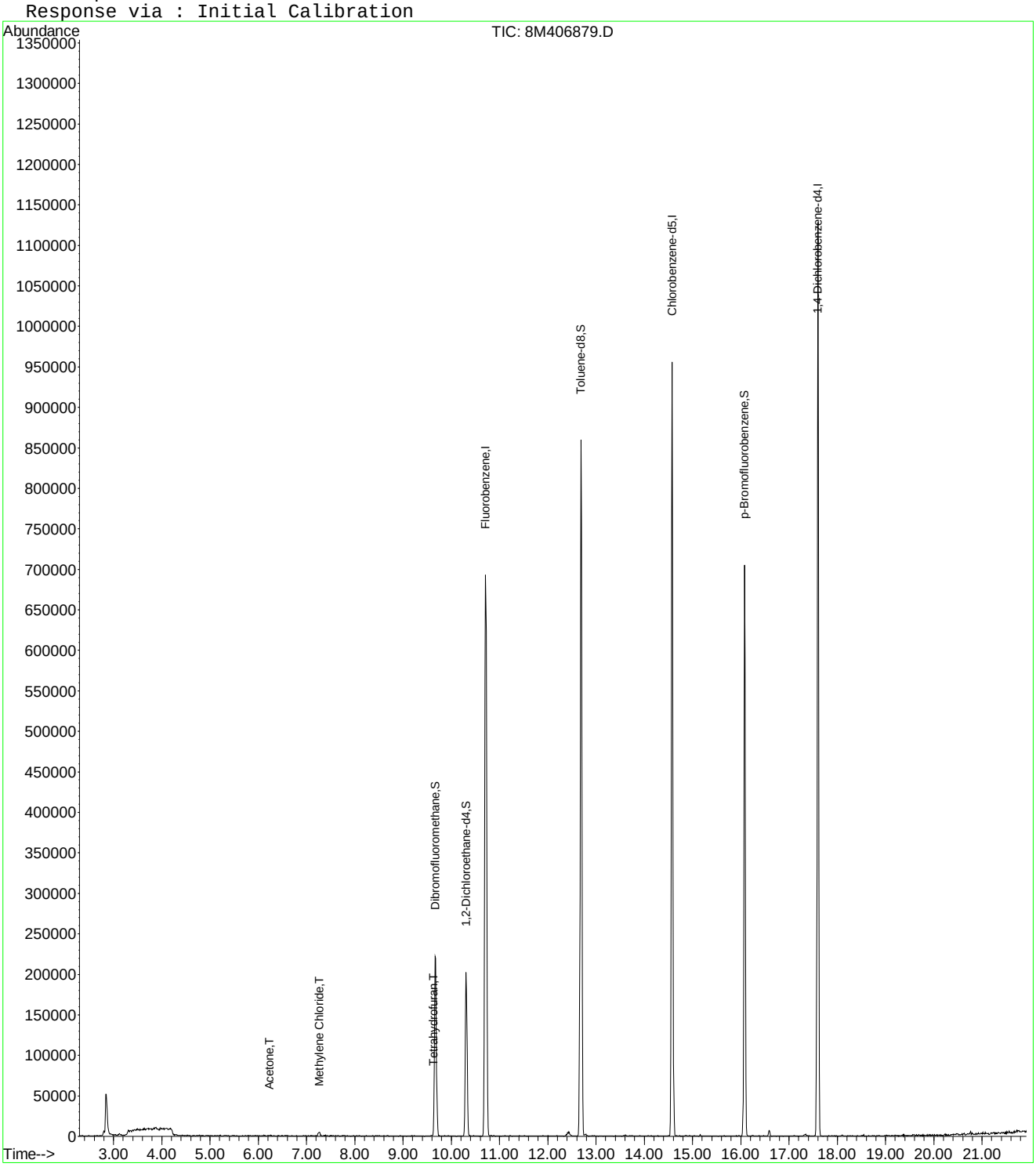

8M406879.D 8260WT.M Wed Aug 19 08:38:02 2015 Page 2

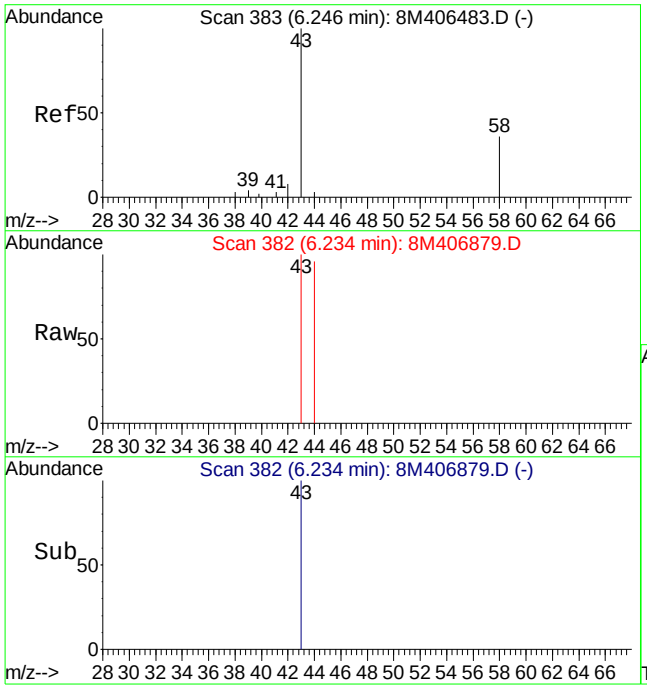

#13
Acetone
Concen: 0.59 ug/L
RT: 6.23 min Scan# 382
Delta R.T. -0.01 min
Lab File: 8M406879.D
Acq: 18 Aug 2015 23:21

Tgt Ion: 43 Resp: 627

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

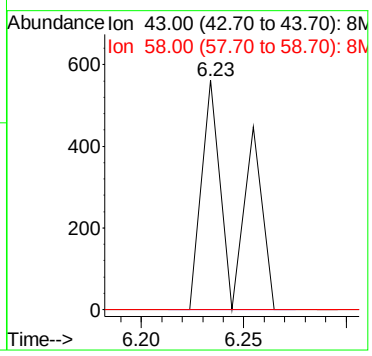

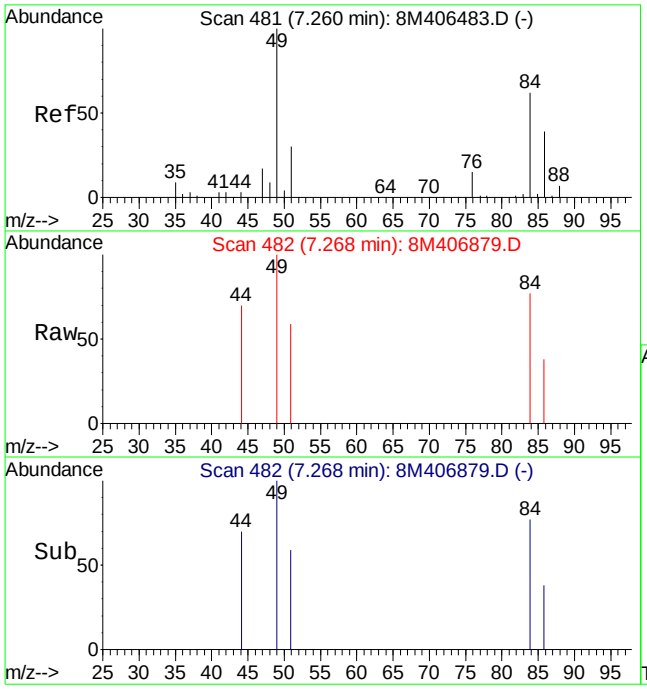

#19
Methylene Chloride
Concen: 0.33 ug/L
RT: 7.27 min Scan# 482
Delta R.T. 0.01 min
Lab File: 8M406879.D
Acq: 18 Aug 2015 23:21

Tgt Ion: 84 Resp: 2809

Ion	Ratio	Lower	Upper
84	100		
49	163.3	98.6	230.2

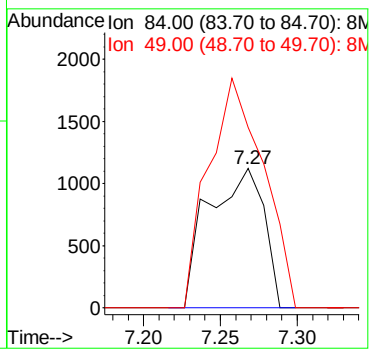

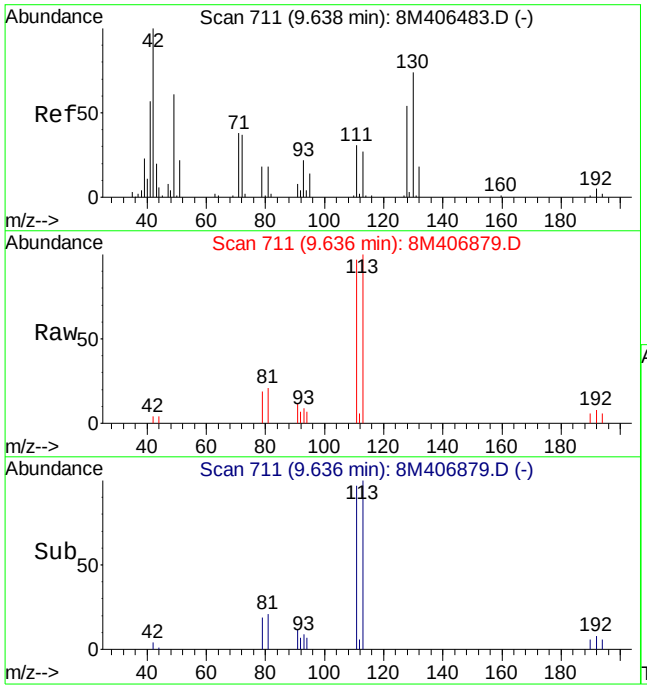

#36
Tetrahydrofuran
Concen: 0.19 ug/L
RT: 9.64 min Scan# 711
Delta R.T. -0.00 min
Lab File: 8M406879.D
Acq: 18 Aug 2015 23:21

Tgt Ion: 42 Resp: 238

Ion	Ratio	Lower	Upper
42	100		
72	0.0	22.4	52.4#
71	0.0	19.5	45.5#

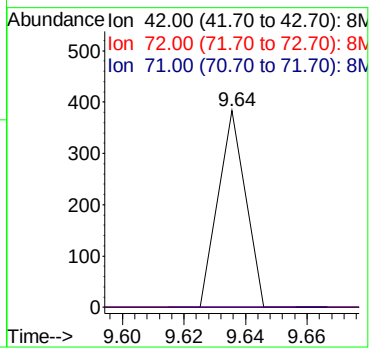

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400358.D Vial: 2
Acq On : 2 Oct 2014 12:24 Operator: TMB
Sample : WG494714-02 5ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:40 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	619208	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	544510	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	254129	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	1884	4.8234 ug/L #	23
3) 3-Chloro-1-propene	7.26	41	51461	4.9911 ug/L	88
4) 2-Chloro-1,3-butadiene	8.64	53	57885	4.7445 ug/L	89
5) Ethyl Acetate	9.28	43	12831	4.1474 ug/L	98
6) Methacrylonitrile	9.44	67	7738	4.2085 ug/L #	61
7) Isobutyl Alcohol	9.28	43	12831	104.0280 ug/L #	12
9) Methyl methacrylate	11.60	41	14247	4.0960 ug/L	83
10) 2-Nitropropane	11.94	43	3986	3.8294 ug/L	98
13) Cyclohexanone	16.03	55	1559	3.8882 ug/L #	43

(#) = qualifier out of range (m) = manual integration
8M400358.D A9FOOWTR.M Fri Oct 03 12:32:40 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400358.D Vial: 2
Acq On : 2 Oct 2014 12:24 Operator: TMB
Sample : WG494714-02 5ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

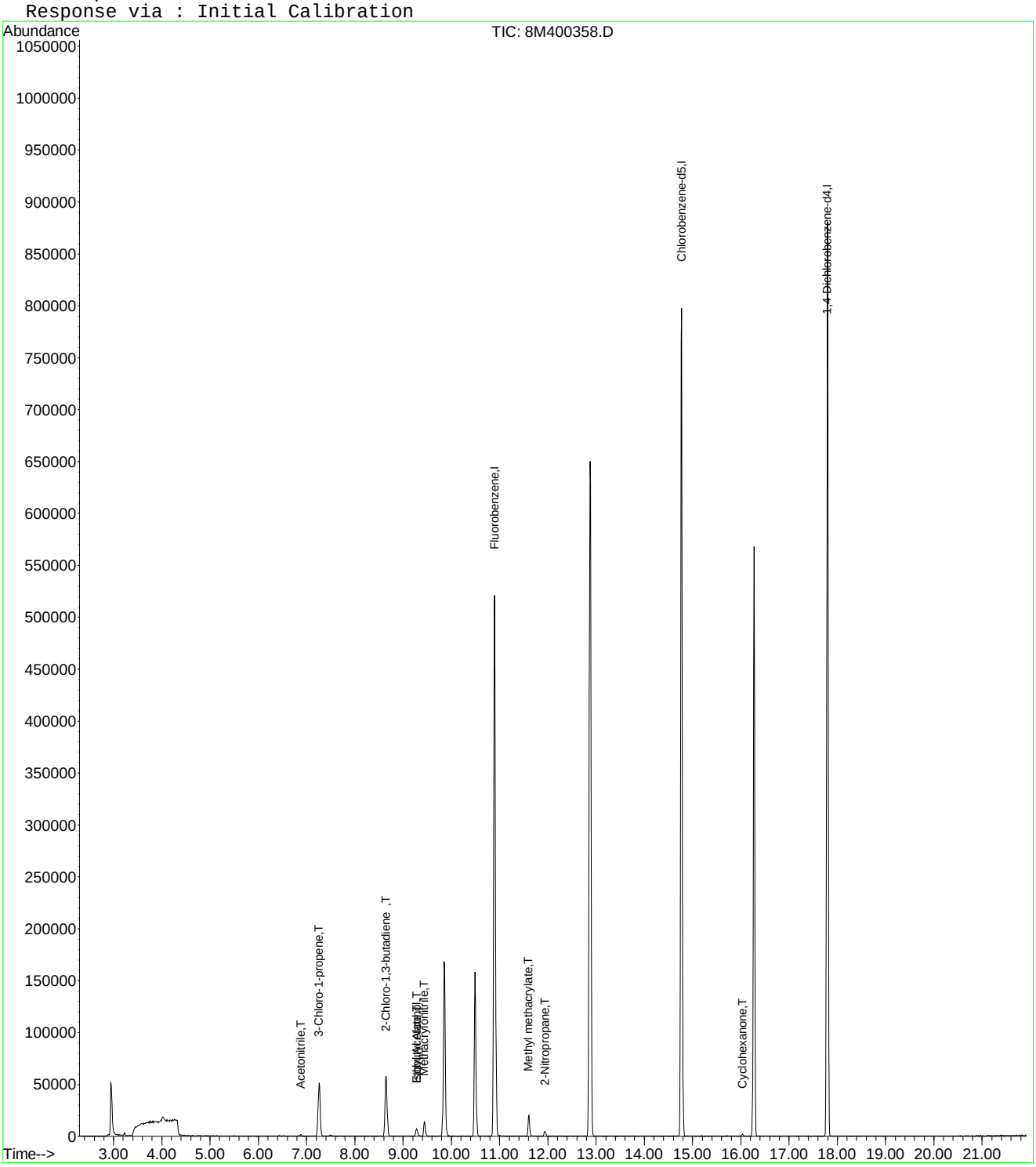

8M400358.D A9FOOWTR.M Fri Oct 03 12:32:41 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400359.D Vial: 3
Acq On : 2 Oct 2014 12:53 Operator: TMB
Sample : WG494714-03 20ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:41 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	590707	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	530005	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	246254	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	7263	19.4920 ug/L	97
3) 3-Chloro-1-propene	7.26	41	190581	19.3757 ug/L	90
4) 2-Chloro-1,3-butadiene	8.65	53	226534	19.4636 ug/L	90
5) Ethyl Acetate	9.28	43	54503	18.4670 ug/L	94
6) Methacrylonitrile	9.44	67	30898	17.6155 ug/L #	65
7) Isobutyl Alcohol	9.45	43	3143	26.7115 ug/L #	95
9) Methyl methacrylate	11.61	41	58234	17.5500 ug/L	72
10) 2-Nitropropane	11.94	43	16687	16.8050 ug/L	98
13) Cyclohexanone	16.03	55	7124	18.3357 ug/L	88

(#) = qualifier out of range (m) = manual integration
8M400359.D A9FOOWTR.M Fri Oct 03 12:32:41 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400359.D Vial: 3
Acq On : 2 Oct 2014 12:53 Operator: TMB
Sample : WG494714-03 20ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

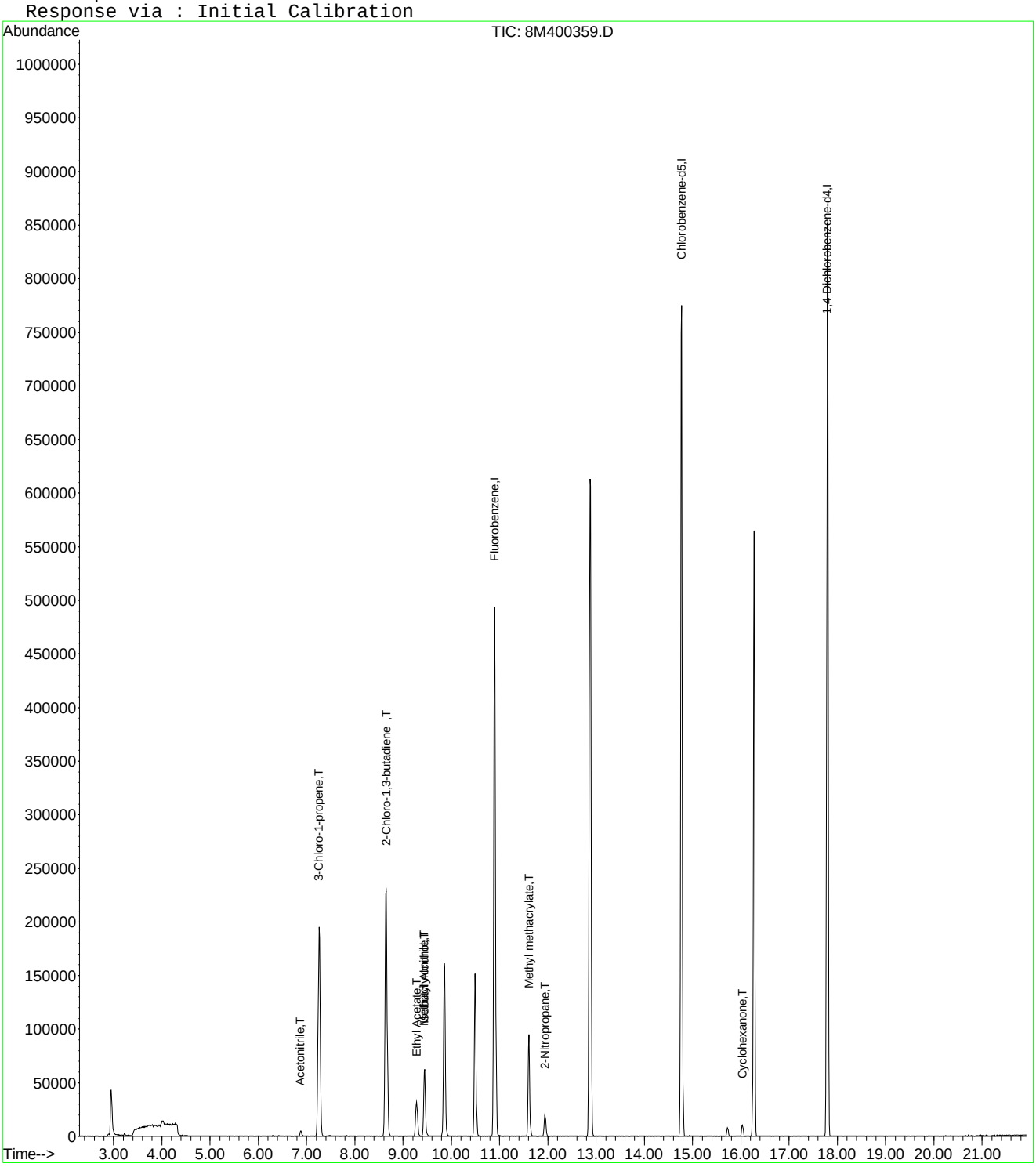

8M400359.D A9FOOWTR.M Fri Oct 03 12:32:42 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400360.D Vial: 4
Acq On : 2 Oct 2014 13:22 Operator: TMB
Sample : WG494714-04 50ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:42 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	590667	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	524443	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	249595	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	17698	47.5001 ug/L	100
3) 3-Chloro-1-propene	7.26	41	491365	49.9588 ug/L	90
4) 2-Chloro-1,3-butadiene	8.65	53	586258	50.3743 ug/L	90
5) Ethyl Acetate	9.27	43	145862	49.4250 ug/L	93
6) Methacrylonitrile	9.44	67	84924	48.4200 ug/L #	62
7) Isobutyl Alcohol	9.46	43	9563	81.2789 ug/L #	95
8) 1-Butanol	10.38	56	1895	48.4971 ug/L	87
9) Methyl methacrylate	11.61	41	161451	48.6599 ug/L	75
10) 2-Nitropropane	11.94	43	45766	46.0929 ug/L	98
13) Cyclohexanone	16.04	55	19698	50.0200 ug/L	89

(#) = qualifier out of range (m) = manual integration
8M400360.D A9FOOWTR.M Fri Oct 03 12:32:42 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400360.D Vial: 4
Acq On : 2 Oct 2014 13:22 Operator: TMB
Sample : WG494714-04 50ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

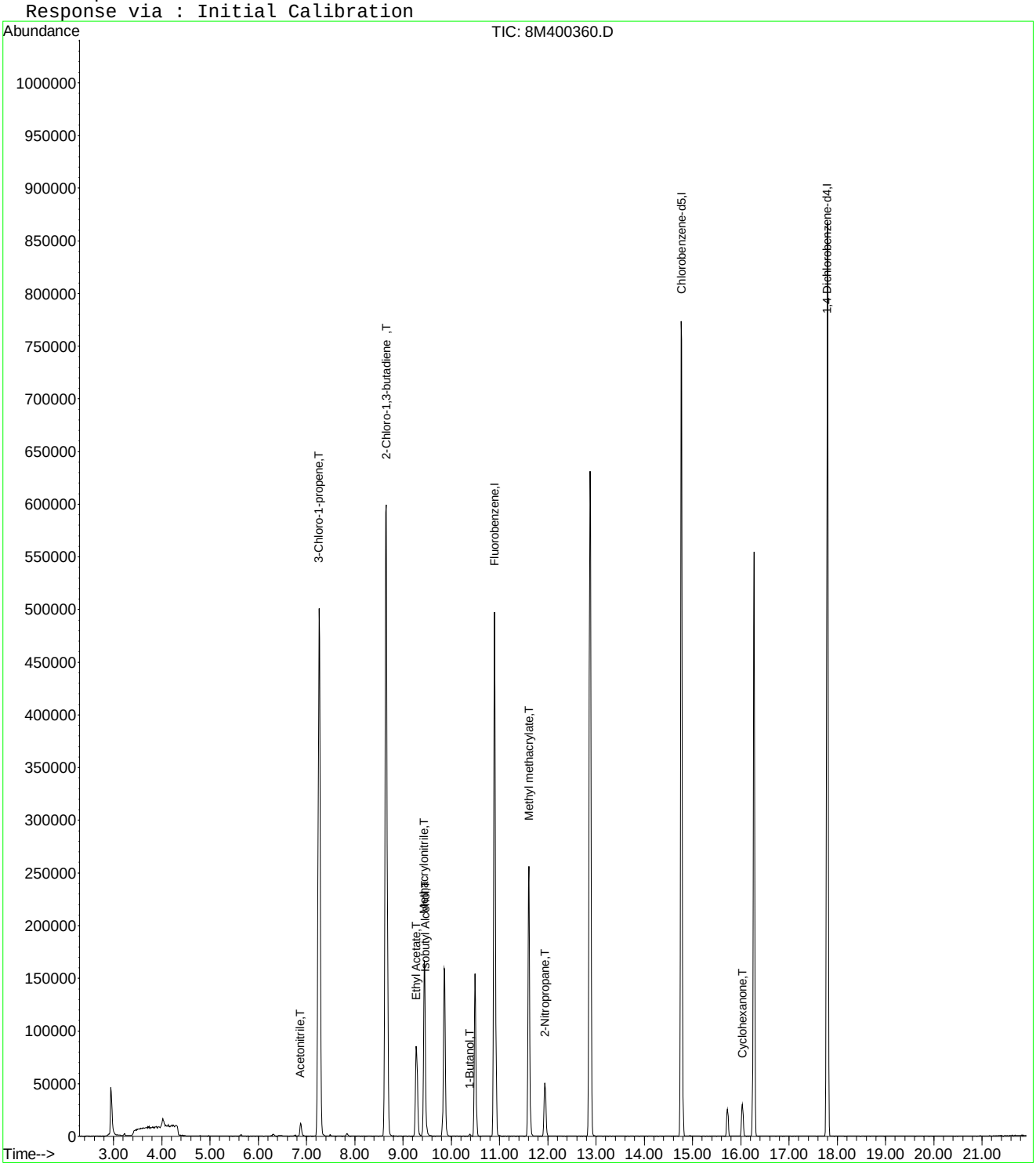

8M400360.D A9FOOWTR.M Fri Oct 03 12:32:42 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400361.D Vial: 5
Acq On : 2 Oct 2014 13:51 Operator: TMB
Sample : WG494714-05 100ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:43 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	595542	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	525736	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	251203	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	38265	101.8596 ug/L	98
3) 3-Chloro-1-propene	7.26	41	1042545	105.1315 ug/L	90
4) 2-Chloro-1,3-butadiene	8.65	53	1239135	105.6013 ug/L	88
5) Ethyl Acetate	9.27	43	315872	106.1564 ug/L	93
6) Methacrylonitrile	9.44	67	182857	103.4038 ug/L #	63
7) Isobutyl Alcohol	9.45	43	23247	195.9661 ug/L #	92
8) 1-Butanol	10.38	56	5482	96.3312 ug/L	88
9) Methyl methacrylate	11.61	41	351287	105.0082 ug/L	73
10) 2-Nitropropane	11.94	43	103249	103.1352 ug/L	99
13) Cyclohexanone	16.04	55	43523	109.8125 ug/L	88

(#) = qualifier out of range (m) = manual integration
8M400361.D A9FOOWTR.M Fri Oct 03 12:32:43 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400361.D Vial: 5
Acq On : 2 Oct 2014 13:51 Operator: TMB
Sample : WG494714-05 100ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

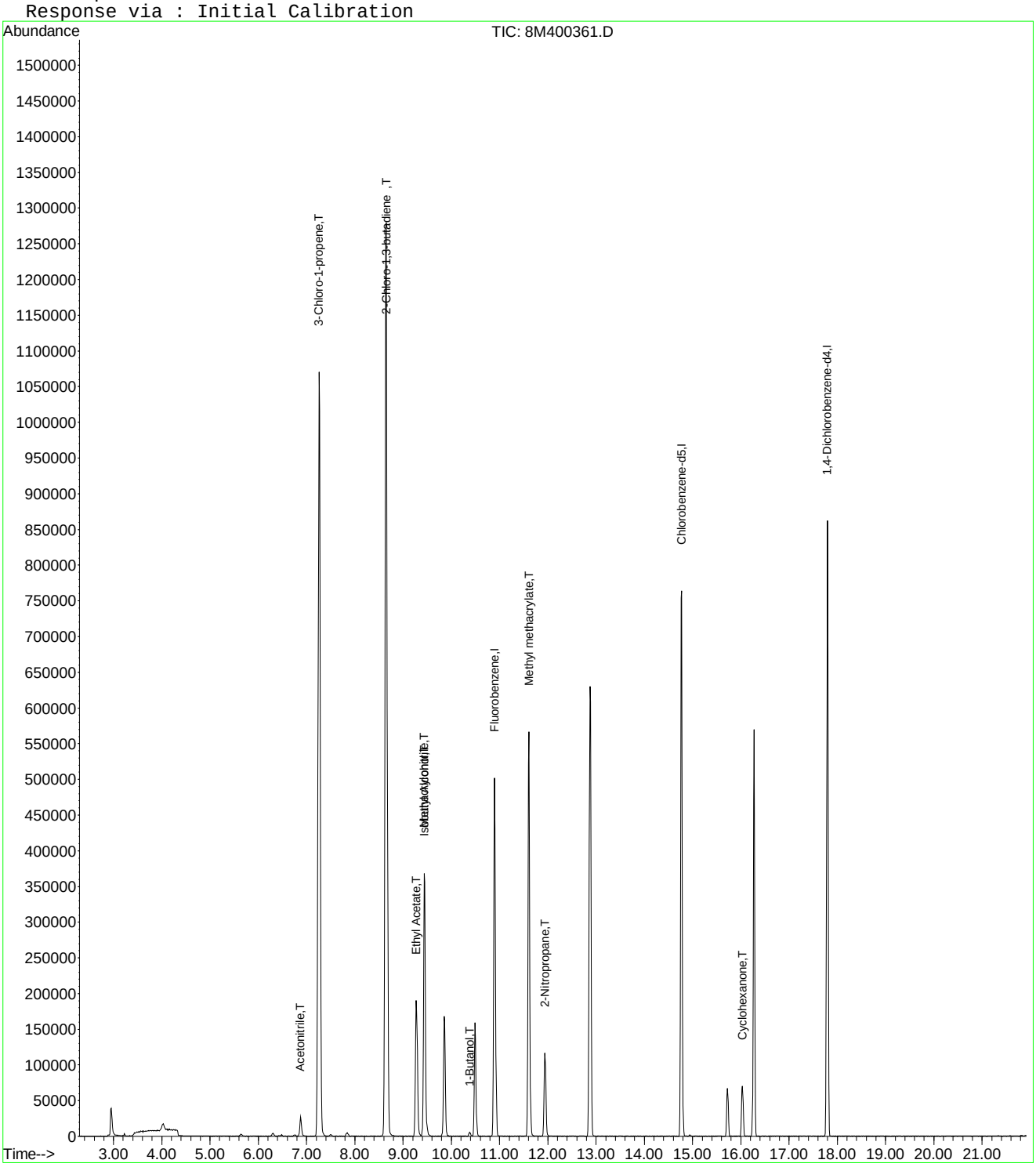

8M400361.D A9FOOWTR.M Fri Oct 03 12:32:43 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400362.D Vial: 6
Acq On : 2 Oct 2014 14:19 Operator: TMB
Sample : WG494714-06 200ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:43 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	605985	25.00 ug/L	-0.02
11) Chlorobenzene-d5	14.77	117	543073	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.80	152	256990	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	81322	212.7447 ug/L	93
3) 3-Chloro-1-propene	7.26	41	2105378	208.6501 ug/L	89
4) 2-Chloro-1,3-butadiene	8.65	53	2530154	211.9083 ug/L	84
5) Ethyl Acetate	9.28	43	654842	216.2828 ug/L	92
6) Methacrylonitrile	9.44	67	386897	215.0159 ug/L #	62
7) Isobutyl Alcohol	9.44	43	51188	424.0654 ug/L	97
8) 1-Butanol	10.37	56	13189	196.5131 ug/L	88
9) Methyl methacrylate	11.60	41	747593	219.6225 ug/L	71
10) 2-Nitropropane	11.94	43	227212	223.0503 ug/L	99
13) Cyclohexanone	16.03	55	76140	187.7821 ug/L	85

(#) = qualifier out of range (m) = manual integration
8M400362.D A9FOOWTR.M Fri Oct 03 12:32:44 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400362.D Vial: 6
Acq On : 2 Oct 2014 14:19 Operator: TMB
Sample : WG494714-06 200ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

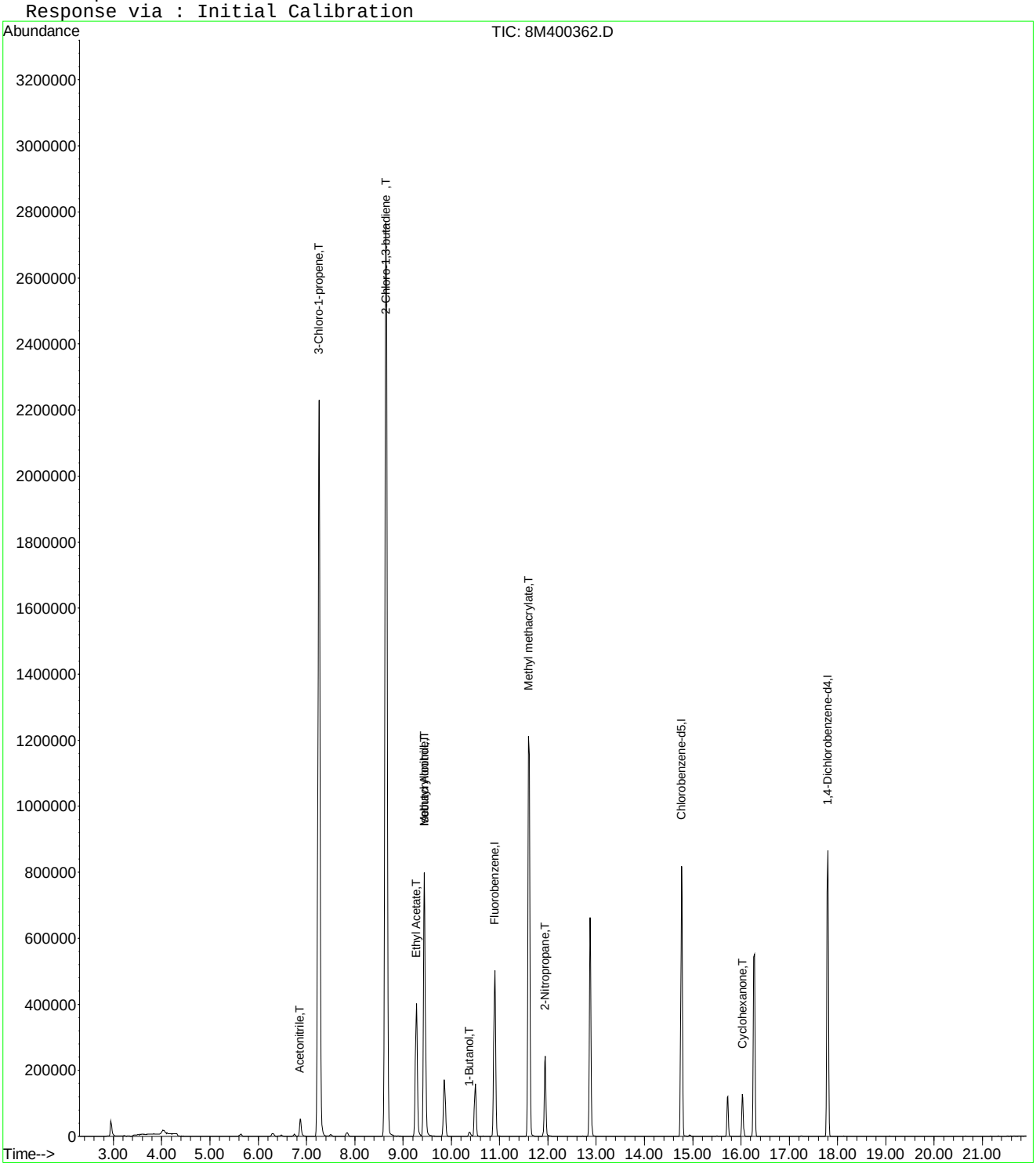

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400363.D Vial: 7
Acq On : 2 Oct 2014 14:48 Operator: TMB
Sample : WG494714-07 300ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:45 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	617316	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	555877	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	259867	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	120718	310.0110 ug/L	94
3) 3-Chloro-1-propene	7.26	41	3133181	304.8093 ug/L	86
4) 2-Chloro-1,3-butadiene	8.64	53	3764580	309.5080 ug/L	79
5) Ethyl Acetate	9.27	43	984728	319.2685 ug/L	92
6) Methacrylonitrile	9.44	67	589378	321.5315 ug/L #	62
7) Isobutyl Alcohol	9.45	43	76604	622.9747 ug/L	98
8) 1-Butanol	10.37	56	23186	322.5015 ug/L	89
9) Methyl methacrylate	11.61	41	1120843	323.2293 ug/L	70
10) 2-Nitropropane	11.94	43	340074	327.7172 ug/L	99
13) Cyclohexanone	16.03	55	133635	325.9318 ug/L	85

(#) = qualifier out of range (m) = manual integration
8M400363.D A9FOOWTR.M Fri Oct 03 12:32:45 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400363.D Vial: 7
Acq On : 2 Oct 2014 14:48 Operator: TMB
Sample : WG494714-07 300ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

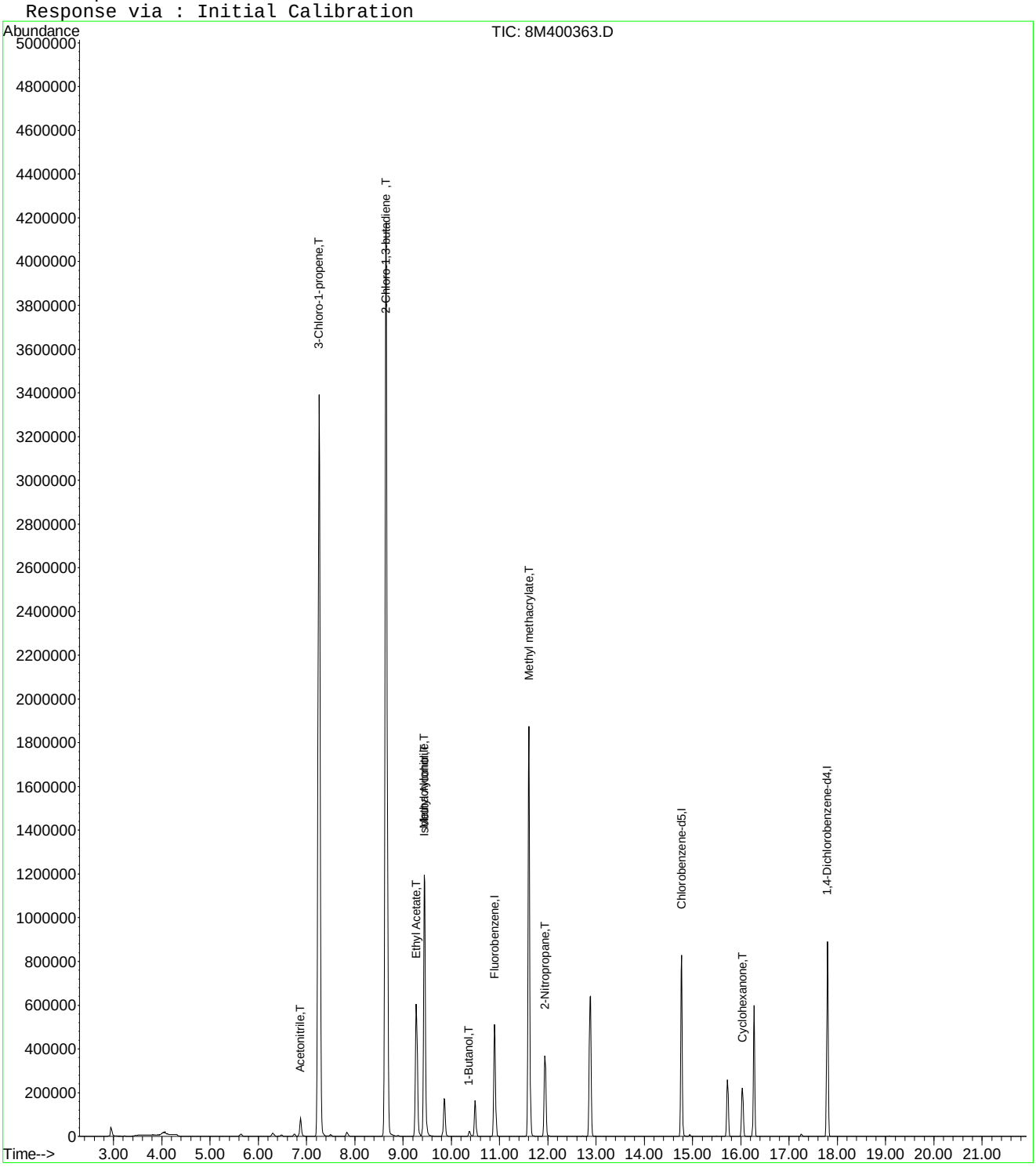

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400364.D Vial: 8
Acq On : 2 Oct 2014 15:16 Operator: TMB
Sample : WG494714-08 400ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:46 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	618926	25.00 ug/L	-0.02
11) Chlorobenzene-d5	14.77	117	559909	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.80	152	262346	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	151708	388.5818 ug/L	95
3) 3-Chloro-1-propene	7.26	41	4028272	390.8682 ug/L	83
4) 2-Chloro-1,3-butadiene	8.65	53	4802050	393.7774 ug/L	74
5) Ethyl Acetate	9.28	43	1250397	404.3491 ug/L	91
6) Methacrylonitrile	9.44	67	762998	415.1660 ug/L #	61
7) Isobutyl Alcohol	9.45	43	102436	830.8840 ug/L #	97
8) 1-Butanol	10.37	56	28243	386.8957 ug/L	89
9) Methyl methacrylate	11.60	41	1436773	413.2595 ug/L	68
10) 2-Nitropropane	11.94	43	451706	434.1607 ug/L	98
13) Cyclohexanone	16.03	55	150327	363.1785 ug/L	84

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400364.D Vial: 8
Acq On : 2 Oct 2014 15:16 Operator: TMB
Sample : WG494714-08 400ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

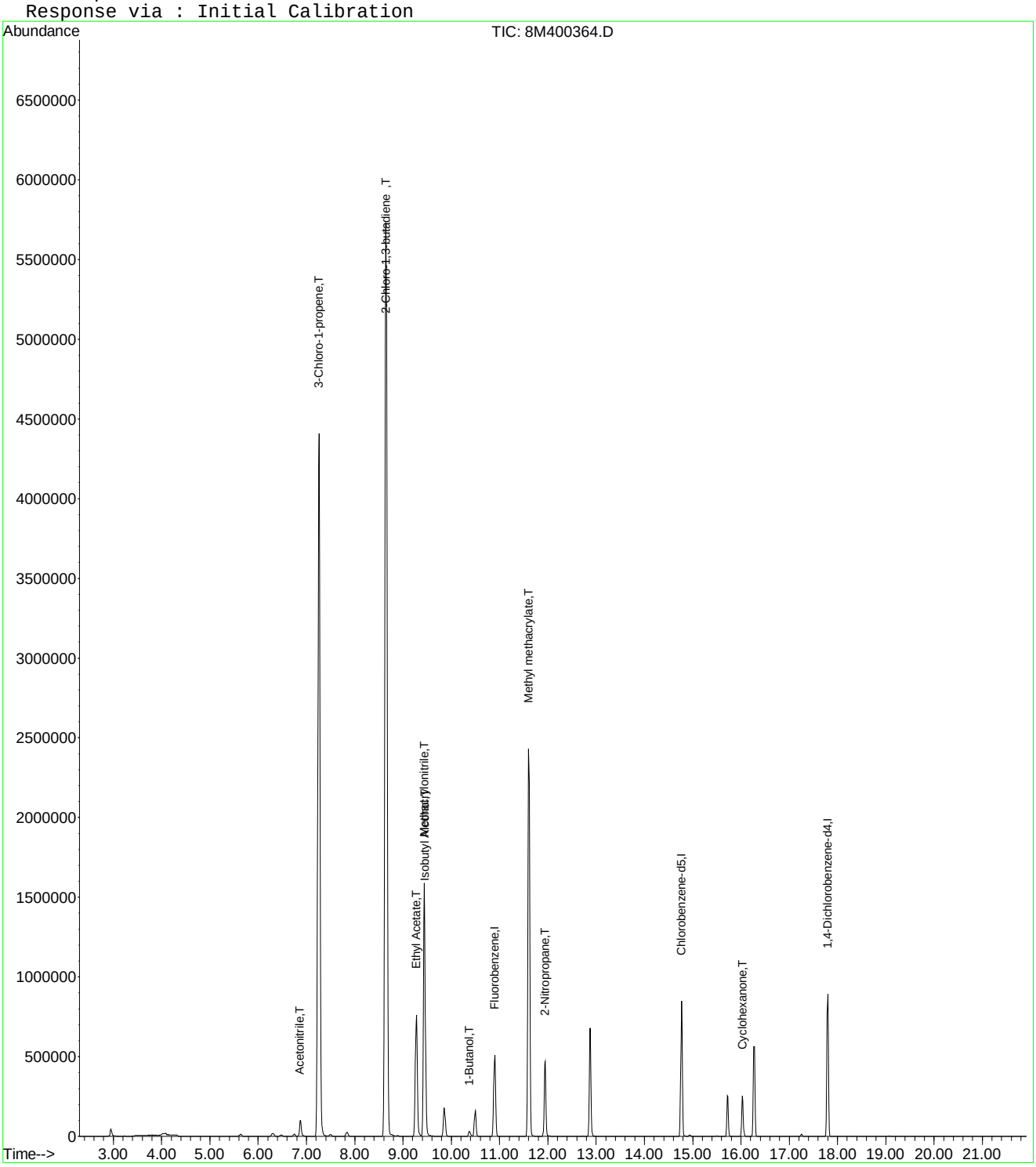

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400365.D Vial: 9
Acq On : 2 Oct 2014 15:45 Operator: TMB
Sample : WG494714-09 500ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:47 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	611679	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	574048	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	266141	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	197468	511.7830 ug/L	95
3) 3-Chloro-1-propene	7.26	41	4817953	473.0307 ug/L	79
4) 2-Chloro-1,3-butadiene	8.64	53	5656851	469.3686 ug/L	68
5) Ethyl Acetate	9.27	43	1590123	520.3008 ug/L	90
6) Methacrylonitrile	9.44	67	990168	545.1581 ug/L #	61
7) Isobutyl Alcohol	9.45	43	130410	1070.3205 ug/L	98
8) 1-Butanol	10.38	56	36529	499.2614 ug/L	87
9) Methyl methacrylate	11.61	41	1840524	535.6626 ug/L	68
10) 2-Nitropropane	11.94	43	590003	573.8046 ug/L	98
13) Cyclohexanone	16.04	55	203273	484.0894 ug/L	84

(#) = qualifier out of range (m) = manual integration
8M400365.D A9FOOWTR.M Fri Oct 03 12:32:47 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400365.D Vial: 9
Acq On : 2 Oct 2014 15:45 Operator: TMB
Sample : WG494714-09 500ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

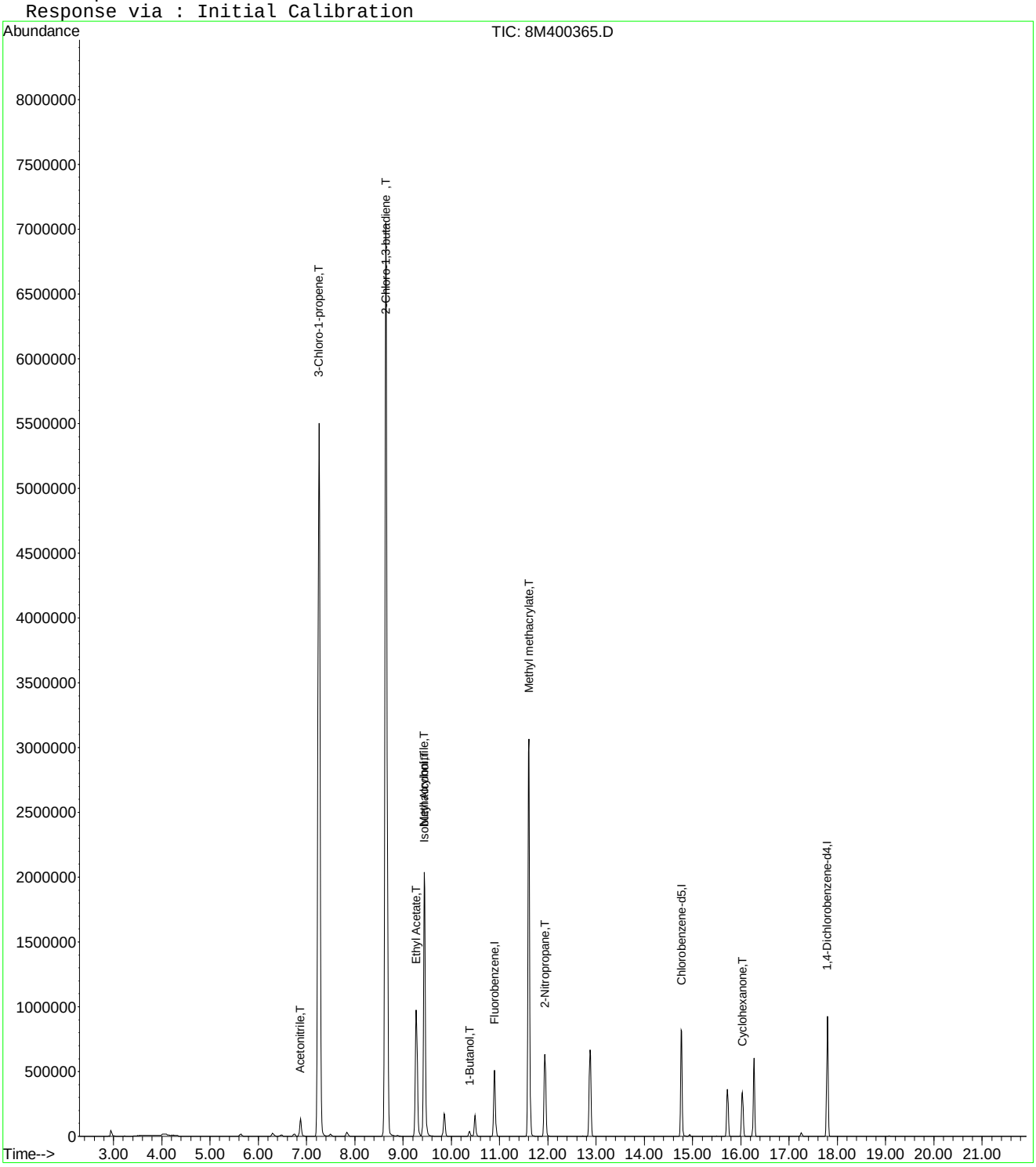

8M400365.D A9FOOWTR.M Fri Oct 03 12:32:47 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400367.D Vial: 11
Acq On : 2 Oct 2014 16:47 Operator: TMB
Sample : WG494714-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66677 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:48 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	548066	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	508831	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	240116	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	36847	106.5815 ug/L	98
3) 3-Chloro-1-propene	7.26	41	1001386	109.7284 ug/L	90
4) 2-Chloro-1,3-butadiene	8.64	53	982184	90.9542 ug/L	89
5) Ethyl Acetate	9.27	43	328991	120.1430 ug/L	94
6) Methacrylonitrile	9.44	67	174278	107.0895 ug/L #	64
7) Isobutyl Alcohol	9.45	43	21185	194.0538 ug/L	99
8) 1-Butanol	10.39	56	5303	100.0865 ug/L	77
9) Methyl methacrylate	11.61	41	317777	103.2198 ug/L	73
10) 2-Nitropropane	11.94	43	95761	103.9416 ug/L	99
13) Cyclohexanone	16.03	55	11614	30.6562 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M400367.D A9FOOWTR.M Fri Oct 03 12:32:49 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400367.D Vial: 11
Acq On : 2 Oct 2014 16:47 Operator: TMB
Sample : WG494714-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66677 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

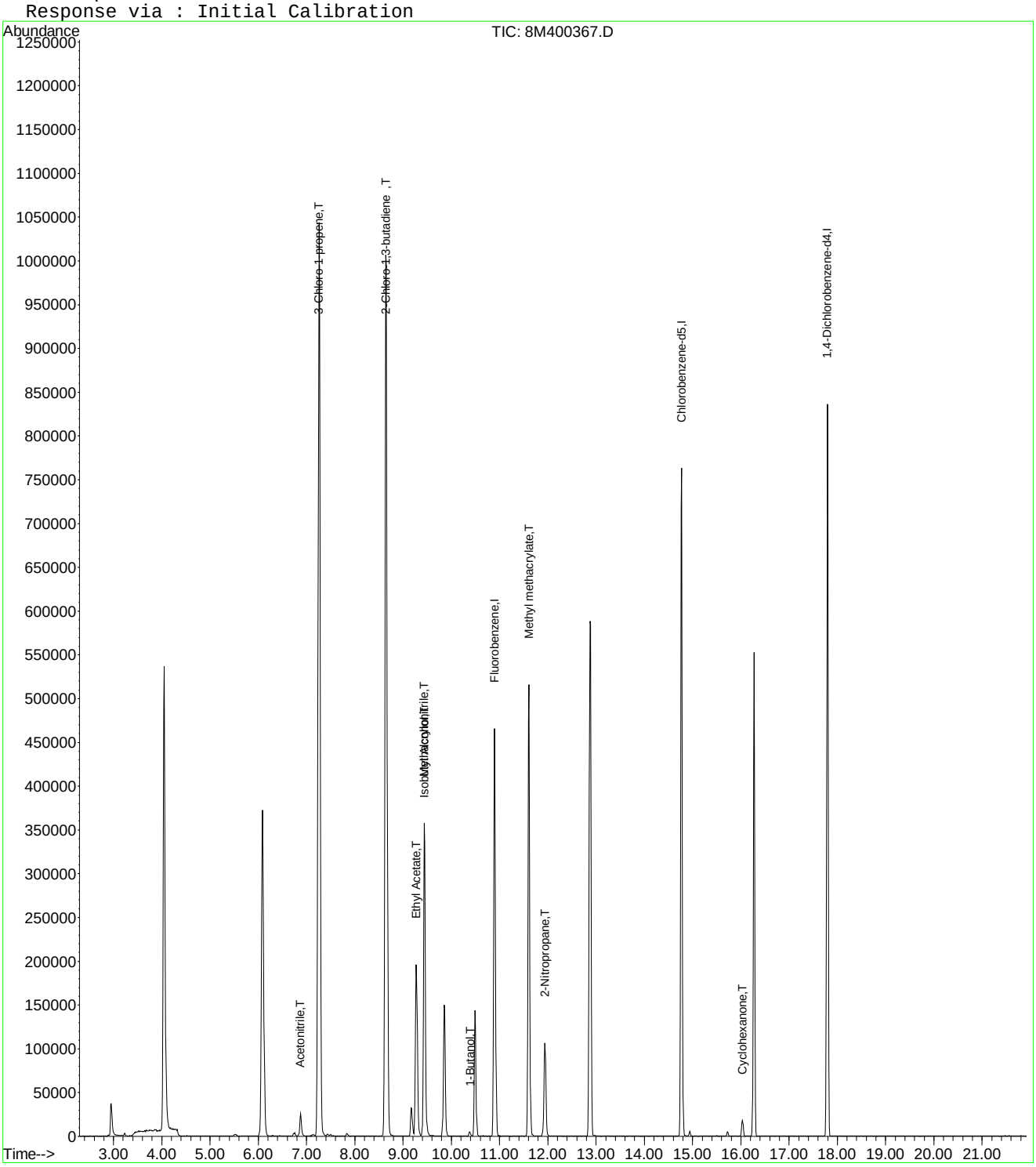

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\100214\8M400367.D Vial: 11
Acq On : 2 Oct 2014 16:47 Operator: TMB
Sample : WG494714-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66677 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	92	-0.03
2	T	Acetonitrile	100.0000	106.5815	-6.6	96	-0.02
3	T	3-Chloro-1-propene	100.0000	109.7284	-9.7	96	-0.03
4	T	2-Chloro-1,3-butadiene	100.0000	90.9542	9.0	79	-0.03
5	T	Ethyl Acetate	100.0000	120.1430	-20.1	104	-0.02
6	T	Methacrylonitrile	100.0000	107.0895	-7.1	95	-0.03
7	T	Isobutyl Alcohol	200.0000	194.0538	3.0	91	-0.02
8	T	1-Butanol	100.0000	100.0865	-0.1	97	0.00
9	T	Methyl methacrylate	100.0000	103.2198	-3.2	90	-0.02
10	T	2-Nitropropane	100.0000	103.9416	-3.9	93	-0.03
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	97	-0.03
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	96	-0.04
13	T	Cyclohexanone	100.0000	30.6562	69.3	27	-0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M400367.D A9FOOWTR.M Fri Oct 03 12:33:23 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406479.D Vial: 3
Acq On : 30 Jul 2015 15:09 Operator: TMB
Sample : WG533051-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:04 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	855570	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	610993	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	330138	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	3287	0.4360 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.76%#	
43) 1,2-Dichloroethane-d4	10.32	65	3577	0.4771 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	1.92%#	
58) Toluene-d8	12.69	98	15700	0.5327 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.12%#	
80) p-Bromofluorobenzene	16.08	95	6489	0.5683 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	11451	0.8764 ug/L	94
3) Chloromethane	3.62	50	16976	1.1637 ug/L	91
4) Vinyl Chloride	3.86	62	9759	0.9097 ug/L	85
5) 1,3-Butadiene	3.91	54	9164	0.9744 ug/L #	73
6) Bromomethane	4.74	94	7543	1.0556 ug/L	92
7) Chloroethane	4.90	64	6509	0.9744 ug/L	95
8) Trichlorofluoromethane	5.40	101	13188	0.9507 ug/L	98
9) Diethyl ether	5.91	59	27288	5.1969 ug/L	93
10) Isoprene	5.95	67	10349	0.9532 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	7136	0.9010 ug/L	81
13) Acetone	6.24	43	1885	1.7472 ug/L #	48
14) 1,1-Dichloroethene	6.47	61	12577	0.9360 ug/L	90
15) Tert-Butyl Alcohol	6.61	59	3097	10.9286 ug/L #	58
16) Dimethyl Sulfide	6.73	62	8416	0.9976 ug/L	99
17) Iodomethane	6.98	142	3742	1.3194 ug/L	77
18) Methyl acetate	6.99	43	4174	0.9970 ug/L #	80
19) Methylene Chloride	7.27	84	9077	1.0605 ug/L	93
20) Carbon Disulfide	7.31	76	27875	1.0157 ug/L	100
21) Acrylonitrile	7.44	53	4457	2.4861 ug/L	100
22) Methyl Tert Butyl Ether	7.47	73	14050	0.9295 ug/L	94
23) trans-1,2-Dichloroethene	7.70	61	11341	0.8999 ug/L	93
24) n-Hexane	7.79	57	12352	0.9067 ug/L	90
25) Diisopropyl ether	8.14	45	163476	5.3419 ug/L	96
26) Vinyl Acetate	8.30	43	7858	1.0046 ug/L #	87
27) 1,1-Dichloroethane	8.33	63	16892	0.9994 ug/L	97
28) Ethyl-Tert-Butyl ether	8.72	59	118161	5.1752 ug/L	99
29) 2-Butanone	8.90	43	1905	1.0428 ug/L #	57
30) Propionitrile	9.00	54	2543	4.3767 ug/L #	56
31) 2,2-Dichloropropane	9.12	77	13296	1.0208 ug/L	94
32) cis-1,2-Dichloroethene	9.18	96	8705	0.9598 ug/L	91
33) Chloroform	9.39	83	14935	0.9791 ug/L	95
34) 1-Bromopropane	9.51	122	1278	0.7928 ug/L	88
35) Bromochloromethane	9.61	130	4797	1.0268 ug/L	98
36) Tetrahydrofuran	9.65	42	6338	5.0444 ug/L	96
38) 1,1,1-Trichloroethane	9.90	97	14299	1.0163 ug/L	92
39) Cyclohexane	9.95	56	15187	0.9254 ug/L	97
40) 1,1-Dichloropropene	10.11	75	11610	0.9638 ug/L	99
41) Tert-Amyl-Methyl ether	10.22	73	90014	5.2666 ug/L	98
42) Carbon Tetrachloride	10.26	117	11478	0.9213 ug/L	92
45) 1,2-Dichloroethane	10.44	62	10157	0.9942 ug/L	91

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406479.D Vial: 3
Acq On : 30 Jul 2015 15:09 Operator: TMB
Sample : WG533051-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:04 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
46)	Benzene	10.46	78	35799	1.0631 ug/L	95
47)	Trichloroethene	11.23	130	10735	1.1169 ug/L	94
48)	Methylcyclohexane	11.29	83	12274	0.8806 ug/L	93
49)	1,2-Dichloropropane	11.42	63	8833	0.9468 ug/L	98
50)	Bromodichloromethane	11.73	83	12231	1.0564 ug/L	91
52)	Dibromomethane	11.82	93	4139	0.9699 ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.02	63	3341	0.8574 ug/L #	81
54)	4-Methyl-2-Pentanone	12.04	58	1468	0.8486 ug/L #	64
55)	cis-1,3-Dichloropropene	12.36	75	12247	0.9610 ug/L	98
56)	Dimethyl Disulfide	12.62	79	4052	0.5869 ug/L	66
59)	Toluene	12.79	91	38254	1.0714 ug/L	97
60)	Ethyl Methacrylate	12.88	69	6131	0.8997 ug/L	95
62)	trans-1,3-Dichloropropene	12.96	75	9175	0.8687 ug/L	92
63)	1,1,2-Trichloroethane	13.17	97	5099	0.9113 ug/L	94
64)	2-Hexanone	13.12	58	1248	0.7895 ug/L #	83
65)	1,3-Dichloropropane	13.48	76	9612	0.9870 ug/L	98
66)	Tetrachloroethene	13.61	164	7876	1.0462 ug/L	87
67)	Dibromochloromethane	13.87	129	6256	0.8487 ug/L	93
68)	1,2-Dibromoethane	14.12	107	5204	0.9565 ug/L	90
69)	1-Chlorohexane	14.22	91	11819	0.9366 ug/L	96
70)	Chlorobenzene	14.63	112	23245	1.0168 ug/L	98
71)	1,1,1,2-Tetrachloroethane	14.65	131	6924	0.8525 ug/L	95
72)	Ethylbenzene	14.66	106	13644	1.0573 ug/L	99
73)	m-,p-Xylene	14.74	106	32527	2.1330 ug/L	100
74)	o-Xylene	15.31	106	13412	0.8937 ug/L	80
75)	Styrene	15.34	104	24649	1.0056 ug/L	98
76)	Bromoform	15.83	173	3759	0.8482 ug/L	93
77)	Isopropylbenzene	15.74	105	38730	1.0309 ug/L	96
79)	1,1,2,2-Tetrachloroethane	15.95	83	6103	1.0174 ug/L #	96
81)	1,2,3-Trichloropropane	16.14	110	1310	0.7780 ug/L #	17
82)	trans-1,4-Dichloro-2-Buten	16.19	53	1214	1.3077 ug/L #	1
83)	n-Propylbenzene	16.24	91	49968	1.0280 ug/L	96
84)	Bromobenzene	16.36	156	9745	0.9898 ug/L	95
85)	1,3,5-Trimethylbenzene	16.43	105	32520	1.0134 ug/L	98
86)	2-Chlorotoluene	16.51	91	32697	1.1013 ug/L	96
87)	4-Chlorotoluene	16.56	91	28365	1.0025 ug/L	99
88)	a-Methylstyrene	16.83	118	15462	0.8872 ug/L	100
89)	tert-Butylbenzene	16.89	134	6892	0.9913 ug/L	98
90)	1,2,4-Trimethylbenzene	16.95	105	32767	1.0078 ug/L	95
91)	sec-Butylbenzene	17.16	105	42903	1.0835 ug/L	100
92)	p-Isopropyltoluene	17.32	119	35830	1.0523 ug/L	100
93)	1,3-Dichlorobenzene	17.51	146	19432	1.0065 ug/L	95
94)	1,4-Dichlorobenzene	17.64	146	19007	0.9550 ug/L	85
95)	n-Butylbenzene	17.84	91	33094	1.0079 ug/L	98
96)	1,2-Dichlorobenzene	18.13	146	17388	1.0201 ug/L	93
97)	1,2-Dibromo-3-Chloropropan	19.12	75	277	0.2638 ug/L #	1
98)	1,2,4-Trichlorobenzene	20.27	180	12417	0.9466 ug/L	95
99)	Hexachlorobutadiene	20.41	225	6827	1.0228 ug/L	89
100)	Naphthalene	20.64	128	16604	0.9756 ug/L	97
101)	1,2,3-Trichlorobenzene	20.95	180	9728	0.8594 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M406479.D 8260WT.M Fri Jul 31 14:02:04 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406479.D Vial: 3
Acq On : 30 Jul 2015 15:09 Operator: TMB
Sample : WG533051-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

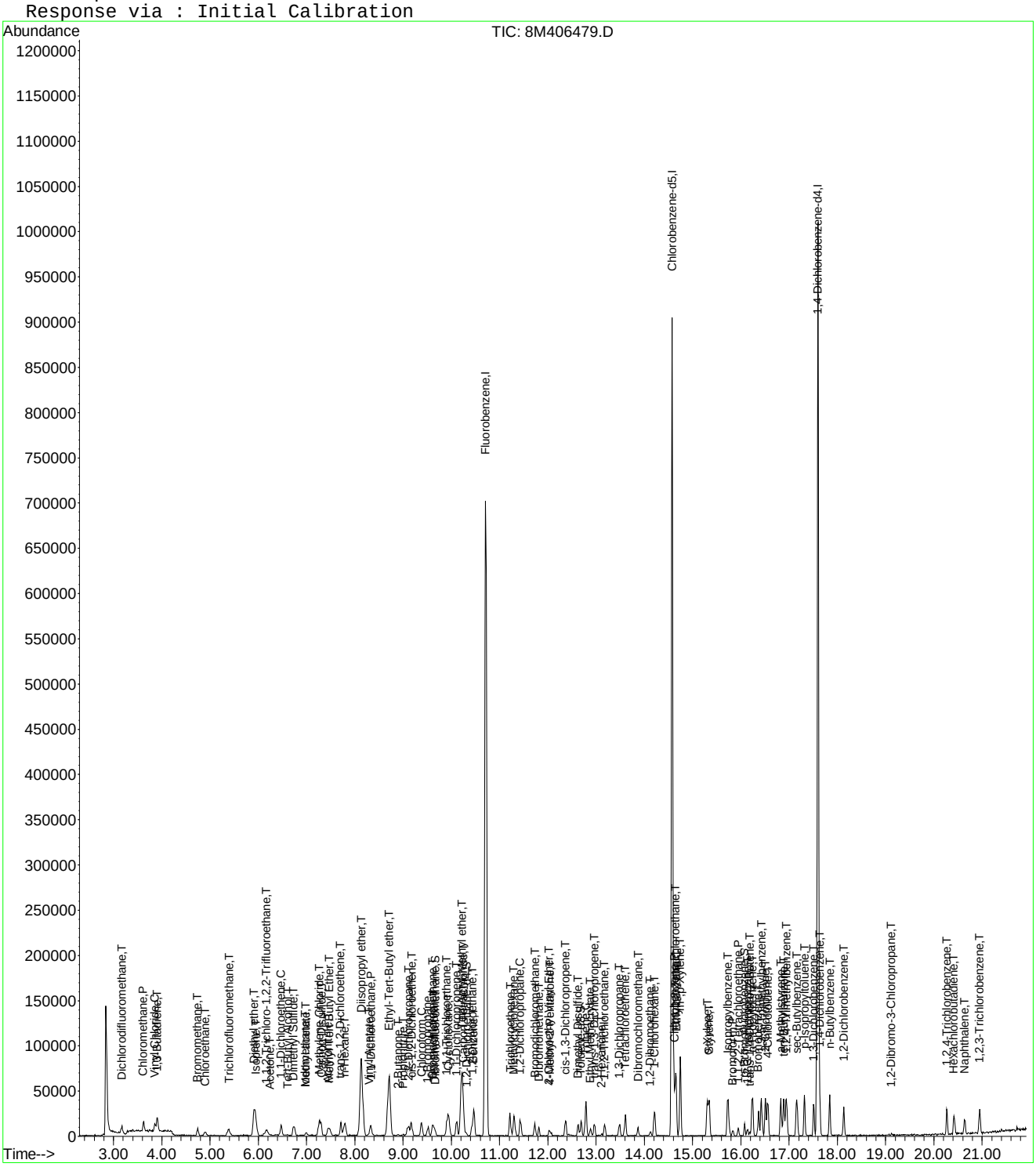

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\073015\8M406479.D Vial: 3
Acq On : 30 Jul 2015 15:09 Operator: TMB
Sample : WG533051-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.8764	12.4	100	0.00
3	P	Chloromethane	1.0000	1.1637	-16.4	100	0.00
4	C	Vinyl Chloride	1.0000	0.9097	9.0	100	0.01
5	T	1,3-Butadiene	1.0000	0.9744	2.6	100	0.02
6	T	Bromomethane	1.0000	1.0556	-5.6	100	0.00
7	T	Chloroethane	1.0000	0.9744	2.6	100	0.00
8	T	Trichlorofluoromethane	1.0000	0.9507	4.9	100	0.00
9	T	Diethyl ether	5.0000	5.1970	-3.9	100	0.00
10	T	Isoprene	1.0000	0.9532	4.7	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.15#
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	0.9010	9.9	100	0.00
13	T	Acetone	-1.0000	1.7472	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	0.9360	6.4	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	10.9286	0.0	100	0.02
16	T	Dimethyl Sulfide	1.0000	0.9976	0.2	100	-0.01
17	T	Iodomethane	1.0000	1.3194	-31.9#	100	-0.01
18	T	Methyl acetate	-1.0000	0.9970	0.0	100	-0.02
19	T	Methylene Chloride	1.0000	1.0605	-6.0	100	0.00
20	T	Carbon Disulfide	1.0000	1.0157	-1.6	100	0.00
21	T	Acrylonitrile	2.5000	2.4861	0.6	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9295	7.0	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	0.8999	10.0	100	-0.01
24	T	n-Hexane	-1.0000	0.9067	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	5.3419	-6.8	100	0.00
26	T	Vinyl Acetate	1.0000	1.0046	-0.5	100	0.00
27	P	1,1-Dichloroethane	1.0000	0.9994	0.1	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	5.1752	-3.5	100	0.00
29	T	2-Butanone	-1.0000	1.0428	0.0	100	0.00
30	T	Propionitrile	5.0000	4.3767	12.5	100	0.00
31	T	2,2-Dichloropropane	1.0000	1.0208	-2.1	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	0.9598	4.0	100	0.00
33	C	Chloroform	1.0000	0.9791	2.1	100	0.00
34		1-Bromopropane	1.0000	0.7928	20.7	100	-0.01
35	T	Bromochloromethane	1.0000	1.0268	-2.7	100	0.00
36	T	Tetrahydrofuran	5.0000	5.0444	-0.9	100	0.00
37	S	Dibromofluoromethane	0.5000	0.4360	12.8	100	0.00
38	T	1,1,1-Trichloroethane	1.0000	1.0163	-1.6	100	-0.01
39	T	Cyclohexane	1.0000	0.9254	7.5	100	0.00
40	T	1,1-Dichloropropene	1.0000	0.9638	3.6	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	5.2666	-5.3	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.9213	7.9	100	0.00
43	S	1,2-Dichloroethane-d4	0.5000	0.4771	4.6	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	1.0000	0.9942	0.6	100	0.00
46	T	Benzene	1.0000	1.0631	-6.3	100	-0.01
47	T	Trichloroethene	1.0000	1.1169	-11.7	100	0.00
48	T	Methylcyclohexane	-1.0000	0.8806	0.0	100	-0.01
49	C	1,2-Dichloropropane	1.0000	0.9468	5.3	100	-0.01
50	T	Bromodichloromethane	1.0000	1.0564	-5.6	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	1.0000	0.9699	3.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.8574	0.0	100	-0.01
54	T	4-Methyl-2-Pentanone	-1.0000	0.8486	0.0	100	-0.02

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\073015\8M406479.D Vial: 3
Acq On : 30 Jul 2015 15:09 Operator: TMB
Sample : WG533051-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9610	3.9	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.5869	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	0.5000	0.5327	-6.5	100	0.00
59	C	Toluene	1.0000	1.0714	-7.1	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.8996	10.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	1.0000	0.8687	13.1	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.9113	8.9	100	-0.01
64	T	2-Hexanone	-1.0000	0.7895	0.0	100	0.00
65	T	1,3-Dichloropropane	1.0000	0.9870	1.3	100	0.00
66	T	Tetrachloroethene	1.0000	1.0462	-4.6	100	0.00
67	T	Dibromochloromethane	1.0000	0.8487	15.1	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.9565	4.3	100	0.00
69	T	1-Chlorohexane	1.0000	0.9366	6.3	100	0.00
70	P	Chlorobenzene	1.0000	1.0168	-1.7	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.8526	14.7	100	-0.01
72	C	Ethylbenzene	1.0000	1.0573	-5.7	100	0.00
73	T	m-,p-Xylene	2.0000	2.1330	-6.7	100	0.00
74	T	o-Xylene	1.0000	0.8937	10.6	100	0.00
75	T	Styrene	1.0000	1.0056	-0.6	100	0.00
76	P	Bromoform	1.0000	0.8482	15.2	100	-0.01
77	T	Isopropylbenzene	1.0000	1.0309	-3.1	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	1.0174	-1.7	100	0.00
80	S	p-Bromofluorobenzene	0.5000	0.5683	-13.7	100	0.00
81	T	1,2,3-Trichloropropane	1.0000	0.7780	22.2	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	1.0000	1.3077	-30.8#	100	0.00
83	T	n-Propylbenzene	1.0000	1.0280	-2.8	100	0.00
84	T	Bromobenzene	1.0000	0.9898	1.0	100	-0.01
85	T	1,3,5-Trimethylbenzene	1.0000	1.0134	-1.3	100	0.00
86	T	2-Chlorotoluene	1.0000	1.1013	-10.1	100	0.00
87	T	4-Chlorotoluene	1.0000	1.0025	-0.3	100	0.00
88	T	a-Methylstyrene	-1.0000	0.8872	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	0.9913	0.9	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	1.0078	-0.8	100	0.00
91	T	sec-Butylbenzene	1.0000	1.0836	-8.4	100	0.00
92	T	p-Isopropyltoluene	1.0000	1.0523	-5.2	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0065	-0.6	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	0.9550	4.5	100	0.00
95	T	n-Butylbenzene	1.0000	1.0079	-0.8	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0201	-2.0	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.2638	0.0	100	-0.01
98	T	1,2,4-Trichlorobenzene	1.0000	0.9466	5.3	100	0.00
99	T	Hexachlorobutadiene	1.0000	1.0228	-2.3	100	-0.02
100	T	Naphthalene	1.0000	0.9756	2.4	100	-0.01
101	T	1,2,3-Trichlorobenzene	1.0000	0.8594	14.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M406479.D 8260WT.M Fri Jul 31 14:02:50 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406480.D Vial: 4
Acq On : 30 Jul 2015 15:37 Operator: TMB
Sample : WG533051-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:05 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	842185	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	601155	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	323926	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	7165	0.9655 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.88%#	
43) 1,2-Dichloroethane-d4	10.31	65	7402	1.0030 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	4.00%#	
58) Toluene-d8	12.69	98	29887	1.0306 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.12%#	
80) p-Bromofluorobenzene	16.08	95	11241	1.0033 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	22708	1.7655 ug/L	98
3) Chloromethane	3.62	50	31078	2.1643 ug/L	88
4) Vinyl Chloride	3.85	62	21014	1.9899 ug/L	94
5) 1,3-Butadiene	3.90	54	18707	2.0207 ug/L	81
6) Bromomethane	4.73	94	13961	1.9848 ug/L	98
7) Chloroethane	4.91	64	12745	1.9383 ug/L	96
8) Trichlorofluoromethane	5.39	101	25572	1.8727 ug/L	98
9) Diethyl ether	5.91	59	126603	24.4945 ug/L	97
10) Isoprene	5.94	67	21343	1.9970 ug/L	97
11) Acrolein	6.15	56	3415	11.0191 ug/L	84
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	14034	1.8000 ug/L	89
13) Acetone	6.24	43	2345	2.2081 ug/L	82
14) 1,1-Dichloroethene	6.48	61	26690	2.0178 ug/L	99
15) Tert-Butyl Alcohol	6.56	59	14997	53.7622 ug/L #	75
16) Dimethyl Sulfide	6.75	62	16424	1.9777 ug/L	98
17) Iodomethane	7.00	142	8811	1.9392 ug/L	99
18) Methyl acetate	7.00	43	7612	1.8471 ug/L #	79
19) Methylene Chloride	7.27	84	17419	2.0674 ug/L	97
20) Carbon Disulfide	7.30	76	57347	2.1228 ug/L	99
21) Acrylonitrile	7.44	53	19063	10.8024 ug/L	96
22) Methyl Tert Butyl Ether	7.47	73	31185	2.0960 ug/L	98
23) trans-1,2-Dichloroethene	7.71	61	24260	1.9556 ug/L	92
24) n-Hexane	7.79	57	27012	2.0143 ug/L	98
25) Diisopropyl ether	8.14	45	757167	25.1353 ug/L	97
26) Vinyl Acetate	8.31	43	15328	1.9907 ug/L #	86
27) 1,1-Dichloroethane	8.32	63	34218	2.0566 ug/L	97
28) Ethyl-Tert-Butyl ether	8.72	59	553606	24.6321 ug/L	99
29) 2-Butanone	8.90	43	3250	1.8074 ug/L #	57
30) Propionitrile	8.99	54	14005	24.4866 ug/L	91
31) 2,2-Dichloropropane	9.11	77	26994	2.1053 ug/L	90
32) cis-1,2-Dichloroethene	9.17	96	18634	2.0872 ug/L	85
33) Chloroform	9.38	83	30476	2.0297 ug/L	98
34) 1-Bromopropane	9.51	122	3425	2.1584 ug/L	99
35) Bromochloromethane	9.63	130	9189	1.9982 ug/L	94
36) Tetrahydrofuran	9.65	42	30961	25.0332 ug/L	96
38) 1,1,1-Trichloroethane	9.91	97	27246	1.9672 ug/L	98
39) Cyclohexane	9.95	56	30760	1.9042 ug/L	97
40) 1,1-Dichloropropene	10.10	75	23767	2.0043 ug/L	95
41) Tert-Amyl-Methyl ether	10.21	73	409936	24.3659 ug/L	99
42) Carbon Tetrachloride	10.26	117	24059	1.9619 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M406480.D 8260WT.M Fri Jul 31 14:02:05 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406480.D Vial: 4
Acq On : 30 Jul 2015 15:37 Operator: TMB
Sample : WG533051-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:05 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	18911	1.8804 ug/L		96
46)	Benzene	10.47	78	67444	2.0346 ug/L		96
47)	Trichloroethene	11.22	130	18008	1.9033 ug/L		95
48)	Methylcyclohexane	11.30	83	26755	1.9501 ug/L		96
49)	1,2-Dichloropropane	11.43	63	18045	1.9650 ug/L		100
50)	Bromodichloromethane	11.73	83	21770	1.9102 ug/L		95
51)	1,4-Dioxane	11.71	88	1562	48.3679 ug/L	#	29
52)	Dibromomethane	11.82	93	8550	2.0353 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.02	63	6526	1.7013 ug/L		99
54)	4-Methyl-2-Pentanone	12.07	58	2541	1.4923 ug/L		94
55)	cis-1,3-Dichloropropene	12.37	75	24560	1.9578 ug/L		98
56)	Dimethyl Disulfide	12.63	79	11521	1.6952 ug/L		95
59)	Toluene	12.79	91	73403	2.0894 ug/L		95
60)	Ethyl Methacrylate	12.88	69	12053	1.7976 ug/L		99
62)	trans-1,3-Dichloropropene	12.97	75	19611	1.8872 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	10698	1.9432 ug/L		90
64)	2-Hexanone	13.12	58	2502	1.6087 ug/L	#	87
65)	1,3-Dichloropropane	13.48	76	19951	2.0822 ug/L		95
66)	Tetrachloroethene	13.61	164	13782	1.8607 ug/L		95
67)	Dibromochloromethane	13.86	129	14706	2.0278 ug/L		95
68)	1,2-Dibromoethane	14.12	107	10788	2.0153 ug/L		90
69)	1-Chlorohexane	14.22	91	23854	1.9213 ug/L		95
70)	Chlorobenzene	14.63	112	46564	2.0701 ug/L		86
71)	1,1,1,2-Tetrachloroethane	14.66	131	15629	1.9559 ug/L		91
72)	Ethylbenzene	14.66	106	24492	1.9290 ug/L		89
73)	m-,p-Xylene	14.74	106	63849	4.2555 ug/L		98
74)	o-Xylene	15.31	106	30844	2.0889 ug/L		94
75)	Styrene	15.34	104	50259	2.0841 ug/L		95
76)	Bromoform	15.84	173	8154	1.8700 ug/L		90
77)	Isopropylbenzene	15.74	105	79139	2.1409 ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.94	83	11517	1.9568 ug/L		89
81)	1,2,3-Trichloropropane	16.14	110	3439	2.0817 ug/L		56
82)	trans-1,4-Dichloro-2-Buten	16.19	53	2913	2.0454 ug/L	#	7
83)	n-Propylbenzene	16.24	91	101745	2.1333 ug/L		99
84)	Bromobenzene	16.37	156	20327	2.1042 ug/L		88
85)	1,3,5-Trimethylbenzene	16.43	105	67532	2.1448 ug/L		99
86)	2-Chlorotoluene	16.51	91	62208	2.1354 ug/L		99
87)	4-Chlorotoluene	16.55	91	59334	2.1373 ug/L		98
88)	a-Methylstyrene	16.83	118	34116	1.9952 ug/L		98
89)	tert-Butylbenzene	16.89	134	13854	2.0309 ug/L		94
90)	1,2,4-Trimethylbenzene	16.95	105	70483	2.2094 ug/L		98
91)	sec-Butylbenzene	17.16	105	84869	2.1845 ug/L		100
92)	p-Isopropyltoluene	17.32	119	72879	2.1814 ug/L		98
93)	1,3-Dichlorobenzene	17.51	146	40091	2.1164 ug/L		100
94)	1,4-Dichlorobenzene	17.64	146	40876	2.0933 ug/L		93
95)	n-Butylbenzene	17.85	91	69304	2.1512 ug/L		99
96)	1,2-Dichlorobenzene	18.13	146	33974	2.0313 ug/L		95
97)	1,2-Dibromo-3-Chloropropan	19.14	75	1986	1.9274 ug/L		90
98)	1,2,4-Trichlorobenzene	20.28	180	25822	2.0063 ug/L		95
99)	Hexachlorobutadiene	20.42	225	12690	1.9376 ug/L		97
100)	Naphthalene	20.64	128	31513	1.8871 ug/L		98
101)	1,2,3-Trichlorobenzene	20.95	180	21856	1.9678 ug/L		93

(#) = qualifier out of range (m) = manual integration
8M406480.D 8260WT.M Fri Jul 31 14:02:05 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406480.D Vial: 4
Acq On : 30 Jul 2015 15:37 Operator: TMB
Sample : WG533051-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

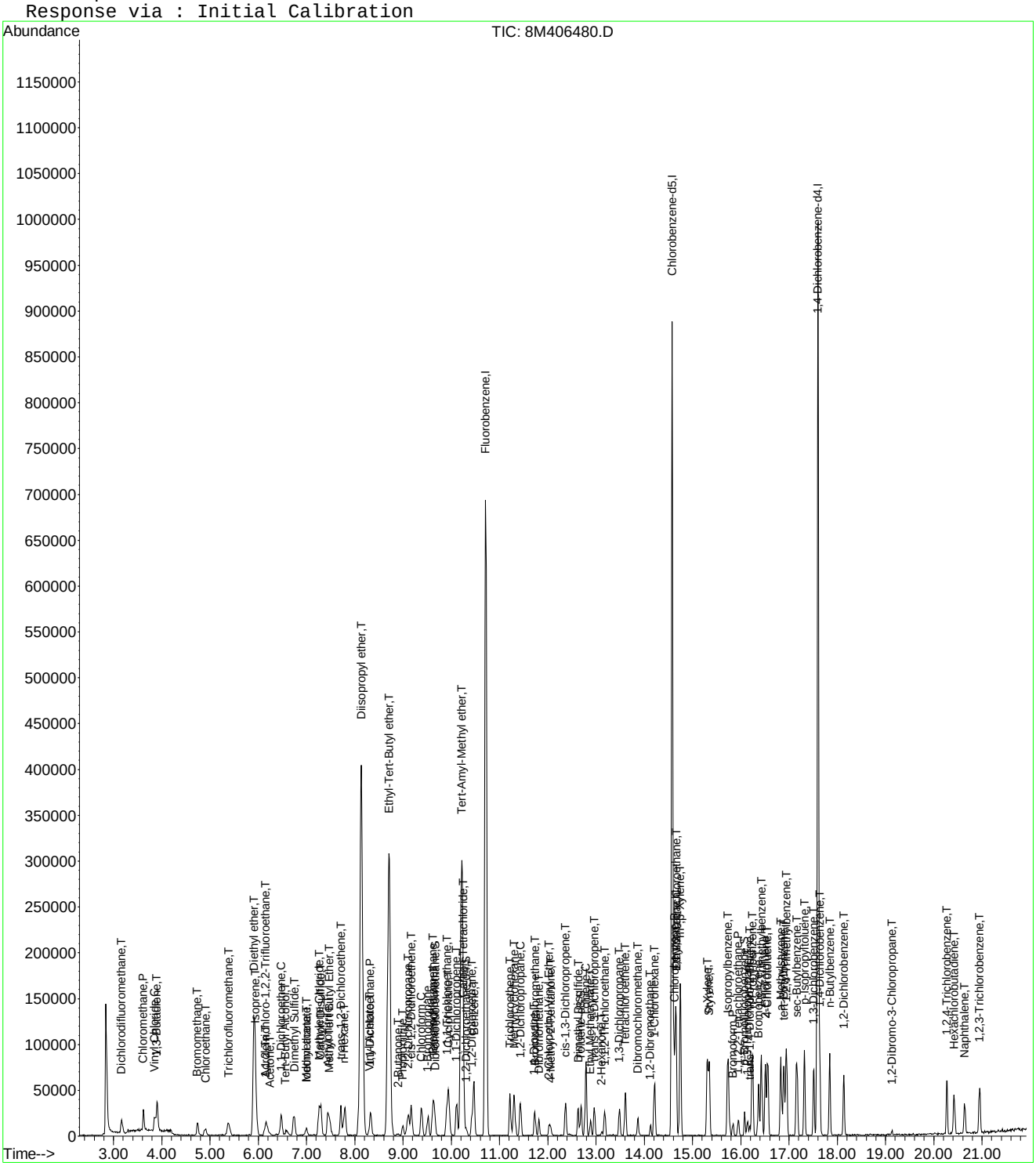

8M406480.D 8260WT.M Fri Jul 31 14:02:06 2015 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\073015\8M406480.D Vial: 4
Acq On : 30 Jul 2015 15:37 Operator: TMB
Sample : WG533051-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.7655	11.7	100	0.00
3	P	Chloromethane	2.0000	2.1643	-8.2	100	0.00
4	C	Vinyl Chloride	2.0000	1.9899	0.5	100	0.00
5	T	1,3-Butadiene	2.0000	2.0207	-1.0	100	0.01
6	T	Bromomethane	2.0000	1.9848	0.8	100	0.00
7	T	Chloroethane	2.0000	1.9383	3.1	100	0.01
8	T	Trichlorofluoromethane	2.0000	1.8727	6.4	100	0.00
9	T	Diethyl ether	25.0000	24.4945	2.0	100	0.00
10	T	Isoprene	2.0000	1.9970	0.1	100	-0.01
11	T	Acrolein	12.5000	11.0191	11.8	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.8000	10.0	100	-0.01
13	T	Acetone	-1.0000	2.2081	0.0	100	0.00
14	C	1,1-Dichloroethene	2.0000	2.0178	-0.9	100	0.01
15	T	Tert-Butyl Alcohol	50.0000	53.7622	-7.5	100	-0.02
16	T	Dimethyl Sulfide	2.0000	1.9777	1.1	100	0.01
17	T	Iodomethane	2.0000	1.9392	3.0	100	0.01
18	T	Methyl acetate	-1.0000	1.8471	0.0	100	0.00
19	T	Methylene Chloride	2.0000	2.0674	-3.4	100	0.01
20	T	Carbon Disulfide	2.0000	2.1228	-6.1	100	0.00
21	T	Acrylonitrile	12.5000	10.8024	13.6	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	2.0960	-4.8	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.9556	2.2	100	0.00
24	T	n-Hexane	-1.0000	2.0143	0.0	100	-0.01
25	T	Diisopropyl ether	25.0000	25.1353	-0.5	100	0.00
26	T	Vinyl Acetate	2.0000	1.9907	0.5	100	0.01
27	P	1,1-Dichloroethane	2.0000	2.0566	-2.8	100	-0.01
28	T	Ethyl-Tert-Butyl ether	25.0000	24.6321	1.5	100	0.01
29	T	2-Butanone	-1.0000	1.8074	0.0	100	0.01
30	T	Propionitrile	25.0000	24.4866	2.1	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1053	-5.3	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0873	-4.4	100	0.00
33	C	Chloroform	2.0000	2.0297	-1.5	100	0.00
34		1-Bromopropane	2.0000	2.1584	-7.9	100	-0.01
35	T	Bromochloromethane	2.0000	1.9982	0.1	100	0.01
36	T	Tetrahydrofuran	25.0000	25.0332	-0.1	100	0.01
37	S	Dibromofluoromethane	1.0000	0.9655	3.4	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.9672	1.6	100	0.00
39	T	Cyclohexane	2.0000	1.9042	4.8	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0043	-0.2	100	-0.01
41	T	Tert-Amyl-Methyl ether	25.0000	24.3659	2.5	100	0.00
42	T	Carbon Tetrachloride	2.0000	1.9619	1.9	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0031	-0.3	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	2.0000	1.8804	6.0	100	0.00
46	T	Benzene	2.0000	2.0346	-1.7	100	0.00
47	T	Trichloroethene	2.0000	1.9033	4.8	100	0.00
48	T	Methylcyclohexane	-1.0000	1.9501	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	1.9650	1.7	100	0.00
50	T	Bromodichloromethane	2.0000	1.9102	4.5	100	0.00
51	T	1,4-Dioxane	-1.0000	48.3679	0.0	100	0.00
52	T	Dibromomethane	2.0000	2.0353	-1.8	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	1.7013	0.0	100	-0.01
54	T	4-Methyl-2-Pentanone	-1.0000	1.4923	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\073015\8M406480.D Vial: 4
Acq On : 30 Jul 2015 15:37 Operator: TMB
Sample : WG533051-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.9578	2.1	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.6952	0.0	100	0.01
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	1.0306	-3.1	100	0.00
59	C	Toluene	2.0000	2.0894	-4.5	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.7976	10.1	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	2.0000	1.8872	5.6	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.9432	2.8	100	0.00
64	T	2-Hexanone	-1.0000	1.6087	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.0822	-4.1	100	0.00
66	T	Tetrachloroethene	2.0000	1.8607	7.0	100	0.00
67	T	Dibromochloromethane	2.0000	2.0278	-1.4	100	-0.01
68	T	1,2-Dibromoethane	2.0000	2.0153	-0.8	100	0.00
69	T	1-Chlorohexane	2.0000	1.9213	3.9	100	0.00
70	P	Chlorobenzene	2.0000	2.0701	-3.5	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.9559	2.2	100	0.00
72	C	Ethylbenzene	2.0000	1.9290	3.6	100	0.00
73	T	m-,p-Xylene	4.0000	4.2555	-6.4	100	0.00
74	T	o-Xylene	2.0000	2.0889	-4.4	100	0.00
75	T	Styrene	2.0000	2.0841	-4.2	100	0.00
76	P	Bromoform	2.0000	1.8700	6.5	100	0.00
77	T	Isopropylbenzene	2.0000	2.1409	-7.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	1.9568	2.2	100	0.00
80	S	p-Bromofluorobenzene	1.0000	1.0033	-0.3	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	2.0817	-4.1	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	2.0454	-2.3	100	0.00
83	T	n-Propylbenzene	2.0000	2.1334	-6.7	100	0.00
84	T	Bromobenzene	2.0000	2.1042	-5.2	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.1448	-7.2	100	0.00
86	T	2-Chlorotoluene	2.0000	2.1354	-6.8	100	0.00
87	T	4-Chlorotoluene	2.0000	2.1373	-6.9	100	-0.01
88	T	a-Methylstyrene	-1.0000	1.9952	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	2.0309	-1.5	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.2094	-10.5	100	0.00
91	T	sec-Butylbenzene	2.0000	2.1845	-9.2	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.1814	-9.1	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.1164	-5.8	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.0933	-4.7	100	0.00
95	T	n-Butylbenzene	2.0000	2.1512	-7.6	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0313	-1.6	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.9274	3.6	100	0.01
98	T	1,2,4-Trichlorobenzene	2.0000	2.0063	-0.3	100	0.00
99	T	Hexachlorobutadiene	2.0000	1.9376	3.1	100	-0.01
100	T	Naphthalene	2.0000	1.8871	5.6	100	-0.01
101	T	1,2,3-Trichlorobenzene	2.0000	1.9678	1.6	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M406480.D 8260WT.M Fri Jul 31 14:03:02 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406481.D Vial: 5
Acq On : 30 Jul 2015 16:06 Operator: TMB
Sample : WG533051-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:06 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	855387	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	612677	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	332830	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.68	111	18863	2.5026 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 10.00%#		
43) 1,2-Dichloroethane-d4	10.31	65	18410	2.4562 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 9.84%#		
58) Toluene-d8	12.68	98	73674	2.4927 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 9.96%#		
80) p-Bromofluorobenzene	16.08	95	27813	2.4159 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 9.68%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	60134	4.6031 ug/L	99
3) Chloromethane	3.62	50	77643	5.3236 ug/L	99
4) Vinyl Chloride	3.84	62	51255	4.7786 ug/L	94
5) 1,3-Butadiene	3.90	54	45203	4.8073 ug/L	83
6) Bromomethane	4.74	94	34945	4.8913 ug/L	99
7) Chloroethane	4.90	64	33390	4.9998 ug/L	98
8) Trichlorofluoromethane	5.39	101	67008	4.8314 ug/L	98
9) Diethyl ether	5.91	59	251096	47.8310 ug/L	99
10) Isoprene	5.95	67	53450	4.9240 ug/L	99
11) Acrolein	6.15	56	6016	23.2099 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	40879	5.1623 ug/L	94
13) Acetone	6.24	43	6548	6.0706 ug/L	97
14) 1,1-Dichloroethene	6.48	61	66355	4.9391 ug/L	96
15) Tert-Butyl Alcohol	6.58	59	27930	98.5799 ug/L	92
16) Dimethyl Sulfide	6.74	62	42375	5.0239 ug/L	91
17) Iodomethane	6.99	142	27526	4.1499 ug/L	98
18) Methyl acetate	7.00	43	21128	5.0477 ug/L #	89
19) Methylene Chloride	7.26	84	42199	4.9312 ug/L	97
20) Carbon Disulfide	7.30	76	137010	4.9935 ug/L	100
21) Acrylonitrile	7.44	53	40009	22.3219 ug/L	96
22) Methyl Tert Butyl Ether	7.47	73	70276	4.6504 ug/L	98
23) trans-1,2-Dichloroethene	7.71	61	64291	5.1026 ug/L	99
24) n-Hexane	7.79	57	65836	4.8337 ug/L	97
25) Diisopropyl ether	8.14	45	1522211	49.7523 ug/L	98
26) Vinyl Acetate	8.30	43	41769	5.3409 ug/L	96
27) 1,1-Dichloroethane	8.33	63	83162	4.9212 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1110375	48.6424 ug/L	99
29) 2-Butanone	8.90	43	8186	4.4822 ug/L	98
30) Propionitrile	8.99	54	27074	46.6060 ug/L	98
31) 2,2-Dichloropropane	9.11	77	64849	4.9797 ug/L	99
32) cis-1,2-Dichloroethene	9.18	96	45762	5.0468 ug/L	93
33) Chloroform	9.38	83	77721	5.0962 ug/L	100
34) 1-Bromopropane	9.52	122	8030	4.9822 ug/L	96
35) Bromochloromethane	9.61	130	22966	4.9171 ug/L	95
36) Tetrahydrofuran	9.63	42	59578	47.4278 ug/L	96
38) 1,1,1-Trichloroethane	9.91	97	70007	4.9767 ug/L	97
39) Cyclohexane	9.95	56	81916	4.9927 ug/L	97
40) 1,1-Dichloropropene	10.11	75	60071	4.9876 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	830703	48.6134 ug/L	100
42) Carbon Tetrachloride	10.26	117	61930	4.9721 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M406481.D 8260WT.M Fri Jul 31 14:02:06 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406481.D Vial: 5
Acq On : 30 Jul 2015 16:06 Operator: TMB
Sample : WG533051-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:06 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	48928	4.7901 ug/L		98
46)	Benzene	10.47	78	173193	5.1442 ug/L		98
47)	Trichloroethene	11.22	130	46467	4.8355 ug/L		97
48)	Methylcyclohexane	11.30	83	67444	4.8399 ug/L		97
49)	1,2-Dichloropropane	11.43	63	47873	5.1327 ug/L		97
50)	Bromodichloromethane	11.73	83	56499	4.8809 ug/L		98
51)	1,4-Dioxane	11.73	88	3529	107.5902 ug/L	#	63
52)	Dibromomethane	11.82	93	19997	4.6868 ug/L		93
53)	2-Chloroethyl Vinyl Ether	12.03	63	17790	4.5663 ug/L		96
54)	4-Methyl-2-Pentanone	12.05	58	7369	4.2609 ug/L		92
55)	cis-1,3-Dichloropropene	12.36	75	61410	4.8198 ug/L		99
56)	Dimethyl Disulfide	12.63	79	29344	4.2511 ug/L		98
59)	Toluene	12.79	91	189851	5.3024 ug/L		99
60)	Ethyl Methacrylate	12.88	69	32117	4.6998 ug/L		99
62)	trans-1,3-Dichloropropene	12.96	75	52110	4.9202 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	28717	5.1180 ug/L		98
64)	2-Hexanone	13.12	58	6680	4.2143 ug/L	#	91
65)	1,3-Dichloropropane	13.49	76	48239	4.9397 ug/L		96
66)	Tetrachloroethene	13.61	164	37579	4.9780 ug/L		98
67)	Dibromochloromethane	13.87	129	34634	4.6858 ug/L		98
68)	1,2-Dibromoethane	14.12	107	27979	5.1285 ug/L		93
69)	1-Chlorohexane	14.22	91	62398	4.9313 ug/L		98
70)	Chlorobenzene	14.63	112	122630	5.3493 ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.66	131	41727	5.1237 ug/L		99
72)	Ethylbenzene	14.66	106	66582	5.1453 ug/L		100
73)	m-,p-Xylene	14.74	106	166752	10.9050 ug/L		96
74)	o-Xylene	15.31	106	76340	5.0729 ug/L		98
75)	Styrene	15.34	104	126606	5.1512 ug/L		98
76)	Bromoform	15.83	173	21576	4.8551 ug/L		96
77)	Isopropylbenzene	15.74	105	204868	5.4380 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.94	83	30972	5.1216 ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	9098	5.3598 ug/L		52
82)	trans-1,4-Dichloro-2-Buten	16.19	53	9344	4.6938 ug/L	#	51
83)	n-Propylbenzene	16.24	91	262533	5.3574 ug/L		99
84)	Bromobenzene	16.37	156	48547	4.8909 ug/L		97
85)	1,3,5-Trimethylbenzene	16.43	105	171622	5.3048 ug/L		97
86)	2-Chlorotoluene	16.51	91	158232	5.2863 ug/L		100
87)	4-Chlorotoluene	16.55	91	151910	5.3257 ug/L		97
88)	a-Methylstyrene	16.83	118	88491	5.0367 ug/L		98
89)	tert-Butylbenzene	16.89	134	35466	5.0600 ug/L		96
90)	1,2,4-Trimethylbenzene	16.94	105	173574	5.2953 ug/L		98
91)	sec-Butylbenzene	17.16	105	218704	5.4789 ug/L		99
92)	p-Isopropyltoluene	17.32	119	185799	5.4124 ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	98863	5.0792 ug/L		98
94)	1,4-Dichlorobenzene	17.64	146	100465	5.0072 ug/L		99
95)	n-Butylbenzene	17.84	91	180077	5.4401 ug/L		99
96)	1,2-Dichlorobenzene	18.13	146	87449	5.0887 ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.13	75	4483	4.2343 ug/L		71
98)	1,2,4-Trichlorobenzene	20.27	180	63290	4.7858 ug/L		98
99)	Hexachlorobutadiene	20.42	225	32926	4.8928 ug/L		97
100)	Naphthalene	20.65	128	80359	4.6834 ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	54533	4.7786 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M406481.D 8260WT.M Fri Jul 31 14:02:06 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406481.D Vial: 5
Acq On : 30 Jul 2015 16:06 Operator: TMB
Sample : WG533051-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

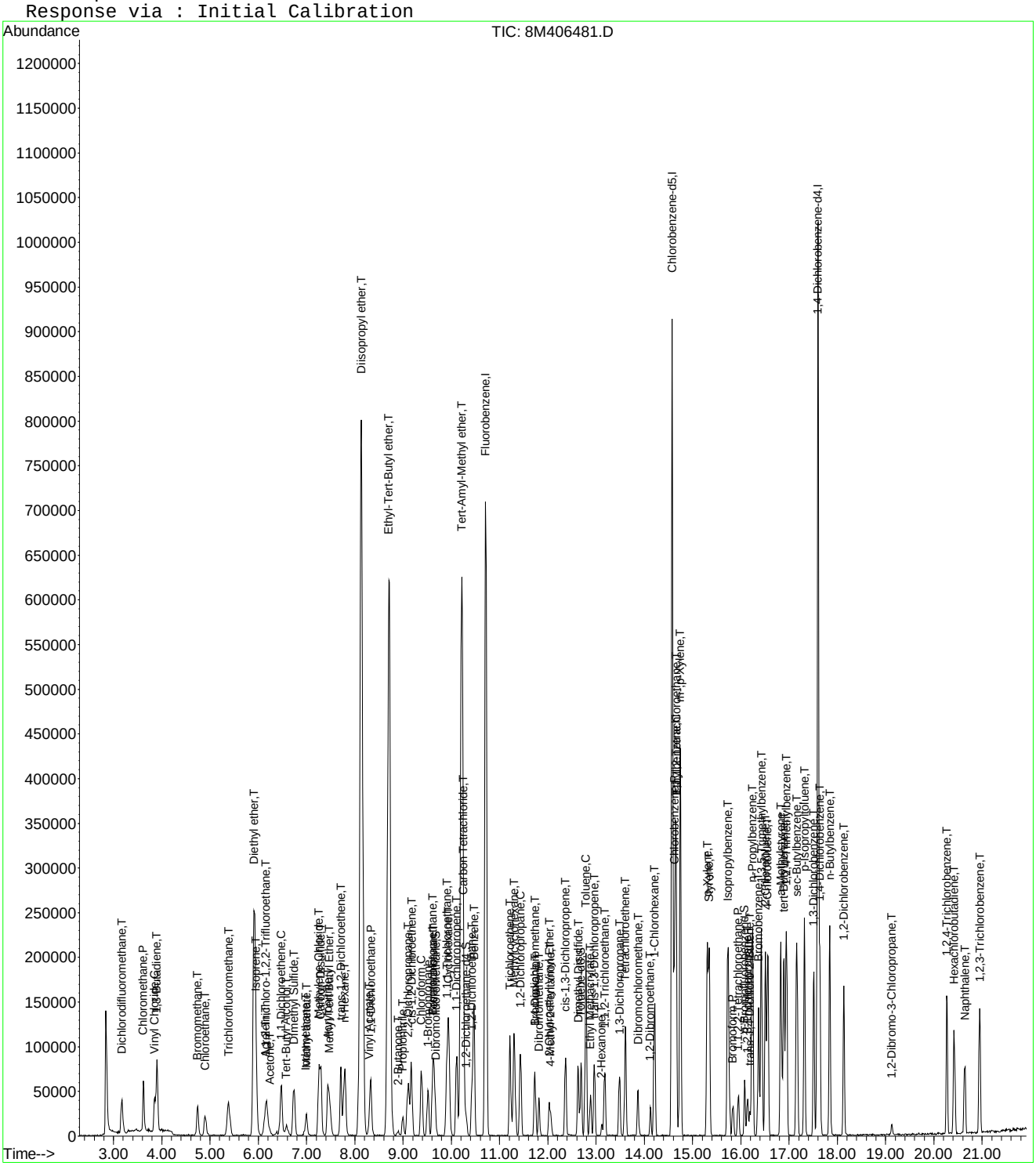

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\073015\8M406481.D Vial: 5
Acq On : 30 Jul 2015 16:06 Operator: TMB
Sample : WG533051-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.6031	7.9	100	0.00
3	P	Chloromethane	5.0000	5.3236	-6.5	100	0.00
4	C	Vinyl Chloride	5.0000	4.7786	4.4	100	0.00
5	T	1,3-Butadiene	5.0000	4.8073	3.9	100	0.00
6	T	Bromomethane	5.0000	4.8913	2.2	100	0.00
7	T	Chloroethane	5.0000	4.9998	0.0	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.8315	3.4	100	0.00
9	T	Diethyl ether	50.0000	47.8310	4.3	100	0.00
10	T	Isoprene	5.0000	4.9240	1.5	100	0.00
11	T	Acrolein	25.0000	23.2099	7.2	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	5.1623	-3.2	100	0.00
13	T	Acetone	5.0000	6.0705	-21.4	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.9391	1.2	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	98.5799	1.4	100	0.00
16	T	Dimethyl Sulfide	5.0000	5.0239	-0.5	100	0.00
17	T	Iodomethane	5.0000	4.1499	17.0	100	0.00
18	T	Methyl acetate	5.0000	5.0477	-1.0	100	-0.01
19	T	Methylene Chloride	5.0000	4.9312	1.4	100	0.00
20	T	Carbon Disulfide	5.0000	4.9935	0.1	100	0.00
21	T	Acrylonitrile	25.0000	22.3219	10.7	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.6504	7.0	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	5.1026	-2.1	100	0.00
24	T	n-Hexane	5.0000	4.8337	3.3	100	0.00
25	T	Diisopropyl ether	50.0000	49.7523	0.5	100	0.00
26	T	Vinyl Acetate	5.0000	5.3409	-6.8	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.9212	1.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	48.6424	2.7	100	0.00
29	T	2-Butanone	5.0000	4.4822	10.4	100	0.00
30	T	Propionitrile	50.0000	46.6060	6.8	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.9797	0.4	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	5.0468	-0.9	100	0.00
33	C	Chloroform	5.0000	5.0962	-1.9	100	0.00
34		1-Bromopropane	5.0000	4.9822	0.4	100	0.00
35	T	Bromochloromethane	5.0000	4.9171	1.7	100	0.00
36	T	Tetrahydrofuran	50.0000	47.4278	5.1	100	0.00
37	S	Dibromofluoromethane	2.5000	2.5026	-0.1	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.9767	0.5	100	0.00
39	T	Cyclohexane	5.0000	4.9927	0.1	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.9876	0.2	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	48.6134	2.8	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.9721	0.6	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.4562	1.8	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	5.0000	4.7901	4.2	100	0.00
46	T	Benzene	5.0000	5.1442	-2.9	100	0.00
47	T	Trichloroethene	5.0000	4.8355	3.3	100	0.00
48	T	Methylcyclohexane	5.0000	4.8399	3.2	100	0.00
49	C	1,2-Dichloropropane	5.0000	5.1327	-2.7	100	0.00
50	T	Bromodichloromethane	5.0000	4.8809	2.4	100	0.00
51	T	1,4-Dioxane	100.0000	107.5902	-7.6	100	0.02
52	T	Dibromomethane	5.0000	4.6868	6.3	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.5663	8.7	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.2609	14.8	100	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\073015\8M406481.D Vial: 5
Acq On : 30 Jul 2015 16:06 Operator: TMB
Sample : WG533051-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.8198	3.6	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.2511	15.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.4927	0.3	100	0.00
59	C	Toluene	5.0000	5.3024	-6.0	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.6998	6.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	5.0000	4.9202	1.6	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	5.1180	-2.4	100	0.00
64	T	2-Hexanone	5.0000	4.2143	15.7	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.9397	1.2	100	0.00
66	T	Tetrachloroethene	5.0000	4.9780	0.4	100	0.00
67	T	Dibromochloromethane	5.0000	4.6857	6.3	100	0.00
68	T	1,2-Dibromoethane	5.0000	5.1285	-2.6	100	0.00
69	T	1-Chlorohexane	5.0000	4.9313	1.4	100	0.00
70	P	Chlorobenzene	5.0000	5.3492	-7.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	5.1237	-2.5	100	0.00
72	C	Ethylbenzene	5.0000	5.1453	-2.9	100	0.00
73	T	m-,p-Xylene	10.0000	10.9050	-9.0	100	0.00
74	T	o-Xylene	5.0000	5.0729	-1.5	100	0.00
75	T	Styrene	5.0000	5.1512	-3.0	100	0.00
76	P	Bromoform	5.0000	4.8551	2.9	100	-0.01
77	T	Isopropylbenzene	5.0000	5.4380	-8.8	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	5.1216	-2.4	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.4160	3.4	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.3598	-7.2	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.6938	6.1	100	0.00
83	T	n-Propylbenzene	5.0000	5.3574	-7.1	100	0.00
84	T	Bromobenzene	5.0000	4.8909	2.2	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	5.3048	-6.1	100	0.00
86	T	2-Chlorotoluene	5.0000	5.2863	-5.7	100	0.00
87	T	4-Chlorotoluene	5.0000	5.3257	-6.5	100	-0.01
88	T	a-Methylstyrene	5.0000	5.0367	-0.7	100	0.00
89	T	tert-Butylbenzene	5.0000	5.0600	-1.2	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.2953	-5.9	100	0.00
91	T	sec-Butylbenzene	5.0000	5.4789	-9.6	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.4124	-8.2	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	5.0792	-1.6	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	5.0072	-0.1	100	0.00
95	T	n-Butylbenzene	5.0000	5.4401	-8.8	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	5.0887	-1.8	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	4.2343	15.3	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.7858	4.3	100	0.00
99	T	Hexachlorobutadiene	5.0000	4.8928	2.1	100	-0.01
100	T	Naphthalene	5.0000	4.6834	6.3	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.7786	4.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M406481.D 8260WT.M Fri Jul 31 14:03:30 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406482.D Vial: 6
Acq On : 30 Jul 2015 16:35 Operator: TMB
Sample : WG533051-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:07 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	878579	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	612458	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	341682	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.68	111	77858	10.0570 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 40.24%#		
43) 1,2-Dichloroethane-d4	10.31	65	78334	10.1753 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 40.72%#		
58) Toluene-d8	12.69	98	308881	10.4545 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 41.80%#		
80) p-Bromofluorobenzene	16.08	95	114109	9.6552 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 38.64%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	294392	21.9402 ug/L	99
3) Chloromethane	3.62	50	295235	19.7083 ug/L	99
4) Vinyl Chloride	3.85	62	213802	19.4071 ug/L	100
5) 1,3-Butadiene	3.90	54	195992	20.2936 ug/L	92
6) Bromomethane	4.74	94	134045	18.2671 ug/L	99
7) Chloroethane	4.90	64	135011	19.6828 ug/L	99
8) Trichlorofluoromethane	5.38	101	285503	20.0421 ug/L	99
9) Diethyl ether	5.91	59	416800	77.2999 ug/L	99
10) Isoprene	5.94	67	222724	19.9765 ug/L	99
11) Acrolein	6.15	56	10886	41.1889 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	161968	19.9137 ug/L	97
13) Acetone	6.25	43	21749	19.6309 ug/L	90
14) 1,1-Dichloroethene	6.47	61	269452	19.5273 ug/L	96
15) Tert-Butyl Alcohol	6.60	59	46659	160.3374 ug/L	96
16) Dimethyl Sulfide	6.74	62	164675	19.0082 ug/L	99
17) Iodomethane	6.99	142	141587	17.2789 ug/L	97
18) Methyl acetate	7.01	43	80285	18.6746 ug/L	97
19) Methylene Chloride	7.26	84	169710	19.3082 ug/L	97
20) Carbon Disulfide	7.30	76	559773	19.8629 ug/L	99
21) Acrylonitrile	7.44	53	67398	36.6102 ug/L	96
22) Methyl Tert Butyl Ether	7.47	73	300217	19.3418 ug/L	99
23) trans-1,2-Dichloroethene	7.71	61	251692	19.4487 ug/L	95
24) n-Hexane	7.79	57	273707	19.5653 ug/L	98
25) Diisopropyl ether	8.14	45	2493814	79.3568 ug/L	98
26) Vinyl Acetate	8.30	43	160888	20.0291 ug/L	100
27) 1,1-Dichloroethane	8.33	63	342819	19.7511 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	1842255	78.5736 ug/L	100
29) 2-Butanone	8.89	43	34580	18.4342 ug/L	100
30) Propionitrile	8.99	54	47189	79.0883 ug/L	100
31) 2,2-Dichloropropane	9.11	77	260916	19.5065 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	187379	20.1194 ug/L	94
33) Chloroform	9.38	83	304643	19.4484 ug/L	99
34) 1-Bromopropane	9.51	122	32572	19.6758 ug/L	95
35) Bromochloromethane	9.61	130	95370	19.8800 ug/L	97
36) Tetrahydrofuran	9.64	42	98153	76.0733 ug/L	95
38) 1,1,1-Trichloroethane	9.91	97	284730	19.7066 ug/L	99
39) Cyclohexane	9.95	56	338069	20.0611 ug/L	98
40) 1,1-Dichloropropene	10.11	75	247480	20.0055 ug/L	100
41) Tert-Amyl-Methyl ether	10.21	73	1363363	77.6791 ug/L	100
42) Carbon Tetrachloride	10.26	117	254833	19.9195 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M406482.D 8260WT.M Fri Jul 31 14:02:08 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406482.D Vial: 6
Acq On : 30 Jul 2015 16:35 Operator: TMB
Sample : WG533051-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:07 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	201171	19.1748 ug/L		100
46)	Benzene	10.47	78	698528	20.2002 ug/L		98
47)	Trichloroethene	11.22	130	183971	18.6392 ug/L		96
48)	Methylcyclohexane	11.30	83	284091	19.8487 ug/L		97
49)	1,2-Dichloropropane	11.43	63	195318	20.3883 ug/L		96
50)	Bromodichloromethane	11.73	83	235526	19.8099 ug/L		99
51)	1,4-Dioxane	11.72	88	4585	136.0950 ug/L		87
52)	Dibromomethane	11.82	93	84217	19.2172 ug/L		95
53)	2-Chloroethyl Vinyl Ether	12.02	63	72635	18.1515 ug/L		99
54)	4-Methyl-2-Pentanone	12.07	58	34061	19.1750 ug/L		95
55)	cis-1,3-Dichloropropene	12.37	75	258884	19.7823 ug/L		98
56)	Dimethyl Disulfide	12.62	79	130981	18.4744 ug/L		99
59)	Toluene	12.79	91	746088	20.8453 ug/L		99
60)	Ethyl Methacrylate	12.88	69	137128	20.0738 ug/L		97
62)	trans-1,3-Dichloropropene	12.96	75	215089	20.3159 ug/L		98
63)	1,1,2-Trichloroethane	13.18	97	111425	19.8655 ug/L		98
64)	2-Hexanone	13.12	58	30148	19.0266 ug/L	#	98
65)	1,3-Dichloropropane	13.48	76	193594	19.8313 ug/L		97
66)	Tetrachloroethene	13.61	164	155127	20.5567 ug/L		95
67)	Dibromochloromethane	13.86	129	149584	20.2450 ug/L		99
68)	1,2-Dibromoethane	14.12	107	108175	19.8353 ug/L		100
69)	1-Chlorohexane	14.22	91	255638	20.2104 ug/L		98
70)	Chlorobenzene	14.63	112	482376	21.0493 ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	167264	20.5459 ug/L		98
72)	Ethylbenzene	14.65	106	262135	20.2644 ug/L		100
73)	m-,p-Xylene	14.74	106	638747	41.7867 ug/L		99
74)	o-Xylene	15.31	106	311292	20.6930 ug/L		97
75)	Styrene	15.34	104	510559	20.7804 ug/L		97
76)	Bromoform	15.84	173	85509	19.2484 ug/L		98
77)	Isopropylbenzene	15.74	105	808892	21.4789 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.94	83	121205	19.5234 ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	33046	18.9636 ug/L		70
82)	trans-1,4-Dichloro-2-Buten	16.18	53	40201	17.1268 ug/L	#	46
83)	n-Propylbenzene	16.24	91	1030697	20.4882 ug/L		99
84)	Bromobenzene	16.37	156	194478	19.0853 ug/L		97
85)	1,3,5-Trimethylbenzene	16.43	105	694288	20.9042 ug/L		97
86)	2-Chlorotoluene	16.51	91	619140	20.1488 ug/L		98
87)	4-Chlorotoluene	16.55	91	599261	20.4646 ug/L		97
88)	a-Methylstyrene	16.83	118	361855	20.0624 ug/L		98
89)	tert-Butylbenzene	16.89	134	142107	19.7494 ug/L		95
90)	1,2,4-Trimethylbenzene	16.95	105	707460	21.0236 ug/L		99
91)	sec-Butylbenzene	17.16	105	882383	21.5323 ug/L		100
92)	p-Isopropyltoluene	17.32	119	748439	21.2376 ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	398721	19.9542 ug/L		99
94)	1,4-Dichlorobenzene	17.64	146	392008	19.0315 ug/L		97
95)	n-Butylbenzene	17.84	91	722188	21.2520 ug/L		99
96)	1,2-Dichlorobenzene	18.13	146	351296	19.9127 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	20012	18.4123 ug/L		88
98)	1,2,4-Trichlorobenzene	20.27	180	266319	19.6166 ug/L		99
99)	Hexachlorobutadiene	20.43	225	133344	19.3015 ug/L		99
100)	Naphthalene	20.64	128	345480	19.6133 ug/L		98
101)	1,2,3-Trichlorobenzene	20.95	180	224501	19.1628 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M406482.D 8260WT.M Fri Jul 31 14:02:08 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406482.D Vial: 6
Acq On : 30 Jul 2015 16:35 Operator: TMB
Sample : WG533051-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

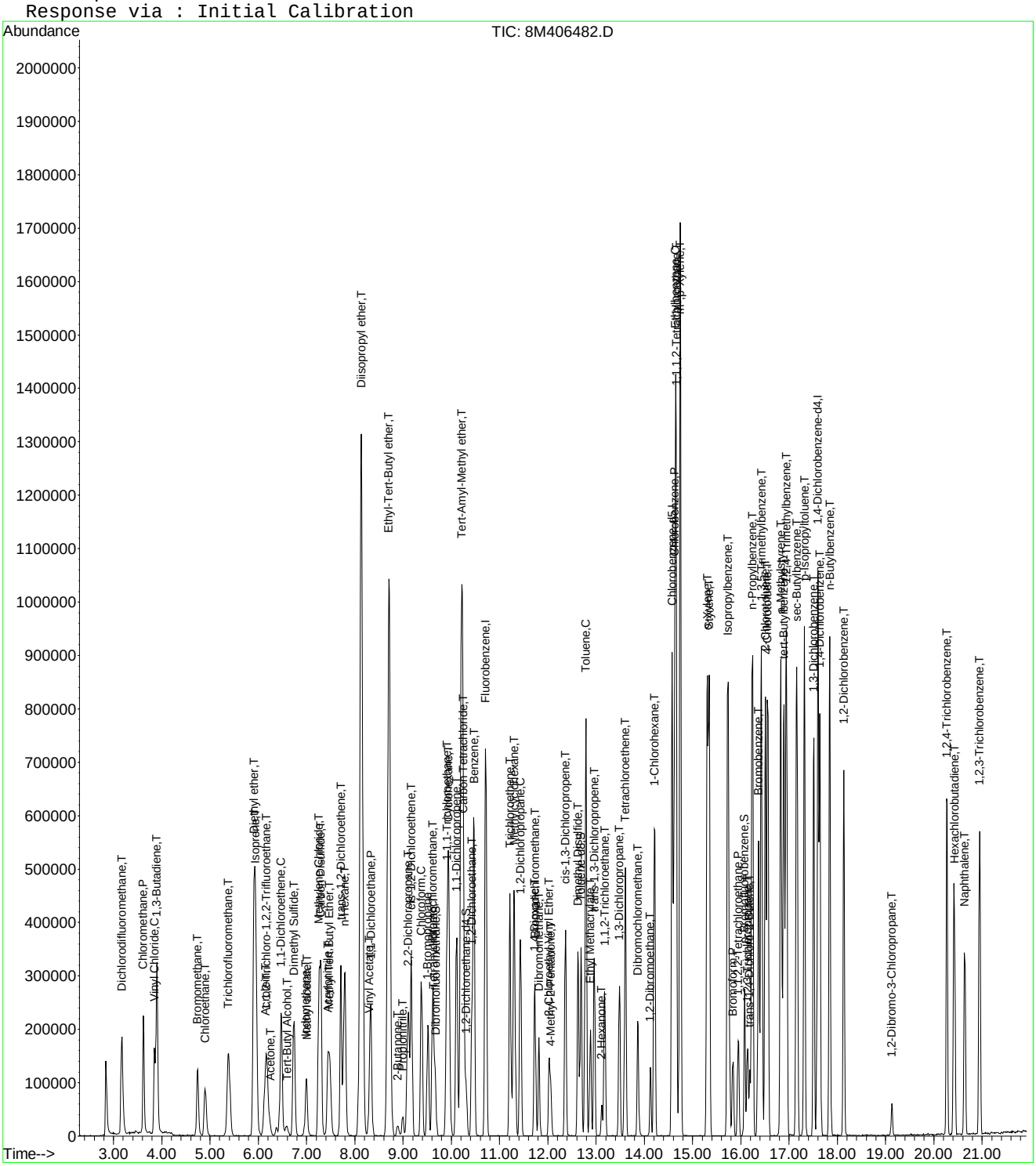

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406483.D Vial: 7
Acq On : 30 Jul 2015 17:04 Operator: TMB
Sample : WG533051-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:08 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	905123	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	645629	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	356726	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	206363	25.8744 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.48%		
43) 1,2-Dichloroethane-d4	10.31	65	193407	24.3862 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.56%		
58) Toluene-d8	12.69	98	789617	25.3525 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.40%		
80) p-Bromofluorobenzene	16.08	95	298735	24.2110 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.84%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	793389	57.3949 ug/L	98
3) Chloromethane	3.62	50	774629	50.1936 ug/L	100
4) Vinyl Chloride	3.85	62	591558	52.1218 ug/L	100
5) 1,3-Butadiene	3.89	54	525687	52.8348 ug/L	96
6) Bromomethane	4.75	94	372151	49.2279 ug/L	98
7) Chloroethane	4.90	64	363278	51.4079 ug/L	99
8) Trichlorofluoromethane	5.39	101	770145	52.4781 ug/L	99
9) Diethyl ether	5.92	59	543358	97.8162 ug/L	99
10) Isoprene	5.95	67	601625	52.3784 ug/L	100
11) Acrolein	6.15	56	15050	53.2458 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	450283	53.7379 ug/L	100
13) Acetone	6.25	43	54001	47.3125 ug/L	89
14) 1,1-Dichloroethene	6.47	61	737038	51.8469 ug/L	97
15) Tert-Butyl Alcohol	6.59	59	54494	181.7696 ug/L	98
16) Dimethyl Sulfide	6.74	62	453799	50.8451 ug/L	96
17) Iodomethane	6.99	142	438030	50.1373 ug/L	96
18) Methyl acetate	7.01	43	211513	47.7558 ug/L	98
19) Methylene Chloride	7.26	84	462069	51.0288 ug/L	99
20) Carbon Disulfide	7.30	76	1497961	51.5946 ug/L	100
21) Acrylonitrile	7.45	53	95327	50.2625 ug/L	99
22) Methyl Tert Butyl Ether	7.48	73	810723	50.7000 ug/L	98
23) trans-1,2-Dichloroethene	7.71	61	695571	52.1719 ug/L	96
24) n-Hexane	7.80	57	743489	51.5880 ug/L	100
25) Diisopropyl ether	8.14	45	3228603	99.7258 ug/L	98
26) Vinyl Acetate	8.30	43	409257	49.4548 ug/L	100
27) 1,1-Dichloroethane	8.33	63	920738	51.4914 ug/L	100
28) Ethyl-Tert-Butyl ether	8.71	59	2377982	98.4484 ug/L	99
29) 2-Butanone	8.88	43	97575	50.4906 ug/L	100
30) Propionitrile	9.00	54	62717	102.0304 ug/L	99
31) 2,2-Dichloropropane	9.11	77	715194	51.9009 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	500332	52.1466 ug/L	96
33) Chloroform	9.38	83	823551	51.0337 ug/L	98
34) 1-Bromopropane	9.52	122	86861	50.9315 ug/L	97
35) Bromochloromethane	9.62	130	249925	50.5694 ug/L	97
36) Tetrahydrofuran	9.64	42	127091	95.6129 ug/L	97
38) 1,1,1-Trichloroethane	9.92	97	778847	52.3243 ug/L	98
39) Cyclohexane	9.95	56	911186	52.4843 ug/L	99
40) 1,1-Dichloropropene	10.11	75	665469	52.2167 ug/L	99
41) Tert-Amyl-Methyl ether	10.22	73	1766552	97.6994 ug/L	99
42) Carbon Tetrachloride	10.26	117	704730	53.4711 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M406483.D 8260WT.M Fri Jul 31 14:02:09 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406483.D Vial: 7
Acq On : 30 Jul 2015 17:04 Operator: TMB
Sample : WG533051-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:08 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	553108	51.1739 ug/L		99
46)	Benzene	10.46	78	1840314	51.6579 ug/L		99
47)	Trichloroethene	11.22	130	492891	48.4731 ug/L		98
48)	Methylcyclohexane	11.30	83	748840	50.7851 ug/L		100
49)	1,2-Dichloropropane	11.44	63	526138	53.3105 ug/L		95
50)	Bromodichloromethane	11.74	83	642036	52.4176 ug/L		100
51)	1,4-Dioxane	11.72	88	6404	184.5131 ug/L		87
52)	Dibromomethane	11.82	93	233147	51.6407 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.03	63	212458	51.5361 ug/L		99
54)	4-Methyl-2-Pentanone	12.06	58	91945	50.2433 ug/L		97
55)	cis-1,3-Dichloropropene	12.37	75	710508	52.7003 ug/L		99
56)	Dimethyl Disulfide	12.63	79	368941	50.5116 ug/L		99
59)	Toluene	12.79	91	1964017	52.0543 ug/L		99
60)	Ethyl Methacrylate	12.88	69	372212	51.6878 ug/L		97
62)	trans-1,3-Dichloropropene	12.97	75	582148	52.1608 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	307585	52.0206 ug/L		100
64)	2-Hexanone	13.12	58	83346	49.8978 ug/L	#	98
65)	1,3-Dichloropropane	13.48	76	534141	51.9049 ug/L		97
66)	Tetrachloroethene	13.61	164	414054	52.0494 ug/L		97
67)	Dibromochloromethane	13.87	129	408742	52.4777 ug/L		99
68)	1,2-Dibromoethane	14.13	107	291774	50.7519 ug/L		98
69)	1-Chlorohexane	14.21	91	679889	50.9895 ug/L		100
70)	Chlorobenzene	14.63	112	1254057	51.9113 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.66	131	464369	54.1101 ug/L		100
72)	Ethylbenzene	14.65	106	698254	51.2055 ug/L		99
73)	m-,p-Xylene	14.75	106	1692501	105.0343 ug/L		94
74)	o-Xylene	15.30	106	838582	52.8805 ug/L		95
75)	Styrene	15.35	104	1379102	53.2472 ug/L		97
76)	Bromoform	15.84	173	239694	51.1839 ug/L		99
77)	Isopropylbenzene	15.73	105	2131296	53.6857 ug/L		98
79)	1,1,2,2-Tetrachloroethane	15.94	83	324676	50.0926 ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	91482	50.2834 ug/L		99
82)	trans-1,4-Dichloro-2-Buten	16.18	53	114476	45.3360 ug/L		95
83)	n-Propylbenzene	16.23	91	2718432	51.7580 ug/L		99
84)	Bromobenzene	16.37	156	526890	49.5262 ug/L		99
85)	1,3,5-Trimethylbenzene	16.43	105	1834447	52.9036 ug/L		97
86)	2-Chlorotoluene	16.51	91	1707990	53.2393 ug/L		98
87)	4-Chlorotoluene	16.55	91	1562668	51.1143 ug/L		97
88)	a-Methylstyrene	16.83	118	973493	51.6973 ug/L		97
89)	tert-Butylbenzene	16.90	134	383962	51.1110 ug/L		95
90)	1,2,4-Trimethylbenzene	16.95	105	1878267	53.4626 ug/L		98
91)	sec-Butylbenzene	17.16	105	2334618	54.5678 ug/L		98
92)	p-Isopropyltoluene	17.32	119	2001322	54.3943 ug/L		98
93)	1,3-Dichlorobenzene	17.52	146	1061972	50.9057 ug/L		99
94)	1,4-Dichlorobenzene	17.64	146	1054477	49.0347 ug/L		96
95)	n-Butylbenzene	17.85	91	1958128	55.1921 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	939992	51.0349 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	58169	51.2620 ug/L		98
98)	1,2,4-Trichlorobenzene	20.27	180	729904	51.4962 ug/L		99
99)	Hexachlorobutadiene	20.42	225	360991	50.0496 ug/L		99
100)	Naphthalene	20.64	128	1011034	54.9769 ug/L		98
101)	1,2,3-Trichlorobenzene	20.95	180	617964	50.5233 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M406483.D 8260WT.M Fri Jul 31 14:02:09 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406483.D Vial: 7
Acq On : 30 Jul 2015 17:04 Operator: TMB
Sample : WG533051-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

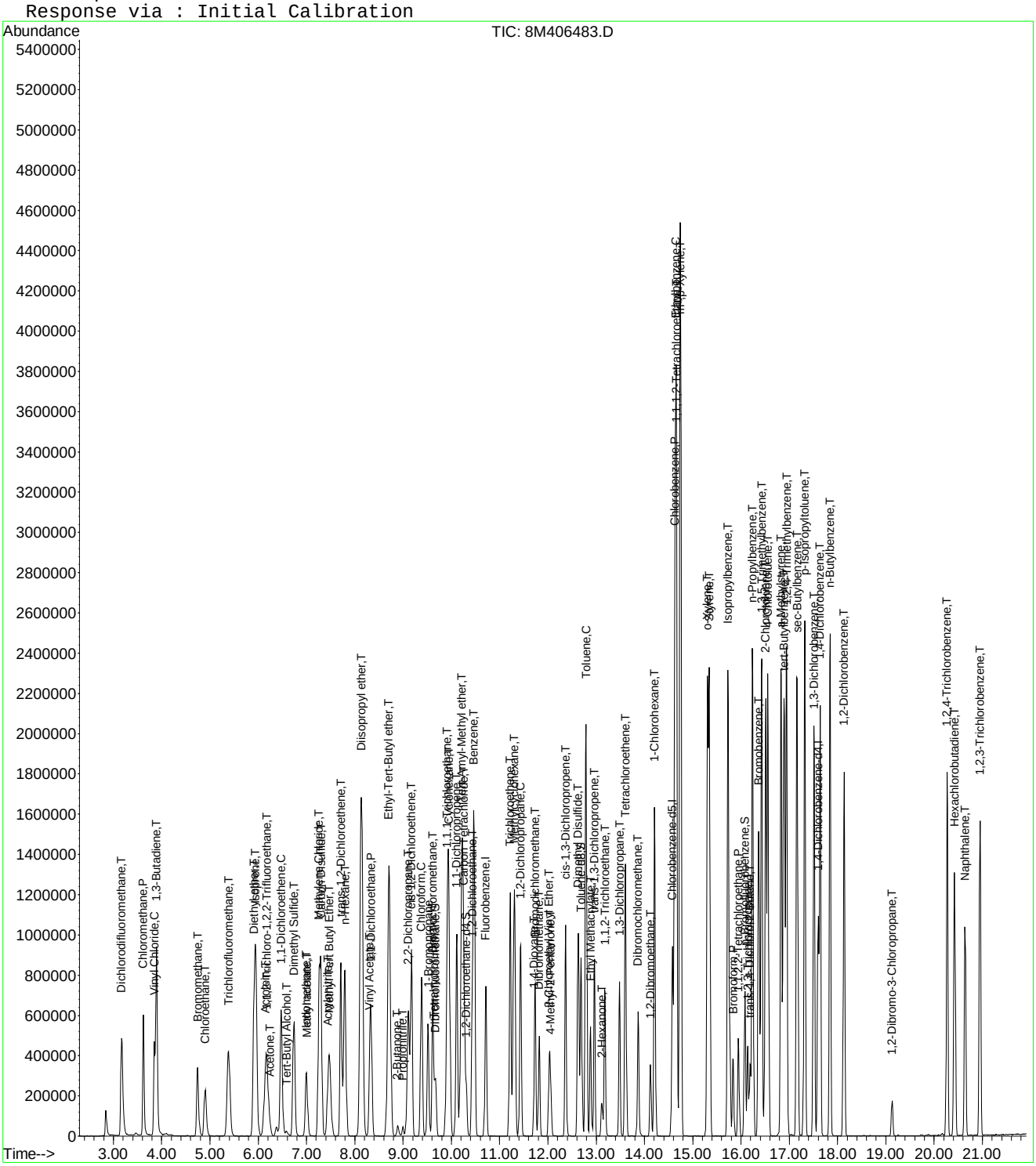

8M406483.D 8260WT.M Fri Jul 31 14:02:09 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406484.D Vial: 8
Acq On : 30 Jul 2015 17:33 Operator: TMB
Sample : WG533051-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:09 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	965047	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	693992	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	377100	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.68	111	407361	47.9046 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 191.60%#		
43) 1,2-Dichloroethane-d4	10.31	65	398417	47.1160 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 188.48%#		
58) Toluene-d8	12.69	98	1502516	44.8800 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 179.52%#		
80) p-Bromofluorobenzene	16.08	95	588300	45.1029 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 180.40%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	1447067	98.1828 ug/L	99
3) Chloromethane	3.62	50	1469585	89.3117 ug/L	100
4) Vinyl Chloride	3.85	62	1113972	92.0567 ug/L	99
5) 1,3-Butadiene	3.89	54	1106871	104.3396 ug/L	93
6) Bromomethane	4.74	94	754878	93.6544 ug/L	99
7) Chloroethane	4.90	64	716703	95.1238 ug/L	99
8) Trichlorofluoromethane	5.39	101	1479847	94.5761 ug/L	99
9) Diethyl ether	5.91	59	1171644	197.8242 ug/L	99
10) Isoprene	5.95	67	1270504	103.7437 ug/L	100
11) Acrolein	6.15	56	35545	97.9111 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	839906	94.0124 ug/L	99
13) Acetone	6.25	43	106698	87.6778 ug/L	88
14) 1,1-Dichloroethene	6.47	61	1429955	94.3441 ug/L	98
15) Tert-Butyl Alcohol	6.60	59	119175	372.8351 ug/L	97
16) Dimethyl Sulfide	6.74	62	972688	102.2159 ug/L	97
17) Iodomethane	6.99	142	950888	101.1755 ug/L	97
18) Methyl acetate	7.01	43	462726	97.9879 ug/L	98
19) Methylene Chloride	7.26	84	914681	94.7409 ug/L	100
20) Carbon Disulfide	7.30	76	3117324	100.7035 ug/L	100
21) Acrylonitrile	7.44	53	208069	102.8952 ug/L	99
22) Methyl Tert Butyl Ether	7.47	73	1688263	99.0227 ug/L	98
23) trans-1,2-Dichloroethene	7.71	61	1400434	98.5184 ug/L	97
24) n-Hexane	7.79	57	1539123	100.1628 ug/L	100
25) Diisopropyl ether	8.14	45	6719736	194.6724 ug/L	99
26) Vinyl Acetate	8.30	43	978547	110.9054 ug/L	100
27) 1,1-Dichloroethane	8.33	63	1824047	95.6740 ug/L	99
28) Ethyl-Tert-Butyl ether	8.71	59	5140284	199.5934 ug/L	98
29) 2-Butanone	8.89	43	209399	101.6262 ug/L	99
30) Propionitrile	8.99	54	133996	204.4539 ug/L	100
31) 2,2-Dichloropropane	9.11	77	1395201	94.9614 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	1020076	99.7147 ug/L	96
33) Chloroform	9.39	83	1666101	96.8338 ug/L	99
34) 1-Bromopropane	9.52	122	183147	100.7212 ug/L	100
35) Bromochloromethane	9.61	130	518828	98.4601 ug/L	99
36) Tetrahydrofuran	9.64	42	282096	199.0480 ug/L	97
38) 1,1,1-Trichloroethane	9.91	97	1537931	96.9053 ug/L	98
39) Cyclohexane	9.95	56	1874220	101.2517 ug/L	100
40) 1,1-Dichloropropene	10.11	75	1274818	93.8186 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	3827307	198.5263 ug/L	98
42) Carbon Tetrachloride	10.26	117	1376730	97.9725 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M406484.D 8260WT.M Fri Jul 31 14:02:10 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406484.D Vial: 8
Acq On : 30 Jul 2015 17:33 Operator: TMB
Sample : WG533051-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:09 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	1142285	99.1225	ug/L		99
46)	Benzene	10.47	78	3562491	93.7903	ug/L		99
47)	Trichloroethene	11.22	130	960301	88.5761	ug/L		98
48)	Methylcyclohexane	11.30	83	1578829	100.4249	ug/L		99
49)	1,2-Dichloropropane	11.43	63	1064186	101.1322	ug/L		97
50)	Bromodichloromethane	11.73	83	1308458	100.1928	ug/L		99
51)	1,4-Dioxane	11.72	88	14577	393.9157	ug/L		85
52)	Dibromomethane	11.82	93	483518	100.4464	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.02	63	447158	101.7323	ug/L		98
54)	4-Methyl-2-Pentanone	12.05	58	198955	101.9681	ug/L		99
55)	cis-1,3-Dichloropropene	12.36	75	1459255	101.5160	ug/L		99
56)	Dimethyl Disulfide	12.62	79	805354	103.4142	ug/L		97
59)	Toluene	12.79	91	3726198	91.8768	ug/L		96
60)	Ethyl Methacrylate	12.88	69	790872	102.1721	ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	1209023	100.7799	ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	623496	98.1008	ug/L		97
64)	2-Hexanone	13.12	58	179741	100.1089	ug/L	#	97
65)	1,3-Dichloropropane	13.48	76	1084202	98.0148	ug/L		97
66)	Tetrachloroethene	13.61	164	788124	92.1684	ug/L		98
67)	Dibromochloromethane	13.86	129	858396	102.5278	ug/L		99
68)	1,2-Dibromoethane	14.12	107	613039	99.2024	ug/L		100
69)	1-Chlorohexane	14.22	91	1399721	97.6592	ug/L		99
70)	Chlorobenzene	14.63	112	2464965	94.9258	ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.66	131	930502	100.8698	ug/L		98
72)	Ethylbenzene	14.66	106	1383565	94.3911	ug/L		91
73)	m-,p-Xylene	14.74	106	3220173	185.9131	ug/L		89
74)	o-Xylene	15.31	106	1658540	97.2981	ug/L		92
75)	Styrene	15.34	104	2709684	97.3302	ug/L		100
76)	Bromoform	15.84	173	507847	100.8877	ug/L		99
77)	Isopropylbenzene	15.74	105	4019718	94.1975	ug/L		96
79)	1,1,2,2-Tetrachloroethane	15.94	83	690755	100.8151	ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	190295	98.9452	ug/L		99
82)	trans-1,4-Dichloro-2-Buten	16.19	53	248869	92.3924	ug/L		95
83)	n-Propylbenzene	16.24	91	4956532	89.2720	ug/L		96
84)	Bromobenzene	16.37	156	1065712	94.7617	ug/L		97
85)	1,3,5-Trimethylbenzene	16.43	105	3512095	95.8131	ug/L		95
86)	2-Chlorotoluene	16.51	91	3173720	93.5823	ug/L		96
87)	4-Chlorotoluene	16.56	91	3137655	97.0865	ug/L		96
88)	a-Methylstyrene	16.83	118	2020165	101.4846	ug/L		99
89)	tert-Butylbenzene	16.89	134	751885	94.6795	ug/L		94
90)	1,2,4-Trimethylbenzene	16.95	105	3589344	96.6464	ug/L		96
91)	sec-Butylbenzene	17.16	105	4288380	94.8183	ug/L		96
92)	p-Isopropyltoluene	17.32	119	3722574	95.7102	ug/L		97
93)	1,3-Dichlorobenzene	17.51	146	2093524	94.9313	ug/L		100
94)	1,4-Dichlorobenzene	17.64	146	2074493	91.2550	ug/L		98
95)	n-Butylbenzene	17.84	91	3669233	97.8339	ug/L		97
96)	1,2-Dichlorobenzene	18.13	146	1883412	96.7313	ug/L		100
97)	1,2-Dibromo-3-Chloropropan	19.13	75	121212	101.0480	ug/L		93
98)	1,2,4-Trichlorobenzene	20.27	180	1458227	97.3224	ug/L		99
99)	Hexachlorobutadiene	20.43	225	710996	93.2502	ug/L		99
100)	Naphthalene	20.65	128	2100408	108.0429	ug/L		100
101)	1,2,3-Trichlorobenzene	20.95	180	1268320	98.0924	ug/L		98

(#) = qualifier out of range (m) = manual integration
8M406484.D 8260WT.M Fri Jul 31 14:02:10 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406484.D Vial: 8
Acq On : 30 Jul 2015 17:33 Operator: TMB
Sample : WG533051-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

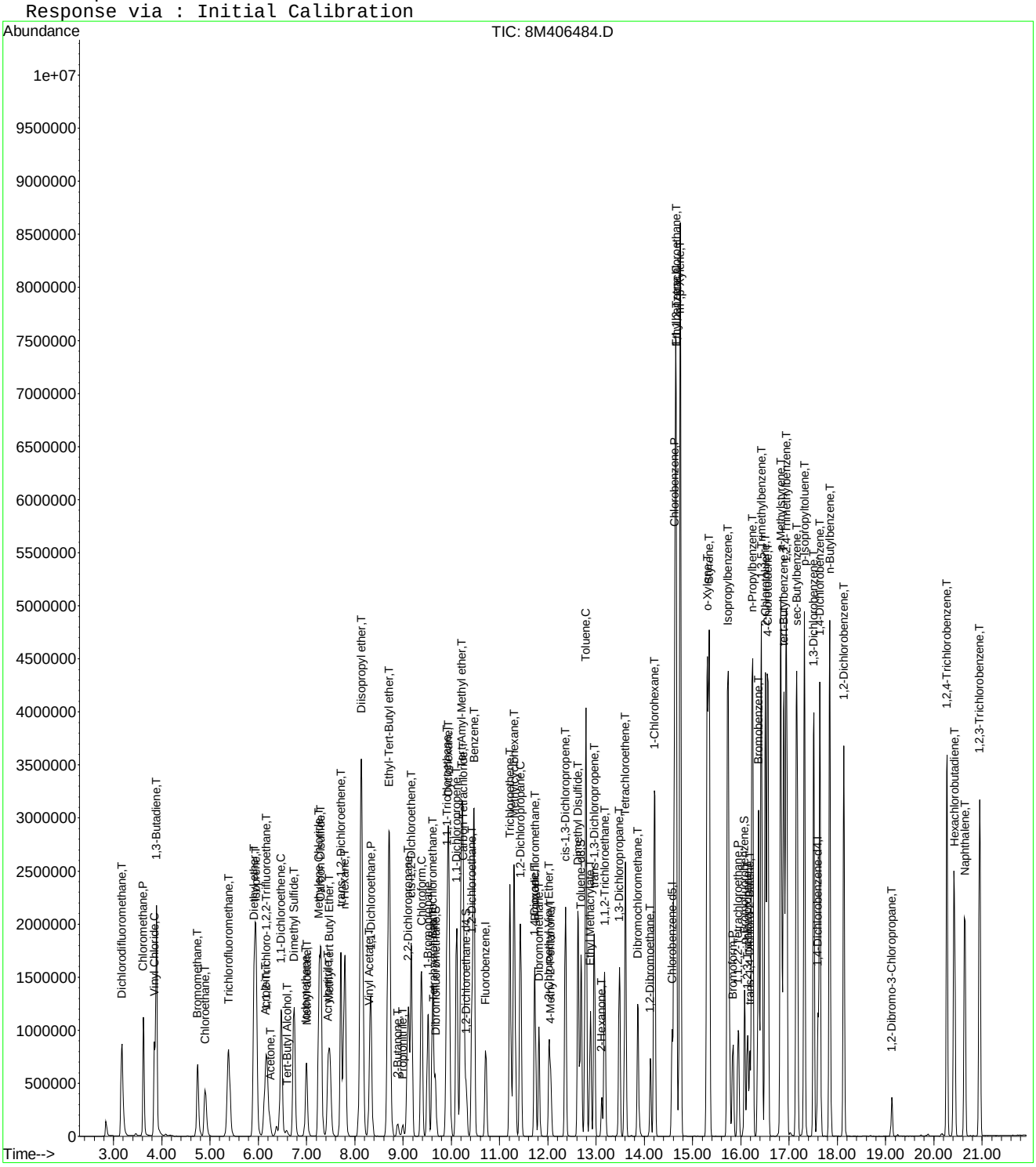

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406485.D Vial: 9
Acq On : 30 Jul 2015 18:01 Operator: TMB
Sample : WG533051-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:10 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	1040394	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	724738	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	397471	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	955134	104.1868 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 416.76%#		
43) 1,2-Dichloroethane-d4	10.31	65	925081	101.4755 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 405.92%#		
58) Toluene-d8	12.69	98	3399366	97.2311 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 388.92%#		
80) p-Bromofluorobenzene	16.08	95	1380717	100.4294 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 401.72%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	3311592	208.4174 ug/L	97
3) Chloromethane	3.62	50	3220138	181.5261 ug/L	97
4) Vinyl Chloride	3.85	62	2492880	191.0878 ug/L	98
5) 1,3-Butadiene	3.89	54	2199328	192.3060 ug/L	90
6) Bromomethane	4.74	94	1766615	203.3032 ug/L	98
7) Chloroethane	4.89	64	1624026	199.9372 ug/L	99
8) Trichlorofluoromethane	5.38	101	3499539	207.4561 ug/L	100
9) Diethyl ether	5.92	59	1482	0.2321 ug/L #	52
10) Isoprene	5.95	67	2748255	208.1580 ug/L	99
11) Acrolein	6.14	56	230	Below Cal #	12
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	1999365	207.5855 ug/L	99
13) Acetone	6.25	43	251669	191.8288 ug/L	89
14) 1,1-Dichloroethene	6.47	61	3348532	204.9261 ug/L	98
15) Tert-Butyl Alcohol	6.47	59	115167	334.2030 ug/L #	58
16) Dimethyl Sulfide	6.74	62	2093852	204.0993 ug/L	97
17) Iodomethane	6.99	142	2010247	197.5620 ug/L	100
18) Methyl acetate	7.00	43	994464	195.3386 ug/L	99
19) Methylene Chloride	7.26	84	2007363	192.8610 ug/L	99
20) Carbon Disulfide	7.30	76	6310743	189.1010 ug/L	97
21) Acrylonitrile	7.46	53	40607	18.6268 ug/L #	26
22) Methyl Tert Butyl Ether	7.48	73	3730350	202.9528 ug/L	97
23) trans-1,2-Dichloroethene	7.70	61	3169136	206.7979 ug/L	97
24) n-Hexane	7.79	57	3249384	196.1483 ug/L	99
26) Vinyl Acetate	8.30	43	1962793	206.3461 ug/L	99
27) 1,1-Dichloroethane	8.34	63	4074812	198.2512 ug/L	98
29) 2-Butanone	8.88	43	450663	202.8775 ug/L	99
30) Propionitrile	8.93	54	1013	1.4337 ug/L #	56
31) 2,2-Dichloropropane	9.11	77	3202826	202.2061 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	2245305	203.5882 ug/L	97
33) Chloroform	9.38	83	3657299	197.1681 ug/L	97
34) 1-Bromopropane	9.51	122	399971	204.0328 ug/L	98
35) Bromochloromethane	9.62	130	1126272	198.2581 ug/L	99
36) Tetrahydrofuran	9.65	42	781	0.5112 ug/L #	40
38) 1,1,1-Trichloroethane	9.92	97	3558174	207.9642 ug/L	100
39) Cyclohexane	9.95	56	4014231	201.1568 ug/L	99
40) 1,1-Dichloropropene	10.11	75	2934077	200.2917 ug/L	98
42) Carbon Tetrachloride	10.26	117	3202446	211.3916 ug/L	100
45) 1,2-Dichloroethane	10.42	62	2535974	204.1237 ug/L	99
46) Benzene	10.47	78	7129962	174.1172 ug/L	92
47) Trichloroethene	11.22	130	2119855	181.3703 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M406485.D 8260WT.M Fri Jul 31 14:02:11 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406485.D Vial: 9
Acq On : 30 Jul 2015 18:01 Operator: TMB
Sample : WG533051-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:10 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
48)	Methylcyclohexane	11.30	83	3333904	196.7026 ug/L		98
49)	1,2-Dichloropropane	11.44	63	2321617	204.6506 ug/L		100
50)	Bromodichloromethane	11.73	83	2863290	203.3727 ug/L		98
51)	1,4-Dioxane	11.73	88	7313	183.3079 ug/L	#	42
52)	Dibromomethane	11.82	93	1057674	203.8094 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	971763	205.0732 ug/L		99
54)	4-Methyl-2-Pentanone	12.06	58	434877	206.7410 ug/L		98
55)	cis-1,3-Dichloropropene	12.37	75	3117841	201.1908 ug/L		96
56)	Dimethyl Disulfide	12.63	79	1770920	210.9322 ug/L		97
59)	Toluene	12.79	91	7346526	173.4585 ug/L		90
60)	Ethyl Methacrylate	12.88	69	1733386	214.4346 ug/L		98
62)	trans-1,3-Dichloropropene	12.97	75	2638443	210.6011 ug/L		98
63)	1,1,2-Trichloroethane	13.18	97	1375417	207.2273 ug/L		99
64)	2-Hexanone	13.12	58	396773	211.6123 ug/L	#	94
65)	1,3-Dichloropropane	13.48	76	2364848	204.7189 ug/L		98
66)	Tetrachloroethene	13.61	164	1792548	200.7390 ug/L		99
67)	Dibromochloromethane	13.87	129	1893932	216.6166 ug/L		99
68)	1,2-Dibromoethane	14.13	107	1353003	209.6556 ug/L		100
69)	1-Chlorohexane	14.21	91	2929109	195.6954 ug/L		97
70)	Chlorobenzene	14.63	112	5005557	184.5862 ug/L		93
71)	1,1,1,2-Tetrachloroethane	14.66	131	2071416	215.0229 ug/L		99
72)	Ethylbenzene	14.65	106	3010230	196.6548 ug/L		72
73)	m-,p-Xylene	14.75	106	6405975	354.1518 ug/L		70
74)	o-Xylene	15.30	106	3538965	198.8053 ug/L		84
75)	Styrene	15.35	104	5528100	190.1421 ug/L		91
76)	Bromoform	15.84	173	1151383	219.0274 ug/L		99
77)	Isopropylbenzene	15.73	105	7826297	175.6197 ug/L		89
79)	1,1,2,2-Tetrachloroethane	15.95	83	1541509	213.4512 ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	423906	209.1164 ug/L		94
82)	trans-1,4-Dichloro-2-Buten	16.18	53	559393	196.1276 ug/L		97
83)	n-Propylbenzene	16.23	91	9019678	154.1273 ug/L		86
84)	Bromobenzene	16.37	156	2284366	192.7125 ug/L		98
85)	1,3,5-Trimethylbenzene	16.43	105	7016916	181.6167 ug/L		90
86)	2-Chlorotoluene	16.51	91	6618013	185.1414 ug/L		93
87)	4-Chlorotoluene	16.56	91	5964330	175.0921 ug/L		89
88)	a-Methylstyrene	16.83	118	4119431	196.3367 ug/L		95
89)	tert-Butylbenzene	16.90	134	1671119	199.6472 ug/L		87
90)	1,2,4-Trimethylbenzene	16.95	105	7021954	179.3824 ug/L		88
91)	sec-Butylbenzene	17.17	105	8237897	172.8090 ug/L		89
92)	p-Isopropyltoluene	17.32	119	7266674	177.2563 ug/L		90
93)	1,3-Dichlorobenzene	17.52	146	4318785	185.7993 ug/L		95
94)	1,4-Dichlorobenzene	17.64	146	4277939	178.5379 ug/L		97
95)	n-Butylbenzene	17.85	91	7108277	179.8165 ug/L		91
96)	1,2-Dichlorobenzene	18.14	146	3887769	189.4407 ug/L		95
97)	1,2-Dibromo-3-Chloropropan	19.13	75	276298	218.5299 ug/L		95
98)	1,2,4-Trichlorobenzene	20.28	180	3070768	194.4400 ug/L		99
99)	Hexachlorobutadiene	20.42	225	1550628	192.9484 ug/L		98
100)	Naphthalene	20.64	128	4400286	214.7458 ug/L		98
101)	1,2,3-Trichlorobenzene	20.95	180	2641708	193.8396 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M406485.D 8260WT.M Fri Jul 31 14:02:11 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406485.D Vial: 9
Acq On : 30 Jul 2015 18:01 Operator: TMB
Sample : WG533051-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

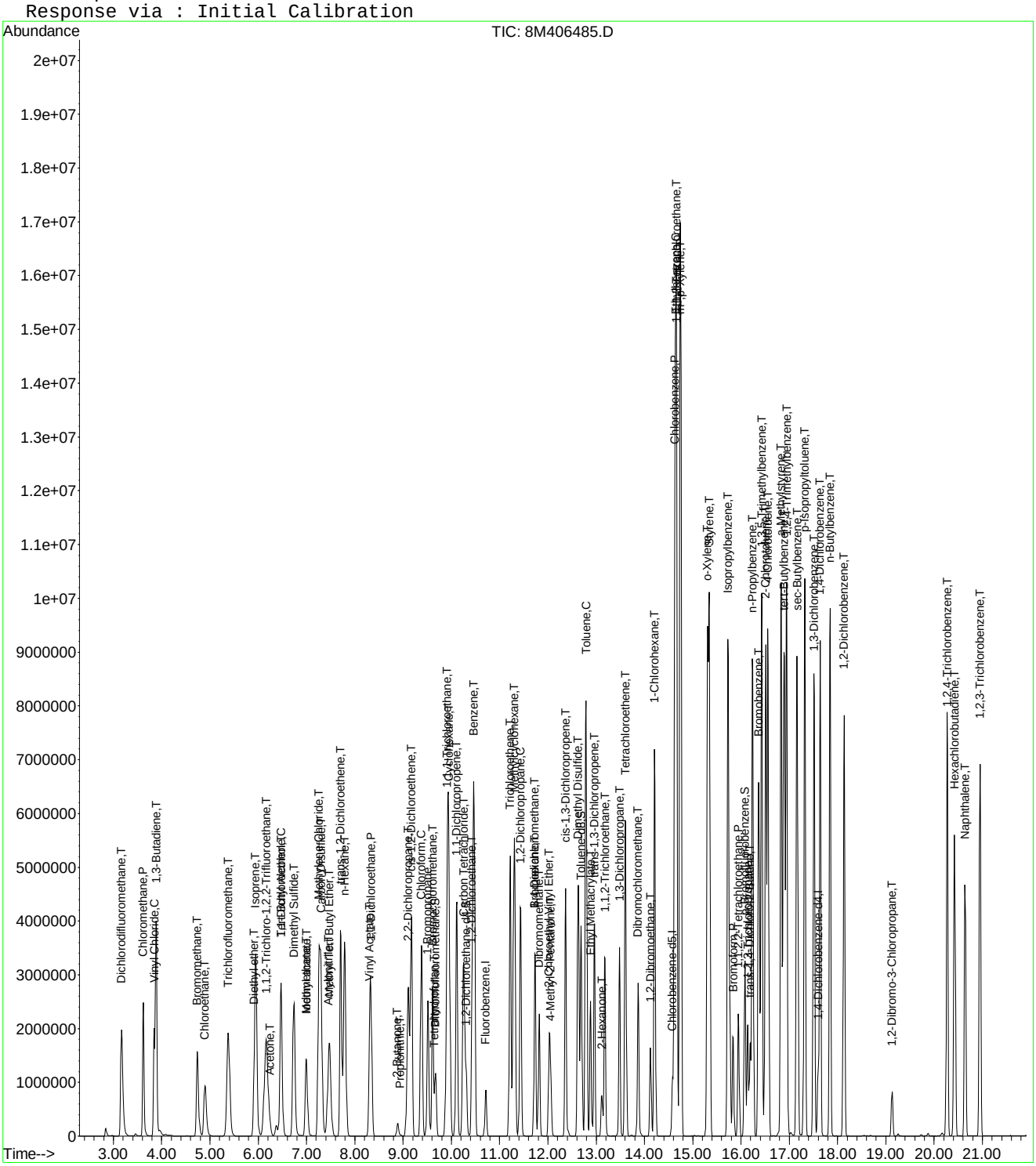

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406486.D Vial: 10
Acq On : 30 Jul 2015 18:29 Operator: TMB
Sample : WG533051-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:12 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	1028584	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	729846	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	400318	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	1523750	168.1203 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 672.48%#		
43) 1,2-Dichloroethane-d4	10.31	65	1500807	166.5192 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 666.08%#		
58) Toluene-d8	12.69	98	5162645	146.6321 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 586.52%#		
80) p-Bromofluorobenzene	16.08	95	2188157	158.0284 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 632.12%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	5117633	325.7800 ug/L	96
3) Chloromethane	3.62	50	4732198	269.8271 ug/L	94
4) Vinyl Chloride	3.85	62	3785878	293.5325 ug/L	95
5) 1,3-Butadiene	3.89	54	3316393	293.3100 ug/L	89
6) Bromomethane	4.74	94	2881777	335.4445 ug/L	98
7) Chloroethane	4.89	64	2610645	325.0921 ug/L	99
8) Trichlorofluoromethane	5.38	101	5765049	345.6818 ug/L	100
9) Diethyl ether	5.92	59	2065500	327.2033 ug/L	98
10) Isoprene	5.95	67	4331415	331.8364 ug/L	97
11) Acrolein	6.14	56	71709	150.4913 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	3194012	335.4281 ug/L	99
13) Acetone	6.25	43	397743	306.6513 ug/L	86
14) 1,1-Dichloroethene	6.47	61	5316346	329.0897 ug/L	96
15) Tert-Butyl Alcohol	6.60	59	224020	657.5476 ug/L	99
16) Dimethyl Sulfide	6.74	62	3335527	328.8653 ug/L	98
17) Iodomethane	6.99	142	3067351	304.4378 ug/L	99
18) Methyl acetate	7.00	43	1728968	343.5137 ug/L	100
19) Methylene Chloride	7.26	84	3154514	306.5554 ug/L	97
20) Carbon Disulfide	7.30	76	9369568	283.9822 ug/L	95
21) Acrylonitrile	7.45	53	419964	194.8536 ug/L	97
22) Methyl Tert Butyl Ether	7.48	73	6031202	331.9001 ug/L	96
23) trans-1,2-Dichloroethene	7.70	61	4927650	325.2394 ug/L	97
24) n-Hexane	7.79	57	5114139	312.2584 ug/L	99
25) Diisopropyl ether	8.14	45	10690367	290.5718 ug/L	96
26) Vinyl Acetate	8.30	43	2722389	289.4876 ug/L	99
27) 1,1-Dichloroethane	8.33	63	6249418	307.5431 ug/L	96
28) Ethyl-Tert-Butyl ether	8.71	59	8582411	312.6635 ug/L	96
29) 2-Butanone	8.89	43	751998	342.4181 ug/L	99
30) Propionitrile	9.00	54	247681	354.5725 ug/L	99
31) 2,2-Dichloropropane	9.11	77	5088250	324.9282 ug/L	97
32) cis-1,2-Dichloroethene	9.17	96	3483978	319.5294 ug/L	98
33) Chloroform	9.38	83	5576785	304.1012 ug/L	95
34) 1-Bromopropane	9.51	122	640622	330.5456 ug/L	99
35) Bromochloromethane	9.62	130	1763334	313.9643 ug/L	100
36) Tetrahydrofuran	9.64	42	516131	341.6878 ug/L	98
38) 1,1,1-Trichloroethane	9.92	97	5610901	331.7050 ug/L	99
39) Cyclohexane	9.95	56	6231793	315.8664 ug/L	99
40) 1,1-Dichloropropene	10.11	75	4572229	315.7021 ug/L	97
41) Tert-Amyl-Methyl ether	10.22	73	6529096	317.7507 ug/L	97
42) Carbon Tetrachloride	10.26	117	5060847	337.8992 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M406486.D 8260WT.M Fri Jul 31 14:02:12 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406486.D Vial: 10
Acq On : 30 Jul 2015 18:29 Operator: TMB
Sample : WG533051-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:12 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	4000729	325.7210	ug/L		98
46)	Benzene	10.46	78	9875498	243.9336	ug/L		85
47)	Trichloroethene	11.22	130	3333538	288.4851	ug/L		98
48)	Methylcyclohexane	11.30	83	5208570	310.8376	ug/L		97
49)	1,2-Dichloropropane	11.44	63	3586239	319.7568	ug/L		98
50)	Bromodichloromethane	11.74	83	4433850	318.5417	ug/L		97
51)	1,4-Dioxane	11.73	88	27597	699.6900	ug/L		83
52)	Dibromomethane	11.82	93	1700087	331.3612	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.03	63	1554095	331.7296	ug/L		98
54)	4-Methyl-2-Pentanone	12.06	58	705495	339.2440	ug/L		99
55)	cis-1,3-Dichloropropene	12.37	75	4762357	310.8380	ug/L		94
56)	Dimethyl Disulfide	12.63	79	2806438	338.1096	ug/L		95
59)	Toluene	12.79	91	9877956	231.5957	ug/L		83
60)	Ethyl Methacrylate	12.88	69	2760219	339.0727	ug/L		99
62)	trans-1,3-Dichloropropene	12.97	75	4102405	325.1631	ug/L		95
63)	1,1,2-Trichloroethane	13.18	97	2171921	324.9424	ug/L		99
64)	2-Hexanone	13.12	58	650699	344.6107	ug/L	#	92
65)	1,3-Dichloropropane	13.48	76	3646600	313.4676	ug/L		99
66)	Tetrachloroethene	13.61	164	2834870	315.2419	ug/L		99
67)	Dibromochloromethane	13.87	129	2977513	338.1666	ug/L		98
68)	1,2-Dibromoethane	14.12	107	2126044	327.1370	ug/L		100
69)	1-Chlorohexane	14.22	91	4484324	297.5033	ug/L		94
70)	Chlorobenzene	14.63	112	7166893	262.4386	ug/L		86
71)	1,1,1,2-Tetrachloroethane	14.66	131	3261834	336.2243	ug/L		99
72)	Ethylbenzene	14.66	106	4621120	299.7795	ug/L		53
73)	m-,p-Xylene	14.74	106	8870609	486.9759	ug/L		59
74)	o-Xylene	15.31	106	5313519	296.4038	ug/L		73
75)	Styrene	15.34	104	7831227	267.4742	ug/L		82
76)	Bromoform	15.84	173	1835375	346.6995	ug/L		99
77)	Isopropylbenzene	15.74	105	10435377	232.5278	ug/L		79
79)	1,1,2,2-Tetrachloroethane	15.94	83	2343040	322.1310	ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	686174	336.0880	ug/L		96
82)	trans-1,4-Dichloro-2-Buten	16.19	53	917720	318.9702	ug/L		94
83)	n-Propylbenzene	16.24	91	11456032	194.3672	ug/L	#	73
84)	Bromobenzene	16.37	156	3483406	291.7753	ug/L		97
85)	1,3,5-Trimethylbenzene	16.43	105	9500295	244.1445	ug/L		82
86)	2-Chlorotoluene	16.51	91	8751876	243.0958	ug/L		85
87)	4-Chlorotoluene	16.56	91	8272493	241.1246	ug/L		80
88)	a-Methylstyrene	16.83	118	6080021	287.7198	ug/L		91
89)	tert-Butylbenzene	16.90	134	2596133	307.9520	ug/L		79
90)	1,2,4-Trimethylbenzene	16.95	105	9434588	239.3014	ug/L		78
91)	sec-Butylbenzene	17.16	105	10777038	224.4655	ug/L	#	79
92)	p-Isopropyltoluene	17.32	119	9679217	234.4264	ug/L		81
93)	1,3-Dichlorobenzene	17.52	146	6256898	267.2648	ug/L		89
94)	1,4-Dichlorobenzene	17.64	146	6127643	253.9157	ug/L		91
95)	n-Butylbenzene	17.85	91	9371345	235.3789	ug/L	#	82
96)	1,2-Dichlorobenzene	18.14	146	5678643	274.7373	ug/L		90
97)	1,2-Dibromo-3-Chloropropan	19.13	75	435677	342.1355	ug/L		95
98)	1,2,4-Trichlorobenzene	20.28	180	4516301	283.9369	ug/L		98
99)	Hexachlorobutadiene	20.42	225	2425051	299.6089	ug/L		97
100)	Naphthalene	20.64	128	6344214	307.4127	ug/L		95
101)	1,2,3-Trichlorobenzene	20.95	180	3945194	287.4262	ug/L		98

(#) = qualifier out of range (m) = manual integration
8M406486.D 8260WT.M Fri Jul 31 14:02:12 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406486.D Vial: 10
Acq On : 30 Jul 2015 18:29 Operator: TMB
Sample : WG533051-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

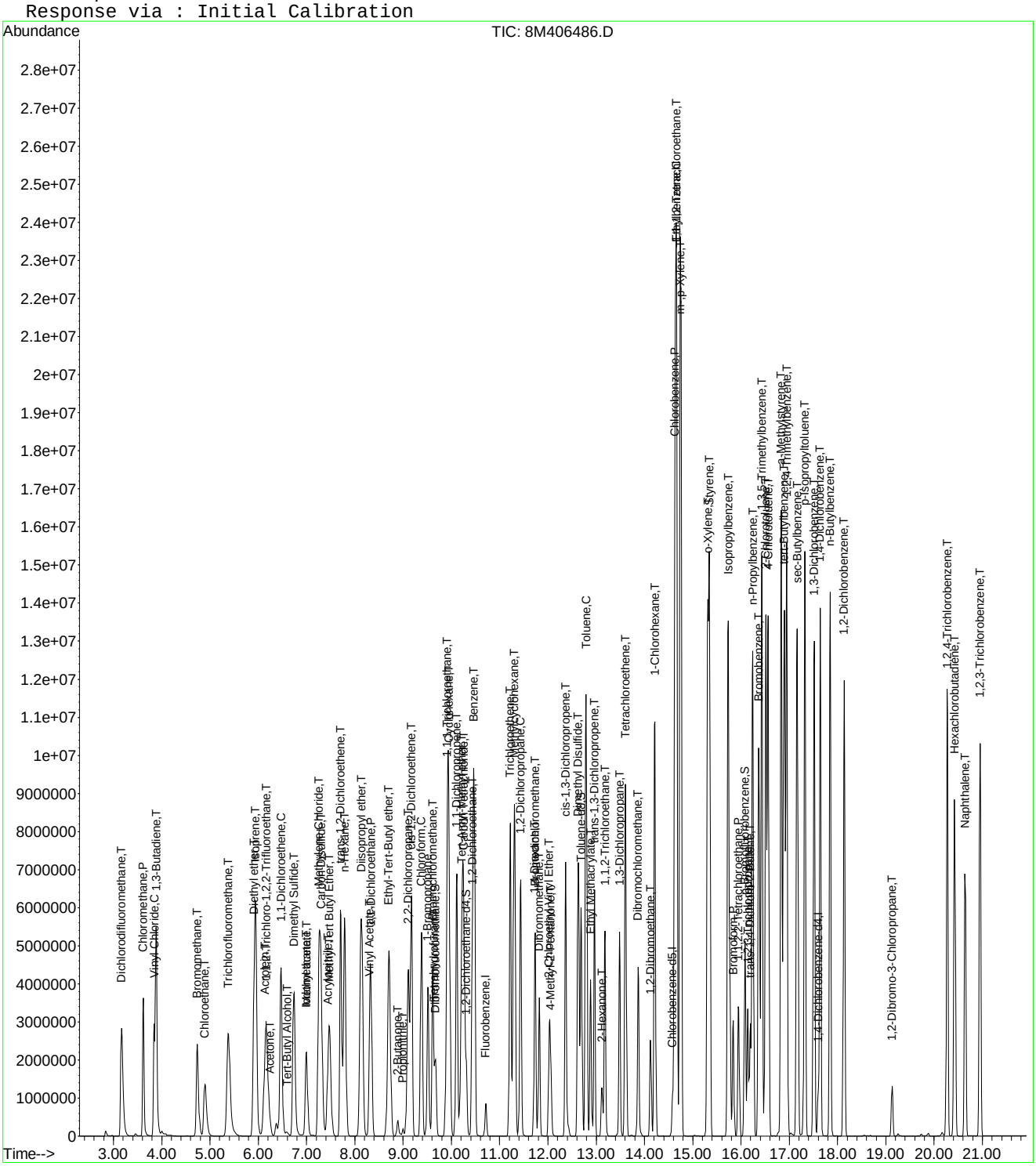

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406490.D Vial: 14
Acq On : 30 Jul 2015 20:22 Operator: TMB
Sample : WG533051-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:13 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	1008944	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	720402	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	380793	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	12.69	98	983	0.0283 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.12%#	
80) p-Bromofluorobenzene	16.08	95	326	0.0248 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.08%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	4543	0.2948 ug/L	95
3) Chloromethane	3.62	50	6070	0.3528 ug/L #	35
4) Vinyl Chloride	3.85	62	4674	0.3694 ug/L	98
5) 1,3-Butadiene	3.90	54	4380	0.3949 ug/L #	39
6) Bromomethane	4.74	94	2512	0.2981 ug/L	87
7) Chloroethane	4.90	64	2354	0.2988 ug/L #	43
8) Trichlorofluoromethane	5.37	101	4252	0.2599 ug/L #	92
10) Isoprene	5.96	67	3719	0.2905 ug/L	83
12) 1,1,2-Trichloro-1,2,2-Trif	6.19	101	2539	0.2718 ug/L #	46
13) Acetone	6.26	43	1060	0.8331 ug/L #	48
14) 1,1-Dichloroethene	6.47	61	5948	0.3754 ug/L	85
16) Dimethyl Sulfide	6.74	62	2808	0.2822 ug/L	100
17) Iodomethane	7.00	142	2256	1.1018 ug/L #	70
18) Methyl acetate	7.01	43	910	0.1843 ug/L #	64
19) Methylene Chloride	7.27	84	4210	0.4171 ug/L	96
20) Carbon Disulfide	7.30	76	14225	0.4395 ug/L	96
22) Methyl Tert Butyl Ether	7.49	73	4586	0.2573 ug/L #	67
23) trans-1,2-Dichloroethene	7.72	61	4895	0.3294 ug/L	73
24) n-Hexane	7.79	57	6977	0.4343 ug/L	90
26) Vinyl Acetate	8.30	43	2618	0.2838 ug/L #	77
27) 1,1-Dichloroethane	8.34	63	5973	0.2997 ug/L #	89
31) 2,2-Dichloropropane	9.12	77	4517	0.2941 ug/L #	70
32) cis-1,2-Dichloroethene	9.17	96	3851	0.3601 ug/L	65
33) Chloroform	9.38	83	5188	0.2884 ug/L	95
35) Bromochloromethane	9.62	130	1196	0.2171 ug/L	79
36) Tetrahydrofuran	9.65	42	429	0.2895 ug/L #	40
38) 1,1,1-Trichloroethane	9.92	97	4248	0.2560 ug/L	95
39) Cyclohexane	9.95	56	5790	0.2992 ug/L #	93
40) 1,1-Dichloropropene	10.10	75	4587	0.3229 ug/L	95
42) Carbon Tetrachloride	10.26	117	3801	0.2587 ug/L	80
45) 1,2-Dichloroethane	10.42	62	3893	0.3231 ug/L #	83
46) Benzene	10.48	78	13718	0.3454 ug/L	96
47) Trichloroethene	11.22	130	5579	0.4922 ug/L	88
48) Methylcyclohexane	11.31	83	6507	0.3959 ug/L	91
49) 1,2-Dichloropropane	11.44	63	2823	0.2566 ug/L	96
50) Bromodichloromethane	11.73	83	3594	0.2632 ug/L #	96
52) Dibromomethane	11.82	93	1790	0.3557 ug/L	91
53) 2-Chloroethyl Vinyl Ether	12.03	63	851	0.1852 ug/L #	53
55) cis-1,3-Dichloropropene	12.37	75	4421	0.2942 ug/L	98
56) Dimethyl Disulfide	12.62	79	1705	0.2094 ug/L	90

(#) = qualifier out of range (m) = manual integration
8M406490.D 8260WT.M Fri Jul 31 14:02:13 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406490.D Vial: 14
Acq On : 30 Jul 2015 20:22 Operator: TMB
Sample : WG533051-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:13 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
59)	Toluene	12.79	91	14603	0.3469 ug/L		96
60)	Ethyl Methacrylate	12.89	69	1978	0.2462 ug/L		93
62)	trans-1,3-Dichloropropene	12.97	75	3988	0.3202 ug/L		92
63)	1,1,2-Trichloroethane	13.18	97	2047	0.3103 ug/L		84
65)	1,3-Dichloropropane	13.47	76	3431	0.2988 ug/L		98
66)	Tetrachloroethene	13.62	164	3148	0.3547 ug/L		92
67)	Dibromochloromethane	13.87	129	2780	0.3199 ug/L		79
68)	1,2-Dibromoethane	14.13	107	1842	0.2871 ug/L		94
69)	1-Chlorohexane	14.22	91	4991	0.3355 ug/L		87
70)	Chlorobenzene	14.63	112	9008	0.3342 ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.65	131	2729	0.2850 ug/L		98
72)	Ethylbenzene	14.65	106	5606	0.3684 ug/L		87
73)	m-,p-Xylene	14.75	106	12100	0.6730 ug/L		97
74)	o-Xylene	15.30	106	5696	0.3219 ug/L		97
75)	Styrene	15.35	104	8917	0.3086 ug/L		92
76)	Bromoform	15.84	173	1357	0.2597 ug/L	#	39
77)	Isopropylbenzene	15.73	105	14415	0.3254 ug/L		98
79)	1,1,2,2-Tetrachloroethane	15.96	83	1905	0.2753 ug/L	#	86
81)	1,2,3-Trichloropropane	16.14	110	272	0.1401 ug/L	#	1
82)	trans-1,4-Dichloro-2-Buten	16.18	53	534	0.9919 ug/L	#	1
83)	n-Propylbenzene	16.24	91	20221	0.3607 ug/L		99
84)	Bromobenzene	16.36	156	3909	0.3442 ug/L		94
85)	1,3,5-Trimethylbenzene	16.42	105	13127	0.3546 ug/L		100
86)	2-Chlorotoluene	16.51	91	13411	0.3916 ug/L		94
87)	4-Chlorotoluene	16.56	91	13020	0.3990 ug/L		84
88)	a-Methylstyrene	16.83	118	5920	0.2945 ug/L		94
89)	tert-Butylbenzene	16.90	134	2558	0.3190 ug/L		90
90)	1,2,4-Trimethylbenzene	16.94	105	13142	0.3504 ug/L		83
91)	sec-Butylbenzene	17.16	105	16120	0.3530 ug/L		94
92)	p-Isopropyltoluene	17.32	119	15239	0.3880 ug/L		94
93)	1,3-Dichlorobenzene	17.52	146	8224	0.3693 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	8297	0.3614 ug/L	#	66
95)	n-Butylbenzene	17.85	91	14908	0.3936 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	6345	0.3227 ug/L		89
97)	1,2-Dibromo-3-Chloropropan	19.12	75	468	0.3864 ug/L	#	1
98)	1,2,4-Trichlorobenzene	20.27	180	6486	0.4287 ug/L		95
99)	Hexachlorobutadiene	20.42	225	3955	0.5137 ug/L		85
100)	Naphthalene	20.64	128	6840	0.3484 ug/L		97
101)	1,2,3-Trichlorobenzene	20.95	180	4318	0.3307 ug/L		80

(#) = qualifier out of range (m) = manual integration
8M406490.D 8260WT.M Fri Jul 31 14:02:13 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406490.D Vial: 14
Acq On : 30 Jul 2015 20:22 Operator: TMB
Sample : WG533051-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

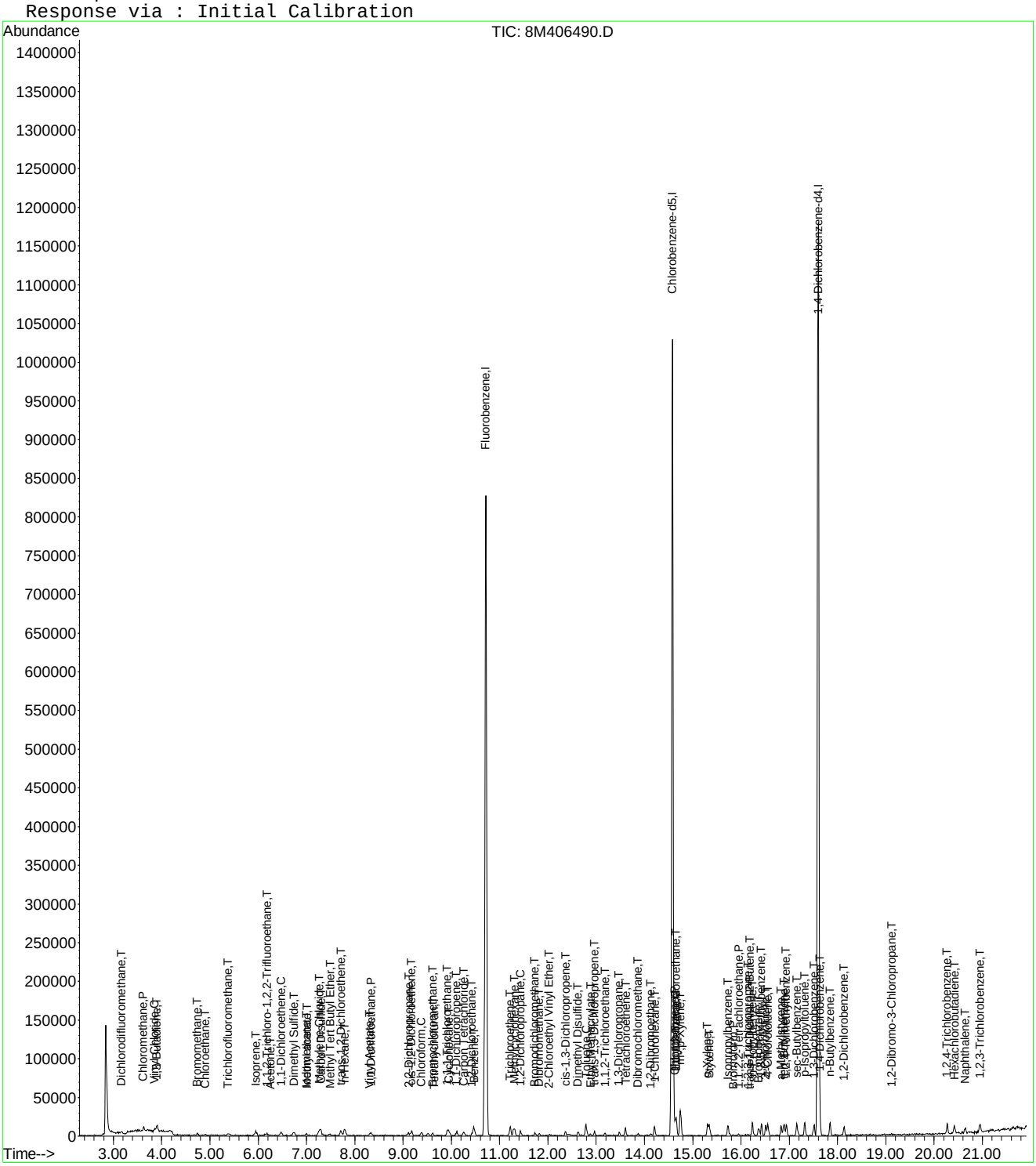

8M406490.D 8260WT.M Fri Jul 31 14:02:14 2015 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\073015\8M406490.D Vial: 14
Acq On : 30 Jul 2015 20:22 Operator: TMB
Sample : WG533051-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2948	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.3528	0.0	100	0.00
4	C	Vinyl Chloride	0.3000	0.3695	-23.2#	100	0.00
5	T	1,3-Butadiene	-1.0000	0.3949	0.0	100	0.01
6	T	Bromomethane	-1.0000	0.2981	0.0	100	0.00
7	T	Chloroethane	-1.0000	0.2988	0.0	100	0.00
8	T	Trichlorofluoromethane	-1.0000	0.2599	0.0	100	-0.02
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.91#
10	T	Isoprene	-1.0000	0.2905	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.15#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2718	0.0	100	0.02
13	T	Acetone	-1.0000	0.8331	0.0	100	0.01
14	C	1,1-Dichloroethene	-1.0000	0.3754	0.0	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.59#
16	T	Dimethyl Sulfide	-1.0000	0.2822	0.0	100	0.00
17	T	Iodomethane	-1.0000	1.1018	0.0	0	0.01
18	T	Methyl acetate	-1.0000	0.1843	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4171	0.0	100	0.01
20	T	Carbon Disulfide	-1.0000	0.4395	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.44#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2573	0.0	100	0.01
23	T	trans-1,2-Dichloroethene	-1.0000	0.3294	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.4343	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.14#
26	T	Vinyl Acetate	-1.0000	0.2838	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.2997	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.89#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.00#
31	T	2,2-Dichloropropane	-1.0000	0.2941	0.0	100	0.01
32	T	cis-1,2-Dichloroethene	-1.0000	0.3601	0.0	100	0.00
33	C	Chloroform	0.3000	0.2884	3.9	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.52#
35	T	Bromochloromethane	-1.0000	0.2171	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.2895	0.0	100	0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	-1.0000	0.2560	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.2992	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.3229	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.22#
42	T	Carbon Tetrachloride	-1.0000	0.2587	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	-1.0000	0.3231	0.0	100	0.00
46	T	Benzene	0.3000	0.3454	-15.1	100	0.00
47	T	Trichloroethene	-1.0000	0.4922	0.0	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3959	0.0	100	0.01
49	C	1,2-Dichloropropane	-1.0000	0.2566	0.0	100	0.00
50	T	Bromodichloromethane	-1.0000	0.2632	0.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	-1.0000	0.3557	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1852	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.07#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\073015\8M406490.D Vial: 14
Acq On : 30 Jul 2015 20:22 Operator: TMB
Sample : WG533051-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.2942	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2094	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0283	0.0	100	0.00
59	C	Toluene	-1.0000	0.3469	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2462	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3202	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.3103	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	-1.0000	0.2988	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.3547	0.0	100	0.01
67	T	Dibromochloromethane	-1.0000	0.3199	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.2871	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.3355	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.3342	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.2850	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.3684	0.0	100	0.00
73	T	m-,p-Xylene	-1.0000	0.6730	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.3219	0.0	100	0.00
75	T	Styrene	-1.0000	0.3086	0.0	100	0.00
76	P	Bromoform	-1.0000	0.2597	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.3254	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2753	0.0	100	0.01
80	S	p-Bromofluorobenzene	-1.0000	0.0248	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.1401	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.9919	0.0	0	0.00
83	T	n-Propylbenzene	-1.0000	0.3607	0.0	0	0.00
84	T	Bromobenzene	0.3000	0.3442	-14.7	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.3546	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.3916	0.0	100	0.00
87	T	4-Chlorotoluene	-1.0000	0.3990	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2945	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3190	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.3504	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3530	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.3880	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.3693	0.0	100	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.3614	-20.5	100	0.00
95	T	n-Butylbenzene	-1.0000	0.3936	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.3227	-7.6	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.3864	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	-1.0000	0.4287	0.0	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.5137	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.3484	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.3307	-10.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1
8M406490.D 8260WT.M Fri Jul 31 14:02:28 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406491.D Vial: 15
Acq On : 30 Jul 2015 20:51 Operator: TMB
Sample : WG533051-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:14 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	981988	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	699821	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	372451	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	12.68	98	213	0.0063 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.04%#	
80) p-Bromofluorobenzene	16.08	95	483	0.0375 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.16%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	5792	0.3862 ug/L	92
3) Chloromethane	3.63	50	9042	0.5400 ug/L #	53
4) Vinyl Chloride	3.85	62	5127	0.4164 ug/L	98
5) 1,3-Butadiene	3.91	54	4317	0.3999 ug/L #	60
6) Bromomethane	4.74	94	3296	0.4019 ug/L	92
7) Chloroethane	4.91	64	3096	0.4038 ug/L #	61
8) Trichlorofluoromethane	5.37	101	6112	0.3839 ug/L #	92
10) Isoprene	5.94	67	4151	0.3331 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.18	101	3248	0.3573 ug/L	97
13) Acetone	6.24	43	1636	1.3212 ug/L #	48
14) 1,1-Dichloroethene	6.47	61	6101	0.3956 ug/L	88
16) Dimethyl Sulfide	6.75	62	3496	0.3610 ug/L	97
17) Iodomethane	6.99	142	2328	1.1155 ug/L	87
18) Methyl acetate	7.01	43	1699	0.3536 ug/L #	64
19) Methylene Chloride	7.26	84	4441	0.4521 ug/L	90
20) Carbon Disulfide	7.30	76	16637	0.5282 ug/L	98
22) Methyl Tert Butyl Ether	7.48	73	5955	0.3433 ug/L #	73
23) trans-1,2-Dichloroethene	7.70	61	5685	0.3930 ug/L	82
24) n-Hexane	7.79	57	7224	0.4620 ug/L	92
26) Vinyl Acetate	8.32	43	3001	0.3343 ug/L #	77
27) 1,1-Dichloroethane	8.34	63	7741	0.3990 ug/L	90
29) 2-Butanone	8.91	43	463	0.2208 ug/L #	57
31) 2,2-Dichloropropane	9.11	77	5224	0.3494 ug/L #	67
32) cis-1,2-Dichloroethene	9.18	96	3573	0.3432 ug/L	91
33) Chloroform	9.38	83	7455	0.4258 ug/L	89
35) Bromochloromethane	9.61	130	2065	0.3851 ug/L	94
36) Tetrahydrofuran	9.63	42	202	0.1401 ug/L #	40
38) 1,1,1-Trichloroethane	9.92	97	5545	0.3434 ug/L	94
39) Cyclohexane	9.94	56	7293	0.3872 ug/L	92
40) 1,1-Dichloropropene	10.10	75	6059	0.4382 ug/L	89
42) Carbon Tetrachloride	10.24	117	5004	0.3500 ug/L	97
45) 1,2-Dichloroethane	10.42	62	4821	0.4111 ug/L	91
46) Benzene	10.46	78	16612	0.4298 ug/L	92
47) Trichloroethene	11.22	130	5775	0.5235 ug/L	95
48) Methylcyclohexane	11.31	83	7747	0.4843 ug/L	94
49) 1,2-Dichloropropane	11.44	63	3675	0.3432 ug/L	98
50) Bromodichloromethane	11.72	83	4746	0.3571 ug/L #	95
52) Dibromomethane	11.82	93	1868	0.3814 ug/L	87
53) 2-Chloroethyl Vinyl Ether	12.03	63	1396	0.3121 ug/L #	53
55) cis-1,3-Dichloropropene	12.37	75	5826	0.3983 ug/L	92

(#) = qualifier out of range (m) = manual integration
8M406491.D 8260WT.M Fri Jul 31 14:02:14 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406491.D Vial: 15
Acq On : 30 Jul 2015 20:51 Operator: TMB
Sample : WG533051-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:14 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
56)	Dimethyl Disulfide	12.62	79	1737	0.2192	ug/L		78
59)	Toluene	12.79	91	19337	0.4728	ug/L		99
60)	Ethyl Methacrylate	12.89	69	2609	0.3342	ug/L		94
62)	trans-1,3-Dichloropropene	12.96	75	3967	0.3279	ug/L		85
63)	1,1,2-Trichloroethane	13.19	97	2460	0.3838	ug/L		87
65)	1,3-Dichloropropane	13.49	76	4041	0.3623	ug/L		97
66)	Tetrachloroethene	13.60	164	3390	0.3931	ug/L		99
67)	Dibromochloromethane	13.86	129	3049	0.3611	ug/L		100
68)	1,2-Dibromoethane	14.13	107	2175	0.3490	ug/L		80
69)	1-Chlorohexane	14.21	91	6587	0.4558	ug/L		78
70)	Chlorobenzene	14.63	112	10900	0.4163	ug/L		86
71)	1,1,1,2-Tetrachloroethane	14.66	131	3091	0.3323	ug/L		92
72)	Ethylbenzene	14.66	106	5826	0.3942	ug/L		94
73)	m-,p-Xylene	14.74	106	14777	0.8460	ug/L		92
74)	o-Xylene	15.31	106	7575	0.4407	ug/L		91
75)	Styrene	15.34	104	11258	0.4010	ug/L		99
76)	Bromoform	15.84	173	1447	0.2851	ug/L		95
77)	Isopropylbenzene	15.73	105	18387	0.4273	ug/L		92
79)	1,1,2,2-Tetrachloroethane	15.94	83	2308	0.3411	ug/L	#	90
81)	1,2,3-Trichloropropane	16.15	110	486	0.2559	ug/L	#	1
82)	trans-1,4-Dichloro-2-Buten	16.19	53	794	1.0932	ug/L	#	1
83)	n-Propylbenzene	16.24	91	24368	0.4444	ug/L		97
84)	Bromobenzene	16.37	156	4461	0.4016	ug/L		92
85)	1,3,5-Trimethylbenzene	16.43	105	15495	0.4280	ug/L		95
86)	2-Chlorotoluene	16.51	91	13796	0.4119	ug/L		97
87)	4-Chlorotoluene	16.55	91	14914	0.4672	ug/L		99
88)	a-Methylstyrene	16.83	118	7575	0.3853	ug/L		88
89)	tert-Butylbenzene	16.90	134	3120	0.3978	ug/L		97
90)	1,2,4-Trimethylbenzene	16.94	105	15362	0.4188	ug/L		99
91)	sec-Butylbenzene	17.16	105	20922	0.4684	ug/L		94
92)	p-Isopropyltoluene	17.32	119	16439	0.4279	ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	9884	0.4538	ug/L		98
94)	1,4-Dichlorobenzene	17.64	146	10851	0.4833	ug/L		80
95)	n-Butylbenzene	17.84	91	19783	0.5341	ug/L		98
96)	1,2-Dichlorobenzene	18.13	146	7878	0.4097	ug/L		94
97)	1,2-Dibromo-3-Chloropropan	19.13	75	335	0.2828	ug/L	#	1
98)	1,2,4-Trichlorobenzene	20.27	180	7047	0.4762	ug/L		93
99)	Hexachlorobutadiene	20.43	225	3518	0.4672	ug/L		98
100)	Naphthalene	20.65	128	6798	0.3540	ug/L		95
101)	1,2,3-Trichlorobenzene	20.96	180	6241	0.4887	ug/L		92

(#) = qualifier out of range (m) = manual integration
8M406491.D 8260WT.M Fri Jul 31 14:02:14 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406491.D Vial: 15
Acq On : 30 Jul 2015 20:51 Operator: TMB
Sample : WG533051-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

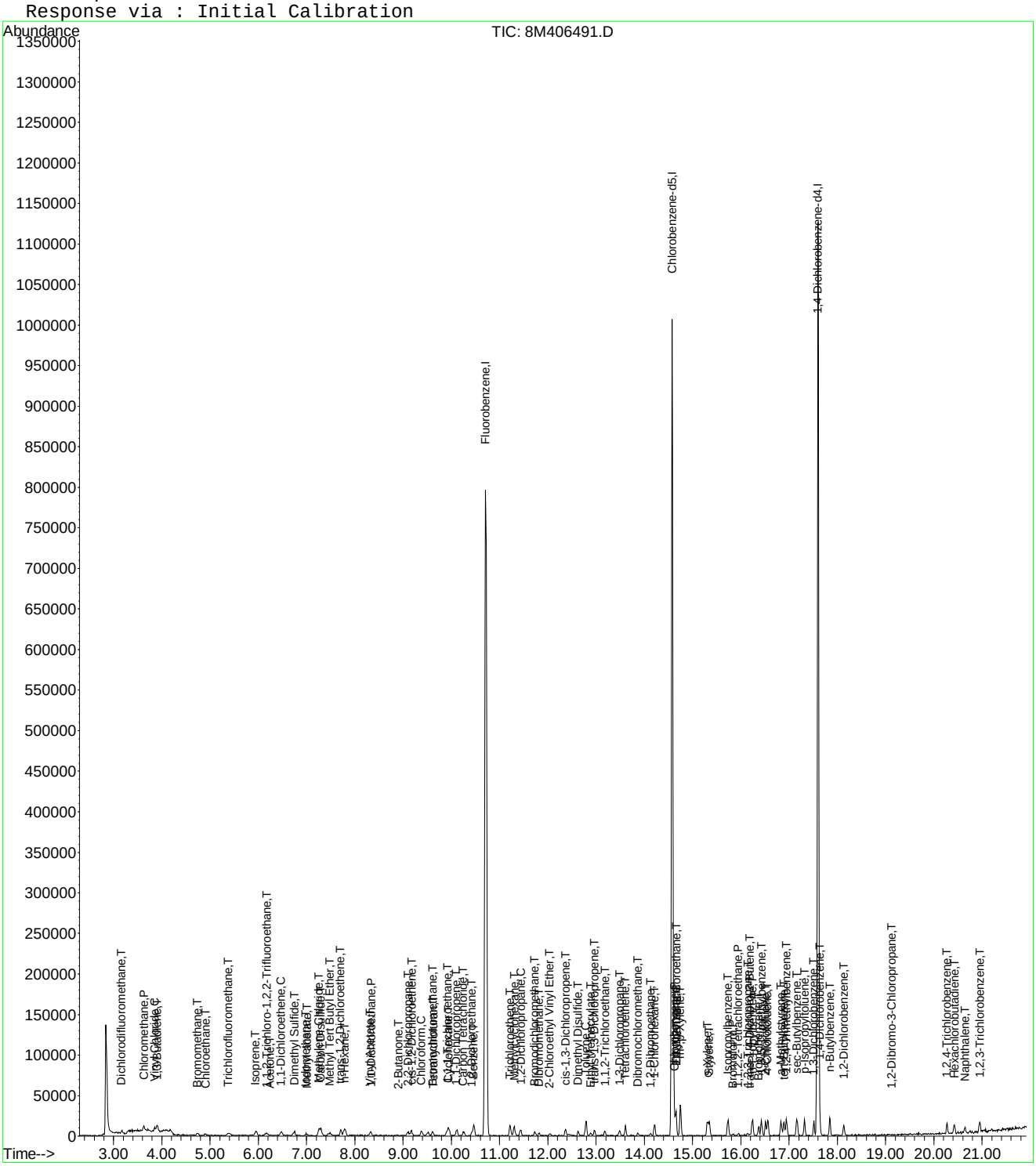

8M406491.D 8260WT.M Fri Jul 31 14:02:15 2015 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\073015\8M406491.D Vial: 15
Acq On : 30 Jul 2015 20:51 Operator: TMB
Sample : WG533051-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	0.4000	0.3862	3.5	100	-0.01
3	P	Chloromethane	-1.0000	0.5400	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.4164	-4.1	100	0.00
5	T	1,3-Butadiene	0.4000	0.3999	0.0	100	0.02
6	T	Bromomethane	0.4000	0.4019	-0.5	100	0.00
7	T	Chloroethane	0.4000	0.4038	-1.0	100	0.00
8	T	Trichlorofluoromethane	0.4000	0.3839	4.0	100	-0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.91#
10	T	Isoprene	0.4000	0.3331	16.7	100	-0.01
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.15#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3573	0.0	100	0.02
13	T	Acetone	-1.0000	1.3212	0.0	100	0.00
14	C	1,1-Dichloroethene	0.4000	0.3956	1.1	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.59#
16	T	Dimethyl Sulfide	0.4000	0.3610	9.7	100	0.00
17	T	Iodomethane	-1.0000	1.1155	0.0	0	0.00
18	T	Methyl acetate	-1.0000	0.3536	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4521	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.5282	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.44#
22	T	Methyl Tert Butyl Ether	-1.0000	0.3433	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.3930	1.7	100	-0.01
24	T	n-Hexane	-1.0000	0.4620	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.14#
26	T	Vinyl Acetate	0.4000	0.3343	16.4	100	0.02
27	P	1,1-Dichloroethane	0.4000	0.3990	0.2	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.2208	0.0	100	0.02
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.00#
31	T	2,2-Dichloropropane	0.4000	0.3494	12.6	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.3432	14.2	100	0.00
33	C	Chloroform	0.4000	0.4258	-6.5	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.52#
35	T	Bromochloromethane	0.4000	0.3851	3.7	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.1401	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	0.4000	0.3434	14.2	100	0.00
39	T	Cyclohexane	-1.0000	0.3872	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4382	0.0	100	-0.01
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.22#
42	T	Carbon Tetrachloride	0.4000	0.3500	12.5	100	-0.01
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	0.4000	0.4111	-2.8	100	-0.01
46	T	Benzene	0.4000	0.4298	-7.4	100	-0.01
47	T	Trichloroethene	0.4000	0.5235	-30.9#	100	0.00
48	T	Methylcyclohexane	-1.0000	0.4843	0.0	100	0.00
49	C	1,2-Dichloropropane	0.4000	0.3432	14.2	100	0.00
50	T	Bromodichloromethane	0.4000	0.3572	10.7	100	-0.01
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	0.4000	0.3814	4.7	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.3121	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.07#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\073015\8M406491.D Vial: 15
Acq On : 30 Jul 2015 20:51 Operator: TMB
Sample : WG533051-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3983	0.4	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2192	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0063	0.0	100	0.00
59	C	Toluene	0.4000	0.4728	-18.2	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3342	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3279	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.3838	4.0	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	0.4000	0.3623	9.4	100	0.00
66	T	Tetrachloroethene	0.4000	0.3932	1.7	100	0.00
67	T	Dibromochloromethane	0.4000	0.3611	9.7	100	-0.01
68	T	1,2-Dibromoethane	0.4000	0.3490	12.7	100	0.00
69	T	1-Chlorohexane	0.4000	0.4557	-13.9	100	0.00
70	P	Chlorobenzene	0.4000	0.4163	-4.1	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3323	16.9	100	0.00
72	C	Ethylbenzene	0.4000	0.3942	1.5	100	0.00
73	T	m-,p-Xylene	0.8000	0.8460	-5.8	100	0.00
74	T	o-Xylene	-1.0000	0.4407	0.0	100	0.00
75	T	Styrene	0.4000	0.4010	-0.3	100	0.00
76	P	Bromoform	-1.0000	0.2851	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.4273	-6.8	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.3411	14.7	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0375	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.2559	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	1.0932	0.0	0	0.00
83	T	n-Propylbenzene	0.4000	0.4444	-11.1	100	0.00
84	T	Bromobenzene	0.4000	0.4016	-0.4	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.4280	-7.0	100	0.00
86	T	2-Chlorotoluene	0.4000	0.4119	-3.0	100	0.00
87	T	4-Chlorotoluene	0.4000	0.4672	-16.8	100	-0.01
88	T	a-Methylstyrene	-1.0000	0.3853	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3978	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	0.4000	0.4188	-4.7	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.4684	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4279	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.4538	-13.4	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.4833	-20.8	100	0.00
95	T	n-Butylbenzene	-1.0000	0.5341	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.4097	-2.4	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.2828	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	0.4000	0.4762	-19.0	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.4672	-16.8	100	0.00
100	T	Naphthalene	0.4000	0.3540	11.5	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.4887	-22.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M406491.D 8260WT.M Fri Jul 31 14:02:37 2015 Page 2

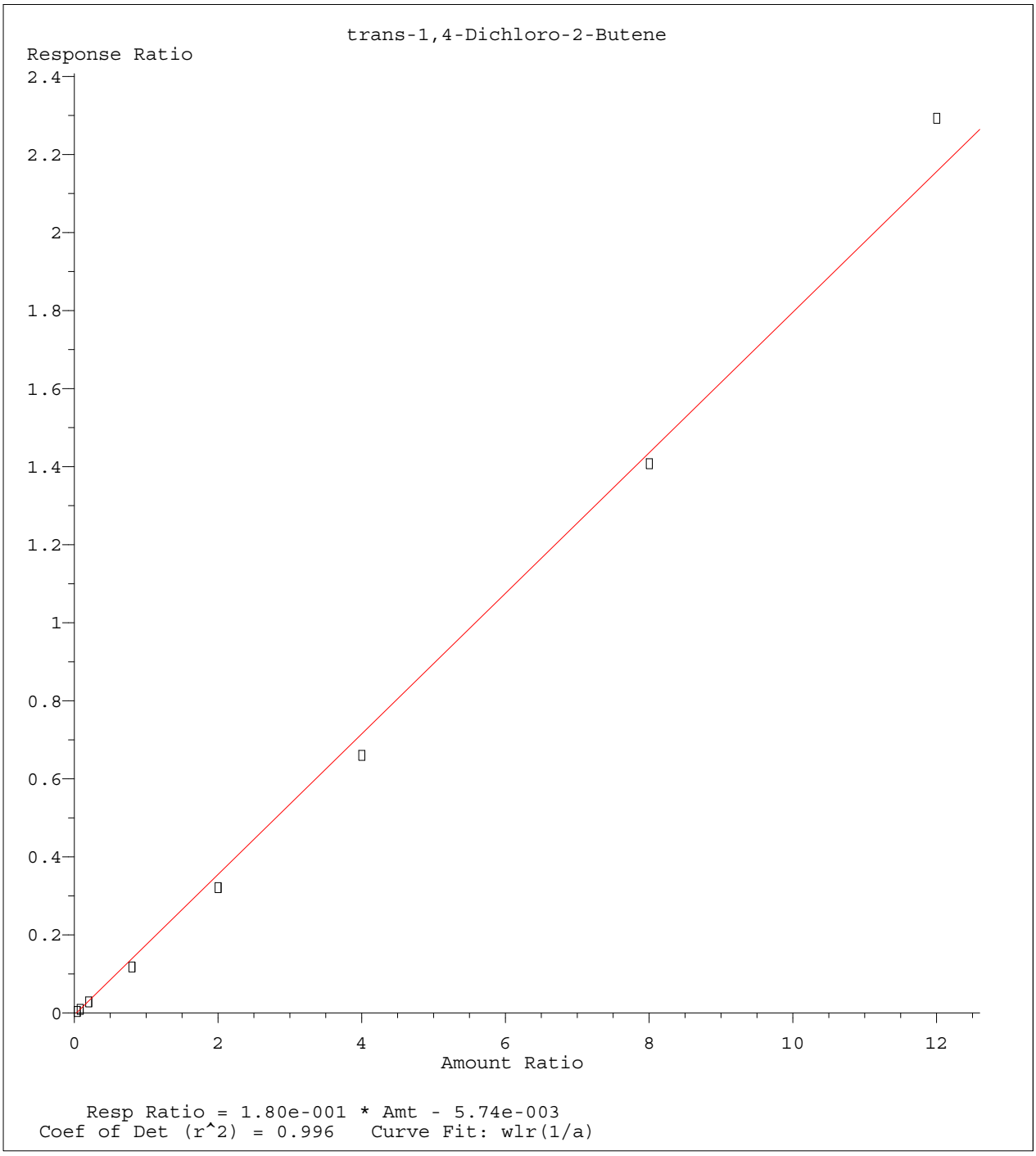

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Fri Jul 31 13:26:17 2015

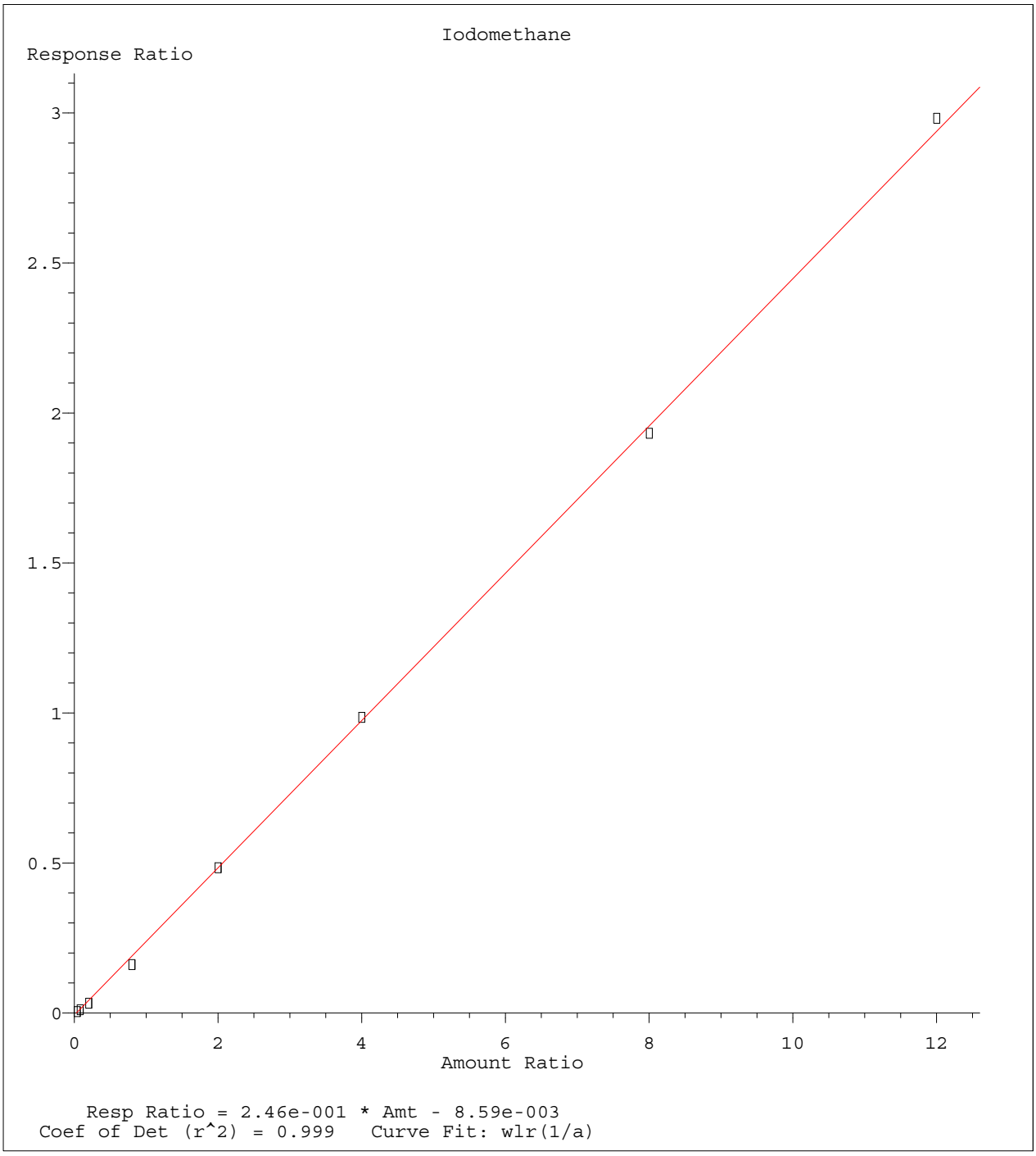

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Fri Jul 31 13:26:17 2015

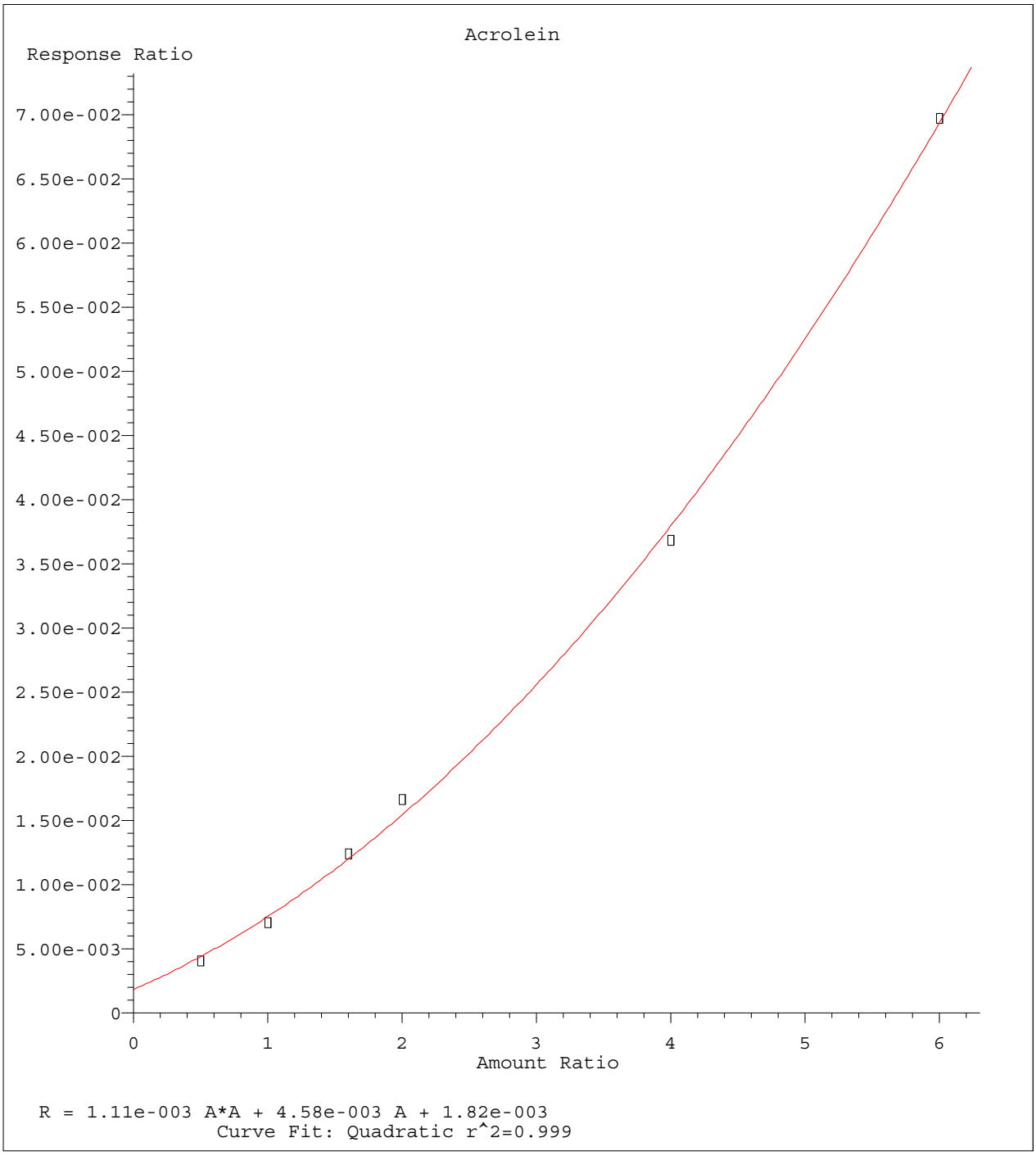

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Fri Jul 31 13:26:17 2015

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406492.D Vial: 16
Acq On : 30 Jul 2015 21:20 Operator: TMB
Sample : WG533051-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD71618 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:15 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	998188	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	705097	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	372507	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	221952	25.2344 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.92%		
43) 1,2-Dichloroethane-d4	10.31	65	213180	24.3733 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.48%		
58) Toluene-d8	12.69	98	842131	24.7582 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.04%		
80) p-Bromofluorobenzene	16.08	95	319261	24.7784 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.12%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	760257	49.8704 ug/L	99
3) Chloromethane	3.62	50	798332	46.9066 ug/L	99
4) Vinyl Chloride	3.85	62	598895	47.8484 ug/L	99
5) 1,3-Butadiene	3.89	54	390174	35.5588 ug/L	91
6) Bromomethane	4.74	94	380637	45.6561 ug/L	98
7) Chloroethane	4.89	64	394516	50.6233 ug/L	99
8) Trichlorofluoromethane	5.38	101	742918	45.9031 ug/L	100
9) Diethyl ether	5.91	59	508023	82.9284 ug/L	99
10) Isoprene	5.94	67	554917	43.8076 ug/L	100
11) Acrolein	6.15	56	25077	73.9767 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	427942	46.3101 ug/L	98
13) Acetone	6.24	43	63026	50.0714 ug/L	85
14) 1,1-Dichloroethene	6.47	61	689436	43.9767 ug/L	96
15) Tert-Butyl Alcohol	6.60	59	62923	190.3168 ug/L	99
16) Dimethyl Sulfide	6.74	62	510518	51.8671 ug/L	96
17) Iodomethane	6.99	142	379173	39.5421 ug/L	97
18) Methyl acetate	7.01	43	192753	39.4626 ug/L	98
19) Methylene Chloride	7.26	84	461816	46.2459 ug/L	98
20) Carbon Disulfide	7.30	76	1095623	34.2184 ug/L	100
21) Acrylonitrile	7.44	53	103087	49.2865 ug/L	97
22) Methyl Tert Butyl Ether	7.48	73	847872	48.0796 ug/L	98
23) trans-1,2-Dichloroethene	7.71	61	685784	46.6421 ug/L	97
24) n-Hexane	7.80	57	587027	36.9341 ug/L	100
25) Diisopropyl ether	8.14	45	3319277	92.9676 ug/L	98
26) Vinyl Acetate	8.30	43	639904	70.1168 ug/L	100
27) 1,1-Dichloroethane	8.33	63	924236	46.8680 ug/L	99
28) Ethyl-Tert-Butyl ether	8.71	59	2407237	90.3679 ug/L	100
29) 2-Butanone	8.89	43	112752	52.9044 ug/L	99
30) Propionitrile	9.00	54	68332	100.8008 ug/L	94
31) 2,2-Dichloropropane	9.11	77	699305	46.0164 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	504121	47.6428 ug/L	95
33) Chloroform	9.38	83	858972	48.2659 ug/L	98
34) 1-Bromopropane	9.52	122	102385	54.4369 ug/L	96
35) Bromochloromethane	9.62	130	263358	48.3192 ug/L	99
36) Tetrahydrofuran	9.64	42	141291	96.3854 ug/L	96
38) 1,1,1-Trichloroethane	9.92	97	802864	48.9090 ug/L	99
39) Cyclohexane	9.95	56	843061	44.0328 ug/L	100
40) 1,1-Dichloropropene	10.11	75	654340	46.5565 ug/L	98
41) Tert-Amyl-Methyl ether	10.22	73	1909722	95.7703 ug/L	100
42) Carbon Tetrachloride	10.26	117	721323	49.6274 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M406492.D 8260WT.M Fri Jul 31 14:02:15 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406492.D Vial: 16
Acq On : 30 Jul 2015 21:20 Operator: TMB
Sample : WG533051-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD71618 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:15 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	552896	46.3850 ug/L		99
46)	Benzene	10.46	78	1887464	48.0417 ug/L		99
47)	Trichloroethene	11.22	130	490661	43.7549 ug/L		97
48)	Methylcyclohexane	11.30	83	742729	45.6744 ug/L		99
49)	1,2-Dichloropropane	11.44	63	535572	49.2069 ug/L		97
50)	Bromodichloromethane	11.73	83	641047	47.4573 ug/L		99
51)	1,4-Dioxane	11.72	88	6953	181.6534 ug/L		83
52)	Dibromomethane	11.82	93	234491	47.0960 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	230887	50.7848 ug/L		100
54)	4-Methyl-2-Pentanone	12.06	58	102085	50.5834 ug/L		98
55)	cis-1,3-Dichloropropene	12.37	75	747778	50.2935 ug/L		99
56)	Dimethyl Disulfide	12.62	79	403465	50.0882 ug/L		95
59)	Toluene	12.79	91	1989406	48.2802 ug/L		98
60)	Ethyl Methacrylate	12.88	69	422204	53.6851 ug/L		94
62)	trans-1,3-Dichloropropene	12.97	75	574201	47.1096 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	306195	47.4179 ug/L		98
64)	2-Hexanone	13.12	58	96303	52.7923 ug/L	#	94
65)	1,3-Dichloropropane	13.48	76	547512	48.7170 ug/L		95
66)	Tetrachloroethene	13.61	164	415959	47.8788 ug/L		99
67)	Dibromochloromethane	13.86	129	407864	47.9485 ug/L		98
68)	1,2-Dibromoethane	14.12	107	297966	47.4577 ug/L		99
69)	1-Chlorohexane	14.22	91	720733	49.4939 ug/L		99
70)	Chlorobenzene	14.63	112	1337432	50.6933 ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.66	131	460306	49.1130 ug/L		100
72)	Ethylbenzene	14.66	106	731345	49.1088 ug/L		95
73)	m-,p-Xylene	14.74	106	1764113	100.2450 ug/L		95
74)	o-Xylene	15.31	106	889253	51.3463 ug/L		96
75)	Styrene	15.34	104	1414087	49.9932 ug/L		100
76)	Bromoform	15.84	173	250708	49.0206 ug/L		98
77)	Isopropylbenzene	15.74	105	2227657	51.3804 ug/L		98
79)	1,1,2,2-Tetrachloroethane	15.94	83	333440	49.2653 ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	91572	48.2006 ug/L		61
82)	trans-1,4-Dichloro-2-Buten	16.18	53	105948	40.2718 ug/L	#	51
83)	n-Propylbenzene	16.24	91	2803567	51.1176 ug/L		99
84)	Bromobenzene	16.37	156	530000	47.7080 ug/L		98
85)	1,3,5-Trimethylbenzene	16.43	105	1890061	52.1983 ug/L		97
86)	2-Chlorotoluene	16.51	91	1810366	54.0398 ug/L		100
87)	4-Chlorotoluene	16.55	91	1675878	52.4950 ug/L		98
88)	a-Methylstyrene	16.83	118	1101871	56.0359 ug/L		99
89)	tert-Butylbenzene	16.89	134	407869	51.9933 ug/L		93
90)	1,2,4-Trimethylbenzene	16.95	105	1882712	51.3188 ug/L		97
91)	sec-Butylbenzene	17.16	105	2381458	53.3045 ug/L		98
92)	p-Isopropyltoluene	17.32	119	1948217	50.7078 ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	1088924	49.9863 ug/L		99
94)	1,4-Dichlorobenzene	17.64	146	1047998	46.6689 ug/L		98
95)	n-Butylbenzene	17.85	91	1912025	51.6095 ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	969811	50.4233 ug/L		100
97)	1,2-Dibromo-3-Chloropropan	19.13	75	54805	46.2513 ug/L		88
98)	1,2,4-Trichlorobenzene	20.28	180	705673	47.6775 ug/L		99
99)	Hexachlorobutadiene	20.43	225	347054	46.0788 ug/L		99
100)	Naphthalene	20.64	128	972942	50.6643 ug/L		99
101)	1,2,3-Trichlorobenzene	20.95	180	603944	47.2852 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M406492.D 8260WT.M Fri Jul 31 14:02:16 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406492.D Vial: 16
Acq On : 30 Jul 2015 21:20 Operator: TMB
Sample : WG533051-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD71618 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

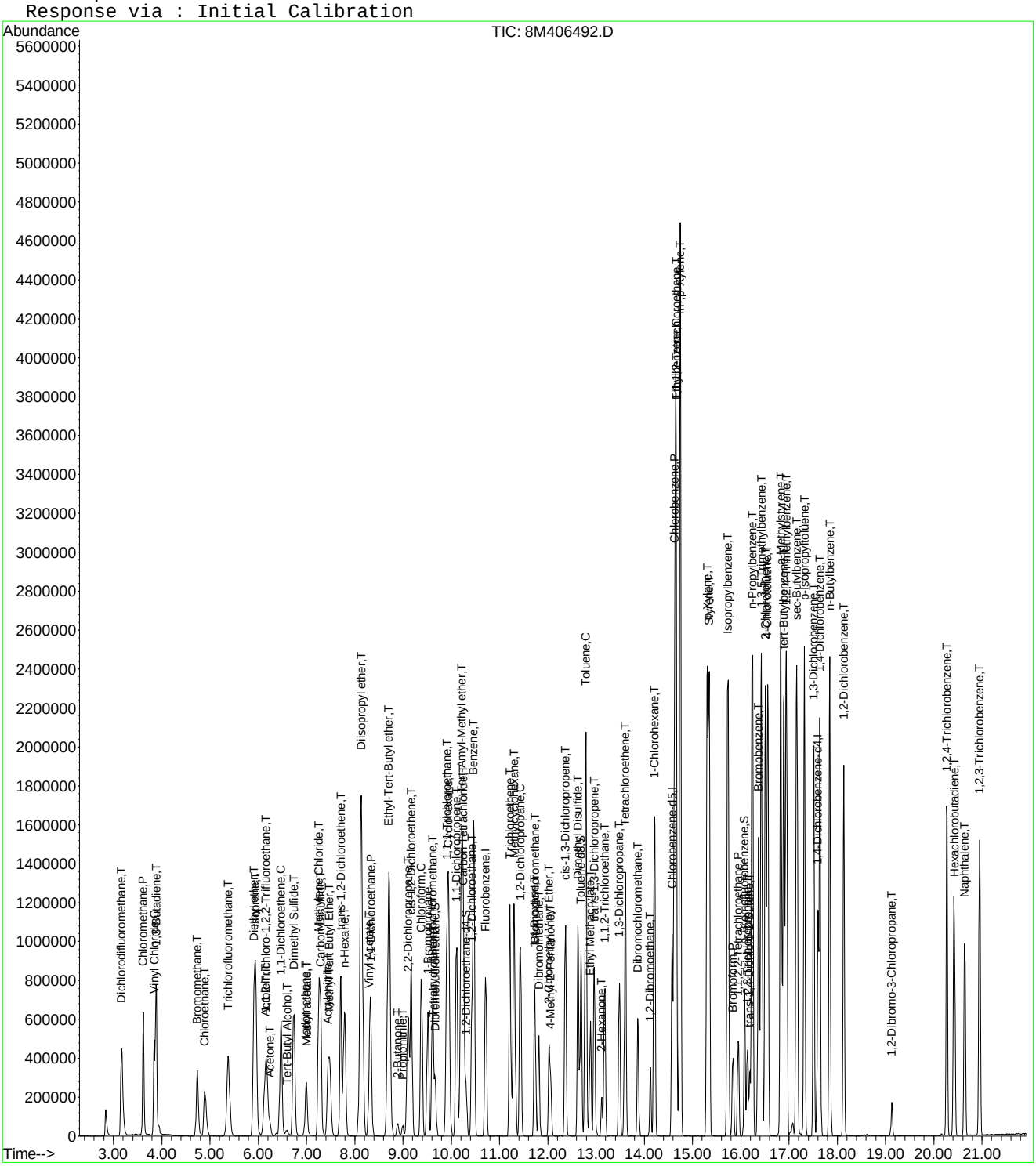

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\073015\8M406492.D Vial: 16
Acq On : 30 Jul 2015 21:20 Operator: TMB
Sample : WG533051-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD71618 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	110	0.00
2	T	Dichlorodifluoromethane	50.0000	49.8704	0.3	96	0.00
3	P	Chloromethane	50.0000	46.9066	6.2	103	0.00
4	C	Vinyl Chloride	50.0000	47.8484	4.3	101	0.00
5	T	1,3-Butadiene	50.0000	35.5588	28.9#	74	0.00
6	T	Bromomethane	50.0000	45.6561	8.7	102	0.00
7	T	Chloroethane	50.0000	50.6233	-1.2	109	-0.01
8	T	Trichlorofluoromethane	50.0000	45.9031	8.2	96	-0.01
9	T	Diethyl ether	100.0000	82.9284	17.1	93	0.00
10	T	Isoprene	50.0000	43.8076	12.4	92	-0.01
11	T	Acrolein	50.0000	73.9767	-48.0#	167	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	46.3100	7.4	95	0.00
13	T	Acetone	50.0000	50.0714	-0.1	117	0.00
14	C	1,1-Dichloroethene	50.0000	43.9767	12.0	94	0.00
15	T	Tert-Butyl Alcohol	200.0000	190.3168	4.8	115	0.01
16	T	Dimethyl Sulfide	50.0000	51.8671	-3.7	112	0.00
17	T	Iodomethane	50.0000	39.5421	20.9	87	0.00
18	T	Methyl acetate	50.0000	39.4626	21.1	91	0.00
19	T	Methylene Chloride	50.0000	46.2459	7.5	100	0.00
20	T	Carbon Disulfide	50.0000	34.2184	31.6#	73	0.00
21	T	Acrylonitrile	50.0000	49.2865	1.4	108	0.00
22	T	Methyl Tert Butyl Ether	50.0000	48.0796	3.8	105	0.00
23	T	trans-1,2-Dichloroethene	50.0000	46.6421	6.7	99	0.00
24	T	n-Hexane	50.0000	36.9341	26.1#	79	0.00
25	T	Diisopropyl ether	100.0000	92.9676	7.0	103	0.00
26	T	Vinyl Acetate	50.0000	70.1168	-40.2#	156	0.00
27	P	1,1-Dichloroethane	50.0000	46.8680	6.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	90.3679	9.6	101	0.00
29	T	2-Butanone	50.0000	52.9044	-5.8	116	0.00
30	T	Propionitrile	100.0000	100.8008	-0.8	109	0.00
31	T	2,2-Dichloropropane	50.0000	46.0164	8.0	98	0.00
32	T	cis-1,2-Dichloroethene	50.0000	47.6428	4.7	101	0.00
33	C	Chloroform	50.0000	48.2659	3.5	104	0.00
34		1-Bromopropane	50.0000	54.4369	-8.9	118	0.00
35	T	Bromochloromethane	50.0000	48.3192	3.4	105	0.00
36	T	Tetrahydrofuran	100.0000	96.3855	3.6	111	0.00
37	S	Dibromofluoromethane	25.0000	25.2344	-0.9	108	0.00
38	T	1,1,1-Trichloroethane	50.0000	48.9090	2.2	103	0.00
39	T	Cyclohexane	50.0000	44.0329	11.9	93	0.00
40	T	1,1-Dichloropropene	50.0000	46.5565	6.9	98	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	95.7703	4.2	108	0.00
42	T	Carbon Tetrachloride	50.0000	49.6274	0.7	102	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.3732	2.5	110	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	46.3850	7.2	100	0.00
46	T	Benzene	50.0000	48.0417	3.9	103	-0.01
47	T	Trichloroethene	50.0000	43.7549	12.5	100	0.00
48	T	Methylcyclohexane	50.0000	45.6744	8.7	99	0.00
49	C	1,2-Dichloropropane	50.0000	49.2069	1.6	102	0.00
50	T	Bromodichloromethane	50.0000	47.4573	5.1	100	0.00
51	T	1,4-Dioxane	200.0000	181.6534	9.2	109	0.01
52	T	Dibromomethane	50.0000	47.0960	5.8	101	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	50.7848	-1.6	109	-0.01
54	T	4-Methyl-2-Pentanone	50.0000	50.5834	-1.2	111	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\073015\8M406492.D Vial: 16
Acq On : 30 Jul 2015 21:20 Operator: TMB
Sample : WG533051-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD71618 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	50.2936	-0.6	105	0.00
56	T	Dimethyl Disulfide	50.0000	50.0882	-0.2	109	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	109	0.00
58	S	Toluene-d8	25.0000	24.7582	1.0	107	0.00
59	C	Toluene	50.0000	48.2802	3.4	101	0.00
60	T	Ethyl Methacrylate	50.0000	53.6851	-7.4	113	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	47.1096	5.8	99	0.00
63	T	1,1,2-Trichloroethane	50.0000	47.4179	5.2	100	0.00
64	T	2-Hexanone	50.0000	52.7923	-5.6	116	0.00
65	T	1,3-Dichloropropane	50.0000	48.7170	2.6	103	0.00
66	T	Tetrachloroethene	50.0000	47.8788	4.2	100	0.00
67	T	Dibromochloromethane	50.0000	47.9485	4.1	100	-0.01
68	T	1,2-Dibromoethane	50.0000	47.4577	5.1	102	0.00
69	T	1-Chlorohexane	50.0000	49.4939	1.0	106	0.00
70	P	Chlorobenzene	50.0000	50.6933	-1.4	107	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	49.1130	1.8	99	0.00
72	C	Ethylbenzene	50.0000	49.1088	1.8	105	0.00
73	T	m-,p-Xylene	100.0000	100.2450	-0.2	104	0.00
74	T	o-Xylene	50.0000	51.3463	-2.7	106	0.00
75	T	Styrene	50.0000	49.9932	0.0	103	0.00
76	P	Bromoform	50.0000	49.0206	2.0	105	0.00
77	T	Isopropylbenzene	50.0000	51.3804	-2.8	105	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	104	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	49.2653	1.5	103	0.00
80	S	p-Bromofluorobenzene	25.0000	24.7784	0.9	107	0.00
81	T	1,2,3-Trichloropropane	50.0000	48.2006	3.6	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	40.2718	19.5	93	-0.01
83	T	n-Propylbenzene	50.0000	51.1176	-2.2	103	0.00
84	T	Bromobenzene	50.0000	47.7080	4.6	101	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	52.1983	-4.4	103	0.00
86	T	2-Chlorotoluene	50.0000	54.0398	-8.1	106	0.00
87	T	4-Chlorotoluene	50.0000	52.4950	-5.0	107	-0.01
88	T	a-Methylstyrene	50.0000	56.0359	-12.1	113	0.00
89	T	tert-Butylbenzene	50.0000	51.9933	-4.0	106	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	51.3188	-2.6	100	0.00
91	T	sec-Butylbenzene	50.0000	53.3045	-6.6	102	0.00
92	T	p-Isopropyltoluene	50.0000	50.7077	-1.4	97	0.00
93	T	1,3-Dichlorobenzene	50.0000	49.9863	0.0	103	0.00
94	T	1,4-Dichlorobenzene	50.0000	46.6689	6.7	99	0.00
95	T	n-Butylbenzene	50.0000	51.6095	-3.2	98	0.00
96	T	1,2-Dichlorobenzene	50.0000	50.4233	-0.8	103	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	46.2513	7.5	94	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	47.6775	4.6	97	0.00
99	T	Hexachlorobutadiene	50.0000	46.0789	7.8	96	0.00
100	T	Naphthalene	50.0000	50.6643	-1.3	96	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	47.2852	5.4	98	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M406492.D 8260WT.M Fri Jul 31 14:04:07 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\081815\8M406862.D Vial: 2
Acq On : 18 Aug 2015 15:16 Operator: TMB
Sample : WG535450-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD71981 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 18 15:38:54 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	1083035	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	797593	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	441312	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	231049	24.2107 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.84%		
43) 1,2-Dichloroethane-d4	10.31	65	212004	22.3399 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 89.36%		
58) Toluene-d8	12.69	98	949626	24.6808 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.72%		
80) p-Bromofluorobenzene	16.08	95	369244	24.1896 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.76%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	916639	55.4180 ug/L	99
3) Chloromethane	3.62	50	1014896	54.9593 ug/L	99
4) Vinyl Chloride	3.85	62	811453	59.7517 ug/L	99
5) 1,3-Butadiene	3.89	54	687916	57.7821 ug/L	99
6) Bromomethane	4.74	94	346270	38.2800 ug/L	100
7) Chloroethane	4.90	64	452352	53.4974 ug/L	99
8) Trichlorofluoromethane	5.38	101	860776	49.0186 ug/L	98
9) Diethyl ether	5.92	59	619242	93.1644 ug/L	98
10) Isoprene	5.95	67	715859	52.0858 ug/L	97
11) Acrolein	6.14	56	8135	24.9867 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	511019	50.9680 ug/L	99
13) Acetone	6.25	43	67281	49.2643 ug/L	94
14) 1,1-Dichloroethene	6.47	61	822811	48.3725 ug/L	96
15) Tert-Butyl Alcohol	6.58	59	79379	221.2806 ug/L	98
16) Dimethyl Sulfide	6.73	62	506253	47.4044 ug/L	97
17) Iodomethane	6.99	142	316929	30.6625 ug/L	94
18) Methyl acetate	7.00	43	238785	45.0569 ug/L	97
19) Methylene Chloride	7.26	84	533638	49.2516 ug/L	100
20) Carbon Disulfide	7.30	76	1730815	49.8218 ug/L	99
21) Acrylonitrile	7.45	53	106972	47.1372 ug/L	100
22) Methyl Tert Butyl Ether	7.48	73	894275	46.7382 ug/L	97
23) trans-1,2-Dichloroethene	7.70	61	800332	50.1685 ug/L	97
24) n-Hexane	7.79	57	874917	50.7348 ug/L	100
25) Diisopropyl ether	8.13	45	3871596	99.9420 ug/L	98
26) Vinyl Acetate	8.30	43	605359	61.1350 ug/L	100
27) 1,1-Dichloroethane	8.33	63	1043418	48.7665 ug/L	99
28) Ethyl-Tert-Butyl ether	8.71	59	2829533	97.8994 ug/L	99
29) 2-Butanone	8.88	43	122589	53.0138 ug/L	100
30) Propionitrile	9.00	54	77846	105.8390 ug/L	100
31) 2,2-Dichloropropane	9.11	77	849096	51.4959 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	573693	49.9703 ug/L	97
33) Chloroform	9.38	83	921237	47.7093 ug/L	99
34) 1-Bromopropane	9.51	122	105851	51.8707 ug/L	93
35) Bromochloromethane	9.62	130	285309	48.2457 ug/L	100
36) Tetrahydrofuran	9.64	42	157777	99.1997 ug/L	95
38) 1,1,1-Trichloroethane	9.92	97	898022	50.4201 ug/L	98
39) Cyclohexane	9.95	56	1081034	52.0388 ug/L	99
40) 1,1-Dichloropropene	10.11	75	792131	51.9450 ug/L	99
41) Tert-Amyl-Methyl ether	10.22	73	2071088	95.7259 ug/L	99
42) Carbon Tetrachloride	10.26	117	805273	51.0628 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\081815\8M406862.D Vial: 2
Acq On : 18 Aug 2015 15:16 Operator: TMB
Sample : WG535450-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD71981 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 18 15:38:54 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	593761	45.9109 ug/L		98
46)	Benzene	10.47	78	2180272	51.1471 ug/L		99
47)	Trichloroethene	11.22	130	579063	47.5928 ug/L		96
48)	Methylcyclohexane	11.30	83	885047	50.1624 ug/L		99
49)	1,2-Dichloropropane	11.43	63	615774	52.1434 ug/L		92
50)	Bromodichloromethane	11.73	83	717982	48.9887 ug/L		100
51)	1,4-Dioxane	11.73	88	10992	264.6780 ug/L		86
52)	Dibromomethane	11.82	93	261417	48.3907 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	243613	49.3861 ug/L		98
54)	4-Methyl-2-Pentanone	12.06	58	113484	51.8263 ug/L		95
55)	cis-1,3-Dichloropropene	12.37	75	823589	51.0529 ug/L		98
56)	Dimethyl Disulfide	12.63	79	429860	49.1843 ug/L		97
59)	Toluene	12.79	91	2320462	49.7838 ug/L		99
60)	Ethyl Methacrylate	12.88	69	431827	48.5410 ug/L		98
62)	trans-1,3-Dichloropropene	12.97	75	672715	48.7915 ug/L		99
63)	1,1,2-Trichloroethane	13.17	97	352328	48.2347 ug/L		98
64)	2-Hexanone	13.11	58	109252	52.9454 ug/L	#	91
65)	1,3-Dichloropropane	13.48	76	611907	48.1327 ug/L		96
66)	Tetrachloroethene	13.61	164	491400	50.0030 ug/L		95
67)	Dibromochloromethane	13.87	129	471313	48.9820 ug/L		99
68)	1,2-Dibromoethane	14.13	107	337322	47.4954 ug/L		99
69)	1-Chlorohexane	14.21	91	826759	50.1908 ug/L		97
70)	Chlorobenzene	14.63	112	1475528	49.4418 ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.66	131	533564	50.3273 ug/L		100
72)	Ethylbenzene	14.65	106	832254	49.4038 ug/L		95
73)	m-,p-Xylene	14.75	106	2002755	100.6078 ug/L		94
74)	o-Xylene	15.30	106	977683	49.9056 ug/L		94
75)	Styrene	15.35	104	1626073	50.8209 ug/L		96
76)	Bromoform	15.84	173	275585	47.6358 ug/L		98
77)	Isopropylbenzene	15.73	105	2492488	50.8218 ug/L		98
79)	1,1,2,2-Tetrachloroethane	15.95	83	385493	48.0760 ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	96627	42.9316 ug/L		60
82)	trans-1,4-Dichloro-2-Buten	16.18	53	129908	41.6526 ug/L	#	66
83)	n-Propylbenzene	16.23	91	3170864	48.8007 ug/L		98
84)	Bromobenzene	16.37	156	610890	46.4159 ug/L		99
85)	1,3,5-Trimethylbenzene	16.42	105	2134164	49.7505 ug/L		97
86)	2-Chlorotoluene	16.51	91	1986083	50.0418 ug/L		96
87)	4-Chlorotoluene	16.56	91	1778955	47.0359 ug/L		96
88)	a-Methylstyrene	16.83	118	1140594	48.9615 ug/L		96
89)	tert-Butylbenzene	16.89	134	454913	48.9490 ug/L		92
90)	1,2,4-Trimethylbenzene	16.94	105	2150076	49.4693 ug/L		97
91)	sec-Butylbenzene	17.16	105	2672760	50.4975 ug/L		98
92)	p-Isopropyltoluene	17.32	119	2262232	49.7007 ug/L		97
93)	1,3-Dichlorobenzene	17.51	146	1257932	48.7415 ug/L		97
94)	1,4-Dichlorobenzene	17.64	146	1232027	46.3101 ug/L		97
95)	n-Butylbenzene	17.85	91	2198726	50.0952 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	1092726	47.9561 ug/L		97
97)	1,2-Dibromo-3-Chloropropan	19.13	75	63584	45.2940 ug/L		91
98)	1,2,4-Trichlorobenzene	20.27	180	814108	46.4280 ug/L		99
99)	Hexachlorobutadiene	20.42	225	408628	45.7954 ug/L		98
100)	Naphthalene	20.64	128	1086866	47.7727 ug/L		98
101)	1,2,3-Trichlorobenzene	20.95	180	693893	45.8575 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M406862.D 8260WT.M Tue Aug 18 15:38:54 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\081815\8M406862.D Vial: 2
Acq On : 18 Aug 2015 15:16 Operator: TMB
Sample : WG535450-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD71981 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 18 15:38 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

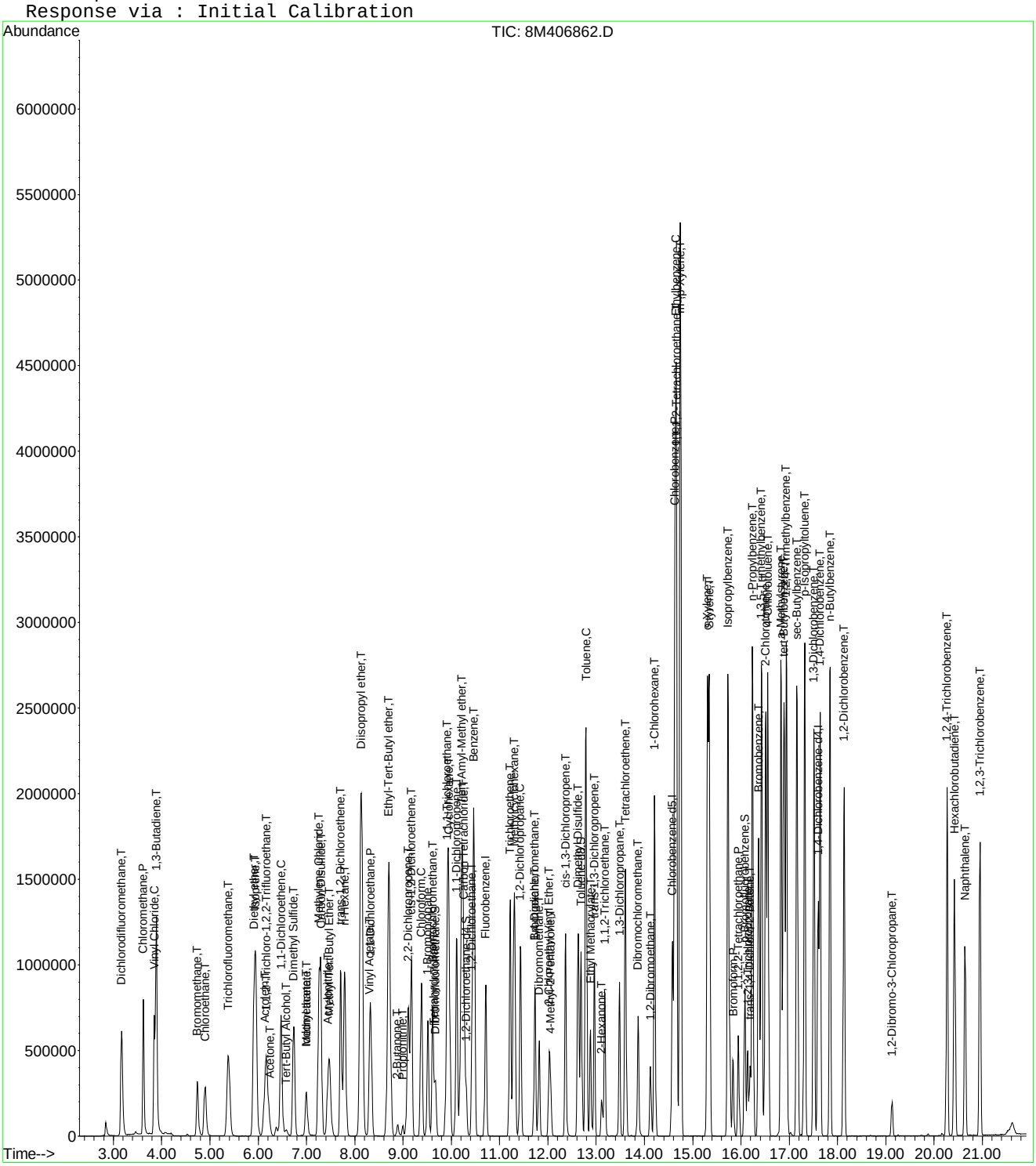

Continuing Calibration Area and RT check

Instrument: HPMS8
Initial cal date: 30 Jul 2015 17:04
CCV date: 18 Aug 2015 15:16
CCV Filename: 8M406862.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	905123	10.71	645629	14.58	356726	17.60
CCV	1083035	10.71	797593	14.58	441312	17.60

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\081815\8M406862.D Vial: 2
Acq On : 18 Aug 2015 15:16 Operator: TMB
Sample : WG535450-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD71981 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	120	0.00
2	T	Dichlorodifluoromethane	0.3818	0.4232	-10.8	116	0.00
3	P	Chloromethane	0.4263	0.4685	-9.9	131	0.00
4	C	Vinyl Chloride	0.3135	0.3746	-19.5	137	0.00
5	T	1,3-Butadiene	0.2748	0.3176	-15.6	131	0.00
6	T	Bromomethane	0.2088	0.1599	23.4	93	0.00
7	T	Chloroethane	0.1952	0.2088	-7.0	125	0.00
8	T	Trichlorofluoromethane	0.4053	0.3974	2.0	112	0.00
9	T	Diethyl ether	0.1534	0.1429	6.8	114	0.00
10	T	Isoprene	0.3172	0.3305	-4.2	119	0.00
11	T	Acrolein	0.0087	0.0038	56.6#	54	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2314	0.2359	-1.9	113	0.00
13	T	Acetone	0.0315	0.0311	1.5	125	0.00
14	C	1,1-Dichloroethene	0.3926	0.3799	3.3	112	0.00
15	T	Tert-Butyl Alcohol	0.0083	0.0092	-10.6	146	0.00
16	T	Dimethyl Sulfide	0.2465	0.2337	5.2	112	0.00
17	T	Iodomethane	0.1976	0.1463	26.0#	72	0.00
18	T	Methyl acetate	0.1223	0.1102	9.9	113	0.00
19	T	Methylene Chloride	0.2501	0.2464	1.5	115	0.00
20	T	Carbon Disulfide	0.8019	0.7991	0.4	116	0.00
21	T	Acrylonitrile	0.0524	0.0494	5.7	112	0.00
22	T	Methyl Tert Butyl Ether	0.4417	0.4129	6.5	110	0.00
23	T	trans-1,2-Dichloroethene	0.3683	0.3695	-0.3	115	0.00
24	T	n-Hexane	0.3981	0.4039	-1.5	118	0.00
25	T	Diisopropyl ether	0.8942	0.8937	0.1	120	0.00
26	T	Vinyl Acetate	0.2286	0.2795	-22.3	148	0.00
27	P	1,1-Dichloroethane	0.4939	0.4817	2.5	113	0.00
28	T	Ethyl-Tert-Butyl ether	0.6672	0.6532	2.1	119	0.00
29	T	2-Butanone	0.0534	0.0566	-6.0	126	0.00
30	T	Propionitrile	0.0170	0.0180	-5.8	124	0.00
31	T	2,2-Dichloropropane	0.3806	0.3920	-3.0	119	0.00
32	T	cis-1,2-Dichloroethene	0.2650	0.2648	0.1	115	0.00
33	C	Chloroform	0.4457	0.4253	4.6	112	0.00
34		1-Bromopropane	0.0471	0.0489	-3.7	122	0.00
35	T	Bromochloromethane	0.1365	0.1317	3.5	114	0.00
36	T	Tetrahydrofuran	0.0367	0.0364	0.8	124	0.00
37	S	Dibromofluoromethane	0.2203	0.2133	3.2	112	0.00
38	T	1,1,1-Trichloroethane	0.4111	0.4146	-0.8	115	0.00
39	T	Cyclohexane	0.4795	0.4991	-4.1	119	0.00
40	T	1,1-Dichloropropene	0.3520	0.3657	-3.9	119	0.00
41	T	Tert-Amyl-Methyl ether	0.4994	0.4781	4.3	117	0.00
42	T	Carbon Tetrachloride	0.3640	0.3718	-2.1	114	0.00
43	S	1,2-Dichloroethane-d4	0.2191	0.1958	10.6	110	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.2985	0.2741	8.2	107	0.00
46	T	Benzene	0.9840	1.0066	-2.3	118	0.00
47	T	Trichloroethene	0.2809	0.2673	4.8	117	0.00
48	T	Methylcyclohexane	0.4073	0.4086	-0.3	118	0.00
49	C	1,2-Dichloropropane	0.2726	0.2843	-4.3	117	0.00
50	T	Bromodichloromethane	0.3383	0.3315	2.0	112	0.00
51	T	1,4-Dioxane	0.0010	0.0013	-32.3#	172#	0.01
52	T	Dibromomethane	0.1247	0.1207	3.2	112	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1139	0.1125	1.2	115	0.00
54	T	4-Methyl-2-Pentanone	0.0505	0.0524	-3.6	123	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\081815\8M406862.D Vial: 2
Acq On : 18 Aug 2015 15:16 Operator: TMB
Sample : WG535450-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD71981 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.3724	0.3802	-2.1	116	0.00
56	T	Dimethyl Disulfide	0.2017	0.1984	1.6	117	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	124	0.00
58	S	Toluene-d8	1.2060	1.1906	1.3	120	0.00
59	C	Toluene	1.4610	1.4547	0.4	118	0.00
60	T	Ethyl Methacrylate	0.2788	0.2707	2.9	116	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.4322	0.4217	2.4	116	0.00
63	T	1,1,2-Trichloroethane	0.2289	0.2209	3.5	115	0.00
64	T	2-Hexanone	0.0647	0.0685	-5.9	131	0.00
65	T	1,3-Dichloropropane	0.3985	0.3836	3.7	115	0.00
66	T	Tetrachloroethene	0.3080	0.3080	-0.0	119	0.00
67	T	Dibromochloromethane	0.3016	0.2955	2.0	115	0.00
68	T	1,2-Dibromoethane	0.2226	0.2115	5.0	116	0.00
69	T	1-Chlorohexane	0.5163	0.5183	-0.4	122	0.00
70	P	Chlorobenzene	0.9354	0.9250	1.1	118	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3323	0.3345	-0.7	115	0.00
72	C	Ethylbenzene	0.5280	0.5217	1.2	119	0.00
73	T	m-,p-Xylene	0.6240	0.6278	-0.6	118	0.00
74	T	o-Xylene	0.6140	0.6129	0.2	117	0.00
75	T	Styrene	1.0029	1.0194	-1.6	118	0.00
76	P	Bromoform	0.1813	0.1728	4.7	115	0.00
77	T	Isopropylbenzene	1.5372	1.5625	-1.6	117	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	124	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4542	0.4368	3.8	119	0.00
80	S	p-Bromofluorobenzene	0.8647	0.8367	3.2	124	0.00
81	T	1,2,3-Trichloropropane	0.1275	0.1095	14.1	106	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1480	0.1472	0.6	113	0.00
83	T	n-Propylbenzene	3.6808	3.5925	2.4	117	0.00
84	T	Bromobenzene	0.7456	0.6921	7.2	116	0.00
85	T	1,3,5-Trimethylbenzene	2.4301	2.4180	0.5	116	0.00
86	T	2-Chlorotoluene	2.2483	2.2502	-0.1	116	0.00
87	T	4-Chlorotoluene	2.1425	2.0155	5.9	114	0.00
88	T	a-Methylstyrene	1.3197	1.2923	2.1	117	0.00
89	T	tert-Butylbenzene	0.5265	0.5154	2.1	118	0.00
90	T	1,2,4-Trimethylbenzene	2.4621	2.4360	1.1	114	0.00
91	T	sec-Butylbenzene	2.9984	3.0282	-1.0	114	0.00
92	T	p-Isopropyltoluene	2.5785	2.5631	0.6	113	0.00
93	T	1,3-Dichlorobenzene	1.4620	1.4252	2.5	118	0.00
94	T	1,4-Dichlorobenzene	1.5071	1.3959	7.4	117	0.00
95	T	n-Butylbenzene	2.4864	2.4911	-0.2	112	0.00
96	T	1,2-Dichlorobenzene	1.2908	1.2380	4.1	116	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.0795	0.0720	9.4	109	0.00
98	T	1,2,4-Trichlorobenzene	0.9933	0.9224	7.1	112	0.00
99	T	Hexachlorobutadiene	0.5055	0.4630	8.4	113	0.00
100	T	Naphthalene	1.2888	1.2314	4.5	108	0.00
101	T	1,2,3-Trichlorobenzene	0.8572	0.7862	8.3	112	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M406862.D 8260WT.M Tue Aug 18 15:41:36 2015 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\081815\8M406862.D Vial: 2
Acq On : 18 Aug 2015 15:16 Operator: TMB
Sample : WG535450-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD71981 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	120	0.00
2	T	Dichlorodifluoromethane	50.0000	55.4180	-10.8	116	0.00
3	P	Chloromethane	50.0000	54.9593	-9.9	131	0.00
4	C	Vinyl Chloride	50.0000	59.7517	-19.5	137	0.00
5	T	1,3-Butadiene	50.0000	57.7821	-15.6	131	0.00
6	T	Bromomethane	50.0000	38.2801	23.4	93	0.00
7	T	Chloroethane	50.0000	53.4974	-7.0	125	0.00
8	T	Trichlorofluoromethane	50.0000	49.0186	2.0	112	0.00
9	T	Diethyl ether	100.0000	93.1644	6.8	114	0.00
10	T	Isoprene	50.0000	52.0858	-4.2	119	0.00
11	T	Acrolein	50.0000	24.9867	50.0#	54	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	50.9680	-1.9	113	0.00
13	T	Acetone	50.0000	49.2643	1.5	125	0.00
14	C	1,1-Dichloroethene	50.0000	48.3725	3.3	112	0.00
15	T	Tert-Butyl Alcohol	200.0000	221.2806	-10.6	146	0.00
16	T	Dimethyl Sulfide	50.0000	47.4044	5.2	112	0.00
17	T	Iodomethane	50.0000	30.6625	38.7#	72	0.00
18	T	Methyl acetate	50.0000	45.0569	9.9	113	0.00
19	T	Methylene Chloride	50.0000	49.2516	1.5	115	0.00
20	T	Carbon Disulfide	50.0000	49.8218	0.4	116	0.00
21	T	Acrylonitrile	50.0000	47.1372	5.7	112	0.00
22	T	Methyl Tert Butyl Ether	50.0000	46.7382	6.5	110	0.00
23	T	trans-1,2-Dichloroethene	50.0000	50.1685	-0.3	115	0.00
24	T	n-Hexane	50.0000	50.7348	-1.5	118	0.00
25	T	Diisopropyl ether	100.0000	99.9420	0.1	120	0.00
26	T	Vinyl Acetate	50.0000	61.1350	-22.3	148	0.00
27	P	1,1-Dichloroethane	50.0000	48.7666	2.5	113	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	97.8994	2.1	119	0.00
29	T	2-Butanone	50.0000	53.0138	-6.0	126	0.00
30	T	Propionitrile	100.0000	105.8390	-5.8	124	0.00
31	T	2,2-Dichloropropane	50.0000	51.4960	-3.0	119	0.00
32	T	cis-1,2-Dichloroethene	50.0000	49.9703	0.1	115	0.00
33	C	Chloroform	50.0000	47.7093	4.6	112	0.00
34		1-Bromopropane	50.0000	51.8707	-3.7	122	0.00
35	T	Bromochloromethane	50.0000	48.2457	3.5	114	0.00
36	T	Tetrahydrofuran	100.0000	99.1997	0.8	124	0.00
37	S	Dibromofluoromethane	25.0000	24.2107	3.2	112	0.00
38	T	1,1,1-Trichloroethane	50.0000	50.4201	-0.8	115	0.00
39	T	Cyclohexane	50.0000	52.0388	-4.1	119	0.00
40	T	1,1-Dichloropropene	50.0000	51.9450	-3.9	119	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	95.7259	4.3	117	0.00
42	T	Carbon Tetrachloride	50.0000	51.0628	-2.1	114	0.00
43	S	1,2-Dichloroethane-d4	25.0000	22.3399	10.6	110	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	45.9109	8.2	107	0.00
46	T	Benzene	50.0000	51.1471	-2.3	118	0.00
47	T	Trichloroethene	50.0000	47.5928	4.8	117	0.00
48	T	Methylcyclohexane	50.0000	50.1624	-0.3	118	0.00
49	C	1,2-Dichloropropane	50.0000	52.1434	-4.3	117	0.00
50	T	Bromodichloromethane	50.0000	48.9887	2.0	112	0.00
51	T	1,4-Dioxane	200.0000	264.6780	-32.3#	172	0.01
52	T	Dibromomethane	50.0000	48.3907	3.2	112	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	49.3861	1.2	115	0.00
54	T	4-Methyl-2-Pentanone	50.0000	51.8263	-3.7	123	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\081815\8M406862.D Vial: 2
Acq On : 18 Aug 2015 15:16 Operator: TMB
Sample : WG535450-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD71981 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	51.0528	-2.1	116	0.00
56	T	Dimethyl Disulfide	50.0000	49.1843	1.6	117	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	124	0.00
58	S	Toluene-d8	25.0000	24.6808	1.3	120	0.00
59	C	Toluene	50.0000	49.7838	0.4	118	0.00
60	T	Ethyl Methacrylate	50.0000	48.5410	2.9	116	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	48.7915	2.4	116	0.00
63	T	1,1,2-Trichloroethane	50.0000	48.2347	3.5	115	0.00
64	T	2-Hexanone	50.0000	52.9454	-5.9	131	0.00
65	T	1,3-Dichloropropane	50.0000	48.1327	3.7	115	0.00
66	T	Tetrachloroethene	50.0000	50.0030	-0.0	119	0.00
67	T	Dibromochloromethane	50.0000	48.9820	2.0	115	0.00
68	T	1,2-Dibromoethane	50.0000	47.4954	5.0	116	0.00
69	T	1-Chlorohexane	50.0000	50.1908	-0.4	122	0.00
70	P	Chlorobenzene	50.0000	49.4418	1.1	118	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	50.3273	-0.7	115	0.00
72	C	Ethylbenzene	50.0000	49.4038	1.2	119	0.00
73	T	m-,p-Xylene	100.0000	100.6078	-0.6	118	0.00
74	T	o-Xylene	50.0000	49.9056	0.2	117	0.00
75	T	Styrene	50.0000	50.8209	-1.6	118	0.00
76	P	Bromoform	50.0000	47.6358	4.7	115	0.00
77	T	Isopropylbenzene	50.0000	50.8218	-1.6	117	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	124	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	48.0760	3.8	119	0.00
80	S	p-Bromofluorobenzene	25.0000	24.1897	3.2	124	0.00
81	T	1,2,3-Trichloropropane	50.0000	42.9316	14.1	106	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	41.6526	16.7	113	0.00
83	T	n-Propylbenzene	50.0000	48.8007	2.4	117	0.00
84	T	Bromobenzene	50.0000	46.4159	7.2	116	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	49.7505	0.5	116	0.00
86	T	2-Chlorotoluene	50.0000	50.0418	-0.1	116	0.00
87	T	4-Chlorotoluene	50.0000	47.0359	5.9	114	0.00
88	T	a-Methylstyrene	50.0000	48.9615	2.1	117	0.00
89	T	tert-Butylbenzene	50.0000	48.9490	2.1	118	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	49.4693	1.1	114	0.00
91	T	sec-Butylbenzene	50.0000	50.4975	-1.0	114	0.00
92	T	p-Isopropyltoluene	50.0000	49.7007	0.6	113	0.00
93	T	1,3-Dichlorobenzene	50.0000	48.7415	2.5	118	0.00
94	T	1,4-Dichlorobenzene	50.0000	46.3101	7.4	117	0.00
95	T	n-Butylbenzene	50.0000	50.0952	-0.2	112	0.00
96	T	1,2-Dichlorobenzene	50.0000	47.9561	4.1	116	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	45.2940	9.4	109	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	46.4280	7.1	112	0.00
99	T	Hexachlorobutadiene	50.0000	45.7953	8.4	113	0.00
100	T	Naphthalene	50.0000	47.7727	4.5	108	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	45.8575	8.3	112	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M406862.D 8260WT.M Tue Aug 18 15:41:37 2015 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\2\DATA\100214\8M400357.D          Vial: 3
Acq On    :  2 Oct 2014  11:58                       Operator: TMB
Sample    : WG494714-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD66476                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

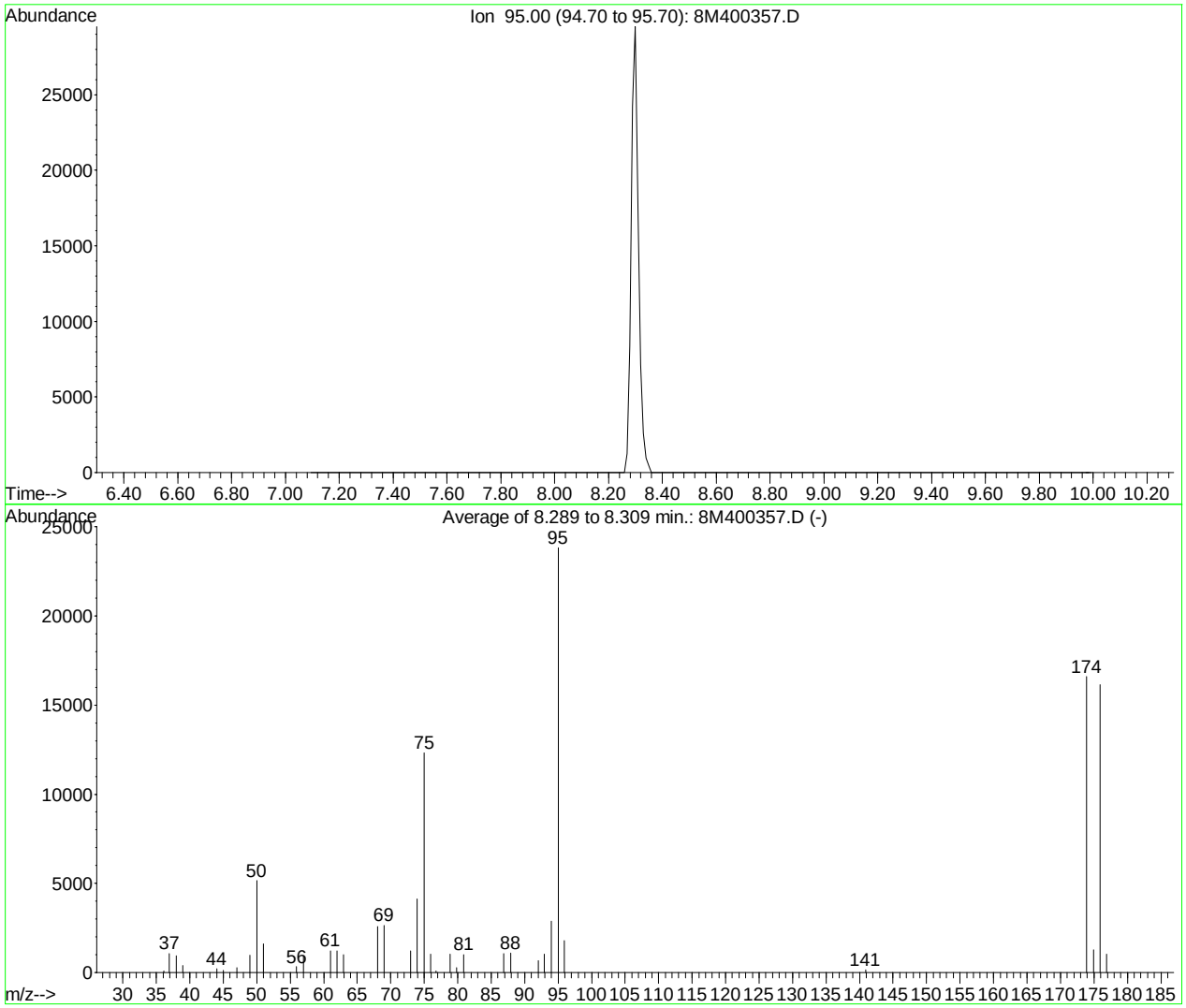

AutoFind: Scans 118, 119, 120; Background Corrected with Scan 113

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.7	5158	PASS
75	95	30	60	51.7	12312	PASS
95	95	100	100	100.0	23818	PASS
96	95	5	9	7.6	1800	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	69.7	16590	PASS
175	174	5	9	7.8	1290	PASS
176	174	95	101	97.3	16145	PASS
177	176	5	9	6.3	1023	PASS

8M400357.D BFB.M Thu Oct 02 12:09:27 2014

BFB

```
Data File : C:\MSDCHEM\2\DATA\073015\8M406477.D          Vial: 1
Acq On    : 30 Jul 2015  14:17                       Operator: TMB
Sample    : WG533051-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD71644                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

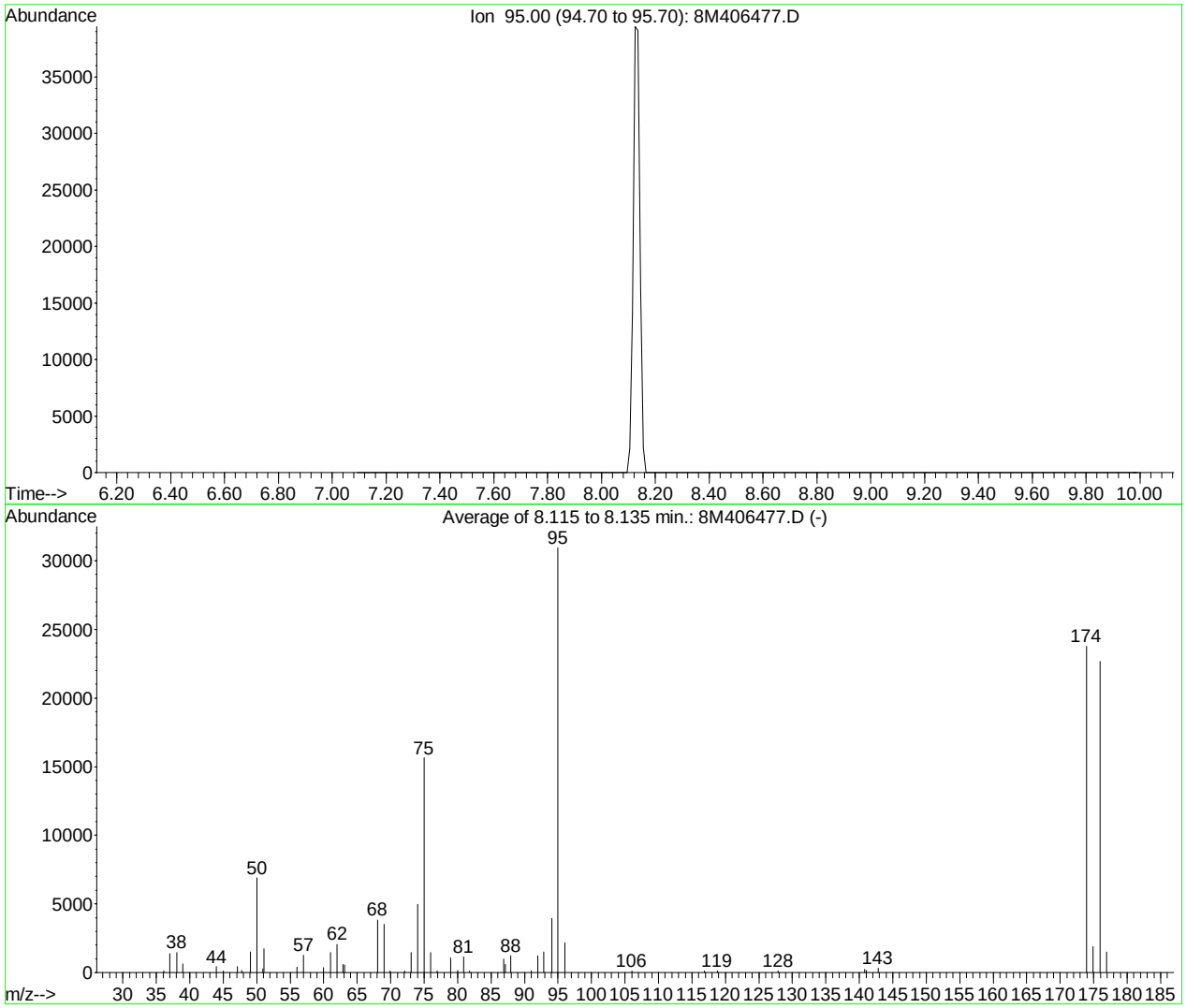

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.2	6881	PASS
75	95	30	60	50.6	15643	PASS
95	95	100	100	100.0	30939	PASS
96	95	5	9	7.0	2155	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	76.8	23758	PASS
175	174	5	9	7.9	1877	PASS
176	174	95	101	95.4	22662	PASS
177	176	5	9	6.6	1487	PASS

8M406477.D BFB.M Thu Jul 30 14:28:24 2015

BFB

```
Data File : C:\MSDCHEM\2\DATA\081815\8M406861.D          Vial: 2
Acq On    : 18 Aug 2015  14:53                       Operator: TMB
Sample    : WG535450-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD71981                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
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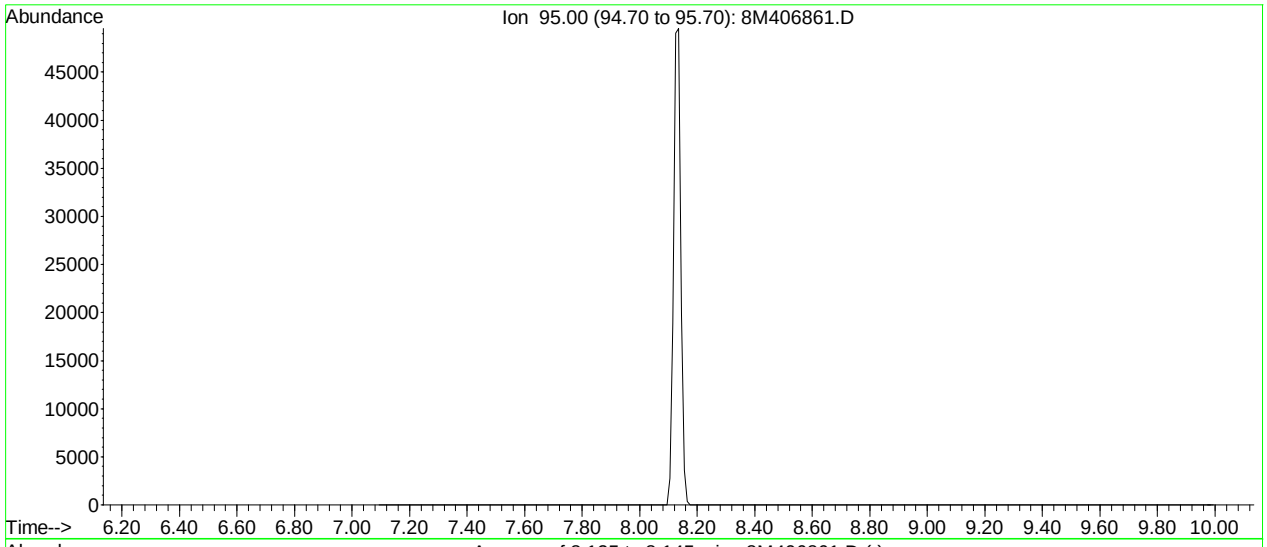

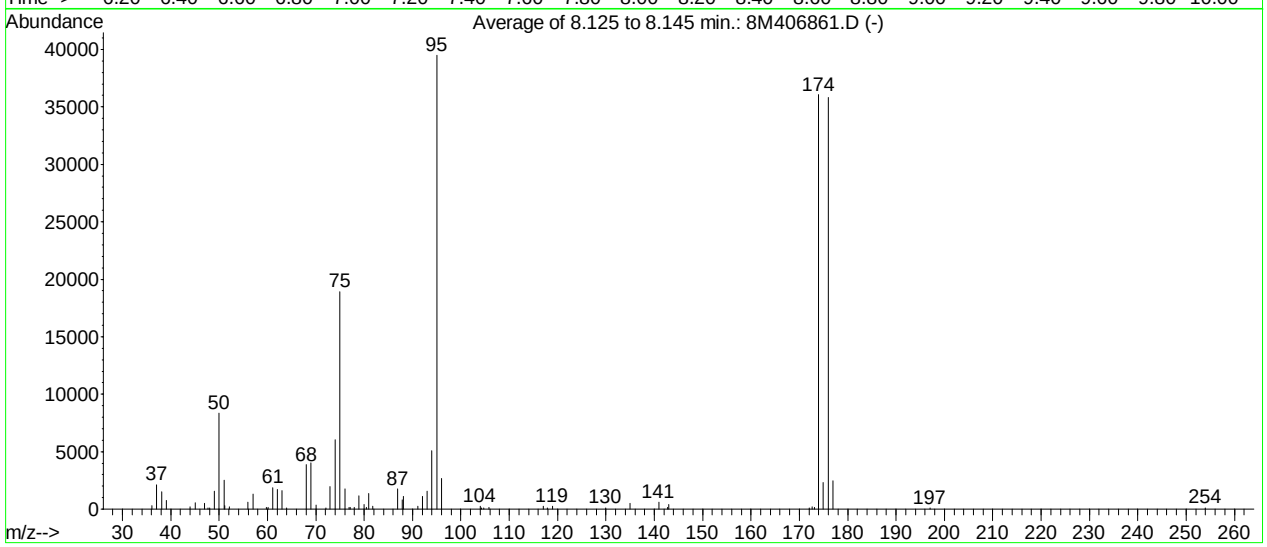

AutoFind: Scans 102, 103, 104; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.2	8370	PASS
75	95	30	60	47.9	18931	PASS
95	95	100	100	100.0	39482	PASS
96	95	5	9	6.7	2659	PASS
173	174	0.00	2	0.4	145	PASS
174	95	50	100	91.4	36072	PASS
175	174	5	9	6.4	2301	PASS
176	174	95	101	99.3	35837	PASS
177	176	5	9	6.8	2443	PASS

8M406861.D BFB.M Tue Aug 18 15:30:31 2015

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\081815\8M406864.D Vial: 4
Acq On : 18 Aug 2015 16:13 Operator: TMB
Sample : WG535451-01 VBLK0818 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 19 08:37:40 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	992933	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	749693	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	419973	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	220910	25.2489 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.00%		
43) 1,2-Dichloroethane-d4	10.31	65	193296	22.2168 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 88.88%		
58) Toluene-d8	12.69	98	909404	25.1456 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.60%		
80) p-Bromofluorobenzene	16.08	95	355448	24.4690 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.88%		

Target Compounds

					Qvalue
13) Acetone	6.27	43	241	0.1925 ug/L #	48
36) Tetrahydrofuran	9.65	42	486	0.3333 ug/L #	40
99) Hexachlorobutadiene	20.43	225	1630	0.1920 ug/L	79

(#) = qualifier out of range (m) = manual integration
8M406864.D 8260WT.M Wed Aug 19 08:37:41 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\081815\8M406864.D Vial: 4
Acq On : 18 Aug 2015 16:13 Operator: TMB
Sample : WG535451-01 VBLK0818 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 19 8:37 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

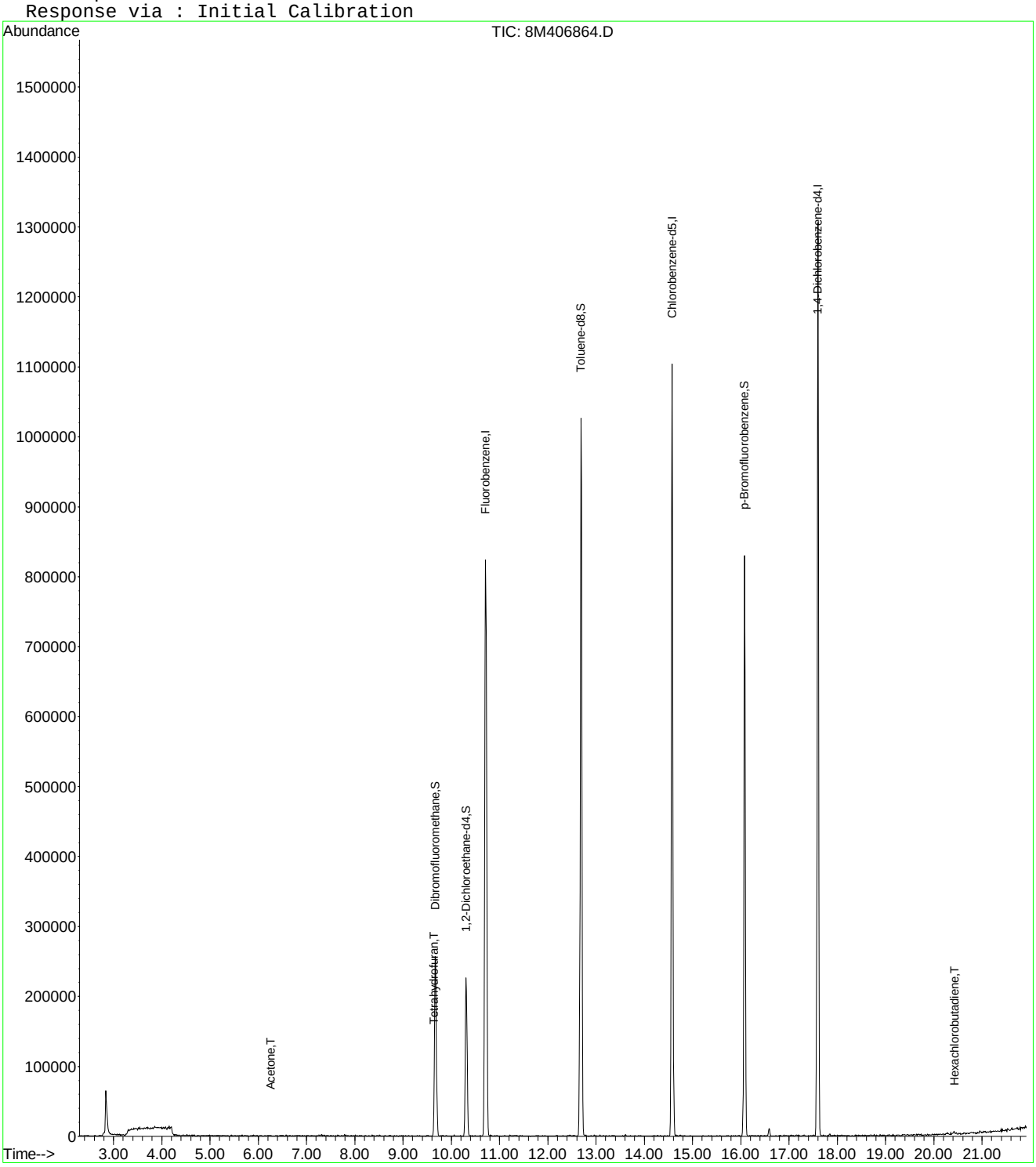

8M406864.D 8260WT.M Wed Aug 19 08:37:41 2015 Page 2

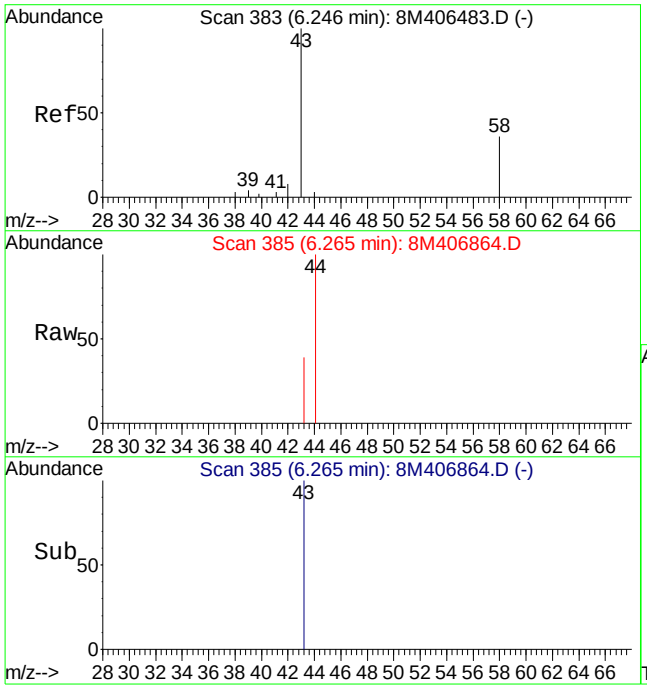

#13
Acetone
Concen: 0.19 ug/L
RT: 6.27 min Scan# 385
Delta R.T. 0.02 min
Lab File: 8M406864.D
Acq: 18 Aug 2015 16:13

Tgt Ion: 43 Resp: 241

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

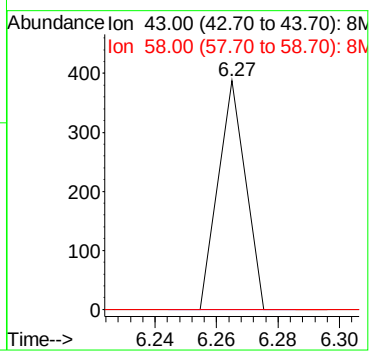

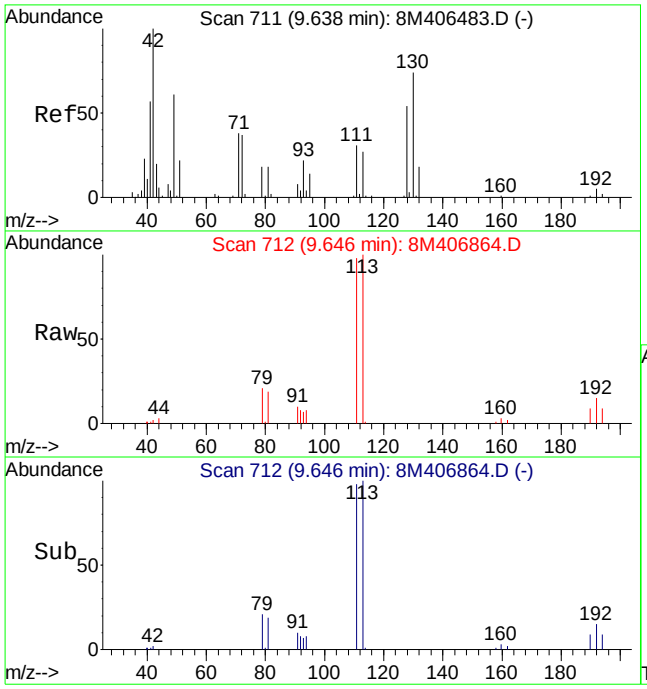

#36
Tetrahydrofuran
Concen: 0.33 ug/L
RT: 9.65 min Scan# 712
Delta R.T. 0.01 min
Lab File: 8M406864.D
Acq: 18 Aug 2015 16:13

Tgt Ion: 42 Resp: 486

Ion	Ratio	Lower	Upper
42	100		
72	0.0	22.4	52.4#
71	0.0	19.5	45.5#

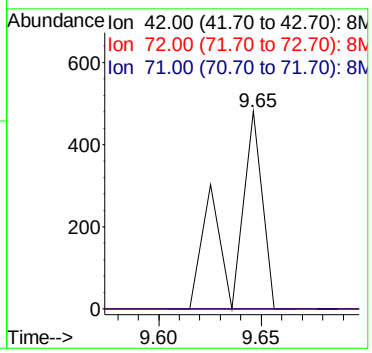

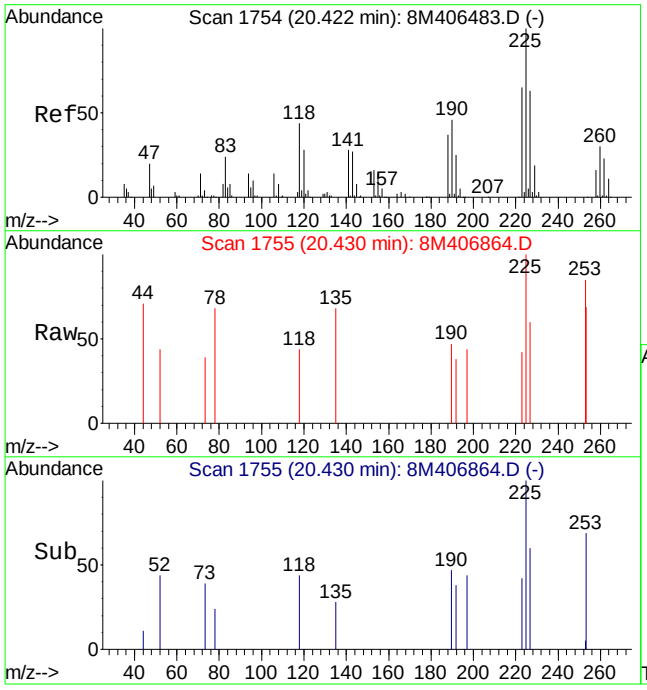

#99
Hexachlorobutadiene
Concen: 0.19 ug/L
RT: 20.43 min Scan# 1755
Delta R.T. 0.00 min
Lab File: 8M406864.D
Acq: 18 Aug 2015 16:13

Tgt Ion:225 Resp: 1630

Ion	Ratio	Lower	Upper
225	100		
223	46.5	37.4	87.4
190	30.4	26.6	62.2

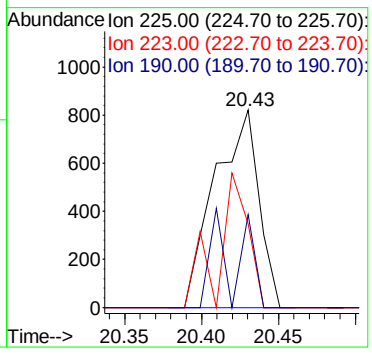

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\081815\8M406866.D Vial: 6
Acq On : 18 Aug 2015 17:09 Operator: TMB
Sample : WG535451-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD71810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 18 17:31:53 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	1008231	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	756099	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	435225	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	216280	24.3446 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.36%		
43) 1,2-Dichloroethane-d4	10.31	65	196642	22.2585 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 89.04%		
58) Toluene-d8	12.69	98	901878	24.7262 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.92%		
80) p-Bromofluorobenzene	16.08	95	359994	23.9135 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.64%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	263334	17.1018 ug/L	98
3) Chloromethane	3.62	50	337076	19.6079 ug/L	99
4) Vinyl Chloride	3.85	62	290488	22.9772 ug/L	98
5) 1,3-Butadiene	3.89	54	201297	18.1626 ug/L	91
6) Bromomethane	4.74	94	82344	9.7785 ug/L	96
7) Chloroethane	4.90	64	164617	20.9128 ug/L	98
8) Trichlorofluoromethane	5.38	101	290637	17.7789 ug/L	96
9) Diethyl ether	5.92	59	573823	92.7364 ug/L	97
10) Isoprene	5.95	67	275978	21.5699 ug/L	99
11) Acrolein	6.14	56	14268	46.3805 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	178763	19.1523 ug/L	97
13) Acetone	6.26	43	30124	23.6938 ug/L	89
14) 1,1-Dichloroethene	6.47	61	266579	16.8347 ug/L	93
15) Tert-Butyl Alcohol	6.59	59	75592	226.3580 ug/L	99
16) Dimethyl Sulfide	6.73	62	220968	22.2261 ug/L	97
17) Iodomethane	6.99	142	59946	6.9266 ug/L	92
18) Methyl acetate	7.01	43	75491	15.3014 ug/L	96
19) Methylene Chloride	7.26	84	195571	19.3892 ug/L	100
20) Carbon Disulfide	7.30	76	551564	17.0548 ug/L	99
21) Acrylonitrile	7.45	53	42083	19.9197 ug/L	96
22) Methyl Tert Butyl Ether	7.48	73	341415	19.1675 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	277426	18.6806 ug/L	97
24) n-Hexane	7.79	57	272541	16.9767 ug/L	100
25) Diisopropyl ether	8.14	45	3506643	97.2371 ug/L	98
26) Vinyl Acetate	8.30	43	285765	31.0005 ug/L	99
27) 1,1-Dichloroethane	8.33	63	377785	18.9667 ug/L	99
28) Ethyl-Tert-Butyl ether	8.71	59	2451895	91.1275 ug/L	99
29) 2-Butanone	8.89	43	48991	22.7581 ug/L	99
30) Propionitrile	9.00	54	75003	109.5395 ug/L	100
31) 2,2-Dichloropropane	9.11	77	289520	18.8615 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	209026	19.5576 ug/L	94
33) Chloroform	9.38	83	348898	19.4094 ug/L	98
34) 1-Bromopropane	9.51	122	39223	20.6467 ug/L	99
35) Bromochloromethane	9.61	130	106256	19.3010 ug/L	100
36) Tetrahydrofuran	9.64	42	152444	102.9579 ug/L	96
38) 1,1,1-Trichloroethane	9.92	97	329113	19.8493 ug/L	98
39) Cyclohexane	9.95	56	374044	19.3416 ug/L	99
40) 1,1-Dichloropropene	10.11	75	267174	18.8202 ug/L	98
41) Tert-Amyl-Methyl ether	10.22	73	1950136	96.8229 ug/L	99
42) Carbon Tetrachloride	10.26	117	284728	19.3943 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M406866.D 8260WT.M Tue Aug 18 17:31:53 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\081815\8M406866.D Vial: 6
Acq On : 18 Aug 2015 17:09 Operator: TMB
Sample : WG535451-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD71810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 18 17:31:53 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	214418	17.8093 ug/L		96
46)	Benzene	10.46	78	803319	20.2433 ug/L		98
47)	Trichloroethene	11.22	130	207888	18.3538 ug/L		97
48)	Methylcyclohexane	11.30	83	312888	19.0495 ug/L		98
49)	1,2-Dichloropropane	11.44	63	224801	20.4484 ug/L		93
50)	Bromodichloromethane	11.74	83	259784	19.0405 ug/L		98
51)	1,4-Dioxane	11.72	88	9089	235.0930 ug/L		92
52)	Dibromomethane	11.82	93	98588	19.6035 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.03	63	93990	20.4677 ug/L		100
54)	4-Methyl-2-Pentanone	12.06	58	41824	20.5175 ug/L		98
55)	cis-1,3-Dichloropropene	12.37	75	313112	20.8493 ug/L		99
56)	Dimethyl Disulfide	12.63	79	156354	19.2172 ug/L		88
59)	Toluene	12.79	91	876682	19.8407 ug/L		100
60)	Ethyl Methacrylate	12.88	69	175296	20.7861 ug/L		95
62)	trans-1,3-Dichloropropene	12.97	75	237629	18.1809 ug/L		99
63)	1,1,2-Trichloroethane	13.17	97	134279	19.3920 ug/L		99
64)	2-Hexanone	13.12	58	41364	21.1458 ug/L	#	87
65)	1,3-Dichloropropane	13.48	76	232816	19.3183 ug/L		95
66)	Tetrachloroethene	13.61	164	183640	19.7120 ug/L		93
67)	Dibromochloromethane	13.87	129	173098	18.9767 ug/L		99
68)	1,2-Dibromoethane	14.12	107	125922	18.7030 ug/L		98
69)	1-Chlorohexane	14.22	91	302088	19.3455 ug/L		98
70)	Chlorobenzene	14.63	112	586162	20.7189 ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	192310	19.1347 ug/L		99
72)	Ethylbenzene	14.65	106	316351	19.8096 ug/L		97
73)	m-,p-Xylene	14.75	106	783778	41.5336 ug/L		95
74)	o-Xylene	15.30	106	390405	21.0218 ug/L		95
75)	Styrene	15.34	104	618796	20.4010 ug/L		96
76)	Bromoform	15.84	173	106014	19.3305 ug/L		99
77)	Isopropylbenzene	15.73	105	981936	21.1204 ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.94	83	154157	19.4943 ug/L		100
81)	1,2,3-Trichloropropane	16.14	110	37697	16.9831 ug/L		64
82)	trans-1,4-Dichloro-2-Buten	16.18	53	39984	13.5479 ug/L	#	1
83)	n-Propylbenzene	16.23	91	1263120	19.7117 ug/L		99
84)	Bromobenzene	16.37	156	234744	18.0855 ug/L		99
85)	1,3,5-Trimethylbenzene	16.43	105	822832	19.4497 ug/L		96
86)	2-Chlorotoluene	16.51	91	799326	20.4217 ug/L		99
87)	4-Chlorotoluene	16.55	91	712378	19.0988 ug/L		97
88)	a-Methylstyrene	16.83	118	449882	19.5819 ug/L		95
89)	tert-Butylbenzene	16.89	134	176628	19.2711 ug/L		95
90)	1,2,4-Trimethylbenzene	16.94	105	807428	18.8372 ug/L		95
91)	sec-Butylbenzene	17.16	105	1044924	20.0183 ug/L		99
92)	p-Isopropyltoluene	17.32	119	838145	18.6714 ug/L		99
93)	1,3-Dichlorobenzene	17.52	146	486946	19.1318 ug/L		98
94)	1,4-Dichlorobenzene	17.64	146	461669	17.5962 ug/L		98
95)	n-Butylbenzene	17.85	91	806011	18.6208 ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	449755	20.0143 ug/L		96
97)	1,2-Dibromo-3-Chloropropan	19.13	75	23928	17.2835 ug/L		98
98)	1,2,4-Trichlorobenzene	20.27	180	298591	17.2666 ug/L		99
99)	Hexachlorobutadiene	20.42	225	148725	16.9009 ug/L		99
100)	Naphthalene	20.64	128	411191	18.3265 ug/L		97
101)	1,2,3-Trichlorobenzene	20.95	180	254843	17.0774 ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\081815\8M406866.D Vial: 6
Acq On : 18 Aug 2015 17:09 Operator: TMB
Sample : WG535451-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD71810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 18 17:31 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

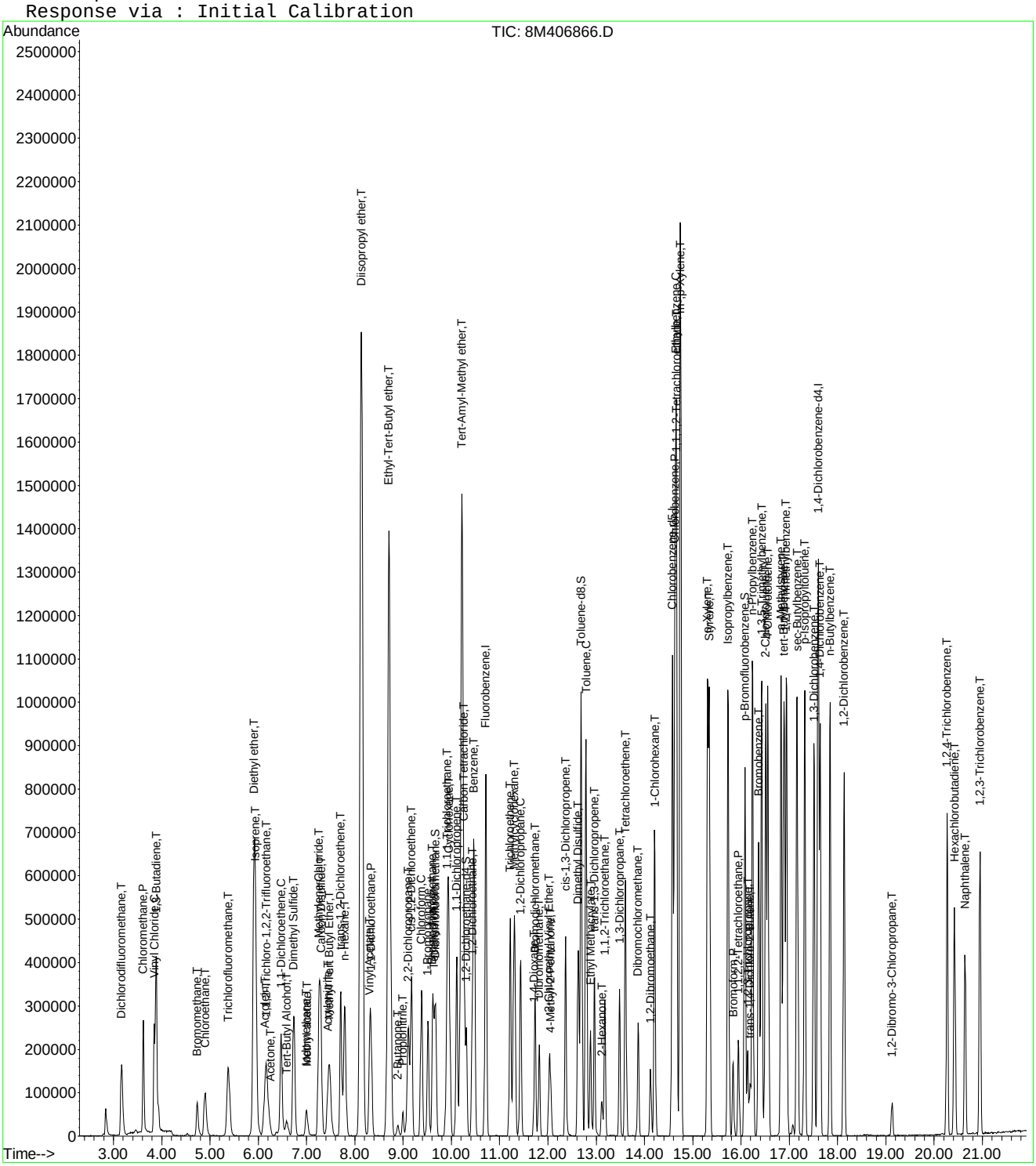

2.1.2 RSK 175

2.1.2.1 Summary Data

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-01	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW18-081715	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG535476	**Analyst:**	JDS	**Run Date:**	08/18/2015 16:40
Collect Date:	08/17/2015 08:30	**Dilution:**	1	**File ID:**	16G48241
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	391000	J	10000	5000	2500
Methane	74-82-8	17.5		5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-01	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW18-081715	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG535545	**Analyst:**	JDS	**Run Date:**	08/19/2015 15:35
Collect Date:	08/17/2015 08:30	**Dilution:**	5	**File ID:**	16G48254
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	473000		50000	25000	12500
Methane	74-82-8	10.0	U	25.0	10.0	5.00
ethene	74-85-1	10.0	U	25.0	10.0	5.00
ethane	74-84-0	10.0	U	25.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-03	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW24-081715	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG535476	**Analyst:**	JDS	**Run Date:**	08/18/2015 16:51
Collect Date:	08/17/2015 09:55	**Dilution:**	1	**File ID:**	16G48242
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	485000	J	10000	5000	2500
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-03	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW24-081715	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG535545	**Analyst:**	JDS	**Run Date:**	08/19/2015 15:47
Collect Date:	08/17/2015 09:55	**Dilution:**	5	**File ID:**	16G48255
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	580000		50000	25000	12500
Methane	74-82-8	10.0	U	25.0	10.0	5.00
ethene	74-85-1	10.0	U	25.0	10.0	5.00
ethane	74-84-0	10.0	U	25.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-05	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW23-081715	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG535476	**Analyst:**	JDS	**Run Date:**	08/18/2015 17:03
Collect Date:	08/17/2015 11:20	**Dilution:**	1	**File ID:**	16G48243
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	147000		10000	5000	2500
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-07	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW08-081715	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG535476	**Analyst:**	JDS	**Run Date:**	08/18/2015 17:26
Collect Date:	08/17/2015 14:50	**Dilution:**	1	**File ID:**	16G48245
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	458000	J	10000	5000	2500
Methane	74-82-8	1.16	J	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-07	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW08-081715	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG535545	**Analyst:**	JDS	**Run Date:**	08/19/2015 15:59
Collect Date:	08/17/2015 14:50	**Dilution:**	5	**File ID:**	16G48256
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	618000		50000	25000	12500
Methane	74-82-8	10.0	U	25.0	10.0	5.00
ethene	74-85-1	10.0	U	25.0	10.0	5.00
ethane	74-84-0	10.0	U	25.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.2.2 QC Summary Data

RSK-175 - Example Calculation for Methane

1.0 Linear Calibration Models

Option A - Average RF Method

ICAL_x	ICAL_r		RF
1.67	19901		11917
6.67	69174		10371
16.7	176923		10594
66.7	685135		10272
133	1324853		9961
300	2845104		9484
		Average RF:	**10433**

Where:
ICAL_x = the ICAL concentration
ICAL_r = the ICAL response (area)
RF = calibration factor = ICAL_r / ICAL_x

Option B - Agilent Linear Regression Constant

ICAL_x	ICAL_r	[ICAL_r}^2	[ICAL-x][ICAL-r]
1.67	19901	396049801	33235
6.67	69174	4785042276	461391
16.7	176923	31301747929	2954614
66.7	685135	4.6941E+11	45698505
133	1324853	1.75524E+12	176205449
300	2845104	8.09462E+12	853531200
Summation:		**1.03557E+13**	**1078884393**

Agilent Linear Regression Constant : **9598.567853**
(1.03557E+13)/1078884393)

2.0 Calculate the concentration in extract, Cx

Where:	
y = area response of methane from quant report	**1157414**
a = average RF (or Agilent regression constant)	**10433.00**
Cx = y/a	**110.9377935**

3.0 Calculate the concentration in sample

Cs = Cx (MW/Tf) (HS/S) (DF)

Where:		
Cx = Concentration in extract	**110.9377935**	umol/mol
MW = molecular weight of analyte	**16.04**	ug/umol
TF = temperature factor = (22.4)(313/273)	**25.68**	L/mol
HS = headspace volume	**0.015**	L
S = sample volume remaining after headspace removal	**0.00547**	L
DF = dilution factor	**2**	
Cs = calculated sample concentration	**380.034301**	ug/L

RSK-175 - Example Calculation for Carbon Dioxide

ICAL Plot - Quadratic Regression (y = Ax^2 + Bx +C)

Ax^2 + Bx + (C - y) = 0

Step 1 - Calculate the concentration in extract, Cx

Data from quadratic regression plot:		
Value of A from plot:	**0.916**	
Value of B from plot:	**1540**	
Value of C from plot:	**0**	
Response for methane from quantitation report (y):	**8763828**	
Value of C - y	**-8763828**	
Solving for Cx using the quadratic formula:		
Root 1 - Computed Cx1:	**2364.716284**	umol/mol
Root 2 - Computed Cx2:	**-4045.938991**	

Step 2 - Calculate the concentration in sample

Cs = Cx (MW/Tf) (HS/S) (DF)

Where:

Cx = Concentration in extract :	**2364.716284**	umol/mol
MW = molecular weight of analyte:	**44.0**	ug/umol
TF = temperature factor = (22.4)(313/273):	**25.68**	L/mol
HS = initial headspace volume (extraction log):	**0.015**	L
S = final volume (extraction log):	**0.00547**	L
DF = dilution factor:	**10**	
Cs = calculated sample concentration:	**111106.798**	ug/L

Other Notes:

Temperature of headspace = 40 C = 313 K

Analyte	**MW (g/mol)**
Methane	16.04
Ethane	30.07
Ethene	28.05
Propane	44.1
Carbon Dioxide	44.0

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 030315
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG514119

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G46874	RINSE	NA	1	1		03/03/15 14:05
16G46875	WG514119-01 0.67umol/mol STD RSK175	NA	1	1	STD67276	03/03/15 14:17
16G46876	WG514119-02 1.67umol/mol STD RSK175	NA	1	1	STD67276	03/03/15 14:30
16G46877	WG514119-03 33.3umol/mol STD RSK175	NA	1	1	STD67276	03/03/15 14:42
16G46878	WG514119-04 66.7umol/mol STD RSK175	NA	1	1	STD67274	03/03/15 14:53
16G46879	WG514119-05 133umol/mol STD RSK175	NA	1	1	STD67274	03/03/15 15:05
16G46880	WG514119-06 333umol/mol STD RSK175	NA	1	1	STD67274	03/03/15 15:17
16G46881	WG514119-07 533umol/mol STD RSK175	NA	1	1	STD67274	03/03/15 15:29
16G46882	RINSE	NA	1	1		03/03/15 15:41
16G46883	WG514119-08 133umol/mol ALT SRC STD	NA	1	1	STD68250	03/03/15 16:14
16G46884	WG514119-08 133umol/mol ALT SRC STD	NA	1	1	STD68250	03/03/15 17:10

Comments

Seq.	Rerun	Dil.	Reason	Analytes
10	X			
File ID: 16G46883				
	Wrong vial taken up by HT3 autosampler			

Approved: March 11, 2015

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 081815
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: STD68250

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG535476

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G48233	WG535474-01 133umol/mol CCV RSK175	NA	1	1	STD67274	08/18/15 14:05
16G48234	WG535476-01 BLANK RSK175	NA	1	1		08/18/15 14:36
16G48235	WG535476-02 67umol/mol LCS RSK175	NA	1	1	STD68250	08/18/15 14:48
16G48236	L15080901-01 A REF RSK175	<2	1	1		08/18/15 15:43
16G48237	L15080901-02 A MS RSK175	<2	1	1	STD68250	08/18/15 15:54
16G48238	L15080901-03 A MSD RSK175	<2	1	1	STD68250	08/18/15 16:05
16G48239	L15080901-04 A RSK175	<2	1	1		08/18/15 16:17
16G48240	L15080901-05 A RSK175	<2	1	1		08/18/15 16:28
16G48241	L15080904-01 A RSK175	6	1	1		08/18/15 16:40
16G48242	L15080904-03 A RSK175	6	1	1		08/18/15 16:51
16G48243	L15080904-05 A RSK175	6	1	1		08/18/15 17:03
16G48244	WG535474-02 133umol/mol CCV RSK175	NA	1	1	STD67274	08/18/15 17:14
16G48245	L15080904-07 A RSK175	6	1	1		08/18/15 17:26
16G48246	WG535474-03 133umol/mol CCV RSK175	NA	1	1	STD67274	08/18/15 17:37

Comments

Seq.	Rerun	Dil.	Reason	Analytes
4	X	5	Over Calibration Range	m
File ID:	16G48236			
	L15080901-01			
7	X	10	Over Calibration Range	m
File ID:	16G48239			
	L15080901-04			
8	X	10	Over Calibration Range	m
File ID:	16G48240			
	L15080901-05			
9	X	5	Over Calibration Range	CO2
File ID:	16G48241			
	L15080904-01			
10	X	5	Over Calibration Range	CO2
File ID:	16G48242			
	L15080904-03			
13	X	5	Over Calibration Range	CO2
File ID:	16G48245			
	L15080904-07			

Approved: August 25, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 081915
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG535545

Comments: L15080910-01 through -05 are new cap tests for QC purposes only and are not added to sample count.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G48247	WG535544-01 133umol/mol CCV RSK175	NA	1	1	STD67274	08/19/15 11:10
16G48248	WG535545-01 BLANK RSK175	NA	1	1		08/19/15 11:57
16G48249	WG535545-02 67umol/mol LCS RSK175	NA	1	1	STD68250	08/19/15 12:09
16G48250	WG535545-03 67umol/mol LCS2 RSK175	NA	1	1	STD68250	08/19/15 13:12
16G48251	L15080901-01 B D1 5X RSK175	<2	1	5		08/19/15 15:02
16G48252	L15080901-04 B D1 10X RSK175	<2	1	10		08/19/15 15:13
16G48253	L15080901-05 B D1 10X RSK175	<2	1	10		08/19/15 15:24
16G48254	L15080904-01 B D1 5X RSK175	6	1	5		08/19/15 15:35
16G48255	L15080904-03 B D1 5X RSK175	6	1	5		08/19/15 15:47
16G48256	L15080904-07 B D1 5X RSK175	6	1	5		08/19/15 15:59
16G48257	L15080931-01 A RSK175	2	1	1		08/19/15 16:11
16G48258	WG535544-02 133umol/mol CCV RSK175	NA	1	1	STD67274	08/19/15 16:22
16G48259	L15080931-02 A RSK175	<2	1	1		08/19/15 16:34
16G48260	L15080931-03 A RSK175	<2	1	1		08/19/15 16:45
16G48261	L15080931-04 A RSK175	<2	1	1		08/19/15 16:57
16G48262	L15080931-05 A RSK175	<2	1	1		08/19/15 17:08
16G48263	L15080931-06 A RSK175	5	1	1		08/19/15 17:20
16G48264	L15080931-07 A RSK175	2	1	1		08/19/15 17:31
16G48265	L15080931-08 A RSK175	2	1	1		08/19/15 17:42
16G48266	L15080931-09 A RSK175	<2	1	1		08/19/15 17:54
16G48267	L15080931-10 A RSK175	<2	1	1		08/19/15 18:06
16G48268	L15080932-01 A RSK175	<2	1	1		08/19/15 18:17
16G48269	WG535544-03 133umol/mol CCV RSK175	NA	1	1	STD67274	08/19/15 18:29
16G48270	L15080910-01 A 133umol/mol RSK175	NA	1	1	STD67274	08/19/15 18:41
16G48271	L15080910-02 A 133umol/mol RSK175	NA	1	1	STD67274	08/19/15 18:52
16G48272	L15080910-03 A BLANK RSK175	NA	1	1		08/19/15 19:04
16G48273	L15080910-04 A BLANK RSK175	NA	1	1		08/19/15 19:15
16G48274	L15080910-05 A BLANK RSK175	NA	1	1		08/19/15 19:27
16G48275	WG535544-04 133umol/mol CCV RSK175	NA	1	1	STD67274	08/19/15 19:38

Comments

Seq.	Rerun	Dil.	Reason	Analytes
11				

Approved: August 25, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 081915
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG535545

Comments: L15080910-01 through -05 are new cap tests for QC purposes only and are not added to sample count.

Comments

Seq.	Rerun	Dil.	Reason	Analytes
File ID: 16G48257				
	L15080931-01 OOH due to pH being out			
21				
File ID: 16G48267				
	L15080931-10 received with large amnt. of headspace			
22	X	20	Over Calibration Range	m
File ID: 16G48268				
	L15080932-01			

Approved: August 25, 2015

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Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B202656

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG514119-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-04	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-05	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-06	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-07	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-08	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B210973

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG535474-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG535474-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG535474-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG535476-02	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
WG535476-04	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
WG535476-05	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
WG535476-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080901-02	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L15080904-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG535476-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080904-05	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080904-07	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080901-04	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080904-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080901-05	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080901-03	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L15080901-01	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B211171

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG535544-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG535544-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG535544-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG535544-04	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080904-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080931-07	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080901-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080901-04	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080904-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080931-06	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080931-09	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080931-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080931-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080932-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080910-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080904-07	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080931-05	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080931-08	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080910-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG535545-03	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L15080931-02	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080910-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080931-04	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080931-10	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080910-05	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080910-04	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080901-05	15	mL	15	mL					5.47	mL	5.47	mL	40
WG535545-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG535545-02	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAR-2015
Analyst: JDS
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 66688
Analytical Workgroups: WG514119

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	NA
Project/Client Specific Requirements	NA
Special Standards	NA
Blanks	NA
TCL's	NA
Surrogates	NA
LCS (Laboratory Control Sample)	NA
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	NA
Surrogates	NA
Calculations & Correct Factors	NA
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
06-MAR-2015

Secondary Reviewer:
11-MAR-2015

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-11-2015 12:34:12

Microbac Laboratories Inc.

Data Checklist

Date: 18-AUG-2015
Analyst: JDS
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 69922
Analytical Workgroups: WG535476

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	NA
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	X
Samples	X
Surrogates	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
24-AUG-2015

Secondary Reviewer:
25-AUG-2015

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-25-2015 08:13:37

Microbac Laboratories Inc.

Data Checklist

Date: 19-AUG-2015
Analyst: JDS
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 70002
Analytical Workgroups: WG535545

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	NA
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	X
Surrogates	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
25-AUG-2015

Secondary Reviewer:
25-AUG-2015

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-25-2015 15:03:04

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: RSK175 AAB#: WG535476

Login Number: L15080904

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW18-081715	01	08/17/15					08/18/2015	1.3	7		08/18/15	1.3	7	
50WW24-081715	03	08/17/15					08/18/2015	1.3	7		08/18/15	1.3	7	
50WW23-081715	05	08/17/15					08/18/2015	1.2	7		08/18/15	1.2	7	
50WW08-081715	07	08/17/15					08/18/2015	1.1	7		08/18/15	1.1	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4350865
Report generated 08/25/2015 14:54

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: RSK175 AAB#: WG535545

Login Number: L15080904

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW18-081715	01	08/17/15					08/19/2015	2.3	7		08/19/15	2.3	7	
50WW24-081715	03	08/17/15					08/19/2015	2.2	7		08/19/15	2.2	7	
50WW08-081715	07	08/17/15					08/19/2015	2	7		08/19/15	2	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4350865
Report generated 08/25/2015 14:54

METHOD BLANK SUMMARY

Login Number: L15080904
Blank File ID: 16G48234
Prep Date: 08/18/15 14:36
Analyzed Date: 08/18/15 14:36
Analyst: JDS

Work Group: WG535476
Blank Sample ID: WG535476-01
Instrument ID: HP16
Method: RSK175

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG535476-02	16G48235	08/18/15 14:48	01
50WW18-081715	L15080904-01	16G48241	08/18/15 16:40	01
50WW24-081715	L15080904-03	16G48242	08/18/15 16:51	01
50WW23-081715	L15080904-05	16G48243	08/18/15 17:03	01
50WW08-081715	L15080904-07	16G48245	08/18/15 17:26	01

Report Name: BLANK_SUMMARY
PDF File ID: 4350866
Report generated 08/25/2015 14:54

METHOD BLANK SUMMARY

Login Number: L15080904
Blank File ID: 16G48248
Prep Date: 08/19/15 11:57
Analyzed Date: 08/19/15 11:57
Analyst: JDS

Work Group: WG535545
Blank Sample ID: WG535545-01
Instrument ID: HP16
Method: RSK175

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG535545-02	16G48249	08/19/15 12:09	01
LCS2	WG535545-03	16G48250	08/19/15 13:12	01
50WW18-081715	L15080904-01	16G48254	08/19/15 15:35	DL01
50WW24-081715	L15080904-03	16G48255	08/19/15 15:47	DL01
50WW08-081715	L15080904-07	16G48256	08/19/15 15:59	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4350866
Report generated 08/25/2015 14:54

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15080904 Prep Date: 08/18/15 14:36 Sample ID: WG535476-01
Instrument ID: HP16 Run Date: 08/18/15 14:36 Prep Method: 5021
File ID: 16G48234 Analyst: JDS Method: RSK175
Workgroup (AAB#): WG535476 Matrix: Water Units: ug/L
Contract #: Cal ID: HP16-03-MAR-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Carbon Dioxide	2500	10000	2500	1	U
Methane	1.00	5.00	1.00	1	U
ethene	1.00	5.00	1.00	1	U
ethane	1.00	5.00	1.00	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4350867
25-AUG-2015 14:54

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15080904 Prep Date: 08/19/15 11:57 Sample ID: WG535545-01
Instrument ID: HP16 Run Date: 08/19/15 11:57 Prep Method: 5021
File ID: 16G48248 Analyst: JDS Method: RSK175
Workgroup (AAB#): WG535545 Matrix: Water Units: ug/L
Contract #: Cal ID: HP16 - 03-MAR-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Carbon Dioxide	2500	10000	2500	1	U
Methane	1.00	5.00	1.00	1	U
ethene	1.00	5.00	1.00	1	U
ethane	1.00	5.00	1.00	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4350867
25-AUG-2015 14:54

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15080904 Analyst: JDS Prep Method: 5021
Instrument ID: HP16 Matrix: Water Method: RSK175
Workgroup (AAB#): WG535545 Units: ug/L
QC Key: DOD4 Lot #: STD68250

Sample ID: WG535545-02 LCS File ID: 16G48249 Run Date: 08/19/2015 12:09
Sample ID: WG535545-03 LCS2 File ID: 16G48250 Run Date: 08/19/2015 13:12

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Methane	114	109	95.6	114	104	90.7	5.28	85 - 115	20	
ethene	200	188	94.1	200	178	89.4	5.20	85 - 115	20	
ethane	214	196	91.4	214	186	86.7	5.29	85 - 115	20	
Carbon Dioxide	31300	30100	96.1	31300	26800	85.6	11.5	10 - 200	40	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4350868
Report generated: 08/25/2015 14:54

Calibration Table Report
Method: RSKEXT1.M
Title: RSK175 HP16 (SOP: OVL RSK01) 030315
Last Calibration: Fri Mar 06 11:52:33 2015
Curve:WG514119
Calibration Files

		0.67	1.67	33.3	66.7	133	333	533			
		16G46875.	16G46876.	16G46877.	16G46878.	16G46879.	16G46880.	16G46881.D			
	Compound								Avg	%RSD	Linear
T	methane		442542.3	201716.7	175611.6	187516.9	186065.3	188702.9	230359.0	45.3	0.999
T	ethene		322209.5	334124.6	295911.1	313430.8	319356.4	318282.1	317219.0	3.9	
T	acetylene		316851.9	343603.6	313507.6	354933.8	357109.5	344601.6	338435.0	5.6	
T	ethane	381661.4	339569.9	346403.4	312338.4	328333.4	335709.7	335266.3	339897.0	6.3	
T	propane	528069.3	481580.8	518227.1	469331.7	483950.9	500133.6	493547.4	496406.0	4.2	
T	n-butane	686564.3	616037.4	680754.9	613926.5	634552.4	659898.4	646188.9	648275.0	4.5	
	Signal #2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
T	carbon dioxide		3977.4	5604.2	5581.8	6054.5	6060.7	5810.7	5514.9	14.2	

Fri Mar 06 11:59:12 2015

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15080904 Run Date: 03/03/2015 Sample ID: WG514119-08
Instrument ID: HP16 Run Time: 17:10 Method: RSK175
File ID: 16G46884 Analyst: JDS QC Key: DOD4
ICal Workgroup: WG514119 Cal ID: HP16 - 03-MAR-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
carbon dioxide		62500	65100	ug/L	5740	4.10	15	
methane		228	236	ug/L	195000	3.50	15	
ethene		398	407	ug/L	324000	2.20	15	
ethane		427	423	ug/L	337000	0.900	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4350869
Report generated 08/25/2015 14:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080904
Run Date: 08/18/2015
Sample ID: WG535474-01
Instrument ID: HP16
Run Time: 14:05
Method: RSK175
File ID: 16G48233
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG535476
Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62500	66100	ug/L	5840	5.81	15	
methane		228	214	ug/L	177000	6.07	15	
ethene		398	374	ug/L	298000	6.06	15	
ethane		427	392	ug/L	312000	8.19	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4350870
Report generated 08/25/2015 14:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080904
Run Date: 08/18/2015
Sample ID: WG535474-02
Instrument ID: HP16
Run Time: 17:14
Method: RSK175
File ID: 16G48244
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG535476
Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62500	58800	ug/L	5190	5.96	15	
methane		228	211	ug/L	175000	7.49	15	
ethene		398	363	ug/L	289000	8.95	15	
ethane		427	381	ug/L	303000	10.9	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4350870
Report generated 08/25/2015 14:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080904
Run Date: 08/18/2015
Sample ID: WG535474-03
Instrument ID: HP16
Run Time: 17:37
Method: RSK175
File ID: 16G48246
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG535476
Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62500	57100	ug/L	5040	8.57	15	
methane		228	214	ug/L	178000	5.96	15	
ethene		398	367	ug/L	292000	7.90	15	
ethane		427	386	ug/L	308000	9.46	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4350870
Report generated 08/25/2015 14:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080904
Run Date: 08/19/2015
Sample ID: WG535544-01
Instrument ID: HP16
Run Time: 11:10
Method: RSK175
File ID: 16G48247
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG535545
Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62500	63800	ug/L	5630	2.09	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4350870
Report generated 08/25/2015 14:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080904
Run Date: 08/19/2015
Sample ID: WG535544-02
Instrument ID: HP16
Run Time: 16:22
Method: RSK175
File ID: 16G48258
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG535545
Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62500	61400	ug/L	5420	1.74	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4350870
Report generated 08/25/2015 14:54

2.1.2.3 Sample Data

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDchem\1\DATA\081815\16G48241.D\FID1A.CH Vial: 9
Signal #2 : C:\MSDchem\1\DATA\081815\16G48241.D\TCD2B.CH
Acq On    : 18 Aug 2015  16:40                      Operator: JDS
Sample    : L15080904-01 A RSK175                   Inst    : HP16
Misc      : 1,1                                     Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Aug 18 16:46:32 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                   Signal #2 Phase:
Signal #1 Info  :                   Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	2305599	10.218	umol/
2) T	ethene	1.06	6756	0.021	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.40	11218	0.033	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	458506431	83139.935	umol/

Signal #1 : C:\MSDchem\1\DATA\081815\16G48241.D\FID1A.CH Vial: 9
Signal #2 : C:\MSDchem\1\DATA\081815\16G48241.D\TCD2B.CH
Acq On : 18 Aug 2015 16:40 Operator: JDS
Sample : L15080904-01 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 18 16:46 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

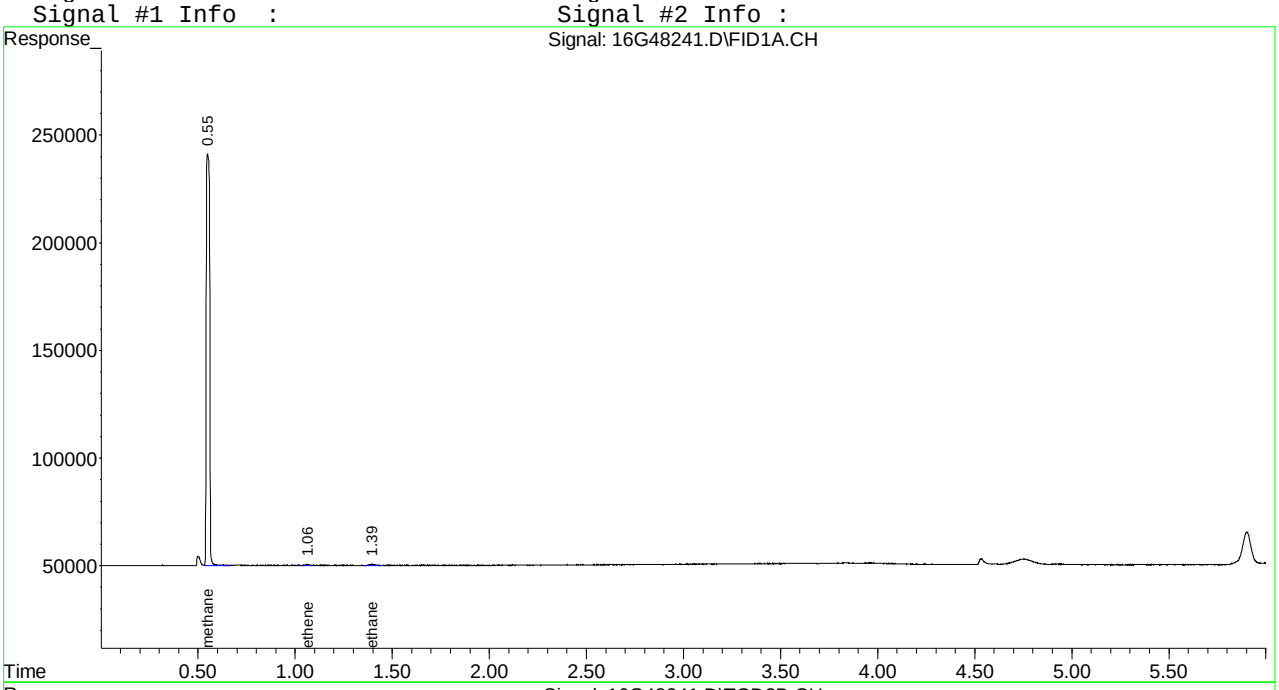

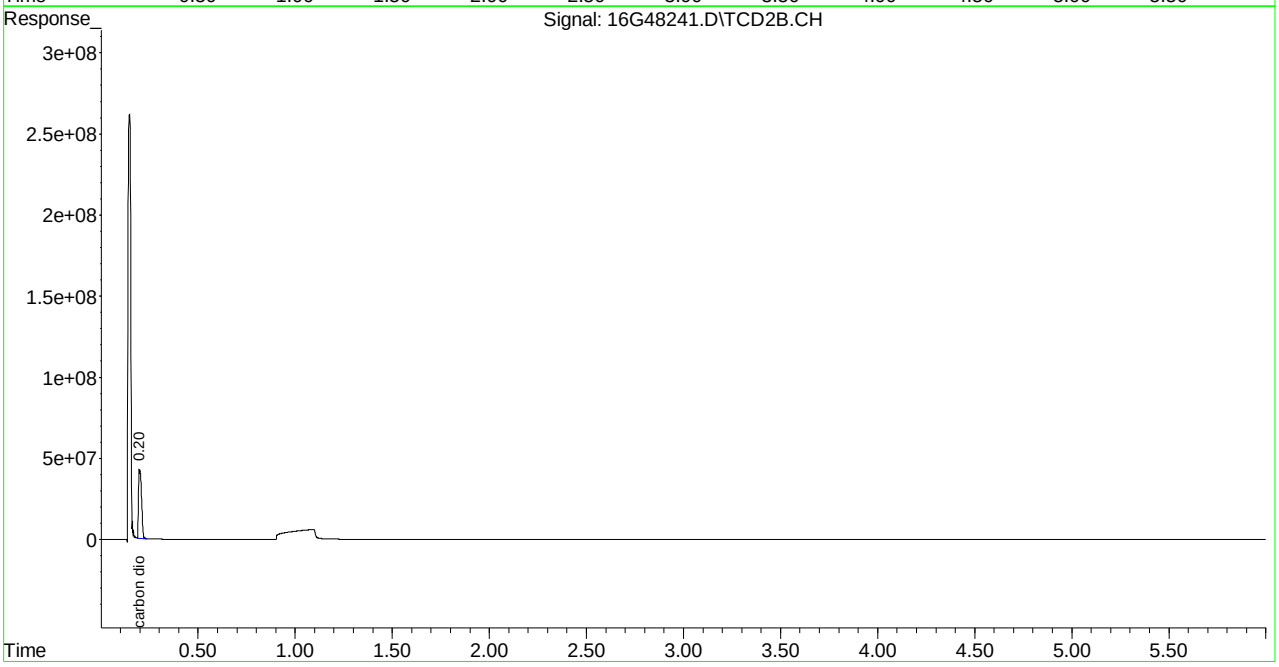

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\081915\16G48254.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\081915\16G48254.D\TCD2B.CH
Acq On : 19 Aug 2015 15:35 Operator: JDS
Sample : L15080904-01 B D1 5X RSK175 Inst : HP16
Misc : 1,5 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 19 15:42:01 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	375479	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	111136039	20152.047	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G48254.D RSKEXT1.M Wed Aug 19 16:36:09 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\081915\16G48254.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\081915\16G48254.D\TCD2B.CH
Acq On : 19 Aug 2015 15:35 Operator: JDS
Sample : L15080904-01 B D1 5X RSK175 Inst : HP16
Misc : 1,5 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 19 15:42 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

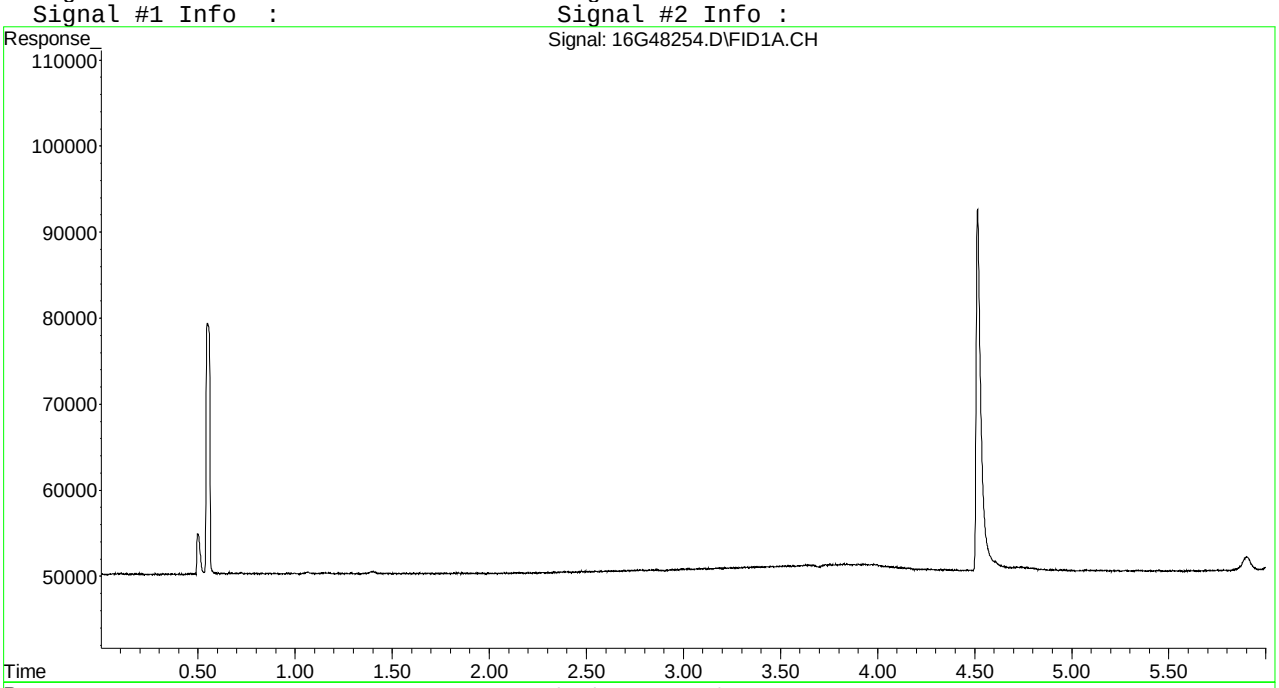

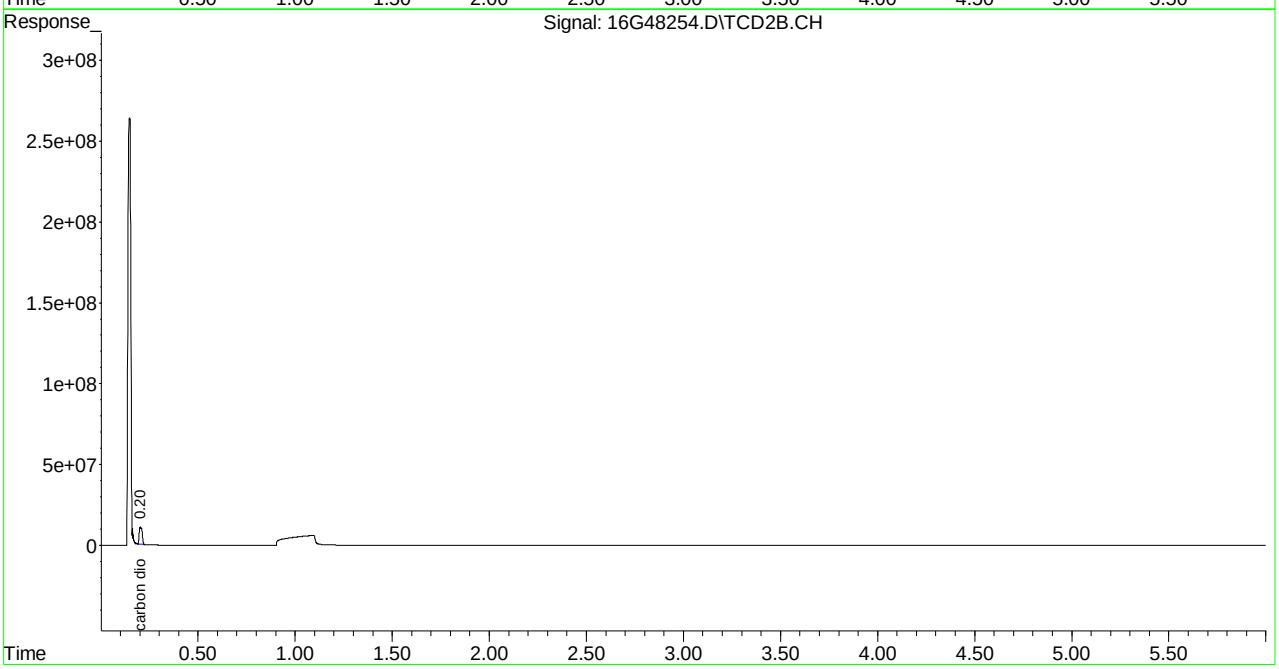

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDchem\1\DATA\081815\16G48242.D\FID1A.CH Vial: 10
Signal #2 : C:\MSDchem\1\DATA\081815\16G48242.D\TCD2B.CH
Acq On    : 18 Aug 2015  16:51                      Operator: JDS
Sample    : L15080904-03 A RSK175                   Inst    : HP16
Misc      : 1,1                                     Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Aug 18 16:57:51 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                   Signal #2 Phase:
Signal #1 Info  :                   Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	316459	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.40	11724	0.034	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	569268861	103224.236	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\081815\16G48242.D\FID1A.CH Vial: 10
Signal #2 : C:\MSDchem\1\DATA\081815\16G48242.D\TCD2B.CH
Acq On : 18 Aug 2015 16:51 Operator: JDS
Sample : L15080904-03 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 18 16:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

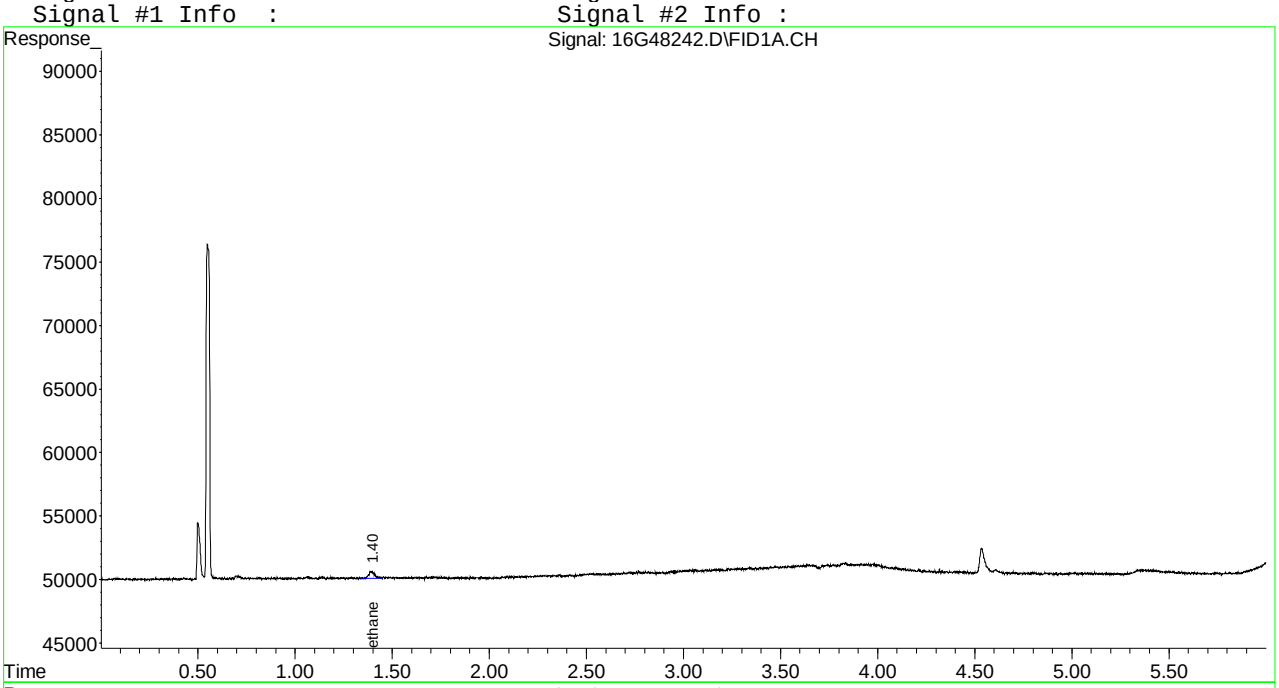

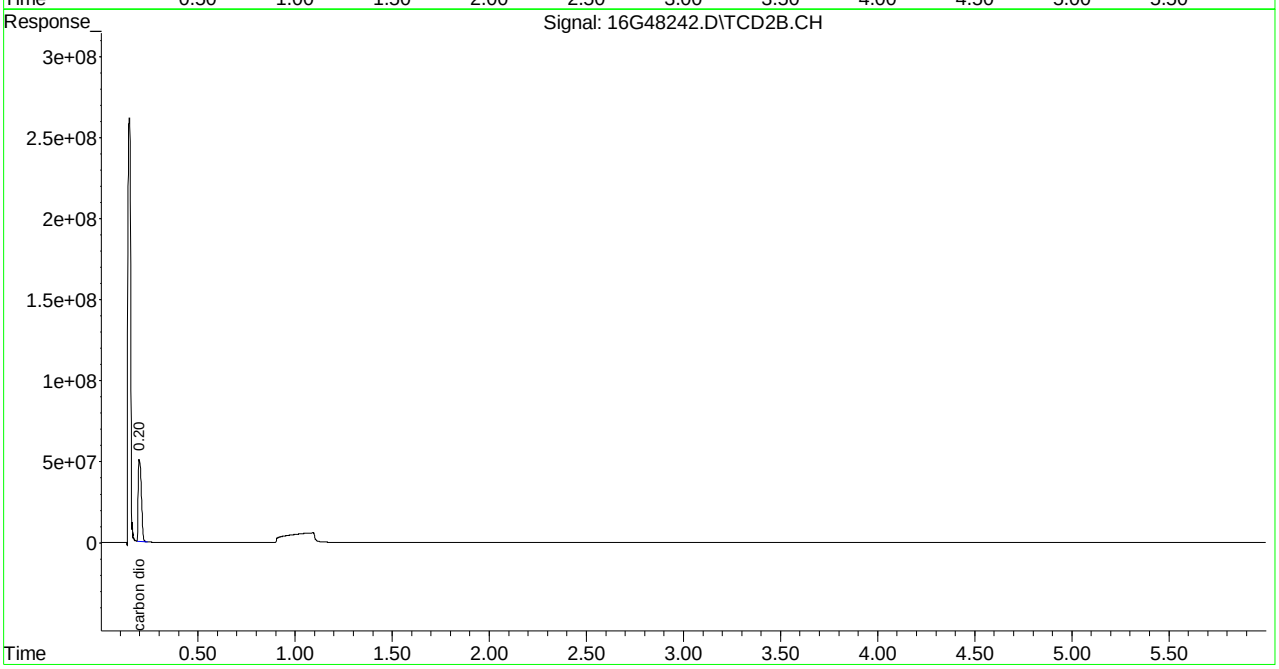

16G48242.D RSKEXT1.M Tue Aug 18 16:57:52 2015 Page 2

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\081915\16G48255.D\FID1A.CH Vial: 9
Signal #2 : C:\MSDCHEM\1\DATA\081915\16G48255.D\TCD2B.CH
Acq On    : 19 Aug 2015  15:47                        Operator: JDS
Sample    : L15080904-03 B D1 5X RSK175               Inst    : HP16
Misc      : 1,5                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Aug 19 15:53:52 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	294757	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	136147770	24687.367	umol/

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\081915\16G48255.D\FID1A.CH Vial: 9
Signal #2 : C:\MSDCHEM\1\DATA\081915\16G48255.D\TCD2B.CH
Acq On    : 19 Aug 2015  15:47                        Operator: JDS
Sample    : L15080904-03 B D1 5X RSK175               Inst    : HP16
Misc      : 1,5                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Aug 19 15:53 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

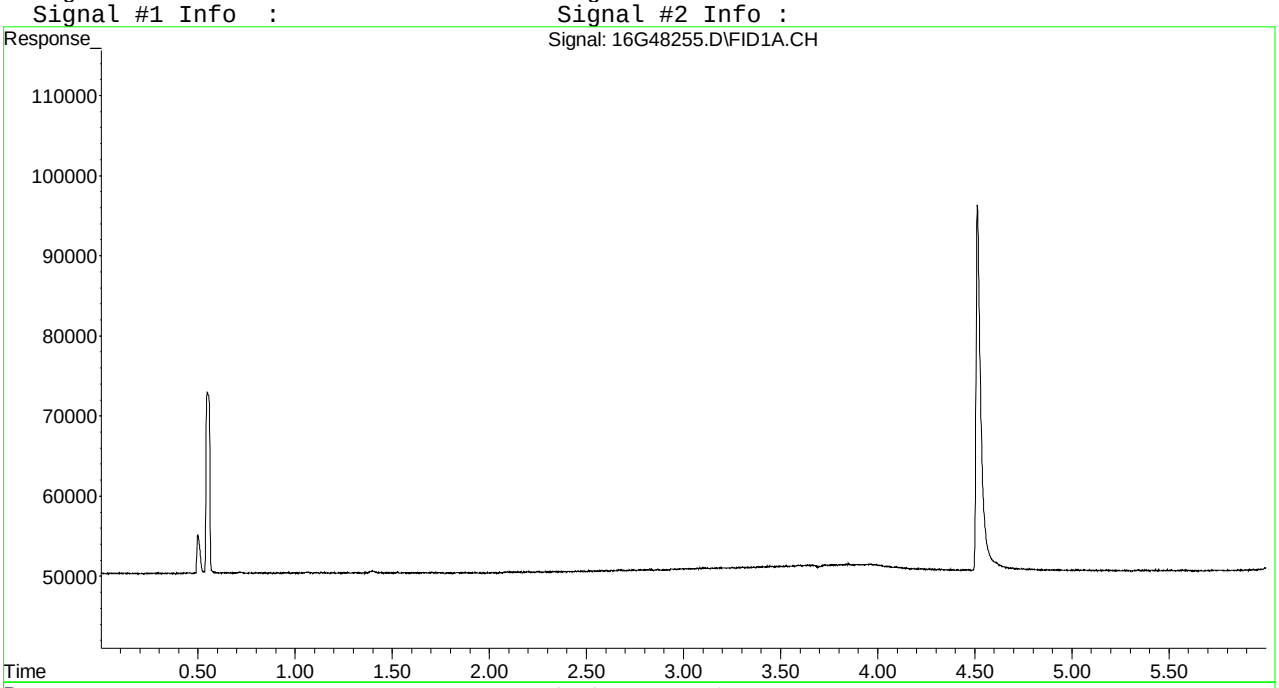

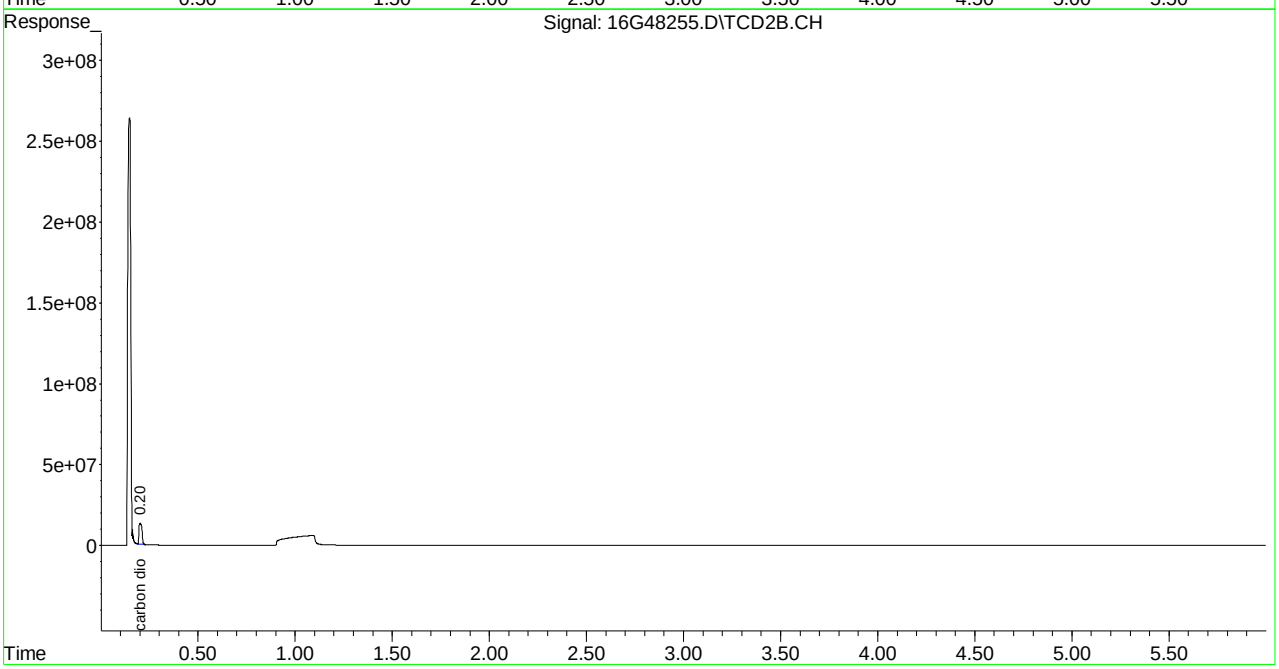

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\081815\16G48243.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\081815\16G48243.D\TCD2B.CH
Acq On    : 18 Aug 2015  17:03                        Operator: JDS
Sample    : L15080904-05 A RSK175                     Inst    : HP16
Misc      : 1,1                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Aug 19 09:39:46 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                   Signal #2 Phase:
Signal #1 Info  :                   Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	255450	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	172033580	31194.460	umol/

Signal #1 : C:\MSDCHEM\1\DATA\081815\16G48243.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\081815\16G48243.D\TCD2B.CH
Acq On : 18 Aug 2015 17:03 Operator: JDS
Sample : L15080904-05 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 19 9:39 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

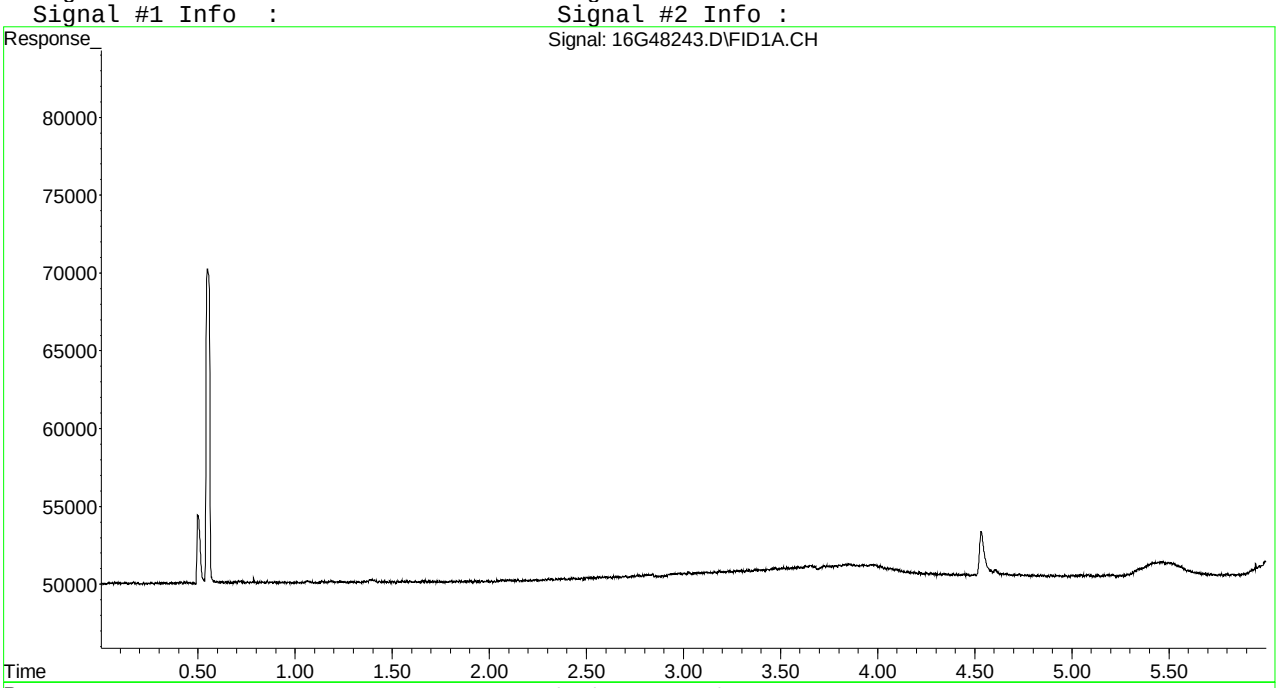

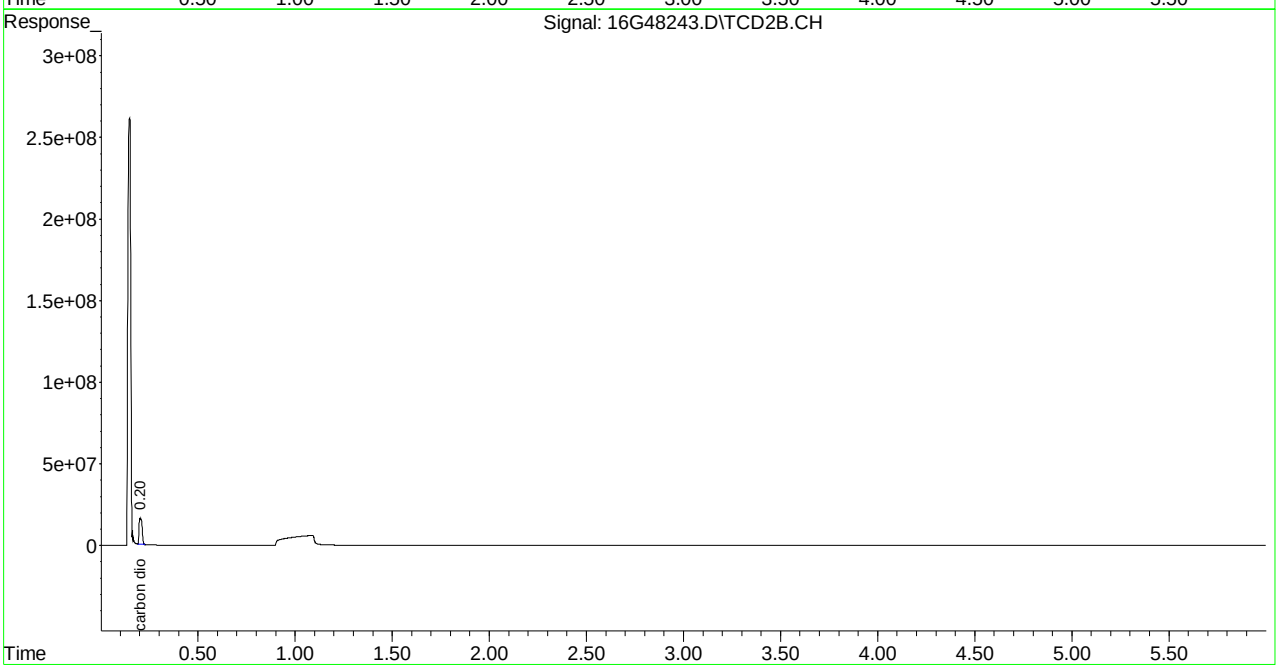

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\081815\16G48245.D\FID1A.CH Vial: 13
Signal #2 : C:\MSDchem\1\DATA\081815\16G48245.D\TCD2B.CH
Acq On : 18 Aug 2015 17:26 Operator: JDS
Sample : L15080904-07 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 18 17:32:18 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	537097	0.685	umol/
2) T	ethene	1.06	9506	0.030	umol/
3) T	acetylene	1.15	8449	0.025	umol/
4) T	ethane	1.40	13437	0.040	umol/
5) T	propane	3.83	6859	0.014	umol/
6) T	n-butane	5.34	8975	0.014	umol/
8) T	carbon dioxide	0.20	537100463	97391.213	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G48245.D RSKEXT1.M Tue Aug 18 17:32:18 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\081815\16G48245.D\FID1A.CH Vial: 13
Signal #2 : C:\MSDchem\1\DATA\081815\16G48245.D\TCD2B.CH
Acq On : 18 Aug 2015 17:26 Operator: JDS
Sample : L15080904-07 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 18 17:32 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

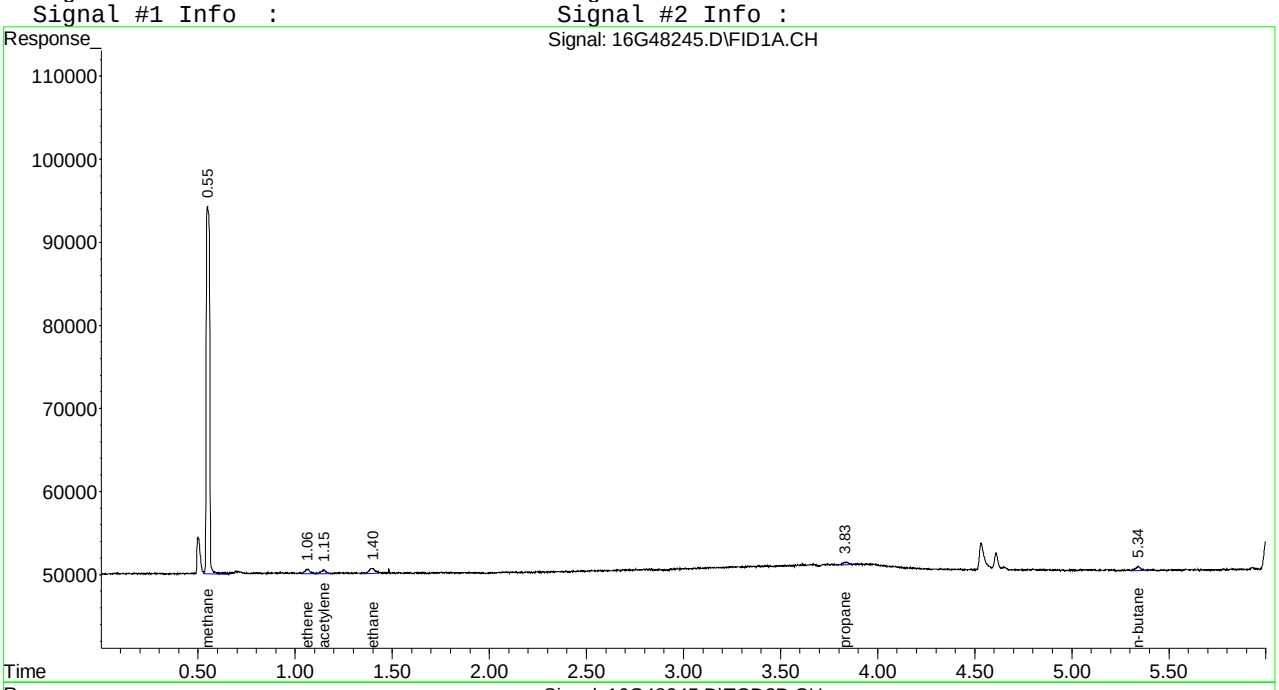

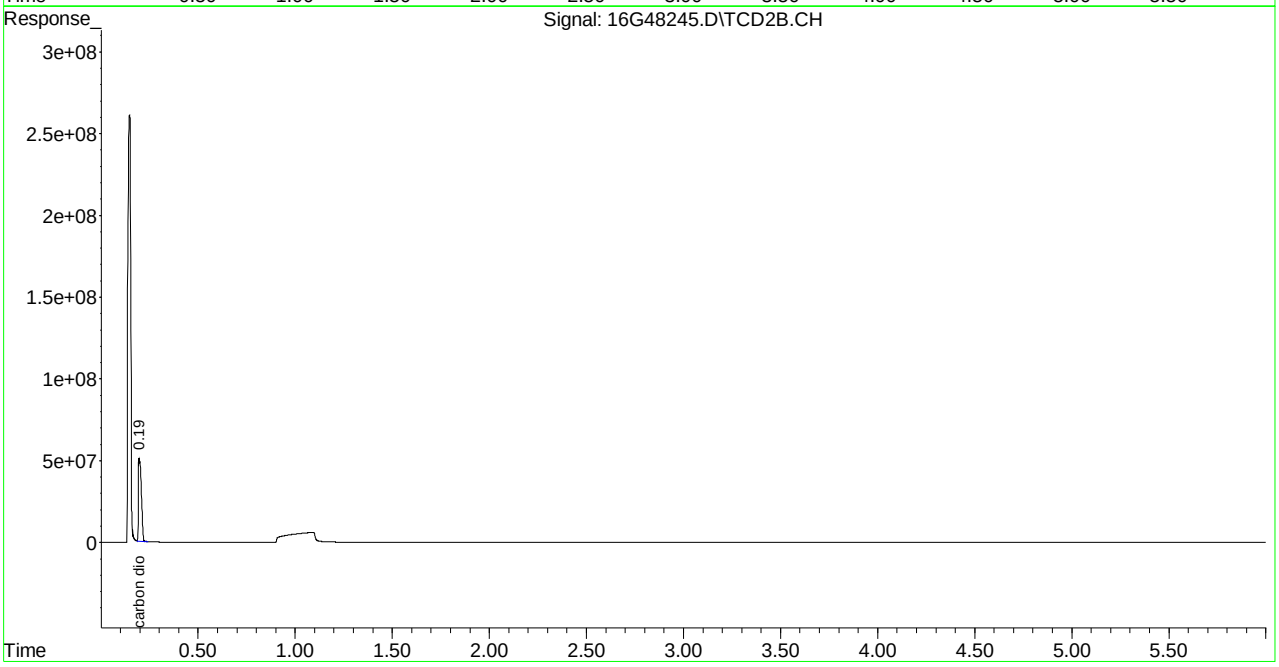

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\081915\16G48256.D\FID1A.CH Vial: 10
Signal #2 : C:\MSDCHEM\1\DATA\081915\16G48256.D\TCD2B.CH
Acq On    : 19 Aug 2015  15:59                        Operator: JDS
Sample    : L15080904-07 B D1 5X RSK175               Inst    : HP16
Misc      : 1,5                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Aug 19 16:05:26 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	356942	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	144953572	26284.104	umol/

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\081915\16G48256.D\FID1A.CH Vial: 10
Signal #2 : C:\MSDCHEM\1\DATA\081915\16G48256.D\TCD2B.CH
Acq On    : 19 Aug 2015  15:59                        Operator: JDS
Sample    : L15080904-07 B D1 5X RSK175               Inst    : HP16
Misc      : 1,5                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Aug 19 16:05 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

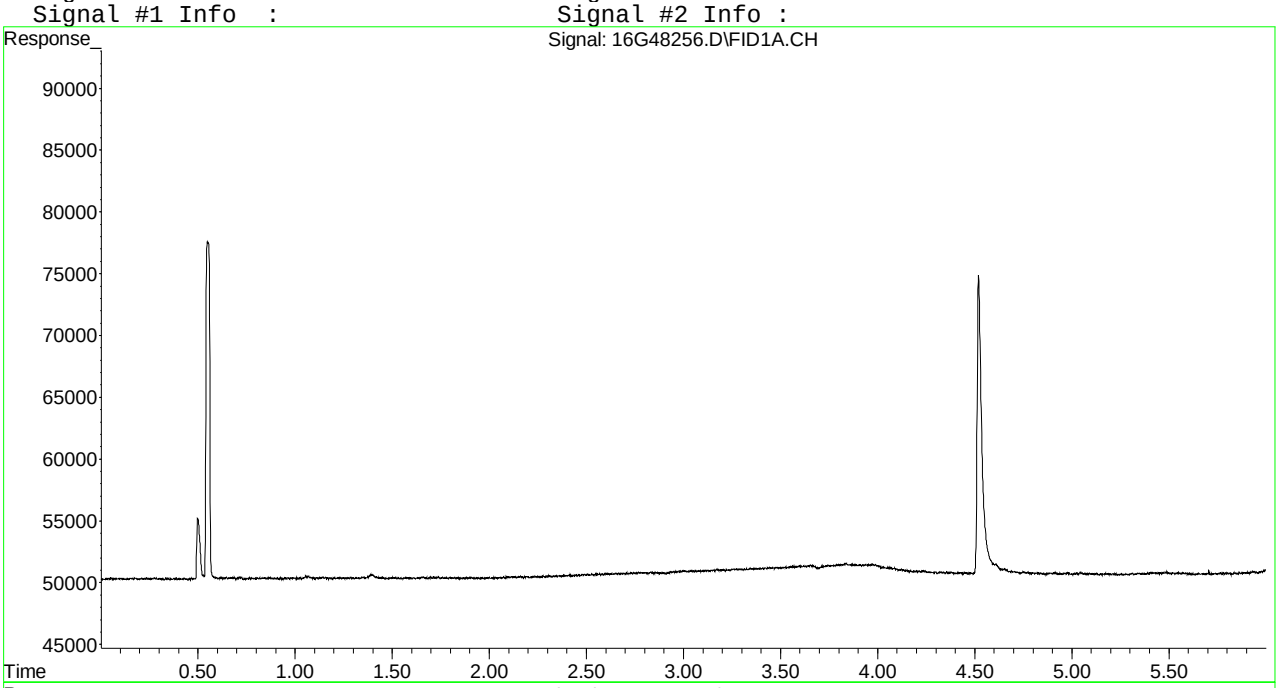

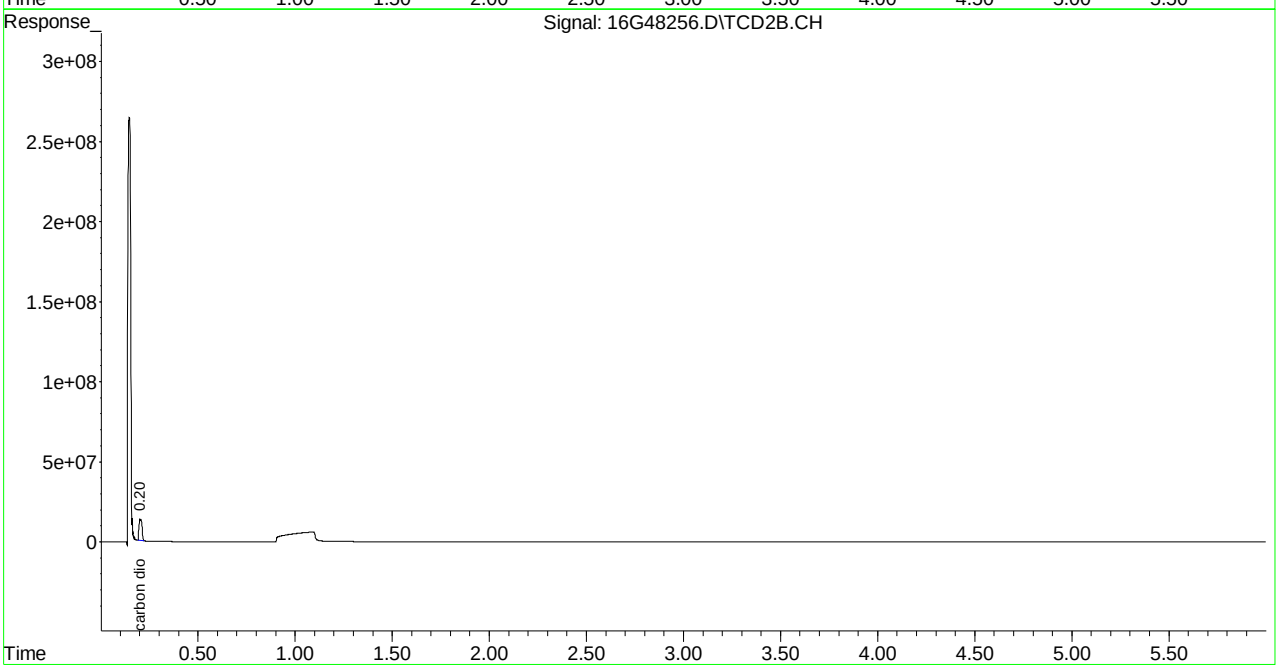

2.1.2.4 Standards Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46875.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46875.D\TCD2B.CH
Acq On : 03 Mar 2015 14:17 Operator: JDS
Sample : WG514119-01 0.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:54:08 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	566979	0.846	umol/
2) T	ethene	1.06	233416	0.736	umol/
3) T	acetylene	1.14	213812	0.632	umol/
4) T	ethane	1.39	254568	0.749	umol/
5) T	propane	3.83	352222	0.710	umol/
6) T	n-butane	5.34	457938	0.706	umol/
8) T	carbon dioxide	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46875.D RSKEXT1.M Fri Mar 06 11:56:43 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46875.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46875.D\TCD2B.CH
Acq On : 03 Mar 2015 14:17 Operator: JDS
Sample : WG514119-01 0.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:54 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

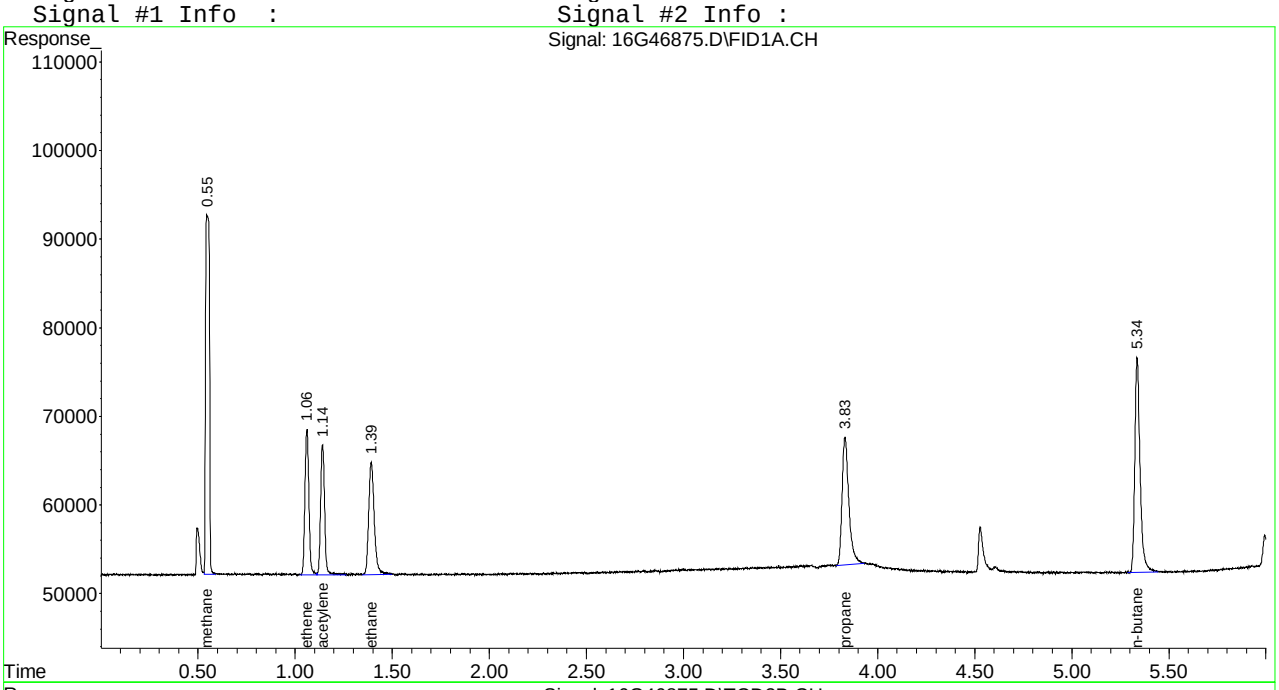

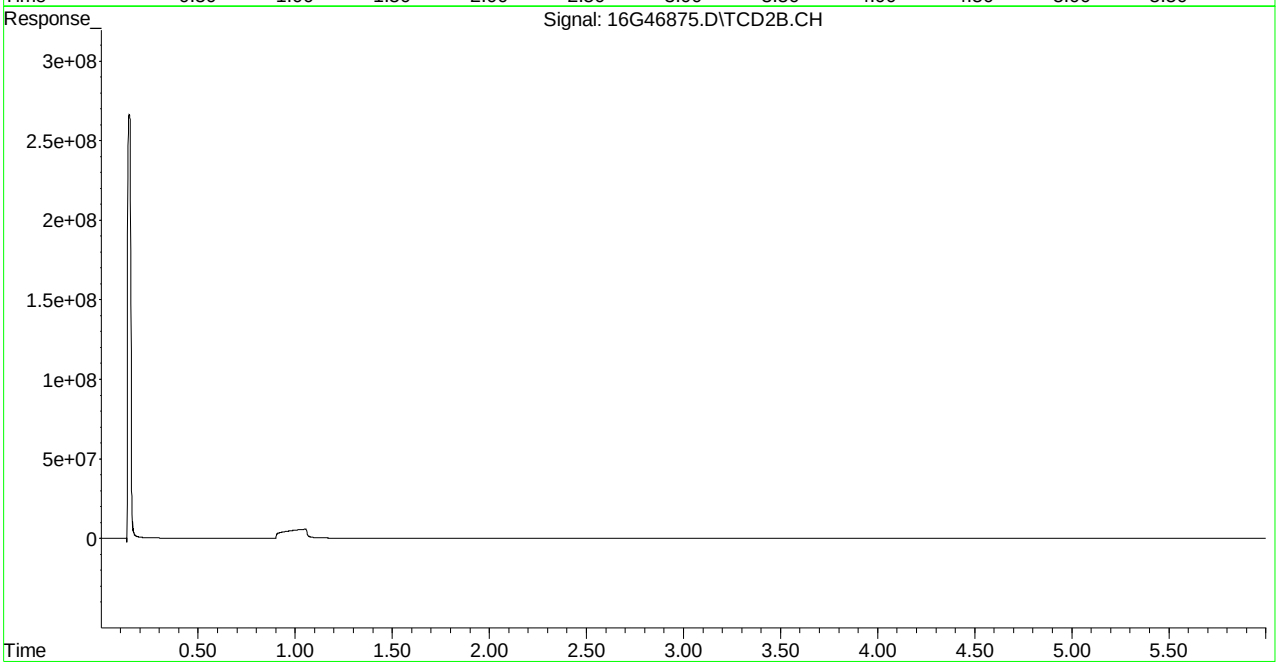

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46875.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46875.D\TCD2B.CH
Acq On : 03 Mar 2015 14:17 Operator: JDS
Sample : WG514119-01 0.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	-1.000	0.846	0.0	0	0.00
2	T	ethene	-1.000	0.736	0.0	100	0.00
3	T	acetylene	-1.000	0.632	0.0	100	0.00
4	T	ethane	0.667	0.749	-12.3	100	0.00
5	T	propane	0.667	0.710	-6.4	100	0.00
6	T	n-butane	0.667	0.706	-5.8	100	0.00

Signal #2

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46875.D RSKEXT1.M Fri Mar 06 11:55:53 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46875.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46875.D\TCD2B.CH
Acq On    : 03 Mar 2015  14:17                        Operator: JDS
Sample    : WG514119-01 0.67umol/mol STD RSK175       Inst    : HP16
Misc      : 1,1 STD67276                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
 ---------------------------------------------------------------------------


Signal #2
8 T   carbon dioxide               -1.000   0.000       0.0     0  -0.21
```

```
---------------------------------------------------------------------------
 (#) = Out of Range             SPCC's out = 0  CCC's out = 0
 16G46875.D  RSKEXT1.M      Fri Mar 06 11:55:53 2015                    Page 2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46876.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46876.D\TCD2B.CH
Acq On : 03 Mar 2015 14:30 Operator: JDS
Sample : WG514119-02 1.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:08 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	739046	1.773	umol/
2) T	ethene	1.06	538090	1.696	umol/
3) T	acetylene	1.14	529143	1.564	umol/
4) T	ethane	1.39	567082	1.668	umol/
5) T	propane	3.83	804240	1.620	umol/
6) T	n-butane	5.34	1028782	1.587	umol/
8) T	carbon dioxide	0.20	7954783	1442.423	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46876.D RSKEXT1.M Fri Mar 06 11:57:08 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46876.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46876.D\TCD2B.CH
Acq On : 03 Mar 2015 14:30 Operator: JDS
Sample : WG514119-02 1.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

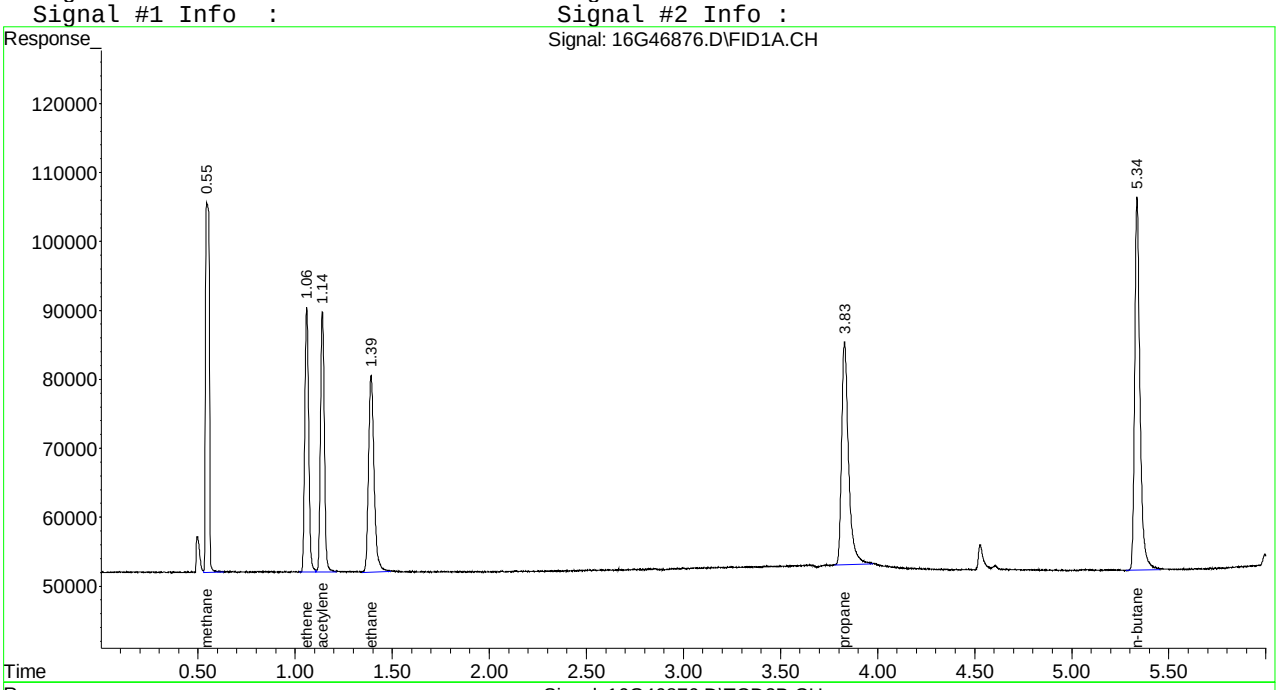

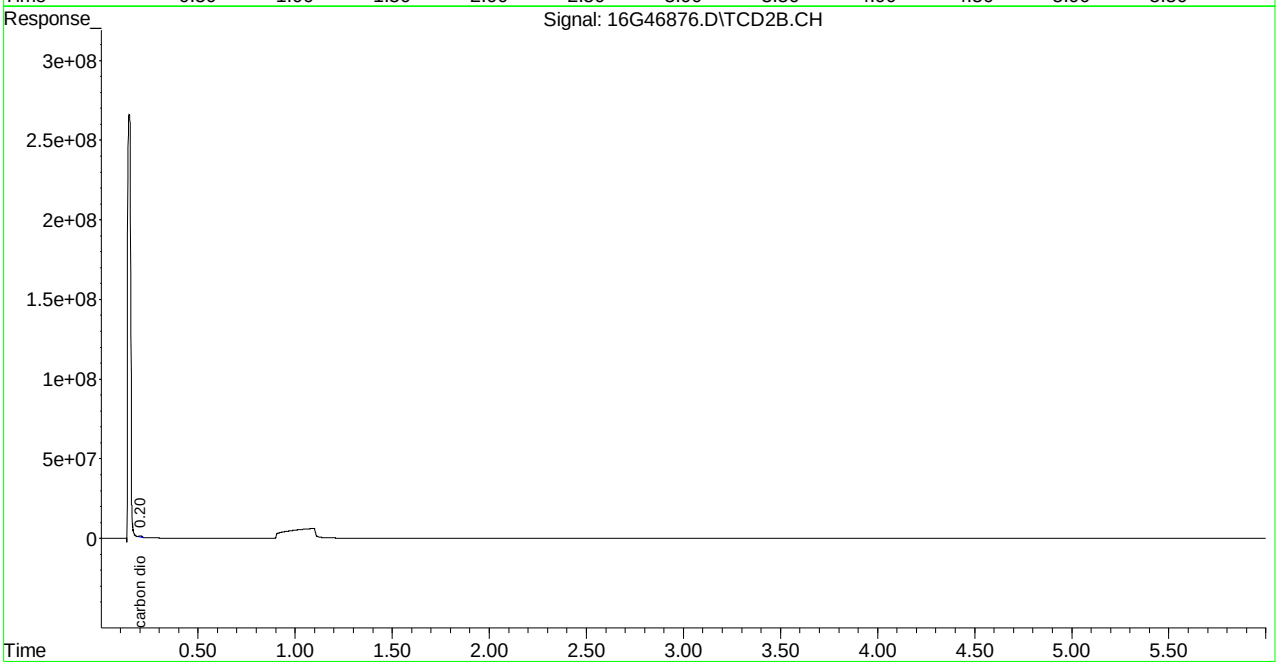

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46876.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46876.D\TCD2B.CH
Acq On : 03 Mar 2015 14:30 Operator: JDS
Sample : WG514119-02 1.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	1.670	1.773	-6.2	100	0.00
2	T	ethene	1.670	1.696	-1.6	100	0.00
3	T	acetylene	1.670	1.564	6.3	100	0.00
4	T	ethane	1.670	1.668	0.1	100	0.00
5	T	propane	1.670	1.620	3.0	100	0.00
6	T	n-butane	1.670	1.587	5.0	100	0.00

Signal #2

8	T	carbon dioxide	2000.000	1442.423	27.9#	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46876.D RSKEXT1.M Fri Mar 06 11:52:49 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46876.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46876.D\TCD2B.CH
Acq On    : 03 Mar 2015  14:30                        Operator: JDS
Sample    : WG514119-02 1.67umol/mol STD RSK175       Inst    : HP16
Misc      : 1,1 STD67276                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46877.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46877.D\TCD2B.CH
Acq On : 03 Mar 2015 14:42 Operator: JDS
Sample : WG514119-03 33.3umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:10 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	6717167	33.998	umol/
2) T	ethene	1.06	11126351	35.075	umol/
3) T	acetylene	1.14	11442001	33.809	umol/
4) T	ethane	1.39	11535235	33.937	umol/
5) T	propane	3.83	17256964	34.764	umol/
6) T	n-butane	5.34	22669140	34.968	umol/
8) T	carbon dioxide	0.20	18661832	3383.908	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46877.D RSKEXT1.M Fri Mar 06 11:57:10 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46877.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46877.D\TCD2B.CH
Acq On : 03 Mar 2015 14:42 Operator: JDS
Sample : WG514119-03 33.3umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

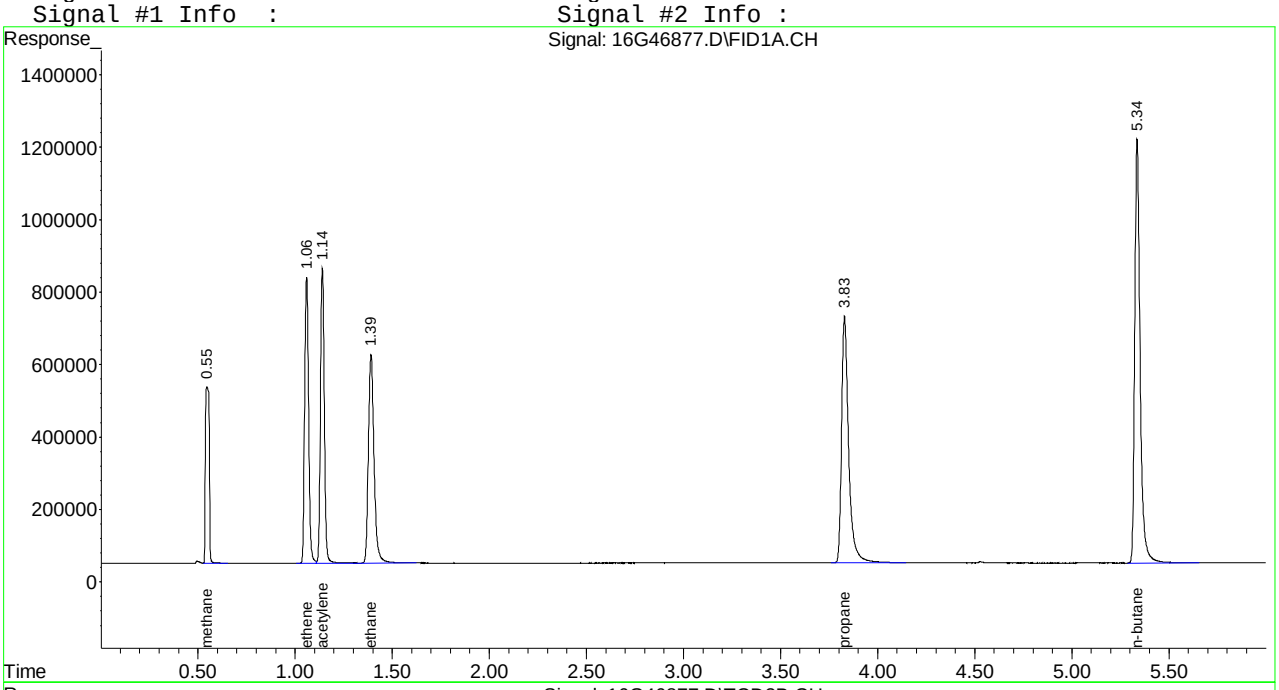

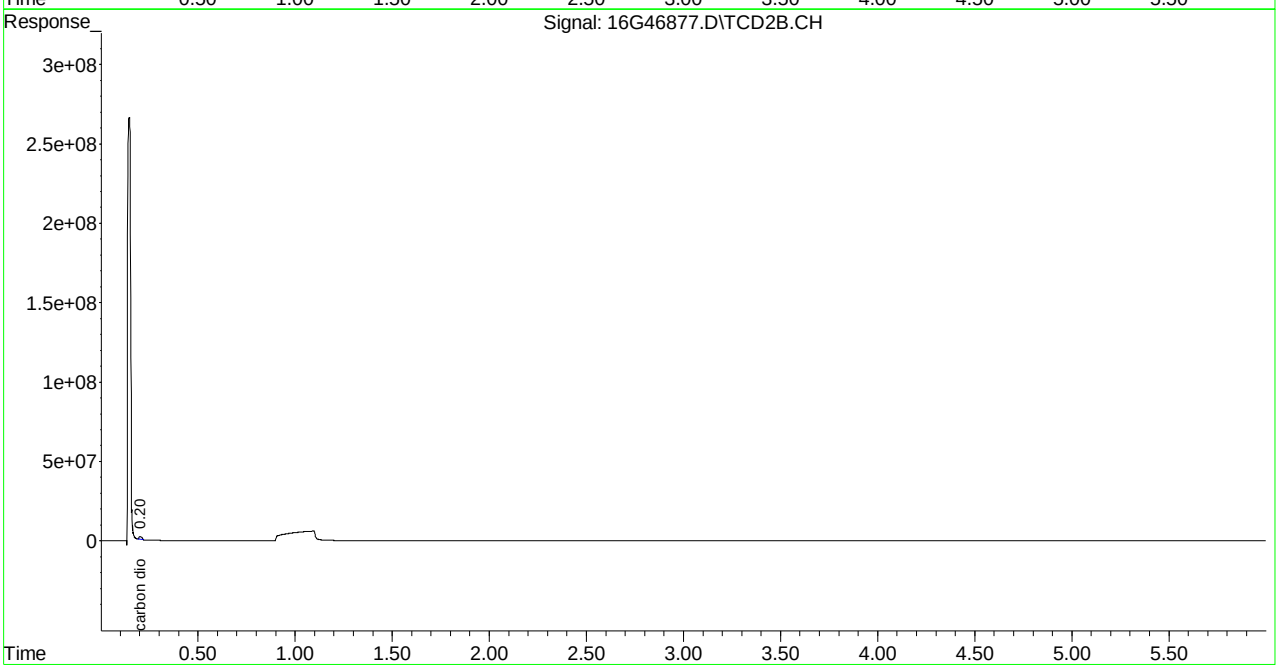

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46878.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46878.D\TCD2B.CH
Acq On : 03 Mar 2015 14:53 Operator: JDS
Sample : WG514119-04 66.7umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:11 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	11713293	60.930	umol/
2) T	ethene	1.06	19737271	62.220	umol/
3) T	acetylene	1.14	20910957	61.787	umol/
4) T	ethane	1.39	20832969	61.292	umol/
5) T	propane	3.83	31304425	63.062	umol/
6) T	n-butane	5.33	40948894	63.166	umol/
8) T	carbon dioxide	0.20	37230879	6750.991	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46878.D RSKEXT1.M Fri Mar 06 11:57:11 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46878.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46878.D\TCD2B.CH
Acq On : 03 Mar 2015 14:53 Operator: JDS
Sample : WG514119-04 66.7umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

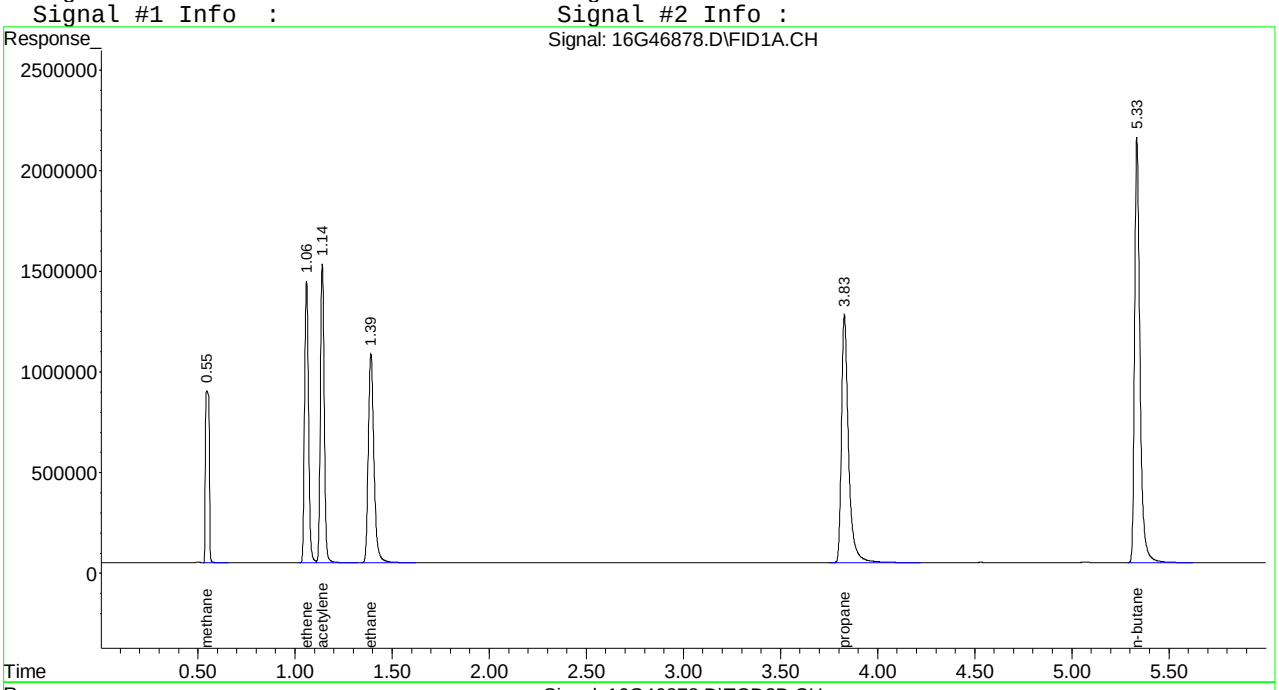

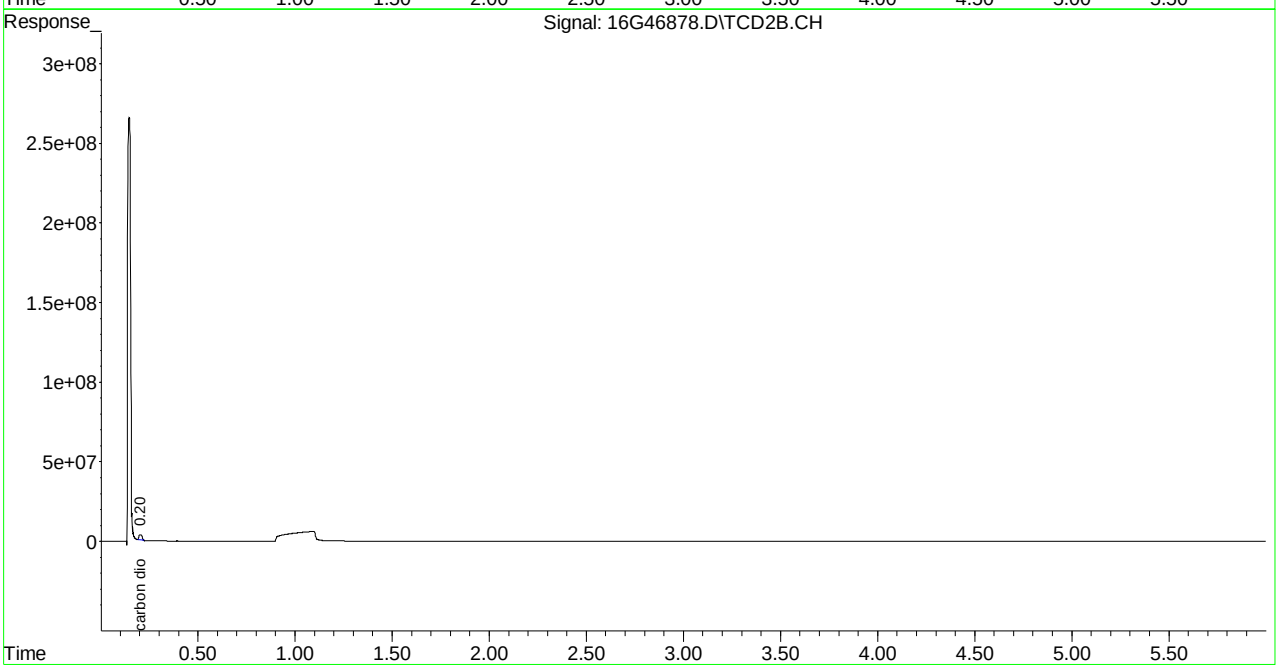

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46879.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46879.D\TCD2B.CH
Acq On : 03 Mar 2015 15:05 Operator: JDS
Sample : WG514119-05 133umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:11 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	24939741	132.227	umol/
2) T	ethene	1.06	41686300	131.412	umol/
3) T	acetylene	1.14	47206199	139.484	umol/
4) T	ethane	1.39	43668346	128.475	umol/
5) T	propane	3.83	64365472	129.663	umol/
6) T	n-butane	5.33	84395468	130.185	umol/
8) T	carbon dioxide	0.20	80524699	14601.362	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46879.D RSKEXT1.M Fri Mar 06 11:57:12 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46879.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46879.D\TCD2B.CH
Acq On : 03 Mar 2015 15:05 Operator: JDS
Sample : WG514119-05 133umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

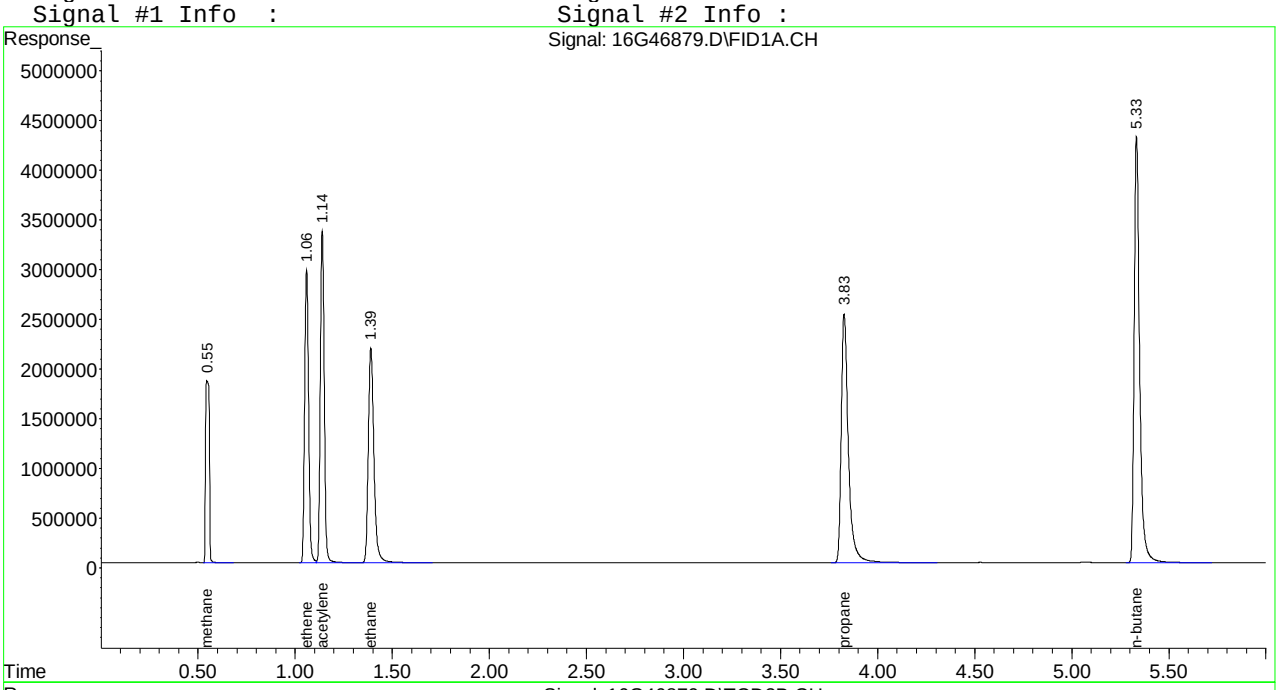

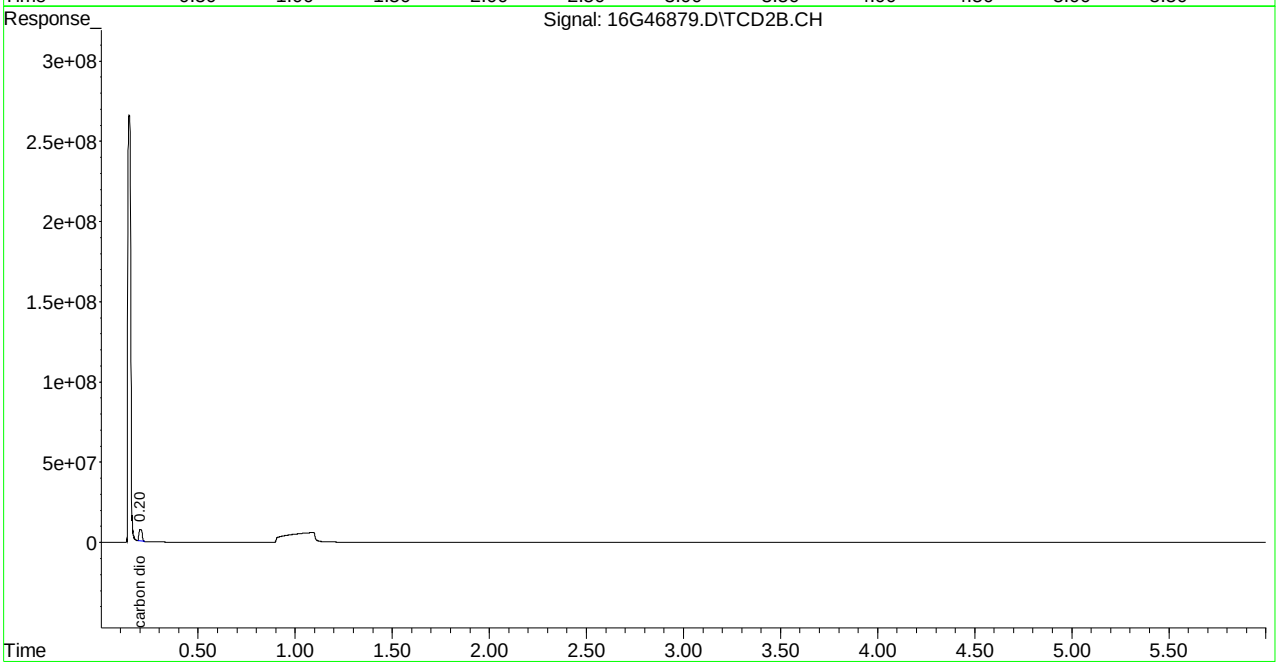

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46880.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46880.D\TCD2B.CH
Acq On : 03 Mar 2015 15:17 Operator: JDS
Sample : WG514119-06 333umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:12 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	61959752	331.783	umol/
2) T	ethene	1.06	106345688	335.244	umol/
3) T	acetylene	1.14	118917475	351.375	umol/
4) T	ethane	1.39	111791323	328.897	umol/
5) T	propane	3.83	166544491	335.501	umol/
6) T	n-butane	5.33	219746160	338.971	umol/
8) T	carbon dioxide	0.20	201820251	36595.610	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46880.D RSKEXT1.M Fri Mar 06 11:57:12 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46880.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46880.D\TCD2B.CH
Acq On : 03 Mar 2015 15:17 Operator: JDS
Sample : WG514119-06 333umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

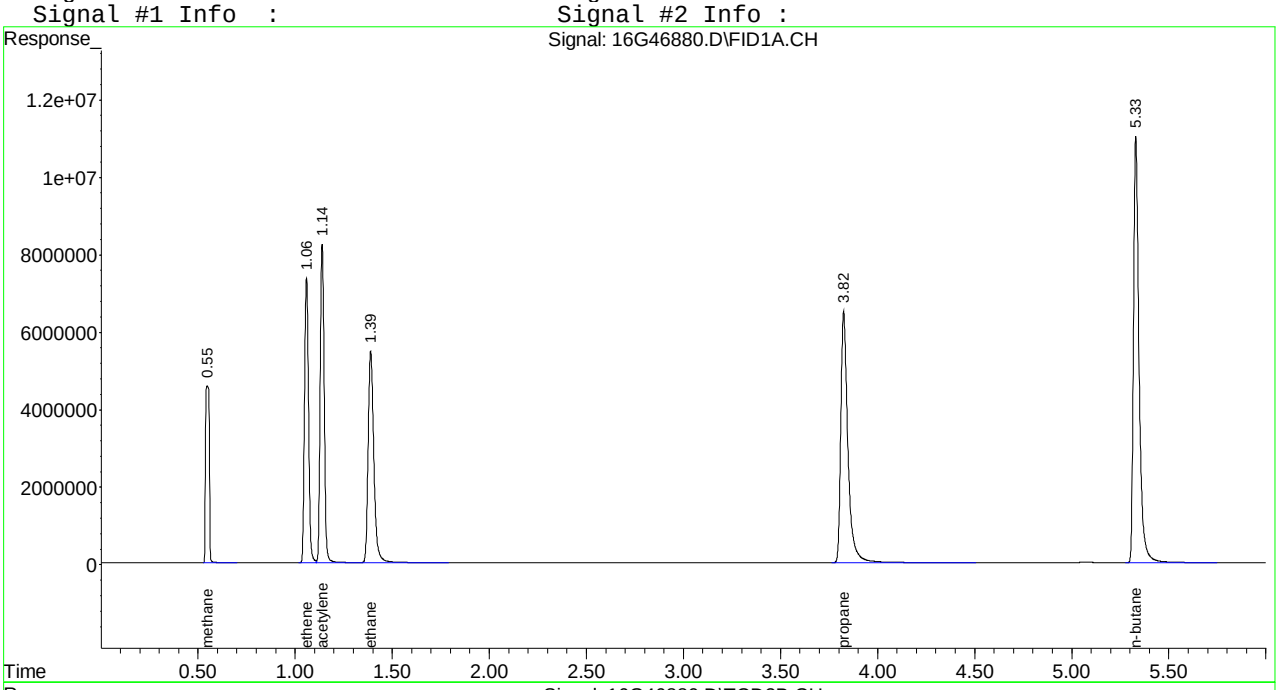

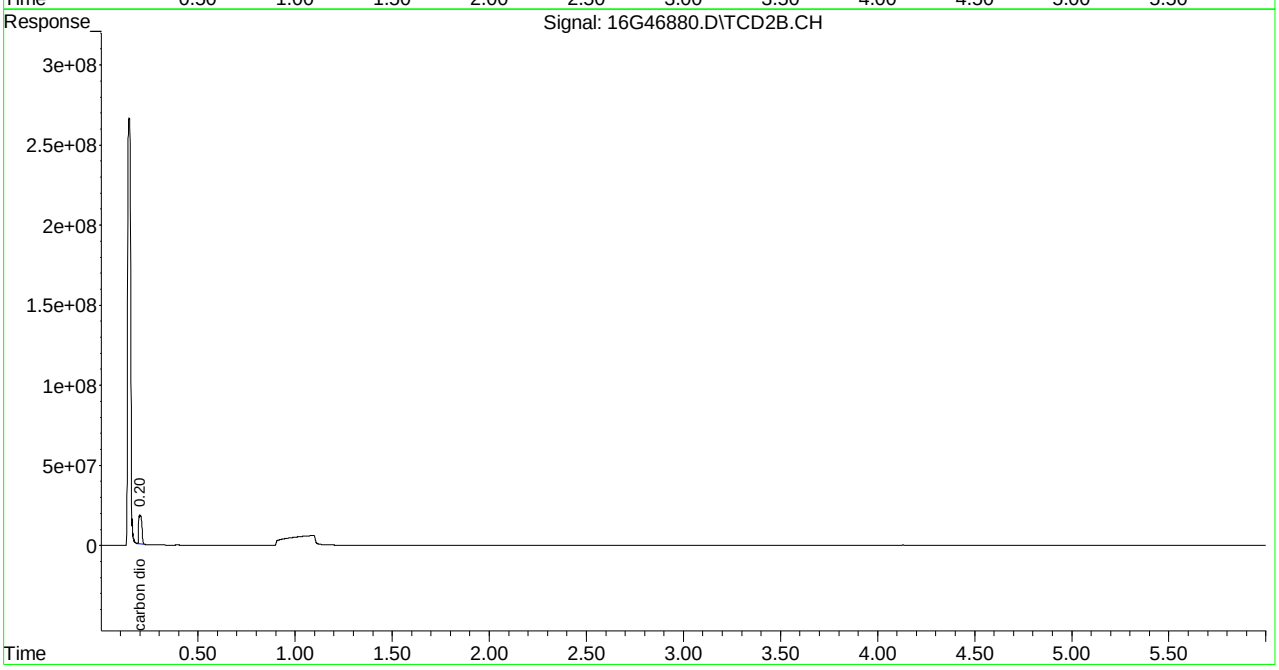

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46881.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46881.D\TCD2B.CH
Acq On : 03 Mar 2015 15:29 Operator: JDS
Sample : WG514119-07 533umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:13 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	100578633	539.958	umol/
2) T	ethene	1.06	169644372	534.786	umol/
3) T	acetylene	1.14	183672662	542.712	umol/
4) T	ethane	1.39	178696917	525.738	umol/
5) T	propane	3.82	263060772	529.931	umol/
6) T	n-butane	5.33	344418707	531.285	umol/
8) T	carbon dioxide	0.20	309711021	56159.199	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46881.D RSKEXT1.M Fri Mar 06 11:57:13 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46881.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46881.D\TCD2B.CH
Acq On : 03 Mar 2015 15:29 Operator: JDS
Sample : WG514119-07 533umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

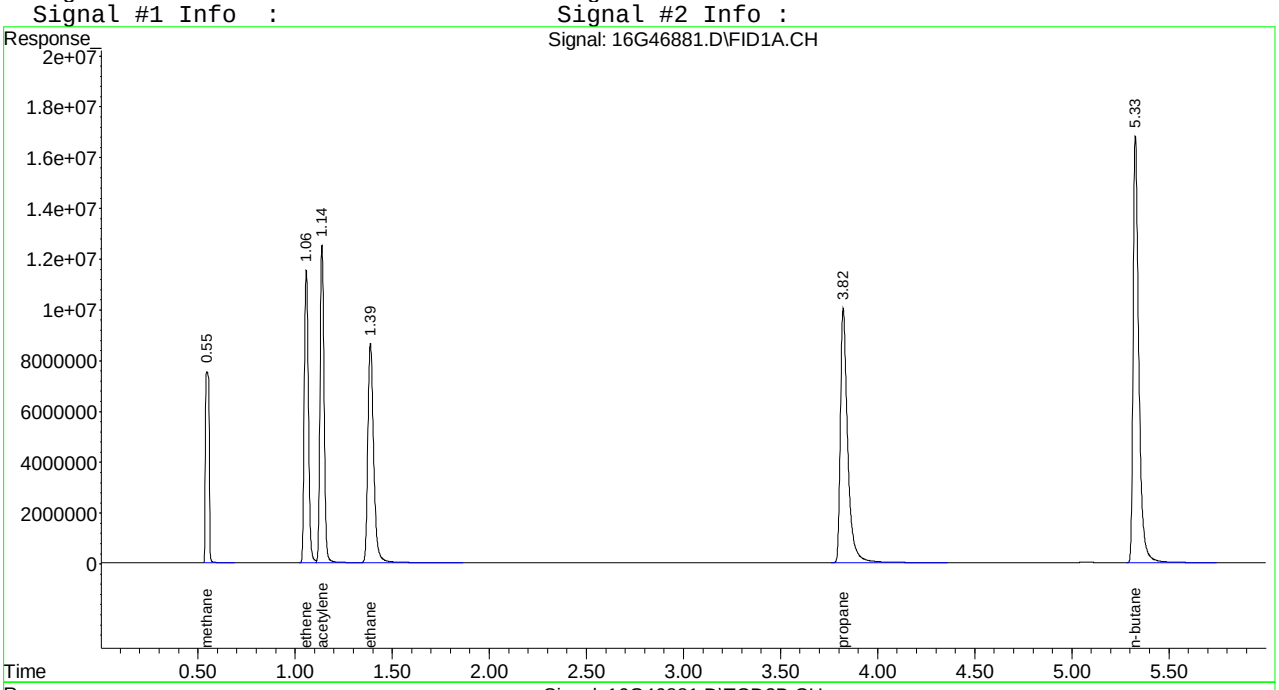

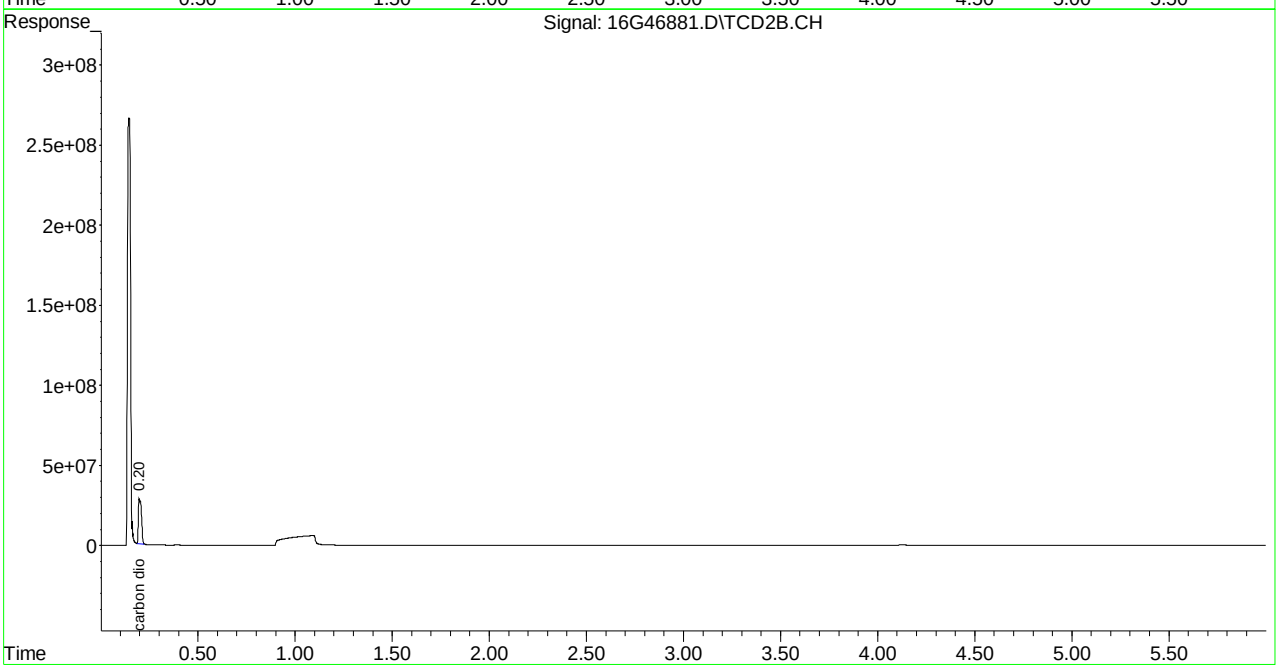

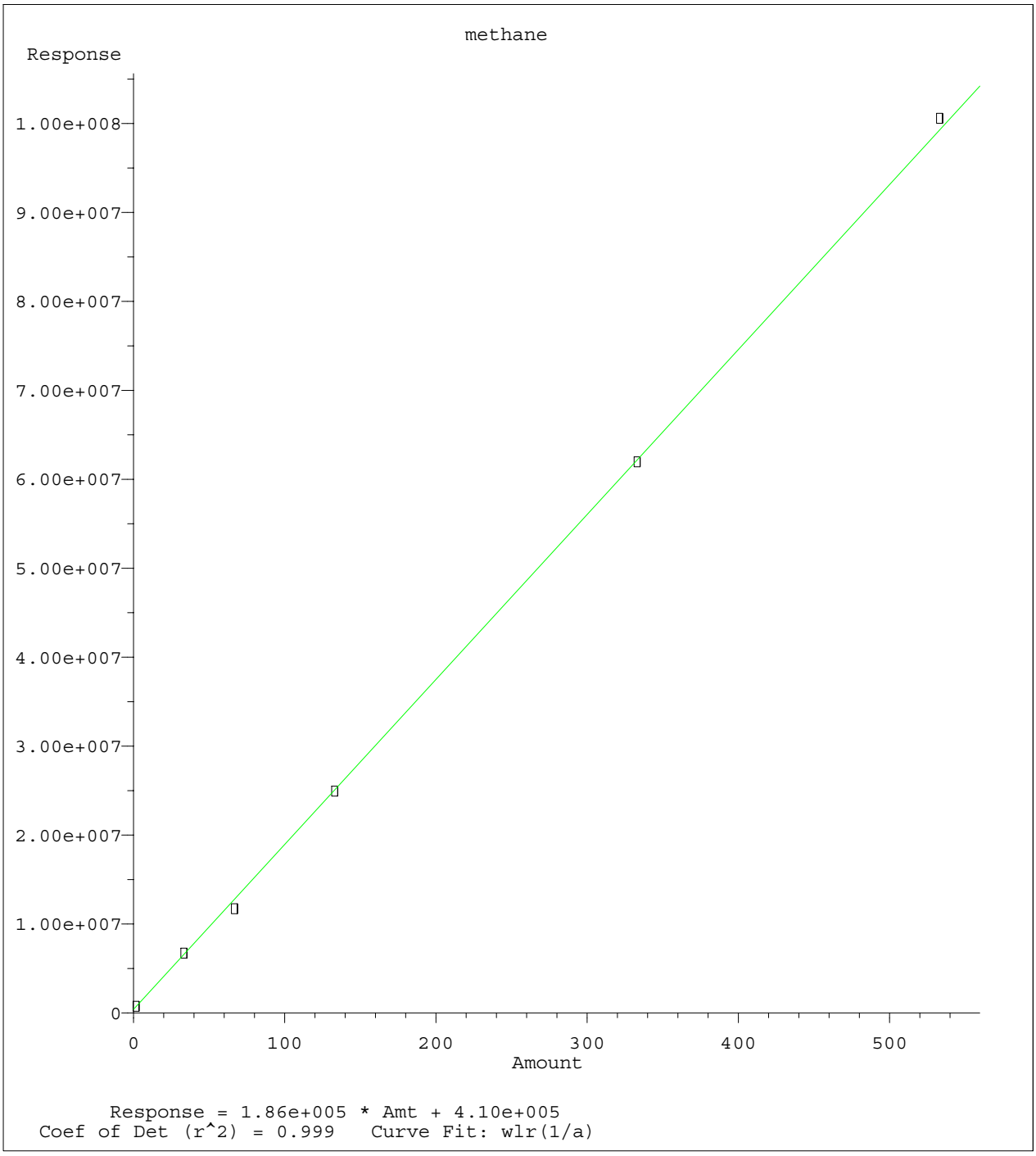

Method Name: C:\MSDCHEM\1\METHODS\RSKEXT1.M
Calibration Table Last Updated: Fri Mar 06 11:52:33 2015

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46884.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46884.D\TCD2B.CH
Acq On : 03 Mar 2015 17:10 Operator: JDS
Sample : WG514119-08 133umol/mol ALT SRC STD RSK1 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:58:49 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	25936090	137.598	umol/
2) T	ethene	1.06	43111404	135.904	umol/
3) T	acetylene	1.14	47098795	139.167	umol/
4) T	ethane	1.39	44778091	131.740	umol/
5) T	propane	3.83	64822008	130.583	umol/
6) T	n-butane	5.33	82856392	127.811	umol/
8) T	carbon dioxide	0.20	76359751	13846.141	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46884.D RSKEXT1.M Fri Mar 06 11:58:49 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46884.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46884.D\TCD2B.CH
Acq On : 03 Mar 2015 17:10 Operator: JDS
Sample : WG514119-08 133umol/mol ALT SRC STD RSK1 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:58 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

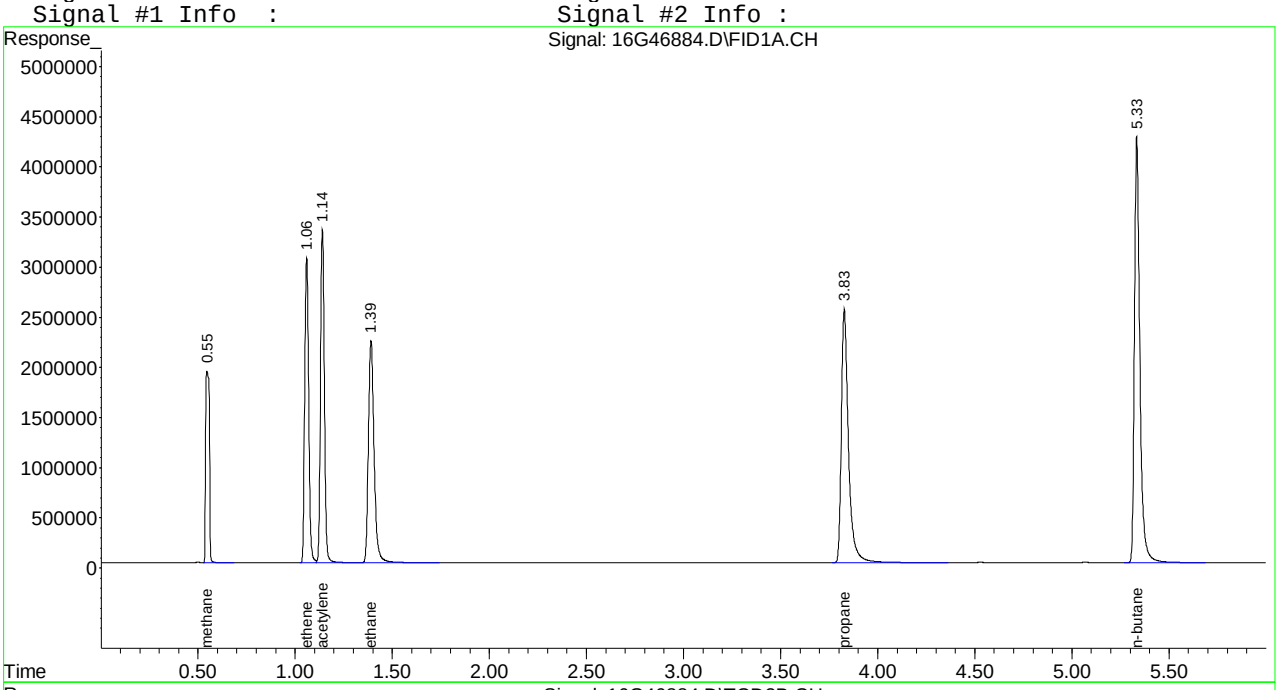

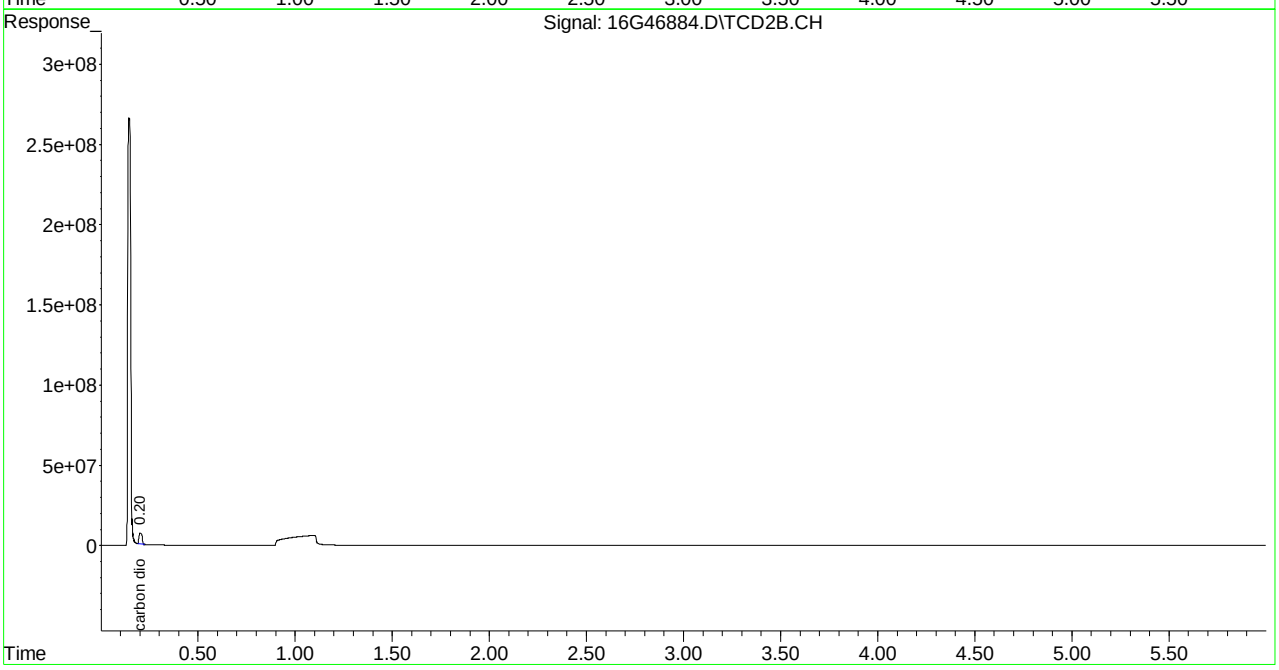

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46884.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46884.D\TCD2B.CH
Acq On : 03 Mar 2015 17:10 Operator: JDS
Sample : WG514119-08 133umol/mol ALT SRC STD RSK1 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	137.598	-3.5	104	0.00
2	T	ethene	133.000	135.904	-2.2	103	0.00
3	T	acetylene	133.000	139.167	-4.6	100	0.00
4	T	ethane	133.000	131.740	0.9	103	0.00
5	T	propane	133.000	130.583	1.8	101	0.00
6	T	n-butane	133.000	127.811	3.9	98	0.00

Signal #2

8	T	carbon dioxide	13300.000	13846.141	-4.1	95	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46884.D RSKEXT1.M Fri Mar 06 11:59:02 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46884.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46884.D\TCD2B.CH
Acq On    : 03 Mar 2015  17:10                        Operator: JDS
Sample    : WG514119-08 133umol/mol ALT SRC STD RSK1 Inst    : HP16
Misc      : 1,1 STD68250                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDchem\1\DATA\081815\16G48233.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDchem\1\DATA\081815\16G48233.D\TCD2B.CH
Acq On    : 18 Aug 2015  14:05                        Operator: JDS
Sample    : WG535474-01 133umol/mol CCV RSK175        Inst    : HP16
Misc      : 1,1 STD67274                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Aug 18 14:12:01 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	23584823	124.923	umol/
2) T	ethene	1.06	39632481	124.937	umol/
3) T	acetylene	1.14	44056911	130.178	umol/
4) T	ethane	1.40	41505341	122.111	umol/
5) T	propane	3.83	61453012	123.796	umol/
6) T	n-butane	5.34	80717998	124.512	umol/
8) T	carbon dioxide	0.20	77609220	14072.704	umol/

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\081815\16G48233.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDchem\1\DATA\081815\16G48233.D\TCD2B.CH
Acq On : 18 Aug 2015 14:05 Operator: JDS
Sample : WG535474-01 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 18 14:12 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

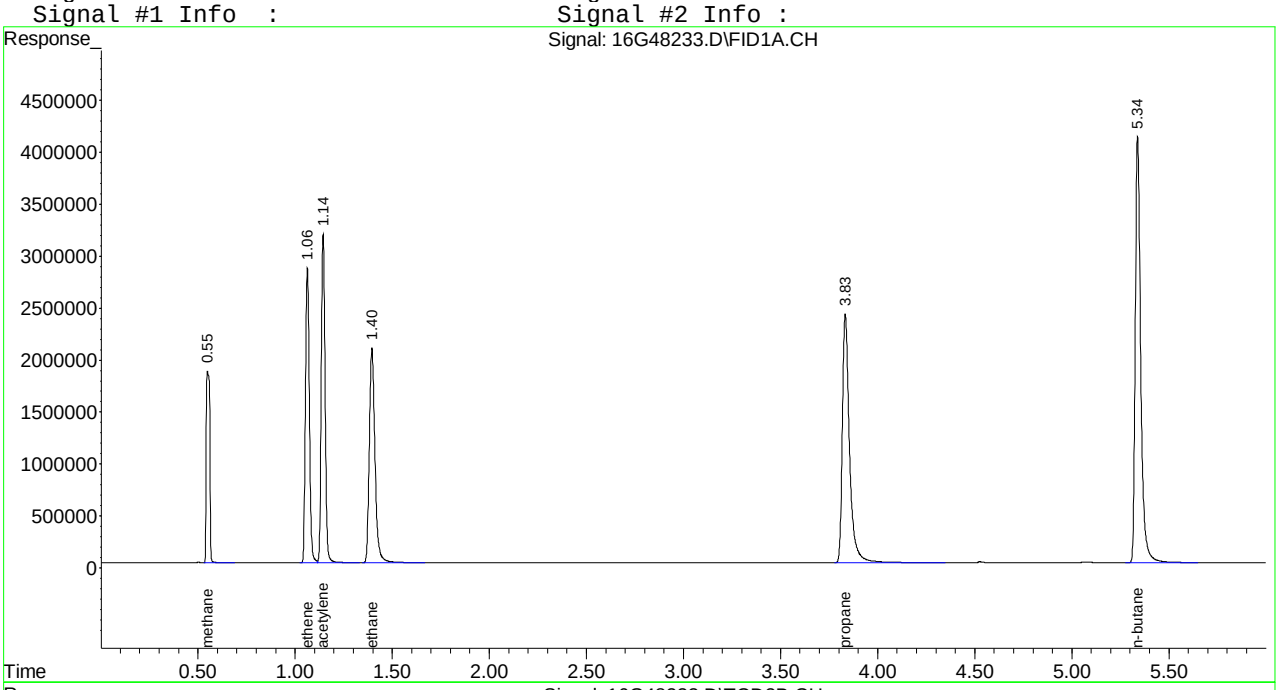

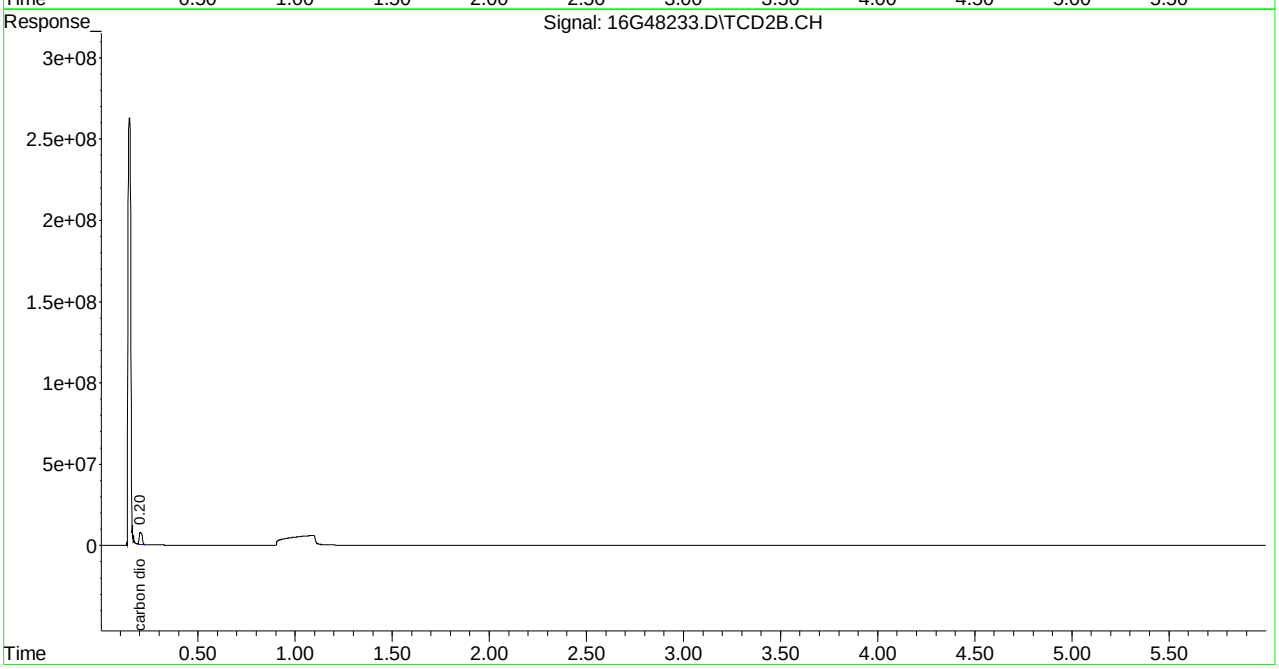

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\081815\16G48233.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\081815\16G48233.D\TCD2B.CH
Acq On : 18 Aug 2015 14:05 Operator: JDS
Sample : WG535474-01 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	124.923	6.1	95	0.00
2	T	ethene	133.000	124.937	6.1	95	0.00
3	T	acetylene	133.000	130.178	2.1	93	0.00
4	T	ethane	133.000	122.111	8.2	95	0.00
5	T	propane	133.000	123.796	6.9	95	0.00
6	T	n-butane	133.000	124.512	6.4	96	0.00

Signal #2

8	T	carbon dioxide	13300.000	14072.704	-5.8	96	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G48233.D RSKEXT1.M Wed Aug 19 09:40:02 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\081815\16G48233.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\081815\16G48233.D\TCD2B.CH
Acq On    : 18 Aug 2015  14:05                      Operator: JDS
Sample    : WG535474-01 133umol/mol CCV RSK175      Inst    : HP16
Misc      : 1,1 STD67274                            Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\081815\16G48244.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\081815\16G48244.D\TCD2B.CH
Acq On : 18 Aug 2015 17:14 Operator: JDS
Sample : WG535474-02 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 18 17:20:40 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	23233928	123.032	umol/
2) T	ethene	1.06	38414585	121.098	umol/
3) T	acetylene	1.14	40911633	120.885	umol/
4) T	ethane	1.39	40298708	118.561	umol/
5) T	propane	3.83	59021896	118.898	umol/
6) T	n-butane	5.34	76746591	118.386	umol/
8) T	carbon dioxide	0.20	68973732	12506.851	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G48244.D RSKEXT1.M Tue Aug 18 17:20:41 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\081815\16G48244.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\081815\16G48244.D\TCD2B.CH
Acq On : 18 Aug 2015 17:14 Operator: JDS
Sample : WG535474-02 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 18 17:20 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

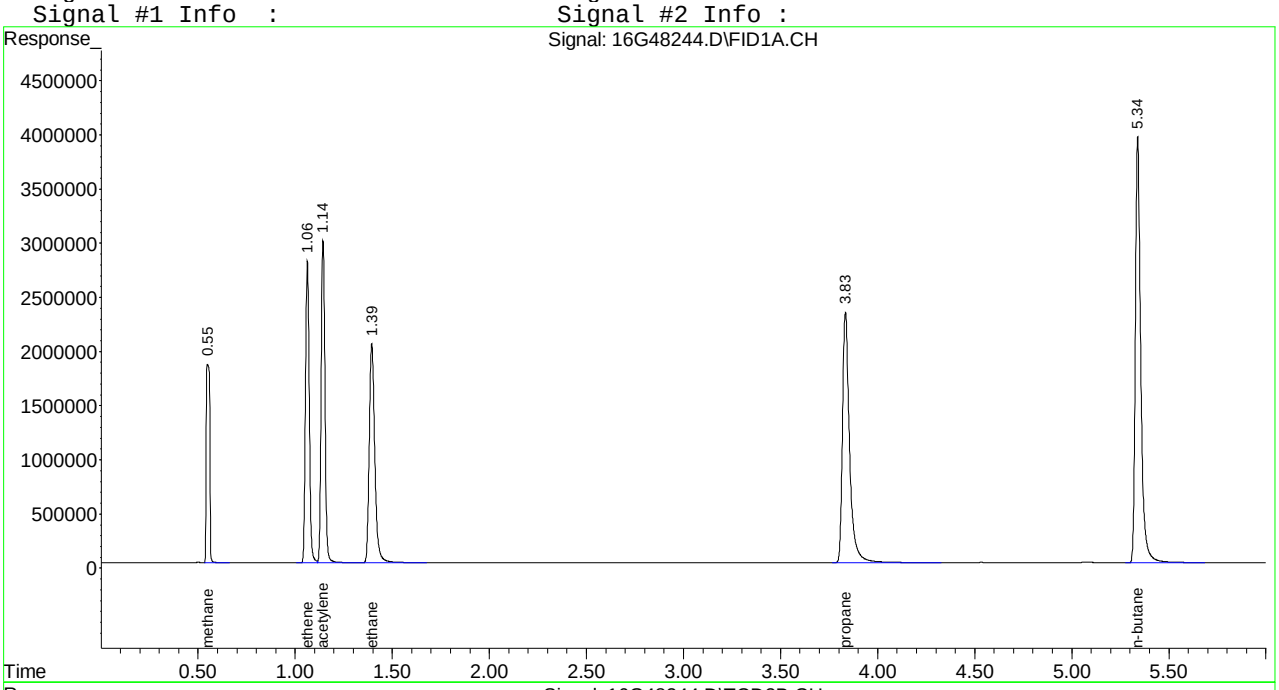

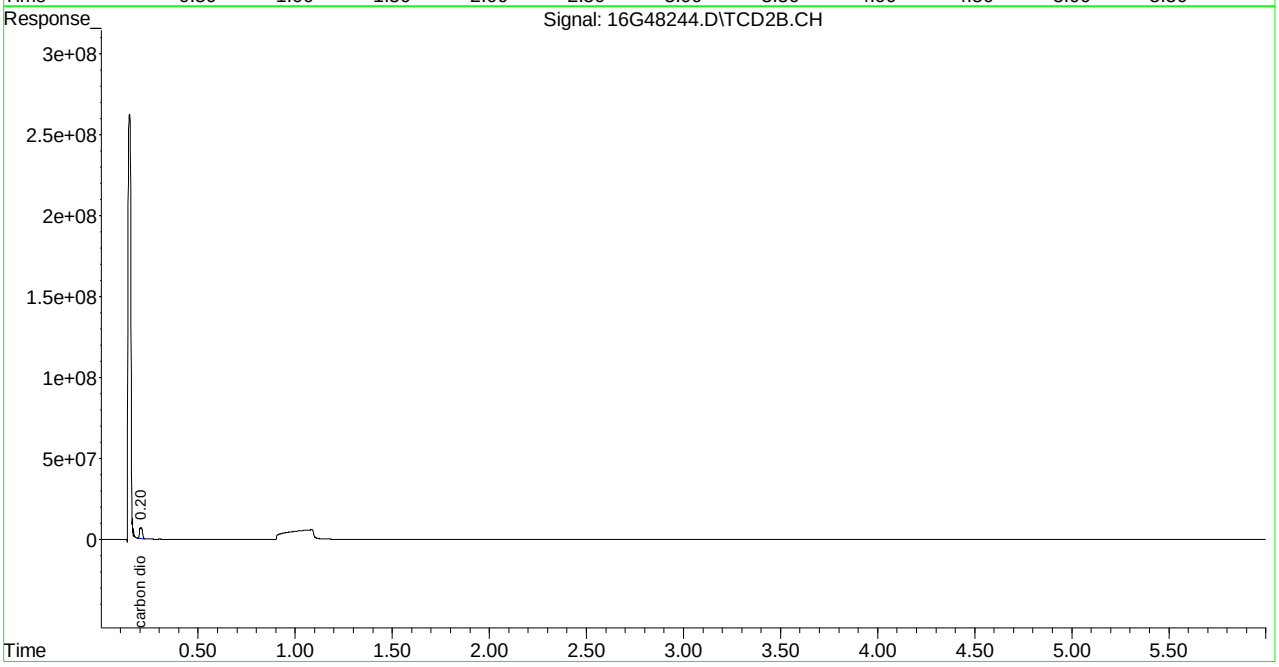

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\081815\16G48244.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\081815\16G48244.D\TCD2B.CH
Acq On : 18 Aug 2015 17:14 Operator: JDS
Sample : WG535474-02 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	123.032	7.5	93	0.00
2	T	ethene	133.000	121.098	8.9	92	0.00
3	T	acetylene	133.000	120.885	9.1	87	0.00
4	T	ethane	133.000	118.561	10.9	92	0.00
5	T	propane	133.000	118.898	10.6	92	0.00
6	T	n-butane	133.000	118.386	11.0	91	0.00

Signal #2

8	T	carbon dioxide	13300.000	12506.851	6.0	86	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G48244.D RSKEXT1.M Wed Aug 19 09:40:09 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\081815\16G48244.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\081815\16G48244.D\TCD2B.CH
Acq On    : 18 Aug 2015  17:14                      Operator: JDS
Sample    : WG535474-02 133umol/mol CCV RSK175      Inst    : HP16
Misc      : 1,1 STD67274                            Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\081815\16G48246.D\FID1A.CH Vial: 14
Signal #2 : C:\MSDchem\1\DATA\081815\16G48246.D\TCD2B.CH
Acq On : 18 Aug 2015 17:37 Operator: JDS
Sample : WG535474-03 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 18 17:43:58 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	23612701	125.074	umol/
2) T	ethene	1.06	38857966	122.496	umol/
3) T	acetylene	1.14	39754480	117.466	umol/
4) T	ethane	1.39	40929181	120.416	umol/
5) T	propane	3.83	60029626	120.929	umol/
6) T	n-butane	5.34	78019123	120.349	umol/
8) T	carbon dioxide	0.20	67059560	12159.758	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G48246.D RSKEXT1.M Tue Aug 18 17:43:59 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\081815\16G48246.D\FID1A.CH Vial: 14
Signal #2 : C:\MSDchem\1\DATA\081815\16G48246.D\TCD2B.CH
Acq On : 18 Aug 2015 17:37 Operator: JDS
Sample : WG535474-03 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 18 17:43 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

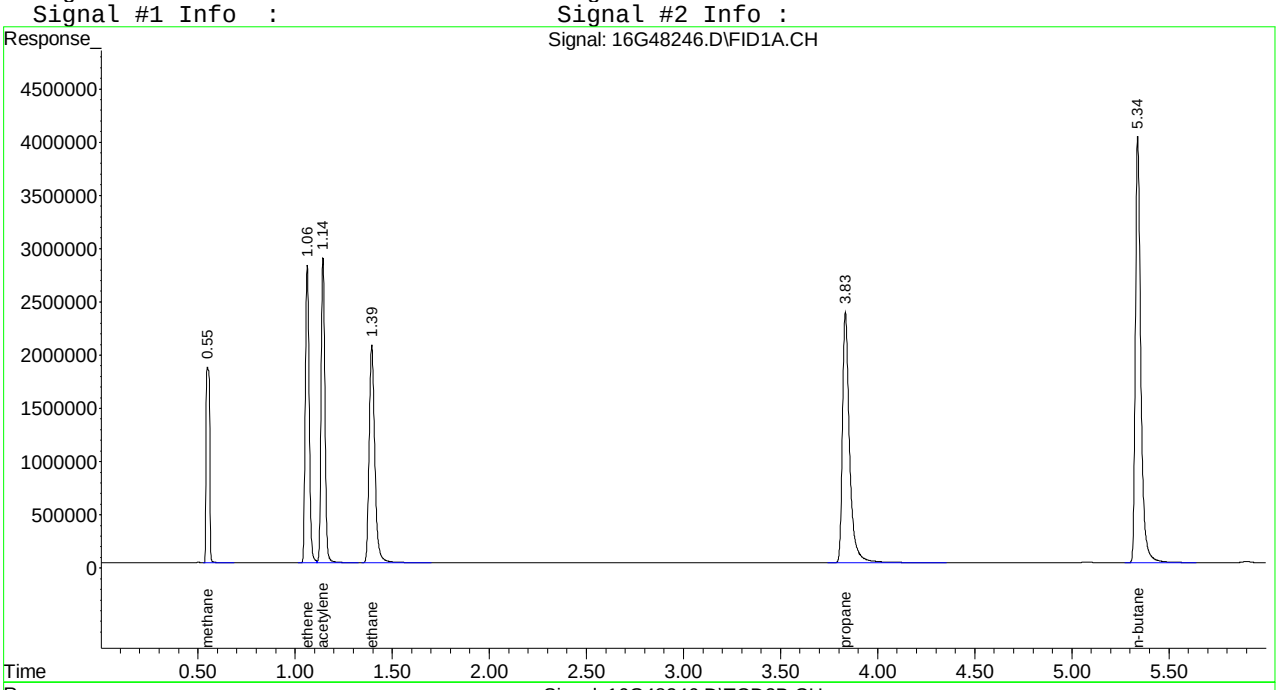

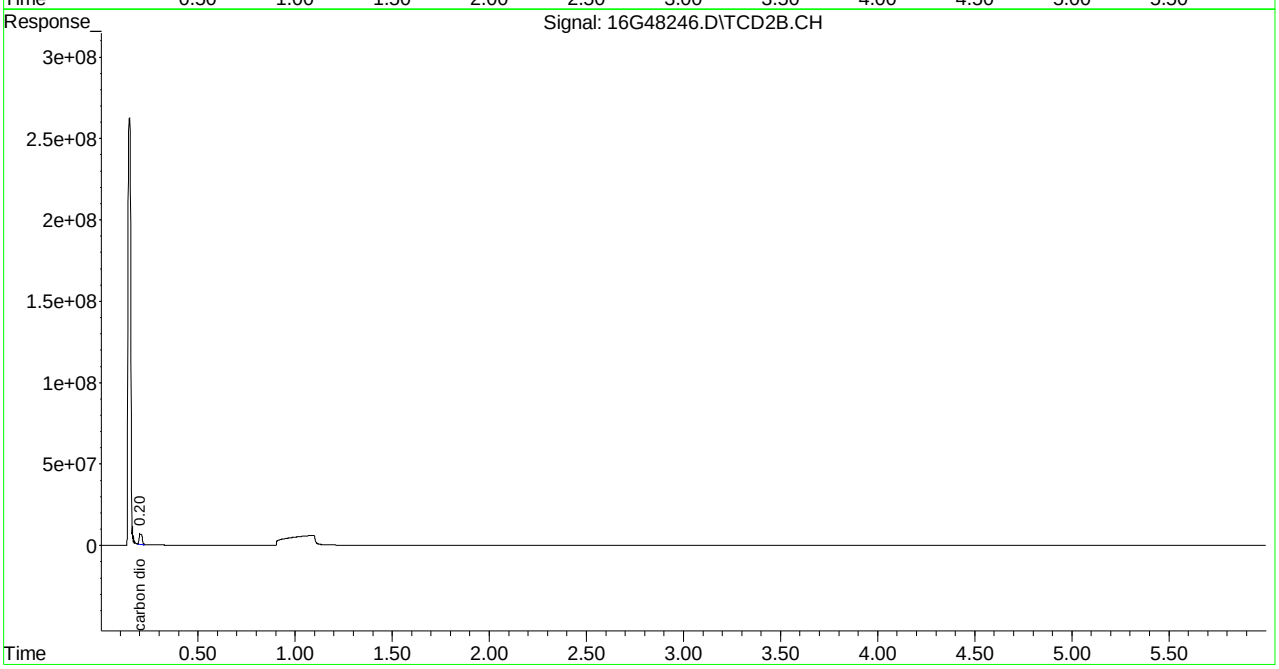

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\081815\16G48246.D\FID1A.CH Vial: 14
Signal #2 : C:\MSDCHEM\1\DATA\081815\16G48246.D\TCD2B.CH
Acq On : 18 Aug 2015 17:37 Operator: JDS
Sample : WG535474-03 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	125.074	6.0	95	0.00
2	T	ethene	133.000	122.496	7.9	93	0.00
3	T	acetylene	133.000	117.466	11.7	84	0.00
4	T	ethane	133.000	120.416	9.5	94	0.00
5	T	propane	133.000	120.929	9.1	93	0.00
6	T	n-butane	133.000	120.349	9.5	92	0.00

Signal #2

8	T	carbon dioxide	13300.000	12159.758	8.6	83	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G48246.D RSKEXT1.M Wed Aug 19 09:40:17 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\081815\16G48246.D\FID1A.CH Vial: 14
Signal #2 : C:\MSDCHEM\1\DATA\081815\16G48246.D\TCD2B.CH
Acq On    : 18 Aug 2015  17:37                      Operator: JDS
Sample    : WG535474-03 133umol/mol CCV RSK175      Inst    : HP16
Misc      : 1,1 STD67274                            Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\081915\16G48247.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDchem\1\DATA\081915\16G48247.D\TCD2B.CH
Acq On : 19 Aug 2015 11:10 Operator: JDS
Sample : WG535544-01 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 19 11:16:08 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	23852937	126.369	umol/
2) T	ethene	1.06	40164191	126.613	umol/
3) T	acetylene	1.14	46013340	135.959	umol/
4) T	ethane	1.39	41972851	123.487	umol/
5) T	propane	3.83	61741199	124.376	umol/
6) T	n-butane	5.34	80826297	124.679	umol/
8) T	carbon dioxide	0.20	74877983	13577.455	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G48247.D RSKEXT1.M Wed Aug 19 11:16:08 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\081915\16G48247.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDchem\1\DATA\081915\16G48247.D\TCD2B.CH
Acq On : 19 Aug 2015 11:10 Operator: JDS
Sample : WG535544-01 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 19 11:16 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

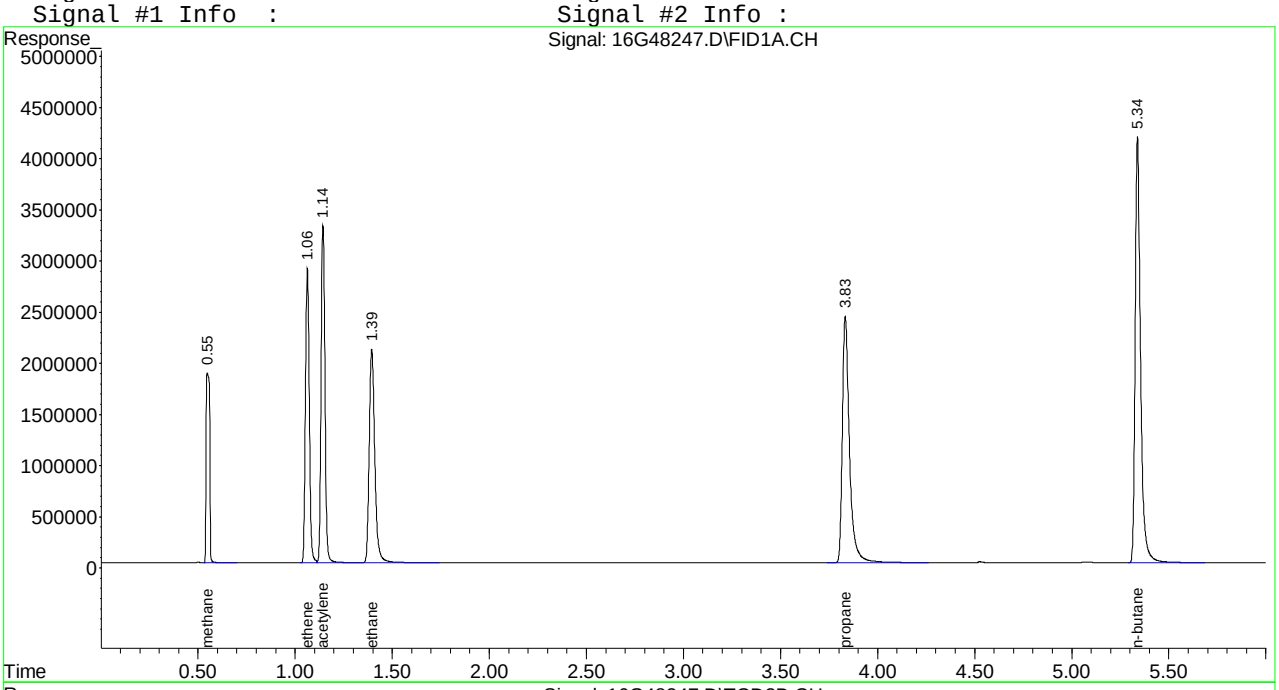

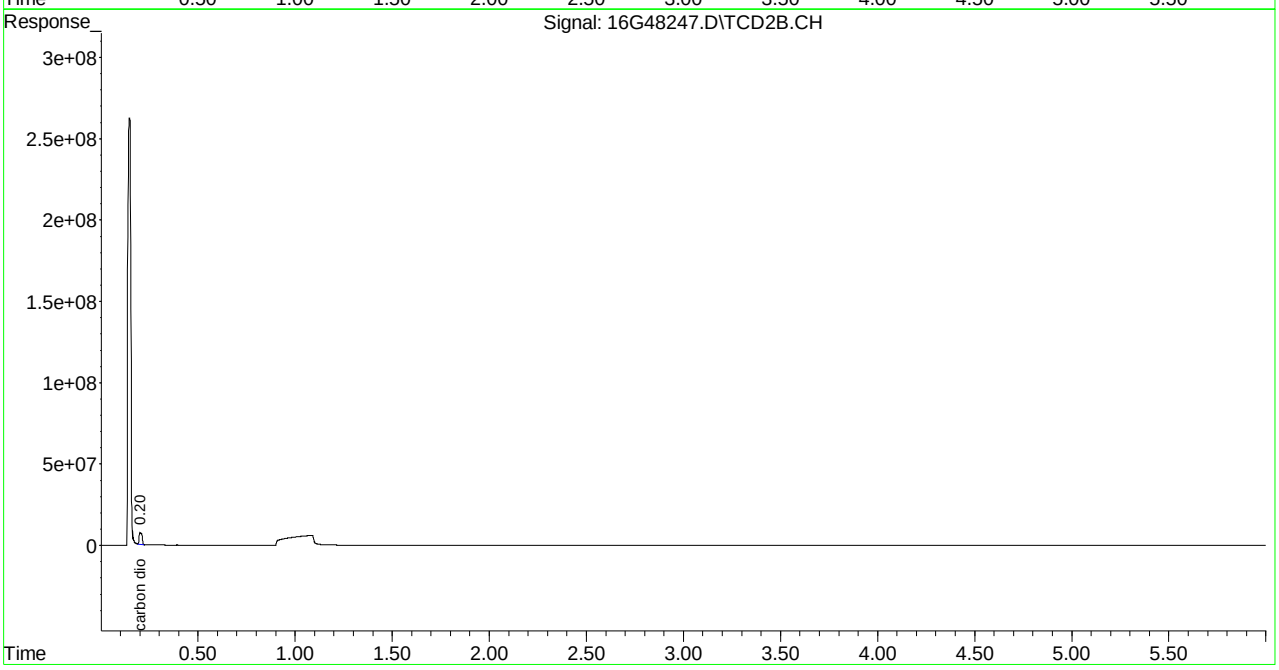

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\081915\16G48247.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\081915\16G48247.D\TCD2B.CH
Acq On : 19 Aug 2015 11:10 Operator: JDS
Sample : WG535544-01 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	126.369	5.0	96	0.00
2	T	ethene	133.000	126.613	4.8	96	0.00
3	T	acetylene	133.000	135.959	-2.2	97	0.00
4	T	ethane	133.000	123.487	7.2	96	0.00
5	T	propane	133.000	124.376	6.5	96	0.00
6	T	n-butane	133.000	124.679	6.3	96	0.00

Signal #2

8	T	carbon dioxide	13300.000	13577.455	-2.1	93	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G48247.D RSKEXT1.M Thu Aug 20 10:36:26 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\081915\16G48247.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\081915\16G48247.D\TCD2B.CH
Acq On    : 19 Aug 2015  11:10                      Operator: JDS
Sample    : WG535544-01 133umol/mol CCV RSK175      Inst    : HP16
Misc      : 1,1 STD67274                            Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\081915\16G48258.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\081915\16G48258.D\TCD2B.CH
Acq On : 19 Aug 2015 16:22 Operator: JDS
Sample : WG535544-02 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 19 16:28:22 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	23728882	125.700	umol/
2) T	ethene	1.06	40021891	126.165	umol/
3) T	acetylene	1.14	43760926	129.304	umol/
4) T	ethane	1.40	42011382	123.600	umol/
5) T	propane	3.83	62084839	125.069	umol/
6) T	n-butane	5.34	81438274	125.623	umol/
8) T	carbon dioxide	0.20	72071306	13068.527	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G48258.D RSKEXT1.M Wed Aug 19 16:28:22 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\081915\16G48258.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\081915\16G48258.D\TCD2B.CH
Acq On : 19 Aug 2015 16:22 Operator: JDS
Sample : WG535544-02 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 19 16:28 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

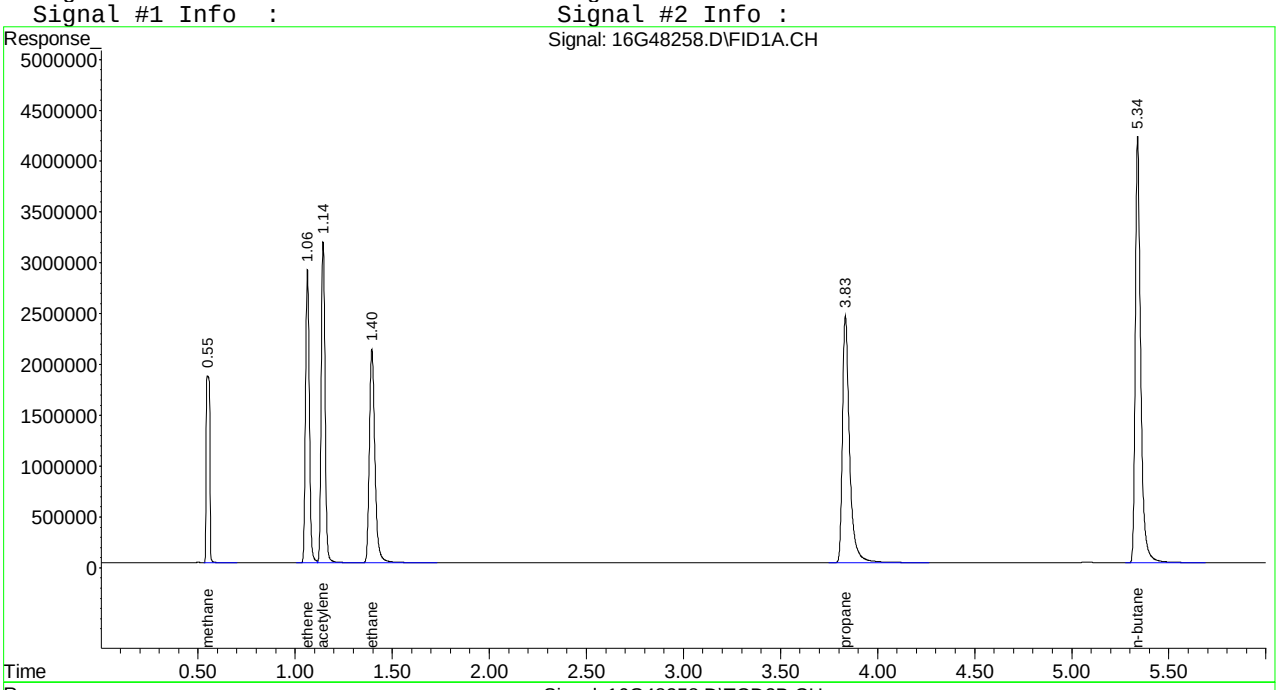

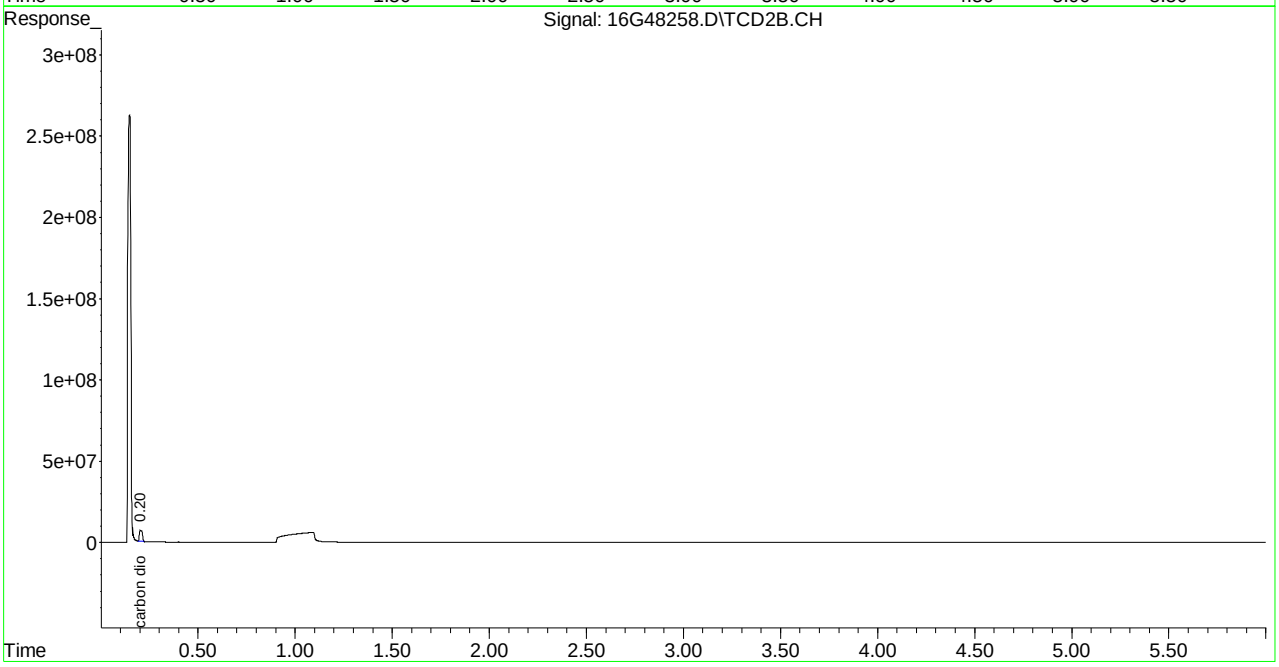

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\081915\16G48258.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\081915\16G48258.D\TCD2B.CH
Acq On : 19 Aug 2015 16:22 Operator: JDS
Sample : WG535544-02 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	125.700	5.5	95	0.00
2	T	ethene	133.000	126.165	5.1	96	0.00
3	T	acetylene	133.000	129.304	2.8	93	0.00
4	T	ethane	133.000	123.600	7.1	96	0.00
5	T	propane	133.000	125.069	6.0	96	0.00
6	T	n-butane	133.000	125.623	5.5	96	0.00
		Signal #2					
8	T	carbon dioxide	13300.000	13068.527	1.7	90	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G48258.D RSKEXT1.M Thu Aug 20 10:36:36 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\081915\16G48258.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\081915\16G48258.D\TCD2B.CH
Acq On    : 19 Aug 2015  16:22                        Operator: JDS
Sample    : WG535544-02 133umol/mol CCV RSK175        Inst    : HP16
Misc      : 1,1 STD67274                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Microbac Laboratories Inc.
Daily Retention Time Window Determination

Login #: L15080904 **Run Date:** 08/18/2015 **Sample ID:** WG535474-01
Instrument: HP16 **Run Time:** 14:05 **Method:** RSK175
Workgroup (AAB#): WG535476 **File ID:** 16G48233

RT Standard	Analysis Date	File ID	Analyst
WG507817-01	01/13/2015	16G46159	JDS
WG507448-01	01/09/2015	16G46148	JDS
WG507013-01	01/06/2015	16G46125	JDS

Analyte	RT #1	RT #2	RT #3	STD	Lower	Upper
METHANE	.54	.55	.55	.55	0.520	0.580
ETHENE	1.06	1.06	1.06	1.06	1.030	1.090
ETHANE	1.39	1.39	1.39	1.4	1.370	1.430
PROPANE	3.82	3.83	3.83	3.83	3.800	3.860
N-BUTANE	5.33	5.34	5.34	5.34	5.310	5.370
CARBON DIOXIDE	.2	.2	.2	.2	0.170	0.230
ACETYLENE	1.14	1.14	1.14	1.14	1.110	1.170

RT_WIN - Modified 01/06/2010
PDF File ID: 4351164
Report generated 08/25/2015 14:54

Microbac Laboratories Inc.
Daily Retention Time Window Determination

Login #: L15080904 **Run Date:** 08/19/2015 **Sample ID:** WG535544-01
Instrument: HP16 **Run Time:** 11:10 **Method:** RSK175
Workgroup (AAB#): WG535545 **File ID:** 16G48247

RT Standard	Analysis Date	File ID	Analyst
WG507817-01	01/13/2015	16G46159	JDS
WG507448-01	01/09/2015	16G46148	JDS
WG507013-01	01/06/2015	16G46125	JDS

Analyte	RT #1	RT #2	RT #3	STD	Lower	Upper
METHANE	.54	.55	.55	.55	0.520	0.580
ETHENE	1.06	1.06	1.06	1.06	1.030	1.090
ETHANE	1.39	1.39	1.39	1.39	1.360	1.420
PROPANE	3.82	3.83	3.83	3.83	3.800	3.860
N-BUTANE	5.33	5.34	5.34	5.34	5.310	5.370
CARBON DIOXIDE	.2	.2	.2	.2	0.170	0.230
ACETYLENE	1.14	1.14	1.14	1.14	1.110	1.170

RT_WIN - Modified 01/06/2010
PDF File ID: 4351164
Report generated 08/25/2015 14:54

2.1.2.5 Raw QC Data

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\081815\16G48234.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\081815\16G48234.D\TCD2B.CH
Acq On    : 18 Aug 2015  14:36                      Operator: JDS
Sample    : WG535476-01 BLANK RSK175                Inst    : HP16
Misc      : 1,1                                     Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Aug 18 14:42:52 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                   Signal #2 Phase:
Signal #1 Info  :                   Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	369676	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.00	0	N.D.	umol/

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\081815\16G48234.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\081815\16G48234.D\TCD2B.CH
Acq On    : 18 Aug 2015  14:36                        Operator: JDS
Sample    : WG535476-01 BLANK RSK175                  Inst    : HP16
Misc      : 1,1                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Aug 18 14:42 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

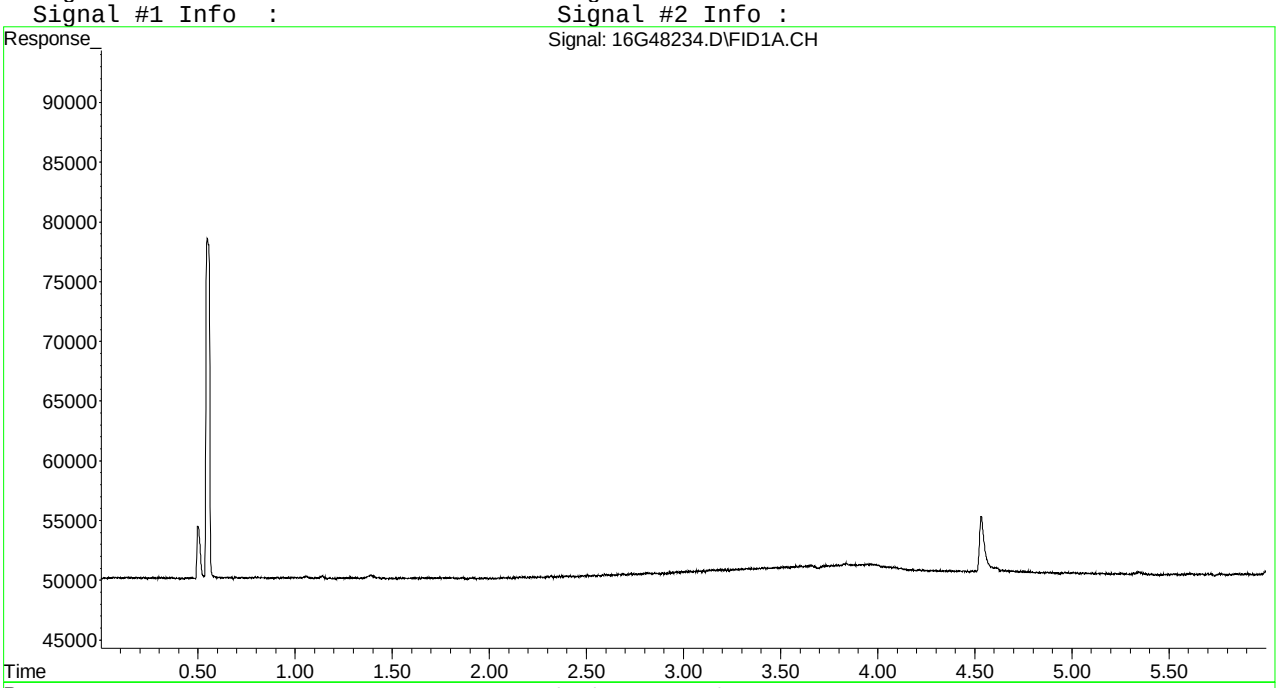

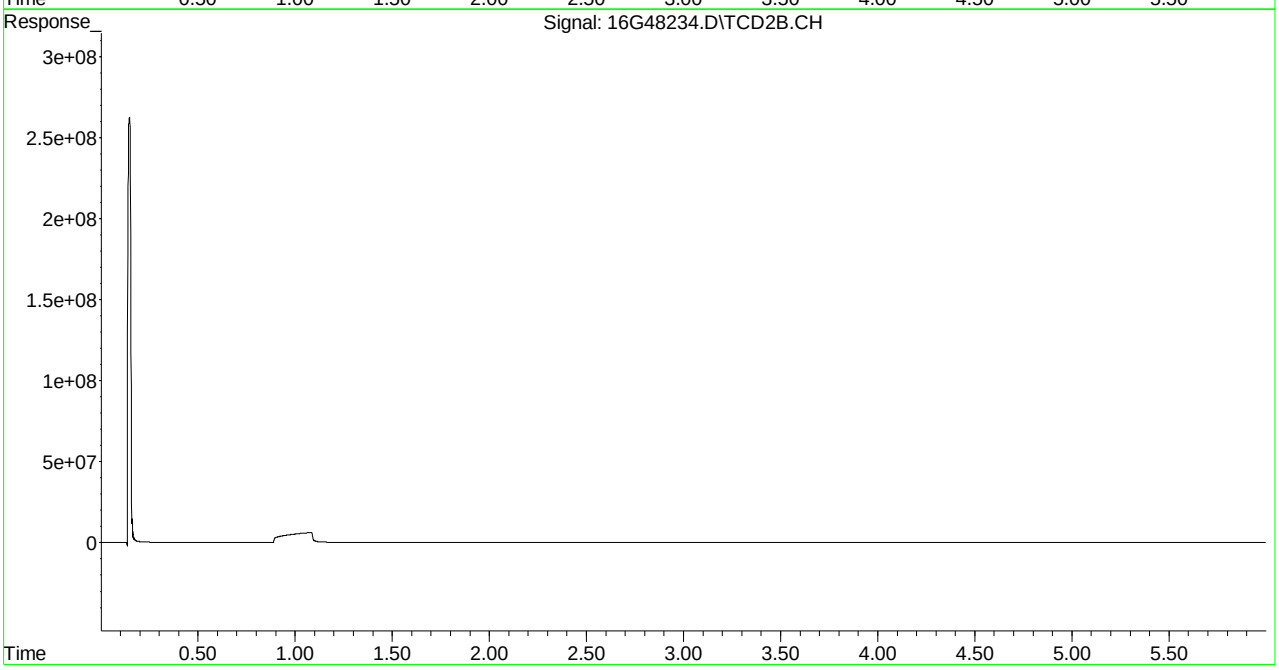

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\081915\16G48248.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\081915\16G48248.D\TCD2B.CH
Acq On : 19 Aug 2015 11:57 Operator: JDS
Sample : WG535545-01 BLANK RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 19 12:03:52 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	367557	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G48248.D RSKEXT1.M Wed Aug 19 13:06:34 2015 Page 1

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\081915\16G48248.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\081915\16G48248.D\TCD2B.CH
Acq On    : 19 Aug 2015  11:57                        Operator: JDS
Sample    : WG535545-01 BLANK RSK175                  Inst    : HP16
Misc      : 1,1                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Aug 19 12:03 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

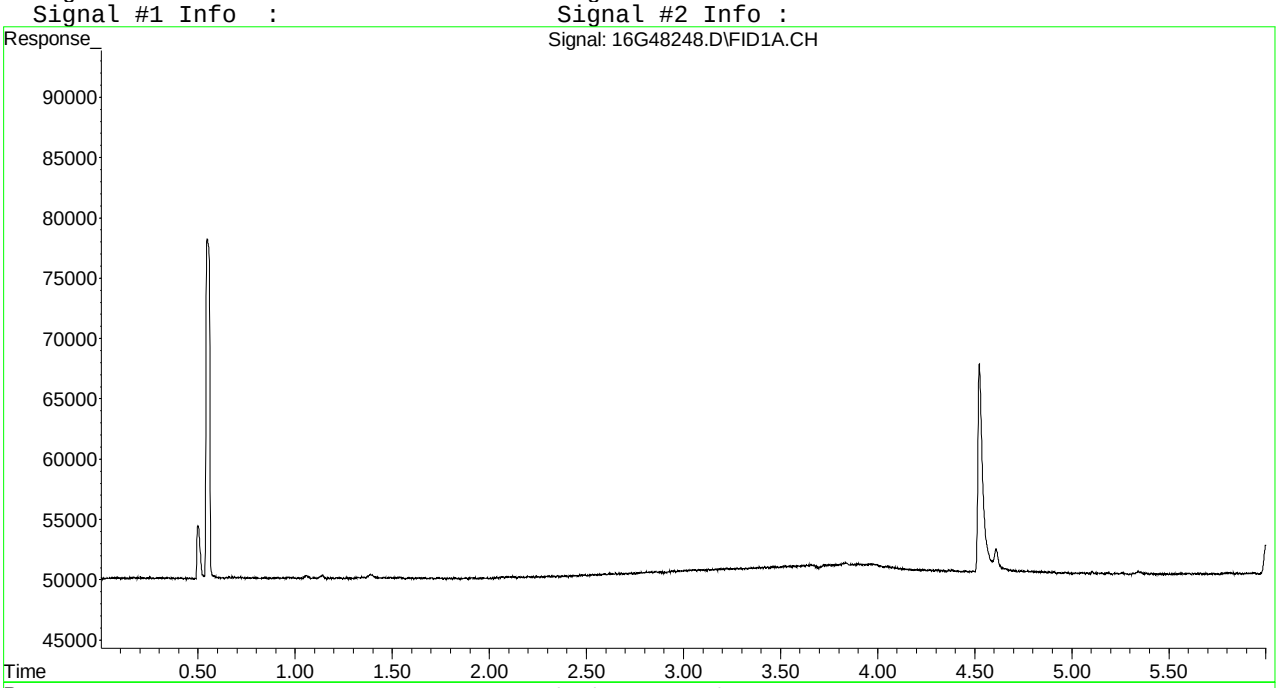

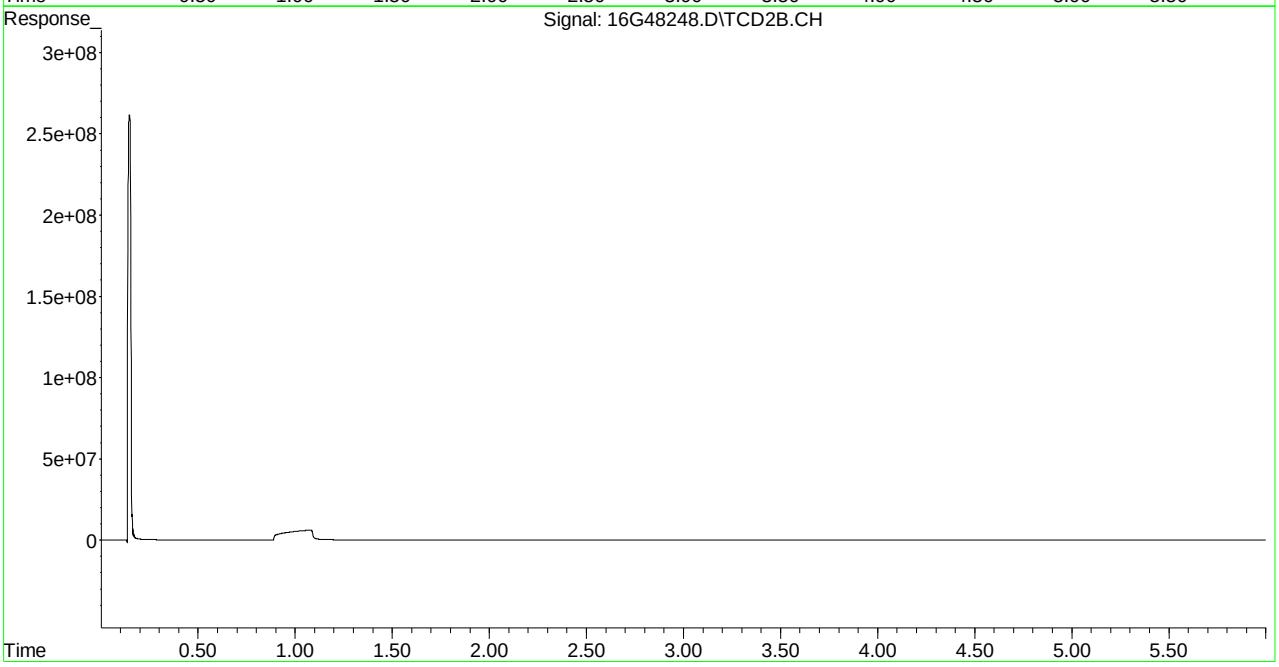

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\081815\16G48235.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDchem\1\DATA\081815\16G48235.D\TCD2B.CH
Acq On : 18 Aug 2015 14:48 Operator: JDS
Sample : WG535476-02 67umol/mol LCS RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 18 14:54:14 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	12530114	65.333	umol/
2) T	ethene	1.06	20660236	65.129	umol/
3) T	acetylene	1.14	22033185	65.103	umol/
4) T	ethane	1.40	21415495	63.006	umol/
5) T	propane	3.83	31115916	62.682	umol/
6) T	n-butane	5.34	40094356	61.848	umol/
8) T	carbon dioxide	0.20	36309545	6583.928	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G48235.D RSKEXT1.M Tue Aug 18 14:54:17 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\081815\16G48235.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDchem\1\DATA\081815\16G48235.D\TCD2B.CH
Acq On : 18 Aug 2015 14:48 Operator: JDS
Sample : WG535476-02 67umol/mol LCS RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 18 14:54 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

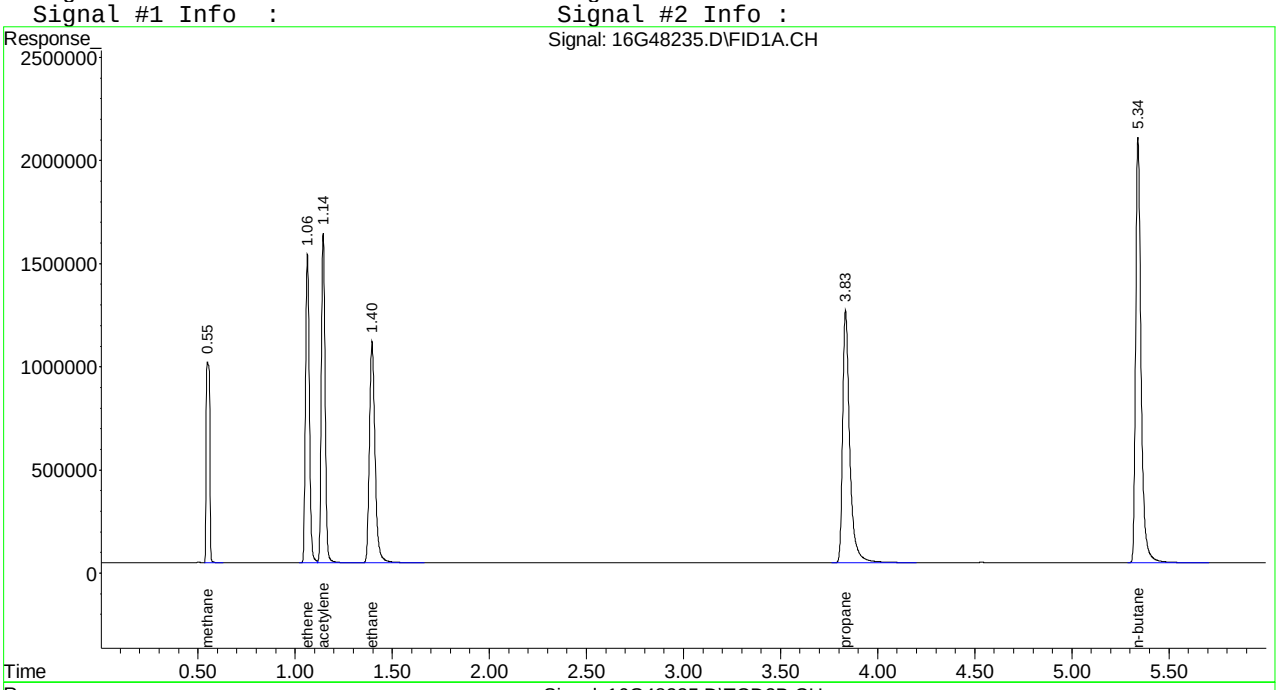

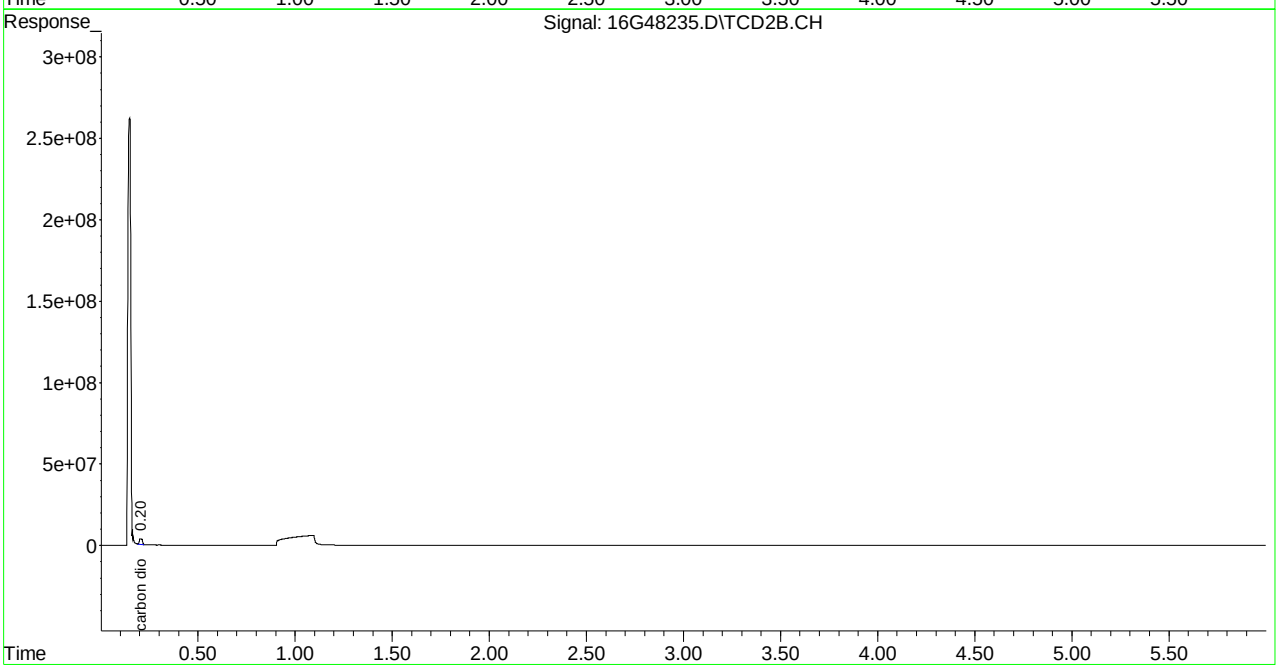

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDchem\1\DATA\081915\16G48249.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDchem\1\DATA\081915\16G48249.D\TCD2B.CH
Acq On    : 19 Aug 2015  12:09                        Operator: JDS
Sample    : WG535545-02 67umol/mol LCS RSK175         Inst    : HP16
Misc      : 1,1 STD68250                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Aug 19 12:15:19 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	12236706	63.751	umol/
2) T	ethene	1.06	19907890	62.758	umol/
3) T	acetylene	1.14	20689785	61.134	umol/
4) T	ethane	1.40	20712601	60.938	umol/
5) T	propane	3.84	29875671	60.184	umol/
6) T	n-butane	5.34	38439284	59.295	umol/
8) T	carbon dioxide	0.20	35340978	6408.300	umol/

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\081915\16G48249.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDchem\1\DATA\081915\16G48249.D\TCD2B.CH
Acq On : 19 Aug 2015 12:09 Operator: JDS
Sample : WG535545-02 67umol/mol LCS RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 19 12:15 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

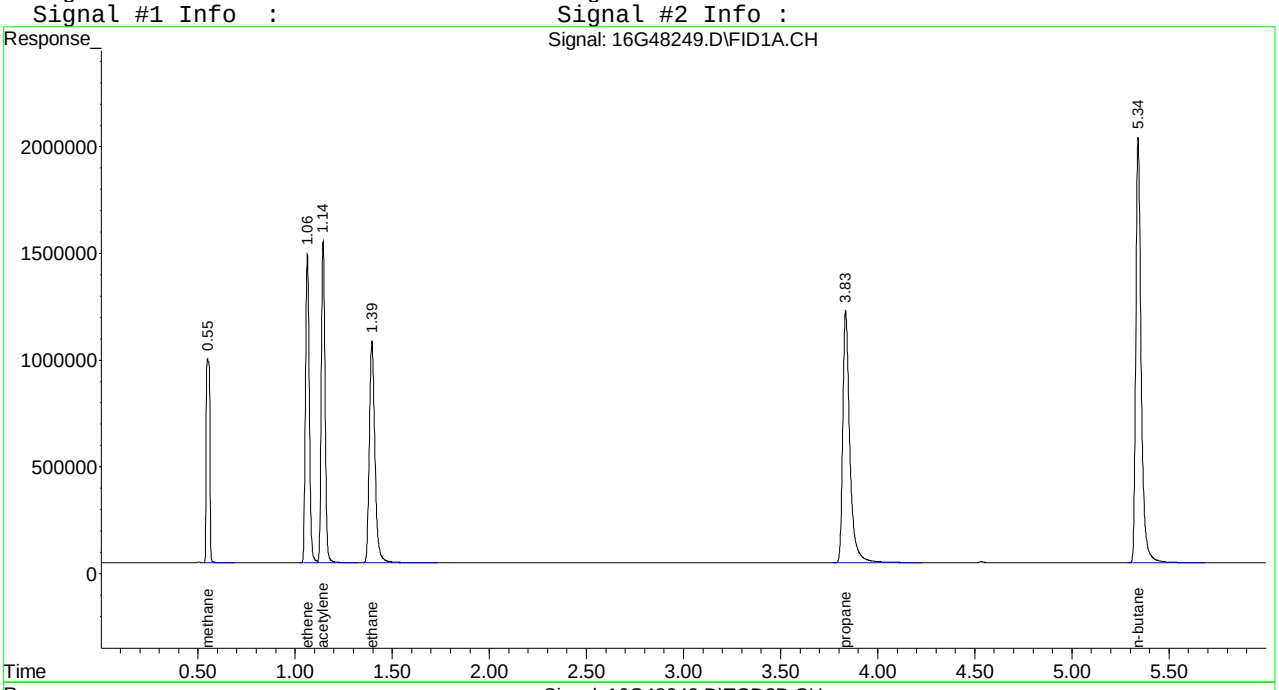

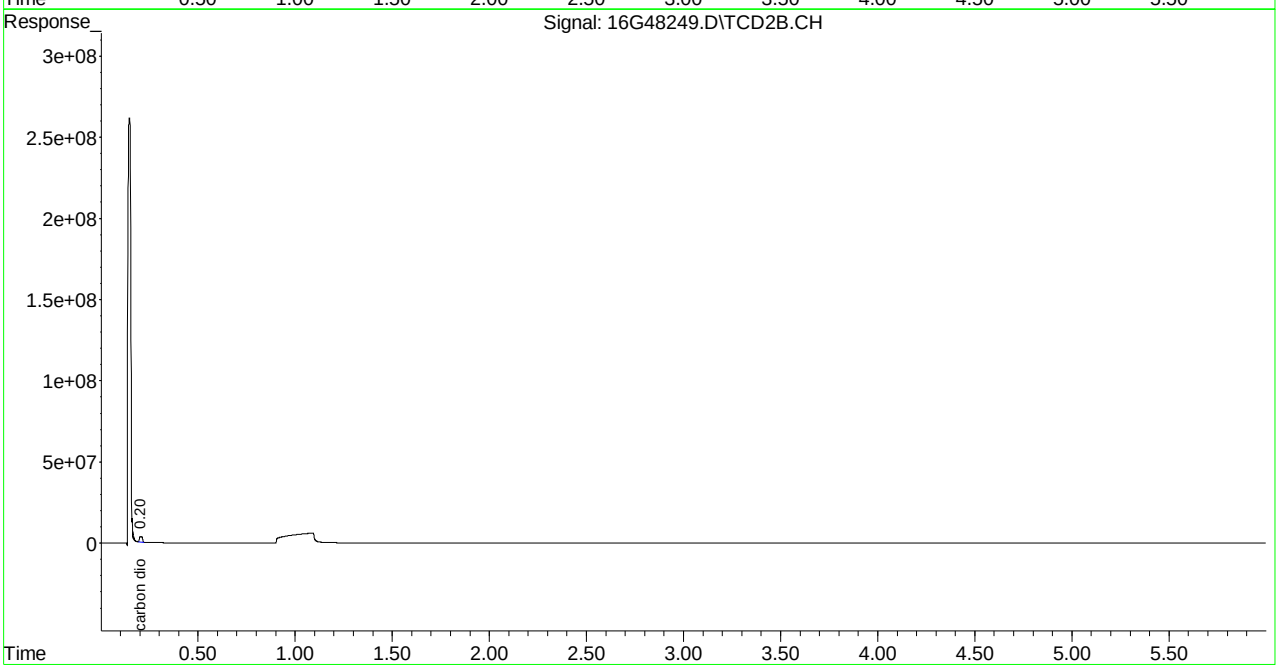

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\081915\16G48250.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDchem\1\DATA\081915\16G48250.D\TCD2B.CH
Acq On : 19 Aug 2015 13:12 Operator: JDS
Sample : WG535545-03 67umol/mol LCS2 RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 19 13:18:08 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	11627318	60.467	umol/
2) T	ethene	1.07	18899764	59.580	umol/
3) T	acetylene	1.15	19397695	57.316	umol/
4) T	ethane	1.40	19647495	57.804	umol/
5) T	propane	3.84	28267333	56.944	umol/
6) T	n-butane	5.34	36069565	55.639	umol/
8) T	carbon dioxide	0.21	31488612	5709.759	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G48250.D RSKEXT1.M Wed Aug 19 13:18:08 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\081915\16G48250.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDchem\1\DATA\081915\16G48250.D\TCD2B.CH
Acq On : 19 Aug 2015 13:12 Operator: JDS
Sample : WG535545-03 67umol/mol LCS2 RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 19 13:18 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

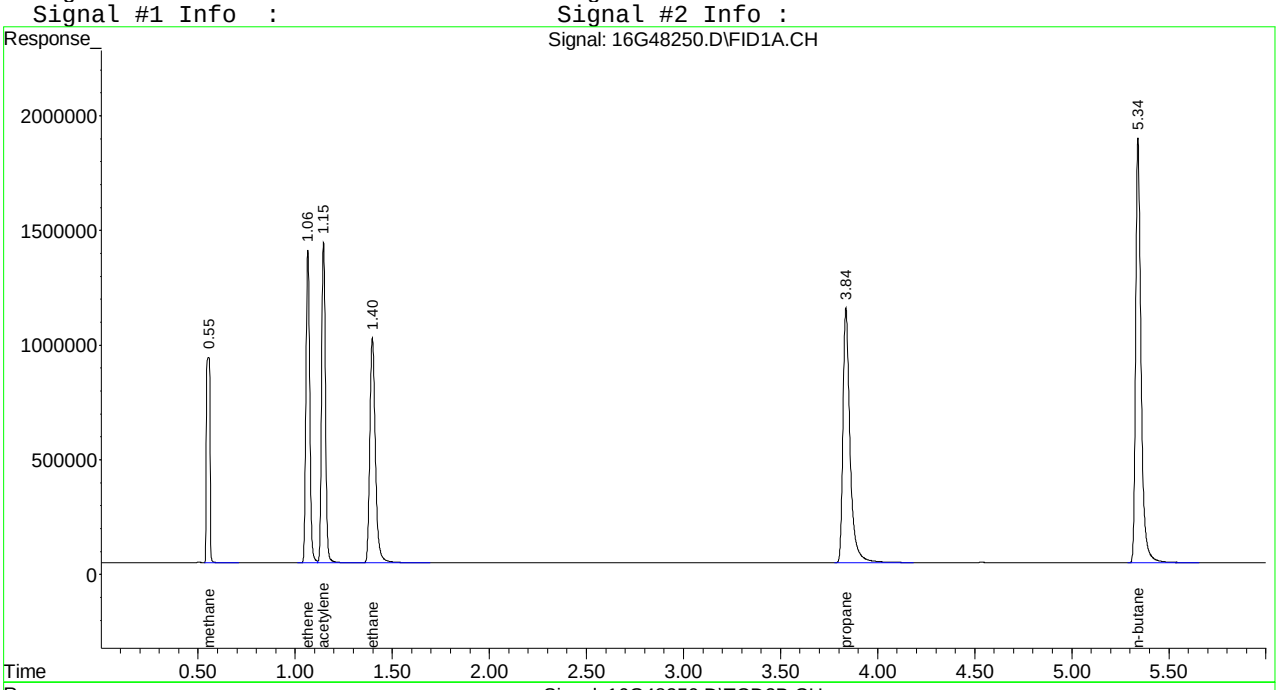

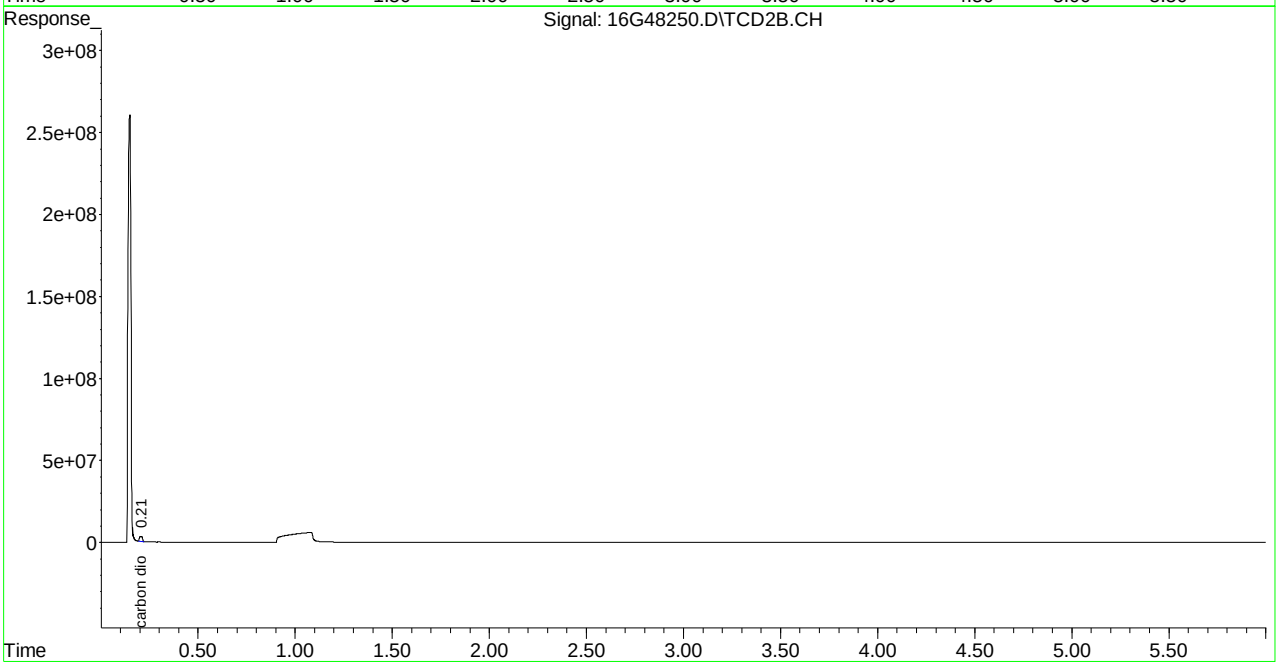

2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW18-081715	**Prep Method:**	6850	**Prep Date:**	08/24/2015 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG536249	**Analyst:**	JWR	**Run Date:**	08/24/2015 19:38
Collect Date:	08/17/2015 08:30	**Dilution:**	1	**File ID:**	1LM.LM31442
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.144	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW24-081715	**Prep Method:**	6850	**Prep Date:**	08/24/2015 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG536249	**Analyst:**	JWR	**Run Date:**	08/24/2015 19:57
Collect Date:	08/17/2015 09:55	**Dilution:**	1	**File ID:**	1LM.LM31443
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW23-081715	**Prep Method:**	6850	**Prep Date:**	08/24/2015 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG536249	**Analyst:**	JWR	**Run Date:**	08/24/2015 21:12
Collect Date:	08/17/2015 11:20	**Dilution:**	1	**File ID:**	1LM.LM31447
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.527		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15080904-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW08-081715	**Prep Method:**	6850	**Prep Date:**	08/24/2015 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG536249	**Analyst:**	JWR	**Run Date:**	08/24/2015 21:50
Collect Date:	08/17/2015 14:50	**Dilution:**	50	**File ID:**	1LM.LM31449
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	157		20.0	10.0	5.00

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1415 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG536249-01 MCT	10,020.	
-02 Blank	0.51	
-03 LCS	0.63	
-04 LCS2	0.71	
L15080772-01	1.40	
L15080899-01	2,840.	
L15080904-01	3,200.	
-03	1,704.	
-05	6,230.	
-07	2,520.	
L15080943-01	180.4	
L15080992-01	4,390.	
-03	651.	
-05	4,940.	
-07	876.	
-09	2,510.	
L15081073-01	2,550.	
-03	2,470.	Sample will need reanalyzed
-05	1,542.	
-06	1,541.	
-07	2,500.	

Analyst: John Richards

Date/Time: 08/24/15 17:20

DCN#112743

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 080515_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 140701254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: ICAL-Only

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD69537 (08/05/2015)

CCV STD: NA LCS STD: NA MS/MSD STD: NA

Comments: ICAL WG533952 : Alternate Source STD69913

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM31292	WG533952-01 CCB	1	1		08/05/15 22:09
2	1LM.LM31293	WG533952-02 STD (0.1 ug/L)	1	1	STD69537	08/05/15 22:28
3	1LM.LM31294	WG533952-03 STD (0.2 ug/L)	1	1	STD69537	08/05/15 22:47
4	1LM.LM31295	WG533952-04 STD (0.5 ug/L)	1	1	STD69537	08/05/15 23:06
5	1LM.LM31296	WG533952-05 STD (1.0 ug/L)	1	1	STD69537	08/05/15 23:25
6	1LM.LM31297	WG533952-06 STD (2.0 ug/L)	1	1	STD69537	08/05/15 23:44
7	1LM.LM31298	WG533952-07 STD (5.0 ug/L)	1	1	STD69537	08/06/15 00:03
8	1LM.LM31299	WG533952-08 STD (10 ug/L)	1	1	STD69537	08/06/15 00:22
9	1LM.LM31300	WG533952-09 SSCV (1.0 ug/L)	1	1	STD69913	08/06/15 00:41

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 10-AUG-15

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 082415_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 140701254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG536249 (waters)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD69537 (08/05/2015)

CCV STD: STD69537 LCS STD: STD69913 MS/MSD STD: NA

Comments: Samples were analyzed neat and/or at dilutions based on their historical results. The result for sample L15081073-03 at a 100x dilution was over the calibration range. The result for this sample at this dilution will not be reported. This sample will be prepared and reanalyzed at a further dilution in a separate workgroup.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM31431	WG536250-01 CCB	1	1		08/24/15 16:09
2	1LM.LM31432	WG536250-02 CCV (1.0ug/L)	1	1	STD69537	08/24/15 16:28
3	1LM.LM31433	WG536249-05 MRL (0.2ug/L)	1	1	STD69537	08/24/15 16:47
4	1LM.LM31434	WG536249-01 MCT (0.2ug/L)	1	1	STD69913	08/24/15 17:06
5	1LM.LM31435	WG536249-02 BLANK	1	1		08/24/15 17:25
6	1LM.LM31436	WG536249-03 LCS (0.2ug/L)	1	1	STD69913	08/24/15 17:44
7	1LM.LM31437	WG536249-04 LCS2 (0.2ug/L)	1	1	STD69913	08/24/15 18:03
8	1LM.LM31438	L15080772-01	1	1		08/24/15 18:22
9	1LM.LM31439	L15080899-01	1	1		08/24/15 18:41
10	1LM.LM31440	L15080899-01 (RR 5x)(NR)	1	5		08/24/15 19:00
11	1LM.LM31441	L15080943-01	1	1		08/24/15 19:19
12	1LM.LM31442	L15080904-01	1	1		08/24/15 19:38
13	1LM.LM31443	L15080904-03	1	1		08/24/15 19:57
14	1LM.LM31444	WG536250-03 CCV (1.0ug/L)	1	1	STD69537	08/24/15 20:16
15	1LM.LM31445	WG536249-06 MRL (0.2ug/L)	1	1	STD69537	08/24/15 20:34
16	1LM.LM31446	WG536250-04 CCB	1	1		08/24/15 20:53
17	1LM.LM31447	L15080904-05	1	1		08/24/15 21:12
18	1LM.LM31448	L15080904-05 (RR 5x)(NR)	1	5		08/24/15 21:31
19	1LM.LM31449	L15080904-07 (50x)	1	50		08/24/15 21:50
20	1LM.LM31450	L15080992-01	1	1		08/24/15 22:09
21	1LM.LM31451	L15080992-03 (5x)	1	5		08/24/15 22:28
22	1LM.LM31452	L15080992-05 (10,000x)	1	10000		08/24/15 22:47
23	1LM.LM31453	L15080992-07 (1,000x)	1	1000		08/24/15 23:06
24	1LM.LM31454	L15080992-09 (1,000x)(NR)	1	1000		08/24/15 23:25
25	1LM.LM31455	L15080992-09 (RR 10,000x)	1	10000		08/24/15 23:44
26	1LM.LM31456	WG536250-05 CCV (1.0ug/L)	1	1	STD69537	08/25/15 00:03
27	1LM.LM31457	WG536249-07 MRL (0.2ug/L)	1	1	STD69537	08/25/15 00:22
28	1LM.LM31458	WG536250-06 CCB	1	1		08/25/15 00:41
29	1LM.LM31459	L15081073-01	1	1		08/25/15 01:00
30	1LM.LM31460	L15081073-03 (100x)(NR)	1	100		08/25/15 01:18
31	1LM.LM31461	L15081073-05	1	1		08/25/15 01:37
32	1LM.LM31462	L15081073-06	1	1		08/25/15 01:56

Page: 1 Approved: 28-AUG-15

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 082415_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 140701254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG536249 (waters)

Internal STD: COA18071 Surrogate STD: NA STD69537 (08/05/2015)

CCV STD: STD69537 LCS STD: STD69913 NA

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
33	1LM.LM31463	L15081073-07	1	1		08/25/15 02:15
34	1LM.LM31464	WG536250-07 CCV (1.0ug/L)	1	1	STD69537	08/25/15 02:34
35	1LM.LM31465	WG536249-08 MRL (0.2ug/L)	1	1	STD69537	08/25/15 02:53
36	1LM.LM31466	WG536250-08 CCB	1	1		08/25/15 03:12

Comments

Seq.	Rerun	Dil.	Reason	Analytes
10				
	L15080899-01 (RR 5x)(NR) : The result for this sample will be reported from its analysis as neat.			
18				
	L15080904-05 (RR 5x)(NR) : The result for this sample will be reported from its analysis as neat.			
24	X	10000	Over Calibration Range	
	L15080992-09 (1,000x)(NR) : The result for this sample will be reported from its analysis at a 10,000x dilution.			
30	X	5000	Over Calibration Range	
	L15081073-03 (100x)(NR) : The result for this sample at this dilution will not be reported. This sample will be prepared and reanalyzed at a further dilution in a separate workgroup.			

Page: 2 Approved: 28-AUG-15

Microbac Laboratories Inc.

Data Checklist

Date: 05-AUG-2015
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG533952
Runlog ID: 69666
Analytical Workgroups: ICAL ONLY

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	NA
Limit of quantitation verification (LOQV) (LCMS)	NA
Special standards	NA
Blanks	NA
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	NA
Recoveries	NA
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	NA
Samples	NA
TCL hits	NA
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 06-AUG-2015 John Richards

Secondary Reviewer: 10-AUG-2015 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-10-2015 15:44:17

Microbac Laboratories Inc.

Data Checklist

Date: 24-AUG-2015
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 70121
Analytical Workgroups: L15080772, 0899, 0904, 0943, 0992, 1073

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	LSB

Primary Reviewer: 28-AUG-2015 John Richards

Secondary Reviewer: 28-AUG-2015 Leslie Bucisa

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-28-2015 13:45:21

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG536249

Login Number: L15080904

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW18-081715	01	08/17/15					08/24/2015	7.3	28		08/24/15	.2	28	
50WW24-081715	03	08/17/15					08/24/2015	7.2	28		08/24/15	.2	28	
50WW23-081715	05	08/17/15					08/24/2015	7.2	28		08/24/15	.3	28	
50WW08-081715	07	08/17/15					08/24/2015	7	28		08/24/15	.3	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4360062
Report generated 08/28/2015 15:28

METHOD BLANK SUMMARY

Login Number: L15080904
Blank File ID: 1LM.LM31435
Prep Date: 08/24/15 15:00
Analyzed Date: 08/24/15 17:25
Analyst: JWR

Work Group: WG536249
Blank Sample ID: WG536249-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG536249-05	1LM.LM31433	08/24/15 16:47	01
MCT	WG536249-01	1LM.LM31434	08/24/15 17:06	01
LCS	WG536249-03	1LM.LM31436	08/24/15 17:44	01
LCS2	WG536249-04	1LM.LM31437	08/24/15 18:03	01
50WW18-081715	L15080904-01	1LM.LM31442	08/24/15 19:38	01
50WW24-081715	L15080904-03	1LM.LM31443	08/24/15 19:57	01
QCMRL	WG536249-06	1LM.LM31445	08/24/15 20:34	01
50WW23-081715	L15080904-05	1LM.LM31447	08/24/15 21:12	01
50WW08-081715	L15080904-07	1LM.LM31449	08/24/15 21:50	DL01
QCMRL	WG536249-07	1LM.LM31457	08/25/15 00:22	01
QCMRL	WG536249-08	1LM.LM31465	08/25/15 02:53	01

Report Name: BLANK_SUMMARY
PDF File ID: 4360063
Report generated 08/28/2015 15:28

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15080904 Prep Date: 08/24/15 15:00 Sample ID: WG536249-02
Instrument ID: LCMS1 Run Date: 08/24/15 17:25 Prep Method: 6850
File ID: 1LM.LM31435 Analyst: JWR Method: 6850
Workgroup (AAB#): WG536249 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-06-AUG-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4360064
28-AUG-2015 15:28

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15080904 Analyst: JWR Prep Method: 6850
Instrument ID: LCMS1 Matrix: Water Method: 6850
Workgroup (AAB#): WG536249 Units: ug/L
QC Key: DOD4 Lot #: STD69913

Sample ID: WG536249-03 LCS File ID: 1LM.LM31436 Run Date: 08/24/2015 17:44
Sample ID: WG536249-04 LCS2 File ID: 1LM.LM31437 Run Date: 08/24/2015 18:03

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Perchlorate	0.200	0.206	103	0.200	0.210	105	1.92	80 - 120	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4360065
Report generated: 08/28/2015 15:28

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L15080904
Analytical Method: 6850
ICAL Workgroup: WG533952

Instrument ID: LCMS1
Initial Calibration Date: 06-AUG-15 00:22
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.372	8.13	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4360719
Report generated 08/28/2015 15:28

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15080904

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 06-AUG-15 00:22

Column ID: F

Analyte	WG533952-02			WG533952-03			WG533952-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	11400.0000	1.406	0.200	25600.0000	1.446	0.500	59400.0000	1.351

INT_CAL - Modified 03/06/2008
PDF File ID: 4360719
Report generated 08/28/2015 15:28

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15080904

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 06-AUG-15 00:22

Column ID: F

Analyte	WG533952-05			WG533952-06			WG533952-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	112000.000	1.326	2.00	231000.000	1.381	5.00	550000.000	1.342

INT_CAL - Modified 03/06/2008
PDF File ID: 4360719
Report generated 08/28/2015 15:28

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15080904

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 06-AUG-15 00:22

Column ID: F

Analyte	WG533952-08		
	CONC	RESP	RF
Perchlorate	10.0	975000.000	1.354

INT_CAL - Modified 03/06/2008

PDF File ID: 4360719

Report generated 08/28/2015 15:28

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15080904 Run Date: 08/06/2015 Sample ID: WG533952-09
Instrument ID: LCMS1 Run Time: 00:41 Method: 6850
File ID: 1LM.LM31300 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG533952 Cal ID: LCMS1 - 06-AUG-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.956	ug/L	1.30	4.40	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4360720
Report generated 08/28/2015 15:28

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15080904
Run Date: 08/24/2015
Sample ID: WG536250-01
Instrument ID: LCMS1
Run Time: 16:09
Method: 6850
File ID: 1LM.LM31431
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG536249
Cal ID: LCMS1 - 06-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4360068
Report generated 08/28/2015 15:28

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15080904
Run Date: 08/24/2015
Sample ID: WG536250-04
Instrument ID: LCMS1
Run Time: 20:53
Method: 6850
File ID: 1LM.LM31446
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG536249
Cal ID: LCMS1 - 06-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4360068
Report generated 08/28/2015 15:28

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15080904
Run Date: 08/25/2015
Sample ID: WG536250-06
Instrument ID: LCMS1
Run Time: 00:41
Method: 6850
File ID: 1LM.LM31458
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG536249
Cal ID: LCMS1 - 06-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4360068
Report generated 08/28/2015 15:28

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15080904
Run Date: 08/25/2015
Sample ID: WG536250-08
Instrument ID: LCMS1
Run Time: 03:12
Method: 6850
File ID: 1LM.LM31466
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG536249
Cal ID: LCMS1 - 06-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4360068
Report generated 08/28/2015 15:28

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080904
Run Date: 08/24/2015
Sample ID: WG536250-02
Instrument ID: LCMS1
Run Time: 16:28
Method: 6850
File ID: 1LM.LM31432
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG536249
Cal ID: LCMS1 - 06-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.05	ug/L	1.43	5.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4360067
Report generated 08/28/2015 15:28

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080904
Run Date: 08/24/2015
Sample ID: WG536250-03
Instrument ID: LCMS1
Run Time: 20:16
Method: 6850
File ID: 1LM.LM31444
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG536249
Cal ID: LCMS1 - 06-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.37	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4360067
Report generated 08/28/2015 15:28

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080904
Run Date: 08/25/2015
Sample ID: WG536250-05
Instrument ID: LCMS1
Run Time: 00:03
Method: 6850
File ID: 1LM.LM31456
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG536249
Cal ID: LCMS1 - 06-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.991	ug/L	1.35	0.900	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4360067
Report generated 08/28/2015 15:28

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080904
Run Date: 08/25/2015
Sample ID: WG536250-07
Instrument ID: LCMS1
Run Time: 02:34
Method: 6850
File ID: 1LM.LM31464
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG536249
Cal ID: LCMS1 - 06-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.979	ug/L	1.33	2.10	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4360067
Report generated 08/28/2015 15:28

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15080904 Run Date: 08/24/2015 Sample ID: WG536249-05
Instrument ID: LCMS1 Run Time: 16:47 Prep Method: 6850
File ID: 1LM.LM31433 Analyst: JWR Method: 6850
Workgroup (AAB#): WG536249 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-06-AUG-15

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.213	107	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4360066
Report generated 08/28/2015 15:28

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15080904 Run Date: 08/24/2015 Sample ID: WG536249-06
Instrument ID: LCMS1 Run Time: 20:34 Prep Method: 6850
File ID: 1LM.LM31445 Analyst: JWR Method: 6850
Workgroup (AAB#): WG536249 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-06-AUG-15

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.196	98.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4360066
Report generated 08/28/2015 15:28

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15080904 Run Date: 08/25/2015 Sample ID: WG536249-07
Instrument ID: LCMS1 Run Time: 00:22 Prep Method: 6850
File ID: 1LM.LM31457 Analyst: JWR Method: 6850
Workgroup (AAB#): WG536249 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-06-AUG-15

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.210	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4360066
Report generated 08/28/2015 15:28

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15080904 Run Date: 08/25/2015 Sample ID: WG536249-08

Instrument ID: LCMS1 Run Time: 02:53 Prep Method: 6850

File ID: 1LM.LM31465 Analyst: JWR Method: 6850

Workgroup (AAB#): WG536249 Matrix: Water Units: ug/L

Contract #: Cal ID: LCMS1-06-AUG-15

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4360066
Report generated 08/28/2015 15:28

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L15080904
Instrument ID: LCMS1
Workgroup (AAB#): WG536249

ICAL CCV Number: WG533952-05
CAL ID: LCMS1-06-AUG-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG533952	NA	NA	414000
Upper Limit	NA	NA	621000
Lower Limit	NA	NA	207000
L15080904-01	1.00	01	446000
L15080904-03	1.00	01	448000
L15080904-05	1.00	01	443000
L15080904-07	50.0	DL01	415000
WG536249-02	1.00	01	397000
WG536249-03	1.00	01	399000
WG536249-04	1.00	01	367000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4360069
Report generated 08/28/2015 15:28

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080904	**Prep Method:**	6850	**Samplenum:**	L15080904-01
Instrument:	LCMS1	**Prep Date:**	08/24/2015 15:00	**File ID:**	1LM.LM31442
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/24/2015 19:38	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	18000	5980	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080904	**Prep Method:**	6850	**Samplenum:**	L15080904-03
Instrument:	LCMS1	**Prep Date:**	08/24/2015 15:00	**File ID:**	1LM.LM31443
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/24/2015 19:57	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	5490	1640	3.35	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080904	**Prep Method:**	6850	**Samplenum:**	L15080904-05
Instrument:	LCMS1	**Prep Date:**	08/24/2015 15:00	**File ID:**	1LM.LM31447
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/24/2015 21:12	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	63700	21000	3.03	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080904	**Prep Method:**	6850	**Samplenum:**	L15080904-07
Instrument:	LCMS1	**Prep Date:**	08/24/2015 15:00	**File ID:**	1LM.LM31449
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/24/2015 21:50	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	352000	111000	3.17	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080904	**Prep Method:**		**Samplenum:**	WG533952-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31293
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/05/2015 22:28	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	11400	3660	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080904	**Prep Method:**		**Samplenum:**	WG533952-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31294
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/05/2015 22:47	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	25600	7580	3.38	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080904	**Prep Method:**		**Samplenum:**	WG533952-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31295
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/05/2015 23:06	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	59400	19000	3.13	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080904	**Prep Method:**		**Samplenum:**	WG533952-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31296
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/05/2015 23:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	112000	35600	3.15	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080904	**Prep Method:**		**Samplenum:**	WG533952-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31297
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/05/2015 23:44	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	231000	70300	3.29	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080904	**Prep Method:**		**Samplenum:**	WG533952-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31298
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/06/2015 00:03	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	550000	170000	3.24	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080904	**Prep Method:**		**Samplenum:**	WG533952-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31299
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/06/2015 00:22	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	975000	304000	3.21	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080904	**Prep Method:**		**Samplenum:**	WG533952-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31300
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/06/2015 00:41	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	109000	34100	3.20	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080904	**Prep Method:**	6850	**Samplenum:**	WG536249-01
Instrument:	LCMS1	**Prep Date:**	08/24/2015 15:00	**File ID:**	1LM.LM31434
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/24/2015 17:06	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	20900	6270	3.33	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080904	**Prep Method:**	6850	**Samplenum:**	WG536249-02
Instrument:	LCMS1	**Prep Date:**	08/24/2015 15:00	**File ID:**	1LM.LM31435
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/24/2015 17:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080904	**Prep Method:**	6850	**Samplenum:**	WG536249-03
Instrument:	LCMS1	**Prep Date:**	08/24/2015 15:00	**File ID:**	1LM.LM31436
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/24/2015 17:44	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	22900	7710	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080904	**Prep Method:**	6850	**Samplenum:**	WG536249-04
Instrument:	LCMS1	**Prep Date:**	08/24/2015 15:00	**File ID:**	1LM.LM31437
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/24/2015 18:03	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	21400	6620	3.23	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080904	**Prep Method:**	6850	**Samplenum:**	WG536249-05
Instrument:	LCMS1	**Prep Date:**	08/24/2015 15:00	**File ID:**	1LM.LM31433
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/24/2015 16:47	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	21500	6560	3.28	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080904	**Prep Method:**	6850	**Samplenum:**	WG536249-06
Instrument:	LCMS1	**Prep Date:**	08/24/2015 15:00	**File ID:**	1LM.LM31445
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/24/2015 20:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	22800	7970	2.86	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080904	**Prep Method:**	6850	**Samplenum:**	WG536249-07
Instrument:	LCMS1	**Prep Date:**	08/24/2015 15:00	**File ID:**	1LM.LM31457
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/25/2015 00:22	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	24100	8120	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080904	**Prep Method:**	6850	**Samplenum:**	WG536249-08
Instrument:	LCMS1	**Prep Date:**	08/24/2015 15:00	**File ID:**	1LM.LM31465
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/25/2015 02:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	24100	7860	3.07	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080904	**Prep Method:**		**Samplenum:**	WG536250-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31431
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/24/2015 16:09	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080904	**Prep Method:**		**Samplenum:**	WG536250-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31432
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/24/2015 16:28	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	105000	32100	3.27	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080904	**Prep Method:**		**Samplenum:**	WG536250-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31444
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/24/2015 20:16	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	124000	39200	3.16	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080904	**Prep Method:**		**Samplenum:**	WG536250-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31446
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/24/2015 20:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	203	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080904	**Prep Method:**		**Samplenum:**	WG536250-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31456
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/25/2015 00:03	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	110000	33700	3.26	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080904	**Prep Method:**		**Samplenum:**	WG536250-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31458
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/25/2015 00:41	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	173	340	0.509	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080904	**Prep Method:**		**Samplenum:**	WG536250-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31464
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/25/2015 02:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	123000	37800	3.25	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080904	**Prep Method:**		**Samplenum:**	WG536250-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31466
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/25/2015 03:12	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	85.8	0.000	2.3	3.8	*

2.2.1.3 Sample Data

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Data File	LM31442.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/24/2015 7:38:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15080904-01	**Injection Vial**	12.00
Data File	LM31442.wiff	**Injection Volume**	10.00
Acquisition Date	8/24/2015 7:38:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	L15080904-01	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.460e+05	9.31	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.800e+04	9.33	N/A	0.144
Perchlorate conf	5.980e+03	9.31	N/A	0.154

O18LP (Internal Standard)

RT (Exp. RT): 9.31(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

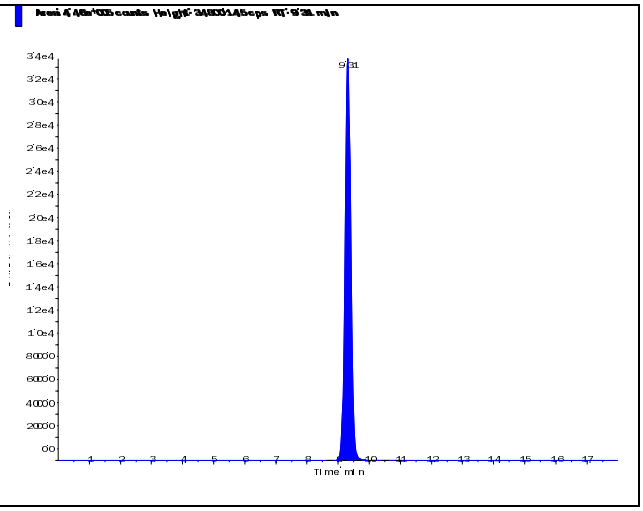

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Printed: 8/27/2015 11:34 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.33 (9.52) min Calculated conc: 0.144 ng/ml Area Ratio: 0.041 Sample Type: (Unknown)	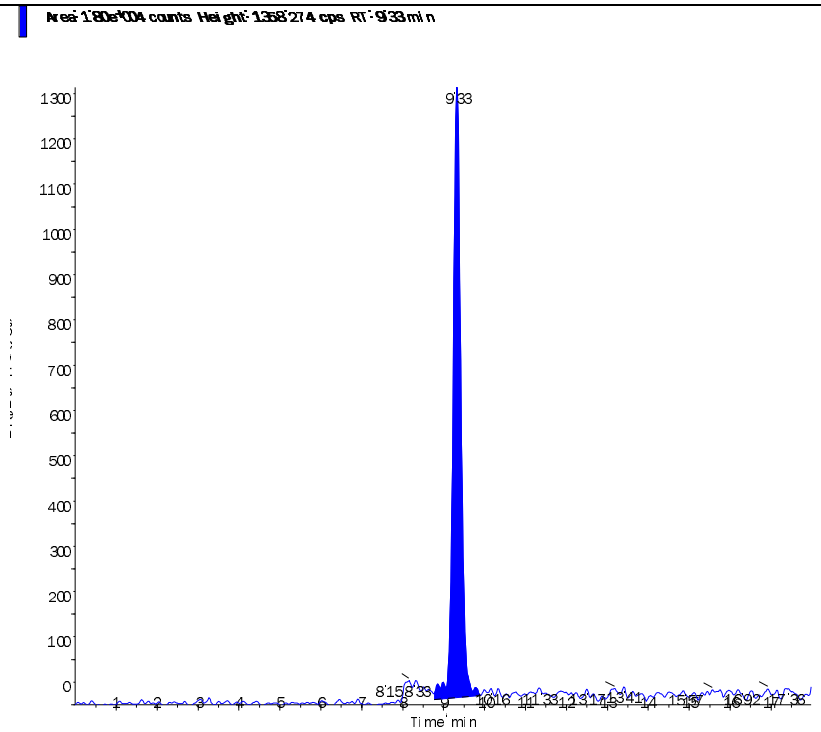
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.31 (9.48) min Calculated conc: 0.154 ng/ml Area Ratio: 0.013 Sample Type: (Unknown)	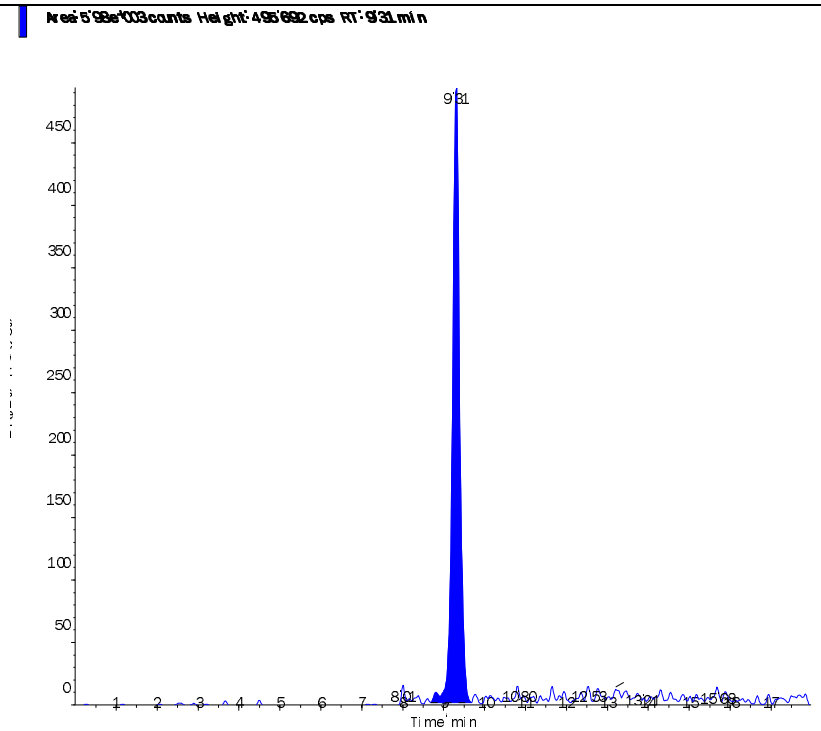

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Printed: 8/27/2015 11:34 AM

Data File	LM31443.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/24/2015 7:57:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15080904-03	**Injection Vial**	13.00
Data File	LM31443.wiff	**Injection Volume**	10.00
Acquisition Date	8/24/2015 7:57:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	L15080904-03	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.480e+05	9.36	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.490e+03	9.38	N/A	0.0394
Perchlorate conf	1.640e+03	9.36	N/A	0.0372

O18LP (Internal Standard)

RT (Exp. RT): 9.36(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

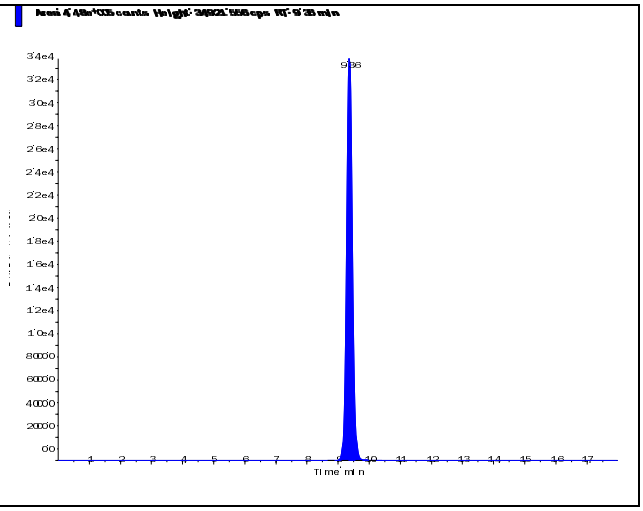

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Printed: 8/27/2015 11:34 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.38 (9.52) min Calculated conc: 0.0394 ng/ml Area Ratio: 0.012 Sample Type: (Unknown)	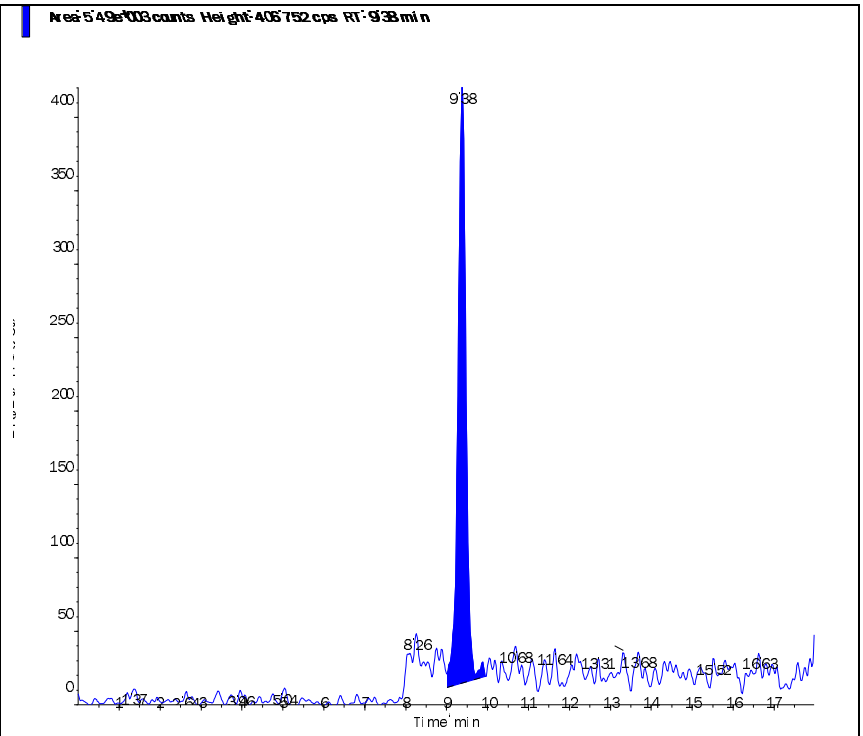
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.36 (9.48) min Calculated conc: 0.0372 ng/ml Area Ratio: 0.004 Sample Type: (Unknown)	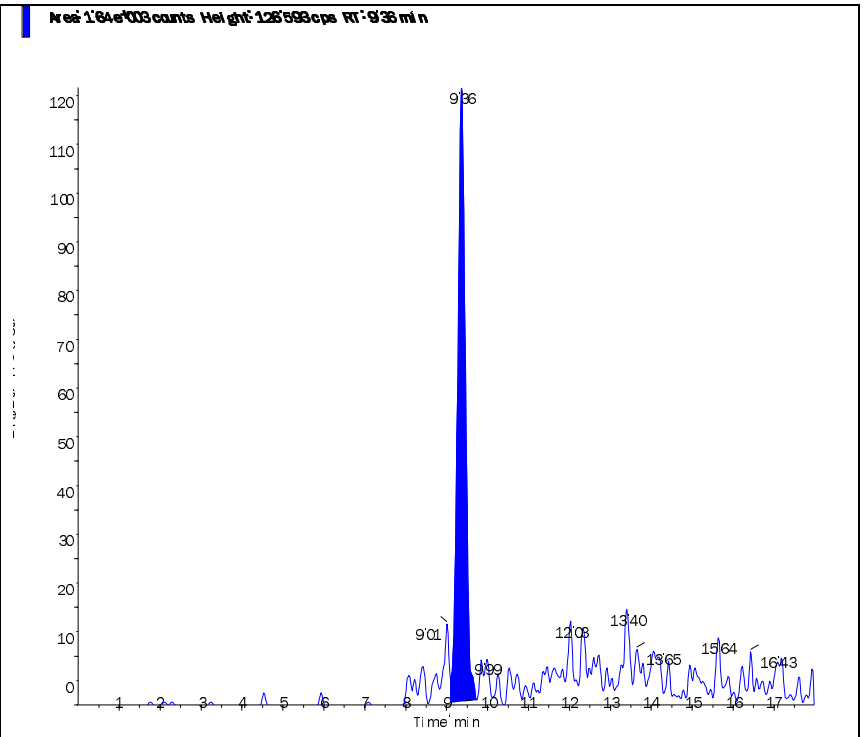

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Printed: 8/27/2015 11:36 AM

Data File	LM31447.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/24/2015 9:12:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15080904-05	**Injection Vial**	14.00
Data File	LM31447.wiff	**Injection Volume**	10.00
Acquisition Date	8/24/2015 9:12:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	L15080904-05	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.430e+05	9.27	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	6.370e+04	9.28	N/A	0.527
Perchlorate conf	2.100e+04	9.26	N/A	0.56

O18LP (Internal Standard)

RT (Exp. RT): 9.27(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

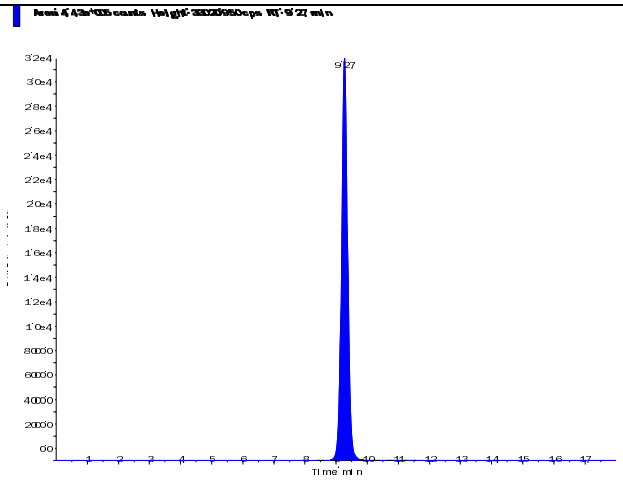

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.28 (9.52) min
Calculated conc:	0.527 ng/ml
Area Ratio:	0.144
Sample Type:	(Unknown)

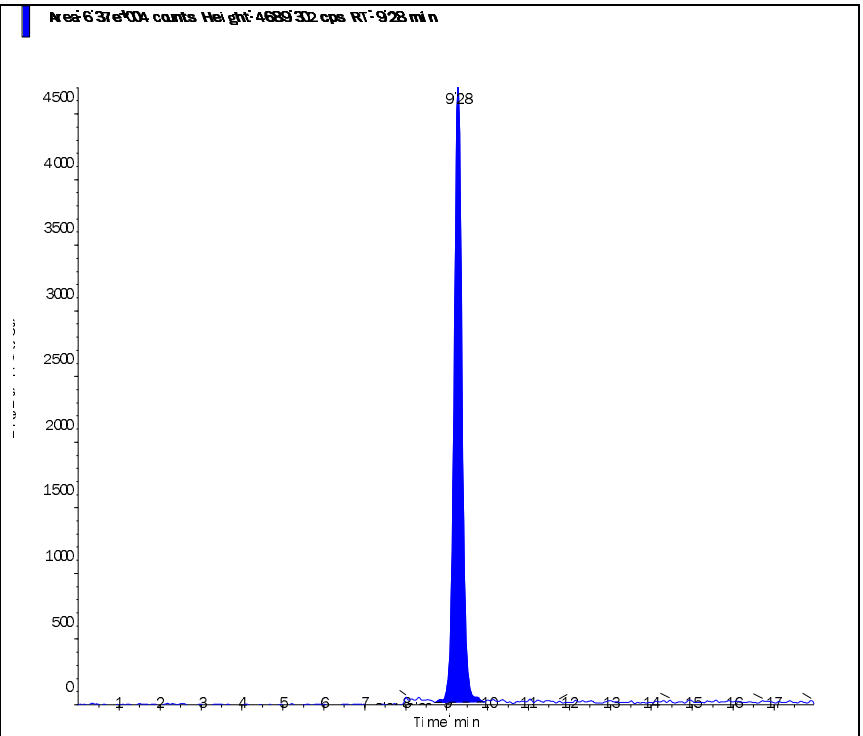

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.26 (9.48) min
Calculated conc:	0.56 ng/ml
Area Ratio:	0.047
Sample Type:	(Unknown)

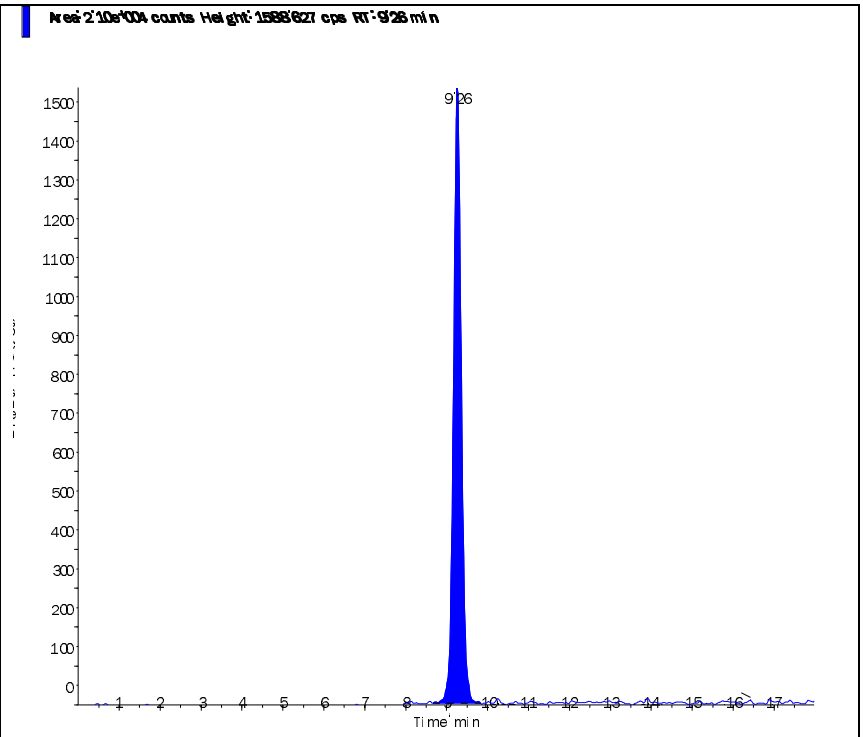

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Printed: 8/27/2015 11:36 AM

Data File	LM31449.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/24/2015 9:50:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15080904-07 (50x)	**Injection Vial**	16.00
Data File	LM31449.wiff	**Injection Volume**	10.00
Acquisition Date	8/24/2015 9:50:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	L15080904-07	**Dilution Factor**	1.00
Sample Comment	1,50 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.150e+05	9.68	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.520e+05	9.69	N/A	3.14
Perchlorate conf	1.110e+05	9.68	N/A	3.18

O18LP (Internal Standard)

RT (Exp. RT): 9.68(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

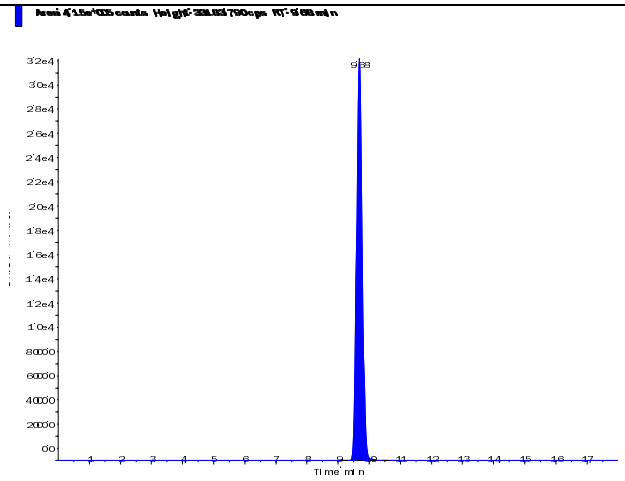

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.69 (9.52) min Calculated conc: 3.14 ng/ml Area Ratio: 0.849 Sample Type: (Unknown)	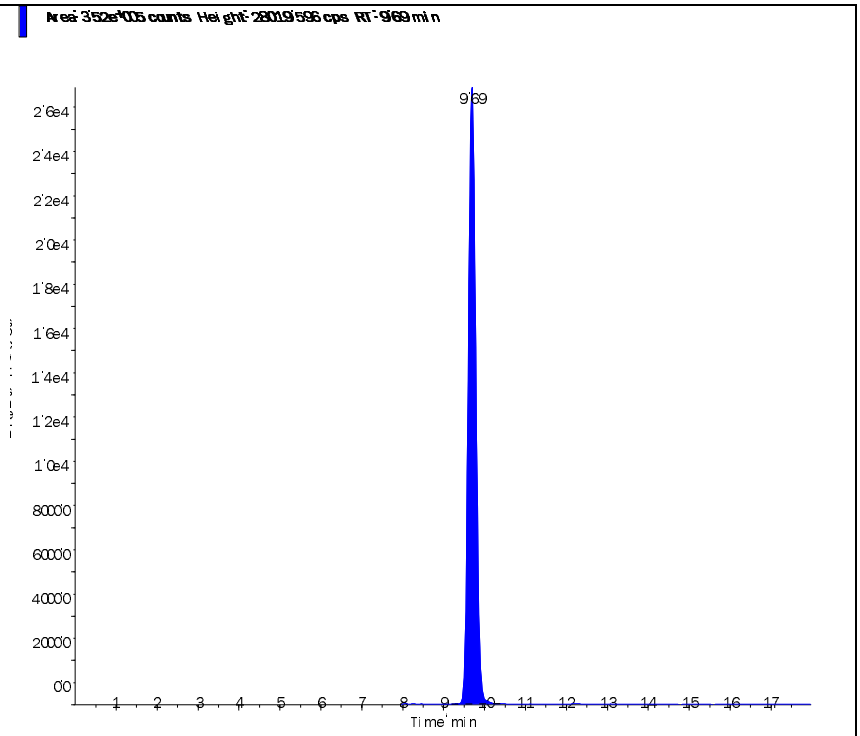
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.68 (9.48) min Calculated conc: 3.18 ng/ml Area Ratio: 0.268 Sample Type: (Unknown)	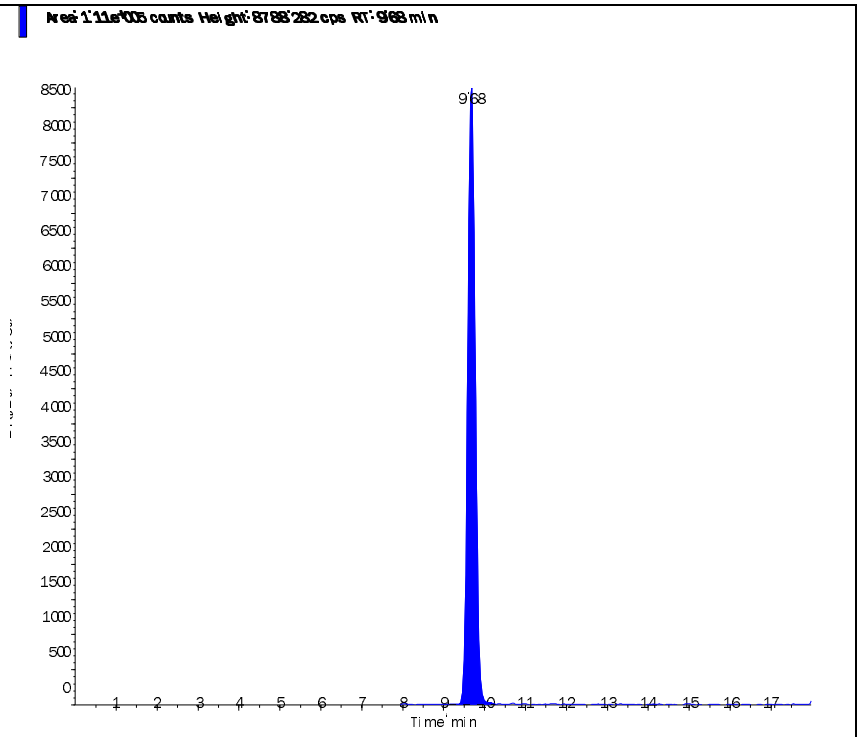

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2.2.1.4 Standards Data

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Created with Analyst Reporter
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Data File	LM31292.wiff	**Result Table**	082715_JWR.rdb
Acquisition Date	8/5/2015 10:09:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG533952-01 CCB	**Injection Vial**	1.00
Data File	LM31292.wiff	**Injection Volume**	10.00
Acquisition Date	8/5/2015 10:09:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082715_JWR.rdb
Sample ID	WG533952-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.160e+05	9.71	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.040e+03	9.73	N/A	0.0122
Perchlorate conf	6.020e+02	9.74	N/A	0.0108

O18LP (Internal Standard)

RT (Exp. RT): 9.71(9.50) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

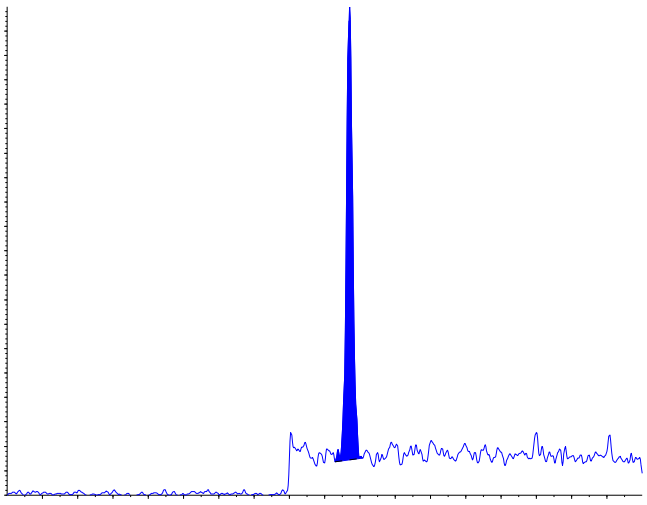

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.73 (9.52) min Calculated conc: 0.0122 ng/ml Area Ratio: 0.005 Sample Type: (Unknown)	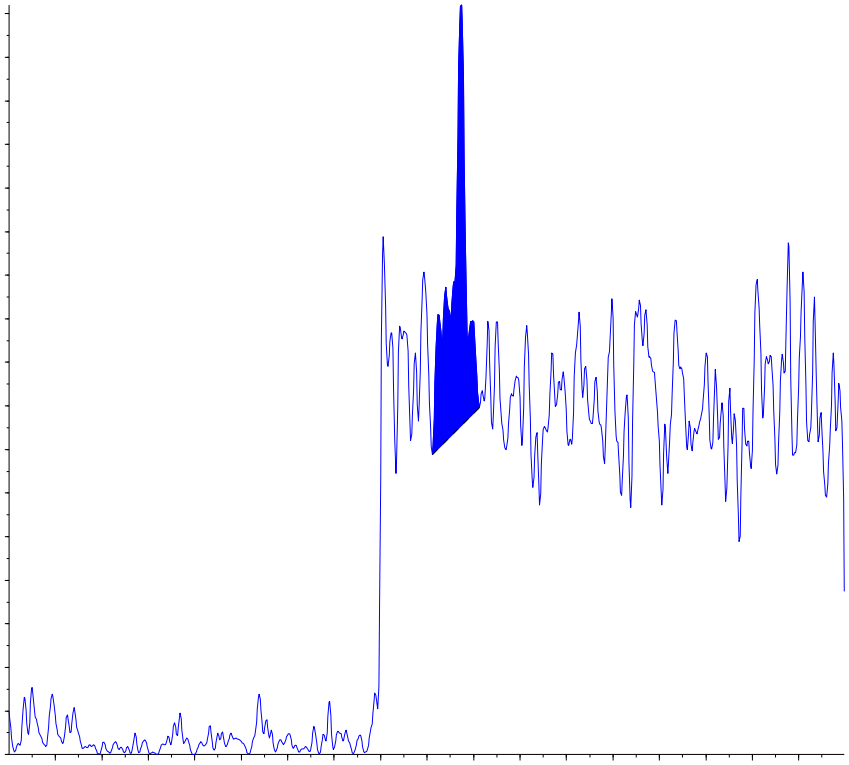
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.74 (9.48) min Calculated conc: 0.0108 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	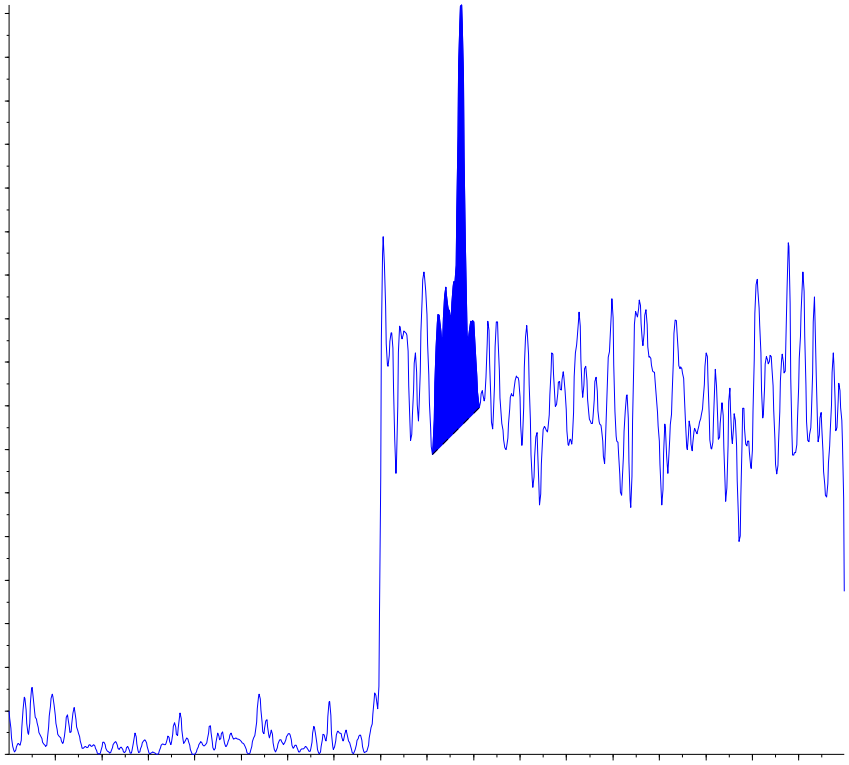

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Printed: 8/6/2015 1:49 PM

Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM31292.wiff	**Result Table**	080515_JWR.rdb
Acquisition Date	8/5/2015 10:09:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.35 x + 0.00162 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	98.1	N/A	N/A
0.20	1	0.21	104.1	N/A	N/A
0.50	1	0.49	98.8	N/A	N/A
1.00	1	0.98	97.6	N/A	N/A
2.00	1	2.04	101.9	N/A	N/A
5.00	1	4.96	99.3	N/A	N/A
10.00	1	10.02	100.2	N/A	N/A

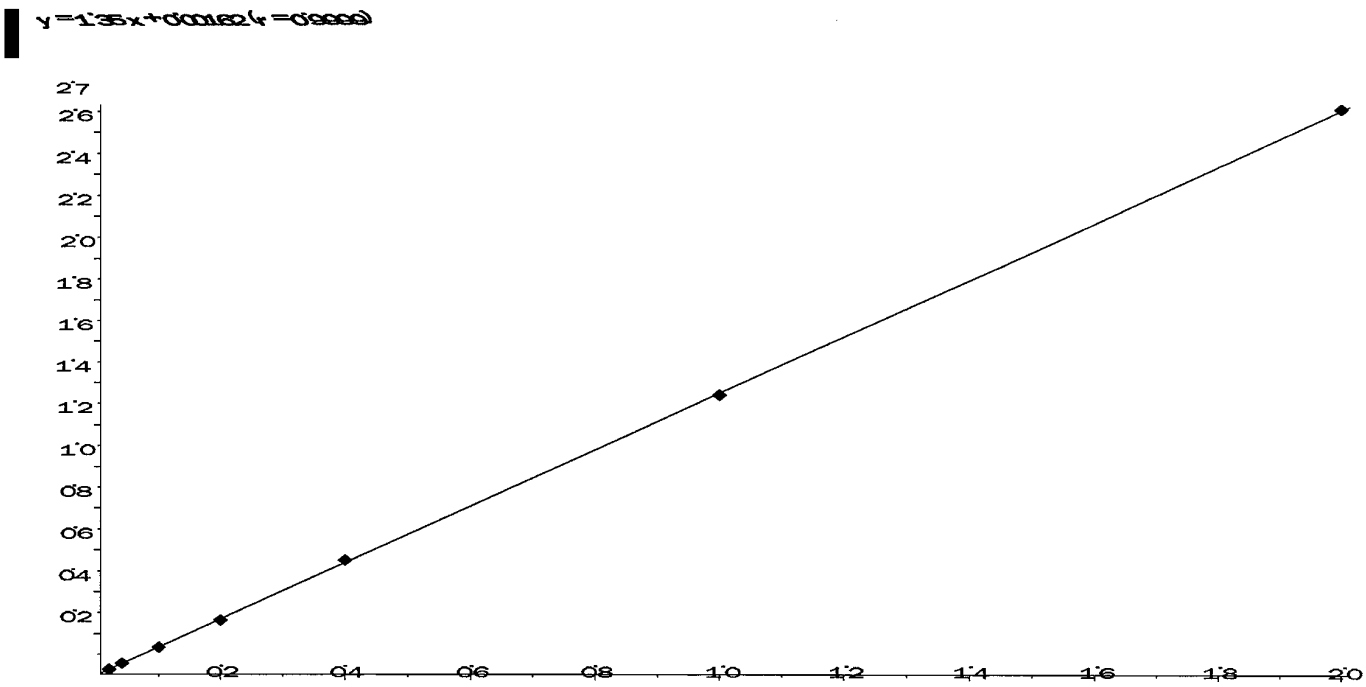

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Created with Analyst Reporter
Printed: 8/6/2015 1:49 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM31292.wiff	**Result Table**	080515_JWR.rdb
Acquisition Date	8/5/2015 10:09:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.42 x + 0.000545 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	100.9	N/A	N/A
0.20	1	0.20	98.7	N/A	N/A
0.50	1	0.51	101.5	N/A	N/A
1.00	1	1.00	99.5	N/A	N/A
2.00	1	2.00	99.9	N/A	N/A
5.00	1	4.94	98.8	N/A	N/A
10.00	1	10.06	100.6	N/A	N/A

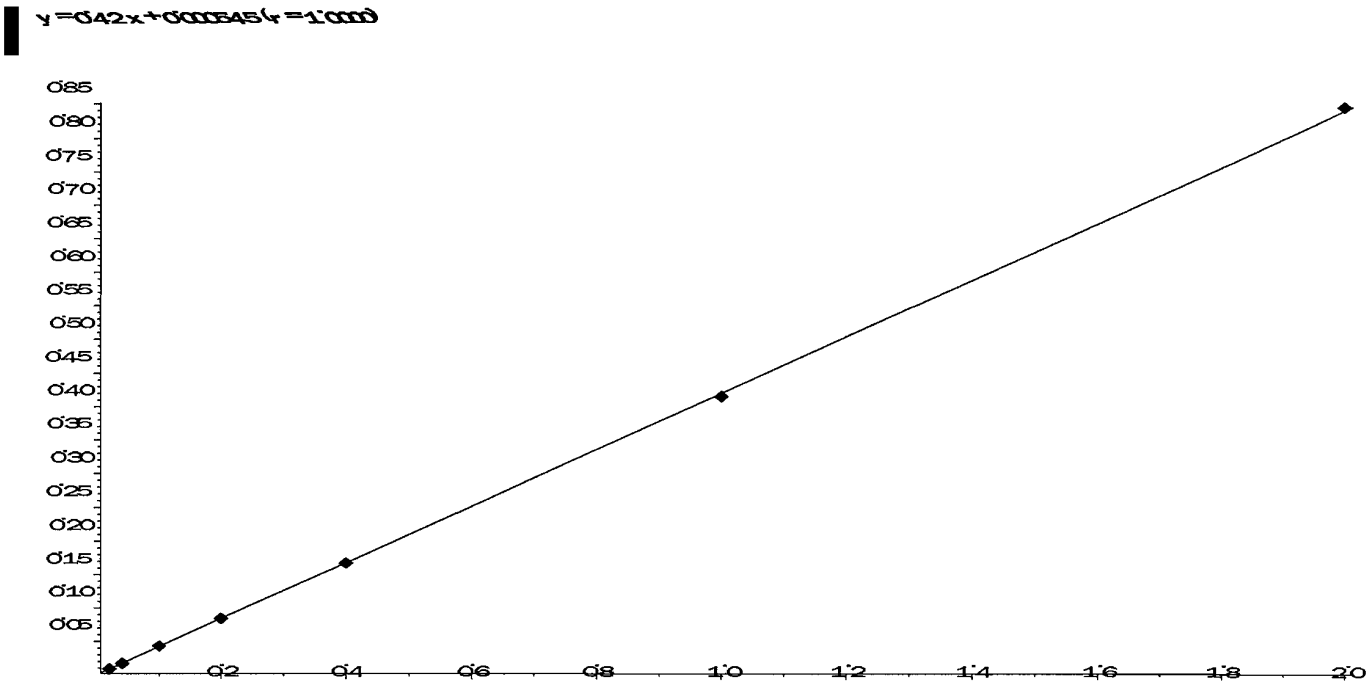

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Data File	LM31293.wiff	**Result Table**	082715_JWR.rdb
Acquisition Date	8/5/2015 10:28:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG533952-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM31293.wiff	**Injection Volume**	10.00
Acquisition Date	8/5/2015 10:28:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	082715_JWR.rdb
Sample ID	WG533952-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.060e+05	9.69	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.140e+04	9.70	0.10	0.0981
Perchlorate conf	3.660e+03	9.69	0.10	0.101

O18LP (Internal Standard)

RT (Exp. RT): 9.69(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

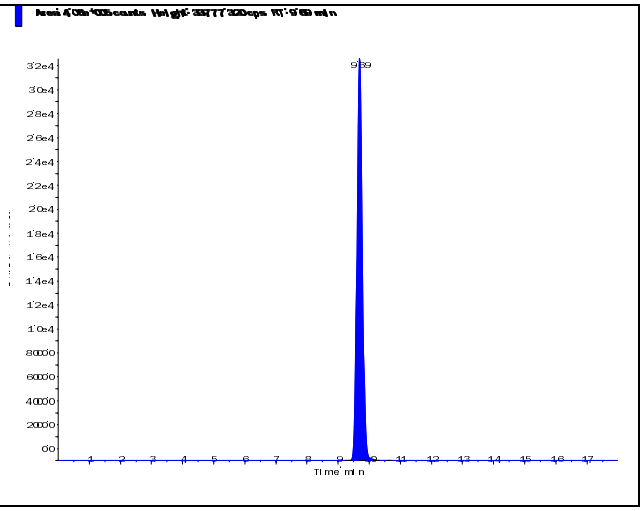

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.70 (9.52) min
Calculated conc:	0.0981 ng/ml
Area Ratio:	0.028
Sample Type:	(Standard)

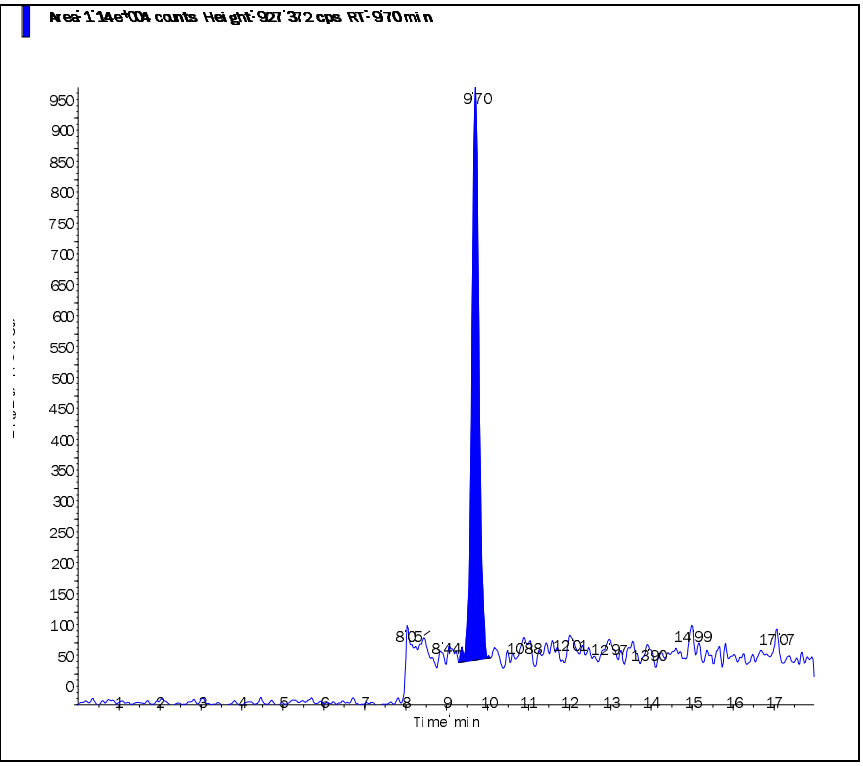

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.69 (9.48) min
Calculated conc:	0.101 ng/ml
Area Ratio:	0.009
Sample Type:	(Standard)

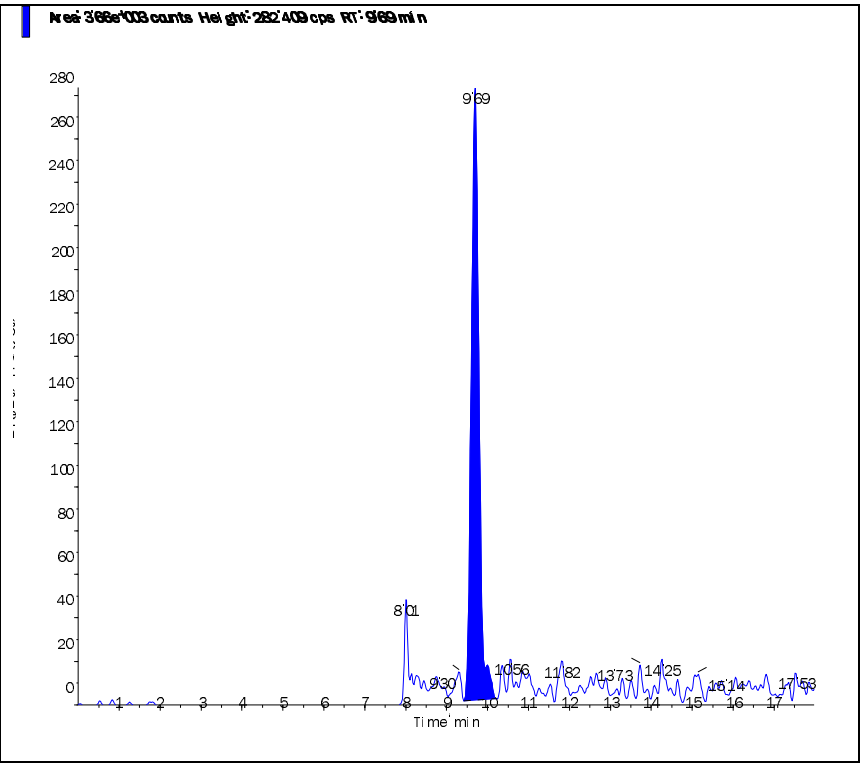

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Data File	LM31294.wiff	**Result Table**	082715_JWR.rdb
Acquisition Date	8/5/2015 10:47:26 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG533952-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM31294.wiff	**Injection Volume**	10.00
Acquisition Date	8/5/2015 10:47:26 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	082715_JWR.rdb
Sample ID	WG533952-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.430e+05	9.50	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.560e+04	9.51	0.20	0.208
Perchlorate conf	7.580e+03	9.48	0.20	0.197

O18LP (Internal Standard)

RT (Exp. RT): 9.50(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

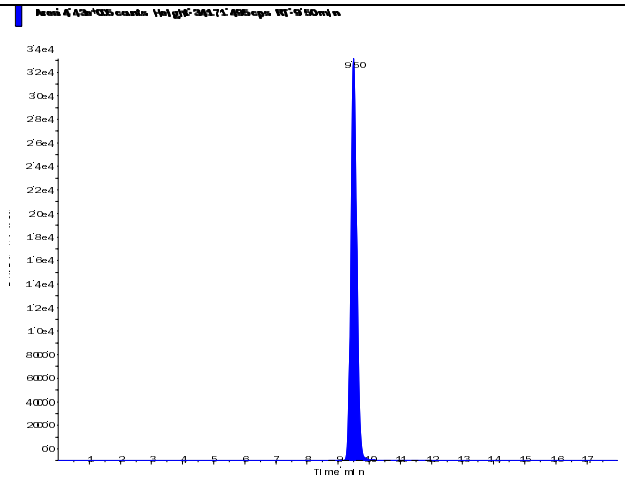

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.51 (9.52) min
Calculated conc:	0.208 ng/ml
Area Ratio:	0.058
Sample Type:	(Standard)

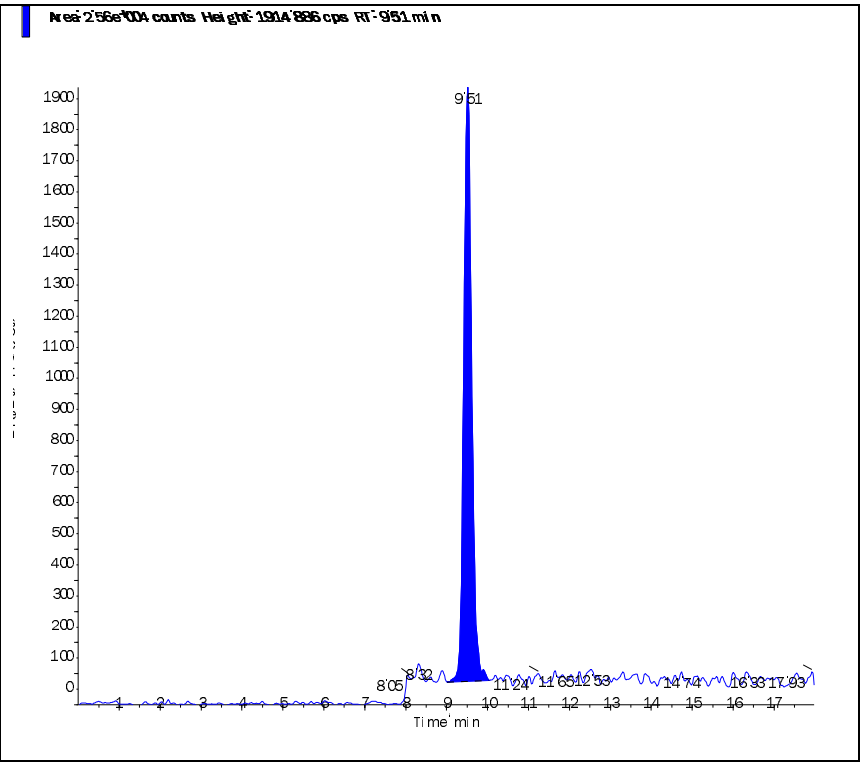

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.48 (9.48) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.017
Sample Type:	(Standard)

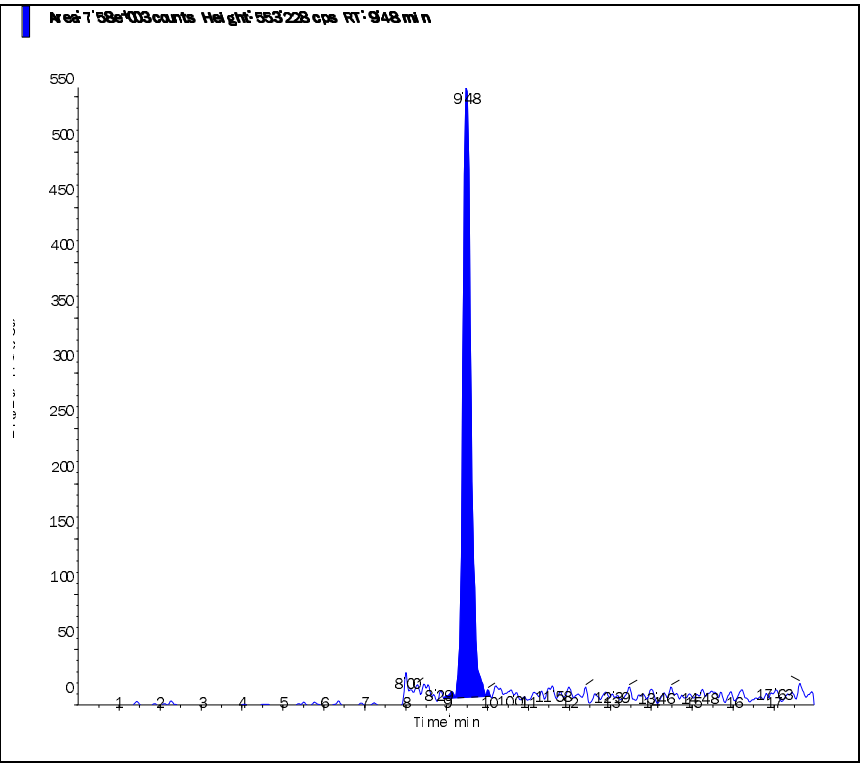

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Data File	LM31295.wiff	**Result Table**	082715_JWR.rdb
Acquisition Date	8/5/2015 11:06:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG533952-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM31295.wiff	**Injection Volume**	10.00
Acquisition Date	8/5/2015 11:06:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	082715_JWR.rdb
Sample ID	WG533952-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.400e+05	9.52	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.940e+04	9.52	0.50	0.494
Perchlorate conf	1.900e+04	9.51	0.50	0.508

O18LP (Internal Standard)

RT (Exp. RT): 9.52(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

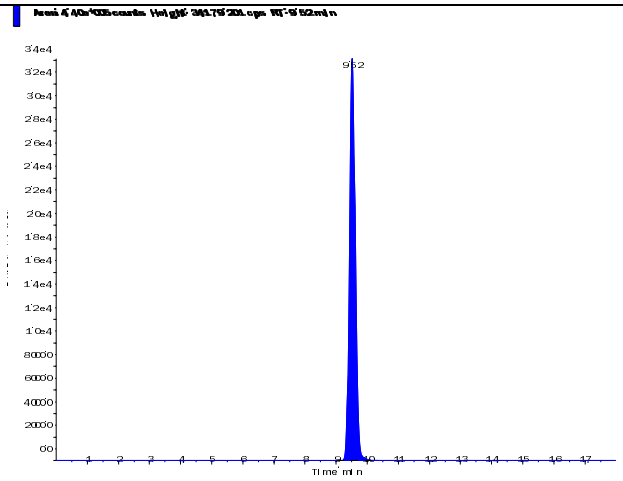

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.52 (9.52) min
Calculated conc:	0.494 ng/ml
Area Ratio:	0.135
Sample Type:	(Standard)

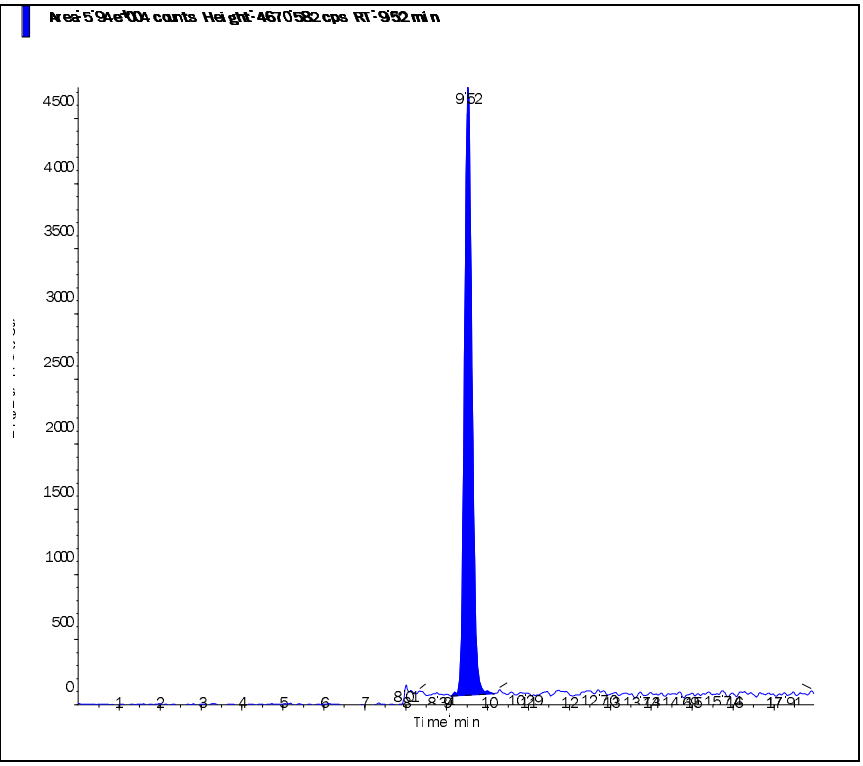

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.51 (9.48) min
Calculated conc:	0.508 ng/ml
Area Ratio:	0.043
Sample Type:	(Standard)

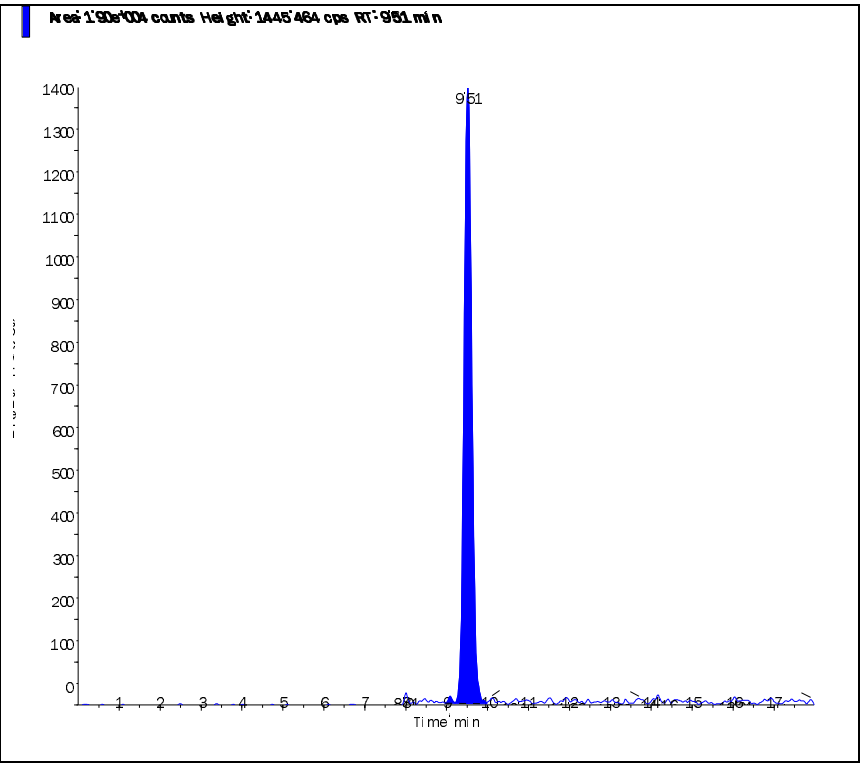

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Data File	LM31296.wiff	**Result Table**	082715_JWR.rdb
Acquisition Date	8/5/2015 11:25:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG533952-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM31296.wiff	**Injection Volume**	10.00
Acquisition Date	8/5/2015 11:25:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	082715_JWR.rdb
Sample ID	WG533952-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.230e+05	9.61	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.120e+05	9.63	1.00	0.976
Perchlorate conf	3.560e+04	9.60	1.00	0.995

O18LP (Internal Standard)

RT (Exp. RT): 9.61(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

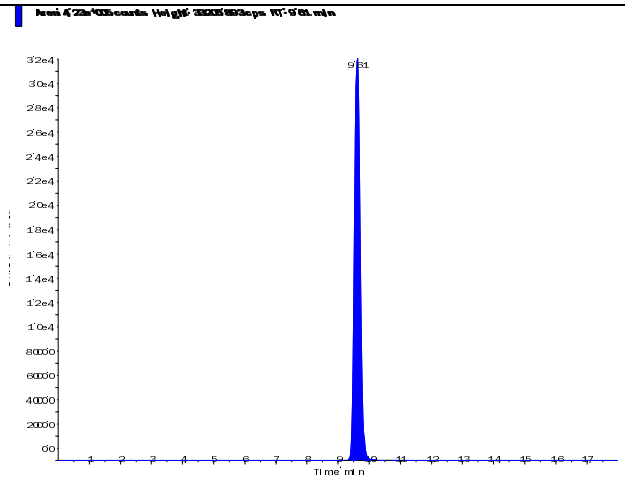

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.63 (9.52) min
Calculated conc:	0.976 ng/ml
Area Ratio:	0.265
Sample Type:	(Standard)

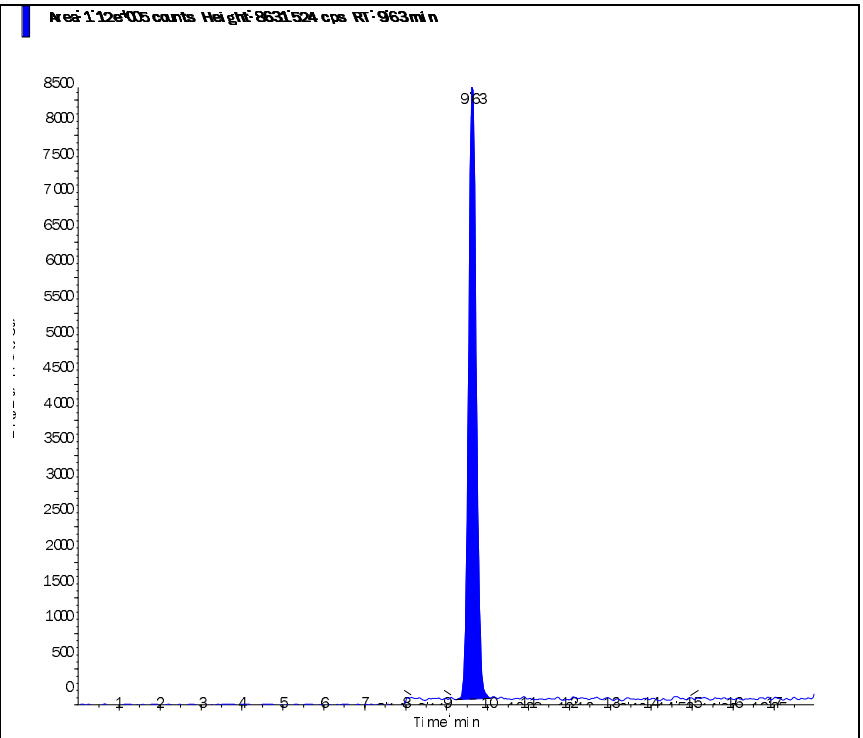

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.60 (9.48) min
Calculated conc:	0.995 ng/ml
Area Ratio:	0.084
Sample Type:	(Standard)

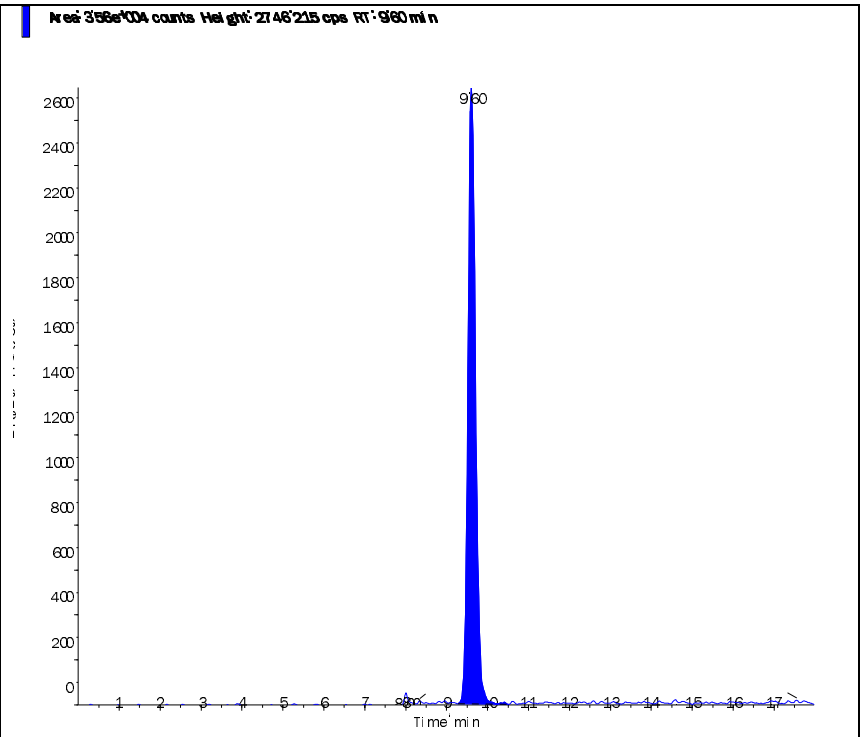

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Data File	LM31297.wiff	**Result Table**	082715_JWR.rdb
Acquisition Date	8/5/2015 11:44:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG533952-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM31297.wiff	**Injection Volume**	10.00
Acquisition Date	8/5/2015 11:44:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	082715_JWR.rdb
Sample ID	WG533952-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.180e+05	9.46	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.310e+05	9.47	2.00	2.04
Perchlorate conf	7.030e+04	9.46	2.00	2.00

O18LP (Internal Standard)

RT (Exp. RT): 9.46(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

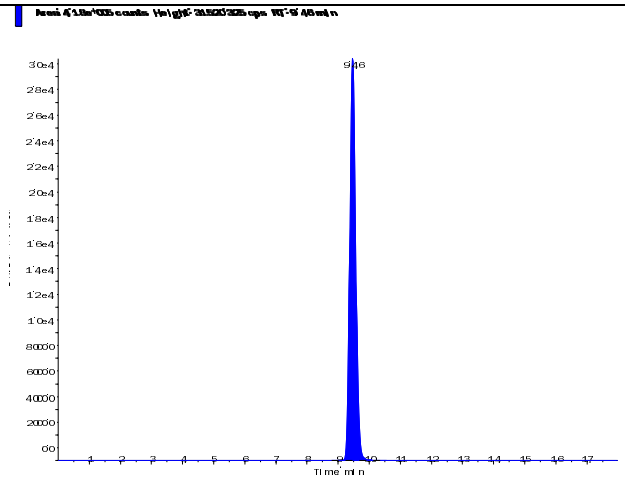

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Printed: 8/28/2015 10:59 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.47 (9.52) min Calculated conc: 2.04 ng/ml Area Ratio: 0.552 Sample Type: (Standard)	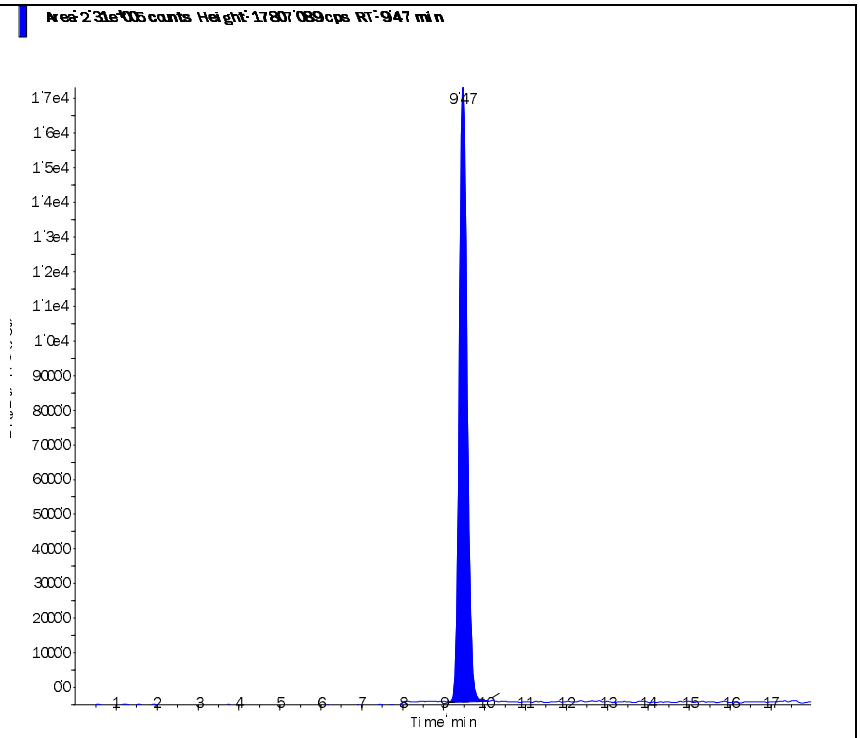
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.46 (9.48) min Calculated conc: 2.00 ng/ml Area Ratio: 0.168 Sample Type: (Standard)	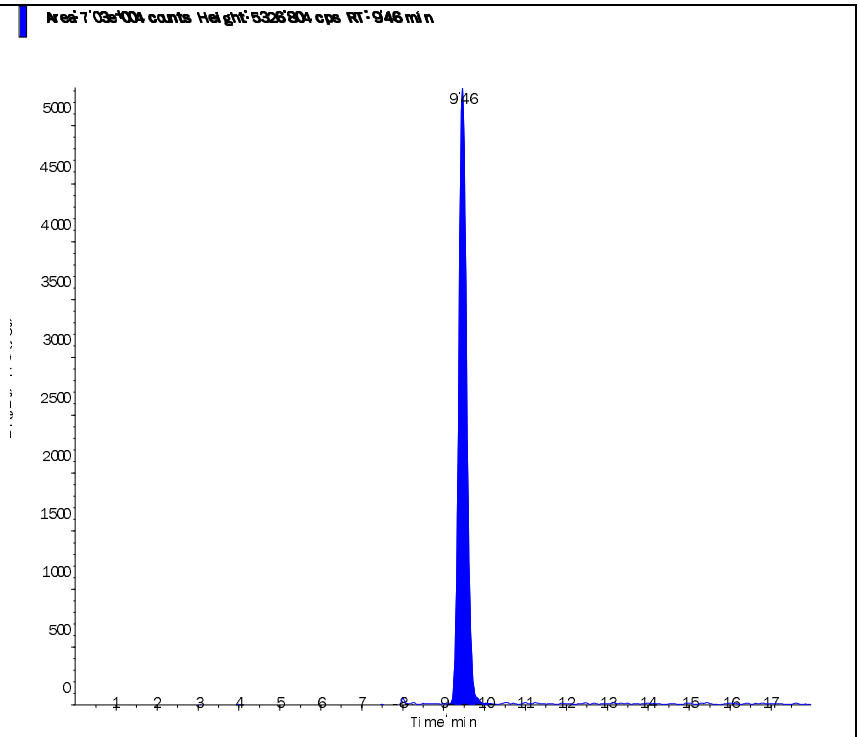

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Created with Analyst Reporter
Printed: 8/28/2015 10:59 AM

Data File	LM31298.wiff	**Result Table**	082715_JWR.rdb
Acquisition Date	8/6/2015 12:03:11 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG533952-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM31298.wiff	**Injection Volume**	10.00
Acquisition Date	8/6/2015 12:03:11 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	082715_JWR.rdb
Sample ID	WG533952-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.100e+05	9.57	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.500e+05	9.58	5.00	4.96
Perchlorate conf	1.700e+05	9.56	5.00	4.94

O18LP (Internal Standard)

RT (Exp. RT): 9.57(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

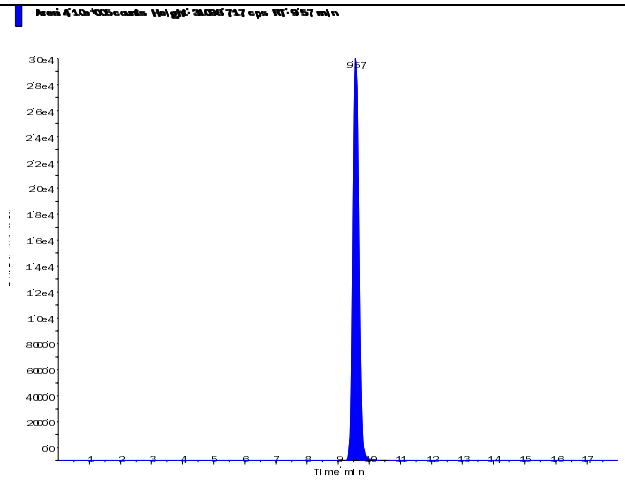

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Created with Analyst Reporter
Printed: 8/28/2015 10:59 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.58 (9.52) min Calculated conc: 4.96 ng/ml Area Ratio: 1.342 Sample Type: (Standard)	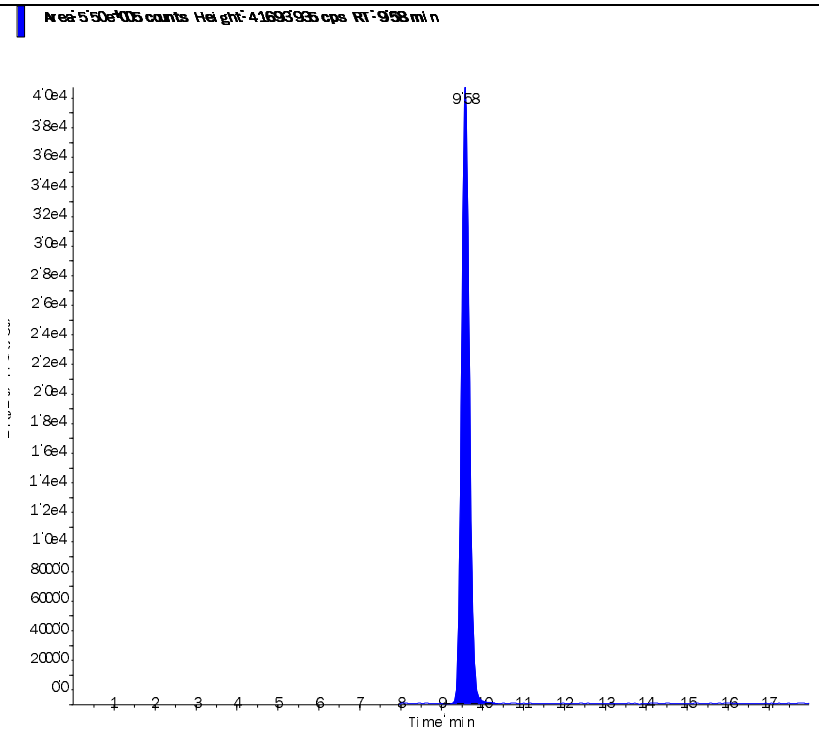
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.56 (9.48) min Calculated conc: 4.94 ng/ml Area Ratio: 0.415 Sample Type: (Standard)	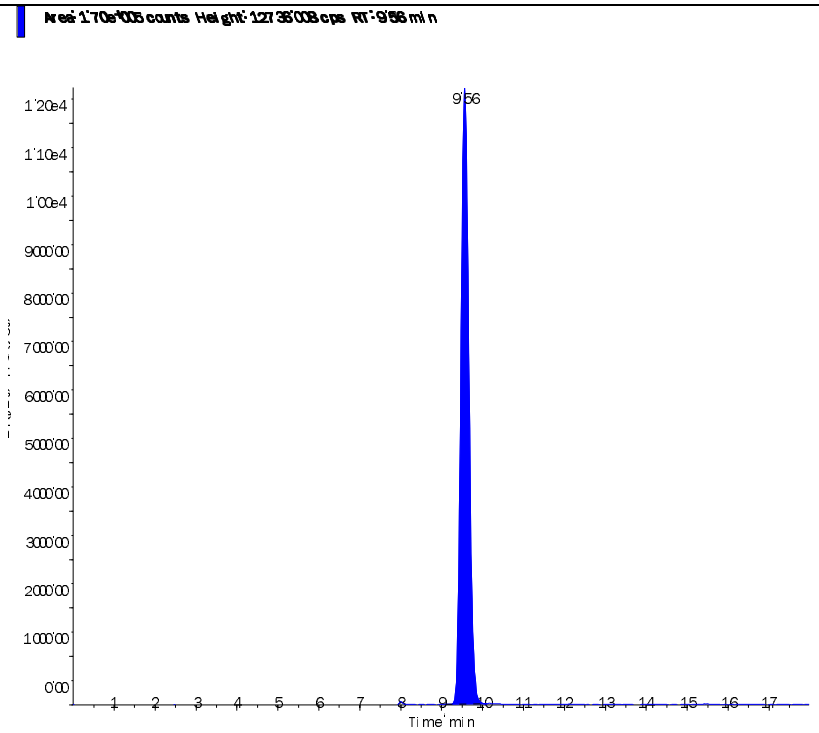

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Created with Analyst Reporter
Printed: 8/28/2015 10:59 AM

Data File	LM31299.wiff	**Result Table**	082715_JWR.rdb
Acquisition Date	8/6/2015 12:22:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG533952-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM31299.wiff	**Injection Volume**	10.00
Acquisition Date	8/6/2015 12:22:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	082715_JWR.rdb
Sample ID	WG533952-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.600e+05	9.65	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	9.750e+05	9.66	10.00	10.00
Perchlorate conf	3.040e+05	9.64	10.00	10.10

O18LP (Internal Standard)

RT (Exp. RT): 9.65(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

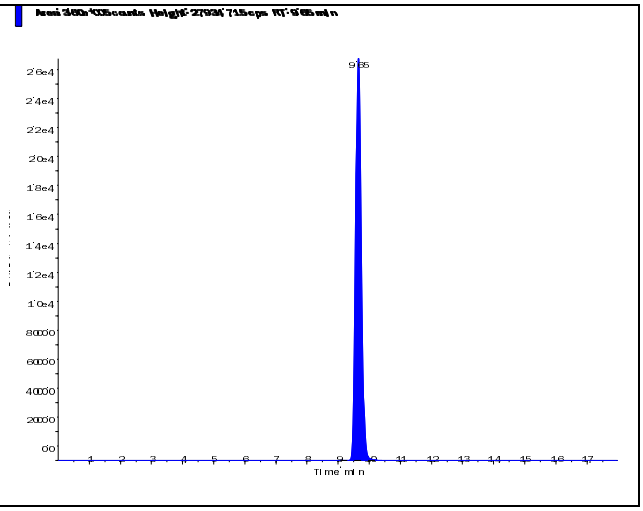

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.66 (9.52) min
Calculated conc:	10.00 ng/ml
Area Ratio:	2.709
Sample Type:	(Standard)

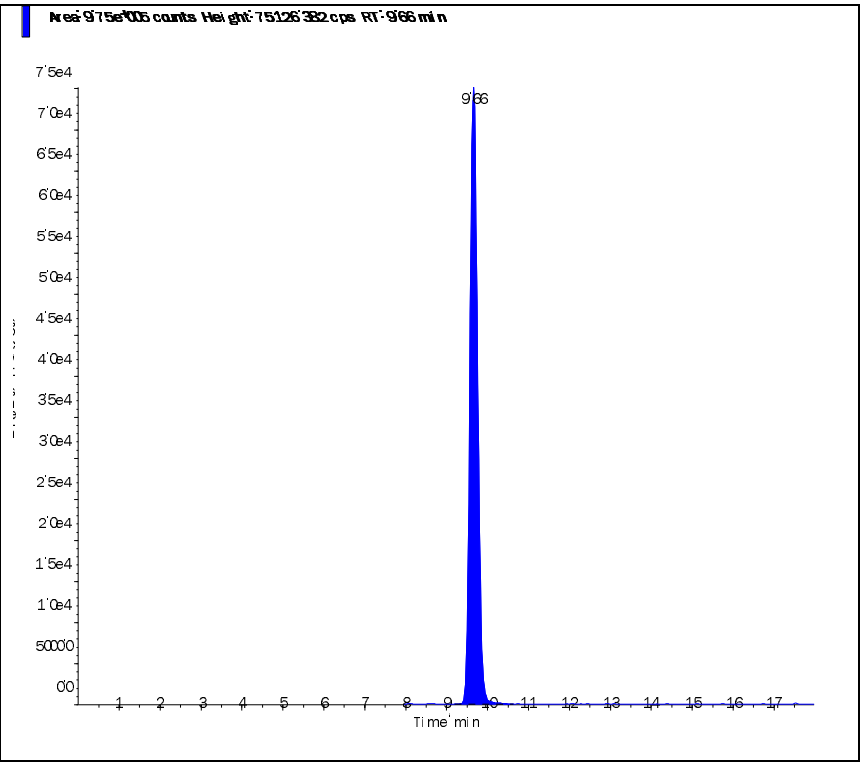

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.64 (9.48) min
Calculated conc:	10.10 ng/ml
Area Ratio:	0.845
Sample Type:	(Standard)

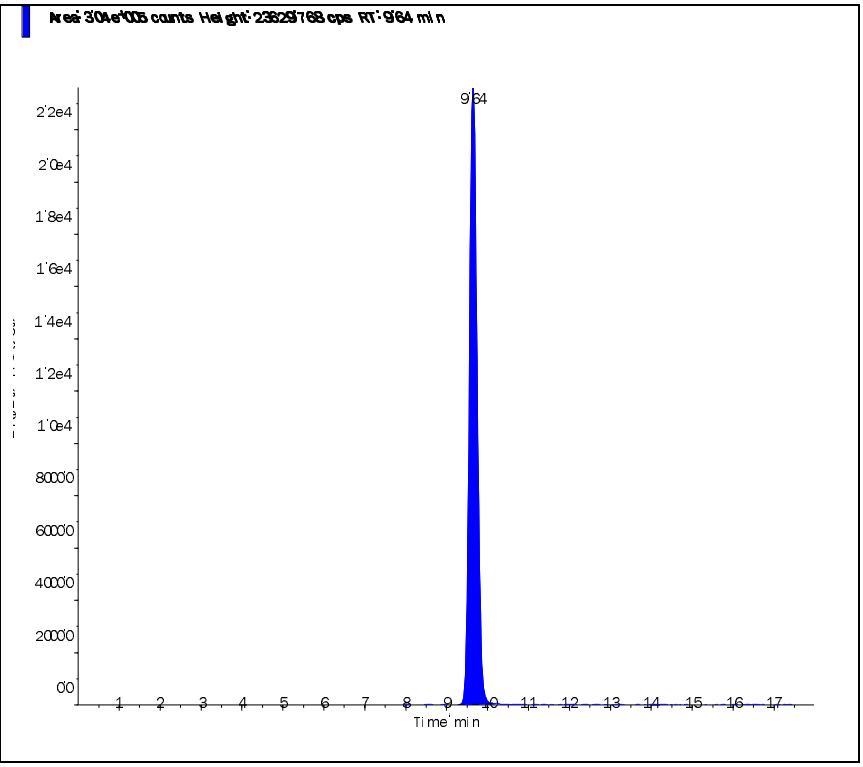

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Created with Analyst Reporter
Printed: 8/6/2015 1:53 PM

Data File	LM31300.wiff	**Result Table**	080515_JWR.rdb
Acquisition Date	8/6/2015 12:41:03 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG533952-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM31300.wiff	**Injection Volume**	10.00
Acquisition Date	8/6/2015 12:41:03 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	080515_JWR.rdb
Sample ID	WG533952-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD69913	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.180e+05	9.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.090e+05	9.71	1.00	0.956
Perchlorate conf	3.410e+04	9.70	1.00	0.964

O18LP (Internal Standard)

RT (Exp. RT): 9.70(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

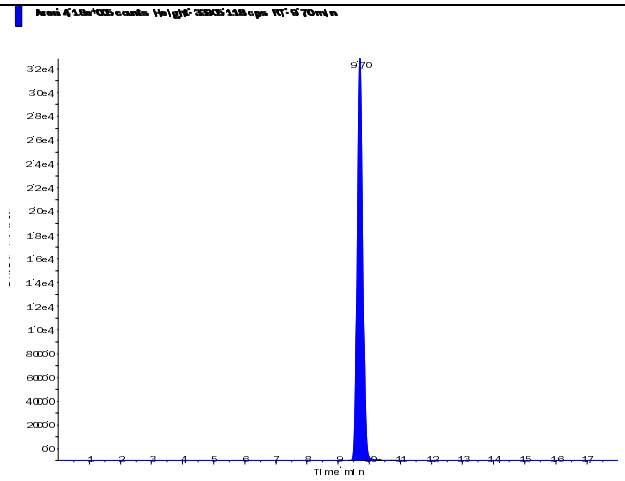

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.71 (9.52) min
Calculated conc:	0.956 ng/ml
Area Ratio:	0.26
Sample Type:	(Quality Control)

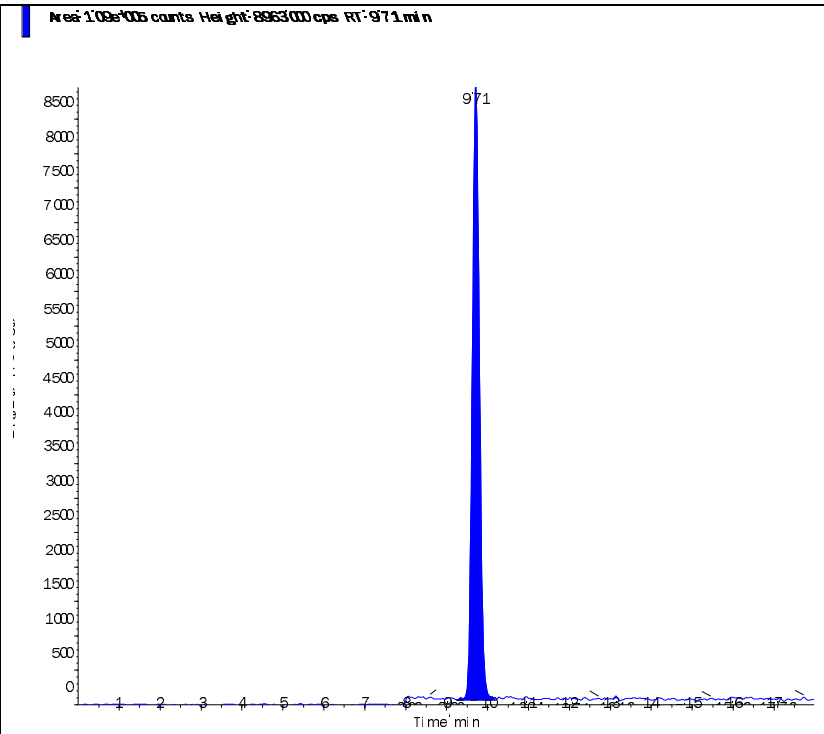

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.70 (9.48) min
Calculated conc:	0.964 ng/ml
Area Ratio:	0.081
Sample Type:	(Quality Control)

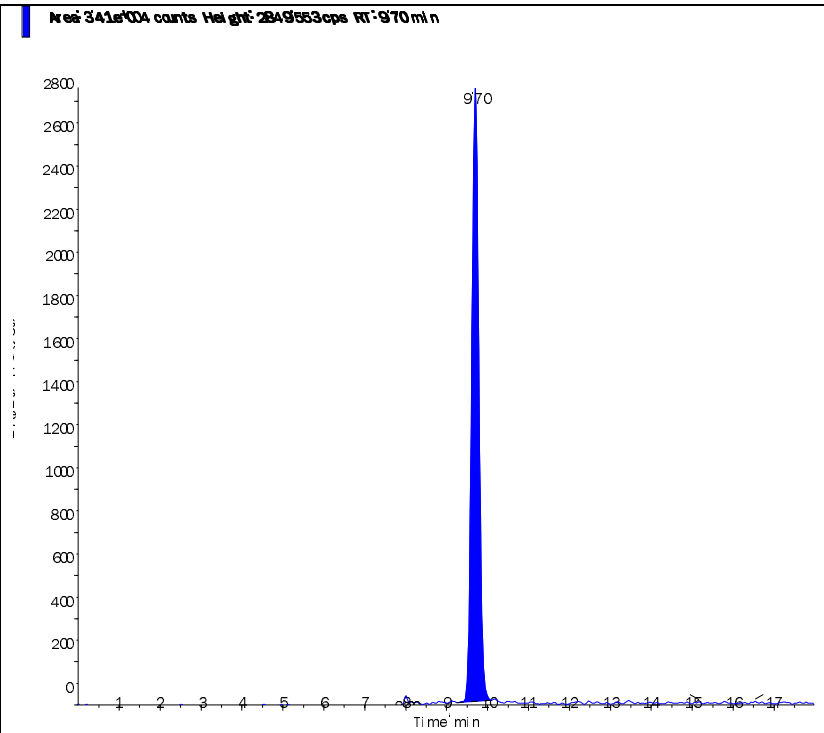

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Created with Analyst Reporter
Printed: 8/27/2015 11:31 AM

Data File	LM31432.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/24/2015 4:28:47 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536250-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM31432.wiff	**Injection Volume**	10.00
Acquisition Date	8/24/2015 4:28:47 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	WG536250-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.660e+05	9.62	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.050e+05	9.62	1.00	1.05
Perchlorate conf	3.210e+04	9.61	1.00	1.04

O18LP (Internal Standard)

RT (Exp. RT): 9.62(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

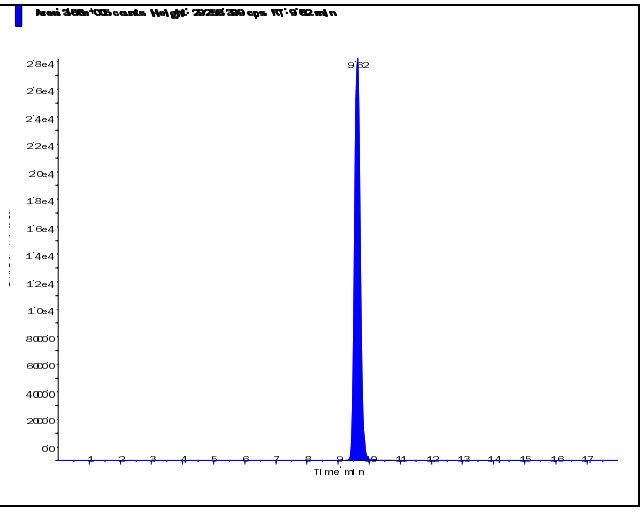

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Created with Analyst Reporter
Printed: 8/27/2015 11:31 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.62 (9.52) min Calculated conc: 1.05 ng/ml Area Ratio: 0.286 Sample Type: (Quality Control)	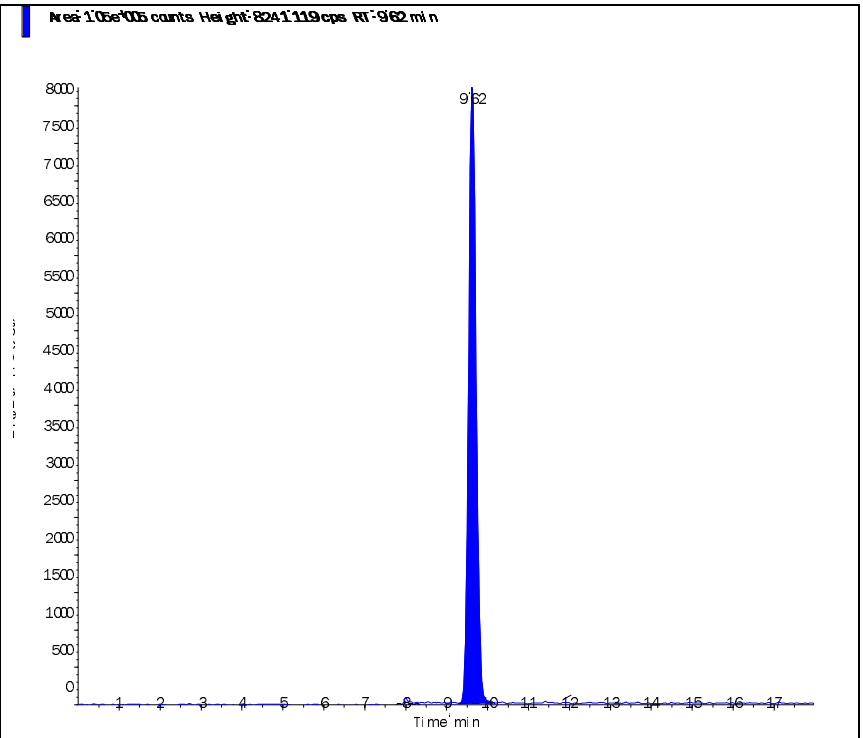
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.61 (9.48) min Calculated conc: 1.04 ng/ml Area Ratio: 0.088 Sample Type: (Quality Control)	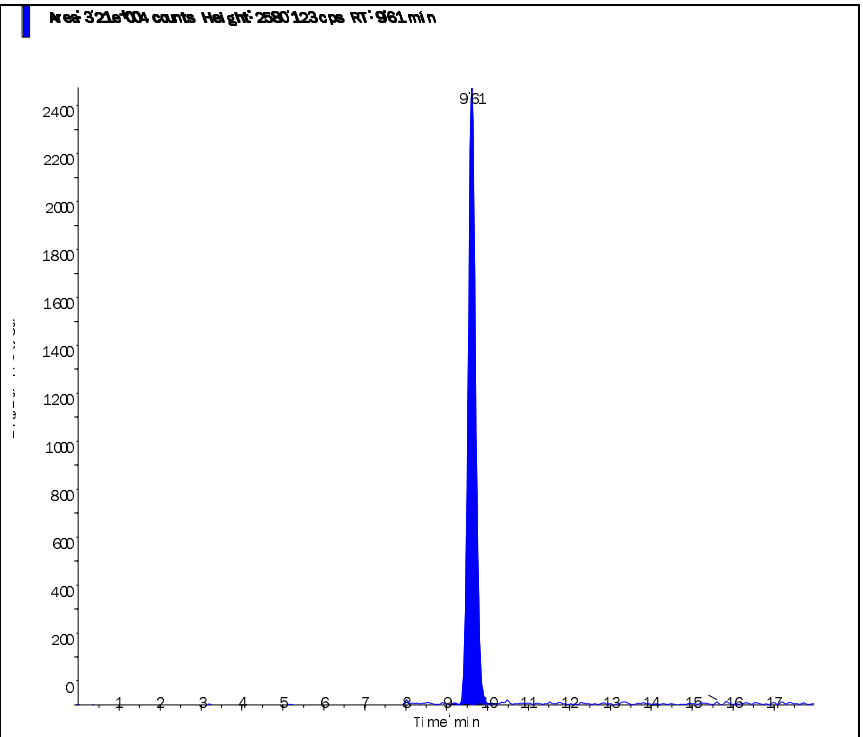

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Created with Analyst Reporter
Printed: 8/27/2015 11:35 AM

Data File	LM31444.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/24/2015 8:16:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536250-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM31444.wiff	**Injection Volume**	10.00
Acquisition Date	8/24/2015 8:16:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	WG536250-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.530e+05	9.60	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.240e+05	9.61	1.00	1.01
Perchlorate conf	3.920e+04	9.60	1.00	1.03

O18LP (Internal Standard)

RT (Exp. RT): 9.60(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

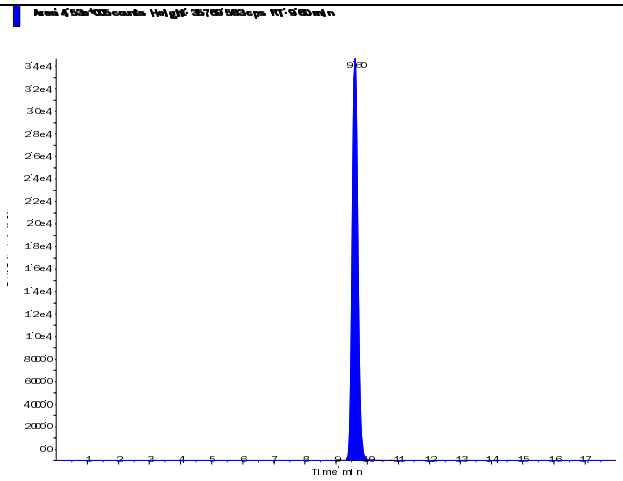

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Printed: 8/27/2015 11:35 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.61 (9.52) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.274
Sample Type:	(Quality Control)

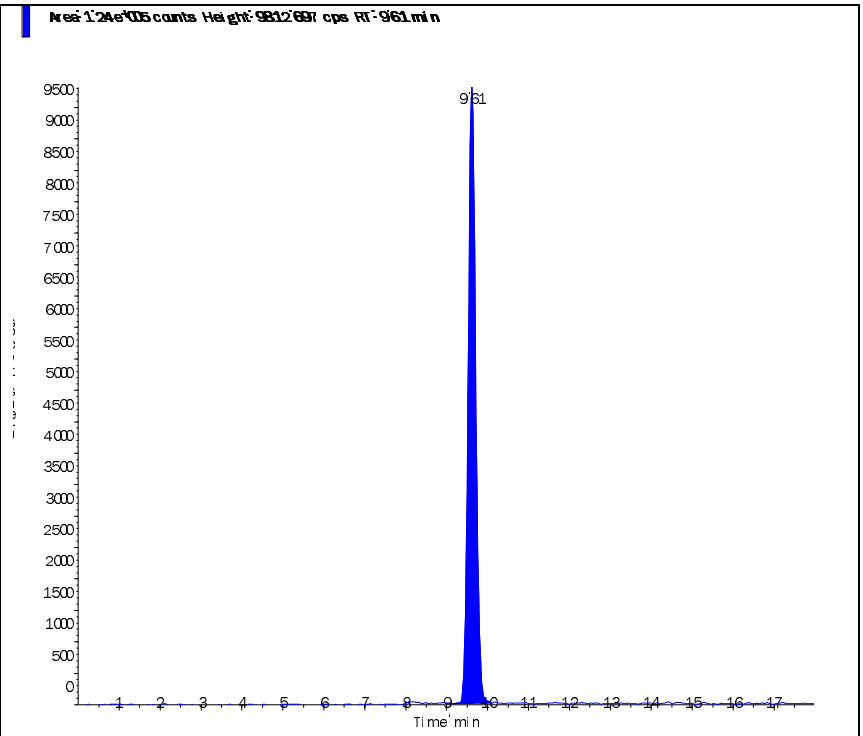

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.60 (9.48) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.087
Sample Type:	(Quality Control)

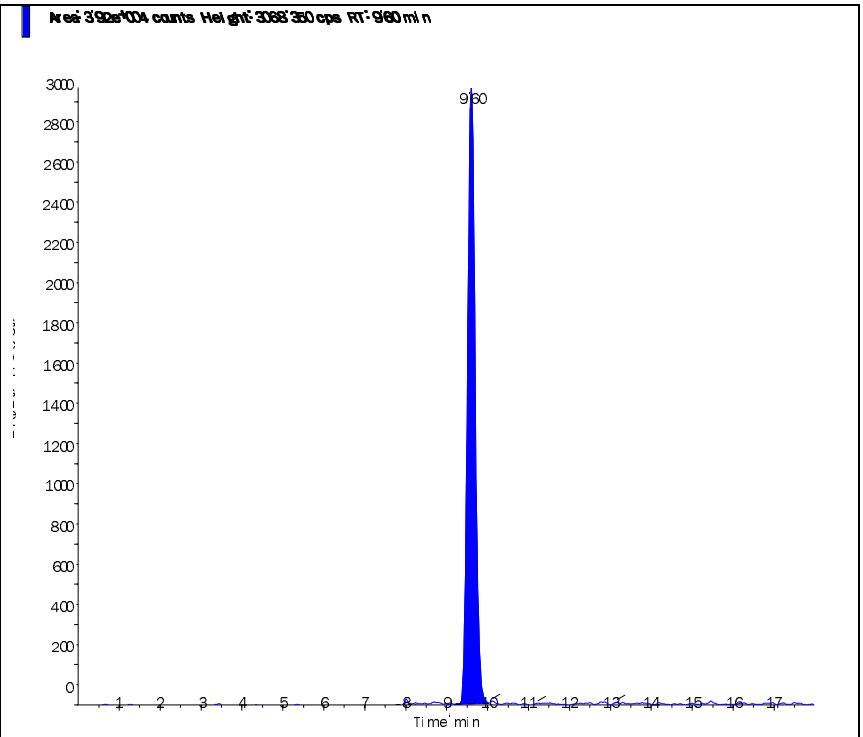

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Created with Analyst Reporter
Printed: 8/27/2015 11:39 AM

Data File	LM31456.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/25/2015 12:03:13 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536250-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM31456.wiff	**Injection Volume**	10.00
Acquisition Date	8/25/2015 12:03:13 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	WG536250-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.070e+05	9.60	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.100e+05	9.61	1.00	0.991
Perchlorate conf	3.370e+04	9.60	1.00	0.98

O18LP (Internal Standard)

RT (Exp. RT): 9.60(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

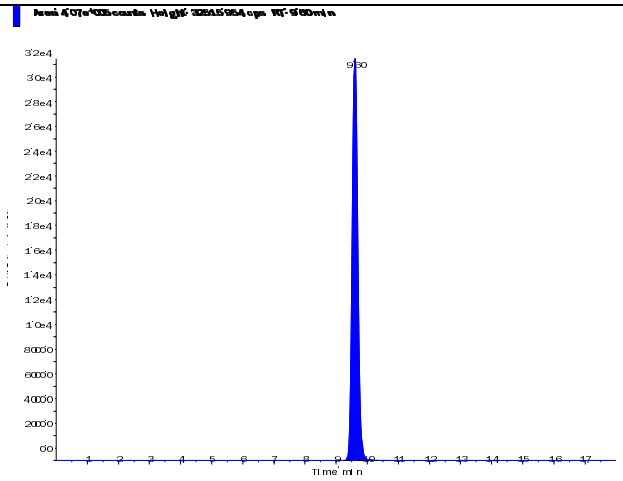

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.61 (9.52) min
Calculated conc:	0.991 ng/ml
Area Ratio:	0.269
Sample Type:	(Quality Control)

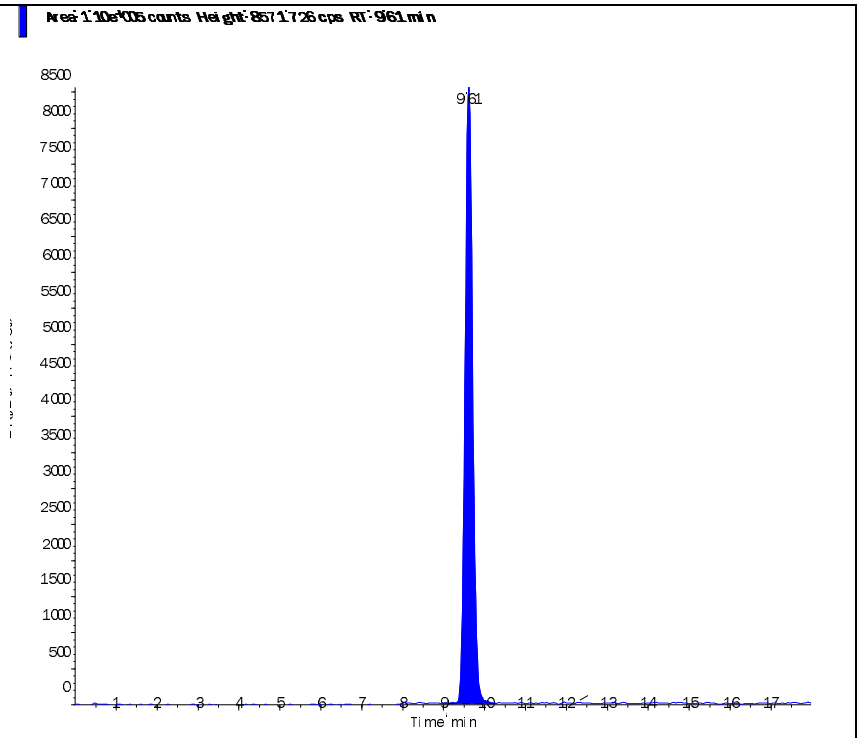

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.60 (9.48) min
Calculated conc:	0.98 ng/ml
Area Ratio:	0.083
Sample Type:	(Quality Control)

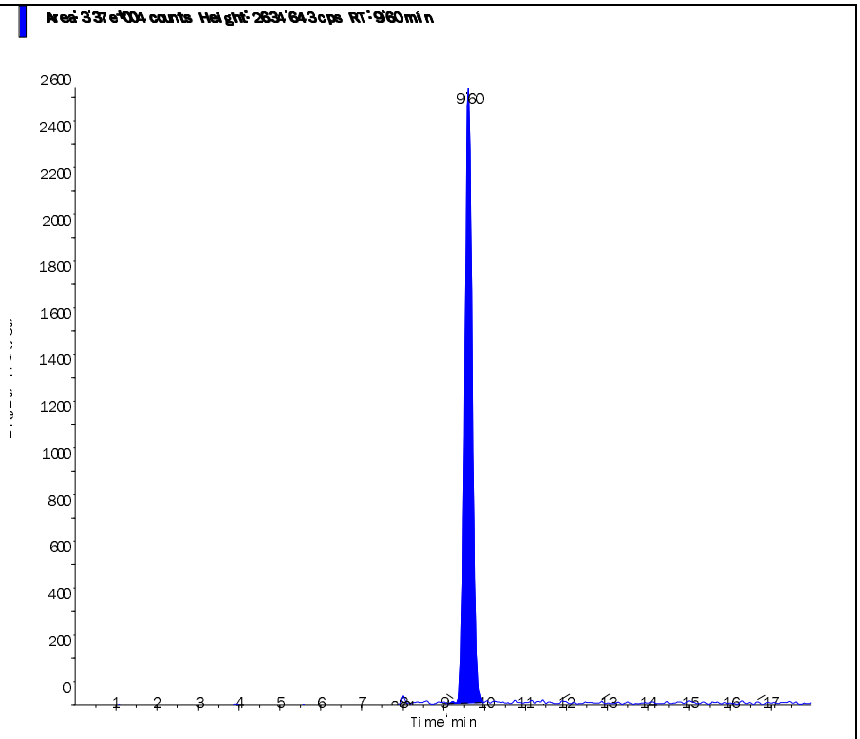

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Created with Analyst Reporter
Printed: 8/27/2015 11:41 AM

Data File	LM31464.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/25/2015 2:34:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536250-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM31464.wiff	**Injection Volume**	10.00
Acquisition Date	8/25/2015 2:34:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	WG536250-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.640e+05	9.59	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.230e+05	9.60	1.00	0.979
Perchlorate conf	3.780e+04	9.59	1.00	0.965

O18LP (Internal Standard)

RT (Exp. RT): 9.59(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

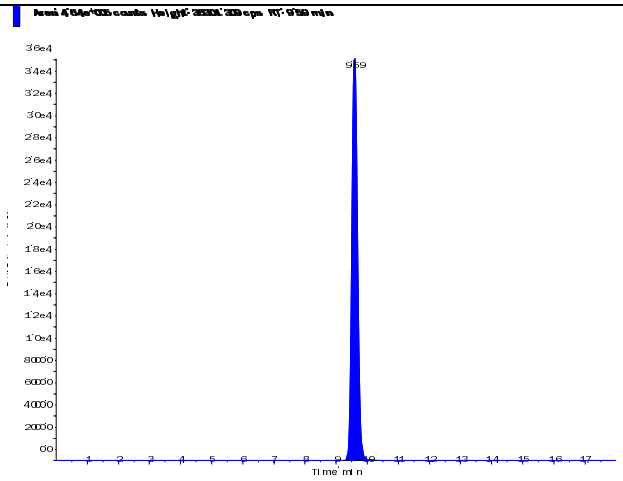

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Printed: 8/27/2015 11:41 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.60 (9.52) min
Calculated conc:	0.979 ng/ml
Area Ratio:	0.266
Sample Type:	(Quality Control)

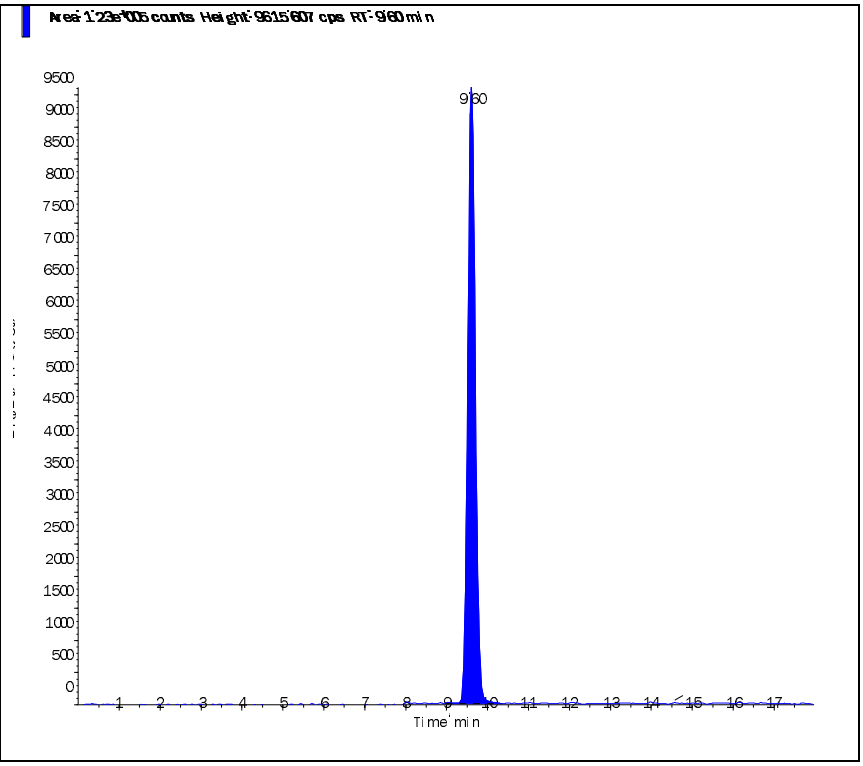

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.59 (9.48) min
Calculated conc:	0.965 ng/ml
Area Ratio:	0.082
Sample Type:	(Quality Control)

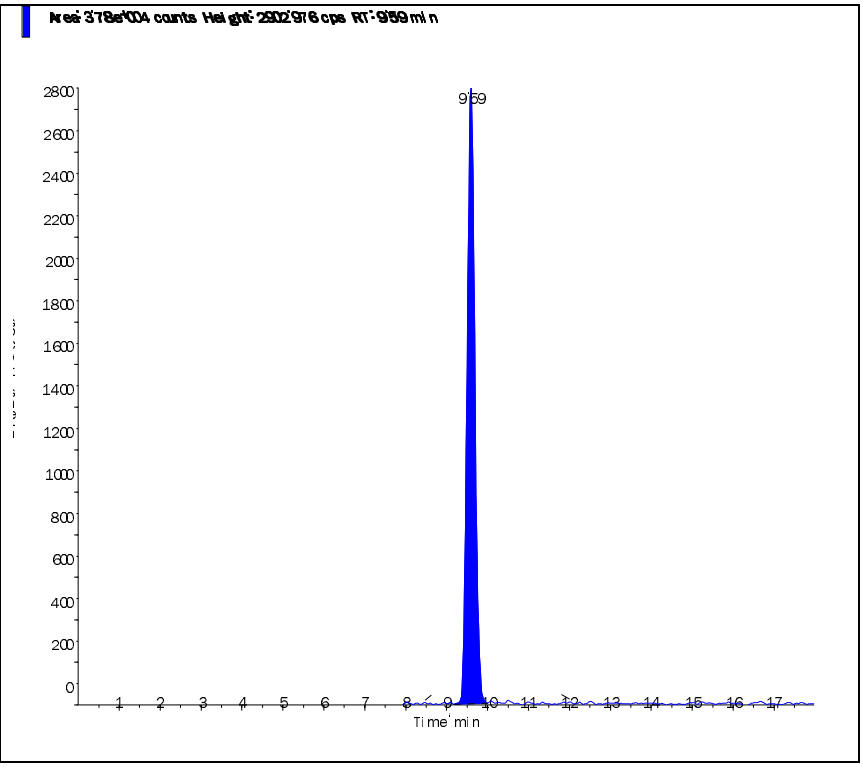

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Created with Analyst Reporter
Printed: 8/27/2015 11:31 AM

Data File	LM31433.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/24/2015 4:47:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536249-05 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM31433.wiff	**Injection Volume**	10.00
Acquisition Date	8/24/2015 4:47:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	WG536249-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.650e+05	9.73	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.150e+04	9.73	N/A	0.213
Perchlorate conf	6.560e+03	9.73	N/A	0.208

O18LP (Internal Standard)

RT (Exp. RT): 9.73(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

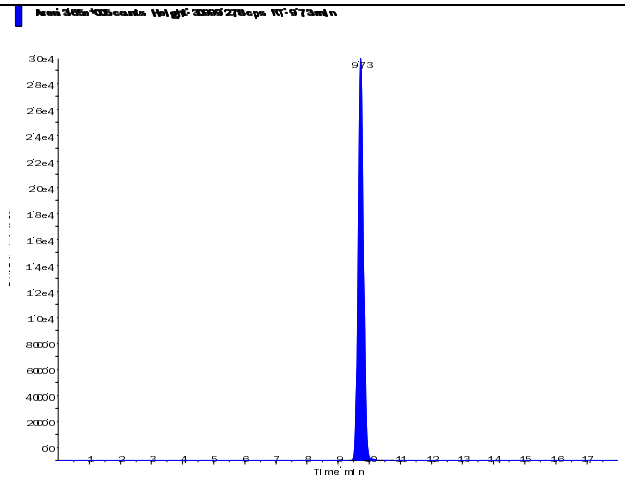

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.73 (9.52) min
Calculated conc:	0.213 ng/ml
Area Ratio:	0.059
Sample Type:	(Unknown)

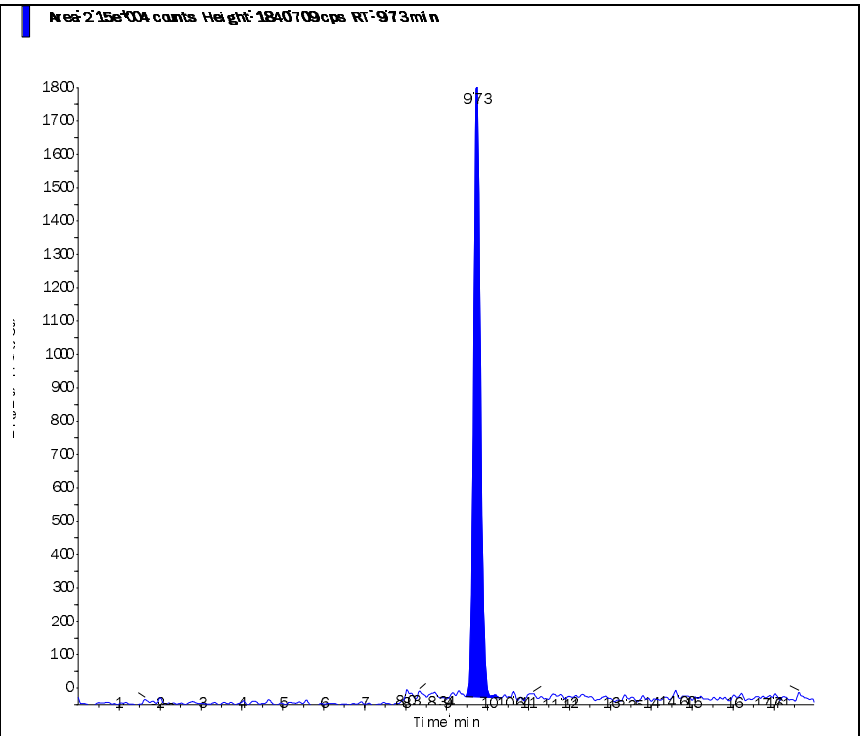

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.73 (9.48) min
Calculated conc:	0.208 ng/ml
Area Ratio:	0.018
Sample Type:	(Unknown)

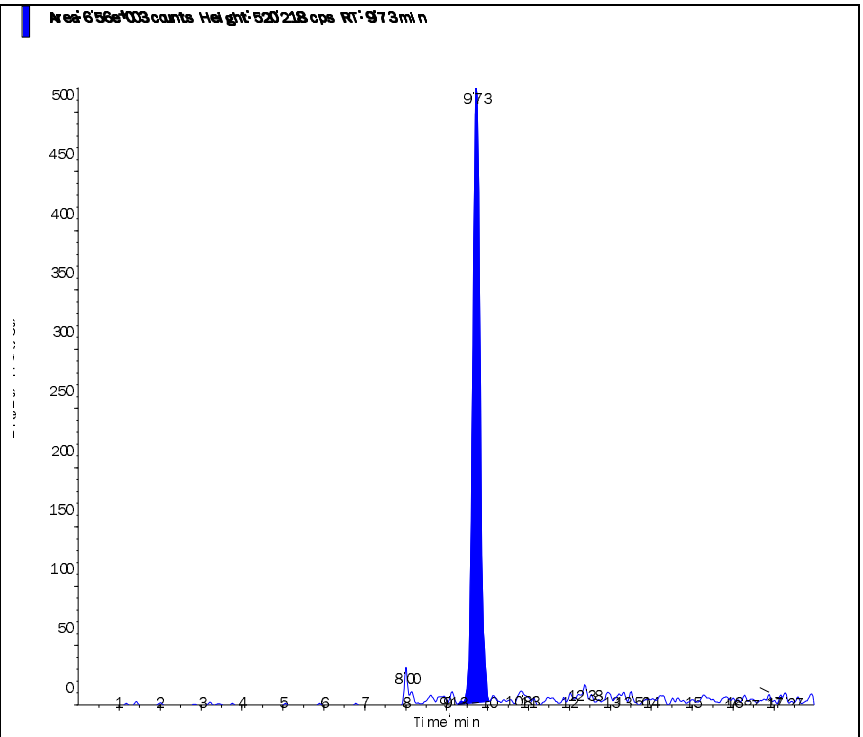

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Data File	LM31445.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/24/2015 8:34:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536249-06 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM31445.wiff	**Injection Volume**	10.00
Acquisition Date	8/24/2015 8:34:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	WG536249-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.180e+05	9.71	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.280e+04	9.72	N/A	0.196
Perchlorate conf	7.970e+03	9.71	N/A	0.221

O18LP (Internal Standard)

RT (Exp. RT): 9.71(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

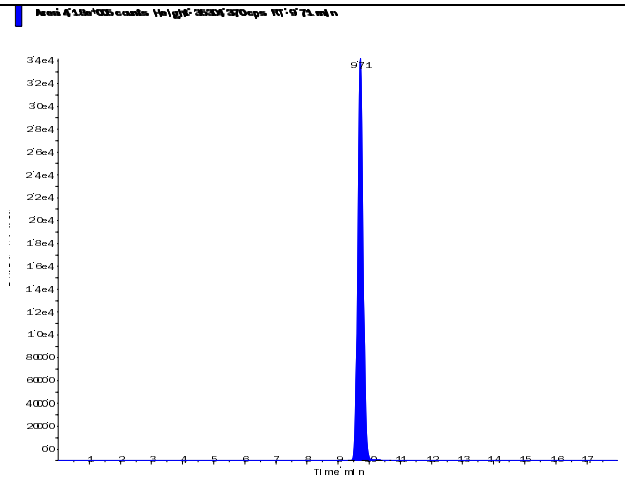

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.72 (9.52) min Calculated conc: 0.196 ng/ml Area Ratio: 0.054 Sample Type: (Unknown)	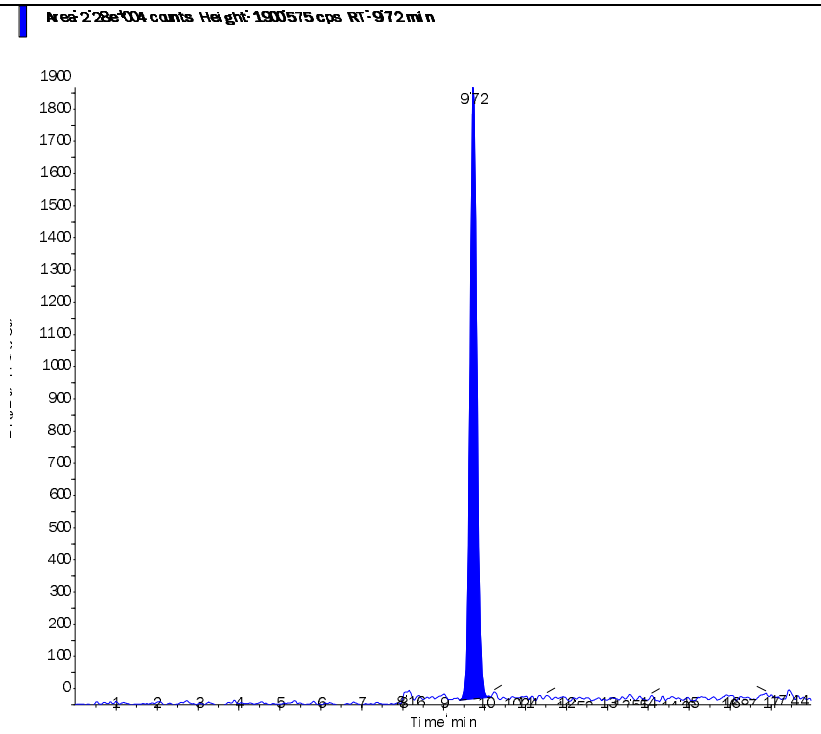
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.71 (9.48) min Calculated conc: 0.221 ng/ml Area Ratio: 0.019 Sample Type: (Unknown)	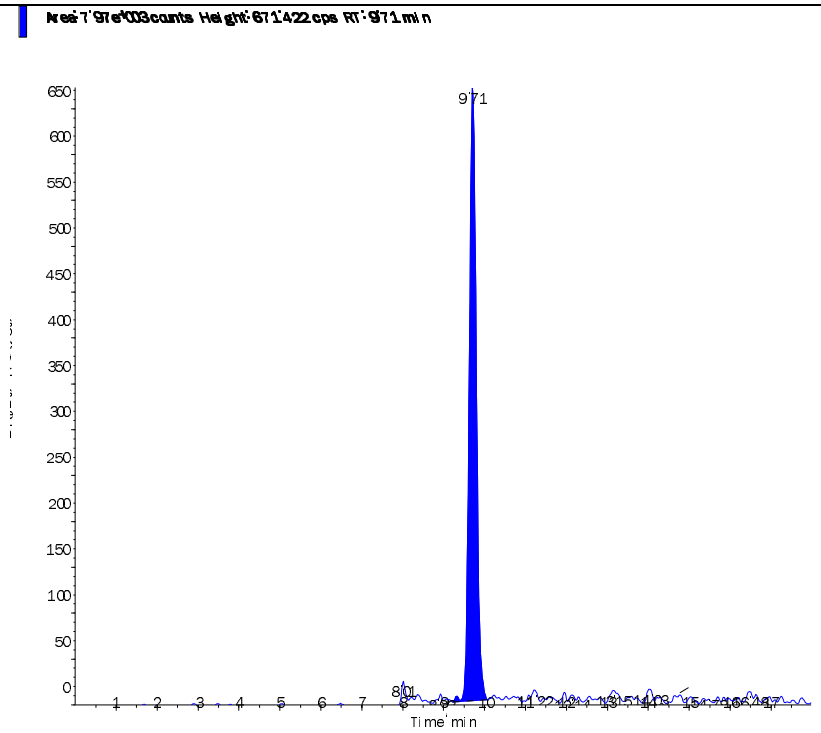

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Data File	LM31457.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/25/2015 12:22:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536249-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM31457.wiff	**Injection Volume**	10.00
Acquisition Date	8/25/2015 12:22:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	WG536249-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.140e+05	9.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.410e+04	9.72	N/A	0.21
Perchlorate conf	8.120e+03	9.71	N/A	0.228

O18LP (Internal Standard)

RT (Exp. RT): 9.70(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

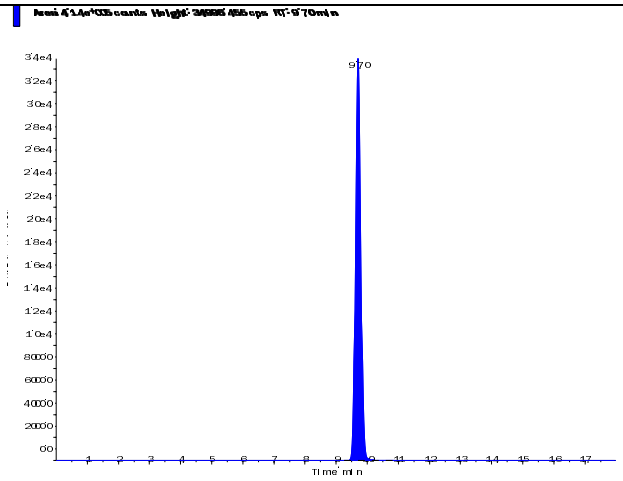

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.72 (9.52) min Calculated conc: 0.21 ng/ml Area Ratio: 0.058 Sample Type: (Unknown)	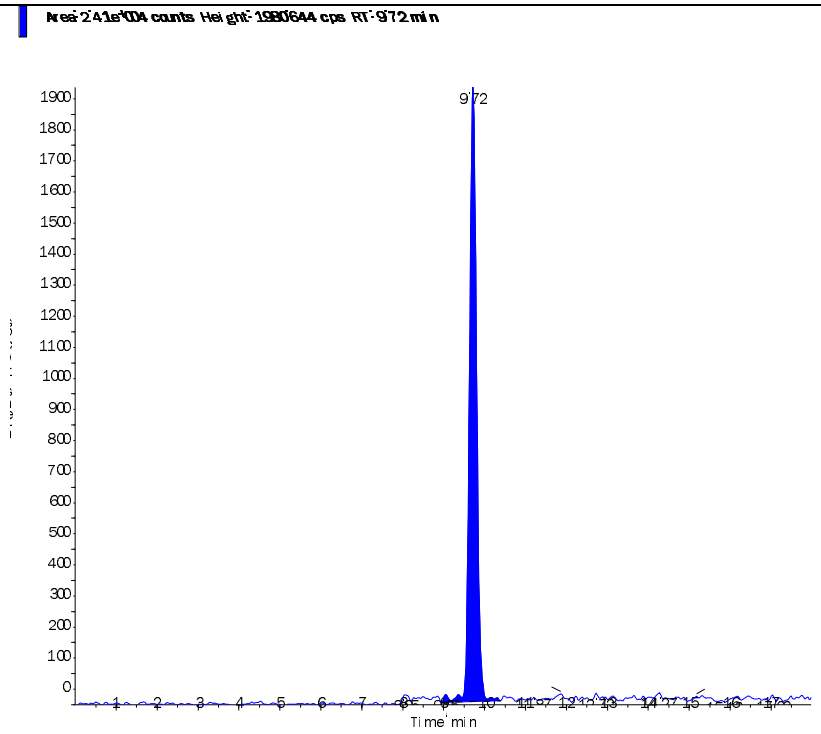
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.71 (9.48) min Calculated conc: 0.228 ng/ml Area Ratio: 0.02 Sample Type: (Unknown)	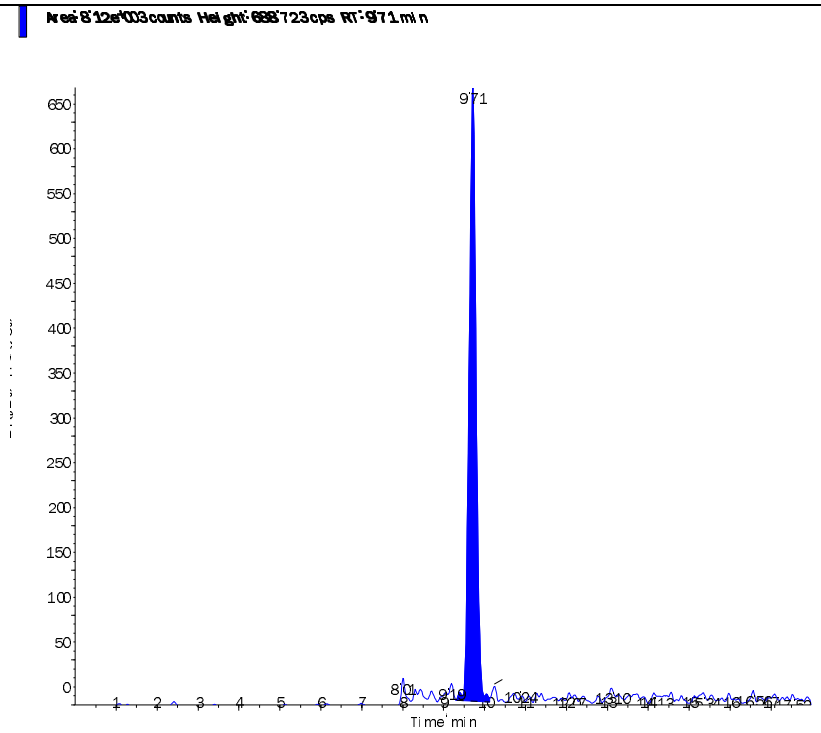

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Data File	LM31465.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/25/2015 2:53:38 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536249-08 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM31465.wiff	**Injection Volume**	10.00
Acquisition Date	8/25/2015 2:53:38 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	WG536249-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.220e+05	9.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.410e+04	9.72	N/A	0.206
Perchlorate conf	7.860e+03	9.69	N/A	0.216

O18LP (Internal Standard)

RT (Exp. RT): 9.70(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

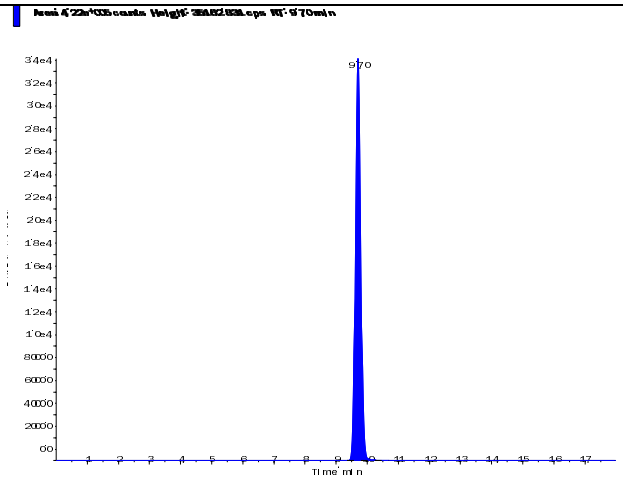

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.72 (9.52) min Calculated conc: 0.206 ng/ml Area Ratio: 0.057 Sample Type: (Unknown)	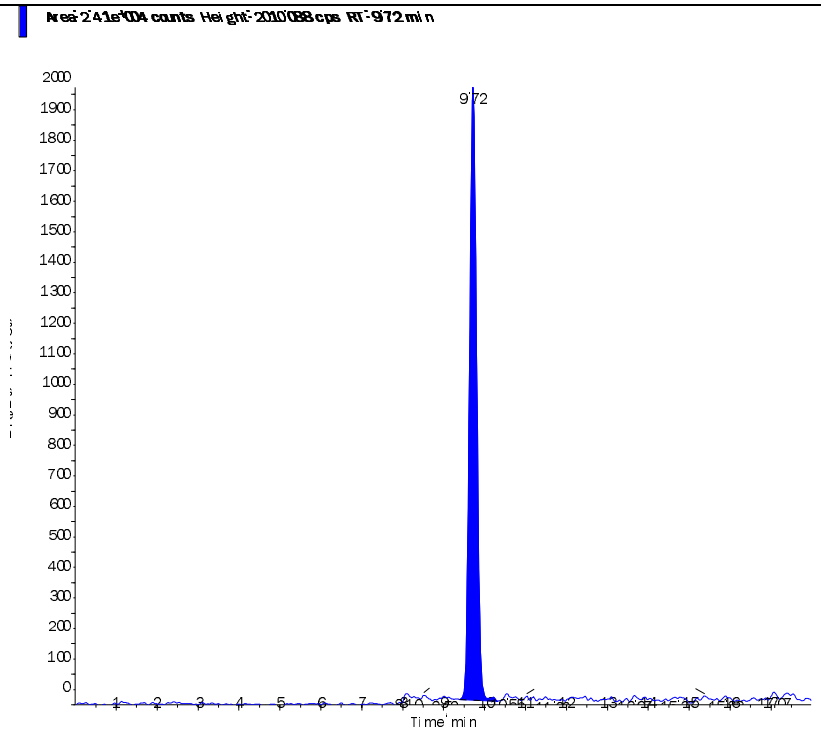
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.69 (9.48) min Calculated conc: 0.216 ng/ml Area Ratio: 0.019 Sample Type: (Unknown)	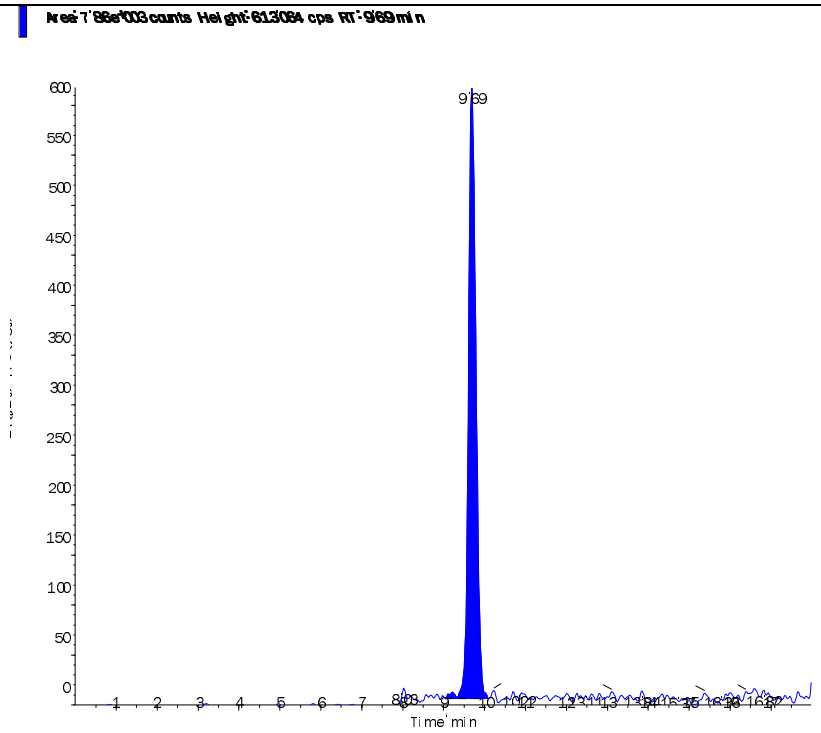

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Data File	LM31431.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/24/2015 4:09:55 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536250-01 CCB	**Injection Vial**	1.00
Data File	LM31431.wiff	**Injection Volume**	10.00
Acquisition Date	8/24/2015 4:09:55 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	WG536250-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.470e+05	9.74	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.74(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

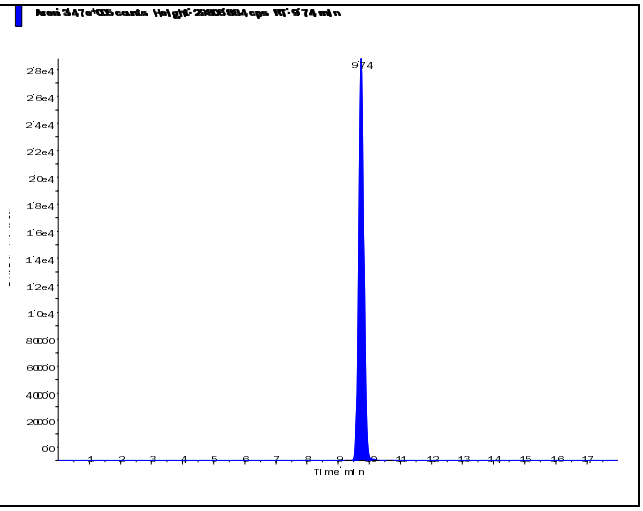

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.52) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

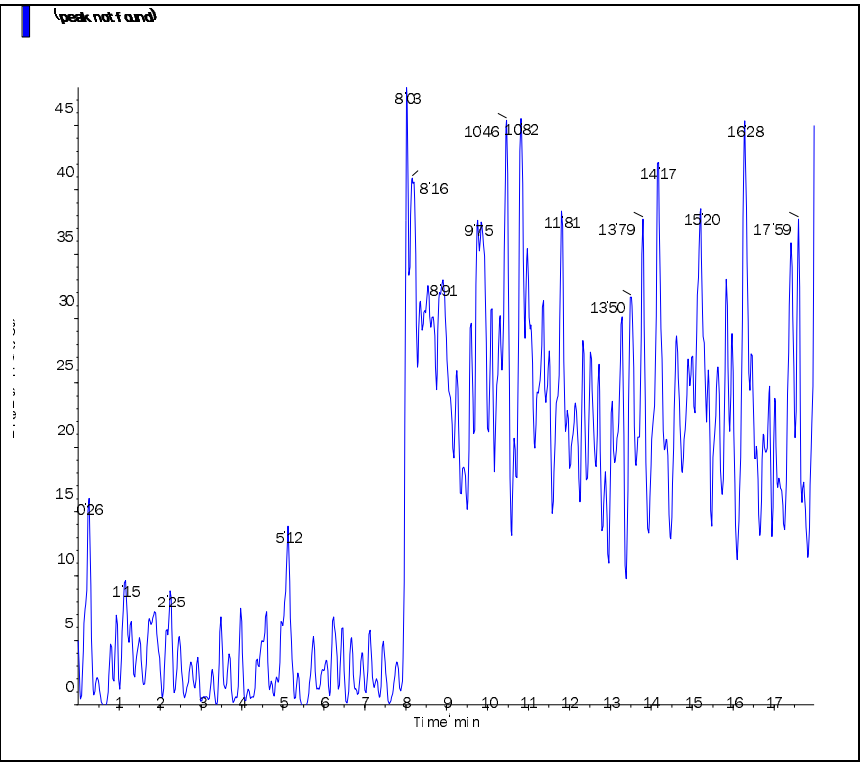

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.48) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

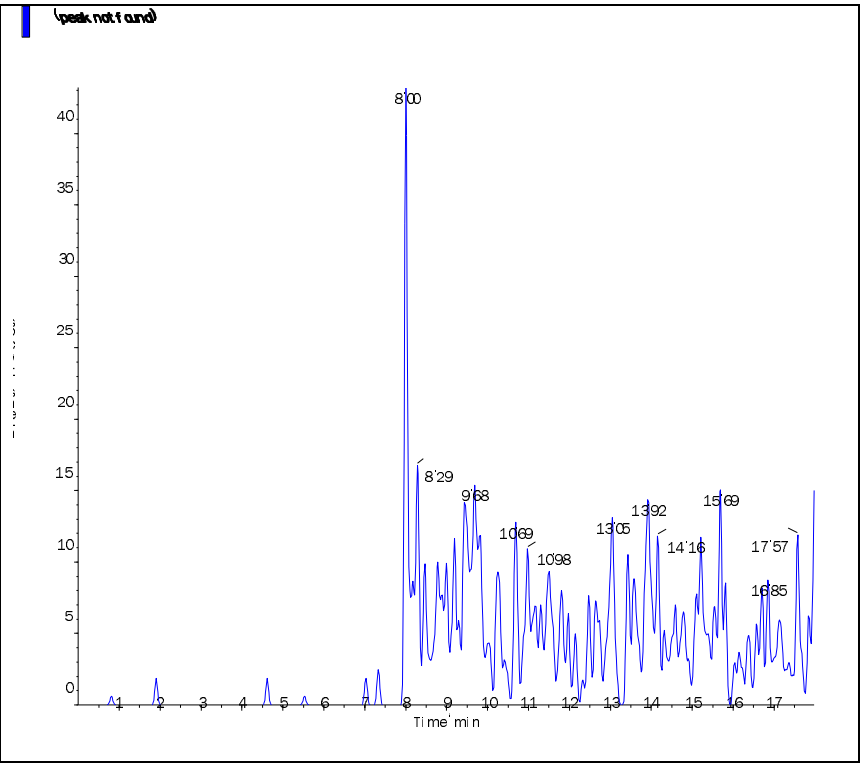

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Data File	LM31446.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/24/2015 8:53:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536250-04 CCB	**Injection Vial**	1.00
Data File	LM31446.wiff	**Injection Volume**	10.00
Acquisition Date	8/24/2015 8:53:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	WG536250-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.030e+05	9.72	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	2.030e+02	9.69	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.72(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

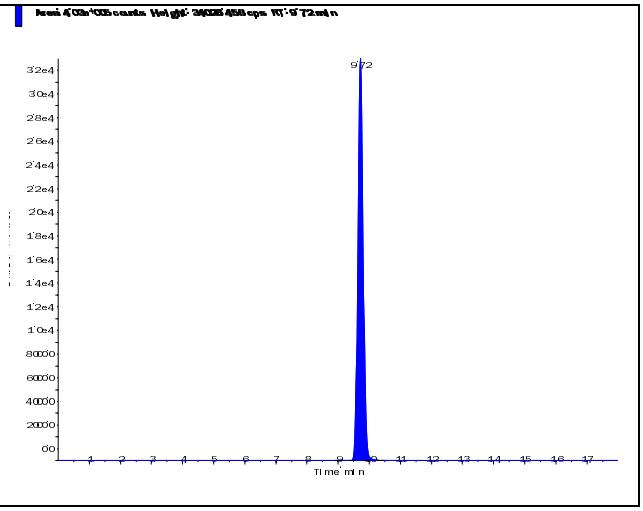

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.52) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	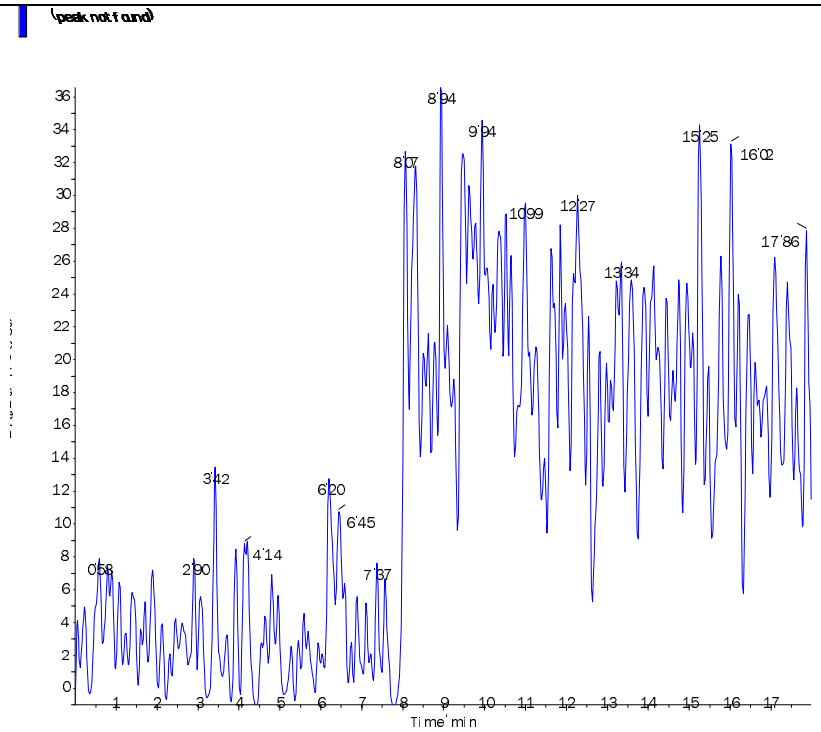
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.69 (9.48) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	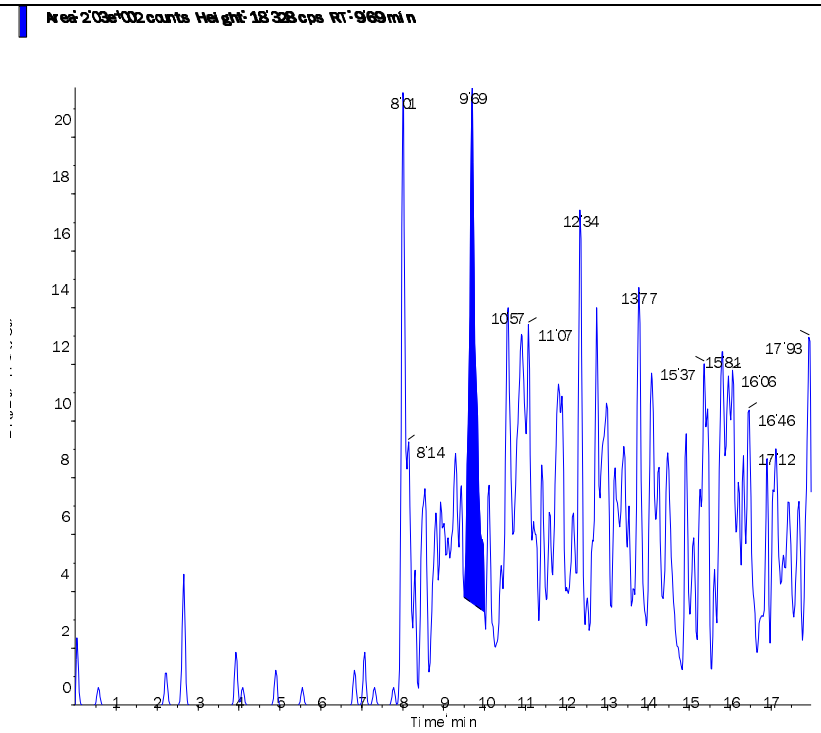

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Data File	LM31458.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/25/2015 12:41:05 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536250-06 CCB	**Injection Vial**	1.00
Data File	LM31458.wiff	**Injection Volume**	10.00
Acquisition Date	8/25/2015 12:41:05 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	WG536250-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.180e+05	9.71	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.730e+02	9.63	N/A	< 0
Perchlorate conf	3.400e+02	9.75	N/A	0.0032

O18LP (Internal Standard)

RT (Exp. RT): 9.71(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

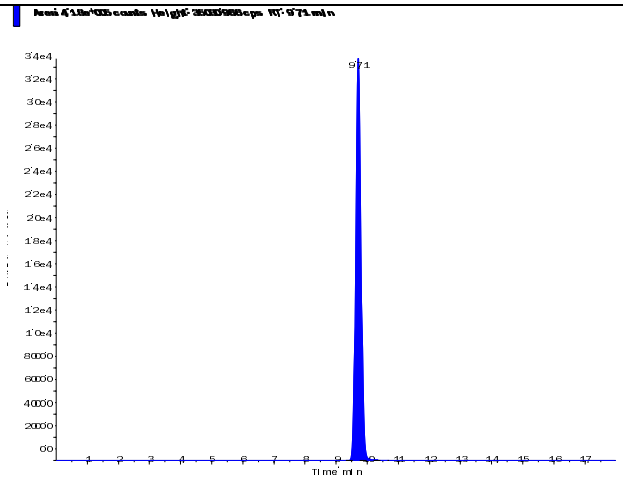

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.63 (9.52) min Calculated conc: < 0 ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	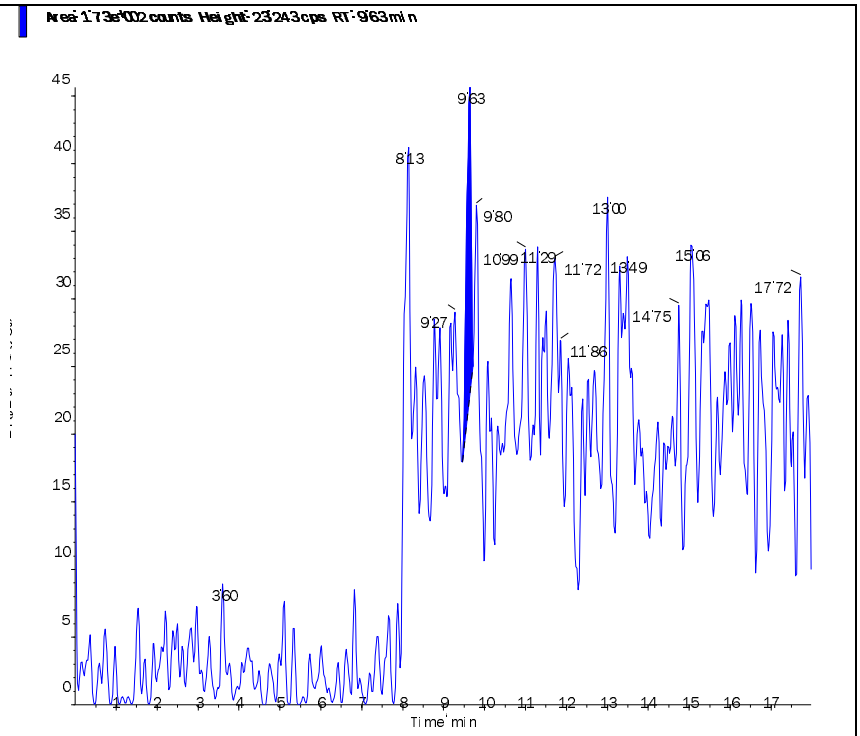
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.75 (9.48) min Calculated conc: 0.0032 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	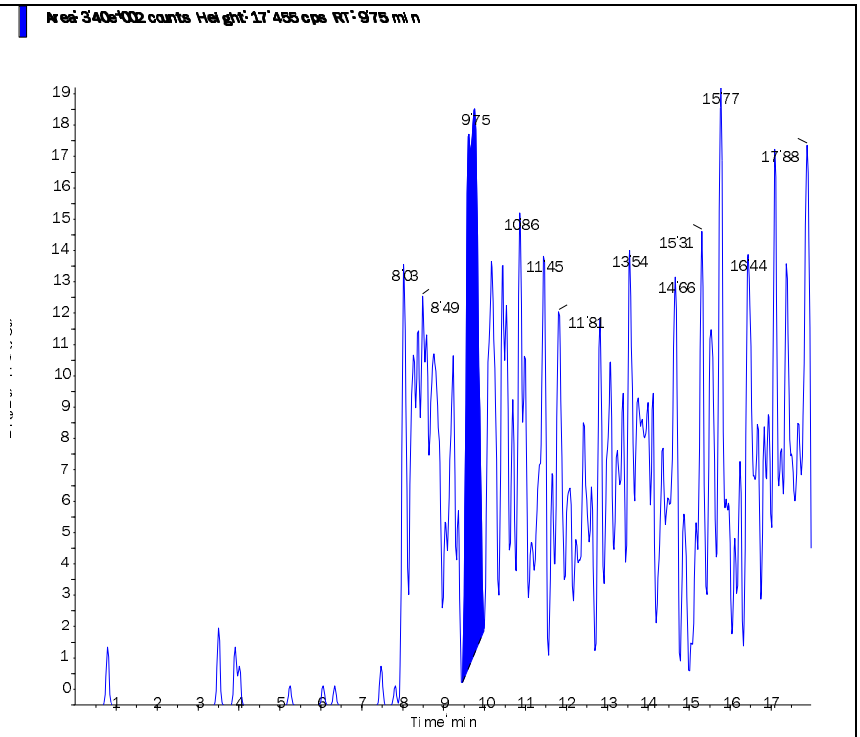

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Data File	LM31466.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/25/2015 3:12:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536250-08 CCB	**Injection Vial**	1.00
Data File	LM31466.wiff	**Injection Volume**	10.00
Acquisition Date	8/25/2015 3:12:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	WG536250-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.150e+05	9.71	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	8.580e+01	9.62	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.71(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

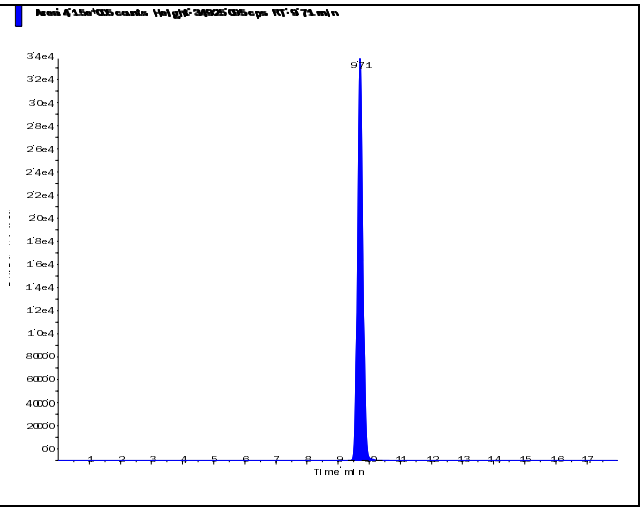

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.52) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	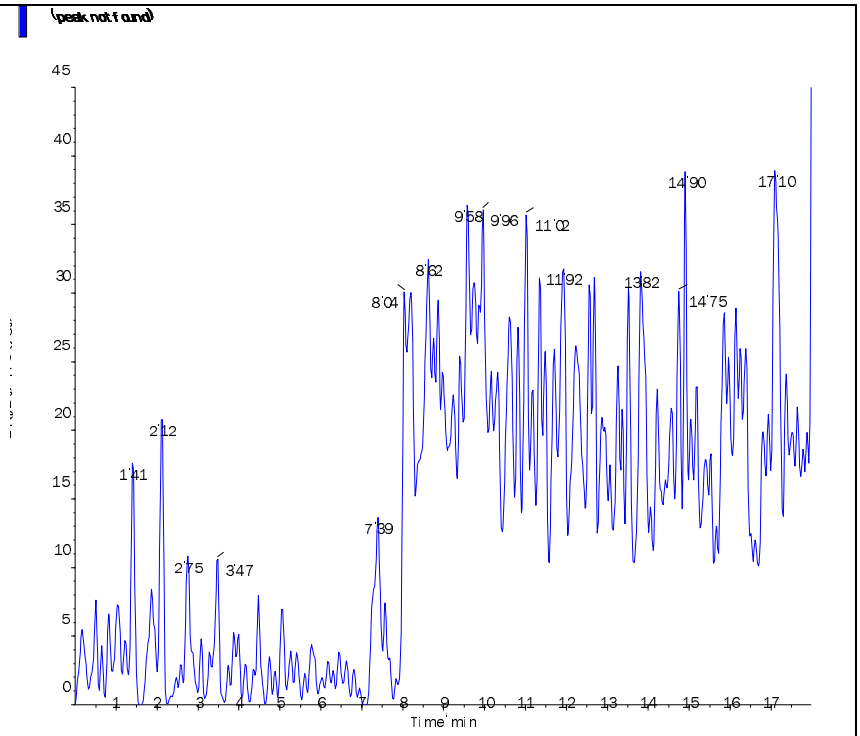
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.62 (9.48) min Calculated conc: < 0 ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	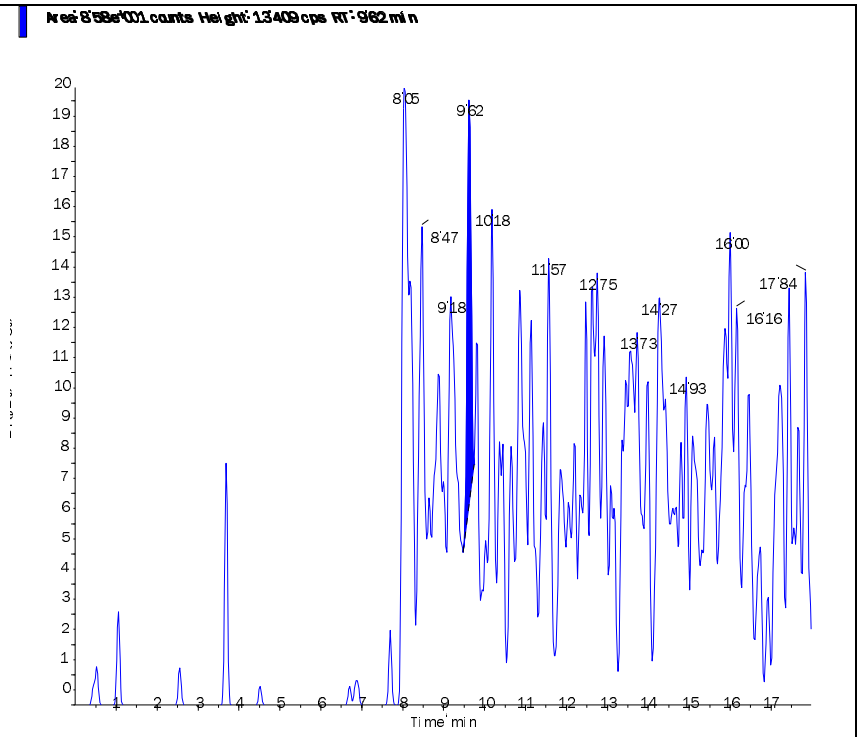

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Data File	LM31434.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/24/2015 5:06:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536249-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM31434.wiff	**Injection Volume**	10.00
Acquisition Date	8/24/2015 5:06:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	WG536249-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD69913	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.560e+05	9.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.090e+04	9.31	N/A	0.212
Perchlorate conf	6.270e+03	9.29	N/A	0.203

O18LP (Internal Standard)

RT (Exp. RT): 9.30(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

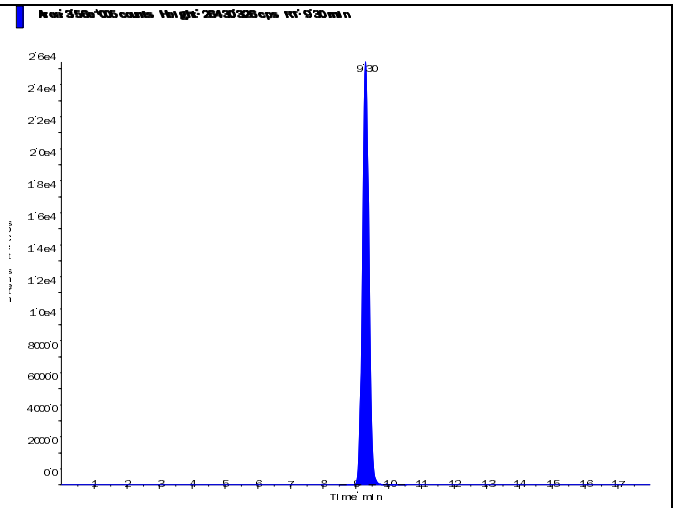

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 8/27/2015 11:31 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.31 (9.52) min Calculated conc: 0.212 ng/ml Area Ratio: 0.059 Sample Type: (Unknown)	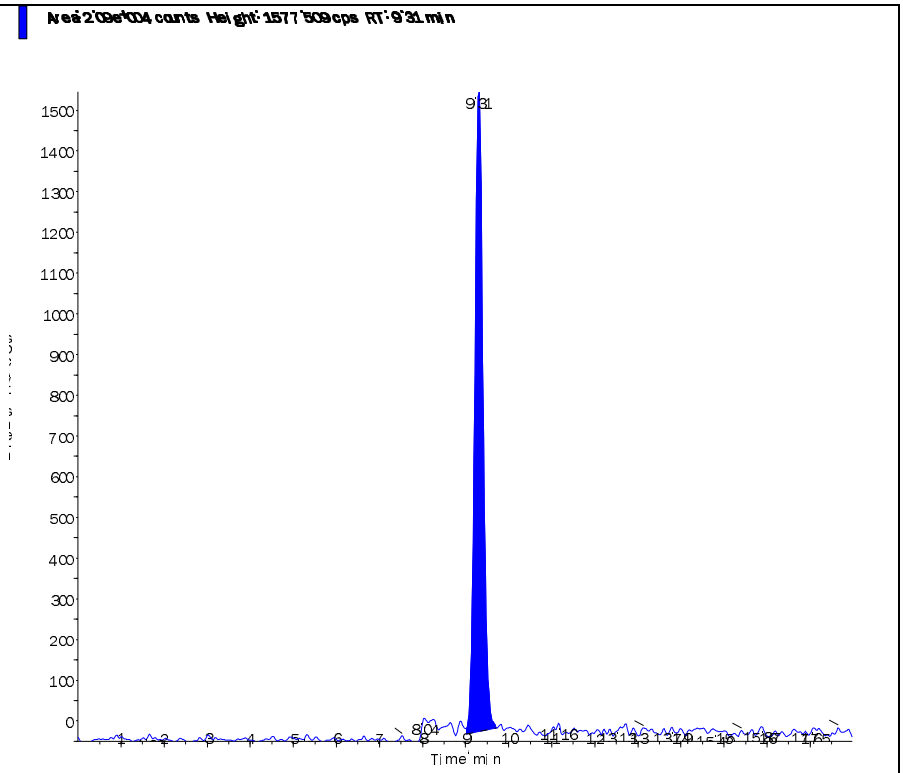
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.29 (9.48) min Calculated conc: 0.203 ng/ml Area Ratio: 0.018 Sample Type: (Unknown)	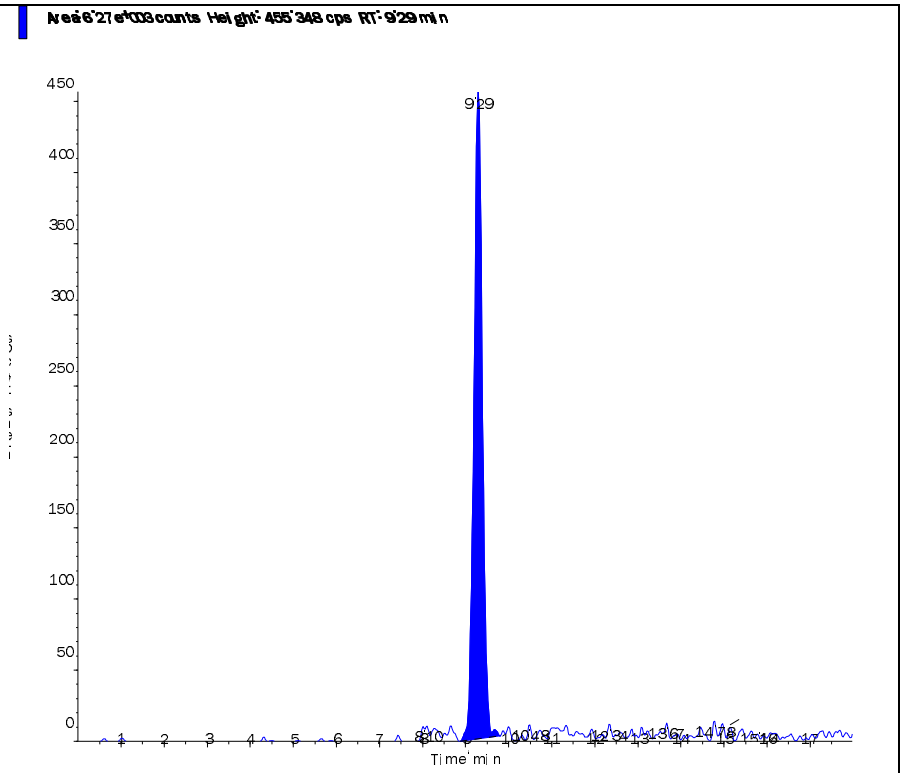

s.dataFile Page 2 of 2

2.2.1.5 Raw QC Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 8/27/2015 11:31 AM

Data File	LM31435.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/24/2015 5:25:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536249-02 BLANK	**Injection Vial**	5.00
Data File	LM31435.wiff	**Injection Volume**	10.00
Acquisition Date	8/24/2015 5:25:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	WG536249-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.970e+05	9.73	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.73(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

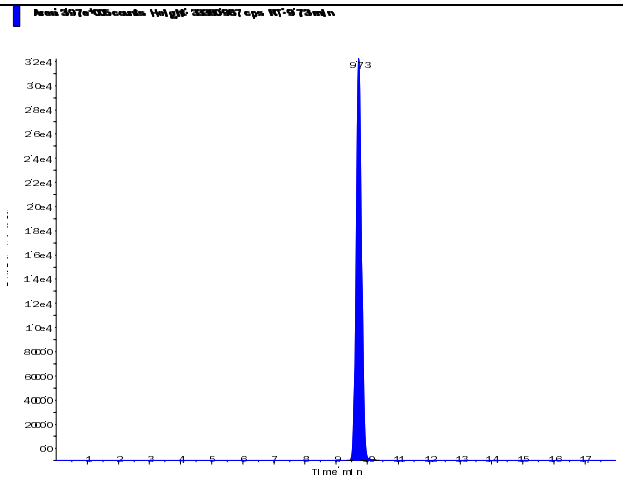

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.52) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

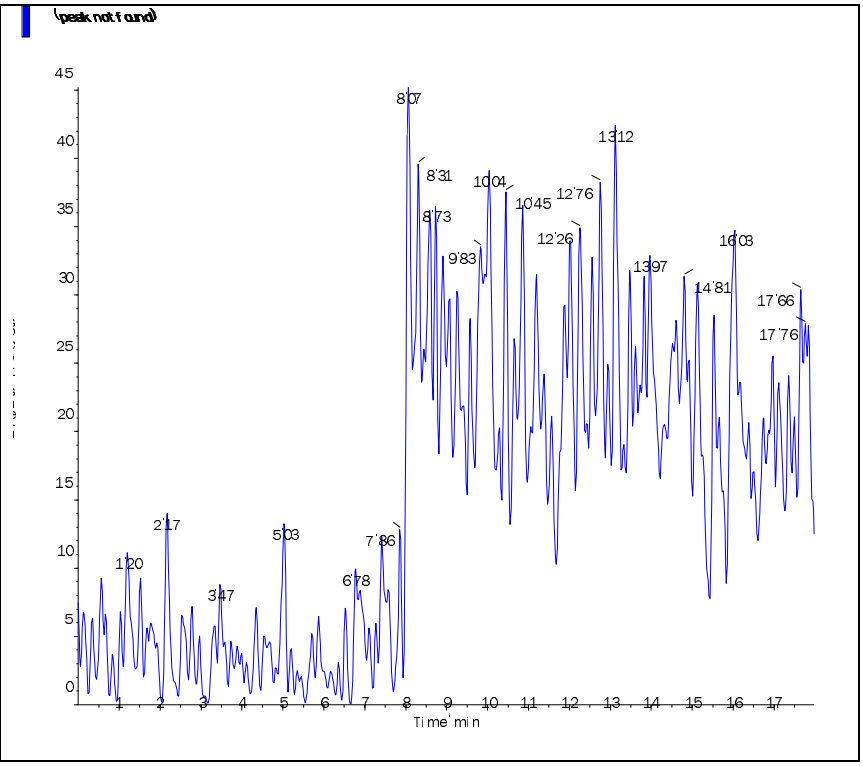

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.48) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

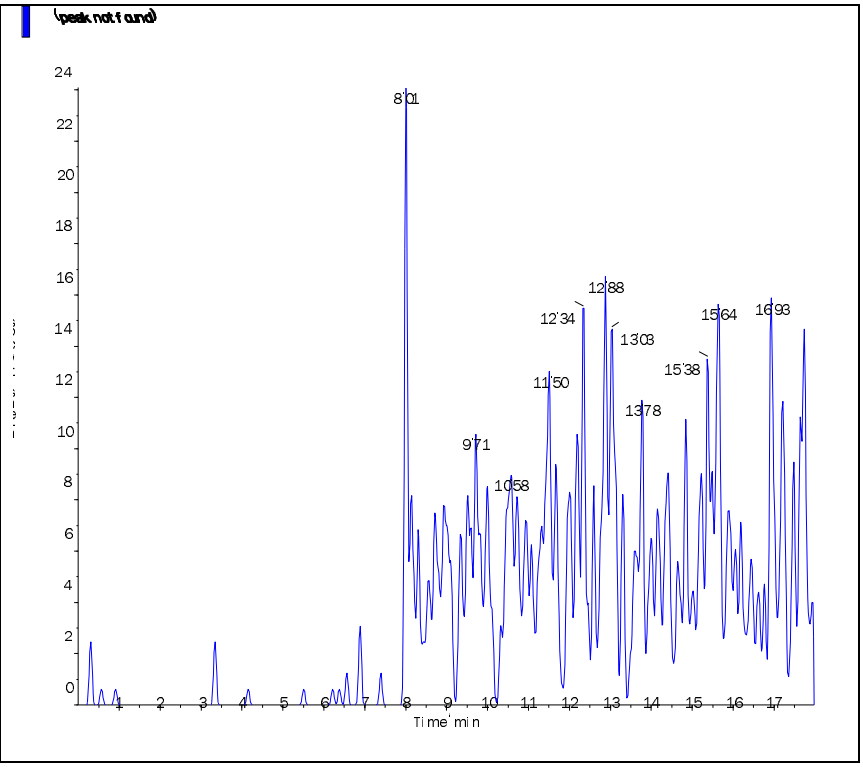

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Created with Analyst Reporter
Printed: 8/27/2015 11:32 AM

Data File	LM31436.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/24/2015 5:44:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536249-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM31436.wiff	**Injection Volume**	10.00
Acquisition Date	8/24/2015 5:44:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	WG536249-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD69913	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.990e+05	9.71	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.290e+04	9.72	N/A	0.206
Perchlorate conf	7.710e+03	9.70	N/A	0.224

O18LP (Internal Standard)

RT (Exp. RT): 9.71(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

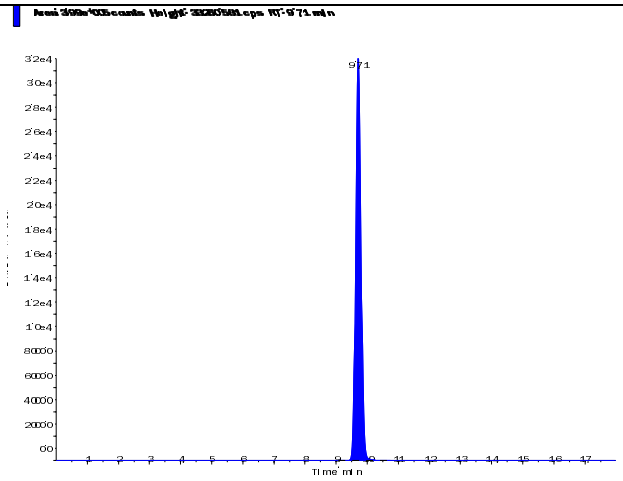

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 8/27/2015 11:32 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.72 (9.52) min Calculated conc: 0.206 ng/ml Area Ratio: 0.057 Sample Type: (Unknown)	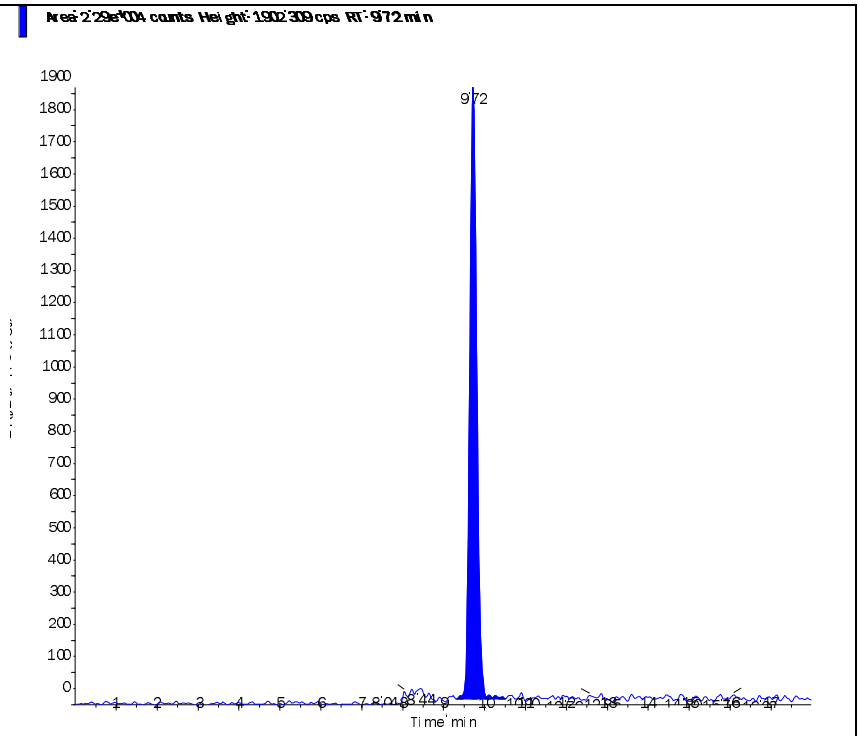
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.70 (9.48) min Calculated conc: 0.224 ng/ml Area Ratio: 0.019 Sample Type: (Unknown)	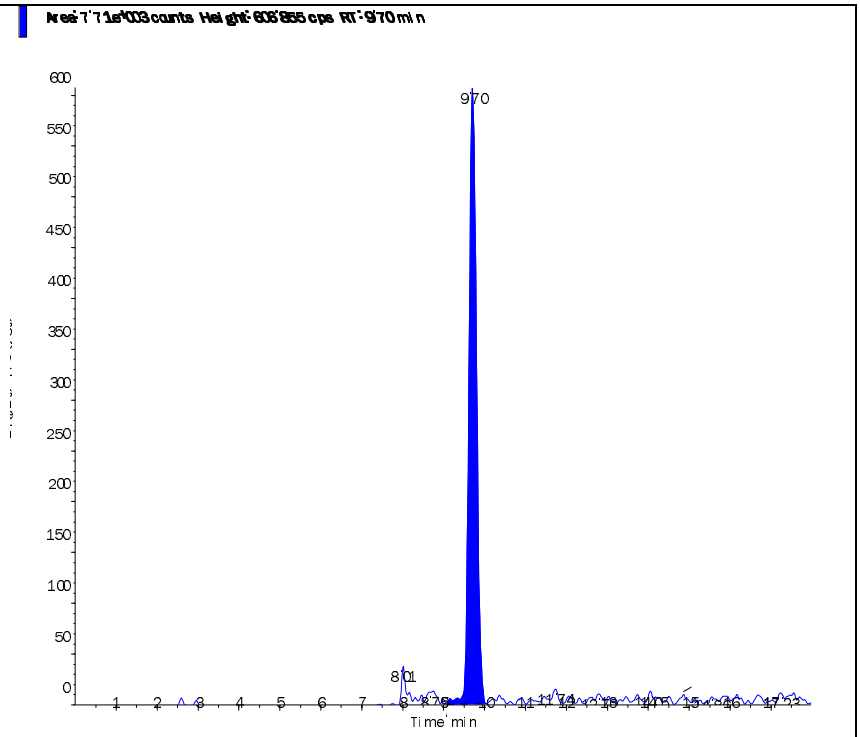

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 8/27/2015 11:32 AM

Data File	LM31437.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/24/2015 6:03:26 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536249-04 LCS2 (0.2ug/L)	**Injection Vial**	7.00
Data File	LM31437.wiff	**Injection Volume**	10.00
Acquisition Date	8/24/2015 6:03:26 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	WG536249-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD69913	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.670e+05	9.72	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.140e+04	9.73	N/A	0.21
Perchlorate conf	6.620e+03	9.72	N/A	0.209

O18LP (Internal Standard)

RT (Exp. RT): 9.72(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

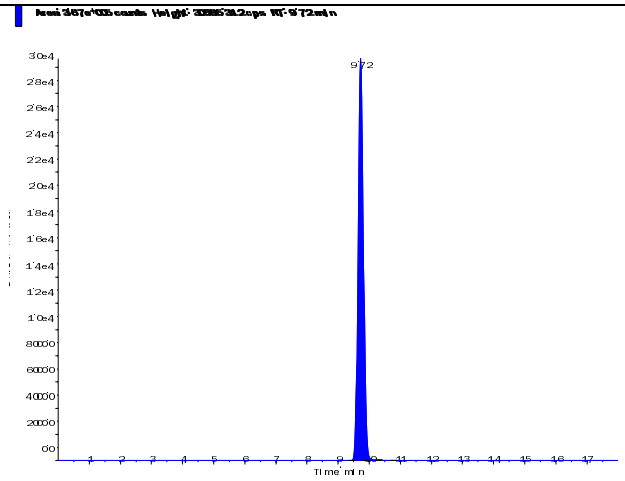

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 8/27/2015 11:32 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.73 (9.52) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.058
Sample Type:	(Unknown)

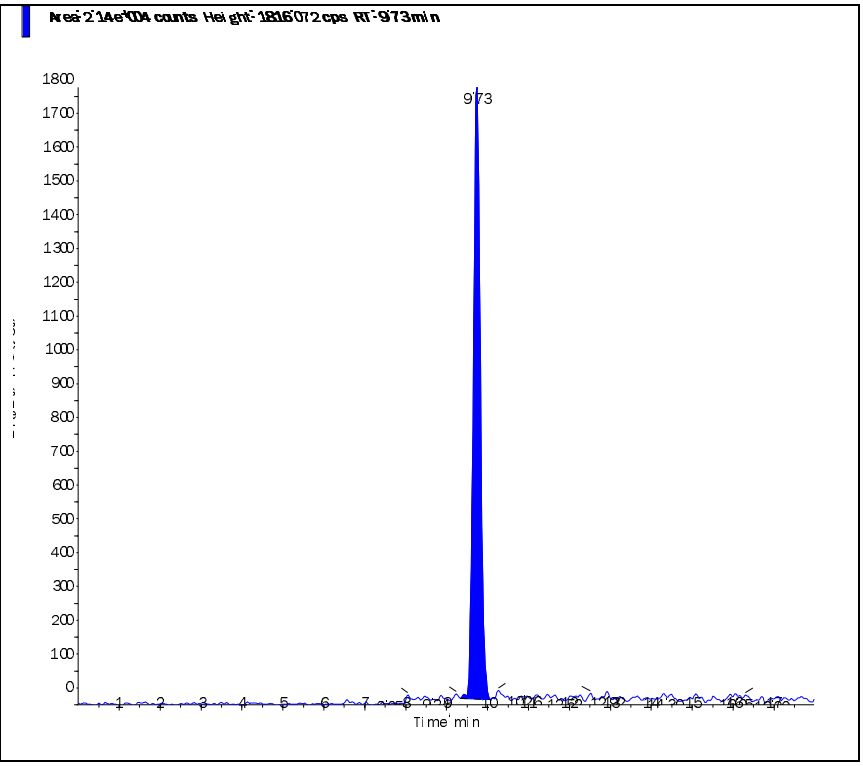

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.72 (9.48) min
Calculated conc:	0.209 ng/ml
Area Ratio:	0.018
Sample Type:	(Unknown)

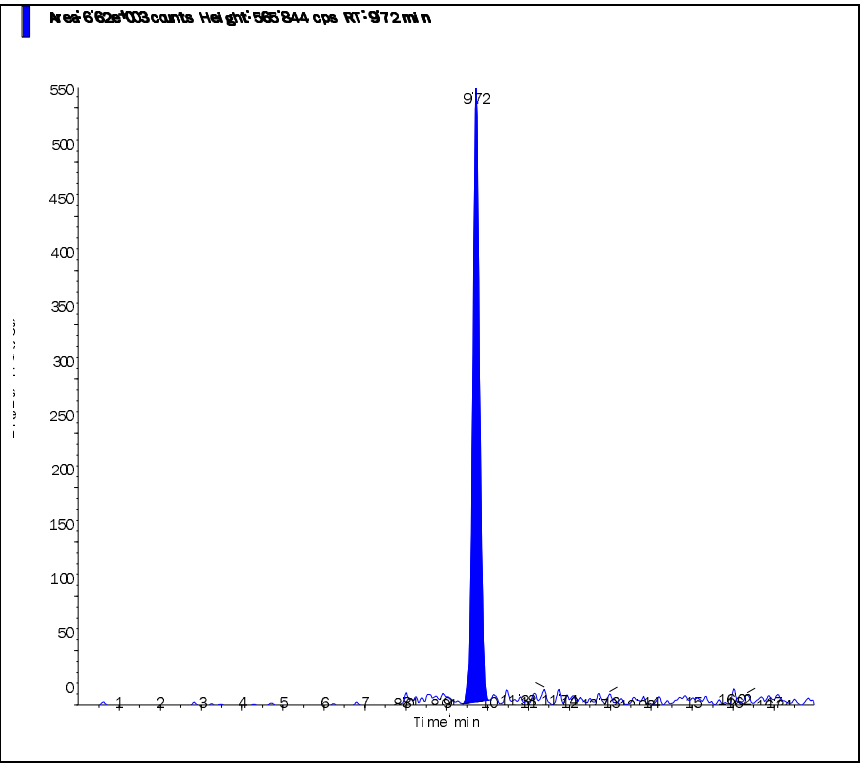

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2.3 Metals Data

2.3.1 Metals I C P Data

2.3.1.1 Summary Data

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-02	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	50WW18FF-081715	**Prep Method:**	3015	**Prep Date:**	08/20/2015 11:21
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	08/23/2015 10:12
Workgroup #:	WG536024	**Analyst:**	KHR	**Run Date:**	08/23/2015 11:10
Collect Date:	08/17/2015 08:30	**Dilution:**	1	**File ID:**	P2.082315.111002
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.116	J	0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-04	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	50WW24FF-081715	**Prep Method:**	3015	**Prep Date:**	08/20/2015 11:21
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	08/23/2015 10:12
Workgroup #:	WG536024	**Analyst:**	KHR	**Run Date:**	08/23/2015 11:12
Collect Date:	08/17/2015 09:55	**Dilution:**	1	**File ID:**	P2.082315.111226
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.100	U	0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-06	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	50WW23FF-081715	**Prep Method:**	3015	**Prep Date:**	08/20/2015 11:21
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	08/23/2015 10:12
Workgroup #:	WG536024	**Analyst:**	KHR	**Run Date:**	08/23/2015 11:14
Collect Date:	08/17/2015 11:20	**Dilution:**	1	**File ID:**	P2.082315.111449
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.100	U	0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-08	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	50WW08FF-081715	**Prep Method:**	3015	**Prep Date:**	08/20/2015 11:21
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	08/23/2015 10:12
Workgroup #:	WG536024	**Analyst:**	KHR	**Run Date:**	08/23/2015 11:17
Collect Date:	08/17/2015 14:50	**Dilution:**	1	**File ID:**	P2.082315.111713
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.100	U	0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.3.1.2 QC Summary Data

Example 6010 Calculations
Perkin Elmer Optima 4300 DV

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG535824
Analyst: REK
Spike Analyst: REK
Run Date: 08/20/2015 11:21
Method: 3015
Balance: BAL019
Instrument: MW-4
Instrument Start: 08/20/2015 11:29

SOP: ME407 Revison 17
Spike Solution: STD71782
Spike Witness: VC
40 & 50 ML. DIGESTION TU COA18222
HCL Lot #: COA18326
HNO3 Lot #: COA18384
ICP Filters- fisher-Lot# RGT32945

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG535824-02	BLANK	1	40 mL	50 mL	205.252 g	205.225 g		
2	WG535764-01	FBLK1	17	5 mL	50 mL	200.341 g	200.316 g		
3	WG535824-03	LCS	1	40 mL	50 mL	210.016 g	210.002 g	5 mL	
4	L15080844-01	SAMP	1	40 mL	50 mL	209.348 g	209.333 g		08/28/15
5	L15080844-02	SAMP	1	40 mL	50 mL	208.861 g	208.841 g		08/28/15
6	L15080904-02	SAMP	1	40 mL	50 mL	204.695 g	204.665 g		08/28/15
7	L15080904-04	SAMP	1	40 mL	50 mL	203.932 g	203.892 g		08/28/15
8	L15080904-06	SAMP	1	40 mL	50 mL	204.077 g	204.057 g		08/28/15
9	L15080904-08	SAMP	1	40 mL	50 mL	205.654 g	205.628 g		08/28/15
10	L15080912-01	SAMP	1	20 mL	50 mL	208.094 g	208.065 g		08/28/15
11	L15080912-02	SAMP	1	20 mL	50 mL	208.285 g	208.25 g		08/28/15
12	L15080971-01	SAMP	1	40 mL	50 mL	206.211 g	206.166 g		08/26/15
13	L15080973-01	SAMP	1	40 mL	50 mL	205.809 g	205.78 g		08/26/15
14	L15080973-02	SAMP	1	40 mL	50 mL	203.907 g	203.866 g		08/26/15
15	L15080973-03	SAMP	1	40 mL	50 mL	206.397 g	206.337 g		08/26/15
16	L15080973-04	SAMP	1	40 mL	50 mL	205.183 g	205.127 g		08/26/15
17	L15080975-01	SAMP	1	40 mL	50 mL	206.592 g	206.545 g		08/26/15
18	L15080985-01	SAMP	1	40 mL	50 mL	204.437 g	204.401 g		08/26/15
19	L15080985-02	SAMP	1	40 mL	50 mL	204.68 g	204.636 g		08/26/15
20	L15080986-01	SAMP	1	40 mL	50 mL	205.617 g	205.583 g		08/26/15
21	WG535824-01	REF	17	5 mL	50 mL	204.64 g	204.614 g		
22	L15080997-01	SAMP	17	5 mL	50 mL	204.64 g	204.614 g		08/24/15
23	L15080998-01	SAMP	17	5 mL	50 mL	203.747 g	203.712 g		08/24/15
24	WG535824-04	MS	1	40 mL	50 mL	210.165 g	210.128 g	5 mL	
25	WG535824-05	MSD	1	40 mL	50 mL	210.146 g	210.112 g	5 mL	

L15080912-01	REDUCED INITIAL VOL. DUE TO MATRIX
L15080912-02	REDUCED INITIAL VOL. DUE TO MATRIX

Analyst: _____

Reviewer: Erin Potter

MW_DIG - Modified 09/30/2009
PDF ID: 4343800
Report generated: 08/20/2015 12:10

Microbac

TCLP Non-Volatile

Analyst(s): CPD
Date: 8/19/15
Filter Lot #: 9486030
Microbac SOP: TCLP01 Rev #: 12

Analyst / Date		Analyst / Date	
CPD	8/19/15	CPD	8/20/15
Time On	Temp On °C	Time Off	Temp Off °C
1538	24.3	0922	22.7

Agitator Speed 30 ± 2 rpm ☑

Jug #	Sample #	Tests	Method	Fluid #	Matrix *	% Solid	Pretest pH Initial	Pretest pH Final	Int. Wt. (g)	Fluid Vol. (mL)	Final extract pH
D	08-0997-01	ME, pH-L	1311	FI-144	S	100	8.56	2.18	100.18	2004	6.25
	08-0998-01	ME	1311				8.01	1.25	100.22	2004	5.11
	08-1004-01	OG-HEM	1311				7.60	1.57	100.34	2007	5.19
	08-0896-01	300	1312	SPLPF1			NA	NA	100.06	2001	9.69
	-02								100.11	2002	9.72
	-03								100.61	2012	9.69
	-04								100.10	2002	9.65
	-05								100.40	2008	9.72
	-06								100.65	2013	9.97
	08-0997-02	ME, pH-L	1312	SPLPF2					100.31	2006	8.83
NA	FBIK1	ME, pH-L, OG-HEM	1311	FI-144	NA	NA	NA	NA	100	100	4.89
NA	SPLPFBIK1	300	1312	SPLPF1							4.14
NA	SPLPFBIK2	ME, pH-L	2	SPLPF2							5.01

CPD 8/20/15

*Matrix Code: (S = solid, sand, soil or sludge) (P = paint) (O = organic) (W = water or aqueous waste)
D = Disposable plastic jug
TCLP Pretest weight will be 5.0 g (± 0.1) unless otherwise noted.
Temperature shall be maintained at 23° ± 2 for 18 ± 2 hours unless otherwise noted.

Comments:

Peer Review By:

Microbac Laboratories Inc.

Instrument Run Log

Instrument: PE-ICP2 Dataset: 082315HR.CSV

Analyst1: KHR Analyst2: N/A

Method: 6010/200.7 SOP: ME600E Rev: 18

Maintenance Log ID:

Calibration Std: STD71998 ICV Std: STD71999 Post Spike: STD71485

ICSA: STD72072 ICSAB: STD72095 Int. Std: RGT33135

CCV: STD72042 LLCCV: STD71998 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 536024, 535615, 536058

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	P2.082315.100317	WG536162-01	Calibration Point		1		08/23/15 10:03
2	P2.082315.100539	WG536162-02	Calibration Point		1		08/23/15 10:05
3	P2.082315.100800	WG536162-03	Calibration Point		1		08/23/15 10:08
4	P2.082315.101022	WG536162-04	Calibration Point		1		08/23/15 10:10
5	P2.082315.101246	WG536162-05	Calibration Point		1		08/23/15 10:12
6	P2.082315.101514	WG536162-06	Initial Calibration Verification		1		08/23/15 10:15
7	P2.082315.101737	WG536162-07	Initial Calib Blank		1		08/23/15 10:17
8	P2.082315.102001	WG536162-08	Low Level Initial Calibration V		1		08/23/15 10:20
9	P2.082315.102222	WG536162-09	Interference Check		1		08/23/15 10:22
10	P2.082315.102445	WG536162-10	Interference Check		1		08/23/15 10:24
11	P2.082315.102708	WG536162-11	CCV		1		08/23/15 10:27
12	P2.082315.102936	WG536162-12	CCB		1		08/23/15 10:29
13	P2.082315.103750	WG535824-02	Method/Prep Blank	40/50	1		08/23/15 10:37
14	P2.082315.104012	WG535824-03	Laboratory Control S	40/50	1		08/23/15 10:40
15	P2.082315.104235	WG535764-01	Fluid Blank 1		1		08/23/15 10:42
16	P2.082315.104500	WG535824-01	Reference Sample		1	L15080997-01	08/23/15 10:45
17	P2.082315.104723	WG535824-04	Matrix Spike	5/50	1	L15080997-01	08/23/15 10:47
18	P2.082315.104947	WG535824-05	Matrix Spike Duplica	5/50	1	L15080997-01	08/23/15 10:49
19	P2.082315.105214	L15080998-01	13837-SSP0520	5/50	1		08/23/15 10:52
20	P2.082315.105438	WG536024-01	Post Digestion Spike		1	L15080998-01	08/23/15 10:54
21	P2.082315.105702	WG536024-02	Serial Dilution		5	L15080998-01	08/23/15 10:57
22	P2.082315.110023	WG536162-13	CCV		1		08/23/15 11:00
23	P2.082315.110248	WG536162-14	CCB		1		08/23/15 11:02
24	P2.082315.110512	L15080844-01	HH-17	40/50	50		08/23/15 11:05
25	P2.082315.110739	L15080844-02	HH-17	40/50	50		08/23/15 11:07
26	P2.082315.111002	L15080904-02	50WW18FF-081715	40/50	1		08/23/15 11:10
27	P2.082315.111226	L15080904-04	50WW24FF-081715	40/50	1		08/23/15 11:12
28	P2.082315.111449	L15080904-06	50WW23FF-081715	40/50	1		08/23/15 11:14
29	P2.082315.111713	L15080904-08	50WW08FF-081715	40/50	1		08/23/15 11:17
30	P2.082315.112034	L15080971-01	59-8-14.2 S1	40/50	1		08/23/15 11:20
31	P2.082315.112257	L15080973-01	27-3-13 W1	40/50	1		08/23/15 11:22
32	P2.082315.112523	L15080973-02	27-3-13 P1	40/50	1		08/23/15 11:25
33	P2.082315.112745	L15080973-03	27-3-13 S3	40/50	1		08/23/15 11:27
34	P2.082315.113008	WG536162-15	CCV		1		08/23/15 11:30

Page: 1 Approved: August 24, 2015

Maren Berry

Microbac Laboratories Inc.

Instrument Run Log

Instrument: PE-ICP2 Dataset: 082315HR.CSV

Analyst1: KHR Analyst2: N/A

Method: 6010/200.7 SOP: ME600E Rev: 18

Maintenance Log ID:

Calibration Std: STD71998 ICV Std: STD71999 Post Spike: STD71485

ICSA: STD72072 ICSAB: STD72095 Int. Std: RGT33135

CCV: STD72042 LLCCV: STD71998 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 536024, 535615, 536058

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	P2.082315.113233	WG536162-16	CCB		1		08/23/15 11:32
36	P2.082315.113457	WG536162-17	Low Level Continuing Calibra		1		08/23/15 11:34
37	P2.082315.113722	L15080912-01	R-18	20/50	20		08/23/15 11:37
38	P2.082315.113949	L15080912-02	R-18	20/50	20		08/23/15 11:39
39	P2.082315.114212	L15080973-04	27-3-13 S1	40/50	1		08/23/15 11:42
40	P2.082315.114433	L15080975-01	59-9-1.6	40/50	1		08/23/15 11:44
41	P2.082315.114655	L15080985-01	27-2-5.01 W1	40/50	1		08/23/15 11:46
42	P2.082315.114918	L15080985-02	27-2-5.01 W1	40/50	1		08/23/15 11:49
43	P2.082315.115141	L15080986-01	1804-104 W1	40/50	1		08/23/15 11:51
44	P2.082315.115403	WG536162-18	CCV		1		08/23/15 11:54
45	P2.082315.115631	WG536162-19	CCB		1		08/23/15 11:56
46	P2.082315.115932	L15080844-01	HH-17		200		08/23/15 11:59
47	P2.082315.120202	L15080912-01	R-18	20/50	200		08/23/15 12:02
48	P2.082315.120433	L15080841-02	NM-17	40/50	100		08/23/15 12:04
49	P2.082315.120656	L15080842-01	DC-17		100		08/23/15 12:06
50	P2.082315.121719	L15080844-01	HH-17	40/50	500		08/23/15 12:17
51	P2.082315.121948	L15080912-01	R-18	20/50	500		08/23/15 12:19
52	P2.082315.122214	L15080841-02	NM-17	40/50	200		08/23/15 12:22
53	P2.082315.122436	L15080842-01	DC-17	40/50	500		08/23/15 12:24
54	P2.082315.122659	WG536162-20	CCV		1		08/23/15 12:26
55	P2.082315.122924	WG536162-21	CCB		1		08/23/15 12:29
56	P2.082315.123259	L15080844-01	HH-17	40/50	1000		08/23/15 12:32
57	P2.082315.123523	WG536162-22	CCV		1		08/23/15 12:35
58	P2.082315.123748	WG536162-23	CCB		1		08/23/15 12:37
59	P2.082315.125753	WG536019-02	Method/Prep Blank	40/50	1		08/23/15 12:57
60	P2.082315.130113	WG536019-03	Laboratory Control S	40/50	1		08/23/15 13:01
61	P2.082315.130339	WG535942-01	Fluid Blank 1		1		08/23/15 13:03
62	P2.082315.130701	WG535942-02	Fluid Blank 2		1		08/23/15 13:07
63	P2.082315.131020	WG536019-01	Reference Sample		1	L15080999-01	08/23/15 13:10
64	P2.082315.131243	WG536019-04	Matrix Spike	5/50	1	L15080999-01	08/23/15 13:12
65	P2.082315.131507	WG536019-05	Matrix Spike Duplica	5/50	1	L15080999-01	08/23/15 13:15
66	P2.082315.131734	WG536058-01	Post Digestion Spike		1	L15080999-01	08/23/15 13:17
67	P2.082315.131958	WG536058-02	Serial Dilution		1	L15080999-01	08/23/15 13:19
68	P2.082315.132223	WG536162-24	CCV		1		08/23/15 13:22

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Maren Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: PE-ICP2 Dataset: 082315HR.CSV
Analyst1: KHR Analyst2: N/A
Method: 6010/200.7 SOP: ME600E Rev: 18
Maintenance Log ID:

Calibration Std: STD71998 ICV Std: STD71999 Post Spike: STD71485
ICSA: STD72072 ICSAB: STD72095 Int. Std: RGT33135
CCV: STD72042 LLCCV: STD71998 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 536024, 535615, 536058

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	P2.082315.132451	WG536162-25	CCB		1		08/23/15 13:24
70	P2.082315.132809	L15080852-01	AWV 19 BAGS	5/50	1		08/23/15 13:28
71	P2.082315.133034	L15080968-01	40547-R3-01	40/50	1		08/23/15 13:30
72	P2.082315.133257	L15080992-02	50WW22FF-081815	40/50	1		08/23/15 13:32
73	P2.082315.133522	L15080992-04	50WW25FF-081815	40/50	1		08/23/15 13:35
74	P2.082315.133745	L15080992-06	50WW12FF-081815	40/50	1		08/23/15 13:37
75	P2.082315.134009	L15080992-08	50WW06FF-081815	40/50	1		08/23/15 13:40
76	P2.082315.134233	L15080992-10	50WW11FF-081815	40/50	1		08/23/15 13:42
77	P2.082315.134456	L15081045-01	27-1-9.12 W1	40/50	1		08/23/15 13:44
78	P2.082315.134719	L15081046-01	2402-107-B W2	40/50	1		08/23/15 13:47
79	P2.082315.134945	L15081047-01	45-20-17 S1	40/50	1		08/23/15 13:49
80	P2.082315.135207	WG536162-26	CCV		1		08/23/15 13:52
81	P2.082315.135432	WG536162-27	CCB		1		08/23/15 13:54
82	P2.082315.135750	WG536162-28	Low Level Continuing Calibra		1		08/23/15 13:57
83	P2.082315.140012	L15081047-02	45-20-17 S2	40/50	1		08/23/15 14:00
84	P2.082315.140235	L15081048-01	2402-113-B W1	40/50	1		08/23/15 14:02
85	P2.082315.140458	L15081050-01	2402-102 S2	40/50	1		08/23/15 14:04
86	P2.082315.140721	L15081050-02	2402-102 S1	40/50	1		08/23/15 14:07
87	P2.082315.140944	WG536162-29	CCV		1		08/23/15 14:09
88	P2.082315.141209	WG536162-30	CCB		1		08/23/15 14:12

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Maren Berry

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 23-AUG-2015
Analyst: KHR
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: PE-ICP2
Curve Workgroup: 536162
Runlog ID: 69987
Analytical Workgroups: 536024, 535615, 536058

Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	
Level 4	0904, 0997, 0998, 0992
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	KHR
Secondary Reviewer	MMB
Comments	

Primary Reviewer: 24-AUG-2015 Kym H. Rhoden

Secondary Reviewer: 24-AUG-2015 Maren Berry

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-24-2015 14:46:30

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010C

AAB#: WG536024

Login Number: L15080904

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW18FF-081715	02	08/17/15					08/20/2015	3.1	180		08/23/15	6.1	180	
50WW24FF-081715	04	08/17/15					08/20/2015	3.1	180		08/23/15	6.1	180	
50WW23FF-081715	06	08/17/15					08/20/2015	3	180		08/23/15	6	180	
50WW08FF-081715	08	08/17/15					08/20/2015	2.9	180		08/23/15	5.9	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4348428
Report generated 08/24/2015 08:26

METHOD BLANK SUMMARY

Login Number: L15080904
Blank File ID: P2.082315.103750
Prep Date: 08/20/15 11:21
Analyzed Date: 08/23/15 10:37
Analyst: KHR

Work Group: WG536024
Blank Sample ID: WG535824-02
Instrument ID: PE-ICP2
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG535824-03	P2.082315.104012	08/23/15 10:40	01
50WW18FF-081715	L15080904-02	P2.082315.111002	08/23/15 11:10	01
50WW24FF-081715	L15080904-04	P2.082315.111226	08/23/15 11:12	01
50WW23FF-081715	L15080904-06	P2.082315.111449	08/23/15 11:14	01
50WW08FF-081715	L15080904-08	P2.082315.111713	08/23/15 11:17	01

Report Name: BLANK_SUMMARY
PDF File ID: 4348429
Report generated 08/24/2015 08:31

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15080904 Prep Date: 08/20/15 11:21 Sample ID: WG535824-02
Instrument ID: PE-ICP2 Run Date: 08/23/15 10:37 Prep Method: 3015
File ID: P2.082315.103750 Analyst: KHR Method: 6010C
Workgroup (AAB#): WG536024 Matrix: Water Units: mg/L
Contract #: Cal ID: PE-ICP - 23-AUG-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Iron, Dissolved	0.0500	0.200	0.0500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4348430
24-AUG-2015 08:31

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15080904 Run Date: 08/23/2015 Sample ID: WG535824-03
Instrument ID: PE-ICP2 Run Time: 10:40 Prep Method: 3015
File ID: P2.082315.104012 Analyst: KHR Method: 6010C
Workgroup (AAB#): WG536024 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD71782 Cal ID: PE-ICP - 23-AUG-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Iron, Dissolved	2.50	2.73	109	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4348431
Report generated: 08/24/2015 08:31

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L15080904 Cal ID: PE-ICP2- Worknum: WG536024
Instrument ID: PE-ICP2 Contract #: Method: 6010C
Parent ID: WG535824-01 File ID: P2.082315.104500 Dil: 1 Matrix: WATER
Sample ID: WG535824-04 MS File ID: P2.082315.104723 Dil: 1 Units: mg/L
Sample ID: WG535824-05 MSD File ID: P2.082315.104947 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Iron	ND	20.0	21.4	107	20.0	21.2	106	0.792	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4348432
Report generated 08/24/2015 08:31

Microbac Laboratories Inc.
Serial Dilution Report

Login: L15080904 **Worknum:** WG536024
Instrument: PE-ICP2 **Method:** 6010C
Serial Dil: WG536024-02 **File ID:** P2.082315.105702 **Dil:** 5 **Units:** mg/L
Sample: L15080998-01 **File ID:** P2.082315.105214 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Iron	ND	U	ND	U		

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 50 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 50 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4348426
08/24/2015 08:31

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L15080904 **Worknum:** WG536024
Instrument ID: PE-ICP2 **Method:** 6010C
Post Spike ID: WG536024-01 **File ID:** P2.082315.105438 **Dil:** 1 **Units:** mg/L
Sample ID: L15080998-01 **File ID:** P2.082315.105214 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
IRON	2.13		0	U	2	106.3	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4348427
Report generated: 08/24/2015 08:31

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L15080904	Workgroup (AAB#):	WG536024
Analytical Method:	6010C	Instrument ID:	PE-ICP2
ICAL Worknum:	WG536162	Initial Calibration Date:	23-AUG-2015 10:12

	WG536162-01		WG536162-02		WG536162-03		WG536162-04		WG536162-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
IRON	0	142	.04	328	.08	624	4	40100	8	79300	.999984	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4348435
Report generated: 24-AUG-2015 08:31

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L15080904
Instrument ID: PE-ICP2
File ID: P2.082315.101737
Workgroup (AAB#): WG536024
Matrix: WATER

Run Date: 08/23/2015
Run Time: 10:17
Analyst: KHR
Cal ID: PE-ICP2 - 23-AUG-15

Sample ID: WG536162-07
Method: 6010C
Units: mg/L

Analytes	MDL	RDL	Concentration	Qualifier
IRON	.04	.16	.04	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4348438
Report generated 08/24/2015 08:31

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15080904
Run Date: 08/23/2015
Sample ID: WG536162-12
Instrument ID: PE-ICP2
Run Time: 10:29
Method: 6010C
File ID: P2.082315.102936
Analyst: KHR
Units: mg/L
Workgroup (AAB#): WG536024
Cal ID: PE-ICP - 23-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4348441
Report generated 08/24/2015 08:32

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15080904
Run Date: 08/23/2015
Sample ID: WG536162-14
Instrument ID: PE-ICP2
Run Time: 11:02
Method: 6010C
File ID: P2.082315.110248
Analyst: KHR
Units: mg/L
Workgroup (AAB#): WG536024
Cal ID: PE-ICP - 23-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4348441
Report generated 08/24/2015 08:32

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15080904
Run Date: 08/23/2015
Sample ID: WG536162-16
Instrument ID: PE-ICP2
Run Time: 11:32
Method: 6010C
File ID: P2.082315.113233
Analyst: KHR
Units: mg/L
Workgroup (AAB#): WG536024
Cal ID: PE-ICP - 23-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4348441
Report generated 08/24/2015 08:32

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)

(Alternate Source)

00643822

Login Number: L15080904 Run Date: 08/23/2015 Sample ID: WG536162-06

Instrument ID: PE-ICP2 Run Time: 10:15 Method: 6010C

File ID: P2.082315.101514 Analyst: KHR Units: mg/L

Workgroup (AAB#): WG536024 Cal ID: PE-ICP - 23-AUG-15

QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Iron		4	4.02	101	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008

PDF File ID: 4348436

Report generated 08/24/2015 08:31

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080904
Run Date: 08/23/2015
Sample ID: WG536162-11
Instrument ID: PE-ICP2
Run Time: 10:27
Method: 6010C
File ID: P2.082315.102708
Analyst: KHR
QC Key: DOD4
Workgroup (AAB#): WG536024
Cal ID: PE-ICP - 23-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.01	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4348440
Report generated 08/24/2015 08:32

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080904
Run Date: 08/23/2015
Sample ID: WG536162-13
Instrument ID: PE-ICP2
Run Time: 11:00
Method: 6010C
File ID: P2.082315.110023
Analyst: KHR
QC Key: DOD4
Workgroup (AAB#): WG536024
Cal ID: PE-ICP - 23-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	3.91	mg/L	97.6	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4348440
Report generated 08/24/2015 08:32

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080904
Run Date: 08/23/2015
Sample ID: WG536162-15
Instrument ID: PE-ICP2
Run Time: 11:30
Method: 6010C
File ID: P2.082315.113008
Analyst: KHR
QC Key: DOD4
Workgroup (AAB#): WG536024
Cal ID: PE-ICP - 23-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.00	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4348440
Report generated 08/24/2015 08:32

Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15080904
Run Date: 08/23/2015
Sample ID: WG536162-08
Instrument ID: PE-ICP2
Run Time: 10:20
Method: 6010C
File ID: P2.082315.102001
Analyst: KHR
QC Key: DOD4
Workgroup (AAB#): WG536024
Cal ID: PE-ICP - 23-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		0.160	0.154	mg/L	96.3	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4348442
Report generated 08/24/2015 10:12

Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15080904
Run Date: 08/23/2015
Sample ID: WG536162-17
Instrument ID: PE-ICP2
Run Time: 11:34
Method: 6010C
File ID: P2.082315.113457
Analyst: KHR
QC Key: DOD4
Workgroup (AAB#): WG536024
Cal ID: PE-ICP - 23-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		0.160	0.153	mg/L	95.7	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4348442
Report generated 08/24/2015 10:12

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L15080904
Instrument ID: PE-ICP2
Sol. A : WG536162-09 **File ID:** P2.082315.102222
Sol. AB : WG536162-10 **File ID:** P2.082315.102445

Workgroup (AAB#): WG536024
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Iron	100	99.2	99.2	100	104	104	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4348439
Report generated 08/24/2015 08:31

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15080904 **Date:** 01/02/2015
Insturment ID: PE-ICP2 **Method:** 6010C

Analyte	Wave Length	AG	AL	AS	B	BA
ALUMINUM	396.15	0	0	0.206	0	0
ANTIMONY	206.84	0	0	-0.740	0	0
ARSENIC	188.98	0	0.0709	0	0	0
BARIUM	233.53	0	0	0	0	0
BERYLLIUM	234.86	0	0	0	0	0
BORON	249.68	0	0	0	0	0
CADMIUM	228.80	0	0	5.00	0	0
CALCIUM	227.55	0	0	0	0	0
CHROMIUM	267.72	0	0	0	0	0
COBALT	228.62	0	0	0	0	0.337
COPPER	327.39	0	0	0	0	0
IRON	239.56	0	0	0	0	0
LEAD	220.35	0	-0.160	0	0	0
LITHIUM	670.78	0	0	0	0	0
MAGNESIUM	279.08	0	0	0	0	0
MANGANESE	257.61	0	0	0	0	0
MOLYBDENUM	202.03	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
POTASSIUM	766.49	0	0	0	0	0
SELENIUM	196.03	0	-0.0380	0	0	0
SILICON	251.61	0	0	0	0	0
SILVER	328.07	0	0	0	0	0
SODIUM	589.59	0	0	0	0	0
STRONTIUM	407.77	0	0	0	0	0
THALLIUM	190.80	0	0.000100	0	0	0
TIN	189.93	0	0	0	0	0
TITANIUM	334.94	0	0	0	0	0
VANADIUM	290.88	0	0	0.200	0	0.0400
ZINC	206.20	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4348434
Report generated: 08/24/2015 08:26

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15080904 **Date:** 01/02/2015
Insturment ID: PE-ICP2 **Method:** 6010C

Analyte	Wave Length	BE	CA	CD	CO	CR
ALUMINUM	396.15	0	0	0	0	0
ANTIMONY	206.84	0	0	0	0.730	8.46
ARSENIC	188.98	0	-0.0220	0	0	-0.490
BARIUM	233.53	0	0	0	-0.192	0
BERYLLIUM	234.86	0	0	0	0	-0.0220
BORON	249.68	0	0	24.1	5.90	1.50
CADMIUM	228.80	0	0	0	-3.64	0
CALCIUM	227.55	0	0	0	0	0
CHROMIUM	267.72	0	0	0	0	0
COBALT	228.62	0	0	0	0	-0.200
COPPER	327.39	0	0	0	0.280	-0.0400
IRON	239.56	0	0	0	2.77	0
LEAD	220.35	0	0	0	0.462	0.0550
LITHIUM	670.78	0	0	0	0	0
MAGNESIUM	279.08	0	0	0	0	0
MANGANESE	257.61	0	0	0	0	0
MOLYBDENUM	202.03	0	0	0	0	0
NICKEL	231.60	0	0	0	1.05	0
POTASSIUM	766.49	0	0	0	0	0
SELENIUM	196.03	0	0	0	-0.250	0
SILICON	251.61	0	0	0	0	0
SILVER	328.07	0	0	0	0	0
SODIUM	589.59	0	0	0	0	0
STRONTIUM	407.77	0	0.0319	0	0	0
THALLIUM	190.80	0	0	0	1.00	0
TIN	189.93	0	0	0	0	0
TITANIUM	334.94	0	-0.150	0	0	0.297
VANADIUM	290.88	0	0	0	0	0
ZINC	206.20	0	0	0	0	-8.16

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4348434
Report generated: 08/24/2015 08:26

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15080904 **Date:** 01/02/2015
Insturment ID: PE-ICP2 **Method:** 6010C

Analyte	Wave Length	CU	FE	K	LI	MG
ALUMINUM	396.15	0	-0.119	0	0	0
ANTIMONY	206.84	0	-0.0366	0	0	0
ARSENIC	188.98	0	-0.250	0	0	0
BARIUM	233.53	0	0.0703	0	0	0
BERYLLIUM	234.86	0	0.224	0	0	0
BORON	249.68	0	-3.19	0	0	0
CADMIUM	228.80	0	0.00436	0	0	0
CALCIUM	227.55	0	0	0	0	0
CHROMIUM	267.72	0	0.0292	0	0	0
COBALT	228.62	0	0.0262	0	0	0
COPPER	327.39	0	-0.0434	0	0.154	0
IRON	239.56	0	0	0	0	0.0200
LEAD	220.35	0	0.0327	0	0	0
LITHIUM	670.78	0	0	0	0	0
MAGNESIUM	279.08	0	0.540	0	0	0
MANGANESE	257.61	0	-0.0240	0	0	0
MOLYBDENUM	202.03	0	-0.0159	0	0	0
NICKEL	231.60	0	0	0	0	0
POTASSIUM	766.49	0	0	0	0	0
SELENIUM	196.03	0	-0.253	0	0	0
SILICON	251.61	0	0	0	0	0
SILVER	328.07	0.0710	-0.421	0	0	0
SODIUM	589.59	0	0	0	0	0
STRONTIUM	407.77	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.93	0	0	0	0	0
TITANIUM	334.94	0	0	0	0	0
VANADIUM	290.88	0	-0.0729	0	0	0.0260
ZINC	206.20	-0.200	0.00660	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4348434
Report generated: 08/24/2015 08:26

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15080904 **Date:** 01/02/2015
Insturment ID: PE-ICP2 **Method:** 6010C

Analyte	Wave Length	MN	MO	NA	NI	PB
ALUMINUM	396.15	0	69.0	0	0	0
ANTIMONY	206.84	0	-1.46	0	-0.745	0
ARSENIC	188.98	0	5.34	0	0	0
BARIUM	233.53	0	-0.750	0	0	0
BERYLLIUM	234.86	-0.100	-0.376	0	-0.00970	0
BORON	249.68	0	-1.00	0	0	0
CADMIUM	228.80	0	0.0420	0	-0.0400	0
CALCIUM	227.55	0	-10.0	0	-150	0
CHROMIUM	267.72	0	0.170	0	0	0
COBALT	228.62	0	-1.80	0	0.129	0
COPPER	327.39	0	-0.0774	0	0.150	0
IRON	239.56	0	0	0	0	0
LEAD	220.35	0.600	-0.500	0	-0.190	0
LITHIUM	670.78	0	0	0	0	0
MAGNESIUM	279.08	0	0	0	0	0
MANGANESE	257.61	0	-0.0200	0	0	0
MOLYBDENUM	202.03	-0.209	0	0	0	0
NICKEL	231.60	0	0	0	0	0
POTASSIUM	766.49	0	0	1.00	0	0
SELENIUM	196.03	0.300	0	0	-0.376	0
SILICON	251.61	0	11.1	0	0	0
SILVER	328.07	0.130	0	0	0	0
SODIUM	589.59	0	0	0	0	0
STRONTIUM	407.77	0	0	0	0	0
THALLIUM	190.80	1.00	0.00100	0	0	0
TIN	189.93	0	0	0	0	0
TITANIUM	334.94	0	0	0	0	0
VANADIUM	290.88	0	0.178	0	0	0
ZINC	206.20	0	0	0	-0.200	-0.100

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4348434
Report generated: 08/24/2015 08:26

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15080904 **Date:** 01/02/2015
Insturment ID: PE-ICP2 **Method:** 6010C

Analyte	Wave Length	SB	SE	SI	SN	SR
ALUMINUM	396.15	0	0	0	0	0
ANTIMONY	206.84	0	0	0	0	0
ARSENIC	188.98	0	0	0	0	0
BARIUM	233.53	0	0	0	0	0
BERYLLIUM	234.86	0	0	0	0	0
BORON	249.68	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	227.55	0	0	0	0	0
CHROMIUM	267.72	0	0	0	0	0
COBALT	228.62	0	0	0	0	0
COPPER	327.39	0	0.0700	0	0	0
IRON	239.56	0	0	0	0	0
LEAD	220.35	-0.0100	0	0	0	0
LITHIUM	670.78	0	0	0	0	0
MAGNESIUM	279.08	0	0	0	0	0
MANGANESE	257.61	0	0	0	0	0
MOLYBDENUM	202.03	0	0	0	0	0
NICKEL	231.60	-0.0500	0	0	0	0
POTASSIUM	766.49	0	0	0	0	0
SELENIUM	196.03	0	0	0	0	0
SILICON	251.61	0	0	0	0	0
SILVER	328.07	0	0	0	0	0.200
SODIUM	589.59	0	0	0	0	0
STRONTIUM	407.77	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.93	0	0	0	0	0
TITANIUM	334.94	0	0	0	0	0
VANADIUM	290.88	0	0	0	0	0
ZINC	206.20	-0.300	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4348434
Report generated: 08/24/2015 08:26

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15080904 **Date:** 01/02/2015
Insturment ID: PE-ICP2 **Method:** 6010C

Analyte	Wave Length	TI	TL	V	ZN
ALUMINUM	396.15	0	0	0	0
ANTIMONY	206.84	0	0	-0.920	0
ARSENIC	188.98	0	0	0.0990	0
BARIUM	233.53	0	0	0.360	0
BERYLLIUM	234.86	0	0	0	0
BORON	249.68	0	0	0	0
CADMIUM	228.80	0	0	0.0800	0
CALCIUM	227.55	0	0	0	0
CHROMIUM	267.72	0	0	-0.567	-0.0400
COBALT	228.62	2.21	0	0	0
COPPER	327.39	-1.05	0	-0.440	-0.0600
IRON	239.56	0	0	0	0
LEAD	220.35	0	0	-0.224	0
LITHIUM	670.78	0	0	0	0
MAGNESIUM	279.08	0	0	0	0
MANGANESE	257.61	0	0	0.00100	0
MOLYBDENUM	202.03	0	0	-0.480	0
NICKEL	231.60	0	0.400	0	0
POTASSIUM	766.49	0	0	0	0
SELENIUM	196.03	-0.220	0	-0.100	0
SILICON	251.61	0	0	0	0
SILVER	328.07	0	0	-2.05	0
SODIUM	589.59	0	0	0	0
STRONTIUM	407.77	0	0	0	0
THALLIUM	190.80	-8.00	0	-2.76	0
TIN	189.93	0	0	0	0
TITANIUM	334.94	0	0	0	0
VANADIUM	290.88	0	0	0	0
ZINC	206.20	0	0	-0.100	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4348434
Report generated: 08/24/2015 08:26

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L15080904 **Date:** 08/12/2015
Insturment ID: PE-ICP2 **Method:** 6010C

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	630.0
Antimony	10.00	45.0
Arsenic	10.00	36.0
Barium	10.00	72.0
Beryllium	10.00	4.5
Boron	10.00	45.0
Cadmium	10.00	4.5
Calcium	10.00	900.0
Chromium	10.00	45.0
Cobalt	10.00	45.0
Copper	10.00	90.0
Iron	10.00	900.0
Lead	10.00	162.0
Lithium	10.00	0.9
Magnesium	10.00	900.0
Manganese	10.00	18.0
Molybdenum	10.00	45.0
Nickel	10.00	90.0
Phosphorus	10.00	72.0
Potassium	10.00	90.0
Selenium	10.00	45.0
Silicon	10.00	22.5
Silver	10.00	1.8
Sodium	10.00	180.0
Strontium	10.00	4.5
Thallium	10.00	9.0
Tin	10.00	45.0
Titanium	10.00	18.0
Vanadium	10.00	90.0
Zinc	10.00	45.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4348433
Report generated: 08/24/2015 08:26

2.3.1.3 Raw Data

==========

Reprocessing Begun
Logged In Analyst: peicp2 Technique: ICP Continuous

Results Data Set (original): 082315H
Results Library (original): C:\pe\peicp2\Results\results2.mdb
Results Data Set (reprocessed): 082315HR
Results Library (reprocessed): C:\pe\peicp2\Results\results2.mdb

==========

Sequence No.: 1 Autosampler Location: 1
Sample ID: S0 Date Collected: 8/23/2015 10:03:17 AM
Analyst: Data Type: Reprocessed on 8/23/2015 10:36:38 AM
Logged In Analyst (Original) : peicp2
Initial Sample Wt: Initial Sample Vol:
Dilution: Sample Prep Vol:

Nebulizer Parameters: S0

Analyte	Back Pressure	Flow
All	200.0 kPa	0.31 L/min

Mean Data: S0

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	2491789.3	103013.44	4.13%		
YRADIAL	148197.4	3097.94	2.09%		
Ga 417.206	989959.6	45539.02	4.60%		
GaRADIAL	34997.8	694.02	1.98%		
Ag 328.068†	836.0	291.05	34.82%	[0.00]	mg/L
Al 396.153†	8.6	113.86	>999.9%	[0.00]	mg/L
As 188.979†	13.1	3.00	22.89%	[0.00]	mg/L
Ba 233.527†	315.4	88.32	28.01%	[0.00]	mg/L
Be 234.861†	-1267.6	69.51	5.48%	[0.00]	mg/L
B 249.677†	266.8	20.95	7.85%	[0.00]	mg/L
Ca 227.546†	-60.2	15.91	26.43%	[0.00]	mg/L
Cd 228.802†	9.9	7.38	74.49%	[0.00]	mg/L
Co 228.616†	-93.7	3.81	4.07%	[0.00]	mg/L
Cr 267.716†	294.0	32.89	11.19%	[0.00]	mg/L
Cu 327.393†	-311.0	152.27	48.96%	[0.00]	mg/L
Fe 239.562†	142.4	23.07	16.20%	[0.00]	mg/L
Mg 279.077†	-80.6	37.67	46.72%	[0.00]	mg/L
Mn 257.610†	1356.2	38.88	2.87%	[0.00]	mg/L
Mo 202.031†	111.6	12.10	10.84%	[0.00]	mg/L
Ni 231.604†	-107.5	24.53	22.82%	[0.00]	mg/L
Pb 220.353†	-228.2	34.07	14.93%	[0.00]	mg/L
Sb 206.836†	58.2	11.63	19.98%	[0.00]	mg/L
Se 196.026†	-3.8	10.92	288.30%	[0.00]	mg/L
Si 251.611†	1243.6	121.79	9.79%	[0.00]	mg/L
Sn 189.927†	-5.9	6.98	117.83%	[0.00]	mg/L
Ti 334.940†	2617.9	346.33	13.23%	[0.00]	mg/L
Tl 190.801†	-46.8	6.50	13.89%	[0.00]	mg/L
V 290.880†	8575.4	30.10	0.35%	[0.00]	mg/L
Zn 206.200†	103.0	11.65	11.31%	[0.00]	mg/L
K 766.490†	34.7	91.19	262.52%	[0.00]	mg/L
Na 589.592†	677.7	238.81	35.24%	[0.00]	mg/L
Sr 407.771†	747.9	56.86	7.60%	[0.00]	mg/L
Li 670.784†	424.3	117.08	27.59%	[0.00]	mg/L
P 214.914†	-105.6	13.87	13.14%	[0.00]	mg/L

==========

Sequence No.: 2 Autosampler Location: 2
Sample ID: S1 Date Collected: 8/23/2015 10:05:39 AM
Analyst: Data Type: Reprocessed on 8/23/2015 10:36:39 AM
Logged In Analyst (Original) : peicp2
Initial Sample Wt: Initial Sample Vol:
Dilution: Sample Prep Vol:

Nebulizer Parameters: S1

Approved: August 24, 2015

Analyte	Back Pressure	Flow
All	200.0 kPa	0.31 L/min

Mean Data: S1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	2504632.4	93814.66	3.75%		
YRADIAL	148470.1	2170.57	1.46%		
Ga 417.206	995914.7	39547.64	3.97%		
GaRADIAL	35098.8	599.11	1.71%		
Ag 328.068†	575.3	66.10	11.49%	[0.0032]	mg/L
Al 396.153†	226.5	60.02	26.50%	[0.08]	mg/L
Ba 233.527†	1116.6	57.03	5.11%	[0.008]	mg/L
Be 234.861†	470.6	14.51	3.08%	[0.0004]	mg/L
Cd 228.802†	10.4	6.61	63.39%	[0.0004]	mg/L
Co 228.616†	71.0	8.99	12.66%	[0.0016]	mg/L
Cr 267.716†	593.8	48.03	8.09%	[0.004]	mg/L
Cu 327.393†	666.7	126.66	19.00%	[0.004]	mg/L
Fe 239.562†	328.2	15.17	4.62%	[0.032]	mg/L
Mg 279.077†	224.4	29.66	13.22%	[0.08]	mg/L
Mn 257.610†	3020.8	204.91	6.78%	[0.004]	mg/L
Mo 202.031†	273.5	12.89	4.71%	[0.008]	mg/L
Ni 231.604†	298.8	46.08	15.42%	[0.004]	mg/L
Pb 220.353†	86.7	21.21	24.47%	[0.004]	mg/L
Sb 206.836†	19.3	5.27	27.33%	[0.0096]	mg/L
Si 251.611†	1336.5	151.08	11.30%	[0.04]	mg/L
Sn 189.927†	84.6	2.75	3.25%	[0.008]	mg/L
Ti 334.940†	6040.0	245.07	4.06%	[0.008]	mg/L
V 290.880†	1133.9	157.28	13.87%	[0.008]	mg/L
Zn 206.200†	677.1	34.79	5.14%	[0.008]	mg/L
K 766.490†	407.6	38.76	9.51%	[0.4]	mg/L
Na 589.592†	2615.0	187.65	7.18%	[0.4]	mg/L
Sr 407.771†	6301.7	114.13	1.81%	[0.008]	mg/L
Li 670.784†	244.4	72.45	29.64%	[0.008]	mg/L
P 214.914†	171.1	8.91	5.21%	[0.08]	mg/L

Sequence No.: 3 **Autosampler Location: 3**
Sample ID: S2 **Date Collected: 8/23/2015 10:08:00 AM**
Analyst: **Data Type: Reprocessed on 8/23/2015 10:36:40 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: S2

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: S2

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	2436866.0	165586.97	6.80%		
YRADIAL	152620.2	1107.13	0.73%		
Ga 417.206	964302.5	72784.87	7.55%		
GaRADIAL	35864.5	188.81	0.53%		
Ag 328.068†	1501.7	99.65	6.64%	[0.0064]	mg/L
Al 396.153†	323.6	15.07	4.66%	[0.16]	mg/L
As 188.979†	28.4	2.79	9.83%	[0.0064]	mg/L
Ba 233.527†	2649.9	261.55	9.87%	[0.016]	mg/L
Be 234.861†	985.8	9.37	0.95%	[0.0008]	mg/L
B 249.677†	572.9	27.96	4.88%	[0.008]	mg/L
Ca 227.546†	30.6	9.06	29.65%	[0.16]	mg/L
Cd 228.802†	35.8	0.25	0.69%	[0.0008]	mg/L
Co 228.616†	140.2	4.06	2.90%	[0.0032]	mg/L
Cr 267.716†	1208.7	62.84	5.20%	[0.008]	mg/L
Cu 327.393†	1572.2	272.31	17.32%	[0.008]	mg/L
Fe 239.562†	624.1	40.22	6.44%	[0.064]	mg/L
Mg 279.077†	498.0	20.20	4.06%	[0.16]	mg/L
Mn 257.610†	6300.5	357.62	5.68%	[0.008]	mg/L

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Mo 202.031†	580.8	53.34	9.18%	[0.016]	mg/L
Ni 231.604†	759.3	9.91	1.30%	[0.008]	mg/L
Pb 220.353†	126.6	20.25	15.99%	[0.008]	mg/L
Sb 206.836†	51.7	7.47	14.44%	[0.0192]	mg/L
Se 196.026†	2.3	5.20	227.33%	[0.0062]	mg/L
Si 251.611†	3150.7	409.88	13.01%	[0.08]	mg/L
Sn 189.927†	200.6	10.77	5.37%	[0.016]	mg/L
Ti 334.940†	12510.6	319.54	2.55%	[0.016]	mg/L
Tl 190.801†	10.2	8.26	81.30%	[0.008]	mg/L
V 290.880†	2644.6	389.99	14.75%	[0.016]	mg/L
Zn 206.200†	1511.1	64.46	4.27%	[0.016]	mg/L
K 766.490†	872.6	74.60	8.55%	[0.8]	mg/L
Na 589.592†	5576.5	138.35	2.48%	[0.8]	mg/L
Sr 407.771†	12346.1	183.43	1.49%	[0.016]	mg/L
Li 670.784†	605.9	96.98	16.00%	[0.016]	mg/L
P 214.914†	363.0	24.64	6.79%	[0.16]	mg/L

Sequence No.: 4 **Autosampler Location: 4**
Sample ID: S3 **Date Collected: 8/23/2015 10:10:22 AM**
Analyst: **Data Type: Reprocessed on 8/23/2015 10:36:41 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: S3

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: S3

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	2452375.0	105198.36	4.29%		
YRADIAL	153265.9	365.50	0.24%		
Ga 417.206	925073.6	41433.16	4.48%		
GaRADIAL	37244.9	153.90	0.41%		
Ag 328.068†	108119.5	1418.60	1.31%	[0.40]	mg/L
Al 396.153†	21629.2	83.45	0.39%	[10.00]	mg/L
As 188.979†	1365.7	52.40	3.84%	[0.40]	mg/L
Ba 233.527†	152437.1	2249.66	1.48%	[1.00]	mg/L
Be 234.861†	66178.8	1048.56	1.58%	[0.05]	mg/L
B 249.677†	37356.8	728.59	1.95%	[0.50]	mg/L
Ca 227.546†	3130.5	95.77	3.06%	[10.00]	mg/L
Cd 228.802†	1950.3	74.05	3.80%	[0.05]	mg/L
Co 228.616†	9518.2	277.59	2.92%	[0.20]	mg/L
Cr 267.716†	71779.4	887.69	1.24%	[0.50]	mg/L
Cu 327.393†	88988.7	743.08	0.84%	[0.50]	mg/L
Fe 239.562†	40120.9	260.54	0.65%	[4.00]	mg/L
Mg 279.077†	19592.8	30.85	0.16%	[10.00]	mg/L
Mn 257.610†	372030.2	4262.07	1.15%	[0.50]	mg/L
Mo 202.031†	35190.3	472.35	1.34%	[1.00]	mg/L
Ni 231.604†	38431.7	662.82	1.72%	[0.50]	mg/L
Pb 220.353†	8077.8	237.73	2.94%	[0.50]	mg/L
Sb 206.836†	3277.6	91.36	2.79%	[1.20]	mg/L
Se 196.026†	441.9	24.82	5.62%	[0.40]	mg/L
Si 251.611†	211570.5	2223.27	1.05%	[5.00]	mg/L
Sn 189.927†	12223.3	339.44	2.78%	[1.00]	mg/L
Ti 334.940†	791110.0	8298.50	1.05%	[1.00]	mg/L
Tl 190.801†	1303.3	36.66	2.81%	[0.50]	mg/L
V 290.880†	169341.9	1914.89	1.13%	[1.00]	mg/L
Zn 206.200†	86695.2	1673.91	1.93%	[1.00]	mg/L
K 766.490†	51920.0	220.92	0.43%	[50.00]	mg/L
Na 589.592†	321042.7	4206.63	1.31%	[50.00]	mg/L
Sr 407.771†	783654.2	14600.75	1.86%	[1.00]	mg/L
Li 670.784†	33506.3	148.82	0.44%	[1.00]	mg/L
P 214.914†	22785.9	657.28	2.88%	[10]	mg/L

Sequence No.: 5 **Autosampler Location: 5**
Sample ID: S4 **Date Collected: 8/23/2015 10:12:46 AM**

Approved: August 24, 2015

Analyst:
Logged In Analyst (Original) : peicp2
Initial Sample Wt:
Dilution:

Data Type: Reprocessed on 8/23/2015 10:36:41 AM
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: S4

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: S4

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Calib Conc.	Units
Y 371.029	2429218.6	31752.43	1.31%		
YRADIAL	149721.1	6668.40	4.45%		
Ga 417.206	893085.5	17627.56	1.97%		
GaRADIAL	36976.2	1263.12	3.42%		
Ag 328.068†	222034.7	2179.72	0.98%	[0.80]	mg/L
Al 396.153†	42715.0	351.65	0.82%	[20.00]	mg/L
As 188.979†	2823.7	28.36	1.00%	[0.80]	mg/L
Ba 233.527†	304960.7	241.33	0.08%	[2.00]	mg/L
Be 234.861†	135741.6	1110.23	0.82%	[0.10]	mg/L
B 249.677†	77581.6	934.75	1.20%	[1.00]	mg/L
Ca 227.546†	6496.4	57.03	0.88%	[20.00]	mg/L
Cd 228.802†	3984.9	32.29	0.81%	[0.10]	mg/L
Co 228.616†	18845.1	178.39	0.95%	[0.40]	mg/L
Cr 267.716†	143582.6	454.24	0.32%	[1.00]	mg/L
Cu 327.393†	181928.6	1981.94	1.09%	[1.00]	mg/L
Fe 239.562†	79324.4	525.46	0.66%	[8.00]	mg/L
Mg 279.077†	38828.2	221.91	0.57%	[20.00]	mg/L
Mn 257.610†	740830.2	474.62	0.06%	[1.00]	mg/L
Mo 202.031†	70914.5	216.94	0.31%	[2.00]	mg/L
Ni 231.604†	76235.6	202.49	0.27%	[1.00]	mg/L
Pb 220.353†	15965.7	143.36	0.90%	[1.00]	mg/L
Sb 206.836†	6724.9	74.24	1.10%	[2.40]	mg/L
Se 196.026†	910.0	7.07	0.78%	[0.80]	mg/L
Si 251.611†	431584.8	3292.58	0.76%	[10.00]	mg/L
Sn 189.927†	24119.5	260.40	1.08%	[2.00]	mg/L
Ti 334.940†	1594807.1	4045.53	0.25%	[2.00]	mg/L
Tl 190.801†	2565.0	25.80	1.01%	[1.00]	mg/L
V 290.880†	339670.5	402.40	0.12%	[2.00]	mg/L
Zn 206.200†	171757.6	378.59	0.22%	[2.00]	mg/L
K 766.490†	103172.6	1171.40	1.14%	[100.00]	mg/L
Na 589.592†	635770.8	18708.26	2.94%	[100.00]	mg/L
Sr 407.771†	1597682.3	62669.78	3.92%	[2.00]	mg/L
Li 670.784†	64529.6	568.00	0.88%	[2.00]	mg/L
P 214.914†	44536.7	395.21	0.89%	[20]	mg/L

Calibration Summary

Analyte	Stds.	Equation	Intercept	Slope	Curvature	Corr. Coef.	Reslope
Ag 328.068	4	Lin, Calc Int	-545.1	276900	0.00000	0.999924	
Al 396.153	4	Lin, Calc Int	45.6	2138	0.00000	0.999981	
As 188.979	3	Wt. Lin	6.2	3461	0.00000	0.999838	
Ba 233.527	4	Lin, Calc Int	27.9	152500	0.00000	1.000000	
Be 234.861	4	Lin, Calc Int	-264.9	1354000	0.00000	0.999928	
B 249.677	3	Lin, Calc Int	-282.6	77350	0.00000	0.999819	
Ca 227.546	3	Lin, Calc Int	-31.1	324.3	0.00000	0.999836	
Cd 228.802	4	Lin, Calc Int	-5.8	39750	0.00000	0.999946	
Co 228.616	4	Lin, Calc Int	7.2	47190	0.00000	0.999987	
Cr 267.716	4	Lin, Calc Int	23.4	143600	0.00000	1.000000	
Cu 327.393	4	Lin, Calc Int	-228.9	181400	0.00000	0.999943	
Fe 239.562	4	Lin, Calc Int	57.3	9930	0.00000	0.999984	
Mg 279.077	4	Lin, Calc Int	102.5	1939	0.00000	0.999987	
Mn 257.610	4	Lin, Calc Int	336.1	741100	0.00000	0.999998	
Mo 202.031	4	Lin, Calc Int	-32.3	35420	0.00000	0.999993	
Ni 231.604	4	Lin, Calc Int	83.9	76260	0.00000	0.999991	
Pb 220.353	4	Lin, Calc Int	18.6	15980	0.00000	0.999984	
Sb 206.836	4	Lin, Calc Int	-13.6	2795	0.00000	0.999927	
Se 196.026	3	Wt. Lin	-4.7	1130	0.00000	0.999928	

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Si 251.611	4	Lin, Calc Int	-742.8	43080	0.00000	0.999957
Sn 189.927	4	Lin, Calc Int	19.0	12080	0.00000	0.999978
Ti 334.940	4	Lin, Calc Int	-968.3	796700	0.00000	0.999993
Tl 190.801	3	Lin, Calc Int	-0.9	2574	0.00000	0.999950
V 290.880	4	Lin, Calc Int	-154.8	169800	0.00000	0.999999
Zn 206.200	4	Lin, Calc Int	141.4	85960	0.00000	0.999990
K 766.490	4	Non Lin, Calc Int	8.7	1045	-0.13199	1.000000
Na 589.592	4	Non Lin, Calc Int	137.2	6480	-1.23831	1.000000
Sr 407.771	4	Lin, Calc Int	-2056.7	797000	0.00000	0.999958
Li 670.784	4	Lin, Calc Int	178.4	32410	0.00000	0.999829
P 214.914	4	Lin, Calc Int	64.4	2233	0.00000	0.999936

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Sequence No.: 6 **Autosampler Location: 11**
Sample ID: ICV **Date Collected: 8/23/2015 10:15:14 AM**
Analyst: **Data Type: Reprocessed on 8/23/2015 10:36:42 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: ICV

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: ICV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2559886.5						99205.15	3.88%
YRADIAL	153750.2						2266.54	1.47%
Ga 417.206	963806.7						38150.82	3.96%
GaRADIAL	37306.7						515.34	1.38%
Ag 328.068†	108754.4	0.398	mg/L	0.0047	0.398	mg/L	0.0047	1.18%
QC value within limits for Ag 328.068 Recovery = 99.54%								
Al 396.153†	22083.5	10.3	mg/L	0.08	10.3	mg/L	0.08	0.73%
QC value within limits for Al 396.153 Recovery = 102.68%								
As 188.979†	1350.8	0.384	mg/L	0.0107	0.384	mg/L	0.0107	2.80%
QC value within limits for As 188.979 Recovery = 95.96%								
Ba 233.527†	156605.9	1.03	mg/L	0.003	1.03	mg/L	0.003	0.30%
QC value within limits for Ba 233.527 Recovery = 102.73%								
Be 234.861†	66871.6	0.0491	mg/L	0.00042	0.0491	mg/L	0.00042	0.85%
QC value within limits for Be 234.861 Recovery = 98.20%								
B 249.677†	38288.2	0.512	mg/L	0.0021	0.512	mg/L	0.0021	0.41%
QC value within limits for B 249.677 Recovery = 102.36%								
Ca 227.546†	3035.3	9.53	mg/L	0.225	9.53	mg/L	0.225	2.36%
QC value within limits for Ca 227.546 Recovery = 95.25%								
Cd 228.802†	1904.9	0.0467	mg/L	0.00117	0.0467	mg/L	0.00117	2.51%
QC value less than the lower limit for Cd 228.802 Recovery = 93.47%								
Co 228.616†	9248.9	0.195	mg/L	0.0035	0.195	mg/L	0.0035	1.78%
QC value within limits for Co 228.616 Recovery = 97.47%								
Cr 267.716†	73037.1	0.509	mg/L	0.0017	0.509	mg/L	0.0017	0.33%
QC value within limits for Cr 267.716 Recovery = 101.82%								
Cu 327.393†	90551.1	0.502	mg/L	0.0028	0.502	mg/L	0.0028	0.56%
QC value within limits for Cu 327.393 Recovery = 100.40%								
Fe 239.562†	39999.6	4.02	mg/L	0.046	4.02	mg/L	0.046	1.16%
QC value within limits for Fe 239.562 Recovery = 100.54%								
Mg 279.077†	19858.9	10.2	mg/L	0.06	10.2	mg/L	0.06	0.58%
QC value within limits for Mg 279.077 Recovery = 101.88%								
Mn 257.610†	375880.9	0.507	mg/L	0.0009	0.507	mg/L	0.0009	0.17%
QC value within limits for Mn 257.610 Recovery = 101.34%								
Mo 202.031†	33583.9	0.950	mg/L	0.0056	0.950	mg/L	0.0056	0.59%
QC value less than the lower limit for Mo 202.031 Recovery = 94.98%								
Ni 231.604†	39112.5	0.511	mg/L	0.0004	0.511	mg/L	0.0004	0.08%
QC value within limits for Ni 231.604 Recovery = 102.29%								
Pb 220.353†	7901.5	0.496	mg/L	0.0084	0.496	mg/L	0.0084	1.68%
QC value within limits for Pb 220.353 Recovery = 99.16%								
Sb 206.836†	3101.2	1.11	mg/L	0.024	1.11	mg/L	0.024	2.11%
QC value less than the lower limit for Sb 206.836 Recovery = 92.77%								
Se 196.026†	423.4	0.380	mg/L	0.0051	0.380	mg/L	0.0051	1.35%
QC value within limits for Se 196.026 Recovery = 95.03%								
Si 251.611†	214653.7	4.99	mg/L	0.055	4.99	mg/L	0.055	1.10%

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QC value within limits for Si 251.611 Recovery = 99.79%
Sn 189.927† 11980.5 0.990 mg/L 0.0133 0.990 mg/L 0.0133 1.35%
QC value within limits for Sn 189.927 Recovery = 99.01%
Ti 334.940† 793711.2 0.998 mg/L 0.0007 0.998 mg/L 0.0007 0.07%
QC value within limits for Ti 334.940 Recovery = 99.79%
Tl 190.801† 1285.3 0.510 mg/L 0.0055 0.510 mg/L 0.0055 1.07%
QC value within limits for Tl 190.801 Recovery = 101.93%
V 290.880† 169567.3 0.999 mg/L 0.0024 0.999 mg/L 0.0024 0.24%
QC value within limits for V 290.880 Recovery = 99.95%
Zn 206.200† 88059.1 1.03 mg/L 0.005 1.03 mg/L 0.005 0.45%
QC value within limits for Zn 206.200 Recovery = 102.77%
K 766.490† 51792.1 49.8 mg/L 0.22 49.8 mg/L 0.22 0.45%
QC value within limits for K 766.490 Recovery = 99.65%
Na 589.592† 314347.9 48.9 mg/L 0.74 48.9 mg/L 0.74 1.50%
QC value within limits for Na 589.592 Recovery = 97.89%
Sr 407.771† 761248.8 0.957 mg/L 0.0141 0.957 mg/L 0.0141 1.47%
QC value within limits for Sr 407.771 Recovery = 95.74%
Li 670.784† 33587.5 1.03 mg/L 0.007 1.03 mg/L 0.007 0.69%
QC value within limits for Li 670.784 Recovery = 103.10%
P 214.914† 22036.9 9.84 mg/L 0.149 9.84 mg/L 0.149 1.52%
QC value within limits for P 214.914 Recovery = 98.39%
QC Failed. Continue with analysis.

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Sequence No.: 7 **Autosampler Location: 1**
Sample ID: ICB **Date Collected: 8/23/2015 10:17:37 AM**
Analyst: **Data Type: Reprocessed on 8/23/2015 10:36:43 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: ICB

Analyte	Back Pressure	Flow
All	200.0 kPa	0.31 L/min

Mean Data: ICB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2443044.8						87393.74	3.58%
YRADIAL	145895.9						5351.45	3.67%
Ga 417.206	974087.3						42735.32	4.39%
GaRADIAL	34459.3						1138.67	3.30%
Ag 328.068†	-501.5	0.00016	mg/L	0.000424	0.00016	mg/L	0.000424	269.29%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	8.7	-0.0173	mg/L	0.02095	-0.0173	mg/L	0.02095	120.79%
QC value within limits for Al 396.153 Recovery = Not calculated								
As 188.979†	8.2	0.00056	mg/L	0.001007	0.00056	mg/L	0.001007	179.01%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	-81.2	-0.00071	mg/L	0.000101	-0.00071	mg/L	0.000101	14.12%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 234.861†	-50.3	0.00016	mg/L	0.000057	0.00016	mg/L	0.000057	35.27%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	473.9	0.00976	mg/L	0.001527	0.00976	mg/L	0.001527	15.64%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	-13.5	0.0542	mg/L	0.04718	0.0542	mg/L	0.04718	87.01%
QC value within limits for Ca 227.546 Recovery = Not calculated								
Cd 228.802†	-3.0	0.00006	mg/L	0.000257	0.00006	mg/L	0.000257	396.83%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	-25.8	-0.00070	mg/L	0.000358	-0.00070	mg/L	0.000358	51.24%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	43.6	0.00014	mg/L	0.000932	0.00014	mg/L	0.000932	659.43%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	251.2	0.00265	mg/L	0.001013	0.00265	mg/L	0.001013	38.23%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	-3.2	-0.00610	mg/L	0.005581	-0.00610	mg/L	0.005581	91.56%
QC value within limits for Fe 239.562 Recovery = Not calculated								
Mg 279.077†	103.5	0.00053	mg/L	0.004005	0.00053	mg/L	0.004005	750.32%
QC value within limits for Mg 279.077 Recovery = Not calculated								
Mn 257.610†	149.6	-0.00025	mg/L	0.000084	-0.00025	mg/L	0.000084	33.40%
QC value within limits for Mn 257.610 Recovery = Not calculated								

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Mo 202.031†	23.1	0.00156	mg/L	0.000367	0.00156	mg/L	0.000367	23.51%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	-18.4	-0.00134	mg/L	0.000173	-0.00134	mg/L	0.000173	12.88%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	1.9	-0.00105	mg/L	0.000070	-0.00105	mg/L	0.000070	6.69%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	5.4	0.00682	mg/L	0.003782	0.00682	mg/L	0.003782	55.48%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	-12.7	-0.00705	mg/L	0.003858	-0.00705	mg/L	0.003858	54.71%
QC value within limits for Se 196.026 Recovery = Not calculated								
Si 251.611†	-262.8	0.0111	mg/L	0.00130	0.0111	mg/L	0.00130	11.65%
QC value within limits for Si 251.611 Recovery = Not calculated								
Sn 189.927†	88.7	0.00576	mg/L	0.001319	0.00576	mg/L	0.001319	22.89%
QC value within limits for Sn 189.927 Recovery = Not calculated								
Ti 334.940†	-9.7	0.00121	mg/L	0.000112	0.00121	mg/L	0.000112	9.26%
QC value within limits for Ti 334.940 Recovery = Not calculated								
Tl 190.801†	3.7	0.00179	mg/L	0.002775	0.00179	mg/L	0.002775	154.89%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 290.880†	101.0	0.00150	mg/L	0.001784	0.00150	mg/L	0.001784	118.55%
QC value within limits for V 290.880 Recovery = Not calculated								
Zn 206.200†	29.1	-0.00130	mg/L	0.000185	-0.00130	mg/L	0.000185	14.16%
QC value within limits for Zn 206.200 Recovery = Not calculated								
K 766.490†	56.7	0.0459	mg/L	0.12063	0.0459	mg/L	0.12063	262.98%
QC value within limits for K 766.490 Recovery = Not calculated								
Na 589.592†	357.4	0.0340	mg/L	0.02401	0.0340	mg/L	0.02401	70.63%
QC value within limits for Na 589.592 Recovery = Not calculated								
Sr 407.771†	-221.2	0.00230	mg/L	0.000051	0.00230	mg/L	0.000051	2.21%
QC value within limits for Sr 407.771 Recovery = Not calculated								
Li 670.784†	32.1	-0.00452	mg/L	0.005521	-0.00452	mg/L	0.005521	122.28%
QC value within limits for Li 670.784 Recovery = Not calculated								
P 214.914†	18.7	-0.0204	mg/L	0.00328	-0.0204	mg/L	0.00328	16.06%
QC value within limits for P 214.914 Recovery = Not calculated								

All analyte(s) passed QC.

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Sequence No.: 8 **Autosampler Location: 14**
Sample ID: LLICV **Date Collected: 8/23/2015 10:20:01 AM**
Analyst: KHR **Data Type: Reprocessed on 8/23/2015 10:36:44 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: LLICV

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: LLICV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2484428.3						113102.93	4.55%
YRADIAL	152279.3						2136.74	1.40%
Ga 417.206	990914.4						48650.62	4.91%
GaRADIAL	36174.0						352.95	0.98%
Ag 328.068†	3846.2	0.0160	mg/L	0.00125	0.0160	mg/L	0.00125	7.82%
Al 396.153†	954.0	0.423	mg/L	0.0236	0.423	mg/L	0.0236	5.58%
As 188.979†	63.9	0.0165	mg/L	0.00053	0.0165	mg/L	0.00053	3.22%
Ba 233.527†	6008.7	0.0392	mg/L	0.00128	0.0392	mg/L	0.00128	3.27%
Be 234.861†	2494.8	0.00202	mg/L	0.000040	0.00202	mg/L	0.000040	1.96%
B 249.677†	1599.3	0.0248	mg/L	0.00093	0.0248	mg/L	0.00093	3.73%
Ca 227.546†	98.1	0.401	mg/L	0.0376	0.401	mg/L	0.0376	9.37%
Cd 228.802†	77.3	0.00203	mg/L	0.000118	0.00203	mg/L	0.000118	5.79%
Co 228.616†	363.7	0.00752	mg/L	0.000122	0.00752	mg/L	0.000122	1.62%
Cr 267.716†	2978.3	0.0206	mg/L	0.00069	0.0206	mg/L	0.00069	3.35%
Cu 327.393†	3441.8	0.0203	mg/L	0.00015	0.0203	mg/L	0.00015	0.74%
Fe 239.562†	1587.1	0.154	mg/L	0.0025	0.154	mg/L	0.0025	1.61%
Mg 279.077†	899.7	0.411	mg/L	0.0214	0.411	mg/L	0.0214	5.21%
Mn 257.610†	15547.4	0.0205	mg/L	0.00068	0.0205	mg/L	0.00068	3.33%
Mo 202.031†	1387.4	0.0401	mg/L	0.00161	0.0401	mg/L	0.00161	4.01%
Ni 231.604†	1582.0	0.0196	mg/L	0.00065	0.0196	mg/L	0.00065	3.29%
Pb 220.353†	327.2	0.0194	mg/L	0.00179	0.0194	mg/L	0.00179	9.22%

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Sb 206.836†	121.6	0.0483 mg/L	0.00284	0.0483 mg/L	0.00284	5.88%
Se 196.026†	8.8	0.0120 mg/L	0.00303	0.0120 mg/L	0.00303	25.31%
Si 251.611†	7755.5	0.197 mg/L	0.0076	0.197 mg/L	0.0076	3.87%
Sn 189.927†	531.6	0.0424 mg/L	0.00117	0.0424 mg/L	0.00117	2.77%
Ti 334.940†	31616.4	0.0409 mg/L	0.00017	0.0409 mg/L	0.00017	0.41%
Tl 190.801†	51.7	0.0209 mg/L	0.00184	0.0209 mg/L	0.00184	8.84%
V 290.880†	6646.2	0.0400 mg/L	0.00095	0.0400 mg/L	0.00095	2.38%
Zn 206.200†	3678.1	0.0413 mg/L	0.00129	0.0413 mg/L	0.00129	3.12%
K 766.490†	2203.8	2.10 mg/L	0.156	2.10 mg/L	0.156	7.45%
Na 589.592†	13850.8	2.12 mg/L	0.031	2.12 mg/L	0.031	1.47%
Sr 407.771†	31720.9	0.0424 mg/L	0.00011	0.0424 mg/L	0.00011	0.26%
Li 670.784†	1371.0	0.0368 mg/L	0.00253	0.0368 mg/L	0.00253	6.89%
P 214.914†	864.7	0.358 mg/L	0.0161	0.358 mg/L	0.0161	4.48%

Sequence No.: 9 **Autosampler Location: 12**
Sample ID: ICSA **Date Collected: 8/23/2015 10:22:22 AM**
Analyst: **Data Type: Reprocessed on 8/23/2015 10:36:45 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: ICSA

Analyte	Back Pressure	Flow
All	200.0 kPa	0.31 L/min

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2383159.5						93552.87	3.93%
YRADIAL	144610.9						1204.41	0.83%
Ga 417.206	883137.7						36940.71	4.18%
GaRADIAL	35656.4						255.55	0.72%
Ag 328.068†	-11933.7	0.00033	mg/L	0.001341	0.00033	mg/L	0.001341	410.66%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	556295.0	260	mg/L	1.3	260	mg/L	1.3	0.51%
QC value within limits for Al 396.153 Recovery = 104.05%								
As 188.979†	-4.6	0.00179	mg/L	0.007257	0.00179	mg/L	0.007257	406.39%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	549.9	0.00014	mg/L	0.000087	0.00014	mg/L	0.000087	61.65%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 234.861†	30282.1	0.00003	mg/L	0.000380	0.00003	mg/L	0.000380	>999.9%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	-30808.4	-0.0176	mg/L	0.00514	-0.0176	mg/L	0.00514	29.28%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	88019.8	271	mg/L	3.1	271	mg/L	3.1	1.16%
QC value within limits for Ca 227.546 Recovery = 108.59%								
Cd 228.802†	2.4	0.00018	mg/L	0.000244	0.00018	mg/L	0.000244	134.16%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	-9.0	-0.00291	mg/L	0.000364	-0.00291	mg/L	0.000364	12.50%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	248.6	0.00211	mg/L	0.000222	0.00211	mg/L	0.000222	10.48%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	-1434.9	0.00000	mg/L	0.001547	0.00000	mg/L	0.001547	>999.9%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	985488.2	99.2	mg/L	0.89	99.2	mg/L	0.89	0.90%
QC value within limits for Fe 239.562 Recovery = 99.23%								
Mg 279.077†	480602.6	248	mg/L	2.3	248	mg/L	2.3	0.93%
QC value within limits for Mg 279.077 Recovery = 99.11%								
Mn 257.610†	-480.4	-0.00285	mg/L	0.000288	-0.00285	mg/L	0.000288	10.10%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	-178.9	0.00196	mg/L	0.001002	0.00196	mg/L	0.001002	50.99%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	-91.1	-0.00229	mg/L	0.000107	-0.00229	mg/L	0.000107	4.67%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	-802.8	0.00284	mg/L	0.000595	0.00284	mg/L	0.000595	20.96%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	-13.3	0.00372	mg/L	0.006322	0.00372	mg/L	0.006322	169.91%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	-29.0	0.00005	mg/L	0.005748	0.00005	mg/L	0.005748	>999.9%

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QC value within limits for Se 196.026 Recovery = Not calculated
Si 251.611† 2639.3 0.0786 mg/L 0.00278 0.0786 mg/L 0.00278 3.54%
QC value within limits for Si 251.611 Recovery = Not calculated
Sn 189.927† -146.0 -0.0137 mg/L 0.00218 -0.0137 mg/L 0.00218 15.94%
QC value within limits for Sn 189.927 Recovery = Not calculated
Ti 334.940† -16128.7 -0.00160 mg/L 0.000623 -0.00160 mg/L 0.000623 38.97%
QC value within limits for Ti 334.940 Recovery = Not calculated
Tl 190.801† -53.2 -0.0205 mg/L 0.00519 -0.0205 mg/L 0.00519 25.26%
QC value within limits for Tl 190.801 Recovery = Not calculated
V 290.880† -2543.1 -0.00403 mg/L 0.001959 -0.00403 mg/L 0.001959 48.59%
QC value within limits for V 290.880 Recovery = Not calculated
Zn 206.200† 292.3 0.00416 mg/L 0.000194 0.00416 mg/L 0.000194 4.65%
QC value within limits for Zn 206.200 Recovery = Not calculated
K 766.490† -315.2 -0.310 mg/L 0.0725 -0.310 mg/L 0.0725 23.37%
QC value within limits for K 766.490 Recovery = Not calculated
Na 589.592† 897.3 0.117 mg/L 0.0075 0.117 mg/L 0.0075 6.35%
QC value within limits for Na 589.592 Recovery = Not calculated
Sr 407.771† 1776.6 -0.00385 mg/L 0.000056 -0.00385 mg/L 0.000056 1.46%
QC value within limits for Sr 407.771 Recovery = Not calculated
Li 670.784† 192.8 0.00044 mg/L 0.001338 0.00044 mg/L 0.001338 302.71%
QC value within limits for Li 670.784 Recovery = Not calculated
P 214.914† 219.4 0.0694 mg/L 0.00395 0.0694 mg/L 0.00395 5.69%
QC value within limits for P 214.914 Recovery = Not calculated
All analyte(s) passed QC.

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Sequence No.: 10 **Autosampler Location: 13**
Sample ID: ICSAB **Date Collected: 8/23/2015 10:24:45 AM**
Analyst: **Data Type: Reprocessed on 8/23/2015 10:36:46 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: ICSAB

Analyte	**Back Pressure**	**Flow**
All	201.0 kPa	0.31 L/min

Mean Data: ICSAB

Analyte	**Mean Corrected Intensity**	**Calib. Conc.**	**Units**	**Std.Dev.**	**Sample Conc.**	**Units**	**Std.Dev.**	**RSD**
Y 371.029	2370748.3						63393.46	2.67%
YRADIAL	146341.3						3780.57	2.58%
Ga 417.206	876315.6						24358.36	2.78%
GaRADIAL	35842.5						680.93	1.90%
Ag 328.068†	135757.8	0.536	mg/L	0.0058	0.536	mg/L	0.0058	1.09%
QC value within limits for Ag 328.068 Recovery = 107.23%								
Al 396.153†	579110.5	271	mg/L	3.2	271	mg/L	3.2	1.20%
QC value within limits for Al 396.153 Recovery = 108.32%								
As 188.979†	855.4	0.251	mg/L	0.0055	0.251	mg/L	0.0055	2.19%
QC value within limits for As 188.979 Recovery = 100.30%								
Ba 233.527†	39228.7	0.254	mg/L	0.0020	0.254	mg/L	0.0020	0.78%
QC value within limits for Ba 233.527 Recovery = 101.46%								
Be 234.861†	387761.0	0.263	mg/L	0.0010	0.263	mg/L	0.0010	0.39%
QC value within limits for Be 234.861 Recovery = 105.21%								
B 249.677†	-31857.6	-0.0264	mg/L	0.00500	-0.0264	mg/L	0.00500	18.91%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	90992.0	281	mg/L	1.6	281	mg/L	1.6	0.56%
QC value within limits for Ca 227.546 Recovery = 112.28%								
Cd 228.802†	19416.3	0.488	mg/L	0.0132	0.488	mg/L	0.0132	2.69%
QC value within limits for Cd 228.802 Recovery = 97.64%								
Co 228.616†	11104.1	0.232	mg/L	0.0058	0.232	mg/L	0.0058	2.51%
QC value within limits for Co 228.616 Recovery = 92.95%								
Cr 267.716†	36617.3	0.256	mg/L	0.0023	0.256	mg/L	0.0023	0.90%
QC value within limits for Cr 267.716 Recovery = 102.26%								
Cu 327.393†	42464.1	0.242	mg/L	0.0035	0.242	mg/L	0.0035	1.45%
QC value within limits for Cu 327.393 Recovery = 96.92%								
Fe 239.562†	1033090.5	104	mg/L	1.0	104	mg/L	1.0	0.95%
QC value within limits for Fe 239.562 Recovery = 104.03%								
Mg 279.077†	493473.1	254	mg/L	4.7	254	mg/L	4.7	1.83%
QC value within limits for Mg 279.077 Recovery = 101.76%								

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Mn 257.610†          186410.6       0.249 mg/L        0.0016       0.249 mg/L        0.0016   0.63%
   QC value within limits for Mn 257.610  Recovery = 99.70%
Mo 202.031†            -182.1     0.00235 mg/L      0.000816     0.00235 mg/L      0.000816  34.71%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†           35605.1       0.465 mg/L        0.0021       0.465 mg/L        0.0021   0.44%
   QC value within limits for Ni 231.604  Recovery = 93.07%
Pb 220.353†            7186.1       0.505 mg/L        0.0094       0.505 mg/L        0.0094   1.87%
   QC value within limits for Pb 220.353  Recovery = 100.96%
Sb 206.836†            1401.3       0.509 mg/L        0.0146       0.509 mg/L        0.0146   2.87%
   QC value within limits for Sb 206.836  Recovery = 101.70%
Se 196.026†             275.2       0.270 mg/L        0.0079       0.270 mg/L        0.0079   2.94%
   QC value within limits for Se 196.026  Recovery = 108.12%
Si 251.611†              37.2      0.0182 mg/L       0.00117      0.0182 mg/L       0.00117   6.46%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†            -137.3     -0.0129 mg/L       0.00195     -0.0129 mg/L       0.00195  15.07%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†          -17050.4    -0.00224 mg/L      0.000300    -0.00224 mg/L      0.000300  13.38%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†            1288.4       0.501 mg/L        0.0159       0.501 mg/L        0.0159   3.17%
   QC value within limits for Tl 190.801  Recovery = 100.17%
V 290.880†            42542.6       0.262 mg/L        0.0009       0.262 mg/L        0.0009   0.35%
   QC value within limits for V 290.880  Recovery = 104.80%
Zn 206.200†           40255.8       0.472 mg/L        0.0019       0.472 mg/L        0.0019   0.40%
   QC value within limits for Zn 206.200  Recovery = 94.33%
K 766.490†             5096.4        4.87 mg/L         0.265        4.87 mg/L         0.265   5.44%
   QC value within limits for K 766.490  Recovery = 97.34%
Na 589.592†           35106.7        5.40 mg/L         0.075        5.40 mg/L         0.075   1.40%
   QC value within limits for Na 589.592  Recovery = 108.04%
Sr 407.771†            1957.3    -0.00392 mg/L      0.000187    -0.00392 mg/L      0.000187   4.79%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†             172.5    -0.00018 mg/L      0.002902    -0.00018 mg/L      0.002902 >999.9%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†             -352.8      -0.187 mg/L        0.0062      -0.187 mg/L        0.0062   3.33%
   QC value within limits for P 214.914  Recovery = Not calculated
All analyte(s) passed QC.

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Sequence No.: 11                                    Autosampler Location: 6
Sample ID: CCV                                      Date Collected: 8/23/2015 10:27:08 AM
Analyst:                                            Data Type: Reprocessed on 8/23/2015 10:36:46 AM
Logged In Analyst (Original) : peicp2
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

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Nebulizer Parameters: CCV
Analyte                 Back Pressure    Flow
All                     200.0 kPa        0.31 L/min

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Mean Data: CCV
                   Mean Corrected        Calib.                          Sample
Analyte               Intensity     Conc. Units      Std.Dev.     Conc. Units      Std.Dev.   RSD
Y 371.029            2580243.6                                                    49782.06   1.93%
YRADIAL               152153.0                                                     1872.87   1.23%
Ga 417.206            966772.3                                                    20507.82   2.12%
GaRADIAL               37179.5                                                      352.55   0.95%
Ag 328.068†           108337.0       0.397 mg/L        0.0035       0.397 mg/L        0.0035   0.87%
   QC value within limits for Ag 328.068  Recovery = 99.15%
Al 396.153†            21522.5        10.0 mg/L          0.09        10.0 mg/L          0.09   0.92%
   QC value within limits for Al 396.153  Recovery = 100.04%
As 188.979†             1337.4       0.380 mg/L        0.0011       0.380 mg/L        0.0011   0.28%
   QC value within limits for As 188.979  Recovery = 94.93%
Ba 233.527†           152909.9        1.00 mg/L         0.002        1.00 mg/L         0.002   0.15%
   QC value within limits for Ba 233.527  Recovery = 100.31%
Be 234.861†            66412.8      0.0488 mg/L       0.00031      0.0488 mg/L       0.00031   0.64%
   QC value within limits for Be 234.861  Recovery = 97.56%
B 249.677†             37892.7       0.507 mg/L        0.0072       0.507 mg/L        0.0072   1.42%
   QC value within limits for B 249.677  Recovery = 101.34%
Ca 227.546†             3028.2        9.50 mg/L         0.063        9.50 mg/L         0.063   0.66%
   QC value within limits for Ca 227.546  Recovery = 95.03%
Cd 228.802†             1909.1      0.0469 mg/L       0.00017      0.0469 mg/L       0.00017   0.36%
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Analysis Begun

Start Time: 8/23/2015 10:37:48 AM **Plasma On Time: 8/23/2015 7:45:07 AM**
Logged In Analyst: peicp2 **Technique: ICP Continuous**
Spectrometer Model: Optima 4300 DV, S/N 077N4011401 **Autosampler Model: Cetac**

Sample Information File: C:\pe\peicp2\Sample Information\SUNDAY.sif
Batch ID:
Results Data Set: 082315HR
Results Library: C:\pe\peicp2\Results\results2.mdb

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Sequence No.: 1 **Autosampler Location: 15**
Sample ID: PBW AA WG535824-02 **Date Collected: 8/23/2015 10:37:50 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: PBW AA WG535824-02

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: PBW AA WG535824-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2494852.3						30035.00	1.20%
YRADIAL	145273.4						5328.87	3.67%
Ga 417.206	999356.8						10819.35	1.08%
GaRADIAL	34480.9						1062.24	3.08%
Ag 328.068†	-434.7	0.00040	mg/L	0.000846	0.00040	mg/L	0.000846	211.63%
Al 396.153†	37.6	-0.00379	mg/L	0.041670	-0.00379	mg/L	0.041670	>999.9%
As 188.979†	5.7	-0.00016	mg/L	0.000504	-0.00016	mg/L	0.000504	320.17%
Ba 233.527†	-151.4	-0.00118	mg/L	0.000067	-0.00118	mg/L	0.000067	5.67%
Be 234.861†	-131.8	0.00010	mg/L	0.000005	0.00010	mg/L	0.000005	4.79%
B 249.677†	34.3	0.00409	mg/L	0.000650	0.00409	mg/L	0.000650	15.90%
Ca 227.546†	-22.9	0.0251	mg/L	0.03744	0.0251	mg/L	0.03744	149.24%
Cd 228.802†	10.6	0.00041	mg/L	0.000079	0.00041	mg/L	0.000079	19.24%
Co 228.616†	-16.2	-0.00050	mg/L	0.000217	-0.00050	mg/L	0.000217	43.77%
Cr 267.716†	61.7	0.00027	mg/L	0.000131	0.00027	mg/L	0.000131	49.11%
Cu 327.393†	108.3	0.00186	mg/L	0.001432	0.00186	mg/L	0.001432	76.94%
Fe 239.562†	55.3	-0.00021	mg/L	0.003143	-0.00021	mg/L	0.003143	>999.9%
Mg 279.077†	160.7	0.0300	mg/L	0.02596	0.0300	mg/L	0.02596	86.45%
Mn 257.610†	-728.3	-0.00144	mg/L	0.000008	-0.00144	mg/L	0.000008	0.59%
Mo 202.031†	9.1	0.00117	mg/L	0.000381	0.00117	mg/L	0.000381	32.61%
Ni 231.604†	-21.5	-0.00138	mg/L	0.000187	-0.00138	mg/L	0.000187	13.52%
Pb 220.353†	-9.0	-0.00173	mg/L	0.001005	-0.00173	mg/L	0.001005	58.11%
Sb 206.836†	-2.5	0.00398	mg/L	0.001195	0.00398	mg/L	0.001195	30.03%
Se 196.026†	-5.0	-0.00024	mg/L	0.003343	-0.00024	mg/L	0.003343	>999.9%
Si 251.611†	-449.3	0.00680	mg/L	0.000754	0.00680	mg/L	0.000754	11.09%
Sn 189.927†	-17.6	-0.00303	mg/L	0.000568	-0.00303	mg/L	0.000568	18.74%
Ti 334.940†	-84.7	0.00111	mg/L	0.000125	0.00111	mg/L	0.000125	11.29%
Tl 190.801†	-7.6	-0.00259	mg/L	0.000761	-0.00259	mg/L	0.000761	29.43%
V 290.880†	-21.0	0.00079	mg/L	0.001277	0.00079	mg/L	0.001277	162.29%
Zn 206.200†	79.9	-0.00071	mg/L	0.000154	-0.00071	mg/L	0.000154	21.55%
K 766.490†	9.3	0.00059	mg/L	0.040246	0.00059	mg/L	0.040246	>999.9%
Na 589.592†	126.4	-0.00166	mg/L	0.019972	-0.00166	mg/L	0.019972	>999.9%
Sr 407.771†	-419.6	0.00205	mg/L	0.000036	0.00205	mg/L	0.000036	1.76%
Li 670.784†	106.8	-0.00221	mg/L	0.001612	-0.00221	mg/L	0.001612	72.87%
P 214.914†	-21.7	-0.0385	mg/L	0.00065	-0.0385	mg/L	0.00065	1.68%

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Sequence No.: 2 **Autosampler Location: 16**
Sample ID: LCSW AA WG535824-03 **Date Collected: 8/23/2015 10:40:12 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Approved: August 24, 2015

Kym H. Rhoden

Nebulizer Parameters: LCSW AA WG535824-03

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: LCSW AA WG535824-03

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2452105.6						55058.00	2.25%
YRADIAL	144297.2						3026.92	2.10%
Ga 417.206	945823.6						20369.38	2.15%
GaRADIAL	35454.4						779.51	2.20%
Ag 328.068†	56190.5	0.207	mg/L	0.0028	0.207	mg/L	0.0028	1.35%
Al 396.153†	11662.4	5.41	mg/L	0.025	5.41	mg/L	0.025	0.47%
As 188.979†	683.1	0.193	mg/L	0.0047	0.193	mg/L	0.0047	2.41%
Ba 233.527†	81381.6	0.534	mg/L	0.0033	0.534	mg/L	0.0033	0.63%
Be 234.861†	33145.8	0.0244	mg/L	0.00030	0.0244	mg/L	0.00030	1.22%
B 249.677†	77604.6	1.01	mg/L	0.022	1.01	mg/L	0.022	2.12%
Ca 227.546†	1537.4	4.87	mg/L	0.025	4.87	mg/L	0.025	0.51%
Cd 228.802†	975.0	0.0240	mg/L	0.00006	0.0240	mg/L	0.00006	0.27%
Co 228.616†	4960.4	0.105	mg/L	0.0013	0.105	mg/L	0.0013	1.22%
Cr 267.716†	38734.0	0.270	mg/L	0.0020	0.270	mg/L	0.0020	0.75%
Cu 327.393†	46500.8	0.258	mg/L	0.0053	0.258	mg/L	0.0053	2.03%
Fe 239.562†	21771.1	2.19	mg/L	0.004	2.19	mg/L	0.004	0.18%
Mg 279.077†	10676.7	5.45	mg/L	0.038	5.45	mg/L	0.038	0.69%
Mn 257.610†	201164.5	0.271	mg/L	0.0029	0.271	mg/L	0.0029	1.07%
Mo 202.031†	18630.4	0.527	mg/L	0.0039	0.527	mg/L	0.0039	0.73%
Ni 231.604†	21219.2	0.277	mg/L	0.0024	0.277	mg/L	0.0024	0.88%
Pb 220.353†	4242.6	0.266	mg/L	0.0039	0.266	mg/L	0.0039	1.46%
Sb 206.836†	1634.0	0.589	mg/L	0.0048	0.589	mg/L	0.0048	0.81%
Se 196.026†	218.1	0.198	mg/L	0.0055	0.198	mg/L	0.0055	2.80%
Si 251.611†	109758.7	2.56	mg/L	0.023	2.56	mg/L	0.023	0.90%
Sn 189.927†	6684.8	0.552	mg/L	0.0062	0.552	mg/L	0.0062	1.13%
Ti 334.940†	420525.2	0.529	mg/L	0.0050	0.529	mg/L	0.0050	0.95%
Tl 190.801†	679.3	0.270	mg/L	0.0030	0.270	mg/L	0.0030	1.10%
V 290.880†	90785.1	0.536	mg/L	0.0055	0.536	mg/L	0.0055	1.03%
Zn 206.200†	45726.6	0.533	mg/L	0.0047	0.533	mg/L	0.0047	0.88%
K 766.490†	27524.1	26.4	mg/L	0.33	26.4	mg/L	0.33	1.25%
Na 589.592†	173552.6	26.9	mg/L	0.12	26.9	mg/L	0.12	0.43%
Sr 407.771†	432832.6	0.545	mg/L	0.0058	0.545	mg/L	0.0058	1.06%
Li 670.784†	18078.5	0.552	mg/L	0.0085	0.552	mg/L	0.0085	1.54%
P 214.914†	11469.3	5.11	mg/L	0.046	5.11	mg/L	0.046	0.89%

Sequence No.: 3
Sample ID: FBLK1 WG535764-01
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 17
Date Collected: 8/23/2015 10:42:35 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: FBLK1 WG535764-01

Analyte	Back Pressure	Flow
All	200.0 kPa	0.31 L/min

Mean Data: FBLK1 WG535764-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2421955.0						110763.28	4.57%
YRADIAL	145888.9						1928.82	1.32%
Ga 417.206	886984.6						43496.59	4.90%
GaRADIAL	34324.7						332.26	0.97%
Ag 328.068†	-246.4	0.00108	mg/L	0.000121	0.00108	mg/L	0.000121	11.19%
Al 396.153†	43.1	-0.00126	mg/L	0.008642	-0.00126	mg/L	0.008642	687.21%
As 188.979†	21.0	0.00425	mg/L	0.002607	0.00425	mg/L	0.002607	61.27%
Ba 233.527†	-131.9	-0.00105	mg/L	0.000102	-0.00105	mg/L	0.000102	9.73%
Be 234.861†	-342.2	-0.00006	mg/L	0.000070	-0.00006	mg/L	0.000070	125.25%
B 249.677†	636.7	0.0119	mg/L	0.00233	0.0119	mg/L	0.00233	19.60%
Ca 227.546†	-46.0	-0.0459	mg/L	0.09457	-0.0459	mg/L	0.09457	205.89%
Cd 228.802†	4.5	0.00023	mg/L	0.000229	0.00023	mg/L	0.000229	97.87%
Co 228.616†	-36.1	-0.00092	mg/L	0.000175	-0.00092	mg/L	0.000175	19.12%

Approved: August 24, 2015

Cr 267.716†	59.9	0.00025	mg/L	0.000302	0.00025	mg/L	0.000302	118.59%
Cu 327.393†	161.8	0.00216	mg/L	0.000367	0.00216	mg/L	0.000367	17.01%
Fe 239.562†	30.9	-0.00266	mg/L	0.001358	-0.00266	mg/L	0.001358	51.10%
Mg 279.077†	72.5	-0.0155	mg/L	0.01309	-0.0155	mg/L	0.01309	84.59%
Mn 257.610†	-728.8	-0.00144	mg/L	0.000032	-0.00144	mg/L	0.000032	2.22%
Mo 202.031†	21.4	0.00151	mg/L	0.000193	0.00151	mg/L	0.000193	12.77%
Ni 231.604†	-15.9	-0.00131	mg/L	0.000425	-0.00131	mg/L	0.000425	32.53%
Pb 220.353†	-6.1	-0.00154	mg/L	0.001438	-0.00154	mg/L	0.001438	93.17%
Sb 206.836†	17.0	0.0109	mg/L	0.00372	0.0109	mg/L	0.00372	33.99%
Se 196.026†	-0.8	0.00348	mg/L	0.009908	0.00348	mg/L	0.009908	285.09%
Si 251.611†	-361.1	0.00884	mg/L	0.001125	0.00884	mg/L	0.001125	12.72%
Sn 189.927†	-3.0	-0.00183	mg/L	0.000343	-0.00183	mg/L	0.000343	18.78%
Ti 334.940†	219.6	0.00149	mg/L	0.000353	0.00149	mg/L	0.000353	23.70%
Tl 190.801†	-4.2	-0.00126	mg/L	0.001265	-0.00126	mg/L	0.001265	100.54%
V 290.880†	12.0	0.00098	mg/L	0.000963	0.00098	mg/L	0.000963	98.25%
Zn 206.200†	318.7	0.00207	mg/L	0.000220	0.00207	mg/L	0.000220	10.64%
K 766.490†	122.0	-0.0229	mg/L	0.10265	-0.0229	mg/L	0.10265	447.33%
Na 589.592†	830169.7	131	mg/L	1.4	131	mg/L	1.4	1.07%
Sr 407.771†	-108.8	0.00245	mg/L	0.000018	0.00245	mg/L	0.000018	0.72%
Li 670.784†	65.9	-0.00347	mg/L	0.001883	-0.00347	mg/L	0.001883	54.23%
P 214.914†	-17.7	-0.0367	mg/L	0.00666	-0.0367	mg/L	0.00666	18.13%

Sequence No.: 4
Sample ID: L1508099701 WG535824-01
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 18
Date Collected: 8/23/2015 10:45:00 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1508099701 WG535824-01

Analyte	Back Pressure	Flow
All	200.0 kPa	0.31 L/min

Mean Data: L1508099701 WG535824-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	2349300.3						92546.54	3.94%
YRADIAL	138070.2						1780.69	1.29%
Ga 417.206	864877.2						33644.66	3.89%
GaRADIAL	33294.4						296.75	0.89%
Ag 328.068†	-36.7	0.00177	mg/L	0.000280	0.00177	mg/L	0.000280	15.80%
Al 396.153†	48.7	0.00133	mg/L	0.026318	0.00133	mg/L	0.026318	>999.9%
As 188.979†	27.8	0.00792	mg/L	0.003719	0.00792	mg/L	0.003719	46.95%
Ba 233.527†	10587.1	0.0693	mg/L	0.00240	0.0693	mg/L	0.00240	3.46%
Be 234.861†	-352.5	-0.00006	mg/L	0.000034	-0.00006	mg/L	0.000034	54.51%
B 249.677†	1803.0	0.0269	mg/L	0.00061	0.0269	mg/L	0.00061	2.28%
Ca 227.546†	25145.1	77.6	mg/L	2.57	77.6	mg/L	2.57	3.31%
Cd 228.802†	55.5	0.00151	mg/L	0.000159	0.00151	mg/L	0.000159	10.52%
Co 228.616†	-29.2	-0.00078	mg/L	0.000275	-0.00078	mg/L	0.000275	35.20%
Cr 267.716†	128.0	0.00073	mg/L	0.000145	0.00073	mg/L	0.000145	19.91%
Cu 327.393†	6838.9	0.0390	mg/L	0.00078	0.0390	mg/L	0.00078	2.01%
Fe 239.562†	11.5	-0.00464	mg/L	0.003785	-0.00464	mg/L	0.003785	81.55%
Mg 279.077†	3045.5	1.52	mg/L	0.067	1.52	mg/L	0.067	4.41%
Mn 257.610†	9726.3	0.0127	mg/L	0.00049	0.0127	mg/L	0.00049	3.88%
Mo 202.031†	47.8	0.00226	mg/L	0.000246	0.00226	mg/L	0.000246	10.85%
Ni 231.604†	29.9	-0.00070	mg/L	0.000263	-0.00070	mg/L	0.000263	37.55%
Pb 220.353†	41.4	0.00142	mg/L	0.001348	0.00142	mg/L	0.001348	95.14%
Sb 206.836†	15.2	0.0103	mg/L	0.00305	0.0103	mg/L	0.00305	29.59%
Se 196.026†	-11.4	-0.00595	mg/L	0.010604	-0.00595	mg/L	0.010604	178.25%
Si 251.611†	23274.4	0.557	mg/L	0.0172	0.557	mg/L	0.0172	3.09%
Sn 189.927†	-125.9	-0.0120	mg/L	0.00139	-0.0120	mg/L	0.00139	11.57%
Ti 334.940†	-4813.7	0.00016	mg/L	0.000573	0.00016	mg/L	0.000573	365.38%
Tl 190.801†	-28.3	-0.0107	mg/L	0.00577	-0.0107	mg/L	0.00577	54.15%
V 290.880†	234.9	0.00225	mg/L	0.001336	0.00225	mg/L	0.001336	59.38%
Zn 206.200†	2711.5	0.0299	mg/L	0.00112	0.0299	mg/L	0.00112	3.73%
K 766.490†	2011.6	1.78	mg/L	0.119	1.78	mg/L	0.119	6.68%
Na 589.592†	839973.7	133	mg/L	0.8	133	mg/L	0.8	0.59%
Sr 407.771†	243497.9	0.306	mg/L	0.0029	0.306	mg/L	0.0029	0.95%
Li 670.784†	145.3	-0.00102	mg/L	0.004271	-0.00102	mg/L	0.004271	418.00%
P 214.914†	262.5	0.0887	mg/L	0.00463	0.0887	mg/L	0.00463	5.22%

Approved: August 24, 2015

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Sequence No.: 5 **Autosampler Location: 19**
Sample ID: L1508099701MS WG535824-04 **Date Collected: 8/23/2015 10:47:23 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508099701MS WG535824-04

Analyte	Back Pressure	Flow
All	200.0 kPa	0.31 L/min

Mean Data: L1508099701MS WG535824-04

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2271186.4						31481.26	1.39%
YRADIAL	139604.2						1296.84	0.93%
Ga 417.206	837835.9						7812.26	0.93%
GaRADIAL	34002.9						357.95	1.05%
Ag 328.068†	59203.8	0.218	mg/L	0.0010	0.218	mg/L	0.0010	0.48%
Al 396.153†	11641.4	5.40	mg/L	0.070	5.40	mg/L	0.070	1.29%
As 188.979†	740.9	0.211	mg/L	0.0019	0.211	mg/L	0.0019	0.89%
Ba 233.527†	90193.9	0.592	mg/L	0.0022	0.592	mg/L	0.0022	0.37%
Be 234.861†	35359.8	0.0261	mg/L	0.00010	0.0261	mg/L	0.00010	0.37%
B 249.677†	82266.5	1.07	mg/L	0.002	1.07	mg/L	0.002	0.16%
Ca 227.546†	27411.1	84.6	mg/L	0.99	84.6	mg/L	0.99	1.16%
Cd 228.802†	1063.8	0.0262	mg/L	0.00017	0.0262	mg/L	0.00017	0.66%
Co 228.616†	4781.0	0.101	mg/L	0.0012	0.101	mg/L	0.0012	1.16%
Cr 267.716†	38580.6	0.269	mg/L	0.0012	0.269	mg/L	0.0012	0.43%
Cu 327.393†	54070.2	0.300	mg/L	0.0019	0.300	mg/L	0.0019	0.63%
Fe 239.562†	21261.8	2.14	mg/L	0.024	2.14	mg/L	0.024	1.11%
Mg 279.077†	13140.3	6.72	mg/L	0.155	6.72	mg/L	0.155	2.31%
Mn 257.610†	205167.8	0.276	mg/L	0.0013	0.276	mg/L	0.0013	0.47%
Mo 202.031†	19127.3	0.541	mg/L	0.0054	0.541	mg/L	0.0054	1.00%
Ni 231.604†	20374.9	0.266	mg/L	0.0025	0.266	mg/L	0.0025	0.94%
Pb 220.353†	4152.2	0.260	mg/L	0.0050	0.260	mg/L	0.0050	1.93%
Sb 206.836†	1739.4	0.627	mg/L	0.0083	0.627	mg/L	0.0083	1.32%
Se 196.026†	222.5	0.202	mg/L	0.0185	0.202	mg/L	0.0185	9.18%
Si 251.611†	140166.6	3.26	mg/L	0.012	3.26	mg/L	0.012	0.37%
Sn 189.927†	6443.8	0.532	mg/L	0.0044	0.532	mg/L	0.0044	0.82%
Ti 334.940†	420119.9	0.534	mg/L	0.0020	0.534	mg/L	0.0020	0.38%
Tl 190.801†	627.0	0.249	mg/L	0.0037	0.249	mg/L	0.0037	1.50%
V 290.880†	92918.7	0.548	mg/L	0.0013	0.548	mg/L	0.0013	0.24%
Zn 206.200†	46446.3	0.541	mg/L	0.0028	0.541	mg/L	0.0028	0.52%
K 766.490†	29727.6	28.4	mg/L	0.38	28.4	mg/L	0.38	1.32%
Na 589.592†	999345.4	159	mg/L	1.8	159	mg/L	1.8	1.16%
Sr 407.771†	667077.2	0.837	mg/L	0.0111	0.837	mg/L	0.0111	1.33%
Li 670.784†	17456.1	0.533	mg/L	0.0055	0.533	mg/L	0.0055	1.03%
P 214.914†	12395.0	5.52	mg/L	0.061	5.52	mg/L	0.061	1.11%

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Sequence No.: 6 **Autosampler Location: 20**
Sample ID: L1508099701SD WG535824-05 **Date Collected: 8/23/2015 10:49:47 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508099701SD WG535824-05

Analyte	Back Pressure	Flow
All	200.0 kPa	0.31 L/min

Mean Data: L1508099701SD WG535824-05

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2308396.3						62554.75	2.71%
YRADIAL	131686.5						6284.80	4.77%
Ga 417.206	852823.3						24391.82	2.86%
GaRADIAL	32516.5						1309.86	4.03%

Approved: August 24, 2015

Kym H. Rhoden

Ag 328.068†	59228.8	0.218	mg/L	0.0009	0.218	mg/L	0.0009	0.39%
Al 396.153†	11620.1	5.39	mg/L	0.053	5.39	mg/L	0.053	0.99%
As 188.979†	732.8	0.209	mg/L	0.0039	0.209	mg/L	0.0039	1.85%
Ba 233.527†	90445.3	0.593	mg/L	0.0033	0.593	mg/L	0.0033	0.56%
Be 234.861†	35827.2	0.0264	mg/L	0.00014	0.0264	mg/L	0.00014	0.51%
B 249.677†	83266.8	1.09	mg/L	0.011	1.09	mg/L	0.011	1.00%
Ca 227.546†	27158.9	83.9	mg/L	2.52	83.9	mg/L	2.52	3.00%
Cd 228.802†	1057.2	0.0260	mg/L	0.00068	0.0260	mg/L	0.00068	2.63%
Co 228.616†	4735.5	0.0998	mg/L	0.00255	0.0998	mg/L	0.00255	2.56%
Cr 267.716†	38826.7	0.271	mg/L	0.0027	0.271	mg/L	0.0027	1.00%
Cu 327.393†	54455.8	0.302	mg/L	0.0018	0.302	mg/L	0.0018	0.59%
Fe 239.562†	21094.6	2.12	mg/L	0.030	2.12	mg/L	0.030	1.44%
Mg 279.077†	13090.7	6.70	mg/L	0.043	6.70	mg/L	0.043	0.64%
Mn 257.610†	206114.0	0.278	mg/L	0.0008	0.278	mg/L	0.0008	0.30%
Mo 202.031†	18927.3	0.536	mg/L	0.0132	0.536	mg/L	0.0132	2.47%
Ni 231.604†	20191.7	0.264	mg/L	0.0067	0.264	mg/L	0.0067	2.53%
Pb 220.353†	4117.7	0.258	mg/L	0.0093	0.258	mg/L	0.0093	3.59%
Sb 206.836†	1724.7	0.621	mg/L	0.0175	0.621	mg/L	0.0175	2.82%
Se 196.026†	222.5	0.202	mg/L	0.0104	0.202	mg/L	0.0104	5.14%
Si 251.611†	140478.2	3.27	mg/L	0.021	3.27	mg/L	0.021	0.64%
Sn 189.927†	6355.3	0.524	mg/L	0.0127	0.524	mg/L	0.0127	2.42%
Ti 334.940†	421444.2	0.535	mg/L	0.0024	0.535	mg/L	0.0024	0.45%
Tl 190.801†	616.9	0.245	mg/L	0.0051	0.245	mg/L	0.0051	2.08%
V 290.880†	92914.8	0.548	mg/L	0.0025	0.548	mg/L	0.0025	0.45%
Zn 206.200†	46703.9	0.544	mg/L	0.0049	0.544	mg/L	0.0049	0.91%
K 766.490†	29466.4	28.1	mg/L	0.29	28.1	mg/L	0.29	1.04%
Na 589.592†	1015556.1	162	mg/L	9.0	162	mg/L	9.0	5.57%
Sr 407.771†	685816.6	0.860	mg/L	0.0507	0.860	mg/L	0.0507	5.89%
Li 670.784†	17507.5	0.535	mg/L	0.0023	0.535	mg/L	0.0023	0.42%
P 214.914†	12302.6	5.48	mg/L	0.131	5.48	mg/L	0.131	2.40%

Sequence No.: 7
Sample ID: L1508099801
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 21
Date Collected: 8/23/2015 10:52:14 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1508099801

Analyte	Back Pressure	Flow
All	200.0 kPa	0.31 L/min

Mean Data: L1508099801

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2370406.7						56874.67	2.40%
YRADIAL	137455.1						4977.19	3.62%
Ga 417.206	874329.1						25062.46	2.87%
GaRADIAL	33031.4						1102.10	3.34%
Ag 328.068†	-210.0	0.00118	mg/L	0.000269	0.00118	mg/L	0.000269	22.82%
Al 396.153†	159.2	0.0530	mg/L	0.04866	0.0530	mg/L	0.04866	91.79%
As 188.979†	24.4	0.00597	mg/L	0.001135	0.00597	mg/L	0.001135	19.02%
Ba 233.527†	16248.0	0.106	mg/L	0.0001	0.106	mg/L	0.0001	0.11%
Be 234.861†	-291.0	-0.00001	mg/L	0.000027	-0.00001	mg/L	0.000027	249.24%
B 249.677†	2353.3	0.0340	mg/L	0.00196	0.0340	mg/L	0.00196	5.78%
Ca 227.546†	10611.5	32.8	mg/L	0.18	32.8	mg/L	0.18	0.54%
Cd 228.802†	180.0	0.00464	mg/L	0.000061	0.00464	mg/L	0.000061	1.31%
Co 228.616†	-26.5	-0.00075	mg/L	0.000305	-0.00075	mg/L	0.000305	40.89%
Cr 267.716†	96.9	0.00054	mg/L	0.000117	0.00054	mg/L	0.000117	21.73%
Cu 327.393†	536.2	0.00426	mg/L	0.001117	0.00426	mg/L	0.001117	26.22%
Fe 239.562†	126.2	0.00691	mg/L	0.004032	0.00691	mg/L	0.004032	58.36%
Mg 279.077†	3277.6	1.64	mg/L	0.083	1.64	mg/L	0.083	5.09%
Mn 257.610†	66993.2	0.0899	mg/L	0.00058	0.0899	mg/L	0.00058	0.65%
Mo 202.031†	49.3	0.00232	mg/L	0.000252	0.00232	mg/L	0.000252	10.85%
Ni 231.604†	111.7	0.00037	mg/L	0.000184	0.00037	mg/L	0.000184	49.80%
Pb 220.353†	451.7	0.0271	mg/L	0.00120	0.0271	mg/L	0.00120	4.43%
Sb 206.836†	40.8	0.0195	mg/L	0.00260	0.0195	mg/L	0.00260	13.37%
Se 196.026†	-7.4	-0.00235	mg/L	0.015181	-0.00235	mg/L	0.015181	645.44%
Si 251.611†	18946.5	0.457	mg/L	0.0022	0.457	mg/L	0.0022	0.48%
Sn 189.927†	-61.3	-0.00665	mg/L	0.000528	-0.00665	mg/L	0.000528	7.94%

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Ti 334.940†	-1724.0	0.00116	mg/L	0.000369	0.00116	mg/L	0.000369 31.87%
Tl 190.801†	-19.7	-0.00740	mg/L	0.001153	-0.00740	mg/L	0.001153 15.59%
V 290.880†	-17.1	0.00076	mg/L	0.000982	0.00076	mg/L	0.000982 128.65%
Zn 206.200†	56641.4	0.657	mg/L	0.0027	0.657	mg/L	0.0027 0.40%
K 766.490†	886.0	0.708	mg/L	0.0566	0.708	mg/L	0.0566 8.00%
Na 589.592†	833221.6	132	mg/L	0.8	132	mg/L	0.8 0.60%
Sr 407.771†	97779.4	0.124	mg/L	0.0006	0.124	mg/L	0.0006 0.52%
Li 670.784†	41.2	-0.00424	mg/L	0.003691	-0.00424	mg/L	0.003691 87.11%
P 214.914†	171.8	0.0481	mg/L	0.00577	0.0481	mg/L	0.00577 11.99%

Sequence No.: 8 **Autosampler Location: 22**
Sample ID: L1508099801PS WG536024-01 **Date Collected: 8/23/2015 10:54:38 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508099801PS WG536024-01

Analyte	Back Pressure	Flow
All	200.0 kPa	0.31 L/min

Mean Data: L1508099801PS WG536024-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2262666.3						45768.42	2.02%
YRADIAL	134552.4						4107.16	3.05%
Ga 417.206	837520.5						17254.37	2.06%
GaRADIAL	32962.9						708.37	2.15%
Ag 328.068†	58375.4	0.215	mg/L	0.0017	0.215	mg/L	0.0017	0.78%
Al 396.153†	11755.5	5.46	mg/L	0.106	5.46	mg/L	0.106	1.94%
As 188.979†	726.5	0.206	mg/L	0.0107	0.206	mg/L	0.0107	5.18%
Ba 233.527†	95383.8	0.626	mg/L	0.0065	0.626	mg/L	0.0065	1.04%
Be 234.861†	35001.8	0.0258	mg/L	0.00008	0.0258	mg/L	0.00008	0.29%
B 249.677†	82141.1	1.07	mg/L	0.005	1.07	mg/L	0.005	0.47%
Ca 227.546†	11366.1	35.2	mg/L	1.35	35.2	mg/L	1.35	3.85%
Cd 228.802†	1157.6	0.0285	mg/L	0.00093	0.0285	mg/L	0.00093	3.25%
Co 228.616†	4753.1	0.100	mg/L	0.0041	0.100	mg/L	0.0041	4.14%
Cr 267.716†	38310.7	0.267	mg/L	0.0034	0.267	mg/L	0.0034	1.28%
Cu 327.393†	48471.1	0.269	mg/L	0.0012	0.269	mg/L	0.0012	0.46%
Fe 239.562†	21178.3	2.13	mg/L	0.040	2.13	mg/L	0.040	1.90%
Mg 279.077†	13251.8	6.78	mg/L	0.133	6.78	mg/L	0.133	1.96%
Mn 257.610†	256593.7	0.346	mg/L	0.0038	0.346	mg/L	0.0038	1.11%
Mo 202.031†	18619.3	0.527	mg/L	0.0227	0.527	mg/L	0.0227	4.31%
Ni 231.604†	20332.1	0.265	mg/L	0.0114	0.265	mg/L	0.0114	4.29%
Pb 220.353†	4465.3	0.280	mg/L	0.0112	0.280	mg/L	0.0112	4.02%
Sb 206.836†	1697.2	0.612	mg/L	0.0234	0.612	mg/L	0.0234	3.82%
Se 196.026†	218.3	0.198	mg/L	0.0107	0.198	mg/L	0.0107	5.38%
Si 251.611†	132375.9	3.08	mg/L	0.032	3.08	mg/L	0.032	1.03%
Sn 189.927†	6364.9	0.525	mg/L	0.0246	0.525	mg/L	0.0246	4.68%
Ti 334.940†	421545.9	0.532	mg/L	0.0047	0.532	mg/L	0.0047	0.89%
Tl 190.801†	625.4	0.249	mg/L	0.0111	0.249	mg/L	0.0111	4.46%
V 290.880†	91732.0	0.541	mg/L	0.0061	0.541	mg/L	0.0061	1.12%
Zn 206.200†	94096.7	1.10	mg/L	0.014	1.10	mg/L	0.014	1.29%
K 766.490†	28487.9	27.2	mg/L	0.15	27.2	mg/L	0.15	0.57%
Na 589.592†	933793.8	148	mg/L	4.0	148	mg/L	4.0	2.71%
Sr 407.771†	533350.5	0.671	mg/L	0.0236	0.671	mg/L	0.0236	3.51%
Li 670.784†	17590.9	0.537	mg/L	0.0081	0.537	mg/L	0.0081	1.51%
P 214.914†	11875.7	5.29	mg/L	0.236	5.29	mg/L	0.236	4.46%

Sequence No.: 9 **Autosampler Location: 23**
Sample ID: L1508099801DL WG536024-02 **Date Collected: 8/23/2015 10:57:02 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508099801DL WG536024-02

Analyte	Back Pressure	Flow
All	200.0 kPa	0.31 L/min

Approved: August 24, 2015

Mean Data: L1508099801DL WG536024-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2308147.8						53620.10	2.32%
YRADIAL	134847.9						3490.61	2.59%
Ga 417.206	884620.2						21925.89	2.48%
GaRADIAL	32915.1						547.50	1.66%
Ag 328.068†	-317.9	0.00082	mg/L	0.000570	0.00082	mg/L	0.000570	69.63%
Al 396.153†	12.5	-0.0156	mg/L	0.00583	-0.0156	mg/L	0.00583	37.48%
As 188.979†	10.4	0.00135	mg/L	0.001723	0.00135	mg/L	0.001723	127.83%
Ba 233.527†	3199.8	0.0208	mg/L	0.00033	0.0208	mg/L	0.00033	1.59%
Be 234.861†	-213.5	0.00004	mg/L	0.000018	0.00004	mg/L	0.000018	46.08%
B 249.677†	811.4	0.0141	mg/L	0.00328	0.0141	mg/L	0.00328	23.26%
Ca 227.546†	1962.7	6.15	mg/L	0.097	6.15	mg/L	0.097	1.57%
Cd 228.802†	40.2	0.00115	mg/L	0.000180	0.00115	mg/L	0.000180	15.71%
Co 228.616†	-14.7	-0.00047	mg/L	0.000279	-0.00047	mg/L	0.000279	59.48%
Cr 267.716†	1.5	-0.00015	mg/L	0.000161	-0.00015	mg/L	0.000161	110.02%
Cu 327.393†	254.0	0.00267	mg/L	0.002644	0.00267	mg/L	0.002644	98.93%
Fe 239.562†	66.0	0.00087	mg/L	0.000517	0.00087	mg/L	0.000517	59.44%
Mg 279.077†	705.4	0.311	mg/L	0.0052	0.311	mg/L	0.0052	1.66%
Mn 257.610†	13178.8	0.0173	mg/L	0.00041	0.0173	mg/L	0.00041	2.39%
Mo 202.031†	25.0	0.00162	mg/L	0.000203	0.00162	mg/L	0.000203	12.50%
Ni 231.604†	20.7	-0.00082	mg/L	0.000193	-0.00082	mg/L	0.000193	23.37%
Pb 220.353†	92.6	0.00461	mg/L	0.000640	0.00461	mg/L	0.000640	13.88%
Sb 206.836†	13.0	0.00954	mg/L	0.002745	0.00954	mg/L	0.002745	28.79%
Se 196.026†	-4.1	0.00054	mg/L	0.005744	0.00054	mg/L	0.005744	>999.9%
Si 251.611†	3319.4	0.0943	mg/L	0.00170	0.0943	mg/L	0.00170	1.80%
Sn 189.927†	-4.9	-0.00198	mg/L	0.000472	-0.00198	mg/L	0.000472	23.80%
Ti 334.940†	-445.1	0.00105	mg/L	0.000289	0.00105	mg/L	0.000289	27.49%
Tl 190.801†	-15.7	-0.00575	mg/L	0.001343	-0.00575	mg/L	0.001343	23.35%
V 290.880†	326.6	0.00283	mg/L	0.001195	0.00283	mg/L	0.001195	42.29%
Zn 206.200†	11234.1	0.129	mg/L	0.0018	0.129	mg/L	0.0018	1.39%
K 766.490†	-102.3	-0.132	mg/L	0.0331	-0.132	mg/L	0.0331	25.11%
Na 589.592†	164642.3	25.5	mg/L	0.26	25.5	mg/L	0.26	1.04%
Sr 407.771†	19081.9	0.0263	mg/L	0.00013	0.0263	mg/L	0.00013	0.49%
Li 670.784†	142.9	-0.00110	mg/L	0.003295	-0.00110	mg/L	0.003295	300.74%
P 214.914†	38.5	-0.0116	mg/L	0.00839	-0.0116	mg/L	0.00839	72.37%

Sequence No.: 10 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 8/23/2015 11:00:23 AM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	200.0 kPa	0.31 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2407172.2						59422.78	2.47%
YRADIAL	145213.1						3608.72	2.49%
Ga 417.206	908630.9						24509.01	2.70%
GaRADIAL	35999.4						751.54	2.09%
Ag 328.068†	107801.3	0.395	mg/L	0.0080	0.395	mg/L	0.0080	2.03%
QC value within limits for Ag 328.068 Recovery = 98.65%								
Al 396.153†	20912.5	9.72	mg/L	0.168	9.72	mg/L	0.168	1.73%
QC value within limits for Al 396.153 Recovery = 97.18%								
As 188.979†	1314.6	0.373	mg/L	0.0071	0.373	mg/L	0.0071	1.90%
QC value within limits for As 188.979 Recovery = 93.27%								
Ba 233.527†	150220.2	0.985	mg/L	0.0088	0.985	mg/L	0.0088	0.89%
QC value within limits for Ba 233.527 Recovery = 98.55%								
Be 234.861†	64779.9	0.0476	mg/L	0.00058	0.0476	mg/L	0.00058	1.22%
QC value within limits for Be 234.861 Recovery = 95.20%								
B 249.677†	37018.5	0.495	mg/L	0.0102	0.495	mg/L	0.0102	2.06%
QC value within limits for B 249.677 Recovery = 99.01%								

Approved: August 24, 2015

Ca 227.546†	2985.8	9.37 mg/L	0.114	9.37 mg/L	0.114	1.22%
QC value within limits for Ca 227.546 Recovery = 93.71%						
Cd 228.802†	1905.4	0.0468 mg/L	0.00098	0.0468 mg/L	0.00098	2.08%
QC value within limits for Cd 228.802 Recovery = 93.59%						
Co 228.616†	9158.8	0.193 mg/L	0.0037	0.193 mg/L	0.0037	1.90%
QC value within limits for Co 228.616 Recovery = 96.59%						
Cr 267.716†	70957.7	0.495 mg/L	0.0062	0.495 mg/L	0.0062	1.26%
QC value within limits for Cr 267.716 Recovery = 98.92%						
Cu 327.393†	88869.9	0.493 mg/L	0.0071	0.493 mg/L	0.0071	1.45%
QC value within limits for Cu 327.393 Recovery = 98.54%						
Fe 239.562†	38842.1	3.91 mg/L	0.053	3.91 mg/L	0.053	1.37%
QC value within limits for Fe 239.562 Recovery = 97.63%						
Mg 279.077†	18967.9	9.73 mg/L	0.201	9.73 mg/L	0.201	2.06%
QC value within limits for Mg 279.077 Recovery = 97.28%						
Mn 257.610†	366133.3	0.494 mg/L	0.0048	0.494 mg/L	0.0048	0.97%
QC value within limits for Mn 257.610 Recovery = 98.71%						
Mo 202.031†	35337.0	0.999 mg/L	0.0210	0.999 mg/L	0.0210	2.10%
QC value within limits for Mo 202.031 Recovery = 99.93%						
Ni 231.604†	37691.9	0.493 mg/L	0.0066	0.493 mg/L	0.0066	1.35%
QC value within limits for Ni 231.604 Recovery = 98.56%						
Pb 220.353†	7858.1	0.493 mg/L	0.0105	0.493 mg/L	0.0105	2.13%
QC value within limits for Pb 220.353 Recovery = 98.60%						
Sb 206.836†	3098.6	1.11 mg/L	0.021	1.11 mg/L	0.021	1.90%
QC value within limits for Sb 206.836 Recovery = 92.70%						
Se 196.026†	446.5	0.400 mg/L	0.0122	0.400 mg/L	0.0122	3.04%
QC value within limits for Se 196.026 Recovery = 100.12%						
Si 251.611†	209495.9	4.87 mg/L	0.069	4.87 mg/L	0.069	1.42%
QC value within limits for Si 251.611 Recovery = 97.38%						
Sn 189.927†	11830.5	0.978 mg/L	0.0208	0.978 mg/L	0.0208	2.13%
QC value within limits for Sn 189.927 Recovery = 97.77%						
Ti 334.940†	780483.3	0.981 mg/L	0.0108	0.981 mg/L	0.0108	1.11%
QC value within limits for Ti 334.940 Recovery = 98.13%						
Tl 190.801†	1274.0	0.505 mg/L	0.0079	0.505 mg/L	0.0079	1.56%
QC value within limits for Tl 190.801 Recovery = 101.02%						
V 290.880†	167038.3	0.985 mg/L	0.0104	0.985 mg/L	0.0104	1.05%
QC value within limits for V 290.880 Recovery = 98.46%						
Zn 206.200†	84907.4	0.991 mg/L	0.0061	0.991 mg/L	0.0061	0.62%
QC value within limits for Zn 206.200 Recovery = 99.09%						
K 766.490†	50616.1	48.7 mg/L	0.92	48.7 mg/L	0.92	1.89%
QC value within limits for K 766.490 Recovery = 97.37%						
Na 589.592†	317216.1	49.4 mg/L	1.51	49.4 mg/L	1.51	3.06%
QC value within limits for Na 589.592 Recovery = 98.79%						
Sr 407.771†	785806.7	0.988 mg/L	0.0325	0.988 mg/L	0.0325	3.29%
QC value within limits for Sr 407.771 Recovery = 98.82%						
Li 670.784†	32249.1	0.990 mg/L	0.0190	0.990 mg/L	0.0190	1.92%
QC value within limits for Li 670.784 Recovery = 98.97%						
P 214.914†	21908.2	9.78 mg/L	0.201	9.78 mg/L	0.201	2.05%
QC value within limits for P 214.914 Recovery = 97.81%						

All analyte(s) passed QC.

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Sequence No.: 11 **Autosampler Location: 1**
Sample ID: CCB **Date Collected: 8/23/2015 11:02:48 AM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCB

Analyte	Back Pressure	Flow
All	200.0 kPa	0.31 L/min

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2280394.2						88543.31	3.88%
YRADIAL	140228.9						1629.85	1.16%
Ga 417.206	902372.1						39346.70	4.36%
GaRADIAL	33445.0						139.81	0.42%
Ag 328.068†	-400.3	0.00053	mg/L	0.001109	0.00053	mg/L	0.001109	210.50%
QC value within limits for Ag 328.068 Recovery = Not calculated								

Approved: August 24, 2015

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Al 396.153†              30.6    -0.00708 mg/L      0.008540    -0.00708 mg/L      0.008540 120.57%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†              10.0     0.00107 mg/L      0.001967     0.00107 mg/L      0.001967 183.53%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†             -27.7    -0.00036 mg/L      0.000043    -0.00036 mg/L      0.000043  11.79%
   QC value within limits for Ba 233.527  Recovery = Not calculated
Be 234.861†            -164.9     0.00008 mg/L      0.000061     0.00008 mg/L      0.000061  80.98%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†              507.6      0.0102 mg/L       0.00183      0.0102 mg/L       0.00183  17.94%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†             -27.8      0.0103 mg/L       0.01926      0.0103 mg/L       0.01926 187.26%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†               1.3     0.00017 mg/L      0.000190     0.00017 mg/L      0.000190 112.34%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†             -20.4    -0.00058 mg/L      0.000307    -0.00058 mg/L      0.000307  52.57%
   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†              -3.1    -0.00018 mg/L      0.000395    -0.00018 mg/L      0.000395 215.66%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†             191.4     0.00232 mg/L      0.001168     0.00232 mg/L      0.001168  50.35%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†               0.3    -0.00574 mg/L      0.005735    -0.00574 mg/L      0.005735  99.94%
   QC value within limits for Fe 239.562  Recovery = Not calculated
Mg 279.077†              67.0     -0.0183 mg/L       0.03149     -0.0183 mg/L       0.03149 172.17%
   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†            -134.4    -0.00063 mg/L      0.000061    -0.00063 mg/L      0.000061   9.68%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†              16.2     0.00137 mg/L      0.000488     0.00137 mg/L      0.000488  35.66%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†              12.6    -0.00093 mg/L      0.000365    -0.00093 mg/L      0.000365  39.15%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†             -13.5    -0.00201 mg/L      0.000903    -0.00201 mg/L      0.000903  44.98%
   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†               8.3     0.00786 mg/L      0.002307     0.00786 mg/L      0.002307  29.36%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†              -3.3     0.00126 mg/L      0.003947     0.00126 mg/L      0.003947 312.83%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†            -323.8     0.00971 mg/L      0.002696     0.00971 mg/L      0.002696  27.76%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†              58.9     0.00330 mg/L      0.001300     0.00330 mg/L      0.001300  39.36%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†             -28.6     0.00118 mg/L      0.000331     0.00118 mg/L      0.000331  28.06%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†              -5.0    -0.00158 mg/L      0.002021    -0.00158 mg/L      0.002021 128.15%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†              444.5     0.00353 mg/L      0.000826     0.00353 mg/L      0.000826  23.43%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†              40.5    -0.00117 mg/L      0.000079    -0.00117 mg/L      0.000079   6.75%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†              104.0      0.0911 mg/L       0.05833      0.0911 mg/L       0.05833  64.00%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†             348.2      0.0326 mg/L       0.00475      0.0326 mg/L       0.00475  14.59%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†              10.5     0.00259 mg/L      0.000060     0.00259 mg/L      0.000060   2.30%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†              45.7    -0.00410 mg/L      0.003677    -0.00410 mg/L      0.003677  89.74%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†                4.8     -0.0267 mg/L       0.00544     -0.0267 mg/L       0.00544  20.42%
   QC value within limits for P 214.914  Recovery = Not calculated
All analyte(s) passed QC.

==========================================================================================
Sequence No.: 12                                    Autosampler Location: 24
Sample ID: L1508084401 0.02                         Date Collected: 8/23/2015 11:05:12 AM
Analyst: KHR                                        Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

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Nebulizer Parameters: L1508084401 0.02
Analyte                 Back Pressure    Flow
All                   200.0 kPa        0.31 L/min
```

Approved: August 24, 2015

Mean Data: L1508084401 0.02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2226256.8						33932.13	1.52%
YRADIAL	132920.3						4295.08	3.23%
Ga 417.206	775988.4						13322.11	1.72%
GaRADIAL	32018.1						1139.95	3.56%
Ag 328.068†	1410.0	0.00800	mg/L	0.001645	0.00800	mg/L	0.001645	20.55%
Al 396.153†	85.4	0.0189	mg/L	0.04631	0.0189	mg/L	0.04631	244.46%
As 188.979†	15.2	0.00936	mg/L	0.001307	0.00936	mg/L	0.001307	13.96%
Ba 233.527†	1224581.5	8.03	mg/L	0.039	8.03	mg/L	0.039	0.49%
Be 234.861†	678.8	0.00019	mg/L	0.000068	0.00019	mg/L	0.000068	36.39%
B 249.677†	31516.6	0.420	mg/L	0.0018	0.420	mg/L	0.0018	0.43%
Ca 227.546†	91127.2	281	mg/L	0.8	281	mg/L	0.8	0.27%
Cd 228.802†	-2.3	0.00006	mg/L	0.000156	0.00006	mg/L	0.000156	250.98%
Co 228.616†	-150.0	-0.00606	mg/L	0.000161	-0.00606	mg/L	0.000161	2.65%
Cr 267.716†	325.9	0.00212	mg/L	0.000133	0.00212	mg/L	0.000133	6.29%
Cu 327.393†	-546.5	-0.00176	mg/L	0.001275	-0.00176	mg/L	0.001275	72.61%
Fe 239.562†	23002.7	2.31	mg/L	0.032	2.31	mg/L	0.032	1.38%
Mg 279.077†	52894.3	27.2	mg/L	0.42	27.2	mg/L	0.42	1.54%
Mn 257.610†	118307.2	0.159	mg/L	0.0007	0.159	mg/L	0.0007	0.41%
Mo 202.031†	-92.3	-0.00152	mg/L	0.000346	-0.00152	mg/L	0.000346	22.77%
Ni 231.604†	69.4	-0.00018	mg/L	0.000214	-0.00018	mg/L	0.000214	119.37%
Pb 220.353†	38.9	0.00110	mg/L	0.001016	0.00110	mg/L	0.001016	92.22%
Sb 206.836†	23.7	0.0134	mg/L	0.00165	0.0134	mg/L	0.00165	12.27%
Se 196.026†	-16.6	-0.0108	mg/L	0.01444	-0.0108	mg/L	0.01444	134.10%
Si 251.611†	12135.8	0.299	mg/L	0.0069	0.299	mg/L	0.0069	2.30%
Sn 189.927†	-159.5	-0.0148	mg/L	0.00090	-0.0148	mg/L	0.00090	6.09%
Ti 334.940†	-16987.4	-0.00206	mg/L	0.000265	-0.00206	mg/L	0.000265	12.83%
Tl 190.801†	-42.1	-0.0163	mg/L	0.00193	-0.0163	mg/L	0.00193	11.84%
V 290.880†	-488.1	-0.00261	mg/L	0.001099	-0.00261	mg/L	0.001099	42.14%
Zn 206.200†	580.3	0.00518	mg/L	0.000271	0.00518	mg/L	0.000271	5.22%
K 766.490†	10952.4	9.69	mg/L	0.062	9.69	mg/L	0.062	0.64%
Na 589.592†	4378370.6	798	mg/L	61.3	798	mg/L	61.3	7.68%
Sr 407.771†	Saturated2							
Li 670.784†	29714.9	0.911	mg/L	0.0050	0.911	mg/L	0.0050	0.55%
P 214.914†	37.8	-0.0119	mg/L	0.00309	-0.0119	mg/L	0.00309	25.93%

Sequence No.: 13
Sample ID: L1508084402 0.02
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 25
Date Collected: 8/23/2015 11:07:39 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1508084402 0.02

Analyte	Back Pressure	Flow
All	200.0 kPa	0.31 L/min

Mean Data: L1508084402 0.02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2195607.5						74686.91	3.40%
YRADIAL	135184.9						8169.49	6.04%
Ga 417.206	765335.4						29367.26	3.84%
GaRADIAL	32482.8						1685.00	5.19%
Ag 328.068†	1170.7	0.00708	mg/L	0.001637	0.00708	mg/L	0.001637	23.12%
Al 396.153†	83.5	0.0180	mg/L	0.03750	0.0180	mg/L	0.03750	207.97%
As 188.979†	-1.6	0.00408	mg/L	0.000703	0.00408	mg/L	0.000703	17.22%
Ba 233.527†	1141611.7	7.49	mg/L	0.059	7.49	mg/L	0.059	0.78%
Be 234.861†	698.0	0.00023	mg/L	0.000253	0.00023	mg/L	0.000253	109.45%
B 249.677†	29561.3	0.394	mg/L	0.0074	0.394	mg/L	0.0074	1.89%
Ca 227.546†	85210.9	263	mg/L	3.3	263	mg/L	3.3	1.27%
Cd 228.802†	-2.5	0.00008	mg/L	0.000187	0.00008	mg/L	0.000187	226.23%
Co 228.616†	-134.8	-0.00555	mg/L	0.000274	-0.00555	mg/L	0.000274	4.94%
Cr 267.716†	291.9	0.00188	mg/L	0.000383	0.00188	mg/L	0.000383	20.34%
Cu 327.393†	-519.6	-0.00161	mg/L	0.000665	-0.00161	mg/L	0.000665	41.38%
Fe 239.562†	21695.8	2.18	mg/L	0.050	2.18	mg/L	0.050	2.31%
Mg 279.077†	49531.2	25.5	mg/L	0.25	25.5	mg/L	0.25	0.97%

Approved: August 24, 2015

Mn 257.610†	110936.2	0.149	mg/L	0.0016	0.149	mg/L	0.0016	1.05%
Mo 202.031†	-87.3	-0.00139	mg/L	0.000342	-0.00139	mg/L	0.000342	24.57%
Ni 231.604†	49.4	-0.00044	mg/L	0.000393	-0.00044	mg/L	0.000393	89.27%
Pb 220.353†	42.9	0.00136	mg/L	0.000320	0.00136	mg/L	0.000320	23.51%
Sb 206.836†	20.0	0.0121	mg/L	0.00595	0.0121	mg/L	0.00595	49.18%
Se 196.026†	-17.5	-0.0115	mg/L	0.00970	-0.0115	mg/L	0.00970	84.14%
Si 251.611†	11210.8	0.277	mg/L	0.0061	0.277	mg/L	0.0061	2.20%
Sn 189.927†	-165.2	-0.0152	mg/L	0.00076	-0.0152	mg/L	0.00076	5.00%
Ti 334.940†	-16109.5	-0.00213	mg/L	0.000357	-0.00213	mg/L	0.000357	16.74%
Tl 190.801†	-48.9	-0.0189	mg/L	0.00278	-0.0189	mg/L	0.00278	14.68%
V 290.880†	-604.9	-0.00325	mg/L	0.000465	-0.00325	mg/L	0.000465	14.29%
Zn 206.200†	594.8	0.00534	mg/L	0.000145	0.00534	mg/L	0.000145	2.72%
K 766.490†	10048.9	8.87	mg/L	0.111	8.87	mg/L	0.111	1.25%
Na 589.592†	4165216.4	751	mg/L	34.2	751	mg/L	34.2	4.56%
Sr 407.771†	Saturated2							
Li 670.784†	27769.5	0.851	mg/L	0.0100	0.851	mg/L	0.0100	1.17%
P 214.914†	26.3	-0.0170	mg/L	0.00815	-0.0170	mg/L	0.00815	47.81%

Sequence No.: 14 **Autosampler Location: 26**
Sample ID: L1508090402 **Date Collected: 8/23/2015 11:10:02 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508090402

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508090402

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	2215669.6						47137.02	2.13%
YRADIAL	136327.2						1755.30	1.29%
Ga 417.206	812362.6						21583.68	2.66%
GaRADIAL	33873.0						480.77	1.42%
Ag 328.068†	754.1	0.00411	mg/L	0.000606	0.00411	mg/L	0.000606	14.74%
Al 396.153†	86.6	0.0190	mg/L	0.04292	0.0190	mg/L	0.04292	225.72%
As 188.979†	15.6	0.00552	mg/L	0.003358	0.00552	mg/L	0.003358	60.87%
Ba 233.527†	17331.8	0.114	mg/L	0.0036	0.114	mg/L	0.0036	3.17%
Be 234.861†	-325.6	-0.00006	mg/L	0.000042	-0.00006	mg/L	0.000042	70.78%
B 249.677†	1260.8	0.0203	mg/L	0.00164	0.0203	mg/L	0.00164	8.09%
Ca 227.546†	41283.8	127	mg/L	1.3	127	mg/L	1.3	1.04%
Cd 228.802†	20.4	0.00064	mg/L	0.000253	0.00064	mg/L	0.000253	39.45%
Co 228.616†	-18.0	-0.00055	mg/L	0.000191	-0.00055	mg/L	0.000191	34.85%
Cr 267.716†	760.3	0.00513	mg/L	0.000152	0.00513	mg/L	0.000152	2.97%
Cu 327.393†	-225.2	0.00001	mg/L	0.000929	0.00001	mg/L	0.000929	>999.9%
Fe 239.562†	991.0	0.0929	mg/L	0.00843	0.0929	mg/L	0.00843	9.08%
Mg 279.077†	109597.6	56.5	mg/L	0.60	56.5	mg/L	0.60	1.06%
Mn 257.610†	34823.8	0.0465	mg/L	0.00025	0.0465	mg/L	0.00025	0.54%
Mo 202.031†	111.3	0.00407	mg/L	0.000732	0.00407	mg/L	0.000732	18.01%
Ni 231.604†	150.9	0.00089	mg/L	0.000279	0.00089	mg/L	0.000279	31.54%
Pb 220.353†	12.3	-0.00042	mg/L	0.000809	-0.00042	mg/L	0.000809	191.42%
Sb 206.836†	17.7	0.0112	mg/L	0.00296	0.0112	mg/L	0.00296	26.56%
Se 196.026†	-39.0	-0.0304	mg/L	0.00251	-0.0304	mg/L	0.00251	8.25%
Si 251.611†	730215.6	17.0	mg/L	0.24	17.0	mg/L	0.24	1.44%
Sn 189.927†	-129.4	-0.0123	mg/L	0.00139	-0.0123	mg/L	0.00139	11.35%
Ti 334.940†	-7831.5	-0.00044	mg/L	0.000229	-0.00044	mg/L	0.000229	52.28%
Tl 190.801†	-33.6	-0.0128	mg/L	0.00426	-0.0128	mg/L	0.00426	33.26%
V 290.880†	-1481.1	-0.00927	mg/L	0.000533	-0.00927	mg/L	0.000533	5.75%
Zn 206.200†	378.0	0.00280	mg/L	0.000226	0.00280	mg/L	0.000226	8.06%
K 766.490†	2203.9	1.79	mg/L	0.090	1.79	mg/L	0.090	5.02%
Na 589.592†	1915319.5	314	mg/L	3.0	314	mg/L	3.0	0.94%
Sr 407.771†	2379734.7	2.98	mg/L	0.025	2.98	mg/L	0.025	0.83%
Li 670.784†	1942.5	0.0544	mg/L	0.00381	0.0544	mg/L	0.00381	7.00%
P 214.914†	244.1	0.0805	mg/L	0.00527	0.0805	mg/L	0.00527	6.54%

Sequence No.: 15 **Autosampler Location: 27**
Sample ID: L1508090404 **Date Collected: 8/23/2015 11:12:26 AM**

Approved: August 24, 2015

Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508090404

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508090404

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2126924.2						93983.25	4.42%
YRADIAL	141214.8						4592.43	3.25%
Ga 417.206	783960.0						40976.48	5.23%
GaRADIAL	34848.6						1120.51	3.22%
Ag 328.068†	114.6	0.00224	mg/L	0.000515	0.00224	mg/L	0.000515	22.98%
Al 396.153†	70.7	0.0116	mg/L	0.02122	0.0116	mg/L	0.02122	182.82%
As 188.979†	10.4	0.00299	mg/L	0.002722	0.00299	mg/L	0.002722	90.90%
Ba 233.527†	7629.4	0.0499	mg/L	0.00323	0.0499	mg/L	0.00323	6.48%
Be 234.861†	-405.6	-0.00010	mg/L	0.000057	-0.00010	mg/L	0.000057	55.21%
B 249.677†	1573.5	0.0241	mg/L	0.00114	0.0241	mg/L	0.00114	4.73%
Ca 227.546†	26483.5	81.8	mg/L	5.90	81.8	mg/L	5.90	7.21%
Cd 228.802†	12.4	0.00045	mg/L	0.000141	0.00045	mg/L	0.000141	31.45%
Co 228.616†	-40.9	-0.00102	mg/L	0.000621	-0.00102	mg/L	0.000621	60.88%
Cr 267.716†	457.8	0.00302	mg/L	0.000214	0.00302	mg/L	0.000214	7.09%
Cu 327.393†	-248.3	-0.00011	mg/L	0.001360	-0.00011	mg/L	0.001360	>999.9%
Fe 239.562†	223.9	0.0162	mg/L	0.00180	0.0162	mg/L	0.00180	11.14%
Mg 279.077†	59101.7	30.4	mg/L	0.05	30.4	mg/L	0.05	0.16%
Mn 257.610†	23357.7	0.0311	mg/L	0.00209	0.0311	mg/L	0.00209	6.74%
Mo 202.031†	78.6	0.00314	mg/L	0.000577	0.00314	mg/L	0.000577	18.40%
Ni 231.604†	90.8	0.00010	mg/L	0.000378	0.00010	mg/L	0.000378	388.61%
Pb 220.353†	-2.2	-0.00132	mg/L	0.001572	-0.00132	mg/L	0.001572	119.32%
Sb 206.836†	26.0	0.0142	mg/L	0.00184	0.0142	mg/L	0.00184	13.00%
Se 196.026†	-21.9	-0.0153	mg/L	0.00872	-0.0153	mg/L	0.00872	57.16%
Si 251.611†	732313.3	17.0	mg/L	0.12	17.0	mg/L	0.12	0.71%
Sn 189.927†	-133.2	-0.0126	mg/L	0.00180	-0.0126	mg/L	0.00180	14.29%
Ti 334.940†	-4814.5	0.00042	mg/L	0.000529	0.00042	mg/L	0.000529	126.04%
Tl 190.801†	-25.9	-0.00977	mg/L	0.002325	-0.00977	mg/L	0.002325	23.79%
V 290.880†	-578.7	-0.00329	mg/L	0.001709	-0.00329	mg/L	0.001709	51.99%
Zn 206.200†	245.5	0.00124	mg/L	0.000263	0.00124	mg/L	0.000263	21.19%
K 766.490†	1362.3	1.09	mg/L	0.030	1.09	mg/L	0.030	2.71%
Na 589.592†	1269257.0	204	mg/L	0.4	204	mg/L	0.4	0.19%
Sr 407.771†	553320.5	0.694	mg/L	0.0021	0.694	mg/L	0.0021	0.30%
Li 670.784†	1048.4	0.0268	mg/L	0.00064	0.0268	mg/L	0.00064	2.39%
P 214.914†	365.3	0.135	mg/L	0.0090	0.135	mg/L	0.0090	6.68%

Sequence No.: 16 **Autosampler Location: 28**
Sample ID: L1508090406 **Date Collected: 8/23/2015 11:14:49 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508090406

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508090406

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2074302.3						32998.08	1.59%
YRADIAL	133415.5						3487.65	2.61%
Ga 417.206	734115.2						16633.32	2.27%
GaRADIAL	32846.6						734.03	2.23%
Ag 328.068†	2502.0	0.0103	mg/L	0.00155	0.0103	mg/L	0.00155	15.08%
Al 396.153†	81.3	0.0165	mg/L	0.02678	0.0165	mg/L	0.02678	161.82%
As 188.979†	8.9	0.00940	mg/L	0.002854	0.00940	mg/L	0.002854	30.37%
Ba 233.527†	54849.1	0.360	mg/L	0.0073	0.360	mg/L	0.0073	2.02%

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Be 234.861†	-435.9	-0.00012	mg/L	0.000018	-0.00012	mg/L	0.000018	15.16%
B 249.677†	1815.7	0.0271	mg/L	0.00064	0.0271	mg/L	0.00064	2.37%
Ca 227.546†	127436.0	393	mg/L	7.1	393	mg/L	7.1	1.80%
Cd 228.802†	30.2	0.00090	mg/L	0.000351	0.00090	mg/L	0.000351	39.03%
Co 228.616†	-39.0	-0.00103	mg/L	0.000207	-0.00103	mg/L	0.000207	20.00%
Cr 267.716†	663.4	0.00445	mg/L	0.000234	0.00445	mg/L	0.000234	5.26%
Cu 327.393†	-1050.3	-0.00457	mg/L	0.001247	-0.00457	mg/L	0.001247	27.28%
Fe 239.562†	119.4	0.00353	mg/L	0.005036	0.00353	mg/L	0.005036	142.66%
Mg 279.077†	263887.2	136	mg/L	0.9	136	mg/L	0.9	0.64%
Mn 257.610†	36199.8	0.0484	mg/L	0.00087	0.0484	mg/L	0.00087	1.81%
Mo 202.031†	87.2	0.00338	mg/L	0.000571	0.00338	mg/L	0.000571	16.89%
Ni 231.604†	699.9	0.00809	mg/L	0.000540	0.00809	mg/L	0.000540	6.67%
Pb 220.353†	-3.7	-0.00142	mg/L	0.000911	-0.00142	mg/L	0.000911	64.09%
Sb 206.836†	32.1	0.0163	mg/L	0.00308	0.0163	mg/L	0.00308	18.88%
Se 196.026†	-27.6	-0.0202	mg/L	0.00563	-0.0202	mg/L	0.00563	27.84%
Si 251.611†	858652.1	19.9	mg/L	0.37	19.9	mg/L	0.37	1.85%
Sn 189.927†	-218.0	-0.0196	mg/L	0.00093	-0.0196	mg/L	0.00093	4.76%
Ti 334.940†	-22726.6	-0.00208	mg/L	0.000592	-0.00208	mg/L	0.000592	28.45%
Tl 190.801†	-50.3	-0.0195	mg/L	0.00224	-0.0195	mg/L	0.00224	11.48%
V 290.880†	-2120.4	-0.0151	mg/L	0.00043	-0.0151	mg/L	0.00043	2.87%
Zn 206.200†	408.5	0.00315	mg/L	0.000199	0.00315	mg/L	0.000199	6.31%
K 766.490†	4200.5	3.58	mg/L	0.048	3.58	mg/L	0.048	1.33%
Na 589.592†	2556173.3	430	mg/L	2.4	430	mg/L	2.4	0.56%
Sr 407.771†	2791649.2	3.49	mg/L	0.008	3.49	mg/L	0.008	0.23%
Li 670.784†	2702.9	0.0779	mg/L	0.00246	0.0779	mg/L	0.00246	3.16%
P 214.914†	135.4	0.0318	mg/L	0.00139	0.0318	mg/L	0.00139	4.36%

Sequence No.: 17
Sample ID: L1508090408
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 29
Date Collected: 8/23/2015 11:17:13 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1508090408

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508090408

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2225233.6						35071.37	1.58%
YRADIAL	129303.1						6754.98	5.22%
Ga 417.206	820500.0						15713.34	1.92%
GaRADIAL	32354.3						1377.64	4.26%
Ag 328.068†	116.4	0.00212	mg/L	0.000909	0.00212	mg/L	0.000909	42.77%
Al 396.153†	125.5	0.0372	mg/L	0.00884	0.0372	mg/L	0.00884	23.78%
As 188.979†	19.9	0.00582	mg/L	0.002241	0.00582	mg/L	0.002241	38.49%
Ba 233.527†	4205.2	0.0274	mg/L	0.00093	0.0274	mg/L	0.00093	3.40%
Be 234.861†	-324.8	-0.00004	mg/L	0.000025	-0.00004	mg/L	0.000025	64.28%
B 249.677†	2702.8	0.0386	mg/L	0.00092	0.0386	mg/L	0.00092	2.39%
Ca 227.546†	28048.0	86.6	mg/L	2.80	86.6	mg/L	2.80	3.24%
Cd 228.802†	20.7	0.00064	mg/L	0.000250	0.00064	mg/L	0.000250	38.79%
Co 228.616†	-24.2	-0.00066	mg/L	0.000495	-0.00066	mg/L	0.000495	75.43%
Cr 267.716†	335.1	0.00217	mg/L	0.000076	0.00217	mg/L	0.000076	3.52%
Cu 327.393†	-216.2	0.00005	mg/L	0.001091	0.00005	mg/L	0.001091	>999.9%
Fe 239.562†	57.7	-0.00090	mg/L	0.001336	-0.00090	mg/L	0.001336	148.48%
Mg 279.077†	91531.6	47.2	mg/L	0.42	47.2	mg/L	0.42	0.88%
Mn 257.610†	27526.5	0.0367	mg/L	0.00129	0.0367	mg/L	0.00129	3.52%
Mo 202.031†	103.0	0.00382	mg/L	0.000502	0.00382	mg/L	0.000502	13.14%
Ni 231.604†	58.0	-0.00033	mg/L	0.000295	-0.00033	mg/L	0.000295	88.45%
Pb 220.353†	-10.8	-0.00186	mg/L	0.000432	-0.00186	mg/L	0.000432	23.27%
Sb 206.836†	19.6	0.0119	mg/L	0.00500	0.0119	mg/L	0.00500	42.15%
Se 196.026†	-24.5	-0.0175	mg/L	0.00326	-0.0175	mg/L	0.00326	18.61%
Si 251.611†	767114.4	17.8	mg/L	0.13	17.8	mg/L	0.13	0.72%
Sn 189.927†	-113.8	-0.0110	mg/L	0.00048	-0.0110	mg/L	0.00048	4.37%
Ti 334.940†	-5304.7	0.00011	mg/L	0.000697	0.00011	mg/L	0.000697	607.58%
Tl 190.801†	-27.9	-0.0106	mg/L	0.00187	-0.0106	mg/L	0.00187	17.69%
V 290.880†	-793.7	-0.00499	mg/L	0.000679	-0.00499	mg/L	0.000679	13.60%
Zn 206.200†	577.7	0.00510	mg/L	0.000392	0.00510	mg/L	0.000392	7.69%

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K 766.490†	1318.4	0.950	mg/L	0.0306	0.950	mg/L	0.0306	3.22%
Na 589.592†	1851297.6	303	mg/L	2.0	303	mg/L	2.0	0.67%
Sr 407.771†	1001909.5	1.26	mg/L	0.004	1.26	mg/L	0.004	0.34%
Li 670.784†	2388.5	0.0682	mg/L	0.00478	0.0682	mg/L	0.00478	7.00%
P 214.914†	197.2	0.0595	mg/L	0.00919	0.0595	mg/L	0.00919	15.45%

Sequence No.: 18 **Autosampler Location: 30**
Sample ID: L1508097101 **Date Collected: 8/23/2015 11:20:34 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508097101

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508097101

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2394891.6						64977.08	2.71%
YRADIAL	139595.2						1901.69	1.36%
Ga 417.206	933170.5						31422.99	3.37%
GaRADIAL	34589.6						380.71	1.10%
Ag 328.068†	-110.7	0.00148	mg/L	0.000169	0.00148	mg/L	0.000169	11.40%
Al 396.153†	126.2	0.0376	mg/L	0.01299	0.0376	mg/L	0.01299	34.60%
As 188.979†	12.7	0.00278	mg/L	0.002421	0.00278	mg/L	0.002421	87.17%
Ba 233.527†	21554.5	0.141	mg/L	0.0044	0.141	mg/L	0.0044	3.11%
Be 234.861†	-221.3	0.00002	mg/L	0.000020	0.00002	mg/L	0.000020	118.58%
B 249.677†	3207.3	0.0454	mg/L	0.00223	0.0454	mg/L	0.00223	4.90%
Ca 227.546†	13165.9	40.7	mg/L	1.55	40.7	mg/L	1.55	3.80%
Cd 228.802†	13.0	0.00046	mg/L	0.000084	0.00046	mg/L	0.000084	18.22%
Co 228.616†	-33.2	-0.00089	mg/L	0.000446	-0.00089	mg/L	0.000446	49.82%
Cr 267.716†	132.0	0.00076	mg/L	0.000167	0.00076	mg/L	0.000167	22.08%
Cu 327.393†	-8.8	0.00122	mg/L	0.001296	0.00122	mg/L	0.001296	106.53%
Fe 239.562†	783.6	0.0728	mg/L	0.00547	0.0728	mg/L	0.00547	7.51%
Mg 279.077†	28985.8	14.9	mg/L	0.23	14.9	mg/L	0.23	1.55%
Mn 257.610†	1761.8	0.00192	mg/L	0.000113	0.00192	mg/L	0.000113	5.90%
Mo 202.031†	82.0	0.00323	mg/L	0.000393	0.00323	mg/L	0.000393	12.16%
Ni 231.604†	-29.3	-0.00148	mg/L	0.000366	-0.00148	mg/L	0.000366	24.75%
Pb 220.353†	23.8	0.00033	mg/L	0.000634	0.00033	mg/L	0.000634	192.90%
Sb 206.836†	7.1	0.00740	mg/L	0.001250	0.00740	mg/L	0.001250	16.90%
Se 196.026†	-11.0	-0.00558	mg/L	0.003529	-0.00558	mg/L	0.003529	63.25%
Si 251.611†	199252.3	4.64	mg/L	0.063	4.64	mg/L	0.063	1.36%
Sn 189.927†	-88.0	-0.00886	mg/L	0.000771	-0.00886	mg/L	0.000771	8.70%
Ti 334.940†	-2767.9	0.00035	mg/L	0.000368	0.00035	mg/L	0.000368	104.03%
Tl 190.801†	-28.8	-0.0109	mg/L	0.00361	-0.0109	mg/L	0.00361	33.23%
V 290.880†	-527.4	-0.00258	mg/L	0.000612	-0.00258	mg/L	0.000612	23.77%
Zn 206.200†	164.0	0.00027	mg/L	0.000086	0.00027	mg/L	0.000086	31.40%
K 766.490†	984.6	0.919	mg/L	0.1213	0.919	mg/L	0.1213	13.20%
Na 589.592†	101162.9	15.6	mg/L	0.11	15.6	mg/L	0.11	0.73%
Sr 407.771†	451098.4	0.567	mg/L	0.0048	0.567	mg/L	0.0048	0.84%
Li 670.784†	193.5	0.00046	mg/L	0.002859	0.00046	mg/L	0.002859	614.87%
P 214.914†	17.9	-0.0208	mg/L	0.00754	-0.0208	mg/L	0.00754	36.26%

Sequence No.: 19 **Autosampler Location: 31**
Sample ID: L1508097301 **Date Collected: 8/23/2015 11:22:57 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508097301

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508097301

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD

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Analyte	Intensity	Conc.	Units	Std.Dev.	Conc.	Units	Std.Dev.	RSD
Y 371.029	2330317.7						108643.07	4.66%
YRADIAL	138507.9						3948.70	2.85%
Ga 417.206	913979.5						45267.56	4.95%
GaRADIAL	34241.6						819.96	2.39%
Ag 328.068†	-37.3	0.00181	mg/L	0.000801	0.00181	mg/L	0.000801	44.13%
Al 396.153†	82.6	0.0172	mg/L	0.02100	0.0172	mg/L	0.02100	122.21%
As 188.979†	8.4	0.00201	mg/L	0.001523	0.00201	mg/L	0.001523	75.94%
Ba 233.527†	13936.2	0.0912	mg/L	0.00304	0.0912	mg/L	0.00304	3.33%
Be 234.861†	-259.8	0.00000	mg/L	0.000078	0.00000	mg/L	0.000078	>999.9%
B 249.677†	724.0	0.0131	mg/L	0.00048	0.0131	mg/L	0.00048	3.66%
Ca 227.546†	20382.1	62.9	mg/L	2.41	62.9	mg/L	2.41	3.84%
Cd 228.802†	6.4	0.00030	mg/L	0.000126	0.00030	mg/L	0.000126	42.05%
Co 228.616†	-28.5	-0.00077	mg/L	0.000088	-0.00077	mg/L	0.000088	11.41%
Cr 267.716†	109.7	0.00060	mg/L	0.000181	0.00060	mg/L	0.000181	30.15%
Cu 327.393†	851.5	0.00595	mg/L	0.000706	0.00595	mg/L	0.000706	11.85%
Fe 239.562†	302.2	0.0246	mg/L	0.00394	0.0246	mg/L	0.00394	16.03%
Mg 279.077†	9782.8	4.99	mg/L	0.105	4.99	mg/L	0.105	2.11%
Mn 257.610†	-109.3	-0.00060	mg/L	0.000068	-0.00060	mg/L	0.000068	11.29%
Mo 202.031†	51.1	0.00236	mg/L	0.000404	0.00236	mg/L	0.000404	17.14%
Ni 231.604†	8.3	-0.00098	mg/L	0.000416	-0.00098	mg/L	0.000416	42.27%
Pb 220.353†	35.6	0.00107	mg/L	0.001492	0.00107	mg/L	0.001492	139.83%
Sb 206.836†	12.4	0.00933	mg/L	0.001559	0.00933	mg/L	0.001559	16.71%
Se 196.026†	-14.1	-0.00833	mg/L	0.005406	-0.00833	mg/L	0.005406	64.94%
Si 251.611†	133593.1	3.12	mg/L	0.033	3.12	mg/L	0.033	1.05%
Sn 189.927†	-122.3	-0.0117	mg/L	0.00046	-0.0117	mg/L	0.00046	3.95%
Ti 334.940†	-4549.7	-0.00045	mg/L	0.000262	-0.00045	mg/L	0.000262	57.56%
Tl 190.801†	-29.6	-0.0112	mg/L	0.00603	-0.0112	mg/L	0.00603	54.05%
V 290.880†	-53.7	0.00047	mg/L	0.001944	0.00047	mg/L	0.001944	417.89%
Zn 206.200†	631.5	0.00571	mg/L	0.000115	0.00571	mg/L	0.000115	2.01%
K 766.490†	668.5	0.623	mg/L	0.0264	0.623	mg/L	0.0264	4.23%
Na 589.592†	52191.9	8.05	mg/L	0.032	8.05	mg/L	0.032	0.40%
Sr 407.771†	118204.6	0.149	mg/L	0.0012	0.149	mg/L	0.0012	0.80%
Li 670.784†	196.2	0.00055	mg/L	0.001982	0.00055	mg/L	0.001982	362.32%
P 214.914†	-23.2	-0.0392	mg/L	0.00620	-0.0392	mg/L	0.00620	15.82%

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Sequence No.: 20 **Autosampler Location: 32**
Sample ID: L1508097302 **Date Collected: 8/23/2015 11:25:23 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508097302

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508097302

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2291264.5						93565.05	4.08%
YRADIAL	137908.2						2772.12	2.01%
Ga 417.206	895129.5						41301.79	4.61%
GaRADIAL	33151.2						497.12	1.50%
Ag 328.068†	-171.6	0.00152	mg/L	0.000946	0.00152	mg/L	0.000946	62.06%
Al 396.153†	690.4	0.301	mg/L	0.0082	0.301	mg/L	0.0082	2.73%
As 188.979†	12.9	0.00245	mg/L	0.003083	0.00245	mg/L	0.003083	126.08%
Ba 233.527†	7725.1	0.0505	mg/L	0.00162	0.0505	mg/L	0.00162	3.21%
Be 234.861†	-144.5	-0.00001	mg/L	0.000070	-0.00001	mg/L	0.000070	499.24%
B 249.677†	1485.4	0.0246	mg/L	0.00114	0.0246	mg/L	0.00114	4.61%
Ca 227.546†	6408.4	19.9	mg/L	0.64	19.9	mg/L	0.64	3.20%
Cd 228.802†	8.4	0.00034	mg/L	0.000071	0.00034	mg/L	0.000071	20.63%
Co 228.616†	-23.1	-0.00067	mg/L	0.000150	-0.00067	mg/L	0.000150	22.25%
Cr 267.716†	154.9	0.00092	mg/L	0.000149	0.00092	mg/L	0.000149	16.23%
Cu 327.393†	79.6	0.00174	mg/L	0.000475	0.00174	mg/L	0.000475	27.33%
Fe 239.562†	4747.2	0.472	mg/L	0.0053	0.472	mg/L	0.0053	1.12%
Mg 279.077†	8729.7	4.45	mg/L	0.075	4.45	mg/L	0.075	1.68%
Mn 257.610†	23202.6	0.0308	mg/L	0.00103	0.0308	mg/L	0.00103	3.33%
Mo 202.031†	77.5	0.00313	mg/L	0.000349	0.00313	mg/L	0.000349	11.12%
Ni 231.604†	30.3	-0.00070	mg/L	0.000098	-0.00070	mg/L	0.000098	14.09%

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Pb 220.353†	2.2	-0.00099	mg/L	0.000338	-0.00099	mg/L	0.000338	34.10%
Sb 206.836†	0.9	0.00520	mg/L	0.002602	0.00520	mg/L	0.002602	50.03%
Se 196.026†	-7.5	-0.00244	mg/L	0.011745	-0.00244	mg/L	0.011745	480.56%
Si 251.611†	22693.2	0.544	mg/L	0.0164	0.544	mg/L	0.0164	3.02%
Sn 189.927†	-63.3	-0.00681	mg/L	0.000477	-0.00681	mg/L	0.000477	7.01%
Ti 334.940†	1295.9	0.00412	mg/L	0.000712	0.00412	mg/L	0.000712	17.29%
Tl 190.801†	-16.0	-0.00584	mg/L	0.001552	-0.00584	mg/L	0.001552	26.57%
V 290.880†	148.3	0.00174	mg/L	0.000739	0.00174	mg/L	0.000739	42.34%
Zn 206.200†	164.1	0.00028	mg/L	0.000227	0.00028	mg/L	0.000227	79.80%
K 766.490†	969.8	0.908	mg/L	0.0570	0.908	mg/L	0.0570	6.28%
Na 589.592†	79913.5	12.3	mg/L	0.05	12.3	mg/L	0.05	0.38%
Sr 407.771†	83577.7	0.107	mg/L	0.0008	0.107	mg/L	0.0008	0.74%
Li 670.784†	113.7	-0.00200	mg/L	0.003456	-0.00200	mg/L	0.003456	172.96%
P 214.914†	52.4	-0.00535	mg/L	0.010419	-0.00535	mg/L	0.010419	194.61%

Sequence No.: 21 **Autosampler Location: 33**
Sample ID: L1508097303 **Date Collected: 8/23/2015 11:27:45 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508097303

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508097303

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2274981.5						12963.99	0.57%
YRADIAL	131147.1						8275.81	6.31%
Ga 417.206	891601.2						5770.13	0.65%
GaRADIAL	32790.6						1790.77	5.46%
Ag 328.068†	70.5	0.00220	mg/L	0.000296	0.00220	mg/L	0.000296	13.43%
Al 396.153†	253.0	0.0965	mg/L	0.00556	0.0965	mg/L	0.00556	5.76%
As 188.979†	8.2	0.00165	mg/L	0.002796	0.00165	mg/L	0.002796	169.73%
Ba 233.527†	11117.4	0.0727	mg/L	0.00134	0.0727	mg/L	0.00134	1.84%
Be 234.861†	-265.9	-0.00003	mg/L	0.000017	-0.00003	mg/L	0.000017	67.29%
B 249.677†	2235.1	0.0331	mg/L	0.00023	0.0331	mg/L	0.00023	0.69%
Ca 227.546†	16234.7	50.2	mg/L	0.85	50.2	mg/L	0.85	1.70%
Cd 228.802†	3.0	0.00021	mg/L	0.000047	0.00021	mg/L	0.000047	21.91%
Co 228.616†	-34.5	-0.00089	mg/L	0.000032	-0.00089	mg/L	0.000032	3.57%
Cr 267.716†	162.8	0.00097	mg/L	0.000101	0.00097	mg/L	0.000101	10.42%
Cu 327.393†	136.0	0.00202	mg/L	0.000723	0.00202	mg/L	0.000723	35.79%
Fe 239.562†	1357.9	0.131	mg/L	0.0131	0.131	mg/L	0.0131	9.99%
Mg 279.077†	16345.6	8.38	mg/L	0.819	8.38	mg/L	0.819	9.78%
Mn 257.610†	3873.7	0.00477	mg/L	0.000119	0.00477	mg/L	0.000119	2.49%
Mo 202.031†	355.1	0.0109	mg/L	0.00003	0.0109	mg/L	0.00003	0.27%
Ni 231.604†	19.0	-0.00084	mg/L	0.000244	-0.00084	mg/L	0.000244	28.90%
Pb 220.353†	-0.8	-0.00120	mg/L	0.000964	-0.00120	mg/L	0.000964	80.62%
Sb 206.836†	9.5	0.00830	mg/L	0.002913	0.00830	mg/L	0.002913	35.09%
Se 196.026†	-6.1	-0.00120	mg/L	0.005003	-0.00120	mg/L	0.005003	416.22%
Si 251.611†	143643.7	3.35	mg/L	0.008	3.35	mg/L	0.008	0.23%
Sn 189.927†	-101.5	-0.00998	mg/L	0.001937	-0.00998	mg/L	0.001937	19.41%
Ti 334.940†	-2354.5	0.00148	mg/L	0.000297	0.00148	mg/L	0.000297	20.05%
Tl 190.801†	-30.8	-0.0116	mg/L	0.00049	-0.0116	mg/L	0.00049	4.24%
V 290.880†	-96.7	0.00014	mg/L	0.001004	0.00014	mg/L	0.001004	714.62%
Zn 206.200†	111.9	-0.00033	mg/L	0.000194	-0.00033	mg/L	0.000194	58.60%
K 766.490†	2877.9	2.74	mg/L	0.226	2.74	mg/L	0.226	8.23%
Na 589.592†	51732.6	7.97	mg/L	0.065	7.97	mg/L	0.065	0.82%
Sr 407.771†	290603.0	0.366	mg/L	0.0032	0.366	mg/L	0.0032	0.87%
Li 670.784†	150.4	-0.00086	mg/L	0.001635	-0.00086	mg/L	0.001635	189.18%
P 214.914†	31.3	-0.0148	mg/L	0.00695	-0.0148	mg/L	0.00695	47.03%

Sequence No.: 22 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 8/23/2015 11:30:08 AM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Approved: August 24, 2015

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2316758.5						46644.28	2.01%
YRADIAL	145716.3						4483.25	3.08%
Ga 417.206	865997.8						23042.46	2.66%
GaRADIAL	35971.3						782.19	2.17%
Ag 328.068†	109991.6	0.403	mg/L	0.0037	0.403	mg/L	0.0037	0.92%
QC value within limits for Ag 328.068 Recovery = 100.65%								
Al 396.153†	21487.2	9.99	mg/L	0.067	9.99	mg/L	0.067	0.67%
QC value within limits for Al 396.153 Recovery = 99.86%								
As 188.979†	1349.0	0.383	mg/L	0.0080	0.383	mg/L	0.0080	2.08%
QC value within limits for As 188.979 Recovery = 95.74%								
Ba 233.527†	151487.8	0.994	mg/L	0.0119	0.994	mg/L	0.0119	1.19%
QC value within limits for Ba 233.527 Recovery = 99.38%								
Be 234.861†	66142.7	0.0486	mg/L	0.00022	0.0486	mg/L	0.00022	0.46%
QC value within limits for Be 234.861 Recovery = 97.18%								
B 249.677†	37538.2	0.502	mg/L	0.0069	0.502	mg/L	0.0069	1.37%
QC value within limits for B 249.677 Recovery = 100.42%								
Ca 227.546†	3098.2	9.72	mg/L	0.198	9.72	mg/L	0.198	2.03%
QC value within limits for Ca 227.546 Recovery = 97.18%								
Cd 228.802†	1956.8	0.0480	mg/L	0.00108	0.0480	mg/L	0.00108	2.26%
QC value within limits for Cd 228.802 Recovery = 96.10%								
Co 228.616†	9350.6	0.197	mg/L	0.0029	0.197	mg/L	0.0029	1.47%
QC value within limits for Co 228.616 Recovery = 98.62%								
Cr 267.716†	71938.3	0.501	mg/L	0.0041	0.501	mg/L	0.0041	0.83%
QC value within limits for Cr 267.716 Recovery = 100.29%								
Cu 327.393†	91122.9	0.505	mg/L	0.0062	0.505	mg/L	0.0062	1.24%
QC value within limits for Cu 327.393 Recovery = 101.03%								
Fe 239.562†	39823.7	4.00	mg/L	0.034	4.00	mg/L	0.034	0.86%
QC value within limits for Fe 239.562 Recovery = 100.10%								
Mg 279.077†	19289.3	9.89	mg/L	0.165	9.89	mg/L	0.165	1.66%
QC value within limits for Mg 279.077 Recovery = 98.94%								
Mn 257.610†	369842.5	0.499	mg/L	0.0054	0.499	mg/L	0.0054	1.09%
QC value within limits for Mn 257.610 Recovery = 99.71%								
Mo 202.031†	36090.9	1.02	mg/L	0.014	1.02	mg/L	0.014	1.42%
QC value within limits for Mo 202.031 Recovery = 102.06%								
Ni 231.604†	38137.3	0.499	mg/L	0.0047	0.499	mg/L	0.0047	0.95%
QC value within limits for Ni 231.604 Recovery = 99.73%								
Pb 220.353†	7939.7	0.498	mg/L	0.0072	0.498	mg/L	0.0072	1.45%
QC value within limits for Pb 220.353 Recovery = 99.63%								
Sb 206.836†	3193.3	1.15	mg/L	0.025	1.15	mg/L	0.025	2.16%
QC value within limits for Sb 206.836 Recovery = 95.53%								
Se 196.026†	448.0	0.402	mg/L	0.0148	0.402	mg/L	0.0148	3.70%
QC value within limits for Se 196.026 Recovery = 100.46%								
Si 251.611†	213307.6	4.96	mg/L	0.042	4.96	mg/L	0.042	0.85%
QC value within limits for Si 251.611 Recovery = 99.15%								
Sn 189.927†	12058.8	0.997	mg/L	0.0148	0.997	mg/L	0.0148	1.49%
QC value within limits for Sn 189.927 Recovery = 99.66%								
Ti 334.940†	790762.7	0.994	mg/L	0.0078	0.994	mg/L	0.0078	0.78%
QC value within limits for Ti 334.940 Recovery = 99.42%								
Tl 190.801†	1299.8	0.515	mg/L	0.0080	0.515	mg/L	0.0080	1.56%
QC value within limits for Tl 190.801 Recovery = 103.06%								
V 290.880†	169112.8	0.997	mg/L	0.0086	0.997	mg/L	0.0086	0.86%
QC value within limits for V 290.880 Recovery = 99.68%								
Zn 206.200†	85317.5	0.996	mg/L	0.0101	0.996	mg/L	0.0101	1.02%
QC value within limits for Zn 206.200 Recovery = 99.58%								
K 766.490†	51871.1	49.9	mg/L	0.20	49.9	mg/L	0.20	0.41%
QC value within limits for K 766.490 Recovery = 99.80%								
Na 589.592†	324599.4	50.6	mg/L	0.56	50.6	mg/L	0.56	1.10%
QC value within limits for Na 589.592 Recovery = 101.12%								
Sr 407.771†	798012.8	1.00	mg/L	0.018	1.00	mg/L	0.018	1.76%
QC value within limits for Sr 407.771 Recovery = 100.35%								
Li 670.784†	33213.6	1.02	mg/L	0.007	1.02	mg/L	0.007	0.67%
QC value within limits for Li 670.784 Recovery = 101.94%								

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P 214.914†	22242.0	9.93 mg/L	0.147	9.93 mg/L	0.147	1.48%

QC value within limits for P 214.914 Recovery = 99.30%

All analyte(s) passed QC.

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Sequence No.: 23 **Autosampler Location: 1**
Sample ID: CCB **Date Collected: 8/23/2015 11:32:33 AM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCB

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2318863.2						73663.76	3.18%
YRADIAL	139119.3						3013.84	2.17%
Ga 417.206	919520.8						34776.79	3.78%
GaRADIAL	33129.1						794.30	2.40%
Ag 328.068†	-281.7	0.00096	mg/L	0.000899	0.00096	mg/L	0.000899	94.07%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	35.9	-0.00463	mg/L	0.020730	-0.00463	mg/L	0.020730	447.51%
QC value within limits for Al 396.153 Recovery = Not calculated								
As 188.979†	21.5	0.00442	mg/L	0.002654	0.00442	mg/L	0.002654	60.08%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	230.8	0.00133	mg/L	0.000091	0.00133	mg/L	0.000091	6.87%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 234.861†	-135.4	0.00010	mg/L	0.000043	0.00010	mg/L	0.000043	44.83%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	339.1	0.00804	mg/L	0.002054	0.00804	mg/L	0.002054	25.55%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	-22.2	0.0273	mg/L	0.03879	0.0273	mg/L	0.03879	142.02%
QC value within limits for Ca 227.546 Recovery = Not calculated								
Cd 228.802†	1.6	0.00016	mg/L	0.000078	0.00016	mg/L	0.000078	48.75%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	-12.0	-0.00041	mg/L	0.000342	-0.00041	mg/L	0.000342	83.82%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	119.7	0.00067	mg/L	0.000344	0.00067	mg/L	0.000344	51.19%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	169.1	0.00220	mg/L	0.000068	0.00220	mg/L	0.000068	3.08%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	61.7	0.00044	mg/L	0.005187	0.00044	mg/L	0.005187	>999.9%
QC value within limits for Fe 239.562 Recovery = Not calculated								
Mg 279.077†	87.1	-0.00794	mg/L	0.047301	-0.00794	mg/L	0.047301	595.68%
QC value within limits for Mg 279.077 Recovery = Not calculated								
Mn 257.610†	-273.5	-0.00082	mg/L	0.000019	-0.00082	mg/L	0.000019	2.28%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	12.7	0.00127	mg/L	0.000562	0.00127	mg/L	0.000562	44.24%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	-1.3	-0.00112	mg/L	0.000200	-0.00112	mg/L	0.000200	17.90%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	-6.0	-0.00154	mg/L	0.001661	-0.00154	mg/L	0.001661	107.94%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	10.6	0.00868	mg/L	0.001044	0.00868	mg/L	0.001044	12.03%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	-4.8	-0.00003	mg/L	0.005065	-0.00003	mg/L	0.005065	>999.9%
QC value within limits for Se 196.026 Recovery = Not calculated								
Si 251.611†	-269.3	0.0110	mg/L	0.00032	0.0110	mg/L	0.00032	2.94%
QC value within limits for Si 251.611 Recovery = Not calculated								
Sn 189.927†	47.4	0.00235	mg/L	0.001876	0.00235	mg/L	0.001876	79.87%
QC value within limits for Sn 189.927 Recovery = Not calculated								
Ti 334.940†	-35.3	0.00117	mg/L	0.000286	0.00117	mg/L	0.000286	24.38%
QC value within limits for Ti 334.940 Recovery = Not calculated								
Tl 190.801†	-4.5	-0.00138	mg/L	0.000709	-0.00138	mg/L	0.000709	51.46%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 290.880†	262.6	0.00246	mg/L	0.000537	0.00246	mg/L	0.000537	21.86%
QC value within limits for V 290.880 Recovery = Not calculated								

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Zn 206.200†	51.4	-0.00104 mg/L	0.000095	-0.00104 mg/L	0.000095	9.18%
QC value within limits for Zn 206.200 Recovery = Not calculated						
K 766.490†	27.4	0.0179 mg/L	0.17081	0.0179 mg/L	0.17081	955.79%
QC value within limits for K 766.490 Recovery = Not calculated						
Na 589.592†	492.7	0.0549 mg/L	0.01493	0.0549 mg/L	0.01493	27.21%
QC value within limits for Na 589.592 Recovery = Not calculated						
Sr 407.771†	1200.5	0.00409 mg/L	0.000031	0.00409 mg/L	0.000031	0.75%
QC value within limits for Sr 407.771 Recovery = Not calculated						
Li 670.784†	3.4	-0.00540 mg/L	0.001785	-0.00540 mg/L	0.001785	33.05%
QC value within limits for Li 670.784 Recovery = Not calculated						
P 214.914†	5.8	-0.0262 mg/L	0.00514	-0.0262 mg/L	0.00514	19.60%
QC value within limits for P 214.914 Recovery = Not calculated						

All analyte(s) passed QC.

Sequence No.: 24 **Autosampler Location: 34**
Sample ID: LLCCV **Date Collected: 8/23/2015 11:34:57 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: LLCCV

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: LLCCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2234420.5						77797.79	3.48%
YRADIAL	134270.7						8460.95	6.30%
Ga 417.206	874252.4						34924.42	3.99%
GaRADIAL	32293.2						1489.17	4.61%
Ag 328.068†	3802.5	0.0158	mg/L	0.00105	0.0158	mg/L	0.00105	6.64%
Al 396.153†	815.0	0.358	mg/L	0.0421	0.358	mg/L	0.0421	11.76%
As 188.979†	55.5	0.0140	mg/L	0.00172	0.0140	mg/L	0.00172	12.28%
Ba 233.527†	6471.5	0.0423	mg/L	0.00152	0.0423	mg/L	0.00152	3.59%
Be 234.861†	2461.4	0.00200	mg/L	0.000042	0.00200	mg/L	0.000042	2.13%
B 249.677†	1682.0	0.0259	mg/L	0.00104	0.0259	mg/L	0.00104	4.01%
Ca 227.546†	97.0	0.398	mg/L	0.0641	0.398	mg/L	0.0641	16.12%
Cd 228.802†	81.7	0.00215	mg/L	0.000119	0.00215	mg/L	0.000119	5.52%
Co 228.616†	355.4	0.00735	mg/L	0.000123	0.00735	mg/L	0.000123	1.68%
Cr 267.716†	2918.2	0.0202	mg/L	0.00058	0.0202	mg/L	0.00058	2.85%
Cu 327.393†	3783.0	0.0222	mg/L	0.00088	0.0222	mg/L	0.00088	3.95%
Fe 239.562†	1577.7	0.153	mg/L	0.0142	0.153	mg/L	0.0142	9.25%
Mg 279.077†	892.1	0.407	mg/L	0.0791	0.407	mg/L	0.0791	19.43%
Mn 257.610†	14426.9	0.0190	mg/L	0.00024	0.0190	mg/L	0.00024	1.25%
Mo 202.031†	1453.0	0.0420	mg/L	0.00147	0.0420	mg/L	0.00147	3.50%
Ni 231.604†	1682.7	0.0210	mg/L	0.00060	0.0210	mg/L	0.00060	2.85%
Pb 220.353†	320.4	0.0190	mg/L	0.00188	0.0190	mg/L	0.00188	9.89%
Sb 206.836†	134.7	0.0530	mg/L	0.00239	0.0530	mg/L	0.00239	4.51%
Se 196.026†	24.2	0.0256	mg/L	0.00510	0.0256	mg/L	0.00510	19.90%
Si 251.611†	7629.2	0.194	mg/L	0.0054	0.194	mg/L	0.0054	2.80%
Sn 189.927†	513.3	0.0409	mg/L	0.00118	0.0409	mg/L	0.00118	2.88%
Ti 334.940†	30759.6	0.0398	mg/L	0.00036	0.0398	mg/L	0.00036	0.91%
Tl 190.801†	42.0	0.0171	mg/L	0.00216	0.0171	mg/L	0.00216	12.62%
V 290.880†	6927.5	0.0417	mg/L	0.00127	0.0417	mg/L	0.00127	3.04%
Zn 206.200†	3686.5	0.0414	mg/L	0.00159	0.0414	mg/L	0.00159	3.84%
K 766.490†	2194.1	2.09	mg/L	0.233	2.09	mg/L	0.233	11.13%
Na 589.592†	13796.1	2.11	mg/L	0.024	2.11	mg/L	0.024	1.15%
Sr 407.771†	32397.6	0.0432	mg/L	0.00011	0.0432	mg/L	0.00011	0.25%
Li 670.784†	1488.6	0.0404	mg/L	0.00195	0.0404	mg/L	0.00195	4.83%
P 214.914†	887.8	0.369	mg/L	0.0172	0.369	mg/L	0.0172	4.66%

Sequence No.: 25 **Autosampler Location: 35**
Sample ID: L1508091201 0.05 **Date Collected: 8/23/2015 11:37:22 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Approved: August 24, 2015

Nebulizer Parameters: L1508091201 0.05

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508091201 0.05

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2217716.0						15461.42	0.70%
YRADIAL	133901.1						3050.61	2.28%
Ga 417.206	767748.5						9268.41	1.21%
GaRADIAL	32344.0						716.19	2.21%
Ag 328.068†	2520.8	0.0121	mg/L	0.00201	0.0121	mg/L	0.00201	16.59%
Al 396.153†	72.0	0.0127	mg/L	0.04747	0.0127	mg/L	0.04747	374.44%
As 188.979†	-1.6	0.00800	mg/L	0.002680	0.00800	mg/L	0.002680	33.50%
Ba 233.527†	1182306.3	7.75	mg/L	0.057	7.75	mg/L	0.057	0.73%
Be 234.861†	929.1	0.00033	mg/L	0.000257	0.00033	mg/L	0.000257	77.24%
B 249.677†	106633.3	1.39	mg/L	0.018	1.39	mg/L	0.018	1.29%
Ca 227.546†	141887.3	438	mg/L	3.8	438	mg/L	3.8	0.86%
Cd 228.802†	3.0	0.00022	mg/L	0.000329	0.00022	mg/L	0.000329	150.31%
Co 228.616†	-158.9	-0.00614	mg/L	0.000447	-0.00614	mg/L	0.000447	7.28%
Cr 267.716†	222.8	0.00140	mg/L	0.000305	0.00140	mg/L	0.000305	21.77%
Cu 327.393†	-982.4	-0.00425	mg/L	0.001651	-0.00425	mg/L	0.001651	38.84%
Fe 239.562†	25199.7	2.53	mg/L	0.029	2.53	mg/L	0.029	1.16%
Mg 279.077†	71970.5	37.1	mg/L	0.27	37.1	mg/L	0.27	0.73%
Mn 257.610†	193904.0	0.261	mg/L	0.0024	0.261	mg/L	0.0024	0.94%
Mo 202.031†	-90.2	-0.00143	mg/L	0.000276	-0.00143	mg/L	0.000276	19.30%
Ni 231.604†	70.7	-0.00016	mg/L	0.000318	-0.00016	mg/L	0.000318	195.68%
Pb 220.353†	79.0	0.00354	mg/L	0.000623	0.00354	mg/L	0.000623	17.59%
Sb 206.836†	25.4	0.0141	mg/L	0.00501	0.0141	mg/L	0.00501	35.64%
Se 196.026†	-20.2	-0.0140	mg/L	0.00600	-0.0140	mg/L	0.00600	42.92%
Si 251.611†	10643.9	0.264	mg/L	0.0030	0.264	mg/L	0.0030	1.15%
Sn 189.927†	-185.0	-0.0169	mg/L	0.00078	-0.0169	mg/L	0.00078	4.61%
Ti 334.940†	-24808.1	-0.00183	mg/L	0.000286	-0.00183	mg/L	0.000286	15.62%
Tl 190.801†	-39.7	-0.0156	mg/L	0.00367	-0.0156	mg/L	0.00367	23.53%
V 290.880†	-741.6	-0.00431	mg/L	0.001335	-0.00431	mg/L	0.001335	30.99%
Zn 206.200†	321.4	0.00217	mg/L	0.000167	0.00217	mg/L	0.000167	7.69%
K 766.490†	22625.4	20.6	mg/L	0.20	20.6	mg/L	0.20	1.00%
Na 589.592†	5717847.7	1120	mg/L	29.5	1120	mg/L	29.5	2.62%
Sr 407.771†	Saturated2							
Li 670.784†	49768.4	1.53	mg/L	0.020	1.53	mg/L	0.020	1.29%
P 214.914†	124.6	0.0270	mg/L	0.00275	0.0270	mg/L	0.00275	10.21%

Sequence No.: 26
Sample ID: L1508091202 0.05
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 36
Date Collected: 8/23/2015 11:39:49 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1508091202 0.05

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508091202 0.05

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2147968.2						50722.87	2.36%
YRADIAL	132902.7						5380.69	4.05%
Ga 417.206	741227.9						21100.89	2.85%
GaRADIAL	32123.7						1162.13	3.62%
Ag 328.068†	2588.9	0.0123	mg/L	0.00114	0.0123	mg/L	0.00114	9.29%
Al 396.153†	73.6	0.0135	mg/L	0.02134	0.0135	mg/L	0.02134	158.61%
As 188.979†	4.9	0.00968	mg/L	0.003183	0.00968	mg/L	0.003183	32.89%
Ba 233.527†	1150221.6	7.54	mg/L	0.033	7.54	mg/L	0.033	0.44%
Be 234.861†	487.3	0.00002	mg/L	0.000165	0.00002	mg/L	0.000165	911.83%
B 249.677†	103861.7	1.36	mg/L	0.019	1.36	mg/L	0.019	1.37%
Ca 227.546†	138856.5	428	mg/L	4.6	428	mg/L	4.6	1.08%
Cd 228.802†	10.0	0.00039	mg/L	0.000314	0.00039	mg/L	0.000314	81.04%

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Co 228.616†	-141.6	-0.00570	mg/L	0.000112	-0.00570	mg/L	0.000112	1.96%
Cr 267.716†	237.0	0.00150	mg/L	0.000201	0.00150	mg/L	0.000201	13.42%
Cu 327.393†	-743.1	-0.00293	mg/L	0.001311	-0.00293	mg/L	0.001311	44.76%
Fe 239.562†	24648.5	2.48	mg/L	0.023	2.48	mg/L	0.023	0.93%
Mg 279.077†	70159.3	36.1	mg/L	0.11	36.1	mg/L	0.11	0.29%
Mn 257.610†	189302.8	0.255	mg/L	0.0010	0.255	mg/L	0.0010	0.41%
Mo 202.031†	-113.3	-0.00208	mg/L	0.000389	-0.00208	mg/L	0.000389	18.68%
Ni 231.604†	66.5	-0.00022	mg/L	0.000121	-0.00022	mg/L	0.000121	55.77%
Pb 220.353†	42.2	0.00125	mg/L	0.002283	0.00125	mg/L	0.002283	183.32%
Sb 206.836†	19.6	0.0120	mg/L	0.00170	0.0120	mg/L	0.00170	14.20%
Se 196.026†	-13.6	-0.00814	mg/L	0.004522	-0.00814	mg/L	0.004522	55.57%
Si 251.611†	10708.6	0.266	mg/L	0.0073	0.266	mg/L	0.0073	2.75%
Sn 189.927†	-184.7	-0.0169	mg/L	0.00043	-0.0169	mg/L	0.00043	2.53%
Ti 334.940†	-24341.0	-0.00184	mg/L	0.000336	-0.00184	mg/L	0.000336	18.19%
Tl 190.801†	-41.0	-0.0160	mg/L	0.00239	-0.0160	mg/L	0.00239	14.89%
V 290.880†	-606.9	-0.00349	mg/L	0.001807	-0.00349	mg/L	0.001807	51.75%
Zn 206.200†	511.0	0.00437	mg/L	0.000469	0.00437	mg/L	0.000469	10.72%
K 766.490†	21833.6	19.8	mg/L	0.08	19.8	mg/L	0.08	0.39%
Na 589.592†	5661334.9	1110	mg/L	75.0	1110	mg/L	75.0	6.75%
Sr 407.771†	Saturated2							
Li 670.784†	48698.5	1.50	mg/L	0.011	1.50	mg/L	0.011	0.75%
P 214.914†	132.7	0.0306	mg/L	0.00519	0.0306	mg/L	0.00519	16.96%

Sequence No.: 27
Sample ID: L1508097304
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 37
Date Collected: 8/23/2015 11:42:12 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1508097304

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508097304

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2312901.8						46978.92	2.03%
YRADIAL	142385.4						5751.50	4.04%
Ga 417.206	905303.4						19159.67	2.12%
GaRADIAL	34433.7						1203.31	3.49%
Ag 328.068†	71.6	0.00233	mg/L	0.000316	0.00233	mg/L	0.000316	13.53%
Al 396.153†	1057.8	0.473	mg/L	0.0209	0.473	mg/L	0.0209	4.42%
As 188.979†	-1.0	-0.00071	mg/L	0.000835	-0.00071	mg/L	0.000835	118.29%
Ba 233.527†	12961.4	0.0848	mg/L	0.00097	0.0848	mg/L	0.00097	1.14%
Be 234.861†	-175.3	-0.00001	mg/L	0.000020	-0.00001	mg/L	0.000020	177.33%
B 249.677†	4086.7	0.0578	mg/L	0.00200	0.0578	mg/L	0.00200	3.47%
Ca 227.546†	19833.6	61.2	mg/L	1.07	61.2	mg/L	1.07	1.74%
Cd 228.802†	3.7	0.00025	mg/L	0.000098	0.00025	mg/L	0.000098	39.72%
Co 228.616†	-25.1	-0.00073	mg/L	0.000173	-0.00073	mg/L	0.000173	23.83%
Cr 267.716†	276.6	0.00177	mg/L	0.000379	0.00177	mg/L	0.000379	21.45%
Cu 327.393†	-68.0	0.00092	mg/L	0.001585	0.00092	mg/L	0.001585	173.08%
Fe 239.562†	3534.1	0.350	mg/L	0.0036	0.350	mg/L	0.0036	1.03%
Mg 279.077†	13804.9	7.07	mg/L	0.090	7.07	mg/L	0.090	1.28%
Mn 257.610†	8904.7	0.0116	mg/L	0.00018	0.0116	mg/L	0.00018	1.52%
Mo 202.031†	60.8	0.00265	mg/L	0.000236	0.00265	mg/L	0.000236	8.89%
Ni 231.604†	50.5	-0.00043	mg/L	0.000487	-0.00043	mg/L	0.000487	112.66%
Pb 220.353†	32.7	0.00097	mg/L	0.001574	0.00097	mg/L	0.001574	162.81%
Sb 206.836†	14.3	0.00999	mg/L	0.004658	0.00999	mg/L	0.004658	46.61%
Se 196.026†	-13.0	-0.00726	mg/L	0.014715	-0.00726	mg/L	0.014715	202.58%
Si 251.611†	203265.8	4.74	mg/L	0.012	4.74	mg/L	0.012	0.25%
Sn 189.927†	-111.8	-0.0108	mg/L	0.00118	-0.0108	mg/L	0.00118	10.86%
Ti 334.940†	2259.6	0.00798	mg/L	0.003301	0.00798	mg/L	0.003301	41.34%
Tl 190.801†	-28.7	-0.0108	mg/L	0.00211	-0.0108	mg/L	0.00211	19.64%
V 290.880†	-17.5	0.00068	mg/L	0.001830	0.00068	mg/L	0.001830	269.40%
Zn 206.200†	471.6	0.00387	mg/L	0.000149	0.00387	mg/L	0.000149	3.86%
K 766.490†	866.3	0.811	mg/L	0.1448	0.811	mg/L	0.1448	17.86%
Na 589.592†	65269.7	10.1	mg/L	0.33	10.1	mg/L	0.33	3.31%
Sr 407.771†	153821.1	0.194	mg/L	0.0066	0.194	mg/L	0.0066	3.41%
Li 670.784†	245.3	0.00206	mg/L	0.005535	0.00206	mg/L	0.005535	268.40%

Approved: August 24, 2015

P 214.914†	43.5	-0.00936	mg/L	0.002617	-0.00936	mg/L	0.002617 27.95%

Sequence No.: 28 **Autosampler Location: 38**
Sample ID: L1508097501 **Date Collected: 8/23/2015 11:44:33 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508097501

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508097501

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2164443.1						61436.37	2.84%
YRADIAL	126248.8						8239.45	6.53%
Ga 417.206	830425.5						31526.99	3.80%
GaRADIAL	32036.2						1675.88	5.23%
Ag 328.068†	469.7	0.00359	mg/L	0.001328	0.00359	mg/L	0.001328	36.98%
Al 396.153†	12.7	-0.0155	mg/L	0.02789	-0.0155	mg/L	0.02789	179.96%
As 188.979†	-5.2	-0.00132	mg/L	0.004312	-0.00132	mg/L	0.004312	326.39%
Ba 233.527†	15354.5	0.101	mg/L	0.0038	0.101	mg/L	0.0038	3.82%
Be 234.861†	-437.4	-0.00013	mg/L	0.000092	-0.00013	mg/L	0.000092	71.91%
B 249.677†	1989.9	0.0294	mg/L	0.00123	0.0294	mg/L	0.00123	4.20%
Ca 227.546†	29281.4	90.4	mg/L	4.16	90.4	mg/L	4.16	4.60%
Cd 228.802†	8.6	0.00038	mg/L	0.000244	0.00038	mg/L	0.000244	64.92%
Co 228.616†	-24.2	-0.00068	mg/L	0.000156	-0.00068	mg/L	0.000156	22.92%
Cr 267.716†	196.8	0.00121	mg/L	0.000358	0.00121	mg/L	0.000358	29.65%
Cu 327.393†	5759.4	0.0330	mg/L	0.00137	0.0330	mg/L	0.00137	4.16%
Fe 239.562†	95.5	0.00361	mg/L	0.003749	0.00361	mg/L	0.003749	103.84%
Mg 279.077†	22922.0	11.8	mg/L	0.35	11.8	mg/L	0.35	3.00%
Mn 257.610†	-32.4	-0.00050	mg/L	0.000064	-0.00050	mg/L	0.000064	12.78%
Mo 202.031†	63.6	0.00270	mg/L	0.000714	0.00270	mg/L	0.000714	26.39%
Ni 231.604†	6.1	-0.00101	mg/L	0.000185	-0.00101	mg/L	0.000185	18.27%
Pb 220.353†	-7.9	-0.00166	mg/L	0.001231	-0.00166	mg/L	0.001231	74.12%
Sb 206.836†	21.9	0.0127	mg/L	0.00253	0.0127	mg/L	0.00253	19.93%
Se 196.026†	-11.8	-0.00625	mg/L	0.011520	-0.00625	mg/L	0.011520	184.45%
Si 251.611†	201928.2	4.70	mg/L	0.021	4.70	mg/L	0.021	0.45%
Sn 189.927†	-143.2	-0.0134	mg/L	0.00067	-0.0134	mg/L	0.00067	4.96%
Ti 334.940†	-5713.0	-0.00015	mg/L	0.000252	-0.00015	mg/L	0.000252	164.13%
Tl 190.801†	-43.4	-0.0166	mg/L	0.00241	-0.0166	mg/L	0.00241	14.58%
V 290.880†	-186.8	-0.00050	mg/L	0.001038	-0.00050	mg/L	0.001038	208.53%
Zn 206.200†	1754.2	0.0188	mg/L	0.00068	0.0188	mg/L	0.00068	3.64%
K 766.490†	1363.8	1.27	mg/L	0.116	1.27	mg/L	0.116	9.07%
Na 589.592†	154651.5	24.0	mg/L	0.23	24.0	mg/L	0.23	0.95%
Sr 407.771†	285134.1	0.357	mg/L	0.0031	0.357	mg/L	0.0031	0.88%
Li 670.784†	393.7	0.00664	mg/L	0.004178	0.00664	mg/L	0.004178	62.91%
P 214.914†	-99.1	-0.0732	mg/L	0.00271	-0.0732	mg/L	0.00271	3.70%

Sequence No.: 29 **Autosampler Location: 39**
Sample ID: L1508098501 **Date Collected: 8/23/2015 11:46:55 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508098501

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508098501

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2275346.7						78062.24	3.43%
YRADIAL	136878.2						3613.71	2.64%
Ga 417.206	840380.5						30821.54	3.67%

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GaRADIAL	33498.6							912.44	2.72%
Ag 328.068†	-420.5	0.00079	mg/L	0.000848	0.00079	mg/L	0.000848	108.00%
Al 396.153†	1054.9	0.472	mg/L	0.0205	0.472	mg/L	0.0205	4.35%
As 188.979†	9.5	0.00120	mg/L	0.001710	0.00120	mg/L	0.001710	142.29%
Ba 233.527†	25882.1	0.170	mg/L	0.0021	0.170	mg/L	0.0021	1.26%
Be 234.861†	-109.9	-0.00008	mg/L	0.000047	-0.00008	mg/L	0.000047	59.55%
B 249.677†	15195.6	0.203	mg/L	0.0022	0.203	mg/L	0.0022	1.09%
Ca 227.546†	1494.2	4.70	mg/L	0.109	4.70	mg/L	0.109	2.33%
Cd 228.802†	0.9	0.00016	mg/L	0.000106	0.00016	mg/L	0.000106	65.59%
Co 228.616†	3.6	-0.00016	mg/L	0.000126	-0.00016	mg/L	0.000126	78.19%
Cr 267.716†	705.5	0.00476	mg/L	0.000367	0.00476	mg/L	0.000367	7.71%
Cu 327.393†	6967.4	0.0397	mg/L	0.00133	0.0397	mg/L	0.00133	3.34%
Fe 239.562†	8826.3	0.883	mg/L	0.0204	0.883	mg/L	0.0204	2.31%
Mg 279.077†	1715.7	0.832	mg/L	0.0545	0.832	mg/L	0.0545	6.55%
Mn 257.610†	42630.5	0.0571	mg/L	0.00052	0.0571	mg/L	0.00052	0.91%
Mo 202.031†	66.6	0.00286	mg/L	0.000268	0.00286	mg/L	0.000268	9.38%
Ni 231.604†	124.3	0.00053	mg/L	0.000253	0.00053	mg/L	0.000253	47.48%
Pb 220.353†	47.8	0.00187	mg/L	0.002202	0.00187	mg/L	0.002202	117.91%
Sb 206.836†	9.9	0.00843	mg/L	0.003639	0.00843	mg/L	0.003639	43.18%
Se 196.026†	-13.0	-0.00738	mg/L	0.009302	-0.00738	mg/L	0.009302	126.09%
Si 251.611†	167585.9	3.91	mg/L	0.047	3.91	mg/L	0.047	1.20%
Sn 189.927†	-3.4	-0.00185	mg/L	0.000474	-0.00185	mg/L	0.000474	25.55%
Ti 334.940†	2345.5	0.00446	mg/L	0.000188	0.00446	mg/L	0.000188	4.21%
Tl 190.801†	-17.0	-0.00624	mg/L	0.006710	-0.00624	mg/L	0.006710	107.50%
V 290.880†	490.6	0.00392	mg/L	0.000925	0.00392	mg/L	0.000925	23.61%
Zn 206.200†	1310.1	0.0137	mg/L	0.00013	0.0137	mg/L	0.00013	0.94%
K 766.490†	1103.2	0.879	mg/L	0.0912	0.879	mg/L	0.0912	10.38%
Na 589.592†	1057872.7	169	mg/L	1.5	169	mg/L	1.5	0.91%
Sr 407.771†	122243.8	0.156	mg/L	0.0007	0.156	mg/L	0.0007	0.45%
Li 670.784†	455.9	0.00856	mg/L	0.003083	0.00856	mg/L	0.003083	36.00%
P 214.914†	73.7	0.00418	mg/L	0.002892	0.00418	mg/L	0.002892	69.18%

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Sequence No.: 30 **Autosampler Location: 40**
Sample ID: L1508098502 **Date Collected: 8/23/2015 11:49:18 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508098502

Analyte	**Back Pressure**	**Flow**
All	201.0 kPa	0.31 L/min

Mean Data: L1508098502

Analyte	**Mean Corrected Intensity**	**Calib. Conc.**	**Units**	**Std.Dev.**	**Sample Conc.**	**Units**	**Std.Dev.**	**RSD**
Y 371.029	2390630.6						109514.40	4.58%
YRADIAL	138726.7						6389.34	4.61%
Ga 417.206	893419.6						44999.16	5.04%
GaRADIAL	34321.0						1392.58	4.06%
Ag 328.068†	-434.0	0.00038	mg/L	0.000862	0.00038	mg/L	0.000862	224.34%
Al 396.153†	117.0	0.0333	mg/L	0.00311	0.0333	mg/L	0.00311	9.33%
As 188.979†	7.8	0.00050	mg/L	0.000692	0.00050	mg/L	0.000692	137.91%
Ba 233.527†	18812.2	0.123	mg/L	0.0052	0.123	mg/L	0.0052	4.23%
Be 234.861†	-315.0	-0.00004	mg/L	0.000045	-0.00004	mg/L	0.000045	108.02%
B 249.677†	15853.5	0.209	mg/L	0.0033	0.209	mg/L	0.0033	1.60%
Ca 227.546†	820.8	2.63	mg/L	0.183	2.63	mg/L	0.183	6.95%
Cd 228.802†	17.0	0.00057	mg/L	0.000118	0.00057	mg/L	0.000118	20.77%
Co 228.616†	-35.3	-0.00094	mg/L	0.000077	-0.00094	mg/L	0.000077	8.14%
Cr 267.716†	631.7	0.00424	mg/L	0.000382	0.00424	mg/L	0.000382	9.01%
Cu 327.393†	2475.4	0.0149	mg/L	0.00137	0.0149	mg/L	0.00137	9.17%
Fe 239.562†	332.2	0.0277	mg/L	0.00523	0.0277	mg/L	0.00523	18.89%
Mg 279.077†	1528.8	0.736	mg/L	0.0458	0.736	mg/L	0.0458	6.23%
Mn 257.610†	5673.1	0.00720	mg/L	0.000396	0.00720	mg/L	0.000396	5.49%
Mo 202.031†	41.0	0.00207	mg/L	0.000275	0.00207	mg/L	0.000275	13.26%
Ni 231.604†	34.4	-0.00065	mg/L	0.000251	-0.00065	mg/L	0.000251	38.97%
Pb 220.353†	-16.6	-0.00220	mg/L	0.001986	-0.00220	mg/L	0.001986	90.18%
Sb 206.836†	3.0	0.00593	mg/L	0.002221	0.00593	mg/L	0.002221	37.47%
Se 196.026†	-5.8	-0.00092	mg/L	0.002328	-0.00092	mg/L	0.002328	252.44%
Si 251.611†	145220.0	3.39	mg/L	0.036	3.39	mg/L	0.036	1.07%

Approved: August 24, 2015

Kym H. Rhoden

Sn 189.927†	-16.8	-0.00297	mg/L	0.000722	-0.00297	mg/L	0.000722 24.35%
Ti 334.940†	324.1	0.00179	mg/L	0.000186	0.00179	mg/L	0.000186 10.39%
Tl 190.801†	-16.7	-0.00612	mg/L	0.005345	-0.00612	mg/L	0.005345 87.29%
V 290.880†	115.1	0.00157	mg/L	0.000651	0.00157	mg/L	0.000651 41.51%
Zn 206.200†	418.1	0.00326	mg/L	0.000311	0.00326	mg/L	0.000311 9.55%
K 766.490†	969.0	0.747	mg/L	0.0520	0.747	mg/L	0.0520 6.96%
Na 589.592†	1078169.6	172	mg/L	1.2	172	mg/L	1.2 0.70%
Sr 407.771†	116104.4	0.148	mg/L	0.0015	0.148	mg/L	0.0015 1.02%
Li 670.784†	349.6	0.00528	mg/L	0.001991	0.00528	mg/L	0.001991 37.69%
P 214.914†	68.3	0.00175	mg/L	0.005099	0.00175	mg/L	0.005099 291.37%

==========

Sequence No.: 31 **Autosampler Location: 41**
Sample ID: L1508098601 **Date Collected: 8/23/2015 11:51:41 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508098601

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508098601

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2284192.1						85650.53	3.75%
YRADIAL	138929.5						5321.68	3.83%
Ga 417.206	879032.8						39098.38	4.45%
GaRADIAL	33445.2						990.56	2.96%
Ag 328.068†	-38.7	0.00187	mg/L	0.000123	0.00187	mg/L	0.000123	6.56%
Al 396.153†	11.0	-0.0164	mg/L	0.02869	-0.0164	mg/L	0.02869	175.00%
As 188.979†	6.8	0.00136	mg/L	0.001295	0.00136	mg/L	0.001295	94.99%
Ba 233.527†	50958.1	0.334	mg/L	0.0034	0.334	mg/L	0.0034	1.02%
Be 234.861†	-245.7	-0.00004	mg/L	0.000062	-0.00004	mg/L	0.000062	158.94%
B 249.677†	2297.6	0.0346	mg/L	0.00112	0.0346	mg/L	0.00112	3.25%
Ca 227.546†	16760.0	51.8	mg/L	2.02	51.8	mg/L	2.02	3.90%
Cd 228.802†	13.9	0.00049	mg/L	0.000184	0.00049	mg/L	0.000184	37.51%
Co 228.616†	-45.6	-0.00122	mg/L	0.000214	-0.00122	mg/L	0.000214	17.53%
Cr 267.716†	131.6	0.00075	mg/L	0.000180	0.00075	mg/L	0.000180	23.90%
Cu 327.393†	30.5	0.00145	mg/L	0.001171	0.00145	mg/L	0.001171	80.78%
Fe 239.562†	3324.5	0.329	mg/L	0.0068	0.329	mg/L	0.0068	2.06%
Mg 279.077†	14742.3	7.55	mg/L	0.095	7.55	mg/L	0.095	1.26%
Mn 257.610†	144837.1	0.195	mg/L	0.0013	0.195	mg/L	0.0013	0.68%
Mo 202.031†	183.4	0.00615	mg/L	0.000284	0.00615	mg/L	0.000284	4.62%
Ni 231.604†	-42.8	-0.00165	mg/L	0.000122	-0.00165	mg/L	0.000122	7.39%
Pb 220.353†	44.1	0.00146	mg/L	0.000067	0.00146	mg/L	0.000067	4.55%
Sb 206.836†	17.3	0.0111	mg/L	0.00287	0.0111	mg/L	0.00287	25.85%
Se 196.026†	-12.2	-0.00672	mg/L	0.006326	-0.00672	mg/L	0.006326	94.17%
Si 251.611†	223709.1	5.21	mg/L	0.016	5.21	mg/L	0.016	0.31%
Sn 189.927†	-90.0	-0.00903	mg/L	0.000634	-0.00903	mg/L	0.000634	7.02%
Ti 334.940†	-3605.3	0.00001	mg/L	0.000134	0.00001	mg/L	0.000134	985.07%
Tl 190.801†	-31.8	-0.0122	mg/L	0.00541	-0.0122	mg/L	0.00541	44.34%
V 290.880†	-262.2	-0.00079	mg/L	0.001952	-0.00079	mg/L	0.001952	247.43%
Zn 206.200†	107.3	-0.00038	mg/L	0.000291	-0.00038	mg/L	0.000291	76.51%
K 766.490†	1244.8	1.15	mg/L	0.106	1.15	mg/L	0.106	9.21%
Na 589.592†	201290.8	31.2	mg/L	0.55	31.2	mg/L	0.55	1.78%
Sr 407.771†	265888.9	0.335	mg/L	0.0045	0.335	mg/L	0.0045	1.33%
Li 670.784†	329.9	0.00467	mg/L	0.003641	0.00467	mg/L	0.003641	77.89%
P 214.914†	9.4	-0.0246	mg/L	0.00182	-0.0246	mg/L	0.00182	7.39%

==========

Sequence No.: 32 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 8/23/2015 11:54:03 AM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow

Approved: August 24, 2015

Kym H. Rhoden

All 201.0 kPa 0.31 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2406725.5						51256.24	2.13%
YRADIAL	146338.7						2540.52	1.74%
Ga 417.206	903614.4						18982.17	2.10%
GaRADIAL	36259.8						583.49	1.61%
Ag 328.068†	109186.6	0.400	mg/L	0.0034	0.400	mg/L	0.0034	0.84%
QC value within limits for Ag 328.068 Recovery = 99.92%								
Al 396.153†	21438.5	9.96	mg/L	0.075	9.96	mg/L	0.075	0.75%
QC value within limits for Al 396.153 Recovery = 99.64%								
As 188.979†	1333.3	0.379	mg/L	0.0049	0.379	mg/L	0.0049	1.30%
QC value within limits for As 188.979 Recovery = 94.63%								
Ba 233.527†	151584.0	0.994	mg/L	0.0057	0.994	mg/L	0.0057	0.58%
QC value within limits for Ba 233.527 Recovery = 99.44%								
Be 234.861†	66257.4	0.0487	mg/L	0.00044	0.0487	mg/L	0.00044	0.91%
QC value within limits for Be 234.861 Recovery = 97.33%								
B 249.677†	37502.9	0.502	mg/L	0.0056	0.502	mg/L	0.0056	1.12%
QC value within limits for B 249.677 Recovery = 100.35%								
Ca 227.546†	3014.3	9.46	mg/L	0.191	9.46	mg/L	0.191	2.02%
QC value within limits for Ca 227.546 Recovery = 94.60%								
Cd 228.802†	1921.9	0.0472	mg/L	0.00099	0.0472	mg/L	0.00099	2.09%
QC value within limits for Cd 228.802 Recovery = 94.37%								
Co 228.616†	9227.1	0.195	mg/L	0.0033	0.195	mg/L	0.0033	1.72%
QC value within limits for Co 228.616 Recovery = 97.30%								
Cr 267.716†	71952.6	0.502	mg/L	0.0033	0.502	mg/L	0.0033	0.66%
QC value within limits for Cr 267.716 Recovery = 100.31%								
Cu 327.393†	90402.9	0.501	mg/L	0.0054	0.501	mg/L	0.0054	1.09%
QC value within limits for Cu 327.393 Recovery = 100.23%								
Fe 239.562†	40096.5	4.03	mg/L	0.035	4.03	mg/L	0.035	0.86%
QC value within limits for Fe 239.562 Recovery = 100.79%								
Mg 279.077†	19598.1	10.1	mg/L	0.13	10.1	mg/L	0.13	1.26%
QC value within limits for Mg 279.077 Recovery = 100.53%								
Mn 257.610†	369349.0	0.498	mg/L	0.0024	0.498	mg/L	0.0024	0.49%
QC value within limits for Mn 257.610 Recovery = 99.58%								
Mo 202.031†	35535.4	1.00	mg/L	0.018	1.00	mg/L	0.018	1.79%
QC value within limits for Mo 202.031 Recovery = 100.49%								
Ni 231.604†	38359.8	0.502	mg/L	0.0025	0.502	mg/L	0.0025	0.50%
QC value within limits for Ni 231.604 Recovery = 100.31%								
Pb 220.353†	7842.6	0.492	mg/L	0.0087	0.492	mg/L	0.0087	1.77%
QC value within limits for Pb 220.353 Recovery = 98.41%								
Sb 206.836†	3106.5	1.12	mg/L	0.019	1.12	mg/L	0.019	1.72%
QC value within limits for Sb 206.836 Recovery = 92.94%								
Se 196.026†	441.0	0.396	mg/L	0.0097	0.396	mg/L	0.0097	2.46%
QC value within limits for Se 196.026 Recovery = 98.92%								
Si 251.611†	212359.7	4.94	mg/L	0.029	4.94	mg/L	0.029	0.58%
QC value within limits for Si 251.611 Recovery = 98.71%								
Sn 189.927†	11902.4	0.984	mg/L	0.0159	0.984	mg/L	0.0159	1.61%
QC value within limits for Sn 189.927 Recovery = 98.36%								
Ti 334.940†	789426.2	0.993	mg/L	0.0066	0.993	mg/L	0.0066	0.66%
QC value within limits for Ti 334.940 Recovery = 99.25%								
Tl 190.801†	1282.8	0.509	mg/L	0.0065	0.509	mg/L	0.0065	1.28%
QC value within limits for Tl 190.801 Recovery = 101.73%								
V 290.880†	168599.1	0.994	mg/L	0.0064	0.994	mg/L	0.0064	0.65%
QC value within limits for V 290.880 Recovery = 99.38%								
Zn 206.200†	85848.1	1.00	mg/L	0.006	1.00	mg/L	0.006	0.61%
QC value within limits for Zn 206.200 Recovery = 100.20%								
K 766.490†	52024.3	50.0	mg/L	0.33	50.0	mg/L	0.33	0.66%
QC value within limits for K 766.490 Recovery = 100.10%								
Na 589.592†	329846.8	51.4	mg/L	1.47	51.4	mg/L	1.47	2.85%
QC value within limits for Na 589.592 Recovery = 102.77%								
Sr 407.771†	812694.0	1.02	mg/L	0.031	1.02	mg/L	0.031	3.02%
QC value within limits for Sr 407.771 Recovery = 102.19%								
Li 670.784†	33299.8	1.02	mg/L	0.008	1.02	mg/L	0.008	0.76%
QC value within limits for Li 670.784 Recovery = 102.21%								
P 214.914†	21945.7	9.80	mg/L	0.172	9.80	mg/L	0.172	1.75%
QC value within limits for P 214.914 Recovery = 97.98%								

All analyte(s) passed QC.

Approved: August 24, 2015

Lynn H. Rhoden

Sequence No.: 33
Sample ID: CCB
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 1
Date Collected: 8/23/2015 11:56:31 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: CCB

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2371090.2						92966.08	3.92%
YRADIAL	142307.1						5443.17	3.82%
Ga 417.206	937911.5						40674.05	4.34%
GaRADIAL	33912.0						1172.22	3.46%
Ag 328.068†	-353.5	0.00069	mg/L	0.000254	0.00069	mg/L	0.000254	36.73%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	70.5	0.0116	mg/L	0.01818	0.0116	mg/L	0.01818	157.09%
QC value within limits for Al 396.153 Recovery = Not calculated								
As 188.979†	9.7	0.00099	mg/L	0.000620	0.00099	mg/L	0.000620	62.70%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	364.9	0.00221	mg/L	0.000121	0.00221	mg/L	0.000121	5.49%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 234.861†	-140.0	0.00009	mg/L	0.000059	0.00009	mg/L	0.000059	62.80%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	515.9	0.0103	mg/L	0.00087	0.0103	mg/L	0.00087	8.48%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	-12.9	0.0561	mg/L	0.04769	0.0561	mg/L	0.04769	84.98%
QC value within limits for Ca 227.546 Recovery = Not calculated								
Cd 228.802†	1.0	0.00016	mg/L	0.000267	0.00016	mg/L	0.000267	164.56%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	-15.7	-0.00049	mg/L	0.000237	-0.00049	mg/L	0.000237	48.80%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	-76.9	-0.00070	mg/L	0.001048	-0.00070	mg/L	0.001048	150.20%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	101.2	0.00182	mg/L	0.000554	0.00182	mg/L	0.000554	30.40%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	23.4	-0.00341	mg/L	0.001415	-0.00341	mg/L	0.001415	41.47%
QC value within limits for Fe 239.562 Recovery = Not calculated								
Mg 279.077†	126.4	0.0123	mg/L	0.03126	0.0123	mg/L	0.03126	253.47%
QC value within limits for Mg 279.077 Recovery = Not calculated								
Mn 257.610†	-287.1	-0.00084	mg/L	0.000039	-0.00084	mg/L	0.000039	4.68%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	-0.2	0.00090	mg/L	0.000115	0.00090	mg/L	0.000115	12.72%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	-28.1	-0.00147	mg/L	0.000395	-0.00147	mg/L	0.000395	26.95%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	7.8	-0.00068	mg/L	0.001008	-0.00068	mg/L	0.001008	148.96%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	9.7	0.00837	mg/L	0.001429	0.00837	mg/L	0.001429	17.07%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	-6.5	-0.00161	mg/L	0.001619	-0.00161	mg/L	0.001619	100.40%
QC value within limits for Se 196.026 Recovery = Not calculated								
Si 251.611†	-284.2	0.0106	mg/L	0.00120	0.0106	mg/L	0.00120	11.31%
QC value within limits for Si 251.611 Recovery = Not calculated								
Sn 189.927†	38.8	0.00164	mg/L	0.000955	0.00164	mg/L	0.000955	58.27%
QC value within limits for Sn 189.927 Recovery = Not calculated								
Ti 334.940†	-212.1	0.00095	mg/L	0.000201	0.00095	mg/L	0.000201	21.12%
QC value within limits for Ti 334.940 Recovery = Not calculated								
Tl 190.801†	-9.2	-0.00322	mg/L	0.000641	-0.00322	mg/L	0.000641	19.89%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 290.880†	116.1	0.00159	mg/L	0.002063	0.00159	mg/L	0.002063	129.42%
QC value within limits for V 290.880 Recovery = Not calculated								
Zn 206.200†	20.7	-0.00141	mg/L	0.000137	-0.00141	mg/L	0.000137	9.71%
QC value within limits for Zn 206.200 Recovery = Not calculated								
K 766.490†	14.3	0.00526	mg/L	0.160209	0.00526	mg/L	0.160209	>999.9%
QC value within limits for K 766.490 Recovery = Not calculated								

Approved: August 24, 2015

Lynn H. Rhoden

```
Na 589.592†              774.7      0.0984 mg/L       0.01227      0.0984 mg/L       0.01227  12.47%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†             2000.5     0.00509 mg/L      0.000036     0.00509 mg/L      0.000036   0.71%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†              157.3    -0.00065 mg/L      0.002680    -0.00065 mg/L      0.002680 409.79%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†                7.4     -0.0255 mg/L       0.00583     -0.0255 mg/L       0.00583  22.84%
   QC value within limits for P 214.914  Recovery = Not calculated
All analyte(s) passed QC.
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Approved: August 24, 2015

Lynn H. Rhoden

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Analysis Begun

Start Time: 8/23/2015 11:59:30 AM **Plasma On Time: 8/23/2015 7:45:07 AM**
Logged In Analyst: peicp2 **Technique: ICP Continuous**
Spectrometer Model: Optima 4300 DV, S/N 077N4011401 **Autosampler Model: Cetac**

Sample Information File: C:\pe\peicp2\Sample Information\SUNDAY.sif
Batch ID:
Results Data Set: 082315HR
Results Library: C:\pe\peicp2\Results\results2.mdb

==========

Sequence No.: 1 **Autosampler Location: 42**
Sample ID: L1508084401 0.005 **Date Collected: 8/23/2015 11:59:32 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508084401 0.005

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508084401 0.005

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2234474.6						137040.19	6.13%
YRADIAL	139259.9						5648.86	4.06%
Ga 417.206	807972.8						51382.85	6.36%
GaRADIAL	32808.6						1160.77	3.54%
Ag 328.068†	44.6	0.00022	mg/L	0.001246	0.00022	mg/L	0.001246	559.46%
Al 396.153†	81.0	0.0166	mg/L	0.02985	0.0166	mg/L	0.02985	180.06%
As 188.979†	6.1	0.00155	mg/L	0.002881	0.00155	mg/L	0.002881	185.53%
Ba 233.527†	304417.6	2.00	mg/L	0.009	2.00	mg/L	0.009	0.46%
Be 234.861†	-36.4	0.00004	mg/L	0.000051	0.00004	mg/L	0.000051	118.78%
B 249.677†	7854.5	0.107	mg/L	0.0074	0.107	mg/L	0.0074	6.88%
Ca 227.546†	21481.5	66.3	mg/L	4.69	66.3	mg/L	4.69	7.08%
Cd 228.802†	-2.3	0.00008	mg/L	0.000143	0.00008	mg/L	0.000143	174.10%
Co 228.616†	-60.8	-0.00212	mg/L	0.000305	-0.00212	mg/L	0.000305	14.41%
Cr 267.716†	118.9	0.00067	mg/L	0.000135	0.00067	mg/L	0.000135	20.17%
Cu 327.393†	88.5	0.00175	mg/L	0.001847	0.00175	mg/L	0.001847	105.49%
Fe 239.562†	5753.0	0.573	mg/L	0.0065	0.573	mg/L	0.0065	1.13%
Mg 279.077†	13267.0	6.79	mg/L	0.070	6.79	mg/L	0.070	1.03%
Mn 257.610†	30773.1	0.0411	mg/L	0.00296	0.0411	mg/L	0.00296	7.20%
Mo 202.031†	-26.0	0.00022	mg/L	0.000295	0.00022	mg/L	0.000295	133.03%
Ni 231.604†	19.0	-0.00084	mg/L	0.000266	-0.00084	mg/L	0.000266	31.49%
Pb 220.353†	32.7	0.00084	mg/L	0.001462	0.00084	mg/L	0.001462	174.00%
Sb 206.836†	13.7	0.00978	mg/L	0.005491	0.00978	mg/L	0.005491	56.13%
Se 196.026†	-15.1	-0.00924	mg/L	0.004260	-0.00924	mg/L	0.004260	46.08%
Si 251.611†	3020.0	0.0873	mg/L	0.01780	0.0873	mg/L	0.01780	20.38%
Sn 189.927†	-99.8	-0.00983	mg/L	0.000899	-0.00983	mg/L	0.000899	9.14%
Ti 334.940†	-4588.4	-0.00029	mg/L	0.000817	-0.00029	mg/L	0.000817	286.01%
Tl 190.801†	-24.2	-0.00911	mg/L	0.004782	-0.00911	mg/L	0.004782	52.50%
V 290.880†	123.1	0.00148	mg/L	0.001966	0.00148	mg/L	0.001966	133.25%
Zn 206.200†	366.1	0.00264	mg/L	0.000322	0.00264	mg/L	0.000322	12.22%
K 766.490†	2546.9	2.25	mg/L	0.127	2.25	mg/L	0.127	5.63%
Na 589.592†	1122528.3	179	mg/L	3.2	179	mg/L	3.2	1.77%
Sr 407.771†	8544505.5	10.7	mg/L	0.45	10.7	mg/L	0.45	4.15%
Li 670.784†	7461.0	0.225	mg/L	0.0072	0.225	mg/L	0.0072	3.22%
P 214.914†	15.0	-0.0221	mg/L	0.01234	-0.0221	mg/L	0.01234	55.83%

==========

Sequence No.: 2 **Autosampler Location: 43**
Sample ID: L1508091201 0.005 **Date Collected: 8/23/2015 12:02:02 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Approved: August 24, 2015

Lynn H. Rhoden

Nebulizer Parameters: L1508091201 0.005

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508091201 0.005

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2378906.0						51032.41	2.15%
YRADIAL	144952.7						3522.51	2.43%
Ga 417.206	879410.9						23547.78	2.68%
GaRADIAL	35056.0						853.38	2.43%
Ag 328.068†	49.7	0.00114	mg/L	0.001394	0.00114	mg/L	0.001394	122.46%
Al 396.153†	21.7	-0.0112	mg/L	0.03059	-0.0112	mg/L	0.03059	273.38%
As 188.979†	2.0	-0.00027	mg/L	0.001569	-0.00027	mg/L	0.001569	575.97%
Ba 233.527†	122093.8	0.801	mg/L	0.0075	0.801	mg/L	0.0075	0.94%
Be 234.861†	-13.8	0.00013	mg/L	0.000012	0.00013	mg/L	0.000012	8.98%
B 249.677†	10570.6	0.141	mg/L	0.0045	0.141	mg/L	0.0045	3.15%
Ca 227.546†	12831.8	39.7	mg/L	1.25	39.7	mg/L	1.25	3.14%
Cd 228.802†	-1.1	0.00012	mg/L	0.000106	0.00012	mg/L	0.000106	87.58%
Co 228.616†	-25.8	-0.00097	mg/L	0.000188	-0.00097	mg/L	0.000188	19.39%
Cr 267.716†	14.3	-0.00006	mg/L	0.000147	-0.00006	mg/L	0.000147	235.57%
Cu 327.393†	-303.5	-0.00042	mg/L	0.001950	-0.00042	mg/L	0.001950	464.18%
Fe 239.562†	2645.8	0.261	mg/L	0.0058	0.261	mg/L	0.0058	2.21%
Mg 279.077†	7904.4	4.02	mg/L	0.120	4.02	mg/L	0.120	2.99%
Mn 257.610†	20319.2	0.0270	mg/L	0.00080	0.0270	mg/L	0.00080	2.97%
Mo 202.031†	-18.3	0.00041	mg/L	0.000308	0.00041	mg/L	0.000308	74.24%
Ni 231.604†	30.0	-0.00070	mg/L	0.000414	-0.00070	mg/L	0.000414	58.98%
Pb 220.353†	23.5	0.00028	mg/L	0.001069	0.00028	mg/L	0.001069	387.99%
Sb 206.836†	7.1	0.00741	mg/L	0.001754	0.00741	mg/L	0.001754	23.66%
Se 196.026†	-12.3	-0.00674	mg/L	0.008900	-0.00674	mg/L	0.008900	131.97%
Si 251.611†	786.5	0.0355	mg/L	0.00576	0.0355	mg/L	0.00576	16.22%
Sn 189.927†	-61.8	-0.00669	mg/L	0.000726	-0.00669	mg/L	0.000726	10.85%
Ti 334.940†	-2909.6	0.00011	mg/L	0.000786	0.00011	mg/L	0.000786	718.14%
Tl 190.801†	-19.7	-0.00734	mg/L	0.003716	-0.00734	mg/L	0.003716	50.66%
V 290.880†	-382.3	-0.00143	mg/L	0.001046	-0.00143	mg/L	0.001046	72.97%
Zn 206.200†	304.1	0.00190	mg/L	0.000107	0.00190	mg/L	0.000107	5.64%
K 766.490†	2249.4	2.05	mg/L	0.049	2.05	mg/L	0.049	2.40%
Na 589.592†	615678.1	96.8	mg/L	0.24	96.8	mg/L	0.24	0.25%
Sr 407.771†	4430667.7	5.56	mg/L	0.126	5.56	mg/L	0.126	2.27%
Li 670.784†	5331.9	0.159	mg/L	0.0026	0.159	mg/L	0.0026	1.64%
P 214.914†	31.4	-0.0148	mg/L	0.00216	-0.0148	mg/L	0.00216	14.63%

Sequence No.: 3
Sample ID: L1508084102 0.01
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 44
Date Collected: 8/23/2015 12:04:33 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1508084102 0.01

Analyte	Back Pressure	Flow
All	200.0 kPa	0.31 L/min

Mean Data: L1508084102 0.01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2434854.0						23463.62	0.96%
YRADIAL	148778.6						3193.30	2.15%
Ga 417.206	883073.8						10711.28	1.21%
GaRADIAL	35742.7						524.53	1.47%
Ag 328.068†	145.8	0.00271	mg/L	0.000805	0.00271	mg/L	0.000805	29.69%
Al 396.153†	0.5	-0.0210	mg/L	0.03419	-0.0210	mg/L	0.03419	162.78%
As 188.979†	12.4	0.00331	mg/L	0.000829	0.00331	mg/L	0.000829	25.04%
Ba 233.527†	2796.3	0.0181	mg/L	0.00044	0.0181	mg/L	0.00044	2.41%
Be 234.861†	237.2	0.00012	mg/L	0.000170	0.00012	mg/L	0.000170	147.55%
B 249.677†	222.1	0.0110	mg/L	0.00058	0.0110	mg/L	0.00058	5.27%
Ca 227.546†	17909.2	55.3	mg/L	1.16	55.3	mg/L	1.16	2.10%
Cd 228.802†	2.6	0.00020	mg/L	0.000096	0.00020	mg/L	0.000096	48.52%
Co 228.616†	-26.0	-0.00073	mg/L	0.000653	-0.00073	mg/L	0.000653	89.21%

Approved: August 24, 2015

Kyn H. Rhoden

Cr 267.716†	35.9	0.00009	mg/L	0.000154	0.00009	mg/L	0.000154	166.86%
Cu 327.393†	-17.9	0.00123	mg/L	0.002931	0.00123	mg/L	0.002931	237.52%
Fe 239.562†	11721.6	1.17	mg/L	0.008	1.17	mg/L	0.008	0.65%
Mg 279.077†	21215.1	10.9	mg/L	0.05	10.9	mg/L	0.05	0.47%
Mn 257.610†	80690.8	0.108	mg/L	0.0015	0.108	mg/L	0.0015	1.34%
Mo 202.031†	-8.5	0.00076	mg/L	0.000207	0.00076	mg/L	0.000207	27.08%
Ni 231.604†	24.2	-0.00078	mg/L	0.000170	-0.00078	mg/L	0.000170	21.87%
Pb 220.353†	31.7	0.00071	mg/L	0.002437	0.00071	mg/L	0.002437	342.65%
Sb 206.836†	2.3	0.00575	mg/L	0.002048	0.00575	mg/L	0.002048	35.61%
Se 196.026†	-8.9	-0.00381	mg/L	0.009142	-0.00381	mg/L	0.009142	240.06%
Si 251.611†	1645.0	0.0554	mg/L	0.00187	0.0554	mg/L	0.00187	3.37%
Sn 189.927†	-86.6	-0.00875	mg/L	0.000666	-0.00875	mg/L	0.000666	7.61%
Ti 334.940†	-3985.0	-0.00024	mg/L	0.000255	-0.00024	mg/L	0.000255	108.45%
Tl 190.801†	-23.4	-0.00889	mg/L	0.000640	-0.00889	mg/L	0.000640	7.20%
V 290.880†	-614.4	-0.00280	mg/L	0.000797	-0.00280	mg/L	0.000797	28.50%
Zn 206.200†	336.9	0.00230	mg/L	0.000120	0.00230	mg/L	0.000120	5.20%
K 766.490†	1019.6	0.749	mg/L	0.1250	0.749	mg/L	0.1250	16.68%
Na 589.592†	1355178.3	218	mg/L	6.1	218	mg/L	6.1	2.80%
Sr 407.771†	1010183.1	1.27	mg/L	0.045	1.27	mg/L	0.045	3.55%
Li 670.784†	990.4	0.0251	mg/L	0.00304	0.0251	mg/L	0.00304	12.14%
P 214.914†	33.0	-0.0140	mg/L	0.00361	-0.0140	mg/L	0.00361	25.72%

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Sequence No.: 4
Sample ID: L1508084201 0.01
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 45
Date Collected: 8/23/2015 12:06:56 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1508084201 0.01

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508084201 0.01

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	2285353.3						82400.54	3.61%
YRADIAL	144288.3						8330.23	5.77%
Ga 417.206	809760.4						33636.48	4.15%
GaRADIAL	33713.0						1723.12	5.11%
Ag 328.068†	581.7	0.00441	mg/L	0.001112	0.00441	mg/L	0.001112	25.21%
Al 396.153†	66.2	0.00976	mg/L	0.022956	0.00976	mg/L	0.022956	235.25%
As 188.979†	6.7	0.00341	mg/L	0.001598	0.00341	mg/L	0.001598	46.89%
Ba 233.527†	333841.4	2.19	mg/L	0.019	2.19	mg/L	0.019	0.85%
Be 234.861†	21.1	0.00003	mg/L	0.000029	0.00003	mg/L	0.000029	104.48%
B 249.677†	25345.9	0.335	mg/L	0.0067	0.335	mg/L	0.0067	2.00%
Ca 227.546†	45185.0	139	mg/L	2.4	139	mg/L	2.4	1.70%
Cd 228.802†	5.9	0.00029	mg/L	0.000138	0.00029	mg/L	0.000138	48.12%
Co 228.616†	-58.3	-0.00213	mg/L	0.000383	-0.00213	mg/L	0.000383	17.99%
Cr 267.716†	108.4	0.00060	mg/L	0.000231	0.00060	mg/L	0.000231	38.62%
Cu 327.393†	-180.0	0.00024	mg/L	0.001395	0.00024	mg/L	0.001395	575.65%
Fe 239.562†	8466.3	0.847	mg/L	0.0148	0.847	mg/L	0.0148	1.75%
Mg 279.077†	25815.8	13.3	mg/L	0.08	13.3	mg/L	0.08	0.57%
Mn 257.610†	68065.3	0.0914	mg/L	0.00091	0.0914	mg/L	0.00091	0.99%
Mo 202.031†	-55.0	-0.00057	mg/L	0.000379	-0.00057	mg/L	0.000379	66.45%
Ni 231.604†	47.5	-0.00047	mg/L	0.000216	-0.00047	mg/L	0.000216	46.15%
Pb 220.353†	41.1	0.00132	mg/L	0.001520	0.00132	mg/L	0.001520	114.98%
Sb 206.836†	14.6	0.0101	mg/L	0.00329	0.0101	mg/L	0.00329	32.48%
Se 196.026†	-21.1	-0.0146	mg/L	0.00272	-0.0146	mg/L	0.00272	18.61%
Si 251.611†	6264.1	0.163	mg/L	0.0091	0.163	mg/L	0.0091	5.60%
Sn 189.927†	-146.2	-0.0137	mg/L	0.00016	-0.0137	mg/L	0.00016	1.18%
Ti 334.940†	-9108.2	-0.00127	mg/L	0.000284	-0.00127	mg/L	0.000284	22.45%
Tl 190.801†	-39.3	-0.0151	mg/L	0.00483	-0.0151	mg/L	0.00483	32.01%
V 290.880†	-234.2	-0.00076	mg/L	0.002356	-0.00076	mg/L	0.002356	310.25%
Zn 206.200†	779.3	0.00745	mg/L	0.000344	0.00745	mg/L	0.000344	4.61%
K 766.490†	6928.1	6.28	mg/L	0.051	6.28	mg/L	0.051	0.82%
Na 589.592†	2113138.2	349	mg/L	9.1	349	mg/L	9.1	2.60%
Sr 407.771†	Saturated2							
Li 670.784†	16018.7	0.489	mg/L	0.0039	0.489	mg/L	0.0039	0.80%
P 214.914†	39.1	-0.0113	mg/L	0.00262	-0.0113	mg/L	0.00262	23.15%

Approved: August 24, 2015

Kym H. Rhoden

User canceled analysis.

Approved: August 24, 2015

Lynn H. Rhoden

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Analysis Begun

Start Time: 8/23/2015 12:17:17 PM **Plasma On Time: 8/23/2015 7:45:07 AM**
Logged In Analyst: peicp2 **Technique: ICP Continuous**
Spectrometer Model: Optima 4300 DV, S/N 077N4011401 **Autosampler Model: Cetac**

Sample Information File: C:\pe\peicp2\Sample Information\SUNDAY.sif
Batch ID:
Results Data Set: 082315HR
Results Library: C:\pe\peicp2\Results\results2.mdb

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Sequence No.: 1 **Autosampler Location: 46**
Sample ID: L1508084401 0.002 **Date Collected: 8/23/2015 12:17:19 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508084401 0.002

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508084401 0.002

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2323275.6						80588.52	3.47%
YRADIAL	135285.6						5209.50	3.85%
Ga 417.206	866139.7						32603.65	3.76%
GaRADIAL	32920.8						1168.88	3.55%
Ag 328.068†	-69.3	0.00088	mg/L	0.000979	0.00088	mg/L	0.000979	111.14%
Al 396.153†	0.7	-0.0210	mg/L	0.02269	-0.0210	mg/L	0.02269	107.94%
As 188.979†	8.3	0.00122	mg/L	0.002764	0.00122	mg/L	0.002764	226.14%
Ba 233.527†	124096.0	0.814	mg/L	0.0088	0.814	mg/L	0.0088	1.08%
Be 234.861†	-132.8	0.00005	mg/L	0.000055	0.00005	mg/L	0.000055	120.33%
B 249.677†	3139.4	0.0451	mg/L	0.00107	0.0451	mg/L	0.00107	2.36%
Ca 227.546†	8169.9	25.3	mg/L	0.53	25.3	mg/L	0.53	2.09%
Cd 228.802†	11.6	0.00043	mg/L	0.000164	0.00043	mg/L	0.000164	38.16%
Co 228.616†	-32.1	-0.00111	mg/L	0.000150	-0.00111	mg/L	0.000150	13.47%
Cr 267.716†	43.4	0.00014	mg/L	0.000316	0.00014	mg/L	0.000316	223.86%
Cu 327.393†	-249.0	-0.00011	mg/L	0.000187	-0.00011	mg/L	0.000187	171.71%
Fe 239.562†	2411.1	0.237	mg/L	0.0050	0.237	mg/L	0.0050	2.10%
Mg 279.077†	5853.6	2.97	mg/L	0.073	2.97	mg/L	0.073	2.48%
Mn 257.610†	11924.5	0.0156	mg/L	0.00028	0.0156	mg/L	0.00028	1.82%
Mo 202.031†	-19.8	0.00037	mg/L	0.000442	0.00037	mg/L	0.000442	120.01%
Ni 231.604†	8.8	-0.00098	mg/L	0.000168	-0.00098	mg/L	0.000168	17.13%
Pb 220.353†	16.2	-0.00018	mg/L	0.001093	-0.00018	mg/L	0.001093	622.17%
Sb 206.836†	15.4	0.0104	mg/L	0.00170	0.0104	mg/L	0.00170	16.32%
Se 196.026†	-16.1	-0.0101	mg/L	0.00859	-0.0101	mg/L	0.00859	85.08%
Si 251.611†	799.4	0.0358	mg/L	0.00137	0.0358	mg/L	0.00137	3.82%
Sn 189.927†	-57.8	-0.00636	mg/L	0.002349	-0.00636	mg/L	0.002349	36.92%
Ti 334.940†	-1884.1	0.00047	mg/L	0.000201	0.00047	mg/L	0.000201	42.44%
Tl 190.801†	-18.4	-0.00682	mg/L	0.002563	-0.00682	mg/L	0.002563	37.59%
V 290.880†	-119.4	0.00014	mg/L	0.000331	0.00014	mg/L	0.000331	240.78%
Zn 206.200†	316.5	0.00205	mg/L	0.000168	0.00205	mg/L	0.000168	8.19%
K 766.490†	1113.1	0.983	mg/L	0.1115	0.983	mg/L	0.1115	11.34%
Na 589.592†	471650.8	73.8	mg/L	0.48	73.8	mg/L	0.48	0.65%
Sr 407.771†	3722536.7	4.67	mg/L	0.265	4.67	mg/L	0.265	5.67%
Li 670.784†	3239.1	0.0944	mg/L	0.00623	0.0944	mg/L	0.00623	6.59%
P 214.914†	3.0	-0.0275	mg/L	0.00822	-0.0275	mg/L	0.00822	29.89%

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Sequence No.: 2 **Autosampler Location: 47**
Sample ID: L1508091201 0.002 **Date Collected: 8/23/2015 12:19:48 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Approved: August 24, 2015

Lynn H. Rhoden

Nebulizer Parameters: L1508091201 0.002

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508091201 0.002

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2333131.2						129940.15	5.57%
YRADIAL	141295.3						3081.64	2.18%
Ga 417.206	883802.5						55716.44	6.30%
GaRADIAL	34349.5						836.30	2.43%
Ag 328.068†	-412.6	0.00007	mg/L	0.000486	0.00007	mg/L	0.000486	655.84%
Al 396.153†	31.9	-0.00642	mg/L	0.026132	-0.00642	mg/L	0.026132	406.81%
As 188.979†	2.8	-0.00063	mg/L	0.002750	-0.00063	mg/L	0.002750	439.16%
Ba 233.527†	49342.3	0.323	mg/L	0.0024	0.323	mg/L	0.0024	0.75%
Be 234.861†	-143.9	0.00007	mg/L	0.000075	0.00007	mg/L	0.000075	114.21%
B 249.677†	4262.1	0.0592	mg/L	0.00297	0.0592	mg/L	0.00297	5.03%
Ca 227.546†	4997.6	15.5	mg/L	0.71	15.5	mg/L	0.71	4.60%
Cd 228.802†	10.5	0.00041	mg/L	0.000048	0.00041	mg/L	0.000048	11.65%
Co 228.616†	-32.5	-0.00095	mg/L	0.000380	-0.00095	mg/L	0.000380	39.93%
Cr 267.716†	11.5	-0.00008	mg/L	0.000200	-0.00008	mg/L	0.000200	243.92%
Cu 327.393†	162.0	0.00215	mg/L	0.001299	0.00215	mg/L	0.001299	60.35%
Fe 239.562†	1132.5	0.108	mg/L	0.0127	0.108	mg/L	0.0127	11.71%
Mg 279.077†	3394.3	1.70	mg/L	0.012	1.70	mg/L	0.012	0.71%
Mn 257.610†	7880.3	0.0102	mg/L	0.00046	0.0102	mg/L	0.00046	4.56%
Mo 202.031†	-12.0	0.00058	mg/L	0.000124	0.00058	mg/L	0.000124	21.23%
Ni 231.604†	-3.9	-0.00115	mg/L	0.000354	-0.00115	mg/L	0.000354	30.81%
Pb 220.353†	22.8	0.00025	mg/L	0.001181	0.00025	mg/L	0.001181	476.82%
Sb 206.836†	5.4	0.00681	mg/L	0.004791	0.00681	mg/L	0.004791	70.38%
Se 196.026†	-11.6	-0.00607	mg/L	0.007463	-0.00607	mg/L	0.007463	123.04%
Si 251.611†	44.2	0.0183	mg/L	0.00136	0.0183	mg/L	0.00136	7.45%
Sn 189.927†	-27.9	-0.00389	mg/L	0.001055	-0.00389	mg/L	0.001055	27.12%
Ti 334.940†	-1512.2	0.00031	mg/L	0.000666	0.00031	mg/L	0.000666	212.80%
Tl 190.801†	-13.3	-0.00483	mg/L	0.002363	-0.00483	mg/L	0.002363	48.92%
V 290.880†	-124.1	0.00014	mg/L	0.001369	0.00014	mg/L	0.001369	966.74%
Zn 206.200†	289.2	0.00172	mg/L	0.000195	0.00172	mg/L	0.000195	11.29%
K 766.490†	919.5	0.833	mg/L	0.0230	0.833	mg/L	0.0230	2.76%
Na 589.592†	252687.7	39.3	mg/L	0.55	39.3	mg/L	0.55	1.39%
Sr 407.771†	1785730.1	2.24	mg/L	0.017	2.24	mg/L	0.017	0.74%
Li 670.784†	2286.2	0.0650	mg/L	0.00305	0.0650	mg/L	0.00305	4.69%
P 214.914†	17.8	-0.0208	mg/L	0.00622	-0.0208	mg/L	0.00622	29.82%

Sequence No.: 3 **Autosampler Location: 48**
Sample ID: L1508084102 0.005 **Date Collected: 8/23/2015 12:22:14 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508084102 0.005

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508084102 0.005

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2362215.1						30287.29	1.28%
YRADIAL	142446.1						5250.78	3.69%
Ga 417.206	876192.1						15722.16	1.79%
GaRADIAL	33723.4						1034.55	3.07%
Ag 328.068†	-251.8	0.00116	mg/L	0.000601	0.00116	mg/L	0.000601	51.64%
Al 396.153†	90.0	0.0208	mg/L	0.01404	0.0208	mg/L	0.01404	67.59%
As 188.979†	4.8	0.00034	mg/L	0.000707	0.00034	mg/L	0.000707	209.37%
Ba 233.527†	1499.1	0.00963	mg/L	0.000475	0.00963	mg/L	0.000475	4.93%
Be 234.861†	28.7	0.00009	mg/L	0.000030	0.00009	mg/L	0.000030	34.27%
B 249.677†	120.5	0.00749	mg/L	0.000647	0.00749	mg/L	0.000647	8.64%
Ca 227.546†	8754.2	27.1	mg/L	1.17	27.1	mg/L	1.17	4.32%
Cd 228.802†	6.0	0.00030	mg/L	0.000186	0.00030	mg/L	0.000186	62.62%
Co 228.616†	-22.8	-0.00065	mg/L	0.000374	-0.00065	mg/L	0.000374	57.54%

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Cr 267.716†	49.5	0.00018	mg/L	0.000131	0.00018	mg/L	0.000131	70.78%
Cu 327.393†	12.3	0.00137	mg/L	0.001010	0.00137	mg/L	0.001010	73.89%
Fe 239.562†	6020.4	0.600	mg/L	0.0115	0.600	mg/L	0.0115	1.91%
Mg 279.077†	11226.0	5.74	mg/L	0.125	5.74	mg/L	0.125	2.18%
Mn 257.610†	40884.9	0.0547	mg/L	0.00044	0.0547	mg/L	0.00044	0.81%
Mo 202.031†	-11.4	0.00064	mg/L	0.000545	0.00064	mg/L	0.000545	85.61%
Ni 231.604†	15.1	-0.00090	mg/L	0.000338	-0.00090	mg/L	0.000338	37.61%
Pb 220.353†	11.4	-0.00050	mg/L	0.002036	-0.00050	mg/L	0.002036	406.97%
Sb 206.836†	7.2	0.00748	mg/L	0.001159	0.00748	mg/L	0.001159	15.49%
Se 196.026†	-8.8	-0.00369	mg/L	0.007142	-0.00369	mg/L	0.007142	193.39%
Si 251.611†	622.3	0.0317	mg/L	0.00227	0.0317	mg/L	0.00227	7.17%
Sn 189.927†	-51.1	-0.00581	mg/L	0.001156	-0.00581	mg/L	0.001156	19.89%
Ti 334.940†	-2424.7	-0.00009	mg/L	0.000247	-0.00009	mg/L	0.000247	277.08%
Tl 190.801†	-15.8	-0.00584	mg/L	0.003601	-0.00584	mg/L	0.003601	61.71%
V 290.880†	-346.3	-0.00118	mg/L	0.000286	-0.00118	mg/L	0.000286	24.32%
Zn 206.200†	283.7	0.00167	mg/L	0.000147	0.00167	mg/L	0.000147	8.78%
K 766.490†	595.8	0.444	mg/L	0.0429	0.444	mg/L	0.0429	9.67%
Na 589.592†	747895.7	118	mg/L	3.3	118	mg/L	3.3	2.76%
Sr 407.771†	542920.2	0.683	mg/L	0.0190	0.683	mg/L	0.0190	2.79%
Li 670.784†	526.0	0.0107	mg/L	0.00417	0.0107	mg/L	0.00417	38.91%
P 214.914†	19.0	-0.0203	mg/L	0.00513	-0.0203	mg/L	0.00513	25.30%

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Sequence No.: 4
Sample ID: L1508084201 0.002
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 49
Date Collected: 8/23/2015 12:24:36 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1508084201 0.002

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508084201 0.002

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	2407900.2						84781.82	3.52%
YRADIAL	142910.6						886.35	0.62%
Ga 417.206	900162.2						37105.53	4.12%
GaRADIAL	35158.8						199.74	0.57%
Ag 328.068†	-175.0	0.00053	mg/L	0.000840	0.00053	mg/L	0.000840	158.01%
Al 396.153†	-25.4	-0.0332	mg/L	0.03259	-0.0332	mg/L	0.03259	98.16%
As 188.979†	5.4	0.00038	mg/L	0.002442	0.00038	mg/L	0.002442	635.91%
Ba 233.527†	69425.2	0.455	mg/L	0.0022	0.455	mg/L	0.0022	0.47%
Be 234.861†	-79.2	0.00010	mg/L	0.000041	0.00010	mg/L	0.000041	41.41%
B 249.677†	5153.1	0.0709	mg/L	0.00434	0.0709	mg/L	0.00434	6.12%
Ca 227.546†	8632.9	26.7	mg/L	1.32	26.7	mg/L	1.32	4.95%
Cd 228.802†	1.4	0.00018	mg/L	0.000150	0.00018	mg/L	0.000150	83.10%
Co 228.616†	-20.3	-0.00074	mg/L	0.000111	-0.00074	mg/L	0.000111	15.06%
Cr 267.716†	26.4	0.00002	mg/L	0.000102	0.00002	mg/L	0.000102	483.59%
Cu 327.393†	-56.0	0.00095	mg/L	0.002282	0.00095	mg/L	0.002282	240.53%
Fe 239.562†	1811.5	0.177	mg/L	0.0080	0.177	mg/L	0.0080	4.51%
Mg 279.077†	5688.1	2.88	mg/L	0.085	2.88	mg/L	0.085	2.96%
Mn 257.610†	14007.0	0.0184	mg/L	0.00083	0.0184	mg/L	0.00083	4.52%
Mo 202.031†	-27.2	0.00016	mg/L	0.000203	0.00016	mg/L	0.000203	129.92%
Ni 231.604†	-4.5	-0.00115	mg/L	0.000174	-0.00115	mg/L	0.000174	15.04%
Pb 220.353†	2.7	-0.00102	mg/L	0.000501	-0.00102	mg/L	0.000501	48.94%
Sb 206.836†	6.3	0.00712	mg/L	0.003387	0.00712	mg/L	0.003387	47.54%
Se 196.026†	-5.3	-0.00052	mg/L	0.004902	-0.00052	mg/L	0.004902	940.02%
Si 251.611†	841.9	0.0368	mg/L	0.00233	0.0368	mg/L	0.00233	6.33%
Sn 189.927†	-49.6	-0.00568	mg/L	0.000736	-0.00568	mg/L	0.000736	12.95%
Ti 334.940†	-2011.5	0.00041	mg/L	0.000441	0.00041	mg/L	0.000441	108.64%
Tl 190.801†	-21.4	-0.00799	mg/L	0.002608	-0.00799	mg/L	0.002608	32.62%
V 290.880†	-354.8	-0.00124	mg/L	0.001370	-0.00124	mg/L	0.001370	110.33%
Zn 206.200†	296.8	0.00181	mg/L	0.000183	0.00181	mg/L	0.000183	10.11%
K 766.490†	1358.8	1.22	mg/L	0.024	1.22	mg/L	0.024	1.95%
Na 589.592†	439992.9	68.8	mg/L	0.18	68.8	mg/L	0.18	0.26%
Sr 407.771†	3479511.7	4.37	mg/L	0.029	4.37	mg/L	0.029	0.67%
Li 670.784†	3317.3	0.0969	mg/L	0.00184	0.0969	mg/L	0.00184	1.90%
P 214.914†	32.7	-0.0142	mg/L	0.00283	-0.0142	mg/L	0.00283	19.98%

Approved: August 24, 2015

Kym H. Rhoden

Sequence No.: 5
Sample ID: CCV
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 6
Date Collected: 8/23/2015 12:26:59 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2346092.9						107992.01	4.60%
YRADIAL	139440.1						2246.59	1.61%
Ga 417.206	875587.4						45590.34	5.21%
GaRADIAL	34656.7						523.12	1.51%
Ag 328.068†	109405.4	0.400	mg/L	0.0028	0.400	mg/L	0.0028	0.70%
QC value within limits for Ag 328.068 Recovery = 100.11%								
Al 396.153†	21164.7	9.84	mg/L	0.088	9.84	mg/L	0.088	0.89%
QC value within limits for Al 396.153 Recovery = 98.36%								
As 188.979†	1338.0	0.380	mg/L	0.0214	0.380	mg/L	0.0214	5.63%
QC value within limits for As 188.979 Recovery = 94.96%								
Ba 233.527†	150362.2	0.986	mg/L	0.0119	0.986	mg/L	0.0119	1.21%
QC value within limits for Ba 233.527 Recovery = 98.64%								
Be 234.861†	66042.6	0.0485	mg/L	0.00053	0.0485	mg/L	0.00053	1.09%
QC value within limits for Be 234.861 Recovery = 97.04%								
B 249.677†	36991.9	0.495	mg/L	0.0033	0.495	mg/L	0.0033	0.66%
QC value within limits for B 249.677 Recovery = 98.97%								
Ca 227.546†	3043.1	9.55	mg/L	0.535	9.55	mg/L	0.535	5.61%
QC value within limits for Ca 227.546 Recovery = 95.49%								
Cd 228.802†	1939.4	0.0476	mg/L	0.00282	0.0476	mg/L	0.00282	5.93%
QC value within limits for Cd 228.802 Recovery = 95.24%								
Co 228.616†	9224.1	0.195	mg/L	0.0108	0.195	mg/L	0.0108	5.54%
QC value within limits for Co 228.616 Recovery = 97.28%								
Cr 267.716†	71246.7	0.497	mg/L	0.0052	0.497	mg/L	0.0052	1.05%
QC value within limits for Cr 267.716 Recovery = 99.32%								
Cu 327.393†	90415.9	0.501	mg/L	0.0046	0.501	mg/L	0.0046	0.91%
QC value within limits for Cu 327.393 Recovery = 100.25%								
Fe 239.562†	39361.4	3.96	mg/L	0.031	3.96	mg/L	0.031	0.77%
QC value within limits for Fe 239.562 Recovery = 98.94%								
Mg 279.077†	19072.0	9.78	mg/L	0.127	9.78	mg/L	0.127	1.30%
QC value within limits for Mg 279.077 Recovery = 97.82%								
Mn 257.610†	366910.8	0.495	mg/L	0.0047	0.495	mg/L	0.0047	0.94%
QC value within limits for Mn 257.610 Recovery = 98.92%								
Mo 202.031†	35591.1	1.01	mg/L	0.053	1.01	mg/L	0.053	5.29%
QC value within limits for Mo 202.031 Recovery = 100.65%								
Ni 231.604†	38156.5	0.499	mg/L	0.0050	0.499	mg/L	0.0050	1.01%
QC value within limits for Ni 231.604 Recovery = 99.78%								
Pb 220.353†	7868.2	0.494	mg/L	0.0274	0.494	mg/L	0.0274	5.55%
QC value within limits for Pb 220.353 Recovery = 98.73%								
Sb 206.836†	3130.1	1.12	mg/L	0.067	1.12	mg/L	0.067	6.00%
QC value within limits for Sb 206.836 Recovery = 93.64%								
Se 196.026†	449.2	0.403	mg/L	0.0221	0.403	mg/L	0.0221	5.48%
QC value within limits for Se 196.026 Recovery = 100.71%								
Si 251.611†	211850.6	4.92	mg/L	0.024	4.92	mg/L	0.024	0.49%
QC value within limits for Si 251.611 Recovery = 98.48%								
Sn 189.927†	11875.8	0.981	mg/L	0.0541	0.981	mg/L	0.0541	5.52%
QC value within limits for Sn 189.927 Recovery = 98.14%								
Ti 334.940†	784235.2	0.986	mg/L	0.0074	0.986	mg/L	0.0074	0.76%
QC value within limits for Ti 334.940 Recovery = 98.60%								
Tl 190.801†	1291.6	0.512	mg/L	0.0274	0.512	mg/L	0.0274	5.35%
QC value within limits for Tl 190.801 Recovery = 102.40%								
V 290.880†	167973.9	0.990	mg/L	0.0076	0.990	mg/L	0.0076	0.77%
QC value within limits for V 290.880 Recovery = 99.01%								
Zn 206.200†	85106.5	0.993	mg/L	0.0187	0.993	mg/L	0.0187	1.88%
QC value within limits for Zn 206.200 Recovery = 99.33%								
K 766.490†	51385.9	49.4	mg/L	0.50	49.4	mg/L	0.50	1.01%

Approved: August 24, 2015

QC value within limits for K 766.490 Recovery = 98.86%

Na 589.592†	329856.3	51.4 mg/L	1.85	51.4 mg/L	1.85	3.59%
QC value within limits for Na 589.592 Recovery = 102.77%						
Sr 407.771†	816215.0	1.03 mg/L	0.040	1.03 mg/L	0.040	3.91%
QC value within limits for Sr 407.771 Recovery = 102.63%						
Li 670.784†	32842.7	1.01 mg/L	0.006	1.01 mg/L	0.006	0.62%
QC value within limits for Li 670.784 Recovery = 100.80%						
P 214.914†	21839.9	9.75 mg/L	0.529	9.75 mg/L	0.529	5.43%
QC value within limits for P 214.914 Recovery = 97.50%						

All analyte(s) passed QC.

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Sequence No.: 6 **Autosampler Location: 1**
Sample ID: CCB **Date Collected: 8/23/2015 12:29:24 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCB

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2244861.8						129794.49	5.78%
YRADIAL	140638.9						5295.33	3.77%
Ga 417.206	885316.1						57434.69	6.49%
GaRADIAL	33764.9						1023.00	3.03%
Ag 328.068†	-311.4	0.00085	mg/L	0.000686	0.00085	mg/L	0.000686	80.82%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	-12.0	-0.0270	mg/L	0.00304	-0.0270	mg/L	0.00304	11.26%
QC value within limits for Al 396.153 Recovery = Not calculated								
As 188.979†	-5.0	-0.00324	mg/L	0.002310	-0.00324	mg/L	0.002310	71.37%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	197.0	0.00111	mg/L	0.000150	0.00111	mg/L	0.000150	13.54%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 234.861†	-213.7	0.00004	mg/L	0.000056	0.00004	mg/L	0.000056	140.99%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	284.2	0.00730	mg/L	0.000435	0.00730	mg/L	0.000435	5.96%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	-23.8	0.0224	mg/L	0.02998	0.0224	mg/L	0.02998	134.11%
QC value within limits for Ca 227.546 Recovery = Not calculated								
Cd 228.802†	6.2	0.00032	mg/L	0.000028	0.00032	mg/L	0.000028	8.93%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	-19.7	-0.00057	mg/L	0.000187	-0.00057	mg/L	0.000187	32.73%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	111.7	0.00062	mg/L	0.001199	0.00062	mg/L	0.001199	194.30%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	-10.1	0.00121	mg/L	0.000137	0.00121	mg/L	0.000137	11.33%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	-6.6	-0.00644	mg/L	0.000315	-0.00644	mg/L	0.000315	4.89%
QC value within limits for Fe 239.562 Recovery = Not calculated								
Mg 279.077†	115.5	0.00675	mg/L	0.005052	0.00675	mg/L	0.005052	74.80%
QC value within limits for Mg 279.077 Recovery = Not calculated								
Mn 257.610†	-468.3	-0.00109	mg/L	0.000110	-0.00109	mg/L	0.000110	10.15%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	31.9	0.00181	mg/L	0.000332	0.00181	mg/L	0.000332	18.33%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	-2.2	-0.00113	mg/L	0.000133	-0.00113	mg/L	0.000133	11.81%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	-20.4	-0.00245	mg/L	0.001337	-0.00245	mg/L	0.001337	54.63%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	17.2	0.0110	mg/L	0.00156	0.0110	mg/L	0.00156	14.11%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	-3.8	0.00084	mg/L	0.000724	0.00084	mg/L	0.000724	86.20%
QC value within limits for Se 196.026 Recovery = Not calculated								
Si 251.611†	-296.0	0.0104	mg/L	0.00250	0.0104	mg/L	0.00250	24.12%
QC value within limits for Si 251.611 Recovery = Not calculated								
Sn 189.927†	28.5	0.00078	mg/L	0.000547	0.00078	mg/L	0.000547	70.25%

Approved: August 24, 2015

Kyn H. Rhoden

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   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†                98.9     0.00134 mg/L      0.000515     0.00134 mg/L      0.000515  38.41%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†                -8.8    -0.00304 mg/L      0.004724    -0.00304 mg/L      0.004724 155.18%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†               545.0     0.00412 mg/L      0.002944     0.00412 mg/L      0.002944  71.47%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†                25.2    -0.00134 mg/L      0.000189    -0.00134 mg/L      0.000189  14.07%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†                 83.3      0.0713 mg/L       0.14425      0.0713 mg/L       0.14425 202.29%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†               728.0      0.0912 mg/L       0.02597      0.0912 mg/L       0.02597  28.49%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†              1830.8     0.00488 mg/L      0.000143     0.00488 mg/L      0.000143   2.93%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†               194.4     0.00049 mg/L      0.004444     0.00049 mg/L      0.004444 905.47%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†                 3.2     -0.0274 mg/L       0.00789     -0.0274 mg/L       0.00789  28.78%
   QC value within limits for P 214.914  Recovery = Not calculated
All analyte(s) passed QC.
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Approved: August 24, 2015

Lynn H. Rhoden

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Analysis Begun

Start Time: 8/23/2015 12:32:57 PM **Plasma On Time: 8/23/2015 7:45:07 AM**
Logged In Analyst: peicp2 **Technique: ICP Continuous**
Spectrometer Model: Optima 4300 DV, S/N 077N4011401 **Autosampler Model: Cetac**

Sample Information File: C:\pe\peicp2\Sample Information\SUNDAY.sif
Batch ID:
Results Data Set: 082315HR
Results Library: C:\pe\peicp2\Results\results2.mdb

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Sequence No.: 1 **Autosampler Location: 50**
Sample ID: L1508084401 0.001 **Date Collected: 8/23/2015 12:32:59 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508084401 0.001

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508084401 0.001

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2353665.6						57256.25	2.43%
YRADIAL	141806.6						1076.05	0.76%
Ga 417.206	893482.9						23930.47	2.68%
GaRADIAL	34814.5						444.08	1.28%
Ag 328.068†	-70.8	0.00129	mg/L	0.000535	0.00129	mg/L	0.000535	41.56%
Al 396.153†	-0.7	-0.0217	mg/L	0.01445	-0.0217	mg/L	0.01445	66.61%
As 188.979†	12.2	0.00204	mg/L	0.001675	0.00204	mg/L	0.001675	81.92%
Ba 233.527†	64677.4	0.424	mg/L	0.0013	0.424	mg/L	0.0013	0.30%
Be 234.861†	-124.5	0.00008	mg/L	0.000020	0.00008	mg/L	0.000020	25.54%
B 249.677†	1661.4	0.0256	mg/L	0.00062	0.0256	mg/L	0.00062	2.42%
Ca 227.546†	4086.8	12.7	mg/L	0.32	12.7	mg/L	0.32	2.53%
Cd 228.802†	4.5	0.00025	mg/L	0.000119	0.00025	mg/L	0.000119	48.22%
Co 228.616†	-15.8	-0.00063	mg/L	0.000081	-0.00063	mg/L	0.000081	12.81%
Cr 267.716†	-0.2	-0.00016	mg/L	0.000243	-0.00016	mg/L	0.000243	148.29%
Cu 327.393†	-344.0	-0.00063	mg/L	0.002115	-0.00063	mg/L	0.002115	334.39%
Fe 239.562†	1246.7	0.120	mg/L	0.0042	0.120	mg/L	0.0042	3.47%
Mg 279.077†	3134.5	1.56	mg/L	0.020	1.56	mg/L	0.020	1.29%
Mn 257.610†	5834.5	0.00742	mg/L	0.000198	0.00742	mg/L	0.000198	2.66%
Mo 202.031†	-8.6	0.00068	mg/L	0.000365	0.00068	mg/L	0.000365	53.99%
Ni 231.604†	61.3	-0.00029	mg/L	0.000332	-0.00029	mg/L	0.000332	112.74%
Pb 220.353†	13.8	-0.00031	mg/L	0.000752	-0.00031	mg/L	0.000752	240.06%
Sb 206.836†	10.9	0.00877	mg/L	0.003198	0.00877	mg/L	0.003198	36.48%
Se 196.026†	-9.9	-0.00456	mg/L	0.012707	-0.00456	mg/L	0.012707	278.78%
Si 251.611†	179.6	0.0214	mg/L	0.00066	0.0214	mg/L	0.00066	3.06%
Sn 189.927†	-19.4	-0.00318	mg/L	0.000425	-0.00318	mg/L	0.000425	13.35%
Ti 334.940†	-982.0	0.00080	mg/L	0.000132	0.00080	mg/L	0.000132	16.57%
Tl 190.801†	-6.7	-0.00226	mg/L	0.003395	-0.00226	mg/L	0.003395	149.98%
V 290.880†	-163.2	-0.00009	mg/L	0.000722	-0.00009	mg/L	0.000722	821.99%
Zn 206.200†	203.5	0.00073	mg/L	0.000110	0.00073	mg/L	0.000110	15.14%
K 766.490†	603.1	0.532	mg/L	0.0148	0.532	mg/L	0.0148	2.78%
Na 589.592†	239674.7	37.2	mg/L	0.16	37.2	mg/L	0.16	0.43%
Sr 407.771†	1885350.5	2.37	mg/L	0.021	2.37	mg/L	0.021	0.88%
Li 670.784†	1604.9	0.0440	mg/L	0.00269	0.0440	mg/L	0.00269	6.12%
P 214.914†	19.8	-0.0200	mg/L	0.00305	-0.0200	mg/L	0.00305	15.30%

==========

Sequence No.: 2 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 8/23/2015 12:35:23 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Approved: August 24, 2015

Kym H. Rhoden

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2324107.2						63680.02	2.74%
YRADIAL	139924.2						3614.94	2.58%
Ga 417.206	868593.0						27958.72	3.22%
GaRADIAL	34578.4						742.36	2.15%
Ag 328.068†	109771.8	0.402	mg/L	0.0029	0.402	mg/L	0.0029	0.73%
QC value within limits for Ag 328.068 Recovery = 100.45%								
Al 396.153†	21555.1	10.0	mg/L	0.06	10.0	mg/L	0.06	0.63%
QC value within limits for Al 396.153 Recovery = 100.19%								
As 188.979†	1301.9	0.370	mg/L	0.0087	0.370	mg/L	0.0087	2.36%
QC value within limits for As 188.979 Recovery = 92.38%								
Ba 233.527†	151319.5	0.993	mg/L	0.0037	0.993	mg/L	0.0037	0.37%
QC value within limits for Ba 233.527 Recovery = 99.27%								
Be 234.861†	66236.6	0.0486	mg/L	0.00008	0.0486	mg/L	0.00008	0.17%
QC value within limits for Be 234.861 Recovery = 97.29%								
B 249.677†	37169.8	0.497	mg/L	0.0055	0.497	mg/L	0.0055	1.10%
QC value within limits for B 249.677 Recovery = 99.49%								
Ca 227.546†	2992.2	9.39	mg/L	0.150	9.39	mg/L	0.150	1.60%
QC value within limits for Ca 227.546 Recovery = 93.91%								
Cd 228.802†	1897.1	0.0466	mg/L	0.00104	0.0466	mg/L	0.00104	2.22%
QC value within limits for Cd 228.802 Recovery = 93.19%								
Co 228.616†	9051.6	0.191	mg/L	0.0036	0.191	mg/L	0.0036	1.91%
QC value within limits for Co 228.616 Recovery = 95.42%								
Cr 267.716†	71561.3	0.499	mg/L	0.0011	0.499	mg/L	0.0011	0.22%
QC value within limits for Cr 267.716 Recovery = 99.76%								
Cu 327.393†	90771.9	0.503	mg/L	0.0051	0.503	mg/L	0.0051	1.02%
QC value within limits for Cu 327.393 Recovery = 100.64%								
Fe 239.562†	40049.8	4.03	mg/L	0.038	4.03	mg/L	0.038	0.95%
QC value within limits for Fe 239.562 Recovery = 100.67%								
Mg 279.077†	19153.8	9.82	mg/L	0.082	9.82	mg/L	0.082	0.83%
QC value within limits for Mg 279.077 Recovery = 98.24%								
Mn 257.610†	370092.3	0.499	mg/L	0.0028	0.499	mg/L	0.0028	0.56%
QC value within limits for Mn 257.610 Recovery = 99.78%								
Mo 202.031†	34918.0	0.987	mg/L	0.0181	0.987	mg/L	0.0181	1.83%
QC value within limits for Mo 202.031 Recovery = 98.75%								
Ni 231.604†	38224.4	0.500	mg/L	0.0029	0.500	mg/L	0.0029	0.58%
QC value within limits for Ni 231.604 Recovery = 99.96%								
Pb 220.353†	7673.6	0.481	mg/L	0.0074	0.481	mg/L	0.0074	1.53%
QC value within limits for Pb 220.353 Recovery = 96.30%								
Sb 206.836†	3046.5	1.09	mg/L	0.021	1.09	mg/L	0.021	1.89%
QC value within limits for Sb 206.836 Recovery = 91.15%								
Se 196.026†	441.3	0.396	mg/L	0.0107	0.396	mg/L	0.0107	2.71%
QC value within limits for Se 196.026 Recovery = 98.98%								
Si 251.611†	212746.4	4.94	mg/L	0.018	4.94	mg/L	0.018	0.36%
QC value within limits for Si 251.611 Recovery = 98.90%								
Sn 189.927†	11622.7	0.960	mg/L	0.0163	0.960	mg/L	0.0163	1.70%
QC value within limits for Sn 189.927 Recovery = 96.05%								
Ti 334.940†	790661.2	0.994	mg/L	0.0045	0.994	mg/L	0.0045	0.46%
QC value within limits for Ti 334.940 Recovery = 99.40%								
Tl 190.801†	1260.6	0.500	mg/L	0.0113	0.500	mg/L	0.0113	2.26%
QC value within limits for Tl 190.801 Recovery = 100.01%								
V 290.880†	169185.7	0.997	mg/L	0.0051	0.997	mg/L	0.0051	0.51%
QC value within limits for V 290.880 Recovery = 99.72%								
Zn 206.200†	85331.6	0.996	mg/L	0.0062	0.996	mg/L	0.0062	0.62%
QC value within limits for Zn 206.200 Recovery = 99.59%								
K 766.490†	52261.1	50.3	mg/L	0.38	50.3	mg/L	0.38	0.75%
QC value within limits for K 766.490 Recovery = 100.56%								
Na 589.592†	327822.8	51.1	mg/L	0.76	51.1	mg/L	0.76	1.50%
QC value within limits for Na 589.592 Recovery = 102.13%								
Sr 407.771†	805129.4	1.01	mg/L	0.016	1.01	mg/L	0.016	1.57%
QC value within limits for Sr 407.771 Recovery = 101.24%								
Li 670.784†	33631.0	1.03	mg/L	0.004	1.03	mg/L	0.004	0.43%
QC value within limits for Li 670.784 Recovery = 103.23%								
P 214.914†	21312.4	9.51	mg/L	0.149	9.51	mg/L	0.149	1.57%
QC value within limits for P 214.914 Recovery = 95.14%								

Approved: August 24, 2015

Lynn H. Rhoden

All analyte(s) passed QC.

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Sequence No.: 3 **Autosampler Location: 1**
Sample ID: CCB **Date Collected: 8/23/2015 12:37:48 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCB

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2407418.5						14697.30	0.61%
YRADIAL	143363.9						6242.93	4.35%
Ga 417.206	950236.2						5959.13	0.63%
GaRADIAL	34265.9						1245.57	3.64%
Ag 328.068†	-262.5	0.00102	mg/L	0.000131	0.00102	mg/L	0.000131	12.83%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	-22.2	-0.0318	mg/L	0.02711	-0.0318	mg/L	0.02711	85.26%
QC value within limits for Al 396.153 Recovery = Not calculated								
As 188.979†	12.2	0.00171	mg/L	0.003787	0.00171	mg/L	0.003787	221.43%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	140.5	0.00074	mg/L	0.000106	0.00074	mg/L	0.000106	14.36%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 234.861†	-105.2	0.00012	mg/L	0.000013	0.00012	mg/L	0.000013	10.81%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	362.1	0.00831	mg/L	0.002698	0.00831	mg/L	0.002698	32.47%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	-14.4	0.0515	mg/L	0.03884	0.0515	mg/L	0.03884	75.41%
QC value within limits for Ca 227.546 Recovery = Not calculated								
Cd 228.802†	7.6	0.00033	mg/L	0.000142	0.00033	mg/L	0.000142	43.64%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	-27.9	-0.00074	mg/L	0.000223	-0.00074	mg/L	0.000223	30.02%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	-16.4	-0.00028	mg/L	0.000517	-0.00028	mg/L	0.000517	187.04%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	240.2	0.00259	mg/L	0.001110	0.00259	mg/L	0.001110	42.89%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	-9.3	-0.00671	mg/L	0.002495	-0.00671	mg/L	0.002495	37.18%
QC value within limits for Fe 239.562 Recovery = Not calculated								
Mg 279.077†	123.7	0.0109	mg/L	0.03175	0.0109	mg/L	0.03175	290.04%
QC value within limits for Mg 279.077 Recovery = Not calculated								
Mn 257.610†	-452.3	-0.00106	mg/L	0.000052	-0.00106	mg/L	0.000052	4.92%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	11.6	0.00124	mg/L	0.000548	0.00124	mg/L	0.000548	44.33%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	3.6	-0.00105	mg/L	0.000093	-0.00105	mg/L	0.000093	8.85%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	23.2	0.00028	mg/L	0.000493	0.00028	mg/L	0.000493	176.85%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	16.8	0.0109	mg/L	0.00480	0.0109	mg/L	0.00480	44.13%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	-2.8	0.00174	mg/L	0.002958	0.00174	mg/L	0.002958	170.22%
QC value within limits for Se 196.026 Recovery = Not calculated								
Si 251.611†	-347.1	0.00917	mg/L	0.000366	0.00917	mg/L	0.000366	3.99%
QC value within limits for Si 251.611 Recovery = Not calculated								
Sn 189.927†	47.0	0.00231	mg/L	0.000769	0.00231	mg/L	0.000769	33.30%
QC value within limits for Sn 189.927 Recovery = Not calculated								
Ti 334.940†	-90.1	0.00111	mg/L	0.000303	0.00111	mg/L	0.000303	27.41%
QC value within limits for Ti 334.940 Recovery = Not calculated								
Tl 190.801†	-8.2	-0.00280	mg/L	0.000852	-0.00280	mg/L	0.000852	30.49%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 290.880†	87.1	0.00142	mg/L	0.001676	0.00142	mg/L	0.001676	117.89%
QC value within limits for V 290.880 Recovery = Not calculated								
Zn 206.200†	43.1	-0.00114	mg/L	0.000131	-0.00114	mg/L	0.000131	11.42%
QC value within limits for Zn 206.200 Recovery = Not calculated								

Approved: August 24, 2015

Lynn H. Rhoden

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K 766.490†                 3.5    -0.00508 mg/L      0.054627    -0.00508 mg/L      0.054627 >999.9%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†              724.6      0.0906 mg/L       0.02572      0.0906 mg/L       0.02572  28.37%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†             1564.4     0.00454 mg/L      0.000137     0.00454 mg/L      0.000137   3.01%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†               44.0    -0.00415 mg/L      0.006112    -0.00415 mg/L      0.006112 147.29%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†                24.2     -0.0180 mg/L       0.00704     -0.0180 mg/L       0.00704  39.16%
   QC value within limits for P 214.914  Recovery = Not calculated
All analyte(s) passed QC.
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Approved: August 24, 2015

Lynn H. Rhoden

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Analysis Begun

Start Time: 8/23/2015 12:57:52 PM **Plasma On Time: 8/23/2015 7:45:07 AM**
Logged In Analyst: peicp2 **Technique: ICP Continuous**
Spectrometer Model: Optima 4300 DV, S/N 077N4011401 **Autosampler Model: Cetac**

Sample Information File: C:\pe\peicp2\Sample Information\SUNDAY2.sif
Batch ID:
Results Data Set: 082315HR
Results Library: C:\pe\peicp2\Results\results2.mdb

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Method Loaded
Method Name: 200.7-6010-3015 ASX **Method Last Saved: 8/14/2015 2:29:43 PM**
IEC File: PLUS-P.iec **SMF File:**
Method Description: STANDARD

==========

Sequence No.: 1 **Autosampler Location: 71**
Sample ID: PBW A4 WG536019-02 **Date Collected: 8/23/2015 12:57:53 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: PBW A4 WG536019-02

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: PBW A4 WG536019-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2381374.3						59424.66	2.50%
YRADIAL	135469.5						12988.81	9.59%
Ga 417.206	952703.5						27296.42	2.87%
GaRADIAL	32774.6						2848.10	8.69%
Ag 328.068†	-272.3	0.00099	mg/L	0.000345	0.00099	mg/L	0.000345	34.89%
Al 396.153†	-24.6	-0.0329	mg/L	0.00239	-0.0329	mg/L	0.00239	7.27%
As 188.979†	5.9	-0.00011	mg/L	0.000473	-0.00011	mg/L	0.000473	418.35%
Ba 233.527†	-120.4	-0.00097	mg/L	0.000124	-0.00097	mg/L	0.000124	12.76%
Be 234.861†	-268.2	0.00000	mg/L	0.000024	0.00000	mg/L	0.000024	>999.9%
B 249.677†	27.4	0.00397	mg/L	0.000233	0.00397	mg/L	0.000233	5.87%
Ca 227.546†	-50.9	-0.0610	mg/L	0.02494	-0.0610	mg/L	0.02494	40.86%
Cd 228.802†	1.4	0.00018	mg/L	0.000122	0.00018	mg/L	0.000122	68.75%
Co 228.616†	-36.7	-0.00093	mg/L	0.000388	-0.00093	mg/L	0.000388	41.65%
Cr 267.716†	34.1	0.00008	mg/L	0.000245	0.00008	mg/L	0.000245	321.78%
Cu 327.393†	-31.8	0.00109	mg/L	0.000727	0.00109	mg/L	0.000727	66.72%
Fe 239.562†	-40.7	-0.00987	mg/L	0.001165	-0.00987	mg/L	0.001165	11.80%
Mg 279.077†	92.2	-0.00528	mg/L	0.005943	-0.00528	mg/L	0.005943	112.57%
Mn 257.610†	-892.6	-0.00166	mg/L	0.000052	-0.00166	mg/L	0.000052	3.13%
Mo 202.031†	14.4	0.00132	mg/L	0.000336	0.00132	mg/L	0.000336	25.47%
Ni 231.604†	-22.6	-0.00139	mg/L	0.000171	-0.00139	mg/L	0.000171	12.26%
Pb 220.353†	-24.0	-0.00267	mg/L	0.001184	-0.00267	mg/L	0.001184	44.31%
Sb 206.836†	6.4	0.00715	mg/L	0.004758	0.00715	mg/L	0.004758	66.50%
Se 196.026†	-7.6	-0.00254	mg/L	0.011770	-0.00254	mg/L	0.011770	463.90%
Si 251.611†	-547.7	0.00451	mg/L	0.000581	0.00451	mg/L	0.000581	12.87%
Sn 189.927†	-9.0	-0.00232	mg/L	0.000322	-0.00232	mg/L	0.000322	13.86%
Ti 334.940†	48.1	0.00127	mg/L	0.000057	0.00127	mg/L	0.000057	4.47%
Tl 190.801†	-13.8	-0.00499	mg/L	0.000728	-0.00499	mg/L	0.000728	14.61%
V 290.880†	490.3	0.00380	mg/L	0.001862	0.00380	mg/L	0.001862	49.05%
Zn 206.200†	41.0	-0.00117	mg/L	0.000035	-0.00117	mg/L	0.000035	2.97%
K 766.490†	33.5	0.0237	mg/L	0.14273	0.0237	mg/L	0.14273	601.42%
Na 589.592†	441.9	0.0470	mg/L	0.01872	0.0470	mg/L	0.01872	39.80%
Sr 407.771†	-33.7	0.00254	mg/L	0.000258	0.00254	mg/L	0.000258	10.17%
Li 670.784†	42.7	-0.00419	mg/L	0.003455	-0.00419	mg/L	0.003455	82.51%
P 214.914†	-25.4	-0.0402	mg/L	0.00196	-0.0402	mg/L	0.00196	4.88%

==========

Sequence No.: 2 **Autosampler Location: 72**

Approved: August 24, 2015

Sample ID: LCSW A4 WG536019-03
Analyst: KHR
Initial Sample Wt:
Dilution:

Date Collected: 8/23/2015 1:01:13 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: LCSW A4 WG536019-03

Analyte	Back Pressure	Flow
All	202.0 kPa	0.31 L/min

Mean Data: LCSW A4 WG536019-03

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2299885.2						123309.59	5.36%
YRADIAL	145566.9						2090.66	1.44%
Ga 417.206	875954.4						53686.38	6.13%
GaRADIAL	35099.0						397.45	1.13%
Ag 328.068†	56216.2	0.207	mg/L	0.0052	0.207	mg/L	0.0052	2.52%
Al 396.153†	11343.1	5.26	mg/L	0.047	5.26	mg/L	0.047	0.89%
As 188.979†	686.0	0.194	mg/L	0.0133	0.194	mg/L	0.0133	6.87%
Ba 233.527†	79104.8	0.519	mg/L	0.0034	0.519	mg/L	0.0034	0.65%
Be 234.861†	32575.5	0.0240	mg/L	0.00048	0.0240	mg/L	0.00048	2.00%
B 249.677†	76176.8	0.995	mg/L	0.0169	0.995	mg/L	0.0169	1.70%
Ca 227.546†	1514.7	4.80	mg/L	0.289	4.80	mg/L	0.289	6.01%
Cd 228.802†	989.5	0.0244	mg/L	0.00156	0.0244	mg/L	0.00156	6.41%
Co 228.616†	4879.6	0.103	mg/L	0.0057	0.103	mg/L	0.0057	5.51%
Cr 267.716†	37883.8	0.264	mg/L	0.0009	0.264	mg/L	0.0009	0.35%
Cu 327.393†	46427.2	0.258	mg/L	0.0067	0.258	mg/L	0.0067	2.58%
Fe 239.562†	20780.8	2.09	mg/L	0.009	2.09	mg/L	0.009	0.42%
Mg 279.077†	10119.8	5.17	mg/L	0.046	5.17	mg/L	0.046	0.90%
Mn 257.610†	194929.7	0.263	mg/L	0.0021	0.263	mg/L	0.0021	0.80%
Mo 202.031†	18370.7	0.520	mg/L	0.0285	0.520	mg/L	0.0285	5.49%
Ni 231.604†	20796.1	0.271	mg/L	0.0147	0.271	mg/L	0.0147	5.42%
Pb 220.353†	4203.6	0.263	mg/L	0.0146	0.263	mg/L	0.0146	5.55%
Sb 206.836†	1611.6	0.581	mg/L	0.0397	0.581	mg/L	0.0397	6.83%
Se 196.026†	216.0	0.196	mg/L	0.0069	0.196	mg/L	0.0069	3.53%
Si 251.611†	107968.9	2.52	mg/L	0.044	2.52	mg/L	0.044	1.73%
Sn 189.927†	6526.4	0.539	mg/L	0.0293	0.539	mg/L	0.0293	5.44%
Ti 334.940†	410730.2	0.517	mg/L	0.0041	0.517	mg/L	0.0041	0.80%
Tl 190.801†	669.2	0.266	mg/L	0.0161	0.266	mg/L	0.0161	6.06%
V 290.880†	88521.7	0.522	mg/L	0.0054	0.522	mg/L	0.0054	1.03%
Zn 206.200†	43973.6	0.512	mg/L	0.0037	0.512	mg/L	0.0037	0.72%
K 766.490†	27061.3	26.0	mg/L	0.15	26.0	mg/L	0.15	0.57%
Na 589.592†	173483.6	26.9	mg/L	0.60	26.9	mg/L	0.60	2.22%
Sr 407.771†	414472.9	0.522	mg/L	0.0138	0.522	mg/L	0.0138	2.64%
Li 670.784†	17502.3	0.535	mg/L	0.0093	0.535	mg/L	0.0093	1.74%
P 214.914†	11200.9	4.99	mg/L	0.273	4.99	mg/L	0.273	5.47%

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Sequence No.: 3
Sample ID: FBLK1 WG535942-01
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 73
Date Collected: 8/23/2015 1:03:39 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: FBLK1 WG535942-01

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: FBLK1 WG535942-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2326972.6						35165.25	1.51%
YRADIAL	139256.6						6395.89	4.59%
Ga 417.206	851864.8						13068.97	1.53%
GaRADIAL	33515.4						1399.11	4.17%
Ag 328.068†	-355.8	0.00068	mg/L	0.000393	0.00068	mg/L	0.000393	57.43%
Al 396.153†	-6.7	-0.0246	mg/L	0.00420	-0.0246	mg/L	0.00420	17.12%
As 188.979†	0.3	-0.00171	mg/L	0.001728	-0.00171	mg/L	0.001728	100.83%

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Ba 233.527†	-115.2	-0.00094	mg/L	0.000201	-0.00094	mg/L	0.000201	21.48%
Be 234.861†	-483.9	-0.00016	mg/L	0.000019	-0.00016	mg/L	0.000019	12.10%
B 249.677†	242.6	0.00675	mg/L	0.001055	0.00675	mg/L	0.001055	15.62%
Ca 227.546†	-42.9	-0.0364	mg/L	0.04769	-0.0364	mg/L	0.04769	130.83%
Cd 228.802†	12.5	0.00047	mg/L	0.000306	0.00047	mg/L	0.000306	65.68%
Co 228.616†	-29.7	-0.00078	mg/L	0.000185	-0.00078	mg/L	0.000185	23.69%
Cr 267.716†	17.0	-0.00004	mg/L	0.000793	-0.00004	mg/L	0.000793	>999.9%
Cu 327.393†	181.0	0.00226	mg/L	0.000957	0.00226	mg/L	0.000957	42.33%
Fe 239.562†	-26.5	-0.00844	mg/L	0.001268	-0.00844	mg/L	0.001268	15.03%
Mg 279.077†	111.1	0.00446	mg/L	0.007221	0.00446	mg/L	0.007221	161.91%
Mn 257.610†	-828.3	-0.00157	mg/L	0.000035	-0.00157	mg/L	0.000035	2.25%
Mo 202.031†	44.1	0.00216	mg/L	0.000242	0.00216	mg/L	0.000242	11.21%
Ni 231.604†	-19.5	-0.00135	mg/L	0.000121	-0.00135	mg/L	0.000121	8.94%
Pb 220.353†	-3.4	-0.00138	mg/L	0.000904	-0.00138	mg/L	0.000904	65.38%
Sb 206.836†	11.8	0.00909	mg/L	0.002105	0.00909	mg/L	0.002105	23.15%
Se 196.026†	5.0	0.00856	mg/L	0.009509	0.00856	mg/L	0.009509	111.12%
Si 251.611†	-10.1	0.0170	mg/L	0.00045	0.0170	mg/L	0.00045	2.65%
Sn 189.927†	0.2	-0.00156	mg/L	0.001249	-0.00156	mg/L	0.001249	80.01%
Ti 334.940†	22.8	0.00124	mg/L	0.000147	0.00124	mg/L	0.000147	11.81%
Tl 190.801†	-12.5	-0.00448	mg/L	0.000565	-0.00448	mg/L	0.000565	12.62%
V 290.880†	211.5	0.00216	mg/L	0.000922	0.00216	mg/L	0.000922	42.80%
Zn 206.200†	223.0	0.00095	mg/L	0.000119	0.00095	mg/L	0.000119	12.48%
K 766.490†	218.0	0.0607	mg/L	0.06064	0.0607	mg/L	0.06064	99.87%
Na 589.592†	880347.4	140	mg/L	1.1	140	mg/L	1.1	0.80%
Sr 407.771†	104.3	0.00271	mg/L	0.000112	0.00271	mg/L	0.000112	4.15%
Li 670.784†	100.4	-0.00241	mg/L	0.002736	-0.00241	mg/L	0.002736	113.60%
P 214.914†	5.7	-0.0263	mg/L	0.00583	-0.0263	mg/L	0.00583	22.18%

Sequence No.: 4 **Autosampler Location: 74**
Sample ID: FBLK2 WG535942-02 **Date Collected: 8/23/2015 1:07:01 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: FBLK2 WG535942-02

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: FBLK2 WG535942-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2316349.5						94113.47	4.06%
YRADIAL	138447.9						7024.77	5.07%
Ga 417.206	916771.4						42359.64	4.62%
GaRADIAL	33538.5						1371.86	4.09%
Ag 328.068†	-387.9	0.00058	mg/L	0.001015	0.00058	mg/L	0.001015	176.42%
Al 396.153†	-22.7	-0.0320	mg/L	0.00624	-0.0320	mg/L	0.00624	19.46%
As 188.979†	7.3	0.00031	mg/L	0.002329	0.00031	mg/L	0.002329	749.83%
Ba 233.527†	-120.3	-0.00097	mg/L	0.000173	-0.00097	mg/L	0.000173	17.83%
Be 234.861†	-361.1	-0.00007	mg/L	0.000071	-0.00007	mg/L	0.000071	102.11%
B 249.677†	120.7	0.00519	mg/L	0.000277	0.00519	mg/L	0.000277	5.34%
Ca 227.546†	-52.7	-0.0667	mg/L	0.06814	-0.0667	mg/L	0.06814	102.12%
Cd 228.802†	7.5	0.00033	mg/L	0.000139	0.00033	mg/L	0.000139	42.24%
Co 228.616†	-39.3	-0.00099	mg/L	0.000214	-0.00099	mg/L	0.000214	21.68%
Cr 267.716†	42.5	0.00014	mg/L	0.000087	0.00014	mg/L	0.000087	64.20%
Cu 327.393†	42.0	0.00150	mg/L	0.000834	0.00150	mg/L	0.000834	55.63%
Fe 239.562†	-2.0	-0.00597	mg/L	0.000708	-0.00597	mg/L	0.000708	11.86%
Mg 279.077†	116.4	0.00720	mg/L	0.006621	0.00720	mg/L	0.006621	92.00%
Mn 257.610†	-866.6	-0.00162	mg/L	0.000035	-0.00162	mg/L	0.000035	2.18%
Mo 202.031†	29.1	0.00173	mg/L	0.000259	0.00173	mg/L	0.000259	14.95%
Ni 231.604†	-30.6	-0.00150	mg/L	0.000128	-0.00150	mg/L	0.000128	8.54%
Pb 220.353†	-11.9	-0.00191	mg/L	0.000846	-0.00191	mg/L	0.000846	44.21%
Sb 206.836†	6.4	0.00715	mg/L	0.001197	0.00715	mg/L	0.001197	16.73%
Se 196.026†	-7.6	-0.00254	mg/L	0.005743	-0.00254	mg/L	0.005743	225.72%
Si 251.611†	-406.8	0.00778	mg/L	0.001192	0.00778	mg/L	0.001192	15.31%
Sn 189.927†	-8.2	-0.00225	mg/L	0.001143	-0.00225	mg/L	0.001143	50.71%
Ti 334.940†	23.4	0.00124	mg/L	0.000353	0.00124	mg/L	0.000353	28.45%
Tl 190.801†	-11.5	-0.00409	mg/L	0.000071	-0.00409	mg/L	0.000071	1.74%
V 290.880†	717.7	0.00514	mg/L	0.002544	0.00514	mg/L	0.002544	49.53%

Approved: August 24, 2015

Zn 206.200†	310.8	0.00197	mg/L	0.000168	0.00197	mg/L	0.000168	8.53%
K 766.490†	23.4	0.0140	mg/L	0.11369	0.0140	mg/L	0.11369	813.71%
Na 589.592†	729.6	0.0914	mg/L	0.01870	0.0914	mg/L	0.01870	20.46%
Sr 407.771†	44.4	0.00264	mg/L	0.000065	0.00264	mg/L	0.000065	2.48%
Li 670.784†	53.7	-0.00385	mg/L	0.005699	-0.00385	mg/L	0.005699	148.05%
P 214.914†	6.1	-0.0261	mg/L	0.01015	-0.0261	mg/L	0.01015	38.94%

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Sequence No.: 5 **Autosampler Location: 75**
Sample ID: L1508099901 WG536019-01 **Date Collected: 8/23/2015 1:10:20 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508099901 WG536019-01

Analyte	Back Pressure	Flow
All	202.0 kPa	0.31 L/min

Mean Data: L1508099901 WG536019-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2386009.2						24144.52	1.01%
YRADIAL	145195.1						8322.09	5.73%
Ga 417.206	876827.8						14645.20	1.67%
GaRADIAL	35255.7						1742.48	4.94%
Ag 328.068†	1035.4	0.00562	mg/L	0.000420	0.00562	mg/L	0.000420	7.47%
Al 396.153†	-7.4	-0.0251	mg/L	0.04782	-0.0251	mg/L	0.04782	190.29%
As 188.979†	1.2	0.00167	mg/L	0.001461	0.00167	mg/L	0.001461	87.28%
Ba 233.527†	2921.2	0.0190	mg/L	0.00013	0.0190	mg/L	0.00013	0.67%
Be 234.861†	-348.6	-0.00006	mg/L	0.000010	-0.00006	mg/L	0.000010	18.52%
B 249.677†	241.9	0.00674	mg/L	0.000655	0.00674	mg/L	0.000655	9.72%
Ca 227.546†	46875.4	145	mg/L	1.6	145	mg/L	1.6	1.13%
Cd 228.802†	14.1	0.00050	mg/L	0.000201	0.00050	mg/L	0.000201	39.81%
Co 228.616†	-34.8	-0.00086	mg/L	0.000179	-0.00086	mg/L	0.000179	20.78%
Cr 267.716†	212.2	0.00132	mg/L	0.000100	0.00132	mg/L	0.000100	7.61%
Cu 327.393†	-135.5	0.00050	mg/L	0.000818	0.00050	mg/L	0.000818	162.24%
Fe 239.562†	-54.5	-0.0113	mg/L	0.00538	-0.0113	mg/L	0.00538	47.74%
Mg 279.077†	76.5	-0.0134	mg/L	0.02910	-0.0134	mg/L	0.02910	217.45%
Mn 257.610†	-963.7	-0.00175	mg/L	0.000025	-0.00175	mg/L	0.000025	1.41%
Mo 202.031†	260.5	0.00826	mg/L	0.000387	0.00826	mg/L	0.000387	4.69%
Ni 231.604†	47.9	-0.00046	mg/L	0.000063	-0.00046	mg/L	0.000063	13.48%
Pb 220.353†	40.8	0.00139	mg/L	0.002030	0.00139	mg/L	0.002030	146.33%
Sb 206.836†	14.2	0.00996	mg/L	0.004516	0.00996	mg/L	0.004516	45.36%
Se 196.026†	-8.5	-0.00331	mg/L	0.004231	-0.00331	mg/L	0.004231	127.83%
Si 251.611†	4744.0	0.127	mg/L	0.0018	0.127	mg/L	0.0018	1.40%
Sn 189.927†	-166.8	-0.0154	mg/L	0.00119	-0.0154	mg/L	0.00119	7.73%
Ti 334.940†	-9407.0	-0.00131	mg/L	0.000247	-0.00131	mg/L	0.000247	18.90%
Tl 190.801†	-40.8	-0.0156	mg/L	0.00403	-0.0156	mg/L	0.00403	25.92%
V 290.880†	319.2	0.00279	mg/L	0.001167	0.00279	mg/L	0.001167	41.85%
Zn 206.200†	231.1	0.00106	mg/L	0.000087	0.00106	mg/L	0.000087	8.27%
K 766.490†	35562.7	34.0	mg/L	0.35	34.0	mg/L	0.35	1.04%
Na 589.592†	866534.2	137	mg/L	1.1	137	mg/L	1.1	0.81%
Sr 407.771†	337586.3	0.422	mg/L	0.0026	0.422	mg/L	0.0026	0.62%
Li 670.784†	462.4	0.00876	mg/L	0.001133	0.00876	mg/L	0.001133	12.93%
P 214.914†	5.9	-0.0262	mg/L	0.00556	-0.0262	mg/L	0.00556	21.27%

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Sequence No.: 6 **Autosampler Location: 76**
Sample ID: L1508099901MS WG536019-04 **Date Collected: 8/23/2015 1:12:43 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508099901MS WG536019-04

Analyte	Back Pressure	Flow
All	202.0 kPa	0.31 L/min

Mean Data: L1508099901MS WG536019-04

Approved: August 24, 2015

Kym H. Rhoden

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	2341253.4						150278.20	6.42%
YRADIAL	146783.1						4565.55	3.11%
Ga 417.206	870217.9						65542.22	7.53%
GaRADIAL	35498.7						1032.10	2.91%
Ag 328.068†	57101.2	0.210	mg/L	0.0060	0.210	mg/L	0.0060	2.85%
Al 396.153†	10998.9	5.10	mg/L	0.033	5.10	mg/L	0.033	0.64%
As 188.979†	720.7	0.207	mg/L	0.0153	0.207	mg/L	0.0153	7.40%
Ba 233.527†	79662.1	0.523	mg/L	0.0060	0.523	mg/L	0.0060	1.14%
Be 234.861†	33980.4	0.0251	mg/L	0.00072	0.0251	mg/L	0.00072	2.88%
B 249.677†	75705.2	0.989	mg/L	0.0309	0.989	mg/L	0.0309	3.12%
Ca 227.546†	46873.7	145	mg/L	4.0	145	mg/L	4.0	2.75%
Cd 228.802†	989.1	0.0243	mg/L	0.00217	0.0243	mg/L	0.00217	8.93%
Co 228.616†	4673.0	0.0985	mg/L	0.00720	0.0985	mg/L	0.00720	7.31%
Cr 267.716†	36659.4	0.255	mg/L	0.0031	0.255	mg/L	0.0031	1.23%
Cu 327.393†	45785.2	0.254	mg/L	0.0083	0.254	mg/L	0.0083	3.27%
Fe 239.562†	19568.7	1.96	mg/L	0.007	1.96	mg/L	0.007	0.35%
Mg 279.077†	9422.0	4.81	mg/L	0.092	4.81	mg/L	0.092	1.91%
Mn 257.610†	188403.7	0.254	mg/L	0.0026	0.254	mg/L	0.0026	1.01%
Mo 202.031†	18818.7	0.533	mg/L	0.0396	0.533	mg/L	0.0396	7.44%
Ni 231.604†	19971.1	0.261	mg/L	0.0198	0.261	mg/L	0.0198	7.58%
Pb 220.353†	4049.7	0.254	mg/L	0.0179	0.254	mg/L	0.0179	7.05%
Sb 206.836†	1667.2	0.601	mg/L	0.0549	0.601	mg/L	0.0549	9.14%
Se 196.026†	242.4	0.219	mg/L	0.0266	0.219	mg/L	0.0266	12.15%
Si 251.611†	116331.1	2.71	mg/L	0.057	2.71	mg/L	0.057	2.11%
Sn 189.927†	6207.6	0.512	mg/L	0.0374	0.512	mg/L	0.0374	7.30%
Ti 334.940†	397464.6	0.509	mg/L	0.0070	0.509	mg/L	0.0070	1.37%
Tl 190.801†	604.6	0.240	mg/L	0.0203	0.240	mg/L	0.0203	8.44%
V 290.880†	88954.3	0.525	mg/L	0.0086	0.525	mg/L	0.0086	1.63%
Zn 206.200†	42112.9	0.491	mg/L	0.0020	0.491	mg/L	0.0020	0.40%
K 766.490†	59255.2	57.0	mg/L	0.42	57.0	mg/L	0.42	0.74%
Na 589.592†	958556.6	152	mg/L	2.8	152	mg/L	2.8	1.84%
Sr 407.771†	697882.2	0.874	mg/L	0.0214	0.874	mg/L	0.0214	2.45%
Li 670.784†	16474.4	0.503	mg/L	0.0038	0.503	mg/L	0.0038	0.76%
P 214.914†	11891.3	5.30	mg/L	0.397	5.30	mg/L	0.397	7.49%

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Sequence No.: 7 **Autosampler Location: 77**
Sample ID: L1508099901SD WG536019-05 **Date Collected: 8/23/2015 1:15:07 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508099901SD WG536019-05

Analyte	Back Pressure	Flow
All	202.0 kPa	0.31 L/min

Mean Data: L1508099901SD WG536019-05

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	2409319.1						26274.39	1.09%
YRADIAL	151585.0						2051.85	1.35%
Ga 417.206	897360.9						10285.13	1.15%
GaRADIAL	36515.2						458.20	1.25%
Ag 328.068†	57714.3	0.212	mg/L	0.0030	0.212	mg/L	0.0030	1.41%
Al 396.153†	11138.5	5.17	mg/L	0.046	5.17	mg/L	0.046	0.89%
As 188.979†	694.7	0.199	mg/L	0.0052	0.199	mg/L	0.0052	2.62%
Ba 233.527†	81092.9	0.532	mg/L	0.0021	0.532	mg/L	0.0021	0.39%
Be 234.861†	34552.8	0.0255	mg/L	0.00016	0.0255	mg/L	0.00016	0.63%
B 249.677†	77886.7	1.02	mg/L	0.014	1.02	mg/L	0.014	1.39%
Ca 227.546†	48083.8	148	mg/L	1.4	148	mg/L	1.4	0.93%
Cd 228.802†	974.6	0.0240	mg/L	0.00054	0.0240	mg/L	0.00054	2.25%
Co 228.616†	4609.1	0.0971	mg/L	0.00178	0.0971	mg/L	0.00178	1.83%
Cr 267.716†	37699.5	0.263	mg/L	0.0006	0.263	mg/L	0.0006	0.24%
Cu 327.393†	46649.9	0.259	mg/L	0.0014	0.259	mg/L	0.0014	0.54%
Fe 239.562†	20253.1	2.03	mg/L	0.024	2.03	mg/L	0.024	1.20%
Mg 279.077†	9575.8	4.88	mg/L	0.023	4.88	mg/L	0.023	0.47%
Mn 257.610†	191349.7	0.258	mg/L	0.0008	0.258	mg/L	0.0008	0.30%
Mo 202.031†	18511.9	0.524	mg/L	0.0087	0.524	mg/L	0.0087	1.65%

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Kym H. Rhoden

Ni 231.604†	19635.8	0.256 mg/L	0.0041	0.256 mg/L	0.0041	1.59%
Pb 220.353†	3954.4	0.248 mg/L	0.0031	0.248 mg/L	0.0031	1.24%
Sb 206.836†	1639.1	0.591 mg/L	0.0089	0.591 mg/L	0.0089	1.51%
Se 196.026†	221.3	0.201 mg/L	0.0085	0.201 mg/L	0.0085	4.23%
Si 251.611†	117479.8	2.74 mg/L	0.023	2.74 mg/L	0.023	0.83%
Sn 189.927†	6109.1	0.504 mg/L	0.0089	0.504 mg/L	0.0089	1.76%
Ti 334.940†	404933.3	0.519 mg/L	0.0022	0.519 mg/L	0.0022	0.42%
Tl 190.801†	593.7	0.236 mg/L	0.0066	0.236 mg/L	0.0066	2.80%
V 290.880†	90531.6	0.534 mg/L	0.0031	0.534 mg/L	0.0031	0.58%
Zn 206.200†	43123.4	0.503 mg/L	0.0023	0.503 mg/L	0.0023	0.46%
K 766.490†	60639.2	58.3 mg/L	0.35	58.3 mg/L	0.35	0.60%
Na 589.592†	1010269.6	161 mg/L	2.8	161 mg/L	2.8	1.72%
Sr 407.771†	733967.9	0.919 mg/L	0.0172	0.919 mg/L	0.0172	1.87%
Li 670.784†	16782.2	0.512 mg/L	0.0023	0.512 mg/L	0.0023	0.44%
P 214.914†	11661.8	5.19 mg/L	0.092	5.19 mg/L	0.092	1.77%

Sequence No.: 8 **Autosampler Location: 78**
Sample ID: L1508099901PS WG536058-01 **Date Collected: 8/23/2015 1:17:34 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508099901PS WG536058-01

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508099901PS WG536058-01

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Y 371.029	2369099.0				27495.35	1.16%
YRADIAL	143747.3				4156.80	2.89%
Ga 417.206	881224.1				10313.35	1.17%
GaRADIAL	34809.4				994.44	2.86%
Ag 328.068†	58518.6	0.215 mg/L	0.0005	0.215 mg/L	0.0005	0.23%
Al 396.153†	11389.1	5.28 mg/L	0.058	5.28 mg/L	0.058	1.11%
As 188.979†	725.6	0.208 mg/L	0.0076	0.208 mg/L	0.0076	3.66%
Ba 233.527†	81171.8	0.532 mg/L	0.0031	0.532 mg/L	0.0031	0.59%
Be 234.861†	34982.1	0.0258 mg/L	0.00012	0.0258 mg/L	0.00012	0.48%
B 249.677†	78803.9	1.03 mg/L	0.007	1.03 mg/L	0.007	0.64%
Ca 227.546†	43308.4	134 mg/L	0.7	134 mg/L	0.7	0.52%
Cd 228.802†	979.4	0.0240 mg/L	0.00056	0.0240 mg/L	0.00056	2.32%
Co 228.616†	4668.3	0.0984 mg/L	0.00284	0.0984 mg/L	0.00284	2.89%
Cr 267.716†	37834.8	0.264 mg/L	0.0009	0.264 mg/L	0.0009	0.33%
Cu 327.393†	47069.6	0.262 mg/L	0.0010	0.262 mg/L	0.0010	0.38%
Fe 239.562†	20519.6	2.06 mg/L	0.035	2.06 mg/L	0.035	1.68%
Mg 279.077†	9895.2	5.05 mg/L	0.067	5.05 mg/L	0.067	1.32%
Mn 257.610†	192887.7	0.260 mg/L	0.0015	0.260 mg/L	0.0015	0.59%
Mo 202.031†	18760.8	0.531 mg/L	0.0139	0.531 mg/L	0.0139	2.62%
Ni 231.604†	19944.2	0.260 mg/L	0.0069	0.260 mg/L	0.0069	2.65%
Pb 220.353†	4036.3	0.253 mg/L	0.0058	0.253 mg/L	0.0058	2.28%
Sb 206.836†	1661.7	0.599 mg/L	0.0152	0.599 mg/L	0.0152	2.54%
Se 196.026†	230.5	0.209 mg/L	0.0078	0.209 mg/L	0.0078	3.73%
Si 251.611†	117307.7	2.73 mg/L	0.012	2.73 mg/L	0.012	0.45%
Sn 189.927†	6222.4	0.513 mg/L	0.0157	0.513 mg/L	0.0157	3.06%
Ti 334.940†	408966.0	0.523 mg/L	0.0022	0.523 mg/L	0.0022	0.43%
Tl 190.801†	617.5	0.245 mg/L	0.0087	0.245 mg/L	0.0087	3.53%
V 290.880†	90936.7	0.536 mg/L	0.0044	0.536 mg/L	0.0044	0.83%
Zn 206.200†	43573.1	0.508 mg/L	0.0018	0.508 mg/L	0.0018	0.35%
K 766.490†	58135.2	55.9 mg/L	0.47	55.9 mg/L	0.47	0.84%
Na 589.592†	946022.6	150 mg/L	6.3	150 mg/L	6.3	4.20%
Sr 407.771†	717805.2	0.899 mg/L	0.0361	0.899 mg/L	0.0361	4.01%
Li 670.784†	17270.4	0.527 mg/L	0.0073	0.527 mg/L	0.0073	1.39%
P 214.914†	11817.0	5.26 mg/L	0.144	5.26 mg/L	0.144	2.74%

Sequence No.: 9 **Autosampler Location: 79**
Sample ID: L1508099901DL WG536058-02 **Date Collected: 8/23/2015 1:19:58 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**

Approved: August 24, 2015

Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508099901DL WG536058-02

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508099901DL WG536058-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2575198.3						66156.54	2.57%
YRADIAL	152667.2						1936.75	1.27%
Ga 417.206	990894.5						21911.01	2.21%
GaRADIAL	37570.7						407.31	1.08%
Ag 328.068†	-238.7	0.00108	mg/L	0.000716	0.00108	mg/L	0.000716	66.16%
Al 396.153†	81.9	0.0169	mg/L	0.02256	0.0169	mg/L	0.02256	133.75%
As 188.979†	8.1	0.00112	mg/L	0.001818	0.00112	mg/L	0.001818	162.06%
Ba 233.527†	621.1	0.00389	mg/L	0.000188	0.00389	mg/L	0.000188	4.84%
Be 234.861†	-86.1	0.00014	mg/L	0.000006	0.00014	mg/L	0.000006	4.20%
B 249.677†	812.3	0.0141	mg/L	0.00177	0.0141	mg/L	0.00177	12.58%
Ca 227.546†	8544.9	26.4	mg/L	0.37	26.4	mg/L	0.37	1.41%
Cd 228.802†	0.3	0.00015	mg/L	0.000192	0.00015	mg/L	0.000192	129.44%
Co 228.616†	-13.2	-0.00043	mg/L	0.000416	-0.00043	mg/L	0.000416	97.98%
Cr 267.716†	40.7	0.00012	mg/L	0.000242	0.00012	mg/L	0.000242	202.35%
Cu 327.393†	54.1	0.00156	mg/L	0.000704	0.00156	mg/L	0.000704	45.24%
Fe 239.562†	-66.5	-0.0125	mg/L	0.00197	-0.0125	mg/L	0.00197	15.79%
Mg 279.077†	89.3	-0.00680	mg/L	0.009693	-0.00680	mg/L	0.009693	142.51%
Mn 257.610†	-563.0	-0.00121	mg/L	0.000023	-0.00121	mg/L	0.000023	1.92%
Mo 202.031†	49.2	0.00230	mg/L	0.000243	0.00230	mg/L	0.000243	10.55%
Ni 231.604†	43.5	-0.00052	mg/L	0.000165	-0.00052	mg/L	0.000165	31.42%
Pb 220.353†	43.4	0.00156	mg/L	0.000998	0.00156	mg/L	0.000998	64.09%
Sb 206.836†	-1.8	0.00422	mg/L	0.003718	0.00422	mg/L	0.003718	88.04%
Se 196.026†	-2.3	0.00210	mg/L	0.001822	0.00210	mg/L	0.001822	86.56%
Si 251.611†	581.4	0.0307	mg/L	0.00111	0.0307	mg/L	0.00111	3.60%
Sn 189.927†	-18.3	-0.00309	mg/L	0.000866	-0.00309	mg/L	0.000866	28.01%
Ti 334.940†	-2431.0	-0.00014	mg/L	0.000258	-0.00014	mg/L	0.000258	186.25%
Tl 190.801†	-21.7	-0.00809	mg/L	0.002679	-0.00809	mg/L	0.002679	33.11%
V 290.880†	-255.1	-0.00059	mg/L	0.000335	-0.00059	mg/L	0.000335	56.53%
Zn 206.200†	299.1	0.00184	mg/L	0.000193	0.00184	mg/L	0.000193	10.53%
K 766.490†	6944.9	6.62	mg/L	0.043	6.62	mg/L	0.043	0.65%
Na 589.592†	174960.2	27.1	mg/L	0.23	27.1	mg/L	0.23	0.83%
Sr 407.771†	68464.9	0.0876	mg/L	0.00066	0.0876	mg/L	0.00066	0.75%
Li 670.784†	178.1	-0.00001	mg/L	0.000971	-0.00001	mg/L	0.000971	>999.9%
P 214.914†	27.1	-0.0167	mg/L	0.00394	-0.0167	mg/L	0.00394	23.60%

Sequence No.: 10 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 8/23/2015 1:22:23 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	202.0 kPa	0.31 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2583963.1						65318.80	2.53%
YRADIAL	152205.3						2934.82	1.93%
Ga 417.206	969750.6						25626.84	2.64%
GaRADIAL	37477.4						377.99	1.01%
Ag 328.068†	105912.9	0.388	mg/L	0.0080	0.388	mg/L	0.0080	2.06%
QC value within limits for Ag 328.068 Recovery = 96.93%								
Al 396.153†	20569.6	9.56	mg/L	0.174	9.56	mg/L	0.174	1.82%
QC value within limits for Al 396.153 Recovery = 95.59%								
As 188.979†	1294.5	0.367	mg/L	0.0142	0.367	mg/L	0.0142	3.87%
QC value within limits for As 188.979 Recovery = 91.86%								

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Ba 233.527†	148211.9	0.972 mg/L	0.0144	0.972 mg/L	0.0144	1.48%
QC value within limits for Ba 233.527 Recovery = 97.23%						
Be 234.861†	64408.0	0.0473 mg/L	0.00088	0.0473 mg/L	0.00088	1.86%
QC value within limits for Be 234.861 Recovery = 94.66%						
B 249.677†	36672.4	0.490 mg/L	0.0132	0.490 mg/L	0.0132	2.70%
QC value within limits for B 249.677 Recovery = 98.06%						
Ca 227.546†	2936.0	9.22 mg/L	0.322	9.22 mg/L	0.322	3.49%
QC value within limits for Ca 227.546 Recovery = 92.17%						
Cd 228.802†	1872.4	0.0460 mg/L	0.00166	0.0460 mg/L	0.00166	3.61%
QC value within limits for Cd 228.802 Recovery = 91.96%						
Co 228.616†	8993.5	0.190 mg/L	0.0060	0.190 mg/L	0.0060	3.16%
QC value within limits for Co 228.616 Recovery = 94.83%						
Cr 267.716†	69840.4	0.487 mg/L	0.0066	0.487 mg/L	0.0066	1.35%
QC value within limits for Cr 267.716 Recovery = 97.36%						
Cu 327.393†	87338.5	0.484 mg/L	0.0084	0.484 mg/L	0.0084	1.74%
QC value within limits for Cu 327.393 Recovery = 96.85%						
Fe 239.562†	38118.3	3.83 mg/L	0.065	3.83 mg/L	0.065	1.69%
QC value within limits for Fe 239.562 Recovery = 95.81%						
Mg 279.077†	18683.3	9.58 mg/L	0.062	9.58 mg/L	0.062	0.64%
QC value within limits for Mg 279.077 Recovery = 95.81%						
Mn 257.610†	359558.7	0.485 mg/L	0.0063	0.485 mg/L	0.0063	1.31%
QC value within limits for Mn 257.610 Recovery = 96.94%						
Mo 202.031†	34280.8	0.969 mg/L	0.0158	0.969 mg/L	0.0158	1.63%
QC value within limits for Mo 202.031 Recovery = 96.95%						
Ni 231.604†	37462.0	0.490 mg/L	0.0084	0.490 mg/L	0.0084	1.72%
QC value within limits for Ni 231.604 Recovery = 97.96%						
Pb 220.353†	7746.8	0.486 mg/L	0.0152	0.486 mg/L	0.0152	3.12%
QC value within limits for Pb 220.353 Recovery = 97.19%						
Sb 206.836†	2982.4	1.07 mg/L	0.036	1.07 mg/L	0.036	3.39%
QC value less than the lower limit for Sb 206.836 Recovery = 89.24%						
Se 196.026†	455.3	0.408 mg/L	0.0145	0.408 mg/L	0.0145	3.55%
QC value within limits for Se 196.026 Recovery = 102.06%						
Si 251.611†	206412.1	4.80 mg/L	0.067	4.80 mg/L	0.067	1.41%
QC value within limits for Si 251.611 Recovery = 95.96%						
Sn 189.927†	11653.0	0.963 mg/L	0.0317	0.963 mg/L	0.0317	3.29%
QC value within limits for Sn 189.927 Recovery = 96.30%						
Ti 334.940†	766951.2	0.964 mg/L	0.0136	0.964 mg/L	0.0136	1.41%
QC value within limits for Ti 334.940 Recovery = 96.43%						
Tl 190.801†	1281.6	0.508 mg/L	0.0131	0.508 mg/L	0.0131	2.58%
QC value within limits for Tl 190.801 Recovery = 101.58%						
V 290.880†	163591.3	0.964 mg/L	0.0149	0.964 mg/L	0.0149	1.54%
QC value within limits for V 290.880 Recovery = 96.43%						
Zn 206.200†	84901.4	0.991 mg/L	0.0121	0.991 mg/L	0.0121	1.22%
QC value within limits for Zn 206.200 Recovery = 99.08%						
K 766.490†	50638.3	48.7 mg/L	0.50	48.7 mg/L	0.50	1.04%
QC value within limits for K 766.490 Recovery = 97.42%						
Na 589.592†	319787.0	49.8 mg/L	0.37	49.8 mg/L	0.37	0.75%
QC value within limits for Na 589.592 Recovery = 99.60%						
Sr 407.771†	785246.9	0.987 mg/L	0.0134	0.987 mg/L	0.0134	1.36%
QC value within limits for Sr 407.771 Recovery = 98.75%						
Li 670.784†	32075.5	0.984 mg/L	0.0153	0.984 mg/L	0.0153	1.56%
QC value within limits for Li 670.784 Recovery = 98.43%						
P 214.914†	21426.5	9.57 mg/L	0.290	9.57 mg/L	0.290	3.03%
QC value within limits for P 214.914 Recovery = 95.65%						

QC Failed. Continue with analysis.

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Sequence No.: 11 **Autosampler Location: 1**
Sample ID: CCB **Date Collected: 8/23/2015 1:24:51 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCB

Analyte	Back Pressure	Flow
All	202.0 kPa	0.31 L/min

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD

Approved: August 24, 2015

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Y 371.029            2443508.8                                                    98723.34   4.04%
YRADIAL               141906.9                                                     7817.27   5.51%
Ga 417.206            972241.0                                                    43825.56   4.51%
GaRADIAL               34036.4                                                     1885.88   5.54%
Ag 328.068†              -477.4     0.00025 mg/L      0.000158     0.00025 mg/L      0.000158  63.89%
   QC value within limits for Ag 328.068  Recovery = Not calculated
Al 396.153†              -14.1     -0.0280 mg/L       0.00826     -0.0280 mg/L       0.00826  29.48%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†                8.7     0.00071 mg/L      0.002690     0.00071 mg/L      0.002690 380.08%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†               27.8     0.00000 mg/L      0.000089     0.00000 mg/L      0.000089 >999.9%
   QC value within limits for Ba 233.527  Recovery = Not calculated
Be 234.861†              -91.9     0.00013 mg/L      0.000059     0.00013 mg/L      0.000059  45.06%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†               325.8     0.00784 mg/L      0.000797     0.00784 mg/L      0.000797  10.18%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†              -28.9     0.00670 mg/L      0.024441     0.00670 mg/L      0.024441 364.87%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†               -4.8     0.00002 mg/L      0.000219     0.00002 mg/L      0.000219 >999.9%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†              -12.0    -0.00041 mg/L      0.000170    -0.00041 mg/L      0.000170  41.82%
   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†               33.4     0.00007 mg/L      0.000078     0.00007 mg/L      0.000078 110.13%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†              170.9     0.00221 mg/L      0.001245     0.00221 mg/L      0.001245  56.42%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†              -26.4    -0.00843 mg/L      0.001014    -0.00843 mg/L      0.001014  12.03%
   QC value within limits for Fe 239.562  Recovery = Not calculated
Mg 279.077†               95.3    -0.00370 mg/L      0.006147    -0.00370 mg/L      0.006147 166.09%
   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†             -572.0    -0.00123 mg/L      0.000049    -0.00123 mg/L      0.000049   4.00%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†               23.2     0.00157 mg/L      0.000438     0.00157 mg/L      0.000438  27.96%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†               30.6    -0.00070 mg/L      0.000533    -0.00070 mg/L      0.000533  76.38%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†               17.7    -0.00007 mg/L      0.002415    -0.00007 mg/L      0.002415 >999.9%
   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†                9.6     0.00831 mg/L      0.002011     0.00831 mg/L      0.002011  24.19%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†               -8.1    -0.00303 mg/L      0.010087    -0.00303 mg/L      0.010087 332.98%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†              -411.4     0.00768 mg/L      0.000518     0.00768 mg/L      0.000518   6.75%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†               25.2     0.00051 mg/L      0.001442     0.00051 mg/L      0.001442 281.83%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†              -436.6     0.00067 mg/L      0.000086     0.00067 mg/L      0.000086  12.86%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†               -2.3    -0.00053 mg/L      0.002050    -0.00053 mg/L      0.002050 389.88%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†               412.8     0.00334 mg/L      0.002326     0.00334 mg/L      0.002326  69.62%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†               24.5    -0.00136 mg/L      0.000073    -0.00136 mg/L      0.000073   5.35%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†                56.4      0.0456 mg/L       0.11359      0.0456 mg/L       0.11359 249.34%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†              664.9      0.0814 mg/L       0.00629      0.0814 mg/L       0.00629   7.73%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†             1414.1     0.00435 mg/L      0.000363     0.00435 mg/L      0.000363   8.34%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†              162.6    -0.00049 mg/L      0.002662    -0.00049 mg/L      0.002662 543.97%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†                29.3     -0.0157 mg/L       0.00338     -0.0157 mg/L       0.00338  21.55%
   QC value within limits for P 214.914  Recovery = Not calculated
All analyte(s) passed QC.
```

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Sequence No.: 12
Sample ID: L1508085201
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 80
Date Collected: 8/23/2015 1:28:09 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Approved: August 24, 2015

Kym H. Rhoden

Nebulizer Parameters: L1508085201

Analyte	Back Pressure	Flow
All	202.0 kPa	0.31 L/min

Mean Data: L1508085201

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2295779.7						139228.13	6.06%
YRADIAL	151270.0						2958.40	1.96%
Ga 417.206	797874.9						53532.94	6.71%
GaRADIAL	35981.0						639.12	1.78%
Ag 328.068†	3222.4	0.0135	mg/L	0.00094	0.0135	mg/L	0.00094	6.96%
Al 396.153†	3376.0	1.56	mg/L	0.032	1.56	mg/L	0.032	2.06%
As 188.979†	3.0	0.0103	mg/L	0.00322	0.0103	mg/L	0.00322	31.39%
Ba 233.527†	59612.7	0.391	mg/L	0.0033	0.391	mg/L	0.0033	0.83%
Be 234.861†	-528.1	-0.00019	mg/L	0.000111	-0.00019	mg/L	0.000111	58.57%
B 249.677†	1962.7	0.0290	mg/L	0.00120	0.0290	mg/L	0.00120	4.13%
Ca 227.546†	168432.8	519	mg/L	5.5	519	mg/L	5.5	1.05%
Cd 228.802†	-0.1	0.00014	mg/L	0.000398	0.00014	mg/L	0.000398	276.71%
Co 228.616†	-30.3	-0.00083	mg/L	0.000237	-0.00083	mg/L	0.000237	28.64%
Cr 267.716†	135.1	0.00078	mg/L	0.000196	0.00078	mg/L	0.000196	25.12%
Cu 327.393†	7109.7	0.0404	mg/L	0.00267	0.0404	mg/L	0.00267	6.60%
Fe 239.562†	61.9	0.00046	mg/L	0.002871	0.00046	mg/L	0.002871	624.12%
Mg 279.077†	171.0	0.0353	mg/L	0.03241	0.0353	mg/L	0.03241	91.70%
Mn 257.610†	-526.8	-0.00116	mg/L	0.000050	-0.00116	mg/L	0.000050	4.26%
Mo 202.031†	481.4	0.0145	mg/L	0.00048	0.0145	mg/L	0.00048	3.28%
Ni 231.604†	31.4	-0.00068	mg/L	0.000156	-0.00068	mg/L	0.000156	23.08%
Pb 220.353†	9.5	-0.00022	mg/L	0.002338	-0.00022	mg/L	0.002338	>999.9%
Sb 206.836†	18.7	0.0116	mg/L	0.00229	0.0116	mg/L	0.00229	19.79%
Se 196.026†	-14.2	-0.00823	mg/L	0.003172	-0.00823	mg/L	0.003172	38.55%
Si 251.611†	17855.7	0.432	mg/L	0.0316	0.432	mg/L	0.0316	7.31%
Sn 189.927†	-208.0	-0.0188	mg/L	0.00095	-0.0188	mg/L	0.00095	5.06%
Ti 334.940†	-27214.8	0.00040	mg/L	0.004472	0.00040	mg/L	0.004472	>999.9%
Tl 190.801†	-56.1	-0.0217	mg/L	0.00593	-0.0217	mg/L	0.00593	27.33%
V 290.880†	622.5	0.00456	mg/L	0.001771	0.00456	mg/L	0.001771	38.86%
Zn 206.200†	2004.0	0.0217	mg/L	0.00097	0.0217	mg/L	0.00097	4.48%
K 766.490†	275778.5	273	mg/L	1.0	273	mg/L	1.0	0.38%
Na 589.592†	2243817.1	373	mg/L	1.3	373	mg/L	1.3	0.35%
Sr 407.771†	521213.6	0.640	mg/L	0.0034	0.640	mg/L	0.0034	0.53%
Li 670.784†	3451.4	0.101	mg/L	0.0016	0.101	mg/L	0.0016	1.61%
P 214.914†	-16.2	-0.0361	mg/L	0.00627	-0.0361	mg/L	0.00627	17.36%

Sequence No.: 13
Sample ID: L1508096801
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 81
Date Collected: 8/23/2015 1:30:34 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1508096801

Analyte	Back Pressure	Flow
All	202.0 kPa	0.31 L/min

Mean Data: L1508096801

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2408854.3						82995.55	3.45%
YRADIAL	153236.2						2820.49	1.84%
Ga 417.206	937009.1						37329.35	3.98%
GaRADIAL	37976.0						617.77	1.63%
Ag 328.068†	-83.9	0.00202	mg/L	0.000271	0.00202	mg/L	0.000271	13.42%
Al 396.153†	1871.5	0.854	mg/L	0.0491	0.854	mg/L	0.0491	5.75%
As 188.979†	13.1	0.00287	mg/L	0.001943	0.00287	mg/L	0.001943	67.74%
Ba 233.527†	10610.5	0.0694	mg/L	0.00259	0.0694	mg/L	0.00259	3.73%
Be 234.861†	39.1	0.00002	mg/L	0.000032	0.00002	mg/L	0.000032	176.12%
B 249.677†	3665.0	0.0548	mg/L	0.00227	0.0548	mg/L	0.00227	4.14%
Ca 227.546†	11017.6	34.1	mg/L	1.41	34.1	mg/L	1.41	4.14%

Approved: August 24, 2015

Cd 228.802†	-4.9	0.00001	mg/L	0.000066	0.00001	mg/L	0.000066	780.74%
Co 228.616†	-15.6	-0.00055	mg/L	0.000060	-0.00055	mg/L	0.000060	10.87%
Cr 267.716†	240.6	0.00152	mg/L	0.000236	0.00152	mg/L	0.000236	15.54%
Cu 327.393†	274.3	0.00286	mg/L	0.000533	0.00286	mg/L	0.000533	18.67%
Fe 239.562†	9840.0	0.985	mg/L	0.0097	0.985	mg/L	0.0097	0.98%
Mg 279.077†	12238.4	6.26	mg/L	0.024	6.26	mg/L	0.024	0.39%
Mn 257.610†	114909.8	0.155	mg/L	0.0019	0.155	mg/L	0.0019	1.22%
Mo 202.031†	115.2	0.00426	mg/L	0.000580	0.00426	mg/L	0.000580	13.64%
Ni 231.604†	127.2	0.00057	mg/L	0.000254	0.00057	mg/L	0.000254	44.25%
Pb 220.353†	34.8	0.00108	mg/L	0.000472	0.00108	mg/L	0.000472	43.85%
Sb 206.836†	13.4	0.00968	mg/L	0.003569	0.00968	mg/L	0.003569	36.86%
Se 196.026†	-21.0	-0.0144	mg/L	0.00362	-0.0144	mg/L	0.00362	25.11%
Si 251.611†	216527.2	5.04	mg/L	0.090	5.04	mg/L	0.090	1.78%
Sn 189.927†	-77.8	-0.00802	mg/L	0.000791	-0.00802	mg/L	0.000791	9.86%
Ti 334.940†	8425.0	0.0140	mg/L	0.00125	0.0140	mg/L	0.00125	8.96%
Tl 190.801†	-26.7	-0.0101	mg/L	0.00270	-0.0101	mg/L	0.00270	26.79%
V 290.880†	31.5	0.00109	mg/L	0.001264	0.00109	mg/L	0.001264	115.57%
Zn 206.200†	643.1	0.00588	mg/L	0.000325	0.00588	mg/L	0.000325	5.54%
K 766.490†	3039.8	2.88	mg/L	0.020	2.88	mg/L	0.020	0.70%
Na 589.592†	153224.7	23.7	mg/L	0.06	23.7	mg/L	0.06	0.25%
Sr 407.771†	161681.6	0.204	mg/L	0.0007	0.204	mg/L	0.0007	0.33%
Li 670.784†	156.3	-0.00068	mg/L	0.002976	-0.00068	mg/L	0.002976	436.02%
P 214.914†	252.6	0.0843	mg/L	0.00523	0.0843	mg/L	0.00523	6.20%

Sequence No.: 14 **Autosampler Location: 82**
Sample ID: L1508099202 **Date Collected: 8/23/2015 1:32:57 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508099202

Analyte	Back Pressure	Flow
All	202.0 kPa	0.31 L/min

Mean Data: L1508099202

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2337093.4						124712.88	5.34%
YRADIAL	145401.4						2296.04	1.58%
Ga 417.206	858905.3						56738.01	6.61%
GaRADIAL	36288.3						762.56	2.10%
Ag 328.068†	1126.8	0.00555	mg/L	0.000316	0.00555	mg/L	0.000316	5.69%
Al 396.153†	22.8	-0.0108	mg/L	0.00925	-0.0108	mg/L	0.00925	85.88%
As 188.979†	-0.3	0.00305	mg/L	0.003595	0.00305	mg/L	0.003595	118.03%
Ba 233.527†	4447.9	0.0290	mg/L	0.00146	0.0290	mg/L	0.00146	5.03%
Be 234.861†	-388.5	-0.00009	mg/L	0.000093	-0.00009	mg/L	0.000093	98.19%
B 249.677†	8362.2	0.112	mg/L	0.0071	0.112	mg/L	0.0071	6.38%
Ca 227.546†	72846.6	225	mg/L	4.1	225	mg/L	4.1	1.82%
Cd 228.802†	9.7	0.00040	mg/L	0.000092	0.00040	mg/L	0.000092	23.20%
Co 228.616†	-27.7	-0.00071	mg/L	0.000672	-0.00071	mg/L	0.000672	95.04%
Cr 267.716†	1268.7	0.00867	mg/L	0.000645	0.00867	mg/L	0.000645	7.44%
Cu 327.393†	-637.0	-0.00228	mg/L	0.001838	-0.00228	mg/L	0.001838	80.50%
Fe 239.562†	244.7	0.0172	mg/L	0.00125	0.0172	mg/L	0.00125	7.26%
Mg 279.077†	159656.8	82.3	mg/L	0.72	82.3	mg/L	0.72	0.88%
Mn 257.610†	1604.7	0.00171	mg/L	0.000141	0.00171	mg/L	0.000141	8.26%
Mo 202.031†	62.7	0.00268	mg/L	0.000668	0.00268	mg/L	0.000668	24.98%
Ni 231.604†	98.5	0.00020	mg/L	0.000087	0.00020	mg/L	0.000087	43.27%
Pb 220.353†	25.9	0.00045	mg/L	0.000646	0.00045	mg/L	0.000646	144.71%
Sb 206.836†	6.1	0.00698	mg/L	0.001713	0.00698	mg/L	0.001713	24.55%
Se 196.026†	-23.9	-0.0170	mg/L	0.01096	-0.0170	mg/L	0.01096	64.48%
Si 251.611†	656806.0	15.3	mg/L	0.19	15.3	mg/L	0.19	1.22%
Sn 189.927†	-174.6	-0.0160	mg/L	0.00085	-0.0160	mg/L	0.00085	5.28%
Ti 334.940†	-14019.5	-0.00196	mg/L	0.000557	-0.00196	mg/L	0.000557	28.44%
Tl 190.801†	-47.8	-0.0184	mg/L	0.00416	-0.0184	mg/L	0.00416	22.63%
V 290.880†	-2338.8	-0.0150	mg/L	0.00089	-0.0150	mg/L	0.00089	5.93%
Zn 206.200†	309.7	0.00203	mg/L	0.000365	0.00203	mg/L	0.000365	17.97%
K 766.490†	3543.1	2.96	mg/L	0.174	2.96	mg/L	0.174	5.87%
Na 589.592†	2517347.2	423	mg/L	6.7	423	mg/L	6.7	1.59%
Sr 407.771†	1868929.5	2.34	mg/L	0.017	2.34	mg/L	0.017	0.73%

Approved: August 24, 2015

Li 670.784†	3317.2	0.0969	mg/L	0.00059	0.0969	mg/L	0.00059	0.61%
P 214.914†	164.6	0.0449	mg/L	0.00724	0.0449	mg/L	0.00724	16.14%

Sequence No.: 15 **Autosampler Location: 83**
Sample ID: L1508099204 **Date Collected: 8/23/2015 1:35:22 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508099204

Analyte	Back Pressure	Flow
All	202.0 kPa	0.31 L/min

Mean Data: L1508099204

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2534681.4						33087.09	1.31%
YRADIAL	152682.5						1680.35	1.10%
Ga 417.206	969974.4						10230.78	1.05%
GaRADIAL	37683.9						440.66	1.17%
Ag 328.068†	-301.5	0.00063	mg/L	0.000158	0.00063	mg/L	0.000158	25.02%
Al 396.153†	34.7	-0.00531	mg/L	0.002590	-0.00531	mg/L	0.002590	48.78%
As 188.979†	22.3	0.00510	mg/L	0.000671	0.00510	mg/L	0.000671	13.16%
Ba 233.527†	13450.1	0.0880	mg/L	0.00096	0.0880	mg/L	0.00096	1.09%
Be 234.861†	-210.2	0.00003	mg/L	0.000011	0.00003	mg/L	0.000011	38.11%
B 249.677†	3483.6	0.0489	mg/L	0.00025	0.0489	mg/L	0.00025	0.51%
Ca 227.546†	6883.9	21.3	mg/L	0.18	21.3	mg/L	0.18	0.84%
Cd 228.802†	2.3	0.00018	mg/L	0.000208	0.00018	mg/L	0.000208	117.61%
Co 228.616†	-24.0	-0.00068	mg/L	0.000272	-0.00068	mg/L	0.000272	39.81%
Cr 267.716†	435.3	0.00287	mg/L	0.000183	0.00287	mg/L	0.000183	6.37%
Cu 327.393†	551.6	0.00430	mg/L	0.000415	0.00430	mg/L	0.000415	9.64%
Fe 239.562†	723.7	0.0670	mg/L	0.00271	0.0670	mg/L	0.00271	4.05%
Mg 279.077†	15027.0	7.70	mg/L	0.184	7.70	mg/L	0.184	2.39%
Mn 257.610†	11090.5	0.0145	mg/L	0.00016	0.0145	mg/L	0.00016	1.08%
Mo 202.031†	151.4	0.00519	mg/L	0.000439	0.00519	mg/L	0.000439	8.46%
Ni 231.604†	27.9	-0.00073	mg/L	0.000192	-0.00073	mg/L	0.000192	26.31%
Pb 220.353†	-1.7	-0.00129	mg/L	0.001572	-0.00129	mg/L	0.001572	122.30%
Sb 206.836†	2.4	0.00571	mg/L	0.001152	0.00571	mg/L	0.001152	20.19%
Se 196.026†	-19.7	-0.0133	mg/L	0.00702	-0.0133	mg/L	0.00702	52.76%
Si 251.611†	521528.8	12.1	mg/L	0.02	12.1	mg/L	0.02	0.14%
Sn 189.927†	-53.6	-0.00602	mg/L	0.002279	-0.00602	mg/L	0.002279	37.89%
Ti 334.940†	-1058.5	0.00125	mg/L	0.000376	0.00125	mg/L	0.000376	29.98%
Tl 190.801†	-29.6	-0.0112	mg/L	0.00300	-0.0112	mg/L	0.00300	26.85%
V 290.880†	-539.3	-0.00246	mg/L	0.002010	-0.00246	mg/L	0.002010	81.74%
Zn 206.200†	1286.0	0.0133	mg/L	0.00012	0.0133	mg/L	0.00012	0.89%
K 766.490†	8567.2	8.10	mg/L	0.183	8.10	mg/L	0.183	2.26%
Na 589.592†	618442.5	97.2	mg/L	0.38	97.2	mg/L	0.38	0.39%
Sr 407.771†	1077543.1	1.35	mg/L	0.009	1.35	mg/L	0.009	0.63%
Li 670.784†	2195.0	0.0622	mg/L	0.00296	0.0622	mg/L	0.00296	4.76%
P 214.914†	110.8	0.0208	mg/L	0.00580	0.0208	mg/L	0.00580	27.87%

Sequence No.: 16 **Autosampler Location: 84**
Sample ID: L1508099206 **Date Collected: 8/23/2015 1:37:45 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508099206

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508099206

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2426929.0						41036.51	1.69%
YRADIAL	144793.6						5516.73	3.81%

Approved: August 24, 2015

Kym H. Rhoden

Ga 417.206	881541.4					15131.00	1.72%
GaRADIAL	36130.7					1078.10	2.98%
Ag 328.068†	1652.7	0.00741	mg/L	0.000692	0.00741 mg/L	0.000692	9.34%
Al 396.153†	32.8	-0.00616	mg/L	0.018583	-0.00616 mg/L	0.018583	301.74%
As 188.979†	0.2	0.00384	mg/L	0.001490	0.00384 mg/L	0.001490	38.78%
Ba 233.527†	4132.6	0.0269	mg/L	0.00063	0.0269 mg/L	0.00063	2.33%
Be 234.861†	-291.6	-0.00001	mg/L	0.000026	-0.00001 mg/L	0.000026	213.94%
B 249.677†	3930.1	0.0544	mg/L	0.00106	0.0544 mg/L	0.00106	1.94%
Ca 227.546†	82373.6	254	mg/L	2.8	254 mg/L	2.8	1.09%
Cd 228.802†	16.8	0.00058	mg/L	0.000187	0.00058 mg/L	0.000187	32.48%
Co 228.616†	-19.0	-0.00052	mg/L	0.000249	-0.00052 mg/L	0.000249	48.00%
Cr 267.716†	337.7	0.00218	mg/L	0.000302	0.00218 mg/L	0.000302	13.86%
Cu 327.393†	-276.9	-0.00030	mg/L	0.001750	-0.00030 mg/L	0.001750	590.88%
Fe 239.562†	29.8	-0.00483	mg/L	0.002898	-0.00483 mg/L	0.002898	59.99%
Mg 279.077†	200300.0	103	mg/L	1.0	103 mg/L	1.0	0.99%
Mn 257.610†	42007.0	0.0562	mg/L	0.00058	0.0562 mg/L	0.00058	1.03%
Mo 202.031†	82.4	0.00324	mg/L	0.000392	0.00324 mg/L	0.000392	12.10%
Ni 231.604†	400.6	0.00416	mg/L	0.000219	0.00416 mg/L	0.000219	5.27%
Pb 220.353†	42.7	0.00147	mg/L	0.000449	0.00147 mg/L	0.000449	30.59%
Sb 206.836†	17.5	0.0111	mg/L	0.00286	0.0111 mg/L	0.00286	25.75%
Se 196.026†	-37.6	-0.0291	mg/L	0.00901	-0.0291 mg/L	0.00901	30.97%
Si 251.611†	876603.7	20.4	mg/L	0.19	20.4 mg/L	0.19	0.95%
Sn 189.927†	-173.3	-0.0159	mg/L	0.00095	-0.0159 mg/L	0.00095	5.99%
Ti 334.940†	-15209.2	-0.00156	mg/L	0.000236	-0.00156 mg/L	0.000236	15.11%
Tl 190.801†	-51.3	-0.0198	mg/L	0.00253	-0.0198 mg/L	0.00253	12.79%
V 290.880†	-2460.4	-0.0163	mg/L	0.00136	-0.0163 mg/L	0.00136	8.38%
Zn 206.200†	357.6	0.00254	mg/L	0.000111	0.00254 mg/L	0.000111	4.37%
K 766.490†	2576.7	1.98	mg/L	0.082	1.98 mg/L	0.082	4.13%
Na 589.592†	2829585.8	481	mg/L	7.4	481 mg/L	7.4	1.53%
Sr 407.771†	1961859.8	2.46	mg/L	0.016	2.46 mg/L	0.016	0.65%
Li 670.784†	2087.4	0.0589	mg/L	0.00231	0.0589 mg/L	0.00231	3.93%
P 214.914†	231.6	0.0749	mg/L	0.00509	0.0749 mg/L	0.00509	6.80%

Sequence No.: 17 **Autosampler Location: 85**
Sample ID: L1508099208 **Date Collected: 8/23/2015 1:40:09 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508099208

Analyte	**Back Pressure**	**Flow**
All	202.0 kPa	0.31 L/min

Mean Data: L1508099208

Analyte	**Mean Corrected Intensity**	**Calib. Conc.**	**Units**	**Std.Dev.**	**Sample Conc.**	**Units**	**Std.Dev.**	**RSD**
Y 371.029	2471705.5						62522.83	2.53%
YRADIAL	146835.2						5378.09	3.66%
Ga 417.206	945386.7						24279.14	2.57%
GaRADIAL	36771.8						1112.55	3.03%
Ag 328.068†	659.2	0.00384	mg/L	0.000786	0.00384	mg/L	0.000786	20.49%
Al 396.153†	23.5	-0.0107	mg/L	0.02811	-0.0107	mg/L	0.02811	261.71%
As 188.979†	6.7	0.00248	mg/L	0.002582	0.00248	mg/L	0.002582	104.30%
Ba 233.527†	16569.6	0.109	mg/L	0.0036	0.109	mg/L	0.0036	3.30%
Be 234.861†	-232.2	0.00003	mg/L	0.000037	0.00003	mg/L	0.000037	122.89%
B 249.677†	2856.0	0.0406	mg/L	0.00137	0.0406	mg/L	0.00137	3.39%
Ca 227.546†	35277.0	109	mg/L	1.4	109	mg/L	1.4	1.27%
Cd 228.802†	3.5	0.00023	mg/L	0.000220	0.00023	mg/L	0.000220	95.61%
Co 228.616†	-36.0	-0.00092	mg/L	0.000415	-0.00092	mg/L	0.000415	45.23%
Cr 267.716†	379.3	0.00248	mg/L	0.000286	0.00248	mg/L	0.000286	11.54%
Cu 327.393†	97.3	0.00179	mg/L	0.000436	0.00179	mg/L	0.000436	24.38%
Fe 239.562†	5.9	-0.00535	mg/L	0.005093	-0.00535	mg/L	0.005093	95.21%
Mg 279.077†	16630.7	8.52	mg/L	0.308	8.52	mg/L	0.308	3.61%
Mn 257.610†	7919.4	0.0102	mg/L	0.00042	0.0102	mg/L	0.00042	4.07%
Mo 202.031†	300.8	0.00940	mg/L	0.000335	0.00940	mg/L	0.000335	3.56%
Ni 231.604†	57.3	-0.00034	mg/L	0.000290	-0.00034	mg/L	0.000290	85.28%
Pb 220.353†	21.7	0.00019	mg/L	0.000819	0.00019	mg/L	0.000819	431.85%
Sb 206.836†	11.4	0.00895	mg/L	0.001980	0.00895	mg/L	0.001980	22.11%
Se 196.026†	-19.6	-0.0132	mg/L	0.00611	-0.0132	mg/L	0.00611	46.44%

Approved: August 24, 2015

Si 251.611†	550432.5	12.8	mg/L	0.17	12.8	mg/L	0.17	1.36%
Sn 189.927†	-132.2	-0.0125	mg/L	0.00026	-0.0125	mg/L	0.00026	2.07%
Ti 334.940†	-7612.4	-0.00135	mg/L	0.000471	-0.00135	mg/L	0.000471	34.83%
Tl 190.801†	-47.5	-0.0182	mg/L	0.00197	-0.0182	mg/L	0.00197	10.85%
V 290.880†	-170.2	-0.00032	mg/L	0.000903	-0.00032	mg/L	0.000903	282.70%
Zn 206.200†	178.0	0.00045	mg/L	0.000116	0.00045	mg/L	0.000116	25.84%
K 766.490†	2718.7	2.55	mg/L	0.134	2.55	mg/L	0.134	5.24%
Na 589.592†	271657.7	42.2	mg/L	0.13	42.2	mg/L	0.13	0.30%
Sr 407.771†	2024125.6	2.54	mg/L	0.021	2.54	mg/L	0.021	0.81%
Li 670.784†	637.2	0.0142	mg/L	0.00362	0.0142	mg/L	0.00362	25.59%
P 214.914†	71.8	0.00335	mg/L	0.006170	0.00335	mg/L	0.006170	184.21%

Sequence No.: 18 **Autosampler Location: 86**
Sample ID: L1508099210 **Date Collected: 8/23/2015 1:42:33 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508099210

Analyte	Back Pressure	Flow
All	202.0 kPa	0.31 L/min

Mean Data: L1508099210

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2435505.6						103678.54	4.26%
YRADIAL	149731.0						4654.43	3.11%
Ga 417.206	897205.5						42935.45	4.79%
GaRADIAL	36704.8						706.45	1.92%
Ag 328.068†	550.4	0.00370	mg/L	0.000775	0.00370	mg/L	0.000775	20.97%
Al 396.153†	129.5	0.0390	mg/L	0.01337	0.0390	mg/L	0.01337	34.27%
As 188.979†	3.7	0.00163	mg/L	0.003166	0.00163	mg/L	0.003166	193.63%
Ba 233.527†	4225.7	0.0275	mg/L	0.00107	0.0275	mg/L	0.00107	3.87%
Be 234.861†	-272.2	-0.00001	mg/L	0.000077	-0.00001	mg/L	0.000077	667.98%
B 249.677†	2613.6	0.0377	mg/L	0.00147	0.0377	mg/L	0.00147	3.89%
Ca 227.546†	34863.6	108	mg/L	0.6	108	mg/L	0.6	0.56%
Cd 228.802†	16.8	0.00057	mg/L	0.000259	0.00057	mg/L	0.000259	45.24%
Co 228.616†	15.2	0.00018	mg/L	0.000543	0.00018	mg/L	0.000543	298.73%
Cr 267.716†	250.6	0.00158	mg/L	0.000202	0.00158	mg/L	0.000202	12.81%
Cu 327.393†	-165.6	0.00034	mg/L	0.000571	0.00034	mg/L	0.000571	169.38%
Fe 239.562†	848.1	0.0786	mg/L	0.00465	0.0786	mg/L	0.00465	5.91%
Mg 279.077†	98778.7	50.9	mg/L	0.25	50.9	mg/L	0.25	0.49%
Mn 257.610†	74334.2	0.0999	mg/L	0.00111	0.0999	mg/L	0.00111	1.11%
Mo 202.031†	152.8	0.00525	mg/L	0.000583	0.00525	mg/L	0.000583	11.11%
Ni 231.604†	192.8	0.00144	mg/L	0.000193	0.00144	mg/L	0.000193	13.45%
Pb 220.353†	13.0	-0.00040	mg/L	0.001034	-0.00040	mg/L	0.001034	255.58%
Sb 206.836†	10.2	0.00852	mg/L	0.001954	0.00852	mg/L	0.001954	22.93%
Se 196.026†	-31.9	-0.0241	mg/L	0.00336	-0.0241	mg/L	0.00336	13.95%
Si 251.611†	817000.4	19.0	mg/L	0.14	19.0	mg/L	0.14	0.76%
Sn 189.927†	-117.4	-0.0113	mg/L	0.00039	-0.0113	mg/L	0.00039	3.41%
Ti 334.940†	-6357.0	0.00014	mg/L	0.000707	0.00014	mg/L	0.000707	494.36%
Tl 190.801†	-46.6	-0.0179	mg/L	0.00141	-0.0179	mg/L	0.00141	7.89%
V 290.880†	-1476.3	-0.00909	mg/L	0.001088	-0.00909	mg/L	0.001088	11.96%
Zn 206.200†	1485.9	0.0157	mg/L	0.00081	0.0157	mg/L	0.00081	5.18%
K 766.490†	1772.1	1.45	mg/L	0.090	1.45	mg/L	0.090	6.17%
Na 589.592†	1464318.4	237	mg/L	1.8	237	mg/L	1.8	0.75%
Sr 407.771†	1054435.4	1.32	mg/L	0.009	1.32	mg/L	0.009	0.66%
Li 670.784†	2229.0	0.0633	mg/L	0.00426	0.0633	mg/L	0.00426	6.73%
P 214.914†	148.2	0.0375	mg/L	0.00691	0.0375	mg/L	0.00691	18.40%

Sequence No.: 19 **Autosampler Location: 87**
Sample ID: L1508104501 **Date Collected: 8/23/2015 1:44:56 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508104501

Approved: August 24, 2015

Kym H. Rhoden

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508104501

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	2560226.4						78918.60	3.08%
YRADIAL	154798.0						3745.56	2.42%
Ga 417.206	992019.8						30639.69	3.09%
GaRADIAL	37922.1						801.84	2.11%
Ag 328.068†	-270.4	0.00122	mg/L	0.000497	0.00122	mg/L	0.000497	40.77%
Al 396.153†	630.3	0.273	mg/L	0.0396	0.273	mg/L	0.0396	14.47%
As 188.979†	5.9	0.00115	mg/L	0.005395	0.00115	mg/L	0.005395	469.86%
Ba 233.527†	56979.1	0.374	mg/L	0.0016	0.374	mg/L	0.0016	0.43%
Be 234.861†	82.1	0.00008	mg/L	0.000031	0.00008	mg/L	0.000031	40.62%
B 249.677†	4297.0	0.0626	mg/L	0.00185	0.0626	mg/L	0.00185	2.96%
Ca 227.546†	15625.6	48.3	mg/L	1.35	48.3	mg/L	1.35	2.79%
Cd 228.802†	4.0	0.00025	mg/L	0.000087	0.00025	mg/L	0.000087	34.92%
Co 228.616†	22.7	0.00018	mg/L	0.000274	0.00018	mg/L	0.000274	149.87%
Cr 267.716†	141.0	0.00082	mg/L	0.000278	0.00082	mg/L	0.000278	33.85%
Cu 327.393†	1350.5	0.00876	mg/L	0.000893	0.00876	mg/L	0.000893	10.19%
Fe 239.562†	8843.0	0.885	mg/L	0.0142	0.885	mg/L	0.0142	1.61%
Mg 279.077†	18439.7	9.46	mg/L	0.137	9.46	mg/L	0.137	1.45%
Mn 257.610†	149393.4	0.201	mg/L	0.0007	0.201	mg/L	0.0007	0.36%
Mo 202.031†	35.5	0.00201	mg/L	0.000551	0.00201	mg/L	0.000551	27.45%
Ni 231.604†	113.0	0.00039	mg/L	0.000488	0.00039	mg/L	0.000488	126.41%
Pb 220.353†	63.8	0.00273	mg/L	0.000473	0.00273	mg/L	0.000473	17.30%
Sb 206.836†	2.9	0.00594	mg/L	0.001737	0.00594	mg/L	0.001737	29.23%
Se 196.026†	-15.4	-0.00954	mg/L	0.007221	-0.00954	mg/L	0.007221	75.71%
Si 251.611†	298261.3	6.94	mg/L	0.027	6.94	mg/L	0.027	0.39%
Sn 189.927†	-103.9	-0.0102	mg/L	0.00144	-0.0102	mg/L	0.00144	14.16%
Ti 334.940†	-1257.4	0.00274	mg/L	0.000413	0.00274	mg/L	0.000413	15.09%
Tl 190.801†	-26.8	-0.0103	mg/L	0.00331	-0.0103	mg/L	0.00331	32.26%
V 290.880†	-705.8	-0.00336	mg/L	0.001220	-0.00336	mg/L	0.001220	36.31%
Zn 206.200†	571.7	0.00504	mg/L	0.000174	0.00504	mg/L	0.000174	3.46%
K 766.490†	838.1	0.758	mg/L	0.0479	0.758	mg/L	0.0479	6.32%
Na 589.592†	232297.5	36.1	mg/L	1.71	36.1	mg/L	1.71	4.75%
Sr 407.771†	434437.7	0.546	mg/L	0.0280	0.546	mg/L	0.0280	5.12%
Li 670.784†	255.3	0.00237	mg/L	0.001155	0.00237	mg/L	0.001155	48.74%
P 214.914†	56.7	-0.00342	mg/L	0.002837	-0.00342	mg/L	0.002837	83.01%

Sequence No.: 20
Sample ID: L1508104601
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 88
Date Collected: 8/23/2015 1:47:19 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1508104601

Analyte	Back Pressure	Flow
All	202.0 kPa	0.31 L/min

Mean Data: L1508104601

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	2542244.4						116666.79	4.59%
YRADIAL	146449.2						7539.64	5.15%
Ga 417.206	996989.9						51299.27	5.15%
GaRADIAL	36384.7						1668.55	4.59%
Ag 328.068†	344.5	0.00366	mg/L	0.000786	0.00366	mg/L	0.000786	21.48%
Al 396.153†	2096.5	0.959	mg/L	0.0222	0.959	mg/L	0.0222	2.32%
As 188.979†	1.4	0.00053	mg/L	0.001935	0.00053	mg/L	0.001935	362.77%
Ba 233.527†	14343.7	0.0939	mg/L	0.00325	0.0939	mg/L	0.00325	3.46%
Be 234.861†	269.0	0.00011	mg/L	0.000147	0.00011	mg/L	0.000147	129.02%
B 249.677†	1152.1	0.0233	mg/L	0.00073	0.0233	mg/L	0.00073	3.13%
Ca 227.546†	25384.8	78.4	mg/L	3.28	78.4	mg/L	3.28	4.19%
Cd 228.802†	2.8	0.00022	mg/L	0.000064	0.00022	mg/L	0.000064	28.46%
Co 228.616†	29.5	0.00039	mg/L	0.000211	0.00039	mg/L	0.000211	54.31%
Cr 267.716†	269.8	0.00172	mg/L	0.000301	0.00172	mg/L	0.000301	17.47%

Approved: August 24, 2015

Cu 327.393†	678.7	0.00510	mg/L	0.001147	0.00510	mg/L	0.001147	22.50%
Fe 239.562†	12624.2	1.27	mg/L	0.016	1.27	mg/L	0.016	1.24%
Mg 279.077†	14306.8	7.33	mg/L	0.080	7.33	mg/L	0.080	1.09%
Mn 257.610†	41105.8	0.0550	mg/L	0.00046	0.0550	mg/L	0.00046	0.83%
Mo 202.031†	72.9	0.00306	mg/L	0.000293	0.00306	mg/L	0.000293	9.59%
Ni 231.604†	136.5	0.00070	mg/L	0.000364	0.00070	mg/L	0.000364	52.27%
Pb 220.353†	39.3	0.00143	mg/L	0.000332	0.00143	mg/L	0.000332	23.27%
Sb 206.836†	11.4	0.00898	mg/L	0.004806	0.00898	mg/L	0.004806	53.54%
Se 196.026†	-7.4	-0.00240	mg/L	0.005926	-0.00240	mg/L	0.005926	246.72%
Si 251.611†	232234.5	5.41	mg/L	0.065	5.41	mg/L	0.065	1.19%
Sn 189.927†	-120.6	-0.0116	mg/L	0.00108	-0.0116	mg/L	0.00108	9.33%
Ti 334.940†	7644.7	0.0158	mg/L	0.00557	0.0158	mg/L	0.00557	35.19%
Tl 190.801†	-36.4	-0.0138	mg/L	0.00316	-0.0138	mg/L	0.00316	22.99%
V 290.880†	-477.2	-0.00188	mg/L	0.000545	-0.00188	mg/L	0.000545	28.95%
Zn 206.200†	375.3	0.00277	mg/L	0.000302	0.00277	mg/L	0.000302	10.90%
K 766.490†	1068.9	1.01	mg/L	0.061	1.01	mg/L	0.061	6.04%
Na 589.592†	41119.8	6.33	mg/L	0.028	6.33	mg/L	0.028	0.45%
Sr 407.771†	286371.7	0.359	mg/L	0.0115	0.359	mg/L	0.0115	3.21%
Li 670.784†	284.5	0.00327	mg/L	0.004041	0.00327	mg/L	0.004041	123.47%
P 214.914†	138.7	0.0333	mg/L	0.00449	0.0333	mg/L	0.00449	13.49%

Sequence No.: 21
Sample ID: L1508104701
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 89
Date Collected: 8/23/2015 1:49:45 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1508104701

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508104701

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2439032.5						133929.24	5.49%
YRADIAL	153529.9						4696.02	3.06%
Ga 417.206	945431.8						52728.82	5.58%
GaRADIAL	38316.1						1126.11	2.94%
Ag 328.068†	253.9	0.00284	mg/L	0.000252	0.00284	mg/L	0.000252	8.87%
Al 396.153†	104.5	0.0274	mg/L	0.02035	0.0274	mg/L	0.02035	74.24%
As 188.979†	7.3	0.00227	mg/L	0.002020	0.00227	mg/L	0.002020	89.00%
Ba 233.527†	12073.4	0.0790	mg/L	0.00525	0.0790	mg/L	0.00525	6.65%
Be 234.861†	-265.8	-0.00001	mg/L	0.000085	-0.00001	mg/L	0.000085	>999.9%
B 249.677†	1790.0	0.0269	mg/L	0.00183	0.0269	mg/L	0.00183	6.79%
Ca 227.546†	28813.0	88.9	mg/L	5.75	88.9	mg/L	5.75	6.47%
Cd 228.802†	-4.1	0.00004	mg/L	0.000134	0.00004	mg/L	0.000134	368.25%
Co 228.616†	-29.0	-0.00078	mg/L	0.000253	-0.00078	mg/L	0.000253	32.55%
Cr 267.716†	136.6	0.00079	mg/L	0.000247	0.00079	mg/L	0.000247	31.39%
Cu 327.393†	-10.3	0.00120	mg/L	0.002708	0.00120	mg/L	0.002708	225.36%
Fe 239.562†	372.0	0.0315	mg/L	0.00312	0.0315	mg/L	0.00312	9.92%
Mg 279.077†	18948.1	9.72	mg/L	0.154	9.72	mg/L	0.154	1.58%
Mn 257.610†	3522.5	0.00430	mg/L	0.000415	0.00430	mg/L	0.000415	9.66%
Mo 202.031†	83.7	0.00328	mg/L	0.000160	0.00328	mg/L	0.000160	4.89%
Ni 231.604†	-1.8	-0.00112	mg/L	0.000126	-0.00112	mg/L	0.000126	11.24%
Pb 220.353†	42.3	0.00149	mg/L	0.001125	0.00149	mg/L	0.001125	75.75%
Sb 206.836†	16.8	0.0109	mg/L	0.00319	0.0109	mg/L	0.00319	29.26%
Se 196.026†	-14.8	-0.00893	mg/L	0.006485	-0.00893	mg/L	0.006485	72.62%
Si 251.611†	210086.9	4.89	mg/L	0.006	4.89	mg/L	0.006	0.13%
Sn 189.927†	-128.8	-0.0122	mg/L	0.00149	-0.0122	mg/L	0.00149	12.21%
Ti 334.940†	-5574.7	-0.00007	mg/L	0.000258	-0.00007	mg/L	0.000258	356.50%
Tl 190.801†	-28.7	-0.0108	mg/L	0.00190	-0.0108	mg/L	0.00190	17.51%
V 290.880†	-556.1	-0.00261	mg/L	0.000172	-0.00261	mg/L	0.000172	6.57%
Zn 206.200†	168.1	0.00032	mg/L	0.000084	0.00032	mg/L	0.000084	26.30%
K 766.490†	1870.9	1.77	mg/L	0.015	1.77	mg/L	0.015	0.85%
Na 589.592†	102563.1	15.9	mg/L	0.23	15.9	mg/L	0.23	1.43%
Sr 407.771†	215817.5	0.271	mg/L	0.0028	0.271	mg/L	0.0028	1.02%
Li 670.784†	128.5	-0.00154	mg/L	0.003499	-0.00154	mg/L	0.003499	226.84%
P 214.914†	37.0	-0.0123	mg/L	0.00893	-0.0123	mg/L	0.00893	72.89%

Approved: August 24, 2015

Sequence No.: 22
Sample ID: CCV
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 6
Date Collected: 8/23/2015 1:52:07 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2605298.5						55666.61	2.14%
YRADIAL	158852.4						1549.72	0.98%
Ga 417.206	975216.0						30442.73	3.12%
GaRADIAL	38842.4						514.43	1.32%
Ag 328.068†	108402.5	0.397	mg/L	0.0037	0.397	mg/L	0.0037	0.92%
QC value within limits for Ag 328.068 Recovery = 99.22%								
Al 396.153†	21452.9	9.97	mg/L	0.110	9.97	mg/L	0.110	1.11%
QC value within limits for Al 396.153 Recovery = 99.72%								
As 188.979†	1374.0	0.390	mg/L	0.0101	0.390	mg/L	0.0101	2.58%
QC value within limits for As 188.979 Recovery = 97.59%								
Ba 233.527†	152519.4	1.00	mg/L	0.002	1.00	mg/L	0.002	0.21%
QC value within limits for Ba 233.527 Recovery = 100.05%								
Be 234.861†	66178.5	0.0486	mg/L	0.00051	0.0486	mg/L	0.00051	1.04%
QC value within limits for Be 234.861 Recovery = 97.20%								
B 249.677†	37163.9	0.497	mg/L	0.0096	0.497	mg/L	0.0096	1.94%
QC value within limits for B 249.677 Recovery = 99.47%								
Ca 227.546†	3075.3	9.65	mg/L	0.294	9.65	mg/L	0.294	3.05%
QC value within limits for Ca 227.546 Recovery = 96.48%								
Cd 228.802†	1971.5	0.0484	mg/L	0.00124	0.0484	mg/L	0.00124	2.57%
QC value within limits for Cd 228.802 Recovery = 96.78%								
Co 228.616†	9420.6	0.199	mg/L	0.0033	0.199	mg/L	0.0033	1.68%
QC value within limits for Co 228.616 Recovery = 99.34%								
Cr 267.716†	71863.6	0.501	mg/L	0.0009	0.501	mg/L	0.0009	0.17%
QC value within limits for Cr 267.716 Recovery = 100.18%								
Cu 327.393†	89485.9	0.496	mg/L	0.0060	0.496	mg/L	0.0060	1.21%
QC value within limits for Cu 327.393 Recovery = 99.22%								
Fe 239.562†	40182.7	4.04	mg/L	0.040	4.04	mg/L	0.040	0.98%
QC value within limits for Fe 239.562 Recovery = 101.00%								
Mg 279.077†	19480.7	9.99	mg/L	0.065	9.99	mg/L	0.065	0.65%
QC value within limits for Mg 279.077 Recovery = 99.92%								
Mn 257.610†	370723.8	0.500	mg/L	0.0009	0.500	mg/L	0.0009	0.19%
QC value within limits for Mn 257.610 Recovery = 99.95%								
Mo 202.031†	35034.0	0.991	mg/L	0.0061	0.991	mg/L	0.0061	0.61%
QC value within limits for Mo 202.031 Recovery = 99.08%								
Ni 231.604†	38340.0	0.501	mg/L	0.0012	0.501	mg/L	0.0012	0.23%
QC value within limits for Ni 231.604 Recovery = 100.26%								
Pb 220.353†	8101.4	0.508	mg/L	0.0089	0.508	mg/L	0.0089	1.76%
QC value within limits for Pb 220.353 Recovery = 101.65%								
Sb 206.836†	3129.9	1.12	mg/L	0.029	1.12	mg/L	0.029	2.60%
QC value within limits for Sb 206.836 Recovery = 93.63%								
Se 196.026†	474.7	0.425	mg/L	0.0065	0.425	mg/L	0.0065	1.52%
QC value within limits for Se 196.026 Recovery = 106.37%								
Si 251.611†	213194.5	4.96	mg/L	0.047	4.96	mg/L	0.047	0.94%
QC value within limits for Si 251.611 Recovery = 99.10%								
Sn 189.927†	12311.0	1.02	mg/L	0.017	1.02	mg/L	0.017	1.63%
QC value within limits for Sn 189.927 Recovery = 101.75%								
Ti 334.940†	789566.7	0.993	mg/L	0.0020	0.993	mg/L	0.0020	0.20%
QC value within limits for Ti 334.940 Recovery = 99.27%								
Tl 190.801†	1326.3	0.526	mg/L	0.0078	0.526	mg/L	0.0078	1.49%
QC value within limits for Tl 190.801 Recovery = 105.11%								
V 290.880†	169012.9	0.996	mg/L	0.0033	0.996	mg/L	0.0033	0.33%
QC value within limits for V 290.880 Recovery = 99.62%								
Zn 206.200†	87245.7	1.02	mg/L	0.003	1.02	mg/L	0.003	0.33%
QC value within limits for Zn 206.200 Recovery = 101.82%								
K 766.490†	52214.3	50.2	mg/L	0.41	50.2	mg/L	0.41	0.82%
QC value within limits for K 766.490 Recovery = 100.47%								

Approved: August 24, 2015

Na 589.592†	323676.5	50.4 mg/L	0.55	50.4 mg/L	0.55	1.09%
QC value within limits for Na 589.592 Recovery = 100.83%						
Sr 407.771†	791521.9	0.995 mg/L	0.0120	0.995 mg/L	0.0120	1.21%
QC value within limits for Sr 407.771 Recovery = 99.53%						
Li 670.784†	32998.1	1.01 mg/L	0.011	1.01 mg/L	0.011	1.07%
QC value within limits for Li 670.784 Recovery = 101.28%						
P 214.914†	22505.2	10.0 mg/L	0.18	10.0 mg/L	0.18	1.77%
QC value within limits for P 214.914 Recovery = 100.48%						

All analyte(s) passed QC.

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Sequence No.: 23 **Autosampler Location: 1**
Sample ID: CCB **Date Collected: 8/23/2015 1:54:32 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCB

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2600139.5						35369.66	1.36%
YRADIAL	150474.1						1044.39	0.69%
Ga 417.206	1043229.1						15297.30	1.47%
GaRADIAL	35845.6						149.23	0.42%
Ag 328.068†	-239.5	0.00110	mg/L	0.000148	0.00110	mg/L	0.000148	13.46%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	-8.8	-0.0255	mg/L	0.00312	-0.0255	mg/L	0.00312	12.23%
QC value within limits for Al 396.153 Recovery = Not calculated								
As 188.979†	9.6	0.00098	mg/L	0.002515	0.00098	mg/L	0.002515	257.97%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	35.1	0.00005	mg/L	0.000006	0.00005	mg/L	0.000006	13.31%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 234.861†	17.4	0.00021	mg/L	0.000021	0.00021	mg/L	0.000021	10.14%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	175.6	0.00589	mg/L	0.000528	0.00589	mg/L	0.000528	8.97%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	-8.3	0.0702	mg/L	0.06633	0.0702	mg/L	0.06633	94.48%
QC value within limits for Ca 227.546 Recovery = Not calculated								
Cd 228.802†	3.4	0.00022	mg/L	0.000150	0.00022	mg/L	0.000150	66.90%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	-15.0	-0.00047	mg/L	0.000018	-0.00047	mg/L	0.000018	3.83%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	6.0	-0.00012	mg/L	0.000224	-0.00012	mg/L	0.000224	184.12%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	309.3	0.00297	mg/L	0.000734	0.00297	mg/L	0.000734	24.73%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	-36.9	-0.00949	mg/L	0.000171	-0.00949	mg/L	0.000171	1.80%
QC value within limits for Fe 239.562 Recovery = Not calculated								
Mg 279.077†	110.1	0.00395	mg/L	0.005939	0.00395	mg/L	0.005939	150.23%
QC value within limits for Mg 279.077 Recovery = Not calculated								
Mn 257.610†	-638.9	-0.00132	mg/L	0.000029	-0.00132	mg/L	0.000029	2.23%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	2.2	0.00097	mg/L	0.000305	0.00097	mg/L	0.000305	31.40%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	9.0	-0.00098	mg/L	0.000489	-0.00098	mg/L	0.000489	49.93%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	5.4	-0.00084	mg/L	0.000975	-0.00084	mg/L	0.000975	116.62%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	1.2	0.00530	mg/L	0.002098	0.00530	mg/L	0.002098	39.61%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	-0.3	0.00392	mg/L	0.002440	0.00392	mg/L	0.002440	62.31%
QC value within limits for Se 196.026 Recovery = Not calculated								
Si 251.611†	-285.4	0.0106	mg/L	0.00037	0.0106	mg/L	0.00037	3.53%
QC value within limits for Si 251.611 Recovery = Not calculated								
Sn 189.927†	42.1	0.00191	mg/L	0.000516	0.00191	mg/L	0.000516	27.01%
QC value within limits for Sn 189.927 Recovery = Not calculated								

Approved: August 24, 2015

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Ti 334.940†	-209.5	0.00096	mg/L	0.000215	0.00096	mg/L	0.000215	22.42%
QC value within limits for Ti 334.940 Recovery = Not calculated								
Tl 190.801†	-2.8	-0.00074	mg/L	0.001514	-0.00074	mg/L	0.001514	204.59%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 290.880†	-257.7	-0.00061	mg/L	0.001236	-0.00061	mg/L	0.001236	203.13%
QC value within limits for V 290.880 Recovery = Not calculated								
Zn 206.200†	18.8	-0.00143	mg/L	0.000306	-0.00143	mg/L	0.000306	21.48%
QC value within limits for Zn 206.200 Recovery = Not calculated								
K 766.490†	-81.9	-0.0868	mg/L	0.01423	-0.0868	mg/L	0.01423	16.40%
QC value within limits for K 766.490 Recovery = Not calculated								
Na 589.592†	714.0	0.0890	mg/L	0.00640	0.0890	mg/L	0.00640	7.19%
QC value within limits for Na 589.592 Recovery = Not calculated								
Sr 407.771†	1762.8	0.00479	mg/L	0.000133	0.00479	mg/L	0.000133	2.77%
QC value within limits for Sr 407.771 Recovery = Not calculated								
Li 670.784†	63.8	-0.00354	mg/L	0.001968	-0.00354	mg/L	0.001968	55.66%
QC value within limits for Li 670.784 Recovery = Not calculated								
P 214.914†	30.1	-0.0154	mg/L	0.00228	-0.0154	mg/L	0.00228	14.86%
QC value within limits for P 214.914 Recovery = Not calculated								

All analyte(s) passed QC.

Sequence No.: 24 **Autosampler Location: 90**
Sample ID: LLCCV **Date Collected: 8/23/2015 1:57:50 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: LLCCV

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: LLCCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2577807.4						74495.12	2.89%
YRADIAL	152774.5						2118.19	1.39%
Ga 417.206	1028048.7						28449.16	2.77%
GaRADIAL	36576.0						300.56	0.82%
Ag 328.068†	3884.1	0.0161	mg/L	0.00013	0.0161	mg/L	0.00013	0.83%
Al 396.153†	872.8	0.385	mg/L	0.0102	0.385	mg/L	0.0102	2.64%
As 188.979†	51.5	0.0129	mg/L	0.00051	0.0129	mg/L	0.00051	3.99%
Ba 233.527†	5966.8	0.0390	mg/L	0.00077	0.0390	mg/L	0.00077	1.99%
Be 234.861†	2437.5	0.00198	mg/L	0.000023	0.00198	mg/L	0.000023	1.16%
B 249.677†	1482.8	0.0233	mg/L	0.00082	0.0233	mg/L	0.00082	3.52%
Ca 227.546†	112.0	0.444	mg/L	0.0643	0.444	mg/L	0.0643	14.48%
Cd 228.802†	69.8	0.00186	mg/L	0.000191	0.00186	mg/L	0.000191	10.30%
Co 228.616†	350.8	0.00725	mg/L	0.000403	0.00725	mg/L	0.000403	5.56%
Cr 267.716†	2916.0	0.0202	mg/L	0.00054	0.0202	mg/L	0.00054	2.70%
Cu 327.393†	3601.1	0.0212	mg/L	0.00082	0.0212	mg/L	0.00082	3.85%
Fe 239.562†	1564.4	0.152	mg/L	0.0043	0.152	mg/L	0.0043	2.81%
Mg 279.077†	949.2	0.437	mg/L	0.0272	0.437	mg/L	0.0272	6.23%
Mn 257.610†	14447.1	0.0190	mg/L	0.00037	0.0190	mg/L	0.00037	1.93%
Mo 202.031†	1357.4	0.0393	mg/L	0.00063	0.0393	mg/L	0.00063	1.61%
Ni 231.604†	1594.4	0.0198	mg/L	0.00063	0.0198	mg/L	0.00063	3.17%
Pb 220.353†	326.5	0.0194	mg/L	0.00012	0.0194	mg/L	0.00012	0.64%
Sb 206.836†	113.1	0.0453	mg/L	0.00185	0.0453	mg/L	0.00185	4.08%
Se 196.026†	14.0	0.0166	mg/L	0.00523	0.0166	mg/L	0.00523	31.49%
Si 251.611†	7622.2	0.194	mg/L	0.0055	0.194	mg/L	0.0055	2.85%
Sn 189.927†	506.1	0.0403	mg/L	0.00115	0.0403	mg/L	0.00115	2.86%
Ti 334.940†	31072.8	0.0402	mg/L	0.00048	0.0402	mg/L	0.00048	1.19%
Tl 190.801†	44.5	0.0180	mg/L	0.00157	0.0180	mg/L	0.00157	8.73%
V 290.880†	6368.9	0.0384	mg/L	0.00210	0.0384	mg/L	0.00210	5.48%
Zn 206.200†	3655.5	0.0411	mg/L	0.00061	0.0411	mg/L	0.00061	1.49%
K 766.490†	2170.2	2.07	mg/L	0.066	2.07	mg/L	0.066	3.19%
Na 589.592†	14086.3	2.15	mg/L	0.018	2.15	mg/L	0.018	0.81%
Sr 407.771†	33698.2	0.0448	mg/L	0.00031	0.0448	mg/L	0.00031	0.70%
Li 670.784†	1379.3	0.0371	mg/L	0.00337	0.0371	mg/L	0.00337	9.08%
P 214.914†	870.7	0.361	mg/L	0.0109	0.361	mg/L	0.0109	3.02%

Approved: August 24, 2015

Sequence No.: 25
Sample ID: L1508104702
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 91
Date Collected: 8/23/2015 2:00:12 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1508104702

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508104702

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	2506256.9						57321.38	2.29%
YRADIAL	149788.5						9194.41	6.14%
Ga 417.206	971304.0						27836.29	2.87%
GaRADIAL	37192.5						2172.43	5.84%
Ag 328.068†	63.1	0.00215	mg/L	0.000552	0.00215	mg/L	0.000552	25.67%
Al 396.153†	92.4	0.0218	mg/L	0.03249	0.0218	mg/L	0.03249	149.14%
As 188.979†	-4.3	-0.00163	mg/L	0.002205	-0.00163	mg/L	0.002205	135.51%
Ba 233.527†	9569.2	0.0626	mg/L	0.00149	0.0626	mg/L	0.00149	2.38%
Be 234.861†	-232.3	0.00002	mg/L	0.000043	0.00002	mg/L	0.000043	224.64%
B 249.677†	1457.7	0.0226	mg/L	0.00088	0.0226	mg/L	0.00088	3.89%
Ca 227.546†	20953.2	64.7	mg/L	1.70	64.7	mg/L	1.70	2.62%
Cd 228.802†	3.4	0.00024	mg/L	0.000120	0.00024	mg/L	0.000120	49.60%
Co 228.616†	-34.6	-0.00090	mg/L	0.000111	-0.00090	mg/L	0.000111	12.39%
Cr 267.716†	144.1	0.00084	mg/L	0.000192	0.00084	mg/L	0.000192	22.91%
Cu 327.393†	-171.7	0.00031	mg/L	0.000849	0.00031	mg/L	0.000849	271.26%
Fe 239.562†	311.9	0.0254	mg/L	0.00205	0.0254	mg/L	0.00205	8.07%
Mg 279.077†	20651.7	10.6	mg/L	0.63	10.6	mg/L	0.63	5.93%
Mn 257.610†	-273.5	-0.00082	mg/L	0.000010	-0.00082	mg/L	0.000010	1.27%
Mo 202.031†	49.0	0.00229	mg/L	0.000349	0.00229	mg/L	0.000349	15.23%
Ni 231.604†	15.5	-0.00089	mg/L	0.000246	-0.00089	mg/L	0.000246	27.69%
Pb 220.353†	21.5	0.00019	mg/L	0.001475	0.00019	mg/L	0.001475	793.01%
Sb 206.836†	16.1	0.0106	mg/L	0.00049	0.0106	mg/L	0.00049	4.60%
Se 196.026†	-8.4	-0.00322	mg/L	0.004044	-0.00322	mg/L	0.004044	125.48%
Si 251.611†	190530.0	4.44	mg/L	0.060	4.44	mg/L	0.060	1.36%
Sn 189.927†	-103.2	-0.0101	mg/L	0.00129	-0.0101	mg/L	0.00129	12.71%
Ti 334.940†	-3821.9	0.00057	mg/L	0.000415	0.00057	mg/L	0.000415	72.64%
Tl 190.801†	-29.9	-0.0113	mg/L	0.00098	-0.0113	mg/L	0.00098	8.62%
V 290.880†	-776.7	-0.00394	mg/L	0.000665	-0.00394	mg/L	0.000665	16.88%
Zn 206.200†	135.1	-0.00006	mg/L	0.000052	-0.00006	mg/L	0.000052	81.98%
K 766.490†	1224.8	1.13	mg/L	0.120	1.13	mg/L	0.120	10.62%
Na 589.592†	206374.1	32.0	mg/L	0.48	32.0	mg/L	0.48	1.49%
Sr 407.771†	189034.4	0.238	mg/L	0.0033	0.238	mg/L	0.0033	1.40%
Li 670.784†	98.3	-0.00247	mg/L	0.002948	-0.00247	mg/L	0.002948	119.16%
P 214.914†	30.3	-0.0153	mg/L	0.00549	-0.0153	mg/L	0.00549	35.96%

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Sequence No.: 26
Sample ID: L1508104801
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 92
Date Collected: 8/23/2015 2:02:35 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1508104801

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508104801

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	2525374.0						5046.00	0.20%
YRADIAL	148756.8						2429.53	1.63%
Ga 417.206	993882.2						6067.29	0.61%
GaRADIAL	37161.9						595.35	1.60%
Ag 328.068†	-49.3	0.00172	mg/L	0.000863	0.00172	mg/L	0.000863	50.25%
Al 396.153†	43.5	-0.00110	mg/L	0.009215	-0.00110	mg/L	0.009215	834.52%

Approved: August 24, 2015

Kym H. Rhoden

As 188.979†	5.0	0.00072	mg/L	0.001491	0.00072	mg/L	0.001491	205.86%
Ba 233.527†	8498.8	0.0556	mg/L	0.00147	0.0556	mg/L	0.00147	2.65%
Be 234.861†	-194.8	0.00005	mg/L	0.000027	0.00005	mg/L	0.000027	54.61%
B 249.677†	1465.7	0.0227	mg/L	0.00089	0.0227	mg/L	0.00089	3.94%
Ca 227.546†	16193.2	50.0	mg/L	1.33	50.0	mg/L	1.33	2.67%
Cd 228.802†	5.2	0.00028	mg/L	0.000102	0.00028	mg/L	0.000102	37.01%
Co 228.616†	-36.5	-0.00093	mg/L	0.000057	-0.00093	mg/L	0.000057	6.09%
Cr 267.716†	99.6	0.00053	mg/L	0.000040	0.00053	mg/L	0.000040	7.53%
Cu 327.393†	1488.6	0.00946	mg/L	0.000686	0.00946	mg/L	0.000686	7.25%
Fe 239.562†	185.0	0.0126	mg/L	0.00597	0.0126	mg/L	0.00597	47.40%
Mg 279.077†	26325.2	13.5	mg/L	0.34	13.5	mg/L	0.34	2.49%
Mn 257.610†	1772.7	0.00194	mg/L	0.000086	0.00194	mg/L	0.000086	4.45%
Mo 202.031†	68.5	0.00284	mg/L	0.000237	0.00284	mg/L	0.000237	8.33%
Ni 231.604†	25.8	-0.00076	mg/L	0.000184	-0.00076	mg/L	0.000184	24.29%
Pb 220.353†	26.5	0.00049	mg/L	0.000945	0.00049	mg/L	0.000945	193.27%
Sb 206.836†	14.2	0.00997	mg/L	0.004046	0.00997	mg/L	0.004046	40.60%
Se 196.026†	-16.1	-0.0101	mg/L	0.01023	-0.0101	mg/L	0.01023	101.34%
Si 251.611†	201429.5	4.69	mg/L	0.046	4.69	mg/L	0.046	0.98%
Sn 189.927†	-107.2	-0.0104	mg/L	0.00077	-0.0104	mg/L	0.00077	7.42%
Ti 334.940†	-3615.5	-0.00011	mg/L	0.000094	-0.00011	mg/L	0.000094	84.44%
Tl 190.801†	-21.5	-0.00804	mg/L	0.001006	-0.00804	mg/L	0.001006	12.51%
V 290.880†	-1090.1	-0.00586	mg/L	0.001820	-0.00586	mg/L	0.001820	31.06%
Zn 206.200†	973.9	0.00969	mg/L	0.000644	0.00969	mg/L	0.000644	6.65%
K 766.490†	1010.5	0.950	mg/L	0.0512	0.950	mg/L	0.0512	5.39%
Na 589.592†	60148.7	9.28	mg/L	0.149	9.28	mg/L	0.149	1.60%
Sr 407.771†	261383.0	0.329	mg/L	0.0047	0.329	mg/L	0.0047	1.43%
Li 670.784†	306.5	0.00395	mg/L	0.000942	0.00395	mg/L	0.000942	23.84%
P 214.914†	-10.7	-0.0336	mg/L	0.00412	-0.0336	mg/L	0.00412	12.26%

Sequence No.: 27 **Autosampler Location: 93**
Sample ID: L1508105001 **Date Collected: 8/23/2015 2:04:58 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508105001

Analyte	Back Pressure	Flow
All	202.0 kPa	0.31 L/min

Mean Data: L1508105001

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2548371.1						63651.56	2.50%
YRADIAL	156102.3						4189.48	2.68%
Ga 417.206	1015773.4						28694.26	2.82%
GaRADIAL	37383.8						981.44	2.63%
Ag 328.068†	-179.8	0.00143	mg/L	0.001077	0.00143	mg/L	0.001077	75.17%
Al 396.153†	510.6	0.217	mg/L	0.0161	0.217	mg/L	0.0161	7.38%
As 188.979†	-0.9	-0.00124	mg/L	0.001191	-0.00124	mg/L	0.001191	96.07%
Ba 233.527†	4532.2	0.0295	mg/L	0.00043	0.0295	mg/L	0.00043	1.45%
Be 234.861†	-81.8	0.00007	mg/L	0.000049	0.00007	mg/L	0.000049	73.05%
B 249.677†	996.8	0.0178	mg/L	0.00052	0.0178	mg/L	0.00052	2.94%
Ca 227.546†	11111.1	34.4	mg/L	0.57	34.4	mg/L	0.57	1.67%
Cd 228.802†	4.1	0.00026	mg/L	0.000039	0.00026	mg/L	0.000039	15.05%
Co 228.616†	-19.4	-0.00058	mg/L	0.000178	-0.00058	mg/L	0.000178	30.39%
Cr 267.716†	126.7	0.00072	mg/L	0.000159	0.00072	mg/L	0.000159	22.09%
Cu 327.393†	1105.7	0.00738	mg/L	0.000805	0.00738	mg/L	0.000805	10.90%
Fe 239.562†	3479.8	0.345	mg/L	0.0060	0.345	mg/L	0.0060	1.74%
Mg 279.077†	7573.0	3.85	mg/L	0.029	3.85	mg/L	0.029	0.76%
Mn 257.610†	73799.5	0.0991	mg/L	0.00082	0.0991	mg/L	0.00082	0.82%
Mo 202.031†	23.0	0.00160	mg/L	0.000257	0.00160	mg/L	0.000257	16.07%
Ni 231.604†	26.8	-0.00074	mg/L	0.000249	-0.00074	mg/L	0.000249	33.50%
Pb 220.353†	12.3	-0.00042	mg/L	0.001551	-0.00042	mg/L	0.001551	368.34%
Sb 206.836†	6.5	0.00719	mg/L	0.001118	0.00719	mg/L	0.001118	15.55%
Se 196.026†	-0.2	0.00396	mg/L	0.003168	0.00396	mg/L	0.003168	79.97%
Si 251.611†	150371.7	3.51	mg/L	0.038	3.51	mg/L	0.038	1.08%
Sn 189.927†	-71.1	-0.00746	mg/L	0.000304	-0.00746	mg/L	0.000304	4.07%
Ti 334.940†	752.1	0.00436	mg/L	0.001119	0.00436	mg/L	0.001119	25.65%
Tl 190.801†	-21.6	-0.00810	mg/L	0.000748	-0.00810	mg/L	0.000748	9.24%

Approved: August 24, 2015

V 290.880†	-338.2	-0.00112	mg/L	0.000780	-0.00112	mg/L	0.000780	69.41%
Zn 206.200†	150.1	0.00012	mg/L	0.000164	0.00012	mg/L	0.000164	139.07%
K 766.490†	1971.3	1.88	mg/L	0.053	1.88	mg/L	0.053	2.80%
Na 589.592†	16499.0	2.53	mg/L	0.058	2.53	mg/L	0.058	2.29%
Sr 407.771†	59968.4	0.0767	mg/L	0.00106	0.0767	mg/L	0.00106	1.39%
Li 670.784†	141.4	-0.00114	mg/L	0.002221	-0.00114	mg/L	0.002221	194.46%
P 214.914†	74.2	0.00441	mg/L	0.005378	0.00441	mg/L	0.005378	121.97%

Sequence No.: 28 **Autosampler Location: 94**
Sample ID: L1508105002 **Date Collected: 8/23/2015 2:07:21 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508105002

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508105002

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2439717.6						118334.35	4.85%
YRADIAL	152116.2						4511.63	2.97%
Ga 417.206	957537.0						55180.08	5.76%
GaRADIAL	36461.1						1014.58	2.78%
Ag 328.068†	-107.5	0.00172	mg/L	0.000666	0.00172	mg/L	0.000666	38.84%
Al 396.153†	526.7	0.225	mg/L	0.0064	0.225	mg/L	0.0064	2.85%
As 188.979†	5.5	0.00086	mg/L	0.002060	0.00086	mg/L	0.002060	239.48%
Ba 233.527†	9074.9	0.0593	mg/L	0.00303	0.0593	mg/L	0.00303	5.10%
Be 234.861†	-114.7	0.00002	mg/L	0.000032	0.00002	mg/L	0.000032	153.76%
B 249.677†	1509.6	0.0248	mg/L	0.00113	0.0248	mg/L	0.00113	4.57%
Ca 227.546†	14487.9	44.8	mg/L	2.77	44.8	mg/L	2.77	6.19%
Cd 228.802†	1.0	0.00017	mg/L	0.000109	0.00017	mg/L	0.000109	64.22%
Co 228.616†	-31.1	-0.00084	mg/L	0.000141	-0.00084	mg/L	0.000141	16.81%
Cr 267.716†	138.8	0.00080	mg/L	0.000200	0.00080	mg/L	0.000200	24.83%
Cu 327.393†	44.9	0.00154	mg/L	0.001121	0.00154	mg/L	0.001121	72.81%
Fe 239.562†	4337.7	0.431	mg/L	0.0032	0.431	mg/L	0.0032	0.75%
Mg 279.077†	12980.0	6.64	mg/L	0.063	6.64	mg/L	0.063	0.95%
Mn 257.610†	53449.2	0.0717	mg/L	0.00049	0.0717	mg/L	0.00049	0.68%
Mo 202.031†	38.0	0.00202	mg/L	0.000151	0.00202	mg/L	0.000151	7.48%
Ni 231.604†	42.2	-0.00054	mg/L	0.000484	-0.00054	mg/L	0.000484	89.58%
Pb 220.353†	9.4	-0.00059	mg/L	0.001064	-0.00059	mg/L	0.001064	181.16%
Sb 206.836†	14.6	0.0101	mg/L	0.00150	0.0101	mg/L	0.00150	14.81%
Se 196.026†	-9.7	-0.00444	mg/L	0.008287	-0.00444	mg/L	0.008287	186.53%
Si 251.611†	156091.2	3.64	mg/L	0.060	3.64	mg/L	0.060	1.65%
Sn 189.927†	-101.8	-0.0100	mg/L	0.00140	-0.0100	mg/L	0.00140	14.01%
Ti 334.940†	-590.9	0.00335	mg/L	0.000589	0.00335	mg/L	0.000589	17.59%
Tl 190.801†	-29.1	-0.0110	mg/L	0.00449	-0.0110	mg/L	0.00449	40.74%
V 290.880†	-564.1	-0.00251	mg/L	0.001849	-0.00251	mg/L	0.001849	73.53%
Zn 206.200†	129.4	-0.00012	mg/L	0.000203	-0.00012	mg/L	0.000203	168.81%
K 766.490†	2399.2	2.28	mg/L	0.136	2.28	mg/L	0.136	5.94%
Na 589.592†	53359.6	8.23	mg/L	0.249	8.23	mg/L	0.249	3.02%
Sr 407.771†	119319.3	0.151	mg/L	0.0039	0.151	mg/L	0.0039	2.57%
Li 670.784†	63.4	-0.00355	mg/L	0.001583	-0.00355	mg/L	0.001583	44.58%
P 214.914†	56.8	-0.00339	mg/L	0.006840	-0.00339	mg/L	0.006840	202.03%

Sequence No.: 29 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 8/23/2015 2:09:44 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Approved: August 24, 2015

Kym H. Rhoden

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2591304.3						43007.55	1.66%
YRADIAL	154462.5						3889.46	2.52%
Ga 417.206	976869.5						21816.73	2.23%
GaRADIAL	38131.9						703.24	1.84%
Ag 328.068†	105337.7	0.386	mg/L	0.0046	0.386	mg/L	0.0046	1.19%
QC value within limits for Ag 328.068 Recovery = 96.42%								
Al 396.153†	20518.2	9.54	mg/L	0.144	9.54	mg/L	0.144	1.51%
QC value within limits for Al 396.153 Recovery = 95.35%								
As 188.979†	1300.1	0.369	mg/L	0.0108	0.369	mg/L	0.0108	2.93%
QC value within limits for As 188.979 Recovery = 92.27%								
Ba 233.527†	148546.3	0.974	mg/L	0.0105	0.974	mg/L	0.0105	1.08%
QC value within limits for Ba 233.527 Recovery = 97.45%								
Be 234.861†	64149.8	0.0471	mg/L	0.00062	0.0471	mg/L	0.00062	1.31%
QC value within limits for Be 234.861 Recovery = 94.27%								
B 249.677†	36235.9	0.485	mg/L	0.0080	0.485	mg/L	0.0080	1.64%
QC value within limits for B 249.677 Recovery = 96.94%								
Ca 227.546†	2938.5	9.22	mg/L	0.230	9.22	mg/L	0.230	2.50%
QC value within limits for Ca 227.546 Recovery = 92.24%								
Cd 228.802†	1877.8	0.0461	mg/L	0.00144	0.0461	mg/L	0.00144	3.12%
QC value within limits for Cd 228.802 Recovery = 92.23%								
Co 228.616†	9067.4	0.191	mg/L	0.0046	0.191	mg/L	0.0046	2.38%
QC value within limits for Co 228.616 Recovery = 95.61%								
Cr 267.716†	69706.4	0.486	mg/L	0.0023	0.486	mg/L	0.0023	0.48%
QC value within limits for Cr 267.716 Recovery = 97.17%								
Cu 327.393†	86991.0	0.482	mg/L	0.0092	0.482	mg/L	0.0092	1.90%
QC value within limits for Cu 327.393 Recovery = 96.46%								
Fe 239.562†	38224.7	3.84	mg/L	0.077	3.84	mg/L	0.077	2.01%
QC value within limits for Fe 239.562 Recovery = 96.07%								
Mg 279.077†	18602.5	9.54	mg/L	0.133	9.54	mg/L	0.133	1.40%
QC value within limits for Mg 279.077 Recovery = 95.40%								
Mn 257.610†	361959.6	0.488	mg/L	0.0056	0.488	mg/L	0.0056	1.14%
QC value within limits for Mn 257.610 Recovery = 97.58%								
Mo 202.031†	34284.8	0.970	mg/L	0.0055	0.970	mg/L	0.0055	0.56%
QC value within limits for Mo 202.031 Recovery = 96.96%								
Ni 231.604†	37273.7	0.487	mg/L	0.0056	0.487	mg/L	0.0056	1.15%
QC value within limits for Ni 231.604 Recovery = 97.46%								
Pb 220.353†	7792.5	0.489	mg/L	0.0123	0.489	mg/L	0.0123	2.51%
QC value within limits for Pb 220.353 Recovery = 97.76%								
Sb 206.836†	2979.3	1.07	mg/L	0.029	1.07	mg/L	0.029	2.72%
QC value less than the lower limit for Sb 206.836 Recovery = 89.15%								
Se 196.026†	450.2	0.404	mg/L	0.0132	0.404	mg/L	0.0132	3.26%
QC value within limits for Se 196.026 Recovery = 100.93%								
Si 251.611†	206968.5	4.81	mg/L	0.077	4.81	mg/L	0.077	1.60%
QC value within limits for Si 251.611 Recovery = 96.22%								
Sn 189.927†	11794.0	0.975	mg/L	0.0236	0.975	mg/L	0.0236	2.42%
QC value within limits for Sn 189.927 Recovery = 97.47%								
Ti 334.940†	769487.6	0.967	mg/L	0.0084	0.967	mg/L	0.0084	0.87%
QC value within limits for Ti 334.940 Recovery = 96.75%								
Tl 190.801†	1284.9	0.509	mg/L	0.0159	0.509	mg/L	0.0159	3.13%
QC value within limits for Tl 190.801 Recovery = 101.84%								
V 290.880†	164855.3	0.972	mg/L	0.0104	0.972	mg/L	0.0104	1.07%
QC value within limits for V 290.880 Recovery = 97.17%								
Zn 206.200†	84605.1	0.987	mg/L	0.0084	0.987	mg/L	0.0084	0.85%
QC value within limits for Zn 206.200 Recovery = 98.73%								
K 766.490†	50196.8	48.3	mg/L	0.98	48.3	mg/L	0.98	2.03%
QC value within limits for K 766.490 Recovery = 96.56%								
Na 589.592†	313880.0	48.9	mg/L	2.76	48.9	mg/L	2.76	5.65%
QC value within limits for Na 589.592 Recovery = 97.75%								
Sr 407.771†	777334.4	0.978	mg/L	0.0604	0.978	mg/L	0.0604	6.17%
QC value within limits for Sr 407.771 Recovery = 97.76%								
Li 670.784†	31483.9	0.966	mg/L	0.0149	0.966	mg/L	0.0149	1.54%
QC value within limits for Li 670.784 Recovery = 96.61%								
P 214.914†	21551.7	9.62	mg/L	0.225	9.62	mg/L	0.225	2.34%
QC value within limits for P 214.914 Recovery = 96.21%								

QC Failed. Continue with analysis.

==========

Sequence No.: 30 **Autosampler Location: 1**
Sample ID: CCB **Date Collected: 8/23/2015 2:12:09 PM**

Approved: August 24, 2015

Analyst:
Initial Sample Wt:
Dilution:

Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: CCB

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2597151.0						15608.94	0.60%
YRADIAL	157907.8						1712.80	1.08%
Ga 417.206	1038156.2						9485.26	0.91%
GaRADIAL	37326.0						452.12	1.21%
Ag 328.068†	-205.4	0.00122	mg/L	0.001250	0.00122	mg/L	0.001250	102.63%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	3.7	-0.0197	mg/L	0.02805	-0.0197	mg/L	0.02805	142.68%
QC value within limits for Al 396.153 Recovery = Not calculated								
As 188.979†	6.9	0.00020	mg/L	0.001234	0.00020	mg/L	0.001234	631.82%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	-4.9	-0.00021	mg/L	0.000053	-0.00021	mg/L	0.000053	24.93%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 234.861†	-18.0	0.00018	mg/L	0.000011	0.00018	mg/L	0.000011	6.07%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	287.6	0.00734	mg/L	0.000840	0.00734	mg/L	0.000840	11.45%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	-16.0	0.0464	mg/L	0.04540	0.0464	mg/L	0.04540	97.84%
QC value within limits for Ca 227.546 Recovery = Not calculated								
Cd 228.802†	-4.3	0.00003	mg/L	0.000207	0.00003	mg/L	0.000207	622.30%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	-17.0	-0.00051	mg/L	0.000212	-0.00051	mg/L	0.000212	41.35%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	16.0	-0.00005	mg/L	0.000046	-0.00005	mg/L	0.000046	86.91%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	-20.4	0.00115	mg/L	0.002041	0.00115	mg/L	0.002041	177.46%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	-42.8	-0.0101	mg/L	0.00028	-0.0101	mg/L	0.00028	2.76%
QC value within limits for Fe 239.562 Recovery = Not calculated								
Mg 279.077†	81.2	-0.0110	mg/L	0.03463	-0.0110	mg/L	0.03463	316.07%
QC value within limits for Mg 279.077 Recovery = Not calculated								
Mn 257.610†	-629.0	-0.00130	mg/L	0.000040	-0.00130	mg/L	0.000040	3.08%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	1.4	0.00095	mg/L	0.000544	0.00095	mg/L	0.000544	57.37%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	-8.4	-0.00121	mg/L	0.000192	-0.00121	mg/L	0.000192	15.92%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	21.7	0.00019	mg/L	0.001229	0.00019	mg/L	0.001229	644.29%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	4.5	0.00650	mg/L	0.003492	0.00650	mg/L	0.003492	53.76%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	-5.6	-0.00081	mg/L	0.005314	-0.00081	mg/L	0.005314	659.76%
QC value within limits for Se 196.026 Recovery = Not calculated								
Si 251.611†	-290.2	0.0105	mg/L	0.00100	0.0105	mg/L	0.00100	9.57%
QC value within limits for Si 251.611 Recovery = Not calculated								
Sn 189.927†	53.2	0.00283	mg/L	0.000896	0.00283	mg/L	0.000896	31.73%
QC value within limits for Sn 189.927 Recovery = Not calculated								
Ti 334.940†	-121.0	0.00107	mg/L	0.000144	0.00107	mg/L	0.000144	13.54%
QC value within limits for Ti 334.940 Recovery = Not calculated								
Tl 190.801†	-4.3	-0.00132	mg/L	0.005545	-0.00132	mg/L	0.005545	419.36%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 290.880†	-474.4	-0.00188	mg/L	0.000441	-0.00188	mg/L	0.000441	23.40%
QC value within limits for V 290.880 Recovery = Not calculated								
Zn 206.200†	24.3	-0.00136	mg/L	0.000170	-0.00136	mg/L	0.000170	12.52%
QC value within limits for Zn 206.200 Recovery = Not calculated								
K 766.490†	3.2	-0.00533	mg/L	0.039125	-0.00533	mg/L	0.039125	734.62%
QC value within limits for K 766.490 Recovery = Not calculated								
Na 589.592†	343.5	0.0318	mg/L	0.02314	0.0318	mg/L	0.02314	72.66%
QC value within limits for Na 589.592 Recovery = Not calculated								
Sr 407.771†	1344.7	0.00427	mg/L	0.000213	0.00427	mg/L	0.000213	4.99%

Approved: August 24, 2015

Lynn H. Rhoden

QC value within limits for Sr 407.771 Recovery = Not calculated

Li 670.784†	24.3	-0.00476 mg/L	0.002867	-0.00476 mg/L	0.002867	60.27%

QC value within limits for Li 670.784 Recovery = Not calculated

P 214.914†	22.5	-0.0187 mg/L	0.00322	-0.0187 mg/L	0.00322	17.21%

QC value within limits for P 214.914 Recovery = Not calculated

All analyte(s) passed QC.

==========

Sequence No.: 31 **Autosampler Location: 95**
Sample ID: BLK **Date Collected: 8/23/2015 2:14:30 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: BLK

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: BLK

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2616606.4						148140.52	5.66%
YRADIAL	152774.3						4754.75	3.11%
Ga 417.206	1048999.1						64763.56	6.17%
GaRADIAL	37785.8						1081.89	2.86%
Ag 328.068†	-527.1	0.00006	mg/L	0.000351	0.00006	mg/L	0.000351	614.77%
Al 396.153†	-27.7	-0.0343	mg/L	0.01440	-0.0343	mg/L	0.01440	41.98%
As 188.979†	9.4	0.00091	mg/L	0.002231	0.00091	mg/L	0.002231	244.39%
Ba 233.527†	-148.3	-0.00115	mg/L	0.000123	-0.00115	mg/L	0.000123	10.68%
Be 234.861†	1.9	0.00020	mg/L	0.000031	0.00020	mg/L	0.000031	15.60%
B 249.677†	55.5	0.00433	mg/L	0.000390	0.00433	mg/L	0.000390	9.00%
Ca 227.546†	-19.7	0.0351	mg/L	0.04229	0.0351	mg/L	0.04229	120.34%
Cd 228.802†	1.0	0.00016	mg/L	0.000224	0.00016	mg/L	0.000224	137.03%
Co 228.616†	-12.3	-0.00041	mg/L	0.000337	-0.00041	mg/L	0.000337	81.56%
Cr 267.716†	-13.7	-0.00026	mg/L	0.000091	-0.00026	mg/L	0.000091	35.05%
Cu 327.393†	-123.9	0.00058	mg/L	0.000974	0.00058	mg/L	0.000974	168.02%
Fe 239.562†	-58.4	-0.0117	mg/L	0.00351	-0.0117	mg/L	0.00351	30.15%
Mg 279.077†	125.2	0.0117	mg/L	0.03063	0.0117	mg/L	0.03063	260.92%
Mn 257.610†	-988.6	-0.00179	mg/L	0.000039	-0.00179	mg/L	0.000039	2.21%
Mo 202.031†	-8.8	0.00066	mg/L	0.000480	0.00066	mg/L	0.000480	72.71%
Ni 231.604†	11.8	-0.00094	mg/L	0.000034	-0.00094	mg/L	0.000034	3.59%
Pb 220.353†	25.7	0.00044	mg/L	0.001152	0.00044	mg/L	0.001152	263.34%
Sb 206.836†	0.8	0.00517	mg/L	0.002566	0.00517	mg/L	0.002566	49.67%
Se 196.026†	-4.7	-0.00002	mg/L	0.003269	-0.00002	mg/L	0.003269	>999.9%
Si 251.611†	-478.3	0.00613	mg/L	0.000724	0.00613	mg/L	0.000724	11.80%
Sn 189.927†	6.8	-0.00101	mg/L	0.000307	-0.00101	mg/L	0.000307	30.28%
Ti 334.940†	-523.3	0.00056	mg/L	0.000472	0.00056	mg/L	0.000472	84.11%
Tl 190.801†	-1.4	-0.00019	mg/L	0.002499	-0.00019	mg/L	0.002499	>999.9%
V 290.880†	-393.1	-0.00141	mg/L	0.000602	-0.00141	mg/L	0.000602	42.82%
Zn 206.200†	61.1	-0.00094	mg/L	0.000216	-0.00094	mg/L	0.000216	23.13%
K 766.490†	10.8	0.00200	mg/L	0.043719	0.00200	mg/L	0.043719	>999.9%
Na 589.592†	196.6	0.00918	mg/L	0.006273	0.00918	mg/L	0.006273	68.36%
Sr 407.771†	47.1	0.00264	mg/L	0.000239	0.00264	mg/L	0.000239	9.05%
Li 670.784†	-21.5	-0.00617	mg/L	0.002703	-0.00617	mg/L	0.002703	43.81%
P 214.914†	34.0	-0.0136	mg/L	0.00597	-0.0136	mg/L	0.00597	43.89%

==========

Sequence No.: 32 **Autosampler Location: 96**
Sample ID: BLK **Date Collected: 8/23/2015 2:16:52 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: BLK

Analyte	Back Pressure	Flow
All	202.0 kPa	0.31 L/min

Mean Data: BLK

Approved: August 24, 2015

Kym H. Rhoden

2.3.2 Metals ICP-MS Data

2.3.2.1 Summary Data

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW18FF-081715	**Prep Method:**	3015	**Prep Date:**	08/19/2015 08:35
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	08/23/2015 15:28
Workgroup #:	WG535910	**Analyst:**	BKT	**Run Date:**	08/23/2015 17:04
Collect Date:	08/17/2015 08:30	**Dilution:**	10	**File ID:**	NI.082315.170455
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0631		0.0400	0.0200	0.0100

Certificate of Analysis

Sample #:	L15080904-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW24FF-081715	**Prep Method:**	3015	**Prep Date:**	08/19/2015 08:35
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	08/24/2015 12:17
Workgroup #:	WG535910	**Analyst:**	BKT	**Run Date:**	08/24/2015 14:32
Collect Date:	08/17/2015 09:55	**Dilution:**	2	**File ID:**	NI.082415.143203
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0351		0.00800	0.00400	0.00200

Certificate of Analysis

Sample #:	L15080904-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW23FF-081715	**Prep Method:**	3015	**Prep Date:**	08/19/2015 08:35
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	08/23/2015 15:28
Workgroup #:	WG535910	**Analyst:**	BKT	**Run Date:**	08/23/2015 17:17
Collect Date:	08/17/2015 11:20	**Dilution:**	10	**File ID:**	NI.082315.171742
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0623		0.0400	0.0200	0.0100

Certificate of Analysis

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15080904-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW08FF-081715	**Prep Method:**	3015	**Prep Date:**	08/19/2015 08:35
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	08/23/2015 15:28
Workgroup #:	WG535910	**Analyst:**	BKT	**Run Date:**	08/23/2015 17:20
Collect Date:	08/17/2015 14:50	**Dilution:**	10	**File ID:**	NI.082315.172054
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0444		0.0400	0.0200	0.0100

2.3.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer NexION 300X

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	100
Vi = Initial volume	40
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/L)	0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	200
Vi = Initial volume	0.5
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/kg)	40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	40
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	50

50 ug/kg = 0.050 mg/kg

Perkin Elmer NexION ICP/MS

STANDARDS KEY

QC Std 1 - ICV
QC Std 2 - ICB
QC Std 3 - LLICV
QC Std 4 - ICSA
QC Std 5 - ICSAB
QC Std 6 - CCV
QC Std 7 - CCB
QC Std 8 - LLCCV

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.00005	0.05	0.1
Sb	10	0	0.00005	0.05	0.1
As	10	0	0.00005	0.05	0.1
Ba	10	0	0.00005	0.05	0.1
Be	10	0	0.00005	0.05	0.1
Ca	1000	0	0.005	5	10
Cd	10	0	0.0005	0.05	0.1
Cr	10	0	0.0005	0.05	0.1
Co	10	0	0.0005	0.05	0.1
Cu	10	0	0.0005	0.05	0.1
Fe	1000	0	0.005	5	10
Pb	10	0	0.00005	0.05	0.1
Mg	1000	0	0.005	5	10
Mn	10	0	0.00005	0.05	0.1
Ni	10	0	0.00005	0.05	0.1
K	1000	0	0.005	5	10
Se	10	0	0.00005	0.05	0.1
Ag	10	0	0.00005	0.05	0.1
Na	1000	0	0.005	5	10
Tl	10	0	0.00005	0.05	0.1
V	10	0	0.00005	0.05	0.1
U	1000	0	0.00005	0.05	0.1
Zn	10	0	0.00005	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG535577
Analyst: VC
Spike Analyst: VC
Run Date: 08/19/2015 08:35
Method: 3015
Balance: BAL016
Instrument: MW-3
Instrument Start: 08/19/2015 08:43

SOP: ME407 Revison 17
Spike Solution: STD68313
Spike Witness: ERP
HNO3 Lot #: COA18384
MS Filters- fisher-Lot#r RGT32947
40 & 50 ML. DIGESTION TU COA18222

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG535577-02	BLANK	1	20 mL	50 mL	181.479 g	181.468 g		
2	WG535577-03	LCS	1	20 mL	50 mL	182.475 g	182.471 g	.25 mL	
3	L15080826-01	SAMP	2	20 mL	50 mL	181.634 g	181.613 g		08/21/15
4	L15080828-01	SAMP	2	20 mL	50 mL	183.578 g	183.564 g		08/24/15
5	L15080854-01	SAMP	2	20 mL	50 mL	183.148 g	183.105 g		08/24/15
6	L15080854-02	SAMP	2	20 mL	50 mL	184.235 g	184.213 g		08/24/15
7	L15080854-03	SAMP	2	20 mL	50 mL	182.894 g	182.874 g		08/24/15
8	L15080854-04	SAMP	2	20 mL	50 mL	182 g	181.991 g		08/24/15
9	L15080858-01	SAMP	2	20 mL	50 mL	181.975 g	181.933 g		08/24/15
10	L15080904-02	SAMP	1	20 mL	50 mL	179.33 g	179.284 g		08/28/15
11	L15080904-04	SAMP	1	20 mL	50 mL	180.321 g	180.295 g		08/28/15
12	L15080904-06	SAMP	1	20 mL	50 mL	181.996 g	181.978 g		08/28/15
13	L15080904-08	SAMP	1	20 mL	50 mL	182.031 g	182.016 g		08/28/15
14	WG535577-01	REF	2	20 mL	50 mL	182.342 g	182.319 g		
15	L15080906-01	SAMP	2	20 mL	50 mL	182.342 g	182.319 g		08/20/15
16	L15080921-01	SAMP	2	20 mL	50 mL	180.633 g	180.621 g		08/25/15
17	L15080922-01	SAMP	2	20 mL	50 mL	182.034 g	182.017 g		08/25/15
18	L15080946-01	SAMP	2	20 mL	50 mL	182.992 g	182.958 g		08/25/15
19	L15080991-01	SAMP	1	20 mL	50 mL	181.688 g	181.659 g		08/21/15
20	L15080991-02	SAMP	1	20 mL	50 mL	181.681 g	181.673 g		08/21/15
21	WG535577-04	DUP	1	20 mL	50 mL	181.578 g	181.556 g		
22	WG535577-05	MS	1	20 mL	50 mL	181.592 g	181.516 g	.25 mL	
23	WG535577-06	MSD	1	20 mL	50 mL	181.496 g	181.49 g	.25 mL	

L15080828-01	ph adj
L15080854-01	ph adj
L15080854-02	ph adj
L15080858-01	FILTERED DIGESTATE
L15080922-01	FILTERED DIGESTATE
L15080946-01	FILTERED DIGESTATE

Analyst: Vicki Collins

Reviewer: Erin Potter

MW_DIG - Modified 09/30/2009
PDF ID: 4340848
Report generated: 08/19/2015 12:56

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 082015B.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD71328 ICV Std: STD71597 Post Spike: STD69341
ICSA: STD71856 ICSAB: STD71214 Int. Std: RGT31676
CCV: STD71329 LLCCV: STD71773 Tuning Sol : STD71213
Stannous : Hydroxylamine :

Workgroups: 535239,535241,535910,534581,535080,535625,535945,535620

Comments: Due to high levels of analytes in sequences 195 through 198, rinses followed to prevent carryover.
Additional Workgroup:535626

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.082015.113311	Blank	Blank		1		08/20/15 11:33
2	NI.082015.113623	WG535854-01	Calibration Point		1		08/20/15 11:36
3	NI.082015.113935	WG535854-02	Calibration Point		1		08/20/15 11:39
4	NI.082015.114246	WG535854-03	Calibration Point		1		08/20/15 11:42
5	NI.082015.114558	WG535854-04	Calibration Point		1		08/20/15 11:45
6	NI.082015.114911	WG535854-05	Initial Calibration Verification		1		08/20/15 11:49
7	NI.082015.115228	WG535854-06	Initial Calib Blank		1		08/20/15 11:52
8	NI.082015.115541	WG535854-07	Interference Check		1		08/20/15 11:55
9	NI.082015.115853	WG535854-08	Interference Check		1		08/20/15 11:58
10	NI.082015.120205	WG535854-09	CCV		1		08/20/15 12:02
11	NI.082015.120517	WG535854-10	CCB		1		08/20/15 12:05
12	NI.082015.120828	WG535058-03	Method/Prep Blank	20/50	1		08/20/15 12:08
13	NI.082015.121139	WG535058-04	Laboratory Control S	20/50	1		08/20/15 12:11
14	NI.082015.121451	WG534899-01	Fluid Blank 2		1		08/20/15 12:14
15	NI.082015.121802	WG535058-01	Reference Sample		1	L15080324-07	08/20/15 12:18
16	NI.082015.122113	WG535058-05	Matrix Spike	20/50	1	L15080324-07	08/20/15 12:21
17	NI.082015.122425	WG535058-06	Matrix Spike Duplica	20/50	1	L15080324-07	08/20/15 12:24
18	NI.082015.122736	L15080551-02	60500-SSP0007-SSP0007	20/50	1		08/20/15 12:27
19	NI.082015.123046	L15080551-04	60500-SSP0004-SPLP002	20/50	1		08/20/15 12:30
20	NI.082015.123358	WG535239-01	Post Digestion Spike		1	L15080551-04	08/20/15 12:33
21	NI.082015.123709	WG535239-02	Serial Dilution		5	L15080551-04	08/20/15 12:37
22	NI.082015.124023	WG535854-11	CCV		1		08/20/15 12:40
23	NI.082015.124334	WG535854-12	CCB		1		08/20/15 12:43
24	NI.082015.124936	L15080551-02	60500-SSP0007-SSP0007	20/50	10		08/20/15 12:49
25	NI.082015.125247	WG535239-01	Post Digestion Spike		5	L15080551-04	08/20/15 12:52
26	NI.082015.125558	WG535239-02	Serial Dilution		25	L15080551-04	08/20/15 12:55
27	NI.082015.125911	WG535854-13	CCV		1		08/20/15 12:59
28	NI.082015.130223	WG535854-14	CCB		1		08/20/15 13:02
29	NI.082015.130610	WG535854-15	Low Level Continuing Calibra		1		08/20/15 13:06
30	NI.082015.131120	WG535190-02	Method/Prep Blank	20/50	1		08/20/15 13:11
31	NI.082015.131432	WG535190-03	Laboratory Control S	20/50	1		08/20/15 13:14
32	NI.082015.131743	L15080721-01	CLAINF11-20150813		10		08/20/15 13:17
33	NI.082015.132055	L15080721-02	CLAEFF11-20150813		10		08/20/15 13:20
34	NI.082015.132406	L15080721-03	B8000INF07-20150813		10		08/20/15 13:24

Page: 1 Approved: August 21, 2015

Maren Berry

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 082015B.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD71328 ICV Std: STD71597 Post Spike: STD69341
ICSA: STD71856 ICSAB: STD71214 Int. Std: RGT31676
CCV: STD71329 LLCCV: STD71773 Tuning Sol : STD71213
Stannous : Hydroxylamine :

Workgroups: 535239,535241,535910,534581,535080,535625,535945,535620

Comments: Due to high levels of analytes in sequences 195 through 198, rinses followed to prevent carryover.
Additional Workgroup:535626

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.082015.132718	L15080721-04	B8000EFF07-20150813		10		08/20/15 13:27
36	NI.082015.133029	L15080626-01	V5H0315-01	20/50	1		08/20/15 13:30
37	NI.082015.133341	WG535241-01	Post Digestion Spike		1	L15080626-01	08/20/15 13:33
38	NI.082015.133652	WG535241-02	Serial Dilution		5	L15080626-01	08/20/15 13:36
39	NI.082015.134005	WG535854-16	CCV		1		08/20/15 13:40
40	NI.082015.134317	WG535854-17	CCB		1		08/20/15 13:43
41	NI.082015.134630	WG535241-02	Serial Dilution		25	L15080626-01	08/20/15 13:46
42	NI.082015.134942	WG535190-01	Reference Sample		1	L15080738-04	08/20/15 13:49
43	NI.082015.135253	WG535190-04	Duplicate	20/50	1	L15080738-04	08/20/15 13:52
44	NI.082015.135604	WG535190-05	Matrix Spike	20/50	1	L15080738-04	08/20/15 13:56
45	NI.082015.135915	WG535190-06	Matrix Spike Duplica	20/50	1	L15080738-04	08/20/15 13:59
46	NI.082015.140228	WG535854-18	CCV		1		08/20/15 14:02
47	NI.082015.140540	WG535854-19	CCB		1		08/20/15 14:05
48	NI.082015.140853	WG535854-20	Low Level Continuing Calibra		1		08/20/15 14:08
49	NI.082015.141636	WG535854-21	CCV		1		08/20/15 14:16
50	NI.082015.142140	WG535854-22	CCB		1		08/20/15 14:21
51	NI.082015.142729	WG535854-23	Low Level Continuing Calibra		1		08/20/15 14:27
52	NI.082015.143727	WG535190-02	Method/Prep Blank	20/50	1		08/20/15 14:37
53	NI.082015.144038	WG535190-03	Laboratory Control S	20/50	1		08/20/15 14:40
54	NI.082015.144350	WG535190-01	Reference Sample		10	L15080738-04	08/20/15 14:43
55	NI.082015.144701	WG535190-04	Duplicate	20/50	10	L15080738-04	08/20/15 14:47
56	NI.082015.145013	WG535190-05	Matrix Spike	20/50	10	L15080738-04	08/20/15 14:50
57	NI.082015.145324	WG535190-06	Matrix Spike Duplica	20/50	10	L15080738-04	08/20/15 14:53
58	NI.082015.145636	L15080731-01	V5H0339-01	20/50	1		08/20/15 14:56
59	NI.082015.145947	WG535241-03	Post Digestion Spike		1	L15080731-01	08/20/15 14:59
60	NI.082015.150259	WG535241-04	Serial Dilution		5	L15080731-01	08/20/15 15:02
61	NI.082015.150611	WG535241-04	Serial Dilution		25	L15080731-01	08/20/15 15:06
62	NI.082015.150923	WG535854-24	CCV		1		08/20/15 15:09
63	NI.082015.151235	WG535854-25	CCB		1		08/20/15 15:12
64	NI.082015.151547	L15080721-01	CLAINF11-20150813	20/50	50		08/20/15 15:15
65	NI.082015.151859	L15080721-02	CLAEFF11-20150813	20/50	50		08/20/15 15:18
66	NI.082015.152210	L15080721-03	B8000INF07-20150813	20/50	100		08/20/15 15:22
67	NI.082015.152522	L15080721-04	B8000EFF07-20150813	20/50	100		08/20/15 15:25
68	NI.082015.152835	WG535854-26	CCV		1		08/20/15 15:28

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Instrument Run Log

Instrument: ICP-MS2 Dataset: 082015B.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD71328 ICV Std: STD71597 Post Spike: STD69341
ICSA: STD71856 ICSAB: STD71214 Int. Std: RGT31676
CCV: STD71329 LLCCV: STD71773 Tuning Sol : STD71213
Stannous : Hydroxylamine :

Workgroups: 535239,535241,535910,534581,535080,535625,535945,535620

Comments: Due to high levels of analytes in sequences 195 through 198, rinses followed to prevent carryover.
Additional Workgroup:535626

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.082015.153146	WG535854-27	CCB		1		08/20/15 15:31
70	NI.082015.153500	WG535854-28	Low Level Continuing Calibra		1		08/20/15 15:35
71	NI.082015.160957	WG535577-02	Method/Prep Blank	20/50	1		08/20/15 16:09
72	NI.082015.161308	WG535577-03	Laboratory Control S	20/50	1		08/20/15 16:13
73	NI.082015.161620	L15080991-01	CLAINF12-20150817-B	20/50	50		08/20/15 16:16
74	NI.082015.161931	L15080991-02	CLAEFF12-20150818-B	20/50	50		08/20/15 16:19
75	NI.082015.162243	WG535577-01	Reference Sample		1	L15080906-01	08/20/15 16:22
76	NI.082015.162554	WG535577-05	Matrix Spike	20/50	1	L15080906-01	08/20/15 16:25
77	NI.082015.162906	WG535577-06	Matrix Spike Duplica	20/50	1	L15080906-01	08/20/15 16:29
78	NI.082015.163218	WG535910-01	Post Digestion Spike		1	L15080906-01	08/20/15 16:32
79	NI.082015.163529	WG535910-02	Serial Dilution		5	L15080906-01	08/20/15 16:35
80	NI.082015.163841	WG535910-02	Serial Dilution		25	L15080906-01	08/20/15 16:38
81	NI.082015.164154	WG535854-29	CCV		1		08/20/15 16:41
82	NI.082015.164505	WG535854-30	CCB		1		08/20/15 16:45
83	NI.082015.164818	WG535854-31	Low Level Continuing Calibra		1		08/20/15 16:48
84	NI.082015.165916	WG534528-03	Method/Prep Blank	20/50	1		08/20/15 16:59
85	NI.082015.170228	WG534528-04	Laboratory Control S	20/50	1		08/20/15 17:02
86	NI.082015.170539	WG534528-01	Reference Sample		5	L15080358-03	08/20/15 17:05
87	NI.082015.170851	WG534528-05	Duplicate	20/50	5	L15080358-03	08/20/15 17:08
88	NI.082015.171202	WG534528-06	Matrix Spike	20/50	5	L15080358-03	08/20/15 17:12
89	NI.082015.171514	L15080408-01	5080319-01	20/50	1		08/20/15 17:15
90	NI.082015.171826	WG534581-03	Post Digestion Spike		1	L15080408-01	08/20/15 17:18
91	NI.082015.172137	WG534581-04	Serial Dilution		5	L15080408-01	08/20/15 17:21
92	NI.082015.172449	WG534581-04	Serial Dilution		25	L15080408-01	08/20/15 17:24
93	NI.082015.172802	WG535854-32	CCV		1		08/20/15 17:28
94	NI.082015.173113	WG535854-33	CCB		1		08/20/15 17:31
95	NI.082015.174413	WG534994-02	Method/Prep Blank	.25/100	1		08/20/15 17:44
96	NI.082015.174725	WG534994-03	Laboratory Control S	.25/100	1		08/20/15 17:47
97	NI.082015.175037	WG534994-01	Reference Sample		1	L15080282-27	08/20/15 17:50
98	NI.082015.175348	WG534994-04	Matrix Spike	.257/100	1	L15080282-27	08/20/15 17:53
99	NI.082015.175700	WG534994-05	Matrix Spike Duplica	.257/100	1	L15080282-27	08/20/15 17:57
100	NI.082015.180011	L15080636-01	V5H0337-01	.256/100	1		08/20/15 18:00
101	NI.082015.180323	L15080597-01	V5H0247-01	.254/100	1		08/20/15 18:03
102	NI.082015.180635	WG535080-01	Post Digestion Spike		1	L15080597-01	08/20/15 18:06

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Instrument Run Log

Instrument: ICP-MS2 Dataset: 082015B.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD71328 ICV Std: STD71597 Post Spike: STD69341
ICSA: STD71856 ICSAB: STD71214 Int. Std: RGT31676
CCV: STD71329 LLCCV: STD71773 Tuning Sol : STD71213
Stannous : Hydroxylamine :

Workgroups: 535239,535241,535910,534581,535080,535625,535945,535620

Comments: Due to high levels of analytes in sequences 195 through 198, rinses followed to prevent carryover.
Additional Workgroup:535626

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.082015.180946	WG535080-02	Serial Dilution		5	L15080597-01	08/20/15 18:09
104	NI.082015.181258	WG535080-02	Serial Dilution	.254/100	25	L15080597-01	08/20/15 18:12
105	NI.082015.181611	WG535854-34	CCV		1		08/20/15 18:16
106	NI.082015.181923	WG535854-35	CCB		1		08/20/15 18:19
107	NI.082015.182235	L15080282-20	D-2 0-2'	.257/100	1		08/20/15 18:22
108	NI.082015.182547	L15080282-21	B-9 0-2'	.25/100	1		08/20/15 18:25
109	NI.082015.182858	L15080282-22	B-9 4-6'	.251/100	1		08/20/15 18:28
110	NI.082015.183209	L15080282-23	SS-1 0-2'	.254/100	1		08/20/15 18:32
111	NI.082015.183521	L15080282-24	SS-2 0-2'	.254/100	1		08/20/15 18:35
112	NI.082015.183832	L15080282-25	SSD-1 0-2'	.257/100	1		08/20/15 18:38
113	NI.082015.184144	L15080282-26	SS-3 0-2'	.251/100	1		08/20/15 18:41
114	NI.082015.184457	WG535854-36	CCV		1		08/20/15 18:44
115	NI.082015.184808	WG535854-37	CCB		1		08/20/15 18:48
116	NI.082015.185606	L15080282-26	SS-3 0-2'	.251/100	100		08/20/15 18:56
117	NI.082015.185918	WG535080-01	Post Digestion Spike		5	L15080597-01	08/20/15 18:59
118	NI.082015.190229	WG535080-01	Post Digestion Spike		25	L15080597-01	08/20/15 19:02
119	NI.082015.190540	L15080636-01	V5H0337-01	.256/100	5		08/20/15 19:05
120	NI.082015.190852	L15080636-01	V5H0337-01	.256/100	25		08/20/15 19:08
121	NI.082015.191204	WG535854-38	CCV		1		08/20/15 19:12
122	NI.082015.191516	WG535854-39	CCB		1		08/20/15 19:15
123	NI.082015.193144	WG535061-02	Method/Prep Blank	40/50	50		08/20/15 19:31
124	NI.082015.193455	WG535061-03	Laboratory Control S	40/50	50		08/20/15 19:34
125	NI.082015.193807	WG535061-01	Reference Sample		50	L15080513-02	08/20/15 19:38
126	NI.082015.194118	WG535061-04	Matrix Spike	5/50	50	L15080513-02	08/20/15 19:41
127	NI.082015.194430	WG535061-05	Matrix Spike Duplica	5/50	50	L15080513-02	08/20/15 19:44
128	NI.082015.194742	L15080531-01	KAISER 9 BAGS	5/50	50		08/20/15 19:47
129	NI.082015.195053	L15080532-01	AWV 17 BAGS	5/50	50		08/20/15 19:50
130	NI.082015.195405	WG535625-01	Post Digestion Spike		50	L15080532-01	08/20/15 19:54
131	NI.082015.195716	WG535625-02	Serial Dilution		250	L15080532-01	08/20/15 19:57
132	NI.082015.200030	WG535854-40	CCV		1		08/20/15 20:00
133	NI.082015.200341	WG535854-41	CCB		1		08/20/15 20:03
134	NI.082015.200654	WG535420-02	Method/Prep Blank	40/50	50		08/20/15 20:06
135	NI.082015.201006	WG535420-03	Laboratory Control S	40/50	50		08/20/15 20:10
136	NI.082015.201318	WG535420-01	Reference Sample		50	L15080677-01	08/20/15 20:13

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Instrument Run Log

Instrument: ICP-MS2 Dataset: 082015B.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD71328 ICV Std: STD71597 Post Spike: STD69341
ICSA: STD71856 ICSAB: STD71214 Int. Std: RGT31676
CCV: STD71329 LLCCV: STD71773 Tuning Sol : STD71213
Stannous : Hydroxylamine :

Workgroups: 535239,535241,535910,534581,535080,535625,535945,535620

Comments: Due to high levels of analytes in sequences 195 through 198, rinses followed to prevent carryover.
Additional Workgroup:535626

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	NI.082015.201629	WG535420-04	Matrix Spike	5/50	50	L15080677-01	08/20/15 20:16
138	NI.082015.201941	WG535420-05	Matrix Spike Duplica	5/50	50	L15080677-01	08/20/15 20:19
139	NI.082015.202253	L15080677-02	FRN FURNACE BAGHOUSE	5/50	50		08/20/15 20:22
140	NI.082015.202605	L15080677-03	FRN MILL FINES (SCREW 1	5/50	50		08/20/15 20:26
141	NI.082015.202916	L15080677-04	FRN MILL FINES (SCREW 8	5/50	50		08/20/15 20:29
142	NI.082015.203228	WG535945-01	Post Digestion Spike		50	L15080677-04	08/20/15 20:32
143	NI.082015.203539	WG535945-02	Serial Dilution		250	L15080677-04	08/20/15 20:35
144	NI.082015.203852	WG535854-42	CCV		1		08/20/15 20:38
145	NI.082015.204204	WG535854-43	CCB		1		08/20/15 20:42
146	NI.082015.204517	WG535204-02	Method/Prep Blank	20/50	1		08/20/15 20:45
147	NI.082015.204836	WG535204-03	Laboratory Control S	20/50	1		08/20/15 20:48
148	NI.082015.205550	WG535204-01	Reference Sample		1	L15080632-20	08/20/15 20:55
149	NI.082015.205901	WG535204-04	Matrix Spike	20/50	1	L15080632-20	08/20/15 20:59
150	NI.082015.210213	WG535204-05	Matrix Spike Duplica	20/50	1	L15080632-20	08/20/15 21:02
151	NI.082015.210549	L15080632-01	5080765-01	20/50	1		08/20/15 21:05
152	NI.082015.210900	L15080632-02	5080765-02	20/50	1		08/20/15 21:09
153	NI.082015.211212	WG535620-01	Post Digestion Spike		1	L15080632-02	08/20/15 21:12
154	NI.082015.211523	WG535620-02	Serial Dilution		5	L15080632-02	08/20/15 21:15
155	NI.082015.211835	WG535620-02	Serial Dilution		25	L15080632-02	08/20/15 21:18
156	NI.082015.212148	WG535854-44	CCV		1		08/20/15 21:21
157	NI.082015.212459	WG535854-45	CCB		1		08/20/15 21:24
158	NI.082015.212812	L15080632-03	5080765-03	20/50	1		08/20/15 21:28
159	NI.082015.213124	L15080632-04	5080765-04	20/50	1		08/20/15 21:31
160	NI.082015.213435	L15080632-05	5080765-05	20/50	1		08/20/15 21:34
161	NI.082015.213746	L15080632-06	5080765-06	20/50	1		08/20/15 21:37
162	NI.082015.214058	L15080632-07	5080765-07	20/50	1		08/20/15 21:40
163	NI.082015.214409	L15080632-08	5080765-08	20/50	1		08/20/15 21:44
164	NI.082015.214721	L15080632-09	5080765-09	20/50	1		08/20/15 21:47
165	NI.082015.215033	L15080632-10	5080765-10	20/50	1		08/20/15 21:50
166	NI.082015.215343	L15080632-11	5080765-11	20/50	1		08/20/15 21:53
167	NI.082015.215655	L15080632-12	5080765-12	20/50	1		08/20/15 21:56
168	NI.082015.220008	WG535854-46	CCV		1		08/20/15 22:00
169	NI.082015.220319	WG535854-47	CCB		1		08/20/15 22:03
170	NI.082015.220632	L15080632-13	5080765-13	20/50	1		08/20/15 22:06

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Instrument Run Log

Instrument: ICP-MS2 Dataset: 082015B.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD71328 ICV Std: STD71597 Post Spike: STD69341
ICSA: STD71856 ICSAB: STD71214 Int. Std: RGT31676
CCV: STD71329 LLCCV: STD71773 Tuning Sol : STD71213
Stannous : Hydroxylamine :

Workgroups: 535239,535241,535910,534581,535080,535625,535945,535620

Comments: Due to high levels of analytes in sequences 195 through 198, rinses followed to prevent carryover.
Additional Workgroup:535626

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
171	NI.082015.220942	L15080632-14	5080765-14	20/50	1		08/20/15 22:09
172	NI.082015.221254	L15080632-15	5080765-15	20/50	1		08/20/15 22:12
173	NI.082015.221606	L15080632-16	5080765-16	20/50	1		08/20/15 22:16
174	NI.082015.221917	L15080632-17	5080765-17	20/50	1		08/20/15 22:19
175	NI.082015.222229	L15080632-18	5080765-18	20/50	1		08/20/15 22:22
176	NI.082015.222540	L15080632-19	5080765-19	20/50	1		08/20/15 22:25
177	NI.082015.222853	WG535854-48	CCV		1		08/20/15 22:28
178	NI.082015.223205	WG535854-49	CCB		1		08/20/15 22:32
179	NI.082015.223518	WG535367-02	Method/Prep Blank	.25/100	1		08/20/15 22:35
180	NI.082015.223829	WG535367-03	Laboratory Control S	.25/100	1		08/20/15 22:38
181	NI.082015.224141	WG535367-01	Reference Sample		5	L15080679-14	08/20/15 22:41
182	NI.082015.224452	WG535367-04	Matrix Spike	.254/100	5	L15080679-14	08/20/15 22:44
183	NI.082015.224804	WG535367-05	Matrix Spike Duplica	.253/100	5	L15080679-14	08/20/15 22:48
184	NI.082015.225116	L15080847-01	081415 RBT	.254/100	1		08/20/15 22:51
185	NI.082015.225427	WG535626-01	Post Digestion Spike		1	L15080847-01	08/20/15 22:54
186	NI.082015.225739	WG535626-02	Serial Dilution		5	L15080847-01	08/20/15 22:57
187	NI.082015.230051	WG535626-02	Serial Dilution		25	L15080847-01	08/20/15 23:00
188	NI.082015.230404	WG535854-50	CCV		1		08/20/15 23:04
189	NI.082015.230715	WG535854-51	CCB		1		08/20/15 23:07
190	NI.082015.231028	L15080597-01	V5H0247-01	.254/100	25		08/20/15 23:10
191	NI.082015.231339	WG535080-01	Post Digestion Spike		25	L15080597-01	08/20/15 23:13
192	NI.082015.231651	L15080636-01	V5H0337-01	.256/100	25		08/20/15 23:16
193	NI.082015.232004	WG535854-52	CCV		1		08/20/15 23:20
194	NI.082015.232316	WG535854-53	CCB		1		08/20/15 23:23
195	NI.082015.232629	L15080721-01	CLAINF11-20150813	20/50	1		08/20/15 23:26
196	NI.082015.232940	L15080721-02	CLAEFF11-20150813	20/50	1		08/20/15 23:29
197	NI.082015.233340	L15080721-03	B8000INF07-20150813	20/50	1		08/20/15 23:33
198	NI.082015.233651	L15080721-04	B8000EFF07-20150813	20/50	1		08/20/15 23:36
199	NI.082015.234003	RINSE	RINSE		1		08/20/15 23:40
200	NI.082015.234314	RINSE	RINSE		1		08/20/15 23:43
201	NI.082015.234626	RINSE	RINSE		1		08/20/15 23:46
202	NI.082015.234938	RINSE	RINSE		1		08/20/15 23:49
203	NI.082015.235252	WG535854-54	CCV		1		08/20/15 23:52
204	NI.082015.235603	WG535854-55	CCB		1		08/20/15 23:56

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Instrument Run Log

Instrument: ICP-MS2 Dataset: 082015B.REP

Analyst1: BKT Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD71328 ICV Std: STD71597 Post Spike: STD69341

ICSA: STD71856 ICSAB: STD71214 Int. Std: RGT31676

CCV: STD71329 LLCCV: STD71773 Tuning Sol : STD71213

Stannous : Hydroxylamine :

Workgroups: 535239,535241,535910,534581,535080,535625,535945,535620

Comments: Due to high levels of analytes in sequences 195 through 198, rinses followed to prevent carryover.
Additional Workgroup:535626

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
205	NI.082015.235916	WG535854-56	Low Level Continuing Calibra		1		08/20/15 23:59

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Instrument Run Log

Instrument: ICP-MS2 Dataset: 082315A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD71328 ICV Std: STD71597 Post Spike: STD69341
ICSA: STD71856 ICSAB: STD71214 Int. Std: RGT31676
CCV: STD71329 LLCCV: STD71773 Tuning Sol : STD71213
Stannous : Hydroxylamine :

Workgroups: 535910,536146,536147,536148,536149

Comments: Rinses were analyzed at sequences 17 and 18 following samples suspected to have high levels of analytes.

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.082315.151539	Blank	Blank		1		08/23/15 15:15
2	NI.082315.151851	WG536152-01	Calibration Point		1		08/23/15 15:18
3	NI.082315.152202	WG536152-02	Calibration Point		1		08/23/15 15:22
4	NI.082315.152514	WG536152-03	Calibration Point		1		08/23/15 15:25
5	NI.082315.152826	WG536152-04	Calibration Point		1		08/23/15 15:28
6	NI.082315.153139	WG536152-05	Initial Calibration Verification		1		08/23/15 15:31
7	NI.082315.153452	WG536152-06	Initial Calib Blank		1		08/23/15 15:34
8	NI.082315.153805	WG536152-07	LLICV		1		08/23/15 15:38
9	NI.082315.154116	WG536152-08	Interference Check		1		08/23/15 15:41
10	NI.082315.154449	WG536152-09	Low Level Initial Calibration V		1		08/23/15 15:44
11	NI.082315.155135	WG536152-10	Interference Check		1		08/23/15 15:51
12	NI.082315.155451	WG536152-11	Interference Check		1		08/23/15 15:54
13	NI.082315.155809	WG536152-12	CCV		1		08/23/15 15:58
14	NI.082315.160225	WG536152-13	CCB		1		08/23/15 16:02
15	NI.082315.160701	L15080991-01	CLAINF12-20150817-B	20/50	1		08/23/15 16:07
16	NI.082315.161013	L15080991-02	CLAEFF12-20150818-B	20/50	1		08/23/15 16:10
17	NI.082315.161324	RINSE	RINSE		1		08/23/15 16:13
18	NI.082315.161635	RINSE	RINSE		1		08/23/15 16:16
19	NI.082315.161948	WG536152-14	CCV		1		08/23/15 16:19
20	NI.082315.162300	WG536152-15	CCB		1		08/23/15 16:23
21	NI.082315.162613	WG536152-16	Low Level Continuing Calibra		1		08/23/15 16:26
22	NI.082315.163924	WG535577-04	Duplicate	20/50	1	L15080906-01	08/23/15 16:39
23	NI.082315.164235	L15080826-01	J5H0162-01	20/50	1		08/23/15 16:42
24	NI.082315.164547	L15080828-01	V5H0346-01	20/50	1		08/23/15 16:45
25	NI.082315.164858	L15080854-01	5080880-01	20/50	1		08/23/15 16:48
26	NI.082315.165210	L15080854-02	5080880-02	20/50	1		08/23/15 16:52
27	NI.082315.165521	L15080854-03	5080880-03	20/50	1		08/23/15 16:55
28	NI.082315.165832	L15080854-04	5080880-04	20/50	1		08/23/15 16:58
29	NI.082315.170144	L15080858-01	V5H0290-02	20/50	1		08/23/15 17:01
30	NI.082315.170455	L15080904-02	50WW18FF-081715	20/50	10		08/23/15 17:04
31	NI.082315.170806	L15080904-04	50WW24FF-081715	20/50	10		08/23/15 17:08
32	NI.082315.171119	WG536152-17	CCV		1		08/23/15 17:11
33	NI.082315.171430	WG536152-18	CCB		1		08/23/15 17:14
34	NI.082315.171742	L15080904-06	50WW23FF-081715	20/50	10		08/23/15 17:17

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Marcia Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 082315A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD71328 ICV Std: STD71597 Post Spike: STD69341
ICSA: STD71856 ICSAB: STD71214 Int. Std: RGT31676
CCV: STD71329 LLCCV: STD71773 Tuning Sol : STD71213
Stannous : Hydroxylamine :

Workgroups: 535910,536146,536147,536148,536149

Comments: Rinses were analyzed at sequences 17 and 18 following samples suspected to have high levels of analytes.

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.082315.172054	L15080904-08	50WW08FF-081715	20/50	10		08/23/15 17:20
36	NI.082315.172405	L15080921-01	POLICE PIT	20/50	1		08/23/15 17:24
37	NI.082315.172717	L15080922-01	004	20/50	1		08/23/15 17:27
38	NI.082315.173028	L15080946-01	V5H0310-02	20/50	1		08/23/15 17:30
39	NI.082315.173824	L15080946-01	V5H0310-02	20/50	5		08/23/15 17:38
40	NI.082315.174135	L15080858-01	V5H0290-02	20/50	10		08/23/15 17:41
41	NI.082315.174448	WG536152-19	CCV		1		08/23/15 17:44
42	NI.082315.174759	WG536152-20	CCB		1		08/23/15 17:47
43	NI.082315.175112	WG536152-21	Low Level Continuing Calibra		1		08/23/15 17:51
44	NI.082315.180713	WG535816-02	Method/Prep Blank	20/50	1		08/23/15 18:07
45	NI.082315.181024	WG535816-03	Laboratory Control S	20/50	1		08/23/15 18:10
46	NI.082315.181336	WG535816-01	Reference Sample		1	L15081026-03	08/23/15 18:13
47	NI.082315.181647	WG535816-05	Duplicate	20/50	1	L15081026-03	08/23/15 18:16
48	NI.082315.181959	WG535816-06	Matrix Spike	20/50	1	L15081026-03	08/23/15 18:19
49	NI.082315.182311	WG535816-07	Matrix Spike Duplica	20/50	1	L15081026-03	08/23/15 18:23
50	NI.082315.182622	L15080997-02	60500-SSP0008-SSP0008	20/50	1		08/23/15 18:26
51	NI.082315.182934	WG536146-01	Post Digestion Spike		1	L15080997-02	08/23/15 18:29
52	NI.082315.183245	WG536146-02	Serial Dilution		5	L15080997-02	08/23/15 18:32
53	NI.082315.183557	WG536146-02	Serial Dilution		25	L15080997-02	08/23/15 18:35
54	NI.082315.183910	WG536152-22	CCV		1		08/23/15 18:39
55	NI.082315.184221	WG536152-23	CCB		1		08/23/15 18:42
56	NI.082315.184533	L15081055-06	OUTFALL 203 GRAB	20/50	1000		08/23/15 18:45
57	NI.082315.184845	L15080937-01	V5H0424-01	20/50	1		08/23/15 18:48
58	NI.082315.185156	L15080938-01	V5H0423-01	20/50	1		08/23/15 18:51
59	NI.082315.185508	L15080939-01	V5H0426-01	20/50	1		08/23/15 18:55
60	NI.082315.185819	L15080940-01	V5H0414-01	20/50	1		08/23/15 18:58
61	NI.082315.190130	L15080940-01	V5H0414-01	20/50	10		08/23/15 19:01
62	NI.082315.190442	L15080941-01	V5H0417-01	20/50	1		08/23/15 19:04
63	NI.082315.190753	L15080942-01	5080569-01	20/50	1		08/23/15 19:07
64	NI.082315.191105	L15080992-02	50WW22FF-081815		10		08/23/15 19:11
65	NI.082315.191417	L15080992-04	50WW25FF-081815		10		08/23/15 19:14
66	NI.082315.191729	WG536152-24	CCV		1		08/23/15 19:17
67	NI.082315.192041	WG536152-25	CCB		1		08/23/15 19:20
68	NI.082315.192353	L15080992-06	50WW12FF-081815		10		08/23/15 19:23

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Maren Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 082315A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD71328 ICV Std: STD71597 Post Spike: STD69341
ICSA: STD71856 ICSAB: STD71214 Int. Std: RGT31676
CCV: STD71329 LLCCV: STD71773 Tuning Sol : STD71213
Stannous : Hydroxylamine :

Workgroups: 535910,536146,536147,536148,536149

Comments: Rinses were analyzed at sequences 17 and 18 following samples suspected to have high levels of analytes.

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.082315.192705	L15080992-08	50WW06FF-081815		10		08/23/15 19:27
70	NI.082315.193016	L15080992-10	50WW11FF-081815		10		08/23/15 19:30
71	NI.082315.193328	L15081019-13	LRA08	20/50	1		08/23/15 19:33
72	NI.082315.193639	L15081026-01	J5H0622-01	20/50	1		08/23/15 19:36
73	NI.082315.193951	L15081026-02	J5H0622-02	20/50	1		08/23/15 19:39
74	NI.082315.194302	WG535816-04	Filter Blank		1		08/23/15 19:43
75	NI.082315.194614	WG535761-01	Fluid Blank 2		1		08/23/15 19:46
76	NI.082315.194927	WG536152-26	CCV		1		08/23/15 19:49
77	NI.082315.195239	WG536152-27	CCB		1		08/23/15 19:52
78	NI.082315.195552	WG536152-28	Low Level Continuing Calibra		1		08/23/15 19:55
79	NI.082315.195904	WG535777-02	Method/Prep Blank	.25/100	1		08/23/15 19:59
80	NI.082315.200215	WG535777-03	Laboratory Control S	.25/100	1		08/23/15 20:02
81	NI.082315.200527	WG535777-01	Reference Sample		1	L15080965-02	08/23/15 20:05
82	NI.082315.200838	WG535777-04	Matrix Spike	.254/100	1	L15080965-02	08/23/15 20:08
83	NI.082315.201150	WG535777-05	Matrix Spike Duplica	.252/100	1	L15080965-02	08/23/15 20:11
84	NI.082315.201501	L15080896-01	SO_01	.251/100	1		08/23/15 20:15
85	NI.082315.201813	L15080896-02	SO_02	.255/100	1		08/23/15 20:18
86	NI.082315.202124	WG536147-01	Post Digestion Spike		1	L15080896-02	08/23/15 20:21
87	NI.082315.202435	WG536147-02	Serial Dilution		5	L15080896-02	08/23/15 20:24
88	NI.082315.202746	WG536147-02	Serial Dilution		25	L15080896-02	08/23/15 20:27
89	NI.082315.203059	WG536152-29	CCV		1		08/23/15 20:30
90	NI.082315.203411	WG536152-30	CCB		1		08/23/15 20:34
91	NI.082315.203724	L15080896-03	SO_03	.255/100	1		08/23/15 20:37
92	NI.082315.204035	L15080896-04	SO_04	.258/100	1		08/23/15 20:40
93	NI.082315.204346	L15080896-05	SO_05	.254/100	1		08/23/15 20:43
94	NI.082315.204657	L15080896-06	SO_06	.257/100	1		08/23/15 20:46
95	NI.082315.205009	L15080965-01	SO_07	.255/100	1		08/23/15 20:50
96	NI.082315.205323	WG536152-31	CCV		1		08/23/15 20:53
97	NI.082315.205634	WG536152-32	CCB		1		08/23/15 20:56
98	NI.082315.205948	WG536019-02	Method/Prep Blank	40/50	50		08/23/15 20:59
99	NI.082315.210300	WG536019-03	Laboratory Control S	40/50	50		08/23/15 21:03
100	NI.082315.210611	WG536019-01	Reference Sample		50	L15080999-01	08/23/15 21:06
101	NI.082315.210923	WG536019-04	Matrix Spike	5/50	50	L15080999-01	08/23/15 21:09
102	NI.082315.211234	WG536019-05	Matrix Spike Duplica	5/50	50	L15080999-01	08/23/15 21:12

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Maren Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 082315A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD71328 ICV Std: STD71597 Post Spike: STD69341
ICSA: STD71856 ICSAB: STD71214 Int. Std: RGT31676
CCV: STD71329 LLCCV: STD71773 Tuning Sol : STD71213
Stannous : Hydroxylamine :

Workgroups: 535910,536146,536147,536148,536149

Comments: Rinses were analyzed at sequences 17 and 18 following samples suspected to have high levels of analytes.

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.082315.211545	L15080852-01	AWV 19 BAGS	5/50	50		08/23/15 21:15
104	NI.082315.211857	WG536148-01	Post Digestion Spike		50	L15080852-01	08/23/15 21:18
105	NI.082315.212208	WG536148-02	Serial Dilution		250	L15080852-01	08/23/15 21:22
106	NI.082315.212521	WG536152-33	CCV		1		08/23/15 21:25
107	NI.082315.212833	WG536152-34	CCB		1		08/23/15 21:28
108	NI.082315.213146	WG535953-02	Method/Prep Blank	.25/100	1		08/23/15 21:31
109	NI.082315.213458	WG535953-03	Laboratory Control S	.25/100	1		08/23/15 21:34
110	NI.082315.213809	WG535953-01	Reference Sample		1	L15081000-26	08/23/15 21:38
111	NI.082315.214121	WG535953-04	Matrix Spike	.255/100	1	L15081000-26	08/23/15 21:41
112	NI.082315.214432	WG535953-05	Matrix Spike Duplica	.253/100	1	L15081000-26	08/23/15 21:44
113	NI.082315.214743	L15081000-02	5010	.257/100	1		08/23/15 21:47
114	NI.082315.215055	L15081000-04	5014	.258/100	1		08/23/15 21:50
115	NI.082315.215406	WG536149-01	Post Digestion Spike		1	L15081000-04	08/23/15 21:54
116	NI.082315.215718	WG536149-02	Serial Dilution		5	L15081000-04	08/23/15 21:57
117	NI.082315.220029	WG536149-02	Serial Dilution		25	L15081000-04	08/23/15 22:00
118	NI.082315.220342	WG536152-35	CCV		1		08/23/15 22:03
119	NI.082315.220654	WG536152-36	CCB		1		08/23/15 22:06
120	NI.082315.221006	L15081000-06	5015	.259/100	1		08/23/15 22:10
121	NI.082315.221318	L15081000-08	5016	.254/100	1		08/23/15 22:13
122	NI.082315.221629	L15081000-10	5017	.256/100	1		08/23/15 22:16
123	NI.082315.221941	L15081000-12	5018	.253/100	1		08/23/15 22:19
124	NI.082315.222252	L15081000-14	5019	.252/100	1		08/23/15 22:22
125	NI.082315.222604	L15081000-16	5020	.254/100	1		08/23/15 22:26
126	NI.082315.222915	L15081000-18	5022	.25/100	1		08/23/15 22:29
127	NI.082315.223227	L15081000-20	5023	.257/100	1		08/23/15 22:32
128	NI.082315.223538	L15081000-22	5024	.251/100	1		08/23/15 22:35
129	NI.082315.223849	L15081000-24	5026	.252/100	1		08/23/15 22:38
130	NI.082315.224203	WG536152-37	CCV		1		08/23/15 22:42
131	NI.082315.224514	WG536152-38	CCB		1		08/23/15 22:45

Comments

Seq.	Rerun	Dil.	Reason	Analytes
8			This sequence was not uploaded due to noncompliance. The following sample was stopped during analysis and the LLICV was immediately reanalyzed.	

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Maren Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 082315A.REP

Analyst1: BKT Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD71328 ICV Std: STD71597 Post Spike: STD69341

ICSA: STD71856 ICSAB: STD71214 Int. Std: RGT31676

CCV: STD71329 LLCCV: STD71773 Tuning Sol : STD71213

Stannous : Hydroxylamine :

Workgroups: 535910,536146,536147,536148,536149

Comments: Rinses were analyzed at sequences 17 and 18 following samples suspected to have high levels of analytes.

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time

Seq.	Rerun	Dil.	Reason	Analytes
9			This sample did not finish analysis. The LLICV was reanalyzed and both interference checks were analyzed later in the calibration.	

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Maren Berry

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 082415A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD71328 ICV Std: STD71597 Post Spike: STD69341
ICSA: STD71856 ICSAB: STD71214 Int. Std: RGT31676
CCV: STD71329 LLCCV: STD71773 Tuning Sol : STD71213
Stannous : Hydroxylamine :

Workgroups: 536244,535910,536146,536272,536626

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.082415.120441	Blank	Blank		1		08/24/15 12:04
2	NI.082415.120753	WG536271-01	Calibration Point		1		08/24/15 12:07
3	NI.082415.121104	WG536271-02	Calibration Point		1		08/24/15 12:11
4	NI.082415.121415	WG536271-03	Calibration Point		1		08/24/15 12:14
5	NI.082415.121727	WG536271-04	Calibration Point		1		08/24/15 12:17
6	NI.082415.122040	WG536271-05	Initial Calibration Verification		1		08/24/15 12:20
7	NI.082415.122353	WG536271-06	Initial Calib Blank		1		08/24/15 12:23
8	NI.082415.122705	WG536271-07	Low Level Initial Calibration V		1		08/24/15 12:27
9	NI.082415.123017	WG536271-08	Interference Check		1		08/24/15 12:30
10	NI.082415.123328	WG536271-09	Interference Check		1		08/24/15 12:33
11	NI.082415.123642	WG536271-10	CCV		1		08/24/15 12:36
12	NI.082415.123954	WG536271-11	CCB		1		08/24/15 12:39
13	NI.082415.124306	WG536161-03	Method/Prep Blank	20/50	1		08/24/15 12:43
14	NI.082415.124617	WG536161-04	Laboratory Control S	20/50	1		08/24/15 12:46
15	NI.082415.124929	WG536161-02	Reference Sample		1	L15081220-21	08/24/15 12:49
16	NI.082415.125241	WG536161-07	Duplicate	20/50	1	L15081220-21	08/24/15 12:52
17	NI.082415.125552	WG536161-01	Reference Sample		5	L15081073-04	08/24/15 12:55
18	NI.082415.125903	WG536161-05	Matrix Spike	20/50	5	L15081073-04	08/24/15 12:59
19	NI.082415.130215	WG536161-06	Matrix Spike Duplica	20/50	5	L15081073-04	08/24/15 13:02
20	NI.082415.130527	L15080776-05	A05-MW08D-Y1S1	20/50	1		08/24/15 13:05
21	NI.082415.130838	WG536244-01	Post Digestion Spike		1	L15080776-05	08/24/15 13:08
22	NI.082415.131150	WG536244-02	Serial Dilution		5	L15080776-05	08/24/15 13:11
23	NI.082415.131503	WG536271-12	CCV		1		08/24/15 13:15
24	NI.082415.131815	WG536271-13	CCB		1		08/24/15 13:18
25	NI.082415.141128	WG536271-14	CCV		1		08/24/15 14:11
26	NI.082415.141448	WG536271-15	CCB		1		08/24/15 14:14
27	NI.082415.142851	L15081073-02	50WW14FF-081915	20/50	5		08/24/15 14:28
28	NI.082415.143203	L15080904-04	50WW24FF-081715	20/50	2		08/24/15 14:32
29	NI.082415.143514	L15080942-01	5080569-01	20/50	100		08/24/15 14:35
30	NI.082415.143825	L15080992-02	50WW22FF-081815		5		08/24/15 14:38
31	NI.082415.144137	L15080992-04	50WW25FF-081815	20/50	1		08/24/15 14:41
32	NI.082415.144924	L15080992-02	50WW22FF-081815	20/50	1		08/24/15 14:49
33	NI.082415.145414	L15080992-06	50WW12FF-081815	20/50	10		08/24/15 14:54
34	NI.082415.145726	L15080992-08	50WW06FF-081815	20/50	1		08/24/15 14:57

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Maren Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 082415A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD71328 ICV Std: STD71597 Post Spike: STD69341
ICSA: STD71856 ICSAB: STD71214 Int. Std: RGT31676
CCV: STD71329 LLCCV: STD71773 Tuning Sol : STD71213
Stannous : Hydroxylamine :

Workgroups: 536244,535910,536146,536272,536626

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.082415.150037	L15080992-10	50WW11FF-081815	20/50	10		08/24/15 15:00
36	NI.082415.150350	WG536271-16	CCV		1		08/24/15 15:03
37	NI.082415.150702	WG536271-17	CCB		1		08/24/15 15:07
38	NI.082415.151014	WG536271-18	Low Level Continuing Calibra		1		08/24/15 15:10
39	NI.082415.151327	L15081220-10	H5H1225-04	20/50	5		08/24/15 15:13
40	NI.082415.151639	L15081220-01	H5H1225-01	20/50	1		08/24/15 15:16
41	NI.082415.151950	L15081220-02	H5H1225-01	20/50	1		08/24/15 15:19
42	NI.082415.152301	L15081220-04	H5H1225-02	20/50	1		08/24/15 15:23
43	NI.082415.152612	L15081220-05	H5H1225-02	20/50	1		08/24/15 15:26
44	NI.082415.152924	L15081220-07	H5H1225-03	20/50	1		08/24/15 15:29
45	NI.082415.153235	L15081220-08	H5H1225-03	20/50	1		08/24/15 15:32
46	NI.082415.153546	L15081220-11	H5H1225-04	20/50	1		08/24/15 15:35
47	NI.082415.153858	L15081220-13	H5H1225-08	20/50	1		08/24/15 15:38
48	NI.082415.154210	L15081220-14	H5H1225-08	20/50	1		08/24/15 15:42
49	NI.082415.154522	WG536271-19	CCV		1		08/24/15 15:45
50	NI.082415.154834	WG536271-20	CCB		1		08/24/15 15:48
51	NI.082415.155733	L15081220-10	H5H1225-04	20/50	50		08/24/15 15:57
52	NI.082415.160044	L15081220-16	H5H1225-06	20/50	1		08/24/15 16:00
53	NI.082415.160356	L15081220-17	H5H1225-09	20/50	1		08/24/15 16:03
54	NI.082415.160707	L15081220-18	H5H1225-05	20/50	1		08/24/15 16:07
55	NI.082415.161018	L15081220-19	H5H1225-07	20/50	1		08/24/15 16:10
56	NI.082415.161330	L15081220-20	H5H1225-10	20/50	1		08/24/15 16:13
57	NI.082415.161643	WG536271-21	CCV		1		08/24/15 16:16
58	NI.082415.161955	WG536271-22	CCB		1		08/24/15 16:19
59	NI.082415.162307	WG535951-01	Method/Prep Blank	10/100	2		08/24/15 16:23
60	NI.082415.162619	WG535951-02	Laboratory Control S	10/100	2		08/24/15 16:26
61	NI.082415.162931	WG535951-03	Laboratory Control S	10/100	2		08/24/15 16:29
62	NI.082415.163242	L15081000-01	5010	10.011/100	2		08/24/15 16:32
63	NI.082415.163554	L15081000-03	5014	10.041/100	2		08/24/15 16:35
64	NI.082415.163905	L15081000-05	5015	10.026/100	2		08/24/15 16:39
65	NI.082415.164216	L15081000-07	5016	10.05/100	2		08/24/15 16:42
66	NI.082415.164528	WG536272-01	Post Digestion Spike		2	L15081000-07	08/24/15 16:45
67	NI.082415.164839	WG536272-02	Serial Dilution		10	L15081000-07	08/24/15 16:48
68	NI.082415.165151	WG536272-02	Serial Dilution		50	L15081000-07	08/24/15 16:51

Page: 2 Approved: August 25, 2015

Maren Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 082415A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD71328 ICV Std: STD71597 Post Spike: STD69341
ICSA: STD71856 ICSAB: STD71214 Int. Std: RGT31676
CCV: STD71329 LLCCV: STD71773 Tuning Sol : STD71213
Stannous : Hydroxylamine :

Workgroups: 536244,535910,536146,536272,536626

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.082415.165504	WG536271-23	CCV		1		08/24/15 16:55
70	NI.082415.165816	WG536271-24	CCB		1		08/24/15 16:58
71	NI.082415.170131	L15081000-09	5017	10.005/100	2		08/24/15 17:01
72	NI.082415.170442	L15081000-11	5018	10.006/100	2		08/24/15 17:04
73	NI.082415.170754	L15081000-13	5019	10.046/100	2		08/24/15 17:07
74	NI.082415.171105	L15081000-15	5020	10.041/100	2		08/24/15 17:11
75	NI.082415.171417	L15081000-17	5022	10.016/100	2		08/24/15 17:14
76	NI.082415.171729	L15081000-19	5023	10.024/100	2		08/24/15 17:17
77	NI.082415.172040	L15081000-21	5024	10.031/100	2		08/24/15 17:20
78	NI.082415.172352	L15081000-23	5026	10.05/100	2		08/24/15 17:23
79	NI.082415.172703	L15081000-25	5025	10.031/100	2		08/24/15 17:27
80	NI.082415.173016	WG536271-25	CCV		1		08/24/15 17:30
81	NI.082415.173327	WG536271-26	CCB		1		08/24/15 17:33
82	NI.082415.175837	WG535367-02	Method/Prep Blank	.25/100	1		08/24/15 17:58
83	NI.082415.180148	WG535367-03	Laboratory Control S	.25/100	1		08/24/15 18:01
84	NI.082415.180500	WG535367-01	Reference Sample		1	L15080679-14	08/24/15 18:05
85	NI.082415.180811	WG535367-04	Matrix Spike	.254/100	1	L15080679-14	08/24/15 18:08
86	NI.082415.181123	WG535367-05	Matrix Spike Duplica	.253/100	1	L15080679-14	08/24/15 18:11
87	NI.082415.181434	L15080679-01	ORG-B4A-312-24	.25/100	1		08/24/15 18:14
88	NI.082415.181745	L15080679-02	ORG-F1A-312-24	.257/100	1		08/24/15 18:17
89	NI.082415.182057	WG535626-03	Post Digestion Spike		1	L15080679-02	08/24/15 18:20
90	NI.082415.182408	WG535626-04	Serial Dilution		5	L15080679-02	08/24/15 18:24
91	NI.082415.182725	WG535626-04	Serial Dilution		25	L15080679-02	08/24/15 18:27
92	NI.082415.183038	WG536271-27	CCV		1		08/24/15 18:30
93	NI.082415.183350	WG536271-28	CCB		1		08/24/15 18:33
94	NI.082415.183703	L15080679-03	ORG-H2A-312-24	.25/100	1		08/24/15 18:37
95	NI.082415.184015	L15080679-04	ORG-L3A-312-24	.258/100	1		08/24/15 18:40
96	NI.082415.184326	L15080679-05	ORG-N2A-312-24	.258/100	1		08/24/15 18:43
97	NI.082415.184638	L15080679-06	ORG-P4A-312-24	.252/100	1		08/24/15 18:46
98	NI.082415.184949	L15080679-07	ORG-S4A-312-24	.251/100	1		08/24/15 18:49
99	NI.082415.185301	L15080679-08	ORG-U1A-312-24	.257/100	1		08/24/15 18:53
100	NI.082415.185613	L15080679-09	ORG-X4A-312-24	.25/100	1		08/24/15 18:56
101	NI.082415.185924	L15080679-10	ORG-Z2A-312-24	.259/100	1		08/24/15 18:59
102	NI.082415.190236	L15080679-11	ORG-HH1-312-24	.25/100	1		08/24/15 19:02

Page: 3 Approved: August 25, 2015

Marcu Berry

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 082415A.REP

Analyst1: BKT Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD71328 ICV Std: STD71597 Post Spike: STD69341

ICSA: STD71856 ICSAB: STD71214 Int. Std: RGT31676

CCV: STD71329 LLCCV: STD71773 Tuning Sol : STD71213

Stannous : Hydroxylamine :

Workgroups: 536244,535910,536146,536272,536626

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.082415.190547	L15080679-12	ORG-EE1-312-24	.253/100	1		08/24/15 19:05
104	NI.082415.190900	WG536271-29	CCV		1		08/24/15 19:09
105	NI.082415.191212	WG536271-30	CCB		1		08/24/15 19:12
106	NI.082415.191524	L15080679-13	ORG-AA1-312-24	.25/100	1		08/24/15 19:15
107	NI.082415.191837	WG536271-31	CCV		1		08/24/15 19:18
108	NI.082415.192149	WG536271-32	CCB		1		08/24/15 19:21

Page: 4 Approved: August 25, 2015

Maren Berry

Microbac Laboratories Inc.

Data Checklist

Date: 20-AUG-2015
Analyst: BKT
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 535854
Runlog ID: 69936
Analytical Workgroups: 535239,535241,535910,534581,535080,535625,535945

Additional Workgroups	535620,535626
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	
Level 4	282,551,721,991,
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BKT
Secondary Reviewer	MMB
Comments	

Primary Reviewer:
21-AUG-2015

Secondary Reviewer:
21-AUG-2015

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-21-2015 09:01:59

Microbac Laboratories Inc.

Data Checklist

Date: 23-AUG-2015
Analyst: BKT
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 536152
Runlog ID: 69986
Analytical Workgroups: 535910,536146,536147,536148,536149

Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1000
Level 4	904,991,992,997
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BKT
Secondary Reviewer	MMB
Comments	

Primary Reviewer:
24-AUG-2015

Secondary Reviewer:
24-AUG-2015

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-24-2015 14:56:50

Microbac Laboratories Inc.

Data Checklist

Date: 24-AUG-2015
Analyst: BKT
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 536271
Runlog ID: 70001
Analytical Workgroups: 536244,535910,536146,536272,536626

Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1000
Level 4	776,904,992
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BKT
Secondary Reviewer	MMB
Comments	

Primary Reviewer:
25-AUG-2015

Secondary Reviewer:
25-AUG-2015

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-25-2015 12:25:16

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG535910

Login Number: L15080904

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW18FF-081715	02	08/17/15					08/19/2015	2	180		08/23/15	6.4	180	
50WW24FF-081715	04	08/17/15					08/19/2015	1.9	180		08/24/15	7.2	180	
50WW23FF-081715	06	08/17/15					08/19/2015	1.9	180		08/23/15	6.2	180	
50WW08FF-081715	08	08/17/15					08/19/2015	1.7	180		08/23/15	6.1	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4348336
Report generated 08/24/2015 17:36

METHOD BLANK SUMMARY

Login Number: L15080904
Blank File ID: NI.082015.160957
Prep Date: 08/19/15 08:35
Analyzed Date: 08/20/15 16:09
Analyst: JYH

Work Group: WG535910
Blank Sample ID: WG535577-02
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG535577-03	NI.082015.161308	08/20/15 16:13	01
DUP	WG535577-04	NI.082315.163924	08/23/15 16:39	01
50WW18FF-081715	L15080904-02	NI.082315.170455	08/23/15 17:04	DL01
50WW23FF-081715	L15080904-06	NI.082315.171742	08/23/15 17:17	DL01
50WW08FF-081715	L15080904-08	NI.082315.172054	08/23/15 17:20	DL01
50WW24FF-081715	L15080904-04	NI.082415.143203	08/24/15 14:32	DL02

Report Name: BLANK_SUMMARY
PDF File ID: 4348337
Report generated 08/24/2015 17:36

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15080904 Prep Date: 08/19/15 08:35 Sample ID: WG535577-02
Instrument ID: ICP-MS2 Run Date: 08/20/15 16:09 Prep Method: 3015
File ID: NI.082015.160957 Analyst: JYH Method: 6020A
Workgroup (AAB#): WG535910 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-20-AUG-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Manganese, Dissolved	0.00100	0.00400	0.00100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4348338
23-AUG-2015 18:19

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15080904 Run Date: 08/20/2015 Sample ID: WG535577-03
Instrument ID: ICP-MS2 Run Time: 16:13 Prep Method: 3015
File ID: NI.082015.161308 Analyst: JYH Method: 6020A
Workgroup (AAB#): WG535910 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD68313 Cal ID: ICP-MS-20-AUG-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Manganese, Dissolved	0.125	0.147	117	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4348339
Report generated: 08/23/2015 18:19

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L15080904 Cal ID: ICP-MS2- Worknum: WG535910
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG535577-01 File ID: NI.082015.162243 Dil: 1 Matrix: WATER
Sample ID: WG535577-05 MS File ID: NI.082015.162554 Dil: 1 Units: mg/L
Sample ID: WG535577-06 MSD File ID: NI.082015.162906 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Manganese	0.0142	0.125	0.151	109	0.125	0.149	108	1.32	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4348340
Report generated 08/23/2015 18:19

Microbac Laboratories Inc.
Serial Dilution Report

Login: L15080904 **Worknum:** WG535910
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG535910-02 **File ID:** NI.082015.163529 **Dil:** 5 **Units:** ug/L
Sample: L15080906-01 **File ID:** NI.082015.162243 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Manganese	5.67	X	5.68	F	0.12	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4348334
08/23/2015 18:19

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L15080904 **Worknum:** WG535910
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG535910-01 **File ID:** NI.082015.163218 **Dil:** 1 **Units:** ug/L
Sample ID: L15080906-01 **File ID:** NI.082015.162243 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MANGANESE	61.6		5.67		50	112.0	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4348335
Report generated: 08/23/2015 18:19

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L15080904	Workgroup (AAB#):	WG535910
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG535854	Initial Calibration Date:	20-AUG-2015 11:45

	WG535854-01		WG535854-02		WG535854-03		WG535854-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
MANGANESE	0	391	.4	753	50	152000	100	303000	.999997	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4348343
Report generated: 24-AUG-2015 17:36

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L15080904	Workgroup (AAB#):	WG535910
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG536152	Initial Calibration Date:	23-AUG-2015 15:28

	WG536152-01		WG536152-02		WG536152-03		WG536152-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
MANGANESE	0	571	.4	761	50	173000	100	343000	.999983	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4348343
Report generated: 24-AUG-2015 17:36

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L15080904	Workgroup (AAB#):	WG535910
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG536271	Initial Calibration Date:	24-AUG-2015 12:17

	WG536271-01		WG536271-02		WG536271-03		WG536271-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
MANGANESE	0	722	.4	1000	50	208000	100	403000	1	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4348343
Report generated: 24-AUG-2015 17:36

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L15080904
Run Date: 08/20/2015
Sample ID: WG535854-06
Instrument ID: ICP-MS2
Run Time: 11:52
Method: 6020A
File ID: NI.082015.115228
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG535910
Cal ID: ICP-MS2 - 20-AUG-15
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
MANGANESE	.4	1.6	.4	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4348345
Report generated 08/24/2015 17:36

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L15080904
Instrument ID: ICP-MS2
File ID: NI.082315.153452
Workgroup (AAB#): WG535910
Matrix: WATER

Run Date: 08/23/2015
Run Time: 15:34
Analyst: BKT
Cal ID: ICP-MS2 - 23-AUG-15

Sample ID: WG536152-06
Method: 6020A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
MANGANESE	.4	1.6	.4	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4348345
Report generated 08/24/2015 17:36

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L15080904
Run Date: 08/24/2015
Sample ID: WG536271-06
Instrument ID: ICP-MS2
Run Time: 12:23
Method: 6020A
File ID: NI.082415.122353
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG535910
Cal ID: ICP-MS2 - 24-AUG-15
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
MANGANESE	.4	1.6	.4	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4348345
Report generated 08/24/2015 17:36

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15080904
Run Date: 08/20/2015
Sample ID: WG535854-10
Instrument ID: ICP-MS2
Run Time: 12:05
Method: 6020A
File ID: NI.082015.120517
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG535910
Cal ID: ICP-MS - 20-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15080904
Run Date: 08/20/2015
Sample ID: WG535854-27
Instrument ID: ICP-MS2
Run Time: 15:31
Method: 6020A
File ID: NI.082015.153146
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG535910
Cal ID: ICP-MS - 20-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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PDF File ID: 4348348
Report generated 08/24/2015 17:36

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15080904
Run Date: 08/20/2015
Sample ID: WG535854-30
Instrument ID: ICP-MS2
Run Time: 16:45
Method: 6020A
File ID: NI.082015.164505
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG535910
Cal ID: ICP-MS - 20-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15080904
Run Date: 08/23/2015
Sample ID: WG536152-13
Instrument ID: ICP-MS2
Run Time: 16:02
Method: 6020A
File ID: NI.082315.160225
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG535910
Cal ID: ICP-MS - 23-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15080904
Run Date: 08/23/2015
Sample ID: WG536152-15
Instrument ID: ICP-MS2
Run Time: 16:23
Method: 6020A
File ID: NI.082315.162300
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG535910
Cal ID: ICP-MS - 23-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15080904
Run Date: 08/23/2015
Sample ID: WG536152-18
Instrument ID: ICP-MS2
Run Time: 17:14
Method: 6020A
File ID: NI.082315.171430
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG535910
Cal ID: ICP-MS - 23-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15080904
Run Date: 08/23/2015
Sample ID: WG536152-20
Instrument ID: ICP-MS2
Run Time: 17:47
Method: 6020A
File ID: NI.082315.174759
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG535910
Cal ID: ICP-MS - 23-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15080904
Run Date: 08/24/2015
Sample ID: WG536271-11
Instrument ID: ICP-MS2
Run Time: 12:39
Method: 6020A
File ID: NI.082415.123954
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG535910
Cal ID: ICP-MS - 24-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15080904
Run Date: 08/24/2015
Sample ID: WG536271-15
Instrument ID: ICP-MS2
Run Time: 14:14
Method: 6020A
File ID: NI.082415.141448
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG535910
Cal ID: ICP-MS - 24-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15080904
Run Date: 08/24/2015
Sample ID: WG536271-17
Instrument ID: ICP-MS2
Run Time: 15:07
Method: 6020A
File ID: NI.082415.150702
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG535910
Cal ID: ICP-MS - 24-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L15080904 Run Date: 08/23/2015 Sample ID: WG536152-05
Instrument ID: ICP-MS2 Run Time: 15:31 Method: 6020A
File ID: NI.082315.153139 Analyst: BKT Units: ug/L
Workgroup (AAB#): WG535910 Cal ID: ICP-MS - 23-AUG-15
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Manganese		50	52.6	105	90 - 110	

* Exceeds LIMITS Limit

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Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L15080904 Run Date: 08/20/2015 Sample ID: WG535854-05
Instrument ID: ICP-MS2 Run Time: 11:49 Method: 6020A
File ID: NI.082015.114911 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG535910 Cal ID: ICP-MS - 20-AUG-15
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Manganese		50	51.3	103	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
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Report generated 08/24/2015 17:36

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L15080904
Run Date: 08/24/2015
Sample ID: WG536271-05
Instrument ID: ICP-MS2
Run Time: 12:20
Method: 6020A
File ID: NI.082415.122040
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG535910
Cal ID: ICP-MS - 24-AUG-15
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Manganese		50	52.5	105	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080904
Run Date: 08/20/2015
Sample ID: WG535854-09
Instrument ID: ICP-MS2
Run Time: 12:02
Method: 6020A
File ID: NI.082015.120205
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG535910
Cal ID: ICP-MS - 20-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0515	mg/L	103	90 - 110		

* Exceeds LIMITS Criteria

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Report generated 08/24/2015 17:36

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080904
Run Date: 08/20/2015
Sample ID: WG535854-26
Instrument ID: ICP-MS2
Run Time: 15:28
Method: 6020A
File ID: NI.082015.152835
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG535910
Cal ID: ICP-MS - 20-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0548	mg/L	110	90 - 110		

* Exceeds LIMITS Criteria

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Report generated 08/24/2015 17:36

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080904
Run Date: 08/20/2015
Sample ID: WG535854-29
Instrument ID: ICP-MS2
Run Time: 16:41
Method: 6020A
File ID: NI.082015.164154
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG535910
Cal ID: ICP-MS - 20-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0544	mg/L	109	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080904
Run Date: 08/23/2015
Sample ID: WG536152-12
Instrument ID: ICP-MS2
Run Time: 15:58
Method: 6020A
File ID: NI.082315.155809
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG535910
Cal ID: ICP-MS - 23-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0515	mg/L	103	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Report generated 08/24/2015 17:36

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080904
Run Date: 08/23/2015
Sample ID: WG536152-14
Instrument ID: ICP-MS2
Run Time: 16:19
Method: 6020A
File ID: NI.082315.161948
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG535910
Cal ID: ICP-MS - 23-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0530	mg/L	106	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080904
Run Date: 08/23/2015
Sample ID: WG536152-17
Instrument ID: ICP-MS2
Run Time: 17:11
Method: 6020A
File ID: NI.082315.171119
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG535910
Cal ID: ICP-MS - 23-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0544	mg/L	109	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080904
Run Date: 08/23/2015
Sample ID: WG536152-19
Instrument ID: ICP-MS2
Run Time: 17:44
Method: 6020A
File ID: NI.082315.174448
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG535910
Cal ID: ICP-MS - 23-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0530	mg/L	106	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080904
Run Date: 08/24/2015
Sample ID: WG536271-10
Instrument ID: ICP-MS2
Run Time: 12:36
Method: 6020A
File ID: NI.082415.123642
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG535910
Cal ID: ICP-MS - 24-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0518	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

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Report generated 08/24/2015 17:36

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080904
Run Date: 08/24/2015
Sample ID: WG536271-14
Instrument ID: ICP-MS2
Run Time: 14:11
Method: 6020A
File ID: NI.082415.141128
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG535910
Cal ID: ICP-MS - 24-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0508	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080904
Run Date: 08/24/2015
Sample ID: WG536271-16
Instrument ID: ICP-MS2
Run Time: 15:03
Method: 6020A
File ID: NI.082415.150350
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG535910
Cal ID: ICP-MS - 24-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0523	mg/L	105	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15080904
Run Date: 08/20/2015
Sample ID: WG535854-15
Instrument ID: ICP-MS2
Run Time: 13:06
Method: 6020A
File ID: NI.082015.130610
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG535910
Cal ID: ICP-MS - 20-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.500	0.474	ug/L	94.9	70 - 130		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15080904
Run Date: 08/20/2015
Sample ID: WG535854-28
Instrument ID: ICP-MS2
Run Time: 15:35
Method: 6020A
File ID: NI.082015.153500
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG535910
Cal ID: ICP-MS - 20-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.500	0.509	ug/L	102	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4348349
Report generated 08/24/2015 17:36

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15080904
Run Date: 08/20/2015
Sample ID: WG535854-31
Instrument ID: ICP-MS2
Run Time: 16:48
Method: 6020A
File ID: NI.082015.164818
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG535910
Cal ID: ICP-MS - 20-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.500	0.522	ug/L	104	70 - 130		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15080904
Run Date: 08/23/2015
Sample ID: WG536152-09
Instrument ID: ICP-MS2
Run Time: 15:44
Method: 6020A
File ID: NI.082315.154449
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG535910
Cal ID: ICP-MS - 23-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.500	0.538	ug/L	108	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4348349
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Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15080904
Run Date: 08/23/2015
Sample ID: WG536152-16
Instrument ID: ICP-MS2
Run Time: 16:26
Method: 6020A
File ID: NI.082315.162613
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG535910
Cal ID: ICP-MS - 23-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.500	0.502	ug/L	100	70 - 130		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15080904
Run Date: 08/23/2015
Sample ID: WG536152-21
Instrument ID: ICP-MS2
Run Time: 17:51
Method: 6020A
File ID: NI.082315.175112
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG535910
Cal ID: ICP-MS - 23-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.500	0.527	ug/L	105	70 - 130		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15080904
Run Date: 08/24/2015
Sample ID: WG536271-07
Instrument ID: ICP-MS2
Run Time: 12:27
Method: 6020A
File ID: NI.082415.122705
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG535910
Cal ID: ICP-MS - 24-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.500	0.472	ug/L	94.4	70 - 130		

* Exceeds LIMITS Criteria

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PDF File ID: 4348349
Report generated 08/24/2015 17:36

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15080904
Run Date: 08/24/2015
Sample ID: WG536271-18
Instrument ID: ICP-MS2
Run Time: 15:10
Method: 6020A
File ID: NI.082415.151014
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG535910
Cal ID: ICP-MS - 24-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.500	0.506	ug/L	101	70 - 130		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L15080904
Instrument ID: ICP-MS2
Sol. A : WG535854-07 **File ID:** NI.082015.115541
Sol. AB : WG535854-08 **File ID:** NI.082015.115853

Workgroup (AAB#): WG535910
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Manganese	NS	0.0879	NS	100	105	105	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

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Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L15080904
Instrument ID: ICP-MS2
Sol. A : WG536152-10 **File ID:** NI.082315.155135
Sol. AB : WG536152-11 **File ID:** NI.082315.155451

Workgroup (AAB#): WG535910
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Manganese	NS	0.0462	NS	100	106	106	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

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Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L15080904
Instrument ID: ICP-MS2
Sol. A : WG536271-08 **File ID:** NI.082415.123017
Sol. AB : WG536271-09 **File ID:** NI.082415.123328

Workgroup (AAB#): WG535910
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Manganese	NS	0.0511	NS	100	105	105	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

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Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L15080904 **Analytical Method:** 6020
Analytical Workgroup: WG535910 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 23-AUG-2015 15:18

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L15080904-02	SAMP	23-AUG-2015 17:04	103.715	97.948	106.329
L15080904-06	SAMP	23-AUG-2015 17:17	101.592	100.269	102.626
L15080904-08	SAMP	23-AUG-2015 17:20	100.674	101.438	100.419
WG536152-05	ICV	23-AUG-2015 15:31	100.917	101.172	99.7
WG536152-06	ICB	23-AUG-2015 15:34	103.976	104.336	102.144
WG536152-09	LLICV	23-AUG-2015 15:44	103.118	101.067	101.547
WG536152-10	ICS	23-AUG-2015 15:51	100.338	99.636	98.241
WG536152-11	ICS	23-AUG-2015 15:54	99.884	101.408	101.484
WG536152-12	CCV	23-AUG-2015 15:58	105.002	103.515	105.132
WG536152-13	CCB	23-AUG-2015 16:02	104.306	103.902	105.61
WG536152-14	CCV	23-AUG-2015 16:19	105.929	100.64	108.798
WG536152-15	CCB	23-AUG-2015 16:23	106.931	102.402	109.202
WG536152-16	LLCCV	23-AUG-2015 16:26	106.738	102.735	108.624
WG536152-17	CCV	23-AUG-2015 17:11	102.524	96.484	102.141
WG536152-18	CCB	23-AUG-2015 17:14	103.48	98.159	101.92
WG536152-19	CCV	23-AUG-2015 17:44	103.114	102.598	102.215
WG536152-20	CCB	23-AUG-2015 17:47	103.811	101.964	101.813
WG536152-21	LLCCV	23-AUG-2015 17:51	103.493	101.88	100.881

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4348342
Report generated: 08/24/2015 17:36

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L15080904 **Analytical Method:** 6020
Analytical Workgroup: WG535910 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 24-AUG-2015 12:07

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L15080904-04	SAMP	24-AUG-2015 14:32	97.847	99.37	99.369
WG536271-05	ICV	24-AUG-2015 12:20	100.45	102.205	99.974
WG536271-06	ICB	24-AUG-2015 12:23	100.8	101.332	100.655
WG536271-07	LLICV	24-AUG-2015 12:27	99.202	101.205	99.719
WG536271-08	ICS	24-AUG-2015 12:30	97.773	98.672	98.401
WG536271-09	ICS	24-AUG-2015 12:33	99.695	99.044	101.112
WG536271-10	CCV	24-AUG-2015 12:36	100.47	99.666	101.197
WG536271-11	CCB	24-AUG-2015 12:39	101.466	99.546	101.136
WG536271-14	CCV	24-AUG-2015 14:11	98.512	101.809	98.861
WG536271-15	CCB	24-AUG-2015 14:14	100.775	100.14	101.851
WG536271-16	CCV	24-AUG-2015 15:03	101.737	101.397	103.675
WG536271-17	CCB	24-AUG-2015 15:07	102.591	99.465	103.891
WG536271-18	LLCCV	24-AUG-2015 15:10	101.459	98.282	101.708

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4348342
Report generated: 08/24/2015 17:36

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L15080904 **Analytical Method:** 6020
Analytical Workgroup: WG535910 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** JYH
ICAL Date: 20-AUG-2015 11:36

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
WG535577-02	BLANK	20-AUG-2015 16:09	108.919	109.002	101.452
WG535577-03	LCS	20-AUG-2015 16:13	108.368	108.941	101.972
WG535854-05	ICV	20-AUG-2015 11:49	102.092	103.507	101.529
WG535854-06	ICB	20-AUG-2015 11:52	100.48	102.693	99.31
WG535854-07	ICS	20-AUG-2015 11:55	98.317	99.986	98.496
WG535854-08	ICS	20-AUG-2015 11:58	100.922	100.396	101.327
WG535854-09	CCV	20-AUG-2015 12:02	101.101	105.067	101.706
WG535854-10	CCB	20-AUG-2015 12:05	100.377	101.532	98.458
WG535854-15	LLCCV	20-AUG-2015 13:06	103.663	101.384	101.943
WG535854-26	CCV	20-AUG-2015 15:28	107.7	106.134	100.691
WG535854-27	CCB	20-AUG-2015 15:31	107.913	106.35	101.878
WG535854-28	LLCCV	20-AUG-2015 15:35	108.448	105.641	101.109
WG535854-29	CCV	20-AUG-2015 16:41	109.868	107.86	101.713
WG535854-30	CCB	20-AUG-2015 16:45	107.089	104.868	99.063
WG535854-31	LLCCV	20-AUG-2015 16:48	109.14	106.635	100.29
WG535910-01	PSPK	20-AUG-2015 16:32	107.109	107.98	99.707
WG535910-02	SERIAL	20-AUG-2015 16:35	110.137	107.304	101.133

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4348342
Report generated: 08/24/2015 17:36

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L15080904 **Analytical Method:** 6020
Analytical Workgroup: WG535910 **Matrix:** 2
Instrument: ICP-MS2 **Analyst:** JYH
ICAL Date: 20-AUG-2015 11:36

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L15080906-01	SAMP	20-AUG-2015 16:22	109.474	108.988	103.737

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4348342
Report generated: 08/24/2015 17:36

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L15080904 **Date:** 07/08/2015
Insturment ID: ICP-MS2 **Method:** 6020A

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Uranium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4348341
Report generated: 08/23/2015 18:19

2.3.2.3 Raw Data

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Thursday, August 20, 2015 10:09:17

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	6.975	1341	2025	0.700	
Mg	23.985	23.975	4501	2019	0.704	
Co	58.933	58.925	11690	2022	0.676	
In	114.904	114.925	22863	2027	0.695	
U	238.050	238.075	47456	2042	0.679	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	2.172
5.575	1.500
5.625	0.904
5.675	3.175
5.725	1.432
5.775	1.083
5.825	2.306
5.875	1.090
5.925	1.349
5.975	0.796
6.025	2.217
6.075	2.982
6.125	8.947
6.175	75.691
6.225	35.355
6.275	100.000
6.325	74.975
6.375	25.672
6.425	3.948
6.475	2.622
6.525	2.492
6.575	1.217
6.625	1.789
6.675	0.863
6.725	2.209
6.775	1.526
6.825	2.230

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6.875	1.594
6.925	1.989
6.975	1.111
7.025	1.341
7.075	0.743
7.125	1.115
7.175	2.273
7.225	4.216
7.275	39.123
7.325	79.756
7.375	29.881
7.425	82.402
7.475	34.233
7.525	55.902
7.575	120.041
7.625	70.711
7.675	92.444
7.725	58.330
7.775	63.191
7.825	69.869
7.875	50.000
7.925	72.436
7.975	38.030
8.025	72.436
8.075	113.855
8.125	223.607
8.175	122.475
8.225	58.330
8.275	95.831
8.325	81.312
8.375	55.902
8.425	71.261
8.475	104.583
22.525	81.441
22.575	100.000
22.625	17.678
22.675	33.333
22.725	40.074
22.775	50.302
22.825	34.583
22.875	38.528
22.925	42.061
22.975	28.853
23.025	28.004
23.075	48.244
23.125	22.232
23.175	46.946

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23.225	43.241
23.275	10.648
23.325	55.069
23.375	24.495
23.425	26.352
23.475	27.524
23.525	1.918
23.575	3.189
23.625	2.765
23.675	1.673
23.725	0.770
23.775	0.895
23.825	0.796
23.875	1.524
23.925	0.825
23.975	0.834
24.025	1.683
24.075	1.977
24.125	1.797
24.175	2.115
24.225	1.746
24.275	0.997
24.325	27.066
24.375	72.436
24.425	42.111
24.475	9.818
24.525	5.619
24.575	2.743
24.625	1.693
24.675	1.934
24.725	0.818
24.775	1.267
24.825	1.524
24.875	1.483
24.925	2.035
24.975	0.783
25.025	2.543
25.075	1.478
25.125	1.796
25.175	1.453
25.225	2.631
25.275	15.860
25.325	53.033
25.375	71.261
25.425	51.875
25.475	16.394
57.525	5.200

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57.575	7.798
57.625	6.957
57.675	1.227
57.725	3.426
57.775	2.881
57.825	1.988
57.875	1.973
57.925	3.792
57.975	1.807
58.025	1.721
58.075	2.523
58.125	3.525
58.175	2.277
58.225	3.364
58.275	13.434
58.325	42.633
58.375	64.359
58.425	31.044
58.475	21.490
58.525	10.583
58.575	4.188
58.625	2.430
58.675	2.126
58.725	2.741
58.775	2.070
58.825	3.085
58.875	2.657
58.925	1.945
58.975	1.767
59.025	2.328
59.075	3.201
59.125	3.426
59.175	3.961
59.225	3.677
59.275	27.456
59.325	50.000
59.375	117.260
59.425	59.265
59.475	58.926
59.525	20.506
59.575	13.147
59.625	5.311
59.675	5.977
59.725	5.076
59.775	3.384
59.825	4.079
59.875	4.171

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59.925	3.231
59.975	2.983
60.025	8.029
60.075	3.662
60.125	5.034
60.175	5.498
60.225	27.113
60.275	34.401
60.325	69.869
60.375	100.000
60.425	108.327
60.475	46.481
113.525	24.027
113.575	4.454
113.625	1.564
113.675	5.110
113.725	3.958
113.775	1.844
113.825	2.446
113.875	2.341
113.925	3.285
113.975	2.823
114.025	3.239
114.075	2.438
114.125	3.876
114.175	3.333
114.225	4.789
114.275	4.525
114.325	15.215
114.375	35.315
114.425	19.628
114.475	13.207
114.525	4.937
114.575	4.327
114.625	0.800
114.675	1.025
114.725	1.011
114.775	1.629
114.825	1.421
114.875	0.950
114.925	0.959
114.975	0.489
115.025	0.852
115.075	1.343
115.125	0.517
115.175	1.325
115.225	2.473

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115.275	2.954
115.325	7.160
115.375	46.481
115.425	46.481
115.475	27.432
115.525	10.844
115.575	3.277
115.625	3.298
115.675	3.671
115.725	2.980
115.775	2.544
115.825	2.605
115.875	3.632
115.925	1.133
115.975	2.355
116.025	1.027
116.075	1.938
116.125	2.139
116.175	2.104
116.225	7.466
116.275	11.518
116.325	30.201
116.375	33.535
116.425	46.771
116.475	34.233
236.525	
236.575	39.411
236.625	52.047
236.675	33.518
236.725	47.843
236.775	36.422
236.825	33.518
236.875	45.166
236.925	48.445
236.975	54.432
237.025	35.355
237.075	45.913
237.125	45.426
237.175	40.745
237.225	30.322
237.275	34.993
237.325	23.958
237.375	40.000
237.425	39.891
237.475	35.972
237.525	34.297
237.575	31.545

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237.625	18.087
237.675	7.967
237.725	5.339
237.775	1.302
237.825	1.172
237.875	3.972
237.925	3.017
237.975	1.825
238.025	1.477
238.075	2.198
238.125	1.125
238.175	1.176
238.225	2.786
238.275	1.641
238.325	1.769
238.375	2.915
238.425	5.895
238.475	2.796
238.525	5.637
238.575	18.055
238.625	24.112
238.675	44.231
238.725	33.919
238.775	46.566
238.825	30.901
238.875	38.065
238.925	28.853
238.975	11.620
239.025	26.503
239.075	10.726
239.125	35.971
239.175	13.495
239.225	54.935
239.275	17.275
239.325	43.257
239.375	41.650
239.425	20.412
239.475	33.641

Approved: August 21, 2015

SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 8/20/2015 10:18:49 AM
End Time: 8/20/2015 10:21:22 AM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 4259.20
        Obtained Intensity (Mg 23.985): 148741.04
        Obtained Intensity (In 114.904): 96970.81
        Obtained Intensity (U 238.05): 45594.10
        Obtained Intensity (Bkgd 220): 0.20
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.015 (=3972.25 / 262454.38)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.004 (=1051.24 / 262454.38)
```

Report Date/Time: Thursday, August 20, 2015 10:21:22
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SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 8/20/2015 10:18:49 AM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 4259.20
                Obtained Intensity (Mg 23.985): 148741.04
                Obtained Intensity (In 114.904): 96970.81
                Obtained Intensity (U 238.05): 45594.10
                Obtained Intensity (Bkgd 220): 0.20
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.015 (=3972.25 / 262454.38)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.004 (=1051.24 / 262454.38)
[Passed]  Optimum value(s): N/A

End Time: 8/20/2015 10:21:22 AM
```


Approved: August 21, 2015

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Thursday, August 20, 2015 11:33:11
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	51673.0	3.2				ug/L		Standard
	Be	9	43.3	58.1				ug/L		Standard
	Al	27	2157.1	155.7				ug/L		Standard
	Sc	45	22687.0	3.1				ug/L		Standard
	Ti	47	43.0	66.6				ug/L		Standard
	V	51	1232.6	4.8				ug/L		Standard
	Cr	52	6387.0	12.6				ug/L		Standard
	Cr	53	1555.1	10.3				ug/L		Standard
	Mn	55	436.0	5.4				ug/L		Standard
	Co	59	236.0	31.3				ug/L		Standard
	Ni	60	204.3	144.8				ug/L		Standard
	Cu	65	302.7	102.3				ug/L		Standard
	Zn	66	332.0	63.4				ug/L		Standard
>	Ge	72	293924.3	3.1				ug/L		Standard
	As	75	44.6	381.0				ug/L		Standard
	Se	82	35.4	71.1				ug/L		Standard
	Se-1	77	153.3	27.0				ug/L		Standard
>	Ga	71	25.0	52.9				mg/L		Standard
	Rb	85	20.0	43.3				ug/L		Standard
	Y	89	279577.8	3.4				ug/L		Standard
>	Rh	103	68.3	72.2				ug/L		Standard
	Mo	98	55.9	123.6				ug/L		Standard
	Ag	107	199.0	116.2				ug/L		Standard
	Cd	111	89.5	167.5				mg/L		Standard
	Cd	114	149.7	164.4				ug/L		Standard
>	In	115	458295.8	3.1				ug/L		Standard
	Sn	118	385.0	11.1				ug/L		Standard
	Sb	123	207.9	92.0				ug/L		Standard
	Ba	135	108.3	114.0				ug/L		Standard
	Ce	140	91.7	135.4				ug/L		Standard
>	Tb	159	812005.7	3.1				ug/L		Standard
	Ho	165	6.7	43.3				ug/L		Standard
	Tl	203	235.7	164.4				ug/L		Standard
	Tl	205	43.3	107.2				ug/L		Standard
	Pb	206	266.3	51.0				ug/L		Standard
	Pb	207	205.7	57.5				ug/L		Standard
	Pb	208	667.7	29.4				ug/L		Standard
	U	238	32.0	170.5				ug/L		Standard
>	Bi	209	377155.2	2.9				ug/L		Standard

Sample ID: Blank
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	Na	23	1.7	173.2	mg/L	Standard
	Mg	24	60.0	30.0	mg/L	Standard
	K	39	11.7	89.2	mg/L	Standard
	Ca	43	36.7	28.4	mg/L	Standard
	Fe	54	56.1	45.1	mg/L	Standard
	Fe	57	735.0	2.0	mg/L	Standard
>	**Sc-1**	45	22687.0	3.1	mg/L	Standard
	Cl	35	20515.9	1.9	ug/L	Standard
	Kr	83	4.7	24.7	ug/L	Standard
	Br	81	570.0	1.8	ug/L	Standard
	P	31	7850.4	2.2	ug/L	Standard
	S	34	1375.1	8.8	ug/L	Standard
	Sr	88	165.0	18.4	ug/L	Standard
	C	12	173.3	20.3	mg/L	Standard
	N	14	0.0		mg/L	Standard
	Hg	202	0.0		mg/L	Standard
	Dy	164	6.0	107.3	mg/L	Standard
	Ho-1	165	6.7	43.3	mg/L	Standard
	Er	166	13.3	114.6	mg/L	Standard
	I	127	3795.5	5.7	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Thursday, August 20, 2015 11:36:23
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52219.9	2.1				ug/L	51673	Standard
	Be	9	23.3	12.4				ug/L	43	Standard
	Al	27	208.3	15.4				ug/L	2157	Standard
	Sc	45	23307.9	0.3				ug/L	22687	Standard
	Ti	47	26.0	23.4				ug/L	43	Standard
	V	51	994.1	12.2				ug/L	1233	Standard
	Cr	52	5827.1	1.5				ug/L	6387	Standard
	Cr	53	1471.7	5.9				ug/L	1555	Standard
	Mn	55	391.0	8.4				ug/L	436	Standard
	Co	59	182.3	3.3				ug/L	236	Standard
	Ni	60	50.3	4.1				ug/L	204	Standard
	Cu	65	149.3	14.9				ug/L	303	Standard
	Zn	66	202.3	13.1				ug/L	332	Standard
>	**Ge**	72	296239.0	0.5				ug/L	293924	Standard
	As	75	-61.9	67.6				ug/L	45	Standard
	Se	82	7.4	110.0				ug/L	35	Standard
	Se-1	77	123.0	12.9				ug/L	153	Standard
>	**Ga**	71	26.7	60.3				mg/L	25	Standard
	Rb	85	23.3	12.4				ug/L	20	Standard
	Y	89	275908.9	2.6				ug/L	279578	Standard
>	**Rh**	103	33.3	22.9				ug/L	68	Standard
	Mo	98	19.2	21.8				ug/L	56	Standard
	Ag	107	75.0	15.4				ug/L	199	Standard
	Cd	111	8.3	93.3				mg/L	89	Standard
	Cd	114	38.8	15.7				ug/L	150	Standard
>	**In**	115	453603.3	1.1				ug/L	458296	Standard
	Sn	118	293.3	8.4				ug/L	385	Standard
	Sb	123	79.5	14.1				ug/L	208	Standard
	Ba	135	33.3	19.5				ug/L	108	Standard
	Ce	140	16.7	34.6				ug/L	92	Standard
>	**Tb**	159	799655.7	1.1				ug/L	812006	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	22.3	54.2				ug/L	236	Standard
	Tl	205	20.0	25.0				ug/L	43	Standard
	Pb	206	172.0	1.5				ug/L	266	Standard
	Pb	207	152.3	6.4				ug/L	206	Standard
	Pb	208	553.3	2.5				ug/L	668	Standard
	U	238	2.7	21.7				ug/L	32	Standard
>	**Bi**	209	376291.1	0.5				ug/L	377155	Standard

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	Na	23	0.0		mg/L	2	Standard
	Mg	24	41.7	30.2	mg/L	60	Standard
	K	39	8.3	34.6	mg/L	12	Standard
	Ca	43	58.3	44.0	mg/L	37	Standard
	Fe	54	52.7	14.5	mg/L	56	Standard
	Fe	57	801.7	6.2	mg/L	735	Standard
>	**Sc-1**	45	23307.9	0.3	mg/L	22687	Standard
	Cl	35	20363.0	1.3	ug/L	20516	Standard
	Kr	83	3.0	115.5	ug/L	5	Standard
	Br	81	663.3	5.7	ug/L	570	Standard
	P	31	7478.5	4.4	ug/L	7850	Standard
	S	34	1308.4	7.5	ug/L	1375	Standard
	Sr	88	145.0	13.8	ug/L	165	Standard
	C	12	206.7	29.6	mg/L	173	Standard
	N	14	3.3	173.2	mg/L	0	Standard
	Hg	202	10.0	100.0	mg/L	0	Standard
	Dy	164	13.2	117.5	mg/L	6	Standard
	Ho-1	165	8.3	91.7	mg/L	7	Standard
	Er	166	3.3	173.2	mg/L	13	Standard
	I	127	3352.0	4.4	mg/L	3795	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Thursday, August 20, 2015 11:39:35
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	51783.4	2.5				ug/L	51673	Standard
	Be	9	76.7	37.7				ug/L	43	Standard
	Al	27	4158.9	4.2				ug/L	2157	Standard
	Sc	45	22960.7	0.7				ug/L	22687	Standard
	Ti	47	39.0	2.6				ug/L	43	Standard
	V	51	1383.0	10.9				ug/L	1233	Standard
	Cr	52	6213.9	2.2				ug/L	6387	Standard
	Cr	53	1275.1	8.6				ug/L	1555	Standard
	Mn	55	753.4	3.1				ug/L	436	Standard
	Co	59	403.7	4.2				ug/L	236	Standard
	Ni	60	131.3	15.6				ug/L	204	Standard
	Cu	65	460.0	3.9				ug/L	303	Standard
	Zn	66	401.0	4.3				ug/L	332	Standard
>	Ge	72	298247.2	0.5				ug/L	293924	Standard
	As	75	3.7	1332.0				ug/L	45	Standard
	Se	82	18.4	29.8				ug/L	35	Standard
	Se-1	77	144.7	8.6				ug/L	153	Standard
>	Ga	71	23.3	32.7				mg/L	25	Standard
	Rb	85	13.3	21.7				ug/L	20	Standard
	Y	89	283542.9	2.5				ug/L	279578	Standard
>	Rh	103	30.0	0.0				ug/L	68	Standard
	Mo	98	185.4	8.6				ug/L	56	Standard
	Ag	107	355.3	5.6				ug/L	199	Standard
	Cd	111	94.2	9.6				mg/L	89	Standard
	Cd	114	243.8	14.7				ug/L	150	Standard
>	In	115	453919.7	0.9				ug/L	458296	Standard
	Sn	118	543.3	12.4				ug/L	385	Standard
	Sb	123	266.4	10.3				ug/L	208	Standard
	Ba	135	151.0	4.8				ug/L	108	Standard
	Ce	140	3.3	86.6				ug/L	92	Standard
>	Tb	159	797802.3	0.5				ug/L	812006	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	370.0	9.0				ug/L	236	Standard
	Tl	205	231.7	22.7				ug/L	43	Standard
	Pb	206	431.0	7.1				ug/L	266	Standard
	Pb	207	396.0	4.8				ug/L	206	Standard
	Pb	208	1349.7	0.6				ug/L	668	Standard
	U	238	223.3	12.0				ug/L	32	Standard
>	Bi	209	373700.3	1.0				ug/L	377155	Standard

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Na	23	1.7	173.2	mg/L	2	Standard
Mg	24	43.3	24.0	mg/L	60	Standard
K	39	20.0	66.1	mg/L	12	Standard
Ca	43	53.3	28.6	mg/L	37	Standard
Fe	54	59.1	42.4	mg/L	56	Standard
Fe	57	778.4	5.5	mg/L	735	Standard
Sc-1	45	22960.7	0.7	mg/L	22687	Standard
Cl	35	20928.4	1.2	ug/L	20516	Standard
Kr	83	2.3	89.2	ug/L	5	Standard
Br	81	583.3	17.2	ug/L	570	Standard
P	31	7446.8	2.8	ug/L	7850	Standard
S	34	1325.1	6.5	ug/L	1375	Standard
Sr	88	141.7	11.3	ug/L	165	Standard
C	12	133.3	15.6	mg/L	173	Standard
N	14	3.3	173.2	mg/L	0	Standard
Hg	202	3.3	173.2	mg/L	0	Standard
Dy	164	6.3	93.2	mg/L	6	Standard
Ho-1	165	6.7	43.3	mg/L	7	Standard
Er	166	6.7	86.6	mg/L	13	Standard
I	127	3368.7	2.7	mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 2
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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Thursday, August 20, 2015 11:42:46
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	52648.0	2.0				ug/L	51673	Standard
	Be	9	34138.4	2.8	**50.0000**	0.465	0.9	ug/L	43	Standard
	Al	27	3528683.6	0.6	**50.0000**	1.251	2.5	ug/L	2157	Standard
	Sc	45	23895.5	0.8				ug/L	22687	Standard
	Ti	47	17059.3	0.7	**100.0000**	0.316	0.3	ug/L	43	Standard
	V	51	217877.8	1.4	**50.0000**	1.075	2.1	ug/L	1233	Standard
	Cr	52	256446.9	1.3	**50.0000**	0.837	1.7	ug/L	6387	Standard
	Cr	53	32932.4	1.5	**50.0000**	1.295	2.6	ug/L	1555	Standard
	Mn	55	152123.6	1.4	**50.0000**	1.113	2.2	ug/L	436	Standard
	Co	59	213417.6	0.5	**50.0000**	0.267	0.5	ug/L	236	Standard
	Ni	60	72666.9	1.0	**50.0000**	0.411	0.8	ug/L	204	Standard
	Cu	65	72354.4	0.6	**50.0000**	0.374	0.7	ug/L	303	Standard
	Zn	66	40598.3	0.8	**50.0000**	0.518	1.0	ug/L	332	Standard
>	Ge	72	303158.3	1.0				ug/L	293924	Standard
	As	75	43087.6	0.4	**50.0000**	0.273	0.5	ug/L	45	Standard
	Se	82	3588.2	3.4	**50.0000**	2.200	4.4	ug/L	35	Standard
	Se-1	77	2745.2	2.7	**50.0000**	1.900	3.8	ug/L	153	Standard
>	Ga	71	46.7	16.4				mg/L	25	Standard
	Rb	85	593.3	15.0				ug/L	20	Standard
	Y	89	275790.8	0.9				ug/L	279578	Standard
>	Rh	103	40.0	62.5				ug/L	68	Standard
	Mo	98	160977.6	0.8	**100.0000**	0.720	0.7	ug/L	56	Standard
	Ag	107	273971.1	0.4	**50.0000**	0.431	0.9	ug/L	199	Standard
	Cd	111	82554.4	0.6	**50.0000**	0.238	0.5	mg/L	89	Standard
	Cd	114	220290.8	2.6	**50.0000**	1.388	2.8	ug/L	150	Standard
>	In	115	451191.0	0.6				ug/L	458296	Standard
	Sn	118	266629.9	2.6	**50.0000**	1.012	2.0	ug/L	385	Standard
	Sb	123	213680.2	0.3	**50.0000**	0.359	0.7	ug/L	208	Standard
	Ba	135	102770.0	1.1	**50.0000**	0.432	0.9	ug/L	108	Standard
	Ce	140	66.7	8.7				ug/L	92	Standard
>	Tb	159	802869.6	0.4				ug/L	812006	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	334421.7	1.2	**50.0000**	0.398	0.8	ug/L	236	Standard
	Tl	205	234834.6	1.9	**50.0000**	0.804	1.6	ug/L	43	Standard
	Pb	206	207176.5	0.8	**50.0000**	0.577	1.2	ug/L	266	Standard
	Pb	207	187781.2	0.8	**50.0000**	0.392	0.8	ug/L	206	Standard
	Pb	208	654647.5	0.6	**50.0000**	0.201	0.4	ug/L	668	Standard
	U	238	222135.9	0.9	**50.0000**	0.295	0.6	ug/L	32	Standard
>	Bi	209	373938.2	0.4				ug/L	377155	Standard

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	Na	23	1.7	173.2	**5.0000**	218.433	4368.7	mg/L	2	Standard
	Mg	24	2010.1	4.5	**5.0000**	0.231	4.6	mg/L	60	Standard
	K	39	271.7	16.7	**5.0000**	0.907	18.1	mg/L	12	Standard
	Ca	43	46.7	44.6	**5.0000**	11.537	230.7	mg/L	37	Standard
	Fe	54	2390.4	3.5	**5.0000**	0.165	3.3	mg/L	56	Standard
	Fe	57	1360.1	9.1	**5.0000**	1.171	23.4	mg/L	735	Standard
>	**Sc-1**	45	23895.5	0.8				mg/L	22687	Standard
	Cl	35	21596.0	0.4				ug/L	20516	Standard
	Kr	83	2.7	21.7				ug/L	5	Standard
	Br	81	590.0	9.4				ug/L	570	Standard
	P	31	9372.9	3.5				ug/L	7850	Standard
	S	34	1645.1	8.8				ug/L	1375	Standard
	Sr	88	135.0	13.4				ug/L	165	Standard
	C	12	236.7	47.5				mg/L	173	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	0	Standard
	Dy	164	2.7	219.6				mg/L	6	Standard
	Ho-1	165	8.3	34.6				mg/L	7	Standard
	Er	166	13.3	43.3				mg/L	13	Standard
	I	127	1926.8	11.5				mg/L	3795	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Thursday, August 20, 2015 11:45:58
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52591.1	2.0				ug/L	51673	Standard
	Be	9	66542.5	1.2	**98.8127**	1.566	1.6	ug/L	43	Standard
	Al	27	6944994.9	0.4	**99.2519**	1.741	1.8	ug/L	2157	Standard
	Sc	45	23805.4	3.0				ug/L	22687	Standard
	Ti	47	34065.9	1.8	**200.5278**	5.815	2.9	ug/L	43	Standard
	V	51	428964.5	1.1	**99.6503**	2.174	2.2	ug/L	1233	Standard
	Cr	52	500088.4	0.9	**99.6255**	1.467	1.5	ug/L	6387	Standard
	Cr	53	62267.7	1.5	**98.4191**	0.374	0.4	ug/L	1555	Standard
	Mn	55	303171.3	1.1	**100.2250**	2.369	2.4	ug/L	436	Standard
	Co	59	415314.5	1.4	**98.9626**	2.688	2.7	ug/L	236	Standard
	Ni	60	142235.9	0.7	**99.2474**	1.774	1.8	ug/L	204	Standard
	Cu	65	142326.7	0.4	**99.6081**	1.541	1.5	ug/L	303	Standard
	Zn	66	79218.2	1.4	**99.2887**	1.466	1.5	ug/L	332	Standard
>	**Ge**	72	301360.5	1.3				ug/L	293924	Standard
	As	75	83025.4	0.5	**98.4187**	1.487	1.5	ug/L	45	Standard
	Se	82	6978.4	1.5	**99.0000**	2.744	2.8	ug/L	35	Standard
	Se-1	77	5287.6	0.9	**99.7363**	1.952	2.0	ug/L	153	Standard
>	**Ga**	71	53.3	32.9				mg/L	25	Standard
	Rb	85	1118.4	13.1				ug/L	20	Standard
	Y	89	281239.7	1.0				ug/L	279578	Standard
>	**Rh**	103	73.3	33.6				ug/L	68	Standard
	Mo	98	318052.5	1.4	**198.2960**	3.421	1.7	ug/L	56	Standard
	Ag	107	541667.5	0.6	**99.1832**	0.911	0.9	ug/L	199	Standard
	Cd	111	165520.8	1.1	**99.8784**	0.486	0.5	mg/L	89	Standard
	Cd	114	432808.8	1.6	**98.8627**	1.490	1.5	ug/L	150	Standard
>	**In**	115	453465.1	1.5				ug/L	458296	Standard
	Sn	118	531714.4	2.6	**99.6317**	1.918	1.9	ug/L	385	Standard
	Sb	123	428907.1	0.8	**99.9391**	1.240	1.2	ug/L	208	Standard
	Ba	135	201386.9	0.3	**98.7456**	1.136	1.2	ug/L	108	Standard
	Ce	140	146.7	25.8				ug/L	92	Standard
>	**Tb**	159	813016.7	0.5				ug/L	812006	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	664890.9	1.3	**99.2990**	0.156	0.2	ug/L	236	Standard
	Tl	205	453702.8	2.0	**97.8621**	0.820	0.8	ug/L	43	Standard
	Pb	206	409820.5	0.9	**99.0695**	0.863	0.9	ug/L	266	Standard
	Pb	207	370433.0	1.1	**98.9320**	0.370	0.4	ug/L	206	Standard
	Pb	208	1288973.8	1.7	**98.8343**	0.563	0.6	ug/L	668	Standard
	U	238	442259.1	0.9	**99.3666**	0.244	0.2	ug/L	32	Standard
>	**Bi**	209	377003.4	1.2				ug/L	377155	Standard

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Na	23	1.7	173.2	**8.7477**	240.423	2748.4	mg/L	2	Standard
Mg	24	4148.9	7.4	**10.2398**	0.987	9.6	mg/L	60	Standard
K	39	536.7	3.5	**10.1573**	0.384	3.8	mg/L	12	Standard
Ca	43	100.0	17.3	**32.7976**	14.446	44.0	mg/L	37	Standard
Fe	54	4687.3	5.1	**9.9842**	0.549	5.5	mg/L	56	Standard
Fe	57	1981.8	2.7	**10.3512**	0.961	9.3	mg/L	735	Standard
Sc-1	45	23805.4	3.0				mg/L	22687	Standard
Cl	35	20485.2	0.6				ug/L	20516	Standard
Kr	83	2.7	21.7				ug/L	5	Standard
Br	81	526.7	5.5				ug/L	570	Standard
P	31	9951.6	4.4				ug/L	7850	Standard
S	34	1551.7	8.6				ug/L	1375	Standard
Sr	88	143.3	5.3				ug/L	165	Standard
C	12	176.7	27.9				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.3	86.9				mg/L	6	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	13	Standard
I	127	608.3	10.9				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998
Corr. Coef.	Ca	43	Correlation coefficient < 0.998

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Thursday, August 20, 2015 11:49:11
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	51560.9	1.8				ug/L	51673	Standard
	Be	9	33953.0	4.3	**51.4049**	2.628	5.1	ug/L	43	Standard
	Al	27	3562603.3	0.5	**51.9249**	0.925	1.8	ug/L	2157	Standard
	Sc	45	24079.1	1.9				ug/L	22687	Standard
	Ti	47	17979.7	0.8	**104.7549**	0.507	0.5	ug/L	43	Standard
	V	51	220339.9	1.6	**50.5705**	1.410	2.8	ug/L	1233	Standard
	Cr	52	260549.9	0.5	**50.8296**	0.880	1.7	ug/L	6387	Standard
	Cr	53	34059.9	0.8	**52.4006**	0.422	0.8	ug/L	1555	Standard
	Mn	55	157084.9	3.0	**51.3367**	1.631	3.2	ug/L	436	Standard
	Co	59	215719.4	1.6	**50.8919**	1.295	2.5	ug/L	236	Standard
	Ni	60	74773.8	2.1	**51.6522**	0.679	1.3	ug/L	204	Standard
	Cu	65	74204.3	2.3	**51.3014**	0.913	1.8	ug/L	303	Standard
	Zn	66	41983.8	1.5	**51.9054**	0.786	1.5	ug/L	332	Standard
>	Ge	72	304232.4	1.3				ug/L	293924	Standard
	As	75	43426.0	1.0	**51.0116**	0.683	1.3	ug/L	45	Standard
	Se	82	3653.2	1.7	**51.2359**	1.567	3.1	ug/L	35	Standard
	Se-1	77	2752.3	4.5	**50.0902**	2.944	5.9	ug/L	153	Standard
>	Ga	71	50.0	26.5				mg/L	25	Standard
	Rb	85	585.0	9.6				ug/L	20	Standard
	Y	89	286500.2	1.1				ug/L	279578	Standard
>	Rh	103	45.0	61.9				ug/L	68	Standard
	Mo	98	167129.6	0.6	**101.5561**	1.944	1.9	ug/L	56	Standard
	Ag	107	277576.6	0.7	**49.5332**	0.944	1.9	ug/L	199	Standard
	Cd	111	84722.6	0.7	**49.8291**	0.934	1.9	mg/L	89	Standard
	Cd	114	224057.7	1.5	**49.8862**	1.325	2.7	ug/L	150	Standard
>	In	115	465303.8	2.1				ug/L	458296	Standard
	Sn	118	254482.8	1.0	**46.4528**	0.664	1.4	ug/L	385	Standard
	Sb	123	221784.6	1.4	**50.3672**	1.317	2.6	ug/L	208	Standard
	Ba	135	105297.3	0.4	**50.3150**	1.167	2.3	ug/L	108	Standard
	Ce	140	206.7	19.6				ug/L	92	Standard
>	Tb	159	817846.9	1.3				ug/L	812006	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	347081.2	1.0	**50.7543**	0.739	1.5	ug/L	236	Standard
	Tl	205	233656.7	2.0	**49.3471**	0.593	1.2	ug/L	43	Standard
	Pb	206	211096.8	0.8	**49.9369**	0.350	0.7	ug/L	266	Standard
	Pb	207	192290.0	1.4	**50.2565**	0.717	1.4	ug/L	206	Standard
	Pb	208	671177.4	0.3	**50.3676**	0.511	1.0	ug/L	668	Standard
	U	238	225381.5	1.4	**49.5846**	0.938	1.9	ug/L	32	Standard
>	Bi	209	385043.8	1.0				ug/L	377155	Standard

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Na	23	1.7	173.2	**8.5779**	240.717	2806.3	mg/L	2	Standard
Mg	24	2048.5	7.4	**4.9336**	0.299	6.1	mg/L	60	Standard
K	39	265.0	11.3	**4.7588**	0.681	14.3	mg/L	12	Standard
Ca	43	80.0	28.6	**17.2995**	16.343	94.5	mg/L	37	Standard
Fe	54	2504.2	5.5	**5.2162**	0.386	7.4	mg/L	56	Standard
Fe	57	1321.7	2.2	**4.3969**	0.068	1.5	mg/L	735	Standard
Sc-1	45	24079.1	1.9				mg/L	22687	Standard
Cl	35	20443.8	0.8				ug/L	20516	Standard
Kr	83	3.7	41.7				ug/L	5	Standard
Br	81	550.0	37.6				ug/L	570	Standard
P	31	9998.3	2.7				ug/L	7850	Standard
S	34	1545.1	5.2				ug/L	1375	Standard
Sr	88	110.0	12.0				ug/L	165	Standard
C	12	250.0	46.1				mg/L	173	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.2	6.0				mg/L	6	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	13	Standard
I	127	658.3	8.7				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.810		
Al	27	103.850		
Sc	45			
Ti	47	104.755		
V	51	101.141		
Cr	52	101.659		
Cr	53			
Mn	55	102.673		
Co	59	101.784		
Ni	60	103.304		
Cu	65	102.603		
Zn	66	103.811		
Ge	72		103.507	
As	75	102.023		
Se	82	102.472		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	101.556		
Ag	107	99.066		
Cd	111	99.658		
Cd	114			
> In	115		101.529	
Sn	118	92.906		
Sb	123	100.734		
Ba	135	100.630		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.509		
Tl	205			
Pb	206	99.874		
Pb	207	100.513		
Pb	208	100.735		
U	238	99.169		
> Bi	209		102.092	
Na	23	171.557		
Mg	24	98.673		
K	39	95.175		
Ca	43	345.991		
Fe	54	104.324		
Fe	57	87.938		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	
QC Std 1	Fe	57	

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Thursday, August 20, 2015 11:52:28
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51000.7	1.3				ug/L	51673	Standard
	Be	9	25.0	20.0	**-0.0268**	0.007	26.8	ug/L	43	Standard
	Al	27	1238.4	105.1	**0.0077**	0.019	244.7	ug/L	2157	Standard
	Sc	45	23531.6	1.8				ug/L	22687	Standard
	Ti	47	33.3	11.4	**0.0638**	0.020	32.1	ug/L	43	Standard
	V	51	1131.4	28.0	**-0.0125**	0.073	580.5	ug/L	1233	Standard
	Cr	52	5184.6	2.8	**-0.1724**	0.019	11.1	ug/L	6387	Standard
	Cr	53	1086.7	2.7	**-0.2777**	0.041	14.7	ug/L	1555	Standard
	Mn	55	475.0	18.5	**-0.0450**	0.029	64.4	ug/L	436	Standard
	Co	59	285.3	44.6	**0.0206**	0.030	145.7	ug/L	236	Standard
	Ni	60	49.7	18.3	**-0.0080**	0.006	80.4	ug/L	204	Standard
	Cu	65	145.0	8.5	**-0.1745**	0.010	5.5	ug/L	303	Standard
	Zn	66	228.0	5.0	**-0.1736**	0.012	7.0	ug/L	332	Standard
>	**Ge**	72	301838.4	1.0				ug/L	293924	Standard
	As	75	-40.0	88.2	**-0.0022**	0.042	1970.9	ug/L	45	Standard
	Se	82	18.8	13.9	**0.0528**	0.035	66.3	ug/L	35	Standard
	Se-1	77	114.3	12.3	**-0.5702**	0.275	48.3	ug/L	153	Standard
>	**Ga**	71	23.3	32.7				mg/L	25	Standard
	Rb	85	28.3	20.4				ug/L	20	Standard
	Y	89	284693.4	3.4				ug/L	279578	Standard
>	**Rh**	103	31.7	63.8				ug/L	68	Standard
	Mo	98	173.3	99.6	**0.0920**	0.107	116.2	ug/L	56	Standard
	Ag	107	410.7	123.2	**0.0598**	0.092	153.9	ug/L	199	Standard
	Cd	111	86.3	157.5	**0.0450**	0.082	181.3	mg/L	89	Standard
	Cd	114	216.1	149.4	**0.0435**	0.073	168.3	ug/L	150	Standard
>	**In**	115	455131.3	1.1				ug/L	458296	Standard
	Sn	118	643.3	23.5	**0.0683**	0.028	40.6	ug/L	385	Standard
	Sb	123	1188.5	30.8	**0.2638**	0.084	31.9	ug/L	208	Standard
	Ba	135	163.3	128.7	**0.0557**	0.102	183.8	ug/L	108	Standard
	Ce	140	111.7	153.8				ug/L	92	Standard
>	**Tb**	159	806952.2	0.8				ug/L	812006	Standard
	Ho	165	10.0	100.0				ug/L	7	Standard
	Tl	203	467.4	155.6	**0.0634**	0.108	169.6	ug/L	236	Standard
	Tl	205	66.7	115.3	**0.0138**	0.016	119.1	ug/L	43	Standard
	Pb	206	378.0	83.9	**0.0356**	0.076	213.1	ug/L	266	Standard
	Pb	207	301.3	80.1	**0.0232**	0.064	275.1	ug/L	206	Standard
	Pb	208	846.7	46.3	**0.0101**	0.030	293.9	ug/L	668	Standard
	U	238	74.7	113.2	**0.0160**	0.019	117.3	ug/L	32	Standard
>	**Bi**	209	378966.5	0.5				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	46.7	27.0	**0.0108**	0.033	307.4	mg/L	60	Standard
K	39	11.7	99.0	**-0.1696**	0.235	138.7	mg/L	12	Standard
Ca	43	46.7	44.6	**-5.6868**	15.864	279.0	mg/L	37	Standard
Fe	54	59.4	36.6	**0.0033**	0.049	1513.8	mg/L	56	Standard
Fe	57	750.0	8.3	**-0.4230**	0.492	116.2	mg/L	735	Standard
> **Sc-1**	45	23531.6	1.8				mg/L	22687	Standard
Cl	35	20007.9	0.9				ug/L	20516	Standard
Kr	83	5.7	53.9				ug/L	5	Standard
Br	81	556.7	15.3				ug/L	570	Standard
P	31	8369.0	3.0				ug/L	7850	Standard
S	34	1516.7	1.9				ug/L	1375	Standard
Sr	88	150.0	18.6				ug/L	165	Standard
C	12	156.7	39.0				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	16.3	36.2				mg/L	6	Standard
Ho-1	165	10.0	100.0				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	3523.7	4.1				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.693	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.310
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.480
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Tl	203	
QC Std 2	Na	23	

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QC Std 2	K	39
QC Std 2	Ca	43
QC Std 2	Fe	57

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Thursday, August 20, 2015 11:55:41
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	52532.6	2.6				ug/L	51673	Standard
	Be	9	55.0	74.4	**0.0168**	0.062	366.2	ug/L	43	Standard
	Al	27	3561132.8	1.9	**50.9438**	0.981	1.9	ug/L	2157	Standard
	Sc	45	22847.2	2.0				ug/L	22687	Standard
	Ti	47	17457.1	0.1	**105.2896**	0.499	0.5	ug/L	43	Standard
	V	51	663.3	6.4	**-0.1170**	0.010	8.3	ug/L	1233	Standard
	Cr	52	5902.8	0.7	**0.0045**	0.009	192.7	ug/L	6387	Standard
	Cr	53	2488.5	5.5	**2.0880**	0.207	9.9	ug/L	1555	Standard
	Mn	55	853.7	3.8	**0.0879**	0.012	14.1	ug/L	436	Standard
	Co	59	317.0	6.9	**0.0303**	0.006	18.9	ug/L	236	Standard
	Ni	60	506.3	14.5	**0.3199**	0.053	16.6	ug/L	204	Standard
	Cu	65	501.0	10.0	**0.0843**	0.036	43.2	ug/L	303	Standard
	Zn	66	756.4	4.5	**0.5165**	0.045	8.8	ug/L	332	Standard
>	Ge	72	293883.8	0.5				ug/L	293924	Standard
	As	75	-35.9	93.0	**0.0019**	0.041	2108.7	ug/L	45	Standard
	Se	82	26.2	24.1	**0.1680**	0.093	55.4	ug/L	35	Standard
	Se-1	77	269.0	3.2	**2.5643**	0.195	7.6	ug/L	153	Standard
>	Ga	71	96.7	36.7				mg/L	25	Standard
	Rb	85	601.7	14.8				ug/L	20	Standard
	Y	89	280441.5	3.1				ug/L	279578	Standard
>	Rh	103	28.3	36.7				ug/L	68	Standard
	Mo	98	164600.5	0.8	**103.0979**	1.725	1.7	ug/L	56	Standard
	Ag	107	121.0	32.0	**0.0073**	0.008	103.0	ug/L	199	Standard
	Cd	111	-40.4	60.9	**-0.0312**	0.015	47.5	mg/L	89	Standard
	Cd	114	668.3	12.3	**0.1481**	0.022	15.0	ug/L	150	Standard
>	In	115	451403.0	2.2				ug/L	458296	Standard
	Sn	118	560.0	20.1	**0.0537**	0.021	39.6	ug/L	385	Standard
	Sb	123	454.0	3.9	**0.0943**	0.002	2.2	ug/L	208	Standard
	Ba	135	171.0	18.6	**0.0605**	0.017	28.6	ug/L	108	Standard
	Ce	140	101.7	5.7				ug/L	92	Standard
>	Tb	159	792235.5	1.0				ug/L	812006	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	68.3	87.5	**0.0047**	0.009	197.3	ug/L	236	Standard
	Tl	205	103.3	148.1	**0.0224**	0.034	151.7	ug/L	43	Standard
	Pb	206	354.3	8.2	**0.0320**	0.008	24.4	ug/L	266	Standard
	Pb	207	307.3	8.3	**0.0268**	0.008	29.1	ug/L	206	Standard
	Pb	208	1078.0	7.7	**0.0297**	0.007	24.6	ug/L	668	Standard
	U	238	84.3	167.1	**0.0189**	0.033	172.7	ug/L	32	Standard
>	Bi	209	370806.9	1.0				ug/L	377155	Standard

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Na	23	3.3	173.2	**-146.4644**	509.259	347.7	mg/L	2	Standard
Mg	24	5085.9	0.3	**13.0930**	0.286	2.2	mg/L	60	Standard
K	39	255.0	17.6	**4.8277**	0.945	19.6	mg/L	12	Standard
Ca	43	105.0	19.0	**39.5105**	16.432	41.6	mg/L	37	Standard
Fe	54	5661.9	4.3	**12.5899**	0.297	2.4	mg/L	56	Standard
Fe	57	2266.8	5.4	**13.6649**	0.724	5.3	mg/L	735	Standard
> **Sc-1**	45	22847.2	2.0				mg/L	22687	Standard
Cl	35	20295.6	0.9				ug/L	20516	Standard
Kr	83	3.0	66.7				ug/L	5	Standard
Br	81	643.3	5.0				ug/L	570	Standard
P	31	8510.7	1.6				ug/L	7850	Standard
S	34	1346.7	6.5				ug/L	1375	Standard
Sr	88	143.3	2.0				ug/L	165	Standard
C	12	373.3	10.1				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.7	221.0				mg/L	6	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	483.3	18.8				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27	1.019		
Sc	45			
Ti	47	105.290		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.986	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	103.098		
Ag	107			
Cd	111			
Cd	114			
> In	115		98.496	
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209		98.317	
Na	23	-1171.715		
Mg	24	261.859		
K	39	96.553		
Ca	43	263.404		
Fe	54	100.719		
Fe	57	109.319		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	

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QC Std 4	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Thursday, August 20, 2015 11:58:53
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54399.2	2.0				ug/L	51673	Standard
	Be	9	73785.9	0.9	**105.9367**	1.954	1.8	ug/L	43	Standard
	Al	27	3895544.4	0.9	**53.8240**	1.509	2.8	ug/L	2157	Standard
	Sc	45	22755.4	2.6				ug/L	22687	Standard
	Ti	47	18742.9	0.7	**112.5949**	0.883	0.8	ug/L	43	Standard
	V	51	438685.9	0.3	**104.0763**	1.156	1.1	ug/L	1233	Standard
	Cr	52	507687.9	2.0	**103.3234**	1.775	1.7	ug/L	6387	Standard
	Cr	53	66237.9	2.4	**107.0884**	1.871	1.7	ug/L	1555	Standard
	Mn	55	311738.2	2.0	**105.2341**	1.675	1.6	ug/L	436	Standard
	Co	59	438744.8	0.3	**106.7546**	1.285	1.2	ug/L	236	Standard
	Ni	60	145513.1	0.7	**103.6811**	0.374	0.4	ug/L	204	Standard
	Cu	65	144457.5	1.4	**103.2416**	0.481	0.5	ug/L	303	Standard
	Zn	66	83633.9	1.0	**107.0844**	1.172	1.1	ug/L	332	Standard
>	**Ge**	72	295089.7	1.0				ug/L	293924	Standard
	As	75	87645.0	0.8	**106.0991**	1.933	1.8	ug/L	45	Standard
	Se	82	7411.5	2.3	**107.3941**	3.567	3.3	ug/L	35	Standard
	Se-1	77	5578.4	2.0	**107.6723**	2.995	2.8	ug/L	153	Standard
>	**Ga**	71	165.0	10.9				mg/L	25	Standard
	Rb	85	705.0	7.4				ug/L	20	Standard
	Y	89	281245.6	2.4				ug/L	279578	Standard
>	**Rh**	103	68.3	27.7				ug/L	68	Standard
	Mo	98	174594.9	0.5	**106.2788**	0.248	0.2	ug/L	56	Standard
	Ag	107	524647.5	1.8	**93.8102**	2.321	2.5	ug/L	199	Standard
	Cd	111	179385.5	1.9	**105.6919**	1.350	1.3	mg/L	89	Standard
	Cd	114	459983.8	1.8	**102.6037**	2.395	2.3	ug/L	150	Standard
>	**In**	115	464376.0	0.6				ug/L	458296	Standard
	Sn	118	665.0	8.5	**0.0699**	0.010	14.2	ug/L	385	Standard
	Sb	123	467147.6	1.2	**106.2794**	0.654	0.6	ug/L	208	Standard
	Ba	135	213686.8	1.1	**102.3089**	1.531	1.5	ug/L	108	Standard
	Ce	140	78.3	32.1				ug/L	92	Standard
>	**Tb**	159	806380.0	1.5				ug/L	812006	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	705028.1	0.5	**104.2929**	0.473	0.5	ug/L	236	Standard
	Tl	205	492273.6	1.5	**105.1880**	2.312	2.2	ug/L	43	Standard
	Pb	206	433863.3	0.6	**103.8849**	1.051	1.0	ug/L	266	Standard
	Pb	207	393435.9	0.9	**104.0848**	1.696	1.6	ug/L	206	Standard
	Pb	208	1384875.1	0.5	**105.1892**	1.226	1.2	ug/L	668	Standard
	U	238	470304.1	1.4	**104.6692**	2.136	2.0	ug/L	32	Standard
>	**Bi**	209	380630.9	0.8				ug/L	377155	Standard

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Na	23	1.7	173.2	**-5.5278**	265.149	4796.6	mg/L	2	Standard
Mg	24	5242.6	1.0	**13.5578**	0.431	3.2	mg/L	60	Standard
K	39	245.0	23.2	**4.6558**	1.278	27.4	mg/L	12	Standard
Ca	43	121.7	23.4	**52.7350**	23.729	45.0	mg/L	37	Standard
Fe	54	6244.4	1.6	**13.9689**	0.570	4.1	mg/L	56	Standard
Fe	57	2350.2	2.8	**14.5317**	0.724	5.0	mg/L	735	Standard
> **Sc-1**	45	22755.4	2.6				mg/L	22687	Standard
Cl	35	21433.8	1.9				ug/L	20516	Standard
Kr	83	5.3	75.8				ug/L	5	Standard
Br	81	523.3	8.0				ug/L	570	Standard
P	31	8335.6	0.9				ug/L	7850	Standard
S	34	1426.7	4.6				ug/L	1375	Standard
Sr	88	158.3	15.9				ug/L	165	Standard
C	12	353.3	31.8				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	6.2	93.6				mg/L	6	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	3152.0	6.2				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	105.937		
Al	27	1.076		
Sc	45			
Ti	47	112.595		
V	51	104.076		
Cr	52	103.323		
Cr	53			
Mn	55	105.234		
Co	59	106.755		
Ni	60	103.681		
Cu	65	103.242		
Zn	66	107.084		
> Ge	72		100.396	
As	75	106.099		
Se	82	107.394		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	106.279		
Ag	107	93.810		
Cd	111	105.692		
Cd	114			
> In	115		101.327	
Sn	118			
Sb	123	106.279		
Ba	135	102.309		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	104.293		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.189		
U	238	104.669		
> Bi	209		100.922	
Na	23	-44.223		
Mg	24	271.156		
K	39	93.116		
Ca	43	351.567		
Fe	54	111.751		
Fe	57	116.254		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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QC Std 5	K	39
QC Std 5	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, August 20, 2015 12:02:05
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	54385.9	3.9				ug/L	51673	Standard
	Be	9	34128.4	0.8	**49.0180**	2.063	4.2	ug/L	43	Standard
	Al	27	3637199.1	4.7	**50.2389**	0.644	1.3	ug/L	2157	Standard
	Sc	45	24065.8	3.8				ug/L	22687	Standard
	Ti	47	17766.4	1.4	**101.9644**	0.851	0.8	ug/L	43	Standard
	V	51	222241.1	1.5	**50.2353**	0.611	1.2	ug/L	1233	Standard
	Cr	52	263217.8	2.4	**50.5745**	1.209	2.4	ug/L	6387	Standard
	Cr	53	33478.6	1.3	**50.6732**	0.401	0.8	ug/L	1555	Standard
	Mn	55	159823.9	0.3	**51.4524**	0.306	0.6	ug/L	436	Standard
	Co	59	217218.8	1.1	**50.4751**	0.526	1.0	ug/L	236	Standard
	Ni	60	74904.4	1.2	**50.9785**	0.860	1.7	ug/L	204	Standard
	Cu	65	73529.0	1.2	**50.0725**	0.396	0.8	ug/L	303	Standard
	Zn	66	41257.1	0.9	**50.2315**	0.285	0.6	ug/L	332	Standard
>	Ge	72	308818.5	0.6				ug/L	293924	Standard
	As	75	43827.4	1.1	**50.7141**	0.385	0.8	ug/L	45	Standard
	Se	82	3736.9	3.0	**51.6162**	1.389	2.7	ug/L	35	Standard
	Se-1	77	2772.9	2.0	**49.6746**	1.076	2.2	ug/L	153	Standard
>	Ga	71	36.7	20.8				mg/L	25	Standard
	Rb	85	581.7	15.2				ug/L	20	Standard
	Y	89	279562.4	1.0				ug/L	279578	Standard
>	Rh	103	28.3	20.4				ug/L	68	Standard
	Mo	98	166968.0	0.7	**101.2760**	2.132	2.1	ug/L	56	Standard
	Ag	107	283605.7	0.3	**50.5159**	0.724	1.4	ug/L	199	Standard
	Cd	111	86475.7	1.4	**50.7635**	0.731	1.4	mg/L	89	Standard
	Cd	114	227544.7	1.2	**50.5628**	0.551	1.1	ug/L	150	Standard
>	In	115	466112.4	1.4				ug/L	458296	Standard
	Sn	118	253567.0	2.9	**46.1933**	0.935	2.0	ug/L	385	Standard
	Sb	123	225175.3	0.7	**51.0403**	0.843	1.7	ug/L	208	Standard
	Ba	135	104970.8	1.8	**50.0548**	0.376	0.8	ug/L	108	Standard
	Ce	140	80.0	16.5				ug/L	92	Standard
>	Tb	159	809130.5	2.6				ug/L	812006	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	348340.2	0.7	**51.4346**	0.279	0.5	ug/L	236	Standard
	Tl	205	239615.0	1.2	**51.1094**	1.050	2.1	ug/L	43	Standard
	Pb	206	215120.1	0.9	**51.3915**	0.821	1.6	ug/L	266	Standard
	Pb	207	194166.9	0.7	**51.2477**	0.784	1.5	ug/L	206	Standard
	Pb	208	682538.3	0.7	**51.7246**	0.801	1.5	ug/L	668	Standard
	U	238	231231.6	1.1	**51.3682**	0.752	1.5	ug/L	32	Standard
>	Bi	209	381308.3	0.9				ug/L	377155	Standard

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Na	23	1.7	173.2	**-0.4756**	256.398	53913.6	mg/L	2	Standard
Mg	24	2063.5	5.0	**4.9868**	0.442	8.9	mg/L	60	Standard
K	39	233.3	17.8	**4.1317**	0.750	18.1	mg/L	12	Standard
Ca	43	70.0	12.4	**10.0807**	4.548	45.1	mg/L	37	Standard
Fe	54	2416.2	6.7	**5.0369**	0.494	9.8	mg/L	56	Standard
Fe	57	1400.1	3.2	**5.1065**	0.858	16.8	mg/L	735	Standard
> **Sc-1**	45	24065.8	3.8				mg/L	22687	Standard
Cl	35	21126.1	1.8				ug/L	20516	Standard
Kr	83	3.0	33.3				ug/L	5	Standard
Br	81	466.7	18.0				ug/L	570	Standard
P	31	9578.0	1.6				ug/L	7850	Standard
S	34	1530.1	5.7				ug/L	1375	Standard
Sr	88	133.3	5.7				ug/L	165	Standard
C	12	243.3	13.2				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.4	104.5				mg/L	6	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	456.7	0.6				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	98.036		
Al	27	100.478		
Sc	45			
Ti	47	101.964		
V	51	100.471		
Cr	52	101.149		
Cr	53			
Mn	55	102.905		
Co	59	100.950		
Ni	60	101.957		
Cu	65	100.145		
Zn	66	100.463		
> Ge	72		105.067	
As	75	101.428		
Se	82	103.232		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.276		
Ag	107	101.032		
Cd	111	101.527		
Cd	114			
In	115			101.706
Sn	118	92.387		
Sb	123	102.081		
Ba	135	100.110		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.869		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.449		
U	238	102.736		
Bi	209			101.101
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, August 20, 2015 12:05:17
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51280.0	1.7				ug/L	51673	Standard
	Be	9	33.3	17.3	**-0.0141**	0.010	67.6	ug/L	43	Standard
	Al	27	888.4	102.6	**0.0027**	0.014	497.3	ug/L	2157	Standard
	Sc	45	23600.0	1.4				ug/L	22687	Standard
	Ti	47	25.0	18.3	**0.0165**	0.026	158.7	ug/L	43	Standard
	V	51	964.2	21.8	**-0.0485**	0.051	104.4	ug/L	1233	Standard
	Cr	52	5347.6	1.8	**-0.1272**	0.013	10.1	ug/L	6387	Standard
	Cr	53	953.4	4.2	**-0.4746**	0.073	15.5	ug/L	1555	Standard
	Mn	55	484.0	8.8	**-0.0402**	0.014	35.4	ug/L	436	Standard
	Co	59	256.0	51.7	**0.0145**	0.032	222.5	ug/L	236	Standard
	Ni	60	50.0	51.9	**-0.0073**	0.018	251.5	ug/L	204	Standard
	Cu	65	148.3	1.0	**-0.1711**	0.002	1.1	ug/L	303	Standard
	Zn	66	221.7	15.5	**-0.1780**	0.046	25.8	ug/L	332	Standard
>	**Ge**	72	298427.1	0.9				ug/L	293924	Standard
	As	75	-31.1	119.7	**0.0080**	0.045	562.4	ug/L	45	Standard
	Se	82	15.6	23.5	**0.0093**	0.050	542.3	ug/L	35	Standard
	Se-1	77	116.0	8.5	**-0.5116**	0.213	41.6	ug/L	153	Standard
>	**Ga**	71	16.7	45.8				mg/L	25	Standard
	Rb	85	31.7	71.2				ug/L	20	Standard
	Y	89	274019.4	1.6				ug/L	279578	Standard
>	**Rh**	103	11.7	65.5				ug/L	68	Standard
	Mo	98	119.2	72.8	**0.0591**	0.054	91.5	ug/L	56	Standard
	Ag	107	169.0	55.3	**0.0161**	0.017	106.3	ug/L	199	Standard
	Cd	111	13.2	76.5	**0.0012**	0.006	522.5	mg/L	89	Standard
	Cd	114	37.7	31.7	**0.0031**	0.003	89.3	ug/L	150	Standard
>	**In**	115	451227.3	0.5				ug/L	458296	Standard
	Sn	118	458.3	10.3	**0.0345**	0.009	25.9	ug/L	385	Standard
	Sb	123	1163.3	14.2	**0.2604**	0.038	14.6	ug/L	208	Standard
	Ba	135	41.7	15.6	**-0.0034**	0.003	90.4	ug/L	108	Standard
	Ce	140	15.0	33.3				ug/L	92	Standard
>	**Tb**	159	799885.4	0.9				ug/L	812006	Standard
	Ho	165	10.0					ug/L	7	Standard
	Tl	203	43.7	54.6	**0.0007**	0.004	483.6	ug/L	236	Standard
	Tl	205	93.3	115.4	**0.0195**	0.023	118.1	ug/L	43	Standard
	Pb	206	257.3	51.4	**0.0067**	0.031	471.3	ug/L	266	Standard
	Pb	207	246.3	60.9	**0.0087**	0.040	456.2	ug/L	206	Standard
	Pb	208	769.7	34.8	**0.0043**	0.020	472.1	ug/L	668	Standard
	U	238	73.0	127.0	**0.0156**	0.021	131.7	ug/L	32	Standard
>	**Bi**	209	378578.3	0.5				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	35.0	24.7	**-0.0191**	0.021	111.5	mg/L	60	Standard
K	39	13.3	114.6	**-0.1420**	0.300	211.0	mg/L	12	Standard
Ca	43	31.7	24.1	**-16.9446**	5.299	31.3	mg/L	37	Standard
Fe	54	49.1	0.4	**-0.0201**	0.001	5.3	mg/L	56	Standard
Fe	57	743.4	4.1	**-0.4952**	0.362	73.1	mg/L	735	Standard
> **Sc-1**	45	23600.0	1.4				mg/L	22687	Standard
Cl	35	20458.5	1.5				ug/L	20516	Standard
Kr	83	4.0	66.1				ug/L	5	Standard
Br	81	563.3	10.4				ug/L	570	Standard
P	31	7997.1	4.1				ug/L	7850	Standard
S	34	1525.1	6.1				ug/L	1375	Standard
Sr	88	116.7	32.5				ug/L	165	Standard
C	12	180.0	44.1				mg/L	173	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.4	5.9				mg/L	6	Standard
Ho-1	165	10.0					mg/L	7	Standard
Er	166	13.3	86.6				mg/L	13	Standard
I	127	3410.4	4.9				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.532	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.458	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.377	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

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Method 6020 - Summary Report

Sample ID: PBW 87 WG535058-03
Sample Date/Time: Thursday, August 20, 2015 12:08:28
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56279.6	6.2				ug/L	51673	Standard
	Be	9	20.0	25.0	**-0.0371**	0.008	20.9	ug/L	43	Standard
	Al	27	2848.6	26.4	**0.0278**	0.011	38.8	ug/L	2157	Standard
	Sc	45	24858.7	2.0				ug/L	22687	Standard
	Ti	47	37.0	20.4	**0.0795**	0.045	56.1	ug/L	43	Standard
	V	51	993.9	3.3	**-0.0509**	0.009	17.1	ug/L	1233	Standard
	Cr	52	6206.9	1.9	**-0.0018**	0.053	2926.9	ug/L	6387	Standard
	Cr	53	1013.4	11.8	**-0.4414**	0.205	46.4	ug/L	1555	Standard
	Mn	55	1144.0	3.3	**0.1652**	0.003	1.9	ug/L	436	Standard
	Co	59	216.7	15.2	**0.0028**	0.007	261.8	ug/L	236	Standard
	Ni	60	107.0	20.0	**0.0298**	0.014	47.3	ug/L	204	Standard
	Cu	65	364.3	5.6	**-0.0282**	0.015	53.7	ug/L	303	Standard
	Zn	66	1482.7	4.4	**1.3493**	0.038	2.8	ug/L	332	Standard
>	**Ge**	72	310840.4	2.5				ug/L	293924	Standard
	As	75	-18.2	156.5	**0.0241**	0.033	135.5	ug/L	45	Standard
	Se	82	24.0	8.9	**0.1165**	0.038	32.3	ug/L	35	Standard
	Se-1	77	104.3	3.6	**-0.8218**	0.095	11.6	ug/L	153	Standard
>	**Ga**	71	31.7	71.2				mg/L	25	Standard
	Rb	85	51.7	22.3				ug/L	20	Standard
	Y	89	297972.3	3.6				ug/L	279578	Standard
>	**Rh**	103	26.7	28.6				ug/L	68	Standard
	Mo	98	35.4	39.9	**0.0051**	0.008	162.0	ug/L	56	Standard
	Ag	107	97.7	44.2	**0.0017**	0.007	432.6	ug/L	199	Standard
	Cd	111	21.9	29.7	**0.0055**	0.004	66.1	mg/L	89	Standard
	Cd	114	59.9	59.6	**0.0072**	0.008	105.8	ug/L	150	Standard
>	**In**	115	485685.2	0.1				ug/L	458296	Standard
	Sn	118	686.7	12.1	**0.0684**	0.015	21.3	ug/L	385	Standard
	Sb	123	547.5	8.6	**0.1071**	0.010	9.6	ug/L	208	Standard
	Ba	135	141.0	8.6	**0.0406**	0.006	13.6	ug/L	108	Standard
	Ce	140	100.0	5.0				ug/L	92	Standard
>	**Tb**	159	834366.4	1.6				ug/L	812006	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	69.0	67.2	**0.0040**	0.007	163.8	ug/L	236	Standard
	Tl	205	45.0	40.1	**0.0087**	0.004	42.6	ug/L	43	Standard
	Pb	206	637.7	6.6	**0.0912**	0.010	11.3	ug/L	266	Standard
	Pb	207	500.3	6.4	**0.0701**	0.009	12.1	ug/L	206	Standard
	Pb	208	1895.0	6.7	**0.0836**	0.010	12.0	ug/L	668	Standard
	U	238	38.3	54.4	**0.0076**	0.004	59.1	ug/L	32	Standard
>	**Bi**	209	397189.1	1.1				ug/L	377155	Standard

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Na	23	1.7	173.2	**7.5503**	242.497	3211.8	mg/L	2	Standard
Mg	24	58.3	26.2	**0.0324**	0.037	115.6	mg/L	60	Standard
K	39	11.7	99.0	**-0.1840**	0.218	118.6	mg/L	12	Standard
Ca	43	45.0	29.4	**-8.7815**	9.346	106.4	mg/L	37	Standard
Fe	54	65.9	19.7	**0.0093**	0.028	302.9	mg/L	56	Standard
Fe	57	713.4	11.2	**-1.0890**	0.610	56.1	mg/L	735	Standard
> **Sc-1**	45	24858.7	2.0				mg/L	22687	Standard
Cl	35	21701.5	2.0				ug/L	20516	Standard
Kr	83	6.0	60.1				ug/L	5	Standard
Br	81	976.7	13.5				ug/L	570	Standard
P	31	10058.3	1.1				ug/L	7850	Standard
S	34	1606.8	5.2				ug/L	1375	Standard
Sr	88	135.0	23.1				ug/L	165	Standard
C	12	253.3	29.1				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.0	187.1				mg/L	6	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	13	Standard
I	127	3027.0	4.5				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.915	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.755	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.976
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.312
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 87 WG535058-04
Sample Date/Time: Thursday, August 20, 2015 12:11:39
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52633.0	3.0				ug/L	51673	Standard
	Be	9	35107.3	4.3	**52.0444**	1.182	2.3	ug/L	43	Standard
	Al	27	2475.2	13.2	**0.0250**	0.005	21.1	ug/L	2157	Standard
	Sc	45	24705.1	1.0				ug/L	22687	Standard
	Ti	47	28.7	30.1	**0.0314**	0.048	152.9	ug/L	43	Standard
	V	51	222033.6	3.1	**49.8562**	1.183	2.4	ug/L	1233	Standard
	Cr	52	269013.1	2.0	**51.3682**	0.686	1.3	ug/L	6387	Standard
	Cr	53	34487.6	4.4	**51.9028**	2.053	4.0	ug/L	1555	Standard
	Mn	55	161143.1	2.7	**51.5363**	1.136	2.2	ug/L	436	Standard
	Co	59	216782.4	2.5	**50.0423**	0.879	1.8	ug/L	236	Standard
	Ni	60	75782.8	3.1	**51.2338**	1.239	2.4	ug/L	204	Standard
	Cu	65	76368.8	3.1	**51.6741**	1.320	2.6	ug/L	303	Standard
	Zn	66	42835.8	1.7	**51.8277**	0.534	1.0	ug/L	332	Standard
>	**Ge**	72	310833.8	0.7				ug/L	293924	Standard
	As	75	42834.7	2.6	**49.2416**	0.945	1.9	ug/L	45	Standard
	Se	82	3590.4	2.8	**49.2591**	1.016	2.1	ug/L	35	Standard
	Se-1	77	2700.2	1.7	**47.9666**	0.709	1.5	ug/L	153	Standard
>	**Ga**	71	23.3	32.7				mg/L	25	Standard
	Rb	85	40.0	12.5				ug/L	20	Standard
	Y	89	284058.0	4.4				ug/L	279578	Standard
>	**Rh**	103	33.3	17.3				ug/L	68	Standard
	Mo	98	63.6	41.3	**0.0225**	0.015	67.1	ug/L	56	Standard
	Ag	107	287761.9	1.2	**50.7494**	0.133	0.3	ug/L	199	Standard
	Cd	111	85486.4	3.0	**49.6812**	0.759	1.5	mg/L	89	Standard
	Cd	114	223451.4	3.2	**49.1677**	1.558	3.2	ug/L	150	Standard
>	**In**	115	470719.1	1.5				ug/L	458296	Standard
	Sn	118	643.3	18.5	**0.0642**	0.020	30.7	ug/L	385	Standard
	Sb	123	232108.2	1.8	**52.0885**	0.171	0.3	ug/L	208	Standard
	Ba	135	104963.8	2.2	**49.5593**	0.343	0.7	ug/L	108	Standard
	Ce	140	135.0	24.3				ug/L	92	Standard
>	**Tb**	159	826395.4	1.2				ug/L	812006	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	347428.7	0.9	**49.6831**	0.151	0.3	ug/L	236	Standard
	Tl	205	236332.8	2.2	**48.8160**	0.972	2.0	ug/L	43	Standard
	Pb	206	220945.4	2.0	**51.1159**	0.903	1.8	ug/L	266	Standard
	Pb	207	191308.8	1.8	**48.8954**	0.694	1.4	ug/L	206	Standard
	Pb	208	685232.6	1.7	**50.2853**	0.466	0.9	ug/L	668	Standard
	U	238	228831.9	1.1	**49.2316**	0.406	0.8	ug/L	32	Standard
>	**Bi**	209	393706.4	0.7				ug/L	377155	Standard

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Na	23	1.7	173.2	**10.1467**	238.000	2345.6	mg/L	2	Standard
Mg	24	53.3	32.9	**0.0210**	0.042	200.0	mg/L	60	Standard
K	39	3.3	86.6	**-0.3407**	0.055	16.1	mg/L	12	Standard
Ca	43	38.3	15.1	**-13.2850**	3.902	29.4	mg/L	37	Standard
Fe	54	81.2	21.2	**0.0416**	0.035	83.2	mg/L	56	Standard
Fe	57	733.4	6.6	**-0.8771**	0.428	48.8	mg/L	735	Standard
> **Sc-1**	45	24705.1	1.0				mg/L	22687	Standard
Cl	35	20600.0	3.3				ug/L	20516	Standard
Kr	83	4.0	25.0				ug/L	5	Standard
Br	81	640.0	5.4				ug/L	570	Standard
P	31	9741.5	4.7				ug/L	7850	Standard
S	34	1386.7	4.0				ug/L	1375	Standard
Sr	88	161.7	28.7				ug/L	165	Standard
C	12	250.0	21.2				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	5.2	228.8				mg/L	6	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	30.0	33.3				mg/L	13	Standard
I	127	3373.7	2.9				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.858	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.753	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.711
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.388
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: FBLANK 87 WG534899-01
Sample Date/Time: Thursday, August 20, 2015 12:14:51
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54258.7	2.3				ug/L	51673	Standard
	Be	9	16.7	17.3	**-0.0411**	0.004	9.2	ug/L	43	Standard
	Al	27	6744.8	1.7	**0.0831**	0.003	3.9	ug/L	2157	Standard
	Sc	45	24372.9	3.0				ug/L	22687	Standard
	Ti	47	65.7	28.8	**0.2484**	0.104	42.0	ug/L	43	Standard
	V	51	1187.2	5.4	**-0.0026**	0.018	686.5	ug/L	1233	Standard
	Cr	52	6555.8	3.3	**0.0873**	0.048	54.5	ug/L	6387	Standard
	Cr	53	1305.1	6.5	**0.0467**	0.113	242.5	ug/L	1555	Standard
	Mn	55	1727.8	2.5	**0.3620**	0.010	2.7	ug/L	436	Standard
	Co	59	273.0	2.2	**0.0169**	0.001	6.5	ug/L	236	Standard
	Ni	60	307.7	5.4	**0.1691**	0.011	6.7	ug/L	204	Standard
	Cu	65	2073.1	1.6	**1.1580**	0.022	1.9	ug/L	303	Standard
	Zn	66	2486.5	1.9	**2.6262**	0.042	1.6	ug/L	332	Standard
>	**Ge**	72	305714.8	1.9				ug/L	293924	Standard
	As	75	-21.0	109.7	**0.0209**	0.027	127.9	ug/L	45	Standard
	Se	82	22.5	12.0	**0.1015**	0.036	35.6	ug/L	35	Standard
	Se-1	77	115.3	11.4	**-0.5776**	0.273	47.2	ug/L	153	Standard
>	**Ga**	71	28.3	10.2				mg/L	25	Standard
	Rb	85	161.7	7.8				ug/L	20	Standard
	Y	89	283151.6	1.3				ug/L	279578	Standard
>	**Rh**	103	20.0	43.3				ug/L	68	Standard
	Mo	98	42.5	15.1	**0.0102**	0.004	39.7	ug/L	56	Standard
	Ag	107	135.0	16.0	**0.0090**	0.004	46.5	ug/L	199	Standard
	Cd	111	28.9	31.6	**0.0102**	0.006	55.3	mg/L	89	Standard
	Cd	114	69.0	79.4	**0.0098**	0.012	126.0	ug/L	150	Standard
>	**In**	115	467692.7	1.4				ug/L	458296	Standard
	Sn	118	595.0	5.8	**0.0564**	0.007	11.9	ug/L	385	Standard
	Sb	123	503.0	4.2	**0.1017**	0.006	6.3	ug/L	208	Standard
	Ba	135	287.3	3.1	**0.1127**	0.006	5.0	ug/L	108	Standard
	Ce	140	213.3	21.8				ug/L	92	Standard
>	**Tb**	159	834528.9	0.7				ug/L	812006	Standard
	Ho	165	13.3	21.7				ug/L	7	Standard
	Tl	203	148.7	11.4	**0.0159**	0.002	15.4	ug/L	236	Standard
	Tl	205	78.3	7.4	**0.0160**	0.001	7.7	ug/L	43	Standard
	Pb	206	1630.4	0.8	**0.3302**	0.003	0.9	ug/L	266	Standard
	Pb	207	1430.7	2.8	**0.3168**	0.010	3.2	ug/L	206	Standard
	Pb	208	5297.4	1.0	**0.3427**	0.004	1.1	ug/L	668	Standard
	U	238	49.0	15.9	**0.0101**	0.002	16.8	ug/L	32	Standard
>	**Bi**	209	385771.7	0.1				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	56.7	53.2	**0.0295**	0.070	237.4	mg/L	60	Standard
K	39	16.7	75.5	**-0.0795**	0.254	319.0	mg/L	12	Standard
Ca	43	53.3	14.3	**-2.3540**	4.368	185.5	mg/L	37	Standard
Fe	54	101.1	10.5	**0.0864**	0.028	32.1	mg/L	56	Standard
Fe	57	818.4	5.5	**-0.0619**	0.370	598.5	mg/L	735	Standard
> **Sc-1**	45	24372.9	3.0				mg/L	22687	Standard
Cl	35	20677.4	0.7				ug/L	20516	Standard
Kr	83	2.7	57.3				ug/L	5	Standard
Br	81	1483.4	8.0				ug/L	570	Standard
P	31	10461.9	0.8				ug/L	7850	Standard
S	34	1508.4	9.0				ug/L	1375	Standard
Sr	88	171.7	17.8				ug/L	165	Standard
C	12	276.7	35.5				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	22.7	98.7				mg/L	6	Standard
Ho-1	165	13.3	21.7				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	2893.6	2.5				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.004	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.011	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.050
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.285
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508032407 WG535058-01
Sample Date/Time: Thursday, August 20, 2015 12:18:02
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54864.2	1.2				ug/L	51673	Standard
	Be	9	38.3	71.8	**-0.0107**	0.038	356.5	ug/L	43	Standard
	Al	27	310704.2	2.0	**4.2452**	0.037	0.9	ug/L	2157	Standard
	Sc	45	24222.7	0.4				ug/L	22687	Standard
	Ti	47	154.3	12.9	**0.7601**	0.112	14.8	ug/L	43	Standard
	V	51	1605.6	1.5	**0.0918**	0.008	8.4	ug/L	1233	Standard
	Cr	52	7173.4	3.0	**0.2039**	0.038	18.7	ug/L	6387	Standard
	Cr	53	1571.7	5.6	**0.4618**	0.150	32.4	ug/L	1555	Standard
	Mn	55	28884.5	2.6	**9.1892**	0.213	2.3	ug/L	436	Standard
	Co	59	681.7	1.4	**0.1123**	0.001	1.2	ug/L	236	Standard
	Ni	60	392.3	4.7	**0.2262**	0.011	4.9	ug/L	204	Standard
	Cu	65	685.7	2.8	**0.1961**	0.010	5.3	ug/L	303	Standard
	Zn	66	2362.9	0.9	**2.4606**	0.011	0.5	ug/L	332	Standard
>	**Ge**	72	306958.6	0.6				ug/L	293924	Standard
	As	75	79.2	34.3	**0.1375**	0.031	22.6	ug/L	45	Standard
	Se	82	44.8	19.1	**0.4101**	0.117	28.5	ug/L	35	Standard
	Se-1	77	140.7	4.7	**-0.1063**	0.133	124.7	ug/L	153	Standard
>	**Ga**	71	75.0	29.1				mg/L	25	Standard
	Rb	85	2370.2	2.3				ug/L	20	Standard
	Y	89	291602.7	0.7				ug/L	279578	Standard
>	**Rh**	103	15.0	0.0				ug/L	68	Standard
	Mo	98	44.5	21.3	**0.0109**	0.005	48.7	ug/L	56	Standard
	Ag	107	88.3	10.3	**0.0004**	0.001	290.4	ug/L	199	Standard
	Cd	111	25.2	16.5	**0.0077**	0.002	28.2	mg/L	89	Standard
	Cd	114	70.6	44.2	**0.0098**	0.007	68.0	ug/L	150	Standard
>	**In**	115	474879.2	2.2				ug/L	458296	Standard
	Sn	118	725.0	19.7	**0.0783**	0.028	36.1	ug/L	385	Standard
	Sb	123	279.5	7.3	**0.0503**	0.005	10.8	ug/L	208	Standard
	Ba	135	7218.4	2.8	**3.3559**	0.021	0.6	ug/L	108	Standard
	Ce	140	6022.9	1.5				ug/L	92	Standard
>	**Tb**	159	825094.2	1.3				ug/L	812006	Standard
	Ho	165	46.7	27.0				ug/L	7	Standard
	Tl	203	81.7	7.5	**0.0060**	0.001	15.4	ug/L	236	Standard
	Tl	205	66.7	45.8	**0.0133**	0.006	48.0	ug/L	43	Standard
	Pb	206	948.4	1.6	**0.1651**	0.003	1.5	ug/L	266	Standard
	Pb	207	794.7	3.8	**0.1472**	0.007	4.9	ug/L	206	Standard
	Pb	208	2897.1	2.9	**0.1590**	0.005	3.4	ug/L	668	Standard
	U	238	44.7	7.9	**0.0090**	0.001	8.0	ug/L	32	Standard
>	**Bi**	209	392494.1	0.5				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	341.7	5.1	**0.7291**	0.040	5.5	mg/L	60	Standard
K	39	11.7	89.2	**-0.1785**	0.202	113.0	mg/L	12	Standard
Ca	43	35.0	42.9	**-15.1281**	10.694	70.7	mg/L	37	Standard
Fe	54	156.0	18.6	**0.2035**	0.060	29.5	mg/L	56	Standard
Fe	57	785.0	7.3	**-0.3080**	0.499	162.0	mg/L	735	Standard
> **Sc-1**	45	24222.7	0.4				mg/L	22687	Standard
Cl	35	20266.9	5.4				ug/L	20516	Standard
Kr	83	1.7	124.9				ug/L	5	Standard
Br	81	3657.1	4.4				ug/L	570	Standard
P	31	11482.7	2.5				ug/L	7850	Standard
S	34	1215.0	1.6				ug/L	1375	Standard
Sr	88	121.7	38.2				ug/L	165	Standard
C	12	296.7	9.7				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	126.2	8.7				mg/L	6	Standard
Ho-1	165	46.7	27.0				mg/L	7	Standard
Er	166	80.0	25.0				mg/L	13	Standard
I	127	26107.5	3.2				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.176	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.435	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.618
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.067
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508032408S WG535058-05
Sample Date/Time: Thursday, August 20, 2015 12:21:13
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	55197.1	2.1				ug/L	51673	Standard
	Be	9	35962.6	1.8	**50.8534**	1.215	2.4	ug/L	43	Standard
	Al	27	294664.1	2.7	**4.0011**	0.043	1.1	ug/L	2157	Standard
	Sc	45	24873.8	3.7				ug/L	22687	Standard
	Ti	47	175.3	3.5	**0.8727**	0.034	3.8	ug/L	43	Standard
	V	51	230568.2	1.6	**51.9811**	0.745	1.4	ug/L	1233	Standard
	Cr	52	276852.3	0.9	**53.1078**	0.910	1.7	ug/L	6387	Standard
	Cr	53	35347.9	4.0	**53.4454**	1.474	2.8	ug/L	1555	Standard
	Mn	55	196098.1	1.9	**62.9901**	0.242	0.4	ug/L	436	Standard
	Co	59	230470.3	1.8	**53.4014**	0.236	0.4	ug/L	236	Standard
	Ni	60	77277.9	0.5	**52.4461**	0.558	1.1	ug/L	204	Standard
	Cu	65	77197.5	0.5	**52.4406**	0.746	1.4	ug/L	303	Standard
	Zn	66	44497.3	2.0	**54.0527**	0.358	0.7	ug/L	332	Standard
>	Ge	72	309711.5	1.6				ug/L	293924	Standard
	As	75	44802.1	2.3	**51.6880**	0.390	0.8	ug/L	45	Standard
	Se	82	3797.9	2.8	**52.3073**	0.651	1.2	ug/L	35	Standard
	Se-1	77	2751.2	0.9	**49.1215**	0.881	1.8	ug/L	153	Standard
>	Ga	71	85.0	17.6				mg/L	25	Standard
	Rb	85	2483.5	3.1				ug/L	20	Standard
	Y	89	294681.6	1.2				ug/L	279578	Standard
>	Rh	103	23.3	12.4				ug/L	68	Standard
	Mo	98	68.6	4.2	**0.0251**	0.002	7.1	ug/L	56	Standard
	Ag	107	291685.8	1.2	**50.7810**	0.911	1.8	ug/L	199	Standard
	Cd	111	89931.7	1.8	**51.5962**	0.622	1.2	mg/L	89	Standard
	Cd	114	235359.1	2.3	**51.1140**	0.872	1.7	ug/L	150	Standard
>	In	115	476862.6	0.6				ug/L	458296	Standard
	Sn	118	2920.3	5.8	**0.4687**	0.028	5.9	ug/L	385	Standard
	Sb	123	241171.4	0.4	**53.4291**	0.563	1.1	ug/L	208	Standard
	Ba	135	115212.0	0.3	**53.7037**	0.195	0.4	ug/L	108	Standard
	Ce	140	4547.3	2.6				ug/L	92	Standard
>	Tb	159	829619.9	1.7				ug/L	812006	Standard
	Ho	165	50.0	34.6				ug/L	7	Standard
	Tl	203	353465.9	0.8	**50.5092**	0.754	1.5	ug/L	236	Standard
	Tl	205	242427.5	0.9	**50.0340**	0.142	0.3	ug/L	43	Standard
	Pb	206	227083.1	0.6	**52.4960**	0.369	0.7	ug/L	266	Standard
	Pb	207	196231.9	0.4	**50.1176**	0.534	1.1	ug/L	206	Standard
	Pb	208	708801.6	1.2	**51.9812**	0.978	1.9	ug/L	668	Standard
	U	238	234558.6	1.5	**50.4274**	1.095	2.2	ug/L	32	Standard
>	Bi	209	394029.6	0.8				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	333.3	20.7	**0.6895**	0.174	25.2	mg/L	60	Standard
K	39	10.0		**-0.2156**	0.007	3.3	mg/L	12	Standard
Ca	43	45.0	29.4	**-8.6462**	9.991	115.6	mg/L	37	Standard
Fe	54	164.8	11.4	**0.2133**	0.038	17.7	mg/L	56	Standard
Fe	57	748.4	4.3	**-0.7909**	0.277	35.1	mg/L	735	Standard
> **Sc-1**	45	24873.8	3.7				mg/L	22687	Standard
Cl	35	19819.6	1.2				ug/L	20516	Standard
Kr	83	3.7	78.7				ug/L	5	Standard
Br	81	1816.8	5.2				ug/L	570	Standard
P	31	11192.5	4.1				ug/L	7850	Standard
S	34	1230.1	5.8				ug/L	1375	Standard
Sr	88	143.3	11.2				ug/L	165	Standard
C	12	273.3	16.9				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	67.0	52.0				mg/L	6	Standard
Ho-1	165	50.0	34.6				mg/L	7	Standard
Er	166	63.3	55.5				mg/L	13	Standard
I	127	12353.4	2.4				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.820	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.371	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.051
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.474
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 21, 2015

Method 6020 - Summary Report

Sample ID: L1508032409SD WG535058-06
Sample Date/Time: Thursday, August 20, 2015 12:24:25
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55817.7	3.3				ug/L	51673	Standard
	Be	9	36811.4	4.3	**51.4680**	1.707	3.3	ug/L	43	Standard
	Al	27	292746.2	0.9	**3.9338**	0.134	3.4	ug/L	2157	Standard
	Sc	45	25074.1	4.4				ug/L	22687	Standard
	Ti	47	177.7	7.0	**0.8796**	0.067	7.6	ug/L	43	Standard
	V	51	226193.1	1.1	**50.6709**	0.384	0.8	ug/L	1233	Standard
	Cr	52	273227.8	2.8	**52.0508**	0.839	1.6	ug/L	6387	Standard
	Cr	53	34746.5	0.9	**52.1829**	0.977	1.9	ug/L	1555	Standard
	Mn	55	192651.6	2.6	**61.4924**	0.925	1.5	ug/L	436	Standard
	Co	59	224100.2	1.0	**51.6058**	0.359	0.7	ug/L	236	Standard
	Ni	60	75527.8	2.0	**50.9316**	0.407	0.8	ug/L	204	Standard
	Cu	65	75933.8	1.2	**51.2503**	0.176	0.3	ug/L	303	Standard
	Zn	66	43195.2	1.8	**52.1305**	0.201	0.4	ug/L	332	Standard
>	**Ge**	72	311646.3	1.6				ug/L	293924	Standard
	As	75	43966.8	0.6	**50.4259**	1.097	2.2	ug/L	45	Standard
	Se	82	3701.6	1.0	**50.6670**	0.415	0.8	ug/L	35	Standard
	Se-1	77	2719.6	1.8	**48.2125**	1.570	3.3	ug/L	153	Standard
>	**Ga**	71	93.3	35.7				mg/L	25	Standard
	Rb	85	2331.8	1.6				ug/L	20	Standard
	Y	89	290177.7	1.3				ug/L	279578	Standard
>	**Rh**	103	31.7	39.7				ug/L	68	Standard
	Mo	98	97.2	14.0	**0.0416**	0.008	20.1	ug/L	56	Standard
	Ag	107	290230.1	0.6	**50.0721**	0.318	0.6	ug/L	199	Standard
	Cd	111	88412.7	1.7	**50.2691**	0.270	0.5	mg/L	89	Standard
	Cd	114	234052.4	2.5	**50.3714**	0.655	1.3	ug/L	150	Standard
>	**In**	115	481187.5	1.2				ug/L	458296	Standard
	Sn	118	1345.1	1.9	**0.1859**	0.007	3.7	ug/L	385	Standard
	Sb	123	234389.8	1.4	**51.4566**	0.190	0.4	ug/L	208	Standard
	Ba	135	113614.5	2.0	**52.4794**	0.571	1.1	ug/L	108	Standard
	Ce	140	4537.3	2.6				ug/L	92	Standard
>	**Tb**	159	831005.5	1.5				ug/L	812006	Standard
	Ho	165	53.3	14.3				ug/L	7	Standard
	Tl	203	351603.4	1.8	**50.2333**	0.693	1.4	ug/L	236	Standard
	Tl	205	239799.9	2.0	**49.4906**	1.152	2.3	ug/L	43	Standard
	Pb	206	223856.6	0.6	**51.7445**	0.326	0.6	ug/L	266	Standard
	Pb	207	191775.1	0.6	**48.9717**	0.191	0.4	ug/L	206	Standard
	Pb	208	694547.2	1.1	**50.9249**	0.251	0.5	ug/L	668	Standard
	U	238	230868.6	1.6	**49.6235**	0.550	1.1	ug/L	32	Standard
>	**Bi**	209	394063.8	0.7				ug/L	377155	Standard

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Na	23	3.3	173.2	**-138.8674**	496.100	357.2	mg/L	2	Standard
Mg	24	356.7	4.3	**0.7363**	0.003	0.4	mg/L	60	Standard
K	39	16.7	62.4	**-0.0982**	0.184	187.9	mg/L	12	Standard
Ca	43	40.0	66.1	**-12.5366**	17.869	142.5	mg/L	37	Standard
Fe	54	165.1	15.2	**0.2101**	0.039	18.7	mg/L	56	Standard
Fe	57	711.7	7.4	**-1.1557**	0.188	16.2	mg/L	735	Standard
> **Sc-1**	45	25074.1	4.4				mg/L	22687	Standard
Cl	35	19644.7	0.8				ug/L	20516	Standard
Kr	83	2.3	65.5				ug/L	5	Standard
Br	81	1213.4	8.1				ug/L	570	Standard
P	31	11719.5	6.6				ug/L	7850	Standard
S	34	1143.4	4.2				ug/L	1375	Standard
Sr	88	145.0	35.0				ug/L	165	Standard
C	12	380.0	30.3				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	0	Standard
Dy	164	77.3	25.6				mg/L	6	Standard
Ho-1	165	53.3	14.3				mg/L	7	Standard
Er	166	56.7	27.0				mg/L	13	Standard
I	127	9299.5	2.1				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.021	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.029	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.995
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.483
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508055102
Sample Date/Time: Thursday, August 20, 2015 12:27:36
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56637.3	1.5				ug/L	51673	Standard
	Be	9	93.3	8.2	**0.0638**	0.011	17.4	ug/L	43	Standard
	Al	27	944545.3	2.2	**12.5214**	0.099	0.8	ug/L	2157	Standard
	Sc	45	25047.4	2.7				ug/L	22687	Standard
	Ti	47	4618.4	4.3	**26.6214**	1.038	3.9	ug/L	43	Standard
	V	51	15308.3	2.6	**3.2326**	0.106	3.3	ug/L	1233	Standard
	Cr	52	13168.4	1.1	**1.3961**	0.027	2.0	ug/L	6387	Standard
	Cr	53	1946.8	3.9	**1.0618**	0.122	11.5	ug/L	1555	Standard
	Mn	55	72056.3	1.4	**23.2746**	0.208	0.9	ug/L	436	Standard
	Co	59	1932.8	7.0	**0.4061**	0.034	8.3	ug/L	236	Standard
	Ni	60	1778.8	1.9	**1.1787**	0.018	1.5	ug/L	204	Standard
	Cu	65	251349.1	1.0	**173.2356**	0.947	0.5	ug/L	303	Standard
	Zn	66	20883.0	0.6	**25.4082**	0.286	1.1	ug/L	332	Standard
>	**Ge**	72	306325.6	0.5				ug/L	293924	Standard
	As	75	7455.2	0.9	**8.7346**	0.066	0.8	ug/L	45	Standard
	Se	82	85.2	3.3	**0.9772**	0.039	4.0	ug/L	35	Standard
	Se-1	77	145.0	4.8	**-0.0186**	0.126	676.8	ug/L	153	Standard
>	**Ga**	71	1805.1	2.9				mg/L	25	Standard
	Rb	85	35981.0	1.8				ug/L	20	Standard
	Y	89	301639.1	2.4				ug/L	279578	Standard
>	**Rh**	103	68.3	18.4				ug/L	68	Standard
	Mo	98	4960.4	1.6	**2.9020**	0.082	2.8	ug/L	56	Standard
	Ag	107	918.7	47.9	**0.1442**	0.078	54.2	ug/L	199	Standard
	Cd	111	595.5	29.3	**0.3328**	0.103	31.0	mg/L	89	Standard
	Cd	114	1526.6	28.9	**0.3240**	0.099	30.5	ug/L	150	Standard
>	**In**	115	480775.5	1.4				ug/L	458296	Standard
	Sn	118	3360.4	4.4	**0.5427**	0.034	6.2	ug/L	385	Standard
	Sb	123	3327.6	11.0	**0.7200**	0.089	12.3	ug/L	208	Standard
	Ba	135	31932.6	0.7	**14.7480**	0.238	1.6	ug/L	108	Standard
	Ce	140	51994.1	2.3				ug/L	92	Standard
>	**Tb**	159	841533.0	1.4				ug/L	812006	Standard
	Ho	165	871.7	10.3				ug/L	7	Standard
	Tl	203	717.7	77.8	**0.0940**	0.076	81.0	ug/L	236	Standard
	Tl	205	296.7	27.5	**0.0594**	0.016	26.2	ug/L	43	Standard
	Pb	206	51674.7	1.6	**11.6638**	0.111	1.0	ug/L	266	Standard
	Pb	207	44966.3	1.5	**11.2103**	0.117	1.0	ug/L	206	Standard
	Pb	208	162569.1	0.8	**11.6416**	0.142	1.2	ug/L	668	Standard
	U	238	594.0	12.1	**0.1244**	0.013	10.6	ug/L	32	Standard
>	**Bi**	209	402078.7	1.6				ug/L	377155	Standard

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Na	23	1.7	173.2	**13.5503**	232.105	1712.9	mg/L	2	Standard
Mg	24	5459.3	1.8	**12.8192**	0.365	2.8	mg/L	60	Standard
K	39	160.0	27.2	**2.5957**	0.847	32.6	mg/L	12	Standard
Ca	43	110.0	12.0	**36.0214**	11.330	31.5	mg/L	37	Standard
Fe	54	494.0	8.8	**0.8849**	0.074	8.3	mg/L	56	Standard
Fe	57	966.7	11.5	**1.0079**	1.170	116.1	mg/L	735	Standard
Sc-1	45	25047.4	2.7				mg/L	22687	Standard
Cl	35	23942.2	2.3				ug/L	20516	Standard
Kr	83	5.7	40.8				ug/L	5	Standard
Br	81	1640.1	8.4				ug/L	570	Standard
P	31	13547.7	1.6				ug/L	7850	Standard
S	34	1178.4	8.0				ug/L	1375	Standard
Sr	88	186.7	13.5				ug/L	165	Standard
C	12	290.0	33.3				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	0	Standard
Dy	164	1234.6	5.1				mg/L	6	Standard
Ho-1	165	871.7	10.3				mg/L	7	Standard
Er	166	810.0	5.7				mg/L	13	Standard
I	127	12138.2	1.0				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.607	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.219	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.905
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.608
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: L1508055104
Sample Date/Time: Thursday, August 20, 2015 12:30:46
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63111.2	2.6				ug/L	51673	Standard
	Be	9	43.3	26.6	**-0.0112**	0.015	136.2	ug/L	43	Standard
	Al	27	15067.5	5.6	**0.1690**	0.007	4.1	ug/L	2157	Standard
	Sc	45	24538.2	2.4				ug/L	22687	Standard
	Ti	47	76.7	6.7	**0.3197**	0.024	7.7	ug/L	43	Standard
	V	51	45258.9	0.9	**10.2774**	0.072	0.7	ug/L	1233	Standard
	Cr	52	14466.2	2.2	**1.7039**	0.046	2.7	ug/L	6387	Standard
	Cr	53	1735.1	7.8	**0.7747**	0.225	29.1	ug/L	1555	Standard
	Mn	55	1387.1	3.5	**0.2578**	0.016	6.3	ug/L	436	Standard
	Co	59	1151.7	1.0	**0.2276**	0.005	2.0	ug/L	236	Standard
	Ni	60	4206.6	3.6	**2.8960**	0.071	2.4	ug/L	204	Standard
	Cu	65	498807.2	2.3	**350.0767**	3.165	0.9	ug/L	303	Standard
	Zn	66	1744.1	3.6	**1.7377**	0.050	2.9	ug/L	332	Standard
>	**Ge**	72	301045.0	1.4				ug/L	293924	Standard
	As	75	1125.3	5.5	**1.3796**	0.060	4.3	ug/L	45	Standard
	Se	82	79.1	9.8	**0.9111**	0.098	10.7	ug/L	35	Standard
	Se-1	77	132.7	5.7	**-0.2100**	0.116	55.3	ug/L	153	Standard
>	**Ga**	71	760.0	2.4				mg/L	25	Standard
	Rb	85	8030.5	4.2				ug/L	20	Standard
	Y	89	292829.5	0.9				ug/L	279578	Standard
>	**Rh**	103	170.0	23.5				ug/L	68	Standard
	Mo	98	18755.4	2.7	**10.5249**	0.279	2.7	ug/L	56	Standard
	Ag	107	137.7	13.7	**0.0077**	0.003	42.5	ug/L	199	Standard
	Cd	111	22.8	66.0	**0.0056**	0.008	147.4	mg/L	89	Standard
	Cd	114	113.7	50.9	**0.0178**	0.012	65.8	ug/L	150	Standard
>	**In**	115	503062.7	1.0				ug/L	458296	Standard
	Sn	118	668.3	6.5	**0.0611**	0.006	10.5	ug/L	385	Standard
	Sb	123	1779.4	5.4	**0.3617**	0.017	4.6	ug/L	208	Standard
	Ba	135	26094.8	0.8	**11.5115**	0.116	1.0	ug/L	108	Standard
	Ce	140	246.7	10.0				ug/L	92	Standard
>	**Tb**	159	856168.5	1.1				ug/L	812006	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	96.7	28.1	**0.0078**	0.004	50.0	ug/L	236	Standard
	Tl	205	46.7	44.6	**0.0090**	0.004	47.9	ug/L	43	Standard
	Pb	206	590.3	7.0	**0.0791**	0.011	14.0	ug/L	266	Standard
	Pb	207	501.0	3.2	**0.0691**	0.002	3.4	ug/L	206	Standard
	Pb	208	1895.4	2.6	**0.0823**	0.005	6.1	ug/L	668	Standard
	U	238	55.0	14.2	**0.0110**	0.002	14.4	ug/L	32	Standard
>	**Bi**	209	401003.6	1.5				ug/L	377155	Standard

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Na	23	11.7	24.7	**-826.8008**	242.444	29.3	mg/L	2	Standard
Mg	24	3963.9	2.0	**9.4759**	0.422	4.5	mg/L	60	Standard
K	39	195.0	16.8	**3.3132**	0.586	17.7	mg/L	12	Standard
Ca	43	450.0	7.3	**277.2488**	28.580	10.3	mg/L	37	Standard
Fe	54	85.3	20.3	**0.0521**	0.041	77.7	mg/L	56	Standard
Fe	57	1101.7	1.9	**2.3087**	0.252	10.9	mg/L	735	Standard
> **Sc-1**	45	24538.2	2.4				mg/L	22687	Standard
Cl	35	48983.8	4.6				ug/L	20516	Standard
Kr	83	4.3	13.3				ug/L	5	Standard
Br	81	2626.9	3.3				ug/L	570	Standard
P	31	11724.5	2.2				ug/L	7850	Standard
S	34	1565.1	7.8				ug/L	1375	Standard
Sr	88	203.3	2.8				ug/L	165	Standard
C	12	446.7	4.7				mg/L	173	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	26.7	78.1				mg/L	0	Standard
Dy	164	9.0	110.6				mg/L	6	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	20.0	0.0				mg/L	13	Standard
I	127	51862.0	3.1				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		122.136	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.423	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.768
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.323
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: L1508055104PS WG535239-01
Sample Date/Time: Thursday, August 20, 2015 12:33:58
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67798.1	2.5				ug/L	51673	Standard
	Be	9	43612.7	1.6	**50.2190**	1.563	3.1	ug/L	43	Standard
	Al	27	15451.2	3.0	**0.1610**	0.008	5.0	ug/L	2157	Standard
	Sc	45	24716.8	3.9				ug/L	22687	Standard
	Ti	47	73.7	6.1	**0.2971**	0.021	6.9	ug/L	43	Standard
	V	51	283507.1	0.9	**65.0768**	0.539	0.8	ug/L	1233	Standard
	Cr	52	281602.1	2.7	**54.9692**	0.803	1.5	ug/L	6387	Standard
	Cr	53	34941.9	3.4	**53.7582**	1.764	3.3	ug/L	1555	Standard
	Mn	55	165880.3	2.1	**54.1646**	0.402	0.7	ug/L	436	Standard
	Co	59	234097.2	1.4	**55.1711**	0.029	0.1	ug/L	236	Standard
	Ni	60	79582.2	2.4	**54.9246**	0.631	1.1	ug/L	204	Standard
	Cu	65	567530.0	2.4	**393.8135**	3.967	1.0	ug/L	303	Standard
	Zn	66	43175.8	3.4	**53.3304**	1.076	2.0	ug/L	332	Standard
>	**Ge**	72	304506.8	1.4				ug/L	293924	Standard
	As	75	47192.4	1.7	**55.3755**	0.228	0.4	ug/L	45	Standard
	Se	82	4048.5	0.9	**56.7417**	0.792	1.4	ug/L	35	Standard
	Se-1	77	2925.6	3.1	**53.3398**	1.226	2.3	ug/L	153	Standard
>	**Ga**	71	768.4	4.9				mg/L	25	Standard
	Rb	85	8243.9	3.2				ug/L	20	Standard
	Y	89	298261.3	2.2				ug/L	279578	Standard
>	**Rh**	103	146.7	11.0				ug/L	68	Standard
	Mo	98	18846.8	0.9	**10.3691**	0.178	1.7	ug/L	56	Standard
	Ag	107	302177.3	2.4	**48.8835**	1.053	2.2	ug/L	199	Standard
	Cd	111	97369.3	0.8	**51.9171**	0.277	0.5	mg/L	89	Standard
	Cd	114	248558.2	1.9	**50.1647**	0.555	1.1	ug/L	150	Standard
>	**In**	115	513157.2	1.4				ug/L	458296	Standard
	Sn	118	738.4	3.1	**0.0705**	0.005	6.5	ug/L	385	Standard
	Sb	123	256028.9	1.5	**52.7098**	0.787	1.5	ug/L	208	Standard
	Ba	135	138986.4	2.3	**60.2097**	1.388	2.3	ug/L	108	Standard
	Ce	140	251.7	15.9				ug/L	92	Standard
>	**Tb**	159	858521.7	1.9				ug/L	812006	Standard
	Ho	165	11.7	99.0				ug/L	7	Standard
	Tl	203	378364.4	1.2	**52.3244**	0.408	0.8	ug/L	236	Standard
	Tl	205	266890.5	1.6	**53.3156**	1.112	2.1	ug/L	43	Standard
	Pb	206	235982.0	1.2	**52.7993**	0.679	1.3	ug/L	266	Standard
	Pb	207	214171.3	1.4	**52.9419**	0.774	1.5	ug/L	206	Standard
	Pb	208	745579.2	1.1	**52.9157**	0.395	0.7	ug/L	668	Standard
	U	238	259676.9	1.2	**54.0274**	0.627	1.2	ug/L	32	Standard
>	**Bi**	209	407117.5	0.4				ug/L	377155	Standard

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Na	23	13.3	78.1	**-976.2178**	901.220	92.3	mg/L	2	Standard
Mg	24	4040.5	7.1	**9.5870**	0.657	6.9	mg/L	60	Standard
K	39	138.3	25.6	**2.2083**	0.608	27.5	mg/L	12	Standard
Ca	43	438.3	5.7	**267.1676**	28.475	10.7	mg/L	37	Standard
Fe	54	89.7	20.9	**0.0586**	0.032	54.3	mg/L	56	Standard
Fe	57	1200.0	2.2	**3.0763**	0.266	8.6	mg/L	735	Standard
> **Sc-1**	45	24716.8	3.9				mg/L	22687	Standard
Cl	35	53654.9	2.4				ug/L	20516	Standard
Kr	83	4.7	32.7				ug/L	5	Standard
Br	81	2640.2	3.7				ug/L	570	Standard
P	31	12268.3	1.3				ug/L	7850	Standard
S	34	1586.7	6.3				ug/L	1375	Standard
Sr	88	231.7	14.0				ug/L	165	Standard
C	12	570.0	27.0				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	115.5				mg/L	0	Standard
Dy	164	19.2	49.6				mg/L	6	Standard
Ho-1	165	11.7	99.0				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	13	Standard
I	127	51534.2	0.6				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		131.206	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.600	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.971
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.944
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: L1508055104SDL WG535239-02
Sample Date/Time: Thursday, August 20, 2015 12:37:09
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61305.6	3.9				ug/L	51673	Standard
	Be	9	15.0	57.7	**-0.0458**	0.011	24.8	ug/L	43	Standard
	Al	27	3210.3	3.8	**0.0290**	0.001	1.9	ug/L	2157	Standard
	Sc	45	23174.4	3.1				ug/L	22687	Standard
	Ti	47	36.0	14.4	**0.0869**	0.030	34.9	ug/L	43	Standard
	V	51	9942.5	1.3	**2.1174**	0.022	1.0	ug/L	1233	Standard
	Cr	52	9123.4	1.6	**0.6851**	0.045	6.6	ug/L	6387	Standard
	Cr	53	981.7	7.4	**-0.3914**	0.121	31.0	ug/L	1555	Standard
	Mn	55	696.7	1.8	**0.0364**	0.006	16.7	ug/L	436	Standard
	Co	59	436.7	14.8	**0.0602**	0.015	25.2	ug/L	236	Standard
	Ni	60	868.0	4.8	**0.5833**	0.024	4.2	ug/L	204	Standard
	Cu	65	96020.3	0.5	**69.3530**	1.068	1.5	ug/L	303	Standard
	Zn	66	3108.3	0.3	**3.5842**	0.053	1.5	ug/L	332	Standard
>	**Ge**	72	291648.7	1.1				ug/L	293924	Standard
	As	75	187.7	22.2	**0.2756**	0.053	19.4	ug/L	45	Standard
	Se	82	32.1	19.3	**0.2586**	0.096	37.2	ug/L	35	Standard
	Se-1	77	109.7	11.9	**-0.5886**	0.240	40.9	ug/L	153	Standard
>	**Ga**	71	165.0	18.9				mg/L	25	Standard
	Rb	85	1551.7	4.5				ug/L	20	Standard
	Y	89	278236.7	1.1				ug/L	279578	Standard
>	**Rh**	103	46.7	52.9				ug/L	68	Standard
	Mo	98	3486.4	1.0	**2.0796**	0.022	1.1	ug/L	56	Standard
	Ag	107	159.3	30.4	**0.0132**	0.009	65.9	ug/L	199	Standard
	Cd	111	17.8	89.5	**0.0036**	0.009	260.4	mg/L	89	Standard
	Cd	114	61.9	48.0	**0.0081**	0.007	81.8	ug/L	150	Standard
>	**In**	115	470443.8	0.6				ug/L	458296	Standard
	Sn	118	426.7	8.6	**0.0253**	0.007	27.9	ug/L	385	Standard
	Sb	123	1213.3	5.1	**0.2606**	0.015	5.8	ug/L	208	Standard
	Ba	135	4946.8	0.5	**2.3144**	0.024	1.0	ug/L	108	Standard
	Ce	140	58.3	9.9				ug/L	92	Standard
>	**Tb**	159	807937.1	0.5				ug/L	812006	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	91.3	81.5	**0.0075**	0.011	145.5	ug/L	236	Standard
	Tl	205	41.7	85.1	**0.0082**	0.007	90.0	ug/L	43	Standard
	Pb	206	474.0	11.3	**0.0555**	0.013	23.6	ug/L	266	Standard
	Pb	207	428.3	10.4	**0.0537**	0.011	21.2	ug/L	206	Standard
	Pb	208	1443.0	3.8	**0.0524**	0.004	6.9	ug/L	668	Standard
	U	238	53.3	72.7	**0.0109**	0.008	76.6	ug/L	32	Standard
>	**Bi**	209	390456.9	0.7				ug/L	377155	Standard

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Na	23	1.7	173.2	**-0.3150**	256.120	81299.1	mg/L	2	Standard
Mg	24	755.0	19.5	**1.8303**	0.410	22.4	mg/L	60	Standard
K	39	50.0	52.9	**0.6101**	0.541	88.7	mg/L	12	Standard
Ca	43	113.3	24.3	**44.6559**	22.016	49.3	mg/L	37	Standard
Fe	54	82.7	7.1	**0.0563**	0.015	26.0	mg/L	56	Standard
Fe	57	750.0	8.8	**-0.3216**	0.486	151.2	mg/L	735	Standard
Sc-1	45	23174.4	3.1				mg/L	22687	Standard
Cl	35	37269.8	1.1				ug/L	20516	Standard
Kr	83	2.3	24.7				ug/L	5	Standard
Br	81	886.7	10.8				ug/L	570	Standard
P	31	9329.5	0.9				ug/L	7850	Standard
S	34	1745.1	4.5				ug/L	1375	Standard
Sr	88	185.0	2.7				ug/L	165	Standard
C	12	300.0	16.7				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	16.7	124.9				mg/L	6	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	0.0					mg/L	13	Standard
I	127	11871.3	1.1				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		118.641	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.226	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.651
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.527
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, August 20, 2015 12:40:23
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	57048.9	2.9				ug/L	51673	Standard
	Be	9	35969.3	2.6	**49.2012**	0.320	0.6	ug/L	43	Standard
	Al	27	3677167.6	2.8	**48.4297**	0.227	0.5	ug/L	2157	Standard
	Sc	45	23701.9	4.9				ug/L	22687	Standard
	Ti	47	18080.1	0.6	**106.5226**	1.353	1.3	ug/L	43	Standard
	V	51	218699.4	1.5	**50.7484**	1.007	2.0	ug/L	1233	Standard
	Cr	52	259843.3	1.7	**51.2654**	1.145	2.2	ug/L	6387	Standard
	Cr	53	32524.9	2.1	**50.5278**	1.136	2.2	ug/L	1555	Standard
	Mn	55	157606.9	1.5	**52.0830**	0.864	1.7	ug/L	436	Standard
	Co	59	216910.0	0.6	**51.7372**	0.315	0.6	ug/L	236	Standard
	Ni	60	72751.9	1.3	**50.8228**	0.936	1.8	ug/L	204	Standard
	Cu	65	72508.1	1.0	**50.6866**	0.324	0.6	ug/L	303	Standard
	Zn	66	40638.1	1.6	**50.7963**	1.191	2.3	ug/L	332	Standard
>	Ge	72	300866.6	0.7				ug/L	293924	Standard
	As	75	42587.6	0.4	**50.5834**	0.259	0.5	ug/L	45	Standard
	Se	82	3610.1	1.3	**51.1884**	0.997	1.9	ug/L	35	Standard
	Se-1	77	2675.9	1.1	**49.1789**	0.778	1.6	ug/L	153	Standard
>	Ga	71	45.0	19.2				mg/L	25	Standard
	Rb	85	590.0	9.8				ug/L	20	Standard
	Y	89	279672.7	0.8				ug/L	279578	Standard
>	Rh	103	28.3	81.5				ug/L	68	Standard
	Mo	98	164304.2	0.9	**98.4631**	0.331	0.3	ug/L	56	Standard
	Ag	107	280794.4	0.6	**49.4189**	0.324	0.7	ug/L	199	Standard
	Cd	111	87099.3	2.0	**50.5251**	1.151	2.3	mg/L	89	Standard
	Cd	114	227316.6	2.3	**49.9192**	1.452	2.9	ug/L	150	Standard
>	In	115	471681.0	0.7				ug/L	458296	Standard
	Sn	118	246689.0	1.7	**44.4095**	0.444	1.0	ug/L	385	Standard
	Sb	123	224198.1	1.3	**50.2104**	0.297	0.6	ug/L	208	Standard
	Ba	135	104807.3	0.7	**49.3909**	0.678	1.4	ug/L	108	Standard
	Ce	140	66.7	30.3				ug/L	92	Standard
>	Tb	159	805409.2	0.4				ug/L	812006	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	351545.6	1.3	**50.3169**	0.895	1.8	ug/L	236	Standard
	Tl	205	241821.3	0.9	**49.9913**	0.386	0.8	ug/L	43	Standard
	Pb	206	217105.2	1.1	**50.2670**	0.146	0.3	ug/L	266	Standard
	Pb	207	197043.4	1.1	**50.4059**	0.561	1.1	ug/L	206	Standard
	Pb	208	694674.0	0.1	**51.0253**	0.492	1.0	ug/L	668	Standard
	U	238	238635.9	0.4	**51.3850**	0.520	1.0	ug/L	32	Standard
>	Bi	209	393388.4	0.9				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	2176.8	5.7	**5.3367**	0.104	1.9	mg/L	60	Standard
K	39	205.0	12.9	**3.6655**	0.682	18.6	mg/L	12	Standard
Ca	43	68.3	11.2	**9.8681**	6.522	66.1	mg/L	37	Standard
Fe	54	2437.5	5.1	**5.1682**	0.514	10.0	mg/L	56	Standard
Fe	57	1456.7	6.0	**5.7843**	0.788	13.6	mg/L	735	Standard
> **Sc-1**	45	23701.9	4.9				mg/L	22687	Standard
Cl	35	26573.4	7.4				ug/L	20516	Standard
Kr	83	1.3	86.6				ug/L	5	Standard
Br	81	606.7	12.8				ug/L	570	Standard
P	31	10458.6	3.7				ug/L	7850	Standard
S	34	1740.1	4.8				ug/L	1375	Standard
Sr	88	146.7	30.7				ug/L	165	Standard
C	12	256.7	22.8				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	13.0	119.4				mg/L	6	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	805.0	9.0				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	98.402		
Al	27	96.859		
Sc	45			
Ti	47	106.523		
V	51	101.497		
Cr	52	102.531		
Cr	53			
Mn	55	104.166		
Co	59	103.474		
Ni	60	101.646		
Cu	65	101.373		
Zn	66	101.593		
> Ge	72		102.362	
As	75	101.167		
Se	82	102.377		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.463		
Ag	107	98.838		
Cd	111	101.050		
Cd	114			
> In	115			102.921
Sn	118	88.819		
Sb	123	100.421		
Ba	135	98.782		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.634		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.051		
U	238	102.770		
> Bi	209			104.304
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, August 20, 2015 12:43:34
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55872.8	1.4				ug/L	51673	Standard
	Be	9	30.0	28.9	**-0.0230**	0.012	53.5	ug/L	43	Standard
	Al	27	586.7	42.1	**-0.0025**	0.003	137.5	ug/L	2157	Standard
	Sc	45	23650.1	2.8				ug/L	22687	Standard
	Ti	47	25.0	22.3	**0.0163**	0.033	200.7	ug/L	43	Standard
	V	51	988.3	15.7	**-0.0435**	0.034	79.0	ug/L	1233	Standard
	Cr	52	5307.9	2.2	**-0.1369**	0.020	14.9	ug/L	6387	Standard
	Cr	53	730.0	8.7	**-0.8408**	0.098	11.6	ug/L	1555	Standard
	Mn	55	455.3	7.2	**-0.0501**	0.010	19.4	ug/L	436	Standard
	Co	59	218.7	27.5	**0.0052**	0.014	266.4	ug/L	236	Standard
	Ni	60	54.0	17.0	**-0.0046**	0.006	136.0	ug/L	204	Standard
	Cu	65	183.0	8.9	**-0.1467**	0.011	7.7	ug/L	303	Standard
	Zn	66	238.0	7.3	**-0.1580**	0.023	14.3	ug/L	332	Standard
>	**Ge**	72	298877.2	0.9				ug/L	293924	Standard
	As	75	-44.9	15.3	**-0.0083**	0.009	105.0	ug/L	45	Standard
	Se	82	15.8	24.6	**0.0123**	0.054	435.6	ug/L	35	Standard
	Se-1	77	101.0	5.5	**-0.8087**	0.127	15.7	ug/L	153	Standard
>	**Ga**	71	21.7	13.3				mg/L	25	Standard
	Rb	85	30.0	16.7				ug/L	20	Standard
	Y	89	279952.7	0.1				ug/L	279578	Standard
>	**Rh**	103	15.0	66.7				ug/L	68	Standard
	Mo	98	78.0	53.9	**0.0314**	0.025	79.7	ug/L	56	Standard
	Ag	107	204.0	71.0	**0.0210**	0.025	120.5	ug/L	199	Standard
	Cd	111	34.9	117.1	**0.0134**	0.024	175.8	mg/L	89	Standard
	Cd	114	58.7	111.3	**0.0073**	0.014	195.1	ug/L	150	Standard
>	**In**	115	468872.1	0.6				ug/L	458296	Standard
	Sn	118	483.3	20.2	**0.0357**	0.017	47.9	ug/L	385	Standard
	Sb	123	959.5	14.1	**0.2041**	0.029	14.3	ug/L	208	Standard
	Ba	135	74.0	71.6	**0.0110**	0.025	225.5	ug/L	108	Standard
	Ce	140	16.7	69.3				ug/L	92	Standard
>	**Tb**	159	829441.4	1.0				ug/L	812006	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	155.0	129.3	**0.0161**	0.028	175.1	ug/L	236	Standard
	Tl	205	43.3	81.0	**0.0084**	0.007	85.3	ug/L	43	Standard
	Pb	206	261.7	31.2	**0.0048**	0.018	386.6	ug/L	266	Standard
	Pb	207	232.3	41.4	**0.0020**	0.024	1191.2	ug/L	206	Standard
	Pb	208	712.7	19.5	**-0.0027**	0.010	370.9	ug/L	668	Standard
	U	238	51.0	84.5	**0.0102**	0.009	89.1	ug/L	32	Standard
>	**Bi**	209	397529.9	0.5				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	68.3	33.0	**0.0654**	0.061	93.7	mg/L	60	Standard
K	39	8.3	91.7	**-0.2375**	0.155	65.2	mg/L	12	Standard
Ca	43	41.7	34.6	**-9.5852**	10.740	112.0	mg/L	37	Standard
Fe	54	47.7	41.9	**-0.0233**	0.043	185.8	mg/L	56	Standard
Fe	57	796.7	5.7	**-0.0307**	0.575	1876.5	mg/L	735	Standard
Sc-1	45	23650.1	2.8				mg/L	22687	Standard
Cl	35	24593.9	1.3				ug/L	20516	Standard
Kr	83	3.3	17.3				ug/L	5	Standard
Br	81	553.3	31.7				ug/L	570	Standard
P	31	8909.3	2.5				ug/L	7850	Standard
S	34	1660.1	6.8				ug/L	1375	Standard
Sr	88	143.3	19.8				ug/L	165	Standard
C	12	200.0	22.9				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	-0.3	173.2				mg/L	6	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	13	Standard
I	127	3568.8	4.0				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.685	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.308	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	105.402	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

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Method 6020 - Summary Report

Sample ID: L1508055102
Sample Date/Time: Thursday, August 20, 2015 12:49:36
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	54643.4	2.7				ug/L	51673	Standard
	Be	9	50.0	87.2	**0.0059**	0.060	1030.2	ug/L	43	Standard
	Al	27	93768.6	7.4	**1.2784**	0.069	5.4	ug/L	2157	Standard
	Sc	45	23007.5	3.7				ug/L	22687	Standard
	Ti	47	492.7	11.0	**2.8520**	0.334	11.7	ug/L	43	Standard
	V	51	2499.4	21.5	**0.3231**	0.127	39.4	ug/L	1233	Standard
	Cr	52	6270.0	4.8	**0.0840**	0.058	69.5	ug/L	6387	Standard
	Cr	53	751.7	8.0	**-0.7809**	0.099	12.7	ug/L	1555	Standard
	Mn	55	8208.2	9.2	**2.5932**	0.251	9.7	ug/L	436	Standard
	Co	59	825.4	95.2	**0.1548**	0.192	124.0	ug/L	236	Standard
	Ni	60	257.7	27.0	**0.1423**	0.050	34.8	ug/L	204	Standard
	Cu	65	24449.4	0.8	**17.3675**	0.203	1.2	ug/L	303	Standard
	Zn	66	3511.7	2.7	**4.0867**	0.104	2.6	ug/L	332	Standard
>	Ge	72	293044.1	0.4				ug/L	293924	Standard
	As	75	660.0	8.2	**0.8495**	0.065	7.7	ug/L	45	Standard
	Se	82	28.1	39.0	**0.1973**	0.161	81.5	ug/L	35	Standard
	Se-1	77	100.0	13.2	**-0.7906**	0.259	32.7	ug/L	153	Standard
>	Ga	71	226.7	18.8				mg/L	25	Standard
	Rb	85	3437.1	5.7				ug/L	20	Standard
	Y	89	279980.3	1.8				ug/L	279578	Standard
>	Rh	103	18.3	41.7				ug/L	68	Standard
	Mo	98	829.0	66.4	**0.4858**	0.327	67.3	ug/L	56	Standard
	Ag	107	227.7	66.8	**0.0257**	0.027	106.5	ug/L	199	Standard
	Cd	111	110.0	78.2	**0.0579**	0.051	88.0	mg/L	89	Standard
	Cd	114	310.3	72.7	**0.0636**	0.051	79.7	ug/L	150	Standard
>	In	115	465342.0	1.0				ug/L	458296	Standard
	Sn	118	733.4	15.0	**0.0822**	0.021	25.3	ug/L	385	Standard
	Sb	123	610.0	18.6	**0.1266**	0.027	21.0	ug/L	208	Standard
	Ba	135	3205.7	0.7	**1.5081**	0.025	1.7	ug/L	108	Standard
	Ce	140	5212.6	1.8				ug/L	92	Standard
>	Tb	159	813020.1	0.5				ug/L	812006	Standard
	Ho	165	80.0	25.0				ug/L	7	Standard
	Tl	203	195.7	101.6	**0.0227**	0.029	127.8	ug/L	236	Standard
	Tl	205	351.7	156.1	**0.0730**	0.115	157.1	ug/L	43	Standard
	Pb	206	5551.4	3.1	**1.2492**	0.044	3.5	ug/L	266	Standard
	Pb	207	4842.1	1.8	**1.2002**	0.023	2.0	ug/L	206	Standard
	Pb	208	18794.3	10.6	**1.3461**	0.146	10.8	ug/L	668	Standard
	U	238	388.3	141.0	**0.0840**	0.119	141.9	ug/L	32	Standard
>	Bi	209	388077.5	0.3				ug/L	377155	Standard

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Na	23	5.0	173.2	**-279.9240**	740.417	264.5	mg/L	2	Standard
Mg	24	508.3	5.0	**1.2056**	0.113	9.4	mg/L	60	Standard
K	39	23.3	32.7	**0.0693**	0.146	210.6	mg/L	12	Standard
Ca	43	43.3	48.0	**-7.1779**	16.371	228.1	mg/L	37	Standard
Fe	54	107.5	13.3	**0.1134**	0.035	30.9	mg/L	56	Standard
Fe	57	773.4	12.6	**-0.0360**	1.083	3010.3	mg/L	735	Standard
> **Sc-1**	45	23007.5	3.7				mg/L	22687	Standard
Cl	35	23898.2	0.3				ug/L	20516	Standard
Kr	83	4.7	49.5				ug/L	5	Standard
Br	81	683.3	1.7				ug/L	570	Standard
P	31	8675.8	2.9				ug/L	7850	Standard
S	34	1561.7	7.1				ug/L	1375	Standard
Sr	88	141.7	5.4				ug/L	165	Standard
C	12	233.3	35.9				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	182.8	20.0				mg/L	6	Standard
Ho-1	165	80.0	25.0				mg/L	7	Standard
Er	166	80.0	43.3				mg/L	13	Standard
I	127	3970.5	4.2				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.748	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.701	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.537
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.896
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508055104PS WG535239-01
Sample Date/Time: Thursday, August 20, 2015 12:52:47
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	54496.2	0.3				ug/L	51673	Standard
	Be	9	36589.1	1.6	**52.3932**	0.698	1.3	ug/L	43	Standard
	Al	27	3298.7	1.1	**0.0351**	0.000	1.2	ug/L	2157	Standard
	Sc	45	22461.6	0.7				ug/L	22687	Standard
	Ti	47	32.0	11.3	**0.0646**	0.020	30.7	ug/L	43	Standard
	V	51	228662.1	1.3	**55.3581**	1.457	2.6	ug/L	1233	Standard
	Cr	52	257470.2	1.6	**53.0118**	1.404	2.6	ug/L	6387	Standard
	Cr	53	32072.2	1.6	**52.0208**	1.604	3.1	ug/L	1555	Standard
	Mn	55	159002.4	1.6	**54.7987**	0.905	1.7	ug/L	436	Standard
	Co	59	222126.8	1.1	**55.2476**	0.529	1.0	ug/L	236	Standard
	Ni	60	72443.2	2.8	**52.7699**	1.567	3.0	ug/L	204	Standard
	Cu	65	169358.1	1.9	**123.8403**	1.898	1.5	ug/L	303	Standard
	Zn	66	41893.2	1.0	**54.6303**	0.270	0.5	ug/L	332	Standard
>	Ge	72	288554.8	1.4				ug/L	293924	Standard
	As	75	44093.1	0.6	**54.6071**	0.655	1.2	ug/L	45	Standard
	Se	82	3797.7	0.3	**56.1701**	0.917	1.6	ug/L	35	Standard
	Se-1	77	2720.2	3.5	**52.3161**	2.717	5.2	ug/L	153	Standard
>	Ga	71	173.3	16.4				mg/L	25	Standard
	Rb	85	1451.7	4.8				ug/L	20	Standard
	Y	89	272518.3	2.5				ug/L	279578	Standard
>	Rh	103	56.7	20.4				ug/L	68	Standard
	Mo	98	3482.9	1.3	**2.0807**	0.056	2.7	ug/L	56	Standard
	Ag	107	282485.8	1.6	**49.9106**	0.706	1.4	ug/L	199	Standard
	Cd	111	89116.3	0.7	**51.8991**	0.765	1.5	mg/L	89	Standard
	Cd	114	232639.0	2.1	**51.2930**	1.630	3.2	ug/L	150	Standard
>	In	115	469860.4	1.4				ug/L	458296	Standard
	Sn	118	463.3	17.5	**0.0322**	0.016	48.7	ug/L	385	Standard
	Sb	123	231778.8	0.7	**52.1158**	0.576	1.1	ug/L	208	Standard
	Ba	135	112097.2	1.9	**53.0367**	1.290	2.4	ug/L	108	Standard
	Ce	140	75.0	23.1				ug/L	92	Standard
>	Tb	159	815249.0	1.3				ug/L	812006	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	360428.3	1.6	**52.0453**	0.530	1.0	ug/L	236	Standard
	Tl	205	247176.8	1.5	**51.5588**	0.934	1.8	ug/L	43	Standard
	Pb	206	222805.6	0.6	**52.0530**	0.303	0.6	ug/L	266	Standard
	Pb	207	202585.7	0.1	**52.2913**	0.425	0.8	ug/L	206	Standard
	Pb	208	717415.1	0.5	**53.1686**	0.257	0.5	ug/L	668	Standard
	U	238	242759.3	0.3	**52.7401**	0.228	0.4	ug/L	32	Standard
>	Bi	209	389890.2	0.7				ug/L	377155	Standard

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Na	23	3.3	86.6	**-155.1461**	262.148	169.0	mg/L	2	Standard
Mg	24	788.4	5.5	**1.9741**	0.125	6.3	mg/L	60	Standard
K	39	53.3	48.1	**0.7081**	0.534	75.4	mg/L	12	Standard
Ca	43	115.0	8.7	**48.4387**	8.236	17.0	mg/L	37	Standard
Fe	54	68.5	11.1	**0.0295**	0.017	56.9	mg/L	56	Standard
Fe	57	805.0	5.5	**0.4115**	0.447	108.7	mg/L	735	Standard
> **Sc-1**	45	22461.6	0.7				mg/L	22687	Standard
Cl	35	29301.1	7.3				ug/L	20516	Standard
Kr	83	4.3	81.0				ug/L	5	Standard
Br	81	983.4	10.4				ug/L	570	Standard
P	31	8834.2	2.7				ug/L	7850	Standard
S	34	1560.1	5.6				ug/L	1375	Standard
Sr	88	186.7	11.2				ug/L	165	Standard
C	12	236.7	32.3				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	124.9				mg/L	0	Standard
Dy	164	12.5	45.0				mg/L	6	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	13	Standard
I	127	11959.7	2.2				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.463	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.173	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1508055104PS WG535239-01
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.523
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.377
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cu 65 Upper, S, EEE	Cu	65	

Approved: August 21, 2015

Method 6020 - Summary Report

Sample ID: L1508055104SDL WG535239-02
Sample Date/Time: Thursday, August 20, 2015 12:55:58
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55185.6	6.4				ug/L	51673	Standard
	Be	9	35.0	51.5	**-0.0148**	0.027	180.3	ug/L	43	Standard
	Al	27	843.4	21.8	**0.0011**	0.003	239.9	ug/L	2157	Standard
	Sc	45	22339.8	4.3				ug/L	22687	Standard
	Ti	47	25.7	22.2	**0.0234**	0.036	154.8	ug/L	43	Standard
	V	51	2957.4	2.1	**0.4319**	0.023	5.3	ug/L	1233	Standard
	Cr	52	7059.3	1.2	**0.2455**	0.032	12.9	ug/L	6387	Standard
	Cr	53	678.3	5.6	**-0.9044**	0.063	7.0	ug/L	1555	Standard
	Mn	55	561.0	4.6	**-0.0114**	0.008	70.6	ug/L	436	Standard
	Co	59	233.0	8.6	**0.0098**	0.006	56.2	ug/L	236	Standard
	Ni	60	199.7	22.4	**0.1005**	0.032	32.2	ug/L	204	Standard
	Cu	65	19821.3	2.2	**14.0027**	0.268	1.9	ug/L	303	Standard
	Zn	66	941.7	2.8	**0.7572**	0.036	4.7	ug/L	332	Standard
>	**Ge**	72	293549.7	1.3				ug/L	293924	Standard
	As	75	23.6	64.7	**0.0743**	0.019	25.5	ug/L	45	Standard
	Se	82	19.2	45.7	**0.0665**	0.131	197.0	ug/L	35	Standard
	Se-1	77	94.7	15.0	**-0.8991**	0.287	32.0	ug/L	153	Standard
>	**Ga**	71	60.0	22.0				mg/L	25	Standard
	Rb	85	315.0	5.7				ug/L	20	Standard
	Y	89	274822.9	2.7				ug/L	279578	Standard
>	**Rh**	103	25.0	52.9				ug/L	68	Standard
	Mo	98	693.4	1.0	**0.4129**	0.003	0.6	ug/L	56	Standard
	Ag	107	120.0	15.6	**0.0068**	0.003	47.0	ug/L	199	Standard
	Cd	111	12.1	23.8	**0.0004**	0.002	394.7	mg/L	89	Standard
	Cd	114	28.4	67.0	**0.0008**	0.004	518.3	ug/L	150	Standard
>	**In**	115	457541.6	1.3				ug/L	458296	Standard
	Sn	118	371.7	3.4	**0.0173**	0.003	18.6	ug/L	385	Standard
	Sb	123	1018.9	1.4	**0.2233**	0.001	0.3	ug/L	208	Standard
	Ba	135	1055.4	3.9	**0.4891**	0.024	5.0	ug/L	108	Standard
	Ce	140	30.0	28.9				ug/L	92	Standard
>	**Tb**	159	806061.2	1.7				ug/L	812006	Standard
	Ho	165	1.7	173.2				ug/L	7	Standard
	Tl	203	37.7	74.6	**-0.0003**	0.004	1472.9	ug/L	236	Standard
	Tl	205	95.0	136.8	**0.0195**	0.027	140.3	ug/L	43	Standard
	Pb	206	228.7	2.6	**-0.0014**	0.002	130.0	ug/L	266	Standard
	Pb	207	192.7	8.8	**-0.0067**	0.004	67.1	ug/L	206	Standard
	Pb	208	762.0	20.0	**0.0024**	0.011	468.5	ug/L	668	Standard
	U	238	78.3	134.5	**0.0165**	0.023	139.8	ug/L	32	Standard
>	**Bi**	209	387279.9	0.7				ug/L	377155	Standard

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Na	23	1.7	173.2	**-12.8761**	277.877	2158.1	mg/L	2	Standard
Mg	24	170.0	15.6	**0.3458**	0.081	23.5	mg/L	60	Standard
K	39	15.0	33.3	**-0.0885**	0.107	120.4	mg/L	12	Standard
Ca	43	53.3	14.3	**1.3769**	7.565	549.4	mg/L	37	Standard
Fe	54	59.0	31.3	**0.0094**	0.046	490.8	mg/L	56	Standard
Fe	57	771.7	2.7	**0.1526**	0.500	327.4	mg/L	735	Standard
> **Sc-1**	45	22339.8	4.3				mg/L	22687	Standard
Cl	35	28654.4	0.7				ug/L	20516	Standard
Kr	83	2.3	65.5				ug/L	5	Standard
Br	81	626.7	13.3				ug/L	570	Standard
P	31	8334.0	1.6				ug/L	7850	Standard
S	34	1625.1	6.4				ug/L	1375	Standard
Sr	88	161.7	17.9				ug/L	165	Standard
C	12	206.7	64.4				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	2.7	235.5				mg/L	6	Standard
Ho-1	165	1.7	173.2				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	4994.2	5.6				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.798	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.873	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.835
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.684
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, August 20, 2015 12:59:11
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	55635.3	1.6				ug/L	51673	Standard
	Be	9	34504.2	1.0	**48.3954**	0.312	0.6	ug/L	43	Standard
	Al	27	3588116.0	1.0	**48.4668**	1.105	2.3	ug/L	2157	Standard
	Sc	45	23718.6	1.0				ug/L	22687	Standard
	Ti	47	17840.8	0.4	**106.0707**	0.694	0.7	ug/L	43	Standard
	V	51	215226.7	0.6	**50.3949**	0.274	0.5	ug/L	1233	Standard
	Cr	52	255023.4	1.6	**50.7604**	0.858	1.7	ug/L	6387	Standard
	Cr	53	31332.4	2.0	**49.0652**	1.153	2.4	ug/L	1555	Standard
	Mn	55	157142.2	1.6	**52.4059**	0.918	1.8	ug/L	436	Standard
	Co	59	212307.5	0.5	**51.1025**	0.314	0.6	ug/L	236	Standard
	Ni	60	72482.6	0.8	**51.0962**	0.507	1.0	ug/L	204	Standard
	Cu	65	71553.2	0.2	**50.4767**	0.056	0.1	ug/L	303	Standard
	Zn	66	40302.9	0.5	**50.8338**	0.157	0.3	ug/L	332	Standard
>	Ge	72	298133.6	0.2				ug/L	293924	Standard
	As	75	41784.9	0.8	**50.0841**	0.291	0.6	ug/L	45	Standard
	Se	82	3527.4	1.0	**50.4680**	0.605	1.2	ug/L	35	Standard
	Se-1	77	2612.2	0.8	**48.4045**	0.342	0.7	ug/L	153	Standard
>	Ga	71	46.7	6.2				mg/L	25	Standard
	Rb	85	563.3	16.0				ug/L	20	Standard
	Y	89	276322.0	0.6				ug/L	279578	Standard
>	Rh	103	33.3	22.9				ug/L	68	Standard
	Mo	98	161835.7	0.4	**98.5436**	0.423	0.4	ug/L	56	Standard
	Ag	107	279806.3	0.2	**50.0368**	0.412	0.8	ug/L	199	Standard
	Cd	111	84743.3	2.3	**49.9414**	0.839	1.7	mg/L	89	Standard
	Cd	114	219217.1	0.9	**48.9066**	0.057	0.1	ug/L	150	Standard
>	In	115	464230.1	0.8				ug/L	458296	Standard
	Sn	118	249686.5	2.7	**45.6713**	1.019	2.2	ug/L	385	Standard
	Sb	123	222749.4	1.3	**50.6914**	0.884	1.7	ug/L	208	Standard
	Ba	135	104463.6	0.7	**50.0167**	0.158	0.3	ug/L	108	Standard
	Ce	140	71.7	31.5				ug/L	92	Standard
>	Tb	159	806292.9	2.0				ug/L	812006	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	349233.1	1.4	**50.4395**	0.324	0.6	ug/L	236	Standard
	Tl	205	243011.7	0.7	**50.7045**	0.980	1.9	ug/L	43	Standard
	Pb	206	214468.6	0.7	**50.1136**	0.240	0.5	ug/L	266	Standard
	Pb	207	193142.0	1.2	**49.8627**	0.797	1.6	ug/L	206	Standard
	Pb	208	689378.6	0.5	**51.1016**	0.587	1.1	ug/L	668	Standard
	U	238	233000.2	0.5	**50.6344**	0.789	1.6	ug/L	32	Standard
>	Bi	209	389818.8	1.2				ug/L	377155	Standard

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Na	23	1.7	173.2	**2.8856**	250.577	8683.6	mg/L	2	Standard
Mg	24	2060.1	2.5	**5.0415**	0.079	1.6	mg/L	60	Standard
K	39	261.7	9.8	**4.7653**	0.542	11.4	mg/L	12	Standard
Ca	43	70.0	12.4	**10.9651**	6.777	61.8	mg/L	37	Standard
Fe	54	2373.7	2.9	**5.0113**	0.186	3.7	mg/L	56	Standard
Fe	57	1288.4	3.9	**4.2783**	0.455	10.6	mg/L	735	Standard
Sc-1	45	23718.6	1.0				mg/L	22687	Standard
Cl	35	24708.1	1.3				ug/L	20516	Standard
Kr	83	4.7	61.9				ug/L	5	Standard
Br	81	600.0	7.3				ug/L	570	Standard
P	31	10520.3	4.1				ug/L	7850	Standard
S	34	1750.1	5.7				ug/L	1375	Standard
Sr	88	130.0	20.0				ug/L	165	Standard
C	12	200.0	18.0				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.7	89.9				mg/L	6	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	518.3	9.7				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	96.791		
Al	27	96.934		
Sc	45			
Ti	47	106.071		
V	51	100.790		
Cr	52	101.521		
Cr	53			
Mn	55	104.812		
Co	59	102.205		
Ni	60	102.192		
Cu	65	100.953		
Zn	66	101.668		
Ge	72		101.432	
As	75	100.168		
Se	82	100.936		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.544		
Ag	107	100.074		
Cd	111	99.883		
Cd	114			
> In	115			101.295
Sn	118	91.343		
Sb	123	101.383		
Ba	135	100.033		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.879		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.203		
U	238	101.269		
> Bi	209			103.358
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, August 20, 2015 13:02:23
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52380.4	2.9				ug/L	51673	Standard
	Be	9	30.0	50.0	**-0.0207**	0.021	102.3	ug/L	43	Standard
	Al	27	1111.8	127.5	**0.0053**	0.020	374.4	ug/L	2157	Standard
	Sc	45	22783.8	2.7				ug/L	22687	Standard
	Ti	47	22.7	32.5	**0.0060**	0.044	745.7	ug/L	43	Standard
	V	51	960.2	22.6	**-0.0441**	0.052	116.8	ug/L	1233	Standard
	Cr	52	5223.9	2.5	**-0.1263**	0.024	18.9	ug/L	6387	Standard
	Cr	53	593.3	1.3	**-1.0376**	0.012	1.1	ug/L	1555	Standard
	Mn	55	508.0	33.7	**-0.0281**	0.058	206.2	ug/L	436	Standard
	Co	59	300.3	67.1	**0.0267**	0.049	184.7	ug/L	236	Standard
	Ni	60	64.7	51.3	**0.0041**	0.024	586.7	ug/L	204	Standard
	Cu	65	181.0	45.9	**-0.1449**	0.060	41.3	ug/L	303	Standard
	Zn	66	226.3	7.5	**-0.1653**	0.021	12.8	ug/L	332	Standard
>	**Ge**	72	291270.4	0.3				ug/L	293924	Standard
	As	75	-30.6	109.8	**0.0079**	0.041	523.7	ug/L	45	Standard
	Se	82	19.6	32.0	**0.0732**	0.091	124.7	ug/L	35	Standard
	Se-1	77	86.3	7.4	**-1.0522**	0.127	12.1	ug/L	153	Standard
>	**Ga**	71	23.3	65.5				mg/L	25	Standard
	Rb	85	13.3	21.7				ug/L	20	Standard
	Y	89	274660.6	1.0				ug/L	279578	Standard
>	**Rh**	103	11.7	24.7				ug/L	68	Standard
	Mo	98	113.6	96.5	**0.0544**	0.067	122.3	ug/L	56	Standard
	Ag	107	121.3	22.5	**0.0071**	0.005	68.7	ug/L	199	Standard
	Cd	111	11.9	80.0	**0.0003**	0.006	1856.4	mg/L	89	Standard
	Cd	114	34.0	124.1	**0.0021**	0.009	450.5	ug/L	150	Standard
>	**In**	115	455598.5	1.7				ug/L	458296	Standard
	Sn	118	471.7	15.6	**0.0362**	0.014	38.6	ug/L	385	Standard
	Sb	123	907.8	4.9	**0.1986**	0.012	6.1	ug/L	208	Standard
	Ba	135	42.0	24.9	**-0.0035**	0.005	136.2	ug/L	108	Standard
	Ce	140	10.0	86.6				ug/L	92	Standard
>	**Tb**	159	794522.3	0.9				ug/L	812006	Standard
	Ho	165	13.3	21.7				ug/L	7	Standard
	Tl	203	39.3	68.8	**-0.0000**	0.004	14039.9	ug/L	236	Standard
	Tl	205	125.0	145.5	**0.0256**	0.038	147.8	ug/L	43	Standard
	Pb	206	267.0	61.3	**0.0077**	0.038	490.4	ug/L	266	Standard
	Pb	207	265.7	55.9	**0.0124**	0.038	304.8	ug/L	206	Standard
	Pb	208	949.7	61.0	**0.0165**	0.043	257.4	ug/L	668	Standard
	U	238	120.3	157.5	**0.0255**	0.041	160.9	ug/L	32	Standard
>	**Bi**	209	385333.4	1.5				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	36.7	67.3	**-0.0112**	0.065	578.8	mg/L	60	Standard
K	39	10.0	86.6	**-0.1978**	0.180	90.8	mg/L	12	Standard
Ca	43	46.7	27.0	**-4.7089**	9.510	202.0	mg/L	37	Standard
Fe	54	49.3	18.5	**-0.0155**	0.023	149.0	mg/L	56	Standard
Fe	57	685.0	5.1	**-0.8001**	0.207	25.9	mg/L	735	Standard
Sc-1	45	22783.8	2.7				mg/L	22687	Standard
Cl	35	23604.4	0.9				ug/L	20516	Standard
Kr	83	2.3	24.7				ug/L	5	Standard
Br	81	520.0	17.1				ug/L	570	Standard
P	31	8742.5	6.2				ug/L	7850	Standard
S	34	1668.4	1.9				ug/L	1375	Standard
Sr	88	171.7	11.0				ug/L	165	Standard
C	12	183.3	30.0				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	3.3	173.2				mg/L	6	Standard
Ho-1	165	13.3	21.7				mg/L	7	Standard
Er	166	0.0					mg/L	13	Standard
I	127	3140.3	4.0				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.097	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.411	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	102.168	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, August 20, 2015 13:04:40
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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, August 20, 2015 13:06:10
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53997.8	2.8				ug/L	51673	Standard
	Be	9	145.0	26.0	**0.1459**	0.061	41.8	ug/L	43	Standard
	Al	27	425.0	77.7	**-0.0045**	0.004	97.6	ug/L	2157	Standard
	Sc	45	22576.8	2.1				ug/L	22687	Standard
	Ti	47	22.0	25.3	**-0.0009**	0.034	3591.3	ug/L	43	Standard
	V	51	2708.7	5.2	**0.3626**	0.033	9.0	ug/L	1233	Standard
	Cr	52	9578.7	1.8	**0.7372**	0.035	4.7	ug/L	6387	Standard
	Cr	53	1063.4	6.6	**-0.2928**	0.122	41.8	ug/L	1555	Standard
	Mn	55	2019.8	3.2	**0.4744**	0.023	4.9	ug/L	436	Standard
	Co	59	1922.8	4.8	**0.4162**	0.020	4.9	ug/L	236	Standard
	Ni	60	2254.2	4.4	**1.5487**	0.077	4.9	ug/L	204	Standard
	Cu	65	1339.1	3.9	**0.6740**	0.033	4.9	ug/L	303	Standard
	Zn	66	5275.3	1.3	**6.2570**	0.091	1.5	ug/L	332	Standard
>	**Ge**	72	297993.2	0.5				ug/L	293924	Standard
	As	75	297.3	13.0	**0.4016**	0.045	11.3	ug/L	45	Standard
	Se	82	46.0	8.7	**0.4473**	0.061	13.6	ug/L	35	Standard
	Se-1	77	98.3	14.7	**-0.8563**	0.280	32.7	ug/L	153	Standard
>	**Ga**	71	15.0	66.7				mg/L	25	Standard
	Rb	85	18.3	63.0				ug/L	20	Standard
	Y	89	278653.0	1.9				ug/L	279578	Standard
>	**Rh**	103	5.0	100.0				ug/L	68	Standard
	Mo	98	37.9	97.7	**0.0072**	0.022	304.9	ug/L	56	Standard
	Ag	107	2292.2	5.4	**0.3923**	0.018	4.5	ug/L	199	Standard
	Cd	111	405.0	1.1	**0.2304**	0.001	0.6	mg/L	89	Standard
	Cd	114	1123.8	4.1	**0.2435**	0.008	3.2	ug/L	150	Standard
>	**In**	115	467201.2	1.0				ug/L	458296	Standard
	Sn	118	666.7	2.3	**0.0695**	0.002	2.6	ug/L	385	Standard
	Sb	123	2172.5	8.2	**0.4791**	0.035	7.4	ug/L	208	Standard
	Ba	135	1575.1	3.3	**0.7257**	0.023	3.2	ug/L	108	Standard
	Ce	140	18.3	63.0				ug/L	92	Standard
>	**Tb**	159	813773.8	0.3				ug/L	812006	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	696.0	34.7	**0.0944**	0.035	36.6	ug/L	236	Standard
	Tl	205	380.0	3.9	**0.0786**	0.003	4.0	ug/L	43	Standard
	Pb	206	1178.4	14.1	**0.2196**	0.038	17.5	ug/L	266	Standard
	Pb	207	991.0	15.2	**0.1985**	0.038	19.3	ug/L	206	Standard
	Pb	208	3445.2	4.8	**0.2004**	0.012	5.8	ug/L	668	Standard
	U	238	1855.1	4.4	**0.4013**	0.017	4.2	ug/L	32	Standard
>	**Bi**	209	390971.8	0.2				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	33.3	22.9	**-0.0194**	0.020	103.2	mg/L	60	Standard
K	39	1.7	173.2	**-0.3698**	0.059	16.0	mg/L	12	Standard
Ca	43	43.3	35.3	**-7.0452**	11.115	157.8	mg/L	37	Standard
Fe	54	46.1	38.4	**-0.0227**	0.038	168.8	mg/L	56	Standard
Fe	57	755.0	3.0	**-0.0876**	0.331	378.2	mg/L	735	Standard
> **Sc-1**	45	22576.8	2.1				mg/L	22687	Standard
Cl	35	24356.2	1.0				ug/L	20516	Standard
Kr	83	2.0	100.0				ug/L	5	Standard
Br	81	543.3	14.3				ug/L	570	Standard
P	31	10016.6	0.3				ug/L	7850	Standard
S	34	1733.4	4.3				ug/L	1375	Standard
Sr	88	120.0	41.0				ug/L	165	Standard
C	12	233.3	30.4				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	-0.5	100.0				mg/L	6	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	525.0	14.2				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	72.968		
Al	27			
Sc	45			
Ti	47			
V	51	90.649		
Cr	52	92.146		
Cr	53			
Mn	55	94.887		
Co	59	104.043		
Ni	60	96.795		
Cu	65	84.244		
Zn	66	100.112		
> Ge	72		101.384	
As	75	100.390		
Se	82	111.817		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	98.071		
Cd	111	95.988		
Cd	114			
> In	115			101.943
Sn	118			
Sb	123	119.782		
Ba	135	96.762		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	118.052		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.193		
U	238	100.316		
> Bi	209			103.663
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW 46 WG535190-02
Sample Date/Time: Thursday, August 20, 2015 13:11:20
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54437.8	4.8				ug/L	51673	Standard
	Be	9	16.7	45.8	**-0.0414**	0.010	23.9	ug/L	43	Standard
	Al	27	7546.9	4.1	**0.0939**	0.005	5.7	ug/L	2157	Standard
	Sc	45	24239.4	4.3				ug/L	22687	Standard
	Ti	47	53.7	10.6	**0.1803**	0.033	18.1	ug/L	43	Standard
	V	51	1133.6	12.5	**-0.0143**	0.034	235.9	ug/L	1233	Standard
	Cr	52	6324.0	4.2	**0.0446**	0.061	137.9	ug/L	6387	Standard
	Cr	53	566.7	4.9	**-1.1245**	0.039	3.5	ug/L	1555	Standard
	Mn	55	2196.8	3.4	**0.5172**	0.030	5.7	ug/L	436	Standard
	Co	59	290.0	21.5	**0.0212**	0.015	72.1	ug/L	236	Standard
	Ni	60	166.7	8.5	**0.0724**	0.010	13.3	ug/L	204	Standard
	Cu	65	370.0	5.7	**-0.0195**	0.016	83.7	ug/L	303	Standard
	Zn	66	1879.4	0.9	**1.8788**	0.009	0.5	ug/L	332	Standard
>	**Ge**	72	304897.0	0.7				ug/L	293924	Standard
	As	75	-37.1	77.2	**0.0021**	0.033	1572.4	ug/L	45	Standard
	Se	82	14.3	51.4	**-0.0128**	0.104	812.9	ug/L	35	Standard
	Se-1	77	87.7	10.8	**-1.1047**	0.170	15.4	ug/L	153	Standard
>	**Ga**	71	43.3	35.3				mg/L	25	Standard
	Rb	85	195.0	18.5				ug/L	20	Standard
	Y	89	275241.5	2.1				ug/L	279578	Standard
>	**Rh**	103	10.0	50.0				ug/L	68	Standard
	Mo	98	53.0	47.5	**0.0160**	0.015	95.2	ug/L	56	Standard
	Ag	107	113.0	43.7	**0.0047**	0.008	180.4	ug/L	199	Standard
	Cd	111	30.9	70.1	**0.0109**	0.012	112.7	mg/L	89	Standard
	Cd	114	99.8	74.8	**0.0161**	0.016	99.8	ug/L	150	Standard
>	**In**	115	475698.4	0.9				ug/L	458296	Standard
	Sn	118	691.7	8.0	**0.0717**	0.009	12.3	ug/L	385	Standard
	Sb	123	246.8	25.8	**0.0428**	0.014	32.0	ug/L	208	Standard
	Ba	135	465.0	11.5	**0.1933**	0.024	12.3	ug/L	108	Standard
	Ce	140	531.7	15.6				ug/L	92	Standard
>	**Tb**	159	809230.3	1.3				ug/L	812006	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	82.3	63.8	**0.0060**	0.007	123.0	ug/L	236	Standard
	Tl	205	63.3	58.2	**0.0127**	0.008	61.2	ug/L	43	Standard
	Pb	206	509.0	10.3	**0.0632**	0.012	18.4	ug/L	266	Standard
	Pb	207	412.0	6.5	**0.0492**	0.008	15.7	ug/L	206	Standard
	Pb	208	1643.4	12.2	**0.0669**	0.016	23.7	ug/L	668	Standard
	U	238	58.0	71.9	**0.0120**	0.009	76.4	ug/L	32	Standard
>	**Bi**	209	391860.2	0.9				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	61.7	32.8	**0.0449**	0.052	116.9	mg/L	60	Standard
K	39	5.0	100.0	**-0.3087**	0.097	31.3	mg/L	12	Standard
Ca	43	38.3	30.1	**-12.7233**	8.364	65.7	mg/L	37	Standard
Fe	54	84.4	31.7	**0.0516**	0.056	108.6	mg/L	56	Standard
Fe	57	721.7	13.9	**-0.8651**	0.773	89.4	mg/L	735	Standard
> **Sc-1**	45	24239.4	4.3				mg/L	22687	Standard
Cl	35	24108.5	2.2				ug/L	20516	Standard
Kr	83	3.3	69.3				ug/L	5	Standard
Br	81	616.7	8.3				ug/L	570	Standard
P	31	10563.7	5.9				ug/L	7850	Standard
S	34	1576.7	3.8				ug/L	1375	Standard
Sr	88	141.7	19.4				ug/L	165	Standard
C	12	300.0	38.4				mg/L	173	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	19.4	51.7				mg/L	6	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	13	Standard
I	127	3807.1	3.9				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.350	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.733	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.797
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.899
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 46 WG535190-03
Sample Date/Time: Thursday, August 20, 2015 13:14:32
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55180.4	2.8				ug/L	51673	Standard
	Be	9	34088.3	1.6	**48.2399**	2.030	4.2	ug/L	43	Standard
	Al	27	3330.4	2.1	**0.0350**	0.001	1.5	ug/L	2157	Standard
	Sc	45	23885.5	2.7				ug/L	22687	Standard
	Ti	47	30.0	25.2	**0.0442**	0.044	99.0	ug/L	43	Standard
	V	51	215367.9	0.9	**49.7966**	0.586	1.2	ug/L	1233	Standard
	Cr	52	259398.7	0.7	**50.9938**	0.590	1.2	ug/L	6387	Standard
	Cr	53	31698.1	2.9	**49.0152**	1.506	3.1	ug/L	1555	Standard
	Mn	55	163824.7	1.2	**53.9562**	0.388	0.7	ug/L	436	Standard
	Co	59	217202.7	1.6	**51.6275**	0.739	1.4	ug/L	236	Standard
	Ni	60	72757.6	0.3	**50.6495**	0.362	0.7	ug/L	204	Standard
	Cu	65	73290.8	0.8	**51.0598**	0.240	0.5	ug/L	303	Standard
	Zn	66	41465.0	0.5	**51.6551**	0.390	0.8	ug/L	332	Standard
>	**Ge**	72	301903.2	0.5				ug/L	293924	Standard
	As	75	41809.1	0.2	**49.4889**	0.166	0.3	ug/L	45	Standard
	Se	82	3482.9	0.6	**49.2027**	0.313	0.6	ug/L	35	Standard
	Se-1	77	2567.6	1.8	**46.8991**	0.684	1.5	ug/L	153	Standard
>	**Ga**	71	23.3	12.4				mg/L	25	Standard
	Rb	85	43.3	43.7				ug/L	20	Standard
	Y	89	287871.3	2.0				ug/L	279578	Standard
>	**Rh**	103	21.7	48.0				ug/L	68	Standard
	Mo	98	41.8	4.3	**0.0091**	0.001	14.1	ug/L	56	Standard
	Ag	107	281677.9	0.6	**48.7400**	0.736	1.5	ug/L	199	Standard
	Cd	111	87338.3	1.0	**49.8104**	0.950	1.9	mg/L	89	Standard
	Cd	114	227564.9	2.2	**49.1196**	0.678	1.4	ug/L	150	Standard
>	**In**	115	479787.6	0.9				ug/L	458296	Standard
	Sn	118	575.0	8.3	**0.0500**	0.008	15.2	ug/L	385	Standard
	Sb	123	231681.2	0.4	**51.0145**	0.593	1.2	ug/L	208	Standard
	Ba	135	104443.1	0.2	**48.3867**	0.444	0.9	ug/L	108	Standard
	Ce	140	268.3	14.0				ug/L	92	Standard
>	**Tb**	159	833272.4	2.3				ug/L	812006	Standard
	Ho	165	21.7	74.2				ug/L	7	Standard
	Tl	203	352574.7	0.1	**49.7417**	0.436	0.9	ug/L	236	Standard
	Tl	205	243033.9	1.3	**49.5241**	0.603	1.2	ug/L	43	Standard
	Pb	206	220016.0	0.9	**50.2175**	0.760	1.5	ug/L	266	Standard
	Pb	207	188552.4	1.1	**47.5448**	0.867	1.8	ug/L	206	Standard
	Pb	208	693814.4	0.7	**50.2343**	0.715	1.4	ug/L	668	Standard
	U	238	229597.9	0.8	**48.7320**	0.528	1.1	ug/L	32	Standard
>	**Bi**	209	399087.8	0.8				ug/L	377155	Standard

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Na	23	1.7	173.2	**0.7042**	254.355	36118.4	mg/L	2	Standard
Mg	24	31.7	24.1	**-0.0283**	0.019	69.0	mg/L	60	Standard
K	39	6.7	43.3	**-0.2733**	0.057	20.7	mg/L	12	Standard
Ca	43	36.7	28.4	**-13.5754**	7.371	54.3	mg/L	37	Standard
Fe	54	66.4	23.4	**0.0155**	0.031	200.6	mg/L	56	Standard
Fe	57	720.0	15.2	**-0.7905**	0.870	110.1	mg/L	735	Standard
> **Sc-1**	45	23885.5	2.7				mg/L	22687	Standard
Cl	35	23685.2	0.6				ug/L	20516	Standard
Kr	83	2.7	57.3				ug/L	5	Standard
Br	81	646.7	8.8				ug/L	570	Standard
P	31	10331.9	2.4				ug/L	7850	Standard
S	34	1598.4	3.6				ug/L	1375	Standard
Sr	88	126.7	6.0				ug/L	165	Standard
C	12	190.0	13.9				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.4	109.4				mg/L	6	Standard
Ho-1	165	21.7	74.2				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	3942.2	4.6				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.788	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.715	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	104.690
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	105.815
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508072101
Sample Date/Time: Thursday, August 20, 2015 13:17:43
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57368.5	4.5				ug/L	51673	Standard
	Be	9	33.3	34.6	**-0.0193**	0.017	86.0	ug/L	43	Standard
	Al	27	11090005.7	1.2	**145.4354**	5.986	4.1	ug/L	2157	Standard
	Sc	45	22303.1	0.7				ug/L	22687	Standard
	Ti	47	25.7	24.7	**0.0288**	0.040	138.3	ug/L	43	Standard
	V	51	1723.3	8.0	**0.1518**	0.034	22.7	ug/L	1233	Standard
	Cr	52	7044.6	7.3	**0.2957**	0.112	37.9	ug/L	6387	Standard
	Cr	53	948.4	7.8	**-0.3999**	0.126	31.6	ug/L	1555	Standard
	Mn	55	5049.5	1.8	**1.5776**	0.030	1.9	ug/L	436	Standard
	Co	59	421.0	2.4	**0.0596**	0.003	4.4	ug/L	236	Standard
	Ni	60	865.0	4.3	**0.5999**	0.028	4.7	ug/L	204	Standard
	Cu	65	1573.1	3.3	**0.8985**	0.038	4.2	ug/L	303	Standard
	Zn	66	2090.1	1.4	**2.3405**	0.039	1.7	ug/L	332	Standard
>	**Ge**	72	283176.4	0.1				ug/L	293924	Standard
	As	75	138.0	69.7	**0.2196**	0.122	55.4	ug/L	45	Standard
	Se	82	376.0	4.2	**5.4741**	0.244	4.5	ug/L	35	Standard
	Se-1	77	347.3	5.2	**4.3819**	0.365	8.3	ug/L	153	Standard
>	**Ga**	71	21.7	35.3				mg/L	25	Standard
	Rb	85	1825.1	6.4				ug/L	20	Standard
	Y	89	272780.8	1.9				ug/L	279578	Standard
>	**Rh**	103	60.0	8.3				ug/L	68	Standard
	Mo	98	162.6	6.3	**0.0831**	0.008	9.3	ug/L	56	Standard
	Ag	107	98.3	9.8	**0.0025**	0.002	68.2	ug/L	199	Standard
	Cd	111	12.6	15.7	**0.0006**	0.001	206.3	mg/L	89	Standard
	Cd	114	25.9	11.2	**0.0002**	0.001	405.7	ug/L	150	Standard
>	**In**	115	466661.3	1.7				ug/L	458296	Standard
	Sn	118	400.0	3.8	**0.0211**	0.003	15.1	ug/L	385	Standard
	Sb	123	348.3	6.1	**0.0669**	0.005	7.4	ug/L	208	Standard
	Ba	135	1066.0	1.8	**0.4841**	0.009	1.9	ug/L	108	Standard
	Ce	140	70.0	25.8				ug/L	92	Standard
>	**Tb**	159	811147.0	1.2				ug/L	812006	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	62.0	15.4	**0.0035**	0.001	41.4	ug/L	236	Standard
	Tl	205	55.0	18.2	**0.0113**	0.002	19.0	ug/L	43	Standard
	Pb	206	257.3	1.6	**0.0067**	0.001	13.2	ug/L	266	Standard
	Pb	207	211.0	1.4	**-0.0007**	0.001	114.2	ug/L	206	Standard
	Pb	208	852.7	2.2	**0.0106**	0.001	12.7	ug/L	668	Standard
	U	238	6450.4	1.3	**1.4410**	0.019	1.3	ug/L	32	Standard
>	**Bi**	209	378993.1	0.1				ug/L	377155	Standard

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Na	23	1.7	173.2	**-5.9760**	265.925	4449.9	mg/L	2	Standard
Mg	24	23539.9	1.4	**62.4600**	0.417	0.7	mg/L	60	Standard
K	39	23.3	12.4	**0.0858**	0.060	69.4	mg/L	12	Standard
Ca	43	86.7	35.3	**27.1510**	23.962	88.3	mg/L	37	Standard
Fe	54	64.1	23.9	**0.0203**	0.034	168.3	mg/L	56	Standard
Fe	57	746.7	4.5	**-0.0852**	0.262	307.9	mg/L	735	Standard
> **Sc-1**	45	22303.1	0.7				mg/L	22687	Standard
Cl	35	44487.4	7.1				ug/L	20516	Standard
Kr	83	2.0	0.0				ug/L	5	Standard
Br	81	4113.9	4.8				ug/L	570	Standard
P	31	8717.5	3.8				ug/L	7850	Standard
S	34	1531.7	8.7				ug/L	1375	Standard
Sr	88	188.3	4.1				ug/L	165	Standard
C	12	300.0	24.0				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	8.6	128.3				mg/L	6	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	30.0	88.2				mg/L	13	Standard
I	127	49853.6	2.9				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.022	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.343	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.825
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.487
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1508072102
Sample Date/Time: Thursday, August 20, 2015 13:20:55
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60181.0	1.5				ug/L	51673	Standard
	Be	9	33.3	45.8	**-0.0217**	0.020	92.5	ug/L	43	Standard
	Al	27	11122343.9	1.8	**138.9117**	4.052	2.9	ug/L	2157	Standard
	Sc	45	22770.4	2.2				ug/L	22687	Standard
	Ti	47	235.0	6.6	**1.3191**	0.096	7.3	ug/L	43	Standard
	V	51	12479.9	0.8	**2.7726**	0.052	1.9	ug/L	1233	Standard
	Cr	52	6731.5	2.8	**0.2071**	0.037	17.9	ug/L	6387	Standard
	Cr	53	1083.4	3.9	**-0.1951**	0.082	41.9	ug/L	1555	Standard
	Mn	55	5471.3	8.6	**1.6976**	0.156	9.2	ug/L	436	Standard
	Co	59	489.0	6.2	**0.0750**	0.008	11.3	ug/L	236	Standard
	Ni	60	867.4	2.8	**0.5921**	0.015	2.5	ug/L	204	Standard
	Cu	65	15134.9	0.5	**10.8596**	0.070	0.6	ug/L	303	Standard
	Zn	66	2979.3	2.7	**3.4736**	0.128	3.7	ug/L	332	Standard
>	Ge	72	287418.3	0.9				ug/L	293924	Standard
	As	75	116.4	25.3	**0.1902**	0.038	19.9	ug/L	45	Standard
	Se	82	359.4	2.8	**5.1415**	0.128	2.5	ug/L	35	Standard
	Se-1	77	330.7	3.5	**3.9392**	0.294	7.5	ug/L	153	Standard
>	Ga	71	130.0	27.7				mg/L	25	Standard
	Rb	85	1921.8	8.2				ug/L	20	Standard
	Y	89	270748.2	1.9				ug/L	279578	Standard
>	Rh	103	95.0	34.5				ug/L	68	Standard
	Mo	98	179.1	5.8	**0.0917**	0.005	5.0	ug/L	56	Standard
	Ag	107	95.0	5.5	**0.0017**	0.001	49.7	ug/L	199	Standard
	Cd	111	6.3	39.9	**-0.0032**	0.001	45.3	mg/L	89	Standard
	Cd	114	21.7	110.1	**-0.0009**	0.005	605.2	ug/L	150	Standard
>	In	115	471957.1	1.8				ug/L	458296	Standard
	Sn	118	435.0	2.0	**0.0266**	0.002	9.2	ug/L	385	Standard
	Sb	123	207.5	8.8	**0.0344**	0.003	9.8	ug/L	208	Standard
	Ba	135	1169.4	4.6	**0.5269**	0.018	3.4	ug/L	108	Standard
	Ce	140	100.0	39.7				ug/L	92	Standard
>	Tb	159	818284.4	0.7				ug/L	812006	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	47.3	26.4	**0.0011**	0.002	164.7	ug/L	236	Standard
	Tl	205	40.0	43.3	**0.0079**	0.004	46.1	ug/L	43	Standard
	Pb	206	768.4	4.4	**0.1260**	0.009	7.2	ug/L	266	Standard
	Pb	207	672.3	1.3	**0.1184**	0.005	4.1	ug/L	206	Standard
	Pb	208	2374.1	1.6	**0.1231**	0.001	0.5	ug/L	668	Standard
	U	238	5966.5	1.5	**1.3062**	0.009	0.7	ug/L	32	Standard
>	Bi	209	386735.6	1.6				ug/L	377155	Standard

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Na	23	5.0	100.0	**-296.1629**	438.935	148.2	mg/L	2	Standard
Mg	24	23136.0	1.2	**60.1437**	1.399	2.3	mg/L	60	Standard
K	39	25.0	72.1	**0.1105**	0.375	339.4	mg/L	12	Standard
Ca	43	65.0	61.1	**9.4907**	31.041	327.1	mg/L	37	Standard
Fe	54	1157.7	4.0	**2.4852**	0.160	6.4	mg/L	56	Standard
Fe	57	1155.0	4.1	**3.5270**	0.436	12.4	mg/L	735	Standard
> **Sc-1**	45	22770.4	2.2				mg/L	22687	Standard
Cl	35	45333.7	0.1				ug/L	20516	Standard
Kr	83	4.3	35.3				ug/L	5	Standard
Br	81	4794.1	5.1				ug/L	570	Standard
P	31	9041.0	2.5				ug/L	7850	Standard
S	34	1528.4	5.4				ug/L	1375	Standard
Sr	88	173.3	10.9				ug/L	165	Standard
C	12	320.0	25.6				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.4	101.7				mg/L	6	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	13	Standard
I	127	69887.8	5.5				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.465	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.786	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.981
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.540
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1508072103
Sample Date/Time: Thursday, August 20, 2015 13:24:06
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65305.6	3.5				ug/L	51673	Standard
	Be	9	18.3	15.7	**-0.0430**	0.004	9.6	ug/L	43	Standard
	Al	27	10699643.8	2.0	**123.1611**	2.131	1.7	ug/L	2157	Standard
	Sc	45	22259.7	2.9				ug/L	22687	Standard
	Ti	47	37.7	30.8	**0.1010**	0.071	70.0	ug/L	43	Standard
	V	51	1749.6	10.4	**0.1532**	0.045	29.4	ug/L	1233	Standard
	Cr	52	7426.2	5.0	**0.3593**	0.090	25.1	ug/L	6387	Standard
	Cr	53	951.7	3.6	**-0.4133**	0.051	12.2	ug/L	1555	Standard
	Mn	55	9058.7	1.7	**2.9537**	0.074	2.5	ug/L	436	Standard
	Co	59	388.3	3.9	**0.0501**	0.004	8.6	ug/L	236	Standard
	Ni	60	681.7	9.9	**0.4581**	0.053	11.5	ug/L	204	Standard
	Cu	65	1882.1	3.5	**1.1132**	0.061	5.5	ug/L	303	Standard
	Zn	66	5559.4	2.0	**6.9018**	0.128	1.9	ug/L	332	Standard
>	**Ge**	72	286530.1	0.9				ug/L	293924	Standard
	As	75	334.1	17.9	**0.4621**	0.077	16.7	ug/L	45	Standard
	Se	82	1170.5	0.9	**17.2853**	0.270	1.6	ug/L	35	Standard
	Se-1	77	908.7	3.4	**15.7422**	0.520	3.3	ug/L	153	Standard
>	**Ga**	71	35.0	14.3				mg/L	25	Standard
	Rb	85	2665.2	4.5				ug/L	20	Standard
	Y	89	273857.8	0.5				ug/L	279578	Standard
>	**Rh**	103	70.0	31.1				ug/L	68	Standard
	Mo	98	271.8	1.4	**0.1463**	0.004	3.0	ug/L	56	Standard
	Ag	107	78.7	12.1	**-0.0012**	0.002	131.4	ug/L	199	Standard
	Cd	111	7.7	41.2	**-0.0024**	0.002	79.8	mg/L	89	Standard
	Cd	114	5.4	129.3	**-0.0044**	0.002	34.9	ug/L	150	Standard
>	**In**	115	474936.5	1.3				ug/L	458296	Standard
	Sn	118	543.3	13.8	**0.0455**	0.014	30.7	ug/L	385	Standard
	Sb	123	130.8	18.2	**0.0171**	0.005	30.9	ug/L	208	Standard
	Ba	135	3045.3	3.0	**1.4017**	0.028	2.0	ug/L	108	Standard
	Ce	140	266.7	13.8				ug/L	92	Standard
>	**Tb**	159	815924.0	1.4				ug/L	812006	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	36.0	14.4	**-0.0005**	0.001	158.5	ug/L	236	Standard
	Tl	205	46.7	6.2	**0.0094**	0.001	7.2	ug/L	43	Standard
	Pb	206	242.3	3.4	**0.0023**	0.002	96.3	ug/L	266	Standard
	Pb	207	210.3	6.3	**-0.0016**	0.004	214.8	ug/L	206	Standard
	Pb	208	758.3	2.0	**0.0026**	0.001	31.7	ug/L	668	Standard
	U	238	5332.9	1.8	**1.1748**	0.021	1.8	ug/L	32	Standard
>	**Bi**	209	384316.2	0.6				ug/L	377155	Standard

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Na	23	1.7	173.2	**-11.0844**	274.773	2478.9	mg/L	2	Standard
Mg	24	27167.7	1.7	**72.2620**	0.877	1.2	mg/L	60	Standard
K	39	55.0	9.1	**0.7557**	0.138	18.3	mg/L	12	Standard
Ca	43	75.0	30.6	**18.4161**	19.104	103.7	mg/L	37	Standard
Fe	54	86.0	28.7	**0.0725**	0.064	87.8	mg/L	56	Standard
Fe	57	886.7	5.9	**1.2471**	0.447	35.8	mg/L	735	Standard
> **Sc-1**	45	22259.7	2.9				mg/L	22687	Standard
Cl	35	47707.1	4.6				ug/L	20516	Standard
Kr	83	4.3	53.3				ug/L	5	Standard
Br	81	3453.7	9.1				ug/L	570	Standard
P	31	8814.2	0.3				ug/L	7850	Standard
S	34	1490.1	5.7				ug/L	1375	Standard
Sr	88	210.0	11.9				ug/L	165	Standard
C	12	230.0	47.8				mg/L	173	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	18.7	94.1				mg/L	6	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	26.7	78.1				mg/L	13	Standard
I	127	32964.2	1.6				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		126.382	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.484	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.631
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.899
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1508072104
Sample Date/Time: Thursday, August 20, 2015 13:27:18
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65692.1	1.3				ug/L	51673	Standard
	Be	9	25.0	52.9	**-0.0352**	0.016	45.7	ug/L	43	Standard
	Al	27	11157664.9	1.4	**127.6283**	0.416	0.3	ug/L	2157	Standard
	Sc	45	22870.6	2.5				ug/L	22687	Standard
	Ti	47	326.7	3.4	**1.8596**	0.047	2.5	ug/L	43	Standard
	V	51	12154.6	0.6	**2.6559**	0.022	0.8	ug/L	1233	Standard
	Cr	52	6148.3	6.5	**0.0681**	0.093	136.9	ug/L	6387	Standard
	Cr	53	975.0	5.4	**-0.3985**	0.105	26.4	ug/L	1555	Standard
	Mn	55	13333.5	2.6	**4.3711**	0.151	3.5	ug/L	436	Standard
	Co	59	467.7	2.3	**0.0682**	0.003	3.7	ug/L	236	Standard
	Ni	60	670.3	2.6	**0.4420**	0.017	3.9	ug/L	204	Standard
	Cu	65	2117.8	2.4	**1.2624**	0.022	1.8	ug/L	303	Standard
	Zn	66	8173.9	0.5	**10.1966**	0.064	0.6	ug/L	332	Standard
>	Ge	72	291047.7	1.1				ug/L	293924	Standard
	As	75	338.3	34.1	**0.4600**	0.140	30.4	ug/L	45	Standard
	Se	82	1226.5	1.0	**17.8381**	0.134	0.8	ug/L	35	Standard
	Se-1	77	892.4	2.3	**15.1275**	0.285	1.9	ug/L	153	Standard
>	Ga	71	176.7	8.6				mg/L	25	Standard
	Rb	85	2813.6	5.0				ug/L	20	Standard
	Y	89	285798.7	0.4				ug/L	279578	Standard
>	Rh	103	75.0	6.7				ug/L	68	Standard
	Mo	98	339.8	6.7	**0.1831**	0.014	7.5	ug/L	56	Standard
	Ag	107	70.0	8.7	**-0.0030**	0.001	34.9	ug/L	199	Standard
	Cd	111	9.6	48.2	**-0.0014**	0.003	183.4	mg/L	89	Standard
	Cd	114	29.4	45.4	**0.0007**	0.003	401.6	ug/L	150	Standard
>	In	115	483702.2	0.6				ug/L	458296	Standard
	Sn	118	706.7	4.1	**0.0724**	0.004	6.2	ug/L	385	Standard
	Sb	123	137.8	7.2	**0.0181**	0.002	11.8	ug/L	208	Standard
	Ba	135	4604.0	0.8	**2.0927**	0.004	0.2	ug/L	108	Standard
	Ce	140	1140.0	13.7				ug/L	92	Standard
>	Tb	159	819930.8	1.9				ug/L	812006	Standard
	Ho	165	25.0	40.0				ug/L	7	Standard
	Tl	203	57.3	22.5	**0.0025**	0.002	72.1	ug/L	236	Standard
	Tl	205	40.0	12.5	**0.0079**	0.001	13.7	ug/L	43	Standard
	Pb	206	444.0	2.9	**0.0487**	0.004	7.4	ug/L	266	Standard
	Pb	207	383.0	3.1	**0.0423**	0.004	8.4	ug/L	206	Standard
	Pb	208	1308.0	6.6	**0.0426**	0.007	15.4	ug/L	668	Standard
	U	238	6362.0	1.8	**1.3827**	0.032	2.3	ug/L	32	Standard
>	Bi	209	389591.3	0.7				ug/L	377155	Standard

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Na	23	3.3	86.6	**-148.0121**	256.076	173.0	mg/L	2	Standard
Mg	24	27381.4	3.6	**70.8530**	0.823	1.2	mg/L	60	Standard
K	39	56.7	43.5	**0.7492**	0.472	63.0	mg/L	12	Standard
Ca	43	78.3	20.5	**19.0616**	11.705	61.4	mg/L	37	Standard
Fe	54	1691.1	8.0	**3.6724**	0.353	9.6	mg/L	56	Standard
Fe	57	1325.1	3.8	**5.0346**	0.337	6.7	mg/L	735	Standard
> **Sc-1**	45	22870.6	2.5				mg/L	22687	Standard
Cl	35	45546.4	0.8				ug/L	20516	Standard
Kr	83	2.7	21.7				ug/L	5	Standard
Br	81	4037.2	2.5				ug/L	570	Standard
P	31	9041.0	4.2				ug/L	7850	Standard
S	34	1498.4	3.9				ug/L	1375	Standard
Sr	88	220.0	9.9				ug/L	165	Standard
C	12	320.0	22.5				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	32.4	34.4				mg/L	6	Standard
Ho-1	165	25.0	40.0				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	37489.7	3.3				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		127.130	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.021	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.544
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.297
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1508062601
Sample Date/Time: Thursday, August 20, 2015 13:30:29
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63685.3	3.4				ug/L	51673	Standard
	Be	9	30.0	50.0	**-0.0284**	0.018	62.1	ug/L	43	Standard
	Al	27	9949746.2	3.2	**117.4170**	2.158	1.8	ug/L	2157	Standard
	Sc	45	24154.2	1.2				ug/L	22687	Standard
	Ti	47	151.0	11.5	**0.7709**	0.101	13.1	ug/L	43	Standard
	V	51	2613.3	6.7	**0.3430**	0.045	13.2	ug/L	1233	Standard
	Cr	52	7435.8	1.0	**0.3068**	0.023	7.6	ug/L	6387	Standard
	Cr	53	6321.3	5.0	**8.3273**	0.465	5.6	ug/L	1555	Standard
	Mn	55	45601.9	1.1	**15.1380**	0.257	1.7	ug/L	436	Standard
	Co	59	698.0	2.9	**0.1218**	0.006	4.9	ug/L	236	Standard
	Ni	60	2120.5	3.0	**1.4606**	0.042	2.9	ug/L	204	Standard
	Cu	65	4757.4	2.4	**3.1147**	0.097	3.1	ug/L	303	Standard
	Zn	66	6715.8	0.6	**8.1280**	0.007	0.1	ug/L	332	Standard
>	Ge	72	296719.0	0.7				ug/L	293924	Standard
	As	75	1081.7	12.0	**1.3472**	0.158	11.7	ug/L	45	Standard
	Se	82	40.6	22.1	**0.3714**	0.128	34.6	ug/L	35	Standard
	Se-1	77	416.0	12.8	**5.4029**	1.004	18.6	ug/L	153	Standard
>	Ga	71	88.3	17.3				mg/L	25	Standard
	Rb	85	34480.9	2.1				ug/L	20	Standard
	Y	89	291312.6	1.6				ug/L	279578	Standard
>	Rh	103	318.3	17.9				ug/L	68	Standard
	Mo	98	5350.7	1.9	**3.1277**	0.038	1.2	ug/L	56	Standard
	Ag	107	88.3	6.2	**0.0002**	0.001	349.2	ug/L	199	Standard
	Cd	111	43.6	10.9	**0.0180**	0.003	15.0	mg/L	89	Standard
	Cd	114	107.7	48.9	**0.0176**	0.011	64.4	ug/L	150	Standard
>	In	115	481233.6	0.7				ug/L	458296	Standard
	Sn	118	770.0	10.8	**0.0842**	0.015	17.3	ug/L	385	Standard
	Sb	123	3005.7	4.1	**0.6479**	0.023	3.5	ug/L	208	Standard
	Ba	135	82001.0	1.5	**37.8668**	0.317	0.8	ug/L	108	Standard
	Ce	140	296.7	10.7				ug/L	92	Standard
>	Tb	159	831097.4	0.5				ug/L	812006	Standard
	Ho	165	16.7	17.3				ug/L	7	Standard
	Tl	203	50.3	12.0	**0.0015**	0.001	58.4	ug/L	236	Standard
	Tl	205	58.3	24.7	**0.0116**	0.003	25.1	ug/L	43	Standard
	Pb	206	419.0	10.5	**0.0423**	0.010	23.0	ug/L	266	Standard
	Pb	207	340.0	5.6	**0.0307**	0.005	15.8	ug/L	206	Standard
	Pb	208	1283.4	5.0	**0.0403**	0.005	12.9	ug/L	668	Standard
	U	238	736.7	7.6	**0.1587**	0.011	6.8	ug/L	32	Standard
>	Bi	209	391585.0	1.0				ug/L	377155	Standard

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Na	23	1.7	173.2	**4.2240**	248.259	5877.4	mg/L	2	Standard
Mg	24	27536.7	3.2	**67.4745**	1.923	2.9	mg/L	60	Standard
K	39	200.0	4.3	**3.4755**	0.216	6.2	mg/L	12	Standard
Ca	43	198.3	31.7	**102.1981**	46.858	45.8	mg/L	37	Standard
Fe	54	79.0	23.1	**0.0407**	0.037	91.6	mg/L	56	Standard
Fe	57	906.7	11.2	**0.7732**	0.977	126.3	mg/L	735	Standard
> **Sc-1**	45	24154.2	1.2				mg/L	22687	Standard
Cl	35	32943.1	0.5				ug/L	20516	Standard
Kr	83	2.3	49.5				ug/L	5	Standard
Br	81	2756.9	11.6				ug/L	570	Standard
P	31	13531.0	4.6				ug/L	7850	Standard
S	34	1518.4	5.9				ug/L	1375	Standard
Sr	88	416.7	23.8				ug/L	165	Standard
C	12	323.3	7.8				mg/L	173	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	25.4	83.0				mg/L	6	Standard
Ho-1	165	16.7	17.3				mg/L	7	Standard
Er	166	26.7	21.7				mg/L	13	Standard
I	127	51569.4	3.7				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.247	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.951	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	105.005
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.826
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1508062601PS WG535241-01
Sample Date/Time: Thursday, August 20, 2015 13:33:41
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62226.0	3.5				ug/L	51673	Standard
	Be	9	39780.5	2.9	**49.9376**	2.594	5.2	ug/L	43	Standard
	Al	27	9691733.9	2.6	**117.1603**	6.051	5.2	ug/L	2157	Standard
	Sc	45	24606.6	2.4				ug/L	22687	Standard
	Ti	47	148.3	13.9	**0.7491**	0.127	17.0	ug/L	43	Standard
	V	51	230124.1	1.2	**53.7625**	0.337	0.6	ug/L	1233	Standard
	Cr	52	266115.6	0.3	**52.8839**	0.436	0.8	ug/L	6387	Standard
	Cr	53	39073.7	2.9	**61.5196**	1.570	2.6	ug/L	1555	Standard
	Mn	55	206628.7	1.9	**68.7942**	1.188	1.7	ug/L	436	Standard
	Co	59	221589.2	1.7	**53.2012**	0.798	1.5	ug/L	236	Standard
	Ni	60	74685.3	0.2	**52.5163**	0.442	0.8	ug/L	204	Standard
	Cu	65	76647.4	1.8	**53.9548**	1.200	2.2	ug/L	303	Standard
	Zn	66	47731.1	1.1	**60.1344**	0.811	1.3	ug/L	332	Standard
>	**Ge**	72	298903.4	0.9				ug/L	293924	Standard
	As	75	44907.7	1.3	**53.6887**	0.859	1.6	ug/L	45	Standard
	Se	82	3649.8	2.0	**52.0917**	1.026	2.0	ug/L	35	Standard
	Se-1	77	3138.3	2.2	**58.5629**	1.661	2.8	ug/L	153	Standard
>	**Ga**	71	113.3	25.9				mg/L	25	Standard
	Rb	85	34380.6	1.5				ug/L	20	Standard
	Y	89	279291.3	2.0				ug/L	279578	Standard
>	**Rh**	103	346.7	10.6				ug/L	68	Standard
	Mo	98	5060.0	3.0	**3.0130**	0.044	1.5	ug/L	56	Standard
	Ag	107	279572.8	0.6	**49.1494**	0.802	1.6	ug/L	199	Standard
	Cd	111	89750.7	1.5	**52.0023**	0.987	1.9	mg/L	89	Standard
	Cd	114	228035.4	1.1	**50.0159**	0.921	1.8	ug/L	150	Standard
>	**In**	115	472280.5	1.8				ug/L	458296	Standard
	Sn	118	805.0	18.1	**0.0934**	0.029	30.5	ug/L	385	Standard
	Sb	123	241881.7	0.2	**54.1162**	1.009	1.9	ug/L	208	Standard
	Ba	135	186643.2	0.3	**87.8753**	1.478	1.7	ug/L	108	Standard
	Ce	140	266.7	5.7				ug/L	92	Standard
>	**Tb**	159	830666.4	0.5				ug/L	812006	Standard
	Ho	165	21.7	13.3				ug/L	7	Standard
	Tl	203	354935.9	0.5	**51.2823**	0.560	1.1	ug/L	236	Standard
	Tl	205	247078.5	1.4	**51.5648**	0.945	1.8	ug/L	43	Standard
	Pb	206	223498.0	0.6	**52.2452**	0.852	1.6	ug/L	266	Standard
	Pb	207	201636.8	0.3	**52.0740**	0.680	1.3	ug/L	206	Standard
	Pb	208	707473.6	0.5	**52.4610**	0.793	1.5	ug/L	668	Standard
	U	238	248840.8	0.1	**54.0901**	0.522	1.0	ug/L	32	Standard
>	**Bi**	209	389700.3	1.0				ug/L	377155	Standard

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Na	23	3.3	86.6	**-126.9649**	237.822	187.3	mg/L	2	Standard
Mg	24	26835.4	1.9	**64.5565**	1.219	1.9	mg/L	60	Standard
K	39	225.0	4.4	**3.8812**	0.252	6.5	mg/L	12	Standard
Ca	43	211.7	14.2	**108.4981**	20.037	18.5	mg/L	37	Standard
Fe	54	83.6	14.9	**0.0473**	0.023	48.1	mg/L	56	Standard
Fe	57	921.7	6.0	**0.7566**	0.604	79.8	mg/L	735	Standard
> **Sc-1**	45	24606.6	2.4				mg/L	22687	Standard
Cl	35	32211.5	1.0				ug/L	20516	Standard
Kr	83	5.3	103.3				ug/L	5	Standard
Br	81	2653.6	3.8				ug/L	570	Standard
P	31	13202.4	4.7				ug/L	7850	Standard
S	34	1586.7	2.1				ug/L	1375	Standard
Sr	88	440.0	12.7				ug/L	165	Standard
C	12	286.7	29.0				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	11.3	52.9				mg/L	6	Standard
Ho-1	165	21.7	13.3				mg/L	7	Standard
Er	166	43.3	35.3				mg/L	13	Standard
I	127	49885.4	2.9				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		120.423	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.694	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.051
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.326
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1508062601SDL WG535241-02
Sample Date/Time: Thursday, August 20, 2015 13:36:52
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	56460.1	3.0				ug/L	51673	Standard
	Be	9	31.7	18.2	**-0.0210**	0.009	43.3	ug/L	43	Standard
	Al	27	1939667.7	1.2	**25.8270**	1.025	4.0	ug/L	2157	Standard
	Sc	45	23750.3	1.2				ug/L	22687	Standard
	Ti	47	48.0	7.2	**0.1533**	0.023	15.1	ug/L	43	Standard
	V	51	1694.1	5.6	**0.1226**	0.018	14.8	ug/L	1233	Standard
	Cr	52	7351.1	2.4	**0.2795**	0.022	7.8	ug/L	6387	Standard
	Cr	53	2646.9	1.9	**2.2807**	0.051	2.2	ug/L	1555	Standard
	Mn	55	9931.3	2.5	**3.1172**	0.089	2.9	ug/L	436	Standard
	Co	59	325.0	3.1	**0.0310**	0.003	9.7	ug/L	236	Standard
	Ni	60	523.7	3.5	**0.3263**	0.015	4.6	ug/L	204	Standard
	Cu	65	1154.7	5.1	**0.5414**	0.038	7.1	ug/L	303	Standard
	Zn	66	2360.9	3.9	**2.5400**	0.135	5.3	ug/L	332	Standard
>	Ge	72	298644.7	1.0				ug/L	293924	Standard
	As	75	191.3	13.1	**0.2743**	0.031	11.4	ug/L	45	Standard
	Se	82	22.2	13.0	**0.1046**	0.041	39.6	ug/L	35	Standard
	Se-1	77	194.7	4.6	**1.0256**	0.209	20.3	ug/L	153	Standard
>	Ga	71	45.0	66.7				mg/L	25	Standard
	Rb	85	7005.0	3.7				ug/L	20	Standard
	Y	89	283718.5	0.8				ug/L	279578	Standard
>	Rh	103	85.0	21.2				ug/L	68	Standard
	Mo	98	1018.7	3.3	**0.6078**	0.026	4.3	ug/L	56	Standard
	Ag	107	111.3	12.7	**0.0050**	0.002	45.4	ug/L	199	Standard
	Cd	111	18.3	16.2	**0.0041**	0.002	47.1	mg/L	89	Standard
	Cd	114	46.3	19.3	**0.0048**	0.002	44.6	ug/L	150	Standard
>	In	115	462187.1	1.6				ug/L	458296	Standard
	Sn	118	450.0	10.6	**0.0309**	0.008	24.5	ug/L	385	Standard
	Sb	123	1443.9	4.8	**0.3180**	0.012	3.7	ug/L	208	Standard
	Ba	135	16535.0	1.2	**7.9338**	0.212	2.7	ug/L	108	Standard
	Ce	140	63.3	29.9				ug/L	92	Standard
>	Tb	159	821327.3	0.5				ug/L	812006	Standard
	Ho	165	10.0					ug/L	7	Standard
	Tl	203	82.7	2.5	**0.0061**	0.000	3.9	ug/L	236	Standard
	Tl	205	46.7	22.3	**0.0092**	0.002	23.9	ug/L	43	Standard
	Pb	206	270.0	6.2	**0.0078**	0.004	54.0	ug/L	266	Standard
	Pb	207	232.0	1.6	**0.0030**	0.001	38.5	ug/L	206	Standard
	Pb	208	848.7	3.5	**0.0083**	0.003	31.0	ug/L	668	Standard
	U	238	169.7	7.7	**0.0361**	0.003	7.4	ug/L	32	Standard
>	Bi	209	390978.0	0.6				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	5192.6	1.5	**12.8562**	0.332	2.6	mg/L	60	Standard
K	39	65.0	53.8	**0.8725**	0.680	78.0	mg/L	12	Standard
Ca	43	61.7	18.7	**4.8577**	8.993	185.1	mg/L	37	Standard
Fe	54	57.5	12.7	**-0.0026**	0.017	634.9	mg/L	56	Standard
Fe	57	768.4	4.9	**-0.3180**	0.380	119.5	mg/L	735	Standard
> **Sc-1**	45	23750.3	1.2				mg/L	22687	Standard
Cl	35	28319.1	0.9				ug/L	20516	Standard
Kr	83	2.0	50.0				ug/L	5	Standard
Br	81	956.7	7.7				ug/L	570	Standard
P	31	9436.3	2.2				ug/L	7850	Standard
S	34	1466.7	6.6				ug/L	1375	Standard
Sr	88	195.0	2.6				ug/L	165	Standard
C	12	213.3	7.2				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	5.7	202.3				mg/L	6	Standard
Ho-1	165	10.0					mg/L	7	Standard
Er	166	20.0	0.0				mg/L	13	Standard
I	127	12218.3	0.6				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.264	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.606	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.849
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.665
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 21, 2015

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, August 20, 2015 13:40:05
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	55113.5	4.3				ug/L	51673	Standard
	Be	9	35139.1	3.4	**49.7648**	0.552	1.1	ug/L	43	Standard
	Al	27	3660575.3	0.9	**49.9574**	1.958	3.9	ug/L	2157	Standard
	Sc	45	24100.8	0.5				ug/L	22687	Standard
	Ti	47	18103.5	0.5	**106.1956**	1.520	1.4	ug/L	43	Standard
	V	51	221033.3	1.7	**51.0635**	0.757	1.5	ug/L	1233	Standard
	Cr	52	259608.2	1.5	**50.9840**	0.588	1.2	ug/L	6387	Standard
	Cr	53	33406.8	1.4	**51.7164**	0.743	1.4	ug/L	1555	Standard
	Mn	55	163905.9	2.7	**53.9348**	1.488	2.8	ug/L	436	Standard
	Co	59	218254.2	1.2	**51.8320**	0.777	1.5	ug/L	236	Standard
	Ni	60	74459.2	0.6	**51.7856**	0.163	0.3	ug/L	204	Standard
	Cu	65	73685.1	0.5	**51.2902**	0.579	1.1	ug/L	303	Standard
	Zn	66	40972.0	1.0	**50.9886**	0.722	1.4	ug/L	332	Standard
>	Ge	72	302190.3	0.9				ug/L	293924	Standard
	As	75	42521.1	2.7	**50.2772**	0.911	1.8	ug/L	45	Standard
	Se	82	3623.0	1.3	**51.1411**	0.310	0.6	ug/L	35	Standard
	Se-1	77	2645.2	1.3	**48.3601**	0.952	2.0	ug/L	153	Standard
>	Ga	71	48.3	33.3				mg/L	25	Standard
	Rb	85	628.3	7.9				ug/L	20	Standard
	Y	89	284065.6	2.1				ug/L	279578	Standard
>	Rh	103	43.3	33.3				ug/L	68	Standard
	Mo	98	164704.0	1.1	**98.5465**	2.202	2.2	ug/L	56	Standard
	Ag	107	284686.5	1.0	**50.0168**	0.455	0.9	ug/L	199	Standard
	Cd	111	86056.1	1.1	**49.8301**	0.355	0.7	mg/L	89	Standard
	Cd	114	227443.0	1.9	**49.8630**	1.474	3.0	ug/L	150	Standard
>	In	115	472526.1	1.4				ug/L	458296	Standard
	Sn	118	253710.0	1.1	**45.5981**	0.471	1.0	ug/L	385	Standard
	Sb	123	226111.1	1.0	**50.5536**	0.551	1.1	ug/L	208	Standard
	Ba	135	106997.5	1.1	**50.3360**	0.814	1.6	ug/L	108	Standard
	Ce	140	81.7	18.7				ug/L	92	Standard
>	Tb	159	837212.3	1.2				ug/L	812006	Standard
	Ho	165	10.0	132.3				ug/L	7	Standard
	Tl	203	354087.8	0.7	**50.0408**	0.490	1.0	ug/L	236	Standard
	Tl	205	245940.1	0.8	**50.2034**	0.473	0.9	ug/L	43	Standard
	Pb	206	218286.3	0.9	**49.9085**	0.814	1.6	ug/L	266	Standard
	Pb	207	197605.1	1.4	**49.9188**	1.191	2.4	ug/L	206	Standard
	Pb	208	699015.3	0.3	**50.6982**	0.627	1.2	ug/L	668	Standard
	U	238	235928.1	0.8	**50.1644**	0.834	1.7	ug/L	32	Standard
>	Bi	209	398408.8	1.0				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	2030.1	1.5	**4.8868**	0.093	1.9	mg/L	60	Standard
K	39	256.7	4.1	**4.5836**	0.204	4.4	mg/L	12	Standard
Ca	43	45.0	22.2	**-7.8249**	7.153	91.4	mg/L	37	Standard
Fe	54	2263.5	4.6	**4.6934**	0.198	4.2	mg/L	56	Standard
Fe	57	1350.1	6.2	**4.6355**	0.782	16.9	mg/L	735	Standard
> **Sc-1**	45	24100.8	0.5				mg/L	22687	Standard
Cl	35	25204.3	3.1				ug/L	20516	Standard
Kr	83	5.0	0.0				ug/L	5	Standard
Br	81	543.3	11.1				ug/L	570	Standard
P	31	10308.5	2.1				ug/L	7850	Standard
S	34	1770.1	4.9				ug/L	1375	Standard
Sr	88	143.3	23.2				ug/L	165	Standard
C	12	210.0	9.5				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.4	104.3				mg/L	6	Standard
Ho-1	165	10.0	132.3				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	696.7	18.6				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	99.530		
Al	27	99.915		
Sc	45			
Ti	47	106.196		
V	51	102.127		
Cr	52	101.968		
Cr	53			
Mn	55	107.870		
Co	59	103.664		
Ni	60	103.571		
Cu	65	102.580		
Zn	66	101.977		
> Ge	72		102.812	
As	75	100.554		
Se	82	102.282		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.546		
Ag	107	100.034		
Cd	111	99.660		
Cd	114			
> In	115			103.105
Sn	118	91.196		
Sb	123	101.107		
Ba	135	100.672		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.082		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.396		
U	238	100.329		
> Bi	209			105.635
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, August 20, 2015 13:43:17
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	53146.5	3.9				ug/L	51673	Standard
	Be	9	16.7	34.6	**-0.0406**	0.008	20.2	ug/L	43	Standard
	Al	27	788.4	29.5	**0.0007**	0.003	438.7	ug/L	2157	Standard
	Sc	45	23508.2	2.8				ug/L	22687	Standard
	Ti	47	23.7	27.5	**0.0104**	0.040	380.6	ug/L	43	Standard
	V	51	916.5	6.4	**-0.0574**	0.013	23.4	ug/L	1233	Standard
	Cr	52	5255.6	3.9	**-0.1334**	0.043	32.6	ug/L	6387	Standard
	Cr	53	503.3	10.0	**-1.1984**	0.083	6.9	ug/L	1555	Standard
	Mn	55	454.3	5.4	**-0.0484**	0.008	17.6	ug/L	436	Standard
	Co	59	208.0	9.9	**0.0034**	0.005	147.7	ug/L	236	Standard
	Ni	60	55.3	32.3	**-0.0031**	0.013	413.9	ug/L	204	Standard
	Cu	65	132.3	9.7	**-0.1813**	0.009	5.0	ug/L	303	Standard
	Zn	66	215.3	4.9	**-0.1831**	0.014	7.8	ug/L	332	Standard
>	Ge	72	294980.4	0.3				ug/L	293924	Standard
	As	75	-33.0	35.5	**0.0055**	0.014	257.5	ug/L	45	Standard
	Se	82	14.6	19.8	**-0.0015**	0.043	2918.9	ug/L	35	Standard
	Se-1	77	80.7	9.1	**-1.1862**	0.144	12.1	ug/L	153	Standard
>	Ga	71	25.0	52.9				mg/L	25	Standard
	Rb	85	23.3	24.7				ug/L	20	Standard
	Y	89	276566.5	1.1				ug/L	279578	Standard
>	Rh	103	15.0	0.0				ug/L	68	Standard
	Mo	98	56.0	22.8	**0.0189**	0.008	40.3	ug/L	56	Standard
	Ag	107	117.7	8.7	**0.0063**	0.002	27.7	ug/L	199	Standard
	Cd	111	10.2	28.0	**-0.0007**	0.002	232.2	mg/L	89	Standard
	Cd	114	20.2	53.7	**-0.0010**	0.002	237.7	ug/L	150	Standard
>	In	115	459199.7	0.6				ug/L	458296	Standard
	Sn	118	426.7	5.9	**0.0272**	0.005	19.0	ug/L	385	Standard
	Sb	123	905.6	6.1	**0.1964**	0.011	5.7	ug/L	208	Standard
	Ba	135	48.3	2.4	**-0.0006**	0.001	124.6	ug/L	108	Standard
	Ce	140	13.3	43.3				ug/L	92	Standard
>	Tb	159	796974.6	1.9				ug/L	812006	Standard
	Ho	165	23.3	44.6				ug/L	7	Standard
	Tl	203	37.7	35.1	**-0.0003**	0.002	613.1	ug/L	236	Standard
	Tl	205	28.3	44.4	**0.0054**	0.003	47.8	ug/L	43	Standard
	Pb	206	205.3	3.8	**-0.0070**	0.002	26.1	ug/L	266	Standard
	Pb	207	186.7	10.4	**-0.0083**	0.005	59.2	ug/L	206	Standard
	Pb	208	645.0	4.8	**-0.0064**	0.002	31.2	ug/L	668	Standard
	U	238	25.0	31.2	**0.0048**	0.002	34.8	ug/L	32	Standard
>	Bi	209	388104.4	1.0				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	46.7	50.6	**0.0097**	0.057	590.0	mg/L	60	Standard
K	39	10.0	100.0	**-0.2010**	0.205	102.0	mg/L	12	Standard
Ca	43	33.3	52.7	**-15.3352**	13.579	88.5	mg/L	37	Standard
Fe	54	51.0	24.4	**-0.0151**	0.030	201.1	mg/L	56	Standard
Fe	57	655.0	9.9	**-1.2568**	0.591	47.0	mg/L	735	Standard
> **Sc-1**	45	23508.2	2.8				mg/L	22687	Standard
Cl	35	23237.8	0.6				ug/L	20516	Standard
Kr	83	4.3	81.0				ug/L	5	Standard
Br	81	543.3	1.1				ug/L	570	Standard
P	31	8335.6	0.6				ug/L	7850	Standard
S	34	1678.4	3.5				ug/L	1375	Standard
Sr	88	165.0	15.7				ug/L	165	Standard
C	12	163.3	9.4				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	15.5	77.8				mg/L	6	Standard
Ho-1	165	23.3	44.6				mg/L	7	Standard
Er	166	23.3	49.5				mg/L	13	Standard
I	127	3083.6	3.7				mg/L	3795	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.359	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.197
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.903
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1508062601SDL WG535241-02
Sample Date/Time: Thursday, August 20, 2015 13:46:30
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53618.1	3.1				ug/L	51673	Standard
	Be	9	23.3	24.7	**-0.0308**	0.010	31.2	ug/L	43	Standard
	Al	27	356980.1	1.2	**4.9960**	0.163	3.3	ug/L	2157	Standard
	Sc	45	23964.0	4.4				ug/L	22687	Standard
	Ti	47	16.0	22.5	**-0.0363**	0.022	59.3	ug/L	43	Standard
	V	51	1070.2	4.3	**-0.0224**	0.005	23.1	ug/L	1233	Standard
	Cr	52	5634.7	3.6	**-0.0626**	0.012	19.2	ug/L	6387	Standard
	Cr	53	736.7	12.2	**-0.8234**	0.115	14.0	ug/L	1555	Standard
	Mn	55	2507.9	3.0	**0.6412**	0.008	1.3	ug/L	436	Standard
	Co	59	226.0	4.4	**0.0075**	0.002	28.3	ug/L	236	Standard
	Ni	60	154.7	1.9	**0.0671**	0.003	4.8	ug/L	204	Standard
	Cu	65	427.0	5.1	**0.0284**	0.022	77.1	ug/L	303	Standard
	Zn	66	1405.4	2.6	**1.3382**	0.095	7.1	ug/L	332	Standard
>	**Ge**	72	296816.2	2.8				ug/L	293924	Standard
	As	75	-2.4	465.3	**0.0425**	0.013	30.9	ug/L	45	Standard
	Se	82	18.0	14.5	**0.0455**	0.037	81.8	ug/L	35	Standard
	Se-1	77	100.0	18.5	**-0.8148**	0.362	44.4	ug/L	153	Standard
>	**Ga**	71	20.0	43.3				mg/L	25	Standard
	Rb	85	1361.7	7.0				ug/L	20	Standard
	Y	89	274523.6	3.8				ug/L	279578	Standard
>	**Rh**	103	26.7	10.8				ug/L	68	Standard
	Mo	98	220.0	3.5	**0.1182**	0.003	2.6	ug/L	56	Standard
	Ag	107	122.0	29.6	**0.0067**	0.006	92.0	ug/L	199	Standard
	Cd	111	37.8	73.9	**0.0153**	0.016	106.0	mg/L	89	Standard
	Cd	114	93.6	101.4	**0.0151**	0.021	138.2	ug/L	150	Standard
>	**In**	115	464909.0	1.3				ug/L	458296	Standard
	Sn	118	486.7	12.9	**0.0371**	0.010	28.3	ug/L	385	Standard
	Sb	123	445.6	8.5	**0.0892**	0.007	8.4	ug/L	208	Standard
	Ba	135	3289.0	1.6	**1.5492**	0.006	0.4	ug/L	108	Standard
	Ce	140	26.7	47.2				ug/L	92	Standard
>	**Tb**	159	794621.7	2.1				ug/L	812006	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	111.3	66.8	**0.0103**	0.011	103.1	ug/L	236	Standard
	Tl	205	35.0	24.7	**0.0069**	0.002	27.8	ug/L	43	Standard
	Pb	206	268.0	10.2	**0.0078**	0.005	64.9	ug/L	266	Standard
	Pb	207	206.3	10.0	**-0.0031**	0.005	158.4	ug/L	206	Standard
	Pb	208	741.3	6.5	**0.0008**	0.002	285.3	ug/L	668	Standard
	U	238	47.7	17.8	**0.0098**	0.002	16.8	ug/L	32	Standard
>	**Bi**	209	387482.9	2.3				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	1043.4	8.7	**2.4726**	0.167	6.7	mg/L	60	Standard
K	39	11.7	65.5	**-0.1782**	0.140	78.7	mg/L	12	Standard
Ca	43	53.3	19.5	**-1.6552**	7.102	429.1	mg/L	37	Standard
Fe	54	52.5	38.9	**-0.0149**	0.042	282.5	mg/L	56	Standard
Fe	57	698.3	7.7	**-0.9942**	0.328	33.0	mg/L	735	Standard
> **Sc-1**	45	23964.0	4.4				mg/L	22687	Standard
Cl	35	23946.9	1.6				ug/L	20516	Standard
Kr	83	2.7	114.6				ug/L	5	Standard
Br	81	600.0	16.7				ug/L	570	Standard
P	31	8605.8	1.7				ug/L	7850	Standard
S	34	1526.7	4.9				ug/L	1375	Standard
Sr	88	165.0	8.0				ug/L	165	Standard
C	12	216.7	39.3				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	5.5	94.5				mg/L	6	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	23.3	65.5				mg/L	13	Standard
I	127	4257.3	3.7				mg/L	3795	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		103.764	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.984	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.443
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.738
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 21, 2015

Method 6020 - Summary Report

Sample ID: L1508073804 WG535190-01
Sample Date/Time: Thursday, August 20, 2015 13:49:42
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65235.5	6.1				ug/L	51673	Standard
	Be	9	36.7	28.4	**-0.0212**	0.012	54.3	ug/L	43	Standard
	Al	27	34328341.8	6.2	**395.5659**	14.300	3.6	ug/L	2157	Standard
	Sc	45	20632.4	1.5				ug/L	22687	Standard
	Ti	47	79.7	1.9	**0.3995**	0.027	6.6	ug/L	43	Standard
	V	51	1517.7	13.8	**0.1259**	0.066	52.8	ug/L	1233	Standard
	Cr	52	6527.7	3.2	**0.2737**	0.014	5.0	ug/L	6387	Standard
	Cr	53	3028.6	5.9	**3.5072**	0.410	11.7	ug/L	1555	Standard
	Mn	55	386429.8	1.5	**144.7021**	2.384	1.6	ug/L	436	Standard
	Co	59	1883.5	1.1	**0.4613**	0.021	4.6	ug/L	236	Standard
	Ni	60	4707.1	3.9	**3.6755**	0.058	1.6	ug/L	204	Standard
	Cu	65	2660.6	7.9	**1.8372**	0.161	8.8	ug/L	303	Standard
	Zn	66	4307.9	7.3	**5.6769**	0.358	6.3	ug/L	332	Standard
>	**Ge**	72	266254.8	3.1				ug/L	293924	Standard
	As	75	1249.3	10.4	**1.7197**	0.154	9.0	ug/L	45	Standard
	Se	82	569.8	11.1	**8.9480**	0.922	10.3	ug/L	35	Standard
	Se-1	77	306.3	7.1	**3.9323**	0.269	6.8	ug/L	153	Standard
>	**Ga**	71	38.3	49.4				mg/L	25	Standard
	Rb	85	54307.3	5.2				ug/L	20	Standard
	Y	89	262418.6	2.0				ug/L	279578	Standard
>	**Rh**	103	1393.4	13.8				ug/L	68	Standard
	Mo	98	147.2	20.4	**0.0777**	0.023	29.2	ug/L	56	Standard
	Ag	107	167.0	48.6	**0.0163**	0.016	101.0	ug/L	199	Standard
	Cd	111	22.1	38.5	**0.0066**	0.005	74.1	mg/L	89	Standard
	Cd	114	68.3	20.0	**0.0101**	0.003	26.3	ug/L	150	Standard
>	**In**	115	448897.5	3.5				ug/L	458296	Standard
	Sn	118	498.3	9.1	**0.0425**	0.007	16.2	ug/L	385	Standard
	Sb	123	355.3	19.2	**0.0721**	0.019	26.9	ug/L	208	Standard
	Ba	135	4647.0	2.4	**2.2789**	0.040	1.7	ug/L	108	Standard
	Ce	140	451.7	1.7				ug/L	92	Standard
>	**Tb**	159	765269.2	2.2				ug/L	812006	Standard
	Ho	165	90.0	36.4				ug/L	7	Standard
	Tl	203	79.7	18.2	**0.0077**	0.003	35.5	ug/L	236	Standard
	Tl	205	78.3	48.8	**0.0188**	0.010	52.6	ug/L	43	Standard
	Pb	206	407.0	19.8	**0.0564**	0.025	44.4	ug/L	266	Standard
	Pb	207	374.7	26.6	**0.0569**	0.033	58.2	ug/L	206	Standard
	Pb	208	1196.0	11.7	**0.0495**	0.015	29.9	ug/L	668	Standard
	U	238	673.3	10.3	**0.1706**	0.021	12.1	ug/L	32	Standard
>	**Bi**	209	333588.7	2.4				ug/L	377155	Standard

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Na	23	16.7	34.6	**-1506.0802**	569.558	37.8	mg/L	2	Standard
Mg	24	356040.2	2.9	**1022.8639**	24.483	2.4	mg/L	60	Standard
K	39	345.0	13.8	**7.4207**	1.012	13.6	mg/L	12	Standard
Ca	43	518.3	19.0	**394.1360**	82.471	20.9	mg/L	37	Standard
Fe	54	190.2	17.3	**0.3465**	0.085	24.6	mg/L	56	Standard
Fe	57	1635.1	4.4	**9.4909**	0.523	5.5	mg/L	735	Standard
> **Sc-1**	45	20632.4	1.5				mg/L	22687	Standard
Cl	35	234963.5	7.3				ug/L	20516	Standard
Kr	83	3.3	34.6				ug/L	5	Standard
Br	81	44104.1	1.5				ug/L	570	Standard
P	31	11554.4	3.9				ug/L	7850	Standard
S	34	1975.1	7.7				ug/L	1375	Standard
Sr	88	1406.7	1.8				ug/L	165	Standard
C	12	603.3	10.7				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	0	Standard
Dy	164	84.7	14.1				mg/L	6	Standard
Ho-1	165	90.0	36.4				mg/L	7	Standard
Er	166	110.0	39.6				mg/L	13	Standard
I	127	202178.8	6.6				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		126.247	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.586	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.949
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		88.449
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508073804DP WG535190-04
Sample Date/Time: Thursday, August 20, 2015 13:52:53
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65069.5	1.7				ug/L	51673	Standard
	Be	9	35.0	24.7	**-0.0229**	0.011	47.8	ug/L	43	Standard
	Al	27	33207546.3	3.1	**383.4978**	9.615	2.5	ug/L	2157	Standard
	Sc	45	20869.4	0.9				ug/L	22687	Standard
	Ti	47	74.0	3.6	**0.3561**	0.020	5.6	ug/L	43	Standard
	V	51	1338.1	4.0	**0.0736**	0.012	16.8	ug/L	1233	Standard
	Cr	52	6461.4	2.6	**0.2433**	0.044	17.9	ug/L	6387	Standard
	Cr	53	2952.0	6.4	**3.3049**	0.325	9.8	ug/L	1555	Standard
	Mn	55	357816.8	0.5	**132.5250**	0.219	0.2	ug/L	436	Standard
	Co	59	1695.1	4.9	**0.4052**	0.020	4.9	ug/L	236	Standard
	Ni	60	4399.3	1.5	**3.3965**	0.049	1.5	ug/L	204	Standard
	Cu	65	2771.9	7.4	**1.9030**	0.173	9.1	ug/L	303	Standard
	Zn	66	4422.6	4.7	**5.7779**	0.330	5.7	ug/L	332	Standard
>	**Ge**	72	269069.8	0.6				ug/L	293924	Standard
	As	75	1309.9	9.1	**1.7841**	0.165	9.2	ug/L	45	Standard
	Se	82	589.9	4.3	**9.1789**	0.457	5.0	ug/L	35	Standard
	Se-1	77	309.3	3.9	**3.9328**	0.264	6.7	ug/L	153	Standard
>	**Ga**	71	50.0	17.3				mg/L	25	Standard
	Rb	85	49626.2	3.0				ug/L	20	Standard
	Y	89	262450.8	1.9				ug/L	279578	Standard
>	**Rh**	103	1560.1	6.2				ug/L	68	Standard
	Mo	98	100.5	3.4	**0.0499**	0.002	3.1	ug/L	56	Standard
	Ag	107	113.3	9.7	**0.0067**	0.002	26.0	ug/L	199	Standard
	Cd	111	18.1	11.5	**0.0046**	0.001	24.5	mg/L	89	Standard
	Cd	114	27.4	112.5	**0.0010**	0.008	735.4	ug/L	150	Standard
>	**In**	115	434346.3	1.8				ug/L	458296	Standard
	Sn	118	656.7	3.8	**0.0768**	0.007	9.3	ug/L	385	Standard
	Sb	123	178.9	8.0	**0.0315**	0.003	11.0	ug/L	208	Standard
	Ba	135	4339.6	1.6	**2.1979**	0.024	1.1	ug/L	108	Standard
	Ce	140	376.7	8.1				ug/L	92	Standard
>	**Tb**	159	776843.1	2.2				ug/L	812006	Standard
	Ho	165	80.0	27.2				ug/L	7	Standard
	Tl	203	29.0	11.9	**-0.0009**	0.001	64.0	ug/L	236	Standard
	Tl	205	23.3	53.9	**0.0052**	0.003	58.8	ug/L	43	Standard
	Pb	206	334.7	5.0	**0.0357**	0.005	13.5	ug/L	266	Standard
	Pb	207	289.7	9.1	**0.0301**	0.008	25.4	ug/L	206	Standard
	Pb	208	935.0	5.0	**0.0260**	0.004	15.7	ug/L	668	Standard
	U	238	548.0	1.6	**0.1376**	0.003	2.0	ug/L	32	Standard
>	**Bi**	209	335889.0	0.4				ug/L	377155	Standard

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Na	23	15.0	33.3	**-1322.9229**	484.324	36.6	mg/L	2	Standard
Mg	24	339679.4	1.7	**964.7396**	7.850	0.8	mg/L	60	Standard
K	39	350.0	8.9	**7.4543**	0.765	10.3	mg/L	12	Standard
Ca	43	491.7	10.0	**367.2406**	42.023	11.4	mg/L	37	Standard
Fe	54	201.9	28.5	**0.3691**	0.137	37.2	mg/L	56	Standard
Fe	57	1468.4	4.5	**7.6396**	0.795	10.4	mg/L	735	Standard
> **Sc-1**	45	20869.4	0.9				mg/L	22687	Standard
Cl	35	222483.7	0.9				ug/L	20516	Standard
Kr	83	3.7	31.5				ug/L	5	Standard
Br	81	38672.6	2.6				ug/L	570	Standard
P	31	11202.5	4.9				ug/L	7850	Standard
S	34	2066.8	8.4				ug/L	1375	Standard
Sr	88	1250.1	10.5				ug/L	165	Standard
C	12	536.7	17.3				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	72.5	14.6				mg/L	6	Standard
Ho-1	165	80.0	27.2				mg/L	7	Standard
Er	166	86.7	29.0				mg/L	13	Standard
I	127	195559.2	1.8				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		125.925	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		91.544	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.774
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		89.059
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1508073804DP WG535190-04
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Method 6020 - Summary Report

Sample ID: L1508073804S WG535190-05
Sample Date/Time: Thursday, August 20, 2015 13:56:04
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62473.6	2.3				ug/L	51673	Standard
	Be	9	34145.1	1.8	**42.6625**	1.602	3.8	ug/L	43	Standard
	Al	27	33724875.0	0.6	**405.8311**	10.893	2.7	ug/L	2157	Standard
	Sc	45	20879.4	2.9				ug/L	22687	Standard
	Ti	47	94.3	4.0	**0.5055**	0.031	6.1	ug/L	43	Standard
	V	51	202141.4	1.7	**53.7414**	0.928	1.7	ug/L	1233	Standard
	Cr	52	212738.0	1.5	**48.0076**	1.426	3.0	ug/L	6387	Standard
	Cr	53	28745.6	1.0	**51.1893**	1.582	3.1	ug/L	1555	Standard
	Mn	55	501190.5	2.0	**190.2531**	4.490	2.4	ug/L	436	Standard
	Co	59	189403.2	1.2	**51.7494**	0.910	1.8	ug/L	236	Standard
	Ni	60	60397.5	1.9	**48.3331**	1.483	3.1	ug/L	204	Standard
	Cu	65	57586.2	1.1	**46.0856**	0.493	1.1	ug/L	303	Standard
	Zn	66	36793.0	0.4	**52.6959**	0.938	1.8	ug/L	332	Standard
>	**Ge**	72	262700.8	2.1				ug/L	293924	Standard
	As	75	40080.1	1.9	**54.5225**	0.849	1.6	ug/L	45	Standard
	Se	82	4207.7	0.9	**68.4246**	2.030	3.0	ug/L	35	Standard
	Se-1	77	2839.3	3.2	**60.3504**	0.905	1.5	ug/L	153	Standard
>	**Ga**	71	48.3	21.5				mg/L	25	Standard
	Rb	85	49688.1	3.2				ug/L	20	Standard
	Y	89	262855.9	1.6				ug/L	279578	Standard
>	**Rh**	103	1788.4	1.2				ug/L	68	Standard
	Mo	98	121.8	10.5	**0.0643**	0.008	13.0	ug/L	56	Standard
	Ag	107	206496.7	0.8	**39.7289**	0.421	1.1	ug/L	199	Standard
	Cd	111	75004.0	1.9	**47.5622**	0.831	1.7	mg/L	89	Standard
	Cd	114	195284.0	1.9	**46.8800**	1.045	2.2	ug/L	150	Standard
>	**In**	115	431446.9	0.4				ug/L	458296	Standard
	Sn	118	566.7	4.4	**0.0598**	0.005	8.7	ug/L	385	Standard
	Sb	123	218527.4	0.7	**53.5077**	0.541	1.0	ug/L	208	Standard
	Ba	135	95981.1	1.2	**49.4472**	0.636	1.3	ug/L	108	Standard
	Ce	140	383.3	21.2				ug/L	92	Standard
>	**Tb**	159	756276.7	1.2				ug/L	812006	Standard
	Ho	165	76.7	26.4				ug/L	7	Standard
	Tl	203	291672.0	0.6	**49.7196**	0.461	0.9	ug/L	236	Standard
	Tl	205	211599.1	1.0	**52.1032**	0.926	1.8	ug/L	43	Standard
	Pb	206	196645.2	0.4	**54.2329**	0.193	0.4	ug/L	266	Standard
	Pb	207	168359.9	0.2	**51.2974**	0.490	1.0	ug/L	206	Standard
	Pb	208	586471.8	1.3	**51.3028**	0.361	0.7	ug/L	668	Standard
	U	238	209398.5	1.3	**53.6981**	0.298	0.6	ug/L	32	Standard
>	**Bi**	209	330295.5	0.8				ug/L	377155	Standard

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Na	23	11.7	24.7	**-998.7796**	292.516	29.3	mg/L	2	Standard
Mg	24	348460.9	2.1	**989.4200**	10.956	1.1	mg/L	60	Standard
K	39	366.7	14.5	**7.8423**	1.359	17.3	mg/L	12	Standard
Ca	43	506.7	20.7	**378.1754**	75.374	19.9	mg/L	37	Standard
Fe	54	191.9	12.9	**0.3456**	0.069	19.9	mg/L	56	Standard
Fe	57	1485.1	4.1	**7.7999**	0.642	8.2	mg/L	735	Standard
> **Sc-1**	45	20879.4	2.9				mg/L	22687	Standard
Cl	35	229328.5	0.5				ug/L	20516	Standard
Kr	83	3.3	34.6				ug/L	5	Standard
Br	81	31262.2	2.0				ug/L	570	Standard
P	31	11082.4	2.7				ug/L	7850	Standard
S	34	2020.1	3.1				ug/L	1375	Standard
Sr	88	1338.4	5.7				ug/L	165	Standard
C	12	480.0	23.5				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	45.7	79.2				mg/L	6	Standard
Ho-1	165	76.7	26.4				mg/L	7	Standard
Er	166	90.0	11.1				mg/L	13	Standard
I	127	288642.6	3.8				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		120.902	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		89.377	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.142
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.575
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508073804SD WG535190-06
Sample Date/Time: Thursday, August 20, 2015 13:59:15
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61628.4	1.7				ug/L	51673	Standard
	Be	9	33502.0	1.5	**42.4110**	0.215	0.5	ug/L	43	Standard
	Al	27	34213250.4	1.6	**417.2881**	11.080	2.7	ug/L	2157	Standard
	Sc	45	20837.7	3.0				ug/L	22687	Standard
	Ti	47	109.3	14.4	**0.6125**	0.118	19.2	ug/L	43	Standard
	V	51	206961.7	1.5	**55.3969**	1.571	2.8	ug/L	1233	Standard
	Cr	52	212503.2	0.5	**48.2675**	1.054	2.2	ug/L	6387	Standard
	Cr	53	28829.1	1.5	**51.6866**	1.627	3.1	ug/L	1555	Standard
	Mn	55	506669.8	1.2	**193.5951**	4.719	2.4	ug/L	436	Standard
	Co	59	188499.7	0.6	**51.8331**	0.524	1.0	ug/L	236	Standard
	Ni	60	61079.5	0.1	**49.1899**	0.814	1.7	ug/L	204	Standard
	Cu	65	59114.1	0.8	**47.6231**	0.380	0.8	ug/L	303	Standard
	Zn	66	37152.5	1.1	**53.5608**	1.034	1.9	ug/L	332	Standard
>	**Ge**	72	261000.5	1.6				ug/L	293924	Standard
	As	75	40245.9	0.9	**55.1035**	0.525	1.0	ug/L	45	Standard
	Se	82	4183.5	1.2	**68.4541**	1.156	1.7	ug/L	35	Standard
	Se-1	77	2949.6	2.8	**63.2419**	1.677	2.7	ug/L	153	Standard
>	**Ga**	71	66.7	28.4				mg/L	25	Standard
	Rb	85	50841.8	1.4				ug/L	20	Standard
	Y	89	259234.7	2.4				ug/L	279578	Standard
>	**Rh**	103	2023.5	2.6				ug/L	68	Standard
	Mo	98	140.9	15.2	**0.0788**	0.014	17.8	ug/L	56	Standard
	Ag	107	208425.9	0.9	**41.0092**	0.204	0.5	ug/L	199	Standard
	Cd	111	74579.1	1.8	**48.3658**	0.718	1.5	mg/L	89	Standard
	Cd	114	187368.8	2.2	**45.9975**	0.920	2.0	ug/L	150	Standard
>	**In**	115	421872.6	0.4				ug/L	458296	Standard
	Sn	118	616.7	11.5	**0.0725**	0.015	20.2	ug/L	385	Standard
	Sb	123	217238.3	0.2	**54.3987**	0.220	0.4	ug/L	208	Standard
	Ba	135	96480.6	0.9	**50.8319**	0.264	0.5	ug/L	108	Standard
	Ce	140	460.0	7.6				ug/L	92	Standard
>	**Tb**	159	747502.1	0.5				ug/L	812006	Standard
	Ho	165	98.3	47.2				ug/L	7	Standard
	Tl	203	293753.7	0.5	**50.0790**	0.497	1.0	ug/L	236	Standard
	Tl	205	209512.0	0.9	**51.5907**	0.564	1.1	ug/L	43	Standard
	Pb	206	197345.6	0.7	**54.4349**	0.905	1.7	ug/L	266	Standard
	Pb	207	170601.1	0.7	**51.9872**	0.804	1.5	ug/L	206	Standard
	Pb	208	580247.8	0.8	**50.7631**	0.205	0.4	ug/L	668	Standard
	U	238	207400.6	0.6	**53.1940**	0.576	1.1	ug/L	32	Standard
>	**Bi**	209	330270.3	0.9				ug/L	377155	Standard

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Na	23	8.3	34.6	**-666.9428**	266.288	39.9	mg/L	2	Standard
Mg	24	354550.5	0.8	**1009.0350**	24.963	2.5	mg/L	60	Standard
K	39	393.3	8.7	**8.4514**	0.947	11.2	mg/L	12	Standard
Ca	43	483.3	7.6	**361.1535**	33.487	9.3	mg/L	37	Standard
Fe	54	170.9	17.7	**0.2934**	0.068	23.2	mg/L	56	Standard
Fe	57	1635.1	4.0	**9.3526**	1.105	11.8	mg/L	735	Standard
> **Sc-1**	45	20837.7	3.0				mg/L	22687	Standard
Cl	35	230047.3	2.5				ug/L	20516	Standard
Kr	83	4.7	61.9				ug/L	5	Standard
Br	81	29712.4	1.0				ug/L	570	Standard
P	31	11127.4	2.4				ug/L	7850	Standard
S	34	2163.5	4.5				ug/L	1375	Standard
Sr	88	1233.4	11.6				ug/L	165	Standard
C	12	496.7	9.5				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	73.3	41.7				mg/L	6	Standard
Ho-1	165	98.3	47.2				mg/L	7	Standard
Er	166	70.0	0.0				mg/L	13	Standard
I	127	303751.8	5.3				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.266	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		88.799	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		92.052
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.569
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, August 20, 2015 14:02:28
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	56739.5	3.4				ug/L	51673	Standard
	Be	9	35827.3	3.0	**49.3015**	1.978	4.0	ug/L	43	Standard
	Al	27	3848015.0	3.9	**50.9613**	1.407	2.8	ug/L	2157	Standard
	Sc	45	23219.5	2.6				ug/L	22687	Standard
	Ti	47	17128.7	1.6	**107.8793**	1.550	1.4	ug/L	43	Standard
	V	51	213139.0	1.1	**52.8848**	0.956	1.8	ug/L	1233	Standard
	Cr	52	246182.4	2.1	**51.9415**	1.445	2.8	ug/L	6387	Standard
	Cr	53	32137.4	1.2	**53.4854**	0.606	1.1	ug/L	1555	Standard
	Mn	55	154770.8	0.6	**54.6901**	0.917	1.7	ug/L	436	Standard
	Co	59	213577.3	1.2	**54.4597**	0.401	0.7	ug/L	236	Standard
	Ni	60	69204.7	1.3	**51.6816**	0.838	1.6	ug/L	204	Standard
	Cu	65	68996.7	0.8	**51.5709**	0.848	1.6	ug/L	303	Standard
	Zn	66	39430.9	3.1	**52.6924**	1.047	2.0	ug/L	332	Standard
>	Ge	72	281452.1	1.4				ug/L	293924	Standard
	As	75	40687.9	1.9	**51.6575**	0.472	0.9	ug/L	45	Standard
	Se	82	3650.7	3.2	**55.3516**	1.772	3.2	ug/L	35	Standard
	Se-1	77	2562.9	2.9	**50.4360**	2.290	4.5	ug/L	153	Standard
>	Ga	71	50.0	10.0				mg/L	25	Standard
	Rb	85	665.0	15.6				ug/L	20	Standard
	Y	89	276290.4	2.1				ug/L	279578	Standard
>	Rh	103	601.7	23.1				ug/L	68	Standard
	Mo	98	162833.1	1.7	**96.1021**	1.039	1.1	ug/L	56	Standard
	Ag	107	281320.5	1.0	**48.7616**	0.328	0.7	ug/L	199	Standard
	Cd	111	87597.6	0.5	**50.0473**	0.787	1.6	mg/L	89	Standard
	Cd	114	227723.2	1.8	**49.2487**	1.030	2.1	ug/L	150	Standard
>	In	115	478934.2	1.1				ug/L	458296	Standard
	Sn	118	261244.9	1.4	**46.3273**	0.962	2.1	ug/L	385	Standard
	Sb	123	227310.0	1.5	**50.1362**	0.246	0.5	ug/L	208	Standard
	Ba	135	107051.2	1.5	**49.6804**	0.396	0.8	ug/L	108	Standard
	Ce	140	85.0	5.9				ug/L	92	Standard
>	Tb	159	837119.9	1.4				ug/L	812006	Standard
	Ho	165	10.0	100.0				ug/L	7	Standard
	Tl	203	355864.9	1.0	**50.1663**	0.658	1.3	ug/L	236	Standard
	Tl	205	251937.4	0.6	**51.2998**	0.577	1.1	ug/L	43	Standard
	Pb	206	225646.3	1.0	**51.4614**	0.604	1.2	ug/L	266	Standard
	Pb	207	203209.3	0.6	**51.2022**	0.549	1.1	ug/L	206	Standard
	Pb	208	706205.2	1.0	**51.0898**	0.600	1.2	ug/L	668	Standard
	U	238	240029.3	0.3	**50.9052**	0.254	0.5	ug/L	32	Standard
>	Bi	209	399400.1	0.6				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	2401.9	7.0	**6.0302**	0.503	8.3	mg/L	60	Standard
K	39	310.0	15.9	**5.8470**	0.979	16.7	mg/L	12	Standard
Ca	43	65.0	23.1	**8.1490**	10.028	123.1	mg/L	37	Standard
Fe	54	2388.6	2.3	**5.1554**	0.157	3.0	mg/L	56	Standard
Fe	57	1351.7	5.7	**5.1101**	0.999	19.5	mg/L	735	Standard
> **Sc-1**	45	23219.5	2.6				mg/L	22687	Standard
Cl	35	24730.2	5.9				ug/L	20516	Standard
Kr	83	5.3	57.3				ug/L	5	Standard
Br	81	980.0	16.0				ug/L	570	Standard
P	31	9518.0	4.2				ug/L	7850	Standard
S	34	1486.7	1.4				ug/L	1375	Standard
Sr	88	178.3	5.8				ug/L	165	Standard
C	12	233.3	8.9				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	2.2	249.0				mg/L	6	Standard
Ho-1	165	10.0	100.0				mg/L	7	Standard
Er	166	23.3	49.5				mg/L	13	Standard
I	127	7005.1	42.6				mg/L	3795	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	98.603		
	Al	27	101.923		
	Sc	45			
	Ti	47	107.879		
	V	51	105.770		
	Cr	52	103.883		
	Cr	53			
	Mn	55	109.380		
	Co	59	108.919		
	Ni	60	103.363		
	Cu	65	103.142		
	Zn	66	105.385		
>	Ge	72		95.757	
	As	75	103.315		
	Se	82	110.703		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	96.102		
Ag	107	97.523		
Cd	111	100.095		
Cd	114			
> In	115		104.503	
Sn	118	92.655		
Sb	123	100.272		
Ba	135	99.361		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.333		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.180		
U	238	101.810		
> Bi	209		105.898	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Se	82	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, August 20, 2015 14:05:40
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54419.2	1.8				ug/L	51673	Standard
	Be	9	41.7	59.2	**-0.0053**	0.035	663.7	ug/L	43	Standard
	Al	27	1210.1	65.1	**0.0063**	0.011	171.6	ug/L	2157	Standard
	Sc	45	23810.4	2.0				ug/L	22687	Standard
	Ti	47	47.3	14.1	**0.1566**	0.040	25.8	ug/L	43	Standard
	V	51	852.7	9.2	**-0.0697**	0.020	28.6	ug/L	1233	Standard
	Cr	52	5295.3	2.1	**-0.1104**	0.021	18.6	ug/L	6387	Standard
	Cr	53	850.0	4.2	**-0.6082**	0.054	8.9	ug/L	1555	Standard
	Mn	55	507.3	5.7	**-0.0281**	0.010	35.5	ug/L	436	Standard
	Co	59	233.0	8.2	**0.0103**	0.005	46.6	ug/L	236	Standard
	Ni	60	85.3	14.0	**0.0191**	0.009	44.7	ug/L	204	Standard
	Cu	65	557.3	8.1	**0.1287**	0.032	24.6	ug/L	303	Standard
	Zn	66	507.7	6.9	**0.2017**	0.045	22.2	ug/L	332	Standard
>	**Ge**	72	291026.5	0.6				ug/L	293924	Standard
	As	75	42.7	25.7	**0.0978**	0.013	13.4	ug/L	45	Standard
	Se	82	47.7	7.7	**0.4881**	0.056	11.4	ug/L	35	Standard
	Se-1	77	102.3	4.9	**-0.7292**	0.107	14.6	ug/L	153	Standard
>	**Ga**	71	21.7	13.3				mg/L	25	Standard
	Rb	85	73.3	43.8				ug/L	20	Standard
	Y	89	270520.3	0.3				ug/L	279578	Standard
>	**Rh**	103	246.7	10.2				ug/L	68	Standard
	Mo	98	55.6	33.0	**0.0189**	0.011	60.9	ug/L	56	Standard
	Ag	107	119.7	24.5	**0.0068**	0.005	80.6	ug/L	199	Standard
	Cd	111	10.9	63.4	**-0.0003**	0.004	1578.3	mg/L	89	Standard
	Cd	114	44.8	26.5	**0.0046**	0.003	58.4	ug/L	150	Standard
>	**In**	115	456642.1	1.2				ug/L	458296	Standard
	Sn	118	441.7	17.0	**0.0305**	0.015	48.4	ug/L	385	Standard
	Sb	123	807.7	6.9	**0.1750**	0.015	8.5	ug/L	208	Standard
	Ba	135	46.3	24.1	**-0.0014**	0.006	409.6	ug/L	108	Standard
	Ce	140	11.7	65.5				ug/L	92	Standard
>	**Tb**	159	825023.4	0.4				ug/L	812006	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	46.3	77.9	**0.0008**	0.005	627.7	ug/L	236	Standard
	Tl	205	48.3	51.0	**0.0094**	0.005	53.8	ug/L	43	Standard
	Pb	206	216.3	7.4	**-0.0055**	0.004	66.2	ug/L	266	Standard
	Pb	207	185.0	10.9	**-0.0098**	0.005	52.3	ug/L	206	Standard
	Pb	208	648.0	6.8	**-0.0072**	0.003	43.8	ug/L	668	Standard
	U	238	27.0	80.7	**0.0051**	0.005	90.5	ug/L	32	Standard
>	**Bi**	209	396727.9	0.2				ug/L	377155	Standard

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Na	23	3.3	86.6	**-141.7154**	250.586	176.8	mg/L	2	Standard
Mg	24	100.0	5.0	**0.1419**	0.010	6.9	mg/L	60	Standard
K	39	8.3	124.9	**-0.2413**	0.204	84.5	mg/L	12	Standard
Ca	43	36.7	41.7	**-13.3328**	11.567	86.8	mg/L	37	Standard
Fe	54	62.7	20.2	**0.0084**	0.029	347.2	mg/L	56	Standard
Fe	57	771.7	13.9	**-0.3082**	0.921	298.7	mg/L	735	Standard
> **Sc-1**	45	23810.4	2.0				mg/L	22687	Standard
Cl	35	23394.7	1.2				ug/L	20516	Standard
Kr	83	4.3	35.3				ug/L	5	Standard
Br	81	703.3	7.8				ug/L	570	Standard
P	31	8193.9	5.1				ug/L	7850	Standard
S	34	1431.7	6.2				ug/L	1375	Standard
Sr	88	145.0	15.8				ug/L	165	Standard
C	12	230.0	30.4				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.7	183.0				mg/L	6	Standard
Ho-1	165	8.3	69.3				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	5217.6	5.3				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.014	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.639
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.190
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Se	82	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, August 20, 2015 14:08:53
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54392.5	2.8				ug/L	51673	Standard
	Be	9	163.3	4.7	**0.1699**	0.016	9.6	ug/L	43	Standard
	Al	27	11932.9	101.2	**0.1562**	0.168	107.6	ug/L	2157	Standard
	Sc	45	23750.3	2.2				ug/L	22687	Standard
	Ti	47	50.0	3.5	**0.1659**	0.011	6.7	ug/L	43	Standard
	V	51	2755.2	7.2	**0.3741**	0.049	13.0	ug/L	1233	Standard
	Cr	52	10185.1	1.0	**0.8623**	0.024	2.8	ug/L	6387	Standard
	Cr	53	1213.4	3.6	**-0.0468**	0.077	164.8	ug/L	1555	Standard
	Mn	55	2445.9	17.7	**0.6179**	0.147	23.8	ug/L	436	Standard
	Co	59	2030.1	7.9	**0.4425**	0.040	9.1	ug/L	236	Standard
	Ni	60	2369.2	2.6	**1.6309**	0.045	2.8	ug/L	204	Standard
	Cu	65	1607.8	1.7	**0.8656**	0.022	2.6	ug/L	303	Standard
	Zn	66	5629.0	1.6	**6.7128**	0.132	2.0	ug/L	332	Standard
>	**Ge**	72	297779.7	0.3				ug/L	293924	Standard
	As	75	286.2	4.9	**0.3886**	0.018	4.5	ug/L	45	Standard
	Se	82	54.0	19.1	**0.5628**	0.150	26.6	ug/L	35	Standard
	Se-1	77	113.0	14.2	**-0.5662**	0.320	56.5	ug/L	153	Standard
>	**Ga**	71	23.3	81.1				mg/L	25	Standard
	Rb	85	53.3	5.4				ug/L	20	Standard
	Y	89	280219.5	1.4				ug/L	279578	Standard
>	**Rh**	103	143.3	7.3				ug/L	68	Standard
	Mo	98	76.3	76.3	**0.0321**	0.037	114.2	ug/L	56	Standard
	Ag	107	2260.5	2.5	**0.3977**	0.010	2.6	ug/L	199	Standard
	Cd	111	414.9	5.3	**0.2429**	0.014	5.9	mg/L	89	Standard
	Cd	114	1022.5	10.6	**0.2275**	0.028	12.1	ug/L	150	Standard
>	**In**	115	454817.9	1.5				ug/L	458296	Standard
	Sn	118	653.3	4.7	**0.0703**	0.004	6.0	ug/L	385	Standard
	Sb	123	2081.0	5.6	**0.4718**	0.033	7.1	ug/L	208	Standard
	Ba	135	1521.1	0.5	**0.7198**	0.008	1.1	ug/L	108	Standard
	Ce	140	20.0	86.6				ug/L	92	Standard
>	**Tb**	159	819175.3	2.0				ug/L	812006	Standard
	Ho	165	10.0	100.0				ug/L	7	Standard
	Tl	203	633.0	9.5	**0.0850**	0.009	10.6	ug/L	236	Standard
	Tl	205	526.7	23.2	**0.1086**	0.026	23.8	ug/L	43	Standard
	Pb	206	1245.7	11.7	**0.2341**	0.035	15.1	ug/L	266	Standard
	Pb	207	1051.7	16.7	**0.2131**	0.046	21.7	ug/L	206	Standard
	Pb	208	3768.2	11.6	**0.2231**	0.033	15.0	ug/L	668	Standard
	U	238	1947.1	8.2	**0.4194**	0.037	8.7	ug/L	32	Standard
>	**Bi**	209	392759.9	0.5				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	200.0	90.2	**0.3981**	0.463	116.3	mg/L	60	Standard
K	39	13.3	142.0	**-0.1407**	0.376	267.2	mg/L	12	Standard
Ca	43	26.7	47.2	**-20.7808**	8.744	42.1	mg/L	37	Standard
Fe	54	60.3	26.0	**0.0033**	0.034	1030.8	mg/L	56	Standard
Fe	57	736.7	7.9	**-0.5929**	0.598	100.9	mg/L	735	Standard
> **Sc-1**	45	23750.3	2.2				mg/L	22687	Standard
Cl	35	24089.1	1.6				ug/L	20516	Standard
Kr	83	2.7	43.3				ug/L	5	Standard
Br	81	596.7	13.5				ug/L	570	Standard
P	31	8779.2	3.5				ug/L	7850	Standard
S	34	1566.7	3.8				ug/L	1375	Standard
Sr	88	160.0	19.5				ug/L	165	Standard
C	12	193.3	18.2				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	9.7	108.3				mg/L	6	Standard
Ho-1	165	10.0	100.0				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	13	Standard
I	127	1626.8	11.3				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	84.942		
Al	27			
Sc	45			
Ti	47			
V	51	93.527		
Cr	52	107.792		
Cr	53			
Mn	55	123.582		
Co	59	110.632		
Ni	60	101.933		
Cu	65	108.198		
Zn	66	107.405		
> Ge	72		101.312	
As	75	97.160		
Se	82	140.697		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	99.437		
Cd	111	101.206		
Cd	114			
> In	115		99.241	
Sn	118			
Sb	123	117.943		
Ba	135	95.975		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	106.275		
Tl	205			
Pb	206			
Pb	207			
Pb	208	111.565		
U	238	104.855		
> Bi	209		104.137	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 8	Se	82	

Sample ID: QC Std 8
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, August 20, 2015 14:16:36
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	52813.6	2.2				ug/L	51673	Standard
	Be	9	32653.5	1.3	**48.2657**	1.590	3.3	ug/L	43	Standard
	Al	27	3609522.2	2.5	**51.3480**	0.215	0.4	ug/L	2157	Standard
	Sc	45	24812.0	2.1				ug/L	22687	Standard
	Ti	47	17931.9	2.6	**107.2512**	2.518	2.3	ug/L	43	Standard
	V	51	213544.4	0.7	**50.3022**	0.323	0.6	ug/L	1233	Standard
	Cr	52	255531.7	1.3	**51.1772**	0.544	1.1	ug/L	6387	Standard
	Cr	53	31708.2	4.8	**49.9849**	2.376	4.8	ug/L	1555	Standard
	Mn	55	162288.6	1.0	**54.4554**	0.502	0.9	ug/L	436	Standard
	Co	59	211295.2	1.0	**51.1649**	0.379	0.7	ug/L	236	Standard
	Ni	60	72047.6	1.6	**51.0938**	0.665	1.3	ug/L	204	Standard
	Cu	65	70869.7	1.3	**50.2941**	0.533	1.1	ug/L	303	Standard
	Zn	66	39873.1	1.4	**50.5920**	0.574	1.1	ug/L	332	Standard
>	Ge	72	296345.7	0.3				ug/L	293924	Standard
	As	75	41585.8	0.4	**50.1466**	0.183	0.4	ug/L	45	Standard
	Se	82	3516.1	1.4	**50.6085**	0.658	1.3	ug/L	35	Standard
	Se-1	77	2615.2	3.9	**48.7690**	1.886	3.9	ug/L	153	Standard
>	Ga	71	53.3	27.1				mg/L	25	Standard
	Rb	85	603.3	1.0				ug/L	20	Standard
	Y	89	279866.6	3.6				ug/L	279578	Standard
>	Rh	103	96.7	13.0				ug/L	68	Standard
	Mo	98	156836.1	1.2	**97.1427**	1.179	1.2	ug/L	56	Standard
	Ag	107	268689.2	0.6	**48.8781**	0.800	1.6	ug/L	199	Standard
	Cd	111	80772.4	2.7	**48.4142**	0.410	0.8	mg/L	89	Standard
	Cd	114	211854.9	2.0	**48.0757**	0.679	1.4	ug/L	150	Standard
>	In	115	456439.4	2.2				ug/L	458296	Standard
	Sn	118	239880.4	3.4	**44.6210**	0.600	1.3	ug/L	385	Standard
	Sb	123	215246.1	0.3	**49.8309**	0.984	2.0	ug/L	208	Standard
	Ba	135	104127.6	0.5	**50.7196**	0.890	1.8	ug/L	108	Standard
	Ce	140	98.3	2.9				ug/L	92	Standard
>	Tb	159	823777.6	1.8				ug/L	812006	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	345105.3	1.6	**49.6506**	0.554	1.1	ug/L	236	Standard
	Tl	205	236988.0	2.4	**49.2439**	0.542	1.1	ug/L	43	Standard
	Pb	206	213534.5	0.5	**49.7046**	0.621	1.2	ug/L	266	Standard
	Pb	207	192979.3	1.2	**49.6240**	0.254	0.5	ug/L	206	Standard
	Pb	208	681868.0	2.0	**50.3407**	0.337	0.7	ug/L	668	Standard
	U	238	231540.3	2.2	**50.1122**	0.481	1.0	ug/L	32	Standard
>	Bi	209	391338.0	1.4				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	2146.8	10.3	**5.0252**	0.561	11.2	mg/L	60	Standard
K	39	276.7	15.8	**4.8292**	0.919	19.0	mg/L	12	Standard
Ca	43	51.7	34.0	**-4.1098**	12.303	299.4	mg/L	37	Standard
Fe	54	2293.0	3.1	**4.6179**	0.166	3.6	mg/L	56	Standard
Fe	57	1285.1	6.8	**3.7604**	0.924	24.6	mg/L	735	Standard
Sc-1	45	24812.0	2.1				mg/L	22687	Standard
Cl	35	22108.8	0.7				ug/L	20516	Standard
Kr	83	5.3	47.2				ug/L	5	Standard
Br	81	643.3	18.7				ug/L	570	Standard
P	31	9079.4	2.6				ug/L	7850	Standard
S	34	1666.8	11.4				ug/L	1375	Standard
Sr	88	166.7	9.2				ug/L	165	Standard
C	12	180.0	58.0				mg/L	173	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.5	102.6				mg/L	6	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	868.4	5.2				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	96.531		
Al	27	102.696		
Sc	45			
Ti	47	107.251		
V	51	100.604		
Cr	52	102.354		
Cr	53			
Mn	55	108.911		
Co	59	102.330		
Ni	60	102.188		
Cu	65	100.588		
Zn	66	101.184		
> Ge	72		100.824	
As	75	100.293		
Se	82	101.217		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	97.143		
Ag	107	97.756		
Cd	111	96.828		
Cd	114			
> In	115			99.595
Sn	118	89.242		
Sb	123	99.662		
Ba	135	101.439		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.301		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.681		
U	238	100.224		
> Bi	209			103.760
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, August 20, 2015 14:21:40
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48885.5	3.6				ug/L	51673	Standard
	Be	9	18.3	15.7	**-0.0357**	0.005	13.2	ug/L	43	Standard
	Al	27	1585.2	138.0	**0.0133**	0.032	242.9	ug/L	2157	Standard
	Sc	45	23994.0	1.6				ug/L	22687	Standard
	Ti	47	31.0	14.1	**0.0544**	0.027	49.4	ug/L	43	Standard
	V	51	824.5	19.0	**-0.0792**	0.038	47.9	ug/L	1233	Standard
	Cr	52	5307.9	2.6	**-0.1231**	0.032	25.9	ug/L	6387	Standard
	Cr	53	575.0	12.9	**-1.0809**	0.120	11.1	ug/L	1555	Standard
	Mn	55	537.0	21.0	**-0.0204**	0.039	190.1	ug/L	436	Standard
	Co	59	225.0	31.9	**0.0076**	0.018	233.3	ug/L	236	Standard
	Ni	60	85.0	12.4	**0.0180**	0.008	42.6	ug/L	204	Standard
	Cu	65	261.3	2.3	**-0.0889**	0.004	4.5	ug/L	303	Standard
	Zn	66	282.3	11.0	**-0.0971**	0.041	42.1	ug/L	332	Standard
>	**Ge**	72	295118.8	0.3				ug/L	293924	Standard
	As	75	-51.8	23.1	**-0.0172**	0.014	83.7	ug/L	45	Standard
	Se	82	18.2	30.4	**0.0503**	0.080	159.4	ug/L	35	Standard
	Se-1	77	90.7	11.1	**-0.9886**	0.204	20.6	ug/L	153	Standard
>	**Ga**	71	25.0	20.0				mg/L	25	Standard
	Rb	85	26.7	84.5				ug/L	20	Standard
	Y	89	264757.4	2.5				ug/L	279578	Standard
>	**Rh**	103	36.7	7.9				ug/L	68	Standard
	Mo	98	50.1	93.7	**0.0168**	0.030	180.5	ug/L	56	Standard
	Ag	107	80.7	6.1	**0.0003**	0.001	324.4	ug/L	199	Standard
	Cd	111	7.3	48.3	**-0.0023**	0.002	97.5	mg/L	89	Standard
	Cd	114	16.2	73.6	**-0.0018**	0.003	161.4	ug/L	150	Standard
>	**In**	115	437802.8	0.5				ug/L	458296	Standard
	Sn	118	391.7	6.6	**0.0242**	0.005	21.6	ug/L	385	Standard
	Sb	123	488.7	17.1	**0.1059**	0.020	18.8	ug/L	208	Standard
	Ba	135	37.7	8.5	**-0.0048**	0.002	32.9	ug/L	108	Standard
	Ce	140	26.7	39.0				ug/L	92	Standard
>	**Tb**	159	813132.6	2.3				ug/L	812006	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	12.3	44.7	**-0.0040**	0.001	19.9	ug/L	236	Standard
	Tl	205	30.0	173.2	**0.0058**	0.011	187.9	ug/L	43	Standard
	Pb	206	239.3	37.2	**0.0010**	0.021	2095.8	ug/L	266	Standard
	Pb	207	202.0	27.3	**-0.0044**	0.014	322.7	ug/L	206	Standard
	Pb	208	681.3	24.5	**-0.0037**	0.012	325.9	ug/L	668	Standard
	U	238	27.0	154.0	**0.0052**	0.009	172.2	ug/L	32	Standard
>	**Bi**	209	387911.4	0.6				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	88.3	31.2	**0.1113**	0.069	62.0	mg/L	60	Standard
K	39	11.7	137.8	**-0.1747**	0.318	181.9	mg/L	12	Standard
Ca	43	41.7	13.9	**-10.0987**	3.917	38.8	mg/L	37	Standard
Fe	54	55.7	14.2	**-0.0077**	0.018	229.7	mg/L	56	Standard
Fe	57	665.0	5.3	**-1.2924**	0.212	16.4	mg/L	735	Standard
Sc-1	45	23994.0	1.6				mg/L	22687	Standard
Cl	35	21010.6	2.7				ug/L	20516	Standard
Kr	83	3.3	62.4				ug/L	5	Standard
Br	81	590.0	27.7				ug/L	570	Standard
P	31	7762.0	6.5				ug/L	7850	Standard
S	34	1516.7	4.0				ug/L	1375	Standard
Sr	88	153.3	16.4				ug/L	165	Standard
C	12	153.3	15.1				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.4	5.9				mg/L	6	Standard
Ho-1	165	8.3	69.3				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	13	Standard
I	127	2575.2	2.2				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.406	
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	95.528
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	102.852
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, August 20, 2015 14:27:29
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51244.9	1.2				ug/L	51673	Standard
	Be	9	143.3	11.2	**0.1534**	0.022	14.4	ug/L	43	Standard
	Al	27	410.0	45.4	**-0.0044**	0.003	60.7	ug/L	2157	Standard
	Sc	45	24556.6	3.2				ug/L	22687	Standard
	Ti	47	25.7	20.0	**0.0195**	0.033	169.1	ug/L	43	Standard
	V	51	2567.1	2.6	**0.3231**	0.026	8.2	ug/L	1233	Standard
	Cr	52	10129.1	0.3	**0.8276**	0.042	5.0	ug/L	6387	Standard
	Cr	53	1043.4	7.4	**-0.3450**	0.101	29.4	ug/L	1555	Standard
	Mn	55	2131.1	2.7	**0.5045**	0.036	7.1	ug/L	436	Standard
	Co	59	1808.8	1.2	**0.3841**	0.005	1.3	ug/L	236	Standard
	Ni	60	2324.8	1.9	**1.5815**	0.065	4.1	ug/L	204	Standard
	Cu	65	1447.4	3.5	**0.7402**	0.046	6.2	ug/L	303	Standard
	Zn	66	5174.9	2.8	**6.0582**	0.148	2.5	ug/L	332	Standard
>	**Ge**	72	301265.0	2.3				ug/L	293924	Standard
	As	75	299.8	12.1	**0.4003**	0.037	9.2	ug/L	45	Standard
	Se	82	48.6	10.7	**0.4761**	0.059	12.4	ug/L	35	Standard
	Se-1	77	103.3	5.7	**-0.7803**	0.091	11.7	ug/L	153	Standard
>	**Ga**	71	28.3	36.7				mg/L	25	Standard
	Rb	85	28.3	44.4				ug/L	20	Standard
	Y	89	279251.0	2.6				ug/L	279578	Standard
>	**Rh**	103	36.7	15.7				ug/L	68	Standard
	Mo	98	22.3	59.6	**-0.0014**	0.008	580.3	ug/L	56	Standard
	Ag	107	2184.5	5.1	**0.3934**	0.013	3.2	ug/L	199	Standard
	Cd	111	387.3	10.4	**0.2316**	0.020	8.6	mg/L	89	Standard
	Cd	114	1061.8	6.5	**0.2420**	0.011	4.6	ug/L	150	Standard
>	**In**	115	444000.0	2.0				ug/L	458296	Standard
	Sn	118	556.7	2.7	**0.0548**	0.005	9.0	ug/L	385	Standard
	Sb	123	1909.5	1.2	**0.4425**	0.006	1.3	ug/L	208	Standard
	Ba	135	1490.7	5.2	**0.7225**	0.033	4.5	ug/L	108	Standard
	Ce	140	23.3	12.4				ug/L	92	Standard
>	**Tb**	159	814409.8	1.6				ug/L	812006	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	568.7	11.0	**0.0762**	0.008	10.7	ug/L	236	Standard
	Tl	205	396.7	5.1	**0.0821**	0.003	3.8	ug/L	43	Standard
	Pb	206	1116.4	5.7	**0.2055**	0.012	5.7	ug/L	266	Standard
	Pb	207	862.0	5.0	**0.1657**	0.011	6.4	ug/L	206	Standard
	Pb	208	3293.1	1.9	**0.1895**	0.005	2.9	ug/L	668	Standard
	U	238	1827.1	4.4	**0.3957**	0.012	2.9	ug/L	32	Standard
>	**Bi**	209	390399.5	1.7				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	61.7	20.4	**0.0426**	0.035	82.0	mg/L	60	Standard
K	39	11.7	49.5	**-0.1818**	0.110	60.4	mg/L	12	Standard
Ca	43	43.3	37.1	**-9.7752**	10.629	108.7	mg/L	37	Standard
Fe	54	64.2	20.4	**0.0070**	0.026	372.8	mg/L	56	Standard
Fe	57	798.4	8.3	**-0.2932**	0.364	124.1	mg/L	735	Standard
Sc-1	45	24556.6	3.2				mg/L	22687	Standard
Cl	35	21662.1	1.1				ug/L	20516	Standard
Kr	83	3.0	57.7				ug/L	5	Standard
Br	81	576.7	12.3				ug/L	570	Standard
P	31	8677.5	5.2				ug/L	7850	Standard
S	34	1531.7	8.4				ug/L	1375	Standard
Sr	88	150.0	10.0				ug/L	165	Standard
C	12	233.3	10.8				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.7	43.5				mg/L	6	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	13	Standard
I	127	641.7	3.0				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	76.677		
Al	27			
Sc	45			
Ti	47			
V	51	80.763		
Cr	52	103.450		
Cr	53			
Mn	55	100.900		
Co	59	96.022		
Ni	60	98.847		
Cu	65	92.529		
Zn	66	96.931		
> Ge	72		102.497	
As	75	100.078		
Se	82	119.017		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	98.347		
Cd	111	96.498		
Cd	114			
> In	115			96.881
Sn	118			
Sb	123	110.625		
Ba	135	96.340		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	95.269		
Tl	205			
Pb	206			
Pb	207			
Pb	208	94.773		
U	238	98.921		
> Bi	209			103.512
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
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Method 6020 - Summary Report

Sample ID: PBW 46 WG535190-02
Sample Date/Time: Thursday, August 20, 2015 14:37:27
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52618.0	4.3				ug/L	51673	Standard
	Be	9	16.7	45.8	**-0.0403**	0.011	27.8	ug/L	43	Standard
	Al	27	6027.9	4.1	**0.0757**	0.003	3.6	ug/L	2157	Standard
	Sc	45	24374.6	2.3				ug/L	22687	Standard
	Ti	47	40.7	16.0	**0.1026**	0.034	32.8	ug/L	43	Standard
	V	51	1146.3	3.6	**-0.0132**	0.012	92.3	ug/L	1233	Standard
	Cr	52	6579.4	1.6	**0.0862**	0.019	21.6	ug/L	6387	Standard
	Cr	53	551.7	4.5	**-1.1539**	0.052	4.5	ug/L	1555	Standard
	Mn	55	1693.4	5.9	**0.3481**	0.023	6.7	ug/L	436	Standard
	Co	59	236.3	1.1	**0.0081**	0.001	16.4	ug/L	236	Standard
	Ni	60	145.3	10.5	**0.0571**	0.012	21.2	ug/L	204	Standard
	Cu	65	352.3	11.1	**-0.0332**	0.030	90.5	ug/L	303	Standard
	Zn	66	1203.0	3.3	**1.0265**	0.031	3.1	ug/L	332	Standard
>	**Ge**	72	307026.1	1.7				ug/L	293924	Standard
	As	75	-47.5	60.7	**-0.0094**	0.033	349.0	ug/L	45	Standard
	Se	82	18.0	42.9	**0.0385**	0.112	291.6	ug/L	35	Standard
	Se-1	77	80.0	11.5	**-1.2632**	0.148	11.7	ug/L	153	Standard
>	**Ga**	71	45.0	19.2				mg/L	25	Standard
	Rb	85	198.3	8.9				ug/L	20	Standard
	Y	89	280725.2	1.0				ug/L	279578	Standard
>	**Rh**	103	36.7	34.3				ug/L	68	Standard
	Mo	98	19.0	12.5	**-0.0036**	0.001	34.4	ug/L	56	Standard
	Ag	107	78.0	15.8	**-0.0006**	0.002	349.1	ug/L	199	Standard
	Cd	111	16.9	20.4	**0.0035**	0.002	53.7	mg/L	89	Standard
	Cd	114	24.8	50.0	**0.0001**	0.003	2534.7	ug/L	150	Standard
>	**In**	115	449748.9	2.2				ug/L	458296	Standard
	Sn	118	503.3	2.1	**0.0433**	0.000	0.9	ug/L	385	Standard
	Sb	123	157.8	25.2	**0.0252**	0.010	39.3	ug/L	208	Standard
	Ba	135	442.0	4.6	**0.1948**	0.014	7.4	ug/L	108	Standard
	Ce	140	525.0	6.2				ug/L	92	Standard
>	**Tb**	159	820020.3	2.2				ug/L	812006	Standard
	Ho	165	18.3	15.7				ug/L	7	Standard
	Tl	203	45.7	2.5	**0.0008**	0.000	11.6	ug/L	236	Standard
	Tl	205	21.7	26.6	**0.0040**	0.001	30.9	ug/L	43	Standard
	Pb	206	432.7	1.9	**0.0453**	0.002	5.1	ug/L	266	Standard
	Pb	207	378.0	2.9	**0.0402**	0.003	7.4	ug/L	206	Standard
	Pb	208	1386.4	1.4	**0.0477**	0.001	1.1	ug/L	668	Standard
	U	238	23.3	13.8	**0.0044**	0.001	16.2	ug/L	32	Standard
>	**Bi**	209	392570.0	1.1				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	61.7	46.1	**0.0425**	0.068	161.0	mg/L	60	Standard
K	39	6.7	114.6	**-0.2749**	0.150	54.6	mg/L	12	Standard
Ca	43	35.0	65.5	**-15.5127**	15.560	100.3	mg/L	37	Standard
Fe	54	57.4	30.4	**-0.0059**	0.038	643.4	mg/L	56	Standard
Fe	57	743.4	14.3	**-0.6972**	1.018	146.0	mg/L	735	Standard
Sc-1	45	24374.6	2.3				mg/L	22687	Standard
Cl	35	22012.0	1.0				ug/L	20516	Standard
Kr	83	1.3	114.6				ug/L	5	Standard
Br	81	653.3	12.4				ug/L	570	Standard
P	31	9196.1	1.1				ug/L	7850	Standard
S	34	1455.1	4.9				ug/L	1375	Standard
Sr	88	146.7	21.9				ug/L	165	Standard
C	12	196.7	15.5				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	13.0	86.6				mg/L	6	Standard
Ho-1	165	18.3	15.7				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	4120.6	3.4				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		101.829	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		104.458	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.135	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	104.087	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 46 WG535190-02
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Method 6020 - Summary Report

Sample ID: LCSW 46 WG535190-03
Sample Date/Time: Thursday, August 20, 2015 14:40:38
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52388.8	4.1				ug/L	51673	Standard
	Be	9	31957.0	2.6	**47.6722**	2.951	6.2	ug/L	43	Standard
	Al	27	3328.7	3.9	**0.0374**	0.001	1.6	ug/L	2157	Standard
	Sc	45	24832.0	2.9				ug/L	22687	Standard
	Ti	47	27.0	6.4	**0.0233**	0.008	35.9	ug/L	43	Standard
	V	51	215669.7	1.0	**48.8297**	0.129	0.3	ug/L	1233	Standard
	Cr	52	264231.4	2.6	**50.8608**	0.839	1.6	ug/L	6387	Standard
	Cr	53	32187.5	1.6	**48.7346**	0.944	1.9	ug/L	1555	Standard
	Mn	55	169122.6	2.1	**54.5493**	0.613	1.1	ug/L	436	Standard
	Co	59	210177.6	1.6	**48.9223**	0.384	0.8	ug/L	236	Standard
	Ni	60	72834.4	2.1	**49.6499**	0.527	1.1	ug/L	204	Standard
	Cu	65	73191.7	1.3	**49.9334**	0.691	1.4	ug/L	303	Standard
	Zn	66	42181.6	0.8	**51.4624**	0.580	1.1	ug/L	332	Standard
>	**Ge**	72	308273.4	1.1				ug/L	293924	Standard
	As	75	41922.9	1.0	**48.5987**	0.090	0.2	ug/L	45	Standard
	Se	82	3450.6	2.7	**47.7266**	0.799	1.7	ug/L	35	Standard
	Se-1	77	2549.9	0.9	**45.5461**	0.949	2.1	ug/L	153	Standard
>	**Ga**	71	36.7	20.8				mg/L	25	Standard
	Rb	85	43.3	43.7				ug/L	20	Standard
	Y	89	283846.3	1.8				ug/L	279578	Standard
>	**Rh**	103	43.3	35.3				ug/L	68	Standard
	Mo	98	37.7	10.3	**0.0085**	0.002	27.6	ug/L	56	Standard
	Ag	107	271611.6	1.5	**50.8757**	0.485	1.0	ug/L	199	Standard
	Cd	111	79403.4	0.7	**49.0211**	0.106	0.2	mg/L	89	Standard
	Cd	114	208375.1	3.9	**48.7034**	2.097	4.3	ug/L	150	Standard
>	**In**	115	443170.3	0.6				ug/L	458296	Standard
	Sn	118	605.0	5.2	**0.0642**	0.006	9.7	ug/L	385	Standard
	Sb	123	220043.5	0.3	**52.4538**	0.431	0.8	ug/L	208	Standard
	Ba	135	103299.0	1.4	**51.8091**	0.596	1.2	ug/L	108	Standard
	Ce	140	263.3	22.9				ug/L	92	Standard
>	**Tb**	159	844797.1	1.7				ug/L	812006	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	344801.2	0.3	**48.9795**	0.487	1.0	ug/L	236	Standard
	Tl	205	229385.1	0.8	**47.0647**	0.437	0.9	ug/L	43	Standard
	Pb	206	220536.1	0.1	**50.6813**	0.424	0.8	ug/L	266	Standard
	Pb	207	190079.2	0.4	**48.2580**	0.486	1.0	ug/L	206	Standard
	Pb	208	682864.5	0.7	**49.7809**	0.723	1.5	ug/L	668	Standard
	U	238	226455.2	0.8	**48.3967**	0.689	1.4	ug/L	32	Standard
>	**Bi**	209	396363.7	0.8				ug/L	377155	Standard

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Na	23	3.3	86.6	**-127.9362**	238.881	186.7	mg/L	2	Standard
Mg	24	51.7	40.3	**0.0155**	0.046	296.3	mg/L	60	Standard
K	39	5.0	100.0	**-0.3107**	0.094	30.3	mg/L	12	Standard
Ca	43	31.7	18.2	**-18.0327**	4.128	22.9	mg/L	37	Standard
Fe	54	62.1	11.4	**0.0014**	0.015	1035.5	mg/L	56	Standard
Fe	57	783.4	8.2	**-0.4949**	0.370	74.8	mg/L	735	Standard
Sc-1	45	24832.0	2.9				mg/L	22687	Standard
Cl	35	21991.9	1.0				ug/L	20516	Standard
Kr	83	5.0	34.6				ug/L	5	Standard
Br	81	526.7	21.9				ug/L	570	Standard
P	31	9536.3	1.3				ug/L	7850	Standard
S	34	1435.1	5.1				ug/L	1375	Standard
Sr	88	185.0	2.7				ug/L	165	Standard
C	12	206.7	41.2				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	11.3	56.4				mg/L	6	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	43.3	35.3				mg/L	13	Standard
I	127	4477.3	6.5				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		101.385	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		104.882	
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	96.700
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	105.093
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 46 WG535190-03
Report Date/Time: Thursday, August 20, 2015 14:42:55
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Method 6020 - Summary Report

Sample ID: L1508073804 WG535190-01
Sample Date/Time: Thursday, August 20, 2015 14:43:50
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	52316.8	1.1				ug/L	51673	Standard
	Be	9	31.7	50.8	**-0.0175**	0.025	140.4	ug/L	43	Standard
	Al	27	3410318.1	1.3	**48.9760**	0.226	0.5	ug/L	2157	Standard
	Sc	45	23817.0	1.3				ug/L	22687	Standard
	Ti	47	35.3	19.3	**0.0817**	0.041	50.3	ug/L	43	Standard
	V	51	1317.7	5.6	**0.0399**	0.019	47.1	ug/L	1233	Standard
	Cr	52	6563.1	5.2	**0.1435**	0.075	52.4	ug/L	6387	Standard
	Cr	53	911.7	9.3	**-0.5166**	0.148	28.7	ug/L	1555	Standard
	Mn	55	44278.0	2.1	**14.8612**	0.282	1.9	ug/L	436	Standard
	Co	59	386.3	5.0	**0.0473**	0.004	9.4	ug/L	236	Standard
	Ni	60	603.0	4.5	**0.3897**	0.019	4.8	ug/L	204	Standard
	Cu	65	614.7	3.3	**0.1669**	0.016	9.8	ug/L	303	Standard
	Zn	66	1676.4	2.5	**1.7080**	0.045	2.7	ug/L	332	Standard
>	Ge	72	293371.4	0.5				ug/L	293924	Standard
	As	75	43.0	82.2	**0.0979**	0.043	44.3	ug/L	45	Standard
	Se	82	56.8	12.7	**0.6158**	0.109	17.7	ug/L	35	Standard
	Se-1	77	112.3	5.7	**-0.5471**	0.116	21.2	ug/L	153	Standard
>	Ga	71	33.3	45.8				mg/L	25	Standard
	Rb	85	5007.5	2.9				ug/L	20	Standard
	Y	89	268879.7	3.2				ug/L	279578	Standard
>	Rh	103	156.7	15.1				ug/L	68	Standard
	Mo	98	21.3	19.8	**-0.0014**	0.003	208.2	ug/L	56	Standard
	Ag	107	118.3	11.0	**0.0080**	0.003	34.9	ug/L	199	Standard
	Cd	111	15.0	17.7	**0.0028**	0.002	65.2	mg/L	89	Standard
	Cd	114	39.0	17.5	**0.0039**	0.002	42.8	ug/L	150	Standard
>	In	115	427467.2	1.1				ug/L	458296	Standard
	Sn	118	346.7	9.8	**0.0171**	0.006	37.4	ug/L	385	Standard
	Sb	123	246.4	9.8	**0.0489**	0.005	10.9	ug/L	208	Standard
	Ba	135	524.3	5.6	**0.2488**	0.016	6.3	ug/L	108	Standard
	Ce	140	60.0	36.3				ug/L	92	Standard
>	Tb	159	798604.9	0.7				ug/L	812006	Standard
	Ho	165	13.3	57.3				ug/L	7	Standard
	Tl	203	67.3	18.6	**0.0046**	0.002	41.1	ug/L	236	Standard
	Tl	205	43.3	6.7	**0.0091**	0.001	7.2	ug/L	43	Standard
	Pb	206	255.3	7.2	**0.0084**	0.004	51.3	ug/L	266	Standard
	Pb	207	213.3	11.5	**0.0019**	0.007	365.1	ug/L	206	Standard
	Pb	208	792.7	7.3	**0.0081**	0.004	52.1	ug/L	668	Standard
	U	238	95.7	13.3	**0.0215**	0.003	13.8	ug/L	32	Standard
>	Bi	209	366202.0	0.5				ug/L	377155	Standard

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Na	23	3.3	86.6	**-141.2340**	250.100	177.1	mg/L	2	Standard
Mg	24	34754.8	1.8	**86.4181**	2.519	2.9	mg/L	60	Standard
K	39	48.3	21.5	**0.5478**	0.214	39.1	mg/L	12	Standard
Ca	43	76.7	29.4	**15.4387**	15.701	101.7	mg/L	37	Standard
Fe	54	69.1	7.3	**0.0220**	0.011	49.4	mg/L	56	Standard
Fe	57	805.0	8.8	**-0.0182**	0.596	3273.5	mg/L	735	Standard
> **Sc-1**	45	23817.0	1.3				mg/L	22687	Standard
Cl	35	39075.8	5.8				ug/L	20516	Standard
Kr	83	4.3	74.2				ug/L	5	Standard
Br	81	4247.3	7.5				ug/L	570	Standard
P	31	7842.0	4.6				ug/L	7850	Standard
S	34	1473.4	9.1				ug/L	1375	Standard
Sr	88	210.0	18.9				ug/L	165	Standard
C	12	200.0	37.7				mg/L	173	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.2	51.9				mg/L	6	Standard
Ho-1	165	13.3	57.3				mg/L	7	Standard
Er	166	23.3	65.5				mg/L	13	Standard
I	127	20805.9	0.3				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.246	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.812	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.273
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.096
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 21, 2015

Method 6020 - Summary Report

Sample ID: L1508073804DP WG535190-04
Sample Date/Time: Thursday, August 20, 2015 14:47:01
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	56406.5	3.3				ug/L	51673	Standard
	Be	9	30.0	92.8	**-0.0243**	0.037	151.7	ug/L	43	Standard
	Al	27	3353937.7	3.3	**44.6744**	0.043	0.1	ug/L	2157	Standard
	Sc	45	24655.1	3.7				ug/L	22687	Standard
	Ti	47	25.7	25.3	**0.0227**	0.037	164.2	ug/L	43	Standard
	V	51	1406.4	10.0	**0.0611**	0.038	62.1	ug/L	1233	Standard
	Cr	52	7418.5	3.6	**0.3187**	0.043	13.6	ug/L	6387	Standard
	Cr	53	926.7	8.7	**-0.4949**	0.113	22.7	ug/L	1555	Standard
	Mn	55	42706.1	0.9	**14.3124**	0.132	0.9	ug/L	436	Standard
	Co	59	367.0	3.8	**0.0425**	0.002	5.8	ug/L	236	Standard
	Ni	60	685.0	5.7	**0.4479**	0.023	5.2	ug/L	204	Standard
	Cu	65	580.3	5.5	**0.1415**	0.017	12.2	ug/L	303	Standard
	Zn	66	1443.4	2.2	**1.4046**	0.020	1.4	ug/L	332	Standard
>	Ge	72	293682.9	1.4				ug/L	293924	Standard
	As	75	105.1	39.1	**0.1729**	0.048	28.0	ug/L	45	Standard
	Se	82	69.0	5.0	**0.7925**	0.042	5.3	ug/L	35	Standard
	Se-1	77	127.0	4.4	**-0.2579**	0.082	31.6	ug/L	153	Standard
>	Ga	71	13.3	21.7				mg/L	25	Standard
	Rb	85	5190.9	5.5				ug/L	20	Standard
	Y	89	275239.7	1.9				ug/L	279578	Standard
>	Rh	103	175.0	13.1				ug/L	68	Standard
	Mo	98	25.2	10.8	**0.0001**	0.002	1100.6	ug/L	56	Standard
	Ag	107	88.7	10.7	**0.0013**	0.002	153.3	ug/L	199	Standard
	Cd	111	15.3	65.5	**0.0024**	0.006	250.1	mg/L	89	Standard
	Cd	114	38.4	74.4	**0.0032**	0.007	205.1	ug/L	150	Standard
>	In	115	453558.9	1.4				ug/L	458296	Standard
	Sn	118	371.7	3.4	**0.0178**	0.002	8.9	ug/L	385	Standard
	Sb	123	121.2	14.0	**0.0163**	0.004	26.4	ug/L	208	Standard
	Ba	135	519.7	3.2	**0.2309**	0.011	4.9	ug/L	108	Standard
	Ce	140	75.0	23.1				ug/L	92	Standard
>	Tb	159	839775.1	2.2				ug/L	812006	Standard
	Ho	165	13.3	94.4				ug/L	7	Standard
	Tl	203	86.3	39.7	**0.0071**	0.005	72.1	ug/L	236	Standard
	Tl	205	63.3	98.1	**0.0131**	0.013	101.5	ug/L	43	Standard
	Pb	206	244.0	9.3	**0.0035**	0.005	151.2	ug/L	266	Standard
	Pb	207	209.0	4.4	**-0.0012**	0.003	201.7	ug/L	206	Standard
	Pb	208	820.0	23.4	**0.0081**	0.014	179.1	ug/L	668	Standard
	U	238	110.3	80.8	**0.0240**	0.020	82.6	ug/L	32	Standard
>	Bi	209	379110.4	0.5				ug/L	377155	Standard

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Na	23	5.0	100.0	**-269.5104**	408.944	151.7	mg/L	2	Standard
Mg	24	34569.4	0.4	**83.0877**	3.058	3.7	mg/L	60	Standard
K	39	50.0	26.5	**0.5513**	0.278	50.5	mg/L	12	Standard
Ca	43	106.7	28.6	**34.7228**	20.995	60.5	mg/L	37	Standard
Fe	54	82.5	29.0	**0.0463**	0.057	123.9	mg/L	56	Standard
Fe	57	845.0	8.3	**0.0854**	0.583	682.4	mg/L	735	Standard
> **Sc-1**	45	24655.1	3.7				mg/L	22687	Standard
Cl	35	42398.6	2.6				ug/L	20516	Standard
Kr	83	2.7	57.3				ug/L	5	Standard
Br	81	4130.6	6.1				ug/L	570	Standard
P	31	8187.2	3.0				ug/L	7850	Standard
S	34	1521.7	10.4				ug/L	1375	Standard
Sr	88	248.3	15.1				ug/L	165	Standard
C	12	190.0	56.9				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	12.7	46.6				mg/L	6	Standard
Ho-1	165	13.3	94.4				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	21383.4	2.2				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.161	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.918	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.966
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.518
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508073804S WG535190-05
Sample Date/Time: Thursday, August 20, 2015 14:50:13
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	55073.3	1.2				ug/L	51673	Standard
	Be	9	3338.7	2.9	**4.6718**	0.131	2.8	ug/L	43	Standard
	Al	27	3436690.9	1.9	**46.8961**	1.443	3.1	ug/L	2157	Standard
	Sc	45	23166.0	1.5				ug/L	22687	Standard
	Ti	47	32.0	22.5	**0.0591**	0.044	73.7	ug/L	43	Standard
	V	51	22489.2	0.7	**5.0349**	0.062	1.2	ug/L	1233	Standard
	Cr	52	31532.8	3.0	**5.2287**	0.139	2.7	ug/L	6387	Standard
	Cr	53	3925.5	6.0	**4.3943**	0.439	10.0	ug/L	1555	Standard
	Mn	55	59339.3	1.9	**19.7218**	0.388	2.0	ug/L	436	Standard
	Co	59	20832.0	0.5	**4.9864**	0.025	0.5	ug/L	236	Standard
	Ni	60	7385.1	1.6	**5.1835**	0.112	2.2	ug/L	204	Standard
	Cu	65	7416.8	1.3	**5.0003**	0.090	1.8	ug/L	303	Standard
	Zn	66	5394.3	0.6	**6.4256**	0.056	0.9	ug/L	332	Standard
>	Ge	72	297264.2	0.9				ug/L	293924	Standard
	As	75	4160.0	2.3	**5.0416**	0.098	1.9	ug/L	45	Standard
	Se	82	392.4	2.7	**5.4407**	0.184	3.4	ug/L	35	Standard
	Se-1	77	357.7	1.3	**4.2456**	0.069	1.6	ug/L	153	Standard
>	Ga	71	31.7	39.7				mg/L	25	Standard
	Rb	85	5250.9	2.4				ug/L	20	Standard
	Y	89	275088.2	0.9				ug/L	279578	Standard
>	Rh	103	173.3	6.7				ug/L	68	Standard
	Mo	98	27.0	35.5	**0.0017**	0.006	361.9	ug/L	56	Standard
	Ag	107	23361.0	0.8	**4.3581**	0.020	0.5	ug/L	199	Standard
	Cd	111	8108.8	0.3	**4.9954**	0.039	0.8	mg/L	89	Standard
	Cd	114	20989.5	2.6	**4.8952**	0.098	2.0	ug/L	150	Standard
>	In	115	443598.0	1.0				ug/L	458296	Standard
	Sn	118	373.3	11.5	**0.0197**	0.008	42.9	ug/L	385	Standard
	Sb	123	22506.4	1.5	**5.3488**	0.029	0.5	ug/L	208	Standard
	Ba	135	10540.0	1.5	**5.2597**	0.052	1.0	ug/L	108	Standard
	Ce	140	60.0	16.7				ug/L	92	Standard
>	Tb	159	802819.9	2.2				ug/L	812006	Standard
	Ho	165	8.3	124.9				ug/L	7	Standard
	Tl	203	32852.9	1.0	**4.9286**	0.071	1.4	ug/L	236	Standard
	Tl	205	23264.5	2.5	**5.0462**	0.140	2.8	ug/L	43	Standard
	Pb	206	21395.1	1.3	**5.1486**	0.089	1.7	ug/L	266	Standard
	Pb	207	18407.5	2.2	**4.8896**	0.107	2.2	ug/L	206	Standard
	Pb	208	66175.5	1.0	**5.0511**	0.058	1.2	ug/L	668	Standard
	U	238	22330.1	1.1	**5.0443**	0.013	0.2	ug/L	32	Standard
>	Bi	209	374917.8	0.8				ug/L	377155	Standard

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Na	23	1.7	173.2	**-1.0240**	257.348	25131.3	mg/L	2	Standard
Mg	24	34454.1	1.2	**88.0638**	0.433	0.5	mg/L	60	Standard
K	39	60.0	14.4	**0.8073**	0.155	19.2	mg/L	12	Standard
Ca	43	103.3	14.0	**37.0719**	11.394	30.7	mg/L	37	Standard
Fe	54	72.7	14.2	**0.0344**	0.025	72.1	mg/L	56	Standard
Fe	57	801.7	3.1	**0.1508**	0.110	73.3	mg/L	735	Standard
> **Sc-1**	45	23166.0	1.5				mg/L	22687	Standard
Cl	35	43749.7	1.5				ug/L	20516	Standard
Kr	83	6.0	44.1				ug/L	5	Standard
Br	81	3330.4	7.5				ug/L	570	Standard
P	31	9359.6	19.7				ug/L	7850	Standard
S	34	1486.7	10.1				ug/L	1375	Standard
Sr	88	271.7	18.4				ug/L	165	Standard
C	12	203.3	33.5				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	5.5	110.4				mg/L	6	Standard
Ho-1	165	8.3	124.9				mg/L	7	Standard
Er	166	23.3	89.2				mg/L	13	Standard
I	127	31693.2	4.8				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.580	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.136	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1508073804S WG535190-05
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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	96.793
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	99.407
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 21, 2015

Method 6020 - Summary Report

Sample ID: L1508073804SD WG535190-06
Sample Date/Time: Thursday, August 20, 2015 14:53:24
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55722.3	3.2				ug/L	51673	Standard
	Be	9	3418.7	2.1	**4.7317**	0.173	3.6	ug/L	43	Standard
	Al	27	3532928.7	0.5	**47.6686**	1.536	3.2	ug/L	2157	Standard
	Sc	45	24332.9	2.4				ug/L	22687	Standard
	Ti	47	38.3	16.8	**0.0972**	0.040	41.1	ug/L	43	Standard
	V	51	22646.8	2.2	**5.0761**	0.130	2.6	ug/L	1233	Standard
	Cr	52	32049.2	0.4	**5.3402**	0.056	1.0	ug/L	6387	Standard
	Cr	53	4075.6	7.4	**4.6436**	0.517	11.1	ug/L	1555	Standard
	Mn	55	60450.4	1.7	**20.1098**	0.358	1.8	ug/L	436	Standard
	Co	59	21188.5	0.2	**5.0764**	0.029	0.6	ug/L	236	Standard
	Ni	60	7510.2	1.6	**5.2753**	0.058	1.1	ug/L	204	Standard
	Cu	65	7427.5	0.7	**5.0115**	0.026	0.5	ug/L	303	Standard
	Zn	66	5483.3	1.6	**6.5446**	0.133	2.0	ug/L	332	Standard
>	**Ge**	72	297043.6	0.8				ug/L	293924	Standard
	As	75	4186.6	2.5	**5.0775**	0.126	2.5	ug/L	45	Standard
	Se	82	393.8	2.5	**5.4653**	0.158	2.9	ug/L	35	Standard
	Se-1	77	356.3	5.8	**4.2259**	0.433	10.2	ug/L	153	Standard
>	**Ga**	71	31.7	24.1				mg/L	25	Standard
	Rb	85	5349.3	2.6				ug/L	20	Standard
	Y	89	272262.9	1.1				ug/L	279578	Standard
>	**Rh**	103	136.7	7.6				ug/L	68	Standard
	Mo	98	25.2	28.6	**0.0005**	0.005	974.8	ug/L	56	Standard
	Ag	107	23392.4	0.8	**4.3430**	0.063	1.5	ug/L	199	Standard
	Cd	111	8125.5	2.2	**4.9827**	0.181	3.6	mg/L	89	Standard
	Cd	114	21462.4	1.4	**4.9815**	0.024	0.5	ug/L	150	Standard
>	**In**	115	445788.4	1.8				ug/L	458296	Standard
	Sn	118	351.7	12.9	**0.0152**	0.009	57.2	ug/L	385	Standard
	Sb	123	22677.5	0.9	**5.3638**	0.061	1.1	ug/L	208	Standard
	Ba	135	10606.0	1.5	**5.2670**	0.047	0.9	ug/L	108	Standard
	Ce	140	76.7	16.4				ug/L	92	Standard
>	**Tb**	159	817240.8	0.9				ug/L	812006	Standard
	Ho	165	18.3	15.7				ug/L	7	Standard
	Tl	203	33115.2	1.0	**4.9043**	0.100	2.0	ug/L	236	Standard
	Tl	205	23306.2	1.2	**4.9897**	0.034	0.7	ug/L	43	Standard
	Pb	206	21554.0	1.5	**5.1199**	0.111	2.2	ug/L	266	Standard
	Pb	207	18577.0	0.6	**4.8712**	0.081	1.7	ug/L	206	Standard
	Pb	208	66730.6	1.1	**5.0281**	0.106	2.1	ug/L	668	Standard
	U	238	22642.9	0.5	**5.0496**	0.076	1.5	ug/L	32	Standard
>	**Bi**	209	379817.4	1.1				ug/L	377155	Standard

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Na	23	1.7	173.2	**9.3667**	239.351	2555.3	mg/L	2	Standard
Mg	24	36615.9	3.1	**89.1107**	2.487	2.8	mg/L	60	Standard
K	39	53.3	28.6	**0.6223**	0.288	46.4	mg/L	12	Standard
Ca	43	81.7	25.5	**17.8610**	14.187	79.4	mg/L	37	Standard
Fe	54	83.1	15.5	**0.0480**	0.024	50.7	mg/L	56	Standard
Fe	57	881.7	2.6	**0.4951**	0.245	49.4	mg/L	735	Standard
Sc-1	45	24332.9	2.4				mg/L	22687	Standard
Cl	35	44972.0	2.0				ug/L	20516	Standard
Kr	83	4.0	25.0				ug/L	5	Standard
Br	81	3137.0	7.3				ug/L	570	Standard
P	31	9214.5	11.5				ug/L	7850	Standard
S	34	1605.1	2.4				ug/L	1375	Standard
Sr	88	231.7	23.7				ug/L	165	Standard
C	12	190.0	29.3				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.2	111.3				mg/L	6	Standard
Ho-1	165	18.3	15.7				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	13	Standard
I	127	33582.2	4.5				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.836	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.061	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	97.271	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.706	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508073101
Sample Date/Time: Thursday, August 20, 2015 14:56:36
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64438.4	1.7				ug/L	51673	Standard
	Be	9	61.7	40.0	**0.0097**	0.030	304.5	ug/L	43	Standard
	Al	27	10211407.1	2.9	**119.0630**	1.599	1.3	ug/L	2157	Standard
	Sc	45	26526.6	4.2				ug/L	22687	Standard
	Ti	47	1475.1	5.5	**8.2271**	0.429	5.2	ug/L	43	Standard
	V	51	5245.2	3.0	**0.9003**	0.035	3.9	ug/L	1233	Standard
	Cr	52	16593.4	2.1	**2.0038**	0.055	2.7	ug/L	6387	Standard
	Cr	53	8996.0	0.7	**11.9384**	0.036	0.3	ug/L	1555	Standard
	Mn	55	834768.6	1.5	**265.8643**	3.273	1.2	ug/L	436	Standard
	Co	59	1530.1	2.4	**0.3038**	0.010	3.2	ug/L	236	Standard
	Ni	60	3661.4	3.1	**2.4167**	0.070	2.9	ug/L	204	Standard
	Cu	65	129582.2	1.5	**87.2331**	1.246	1.4	ug/L	303	Standard
	Zn	66	90407.0	1.4	**109.0948**	1.909	1.7	ug/L	332	Standard
>	**Ge**	72	313134.4	0.5				ug/L	293924	Standard
	As	75	4936.4	0.4	**5.6738**	0.004	0.1	ug/L	45	Standard
	Se	82	75.5	10.6	**0.8185**	0.105	12.8	ug/L	35	Standard
	Se-1	77	546.0	7.6	**7.4055**	0.818	11.0	ug/L	153	Standard
>	**Ga**	71	213.3	14.1				mg/L	25	Standard
	Rb	85	43612.7	1.5				ug/L	20	Standard
	Y	89	299707.1	1.2				ug/L	279578	Standard
>	**Rh**	103	310.0	9.0				ug/L	68	Standard
	Mo	98	9926.0	1.4	**5.6706**	0.088	1.5	ug/L	56	Standard
	Ag	107	1259.4	3.8	**0.1970**	0.012	6.1	ug/L	199	Standard
	Cd	111	179.3	9.8	**0.0925**	0.008	8.5	mg/L	89	Standard
	Cd	114	521.3	8.9	**0.1038**	0.009	9.0	ug/L	150	Standard
>	**In**	115	493584.8	1.9				ug/L	458296	Standard
	Sn	118	8277.3	1.8	**1.3739**	0.011	0.8	ug/L	385	Standard
	Sb	123	7948.7	0.2	**1.6900**	0.028	1.7	ug/L	208	Standard
	Ba	135	258904.4	0.9	**116.6354**	1.169	1.0	ug/L	108	Standard
	Ce	140	7040.0	4.1				ug/L	92	Standard
>	**Tb**	159	896651.9	1.3				ug/L	812006	Standard
	Ho	165	185.0	17.7				ug/L	7	Standard
	Tl	203	114.0	9.5	**0.0078**	0.001	15.0	ug/L	236	Standard
	Tl	205	80.0	16.5	**0.0133**	0.002	16.9	ug/L	43	Standard
	Pb	206	8848.6	0.5	**1.6545**	0.020	1.2	ug/L	266	Standard
	Pb	207	7432.2	1.7	**1.5297**	0.021	1.4	ug/L	206	Standard
	Pb	208	27095.8	1.1	**1.6062**	0.015	1.0	ug/L	668	Standard
	U	238	6167.9	2.1	**1.1064**	0.021	1.9	ug/L	32	Standard
>	**Bi**	209	471945.5	0.9				ug/L	377155	Standard

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Na	23	6.7	114.6	**-351.3976**	562.801	160.2	mg/L	2	Standard
Mg	24	31713.2	0.9	**70.8366**	2.549	3.6	mg/L	60	Standard
K	39	273.3	6.9	**4.4359**	0.529	11.9	mg/L	12	Standard
Ca	43	208.3	5.0	**95.6804**	4.314	4.5	mg/L	37	Standard
Fe	54	558.6	3.5	**0.9546**	0.040	4.2	mg/L	56	Standard
Fe	57	1083.4	0.7	**1.4659**	0.327	22.3	mg/L	735	Standard
> **Sc-1**	45	26526.6	4.2				mg/L	22687	Standard
Cl	35	33739.5	2.0				ug/L	20516	Standard
Kr	83	3.0	33.3				ug/L	5	Standard
Br	81	2073.5	4.0				ug/L	570	Standard
P	31	14390.2	4.8				ug/L	7850	Standard
S	34	1738.4	8.9				ug/L	1375	Standard
Sr	88	451.7	2.3				ug/L	165	Standard
C	12	1670.1	4.2				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	90.0	19.2				mg/L	0	Standard
Dy	164	253.6	23.7				mg/L	6	Standard
Ho-1	165	185.0	17.7				mg/L	7	Standard
Er	166	133.3	38.5				mg/L	13	Standard
I	127	49788.3	0.9				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.704	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.536	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.700
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		125.133
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	
Bi 209 Int Std for sample	Bi	209	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1508073101PS WG535241-03
Sample Date/Time: Thursday, August 20, 2015 14:59:47
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	61754.0	2.4				ug/L	51673	Standard
	Be	9	40596.1	5.3	**51.3357**	3.419	6.7	ug/L	43	Standard
	Al	27	9666720.7	1.3	**117.6703**	3.179	2.7	ug/L	2157	Standard
	Sc	45	26277.8	1.0				ug/L	22687	Standard
	Ti	47	1444.4	1.0	**8.0400**	0.117	1.5	ug/L	43	Standard
	V	51	237699.9	2.1	**52.9098**	1.035	2.0	ug/L	1233	Standard
	Cr	52	286186.1	1.9	**54.2142**	0.524	1.0	ug/L	6387	Standard
	Cr	53	44570.5	2.6	**67.0635**	2.578	3.8	ug/L	1555	Standard
	Mn	55	1006255.3	3.0	**319.8988**	5.869	1.8	ug/L	436	Standard
	Co	59	229824.7	2.0	**52.5709**	0.439	0.8	ug/L	236	Standard
	Ni	60	79864.7	2.0	**53.5043**	0.598	1.1	ug/L	204	Standard
	Cu	65	203839.9	1.5	**137.1322**	1.414	1.0	ug/L	303	Standard
	Zn	66	132040.3	1.6	**159.2438**	0.647	0.4	ug/L	332	Standard
>	Ge	72	313703.2	1.2				ug/L	293924	Standard
	As	75	50854.4	1.4	**57.9224**	0.225	0.4	ug/L	45	Standard
	Se	82	3907.5	2.1	**53.1385**	0.485	0.9	ug/L	35	Standard
	Se-1	77	3296.7	1.7	**58.6088**	0.372	0.6	ug/L	153	Standard
>	Ga	71	223.3	9.0				mg/L	25	Standard
	Rb	85	42118.5	2.6				ug/L	20	Standard
	Y	89	296666.4	1.0				ug/L	279578	Standard
>	Rh	103	361.7	9.7				ug/L	68	Standard
	Mo	98	9476.3	2.1	**5.5798**	0.194	3.5	ug/L	56	Standard
	Ag	107	285993.7	2.6	**49.5640**	0.691	1.4	ug/L	199	Standard
	Cd	111	90605.7	2.9	**51.7526**	0.900	1.7	mg/L	89	Standard
	Cd	114	236292.5	2.5	**51.0961**	1.111	2.2	ug/L	150	Standard
>	In	115	478960.8	1.5				ug/L	458296	Standard
	Sn	118	8389.0	2.1	**1.4377**	0.052	3.7	ug/L	385	Standard
	Sb	123	248864.6	2.5	**54.8846**	0.575	1.0	ug/L	208	Standard
	Ba	135	368111.6	1.8	**170.8878**	2.039	1.2	ug/L	108	Standard
	Ce	140	6794.9	2.0				ug/L	92	Standard
>	Tb	159	856764.3	3.2				ug/L	812006	Standard
	Ho	165	160.0	17.4				ug/L	7	Standard
	Tl	203	369606.4	1.0	**44.6777**	0.524	1.2	ug/L	236	Standard
	Tl	205	258281.1	0.3	**45.1022**	0.926	2.1	ug/L	43	Standard
	Pb	206	240971.6	1.1	**47.1218**	0.738	1.6	ug/L	266	Standard
	Pb	207	215513.2	1.8	**46.5565**	0.669	1.4	ug/L	206	Standard
	Pb	208	765089.5	0.8	**47.4670**	1.180	2.5	ug/L	668	Standard
	U	238	264091.6	1.4	**48.0360**	1.328	2.8	ug/L	32	Standard
>	Bi	209	465836.4	2.1				ug/L	377155	Standard

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Na	23	1.7	173.2	**17.9580**	224.470	1250.0	mg/L	2	Standard
Mg	24	30370.4	0.4	**68.4119**	0.761	1.1	mg/L	60	Standard
K	39	290.0	12.4	**4.7604**	0.592	12.4	mg/L	12	Standard
Ca	43	216.7	15.4	**102.5172**	22.544	22.0	mg/L	37	Standard
Fe	54	483.6	11.1	**0.8182**	0.109	13.4	mg/L	56	Standard
Fe	57	1043.4	5.3	**1.2204**	0.465	38.1	mg/L	735	Standard
> **Sc-1**	45	26277.8	1.0				mg/L	22687	Standard
Cl	35	32943.8	1.8				ug/L	20516	Standard
Kr	83	4.0	25.0				ug/L	5	Standard
Br	81	2003.5	4.9				ug/L	570	Standard
P	31	13796.3	3.3				ug/L	7850	Standard
S	34	1751.8	4.8				ug/L	1375	Standard
Sr	88	425.0	10.5				ug/L	165	Standard
C	12	1503.4	2.8				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	66.7	22.9				mg/L	0	Standard
Dy	164	213.1	46.0				mg/L	6	Standard
Ho-1	165	160.0	17.4				mg/L	7	Standard
Er	166	143.3	8.1				mg/L	13	Standard
I	127	49323.5	1.8				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.509	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.729	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.509
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		123.513
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Cu 65 Upper, S, EEE	Cu	65	

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Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	
Bi 209 Int Std for sample	Bi	209	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1508073101SDL WG535241-04
Sample Date/Time: Thursday, August 20, 2015 15:02:59
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55063.4	4.9				ug/L	51673	Standard
	Be	9	26.7	28.6	**-0.0274**	0.009	33.0	ug/L	43	Standard
	Al	27	1886065.3	4.7	**25.7367**	0.589	2.3	ug/L	2157	Standard
	Sc	45	25927.2	2.1				ug/L	22687	Standard
	Ti	47	338.0	2.9	**1.8135**	0.043	2.4	ug/L	43	Standard
	V	51	2100.1	7.3	**0.2027**	0.035	17.1	ug/L	1233	Standard
	Cr	52	8919.0	2.0	**0.5421**	0.045	8.3	ug/L	6387	Standard
	Cr	53	2993.6	0.2	**2.6929**	0.042	1.6	ug/L	1555	Standard
	Mn	55	166769.1	0.9	**53.7916**	0.788	1.5	ug/L	436	Standard
	Co	59	465.3	7.9	**0.0611**	0.008	12.4	ug/L	236	Standard
	Ni	60	821.7	3.3	**0.5182**	0.024	4.7	ug/L	204	Standard
	Cu	65	26535.2	1.7	**17.9271**	0.427	2.4	ug/L	303	Standard
	Zn	66	19543.6	0.1	**23.5951**	0.260	1.1	ug/L	332	Standard
>	**Ge**	72	308296.8	1.0				ug/L	293924	Standard
	As	75	909.5	6.1	**1.0992**	0.075	6.8	ug/L	45	Standard
	Se	82	28.5	5.8	**0.1824**	0.026	14.4	ug/L	35	Standard
	Se-1	77	183.3	7.4	**0.6889**	0.225	32.6	ug/L	153	Standard
>	**Ga**	71	75.0	0.0				mg/L	25	Standard
	Rb	85	8227.2	2.4				ug/L	20	Standard
	Y	89	283880.4	1.9				ug/L	279578	Standard
>	**Rh**	103	113.3	19.9				ug/L	68	Standard
	Mo	98	1836.0	2.3	**1.0938**	0.030	2.7	ug/L	56	Standard
	Ag	107	363.0	17.4	**0.0493**	0.010	19.3	ug/L	199	Standard
	Cd	111	55.1	42.0	**0.0252**	0.013	49.9	mg/L	89	Standard
	Cd	114	117.2	33.7	**0.0202**	0.008	39.8	ug/L	150	Standard
>	**In**	115	468011.9	2.5				ug/L	458296	Standard
	Sn	118	1845.1	2.2	**0.2836**	0.015	5.3	ug/L	385	Standard
	Sb	123	2323.3	5.8	**0.5123**	0.018	3.6	ug/L	208	Standard
	Ba	135	50645.2	1.5	**24.0476**	0.579	2.4	ug/L	108	Standard
	Ce	140	1396.7	5.4				ug/L	92	Standard
>	**Tb**	159	839012.5	3.4				ug/L	812006	Standard
	Ho	165	28.3	36.7				ug/L	7	Standard
	Tl	203	104.3	89.4	**0.0082**	0.012	150.3	ug/L	236	Standard
	Tl	205	45.0	55.6	**0.0082**	0.005	57.7	ug/L	43	Standard
	Pb	206	1974.5	1.8	**0.3753**	0.003	0.8	ug/L	266	Standard
	Pb	207	1660.1	1.1	**0.3431**	0.003	0.9	ug/L	206	Standard
	Pb	208	6150.2	3.6	**0.3709**	0.012	3.2	ug/L	668	Standard
	U	238	1255.4	0.9	**0.2537**	0.005	2.0	ug/L	32	Standard
>	**Bi**	209	418200.3	1.4				ug/L	377155	Standard

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Na	23	1.7	173.2	**18.9605**	222.734	1174.7	mg/L	2	Standard
Mg	24	5942.8	1.9	**13.4884**	0.535	4.0	mg/L	60	Standard
K	39	86.7	8.8	**1.1634**	0.164	14.1	mg/L	12	Standard
Ca	43	71.7	14.5	**7.6776**	6.856	89.3	mg/L	37	Standard
Fe	54	162.9	7.6	**0.1959**	0.030	15.5	mg/L	56	Standard
Fe	57	803.4	5.0	**-0.5999**	0.451	75.2	mg/L	735	Standard
> **Sc-1**	45	25927.2	2.1				mg/L	22687	Standard
Cl	35	26980.7	2.8				ug/L	20516	Standard
Kr	83	3.0	57.7				ug/L	5	Standard
Br	81	746.7	16.4				ug/L	570	Standard
P	31	9014.3	1.3				ug/L	7850	Standard
S	34	1570.1	7.2				ug/L	1375	Standard
Sr	88	173.3	22.4				ug/L	165	Standard
C	12	426.7	17.0				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	65.5				mg/L	0	Standard
Dy	164	34.0	32.7				mg/L	6	Standard
Ho-1	165	28.3	36.7				mg/L	7	Standard
Er	166	56.7	56.7				mg/L	13	Standard
I	127	11060.7	4.6				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.561	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.890	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.120
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.883
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508073101SDL WG535241-04
Sample Date/Time: Thursday, August 20, 2015 15:06:11
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51994.1	0.8				ug/L	51673	Standard
	Be	9	16.7	17.3	**-0.0400**	0.005	11.3	ug/L	43	Standard
	Al	27	360409.9	1.2	**5.1992**	0.093	1.8	ug/L	2157	Standard
	Sc	45	25613.3	2.2				ug/L	22687	Standard
	Ti	47	84.0	7.2	**0.3389**	0.039	11.4	ug/L	43	Standard
	V	51	1470.9	3.0	**0.0505**	0.005	10.6	ug/L	1233	Standard
	Cr	52	7499.5	1.0	**0.2228**	0.007	3.3	ug/L	6387	Standard
	Cr	53	1125.0	1.5	**-0.3011**	0.019	6.4	ug/L	1555	Standard
	Mn	55	33223.7	1.2	**10.2674**	0.014	0.1	ug/L	436	Standard
	Co	59	241.0	9.8	**0.0075**	0.006	80.2	ug/L	236	Standard
	Ni	60	203.3	2.7	**0.0924**	0.003	3.1	ug/L	204	Standard
	Cu	65	5453.3	1.8	**3.3648**	0.045	1.3	ug/L	303	Standard
	Zn	66	4677.4	0.9	**5.1436**	0.025	0.5	ug/L	332	Standard
>	**Ge**	72	316727.9	1.4				ug/L	293924	Standard
	As	75	163.4	15.2	**0.2294**	0.025	11.0	ug/L	45	Standard
	Se	82	18.9	18.6	**0.0413**	0.044	106.2	ug/L	35	Standard
	Se-1	77	99.3	0.6	**-0.9513**	0.029	3.1	ug/L	153	Standard
>	**Ga**	71	36.7	31.5				mg/L	25	Standard
	Rb	85	1680.1	11.1				ug/L	20	Standard
	Y	89	283501.1	0.1				ug/L	279578	Standard
>	**Rh**	103	38.3	30.1				ug/L	68	Standard
	Mo	98	386.1	8.7	**0.2249**	0.023	10.2	ug/L	56	Standard
	Ag	107	127.3	5.2	**0.0083**	0.001	10.5	ug/L	199	Standard
	Cd	111	16.2	46.7	**0.0029**	0.004	152.2	mg/L	89	Standard
	Cd	114	48.6	61.1	**0.0055**	0.007	124.5	ug/L	150	Standard
>	**In**	115	454179.1	1.5				ug/L	458296	Standard
	Sn	118	675.0	7.1	**0.0746**	0.010	14.0	ug/L	385	Standard
	Sb	123	516.5	2.1	**0.1082**	0.004	3.7	ug/L	208	Standard
	Ba	135	9967.3	2.6	**4.8560**	0.088	1.8	ug/L	108	Standard
	Ce	140	261.7	4.8				ug/L	92	Standard
>	**Tb**	159	838886.3	0.6				ug/L	812006	Standard
	Ho	165	21.7	48.0				ug/L	7	Standard
	Tl	203	23.3	37.4	**-0.0025**	0.001	50.6	ug/L	236	Standard
	Tl	205	23.3	53.9	**0.0042**	0.003	61.0	ug/L	43	Standard
	Pb	206	538.7	2.1	**0.0668**	0.004	5.5	ug/L	266	Standard
	Pb	207	455.7	3.1	**0.0572**	0.003	5.8	ug/L	206	Standard
	Pb	208	1730.0	1.7	**0.0698**	0.003	3.9	ug/L	668	Standard
	U	238	244.7	1.4	**0.0508**	0.001	2.5	ug/L	32	Standard
>	**Bi**	209	402742.5	1.0				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	1301.7	2.6	**2.9065**	0.088	3.0	mg/L	60	Standard
K	39	16.7	34.6	**-0.1006**	0.101	100.2	mg/L	12	Standard
Ca	43	56.7	27.0	**-1.9917**	9.519	477.9	mg/L	37	Standard
Fe	54	80.9	28.8	**0.0352**	0.047	133.6	mg/L	56	Standard
Fe	57	720.0	5.4	**-1.2098**	0.210	17.4	mg/L	735	Standard
> **Sc-1**	45	25613.3	2.2				mg/L	22687	Standard
Cl	35	25554.2	0.9				ug/L	20516	Standard
Kr	83	5.0	60.0				ug/L	5	Standard
Br	81	616.7	8.0				ug/L	570	Standard
P	31	8013.8	3.3				ug/L	7850	Standard
S	34	1476.7	2.0				ug/L	1375	Standard
Sr	88	145.0	6.0				ug/L	165	Standard
C	12	193.3	29.9				mg/L	173	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.5	48.4				mg/L	6	Standard
Ho-1	165	21.7	48.0				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	13	Standard
I	127	4472.3	3.3				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.621	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.758	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.102
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.784
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, August 20, 2015 15:09:23
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	55620.2	0.6				ug/L	51673	Standard
	Be	9	33004.3	4.0	**46.2924**	1.557	3.4	ug/L	43	Standard
	Al	27	3684131.9	2.3	**49.7711**	1.393	2.8	ug/L	2157	Standard
	Sc	45	25698.5	2.9				ug/L	22687	Standard
	Ti	47	19323.6	1.6	**109.0556**	2.764	2.5	ug/L	43	Standard
	V	51	221492.0	0.9	**49.2188**	0.783	1.6	ug/L	1233	Standard
	Cr	52	269206.3	1.8	**50.8567**	0.757	1.5	ug/L	6387	Standard
	Cr	53	34288.8	2.5	**51.0639**	2.384	4.7	ug/L	1555	Standard
	Mn	55	173351.8	1.3	**54.8847**	1.288	2.3	ug/L	436	Standard
	Co	59	217112.2	0.9	**49.6014**	0.881	1.8	ug/L	236	Standard
	Ni	60	76745.9	1.9	**51.3523**	1.325	2.6	ug/L	204	Standard
	Cu	65	75370.1	2.4	**50.4567**	0.750	1.5	ug/L	303	Standard
	Zn	66	42701.4	0.9	**51.1218**	0.654	1.3	ug/L	332	Standard
>	Ge	72	314169.7	2.2				ug/L	293924	Standard
	As	75	43046.5	0.6	**48.9823**	1.280	2.6	ug/L	45	Standard
	Se	82	3644.5	0.7	**49.4893**	0.961	1.9	ug/L	35	Standard
	Se-1	77	2748.6	4.3	**48.3341**	2.161	4.5	ug/L	153	Standard
>	Ga	71	48.3	62.4				mg/L	25	Standard
	Rb	85	650.0	9.1				ug/L	20	Standard
	Y	89	287792.5	3.1				ug/L	279578	Standard
>	Rh	103	53.3	14.3				ug/L	68	Standard
	Mo	98	161238.2	1.9	**98.5831**	1.302	1.3	ug/L	56	Standard
	Ag	107	281007.7	0.9	**50.4643**	0.866	1.7	ug/L	199	Standard
	Cd	111	83593.0	2.8	**49.4620**	0.411	0.8	mg/L	89	Standard
	Cd	114	220296.0	3.1	**49.3427**	0.838	1.7	ug/L	150	Standard
>	In	115	462367.3	2.3				ug/L	458296	Standard
	Sn	118	253455.8	0.9	**46.5695**	1.268	2.7	ug/L	385	Standard
	Sb	123	220816.9	0.8	**50.4627**	0.837	1.7	ug/L	208	Standard
	Ba	135	107177.4	1.2	**51.5322**	0.675	1.3	ug/L	108	Standard
	Ce	140	91.7	13.7				ug/L	92	Standard
>	Tb	159	857124.7	0.9				ug/L	812006	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	359264.1	1.1	**50.0255**	0.353	0.7	ug/L	236	Standard
	Tl	205	247070.0	1.2	**49.6931**	0.489	1.0	ug/L	43	Standard
	Pb	206	220556.9	1.3	**49.6826**	0.242	0.5	ug/L	266	Standard
	Pb	207	200805.4	1.3	**49.9754**	0.380	0.8	ug/L	206	Standard
	Pb	208	711165.4	1.2	**50.8196**	0.483	1.0	ug/L	668	Standard
	U	238	241143.6	1.9	**50.5173**	0.891	1.8	ug/L	32	Standard
>	Bi	209	404345.5	1.2				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	2221.8	5.5	**5.0158**	0.137	2.7	mg/L	60	Standard
K	39	276.7	8.9	**4.6486**	0.590	12.7	mg/L	12	Standard
Ca	43	68.3	15.2	**6.0240**	8.342	138.5	mg/L	37	Standard
Fe	54	2458.0	2.9	**4.7880**	0.271	5.7	mg/L	56	Standard
Fe	57	1286.7	4.5	**3.3975**	0.645	19.0	mg/L	735	Standard
> **Sc-1**	45	25698.5	2.9				mg/L	22687	Standard
Cl	35	24290.1	2.1				ug/L	20516	Standard
Kr	83	3.7	15.7				ug/L	5	Standard
Br	81	540.0	24.3				ug/L	570	Standard
P	31	10336.9	2.8				ug/L	7850	Standard
S	34	1761.8	8.1				ug/L	1375	Standard
Sr	88	186.7	17.8				ug/L	165	Standard
C	12	210.0	9.5				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	5.7	202.4				mg/L	6	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	605.0	4.4				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	92.585		
Al	27	99.542		
Sc	45			
Ti	47	109.056		
V	51	98.438		
Cr	52	101.713		
Cr	53			
Mn	55	109.769		
Co	59	99.203		
Ni	60	102.705		
Cu	65	100.913		
Zn	66	102.244		
> Ge	72		106.888	
As	75	97.965		
Se	82	98.979		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.583		
Ag	107	100.929		
Cd	111	98.924		
Cd	114			
> In	115			100.888
Sn	118	93.139		
Sb	123	100.925		
Ba	135	103.064		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.051		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.639		
U	238	101.035		
> Bi	209			107.209
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, August 20, 2015 15:12:35
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54372.5	3.8				ug/L	51673	Standard
	Be	9	6.7	43.3	**-0.0553**	0.005	8.3	ug/L	43	Standard
	Al	27	505.0	15.2	**-0.0034**	0.001	38.2	ug/L	2157	Standard
	Sc	45	26059.1	2.0				ug/L	22687	Standard
	Ti	47	28.3	2.0	**0.0291**	0.002	7.6	ug/L	43	Standard
	V	51	900.7	13.8	**-0.0729**	0.026	36.2	ug/L	1233	Standard
	Cr	52	5739.8	1.3	**-0.0982**	0.016	15.9	ug/L	6387	Standard
	Cr	53	461.7	7.0	**-1.3082**	0.058	4.4	ug/L	1555	Standard
	Mn	55	487.0	6.1	**-0.0462**	0.012	25.9	ug/L	436	Standard
	Co	59	190.0	4.2	**-0.0035**	0.002	61.4	ug/L	236	Standard
	Ni	60	58.3	13.1	**-0.0033**	0.005	152.1	ug/L	204	Standard
	Cu	65	209.0	6.3	**-0.1346**	0.008	5.7	ug/L	303	Standard
	Zn	66	246.7	7.5	**-0.1599**	0.027	17.1	ug/L	332	Standard
>	**Ge**	72	312072.9	2.3				ug/L	293924	Standard
	As	75	-53.6	34.8	**-0.0160**	0.021	134.5	ug/L	45	Standard
	Se	82	17.2	34.5	**0.0204**	0.076	373.3	ug/L	35	Standard
	Se-1	77	88.3	4.6	**-1.1298**	0.075	6.6	ug/L	153	Standard
>	**Ga**	71	31.7	9.1				mg/L	25	Standard
	Rb	85	25.0	60.0				ug/L	20	Standard
	Y	89	285514.7	2.8				ug/L	279578	Standard
>	**Rh**	103	21.7	48.0				ug/L	68	Standard
	Mo	98	56.3	21.9	**0.0189**	0.008	40.8	ug/L	56	Standard
	Ag	107	99.0	13.2	**0.0028**	0.002	88.4	ug/L	199	Standard
	Cd	111	10.9	46.1	**-0.0004**	0.003	783.0	mg/L	89	Standard
	Cd	114	12.2	76.7	**-0.0029**	0.002	73.4	ug/L	150	Standard
>	**In**	115	463353.6	0.6				ug/L	458296	Standard
	Sn	118	478.3	6.3	**0.0359**	0.006	15.6	ug/L	385	Standard
	Sb	123	849.3	4.0	**0.1817**	0.009	4.8	ug/L	208	Standard
	Ba	135	34.7	13.3	**-0.0073**	0.002	31.0	ug/L	108	Standard
	Ce	140	21.7	48.0				ug/L	92	Standard
>	**Tb**	159	846475.3	1.7				ug/L	812006	Standard
	Ho	165	10.0					ug/L	7	Standard
	Tl	203	19.7	17.9	**-0.0030**	0.000	15.3	ug/L	236	Standard
	Tl	205	23.3	24.7	**0.0042**	0.001	28.4	ug/L	43	Standard
	Pb	206	205.0	6.0	**-0.0094**	0.003	29.1	ug/L	266	Standard
	Pb	207	186.7	5.1	**-0.0107**	0.002	20.8	ug/L	206	Standard
	Pb	208	651.3	9.3	**-0.0083**	0.004	53.2	ug/L	668	Standard
	U	238	13.3	15.6	**0.0021**	0.000	19.6	ug/L	32	Standard
>	**Bi**	209	407745.1	0.7				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	60.0	38.2	**0.0297**	0.053	179.5	mg/L	60	Standard
K	39	5.0	100.0	**-0.3154**	0.088	27.9	mg/L	12	Standard
Ca	43	26.7	10.8	**-22.3985**	1.982	8.8	mg/L	37	Standard
Fe	54	57.5	18.8	**-0.0134**	0.023	171.8	mg/L	56	Standard
Fe	57	681.7	15.8	**-1.6027**	0.974	60.8	mg/L	735	Standard
> **Sc-1**	45	26059.1	2.0				mg/L	22687	Standard
Cl	35	22981.4	2.0				ug/L	20516	Standard
Kr	83	2.3	24.7				ug/L	5	Standard
Br	81	560.0	13.5				ug/L	570	Standard
P	31	8600.8	0.8				ug/L	7850	Standard
S	34	1693.4	5.6				ug/L	1375	Standard
Sr	88	116.7	13.1				ug/L	165	Standard
C	12	163.3	30.2				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	22.7	68.2				mg/L	6	Standard
Ho-1	165	10.0					mg/L	7	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	2356.9	2.5				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.175	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.104
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.111
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508072101
Sample Date/Time: Thursday, August 20, 2015 15:15:47
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53210.0	2.3				ug/L	51673	Standard
	Be	9	13.3	21.7	**-0.0454**	0.005	10.0	ug/L	43	Standard
	Al	27	2329352.3	1.2	**32.8933**	0.396	1.2	ug/L	2157	Standard
	Sc	45	25172.6	5.8				ug/L	22687	Standard
	Ti	47	20.7	29.2	**-0.0160**	0.032	203.0	ug/L	43	Standard
	V	51	1194.4	22.3	**-0.0098**	0.057	577.3	ug/L	1233	Standard
	Cr	52	6838.2	7.9	**0.1016**	0.093	91.7	ug/L	6387	Standard
	Cr	53	588.3	8.5	**-1.1202**	0.083	7.4	ug/L	1555	Standard
	Mn	55	1567.1	2.3	**0.2941**	0.013	4.3	ug/L	436	Standard
	Co	59	255.0	3.2	**0.0109**	0.002	21.3	ug/L	236	Standard
	Ni	60	217.7	1.9	**0.1026**	0.002	2.4	ug/L	204	Standard
	Cu	65	516.7	2.5	**0.0705**	0.013	18.0	ug/L	303	Standard
	Zn	66	1207.4	2.6	**0.9936**	0.052	5.3	ug/L	332	Standard
>	**Ge**	72	315233.2	1.2				ug/L	293924	Standard
	As	75	-20.4	172.2	**0.0220**	0.040	182.0	ug/L	45	Standard
	Se	82	89.8	1.0	**1.0066**	0.027	2.7	ug/L	35	Standard
	Se-1	77	126.3	4.4	**-0.4424**	0.101	22.8	ug/L	153	Standard
>	**Ga**	71	21.7	26.6				mg/L	25	Standard
	Rb	85	450.0	10.7				ug/L	20	Standard
	Y	89	283077.0	1.6				ug/L	279578	Standard
>	**Rh**	103	43.3	35.3				ug/L	68	Standard
	Mo	98	55.9	7.5	**0.0187**	0.003	15.8	ug/L	56	Standard
	Ag	107	78.0	15.4	**-0.0010**	0.002	222.5	ug/L	199	Standard
	Cd	111	9.2	34.8	**-0.0014**	0.002	137.0	mg/L	89	Standard
	Cd	114	11.7	103.5	**-0.0030**	0.003	89.8	ug/L	150	Standard
>	**In**	115	461923.7	1.4				ug/L	458296	Standard
	Sn	118	373.3	14.7	**0.0168**	0.009	56.3	ug/L	385	Standard
	Sb	123	296.4	12.1	**0.0558**	0.008	13.8	ug/L	208	Standard
	Ba	135	259.7	8.9	**0.1011**	0.012	11.9	ug/L	108	Standard
	Ce	140	45.0	22.2				ug/L	92	Standard
>	**Tb**	159	841282.7	1.3				ug/L	812006	Standard
	Ho	165	6.7	86.6				ug/L	7	Standard
	Tl	203	20.7	26.6	**-0.0029**	0.001	27.0	ug/L	236	Standard
	Tl	205	15.0	57.7	**0.0025**	0.002	67.5	ug/L	43	Standard
	Pb	206	243.7	5.5	**-0.0002**	0.003	1517.4	ug/L	266	Standard
	Pb	207	216.3	9.0	**-0.0029**	0.004	146.1	ug/L	206	Standard
	Pb	208	797.7	1.3	**0.0026**	0.000	11.3	ug/L	668	Standard
	U	238	1400.1	4.6	**0.2927**	0.014	4.7	ug/L	32	Standard
>	**Bi**	209	404332.4	1.1				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	4777.4	3.3	**11.1815**	0.996	8.9	mg/L	60	Standard
K	39	6.7	43.3	**-0.2781**	0.061	22.0	mg/L	12	Standard
Ca	43	48.3	21.5	**-6.7393**	7.878	116.9	mg/L	37	Standard
Fe	54	54.2	10.0	**-0.0161**	0.015	94.1	mg/L	56	Standard
Fe	57	738.4	2.7	**-0.9351**	0.467	50.0	mg/L	735	Standard
Sc-1	45	25172.6	5.8				mg/L	22687	Standard
Cl	35	26968.0	3.5				ug/L	20516	Standard
Kr	83	5.0	40.0				ug/L	5	Standard
Br	81	1196.7	9.2				ug/L	570	Standard
P	31	8108.8	4.7				ug/L	7850	Standard
S	34	1538.4	5.9				ug/L	1375	Standard
Sr	88	141.7	5.4				ug/L	165	Standard
C	12	190.0	22.9				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	19.4	88.8				mg/L	6	Standard
Ho-1	165	6.7	86.6				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	12593.6	2.2				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		102.974	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		107.250	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.792
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.206
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508072102
Sample Date/Time: Thursday, August 20, 2015 15:18:59
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	57241.3	1.3				ug/L	51673	Standard
	Be	9	11.7	24.7	**-0.0491**	0.004	7.9	ug/L	43	Standard
	Al	27	2267630.8	2.0	**29.7678**	0.937	3.1	ug/L	2157	Standard
	Sc	45	25820.3	4.5				ug/L	22687	Standard
	Ti	47	73.0	10.3	**0.2773**	0.040	14.6	ug/L	43	Standard
	V	51	3664.2	3.6	**0.5375**	0.029	5.5	ug/L	1233	Standard
	Cr	52	7592.6	2.3	**0.2421**	0.030	12.4	ug/L	6387	Standard
	Cr	53	571.7	11.4	**-1.1492**	0.104	9.1	ug/L	1555	Standard
	Mn	55	1672.1	3.7	**0.3254**	0.020	6.1	ug/L	436	Standard
	Co	59	264.3	3.7	**0.0128**	0.003	19.7	ug/L	236	Standard
	Ni	60	255.3	6.6	**0.1272**	0.012	9.4	ug/L	204	Standard
	Cu	65	3622.1	2.9	**2.1447**	0.069	3.2	ug/L	303	Standard
	Zn	66	1505.7	3.6	**1.3455**	0.058	4.3	ug/L	332	Standard
>	Ge	72	316387.6	0.5				ug/L	293924	Standard
	As	75	19.3	226.1	**0.0674**	0.049	73.2	ug/L	45	Standard
	Se	82	93.4	8.2	**1.0505**	0.109	10.4	ug/L	35	Standard
	Se-1	77	129.7	2.2	**-0.3893**	0.062	16.0	ug/L	153	Standard
>	Ga	71	36.7	28.4				mg/L	25	Standard
	Rb	85	426.7	5.8				ug/L	20	Standard
	Y	89	285621.0	2.0				ug/L	279578	Standard
>	Rh	103	23.3	136.1				ug/L	68	Standard
	Mo	98	49.1	13.1	**0.0135**	0.004	30.8	ug/L	56	Standard
	Ag	107	95.3	30.6	**0.0016**	0.005	332.0	ug/L	199	Standard
	Cd	111	25.2	129.3	**0.0078**	0.019	244.4	mg/L	89	Standard
	Cd	114	57.1	141.2	**0.0069**	0.018	255.9	ug/L	150	Standard
>	In	115	478534.3	1.2				ug/L	458296	Standard
	Sn	118	355.0	7.3	**0.0113**	0.005	44.6	ug/L	385	Standard
	Sb	123	189.1	30.0	**0.0299**	0.013	44.0	ug/L	208	Standard
	Ba	135	292.0	19.3	**0.1120**	0.028	25.1	ug/L	108	Standard
	Ce	140	18.3	31.5				ug/L	92	Standard
>	Tb	159	877973.1	2.7				ug/L	812006	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	49.3	118.8	**0.0010**	0.008	784.6	ug/L	236	Standard
	Tl	205	11.7	65.5	**0.0018**	0.002	83.7	ug/L	43	Standard
	Pb	206	342.3	6.5	**0.0207**	0.005	23.9	ug/L	266	Standard
	Pb	207	270.0	4.8	**0.0094**	0.004	37.5	ug/L	206	Standard
	Pb	208	1034.3	3.1	**0.0183**	0.003	14.2	ug/L	668	Standard
	U	238	1266.7	3.5	**0.2604**	0.007	2.9	ug/L	32	Standard
>	Bi	209	411062.6	0.6				ug/L	377155	Standard

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Na	23	1.7	173.2	**21.2014**	218.853	1032.3	mg/L	2	Standard
Mg	24	4854.1	3.7	**11.0418**	0.246	2.2	mg/L	60	Standard
K	39	5.0	173.2	**-0.3130**	0.158	50.4	mg/L	12	Standard
Ca	43	56.7	5.1	**-2.0605**	3.504	170.0	mg/L	37	Standard
Fe	54	277.7	19.7	**0.4228**	0.084	19.8	mg/L	56	Standard
Fe	57	821.7	2.0	**-0.4182**	0.419	100.3	mg/L	735	Standard
Sc-1	45	25820.3	4.5				mg/L	22687	Standard
Cl	35	29711.1	1.1				ug/L	20516	Standard
Kr	83	4.7	24.7				ug/L	5	Standard
Br	81	1320.1	8.0				ug/L	570	Standard
P	31	8242.2	3.5				ug/L	7850	Standard
S	34	1590.1	0.3				ug/L	1375	Standard
Sr	88	198.3	15.2				ug/L	165	Standard
C	12	150.0	17.6				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	25.7	21.0				mg/L	6	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	13	Standard
I	127	16767.6	3.6				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.776	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.643	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.416
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.990
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508072103
Sample Date/Time: Thursday, August 20, 2015 15:22:10
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	55598.7	5.8				ug/L	51673	Standard
	Be	9	20.0	50.0	**-0.0371**	0.013	35.2	ug/L	43	Standard
	Al	27	1067063.0	1.7	**14.4450**	0.881	6.1	ug/L	2157	Standard
	Sc	45	25104.1	2.1				ug/L	22687	Standard
	Ti	47	24.7	37.7	**0.0103**	0.055	536.1	ug/L	43	Standard
	V	51	1465.9	7.3	**0.0580**	0.021	35.8	ug/L	1233	Standard
	Cr	52	7874.4	3.0	**0.3349**	0.027	8.0	ug/L	6387	Standard
	Cr	53	525.0	11.0	**-1.1995**	0.102	8.5	ug/L	1555	Standard
	Mn	55	1694.4	10.2	**0.3456**	0.047	13.5	ug/L	436	Standard
	Co	59	258.0	10.7	**0.0128**	0.005	42.7	ug/L	236	Standard
	Ni	60	121.7	2.5	**0.0404**	0.001	2.2	ug/L	204	Standard
	Cu	65	411.3	4.5	**0.0058**	0.012	201.8	ug/L	303	Standard
	Zn	66	2218.2	1.5	**2.2684**	0.028	1.2	ug/L	332	Standard
>	Ge	72	308482.5	1.6				ug/L	293924	Standard
	As	75	-23.7	63.8	**0.0180**	0.018	99.0	ug/L	45	Standard
	Se	82	125.0	3.5	**1.5216**	0.081	5.3	ug/L	35	Standard
	Se-1	77	163.0	5.2	**0.3022**	0.119	39.3	ug/L	153	Standard
>	Ga	71	16.7	17.3				mg/L	25	Standard
	Rb	85	298.3	9.8				ug/L	20	Standard
	Y	89	281901.0	2.4				ug/L	279578	Standard
>	Rh	103	23.3	12.4				ug/L	68	Standard
	Mo	98	60.2	27.6	**0.0213**	0.010	45.3	ug/L	56	Standard
	Ag	107	155.3	98.6	**0.0128**	0.027	212.1	ug/L	199	Standard
	Cd	111	7.2	21.2	**-0.0025**	0.001	35.4	mg/L	89	Standard
	Cd	114	34.3	70.6	**0.0021**	0.005	252.6	ug/L	150	Standard
>	In	115	460706.7	1.9				ug/L	458296	Standard
	Sn	118	336.7	14.4	**0.0102**	0.008	79.2	ug/L	385	Standard
	Sb	123	209.1	53.0	**0.0358**	0.025	69.3	ug/L	208	Standard
	Ba	135	385.0	17.4	**0.1616**	0.030	18.5	ug/L	108	Standard
	Ce	140	60.0	14.4				ug/L	92	Standard
>	Tb	159	841712.0	4.2				ug/L	812006	Standard
	Ho	165	6.7	86.6				ug/L	7	Standard
	Tl	203	110.0	148.8	**0.0092**	0.022	240.9	ug/L	236	Standard
	Tl	205	31.7	92.5	**0.0058**	0.006	98.6	ug/L	43	Standard
	Pb	206	327.7	37.4	**0.0179**	0.026	144.5	ug/L	266	Standard
	Pb	207	282.7	32.9	**0.0129**	0.022	166.5	ug/L	206	Standard
	Pb	208	900.7	10.9	**0.0095**	0.006	60.6	ug/L	668	Standard
	U	238	569.3	4.6	**0.1178**	0.003	2.7	ug/L	32	Standard
>	Bi	209	406956.0	1.8				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	2773.6	2.6	**6.4428**	0.108	1.7	mg/L	60	Standard
K	39	18.3	31.5	**-0.0604**	0.116	192.7	mg/L	12	Standard
Ca	43	46.7	16.4	**-8.0080**	4.774	59.6	mg/L	37	Standard
Fe	54	71.0	10.8	**0.0180**	0.013	74.8	mg/L	56	Standard
Fe	57	730.0	18.8	**-1.0155**	1.050	103.4	mg/L	735	Standard
> **Sc-1**	45	25104.1	2.1				mg/L	22687	Standard
Cl	35	28027.9	1.5				ug/L	20516	Standard
Kr	83	5.0	72.1				ug/L	5	Standard
Br	81	790.0	4.6				ug/L	570	Standard
P	31	7942.1	1.4				ug/L	7850	Standard
S	34	1620.1	5.3				ug/L	1375	Standard
Sr	88	143.3	28.2				ug/L	165	Standard
C	12	133.3	37.7				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.5	100.0				mg/L	6	Standard
Ho-1	165	6.7	86.6				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	6062.9	4.2				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.597	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.953	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.526
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.901
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508072104
Sample Date/Time: Thursday, August 20, 2015 15:25:22
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	54678.7	5.1				ug/L	51673	Standard
	Be	9	16.7	45.8	**-0.0415**	0.010	23.1	ug/L	43	Standard
	Al	27	1076649.4	1.0	**14.8085**	0.636	4.3	ug/L	2157	Standard
	Sc	45	25117.5	1.6				ug/L	22687	Standard
	Ti	47	52.3	7.2	**0.1652**	0.022	13.2	ug/L	43	Standard
	V	51	2541.9	0.7	**0.2956**	0.005	1.8	ug/L	1233	Standard
	Cr	52	7536.2	2.2	**0.2493**	0.021	8.4	ug/L	6387	Standard
	Cr	53	416.7	7.2	**-1.3795**	0.050	3.6	ug/L	1555	Standard
	Mn	55	1980.1	2.3	**0.4303**	0.009	2.2	ug/L	436	Standard
	Co	59	220.7	10.7	**0.0035**	0.006	165.1	ug/L	236	Standard
	Ni	60	134.7	13.3	**0.0481**	0.013	26.5	ug/L	204	Standard
	Cu	65	426.3	6.3	**0.0124**	0.020	159.0	ug/L	303	Standard
	Zn	66	1905.5	2.0	**1.8538**	0.062	3.4	ug/L	332	Standard
>	Ge	72	312489.3	0.8				ug/L	293924	Standard
	As	75	-28.0	124.3	**0.0135**	0.040	292.3	ug/L	45	Standard
	Se	82	130.9	2.8	**1.5794**	0.036	2.3	ug/L	35	Standard
	Se-1	77	174.0	5.8	**0.4685**	0.165	35.2	ug/L	153	Standard
>	Ga	71	40.0	54.5				mg/L	25	Standard
	Rb	85	311.7	7.2				ug/L	20	Standard
	Y	89	283741.4	2.3				ug/L	279578	Standard
>	Rh	103	21.7	35.3				ug/L	68	Standard
	Mo	98	90.6	2.2	**0.0400**	0.001	1.4	ug/L	56	Standard
	Ag	107	66.7	32.4	**-0.0030**	0.004	136.0	ug/L	199	Standard
	Cd	111	3.5	44.1	**-0.0048**	0.001	18.6	mg/L	89	Standard
	Cd	114	13.8	52.4	**-0.0025**	0.002	66.7	ug/L	150	Standard
>	In	115	461521.6	1.4				ug/L	458296	Standard
	Sn	118	355.0	12.5	**0.0136**	0.009	65.5	ug/L	385	Standard
	Sb	123	92.7	21.8	**0.0092**	0.004	47.4	ug/L	208	Standard
	Ba	135	509.0	4.0	**0.2212**	0.006	2.9	ug/L	108	Standard
	Ce	140	143.3	15.7				ug/L	92	Standard
>	Tb	159	830151.8	1.4				ug/L	812006	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	8.3	38.6	**-0.0046**	0.000	9.6	ug/L	236	Standard
	Tl	205	5.0	100.0	**0.0005**	0.001	192.3	ug/L	43	Standard
	Pb	206	239.3	7.6	**-0.0006**	0.004	671.3	ug/L	266	Standard
	Pb	207	209.3	2.0	**-0.0041**	0.001	31.0	ug/L	206	Standard
	Pb	208	722.7	3.6	**-0.0022**	0.002	67.9	ug/L	668	Standard
	U	238	618.3	4.4	**0.1303**	0.005	3.6	ug/L	32	Standard
>	Bi	209	399961.1	0.8				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	2715.2	3.3	**6.3045**	0.304	4.8	mg/L	60	Standard
K	39	16.7	62.4	**-0.0944**	0.191	202.5	mg/L	12	Standard
Ca	43	48.3	58.8	**-7.0270**	18.922	269.3	mg/L	37	Standard
Fe	54	174.2	26.0	**0.2283**	0.087	38.1	mg/L	56	Standard
Fe	57	813.4	10.6	**-0.3162**	0.672	212.4	mg/L	735	Standard
Sc-1	45	25117.5	1.6				mg/L	22687	Standard
Cl	35	27277.2	2.7				ug/L	20516	Standard
Kr	83	5.7	27.0				ug/L	5	Standard
Br	81	906.7	14.2				ug/L	570	Standard
P	31	7960.4	5.3				ug/L	7850	Standard
S	34	1575.1	1.3				ug/L	1375	Standard
Sr	88	175.0	11.4				ug/L	165	Standard
C	12	183.3	69.3				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.2	111.8				mg/L	6	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	16.7	124.9				mg/L	13	Standard
I	127	6212.9	6.8				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		105.817	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.316	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.704
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.047
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, August 20, 2015 15:28:35
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	53636.5	1.8				ug/L	51673	Standard
	Be	9	33483.6	1.5	**48.7136**	0.289	0.6	ug/L	43	Standard
	Al	27	3605138.3	0.3	**50.5099**	0.779	1.5	ug/L	2157	Standard
	Sc	45	26014.0	3.8				ug/L	22687	Standard
	Ti	47	18705.5	1.3	**106.2867**	0.450	0.4	ug/L	43	Standard
	V	51	218175.6	0.4	**48.8227**	0.903	1.8	ug/L	1233	Standard
	Cr	52	267398.5	1.1	**50.8702**	0.272	0.5	ug/L	6387	Standard
	Cr	53	33557.1	2.5	**50.2686**	1.163	2.3	ug/L	1555	Standard
	Mn	55	172005.0	1.6	**54.8315**	0.683	1.2	ug/L	436	Standard
	Co	59	217706.6	0.4	**50.0860**	0.689	1.4	ug/L	236	Standard
	Ni	60	73722.6	1.3	**49.6695**	0.605	1.2	ug/L	204	Standard
	Cu	65	75335.9	1.5	**50.7934**	0.452	0.9	ug/L	303	Standard
	Zn	66	41510.1	1.2	**50.0322**	0.409	0.8	ug/L	332	Standard
>	Ge	72	311953.1	1.5				ug/L	293924	Standard
	As	75	42733.6	1.1	**48.9552**	0.221	0.5	ug/L	45	Standard
	Se	82	3630.7	1.6	**49.6433**	0.757	1.5	ug/L	35	Standard
	Se-1	77	2684.6	1.3	**47.4929**	0.204	0.4	ug/L	153	Standard
>	Ga	71	46.7	40.6				mg/L	25	Standard
	Rb	85	590.0	9.3				ug/L	20	Standard
	Y	89	282185.8	1.9				ug/L	279578	Standard
>	Rh	103	51.7	29.6				ug/L	68	Standard
	Mo	98	159905.0	0.8	**97.9577**	0.932	1.0	ug/L	56	Standard
	Ag	107	274173.4	0.1	**49.3279**	0.691	1.4	ug/L	199	Standard
	Cd	111	82855.3	0.6	**49.1330**	0.898	1.8	mg/L	89	Standard
	Cd	114	223449.9	1.3	**50.1627**	1.320	2.6	ug/L	150	Standard
>	In	115	461464.7	1.5				ug/L	458296	Standard
	Sn	118	243264.0	0.4	**44.7712**	0.662	1.5	ug/L	385	Standard
	Sb	123	218193.2	0.6	**49.9530**	0.438	0.9	ug/L	208	Standard
	Ba	135	105734.0	0.8	**50.9374**	0.977	1.9	ug/L	108	Standard
	Ce	140	88.3	16.3				ug/L	92	Standard
>	Tb	159	867738.4	1.2				ug/L	812006	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	357291.7	0.6	**49.5231**	0.238	0.5	ug/L	236	Standard
	Tl	205	242405.4	0.7	**48.5313**	0.316	0.7	ug/L	43	Standard
	Pb	206	218523.2	0.3	**48.9999**	0.280	0.6	ug/L	266	Standard
	Pb	207	198236.1	0.7	**49.1098**	0.404	0.8	ug/L	206	Standard
	Pb	208	712244.7	0.5	**50.6631**	0.123	0.2	ug/L	668	Standard
	U	238	239130.4	0.9	**49.8651**	0.347	0.7	ug/L	32	Standard
>	Bi	209	406194.5	0.3				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	2116.8	5.5	**4.7149**	0.090	1.9	mg/L	60	Standard
K	39	250.0	14.0	**4.0934**	0.580	14.2	mg/L	12	Standard
Ca	43	53.3	14.3	**-4.6675**	4.734	101.4	mg/L	37	Standard
Fe	54	2262.9	2.4	**4.3398**	0.069	1.6	mg/L	56	Standard
Fe	57	1303.4	7.8	**3.3991**	0.805	23.7	mg/L	735	Standard
> **Sc-1**	45	26014.0	3.8				mg/L	22687	Standard
Cl	35	23699.9	2.8				ug/L	20516	Standard
Kr	83	5.7	44.4				ug/L	5	Standard
Br	81	533.3	10.3				ug/L	570	Standard
P	31	10065.0	1.9				ug/L	7850	Standard
S	34	1708.4	5.3				ug/L	1375	Standard
Sr	88	151.7	18.2				ug/L	165	Standard
C	12	196.7	16.3				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.4	177.7				mg/L	6	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	545.0	9.7				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	97.427		
Al	27	101.020		
Sc	45			
Ti	47	106.287		
V	51	97.645		
Cr	52	101.740		
Cr	53			
Mn	55	109.663		
Co	59	100.172		
Ni	60	99.339		
Cu	65	101.587		
Zn	66	100.064		
> Ge	72		106.134	
As	75	97.910		
Se	82	99.287		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	97.958		
Ag	107	98.656		
Cd	111	98.266		
Cd	114			
> In	115			100.691
Sn	118	89.542		
Sb	123	99.906		
Ba	135	101.875		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.046		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.326		
U	238	99.730		
> Bi	209			107.700
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, August 20, 2015 15:31:46
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53332.0	1.8				ug/L	51673	Standard
	Be	9	26.7	39.0	**-0.0260**	0.015	58.0	ug/L	43	Standard
	Al	27	1930.3	137.1	**0.0164**	0.037	222.5	ug/L	2157	Standard
	Sc	45	25641.7	0.3				ug/L	22687	Standard
	Ti	47	23.7	44.4	**0.0013**	0.056	4311.6	ug/L	43	Standard
	V	51	969.6	0.7	**-0.0575**	0.007	12.8	ug/L	1233	Standard
	Cr	52	5663.1	4.5	**-0.1153**	0.036	31.0	ug/L	6387	Standard
	Cr	53	366.7	9.9	**-1.4570**	0.063	4.3	ug/L	1555	Standard
	Mn	55	453.7	11.7	**-0.0569**	0.020	35.8	ug/L	436	Standard
	Co	59	193.0	4.7	**-0.0028**	0.003	113.9	ug/L	236	Standard
	Ni	60	87.3	40.7	**0.0159**	0.022	141.9	ug/L	204	Standard
	Cu	65	222.3	13.3	**-0.1259**	0.018	13.9	ug/L	303	Standard
	Zn	66	249.7	8.2	**-0.1566**	0.032	20.2	ug/L	332	Standard
>	**Ge**	72	312589.4	2.7				ug/L	293924	Standard
	As	75	-32.5	57.0	**0.0080**	0.022	280.6	ug/L	45	Standard
	Se	82	17.2	15.5	**0.0212**	0.031	146.8	ug/L	35	Standard
	Se-1	77	78.0	8.4	**-1.3244**	0.141	10.6	ug/L	153	Standard
>	**Ga**	71	15.0	57.7				mg/L	25	Standard
	Rb	85	30.0	33.3				ug/L	20	Standard
	Y	89	285336.8	0.8				ug/L	279578	Standard
>	**Rh**	103	25.0	20.0				ug/L	68	Standard
	Mo	98	63.4	28.7	**0.0228**	0.011	48.0	ug/L	56	Standard
	Ag	107	130.3	26.5	**0.0082**	0.006	74.9	ug/L	199	Standard
	Cd	111	24.5	70.1	**0.0075**	0.010	133.9	mg/L	89	Standard
	Cd	114	40.0	52.2	**0.0033**	0.005	140.3	ug/L	150	Standard
>	**In**	115	466904.3	0.7				ug/L	458296	Standard
	Sn	118	496.7	8.2	**0.0386**	0.008	20.8	ug/L	385	Standard
	Sb	123	873.5	10.2	**0.1857**	0.020	10.7	ug/L	208	Standard
	Ba	135	52.3	48.6	**0.0010**	0.012	1275.8	ug/L	108	Standard
	Ce	140	16.7	62.4				ug/L	92	Standard
>	**Tb**	159	837663.2	0.7				ug/L	812006	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	57.7	66.8	**0.0022**	0.005	240.3	ug/L	236	Standard
	Tl	205	28.3	113.5	**0.0052**	0.006	124.4	ug/L	43	Standard
	Pb	206	227.0	8.0	**-0.0043**	0.004	93.0	ug/L	266	Standard
	Pb	207	191.3	8.3	**-0.0094**	0.004	43.8	ug/L	206	Standard
	Pb	208	671.3	4.6	**-0.0068**	0.002	34.9	ug/L	668	Standard
	U	238	54.3	119.2	**0.0107**	0.014	126.4	ug/L	32	Standard
>	**Bi**	209	406998.3	0.4				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	65.0	20.4	**0.0433**	0.031	70.6	mg/L	60	Standard
K	39	1.7	173.2	**-0.3737**	0.053	14.1	mg/L	12	Standard
Ca	43	26.7	10.8	**-22.1208**	1.904	8.6	mg/L	37	Standard
Fe	54	57.5	13.1	**-0.0118**	0.015	127.6	mg/L	56	Standard
Fe	57	703.3	8.1	**-1.3508**	0.449	33.2	mg/L	735	Standard
Sc-1	45	25641.7	0.3				mg/L	22687	Standard
Cl	35	23113.0	1.5				ug/L	20516	Standard
Kr	83	2.3	65.5				ug/L	5	Standard
Br	81	533.3	20.6				ug/L	570	Standard
P	31	8674.1	1.1				ug/L	7850	Standard
S	34	1671.8	12.1				ug/L	1375	Standard
Sr	88	168.3	22.7				ug/L	165	Standard
C	12	206.7	46.0				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.4	100.0				mg/L	6	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	13	Standard
I	127	2338.5	5.7				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.350	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.878
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.913
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, August 20, 2015 15:35:00
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52893.9	1.8				ug/L	51673	Standard
	Be	9	143.3	21.0	**0.1462**	0.041	27.9	ug/L	43	Standard
	Al	27	331.7	15.4	**-0.0057**	0.001	14.2	ug/L	2157	Standard
	Sc	45	25965.6	4.3				ug/L	22687	Standard
	Ti	47	21.0	4.8	**-0.0121**	0.005	42.7	ug/L	43	Standard
	V	51	2578.6	2.9	**0.3075**	0.019	6.0	ug/L	1233	Standard
	Cr	52	10184.4	2.9	**0.7769**	0.050	6.5	ug/L	6387	Standard
	Cr	53	941.7	9.0	**-0.5539**	0.127	22.9	ug/L	1555	Standard
	Mn	55	2213.2	3.0	**0.5094**	0.024	4.8	ug/L	436	Standard
	Co	59	1885.5	2.1	**0.3889**	0.008	2.1	ug/L	236	Standard
	Ni	60	2390.2	2.6	**1.5767**	0.049	3.1	ug/L	204	Standard
	Cu	65	1489.1	4.4	**0.7378**	0.040	5.4	ug/L	303	Standard
	Zn	66	5376.3	1.8	**6.1097**	0.112	1.8	ug/L	332	Standard
>	**Ge**	72	310505.1	0.5				ug/L	293924	Standard
	As	75	279.8	7.8	**0.3671**	0.024	6.5	ug/L	45	Standard
	Se	82	40.3	8.7	**0.3420**	0.048	14.1	ug/L	35	Standard
	Se-1	77	97.3	16.5	**-0.9514**	0.311	32.6	ug/L	153	Standard
>	**Ga**	71	21.7	48.0				mg/L	25	Standard
	Rb	85	21.7	35.3				ug/L	20	Standard
	Y	89	280139.6	1.0				ug/L	279578	Standard
>	**Rh**	103	18.3	41.7				ug/L	68	Standard
	Mo	98	24.9	13.1	**-0.0004**	0.002	534.1	ug/L	56	Standard
	Ag	107	2175.8	1.4	**0.3749**	0.007	1.8	ug/L	199	Standard
	Cd	111	401.3	6.4	**0.2302**	0.016	7.0	mg/L	89	Standard
	Cd	114	1046.9	5.4	**0.2284**	0.012	5.1	ug/L	150	Standard
>	**In**	115	463380.5	0.4				ug/L	458296	Standard
	Sn	118	615.0	3.7	**0.0610**	0.004	6.3	ug/L	385	Standard
	Sb	123	1991.8	4.6	**0.4422**	0.020	4.6	ug/L	208	Standard
	Ba	135	1615.4	1.8	**0.7513**	0.016	2.1	ug/L	108	Standard
	Ce	140	31.7	32.9				ug/L	92	Standard
>	**Tb**	159	842516.6	2.3				ug/L	812006	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	584.0	2.6	**0.0746**	0.001	1.8	ug/L	236	Standard
	Tl	205	435.0	13.0	**0.0861**	0.012	14.0	ug/L	43	Standard
	Pb	206	1107.0	2.0	**0.1916**	0.007	3.7	ug/L	266	Standard
	Pb	207	932.7	5.1	**0.1729**	0.010	6.0	ug/L	206	Standard
	Pb	208	3464.8	2.6	**0.1905**	0.005	2.5	ug/L	668	Standard
	U	238	1931.5	1.6	**0.3993**	0.003	0.7	ug/L	32	Standard
>	**Bi**	209	409016.5	0.9				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	56.7	22.2	**0.0217**	0.023	105.9	mg/L	60	Standard
K	39	6.7	43.3	**-0.2825**	0.057	20.2	mg/L	12	Standard
Ca	43	31.7	39.7	**-18.8565**	8.779	46.6	mg/L	37	Standard
Fe	54	76.1	20.6	**0.0230**	0.025	108.1	mg/L	56	Standard
Fe	57	770.0	9.0	**-0.8727**	0.671	76.9	mg/L	735	Standard
Sc-1	45	25965.6	4.3				mg/L	22687	Standard
Cl	35	23392.0	0.6				ug/L	20516	Standard
Kr	83	2.3	24.7				ug/L	5	Standard
Br	81	510.0	15.3				ug/L	570	Standard
P	31	9452.9	2.5				ug/L	7850	Standard
S	34	1771.8	5.5				ug/L	1375	Standard
Sr	88	138.3	14.6				ug/L	165	Standard
C	12	223.3	9.3				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.9	41.7				mg/L	6	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	541.7	7.5				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	73.119		
Al	27			
Sc	45			
Ti	47			
V	51	76.881		
Cr	52	97.108		
Cr	53			
Mn	55	101.872		
Co	59	97.225		
Ni	60	98.544		
Cu	65	92.224		
Zn	66	97.755		
Ge	72		105.641	
As	75	91.784		
Se	82	85.509		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	93.733		
Cd	111	95.920		
Cd	114			
> In	115			101.109
Sn	118			
Sb	123	110.548		
Ba	135	100.173		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	93.290		
Tl	205			
Pb	206			
Pb	207			
Pb	208	95.264		
U	238	99.837		
> Bi	209			108.448
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW R6 WG535577-02
Sample Date/Time: Thursday, August 20, 2015 16:09:57
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52748.3	1.6				ug/L	51673	Standard
	Be	9	18.3	31.5	**-0.0379**	0.008	22.1	ug/L	43	Standard
	Al	27	4830.8	1.6	**0.0584**	0.000	0.7	ug/L	2157	Standard
	Sc	45	26518.2	1.3				ug/L	22687	Standard
	Ti	47	24.3	27.4	**0.0028**	0.037	1317.5	ug/L	43	Standard
	V	51	1093.6	3.1	**-0.0359**	0.004	11.5	ug/L	1233	Standard
	Cr	52	7083.0	1.6	**0.1273**	0.004	2.9	ug/L	6387	Standard
	Cr	53	568.3	9.9	**-1.1650**	0.092	7.9	ug/L	1555	Standard
	Mn	55	851.0	1.9	**0.0630**	0.006	9.1	ug/L	436	Standard
	Co	59	239.0	2.7	**0.0064**	0.002	28.5	ug/L	236	Standard
	Ni	60	85.0	7.3	**0.0132**	0.003	25.7	ug/L	204	Standard
	Cu	65	236.0	8.5	**-0.1204**	0.013	11.0	ug/L	303	Standard
	Zn	66	1025.7	7.8	**0.7547**	0.094	12.5	ug/L	332	Standard
>	**Ge**	72	320383.0	1.5				ug/L	293924	Standard
	As	75	-22.9	41.3	**0.0200**	0.011	52.7	ug/L	45	Standard
	Se	82	15.6	23.6	**-0.0060**	0.046	769.4	ug/L	35	Standard
	Se-1	77	80.0	5.7	**-1.3251**	0.076	5.7	ug/L	153	Standard
>	**Ga**	71	31.7	24.1				mg/L	25	Standard
	Rb	85	51.7	11.2				ug/L	20	Standard
	Y	89	291453.3	0.8				ug/L	279578	Standard
>	**Rh**	103	18.3	31.5				ug/L	68	Standard
	Mo	98	25.5	13.4	**0.0000**	0.002	30313.4	ug/L	56	Standard
	Ag	107	89.3	3.2	**0.0010**	0.000	32.4	ug/L	199	Standard
	Cd	111	24.6	2.4	**0.0077**	0.000	6.0	mg/L	89	Standard
	Cd	114	77.2	12.0	**0.0116**	0.002	18.2	ug/L	150	Standard
>	**In**	115	464950.9	1.3				ug/L	458296	Standard
	Sn	118	415.0	14.7	**0.0240**	0.011	44.2	ug/L	385	Standard
	Sb	123	193.2	18.6	**0.0319**	0.008	24.3	ug/L	208	Standard
	Ba	135	180.0	9.3	**0.0621**	0.007	11.3	ug/L	108	Standard
	Ce	140	198.3	6.3				ug/L	92	Standard
>	**Tb**	159	878683.9	1.0				ug/L	812006	Standard
	Ho	165	3.3	173.2				ug/L	7	Standard
	Tl	203	55.0	22.8	**0.0018**	0.002	99.7	ug/L	236	Standard
	Tl	205	33.3	37.7	**0.0061**	0.003	41.0	ug/L	43	Standard
	Pb	206	276.0	4.2	**0.0061**	0.003	51.2	ug/L	266	Standard
	Pb	207	220.3	8.0	**-0.0028**	0.004	150.3	ug/L	206	Standard
	Pb	208	866.3	8.2	**0.0066**	0.006	84.1	ug/L	668	Standard
	U	238	33.0	19.9	**0.0062**	0.001	20.9	ug/L	32	Standard
>	**Bi**	209	410795.3	0.9				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	31.7	39.7	**-0.0363**	0.028	76.2	mg/L	60	Standard
K	39	6.7	43.3	**-0.2866**	0.050	17.3	mg/L	12	Standard
Ca	43	33.3	31.2	**-18.3062**	7.102	38.8	mg/L	37	Standard
Fe	54	72.6	16.8	**0.0138**	0.025	183.2	mg/L	56	Standard
Fe	57	756.7	12.3	**-1.1144**	0.777	69.7	mg/L	735	Standard
Sc-1	45	26518.2	1.3				mg/L	22687	Standard
Cl	35	22375.2	1.6				ug/L	20516	Standard
Kr	83	5.7	10.2				ug/L	5	Standard
Br	81	703.3	7.0				ug/L	570	Standard
P	31	9766.5	3.2				ug/L	7850	Standard
S	34	1566.7	4.9				ug/L	1375	Standard
Sr	88	151.7	25.2				ug/L	165	Standard
C	12	210.0	34.3				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	5.4	109.8				mg/L	6	Standard
Ho-1	165	3.3	173.2				mg/L	7	Standard
Er	166	26.7	21.7				mg/L	13	Standard
I	127	2800.3	5.0				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		102.081	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		109.002	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.452
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.919
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW R6 WG535577-02
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Method 6020 - Summary Report

Sample ID: LCSW R6 WG535577-03
Sample Date/Time: Thursday, August 20, 2015 16:13:08
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53290.3	2.5				ug/L	51673	Standard
	Be	9	32172.5	4.2	**47.0929**	0.806	1.7	ug/L	43	Standard
	Al	27	2356.9	6.2	**0.0228**	0.001	5.4	ug/L	2157	Standard
	Sc	45	25616.6	2.1				ug/L	22687	Standard
	Ti	47	29.3	5.2	**0.0305**	0.007	24.6	ug/L	43	Standard
	V	51	222891.4	2.2	**48.5796**	0.735	1.5	ug/L	1233	Standard
	Cr	52	277075.4	2.7	**51.3577**	1.065	2.1	ug/L	6387	Standard
	Cr	53	34325.6	4.5	**50.0888**	2.386	4.8	ug/L	1555	Standard
	Mn	55	188965.5	1.1	**58.6974**	0.287	0.5	ug/L	436	Standard
	Co	59	221508.8	0.8	**49.6408**	0.154	0.3	ug/L	236	Standard
	Ni	60	76407.2	1.6	**50.1466**	0.460	0.9	ug/L	204	Standard
	Cu	65	76972.4	1.7	**50.5557**	0.576	1.1	ug/L	303	Standard
	Zn	66	50268.9	1.8	**59.1055**	0.617	1.0	ug/L	332	Standard
>	**Ge**	72	320202.9	0.7				ug/L	293924	Standard
	As	75	43161.2	2.3	**48.1682**	0.874	1.8	ug/L	45	Standard
	Se	82	3578.8	1.5	**47.6627**	0.688	1.4	ug/L	35	Standard
	Se-1	77	2677.6	1.0	**46.0707**	0.623	1.4	ug/L	153	Standard
>	**Ga**	71	36.7	55.1				mg/L	25	Standard
	Rb	85	41.7	18.3				ug/L	20	Standard
	Y	89	288269.7	3.0				ug/L	279578	Standard
>	**Rh**	103	26.7	28.6				ug/L	68	Standard
	Mo	98	41.4	10.2	**0.0095**	0.003	29.6	ug/L	56	Standard
	Ag	107	279398.0	2.6	**49.6259**	0.705	1.4	ug/L	199	Standard
	Cd	111	81775.1	1.9	**47.8739**	0.408	0.9	mg/L	89	Standard
	Cd	114	216100.8	2.1	**47.8898**	0.520	1.1	ug/L	150	Standard
>	**In**	115	467332.1	1.5				ug/L	458296	Standard
	Sn	118	560.0	4.6	**0.0501**	0.006	11.2	ug/L	385	Standard
	Sb	123	225443.4	1.4	**50.9616**	0.271	0.5	ug/L	208	Standard
	Ba	135	107201.3	1.3	**50.9883**	0.253	0.5	ug/L	108	Standard
	Ce	140	275.0	21.0				ug/L	92	Standard
>	**Tb**	159	854254.2	0.9				ug/L	812006	Standard
	Ho	165	1.7	173.2				ug/L	7	Standard
	Tl	203	358412.4	2.1	**49.3700**	0.820	1.7	ug/L	236	Standard
	Tl	205	242197.2	0.9	**48.1912**	0.463	1.0	ug/L	43	Standard
	Pb	206	225082.7	1.4	**50.1592**	0.505	1.0	ug/L	266	Standard
	Pb	207	195166.8	1.4	**48.0491**	0.563	1.2	ug/L	206	Standard
	Pb	208	730682.7	1.0	**51.6551**	0.393	0.8	ug/L	668	Standard
	U	238	241600.7	1.6	**50.0686**	0.622	1.2	ug/L	32	Standard
>	**Bi**	209	408713.9	0.4				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	51.7	59.1	**0.0121**	0.070	576.5	mg/L	60	Standard
K	39	10.0	50.0	**-0.2207**	0.092	41.6	mg/L	12	Standard
Ca	43	25.0	0.0	**-23.2200**	0.362	1.6	mg/L	37	Standard
Fe	54	63.0	35.9	**-0.0014**	0.043	3049.2	mg/L	56	Standard
Fe	57	691.7	4.8	**-1.4410**	0.196	13.6	mg/L	735	Standard
> **Sc-1**	45	25616.6	2.1				mg/L	22687	Standard
Cl	35	21943.9	3.1				ug/L	20516	Standard
Kr	83	4.0	0.0				ug/L	5	Standard
Br	81	1256.7	14.3				ug/L	570	Standard
P	31	9758.1	4.9				ug/L	7850	Standard
S	34	1580.1	2.5				ug/L	1375	Standard
Sr	88	125.0	20.8				ug/L	165	Standard
C	12	146.7	19.7				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	-0.6	86.6				mg/L	6	Standard
Ho-1	165	1.7	173.2				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	13	Standard
I	127	2876.9	8.5				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.130	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.941	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.972
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.368
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508099101
Sample Date/Time: Thursday, August 20, 2015 16:16:20
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52250.0	1.9				ug/L	51673	Standard
	Be	9	15.0	33.3	**-0.0427**	0.007	16.6	ug/L	43	Standard
	Al	27	2161723.4	1.9	**31.0933**	1.059	3.4	ug/L	2157	Standard
	Sc	45	26261.1	1.2				ug/L	22687	Standard
	Ti	47	25.0	6.9	**0.0073**	0.008	105.3	ug/L	43	Standard
	V	51	1397.8	8.4	**0.0330**	0.028	84.8	ug/L	1233	Standard
	Cr	52	6994.6	6.4	**0.1191**	0.077	64.6	ug/L	6387	Standard
	Cr	53	516.7	9.7	**-1.2394**	0.065	5.2	ug/L	1555	Standard
	Mn	55	1399.1	2.7	**0.2368**	0.018	7.7	ug/L	436	Standard
	Co	59	296.3	14.0	**0.0197**	0.010	51.5	ug/L	236	Standard
	Ni	60	227.3	4.7	**0.1076**	0.005	4.2	ug/L	204	Standard
	Cu	65	480.0	4.6	**0.0429**	0.020	46.0	ug/L	303	Standard
	Zn	66	1119.0	0.9	**0.8741**	0.020	2.3	ug/L	332	Standard
>	**Ge**	72	318285.3	1.7				ug/L	293924	Standard
	As	75	8.9	440.2	**0.0559**	0.044	78.4	ug/L	45	Standard
	Se	82	93.0	11.8	**1.0386**	0.153	14.7	ug/L	35	Standard
	Se-1	77	115.7	8.3	**-0.6615**	0.155	23.4	ug/L	153	Standard
>	**Ga**	71	6.7	86.6				mg/L	25	Standard
	Rb	85	395.0	19.2				ug/L	20	Standard
	Y	89	278625.2	0.3				ug/L	279578	Standard
>	**Rh**	103	25.0	20.0				ug/L	68	Standard
	Mo	98	49.5	23.4	**0.0154**	0.007	48.6	ug/L	56	Standard
	Ag	107	191.3	79.2	**0.0203**	0.028	139.1	ug/L	199	Standard
	Cd	111	17.9	56.6	**0.0041**	0.006	154.0	mg/L	89	Standard
	Cd	114	46.5	55.9	**0.0051**	0.006	119.2	ug/L	150	Standard
>	**In**	115	453054.7	1.7				ug/L	458296	Standard
	Sn	118	316.7	6.4	**0.0076**	0.004	50.3	ug/L	385	Standard
	Sb	123	205.9	55.3	**0.0363**	0.027	74.8	ug/L	208	Standard
	Ba	135	254.3	23.4	**0.1011**	0.031	30.3	ug/L	108	Standard
	Ce	140	23.3	12.4				ug/L	92	Standard
>	**Tb**	159	845245.5	0.6				ug/L	812006	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	169.0	127.1	**0.0181**	0.031	168.7	ug/L	236	Standard
	Tl	205	86.7	59.2	**0.0171**	0.011	61.8	ug/L	43	Standard
	Pb	206	521.0	14.7	**0.0627**	0.019	30.2	ug/L	266	Standard
	Pb	207	415.0	14.2	**0.0470**	0.016	34.6	ug/L	206	Standard
	Pb	208	1421.7	11.1	**0.0476**	0.013	26.9	ug/L	668	Standard
	U	238	1259.7	7.8	**0.2641**	0.025	9.3	ug/L	32	Standard
>	**Bi**	209	403428.1	1.5				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	4592.4	1.6	**10.2620**	0.286	2.8	mg/L	60	Standard
K	39	6.7	43.3	**-0.2855**	0.050	17.5	mg/L	12	Standard
Ca	43	61.7	26.1	**0.5820**	11.102	1907.5	mg/L	37	Standard
Fe	54	72.8	18.0	**0.0151**	0.024	158.3	mg/L	56	Standard
Fe	57	780.0	3.4	**-0.8751**	0.158	18.1	mg/L	735	Standard
> **Sc-1**	45	26261.1	1.2				mg/L	22687	Standard
Cl	35	24902.5	3.1				ug/L	20516	Standard
Kr	83	3.3	17.3				ug/L	5	Standard
Br	81	1133.4	5.7				ug/L	570	Standard
P	31	7733.6	2.0				ug/L	7850	Standard
S	34	1446.7	7.5				ug/L	1375	Standard
Sr	88	171.7	14.4				ug/L	165	Standard
C	12	236.7	24.0				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	16.2	71.3				mg/L	6	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	10.0					mg/L	13	Standard
I	127	10098.4	3.4				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.117	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.288	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.856	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	106.966	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508099102
Sample Date/Time: Thursday, August 20, 2015 16:19:31
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53837.2	2.1				ug/L	51673	Standard
	Be	9	23.3	49.5	**-0.0310**	0.017	55.5	ug/L	43	Standard
	Al	27	2190274.3	0.8	**30.5746**	0.859	2.8	ug/L	2157	Standard
	Sc	45	26049.1	3.9				ug/L	22687	Standard
	Ti	47	24.0	18.2	**0.0036**	0.023	627.6	ug/L	43	Standard
	V	51	2143.5	1.4	**0.2049**	0.014	6.8	ug/L	1233	Standard
	Cr	52	8083.8	1.9	**0.3520**	0.049	13.8	ug/L	6387	Standard
	Cr	53	503.3	12.8	**-1.2481**	0.084	6.7	ug/L	1555	Standard
	Mn	55	1332.7	1.3	**0.2225**	0.009	3.8	ug/L	436	Standard
	Co	59	253.3	3.4	**0.0108**	0.002	17.1	ug/L	236	Standard
	Ni	60	246.0	6.2	**0.1225**	0.007	6.0	ug/L	204	Standard
	Cu	65	1856.4	1.4	**0.9771**	0.041	4.2	ug/L	303	Standard
	Zn	66	1318.1	1.0	**1.1361**	0.017	1.5	ug/L	332	Standard
>	**Ge**	72	313362.4	2.0				ug/L	293924	Standard
	As	75	-0.6	4817.7	**0.0449**	0.032	71.0	ug/L	45	Standard
	Se	82	84.9	10.4	**0.9475**	0.139	14.6	ug/L	35	Standard
	Se-1	77	120.3	2.7	**-0.5405**	0.016	3.0	ug/L	153	Standard
>	**Ga**	71	23.3	49.5				mg/L	25	Standard
	Rb	85	368.3	7.7				ug/L	20	Standard
	Y	89	279214.2	3.2				ug/L	279578	Standard
>	**Rh**	103	25.0	40.0				ug/L	68	Standard
	Mo	98	44.6	18.3	**0.0118**	0.005	43.3	ug/L	56	Standard
	Ag	107	88.7	9.1	**0.0010**	0.001	148.1	ug/L	199	Standard
	Cd	111	3.9	44.2	**-0.0045**	0.001	23.2	mg/L	89	Standard
	Cd	114	9.4	44.2	**-0.0035**	0.001	27.2	ug/L	150	Standard
>	**In**	115	461011.3	0.4				ug/L	458296	Standard
	Sn	118	331.7	18.0	**0.0093**	0.011	117.4	ug/L	385	Standard
	Sb	123	92.6	4.1	**0.0092**	0.001	9.1	ug/L	208	Standard
	Ba	135	238.7	6.7	**0.0912**	0.008	8.7	ug/L	108	Standard
	Ce	140	36.7	41.7				ug/L	92	Standard
>	**Tb**	159	850232.7	1.8				ug/L	812006	Standard
	Ho	165	13.3	43.3				ug/L	7	Standard
	Tl	203	25.7	25.0	**-0.0022**	0.001	39.6	ug/L	236	Standard
	Tl	205	13.3	43.3	**0.0022**	0.001	52.0	ug/L	43	Standard
	Pb	206	516.0	5.5	**0.0607**	0.008	13.2	ug/L	266	Standard
	Pb	207	421.0	6.7	**0.0476**	0.007	14.4	ug/L	206	Standard
	Pb	208	1645.4	3.7	**0.0627**	0.004	5.7	ug/L	668	Standard
	U	238	1279.4	3.6	**0.2662**	0.008	3.1	ug/L	32	Standard
>	**Bi**	209	406148.2	1.3				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	4909.1	0.8	**11.0758**	0.432	3.9	mg/L	60	Standard
K	39	8.3	34.6	**-0.2531**	0.056	22.0	mg/L	12	Standard
Ca	43	51.7	11.2	**-5.8702**	2.675	45.6	mg/L	37	Standard
Fe	54	102.4	17.0	**0.0741**	0.027	36.1	mg/L	56	Standard
Fe	57	748.4	1.4	**-1.0741**	0.166	15.4	mg/L	735	Standard
> **Sc-1**	45	26049.1	3.9				mg/L	22687	Standard
Cl	35	27146.3	2.3				ug/L	20516	Standard
Kr	83	4.3	35.3				ug/L	5	Standard
Br	81	910.0	16.6				ug/L	570	Standard
P	31	8082.2	2.9				ug/L	7850	Standard
S	34	1543.4	6.0				ug/L	1375	Standard
Sr	88	171.7	11.0				ug/L	165	Standard
C	12	186.7	59.0				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	13.3	114.6				mg/L	6	Standard
Ho-1	165	13.3	43.3				mg/L	7	Standard
Er	166	0.0					mg/L	13	Standard
I	127	16637.5	4.9				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.188	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.613	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.593
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.687
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508090601 WG535577-01
Sample Date/Time: Thursday, August 20, 2015 16:22:43
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56640.7	1.6				ug/L	51673	Standard
	Be	9	21.7	26.6	**-0.0352**	0.008	21.5	ug/L	43	Standard
	Al	27	2961536.5	1.4	**39.2844**	0.363	0.9	ug/L	2157	Standard
	Sc	45	26772.0	3.3				ug/L	22687	Standard
	Ti	47	130.7	5.7	**0.5916**	0.035	5.9	ug/L	43	Standard
	V	51	13885.7	2.0	**2.7672**	0.056	2.0	ug/L	1233	Standard
	Cr	52	11948.4	2.9	**1.0501**	0.042	4.0	ug/L	6387	Standard
	Cr	53	1870.1	5.2	**0.8107**	0.159	19.6	ug/L	1555	Standard
	Mn	55	18850.7	1.6	**5.6712**	0.065	1.2	ug/L	436	Standard
	Co	59	649.7	2.7	**0.0984**	0.004	4.0	ug/L	236	Standard
	Ni	60	1816.1	3.0	**1.1498**	0.028	2.4	ug/L	204	Standard
	Cu	65	1552.1	4.2	**0.7489**	0.057	7.6	ug/L	303	Standard
	Zn	66	1882.5	1.7	**1.7698**	0.042	2.4	ug/L	332	Standard
>	**Ge**	72	320343.1	1.3				ug/L	293924	Standard
	As	75	5563.4	0.6	**6.2464**	0.050	0.8	ug/L	45	Standard
	Se	82	211.0	5.2	**2.6087**	0.180	6.9	ug/L	35	Standard
	Se-1	77	239.7	10.0	**1.5846**	0.389	24.6	ug/L	153	Standard
>	**Ga**	71	3845.5	6.1				mg/L	25	Standard
	Rb	85	9541.3	5.6				ug/L	20	Standard
	Y	89	289049.8	1.4				ug/L	279578	Standard
>	**Rh**	103	48.3	15.8				ug/L	68	Standard
	Mo	98	22363.4	1.2	**13.2839**	0.159	1.2	ug/L	56	Standard
	Ag	107	78.3	17.7	**-0.0013**	0.002	171.9	ug/L	199	Standard
	Cd	111	46.7	32.9	**0.0200**	0.008	42.5	mg/L	89	Standard
	Cd	114	238.5	10.5	**0.0464**	0.005	11.2	ug/L	150	Standard
>	**In**	115	475423.5	1.4				ug/L	458296	Standard
	Sn	118	430.0	10.1	**0.0251**	0.009	35.2	ug/L	385	Standard
	Sb	123	3393.4	0.8	**0.7423**	0.015	2.0	ug/L	208	Standard
	Ba	135	57368.7	1.2	**26.8153**	0.630	2.3	ug/L	108	Standard
	Ce	140	1085.0	18.9				ug/L	92	Standard
>	**Tb**	159	876573.1	0.8				ug/L	812006	Standard
	Ho	165	51.7	24.4				ug/L	7	Standard
	Tl	203	2014.8	1.8	**0.2690**	0.005	1.7	ug/L	236	Standard
	Tl	205	1296.7	3.5	**0.2550**	0.010	4.1	ug/L	43	Standard
	Pb	206	652.0	9.9	**0.0888**	0.014	16.1	ug/L	266	Standard
	Pb	207	492.0	1.0	**0.0633**	0.002	2.6	ug/L	206	Standard
	Pb	208	1866.0	4.0	**0.0763**	0.006	7.8	ug/L	668	Standard
	U	238	1275.1	3.5	**0.2610**	0.011	4.2	ug/L	32	Standard
>	**Bi**	209	412886.2	0.7				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	4147.2	2.2	**9.0868**	0.486	5.3	mg/L	60	Standard
K	39	61.7	9.4	**0.6746**	0.094	13.9	mg/L	12	Standard
Ca	43	108.3	2.7	**29.9445**	4.121	13.8	mg/L	37	Standard
Fe	54	73.9	20.2	**0.0148**	0.029	196.7	mg/L	56	Standard
Fe	57	856.7	3.2	**-0.3881**	0.333	85.7	mg/L	735	Standard
> **Sc-1**	45	26772.0	3.3				mg/L	22687	Standard
Cl	35	27772.8	1.9				ug/L	20516	Standard
Kr	83	5.3	57.3				ug/L	5	Standard
Br	81	2960.3	5.9				ug/L	570	Standard
P	31	10118.4	5.1				ug/L	7850	Standard
S	34	1588.4	4.9				ug/L	1375	Standard
Sr	88	200.0	9.0				ug/L	165	Standard
C	12	226.7	28.7				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	63.3	32.9				mg/L	0	Standard
Dy	164	44.0	68.7				mg/L	6	Standard
Ho-1	165	51.7	24.4				mg/L	7	Standard
Er	166	56.7	27.0				mg/L	13	Standard
I	127	21600.4	5.0				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.614	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.988	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.737
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.474
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508090601S WG535577-05
Sample Date/Time: Thursday, August 20, 2015 16:25:54
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	57644.5	3.5				ug/L	51673	Standard
	Be	9	34323.8	2.4	**46.4711**	0.532	1.1	ug/L	43	Standard
	Al	27	2883181.2	0.9	**37.6036**	1.178	3.1	ug/L	2157	Standard
	Sc	45	26201.0	4.6				ug/L	22687	Standard
	Ti	47	170.7	6.5	**0.7969**	0.063	7.9	ug/L	43	Standard
	V	51	236944.8	2.6	**50.7307**	1.497	3.0	ug/L	1233	Standard
	Cr	52	277608.5	0.4	**50.5150**	0.371	0.7	ug/L	6387	Standard
	Cr	53	35824.0	1.6	**51.3855**	1.175	2.3	ug/L	1555	Standard
	Mn	55	197993.3	2.9	**60.4051**	2.024	3.4	ug/L	436	Standard
	Co	59	215896.7	1.0	**47.5136**	0.915	1.9	ug/L	236	Standard
	Ni	60	76583.4	1.6	**49.3566**	0.630	1.3	ug/L	204	Standard
	Cu	65	75845.4	1.1	**48.9108**	0.581	1.2	ug/L	303	Standard
	Zn	66	62072.9	1.0	**71.7685**	0.210	0.3	ug/L	332	Standard
>	Ge	72	326092.7	1.1				ug/L	293924	Standard
	As	75	48673.8	1.2	**53.3400**	0.768	1.4	ug/L	45	Standard
	Se	82	3701.5	1.4	**48.4123**	0.842	1.7	ug/L	35	Standard
	Se-1	77	2797.3	2.1	**47.3278**	0.588	1.2	ug/L	153	Standard
>	Ga	71	3917.2	5.1				mg/L	25	Standard
	Rb	85	9144.4	0.3				ug/L	20	Standard
	Y	89	291659.6	2.1				ug/L	279578	Standard
>	Rh	103	71.7	17.6				ug/L	68	Standard
	Mo	98	21909.6	2.6	**13.0883**	0.483	3.7	ug/L	56	Standard
	Ag	107	275850.9	1.0	**48.4308**	0.201	0.4	ug/L	199	Standard
	Cd	111	82602.7	0.1	**47.8014**	0.500	1.0	mg/L	89	Standard
	Cd	114	216850.4	0.3	**47.5021**	0.404	0.9	ug/L	150	Standard
>	In	115	472825.5	1.1				ug/L	458296	Standard
	Sn	118	958.4	8.5	**0.1206**	0.016	13.2	ug/L	385	Standard
	Sb	123	236670.1	0.5	**52.8807**	0.529	1.0	ug/L	208	Standard
	Ba	135	162371.8	0.9	**76.3495**	1.273	1.7	ug/L	108	Standard
	Ce	140	1240.1	5.9				ug/L	92	Standard
>	Tb	159	856743.3	1.2				ug/L	812006	Standard
	Ho	165	51.7	34.0				ug/L	7	Standard
	Tl	203	362084.1	0.5	**48.9444**	0.558	1.1	ug/L	236	Standard
	Tl	205	243963.5	1.0	**47.6307**	0.171	0.4	ug/L	43	Standard
	Pb	206	225650.2	0.5	**49.3475**	0.847	1.7	ug/L	266	Standard
	Pb	207	193869.1	0.3	**46.8371**	0.678	1.4	ug/L	206	Standard
	Pb	208	715676.4	1.1	**49.6512**	1.181	2.4	ug/L	668	Standard
	U	238	242377.1	1.1	**49.2932**	0.942	1.9	ug/L	32	Standard
>	Bi	209	416546.5	1.3				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	4075.5	2.9	**9.1207**	0.278	3.0	mg/L	60	Standard
K	39	58.3	60.2	**0.6217**	0.576	92.7	mg/L	12	Standard
Ca	43	98.3	12.8	**25.1119**	11.065	44.1	mg/L	37	Standard
Fe	54	93.5	13.0	**0.0558**	0.016	28.0	mg/L	56	Standard
Fe	57	741.7	7.2	**-1.1626**	0.427	36.7	mg/L	735	Standard
> **Sc-1**	45	26201.0	4.6				mg/L	22687	Standard
Cl	35	28308.4	1.1				ug/L	20516	Standard
Kr	83	6.0	33.3				ug/L	5	Standard
Br	81	3117.0	7.9				ug/L	570	Standard
P	31	10041.7	2.4				ug/L	7850	Standard
S	34	1681.8	4.9				ug/L	1375	Standard
Sr	88	176.7	9.9				ug/L	165	Standard
C	12	183.3	22.0				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	106.7	21.7				mg/L	0	Standard
Dy	164	63.2	48.7				mg/L	6	Standard
Ho-1	165	51.7	34.0				mg/L	7	Standard
Er	166	73.3	7.9				mg/L	13	Standard
I	127	18950.2	0.3				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.556	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.944	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.170
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.444
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1508090601S WG535577-05
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Method 6020 - Summary Report

Sample ID: L1508090601SD WG535577-06
Sample Date/Time: Thursday, August 20, 2015 16:29:06
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57396.9	3.7				ug/L	51673	Standard
	Be	9	32436.4	1.0	**44.1206**	1.268	2.9	ug/L	43	Standard
	Al	27	2755395.9	2.1	**36.0989**	1.555	4.3	ug/L	2157	Standard
	Sc	45	24988.9	3.9				ug/L	22687	Standard
	Ti	47	116.0	16.4	**0.5284**	0.111	21.0	ug/L	43	Standard
	V	51	223922.7	1.9	**50.1376**	1.272	2.5	ug/L	1233	Standard
	Cr	52	261146.2	1.2	**49.6796**	0.890	1.8	ug/L	6387	Standard
	Cr	53	33096.1	1.5	**49.5744**	0.642	1.3	ug/L	1555	Standard
	Mn	55	186855.5	1.0	**59.6135**	0.784	1.3	ug/L	436	Standard
	Co	59	209531.1	1.7	**48.2259**	1.121	2.3	ug/L	236	Standard
	Ni	60	72287.4	1.6	**48.7264**	1.005	2.1	ug/L	204	Standard
	Cu	65	71193.9	1.9	**48.0141**	1.199	2.5	ug/L	303	Standard
	Zn	66	41222.0	0.6	**49.7065**	0.472	1.0	ug/L	332	Standard
>	**Ge**	72	311795.6	0.6				ug/L	293924	Standard
	As	75	46843.4	0.5	**53.6864**	0.561	1.0	ug/L	45	Standard
	Se	82	3529.8	1.7	**48.2788**	0.670	1.4	ug/L	35	Standard
	Se-1	77	2681.6	3.1	**47.4688**	1.880	4.0	ug/L	153	Standard
>	**Ga**	71	3535.4	5.4				mg/L	25	Standard
	Rb	85	8720.8	5.4				ug/L	20	Standard
	Y	89	286891.0	3.4				ug/L	279578	Standard
>	**Rh**	103	80.0	18.8				ug/L	68	Standard
	Mo	98	20583.4	1.1	**12.4815**	0.184	1.5	ug/L	56	Standard
	Ag	107	263695.6	2.1	**47.0040**	0.666	1.4	ug/L	199	Standard
	Cd	111	81204.8	2.1	**47.7066**	0.483	1.0	mg/L	89	Standard
	Cd	114	211451.4	1.3	**47.0293**	0.613	1.3	ug/L	150	Standard
>	**In**	115	465685.7	1.3				ug/L	458296	Standard
	Sn	118	655.0	4.3	**0.0677**	0.004	5.3	ug/L	385	Standard
	Sb	123	226281.5	2.2	**51.3290**	0.759	1.5	ug/L	208	Standard
	Ba	135	154018.3	1.4	**73.5233**	0.294	0.4	ug/L	108	Standard
	Ce	140	840.0	0.6				ug/L	92	Standard
>	**Tb**	159	842614.6	0.3				ug/L	812006	Standard
	Ho	165	45.0	40.1				ug/L	7	Standard
	Tl	203	346277.9	1.5	**48.2376**	0.459	1.0	ug/L	236	Standard
	Tl	205	238039.7	3.0	**47.8950**	1.223	2.6	ug/L	43	Standard
	Pb	206	217336.8	0.9	**48.9794**	0.208	0.4	ug/L	266	Standard
	Pb	207	186382.6	1.8	**46.4015**	0.558	1.2	ug/L	206	Standard
	Pb	208	697759.6	1.8	**49.8821**	0.740	1.5	ug/L	668	Standard
	U	238	235784.4	2.3	**49.4142**	0.914	1.9	ug/L	32	Standard
>	**Bi**	209	404148.6	0.6				ug/L	377155	Standard

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Na	23	5.0	100.0	**-273.2652**	426.891	156.2	mg/L	2	Standard
Mg	24	3812.1	0.8	**8.9473**	0.420	4.7	mg/L	60	Standard
K	39	50.0	10.0	**0.5329**	0.083	15.6	mg/L	12	Standard
Ca	43	101.7	15.0	**30.0311**	7.993	26.6	mg/L	37	Standard
Fe	54	70.5	49.3	**0.0198**	0.078	394.7	mg/L	56	Standard
Fe	57	768.4	7.2	**-0.6375**	0.710	111.3	mg/L	735	Standard
Sc-1	45	24988.9	3.9				mg/L	22687	Standard
Cl	35	27369.4	3.6				ug/L	20516	Standard
Kr	83	3.7	31.5				ug/L	5	Standard
Br	81	2520.2	4.4				ug/L	570	Standard
P	31	10210.1	4.1				ug/L	7850	Standard
S	34	1531.7	5.0				ug/L	1375	Standard
Sr	88	196.7	14.0				ug/L	165	Standard
C	12	220.0	28.4				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	15.7				mg/L	0	Standard
Dy	164	54.4	21.7				mg/L	6	Standard
Ho-1	165	45.0	40.1				mg/L	7	Standard
Er	166	46.7	24.7				mg/L	13	Standard
I	127	17458.4	7.0				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.077	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.080	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1508090601SD WG535577-06
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.612
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.157
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 21, 2015

Method 6020 - Summary Report

Sample ID: L1508090601PS WG535910-01
Sample Date/Time: Thursday, August 20, 2015 16:32:18
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	57206.2	3.6				ug/L	51673	Standard
	Be	9	33712.5	2.0	**46.0240**	1.994	4.3	ug/L	43	Standard
	Al	27	2920888.3	2.3	**38.3725**	0.526	1.4	ug/L	2157	Standard
	Sc	45	25124.2	2.3				ug/L	22687	Standard
	Ti	47	112.7	21.0	**0.4987**	0.138	27.6	ug/L	43	Standard
	V	51	233563.7	1.2	**51.3773**	0.252	0.5	ug/L	1233	Standard
	Cr	52	272778.7	3.1	**51.0094**	1.604	3.1	ug/L	6387	Standard
	Cr	53	34163.5	3.3	**50.2938**	1.204	2.4	ug/L	1555	Standard
	Mn	55	196647.4	1.6	**61.6440**	1.308	2.1	ug/L	436	Standard
	Co	59	222359.1	0.8	**50.2801**	0.786	1.6	ug/L	236	Standard
	Ni	60	75822.6	1.9	**50.2076**	0.776	1.5	ug/L	204	Standard
	Cu	65	75393.8	0.8	**49.9599**	0.481	1.0	ug/L	303	Standard
	Zn	66	43837.3	0.8	**51.9524**	0.663	1.3	ug/L	332	Standard
>	Ge	72	317379.9	1.0				ug/L	293924	Standard
	As	75	49061.5	0.7	**55.2392**	0.652	1.2	ug/L	45	Standard
	Se	82	3743.2	0.6	**50.3117**	0.772	1.5	ug/L	35	Standard
	Se-1	77	2811.3	4.4	**48.9654**	2.275	4.6	ug/L	153	Standard
>	Ga	71	3848.8	6.3				mg/L	25	Standard
	Rb	85	9402.9	1.7				ug/L	20	Standard
	Y	89	285929.4	0.3				ug/L	279578	Standard
>	Rh	103	45.0	48.4				ug/L	68	Standard
	Mo	98	22012.5	0.6	**13.6045**	0.110	0.8	ug/L	56	Standard
	Ag	107	275398.0	1.5	**50.0327**	0.664	1.3	ug/L	199	Standard
	Cd	111	82977.1	0.7	**49.6855**	0.343	0.7	mg/L	89	Standard
	Cd	114	220901.3	0.3	**50.0730**	0.603	1.2	ug/L	150	Standard
>	In	115	456953.6	1.4				ug/L	458296	Standard
	Sn	118	403.3	3.1	**0.0232**	0.002	9.7	ug/L	385	Standard
	Sb	123	228153.8	0.7	**52.7490**	0.442	0.8	ug/L	208	Standard
	Ba	135	162192.2	0.8	**78.9113**	0.566	0.7	ug/L	108	Standard
	Ce	140	885.0	7.2				ug/L	92	Standard
>	Tb	159	837444.7	1.9				ug/L	812006	Standard
	Ho	165	58.3	17.8				ug/L	7	Standard
	Tl	203	363008.1	1.0	**50.5999**	0.882	1.7	ug/L	236	Standard
	Tl	205	248047.4	1.1	**49.9462**	1.231	2.5	ug/L	43	Standard
	Pb	206	221973.9	0.8	**50.0535**	0.577	1.2	ug/L	266	Standard
	Pb	207	200826.8	1.7	**50.0254**	0.139	0.3	ug/L	206	Standard
	Pb	208	724947.2	1.0	**51.8620**	1.085	2.1	ug/L	668	Standard
	U	238	246978.4	0.5	**51.7922**	0.697	1.3	ug/L	32	Standard
>	Bi	209	403966.8	1.4				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	4012.2	3.2	**9.3635**	0.383	4.1	mg/L	60	Standard
K	39	40.0	65.0	**0.3346**	0.462	137.9	mg/L	12	Standard
Ca	43	116.7	15.1	**40.2566**	12.908	32.1	mg/L	37	Standard
Fe	54	85.2	4.1	**0.0472**	0.010	20.7	mg/L	56	Standard
Fe	57	825.0	12.8	**-0.2266**	0.767	338.5	mg/L	735	Standard
> **Sc-1**	45	25124.2	2.3				mg/L	22687	Standard
Cl	35	27831.5	0.5				ug/L	20516	Standard
Kr	83	3.3	17.3				ug/L	5	Standard
Br	81	3057.0	1.7				ug/L	570	Standard
P	31	10308.5	4.1				ug/L	7850	Standard
S	34	1606.8	12.7				ug/L	1375	Standard
Sr	88	168.3	8.6				ug/L	165	Standard
C	12	296.7	17.0				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	110.0	41.7				mg/L	0	Standard
Dy	164	73.5	53.5				mg/L	6	Standard
Ho-1	165	58.3	17.8				mg/L	7	Standard
Er	166	66.7	37.7				mg/L	13	Standard
I	127	21226.6	5.7				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.708	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.980	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.707
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.109
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508090601SDL WG535910-02
Sample Date/Time: Thursday, August 20, 2015 16:35:29
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53705.0	0.8				ug/L	51673	Standard
	Be	9	11.7	65.5	**-0.0480**	0.011	23.5	ug/L	43	Standard
	Al	27	596823.2	1.8	**8.3407**	0.109	1.3	ug/L	2157	Standard
	Sc	45	26211.0	2.0				ug/L	22687	Standard
	Ti	47	35.3	26.3	**0.0673**	0.055	82.5	ug/L	43	Standard
	V	51	3829.5	2.7	**0.5772**	0.037	6.3	ug/L	1233	Standard
	Cr	52	8626.8	2.5	**0.4463**	0.049	11.0	ug/L	6387	Standard
	Cr	53	738.4	9.2	**-0.8889**	0.118	13.3	ug/L	1555	Standard
	Mn	55	4226.9	2.1	**1.1356**	0.025	2.2	ug/L	436	Standard
	Co	59	281.0	8.5	**0.0168**	0.005	30.4	ug/L	236	Standard
	Ni	60	425.7	7.7	**0.2411**	0.018	7.3	ug/L	204	Standard
	Cu	65	3502.7	0.3	**2.0727**	0.031	1.5	ug/L	303	Standard
	Zn	66	1306.7	6.7	**1.1112**	0.085	7.6	ug/L	332	Standard
>	**Ge**	72	315394.0	1.6				ug/L	293924	Standard
	As	75	1139.2	3.1	**1.3357**	0.060	4.5	ug/L	45	Standard
	Se	82	63.0	7.6	**0.6408**	0.054	8.4	ug/L	35	Standard
	Se-1	77	110.3	5.0	**-0.7390**	0.126	17.0	ug/L	153	Standard
>	**Ga**	71	770.0	19.7				mg/L	25	Standard
	Rb	85	1948.5	3.6				ug/L	20	Standard
	Y	89	284379.4	1.5				ug/L	279578	Standard
>	**Rh**	103	23.3	61.9				ug/L	68	Standard
	Mo	98	4496.5	1.6	**2.7272**	0.020	0.7	ug/L	56	Standard
	Ag	107	97.7	13.2	**0.0025**	0.002	95.3	ug/L	199	Standard
	Cd	111	15.2	30.8	**0.0022**	0.003	126.9	mg/L	89	Standard
	Cd	114	37.1	10.6	**0.0027**	0.001	30.7	ug/L	150	Standard
>	**In**	115	463488.9	1.2				ug/L	458296	Standard
	Sn	118	420.0	9.4	**0.0253**	0.008	31.4	ug/L	385	Standard
	Sb	123	1471.7	4.7	**0.3236**	0.017	5.3	ug/L	208	Standard
	Ba	135	11544.4	1.8	**5.5146**	0.037	0.7	ug/L	108	Standard
	Ce	140	178.3	38.2				ug/L	92	Standard
>	**Tb**	159	852947.8	2.2				ug/L	812006	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	448.0	6.0	**0.0550**	0.004	6.4	ug/L	236	Standard
	Tl	205	285.0	9.3	**0.0553**	0.005	9.2	ug/L	43	Standard
	Pb	206	302.7	2.3	**0.0112**	0.001	12.6	ug/L	266	Standard
	Pb	207	232.0	6.9	**-0.0005**	0.004	759.2	ug/L	206	Standard
	Pb	208	910.3	3.6	**0.0089**	0.002	25.8	ug/L	668	Standard
	U	238	263.7	7.8	**0.0531**	0.004	8.1	ug/L	32	Standard
>	**Bi**	209	415388.1	0.2				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	833.4	6.4	**1.7774**	0.103	5.8	mg/L	60	Standard
K	39	20.0	43.3	**-0.0449**	0.159	354.5	mg/L	12	Standard
Ca	43	35.0	14.3	**-16.9631**	3.760	22.2	mg/L	37	Standard
Fe	54	56.1	40.9	**-0.0166**	0.046	279.9	mg/L	56	Standard
Fe	57	706.7	10.0	**-1.4541**	0.458	31.5	mg/L	735	Standard
> **Sc-1**	45	26211.0	2.0				mg/L	22687	Standard
Cl	35	25637.7	0.8				ug/L	20516	Standard
Kr	83	4.3	26.6				ug/L	5	Standard
Br	81	930.0	13.4				ug/L	570	Standard
P	31	8492.4	2.5				ug/L	7850	Standard
S	34	1586.7	5.4				ug/L	1375	Standard
Sr	88	171.7	6.1				ug/L	165	Standard
C	12	176.7	21.4				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	0	Standard
Dy	164	9.4	106.9				mg/L	6	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	7081.7	0.4				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.932	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.304	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	101.133
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	110.137
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508090601SDL WG535910-02
Sample Date/Time: Thursday, August 20, 2015 16:38:41
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53378.9	0.8				ug/L	51673	Standard
	Be	9	11.7	24.7	**-0.0480**	0.004	8.5	ug/L	43	Standard
	Al	27	120045.4	1.3	**1.6796**	0.014	0.9	ug/L	2157	Standard
	Sc	45	26216.0	0.6				ug/L	22687	Standard
	Ti	47	23.7	40.6	**0.0024**	0.055	2300.6	ug/L	43	Standard
	V	51	1854.8	4.0	**0.1409**	0.013	9.1	ug/L	1233	Standard
	Cr	52	7786.7	0.6	**0.2974**	0.020	6.7	ug/L	6387	Standard
	Cr	53	430.0	3.5	**-1.3591**	0.030	2.2	ug/L	1555	Standard
	Mn	55	1276.4	7.3	**0.2053**	0.029	14.0	ug/L	436	Standard
	Co	59	219.0	10.9	**0.0031**	0.006	181.2	ug/L	236	Standard
	Ni	60	124.7	12.2	**0.0413**	0.011	26.3	ug/L	204	Standard
	Cu	65	263.7	2.2	**-0.0979**	0.002	2.4	ug/L	303	Standard
	Zn	66	934.7	4.1	**0.6745**	0.056	8.2	ug/L	332	Standard
>	**Ge**	72	312653.4	1.0				ug/L	293924	Standard
	As	75	202.7	10.9	**0.2767**	0.023	8.3	ug/L	45	Standard
	Se	82	22.6	9.4	**0.0947**	0.027	28.7	ug/L	35	Standard
	Se-1	77	77.0	12.8	**-1.3444**	0.190	14.1	ug/L	153	Standard
>	**Ga**	71	216.7	13.3				mg/L	25	Standard
	Rb	85	445.0	7.9				ug/L	20	Standard
	Y	89	286362.6	0.8				ug/L	279578	Standard
>	**Rh**	103	15.0	33.3				ug/L	68	Standard
	Mo	98	884.0	1.2	**0.5235**	0.007	1.3	ug/L	56	Standard
	Ag	107	79.7	22.1	**-0.0007**	0.003	423.3	ug/L	199	Standard
	Cd	111	10.3	48.8	**-0.0007**	0.003	400.5	mg/L	89	Standard
	Cd	114	27.4	17.8	**0.0005**	0.001	202.1	ug/L	150	Standard
>	**In**	115	463616.1	0.6				ug/L	458296	Standard
	Sn	118	283.3	5.4	**0.0001**	0.002	2107.8	ug/L	385	Standard
	Sb	123	392.3	5.7	**0.0774**	0.006	7.1	ug/L	208	Standard
	Ba	135	2341.2	3.6	**1.0989**	0.038	3.4	ug/L	108	Standard
	Ce	140	55.0	9.1				ug/L	92	Standard
>	**Tb**	159	840334.2	1.0				ug/L	812006	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	85.0	6.6	**0.0060**	0.001	11.9	ug/L	236	Standard
	Tl	205	71.7	22.4	**0.0138**	0.003	23.3	ug/L	43	Standard
	Pb	206	289.7	18.5	**0.0096**	0.012	119.8	ug/L	266	Standard
	Pb	207	240.3	7.7	**0.0027**	0.005	177.5	ug/L	206	Standard
	Pb	208	924.3	6.8	**0.0112**	0.004	39.5	ug/L	668	Standard
	U	238	60.3	13.4	**0.0119**	0.002	14.8	ug/L	32	Standard
>	**Bi**	209	407138.2	0.8				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	201.7	18.6	**0.3488**	0.082	23.6	mg/L	60	Standard
K	39	8.3	34.6	**-0.2553**	0.051	20.1	mg/L	12	Standard
Ca	43	38.3	27.2	**-14.8111**	6.925	46.8	mg/L	37	Standard
Fe	54	70.8	3.9	**0.0117**	0.006	49.8	mg/L	56	Standard
Fe	57	750.0	6.0	**-1.1019**	0.389	35.3	mg/L	735	Standard
> **Sc-1**	45	26216.0	0.6				mg/L	22687	Standard
Cl	35	25449.4	1.2				ug/L	20516	Standard
Kr	83	6.0	28.9				ug/L	5	Standard
Br	81	670.0	13.0				ug/L	570	Standard
P	31	8198.9	3.0				ug/L	7850	Standard
S	34	1610.1	7.2				ug/L	1375	Standard
Sr	88	138.3	11.0				ug/L	165	Standard
C	12	163.3	35.9				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	23.0	49.0				mg/L	6	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	13	Standard
I	127	3745.5	4.3				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.301	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.372	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.161
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.950
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 21, 2015

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, August 20, 2015 16:41:54
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	53977.7	2.3				ug/L	51673	Standard
	Be	9	32352.9	2.7	**46.7671**	0.728	1.6	ug/L	43	Standard
	Al	27	3427132.3	0.6	**47.7218**	1.248	2.6	ug/L	2157	Standard
	Sc	45	26922.2	2.6				ug/L	22687	Standard
	Ti	47	18919.5	1.4	**105.7767**	0.979	0.9	ug/L	43	Standard
	V	51	216750.9	2.0	**47.7106**	0.743	1.6	ug/L	1233	Standard
	Cr	52	263732.3	1.7	**49.3307**	0.692	1.4	ug/L	6387	Standard
	Cr	53	32795.5	1.8	**48.2605**	0.660	1.4	ug/L	1555	Standard
	Mn	55	173553.3	2.0	**54.4367**	1.081	2.0	ug/L	436	Standard
	Co	59	213894.3	1.1	**48.4146**	0.609	1.3	ug/L	236	Standard
	Ni	60	73829.5	1.1	**48.9409**	0.388	0.8	ug/L	204	Standard
	Cu	65	73537.1	1.9	**48.7735**	0.685	1.4	ug/L	303	Standard
	Zn	66	41655.9	1.6	**49.3959**	0.671	1.4	ug/L	332	Standard
>	Ge	72	317025.4	0.5				ug/L	293924	Standard
	As	75	42425.2	0.9	**47.8231**	0.254	0.5	ug/L	45	Standard
	Se	82	3556.8	0.9	**47.8429**	0.247	0.5	ug/L	35	Standard
	Se-1	77	2616.2	0.9	**45.4275**	0.186	0.4	ug/L	153	Standard
>	Ga	71	50.0	34.6				mg/L	25	Standard
	Rb	85	580.0	12.2				ug/L	20	Standard
	Y	89	288324.6	1.6				ug/L	279578	Standard
>	Rh	103	28.3	10.2				ug/L	68	Standard
	Mo	98	157876.8	0.5	**95.7407**	1.142	1.2	ug/L	56	Standard
	Ag	107	270869.9	1.7	**48.2424**	1.139	2.4	ug/L	199	Standard
	Cd	111	81104.8	0.9	**47.6033**	0.221	0.5	mg/L	89	Standard
	Cd	114	208836.3	1.0	**46.3987**	0.173	0.4	ug/L	150	Standard
>	In	115	466145.1	0.7				ug/L	458296	Standard
	Sn	118	242739.3	1.6	**44.2195**	0.700	1.6	ug/L	385	Standard
	Sb	123	216018.8	1.0	**48.9572**	0.764	1.6	ug/L	208	Standard
	Ba	135	104891.8	0.5	**50.0176**	0.571	1.1	ug/L	108	Standard
	Ce	140	73.3	3.9				ug/L	92	Standard
>	Tb	159	864256.5	0.8				ug/L	812006	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	353439.4	0.9	**48.0302**	0.923	1.9	ug/L	236	Standard
	Tl	205	238527.9	0.3	**46.8181**	0.590	1.3	ug/L	43	Standard
	Pb	206	215247.6	1.1	**47.3161**	0.783	1.7	ug/L	266	Standard
	Pb	207	194528.8	0.6	**47.2417**	0.404	0.9	ug/L	206	Standard
	Pb	208	704148.3	0.4	**49.1023**	0.521	1.1	ug/L	668	Standard
	U	238	239986.5	1.3	**49.0571**	0.118	0.2	ug/L	32	Standard
>	Bi	209	414371.5	1.4				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	2035.1	2.8	**4.3780**	0.228	5.2	mg/L	60	Standard
K	39	231.7	20.1	**3.6147**	0.717	19.8	mg/L	12	Standard
Ca	43	66.7	38.5	**2.8384**	16.813	592.3	mg/L	37	Standard
Fe	54	2234.9	3.9	**4.1349**	0.157	3.8	mg/L	56	Standard
Fe	57	1343.4	8.9	**3.3711**	1.179	35.0	mg/L	735	Standard
> **Sc-1**	45	26922.2	2.6				mg/L	22687	Standard
Cl	35	21795.7	5.3				ug/L	20516	Standard
Kr	83	5.7	27.0				ug/L	5	Standard
Br	81	516.7	8.7				ug/L	570	Standard
P	31	10041.7	0.6				ug/L	7850	Standard
S	34	1716.8	1.8				ug/L	1375	Standard
Sr	88	138.3	10.4				ug/L	165	Standard
C	12	173.3	33.8				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	26.3	44.9				mg/L	6	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	561.7	17.8				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	93.534		
Al	27	95.444		
Sc	45			
Ti	47	105.777		
V	51	95.421		
Cr	52	98.661		
Cr	53			
Mn	55	108.873		
Co	59	96.829		
Ni	60	97.882		
Cu	65	97.547		
Zn	66	98.792		
> Ge	72		107.860	
As	75	95.646		
Se	82	95.686		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	95.741		
Ag	107	96.485		
Cd	111	95.207		
Cd	114			
In	115			101.713
Sn	118	88.439		
Sb	123	97.914		
Ba	135	100.035		
Ce	140			
Tb	159			
Ho	165			
Tl	203	96.060		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.205		
U	238	98.114		
Bi	209			109.868
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, August 20, 2015 16:45:05
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51791.8	3.0				ug/L	51673	Standard
	Be	9	18.3	150.2	**-0.0366**	0.043	117.0	ug/L	43	Standard
	Al	27	1160.1	85.6	**0.0067**	0.015	224.1	ug/L	2157	Standard
	Sc	45	25256.1	4.5				ug/L	22687	Standard
	Ti	47	21.7	10.7	**-0.0073**	0.013	182.3	ug/L	43	Standard
	V	51	972.5	11.1	**-0.0540**	0.024	44.9	ug/L	1233	Standard
	Cr	52	5439.0	5.3	**-0.1438**	0.058	40.2	ug/L	6387	Standard
	Cr	53	280.0	17.2	**-1.5862**	0.077	4.8	ug/L	1555	Standard
	Mn	55	543.3	18.5	**-0.0262**	0.032	123.6	ug/L	436	Standard
	Co	59	264.7	46.6	**0.0144**	0.029	198.8	ug/L	236	Standard
	Ni	60	68.3	25.2	**0.0040**	0.012	290.0	ug/L	204	Standard
	Cu	65	268.3	9.5	**-0.0921**	0.017	19.0	ug/L	303	Standard
	Zn	66	228.3	7.2	**-0.1790**	0.021	11.6	ug/L	332	Standard
>	**Ge**	72	308232.7	0.2				ug/L	293924	Standard
	As	75	-45.0	62.6	**-0.0067**	0.033	491.3	ug/L	45	Standard
	Se	82	15.2	29.7	**-0.0029**	0.063	2169.7	ug/L	35	Standard
	Se-1	77	71.7	7.0	**-1.4254**	0.096	6.7	ug/L	153	Standard
>	**Ga**	71	15.0	57.7				mg/L	25	Standard
	Rb	85	16.7	96.4				ug/L	20	Standard
	Y	89	274996.5	0.3				ug/L	279578	Standard
>	**Rh**	103	10.0	50.0				ug/L	68	Standard
	Mo	98	93.7	35.8	**0.0428**	0.021	49.2	ug/L	56	Standard
	Ag	107	221.0	84.2	**0.0255**	0.034	133.9	ug/L	199	Standard
	Cd	111	15.2	62.0	**0.0024**	0.006	242.6	mg/L	89	Standard
	Cd	114	36.7	10.6	**0.0028**	0.001	31.0	ug/L	150	Standard
>	**In**	115	454003.2	1.0				ug/L	458296	Standard
	Sn	118	496.7	9.4	**0.0412**	0.009	21.5	ug/L	385	Standard
	Sb	123	920.4	16.4	**0.2022**	0.035	17.4	ug/L	208	Standard
	Ba	135	89.7	84.2	**0.0200**	0.037	185.3	ug/L	108	Standard
	Ce	140	11.7	24.7				ug/L	92	Standard
>	**Tb**	159	839193.8	1.5				ug/L	812006	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	193.0	124.3	**0.0211**	0.033	157.9	ug/L	236	Standard
	Tl	205	81.7	93.5	**0.0160**	0.015	96.1	ug/L	43	Standard
	Pb	206	314.3	52.3	**0.0157**	0.037	235.2	ug/L	266	Standard
	Pb	207	260.0	44.0	**0.0080**	0.028	353.3	ug/L	206	Standard
	Pb	208	858.7	27.9	**0.0070**	0.017	244.5	ug/L	668	Standard
	U	238	61.0	80.3	**0.0122**	0.010	84.2	ug/L	32	Standard
>	**Bi**	209	403890.0	0.9				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	48.3	11.9	**0.0064**	0.012	182.8	mg/L	60	Standard
K	39	3.3	86.6	**-0.3413**	0.054	16.0	mg/L	12	Standard
Ca	43	26.7	21.7	**-21.9403**	3.216	14.7	mg/L	37	Standard
Fe	54	55.9	13.7	**-0.0133**	0.015	113.4	mg/L	56	Standard
Fe	57	705.0	10.4	**-1.2499**	0.517	41.4	mg/L	735	Standard
> **Sc-1**	45	25256.1	4.5				mg/L	22687	Standard
Cl	35	20725.5	0.7				ug/L	20516	Standard
Kr	83	2.7	94.4				ug/L	5	Standard
Br	81	566.7	18.7				ug/L	570	Standard
P	31	8509.1	6.8				ug/L	7850	Standard
S	34	1620.1	3.9				ug/L	1375	Standard
Sr	88	128.3	15.7				ug/L	165	Standard
C	12	190.0	41.8				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	6.2	180.0				mg/L	6	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	2861.9	3.4				mg/L	3795	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		104.868	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.063	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	107.089	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, August 20, 2015 16:48:18
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53253.5	3.5				ug/L	51673	Standard
	Be	9	111.7	18.1	**0.0985**	0.026	26.4	ug/L	43	Standard
	Al	27	265.0	24.7	**-0.0067**	0.001	14.6	ug/L	2157	Standard
	Sc	45	26019.0	5.7				ug/L	22687	Standard
	Ti	47	22.7	5.1	**-0.0037**	0.006	174.6	ug/L	43	Standard
	V	51	2642.7	2.7	**0.3164**	0.017	5.3	ug/L	1233	Standard
	Cr	52	10345.9	1.5	**0.7896**	0.013	1.7	ug/L	6387	Standard
	Cr	53	935.0	7.5	**-0.5782**	0.096	16.6	ug/L	1555	Standard
	Mn	55	2273.5	3.0	**0.5219**	0.022	4.2	ug/L	436	Standard
	Co	59	1940.8	2.0	**0.3976**	0.012	3.0	ug/L	236	Standard
	Ni	60	2389.2	3.0	**1.5610**	0.056	3.6	ug/L	204	Standard
	Cu	65	1425.7	3.2	**0.6857**	0.030	4.4	ug/L	303	Standard
	Zn	66	5322.6	0.9	**5.9835**	0.012	0.2	ug/L	332	Standard
>	**Ge**	72	313426.4	0.9				ug/L	293924	Standard
	As	75	299.7	4.8	**0.3869**	0.018	4.7	ug/L	45	Standard
	Se	82	36.7	6.0	**0.2873**	0.026	8.9	ug/L	35	Standard
	Se-1	77	93.7	8.7	**-1.0370**	0.166	16.0	ug/L	153	Standard
>	**Ga**	71	15.0	66.7				mg/L	25	Standard
	Rb	85	26.7	57.3				ug/L	20	Standard
	Y	89	287946.2	2.1				ug/L	279578	Standard
>	**Rh**	103	18.3	15.7				ug/L	68	Standard
	Mo	98	19.2	19.2	**-0.0037**	0.002	64.2	ug/L	56	Standard
	Ag	107	2181.2	4.2	**0.3790**	0.014	3.6	ug/L	199	Standard
	Cd	111	378.0	6.6	**0.2181**	0.012	5.7	mg/L	89	Standard
	Cd	114	1020.0	9.2	**0.2242**	0.020	8.7	ug/L	150	Standard
>	**In**	115	459625.6	1.0				ug/L	458296	Standard
	Sn	118	623.3	8.8	**0.0635**	0.011	16.9	ug/L	385	Standard
	Sb	123	1976.3	1.4	**0.4424**	0.009	2.1	ug/L	208	Standard
	Ba	135	1564.1	1.6	**0.7328**	0.016	2.2	ug/L	108	Standard
	Ce	140	18.3	63.0				ug/L	92	Standard
>	**Tb**	159	859058.7	0.1				ug/L	812006	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	574.3	4.7	**0.0728**	0.004	5.3	ug/L	236	Standard
	Tl	205	395.0	8.9	**0.0776**	0.007	9.0	ug/L	43	Standard
	Pb	206	1150.4	5.1	**0.1996**	0.013	6.7	ug/L	266	Standard
	Pb	207	934.7	4.2	**0.1720**	0.009	5.3	ug/L	206	Standard
	Pb	208	3497.8	0.8	**0.1913**	0.003	1.3	ug/L	668	Standard
	U	238	1829.1	2.9	**0.3758**	0.012	3.2	ug/L	32	Standard
>	**Bi**	209	411625.8	0.3				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	45.0	0.0	**-0.0042**	0.006	142.8	mg/L	60	Standard
K	39	11.7	89.2	**-0.1878**	0.197	104.8	mg/L	12	Standard
Ca	43	35.0	37.8	**-16.9487**	7.992	47.2	mg/L	37	Standard
Fe	54	74.2	17.8	**0.0193**	0.022	116.6	mg/L	56	Standard
Fe	57	748.4	11.1	**-1.0358**	1.004	96.9	mg/L	735	Standard
> **Sc-1**	45	26019.0	5.7				mg/L	22687	Standard
Cl	35	20692.8	2.3				ug/L	20516	Standard
Kr	83	2.7	57.3				ug/L	5	Standard
Br	81	510.0	7.1				ug/L	570	Standard
P	31	9356.2	2.7				ug/L	7850	Standard
S	34	1733.4	6.6				ug/L	1375	Standard
Sr	88	171.7	10.2				ug/L	165	Standard
C	12	213.3	27.5				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	22.4	24.0				mg/L	6	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	486.7	18.0				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	49.240		
Al	27			
Sc	45			
Ti	47			
V	51	79.110		
Cr	52	98.705		
Cr	53			
Mn	55	104.381		
Co	59	99.399		
Ni	60	97.563		
Cu	65	85.717		
Zn	66	95.736		
> Ge	72		106.635	
As	75	96.721		
Se	82	71.837		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	94.751		
Cd	111	90.883		
Cd	114			
> In	115			100.290
Sn	118			
Sb	123	110.602		
Ba	135	97.712		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	91.014		
Tl	205			
Pb	206			
Pb	207			
Pb	208	95.659		
U	238	93.947		
> Bi	209			109.140
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 8	Be	9	

Sample ID: QC Std 8
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Method 6020 - Summary Report

Sample ID: PBW 44 WG534528-03
Sample Date/Time: Thursday, August 20, 2015 16:59:16
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53559.5	0.6				ug/L	51673	Standard
	Be	9	11.7	137.8	**-0.0480**	0.023	48.6	ug/L	43	Standard
	Al	27	16619.1	1.1	**0.2228**	0.001	0.6	ug/L	2157	Standard
	Sc	45	25780.3	1.7				ug/L	22687	Standard
	Ti	47	29.7	3.9	**0.0316**	0.006	17.6	ug/L	43	Standard
	V	51	1217.2	1.3	**-0.0097**	0.005	52.3	ug/L	1233	Standard
	Cr	52	6903.2	1.2	**0.0886**	0.024	27.4	ug/L	6387	Standard
	Cr	53	493.3	6.9	**-1.2818**	0.057	4.5	ug/L	1555	Standard
	Mn	55	2433.5	1.3	**0.5532**	0.009	1.7	ug/L	436	Standard
	Co	59	233.7	4.0	**0.0050**	0.002	48.5	ug/L	236	Standard
	Ni	60	166.7	0.7	**0.0664**	0.001	1.4	ug/L	204	Standard
	Cu	65	424.0	5.1	**0.0027**	0.015	561.7	ug/L	303	Standard
	Zn	66	2030.5	3.6	**1.9354**	0.065	3.4	ug/L	332	Standard
>	**Ge**	72	321568.8	1.0				ug/L	293924	Standard
	As	75	-33.4	90.7	**0.0085**	0.033	389.7	ug/L	45	Standard
	Se	82	14.2	20.6	**-0.0255**	0.040	156.3	ug/L	35	Standard
	Se-1	77	73.7	20.7	**-1.4471**	0.266	18.4	ug/L	153	Standard
>	**Ga**	71	66.7	31.2				mg/L	25	Standard
	Rb	85	166.7	9.2				ug/L	20	Standard
	Y	89	290115.3	2.2				ug/L	279578	Standard
>	**Rh**	103	8.3	91.7				ug/L	68	Standard
	Mo	98	22.4	37.8	**-0.0017**	0.005	300.7	ug/L	56	Standard
	Ag	107	83.0	12.7	**0.0000**	0.002	6929.7	ug/L	199	Standard
	Cd	111	12.3	28.6	**0.0005**	0.002	405.3	mg/L	89	Standard
	Cd	114	52.8	14.1	**0.0063**	0.002	27.7	ug/L	150	Standard
>	**In**	115	458863.4	0.6				ug/L	458296	Standard
	Sn	118	890.0	9.0	**0.1131**	0.015	13.0	ug/L	385	Standard
	Sb	123	204.5	19.1	**0.0351**	0.009	25.3	ug/L	208	Standard
	Ba	135	513.0	1.2	**0.2246**	0.002	0.8	ug/L	108	Standard
	Ce	140	570.0	6.9				ug/L	92	Standard
>	**Tb**	159	837304.9	1.0				ug/L	812006	Standard
	Ho	165	20.0	25.0				ug/L	7	Standard
	Tl	203	39.3	65.9	**-0.0003**	0.004	1070.3	ug/L	236	Standard
	Tl	205	16.7	148.0	**0.0029**	0.005	173.6	ug/L	43	Standard
	Pb	206	322.7	10.4	**0.0170**	0.008	44.3	ug/L	266	Standard
	Pb	207	289.7	2.1	**0.0148**	0.001	7.9	ug/L	206	Standard
	Pb	208	1049.0	6.7	**0.0199**	0.005	24.7	ug/L	668	Standard
	U	238	26.0	54.5	**0.0048**	0.003	61.3	ug/L	32	Standard
>	**Bi**	209	407693.0	0.5				ug/L	377155	Standard

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Na	23	1.7	173.2	**16.5885**	226.843	1367.5	mg/L	2	Standard
Mg	24	48.3	15.8	**0.0040**	0.016	400.7	mg/L	60	Standard
K	39	6.7	43.3	**-0.2833**	0.051	18.0	mg/L	12	Standard
Ca	43	26.7	60.3	**-22.2464**	10.620	47.7	mg/L	37	Standard
Fe	54	87.9	8.7	**0.0479**	0.013	26.4	mg/L	56	Standard
Fe	57	626.7	11.2	**-1.9965**	0.650	32.5	mg/L	735	Standard
Sc-1	45	25780.3	1.7				mg/L	22687	Standard
Cl	35	20875.0	1.0				ug/L	20516	Standard
Kr	83	5.3	10.8				ug/L	5	Standard
Br	81	630.0	13.0				ug/L	570	Standard
P	31	9864.9	3.5				ug/L	7850	Standard
S	34	1680.1	0.3				ug/L	1375	Standard
Sr	88	153.3	33.9				ug/L	165	Standard
C	12	196.7	52.2				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	22.4	25.9				mg/L	6	Standard
Ho-1	165	20.0	25.0				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	470.0	2.8				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		103.651	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		109.405	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.124
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.097
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 44 WG534528-03
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Method 6020 - Summary Report

Sample ID: LCSW 44 WG534528-04
Sample Date/Time: Thursday, August 20, 2015 17:02:28
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54335.7	4.8				ug/L	51673	Standard
	Be	9	32326.1	3.1	**46.4531**	1.337	2.9	ug/L	43	Standard
	Al	27	4122.2	6.9	**0.0467**	0.004	9.0	ug/L	2157	Standard
	Sc	45	26326.2	2.6				ug/L	22687	Standard
	Ti	47	31.0	16.1	**0.0404**	0.031	76.0	ug/L	43	Standard
	V	51	228929.0	1.0	**50.0111**	1.168	2.3	ug/L	1233	Standard
	Cr	52	282998.4	1.2	**52.5901**	0.578	1.1	ug/L	6387	Standard
	Cr	53	35222.6	1.7	**51.5583**	1.344	2.6	ug/L	1555	Standard
	Mn	55	190354.0	1.1	**59.2592**	1.645	2.8	ug/L	436	Standard
	Co	59	223255.3	1.2	**50.1416**	1.478	2.9	ug/L	236	Standard
	Ni	60	78182.9	1.6	**51.4120**	0.518	1.0	ug/L	204	Standard
	Cu	65	78095.8	0.5	**51.4024**	0.725	1.4	ug/L	303	Standard
	Zn	66	43777.5	2.0	**51.5195**	1.238	2.4	ug/L	332	Standard
>	**Ge**	72	319613.5	1.7				ug/L	293924	Standard
	As	75	42821.7	1.4	**47.8866**	0.896	1.9	ug/L	45	Standard
	Se	82	3573.9	0.7	**47.6956**	1.070	2.2	ug/L	35	Standard
	Se-1	77	2625.9	2.8	**45.2129**	0.945	2.1	ug/L	153	Standard
>	**Ga**	71	50.0	10.0				mg/L	25	Standard
	Rb	85	85.0	36.7				ug/L	20	Standard
	Y	89	291826.0	2.1				ug/L	279578	Standard
>	**Rh**	103	31.7	36.5				ug/L	68	Standard
	Mo	98	38.4	13.1	**0.0073**	0.003	40.7	ug/L	56	Standard
	Ag	107	288827.7	1.6	**50.4146**	0.791	1.6	ug/L	199	Standard
	Cd	111	84920.6	0.8	**48.8561**	0.686	1.4	mg/L	89	Standard
	Cd	114	218249.1	1.8	**47.5328**	1.166	2.5	ug/L	150	Standard
>	**In**	115	475596.3	0.9				ug/L	458296	Standard
	Sn	118	638.3	3.9	**0.0623**	0.004	7.2	ug/L	385	Standard
	Sb	123	230115.4	0.8	**51.1143**	0.457	0.9	ug/L	208	Standard
	Ba	135	109114.5	0.4	**50.9983**	0.612	1.2	ug/L	108	Standard
	Ce	140	275.0	17.9				ug/L	92	Standard
>	**Tb**	159	863960.5	2.9				ug/L	812006	Standard
	Ho	165	20.0	43.3				ug/L	7	Standard
	Tl	203	366659.6	0.7	**49.1905**	0.260	0.5	ug/L	236	Standard
	Tl	205	248438.6	3.5	**48.1383**	1.485	3.1	ug/L	43	Standard
	Pb	206	230050.7	0.3	**49.9300**	0.154	0.3	ug/L	266	Standard
	Pb	207	198484.3	0.7	**47.5927**	0.531	1.1	ug/L	206	Standard
	Pb	208	743030.0	0.3	**51.1581**	0.274	0.5	ug/L	668	Standard
	U	238	245584.0	0.4	**49.5688**	0.394	0.8	ug/L	32	Standard
>	**Bi**	209	419663.2	0.5				ug/L	377155	Standard

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Na	23	1.7	173.2	**21.5751**	218.206	1011.4	mg/L	2	Standard
Mg	24	45.0	33.3	**-0.0051**	0.036	714.0	mg/L	60	Standard
K	39	8.3	124.9	**-0.2589**	0.179	69.3	mg/L	12	Standard
Ca	43	33.3	31.2	**-18.1413**	7.222	39.8	mg/L	37	Standard
Fe	54	79.4	21.6	**0.0273**	0.029	106.5	mg/L	56	Standard
Fe	57	726.7	7.9	**-1.3092**	0.522	39.9	mg/L	735	Standard
> **Sc-1**	45	26326.2	2.6				mg/L	22687	Standard
Cl	35	21048.6	0.3				ug/L	20516	Standard
Kr	83	3.7	15.7				ug/L	5	Standard
Br	81	643.3	7.0				ug/L	570	Standard
P	31	10130.1	2.0				ug/L	7850	Standard
S	34	1565.1	3.0				ug/L	1375	Standard
Sr	88	166.7	7.5				ug/L	165	Standard
C	12	196.7	19.3				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	15.9	40.0				mg/L	6	Standard
Ho-1	165	20.0	43.3				mg/L	7	Standard
Er	166	16.7	91.7				mg/L	13	Standard
I	127	781.7	7.6				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.153	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.740	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.775
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		111.271
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508035803 WG534528-01
Sample Date/Time: Thursday, August 20, 2015 17:05:39
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58864.5	7.5				ug/L	51673	Standard
	Be	9	1838.4	11.7	**2.3700**	0.114	4.8	ug/L	43	Standard
	Al	27	4772436.5	1.6	**61.1192**	4.127	6.8	ug/L	2157	Standard
	Sc	45	25494.8	3.9				ug/L	22687	Standard
	Ti	47	70.0	22.5	**0.2810**	0.085	30.4	ug/L	43	Standard
	V	51	3977.3	2.2	**0.6549**	0.015	2.3	ug/L	1233	Standard
	Cr	52	20849.4	5.4	**3.0044**	0.170	5.6	ug/L	6387	Standard
	Cr	53	2261.8	2.9	**1.6371**	0.129	7.9	ug/L	1555	Standard
	Mn	55	1711847.2	1.5	**569.2111**	9.183	1.6	ug/L	436	Standard
	Co	59	97553.4	0.8	**23.3055**	0.279	1.2	ug/L	236	Standard
	Ni	60	71441.9	4.0	**50.0200**	1.099	2.2	ug/L	204	Standard
	Cu	65	9459.3	2.3	**6.3898**	0.112	1.8	ug/L	303	Standard
	Zn	66	135641.2	1.8	**171.0536**	1.585	0.9	ug/L	332	Standard
>	**Ge**	72	300089.6	1.8				ug/L	293924	Standard
	As	75	219.7	7.8	**0.3066**	0.016	5.2	ug/L	45	Standard
	Se	82	36.5	10.6	**0.3069**	0.050	16.4	ug/L	35	Standard
	Se-1	77	75.7	4.6	**-1.3095**	0.095	7.3	ug/L	153	Standard
>	**Ga**	71	546.7	2.3				mg/L	25	Standard
	Rb	85	12630.3	1.2				ug/L	20	Standard
	Y	89	410231.1	0.4				ug/L	279578	Standard
>	**Rh**	103	26.7	28.6				ug/L	68	Standard
	Mo	98	32.8	42.4	**0.0039**	0.008	209.4	ug/L	56	Standard
	Ag	107	125.0	26.4	**0.0068**	0.006	83.2	ug/L	199	Standard
	Cd	111	331.6	5.1	**0.1836**	0.009	4.7	mg/L	89	Standard
	Cd	114	964.7	4.7	**0.2042**	0.012	5.7	ug/L	150	Standard
>	**In**	115	476544.2	0.9				ug/L	458296	Standard
	Sn	118	1440.1	1.6	**0.2051**	0.002	1.1	ug/L	385	Standard
	Sb	123	530.7	5.6	**0.1057**	0.007	6.3	ug/L	208	Standard
	Ba	135	614.7	4.0	**0.2629**	0.014	5.2	ug/L	108	Standard
	Ce	140	133053.5	2.4				ug/L	92	Standard
>	**Tb**	159	850984.6	1.4				ug/L	812006	Standard
	Ho	165	15289.4	2.9				ug/L	7	Standard
	Tl	203	439.0	9.3	**0.0544**	0.006	11.2	ug/L	236	Standard
	Tl	205	306.7	9.4	**0.0601**	0.006	9.5	ug/L	43	Standard
	Pb	206	821.4	5.2	**0.1268**	0.009	7.1	ug/L	266	Standard
	Pb	207	703.0	6.9	**0.1154**	0.012	10.6	ug/L	206	Standard
	Pb	208	2581.4	1.1	**0.1270**	0.003	2.6	ug/L	668	Standard
	U	238	1613.4	1.2	**0.3315**	0.002	0.6	ug/L	32	Standard
>	**Bi**	209	411417.5	0.9				ug/L	377155	Standard

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Na	23	5.0	100.0	**-262.3747**	408.127	155.6	mg/L	2	Standard
Mg	24	201.7	15.9	**0.3610**	0.063	17.5	mg/L	60	Standard
K	39	15.0	88.2	**-0.1252**	0.253	202.2	mg/L	12	Standard
Ca	43	146.7	41.1	**59.3602**	41.580	70.0	mg/L	37	Standard
Fe	54	12699.1	2.6	**25.4530**	0.567	2.2	mg/L	56	Standard
Fe	57	3912.2	4.5	**25.0217**	0.585	2.3	mg/L	735	Standard
> **Sc-1**	45	25494.8	3.9				mg/L	22687	Standard
Cl	35	34401.1	4.0				ug/L	20516	Standard
Kr	83	5.7	27.0				ug/L	5	Standard
Br	81	536.7	12.7				ug/L	570	Standard
P	31	10321.9	4.9				ug/L	7850	Standard
S	34	1401.7	9.4				ug/L	1375	Standard
Sr	88	181.7	12.4				ug/L	165	Standard
C	12	196.7	29.8				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	24077.8	4.0				mg/L	6	Standard
Ho-1	165	15289.4	2.9				mg/L	7	Standard
Er	166	12365.1	5.2				mg/L	13	Standard
I	127	2861.9	7.1				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.917	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.098	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.982
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.084
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1508035803DP WG534528-05
Sample Date/Time: Thursday, August 20, 2015 17:08:51
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63191.5	2.1				ug/L	51673	Standard
	Be	9	1975.1	6.1	**2.3761**	0.109	4.6	ug/L	43	Standard
	Al	27	5043101.1	3.9	**59.9656**	2.041	3.4	ug/L	2157	Standard
	Sc	45	26072.4	3.1				ug/L	22687	Standard
	Ti	47	71.3	10.9	**0.2817**	0.043	15.2	ug/L	43	Standard
	V	51	3911.2	2.7	**0.6222**	0.030	4.8	ug/L	1233	Standard
	Cr	52	20874.7	0.5	**2.9310**	0.035	1.2	ug/L	6387	Standard
	Cr	53	2361.9	4.3	**1.7254**	0.138	8.0	ug/L	1555	Standard
	Mn	55	1693744.9	2.2	**552.5294**	14.670	2.7	ug/L	436	Standard
	Co	59	97601.0	0.5	**22.8727**	0.131	0.6	ug/L	236	Standard
	Ni	60	72203.0	0.7	**49.6125**	0.652	1.3	ug/L	204	Standard
	Cu	65	6446.0	2.3	**4.1808**	0.125	3.0	ug/L	303	Standard
	Zn	66	135442.7	0.7	**167.5689**	2.118	1.3	ug/L	332	Standard
>	**Ge**	72	305868.2	0.6				ug/L	293924	Standard
	As	75	221.2	26.4	**0.3039**	0.069	22.8	ug/L	45	Standard
	Se	82	36.8	30.4	**0.3012**	0.160	53.0	ug/L	35	Standard
	Se-1	77	78.7	15.4	**-1.2802**	0.239	18.7	ug/L	153	Standard
>	**Ga**	71	550.0	4.0				mg/L	25	Standard
	Rb	85	12893.8	3.5				ug/L	20	Standard
	Y	89	409574.7	1.7				ug/L	279578	Standard
>	**Rh**	103	23.3	32.7				ug/L	68	Standard
	Mo	98	33.9	48.3	**0.0038**	0.010	261.2	ug/L	56	Standard
	Ag	107	149.0	68.1	**0.0101**	0.018	177.3	ug/L	199	Standard
	Cd	111	332.0	2.1	**0.1750**	0.010	5.7	mg/L	89	Standard
	Cd	114	875.4	5.1	**0.1761**	0.015	8.7	ug/L	150	Standard
>	**In**	115	500124.6	3.4				ug/L	458296	Standard
	Sn	118	481.7	11.4	**0.0299**	0.007	23.9	ug/L	385	Standard
	Sb	123	200.9	37.6	**0.0308**	0.018	56.8	ug/L	208	Standard
	Ba	135	594.3	2.0	**0.2404**	0.004	1.7	ug/L	108	Standard
	Ce	140	136386.2	1.5				ug/L	92	Standard
>	**Tb**	159	878331.9	1.6				ug/L	812006	Standard
	Ho	165	15391.1	2.2				ug/L	7	Standard
	Tl	203	444.7	9.0	**0.0526**	0.005	9.7	ug/L	236	Standard
	Tl	205	341.7	33.5	**0.0644**	0.022	34.2	ug/L	43	Standard
	Pb	206	676.0	9.7	**0.0887**	0.015	17.1	ug/L	266	Standard
	Pb	207	576.7	14.8	**0.0788**	0.021	26.4	ug/L	206	Standard
	Pb	208	2020.1	12.5	**0.0819**	0.018	22.1	ug/L	668	Standard
	U	238	1684.4	2.0	**0.3323**	0.010	3.1	ug/L	32	Standard
>	**Bi**	209	428629.0	1.3				ug/L	377155	Standard

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Na	23	3.3	173.2	**-105.2002**	437.787	416.1	mg/L	2	Standard
Mg	24	216.7	23.6	**0.3871**	0.126	32.4	mg/L	60	Standard
K	39	28.3	27.0	**0.1078**	0.150	138.7	mg/L	12	Standard
Ca	43	126.7	16.0	**44.1025**	15.204	34.5	mg/L	37	Standard
Fe	54	13037.5	3.4	**25.5462**	0.705	2.8	mg/L	56	Standard
Fe	57	3935.5	6.4	**24.4856**	1.351	5.5	mg/L	735	Standard
> **Sc-1**	45	26072.4	3.1				mg/L	22687	Standard
Cl	35	39573.1	5.8				ug/L	20516	Standard
Kr	83	5.0	40.0				ug/L	5	Standard
Br	81	486.7	35.3				ug/L	570	Standard
P	31	10677.1	2.0				ug/L	7850	Standard
S	34	1328.4	3.7				ug/L	1375	Standard
Sr	88	171.7	11.0				ug/L	165	Standard
C	12	253.3	38.9				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	24170.9	6.1				mg/L	6	Standard
Ho-1	165	15391.1	2.2				mg/L	7	Standard
Er	166	13349.2	3.5				mg/L	13	Standard
I	127	3297.0	7.0				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		122.291	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.064	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.127
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		113.648
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1508035803S WG534528-06
Sample Date/Time: Thursday, August 20, 2015 17:12:02
Number of Replicates: 3
Autosampler Position: 346
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68807.8	4.6				ug/L	51673	Standard
	Be	9	10525.3	3.0	**11.9063**	0.727	6.1	ug/L	43	Standard
	Al	27	5614118.7	4.5	**61.3160**	1.161	1.9	ug/L	2157	Standard
	Sc	45	25942.2	3.4				ug/L	22687	Standard
	Ti	47	73.3	8.0	**0.3075**	0.037	11.9	ug/L	43	Standard
	V	51	48648.4	1.3	**11.2542**	0.113	1.0	ug/L	1233	Standard
	Cr	52	73129.1	2.1	**13.7883**	0.311	2.3	ug/L	6387	Standard
	Cr	53	8697.5	2.4	**12.2488**	0.287	2.3	ug/L	1555	Standard
	Mn	55	1819449.8	1.1	**612.9708**	4.829	0.8	ug/L	436	Standard
	Co	59	149721.1	0.7	**36.2661**	0.360	1.0	ug/L	236	Standard
	Ni	60	90702.4	0.9	**64.3784**	0.531	0.8	ug/L	204	Standard
	Cu	65	20717.2	1.8	**14.5165**	0.216	1.5	ug/L	303	Standard
	Zn	66	149348.5	1.1	**190.8894**	1.770	0.9	ug/L	332	Standard
>	**Ge**	72	296150.3	0.3				ug/L	293924	Standard
	As	75	8673.3	1.5	**10.5021**	0.191	1.8	ug/L	45	Standard
	Se	82	777.0	3.8	**11.0250**	0.420	3.8	ug/L	35	Standard
	Se-1	77	617.7	1.5	**9.4016**	0.220	2.3	ug/L	153	Standard
>	**Ga**	71	573.3	13.4				mg/L	25	Standard
	Rb	85	14435.2	2.3				ug/L	20	Standard
	Y	89	437190.6	2.6				ug/L	279578	Standard
>	**Rh**	103	38.3	65.7				ug/L	68	Standard
	Mo	98	43.2	9.7	**0.0078**	0.002	28.2	ug/L	56	Standard
	Ag	107	60740.5	0.4	**9.6262**	0.193	2.0	ug/L	199	Standard
	Cd	111	19611.9	2.2	**10.2484**	0.011	0.1	mg/L	89	Standard
	Cd	114	50141.5	1.8	**9.9200**	0.050	0.5	ug/L	150	Standard
>	**In**	115	523295.0	2.2				ug/L	458296	Standard
	Sn	118	488.3	7.8	**0.0275**	0.005	18.6	ug/L	385	Standard
	Sb	123	50705.6	1.2	**10.2309**	0.322	3.1	ug/L	208	Standard
	Ba	135	22639.9	0.5	**9.5996**	0.190	2.0	ug/L	108	Standard
	Ce	140	146419.2	1.4				ug/L	92	Standard
>	**Tb**	159	907949.2	0.9				ug/L	812006	Standard
	Ho	165	16654.1	0.8				ug/L	7	Standard
	Tl	203	76731.8	0.6	**9.9328**	0.083	0.8	ug/L	236	Standard
	Tl	205	54558.1	0.8	**10.2055**	0.096	0.9	ug/L	43	Standard
	Pb	206	49302.4	0.6	**10.2856**	0.028	0.3	ug/L	266	Standard
	Pb	207	42744.2	0.5	**9.8487**	0.064	0.7	ug/L	206	Standard
	Pb	208	156951.4	0.9	**10.3879**	0.062	0.6	ug/L	668	Standard
	U	238	54985.6	0.7	**10.7127**	0.043	0.4	ug/L	32	Standard
>	**Bi**	209	434737.1	0.4				ug/L	377155	Standard

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Na	23	5.0	173.2	**-250.2386**	689.001	275.3	mg/L	2	Standard
Mg	24	206.7	9.2	**0.3653**	0.042	11.4	mg/L	60	Standard
K	39	16.7	62.4	**-0.1047**	0.183	175.1	mg/L	12	Standard
Ca	43	146.7	23.9	**58.2289**	26.537	45.6	mg/L	37	Standard
Fe	54	13939.5	0.9	**27.4788**	1.078	3.9	mg/L	56	Standard
Fe	57	4457.3	4.3	**28.9288**	2.703	9.3	mg/L	735	Standard
Sc-1	45	25942.2	3.4				mg/L	22687	Standard
Cl	35	44588.9	3.6				ug/L	20516	Standard
Kr	83	3.3	69.3				ug/L	5	Standard
Br	81	546.7	2.8				ug/L	570	Standard
P	31	11684.5	6.1				ug/L	7850	Standard
S	34	1395.1	1.8				ug/L	1375	Standard
Sr	88	180.0	7.3				ug/L	165	Standard
C	12	250.0	30.2				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	26093.4	1.6				mg/L	6	Standard
Ho-1	165	16654.1	0.8				mg/L	7	Standard
Er	166	13782.9	4.2				mg/L	13	Standard
I	127	3240.3	5.4				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		133.160	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.757	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.183
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		115.267
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1508040801
Sample Date/Time: Thursday, August 20, 2015 17:15:14
Number of Replicates: 3
Autosampler Position: 347
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76325.1	1.9				ug/L	51673	Standard
	Be	9	81.7	12.7	**0.0187**	0.012	64.5	ug/L	43	Standard
	Al	27	144746737.6	2.7	**1425.7530**	58.104	4.1	ug/L	2157	Standard
	Sc	45	23753.6	3.3				ug/L	22687	Standard
	Ti	47	521.7	4.1	**3.0177**	0.165	5.5	ug/L	43	Standard
	V	51	10038.9	2.5	**2.1207**	0.040	1.9	ug/L	1233	Standard
	Cr	52	10551.0	0.9	**0.9645**	0.041	4.2	ug/L	6387	Standard
	Cr	53	15494.6	1.5	**23.5896**	0.384	1.6	ug/L	1555	Standard
	Mn	55	5712465.5	2.6	**1938.5871**	35.047	1.8	ug/L	436	Standard
	Co	59	20547.6	1.8	**4.9725**	0.121	2.4	ug/L	236	Standard
	Ni	60	129359.0	1.6	**92.4860**	0.523	0.6	ug/L	204	Standard
	Cu	65	5180.2	2.8	**3.4487**	0.064	1.9	ug/L	303	Standard
	Zn	66	77504.1	1.9	**99.5493**	1.544	1.6	ug/L	332	Standard
>	**Ge**	72	294053.9	1.2				ug/L	293924	Standard
	As	75	1591.1	14.4	**1.9793**	0.297	15.0	ug/L	45	Standard
	Se	82	1966.4	1.3	**28.4350**	0.639	2.2	ug/L	35	Standard
	Se-1	77	2309.8	4.9	**43.1283**	2.763	6.4	ug/L	153	Standard
>	**Ga**	71	308.3	2.5				mg/L	25	Standard
	Rb	85	33527.1	3.5				ug/L	20	Standard
	Y	89	307109.6	2.9				ug/L	279578	Standard
>	**Rh**	103	400.0	9.9				ug/L	68	Standard
	Mo	98	26640.4	0.1	**14.5235**	0.034	0.2	ug/L	56	Standard
	Ag	107	146.3	66.0	**0.0085**	0.016	183.3	ug/L	199	Standard
	Cd	111	9311.3	0.7	**4.9117**	0.026	0.5	mg/L	89	Standard
	Cd	114	24761.5	3.0	**4.9456**	0.149	3.0	ug/L	150	Standard
>	**In**	115	518026.5	0.3				ug/L	458296	Standard
	Sn	118	1695.1	3.3	**0.2264**	0.010	4.4	ug/L	385	Standard
	Sb	123	2199.9	5.0	**0.4368**	0.024	5.5	ug/L	208	Standard
	Ba	135	49599.4	0.7	**21.2681**	0.197	0.9	ug/L	108	Standard
	Ce	140	5035.8	6.0				ug/L	92	Standard
>	**Tb**	159	874759.7	1.4				ug/L	812006	Standard
	Ho	165	181.7	1.6				ug/L	7	Standard
	Tl	203	4940.8	2.6	**0.6690**	0.015	2.2	ug/L	236	Standard
	Tl	205	3527.1	1.1	**0.6953**	0.010	1.4	ug/L	43	Standard
	Pb	206	1079.4	3.6	**0.1835**	0.008	4.1	ug/L	266	Standard
	Pb	207	815.4	5.2	**0.1424**	0.009	6.6	ug/L	206	Standard
	Pb	208	3025.5	1.9	**0.1578**	0.003	2.0	ug/L	668	Standard
	U	238	85793.9	1.1	**17.6262**	0.233	1.3	ug/L	32	Standard
>	**Bi**	209	412285.1	0.5				ug/L	377155	Standard

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Na	23	11.7	65.5	**-871.3390**	699.063	80.2	mg/L	2	Standard
Mg	24	24362.9	2.1	**60.7158**	1.130	1.9	mg/L	60	Standard
K	39	170.0	15.3	**2.9391**	0.415	14.1	mg/L	12	Standard
Ca	43	580.0	4.6	**381.8708**	5.628	1.5	mg/L	37	Standard
Fe	54	110.8	9.3	**0.1129**	0.027	24.1	mg/L	56	Standard
Fe	57	1261.7	3.8	**4.0292**	0.388	9.6	mg/L	735	Standard
> **Sc-1**	45	23753.6	3.3				mg/L	22687	Standard
Cl	35	103943.5	2.5				ug/L	20516	Standard
Kr	83	2.0	50.0				ug/L	5	Standard
Br	81	40196.7	5.6				ug/L	570	Standard
P	31	14223.3	1.6				ug/L	7850	Standard
S	34	1723.4	5.3				ug/L	1375	Standard
Sr	88	511.7	14.7				ug/L	165	Standard
C	12	453.3	17.7				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	43.3				mg/L	0	Standard
Dy	164	249.0	3.1				mg/L	6	Standard
Ho-1	165	181.7	1.6				mg/L	7	Standard
Er	166	230.0	23.0				mg/L	13	Standard
I	127	946731.9	8.4				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		147.708	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.044	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	113.033
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	109.314
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508040801PS WG534581-03
Sample Date/Time: Thursday, August 20, 2015 17:18:26
Number of Replicates: 3
Autosampler Position: 348
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80377.7	1.7				ug/L	51673	Standard
	Be	9	45917.8	1.2	**44.5736**	0.265	0.6	ug/L	43	Standard
	Al	27	147818010.5	1.6	**1382.4728**	42.676	3.1	ug/L	2157	Standard
	Sc	45	24277.8	1.9				ug/L	22687	Standard
	Ti	47	525.0	7.3	**3.0944**	0.232	7.5	ug/L	43	Standard
	V	51	235856.3	0.2	**57.0530**	0.057	0.1	ug/L	1233	Standard
	Cr	52	258082.7	1.3	**53.0897**	0.642	1.2	ug/L	6387	Standard
	Cr	53	47880.6	3.4	**78.5838**	2.908	3.7	ug/L	1555	Standard
	Mn	55	5695420.9	1.8	**1968.2778**	31.065	1.6	ug/L	436	Standard
	Co	59	241672.8	1.7	**60.0644**	0.868	1.4	ug/L	236	Standard
	Ni	60	194842.5	2.2	**141.8792**	2.891	2.0	ug/L	204	Standard
	Cu	65	70082.1	1.4	**51.0452**	0.683	1.3	ug/L	303	Standard
	Zn	66	112609.7	1.7	**147.5071**	2.312	1.6	ug/L	332	Standard
>	**Ge**	72	288766.4	0.2				ug/L	293924	Standard
	As	75	44366.8	0.8	**54.9003**	0.476	0.9	ug/L	45	Standard
	Se	82	5735.4	1.9	**84.8663**	1.782	2.1	ug/L	35	Standard
	Se-1	77	5112.9	1.1	**100.6554**	0.911	0.9	ug/L	153	Standard
>	**Ga**	71	336.7	4.5				mg/L	25	Standard
	Rb	85	33014.3	2.0				ug/L	20	Standard
	Y	89	306841.3	1.4				ug/L	279578	Standard
>	**Rh**	103	416.7	4.2				ug/L	68	Standard
	Mo	98	26176.4	1.7	**14.0841**	0.042	0.3	ug/L	56	Standard
	Ag	107	289056.6	0.6	**45.7218**	0.513	1.1	ug/L	199	Standard
	Cd	111	105986.2	1.7	**55.2498**	0.450	0.8	mg/L	89	Standard
	Cd	114	274794.6	3.3	**54.2167**	1.044	1.9	ug/L	150	Standard
>	**In**	115	524851.0	1.4				ug/L	458296	Standard
	Sn	118	1706.8	3.6	**0.2247**	0.012	5.4	ug/L	385	Standard
	Sb	123	258799.3	0.9	**52.0930**	0.410	0.8	ug/L	208	Standard
	Ba	135	160813.9	0.6	**68.1238**	1.310	1.9	ug/L	108	Standard
	Ce	140	4724.1	2.1				ug/L	92	Standard
>	**Tb**	159	896297.4	0.3				ug/L	812006	Standard
	Ho	165	221.7	13.0				ug/L	7	Standard
	Tl	203	378489.4	0.3	**51.1612**	0.289	0.6	ug/L	236	Standard
	Tl	205	277437.1	0.7	**54.1672**	0.173	0.3	ug/L	43	Standard
	Pb	206	239805.9	0.8	**52.4414**	0.057	0.1	ug/L	266	Standard
	Pb	207	216808.6	0.8	**52.3818**	0.097	0.2	ug/L	206	Standard
	Pb	208	751263.5	0.9	**52.1145**	0.206	0.4	ug/L	668	Standard
	U	238	360908.6	1.2	**73.3984**	1.303	1.8	ug/L	32	Standard
>	**Bi**	209	416527.2	0.7				ug/L	377155	Standard

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Na	23	15.0	115.5	**-1100.3627**	1422.817	129.3	mg/L	2	Standard
Mg	24	24957.2	2.2	**60.8638**	2.453	4.0	mg/L	60	Standard
K	39	173.3	24.2	**2.9503**	0.862	29.2	mg/L	12	Standard
Ca	43	505.0	17.4	**320.3089**	68.473	21.4	mg/L	37	Standard
Fe	54	140.4	7.0	**0.1699**	0.019	11.4	mg/L	56	Standard
Fe	57	1236.7	2.9	**3.5758**	0.476	13.3	mg/L	735	Standard
> **Sc-1**	45	24277.8	1.9				mg/L	22687	Standard
Cl	35	108231.4	2.9				ug/L	20516	Standard
Kr	83	3.7	41.7				ug/L	5	Standard
Br	81	40343.7	3.1				ug/L	570	Standard
P	31	13864.7	4.4				ug/L	7850	Standard
S	34	1860.1	4.7				ug/L	1375	Standard
Sr	88	583.3	11.6				ug/L	165	Standard
C	12	540.0	17.0				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	0	Standard
Dy	164	272.3	9.8				mg/L	6	Standard
Ho-1	165	221.7	13.0				mg/L	7	Standard
Er	166	230.0	35.6				mg/L	13	Standard
I	127	952345.1	5.4				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		155.551	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.245	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.522
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.439
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Ni 60 Upper, S, EEE	Ni	60
Zn 66 Upper, S, EEE	Zn	66
Se-1 77 Upper, S, EEE	Se-1	77

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Method 6020 - Summary Report

Sample ID: L1508040801SDL WG534581-04
Sample Date/Time: Thursday, August 20, 2015 17:21:37
Number of Replicates: 3
Autosampler Position: 349
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67167.0	3.0				ug/L	51673	Standard
	Be	9	23.3	65.5	**-0.0381**	0.017	44.3	ug/L	43	Standard
	Al	27	28225875.4	3.0	**315.8040**	3.495	1.1	ug/L	2157	Standard
	Sc	45	22989.1	2.4				ug/L	22687	Standard
	Ti	47	116.3	9.5	**0.5734**	0.065	11.3	ug/L	43	Standard
	V	51	3186.8	9.6	**0.4889**	0.071	14.6	ug/L	1233	Standard
	Cr	52	8431.0	1.4	**0.5347**	0.019	3.6	ug/L	6387	Standard
	Cr	53	4597.4	1.3	**5.6103**	0.112	2.0	ug/L	1555	Standard
	Mn	55	1151864.1	3.1	**392.6662**	11.200	2.9	ug/L	436	Standard
	Co	59	4176.9	1.2	**0.9781**	0.012	1.2	ug/L	236	Standard
	Ni	60	26569.6	2.4	**19.0560**	0.426	2.2	ug/L	204	Standard
	Cu	65	1199.4	2.3	**0.5905**	0.016	2.8	ug/L	303	Standard
	Zn	66	17497.8	2.8	**22.2289**	0.577	2.6	ug/L	332	Standard
>	**Ge**	72	292613.2	0.4				ug/L	293924	Standard
	As	75	276.1	38.3	**0.3821**	0.128	33.5	ug/L	45	Standard
	Se	82	385.0	2.5	**5.4211**	0.118	2.2	ug/L	35	Standard
	Se-1	77	588.0	2.3	**8.9555**	0.224	2.5	ug/L	153	Standard
>	**Ga**	71	71.7	26.4				mg/L	25	Standard
	Rb	85	6629.8	4.0				ug/L	20	Standard
	Y	89	290298.4	1.6				ug/L	279578	Standard
>	**Rh**	103	83.3	9.2				ug/L	68	Standard
	Mo	98	5187.7	0.7	**2.8604**	0.039	1.4	ug/L	56	Standard
	Ag	107	139.3	7.3	**0.0077**	0.002	22.8	ug/L	199	Standard
	Cd	111	1894.7	0.7	**1.0100**	0.025	2.5	mg/L	89	Standard
	Cd	114	5156.9	4.9	**1.0416**	0.045	4.3	ug/L	150	Standard
>	**In**	115	510043.9	1.9				ug/L	458296	Standard
	Sn	118	645.0	5.6	**0.0557**	0.006	10.5	ug/L	385	Standard
	Sb	123	1280.1	9.4	**0.2530**	0.020	8.1	ug/L	208	Standard
	Ba	135	10165.4	1.3	**4.4084**	0.027	0.6	ug/L	108	Standard
	Ce	140	1046.7	10.1				ug/L	92	Standard
>	**Tb**	159	864106.4	1.3				ug/L	812006	Standard
	Ho	165	55.0	27.3				ug/L	7	Standard
	Tl	203	1071.4	3.5	**0.1371**	0.006	4.6	ug/L	236	Standard
	Tl	205	806.7	5.3	**0.1549**	0.009	5.7	ug/L	43	Standard
	Pb	206	558.3	0.4	**0.0654**	0.002	2.3	ug/L	266	Standard
	Pb	207	464.7	6.9	**0.0540**	0.007	12.3	ug/L	206	Standard
	Pb	208	1673.0	4.8	**0.0601**	0.005	7.5	ug/L	668	Standard
	U	238	16842.0	1.7	**3.3778**	0.027	0.8	ug/L	32	Standard
>	**Bi**	209	422250.5	0.9				ug/L	377155	Standard

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Na	23	3.3	86.6	**-148.3031**	256.415	172.9	mg/L	2	Standard
Mg	24	4767.4	1.2	**12.1894**	0.194	1.6	mg/L	60	Standard
K	39	40.0	45.1	**0.4079**	0.356	87.3	mg/L	12	Standard
Ca	43	115.0	19.0	**46.3560**	16.247	35.0	mg/L	37	Standard
Fe	54	66.9	4.5	**0.0225**	0.007	29.0	mg/L	56	Standard
Fe	57	833.4	13.7	**0.4929**	1.002	203.3	mg/L	735	Standard
> **Sc-1**	45	22989.1	2.4				mg/L	22687	Standard
Cl	35	50047.9	1.9				ug/L	20516	Standard
Kr	83	2.7	43.3				ug/L	5	Standard
Br	81	8062.1	0.7				ug/L	570	Standard
P	31	9699.8	4.6				ug/L	7850	Standard
S	34	1620.1	9.9				ug/L	1375	Standard
Sr	88	226.7	8.4				ug/L	165	Standard
C	12	270.0	12.8				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	0	Standard
Dy	164	27.9	59.6				mg/L	6	Standard
Ho-1	165	55.0	27.3				mg/L	7	Standard
Er	166	43.3	35.3				mg/L	13	Standard
I	127	205408.2	1.5				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.985	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.554	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	111.291	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	111.957	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508040801SDL WG534581-04
Sample Date/Time: Thursday, August 20, 2015 17:24:49
Number of Replicates: 3
Autosampler Position: 350
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66361.8	4.0				ug/L	51673	Standard
	Be	9	21.7	53.3	**-0.0398**	0.012	31.3	ug/L	43	Standard
	Al	27	5423044.2	0.8	**61.4738**	2.715	4.4	ug/L	2157	Standard
	Sc	45	24925.5	2.0				ug/L	22687	Standard
	Ti	47	43.7	3.5	**0.1265**	0.010	7.8	ug/L	43	Standard
	V	51	2135.6	5.2	**0.2248**	0.028	12.3	ug/L	1233	Standard
	Cr	52	9235.1	0.9	**0.6564**	0.023	3.6	ug/L	6387	Standard
	Cr	53	1655.1	4.3	**0.6569**	0.120	18.2	ug/L	1555	Standard
	Mn	55	233007.0	1.7	**77.3912**	1.176	1.5	ug/L	436	Standard
	Co	59	992.7	2.6	**0.1907**	0.007	3.6	ug/L	236	Standard
	Ni	60	5454.0	1.8	**3.7853**	0.081	2.1	ug/L	204	Standard
	Cu	65	394.3	5.0	**0.0021**	0.015	716.0	ug/L	303	Standard
	Zn	66	4252.9	0.7	**4.9243**	0.044	0.9	ug/L	332	Standard
>	**Ge**	72	299708.2	0.3				ug/L	293924	Standard
	As	75	45.0	154.6	**0.0989**	0.083	83.8	ug/L	45	Standard
	Se	82	99.6	3.6	**1.2096**	0.048	4.0	ug/L	35	Standard
	Se-1	77	206.0	8.2	**1.2322**	0.334	27.1	ug/L	153	Standard
>	**Ga**	71	26.7	57.3				mg/L	25	Standard
	Rb	85	1346.7	2.4				ug/L	20	Standard
	Y	89	290121.7	1.4				ug/L	279578	Standard
>	**Rh**	103	25.0	34.6				ug/L	68	Standard
	Mo	98	1028.0	3.6	**0.5642**	0.022	4.0	ug/L	56	Standard
	Ag	107	114.0	49.6	**0.0039**	0.009	241.5	ug/L	199	Standard
	Cd	111	383.7	10.1	**0.2027**	0.022	10.8	mg/L	89	Standard
	Cd	114	989.9	8.7	**0.1990**	0.018	9.1	ug/L	150	Standard
>	**In**	115	501360.9	0.3				ug/L	458296	Standard
	Sn	118	378.3	11.9	**0.0123**	0.007	60.3	ug/L	385	Standard
	Sb	123	351.7	4.0	**0.0621**	0.003	4.4	ug/L	208	Standard
	Ba	135	2054.5	2.3	**0.8873**	0.024	2.7	ug/L	108	Standard
	Ce	140	205.0	6.5				ug/L	92	Standard
>	**Tb**	159	884126.1	1.5				ug/L	812006	Standard
	Ho	165	10.0	100.0				ug/L	7	Standard
	Tl	203	287.7	28.0	**0.0320**	0.011	33.6	ug/L	236	Standard
	Tl	205	175.0	5.7	**0.0326**	0.002	4.8	ug/L	43	Standard
	Pb	206	457.0	4.4	**0.0418**	0.005	12.6	ug/L	266	Standard
	Pb	207	400.7	4.2	**0.0372**	0.005	12.3	ug/L	206	Standard
	Pb	208	1440.7	4.0	**0.0425**	0.005	11.0	ug/L	668	Standard
	U	238	3276.7	1.6	**0.6452**	0.007	1.1	ug/L	32	Standard
>	**Bi**	209	429756.5	1.2				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	948.4	5.5	**2.1476**	0.085	4.0	mg/L	60	Standard
K	39	11.7	99.0	**-0.1877**	0.210	112.0	mg/L	12	Standard
Ca	43	51.7	14.8	**-4.2084**	5.767	137.0	mg/L	37	Standard
Fe	54	65.8	17.8	**0.0086**	0.025	292.8	mg/L	56	Standard
Fe	57	720.0	2.4	**-1.0415**	0.264	25.4	mg/L	735	Standard
> **Sc-1**	45	24925.5	2.0				mg/L	22687	Standard
Cl	35	39354.4	0.5				ug/L	20516	Standard
Kr	83	3.0	88.2				ug/L	5	Standard
Br	81	1830.1	9.5				ug/L	570	Standard
P	31	8797.6	2.6				ug/L	7850	Standard
S	34	1575.1	8.6				ug/L	1375	Standard
Sr	88	175.0	15.1				ug/L	165	Standard
C	12	266.7	36.0				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	18.7	137.0				mg/L	6	Standard
Ho-1	165	10.0	100.0				mg/L	7	Standard
Er	166	26.7	94.4				mg/L	13	Standard
I	127	47517.7	1.9				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.426	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.968	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.397
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		113.947
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, August 20, 2015 17:28:02
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	62706.3	3.5				ug/L	51673	Standard
	Be	9	39090.4	3.3	**48.6453**	0.306	0.6	ug/L	43	Standard
	Al	27	3921778.4	3.2	**46.9937**	0.257	0.5	ug/L	2157	Standard
	Sc	45	24603.3	1.0				ug/L	22687	Standard
	Ti	47	17994.3	1.6	**109.1363**	3.179	2.9	ug/L	43	Standard
	V	51	218431.0	0.9	**52.1808**	1.237	2.4	ug/L	1233	Standard
	Cr	52	254709.9	1.9	**51.7420**	1.750	3.4	ug/L	6387	Standard
	Cr	53	32030.5	2.6	**51.2297**	0.364	0.7	ug/L	1555	Standard
	Mn	55	171488.9	1.6	**58.3542**	1.303	2.2	ug/L	436	Standard
	Co	59	221955.3	0.7	**54.5025**	1.468	2.7	ug/L	236	Standard
	Ni	60	70992.3	0.6	**51.0483**	1.155	2.3	ug/L	204	Standard
	Cu	65	69848.3	0.4	**50.2616**	1.169	2.3	ug/L	303	Standard
	Zn	66	39591.3	1.3	**50.9293**	0.460	0.9	ug/L	332	Standard
>	Ge	72	292358.4	2.0				ug/L	293924	Standard
	As	75	40944.4	0.6	**50.0595**	1.013	2.0	ug/L	45	Standard
	Se	82	3524.4	0.9	**51.4441**	1.481	2.9	ug/L	35	Standard
	Se-1	77	2594.9	0.2	**49.0822**	0.951	1.9	ug/L	153	Standard
>	Ga	71	35.0	37.8				mg/L	25	Standard
	Rb	85	668.3	4.6				ug/L	20	Standard
	Y	89	294421.5	0.8				ug/L	279578	Standard
>	Rh	103	36.7	28.4				ug/L	68	Standard
	Mo	98	171996.4	1.5	**95.7921**	1.338	1.4	ug/L	56	Standard
	Ag	107	291718.8	1.9	**47.7189**	1.239	2.6	ug/L	199	Standard
	Cd	111	91429.2	1.4	**49.2899**	0.871	1.8	mg/L	89	Standard
	Cd	114	238236.9	1.4	**48.6201**	1.050	2.2	ug/L	150	Standard
>	In	115	507672.4	2.9				ug/L	458296	Standard
	Sn	118	268406.7	3.5	**44.8917**	0.297	0.7	ug/L	385	Standard
	Sb	123	235962.4	1.1	**49.1196**	1.091	2.2	ug/L	208	Standard
	Ba	135	108555.8	0.8	**47.5464**	1.007	2.1	ug/L	108	Standard
	Ce	140	78.3	32.1				ug/L	92	Standard
>	Tb	159	885229.1	2.7				ug/L	812006	Standard
	Ho	165	15.0	100.0				ug/L	7	Standard
	Tl	203	369536.8	0.3	**49.2095**	0.988	2.0	ug/L	236	Standard
	Tl	205	261260.4	1.9	**50.2530**	1.403	2.8	ug/L	43	Standard
	Pb	206	230860.0	1.2	**49.7311**	0.924	1.9	ug/L	266	Standard
	Pb	207	209589.4	0.8	**49.8806**	0.727	1.5	ug/L	206	Standard
	Pb	208	740149.6	0.6	**50.5781**	0.800	1.6	ug/L	668	Standard
	U	238	254589.6	1.0	**51.0003**	0.773	1.5	ug/L	32	Standard
>	Bi	209	422916.9	2.2				ug/L	377155	Standard

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Na	23	3.3	173.2	**-133.2052**	486.293	365.1	mg/L	2	Standard
Mg	24	2298.5	7.8	**5.4289**	0.383	7.1	mg/L	60	Standard
K	39	288.3	20.3	**5.0922**	1.176	23.1	mg/L	12	Standard
Ca	43	50.0	60.8	**-4.8205**	21.844	453.2	mg/L	37	Standard
Fe	54	2412.4	3.6	**4.9079**	0.233	4.8	mg/L	56	Standard
Fe	57	1401.7	3.8	**4.8310**	0.343	7.1	mg/L	735	Standard
> **Sc-1**	45	24603.3	1.0				mg/L	22687	Standard
Cl	35	29813.5	8.8				ug/L	20516	Standard
Kr	83	3.0	0.0				ug/L	5	Standard
Br	81	606.7	3.4				ug/L	570	Standard
P	31	10628.7	1.3				ug/L	7850	Standard
S	34	1666.8	3.4				ug/L	1375	Standard
Sr	88	155.0	8.5				ug/L	165	Standard
C	12	180.0	38.9				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.2	93.3				mg/L	6	Standard
Ho-1	165	15.0	100.0				mg/L	7	Standard
Er	166	10.0					mg/L	13	Standard
I	127	4810.8	10.7				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	97.291		
Al	27	93.987		
Sc	45			
Ti	47	109.136		
V	51	104.362		
Cr	52	103.484		
Cr	53			
Mn	55	116.708		
Co	59	109.005		
Ni	60	102.097		
Cu	65	100.523		
Zn	66	101.859		
> Ge	72		99.467	
As	75	100.119		
Se	82	102.888		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	95.792		
Ag	107	95.438		
Cd	111	98.580		
Cd	114			
> In	115		110.774	
Sn	118	89.783		
Sb	123	98.239		
Ba	135	95.093		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.419		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.156		
U	238	102.001		
> Bi	209		112.133	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, August 20, 2015 17:31:13
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	61521.4	3.7				ug/L	51673	Standard
	Be	9	13.3	94.4	**-0.0477**	0.017	34.8	ug/L	43	Standard
	Al	27	1500.1	15.8	**0.0079**	0.003	34.2	ug/L	2157	Standard
	Sc	45	25259.4	1.2				ug/L	22687	Standard
	Ti	47	19.0	31.6	**-0.0181**	0.035	194.4	ug/L	43	Standard
	V	51	945.2	5.0	**-0.0509**	0.012	23.7	ug/L	1233	Standard
	Cr	52	5553.4	1.7	**-0.0744**	0.022	29.1	ug/L	6387	Standard
	Cr	53	470.0	13.3	**-1.2552**	0.100	7.9	ug/L	1555	Standard
	Mn	55	502.7	2.7	**-0.0324**	0.003	10.6	ug/L	436	Standard
	Co	59	202.7	1.0	**0.0020**	0.001	32.2	ug/L	236	Standard
	Ni	60	69.3	7.3	**0.0068**	0.004	57.6	ug/L	204	Standard
	Cu	65	298.0	3.3	**-0.0630**	0.008	12.3	ug/L	303	Standard
	Zn	66	242.7	12.5	**-0.1486**	0.039	26.5	ug/L	332	Standard
>	Ge	72	295599.7	0.7				ug/L	293924	Standard
	As	75	-38.0	166.7	**-0.0003**	0.077	22436.3	ug/L	45	Standard
	Se	82	20.8	43.0	**0.0875**	0.131	149.5	ug/L	35	Standard
	Se-1	77	87.7	5.4	**-1.0509**	0.099	9.4	ug/L	153	Standard
>	Ga	71	15.0	57.7				mg/L	25	Standard
	Rb	85	21.7	48.0				ug/L	20	Standard
	Y	89	283744.1	1.2				ug/L	279578	Standard
>	Rh	103	10.0					ug/L	68	Standard
	Mo	98	56.0	22.8	**0.0162**	0.008	47.8	ug/L	56	Standard
	Ag	107	95.0	3.6	**0.0008**	0.001	105.9	ug/L	199	Standard
	Cd	111	9.2	61.5	**-0.0017**	0.003	181.4	mg/L	89	Standard
	Cd	114	22.0	30.6	**-0.0010**	0.001	146.6	ug/L	150	Standard
>	In	115	500711.1	1.8				ug/L	458296	Standard
	Sn	118	483.3	13.5	**0.0301**	0.010	32.1	ug/L	385	Standard
	Sb	123	858.8	8.9	**0.1695**	0.019	11.4	ug/L	208	Standard
	Ba	135	40.0	17.3	**-0.0062**	0.003	54.3	ug/L	108	Standard
	Ce	140	15.0	88.2				ug/L	92	Standard
>	Tb	159	866783.1	0.8				ug/L	812006	Standard
	Ho	165	15.0	66.7				ug/L	7	Standard
	Tl	203	20.3	15.0	**-0.0031**	0.000	13.3	ug/L	236	Standard
	Tl	205	11.7	24.7	**0.0017**	0.001	33.0	ug/L	43	Standard
	Pb	206	213.3	7.2	**-0.0103**	0.003	28.7	ug/L	266	Standard
	Pb	207	170.7	3.6	**-0.0171**	0.001	6.6	ug/L	206	Standard
	Pb	208	671.3	4.2	**-0.0096**	0.002	16.4	ug/L	668	Standard
	U	238	10.7	19.5	**0.0015**	0.000	27.5	ug/L	32	Standard
>	Bi	209	433069.5	0.8				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	46.7	16.4	**0.0024**	0.017	690.6	mg/L	60	Standard
K	39	8.3	69.3	**-0.2492**	0.108	43.4	mg/L	12	Standard
Ca	43	36.7	20.8	**-14.9976**	5.285	35.2	mg/L	37	Standard
Fe	54	57.5	49.7	**-0.0098**	0.059	605.1	mg/L	56	Standard
Fe	57	703.3	6.0	**-1.2599**	0.413	32.7	mg/L	735	Standard
> **Sc-1**	45	25259.4	1.2				mg/L	22687	Standard
Cl	35	26867.8	1.3				ug/L	20516	Standard
Kr	83	3.0	33.3				ug/L	5	Standard
Br	81	506.7	23.5				ug/L	570	Standard
P	31	8485.7	1.6				ug/L	7850	Standard
S	34	1618.4	8.4				ug/L	1375	Standard
Sr	88	158.3	11.1				ug/L	165	Standard
C	12	286.7	41.6				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	29.8	57.6				mg/L	6	Standard
Ho-1	165	15.0	66.7				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	5531.0	1.2				mg/L	3795	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.570	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.255
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		114.825
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBS M1 WG534994-02
Sample Date/Time: Thursday, August 20, 2015 17:44:13
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62945.5	1.2				ug/L	51673	Standard
	Be	9	11.7	89.2	**-0.0505**	0.013	25.8	ug/L	43	Standard
	Al	27	2982.0	3.0	**0.0252**	0.001	3.9	ug/L	2157	Standard
	Sc	45	25276.1	4.0				ug/L	22687	Standard
	Ti	47	27.3	24.4	**0.0233**	0.037	157.6	ug/L	43	Standard
	V	51	1122.9	1.8	**-0.0226**	0.007	30.3	ug/L	1233	Standard
	Cr	52	6790.5	2.6	**0.1073**	0.033	30.4	ug/L	6387	Standard
	Cr	53	455.0	3.8	**-1.3186**	0.020	1.5	ug/L	1555	Standard
	Mn	55	825.4	3.1	**0.0621**	0.007	12.0	ug/L	436	Standard
	Co	59	204.3	11.8	**-0.0002**	0.005	3304.1	ug/L	236	Standard
	Ni	60	197.3	2.4	**0.0906**	0.004	4.7	ug/L	204	Standard
	Cu	65	265.3	7.3	**-0.0962**	0.014	15.0	ug/L	303	Standard
	Zn	66	1054.4	3.4	**0.8232**	0.052	6.3	ug/L	332	Standard
>	**Ge**	72	311796.0	1.0				ug/L	293924	Standard
	As	75	-48.6	27.1	**-0.0103**	0.016	152.9	ug/L	45	Standard
	Se	82	13.9	11.6	**-0.0237**	0.022	93.9	ug/L	35	Standard
	Se-1	77	78.0	11.2	**-1.3232**	0.150	11.3	ug/L	153	Standard
>	**Ga**	71	40.0	25.0				mg/L	25	Standard
	Rb	85	53.3	37.9				ug/L	20	Standard
	Y	89	292856.5	3.1				ug/L	279578	Standard
>	**Rh**	103	15.0	57.7				ug/L	68	Standard
	Mo	98	19.8	18.2	**-0.0040**	0.002	51.1	ug/L	56	Standard
	Ag	107	78.0	22.2	**-0.0016**	0.003	202.5	ug/L	199	Standard
	Cd	111	10.6	55.3	**-0.0008**	0.003	434.2	mg/L	89	Standard
	Cd	114	31.1	59.6	**0.0011**	0.004	363.9	ug/L	150	Standard
>	**In**	115	483545.1	1.3				ug/L	458296	Standard
	Sn	118	455.0	10.5	**0.0281**	0.007	26.3	ug/L	385	Standard
	Sb	123	343.3	14.8	**0.0629**	0.010	16.1	ug/L	208	Standard
	Ba	135	235.3	3.2	**0.0842**	0.003	3.2	ug/L	108	Standard
	Ce	140	203.3	14.4				ug/L	92	Standard
>	**Tb**	159	879805.2	1.1				ug/L	812006	Standard
	Ho	165	18.3	68.6				ug/L	7	Standard
	Tl	203	11.7	27.6	**-0.0042**	0.000	9.9	ug/L	236	Standard
	Tl	205	10.0	100.0	**0.0014**	0.002	134.0	ug/L	43	Standard
	Pb	206	686.0	4.4	**0.0914**	0.006	6.2	ug/L	266	Standard
	Pb	207	574.7	1.4	**0.0789**	0.003	3.3	ug/L	206	Standard
	Pb	208	2077.1	2.0	**0.0863**	0.004	4.2	ug/L	668	Standard
	U	238	8.3	36.7	**0.0010**	0.001	58.5	ug/L	32	Standard
>	**Bi**	209	426682.0	0.6				ug/L	377155	Standard

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Na	23	3.3	86.6	**-117.7577**	229.955	195.3	mg/L	2	Standard
Mg	24	26.7	57.3	**-0.0453**	0.034	74.5	mg/L	60	Standard
K	39	11.7	107.9	**-0.1896**	0.235	123.9	mg/L	12	Standard
Ca	43	36.7	61.5	**-15.4028**	14.364	93.3	mg/L	37	Standard
Fe	54	55.9	5.2	**-0.0134**	0.003	19.7	mg/L	56	Standard
Fe	57	698.3	1.1	**-1.3010**	0.278	21.4	mg/L	735	Standard
> **Sc-1**	45	25276.1	4.0				mg/L	22687	Standard
Cl	35	27411.5	2.7				ug/L	20516	Standard
Kr	83	4.0	43.3				ug/L	5	Standard
Br	81	526.7	11.6				ug/L	570	Standard
P	31	9926.6	1.7				ug/L	7850	Standard
S	34	1533.4	3.3				ug/L	1375	Standard
Sr	88	151.7	10.6				ug/L	165	Standard
C	12	320.0	28.6				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	5.9	180.3				mg/L	6	Standard
Ho-1	165	18.3	68.6				mg/L	7	Standard
Er	166	16.7	124.9				mg/L	13	Standard
I	127	3788.8	6.0				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		121.815	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.080	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.509
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		113.132
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: LCSS M1 WG534994-03
Sample Date/Time: Thursday, August 20, 2015 17:47:25
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62105.4	1.5				ug/L	51673	Standard
	Be	9	18931.8	1.6	**23.7586**	0.651	2.7	ug/L	43	Standard
	Al	27	3360.4	21.5	**0.0302**	0.008	27.4	ug/L	2157	Standard
	Sc	45	25484.8	1.8				ug/L	22687	Standard
	Ti	47	32.7	4.7	**0.0578**	0.008	14.6	ug/L	43	Standard
	V	51	111795.7	0.3	**25.4211**	0.167	0.7	ug/L	1233	Standard
	Cr	52	135980.2	0.9	**25.8408**	0.070	0.3	ug/L	6387	Standard
	Cr	53	17486.8	0.3	**25.8111**	0.156	0.6	ug/L	1555	Standard
	Mn	55	93555.6	1.2	**30.3759**	0.366	1.2	ug/L	436	Standard
	Co	59	111910.5	0.9	**26.2768**	0.381	1.4	ug/L	236	Standard
	Ni	60	37303.9	1.3	**25.6516**	0.200	0.8	ug/L	204	Standard
	Cu	65	36766.9	1.4	**25.1836**	0.202	0.8	ug/L	303	Standard
	Zn	66	21369.1	1.2	**26.0914**	0.155	0.6	ug/L	332	Standard
>	**Ge**	72	305372.7	0.6				ug/L	293924	Standard
	As	75	20634.2	1.3	**24.1702**	0.308	1.3	ug/L	45	Standard
	Se	82	1767.2	1.6	**24.5771**	0.556	2.3	ug/L	35	Standard
	Se-1	77	1322.4	1.9	**22.5166**	0.551	2.4	ug/L	153	Standard
>	**Ga**	71	21.7	13.3				mg/L	25	Standard
	Rb	85	38.3	7.5				ug/L	20	Standard
	Y	89	294464.1	1.2				ug/L	279578	Standard
>	**Rh**	103	18.3	15.7				ug/L	68	Standard
	Mo	98	35.0	6.1	**0.0043**	0.001	29.0	ug/L	56	Standard
	Ag	107	146673.9	0.5	**24.4578**	0.202	0.8	ug/L	199	Standard
	Cd	111	44942.8	1.1	**24.7044**	0.347	1.4	mg/L	89	Standard
	Cd	114	115669.9	0.6	**24.0689**	0.253	1.1	ug/L	150	Standard
>	**In**	115	497685.5	0.5				ug/L	458296	Standard
	Sn	118	561.7	21.4	**0.0441**	0.020	46.1	ug/L	385	Standard
	Sb	123	119303.6	1.3	**25.3180**	0.389	1.5	ug/L	208	Standard
	Ba	135	55010.0	1.5	**24.5553**	0.317	1.3	ug/L	108	Standard
	Ce	140	253.3	8.2				ug/L	92	Standard
>	**Tb**	159	873556.5	1.4				ug/L	812006	Standard
	Ho	165	16.7	45.8				ug/L	7	Standard
	Tl	203	183155.4	0.8	**24.2671**	0.073	0.3	ug/L	236	Standard
	Tl	205	129272.5	1.5	**24.7443**	0.464	1.9	ug/L	43	Standard
	Pb	206	118731.7	0.6	**25.4263**	0.164	0.6	ug/L	266	Standard
	Pb	207	103174.8	1.2	**24.4067**	0.151	0.6	ug/L	206	Standard
	Pb	208	377703.4	1.3	**25.6578**	0.185	0.7	ug/L	668	Standard
	U	238	126129.5	0.3	**25.1451**	0.132	0.5	ug/L	32	Standard
>	**Bi**	209	424878.0	0.6				ug/L	377155	Standard

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Na	23	1.7	173.2	**15.9817**	227.894	1426.0	mg/L	2	Standard
Mg	24	18.3	31.5	**-0.0642**	0.014	22.2	mg/L	60	Standard
K	39	15.0	66.7	**-0.1272**	0.188	147.8	mg/L	12	Standard
Ca	43	33.3	17.3	**-17.4395**	4.311	24.7	mg/L	37	Standard
Fe	54	57.9	30.7	**-0.0102**	0.037	358.2	mg/L	56	Standard
Fe	57	765.0	9.7	**-0.8002**	0.708	88.5	mg/L	735	Standard
> **Sc-1**	45	25484.8	1.8				mg/L	22687	Standard
Cl	35	27809.5	1.2				ug/L	20516	Standard
Kr	83	4.0	25.0				ug/L	5	Standard
Br	81	573.3	17.2				ug/L	570	Standard
P	31	10041.7	3.0				ug/L	7850	Standard
S	34	1520.1	3.4				ug/L	1375	Standard
Sr	88	183.3	16.0				ug/L	165	Standard
C	12	320.0	26.7				mg/L	173	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.0	52.7				mg/L	6	Standard
Ho-1	165	16.7	45.8				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	13	Standard
I	127	3545.4	5.3				mg/L	3795	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		120.189	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		103.895	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.595
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		112.653
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: LCSS M1 WG534994-03
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Method 6020 - Summary Report

Sample ID: L1508028227 WG534994-01
Sample Date/Time: Thursday, August 20, 2015 17:50:37
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65959.9	1.1				ug/L	51673	Standard
	Be	9	251.7	27.0	**0.2331**	0.080	34.3	ug/L	43	Standard
	Al	27	1557919.6	1.3	**17.7409**	0.323	1.8	ug/L	2157	Standard
	Sc	45	27950.8	0.9				ug/L	22687	Standard
	Ti	47	12608.6	2.5	**71.9863**	1.585	2.2	ug/L	43	Standard
	V	51	182787.1	0.2	**41.0758**	0.197	0.5	ug/L	1233	Standard
	Cr	52	92879.5	1.6	**16.9749**	0.382	2.2	ug/L	6387	Standard
	Cr	53	11594.4	1.5	**16.1392**	0.279	1.7	ug/L	1555	Standard
	Mn	55	584265.1	2.3	**187.7325**	3.230	1.7	ug/L	436	Standard
	Co	59	26290.5	0.2	**6.0392**	0.050	0.8	ug/L	236	Standard
	Ni	60	66961.3	0.6	**45.3546**	0.518	1.1	ug/L	204	Standard
	Cu	65	563693.5	1.2	**383.9315**	5.645	1.5	ug/L	303	Standard
	Zn	66	1067645.0	0.7	**1305.2159**	4.632	0.4	ug/L	332	Standard
>	Ge	72	310266.6	0.6				ug/L	293924	Standard
	As	75	24066.3	0.3	**27.7397**	0.246	0.9	ug/L	45	Standard
	Se	82	72.8	17.9	**0.7913**	0.186	23.5	ug/L	35	Standard
	Se-1	77	128.0	7.5	**-0.3736**	0.179	48.0	ug/L	153	Standard
>	Ga	71	14902.3	3.1				mg/L	25	Standard
	Rb	85	86497.9	1.8				ug/L	20	Standard
	Y	89	363108.5	3.8				ug/L	279578	Standard
>	Rh	103	128.3	14.8				ug/L	68	Standard
	Mo	98	7519.0	0.4	**4.3104**	0.005	0.1	ug/L	56	Standard
	Ag	107	702.3	7.3	**0.1037**	0.008	8.0	ug/L	199	Standard
	Cd	111	10630.4	1.4	**5.9128**	0.063	1.1	mg/L	89	Standard
	Cd	114	27718.7	3.4	**5.8372**	0.194	3.3	ug/L	150	Standard
>	In	115	491386.8	0.3				ug/L	458296	Standard
	Sn	118	36662.6	1.4	**6.2912**	0.084	1.3	ug/L	385	Standard
	Sb	123	3226.3	5.0	**0.6817**	0.034	5.0	ug/L	208	Standard
	Ba	135	114905.4	0.5	**51.9760**	0.177	0.3	ug/L	108	Standard
	Ce	140	632314.4	0.1				ug/L	92	Standard
>	Tb	159	892409.3	0.3				ug/L	812006	Standard
	Ho	165	8829.2	0.5				ug/L	7	Standard
	Tl	203	2740.9	0.8	**0.3474**	0.000	0.1	ug/L	236	Standard
	Tl	205	1986.8	4.7	**0.3692**	0.015	4.1	ug/L	43	Standard
	Pb	206	1529396.5	0.5	**319.0747**	2.706	0.8	ug/L	266	Standard
	Pb	207	1258880.7	0.4	**290.1681**	2.376	0.8	ug/L	206	Standard
	Pb	208	4629433.2	0.6	**306.3641**	1.428	0.5	ug/L	668	Standard
	U	238	6435.7	1.6	**1.2467**	0.009	0.7	ug/L	32	Standard
>	Bi	209	437005.9	0.9				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	71.7	32.2	**0.0449**	0.048	108.0	mg/L	60	Standard
K	39	58.3	24.7	**0.5740**	0.246	42.9	mg/L	12	Standard
Ca	43	46.7	24.7	**-11.2734**	6.861	60.9	mg/L	37	Standard
Fe	54	17809.0	1.9	**32.5833**	0.833	2.6	mg/L	56	Standard
Fe	57	5215.9	2.1	**31.9635**	0.678	2.1	mg/L	735	Standard
> **Sc-1**	45	27950.8	0.9				mg/L	22687	Standard
Cl	35	24356.2	1.1				ug/L	20516	Standard
Kr	83	3.0	33.3				ug/L	5	Standard
Br	81	636.7	9.5				ug/L	570	Standard
P	31	10653.8	6.0				ug/L	7850	Standard
S	34	1625.1	3.5				ug/L	1375	Standard
Sr	88	173.3	14.8				ug/L	165	Standard
C	12	270.0	11.1				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	590.0	11.1				mg/L	0	Standard
Dy	164	14989.7	1.6				mg/L	6	Standard
Ho-1	165	8829.2	0.5				mg/L	7	Standard
Er	166	8102.2	4.5				mg/L	13	Standard
I	127	8252.3	5.2				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		127.649	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.560	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.220
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		115.869
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Cu 65 Upper, S, EEE	Cu	65	

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Zn 66 Upper, S, EEE	Zn	66
Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1508028227S WG534994-04
Sample Date/Time: Thursday, August 20, 2015 17:53:48
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66875.6	0.6				ug/L	51673	Standard
	Be	9	19686.1	3.5	**22.9325**	0.680	3.0	ug/L	43	Standard
	Al	27	1519981.4	1.2	**17.0702**	0.219	1.3	ug/L	2157	Standard
	Sc	45	28809.0	0.8				ug/L	22687	Standard
	Ti	47	15539.0	1.1	**91.2080**	0.614	0.7	ug/L	43	Standard
	V	51	285167.3	1.5	**66.0186**	0.661	1.0	ug/L	1233	Standard
	Cr	52	220092.1	0.8	**43.0820**	0.642	1.5	ug/L	6387	Standard
	Cr	53	27186.1	4.0	**41.7391**	1.392	3.3	ug/L	1555	Standard
	Mn	55	554840.0	2.0	**183.2138**	3.232	1.8	ug/L	436	Standard
	Co	59	131355.4	1.8	**31.2040**	0.613	2.0	ug/L	236	Standard
	Ni	60	98302.6	1.2	**68.4419**	0.394	0.6	ug/L	204	Standard
	Cu	65	524233.0	0.9	**366.9028**	1.219	0.3	ug/L	303	Standard
	Zn	66	1033250.5	0.5	**1298.1563**	12.491	1.0	ug/L	332	Standard
>	**Ge**	72	301916.9	0.8				ug/L	293924	Standard
	As	75	42043.2	1.2	**49.7629**	0.457	0.9	ug/L	45	Standard
	Se	82	1773.0	0.3	**24.9420**	0.237	0.9	ug/L	35	Standard
	Se-1	77	1286.4	2.4	**22.1084**	0.578	2.6	ug/L	153	Standard
>	**Ga**	71	12566.9	3.1				mg/L	25	Standard
	Rb	85	76780.8	2.7				ug/L	20	Standard
	Y	89	360727.2	2.7				ug/L	279578	Standard
>	**Rh**	103	158.3	7.3				ug/L	68	Standard
	Mo	98	7403.5	2.2	**4.2239**	0.052	1.2	ug/L	56	Standard
	Ag	107	147432.6	1.6	**24.7825**	0.160	0.6	ug/L	199	Standard
	Cd	111	55699.0	1.5	**30.8649**	0.144	0.5	mg/L	89	Standard
	Cd	114	147293.6	1.4	**30.8982**	0.221	0.7	ug/L	150	Standard
>	**In**	115	493687.5	1.2				ug/L	458296	Standard
	Sn	118	57239.6	3.0	**9.8044**	0.226	2.3	ug/L	385	Standard
	Sb	123	17229.7	0.8	**3.6758**	0.019	0.5	ug/L	208	Standard
	Ba	135	179901.1	1.1	**81.0206**	1.548	1.9	ug/L	108	Standard
	Ce	140	624712.0	2.1				ug/L	92	Standard
>	**Tb**	159	887459.5	2.3				ug/L	812006	Standard
	Ho	165	8825.9	0.8				ug/L	7	Standard
	Tl	203	185119.5	1.4	**23.2431**	0.160	0.7	ug/L	236	Standard
	Tl	205	130740.1	1.8	**23.7132**	0.263	1.1	ug/L	43	Standard
	Pb	206	1818705.8	0.6	**369.8435**	2.960	0.8	ug/L	266	Standard
	Pb	207	1501040.7	0.7	**337.2453**	3.303	1.0	ug/L	206	Standard
	Pb	208	5481471.3	0.9	**353.5775**	1.120	0.3	ug/L	668	Standard
	U	238	129782.5	1.5	**24.5182**	0.228	0.9	ug/L	32	Standard
>	**Bi**	209	448339.4	0.7				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	81.7	12.7	**0.0611**	0.022	36.4	mg/L	60	Standard
K	39	55.0	24.1	**0.4912**	0.221	45.1	mg/L	12	Standard
Ca	43	48.3	21.5	**-11.1041**	6.181	55.7	mg/L	37	Standard
Fe	54	16884.7	2.7	**29.9628**	1.016	3.4	mg/L	56	Standard
Fe	57	5089.2	1.1	**29.8818**	0.498	1.7	mg/L	735	Standard
> **Sc-1**	45	28809.0	0.8				mg/L	22687	Standard
Cl	35	23925.6	2.6				ug/L	20516	Standard
Kr	83	4.7	53.9				ug/L	5	Standard
Br	81	783.4	4.8				ug/L	570	Standard
P	31	11242.5	5.0				ug/L	7850	Standard
S	34	1578.4	4.4				ug/L	1375	Standard
Sr	88	176.7	29.7				ug/L	165	Standard
C	12	450.0	31.1				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	936.7	1.6				mg/L	0	Standard
Dy	164	14395.5	3.0				mg/L	6	Standard
Ho-1	165	8825.9	0.8				mg/L	7	Standard
Er	166	8038.8	3.8				mg/L	13	Standard
I	127	10275.2	2.8				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.421	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.719	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	107.722	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	118.874	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Cu 65 Upper, S, EEE	Cu	65	

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Zn 66 Upper, S, EEE	Zn	66
Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1508028227SD WG534994-05
Sample Date/Time: Thursday, August 20, 2015 17:57:00
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69942.8	2.8				ug/L	51673	Standard
	Be	9	20630.7	2.9	**22.9877**	0.667	2.9	ug/L	43	Standard
	Al	27	1648098.4	1.9	**17.7060**	0.566	3.2	ug/L	2157	Standard
	Sc	45	29007.7	1.2				ug/L	22687	Standard
	Ti	47	14073.5	1.6	**81.1920**	0.576	0.7	ug/L	43	Standard
	V	51	261566.9	1.1	**59.5186**	1.592	2.7	ug/L	1233	Standard
	Cr	52	216319.1	1.4	**41.5829**	0.387	0.9	ug/L	6387	Standard
	Cr	53	27057.5	1.9	**40.8088**	1.100	2.7	ug/L	1555	Standard
	Mn	55	544780.8	0.5	**176.8681**	3.217	1.8	ug/L	436	Standard
	Co	59	137091.8	1.1	**32.0188**	0.582	1.8	ug/L	236	Standard
	Ni	60	100895.5	1.4	**69.0606**	0.672	1.0	ug/L	204	Standard
	Cu	65	407446.3	0.9	**280.2991**	4.019	1.4	ug/L	303	Standard
	Zn	66	973368.6	0.5	**1202.3126**	22.223	1.8	ug/L	332	Standard
>	**Ge**	72	307155.9	2.3				ug/L	293924	Standard
	As	75	40834.1	1.1	**47.5193**	0.701	1.5	ug/L	45	Standard
	Se	82	1832.8	0.9	**25.3534**	0.496	2.0	ug/L	35	Standard
	Se-1	77	1395.1	3.1	**23.7691**	1.339	5.6	ug/L	153	Standard
>	**Ga**	71	12573.6	3.8				mg/L	25	Standard
	Rb	85	77174.5	2.5				ug/L	20	Standard
	Y	89	371738.4	2.4				ug/L	279578	Standard
>	**Rh**	103	136.7	21.1				ug/L	68	Standard
	Mo	98	6732.7	1.1	**3.6434**	0.020	0.6	ug/L	56	Standard
	Ag	107	149561.9	0.5	**23.8589**	0.113	0.5	ug/L	199	Standard
	Cd	111	56187.3	0.3	**29.5496**	0.281	1.0	mg/L	89	Standard
	Cd	114	145292.9	2.5	**28.9278**	0.920	3.2	ug/L	150	Standard
>	**In**	115	520212.0	0.7				ug/L	458296	Standard
	Sn	118	54539.7	1.3	**8.8611**	0.054	0.6	ug/L	385	Standard
	Sb	123	14199.7	0.6	**2.8724**	0.036	1.3	ug/L	208	Standard
	Ba	135	194504.8	0.4	**83.1242**	0.744	0.9	ug/L	108	Standard
	Ce	140	640757.1	0.8				ug/L	92	Standard
>	**Tb**	159	908190.2	0.3				ug/L	812006	Standard
	Ho	165	8233.9	4.4				ug/L	7	Standard
	Tl	203	190836.6	0.2	**24.2426**	0.028	0.1	ug/L	236	Standard
	Tl	205	134519.6	1.6	**24.6856**	0.385	1.6	ug/L	43	Standard
	Pb	206	1263812.0	0.7	**259.9921**	2.172	0.8	ug/L	266	Standard
	Pb	207	1049073.6	0.7	**238.4382**	2.085	0.9	ug/L	206	Standard
	Pb	208	3862116.7	1.2	**252.0297**	3.401	1.3	ug/L	668	Standard
	U	238	135090.0	1.7	**25.8209**	0.458	1.8	ug/L	32	Standard
>	**Bi**	209	443148.5	0.2				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	86.7	20.3	**0.0704**	0.038	54.0	mg/L	60	Standard
K	39	55.0	18.2	**0.4842**	0.162	33.5	mg/L	12	Standard
Ca	43	35.0	49.5	**-19.2039**	10.396	54.1	mg/L	37	Standard
Fe	54	15148.7	1.3	**26.6823**	0.452	1.7	mg/L	56	Standard
Fe	57	4640.7	0.4	**26.3935**	0.273	1.0	mg/L	735	Standard
> **Sc-1**	45	29007.7	1.2				mg/L	22687	Standard
Cl	35	25379.9	2.9				ug/L	20516	Standard
Kr	83	3.3	91.7				ug/L	5	Standard
Br	81	760.0	10.8				ug/L	570	Standard
P	31	11721.2	2.6				ug/L	7850	Standard
S	34	1575.1	1.6				ug/L	1375	Standard
Sr	88	190.0	9.5				ug/L	165	Standard
C	12	360.0	26.8				mg/L	173	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	743.4	23.7				mg/L	0	Standard
Dy	164	14271.9	3.2				mg/L	6	Standard
Ho-1	165	8233.9	4.4				mg/L	7	Standard
Er	166	7415.2	6.2				mg/L	13	Standard
I	127	8372.3	5.0				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		135.357	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.502	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.510
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		117.498
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Cu 65 Upper, S, EEE	Cu	65	

Sample ID: L1508028227SD WG534994-05
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Zn 66 Upper, S, EEE	Zn	66
Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

Sample ID: L1508028227SD WG534994-05
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Method 6020 - Summary Report

Sample ID: L1508063601
Sample Date/Time: Thursday, August 20, 2015 18:00:11
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72990.4	2.2				ug/L	51673	Standard
	Be	9	161.7	23.2	**0.1076**	0.037	34.4	ug/L	43	Standard
	Al	27	1072312.6	2.3	**11.0345**	0.399	3.6	ug/L	2157	Standard
	Sc	45	26484.8	2.2				ug/L	22687	Standard
	Ti	47	7411.1	1.1	**41.3505**	0.679	1.6	ug/L	43	Standard
	V	51	28077.9	1.1	**5.9402**	0.096	1.6	ug/L	1233	Standard
	Cr	52	68274.5	0.5	**11.8676**	0.065	0.5	ug/L	6387	Standard
	Cr	53	8402.3	2.8	**10.8533**	0.283	2.6	ug/L	1555	Standard
	Mn	55	3334931.4	1.4	**1049.5764**	18.828	1.8	ug/L	436	Standard
	Co	59	6303.3	2.4	**1.3806**	0.034	2.5	ug/L	236	Standard
	Ni	60	11501.7	2.2	**7.5879**	0.211	2.8	ug/L	204	Standard
	Cu	65	823613.8	1.9	**549.0469**	13.349	2.4	ug/L	303	Standard
	Zn	66	418826.9	2.8	**500.7853**	16.202	3.2	ug/L	332	Standard
>	**Ge**	72	317082.6	0.6				ug/L	293924	Standard
	As	75	23088.2	1.4	**26.0424**	0.360	1.4	ug/L	45	Standard
	Se	82	261.2	7.8	**3.3136**	0.257	7.8	ug/L	35	Standard
	Se-1	77	261.3	9.2	**2.0299**	0.418	20.6	ug/L	153	Standard
>	**Ga**	71	10440.3	0.8				mg/L	25	Standard
	Rb	85	13582.8	1.3				ug/L	20	Standard
	Y	89	334616.9	1.7				ug/L	279578	Standard
>	**Rh**	103	140.0	28.6				ug/L	68	Standard
	Mo	98	15049.9	2.7	**7.7907**	0.065	0.8	ug/L	56	Standard
	Ag	107	12527.5	3.8	**1.8936**	0.052	2.7	ug/L	199	Standard
	Cd	111	1208.5	7.9	**0.5996**	0.038	6.4	mg/L	89	Standard
	Cd	114	3383.0	8.8	**0.6369**	0.046	7.2	ug/L	150	Standard
>	**In**	115	544992.7	1.9				ug/L	458296	Standard
	Sn	118	9908.2	7.0	**1.4935**	0.096	6.4	ug/L	385	Standard
	Sb	123	4383.7	3.3	**0.8379**	0.021	2.5	ug/L	208	Standard
	Ba	135	1083521.1	0.7	**442.1572**	5.419	1.2	ug/L	108	Standard
	Ce	140	86868.4	1.8				ug/L	92	Standard
>	**Tb**	159	913449.2	3.2				ug/L	812006	Standard
	Ho	165	1521.7	4.7				ug/L	7	Standard
	Tl	203	588.3	59.4	**0.0353**	0.024	67.7	ug/L	236	Standard
	Tl	205	340.0	34.8	**0.0339**	0.012	34.3	ug/L	43	Standard
	Pb	206	96646.4	2.6	**10.9141**	0.142	1.3	ug/L	266	Standard
	Pb	207	79734.0	2.4	**9.9421**	0.121	1.2	ug/L	206	Standard
	Pb	208	292117.8	1.1	**10.4645**	0.103	1.0	ug/L	668	Standard
	U	238	61762.0	0.4	**6.5125**	0.065	1.0	ug/L	32	Standard
>	**Bi**	209	803291.5	1.3				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	368.3	10.5	**0.7166**	0.071	9.9	mg/L	60	Standard
K	39	25.0	40.0	**0.0398**	0.181	455.9	mg/L	12	Standard
Ca	43	86.7	8.8	**16.5272**	5.809	35.1	mg/L	37	Standard
Fe	54	3039.5	5.3	**5.7679**	0.380	6.6	mg/L	56	Standard
Fe	57	1586.7	3.3	**5.4557**	0.623	11.4	mg/L	735	Standard
> **Sc-1**	45	26484.8	2.2				mg/L	22687	Standard
Cl	35	28637.0	1.2				ug/L	20516	Standard
Kr	83	4.0	25.0				ug/L	5	Standard
Br	81	2166.8	12.6				ug/L	570	Standard
P	31	11557.7	2.2				ug/L	7850	Standard
S	34	1255.1	12.4				ug/L	1375	Standard
Sr	88	311.7	10.7				ug/L	165	Standard
C	12	2530.2	12.6				mg/L	173	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	1703.4	9.3				mg/L	0	Standard
Dy	164	2424.1	5.9				mg/L	6	Standard
Ho-1	165	1521.7	4.7				mg/L	7	Standard
Er	166	1380.1	6.3				mg/L	13	Standard
I	127	328284.2	7.9				mg/L	3795	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		141.254	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		107.879	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		118.917
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		212.987
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Cu 65 Upper, S, EEE	Cu	65	

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Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	
Bi 209 Int Std for sample	Bi	209	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1508059701
Sample Date/Time: Thursday, August 20, 2015 18:03:23
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	78635.4	4.0				ug/L	51673	Standard
	Be	9	150.0	50.4	**0.0828**	0.071	85.8	ug/L	43	Standard
	Al	27	1208028.3	2.0	**11.5512**	0.654	5.7	ug/L	2157	Standard
	Sc	45	26740.2	1.5				ug/L	22687	Standard
	Ti	47	6506.1	3.4	**36.0850**	0.955	2.6	ug/L	43	Standard
	V	51	27999.5	1.0	**5.8900**	0.076	1.3	ug/L	1233	Standard
	Cr	52	67099.4	3.5	**11.5708**	0.236	2.0	ug/L	6387	Standard
	Cr	53	7753.7	2.6	**9.7951**	0.137	1.4	ug/L	1555	Standard
	Mn	55	3277979.2	1.0	**1026.3751**	27.590	2.7	ug/L	436	Standard
	Co	59	6547.4	1.3	**1.4283**	0.034	2.4	ug/L	236	Standard
	Ni	60	10878.6	2.4	**7.1346**	0.053	0.7	ug/L	204	Standard
	Cu	65	846569.0	1.7	**561.2908**	3.728	0.7	ug/L	303	Standard
	Zn	66	427408.6	1.1	**508.2957**	3.091	0.6	ug/L	332	Standard
>	Ge	72	318790.4	1.7				ug/L	293924	Standard
	As	75	24099.2	0.4	**27.0389**	0.333	1.2	ug/L	45	Standard
	Se	82	281.6	3.2	**3.5709**	0.152	4.3	ug/L	35	Standard
	Se-1	77	295.3	5.2	**2.6283**	0.263	10.0	ug/L	153	Standard
>	Ga	71	10436.9	2.2				mg/L	25	Standard
	Rb	85	11949.7	3.8				ug/L	20	Standard
	Y	89	350300.1	1.1				ug/L	279578	Standard
>	Rh	103	171.7	7.3				ug/L	68	Standard
	Mo	98	14938.6	1.0	**7.3948**	0.118	1.6	ug/L	56	Standard
	Ag	107	14247.0	0.9	**2.0608**	0.031	1.5	ug/L	199	Standard
	Cd	111	1231.6	1.8	**0.5845**	0.010	1.8	mg/L	89	Standard
	Cd	114	3320.4	4.0	**0.5977**	0.018	3.1	ug/L	150	Standard
>	In	115	569973.5	1.0				ug/L	458296	Standard
	Sn	118	15968.4	4.3	**2.3296**	0.087	3.7	ug/L	385	Standard
	Sb	123	9705.3	1.4	**1.7874**	0.033	1.9	ug/L	208	Standard
	Ba	135	1165719.1	1.0	**454.7855**	2.087	0.5	ug/L	108	Standard
	Ce	140	81458.4	1.0				ug/L	92	Standard
>	Tb	159	968008.7	2.1				ug/L	812006	Standard
	Ho	165	1640.1	7.6				ug/L	7	Standard
	Tl	203	409.3	7.9	**0.0220**	0.002	10.7	ug/L	236	Standard
	Tl	205	335.0	27.6	**0.0323**	0.009	28.6	ug/L	43	Standard
	Pb	206	96028.7	0.8	**10.4840**	0.141	1.3	ug/L	266	Standard
	Pb	207	79034.3	0.9	**9.5269**	0.144	1.5	ug/L	206	Standard
	Pb	208	290938.1	1.0	**10.0744**	0.159	1.6	ug/L	668	Standard
	U	238	67564.7	1.0	**6.8878**	0.106	1.5	ug/L	32	Standard
>	Bi	209	830865.4	0.6				ug/L	377155	Standard

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Na	23	3.3	173.2	**-106.0466**	439.253	414.2	mg/L	2	Standard
Mg	24	355.0	7.5	**0.6796**	0.048	7.0	mg/L	60	Standard
K	39	35.0	24.7	**0.2106**	0.162	77.1	mg/L	12	Standard
Ca	43	111.7	17.0	**32.1355**	12.522	39.0	mg/L	37	Standard
Fe	54	3248.6	6.2	**6.1067**	0.311	5.1	mg/L	56	Standard
Fe	57	1598.4	5.0	**5.4185**	0.560	10.3	mg/L	735	Standard
> **Sc-1**	45	26740.2	1.5				mg/L	22687	Standard
Cl	35	31144.6	1.4				ug/L	20516	Standard
Kr	83	2.7	114.6				ug/L	5	Standard
Br	81	1996.8	11.5				ug/L	570	Standard
P	31	11904.7	1.1				ug/L	7850	Standard
S	34	1181.7	6.4				ug/L	1375	Standard
Sr	88	305.0	2.8				ug/L	165	Standard
C	12	3137.0	2.1				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	2106.8	15.6				mg/L	0	Standard
Dy	164	2329.4	5.4				mg/L	6	Standard
Ho-1	165	1640.1	7.6				mg/L	7	Standard
Er	166	1546.7	11.7				mg/L	13	Standard
I	127	237964.3	1.1				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		152.179	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.460	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		124.368
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		220.298
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Cu 65 Upper, S, EEE	Cu	65	

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Zn 66 Upper, S, EEE	Zn	66	
In 115 Int Std for sample	In	115	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	
Bi 209 Int Std for sample	Bi	209	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1508059701PS WG535080-01
Sample Date/Time: Thursday, August 20, 2015 18:06:35
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75377.4	5.1				ug/L	51673	Standard
	Be	9	47847.2	3.7	**49.5564**	0.721	1.5	ug/L	43	Standard
	Al	27	1177842.5	1.2	**11.7479**	0.455	3.9	ug/L	2157	Standard
	Sc	45	26800.4	6.9				ug/L	22687	Standard
	Ti	47	6274.3	1.7	**35.0497**	0.682	1.9	ug/L	43	Standard
	V	51	270619.9	1.0	**59.7378**	0.648	1.1	ug/L	1233	Standard
	Cr	52	344280.5	1.1	**64.8766**	0.507	0.8	ug/L	6387	Standard
	Cr	53	43194.9	4.4	**64.3241**	3.161	4.9	ug/L	1555	Standard
	Mn	55	3374741.2	2.2	**1063.9014**	17.308	1.6	ug/L	436	Standard
	Co	59	253916.4	1.1	**57.5735**	0.273	0.5	ug/L	236	Standard
	Ni	60	89566.3	1.4	**59.4806**	0.951	1.6	ug/L	204	Standard
	Cu	65	907175.7	1.6	**605.8192**	8.674	1.4	ug/L	303	Standard
	Zn	66	463448.9	1.0	**555.1216**	3.030	0.5	ug/L	332	Standard
>	Ge	72	316515.3	0.8				ug/L	293924	Standard
	As	75	70857.0	1.4	**79.9697**	0.710	0.9	ug/L	45	Standard
	Se	82	4416.5	2.9	**59.5514**	1.366	2.3	ug/L	35	Standard
	Se-1	77	3175.3	2.4	**55.8323**	1.705	3.1	ug/L	153	Standard
>	Ga	71	11229.2	2.3				mg/L	25	Standard
	Rb	85	11472.7	0.4				ug/L	20	Standard
	Y	89	340872.4	1.7				ug/L	279578	Standard
>	Rh	103	216.7	17.3				ug/L	68	Standard
	Mo	98	14600.9	0.9	**7.2790**	0.139	1.9	ug/L	56	Standard
	Ag	107	345630.5	1.8	**50.6932**	0.348	0.7	ug/L	199	Standard
	Cd	111	107923.6	0.6	**52.1779**	0.725	1.4	mg/L	89	Standard
	Cd	114	275495.6	1.0	**50.4182**	0.692	1.4	ug/L	150	Standard
>	In	115	565963.4	1.1				ug/L	458296	Standard
	Sn	118	15371.1	1.6	**2.2572**	0.030	1.3	ug/L	385	Standard
	Sb	123	280608.0	1.8	**52.3750**	0.577	1.1	ug/L	208	Standard
	Ba	135	1258261.9	0.7	**494.3869**	3.609	0.7	ug/L	108	Standard
	Ce	140	80779.8	0.4				ug/L	92	Standard
>	Tb	159	949438.3	0.9				ug/L	812006	Standard
	Ho	165	1648.4	7.6				ug/L	7	Standard
	Tl	203	415502.1	0.9	**28.3551**	0.316	1.1	ug/L	236	Standard
	Tl	205	309332.5	0.7	**30.4952**	0.457	1.5	ug/L	43	Standard
	Pb	206	356506.0	1.5	**39.3518**	0.743	1.9	ug/L	266	Standard
	Pb	207	315694.3	0.3	**38.4971**	0.385	1.0	ug/L	206	Standard
	Pb	208	1122903.1	1.1	**39.3171**	0.489	1.2	ug/L	668	Standard
	U	238	356812.9	1.1	**36.6371**	0.545	1.5	ug/L	32	Standard
>	Bi	209	824969.9	0.8				ug/L	377155	Standard

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Na	23	5.0	100.0	**-227.2901**	384.301	169.1	mg/L	2	Standard
Mg	24	431.7	4.8	**0.8493**	0.045	5.3	mg/L	60	Standard
K	39	25.0	40.0	**0.0423**	0.206	486.1	mg/L	12	Standard
Ca	43	76.7	13.6	**9.4323**	6.739	71.4	mg/L	37	Standard
Fe	54	2999.3	2.8	**5.6384**	0.478	8.5	mg/L	56	Standard
Fe	57	1606.8	3.4	**5.4972**	0.963	17.5	mg/L	735	Standard
Sc-1	45	26800.4	6.9				mg/L	22687	Standard
Cl	35	31039.1	2.2				ug/L	20516	Standard
Kr	83	3.7	41.7				ug/L	5	Standard
Br	81	2156.8	10.1				ug/L	570	Standard
P	31	11609.4	1.3				ug/L	7850	Standard
S	34	1098.4	4.0				ug/L	1375	Standard
Sr	88	236.7	12.2				ug/L	165	Standard
C	12	3330.4	8.7				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	2130.1	0.9				mg/L	0	Standard
Dy	164	2248.8	5.2				mg/L	6	Standard
Ho-1	165	1648.4	7.6				mg/L	7	Standard
Er	166	1560.1	6.1				mg/L	13	Standard
I	127	231840.4	0.9				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		145.874	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		107.686	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		123.493
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		218.735
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Cu 65 Upper, S, EEE	Cu	65	

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Zn 66 Upper, S, EEE	Zn	66	
In 115 Int Std for sample	In	115	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	
Bi 209 Int Std for sample	Bi	209	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1508059701SDL WG535080-02
Sample Date/Time: Thursday, August 20, 2015 18:09:46
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70182.2	2.1				ug/L	51673	Standard
	Be	9	30.0	33.3	**-0.0317**	0.011	34.3	ug/L	43	Standard
	Al	27	224023.7	3.5	**2.3894**	0.108	4.5	ug/L	2157	Standard
	Sc	45	25356.2	1.6				ug/L	22687	Standard
	Ti	47	1167.7	2.9	**6.7508**	0.127	1.9	ug/L	43	Standard
	V	51	5823.9	1.7	**1.0827**	0.038	3.5	ug/L	1233	Standard
	Cr	52	16863.4	0.5	**2.1879**	0.036	1.7	ug/L	6387	Standard
	Cr	53	1825.1	9.6	**0.9169**	0.239	26.0	ug/L	1555	Standard
	Mn	55	593054.9	1.2	**196.4236**	2.558	1.3	ug/L	436	Standard
	Co	59	1441.4	6.8	**0.2968**	0.027	8.9	ug/L	236	Standard
	Ni	60	2149.5	0.7	**1.4593**	0.015	1.0	ug/L	204	Standard
	Cu	65	163367.2	1.8	**114.4715**	0.567	0.5	ug/L	303	Standard
	Zn	66	82640.1	1.3	**103.6981**	0.504	0.5	ug/L	332	Standard
>	**Ge**	72	301059.7	1.5				ug/L	293924	Standard
	As	75	4433.0	4.0	**5.3017**	0.154	2.9	ug/L	45	Standard
	Se	82	70.2	5.5	**0.7845**	0.062	7.9	ug/L	35	Standard
	Se-1	77	117.7	6.9	**-0.4994**	0.175	34.9	ug/L	153	Standard
>	**Ga**	71	2133.5	6.7				mg/L	25	Standard
	Rb	85	2231.8	2.2				ug/L	20	Standard
	Y	89	305337.1	2.4				ug/L	279578	Standard
>	**Rh**	103	43.3	52.0				ug/L	68	Standard
	Mo	98	2812.8	2.4	**1.4860**	0.050	3.3	ug/L	56	Standard
	Ag	107	2716.2	3.1	**0.4108**	0.014	3.5	ug/L	199	Standard
	Cd	111	250.5	14.0	**0.1225**	0.017	13.8	mg/L	89	Standard
	Cd	114	637.6	2.7	**0.1191**	0.005	4.0	ug/L	150	Standard
>	**In**	115	529726.0	1.2				ug/L	458296	Standard
	Sn	118	3257.0	1.3	**0.4710**	0.011	2.3	ug/L	385	Standard
	Sb	123	2572.5	3.4	**0.5013**	0.024	4.7	ug/L	208	Standard
	Ba	135	219792.7	0.5	**92.2524**	1.223	1.3	ug/L	108	Standard
	Ce	140	15394.5	2.8				ug/L	92	Standard
>	**Tb**	159	901623.3	0.4				ug/L	812006	Standard
	Ho	165	301.7	12.6				ug/L	7	Standard
	Tl	203	108.7	17.4	**0.0061**	0.002	34.8	ug/L	236	Standard
	Tl	205	106.7	61.2	**0.0164**	0.010	62.9	ug/L	43	Standard
	Pb	206	18294.4	2.4	**3.1832**	0.058	1.8	ug/L	266	Standard
	Pb	207	15189.9	2.7	**2.9140**	0.061	2.1	ug/L	206	Standard
	Pb	208	55525.8	1.8	**3.0634**	0.037	1.2	ug/L	668	Standard
	U	238	12621.9	1.3	**2.0751**	0.028	1.4	ug/L	32	Standard
>	**Bi**	209	515080.7	0.6				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	113.3	22.6	**0.1587**	0.064	40.3	mg/L	60	Standard
K	39	10.0	50.0	**-0.2183**	0.095	43.6	mg/L	12	Standard
Ca	43	41.7	6.9	**-11.6673**	2.377	20.4	mg/L	37	Standard
Fe	54	688.4	6.0	**1.2671**	0.092	7.3	mg/L	56	Standard
Fe	57	920.0	12.3	**0.5143**	1.050	204.1	mg/L	735	Standard
> **Sc-1**	45	25356.2	1.6				mg/L	22687	Standard
Cl	35	26287.5	2.0				ug/L	20516	Standard
Kr	83	3.0	66.7				ug/L	5	Standard
Br	81	1000.0	5.2				ug/L	570	Standard
P	31	9571.4	6.3				ug/L	7850	Standard
S	34	1053.4	4.1				ug/L	1375	Standard
Sr	88	151.7	26.4				ug/L	165	Standard
C	12	813.4	7.9				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	413.3	24.5				mg/L	0	Standard
Dy	164	464.7	14.3				mg/L	6	Standard
Ho-1	165	301.7	12.6				mg/L	7	Standard
Er	166	250.0	14.4				mg/L	13	Standard
I	127	48121.3	1.5				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		135.820	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.428	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		115.586
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		136.570
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Cu 65 Upper, S, EEE	Cu	65	

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Zn 66 Upper, S, EEE	Zn	66	
Bi 209 Int Std for sample	Bi	209	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1508059701SDL WG535080-02
Sample Date/Time: Thursday, August 20, 2015 18:12:58
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66485.6	3.1				ug/L	51673	Standard
	Be	9	15.0	33.3	**-0.0475**	0.005	11.5	ug/L	43	Standard
	Al	27	45927.8	0.7	**0.5091**	0.020	3.9	ug/L	2157	Standard
	Sc	45	24259.4	0.9				ug/L	22687	Standard
	Ti	47	259.3	5.0	**1.4381**	0.072	5.0	ug/L	43	Standard
	V	51	1948.5	1.6	**0.1913**	0.012	6.1	ug/L	1233	Standard
	Cr	52	7247.1	1.8	**0.2867**	0.039	13.6	ug/L	6387	Standard
	Cr	53	676.7	7.9	**-0.9059**	0.080	8.8	ug/L	1555	Standard
	Mn	55	118295.8	2.0	**40.0894**	1.191	3.0	ug/L	436	Standard
	Co	59	427.7	9.4	**0.0576**	0.011	18.8	ug/L	236	Standard
	Ni	60	461.0	4.0	**0.2882**	0.011	3.7	ug/L	204	Standard
	Cu	65	31702.1	1.1	**22.6003**	0.457	2.0	ug/L	303	Standard
	Zn	66	17274.8	0.6	**21.9066**	0.340	1.6	ug/L	332	Standard
>	**Ge**	72	293085.3	0.9				ug/L	293924	Standard
	As	75	853.9	4.3	**1.0855**	0.037	3.4	ug/L	45	Standard
	Se	82	29.9	17.3	**0.2235**	0.076	34.1	ug/L	35	Standard
	Se-1	77	84.3	7.6	**-1.1034**	0.113	10.3	ug/L	153	Standard
>	**Ga**	71	420.0	4.8				mg/L	25	Standard
	Rb	85	460.0	6.1				ug/L	20	Standard
	Y	89	297194.9	1.0				ug/L	279578	Standard
>	**Rh**	103	18.3	83.3				ug/L	68	Standard
	Mo	98	547.3	2.6	**0.2840**	0.010	3.4	ug/L	56	Standard
	Ag	107	599.3	5.6	**0.0814**	0.006	7.3	ug/L	199	Standard
	Cd	111	50.5	8.9	**0.0199**	0.002	11.4	mg/L	89	Standard
	Cd	114	163.8	19.2	**0.0273**	0.006	23.2	ug/L	150	Standard
>	**In**	115	516631.1	0.8				ug/L	458296	Standard
	Sn	118	976.7	4.4	**0.1089**	0.007	6.1	ug/L	385	Standard
	Sb	123	583.8	2.5	**0.1074**	0.003	3.2	ug/L	208	Standard
	Ba	135	43369.0	2.1	**18.6438**	0.381	2.0	ug/L	108	Standard
	Ce	140	3030.3	7.2				ug/L	92	Standard
>	**Tb**	159	872804.7	1.3				ug/L	812006	Standard
	Ho	165	75.0	6.7				ug/L	7	Standard
	Tl	203	28.7	26.2	**-0.0021**	0.001	43.7	ug/L	236	Standard
	Tl	205	25.0	20.0	**0.0041**	0.001	20.5	ug/L	43	Standard
	Pb	206	3815.1	2.6	**0.7302**	0.014	1.9	ug/L	266	Standard
	Pb	207	3189.3	3.0	**0.6686**	0.013	2.0	ug/L	206	Standard
	Pb	208	11687.8	1.0	**0.7088**	0.005	0.8	ug/L	668	Standard
	U	238	2428.9	1.5	**0.4639**	0.007	1.4	ug/L	32	Standard
>	**Bi**	209	442939.4	1.8				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	70.0	44.6	**0.0638**	0.075	117.7	mg/L	60	Standard
K	39	3.3	173.2	**-0.3391**	0.113	33.2	mg/L	12	Standard
Ca	43	56.7	60.1	**0.4054**	24.675	6087.3	mg/L	37	Standard
Fe	54	164.2	16.9	**0.2209**	0.061	27.8	mg/L	56	Standard
Fe	57	763.4	8.5	**-0.5082**	0.508	100.0	mg/L	735	Standard
> **Sc-1**	45	24259.4	0.9				mg/L	22687	Standard
Cl	35	24668.7	1.9				ug/L	20516	Standard
Kr	83	4.0	43.3				ug/L	5	Standard
Br	81	726.7	5.6				ug/L	570	Standard
P	31	8292.3	1.7				ug/L	7850	Standard
S	34	1020.0	5.8				ug/L	1375	Standard
Sr	88	178.3	22.7				ug/L	165	Standard
C	12	356.7	5.8				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	10.2				mg/L	0	Standard
Dy	164	67.1	67.8				mg/L	6	Standard
Ho-1	165	75.0	6.7				mg/L	7	Standard
Er	166	60.0	16.7				mg/L	13	Standard
I	127	12346.7	4.9				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.666	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.715	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.729
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		117.442
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, August 20, 2015 18:16:11
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	62999.1	2.9				ug/L	51673	Standard
	Be	9	40597.7	1.3	**50.3188**	1.824	3.6	ug/L	43	Standard
	Al	27	4010816.1	1.1	**47.8627**	1.632	3.4	ug/L	2157	Standard
	Sc	45	24721.8	3.0				ug/L	22687	Standard
	Ti	47	18095.1	1.5	**106.3839**	1.316	1.2	ug/L	43	Standard
	V	51	221259.8	0.3	**51.2363**	0.061	0.1	ug/L	1233	Standard
	Cr	52	255668.9	1.1	**50.3130**	0.596	1.2	ug/L	6387	Standard
	Cr	53	32907.4	2.0	**51.0348**	1.012	2.0	ug/L	1555	Standard
	Mn	55	169001.8	1.6	**55.7455**	0.772	1.4	ug/L	436	Standard
	Co	59	220202.3	0.5	**52.4148**	0.278	0.5	ug/L	236	Standard
	Ni	60	71274.6	0.5	**49.6847**	0.347	0.7	ug/L	204	Standard
	Cu	65	70552.2	1.0	**49.2104**	0.472	1.0	ug/L	303	Standard
	Zn	66	39703.6	1.5	**49.5086**	0.617	1.2	ug/L	332	Standard
>	Ge	72	301484.6	0.3				ug/L	293924	Standard
	As	75	41530.9	0.7	**49.2276**	0.314	0.6	ug/L	45	Standard
	Se	82	3571.6	2.6	**50.5347**	1.455	2.9	ug/L	35	Standard
	Se-1	77	2562.9	1.9	**46.8805**	1.010	2.2	ug/L	153	Standard
>	Ga	71	35.0	57.1				mg/L	25	Standard
	Rb	85	633.3	2.4				ug/L	20	Standard
	Y	89	289182.2	1.4				ug/L	279578	Standard
>	Rh	103	40.0	45.1				ug/L	68	Standard
	Mo	98	175034.7	0.5	**97.5572**	1.061	1.1	ug/L	56	Standard
	Ag	107	300991.0	0.4	**49.2658**	0.333	0.7	ug/L	199	Standard
	Cd	111	92888.3	0.0	**50.1103**	0.310	0.6	mg/L	89	Standard
	Cd	114	237976.6	1.6	**48.5982**	0.917	1.9	ug/L	150	Standard
>	In	115	507179.5	0.7				ug/L	458296	Standard
	Sn	118	273819.5	2.2	**45.8515**	1.240	2.7	ug/L	385	Standard
	Sb	123	243188.0	0.3	**50.6548**	0.485	1.0	ug/L	208	Standard
	Ba	135	108864.0	0.3	**47.7094**	0.342	0.7	ug/L	108	Standard
	Ce	140	86.7	8.8				ug/L	92	Standard
>	Tb	159	871069.4	1.0				ug/L	812006	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	374882.7	1.0	**49.0941**	0.196	0.4	ug/L	236	Standard
	Tl	205	269017.3	0.9	**50.8949**	1.066	2.1	ug/L	43	Standard
	Pb	206	235845.4	0.1	**49.9714**	0.709	1.4	ug/L	266	Standard
	Pb	207	215950.1	0.7	**50.5531**	0.855	1.7	ug/L	206	Standard
	Pb	208	744458.6	0.4	**50.0382**	0.850	1.7	ug/L	668	Standard
	U	238	259886.3	0.6	**51.2090**	0.852	1.7	ug/L	32	Standard
>	Bi	209	429933.3	1.4				ug/L	377155	Standard

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Na	23	1.7	173.2	**8.1801**	241.406	2951.2	mg/L	2	Standard
Mg	24	2351.8	2.1	**5.5346**	0.143	2.6	mg/L	60	Standard
K	39	231.7	27.0	**4.0098**	1.306	32.6	mg/L	12	Standard
Ca	43	71.7	29.0	**9.7573**	12.895	132.2	mg/L	37	Standard
Fe	54	2382.7	7.9	**4.8276**	0.484	10.0	mg/L	56	Standard
Fe	57	1373.4	7.0	**4.5426**	0.893	19.7	mg/L	735	Standard
> **Sc-1**	45	24721.8	3.0				mg/L	22687	Standard
Cl	35	27695.3	4.6				ug/L	20516	Standard
Kr	83	3.7	56.8				ug/L	5	Standard
Br	81	696.7	12.5				ug/L	570	Standard
P	31	10381.9	6.2				ug/L	7850	Standard
S	34	1515.1	6.0				ug/L	1375	Standard
Sr	88	155.0	19.6				ug/L	165	Standard
C	12	300.0	32.1				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	16.3	36.2				mg/L	6	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	1448.4	18.5				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	100.638		
Al	27	95.725		
Sc	45			
Ti	47	106.384		
V	51	102.473		
Cr	52	100.626		
Cr	53			
Mn	55	111.491		
Co	59	104.830		
Ni	60	99.369		
Cu	65	98.421		
Zn	66	99.017		
> Ge	72		102.572	
As	75	98.455		
Se	82	101.069		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	97.557		
Ag	107	98.532		
Cd	111	100.221		
Cd	114			
> In	115		110.666	
Sn	118	91.703		
Sb	123	101.310		
Ba	135	95.419		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.188		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.076		
U	238	102.418		
> Bi	209		113.994	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, August 20, 2015 18:19:23
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64006.6	1.5				ug/L	51673	Standard
	Be	9	28.3	113.5	**-0.0303**	0.039	129.6	ug/L	43	Standard
	Al	27	1488.5	128.1	**0.0071**	0.022	316.3	ug/L	2157	Standard
	Sc	45	24246.1	0.7				ug/L	22687	Standard
	Ti	47	24.0	36.3	**0.0138**	0.051	366.3	ug/L	43	Standard
	V	51	848.6	4.8	**-0.0708**	0.006	8.0	ug/L	1233	Standard
	Cr	52	5525.3	3.7	**-0.0625**	0.036	56.9	ug/L	6387	Standard
	Cr	53	351.7	15.3	**-1.4415**	0.080	5.5	ug/L	1555	Standard
	Mn	55	1032.1	86.4	**0.1488**	0.298	200.0	ug/L	436	Standard
	Co	59	218.3	15.8	**0.0066**	0.008	116.9	ug/L	236	Standard
	Ni	60	92.7	52.3	**0.0240**	0.034	140.2	ug/L	204	Standard
	Cu	65	494.0	75.9	**0.0801**	0.265	330.6	ug/L	303	Standard
	Zn	66	390.7	64.6	**0.0458**	0.319	695.3	ug/L	332	Standard
>	**Ge**	72	291061.5	2.1				ug/L	293924	Standard
	As	75	-19.6	220.2	**0.0213**	0.052	246.0	ug/L	45	Standard
	Se	82	22.5	19.9	**0.1185**	0.074	62.1	ug/L	35	Standard
	Se-1	77	69.0	15.3	**-1.4013**	0.183	13.1	ug/L	153	Standard
>	**Ga**	71	36.7	20.8				mg/L	25	Standard
	Rb	85	20.0	25.0				ug/L	20	Standard
	Y	89	290973.8	2.7				ug/L	279578	Standard
>	**Rh**	103	16.7	17.3				ug/L	68	Standard
	Mo	98	58.4	24.6	**0.0173**	0.008	45.6	ug/L	56	Standard
	Ag	107	127.7	49.2	**0.0061**	0.010	168.9	ug/L	199	Standard
	Cd	111	15.9	87.1	**0.0018**	0.007	412.2	mg/L	89	Standard
	Cd	114	50.2	121.4	**0.0048**	0.013	260.5	ug/L	150	Standard
>	**In**	115	501908.4	1.6				ug/L	458296	Standard
	Sn	118	488.3	1.6	**0.0309**	0.003	8.5	ug/L	385	Standard
	Sb	123	861.4	8.8	**0.1695**	0.018	10.9	ug/L	208	Standard
	Ba	135	147.0	113.1	**0.0411**	0.073	178.9	ug/L	108	Standard
	Ce	140	38.3	128.0				ug/L	92	Standard
>	**Tb**	159	857641.5	3.2				ug/L	812006	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	50.7	101.4	**0.0010**	0.007	692.3	ug/L	236	Standard
	Tl	205	136.7	154.4	**0.0258**	0.041	157.1	ug/L	43	Standard
	Pb	206	302.7	39.0	**0.0100**	0.025	254.0	ug/L	266	Standard
	Pb	207	240.0	37.2	**0.0004**	0.021	5347.7	ug/L	206	Standard
	Pb	208	1420.4	88.7	**0.0427**	0.086	202.1	ug/L	668	Standard
	U	238	128.7	150.3	**0.0252**	0.039	154.1	ug/L	32	Standard
>	**Bi**	209	423143.7	1.9				ug/L	377155	Standard

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Na	23	1.7	173.2	**7.3776**	242.796	3291.0	mg/L	2	Standard
Mg	24	55.0	32.8	**0.0273**	0.043	158.7	mg/L	60	Standard
K	39	5.0	100.0	**-0.3075**	0.096	31.3	mg/L	12	Standard
Ca	43	48.3	31.6	**-5.6478**	10.791	191.1	mg/L	37	Standard
Fe	54	59.4	36.4	**-0.0013**	0.045	3479.7	mg/L	56	Standard
Fe	57	771.7	7.1	**-0.4305**	0.454	105.4	mg/L	735	Standard
Sc-1	45	24246.1	0.7				mg/L	22687	Standard
Cl	35	27766.1	2.8				ug/L	20516	Standard
Kr	83	4.0	50.0				ug/L	5	Standard
Br	81	473.3	11.6				ug/L	570	Standard
P	31	8677.5	4.3				ug/L	7850	Standard
S	34	1566.7	3.9				ug/L	1375	Standard
Sr	88	181.7	11.1				ug/L	165	Standard
C	12	273.3	31.5				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.7	103.3				mg/L	6	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	3162.0	1.0				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.026	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.516
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		112.194
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508028220
Sample Date/Time: Thursday, August 20, 2015 18:22:35
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72324.0	3.5				ug/L	51673	Standard
	Be	9	760.0	2.4	**0.7563**	0.015	2.0	ug/L	43	Standard
	Al	27	1493449.8	1.6	**15.5256**	0.790	5.1	ug/L	2157	Standard
	Sc	45	31197.1	1.3				ug/L	22687	Standard
	Ti	47	14810.9	1.3	**84.7689**	1.369	1.6	ug/L	43	Standard
	V	51	89908.5	0.6	**20.1077**	0.202	1.0	ug/L	1233	Standard
	Cr	52	85899.2	1.0	**15.6442**	0.341	2.2	ug/L	6387	Standard
	Cr	53	10520.3	2.2	**14.4896**	0.236	1.6	ug/L	1555	Standard
	Mn	55	948996.2	0.8	**305.7231**	1.973	0.6	ug/L	436	Standard
	Co	59	31330.4	0.7	**7.2217**	0.110	1.5	ug/L	236	Standard
	Ni	60	40917.8	0.3	**27.7574**	0.336	1.2	ug/L	204	Standard
	Cu	65	612555.0	0.6	**418.1270**	5.136	1.2	ug/L	303	Standard
	Zn	66	564110.7	1.6	**690.8474**	5.551	0.8	ug/L	332	Standard
>	Ge	72	309616.4	1.1				ug/L	293924	Standard
	As	75	43095.0	0.9	**49.7404**	0.275	0.6	ug/L	45	Standard
	Se	82	1677.2	2.4	**22.9937**	0.750	3.3	ug/L	35	Standard
	Se-1	77	1305.4	4.3	**21.8529**	1.212	5.5	ug/L	153	Standard
>	Ga	71	12628.6	3.3				mg/L	25	Standard
	Rb	85	53084.5	2.9				ug/L	20	Standard
	Y	89	401188.8	0.6				ug/L	279578	Standard
>	Rh	103	585.0	6.8				ug/L	68	Standard
	Mo	98	9755.4	0.8	**5.1863**	0.023	0.4	ug/L	56	Standard
	Ag	107	1742.8	3.4	**0.2579**	0.008	3.3	ug/L	199	Standard
	Cd	111	1781.6	4.1	**0.9129**	0.044	4.8	mg/L	89	Standard
	Cd	114	4616.8	5.9	**0.8966**	0.059	6.6	ug/L	150	Standard
>	In	115	530193.8	0.7				ug/L	458296	Standard
	Sn	118	9966.6	1.7	**1.5462**	0.016	1.1	ug/L	385	Standard
	Sb	123	5092.9	2.1	**1.0030**	0.024	2.4	ug/L	208	Standard
	Ba	135	221642.2	1.3	**92.9414**	1.387	1.5	ug/L	108	Standard
	Ce	140	778006.9	1.3				ug/L	92	Standard
>	Tb	159	924500.0	1.7				ug/L	812006	Standard
	Ho	165	10772.2	2.6				ug/L	7	Standard
	Tl	203	6591.1	1.3	**0.3345**	0.007	2.1	ug/L	236	Standard
	Tl	205	4597.4	4.9	**0.3423**	0.018	5.3	ug/L	43	Standard
	Pb	206	10467149.5	0.5	**874.9174**	5.953	0.7	ug/L	266	Standard
	Pb	207	8783616.3	0.6	**811.1998**	10.396	1.3	ug/L	206	Standard
	Pb	208	32027335.1	0.7	**849.1781**	0.374	0.0	ug/L	668	Standard
	U	238	6732.8	0.9	**0.5222**	0.006	1.2	ug/L	32	Standard
>	Bi	209	1090838.1	0.7				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	173.3	25.9	**0.2228**	0.088	39.5	mg/L	60	Standard
K	39	55.0	24.1	**0.4200**	0.187	44.5	mg/L	12	Standard
Ca	43	50.0	81.9	**-12.5840**	22.193	176.4	mg/L	37	Standard
Fe	54	11189.6	1.3	**18.2885**	0.471	2.6	mg/L	56	Standard
Fe	57	3685.4	3.3	**17.6408**	1.062	6.0	mg/L	735	Standard
> **Sc-1**	45	31197.1	1.3				mg/L	22687	Standard
Cl	35	27806.8	1.9				ug/L	20516	Standard
Kr	83	4.7	32.7				ug/L	5	Standard
Br	81	683.3	26.2				ug/L	570	Standard
P	31	11012.3	1.5				ug/L	7850	Standard
S	34	1646.8	12.1				ug/L	1375	Standard
Sr	88	208.3	34.1				ug/L	165	Standard
C	12	496.7	41.1				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	5374.3	5.5				mg/L	0	Standard
Dy	164	17207.5	3.6				mg/L	6	Standard
Ho-1	165	10772.2	2.6				mg/L	7	Standard
Er	166	10080.0	2.3				mg/L	13	Standard
I	127	6554.8	2.5				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		139.965	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.339	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		115.688
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		289.228
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Cu 65 Upper, S, EEE	Cu	65	

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Zn 66 Upper, S, EEE	Zn	66	
Pb 206 Upper, S, EEE	Pb	206	
Pb 207 Upper, S, EEE	Pb	207	
Pb 208 Upper, S, EEE	Pb	208	
Bi 209 Int Std for sample	Bi	209	Rerun sample

Sample ID: L1508028220
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Method 6020 - Summary Report

Sample ID: L1508028221
Sample Date/Time: Thursday, August 20, 2015 18:25:47
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75487.7	2.6				ug/L	51673	Standard
	Be	9	845.0	12.7	**0.8120**	0.134	16.5	ug/L	43	Standard
	Al	27	1475492.5	2.0	**14.6802**	0.117	0.8	ug/L	2157	Standard
	Sc	45	29515.4	1.0				ug/L	22687	Standard
	Ti	47	28766.3	1.0	**164.6112**	3.974	2.4	ug/L	43	Standard
	V	51	330282.1	0.7	**74.5324**	1.693	2.3	ug/L	1233	Standard
	Cr	52	178789.1	1.0	**33.8409**	0.849	2.5	ug/L	6387	Standard
	Cr	53	22236.3	2.6	**32.8581**	1.303	4.0	ug/L	1555	Standard
	Mn	55	797979.3	0.1	**256.7872**	4.118	1.6	ug/L	436	Standard
	Co	59	26999.0	0.2	**6.2101**	0.094	1.5	ug/L	236	Standard
	Ni	60	32634.8	1.3	**22.1040**	0.112	0.5	ug/L	204	Standard
	Cu	65	460717.8	1.0	**314.0710**	3.960	1.3	ug/L	303	Standard
	Zn	66	527764.6	0.6	**645.6686**	7.134	1.1	ug/L	332	Standard
>	Ge	72	309968.5	1.7				ug/L	293924	Standard
	As	75	71230.3	0.9	**82.1112**	1.952	2.4	ug/L	45	Standard
	Se	82	3648.0	0.2	**50.2096**	0.954	1.9	ug/L	35	Standard
	Se-1	77	2710.2	2.7	**48.3063**	1.557	3.2	ug/L	153	Standard
>	Ga	71	14583.7	1.0				mg/L	25	Standard
	Rb	85	49009.2	2.0				ug/L	20	Standard
	Y	89	390028.1	0.9				ug/L	279578	Standard
>	Rh	103	1118.4	0.9				ug/L	68	Standard
	Mo	98	10971.7	1.5	**5.9251**	0.061	1.0	ug/L	56	Standard
	Ag	107	2864.9	1.8	**0.4407**	0.012	2.8	ug/L	199	Standard
	Cd	111	1620.5	4.7	**0.8422**	0.028	3.4	mg/L	89	Standard
	Cd	114	4224.9	5.5	**0.8330**	0.056	6.8	ug/L	150	Standard
>	In	115	522165.2	1.6				ug/L	458296	Standard
	Sn	118	13013.9	4.3	**2.0664**	0.058	2.8	ug/L	385	Standard
	Sb	123	13612.0	1.7	**2.7432**	0.078	2.8	ug/L	208	Standard
	Ba	135	213841.3	1.4	**91.0515**	1.144	1.3	ug/L	108	Standard
	Ce	140	583271.5	0.3				ug/L	92	Standard
>	Tb	159	901644.0	2.2				ug/L	812006	Standard
	Ho	165	9479.6	0.5				ug/L	7	Standard
	Tl	203	6255.0	2.3	**0.1910**	0.003	1.8	ug/L	236	Standard
	Tl	205	4520.7	1.5	**0.2049**	0.002	0.9	ug/L	43	Standard
	Pb	206	18840304.2	0.4	**959.6991**	6.979	0.7	ug/L	266	Standard
	Pb	207	15936183.5	0.1	**896.8810**	6.893	0.8	ug/L	206	Standard
	Pb	208	57524646.4	0.9	**929.5028**	10.657	1.1	ug/L	668	Standard
	U	238	6456.7	2.2	**0.3049**	0.008	2.6	ug/L	32	Standard
>	Bi	209	1790012.4	0.7				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	138.3	2.1	**0.1708**	0.004	2.3	mg/L	60	Standard
K	39	33.3	17.3	**0.1243**	0.086	69.4	mg/L	12	Standard
Ca	43	48.3	23.9	**-11.7442**	6.992	59.5	mg/L	37	Standard
Fe	54	17642.3	1.3	**30.5567**	0.381	1.2	mg/L	56	Standard
Fe	57	5300.9	8.1	**30.5202**	3.416	11.2	mg/L	735	Standard
> **Sc-1**	45	29515.4	1.0				mg/L	22687	Standard
Cl	35	28320.4	1.7				ug/L	20516	Standard
Kr	83	5.0	20.0				ug/L	5	Standard
Br	81	726.7	4.4				ug/L	570	Standard
P	31	11182.5	3.7				ug/L	7850	Standard
S	34	1716.8	2.0				ug/L	1375	Standard
Sr	88	191.7	10.5				ug/L	165	Standard
C	12	373.3	35.0				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	9496.3	2.0				mg/L	0	Standard
Dy	164	15138.7	4.9				mg/L	6	Standard
Ho-1	165	9479.6	0.5				mg/L	7	Standard
Er	166	8752.5	1.0				mg/L	13	Standard
I	127	5761.1	2.9				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		146.087	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.459	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.936
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		474.609
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	

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Cu 65 Upper, S, EEE	Cu	65	
Zn 66 Upper, S, EEE	Zn	66	
Pb 206 Upper, S, EEE	Pb	206	
Pb 207 Upper, S, EEE	Pb	207	
Pb 208 Upper, S, EEE	Pb	208	
Bi 209 Int Std for sample	Bi	209	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1508028222
Sample Date/Time: Thursday, August 20, 2015 18:28:58
Number of Replicates: 3
Autosampler Position: 227
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73940.0	1.0				ug/L	51673	Standard
	Be	9	361.7	2.9	**0.3172**	0.014	4.3	ug/L	43	Standard
	Al	27	2210889.8	2.8	**22.4635**	0.762	3.4	ug/L	2157	Standard
	Sc	45	29450.3	1.1				ug/L	22687	Standard
	Ti	47	11793.9	1.4	**67.3965**	1.492	2.2	ug/L	43	Standard
	V	51	81813.1	1.9	**18.2481**	0.233	1.3	ug/L	1233	Standard
	Cr	52	77472.6	1.9	**13.9684**	0.086	0.6	ug/L	6387	Standard
	Cr	53	9277.8	4.7	**12.5158**	0.414	3.3	ug/L	1555	Standard
	Mn	55	1060449.2	0.6	**341.2558**	4.779	1.4	ug/L	436	Standard
	Co	59	37432.2	1.7	**8.6257**	0.092	1.1	ug/L	236	Standard
	Ni	60	36217.6	2.2	**24.5297**	0.236	1.0	ug/L	204	Standard
	Cu	65	68999.1	2.2	**46.7881**	0.465	1.0	ug/L	303	Standard
	Zn	66	79593.2	1.5	**96.9603**	0.467	0.5	ug/L	332	Standard
>	**Ge**	72	310022.1	1.9				ug/L	293924	Standard
	As	75	12280.0	1.5	**14.1883**	0.121	0.9	ug/L	45	Standard
	Se	82	54.3	2.0	**0.5367**	0.029	5.4	ug/L	35	Standard
	Se-1	77	115.7	9.2	**-0.6023**	0.222	36.9	ug/L	153	Standard
>	**Ga**	71	9786.5	4.3				mg/L	25	Standard
	Rb	85	71022.7	0.8				ug/L	20	Standard
	Y	89	396104.8	1.4				ug/L	279578	Standard
>	**Rh**	103	36.7	7.9				ug/L	68	Standard
	Mo	98	6147.4	1.0	**3.3338**	0.034	1.0	ug/L	56	Standard
	Ag	107	304.0	11.5	**0.0337**	0.006	17.5	ug/L	199	Standard
	Cd	111	382.2	2.9	**0.1948**	0.007	3.6	mg/L	89	Standard
	Cd	114	986.2	3.3	**0.1913**	0.007	3.4	ug/L	150	Standard
>	**In**	115	518895.7	0.7				ug/L	458296	Standard
	Sn	118	640.0	2.8	**0.0530**	0.004	6.6	ug/L	385	Standard
	Sb	123	285.0	6.1	**0.0461**	0.004	8.1	ug/L	208	Standard
	Ba	135	36425.7	1.7	**15.5871**	0.296	1.9	ug/L	108	Standard
	Ce	140	1137202.4	1.9				ug/L	92	Standard
>	**Tb**	159	901563.0	0.1				ug/L	812006	Standard
	Ho	165	11300.9	0.4				ug/L	7	Standard
	Tl	203	2221.5	1.4	**0.2787**	0.006	2.0	ug/L	236	Standard
	Tl	205	1668.4	4.5	**0.3080**	0.014	4.5	ug/L	43	Standard
	Pb	206	76809.0	2.8	**15.8699**	0.539	3.4	ug/L	266	Standard
	Pb	207	62325.4	4.3	**14.2212**	0.700	4.9	ug/L	206	Standard
	Pb	208	228876.2	1.8	**14.9980**	0.364	2.4	ug/L	668	Standard
	U	238	6840.2	0.6	**1.3166**	0.004	0.3	ug/L	32	Standard
>	**Bi**	209	439848.6	0.6				ug/L	377155	Standard

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Na	23	3.3	86.6	**-84.5287**	201.026	237.8	mg/L	2	Standard
Mg	24	76.7	57.0	**0.0470**	0.086	184.0	mg/L	60	Standard
K	39	46.7	16.4	**0.3388**	0.128	37.9	mg/L	12	Standard
Ca	43	60.0	25.0	**-4.8120**	9.192	191.0	mg/L	37	Standard
Fe	54	13145.7	2.0	**22.7844**	0.218	1.0	mg/L	56	Standard
Fe	57	3925.5	3.8	**20.8124**	1.249	6.0	mg/L	735	Standard
> **Sc-1**	45	29450.3	1.1				mg/L	22687	Standard
Cl	35	26898.5	0.3				ug/L	20516	Standard
Kr	83	4.3	58.1				ug/L	5	Standard
Br	81	1163.4	7.8				ug/L	570	Standard
P	31	11417.6	2.6				ug/L	7850	Standard
S	34	1698.4	5.6				ug/L	1375	Standard
Sr	88	166.7	18.1				ug/L	165	Standard
C	12	383.3	20.3				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	180.0	5.6				mg/L	0	Standard
Dy	164	18699.1	0.8				mg/L	6	Standard
Ho-1	165	11300.9	0.4				mg/L	7	Standard
Er	166	10920.6	1.0				mg/L	13	Standard
I	127	6754.8	2.5				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		143.092	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.477	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.223
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		116.623
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508028223
Sample Date/Time: Thursday, August 20, 2015 18:32:09
Number of Replicates: 3
Autosampler Position: 228
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69971.5	5.4				ug/L	51673	Standard
	Be	9	1400.1	5.5	**1.5004**	0.096	6.4	ug/L	43	Standard
	Al	27	8183517.7	1.0	**88.0268**	4.038	4.6	ug/L	2157	Standard
	Sc	45	30986.7	5.0				ug/L	22687	Standard
	Ti	47	35460.8	2.5	**209.3449**	5.094	2.4	ug/L	43	Standard
	V	51	198019.6	0.6	**45.9902**	0.542	1.2	ug/L	1233	Standard
	Cr	52	87139.2	1.3	**16.4098**	0.355	2.2	ug/L	6387	Standard
	Cr	53	10253.5	1.5	**14.5640**	0.233	1.6	ug/L	1555	Standard
	Mn	55	3288066.5	2.3	**1092.1420**	23.490	2.2	ug/L	436	Standard
	Co	59	92868.7	0.1	**22.1567**	0.169	0.8	ug/L	236	Standard
	Ni	60	168260.2	1.2	**117.7644**	1.529	1.3	ug/L	204	Standard
	Cu	65	10593164.8	1.6	**7456.0045**	98.944	1.3	ug/L	303	Standard
	Zn	66	2415344.9	0.8	**3050.2431**	36.880	1.2	ug/L	332	Standard
>	**Ge**	72	300431.1	0.9				ug/L	293924	Standard
	As	75	33282.3	0.6	**39.6001**	0.497	1.3	ug/L	45	Standard
	Se	82	185.2	2.2	**2.4264**	0.068	2.8	ug/L	35	Standard
	Se-1	77	221.3	5.5	**1.5218**	0.273	18.0	ug/L	153	Standard
>	**Ga**	71	11444.3	2.7				mg/L	25	Standard
	Rb	85	92883.8	0.3				ug/L	20	Standard
	Y	89	613785.9	2.2				ug/L	279578	Standard
>	**Rh**	103	1118.4	2.9				ug/L	68	Standard
	Mo	98	5218.8	0.8	**2.9049**	0.051	1.7	ug/L	56	Standard
	Ag	107	27106.6	0.8	**4.4398**	0.007	0.2	ug/L	199	Standard
	Cd	111	10021.6	1.1	**5.4205**	0.029	0.5	mg/L	89	Standard
	Cd	114	26514.7	4.3	**5.4287**	0.182	3.3	ug/L	150	Standard
>	**In**	115	505274.1	1.0				ug/L	458296	Standard
	Sn	118	345594.5	1.9	**58.0954**	0.791	1.4	ug/L	385	Standard
	Sb	123	2903.8	1.7	**0.5953**	0.007	1.1	ug/L	208	Standard
	Ba	135	232104.0	0.5	**102.1303**	0.526	0.5	ug/L	108	Standard
	Ce	140	1466737.7	0.2				ug/L	92	Standard
>	**Tb**	159	913047.1	0.8				ug/L	812006	Standard
	Ho	165	31987.1	2.2				ug/L	7	Standard
	Tl	203	2026.8	2.7	**0.2432**	0.007	2.8	ug/L	236	Standard
	Tl	205	1445.1	8.7	**0.2559**	0.023	8.9	ug/L	43	Standard
	Pb	206	5838543.0	1.1	**1161.3856**	23.261	2.0	ug/L	266	Standard
	Pb	207	4708932.2	0.6	**1034.8453**	14.482	1.4	ug/L	206	Standard
	Pb	208	17483072.0	0.1	**1103.0966**	11.734	1.1	ug/L	668	Standard
	U	238	8490.7	0.8	**1.5684**	0.031	2.0	ug/L	32	Standard
>	**Bi**	209	458441.5	1.2				ug/L	377155	Standard

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Na	23	3.3	86.6	**-77.4681**	195.282	252.1	mg/L	2	Standard
Mg	24	173.3	16.4	**0.2244**	0.048	21.3	mg/L	60	Standard
K	39	60.0	36.3	**0.5149**	0.384	74.5	mg/L	12	Standard
Ca	43	403.3	17.2	**186.4400**	50.224	26.9	mg/L	37	Standard
Fe	54	12910.9	4.2	**21.3273**	2.004	9.4	mg/L	56	Standard
Fe	57	4248.9	7.8	**21.7315**	3.766	17.3	mg/L	735	Standard
> **Sc-1**	45	30986.7	5.0				mg/L	22687	Standard
Cl	35	28875.5	0.6				ug/L	20516	Standard
Kr	83	3.0	0.0				ug/L	5	Standard
Br	81	1203.4	10.0				ug/L	570	Standard
P	31	12793.7	2.5				ug/L	7850	Standard
S	34	2026.8	3.7				ug/L	1375	Standard
Sr	88	193.3	16.6				ug/L	165	Standard
C	12	696.7	19.6				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	983.4	13.7				mg/L	0	Standard
Dy	164	51684.2	0.6				mg/L	6	Standard
Ho-1	165	31987.1	2.2				mg/L	7	Standard
Er	166	29755.9	1.3				mg/L	13	Standard
I	127	8942.6	4.8				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		135.412	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.214	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.251
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		121.552
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	

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Ni 60 Upper, S, EEE	Ni	60	
Cu 65 Upper, S, EEE	Cu	65	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	
Pb 206 Upper, S, EEE	Pb	206	
Pb 207 Upper, S, EEE	Pb	207	
Pb 208 Upper, S, EEE	Pb	208	
Bi 209 Int Std for sample	Bi	209	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1508028224
Sample Date/Time: Thursday, August 20, 2015 18:35:21
Number of Replicates: 3
Autosampler Position: 229
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65872.9	1.8				ug/L	51673	Standard
	Be	9	505.0	10.3	**0.5339**	0.060	11.2	ug/L	43	Standard
	Al	27	2669271.5	1.4	**30.4477**	0.689	2.3	ug/L	2157	Standard
	Sc	45	29996.3	2.1				ug/L	22687	Standard
	Ti	47	13292.5	2.5	**77.5429**	1.550	2.0	ug/L	43	Standard
	V	51	78297.8	1.1	**17.8211**	0.169	0.9	ug/L	1233	Standard
	Cr	52	74970.1	1.7	**13.7838**	0.189	1.4	ug/L	6387	Standard
	Cr	53	9314.5	2.8	**12.8818**	0.344	2.7	ug/L	1555	Standard
	Mn	55	2131724.4	1.0	**700.3895**	4.635	0.7	ug/L	436	Standard
	Co	59	50718.8	1.5	**11.9484**	0.129	1.1	ug/L	236	Standard
	Ni	60	50615.1	0.9	**35.0164**	0.501	1.4	ug/L	204	Standard
	Cu	65	744059.3	1.2	**517.8424**	5.747	1.1	ug/L	303	Standard
	Zn	66	654516.9	1.9	**817.2967**	11.972	1.5	ug/L	332	Standard
>	**Ge**	72	303684.3	0.5				ug/L	293924	Standard
	As	75	15290.9	1.5	**18.0220**	0.220	1.2	ug/L	45	Standard
	Se	82	84.7	19.2	**0.9815**	0.235	23.9	ug/L	35	Standard
	Se-1	77	171.7	4.7	**0.5190**	0.162	31.2	ug/L	153	Standard
>	**Ga**	71	10203.4	4.4				mg/L	25	Standard
	Rb	85	90673.9	1.9				ug/L	20	Standard
	Y	89	610900.4	2.5				ug/L	279578	Standard
>	**Rh**	103	116.7	17.3				ug/L	68	Standard
	Mo	98	4918.3	1.3	**2.7115**	0.039	1.4	ug/L	56	Standard
	Ag	107	1200.4	6.8	**0.1806**	0.016	8.7	ug/L	199	Standard
	Cd	111	12094.5	1.8	**6.4833**	0.044	0.7	mg/L	89	Standard
	Cd	114	30748.2	2.8	**6.2396**	0.087	1.4	ug/L	150	Standard
>	**In**	115	509912.6	1.4				ug/L	458296	Standard
	Sn	118	7768.7	6.7	**1.2430**	0.075	6.0	ug/L	385	Standard
	Sb	123	459.9	12.7	**0.0834**	0.013	15.2	ug/L	208	Standard
	Ba	135	110344.4	1.3	**48.0992**	0.370	0.8	ug/L	108	Standard
	Ce	140	1243697.0	2.7				ug/L	92	Standard
>	**Tb**	159	916303.3	1.3				ug/L	812006	Standard
	Ho	165	32122.4	2.6				ug/L	7	Standard
	Tl	203	2070.8	2.3	**0.2668**	0.005	1.7	ug/L	236	Standard
	Tl	205	1385.1	2.9	**0.2629**	0.010	3.7	ug/L	43	Standard
	Pb	206	788062.6	1.4	**167.9414**	2.335	1.4	ug/L	266	Standard
	Pb	207	639740.3	0.9	**150.6239**	1.867	1.2	ug/L	206	Standard
	Pb	208	2379379.3	1.8	**160.8395**	2.471	1.5	ug/L	668	Standard
	U	238	5378.3	0.8	**1.0644**	0.008	0.8	ug/L	32	Standard
>	**Bi**	209	427744.8	0.8				ug/L	377155	Standard

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Na	23	1.7	173.2	**34.8097**	195.283	561.0	mg/L	2	Standard
Mg	24	91.7	32.9	**0.0734**	0.056	76.6	mg/L	60	Standard
K	39	36.7	28.4	**0.1663**	0.152	91.4	mg/L	12	Standard
Ca	43	48.3	26.0	**-12.1425**	7.802	64.3	mg/L	37	Standard
Fe	54	12871.1	4.3	**21.9021**	0.933	4.3	mg/L	56	Standard
Fe	57	4218.9	4.5	**22.3367**	0.782	3.5	mg/L	735	Standard
Sc-1	45	29996.3	2.1				mg/L	22687	Standard
Cl	35	25796.0	3.8				ug/L	20516	Standard
Kr	83	4.7	32.7				ug/L	5	Standard
Br	81	910.0	10.8				ug/L	570	Standard
P	31	12028.1	3.7				ug/L	7850	Standard
S	34	1686.8	13.8				ug/L	1375	Standard
Sr	88	138.3	14.6				ug/L	165	Standard
C	12	290.0	6.0				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	380.0	5.3				mg/L	0	Standard
Dy	164	51901.0	4.5				mg/L	6	Standard
Ho-1	165	32122.4	2.6				mg/L	7	Standard
Er	166	28306.5	4.5				mg/L	13	Standard
I	127	7075.0	2.6				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		127.480	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.321	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.263
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		113.413
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Cu 65 Upper, S, EEE	Cu	65	

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Zn 66 Upper, S, EEE	Zn	66
Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

Approved: August 21, 2015

Method 6020 - Summary Report

Sample ID: L1508028225
Sample Date/Time: Thursday, August 20, 2015 18:38:32
Number of Replicates: 3
Autosampler Position: 230
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73702.3	3.6				ug/L	51673	Standard
	Be	9	536.7	6.2	**0.5036**	0.016	3.2	ug/L	43	Standard
	Al	27	2836817.2	3.3	**28.9179**	0.336	1.2	ug/L	2157	Standard
	Sc	45	31397.5	3.4				ug/L	22687	Standard
	Ti	47	12465.1	2.0	**71.2501**	1.437	2.0	ug/L	43	Standard
	V	51	93569.6	1.5	**20.9149**	0.097	0.5	ug/L	1233	Standard
	Cr	52	85599.2	2.7	**15.5649**	0.297	1.9	ug/L	6387	Standard
	Cr	53	10782.2	5.6	**14.8875**	1.002	6.7	ug/L	1555	Standard
	Mn	55	2484626.4	3.1	**799.8284**	15.614	2.0	ug/L	436	Standard
	Co	59	53866.3	2.4	**12.4354**	0.157	1.3	ug/L	236	Standard
	Ni	60	54480.1	1.0	**36.9329**	0.219	0.6	ug/L	204	Standard
	Cu	65	2443767.3	1.4	**1667.1235**	5.507	0.3	ug/L	303	Standard
	Zn	66	910920.1	1.8	**1114.7399**	10.329	0.9	ug/L	332	Standard
>	Ge	72	309924.3	1.2				ug/L	293924	Standard
	As	75	17752.8	0.2	**20.4983**	0.255	1.2	ug/L	45	Standard
	Se	82	99.4	11.1	**1.1614**	0.168	14.4	ug/L	35	Standard
	Se-1	77	173.3	16.3	**0.4801**	0.499	104.0	ug/L	153	Standard
>	Ga	71	11290.9	1.3				mg/L	25	Standard
	Rb	85	106642.3	0.8				ug/L	20	Standard
	Y	89	592166.0	1.1				ug/L	279578	Standard
>	Rh	103	248.3	11.4				ug/L	68	Standard
	Mo	98	7029.8	0.1	**3.8482**	0.027	0.7	ug/L	56	Standard
	Ag	107	4714.7	9.4	**0.7458**	0.066	8.9	ug/L	199	Standard
	Cd	111	12549.7	0.5	**6.6693**	0.047	0.7	mg/L	89	Standard
	Cd	114	32952.6	0.8	**6.6303**	0.089	1.3	ug/L	150	Standard
>	In	115	514389.4	0.7				ug/L	458296	Standard
	Sn	118	11577.8	1.3	**1.8616**	0.012	0.6	ug/L	385	Standard
	Sb	123	891.6	29.9	**0.1709**	0.053	31.2	ug/L	208	Standard
	Ba	135	130773.9	0.5	**56.5133**	0.591	1.0	ug/L	108	Standard
	Ce	140	1226977.1	1.0				ug/L	92	Standard
>	Tb	159	923645.0	1.3				ug/L	812006	Standard
	Ho	165	31290.6	2.7				ug/L	7	Standard
	Tl	203	2681.6	15.3	**0.3337**	0.046	13.9	ug/L	236	Standard
	Tl	205	1830.1	0.8	**0.3346**	0.008	2.4	ug/L	43	Standard
	Pb	206	1485133.8	0.1	**304.8190**	4.716	1.5	ug/L	266	Standard
	Pb	207	1203605.6	0.6	**272.9198**	3.405	1.2	ug/L	206	Standard
	Pb	208	4435490.6	1.3	**288.7985**	7.134	2.5	ug/L	668	Standard
	U	238	6615.8	1.4	**1.2611**	0.034	2.7	ug/L	32	Standard
>	Bi	209	444254.2	1.6				ug/L	377155	Standard

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Na	23	1.7	173.2	**35.9363**	193.331	538.0	mg/L	2	Standard
Mg	24	90.0	22.2	**0.0639**	0.043	67.3	mg/L	60	Standard
K	39	51.7	11.2	**0.3691**	0.110	29.9	mg/L	12	Standard
Ca	43	68.3	41.6	**-2.2480**	16.329	726.4	mg/L	37	Standard
Fe	54	14012.2	3.7	**22.8181**	1.599	7.0	mg/L	56	Standard
Fe	57	4307.3	1.7	**21.6321**	0.528	2.4	mg/L	735	Standard
> **Sc-1**	45	31397.5	3.4				mg/L	22687	Standard
Cl	35	25904.1	1.0				ug/L	20516	Standard
Kr	83	2.3	89.2				ug/L	5	Standard
Br	81	660.0	18.2				ug/L	570	Standard
P	31	11614.5	2.3				ug/L	7850	Standard
S	34	1576.7	7.7				ug/L	1375	Standard
Sr	88	178.3	21.0				ug/L	165	Standard
C	12	460.0	18.6				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1936.8	5.2				mg/L	0	Standard
Dy	164	49760.6	2.7				mg/L	6	Standard
Ho-1	165	31290.6	2.7				mg/L	7	Standard
Er	166	28019.2	4.0				mg/L	13	Standard
I	127	8072.2	4.1				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		142.632	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.444	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.240
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		117.791
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Cu 65 Upper, S, EEE	Cu	65	

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Zn 66 Upper, S, EEE	Zn	66
Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1508028226
Sample Date/Time: Thursday, August 20, 2015 18:41:44
Number of Replicates: 3
Autosampler Position: 231
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	50395.4	1.9				ug/L	51673	Standard
	Be	9	208.3	1.4	**0.2581**	0.010	3.8	ug/L	43	Standard
	Al	27	763012.1	0.4	**11.3708**	0.247	2.2	ug/L	2157	Standard
	Sc	45	22586.8	2.0				ug/L	22687	Standard
	Ti	47	10050.3	1.8	**72.3785**	1.228	1.7	ug/L	43	Standard
	V	51	87287.9	0.9	**24.6311**	0.157	0.6	ug/L	1233	Standard
	Cr	52	50124.1	0.9	**11.1655**	0.055	0.5	ug/L	6387	Standard
	Cr	53	6139.6	2.8	**10.1068**	0.382	3.8	ug/L	1555	Standard
	Mn	55	871326.7	0.7	**353.3386**	2.516	0.7	ug/L	436	Standard
	Co	59	17522.5	0.1	**5.0694**	0.024	0.5	ug/L	236	Standard
	Ni	60	187667.1	2.2	**160.4226**	2.938	1.8	ug/L	204	Standard
	Cu	65	515480.4	1.3	**442.8593**	3.996	0.9	ug/L	303	Standard
	Zn	66	776272.0	0.9	**1196.9548**	6.159	0.5	ug/L	332	Standard
>	Ge	72	245983.7	0.4				ug/L	293924	Standard
	As	75	427787.8	1.4	**620.9309**	6.072	1.0	ug/L	45	Standard
	Se	82	79733.6	0.7	**1388.2592**	7.431	0.5	ug/L	35	Standard
	Se-1	77	51159.6	2.2	**1212.2082**	22.153	1.8	ug/L	153	Standard
>	Ga	71	9066.0	2.4				mg/L	25	Standard
	Rb	85	151830.3	1.2				ug/L	20	Standard
	Y	89	293995.3	1.6				ug/L	279578	Standard
>	Rh	103	35717.1	3.4				ug/L	68	Standard
	Mo	98	8254.4	3.0	**5.6413**	0.149	2.6	ug/L	56	Standard
	Ag	107	12733.3	1.3	**2.5482**	0.030	1.2	ug/L	199	Standard
	Cd	111	18088.9	1.3	**11.9924**	0.133	1.1	mg/L	89	Standard
	Cd	114	44739.3	2.7	**11.2289**	0.327	2.9	ug/L	150	Standard
>	In	115	412506.3	0.3				ug/L	458296	Standard
	Sn	118	38885.2	10.6	**7.9628**	0.859	10.8	ug/L	385	Standard
	Sb	123	44225.4	0.3	**11.3165**	0.069	0.6	ug/L	208	Standard
	Ba	135	127055.9	0.9	**68.4710**	0.731	1.1	ug/L	108	Standard
	Ce	140	387656.6	2.3				ug/L	92	Standard
>	Tb	159	588500.6	1.2				ug/L	812006	Standard
	Ho	165	4050.5	3.6				ug/L	7	Standard
	Tl	203	76040.3	0.6	**0.3539**	0.003	0.8	ug/L	236	Standard
	Tl	205	81971.3	3.3	**0.5595**	0.019	3.4	ug/L	43	Standard
	Pb	206	647233658.9	0.4	**4957.7181**	25.673	0.5	ug/L	266	Standard
	Pb	207	536814788.9	0.5	**4543.2097**	53.756	1.2	ug/L	206	Standard
	Pb	208	1609505312.1	0.8	**3910.7089**	21.749	0.6	ug/L	668	Standard
	U	238	3407.7	0.3	**0.0236**	0.000	1.1	ug/L	32	Standard
>	Bi	209	11904257.7	0.9				ug/L	377155	Standard

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Na	23	1.7	173.2	**-3.1257**	260.989	8349.8	mg/L	2	Standard
Mg	24	161.7	15.6	**0.3183**	0.074	23.3	mg/L	60	Standard
K	39	108.3	30.7	**1.8448**	0.702	38.1	mg/L	12	Standard
Ca	43	35.0	24.7	**-13.2198**	7.201	54.5	mg/L	37	Standard
Fe	54	25081.4	2.6	**56.9059**	2.524	4.4	mg/L	56	Standard
Fe	57	7381.8	0.5	**61.3290**	1.594	2.6	mg/L	735	Standard
Sc-1	45	22586.8	2.0				mg/L	22687	Standard
Cl	35	26245.4	6.0				ug/L	20516	Standard
Kr	83	3.0	88.2				ug/L	5	Standard
Br	81	1673.4	7.8				ug/L	570	Standard
P	31	8697.5	2.6				ug/L	7850	Standard
S	34	1598.4	6.9				ug/L	1375	Standard
Sr	88	131.7	11.6				ug/L	165	Standard
C	12	333.3	7.5				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	890346.5	0.3				mg/L	0	Standard
Dy	164	6702.5	3.7				mg/L	6	Standard
Ho-1	165	4050.5	3.6				mg/L	7	Standard
Er	166	4087.2	5.3				mg/L	13	Standard
I	127	8969.3	4.2				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.527	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		83.689	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	90.009	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	3156.329	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	
Cu 65 Upper, S, EEE	Cu	65	

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Zn 66 Upper, S, EEE	Zn	66	
As 75 Upper, S, EEE	As	75	
Se 82 Upper, S, EEE	Se	82	
Se-1 77 Upper, S, EEE	Se-1	77	
Pb 206 Upper, S, EEE	Pb	206	
Pb 207 Upper, S, EEE	Pb	207	
Pb 208 Upper, S, EEE	Pb	208	
Bi 209 Int Std for sample	Bi	209	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, August 20, 2015 18:44:57
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	69897.6	2.3				ug/L	51673	Standard
	Be	9	42601.5	3.1	**47.5510**	0.485	1.0	ug/L	43	Standard
	Al	27	4141931.0	4.6	**44.5061**	1.045	2.3	ug/L	2157	Standard
	Sc	45	26463.1	5.2				ug/L	22687	Standard
	Ti	47	19858.7	1.7	**116.3216**	0.791	0.7	ug/L	43	Standard
	V	51	224850.4	2.1	**51.8701**	0.247	0.5	ug/L	1233	Standard
	Cr	52	275401.0	3.4	**54.0631**	0.636	1.2	ug/L	6387	Standard
	Cr	53	34275.4	1.8	**53.0310**	0.531	1.0	ug/L	1555	Standard
	Mn	55	176723.1	3.5	**58.0689**	1.179	2.0	ug/L	436	Standard
	Co	59	222037.4	1.8	**52.6514**	0.639	1.2	ug/L	236	Standard
	Ni	60	74365.8	1.7	**51.6441**	0.539	1.0	ug/L	204	Standard
	Cu	65	72547.7	2.1	**50.4171**	0.818	1.6	ug/L	303	Standard
	Zn	66	40293.2	2.3	**50.0541**	0.233	0.5	ug/L	332	Standard
>	Ge	72	302671.4	2.4				ug/L	293924	Standard
	As	75	41975.6	2.2	**49.5620**	0.411	0.8	ug/L	45	Standard
	Se	82	3658.9	0.7	**51.5884**	1.286	2.5	ug/L	35	Standard
	Se-1	77	2635.9	5.4	**48.0699**	1.600	3.3	ug/L	153	Standard
>	Ga	71	33.3	22.9				mg/L	25	Standard
	Rb	85	585.0	14.1				ug/L	20	Standard
	Y	89	293096.2	0.8				ug/L	279578	Standard
>	Rh	103	36.7	56.8				ug/L	68	Standard
	Mo	98	173127.5	2.6	**95.5060**	2.888	3.0	ug/L	56	Standard
	Ag	107	299964.0	2.1	**48.5944**	1.133	2.3	ug/L	199	Standard
	Cd	111	92932.1	1.0	**49.6195**	0.678	1.4	mg/L	89	Standard
	Cd	114	242539.0	1.5	**49.0192**	0.679	1.4	ug/L	150	Standard
>	In	115	512442.6	0.6				ug/L	458296	Standard
	Sn	118	270201.4	0.6	**44.7771**	0.485	1.1	ug/L	385	Standard
	Sb	123	236149.7	1.5	**48.6835**	0.899	1.8	ug/L	208	Standard
	Ba	135	108177.5	0.9	**46.9215**	0.573	1.2	ug/L	108	Standard
	Ce	140	420.0	85.1				ug/L	92	Standard
>	Tb	159	874105.8	1.2				ug/L	812006	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	368519.6	0.8	**48.0664**	0.616	1.3	ug/L	236	Standard
	Tl	205	265112.5	3.2	**49.9373**	1.204	2.4	ug/L	43	Standard
	Pb	206	276010.2	20.6	**58.1964**	11.586	19.9	ug/L	266	Standard
	Pb	207	246730.5	19.8	**57.4764**	10.964	19.1	ug/L	206	Standard
	Pb	208	838750.7	15.8	**56.1103**	8.470	15.1	ug/L	668	Standard
	U	238	255980.7	1.0	**50.2313**	0.755	1.5	ug/L	32	Standard
>	Bi	209	431691.7	1.2				ug/L	377155	Standard

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Na	23	1.7	173.2	**24.1079**	213.819	886.9	mg/L	2	Standard
Mg	24	2361.9	11.2	**5.1814**	0.467	9.0	mg/L	60	Standard
K	39	196.7	2.9	**3.0836**	0.232	7.5	mg/L	12	Standard
Ca	43	56.7	10.2	**-3.1392**	2.110	67.2	mg/L	37	Standard
Fe	54	2470.2	6.4	**4.6641**	0.154	3.3	mg/L	56	Standard
Fe	57	1318.4	4.5	**3.3556**	0.724	21.6	mg/L	735	Standard
> **Sc-1**	45	26463.1	5.2				mg/L	22687	Standard
Cl	35	31613.0	2.0				ug/L	20516	Standard
Kr	83	6.0	16.7				ug/L	5	Standard
Br	81	600.0	24.9				ug/L	570	Standard
P	31	13145.7	3.0				ug/L	7850	Standard
S	34	2215.2	2.9				ug/L	1375	Standard
Sr	88	168.3	10.4				ug/L	165	Standard
C	12	300.0	20.8				mg/L	173	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3127.0	31.8				mg/L	0	Standard
Dy	164	25.5	47.4				mg/L	6	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	23.3	65.5				mg/L	13	Standard
I	127	656.7	10.7				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	95.102		
Al	27	89.012		
Sc	45			
Ti	47	116.322		
V	51	103.740		
Cr	52	108.126		
Cr	53			
Mn	55	116.138		
Co	59	105.303		
Ni	60	103.288		
Cu	65	100.834		
Zn	66	100.108		
> Ge	72		102.976	
As	75	99.124		
Se	82	103.177		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	95.506		
Ag	107	97.189		
Cd	111	99.239		
Cd	114			
In	115		111.815	
Sn	118	89.554		
Sb	123	97.367		
Ba	135	93.843		
Ce	140			
Tb	159			
Ho	165			
Tl	203	96.133		
Tl	205			
Pb	206			
Pb	207			
Pb	208	112.221		
U	238	100.463		
Bi	209		114.460	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	
QC Std 6	Ti	47	
QC Std 6	Mn	55	

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QC Std 6	Pb	208

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, August 20, 2015 18:48:08
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66684.8	2.4				ug/L	51673	Standard
	Be	9	20.0	25.0	**-0.0416**	0.006	13.9	ug/L	43	Standard
	Al	27	398.3	5.2	**-0.0059**	0.000	3.7	ug/L	2157	Standard
	Sc	45	25653.4	3.2				ug/L	22687	Standard
	Ti	47	19.7	15.5	**-0.0151**	0.018	120.2	ug/L	43	Standard
	V	51	758.3	4.5	**-0.0971**	0.008	8.4	ug/L	1233	Standard
	Cr	52	4734.1	0.6	**-0.2522**	0.007	2.8	ug/L	6387	Standard
	Cr	53	246.7	11.2	**-1.6260**	0.047	2.9	ug/L	1555	Standard
	Mn	55	458.3	1.6	**-0.0488**	0.002	3.9	ug/L	436	Standard
	Co	59	211.3	3.6	**0.0036**	0.002	45.0	ug/L	236	Standard
	Ni	60	61.0	14.6	**0.0004**	0.006	1579.0	ug/L	204	Standard
	Cu	65	331.0	6.6	**-0.0416**	0.016	39.2	ug/L	303	Standard
	Zn	66	263.0	3.9	**-0.1258**	0.011	9.0	ug/L	332	Standard
>	**Ge**	72	298450.8	0.5				ug/L	293924	Standard
	As	75	-33.4	31.9	**0.0056**	0.013	223.9	ug/L	45	Standard
	Se	82	20.9	29.8	**0.0855**	0.089	104.5	ug/L	35	Standard
	Se-1	77	70.0	11.7	**-1.4130**	0.166	11.8	ug/L	153	Standard
>	**Ga**	71	11.7	89.2				mg/L	25	Standard
	Rb	85	33.3	70.9				ug/L	20	Standard
	Y	89	279621.7	0.8				ug/L	279578	Standard
>	**Rh**	103	6.7	43.3				ug/L	68	Standard
	Mo	98	46.6	29.4	**0.0112**	0.008	69.2	ug/L	56	Standard
	Ag	107	104.7	17.9	**0.0026**	0.003	117.1	ug/L	199	Standard
	Cd	111	11.9	14.8	**-0.0002**	0.001	473.8	mg/L	89	Standard
	Cd	114	3.8	88.0	**-0.0048**	0.001	14.8	ug/L	150	Standard
>	**In**	115	492943.8	0.7				ug/L	458296	Standard
	Sn	118	478.3	18.7	**0.0306**	0.015	48.9	ug/L	385	Standard
	Sb	123	790.1	5.1	**0.1573**	0.008	4.8	ug/L	208	Standard
	Ba	135	39.3	21.9	**-0.0062**	0.004	62.5	ug/L	108	Standard
	Ce	140	48.3	26.0				ug/L	92	Standard
>	**Tb**	159	848914.9	1.4				ug/L	812006	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	19.3	59.5	**-0.0032**	0.002	47.6	ug/L	236	Standard
	Tl	205	8.3	124.9	**0.0011**	0.002	179.5	ug/L	43	Standard
	Pb	206	10084.0	3.2	**2.1143**	0.058	2.7	ug/L	266	Standard
	Pb	207	8353.3	2.2	**1.9289**	0.035	1.8	ug/L	206	Standard
	Pb	208	32039.0	3.6	**2.1322**	0.075	3.5	ug/L	668	Standard
	U	238	11.3	28.4	**0.0016**	0.001	39.1	ug/L	32	Standard
>	**Bi**	209	423781.5	0.5				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	51.7	63.0	**0.0110**	0.071	646.6	mg/L	60	Standard
K	39	6.7	114.6	**-0.2803**	0.141	50.4	mg/L	12	Standard
Ca	43	36.7	28.4	**-15.2244**	7.690	50.5	mg/L	37	Standard
Fe	54	70.7	24.6	**0.0152**	0.039	254.4	mg/L	56	Standard
Fe	57	726.7	8.3	**-1.1503**	0.648	56.3	mg/L	735	Standard
> **Sc-1**	45	25653.4	3.2				mg/L	22687	Standard
Cl	35	28699.2	1.4				ug/L	20516	Standard
Kr	83	3.3	62.4				ug/L	5	Standard
Br	81	570.0	24.4				ug/L	570	Standard
P	31	10857.2	3.6				ug/L	7850	Standard
S	34	2011.8	0.6				ug/L	1375	Standard
Sr	88	136.7	15.2				ug/L	165	Standard
C	12	283.3	48.0				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1200.0	21.9				mg/L	0	Standard
Dy	164	15.9	77.1				mg/L	6	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	16.7	91.7				mg/L	13	Standard
I	127	2570.2	4.3				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.540	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.560
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		112.363
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Pb	208	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1508028226
Sample Date/Time: Thursday, August 20, 2015 18:56:06
Number of Replicates: 3
Autosampler Position: 232
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66103.9	1.5				ug/L	51673	Standard
	Be	9	16.7	124.9	**-0.0453**	0.025	54.1	ug/L	43	Standard
	Al	27	12260.0	5.7	**0.1290**	0.008	6.1	ug/L	2157	Standard
	Sc	45	25531.5	0.9				ug/L	22687	Standard
	Ti	47	160.7	3.1	**0.8354**	0.026	3.1	ug/L	43	Standard
	V	51	1704.1	3.7	**0.1304**	0.012	9.4	ug/L	1233	Standard
	Cr	52	5306.3	2.4	**-0.1220**	0.016	13.5	ug/L	6387	Standard
	Cr	53	308.3	9.8	**-1.5196**	0.045	2.9	ug/L	1555	Standard
	Mn	55	9836.5	1.2	**3.1293**	0.024	0.8	ug/L	436	Standard
	Co	59	384.3	6.9	**0.0464**	0.005	11.8	ug/L	236	Standard
	Ni	60	2592.2	1.6	**1.8076**	0.021	1.2	ug/L	204	Standard
	Cu	65	7135.0	6.9	**4.8417**	0.299	6.2	ug/L	303	Standard
	Zn	66	11018.3	1.2	**13.7269**	0.174	1.3	ug/L	332	Standard
>	**Ge**	72	294700.9	1.0				ug/L	293924	Standard
	As	75	5004.8	0.9	**6.1094**	0.107	1.7	ug/L	45	Standard
	Se	82	902.8	1.4	**12.9109**	0.307	2.4	ug/L	35	Standard
	Se-1	77	684.7	2.1	**10.7885**	0.168	1.6	ug/L	153	Standard
>	**Ga**	71	150.0	15.3				mg/L	25	Standard
	Rb	85	1878.5	7.3				ug/L	20	Standard
	Y	89	287990.1	1.7				ug/L	279578	Standard
>	**Rh**	103	415.0	15.4				ug/L	68	Standard
	Mo	98	107.7	1.6	**0.0457**	0.001	1.1	ug/L	56	Standard
	Ag	107	229.0	4.3	**0.0232**	0.001	4.2	ug/L	199	Standard
	Cd	111	227.4	6.6	**0.1184**	0.009	7.6	mg/L	89	Standard
	Cd	114	567.3	12.1	**0.1126**	0.013	11.7	ug/L	150	Standard
>	**In**	115	497159.6	1.8				ug/L	458296	Standard
	Sn	118	970.0	23.5	**0.1144**	0.041	36.2	ug/L	385	Standard
	Sb	123	769.2	5.7	**0.1514**	0.006	4.3	ug/L	208	Standard
	Ba	135	1804.4	2.8	**0.7831**	0.014	1.8	ug/L	108	Standard
	Ce	140	5337.6	1.3				ug/L	92	Standard
>	**Tb**	159	858302.9	1.1				ug/L	812006	Standard
	Ho	165	95.0	26.3				ug/L	7	Standard
	Tl	203	1100.4	0.7	**0.0974**	0.000	0.3	ug/L	236	Standard
	Tl	205	786.7	7.0	**0.1061**	0.008	7.4	ug/L	43	Standard
	Pb	206	8019812.9	0.6	**1217.6357**	11.980	1.0	ug/L	266	Standard
	Pb	207	6676649.9	0.8	**1119.9682**	10.270	0.9	ug/L	206	Standard
	Pb	208	25130807.2	0.9	**1210.3502**	14.649	1.2	ug/L	668	Standard
	U	238	42.3	9.8	**0.0053**	0.001	10.8	ug/L	32	Standard
>	**Bi**	209	600561.6	0.7				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	24.0	**-0.0065**	0.023	362.4	mg/L	60	Standard
K	39	1.7	173.2	**-0.3732**	0.053	14.3	mg/L	12	Standard
Ca	43	40.0	12.5	**-13.0101**	3.397	26.1	mg/L	37	Standard
Fe	54	267.6	28.2	**0.4120**	0.157	38.1	mg/L	56	Standard
Fe	57	736.7	7.3	**-1.0542**	0.387	36.7	mg/L	735	Standard
> **Sc-1**	45	25531.5	0.9				mg/L	22687	Standard
Cl	35	26964.6	0.6				ug/L	20516	Standard
Kr	83	3.0	57.7				ug/L	5	Standard
Br	81	616.7	7.7				ug/L	570	Standard
P	31	10080.0	2.4				ug/L	7850	Standard
S	34	1990.1	4.3				ug/L	1375	Standard
Sr	88	181.7	30.9				ug/L	165	Standard
C	12	206.7	15.6				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13843.0	0.8				mg/L	0	Standard
Dy	164	126.5	7.3				mg/L	6	Standard
Ho-1	165	95.0	26.3				mg/L	7	Standard
Er	166	73.3	20.8				mg/L	13	Standard
I	127	3428.7	3.5				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		127.927	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.264	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.480
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		159.235
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Pb 206 Upper, S, EEE	Pb	206	
Pb 207 Upper, S, EEE	Pb	207	

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Pb 208 Upper, S, EEE	Pb	208	
Bi 209 Int Std for sample	Bi	209	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1508059701PS WG535080-01
Sample Date/Time: Thursday, August 20, 2015 18:59:18
Number of Replicates: 3
Autosampler Position: 233
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68531.3	1.9				ug/L	51673	Standard
	Be	9	41678.9	0.3	**47.4643**	0.847	1.8	ug/L	43	Standard
	Al	27	209900.9	1.7	**2.2915**	0.034	1.5	ug/L	2157	Standard
	Sc	45	25262.7	2.9				ug/L	22687	Standard
	Ti	47	1646.4	4.9	**9.3781**	0.442	4.7	ug/L	43	Standard
	V	51	230062.3	1.9	**52.2947**	1.506	2.9	ug/L	1233	Standard
	Cr	52	281743.0	1.2	**54.5097**	0.774	1.4	ug/L	6387	Standard
	Cr	53	34489.2	1.5	**52.5454**	0.256	0.5	ug/L	1555	Standard
	Mn	55	786729.4	5.3	**255.4624**	15.516	6.1	ug/L	436	Standard
	Co	59	225506.6	1.2	**52.6804**	1.015	1.9	ug/L	236	Standard
	Ni	60	76819.9	1.2	**52.5542**	0.724	1.4	ug/L	204	Standard
	Cu	65	238955.0	1.1	**164.2156**	2.866	1.7	ug/L	303	Standard
	Zn	66	125130.2	0.1	**154.0927**	1.445	0.9	ug/L	332	Standard
>	Ge	72	307224.0	1.0				ug/L	293924	Standard
	As	75	47371.6	1.8	**55.0966**	0.895	1.6	ug/L	45	Standard
	Se	82	3731.6	2.5	**51.8190**	1.512	2.9	ug/L	35	Standard
	Se-1	77	2713.6	1.1	**48.8243**	1.054	2.2	ug/L	153	Standard
>	Ga	71	2103.5	3.0				mg/L	25	Standard
	Rb	85	2191.8	1.4				ug/L	20	Standard
	Y	89	297939.8	1.8				ug/L	279578	Standard
>	Rh	103	58.3	32.5				ug/L	68	Standard
	Mo	98	2648.0	1.5	**1.4780**	0.029	1.9	ug/L	56	Standard
	Ag	107	303212.7	1.0	**50.2180**	0.864	1.7	ug/L	199	Standard
	Cd	111	94373.3	1.3	**51.5158**	1.058	2.1	mg/L	89	Standard
	Cd	114	242051.2	0.7	**50.0113**	0.215	0.4	ug/L	150	Standard
>	In	115	501272.5	0.8				ug/L	458296	Standard
	Sn	118	3232.0	3.7	**0.4963**	0.019	3.8	ug/L	385	Standard
	Sb	123	245807.5	0.8	**51.8024**	0.274	0.5	ug/L	208	Standard
	Ba	135	324850.9	1.3	**144.0891**	1.748	1.2	ug/L	108	Standard
	Ce	140	14935.7	1.1				ug/L	92	Standard
>	Tb	159	870009.2	1.0				ug/L	812006	Standard
	Ho	165	288.3	5.6				ug/L	7	Standard
	Tl	203	380538.7	0.8	**43.1198**	0.554	1.3	ug/L	236	Standard
	Tl	205	267726.5	1.0	**43.8196**	0.574	1.3	ug/L	43	Standard
	Pb	206	257822.9	1.0	**47.2602**	0.638	1.3	ug/L	266	Standard
	Pb	207	231870.8	0.7	**46.9566**	0.387	0.8	ug/L	206	Standard
	Pb	208	823999.4	0.5	**47.9136**	0.410	0.9	ug/L	668	Standard
	U	238	271475.2	0.7	**46.2796**	0.457	1.0	ug/L	32	Standard
>	Bi	209	496880.8	0.6				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	98.3	20.5	**0.1237**	0.047	38.1	mg/L	60	Standard
K	39	13.3	21.7	**-0.1558**	0.059	38.2	mg/L	12	Standard
Ca	43	40.0	50.0	**-12.9680**	12.883	99.3	mg/L	37	Standard
Fe	54	667.5	4.2	**1.2309**	0.091	7.4	mg/L	56	Standard
Fe	57	921.7	10.2	**0.5348**	0.559	104.6	mg/L	735	Standard
Sc-1	45	25262.7	2.9				mg/L	22687	Standard
Cl	35	27748.7	1.4				ug/L	20516	Standard
Kr	83	3.0	145.3				ug/L	5	Standard
Br	81	900.0	23.8				ug/L	570	Standard
P	31	10141.7	2.9				ug/L	7850	Standard
S	34	1956.8	2.3				ug/L	1375	Standard
Sr	88	183.3	15.0				ug/L	165	Standard
C	12	730.0	13.1				mg/L	173	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	780.0	18.6				mg/L	0	Standard
Dy	164	407.4	20.5				mg/L	6	Standard
Ho-1	165	288.3	5.6				mg/L	7	Standard
Er	166	333.3	11.4				mg/L	13	Standard
I	127	42994.3	1.5				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.625	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.525	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.378
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		131.744
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Cu 65 Upper, S, EEE	Cu	65	

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Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	
Bi 209 Int Std for sample	Bi	209	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1508059701PS WG535080-01
Sample Date/Time: Thursday, August 20, 2015 19:02:29
Number of Replicates: 3
Autosampler Position: 234
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	62801.6	3.3				ug/L	51673	Standard
	Be	9	38991.8	0.4	**48.4830**	1.686	3.5	ug/L	43	Standard
	Al	27	39327.7	4.4	**0.4601**	0.006	1.3	ug/L	2157	Standard
	Sc	45	24160.9	3.3				ug/L	22687	Standard
	Ti	47	306.0	9.5	**1.7185**	0.189	11.0	ug/L	43	Standard
	V	51	217478.3	1.6	**51.7082**	0.463	0.9	ug/L	1233	Standard
	Cr	52	260310.4	1.5	**52.6510**	0.574	1.1	ug/L	6387	Standard
	Cr	53	32423.0	4.1	**51.6698**	2.696	5.2	ug/L	1555	Standard
	Mn	55	293053.4	1.0	**99.4294**	2.520	2.5	ug/L	436	Standard
	Co	59	224062.9	0.5	**54.7770**	1.519	2.8	ug/L	236	Standard
	Ni	60	72795.8	1.5	**52.1027**	0.465	0.9	ug/L	204	Standard
	Cu	65	102979.8	1.5	**73.8858**	0.647	0.9	ug/L	303	Standard
	Zn	66	56522.9	1.4	**72.5806**	0.837	1.2	ug/L	332	Standard
>	Ge	72	293678.5	2.4				ug/L	293924	Standard
	As	75	42452.4	2.0	**51.6590**	0.432	0.8	ug/L	45	Standard
	Se	82	3584.5	1.8	**52.0727**	0.317	0.6	ug/L	35	Standard
	Se-1	77	2611.9	2.6	**49.1842**	1.331	2.7	ug/L	153	Standard
>	Ga	71	393.3	22.4				mg/L	25	Standard
	Rb	85	441.7	5.2				ug/L	20	Standard
	Y	89	286329.2	4.8				ug/L	279578	Standard
>	Rh	103	36.7	15.7				ug/L	68	Standard
	Mo	98	536.8	3.8	**0.2977**	0.013	4.4	ug/L	56	Standard
	Ag	107	293825.5	1.0	**50.3376**	0.565	1.1	ug/L	199	Standard
	Cd	111	91033.2	1.6	**51.3972**	0.400	0.8	mg/L	89	Standard
	Cd	114	232862.8	1.7	**49.7775**	1.279	2.6	ug/L	150	Standard
>	In	115	484632.3	2.1				ug/L	458296	Standard
	Sn	118	946.7	3.0	**0.1143**	0.008	6.8	ug/L	385	Standard
	Sb	123	236037.7	1.6	**51.4588**	0.833	1.6	ug/L	208	Standard
	Ba	135	148234.3	1.3	**68.0016**	0.547	0.8	ug/L	108	Standard
	Ce	140	2968.6	8.9				ug/L	92	Standard
>	Tb	159	834702.3	2.6				ug/L	812006	Standard
	Ho	165	78.3	28.8				ug/L	7	Standard
	Tl	203	367699.6	0.5	**48.8542**	0.605	1.2	ug/L	236	Standard
	Tl	205	264470.0	0.9	**50.7528**	0.393	0.8	ug/L	43	Standard
	Pb	206	235817.8	1.2	**50.6846**	0.241	0.5	ug/L	266	Standard
	Pb	207	213906.8	0.8	**50.7968**	0.530	1.0	ug/L	206	Standard
	Pb	208	771368.5	1.3	**52.5931**	0.303	0.6	ug/L	668	Standard
	U	238	256860.8	1.1	**51.3402**	0.320	0.6	ug/L	32	Standard
>	Bi	209	423805.1	1.6				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	55.0	15.7	**0.0285**	0.025	88.2	mg/L	60	Standard
K	39	11.7	65.5	**-0.1780**	0.150	84.2	mg/L	12	Standard
Ca	43	31.7	18.2	**-17.4447**	4.051	23.2	mg/L	37	Standard
Fe	54	179.1	25.0	**0.2518**	0.082	32.5	mg/L	56	Standard
Fe	57	786.7	9.7	**-0.2585**	0.855	330.6	mg/L	735	Standard
> **Sc-1**	45	24160.9	3.3				mg/L	22687	Standard
Cl	35	27090.9	2.5				ug/L	20516	Standard
Kr	83	4.0	25.0				ug/L	5	Standard
Br	81	556.7	3.7				ug/L	570	Standard
P	31	9838.2	2.5				ug/L	7850	Standard
S	34	1875.1	1.7				ug/L	1375	Standard
Sr	88	155.0	11.6				ug/L	165	Standard
C	12	290.0	22.6				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	363.3	12.7				mg/L	0	Standard
Dy	164	81.1	14.4				mg/L	6	Standard
Ho-1	165	78.3	28.8				mg/L	7	Standard
Er	166	46.7	32.7				mg/L	13	Standard
I	127	10433.6	2.8				mg/L	3795	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		121.537	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.916	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.747
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		112.369
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1508063601
Sample Date/Time: Thursday, August 20, 2015 19:05:40
Number of Replicates: 3
Autosampler Position: 235
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67829.9	1.7				ug/L	51673	Standard
	Be	9	51.7	29.6	**-0.0057**	0.017	292.9	ug/L	43	Standard
	Al	27	193003.4	1.7	**2.1288**	0.074	3.5	ug/L	2157	Standard
	Sc	45	24703.5	2.0				ug/L	22687	Standard
	Ti	47	1672.4	4.8	**9.7195**	0.518	5.3	ug/L	43	Standard
	V	51	5718.7	3.2	**1.0569**	0.050	4.7	ug/L	1233	Standard
	Cr	52	16266.1	3.2	**2.0646**	0.125	6.1	ug/L	6387	Standard
	Cr	53	1655.1	3.7	**0.6421**	0.086	13.3	ug/L	1555	Standard
	Mn	55	646264.5	3.0	**213.8870**	7.646	3.6	ug/L	436	Standard
	Co	59	1389.7	7.9	**0.2841**	0.028	9.9	ug/L	236	Standard
	Ni	60	2215.8	2.1	**1.5041**	0.030	2.0	ug/L	204	Standard
	Cu	65	155153.4	0.4	**108.6103**	0.356	0.3	ug/L	303	Standard
	Zn	66	80139.0	0.4	**100.4553**	0.341	0.3	ug/L	332	Standard
>	**Ge**	72	301324.2	0.6				ug/L	293924	Standard
	As	75	4203.8	1.9	**5.0261**	0.068	1.4	ug/L	45	Standard
	Se	82	58.4	13.5	**0.6165**	0.113	18.4	ug/L	35	Standard
	Se-1	77	117.7	6.0	**-0.5027**	0.130	25.8	ug/L	153	Standard
>	**Ga**	71	1996.8	6.6				mg/L	25	Standard
	Rb	85	2458.5	1.9				ug/L	20	Standard
	Y	89	298656.6	0.9				ug/L	279578	Standard
>	**Rh**	103	45.0	33.3				ug/L	68	Standard
	Mo	98	2726.1	1.7	**1.5138**	0.024	1.6	ug/L	56	Standard
	Ag	107	2318.8	1.7	**0.3671**	0.005	1.4	ug/L	199	Standard
	Cd	111	220.8	4.8	**0.1131**	0.006	5.3	mg/L	89	Standard
	Cd	114	602.3	4.3	**0.1182**	0.006	4.8	ug/L	150	Standard
>	**In**	115	503960.6	0.4				ug/L	458296	Standard
	Sn	118	2151.8	3.9	**0.3112**	0.015	4.8	ug/L	385	Standard
	Sb	123	1913.9	3.6	**0.3893**	0.014	3.6	ug/L	208	Standard
	Ba	135	203049.2	0.6	**89.5726**	0.339	0.4	ug/L	108	Standard
	Ce	140	15921.7	4.4				ug/L	92	Standard
>	**Tb**	159	858555.0	0.5				ug/L	812006	Standard
	Ho	165	340.0	14.0				ug/L	7	Standard
	Tl	203	121.7	20.9	**0.0084**	0.003	34.3	ug/L	236	Standard
	Tl	205	173.3	111.0	**0.0285**	0.032	112.4	ug/L	43	Standard
	Pb	206	21614.9	12.1	**4.0089**	0.468	11.7	ug/L	266	Standard
	Pb	207	17806.2	11.6	**3.6423**	0.409	11.2	ug/L	206	Standard
	Pb	208	134145.9	93.2	**7.9236**	7.393	93.3	ug/L	668	Standard
	U	238	11375.6	3.4	**1.9869**	0.057	2.9	ug/L	32	Standard
>	**Bi**	209	484759.1	0.5				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	98.3	5.9	**0.1291**	0.015	12.0	mg/L	60	Standard
K	39	11.7	49.5	**-0.1814**	0.112	62.0	mg/L	12	Standard
Ca	43	26.7	39.0	**-21.5166**	6.988	32.5	mg/L	37	Standard
Fe	54	643.5	9.8	**1.2104**	0.133	11.0	mg/L	56	Standard
Fe	57	906.7	11.7	**0.5995**	1.003	167.3	mg/L	735	Standard
Sc-1	45	24703.5	2.0				mg/L	22687	Standard
Cl	35	27781.4	1.4				ug/L	20516	Standard
Kr	83	2.3	65.5				ug/L	5	Standard
Br	81	643.3	15.1				ug/L	570	Standard
P	31	9980.0	5.0				ug/L	7850	Standard
S	34	1815.1	5.0				ug/L	1375	Standard
Sr	88	173.3	14.2				ug/L	165	Standard
C	12	513.3	14.4				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	520.0	12.0				mg/L	0	Standard
Dy	164	435.5	7.9				mg/L	6	Standard
Ho-1	165	340.0	14.0				mg/L	7	Standard
Er	166	303.3	3.8				mg/L	13	Standard
I	127	61032.9	5.7				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		131.267	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.518	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.964
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		128.530
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Cu 65 Upper, S, EEE	Cu	65	

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Zn 66 Upper, S, EEE	Zn	66	
Bi 209 Int Std for sample	Bi	209	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1508063601
Sample Date/Time: Thursday, August 20, 2015 19:08:52
Number of Replicates: 3
Autosampler Position: 236
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62758.1	1.3				ug/L	51673	Standard
	Be	9	16.7	34.6	**-0.0443**	0.007	15.9	ug/L	43	Standard
	Al	27	36709.4	0.6	**0.4292**	0.007	1.6	ug/L	2157	Standard
	Sc	45	25095.8	1.2				ug/L	22687	Standard
	Ti	47	354.0	4.8	**1.9934**	0.062	3.1	ug/L	43	Standard
	V	51	1688.1	1.4	**0.1257**	0.011	8.5	ug/L	1233	Standard
	Cr	52	7042.3	3.8	**0.2318**	0.019	8.3	ug/L	6387	Standard
	Cr	53	530.0	16.1	**-1.1538**	0.157	13.6	ug/L	1555	Standard
	Mn	55	122346.4	1.3	**41.1302**	0.523	1.3	ug/L	436	Standard
	Co	59	410.3	5.7	**0.0526**	0.007	13.1	ug/L	236	Standard
	Ni	60	483.0	2.0	**0.3013**	0.008	2.8	ug/L	204	Standard
	Cu	65	30203.4	1.5	**21.3433**	0.358	1.7	ug/L	303	Standard
	Zn	66	16329.1	0.7	**20.5153**	0.474	2.3	ug/L	332	Standard
>	**Ge**	72	295497.9	2.6				ug/L	293924	Standard
	As	75	804.1	11.2	**1.0171**	0.109	10.7	ug/L	45	Standard
	Se	82	28.6	32.4	**0.2009**	0.138	68.8	ug/L	35	Standard
	Se-1	77	82.0	23.2	**-1.1669**	0.345	29.6	ug/L	153	Standard
>	**Ga**	71	380.0	7.3				mg/L	25	Standard
	Rb	85	481.7	3.3				ug/L	20	Standard
	Y	89	285425.1	0.7				ug/L	279578	Standard
>	**Rh**	103	18.3	41.7				ug/L	68	Standard
	Mo	98	527.6	4.0	**0.2849**	0.015	5.2	ug/L	56	Standard
	Ag	107	501.0	4.9	**0.0688**	0.004	6.3	ug/L	199	Standard
	Cd	111	52.5	10.5	**0.0221**	0.003	13.2	mg/L	89	Standard
	Cd	114	136.3	33.5	**0.0229**	0.010	42.5	ug/L	150	Standard
>	**In**	115	496650.3	1.0				ug/L	458296	Standard
	Sn	118	696.7	11.0	**0.0674**	0.012	17.9	ug/L	385	Standard
	Sb	123	526.3	3.8	**0.1000**	0.004	3.7	ug/L	208	Standard
	Ba	135	39483.7	0.3	**17.6561**	0.192	1.1	ug/L	108	Standard
	Ce	140	3097.0	2.9				ug/L	92	Standard
>	**Tb**	159	861647.9	1.0				ug/L	812006	Standard
	Ho	165	56.7	51.7				ug/L	7	Standard
	Tl	203	46.7	87.8	**0.0003**	0.005	1830.6	ug/L	236	Standard
	Tl	205	25.0	91.7	**0.0042**	0.004	102.0	ug/L	43	Standard
	Pb	206	7920.0	43.0	**1.6089**	0.708	44.0	ug/L	266	Standard
	Pb	207	6532.9	39.9	**1.4600**	0.598	40.9	ug/L	206	Standard
	Pb	208	21683.3	23.6	**1.3915**	0.334	24.0	ug/L	668	Standard
	U	238	2180.8	2.1	**0.4256**	0.009	2.1	ug/L	32	Standard
>	**Bi**	209	433447.3	0.5				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	45.0	40.1	**-0.0005**	0.043	8085.4	mg/L	60	Standard
K	39	3.3	86.6	**-0.3422**	0.054	15.6	mg/L	12	Standard
Ca	43	30.0	44.1	**-19.4289**	9.083	46.7	mg/L	37	Standard
Fe	54	156.0	24.1	**0.1916**	0.074	38.5	mg/L	56	Standard
Fe	57	778.4	6.5	**-0.5986**	0.438	73.2	mg/L	735	Standard
> **Sc-1**	45	25095.8	1.2				mg/L	22687	Standard
Cl	35	26547.2	0.4				ug/L	20516	Standard
Kr	83	5.3	10.8				ug/L	5	Standard
Br	81	696.7	7.9				ug/L	570	Standard
P	31	9416.3	2.9				ug/L	7850	Standard
S	34	1866.8	2.4				ug/L	1375	Standard
Sr	88	153.3	8.2				ug/L	165	Standard
C	12	280.0	36.2				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	256.7	9.8				mg/L	0	Standard
Dy	164	79.8	52.0				mg/L	6	Standard
Ho-1	165	56.7	51.7				mg/L	7	Standard
Er	166	73.3	15.7				mg/L	13	Standard
I	127	14975.7	0.3				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		121.452	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.535	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.369
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		114.925
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, August 20, 2015 19:12:04
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	62589.1	2.3				ug/L	51673	Standard
	Be	9	38263.3	3.8	**47.6919**	0.845	1.8	ug/L	43	Standard
	Al	27	3815649.1	1.8	**45.8272**	1.697	3.7	ug/L	2157	Standard
	Sc	45	25758.5	0.9				ug/L	22687	Standard
	Ti	47	18220.3	2.0	**109.5423**	1.783	1.6	ug/L	43	Standard
	V	51	215121.3	1.5	**50.9393**	0.781	1.5	ug/L	1233	Standard
	Cr	52	252842.1	1.4	**50.8989**	1.077	2.1	ug/L	6387	Standard
	Cr	53	31375.8	0.4	**49.7105**	0.504	1.0	ug/L	1555	Standard
	Mn	55	172413.0	1.9	**58.1623**	0.806	1.4	ug/L	436	Standard
	Co	59	217580.8	0.4	**52.9622**	0.347	0.7	ug/L	236	Standard
	Ni	60	70205.0	1.4	**50.0481**	0.977	2.0	ug/L	204	Standard
	Cu	65	68964.6	0.3	**49.1903**	0.211	0.4	ug/L	303	Standard
	Zn	66	39265.1	0.1	**50.0753**	0.291	0.6	ug/L	332	Standard
>	Ge	72	294825.2	0.7				ug/L	293924	Standard
	As	75	41191.8	0.3	**49.9286**	0.178	0.4	ug/L	45	Standard
	Se	82	3517.8	0.3	**50.8981**	0.370	0.7	ug/L	35	Standard
	Se-1	77	2517.5	2.2	**47.1002**	0.803	1.7	ug/L	153	Standard
>	Ga	71	41.7	18.3				mg/L	25	Standard
	Rb	85	641.7	9.8				ug/L	20	Standard
	Y	89	289847.2	2.4				ug/L	279578	Standard
>	Rh	103	31.7	48.2				ug/L	68	Standard
	Mo	98	171555.7	0.5	**96.6823**	0.823	0.9	ug/L	56	Standard
	Ag	107	286467.2	0.7	**47.4099**	0.274	0.6	ug/L	199	Standard
	Cd	111	91158.9	1.2	**49.7255**	0.692	1.4	mg/L	89	Standard
	Cd	114	234056.8	0.9	**48.3294**	0.497	1.0	ug/L	150	Standard
>	In	115	501584.5	0.4				ug/L	458296	Standard
	Sn	118	261662.1	1.5	**44.3008**	0.851	1.9	ug/L	385	Standard
	Sb	123	231384.0	0.6	**48.7321**	0.408	0.8	ug/L	208	Standard
	Ba	135	106342.6	0.7	**47.1241**	0.523	1.1	ug/L	108	Standard
	Ce	140	85.0	21.2				ug/L	92	Standard
>	Tb	159	852618.9	0.7				ug/L	812006	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	360852.7	1.4	**48.6581**	0.794	1.6	ug/L	236	Standard
	Tl	205	259018.7	0.8	**50.4505**	0.782	1.5	ug/L	43	Standard
	Pb	206	227176.6	1.1	**49.5577**	0.796	1.6	ug/L	266	Standard
	Pb	207	205210.0	2.0	**49.4601**	1.297	2.6	ug/L	206	Standard
	Pb	208	741384.3	0.5	**51.3029**	0.189	0.4	ug/L	668	Standard
	U	238	252509.9	1.2	**51.2233**	0.521	1.0	ug/L	32	Standard
>	Bi	209	417553.2	0.8				ug/L	377155	Standard

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Na	23	1.7	173.2	**14.1012**	231.151	1639.2	mg/L	2	Standard
Mg	24	2161.8	5.0	**4.8675**	0.217	4.4	mg/L	60	Standard
K	39	218.3	27.3	**3.5721**	1.114	31.2	mg/L	12	Standard
Ca	43	65.0	20.4	**3.5030**	8.705	248.5	mg/L	37	Standard
Fe	54	2361.2	2.0	**4.5782**	0.065	1.4	mg/L	56	Standard
Fe	57	1481.7	6.8	**4.9464**	0.765	15.5	mg/L	735	Standard
> **Sc-1**	45	25758.5	0.9				mg/L	22687	Standard
Cl	35	27944.4	0.9				ug/L	20516	Standard
Kr	83	2.7	94.4				ug/L	5	Standard
Br	81	620.0	6.5				ug/L	570	Standard
P	31	11601.1	5.3				ug/L	7850	Standard
S	34	2045.1	2.4				ug/L	1375	Standard
Sr	88	151.7	21.4				ug/L	165	Standard
C	12	283.3	58.7				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	193.3	10.8				mg/L	0	Standard
Dy	164	12.7	50.0				mg/L	6	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	1031.7	23.9				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	95.384		
Al	27	91.654		
Sc	45			
Ti	47	109.542		
V	51	101.879		
Cr	52	101.798		
Cr	53			
Mn	55	116.325		
Co	59	105.924		
Ni	60	100.096		
Cu	65	98.381		
Zn	66	100.151		
> Ge	72		100.306	
As	75	99.857		
Se	82	101.796		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	96.682		
Ag	107	94.820		
Cd	111	99.451		
Cd	114			
In	115		109.446	
Sn	118	88.602		
Sb	123	97.464		
Ba	135	94.248		
Ce	140			
Tb	159			
Ho	165			
Tl	203	97.316		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.606		
U	238	102.447		
Bi	209		110.711	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, August 20, 2015 19:15:16
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63531.3	1.2				ug/L	51673	Standard
	Be	9	36.7	41.7	**-0.0199**	0.019	93.2	ug/L	43	Standard
	Al	27	1635.2	131.7	**0.0091**	0.026	283.1	ug/L	2157	Standard
	Sc	45	24945.5	2.4				ug/L	22687	Standard
	Ti	47	20.3	45.7	**-0.0083**	0.057	683.8	ug/L	43	Standard
	V	51	909.0	35.2	**-0.0565**	0.077	136.8	ug/L	1233	Standard
	Cr	52	4674.4	2.5	**-0.2415**	0.031	12.8	ug/L	6387	Standard
	Cr	53	226.7	5.6	**-1.6500**	0.018	1.1	ug/L	1555	Standard
	Mn	55	1194.1	104.7	**0.2069**	0.429	207.2	ug/L	436	Standard
	Co	59	267.7	47.6	**0.0187**	0.031	167.8	ug/L	236	Standard
	Ni	60	71.7	31.5	**0.0091**	0.016	178.0	ug/L	204	Standard
	Cu	65	438.3	63.4	**0.0419**	0.202	481.6	ug/L	303	Standard
	Zn	66	301.0	39.3	**-0.0683**	0.154	225.7	ug/L	332	Standard
>	**Ge**	72	291502.9	0.8				ug/L	293924	Standard
	As	75	-61.6	48.3	**-0.0300**	0.037	121.8	ug/L	45	Standard
	Se	82	13.1	57.7	**-0.0205**	0.112	545.2	ug/L	35	Standard
	Se-1	77	71.7	9.1	**-1.3477**	0.126	9.3	ug/L	153	Standard
>	**Ga**	71	16.7	91.7				mg/L	25	Standard
	Rb	85	31.7	39.7				ug/L	20	Standard
	Y	89	283139.4	0.1				ug/L	279578	Standard
>	**Rh**	103	13.3	94.4				ug/L	68	Standard
	Mo	98	84.8	59.9	**0.0331**	0.029	87.9	ug/L	56	Standard
	Ag	107	294.3	116.8	**0.0345**	0.058	167.3	ug/L	199	Standard
	Cd	111	11.2	75.9	**-0.0006**	0.005	768.9	mg/L	89	Standard
	Cd	114	44.1	97.0	**0.0037**	0.009	244.1	ug/L	150	Standard
>	**In**	115	493461.3	1.4				ug/L	458296	Standard
	Sn	118	531.7	15.0	**0.0398**	0.014	35.1	ug/L	385	Standard
	Sb	123	1074.2	25.9	**0.2181**	0.060	27.3	ug/L	208	Standard
	Ba	135	254.0	146.7	**0.0904**	0.168	185.4	ug/L	108	Standard
	Ce	140	383.3	166.4				ug/L	92	Standard
>	**Tb**	159	859985.8	1.5				ug/L	812006	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	261.3	154.0	**0.0286**	0.053	184.6	ug/L	236	Standard
	Tl	205	75.0	133.2	**0.0138**	0.019	137.2	ug/L	43	Standard
	Pb	206	63383.1	168.1	**13.4038**	22.614	168.7	ug/L	266	Standard
	Pb	207	50099.3	167.5	**11.6975**	19.675	168.2	ug/L	206	Standard
	Pb	208	78178.7	160.0	**5.2151**	8.418	161.4	ug/L	668	Standard
	U	238	67.3	138.5	**0.0127**	0.018	144.6	ug/L	32	Standard
>	**Bi**	209	423402.3	1.3				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	58.3	17.8	**0.0315**	0.023	73.8	mg/L	60	Standard
K	39	6.7	114.6	**-0.2768**	0.148	53.4	mg/L	12	Standard
Ca	43	23.3	12.4	**-23.9003**	2.247	9.4	mg/L	37	Standard
Fe	54	62.9	52.8	**0.0018**	0.067	3648.3	mg/L	56	Standard
Fe	57	763.4	7.9	**-0.6833**	0.532	77.9	mg/L	735	Standard
> **Sc-1**	45	24945.5	2.4				mg/L	22687	Standard
Cl	35	26744.9	2.2				ug/L	20516	Standard
Kr	83	4.0	43.3				ug/L	5	Standard
Br	81	500.0	11.1				ug/L	570	Standard
P	31	10223.5	5.8				ug/L	7850	Standard
S	34	2076.8	0.6				ug/L	1375	Standard
Sr	88	166.7	6.2				ug/L	165	Standard
C	12	196.7	10.6				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	320.0	73.1				mg/L	0	Standard
Dy	164	35.5	105.7				mg/L	6	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	23.3	24.7				mg/L	13	Standard
I	127	2680.2	2.3				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.176	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.673
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		112.262
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	
QC Std 7	Pb	208	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW 5B WG535061-02
Sample Date/Time: Thursday, August 20, 2015 19:31:44
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61196.7	2.4				ug/L	51673	Standard
	Be	9	6.7	114.6	**-0.0566**	0.010	17.0	ug/L	43	Standard
	Al	27	410.0	5.6	**-0.0054**	0.000	7.2	ug/L	2157	Standard
	Sc	45	25468.1	2.5				ug/L	22687	Standard
	Ti	47	16.7	15.1	**-0.0298**	0.015	51.9	ug/L	43	Standard
	V	51	1087.7	5.2	**-0.0116**	0.013	113.9	ug/L	1233	Standard
	Cr	52	6015.5	10.6	**0.0471**	0.131	278.5	ug/L	6387	Standard
	Cr	53	7228.4	4.4	**10.1162**	0.491	4.9	ug/L	1555	Standard
	Mn	55	603.0	2.0	**0.0059**	0.003	59.1	ug/L	436	Standard
	Co	59	175.7	6.2	**-0.0036**	0.003	80.1	ug/L	236	Standard
	Ni	60	47.7	2.4	**-0.0079**	0.001	10.0	ug/L	204	Standard
	Cu	65	184.0	4.9	**-0.1417**	0.007	5.0	ug/L	303	Standard
	Zn	66	963.4	1.8	**0.8033**	0.026	3.3	ug/L	332	Standard
>	**Ge**	72	289335.5	0.4				ug/L	293924	Standard
	As	75	-81.8	55.7	**-0.0555**	0.056	101.2	ug/L	45	Standard
	Se	82	16.6	7.3	**0.0315**	0.018	55.9	ug/L	35	Standard
	Se-1	77	670.0	4.3	**10.7465**	0.630	5.9	ug/L	153	Standard
>	**Ga**	71	28.3	27.0				mg/L	25	Standard
	Rb	85	33.3	56.8				ug/L	20	Standard
	Y	89	286183.2	2.0				ug/L	279578	Standard
>	**Rh**	103	28.3	27.0				ug/L	68	Standard
	Mo	98	22.4	13.7	**-0.0025**	0.002	73.5	ug/L	56	Standard
	Ag	107	65.3	13.4	**-0.0038**	0.002	42.6	ug/L	199	Standard
	Cd	111	2.6	44.1	**-0.0053**	0.001	12.7	mg/L	89	Standard
	Cd	114	3.9	364.0	**-0.0048**	0.003	62.7	ug/L	150	Standard
>	**In**	115	484481.3	1.1				ug/L	458296	Standard
	Sn	118	415.0	16.3	**0.0211**	0.012	59.1	ug/L	385	Standard
	Sb	123	302.6	18.7	**0.0541**	0.013	23.8	ug/L	208	Standard
	Ba	135	36.0	36.1	**-0.0074**	0.006	82.5	ug/L	108	Standard
	Ce	140	16.7	45.8				ug/L	92	Standard
>	**Tb**	159	843020.9	2.1				ug/L	812006	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	19.3	23.9	**-0.0031**	0.001	20.6	ug/L	236	Standard
	Tl	205	11.7	49.5	**0.0018**	0.001	63.2	ug/L	43	Standard
	Pb	206	1004.0	9.3	**0.1668**	0.023	14.0	ug/L	266	Standard
	Pb	207	824.7	11.6	**0.1447**	0.026	17.8	ug/L	206	Standard
	Pb	208	3114.1	11.0	**0.1640**	0.027	16.3	ug/L	668	Standard
	U	238	1.7	69.3	**-0.0003**	0.000	82.4	ug/L	32	Standard
>	**Bi**	209	412674.9	1.1				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	38.3	41.9	**-0.0177**	0.038	214.4	mg/L	60	Standard
K	39	13.3	21.7	**-0.1580**	0.058	36.8	mg/L	12	Standard
Ca	43	36.7	41.7	**-15.3008**	10.164	66.4	mg/L	37	Standard
Fe	54	59.3	36.2	**-0.0068**	0.046	686.0	mg/L	56	Standard
Fe	57	716.7	7.3	**-1.1965**	0.492	41.1	mg/L	735	Standard
> **Sc-1**	45	25468.1	2.5				mg/L	22687	Standard
Cl	35	25552.2	1.2				ug/L	20516	Standard
Kr	83	2.3	89.2				ug/L	5	Standard
Br	81	503.3	12.9				ug/L	570	Standard
P	31	9499.6	2.7				ug/L	7850	Standard
S	34	1756.8	4.6				ug/L	1375	Standard
Sr	88	153.3	10.5				ug/L	165	Standard
C	12	213.3	23.6				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	213.3	14.3				mg/L	0	Standard
Dy	164	8.9	6.2				mg/L	6	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	23.3	49.5				mg/L	13	Standard
I	127	3025.3	2.7				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.431	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.439	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.714
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.418
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 5B WG535061-03
Sample Date/Time: Thursday, August 20, 2015 19:34:55
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63690.3	2.0				ug/L	51673	Standard
	Be	9	413.3	14.5	**0.4418**	0.069	15.6	ug/L	43	Standard
	Al	27	83539.7	0.7	**0.9757**	0.027	2.8	ug/L	2157	Standard
	Sc	45	26019.0	2.4				ug/L	22687	Standard
	Ti	47	1886.5	5.3	**10.9171**	0.470	4.3	ug/L	43	Standard
	V	51	44393.3	3.0	**10.0102**	0.215	2.2	ug/L	1233	Standard
	Cr	52	32208.5	1.6	**5.2467**	0.198	3.8	ug/L	6387	Standard
	Cr	53	17490.1	2.9	**26.0534**	1.233	4.7	ug/L	1555	Standard
	Mn	55	17849.8	1.7	**5.6795**	0.093	1.6	ug/L	436	Standard
	Co	59	8823.9	2.4	**2.0452**	0.051	2.5	ug/L	236	Standard
	Ni	60	7234.4	1.6	**4.9823**	0.151	3.0	ug/L	204	Standard
	Cu	65	7416.5	0.6	**4.9022**	0.100	2.0	ug/L	303	Standard
	Zn	66	8883.3	3.1	**10.6684**	0.366	3.4	ug/L	332	Standard
>	**Ge**	72	302917.1	1.4				ug/L	293924	Standard
	As	75	3173.1	1.5	**3.7855**	0.031	0.8	ug/L	45	Standard
	Se	82	294.5	2.6	**3.9506**	0.130	3.3	ug/L	35	Standard
	Se-1	77	1606.8	4.8	**28.2200**	1.865	6.6	ug/L	153	Standard
>	**Ga**	71	53.3	14.3				mg/L	25	Standard
	Rb	85	75.0	17.6				ug/L	20	Standard
	Y	89	280263.7	1.4				ug/L	279578	Standard
>	**Rh**	103	26.7	28.6				ug/L	68	Standard
	Mo	98	16723.1	0.1	**10.0720**	0.059	0.6	ug/L	56	Standard
	Ag	107	22632.9	0.5	**3.9949**	0.002	0.0	ug/L	199	Standard
	Cd	111	817.0	3.3	**0.4702**	0.017	3.5	mg/L	89	Standard
	Cd	114	2348.8	3.2	**0.5136**	0.019	3.6	ug/L	150	Standard
>	**In**	115	468691.7	0.5				ug/L	458296	Standard
	Sn	118	50572.6	0.3	**9.1216**	0.036	0.4	ug/L	385	Standard
	Sb	123	56461.1	1.7	**12.7172**	0.241	1.9	ug/L	208	Standard
	Ba	135	21066.3	1.9	**9.9719**	0.234	2.3	ug/L	108	Standard
	Ce	140	21.7	26.6				ug/L	92	Standard
>	**Tb**	159	838048.4	0.5				ug/L	812006	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	35592.4	0.7	**4.8203**	0.042	0.9	ug/L	236	Standard
	Tl	205	25558.2	1.3	**5.0045**	0.056	1.1	ug/L	43	Standard
	Pb	206	24607.0	1.3	**5.3477**	0.059	1.1	ug/L	266	Standard
	Pb	207	21609.7	1.3	**5.1855**	0.057	1.1	ug/L	206	Standard
	Pb	208	79318.7	4.6	**5.4701**	0.249	4.6	ug/L	668	Standard
	U	238	4.7	86.6	**0.0003**	0.001	253.0	ug/L	32	Standard
>	**Bi**	209	415279.5	0.2				ug/L	377155	Standard

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Na	23	1.7	173.2	**14.6995**	230.114	1565.5	mg/L	2	Standard
Mg	24	233.3	6.2	**0.4243**	0.020	4.7	mg/L	60	Standard
K	39	25.0	52.9	**0.0451**	0.238	528.0	mg/L	12	Standard
Ca	43	36.7	28.4	**-15.6176**	7.409	47.4	mg/L	37	Standard
Fe	54	92.5	33.3	**0.0566**	0.064	113.6	mg/L	56	Standard
Fe	57	783.4	3.0	**-0.7866**	0.270	34.3	mg/L	735	Standard
> **Sc-1**	45	26019.0	2.4				mg/L	22687	Standard
Cl	35	25381.3	2.7				ug/L	20516	Standard
Kr	83	3.7	31.5				ug/L	5	Standard
Br	81	486.7	7.8				ug/L	570	Standard
P	31	9434.6	2.4				ug/L	7850	Standard
S	34	1761.8	8.9				ug/L	1375	Standard
Sr	88	151.7	28.8				ug/L	165	Standard
C	12	203.3	27.1				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	210.0	19.0				mg/L	0	Standard
Dy	164	16.0	75.6				mg/L	6	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	2880.3	1.8				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.256	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.060	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.268
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.108
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1508051302 WG535061-01
Sample Date/Time: Thursday, August 20, 2015 19:38:07
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63258.5	1.6				ug/L	51673	Standard
	Be	9	8.3	34.6	**-0.0548**	0.003	6.3	ug/L	43	Standard
	Al	27	27299.6	1.9	**0.3139**	0.007	2.2	ug/L	2157	Standard
	Sc	45	25862.1	2.8				ug/L	22687	Standard
	Ti	47	17.3	14.5	**-0.0292**	0.014	46.4	ug/L	43	Standard
	V	51	948.3	8.0	**-0.0527**	0.015	27.8	ug/L	1233	Standard
	Cr	52	6087.6	1.9	**0.0227**	0.026	114.0	ug/L	6387	Standard
	Cr	53	8232.2	4.2	**11.3773**	0.667	5.9	ug/L	1555	Standard
	Mn	55	48066.1	0.7	**15.8651**	0.316	2.0	ug/L	436	Standard
	Co	59	225.3	5.8	**0.0069**	0.002	35.1	ug/L	236	Standard
	Ni	60	86.7	10.9	**0.0184**	0.006	35.1	ug/L	204	Standard
	Cu	65	201.0	8.6	**-0.1339**	0.011	8.1	ug/L	303	Standard
	Zn	66	1171.4	2.5	**1.0281**	0.017	1.7	ug/L	332	Standard
>	**Ge**	72	298634.4	1.4				ug/L	293924	Standard
	As	75	-76.4	58.5	**-0.0464**	0.054	117.1	ug/L	45	Standard
	Se	82	15.0	21.2	**0.0016**	0.047	3024.2	ug/L	35	Standard
	Se-1	77	731.0	4.6	**11.5161**	0.600	5.2	ug/L	153	Standard
>	**Ga**	71	33.3	56.8				mg/L	25	Standard
	Rb	85	103.3	12.2				ug/L	20	Standard
	Y	89	286367.6	0.6				ug/L	279578	Standard
>	**Rh**	103	13.3	43.3				ug/L	68	Standard
	Mo	98	23.0	24.5	**-0.0023**	0.003	133.2	ug/L	56	Standard
	Ag	107	73.0	17.2	**-0.0026**	0.002	84.7	ug/L	199	Standard
	Cd	111	12.6	9.1	**0.0002**	0.001	247.5	mg/L	89	Standard
	Cd	114	29.2	51.4	**0.0006**	0.003	552.9	ug/L	150	Standard
>	**In**	115	491052.2	1.3				ug/L	458296	Standard
	Sn	118	403.3	0.7	**0.0180**	0.001	7.8	ug/L	385	Standard
	Sb	123	98.6	5.7	**0.0092**	0.001	10.4	ug/L	208	Standard
	Ba	135	2188.5	1.9	**0.9670**	0.007	0.7	ug/L	108	Standard
	Ce	140	120.0	0.0				ug/L	92	Standard
>	**Tb**	159	862183.6	2.3				ug/L	812006	Standard
	Ho	165	11.7	49.5				ug/L	7	Standard
	Tl	203	17.3	38.4	**-0.0034**	0.001	25.0	ug/L	236	Standard
	Tl	205	21.7	93.3	**0.0037**	0.004	104.2	ug/L	43	Standard
	Pb	206	934.7	32.4	**0.1477**	0.063	42.6	ug/L	266	Standard
	Pb	207	747.0	36.1	**0.1223**	0.062	50.8	ug/L	206	Standard
	Pb	208	9551.3	130.6	**0.5977**	0.846	141.6	ug/L	668	Standard
	U	238	14.7	103.3	**0.0023**	0.003	129.7	ug/L	32	Standard
>	**Bi**	209	419011.8	1.3				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	1108.4	13.9	**2.4284**	0.287	11.8	mg/L	60	Standard
K	39	15.0	33.3	**-0.1318**	0.092	69.5	mg/L	12	Standard
Ca	43	36.7	28.4	**-15.6867**	6.487	41.4	mg/L	37	Standard
Fe	54	72.6	27.8	**0.0167**	0.038	228.0	mg/L	56	Standard
Fe	57	703.3	5.1	**-1.3976**	0.286	20.5	mg/L	735	Standard
Sc-1	45	25862.1	2.8				mg/L	22687	Standard
Cl	35	25012.6	1.4				ug/L	20516	Standard
Kr	83	3.0	66.7				ug/L	5	Standard
Br	81	486.7	4.3				ug/L	570	Standard
P	31	9539.7	1.6				ug/L	7850	Standard
S	34	1705.1	4.5				ug/L	1375	Standard
Sr	88	156.7	24.8				ug/L	165	Standard
C	12	330.0	29.2				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	120.0	30.0				mg/L	0	Standard
Dy	164	18.2	56.4				mg/L	6	Standard
Ho-1	165	11.7	49.5				mg/L	7	Standard
Er	166	36.7	56.8				mg/L	13	Standard
I	127	2960.3	4.6				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		122.421	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.602	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.147
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		111.098
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1508051302S WG535061-04
Sample Date/Time: Thursday, August 20, 2015 19:41:18
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	66109.0	2.3				ug/L	51673	Standard
	Be	9	403.3	19.3	**0.4131**	0.102	24.6	ug/L	43	Standard
	Al	27	112591.9	2.2	**1.2697**	0.029	2.3	ug/L	2157	Standard
	Sc	45	24852.1	4.7				ug/L	22687	Standard
	Ti	47	1972.5	3.0	**11.8805**	0.272	2.3	ug/L	43	Standard
	V	51	45120.7	2.6	**10.5930**	0.232	2.2	ug/L	1233	Standard
	Cr	52	32546.9	1.5	**5.5709**	0.041	0.7	ug/L	6387	Standard
	Cr	53	18571.4	4.1	**28.9516**	1.028	3.6	ug/L	1555	Standard
	Mn	55	65602.4	1.9	**22.2693**	0.388	1.7	ug/L	436	Standard
	Co	59	9049.0	2.6	**2.1836**	0.065	3.0	ug/L	236	Standard
	Ni	60	7330.8	1.3	**5.2492**	0.020	0.4	ug/L	204	Standard
	Cu	65	7425.5	3.2	**5.1122**	0.136	2.7	ug/L	303	Standard
	Zn	66	9105.7	0.3	**11.3983**	0.121	1.1	ug/L	332	Standard
>	Ge	72	291378.2	0.9				ug/L	293924	Standard
	As	75	3220.8	4.0	**3.9924**	0.171	4.3	ug/L	45	Standard
	Se	82	311.0	1.2	**4.3588**	0.093	2.1	ug/L	35	Standard
	Se-1	77	1647.8	2.6	**30.2585**	1.062	3.5	ug/L	153	Standard
>	Ga	71	46.7	34.4				mg/L	25	Standard
	Rb	85	151.7	25.6				ug/L	20	Standard
	Y	89	288715.0	0.9				ug/L	279578	Standard
>	Rh	103	16.7	17.3				ug/L	68	Standard
	Mo	98	17101.2	1.1	**10.1082**	0.130	1.3	ug/L	56	Standard
	Ag	107	23090.2	1.1	**3.9999**	0.049	1.2	ug/L	199	Standard
	Cd	111	867.2	3.6	**0.4900**	0.016	3.3	mg/L	89	Standard
	Cd	114	2517.9	11.8	**0.5407**	0.067	12.4	ug/L	150	Standard
>	In	115	477572.3	0.4				ug/L	458296	Standard
	Sn	118	51291.7	1.5	**9.0786**	0.103	1.1	ug/L	385	Standard
	Sb	123	57637.4	0.7	**12.7403**	0.064	0.5	ug/L	208	Standard
	Ba	135	23919.2	1.3	**11.1134**	0.097	0.9	ug/L	108	Standard
	Ce	140	136.7	22.1				ug/L	92	Standard
>	Tb	159	846792.9	1.0				ug/L	812006	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	36762.9	1.3	**5.0250**	0.076	1.5	ug/L	236	Standard
	Tl	205	26668.5	2.5	**5.2705**	0.152	2.9	ug/L	43	Standard
	Pb	206	24848.4	1.5	**5.4513**	0.101	1.9	ug/L	266	Standard
	Pb	207	21592.7	1.6	**5.2299**	0.102	2.0	ug/L	206	Standard
	Pb	208	78957.7	0.2	**5.4957**	0.022	0.4	ug/L	668	Standard
	U	238	12.0	22.0	**0.0018**	0.001	29.9	ug/L	32	Standard
>	Bi	209	411488.5	0.4				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	1456.7	3.8	**3.3693**	0.078	2.3	mg/L	60	Standard
K	39	30.0	16.7	**0.1595**	0.071	44.4	mg/L	12	Standard
Ca	43	36.7	43.8	**-14.3144**	12.120	84.7	mg/L	37	Standard
Fe	54	67.8	18.9	**0.0129**	0.025	195.4	mg/L	56	Standard
Fe	57	750.0	1.8	**-0.7621**	0.399	52.3	mg/L	735	Standard
> **Sc-1**	45	24852.1	4.7				mg/L	22687	Standard
Cl	35	26815.1	3.2				ug/L	20516	Standard
Kr	83	3.7	41.7				ug/L	5	Standard
Br	81	600.0	24.6				ug/L	570	Standard
P	31	9995.0	1.2				ug/L	7850	Standard
S	34	1778.4	4.6				ug/L	1375	Standard
Sr	88	155.0	11.6				ug/L	165	Standard
C	12	273.3	50.7				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	106.7	23.6				mg/L	0	Standard
Dy	164	22.1	49.5				mg/L	6	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	26.7	108.3				mg/L	13	Standard
I	127	2978.6	5.6				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		127.937	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.134	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.206
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.103
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1508051302SD WG535061-05
Sample Date/Time: Thursday, August 20, 2015 19:44:30
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65464.5	1.6				ug/L	51673	Standard
	Be	9	440.0	14.5	**0.4603**	0.077	16.6	ug/L	43	Standard
	Al	27	114170.2	0.6	**1.3005**	0.027	2.1	ug/L	2157	Standard
	Sc	45	26226.0	1.6				ug/L	22687	Standard
	Ti	47	2010.8	2.3	**12.1237**	0.255	2.1	ug/L	43	Standard
	V	51	44559.9	2.4	**10.4650**	0.174	1.7	ug/L	1233	Standard
	Cr	52	32770.7	0.1	**5.6229**	0.064	1.1	ug/L	6387	Standard
	Cr	53	19268.9	1.9	**30.1410**	0.294	1.0	ug/L	1555	Standard
	Mn	55	65571.0	2.5	**22.2716**	0.353	1.6	ug/L	436	Standard
	Co	59	8996.3	1.4	**2.1721**	0.037	1.7	ug/L	236	Standard
	Ni	60	7363.1	0.8	**5.2769**	0.090	1.7	ug/L	204	Standard
	Cu	65	7407.1	2.4	**5.1028**	0.089	1.7	ug/L	303	Standard
	Zn	66	9208.8	2.9	**11.5402**	0.336	2.9	ug/L	332	Standard
>	**Ge**	72	291179.8	1.0				ug/L	293924	Standard
	As	75	3135.8	6.4	**3.8899**	0.229	5.9	ug/L	45	Standard
	Se	82	289.3	4.0	**4.0413**	0.136	3.4	ug/L	35	Standard
	Se-1	77	1703.4	3.0	**31.3928**	0.946	3.0	ug/L	153	Standard
>	**Ga**	71	45.0	19.2				mg/L	25	Standard
	Rb	85	173.3	4.4				ug/L	20	Standard
	Y	89	286886.4	2.2				ug/L	279578	Standard
>	**Rh**	103	25.0	40.0				ug/L	68	Standard
	Mo	98	17063.0	1.2	**9.9630**	0.196	2.0	ug/L	56	Standard
	Ag	107	23511.6	1.0	**4.0231**	0.030	0.8	ug/L	199	Standard
	Cd	111	905.2	3.7	**0.5054**	0.015	2.9	mg/L	89	Standard
	Cd	114	2670.1	1.6	**0.5665**	0.011	1.9	ug/L	150	Standard
>	**In**	115	483481.2	0.8				ug/L	458296	Standard
	Sn	118	51584.3	0.7	**9.0190**	0.065	0.7	ug/L	385	Standard
	Sb	123	58228.9	1.3	**12.7146**	0.221	1.7	ug/L	208	Standard
	Ba	135	23790.7	0.3	**10.9191**	0.112	1.0	ug/L	108	Standard
	Ce	140	130.0	13.9				ug/L	92	Standard
>	**Tb**	159	863482.2	0.7				ug/L	812006	Standard
	Ho	165	10.0					ug/L	7	Standard
	Tl	203	37557.5	0.6	**4.9928**	0.056	1.1	ug/L	236	Standard
	Tl	205	26848.8	0.3	**5.1602**	0.032	0.6	ug/L	43	Standard
	Pb	206	27818.3	16.5	**5.9424**	1.011	17.0	ug/L	266	Standard
	Pb	207	24790.4	17.8	**5.8484**	1.073	18.3	ug/L	206	Standard
	Pb	208	86888.5	13.9	**5.8875**	0.849	14.4	ug/L	668	Standard
	U	238	17.0	25.6	**0.0028**	0.001	32.0	ug/L	32	Standard
>	**Bi**	209	423097.8	0.6				ug/L	377155	Standard

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Na	23	1.7	173.2	**15.6252**	228.511	1462.5	mg/L	2	Standard
Mg	24	1370.1	5.7	**2.9922**	0.222	7.4	mg/L	60	Standard
K	39	33.3	31.2	**0.1924**	0.193	100.2	mg/L	12	Standard
Ca	43	43.3	29.0	**-11.4437**	8.703	76.1	mg/L	37	Standard
Fe	54	76.7	39.5	**0.0238**	0.062	258.1	mg/L	56	Standard
Fe	57	736.7	10.5	**-1.2068**	0.677	56.1	mg/L	735	Standard
Sc-1	45	26226.0	1.6				mg/L	22687	Standard
Cl	35	26817.0	1.8				ug/L	20516	Standard
Kr	83	3.0	57.7				ug/L	5	Standard
Br	81	506.7	13.9				ug/L	570	Standard
P	31	10085.0	2.1				ug/L	7850	Standard
S	34	1803.4	3.0				ug/L	1375	Standard
Sr	88	168.3	14.7				ug/L	165	Standard
C	12	296.7	34.6				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	143.3	20.1				mg/L	0	Standard
Dy	164	15.9	37.3				mg/L	6	Standard
Ho-1	165	10.0					mg/L	7	Standard
Er	166	16.7	34.6				mg/L	13	Standard
I	127	2815.3	1.9				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		126.690	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.066	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.495
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		112.181
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: L1508051302SD WG535061-05
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Method 6020 - Summary Report

Sample ID: L1508053101
Sample Date/Time: Thursday, August 20, 2015 19:47:42
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59510.0	1.7				ug/L	51673	Standard
	Be	9	15.0	0.0	**-0.0453**	0.000	0.7	ug/L	43	Standard
	Al	27	1175.0	3.6	**0.0044**	0.001	12.1	ug/L	2157	Standard
	Sc	45	25039.0	2.4				ug/L	22687	Standard
	Ti	47	20.3	7.5	**-0.0103**	0.010	96.4	ug/L	43	Standard
	V	51	1037.1	18.8	**-0.0299**	0.046	153.3	ug/L	1233	Standard
	Cr	52	5733.1	3.9	**-0.0407**	0.054	133.1	ug/L	6387	Standard
	Cr	53	9064.4	15.2	**12.8461**	2.362	18.4	ug/L	1555	Standard
	Mn	55	812.0	6.5	**0.0713**	0.017	24.3	ug/L	436	Standard
	Co	59	262.3	16.3	**0.0164**	0.011	64.7	ug/L	236	Standard
	Ni	60	190.3	2.4	**0.0924**	0.002	2.6	ug/L	204	Standard
	Cu	65	356.3	1.4	**-0.0220**	0.005	23.9	ug/L	303	Standard
	Zn	66	1260.7	3.0	**1.1536**	0.058	5.0	ug/L	332	Standard
>	**Ge**	72	296470.5	0.7				ug/L	293924	Standard
	As	75	-86.0	8.4	**-0.0581**	0.008	14.3	ug/L	45	Standard
	Se	82	46.1	8.0	**0.4511**	0.050	11.1	ug/L	35	Standard
	Se-1	77	691.7	11.1	**10.8533**	1.614	14.9	ug/L	153	Standard
>	**Ga**	71	586.7	9.4				mg/L	25	Standard
	Rb	85	9294.5	2.4				ug/L	20	Standard
	Y	89	280545.7	1.8				ug/L	279578	Standard
>	**Rh**	103	13.3	57.3				ug/L	68	Standard
	Mo	98	1464.0	2.8	**0.8341**	0.027	3.2	ug/L	56	Standard
	Ag	107	72.3	20.4	**-0.0027**	0.003	94.3	ug/L	199	Standard
	Cd	111	7.8	37.8	**-0.0024**	0.002	67.7	mg/L	89	Standard
	Cd	114	6.7	90.6	**-0.0042**	0.001	31.0	ug/L	150	Standard
>	**In**	115	487140.0	0.4				ug/L	458296	Standard
	Sn	118	433.3	24.5	**0.0238**	0.019	78.4	ug/L	385	Standard
	Sb	123	123.3	20.3	**0.0148**	0.005	36.5	ug/L	208	Standard
	Ba	135	3404.7	0.4	**1.5303**	0.010	0.7	ug/L	108	Standard
	Ce	140	336.7	13.8				ug/L	92	Standard
>	**Tb**	159	853656.9	0.8				ug/L	812006	Standard
	Ho	165	18.3	103.3				ug/L	7	Standard
	Tl	203	71.3	9.9	**0.0038**	0.001	24.8	ug/L	236	Standard
	Tl	205	33.3	31.2	**0.0059**	0.002	33.2	ug/L	43	Standard
	Pb	206	805.0	45.3	**0.1191**	0.081	67.7	ug/L	266	Standard
	Pb	207	641.0	46.9	**0.0966**	0.073	76.1	ug/L	206	Standard
	Pb	208	2195.1	21.7	**0.0961**	0.034	35.5	ug/L	668	Standard
	U	238	1.7	34.6	**-0.0003**	0.000	40.2	ug/L	32	Standard
>	**Bi**	209	422265.6	0.9				ug/L	377155	Standard

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Na	23	1.7	173.2	**7.6365**	242.348	3173.5	mg/L	2	Standard
Mg	24	2655.2	7.6	**6.1771**	0.391	6.3	mg/L	60	Standard
K	39	205.0	15.2	**3.4393**	0.669	19.5	mg/L	12	Standard
Ca	43	75.0	26.7	**11.8376**	14.770	124.8	mg/L	37	Standard
Fe	54	57.6	27.7	**-0.0087**	0.034	387.0	mg/L	56	Standard
Fe	57	821.7	9.2	**-0.2169**	0.690	318.4	mg/L	735	Standard
> **Sc-1**	45	25039.0	2.4				mg/L	22687	Standard
Cl	35	27421.5	0.6				ug/L	20516	Standard
Kr	83	4.3	35.3				ug/L	5	Standard
Br	81	1163.4	5.2				ug/L	570	Standard
P	31	10061.7	3.6				ug/L	7850	Standard
S	34	1948.5	4.3				ug/L	1375	Standard
Sr	88	166.7	22.1				ug/L	165	Standard
C	12	376.7	7.7				mg/L	173	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	70.0	37.8				mg/L	0	Standard
Dy	164	-0.8	91.7				mg/L	6	Standard
Ho-1	165	18.3	103.3				mg/L	7	Standard
Er	166	16.7	91.7				mg/L	13	Standard
I	127	4379.0	3.6				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.166	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.866	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.294
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		111.961
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508053201
Sample Date/Time: Thursday, August 20, 2015 19:50:53
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59314.3	3.9				ug/L	51673	Standard
	Be	9	5.0	100.0	**-0.0586**	0.006	10.8	ug/L	43	Standard
	Al	27	222510.3	0.8	**2.8110**	0.086	3.1	ug/L	2157	Standard
	Sc	45	25481.4	1.2				ug/L	22687	Standard
	Ti	47	22.3	2.6	**0.0019**	0.001	76.5	ug/L	43	Standard
	V	51	1076.7	5.0	**-0.0198**	0.014	72.8	ug/L	1233	Standard
	Cr	52	5668.7	3.4	**-0.0509**	0.051	99.8	ug/L	6387	Standard
	Cr	53	5966.2	9.4	**7.7702**	0.735	9.5	ug/L	1555	Standard
	Mn	55	6566.1	1.8	**2.0141**	0.043	2.1	ug/L	436	Standard
	Co	59	256.7	7.1	**0.0151**	0.004	26.5	ug/L	236	Standard
	Ni	60	313.0	8.6	**0.1803**	0.023	12.6	ug/L	204	Standard
	Cu	65	539.0	3.3	**0.1094**	0.018	16.6	ug/L	303	Standard
	Zn	66	940.4	2.8	**0.7464**	0.027	3.7	ug/L	332	Standard
>	**Ge**	72	295746.8	1.8				ug/L	293924	Standard
	As	75	-17.4	435.7	**0.0255**	0.090	354.0	ug/L	45	Standard
	Se	82	66.9	16.3	**0.7547**	0.159	21.0	ug/L	35	Standard
	Se-1	77	619.0	10.3	**9.4340**	1.082	11.5	ug/L	153	Standard
>	**Ga**	71	66.7	11.5				mg/L	25	Standard
	Rb	85	12084.8	4.0				ug/L	20	Standard
	Y	89	278321.4	0.6				ug/L	279578	Standard
>	**Rh**	103	10.0					ug/L	68	Standard
	Mo	98	450.9	4.9	**0.2520**	0.016	6.3	ug/L	56	Standard
	Ag	107	69.0	9.1	**-0.0030**	0.001	37.9	ug/L	199	Standard
	Cd	111	132.3	12.4	**0.0692**	0.010	14.6	mg/L	89	Standard
	Cd	114	370.9	13.0	**0.0751**	0.012	15.3	ug/L	150	Standard
>	**In**	115	476707.8	1.2				ug/L	458296	Standard
	Sn	118	340.0	7.8	**0.0088**	0.004	48.8	ug/L	385	Standard
	Sb	123	822.1	5.9	**0.1702**	0.009	5.3	ug/L	208	Standard
	Ba	135	9747.5	0.9	**4.5237**	0.085	1.9	ug/L	108	Standard
	Ce	140	25.0	40.0				ug/L	92	Standard
>	**Tb**	159	861480.6	1.8				ug/L	812006	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	133.0	11.3	**0.0122**	0.002	16.1	ug/L	236	Standard
	Tl	205	121.7	16.6	**0.0233**	0.004	16.6	ug/L	43	Standard
	Pb	206	656.0	0.8	**0.0884**	0.001	1.7	ug/L	266	Standard
	Pb	207	499.0	3.5	**0.0639**	0.005	7.2	ug/L	206	Standard
	Pb	208	1935.4	1.7	**0.0799**	0.002	2.4	ug/L	668	Standard
	U	238	2.3	65.5	**-0.0002**	0.000	204.0	ug/L	32	Standard
>	**Bi**	209	416600.8	0.5				ug/L	377155	Standard

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Na	23	1.7	173.2	**12.5149**	233.898	1869.0	mg/L	2	Standard
Mg	24	3365.4	1.3	**7.7232**	0.136	1.8	mg/L	60	Standard
K	39	221.7	38.7	**3.6680**	1.579	43.0	mg/L	12	Standard
Ca	43	65.0	20.4	**3.9757**	8.837	222.3	mg/L	37	Standard
Fe	54	77.5	15.9	**0.0294**	0.026	89.8	mg/L	56	Standard
Fe	57	768.4	10.9	**-0.7771**	0.726	93.4	mg/L	735	Standard
> **Sc-1**	45	25481.4	1.2				mg/L	22687	Standard
Cl	35	26873.8	1.6				ug/L	20516	Standard
Kr	83	3.3	17.3				ug/L	5	Standard
Br	81	900.0	11.8				ug/L	570	Standard
P	31	9951.6	3.6				ug/L	7850	Standard
S	34	1878.4	0.9				ug/L	1375	Standard
Sr	88	148.3	33.9				ug/L	165	Standard
C	12	346.7	18.3				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	76.7	60.2				mg/L	0	Standard
Dy	164	14.8	39.3				mg/L	6	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	40.0	25.0				mg/L	13	Standard
I	127	9816.5	7.5				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.788	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.620	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.018
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.459
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 21, 2015

Method 6020 - Summary Report

Sample ID: L1508053201PS WG535625-01
Sample Date/Time: Thursday, August 20, 2015 19:54:05
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60555.8	2.6				ug/L	51673	Standard
	Be	9	38238.2	3.5	**49.3051**	2.448	5.0	ug/L	43	Standard
	Al	27	228349.6	0.4	**2.8245**	0.062	2.2	ug/L	2157	Standard
	Sc	45	24918.8	3.8				ug/L	22687	Standard
	Ti	47	28.3	53.1	**0.0392**	0.092	233.6	ug/L	43	Standard
	V	51	215868.4	1.3	**51.1744**	0.345	0.7	ug/L	1233	Standard
	Cr	52	259580.3	1.3	**52.3508**	1.149	2.2	ug/L	6387	Standard
	Cr	53	37397.8	0.6	**59.7139**	0.871	1.5	ug/L	1555	Standard
	Mn	55	182243.2	1.0	**61.5664**	0.808	1.3	ug/L	436	Standard
	Co	59	219053.7	1.4	**53.3797**	0.396	0.7	ug/L	236	Standard
	Ni	60	71663.4	0.9	**51.1475**	0.804	1.6	ug/L	204	Standard
	Cu	65	72631.7	2.1	**51.8835**	1.260	2.4	ug/L	303	Standard
	Zn	66	41672.2	0.7	**53.2390**	0.899	1.7	ug/L	332	Standard
>	**Ge**	72	294498.5	1.4				ug/L	293924	Standard
	As	75	41725.5	1.9	**50.6299**	0.643	1.3	ug/L	45	Standard
	Se	82	3608.0	3.0	**52.2610**	1.134	2.2	ug/L	35	Standard
	Se-1	77	3075.0	1.8	**58.2145**	0.316	0.5	ug/L	153	Standard
>	**Ga**	71	80.0	39.0				mg/L	25	Standard
	Rb	85	12752.0	5.5				ug/L	20	Standard
	Y	89	285627.5	1.6				ug/L	279578	Standard
>	**Rh**	103	30.0	60.1				ug/L	68	Standard
	Mo	98	470.8	3.1	**0.2592**	0.010	3.7	ug/L	56	Standard
	Ag	107	279822.7	1.6	**47.9414**	0.662	1.4	ug/L	199	Standard
	Cd	111	89633.6	1.0	**50.6144**	0.263	0.5	mg/L	89	Standard
	Cd	114	234442.2	3.6	**50.1091**	1.576	3.1	ug/L	150	Standard
>	**In**	115	484515.0	0.5				ug/L	458296	Standard
	Sn	118	475.0	15.7	**0.0316**	0.013	42.7	ug/L	385	Standard
	Sb	123	233322.2	0.5	**50.8711**	0.081	0.2	ug/L	208	Standard
	Ba	135	119172.9	0.7	**54.6718**	0.151	0.3	ug/L	108	Standard
	Ce	140	98.3	60.2				ug/L	92	Standard
>	**Tb**	159	867636.9	1.4				ug/L	812006	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	369761.1	1.0	**49.9751**	0.636	1.3	ug/L	236	Standard
	Tl	205	264433.4	2.3	**51.6248**	1.359	2.6	ug/L	43	Standard
	Pb	206	237418.7	2.3	**51.9104**	1.056	2.0	ug/L	266	Standard
	Pb	207	215519.6	1.8	**52.0611**	0.674	1.3	ug/L	206	Standard
	Pb	208	793219.8	6.0	**55.0141**	3.076	5.6	ug/L	668	Standard
	U	238	259049.5	0.9	**52.6729**	0.458	0.9	ug/L	32	Standard
>	**Bi**	209	416580.9	0.6				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	3308.7	1.0	**7.7733**	0.356	4.6	mg/L	60	Standard
K	39	218.3	13.8	**3.6919**	0.445	12.1	mg/L	12	Standard
Ca	43	93.3	27.5	**24.4570**	16.493	67.4	mg/L	37	Standard
Fe	54	62.1	34.0	**0.0021**	0.048	2235.4	mg/L	56	Standard
Fe	57	818.4	9.7	**-0.2253**	0.477	211.8	mg/L	735	Standard
Sc-1	45	24918.8	3.8				mg/L	22687	Standard
Cl	35	28698.5	2.2				ug/L	20516	Standard
Kr	83	3.7	56.8				ug/L	5	Standard
Br	81	903.4	8.3				ug/L	570	Standard
P	31	10436.9	3.6				ug/L	7850	Standard
S	34	1988.5	2.8				ug/L	1375	Standard
Sr	88	155.0	29.0				ug/L	165	Standard
C	12	333.3	33.0				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	90.0	29.4				mg/L	0	Standard
Dy	164	9.2	108.7				mg/L	6	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	13	Standard
I	127	10318.5	3.9				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.190	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.195	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.721
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.453
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508053201SDL WG535625-02
Sample Date/Time: Thursday, August 20, 2015 19:57:16
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 250
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60734.9	3.6				ug/L	51673	Standard
	Be	9	20.0	66.1	**-0.0397**	0.016	41.5	ug/L	43	Standard
	Al	27	46426.1	4.1	**0.5640**	0.007	1.2	ug/L	2157	Standard
	Sc	45	25314.5	4.1				ug/L	22687	Standard
	Ti	47	18.0	33.3	**-0.0261**	0.036	137.7	ug/L	43	Standard
	V	51	1047.5	16.2	**-0.0317**	0.041	128.7	ug/L	1233	Standard
	Cr	52	5663.4	0.3	**-0.0761**	0.006	8.3	ug/L	6387	Standard
	Cr	53	2235.2	9.7	**1.5702**	0.328	20.9	ug/L	1555	Standard
	Mn	55	2004.5	7.7	**0.4608**	0.055	11.9	ug/L	436	Standard
	Co	59	254.3	27.2	**0.0133**	0.017	125.5	ug/L	236	Standard
	Ni	60	130.7	3.1	**0.0485**	0.003	7.0	ug/L	204	Standard
	Cu	65	271.0	11.5	**-0.0863**	0.023	26.3	ug/L	303	Standard
	Zn	66	1877.4	1.9	**1.8999**	0.061	3.2	ug/L	332	Standard
>	Ge	72	301895.8	0.8				ug/L	293924	Standard
	As	75	-52.4	63.3	**-0.0163**	0.039	237.7	ug/L	45	Standard
	Se	82	22.4	28.0	**0.1038**	0.088	85.2	ug/L	35	Standard
	Se-1	77	231.0	6.4	**1.6863**	0.279	16.6	ug/L	153	Standard
>	Ga	71	25.0	20.0				mg/L	25	Standard
	Rb	85	2728.6	4.3				ug/L	20	Standard
	Y	89	282891.9	1.5				ug/L	279578	Standard
>	Rh	103	13.3	21.7				ug/L	68	Standard
	Mo	98	113.5	13.2	**0.0508**	0.008	15.2	ug/L	56	Standard
	Ag	107	146.0	81.3	**0.0099**	0.020	200.7	ug/L	199	Standard
	Cd	111	33.1	25.7	**0.0119**	0.005	38.6	mg/L	89	Standard
	Cd	114	83.0	32.9	**0.0122**	0.006	45.8	ug/L	150	Standard
>	In	115	483282.5	1.8				ug/L	458296	Standard
	Sn	118	321.7	19.4	**0.0049**	0.012	241.4	ug/L	385	Standard
	Sb	123	1122.2	14.9	**0.2331**	0.033	14.2	ug/L	208	Standard
	Ba	135	2121.1	2.0	**0.9525**	0.036	3.8	ug/L	108	Standard
	Ce	140	26.7	28.6				ug/L	92	Standard
>	Tb	159	843624.2	0.7				ug/L	812006	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	139.0	102.2	**0.0130**	0.019	148.9	ug/L	236	Standard
	Tl	205	73.3	108.3	**0.0138**	0.016	113.0	ug/L	43	Standard
	Pb	206	5916.4	158.5	**1.2391**	2.054	165.8	ug/L	266	Standard
	Pb	207	4860.1	157.5	**1.1179**	1.853	165.7	ug/L	206	Standard
	Pb	208	9209.8	143.2	**0.5840**	0.917	157.0	ug/L	668	Standard
	U	238	32.3	114.7	**0.0059**	0.008	127.6	ug/L	32	Standard
>	Bi	209	421173.3	1.0				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	728.4	0.4	**1.6007**	0.074	4.6	mg/L	60	Standard
K	39	55.0	9.1	**0.6152**	0.108	17.6	mg/L	12	Standard
Ca	43	48.3	48.9	**-6.5981**	17.861	270.7	mg/L	37	Standard
Fe	54	64.8	31.0	**0.0049**	0.041	849.8	mg/L	56	Standard
Fe	57	793.4	2.8	**-0.5249**	0.308	58.6	mg/L	735	Standard
> Sc-1	45	25314.5	4.1				mg/L	22687	Standard
Cl	35	27988.5	2.0				ug/L	20516	Standard
Kr	83	3.0	57.7				ug/L	5	Standard
Br	81	596.7	5.4				ug/L	570	Standard
P	31	10020.0	3.8				ug/L	7850	Standard
S	34	1731.8	7.6				ug/L	1375	Standard
Sr	88	158.3	14.6				ug/L	165	Standard
C	12	230.0	34.0				mg/L	173	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	43.3	58.1				mg/L	0	Standard
Dy	164	12.1	44.0				mg/L	6	Standard
Ho-1	165	8.3	69.3				mg/L	7	Standard
Er	166	26.7	86.6				mg/L	13	Standard
I	127	4629.0	5.3				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.537	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.712	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1508053201SDL WG535625-02
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.452
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		111.671
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 21, 2015

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, August 20, 2015 20:00:30
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61723.9	3.8				ug/L	51673	Standard
	Be	9	37018.5	0.4	**46.8384**	1.714	3.7	ug/L	43	Standard
	Al	27	3806451.2	1.2	**46.3652**	1.276	2.8	ug/L	2157	Standard
	Sc	45	25598.3	3.4				ug/L	22687	Standard
	Ti	47	18936.5	2.0	**110.5782**	2.998	2.7	ug/L	43	Standard
	V	51	215730.6	1.2	**49.6024**	0.776	1.6	ug/L	1233	Standard
	Cr	52	257936.8	0.9	**50.4117**	0.787	1.6	ug/L	6387	Standard
	Cr	53	32920.7	2.1	**50.6899**	1.178	2.3	ug/L	1555	Standard
	Mn	55	176857.0	1.5	**57.9372**	0.426	0.7	ug/L	436	Standard
	Co	59	218236.5	0.4	**51.5861**	0.381	0.7	ug/L	236	Standard
	Ni	60	71781.0	1.2	**49.6885**	0.384	0.8	ug/L	204	Standard
	Cu	65	71314.4	1.0	**49.3986**	0.573	1.2	ug/L	303	Standard
	Zn	66	39848.3	0.9	**49.3479**	0.918	1.9	ug/L	332	Standard
>	**Ge**	72	303599.0	0.9				ug/L	293924	Standard
	As	75	41063.0	1.6	**48.3353**	0.683	1.4	ug/L	45	Standard
	Se	82	3497.9	0.6	**49.1397**	0.322	0.7	ug/L	35	Standard
	Se-1	77	2648.9	3.3	**48.1820**	1.291	2.7	ug/L	153	Standard
>	**Ga**	71	35.0	62.3				mg/L	25	Standard
	Rb	85	601.7	5.3				ug/L	20	Standard
	Y	89	289979.0	1.6				ug/L	279578	Standard
>	**Rh**	103	21.7	48.0				ug/L	68	Standard
	Mo	98	169956.9	1.0	**97.4097**	1.820	1.9	ug/L	56	Standard
	Ag	107	287192.3	0.4	**48.3358**	0.332	0.7	ug/L	199	Standard
	Cd	111	89800.2	1.1	**49.8130**	0.550	1.1	mg/L	89	Standard
	Cd	114	234229.0	0.7	**49.1844**	0.499	1.0	ug/L	150	Standard
>	**In**	115	493246.7	1.0				ug/L	458296	Standard
	Sn	118	261742.5	2.7	**45.0724**	1.630	3.6	ug/L	385	Standard
	Sb	123	232847.0	0.3	**49.8711**	0.384	0.8	ug/L	208	Standard
	Ba	135	107522.8	0.6	**48.4565**	0.746	1.5	ug/L	108	Standard
	Ce	140	120.0	30.0				ug/L	92	Standard
>	**Tb**	159	850113.8	1.3				ug/L	812006	Standard
	Ho	165	11.7	99.0				ug/L	7	Standard
	Tl	203	370853.4	0.3	**49.6800**	0.687	1.4	ug/L	236	Standard
	Tl	205	263106.6	1.1	**50.9131**	1.099	2.2	ug/L	43	Standard
	Pb	206	230842.1	2.1	**50.0266**	1.181	2.4	ug/L	266	Standard
	Pb	207	208061.5	2.7	**49.8140**	1.380	2.8	ug/L	206	Standard
	Pb	208	757640.3	1.1	**52.0849**	0.641	1.2	ug/L	668	Standard
	U	238	259663.2	0.5	**52.3301**	0.481	0.9	ug/L	32	Standard
>	**Bi**	209	420322.1	1.1				ug/L	377155	Standard

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Na	23	1.7	173.2	**15.8292**	228.158	1441.4	mg/L	2	Standard
Mg	24	2276.8	2.2	**5.1727**	0.303	5.9	mg/L	60	Standard
K	39	205.0	8.8	**3.3427**	0.227	6.8	mg/L	12	Standard
Ca	43	68.3	29.6	**5.8045**	12.253	211.1	mg/L	37	Standard
Fe	54	2497.4	5.2	**4.8828**	0.252	5.2	mg/L	56	Standard
Fe	57	1393.4	2.2	**4.3160**	0.641	14.9	mg/L	735	Standard
> **Sc-1**	45	25598.3	3.4				mg/L	22687	Standard
Cl	35	26994.7	0.8				ug/L	20516	Standard
Kr	83	3.7	41.7				ug/L	5	Standard
Br	81	583.3	6.9				ug/L	570	Standard
P	31	12518.5	3.7				ug/L	7850	Standard
S	34	1895.1	6.0				ug/L	1375	Standard
Sr	88	166.7	35.8				ug/L	165	Standard
C	12	313.3	49.9				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	63.3	50.8				mg/L	0	Standard
Dy	164	8.9	112.6				mg/L	6	Standard
Ho-1	165	11.7	99.0				mg/L	7	Standard
Er	166	23.3	24.7				mg/L	13	Standard
I	127	566.7	5.7				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	93.677		
Al	27	92.730		
Sc	45			
Ti	47	110.578		
V	51	99.205		
Cr	52	100.823		
Cr	53			
Mn	55	115.874		
Co	59	103.172		
Ni	60	99.377		
Cu	65	98.797		
Zn	66	98.696		
> Ge	72		103.292	
As	75	96.671		
Se	82	98.279		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	97.410		
Ag	107	96.672		
Cd	111	99.626		
Cd	114			
> In	115			107.626
Sn	118	90.145		
Sb	123	99.742		
Ba	135	96.913		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.360		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.170		
U	238	104.660		
> Bi	209			111.445
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Ti	47	
QC Std 6	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, August 20, 2015 20:03:41
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60154.2	2.3				ug/L	51673	Standard
	Be	9	8.3	91.7	**-0.0543**	0.010	18.0	ug/L	43	Standard
	Al	27	298.3	14.4	**-0.0067**	0.000	7.2	ug/L	2157	Standard
	Sc	45	25167.6	1.8				ug/L	22687	Standard
	Ti	47	14.0	25.8	**-0.0473**	0.021	45.1	ug/L	43	Standard
	V	51	780.8	5.6	**-0.0884**	0.007	8.0	ug/L	1233	Standard
	Cr	52	4787.1	2.4	**-0.2232**	0.021	9.3	ug/L	6387	Standard
	Cr	53	488.3	10.8	**-1.2185**	0.074	6.1	ug/L	1555	Standard
	Mn	55	473.3	3.0	**-0.0409**	0.002	4.1	ug/L	436	Standard
	Co	59	202.7	7.4	**0.0025**	0.004	153.0	ug/L	236	Standard
	Ni	60	56.3	16.0	**-0.0022**	0.006	262.5	ug/L	204	Standard
	Cu	65	192.3	6.6	**-0.1375**	0.007	5.2	ug/L	303	Standard
	Zn	66	204.3	6.4	**-0.1956**	0.013	6.6	ug/L	332	Standard
>	**Ge**	72	293010.1	2.0				ug/L	293924	Standard
	As	75	-49.5	12.2	**-0.0150**	0.009	57.5	ug/L	45	Standard
	Se	82	14.9	19.2	**0.0040**	0.041	1008.1	ug/L	35	Standard
	Se-1	77	94.0	17.0	**-0.9128**	0.288	31.6	ug/L	153	Standard
>	**Ga**	71	16.7	17.3				mg/L	25	Standard
	Rb	85	31.7	9.1				ug/L	20	Standard
	Y	89	278770.0	1.7				ug/L	279578	Standard
>	**Rh**	103	16.7	34.6				ug/L	68	Standard
	Mo	98	57.5	6.0	**0.0181**	0.002	10.6	ug/L	56	Standard
	Ag	107	111.7	19.3	**0.0041**	0.004	84.8	ug/L	199	Standard
	Cd	111	5.6	27.8	**-0.0037**	0.001	23.2	mg/L	89	Standard
	Cd	114	17.7	6.3	**-0.0018**	0.000	12.6	ug/L	150	Standard
>	**In**	115	484010.0	0.9				ug/L	458296	Standard
	Sn	118	458.3	9.1	**0.0287**	0.008	26.9	ug/L	385	Standard
	Sb	123	863.8	5.4	**0.1766**	0.010	5.9	ug/L	208	Standard
	Ba	135	32.3	13.9	**-0.0091**	0.002	21.5	ug/L	108	Standard
	Ce	140	16.7	75.5				ug/L	92	Standard
>	**Tb**	159	860638.3	0.4				ug/L	812006	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	26.7	28.6	**-0.0022**	0.001	44.4	ug/L	236	Standard
	Tl	205	15.0	33.3	**0.0024**	0.001	40.0	ug/L	43	Standard
	Pb	206	513.7	38.8	**0.0544**	0.042	77.6	ug/L	266	Standard
	Pb	207	430.7	42.7	**0.0447**	0.043	96.2	ug/L	206	Standard
	Pb	208	1407.0	21.5	**0.0408**	0.020	49.3	ug/L	668	Standard
	U	238	12.3	76.6	**0.0018**	0.002	102.6	ug/L	32	Standard
>	**Bi**	209	427110.4	0.4				ug/L	377155	Standard

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Na	23	3.3	86.6	**-126.5231**	237.368	187.6	mg/L	2	Standard
Mg	24	50.0	52.0	**0.0113**	0.063	557.7	mg/L	60	Standard
K	39	10.0	132.3	**-0.2209**	0.241	109.0	mg/L	12	Standard
Ca	43	23.3	24.7	**-24.0533**	4.057	16.9	mg/L	37	Standard
Fe	54	62.6	16.5	**0.0008**	0.021	2691.9	mg/L	56	Standard
Fe	57	683.3	4.8	**-1.4038**	0.370	26.4	mg/L	735	Standard
> **Sc-1**	45	25167.6	1.8				mg/L	22687	Standard
Cl	35	25408.6	1.4				ug/L	20516	Standard
Kr	83	4.0	75.0				ug/L	5	Standard
Br	81	443.3	17.2				ug/L	570	Standard
P	31	10743.8	3.3				ug/L	7850	Standard
S	34	1771.8	3.8				ug/L	1375	Standard
Sr	88	180.0	2.8				ug/L	165	Standard
C	12	200.0	50.7				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	60.0	50.0				mg/L	0	Standard
Dy	164	6.0	100.7				mg/L	6	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	13	Standard
I	127	2685.2	3.6				mg/L	3795	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.689	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.611
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		113.245
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW 13 WG535420-02
Sample Date/Time: Thursday, August 20, 2015 20:06:54
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60676.4	3.9				ug/L	51673	Standard
	Be	9	10.0	86.6	**-0.0522**	0.011	21.2	ug/L	43	Standard
	Al	27	441.7	28.9	**-0.0050**	0.001	27.7	ug/L	2157	Standard
	Sc	45	24805.3	2.0				ug/L	22687	Standard
	Ti	47	21.0	16.5	**-0.0049**	0.021	427.3	ug/L	43	Standard
	V	51	754.7	28.7	**-0.0945**	0.053	55.5	ug/L	1233	Standard
	Cr	52	5066.2	2.3	**-0.1657**	0.027	16.4	ug/L	6387	Standard
	Cr	53	4810.8	7.7	**5.9513**	0.617	10.4	ug/L	1555	Standard
	Mn	55	546.0	6.8	**-0.0161**	0.013	81.2	ug/L	436	Standard
	Co	59	227.7	13.7	**0.0086**	0.008	91.0	ug/L	236	Standard
	Ni	60	54.7	12.2	**-0.0034**	0.005	146.0	ug/L	204	Standard
	Cu	65	168.7	22.2	**-0.1545**	0.027	17.6	ug/L	303	Standard
	Zn	66	1055.4	0.5	**0.9061**	0.004	0.5	ug/L	332	Standard
>	**Ge**	72	293114.1	0.4				ug/L	293924	Standard
	As	75	-60.4	108.3	**-0.0283**	0.080	282.4	ug/L	45	Standard
	Se	82	13.9	28.2	**-0.0116**	0.056	488.2	ug/L	35	Standard
	Se-1	77	420.0	8.6	**5.5858**	0.684	12.3	ug/L	153	Standard
>	**Ga**	71	30.0	33.3				mg/L	25	Standard
	Rb	85	23.3	49.5				ug/L	20	Standard
	Y	89	281583.5	2.5				ug/L	279578	Standard
>	**Rh**	103	18.3	41.7				ug/L	68	Standard
	Mo	98	42.9	56.6	**0.0099**	0.014	144.9	ug/L	56	Standard
	Ag	107	101.7	22.7	**0.0028**	0.004	146.2	ug/L	199	Standard
	Cd	111	6.9	14.3	**-0.0028**	0.001	19.6	mg/L	89	Standard
	Cd	114	25.0	64.1	**-0.0001**	0.004	3219.2	ug/L	150	Standard
>	**In**	115	475004.6	1.3				ug/L	458296	Standard
	Sn	118	371.7	15.1	**0.0147**	0.010	70.7	ug/L	385	Standard
	Sb	123	318.8	2.7	**0.0590**	0.003	4.7	ug/L	208	Standard
	Ba	135	32.0	21.9	**-0.0090**	0.003	38.0	ug/L	108	Standard
	Ce	140	25.0	20.0				ug/L	92	Standard
>	**Tb**	159	845073.6	0.8				ug/L	812006	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	22.0	34.3	**-0.0028**	0.001	36.7	ug/L	236	Standard
	Tl	205	33.3	62.5	**0.0060**	0.004	68.0	ug/L	43	Standard
	Pb	206	1021.0	60.8	**0.1687**	0.137	81.2	ug/L	266	Standard
	Pb	207	970.0	57.7	**0.1783**	0.137	76.6	ug/L	206	Standard
	Pb	208	3153.5	50.9	**0.1649**	0.113	68.4	ug/L	668	Standard
	U	238	34.0	72.3	**0.0063**	0.005	79.7	ug/L	32	Standard
>	**Bi**	209	417254.1	1.1				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	42.1	**-0.0077**	0.041	540.8	mg/L	60	Standard
K	39	8.3	34.6	**-0.2466**	0.055	22.2	mg/L	12	Standard
Ca	43	25.0	52.9	**-22.7549**	8.877	39.0	mg/L	37	Standard
Fe	54	51.3	23.0	**-0.0207**	0.024	117.7	mg/L	56	Standard
Fe	57	805.0	5.9	**-0.2941**	0.481	163.6	mg/L	735	Standard
> **Sc-1**	45	24805.3	2.0				mg/L	22687	Standard
Cl	35	25512.1	2.2				ug/L	20516	Standard
Kr	83	2.3	24.7				ug/L	5	Standard
Br	81	533.3	3.9				ug/L	570	Standard
P	31	10138.4	0.6				ug/L	7850	Standard
S	34	1796.8	5.6				ug/L	1375	Standard
Sr	88	158.3	21.0				ug/L	165	Standard
C	12	226.7	14.2				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	70.0	14.3				mg/L	0	Standard
Dy	164	8.9	101.8				mg/L	6	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	23.3	89.2				mg/L	13	Standard
I	127	2881.9	2.2				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.424	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.724	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.646
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.632
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 13 WG535420-02
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Method 6020 - Summary Report

Sample ID: LCSW 13 WG535420-03
Sample Date/Time: Thursday, August 20, 2015 20:10:06
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65382.4	0.7				ug/L	51673	Standard
	Be	9	353.3	7.8	**0.3571**	0.030	8.4	ug/L	43	Standard
	Al	27	80411.3	2.9	**0.9137**	0.020	2.1	ug/L	2157	Standard
	Sc	45	25145.9	4.7				ug/L	22687	Standard
	Ti	47	1879.1	1.9	**11.4307**	0.286	2.5	ug/L	43	Standard
	V	51	43092.9	0.2	**10.2110**	0.050	0.5	ug/L	1233	Standard
	Cr	52	30248.5	1.6	**5.1559**	0.070	1.3	ug/L	6387	Standard
	Cr	53	15511.3	7.4	**24.1171**	1.976	8.2	ug/L	1555	Standard
	Mn	55	17573.9	0.6	**5.8790**	0.059	1.0	ug/L	436	Standard
	Co	59	8906.0	1.1	**2.1706**	0.029	1.3	ug/L	236	Standard
	Ni	60	6979.6	0.7	**5.0472**	0.043	0.9	ug/L	204	Standard
	Cu	65	7054.6	2.2	**4.8956**	0.098	2.0	ug/L	303	Standard
	Zn	66	8598.8	0.4	**10.8516**	0.066	0.6	ug/L	332	Standard
>	**Ge**	72	288442.4	0.6				ug/L	293924	Standard
	As	75	3100.2	2.4	**3.8827**	0.082	2.1	ug/L	45	Standard
	Se	82	282.1	6.1	**3.9749**	0.239	6.0	ug/L	35	Standard
	Se-1	77	1165.4	6.4	**20.8167**	1.432	6.9	ug/L	153	Standard
>	**Ga**	71	25.0	40.0				mg/L	25	Standard
	Rb	85	96.7	3.0				ug/L	20	Standard
	Y	89	290271.1	1.3				ug/L	279578	Standard
>	**Rh**	103	15.0	66.7				ug/L	68	Standard
	Mo	98	16632.8	1.5	**9.5161**	0.172	1.8	ug/L	56	Standard
	Ag	107	23036.5	0.3	**3.8623**	0.013	0.3	ug/L	199	Standard
	Cd	111	862.3	8.3	**0.4713**	0.037	7.9	mg/L	89	Standard
	Cd	114	2571.5	4.6	**0.5343**	0.024	4.6	ug/L	150	Standard
>	**In**	115	493362.8	0.5				ug/L	458296	Standard
	Sn	118	50972.3	2.5	**8.7314**	0.193	2.2	ug/L	385	Standard
	Sb	123	57781.8	1.1	**12.3638**	0.199	1.6	ug/L	208	Standard
	Ba	135	21542.0	0.8	**9.6861**	0.122	1.3	ug/L	108	Standard
	Ce	140	28.3	27.0				ug/L	92	Standard
>	**Tb**	159	862742.1	1.3				ug/L	812006	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	36938.3	0.9	**4.9330**	0.035	0.7	ug/L	236	Standard
	Tl	205	26984.0	1.6	**5.2107**	0.116	2.2	ug/L	43	Standard
	Pb	206	23913.2	1.4	**5.1227**	0.097	1.9	ug/L	266	Standard
	Pb	207	20954.5	1.6	**4.9564**	0.116	2.3	ug/L	206	Standard
	Pb	208	77398.9	0.8	**5.2617**	0.073	1.4	ug/L	668	Standard
	U	238	9.0	125.2	**0.0012**	0.002	191.5	ug/L	32	Standard
>	**Bi**	209	421141.2	0.7				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	231.7	10.0	**0.4389**	0.045	10.3	mg/L	60	Standard
K	39	28.3	27.0	**0.1215**	0.127	104.8	mg/L	12	Standard
Ca	43	33.3	45.8	**-16.8827**	11.385	67.4	mg/L	37	Standard
Fe	54	84.6	17.7	**0.0469**	0.037	79.0	mg/L	56	Standard
Fe	57	763.4	2.7	**-0.7292**	0.318	43.6	mg/L	735	Standard
> **Sc-1**	45	25145.9	4.7				mg/L	22687	Standard
Cl	35	27503.6	2.5				ug/L	20516	Standard
Kr	83	3.7	15.7				ug/L	5	Standard
Br	81	556.7	10.2				ug/L	570	Standard
P	31	10453.6	3.7				ug/L	7850	Standard
S	34	1918.5	4.6				ug/L	1375	Standard
Sr	88	171.7	29.2				ug/L	165	Standard
C	12	253.3	8.2				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	60.0				mg/L	0	Standard
Dy	164	12.7	50.0				mg/L	6	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	2803.6	3.8				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		126.531	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.135	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.652
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		111.663
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: LCSW 13 WG535420-03
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Method 6020 - Summary Report

Sample ID: L1508067701 WG535420-01
Sample Date/Time: Thursday, August 20, 2015 20:13:18
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59354.6	5.0				ug/L	51673	Standard
	Be	9	10.0	50.0	**-0.0516**	0.007	13.8	ug/L	43	Standard
	Al	27	330428.8	2.3	**4.1785**	0.183	4.4	ug/L	2157	Standard
	Sc	45	25000.6	1.4				ug/L	22687	Standard
	Ti	47	18.3	3.1	**-0.0205**	0.003	14.9	ug/L	43	Standard
	V	51	912.1	25.1	**-0.0559**	0.054	97.3	ug/L	1233	Standard
	Cr	52	5415.0	0.4	**-0.0877**	0.005	6.2	ug/L	6387	Standard
	Cr	53	6079.6	3.4	**8.1082**	0.402	5.0	ug/L	1555	Standard
	Mn	55	50622.8	3.4	**17.1230**	0.583	3.4	ug/L	436	Standard
	Co	59	752.4	2.8	**0.1381**	0.006	4.0	ug/L	236	Standard
	Ni	60	2213.5	1.1	**1.5540**	0.023	1.5	ug/L	204	Standard
	Cu	65	397.0	3.7	**0.0117**	0.012	99.8	ug/L	303	Standard
	Zn	66	9042.0	1.3	**11.3042**	0.095	0.8	ug/L	332	Standard
>	**Ge**	72	291630.6	0.6				ug/L	293924	Standard
	As	75	-45.5	142.9	**-0.0101**	0.079	787.5	ug/L	45	Standard
	Se	82	19.0	13.1	**0.0646**	0.038	59.1	ug/L	35	Standard
	Se-1	77	542.7	2.2	**8.0877**	0.239	3.0	ug/L	153	Standard
>	**Ga**	71	31.7	77.9				mg/L	25	Standard
	Rb	85	11759.6	1.9				ug/L	20	Standard
	Y	89	277781.7	1.0				ug/L	279578	Standard
>	**Rh**	103	15.0	100.0				ug/L	68	Standard
	Mo	98	63.9	21.2	**0.0225**	0.008	36.1	ug/L	56	Standard
	Ag	107	76.3	7.6	**-0.0016**	0.001	62.8	ug/L	199	Standard
	Cd	111	5.9	16.8	**-0.0034**	0.001	16.5	mg/L	89	Standard
	Cd	114	14.6	60.9	**-0.0024**	0.002	81.4	ug/L	150	Standard
>	**In**	115	474512.3	0.4				ug/L	458296	Standard
	Sn	118	388.3	10.4	**0.0177**	0.007	40.2	ug/L	385	Standard
	Sb	123	197.9	9.2	**0.0321**	0.004	12.0	ug/L	208	Standard
	Ba	135	18921.5	0.5	**8.8434**	0.021	0.2	ug/L	108	Standard
	Ce	140	56.7	13.5				ug/L	92	Standard
>	**Tb**	159	831959.0	1.0				ug/L	812006	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	33.3	60.1	**-0.0012**	0.003	229.3	ug/L	236	Standard
	Tl	205	8.3	69.3	**0.0012**	0.001	98.3	ug/L	43	Standard
	Pb	206	782.7	10.4	**0.1184**	0.018	15.3	ug/L	266	Standard
	Pb	207	631.0	9.5	**0.0978**	0.014	14.7	ug/L	206	Standard
	Pb	208	2364.4	5.2	**0.1119**	0.009	7.8	ug/L	668	Standard
	U	238	4.7	53.9	**0.0003**	0.001	154.1	ug/L	32	Standard
>	**Bi**	209	411079.0	0.4				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	4520.7	3.3	**10.6111**	0.242	2.3	mg/L	60	Standard
K	39	245.0	4.1	**4.1879**	0.253	6.0	mg/L	12	Standard
Ca	43	25.0	20.0	**-22.7884**	3.579	15.7	mg/L	37	Standard
Fe	54	59.2	25.5	**-0.0051**	0.033	639.9	mg/L	56	Standard
Fe	57	723.4	9.1	**-1.0359**	0.539	52.0	mg/L	735	Standard
> **Sc-1**	45	25000.6	1.4				mg/L	22687	Standard
Cl	35	25716.5	1.4				ug/L	20516	Standard
Kr	83	5.0	20.0				ug/L	5	Standard
Br	81	910.0	15.3				ug/L	570	Standard
P	31	10171.8	4.2				ug/L	7850	Standard
S	34	1905.1	9.1				ug/L	1375	Standard
Sr	88	160.0	13.6				ug/L	165	Standard
C	12	253.3	26.3				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	57.3				mg/L	0	Standard
Dy	164	29.2	89.1				mg/L	6	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	16.7	124.9				mg/L	13	Standard
I	127	4439.0	1.2				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.866	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.220	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.538
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.995
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 21, 2015

Method 6020 - Summary Report

Sample ID: L1508067701S WG535420-04
Sample Date/Time: Thursday, August 20, 2015 20:16:29
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64579.1	3.3				ug/L	51673	Standard
	Be	9	411.7	19.0	**0.4318**	0.081	18.8	ug/L	43	Standard
	Al	27	400585.4	1.5	**4.6535**	0.121	2.6	ug/L	2157	Standard
	Sc	45	25474.7	2.1				ug/L	22687	Standard
	Ti	47	1853.1	2.8	**11.0699**	0.264	2.4	ug/L	43	Standard
	V	51	41773.5	0.7	**9.7126**	0.114	1.2	ug/L	1233	Standard
	Cr	52	29774.2	1.2	**4.9468**	0.072	1.5	ug/L	6387	Standard
	Cr	53	14573.7	6.4	**22.1117**	1.659	7.5	ug/L	1555	Standard
	Mn	55	64821.4	1.5	**21.8354**	0.238	1.1	ug/L	436	Standard
	Co	59	8976.3	0.2	**2.1490**	0.009	0.4	ug/L	236	Standard
	Ni	60	8827.6	0.9	**6.2823**	0.035	0.6	ug/L	204	Standard
	Cu	65	7146.4	1.5	**4.8715**	0.064	1.3	ug/L	303	Standard
	Zn	66	16514.3	1.8	**20.8841**	0.293	1.4	ug/L	332	Standard
>	**Ge**	72	293565.0	0.5				ug/L	293924	Standard
	As	75	3028.6	1.2	**3.7287**	0.026	0.7	ug/L	45	Standard
	Se	82	294.4	2.5	**4.0815**	0.127	3.1	ug/L	35	Standard
	Se-1	77	1119.0	5.2	**19.4901**	1.262	6.5	ug/L	153	Standard
>	**Ga**	71	35.0	24.7				mg/L	25	Standard
	Rb	85	11749.6	3.0				ug/L	20	Standard
	Y	89	281035.2	2.6				ug/L	279578	Standard
>	**Rh**	103	26.7	21.7				ug/L	68	Standard
	Mo	98	16026.1	0.6	**9.4797**	0.180	1.9	ug/L	56	Standard
	Ag	107	21892.5	1.2	**3.7951**	0.100	2.6	ug/L	199	Standard
	Cd	111	821.2	1.7	**0.4641**	0.010	2.2	mg/L	89	Standard
	Cd	114	2329.7	8.9	**0.4996**	0.036	7.3	ug/L	150	Standard
>	**In**	115	477265.7	1.7				ug/L	458296	Standard
	Sn	118	48798.5	2.8	**8.6410**	0.210	2.4	ug/L	385	Standard
	Sb	123	55333.2	1.5	**12.2407**	0.269	2.2	ug/L	208	Standard
	Ba	135	39189.3	0.8	**18.2406**	0.436	2.4	ug/L	108	Standard
	Ce	140	71.7	34.4				ug/L	92	Standard
>	**Tb**	159	866648.0	1.5				ug/L	812006	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	35375.3	1.4	**4.7282**	0.077	1.6	ug/L	236	Standard
	Tl	205	24945.5	4.0	**4.8215**	0.219	4.5	ug/L	43	Standard
	Pb	206	23183.4	0.7	**4.9690**	0.078	1.6	ug/L	266	Standard
	Pb	207	20573.3	1.6	**4.8689**	0.079	1.6	ug/L	206	Standard
	Pb	208	73854.1	0.8	**5.0226**	0.082	1.6	ug/L	668	Standard
	U	238	1.3	114.6	**-0.0004**	0.000	85.5	ug/L	32	Standard
>	**Bi**	209	420792.2	1.0				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	4835.8	2.8	**11.1451**	0.079	0.7	mg/L	60	Standard
K	39	243.3	22.6	**4.0685**	0.989	24.3	mg/L	12	Standard
Ca	43	36.7	55.1	**-15.0657**	14.168	94.0	mg/L	37	Standard
Fe	54	71.5	10.9	**0.0171**	0.016	94.0	mg/L	56	Standard
Fe	57	771.7	8.8	**-0.7493**	0.565	75.4	mg/L	735	Standard
Sc-1	45	25474.7	2.1				mg/L	22687	Standard
Cl	35	26594.7	2.5				ug/L	20516	Standard
Kr	83	2.3	24.7				ug/L	5	Standard
Br	81	763.4	1.5				ug/L	570	Standard
P	31	10235.1	6.3				ug/L	7850	Standard
S	34	1876.8	4.4				ug/L	1375	Standard
Sr	88	203.3	20.5				ug/L	165	Standard
C	12	290.0	21.5				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	56.8				mg/L	0	Standard
Dy	164	12.5	86.6				mg/L	6	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	16.7	91.7				mg/L	13	Standard
I	127	4145.6	4.5				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.976	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.878	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.139
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		111.570
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: August 21, 2015

Method 6020 - Summary Report

Sample ID: L1508067701SD WG535420-05
Sample Date/Time: Thursday, August 20, 2015 20:19:41
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62572.4	3.5				ug/L	51673	Standard
	Be	9	400.0	5.4	**0.4355**	0.044	10.0	ug/L	43	Standard
	Al	27	407310.4	2.1	**4.8834**	0.107	2.2	ug/L	2157	Standard
	Sc	45	24878.7	1.0				ug/L	22687	Standard
	Ti	47	1777.1	2.0	**10.7227**	0.211	2.0	ug/L	43	Standard
	V	51	42156.8	2.6	**9.9069**	0.127	1.3	ug/L	1233	Standard
	Cr	52	29874.1	1.8	**5.0312**	0.071	1.4	ug/L	6387	Standard
	Cr	53	15177.6	2.8	**23.3628**	0.401	1.7	ug/L	1555	Standard
	Mn	55	65767.8	0.9	**22.3932**	0.496	2.2	ug/L	436	Standard
	Co	59	9163.4	0.4	**2.2182**	0.024	1.1	ug/L	236	Standard
	Ni	60	8763.2	1.7	**6.3009**	0.022	0.3	ug/L	204	Standard
	Cu	65	7116.7	2.7	**4.9036**	0.148	3.0	ug/L	303	Standard
	Zn	66	16294.4	0.8	**20.8222**	0.446	2.1	ug/L	332	Standard
>	**Ge**	72	290565.0	1.4				ug/L	293924	Standard
	As	75	3000.9	2.6	**3.7324**	0.049	1.3	ug/L	45	Standard
	Se	82	278.7	3.2	**3.8958**	0.188	4.8	ug/L	35	Standard
	Se-1	77	1208.0	5.2	**21.4977**	0.953	4.4	ug/L	153	Standard
>	**Ga**	71	36.7	34.3				mg/L	25	Standard
	Rb	85	11766.2	1.5				ug/L	20	Standard
	Y	89	283446.7	0.4				ug/L	279578	Standard
>	**Rh**	103	13.3	57.3				ug/L	68	Standard
	Mo	98	16321.0	1.7	**9.6416**	0.178	1.8	ug/L	56	Standard
	Ag	107	21617.7	1.5	**3.7418**	0.038	1.0	ug/L	199	Standard
	Cd	111	825.4	1.4	**0.4660**	0.013	2.9	mg/L	89	Standard
	Cd	114	2523.0	8.4	**0.5417**	0.052	9.6	ug/L	150	Standard
>	**In**	115	477840.0	1.5				ug/L	458296	Standard
	Sn	118	48367.1	2.1	**8.5555**	0.263	3.1	ug/L	385	Standard
	Sb	123	54816.3	0.9	**12.1110**	0.194	1.6	ug/L	208	Standard
	Ba	135	38669.6	0.8	**17.9746**	0.302	1.7	ug/L	108	Standard
	Ce	140	76.7	16.4				ug/L	92	Standard
>	**Tb**	159	848601.8	2.1				ug/L	812006	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	35083.2	1.0	**4.7635**	0.031	0.7	ug/L	236	Standard
	Tl	205	25678.4	1.4	**5.0412**	0.078	1.6	ug/L	43	Standard
	Pb	206	24414.1	7.4	**5.3192**	0.392	7.4	ug/L	266	Standard
	Pb	207	21529.0	7.3	**5.1792**	0.376	7.3	ug/L	206	Standard
	Pb	208	144385.9	84.0	**10.0285**	8.470	84.5	ug/L	668	Standard
	U	238	69.0	140.5	**0.0135**	0.020	147.3	ug/L	32	Standard
>	**Bi**	209	414217.3	1.0				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	4880.8	3.6	**11.5247**	0.466	4.0	mg/L	60	Standard
K	39	291.7	4.9	**5.0861**	0.256	5.0	mg/L	12	Standard
Ca	43	23.3	75.3	**-23.8076**	12.311	51.7	mg/L	37	Standard
Fe	54	68.4	18.7	**0.0142**	0.028	193.7	mg/L	56	Standard
Fe	57	701.7	1.1	**-1.1876**	0.090	7.5	mg/L	735	Standard
Sc-1	45	24878.7	1.0				mg/L	22687	Standard
Cl	35	27020.1	1.5				ug/L	20516	Standard
Kr	83	3.7	68.6				ug/L	5	Standard
Br	81	823.4	7.4				ug/L	570	Standard
P	31	9846.5	2.6				ug/L	7850	Standard
S	34	1891.8	2.6				ug/L	1375	Standard
Sr	88	165.0	6.1				ug/L	165	Standard
C	12	286.7	23.7				mg/L	173	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	70.0	51.5				mg/L	0	Standard
Dy	164	5.9	93.7				mg/L	6	Standard
Ho-1	165	8.3	69.3				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	13	Standard
I	127	3855.5	3.0				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		121.093	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.857	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.265
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.827
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1508067702
Sample Date/Time: Thursday, August 20, 2015 20:22:53
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61352.3	0.3				ug/L	51673	Standard
	Be	9	13.3	21.7	**-0.0480**	0.004	7.6	ug/L	43	Standard
	Al	27	464167.3	4.6	**5.6750**	0.260	4.6	ug/L	2157	Standard
	Sc	45	24968.9	3.8				ug/L	22687	Standard
	Ti	47	18.3	8.3	**-0.0213**	0.011	50.0	ug/L	43	Standard
	V	51	1349.4	7.6	**0.0469**	0.028	60.6	ug/L	1233	Standard
	Cr	52	5757.1	6.3	**-0.0256**	0.091	353.4	ug/L	6387	Standard
	Cr	53	5069.2	3.7	**6.3539**	0.341	5.4	ug/L	1555	Standard
	Mn	55	33873.5	1.4	**11.2953**	0.132	1.2	ug/L	436	Standard
	Co	59	440.3	2.6	**0.0603**	0.001	2.4	ug/L	236	Standard
	Ni	60	1120.0	2.8	**0.7588**	0.030	4.0	ug/L	204	Standard
	Cu	65	10776.2	1.6	**7.4736**	0.123	1.6	ug/L	303	Standard
	Zn	66	95079.4	1.2	**122.2401**	2.304	1.9	ug/L	332	Standard
>	**Ge**	72	294062.1	1.3				ug/L	293924	Standard
	As	75	-52.0	88.7	**-0.0173**	0.055	321.4	ug/L	45	Standard
	Se	82	125.0	8.1	**1.6063**	0.135	8.4	ug/L	35	Standard
	Se-1	77	615.3	3.7	**9.4445**	0.543	5.8	ug/L	153	Standard
>	**Ga**	71	25.0	40.0				mg/L	25	Standard
	Rb	85	14220.0	1.8				ug/L	20	Standard
	Y	89	284667.7	0.7				ug/L	279578	Standard
>	**Rh**	103	13.3	57.3				ug/L	68	Standard
	Mo	98	482.7	1.6	**0.2656**	0.003	1.0	ug/L	56	Standard
	Ag	107	81.7	10.4	**-0.0010**	0.001	140.1	ug/L	199	Standard
	Cd	111	1590.0	2.6	**0.8896**	0.019	2.1	mg/L	89	Standard
	Cd	114	4229.8	0.6	**0.8972**	0.011	1.2	ug/L	150	Standard
>	**In**	115	485312.2	0.7				ug/L	458296	Standard
	Sn	118	463.3	12.6	**0.0293**	0.010	33.4	ug/L	385	Standard
	Sb	123	1094.1	2.1	**0.2262**	0.004	1.8	ug/L	208	Standard
	Ba	135	9026.7	2.5	**4.1119**	0.080	1.9	ug/L	108	Standard
	Ce	140	23.3	75.3				ug/L	92	Standard
>	**Tb**	159	860615.0	2.3				ug/L	812006	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	172.7	7.0	**0.0175**	0.002	8.8	ug/L	236	Standard
	Tl	205	125.0	24.0	**0.0238**	0.006	24.9	ug/L	43	Standard
	Pb	206	2946.3	2.0	**0.5874**	0.011	2.0	ug/L	266	Standard
	Pb	207	2489.9	1.3	**0.5432**	0.004	0.7	ug/L	206	Standard
	Pb	208	9078.7	2.3	**0.5737**	0.018	3.2	ug/L	668	Standard
	U	238	67.0	5.2	**0.0129**	0.001	4.9	ug/L	32	Standard
>	**Bi**	209	418079.1	0.7				ug/L	377155	Standard

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Na	23	5.0	100.0	**-259.1086**	413.122	159.4	mg/L	2	Standard
Mg	24	3782.1	5.2	**8.8699**	0.152	1.7	mg/L	60	Standard
K	39	273.3	21.7	**4.7227**	1.100	23.3	mg/L	12	Standard
Ca	43	86.7	20.3	**20.1281**	13.330	66.2	mg/L	37	Standard
Fe	54	67.3	47.7	**0.0119**	0.067	566.5	mg/L	56	Standard
Fe	57	843.4	7.9	**-0.0142**	0.632	4451.9	mg/L	735	Standard
> **Sc-1**	45	24968.9	3.8				mg/L	22687	Standard
Cl	35	27531.0	3.8				ug/L	20516	Standard
Kr	83	3.0	66.7				ug/L	5	Standard
Br	81	856.7	13.4				ug/L	570	Standard
P	31	10131.7	1.5				ug/L	7850	Standard
S	34	1838.4	7.6				ug/L	1375	Standard
Sr	88	185.0	5.4				ug/L	165	Standard
C	12	330.0	42.7				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	94.4				mg/L	0	Standard
Dy	164	2.1	274.3				mg/L	6	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	26.7	21.7				mg/L	13	Standard
I	127	8655.8	7.2				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.732	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.047	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	105.895
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	110.851
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1508067703
Sample Date/Time: Thursday, August 20, 2015 20:26:05
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61092.9	0.6				ug/L	51673	Standard
	Be	9	33.3	45.8	**-0.0225**	0.019	85.7	ug/L	43	Standard
	Al	27	372264.3	0.2	**4.5689**	0.027	0.6	ug/L	2157	Standard
	Sc	45	23975.6	1.0				ug/L	22687	Standard
	Ti	47	108.7	11.7	**0.5280**	0.078	14.8	ug/L	43	Standard
	V	51	1083.9	24.8	**-0.0150**	0.065	433.8	ug/L	1233	Standard
	Cr	52	10105.7	2.3	**0.8852**	0.045	5.1	ug/L	6387	Standard
	Cr	53	8809.3	13.1	**12.6289**	1.934	15.3	ug/L	1555	Standard
	Mn	55	100195.6	1.7	**34.0181**	0.526	1.5	ug/L	436	Standard
	Co	59	1886.1	6.2	**0.4164**	0.029	7.0	ug/L	236	Standard
	Ni	60	4209.3	2.6	**2.9871**	0.077	2.6	ug/L	204	Standard
	Cu	65	314.7	6.1	**-0.0485**	0.014	29.9	ug/L	303	Standard
	Zn	66	189795.7	0.8	**245.9799**	1.958	0.8	ug/L	332	Standard
>	**Ge**	72	292226.2	0.2				ug/L	293924	Standard
	As	75	-47.0	105.5	**-0.0121**	0.061	502.9	ug/L	45	Standard
	Se	82	15.2	26.1	**0.0084**	0.058	689.9	ug/L	35	Standard
	Se-1	77	655.7	10.8	**10.3256**	1.427	13.8	ug/L	153	Standard
>	**Ga**	71	316.7	20.6				mg/L	25	Standard
	Rb	85	18504.6	3.2				ug/L	20	Standard
	Y	89	282030.8	1.0				ug/L	279578	Standard
>	**Rh**	103	15.0	57.7				ug/L	68	Standard
	Mo	98	38.1	7.6	**0.0071**	0.002	26.5	ug/L	56	Standard
	Ag	107	81.7	28.7	**-0.0007**	0.004	547.0	ug/L	199	Standard
	Cd	111	86.2	4.7	**0.0428**	0.003	6.6	mg/L	89	Standard
	Cd	114	242.8	10.4	**0.0472**	0.005	10.5	ug/L	150	Standard
>	**In**	115	475933.6	1.1				ug/L	458296	Standard
	Sn	118	1075.0	8.1	**0.1401**	0.014	9.8	ug/L	385	Standard
	Sb	123	966.3	3.7	**0.2025**	0.007	3.6	ug/L	208	Standard
	Ba	135	32728.3	0.9	**15.2702**	0.303	2.0	ug/L	108	Standard
	Ce	140	1705.1	3.3				ug/L	92	Standard
>	**Tb**	159	846740.3	1.9				ug/L	812006	Standard
	Ho	165	61.7	16.9				ug/L	7	Standard
	Tl	203	35.0	59.7	**-0.0010**	0.003	276.2	ug/L	236	Standard
	Tl	205	25.0	20.0	**0.0044**	0.001	22.0	ug/L	43	Standard
	Pb	206	11455.7	8.5	**2.4637**	0.202	8.2	ug/L	266	Standard
	Pb	207	9394.6	6.7	**2.2256**	0.140	6.3	ug/L	206	Standard
	Pb	208	34230.5	2.8	**2.3335**	0.059	2.5	ug/L	668	Standard
	U	238	14.3	73.3	**0.0023**	0.002	92.7	ug/L	32	Standard
>	**Bi**	209	414598.0	0.7				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	4222.3	2.3	**10.3335**	0.262	2.5	mg/L	60	Standard
K	39	363.3	11.1	**6.6883**	0.719	10.7	mg/L	12	Standard
Ca	43	18.3	31.5	**-26.8496**	4.312	16.1	mg/L	37	Standard
Fe	54	59.2	38.6	**-0.0002**	0.049	27638.6	mg/L	56	Standard
Fe	57	738.4	8.8	**-0.6473**	0.535	82.6	mg/L	735	Standard
> **Sc-1**	45	23975.6	1.0				mg/L	22687	Standard
Cl	35	26820.4	1.8				ug/L	20516	Standard
Kr	83	3.3	45.8				ug/L	5	Standard
Br	81	816.7	6.7				ug/L	570	Standard
P	31	9983.3	1.8				ug/L	7850	Standard
S	34	1868.4	7.0				ug/L	1375	Standard
Sr	88	161.7	33.4				ug/L	165	Standard
C	12	316.7	19.0				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	53.3	71.0				mg/L	0	Standard
Dy	164	73.5	21.3				mg/L	6	Standard
Ho-1	165	61.7	16.9				mg/L	7	Standard
Er	166	66.7	22.9				mg/L	13	Standard
I	127	3245.3	3.3				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.230	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.422	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.849
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.928
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1508067704
Sample Date/Time: Thursday, August 20, 2015 20:29:16
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62661.0	2.2				ug/L	51673	Standard
	Be	9	23.3	89.2	**-0.0363**	0.026	70.4	ug/L	43	Standard
	Al	27	232960.9	1.5	**2.7850**	0.103	3.7	ug/L	2157	Standard
	Sc	45	24401.3	3.0				ug/L	22687	Standard
	Ti	47	18.7	22.3	**-0.0169**	0.025	150.0	ug/L	43	Standard
	V	51	1124.6	37.5	**-0.0014**	0.101	7247.3	ug/L	1233	Standard
	Cr	52	5879.1	3.8	**0.0260**	0.048	184.3	ug/L	6387	Standard
	Cr	53	9094.4	0.4	**13.3436**	0.180	1.4	ug/L	1555	Standard
	Mn	55	56580.5	2.9	**19.4316**	0.603	3.1	ug/L	436	Standard
	Co	59	612.7	3.6	**0.1058**	0.006	6.1	ug/L	236	Standard
	Ni	60	527.7	4.1	**0.3433**	0.017	5.1	ug/L	204	Standard
	Cu	65	269.7	12.6	**-0.0778**	0.026	33.3	ug/L	303	Standard
	Zn	66	1626.4	3.9	**1.6859**	0.102	6.1	ug/L	332	Standard
>	**Ge**	72	287640.4	0.8				ug/L	293924	Standard
	As	75	-9.8	492.1	**0.0336**	0.060	177.1	ug/L	45	Standard
	Se	82	24.3	19.1	**0.1470**	0.066	45.2	ug/L	35	Standard
	Se-1	77	718.7	3.1	**11.8147**	0.509	4.3	ug/L	153	Standard
>	**Ga**	71	30.0	44.1				mg/L	25	Standard
	Rb	85	18933.5	4.3				ug/L	20	Standard
	Y	89	275642.3	4.0				ug/L	279578	Standard
>	**Rh**	103	18.3	15.7				ug/L	68	Standard
	Mo	98	33.0	23.5	**0.0041**	0.005	113.1	ug/L	56	Standard
	Ag	107	64.0	1.6	**-0.0038**	0.000	5.1	ug/L	199	Standard
	Cd	111	9.9	10.1	**-0.0011**	0.001	51.6	mg/L	89	Standard
	Cd	114	25.5	20.2	**-0.0000**	0.001	3382.8	ug/L	150	Standard
>	**In**	115	476002.8	0.2				ug/L	458296	Standard
	Sn	118	416.7	11.2	**0.0226**	0.008	36.5	ug/L	385	Standard
	Sb	123	932.2	0.2	**0.1950**	0.000	0.2	ug/L	208	Standard
	Ba	135	24694.4	1.1	**11.5127**	0.148	1.3	ug/L	108	Standard
	Ce	140	60.0	25.0				ug/L	92	Standard
>	**Tb**	159	856269.1	1.1				ug/L	812006	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	10.3	34.0	**-0.0044**	0.000	11.2	ug/L	236	Standard
	Tl	205	5.0	100.0	**0.0005**	0.001	199.1	ug/L	43	Standard
	Pb	206	607.3	3.6	**0.0771**	0.004	5.1	ug/L	266	Standard
	Pb	207	508.0	3.1	**0.0655**	0.004	5.4	ug/L	206	Standard
	Pb	208	1863.0	2.1	**0.0742**	0.003	3.4	ug/L	668	Standard
	U	238	6.0	60.1	**0.0006**	0.001	125.8	ug/L	32	Standard
>	**Bi**	209	418724.1	2.0				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	5521.0	3.2	**13.3082**	0.344	2.6	mg/L	60	Standard
K	39	370.0	6.2	**6.7098**	0.636	9.5	mg/L	12	Standard
Ca	43	46.7	6.2	**-6.9960**	2.689	38.4	mg/L	37	Standard
Fe	54	82.7	9.5	**0.0475**	0.021	44.8	mg/L	56	Standard
Fe	57	733.4	12.7	**-0.7842**	0.949	121.0	mg/L	735	Standard
> **Sc-1**	45	24401.3	3.0				mg/L	22687	Standard
Cl	35	26889.8	0.1				ug/L	20516	Standard
Kr	83	3.3	62.4				ug/L	5	Standard
Br	81	713.4	19.0				ug/L	570	Standard
P	31	9713.1	2.9				ug/L	7850	Standard
S	34	1810.1	9.6				ug/L	1375	Standard
Sr	88	188.3	25.5				ug/L	165	Standard
C	12	276.7	48.5				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	52.9				mg/L	0	Standard
Dy	164	2.5	224.1				mg/L	6	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	16.7	91.7				mg/L	13	Standard
I	127	3232.0	3.7				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		121.264	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.862	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.864
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		111.022
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1508067704PS WG535945-01
Sample Date/Time: Thursday, August 20, 2015 20:32:28
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63193.3	3.1				ug/L	51673	Standard
	Be	9	38804.7	2.7	**47.9189**	0.474	1.0	ug/L	43	Standard
	Al	27	231752.4	0.9	**2.7468**	0.061	2.2	ug/L	2157	Standard
	Sc	45	25271.1	3.4				ug/L	22687	Standard
	Ti	47	20.3	12.4	**-0.0078**	0.016	203.4	ug/L	43	Standard
	V	51	214886.6	1.1	**51.6493**	0.971	1.9	ug/L	1233	Standard
	Cr	52	257672.0	1.0	**52.6817**	0.620	1.2	ug/L	6387	Standard
	Cr	53	39613.4	2.1	**64.2694**	1.682	2.6	ug/L	1555	Standard
	Mn	55	225692.4	1.6	**77.3470**	1.758	2.3	ug/L	436	Standard
	Co	59	217223.1	0.1	**53.6654**	0.671	1.2	ug/L	236	Standard
	Ni	60	70890.5	0.4	**51.2898**	0.668	1.3	ug/L	204	Standard
	Cu	65	70393.8	0.6	**50.9673**	0.344	0.7	ug/L	303	Standard
	Zn	66	40528.5	0.2	**52.4802**	0.671	1.3	ug/L	332	Standard
>	**Ge**	72	290508.9	1.2				ug/L	293924	Standard
	As	75	41041.6	0.5	**50.4873**	0.377	0.7	ug/L	45	Standard
	Se	82	3514.0	1.9	**51.6056**	1.258	2.4	ug/L	35	Standard
	Se-1	77	3269.0	2.4	**62.9501**	0.780	1.2	ug/L	153	Standard
>	**Ga**	71	33.3	75.5				mg/L	25	Standard
	Rb	85	19777.9	0.4				ug/L	20	Standard
	Y	89	284161.7	0.7				ug/L	279578	Standard
>	**Rh**	103	26.7	43.3				ug/L	68	Standard
	Mo	98	37.0	1.7	**0.0059**	0.001	10.4	ug/L	56	Standard
	Ag	107	280144.3	2.2	**47.5430**	0.513	1.1	ug/L	199	Standard
	Cd	111	89915.3	1.7	**50.3005**	0.885	1.8	mg/L	89	Standard
	Cd	114	240723.8	1.1	**50.9822**	1.117	2.2	ug/L	150	Standard
>	**In**	115	489103.8	1.1				ug/L	458296	Standard
	Sn	118	451.7	5.6	**0.0267**	0.004	13.8	ug/L	385	Standard
	Sb	123	232510.2	0.7	**50.2198**	0.211	0.4	ug/L	208	Standard
	Ba	135	134282.1	1.2	**61.0284**	0.268	0.4	ug/L	108	Standard
	Ce	140	26.7	10.8				ug/L	92	Standard
>	**Tb**	159	852952.0	1.7				ug/L	812006	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	373486.3	1.3	**50.4390**	0.493	1.0	ug/L	236	Standard
	Tl	205	267293.9	0.7	**52.1456**	0.868	1.7	ug/L	43	Standard
	Pb	206	233134.9	0.2	**50.9415**	0.816	1.6	ug/L	266	Standard
	Pb	207	212106.3	0.3	**51.2043**	0.797	1.6	ug/L	206	Standard
	Pb	208	748913.3	0.7	**51.9093**	0.731	1.4	ug/L	668	Standard
	U	238	265178.9	0.9	**53.8791**	0.472	0.9	ug/L	32	Standard
>	**Bi**	209	416916.7	1.5				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	5604.4	3.2	**13.0596**	0.881	6.7	mg/L	60	Standard
K	39	445.0	8.5	**7.8344**	0.457	5.8	mg/L	12	Standard
Ca	43	30.0	16.7	**-19.5603**	3.413	17.4	mg/L	37	Standard
Fe	54	52.5	27.0	**-0.0199**	0.031	156.0	mg/L	56	Standard
Fe	57	685.0	8.4	**-1.4208**	0.366	25.8	mg/L	735	Standard
Sc-1	45	25271.1	3.4				mg/L	22687	Standard
Cl	35	26746.3	1.3				ug/L	20516	Standard
Kr	83	3.7	31.5				ug/L	5	Standard
Br	81	816.7	3.5				ug/L	570	Standard
P	31	10031.7	2.1				ug/L	7850	Standard
S	34	1838.4	5.1				ug/L	1375	Standard
Sr	88	176.7	26.3				ug/L	165	Standard
C	12	333.3	43.9				mg/L	173	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	50.0	34.6				mg/L	0	Standard
Dy	164	6.0	200.7				mg/L	6	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	13	Standard
I	127	3115.3	2.1				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		122.294	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.838	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.722
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.542
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1508067704SDL WG535945-02
Sample Date/Time: Thursday, August 20, 2015 20:35:39
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 250
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59650.6	3.1				ug/L	51673	Standard
	Be	9	21.7	53.3	**-0.0367**	0.015	40.5	ug/L	43	Standard
	Al	27	48328.6	0.4	**0.5989**	0.021	3.5	ug/L	2157	Standard
	Sc	45	24913.8	3.3				ug/L	22687	Standard
	Ti	47	17.0	30.6	**-0.0305**	0.030	98.8	ug/L	43	Standard
	V	51	863.9	6.2	**-0.0708**	0.014	19.4	ug/L	1233	Standard
	Cr	52	5535.0	2.6	**-0.0819**	0.021	25.8	ug/L	6387	Standard
	Cr	53	3212.0	4.1	**3.2368**	0.155	4.8	ug/L	1555	Standard
	Mn	55	12230.3	1.6	**3.9145**	0.053	1.4	ug/L	436	Standard
	Co	59	301.3	8.5	**0.0257**	0.005	20.8	ug/L	236	Standard
	Ni	60	165.3	5.7	**0.0747**	0.007	8.7	ug/L	204	Standard
	Cu	65	209.0	33.0	**-0.1275**	0.048	37.4	ug/L	303	Standard
	Zn	66	1174.0	4.7	**1.0419**	0.058	5.5	ug/L	332	Standard
>	**Ge**	72	296530.2	1.3				ug/L	293924	Standard
	As	75	-47.2	17.2	**-0.0113**	0.009	82.8	ug/L	45	Standard
	Se	82	20.3	10.3	**0.0785**	0.027	33.9	ug/L	35	Standard
	Se-1	77	249.7	3.7	**2.1356**	0.189	8.8	ug/L	153	Standard
>	**Ga**	71	30.0	44.1				mg/L	25	Standard
	Rb	85	4065.5	4.6				ug/L	20	Standard
	Y	89	276946.6	0.6				ug/L	279578	Standard
>	**Rh**	103	11.7	65.5				ug/L	68	Standard
	Mo	98	16.0	16.5	**-0.0061**	0.002	28.2	ug/L	56	Standard
	Ag	107	100.0	18.7	**0.0023**	0.003	137.9	ug/L	199	Standard
	Cd	111	16.3	99.9	**0.0024**	0.009	375.1	mg/L	89	Standard
	Cd	114	20.6	115.1	**-0.0011**	0.005	446.6	ug/L	150	Standard
>	**In**	115	479993.3	1.6				ug/L	458296	Standard
	Sn	118	351.7	15.7	**0.0104**	0.009	90.2	ug/L	385	Standard
	Sb	123	1068.2	3.9	**0.2232**	0.008	3.8	ug/L	208	Standard
	Ba	135	5246.9	3.4	**2.4064**	0.048	2.0	ug/L	108	Standard
	Ce	140	26.7	57.3				ug/L	92	Standard
>	**Tb**	159	868685.0	1.5				ug/L	812006	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	57.0	45.1	**0.0018**	0.003	186.9	ug/L	236	Standard
	Tl	205	40.0	50.0	**0.0072**	0.004	53.1	ug/L	43	Standard
	Pb	206	1150.4	41.8	**0.1922**	0.103	53.5	ug/L	266	Standard
	Pb	207	980.7	34.2	**0.1763**	0.079	44.9	ug/L	206	Standard
	Pb	208	3594.9	36.6	**0.1914**	0.093	48.3	ug/L	668	Standard
	U	238	26.0	23.1	**0.0046**	0.001	26.1	ug/L	32	Standard
>	**Bi**	209	423978.1	1.3				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	1198.4	5.3	**2.7491**	0.234	8.5	mg/L	60	Standard
K	39	78.3	19.5	**1.0747**	0.334	31.1	mg/L	12	Standard
Ca	43	33.3	37.7	**-16.9794**	8.517	50.2	mg/L	37	Standard
Fe	54	69.4	12.7	**0.0165**	0.023	140.3	mg/L	56	Standard
Fe	57	808.4	8.8	**-0.3063**	0.441	144.1	mg/L	735	Standard
> **Sc-1**	45	24913.8	3.3				mg/L	22687	Standard
Cl	35	25509.5	1.6				ug/L	20516	Standard
Kr	83	3.0	33.3				ug/L	5	Standard
Br	81	583.3	16.7				ug/L	570	Standard
P	31	9407.9	3.2				ug/L	7850	Standard
S	34	1701.8	4.8				ug/L	1375	Standard
Sr	88	178.3	23.3				ug/L	165	Standard
C	12	210.0	25.2				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	0	Standard
Dy	164	12.4	127.2				mg/L	6	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	2695.2	3.7				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.439	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.887	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.734
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		112.415
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, August 20, 2015 20:38:52
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	61096.3	1.8				ug/L	51673	Standard
	Be	9	36569.1	2.0	**46.7088**	1.045	2.2	ug/L	43	Standard
	Al	27	3818881.5	2.1	**46.9631**	0.573	1.2	ug/L	2157	Standard
	Sc	45	25282.7	0.3				ug/L	22687	Standard
	Ti	47	18570.4	1.5	**110.4712**	3.113	2.8	ug/L	43	Standard
	V	51	212922.2	0.4	**49.8730**	0.755	1.5	ug/L	1233	Standard
	Cr	52	255423.9	2.5	**50.8702**	1.844	3.6	ug/L	6387	Standard
	Cr	53	31823.4	2.9	**49.8981**	2.170	4.3	ug/L	1555	Standard
	Mn	55	174594.4	2.0	**58.2818**	1.973	3.4	ug/L	436	Standard
	Co	59	217019.6	0.8	**52.2624**	1.134	2.2	ug/L	236	Standard
	Ni	60	69891.9	1.8	**49.2956**	1.552	3.1	ug/L	204	Standard
	Cu	65	69778.7	1.3	**49.2440**	1.330	2.7	ug/L	303	Standard
	Zn	66	39093.4	1.7	**49.3225**	1.535	3.1	ug/L	332	Standard
>	Ge	72	298052.4	1.4				ug/L	293924	Standard
	As	75	40615.1	0.4	**48.7041**	0.795	1.6	ug/L	45	Standard
	Se	82	3528.3	1.9	**50.5033**	1.394	2.8	ug/L	35	Standard
	Se-1	77	2517.2	3.0	**46.5681**	1.848	4.0	ug/L	153	Standard
>	Ga	71	36.7	20.8				mg/L	25	Standard
	Rb	85	613.3	9.8				ug/L	20	Standard
	Y	89	288834.4	2.0				ug/L	279578	Standard
>	Rh	103	31.7	55.5				ug/L	68	Standard
	Mo	98	167178.2	0.2	**95.8951**	1.137	1.2	ug/L	56	Standard
	Ag	107	284867.0	0.4	**47.9856**	0.396	0.8	ug/L	199	Standard
	Cd	111	88903.1	0.7	**49.3581**	0.429	0.9	mg/L	89	Standard
	Cd	114	230563.4	2.8	**48.4504**	1.050	2.2	ug/L	150	Standard
>	In	115	492834.4	1.2				ug/L	458296	Standard
	Sn	118	259000.8	2.5	**44.6230**	0.626	1.4	ug/L	385	Standard
	Sb	123	228579.1	0.7	**49.0001**	0.679	1.4	ug/L	208	Standard
	Ba	135	107333.9	1.1	**48.4078**	0.132	0.3	ug/L	108	Standard
	Ce	140	108.3	5.3				ug/L	92	Standard
>	Tb	159	852129.3	0.8				ug/L	812006	Standard
	Ho	165	0.0					ug/L	7	Standard
	Tl	203	366096.8	0.4	**49.1868**	0.411	0.8	ug/L	236	Standard
	Tl	205	264391.9	0.4	**51.3090**	0.338	0.7	ug/L	43	Standard
	Pb	206	225611.3	0.2	**49.0361**	0.113	0.2	ug/L	266	Standard
	Pb	207	205553.6	0.5	**49.3600**	0.348	0.7	ug/L	206	Standard
	Pb	208	740900.0	0.6	**51.0855**	0.508	1.0	ug/L	668	Standard
	U	238	258194.7	1.5	**52.1896**	0.917	1.8	ug/L	32	Standard
>	Bi	209	419059.2	0.4				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	2181.8	6.9	**5.0088**	0.352	7.0	mg/L	60	Standard
K	39	206.7	13.3	**3.4240**	0.507	14.8	mg/L	12	Standard
Ca	43	40.0	12.5	**-12.7536**	3.337	26.2	mg/L	37	Standard
Fe	54	2408.5	3.5	**4.7626**	0.153	3.2	mg/L	56	Standard
Fe	57	1370.1	4.9	**4.2506**	0.562	13.2	mg/L	735	Standard
Sc-1	45	25282.7	0.3				mg/L	22687	Standard
Cl	35	26334.2	0.4				ug/L	20516	Standard
Kr	83	4.0	25.0				ug/L	5	Standard
Br	81	563.3	6.7				ug/L	570	Standard
P	31	12101.5	3.8				ug/L	7850	Standard
S	34	1935.1	4.7				ug/L	1375	Standard
Sr	88	163.3	6.4				ug/L	165	Standard
C	12	246.7	20.0				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	69.3				mg/L	0	Standard
Dy	164	12.9	86.6				mg/L	6	Standard
Ho-1	165	0.0					mg/L	7	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	451.7	5.2				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	93.418		
Al	27	93.926		
Sc	45			
Ti	47	110.471		
V	51	99.746		
Cr	52	101.740		
Cr	53			
Mn	55	116.564		
Co	59	104.525		
Ni	60	98.591		
Cu	65	98.488		
Zn	66	98.645		
Ge	72		101.404	
As	75	97.408		
Se	82	101.007		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	95.895		
Ag	107	95.971		
Cd	111	98.716		
Cd	114			
> In	115		107.536	
Sn	118	89.246		
Sb	123	98.000		
Ba	135	96.816		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.374		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.171		
U	238	104.379		
> Bi	209		111.111	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Ti	47	
QC Std 6	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, August 20, 2015 20:42:04
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62021.7	2.4				ug/L	51673	Standard
	Be	9	0.0		**-0.0650**	0.000	0.0	ug/L	43	Standard
	Al	27	265.0	11.8	**-0.0072**	0.000	6.2	ug/L	2157	Standard
	Sc	45	25082.4	1.2				ug/L	22687	Standard
	Ti	47	15.3	15.1	**-0.0388**	0.013	33.8	ug/L	43	Standard
	V	51	716.8	11.3	**-0.1029**	0.019	18.7	ug/L	1233	Standard
	Cr	52	4773.4	1.0	**-0.2215**	0.010	4.6	ug/L	6387	Standard
	Cr	53	513.3	13.8	**-1.1722**	0.118	10.0	ug/L	1555	Standard
	Mn	55	445.0	9.3	**-0.0499**	0.013	26.1	ug/L	436	Standard
	Co	59	207.3	1.0	**0.0038**	0.001	22.0	ug/L	236	Standard
	Ni	60	50.3	13.2	**-0.0063**	0.005	82.7	ug/L	204	Standard
	Cu	65	219.3	3.3	**-0.1171**	0.007	5.8	ug/L	303	Standard
	Zn	66	212.0	10.5	**-0.1843**	0.030	16.1	ug/L	332	Standard
>	**Ge**	72	291656.9	1.1				ug/L	293924	Standard
	As	75	-41.0	88.5	**-0.0044**	0.044	999.7	ug/L	45	Standard
	Se	82	20.3	41.7	**0.0850**	0.126	147.9	ug/L	35	Standard
	Se-1	77	91.3	7.0	**-0.9533**	0.144	15.1	ug/L	153	Standard
>	**Ga**	71	20.0	66.1				mg/L	25	Standard
	Rb	85	21.7	13.3				ug/L	20	Standard
	Y	89	277148.7	1.2				ug/L	279578	Standard
>	**Rh**	103	18.3	41.7				ug/L	68	Standard
	Mo	98	53.9	17.2	**0.0154**	0.005	35.2	ug/L	56	Standard
	Ag	107	96.7	21.5	**0.0013**	0.004	271.9	ug/L	199	Standard
	Cd	111	5.9	34.2	**-0.0035**	0.001	31.3	mg/L	89	Standard
	Cd	114	28.2	4.4	**0.0003**	0.000	81.1	ug/L	150	Standard
>	**In**	115	492733.9	0.4				ug/L	458296	Standard
	Sn	118	440.0	10.4	**0.0241**	0.008	31.7	ug/L	385	Standard
	Sb	123	902.4	7.2	**0.1815**	0.014	7.8	ug/L	208	Standard
	Ba	135	42.0	25.2	**-0.0050**	0.005	96.9	ug/L	108	Standard
	Ce	140	8.3	34.6				ug/L	92	Standard
>	**Tb**	159	863182.0	1.1				ug/L	812006	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	16.3	44.3	**-0.0036**	0.001	27.2	ug/L	236	Standard
	Tl	205	8.3	91.7	**0.0011**	0.001	131.7	ug/L	43	Standard
	Pb	206	312.7	2.7	**0.0121**	0.002	13.6	ug/L	266	Standard
	Pb	207	257.0	12.5	**0.0043**	0.007	166.0	ug/L	206	Standard
	Pb	208	970.7	4.4	**0.0118**	0.003	23.1	ug/L	668	Standard
	U	238	11.0	24.1	**0.0016**	0.001	34.4	ug/L	32	Standard
>	**Bi**	209	423726.5	0.9				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	48.3	23.9	**0.0074**	0.028	380.5	mg/L	60	Standard
K	39	8.3	91.7	**-0.2478**	0.143	57.6	mg/L	12	Standard
Ca	43	25.0	34.6	**-22.9030**	5.768	25.2	mg/L	37	Standard
Fe	54	61.0	41.3	**-0.0017**	0.053	3134.6	mg/L	56	Standard
Fe	57	698.3	5.3	**-1.2607**	0.379	30.0	mg/L	735	Standard
> **Sc-1**	45	25082.4	1.2				mg/L	22687	Standard
Cl	35	25441.3	1.5				ug/L	20516	Standard
Kr	83	4.3	35.3				ug/L	5	Standard
Br	81	550.0	13.7				ug/L	570	Standard
P	31	10678.8	2.8				ug/L	7850	Standard
S	34	1983.5	2.3				ug/L	1375	Standard
Sr	88	176.7	16.3				ug/L	165	Standard
C	12	173.3	18.5				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	25.0				mg/L	0	Standard
Dy	164	9.4	104.3				mg/L	6	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	2628.6	3.5				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.229	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.514
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		112.348
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW 32 WG535204-02
Sample Date/Time: Thursday, August 20, 2015 20:45:17
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63163.1	0.8				ug/L	51673	Standard
	Be	9	16.7	62.4	**-0.0445**	0.013	28.7	ug/L	43	Standard
	Al	27	3043.7	24.1	**0.0258**	0.008	32.8	ug/L	2157	Standard
	Sc	45	25973.9	3.3				ug/L	22687	Standard
	Ti	47	32.7	31.4	**0.0625**	0.063	100.5	ug/L	43	Standard
	V	51	868.5	11.6	**-0.0713**	0.022	31.2	ug/L	1233	Standard
	Cr	52	5443.0	0.3	**-0.1077**	0.014	12.9	ug/L	6387	Standard
	Cr	53	633.3	8.4	**-0.9966**	0.080	8.1	ug/L	1555	Standard
	Mn	55	869.0	3.4	**0.0886**	0.012	13.0	ug/L	436	Standard
	Co	59	203.0	2.0	**0.0016**	0.001	46.3	ug/L	236	Standard
	Ni	60	85.3	15.3	**0.0175**	0.009	50.5	ug/L	204	Standard
	Cu	65	228.0	6.9	**-0.1147**	0.010	8.5	ug/L	303	Standard
	Zn	66	1204.7	2.3	**1.0715**	0.030	2.8	ug/L	332	Standard
>	**Ge**	72	298442.1	0.9				ug/L	293924	Standard
	As	75	-30.2	21.3	**0.0092**	0.008	86.2	ug/L	45	Standard
	Se	82	16.4	27.0	**0.0219**	0.066	299.7	ug/L	35	Standard
	Se-1	77	87.7	5.7	**-1.0681**	0.084	7.8	ug/L	153	Standard
>	**Ga**	71	18.3	56.8				mg/L	25	Standard
	Rb	85	35.0	24.7				ug/L	20	Standard
	Y	89	290471.7	1.6				ug/L	279578	Standard
>	**Rh**	103	21.7	26.6				ug/L	68	Standard
	Mo	98	25.7	14.0	**-0.0009**	0.002	213.1	ug/L	56	Standard
	Ag	107	80.7	13.7	**-0.0015**	0.002	115.4	ug/L	199	Standard
	Cd	111	10.0	75.7	**-0.0014**	0.004	301.2	mg/L	89	Standard
	Cd	114	41.5	35.9	**0.0030**	0.003	99.4	ug/L	150	Standard
>	**In**	115	498049.2	1.3				ug/L	458296	Standard
	Sn	118	440.0	12.3	**0.0232**	0.008	36.2	ug/L	385	Standard
	Sb	123	408.2	14.1	**0.0745**	0.011	15.2	ug/L	208	Standard
	Ba	135	224.7	7.3	**0.0763**	0.006	8.0	ug/L	108	Standard
	Ce	140	256.7	6.8				ug/L	92	Standard
>	**Tb**	159	883611.5	0.8				ug/L	812006	Standard
	Ho	165	25.0	20.0				ug/L	7	Standard
	Tl	203	29.3	55.4	**-0.0019**	0.002	111.1	ug/L	236	Standard
	Tl	205	41.7	100.6	**0.0074**	0.008	107.1	ug/L	43	Standard
	Pb	206	403.3	9.2	**0.0305**	0.008	25.0	ug/L	266	Standard
	Pb	207	352.7	3.9	**0.0260**	0.003	12.1	ug/L	206	Standard
	Pb	208	1446.0	19.9	**0.0429**	0.019	44.8	ug/L	668	Standard
	U	238	33.0	128.7	**0.0059**	0.008	142.2	ug/L	32	Standard
>	**Bi**	209	429277.0	0.3				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	46.7	16.4	**-0.0001**	0.021	33487.7	mg/L	60	Standard
K	39	6.7	43.3	**-0.2841**	0.051	17.8	mg/L	12	Standard
Ca	43	33.3	52.7	**-18.1071**	11.270	62.2	mg/L	37	Standard
Fe	54	77.5	20.8	**0.0269**	0.036	133.4	mg/L	56	Standard
Fe	57	743.4	4.7	**-1.0904**	0.486	44.5	mg/L	735	Standard
Sc-1	45	25973.9	3.3				mg/L	22687	Standard
Cl	35	26064.4	0.4				ug/L	20516	Standard
Kr	83	3.3	75.5				ug/L	5	Standard
Br	81	536.7	19.4				ug/L	570	Standard
P	31	12363.4	3.4				ug/L	7850	Standard
S	34	1880.1	0.8				ug/L	1375	Standard
Sr	88	175.0	15.9				ug/L	165	Standard
C	12	246.7	9.4				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	65.5				mg/L	0	Standard
Dy	164	3.3	173.2				mg/L	6	Standard
Ho-1	165	25.0	20.0				mg/L	7	Standard
Er	166	0.0					mg/L	13	Standard
I	127	3008.6	3.8				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		122.236	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.537	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.674
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		113.820
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: PBW 32 WG535204-02
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Method 6020 - Summary Report

Sample ID: LCSW 32 WG535204-03
Sample Date/Time: Thursday, August 20, 2015 20:48:36
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61728.9	2.6				ug/L	51673	Standard
	Be	9	38353.5	3.8	**48.5205**	2.719	5.6	ug/L	43	Standard
	Al	27	2633.6	7.6	**0.0217**	0.003	12.6	ug/L	2157	Standard
	Sc	45	24534.9	3.7				ug/L	22687	Standard
	Ti	47	23.3	10.8	**0.0072**	0.013	182.3	ug/L	43	Standard
	V	51	219841.1	1.0	**51.6801**	1.129	2.2	ug/L	1233	Standard
	Cr	52	267131.8	1.1	**53.4340**	0.974	1.8	ug/L	6387	Standard
	Cr	53	33857.8	0.6	**53.3986**	1.444	2.7	ug/L	1555	Standard
	Mn	55	179270.1	4.0	**60.0172**	1.562	2.6	ug/L	436	Standard
	Co	59	219768.1	0.9	**53.1008**	0.968	1.8	ug/L	236	Standard
	Ni	60	72165.1	1.4	**51.0717**	1.496	2.9	ug/L	204	Standard
	Cu	65	72167.5	2.0	**51.1177**	1.843	3.6	ug/L	303	Standard
	Zn	66	40742.0	1.8	**51.5896**	1.226	2.4	ug/L	332	Standard
>	**Ge**	72	297075.7	2.2				ug/L	293924	Standard
	As	75	40985.6	0.8	**49.3116**	0.671	1.4	ug/L	45	Standard
	Se	82	3463.6	2.3	**49.7267**	0.160	0.3	ug/L	35	Standard
	Se-1	77	2546.2	2.8	**47.2999**	1.591	3.4	ug/L	153	Standard
>	**Ga**	71	26.7	10.8				mg/L	25	Standard
	Rb	85	58.3	21.6				ug/L	20	Standard
	Y	89	286011.1	3.3				ug/L	279578	Standard
>	**Rh**	103	21.7	53.3				ug/L	68	Standard
	Mo	98	44.0	15.3	**0.0101**	0.003	34.3	ug/L	56	Standard
	Ag	107	296148.2	1.8	**50.7644**	0.692	1.4	ug/L	199	Standard
	Cd	111	90925.9	1.6	**51.3816**	1.435	2.8	mg/L	89	Standard
	Cd	114	232389.4	1.3	**49.7207**	1.820	3.7	ug/L	150	Standard
>	**In**	115	484353.1	2.4				ug/L	458296	Standard
	Sn	118	543.3	8.2	**0.0435**	0.006	14.8	ug/L	385	Standard
	Sb	123	244228.8	1.7	**53.2881**	1.541	2.9	ug/L	208	Standard
	Ba	135	109093.3	0.4	**50.0848**	1.367	2.7	ug/L	108	Standard
	Ce	140	898.4	2.3				ug/L	92	Standard
>	**Tb**	159	858772.7	2.0				ug/L	812006	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	373930.6	0.1	**49.3205**	1.403	2.8	ug/L	236	Standard
	Tl	205	270527.1	0.4	**51.5397**	1.479	2.9	ug/L	43	Standard
	Pb	206	240909.8	0.3	**51.4064**	1.442	2.8	ug/L	266	Standard
	Pb	207	206760.5	0.5	**48.7429**	1.484	3.0	ug/L	206	Standard
	Pb	208	756108.6	1.3	**51.1751**	1.318	2.6	ug/L	668	Standard
	U	238	257072.4	2.5	**51.0036**	1.556	3.1	ug/L	32	Standard
>	**Bi**	209	427091.0	2.9				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	60.0	8.3	**0.0384**	0.017	45.1	mg/L	60	Standard
K	39	16.7	45.8	**-0.0881**	0.139	157.7	mg/L	12	Standard
Ca	43	43.3	24.0	**-9.6470**	6.707	69.5	mg/L	37	Standard
Fe	54	74.5	34.7	**0.0300**	0.058	193.3	mg/L	56	Standard
Fe	57	706.7	17.4	**-1.0676**	0.959	89.8	mg/L	735	Standard
Sc-1	45	24534.9	3.7				mg/L	22687	Standard
Cl	35	26308.8	3.4				ug/L	20516	Standard
Kr	83	4.7	81.1				ug/L	5	Standard
Br	81	556.7	8.9				ug/L	570	Standard
P	31	12448.5	4.1				ug/L	7850	Standard
S	34	1815.1	0.6				ug/L	1375	Standard
Sr	88	171.7	23.4				ug/L	165	Standard
C	12	250.0	24.0				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	57.7				mg/L	0	Standard
Dy	164	15.1	37.7				mg/L	6	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	33.3	45.8				mg/L	13	Standard
I	127	4794.1	2.9				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		119.461	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.072	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.686
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		113.240
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 32 WG535204-03
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Method 6020 - Summary Report

Sample ID: L1508063220 WG535204-01
Sample Date/Time: Thursday, August 20, 2015 20:55:50
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63804.1	1.8				ug/L	51673	Standard
	Be	9	23.3	61.9	**-0.0362**	0.018	50.7	ug/L	43	Standard
	Al	27	5488150.8	0.8	**64.6442**	1.300	2.0	ug/L	2157	Standard
	Sc	45	25726.8	2.0				ug/L	22687	Standard
	Ti	47	65.3	10.0	**0.2517**	0.035	13.7	ug/L	43	Standard
	V	51	1236.6	4.0	**0.0121**	0.014	118.9	ug/L	1233	Standard
	Cr	52	6601.4	1.1	**0.1125**	0.025	22.5	ug/L	6387	Standard
	Cr	53	656.7	6.9	**-0.9703**	0.081	8.3	ug/L	1555	Standard
	Mn	55	36877.2	2.5	**11.9857**	0.186	1.6	ug/L	436	Standard
	Co	59	544.3	6.7	**0.0822**	0.007	9.1	ug/L	236	Standard
	Ni	60	1235.4	5.1	**0.8180**	0.045	5.5	ug/L	204	Standard
	Cu	65	1156.7	4.2	**0.5341**	0.042	7.9	ug/L	303	Standard
	Zn	66	2228.5	2.5	**2.3399**	0.044	1.9	ug/L	332	Standard
>	**Ge**	72	301963.5	1.0				ug/L	293924	Standard
	As	75	19.3	113.3	**0.0682**	0.026	37.5	ug/L	45	Standard
	Se	82	30.6	30.8	**0.2198**	0.131	59.7	ug/L	35	Standard
	Se-1	77	103.7	10.1	**-0.7792**	0.184	23.7	ug/L	153	Standard
>	**Ga**	71	35.0	24.7				mg/L	25	Standard
	Rb	85	1811.8	8.9				ug/L	20	Standard
	Y	89	292082.1	1.4				ug/L	279578	Standard
>	**Rh**	103	38.3	19.9				ug/L	68	Standard
	Mo	98	643.7	2.5	**0.3556**	0.007	1.9	ug/L	56	Standard
	Ag	107	131.0	18.2	**0.0072**	0.004	54.3	ug/L	199	Standard
	Cd	111	22.0	52.9	**0.0054**	0.006	119.2	mg/L	89	Standard
	Cd	114	62.5	35.2	**0.0076**	0.005	62.1	ug/L	150	Standard
>	**In**	115	490386.3	1.0				ug/L	458296	Standard
	Sn	118	1273.4	7.8	**0.1688**	0.015	9.0	ug/L	385	Standard
	Sb	123	487.4	14.0	**0.0931**	0.015	16.4	ug/L	208	Standard
	Ba	135	30803.3	0.3	**13.9451**	0.112	0.8	ug/L	108	Standard
	Ce	140	278.3	5.2				ug/L	92	Standard
>	**Tb**	159	872151.3	2.2				ug/L	812006	Standard
	Ho	165	15.0	0.0				ug/L	7	Standard
	Tl	203	99.7	26.9	**0.0075**	0.004	47.0	ug/L	236	Standard
	Tl	205	53.3	5.4	**0.0097**	0.001	5.7	ug/L	43	Standard
	Pb	206	610.3	4.9	**0.0759**	0.006	8.3	ug/L	266	Standard
	Pb	207	533.7	1.7	**0.0699**	0.003	4.2	ug/L	206	Standard
	Pb	208	1928.4	4.3	**0.0769**	0.005	6.9	ug/L	668	Standard
	U	238	463.7	4.0	**0.0919**	0.004	4.1	ug/L	32	Standard
>	**Bi**	209	424525.7	0.8				ug/L	377155	Standard

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Na	23	1.7	173.2	**17.3391**	225.543	1300.8	mg/L	2	Standard
Mg	24	1386.7	6.1	**3.0867**	0.133	4.3	mg/L	60	Standard
K	39	36.7	43.8	**0.2628**	0.291	110.7	mg/L	12	Standard
Ca	43	135.0	28.9	**50.9306**	28.070	55.1	mg/L	37	Standard
Fe	54	81.1	49.6	**0.0355**	0.083	232.7	mg/L	56	Standard
Fe	57	883.4	12.6	**0.1085**	1.034	953.3	mg/L	735	Standard
> **Sc-1**	45	25726.8	2.0				mg/L	22687	Standard
Cl	35	29132.0	3.0				ug/L	20516	Standard
Kr	83	3.0	33.3				ug/L	5	Standard
Br	81	1550.1	9.7				ug/L	570	Standard
P	31	12980.6	2.8				ug/L	7850	Standard
S	34	1615.1	1.1				ug/L	1375	Standard
Sr	88	151.7	3.8				ug/L	165	Standard
C	12	363.3	15.2				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	0	Standard
Dy	164	25.5	23.7				mg/L	6	Standard
Ho-1	165	15.0	0.0				mg/L	7	Standard
Er	166	23.3	24.7				mg/L	13	Standard
I	127	7550.2	2.4				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.477	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.735	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.002
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		112.560
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: August 21, 2015

Method 6020 - Summary Report

Sample ID: L1508063220S WG535204-04
Sample Date/Time: Thursday, August 20, 2015 20:59:01
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65761.0	5.2				ug/L	51673	Standard
	Be	9	39483.1	2.1	**46.9044**	1.735	3.7	ug/L	43	Standard
	Al	27	5630322.5	3.4	**64.3734**	1.235	1.9	ug/L	2157	Standard
	Sc	45	26845.4	2.3				ug/L	22687	Standard
	Ti	47	64.3	13.0	**0.2453**	0.042	17.0	ug/L	43	Standard
	V	51	222924.0	1.7	**51.5190**	0.279	0.5	ug/L	1233	Standard
	Cr	52	272920.3	2.3	**53.6779**	0.873	1.6	ug/L	6387	Standard
	Cr	53	34668.0	1.5	**53.7625**	0.305	0.6	ug/L	1555	Standard
	Mn	55	215618.2	1.2	**71.0421**	0.967	1.4	ug/L	436	Standard
	Co	59	218190.6	1.0	**51.8354**	0.596	1.1	ug/L	236	Standard
	Ni	60	73962.1	1.4	**51.4594**	0.697	1.4	ug/L	204	Standard
	Cu	65	71189.9	1.2	**49.5599**	0.378	0.8	ug/L	303	Standard
	Zn	66	42264.5	1.7	**52.6267**	0.554	1.1	ug/L	332	Standard
>	Ge	72	302103.8	1.9				ug/L	293924	Standard
	As	75	41783.7	1.5	**49.4309**	0.730	1.5	ug/L	45	Standard
	Se	82	3558.8	1.5	**50.2525**	0.806	1.6	ug/L	35	Standard
	Se-1	77	2516.5	1.8	**45.8917**	1.171	2.6	ug/L	153	Standard
>	Ga	71	48.3	39.2				mg/L	25	Standard
	Rb	85	1826.8	8.3				ug/L	20	Standard
	Y	89	296426.6	0.6				ug/L	279578	Standard
>	Rh	103	40.0	37.5				ug/L	68	Standard
	Mo	98	663.0	0.4	**0.3557**	0.003	0.8	ug/L	56	Standard
	Ag	107	295736.5	1.2	**48.6150**	0.419	0.9	ug/L	199	Standard
	Cd	111	91618.4	0.3	**49.6398**	0.130	0.3	mg/L	89	Standard
	Cd	114	232134.9	0.3	**47.6102**	0.141	0.3	ug/L	150	Standard
>	In	115	504976.4	0.5				ug/L	458296	Standard
	Sn	118	625.0	15.3	**0.0534**	0.017	30.9	ug/L	385	Standard
	Sb	123	249735.0	0.5	**52.2440**	0.233	0.4	ug/L	208	Standard
	Ba	135	141140.4	1.2	**62.1291**	0.571	0.9	ug/L	108	Standard
	Ce	140	573.3	14.4				ug/L	92	Standard
>	Tb	159	888130.8	1.9				ug/L	812006	Standard
	Ho	165	16.7	45.8				ug/L	7	Standard
	Tl	203	375303.8	0.7	**49.3949**	0.846	1.7	ug/L	236	Standard
	Tl	205	266058.8	3.1	**50.5814**	1.854	3.7	ug/L	43	Standard
	Pb	206	237837.5	0.5	**50.6409**	0.815	1.6	ug/L	266	Standard
	Pb	207	204883.6	0.2	**48.1928**	0.620	1.3	ug/L	206	Standard
	Pb	208	755450.8	0.3	**51.0233**	0.567	1.1	ug/L	668	Standard
	U	238	259894.1	0.5	**51.4575**	0.460	0.9	ug/L	32	Standard
>	Bi	209	427832.4	1.1				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	1480.1	2.8	**3.1634**	0.151	4.8	mg/L	60	Standard
K	39	51.7	20.1	**0.4987**	0.189	37.8	mg/L	12	Standard
Ca	43	146.7	13.8	**54.3003**	12.250	22.6	mg/L	37	Standard
Fe	54	81.1	10.3	**0.0284**	0.020	69.4	mg/L	56	Standard
Fe	57	885.0	3.4	**-0.1870**	0.341	182.6	mg/L	735	Standard
> **Sc-1**	45	26845.4	2.3				mg/L	22687	Standard
Cl	35	31334.4	1.1				ug/L	20516	Standard
Kr	83	3.7	63.0				ug/L	5	Standard
Br	81	2190.2	4.8				ug/L	570	Standard
P	31	13160.7	4.2				ug/L	7850	Standard
S	34	1641.8	2.3				ug/L	1375	Standard
Sr	88	195.0	19.4				ug/L	165	Standard
C	12	403.3	11.7				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	65.5				mg/L	0	Standard
Dy	164	19.0	51.3				mg/L	6	Standard
Ho-1	165	16.7	45.8				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	7575.2	1.0				mg/L	3795	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		127.264	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		102.783	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.186
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		113.437
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: August 21, 2015

Method 6020 - Summary Report

Sample ID: L1508063220SD WG535204-05
Sample Date/Time: Thursday, August 20, 2015 21:02:13
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63832.6	2.1				ug/L	51673	Standard
	Be	9	38991.8	1.4	**47.6681**	0.496	1.0	ug/L	43	Standard
	Al	27	5481408.4	3.6	**64.5162**	1.633	2.5	ug/L	2157	Standard
	Sc	45	25596.6	1.3				ug/L	22687	Standard
	Ti	47	56.0	7.8	**0.2004**	0.030	15.2	ug/L	43	Standard
	V	51	219292.7	0.3	**51.1831**	0.810	1.6	ug/L	1233	Standard
	Cr	52	265751.9	1.9	**52.7600**	0.478	0.9	ug/L	6387	Standard
	Cr	53	32939.1	2.7	**51.4970**	1.031	2.0	ug/L	1555	Standard
	Mn	55	212349.8	2.8	**70.6359**	1.163	1.6	ug/L	436	Standard
	Co	59	215831.7	0.4	**51.7835**	1.044	2.0	ug/L	236	Standard
	Ni	60	70668.1	1.1	**49.6468**	0.356	0.7	ug/L	204	Standard
	Cu	65	68471.4	1.7	**48.1232**	0.104	0.2	ug/L	303	Standard
	Zn	66	40875.7	0.9	**51.3886**	0.508	1.0	ug/L	332	Standard
>	Ge	72	299165.5	1.7				ug/L	293924	Standard
	As	75	40987.3	1.1	**48.9640**	0.457	0.9	ug/L	45	Standard
	Se	82	3526.5	1.3	**50.2957**	1.486	3.0	ug/L	35	Standard
	Se-1	77	2593.6	0.7	**47.8716**	0.801	1.7	ug/L	153	Standard
>	Ga	71	35.0	51.5				mg/L	25	Standard
	Rb	85	1820.1	9.9				ug/L	20	Standard
	Y	89	292242.9	2.8				ug/L	279578	Standard
>	Rh	103	43.3	26.6				ug/L	68	Standard
	Mo	98	626.2	7.2	**0.3393**	0.028	8.2	ug/L	56	Standard
	Ag	107	287098.7	0.9	**47.7489**	0.234	0.5	ug/L	199	Standard
	Cd	111	90630.6	1.6	**49.6776**	0.299	0.6	mg/L	89	Standard
	Cd	114	230588.8	1.0	**47.8480**	0.474	1.0	ug/L	150	Standard
>	In	115	499138.4	1.2				ug/L	458296	Standard
	Sn	118	545.0	12.0	**0.0411**	0.012	29.2	ug/L	385	Standard
	Sb	123	241578.5	1.1	**51.1286**	0.163	0.3	ug/L	208	Standard
	Ba	135	138312.4	0.3	**61.6018**	0.636	1.0	ug/L	108	Standard
	Ce	140	295.0	4.5				ug/L	92	Standard
>	Tb	159	881500.3	0.8				ug/L	812006	Standard
	Ho	165	23.3	44.6				ug/L	7	Standard
	Tl	203	368840.7	0.9	**48.7556**	0.227	0.5	ug/L	236	Standard
	Tl	205	264081.6	0.8	**50.4225**	0.291	0.6	ug/L	43	Standard
	Pb	206	232672.6	0.2	**49.7611**	0.777	1.6	ug/L	266	Standard
	Pb	207	201538.9	0.3	**47.6183**	0.791	1.7	ug/L	206	Standard
	Pb	208	748458.5	0.1	**50.7775**	0.710	1.4	ug/L	668	Standard
	U	238	259393.9	0.4	**51.5886**	0.630	1.2	ug/L	32	Standard
>	Bi	209	425941.8	1.3				ug/L	377155	Standard

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Na	23	1.7	173.2	**12.4614**	233.991	1877.7	mg/L	2	Standard
Mg	24	1461.7	1.0	**3.2790**	0.073	2.2	mg/L	60	Standard
K	39	35.0	28.6	**0.2372**	0.188	79.5	mg/L	12	Standard
Ca	43	191.7	10.5	**89.2414**	12.059	13.5	mg/L	37	Standard
Fe	54	76.8	18.3	**0.0271**	0.028	104.0	mg/L	56	Standard
Fe	57	825.0	7.9	**-0.3402**	0.617	181.4	mg/L	735	Standard
> **Sc-1**	45	25596.6	1.3				mg/L	22687	Standard
Cl	35	31365.1	1.0				ug/L	20516	Standard
Kr	83	4.3	35.3				ug/L	5	Standard
Br	81	2333.5	2.9				ug/L	570	Standard
P	31	12980.6	3.9				ug/L	7850	Standard
S	34	1645.1	6.7				ug/L	1375	Standard
Sr	88	200.0	22.5				ug/L	165	Standard
C	12	306.7	19.9				mg/L	173	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	36.7	15.7				mg/L	0	Standard
Dy	164	5.4	95.2				mg/L	6	Standard
Ho-1	165	23.3	44.6				mg/L	7	Standard
Er	166	26.7	78.1				mg/L	13	Standard
I	127	7623.6	1.5				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.532	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.783	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1508063220SD WG535204-05
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.912
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		112.935
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1508063201
Sample Date/Time: Thursday, August 20, 2015 21:05:49
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61948.6	7.7				ug/L	51673	Standard
	Be	9	20.0	50.0	**-0.0401**	0.011	28.0	ug/L	43	Standard
	Al	27	7845762.7	1.3	**95.4890**	6.283	6.6	ug/L	2157	Standard
	Sc	45	25337.9	3.7				ug/L	22687	Standard
	Ti	47	62.3	22.8	**0.2359**	0.083	35.2	ug/L	43	Standard
	V	51	2023.7	5.4	**0.1974**	0.025	12.8	ug/L	1233	Standard
	Cr	52	7079.0	0.8	**0.2157**	0.018	8.1	ug/L	6387	Standard
	Cr	53	976.7	10.7	**-0.4470**	0.178	39.9	ug/L	1555	Standard
	Mn	55	140147.6	1.0	**46.3577**	0.803	1.7	ug/L	436	Standard
	Co	59	1148.7	1.1	**0.2274**	0.001	0.4	ug/L	236	Standard
	Ni	60	1637.1	1.6	**1.1035**	0.011	1.0	ug/L	204	Standard
	Cu	65	628.3	1.8	**0.1661**	0.010	6.3	ug/L	303	Standard
	Zn	66	2001.8	1.8	**2.0679**	0.039	1.9	ug/L	332	Standard
>	**Ge**	72	300451.2	0.8				ug/L	293924	Standard
	As	75	146.8	27.2	**0.2197**	0.046	21.0	ug/L	45	Standard
	Se	82	46.5	18.6	**0.4480**	0.119	26.6	ug/L	35	Standard
	Se-1	77	110.7	9.1	**-0.6312**	0.206	32.7	ug/L	153	Standard
>	**Ga**	71	28.3	10.2				mg/L	25	Standard
	Rb	85	1328.4	2.4				ug/L	20	Standard
	Y	89	290062.5	1.9				ug/L	279578	Standard
>	**Rh**	103	36.7	43.8				ug/L	68	Standard
	Mo	98	185.6	7.0	**0.0917**	0.008	8.3	ug/L	56	Standard
	Ag	107	149.0	51.2	**0.0104**	0.013	128.0	ug/L	199	Standard
	Cd	111	54.6	78.1	**0.0239**	0.024	101.8	mg/L	89	Standard
	Cd	114	160.1	70.6	**0.0284**	0.024	85.7	ug/L	150	Standard
>	**In**	115	489602.9	1.3				ug/L	458296	Standard
	Sn	118	491.7	5.0	**0.0336**	0.004	13.3	ug/L	385	Standard
	Sb	123	479.1	9.2	**0.0915**	0.011	11.7	ug/L	208	Standard
	Ba	135	36623.9	1.3	**16.6114**	0.221	1.3	ug/L	108	Standard
	Ce	140	1123.4	2.8				ug/L	92	Standard
>	**Tb**	159	873963.3	1.6				ug/L	812006	Standard
	Ho	165	26.7	60.3				ug/L	7	Standard
	Tl	203	150.7	73.9	**0.0146**	0.015	104.2	ug/L	236	Standard
	Tl	205	53.3	10.8	**0.0099**	0.001	10.4	ug/L	43	Standard
	Pb	206	612.3	6.3	**0.0781**	0.009	11.7	ug/L	266	Standard
	Pb	207	495.0	4.7	**0.0623**	0.006	10.4	ug/L	206	Standard
	Pb	208	1900.0	2.1	**0.0767**	0.003	4.6	ug/L	668	Standard
	U	238	821.0	4.7	**0.1654**	0.009	5.5	ug/L	32	Standard
>	**Bi**	209	418906.3	1.0				ug/L	377155	Standard

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Na	23	1.7	173.2	**15.7528**	228.290	1449.2	mg/L	2	Standard
Mg	24	1676.8	5.0	**3.8222**	0.301	7.9	mg/L	60	Standard
K	39	45.0	19.2	**0.4306**	0.177	41.2	mg/L	12	Standard
Ca	43	246.7	7.7	**128.4606**	16.238	12.6	mg/L	37	Standard
Fe	54	81.1	32.0	**0.0364**	0.048	132.2	mg/L	56	Standard
Fe	57	950.0	8.8	**0.7532**	0.551	73.2	mg/L	735	Standard
> **Sc-1**	45	25337.9	3.7				mg/L	22687	Standard
Cl	35	30473.3	1.5				ug/L	20516	Standard
Kr	83	5.3	21.7				ug/L	5	Standard
Br	81	1576.7	11.7				ug/L	570	Standard
P	31	12885.5	3.1				ug/L	7850	Standard
S	34	1693.4	3.6				ug/L	1375	Standard
Sr	88	173.3	3.3				ug/L	165	Standard
C	12	276.7	29.4				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	0	Standard
Dy	164	44.9	14.1				mg/L	6	Standard
Ho-1	165	26.7	60.3				mg/L	7	Standard
Er	166	36.7	31.5				mg/L	13	Standard
I	127	15771.5	3.4				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.886	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.221	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.831
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		111.070
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508063202
Sample Date/Time: Thursday, August 20, 2015 21:09:00
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62316.3	2.1				ug/L	51673	Standard
	Be	9	10.0	50.0	**-0.0526**	0.006	11.4	ug/L	43	Standard
	Al	27	9994015.3	1.7	**120.5184**	0.635	0.5	ug/L	2157	Standard
	Sc	45	25950.5	1.1				ug/L	22687	Standard
	Ti	47	82.0	4.4	**0.3522**	0.016	4.6	ug/L	43	Standard
	V	51	1258.9	1.3	**0.0187**	0.002	9.8	ug/L	1233	Standard
	Cr	52	6748.5	2.6	**0.1487**	0.022	14.6	ug/L	6387	Standard
	Cr	53	488.3	5.3	**-1.2379**	0.034	2.7	ug/L	1555	Standard
	Mn	55	706002.2	0.5	**234.3524**	2.287	1.0	ug/L	436	Standard
	Co	59	693.7	3.0	**0.1186**	0.006	5.2	ug/L	236	Standard
	Ni	60	1420.4	2.2	**0.9519**	0.019	2.0	ug/L	204	Standard
	Cu	65	1126.4	2.4	**0.5168**	0.027	5.2	ug/L	303	Standard
	Zn	66	4043.5	1.9	**4.6476**	0.137	2.9	ug/L	332	Standard
>	**Ge**	72	300435.3	1.1				ug/L	293924	Standard
	As	75	5034.9	0.9	**6.0289**	0.018	0.3	ug/L	45	Standard
	Se	82	60.5	11.3	**0.6482**	0.097	14.9	ug/L	35	Standard
	Se-1	77	84.3	3.0	**-1.1435**	0.061	5.3	ug/L	153	Standard
>	**Ga**	71	40.0	12.5				mg/L	25	Standard
	Rb	85	1515.1	7.9				ug/L	20	Standard
	Y	89	283299.1	0.9				ug/L	279578	Standard
>	**Rh**	103	31.7	24.1				ug/L	68	Standard
	Mo	98	1211.6	3.1	**0.7044**	0.025	3.6	ug/L	56	Standard
	Ag	107	97.3	10.3	**0.0020**	0.002	95.7	ug/L	199	Standard
	Cd	111	29.3	6.6	**0.0100**	0.001	8.7	mg/L	89	Standard
	Cd	114	89.3	28.2	**0.0139**	0.006	40.7	ug/L	150	Standard
>	**In**	115	475884.6	1.5				ug/L	458296	Standard
	Sn	118	833.4	3.0	**0.0971**	0.007	6.8	ug/L	385	Standard
	Sb	123	238.0	7.6	**0.0409**	0.004	9.4	ug/L	208	Standard
	Ba	135	34007.1	0.9	**15.8698**	0.298	1.9	ug/L	108	Standard
	Ce	140	496.7	9.1				ug/L	92	Standard
>	**Tb**	159	858501.6	2.1				ug/L	812006	Standard
	Ho	165	15.0	57.7				ug/L	7	Standard
	Tl	203	113.3	9.4	**0.0095**	0.001	14.1	ug/L	236	Standard
	Tl	205	85.0	32.8	**0.0161**	0.006	34.4	ug/L	43	Standard
	Pb	206	909.7	6.2	**0.1430**	0.011	7.6	ug/L	266	Standard
	Pb	207	749.4	11.2	**0.1237**	0.022	17.5	ug/L	206	Standard
	Pb	208	2815.1	1.0	**0.1401**	0.003	2.4	ug/L	668	Standard
	U	238	726.0	0.5	**0.1463**	0.002	1.1	ug/L	32	Standard
>	**Bi**	209	418491.3	0.8				ug/L	377155	Standard

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Na	23	6.7	43.3	**-378.7734**	228.171	60.2	mg/L	2	Standard
Mg	24	1455.1	6.5	**3.2173**	0.222	6.9	mg/L	60	Standard
K	39	18.3	87.7	**-0.0751**	0.288	383.3	mg/L	12	Standard
Ca	43	191.7	13.4	**87.6689**	18.155	20.7	mg/L	37	Standard
Fe	54	1097.7	9.3	**2.0432**	0.180	8.8	mg/L	56	Standard
Fe	57	1040.0	6.0	**1.2942**	0.419	32.4	mg/L	735	Standard
> **Sc-1**	45	25950.5	1.1				mg/L	22687	Standard
Cl	35	27868.3	0.7				ug/L	20516	Standard
Kr	83	3.3	17.3				ug/L	5	Standard
Br	81	4577.4	4.8				ug/L	570	Standard
P	31	13803.0	3.1				ug/L	7850	Standard
S	34	1576.7	6.0				ug/L	1375	Standard
Sr	88	206.7	20.1				ug/L	165	Standard
C	12	396.7	18.2				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	0	Standard
Dy	164	22.1	66.2				mg/L	6	Standard
Ho-1	165	15.0	57.7				mg/L	7	Standard
Er	166	26.7	57.3				mg/L	13	Standard
I	127	172434.6	5.9				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		120.597	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.215	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.838
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.960
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508063202PS WG535620-01
Sample Date/Time: Thursday, August 20, 2015 21:12:12
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60497.3	4.2				ug/L	51673	Standard
	Be	9	37422.9	3.9	**48.3176**	2.566	5.3	ug/L	43	Standard
	Al	27	9895821.4	1.5	**123.0161**	3.722	3.0	ug/L	2157	Standard
	Sc	45	26347.9	3.1				ug/L	22687	Standard
	Ti	47	106.7	37.1	**0.5060**	0.247	48.8	ug/L	43	Standard
	V	51	216586.5	0.6	**50.7855**	1.028	2.0	ug/L	1233	Standard
	Cr	52	262395.3	0.7	**52.3303**	0.445	0.9	ug/L	6387	Standard
	Cr	53	33097.8	2.5	**52.0266**	2.131	4.1	ug/L	1555	Standard
	Mn	55	866385.0	1.4	**290.1932**	2.465	0.8	ug/L	436	Standard
	Co	59	212763.2	0.9	**51.2785**	0.746	1.5	ug/L	236	Standard
	Ni	60	71524.8	0.9	**50.4823**	0.305	0.6	ug/L	204	Standard
	Cu	65	69812.5	1.1	**49.3030**	0.316	0.6	ug/L	303	Standard
	Zn	66	42071.3	0.9	**53.1513**	0.323	0.6	ug/L	332	Standard
>	**Ge**	72	297779.4	1.4				ug/L	293924	Standard
	As	75	46155.4	1.3	**55.3902**	0.946	1.7	ug/L	45	Standard
	Se	82	3527.9	0.8	**50.5415**	0.804	1.6	ug/L	35	Standard
	Se-1	77	2562.9	0.4	**47.5026**	0.543	1.1	ug/L	153	Standard
>	**Ga**	71	48.3	26.0				mg/L	25	Standard
	Rb	85	1488.4	7.6				ug/L	20	Standard
	Y	89	288185.2	1.4				ug/L	279578	Standard
>	**Rh**	103	25.0	40.0				ug/L	68	Standard
	Mo	98	1194.9	3.9	**0.6734**	0.025	3.8	ug/L	56	Standard
	Ag	107	282894.4	1.0	**47.8957**	0.358	0.7	ug/L	199	Standard
	Cd	111	87308.9	0.1	**48.7210**	0.248	0.5	mg/L	89	Standard
	Cd	114	223872.9	3.5	**47.2937**	1.833	3.9	ug/L	150	Standard
>	**In**	115	490301.8	0.4				ug/L	458296	Standard
	Sn	118	641.7	7.2	**0.0594**	0.008	13.8	ug/L	385	Standard
	Sb	123	229398.0	0.3	**49.4252**	0.138	0.3	ug/L	208	Standard
	Ba	135	141606.7	0.6	**64.2034**	0.650	1.0	ug/L	108	Standard
	Ce	140	448.3	5.3				ug/L	92	Standard
>	**Tb**	159	880274.4	3.3				ug/L	812006	Standard
	Ho	165	16.7	34.6				ug/L	7	Standard
	Tl	203	365040.2	1.3	**49.0176**	0.657	1.3	ug/L	236	Standard
	Tl	205	257286.2	1.0	**49.9021**	0.452	0.9	ug/L	43	Standard
	Pb	206	224728.0	0.6	**48.8173**	0.260	0.5	ug/L	266	Standard
	Pb	207	204869.4	0.5	**49.1681**	0.132	0.3	ug/L	206	Standard
	Pb	208	725563.3	0.5	**49.9985**	0.121	0.2	ug/L	668	Standard
	U	238	257405.8	0.5	**52.0004**	0.126	0.2	ug/L	32	Standard
>	**Bi**	209	419284.6	0.3				ug/L	377155	Standard

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Na	23	3.3	86.6	**-107.6689**	221.104	205.4	mg/L	2	Standard
Mg	24	1536.7	7.4	**3.3581**	0.365	10.9	mg/L	60	Standard
K	39	6.7	114.6	**-0.2865**	0.136	47.5	mg/L	12	Standard
Ca	43	193.3	11.9	**86.5598**	11.759	13.6	mg/L	37	Standard
Fe	54	1096.8	9.0	**2.0112**	0.205	10.2	mg/L	56	Standard
Fe	57	1061.7	6.5	**1.3568**	0.779	57.4	mg/L	735	Standard
> **Sc-1**	45	26347.9	3.1				mg/L	22687	Standard
Cl	35	27498.9	1.7				ug/L	20516	Standard
Kr	83	4.3	35.3				ug/L	5	Standard
Br	81	4534.0	6.2				ug/L	570	Standard
P	31	13432.6	1.9				ug/L	7850	Standard
S	34	1703.4	1.5				ug/L	1375	Standard
Sr	88	171.7	16.0				ug/L	165	Standard
C	12	340.0	16.4				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	57.3				mg/L	0	Standard
Dy	164	18.9	95.5				mg/L	6	Standard
Ho-1	165	16.7	34.6				mg/L	7	Standard
Er	166	23.3	89.2				mg/L	13	Standard
I	127	175541.8	3.3				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.077	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.312	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	106.984
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	111.170
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508063202SDL WG535620-02
Sample Date/Time: Thursday, August 20, 2015 21:15:23
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59491.6	2.9				ug/L	51673	Standard
	Be	9	18.3	41.7	**-0.0410**	0.010	24.0	ug/L	43	Standard
	Al	27	1991219.5	0.2	**25.1559**	0.699	2.8	ug/L	2157	Standard
	Sc	45	24539.9	1.3				ug/L	22687	Standard
	Ti	47	25.0	18.3	**0.0187**	0.027	145.8	ug/L	43	Standard
	V	51	1085.6	1.9	**-0.0164**	0.003	17.9	ug/L	1233	Standard
	Cr	52	6204.9	0.9	**0.0659**	0.027	40.3	ug/L	6387	Standard
	Cr	53	426.7	12.9	**-1.3227**	0.091	6.8	ug/L	1555	Standard
	Mn	55	140539.8	0.8	**47.4897**	0.971	2.0	ug/L	436	Standard
	Co	59	318.0	3.9	**0.0304**	0.002	7.3	ug/L	236	Standard
	Ni	60	337.3	6.6	**0.1987**	0.017	8.7	ug/L	204	Standard
	Cu	65	365.0	10.5	**-0.0136**	0.031	225.6	ug/L	303	Standard
	Zn	66	1537.4	5.5	**1.5240**	0.133	8.7	ug/L	332	Standard
>	**Ge**	72	294162.7	1.2				ug/L	293924	Standard
	As	75	988.6	3.3	**1.2458**	0.054	4.3	ug/L	45	Standard
	Se	82	23.1	12.0	**0.1225**	0.037	30.0	ug/L	35	Standard
	Se-1	77	74.7	24.7	**-1.2977**	0.386	29.7	ug/L	153	Standard
>	**Ga**	71	25.0	40.0				mg/L	25	Standard
	Rb	85	286.7	14.8				ug/L	20	Standard
	Y	89	279848.5	2.5				ug/L	279578	Standard
>	**Rh**	103	15.0	33.3				ug/L	68	Standard
	Mo	98	236.6	5.1	**0.1244**	0.007	5.8	ug/L	56	Standard
	Ag	107	116.0	20.9	**0.0051**	0.004	79.3	ug/L	199	Standard
	Cd	111	13.4	57.8	**0.0009**	0.004	506.8	mg/L	89	Standard
	Cd	114	49.9	62.5	**0.0052**	0.007	128.7	ug/L	150	Standard
>	**In**	115	477909.4	0.8				ug/L	458296	Standard
	Sn	118	438.3	9.3	**0.0262**	0.008	30.1	ug/L	385	Standard
	Sb	123	818.5	6.7	**0.1689**	0.011	6.5	ug/L	208	Standard
	Ba	135	6947.9	0.1	**3.2091**	0.027	0.8	ug/L	108	Standard
	Ce	140	125.0	0.0				ug/L	92	Standard
>	**Tb**	159	827384.7	2.6				ug/L	812006	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	62.3	45.4	**0.0028**	0.004	136.0	ug/L	236	Standard
	Tl	205	25.0	52.9	**0.0045**	0.003	58.5	ug/L	43	Standard
	Pb	206	520.3	46.4	**0.0611**	0.054	87.6	ug/L	266	Standard
	Pb	207	465.7	40.1	**0.0583**	0.046	78.3	ug/L	206	Standard
	Pb	208	1441.4	26.5	**0.0478**	0.027	55.9	ug/L	668	Standard
	U	238	148.0	8.4	**0.0301**	0.003	8.9	ug/L	32	Standard
>	**Bi**	209	407423.9	0.4				ug/L	377155	Standard

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Na	23	1.7	173.2	**7.9803**	241.752	3029.4	mg/L	2	Standard
Mg	24	330.0	10.6	**0.6910**	0.094	13.6	mg/L	60	Standard
K	39	13.3	57.3	**-0.1483**	0.148	100.0	mg/L	12	Standard
Ca	43	83.3	25.0	**18.6146**	14.776	79.4	mg/L	37	Standard
Fe	54	279.2	5.3	**0.4573**	0.036	8.0	mg/L	56	Standard
Fe	57	898.4	5.6	**0.5748**	0.514	89.5	mg/L	735	Standard
Sc-1	45	24539.9	1.3				mg/L	22687	Standard
Cl	35	27154.3	1.4				ug/L	20516	Standard
Kr	83	1.7	124.9				ug/L	5	Standard
Br	81	1343.4	5.4				ug/L	570	Standard
P	31	10071.7	2.0				ug/L	7850	Standard
S	34	1641.8	2.0				ug/L	1375	Standard
Sr	88	136.7	5.6				ug/L	165	Standard
C	12	230.0	34.5				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	0.0				mg/L	0	Standard
Dy	164	9.8	177.4				mg/L	6	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	39725.4	1.5				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		115.131	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.081	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.280
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.026
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508063202SDL WG535620-02
Sample Date/Time: Thursday, August 20, 2015 21:18:35
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57256.3	1.7				ug/L	51673	Standard
	Be	9	10.0	100.0	**-0.0515**	0.013	26.0	ug/L	43	Standard
	Al	27	404024.6	2.4	**5.2922**	0.064	1.2	ug/L	2157	Standard
	Sc	45	24918.8	4.0				ug/L	22687	Standard
	Ti	47	14.3	31.5	**-0.0477**	0.027	56.0	ug/L	43	Standard
	V	51	1151.4	4.7	**-0.0073**	0.013	178.3	ug/L	1233	Standard
	Cr	52	6230.3	3.1	**0.0397**	0.042	107.1	ug/L	6387	Standard
	Cr	53	380.0	5.7	**-1.4153**	0.034	2.4	ug/L	1555	Standard
	Mn	55	28326.1	0.9	**9.1744**	0.055	0.6	ug/L	436	Standard
	Co	59	211.0	6.6	**0.0030**	0.003	110.9	ug/L	236	Standard
	Ni	60	100.0	15.1	**0.0272**	0.011	39.4	ug/L	204	Standard
	Cu	65	171.7	15.8	**-0.1558**	0.019	12.3	ug/L	303	Standard
	Zn	66	998.7	1.8	**0.7967**	0.025	3.1	ug/L	332	Standard
>	**Ge**	72	301510.4	0.3				ug/L	293924	Standard
	As	75	184.9	12.0	**0.2645**	0.027	10.1	ug/L	45	Standard
	Se	82	25.2	14.4	**0.1440**	0.051	35.5	ug/L	35	Standard
	Se-1	77	75.3	2.8	**-1.3241**	0.039	2.9	ug/L	153	Standard
>	**Ga**	71	15.0	120.2				mg/L	25	Standard
	Rb	85	81.7	9.4				ug/L	20	Standard
	Y	89	276115.3	1.6				ug/L	279578	Standard
>	**Rh**	103	5.0	100.0				ug/L	68	Standard
	Mo	98	59.6	13.0	**0.0207**	0.005	25.3	ug/L	56	Standard
	Ag	107	89.0	1.1	**0.0009**	0.000	47.6	ug/L	199	Standard
	Cd	111	6.6	57.7	**-0.0030**	0.002	75.3	mg/L	89	Standard
	Cd	114	10.3	129.4	**-0.0033**	0.003	91.1	ug/L	150	Standard
>	**In**	115	465522.3	1.9				ug/L	458296	Standard
	Sn	118	360.0	2.4	**0.0139**	0.001	5.2	ug/L	385	Standard
	Sb	123	249.4	6.5	**0.0446**	0.004	8.4	ug/L	208	Standard
	Ba	135	1417.4	0.1	**0.6533**	0.013	2.0	ug/L	108	Standard
	Ce	140	45.0	11.1				ug/L	92	Standard
>	**Tb**	159	850633.5	0.7				ug/L	812006	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	12.0	33.3	**-0.0042**	0.001	13.0	ug/L	236	Standard
	Tl	205	16.7	96.4	**0.0027**	0.003	113.9	ug/L	43	Standard
	Pb	206	292.3	7.2	**0.0082**	0.005	60.9	ug/L	266	Standard
	Pb	207	247.7	3.1	**0.0025**	0.002	64.3	ug/L	206	Standard
	Pb	208	859.0	6.0	**0.0046**	0.004	84.2	ug/L	668	Standard
	U	238	34.3	20.7	**0.0063**	0.001	23.1	ug/L	32	Standard
>	**Bi**	209	420892.0	0.6				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	80.0	22.5	**0.0834**	0.042	50.9	mg/L	60	Standard
K	39	8.3	91.7	**-0.2478**	0.141	56.7	mg/L	12	Standard
Ca	43	38.3	15.1	**-13.3705**	5.142	38.5	mg/L	37	Standard
Fe	54	116.1	18.1	**0.1118**	0.038	33.8	mg/L	56	Standard
Fe	57	811.7	5.4	**-0.2652**	0.472	177.9	mg/L	735	Standard
> **Sc-1**	45	24918.8	4.0				mg/L	22687	Standard
Cl	35	26622.0	0.8				ug/L	20516	Standard
Kr	83	3.0	33.3				ug/L	5	Standard
Br	81	700.0	12.7				ug/L	570	Standard
P	31	9177.8	4.9				ug/L	7850	Standard
S	34	1478.4	1.9				ug/L	1375	Standard
Sr	88	170.0	15.6				ug/L	165	Standard
C	12	220.0	16.4				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	24.7				mg/L	0	Standard
Dy	164	6.0	94.2				mg/L	6	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	10662.1	1.9				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.805	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.581	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.577
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		111.597
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, August 20, 2015 21:21:48
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60691.5	5.3				ug/L	51673	Standard
	Be	9	35362.9	0.9	**45.5336**	2.049	4.5	ug/L	43	Standard
	Al	27	3726486.5	1.3	**46.1970**	1.834	4.0	ug/L	2157	Standard
	Sc	45	24902.1	2.5				ug/L	22687	Standard
	Ti	47	18264.3	1.3	**107.2202**	1.747	1.6	ug/L	43	Standard
	V	51	210651.2	1.0	**48.6909**	0.451	0.9	ug/L	1233	Standard
	Cr	52	250447.0	1.8	**49.1847**	1.061	2.2	ug/L	6387	Standard
	Cr	53	30901.5	2.8	**47.7217**	1.235	2.6	ug/L	1555	Standard
	Mn	55	172640.2	2.0	**56.8656**	1.346	2.4	ug/L	436	Standard
	Co	59	215028.9	1.3	**51.1044**	0.803	1.6	ug/L	236	Standard
	Ni	60	69548.9	0.4	**48.4059**	0.285	0.6	ug/L	204	Standard
	Cu	65	69024.9	0.2	**48.0645**	0.053	0.1	ug/L	303	Standard
	Zn	66	38781.2	1.3	**48.2725**	0.477	1.0	ug/L	332	Standard
>	Ge	72	301950.1	0.3				ug/L	293924	Standard
	As	75	40733.2	0.9	**48.2083**	0.373	0.8	ug/L	45	Standard
	Se	82	3417.2	0.8	**48.2636**	0.483	1.0	ug/L	35	Standard
	Se-1	77	2539.5	1.7	**46.3520**	0.851	1.8	ug/L	153	Standard
>	Ga	71	36.7	39.4				mg/L	25	Standard
	Rb	85	656.7	6.7				ug/L	20	Standard
	Y	89	282801.5	3.1				ug/L	279578	Standard
>	Rh	103	23.3	44.6				ug/L	68	Standard
	Mo	98	164963.4	0.5	**97.5030**	1.088	1.1	ug/L	56	Standard
	Ag	107	277175.9	1.2	**48.1131**	0.884	1.8	ug/L	199	Standard
	Cd	111	84538.7	1.2	**48.3620**	0.534	1.1	mg/L	89	Standard
	Cd	114	223125.0	1.9	**48.3220**	1.143	2.4	ug/L	150	Standard
>	In	115	478263.0	0.6				ug/L	458296	Standard
	Sn	118	249264.1	1.9	**44.2575**	0.828	1.9	ug/L	385	Standard
	Sb	123	223649.3	1.0	**49.4026**	0.821	1.7	ug/L	208	Standard
	Ba	135	104987.2	0.9	**48.7943**	0.731	1.5	ug/L	108	Standard
	Ce	140	91.7	3.1				ug/L	92	Standard
>	Tb	159	854604.8	2.0				ug/L	812006	Standard
	Ho	165	6.7	86.6				ug/L	7	Standard
	Tl	203	355306.0	0.9	**48.1628**	0.146	0.3	ug/L	236	Standard
	Tl	205	253642.1	0.6	**49.6688**	0.926	1.9	ug/L	43	Standard
	Pb	206	221113.1	0.4	**48.4908**	0.589	1.2	ug/L	266	Standard
	Pb	207	200101.0	0.4	**48.4817**	0.524	1.1	ug/L	206	Standard
	Pb	208	718723.6	0.9	**50.0035**	0.959	1.9	ug/L	668	Standard
	U	238	246085.2	1.2	**50.1929**	1.126	2.2	ug/L	32	Standard
>	Bi	209	415354.0	1.2				ug/L	377155	Standard

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Na	23	1.7	173.2	**6.9148**	243.598	3522.8	mg/L	2	Standard
Mg	24	2133.5	4.1	**4.9709**	0.108	2.2	mg/L	60	Standard
K	39	210.0	13.3	**3.5417**	0.462	13.1	mg/L	12	Standard
Ca	43	48.3	31.6	**-6.5915**	10.431	158.2	mg/L	37	Standard
Fe	54	2392.9	3.1	**4.8102**	0.274	5.7	mg/L	56	Standard
Fe	57	1308.4	1.5	**3.9090**	0.261	6.7	mg/L	735	Standard
Sc-1	45	24902.1	2.5				mg/L	22687	Standard
Cl	35	25120.8	3.3				ug/L	20516	Standard
Kr	83	4.0	90.1				ug/L	5	Standard
Br	81	466.7	24.4				ug/L	570	Standard
P	31	13541.3	26.5				ug/L	7850	Standard
S	34	1851.8	5.3				ug/L	1375	Standard
Sr	88	140.0	12.4				ug/L	165	Standard
C	12	183.3	11.4				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	0	Standard
Dy	164	9.4	7.8				mg/L	6	Standard
Ho-1	165	6.7	86.6				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	1065.0	11.2				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	91.067		
Al	27	92.394		
Sc	45			
Ti	47	107.220		
V	51	97.382		
Cr	52	98.369		
Cr	53			
Mn	55	113.731		
Co	59	102.209		
Ni	60	96.812		
Cu	65	96.129		
Zn	66	96.545		
Ge	72		102.731	
As	75	96.417		
Se	82	96.527		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
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Rb	85			
Y	89			
> Rh	103			
Mo	98	97.503		
Ag	107	96.226		
Cd	111	96.724		
Cd	114			
> In	115		104.357	
Sn	118	88.515		
Sb	123	98.805		
Ba	135	97.589		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	96.326		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.007		
U	238	100.386		
> Bi	209		110.128	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Mn	55	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, August 20, 2015 21:24:59
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59424.7	2.7				ug/L	51673	Standard
	Be	9	30.0	115.5	**-0.0254**	0.046	180.1	ug/L	43	Standard
	Al	27	2754.0	153.4	**0.0246**	0.054	218.5	ug/L	2157	Standard
	Sc	45	25246.0	1.3				ug/L	22687	Standard
	Ti	47	21.0	40.7	**-0.0074**	0.049	662.8	ug/L	43	Standard
	V	51	813.9	7.7	**-0.0837**	0.013	15.6	ug/L	1233	Standard
	Cr	52	5016.5	1.2	**-0.1924**	0.018	9.6	ug/L	6387	Standard
	Cr	53	330.0	15.7	**-1.4898**	0.078	5.3	ug/L	1555	Standard
	Mn	55	703.4	65.6	**0.0324**	0.151	465.2	ug/L	436	Standard
	Co	59	287.3	60.2	**0.0217**	0.041	187.1	ug/L	236	Standard
	Ni	60	69.3	60.4	**0.0061**	0.029	472.0	ug/L	204	Standard
	Cu	65	227.0	11.1	**-0.1151**	0.016	14.0	ug/L	303	Standard
	Zn	66	225.0	16.0	**-0.1736**	0.044	25.4	ug/L	332	Standard
>	**Ge**	72	297840.0	1.5				ug/L	293924	Standard
	As	75	-7.4	77.4	**0.0367**	0.007	18.2	ug/L	45	Standard
	Se	82	16.9	40.9	**0.0302**	0.104	342.6	ug/L	35	Standard
	Se-1	77	69.7	12.0	**-1.4180**	0.151	10.6	ug/L	153	Standard
>	**Ga**	71	23.3	32.7				mg/L	25	Standard
	Rb	85	23.3	32.7				ug/L	20	Standard
	Y	89	276916.1	1.1				ug/L	279578	Standard
>	**Rh**	103	13.3	43.3				ug/L	68	Standard
	Mo	98	76.1	69.1	**0.0300**	0.032	106.4	ug/L	56	Standard
	Ag	107	102.7	22.3	**0.0030**	0.004	139.1	ug/L	199	Standard
	Cd	111	12.2	69.5	**0.0003**	0.005	1844.2	mg/L	89	Standard
	Cd	114	31.0	158.4	**0.0013**	0.011	855.7	ug/L	150	Standard
>	**In**	115	474285.4	1.3				ug/L	458296	Standard
	Sn	118	458.3	10.4	**0.0304**	0.009	30.3	ug/L	385	Standard
	Sb	123	838.1	10.4	**0.1748**	0.020	11.5	ug/L	208	Standard
	Ba	135	41.3	37.5	**-0.0045**	0.007	165.2	ug/L	108	Standard
	Ce	140	15.0	66.7				ug/L	92	Standard
>	**Tb**	159	871360.0	1.3				ug/L	812006	Standard
	Ho	165	11.7	99.0				ug/L	7	Standard
	Tl	203	36.0	84.2	**-0.0010**	0.004	410.7	ug/L	236	Standard
	Tl	205	161.7	159.8	**0.0304**	0.049	162.1	ug/L	43	Standard
	Pb	206	267.3	14.0	**0.0028**	0.007	265.2	ug/L	266	Standard
	Pb	207	233.3	11.4	**-0.0009**	0.006	650.6	ug/L	206	Standard
	Pb	208	1480.7	82.6	**0.0468**	0.082	175.9	ug/L	668	Standard
	U	238	110.0	162.2	**0.0212**	0.035	166.7	ug/L	32	Standard
>	**Bi**	209	419990.4	1.3				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	45.0	48.4	**-0.0013**	0.051	3868.2	mg/L	60	Standard
K	39	11.7	49.5	**-0.1875**	0.107	57.3	mg/L	12	Standard
Ca	43	18.3	15.7	**-27.5562**	1.844	6.7	mg/L	37	Standard
Fe	54	67.4	37.1	**0.0106**	0.053	497.8	mg/L	56	Standard
Fe	57	750.0	9.4	**-0.8751**	0.543	62.1	mg/L	735	Standard
Sc-1	45	25246.0	1.3				mg/L	22687	Standard
Cl	35	24294.1	0.6				ug/L	20516	Standard
Kr	83	3.0	57.7				ug/L	5	Standard
Br	81	456.7	8.9				ug/L	570	Standard
P	31	10140.1	3.9				ug/L	7850	Standard
S	34	1638.4	3.8				ug/L	1375	Standard
Sr	88	185.0	16.9				ug/L	165	Standard
C	12	203.3	24.8				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	89.2				mg/L	0	Standard
Dy	164	-1.0	100.0				mg/L	6	Standard
Ho-1	165	11.7	99.0				mg/L	7	Standard
Er	166	20.0	100.0				mg/L	13	Standard
I	127	2701.9	3.4				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.332	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.489
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		111.357
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508063203
Sample Date/Time: Thursday, August 20, 2015 21:28:12
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63588.2	2.0				ug/L	51673	Standard
	Be	9	18.3	128.9	**-0.0421**	0.030	70.8	ug/L	43	Standard
	Al	27	10138351.2	2.3	**119.8133**	2.017	1.7	ug/L	2157	Standard
	Sc	45	26354.6	7.1				ug/L	22687	Standard
	Ti	47	76.3	25.9	**0.3262**	0.115	35.3	ug/L	43	Standard
	V	51	1565.0	5.5	**0.0969**	0.023	24.2	ug/L	1233	Standard
	Cr	52	7094.7	1.0	**0.2447**	0.012	5.0	ug/L	6387	Standard
	Cr	53	826.7	7.7	**-0.6655**	0.118	17.8	ug/L	1555	Standard
	Mn	55	381889.6	1.3	**128.9563**	2.654	2.1	ug/L	436	Standard
	Co	59	2119.5	1.8	**0.4686**	0.012	2.6	ug/L	236	Standard
	Ni	60	2927.9	1.4	**2.0440**	0.010	0.5	ug/L	204	Standard
	Cu	65	2608.2	1.2	**1.5926**	0.023	1.4	ug/L	303	Standard
	Zn	66	3357.7	0.3	**3.8569**	0.043	1.1	ug/L	332	Standard
>	**Ge**	72	295139.3	0.9				ug/L	293924	Standard
	As	75	223.5	16.3	**0.3156**	0.042	13.4	ug/L	45	Standard
	Se	82	84.5	5.3	**1.0123**	0.055	5.4	ug/L	35	Standard
	Se-1	77	95.3	12.4	**-0.8951**	0.253	28.3	ug/L	153	Standard
>	**Ga**	71	35.0	37.8				mg/L	25	Standard
	Rb	85	1383.4	6.6				ug/L	20	Standard
	Y	89	289102.2	0.7				ug/L	279578	Standard
>	**Rh**	103	30.0	44.1				ug/L	68	Standard
	Mo	98	430.6	2.6	**0.2272**	0.007	3.2	ug/L	56	Standard
	Ag	107	102.3	13.2	**0.0019**	0.002	111.1	ug/L	199	Standard
	Cd	111	59.4	12.7	**0.0256**	0.004	15.4	mg/L	89	Standard
	Cd	114	168.5	13.6	**0.0292**	0.005	15.7	ug/L	150	Standard
>	**In**	115	501470.5	0.6				ug/L	458296	Standard
	Sn	118	553.3	18.6	**0.0419**	0.017	40.4	ug/L	385	Standard
	Sb	123	528.4	4.9	**0.0993**	0.005	4.9	ug/L	208	Standard
	Ba	135	48612.5	0.4	**21.5333**	0.039	0.2	ug/L	108	Standard
	Ce	140	1608.4	4.8				ug/L	92	Standard
>	**Tb**	159	876850.9	1.1				ug/L	812006	Standard
	Ho	165	48.3	11.9				ug/L	7	Standard
	Tl	203	127.3	15.9	**0.0114**	0.003	23.7	ug/L	236	Standard
	Tl	205	93.3	8.2	**0.0177**	0.002	8.5	ug/L	43	Standard
	Pb	206	2001.1	3.9	**0.3810**	0.017	4.3	ug/L	266	Standard
	Pb	207	1687.8	4.3	**0.3497**	0.017	4.8	ug/L	206	Standard
	Pb	208	6249.2	1.7	**0.3777**	0.007	1.7	ug/L	668	Standard
	U	238	1851.4	3.4	**0.3743**	0.012	3.3	ug/L	32	Standard
>	**Bi**	209	418272.1	0.2				ug/L	377155	Standard

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Na	23	3.3	173.2	**-133.0896**	486.093	365.2	mg/L	2	Standard
Mg	24	1140.0	4.0	**2.4616**	0.097	3.9	mg/L	60	Standard
K	39	38.3	19.9	**0.2742**	0.105	38.5	mg/L	12	Standard
Ca	43	315.0	31.7	**166.9436**	64.629	38.7	mg/L	37	Standard
Fe	54	72.3	55.7	**0.0136**	0.075	552.1	mg/L	56	Standard
Fe	57	1030.0	5.1	**1.1107**	0.594	53.5	mg/L	735	Standard
> **Sc-1**	45	26354.6	7.1				mg/L	22687	Standard
Cl	35	33683.4	3.7				ug/L	20516	Standard
Kr	83	3.7	41.7				ug/L	5	Standard
Br	81	6918.2	5.1				ug/L	570	Standard
P	31	13107.3	6.1				ug/L	7850	Standard
S	34	1710.1	9.4				ug/L	1375	Standard
Sr	88	178.3	23.3				ug/L	165	Standard
C	12	433.3	7.1				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	0	Standard
Dy	164	55.5	52.2				mg/L	6	Standard
Ho-1	165	48.3	11.9				mg/L	7	Standard
Er	166	23.3	65.5				mg/L	13	Standard
I	127	465993.0	1.1				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.059	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.413	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.421
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.902
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508063204
Sample Date/Time: Thursday, August 20, 2015 21:31:24
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70723.1	2.9				ug/L	51673	Standard
	Be	9	31.7	50.8	**-0.0298**	0.019	62.9	ug/L	43	Standard
	Al	27	110253264.0	3.3	**1171.6021**	24.969	2.1	ug/L	2157	Standard
	Sc	45	22858.9	5.9				ug/L	22687	Standard
	Ti	47	67.0	16.6	**0.2898**	0.063	21.8	ug/L	43	Standard
	V	51	2353.7	8.7	**0.3127**	0.065	20.6	ug/L	1233	Standard
	Cr	52	6792.2	2.4	**0.2507**	0.008	3.4	ug/L	6387	Standard
	Cr	53	7306.8	1.1	**10.5983**	0.206	1.9	ug/L	1555	Standard
	Mn	55	759254.3	4.4	**269.0245**	6.682	2.5	ug/L	436	Standard
	Co	59	7288.4	2.5	**1.8133**	0.038	2.1	ug/L	236	Standard
	Ni	60	9102.1	3.0	**6.7612**	0.135	2.0	ug/L	204	Standard
	Cu	65	2377.2	1.6	**1.5109**	0.049	3.2	ug/L	303	Standard
	Zn	66	3814.5	3.3	**4.6827**	0.064	1.4	ug/L	332	Standard
>	**Ge**	72	281400.5	2.5				ug/L	293924	Standard
	As	75	980.7	6.9	**1.2899**	0.084	6.5	ug/L	45	Standard
	Se	82	432.6	2.6	**6.3770**	0.327	5.1	ug/L	35	Standard
	Se-1	77	860.4	3.1	**15.0899**	0.860	5.7	ug/L	153	Standard
>	**Ga**	71	58.3	43.1				mg/L	25	Standard
	Rb	85	5827.8	1.8				ug/L	20	Standard
	Y	89	287136.9	0.5				ug/L	279578	Standard
>	**Rh**	103	60.0	8.3				ug/L	68	Standard
	Mo	98	243.0	11.6	**0.1236**	0.018	14.3	ug/L	56	Standard
	Ag	107	91.3	17.5	**0.0004**	0.003	747.1	ug/L	199	Standard
	Cd	111	74.5	4.0	**0.0344**	0.002	6.2	mg/L	89	Standard
	Cd	114	207.9	11.1	**0.0380**	0.005	12.3	ug/L	150	Standard
>	**In**	115	494140.4	1.7				ug/L	458296	Standard
	Sn	118	576.7	6.1	**0.0474**	0.007	14.8	ug/L	385	Standard
	Sb	123	379.1	3.9	**0.0691**	0.002	3.2	ug/L	208	Standard
	Ba	135	57458.4	1.2	**25.8400**	0.629	2.4	ug/L	108	Standard
	Ce	140	2596.9	2.6				ug/L	92	Standard
>	**Tb**	159	860170.7	1.0				ug/L	812006	Standard
	Ho	165	48.3	29.9				ug/L	7	Standard
	Tl	203	216.7	4.3	**0.0246**	0.002	6.9	ug/L	236	Standard
	Tl	205	165.0	6.1	**0.0329**	0.002	7.0	ug/L	43	Standard
	Pb	206	2509.2	7.0	**0.5133**	0.032	6.3	ug/L	266	Standard
	Pb	207	2100.1	4.5	**0.4690**	0.016	3.5	ug/L	206	Standard
	Pb	208	7630.8	3.6	**0.4941**	0.012	2.4	ug/L	668	Standard
	U	238	1845.1	2.5	**0.3880**	0.013	3.4	ug/L	32	Standard
>	**Bi**	209	402270.9	1.5				ug/L	377155	Standard

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Na	23	30.0	16.7	**-2548.7448**	505.670	19.8	mg/L	2	Standard
Mg	24	17561.8	3.3	**45.5950**	4.040	8.9	mg/L	60	Standard
K	39	175.0	35.8	**3.2354**	1.458	45.1	mg/L	12	Standard
Ca	43	1036.7	13.1	**742.5963**	75.492	10.2	mg/L	37	Standard
Fe	54	64.2	28.6	**0.0189**	0.048	252.9	mg/L	56	Standard
Fe	57	1570.1	3.2	**7.3006**	0.470	6.4	mg/L	735	Standard
> **Sc-1**	45	22858.9	5.9				mg/L	22687	Standard
Cl	35	134635.3	8.8				ug/L	20516	Standard
Kr	83	3.0	145.3				ug/L	5	Standard
Br	81	45835.9	2.8				ug/L	570	Standard
P	31	13105.7	3.2				ug/L	7850	Standard
S	34	1970.1	2.0				ug/L	1375	Standard
Sr	88	213.3	11.6				ug/L	165	Standard
C	12	440.0	7.9				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	66.1				mg/L	0	Standard
Dy	164	70.6	15.4				mg/L	6	Standard
Ho-1	165	48.3	29.9				mg/L	7	Standard
Er	166	56.7	27.0				mg/L	13	Standard
I	127	57472.2	2.1				mg/L	3795	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		136.867	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.739	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.821
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.659
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1508063204
Report Date/Time: Thursday, August 20, 2015 21:33:40
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Method 6020 - Summary Report

Sample ID: L1508063205
Sample Date/Time: Thursday, August 20, 2015 21:34:35
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74008.8	4.1				ug/L	51673	Standard
	Be	9	18.3	78.7	**-0.0454**	0.016	35.1	ug/L	43	Standard
	Al	27	24019462.2	2.3	**244.0031**	4.478	1.8	ug/L	2157	Standard
	Sc	45	24090.8	2.3				ug/L	22687	Standard
	Ti	47	93.3	30.4	**0.4497**	0.171	38.0	ug/L	43	Standard
	V	51	1664.4	8.7	**0.1358**	0.039	28.4	ug/L	1233	Standard
	Cr	52	6878.2	0.5	**0.2547**	0.022	8.6	ug/L	6387	Standard
	Cr	53	3955.5	2.9	**4.7394**	0.234	4.9	ug/L	1555	Standard
	Mn	55	2393.2	3.4	**0.6384**	0.029	4.6	ug/L	436	Standard
	Co	59	898.7	7.3	**0.1798**	0.015	8.3	ug/L	236	Standard
	Ni	60	3087.3	1.2	**2.2424**	0.025	1.1	ug/L	204	Standard
	Cu	65	7083.7	1.5	**4.9947**	0.063	1.3	ug/L	303	Standard
	Zn	66	3731.1	1.6	**4.5213**	0.046	1.0	ug/L	332	Standard
>	**Ge**	72	284196.1	1.0				ug/L	293924	Standard
	As	75	752.6	7.4	**0.9915**	0.079	8.0	ug/L	45	Standard
	Se	82	386.1	1.3	**5.6057**	0.134	2.4	ug/L	35	Standard
	Se-1	77	418.7	5.3	**5.8248**	0.500	8.6	ug/L	153	Standard
>	**Ga**	71	36.7	7.9				mg/L	25	Standard
	Rb	85	743.4	6.9				ug/L	20	Standard
	Y	89	294183.0	2.5				ug/L	279578	Standard
>	**Rh**	103	36.7	67.3				ug/L	68	Standard
	Mo	98	183.0	12.2	**0.0835**	0.011	12.9	ug/L	56	Standard
	Ag	107	94.7	7.8	**0.0001**	0.001	1409.1	ug/L	199	Standard
	Cd	111	29.3	27.9	**0.0085**	0.004	46.7	mg/L	89	Standard
	Cd	114	75.8	29.8	**0.0094**	0.004	46.6	ug/L	150	Standard
>	**In**	115	521773.2	1.8				ug/L	458296	Standard
	Sn	118	2021.8	7.0	**0.2779**	0.029	10.4	ug/L	385	Standard
	Sb	123	363.7	9.8	**0.0616**	0.007	11.0	ug/L	208	Standard
	Ba	135	34961.6	0.6	**14.8801**	0.314	2.1	ug/L	108	Standard
	Ce	140	845.0	28.8				ug/L	92	Standard
>	**Tb**	159	910450.2	0.5				ug/L	812006	Standard
	Ho	165	58.3	4.9				ug/L	7	Standard
	Tl	203	82.0	10.6	**0.0048**	0.001	23.2	ug/L	236	Standard
	Tl	205	60.0	16.7	**0.0107**	0.002	17.3	ug/L	43	Standard
	Pb	206	3509.7	2.2	**0.6781**	0.014	2.1	ug/L	266	Standard
	Pb	207	2847.3	6.3	**0.6004**	0.040	6.7	ug/L	206	Standard
	Pb	208	10225.4	4.4	**0.6232**	0.028	4.5	ug/L	668	Standard
	U	238	1089.4	1.2	**0.2108**	0.002	1.0	ug/L	32	Standard
>	**Bi**	209	436434.1	0.3				ug/L	377155	Standard

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Na	23	8.3	34.6	**-562.1979**	249.516	44.4	mg/L	2	Standard
Mg	24	5449.3	4.3	**13.2999**	0.369	2.8	mg/L	60	Standard
K	39	111.7	29.1	**1.7611**	0.606	34.4	mg/L	12	Standard
Ca	43	490.0	6.7	**311.5714**	23.624	7.6	mg/L	37	Standard
Fe	54	87.5	17.4	**0.0600**	0.037	61.6	mg/L	56	Standard
Fe	57	1123.4	7.8	**2.6690**	0.729	27.3	mg/L	735	Standard
> **Sc-1**	45	24090.8	2.3				mg/L	22687	Standard
Cl	35	59953.7	1.2				ug/L	20516	Standard
Kr	83	3.0	33.3				ug/L	5	Standard
Br	81	34586.1	2.4				ug/L	570	Standard
P	31	14098.2	0.8				ug/L	7850	Standard
S	34	1746.8	5.8				ug/L	1375	Standard
Sr	88	196.7	5.3				ug/L	165	Standard
C	12	456.7	15.4				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	91.7				mg/L	0	Standard
Dy	164	57.9	15.7				mg/L	6	Standard
Ho-1	165	58.3	4.9				mg/L	7	Standard
Er	166	43.3	70.5				mg/L	13	Standard
I	127	11679.5	5.6				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		143.225	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.690	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.851
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		115.717
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1508063206
Sample Date/Time: Thursday, August 20, 2015 21:37:46
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71089.9	3.8				ug/L	51673	Standard
	Be	9	21.7	26.6	**-0.0413**	0.006	14.6	ug/L	43	Standard
	Al	27	19108849.4	2.8	**202.3049**	12.744	6.3	ug/L	2157	Standard
	Sc	45	23139.3	2.0				ug/L	22687	Standard
	Ti	47	89.7	20.8	**0.4289**	0.115	26.8	ug/L	43	Standard
	V	51	1613.3	1.0	**0.1239**	0.009	7.3	ug/L	1233	Standard
	Cr	52	6718.5	2.2	**0.2233**	0.015	6.8	ug/L	6387	Standard
	Cr	53	2910.3	4.4	**2.9596**	0.170	5.7	ug/L	1555	Standard
	Mn	55	1131.4	1.2	**0.1961**	0.000	0.1	ug/L	436	Standard
	Co	59	831.0	2.7	**0.1633**	0.008	5.1	ug/L	236	Standard
	Ni	60	2838.6	1.5	**2.0630**	0.048	2.3	ug/L	204	Standard
	Cu	65	7258.4	1.1	**5.1362**	0.069	1.3	ug/L	303	Standard
	Zn	66	4431.3	1.8	**5.4683**	0.051	0.9	ug/L	332	Standard
>	**Ge**	72	283610.0	1.3				ug/L	293924	Standard
	As	75	686.7	5.9	**0.9097**	0.043	4.8	ug/L	45	Standard
	Se	82	313.7	2.4	**4.5233**	0.055	1.2	ug/L	35	Standard
	Se-1	77	290.0	2.6	**3.1916**	0.213	6.7	ug/L	153	Standard
>	**Ga**	71	25.0	52.9				mg/L	25	Standard
	Rb	85	1048.4	1.7				ug/L	20	Standard
	Y	89	285112.6	0.4				ug/L	279578	Standard
>	**Rh**	103	56.7	25.5				ug/L	68	Standard
	Mo	98	168.6	11.8	**0.0784**	0.012	15.5	ug/L	56	Standard
	Ag	107	83.0	2.1	**-0.0014**	0.000	28.8	ug/L	199	Standard
	Cd	111	27.9	28.6	**0.0082**	0.004	51.4	mg/L	89	Standard
	Cd	114	68.9	32.0	**0.0085**	0.005	56.0	ug/L	150	Standard
>	**In**	115	507938.7	1.7				ug/L	458296	Standard
	Sn	118	601.7	12.5	**0.0489**	0.012	24.9	ug/L	385	Standard
	Sb	123	169.9	18.8	**0.0233**	0.006	27.0	ug/L	208	Standard
	Ba	135	57467.1	0.5	**25.1393**	0.389	1.5	ug/L	108	Standard
	Ce	140	276.7	5.2				ug/L	92	Standard
>	**Tb**	159	888624.0	0.9				ug/L	812006	Standard
	Ho	165	31.7	24.1				ug/L	7	Standard
	Tl	203	131.0	3.3	**0.0115**	0.001	5.9	ug/L	236	Standard
	Tl	205	108.3	11.6	**0.0201**	0.002	11.9	ug/L	43	Standard
	Pb	206	1455.7	10.1	**0.2548**	0.033	12.8	ug/L	266	Standard
	Pb	207	1163.7	7.3	**0.2170**	0.021	9.7	ug/L	206	Standard
	Pb	208	4244.6	8.3	**0.2322**	0.025	10.8	ug/L	668	Standard
	U	238	1376.1	0.8	**0.2715**	0.000	0.2	ug/L	32	Standard
>	**Bi**	209	428344.6	0.6				ug/L	377155	Standard

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Na	23	5.0	100.0	**-297.7513**	441.928	148.4	mg/L	2	Standard
Mg	24	2798.6	0.7	**7.0650**	0.171	2.4	mg/L	60	Standard
K	39	53.3	62.4	**0.6847**	0.700	102.2	mg/L	12	Standard
Ca	43	438.3	6.5	**287.1771**	14.991	5.2	mg/L	37	Standard
Fe	54	95.6	30.3	**0.0851**	0.064	75.2	mg/L	56	Standard
Fe	57	993.4	8.3	**1.9035**	0.874	45.9	mg/L	735	Standard
> **Sc-1**	45	23139.3	2.0				mg/L	22687	Standard
Cl	35	52470.1	2.1				ug/L	20516	Standard
Kr	83	4.7	24.7				ug/L	5	Standard
Br	81	32548.3	3.1				ug/L	570	Standard
P	31	14295.1	5.6				ug/L	7850	Standard
S	34	1736.8	3.8				ug/L	1375	Standard
Sr	88	208.3	13.6				ug/L	165	Standard
C	12	376.7	27.2				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	86.6				mg/L	0	Standard
Dy	164	18.9	6.4				mg/L	6	Standard
Ho-1	165	31.7	24.1				mg/L	7	Standard
Er	166	23.3	107.9				mg/L	13	Standard
I	127	6718.2	2.2				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		137.576	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.491	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.832
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		113.572
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1508063207
Sample Date/Time: Thursday, August 20, 2015 21:40:58
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67153.6	3.5				ug/L	51673	Standard
	Be	9	26.7	39.0	**-0.0337**	0.013	38.4	ug/L	43	Standard
	Al	27	13157058.9	2.5	**147.2587**	1.521	1.0	ug/L	2157	Standard
	Sc	45	23750.3	2.7				ug/L	22687	Standard
	Ti	47	56.3	16.8	**0.2335**	0.063	27.0	ug/L	43	Standard
	V	51	1510.9	6.6	**0.1121**	0.024	21.7	ug/L	1233	Standard
	Cr	52	7825.7	0.6	**0.5219**	0.044	8.4	ug/L	6387	Standard
	Cr	53	1435.1	8.1	**0.5217**	0.213	40.8	ug/L	1555	Standard
	Mn	55	2111.1	9.3	**0.5688**	0.086	15.2	ug/L	436	Standard
	Co	59	816.0	5.2	**0.1671**	0.014	8.4	ug/L	236	Standard
	Ni	60	2792.3	4.2	**2.1036**	0.092	4.4	ug/L	204	Standard
	Cu	65	8536.4	0.9	**6.3206**	0.114	1.8	ug/L	303	Standard
	Zn	66	7126.0	2.8	**9.4192**	0.215	2.3	ug/L	332	Standard
>	**Ge**	72	273695.5	1.9				ug/L	293924	Standard
	As	75	115.8	10.9	**0.1965**	0.016	8.0	ug/L	45	Standard
	Se	82	86.9	4.1	**1.1459**	0.064	5.6	ug/L	35	Standard
	Se-1	77	166.3	4.5	**0.7693**	0.222	28.9	ug/L	153	Standard
>	**Ga**	71	45.0	48.4				mg/L	25	Standard
	Rb	85	3830.5	3.3				ug/L	20	Standard
	Y	89	285059.3	2.5				ug/L	279578	Standard
>	**Rh**	103	58.3	9.9				ug/L	68	Standard
	Mo	98	202.7	5.6	**0.0975**	0.007	6.8	ug/L	56	Standard
	Ag	107	83.0	8.7	**-0.0014**	0.001	86.1	ug/L	199	Standard
	Cd	111	27.2	26.9	**0.0079**	0.004	49.4	mg/L	89	Standard
	Cd	114	67.7	61.4	**0.0082**	0.008	103.0	ug/L	150	Standard
>	**In**	115	506891.8	0.5				ug/L	458296	Standard
	Sn	118	646.7	5.1	**0.0566**	0.006	10.7	ug/L	385	Standard
	Sb	123	168.1	3.4	**0.0231**	0.001	4.7	ug/L	208	Standard
	Ba	135	43624.4	0.7	**19.1141**	0.056	0.3	ug/L	108	Standard
	Ce	140	268.3	15.8				ug/L	92	Standard
>	**Tb**	159	880271.0	0.4				ug/L	812006	Standard
	Ho	165	20.0	0.0				ug/L	7	Standard
	Tl	203	175.0	11.0	**0.0178**	0.003	16.2	ug/L	236	Standard
	Tl	205	115.0	22.6	**0.0219**	0.005	24.0	ug/L	43	Standard
	Pb	206	1668.4	1.9	**0.3078**	0.009	3.1	ug/L	266	Standard
	Pb	207	1379.1	1.1	**0.2747**	0.003	0.9	ug/L	206	Standard
	Pb	208	5147.0	0.7	**0.3008**	0.005	1.7	ug/L	668	Standard
	U	238	1322.7	4.2	**0.2668**	0.014	5.1	ug/L	32	Standard
>	**Bi**	209	419107.5	1.4				ug/L	377155	Standard

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Na	23	11.7	65.5	**-864.7271**	667.183	77.2	mg/L	2	Standard
Mg	24	2408.5	1.9	**5.9080**	0.217	3.7	mg/L	60	Standard
K	39	46.7	22.3	**0.5202**	0.228	43.7	mg/L	12	Standard
Ca	43	378.3	10.0	**235.2511**	26.423	11.2	mg/L	37	Standard
Fe	54	104.0	29.1	**0.0990**	0.070	71.1	mg/L	56	Standard
Fe	57	1013.4	4.9	**1.8355**	0.207	11.3	mg/L	735	Standard
> **Sc-1**	45	23750.3	2.7				mg/L	22687	Standard
Cl	35	47335.2	3.5				ug/L	20516	Standard
Kr	83	3.0	33.3				ug/L	5	Standard
Br	81	4737.4	6.9				ug/L	570	Standard
P	31	13013.9	1.0				ug/L	7850	Standard
S	34	1708.4	4.3				ug/L	1375	Standard
Sr	88	218.3	8.0				ug/L	165	Standard
C	12	506.7	18.3				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	8.7	120.2				mg/L	6	Standard
Ho-1	165	20.0	0.0				mg/L	7	Standard
Er	166	26.7	43.3				mg/L	13	Standard
I	127	6129.6	1.8				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.959	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.118	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.604
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		111.123
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1508063208
Sample Date/Time: Thursday, August 20, 2015 21:44:09
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66450.4	1.0				ug/L	51673	Standard
	Be	9	33.3	48.2	**-0.0257**	0.019	74.8	ug/L	43	Standard
	Al	27	53100670.9	0.7	**600.5729**	9.673	1.6	ug/L	2157	Standard
	Sc	45	22750.4	3.0				ug/L	22687	Standard
	Ti	47	662.0	40.0	**4.1502**	1.705	41.1	ug/L	43	Standard
	V	51	1542.6	17.6	**0.1196**	0.069	57.9	ug/L	1233	Standard
	Cr	52	8668.5	1.4	**0.7060**	0.032	4.5	ug/L	6387	Standard
	Cr	53	4070.5	1.4	**5.1936**	0.167	3.2	ug/L	1555	Standard
	Mn	55	4122.2	2.1	**1.2994**	0.043	3.3	ug/L	436	Standard
	Co	59	984.0	1.9	**0.2107**	0.003	1.5	ug/L	236	Standard
	Ni	60	3523.7	1.2	**2.6622**	0.058	2.2	ug/L	204	Standard
	Cu	65	1937.1	1.0	**1.2187**	0.028	2.3	ug/L	303	Standard
	Zn	66	3005.6	1.9	**3.7013**	0.084	2.3	ug/L	332	Standard
>	**Ge**	72	274063.9	0.9				ug/L	293924	Standard
	As	75	707.6	10.9	**0.9679**	0.108	11.2	ug/L	45	Standard
	Se	82	329.6	7.7	**4.9370**	0.401	8.1	ug/L	35	Standard
	Se-1	77	410.3	0.9	**5.9634**	0.019	0.3	ug/L	153	Standard
>	**Ga**	71	20.0	0.0				mg/L	25	Standard
	Rb	85	2115.1	5.9				ug/L	20	Standard
	Y	89	284449.2	1.9				ug/L	279578	Standard
>	**Rh**	103	35.0	14.3				ug/L	68	Standard
	Mo	98	507.3	3.5	**0.2727**	0.012	4.5	ug/L	56	Standard
	Ag	107	81.3	9.2	**-0.0014**	0.001	86.0	ug/L	199	Standard
	Cd	111	31.9	22.1	**0.0107**	0.004	36.3	mg/L	89	Standard
	Cd	114	87.1	13.7	**0.0125**	0.002	19.3	ug/L	150	Standard
>	**In**	115	497576.4	0.8				ug/L	458296	Standard
	Sn	118	1163.4	5.9	**0.1470**	0.013	8.9	ug/L	385	Standard
	Sb	123	259.5	3.8	**0.0431**	0.002	4.7	ug/L	208	Standard
	Ba	135	12396.4	1.1	**5.5163**	0.065	1.2	ug/L	108	Standard
	Ce	140	371.7	18.9				ug/L	92	Standard
>	**Tb**	159	843148.3	1.6				ug/L	812006	Standard
	Ho	165	36.7	56.8				ug/L	7	Standard
	Tl	203	116.7	9.4	**0.0106**	0.002	15.2	ug/L	236	Standard
	Tl	205	80.0	22.5	**0.0157**	0.003	22.1	ug/L	43	Standard
	Pb	206	1191.7	3.7	**0.2151**	0.010	4.8	ug/L	266	Standard
	Pb	207	1009.4	1.6	**0.1962**	0.004	1.9	ug/L	206	Standard
	Pb	208	3714.8	1.2	**0.2129**	0.007	3.1	ug/L	668	Standard
	U	238	2005.5	3.2	**0.4220**	0.014	3.4	ug/L	32	Standard
>	**Bi**	209	402027.8	1.3				ug/L	377155	Standard

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Na	23	10.0	50.0	**-744.2345**	423.678	56.9	mg/L	2	Standard
Mg	24	5981.2	2.5	**15.4950**	0.841	5.4	mg/L	60	Standard
K	39	71.7	14.5	**1.0688**	0.186	17.4	mg/L	12	Standard
Ca	43	546.7	9.6	**374.7199**	27.329	7.3	mg/L	37	Standard
Fe	54	77.3	10.4	**0.0471**	0.013	27.8	mg/L	56	Standard
Fe	57	1155.0	9.5	**3.5431**	1.075	30.3	mg/L	735	Standard
> **Sc-1**	45	22750.4	3.0				mg/L	22687	Standard
Cl	35	76033.1	2.9				ug/L	20516	Standard
Kr	83	6.0	44.1				ug/L	5	Standard
Br	81	34532.7	3.7				ug/L	570	Standard
P	31	12328.3	2.2				ug/L	7850	Standard
S	34	1810.1	7.7				ug/L	1375	Standard
Sr	88	201.7	21.1				ug/L	165	Standard
C	12	533.3	11.9				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	66.7				mg/L	0	Standard
Dy	164	51.3	31.5				mg/L	6	Standard
Ho-1	165	36.7	56.8				mg/L	7	Standard
Er	166	43.3	53.3				mg/L	13	Standard
I	127	18516.3	3.6				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.598	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.243	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.571
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.595
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1508063209
Sample Date/Time: Thursday, August 20, 2015 21:47:21
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68517.9	0.6				ug/L	51673	Standard
	Be	9	30.0	0.0	**-0.0308**	0.000	0.7	ug/L	43	Standard
	Al	27	15931558.1	2.0	**174.7401**	4.340	2.5	ug/L	2157	Standard
	Sc	45	22727.0	0.7				ug/L	22687	Standard
	Ti	47	65.0	33.7	**0.2844**	0.141	49.5	ug/L	43	Standard
	V	51	1512.3	6.3	**0.1079**	0.030	27.9	ug/L	1233	Standard
	Cr	52	6876.9	2.5	**0.2919**	0.047	16.0	ug/L	6387	Standard
	Cr	53	2150.2	3.3	**1.7459**	0.200	11.5	ug/L	1555	Standard
	Mn	55	1611.4	3.2	**0.3783**	0.023	6.1	ug/L	436	Standard
	Co	59	740.7	2.0	**0.1448**	0.006	4.0	ug/L	236	Standard
	Ni	60	2404.5	1.9	**1.7821**	0.013	0.8	ug/L	204	Standard
	Cu	65	6181.6	1.4	**4.4420**	0.157	3.5	ug/L	303	Standard
	Zn	66	4466.3	1.3	**5.6558**	0.154	2.7	ug/L	332	Standard
>	**Ge**	72	277179.7	2.0				ug/L	293924	Standard
	As	75	363.5	7.4	**0.5133**	0.025	4.9	ug/L	45	Standard
	Se	82	166.6	3.2	**2.3601**	0.061	2.6	ug/L	35	Standard
	Se-1	77	247.3	5.7	**2.4347**	0.402	16.5	ug/L	153	Standard
>	**Ga**	71	23.3	32.7				mg/L	25	Standard
	Rb	85	2233.5	4.1				ug/L	20	Standard
	Y	89	279118.0	1.8				ug/L	279578	Standard
>	**Rh**	103	38.3	39.8				ug/L	68	Standard
	Mo	98	172.0	5.4	**0.0818**	0.006	7.9	ug/L	56	Standard
	Ag	107	101.7	4.0	**0.0019**	0.001	49.5	ug/L	199	Standard
	Cd	111	30.0	17.2	**0.0096**	0.003	26.4	mg/L	89	Standard
	Cd	114	75.5	69.4	**0.0101**	0.011	109.0	ug/L	150	Standard
>	**In**	115	499944.6	1.7				ug/L	458296	Standard
	Sn	118	728.4	8.6	**0.0721**	0.011	15.4	ug/L	385	Standard
	Sb	123	160.0	6.7	**0.0218**	0.002	10.0	ug/L	208	Standard
	Ba	135	53412.3	0.5	**23.7396**	0.508	2.1	ug/L	108	Standard
	Ce	140	265.0	13.2				ug/L	92	Standard
>	**Tb**	159	869185.8	1.1				ug/L	812006	Standard
	Ho	165	11.7	89.2				ug/L	7	Standard
	Tl	203	94.0	15.1	**0.0069**	0.002	27.9	ug/L	236	Standard
	Tl	205	56.7	20.4	**0.0105**	0.002	21.3	ug/L	43	Standard
	Pb	206	845.0	3.5	**0.1285**	0.006	5.0	ug/L	266	Standard
	Pb	207	687.3	3.1	**0.1083**	0.005	4.5	ug/L	206	Standard
	Pb	208	2446.4	3.1	**0.1142**	0.005	4.8	ug/L	668	Standard
	U	238	1076.4	2.2	**0.2167**	0.005	2.2	ug/L	32	Standard
>	**Bi**	209	419437.7	0.2				ug/L	377155	Standard

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Na	23	6.7	43.3	**-453.0310**	258.902	57.1	mg/L	2	Standard
Mg	24	1273.4	11.7	**3.2136**	0.373	11.6	mg/L	60	Standard
K	39	46.7	48.3	**0.5593**	0.471	84.3	mg/L	12	Standard
Ca	43	381.7	9.7	**250.0711**	25.990	10.4	mg/L	37	Standard
Fe	54	65.7	30.7	**0.0213**	0.045	209.2	mg/L	56	Standard
Fe	57	993.4	11.1	**2.0565**	1.005	48.9	mg/L	735	Standard
Sc-1	45	22727.0	0.7				mg/L	22687	Standard
Cl	35	45176.6	1.4				ug/L	20516	Standard
Kr	83	4.3	70.5				ug/L	5	Standard
Br	81	15798.2	2.3				ug/L	570	Standard
P	31	12375.1	3.8				ug/L	7850	Standard
S	34	1603.4	9.0				ug/L	1375	Standard
Sr	88	201.7	32.7				ug/L	165	Standard
C	12	450.0	16.8				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	26.2	57.1				mg/L	6	Standard
Ho-1	165	11.7	89.2				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	11337.6	5.6				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.599	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.303	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.088
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		111.211
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1508063210
Sample Date/Time: Thursday, August 20, 2015 21:50:33
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64314.6	3.2				ug/L	51673	Standard
	Be	9	28.3	27.0	**-0.0305**	0.010	33.0	ug/L	43	Standard
	Al	27	10345948.6	1.4	**120.9295**	2.504	2.1	ug/L	2157	Standard
	Sc	45	22840.5	1.9				ug/L	22687	Standard
	Ti	47	59.7	10.6	**0.2552**	0.041	16.2	ug/L	43	Standard
	V	51	1350.0	10.6	**0.0713**	0.039	54.1	ug/L	1233	Standard
	Cr	52	6557.1	2.6	**0.2411**	0.044	18.4	ug/L	6387	Standard
	Cr	53	1665.1	3.1	**0.9320**	0.079	8.4	ug/L	1555	Standard
	Mn	55	1479.4	12.6	**0.3381**	0.071	21.1	ug/L	436	Standard
	Co	59	611.0	4.0	**0.1133**	0.007	6.4	ug/L	236	Standard
	Ni	60	1912.8	3.7	**1.4289**	0.063	4.4	ug/L	204	Standard
	Cu	65	6502.1	2.5	**4.7520**	0.128	2.7	ug/L	303	Standard
	Zn	66	4106.9	1.4	**5.2388**	0.104	2.0	ug/L	332	Standard
>	Ge	72	273458.4	0.6				ug/L	293924	Standard
	As	75	172.1	41.8	**0.2704**	0.094	34.8	ug/L	45	Standard
	Se	82	70.1	16.4	**0.8839**	0.184	20.9	ug/L	35	Standard
	Se-1	77	174.7	6.6	**0.9487**	0.267	28.1	ug/L	153	Standard
>	Ga	71	21.7	58.1				mg/L	25	Standard
	Rb	85	1736.8	1.8				ug/L	20	Standard
	Y	89	280582.9	1.6				ug/L	279578	Standard
>	Rh	103	28.3	36.7				ug/L	68	Standard
	Mo	98	206.9	13.1	**0.1055**	0.017	16.1	ug/L	56	Standard
	Ag	107	119.7	50.7	**0.0054**	0.010	183.5	ug/L	199	Standard
	Cd	111	46.9	99.0	**0.0194**	0.026	131.5	mg/L	89	Standard
	Cd	114	135.3	93.8	**0.0231**	0.026	114.5	ug/L	150	Standard
>	In	115	483616.9	1.8				ug/L	458296	Standard
	Sn	118	485.0	15.6	**0.0333**	0.012	36.1	ug/L	385	Standard
	Sb	123	160.1	32.3	**0.0229**	0.011	46.3	ug/L	208	Standard
	Ba	135	45660.7	1.0	**20.9744**	0.290	1.4	ug/L	108	Standard
	Ce	140	203.3	21.5				ug/L	92	Standard
>	Tb	159	851652.6	1.5				ug/L	812006	Standard
	Ho	165	16.7	34.6				ug/L	7	Standard
	Tl	203	137.3	72.4	**0.0132**	0.014	104.2	ug/L	236	Standard
	Tl	205	75.0	30.6	**0.0145**	0.005	32.2	ug/L	43	Standard
	Pb	206	2018.5	10.5	**0.3962**	0.048	12.1	ug/L	266	Standard
	Pb	207	1689.4	7.9	**0.3607**	0.034	9.5	ug/L	206	Standard
	Pb	208	6010.8	4.8	**0.3719**	0.022	5.8	ug/L	668	Standard
	U	238	1024.7	1.2	**0.2122**	0.002	1.1	ug/L	32	Standard
>	Bi	209	407812.8	2.0				ug/L	377155	Standard

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Na	23	5.0	100.0	**-303.5636**	448.211	147.6	mg/L	2	Standard
Mg	24	1698.4	1.2	**4.3017**	0.055	1.3	mg/L	60	Standard
K	39	33.3	67.6	**0.2772**	0.453	163.5	mg/L	12	Standard
Ca	43	301.7	13.8	**188.5336**	34.266	18.2	mg/L	37	Standard
Fe	54	89.0	20.0	**0.0731**	0.040	54.7	mg/L	56	Standard
Fe	57	953.4	5.0	**1.6487**	0.513	31.1	mg/L	735	Standard
> **Sc-1**	45	22840.5	1.9				mg/L	22687	Standard
Cl	35	38510.9	2.1				ug/L	20516	Standard
Kr	83	5.0	72.1				ug/L	5	Standard
Br	81	6811.5	1.4				ug/L	570	Standard
P	31	12511.8	2.6				ug/L	7850	Standard
S	34	1736.8	7.9				ug/L	1375	Standard
Sr	88	168.3	12.0				ug/L	165	Standard
C	12	380.0	16.0				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	107.9				mg/L	0	Standard
Dy	164	35.5	63.4				mg/L	6	Standard
Ho-1	165	16.7	34.6				mg/L	7	Standard
Er	166	23.3	49.5				mg/L	13	Standard
I	127	5782.8	1.6				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.465	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.037	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.525
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.129
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1508063211
Sample Date/Time: Thursday, August 20, 2015 21:53:43
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64969.0	2.5				ug/L	51673	Standard
	Be	9	21.7	48.0	**-0.0391**	0.012	30.7	ug/L	43	Standard
	Al	27	24068323.3	2.5	**278.5075**	10.141	3.6	ug/L	2157	Standard
	Sc	45	22737.1	4.1				ug/L	22687	Standard
	Ti	47	63.0	4.2	**0.2853**	0.011	3.7	ug/L	43	Standard
	V	51	1405.3	1.5	**0.0930**	0.006	6.4	ug/L	1233	Standard
	Cr	52	6302.6	0.5	**0.2144**	0.030	14.0	ug/L	6387	Standard
	Cr	53	1228.4	7.2	**0.2010**	0.132	65.6	ug/L	1555	Standard
	Mn	55	5967.5	1.8	**2.0220**	0.016	0.8	ug/L	436	Standard
	Co	59	836.7	3.7	**0.1772**	0.006	3.3	ug/L	236	Standard
	Ni	60	2935.3	1.7	**2.2629**	0.005	0.2	ug/L	204	Standard
	Cu	65	3290.0	1.3	**2.3219**	0.015	0.6	ug/L	303	Standard
	Zn	66	2469.2	0.2	**3.0392**	0.062	2.0	ug/L	332	Standard
>	**Ge**	72	267795.6	1.7				ug/L	293924	Standard
	As	75	205.5	3.3	**0.3195**	0.010	3.2	ug/L	45	Standard
	Se	82	166.3	3.5	**2.4469**	0.122	5.0	ug/L	35	Standard
	Se-1	77	187.0	6.5	**1.2937**	0.202	15.6	ug/L	153	Standard
>	**Ga**	71	31.7	24.1				mg/L	25	Standard
	Rb	85	2315.2	1.7				ug/L	20	Standard
	Y	89	275102.9	2.8				ug/L	279578	Standard
>	**Rh**	103	28.3	62.0				ug/L	68	Standard
	Mo	98	269.0	2.9	**0.1404**	0.005	3.7	ug/L	56	Standard
	Ag	107	77.7	4.1	**-0.0018**	0.001	38.1	ug/L	199	Standard
	Cd	111	34.4	24.8	**0.0125**	0.005	38.8	mg/L	89	Standard
	Cd	114	83.7	27.7	**0.0122**	0.005	40.4	ug/L	150	Standard
>	**In**	115	487849.7	1.2				ug/L	458296	Standard
	Sn	118	481.7	2.2	**0.0321**	0.003	8.7	ug/L	385	Standard
	Sb	123	127.7	12.3	**0.0157**	0.003	19.6	ug/L	208	Standard
	Ba	135	24339.5	1.2	**11.0725**	0.246	2.2	ug/L	108	Standard
	Ce	140	293.3	29.0				ug/L	92	Standard
>	**Tb**	159	851797.4	1.1				ug/L	812006	Standard
	Ho	165	21.7	93.3				ug/L	7	Standard
	Tl	203	79.7	9.3	**0.0053**	0.001	18.1	ug/L	236	Standard
	Tl	205	65.0	33.5	**0.0126**	0.004	35.0	ug/L	43	Standard
	Pb	206	1457.4	1.6	**0.2725**	0.006	2.1	ug/L	266	Standard
	Pb	207	1202.0	3.7	**0.2419**	0.013	5.4	ug/L	206	Standard
	Pb	208	4387.6	0.2	**0.2585**	0.003	1.2	ug/L	668	Standard
	U	238	1945.1	1.9	**0.4057**	0.010	2.4	ug/L	32	Standard
>	**Bi**	209	405506.6	0.8				ug/L	377155	Standard

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Na	23	3.3	173.2	**-156.6312**	526.868	336.4	mg/L	2	Standard
Mg	24	4223.9	5.2	**10.9303**	0.968	8.9	mg/L	60	Standard
K	39	61.7	33.8	**0.8731**	0.453	51.9	mg/L	12	Standard
Ca	43	520.0	3.5	**355.6747**	20.852	5.9	mg/L	37	Standard
Fe	54	84.1	15.8	**0.0632**	0.032	50.2	mg/L	56	Standard
Fe	57	1143.4	7.1	**3.4340**	0.622	18.1	mg/L	735	Standard
> **Sc-1**	45	22737.1	4.1				mg/L	22687	Standard
Cl	35	58053.1	2.8				ug/L	20516	Standard
Kr	83	4.0	25.0				ug/L	5	Standard
Br	81	9356.2	5.1				ug/L	570	Standard
P	31	12610.2	2.6				ug/L	7850	Standard
S	34	1643.4	9.3				ug/L	1375	Standard
Sr	88	221.7	16.3				ug/L	165	Standard
C	12	543.3	9.3				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	31.7	36.0				mg/L	6	Standard
Ho-1	165	21.7	93.3				mg/L	7	Standard
Er	166	33.3	45.8				mg/L	13	Standard
I	127	4467.3	2.6				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		125.731	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		91.110	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.449
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.517
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1508063212
Sample Date/Time: Thursday, August 20, 2015 21:56:55
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66114.0	1.7				ug/L	51673	Standard
	Be	9	21.7	58.1	**-0.0395**	0.015	37.3	ug/L	43	Standard
	Al	27	12577606.4	2.3	**142.9459**	1.022	0.7	ug/L	2157	Standard
	Sc	45	21970.9	1.2				ug/L	22687	Standard
	Ti	47	62.0	9.8	**0.2706**	0.042	15.4	ug/L	43	Standard
	V	51	1439.4	6.4	**0.0941**	0.022	23.1	ug/L	1233	Standard
	Cr	52	6475.7	2.8	**0.2235**	0.048	21.3	ug/L	6387	Standard
	Cr	53	1103.4	7.3	**-0.0664**	0.130	195.9	ug/L	1555	Standard
	Mn	55	21003.2	2.6	**7.4667**	0.240	3.2	ug/L	436	Standard
	Co	59	645.0	2.6	**0.1222**	0.003	2.7	ug/L	236	Standard
	Ni	60	1917.1	0.4	**1.4325**	0.011	0.7	ug/L	204	Standard
	Cu	65	1450.7	2.3	**0.8459**	0.018	2.2	ug/L	303	Standard
	Zn	66	2662.9	2.4	**3.2362**	0.107	3.3	ug/L	332	Standard
>	**Ge**	72	273380.7	0.7				ug/L	293924	Standard
	As	75	96.6	24.7	**0.1716**	0.031	18.2	ug/L	45	Standard
	Se	82	72.2	0.9	**0.9173**	0.012	1.4	ug/L	35	Standard
	Se-1	77	147.0	8.2	**0.3566**	0.234	65.8	ug/L	153	Standard
>	**Ga**	71	21.7	35.3				mg/L	25	Standard
	Rb	85	1856.8	6.6				ug/L	20	Standard
	Y	89	274031.3	1.7				ug/L	279578	Standard
>	**Rh**	103	28.3	40.8				ug/L	68	Standard
	Mo	98	380.6	1.2	**0.2092**	0.005	2.3	ug/L	56	Standard
	Ag	107	66.0	6.1	**-0.0036**	0.001	15.8	ug/L	199	Standard
	Cd	111	39.2	13.6	**0.0156**	0.003	20.8	mg/L	89	Standard
	Cd	114	79.9	41.2	**0.0117**	0.007	59.9	ug/L	150	Standard
>	**In**	115	478837.0	1.2				ug/L	458296	Standard
	Sn	118	561.7	15.4	**0.0479**	0.015	31.6	ug/L	385	Standard
	Sb	123	136.3	15.5	**0.0181**	0.004	24.3	ug/L	208	Standard
	Ba	135	33611.6	0.7	**15.5876**	0.278	1.8	ug/L	108	Standard
	Ce	140	281.7	6.2				ug/L	92	Standard
>	**Tb**	159	842482.3	2.1				ug/L	812006	Standard
	Ho	165	36.7	20.8				ug/L	7	Standard
	Tl	203	115.0	12.1	**0.0102**	0.002	20.2	ug/L	236	Standard
	Tl	205	75.0	54.6	**0.0146**	0.008	57.3	ug/L	43	Standard
	Pb	206	1290.1	2.8	**0.2338**	0.011	4.7	ug/L	266	Standard
	Pb	207	1076.0	2.9	**0.2095**	0.010	5.0	ug/L	206	Standard
	Pb	208	3821.5	1.6	**0.2170**	0.006	2.9	ug/L	668	Standard
	U	238	1305.1	2.5	**0.2709**	0.009	3.2	ug/L	32	Standard
>	**Bi**	209	407203.2	1.3				ug/L	377155	Standard

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Na	23	8.3	34.6	**-631.2576**	275.488	43.6	mg/L	2	Standard
Mg	24	1266.7	5.6	**3.3112**	0.196	5.9	mg/L	60	Standard
K	39	28.3	27.0	**0.1996**	0.161	80.4	mg/L	12	Standard
Ca	43	236.7	12.9	**145.9350**	21.788	14.9	mg/L	37	Standard
Fe	54	64.0	12.9	**0.0224**	0.018	79.7	mg/L	56	Standard
Fe	57	903.4	6.6	**1.5107**	0.471	31.2	mg/L	735	Standard
> **Sc-1**	45	21970.9	1.2				mg/L	22687	Standard
Cl	35	39634.5	2.0				ug/L	20516	Standard
Kr	83	2.7	21.7				ug/L	5	Standard
Br	81	3623.8	8.1				ug/L	570	Standard
P	31	12466.8	0.4				ug/L	7850	Standard
S	34	1565.1	6.6				ug/L	1375	Standard
Sr	88	200.0	21.4				ug/L	165	Standard
C	12	380.0	7.0				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	25.9	88.2				mg/L	6	Standard
Ho-1	165	36.7	20.8				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	13	Standard
I	127	10840.6	6.4				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		127.947	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.011	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.482
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.967
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, August 20, 2015 22:00:08
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	58793.9	1.8				ug/L	51673	Standard
	Be	9	36032.8	3.1	**47.8419**	2.117	4.4	ug/L	43	Standard
	Al	27	3612602.1	1.0	**46.1772**	1.061	2.3	ug/L	2157	Standard
	Sc	45	22099.4	1.3				ug/L	22687	Standard
	Ti	47	15963.7	1.3	**103.6601**	2.029	2.0	ug/L	43	Standard
	V	51	192989.6	1.5	**49.3445**	0.473	1.0	ug/L	1233	Standard
	Cr	52	224010.9	0.7	**48.6480**	0.543	1.1	ug/L	6387	Standard
	Cr	53	28161.2	1.9	**48.1256**	1.056	2.2	ug/L	1555	Standard
	Mn	55	150409.5	0.1	**54.7920**	0.416	0.8	ug/L	436	Standard
	Co	59	195908.1	0.3	**51.5008**	0.217	0.4	ug/L	236	Standard
	Ni	60	61559.5	0.6	**47.3927**	0.560	1.2	ug/L	204	Standard
	Cu	65	60985.5	1.1	**46.9681**	0.634	1.4	ug/L	303	Standard
	Zn	66	34467.5	1.5	**47.4485**	0.575	1.2	ug/L	332	Standard
>	Ge	72	272982.6	0.7				ug/L	293924	Standard
	As	75	36311.8	0.6	**47.5369**	0.171	0.4	ug/L	45	Standard
	Se	82	3101.9	0.9	**48.4622**	0.684	1.4	ug/L	35	Standard
	Se-1	77	2226.8	1.3	**44.8772**	0.953	2.1	ug/L	153	Standard
>	Ga	71	38.3	30.1				mg/L	25	Standard
	Rb	85	583.3	6.0				ug/L	20	Standard
	Y	89	261214.3	1.1				ug/L	279578	Standard
>	Rh	103	21.7	35.3				ug/L	68	Standard
	Mo	98	153200.2	1.0	**93.1214**	0.237	0.3	ug/L	56	Standard
	Ag	107	264279.3	1.5	**47.1812**	1.049	2.2	ug/L	199	Standard
	Cd	111	82177.6	1.4	**48.3523**	0.884	1.8	mg/L	89	Standard
	Cd	114	216604.9	3.4	**48.2476**	1.897	3.9	ug/L	150	Standard
>	In	115	465027.4	0.7				ug/L	458296	Standard
	Sn	118	244077.1	1.3	**44.5742**	0.901	2.0	ug/L	385	Standard
	Sb	123	218271.4	1.2	**49.5880**	0.933	1.9	ug/L	208	Standard
	Ba	135	99127.6	0.6	**47.3815**	0.610	1.3	ug/L	108	Standard
	Ce	140	80.0	0.0				ug/L	92	Standard
>	Tb	159	820878.2	1.0				ug/L	812006	Standard
	Ho	165	6.7	86.6				ug/L	7	Standard
	Tl	203	346582.8	1.6	**48.2188**	0.257	0.5	ug/L	236	Standard
	Tl	205	249350.0	0.1	**50.1149**	0.596	1.2	ug/L	43	Standard
	Pb	206	220236.1	0.5	**49.5768**	0.807	1.6	ug/L	266	Standard
	Pb	207	199295.5	0.8	**49.5606**	0.203	0.4	ug/L	206	Standard
	Pb	208	688133.1	0.9	**49.1341**	0.503	1.0	ug/L	668	Standard
	U	238	243316.6	1.1	**50.9366**	0.975	1.9	ug/L	32	Standard
>	Bi	209	404665.1	1.2				ug/L	377155	Standard

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Na	23	1.7	173.2	**-9.0799**	271.302	2987.9	mg/L	2	Standard
Mg	24	2081.8	6.1	**5.4755**	0.280	5.1	mg/L	60	Standard
K	39	223.3	8.5	**4.3265**	0.351	8.1	mg/L	12	Standard
Ca	43	51.7	20.1	**0.3517**	8.393	2386.8	mg/L	37	Standard
Fe	54	2225.8	1.7	**5.0431**	0.055	1.1	mg/L	56	Standard
Fe	57	1310.1	13.0	**5.3242**	1.705	32.0	mg/L	735	Standard
Sc-1	45	22099.4	1.3				mg/L	22687	Standard
Cl	35	28681.8	5.1				ug/L	20516	Standard
Kr	83	3.7	31.5				ug/L	5	Standard
Br	81	506.7	11.6				ug/L	570	Standard
P	31	10416.9	6.4				ug/L	7850	Standard
S	34	1580.1	1.4				ug/L	1375	Standard
Sr	88	180.0	19.4				ug/L	165	Standard
C	12	260.0	11.5				mg/L	173	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	23.3	107.9				mg/L	0	Standard
Dy	164	9.4	101.9				mg/L	6	Standard
Ho-1	165	6.7	86.6				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	570.0	6.3				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	95.684		
Al	27	92.354		
Sc	45			
Ti	47	103.660		
V	51	98.689		
Cr	52	97.296		
Cr	53			
Mn	55	109.584		
Co	59	103.002		
Ni	60	94.785		
Cu	65	93.936		
Zn	66	94.897		
Ge	72		92.875	
As	75	95.074		
Se	82	96.924		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	93.121		
Ag	107	94.362		
Cd	111	96.705		
Cd	114			
In	115			101.469
Sn	118	89.148		
Sb	123	99.176		
Ba	135	94.763		
Ce	140			
Tb	159			
Ho	165			
Tl	203	96.438		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.268		
U	238	101.873		
Bi	209			107.294
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, August 20, 2015 22:03:19
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57559.1	1.5				ug/L	51673	Standard
	Be	9	33.3	95.3	**-0.0199**	0.043	214.5	ug/L	43	Standard
	Al	27	14783.1	161.5	**0.1815**	0.310	170.6	ug/L	2157	Standard
	Sc	45	21870.8	2.9				ug/L	22687	Standard
	Ti	47	22.7	50.9	**0.0225**	0.079	350.9	ug/L	43	Standard
	V	51	751.6	8.9	**-0.0727**	0.019	26.4	ug/L	1233	Standard
	Cr	52	4768.1	4.0	**-0.1031**	0.050	48.3	ug/L	6387	Standard
	Cr	53	588.3	5.0	**-0.9290**	0.064	6.9	ug/L	1555	Standard
	Mn	55	445.3	7.5	**-0.0314**	0.012	37.1	ug/L	436	Standard
	Co	59	216.3	10.6	**0.0124**	0.006	50.4	ug/L	236	Standard
	Ni	60	82.7	71.6	**0.0243**	0.048	197.9	ug/L	204	Standard
	Cu	65	334.3	61.2	**-0.0043**	0.167	3854.4	ug/L	303	Standard
	Zn	66	256.7	49.4	**-0.0858**	0.186	216.9	ug/L	332	Standard
>	**Ge**	72	260368.2	0.9				ug/L	293924	Standard
	As	75	-8.1	453.3	**0.0346**	0.050	144.3	ug/L	45	Standard
	Se	82	18.2	18.9	**0.0857**	0.059	68.9	ug/L	35	Standard
	Se-1	77	79.3	13.6	**-1.0037**	0.242	24.1	ug/L	153	Standard
>	**Ga**	71	21.7	70.5				mg/L	25	Standard
	Rb	85	28.3	40.8				ug/L	20	Standard
	Y	89	264483.0	2.8				ug/L	279578	Standard
>	**Rh**	103	6.7	86.6				ug/L	68	Standard
	Mo	98	53.6	6.2	**0.0173**	0.002	11.0	ug/L	56	Standard
	Ag	107	105.0	5.0	**0.0039**	0.001	21.3	ug/L	199	Standard
	Cd	111	15.5	91.1	**0.0024**	0.008	349.9	mg/L	89	Standard
	Cd	114	9.8	129.9	**-0.0034**	0.003	84.9	ug/L	150	Standard
>	**In**	115	462079.8	0.6				ug/L	458296	Standard
	Sn	118	441.7	2.8	**0.0294**	0.003	8.6	ug/L	385	Standard
	Sb	123	725.8	5.2	**0.1539**	0.008	4.9	ug/L	208	Standard
	Ba	135	52.3	35.0	**0.0012**	0.009	728.6	ug/L	108	Standard
	Ce	140	31.7	71.2				ug/L	92	Standard
>	**Tb**	159	814002.8	0.7				ug/L	812006	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	30.7	66.2	**-0.0014**	0.003	207.3	ug/L	236	Standard
	Tl	205	16.7	69.3	**0.0029**	0.002	81.9	ug/L	43	Standard
	Pb	206	875.0	117.6	**0.1464**	0.238	162.9	ug/L	266	Standard
	Pb	207	667.0	120.6	**0.1130**	0.206	182.2	ug/L	206	Standard
	Pb	208	1579.7	89.4	**0.0608**	0.104	171.1	ug/L	668	Standard
	U	238	25.0	90.2	**0.0047**	0.005	103.1	ug/L	32	Standard
>	**Bi**	209	398413.9	1.0				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	42.1	**0.0061**	0.047	774.4	mg/L	60	Standard
K	39	8.3	91.7	**-0.2227**	0.168	75.5	mg/L	12	Standard
Ca	43	43.3	6.7	**-5.8108**	2.793	48.1	mg/L	37	Standard
Fe	54	41.2	39.9	**-0.0306**	0.037	119.5	mg/L	56	Standard
Fe	57	748.4	7.4	**0.0772**	0.614	795.5	mg/L	735	Standard
> **Sc-1**	45	21870.8	2.9				mg/L	22687	Standard
Cl	35	26252.1	1.5				ug/L	20516	Standard
Kr	83	3.7	15.7				ug/L	5	Standard
Br	81	473.3	6.8				ug/L	570	Standard
P	31	8572.4	0.6				ug/L	7850	Standard
S	34	1555.1	6.1				ug/L	1375	Standard
Sr	88	161.7	15.9				ug/L	165	Standard
C	12	250.0	28.0				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	16.0	35.2				mg/L	6	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	2190.2	3.2				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		88.583	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	100.826
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	105.637
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508063213
Sample Date/Time: Thursday, August 20, 2015 22:06:32
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59732.6	3.3				ug/L	51673	Standard
	Be	9	5.0	100.0	**-0.0586**	0.006	11.1	ug/L	43	Standard
	Al	27	10838166.9	0.6	**136.4543**	5.088	3.7	ug/L	2157	Standard
	Sc	45	23558.3	3.1				ug/L	22687	Standard
	Ti	47	58.3	12.9	**0.2497**	0.038	15.2	ug/L	43	Standard
	V	51	1569.7	5.4	**0.1317**	0.019	14.7	ug/L	1233	Standard
	Cr	52	7098.0	2.1	**0.3780**	0.042	11.0	ug/L	6387	Standard
	Cr	53	673.3	8.3	**-0.8167**	0.125	15.4	ug/L	1555	Standard
	Mn	55	792914.2	0.7	**292.3882**	10.455	3.6	ug/L	436	Standard
	Co	59	1909.8	3.7	**0.4595**	0.006	1.3	ug/L	236	Standard
	Ni	60	4651.4	2.8	**3.5729**	0.088	2.5	ug/L	204	Standard
	Cu	65	660.0	1.3	**0.2399**	0.022	9.1	ug/L	303	Standard
	Zn	66	2860.3	1.9	**3.5505**	0.051	1.4	ug/L	332	Standard
>	**Ge**	72	270664.9	2.9				ug/L	293924	Standard
	As	75	44.2	7.2	**0.1038**	0.006	5.6	ug/L	45	Standard
	Se	82	36.0	23.2	**0.3559**	0.132	37.0	ug/L	35	Standard
	Se-1	77	82.0	6.8	**-1.0116**	0.151	15.0	ug/L	153	Standard
>	**Ga**	71	40.0	69.6				mg/L	25	Standard
	Rb	85	751.7	9.0				ug/L	20	Standard
	Y	89	274891.6	3.5				ug/L	279578	Standard
>	**Rh**	103	26.7	65.8				ug/L	68	Standard
	Mo	98	902.7	4.1	**0.5264**	0.018	3.5	ug/L	56	Standard
	Ag	107	107.0	9.8	**0.0039**	0.002	45.8	ug/L	199	Standard
	Cd	111	61.0	23.0	**0.0286**	0.008	27.8	mg/L	89	Standard
	Cd	114	162.7	14.2	**0.0302**	0.005	16.0	ug/L	150	Standard
>	**In**	115	470846.2	1.0				ug/L	458296	Standard
	Sn	118	706.7	9.6	**0.0758**	0.013	17.1	ug/L	385	Standard
	Sb	123	395.9	7.6	**0.0768**	0.006	7.9	ug/L	208	Standard
	Ba	135	143335.8	1.0	**67.6721**	0.086	0.1	ug/L	108	Standard
	Ce	140	3840.5	6.4				ug/L	92	Standard
>	**Tb**	159	832257.6	2.1				ug/L	812006	Standard
	Ho	165	81.7	21.5				ug/L	7	Standard
	Tl	203	94.7	18.5	**0.0076**	0.002	30.4	ug/L	236	Standard
	Tl	205	75.0	37.1	**0.0148**	0.006	38.1	ug/L	43	Standard
	Pb	206	576.0	7.8	**0.0763**	0.011	14.4	ug/L	266	Standard
	Pb	207	516.7	4.8	**0.0735**	0.007	9.0	ug/L	206	Standard
	Pb	208	1792.4	1.9	**0.0753**	0.001	1.3	ug/L	668	Standard
	U	238	1046.4	0.6	**0.2212**	0.002	0.9	ug/L	32	Standard
>	**Bi**	209	399593.3	1.3				ug/L	377155	Standard

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Na	23	3.3	86.6	**-145.1643**	253.781	174.8	mg/L	2	Standard
Mg	24	805.0	11.2	**1.9236**	0.278	14.5	mg/L	60	Standard
K	39	40.0	12.5	**0.3898**	0.079	20.3	mg/L	12	Standard
Ca	43	240.0	9.1	**135.9172**	13.219	9.7	mg/L	37	Standard
Fe	54	64.2	47.5	**0.0123**	0.064	516.7	mg/L	56	Standard
Fe	57	885.0	5.6	**0.7858**	0.689	87.7	mg/L	735	Standard
> **Sc-1**	45	23558.3	3.1				mg/L	22687	Standard
Cl	35	31906.9	2.4				ug/L	20516	Standard
Kr	83	3.3	34.6				ug/L	5	Standard
Br	81	1966.8	12.0				ug/L	570	Standard
P	31	11714.5	2.4				ug/L	7850	Standard
S	34	1686.8	7.9				ug/L	1375	Standard
Sr	88	190.0	4.6				ug/L	165	Standard
C	12	290.0	13.8				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	0	Standard
Dy	164	127.4	15.7				mg/L	6	Standard
Ho-1	165	81.7	21.5				mg/L	7	Standard
Er	166	53.3	10.8				mg/L	13	Standard
I	127	29844.4	5.1				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.597	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.087	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.738
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.949
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508063214
Sample Date/Time: Thursday, August 20, 2015 22:09:42
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59123.5	2.3				ug/L	51673	Standard
	Be	9	13.3	21.7	**-0.0474**	0.004	7.6	ug/L	43	Standard
	Al	27	9962953.4	2.1	**126.6328**	1.197	0.9	ug/L	2157	Standard
	Sc	45	23498.2	3.6				ug/L	22687	Standard
	Ti	47	69.7	19.8	**0.3163**	0.083	26.4	ug/L	43	Standard
	V	51	1648.8	4.1	**0.1452**	0.023	15.7	ug/L	1233	Standard
	Cr	52	6749.5	1.0	**0.2739**	0.010	3.8	ug/L	6387	Standard
	Cr	53	636.7	6.7	**-0.9034**	0.076	8.5	ug/L	1555	Standard
	Mn	55	378819.5	1.0	**137.1509**	1.574	1.1	ug/L	436	Standard
	Co	59	1573.4	0.5	**0.3633**	0.006	1.7	ug/L	236	Standard
	Ni	60	1965.1	2.0	**1.4589**	0.025	1.7	ug/L	204	Standard
	Cu	65	731.7	3.1	**0.2858**	0.012	4.2	ug/L	303	Standard
	Zn	66	1802.8	2.5	**2.0245**	0.040	2.0	ug/L	332	Standard
>	**Ge**	72	275289.0	1.4				ug/L	293924	Standard
	As	75	57.2	61.2	**0.1200**	0.046	38.7	ug/L	45	Standard
	Se	82	24.5	40.7	**0.1681**	0.161	95.8	ug/L	35	Standard
	Se-1	77	82.0	8.0	**-1.0445**	0.117	11.2	ug/L	153	Standard
>	**Ga**	71	40.0	12.5				mg/L	25	Standard
	Rb	85	1228.4	6.6				ug/L	20	Standard
	Y	89	266098.3	1.3				ug/L	279578	Standard
>	**Rh**	103	31.7	24.1				ug/L	68	Standard
	Mo	98	221.9	6.9	**0.1204**	0.011	9.0	ug/L	56	Standard
	Ag	107	87.3	8.7	**0.0007**	0.002	218.0	ug/L	199	Standard
	Cd	111	48.2	14.1	**0.0217**	0.004	19.0	mg/L	89	Standard
	Cd	114	142.3	11.7	**0.0263**	0.003	12.7	ug/L	150	Standard
>	**In**	115	461903.4	1.6				ug/L	458296	Standard
	Sn	118	475.0	18.0	**0.0356**	0.016	44.1	ug/L	385	Standard
	Sb	123	190.8	9.7	**0.0316**	0.004	12.0	ug/L	208	Standard
	Ba	135	66622.2	0.8	**32.0558**	0.580	1.8	ug/L	108	Standard
	Ce	140	830.0	3.7				ug/L	92	Standard
>	**Tb**	159	833446.7	1.3				ug/L	812006	Standard
	Ho	165	30.0	57.7				ug/L	7	Standard
	Tl	203	57.0	3.5	**0.0022**	0.000	15.4	ug/L	236	Standard
	Tl	205	65.0	42.8	**0.0126**	0.006	44.2	ug/L	43	Standard
	Pb	206	434.7	6.1	**0.0431**	0.006	14.2	ug/L	266	Standard
	Pb	207	383.3	3.8	**0.0390**	0.004	11.2	ug/L	206	Standard
	Pb	208	1342.7	1.2	**0.0419**	0.002	4.2	ug/L	668	Standard
	U	238	1064.4	0.7	**0.2230**	0.001	0.6	ug/L	32	Standard
>	**Bi**	209	403202.3	0.8				ug/L	377155	Standard

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Na	23	1.7	173.2	**0.3237**	255.014	78792.5	mg/L	2	Standard
Mg	24	688.3	18.4	**1.6235**	0.254	15.6	mg/L	60	Standard
K	39	28.3	27.0	**0.1642**	0.167	101.7	mg/L	12	Standard
Ca	43	250.0	14.4	**143.9519**	27.649	19.2	mg/L	37	Standard
Fe	54	54.6	32.7	**-0.0077**	0.040	519.9	mg/L	56	Standard
Fe	57	925.0	7.5	**1.1606**	0.775	66.8	mg/L	735	Standard
> **Sc-1**	45	23498.2	3.6				mg/L	22687	Standard
Cl	35	31846.1	1.9				ug/L	20516	Standard
Kr	83	2.7	21.7				ug/L	5	Standard
Br	81	2233.5	14.7				ug/L	570	Standard
P	31	12640.3	13.6				ug/L	7850	Standard
S	34	1573.4	5.4				ug/L	1375	Standard
Sr	88	185.0	9.7				ug/L	165	Standard
C	12	340.0	11.8				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	38.6	3.3				mg/L	6	Standard
Ho-1	165	30.0	57.7				mg/L	7	Standard
Er	166	30.0	88.2				mg/L	13	Standard
I	127	19742.9	3.1				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.419	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.660	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.787
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.906
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1508063214
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Method 6020 - Summary Report

Sample ID: L1508063215
Sample Date/Time: Thursday, August 20, 2015 22:12:54
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59336.0	1.3				ug/L	51673	Standard
	Be	9	20.0	50.0	**-0.0388**	0.013	33.3	ug/L	43	Standard
	Al	27	101178745.2	1.6	**1281.5186**	22.195	1.7	ug/L	2157	Standard
	Sc	45	20889.4	4.6				ug/L	22687	Standard
	Ti	47	59.3	10.2	**0.2764**	0.040	14.4	ug/L	43	Standard
	V	51	1949.9	6.4	**0.2555**	0.032	12.5	ug/L	1233	Standard
	Cr	52	6628.8	2.0	**0.3468**	0.032	9.1	ug/L	6387	Standard
	Cr	53	5612.7	4.7	**8.5589**	0.507	5.9	ug/L	1555	Standard
	Mn	55	20732.2	0.5	**7.8264**	0.069	0.9	ug/L	436	Standard
	Co	59	3271.7	1.3	**0.8646**	0.015	1.8	ug/L	236	Standard
	Ni	60	7443.2	1.2	**6.0316**	0.053	0.9	ug/L	204	Standard
	Cu	65	2233.2	3.7	**1.5560**	0.067	4.3	ug/L	303	Standard
	Zn	66	2973.0	4.1	**3.9170**	0.191	4.9	ug/L	332	Standard
>	**Ge**	72	257742.8	0.6				ug/L	293924	Standard
	As	75	681.8	4.5	**0.9898**	0.037	3.7	ug/L	45	Standard
	Se	82	340.4	3.7	**5.4430**	0.225	4.1	ug/L	35	Standard
	Se-1	77	680.3	1.4	**12.6369**	0.137	1.1	ug/L	153	Standard
>	**Ga**	71	38.3	19.9				mg/L	25	Standard
	Rb	85	4175.6	1.8				ug/L	20	Standard
	Y	89	270870.3	3.7				ug/L	279578	Standard
>	**Rh**	103	31.7	36.5				ug/L	68	Standard
	Mo	98	320.4	1.7	**0.1755**	0.001	0.5	ug/L	56	Standard
	Ag	107	91.3	18.7	**0.0010**	0.003	298.4	ug/L	199	Standard
	Cd	111	90.6	8.4	**0.0455**	0.004	8.2	mg/L	89	Standard
	Cd	114	252.5	26.0	**0.0495**	0.014	27.9	ug/L	150	Standard
>	**In**	115	474035.7	1.3				ug/L	458296	Standard
	Sn	118	465.0	13.0	**0.0315**	0.010	31.6	ug/L	385	Standard
	Sb	123	203.5	5.7	**0.0334**	0.002	6.7	ug/L	208	Standard
	Ba	135	12784.4	1.2	**5.9734**	0.006	0.1	ug/L	108	Standard
	Ce	140	1150.0	3.3				ug/L	92	Standard
>	**Tb**	159	813847.5	2.2				ug/L	812006	Standard
	Ho	165	26.7	21.7				ug/L	7	Standard
	Tl	203	111.3	16.3	**0.0108**	0.003	25.9	ug/L	236	Standard
	Tl	205	58.3	9.9	**0.0120**	0.001	10.8	ug/L	43	Standard
	Pb	206	550.3	7.5	**0.0773**	0.010	12.3	ug/L	266	Standard
	Pb	207	439.7	4.4	**0.0602**	0.004	7.5	ug/L	206	Standard
	Pb	208	1528.7	4.0	**0.0623**	0.004	6.8	ug/L	668	Standard
	U	238	2213.8	3.4	**0.4946**	0.014	2.8	ug/L	32	Standard
>	**Bi**	209	378582.5	0.6				ug/L	377155	Standard

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Na	23	15.0	33.3	**-1323.8199**	475.601	35.9	mg/L	2	Standard
Mg	24	11507.7	2.8	**32.6259**	2.469	7.6	mg/L	60	Standard
K	39	121.7	8.6	**2.3321**	0.331	14.2	mg/L	12	Standard
Ca	43	1208.4	3.8	**960.5070**	36.409	3.8	mg/L	37	Standard
Fe	54	79.3	44.5	**0.0658**	0.079	120.7	mg/L	56	Standard
Fe	57	1583.4	5.1	**8.7896**	0.926	10.5	mg/L	735	Standard
> **Sc-1**	45	20889.4	4.6				mg/L	22687	Standard
Cl	35	138905.7	5.3				ug/L	20516	Standard
Kr	83	2.3	65.5				ug/L	5	Standard
Br	81	37108.8	3.6				ug/L	570	Standard
P	31	11329.2	6.3				ug/L	7850	Standard
S	34	1741.8	7.0				ug/L	1375	Standard
Sr	88	216.7	15.7				ug/L	165	Standard
C	12	350.0	23.4				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	24.7				mg/L	0	Standard
Dy	164	38.4	50.2				mg/L	6	Standard
Ho-1	165	26.7	21.7				mg/L	7	Standard
Er	166	33.3	62.5				mg/L	13	Standard
I	127	37148.8	2.9				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.830	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		87.690	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.434
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.378
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1508063216
Sample Date/Time: Thursday, August 20, 2015 22:16:06
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63225.0	2.7				ug/L	51673	Standard
	Be	9	18.3	56.8	**-0.0426**	0.012	28.5	ug/L	43	Standard
	Al	27	34167954.7	1.6	**406.3616**	15.024	3.7	ug/L	2157	Standard
	Sc	45	20859.4	2.4				ug/L	22687	Standard
	Ti	47	56.0	13.9	**0.2412**	0.050	20.8	ug/L	43	Standard
	V	51	1641.5	10.1	**0.1576**	0.045	28.8	ug/L	1233	Standard
	Cr	52	6026.2	2.9	**0.1597**	0.036	22.5	ug/L	6387	Standard
	Cr	53	2498.5	6.8	**2.5373**	0.344	13.6	ug/L	1555	Standard
	Mn	55	13915.1	1.0	**5.0163**	0.087	1.7	ug/L	436	Standard
	Co	59	2965.0	1.5	**0.7530**	0.018	2.4	ug/L	236	Standard
	Ni	60	4605.0	1.9	**3.5967**	0.068	1.9	ug/L	204	Standard
	Cu	65	1203.7	2.5	**0.6803**	0.028	4.1	ug/L	303	Standard
	Zn	66	2023.1	1.5	**2.4242**	0.055	2.3	ug/L	332	Standard
>	**Ge**	72	266161.5	0.8				ug/L	293924	Standard
	As	75	546.0	7.7	**0.7781**	0.060	7.7	ug/L	45	Standard
	Se	82	236.9	6.3	**3.6006**	0.272	7.6	ug/L	35	Standard
	Se-1	77	293.7	6.8	**3.6609**	0.410	11.2	ug/L	153	Standard
>	**Ga**	71	33.3	34.6				mg/L	25	Standard
	Rb	85	2445.2	3.6				ug/L	20	Standard
	Y	89	268786.9	1.7				ug/L	279578	Standard
>	**Rh**	103	51.7	20.1				ug/L	68	Standard
	Mo	98	351.9	6.5	**0.1979**	0.014	7.1	ug/L	56	Standard
	Ag	107	81.3	12.8	**-0.0005**	0.002	358.5	ug/L	199	Standard
	Cd	111	46.6	5.4	**0.0205**	0.001	7.0	mg/L	89	Standard
	Cd	114	115.5	32.9	**0.0201**	0.008	41.8	ug/L	150	Standard
>	**In**	115	466190.2	0.3				ug/L	458296	Standard
	Sn	118	478.3	10.6	**0.0354**	0.009	26.2	ug/L	385	Standard
	Sb	123	171.8	2.2	**0.0270**	0.001	3.1	ug/L	208	Standard
	Ba	135	26833.4	0.2	**12.7758**	0.056	0.4	ug/L	108	Standard
	Ce	140	1095.0	13.5				ug/L	92	Standard
>	**Tb**	159	828799.8	0.5				ug/L	812006	Standard
	Ho	165	58.3	21.6				ug/L	7	Standard
	Tl	203	66.7	12.5	**0.0038**	0.001	32.9	ug/L	236	Standard
	Tl	205	46.7	40.6	**0.0092**	0.004	42.3	ug/L	43	Standard
	Pb	206	519.0	2.6	**0.0654**	0.003	4.6	ug/L	266	Standard
	Pb	207	405.0	5.8	**0.0472**	0.005	11.3	ug/L	206	Standard
	Pb	208	1477.4	2.6	**0.0544**	0.004	6.6	ug/L	668	Standard
	U	238	3132.0	2.7	**0.6753**	0.014	2.1	ug/L	32	Standard
>	**Bi**	209	392472.3	0.8				ug/L	377155	Standard

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Na	23	16.7	45.8	**-1478.1682**	705.919	47.8	mg/L	2	Standard
Mg	24	2615.2	4.1	**7.3316**	0.446	6.1	mg/L	60	Standard
K	39	48.3	39.2	**0.6752**	0.395	58.6	mg/L	12	Standard
Ca	43	738.4	12.7	**571.2308**	70.577	12.4	mg/L	37	Standard
Fe	54	70.7	11.4	**0.0474**	0.023	49.4	mg/L	56	Standard
Fe	57	1195.0	2.2	**4.9033**	0.359	7.3	mg/L	735	Standard
> **Sc-1**	45	20859.4	2.4				mg/L	22687	Standard
Cl	35	83271.6	1.4				ug/L	20516	Standard
Kr	83	4.7	53.9				ug/L	5	Standard
Br	81	24025.7	1.2				ug/L	570	Standard
P	31	11736.2	5.2				ug/L	7850	Standard
S	34	1553.4	3.4				ug/L	1375	Standard
Sr	88	208.3	25.9				ug/L	165	Standard
C	12	390.0	24.5				mg/L	173	Standard
N	14	6.7	173.2				mg/L	0	Standard
Hg	202	36.7	56.8				mg/L	0	Standard
Dy	164	61.1	41.3				mg/L	6	Standard
Ho-1	165	58.3	21.6				mg/L	7	Standard
Er	166	46.7	24.7				mg/L	13	Standard
I	127	11401.0	1.6				mg/L	3795	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		122.356	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		90.554	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.723
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.061
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1508063217
Sample Date/Time: Thursday, August 20, 2015 22:19:17
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63603.4	5.1				ug/L	51673	Standard
	Be	9	15.0	33.3	**-0.0468**	0.005	11.2	ug/L	43	Standard
	Al	27	36107208.8	5.2	**426.7940**	16.302	3.8	ug/L	2157	Standard
	Sc	45	21450.2	1.8				ug/L	22687	Standard
	Ti	47	77.3	4.9	**0.3992**	0.035	8.7	ug/L	43	Standard
	V	51	1319.8	8.5	**0.0827**	0.024	29.5	ug/L	1233	Standard
	Cr	52	6288.6	2.0	**0.2622**	0.021	8.0	ug/L	6387	Standard
	Cr	53	2546.9	1.8	**2.7622**	0.076	2.8	ug/L	1555	Standard
	Mn	55	1925105.6	0.5	**743.2416**	14.466	1.9	ug/L	436	Standard
	Co	59	6898.2	0.8	**1.8699**	0.037	2.0	ug/L	236	Standard
	Ni	60	5386.0	1.5	**4.3403**	0.058	1.3	ug/L	204	Standard
	Cu	65	1197.0	2.3	**0.7030**	0.014	2.0	ug/L	303	Standard
	Zn	66	2823.6	0.9	**3.6853**	0.084	2.3	ug/L	332	Standard
>	**Ge**	72	258503.7	1.8				ug/L	293924	Standard
	As	75	364.3	8.9	**0.5491**	0.050	9.1	ug/L	45	Standard
	Se	82	189.0	1.6	**2.9183**	0.076	2.6	ug/L	35	Standard
	Se-1	77	272.7	7.8	**3.3836**	0.564	16.7	ug/L	153	Standard
>	**Ga**	71	56.7	13.5				mg/L	25	Standard
	Rb	85	4699.1	3.6				ug/L	20	Standard
	Y	89	260651.2	0.1				ug/L	279578	Standard
>	**Rh**	103	121.7	19.4				ug/L	68	Standard
	Mo	98	638.5	7.6	**0.3720**	0.032	8.6	ug/L	56	Standard
	Ag	107	120.0	60.8	**0.0064**	0.013	204.2	ug/L	199	Standard
	Cd	111	47.0	17.9	**0.0208**	0.005	23.3	mg/L	89	Standard
	Cd	114	90.1	27.8	**0.0144**	0.005	37.6	ug/L	150	Standard
>	**In**	115	465985.0	0.7				ug/L	458296	Standard
	Sn	118	616.7	6.3	**0.0607**	0.007	12.3	ug/L	385	Standard
	Sb	123	248.8	47.1	**0.0445**	0.027	60.4	ug/L	208	Standard
	Ba	135	23972.3	0.7	**11.4164**	0.122	1.1	ug/L	108	Standard
	Ce	140	1428.4	5.3				ug/L	92	Standard
>	**Tb**	159	829895.0	2.1				ug/L	812006	Standard
	Ho	165	50.0	20.0				ug/L	7	Standard
	Tl	203	123.0	1.6	**0.0120**	0.000	0.8	ug/L	236	Standard
	Tl	205	70.0	50.0	**0.0141**	0.007	50.6	ug/L	43	Standard
	Pb	206	1559.1	106.6	**0.3071**	0.383	124.8	ug/L	266	Standard
	Pb	207	1335.1	112.8	**0.2859**	0.384	134.3	ug/L	206	Standard
	Pb	208	3317.5	85.6	**0.1904**	0.207	108.8	ug/L	668	Standard
	U	238	8242.9	1.1	**1.7917**	0.037	2.0	ug/L	32	Standard
>	**Bi**	209	389617.2	1.1				ug/L	377155	Standard

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Na	23	13.3	57.3	**-1129.0964**	730.585	64.7	mg/L	2	Standard
Mg	24	6791.5	3.0	**18.6600**	0.258	1.4	mg/L	60	Standard
K	39	58.3	26.2	**0.8673**	0.320	36.9	mg/L	12	Standard
Ca	43	721.7	12.2	**540.9097**	62.999	11.6	mg/L	37	Standard
Fe	54	273.6	9.6	**0.5283**	0.069	13.1	mg/L	56	Standard
Fe	57	1186.7	4.7	**4.4886**	0.518	11.5	mg/L	735	Standard
> **Sc-1**	45	21450.2	1.8				mg/L	22687	Standard
Cl	35	75842.2	3.5				ug/L	20516	Standard
Kr	83	5.3	47.2				ug/L	5	Standard
Br	81	17693.7	4.6				ug/L	570	Standard
P	31	11561.1	2.2				ug/L	7850	Standard
S	34	1451.7	3.5				ug/L	1375	Standard
Sr	88	316.7	7.8				ug/L	165	Standard
C	12	476.7	12.3				mg/L	173	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	0	Standard
Dy	164	64.8	49.1				mg/L	6	Standard
Ho-1	165	50.0	20.0				mg/L	7	Standard
Er	166	40.0	25.0				mg/L	13	Standard
I	127	8409.0	1.7				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.088	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		87.949	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.678
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.304
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508063218
Sample Date/Time: Thursday, August 20, 2015 22:22:29
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60263.0	3.7				ug/L	51673	Standard
	Be	9	13.3	21.7	**-0.0476**	0.004	9.0	ug/L	43	Standard
	Al	27	5315291.7	4.6	**66.2590**	0.866	1.3	ug/L	2157	Standard
	Sc	45	22336.5	3.2				ug/L	22687	Standard
	Ti	47	52.3	34.7	**0.2147**	0.121	56.2	ug/L	43	Standard
	V	51	1308.7	8.0	**0.0675**	0.028	41.1	ug/L	1233	Standard
	Cr	52	6489.1	1.7	**0.2557**	0.031	12.3	ug/L	6387	Standard
	Cr	53	886.7	6.0	**-0.4192**	0.092	21.8	ug/L	1555	Standard
	Mn	55	72434.8	1.4	**26.7818**	0.412	1.5	ug/L	436	Standard
	Co	59	772.7	5.1	**0.1599**	0.011	6.9	ug/L	236	Standard
	Ni	60	1102.0	2.9	**0.8226**	0.024	3.0	ug/L	204	Standard
	Cu	65	553.0	2.0	**0.1603**	0.010	6.2	ug/L	303	Standard
	Zn	66	1548.4	2.7	**1.7328**	0.061	3.5	ug/L	332	Standard
>	**Ge**	72	267924.1	0.4				ug/L	293924	Standard
	As	75	106.3	11.4	**0.1871**	0.016	8.6	ug/L	45	Standard
	Se	82	37.6	29.4	**0.3862**	0.174	45.1	ug/L	35	Standard
	Se-1	77	109.0	4.6	**-0.4072**	0.100	24.5	ug/L	153	Standard
>	**Ga**	71	30.0	60.1				mg/L	25	Standard
	Rb	85	1080.0	6.0				ug/L	20	Standard
	Y	89	275806.0	3.3				ug/L	279578	Standard
>	**Rh**	103	20.0	43.3				ug/L	68	Standard
	Mo	98	552.0	7.9	**0.3168**	0.021	6.7	ug/L	56	Standard
	Ag	107	68.7	11.1	**-0.0028**	0.002	56.9	ug/L	199	Standard
	Cd	111	21.2	15.1	**0.0055**	0.002	32.4	mg/L	89	Standard
	Cd	114	71.5	31.7	**0.0101**	0.005	46.1	ug/L	150	Standard
>	**In**	115	469250.7	2.3				ug/L	458296	Standard
	Sn	118	501.7	4.1	**0.0391**	0.003	8.9	ug/L	385	Standard
	Sb	123	122.3	10.9	**0.0156**	0.004	23.2	ug/L	208	Standard
	Ba	135	45020.5	1.6	**21.3140**	0.237	1.1	ug/L	108	Standard
	Ce	140	493.3	6.5				ug/L	92	Standard
>	**Tb**	159	817882.1	0.8				ug/L	812006	Standard
	Ho	165	35.0	24.7				ug/L	7	Standard
	Tl	203	50.0	16.0	**0.0013**	0.001	86.4	ug/L	236	Standard
	Tl	205	45.0	19.2	**0.0087**	0.002	21.0	ug/L	43	Standard
	Pb	206	515.7	2.1	**0.0632**	0.003	4.9	ug/L	266	Standard
	Pb	207	432.0	6.6	**0.0528**	0.006	12.1	ug/L	206	Standard
	Pb	208	1560.4	0.8	**0.0592**	0.001	1.0	ug/L	668	Standard
	U	238	352.3	4.8	**0.0745**	0.003	4.2	ug/L	32	Standard
>	**Bi**	209	397159.8	0.8				ug/L	377155	Standard

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Na	23	5.0	100.0	**-305.5647**	457.253	149.6	mg/L	2	Standard
Mg	24	1340.1	2.3	**3.4502**	0.036	1.1	mg/L	60	Standard
K	39	16.7	17.3	**-0.0532**	0.072	135.3	mg/L	12	Standard
Ca	43	148.3	28.1	**75.4578**	36.246	48.0	mg/L	37	Standard
Fe	54	137.6	23.3	**0.1908**	0.084	43.9	mg/L	56	Standard
Fe	57	833.4	7.4	**0.7276**	0.720	99.0	mg/L	735	Standard
> **Sc-1**	45	22336.5	3.2				mg/L	22687	Standard
Cl	35	33677.4	3.7				ug/L	20516	Standard
Kr	83	2.3	49.5				ug/L	5	Standard
Br	81	1726.8	9.9				ug/L	570	Standard
P	31	11129.1	1.9				ug/L	7850	Standard
S	34	1473.4	8.6				ug/L	1375	Standard
Sr	88	188.3	5.5				ug/L	165	Standard
C	12	360.0	16.7				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	26.2	56.5				mg/L	6	Standard
Ho-1	165	35.0	24.7				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	5225.9	2.5				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.624	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		91.154	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.390
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.304
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508063219
Sample Date/Time: Thursday, August 20, 2015 22:25:40
Number of Replicates: 3
Autosampler Position: 346
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60915.9	6.2				ug/L	51673	Standard
	Be	9	8.3	91.7	**-0.0545**	0.009	17.1	ug/L	43	Standard
	Al	27	5476289.3	2.2	**67.6739**	3.188	4.7	ug/L	2157	Standard
	Sc	45	23373.0	0.9				ug/L	22687	Standard
	Ti	47	50.0	5.3	**0.1946**	0.016	8.2	ug/L	43	Standard
	V	51	1577.5	4.5	**0.1323**	0.017	13.0	ug/L	1233	Standard
	Cr	52	6903.6	1.5	**0.3286**	0.024	7.4	ug/L	6387	Standard
	Cr	53	863.4	8.5	**-0.4828**	0.126	26.1	ug/L	1555	Standard
	Mn	55	2140.8	2.1	**0.5846**	0.014	2.5	ug/L	436	Standard
	Co	59	684.7	4.7	**0.1339**	0.009	6.6	ug/L	236	Standard
	Ni	60	907.4	2.6	**0.6602**	0.019	2.9	ug/L	204	Standard
	Cu	65	539.0	4.8	**0.1435**	0.020	14.2	ug/L	303	Standard
	Zn	66	1532.1	0.2	**1.6804**	0.005	0.3	ug/L	332	Standard
>	**Ge**	72	271581.7	0.4				ug/L	293924	Standard
	As	75	128.1	24.1	**0.2140**	0.041	19.1	ug/L	45	Standard
	Se	82	34.2	17.8	**0.3251**	0.099	30.3	ug/L	35	Standard
	Se-1	77	101.3	14.9	**-0.6037**	0.328	54.3	ug/L	153	Standard
>	**Ga**	71	15.0	66.7				mg/L	25	Standard
	Rb	85	1185.0	8.2				ug/L	20	Standard
	Y	89	273213.9	2.4				ug/L	279578	Standard
>	**Rh**	103	21.7	58.1				ug/L	68	Standard
	Mo	98	199.8	7.5	**0.1038**	0.009	8.8	ug/L	56	Standard
	Ag	107	81.3	10.3	**-0.0007**	0.001	195.0	ug/L	199	Standard
	Cd	111	31.6	11.0	**0.0115**	0.002	17.7	mg/L	89	Standard
	Cd	114	81.3	32.6	**0.0122**	0.006	46.8	ug/L	150	Standard
>	**In**	115	473179.0	0.5				ug/L	458296	Standard
	Sn	118	448.3	12.9	**0.0288**	0.011	37.4	ug/L	385	Standard
	Sb	123	105.7	9.5	**0.0116**	0.002	20.1	ug/L	208	Standard
	Ba	135	22515.7	1.0	**10.5574**	0.059	0.6	ug/L	108	Standard
	Ce	140	248.3	11.4				ug/L	92	Standard
>	**Tb**	159	845305.6	1.7				ug/L	812006	Standard
	Ho	165	16.7	17.3				ug/L	7	Standard
	Tl	203	28.0	10.7	**-0.0018**	0.000	20.5	ug/L	236	Standard
	Tl	205	26.7	10.8	**0.0049**	0.001	14.0	ug/L	43	Standard
	Pb	206	429.0	3.5	**0.0422**	0.003	7.0	ug/L	266	Standard
	Pb	207	329.3	1.3	**0.0259**	0.003	10.6	ug/L	206	Standard
	Pb	208	1322.0	2.7	**0.0407**	0.001	3.1	ug/L	668	Standard
	U	238	291.7	5.0	**0.0609**	0.002	3.4	ug/L	32	Standard
>	**Bi**	209	401594.4	2.1				ug/L	377155	Standard

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Na	23	1.7	173.2	**0.1964**	255.235	129985.2	mg/L	2	Standard
Mg	24	1036.7	9.7	**2.5219**	0.245	9.7	mg/L	60	Standard
K	39	45.0	11.1	**0.4983**	0.108	21.7	mg/L	12	Standard
Ca	43	160.0	5.4	**78.2098**	5.564	7.1	mg/L	37	Standard
Fe	54	79.5	38.0	**0.0473**	0.065	136.9	mg/L	56	Standard
Fe	57	846.7	5.0	**0.4889**	0.314	64.2	mg/L	735	Standard
> **Sc-1**	45	23373.0	0.9				mg/L	22687	Standard
Cl	35	32142.1	1.0				ug/L	20516	Standard
Kr	83	3.7	83.3				ug/L	5	Standard
Br	81	1350.1	13.0				ug/L	570	Standard
P	31	10757.2	0.9				ug/L	7850	Standard
S	34	1518.4	9.1				ug/L	1375	Standard
Sr	88	178.3	37.3				ug/L	165	Standard
C	12	320.0	29.8				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	43.3				mg/L	0	Standard
Dy	164	21.9	99.9				mg/L	6	Standard
Ho-1	165	16.7	17.3				mg/L	7	Standard
Er	166	30.0	100.0				mg/L	13	Standard
I	127	6434.7	2.3				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.887	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.399	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.248
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.480
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, August 20, 2015 22:28:53
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	57328.3	3.6				ug/L	51673	Standard
	Be	9	34191.9	3.1	**46.5644**	1.765	3.8	ug/L	43	Standard
	Al	27	3612602.1	1.0	**47.3800**	1.448	3.1	ug/L	2157	Standard
	Sc	45	22899.0	2.8				ug/L	22687	Standard
	Ti	47	16339.1	0.8	**107.5077**	1.976	1.8	ug/L	43	Standard
	V	51	190717.0	1.8	**49.4061**	0.389	0.8	ug/L	1233	Standard
	Cr	52	225376.6	0.8	**49.6189**	0.952	1.9	ug/L	6387	Standard
	Cr	53	28511.8	2.8	**49.4121**	0.919	1.9	ug/L	1555	Standard
	Mn	55	151353.9	0.5	**55.8680**	0.328	0.6	ug/L	436	Standard
	Co	59	194107.1	0.6	**51.7050**	0.764	1.5	ug/L	236	Standard
	Ni	60	62085.0	1.8	**48.4243**	0.393	0.8	ug/L	204	Standard
	Cu	65	61327.5	0.5	**47.8603**	0.290	0.6	ug/L	303	Standard
	Zn	66	35034.5	1.3	**48.8789**	0.137	0.3	ug/L	332	Standard
>	Ge	72	269427.6	1.1				ug/L	293924	Standard
	As	75	36219.8	0.5	**48.0445**	0.470	1.0	ug/L	45	Standard
	Se	82	3112.5	0.3	**49.2746**	0.506	1.0	ug/L	35	Standard
	Se-1	77	2287.2	2.7	**46.8044**	0.813	1.7	ug/L	153	Standard
>	Ga	71	36.7	28.4				mg/L	25	Standard
	Rb	85	528.3	11.1				ug/L	20	Standard
	Y	89	262900.0	1.6				ug/L	279578	Standard
>	Rh	103	28.3	66.8				ug/L	68	Standard
	Mo	98	148558.0	0.2	**92.4969**	1.547	1.7	ug/L	56	Standard
	Ag	107	260091.8	1.7	**47.5585**	1.138	2.4	ug/L	199	Standard
	Cd	111	78411.1	1.3	**47.2515**	0.673	1.4	mg/L	89	Standard
	Cd	114	206200.1	1.6	**47.0325**	0.201	0.4	ug/L	150	Standard
>	In	115	454063.0	1.5				ug/L	458296	Standard
	Sn	118	233141.1	3.1	**43.6196**	1.997	4.6	ug/L	385	Standard
	Sb	123	211637.8	1.7	**49.2468**	1.233	2.5	ug/L	208	Standard
	Ba	135	98202.9	0.6	**48.0786**	0.842	1.8	ug/L	108	Standard
	Ce	140	80.0	16.5				ug/L	92	Standard
>	Tb	159	817990.8	0.6				ug/L	812006	Standard
	Ho	165	13.3	21.7				ug/L	7	Standard
	Tl	203	340343.3	0.9	**47.7736**	0.647	1.4	ug/L	236	Standard
	Tl	205	240412.9	2.1	**48.7440**	1.107	2.3	ug/L	43	Standard
	Pb	206	214624.3	1.5	**48.7323**	0.367	0.8	ug/L	266	Standard
	Pb	207	193220.7	1.3	**48.4746**	0.771	1.6	ug/L	206	Standard
	Pb	208	673411.8	0.7	**48.5108**	0.881	1.8	ug/L	668	Standard
	U	238	234287.9	0.4	**49.4767**	0.501	1.0	ug/L	32	Standard
>	Bi	209	401128.7	1.3				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	2010.1	3.0	**5.1003**	0.239	4.7	mg/L	60	Standard
K	39	211.7	14.2	**3.9159**	0.503	12.8	mg/L	12	Standard
Ca	43	51.7	24.4	**-1.1912**	8.873	744.9	mg/L	37	Standard
Fe	54	2143.4	3.6	**4.6803**	0.214	4.6	mg/L	56	Standard
Fe	57	1323.4	4.4	**5.0023**	0.307	6.1	mg/L	735	Standard
Sc-1	45	22899.0	2.8				mg/L	22687	Standard
Cl	35	26463.8	5.8				ug/L	20516	Standard
Kr	83	4.3	35.3				ug/L	5	Standard
Br	81	476.7	25.4				ug/L	570	Standard
P	31	9644.7	1.6				ug/L	7850	Standard
S	34	1666.8	5.9				ug/L	1375	Standard
Sr	88	161.7	14.6				ug/L	165	Standard
C	12	250.0	13.9				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	49.5				mg/L	0	Standard
Dy	164	22.4	69.0				mg/L	6	Standard
Ho-1	165	13.3	21.7				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	503.3	16.8				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	93.129		
Al	27	94.760		
Sc	45			
Ti	47	107.508		
V	51	98.812		
Cr	52	99.238		
Cr	53			
Mn	55	111.736		
Co	59	103.410		
Ni	60	96.849		
Cu	65	95.721		
Zn	66	97.758		
Ge	72		91.666	
As	75	96.089		
Se	82	98.549		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	92.497		
Ag	107	95.117		
Cd	111	94.503		
Cd	114			
> In	115			99.076
Sn	118	87.239		
Sb	123	98.494		
Ba	135	96.157		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	95.547		
Tl	205			
Pb	206			
Pb	207			
Pb	208	97.022		
U	238	98.953		
> Bi	209			106.356
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Mn	55	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, August 20, 2015 22:32:05
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53178.2	3.0				ug/L	51673	Standard
	Be	9	10.0	100.0	**-0.0505**	0.014	28.3	ug/L	43	Standard
	Al	27	2628.7	86.0	**0.0262**	0.031	116.5	ug/L	2157	Standard
	Sc	45	21804.0	3.3				ug/L	22687	Standard
	Ti	47	16.3	28.9	**-0.0235**	0.031	131.8	ug/L	43	Standard
	V	51	802.8	8.6	**-0.0641**	0.017	25.9	ug/L	1233	Standard
	Cr	52	4515.0	2.6	**-0.1871**	0.022	11.6	ug/L	6387	Standard
	Cr	53	468.3	8.9	**-1.1744**	0.069	5.9	ug/L	1555	Standard
	Mn	55	500.0	5.0	**-0.0149**	0.010	69.9	ug/L	436	Standard
	Co	59	224.3	13.7	**0.0132**	0.008	63.3	ug/L	236	Standard
	Ni	60	47.7	16.8	**-0.0050**	0.006	119.7	ug/L	204	Standard
	Cu	65	205.7	9.2	**-0.1130**	0.016	13.9	ug/L	303	Standard
	Zn	66	199.0	1.8	**-0.1769**	0.004	2.3	ug/L	332	Standard
>	**Ge**	72	266630.3	0.9				ug/L	293924	Standard
	As	75	-33.6	30.4	**0.0005**	0.014	3000.8	ug/L	45	Standard
	Se	82	12.9	8.6	**-0.0066**	0.016	243.4	ug/L	35	Standard
	Se-1	77	76.7	11.1	**-1.1044**	0.179	16.2	ug/L	153	Standard
>	**Ga**	71	28.3	27.0				mg/L	25	Standard
	Rb	85	21.7	26.6				ug/L	20	Standard
	Y	89	257294.8	1.2				ug/L	279578	Standard
>	**Rh**	103	13.3	142.0				ug/L	68	Standard
	Mo	98	55.2	20.1	**0.0204**	0.007	33.7	ug/L	56	Standard
	Ag	107	105.3	12.4	**0.0052**	0.002	45.2	ug/L	199	Standard
	Cd	111	7.2	34.7	**-0.0022**	0.002	73.6	mg/L	89	Standard
	Cd	114	15.4	82.1	**-0.0019**	0.003	156.6	ug/L	150	Standard
>	**In**	115	433391.9	1.4				ug/L	458296	Standard
	Sn	118	421.7	26.0	**0.0310**	0.023	72.7	ug/L	385	Standard
	Sb	123	676.5	6.3	**0.1529**	0.010	6.3	ug/L	208	Standard
	Ba	135	39.7	10.5	**-0.0036**	0.002	64.5	ug/L	108	Standard
	Ce	140	18.3	15.7				ug/L	92	Standard
>	**Tb**	159	786752.3	3.8				ug/L	812006	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	18.0	5.6	**-0.0031**	0.000	4.4	ug/L	236	Standard
	Tl	205	25.0	87.2	**0.0048**	0.005	96.8	ug/L	43	Standard
	Pb	206	272.7	3.8	**0.0091**	0.002	25.8	ug/L	266	Standard
	Pb	207	236.7	16.6	**0.0049**	0.011	217.1	ug/L	206	Standard
	Pb	208	770.0	16.7	**0.0031**	0.010	319.0	ug/L	668	Standard
	U	238	29.0	96.1	**0.0058**	0.006	107.2	ug/L	32	Standard
>	**Bi**	209	386857.7	0.7				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	13.9	**0.0067**	0.019	284.1	mg/L	60	Standard
K	39	11.7	49.5	**-0.1547**	0.121	78.4	mg/L	12	Standard
Ca	43	28.3	50.9	**-17.4842**	11.964	68.4	mg/L	37	Standard
Fe	54	39.4	38.1	**-0.0348**	0.033	93.5	mg/L	56	Standard
Fe	57	821.7	9.9	**0.7912**	0.654	82.7	mg/L	735	Standard
> **Sc-1**	45	21804.0	3.3				mg/L	22687	Standard
Cl	35	24254.1	2.4				ug/L	20516	Standard
Kr	83	2.0	86.6				ug/L	5	Standard
Br	81	510.0	7.8				ug/L	570	Standard
P	31	7978.8	2.1				ug/L	7850	Standard
S	34	1535.1	2.9				ug/L	1375	Standard
Sr	88	175.0	5.7				ug/L	165	Standard
C	12	203.3	28.0				mg/L	173	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.4	5.9				mg/L	6	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	13	Standard
I	127	1920.1	5.3				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.714	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.566
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.573
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBS M5 WG535367-02
Sample Date/Time: Thursday, August 20, 2015 22:35:18
Number of Replicates: 3
Autosampler Position: 347
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56441.7	2.8				ug/L	51673	Standard
	Be	9	6.7	114.6	**-0.0556**	0.011	19.4	ug/L	43	Standard
	Al	27	4847.9	95.5	**0.0531**	0.059	111.1	ug/L	2157	Standard
	Sc	45	22915.7	1.4				ug/L	22687	Standard
	Ti	47	20.0	22.9	**-0.0006**	0.032	5618.5	ug/L	43	Standard
	V	51	900.3	12.3	**-0.0414**	0.032	77.8	ug/L	1233	Standard
	Cr	52	5139.2	2.2	**-0.0609**	0.023	37.5	ug/L	6387	Standard
	Cr	53	466.7	7.6	**-1.1880**	0.077	6.5	ug/L	1555	Standard
	Mn	55	688.7	7.6	**0.0520**	0.016	31.4	ug/L	436	Standard
	Co	59	201.3	8.3	**0.0062**	0.004	66.1	ug/L	236	Standard
	Ni	60	117.3	31.5	**0.0486**	0.028	57.4	ug/L	204	Standard
	Cu	65	204.0	13.3	**-0.1167**	0.020	17.3	ug/L	303	Standard
	Zn	66	1161.4	1.2	**1.1699**	0.021	1.8	ug/L	332	Standard
>	**Ge**	72	270370.8	1.7				ug/L	293924	Standard
	As	75	-43.2	33.5	**-0.0115**	0.019	164.6	ug/L	45	Standard
	Se	82	15.7	45.5	**0.0349**	0.116	333.3	ug/L	35	Standard
	Se-1	77	83.3	13.6	**-0.9841**	0.230	23.4	ug/L	153	Standard
>	**Ga**	71	15.0	100.0				mg/L	25	Standard
	Rb	85	41.7	27.7				ug/L	20	Standard
	Y	89	268288.2	1.6				ug/L	279578	Standard
>	**Rh**	103	10.0	86.6				ug/L	68	Standard
	Mo	98	24.0	42.0	**-0.0008**	0.006	731.1	ug/L	56	Standard
	Ag	107	79.3	29.2	**-0.0008**	0.004	541.4	ug/L	199	Standard
	Cd	111	18.3	88.4	**0.0040**	0.010	240.3	mg/L	89	Standard
	Cd	114	22.7	87.2	**-0.0005**	0.004	867.7	ug/L	150	Standard
>	**In**	115	463132.4	1.0				ug/L	458296	Standard
	Sn	118	396.7	7.6	**0.0210**	0.006	28.8	ug/L	385	Standard
	Sb	123	330.3	6.6	**0.0634**	0.004	6.8	ug/L	208	Standard
	Ba	135	133.7	21.0	**0.0402**	0.014	33.8	ug/L	108	Standard
	Ce	140	125.0	25.0				ug/L	92	Standard
>	**Tb**	159	832088.9	1.4				ug/L	812006	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	31.3	118.1	**-0.0014**	0.005	349.6	ug/L	236	Standard
	Tl	205	8.3	173.2	**0.0012**	0.003	246.2	ug/L	43	Standard
	Pb	206	311.0	10.1	**0.0152**	0.006	39.3	ug/L	266	Standard
	Pb	207	279.0	6.9	**0.0131**	0.004	27.1	ug/L	206	Standard
	Pb	208	1013.7	4.7	**0.0184**	0.002	10.9	ug/L	668	Standard
	U	238	8.3	111.5	**0.0011**	0.002	172.2	ug/L	32	Standard
>	**Bi**	209	402218.5	2.0				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	17.6	**0.0053**	0.021	395.5	mg/L	60	Standard
K	39	6.7	43.3	**-0.2677**	0.059	22.2	mg/L	12	Standard
Ca	43	35.0	37.8	**-13.6136**	10.208	75.0	mg/L	37	Standard
Fe	54	71.0	35.0	**0.0325**	0.057	175.1	mg/L	56	Standard
Fe	57	791.7	11.8	**0.1447**	0.902	623.3	mg/L	735	Standard
> **Sc-1**	45	22915.7	1.4				mg/L	22687	Standard
Cl	35	25783.3	1.1				ug/L	20516	Standard
Kr	83	4.7	24.7				ug/L	5	Standard
Br	81	663.3	10.0				ug/L	570	Standard
P	31	9749.8	2.4				ug/L	7850	Standard
S	34	1543.4	1.2				ug/L	1375	Standard
Sr	88	163.3	3.5				ug/L	165	Standard
C	12	226.7	35.4				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	6.2	100.1				mg/L	6	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	1125.0	9.7				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.228	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		91.987	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.055
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.645
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSS M5 WG535367-03
Sample Date/Time: Thursday, August 20, 2015 22:38:29
Number of Replicates: 3
Autosampler Position: 348
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	55172.0	3.5				ug/L	51673	Standard
	Be	9	16754.3	0.6	**23.6805**	0.809	3.4	ug/L	43	Standard
	Al	27	1833.4	5.1	**0.0146**	0.002	14.9	ug/L	2157	Standard
	Sc	45	22651.9	3.9				ug/L	22687	Standard
	Ti	47	19.3	52.1	**-0.0064**	0.066	1023.2	ug/L	43	Standard
	V	51	98355.1	0.6	**24.9654**	0.259	1.0	ug/L	1233	Standard
	Cr	52	115988.7	1.8	**24.5505**	0.336	1.4	ug/L	6387	Standard
	Cr	53	14373.5	4.0	**23.5199**	1.006	4.3	ug/L	1555	Standard
	Mn	55	77089.7	2.0	**27.9298**	0.638	2.3	ug/L	436	Standard
	Co	59	97015.6	1.1	**25.4308**	0.355	1.4	ug/L	236	Standard
	Ni	60	31566.5	1.6	**24.2334**	0.411	1.7	ug/L	204	Standard
	Cu	65	31947.6	0.3	**24.4244**	0.080	0.3	ug/L	303	Standard
	Zn	66	18428.5	0.9	**25.1058**	0.256	1.0	ug/L	332	Standard
>	Ge	72	273512.7	0.5				ug/L	293924	Standard
	As	75	17987.3	0.7	**23.5249**	0.067	0.3	ug/L	45	Standard
	Se	82	1543.6	1.5	**23.9607**	0.281	1.2	ug/L	35	Standard
	Se-1	77	1127.7	1.3	**21.3052**	0.431	2.0	ug/L	153	Standard
>	Ga	71	11.7	65.5				mg/L	25	Standard
	Rb	85	21.7	35.3				ug/L	20	Standard
	Y	89	263765.0	2.0				ug/L	279578	Standard
>	Rh	103	26.7	39.0				ug/L	68	Standard
	Mo	98	28.9	22.2	**0.0026**	0.004	166.7	ug/L	56	Standard
	Ag	107	130519.1	0.8	**23.9527**	0.474	2.0	ug/L	199	Standard
	Cd	111	39046.5	1.6	**23.6252**	0.766	3.2	mg/L	89	Standard
	Cd	114	103805.2	1.1	**23.7734**	0.583	2.5	ug/L	150	Standard
>	In	115	452302.3	2.0				ug/L	458296	Standard
	Sn	118	406.7	11.8	**0.0247**	0.010	41.3	ug/L	385	Standard
	Sb	123	108791.6	1.1	**25.4088**	0.508	2.0	ug/L	208	Standard
	Ba	135	48968.0	1.0	**24.0550**	0.321	1.3	ug/L	108	Standard
	Ce	140	260.0	11.7				ug/L	92	Standard
>	Tb	159	813414.3	1.4				ug/L	812006	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	167865.2	1.1	**23.8738**	0.355	1.5	ug/L	236	Standard
	Tl	205	119729.6	1.7	**24.5984**	0.483	2.0	ug/L	43	Standard
	Pb	206	110090.5	0.8	**25.3052**	0.275	1.1	ug/L	266	Standard
	Pb	207	94892.9	0.9	**24.0950**	0.318	1.3	ug/L	206	Standard
	Pb	208	334288.1	0.9	**24.3721**	0.126	0.5	ug/L	668	Standard
	U	238	114397.6	0.7	**24.4788**	0.118	0.5	ug/L	32	Standard
>	Bi	209	395840.5	0.4				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	33.3	43.3	**-0.0193**	0.040	205.4	mg/L	60	Standard
K	39	3.3	173.2	**-0.3338**	0.122	36.4	mg/L	12	Standard
Ca	43	33.3	37.7	**-14.6842**	9.666	65.8	mg/L	37	Standard
Fe	54	53.6	35.6	**-0.0052**	0.045	865.8	mg/L	56	Standard
Fe	57	748.4	13.4	**-0.1498**	1.142	762.2	mg/L	735	Standard
> **Sc-1**	45	22651.9	3.9				mg/L	22687	Standard
Cl	35	25333.8	0.8				ug/L	20516	Standard
Kr	83	0.7	173.2				ug/L	5	Standard
Br	81	483.3	9.3				ug/L	570	Standard
P	31	8977.7	0.9				ug/L	7850	Standard
S	34	1430.1	4.7				ug/L	1375	Standard
Sr	88	173.3	10.9				ug/L	165	Standard
C	12	263.3	28.0				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	9.8	2.8				mg/L	6	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	1566.7	9.6				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.771	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.055	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.692
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.954
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSS M5 WG535367-03
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Method 6020 - Summary Report

Sample ID: L1508067914 WG535367-01
Sample Date/Time: Thursday, August 20, 2015 22:41:41
Number of Replicates: 3
Autosampler Position: 349
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54999.8	4.8				ug/L	51673	Standard
	Be	9	98.3	28.0	**0.0761**	0.047	61.7	ug/L	43	Standard
	Al	27	28568.6	1.7	**0.3804**	0.013	3.4	ug/L	2157	Standard
	Sc	45	23772.0	1.8				ug/L	22687	Standard
	Ti	47	482.3	2.1	**3.0162**	0.054	1.8	ug/L	43	Standard
	V	51	13591.6	0.4	**3.2336**	0.050	1.5	ug/L	1233	Standard
	Cr	52	15739.5	2.4	**2.3017**	0.095	4.1	ug/L	6387	Standard
	Cr	53	1781.8	3.0	**1.1574**	0.063	5.5	ug/L	1555	Standard
	Mn	55	181512.6	1.7	**66.4334**	1.437	2.2	ug/L	436	Standard
	Co	59	2625.2	3.1	**0.6464**	0.025	3.9	ug/L	236	Standard
	Ni	60	965.7	4.1	**0.7043**	0.024	3.5	ug/L	204	Standard
	Cu	65	1601.1	0.9	**0.9692**	0.026	2.7	ug/L	303	Standard
	Zn	66	2803.6	1.8	**3.4523**	0.051	1.5	ug/L	332	Standard
>	**Ge**	72	271910.6	1.6				ug/L	293924	Standard
	As	75	381.2	7.2	**0.5458**	0.030	5.5	ug/L	45	Standard
	Se	82	27.8	37.5	**0.2249**	0.165	73.5	ug/L	35	Standard
	Se-1	77	82.0	16.9	**-1.0247**	0.273	26.7	ug/L	153	Standard
>	**Ga**	71	1288.4	4.7				mg/L	25	Standard
	Rb	85	16135.3	2.4				ug/L	20	Standard
	Y	89	266664.9	1.6				ug/L	279578	Standard
>	**Rh**	103	15.0	33.3				ug/L	68	Standard
	Mo	98	117.5	11.1	**0.0588**	0.008	13.9	ug/L	56	Standard
	Ag	107	178.7	17.1	**0.0182**	0.006	31.7	ug/L	199	Standard
	Cd	111	38.1	28.8	**0.0166**	0.007	42.1	mg/L	89	Standard
	Cd	114	70.3	21.5	**0.0107**	0.004	34.1	ug/L	150	Standard
>	**In**	115	446755.2	1.3				ug/L	458296	Standard
	Sn	118	486.7	8.9	**0.0409**	0.009	22.8	ug/L	385	Standard
	Sb	123	185.4	8.2	**0.0319**	0.003	9.9	ug/L	208	Standard
	Ba	135	29967.6	0.4	**14.8940**	0.174	1.2	ug/L	108	Standard
	Ce	140	95996.5	1.0				ug/L	92	Standard
>	**Tb**	159	820659.8	1.4				ug/L	812006	Standard
	Ho	165	450.0	14.7				ug/L	7	Standard
	Tl	203	145.3	36.3	**0.0148**	0.008	51.1	ug/L	236	Standard
	Tl	205	110.0	27.3	**0.0220**	0.006	27.9	ug/L	43	Standard
	Pb	206	35198.5	0.4	**8.0122**	0.103	1.3	ug/L	266	Standard
	Pb	207	29240.9	0.9	**7.3477**	0.090	1.2	ug/L	206	Standard
	Pb	208	106425.9	0.3	**7.6829**	0.069	0.9	ug/L	668	Standard
	U	238	701.0	0.7	**0.1486**	0.001	0.9	ug/L	32	Standard
>	**Bi**	209	397865.7	0.8				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	31.7	36.5	**-0.0278**	0.030	107.4	mg/L	60	Standard
K	39	1.7	173.2	**-0.3709**	0.057	15.5	mg/L	12	Standard
Ca	43	31.7	45.6	**-17.1130**	10.388	60.7	mg/L	37	Standard
Fe	54	1233.9	10.9	**2.5371**	0.283	11.2	mg/L	56	Standard
Fe	57	1050.0	3.3	**2.1593**	0.468	21.7	mg/L	735	Standard
Sc-1	45	23772.0	1.8				mg/L	22687	Standard
Cl	35	23796.7	3.0				ug/L	20516	Standard
Kr	83	2.0	50.0				ug/L	5	Standard
Br	81	596.7	12.7				ug/L	570	Standard
P	31	8395.7	2.4				ug/L	7850	Standard
S	34	1435.1	3.1				ug/L	1375	Standard
Sr	88	155.0	16.1				ug/L	165	Standard
C	12	353.3	15.6				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	60.0	72.6				mg/L	0	Standard
Dy	164	807.0	7.2				mg/L	6	Standard
Ho-1	165	450.0	14.7				mg/L	7	Standard
Er	166	410.0	18.4				mg/L	13	Standard
I	127	6959.9	4.6				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		106.438	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		92.510	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.482
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.491
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 21, 2015

Method 6020 - Summary Report

Sample ID: L1508067914S WG535367-04
Sample Date/Time: Thursday, August 20, 2015 22:44:52
Number of Replicates: 3
Autosampler Position: 350
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	56624.0	2.2				ug/L	51673	Standard
	Be	9	3445.4	0.9	**4.6913**	0.143	3.0	ug/L	43	Standard
	Al	27	47954.1	1.3	**0.6262**	0.012	1.8	ug/L	2157	Standard
	Sc	45	23237.8	2.9				ug/L	22687	Standard
	Ti	47	947.7	3.4	**6.0985**	0.267	4.4	ug/L	43	Standard
	V	51	40881.7	1.8	**10.3518**	0.174	1.7	ug/L	1233	Standard
	Cr	52	46478.9	0.9	**9.2436**	0.055	0.6	ug/L	6387	Standard
	Cr	53	5554.4	3.9	**7.9713**	0.327	4.1	ug/L	1555	Standard
	Mn	55	211019.0	0.5	**77.8020**	0.533	0.7	ug/L	436	Standard
	Co	59	22545.8	0.5	**5.9505**	0.050	0.8	ug/L	236	Standard
	Ni	60	7803.7	0.7	**6.0367**	0.050	0.8	ug/L	204	Standard
	Cu	65	8649.5	1.6	**6.4979**	0.091	1.4	ug/L	303	Standard
	Zn	66	7003.3	1.3	**9.3814**	0.091	1.0	ug/L	332	Standard
>	Ge	72	270013.9	1.1				ug/L	293924	Standard
	As	75	3075.5	1.1	**4.1126**	0.083	2.0	ug/L	45	Standard
	Se	82	187.7	4.3	**2.7637**	0.153	5.5	ug/L	35	Standard
	Se-1	77	192.0	8.4	**1.3683**	0.303	22.1	ug/L	153	Standard
>	Ga	71	2800.3	2.5				mg/L	25	Standard
	Rb	85	24700.1	1.8				ug/L	20	Standard
	Y	89	272526.9	2.6				ug/L	279578	Standard
>	Rh	103	16.7	148.0				ug/L	68	Standard
	Mo	98	191.5	4.6	**0.1041**	0.007	6.9	ug/L	56	Standard
	Ag	107	25752.5	0.1	**4.7084**	0.075	1.6	ug/L	199	Standard
	Cd	111	8159.1	0.8	**4.9249**	0.110	2.2	mg/L	89	Standard
	Cd	114	20889.4	0.4	**4.7736**	0.074	1.6	ug/L	150	Standard
>	In	115	452811.9	1.6				ug/L	458296	Standard
	Sn	118	436.7	11.6	**0.0302**	0.010	33.9	ug/L	385	Standard
	Sb	123	771.9	2.4	**0.1681**	0.001	0.8	ug/L	208	Standard
	Ba	135	43551.8	1.1	**21.3669**	0.311	1.5	ug/L	108	Standard
	Ce	140	105981.1	1.5				ug/L	92	Standard
>	Tb	159	813705.4	0.4				ug/L	812006	Standard
	Ho	165	555.0	3.9				ug/L	7	Standard
	Tl	203	33224.4	1.0	**4.7315**	0.041	0.9	ug/L	236	Standard
	Tl	205	23733.6	0.9	**4.8871**	0.052	1.1	ug/L	43	Standard
	Pb	206	56619.9	0.5	**13.0184**	0.089	0.7	ug/L	266	Standard
	Pb	207	47983.5	0.5	**12.1841**	0.020	0.2	ug/L	206	Standard
	Pb	208	176512.7	0.6	**12.8739**	0.042	0.3	ug/L	668	Standard
	U	238	23704.9	0.8	**5.0838**	0.026	0.5	ug/L	32	Standard
>	Bi	209	394909.0	0.4				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	53.3	14.3	**0.0294**	0.022	76.0	mg/L	60	Standard
K	39	10.0	50.0	**-0.2020**	0.100	49.7	mg/L	12	Standard
Ca	43	21.7	35.3	**-23.9675**	5.624	23.5	mg/L	37	Standard
Fe	54	2391.4	5.6	**5.1540**	0.204	4.0	mg/L	56	Standard
Fe	57	1360.1	7.3	**5.1547**	0.726	14.1	mg/L	735	Standard
> **Sc-1**	45	23237.8	2.9				mg/L	22687	Standard
Cl	35	22496.7	1.2				ug/L	20516	Standard
Kr	83	4.3	13.3				ug/L	5	Standard
Br	81	663.3	8.3				ug/L	570	Standard
P	31	7940.4	4.1				ug/L	7850	Standard
S	34	1413.4	7.1				ug/L	1375	Standard
Sr	88	151.7	10.1				ug/L	165	Standard
C	12	383.3	8.0				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	45.8				mg/L	0	Standard
Dy	164	1028.6	7.7				mg/L	6	Standard
Ho-1	165	555.0	3.9				mg/L	7	Standard
Er	166	446.7	13.7				mg/L	13	Standard
I	127	7988.8	2.3				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.581	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		91.865	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.803
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.707
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 21, 2015

Method 6020 - Summary Report

Sample ID: L1508036714SD WG535367-05
Sample Date/Time: Thursday, August 20, 2015 22:48:04
Number of Replicates: 3
Autosampler Position: 351
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57216.4	5.6				ug/L	51673	Standard
	Be	9	3432.1	3.3	**4.6379**	0.430	9.3	ug/L	43	Standard
	Al	27	64862.0	3.2	**0.8425**	0.032	3.8	ug/L	2157	Standard
	Sc	45	23498.2	1.6				ug/L	22687	Standard
	Ti	47	1329.7	3.9	**8.4174**	0.288	3.4	ug/L	43	Standard
	V	51	44112.2	1.0	**10.9426**	0.024	0.2	ug/L	1233	Standard
	Cr	52	45654.7	1.3	**8.8350**	0.099	1.1	ug/L	6387	Standard
	Cr	53	5602.7	1.8	**7.8406**	0.156	2.0	ug/L	1555	Standard
	Mn	55	204247.9	0.9	**73.6589**	0.487	0.7	ug/L	436	Standard
	Co	59	22476.7	0.6	**5.8024**	0.063	1.1	ug/L	236	Standard
	Ni	60	7922.4	2.2	**5.9949**	0.105	1.7	ug/L	204	Standard
	Cu	65	9731.8	2.6	**7.1795**	0.134	1.9	ug/L	303	Standard
	Zn	66	7871.4	2.0	**10.3606**	0.134	1.3	ug/L	332	Standard
>	**Ge**	72	275999.5	0.8				ug/L	293924	Standard
	As	75	3194.1	0.8	**4.1775**	0.050	1.2	ug/L	45	Standard
	Se	82	247.7	3.3	**3.6301**	0.135	3.7	ug/L	35	Standard
	Se-1	77	233.7	2.2	**2.1624**	0.100	4.6	ug/L	153	Standard
>	**Ga**	71	3428.7	5.2				mg/L	25	Standard
	Rb	85	28967.7	1.3				ug/L	20	Standard
	Y	89	269983.0	1.9				ug/L	279578	Standard
>	**Rh**	103	25.0	34.6				ug/L	68	Standard
	Mo	98	260.3	3.5	**0.1470**	0.007	4.7	ug/L	56	Standard
	Ag	107	25625.3	0.4	**4.6850**	0.057	1.2	ug/L	199	Standard
	Cd	111	7875.5	0.4	**4.7532**	0.049	1.0	mg/L	89	Standard
	Cd	114	20969.8	3.2	**4.7927**	0.189	3.9	ug/L	150	Standard
>	**In**	115	452764.3	0.8				ug/L	458296	Standard
	Sn	118	363.3	16.5	**0.0164**	0.011	66.8	ug/L	385	Standard
	Sb	123	513.7	2.6	**0.1079**	0.002	2.1	ug/L	208	Standard
	Ba	135	46669.4	0.5	**22.8983**	0.115	0.5	ug/L	108	Standard
	Ce	140	182931.0	0.3				ug/L	92	Standard
>	**Tb**	159	827283.5	2.7				ug/L	812006	Standard
	Ho	165	793.4	1.3				ug/L	7	Standard
	Tl	203	33025.0	1.7	**4.6501**	0.073	1.6	ug/L	236	Standard
	Tl	205	23701.9	0.5	**4.8256**	0.026	0.5	ug/L	43	Standard
	Pb	206	54970.5	0.6	**12.4949**	0.096	0.8	ug/L	266	Standard
	Pb	207	46087.0	1.2	**11.5685**	0.167	1.4	ug/L	206	Standard
	Pb	208	167970.9	0.3	**12.1101**	0.037	0.3	ug/L	668	Standard
	U	238	23264.8	0.7	**4.9334**	0.038	0.8	ug/L	32	Standard
>	**Bi**	209	399395.2	0.2				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	71.7	26.4	**0.0738**	0.048	65.1	mg/L	60	Standard
K	39	15.0	100.0	**-0.1019**	0.303	298.0	mg/L	12	Standard
Ca	43	35.0	37.8	**-14.3512**	9.752	68.0	mg/L	37	Standard
Fe	54	2506.2	4.9	**5.3468**	0.216	4.0	mg/L	56	Standard
Fe	57	1386.7	3.1	**5.2633**	0.476	9.0	mg/L	735	Standard
> **Sc-1**	45	23498.2	1.6				mg/L	22687	Standard
Cl	35	20865.7	1.3				ug/L	20516	Standard
Kr	83	4.3	35.3				ug/L	5	Standard
Br	81	550.0	10.1				ug/L	570	Standard
P	31	7953.8	4.7				ug/L	7850	Standard
S	34	1308.4	6.0				ug/L	1375	Standard
Sr	88	188.3	20.3				ug/L	165	Standard
C	12	396.7	22.0				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	25.0				mg/L	0	Standard
Dy	164	1624.5	8.2				mg/L	6	Standard
Ho-1	165	793.4	1.3				mg/L	7	Standard
Er	166	673.3	7.0				mg/L	13	Standard
I	127	8170.5	6.1				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.728	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.902	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.793	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	105.897	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1508036714SD WG535367-05
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Method 6020 - Summary Report

Sample ID: L1508084701
Sample Date/Time: Thursday, August 20, 2015 22:51:16
Number of Replicates: 3
Autosampler Position: 352
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72143.1	2.1				ug/L	51673	Standard
	Be	9	293.3	15.3	**0.2530**	0.051	20.2	ug/L	43	Standard
	Al	27	26983260.0	0.7	**281.1751**	7.672	2.7	ug/L	2157	Standard
	Sc	45	23126.0	1.8				ug/L	22687	Standard
	Ti	47	6460.7	1.6	**40.5697**	0.634	1.6	ug/L	43	Standard
	V	51	20485.2	4.8	**4.8285**	0.239	4.9	ug/L	1233	Standard
	Cr	52	429841.4	1.1	**91.5010**	1.198	1.3	ug/L	6387	Standard
	Cr	53	55877.9	1.6	**94.4044**	1.722	1.8	ug/L	1555	Standard
	Mn	55	1832054.9	1.9	**648.8881**	12.323	1.9	ug/L	436	Standard
	Co	59	38109.9	0.7	**9.6697**	0.055	0.6	ug/L	236	Standard
	Ni	60	59193.4	0.5	**44.1555**	0.294	0.7	ug/L	204	Standard
	Cu	65	121271.8	1.9	**90.7568**	1.597	1.8	ug/L	303	Standard
	Zn	66	186498.5	1.0	**250.7404**	2.110	0.8	ug/L	332	Standard
>	Ge	72	281704.3	0.2				ug/L	293924	Standard
	As	75	608832.7	0.2	**771.6729**	3.639	0.5	ug/L	45	Standard
	Se	82	92.1	1.3	**1.1858**	0.016	1.4	ug/L	35	Standard
	Se-1	77	313.3	6.2	**3.7142**	0.397	10.7	ug/L	153	Standard
>	Ga	71	5609.4	6.3				mg/L	25	Standard
	Rb	85	67061.4	0.9				ug/L	20	Standard
	Y	89	312508.3	0.4				ug/L	279578	Standard
>	Rh	103	421.7	11.0				ug/L	68	Standard
	Mo	98	77568.7	2.4	**45.7038**	0.448	1.0	ug/L	56	Standard
	Ag	107	561.0	1.7	**0.0822**	0.002	3.0	ug/L	199	Standard
	Cd	111	1374.0	3.6	**0.7773**	0.035	4.6	mg/L	89	Standard
	Cd	114	4162.9	3.6	**0.8932**	0.014	1.5	ug/L	150	Standard
>	In	115	479719.4	3.0				ug/L	458296	Standard
	Sn	118	31297.3	0.8	**5.4984**	0.193	3.5	ug/L	385	Standard
	Sb	123	31511.4	3.2	**6.9284**	0.032	0.5	ug/L	208	Standard
	Ba	135	169591.2	1.1	**78.6246**	1.854	2.4	ug/L	108	Standard
	Ce	140	266006.6	1.0				ug/L	92	Standard
>	Tb	159	816908.4	1.8				ug/L	812006	Standard
	Ho	165	3190.3	4.0				ug/L	7	Standard
	Tl	203	1115.4	3.2	**0.1529**	0.006	4.0	ug/L	236	Standard
	Tl	205	838.4	4.8	**0.1718**	0.011	6.4	ug/L	43	Standard
	Pb	206	1443743.2	1.6	**332.4014**	2.136	0.6	ug/L	266	Standard
	Pb	207	1173888.1	1.1	**298.6208**	3.238	1.1	ug/L	206	Standard
	Pb	208	4261938.3	0.6	**311.3108**	5.376	1.7	ug/L	668	Standard
	U	238	3591.4	2.4	**0.7675**	0.003	0.4	ug/L	32	Standard
>	Bi	209	396015.2	2.2				ug/L	377155	Standard

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Na	23	28.3	20.4	**-2358.4382**	477.987	20.3	mg/L	2	Standard
Mg	24	50119.5	3.4	**128.4355**	6.331	4.9	mg/L	60	Standard
K	39	40.0	12.5	**0.4050**	0.088	21.7	mg/L	12	Standard
Ca	43	840.0	9.8	**587.2297**	51.374	8.7	mg/L	37	Standard
Fe	54	64134.6	1.3	**142.2651**	3.482	2.4	mg/L	56	Standard
Fe	57	18251.0	2.1	**158.1288**	5.345	3.4	mg/L	735	Standard
> **Sc-1**	45	23126.0	1.8				mg/L	22687	Standard
Cl	35	124593.8	8.3				ug/L	20516	Standard
Kr	83	3.0	57.7				ug/L	5	Standard
Br	81	1193.4	8.4				ug/L	570	Standard
P	31	9816.5	2.2				ug/L	7850	Standard
S	34	1528.4	4.4				ug/L	1375	Standard
Sr	88	643.3	14.3				ug/L	165	Standard
C	12	1463.4	19.5				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	406.7	30.4				mg/L	0	Standard
Dy	164	5041.3	1.1				mg/L	6	Standard
Ho-1	165	3190.3	4.0				mg/L	7	Standard
Er	166	2496.9	7.0				mg/L	13	Standard
I	127	9301.2	4.5				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		139.615	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.842	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.675
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	105.001
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Zn 66 Upper, S, EEE	Zn	66
As 75 Upper, S, EEE	As	75
Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1508084701PS WG535626-01
Sample Date/Time: Thursday, August 20, 2015 22:54:27
Number of Replicates: 3
Autosampler Position: 353
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76204.6	2.7				ug/L	51673	Standard
	Be	9	42553.0	3.2	**43.5631**	0.483	1.1	ug/L	43	Standard
	Al	27	27625835.2	2.9	**272.4203**	2.461	0.9	ug/L	2157	Standard
	Sc	45	22830.5	1.5				ug/L	22687	Standard
	Ti	47	6368.7	1.7	**39.5806**	0.632	1.6	ug/L	43	Standard
	V	51	236946.7	2.1	**58.1618**	1.331	2.3	ug/L	1233	Standard
	Cr	52	657416.2	0.6	**139.1510**	2.154	1.5	ug/L	6387	Standard
	Cr	53	84810.1	1.7	**142.8688**	4.352	3.0	ug/L	1555	Standard
	Mn	55	1977971.4	0.9	**693.5207**	13.678	2.0	ug/L	436	Standard
	Co	59	252572.4	0.3	**63.7010**	1.033	1.6	ug/L	236	Standard
	Ni	60	122017.4	0.6	**90.1372**	0.907	1.0	ug/L	204	Standard
	Cu	65	179039.3	0.8	**132.7659**	2.459	1.9	ug/L	303	Standard
	Zn	66	218886.6	1.4	**291.4216**	8.268	2.8	ug/L	332	Standard
>	**Ge**	72	284623.5	1.4				ug/L	293924	Standard
	As	75	647524.4	0.5	**812.3632**	8.250	1.0	ug/L	45	Standard
	Se	82	3836.7	0.6	**57.5318**	0.516	0.9	ug/L	35	Standard
	Se-1	77	2822.6	1.2	**55.1564**	0.686	1.2	ug/L	153	Standard
>	**Ga**	71	5791.1	0.9				mg/L	25	Standard
	Rb	85	67081.6	2.5				ug/L	20	Standard
	Y	89	325035.0	1.7				ug/L	279578	Standard
>	**Rh**	103	438.3	4.3				ug/L	68	Standard
	Mo	98	78226.0	1.9	**45.0106**	0.680	1.5	ug/L	56	Standard
	Ag	107	271932.9	0.5	**45.9613**	0.477	1.0	ug/L	199	Standard
	Cd	111	90369.6	1.1	**50.3414**	0.609	1.2	mg/L	89	Standard
	Cd	114	230947.6	2.0	**48.7035**	1.223	2.5	ug/L	150	Standard
>	**In**	115	491159.3	0.7				ug/L	458296	Standard
	Sn	118	33356.7	0.6	**5.7221**	0.056	1.0	ug/L	385	Standard
	Sb	123	268070.9	0.7	**57.6618**	0.799	1.4	ug/L	208	Standard
	Ba	135	273398.1	1.1	**123.7645**	1.828	1.5	ug/L	108	Standard
	Ce	140	267860.5	1.0				ug/L	92	Standard
>	**Tb**	159	830457.3	0.7				ug/L	812006	Standard
	Ho	165	3048.6	3.4				ug/L	7	Standard
	Tl	203	357573.6	0.8	**50.4974**	0.691	1.4	ug/L	236	Standard
	Tl	205	264174.9	0.7	**53.8878**	0.751	1.4	ug/L	43	Standard
	Pb	206	1686168.9	1.0	**385.5871**	4.315	1.1	ug/L	266	Standard
	Pb	207	1406176.9	1.2	**355.2560**	2.534	0.7	ug/L	206	Standard
	Pb	208	4977139.5	1.0	**361.0554**	6.189	1.7	ug/L	668	Standard
	U	238	267287.8	0.9	**56.7923**	1.123	2.0	ug/L	32	Standard
>	**Bi**	209	398706.9	1.1				ug/L	377155	Standard

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Na	23	20.0	0.0	**-1647.1600**	27.574	1.7	mg/L	2	Standard
Mg	24	50974.0	2.1	**132.2526**	2.143	1.6	mg/L	60	Standard
K	39	35.0	37.8	**0.3119**	0.265	85.1	mg/L	12	Standard
Ca	43	900.0	6.6	**641.0114**	34.400	5.4	mg/L	37	Standard
Fe	54	64075.5	0.7	**143.9722**	3.208	2.2	mg/L	56	Standard
Fe	57	17952.3	2.2	**157.5390**	6.069	3.9	mg/L	735	Standard
> **Sc-1**	45	22830.5	1.5				mg/L	22687	Standard
Cl	35	134770.0	4.0				ug/L	20516	Standard
Kr	83	2.0	50.0				ug/L	5	Standard
Br	81	1410.1	15.6				ug/L	570	Standard
P	31	10577.1	10.6				ug/L	7850	Standard
S	34	1490.1	2.7				ug/L	1375	Standard
Sr	88	726.7	1.7				ug/L	165	Standard
C	12	1366.7	8.4				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	566.7	16.4				mg/L	0	Standard
Dy	164	5236.6	3.2				mg/L	6	Standard
Ho-1	165	3048.6	3.4				mg/L	7	Standard
Er	166	2596.9	9.8				mg/L	13	Standard
I	127	8854.3	10.5				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		147.475	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.836	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.171
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.714
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Cr 52 Upper, S, EEE	Cr	52	

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Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Cu 65 Upper, S, EEE	Cu	65
Zn 66 Upper, S, EEE	Zn	66
As 75 Upper, S, EEE	As	75
Ba 135 Upper, S, EEE	Ba	135
Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1508084701SDL WG535626-02
Sample Date/Time: Thursday, August 20, 2015 22:57:39
Number of Replicates: 3
Autosampler Position: 354
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69746.8	1.2				ug/L	51673	Standard
	Be	9	76.7	13.6	**0.0208**	0.011	52.5	ug/L	43	Standard
	Al	27	5600689.5	1.8	**60.3333**	0.596	1.0	ug/L	2157	Standard
	Sc	45	22434.9	3.2				ug/L	22687	Standard
	Ti	47	1317.4	1.9	**8.4908**	0.100	1.2	ug/L	43	Standard
	V	51	4530.0	5.6	**0.8978**	0.077	8.6	ug/L	1233	Standard
	Cr	52	90262.5	1.8	**19.0129**	0.291	1.5	ug/L	6387	Standard
	Cr	53	11899.7	2.2	**19.3065**	0.171	0.9	ug/L	1555	Standard
	Mn	55	349996.4	1.8	**128.6415**	2.191	1.7	ug/L	436	Standard
	Co	59	7551.9	1.6	**1.9533**	0.005	0.3	ug/L	236	Standard
	Ni	60	12244.3	1.1	**9.4566**	0.073	0.8	ug/L	204	Standard
	Cu	65	25063.4	0.9	**19.2741**	0.329	1.7	ug/L	303	Standard
	Zn	66	38638.9	1.5	**53.6243**	1.408	2.6	ug/L	332	Standard
>	**Ge**	72	271147.2	1.8				ug/L	293924	Standard
	As	75	115860.4	1.3	**152.6166**	1.694	1.1	ug/L	45	Standard
	Se	82	40.0	22.9	**0.4195**	0.156	37.1	ug/L	35	Standard
	Se-1	77	114.7	9.6	**-0.3097**	0.282	91.0	ug/L	153	Standard
>	**Ga**	71	1181.7	1.5				mg/L	25	Standard
	Rb	85	12987.2	4.9				ug/L	20	Standard
	Y	89	285525.4	1.0				ug/L	279578	Standard
>	**Rh**	103	111.7	13.7				ug/L	68	Standard
	Mo	98	15273.3	2.3	**8.6203**	0.289	3.4	ug/L	56	Standard
	Ag	107	277.3	52.6	**0.0309**	0.024	76.4	ug/L	199	Standard
	Cd	111	361.5	21.7	**0.1907**	0.041	21.3	mg/L	89	Standard
	Cd	114	964.1	22.1	**0.1938**	0.042	21.6	ug/L	150	Standard
>	**In**	115	500121.8	1.1				ug/L	458296	Standard
	Sn	118	6929.9	1.1	**1.1263**	0.022	2.0	ug/L	385	Standard
	Sb	123	7482.9	2.4	**1.5689**	0.028	1.8	ug/L	208	Standard
	Ba	135	36196.5	1.2	**16.0719**	0.274	1.7	ug/L	108	Standard
	Ce	140	55794.2	1.4				ug/L	92	Standard
>	**Tb**	159	865710.2	1.5				ug/L	812006	Standard
	Ho	165	708.3	2.3				ug/L	7	Standard
	Tl	203	373.7	56.3	**0.0442**	0.027	61.6	ug/L	236	Standard
	Tl	205	228.3	9.1	**0.0438**	0.003	7.4	ug/L	43	Standard
	Pb	206	301416.2	1.2	**65.5632**	0.892	1.4	ug/L	266	Standard
	Pb	207	244067.5	0.7	**58.6514**	0.965	1.6	ug/L	206	Standard
	Pb	208	881346.3	1.1	**60.8196**	1.594	2.6	ug/L	668	Standard
	U	238	757.0	6.2	**0.1524**	0.007	4.4	ug/L	32	Standard
>	**Bi**	209	418925.0	2.3				ug/L	377155	Standard

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Na	23	3.3	86.6	**-153.4975**	260.965	170.0	mg/L	2	Standard
Mg	24	10301.8	5.4	**27.1430**	1.951	7.2	mg/L	60	Standard
K	39	16.7	62.4	**-0.0578**	0.217	374.7	mg/L	12	Standard
Ca	43	190.0	13.7	**105.9794**	15.084	14.2	mg/L	37	Standard
Fe	54	12297.8	1.4	**28.0334**	1.120	4.0	mg/L	56	Standard
Fe	57	4158.9	4.8	**31.7699**	3.040	9.6	mg/L	735	Standard
Sc-1	45	22434.9	3.2				mg/L	22687	Standard
Cl	35	42988.9	1.8				ug/L	20516	Standard
Kr	83	4.7	12.4				ug/L	5	Standard
Br	81	623.3	2.5				ug/L	570	Standard
P	31	8604.1	7.7				ug/L	7850	Standard
S	34	1266.7	2.3				ug/L	1375	Standard
Sr	88	275.0	3.6				ug/L	165	Standard
C	12	476.7	14.0				mg/L	173	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	93.3	43.3				mg/L	0	Standard
Dy	164	1187.9	8.5				mg/L	6	Standard
Ho-1	165	708.3	2.3				mg/L	7	Standard
Er	166	463.3	13.0				mg/L	13	Standard
I	127	3498.7	6.7				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		134.977	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.251	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.126
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		111.075
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
As 75 Upper, S, EEE	As	75	

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Method 6020 - Summary Report

Sample ID: L1508084701SDL WG535626-02
Sample Date/Time: Thursday, August 20, 2015 23:00:51
Number of Replicates: 3
Autosampler Position: 355
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61625.1	0.5				ug/L	51673	Standard
	Be	9	26.7	47.2	**-0.0312**	0.016	50.5	ug/L	43	Standard
	Al	27	1085772.0	1.0	**13.2300**	0.082	0.6	ug/L	2157	Standard
	Sc	45	22056.0	1.2				ug/L	22687	Standard
	Ti	47	254.0	1.0	**1.5263**	0.013	0.9	ug/L	43	Standard
	V	51	1534.5	6.9	**0.1208**	0.026	21.7	ug/L	1233	Standard
	Cr	52	21233.5	1.9	**3.5306**	0.085	2.4	ug/L	6387	Standard
	Cr	53	2678.6	2.7	**2.7626**	0.116	4.2	ug/L	1555	Standard
	Mn	55	70448.4	1.5	**25.6659**	0.377	1.5	ug/L	436	Standard
	Co	59	1625.8	5.0	**0.3824**	0.022	5.7	ug/L	236	Standard
	Ni	60	2506.9	2.5	**1.8974**	0.053	2.8	ug/L	204	Standard
	Cu	65	5200.9	0.2	**3.7700**	0.006	0.2	ug/L	303	Standard
	Zn	66	8478.0	1.9	**11.3752**	0.251	2.2	ug/L	332	Standard
>	**Ge**	72	271813.1	0.3				ug/L	293924	Standard
	As	75	22725.5	0.7	**29.8957**	0.246	0.8	ug/L	45	Standard
	Se	82	19.0	6.6	**0.0859**	0.019	22.1	ug/L	35	Standard
	Se-1	77	81.3	14.7	**-1.0353**	0.259	25.0	ug/L	153	Standard
>	**Ga**	71	218.3	5.8				mg/L	25	Standard
	Rb	85	2530.2	2.6				ug/L	20	Standard
	Y	89	276583.3	0.3				ug/L	279578	Standard
>	**Rh**	103	21.7	70.5				ug/L	68	Standard
	Mo	98	2969.6	2.0	**1.7158**	0.054	3.2	ug/L	56	Standard
	Ag	107	89.7	6.8	**0.0004**	0.001	253.2	ug/L	199	Standard
	Cd	111	63.2	6.4	**0.0288**	0.002	7.6	mg/L	89	Standard
	Cd	114	181.2	5.4	**0.0331**	0.002	4.9	ug/L	150	Standard
>	**In**	115	485021.9	1.3				ug/L	458296	Standard
	Sn	118	1571.7	1.6	**0.2237**	0.001	0.5	ug/L	385	Standard
	Sb	123	1532.2	1.0	**0.3219**	0.007	2.2	ug/L	208	Standard
	Ba	135	7080.0	1.1	**3.2223**	0.041	1.3	ug/L	108	Standard
	Ce	140	10997.3	2.6				ug/L	92	Standard
>	**Tb**	159	832653.0	1.7				ug/L	812006	Standard
	Ho	165	130.0	20.0				ug/L	7	Standard
	Tl	203	61.0	11.4	**0.0026**	0.001	35.8	ug/L	236	Standard
	Tl	205	51.7	14.8	**0.0097**	0.001	14.9	ug/L	43	Standard
	Pb	206	59358.7	0.6	**13.0854**	0.169	1.3	ug/L	266	Standard
	Pb	207	48437.3	1.2	**11.7911**	0.259	2.2	ug/L	206	Standard
	Pb	208	175952.9	0.4	**12.3016**	0.171	1.4	ug/L	668	Standard
	U	238	150.0	7.0	**0.0302**	0.002	6.1	ug/L	32	Standard
>	**Bi**	209	411930.4	1.1				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	2018.5	4.2	**5.3205**	0.294	5.5	mg/L	60	Standard
K	39	5.0	0.0	**-0.2979**	0.001	0.4	mg/L	12	Standard
Ca	43	58.3	19.8	**5.6168**	9.003	160.3	mg/L	37	Standard
Fe	54	2617.2	1.8	**5.9642**	0.085	1.4	mg/L	56	Standard
Fe	57	1485.1	4.5	**7.0007**	0.595	8.5	mg/L	735	Standard
> **Sc-1**	45	22056.0	1.2				mg/L	22687	Standard
Cl	35	26903.9	2.4				ug/L	20516	Standard
Kr	83	2.3	24.7				ug/L	5	Standard
Br	81	593.3	8.6				ug/L	570	Standard
P	31	7863.7	0.7				ug/L	7850	Standard
S	34	1223.4	3.5				ug/L	1375	Standard
Sr	88	203.3	1.4				ug/L	165	Standard
C	12	273.3	23.8				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	32.7				mg/L	0	Standard
Dy	164	255.4	37.8				mg/L	6	Standard
Ho-1	165	130.0	20.0				mg/L	7	Standard
Er	166	96.7	11.9				mg/L	13	Standard
I	127	2143.5	2.9				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.260	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.477	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.832
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.220
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 21, 2015

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, August 20, 2015 23:04:04
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63138.2	5.9				ug/L	51673	Standard
	Be	9	36966.7	3.6	**45.7237**	1.079	2.4	ug/L	43	Standard
	Al	27	3825804.2	4.0	**45.5708**	1.506	3.3	ug/L	2157	Standard
	Sc	45	23181.1	1.6				ug/L	22687	Standard
	Ti	47	16605.1	0.5	**107.7436**	1.449	1.3	ug/L	43	Standard
	V	51	199477.4	1.4	**50.9742**	0.676	1.3	ug/L	1233	Standard
	Cr	52	231806.4	2.4	**50.3334**	0.429	0.9	ug/L	6387	Standard
	Cr	53	28575.3	1.8	**48.8290**	1.378	2.8	ug/L	1555	Standard
	Mn	55	157514.9	0.8	**57.3460**	0.743	1.3	ug/L	436	Standard
	Co	59	202396.2	0.5	**53.1701**	0.827	1.6	ug/L	236	Standard
	Ni	60	64188.7	0.7	**49.3814**	0.744	1.5	ug/L	204	Standard
	Cu	65	63023.5	0.7	**48.5118**	0.841	1.7	ug/L	303	Standard
	Zn	66	35334.5	1.9	**48.6108**	0.201	0.4	ug/L	332	Standard
>	Ge	72	273224.1	1.9				ug/L	293924	Standard
	As	75	37259.7	0.7	**48.7410**	0.641	1.3	ug/L	45	Standard
	Se	82	3214.8	1.9	**50.2101**	1.908	3.8	ug/L	35	Standard
	Se-1	77	2320.8	1.0	**46.8478**	0.582	1.2	ug/L	153	Standard
>	Ga	71	25.0	40.0				mg/L	25	Standard
	Rb	85	568.3	9.4				ug/L	20	Standard
	Y	89	280406.7	2.1				ug/L	279578	Standard
>	Rh	103	35.0	14.3				ug/L	68	Standard
	Mo	98	159889.9	0.5	**93.4382**	0.187	0.2	ug/L	56	Standard
	Ag	107	273122.7	0.6	**46.8739**	0.362	0.8	ug/L	199	Standard
	Cd	111	86809.8	0.1	**49.1050**	0.392	0.8	mg/L	89	Standard
	Cd	114	220836.0	2.8	**47.2891**	1.485	3.1	ug/L	150	Standard
>	In	115	483697.6	0.7				ug/L	458296	Standard
	Sn	118	252113.0	2.9	**44.2661**	1.535	3.5	ug/L	385	Standard
	Sb	123	221858.6	1.2	**48.4519**	0.273	0.6	ug/L	208	Standard
	Ba	135	103223.5	1.9	**47.4297**	0.575	1.2	ug/L	108	Standard
	Ce	140	78.3	7.4				ug/L	92	Standard
>	Tb	159	834163.4	2.8				ug/L	812006	Standard
	Ho	165	8.3	124.9				ug/L	7	Standard
	Tl	203	346372.6	1.0	**48.1735**	0.527	1.1	ug/L	236	Standard
	Tl	205	257192.9	0.8	**51.6766**	1.257	2.4	ug/L	43	Standard
	Pb	206	220690.7	0.9	**49.6553**	0.553	1.1	ug/L	266	Standard
	Pb	207	199695.7	0.6	**49.6432**	0.719	1.4	ug/L	206	Standard
	Pb	208	703302.2	0.5	**50.2015**	0.840	1.7	ug/L	668	Standard
	U	238	243302.9	1.6	**50.9105**	0.991	1.9	ug/L	32	Standard
>	Bi	209	404872.2	2.1				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	2308.5	8.4	**5.7943**	0.438	7.6	mg/L	60	Standard
K	39	253.3	4.6	**4.7167**	0.296	6.3	mg/L	12	Standard
Ca	43	65.0	67.1	**8.7045**	33.529	385.2	mg/L	37	Standard
Fe	54	2379.8	0.6	**5.1434**	0.059	1.1	mg/L	56	Standard
Fe	57	1421.7	5.1	**5.7542**	0.861	15.0	mg/L	735	Standard
Sc-1	45	23181.1	1.6				mg/L	22687	Standard
Cl	35	25022.6	1.1				ug/L	20516	Standard
Kr	83	4.0	66.1				ug/L	5	Standard
Br	81	480.0	18.2				ug/L	570	Standard
P	31	9613.1	3.6				ug/L	7850	Standard
S	34	1376.7	2.9				ug/L	1375	Standard
Sr	88	186.7	8.6				ug/L	165	Standard
C	12	256.7	25.9				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	18.9	92.5				mg/L	6	Standard
Ho-1	165	8.3	124.9				mg/L	7	Standard
Er	166	23.3	24.7				mg/L	13	Standard
I	127	460.0	13.6				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	91.447		
Al	27	91.142		
Sc	45			
Ti	47	107.744		
V	51	101.948		
Cr	52	100.667		
Cr	53			
Mn	55	114.692		
Co	59	106.340		
Ni	60	98.763		
Cu	65	97.024		
Zn	66	97.222		
Ge	72		92.957	
As	75	97.482		
Se	82	100.420		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	93.438		
Ag	107	93.748		
Cd	111	98.210		
Cd	114			
> In	115		105.543	
Sn	118	88.532		
Sb	123	96.904		
Ba	135	94.859		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	96.347		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.403		
U	238	101.821		
> Bi	209		107.349	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Mn	55	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, August 20, 2015 23:07:15
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59797.8	2.5				ug/L	51673	Standard
	Be	9	8.3	124.9	**-0.0542**	0.014	25.1	ug/L	43	Standard
	Al	27	871.7	52.5	**0.0006**	0.006	1015.1	ug/L	2157	Standard
	Sc	45	21882.5	3.0				ug/L	22687	Standard
	Ti	47	16.0	18.8	**-0.0282**	0.020	69.6	ug/L	43	Standard
	V	51	734.5	9.6	**-0.0868**	0.018	20.6	ug/L	1233	Standard
	Cr	52	4595.7	2.2	**-0.1944**	0.021	10.6	ug/L	6387	Standard
	Cr	53	371.7	10.9	**-1.3668**	0.073	5.3	ug/L	1555	Standard
	Mn	55	438.7	14.3	**-0.0419**	0.023	55.5	ug/L	436	Standard
	Co	59	218.7	9.4	**0.0102**	0.006	54.0	ug/L	236	Standard
	Ni	60	48.0	13.0	**-0.0057**	0.005	85.3	ug/L	204	Standard
	Cu	65	211.0	5.0	**-0.1130**	0.008	7.4	ug/L	303	Standard
	Zn	66	192.7	8.6	**-0.1927**	0.023	12.2	ug/L	332	Standard
>	**Ge**	72	273344.6	0.2				ug/L	293924	Standard
	As	75	38.2	173.2	**0.0955**	0.087	90.7	ug/L	45	Standard
	Se	82	19.2	13.4	**0.0874**	0.041	46.7	ug/L	35	Standard
	Se-1	77	70.7	4.5	**-1.2733**	0.072	5.6	ug/L	153	Standard
>	**Ga**	71	13.3	57.3				mg/L	25	Standard
	Rb	85	31.7	36.5				ug/L	20	Standard
	Y	89	264604.2	1.6				ug/L	279578	Standard
>	**Rh**	103	6.7	43.3				ug/L	68	Standard
	Mo	98	65.1	15.5	**0.0245**	0.007	28.3	ug/L	56	Standard
	Ag	107	121.3	34.8	**0.0070**	0.008	115.6	ug/L	199	Standard
	Cd	111	21.2	90.8	**0.0059**	0.012	199.9	mg/L	89	Standard
	Cd	114	63.6	106.6	**0.0089**	0.016	175.7	ug/L	150	Standard
>	**In**	115	460833.5	1.9				ug/L	458296	Standard
	Sn	118	486.7	3.1	**0.0380**	0.004	10.9	ug/L	385	Standard
	Sb	123	768.6	3.7	**0.1643**	0.006	3.9	ug/L	208	Standard
	Ba	135	59.3	47.7	**0.0048**	0.014	296.1	ug/L	108	Standard
	Ce	140	26.7	92.5				ug/L	92	Standard
>	**Tb**	159	817227.9	1.3				ug/L	812006	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	53.3	109.9	**0.0018**	0.008	457.3	ug/L	236	Standard
	Tl	205	18.3	41.7	**0.0033**	0.002	48.3	ug/L	43	Standard
	Pb	206	294.7	15.0	**0.0125**	0.010	83.9	ug/L	266	Standard
	Pb	207	244.3	24.5	**0.0052**	0.016	295.7	ug/L	206	Standard
	Pb	208	827.3	11.3	**0.0058**	0.007	121.8	ug/L	668	Standard
	U	238	20.7	52.2	**0.0038**	0.002	61.5	ug/L	32	Standard
>	**Bi**	209	397166.5	0.5				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	51.7	5.6	**0.0329**	0.004	13.0	mg/L	60	Standard
K	39	5.0	100.0	**-0.2961**	0.110	37.2	mg/L	12	Standard
Ca	43	21.7	74.2	**-22.7463**	13.285	58.4	mg/L	37	Standard
Fe	54	64.2	13.6	**0.0241**	0.024	100.9	mg/L	56	Standard
Fe	57	753.4	8.4	**0.1302**	0.812	623.6	mg/L	735	Standard
Sc-1	45	21882.5	3.0				mg/L	22687	Standard
Cl	35	23810.7	0.4				ug/L	20516	Standard
Kr	83	3.3	17.3				ug/L	5	Standard
Br	81	500.0	12.5				ug/L	570	Standard
P	31	7802.0	1.6				ug/L	7850	Standard
S	34	1351.7	3.1				ug/L	1375	Standard
Sr	88	193.3	33.7				ug/L	165	Standard
C	12	260.0	7.7				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	9.2	108.8				mg/L	6	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	13	Standard
I	127	2050.1	7.9				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		92.998	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.554
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.306
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, August 20, 2015 23:09:32
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Method 6020 - Summary Report

Sample ID: L1508059701
Sample Date/Time: Thursday, August 20, 2015 23:10:28
Number of Replicates: 3
Autosampler Position: 401
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59540.2	3.7				ug/L	51673	Standard
	Be	9	23.3	49.5	**-0.0344**	0.015	43.7	ug/L	43	Standard
	Al	27	38841.4	1.2	**0.4804**	0.022	4.5	ug/L	2157	Standard
	Sc	45	23301.2	2.0				ug/L	22687	Standard
	Ti	47	237.0	4.4	**1.3873**	0.076	5.5	ug/L	43	Standard
	V	51	1677.0	1.8	**0.1497**	0.003	1.7	ug/L	1233	Standard
	Cr	52	6895.9	0.9	**0.2975**	0.031	10.6	ug/L	6387	Standard
	Cr	53	568.3	13.7	**-1.0299**	0.138	13.4	ug/L	1555	Standard
	Mn	55	107880.9	2.7	**38.6779**	0.579	1.5	ug/L	436	Standard
	Co	59	400.3	4.0	**0.0566**	0.003	5.3	ug/L	236	Standard
	Ni	60	417.7	3.1	**0.2747**	0.011	4.0	ug/L	204	Standard
	Cu	65	29085.2	1.3	**21.9381**	0.414	1.9	ug/L	303	Standard
	Zn	66	15888.0	2.2	**21.3104**	0.332	1.6	ug/L	332	Standard
>	**Ge**	72	276904.6	1.2				ug/L	293924	Standard
	As	75	746.5	7.1	**1.0081**	0.071	7.0	ug/L	45	Standard
	Se	82	21.3	17.0	**0.1149**	0.057	49.9	ug/L	35	Standard
	Se-1	77	89.3	14.0	**-0.8971**	0.281	31.3	ug/L	153	Standard
>	**Ga**	71	383.3	11.8				mg/L	25	Standard
	Rb	85	390.0	5.6				ug/L	20	Standard
	Y	89	270618.9	1.2				ug/L	279578	Standard
>	**Rh**	103	21.7	70.5				ug/L	68	Standard
	Mo	98	482.1	3.9	**0.2731**	0.013	4.9	ug/L	56	Standard
	Ag	107	537.7	6.0	**0.0796**	0.006	8.1	ug/L	199	Standard
	Cd	111	42.6	17.9	**0.0178**	0.004	24.6	mg/L	89	Standard
	Cd	114	147.8	19.4	**0.0268**	0.006	23.3	ug/L	150	Standard
>	**In**	115	472351.7	0.9				ug/L	458296	Standard
	Sn	118	890.0	8.3	**0.1083**	0.012	11.4	ug/L	385	Standard
	Sb	123	609.2	4.2	**0.1243**	0.005	3.6	ug/L	208	Standard
	Ba	135	40437.9	0.9	**19.0153**	0.324	1.7	ug/L	108	Standard
	Ce	140	2943.6	2.5				ug/L	92	Standard
>	**Tb**	159	830800.7	2.1				ug/L	812006	Standard
	Ho	165	63.3	35.6				ug/L	7	Standard
	Tl	203	24.3	30.8	**-0.0025**	0.001	41.2	ug/L	236	Standard
	Tl	205	25.0	20.0	**0.0043**	0.001	21.3	ug/L	43	Standard
	Pb	206	3467.7	2.3	**0.6964**	0.016	2.3	ug/L	266	Standard
	Pb	207	2877.9	1.1	**0.6325**	0.013	2.0	ug/L	206	Standard
	Pb	208	10467.7	0.9	**0.6653**	0.007	1.1	ug/L	668	Standard
	U	238	2213.2	4.3	**0.4449**	0.014	3.1	ug/L	32	Standard
>	**Bi**	209	420703.3	1.3				ug/L	377155	Standard

Sample ID: L1508059701
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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	53.3	37.9	**0.0294**	0.053	181.9	mg/L	60	Standard
K	39	6.7	86.6	**-0.2710**	0.115	42.5	mg/L	12	Standard
Ca	43	38.3	52.7	**-11.5288**	15.268	132.4	mg/L	37	Standard
Fe	54	169.0	20.4	**0.2461**	0.081	33.1	mg/L	56	Standard
Fe	57	786.7	1.0	**-0.0227**	0.176	775.5	mg/L	735	Standard
Sc-1	45	23301.2	2.0				mg/L	22687	Standard
Cl	35	22985.4	0.7				ug/L	20516	Standard
Kr	83	3.0	33.3				ug/L	5	Standard
Br	81	630.0	32.6				ug/L	570	Standard
P	31	7548.5	3.8				ug/L	7850	Standard
S	34	1210.0	12.9				ug/L	1375	Standard
Sr	88	180.0	17.3				ug/L	165	Standard
C	12	340.0	26.1				mg/L	173	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	56.7	20.4				mg/L	0	Standard
Dy	164	106.6	25.3				mg/L	6	Standard
Ho-1	165	63.3	35.6				mg/L	7	Standard
Er	166	70.0	24.7				mg/L	13	Standard
I	127	9096.1	0.4				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		115.225	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		94.209	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.067
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		111.546
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508059701PS WG535080-01
Sample Date/Time: Thursday, August 20, 2015 23:13:39
Number of Replicates: 3
Autosampler Position: 402
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60192.7	2.1				ug/L	51673	Standard
	Be	9	38106.2	0.5	**49.4110**	0.834	1.7	ug/L	43	Standard
	Al	27	39128.8	4.0	**0.4781**	0.015	3.2	ug/L	2157	Standard
	Sc	45	22837.2	2.3				ug/L	22687	Standard
	Ti	47	239.7	4.9	**1.4283**	0.083	5.8	ug/L	43	Standard
	V	51	201791.3	0.8	**51.6759**	0.605	1.2	ug/L	1233	Standard
	Cr	52	240024.5	1.4	**52.2760**	0.471	0.9	ug/L	6387	Standard
	Cr	53	30297.0	6.6	**51.9854**	3.338	6.4	ug/L	1555	Standard
	Mn	55	265636.5	1.8	**97.0508**	2.363	2.4	ug/L	436	Standard
	Co	59	205249.2	0.5	**54.0263**	0.348	0.6	ug/L	236	Standard
	Ni	60	67217.4	0.4	**51.8160**	0.343	0.7	ug/L	204	Standard
	Cu	65	94656.1	0.9	**73.1403**	0.187	0.3	ug/L	303	Standard
	Zn	66	51743.9	1.0	**71.5516**	0.349	0.5	ug/L	332	Standard
>	Ge	72	272642.6	0.7				ug/L	293924	Standard
	As	75	38964.8	0.2	**51.0713**	0.269	0.5	ug/L	45	Standard
	Se	82	3309.9	0.8	**51.7885**	0.386	0.7	ug/L	35	Standard
	Se-1	77	2373.5	2.3	**48.0732**	0.940	2.0	ug/L	153	Standard
>	Ga	71	451.7	11.5				mg/L	25	Standard
	Rb	85	368.3	9.6				ug/L	20	Standard
	Y	89	273883.6	1.5				ug/L	279578	Standard
>	Rh	103	38.3	41.9				ug/L	68	Standard
	Mo	98	488.1	7.5	**0.2708**	0.017	6.2	ug/L	56	Standard
	Ag	107	279794.1	0.5	**48.2407**	1.040	2.2	ug/L	199	Standard
	Cd	111	87508.2	1.4	**49.7297**	1.362	2.7	mg/L	89	Standard
	Cd	114	226772.0	1.4	**48.7726**	0.538	1.1	ug/L	150	Standard
>	In	115	481580.8	1.7				ug/L	458296	Standard
	Sn	118	921.7	6.0	**0.1110**	0.012	10.7	ug/L	385	Standard
	Sb	123	226408.3	1.2	**49.6694**	0.706	1.4	ug/L	208	Standard
	Ba	135	144724.6	0.6	**66.8125**	0.783	1.2	ug/L	108	Standard
	Ce	140	2775.3	5.6				ug/L	92	Standard
>	Tb	159	828270.7	1.3				ug/L	812006	Standard
	Ho	165	66.7	45.2				ug/L	7	Standard
	Tl	203	357302.2	0.3	**48.3838**	0.412	0.9	ug/L	236	Standard
	Tl	205	256471.5	2.3	**50.1733**	1.655	3.3	ug/L	43	Standard
	Pb	206	225771.7	0.3	**49.4600**	0.542	1.1	ug/L	266	Standard
	Pb	207	204675.5	0.6	**49.5372**	0.451	0.9	ug/L	206	Standard
	Pb	208	721819.6	0.6	**50.1631**	0.725	1.4	ug/L	668	Standard
	U	238	243674.6	0.9	**49.6410**	0.287	0.6	ug/L	32	Standard
>	Bi	209	415795.4	1.1				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	55.0	9.1	**0.0358**	0.012	34.7	mg/L	60	Standard
K	39	10.0	132.3	**-0.1953**	0.277	141.9	mg/L	12	Standard
Ca	43	35.0	37.8	**-13.4420**	10.520	78.3	mg/L	37	Standard
Fe	54	149.2	15.2	**0.2093**	0.058	27.8	mg/L	56	Standard
Fe	57	788.4	2.0	**0.1365**	0.221	162.1	mg/L	735	Standard
> **Sc-1**	45	22837.2	2.3				mg/L	22687	Standard
Cl	35	22260.3	0.9				ug/L	20516	Standard
Kr	83	6.0	16.7				ug/L	5	Standard
Br	81	636.7	25.2				ug/L	570	Standard
P	31	7845.4	3.5				ug/L	7850	Standard
S	34	1186.7	10.0				ug/L	1375	Standard
Sr	88	170.0	13.5				ug/L	165	Standard
C	12	246.7	14.2				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	106.7	21.7				mg/L	0	Standard
Dy	164	99.3	5.5				mg/L	6	Standard
Ho-1	165	66.7	45.2				mg/L	7	Standard
Er	166	83.3	6.9				mg/L	13	Standard
I	127	9332.9	2.0				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.488	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.759	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1508059701PS WG535080-01
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.081
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.245
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 21, 2015

Method 6020 - Summary Report

Sample ID: L1508063601
Sample Date/Time: Thursday, August 20, 2015 23:16:51
Number of Replicates: 3
Autosampler Position: 403
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58499.4	0.2				ug/L	51673	Standard
	Be	9	21.7	53.3	**-0.0361**	0.015	42.6	ug/L	43	Standard
	Al	27	35498.2	1.3	**0.4456**	0.006	1.3	ug/L	2157	Standard
	Sc	45	22598.5	2.1				ug/L	22687	Standard
	Ti	47	253.7	11.1	**1.5056**	0.179	11.9	ug/L	43	Standard
	V	51	1746.2	3.8	**0.1704**	0.013	7.9	ug/L	1233	Standard
	Cr	52	6996.9	3.2	**0.3305**	0.035	10.5	ug/L	6387	Standard
	Cr	53	606.7	16.2	**-0.9553**	0.171	17.9	ug/L	1555	Standard
	Mn	55	114821.5	1.3	**41.4956**	0.916	2.2	ug/L	436	Standard
	Co	59	415.7	1.2	**0.0614**	0.002	3.6	ug/L	236	Standard
	Ni	60	416.7	3.7	**0.2762**	0.009	3.2	ug/L	204	Standard
	Cu	65	28125.8	2.2	**21.3608**	0.356	1.7	ug/L	303	Standard
	Zn	66	15166.6	0.2	**20.4771**	0.161	0.8	ug/L	332	Standard
>	**Ge**	72	274873.1	0.9				ug/L	293924	Standard
	As	75	723.4	4.6	**0.9854**	0.052	5.3	ug/L	45	Standard
	Se	82	21.3	15.7	**0.1182**	0.055	46.4	ug/L	35	Standard
	Se-1	77	75.3	14.7	**-1.1839**	0.220	18.6	ug/L	153	Standard
>	**Ga**	71	395.0	18.3				mg/L	25	Standard
	Rb	85	468.3	10.7				ug/L	20	Standard
	Y	89	274185.4	0.8				ug/L	279578	Standard
>	**Rh**	103	21.7	48.0				ug/L	68	Standard
	Mo	98	519.8	3.7	**0.3012**	0.013	4.2	ug/L	56	Standard
	Ag	107	565.3	5.2	**0.0862**	0.006	6.4	ug/L	199	Standard
	Cd	111	60.5	21.8	**0.0289**	0.008	27.1	mg/L	89	Standard
	Cd	114	161.8	22.0	**0.0305**	0.008	26.2	ug/L	150	Standard
>	**In**	115	463883.2	0.3				ug/L	458296	Standard
	Sn	118	680.0	3.2	**0.0728**	0.004	5.0	ug/L	385	Standard
	Sb	123	1155.5	6.2	**0.2512**	0.017	6.6	ug/L	208	Standard
	Ba	135	38342.8	0.3	**18.3569**	0.092	0.5	ug/L	108	Standard
	Ce	140	3097.0	5.4				ug/L	92	Standard
>	**Tb**	159	818733.2	0.9				ug/L	812006	Standard
	Ho	165	60.0	30.0				ug/L	7	Standard
	Tl	203	90.3	44.3	**0.0066**	0.005	82.2	ug/L	236	Standard
	Tl	205	43.3	33.3	**0.0081**	0.003	35.5	ug/L	43	Standard
	Pb	206	3517.4	0.0	**0.7264**	0.004	0.6	ug/L	266	Standard
	Pb	207	2964.6	2.9	**0.6710**	0.020	3.0	ug/L	206	Standard
	Pb	208	10677.5	0.8	**0.6981**	0.003	0.5	ug/L	668	Standard
	U	238	2133.2	2.7	**0.4397**	0.013	3.0	ug/L	32	Standard
>	**Bi**	209	410362.3	0.5				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	68.3	4.2	**0.0723**	0.008	11.2	mg/L	60	Standard
K	39	5.0	173.2	**-0.3027**	0.176	58.0	mg/L	12	Standard
Ca	43	31.7	18.2	**-15.9145**	4.071	25.6	mg/L	37	Standard
Fe	54	191.1	20.3	**0.3076**	0.092	29.8	mg/L	56	Standard
Fe	57	785.0	3.9	**0.1781**	0.159	89.3	mg/L	735	Standard
> **Sc-1**	45	22598.5	2.1				mg/L	22687	Standard
Cl	35	21550.6	1.1				ug/L	20516	Standard
Kr	83	3.3	75.5				ug/L	5	Standard
Br	81	450.0	7.7				ug/L	570	Standard
P	31	7516.9	4.4				ug/L	7850	Standard
S	34	1161.7	3.9				ug/L	1375	Standard
Sr	88	173.3	11.7				ug/L	165	Standard
C	12	290.0	19.2				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	52.9				mg/L	0	Standard
Dy	164	74.4	7.2				mg/L	6	Standard
Ho-1	165	60.0	30.0				mg/L	7	Standard
Er	166	46.7	81.1				mg/L	13	Standard
I	127	12149.9	4.5				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.211	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.518	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.219
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.805
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 21, 2015

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, August 20, 2015 23:20:04
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	57555.8	1.9				ug/L	51673	Standard
	Be	9	35274.4	3.5	**47.8137**	0.970	2.0	ug/L	43	Standard
	Al	27	3653777.5	0.5	**47.7092**	1.061	2.2	ug/L	2157	Standard
	Sc	45	22990.8	0.7				ug/L	22687	Standard
	Ti	47	16611.8	1.1	**105.7383**	2.823	2.7	ug/L	43	Standard
	V	51	197687.7	1.2	**49.5539**	1.379	2.8	ug/L	1233	Standard
	Cr	52	231379.3	1.8	**49.2676**	1.225	2.5	ug/L	6387	Standard
	Cr	53	28688.8	1.1	**48.0545**	1.155	2.4	ug/L	1555	Standard
	Mn	55	156497.2	1.4	**55.8926**	1.713	3.1	ug/L	436	Standard
	Co	59	199913.4	1.5	**51.5192**	1.493	2.9	ug/L	236	Standard
	Ni	60	64255.3	0.2	**48.4874**	0.740	1.5	ug/L	204	Standard
	Cu	65	63748.2	1.6	**48.1315**	1.223	2.5	ug/L	303	Standard
	Zn	66	35597.8	1.4	**48.0482**	1.468	3.1	ug/L	332	Standard
>	Ge	72	278542.1	1.6				ug/L	293924	Standard
	As	75	37282.8	1.1	**47.8479**	1.329	2.8	ug/L	45	Standard
	Se	82	3132.5	2.3	**47.9793**	1.879	3.9	ug/L	35	Standard
	Se-1	77	2283.2	1.3	**45.1082**	0.684	1.5	ug/L	153	Standard
>	Ga	71	33.3	8.7				mg/L	25	Standard
	Rb	85	536.7	6.6				ug/L	20	Standard
	Y	89	273873.1	0.4				ug/L	279578	Standard
>	Rh	103	20.0	43.3				ug/L	68	Standard
	Mo	98	155545.1	0.7	**95.0439**	1.737	1.8	ug/L	56	Standard
	Ag	107	267193.1	0.8	**47.9412**	0.235	0.5	ug/L	199	Standard
	Cd	111	82667.5	2.5	**48.8817**	0.755	1.5	mg/L	89	Standard
	Cd	114	212150.0	2.7	**47.4904**	1.217	2.6	ug/L	150	Standard
>	In	115	462670.1	1.2				ug/L	458296	Standard
	Sn	118	236080.0	3.7	**43.3212**	1.204	2.8	ug/L	385	Standard
	Sb	123	216712.8	1.4	**49.4815**	0.568	1.1	ug/L	208	Standard
	Ba	135	99722.5	1.2	**47.9077**	0.473	1.0	ug/L	108	Standard
	Ce	140	76.7	38.2				ug/L	92	Standard
>	Tb	159	821083.4	0.7				ug/L	812006	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	338392.9	0.8	**48.4219**	0.311	0.6	ug/L	236	Standard
	Tl	205	243588.0	2.1	**50.3452**	0.919	1.8	ug/L	43	Standard
	Pb	206	215809.1	0.7	**49.9581**	0.113	0.2	ug/L	266	Standard
	Pb	207	194114.9	0.3	**49.6467**	0.285	0.6	ug/L	206	Standard
	Pb	208	680395.3	1.8	**49.9627**	0.734	1.5	ug/L	668	Standard
	U	238	234714.6	1.3	**50.5294**	0.662	1.3	ug/L	32	Standard
>	Bi	209	393457.6	0.5				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	1998.5	9.0	**5.0479**	0.494	9.8	mg/L	60	Standard
K	39	235.0	22.2	**4.3873**	1.089	24.8	mg/L	12	Standard
Ca	43	48.3	26.0	**-3.7345**	9.600	257.1	mg/L	37	Standard
Fe	54	2117.3	2.7	**4.6006**	0.141	3.1	mg/L	56	Standard
Fe	57	1365.1	4.0	**5.3381**	0.575	10.8	mg/L	735	Standard
Sc-1	45	22990.8	0.7				mg/L	22687	Standard
Cl	35	22756.4	1.3				ug/L	20516	Standard
Kr	83	5.7	27.0				ug/L	5	Standard
Br	81	480.0	12.7				ug/L	570	Standard
P	31	9186.1	4.9				ug/L	7850	Standard
S	34	1405.1	11.6				ug/L	1375	Standard
Sr	88	183.3	24.7				ug/L	165	Standard
C	12	270.0	25.9				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	2.9	173.2				mg/L	6	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	10.0	173.2				mg/L	13	Standard
I	127	590.0	15.1				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	95.627		
Al	27	95.418		
Sc	45			
Ti	47	105.738		
V	51	99.108		
Cr	52	98.535		
Cr	53			
Mn	55	111.785		
Co	59	103.038		
Ni	60	96.975		
Cu	65	96.263		
Zn	66	96.096		
Ge	72		94.767	
As	75	95.696		
Se	82	95.959		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	95.044		
Ag	107	95.882		
Cd	111	97.763		
Cd	114			
> In	115			100.954
Sn	118	86.642		
Sb	123	98.963		
Ba	135	95.815		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	96.844		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.925		
U	238	101.059		
> Bi	209			104.322
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, August 20, 2015 23:23:16
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59563.6	3.7				ug/L	51673	Standard
	Be	9	16.7	96.4	**-0.0426**	0.022	52.4	ug/L	43	Standard
	Al	27	550.0	20.1	**-0.0035**	0.001	35.7	ug/L	2157	Standard
	Sc	45	23635.1	1.2				ug/L	22687	Standard
	Ti	47	12.0	14.4	**-0.0560**	0.010	18.1	ug/L	43	Standard
	V	51	738.8	11.2	**-0.0900**	0.019	20.9	ug/L	1233	Standard
	Cr	52	4739.4	3.2	**-0.1857**	0.042	22.4	ug/L	6387	Standard
	Cr	53	301.7	18.3	**-1.5033**	0.096	6.4	ug/L	1555	Standard
	Mn	55	434.7	6.5	**-0.0469**	0.009	19.6	ug/L	436	Standard
	Co	59	212.7	5.5	**0.0074**	0.003	39.3	ug/L	236	Standard
	Ni	60	57.3	15.8	**0.0006**	0.007	1240.8	ug/L	204	Standard
	Cu	65	194.0	3.2	**-0.1294**	0.007	5.0	ug/L	303	Standard
	Zn	66	206.7	3.2	**-0.1796**	0.012	6.5	ug/L	332	Standard
>	**Ge**	72	279568.6	1.3				ug/L	293924	Standard
	As	75	5.4	429.4	**0.0523**	0.030	56.5	ug/L	45	Standard
	Se	82	18.7	41.4	**0.0719**	0.118	164.6	ug/L	35	Standard
	Se-1	77	65.3	9.7	**-1.4194**	0.117	8.2	ug/L	153	Standard
>	**Ga**	71	8.3	69.3				mg/L	25	Standard
	Rb	85	13.3	57.3				ug/L	20	Standard
	Y	89	267772.6	1.7				ug/L	279578	Standard
>	**Rh**	103	13.3	57.3				ug/L	68	Standard
	Mo	98	57.1	20.1	**0.0192**	0.007	37.9	ug/L	56	Standard
	Ag	107	103.7	8.8	**0.0035**	0.002	51.8	ug/L	199	Standard
	Cd	111	7.6	27.9	**-0.0024**	0.001	51.3	mg/L	89	Standard
	Cd	114	26.9	30.8	**0.0004**	0.002	463.6	ug/L	150	Standard
>	**In**	115	465579.6	1.1				ug/L	458296	Standard
	Sn	118	490.0	8.9	**0.0376**	0.007	18.9	ug/L	385	Standard
	Sb	123	843.7	6.6	**0.1796**	0.015	8.2	ug/L	208	Standard
	Ba	135	46.7	27.2	**-0.0016**	0.006	378.6	ug/L	108	Standard
	Ce	140	15.0	88.2				ug/L	92	Standard
>	**Tb**	159	834030.0	1.5				ug/L	812006	Standard
	Ho	165	6.7	86.6				ug/L	7	Standard
	Tl	203	26.0	10.2	**-0.0022**	0.000	16.1	ug/L	236	Standard
	Tl	205	13.3	78.1	**0.0022**	0.002	95.9	ug/L	43	Standard
	Pb	206	245.3	4.4	**-0.0001**	0.003	2374.2	ug/L	266	Standard
	Pb	207	213.7	4.0	**-0.0038**	0.002	48.8	ug/L	206	Standard
	Pb	208	765.3	5.3	**0.0000**	0.003	9949.2	ug/L	668	Standard
	U	238	21.0	54.1	**0.0037**	0.002	62.5	ug/L	32	Standard
>	**Bi**	209	406137.0	0.5				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	61.6	**-0.0022**	0.065	2934.9	mg/L	60	Standard
K	39	1.7	173.2	**-0.3707**	0.058	15.6	mg/L	12	Standard
Ca	43	28.3	36.7	**-19.3425**	7.719	39.9	mg/L	37	Standard
Fe	54	46.1	35.0	**-0.0269**	0.035	130.9	mg/L	56	Standard
Fe	57	771.7	11.8	**-0.2531**	0.859	339.3	mg/L	735	Standard
> **Sc-1**	45	23635.1	1.2				mg/L	22687	Standard
Cl	35	22024.7	0.5				ug/L	20516	Standard
Kr	83	4.0	43.3				ug/L	5	Standard
Br	81	473.3	4.4				ug/L	570	Standard
P	31	7970.4	3.6				ug/L	7850	Standard
S	34	1446.7	4.0				ug/L	1375	Standard
Sr	88	160.0	19.0				ug/L	165	Standard
C	12	263.3	19.1				mg/L	173	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	15.5	97.9				mg/L	6	Standard
Ho-1	165	6.7	86.6				mg/L	7	Standard
Er	166	23.3	24.7				mg/L	13	Standard
I	127	1981.8	2.3				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.116	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.589
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.684
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1508072101
Sample Date/Time: Thursday, August 20, 2015 23:26:29
Number of Replicates: 3
Autosampler Position: 404
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65993.8	6.5				ug/L	51673	Standard
	Be	9	25.0	72.1	**-0.0350**	0.022	61.9	ug/L	43	Standard
	Al	27	106741228.2	1.6	**1218.2850**	66.170	5.4	ug/L	2157	Standard
	Sc	45	22067.7	2.4				ug/L	22687	Standard
	Ti	47	83.3	3.9	**0.4425**	0.017	3.9	ug/L	43	Standard
	V	51	4467.7	4.9	**0.9431**	0.061	6.4	ug/L	1233	Standard
	Cr	52	7925.4	3.1	**0.6556**	0.072	11.0	ug/L	6387	Standard
	Cr	53	2413.5	11.4	**2.5333**	0.550	21.7	ug/L	1555	Standard
	Mn	55	36871.8	1.8	**14.0967**	0.182	1.3	ug/L	436	Standard
	Co	59	1865.8	3.6	**0.4735**	0.019	4.1	ug/L	236	Standard
	Ni	60	5833.1	1.4	**4.7251**	0.080	1.7	ug/L	204	Standard
	Cu	65	9465.0	1.7	**7.5008**	0.105	1.4	ug/L	303	Standard
	Zn	66	3840.2	1.2	**5.2015**	0.031	0.6	ug/L	332	Standard
>	**Ge**	72	257366.0	1.2				ug/L	293924	Standard
	As	75	1469.6	13.9	**2.0826**	0.263	12.6	ug/L	45	Standard
	Se	82	3443.0	1.4	**57.0903**	0.153	0.3	ug/L	35	Standard
	Se-1	77	2420.5	1.2	**52.1659**	0.855	1.6	ug/L	153	Standard
>	**Ga**	71	33.3	37.7				mg/L	25	Standard
	Rb	85	16050.2	4.5				ug/L	20	Standard
	Y	89	256761.4	2.3				ug/L	279578	Standard
>	**Rh**	103	446.7	12.3				ug/L	68	Standard
	Mo	98	1441.4	1.9	**0.9484**	0.015	1.6	ug/L	56	Standard
	Ag	107	86.0	15.2	**0.0019**	0.002	124.3	ug/L	199	Standard
	Cd	111	23.6	4.4	**0.0084**	0.001	6.8	mg/L	89	Standard
	Cd	114	47.0	69.0	**0.0060**	0.008	132.8	ug/L	150	Standard
>	**In**	115	422761.4	1.8				ug/L	458296	Standard
	Sn	118	485.0	11.7	**0.0459**	0.013	28.9	ug/L	385	Standard
	Sb	123	909.1	2.3	**0.2153**	0.005	2.2	ug/L	208	Standard
	Ba	135	9112.1	0.5	**4.7698**	0.065	1.4	ug/L	108	Standard
	Ce	140	355.0	11.0				ug/L	92	Standard
>	**Tb**	159	766373.2	1.0				ug/L	812006	Standard
	Ho	165	16.7	62.4				ug/L	7	Standard
	Tl	203	146.3	10.4	**0.0187**	0.002	12.8	ug/L	236	Standard
	Tl	205	98.3	36.8	**0.0233**	0.009	37.1	ug/L	43	Standard
	Pb	206	499.3	6.0	**0.0803**	0.009	11.6	ug/L	266	Standard
	Pb	207	393.0	1.9	**0.0610**	0.004	6.0	ug/L	206	Standard
	Pb	208	1459.4	4.2	**0.0712**	0.007	9.6	ug/L	668	Standard
	U	238	59867.4	1.6	**15.0855**	0.103	0.7	ug/L	32	Standard
>	**Bi**	209	336129.5	1.2				ug/L	377155	Standard

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Na	23	8.3	34.6	**-622.4507**	255.052	41.0	mg/L	2	Standard
Mg	24	222383.7	1.6	**597.3612**	4.631	0.8	mg/L	60	Standard
K	39	253.3	9.3	**4.9670**	0.383	7.7	mg/L	12	Standard
Ca	43	580.0	10.2	**414.5616**	49.202	11.9	mg/L	37	Standard
Fe	54	91.7	16.3	**0.0869**	0.040	46.0	mg/L	56	Standard
Fe	57	1446.7	4.8	**6.6452**	0.989	14.9	mg/L	735	Standard
> **Sc-1**	45	22067.7	2.4				mg/L	22687	Standard
Cl	35	205943.6	1.1				ug/L	20516	Standard
Kr	83	6.0	16.7				ug/L	5	Standard
Br	81	30838.1	6.4				ug/L	570	Standard
P	31	10375.2	3.5				ug/L	7850	Standard
S	34	1630.1	1.1				ug/L	1375	Standard
Sr	88	718.4	7.8				ug/L	165	Standard
C	12	476.7	16.0				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	49.5				mg/L	0	Standard
Dy	164	22.2	69.7				mg/L	6	Standard
Ho-1	165	16.7	62.4				mg/L	7	Standard
Er	166	23.3	24.7				mg/L	13	Standard
I	127	420577.0	1.9				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		127.714	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		87.562	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		92.246
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		89.122
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1508072102
Sample Date/Time: Thursday, August 20, 2015 23:29:40
Number of Replicates: 3
Autosampler Position: 405
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61851.0	1.4				ug/L	51673	Standard
	Be	9	31.7	36.5	**-0.0250**	0.015	59.3	ug/L	43	Standard
	Al	27	97514257.7	0.5	**1184.8817**	9.669	0.8	ug/L	2157	Standard
	Sc	45	21181.5	2.2				ug/L	22687	Standard
	Ti	47	1763.4	2.1	**12.2816**	0.054	0.4	ug/L	43	Standard
	V	51	97684.6	2.5	**26.9206**	0.345	1.3	ug/L	1233	Standard
	Cr	52	8788.5	1.8	**0.9023**	0.002	0.3	ug/L	6387	Standard
	Cr	53	2766.9	7.1	**3.3046**	0.293	8.9	ug/L	1555	Standard
	Mn	55	41632.1	1.7	**16.2856**	0.503	3.1	ug/L	436	Standard
	Co	59	2643.6	0.8	**0.7061**	0.009	1.3	ug/L	236	Standard
	Ni	60	5616.7	3.1	**4.6431**	0.074	1.6	ug/L	204	Standard
	Cu	65	115861.0	1.2	**96.9176**	0.584	0.6	ug/L	303	Standard
	Zn	66	14784.9	2.0	**21.7927**	0.131	0.6	ug/L	332	Standard
>	**Ge**	72	252096.7	1.7				ug/L	293924	Standard
	As	75	1693.5	11.9	**2.4441**	0.285	11.7	ug/L	45	Standard
	Se	82	3242.9	1.3	**54.8996**	1.271	2.3	ug/L	35	Standard
	Se-1	77	2300.2	2.4	**50.5393**	1.925	3.8	ug/L	153	Standard
>	**Ga**	71	863.4	3.7				mg/L	25	Standard
	Rb	85	14253.4	3.5				ug/L	20	Standard
	Y	89	243995.7	1.0				ug/L	279578	Standard
>	**Rh**	103	483.3	8.4				ug/L	68	Standard
	Mo	98	1361.6	7.4	**0.9586**	0.068	7.1	ug/L	56	Standard
	Ag	107	223.3	13.6	**0.0319**	0.006	17.6	ug/L	199	Standard
	Cd	111	24.7	54.5	**0.0102**	0.009	88.0	mg/L	89	Standard
	Cd	114	73.3	21.1	**0.0136**	0.004	28.4	ug/L	150	Standard
>	**In**	115	395126.6	1.6				ug/L	458296	Standard
	Sn	118	935.0	11.7	**0.1491**	0.020	13.4	ug/L	385	Standard
	Sb	123	852.9	2.7	**0.2161**	0.002	1.1	ug/L	208	Standard
	Ba	135	9703.4	0.4	**5.4378**	0.068	1.3	ug/L	108	Standard
	Ce	140	603.3	8.6				ug/L	92	Standard
>	**Tb**	159	736295.2	2.3				ug/L	812006	Standard
	Ho	165	35.0	24.7				ug/L	7	Standard
	Tl	203	117.0	34.2	**0.0142**	0.007	47.0	ug/L	236	Standard
	Tl	205	86.7	33.8	**0.0208**	0.007	33.2	ug/L	43	Standard
	Pb	206	4920.1	2.4	**1.3066**	0.031	2.4	ug/L	266	Standard
	Pb	207	4076.9	4.4	**1.1895**	0.037	3.1	ug/L	206	Standard
	Pb	208	14266.6	1.1	**1.1981**	0.007	0.6	ug/L	668	Standard
	U	238	51960.9	0.8	**13.3593**	0.138	1.0	ug/L	32	Standard
>	**Bi**	209	329471.6	1.5				ug/L	377155	Standard

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Na	23	15.0	100.0	**-1294.1025**	1421.282	109.8	mg/L	2	Standard
Mg	24	209553.1	2.6	**586.4624**	14.922	2.5	mg/L	60	Standard
K	39	235.0	6.4	**4.7914**	0.296	6.2	mg/L	12	Standard
Ca	43	498.3	6.5	**366.4951**	22.806	6.2	mg/L	37	Standard
Fe	54	8647.7	1.8	**20.8326**	0.312	1.5	mg/L	56	Standard
Fe	57	3510.4	3.4	**27.6043**	1.355	4.9	mg/L	735	Standard
Sc-1	45	21181.5	2.2				mg/L	22687	Standard
Cl	35	176282.4	1.7				ug/L	20516	Standard
Kr	83	4.0	43.3				ug/L	5	Standard
Br	81	34536.0	4.7				ug/L	570	Standard
P	31	10198.4	1.8				ug/L	7850	Standard
S	34	1711.8	4.2				ug/L	1375	Standard
Sr	88	658.3	10.3				ug/L	165	Standard
C	12	876.7	9.3				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	32.7	47.4				mg/L	6	Standard
Ho-1	165	35.0	24.7				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	543621.5	6.7				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.697	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		85.769	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		86.216
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.357
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1508072103
Sample Date/Time: Thursday, August 20, 2015 23:33:40
Number of Replicates: 3
Autosampler Position: 406
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	90126.1	5.3				ug/L	51673	Standard
	Be	9	26.7	28.6	**-0.0416**	0.008	18.8	ug/L	43	Standard
	Al	27	94756767.0	1.6	**791.2664**	34.023	4.3	ug/L	2157	Standard
	Sc	45	21290.0	1.8				ug/L	22687	Standard
	Ti	47	155.0	2.6	**0.9713**	0.024	2.5	ug/L	43	Standard
	V	51	3987.8	1.7	**0.8474**	0.022	2.6	ug/L	1233	Standard
	Cr	52	6913.9	2.7	**0.4688**	0.024	5.1	ug/L	6387	Standard
	Cr	53	2455.2	1.4	**2.7597**	0.066	2.4	ug/L	1555	Standard
	Mn	55	80454.9	3.4	**32.0012**	0.778	2.4	ug/L	436	Standard
	Co	59	1645.8	1.2	**0.4269**	0.002	0.5	ug/L	236	Standard
	Ni	60	4438.7	1.6	**3.7021**	0.034	0.9	ug/L	204	Standard
	Cu	65	11273.9	1.1	**9.2862**	0.036	0.4	ug/L	303	Standard
	Zn	66	32799.8	1.0	**49.4613**	0.542	1.1	ug/L	332	Standard
>	Ge	72	249322.2	1.4				ug/L	293924	Standard
	As	75	2872.2	8.9	**4.1601**	0.389	9.3	ug/L	45	Standard
	Se	82	10226.4	0.1	**175.5060**	2.346	1.3	ug/L	35	Standard
	Se-1	77	7413.8	2.0	**170.9363**	2.136	1.2	ug/L	153	Standard
>	Ga	71	141.7	18.1				mg/L	25	Standard
	Rb	85	20954.5	1.5				ug/L	20	Standard
	Y	89	244616.4	2.7				ug/L	279578	Standard
>	Rh	103	433.3	10.4				ug/L	68	Standard
	Mo	98	2261.2	2.5	**1.6238**	0.007	0.4	ug/L	56	Standard
	Ag	107	73.0	7.1	**0.0006**	0.001	224.7	ug/L	199	Standard
	Cd	111	11.7	43.1	**0.0014**	0.003	252.7	mg/L	89	Standard
	Cd	114	29.3	52.2	**0.0021**	0.004	184.6	ug/L	150	Standard
>	In	115	389925.4	2.1				ug/L	458296	Standard
	Sn	118	1705.1	4.7	**0.3202**	0.024	7.6	ug/L	385	Standard
	Sb	123	388.3	5.6	**0.0933**	0.006	6.6	ug/L	208	Standard
	Ba	135	24926.8	1.9	**14.1929**	0.167	1.2	ug/L	108	Standard
	Ce	140	2175.2	0.8				ug/L	92	Standard
>	Tb	159	723760.8	2.0				ug/L	812006	Standard
	Ho	165	36.7	15.7				ug/L	7	Standard
	Tl	203	146.7	7.9	**0.0204**	0.002	9.1	ug/L	236	Standard
	Tl	205	85.0	20.4	**0.0214**	0.005	22.3	ug/L	43	Standard
	Pb	206	501.7	1.7	**0.0896**	0.003	3.4	ug/L	266	Standard
	Pb	207	427.7	1.1	**0.0796**	0.001	1.4	ug/L	206	Standard
	Pb	208	1454.0	1.1	**0.0787**	0.001	1.4	ug/L	668	Standard
	U	238	45914.5	2.5	**12.3113**	0.134	1.1	ug/L	32	Standard
>	Bi	209	315851.0	1.5				ug/L	377155	Standard

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Na	23	6.7	43.3	**-496.1178**	287.002	57.8	mg/L	2	Standard
Mg	24	244038.4	1.8	**679.4386**	7.656	1.1	mg/L	60	Standard
K	39	393.3	12.1	**8.2605**	1.167	14.1	mg/L	12	Standard
Ca	43	371.7	7.4	**261.5527**	19.128	7.3	mg/L	37	Standard
Fe	54	210.4	9.5	**0.3801**	0.047	12.3	mg/L	56	Standard
Fe	57	1353.4	8.2	**6.2296**	1.322	21.2	mg/L	735	Standard
Sc-1	45	21290.0	1.8				mg/L	22687	Standard
Cl	35	167626.6	4.2				ug/L	20516	Standard
Kr	83	3.7	41.7				ug/L	5	Standard
Br	81	20597.3	3.1				ug/L	570	Standard
P	31	9609.7	9.0				ug/L	7850	Standard
S	34	1581.7	6.3				ug/L	1375	Standard
Sr	88	551.7	12.2				ug/L	165	Standard
C	12	333.3	13.9				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	51.4	47.9				mg/L	6	Standard
Ho-1	165	36.7	15.7				mg/L	7	Standard
Er	166	40.0	50.0				mg/L	13	Standard
I	127	240846.7	5.8				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		174.416	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		84.825	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	85.082
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	83.746
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Se 82 Upper, S, EEE	Se	82	

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Se-1 77 Upper, S, EEE Se-1 77

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Method 6020 - Summary Report

Sample ID: L1508072104
Sample Date/Time: Thursday, August 20, 2015 23:36:51
Number of Replicates: 3
Autosampler Position: 407
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78559.8	1.7				ug/L	51673	Standard
	Be	9	18.3	41.7	**-0.0468**	0.008	16.3	ug/L	43	Standard
	Al	27	85747590.6	3.4	**820.1301**	18.332	2.2	ug/L	2157	Standard
	Sc	45	20211.8	3.0				ug/L	22687	Standard
	Ti	47	2562.2	0.4	**18.7868**	0.217	1.2	ug/L	43	Standard
	V	51	90607.5	1.2	**26.1849**	0.473	1.8	ug/L	1233	Standard
	Cr	52	7084.0	0.4	**0.5749**	0.017	2.9	ug/L	6387	Standard
	Cr	53	2273.5	4.7	**2.5693**	0.182	7.1	ug/L	1555	Standard
	Mn	55	107351.0	0.2	**44.3769**	0.626	1.4	ug/L	436	Standard
	Co	59	2258.8	3.7	**0.6279**	0.030	4.8	ug/L	236	Standard
	Ni	60	3970.9	2.9	**3.4317**	0.064	1.9	ug/L	204	Standard
	Cu	65	13002.9	1.0	**11.1632**	0.039	0.3	ug/L	303	Standard
	Zn	66	52442.6	1.8	**82.3223**	1.064	1.3	ug/L	332	Standard
>	**Ge**	72	240374.3	1.3				ug/L	293924	Standard
	As	75	2988.9	16.1	**4.4814**	0.682	15.2	ug/L	45	Standard
	Se	82	9740.4	1.6	**173.3815**	3.598	2.1	ug/L	35	Standard
	Se-1	77	6901.2	1.3	**164.9756**	3.891	2.4	ug/L	153	Standard
>	**Ga**	71	1293.4	12.4				mg/L	25	Standard
	Rb	85	20939.5	1.8				ug/L	20	Standard
	Y	89	225670.1	1.6				ug/L	279578	Standard
>	**Rh**	103	605.0	12.0				ug/L	68	Standard
	Mo	98	2614.4	2.0	**2.0346**	0.088	4.3	ug/L	56	Standard
	Ag	107	103.3	21.6	**0.0089**	0.006	63.8	ug/L	199	Standard
	Cd	111	33.4	13.7	**0.0186**	0.004	21.0	mg/L	89	Standard
	Cd	114	93.0	30.1	**0.0210**	0.007	35.4	ug/L	150	Standard
>	**In**	115	360769.0	2.5				ug/L	458296	Standard
	Sn	118	2496.9	6.2	**0.5366**	0.036	6.6	ug/L	385	Standard
	Sb	123	505.8	10.9	**0.1364**	0.019	13.7	ug/L	208	Standard
	Ba	135	35373.2	1.5	**21.7858**	0.453	2.1	ug/L	108	Standard
	Ce	140	8275.6	3.7				ug/L	92	Standard
>	**Tb**	159	688070.6	2.7				ug/L	812006	Standard
	Ho	165	151.7	1.9				ug/L	7	Standard
	Tl	203	195.7	1.6	**0.0293**	0.001	2.9	ug/L	236	Standard
	Tl	205	168.3	43.3	**0.0432**	0.020	45.4	ug/L	43	Standard
	Pb	206	2026.5	7.6	**0.5329**	0.054	10.1	ug/L	266	Standard
	Pb	207	1650.8	6.6	**0.4724**	0.042	8.9	ug/L	206	Standard
	Pb	208	5689.8	6.0	**0.4692**	0.040	8.6	ug/L	668	Standard
	U	238	49175.4	1.6	**13.2442**	0.127	1.0	ug/L	32	Standard
>	**Bi**	209	314500.4	1.7				ug/L	377155	Standard

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Na	23	8.3	91.7	**-711.5223**	796.504	111.9	mg/L	2	Standard
Mg	24	228477.4	2.9	**670.6072**	34.237	5.1	mg/L	60	Standard
K	39	408.3	11.8	**9.0496**	0.971	10.7	mg/L	12	Standard
Ca	43	346.7	8.7	**256.1598**	19.815	7.7	mg/L	37	Standard
Fe	54	11498.1	1.9	**29.1023**	1.403	4.8	mg/L	56	Standard
Fe	57	4198.9	2.7	**36.3909**	0.264	0.7	mg/L	735	Standard
Sc-1	45	20211.8	3.0				mg/L	22687	Standard
Cl	35	143831.1	2.5				ug/L	20516	Standard
Kr	83	4.0	25.0				ug/L	5	Standard
Br	81	25955.6	2.9				ug/L	570	Standard
P	31	9282.8	2.5				ug/L	7850	Standard
S	34	1453.4	13.1				ug/L	1375	Standard
Sr	88	576.7	5.3				ug/L	165	Standard
C	12	723.4	19.6				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	164.9	21.9				mg/L	6	Standard
Ho-1	165	151.7	1.9				mg/L	7	Standard
Er	166	106.7	44.3				mg/L	13	Standard
I	127	245052.2	6.1				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		152.033	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		81.781	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		78.720
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		83.388
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Se 82 Upper, S, EEE	Se	82	

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Se-1 77 Upper, S, EEE Se-1 77

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Method 6020 - Summary Report

Sample ID: RINSE
Sample Date/Time: Thursday, August 20, 2015 23:40:03
Number of Replicates: 3
Autosampler Position: 408
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51129.5	3.5				ug/L	51673	Standard
	Be	9	15.0	66.7	**-0.0421**	0.016	37.0	ug/L	43	Standard
	Al	27	17273.9	79.1	**0.2460**	0.208	84.5	ug/L	2157	Standard
	Sc	45	21737.2	1.0				ug/L	22687	Standard
	Ti	47	24.7	22.3	**0.0376**	0.038	99.8	ug/L	43	Standard
	V	51	972.7	7.1	**-0.0106**	0.020	189.0	ug/L	1233	Standard
	Cr	52	5838.1	1.3	**0.1598**	0.028	17.2	ug/L	6387	Standard
	Cr	53	446.7	12.0	**-1.1863**	0.095	8.0	ug/L	1555	Standard
	Mn	55	660.3	4.8	**0.0535**	0.013	24.4	ug/L	436	Standard
	Co	59	208.3	6.5	**0.0108**	0.004	39.0	ug/L	236	Standard
	Ni	60	51.0	18.9	**-0.0010**	0.008	769.2	ug/L	204	Standard
	Cu	65	496.7	15.5	**0.1308**	0.060	45.5	ug/L	303	Standard
	Zn	66	1456.7	9.5	**1.6823**	0.185	11.0	ug/L	332	Standard
>	**Ge**	72	257866.3	0.9				ug/L	293924	Standard
	As	75	107.2	21.7	**0.1937**	0.031	15.9	ug/L	45	Standard
	Se	82	71.2	9.8	**0.9686**	0.105	10.8	ug/L	35	Standard
	Se-1	77	83.3	21.0	**-0.8972**	0.384	42.8	ug/L	153	Standard
>	**Ga**	71	26.7	96.2				mg/L	25	Standard
	Rb	85	65.0	30.8				ug/L	20	Standard
	Y	89	249612.9	1.2				ug/L	279578	Standard
>	**Rh**	103	161.7	14.6				ug/L	68	Standard
	Mo	98	10.0	24.0	**-0.0088**	0.002	17.6	ug/L	56	Standard
	Ag	107	72.7	9.4	**-0.0006**	0.001	203.7	ug/L	199	Standard
	Cd	111	3.3	46.4	**-0.0047**	0.001	21.7	mg/L	89	Standard
	Cd	114	16.2	53.3	**-0.0016**	0.002	136.8	ug/L	150	Standard
>	**In**	115	420035.8	0.9				ug/L	458296	Standard
	Sn	118	328.3	10.7	**0.0146**	0.007	48.5	ug/L	385	Standard
	Sb	123	67.9	18.1	**0.0051**	0.003	62.4	ug/L	208	Standard
	Ba	135	53.0	5.0	**0.0041**	0.001	35.7	ug/L	108	Standard
	Ce	140	15.0	66.7				ug/L	92	Standard
>	**Tb**	159	784948.0	0.5				ug/L	812006	Standard
	Ho	165	1.7	173.2				ug/L	7	Standard
	Tl	203	10.3	45.7	**-0.0042**	0.001	16.5	ug/L	236	Standard
	Tl	205	11.7	89.2	**0.0020**	0.002	111.3	ug/L	43	Standard
	Pb	206	269.7	17.2	**0.0101**	0.010	99.8	ug/L	266	Standard
	Pb	207	234.0	14.8	**0.0058**	0.008	143.0	ug/L	206	Standard
	Pb	208	861.7	13.8	**0.0117**	0.008	68.8	ug/L	668	Standard
	U	238	16.7	90.1	**0.0031**	0.003	108.4	ug/L	32	Standard
>	**Bi**	209	375978.2	1.7				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	88.3	55.0	**0.1338**	0.133	99.2	mg/L	60	Standard
K	39	6.7	43.3	**-0.2602**	0.063	24.3	mg/L	12	Standard
Ca	43	38.3	39.8	**-9.5909**	12.288	128.1	mg/L	37	Standard
Fe	54	47.2	27.9	**-0.0154**	0.032	207.5	mg/L	56	Standard
Fe	57	835.0	2.6	**0.9509**	0.290	30.5	mg/L	735	Standard
> **Sc-1**	45	21737.2	1.0				mg/L	22687	Standard
Cl	35	21443.2	1.0				ug/L	20516	Standard
Kr	83	1.0	100.0				ug/L	5	Standard
Br	81	700.0	26.7				ug/L	570	Standard
P	31	7008.3	3.8				ug/L	7850	Standard
S	34	1153.4	4.6				ug/L	1375	Standard
Sr	88	145.0	24.9				ug/L	165	Standard
C	12	196.7	17.9				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	13.0	89.8				mg/L	6	Standard
Ho-1	165	1.7	173.2				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	8240.7	29.3				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.948	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		87.732	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	91.652
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	99.688
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: RINSE
Report Date/Time: Thursday, August 20, 2015 23:42:20
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Method 6020 - Summary Report

Sample ID: RINSE
Sample Date/Time: Thursday, August 20, 2015 23:43:14
Number of Replicates: 3
Autosampler Position: 409
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48840.3	2.6				ug/L	51673	Standard
	Be	9	5.0	100.0	**-0.0570**	0.008	13.8	ug/L	43	Standard
	Al	27	3120.3	27.3	**0.0378**	0.014	37.0	ug/L	2157	Standard
	Sc	45	22326.4	1.4				ug/L	22687	Standard
	Ti	47	25.7	23.8	**0.0404**	0.040	98.9	ug/L	43	Standard
	V	51	1069.3	11.8	**0.0091**	0.035	382.9	ug/L	1233	Standard
	Cr	52	5953.8	1.0	**0.1550**	0.024	15.6	ug/L	6387	Standard
	Cr	53	378.3	5.3	**-1.3309**	0.039	2.9	ug/L	1555	Standard
	Mn	55	518.0	1.1	**-0.0062**	0.004	61.7	ug/L	436	Standard
	Co	59	198.3	4.6	**0.0068**	0.003	38.3	ug/L	236	Standard
	Ni	60	41.0	14.8	**-0.0099**	0.005	45.6	ug/L	204	Standard
	Cu	65	297.3	6.4	**-0.0378**	0.017	45.9	ug/L	303	Standard
	Zn	66	1004.0	4.4	**0.9839**	0.075	7.6	ug/L	332	Standard
>	**Ge**	72	263898.5	0.9				ug/L	293924	Standard
	As	75	29.6	59.8	**0.0855**	0.024	28.2	ug/L	45	Standard
	Se	82	32.0	28.7	**0.3067**	0.153	49.9	ug/L	35	Standard
	Se-1	77	74.7	7.6	**-1.1302**	0.137	12.1	ug/L	153	Standard
>	**Ga**	71	28.3	36.7				mg/L	25	Standard
	Rb	85	40.0	37.5				ug/L	20	Standard
	Y	89	249180.4	3.3				ug/L	279578	Standard
>	**Rh**	103	125.0	8.0				ug/L	68	Standard
	Mo	98	12.0	52.0	**-0.0072**	0.004	60.6	ug/L	56	Standard
	Ag	107	64.3	21.2	**-0.0019**	0.003	137.8	ug/L	199	Standard
	Cd	111	4.3	58.3	**-0.0039**	0.002	43.7	mg/L	89	Standard
	Cd	114	10.9	101.8	**-0.0029**	0.003	95.7	ug/L	150	Standard
>	**In**	115	408667.3	1.8				ug/L	458296	Standard
	Sn	118	278.3	8.9	**0.0061**	0.006	98.8	ug/L	385	Standard
	Sb	123	57.7	18.6	**0.0030**	0.003	99.2	ug/L	208	Standard
	Ba	135	35.7	19.7	**-0.0046**	0.004	83.4	ug/L	108	Standard
	Ce	140	6.7	114.6				ug/L	92	Standard
>	**Tb**	159	759302.9	0.6				ug/L	812006	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	6.3	9.1	**-0.0048**	0.000	2.0	ug/L	236	Standard
	Tl	205	3.3	86.6	**0.0003**	0.001	241.4	ug/L	43	Standard
	Pb	206	215.7	10.9	**-0.0000**	0.006	12600.1	ug/L	266	Standard
	Pb	207	176.7	5.1	**-0.0069**	0.003	39.8	ug/L	206	Standard
	Pb	208	674.7	6.6	**0.0002**	0.004	1483.2	ug/L	668	Standard
	U	238	3.0	33.3	**0.0001**	0.000	274.3	ug/L	32	Standard
>	**Bi**	209	356639.2	0.3				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	85.0	10.2	**0.1187**	0.022	18.7	mg/L	60	Standard
K	39	5.0	100.0	**-0.2999**	0.103	34.4	mg/L	12	Standard
Ca	43	30.0	16.7	**-16.8929**	3.607	21.3	mg/L	37	Standard
Fe	54	59.2	26.4	**0.0088**	0.034	390.5	mg/L	56	Standard
Fe	57	816.7	8.2	**0.5695**	0.694	121.9	mg/L	735	Standard
Sc-1	45	22326.4	1.4				mg/L	22687	Standard
Cl	35	21668.2	0.9				ug/L	20516	Standard
Kr	83	3.3	62.4				ug/L	5	Standard
Br	81	456.7	33.9				ug/L	570	Standard
P	31	6688.1	2.1				ug/L	7850	Standard
S	34	1170.0	3.4				ug/L	1375	Standard
Sr	88	176.7	7.1				ug/L	165	Standard
C	12	180.0	29.4				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	65.5				mg/L	0	Standard
Dy	164	13.0	46.5				mg/L	6	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	3642.1	12.9				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		94.518	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		89.784	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.171
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.560
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: RINSE
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Method 6020 - Summary Report

Sample ID: RINSE
Sample Date/Time: Thursday, August 20, 2015 23:46:26
Number of Replicates: 3
Autosampler Position: 410
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48786.8	3.7				ug/L	51673	Standard
	Be	9	13.3	43.3	**-0.0438**	0.009	19.9	ug/L	43	Standard
	Al	27	8007.7	126.8	**0.1170**	0.165	140.7	ug/L	2157	Standard
	Sc	45	23057.5	1.7				ug/L	22687	Standard
	Ti	47	24.3	31.9	**0.0270**	0.052	193.4	ug/L	43	Standard
	V	51	1132.8	2.6	**0.0170**	0.009	52.4	ug/L	1233	Standard
	Cr	52	6181.9	1.5	**0.1654**	0.016	9.5	ug/L	6387	Standard
	Cr	53	305.0	10.8	**-1.4823**	0.062	4.2	ug/L	1555	Standard
	Mn	55	1344.7	3.6	**0.2915**	0.019	6.6	ug/L	436	Standard
	Co	59	215.7	6.2	**0.0098**	0.004	40.4	ug/L	236	Standard
	Ni	60	90.0	3.3	**0.0270**	0.002	5.8	ug/L	204	Standard
	Cu	65	296.0	7.6	**-0.0459**	0.020	43.3	ug/L	303	Standard
	Zn	66	1932.5	2.0	**2.2369**	0.083	3.7	ug/L	332	Standard
>	**Ge**	72	271931.0	1.1				ug/L	293924	Standard
	As	75	-17.5	242.7	**0.0224**	0.056	249.6	ug/L	45	Standard
	Se	82	24.8	32.6	**0.1769**	0.128	72.2	ug/L	35	Standard
	Se-1	77	68.3	3.0	**-1.3153**	0.057	4.3	ug/L	153	Standard
>	**Ga**	71	18.3	68.6				mg/L	25	Standard
	Rb	85	30.0	28.9				ug/L	20	Standard
	Y	89	250343.3	1.8				ug/L	279578	Standard
>	**Rh**	103	100.0	10.0				ug/L	68	Standard
	Mo	98	9.4	37.9	**-0.0089**	0.003	28.4	ug/L	56	Standard
	Ag	107	59.3	18.5	**-0.0027**	0.002	81.3	ug/L	199	Standard
	Cd	111	4.0	50.2	**-0.0041**	0.001	33.9	mg/L	89	Standard
	Cd	114	21.4	143.6	**-0.0001**	0.008	9328.1	ug/L	150	Standard
>	**In**	115	399982.7	0.8				ug/L	458296	Standard
	Sn	118	508.3	2.0	**0.0562**	0.003	5.1	ug/L	385	Standard
	Sb	123	57.3	4.9	**0.0031**	0.001	19.9	ug/L	208	Standard
	Ba	135	49.3	19.7	**0.0034**	0.005	151.0	ug/L	108	Standard
	Ce	140	26.7	10.8				ug/L	92	Standard
>	**Tb**	159	755323.8	2.0				ug/L	812006	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	7.3	7.9	**-0.0046**	0.000	2.0	ug/L	236	Standard
	Tl	205	5.0	100.0	**0.0006**	0.001	176.7	ug/L	43	Standard
	Pb	206	224.0	10.7	**0.0012**	0.006	485.0	ug/L	266	Standard
	Pb	207	194.3	7.7	**-0.0027**	0.004	162.3	ug/L	206	Standard
	Pb	208	737.7	3.9	**0.0045**	0.002	54.6	ug/L	668	Standard
	U	238	9.3	108.4	**0.0016**	0.002	152.2	ug/L	32	Standard
>	**Bi**	209	361952.7	0.5				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	78.3	16.1	**0.0948**	0.036	37.6	mg/L	60	Standard
K	39	11.7	89.2	**-0.1687**	0.211	124.9	mg/L	12	Standard
Ca	43	21.7	26.6	**-23.8066**	4.532	19.0	mg/L	37	Standard
Fe	54	52.7	14.6	**-0.0095**	0.018	189.0	mg/L	56	Standard
Fe	57	805.0	12.9	**0.2264**	1.057	466.8	mg/L	735	Standard
> **Sc-1**	45	23057.5	1.7				mg/L	22687	Standard
Cl	35	21174.8	1.1				ug/L	20516	Standard
Kr	83	4.7	101.3				ug/L	5	Standard
Br	81	476.7	10.6				ug/L	570	Standard
P	31	6968.3	2.1				ug/L	7850	Standard
S	34	1118.4	6.0				ug/L	1375	Standard
Sr	88	186.7	17.2				ug/L	165	Standard
C	12	153.3	16.4				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.7	93.2				mg/L	6	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	13	Standard
I	127	2855.3	5.5				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.414	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.517	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	87.276
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	95.969
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: RINSE
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Method 6020 - Summary Report

Sample ID: RINSE
Sample Date/Time: Thursday, August 20, 2015 23:49:38
Number of Replicates: 3
Autosampler Position: 411
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50020.8	1.7				ug/L	51673	Standard
	Be	9	18.3	83.3	**-0.0363**	0.024	66.6	ug/L	43	Standard
	Al	27	4277.7	107.2	**0.0543**	0.070	128.6	ug/L	2157	Standard
	Sc	45	23511.6	1.6				ug/L	22687	Standard
	Ti	47	18.7	6.2	**-0.0060**	0.009	147.1	ug/L	43	Standard
	V	51	1137.0	4.6	**0.0282**	0.012	42.9	ug/L	1233	Standard
	Cr	52	6110.9	1.2	**0.1968**	0.026	13.3	ug/L	6387	Standard
	Cr	53	308.3	8.9	**-1.4577**	0.050	3.4	ug/L	1555	Standard
	Mn	55	820.0	3.9	**0.1093**	0.011	10.5	ug/L	436	Standard
	Co	59	203.0	7.2	**0.0083**	0.005	54.6	ug/L	236	Standard
	Ni	60	59.7	21.6	**0.0052**	0.011	203.4	ug/L	204	Standard
	Cu	65	239.0	7.4	**-0.0839**	0.015	18.0	ug/L	303	Standard
	Zn	66	1093.4	5.4	**1.1184**	0.089	7.9	ug/L	332	Standard
>	**Ge**	72	262845.4	1.0				ug/L	293924	Standard
	As	75	-23.8	202.2	**0.0126**	0.066	519.6	ug/L	45	Standard
	Se	82	20.5	28.1	**0.1194**	0.092	76.8	ug/L	35	Standard
	Se-1	77	71.7	4.3	**-1.1905**	0.077	6.5	ug/L	153	Standard
>	**Ga**	71	21.7	58.1				mg/L	25	Standard
	Rb	85	38.3	15.1				ug/L	20	Standard
	Y	89	249962.0	1.6				ug/L	279578	Standard
>	**Rh**	103	55.0	15.7				ug/L	68	Standard
	Mo	98	7.9	31.8	**-0.0100**	0.002	17.4	ug/L	56	Standard
	Ag	107	51.0	16.8	**-0.0045**	0.002	39.3	ug/L	199	Standard
	Cd	111	4.6	99.2	**-0.0037**	0.003	84.7	mg/L	89	Standard
	Cd	114	12.9	100.5	**-0.0023**	0.003	144.7	ug/L	150	Standard
>	**In**	115	405119.8	0.5				ug/L	458296	Standard
	Sn	118	328.3	3.8	**0.0171**	0.002	14.3	ug/L	385	Standard
	Sb	123	55.7	26.0	**0.0025**	0.004	148.8	ug/L	208	Standard
	Ba	135	49.3	55.8	**0.0031**	0.015	486.4	ug/L	108	Standard
	Ce	140	10.0	100.0				ug/L	92	Standard
>	**Tb**	159	754035.3	2.0				ug/L	812006	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	11.7	121.9	**-0.0039**	0.002	56.8	ug/L	236	Standard
	Tl	205	5.0	0.0	**0.0006**	0.000	1.3	ug/L	43	Standard
	Pb	206	237.0	5.2	**0.0048**	0.003	60.6	ug/L	266	Standard
	Pb	207	182.7	11.1	**-0.0057**	0.005	95.2	ug/L	206	Standard
	Pb	208	686.7	7.4	**0.0007**	0.004	525.3	ug/L	668	Standard
	U	238	5.7	97.2	**0.0007**	0.001	183.4	ug/L	32	Standard
>	**Bi**	209	359849.9	0.7				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	83.3	13.9	**0.1029**	0.027	26.2	mg/L	60	Standard
K	39	11.7	65.5	**-0.1707**	0.154	90.1	mg/L	12	Standard
Ca	43	30.0	44.1	**-18.0941**	9.616	53.1	mg/L	37	Standard
Fe	54	49.2	40.3	**-0.0201**	0.041	206.1	mg/L	56	Standard
Fe	57	740.0	8.2	**-0.5081**	0.430	84.7	mg/L	735	Standard
> **Sc-1**	45	23511.6	1.6				mg/L	22687	Standard
Cl	35	21560.7	1.0				ug/L	20516	Standard
Kr	83	3.3	91.7				ug/L	5	Standard
Br	81	503.3	6.4				ug/L	570	Standard
P	31	6613.1	3.5				ug/L	7850	Standard
S	34	1186.7	7.8				ug/L	1375	Standard
Sr	88	156.7	4.9				ug/L	165	Standard
C	12	140.0	24.7				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.3	86.9				mg/L	6	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	13	Standard
I	127	2491.9	2.0				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		96.803	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		89.426	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		88.397
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.412
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, August 20, 2015 23:52:52
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	48852.1	4.2				ug/L	51673	Standard
	Be	9	28964.3	0.1	**46.3124**	1.856	4.0	ug/L	43	Standard
	Al	27	3243133.1	2.4	**49.9065**	1.131	2.3	ug/L	2157	Standard
	Sc	45	23264.5	0.9				ug/L	22687	Standard
	Ti	47	16421.6	1.1	**107.3660**	0.961	0.9	ug/L	43	Standard
	V	51	187393.5	0.5	**48.2410**	0.250	0.5	ug/L	1233	Standard
	Cr	52	224804.0	2.3	**49.1666**	0.971	2.0	ug/L	6387	Standard
	Cr	53	27403.1	2.0	**47.1112**	0.966	2.1	ug/L	1555	Standard
	Mn	55	150286.1	1.2	**55.1257**	0.624	1.1	ug/L	436	Standard
	Co	59	183621.7	1.1	**48.6015**	0.458	0.9	ug/L	236	Standard
	Ni	60	61982.2	1.2	**48.0453**	0.319	0.7	ug/L	204	Standard
	Cu	65	62393.2	0.5	**48.3919**	0.255	0.5	ug/L	303	Standard
	Zn	66	34823.0	1.5	**48.2764**	0.461	1.0	ug/L	332	Standard
>	Ge	72	271109.8	0.8				ug/L	293924	Standard
	As	75	35715.0	0.8	**47.0806**	0.485	1.0	ug/L	45	Standard
	Se	82	3003.0	1.9	**47.2410**	1.299	2.7	ug/L	35	Standard
	Se-1	77	2224.2	2.1	**45.1526**	1.406	3.1	ug/L	153	Standard
>	Ga	71	28.3	40.8				mg/L	25	Standard
	Rb	85	466.7	8.1				ug/L	20	Standard
	Y	89	250221.1	1.1				ug/L	279578	Standard
>	Rh	103	88.3	28.5				ug/L	68	Standard
	Mo	98	137708.7	0.4	**96.0540**	0.900	0.9	ug/L	56	Standard
	Ag	107	235549.2	0.8	**48.2509**	0.617	1.3	ug/L	199	Standard
	Cd	111	69110.3	1.8	**46.6573**	0.788	1.7	mg/L	89	Standard
	Cd	114	183378.2	1.8	**46.8622**	0.621	1.3	ug/L	150	Standard
>	In	115	405263.4	0.6				ug/L	458296	Standard
	Sn	118	209441.2	1.6	**43.8852**	0.715	1.6	ug/L	385	Standard
	Sb	123	189951.8	1.3	**49.5160**	0.816	1.6	ug/L	208	Standard
	Ba	135	92762.8	0.9	**50.8797**	0.778	1.5	ug/L	108	Standard
	Ce	140	65.0	15.4				ug/L	92	Standard
>	Tb	159	763660.6	1.8				ug/L	812006	Standard
	Ho	165	11.7	49.5				ug/L	7	Standard
	Tl	203	310576.7	0.9	**48.2970**	0.432	0.9	ug/L	236	Standard
	Tl	205	218670.2	1.4	**49.1148**	0.181	0.4	ug/L	43	Standard
	Pb	206	197271.3	0.8	**49.6288**	0.448	0.9	ug/L	266	Standard
	Pb	207	178433.6	0.9	**49.6016**	1.110	2.2	ug/L	206	Standard
	Pb	208	623010.3	0.1	**49.7236**	0.847	1.7	ug/L	668	Standard
	U	238	210434.0	1.0	**49.2353**	0.827	1.7	ug/L	32	Standard
>	Bi	209	362082.5	1.7				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	1908.5	3.4	**4.7572**	0.206	4.3	mg/L	60	Standard
K	39	258.3	18.8	**4.8006**	1.011	21.1	mg/L	12	Standard
Ca	43	46.7	44.6	**-5.3309**	15.831	297.0	mg/L	37	Standard
Fe	54	1944.9	6.8	**4.1657**	0.319	7.7	mg/L	56	Standard
Fe	57	1231.7	7.9	**3.9911**	0.890	22.3	mg/L	735	Standard
Sc-1	45	23264.5	0.9				mg/L	22687	Standard
Cl	35	18845.1	3.4				ug/L	20516	Standard
Kr	83	2.7	21.7				ug/L	5	Standard
Br	81	493.3	17.0				ug/L	570	Standard
P	31	7890.4	3.4				ug/L	7850	Standard
S	34	1231.7	4.7				ug/L	1375	Standard
Sr	88	151.7	15.6				ug/L	165	Standard
C	12	233.3	13.1				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.7	103.3				mg/L	6	Standard
Ho-1	165	11.7	49.5				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	868.4	10.3				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	92.625		
Al	27	99.813		
Sc	45			
Ti	47	107.366		
V	51	96.482		
Cr	52	98.333		
Cr	53			
Mn	55	110.251		
Co	59	97.203		
Ni	60	96.091		
Cu	65	96.784		
Zn	66	96.553		
Ge	72		92.238	
As	75	94.161		
Se	82	94.482		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	96.054		
Ag	107	96.502		
Cd	111	93.315		
Cd	114			
> In	115		88.428	
Sn	118	87.770		
Sb	123	99.032		
Ba	135	101.759		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	96.594		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.447		
U	238	98.471		
> Bi	209		96.004	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Mn	55	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, August 20, 2015 23:56:03
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	47325.5	3.9				ug/L	51673	Standard
	Be	9	30.0	109.3	**-0.0163**	0.054	327.8	ug/L	43	Standard
	Al	27	36835.6	163.3	**0.5676**	0.944	166.3	ug/L	2157	Standard
	Sc	45	23333.0	3.6				ug/L	22687	Standard
	Ti	47	24.7	45.6	**0.0350**	0.079	226.2	ug/L	43	Standard
	V	51	756.4	5.4	**-0.0741**	0.009	12.0	ug/L	1233	Standard
	Cr	52	4893.8	3.3	**-0.0875**	0.057	65.5	ug/L	6387	Standard
	Cr	53	350.0	4.9	**-1.3820**	0.045	3.3	ug/L	1555	Standard
	Mn	55	440.0	15.8	**-0.0354**	0.028	77.9	ug/L	436	Standard
	Co	59	220.7	10.0	**0.0128**	0.005	37.0	ug/L	236	Standard
	Ni	60	86.7	70.3	**0.0271**	0.050	185.3	ug/L	204	Standard
	Cu	65	291.7	33.5	**-0.0414**	0.083	199.9	ug/L	303	Standard
	Zn	66	267.3	30.7	**-0.0740**	0.126	169.9	ug/L	332	Standard
>	**Ge**	72	263677.6	2.2				ug/L	293924	Standard
	As	75	23.4	265.1	**0.0781**	0.085	109.4	ug/L	45	Standard
	Se	82	18.5	21.6	**0.0860**	0.061	70.5	ug/L	35	Standard
	Se-1	77	74.3	18.6	**-1.1402**	0.271	23.7	ug/L	153	Standard
>	**Ga**	71	18.3	15.7				mg/L	25	Standard
	Rb	85	35.0	37.8				ug/L	20	Standard
	Y	89	245616.5	0.4				ug/L	279578	Standard
>	**Rh**	103	36.7	55.1				ug/L	68	Standard
	Mo	98	63.4	67.9	**0.0287**	0.030	105.4	ug/L	56	Standard
	Ag	107	151.3	61.1	**0.0160**	0.019	119.3	ug/L	199	Standard
	Cd	111	24.5	75.2	**0.0097**	0.012	128.5	mg/L	89	Standard
	Cd	114	46.9	96.5	**0.0064**	0.012	181.1	ug/L	150	Standard
>	**In**	115	406531.2	0.4				ug/L	458296	Standard
	Sn	118	425.0	4.2	**0.0371**	0.004	11.0	ug/L	385	Standard
	Sb	123	717.3	10.2	**0.1745**	0.020	11.3	ug/L	208	Standard
	Ba	135	68.3	59.5	**0.0134**	0.022	166.2	ug/L	108	Standard
	Ce	140	28.3	71.3				ug/L	92	Standard
>	**Tb**	159	779424.0	0.8				ug/L	812006	Standard
	Ho	165	10.0					ug/L	7	Standard
	Tl	203	112.3	113.4	**0.0113**	0.019	171.1	ug/L	236	Standard
	Tl	205	30.0	76.4	**0.0061**	0.005	82.4	ug/L	43	Standard
	Pb	206	237.7	14.5	**0.0031**	0.008	270.2	ug/L	266	Standard
	Pb	207	211.3	24.4	**0.0005**	0.014	2580.1	ug/L	206	Standard
	Pb	208	660.7	10.5	**-0.0030**	0.005	177.7	ug/L	668	Standard
	U	238	26.0	54.3	**0.0053**	0.003	60.6	ug/L	32	Standard
>	**Bi**	209	371467.8	0.3				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	88.3	60.5	**0.1146**	0.126	110.0	mg/L	60	Standard
K	39	8.3	124.9	**-0.2406**	0.200	83.2	mg/L	12	Standard
Ca	43	38.3	39.8	**-11.5255**	12.139	105.3	mg/L	37	Standard
Fe	54	47.6	5.8	**-0.0222**	0.004	19.3	mg/L	56	Standard
Fe	57	871.7	10.7	**0.7423**	0.967	130.2	mg/L	735	Standard
> **Sc-1**	45	23333.0	3.6				mg/L	22687	Standard
Cl	35	18299.7	1.6				ug/L	20516	Standard
Kr	83	5.7	27.0				ug/L	5	Standard
Br	81	406.7	8.6				ug/L	570	Standard
P	31	7256.7	3.5				ug/L	7850	Standard
S	34	1201.7	10.2				ug/L	1375	Standard
Sr	88	183.3	12.9				ug/L	165	Standard
C	12	183.3	40.2				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	12.9	44.9				mg/L	6	Standard
Ho-1	165	10.0					mg/L	7	Standard
Er	166	10.0					mg/L	13	Standard
I	127	1926.8	2.4				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		89.709	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		88.705
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.492
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, August 20, 2015 23:59:16
Number of Replicates: 3
Autosampler Position: 202
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48852.0	1.2				ug/L	51673	Standard
	Be	9	128.3	29.2	**0.1407**	0.062	44.1	ug/L	43	Standard
	Al	27	1908.5	7.3	**0.0189**	0.002	9.9	ug/L	2157	Standard
	Sc	45	23282.9	0.6				ug/L	22687	Standard
	Ti	47	19.0	19.0	**-0.0096**	0.023	234.1	ug/L	43	Standard
	V	51	2301.2	5.6	**0.3117**	0.037	11.8	ug/L	1233	Standard
	Cr	52	8784.2	1.4	**0.7237**	0.029	4.0	ug/L	6387	Standard
	Cr	53	763.4	10.8	**-0.6796**	0.143	21.1	ug/L	1555	Standard
	Mn	55	2018.8	2.8	**0.5302**	0.023	4.3	ug/L	436	Standard
	Co	59	1630.1	1.3	**0.3782**	0.003	0.7	ug/L	236	Standard
	Ni	60	1981.8	1.9	**1.4721**	0.021	1.4	ug/L	204	Standard
	Cu	65	1263.1	1.4	**0.6944**	0.013	1.8	ug/L	303	Standard
	Zn	66	4476.0	2.0	**5.7123**	0.163	2.9	ug/L	332	Standard
>	**Ge**	72	275184.6	0.6				ug/L	293924	Standard
	As	75	261.2	18.6	**0.3842**	0.061	15.9	ug/L	45	Standard
	Se	82	41.1	26.4	**0.4242**	0.165	38.8	ug/L	35	Standard
	Se-1	77	78.3	0.7	**-1.1207**	0.016	1.4	ug/L	153	Standard
>	**Ga**	71	23.3	32.7				mg/L	25	Standard
	Rb	85	23.3	53.9				ug/L	20	Standard
	Y	89	255811.5	0.8				ug/L	279578	Standard
>	**Rh**	103	43.3	26.6				ug/L	68	Standard
	Mo	98	20.7	24.8	**-0.0011**	0.003	319.9	ug/L	56	Standard
	Ag	107	1914.8	1.4	**0.3784**	0.004	1.1	ug/L	199	Standard
	Cd	111	334.0	3.2	**0.2193**	0.008	3.6	mg/L	89	Standard
	Cd	114	890.8	6.2	**0.2227**	0.015	6.8	ug/L	150	Standard
>	**In**	115	404220.4	1.2				ug/L	458296	Standard
	Sn	118	468.3	7.3	**0.0466**	0.006	13.9	ug/L	385	Standard
	Sb	123	1722.0	0.5	**0.4382**	0.007	1.7	ug/L	208	Standard
	Ba	135	1334.4	0.4	**0.7102**	0.008	1.2	ug/L	108	Standard
	Ce	140	15.0	33.3				ug/L	92	Standard
>	**Tb**	159	771160.4	0.9				ug/L	812006	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	506.3	4.5	**0.0721**	0.004	5.1	ug/L	236	Standard
	Tl	205	338.3	11.5	**0.0747**	0.009	11.6	ug/L	43	Standard
	Pb	206	1026.4	6.3	**0.2004**	0.016	7.9	ug/L	266	Standard
	Pb	207	865.7	2.9	**0.1814**	0.006	3.5	ug/L	206	Standard
	Pb	208	3065.8	1.0	**0.1877**	0.003	1.5	ug/L	668	Standard
	U	238	1673.4	2.8	**0.3865**	0.012	3.1	ug/L	32	Standard
>	**Bi**	209	366180.4	0.2				ug/L	377155	Standard

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Na	23	0.0		**147.5561**	0.000	0.0	mg/L	2	Standard
Mg	24	48.3	15.8	**0.0161**	0.020	123.3	mg/L	60	Standard
K	39	13.3	21.7	**-0.1361**	0.057	41.8	mg/L	12	Standard
Ca	43	31.7	45.6	**-16.6201**	10.629	64.0	mg/L	37	Standard
Fe	54	78.0	25.8	**0.0447**	0.043	96.8	mg/L	56	Standard
Fe	57	785.0	8.1	**-0.0363**	0.532	1464.2	mg/L	735	Standard
> **Sc-1**	45	23282.9	0.6				mg/L	22687	Standard
Cl	35	18911.1	0.6				ug/L	20516	Standard
Kr	83	3.3	17.3				ug/L	5	Standard
Br	81	396.7	30.5				ug/L	570	Standard
P	31	7980.4	3.1				ug/L	7850	Standard
S	34	1180.0	6.2				ug/L	1375	Standard
Sr	88	163.3	12.4				ug/L	165	Standard
C	12	183.3	16.7				mg/L	173	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	0	Standard
Dy	164	13.2	116.4				mg/L	6	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	613.3	6.9				mg/L	3795	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.541	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.624	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 8
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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	88.201
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	97.090
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
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MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Sunday, August 23, 2015 14:55:23

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1344	2025	0.673	
Mg	23.985	23.975	4494	2019	0.711	
Co	58.933	58.925	11694	2022	0.697	
In	114.904	114.925	22865	2027	0.693	
U	238.050	238.025	47459	2042	0.677	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	4.441
5.575	2.703
5.625	3.703
5.675	3.526
5.725	4.063
5.775	3.907
5.825	3.804
5.875	2.636
5.925	1.645
5.975	2.591
6.025	1.764
6.075	3.156
6.125	5.447
6.175	7.624
6.225	149.071
6.275	37.268
6.325	83.853
6.375	85.267
6.425	21.551
6.475	9.715
6.525	4.542
6.575	2.665
6.625	2.784
6.675	1.625
6.725	1.920
6.775	2.503
6.825	1.894

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6.875	0.935
6.925	0.790
6.975	1.563
7.025	1.345
7.075	2.061
7.125	2.065
7.175	1.575
7.225	4.324
7.275	53.926
7.325	37.268
7.375	94.786
7.425	38.030
7.475	91.287
7.525	81.441
7.575	122.475
7.625	139.240
7.675	39.123
7.725	72.436
7.775	55.902
7.825	95.831
7.875	69.722
7.925	106.863
7.975	55.902
8.025	136.931
8.075	55.902
8.125	58.685
8.175	108.327
8.225	50.000
8.275	82.402
8.325	95.831
8.375	104.583
8.425	100.000
8.475	91.287
22.525	55.902
22.575	95.924
22.625	28.524
22.675	13.258
22.725	19.921
22.775	48.725
22.825	23.177
22.875	5.893
22.925	46.264
22.975	23.036
23.025	16.937
23.075	23.111
23.125	30.162
23.175	43.064

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23.225	33.624
23.275	37.769
23.325	24.993
23.375	33.248
23.425	25.074
23.475	35.954
23.525	8.501
23.575	2.046
23.625	2.319
23.675	3.471
23.725	1.963
23.775	1.611
23.825	1.811
23.875	1.270
23.925	0.818
23.975	1.797
24.025	0.889
24.075	1.205
24.125	1.181
24.175	1.159
24.225	2.098
24.275	1.565
24.325	4.792
24.375	45.079
24.425	68.148
24.475	8.712
24.525	6.713
24.575	4.567
24.625	3.198
24.675	2.996
24.725	2.215
24.775	2.220
24.825	2.728
24.875	2.182
24.925	2.379
24.975	3.354
25.025	2.251
25.075	2.919
25.125	2.307
25.175	1.624
25.225	1.419
25.275	6.061
25.325	39.123
25.375	35.355
25.425	51.349
25.475	15.707
57.525	4.400

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57.575	4.046
57.625	2.896
57.675	3.861
57.725	3.236
57.775	2.740
57.825	1.511
57.875	2.537
57.925	2.285
57.975	2.174
58.025	1.685
58.075	3.619
58.125	1.267
58.175	1.298
58.225	3.374
58.275	23.149
58.325	72.111
58.375	58.736
58.425	14.861
58.475	4.200
58.525	10.582
58.575	6.741
58.625	2.202
58.675	4.110
58.725	3.419
58.775	1.732
58.825	3.026
58.875	2.754
58.925	3.557
58.975	3.124
59.025	1.981
59.075	1.171
59.125	3.410
59.175	5.873
59.225	5.492
59.275	23.570
59.325	63.888
59.375	100.000
59.425	47.075
59.475	27.794
59.525	14.938
59.575	7.661
59.625	9.030
59.675	4.606
59.725	1.923
59.775	3.794
59.825	3.736
59.875	4.246

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59.925	3.788
59.975	4.250
60.025	7.344
60.075	2.645
60.125	3.674
60.175	8.336
60.225	13.939
60.275	64.043
60.325	58.685
60.375	39.123
60.425	51.602
60.475	57.051
113.525	16.851
113.575	5.488
113.625	5.170
113.675	5.363
113.725	2.402
113.775	1.328
113.825	4.438
113.875	2.443
113.925	4.401
113.975	2.454
114.025	1.231
114.075	3.077
114.125	2.041
114.175	7.017
114.225	4.370
114.275	16.891
114.325	42.492
114.375	25.074
114.425	17.024
114.475	9.361
114.525	4.072
114.575	2.613
114.625	2.448
114.675	1.056
114.725	2.081
114.775	2.032
114.825	2.280
114.875	2.194
114.925	2.229
114.975	3.153
115.025	1.635
115.075	1.897
115.125	2.468
115.175	1.750
115.225	2.858

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115.275	8.843
115.325	24.594
115.375	71.442
115.425	47.650
115.475	22.780
115.525	6.617
115.575	6.735
115.625	2.497
115.675	2.576
115.725	9.904
115.775	3.692
115.825	4.607
115.875	1.202
115.925	4.092
115.975	1.120
116.025	2.367
116.075	4.457
116.125	4.033
116.175	4.351
116.225	7.533
116.275	10.955
116.325	47.843
116.375	81.312
116.425	34.312
116.475	38.528
236.525	223.607
236.575	46.566
236.625	28.524
236.675	22.588
236.725	15.002
236.775	30.459
236.825	47.650
236.875	44.605
236.925	50.034
236.975	22.222
237.025	16.110
237.075	42.931
237.125	30.322
237.175	37.268
237.225	20.039
237.275	30.492
237.325	106.096
237.375	37.982
237.425	47.453
237.475	24.686
237.525	15.710
237.575	8.006

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237.625	5.317
237.675	4.922
237.725	5.138
237.775	2.510
237.825	3.630
237.875	2.671
237.925	1.723
237.975	1.481
238.025	1.099
238.075	2.079
238.125	2.745
238.175	1.815
238.225	2.825
238.275	2.110
238.325	3.221
238.375	4.666
238.425	9.178
238.475	12.342
238.525	7.846
238.575	40.745
238.625	39.529
238.675	63.191
238.725	58.975
238.775	50.508
238.825	20.412
238.875	43.971
238.925	39.219
238.975	29.315
239.025	23.385
239.075	38.932
239.125	46.187
239.175	33.333
239.225	27.524
239.275	39.529
239.325	50.146
239.375	28.384
239.425	16.563
239.475	25.074

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SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 8/23/2015 2:59:51 PM
End Time: 8/23/2015 3:02:27 PM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 2934.02
        Obtained Intensity (Mg 23.985): 178163.54
        Obtained Intensity (In 114.904): 79055.71
        Obtained Intensity (U 238.05): 42757.58
        Obtained Intensity (Bkgd 220): 0.73
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.019 (=5280.39 / 276518.70)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.004 (=1096.91 / 276518.70)
```

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SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 8/23/2015 2:59:51 PM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 2934.02
                Obtained Intensity (Mg 23.985): 178163.54
                Obtained Intensity (In 114.904): 79055.71
                Obtained Intensity (U 238.05): 42757.58
                Obtained Intensity (Bkgd 220): 0.73
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.019 (=5280.39 / 276518.70)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.004 (=1096.91 / 276518.70)
[Passed]  Optimum value(s): N/A

End Time: 8/23/2015 3:02:27 PM
```


Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Sunday, August 23, 2015 15:15:39
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	53497.6	1.4				ug/L		Standard
	Be	9	11.7	99.0				ug/L		Standard
	Al	27	486.7	6.5				ug/L		Standard
	Sc	45	24506.5	3.1				ug/L		Standard
	Ti	47	21.3	2.7				ug/L		Standard
	V	51	1267.5	3.1				ug/L		Standard
	Cr	52	7921.4	2.0				ug/L		Standard
	Cr	53	441.7	5.6				ug/L		Standard
	Mn	55	545.3	3.5				ug/L		Standard
	Co	59	183.0	7.7				ug/L		Standard
	Ni	60	130.7	5.7				ug/L		Standard
	Cu	65	231.3	1.1				ug/L		Standard
	Zn	66	306.3	5.7				ug/L		Standard
>	Ge	72	330477.7	1.8				ug/L		Standard
	As	75	-22.6	114.0				ug/L		Standard
	Se	82	26.9	28.3				ug/L		Standard
	Se-1	77	92.0	7.1				ug/L		Standard
>	Ga	71	36.7	20.8				mg/L		Standard
	Rb	85	25.0	20.0				ug/L		Standard
	Y	89	312466.8	2.2				ug/L		Standard
>	Rh	103	20.0	25.0				ug/L		Standard
	Mo	98	13.2	22.6				ug/L		Standard
	Ag	107	71.7	3.2				ug/L		Standard
	Cd	111	5.0	34.8				mg/L		Standard
	Cd	114	7.5	103.6				ug/L		Standard
>	In	115	477820.5	0.5				ug/L		Standard
	Sn	118	343.3	9.9				ug/L		Standard
	Sb	123	55.6	27.9				ug/L		Standard
	Ba	135	35.7	10.6				ug/L		Standard
	Ce	140	65.0	50.4				ug/L		Standard
>	Tb	159	939481.2	2.0				ug/L		Standard
	Ho	165	6.7	114.6				ug/L		Standard
	Tl	203	5.3	109.9				ug/L		Standard
	Tl	205	1.7	173.2				ug/L		Standard
	Pb	206	222.0	5.1				ug/L		Standard
	Pb	207	186.3	10.6				ug/L		Standard
	Pb	208	716.7	4.3				ug/L		Standard
	U	238	1.7	124.9				ug/L		Standard
>	Bi	209	440279.4	0.5				ug/L		Standard

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	Na	23	1.7	173.2	mg/L	Standard
	Mg	24	45.0	29.4	mg/L	Standard
	K	39	10.0	50.0	mg/L	Standard
	Ca	43	46.7	44.6	mg/L	Standard
	Fe	54	46.0	12.7	mg/L	Standard
	Fe	57	626.7	8.9	mg/L	Standard
>	**Sc-1**	45	24506.5	3.1	mg/L	Standard
	Cl	35	47099.8	0.8	ug/L	Standard
	Kr	83	8.3	42.1	ug/L	Standard
	Br	81	426.7	25.1	ug/L	Standard
	P	31	10518.7	4.4	ug/L	Standard
	S	34	2003.5	6.4	ug/L	Standard
	Sr	88	131.7	19.5	ug/L	Standard
	C	12	176.7	17.3	mg/L	Standard
	N	14	3.3	173.2	mg/L	Standard
	Hg	202	10.0		mg/L	Standard
	Dy	164	13.0	117.0	mg/L	Standard
	Ho-1	165	6.7	114.6	mg/L	Standard
	Er	166	6.7	86.6	mg/L	Standard
	I	127	2225.2	3.2	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Sunday, August 23, 2015 15:18:51
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	52064.3	2.5				ug/L	53498	Standard
	Be	9	8.3	91.7	-0.0053	0.014	256.3	ug/L	12	Standard
	Al	27	475.0	14.2	-0.0039	0.001	29.9	ug/L	487	Standard
	Sc	45	25069.1	2.6				ug/L	24506	Standard
	Ti	47	19.7	48.9	-0.0252	0.051	204.4	ug/L	21	Standard
	V	51	1267.0	1.5	-0.0217	0.004	20.3	ug/L	1268	Standard
	Cr	52	7678.9	0.5	-0.0515	0.009	17.2	ug/L	7921	Standard
	Cr	53	400.0	14.4	-0.1142	0.090	78.6	ug/L	442	Standard
	Mn	55	571.3	3.5	-0.0109	0.007	61.7	ug/L	545	Standard
	Co	59	187.7	7.3	-0.0033	0.004	117.7	ug/L	183	Standard
	Ni	60	131.3	3.8	0.0072	0.003	39.0	ug/L	131	Standard
	Cu	65	219.3	7.0	-0.0098	0.011	108.5	ug/L	231	Standard
	Zn	66	325.0	4.3	-0.0285	0.022	78.3	ug/L	306	Standard
>	Ge	72	334244.4	0.9				ug/L	330478	Standard
	As	75	-58.2	31.9	-0.0234	0.024	101.7	ug/L	-23	Standard
	Se	82	16.2	17.8	-0.1663	0.047	28.4	ug/L	27	Standard
	Se-1	77	87.3	13.3	0.0031	0.246	8030.6	ug/L	92	Standard
>	Ga	71	18.3	41.7				mg/L	37	Standard
	Rb	85	36.7	20.8				ug/L	25	Standard
	Y	89	311546.0	1.7				ug/L	312467	Standard
>	Rh	103	31.7	65.7				ug/L	20	Standard
	Mo	98	7.4	24.6	0.0033	0.001	42.3	ug/L	13	Standard
	Ag	107	68.7	7.3	-0.0070	0.001	14.1	ug/L	72	Standard
	Cd	111	5.6	27.0	-0.0091	0.001	12.3	mg/L	5	Standard
	Cd	114	18.7	60.6	-0.0028	0.003	114.7	ug/L	7	Standard
>	In	115	474373.5	1.2				ug/L	477820	Standard
	Sn	118	298.3	16.9	-0.0119	0.011	92.7	ug/L	343	Standard
	Sb	123	29.9	16.6	0.0042	0.001	29.7	ug/L	56	Standard
	Ba	135	38.7	22.0	-0.0059	0.005	80.2	ug/L	36	Standard
	Ce	140	48.3	29.9				ug/L	65	Standard
>	Tb	159	942608.1	2.4				ug/L	939481	Standard
	Ho	165	13.3	57.3				ug/L	7	Standard
	Tl	203	5.0	69.3	-0.0031	0.001	17.6	ug/L	5	Standard
	Tl	205	3.3	173.2	-0.0059	0.001	22.3	ug/L	2	Standard
	Pb	206	218.3	10.5	-0.0085	0.006	74.1	ug/L	222	Standard
	Pb	207	189.7	6.6	-0.0084	0.004	45.8	ug/L	186	Standard
	Pb	208	683.3	1.4	-0.0089	0.000	4.6	ug/L	717	Standard
	U	238	4.0	109.0	-0.0054	0.001	18.2	ug/L	2	Standard
>	Bi	209	448941.1	1.4				ug/L	440279	Standard

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Na	23	1.7	**-4645943967208**0470110003232.172			173.2	mg/L	2	Standard
Mg	24	41.7	42.1	**-0.0222**	0.047	212.2	mg/L	45	Standard
K	39	8.3	124.9	**-0.1140**	0.394	345.6	mg/L	10	Standard
Ca	43	30.0	28.9	**-1.8689**	1.782	95.3	mg/L	47	Standard
Fe	54	72.7	14.6	**0.0140**	0.027	190.9	mg/L	46	Standard
Fe	57	695.0	7.3	**0.6515**	0.604	92.7	mg/L	627	Standard
Sc-1	45	25069.1	2.6				mg/L	24506	Standard
Cl	35	47626.1	2.3				ug/L	47100	Standard
Kr	83	5.7	71.3				ug/L	8	Standard
Br	81	410.0	28.8				ug/L	427	Standard
P	31	11325.9	5.8				ug/L	10519	Standard
S	34	1953.5	5.3				ug/L	2003	Standard
Sr	88	153.3	6.8				ug/L	132	Standard
C	12	216.7	37.3				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	12.5	96.6				mg/L	13	Standard
Ho-1	165	13.3	57.3				mg/L	7	Standard
Er	166	16.7	91.7				mg/L	7	Standard
I	127	2133.5	2.9				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: Standard 1
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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 1
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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Sunday, August 23, 2015 15:22:02
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54039.6	2.6				ug/L	53498	Standard
	Be	9	41.7	6.9	**0.0500**	0.004	8.6	ug/L	12	Standard
	Al	27	4263.9	4.7	**0.0500**	0.002	3.6	ug/L	487	Standard
	Sc	45	25169.2	3.2				ug/L	24506	Standard
	Ti	47	42.0	23.0	**0.1000**	0.053	53.2	ug/L	21	Standard
	V	51	1517.7	6.6	**0.0500**	0.025	50.0	ug/L	1268	Standard
	Cr	52	8017.1	1.2	**0.0500**	0.014	28.0	ug/L	7921	Standard
	Cr	53	495.0	16.3	**0.0500**	0.123	245.3	ug/L	442	Standard
	Mn	55	761.0	1.6	**0.0500**	0.004	8.1	ug/L	545	Standard
	Co	59	372.7	2.3	**0.0500**	0.002	4.4	ug/L	183	Standard
	Ni	60	186.0	6.7	**0.0500**	0.010	20.2	ug/L	131	Standard
	Cu	65	292.3	7.1	**0.0500**	0.017	33.7	ug/L	231	Standard
	Zn	66	376.0	6.5	**0.0500**	0.036	72.3	ug/L	306	Standard
>	**Ge**	72	326673.1	0.6				ug/L	330478	Standard
	As	75	-1.4	1797.2	**0.0500**	0.034	68.4	ug/L	-23	Standard
	Se	82	29.1	5.7	**0.0500**	0.028	56.8	ug/L	27	Standard
	Se-1	77	87.3	16.7	**0.0500**	0.338	675.3	ug/L	92	Standard
>	**Ga**	71	13.3	78.1				mg/L	37	Standard
	Rb	85	33.3	22.9				ug/L	25	Standard
	Y	89	314532.2	2.2				ug/L	312467	Standard
>	**Rh**	103	18.3	15.7				ug/L	20	Standard
	Mo	98	138.2	13.1	**0.1000**	0.012	12.4	ug/L	13	Standard
	Ag	107	342.7	10.5	**0.0500**	0.008	16.0	ug/L	72	Standard
	Cd	111	85.6	7.6	**0.0500**	0.005	10.0	mg/L	5	Standard
	Cd	114	206.2	16.7	**0.0500**	0.010	20.2	ug/L	7	Standard
>	**In**	115	475079.4	0.9				ug/L	477820	Standard
	Sn	118	575.0	13.0	**0.0500**	0.016	31.6	ug/L	343	Standard
	Sb	123	199.1	2.8	**0.0500**	0.001	2.2	ug/L	56	Standard
	Ba	135	144.7	17.1	**0.0500**	0.013	25.1	ug/L	36	Standard
	Ce	140	43.3	94.0				ug/L	65	Standard
>	**Tb**	159	940988.0	2.9				ug/L	939481	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	344.3	5.9	**0.0500**	0.003	6.6	ug/L	5	Standard
	Tl	205	246.7	22.3	**0.0500**	0.013	25.1	ug/L	2	Standard
	Pb	206	447.7	7.4	**0.0500**	0.008	16.3	ug/L	222	Standard
	Pb	207	397.0	4.4	**0.0500**	0.005	9.2	ug/L	186	Standard
	Pb	208	1428.0	1.7	**0.0500**	0.002	3.8	ug/L	717	Standard
	U	238	248.7	6.2	**0.0500**	0.004	7.3	ug/L	2	Standard
>	**Bi**	209	441288.8	0.4				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	51.7	20.1	**0.0050**	0.027	537.5	mg/L	45	Standard
K	39	11.7	107.9	**0.0050**	0.474	9470.2	mg/L	10	Standard
Ca	43	38.3	15.1	**0.0050**	1.512	30237.3	mg/L	47	Standard
Fe	54	69.3	25.5	**0.0050**	0.045	901.1	mg/L	46	Standard
Fe	57	631.7	7.5	**0.0050**	0.256	5115.9	mg/L	627	Standard
Sc-1	45	25169.2	3.2				mg/L	24506	Standard
Cl	35	47423.4	1.2				ug/L	47100	Standard
Kr	83	5.3	39.0				ug/L	8	Standard
Br	81	556.7	11.7				ug/L	427	Standard
P	31	10965.6	3.2				ug/L	10519	Standard
S	34	1960.1	9.6				ug/L	2003	Standard
Sr	88	150.0	8.8				ug/L	132	Standard
C	12	136.7	29.6				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	8.4	107.8				mg/L	13	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	33.3	69.3				mg/L	7	Standard
I	127	2185.2	5.0				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 2
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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Sunday, August 23, 2015 15:25:14
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	53524.5	4.6				ug/L	53498	Standard
	Be	9	29498.7	4.1	**50.1451**	2.856	5.7	ug/L	12	Standard
	Al	27	3541433.0	1.5	**51.1643**	1.901	3.7	ug/L	487	Standard
	Sc	45	25107.5	2.0				ug/L	24506	Standard
	Ti	47	18753.3	0.8	**98.9270**	2.118	2.1	ug/L	21	Standard
	V	51	203725.0	1.6	**49.9356**	1.672	3.3	ug/L	1268	Standard
	Cr	52	271268.2	2.2	**50.1790**	1.717	3.4	ug/L	7921	Standard
	Cr	53	33518.7	1.7	**50.2983**	0.781	1.6	ug/L	442	Standard
	Mn	55	172563.5	1.2	**49.7061**	1.470	3.0	ug/L	545	Standard
	Co	59	185554.2	1.7	**50.1744**	1.696	3.4	ug/L	183	Standard
	Ni	60	70578.7	1.8	**50.1872**	1.707	3.4	ug/L	131	Standard
	Cu	65	68755.0	1.0	**50.4384**	1.372	2.7	ug/L	231	Standard
	Zn	66	38982.4	1.8	**49.9497**	1.605	3.2	ug/L	306	Standard
>	Ge	72	339954.8	1.7				ug/L	330478	Standard
	As	75	39112.5	0.5	**49.9084**	1.013	2.0	ug/L	-23	Standard
	Se	82	3209.2	2.5	**49.5749**	0.509	1.0	ug/L	27	Standard
	Se-1	77	2328.5	2.5	**49.2311**	0.961	2.0	ug/L	92	Standard
>	Ga	71	48.3	21.5				mg/L	37	Standard
	Rb	85	631.7	7.9				ug/L	25	Standard
	Y	89	314815.6	1.3				ug/L	312467	Standard
>	Rh	103	28.3	27.0				ug/L	20	Standard
	Mo	98	138945.0	0.3	**101.8300**	1.148	1.1	ug/L	13	Standard
	Ag	107	247120.3	0.6	**50.8479**	0.888	1.7	ug/L	72	Standard
	Cd	111	69056.2	0.4	**50.4800**	0.658	1.3	mg/L	5	Standard
	Cd	114	180477.8	0.6	**50.2933**	0.443	0.9	ug/L	7	Standard
>	In	115	479883.2	1.4				ug/L	477820	Standard
	Sn	118	218105.6	1.9	**48.3447**	1.591	3.3	ug/L	343	Standard
	Sb	123	188569.5	0.5	**50.5304**	0.827	1.6	ug/L	56	Standard
	Ba	135	96777.4	0.5	**50.5901**	0.872	1.7	ug/L	36	Standard
	Ce	140	78.3	18.4				ug/L	65	Standard
>	Tb	159	949219.7	1.8				ug/L	939481	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	324196.0	0.1	**49.7574**	0.904	1.8	ug/L	5	Standard
	Tl	205	219717.0	1.8	**49.5695**	1.660	3.3	ug/L	2	Standard
	Pb	206	202815.1	0.7	**49.9448**	0.845	1.7	ug/L	222	Standard
	Pb	207	183673.3	0.5	**49.9992**	1.065	2.1	ug/L	186	Standard
	Pb	208	654377.0	0.6	**49.9838**	1.167	2.3	ug/L	717	Standard
	U	238	223602.5	0.4	**49.6775**	1.100	2.2	ug/L	2	Standard
>	Bi	209	449460.8	1.8				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	1855.1	0.5	**4.9736**	0.130	2.6	mg/L	45	Standard
K	39	151.7	6.9	**5.1226**	0.401	7.8	mg/L	10	Standard
Ca	43	60.0	30.0	**4.8039**	3.878	80.7	mg/L	47	Standard
Fe	54	2118.9	9.4	**5.0650**	0.393	7.8	mg/L	46	Standard
Fe	57	1180.0	6.7	**5.2976**	0.816	15.4	mg/L	627	Standard
> **Sc-1**	45	25107.5	2.0				mg/L	24506	Standard
Cl	35	43737.1	3.2				ug/L	47100	Standard
Kr	83	4.0	50.0				ug/L	8	Standard
Br	81	430.0	8.1				ug/L	427	Standard
P	31	11324.2	3.6				ug/L	10519	Standard
S	34	2218.5	2.4				ug/L	2003	Standard
Sr	88	190.0	19.9				ug/L	132	Standard
C	12	166.7	12.5				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	15.5	97.9				mg/L	13	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	23.3	24.7				mg/L	7	Standard
I	127	1090.0	3.5				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 3
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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Sunday, August 23, 2015 15:28:26
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	53957.6	1.4				ug/L	53498	Standard
	Be	9	59177.0	1.3	**99.7100**	2.643	2.7	ug/L	12	Standard
	Al	27	6821343.7	0.5	**97.6725**	1.035	1.1	ug/L	487	Standard
	Sc	45	25571.6	1.2				ug/L	24506	Standard
	Ti	47	37719.9	1.9	**202.1449**	5.259	2.6	ug/L	21	Standard
	V	51	401077.3	0.8	**100.1287**	1.818	1.8	ug/L	1268	Standard
	Cr	52	522746.7	2.1	**99.6421**	3.193	3.2	ug/L	7921	Standard
	Cr	53	64764.9	3.8	**99.4036**	4.742	4.8	ug/L	442	Standard
	Mn	55	343413.3	0.6	**100.5875**	0.908	0.9	ug/L	545	Standard
	Co	59	362876.2	1.4	**99.6514**	1.999	2.0	ug/L	183	Standard
	Ni	60	137908.8	1.0	**99.6259**	1.744	1.8	ug/L	131	Standard
	Cu	65	132879.9	1.8	**99.1237**	2.501	2.5	ug/L	231	Standard
	Zn	66	76615.6	1.1	**100.1005**	1.235	1.2	ug/L	306	Standard
>	Ge	72	334828.1	1.0				ug/L	330478	Standard
	As	75	77375.6	1.0	**100.1831**	1.983	2.0	ug/L	-23	Standard
	Se	82	6401.4	0.5	**100.8498**	1.415	1.4	ug/L	27	Standard
	Se-1	77	4637.0	0.3	**101.5370**	0.905	0.9	ug/L	92	Standard
>	Ga	71	61.7	4.7				mg/L	37	Standard
	Rb	85	1071.7	4.7				ug/L	25	Standard
	Y	89	319068.1	1.1				ug/L	312467	Standard
>	Rh	103	36.7	7.9				ug/L	20	Standard
	Mo	98	271906.2	0.5	**196.3418**	3.234	1.6	ug/L	13	Standard
	Ag	107	484841.9	0.1	**98.3050**	1.292	1.3	ug/L	72	Standard
	Cd	111	137515.2	1.4	**99.0405**	0.558	0.6	mg/L	5	Standard
	Cd	114	362129.6	3.7	**99.4137**	2.936	3.0	ug/L	7	Standard
>	In	115	487077.5	1.4				ug/L	477820	Standard
	Sn	118	472744.0	1.1	**103.3090**	1.647	1.6	ug/L	343	Standard
	Sb	123	374740.0	0.4	**98.9398**	1.711	1.7	ug/L	56	Standard
	Ba	135	191838.5	0.4	**98.8205**	0.972	1.0	ug/L	36	Standard
	Ce	140	161.7	15.6				ug/L	65	Standard
>	Tb	159	952912.9	1.2				ug/L	939481	Standard
	Ho	165	5.0	0.0				ug/L	7	Standard
	Tl	203	645654.6	0.5	**100.4850**	1.395	1.4	ug/L	5	Standard
	Tl	205	440912.5	1.5	**100.8606**	2.288	2.3	ug/L	2	Standard
	Pb	206	400650.7	1.4	**100.1103**	1.917	1.9	ug/L	222	Standard
	Pb	207	362109.3	1.0	**100.0016**	0.711	0.7	ug/L	186	Standard
	Pb	208	1290839.0	0.6	**100.0325**	1.282	1.3	ug/L	717	Standard
	U	238	446784.2	0.8	**100.6447**	0.296	0.3	ug/L	2	Standard
>	Bi	209	443195.1	0.8				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	3768.8	1.8	**10.0528**	0.069	0.7	mg/L	45	Standard
K	39	283.3	8.3	**9.7549**	0.967	9.9	mg/L	10	Standard
Ca	43	86.7	24.0	**10.3921**	4.377	42.1	mg/L	47	Standard
Fe	54	4136.5	1.5	**9.8700**	0.107	1.1	mg/L	46	Standard
Fe	57	1638.4	6.7	**9.4051**	0.878	9.3	mg/L	627	Standard
Sc-1	45	25571.6	1.2				mg/L	24506	Standard
Cl	35	40849.0	1.7				ug/L	47100	Standard
Kr	83	5.7	56.7				ug/L	8	Standard
Br	81	443.3	22.6				ug/L	427	Standard
P	31	11345.9	1.9				ug/L	10519	Standard
S	34	2245.2	1.8				ug/L	2003	Standard
Sr	88	170.0	19.3				ug/L	132	Standard
C	12	180.0	20.0				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	10.0	100.0				mg/L	10	Standard
Dy	164	6.2	86.7				mg/L	13	Standard
Ho-1	165	5.0	0.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	378.3	6.5				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998

Sample ID: Standard 4
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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Sunday, August 23, 2015 15:31:39
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	51696.4	2.0				ug/L	53498	Standard
	Be	9	30278.6	1.7	**53.2329**	0.821	1.5	ug/L	12	Standard
	Al	27	3587464.0	1.5	**53.6081**	0.297	0.6	ug/L	487	Standard
	Sc	45	24843.7	4.3				ug/L	24506	Standard
	Ti	47	19772.6	1.8	**106.0401**	0.624	0.6	ug/L	21	Standard
	V	51	207973.8	1.4	**51.8286**	0.318	0.6	ug/L	1268	Standard
	Cr	52	277084.9	1.9	**52.1694**	1.389	2.7	ug/L	7921	Standard
	Cr	53	33871.2	3.0	**51.7021**	1.561	3.0	ug/L	442	Standard
	Mn	55	179491.3	0.6	**52.5777**	1.315	2.5	ug/L	545	Standard
	Co	59	188834.5	1.0	**51.9077**	0.771	1.5	ug/L	183	Standard
	Ni	60	72841.3	0.8	**52.6632**	1.191	2.3	ug/L	131	Standard
	Cu	65	70667.8	0.7	**52.7187**	1.322	2.5	ug/L	231	Standard
	Zn	66	39576.6	1.2	**51.5666**	0.721	1.4	ug/L	306	Standard
>	Ge	72	334351.4	1.9				ug/L	330478	Standard
	As	75	39919.3	1.2	**51.7882**	0.970	1.9	ug/L	-23	Standard
	Se	82	3322.9	2.2	**52.2340**	1.737	3.3	ug/L	27	Standard
	Se-1	77	2370.9	2.2	**51.0611**	2.130	4.2	ug/L	92	Standard
>	Ga	71	66.7	15.6				mg/L	37	Standard
	Rb	85	531.7	10.3				ug/L	25	Standard
	Y	89	314084.7	2.2				ug/L	312467	Standard
>	Rh	103	38.3	30.1				ug/L	20	Standard
	Mo	98	144616.6	0.8	**106.7927**	2.822	2.6	ug/L	13	Standard
	Ag	107	254789.5	0.5	**52.8171**	0.999	1.9	ug/L	72	Standard
	Cd	111	71613.5	0.5	**52.7476**	1.379	2.6	mg/L	5	Standard
	Cd	114	186934.8	2.8	**52.5077**	2.585	4.9	ug/L	7	Standard
>	In	115	476387.7	2.1				ug/L	477820	Standard
	Sn	118	231266.6	0.2	**51.6441**	1.152	2.2	ug/L	343	Standard
	Sb	123	196023.3	0.7	**52.9208**	1.126	2.1	ug/L	56	Standard
	Ba	135	100017.0	0.8	**52.6800**	1.430	2.7	ug/L	36	Standard
	Ce	140	203.3	17.3				ug/L	65	Standard
>	Tb	159	960131.0	2.8				ug/L	939481	Standard
	Ho	165	11.7	99.0				ug/L	7	Standard
	Tl	203	332538.3	0.2	**51.6199**	0.465	0.9	ug/L	5	Standard
	Tl	205	223550.5	0.7	**51.0021**	0.583	1.1	ug/L	2	Standard
	Pb	206	209035.2	1.0	**52.0666**	0.510	1.0	ug/L	222	Standard
	Pb	207	188440.7	1.0	**51.8801**	0.297	0.6	ug/L	186	Standard
	Pb	208	673535.1	0.6	**52.0339**	0.651	1.3	ug/L	717	Standard
	U	238	229870.7	0.8	**51.6498**	0.555	1.1	ug/L	2	Standard
>	Bi	209	444317.6	0.9				ug/L	440279	Standard

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Na	23	1.7	**-4493271685277**7825748511068.094			173.2	mg/L	2	Standard
Mg	24	2010.1	5.9	**5.4667**	0.459	8.4	mg/L	45	Standard
K	39	180.0	16.7	**6.2121**	0.908	14.6	mg/L	10	Standard
Ca	43	63.3	40.5	**5.6663**	5.689	100.4	mg/L	47	Standard
Fe	54	2096.9	4.8	**5.0746**	0.281	5.5	mg/L	46	Standard
Fe	57	1225.0	1.1	**5.8670**	0.576	9.8	mg/L	627	Standard
Sc-1	45	24843.7	4.3				mg/L	24506	Standard
Cl	35	39879.1	1.3				ug/L	47100	Standard
Kr	83	5.7	40.8				ug/L	8	Standard
Br	81	423.3	4.9				ug/L	427	Standard
P	31	11007.3	1.5				ug/L	10519	Standard
S	34	2151.8	2.9				ug/L	2003	Standard
Sr	88	155.0	8.5				ug/L	132	Standard
C	12	253.3	46.8				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	12.7	93.2				mg/L	13	Standard
Ho-1	165	11.7	99.0				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	580.0	4.8				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	106.466		
Al	27	107.216		
Sc	45			
Ti	47	106.040		
V	51	103.657		
Cr	52	104.339		
Cr	53			
Mn	55	105.155		
Co	59	103.815		
Ni	60	105.326		
Cu	65	105.437		
Zn	66	103.133		
Ge	72		101.172	
As	75	103.576		
Se	82	104.468		
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
Rh	103		
Mo	98	106.793	
Ag	107	105.634	
Cd	111	105.495	
Cd	114		
In	115		99.700
Sn	118	103.288	
Sb	123	105.842	
Ba	135	105.360	
Ce	140		
Tb	159		
Ho	165		
Tl	203	103.240	
Tl	205		
Pb	206	104.133	
Pb	207	103.760	
Pb	208	104.068	
U	238	103.300	
Bi	209		100.917
Na	2-898654337054985.500		
Mg	24	109.335	
K	39	124.241	
Ca	43	113.326	
Fe	54	101.491	
Fe	57	117.339	
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	K	39	
QC Std 1	Ca	43	

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QC Std 1	Fe	57

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Sunday, August 23, 2015 15:34:52
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54763.8	2.8				ug/L	53498	Standard
	Be	9	58.3	129.0	**0.0788**	0.129	163.4	ug/L	12	Standard
	Al	27	3962.7	127.9	**0.0460**	0.074	160.5	ug/L	487	Standard
	Sc	45	25064.1	1.5				ug/L	24506	Standard
	Ti	47	39.0	54.6	**0.0742**	0.117	157.1	ug/L	21	Standard
	V	51	1021.3	17.5	**-0.0912**	0.043	47.0	ug/L	1268	Standard
	Cr	52	6453.0	3.9	**-0.3261**	0.079	24.3	ug/L	7921	Standard
	Cr	53	496.7	20.5	**0.0148**	0.172	1161.9	ug/L	442	Standard
	Mn	55	774.0	29.8	**0.0429**	0.072	167.5	ug/L	545	Standard
	Co	59	332.7	35.1	**0.0344**	0.033	96.9	ug/L	183	Standard
	Ni	60	165.0	42.7	**0.0288**	0.053	183.3	ug/L	131	Standard
	Cu	65	280.3	20.3	**0.0302**	0.046	153.9	ug/L	231	Standard
	Zn	66	339.3	12.2	**-0.0225**	0.063	279.9	ug/L	306	Standard
>	**Ge**	72	344808.1	2.7				ug/L	330478	Standard
	As	75	-12.8	173.7	**0.0358**	0.028	78.0	ug/L	-23	Standard
	Se	82	21.5	23.9	**-0.0937**	0.074	78.5	ug/L	27	Standard
	Se-1	77	85.0	11.2	**-0.1033**	0.240	232.6	ug/L	92	Standard
>	**Ga**	71	33.3	52.7				mg/L	37	Standard
	Rb	85	26.7	28.6				ug/L	25	Standard
	Y	89	322571.5	1.6				ug/L	312467	Standard
>	**Rh**	103	31.7	24.1				ug/L	20	Standard
	Mo	98	120.9	59.0	**0.0854**	0.053	61.6	ug/L	13	Standard
	Ag	107	158.0	50.6	**0.0109**	0.017	152.6	ug/L	72	Standard
	Cd	111	21.8	119.5	**0.0025**	0.019	751.7	mg/L	5	Standard
	Cd	114	36.2	102.6	**0.0019**	0.010	550.9	ug/L	7	Standard
>	**In**	115	488065.0	1.8				ug/L	477820	Standard
	Sn	118	575.0	8.6	**0.0468**	0.013	27.5	ug/L	343	Standard
	Sb	123	996.4	8.0	**0.2588**	0.024	9.1	ug/L	56	Standard
	Ba	135	61.3	48.7	**0.0053**	0.016	296.7	ug/L	36	Standard
	Ce	140	51.7	59.1				ug/L	65	Standard
>	**Tb**	159	970694.7	2.7				ug/L	939481	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	62.7	121.5	**0.0057**	0.012	203.8	ug/L	5	Standard
	Tl	205	285.0	135.1	**0.0571**	0.086	151.0	ug/L	2	Standard
	Pb	206	304.7	29.7	**0.0115**	0.023	197.0	ug/L	222	Standard
	Pb	207	280.3	41.9	**0.0150**	0.032	213.9	ug/L	186	Standard
	Pb	208	1652.4	75.0	**0.0636**	0.095	149.1	ug/L	717	Standard
	U	238	317.7	136.1	**0.0638**	0.095	149.7	ug/L	2	Standard
>	**Bi**	209	457784.4	1.7				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	30.0	16.7	**-0.0540**	0.013	24.2	mg/L	45	Standard
K	39	16.7	45.8	**0.1886**	0.291	154.1	mg/L	10	Standard
Ca	43	46.7	34.4	**1.8457**	3.440	186.4	mg/L	47	Standard
Fe	54	66.1	60.7	**-0.0023**	0.099	4307.2	mg/L	46	Standard
Fe	57	686.7	8.7	**0.5614**	0.492	87.6	mg/L	627	Standard
> **Sc-1**	45	25064.1	1.5				mg/L	24506	Standard
Cl	35	41163.9	2.0				ug/L	47100	Standard
Kr	83	5.7	44.4				ug/L	8	Standard
Br	81	460.0	37.9				ug/L	427	Standard
P	31	10938.9	2.7				ug/L	10519	Standard
S	34	2120.1	7.0				ug/L	2003	Standard
Sr	88	158.3	14.9				ug/L	132	Standard
C	12	203.3	34.9				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	9.5	112.7				mg/L	13	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	10.0	173.2				mg/L	7	Standard
I	127	1996.8	9.0				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.336	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	102.144
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	103.976
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	K	39	
QC Std 2	Ca	43	

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QC Std 2	Fe	57

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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Sunday, August 23, 2015 15:38:05
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55523.3	3.3				ug/L	53498	Standard
	Be	9	145.0	31.0	**0.2181**	0.079	36.0	ug/L	12	Standard
	Al	27	376.7	12.3	**-0.0057**	0.000	8.6	ug/L	487	Standard
	Sc	45	26721.9	2.5				ug/L	24506	Standard
	Ti	47	23.3	20.3	**-0.0102**	0.024	231.2	ug/L	21	Standard
	V	51	2527.6	6.0	**0.2709**	0.031	11.4	ug/L	1268	Standard
	Cr	52	10830.9	2.4	**0.4813**	0.024	5.0	ug/L	7921	Standard
	Cr	53	981.7	4.6	**0.7302**	0.075	10.3	ug/L	442	Standard
	Mn	55	2385.2	0.8	**0.4963**	0.013	2.6	ug/L	545	Standard
	Co	59	1658.8	2.1	**0.3846**	0.005	1.2	ug/L	183	Standard
	Ni	60	2365.5	0.3	**1.5619**	0.024	1.5	ug/L	131	Standard
	Cu	65	1437.4	1.1	**0.8622**	0.024	2.7	ug/L	231	Standard
	Zn	66	5014.8	1.9	**5.8921**	0.059	1.0	ug/L	306	Standard
>	**Ge**	72	347127.1	1.2				ug/L	330478	Standard
	As	75	278.0	7.7	**0.3989**	0.024	6.0	ug/L	-23	Standard
	Se	82	44.7	20.6	**0.2581**	0.133	51.5	ug/L	27	Standard
	Se-1	77	109.0	9.6	**0.3988**	0.234	58.7	ug/L	92	Standard
>	**Ga**	71	16.7	45.8				mg/L	37	Standard
	Rb	85	36.7	43.8				ug/L	25	Standard
	Y	89	324154.8	1.8				ug/L	312467	Standard
>	**Rh**	103	16.7	17.3				ug/L	20	Standard
	Mo	98	29.2	10.3	**0.0184**	0.002	12.7	ug/L	13	Standard
	Ag	107	2126.5	0.5	**0.4014**	0.006	1.5	ug/L	72	Standard
	Cd	111	357.3	6.7	**0.2390**	0.017	7.2	mg/L	5	Standard
	Cd	114	973.1	8.8	**0.2541**	0.027	10.7	ug/L	7	Standard
>	**In**	115	497004.0	1.7				ug/L	477820	Standard
	Sn	118	691.7	11.2	**0.0693**	0.015	21.4	ug/L	343	Standard
	Sb	123	1855.5	4.7	**0.4762**	0.022	4.7	ug/L	56	Standard
	Ba	135	1486.4	1.1	**0.7242**	0.005	0.7	ug/L	36	Standard
	Ce	140	16.7	96.4				ug/L	65	Standard
>	**Tb**	159	967178.9	1.5				ug/L	939481	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	562.0	6.7	**0.0796**	0.005	6.1	ug/L	5	Standard
	Tl	205	375.0	9.3	**0.0752**	0.008	11.3	ug/L	2	Standard
	Pb	206	1091.4	3.2	**0.1979**	0.011	5.7	ug/L	222	Standard
	Pb	207	941.7	3.3	**0.1881**	0.011	5.8	ug/L	186	Standard
	Pb	208	3424.5	1.0	**0.1920**	0.003	1.4	ug/L	717	Standard
	U	238	1841.1	1.6	**0.3893**	0.011	2.7	ug/L	2	Standard
>	**Bi**	209	464736.6	1.1				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	31.7	24.1	**-0.0549**	0.019	34.0	mg/L	45	Standard
K	39	6.7	114.6	**-0.1983**	0.261	131.5	mg/L	10	Standard
Ca	43	41.7	18.3	**0.1873**	1.609	859.0	mg/L	47	Standard
Fe	54	57.4	30.9	**-0.0333**	0.038	114.6	mg/L	46	Standard
Fe	57	640.0	14.3	**-0.2506**	0.979	390.5	mg/L	627	Standard
> **Sc-1**	45	26721.9	2.5				mg/L	24506	Standard
Cl	35	42029.6	1.3				ug/L	47100	Standard
Kr	83	3.3	45.8				ug/L	8	Standard
Br	81	450.0	13.5				ug/L	427	Standard
P	31	11229.2	2.0				ug/L	10519	Standard
S	34	2135.2	4.7				ug/L	2003	Standard
Sr	88	160.0	23.6				ug/L	132	Standard
C	12	213.3	41.0				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	9.7	2.9				mg/L	13	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	376.7	9.6				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	109.074		
Al	27	-0.572		
Sc	45			
Ti	47			
V	51	67.713		
Cr	52	60.169		
Cr	53			
Mn	55	99.255		
Co	59	96.154		
Ni	60	97.619		
Cu	65	107.774		
Zn	66	94.274		
> Ge	72		105.038	
As	75	99.728		
Se	82	64.536		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	100.343		
Cd	111	99.579		
Cd	114			
> In	115			104.015
Sn	118			
Sb	123	119.051		
Ba	135	96.562		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.447		
Tl	205			
Pb	206			
Pb	207			
Pb	208	96.012		
U	238	97.337		
> Bi	209			105.555
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	
QC Std 3	V	51	
QC Std 3	Cr	52	

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QC Std 3	Se	82

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Sunday, August 23, 2015 15:41:16
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	53830.5	1.9				ug/L	53498	Standard
	Be	9	12.5	84.9	**0.0012**	0.018	1537.2	ug/L	12	Standard
	Al	27	3623277.4	1.5	**51.9947**	0.184	0.4	ug/L	487	Standard
	Sc	45	24287.0	3.3				ug/L	24506	Standard
	Ti	47	20590.5	1.1	**111.5479**	1.099	1.0	ug/L	21	Standard
	V	51	665.8	27.5	**-0.1709**	0.047	27.2	ug/L	1268	Standard
	Cr	52	6843.0	1.6	**-0.2006**	0.023	11.4	ug/L	7921	Standard
	Cr	53	3798.0	4.0	**5.2045**	0.231	4.4	ug/L	442	Standard
	Mn	55	744.0	1.7	**0.0420**	0.004	8.4	ug/L	545	Standard
	Co	59	291.0	2.9	**0.0259**	0.002	9.4	ug/L	183	Standard
	Ni	60	524.5	8.0	**0.2957**	0.031	10.5	ug/L	131	Standard
	Cu	65	483.5	6.3	**0.1915**	0.023	11.8	ug/L	231	Standard
	Zn	66	1112.5	1.5	**1.0210**	0.020	2.0	ug/L	306	Standard
>	Ge	72	331000.5	0.1				ug/L	330478	Standard
	As	75	1.0	2974.4	**0.0533**	0.039	74.0	ug/L	-23	Standard
	Se	82	24.0	16.8	**-0.0393**	0.064	163.1	ug/L	27	Standard
	Se-1	77	254.0	5.0	**3.7856**	0.281	7.4	ug/L	92	Standard
>	Ga	71	105.0	6.7				mg/L	37	Standard
	Rb	85	475.0	11.9				ug/L	25	Standard
	Y	89	318250.1	0.2				ug/L	312467	Standard
>	Rh	103	20.0	106.1				ug/L	20	Standard
	Mo	98	141633.9	0.5	**105.1828**	1.498	1.4	ug/L	13	Standard
	Ag	107	74.5	4.7	**-0.0057**	0.000	7.8	ug/L	72	Standard
	Cd	111	-69.1	19.6	**-0.0645**	0.011	17.0	mg/L	5	Standard
	Cd	114	497.0	4.9	**0.1322**	0.004	3.2	ug/L	7	Standard
>	In	115	473592.6	1.9				ug/L	477820	Standard
	Sn	118	392.5	4.5	**0.0094**	0.002	24.6	ug/L	343	Standard
	Sb	123	168.4	0.8	**0.0419**	0.001	2.9	ug/L	56	Standard
	Ba	135	166.5	0.4	**0.0619**	0.001	2.1	ug/L	36	Standard
	Ce	140	127.5	13.9				ug/L	65	Standard
>	Tb	159	945873.4	0.5				ug/L	939481	Standard
	Ho	165	20.0	35.4				ug/L	7	Standard
	Tl	203	26.0	5.4	**0.0003**	0.000	81.9	ug/L	5	Standard
	Tl	205	2.5	141.4	**-0.0061**	0.001	13.5	ug/L	2	Standard
	Pb	206	374.5	0.9	**0.0326**	0.001	3.2	ug/L	222	Standard
	Pb	207	322.5	3.3	**0.0302**	0.003	10.3	ug/L	186	Standard
	Pb	208	1183.5	0.1	**0.0319**	0.000	0.2	ug/L	717	Standard
	U	238	3.0	0.0	**-0.0056**	0.000	0.0	ug/L	2	Standard
>	Bi	209	436962.8	0.1				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	4698.2	3.7	**13.2374**	0.047	0.4	mg/L	45	Standard
K	39	167.5	6.3	**5.9038**	0.190	3.2	mg/L	10	Standard
Ca	43	115.0	6.1	**17.9889**	2.514	14.0	mg/L	47	Standard
Fe	54	5302.6	0.2	**13.3874**	0.481	3.6	mg/L	46	Standard
Fe	57	2110.1	7.4	**14.9508**	2.246	15.0	mg/L	627	Standard
> **Sc-1**	45	24287.0	3.3				mg/L	24506	Standard
Cl	35	42933.7	0.3				ug/L	47100	Standard
Kr	83	4.0	35.4				ug/L	8	Standard
Br	81	565.0	6.3				ug/L	427	Standard
P	31	9760.6	0.9				ug/L	10519	Standard
S	34	1982.6	4.1				ug/L	2003	Standard
Sr	88	190.0	11.2				ug/L	132	Standard
C	12	310.0	13.7				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	5.0	141.4				mg/L	10	Standard
Dy	164	18.6	3.6				mg/L	13	Standard
Ho-1	165	20.0	35.4				mg/L	7	Standard
Er	166	30.0	47.1				mg/L	7	Standard
I	127	305.0	20.9				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27	1.040		
Sc	45			
Ti	47	111.548		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.158	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	105.183		
Ag	107			
Cd	111			
Cd	114			
In	115			99.115
Sn	118			
Sb	123			
Ba	135			
Ce	140			
Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
Bi	209			99.247
Na	23	0.152		
Mg	24	264.747		
K	39	118.076		
Ca	43	119.926		
Fe	54	107.099		
Fe	57	119.607		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	

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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Sunday, August 23, 2015 15:44:49
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	54330.7	4.2				ug/L	53498	Standard
	Be	9	110.0	20.8	**0.1651**	0.044	26.7	ug/L	12	Standard
	Al	27	801.7	47.0	**0.0004**	0.005	1299.6	ug/L	487	Standard
	Sc	45	25397.9	3.0				ug/L	24506	Standard
	Ti	47	21.3	9.8	**-0.0159**	0.014	89.9	ug/L	21	Standard
	V	51	2515.5	1.9	**0.2925**	0.027	9.1	ug/L	1268	Standard
	Cr	52	10898.6	1.5	**0.5756**	0.078	13.6	ug/L	7921	Standard
	Cr	53	1030.0	3.5	**0.8635**	0.078	9.0	ug/L	442	Standard
	Mn	55	2434.5	1.6	**0.5375**	0.013	2.5	ug/L	545	Standard
	Co	59	1677.8	2.3	**0.4076**	0.024	5.9	ug/L	183	Standard
	Ni	60	2436.2	1.4	**1.6789**	0.060	3.6	ug/L	131	Standard
	Cu	65	1391.7	2.1	**0.8692**	0.041	4.7	ug/L	231	Standard
	Zn	66	5016.8	1.1	**6.1495**	0.242	3.9	ug/L	306	Standard
>	Ge	72	334004.5	3.2				ug/L	330478	Standard
	As	75	272.2	15.8	**0.4042**	0.045	11.1	ug/L	-23	Standard
	Se	82	46.9	19.0	**0.3196**	0.127	39.8	ug/L	27	Standard
	Se-1	77	111.0	8.3	**0.5324**	0.124	23.3	ug/L	92	Standard
>	Ga	71	25.0	34.6				mg/L	37	Standard
	Rb	85	33.3	17.3				ug/L	25	Standard
	Y	89	317516.2	4.2				ug/L	312467	Standard
>	Rh	103	20.0	43.3				ug/L	20	Standard
	Mo	98	63.9	35.3	**0.0440**	0.016	37.0	ug/L	13	Standard
	Ag	107	2170.5	2.1	**0.4210**	0.022	5.3	ug/L	72	Standard
	Cd	111	351.9	1.7	**0.2414**	0.012	5.0	mg/L	5	Standard
	Cd	114	924.3	5.2	**0.2471**	0.020	8.2	ug/L	7	Standard
>	In	115	485213.6	3.1				ug/L	477820	Standard
	Sn	118	586.7	7.7	**0.0502**	0.014	27.2	ug/L	343	Standard
	Sb	123	1697.5	3.1	**0.4463**	0.022	5.0	ug/L	56	Standard
	Ba	135	1499.4	3.2	**0.7495**	0.030	4.0	ug/L	36	Standard
	Ce	140	31.7	71.2				ug/L	65	Standard
>	Tb	159	952913.4	3.0				ug/L	939481	Standard
	Ho	165	13.3	21.7				ug/L	7	Standard
	Tl	203	506.3	1.1	**0.0731**	0.001	1.3	ug/L	5	Standard
	Tl	205	410.0	6.5	**0.0848**	0.004	4.4	ug/L	2	Standard
	Pb	206	1097.0	3.0	**0.2053**	0.004	2.2	ug/L	222	Standard
	Pb	207	936.0	1.3	**0.1924**	0.003	1.5	ug/L	186	Standard
	Pb	208	3402.1	1.0	**0.1964**	0.008	4.3	ug/L	717	Standard
	U	238	1910.5	2.0	**0.4142**	0.018	4.4	ug/L	2	Standard
>	Bi	209	454008.5	2.4				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	33.3	22.9	**-0.0456**	0.023	50.0	mg/L	45	Standard
K	39	10.0	132.3	**-0.0678**	0.466	687.5	mg/L	10	Standard
Ca	43	36.7	64.4	**-0.4026**	5.355	1330.0	mg/L	47	Standard
Fe	54	52.6	21.7	**-0.0371**	0.030	81.2	mg/L	46	Standard
Fe	57	688.3	13.8	**0.4832**	0.762	157.7	mg/L	627	Standard
> **Sc-1**	45	25397.9	3.0				mg/L	24506	Standard
Cl	35	40172.5	0.6				ug/L	47100	Standard
Kr	83	6.7	31.2				ug/L	8	Standard
Br	81	470.0	13.3				ug/L	427	Standard
P	31	10790.5	2.8				ug/L	10519	Standard
S	34	2055.1	4.6				ug/L	2003	Standard
Sr	88	176.7	22.7				ug/L	132	Standard
C	12	200.0	44.4				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	6.3	86.9				mg/L	13	Standard
Ho-1	165	13.3	21.7				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	7	Standard
I	127	400.0	3.8				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	82.532		
Al	27	0.041		
Sc	45			
Ti	47			
V	51	73.133		
Cr	52	71.956		
Cr	53			
Mn	55	107.495		
Co	59	101.912		
Ni	60	104.933		
Cu	65	108.655		
Zn	66	98.391		
> Ge	72		101.067	
As	75	101.047		
Se	82	79.906		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	105.247		
Cd	111	100.591		
Cd	114			
> In	115			101.547
Sn	118			
Sb	123	111.583		
Ba	135	99.932		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	91.393		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.220		
U	238	103.538		
> Bi	209			103.118
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Sunday, August 23, 2015 15:51:35
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	54636.7	0.8				ug/L	53498	Standard
	Be	9	3.3	86.6	**-0.0146**	0.005	32.8	ug/L	12	Standard
	Al	27	3582455.8	0.4	**50.6516**	0.614	1.2	ug/L	487	Standard
	Sc	45	24519.8	1.9				ug/L	24506	Standard
	Ti	47	20815.3	1.7	**113.3545**	1.306	1.2	ug/L	21	Standard
	V	51	766.3	9.7	**-0.1444**	0.018	12.8	ug/L	1268	Standard
	Cr	52	6835.9	3.3	**-0.1951**	0.037	19.0	ug/L	7921	Standard
	Cr	53	3273.7	1.6	**4.4119**	0.092	2.1	ug/L	442	Standard
	Mn	55	754.4	5.7	**0.0462**	0.012	25.9	ug/L	545	Standard
	Co	59	268.7	4.0	**0.0201**	0.003	12.7	ug/L	183	Standard
	Ni	60	539.3	4.7	**0.3086**	0.018	5.7	ug/L	131	Standard
	Cu	65	472.0	1.3	**0.1847**	0.007	3.6	ug/L	231	Standard
	Zn	66	733.0	2.4	**0.5222**	0.018	3.4	ug/L	306	Standard
>	Ge	72	329275.6	0.6				ug/L	330478	Standard
	As	75	-26.9	74.5	**0.0165**	0.026	159.9	ug/L	-23	Standard
	Se	82	26.5	19.8	**0.0027**	0.082	3008.4	ug/L	27	Standard
	Se-1	77	244.3	12.5	**3.5967**	0.697	19.4	ug/L	92	Standard
>	Ga	71	105.0	4.8				mg/L	37	Standard
	Rb	85	608.3	6.3				ug/L	25	Standard
	Y	89	308170.1	3.7				ug/L	312467	Standard
>	Rh	103	28.3	27.0				ug/L	20	Standard
	Mo	98	142218.7	0.3	**106.5658**	1.984	1.9	ug/L	13	Standard
	Ag	107	79.7	4.8	**-0.0045**	0.001	24.2	ug/L	72	Standard
	Cd	111	-60.7	20.3	**-0.0586**	0.009	16.1	mg/L	5	Standard
	Cd	114	494.4	11.4	**0.1330**	0.019	13.9	ug/L	7	Standard
>	In	115	469415.4	1.8				ug/L	477820	Standard
	Sn	118	395.0	12.2	**0.0108**	0.011	105.9	ug/L	343	Standard
	Sb	123	132.5	23.5	**0.0324**	0.008	25.8	ug/L	56	Standard
	Ba	135	169.3	3.5	**0.0642**	0.005	7.4	ug/L	36	Standard
	Ce	140	121.7	17.1				ug/L	65	Standard
>	Tb	159	942451.4	0.8				ug/L	939481	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	17.0	17.6	**-0.0012**	0.000	39.3	ug/L	5	Standard
	Tl	205	16.7	17.3	**-0.0028**	0.001	23.5	ug/L	2	Standard
	Pb	206	373.3	5.4	**0.0312**	0.005	14.8	ug/L	222	Standard
	Pb	207	321.3	2.8	**0.0289**	0.002	7.2	ug/L	186	Standard
	Pb	208	1152.7	1.7	**0.0285**	0.001	3.9	ug/L	717	Standard
	U	238	2.3	137.8	**-0.0057**	0.001	12.6	ug/L	2	Standard
>	Bi	209	441765.7	0.5				ug/L	440279	Standard

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Na	23	5.0	**-1419684977721**40247059543202.090			98.8	mg/L	2	Standard
Mg	24	4665.7	3.0	**13.0278**	0.646	5.0	mg/L	45	Standard
K	39	158.3	6.6	**5.5054**	0.414	7.5	mg/L	10	Standard
Ca	43	126.7	2.3	**20.3699**	1.116	5.5	mg/L	47	Standard
Fe	54	5205.3	2.0	**13.0045**	0.048	0.4	mg/L	46	Standard
Fe	57	1930.1	5.3	**12.9360**	0.677	5.2	mg/L	627	Standard
Sc-1	45	24519.8	1.9				mg/L	24506	Standard
Cl	35	42110.4	0.5				ug/L	47100	Standard
Kr	83	3.0	57.7				ug/L	8	Standard
Br	81	390.0	11.2				ug/L	427	Standard
P	31	9975.0	4.2				ug/L	10519	Standard
S	34	1960.1	5.3				ug/L	2003	Standard
Sr	88	140.0	17.9				ug/L	132	Standard
C	12	316.7	26.3				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	12.7	89.9				mg/L	13	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	7	Standard
I	127	303.3	19.1				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27	1.013		
Sc	45			
Ti	47	113.354		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.636	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	106.566		
Ag	107			
Cd	111			
Cd	114			
In	115			98.241
Sn	118			
Sb	123			
Ba	135			
Ce	140			
Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
Bi	209			100.338
Na	-1135747982180095.700			
Mg	24	260.556		
K	39	110.108		
Ca	43	135.799		
Fe	54	104.036		
Fe	57	103.488		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	

Sample ID: QC Std 4
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QC Std 4	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Sunday, August 23, 2015 15:54:51
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	56600.6	2.4				ug/L	53498	Standard
	Be	9	63842.6	2.2	**102.5619**	3.310	3.2	ug/L	12	Standard
	Al	27	3772045.8	1.6	**51.4853**	0.507	1.0	ug/L	487	Standard
	Sc	45	24818.6	0.4				ug/L	24506	Standard
	Ti	47	21381.7	0.6	**114.4125**	1.001	0.9	ug/L	21	Standard
	V	51	414800.3	1.1	**103.4620**	1.476	1.4	ug/L	1268	Standard
	Cr	52	543633.6	1.3	**103.5708**	1.743	1.7	ug/L	7921	Standard
	Cr	53	69917.7	3.3	**107.2331**	3.291	3.1	ug/L	442	Standard
	Mn	55	361231.4	1.6	**105.7163**	1.814	1.7	ug/L	545	Standard
	Co	59	380844.0	0.0	**104.4839**	0.367	0.4	ug/L	183	Standard
	Ni	60	142986.6	1.0	**103.1910**	0.740	0.7	ug/L	131	Standard
	Cu	65	138696.8	2.1	**103.3601**	2.003	1.9	ug/L	231	Standard
	Zn	66	79870.0	0.8	**104.2709**	0.593	0.6	ug/L	306	Standard
>	Ge	72	335131.8	0.3				ug/L	330478	Standard
	As	75	80978.9	0.5	**104.7377**	0.528	0.5	ug/L	-23	Standard
	Se	82	6722.2	0.5	**105.8191**	0.551	0.5	ug/L	27	Standard
	Se-1	77	4983.8	1.9	**109.1665**	1.934	1.8	ug/L	92	Standard
>	Ga	71	131.7	15.3				mg/L	37	Standard
	Rb	85	585.0	10.5				ug/L	25	Standard
	Y	89	319245.9	2.1				ug/L	312467	Standard
>	Rh	103	50.0	55.7				ug/L	20	Standard
	Mo	98	150284.2	1.1	**109.0092**	1.378	1.3	ug/L	13	Standard
	Ag	107	481930.9	2.8	**98.1973**	4.344	4.4	ug/L	72	Standard
	Cd	111	147091.9	1.0	**106.4414**	2.071	1.9	mg/L	5	Standard
	Cd	114	382170.8	1.9	**105.4154**	2.077	2.0	ug/L	7	Standard
>	In	115	484911.6	2.4				ug/L	477820	Standard
	Sn	118	515.0	4.4	**0.0344**	0.008	22.2	ug/L	343	Standard
	Sb	123	402075.2	1.4	**106.6386**	1.847	1.7	ug/L	56	Standard
	Ba	135	200723.2	0.8	**103.8770**	1.630	1.6	ug/L	36	Standard
	Ce	140	71.7	21.3				ug/L	65	Standard
>	Tb	159	944530.4	1.3				ug/L	939481	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	668386.3	1.3	**104.8284**	0.754	0.7	ug/L	5	Standard
	Tl	205	462807.3	0.8	**106.7053**	2.445	2.3	ug/L	2	Standard
	Pb	206	421070.5	0.6	**106.0373**	1.095	1.0	ug/L	222	Standard
	Pb	207	379666.8	0.8	**105.6840**	1.601	1.5	ug/L	186	Standard
	Pb	208	1356837.7	0.2	**105.9776**	1.483	1.4	ug/L	717	Standard
	U	238	471961.7	0.4	**107.1579**	1.423	1.3	ug/L	2	Standard
>	Bi	209	439768.0	1.5				ug/L	440279	Standard

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Na	23	1.7	**-4717176670678170389661894**0.531		173.2	mg/L	2	Standard
Mg	24	4740.7	3.6	**13.0715**	0.526	4.0	mg/L	45	Standard
K	39	143.3	4.0	**4.8769**	0.195	4.0	mg/L	10	Standard
Ca	43	121.7	29.7	**18.9008**	8.228	43.5	mg/L	47	Standard
Fe	54	5273.8	4.7	**13.0190**	0.672	5.2	mg/L	46	Standard
Fe	57	2075.1	4.1	**14.1266**	0.897	6.3	mg/L	627	Standard
Sc-1	45	24818.6	0.4				mg/L	24506	Standard
Cl	35	44443.1	1.4				ug/L	47100	Standard
Kr	83	3.3	75.5				ug/L	8	Standard
Br	81	476.7	11.9				ug/L	427	Standard
P	31	10532.0	3.1				ug/L	10519	Standard
S	34	2026.8	4.8				ug/L	2003	Standard
Sr	88	140.0	3.6				ug/L	132	Standard
C	12	326.7	24.6				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	12.5	127.7				mg/L	13	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	16.7	91.7				mg/L	7	Standard
I	127	1911.8	9.7				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.562		
Al	27	1.030		
Sc	45			
Ti	47	114.413		
V	51	103.462		
Cr	52	103.571		
Cr	53			
Mn	55	105.716		
Co	59	104.484		
Ni	60	103.191		
Cu	65	103.360		
Zn	66	104.271		
Ge	72		101.408	
As	75	104.738		
Se	82	105.819		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	109.009		
Ag	107	98.197		
Cd	111	106.441		
Cd	114			
In	115		101.484	
Sn	118			
Sb	123	106.639		
Ba	135	103.877		
Ce	140			
Tb	159			
Ho	165			
Tl	203	104.828		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.978		
U	238	107.158		
Bi	209		99.884	
Na	2-377374133654	293.190		
Mg	24	261.431		
K	39	97.538		
Ca	43	126.005		
Fe	54	104.152		
Fe	57	113.013		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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QC Std 5	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Sunday, August 23, 2015 15:58:09
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56761.1	1.9				ug/L	53498	Standard
	Be	9	32020.5	2.6	**51.2622**	0.589	1.1	ug/L	12	Standard
	Al	27	3631344.7	0.9	**49.4272**	0.841	1.7	ug/L	487	Standard
	Sc	45	25815.3	2.8				ug/L	24506	Standard
	Ti	47	19823.0	1.2	**103.9148**	2.283	2.2	ug/L	21	Standard
	V	51	211028.4	0.6	**51.3967**	0.602	1.2	ug/L	1268	Standard
	Cr	52	276708.3	1.6	**50.8792**	1.345	2.6	ug/L	7921	Standard
	Cr	53	34531.0	1.3	**51.5139**	1.131	2.2	ug/L	442	Standard
	Mn	55	179950.0	2.3	**51.5096**	1.661	3.2	ug/L	545	Standard
	Co	59	189376.0	1.4	**50.8761**	1.147	2.3	ug/L	183	Standard
	Ni	60	72728.8	0.6	**51.3802**	0.710	1.4	ug/L	131	Standard
	Cu	65	70110.5	0.6	**51.1029**	0.771	1.5	ug/L	231	Standard
	Zn	66	39540.9	0.6	**50.3376**	0.253	0.5	ug/L	306	Standard
>	**Ge**	72	342093.1	1.0				ug/L	330478	Standard
	As	75	39789.6	1.9	**50.4403**	0.479	0.9	ug/L	-23	Standard
	Se	82	3351.2	2.6	**51.4609**	1.041	2.0	ug/L	27	Standard
	Se-1	77	2431.2	2.1	**51.1633**	1.588	3.1	ug/L	92	Standard
>	**Ga**	71	50.0	36.1				mg/L	37	Standard
	Rb	85	545.0	2.4				ug/L	25	Standard
	Y	89	322887.4	2.6				ug/L	312467	Standard
>	**Rh**	103	41.7	30.2				ug/L	20	Standard
	Mo	98	143134.9	0.3	**100.2042**	0.927	0.9	ug/L	13	Standard
	Ag	107	259296.0	0.6	**50.9623**	0.589	1.2	ug/L	72	Standard
	Cd	111	72905.4	1.1	**50.9088**	0.854	1.7	mg/L	5	Standard
	Cd	114	190665.9	2.4	**50.7565**	1.384	2.7	ug/L	7	Standard
>	**In**	115	502342.8	0.6				ug/L	477820	Standard
	Sn	118	223701.0	0.6	**47.3546**	0.583	1.2	ug/L	343	Standard
	Sb	123	198459.9	0.8	**50.7987**	0.747	1.5	ug/L	56	Standard
	Ba	135	99135.3	0.3	**49.4991**	0.423	0.9	ug/L	36	Standard
	Ce	140	81.7	9.4				ug/L	65	Standard
>	**Tb**	159	971643.7	1.3				ug/L	939481	Standard
	Ho	165	11.7	107.9				ug/L	7	Standard
	Tl	203	332635.7	0.1	**49.6250**	0.308	0.6	ug/L	5	Standard
	Tl	205	227590.1	1.5	**49.9052**	1.028	2.1	ug/L	2	Standard
	Pb	206	209876.7	1.2	**50.2426**	0.890	1.8	ug/L	222	Standard
	Pb	207	188535.1	0.6	**49.8869**	0.580	1.2	ug/L	186	Standard
	Pb	208	677150.7	0.8	**50.2761**	0.741	1.5	ug/L	717	Standard
	U	238	232040.1	1.1	**50.1059**	0.258	0.5	ug/L	2	Standard
>	**Bi**	209	462302.8	0.7				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	1940.1	2.7	**5.0597**	0.047	0.9	mg/L	45	Standard
K	39	181.7	12.7	**6.0268**	0.695	11.5	mg/L	10	Standard
Ca	43	60.0	25.0	**4.4079**	2.893	65.6	mg/L	47	Standard
Fe	54	2220.7	7.8	**5.1665**	0.286	5.5	mg/L	46	Standard
Fe	57	1220.0	2.2	**5.3583**	0.185	3.5	mg/L	627	Standard
Sc-1	45	25815.3	2.8				mg/L	24506	Standard
Cl	35	42292.9	1.2				ug/L	47100	Standard
Kr	83	5.0	34.6				ug/L	8	Standard
Br	81	520.0	23.1				ug/L	427	Standard
P	31	10695.4	0.9				ug/L	10519	Standard
S	34	2071.8	4.3				ug/L	2003	Standard
Sr	88	158.3	9.6				ug/L	132	Standard
C	12	230.0	19.9				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	19.5	86.6				mg/L	13	Standard
Ho-1	165	11.7	107.9				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	385.0	6.7				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.524		
Al	27	98.854		
Sc	45			
Ti	47	103.915		
V	51	102.793		
Cr	52	101.758		
Cr	53			
Mn	55	103.019		
Co	59	101.752		
Ni	60	102.760		
Cu	65	102.206		
Zn	66	100.675		
Ge	72		103.515	
As	75	100.881		
Se	82	102.922		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	100.204		
Ag	107	101.925		
Cd	111	101.818		
Cd	114			
In	115			105.132
Sn	118	94.709		
Sb	123	101.597		
Ba	135	98.998		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.250		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.552		
U	238	100.212		
Bi	209			105.002
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Sunday, August 23, 2015 16:02:25
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56100.3	1.0				ug/L	53498	Standard
	Be	9	13.3	108.3	**0.0014**	0.023	1674.4	ug/L	12	Standard
	Al	27	660.0	36.9	**-0.0018**	0.003	187.1	ug/L	487	Standard
	Sc	45	26568.3	1.7				ug/L	24506	Standard
	Ti	47	22.3	27.4	**-0.0137**	0.034	249.3	ug/L	21	Standard
	V	51	1029.4	10.7	**-0.0878**	0.032	36.5	ug/L	1268	Standard
	Cr	52	6595.8	3.4	**-0.2947**	0.066	22.5	ug/L	7921	Standard
	Cr	53	525.0	15.3	**0.0563**	0.107	189.7	ug/L	442	Standard
	Mn	55	624.0	4.5	**-0.0002**	0.011	4721.5	ug/L	545	Standard
	Co	59	193.3	2.7	**-0.0031**	0.002	76.9	ug/L	183	Standard
	Ni	60	99.0	9.6	**-0.0180**	0.008	45.1	ug/L	131	Standard
	Cu	65	218.7	13.9	**-0.0144**	0.025	171.3	ug/L	231	Standard
	Zn	66	323.3	4.2	**-0.0419**	0.024	57.9	ug/L	306	Standard
>	**Ge**	72	343373.9	1.9				ug/L	330478	Standard
	As	75	-59.9	17.7	**-0.0236**	0.014	59.1	ug/L	-23	Standard
	Se	82	22.2	32.5	**-0.0783**	0.116	148.3	ug/L	27	Standard
	Se-1	77	89.7	12.3	**0.0025**	0.227	9061.3	ug/L	92	Standard
>	**Ga**	71	23.3	65.5				mg/L	37	Standard
	Rb	85	28.3	66.8				ug/L	25	Standard
	Y	89	321894.9	2.6				ug/L	312467	Standard
>	**Rh**	103	23.3	49.5				ug/L	20	Standard
	Mo	98	46.7	32.3	**0.0304**	0.011	35.4	ug/L	13	Standard
	Ag	107	101.0	41.3	**-0.0015**	0.008	559.2	ug/L	72	Standard
	Cd	111	13.9	103.6	**-0.0036**	0.010	282.9	mg/L	5	Standard
	Cd	114	27.7	119.5	**-0.0007**	0.009	1225.9	ug/L	7	Standard
>	**In**	115	504625.3	1.2				ug/L	477820	Standard
	Sn	118	456.7	17.0	**0.0176**	0.016	93.8	ug/L	343	Standard
	Sb	123	721.8	16.9	**0.1801**	0.031	17.4	ug/L	56	Standard
	Ba	135	56.7	57.5	**0.0019**	0.016	865.1	ug/L	36	Standard
	Ce	140	15.0	66.7				ug/L	65	Standard
>	**Tb**	159	974162.4	0.8				ug/L	939481	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	43.7	135.5	**0.0028**	0.009	321.1	ug/L	5	Standard
	Tl	205	20.0	75.0	**-0.0022**	0.003	153.0	ug/L	2	Standard
	Pb	206	248.7	7.8	**-0.0023**	0.006	239.8	ug/L	222	Standard
	Pb	207	225.3	3.4	**-0.0001**	0.003	4485.5	ug/L	186	Standard
	Pb	208	746.3	9.5	**-0.0053**	0.006	116.9	ug/L	717	Standard
	U	238	13.0	120.9	**-0.0034**	0.003	102.4	ug/L	2	Standard
>	**Bi**	209	459238.5	1.5				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	50.0	17.3	**-0.0066**	0.022	339.9	mg/L	45	Standard
K	39	5.0	100.0	**-0.2540**	0.170	67.0	mg/L	10	Standard
Ca	43	23.3	65.5	**-3.6425**	3.198	87.8	mg/L	47	Standard
Fe	54	67.4	41.2	**-0.0087**	0.063	727.3	mg/L	46	Standard
Fe	57	663.3	6.3	**-0.0224**	0.320	1430.3	mg/L	627	Standard
> **Sc-1**	45	26568.3	1.7				mg/L	24506	Standard
Cl	35	41658.5	1.6				ug/L	47100	Standard
Kr	83	5.3	21.7				ug/L	8	Standard
Br	81	463.3	16.3				ug/L	427	Standard
P	31	10945.6	1.5				ug/L	10519	Standard
S	34	1981.8	1.9				ug/L	2003	Standard
Sr	88	158.3	15.6				ug/L	132	Standard
C	12	163.3	15.4				mg/L	177	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	6.3	86.9				mg/L	13	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	7	Standard
I	127	2080.1	5.8				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.902	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.610
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.306
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Sunday, August 23, 2015 16:04:42
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Method 6020 - Summary Report

Sample ID: L1508099101
Sample Date/Time: Sunday, August 23, 2015 16:07:01
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72138.2	3.8				ug/L	53498	Standard
	Be	9	18.3	56.8	**0.0027**	0.012	443.2	ug/L	12	Standard
	Al	27	121516975.0	4.8	**1301.3709**	33.486	2.6	ug/L	487	Standard
	Sc	45	22932.4	4.8				ug/L	24506	Standard
	Ti	47	110.3	15.1	**0.4974**	0.082	16.6	ug/L	21	Standard
	V	51	4839.4	3.6	**0.9503**	0.064	6.7	ug/L	1268	Standard
	Cr	52	12277.0	3.6	**0.9879**	0.117	11.9	ug/L	7921	Standard
	Cr	53	3207.0	5.7	**4.5367**	0.217	4.8	ug/L	442	Standard
	Mn	55	36638.6	0.6	**11.2580**	0.210	1.9	ug/L	545	Standard
	Co	59	2032.5	2.1	**0.5391**	0.012	2.3	ug/L	183	Standard
	Ni	60	7244.4	2.1	**5.4855**	0.214	3.9	ug/L	131	Standard
	Cu	65	10653.1	1.0	**8.2947**	0.204	2.5	ug/L	231	Standard
	Zn	66	4598.0	4.8	**5.9678**	0.421	7.1	ug/L	306	Standard
>	**Ge**	72	314794.7	1.9				ug/L	330478	Standard
	As	75	2052.8	3.6	**2.8768**	0.056	1.9	ug/L	-23	Standard
	Se	82	3898.7	0.6	**65.1922**	1.402	2.2	ug/L	27	Standard
	Se-1	77	2652.9	1.7	**61.0437**	1.988	3.3	ug/L	92	Standard
>	**Ga**	71	58.3	9.9				mg/L	37	Standard
	Rb	85	16797.6	1.7				ug/L	25	Standard
	Y	89	319316.5	0.7				ug/L	312467	Standard
>	**Rh**	103	588.3	9.4				ug/L	20	Standard
	Mo	98	1460.4	3.9	**1.0550**	0.047	4.5	ug/L	13	Standard
	Ag	107	96.3	39.0	**-0.0017**	0.008	457.6	ug/L	72	Standard
	Cd	111	10.4	20.9	**-0.0057**	0.001	25.9	mg/L	5	Standard
	Cd	114	36.0	61.8	**0.0018**	0.006	343.0	ug/L	7	Standard
>	**In**	115	485869.4	1.2				ug/L	477820	Standard
	Sn	118	585.0	4.8	**0.0495**	0.007	15.1	ug/L	343	Standard
	Sb	123	813.2	6.4	**0.2115**	0.016	7.6	ug/L	56	Standard
	Ba	135	8219.9	1.5	**4.2193**	0.054	1.3	ug/L	36	Standard
	Ce	140	366.7	22.6				ug/L	65	Standard
>	**Tb**	159	925168.1	0.6				ug/L	939481	Standard
	Ho	165	16.7	17.3				ug/L	7	Standard
	Tl	203	97.0	9.9	**0.0126**	0.001	11.4	ug/L	5	Standard
	Tl	205	93.3	17.2	**0.0166**	0.004	23.2	ug/L	2	Standard
	Pb	206	337.0	27.3	**0.0293**	0.024	81.5	ug/L	222	Standard
	Pb	207	292.0	32.9	**0.0276**	0.028	100.8	ug/L	186	Standard
	Pb	208	940.0	15.1	**0.0182**	0.011	60.7	ug/L	717	Standard
	U	238	60422.3	1.3	**14.8331**	0.354	2.4	ug/L	2	Standard
>	**Bi**	209	406604.0	1.1				ug/L	440279	Standard

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Na	23	13.3	**-4097030020119**9448097930	1897.578	23.1	mg/L	2	Standard
Mg	24	232395.7	4.1	**702.5246**	63.196	9.0	mg/L	45	Standard
K	39	163.3	18.5	**6.0870**	0.908	14.9	mg/L	10	Standard
Ca	43	551.7	11.4	**126.1318**	15.137	12.0	mg/L	47	Standard
Fe	54	68.4	6.6	**0.0191**	0.009	45.9	mg/L	46	Standard
Fe	57	1306.7	6.6	**7.7205**	1.074	13.9	mg/L	627	Standard
Sc-1	45	22932.4	4.8				mg/L	24506	Standard
Cl	35	679291.0	7.6				ug/L	47100	Standard
Kr	83	7.0	51.5				ug/L	8	Standard
Br	81	28740.6	2.6				ug/L	427	Standard
P	31	14014.8	5.6				ug/L	10519	Standard
S	34	2908.6	1.3				ug/L	2003	Standard
Sr	88	536.7	1.9				ug/L	132	Standard
C	12	1430.1	14.5				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	8.7	120.3				mg/L	13	Standard
Ho-1	165	16.7	17.3				mg/L	7	Standard
Er	166	26.7	57.3				mg/L	7	Standard
I	127	348928.8	0.7				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		134.844	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.254	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	101.685
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	92.351
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1508099102
Sample Date/Time: Sunday, August 23, 2015 16:10:13
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73842.9	1.4				ug/L	53498	Standard
	Be	9	28.3	56.7	**0.0150**	0.020	134.6	ug/L	12	Standard
	Al	27	119299897.8	0.8	**1248.3519**	16.841	1.3	ug/L	487	Standard
	Sc	45	23177.7	2.5				ug/L	24506	Standard
	Ti	47	550.3	1.1	**3.0790**	0.110	3.6	ug/L	21	Standard
	V	51	35859.6	1.9	**9.4307**	0.386	4.1	ug/L	1268	Standard
	Cr	52	13018.3	2.0	**1.2004**	0.114	9.5	ug/L	7921	Standard
	Cr	53	3660.4	3.3	**5.4183**	0.186	3.4	ug/L	442	Standard
	Mn	55	36555.7	0.8	**11.4857**	0.240	2.1	ug/L	545	Standard
	Co	59	2274.2	3.1	**0.6244**	0.016	2.5	ug/L	183	Standard
	Ni	60	7620.2	1.5	**5.9045**	0.200	3.4	ug/L	131	Standard
	Cu	65	64742.7	1.6	**52.4442**	1.854	3.5	ug/L	231	Standard
	Zn	66	11178.5	0.5	**15.5004**	0.415	2.7	ug/L	306	Standard
>	**Ge**	72	307977.4	2.4				ug/L	330478	Standard
	As	75	2113.8	9.7	**3.0303**	0.345	11.4	ug/L	-23	Standard
	Se	82	3671.9	0.5	**62.7549**	1.800	2.9	ug/L	27	Standard
	Se-1	77	2504.2	3.5	**58.8306**	2.578	4.4	ug/L	92	Standard
>	**Ga**	71	248.3	9.3				mg/L	37	Standard
	Rb	85	16372.2	2.4				ug/L	25	Standard
	Y	89	313870.0	1.8				ug/L	312467	Standard
>	**Rh**	103	685.0	5.1				ug/L	20	Standard
	Mo	98	1445.3	1.2	**1.0386**	0.026	2.5	ug/L	13	Standard
	Ag	107	642.7	3.9	**0.1087**	0.004	4.1	ug/L	72	Standard
	Cd	111	40.1	24.3	**0.0155**	0.007	42.5	mg/L	5	Standard
	Cd	114	113.3	9.6	**0.0229**	0.004	15.4	ug/L	7	Standard
>	**In**	115	488454.9	1.8				ug/L	477820	Standard
	Sn	118	623.3	13.6	**0.0569**	0.016	28.4	ug/L	343	Standard
	Sb	123	745.3	1.3	**0.1924**	0.004	2.3	ug/L	56	Standard
	Ba	135	8447.4	1.9	**4.3143**	0.100	2.3	ug/L	36	Standard
	Ce	140	416.7	7.0				ug/L	65	Standard
>	**Tb**	159	910272.0	1.2				ug/L	939481	Standard
	Ho	165	15.0	66.7				ug/L	7	Standard
	Tl	203	90.3	5.0	**0.0113**	0.001	7.9	ug/L	5	Standard
	Tl	205	56.7	13.5	**0.0073**	0.002	23.2	ug/L	2	Standard
	Pb	206	5649.7	1.1	**1.4583**	0.028	1.9	ug/L	222	Standard
	Pb	207	4680.4	0.7	**1.3321**	0.010	0.7	ug/L	186	Standard
	Pb	208	17086.4	0.8	**1.3650**	0.009	0.6	ug/L	717	Standard
	U	238	57236.2	0.8	**13.8752**	0.203	1.5	ug/L	2	Standard
>	**Bi**	209	411714.1	1.4				ug/L	440279	Standard

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Na	23	15.0	**-4509373918622**55831961701850.370		56.7	mg/L	2	Standard
Mg	24	229930.4	2.2	**685.9581**	19.274	2.8	mg/L	45	Standard
K	39	178.3	22.5	**6.6298**	1.495	22.5	mg/L	10	Standard
Ca	43	536.7	9.2	**121.0800**	13.033	10.8	mg/L	47	Standard
Fe	54	2015.2	5.3	**5.2255**	0.157	3.0	mg/L	46	Standard
Fe	57	1843.4	4.0	**13.1525**	1.000	7.6	mg/L	627	Standard
Sc-1	45	23177.7	2.5				mg/L	24506	Standard
Cl	35	701696.6	2.5				ug/L	47100	Standard
Kr	83	4.3	26.6				ug/L	8	Standard
Br	81	21695.6	6.4				ug/L	427	Standard
P	31	14919.0	5.1				ug/L	10519	Standard
S	34	3043.6	1.8				ug/L	2003	Standard
Sr	88	575.0	11.3				ug/L	132	Standard
C	12	1466.7	0.4				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	25.1	24.2				mg/L	13	Standard
Ho-1	165	15.0	66.7				mg/L	7	Standard
Er	166	33.3	34.6				mg/L	7	Standard
I	127	754316.1	6.6				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		138.030	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		93.192	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.226	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	93.512	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: RINSE
Sample Date/Time: Sunday, August 23, 2015 16:13:24
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64440.5	6.7				ug/L	53498	Standard
	Be	9	11.7	65.5	**-0.0031**	0.012	385.9	ug/L	12	Standard
	Al	27	32402.1	121.9	**0.3594**	0.436	121.4	ug/L	487	Standard
	Sc	45	25382.9	2.0				ug/L	24506	Standard
	Ti	47	32.7	7.7	**0.0471**	0.013	28.0	ug/L	21	Standard
	V	51	1972.4	3.5	**0.1625**	0.020	12.5	ug/L	1268	Standard
	Cr	52	10864.2	0.1	**0.5965**	0.015	2.6	ug/L	7921	Standard
	Cr	53	701.7	10.7	**0.3682**	0.112	30.4	ug/L	442	Standard
	Mn	55	1498.4	3.1	**0.2680**	0.016	6.0	ug/L	545	Standard
	Co	59	230.0	16.9	**0.0092**	0.011	113.7	ug/L	183	Standard
	Ni	60	206.0	5.1	**0.0635**	0.007	11.2	ug/L	131	Standard
	Cu	65	593.7	20.1	**0.2766**	0.088	31.9	ug/L	231	Standard
	Zn	66	1606.8	11.5	**1.6865**	0.238	14.1	ug/L	306	Standard
>	Ge	72	329468.7	0.7				ug/L	330478	Standard
	As	75	36.0	136.5	**0.0992**	0.064	64.8	ug/L	-23	Standard
	Se	82	50.0	27.8	**0.3809**	0.220	57.7	ug/L	27	Standard
	Se-1	77	97.3	3.1	**0.2592**	0.062	23.8	ug/L	92	Standard
>	Ga	71	31.7	24.1				mg/L	37	Standard
	Rb	85	48.3	33.3				ug/L	25	Standard
	Y	89	328279.0	1.9				ug/L	312467	Standard
>	Rh	103	98.3	11.7				ug/L	20	Standard
	Mo	98	27.3	42.4	**0.0163**	0.008	46.1	ug/L	13	Standard
	Ag	107	93.7	30.9	**-0.0034**	0.005	152.2	ug/L	72	Standard
	Cd	111	11.3	74.1	**-0.0057**	0.005	97.1	mg/L	5	Standard
	Cd	114	30.5	94.1	**-0.0003**	0.007	2266.7	ug/L	7	Standard
>	In	115	516780.6	2.0				ug/L	477820	Standard
	Sn	118	480.0	6.3	**0.0202**	0.007	36.6	ug/L	343	Standard
	Sb	123	135.4	19.2	**0.0297**	0.006	19.5	ug/L	56	Standard
	Ba	135	60.7	33.1	**0.0030**	0.009	306.6	ug/L	36	Standard
	Ce	140	28.3	44.4				ug/L	65	Standard
>	Tb	159	961746.6	3.3				ug/L	939481	Standard
	Ho	165	13.3	43.3				ug/L	7	Standard
	Tl	203	41.7	121.2	**0.0024**	0.007	314.9	ug/L	5	Standard
	Tl	205	21.7	133.2	**-0.0019**	0.006	327.9	ug/L	2	Standard
	Pb	206	278.0	9.1	**0.0045**	0.005	120.6	ug/L	222	Standard
	Pb	207	252.0	7.8	**0.0069**	0.005	73.8	ug/L	186	Standard
	Pb	208	884.7	13.4	**0.0048**	0.008	172.5	ug/L	717	Standard
	U	238	37.0	136.0	**0.0017**	0.011	633.7	ug/L	2	Standard
>	Bi	209	460280.2	2.0				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	121.7	74.6	**0.1974**	0.255	129.3	mg/L	45	Standard
K	39	5.0	100.0	**-0.2452**	0.181	73.8	mg/L	10	Standard
Ca	43	35.0	49.5	**-0.8700**	3.644	418.9	mg/L	47	Standard
Fe	54	72.4	31.1	**0.0114**	0.057	501.5	mg/L	46	Standard
Fe	57	716.7	14.9	**0.7691**	1.023	133.0	mg/L	627	Standard
Sc-1	45	25382.9	2.0				mg/L	24506	Standard
Cl	35	71605.5	2.2				ug/L	47100	Standard
Kr	83	5.7	40.8				ug/L	8	Standard
Br	81	836.7	12.1				ug/L	427	Standard
P	31	11507.7	3.2				ug/L	10519	Standard
S	34	1986.8	5.3				ug/L	2003	Standard
Sr	88	145.0	15.8				ug/L	132	Standard
C	12	296.7	23.7				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	10.0					mg/L	10	Standard
Dy	164	22.9	110.1				mg/L	13	Standard
Ho-1	165	13.3	43.3				mg/L	7	Standard
Er	166	10.0					mg/L	7	Standard
I	127	11998.6	39.9				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		120.455	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.695	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	108.154
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	104.543
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: RINSE
Report Date/Time: Sunday, August 23, 2015 16:15:41
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Method 6020 - Summary Report

Sample ID: RINSE
Sample Date/Time: Sunday, August 23, 2015 16:16:35
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63176.5	3.2				ug/L	53498	Standard
	Be	9	16.7	45.8	**0.0039**	0.011	277.0	ug/L	12	Standard
	Al	27	6084.7	48.2	**0.0632**	0.035	54.9	ug/L	487	Standard
	Sc	45	25369.6	1.1				ug/L	24506	Standard
	Ti	47	27.0	9.8	**0.0128**	0.014	110.9	ug/L	21	Standard
	V	51	1924.3	7.3	**0.1386**	0.035	25.0	ug/L	1268	Standard
	Cr	52	11019.3	1.2	**0.5754**	0.021	3.6	ug/L	7921	Standard
	Cr	53	543.3	3.0	**0.0995**	0.026	26.0	ug/L	442	Standard
	Mn	55	676.0	4.6	**0.0179**	0.009	51.2	ug/L	545	Standard
	Co	59	218.0	3.2	**0.0045**	0.002	42.6	ug/L	183	Standard
	Ni	60	169.0	9.8	**0.0334**	0.012	36.3	ug/L	131	Standard
	Cu	65	378.3	6.3	**0.1065**	0.017	16.1	ug/L	231	Standard
	Zn	66	2241.5	3.5	**2.4626**	0.100	4.0	ug/L	306	Standard
>	**Ge**	72	337492.0	0.2				ug/L	330478	Standard
	As	75	0.8	2647.8	**0.0530**	0.026	49.9	ug/L	-23	Standard
	Se	82	35.2	10.3	**0.1301**	0.056	42.8	ug/L	27	Standard
	Se-1	77	82.3	17.6	**-0.1248**	0.324	260.0	ug/L	92	Standard
>	**Ga**	71	15.0	120.2				mg/L	37	Standard
	Rb	85	31.7	36.5				ug/L	25	Standard
	Y	89	337351.0	0.6				ug/L	312467	Standard
>	**Rh**	103	73.3	32.2				ug/L	20	Standard
	Mo	98	15.1	13.7	**0.0078**	0.001	16.4	ug/L	13	Standard
	Ag	107	70.0	16.1	**-0.0082**	0.002	23.0	ug/L	72	Standard
	Cd	111	4.0	25.2	**-0.0106**	0.001	6.1	mg/L	5	Standard
	Cd	114	11.1	101.5	**-0.0053**	0.003	53.3	ug/L	7	Standard
>	**In**	115	529177.1	1.7				ug/L	477820	Standard
	Sn	118	395.0	8.9	**0.0008**	0.008	1088.9	ug/L	343	Standard
	Sb	123	94.7	14.9	**0.0191**	0.003	16.4	ug/L	56	Standard
	Ba	135	39.7	1.5	**-0.0075**	0.001	7.6	ug/L	36	Standard
	Ce	140	28.3	27.0				ug/L	65	Standard
>	**Tb**	159	1006219.4	1.5				ug/L	939481	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	4.3	58.1	**-0.0032**	0.000	11.6	ug/L	5	Standard
	Tl	205	5.0	100.0	**-0.0056**	0.001	19.3	ug/L	2	Standard
	Pb	206	238.0	7.6	**-0.0068**	0.004	57.6	ug/L	222	Standard
	Pb	207	225.0	9.6	**-0.0020**	0.005	256.5	ug/L	186	Standard
	Pb	208	722.7	2.9	**-0.0088**	0.001	15.8	ug/L	717	Standard
	U	238	6.3	9.1	**-0.0049**	0.000	2.7	ug/L	2	Standard
>	**Bi**	209	473885.5	0.7				ug/L	440279	Standard

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Na	23	1.7	-4618414017857999327729308	5.312	173.2	mg/L	2	Standard
Mg	24	63.3	24.1	**0.0357**	0.040	112.3	mg/L	45	Standard
K	39	8.3	91.7	**-0.1252**	0.274	218.6	mg/L	10	Standard
Ca	43	50.0	20.0	**2.4935**	2.259	90.6	mg/L	47	Standard
Fe	54	73.8	23.4	**0.0146**	0.042	291.4	mg/L	46	Standard
Fe	57	766.7	5.5	**1.2495**	0.480	38.4	mg/L	627	Standard
Sc-1	45	25369.6	1.1				mg/L	24506	Standard
Cl	35	70543.9	1.2				ug/L	47100	Standard
Kr	83	4.3	81.0				ug/L	8	Standard
Br	81	613.3	5.2				ug/L	427	Standard
P	31	11412.6	0.9				ug/L	10519	Standard
S	34	2226.8	8.9				ug/L	2003	Standard
Sr	88	181.7	20.8				ug/L	132	Standard
C	12	190.0	0.0				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	12.9	45.1				mg/L	13	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	5269.3	17.4				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		118.092	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.122	
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	110.748
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	107.633
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Sunday, August 23, 2015 16:19:48
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60425.3	2.7				ug/L	53498	Standard
	Be	9	33598.9	0.7	**50.5594**	1.619	3.2	ug/L	12	Standard
	Al	27	3736613.9	2.3	**47.7862**	1.541	3.2	ug/L	487	Standard
	Sc	45	24892.1	1.8				ug/L	24506	Standard
	Ti	47	19161.1	0.5	**103.3033**	1.179	1.1	ug/L	21	Standard
	V	51	205256.9	0.0	**51.4170**	0.307	0.6	ug/L	1268	Standard
	Cr	52	272218.7	2.1	**51.4936**	1.105	2.1	ug/L	7921	Standard
	Cr	53	33303.2	1.4	**51.0932**	1.056	2.1	ug/L	442	Standard
	Mn	55	179892.6	0.3	**52.9596**	0.309	0.6	ug/L	545	Standard
	Co	59	192046.2	1.2	**53.0615**	0.392	0.7	ug/L	183	Standard
	Ni	60	69999.7	1.5	**50.8579**	0.477	0.9	ug/L	131	Standard
	Cu	65	67512.8	0.8	**50.6084**	0.135	0.3	ug/L	231	Standard
	Zn	66	37928.4	1.4	**49.6550**	0.410	0.8	ug/L	306	Standard
>	Ge	72	332591.8	0.6				ug/L	330478	Standard
	As	75	38711.7	1.0	**50.4787**	0.419	0.8	ug/L	-23	Standard
	Se	82	3285.1	2.2	**51.8942**	1.092	2.1	ug/L	27	Standard
	Se-1	77	2351.8	5.4	**50.8779**	2.502	4.9	ug/L	92	Standard
>	Ga	71	36.7	31.5				mg/L	37	Standard
	Rb	85	536.7	7.8				ug/L	25	Standard
	Y	89	337215.1	1.5				ug/L	312467	Standard
>	Rh	103	93.3	16.4				ug/L	20	Standard
	Mo	98	149341.4	0.5	**101.0232**	0.312	0.3	ug/L	13	Standard
	Ag	107	259754.5	1.0	**49.3299**	0.532	1.1	ug/L	72	Standard
	Cd	111	75877.1	1.8	**51.1948**	0.831	1.6	mg/L	5	Standard
	Cd	114	201129.1	1.5	**51.7355**	0.842	1.6	ug/L	7	Standard
>	In	115	519857.9	0.5				ug/L	477820	Standard
	Sn	118	224695.8	1.7	**45.9608**	0.984	2.1	ug/L	343	Standard
	Sb	123	200616.2	1.2	**49.6201**	0.850	1.7	ug/L	56	Standard
	Ba	135	99561.7	0.4	**48.0355**	0.319	0.7	ug/L	36	Standard
	Ce	140	76.7	24.7				ug/L	65	Standard
>	Tb	159	997013.3	1.6				ug/L	939481	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	336946.8	0.5	**49.8310**	0.664	1.3	ug/L	5	Standard
	Tl	205	237789.9	1.1	**51.6863**	0.911	1.8	ug/L	2	Standard
	Pb	206	212658.0	0.3	**50.4631**	0.529	1.0	ug/L	222	Standard
	Pb	207	191888.8	0.2	**50.3313**	0.500	1.0	ug/L	186	Standard
	Pb	208	685202.5	0.3	**50.4287**	0.476	0.9	ug/L	717	Standard
	U	238	236552.0	0.5	**50.6388**	0.727	1.4	ug/L	2	Standard
>	Bi	209	466381.9	1.0				ug/L	440279	Standard

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Na	23	1.7	**-4625723412580119879723658.406**			173.2	mg/L	2	Standard
Mg	24	2108.5	4.0	**5.7212**	0.266	4.6	mg/L	45	Standard
K	39	135.0	17.0	**4.5530**	0.823	18.1	mg/L	10	Standard
Ca	43	81.7	18.7	**9.7862**	3.237	33.1	mg/L	47	Standard
Fe	54	2145.1	2.1	**5.1804**	0.057	1.1	mg/L	46	Standard
Fe	57	1320.1	8.1	**6.7385**	0.806	12.0	mg/L	627	Standard
Sc-1	45	24892.1	1.8				mg/L	24506	Standard
Cl	35	55482.3	6.5				ug/L	47100	Standard
Kr	83	4.7	68.9				ug/L	8	Standard
Br	81	590.0	20.6				ug/L	427	Standard
P	31	11584.4	3.1				ug/L	10519	Standard
S	34	2296.8	8.6				ug/L	2003	Standard
Sr	88	151.7	36.5				ug/L	132	Standard
C	12	273.3	21.4				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	13.2	116.4				mg/L	13	Standard
Ho-1	165	8.3	69.3				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	2028.5	10.3				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	101.119		
Al	27	95.572		
Sc	45			
Ti	47	103.303		
V	51	102.834		
Cr	52	102.987		
Cr	53			
Mn	55	105.919		
Co	59	106.123		
Ni	60	101.716		
Cu	65	101.217		
Zn	66	99.310		
Ge	72		100.640	
As	75	100.957		
Se	82	103.788		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	101.023		
Ag	107	98.660		
Cd	111	102.390		
Cd	114			
> In	115		108.798	
Sn	118	91.922		
Sb	123	99.240		
Ba	135	96.071		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.662		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.857		
U	238	101.278		
> Bi	209		105.929	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Sunday, August 23, 2015 16:23:00
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	61825.9	2.6				ug/L	53498	Standard
	Be	9	16.7	62.4	**0.0047**	0.016	338.4	ug/L	12	Standard
	Al	27	2735.5	116.4	**0.0232**	0.040	171.0	ug/L	487	Standard
	Sc	45	25206.0	4.1				ug/L	24506	Standard
	Ti	47	28.7	23.2	**0.0215**	0.037	170.3	ug/L	21	Standard
	V	51	1090.7	10.5	**-0.0693**	0.028	40.7	ug/L	1268	Standard
	Cr	52	6958.3	2.7	**-0.2074**	0.053	25.7	ug/L	7921	Standard
	Cr	53	435.0	5.0	**-0.0681**	0.042	61.1	ug/L	442	Standard
	Mn	55	638.0	3.3	**0.0064**	0.009	141.7	ug/L	545	Standard
	Co	59	201.0	12.7	**-0.0002**	0.008	3210.1	ug/L	183	Standard
	Ni	60	157.7	4.8	**0.0250**	0.007	26.6	ug/L	131	Standard
	Cu	65	317.7	7.1	**0.0609**	0.015	25.2	ug/L	231	Standard
	Zn	66	380.7	9.0	**0.0380**	0.037	96.8	ug/L	306	Standard
>	Ge	72	338414.9	1.7				ug/L	330478	Standard
	As	75	-8.2	257.7	**0.0418**	0.027	64.7	ug/L	-23	Standard
	Se	82	29.7	14.1	**0.0434**	0.073	168.4	ug/L	27	Standard
	Se-1	77	77.7	17.6	**-0.2362**	0.276	116.7	ug/L	92	Standard
>	Ga	71	28.3	10.2				mg/L	37	Standard
	Rb	85	36.7	41.7				ug/L	25	Standard
	Y	89	326189.3	1.5				ug/L	312467	Standard
>	Rh	103	66.7	4.3				ug/L	20	Standard
	Mo	98	51.7	20.8	**0.0326**	0.007	21.6	ug/L	13	Standard
	Ag	107	88.0	15.8	**-0.0046**	0.003	57.0	ug/L	72	Standard
	Cd	111	5.2	11.5	**-0.0097**	0.000	4.2	mg/L	5	Standard
	Cd	114	10.2	184.8	**-0.0055**	0.005	89.3	ug/L	7	Standard
>	In	115	521789.8	1.3				ug/L	477820	Standard
	Sn	118	550.0	7.2	**0.0334**	0.007	21.7	ug/L	343	Standard
	Sb	123	764.1	10.3	**0.1843**	0.017	9.2	ug/L	56	Standard
	Ba	135	34.3	6.7	**-0.0098**	0.001	13.1	ug/L	36	Standard
	Ce	140	26.7	28.6				ug/L	65	Standard
>	Tb	159	996586.1	1.8				ug/L	939481	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	14.0	75.6	**-0.0018**	0.002	86.8	ug/L	5	Standard
	Tl	205	5.0	100.0	**-0.0056**	0.001	19.3	ug/L	2	Standard
	Pb	206	247.3	4.5	**-0.0042**	0.002	57.9	ug/L	222	Standard
	Pb	207	219.7	6.1	**-0.0030**	0.003	108.1	ug/L	186	Standard
	Pb	208	751.0	4.2	**-0.0064**	0.002	32.7	ug/L	717	Standard
	U	238	10.3	40.3	**-0.0041**	0.001	21.5	ug/L	2	Standard
>	Bi	209	470795.2	0.4				ug/L	440279	Standard

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Na	23	1.7	**-4877562187018448185524995**3.531			173.2	mg/L	2	Standard
Mg	24	60.0	44.1	**0.0268**	0.068	254.3	mg/L	45	Standard
K	39	6.7	114.6	**-0.1834**	0.270	147.3	mg/L	10	Standard
Ca	43	28.3	40.8	**-2.2107**	2.679	121.2	mg/L	47	Standard
Fe	54	52.5	23.5	**-0.0360**	0.035	97.7	mg/L	46	Standard
Fe	57	728.4	7.6	**0.9343**	0.584	62.5	mg/L	627	Standard
Sc-1	45	25206.0	4.1				mg/L	24506	Standard
Cl	35	52722.2	1.2				ug/L	47100	Standard
Kr	83	0.7	86.6				ug/L	8	Standard
Br	81	543.3	5.6				ug/L	427	Standard
P	31	11437.7	3.5				ug/L	10519	Standard
S	34	1998.5	5.9				ug/L	2003	Standard
Sr	88	186.7	3.1				ug/L	132	Standard
C	12	220.0	61.2				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	19.4	51.7				mg/L	13	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	7	Standard
I	127	3092.0	3.9				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.402	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.202
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.931
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Sunday, August 23, 2015 16:26:13
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59916.6	1.7				ug/L	53498	Standard
	Be	9	148.3	10.3	**0.2048**	0.021	10.1	ug/L	12	Standard
	Al	27	1880.2	116.6	**0.0130**	0.028	212.4	ug/L	487	Standard
	Sc	45	24199.3	3.6				ug/L	24506	Standard
	Ti	47	22.0	7.9	**-0.0144**	0.010	71.9	ug/L	21	Standard
	V	51	2805.4	4.0	**0.3537**	0.038	10.7	ug/L	1268	Standard
	Cr	52	11753.9	1.3	**0.7034**	0.049	7.0	ug/L	7921	Standard
	Cr	53	951.7	3.4	**0.7176**	0.067	9.4	ug/L	442	Standard
	Mn	55	2351.8	3.8	**0.5020**	0.035	7.0	ug/L	545	Standard
	Co	59	1706.8	4.6	**0.4076**	0.023	5.5	ug/L	183	Standard
	Ni	60	2326.8	1.0	**1.5713**	0.019	1.2	ug/L	131	Standard
	Cu	65	1445.4	2.1	**0.8913**	0.030	3.3	ug/L	231	Standard
	Zn	66	4899.8	1.7	**5.8857**	0.015	0.3	ug/L	306	Standard
>	**Ge**	72	339515.7	1.5				ug/L	330478	Standard
	As	75	265.5	14.9	**0.3908**	0.051	13.1	ug/L	-23	Standard
	Se	82	53.6	7.9	**0.4136**	0.074	18.0	ug/L	27	Standard
	Se-1	77	98.3	22.6	**0.2115**	0.453	214.2	ug/L	92	Standard
>	**Ga**	71	16.7	45.8				mg/L	37	Standard
	Rb	85	31.7	36.5				ug/L	25	Standard
	Y	89	326073.7	1.8				ug/L	312467	Standard
>	**Rh**	103	43.3	40.5				ug/L	20	Standard
	Mo	98	36.7	65.0	**0.0226**	0.016	71.8	ug/L	13	Standard
	Ag	107	2134.5	2.2	**0.3850**	0.012	3.1	ug/L	72	Standard
	Cd	111	361.0	3.2	**0.2307**	0.006	2.6	mg/L	5	Standard
	Cd	114	982.9	6.8	**0.2451**	0.015	6.3	ug/L	7	Standard
>	**In**	115	519029.5	1.3				ug/L	477820	Standard
	Sn	118	638.3	1.8	**0.0522**	0.003	5.1	ug/L	343	Standard
	Sb	123	1734.0	1.0	**0.4258**	0.010	2.2	ug/L	56	Standard
	Ba	135	1501.7	2.8	**0.6996**	0.011	1.6	ug/L	36	Standard
	Ce	140	21.7	13.3				ug/L	65	Standard
>	**Tb**	159	980441.3	0.5				ug/L	939481	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	542.0	6.6	**0.0758**	0.006	7.6	ug/L	5	Standard
	Tl	205	378.3	12.3	**0.0750**	0.011	14.2	ug/L	2	Standard
	Pb	206	1137.0	3.8	**0.2057**	0.012	5.7	ug/L	222	Standard
	Pb	207	943.0	3.5	**0.1856**	0.010	5.4	ug/L	186	Standard
	Pb	208	3532.5	0.7	**0.1971**	0.004	1.9	ug/L	717	Standard
	U	238	1870.4	1.5	**0.3911**	0.005	1.4	ug/L	2	Standard
>	**Bi**	209	469944.0	0.8				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	36.7	51.6	**-0.0313**	0.056	178.9	mg/L	45	Standard
K	39	6.7	86.6	**-0.1683**	0.222	132.2	mg/L	10	Standard
Ca	43	38.3	19.9	**0.3541**	1.997	563.8	mg/L	47	Standard
Fe	54	74.1	37.4	**0.0227**	0.067	293.8	mg/L	46	Standard
Fe	57	755.0	9.3	**1.4901**	0.759	50.9	mg/L	627	Standard
> **Sc-1**	45	24199.3	3.6				mg/L	24506	Standard
Cl	35	53412.7	0.9				ug/L	47100	Standard
Kr	83	8.3	59.2				ug/L	8	Standard
Br	81	600.0	7.6				ug/L	427	Standard
P	31	11377.6	2.7				ug/L	10519	Standard
S	34	2215.2	5.9				ug/L	2003	Standard
Sr	88	166.7	27.1				ug/L	132	Standard
C	12	170.0	52.3				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	1.7	340.7				mg/L	13	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	33.3	17.3				mg/L	7	Standard
I	127	1145.0	11.2				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	102.424		
Al	27			
Sc	45			
Ti	47			
V	51	88.432		
Cr	52	87.928		
Cr	53			
Mn	55	100.398		
Co	59	101.893		
Ni	60	98.204		
Cu	65	111.414		
Zn	66	94.171		
> Ge	72		102.735	
As	75	97.699		
Se	82	103.403		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	96.243		
Cd	111	96.135		
Cd	114			
> In	115			108.624
Sn	118			
Sb	123	106.446		
Ba	135	93.285		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	94.689		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.562		
U	238	97.780		
> Bi	209			106.738
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: L1508090601DP WG535577-04
Sample Date/Time: Sunday, August 23, 2015 16:39:24
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62413.3	1.5				ug/L	53498	Standard
	Be	9	26.7	43.3	**0.0186**	0.016	86.7	ug/L	12	Standard
	Al	27	3130649.9	1.7	**38.7557**	1.243	3.2	ug/L	487	Standard
	Sc	45	26202.6	2.0				ug/L	24506	Standard
	Ti	47	133.3	27.6	**0.5516**	0.182	33.1	ug/L	21	Standard
	V	51	13254.4	0.9	**2.8344**	0.039	1.4	ug/L	1268	Standard
	Cr	52	12879.5	2.3	**0.8431**	0.074	8.8	ug/L	7921	Standard
	Cr	53	1690.1	12.0	**1.7661**	0.325	18.4	ug/L	442	Standard
	Mn	55	19501.9	2.9	**5.2910**	0.103	1.9	ug/L	545	Standard
	Co	59	587.3	0.8	**0.0993**	0.001	1.0	ug/L	183	Standard
	Ni	60	1817.4	4.0	**1.1686**	0.060	5.1	ug/L	131	Standard
	Cu	65	1423.1	2.9	**0.8428**	0.038	4.5	ug/L	231	Standard
	Zn	66	1400.1	1.1	**1.3009**	0.030	2.3	ug/L	306	Standard
>	**Ge**	72	350222.4	1.1				ug/L	330478	Standard
	As	75	5190.4	2.1	**6.4723**	0.071	1.1	ug/L	-23	Standard
	Se	82	216.0	4.3	**2.8438**	0.108	3.8	ug/L	27	Standard
	Se-1	77	219.3	7.0	**2.7332**	0.362	13.2	ug/L	92	Standard
>	**Ga**	71	3650.4	6.5				mg/L	37	Standard
	Rb	85	9167.8	4.1				ug/L	25	Standard
	Y	89	331772.9	2.5				ug/L	312467	Standard
>	**Rh**	103	68.3	18.4				ug/L	20	Standard
	Mo	98	20228.1	0.9	**13.7301**	0.173	1.3	ug/L	13	Standard
	Ag	107	78.3	5.2	**-0.0063**	0.001	11.2	ug/L	72	Standard
	Cd	111	20.7	38.9	**0.0008**	0.005	688.1	mg/L	5	Standard
	Cd	114	148.2	12.0	**0.0302**	0.005	15.5	ug/L	7	Standard
>	**In**	115	518031.5	0.4				ug/L	477820	Standard
	Sn	118	501.7	14.9	**0.0243**	0.015	63.4	ug/L	343	Standard
	Sb	123	3119.3	0.8	**0.7704**	0.006	0.8	ug/L	56	Standard
	Ba	135	53190.5	0.7	**25.7407**	0.159	0.6	ug/L	36	Standard
	Ce	140	786.7	4.8				ug/L	65	Standard
>	**Tb**	159	985299.2	1.2				ug/L	939481	Standard
	Ho	165	53.3	21.7				ug/L	7	Standard
	Tl	203	1847.4	1.2	**0.2688**	0.007	2.5	ug/L	5	Standard
	Tl	205	1236.7	3.1	**0.2615**	0.006	2.1	ug/L	2	Standard
	Pb	206	413.0	0.8	**0.0355**	0.002	4.7	ug/L	222	Standard
	Pb	207	336.7	3.3	**0.0281**	0.004	14.0	ug/L	186	Standard
	Pb	208	1326.7	3.0	**0.0363**	0.004	10.3	ug/L	717	Standard
	U	238	1173.4	4.1	**0.2444**	0.013	5.3	ug/L	2	Standard
>	**Bi**	209	467498.8	1.2				ug/L	440279	Standard

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Na	23	5.0	**-132589867919**	132656729508065.660		100.1	mg/L	2	Standard
Mg	24	3953.8	4.8	**10.3021**	0.625	6.1	mg/L	45	Standard
K	39	38.3	54.3	**0.9256**	0.749	80.9	mg/L	10	Standard
Ca	43	110.0	13.6	**14.9856**	3.634	24.2	mg/L	47	Standard
Fe	54	85.3	24.7	**0.0367**	0.054	148.0	mg/L	46	Standard
Fe	57	800.0	6.0	**1.3236**	0.467	35.3	mg/L	627	Standard
Sc-1	45	26202.6	2.0				mg/L	24506	Standard
Cl	35	64594.9	4.4				ug/L	47100	Standard
Kr	83	3.7	68.6				ug/L	8	Standard
Br	81	3767.1	6.8				ug/L	427	Standard
P	31	12488.5	5.7				ug/L	10519	Standard
S	34	2148.5	2.9				ug/L	2003	Standard
Sr	88	238.3	10.8				ug/L	132	Standard
C	12	300.0	6.7				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	100.0	20.0				mg/L	10	Standard
Dy	164	60.9	62.2				mg/L	13	Standard
Ho-1	165	53.3	21.7				mg/L	7	Standard
Er	166	50.0	20.0				mg/L	7	Standard
I	127	22216.3	8.1				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.666	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.975	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	108.416
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	106.182
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: L1508082601
Sample Date/Time: Sunday, August 23, 2015 16:42:35
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	61881.2	2.3				ug/L	53498	Standard
	Be	9	15.0	0.0	**0.0020**	0.001	25.9	ug/L	12	Standard
	Al	27	3557123.5	2.2	**44.4122**	1.157	2.6	ug/L	487	Standard
	Sc	45	24875.4	1.2				ug/L	24506	Standard
	Ti	47	86.3	13.2	**0.3341**	0.054	16.1	ug/L	21	Standard
	V	51	1196.8	21.0	**-0.0380**	0.064	168.2	ug/L	1268	Standard
	Cr	52	14168.3	1.0	**1.2173**	0.019	1.5	ug/L	7921	Standard
	Cr	53	11539.4	4.7	**17.1991**	0.629	3.7	ug/L	442	Standard
	Mn	55	21285.3	0.8	**6.1032**	0.139	2.3	ug/L	545	Standard
	Co	59	755.7	2.7	**0.1538**	0.003	1.7	ug/L	183	Standard
	Ni	60	88859.5	1.1	**64.5211**	0.431	0.7	ug/L	131	Standard
	Cu	65	61650.8	1.1	**46.1546**	0.597	1.3	ug/L	231	Standard
	Zn	66	5785.4	2.4	**7.1828**	0.290	4.0	ug/L	306	Standard
>	Ge	72	332948.1	1.6				ug/L	330478	Standard
	As	75	282.1	71.1	**0.4219**	0.268	63.5	ug/L	-23	Standard
	Se	82	115.5	13.4	**1.4184**	0.276	19.4	ug/L	27	Standard
	Se-1	77	715.4	2.1	**14.1110**	0.545	3.9	ug/L	92	Standard
>	Ga	71	48.3	41.8				mg/L	37	Standard
	Rb	85	6489.7	3.1				ug/L	25	Standard
	Y	89	320920.6	2.0				ug/L	312467	Standard
>	Rh	103	130.0	61.9				ug/L	20	Standard
	Mo	98	1767.9	1.9	**1.2624**	0.029	2.3	ug/L	13	Standard
	Ag	107	120.0	5.5	**0.0028**	0.001	43.2	ug/L	72	Standard
	Cd	111	70.6	9.4	**0.0372**	0.005	12.7	mg/L	5	Standard
	Cd	114	248.6	10.3	**0.0595**	0.007	12.2	ug/L	7	Standard
>	In	115	491663.2	0.5				ug/L	477820	Standard
	Sn	118	42675.1	3.1	**9.1658**	0.271	3.0	ug/L	343	Standard
	Sb	123	1058.3	5.0	**0.2729**	0.013	4.7	ug/L	56	Standard
	Ba	135	40727.3	1.3	**20.7612**	0.241	1.2	ug/L	36	Standard
	Ce	140	530.0	14.3				ug/L	65	Standard
>	Tb	159	944439.6	1.2				ug/L	939481	Standard
	Ho	165	16.7	45.8				ug/L	7	Standard
	Tl	203	66.7	3.5	**0.0069**	0.000	2.6	ug/L	5	Standard
	Tl	205	30.0	33.3	**0.0005**	0.002	542.5	ug/L	2	Standard
	Pb	206	325656.4	0.9	**84.0032**	1.407	1.7	ug/L	222	Standard
	Pb	207	260598.0	0.5	**74.2973**	1.335	1.8	ug/L	186	Standard
	Pb	208	975644.8	0.3	**78.0519**	1.341	1.7	ug/L	717	Standard
	U	238	27.0	9.8	**0.0000**	0.001	10319.5	ug/L	2	Standard
>	Bi	209	429302.4	1.9				ug/L	440279	Standard

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Na	23	1.7	**-4674738226468**0968841203203.797			173.2	mg/L	2	Standard
Mg	24	129894.4	0.3	**360.9265**	3.808	1.1	mg/L	45	Standard
K	39	143.3	29.3	**4.8715**	1.572	32.3	mg/L	10	Standard
Ca	43	141.7	12.4	**23.3491**	4.321	18.5	mg/L	47	Standard
Fe	54	70.3	31.5	**0.0094**	0.055	579.2	mg/L	46	Standard
Fe	57	908.4	14.9	**2.7600**	1.259	45.6	mg/L	627	Standard
Sc-1	45	24875.4	1.2				mg/L	24506	Standard
Cl	35	165393.2	0.7				ug/L	47100	Standard
Kr	83	7.3	7.9				ug/L	8	Standard
Br	81	5991.2	4.4				ug/L	427	Standard
P	31	12153.2	3.3				ug/L	10519	Standard
S	34	2095.1	1.8				ug/L	2003	Standard
Sr	88	188.3	8.1				ug/L	132	Standard
C	12	553.3	15.4				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	11.9	128.4				mg/L	13	Standard
Ho-1	165	16.7	45.8				mg/L	7	Standard
Er	166	30.0	0.0				mg/L	7	Standard
I	127	354116.2	5.9				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		115.671	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.748	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.897
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.507
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: L1508082801
Sample Date/Time: Sunday, August 23, 2015 16:45:47
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65399.2	2.5				ug/L	53498	Standard
	Be	9	18.3	41.7	**0.0056**	0.011	198.9	ug/L	12	Standard
	Al	27	9325136.7	1.4	**110.2230**	4.199	3.8	ug/L	487	Standard
	Sc	45	26187.6	3.1				ug/L	24506	Standard
	Ti	47	161.3	3.8	**0.7097**	0.026	3.7	ug/L	21	Standard
	V	51	1946.4	39.5	**0.1347**	0.190	141.1	ug/L	1268	Standard
	Cr	52	9032.0	2.1	**0.1582**	0.023	14.3	ug/L	7921	Standard
	Cr	53	9256.2	6.5	**13.1691**	0.887	6.7	ug/L	442	Standard
	Mn	55	58210.9	0.3	**16.4195**	0.166	1.0	ug/L	545	Standard
	Co	59	737.7	5.2	**0.1420**	0.009	6.1	ug/L	183	Standard
	Ni	60	2302.8	2.3	**1.5299**	0.024	1.6	ug/L	131	Standard
	Cu	65	5171.9	2.0	**3.5817**	0.099	2.8	ug/L	231	Standard
	Zn	66	6891.6	2.4	**8.3341**	0.241	2.9	ug/L	306	Standard
>	**Ge**	72	344556.5	0.8				ug/L	330478	Standard
	As	75	1218.3	4.0	**1.5837**	0.054	3.4	ug/L	-23	Standard
	Se	82	61.7	3.5	**0.5263**	0.040	7.6	ug/L	27	Standard
	Se-1	77	529.7	3.9	**9.5363**	0.353	3.7	ug/L	92	Standard
>	**Ga**	71	78.3	13.3				mg/L	37	Standard
	Rb	85	36413.7	1.4				ug/L	25	Standard
	Y	89	331481.9	2.7				ug/L	312467	Standard
>	**Rh**	103	336.7	23.0				ug/L	20	Standard
	Mo	98	5125.1	2.8	**3.5461**	0.088	2.5	ug/L	13	Standard
	Ag	107	94.0	10.1	**-0.0030**	0.002	61.4	ug/L	72	Standard
	Cd	111	42.5	22.6	**0.0161**	0.007	40.8	mg/L	5	Standard
	Cd	114	114.5	9.5	**0.0220**	0.003	12.6	ug/L	7	Standard
>	**In**	115	507906.7	0.3				ug/L	477820	Standard
	Sn	118	640.0	2.8	**0.0554**	0.004	7.5	ug/L	343	Standard
	Sb	123	2973.4	2.0	**0.7489**	0.017	2.3	ug/L	56	Standard
	Ba	135	75695.3	1.3	**37.3730**	0.392	1.0	ug/L	36	Standard
	Ce	140	236.7	12.2				ug/L	65	Standard
>	**Tb**	159	997301.2	0.9				ug/L	939481	Standard
	Ho	165	26.7	60.3				ug/L	7	Standard
	Tl	203	49.0	25.5	**0.0036**	0.002	51.0	ug/L	5	Standard
	Tl	205	23.3	24.7	**-0.0015**	0.001	83.6	ug/L	2	Standard
	Pb	206	536.7	6.2	**0.0678**	0.009	13.9	ug/L	222	Standard
	Pb	207	432.3	6.3	**0.0558**	0.009	15.4	ug/L	186	Standard
	Pb	208	1630.0	5.7	**0.0614**	0.007	12.1	ug/L	717	Standard
	U	238	466.3	9.7	**0.0956**	0.009	9.3	ug/L	2	Standard
>	**Bi**	209	456981.6	1.0				ug/L	440279	Standard

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Na	23	5.0	**-138579838622**	240027321399398.560		173.2	mg/L	2	Standard
Mg	24	28189.6	3.7	**74.3561**	4.117	5.5	mg/L	45	Standard
K	39	171.7	11.0	**5.6098**	0.830	14.8	mg/L	10	Standard
Ca	43	221.7	6.5	**38.8937**	4.353	11.2	mg/L	47	Standard
Fe	54	87.5	3.8	**0.0417**	0.014	33.7	mg/L	46	Standard
Fe	57	848.4	7.8	**1.7707**	0.560	31.6	mg/L	627	Standard
> **Sc-1**	45	26187.6	3.1				mg/L	24506	Standard
Cl	35	67293.1	1.6				ug/L	47100	Standard
Kr	83	7.0	65.5				ug/L	8	Standard
Br	81	2500.2	0.7				ug/L	427	Standard
P	31	14967.4	3.8				ug/L	10519	Standard
S	34	2071.8	0.4				ug/L	2003	Standard
Sr	88	356.7	11.7				ug/L	132	Standard
C	12	350.0	34.6				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	6.7	173.2				mg/L	10	Standard
Dy	164	41.9	14.9				mg/L	13	Standard
Ho-1	165	26.7	60.3				mg/L	7	Standard
Er	166	30.0	57.7				mg/L	7	Standard
I	127	52492.6	5.5				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		122.247	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.260	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.297
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.794
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1508085401
Sample Date/Time: Sunday, August 23, 2015 16:48:58
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59474.9	3.2				ug/L	53498	Standard
	Be	9	381.7	4.0	**0.5632**	0.006	1.0	ug/L	12	Standard
	Al	27	10161241.9	2.6	**132.0196**	2.559	1.9	ug/L	487	Standard
	Sc	45	21234.9	5.0				ug/L	24506	Standard
	Ti	47	28082.7	1.0	**177.4275**	1.078	0.6	ug/L	21	Standard
	V	51	175098.9	0.8	**51.3763**	0.215	0.4	ug/L	1268	Standard
	Cr	52	200464.8	0.8	**44.2057**	0.164	0.4	ug/L	7921	Standard
	Cr	53	35244.3	1.8	**63.5127**	1.554	2.4	ug/L	442	Standard
	Mn	55	404644.6	0.6	**139.8281**	0.873	0.6	ug/L	545	Standard
	Co	59	17117.7	0.8	**5.4908**	0.021	0.4	ug/L	183	Standard
	Ni	60	78110.5	1.1	**66.5025**	0.349	0.5	ug/L	131	Standard
	Cu	65	11245.5	0.8	**9.7348**	0.144	1.5	ug/L	231	Standard
	Zn	66	57220.2	1.1	**88.0978**	0.476	0.5	ug/L	306	Standard
>	**Ge**	72	283940.6	0.6				ug/L	330478	Standard
	As	75	9319.4	1.7	**14.2712**	0.159	1.1	ug/L	-23	Standard
	Se	82	4550.2	1.7	**84.4574**	1.330	1.6	ug/L	27	Standard
	Se-1	77	3851.2	1.8	**99.3968**	1.791	1.8	ug/L	92	Standard
>	**Ga**	71	3782.1	4.0				mg/L	37	Standard
	Rb	85	200317.7	2.4				ug/L	25	Standard
	Y	89	389986.9	3.3				ug/L	312467	Standard
>	**Rh**	103	410.0	20.3				ug/L	20	Standard
	Mo	98	439559.2	1.3	**372.0623**	14.163	3.8	ug/L	13	Standard
	Ag	107	653.0	1.1	**0.1340**	0.006	4.2	ug/L	72	Standard
	Cd	111	1505.8	7.3	**1.2581**	0.097	7.7	mg/L	5	Standard
	Cd	114	5607.0	2.2	**1.7963**	0.052	2.9	ug/L	7	Standard
>	**In**	115	415743.4	2.7				ug/L	477820	Standard
	Sn	118	1020.0	8.5	**0.1823**	0.017	9.4	ug/L	343	Standard
	Sb	123	6867.2	1.8	**2.1211**	0.069	3.2	ug/L	56	Standard
	Ba	135	77989.5	0.4	**47.0758**	1.466	3.1	ug/L	36	Standard
	Ce	140	161979.8	2.2				ug/L	65	Standard
>	**Tb**	159	814153.0	1.5				ug/L	939481	Standard
	Ho	165	6563.1	1.6				ug/L	7	Standard
	Tl	203	794.4	1.5	**0.1585**	0.003	1.7	ug/L	5	Standard
	Tl	205	545.0	8.4	**0.1571**	0.015	9.2	ug/L	2	Standard
	Pb	206	8022.1	1.6	**2.5716**	0.026	1.0	ug/L	222	Standard
	Pb	207	5925.5	2.6	**2.0902**	0.048	2.3	ug/L	186	Standard
	Pb	208	20948.9	0.7	**2.0723**	0.028	1.3	ug/L	717	Standard
	U	238	25568.9	0.8	**7.5591**	0.066	0.9	ug/L	2	Standard
>	**Bi**	209	337443.7	0.6				ug/L	440279	Standard

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Na	23	113.3	**-3740442189922**331126099834657.060			8.9	mg/L	2	Standard
Mg	24	598562.7	1.6	**1952.6902**	120.625	6.2	mg/L	45	Standard
K	39	648.3	5.8	**27.7065**	3.029	10.9	mg/L	10	Standard
Ca	43	4392.3	4.4	**1152.1060**	109.197	9.5	mg/L	47	Standard
Fe	54	1201.4	10.1	**3.3525**	0.419	12.5	mg/L	46	Standard
Fe	57	5187.6	4.2	**53.0380**	5.010	9.4	mg/L	627	Standard
Sc-1	45	21234.9	5.0				mg/L	24506	Standard
Cl	35	1890411.0	4.2				ug/L	47100	Standard
Kr	83	5.0	60.0				ug/L	8	Standard
Br	81	77775.8	1.7				ug/L	427	Standard
P	31	21238.2	3.6				ug/L	10519	Standard
S	34	4852.4	1.0				ug/L	2003	Standard
Sr	88	451.7	22.2				ug/L	132	Standard
C	12	406.7	22.3				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	2200.2	4.4				mg/L	10	Standard
Dy	164	9242.7	1.2				mg/L	13	Standard
Ho-1	165	6563.1	1.6				mg/L	7	Standard
Er	166	6548.1	7.9				mg/L	7	Standard
I	127	1652702.2	7.9				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.173	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		85.918	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	87.008	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	76.643	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	

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Mo 98 Upper, S, EEE	Mo	98

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Method 6020 - Summary Report

Sample ID: L1508085402
Sample Date/Time: Sunday, August 23, 2015 16:52:10
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61417.6	1.7				ug/L	53498	Standard
	Be	9	573.3	2.2	**0.8289**	0.030	3.6	ug/L	12	Standard
	Al	27	17227293.6	0.6	**216.7303**	2.446	1.1	ug/L	487	Standard
	Sc	45	21565.3	3.5				ug/L	24506	Standard
	Ti	47	18966.2	0.6	**116.4622**	1.566	1.3	ug/L	21	Standard
	V	51	202113.8	1.3	**57.6983**	0.883	1.5	ug/L	1268	Standard
	Cr	52	187140.1	1.4	**39.9796**	0.681	1.7	ug/L	7921	Standard
	Cr	53	32768.7	1.7	**57.3412**	1.450	2.5	ug/L	442	Standard
	Mn	55	793515.0	1.2	**266.7421**	2.625	1.0	ug/L	545	Standard
	Co	59	20552.3	2.3	**6.4179**	0.098	1.5	ug/L	183	Standard
	Ni	60	83461.6	0.7	**69.0903**	0.701	1.0	ug/L	131	Standard
	Cu	65	10172.4	2.3	**8.5402**	0.231	2.7	ug/L	231	Standard
	Zn	66	82261.7	0.6	**123.3227**	1.531	1.2	ug/L	306	Standard
>	**Ge**	72	292080.9	1.7				ug/L	330478	Standard
	As	75	9585.7	2.1	**14.2754**	0.496	3.5	ug/L	-23	Standard
	Se	82	5005.1	0.9	**90.3625**	2.069	2.3	ug/L	27	Standard
	Se-1	77	4159.9	1.5	**104.5025**	3.140	3.0	ug/L	92	Standard
>	**Ga**	71	2823.6	6.1				mg/L	37	Standard
	Rb	85	184744.6	1.4				ug/L	25	Standard
	Y	89	358191.5	2.8				ug/L	312467	Standard
>	**Rh**	103	403.3	7.0				ug/L	20	Standard
	Mo	98	400965.2	1.1	**327.4040**	2.357	0.7	ug/L	13	Standard
	Ag	107	421.3	6.8	**0.0754**	0.007	8.8	ug/L	72	Standard
	Cd	111	986.2	5.5	**0.7904**	0.050	6.3	mg/L	5	Standard
	Cd	114	4410.3	3.9	**1.3614**	0.051	3.8	ug/L	7	Standard
>	**In**	115	430694.8	1.4				ug/L	477820	Standard
	Sn	118	1753.4	3.8	**0.3549**	0.018	5.2	ug/L	343	Standard
	Sb	123	8828.1	1.3	**2.6318**	0.018	0.7	ug/L	56	Standard
	Ba	135	101087.4	0.7	**58.8782**	0.602	1.0	ug/L	36	Standard
	Ce	140	106988.1	0.3				ug/L	65	Standard
>	**Tb**	159	824614.0	1.7				ug/L	939481	Standard
	Ho	165	4262.3	6.0				ug/L	7	Standard
	Tl	203	1228.4	2.5	**0.2403**	0.007	2.9	ug/L	5	Standard
	Tl	205	908.4	2.2	**0.2587**	0.008	3.0	ug/L	2	Standard
	Pb	206	6769.2	0.6	**2.0991**	0.039	1.9	ug/L	222	Standard
	Pb	207	5099.5	2.1	**1.7392**	0.003	0.2	ug/L	186	Standard
	Pb	208	17648.6	0.3	**1.6866**	0.031	1.8	ug/L	717	Standard
	U	238	18791.0	0.5	**5.4011**	0.138	2.6	ug/L	2	Standard
>	**Bi**	209	347076.9	2.0				ug/L	440279	Standard

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Na	23	100.0	**-324447880070**1082498816073021.900			33.4	mg/L	2	Standard
Mg	24	397733.8	1.8	**1275.9056**	44.497	3.5	mg/L	45	Standard
K	39	460.0	17.0	**19.2072**	3.698	19.3	mg/L	10	Standard
Ca	43	4710.7	4.7	**1213.1545**	26.099	2.2	mg/L	47	Standard
Fe	54	2996.5	6.5	**8.4594**	0.603	7.1	mg/L	46	Standard
Fe	57	5566.0	1.3	**56.2423**	1.387	2.5	mg/L	627	Standard
Sc-1	45	21565.3	3.5				mg/L	24506	Standard
Cl	35	1749948.2	4.5				ug/L	47100	Standard
Kr	83	3.0	33.3				ug/L	8	Standard
Br	81	46695.4	6.3				ug/L	427	Standard
P	31	24523.2	3.9				ug/L	10519	Standard
S	34	4664.1	1.6				ug/L	2003	Standard
Sr	88	430.0	3.1				ug/L	132	Standard
C	12	476.7	28.3				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	1223.4	9.0				mg/L	10	Standard
Dy	164	5714.9	5.8				mg/L	13	Standard
Ho-1	165	4262.3	6.0				mg/L	7	Standard
Er	166	4167.2	6.6				mg/L	7	Standard
I	127	1098707.5	7.2				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		114.804	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		88.381	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.137
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		78.831
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	

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Zn 66 Upper, S, EEE	Zn	66
Se-1 77 Upper, S, EEE	Se-1	77
Mo 98 Upper, S, EEE	Mo	98

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Method 6020 - Summary Report

Sample ID: L1508085403
Sample Date/Time: Sunday, August 23, 2015 16:55:21
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67302.9	6.8				ug/L	53498	Standard
	Be	9	23.3	44.6	**0.0115**	0.014	119.2	ug/L	12	Standard
	Al	27	4388428.6	3.8	**50.4371**	1.558	3.1	ug/L	487	Standard
	Sc	45	22710.3	1.4				ug/L	24506	Standard
	Ti	47	127.0	19.2	**0.6083**	0.129	21.2	ug/L	21	Standard
	V	51	20624.4	3.2	**5.2776**	0.120	2.3	ug/L	1268	Standard
	Cr	52	8980.3	4.0	**0.3492**	0.044	12.6	ug/L	7921	Standard
	Cr	53	10842.2	6.8	**17.5072**	1.508	8.6	ug/L	442	Standard
	Mn	55	90136.2	3.7	**28.5740**	0.465	1.6	ug/L	545	Standard
	Co	59	2888.3	3.3	**0.8078**	0.012	1.5	ug/L	183	Standard
	Ni	60	9802.2	3.6	**7.6168**	0.121	1.6	ug/L	131	Standard
	Cu	65	2901.3	1.5	**2.1837**	0.037	1.7	ug/L	231	Standard
	Zn	66	3223.0	2.4	**4.1448**	0.124	3.0	ug/L	306	Standard
>	Ge	72	307905.4	2.1				ug/L	330478	Standard
	As	75	4180.6	5.1	**5.9324**	0.199	3.4	ug/L	-23	Standard
	Se	82	1761.1	0.9	**29.8800**	0.670	2.2	ug/L	27	Standard
	Se-1	77	1420.7	4.4	**32.5186**	0.877	2.7	ug/L	92	Standard
>	Ga	71	4939.1	2.0				mg/L	37	Standard
	Rb	85	227088.1	2.3				ug/L	25	Standard
	Y	89	312347.8	2.3				ug/L	312467	Standard
>	Rh	103	190.0	14.7				ug/L	20	Standard
	Mo	98	527938.7	1.5	**389.2559**	3.090	0.8	ug/L	13	Standard
	Ag	107	73.0	3.6	**-0.0062**	0.001	8.6	ug/L	72	Standard
	Cd	111	-12.7	322.8	**-0.0224**	0.030	132.8	mg/L	5	Standard
	Cd	114	2432.6	5.2	**0.6739**	0.032	4.7	ug/L	7	Standard
>	In	115	476989.1	1.9				ug/L	477820	Standard
	Sn	118	468.3	13.9	**0.0256**	0.013	49.8	ug/L	343	Standard
	Sb	123	14291.2	0.7	**3.8493**	0.049	1.3	ug/L	56	Standard
	Ba	135	47602.7	1.6	**25.0190**	0.139	0.6	ug/L	36	Standard
	Ce	140	1270.1	5.1				ug/L	65	Standard
>	Tb	159	922157.9	1.6				ug/L	939481	Standard
	Ho	165	70.0	12.4				ug/L	7	Standard
	Tl	203	2016.1	1.5	**0.3377**	0.002	0.5	ug/L	5	Standard
	Tl	205	1353.4	5.7	**0.3303**	0.019	5.7	ug/L	2	Standard
	Pb	206	414.7	7.3	**0.0504**	0.008	15.4	ug/L	222	Standard
	Pb	207	338.7	6.1	**0.0417**	0.005	13.1	ug/L	186	Standard
	Pb	208	1178.7	4.0	**0.0383**	0.004	9.7	ug/L	717	Standard
	U	238	13839.0	0.7	**3.3875**	0.034	1.0	ug/L	2	Standard
>	Bi	209	407146.8	1.0				ug/L	440279	Standard

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Na	23	11.7	**-361220260944**	238606549784063.780		66.1	mg/L	2	Standard
Mg	24	290027.2	2.3	**883.1424**	33.080	3.7	mg/L	45	Standard
K	39	473.3	12.2	**18.7139**	2.385	12.7	mg/L	10	Standard
Ca	43	435.0	8.0	**98.5559**	7.390	7.5	mg/L	47	Standard
Fe	54	132.2	17.7	**0.1957**	0.068	34.7	mg/L	46	Standard
Fe	57	1406.7	3.4	**8.9014**	0.621	7.0	mg/L	627	Standard
> **Sc-1**	45	22710.3	1.4				mg/L	24506	Standard
Cl	35	567458.3	2.8				ug/L	47100	Standard
Kr	83	6.3	63.8				ug/L	8	Standard
Br	81	39966.0	3.3				ug/L	427	Standard
P	31	13217.4	3.6				ug/L	10519	Standard
S	34	2653.6	0.9				ug/L	2003	Standard
Sr	88	230.0	22.7				ug/L	132	Standard
C	12	343.3	28.3				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	116.7	26.2				mg/L	10	Standard
Dy	164	90.6	17.9				mg/L	13	Standard
Ho-1	165	70.0	12.4				mg/L	7	Standard
Er	166	56.7	44.4				mg/L	7	Standard
I	127	699658.6	3.5				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		125.805	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.170	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.826
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.475
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	

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Method 6020 - Summary Report

Sample ID: L1508085404
Sample Date/Time: Sunday, August 23, 2015 16:58:32
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65943.4	4.8				ug/L	53498	Standard
	Be	9	26.7	39.0	**0.0166**	0.014	82.9	ug/L	12	Standard
	Al	27	3994321.0	0.4	**46.8666**	2.438	5.2	ug/L	487	Standard
	Sc	45	21829.1	4.5				ug/L	24506	Standard
	Ti	47	67.0	8.3	**0.2762**	0.033	11.8	ug/L	21	Standard
	V	51	1143.2	41.8	**-0.0153**	0.134	879.1	ug/L	1268	Standard
	Cr	52	8763.9	2.5	**0.3822**	0.060	15.6	ug/L	7921	Standard
	Cr	53	12073.1	3.4	**20.4121**	0.531	2.6	ug/L	442	Standard
	Mn	55	142461.7	1.2	**47.1964**	0.787	1.7	ug/L	545	Standard
	Co	59	1179.0	4.3	**0.3123**	0.019	6.1	ug/L	183	Standard
	Ni	60	4589.4	1.4	**3.6727**	0.074	2.0	ug/L	131	Standard
	Cu	65	2338.5	0.2	**1.8064**	0.018	1.0	ug/L	231	Standard
	Zn	66	2660.6	0.7	**3.5015**	0.043	1.2	ug/L	306	Standard
>	Ge	72	295443.5	0.9				ug/L	330478	Standard
	As	75	1900.5	5.7	**2.8398**	0.177	6.2	ug/L	-23	Standard
	Se	82	1107.8	2.7	**19.4394**	0.599	3.1	ug/L	27	Standard
	Se-1	77	1049.4	3.1	**24.5932**	0.870	3.5	ug/L	92	Standard
>	Ga	71	1280.1	2.4				mg/L	37	Standard
	Rb	85	216756.2	0.8				ug/L	25	Standard
	Y	89	301903.5	1.4				ug/L	312467	Standard
>	Rh	103	278.3	8.5				ug/L	20	Standard
	Mo	98	465725.0	0.8	**347.9583**	5.583	1.6	ug/L	13	Standard
	Ag	107	64.7	7.8	**-0.0077**	0.001	14.7	ug/L	72	Standard
	Cd	111	-438.1	1.8	**-0.3398**	0.010	2.9	mg/L	5	Standard
	Cd	114	1071.0	1.2	**0.2962**	0.003	0.9	ug/L	7	Standard
>	In	115	470742.8	1.2				ug/L	477820	Standard
	Sn	118	525.0	11.5	**0.0399**	0.013	31.4	ug/L	343	Standard
	Sb	123	9873.1	1.4	**2.6930**	0.021	0.8	ug/L	56	Standard
	Ba	135	40263.4	1.1	**21.4384**	0.175	0.8	ug/L	36	Standard
	Ce	140	141.7	30.0				ug/L	65	Standard
>	Tb	159	901146.8	0.7				ug/L	939481	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	817.4	1.5	**0.1389**	0.003	2.2	ug/L	5	Standard
	Tl	205	585.0	3.9	**0.1435**	0.005	3.2	ug/L	2	Standard
	Pb	206	303.0	6.4	**0.0226**	0.005	20.4	ug/L	222	Standard
	Pb	207	240.7	6.4	**0.0144**	0.004	30.4	ug/L	186	Standard
	Pb	208	813.0	2.1	**0.0095**	0.001	8.3	ug/L	717	Standard
	U	238	7239.1	1.4	**1.8240**	0.036	2.0	ug/L	2	Standard
>	Bi	209	394925.7	1.0				ug/L	440279	Standard

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Na	23	6.7	**-2135172992041**85416845032312.250			86.8	mg/L	2	Standard
Mg	24	297082.9	1.2	**942.3707**	52.151	5.5	mg/L	45	Standard
K	39	408.3	10.2	**16.7204**	0.968	5.8	mg/L	10	Standard
Ca	43	416.7	30.1	**98.3258**	32.844	33.4	mg/L	47	Standard
Fe	54	125.2	6.1	**0.1908**	0.036	19.1	mg/L	46	Standard
Fe	57	1366.7	6.5	**9.1017**	1.547	17.0	mg/L	627	Standard
> **Sc-1**	45	21829.1	4.5				mg/L	24506	Standard
Cl	35	539734.1	0.8				ug/L	47100	Standard
Kr	83	3.0	66.7				ug/L	8	Standard
Br	81	39083.7	1.2				ug/L	427	Standard
P	31	12623.6	1.5				ug/L	10519	Standard
S	34	2648.6	0.8				ug/L	2003	Standard
Sr	88	206.7	10.1				ug/L	132	Standard
C	12	316.7	21.0				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	46.7	32.7				mg/L	10	Standard
Dy	164	13.0	89.8				mg/L	13	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	743415.0	5.3				mg/L	2225	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		123.264	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		89.399	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.519
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		89.699
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

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Method 6020 - Summary Report

Sample ID: L1508085801
Sample Date/Time: Sunday, August 23, 2015 17:01:44
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65883.1	4.2				ug/L	53498	Standard
	Be	9	18.3	68.6	**0.0050**	0.017	345.9	ug/L	12	Standard
	Al	27	6446034.2	2.2	**75.6242**	1.505	2.0	ug/L	487	Standard
	Sc	45	26478.1	3.2				ug/L	24506	Standard
	Ti	47	575.0	3.7	**2.9123**	0.085	2.9	ug/L	21	Standard
	V	51	1594.7	19.9	**0.0550**	0.080	145.8	ug/L	1268	Standard
	Cr	52	12009.1	3.8	**0.7537**	0.073	9.7	ug/L	7921	Standard
	Cr	53	11604.5	8.6	**16.9614**	1.290	7.6	ug/L	442	Standard
	Mn	55	24027.0	1.6	**6.7821**	0.205	3.0	ug/L	545	Standard
	Co	59	851.7	4.0	**0.1761**	0.011	6.1	ug/L	183	Standard
	Ni	60	2279.2	2.4	**1.5386**	0.025	1.6	ug/L	131	Standard
	Cu	65	58840.4	0.7	**43.2286**	0.487	1.1	ug/L	231	Standard
	Zn	66	99857.3	0.8	**128.9339**	2.351	1.8	ug/L	306	Standard
>	Ge	72	339186.0	1.3				ug/L	330478	Standard
	As	75	1645.7	5.0	**2.1552**	0.132	6.1	ug/L	-23	Standard
	Se	82	721.5	2.9	**10.8477**	0.479	4.4	ug/L	27	Standard
	Se-1	77	535.7	8.3	**9.8487**	0.901	9.1	ug/L	92	Standard
>	Ga	71	138.3	30.7				mg/L	37	Standard
	Rb	85	38443.7	2.1				ug/L	25	Standard
	Y	89	336841.5	0.6				ug/L	312467	Standard
>	Rh	103	213.3	8.2				ug/L	20	Standard
	Mo	98	10677.4	2.4	**7.1144**	0.143	2.0	ug/L	13	Standard
	Ag	107	212.7	6.4	**0.0185**	0.002	12.3	ug/L	72	Standard
	Cd	111	24.2	43.0	**0.0029**	0.007	246.4	mg/L	5	Standard
	Cd	114	140.5	27.3	**0.0275**	0.010	34.8	ug/L	7	Standard
>	In	115	527600.3	0.8				ug/L	477820	Standard
	Sn	118	2218.5	7.1	**0.3690**	0.031	8.5	ug/L	343	Standard
	Sb	123	250.4	1.3	**0.0571**	0.000	0.7	ug/L	56	Standard
	Ba	135	29134.0	1.1	**13.8308**	0.071	0.5	ug/L	36	Standard
	Ce	140	291.7	11.0				ug/L	65	Standard
>	Tb	159	1023973.5	1.3				ug/L	939481	Standard
	Ho	165	16.7	45.8				ug/L	7	Standard
	Tl	203	32.0	24.8	**0.0009**	0.001	132.0	ug/L	5	Standard
	Tl	205	18.3	68.6	**-0.0027**	0.003	101.8	ug/L	2	Standard
	Pb	206	1542.7	1.1	**0.3019**	0.005	1.8	ug/L	222	Standard
	Pb	207	1295.1	2.9	**0.2778**	0.010	3.6	ug/L	186	Standard
	Pb	208	4472.6	0.8	**0.2663**	0.002	0.9	ug/L	717	Standard
	U	238	1009.0	2.1	**0.2084**	0.005	2.3	ug/L	2	Standard
>	Bi	209	469272.8	0.4				ug/L	440279	Standard

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Na	23	6.7	**-178579802716483367076694395.672**			46.7	mg/L	2	Standard
Mg	24	50040.8	1.6	**130.6439**	5.595	4.3	mg/L	45	Standard
K	39	243.3	23.1	**7.9946**	1.773	22.2	mg/L	10	Standard
Ca	43	115.0	15.1	**15.7615**	3.619	23.0	mg/L	47	Standard
Fe	54	132.4	22.7	**0.1437**	0.066	46.2	mg/L	46	Standard
Fe	57	933.4	5.6	**2.4617**	0.456	18.5	mg/L	627	Standard
> **Sc-1**	45	26478.1	3.2				mg/L	24506	Standard
Cl	35	73134.8	0.9				ug/L	47100	Standard
Kr	83	3.3	34.6				ug/L	8	Standard
Br	81	48832.0	3.4				ug/L	427	Standard
P	31	14406.9	4.1				ug/L	10519	Standard
S	34	2180.2	7.5				ug/L	2003	Standard
Sr	88	191.7	19.9				ug/L	132	Standard
C	12	966.7	11.3				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	33.3	62.5				mg/L	10	Standard
Dy	164	38.1	1.3				mg/L	13	Standard
Ho-1	165	16.7	45.8				mg/L	7	Standard
Er	166	40.0	25.0				mg/L	7	Standard
I	127	3158684.6	1.6				mg/L	2225	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		123.151	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		102.635	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.418
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.585
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1508090402
Sample Date/Time: Sunday, August 23, 2015 17:04:55
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60130.8	2.9				ug/L	53498	Standard
	Be	9	15.0	33.3	**0.0027**	0.008	300.7	ug/L	12	Standard
	Al	27	2077885.4	4.1	**26.7094**	1.520	5.7	ug/L	487	Standard
	Sc	45	25558.2	4.1				ug/L	24506	Standard
	Ti	47	60.7	10.6	**0.2058**	0.038	18.6	ug/L	21	Standard
	V	51	1412.6	17.3	**0.0261**	0.061	234.1	ug/L	1268	Standard
	Cr	52	9644.1	1.7	**0.3903**	0.026	6.7	ug/L	7921	Standard
	Cr	53	2983.6	7.3	**4.0377**	0.365	9.0	ug/L	442	Standard
	Mn	55	8909.3	3.7	**2.5254**	0.109	4.3	ug/L	545	Standard
	Co	59	388.0	2.2	**0.0553**	0.003	6.0	ug/L	183	Standard
	Ni	60	1127.4	2.5	**0.7552**	0.019	2.6	ug/L	131	Standard
	Cu	65	654.0	6.3	**0.3317**	0.035	10.6	ug/L	231	Standard
	Zn	66	1552.7	2.1	**1.6523**	0.061	3.7	ug/L	306	Standard
>	**Ge**	72	323696.6	0.8				ug/L	330478	Standard
	As	75	190.0	23.7	**0.3061**	0.059	19.2	ug/L	-23	Standard
	Se	82	125.2	8.0	**1.6254**	0.165	10.2	ug/L	27	Standard
	Se-1	77	177.0	1.1	**2.1380**	0.074	3.5	ug/L	92	Standard
>	**Ga**	71	26.7	57.3				mg/L	37	Standard
	Rb	85	1208.4	6.4				ug/L	25	Standard
	Y	89	324135.3	3.8				ug/L	312467	Standard
>	**Rh**	103	178.3	18.7				ug/L	20	Standard
	Mo	98	153.6	63.4	**0.1047**	0.069	66.3	ug/L	13	Standard
	Ag	107	65.7	26.9	**-0.0085**	0.003	39.4	ug/L	72	Standard
	Cd	111	27.7	16.2	**0.0059**	0.003	56.9	mg/L	5	Standard
	Cd	114	68.5	9.6	**0.0099**	0.002	20.0	ug/L	7	Standard
>	**In**	115	508062.2	1.4				ug/L	477820	Standard
	Sn	118	366.7	16.3	**-0.0020**	0.012	610.9	ug/L	343	Standard
	Sb	123	51.6	22.8	**0.0092**	0.003	34.3	ug/L	56	Standard
	Ba	135	10439.9	1.3	**5.1315**	0.135	2.6	ug/L	36	Standard
	Ce	140	256.7	14.8				ug/L	65	Standard
>	**Tb**	159	976742.7	0.8				ug/L	939481	Standard
	Ho	165	11.7	107.9				ug/L	7	Standard
	Tl	203	30.7	13.2	**0.0008**	0.001	84.1	ug/L	5	Standard
	Tl	205	18.3	78.7	**-0.0025**	0.003	129.6	ug/L	2	Standard
	Pb	206	277.7	5.2	**0.0050**	0.004	84.9	ug/L	222	Standard
	Pb	207	243.0	5.4	**0.0050**	0.003	51.8	ug/L	186	Standard
	Pb	208	836.0	1.2	**0.0017**	0.002	88.4	ug/L	717	Standard
	U	238	1059.0	2.3	**0.2254**	0.009	4.0	ug/L	2	Standard
>	**Bi**	209	456635.6	1.6				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	5851.1	4.5	**15.7283**	1.350	8.6	mg/L	45	Standard
K	39	18.3	41.7	**0.2401**	0.289	120.5	mg/L	10	Standard
Ca	43	68.3	22.4	**6.3634**	2.840	44.6	mg/L	47	Standard
Fe	54	86.2	14.4	**0.0433**	0.030	68.6	mg/L	46	Standard
Fe	57	795.0	3.8	**1.4712**	0.497	33.8	mg/L	627	Standard
> **Sc-1**	45	25558.2	4.1				mg/L	24506	Standard
Cl	35	63883.7	0.7				ug/L	47100	Standard
Kr	83	4.3	48.0				ug/L	8	Standard
Br	81	5454.3	5.8				ug/L	427	Standard
P	31	12640.3	2.7				ug/L	10519	Standard
S	34	2213.5	3.3				ug/L	2003	Standard
Sr	88	195.0	9.2				ug/L	132	Standard
C	12	280.0	9.4				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	12.4	127.2				mg/L	13	Standard
Ho-1	165	11.7	107.9				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	77154.4	3.4				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.399	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.948	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.329
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.715
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508090404
Sample Date/Time: Sunday, August 23, 2015 17:08:06
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59476.7	5.1				ug/L	53498	Standard
	Be	9	11.7	24.7	**-0.0021**	0.005	263.8	ug/L	12	Standard
	Al	27	1025292.5	1.9	**13.3228**	0.443	3.3	ug/L	487	Standard
	Sc	45	25055.7	0.8				ug/L	24506	Standard
	Ti	47	56.7	6.7	**0.1773**	0.021	12.1	ug/L	21	Standard
	V	51	1345.4	6.5	**0.0019**	0.018	963.7	ug/L	1268	Standard
	Cr	52	9057.0	1.9	**0.2367**	0.025	10.6	ug/L	7921	Standard
	Cr	53	1896.8	3.0	**2.2383**	0.058	2.6	ug/L	442	Standard
	Mn	55	5628.7	2.3	**1.4956**	0.040	2.7	ug/L	545	Standard
	Co	59	239.7	6.9	**0.0118**	0.004	35.6	ug/L	183	Standard
	Ni	60	554.7	5.2	**0.3186**	0.019	6.0	ug/L	131	Standard
	Cu	65	573.7	10.2	**0.2607**	0.045	17.2	ug/L	231	Standard
	Zn	66	1400.4	0.8	**1.4076**	0.031	2.2	ug/L	306	Standard
>	Ge	72	330258.8	1.0				ug/L	330478	Standard
	As	75	244.3	17.6	**0.3726**	0.057	15.4	ug/L	-23	Standard
	Se	82	137.6	5.9	**1.7843**	0.132	7.4	ug/L	27	Standard
	Se-1	77	150.3	4.9	**1.4528**	0.153	10.5	ug/L	92	Standard
>	Ga	71	46.7	22.3				mg/L	37	Standard
	Rb	85	178.3	10.6				ug/L	25	Standard
	Y	89	325782.8	2.1				ug/L	312467	Standard
>	Rh	103	136.7	18.4				ug/L	20	Standard
	Mo	98	65.8	45.6	**0.0432**	0.020	47.4	ug/L	13	Standard
	Ag	107	71.7	16.8	**-0.0074**	0.002	32.3	ug/L	72	Standard
	Cd	111	12.1	42.6	**-0.0049**	0.004	72.9	mg/L	5	Standard
	Cd	114	40.0	29.2	**0.0024**	0.003	129.0	ug/L	7	Standard
>	In	115	508945.2	0.6				ug/L	477820	Standard
	Sn	118	436.7	14.2	**0.0125**	0.013	103.3	ug/L	343	Standard
	Sb	123	59.9	15.2	**0.0112**	0.002	20.3	ug/L	56	Standard
	Ba	135	4160.6	1.5	**2.0253**	0.041	2.0	ug/L	36	Standard
	Ce	140	43.3	24.0				ug/L	65	Standard
>	Tb	159	983599.1	0.9				ug/L	939481	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	40.0	28.2	**0.0022**	0.002	75.7	ug/L	5	Standard
	Tl	205	31.7	48.2	**0.0004**	0.003	892.6	ug/L	2	Standard
	Pb	206	267.3	2.2	**0.0026**	0.002	66.7	ug/L	222	Standard
	Pb	207	226.3	4.6	**0.0006**	0.003	455.5	ug/L	186	Standard
	Pb	208	804.3	0.9	**-0.0006**	0.001	114.4	ug/L	717	Standard
	U	238	521.3	4.4	**0.1078**	0.005	4.2	ug/L	2	Standard
>	Bi	209	456076.9	0.5				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	3738.8	9.9	**10.1825**	1.052	10.3	mg/L	45	Standard
K	39	11.7	49.5	**0.0019**	0.210	10998.3	mg/L	10	Standard
Ca	43	46.7	22.3	**1.8734**	2.301	122.8	mg/L	47	Standard
Fe	54	84.3	35.7	**0.0429**	0.075	175.3	mg/L	46	Standard
Fe	57	783.4	16.6	**1.4947**	1.224	81.9	mg/L	627	Standard
> **Sc-1**	45	25055.7	0.8				mg/L	24506	Standard
Cl	35	59590.3	1.6				ug/L	47100	Standard
Kr	83	4.7	53.9				ug/L	8	Standard
Br	81	7225.1	2.3				ug/L	427	Standard
P	31	12006.4	2.3				ug/L	10519	Standard
S	34	2183.5	3.1				ug/L	2003	Standard
Sr	88	176.7	9.9				ug/L	132	Standard
C	12	266.7	4.3				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	6.7	86.6				mg/L	10	Standard
Dy	164	19.4	88.8				mg/L	13	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	7	Standard
I	127	14879.0	2.1				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.176	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.934	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.514
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.588
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Sunday, August 23, 2015 17:11:19
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	54977.9	2.7				ug/L	53498	Standard
	Be	9	31405.9	3.5	**51.9055**	0.423	0.8	ug/L	12	Standard
	Al	27	3663488.7	1.0	**51.4907**	1.032	2.0	ug/L	487	Standard
	Sc	45	24563.2	3.9				ug/L	24506	Standard
	Ti	47	19220.2	0.8	**108.0910**	1.430	1.3	ug/L	21	Standard
	V	51	201538.7	1.5	**52.6705**	1.023	1.9	ug/L	1268	Standard
	Cr	52	264357.8	1.8	**52.1840**	1.228	2.4	ug/L	7921	Standard
	Cr	53	33637.3	1.5	**53.8659**	0.991	1.8	ug/L	442	Standard
	Mn	55	177047.1	0.9	**54.3720**	0.635	1.2	ug/L	545	Standard
	Co	59	183898.0	0.5	**53.0010**	0.455	0.9	ug/L	183	Standard
	Ni	60	68125.8	1.3	**51.6346**	0.928	1.8	ug/L	131	Standard
	Cu	65	66289.7	0.8	**51.8386**	0.653	1.3	ug/L	231	Standard
	Zn	66	37742.3	0.8	**51.5602**	0.575	1.1	ug/L	306	Standard
>	Ge	72	318856.9	0.5				ug/L	330478	Standard
	As	75	37655.2	1.3	**51.2180**	0.880	1.7	ug/L	-23	Standard
	Se	82	3217.3	1.9	**53.0241**	1.187	2.2	ug/L	27	Standard
	Se-1	77	2309.2	1.6	**52.1624**	0.616	1.2	ug/L	92	Standard
>	Ga	71	45.0	11.1				mg/L	37	Standard
	Rb	85	635.0	18.5				ug/L	25	Standard
	Y	89	316916.0	2.1				ug/L	312467	Standard
>	Rh	103	156.7	1.8				ug/L	20	Standard
	Mo	98	141134.1	1.4	**101.6972**	0.531	0.5	ug/L	13	Standard
	Ag	107	253332.0	0.6	**51.2558**	0.909	1.8	ug/L	72	Standard
	Cd	111	72195.2	1.0	**51.8903**	0.398	0.8	mg/L	5	Standard
	Cd	114	188648.8	1.9	**51.7047**	1.733	3.4	ug/L	7	Standard
>	In	115	488051.3	1.7				ug/L	477820	Standard
	Sn	118	224814.1	1.3	**48.9971**	1.286	2.6	ug/L	343	Standard
	Sb	123	191629.3	1.6	**50.4843**	0.207	0.4	ug/L	56	Standard
	Ba	135	98375.4	1.8	**50.5583**	0.569	1.1	ug/L	36	Standard
	Ce	140	100.0	21.8				ug/L	65	Standard
>	Tb	159	958664.2	1.2				ug/L	939481	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	333297.1	0.6	**50.9258**	0.458	0.9	ug/L	5	Standard
	Tl	205	227648.3	2.7	**51.1280**	1.727	3.4	ug/L	2	Standard
	Pb	206	209529.2	0.6	**51.3700**	0.259	0.5	ug/L	222	Standard
	Pb	207	190660.4	0.2	**51.6697**	0.367	0.7	ug/L	186	Standard
	Pb	208	665658.9	0.4	**50.6166**	0.494	1.0	ug/L	717	Standard
	U	238	227220.3	1.4	**50.2562**	1.011	2.0	ug/L	2	Standard
>	Bi	209	451392.1	0.7				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	1928.5	2.9	**5.3009**	0.365	6.9	mg/L	45	Standard
K	39	193.3	24.4	**6.7669**	1.539	22.7	mg/L	10	Standard
Ca	43	46.7	16.4	**2.0532**	1.318	64.2	mg/L	47	Standard
Fe	54	2110.0	2.8	**5.1668**	0.190	3.7	mg/L	46	Standard
Fe	57	1281.7	6.5	**6.5690**	1.208	18.4	mg/L	627	Standard
> **Sc-1**	45	24563.2	3.9				mg/L	24506	Standard
Cl	35	49593.8	5.0				ug/L	47100	Standard
Kr	83	4.0	50.0				ug/L	8	Standard
Br	81	856.7	5.5				ug/L	427	Standard
P	31	10825.5	3.1				ug/L	10519	Standard
S	34	2173.5	4.1				ug/L	2003	Standard
Sr	88	166.7	22.1				ug/L	132	Standard
C	12	163.3	40.8				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	9.2	8.0				mg/L	13	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	16.7	91.7				mg/L	7	Standard
I	127	4879.1	12.6				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	103.811		
Al	27	102.981		
Sc	45			
Ti	47	108.091		
V	51	105.341		
Cr	52	104.368		
Cr	53			
Mn	55	108.744		
Co	59	106.002		
Ni	60	103.269		
Cu	65	103.677		
Zn	66	103.120		
> Ge	72		96.484	
As	75	102.436		
Se	82	106.048		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.697		
Ag	107	102.512		
Cd	111	103.781		
Cd	114			
In	115			102.141
Sn	118	97.994		
Sb	123	100.969		
Ba	135	101.117		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.852		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.233		
U	238	100.512		
Bi	209			102.524
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Sunday, August 23, 2015 17:14:30
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	53895.8	3.2				ug/L	53498	Standard
	Be	9	16.7	45.8	**0.0083**	0.014	167.1	ug/L	12	Standard
	Al	27	835.0	8.4	**0.0010**	0.001	132.4	ug/L	487	Standard
	Sc	45	25251.0	2.8				ug/L	24506	Standard
	Ti	47	28.0	16.4	**0.0241**	0.025	105.0	ug/L	21	Standard
	V	51	880.3	15.9	**-0.1120**	0.036	32.4	ug/L	1268	Standard
	Cr	52	6329.7	3.3	**-0.2759**	0.042	15.2	ug/L	7921	Standard
	Cr	53	603.3	8.9	**0.2289**	0.086	37.6	ug/L	442	Standard
	Mn	55	633.7	1.2	**0.0130**	0.002	16.7	ug/L	545	Standard
	Co	59	192.3	3.7	**-0.0004**	0.002	485.1	ug/L	183	Standard
	Ni	60	269.3	7.0	**0.1131**	0.014	12.6	ug/L	131	Standard
	Cu	65	447.7	4.5	**0.1713**	0.015	8.8	ug/L	231	Standard
	Zn	66	471.3	2.9	**0.1825**	0.018	9.6	ug/L	306	Standard
>	Ge	72	324392.5	0.1				ug/L	330478	Standard
	As	75	5.7	157.6	**0.0596**	0.012	20.1	ug/L	-23	Standard
	Se	82	41.9	15.4	**0.2614**	0.104	39.9	ug/L	27	Standard
	Se-1	77	95.7	4.0	**0.2554**	0.085	33.1	ug/L	92	Standard
>	Ga	71	23.3	68.9				mg/L	37	Standard
	Rb	85	43.3	37.1				ug/L	25	Standard
	Y	89	315345.3	1.9				ug/L	312467	Standard
>	Rh	103	120.0	7.2				ug/L	20	Standard
	Mo	98	62.8	17.2	**0.0431**	0.008	18.0	ug/L	13	Standard
	Ag	107	87.3	8.1	**-0.0036**	0.001	39.7	ug/L	72	Standard
	Cd	111	6.2	33.7	**-0.0088**	0.002	17.1	mg/L	5	Standard
	Cd	114	15.2	38.0	**-0.0039**	0.002	40.3	ug/L	7	Standard
>	In	115	486993.1	0.1				ug/L	477820	Standard
	Sn	118	428.3	8.2	**0.0148**	0.008	51.0	ug/L	343	Standard
	Sb	123	700.7	7.4	**0.1811**	0.013	7.4	ug/L	56	Standard
	Ba	135	39.7	25.8	**-0.0059**	0.005	88.4	ug/L	36	Standard
	Ce	140	21.7	58.1				ug/L	65	Standard
>	Tb	159	958917.0	1.9				ug/L	939481	Standard
	Ho	165	15.0	120.2				ug/L	7	Standard
	Tl	203	14.0	12.4	**-0.0017**	0.000	16.2	ug/L	5	Standard
	Tl	205	8.3	34.6	**-0.0048**	0.001	13.6	ug/L	2	Standard
	Pb	206	238.3	7.2	**-0.0044**	0.004	100.0	ug/L	222	Standard
	Pb	207	180.0	7.0	**-0.0118**	0.003	29.5	ug/L	186	Standard
	Pb	208	735.3	7.4	**-0.0057**	0.005	82.6	ug/L	717	Standard
	U	238	7.0	28.6	**-0.0047**	0.000	9.7	ug/L	2	Standard
>	Bi	209	455602.6	1.3				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	78.3	14.7	**0.0775**	0.028	36.5	mg/L	45	Standard
K	39	15.0	33.3	**0.1240**	0.196	157.7	mg/L	10	Standard
Ca	43	26.7	39.0	**-2.6524**	2.221	83.7	mg/L	47	Standard
Fe	54	77.7	9.7	**0.0251**	0.020	78.1	mg/L	46	Standard
Fe	57	730.0	7.5	**0.9317**	0.526	56.5	mg/L	627	Standard
> **Sc-1**	45	25251.0	2.8				mg/L	24506	Standard
Cl	35	47145.3	2.6				ug/L	47100	Standard
Kr	83	5.3	10.8				ug/L	8	Standard
Br	81	573.3	9.6				ug/L	427	Standard
P	31	10737.1	2.8				ug/L	10519	Standard
S	34	2331.8	6.9				ug/L	2003	Standard
Sr	88	175.0	30.2				ug/L	132	Standard
C	12	130.0	81.0				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	9.4	107.0				mg/L	13	Standard
Ho-1	165	15.0	120.2				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	4842.4	11.1				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.159	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.920
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.480
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Se	82	

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Method 6020 - Summary Report

Sample ID: L1508090406
Sample Date/Time: Sunday, August 23, 2015 17:17:42
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56848.3	4.6				ug/L	53498	Standard
	Be	9	23.3	68.9	**0.0165**	0.025	150.2	ug/L	12	Standard
	Al	27	4736394.2	1.8	**64.4413**	2.822	4.4	ug/L	487	Standard
	Sc	45	25558.2	4.1				ug/L	24506	Standard
	Ti	47	50.3	25.3	**0.1417**	0.068	47.9	ug/L	21	Standard
	V	51	1524.4	14.8	**0.0460**	0.055	120.4	ug/L	1268	Standard
	Cr	52	8627.5	7.9	**0.1471**	0.138	93.9	ug/L	7921	Standard
	Cr	53	4290.6	18.8	**5.9704**	1.276	21.4	ug/L	442	Standard
	Mn	55	9013.0	2.3	**2.4931**	0.050	2.0	ug/L	545	Standard
	Co	59	389.0	10.6	**0.0530**	0.011	20.7	ug/L	183	Standard
	Ni	60	1549.1	4.7	**1.0437**	0.052	5.0	ug/L	131	Standard
	Cu	65	553.7	10.1	**0.2440**	0.041	16.6	ug/L	231	Standard
	Zn	66	1343.4	1.6	**1.3256**	0.034	2.5	ug/L	306	Standard
>	**Ge**	72	331367.7	0.4				ug/L	330478	Standard
	As	75	173.5	5.5	**0.2788**	0.012	4.3	ug/L	-23	Standard
	Se	82	114.2	11.8	**1.4023**	0.218	15.5	ug/L	27	Standard
	Se-1	77	229.3	7.2	**3.2227**	0.363	11.3	ug/L	92	Standard
>	**Ga**	71	30.0	28.9				mg/L	37	Standard
	Rb	85	938.4	7.7				ug/L	25	Standard
	Y	89	327343.0	2.5				ug/L	312467	Standard
>	**Rh**	103	165.0	16.0				ug/L	20	Standard
	Mo	98	162.2	133.6	**0.1130**	0.153	135.6	ug/L	13	Standard
	Ag	107	140.7	83.3	**0.0069**	0.023	336.4	ug/L	72	Standard
	Cd	111	61.4	73.8	**0.0304**	0.032	104.4	mg/L	5	Standard
	Cd	114	170.0	59.7	**0.0381**	0.027	70.9	ug/L	7	Standard
>	**In**	115	490368.3	1.1				ug/L	477820	Standard
	Sn	118	496.7	32.2	**0.0288**	0.034	116.4	ug/L	343	Standard
	Sb	123	277.1	30.1	**0.0686**	0.021	30.6	ug/L	56	Standard
	Ba	135	32291.4	0.8	**16.4994**	0.090	0.5	ug/L	36	Standard
	Ce	140	113.3	70.1				ug/L	65	Standard
>	**Tb**	159	955584.1	2.3				ug/L	939481	Standard
	Ho	165	10.0	100.0				ug/L	7	Standard
	Tl	203	142.3	138.5	**0.0181**	0.030	167.7	ug/L	5	Standard
	Tl	205	43.3	76.8	**0.0032**	0.008	238.0	ug/L	2	Standard
	Pb	206	322.7	36.9	**0.0175**	0.029	167.3	ug/L	222	Standard
	Pb	207	281.7	33.5	**0.0169**	0.026	151.5	ug/L	186	Standard
	Pb	208	956.7	24.3	**0.0123**	0.018	144.3	ug/L	717	Standard
	U	238	618.3	3.7	**0.1317**	0.005	3.7	ug/L	2	Standard
>	**Bi**	209	447290.3	0.3				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	7081.7	1.1	**19.0414**	0.792	4.2	mg/L	45	Standard
K	39	13.3	57.3	**0.0543**	0.280	516.2	mg/L	10	Standard
Ca	43	81.7	21.5	**9.4461**	4.481	47.4	mg/L	47	Standard
Fe	54	72.6	4.1	**0.0103**	0.006	59.1	mg/L	46	Standard
Fe	57	846.7	4.8	**1.9508**	0.358	18.3	mg/L	627	Standard
> **Sc-1**	45	25558.2	4.1				mg/L	24506	Standard
Cl	35	54114.5	3.2				ug/L	47100	Standard
Kr	83	7.0	24.7				ug/L	8	Standard
Br	81	6884.9	5.4				ug/L	427	Standard
P	31	11639.5	2.6				ug/L	10519	Standard
S	34	2243.5	7.5				ug/L	2003	Standard
Sr	88	211.7	21.2				ug/L	132	Standard
C	12	200.0	40.9				mg/L	177	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	15.7	94.5				mg/L	13	Standard
Ho-1	165	10.0	100.0				mg/L	7	Standard
Er	166	20.0	132.3				mg/L	7	Standard
I	127	22892.3	2.0				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.263	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.269	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.626
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.592
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508090408
Sample Date/Time: Sunday, August 23, 2015 17:20:54
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55091.7	1.7				ug/L	53498	Standard
	Be	9	16.7	34.6	**0.0073**	0.009	125.3	ug/L	12	Standard
	Al	27	1492934.9	0.5	**20.9311**	0.445	2.1	ug/L	487	Standard
	Sc	45	25055.7	5.7				ug/L	24506	Standard
	Ti	47	44.3	12.4	**0.1065**	0.028	26.2	ug/L	21	Standard
	V	51	1714.7	2.3	**0.0895**	0.015	16.8	ug/L	1268	Standard
	Cr	52	8920.6	4.5	**0.1848**	0.095	51.5	ug/L	7921	Standard
	Cr	53	1808.4	7.3	**2.0583**	0.205	10.0	ug/L	442	Standard
	Mn	55	6668.1	2.2	**1.7754**	0.041	2.3	ug/L	545	Standard
	Co	59	289.3	2.5	**0.0245**	0.002	6.6	ug/L	183	Standard
	Ni	60	491.7	3.1	**0.2671**	0.007	2.6	ug/L	131	Standard
	Cu	65	453.7	8.2	**0.1645**	0.025	15.1	ug/L	231	Standard
	Zn	66	1413.7	1.6	**1.3972**	0.013	0.9	ug/L	306	Standard
>	**Ge**	72	335229.0	1.3				ug/L	330478	Standard
	As	75	61.3	32.7	**0.1310**	0.025	18.9	ug/L	-23	Standard
	Se	82	65.9	3.1	**0.6193**	0.032	5.2	ug/L	27	Standard
	Se-1	77	127.7	9.9	**0.9002**	0.317	35.3	ug/L	92	Standard
>	**Ga**	71	20.0	25.0				mg/L	37	Standard
	Rb	85	243.3	11.9				ug/L	25	Standard
	Y	89	319610.6	2.6				ug/L	312467	Standard
>	**Rh**	103	126.7	16.0				ug/L	20	Standard
	Mo	98	31.7	7.1	**0.0210**	0.002	8.2	ug/L	13	Standard
	Ag	107	62.3	11.4	**-0.0084**	0.002	18.4	ug/L	72	Standard
	Cd	111	18.6	16.4	**0.0003**	0.002	668.9	mg/L	5	Standard
	Cd	114	54.8	49.5	**0.0071**	0.007	104.4	ug/L	7	Standard
>	**In**	115	479824.6	0.7				ug/L	477820	Standard
	Sn	118	380.0	7.3	**0.0055**	0.006	113.3	ug/L	343	Standard
	Sb	123	116.8	16.9	**0.0274**	0.005	19.9	ug/L	56	Standard
	Ba	135	2414.2	0.4	**1.2363**	0.011	0.9	ug/L	36	Standard
	Ce	140	101.7	34.5				ug/L	65	Standard
>	**Tb**	159	951210.7	0.7				ug/L	939481	Standard
	Ho	165	23.3	32.7				ug/L	7	Standard
	Tl	203	31.0	14.1	**0.0010**	0.001	68.7	ug/L	5	Standard
	Tl	205	28.3	71.3	**-0.0001**	0.005	3118.2	ug/L	2	Standard
	Pb	206	243.0	3.2	**-0.0016**	0.002	119.2	ug/L	222	Standard
	Pb	207	228.7	6.0	**0.0030**	0.004	138.2	ug/L	186	Standard
	Pb	208	830.3	1.1	**0.0032**	0.001	24.0	ug/L	717	Standard
	U	238	3254.0	0.7	**0.7268**	0.011	1.4	ug/L	2	Standard
>	**Bi**	209	443246.2	0.7				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	4917.5	2.2	**13.4532**	0.577	4.3	mg/L	45	Standard
K	39	10.0	86.6	**-0.0688**	0.289	420.3	mg/L	10	Standard
Ca	43	60.0	8.3	**4.9099**	1.664	33.9	mg/L	47	Standard
Fe	54	65.9	15.6	**-0.0018**	0.033	1816.4	mg/L	46	Standard
Fe	57	738.4	9.1	**1.0962**	0.979	89.3	mg/L	627	Standard
> **Sc-1**	45	25055.7	5.7				mg/L	24506	Standard
Cl	35	57704.3	1.0				ug/L	47100	Standard
Kr	83	4.3	58.1				ug/L	8	Standard
Br	81	3367.0	5.3				ug/L	427	Standard
P	31	11522.7	1.5				ug/L	10519	Standard
S	34	2153.5	11.4				ug/L	2003	Standard
Sr	88	183.3	11.0				ug/L	132	Standard
C	12	210.0	26.5				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	6.7	86.6				mg/L	10	Standard
Dy	164	6.0	193.9				mg/L	13	Standard
Ho-1	165	23.3	32.7				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	7	Standard
I	127	33644.0	3.4				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.980	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.438	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.419
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.674
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508092101
Sample Date/Time: Sunday, August 23, 2015 17:24:05
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58941.1	1.3				ug/L	53498	Standard
	Be	9	23.3	12.4	**0.0159**	0.005	30.3	ug/L	12	Standard
	Al	27	2558994.1	1.0	**33.5339**	0.171	0.5	ug/L	487	Standard
	Sc	45	26643.4	3.3				ug/L	24506	Standard
	Ti	47	848.4	6.2	**4.4481**	0.218	4.9	ug/L	21	Standard
	V	51	48074.4	1.1	**11.7895**	0.299	2.5	ug/L	1268	Standard
	Cr	52	31760.3	2.3	**4.6491**	0.057	1.2	ug/L	7921	Standard
	Cr	53	7668.6	4.2	**11.2044**	0.501	4.5	ug/L	442	Standard
	Mn	55	82145.8	0.6	**24.0983**	0.426	1.8	ug/L	545	Standard
	Co	59	1050.4	2.2	**0.2358**	0.012	5.3	ug/L	183	Standard
	Ni	60	2033.8	2.3	**1.3931**	0.039	2.8	ug/L	131	Standard
	Cu	65	2309.5	1.8	**1.5639**	0.022	1.4	ug/L	231	Standard
	Zn	66	7208.0	0.8	**9.0731**	0.212	2.3	ug/L	306	Standard
>	**Ge**	72	332498.8	2.1				ug/L	330478	Standard
	As	75	647.5	5.6	**0.8965**	0.064	7.2	ug/L	-23	Standard
	Se	82	97.4	9.8	**1.1310**	0.176	15.6	ug/L	27	Standard
	Se-1	77	264.0	1.9	**3.9879**	0.236	5.9	ug/L	92	Standard
>	**Ga**	71	320.0	13.5				mg/L	37	Standard
	Rb	85	59073.4	4.3				ug/L	25	Standard
	Y	89	334577.2	0.6				ug/L	312467	Standard
>	**Rh**	103	136.7	16.9				ug/L	20	Standard
	Mo	98	7311.6	1.6	**5.1544**	0.099	1.9	ug/L	13	Standard
	Ag	107	143.3	48.3	**0.0072**	0.014	194.7	ug/L	72	Standard
	Cd	111	64.0	52.4	**0.0320**	0.024	75.4	mg/L	5	Standard
	Cd	114	262.2	39.5	**0.0623**	0.028	45.5	ug/L	7	Standard
>	**In**	115	498708.7	2.0				ug/L	477820	Standard
	Sn	118	3210.3	2.6	**0.6068**	0.004	0.7	ug/L	343	Standard
	Sb	123	723.0	11.9	**0.1826**	0.022	12.2	ug/L	56	Standard
	Ba	135	26415.3	1.0	**13.2684**	0.235	1.8	ug/L	36	Standard
	Ce	140	11082.4	2.5				ug/L	65	Standard
>	**Tb**	159	968622.8	3.8				ug/L	939481	Standard
	Ho	165	240.0	2.1				ug/L	7	Standard
	Tl	203	153.3	73.8	**0.0195**	0.017	89.0	ug/L	5	Standard
	Tl	205	56.7	18.4	**0.0060**	0.002	38.0	ug/L	2	Standard
	Pb	206	5244.9	2.7	**1.2181**	0.037	3.0	ug/L	222	Standard
	Pb	207	4411.3	1.5	**1.1302**	0.019	1.6	ug/L	186	Standard
	Pb	208	16024.3	0.9	**1.1522**	0.024	2.1	ug/L	717	Standard
	U	238	1078.0	4.4	**0.2310**	0.013	5.5	ug/L	2	Standard
>	**Bi**	209	453887.3	1.4				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	12570.2	1.8	**32.5008**	0.951	2.9	mg/L	45	Standard
K	39	190.0	9.5	**6.1400**	0.840	13.7	mg/L	10	Standard
Ca	43	171.7	4.4	**27.5040**	1.167	4.2	mg/L	47	Standard
Fe	54	244.7	2.4	**0.4043**	0.027	6.7	mg/L	46	Standard
Fe	57	883.4	4.7	**1.9644**	0.570	29.0	mg/L	627	Standard
Sc-1	45	26643.4	3.3				mg/L	24506	Standard
Cl	35	65210.1	2.9				ug/L	47100	Standard
Kr	83	6.3	39.7				ug/L	8	Standard
Br	81	2373.5	6.9				ug/L	427	Standard
P	31	13838.0	3.2				ug/L	10519	Standard
S	34	2228.5	2.3				ug/L	2003	Standard
Sr	88	180.0	17.3				ug/L	132	Standard
C	12	293.3	13.8				mg/L	177	Standard
N	14	6.7	86.6				mg/L	3	Standard
Hg	202	120.0	8.3				mg/L	10	Standard
Dy	164	385.2	22.8				mg/L	13	Standard
Ho-1	165	240.0	2.1				mg/L	7	Standard
Er	166	240.0	31.5				mg/L	7	Standard
I	127	13641.2	6.6				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		110.175	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.612	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.372
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.091
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508092201
Sample Date/Time: Sunday, August 23, 2015 17:27:17
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58163.2	4.3				ug/L	53498	Standard
	Be	9	35.0	75.6	**0.0337**	0.039	115.7	ug/L	12	Standard
	Al	27	1940031.2	2.0	**25.7776**	0.626	2.4	ug/L	487	Standard
	Sc	45	26334.5	2.5				ug/L	24506	Standard
	Ti	47	1606.8	4.0	**8.4835**	0.433	5.1	ug/L	21	Standard
	V	51	28883.6	0.3	**6.8923**	0.113	1.6	ug/L	1268	Standard
	Cr	52	31109.9	2.0	**4.4785**	0.173	3.9	ug/L	7921	Standard
	Cr	53	5647.7	0.7	**7.9927**	0.120	1.5	ug/L	442	Standard
	Mn	55	191611.9	1.7	**56.0230**	1.272	2.3	ug/L	545	Standard
	Co	59	1377.7	2.3	**0.3234**	0.008	2.4	ug/L	183	Standard
	Ni	60	2060.8	4.4	**1.4016**	0.070	5.0	ug/L	131	Standard
	Cu	65	4528.3	1.6	**3.2080**	0.050	1.6	ug/L	231	Standard
	Zn	66	22287.7	1.2	**28.7848**	0.548	1.9	ug/L	306	Standard
>	**Ge**	72	334983.9	1.2				ug/L	330478	Standard
	As	75	600.6	8.7	**0.8294**	0.077	9.3	ug/L	-23	Standard
	Se	82	68.5	6.0	**0.6610**	0.073	11.0	ug/L	27	Standard
	Se-1	77	187.0	2.5	**2.2232**	0.097	4.4	ug/L	92	Standard
>	**Ga**	71	393.3	11.8				mg/L	37	Standard
	Rb	85	29679.0	2.0				ug/L	25	Standard
	Y	89	331128.4	1.9				ug/L	312467	Standard
>	**Rh**	103	121.7	16.6				ug/L	20	Standard
	Mo	98	2815.5	0.8	**1.9635**	0.006	0.3	ug/L	13	Standard
	Ag	107	1184.4	4.3	**0.2110**	0.012	5.6	ug/L	72	Standard
	Cd	111	182.9	7.1	**0.1141**	0.008	7.0	mg/L	5	Standard
	Cd	114	483.3	8.1	**0.1203**	0.011	9.5	ug/L	7	Standard
>	**In**	115	503689.8	0.9				ug/L	477820	Standard
	Sn	118	2550.2	3.3	**0.4604**	0.016	3.5	ug/L	343	Standard
	Sb	123	3125.7	2.2	**0.7941**	0.022	2.7	ug/L	56	Standard
	Ba	135	22190.9	1.0	**11.0296**	0.035	0.3	ug/L	36	Standard
	Ce	140	21996.0	2.4				ug/L	65	Standard
>	**Tb**	159	978171.8	1.5				ug/L	939481	Standard
	Ho	165	368.3	12.9				ug/L	7	Standard
	Tl	203	107.3	9.7	**0.0123**	0.002	12.4	ug/L	5	Standard
	Tl	205	96.7	20.9	**0.0147**	0.005	30.7	ug/L	2	Standard
	Pb	206	16222.3	1.2	**3.8614**	0.051	1.3	ug/L	222	Standard
	Pb	207	13485.7	1.2	**3.5451**	0.038	1.1	ug/L	186	Standard
	Pb	208	49883.6	0.9	**3.6809**	0.042	1.1	ug/L	717	Standard
	U	238	749.0	5.5	**0.1570**	0.009	5.9	ug/L	2	Standard
>	**Bi**	209	458097.0	0.3				ug/L	440279	Standard

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Na	23	1.7	**-438786346841**7600002463961	5.812	173.2	mg/L	2	Standard
Mg	24	5909.5	4.7	**15.3905**	0.971	6.3	mg/L	45	Standard
K	39	141.7	14.3	**4.5099**	0.642	14.2	mg/L	10	Standard
Ca	43	116.7	28.5	**16.3407**	7.566	46.3	mg/L	47	Standard
Fe	54	356.5	3.1	**0.6745**	0.040	5.9	mg/L	46	Standard
Fe	57	960.0	0.5	**2.7535**	0.223	8.1	mg/L	627	Standard
Sc-1	45	26334.5	2.5				mg/L	24506	Standard
Cl	35	58557.6	0.5				ug/L	47100	Standard
Kr	83	3.0	66.7				ug/L	8	Standard
Br	81	1803.4	7.0				ug/L	427	Standard
P	31	13102.3	4.7				ug/L	10519	Standard
S	34	2185.2	3.5				ug/L	2003	Standard
Sr	88	215.0	22.2				ug/L	132	Standard
C	12	283.3	39.0				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	50.0	0.0				mg/L	10	Standard
Dy	164	577.7	3.8				mg/L	13	Standard
Ho-1	165	368.3	12.9				mg/L	7	Standard
Er	166	396.7	27.7				mg/L	7	Standard
I	127	9806.5	0.6				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		108.721	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.364	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.414
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.047
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508094601
Sample Date/Time: Sunday, August 23, 2015 17:30:28
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59776.0	1.1				ug/L	53498	Standard
	Be	9	11.7	24.7	**-0.0023**	0.005	196.6	ug/L	12	Standard
	Al	27	5651201.6	2.0	**73.0272**	0.680	0.9	ug/L	487	Standard
	Sc	45	26928.9	1.1				ug/L	24506	Standard
	Ti	47	633.3	6.0	**3.1883**	0.193	6.0	ug/L	21	Standard
	V	51	1484.6	23.7	**0.0231**	0.081	351.0	ug/L	1268	Standard
	Cr	52	12216.6	2.4	**0.7718**	0.104	13.4	ug/L	7921	Standard
	Cr	53	12174.9	2.3	**17.6717**	0.897	5.1	ug/L	442	Standard
	Mn	55	26964.6	0.7	**7.5553**	0.144	1.9	ug/L	545	Standard
	Co	59	860.0	4.3	**0.1760**	0.008	4.4	ug/L	183	Standard
	Ni	60	2267.2	3.7	**1.5150**	0.084	5.5	ug/L	131	Standard
	Cu	65	51536.2	1.3	**37.4664**	0.691	1.8	ug/L	231	Standard
	Zn	66	87139.9	2.0	**111.3316**	2.351	2.1	ug/L	306	Standard
>	**Ge**	72	342621.4	2.5				ug/L	330478	Standard
	As	75	270.1	26.7	**0.3935**	0.089	22.7	ug/L	-23	Standard
	Se	82	120.5	7.4	**1.4383**	0.101	7.0	ug/L	27	Standard
	Se-1	77	603.0	5.5	**11.2192**	1.047	9.3	ug/L	92	Standard
>	**Ga**	71	118.3	6.5				mg/L	37	Standard
	Rb	85	38931.6	1.3				ug/L	25	Standard
	Y	89	329448.9	1.7				ug/L	312467	Standard
>	**Rh**	103	123.3	15.3				ug/L	20	Standard
	Mo	98	8057.2	1.1	**5.6320**	0.082	1.5	ug/L	13	Standard
	Ag	107	175.3	10.5	**0.0132**	0.004	28.0	ug/L	72	Standard
	Cd	111	50.6	13.0	**0.0220**	0.005	21.1	mg/L	5	Standard
	Cd	114	132.3	15.7	**0.0271**	0.005	20.0	ug/L	7	Standard
>	**In**	115	502923.8	0.6				ug/L	477820	Standard
	Sn	118	2026.8	4.6	**0.3504**	0.018	5.0	ug/L	343	Standard
	Sb	123	227.1	7.9	**0.0542**	0.005	8.7	ug/L	56	Standard
	Ba	135	28909.9	0.3	**14.3996**	0.132	0.9	ug/L	36	Standard
	Ce	140	253.3	8.0				ug/L	65	Standard
>	**Tb**	159	982912.5	0.6				ug/L	939481	Standard
	Ho	165	18.3	15.7				ug/L	7	Standard
	Tl	203	26.3	28.0	**0.0001**	0.001	928.9	ug/L	5	Standard
	Tl	205	10.0	100.0	**-0.0045**	0.002	48.9	ug/L	2	Standard
	Pb	206	1339.1	1.8	**0.2599**	0.007	2.7	ug/L	222	Standard
	Pb	207	1123.7	5.1	**0.2388**	0.016	6.6	ug/L	186	Standard
	Pb	208	4040.2	0.9	**0.2404**	0.001	0.5	ug/L	717	Standard
	U	238	755.0	2.2	**0.1575**	0.005	3.2	ug/L	2	Standard
>	**Bi**	209	460378.3	0.9				ug/L	440279	Standard

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Na	23	3.3	**-869763147260**75337533163131.203			86.6	mg/L	2	Standard
Mg	24	43338.6	1.5	**111.1333**	0.960	0.9	mg/L	45	Standard
K	39	195.0	16.8	**6.2321**	1.193	19.1	mg/L	10	Standard
Ca	43	118.3	12.2	**16.0618**	3.252	20.2	mg/L	47	Standard
Fe	54	147.3	11.9	**0.1736**	0.044	25.4	mg/L	46	Standard
Fe	57	906.7	4.7	**2.0760**	0.291	14.0	mg/L	627	Standard
Sc-1	45	26928.9	1.1				mg/L	24506	Standard
Cl	35	62114.4	1.2				ug/L	47100	Standard
Kr	83	8.7	17.6				ug/L	8	Standard
Br	81	6411.4	3.2				ug/L	427	Standard
P	31	12932.2	1.2				ug/L	10519	Standard
S	34	2323.5	0.2				ug/L	2003	Standard
Sr	88	190.0	11.5				ug/L	132	Standard
C	12	860.0	8.1				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	73.3	15.7				mg/L	10	Standard
Dy	164	26.2	58.3				mg/L	13	Standard
Ho-1	165	18.3	15.7				mg/L	7	Standard
Er	166	10.0					mg/L	7	Standard
I	127	2841543.2	0.7				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.736	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.675	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.254
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.565
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1508094601
Sample Date/Time: Sunday, August 23, 2015 17:38:24
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55290.7	1.7				ug/L	53498	Standard
	Be	9	6.7	114.6	**-0.0093**	0.012	133.2	ug/L	12	Standard
	Al	27	1087140.8	1.1	**15.1832**	0.297	2.0	ug/L	487	Standard
	Sc	45	26625.0	1.8				ug/L	24506	Standard
	Ti	47	152.3	5.9	**0.6596**	0.050	7.5	ug/L	21	Standard
	V	51	1243.7	4.0	**-0.0381**	0.014	37.8	ug/L	1268	Standard
	Cr	52	9543.3	2.2	**0.2466**	0.029	11.6	ug/L	7921	Standard
	Cr	53	3258.7	3.2	**4.1407**	0.198	4.8	ug/L	442	Standard
	Mn	55	6235.6	1.6	**1.5913**	0.026	1.6	ug/L	545	Standard
	Co	59	305.0	8.8	**0.0261**	0.007	25.9	ug/L	183	Standard
	Ni	60	626.3	1.7	**0.3503**	0.010	2.9	ug/L	131	Standard
	Cu	65	10937.9	0.9	**7.7332**	0.045	0.6	ug/L	231	Standard
	Zn	66	19145.1	0.4	**23.8562**	0.312	1.3	ug/L	306	Standard
>	**Ge**	72	346068.1	0.9				ug/L	330478	Standard
	As	75	67.1	92.0	**0.1359**	0.077	56.4	ug/L	-23	Standard
	Se	82	45.0	22.9	**0.2652**	0.155	58.4	ug/L	27	Standard
	Se-1	77	190.0	2.4	**2.1550**	0.135	6.2	ug/L	92	Standard
>	**Ga**	71	45.0	22.2				mg/L	37	Standard
	Rb	85	7962.1	3.1				ug/L	25	Standard
	Y	89	333459.5	0.4				ug/L	312467	Standard
>	**Rh**	103	66.7	4.3				ug/L	20	Standard
	Mo	98	1580.3	4.2	**1.1349**	0.023	2.0	ug/L	13	Standard
	Ag	107	88.7	6.5	**-0.0033**	0.001	41.7	ug/L	72	Standard
	Cd	111	14.2	18.5	**-0.0031**	0.002	57.2	mg/L	5	Standard
	Cd	114	48.0	53.1	**0.0050**	0.007	135.8	ug/L	7	Standard
>	**In**	115	488571.0	2.2				ug/L	477820	Standard
	Sn	118	633.3	3.0	**0.0593**	0.004	6.6	ug/L	343	Standard
	Sb	123	88.0	4.8	**0.0193**	0.001	4.2	ug/L	56	Standard
	Ba	135	5743.1	1.7	**2.9238**	0.021	0.7	ug/L	36	Standard
	Ce	140	65.0	33.5				ug/L	65	Standard
>	**Tb**	159	957660.3	0.8				ug/L	939481	Standard
	Ho	165	13.3	78.1				ug/L	7	Standard
	Tl	203	23.7	17.1	**-0.0002**	0.001	336.4	ug/L	5	Standard
	Tl	205	10.0	50.0	**-0.0044**	0.001	26.8	ug/L	2	Standard
	Pb	206	495.3	6.9	**0.0596**	0.006	9.4	ug/L	222	Standard
	Pb	207	374.7	2.8	**0.0419**	0.001	1.4	ug/L	186	Standard
	Pb	208	1498.7	2.9	**0.0534**	0.006	11.2	ug/L	717	Standard
	U	238	158.7	3.5	**0.0290**	0.002	7.0	ug/L	2	Standard
>	**Bi**	209	449558.6	2.4				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	8352.3	0.5	**21.5577**	0.445	2.1	mg/L	45	Standard
K	39	56.7	18.4	**1.5336**	0.389	25.4	mg/L	10	Standard
Ca	43	48.3	15.8	**1.6129**	1.599	99.1	mg/L	47	Standard
Fe	54	97.3	29.7	**0.0604**	0.065	107.8	mg/L	46	Standard
Fe	57	851.7	3.8	**1.6711**	0.184	11.0	mg/L	627	Standard
Sc-1	45	26625.0	1.8				mg/L	24506	Standard
Cl	35	54985.6	0.9				ug/L	47100	Standard
Kr	83	5.7	20.4				ug/L	8	Standard
Br	81	1790.1	1.9				ug/L	427	Standard
P	31	11100.7	2.0				ug/L	10519	Standard
S	34	2265.2	1.6				ug/L	2003	Standard
Sr	88	220.0	4.5				ug/L	132	Standard
C	12	296.7	19.8				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	10.0	100.0				mg/L	10	Standard
Dy	164	22.9	27.1				mg/L	13	Standard
Ho-1	165	13.3	78.1				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	557549.1	3.1				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		103.352	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		104.718	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.250
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.108
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: L1508085801
Sample Date/Time: Sunday, August 23, 2015 17:41:35
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	55724.0	3.6				ug/L	53498	Standard
	Be	9	6.7	86.6	**-0.0094**	0.009	97.9	ug/L	12	Standard
	Al	27	547520.4	1.6	**7.5842**	0.158	2.1	ug/L	487	Standard
	Sc	45	26149.2	2.2				ug/L	24506	Standard
	Ti	47	81.7	17.4	**0.2951**	0.067	22.8	ug/L	21	Standard
	V	51	1448.2	4.4	**0.0138**	0.015	108.7	ug/L	1268	Standard
	Cr	52	9217.1	3.8	**0.1981**	0.078	39.2	ug/L	7921	Standard
	Cr	53	2115.1	3.7	**2.4534**	0.166	6.8	ug/L	442	Standard
	Mn	55	3042.3	3.5	**0.6907**	0.023	3.3	ug/L	545	Standard
	Co	59	271.0	7.4	**0.0176**	0.006	32.8	ug/L	183	Standard
	Ni	60	411.0	5.3	**0.2017**	0.016	7.9	ug/L	131	Standard
	Cu	65	7013.6	2.3	**4.9334**	0.180	3.7	ug/L	231	Standard
	Zn	66	11347.9	2.1	**14.0549**	0.242	1.7	ug/L	306	Standard
>	Ge	72	343661.7	1.6				ug/L	330478	Standard
	As	75	110.7	6.3	**0.1916**	0.009	4.4	ug/L	-23	Standard
	Se	82	89.7	5.6	**0.9606**	0.098	10.2	ug/L	27	Standard
	Se-1	77	141.3	5.4	**1.1238**	0.125	11.1	ug/L	92	Standard
>	Ga	71	20.0	90.1				mg/L	37	Standard
	Rb	85	3710.5	6.7				ug/L	25	Standard
	Y	89	333447.2	3.6				ug/L	312467	Standard
>	Rh	103	105.0	33.3				ug/L	20	Standard
	Mo	98	949.6	3.8	**0.6828**	0.023	3.3	ug/L	13	Standard
	Ag	107	83.7	7.8	**-0.0043**	0.001	31.7	ug/L	72	Standard
	Cd	111	8.7	11.8	**-0.0070**	0.001	10.8	mg/L	5	Standard
	Cd	114	20.6	90.5	**-0.0024**	0.005	210.0	ug/L	7	Standard
>	In	115	487458.7	0.5				ug/L	477820	Standard
	Sn	118	538.3	5.1	**0.0388**	0.006	14.3	ug/L	343	Standard
	Sb	123	76.0	8.6	**0.0162**	0.002	10.9	ug/L	56	Standard
	Ba	135	2825.9	2.6	**1.4284**	0.036	2.5	ug/L	36	Standard
	Ce	140	51.7	22.3				ug/L	65	Standard
>	Tb	159	964304.6	0.9				ug/L	939481	Standard
	Ho	165	10.0					ug/L	7	Standard
	Tl	203	19.0	24.1	**-0.0009**	0.001	79.5	ug/L	5	Standard
	Tl	205	10.0	100.0	**-0.0044**	0.002	50.0	ug/L	2	Standard
	Pb	206	385.3	3.5	**0.0322**	0.003	8.2	ug/L	222	Standard
	Pb	207	339.3	5.0	**0.0319**	0.004	12.4	ug/L	186	Standard
	Pb	208	1243.4	1.9	**0.0334**	0.001	2.2	ug/L	717	Standard
	U	238	101.3	4.7	**0.0161**	0.001	5.5	ug/L	2	Standard
>	Bi	209	451516.3	1.3				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	4397.3	6.9	**11.4893**	0.746	6.5	mg/L	45	Standard
K	39	25.0	52.9	**0.4480**	0.444	99.2	mg/L	10	Standard
Ca	43	33.3	69.3	**-1.4709**	4.750	323.0	mg/L	47	Standard
Fe	54	91.1	35.7	**0.0507**	0.081	159.3	mg/L	46	Standard
Fe	57	846.7	1.4	**1.7694**	0.202	11.4	mg/L	627	Standard
> **Sc-1**	45	26149.2	2.2				mg/L	24506	Standard
Cl	35	53759.9	0.5				ug/L	47100	Standard
Kr	83	3.3	45.8				ug/L	8	Standard
Br	81	5444.3	1.7				ug/L	427	Standard
P	31	10807.2	1.8				ug/L	10519	Standard
S	34	2186.8	2.2				ug/L	2003	Standard
Sr	88	181.7	22.1				ug/L	132	Standard
C	12	256.7	67.1				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	10.0	100.0				mg/L	10	Standard
Dy	164	8.7	114.7				mg/L	13	Standard
Ho-1	165	10.0					mg/L	7	Standard
Er	166	26.7	21.7				mg/L	7	Standard
I	127	283359.0	1.8				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.162	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.989	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.017
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.552
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Sunday, August 23, 2015 17:44:48
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	52332.0	3.8				ug/L	53498	Standard
	Be	9	29685.7	2.2	**51.5812**	1.513	2.9	ug/L	12	Standard
	Al	27	3468959.8	2.7	**51.2230**	1.044	2.0	ug/L	487	Standard
	Sc	45	25703.5	2.5				ug/L	24506	Standard
	Ti	47	19839.0	1.2	**104.9448**	2.876	2.7	ug/L	21	Standard
	V	51	206781.8	1.4	**50.8144**	1.106	2.2	ug/L	1268	Standard
	Cr	52	275172.4	0.9	**51.0518**	0.665	1.3	ug/L	7921	Standard
	Cr	53	34278.8	2.6	**51.5867**	0.876	1.7	ug/L	442	Standard
	Mn	55	183555.9	1.0	**53.0097**	0.357	0.7	ug/L	545	Standard
	Co	59	187127.2	1.0	**50.7209**	0.744	1.5	ug/L	183	Standard
	Ni	60	71873.4	0.9	**51.2365**	1.114	2.2	ug/L	131	Standard
	Cu	65	69340.7	1.1	**50.9915**	0.295	0.6	ug/L	231	Standard
	Zn	66	39210.7	1.3	**50.3670**	0.671	1.3	ug/L	306	Standard
>	Ge	72	339062.1	1.7				ug/L	330478	Standard
	As	75	39215.9	1.6	**50.1626**	0.486	1.0	ug/L	-23	Standard
	Se	82	3286.7	2.4	**50.9160**	0.395	0.8	ug/L	27	Standard
	Se-1	77	2354.5	2.8	**49.9322**	0.592	1.2	ug/L	92	Standard
>	Ga	71	46.7	16.4				mg/L	37	Standard
	Rb	85	600.0	6.3				ug/L	25	Standard
	Y	89	322124.0	1.9				ug/L	312467	Standard
>	Rh	103	80.0	28.6				ug/L	20	Standard
	Mo	98	136141.7	1.1	**98.0306**	1.457	1.5	ug/L	13	Standard
	Ag	107	249703.9	0.9	**50.4798**	0.838	1.7	ug/L	72	Standard
	Cd	111	70158.1	0.3	**50.3888**	0.634	1.3	mg/L	5	Standard
	Cd	114	188841.1	1.3	**51.7006**	0.226	0.4	ug/L	7	Standard
>	In	115	488406.2	1.0				ug/L	477820	Standard
	Sn	118	216570.3	1.3	**47.1568**	1.020	2.2	ug/L	343	Standard
	Sb	123	189308.0	0.3	**49.8381**	0.374	0.7	ug/L	56	Standard
	Ba	135	98192.2	1.7	**50.4277**	0.879	1.7	ug/L	36	Standard
	Ce	140	98.3	20.5				ug/L	65	Standard
>	Tb	159	956296.3	1.5				ug/L	939481	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	329666.9	0.3	**50.0830**	0.368	0.7	ug/L	5	Standard
	Tl	205	226448.5	2.1	**50.5654**	1.344	2.7	ug/L	2	Standard
	Pb	206	207455.7	0.8	**50.5696**	0.295	0.6	ug/L	222	Standard
	Pb	207	187356.0	0.9	**50.4818**	0.464	0.9	ug/L	186	Standard
	Pb	208	665675.7	0.2	**50.3286**	0.536	1.1	ug/L	717	Standard
	U	238	229294.7	0.9	**50.4249**	0.859	1.7	ug/L	2	Standard
>	Bi	209	453991.1	0.8				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	1935.1	4.2	**5.0671**	0.092	1.8	mg/L	45	Standard
K	39	166.7	33.0	**5.5065**	1.845	33.5	mg/L	10	Standard
Ca	43	76.7	24.7	**8.0824**	3.755	46.5	mg/L	47	Standard
Fe	54	2073.0	10.3	**4.8467**	0.622	12.8	mg/L	46	Standard
Fe	57	1255.1	6.4	**5.7289**	0.549	9.6	mg/L	627	Standard
Sc-1	45	25703.5	2.5				mg/L	24506	Standard
Cl	35	47316.4	1.6				ug/L	47100	Standard
Kr	83	5.3	57.3				ug/L	8	Standard
Br	81	533.3	22.5				ug/L	427	Standard
P	31	11677.8	2.9				ug/L	10519	Standard
S	34	2396.9	6.0				ug/L	2003	Standard
Sr	88	173.3	22.4				ug/L	132	Standard
C	12	206.7	32.2				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	6.7	86.6				mg/L	10	Standard
Dy	164	2.7	219.6				mg/L	13	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	7	Standard
I	127	1918.5	16.1				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	103.162		
Al	27	102.446		
Sc	45			
Ti	47	104.945		
V	51	101.629		
Cr	52	102.104		
Cr	53			
Mn	55	106.019		
Co	59	101.442		
Ni	60	102.473		
Cu	65	101.983		
Zn	66	100.734		
Ge	72		102.598	
As	75	100.325		
Se	82	101.832		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.031		
Ag	107	100.960		
Cd	111	100.778		
Cd	114			
> In	115			102.215
Sn	118	94.314		
Sb	123	99.676		
Ba	135	100.855		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.166		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.657		
U	238	100.850		
> Bi	209			103.114
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Sunday, August 23, 2015 17:47:59
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53745.2	0.8				ug/L	53498	Standard
	Be	9	25.0	40.0	**0.0223**	0.017	77.5	ug/L	12	Standard
	Al	27	1791.8	54.1	**0.0148**	0.014	93.7	ug/L	487	Standard
	Sc	45	25391.3	1.5				ug/L	24506	Standard
	Ti	47	27.3	4.2	**0.0148**	0.005	36.6	ug/L	21	Standard
	V	51	1051.2	1.5	**-0.0780**	0.002	2.6	ug/L	1268	Standard
	Cr	52	6554.1	3.9	**-0.2797**	0.053	19.0	ug/L	7921	Standard
	Cr	53	556.7	6.1	**0.1214**	0.056	46.5	ug/L	442	Standard
	Mn	55	707.7	10.4	**0.0275**	0.023	81.9	ug/L	545	Standard
	Co	59	230.0	15.1	**0.0079**	0.010	123.8	ug/L	183	Standard
	Ni	60	182.0	4.7	**0.0429**	0.007	15.4	ug/L	131	Standard
	Cu	65	328.0	4.3	**0.0696**	0.009	13.2	ug/L	231	Standard
	Zn	66	367.0	6.8	**0.0226**	0.030	133.3	ug/L	306	Standard
>	**Ge**	72	336968.3	0.8				ug/L	330478	Standard
	As	75	-18.2	164.5	**0.0288**	0.038	133.0	ug/L	-23	Standard
	Se	82	18.2	5.9	**-0.1360**	0.017	12.7	ug/L	27	Standard
	Se-1	77	80.7	18.1	**-0.1604**	0.316	197.0	ug/L	92	Standard
>	**Ga**	71	20.0	25.0				mg/L	37	Standard
	Rb	85	35.0	14.3				ug/L	25	Standard
	Y	89	323598.3	1.9				ug/L	312467	Standard
>	**Rh**	103	80.0	43.8				ug/L	20	Standard
	Mo	98	109.4	57.5	**0.0766**	0.045	58.1	ug/L	13	Standard
	Ag	107	114.7	61.4	**0.0020**	0.014	722.7	ug/L	72	Standard
	Cd	111	20.8	124.5	**0.0017**	0.019	1084.0	mg/L	5	Standard
	Cd	114	57.6	139.2	**0.0077**	0.022	285.7	ug/L	7	Standard
>	**In**	115	486481.8	1.4				ug/L	477820	Standard
	Sn	118	523.3	4.5	**0.0358**	0.005	14.7	ug/L	343	Standard
	Sb	123	761.7	6.4	**0.1976**	0.015	7.6	ug/L	56	Standard
	Ba	135	76.7	68.2	**0.0131**	0.027	203.8	ug/L	36	Standard
	Ce	140	20.0	25.0				ug/L	65	Standard
>	**Tb**	159	961866.0	1.8				ug/L	939481	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	80.7	137.9	**0.0083**	0.017	201.0	ug/L	5	Standard
	Tl	205	70.0	53.9	**0.0088**	0.008	93.7	ug/L	2	Standard
	Pb	206	307.3	23.4	**0.0120**	0.017	141.1	ug/L	222	Standard
	Pb	207	265.3	17.0	**0.0109**	0.012	107.2	ug/L	186	Standard
	Pb	208	891.0	11.7	**0.0058**	0.007	129.1	ug/L	717	Standard
	U	238	46.7	26.8	**0.0039**	0.003	68.2	ug/L	2	Standard
>	**Bi**	209	457060.3	0.7				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	66.7	35.4	**0.0443**	0.063	141.3	mg/L	45	Standard
K	39	6.7	114.6	**-0.1817**	0.281	154.8	mg/L	10	Standard
Ca	43	28.3	40.8	**-2.3215**	2.477	106.7	mg/L	47	Standard
Fe	54	66.1	23.2	**-0.0045**	0.037	813.6	mg/L	46	Standard
Fe	57	746.7	1.5	**1.0502**	0.068	6.5	mg/L	627	Standard
> **Sc-1**	45	25391.3	1.5				mg/L	24506	Standard
Cl	35	46270.6	1.9				ug/L	47100	Standard
Kr	83	4.3	70.5				ug/L	8	Standard
Br	81	623.3	11.4				ug/L	427	Standard
P	31	10728.8	1.4				ug/L	10519	Standard
S	34	2353.5	1.2				ug/L	2003	Standard
Sr	88	190.0	7.0				ug/L	132	Standard
C	12	146.7	59.6				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	23.0	107.2				mg/L	13	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	7	Standard
I	127	2806.9	8.4				mg/L	2225	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.964	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.813
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.811
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Sunday, August 23, 2015 17:51:12
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	53084.5	1.5				ug/L	53498	Standard
	Be	9	121.7	30.8	**0.1878**	0.062	32.8	ug/L	12	Standard
	Al	27	503.3	17.3	**-0.0036**	0.001	33.4	ug/L	487	Standard
	Sc	45	25541.5	2.5				ug/L	24506	Standard
	Ti	47	22.3	20.7	**-0.0120**	0.023	190.4	ug/L	21	Standard
	V	51	2632.9	4.4	**0.3164**	0.031	9.9	ug/L	1268	Standard
	Cr	52	11264.5	1.7	**0.6283**	0.065	10.3	ug/L	7921	Standard
	Cr	53	1070.0	4.7	**0.9112**	0.076	8.3	ug/L	442	Standard
	Mn	55	2419.5	3.0	**0.5271**	0.012	2.4	ug/L	545	Standard
	Co	59	1649.8	1.1	**0.3959**	0.008	2.0	ug/L	183	Standard
	Ni	60	2350.8	2.5	**1.6025**	0.042	2.6	ug/L	131	Standard
	Cu	65	1484.4	1.1	**0.9294**	0.032	3.5	ug/L	231	Standard
	Zn	66	4884.5	2.4	**5.9195**	0.133	2.2	ug/L	306	Standard
>	Ge	72	336691.3	1.9				ug/L	330478	Standard
	As	75	290.5	9.0	**0.4255**	0.027	6.3	ug/L	-23	Standard
	Se	82	49.9	9.9	**0.3617**	0.064	17.7	ug/L	27	Standard
	Se-1	77	102.7	3.9	**0.3298**	0.055	16.6	ug/L	92	Standard
>	Ga	71	28.3	83.4				mg/L	37	Standard
	Rb	85	38.3	27.2				ug/L	25	Standard
	Y	89	324461.7	3.5				ug/L	312467	Standard
>	Rh	103	63.3	27.7				ug/L	20	Standard
	Mo	98	22.1	9.4	**0.0139**	0.002	11.7	ug/L	13	Standard
	Ag	107	1969.8	0.5	**0.3824**	0.005	1.3	ug/L	72	Standard
	Cd	111	344.3	8.6	**0.2372**	0.019	8.0	mg/L	5	Standard
	Cd	114	870.2	5.2	**0.2333**	0.010	4.4	ug/L	7	Standard
>	In	115	482028.8	1.0				ug/L	477820	Standard
	Sn	118	553.3	8.4	**0.0434**	0.010	23.1	ug/L	343	Standard
	Sb	123	1694.4	2.6	**0.4482**	0.015	3.4	ug/L	56	Standard
	Ba	135	1449.1	2.7	**0.7280**	0.018	2.4	ug/L	36	Standard
	Ce	140	23.3	44.6				ug/L	65	Standard
>	Tb	159	950114.5	1.4				ug/L	939481	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	564.7	3.4	**0.0816**	0.003	3.1	ug/L	5	Standard
	Tl	205	361.7	5.6	**0.0738**	0.005	6.9	ug/L	2	Standard
	Pb	206	1065.0	5.8	**0.1966**	0.016	8.1	ug/L	222	Standard
	Pb	207	903.7	3.2	**0.1827**	0.007	3.6	ug/L	186	Standard
	Pb	208	3442.8	3.4	**0.1985**	0.010	4.8	ug/L	717	Standard
	U	238	1825.8	0.8	**0.3938**	0.006	1.5	ug/L	2	Standard
>	Bi	209	455657.4	0.8				ug/L	440279	Standard

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Na	23	1.7	**-4613857355297991435358248**4.312		173.2	mg/L	2	Standard
Mg	24	55.0	18.2	**0.0124**	0.029	232.6	mg/L	45	Standard
K	39	10.0	50.0	**-0.0673**	0.172	255.8	mg/L	10	Standard
Ca	43	21.7	58.1	**-3.7743**	2.848	75.5	mg/L	47	Standard
Fe	54	57.5	33.2	**-0.0256**	0.050	194.6	mg/L	46	Standard
Fe	57	773.4	7.5	**1.2657**	0.623	49.2	mg/L	627	Standard
Sc-1	45	25541.5	2.5				mg/L	24506	Standard
Cl	35	46090.7	1.4				ug/L	47100	Standard
Kr	83	4.0	25.0				ug/L	8	Standard
Br	81	460.0	14.3				ug/L	427	Standard
P	31	10468.6	2.9				ug/L	10519	Standard
S	34	2280.2	0.7				ug/L	2003	Standard
Sr	88	173.3	11.7				ug/L	132	Standard
C	12	173.3	46.6				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	9.5	100.0				mg/L	13	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	1055.0	7.2				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	93.901		
Al	27			
Sc	45			
Ti	47			
V	51	79.089		
Cr	52	78.541		
Cr	53			
Mn	55	105.410		
Co	59	98.971		
Ni	60	100.156		
Cu	65	116.180		
Zn	66	94.712		
Ge	72		101.880	
As	75	106.364		
Se	82	90.415		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	95.590		
Cd	111	98.845		
Cd	114			
> In	115			100.881
Sn	118			
Sb	123	112.050		
Ba	135	97.069		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	102.056		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.231		
U	238	98.454		
> Bi	209			103.493
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
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Method 6020 - Summary Report

Sample ID: PBW R7 WG535816-02
Sample Date/Time: Sunday, August 23, 2015 18:07:13
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53895.8	4.4				ug/L	53498	Standard
	Be	9	11.7	89.2	**-0.0002**	0.018	10269.1	ug/L	12	Standard
	Al	27	6534.7	3.1	**0.0828**	0.002	2.1	ug/L	487	Standard
	Sc	45	26371.3	1.9				ug/L	24506	Standard
	Ti	47	30.7	18.0	**0.0274**	0.029	106.6	ug/L	21	Standard
	V	51	1196.8	6.4	**-0.0514**	0.018	34.5	ug/L	1268	Standard
	Cr	52	7856.7	3.3	**-0.0780**	0.060	77.1	ug/L	7921	Standard
	Cr	53	531.7	3.0	**0.0563**	0.013	23.3	ug/L	442	Standard
	Mn	55	942.7	4.7	**0.0870**	0.009	10.8	ug/L	545	Standard
	Co	59	198.7	1.0	**-0.0025**	0.000	6.9	ug/L	183	Standard
	Ni	60	182.0	6.7	**0.0386**	0.007	18.1	ug/L	131	Standard
	Cu	65	324.3	5.7	**0.0591**	0.014	23.8	ug/L	231	Standard
	Zn	66	1480.4	2.1	**1.4122**	0.037	2.6	ug/L	306	Standard
>	**Ge**	72	348245.1	1.4				ug/L	330478	Standard
	As	75	-38.6	71.8	**0.0042**	0.034	811.3	ug/L	-23	Standard
	Se	82	23.5	26.8	**-0.0651**	0.097	148.8	ug/L	27	Standard
	Se-1	77	87.3	12.6	**-0.0743**	0.235	315.6	ug/L	92	Standard
>	**Ga**	71	55.0					mg/L	37	Standard
	Rb	85	80.0	10.8				ug/L	25	Standard
	Y	89	322701.4	2.2				ug/L	312467	Standard
>	**Rh**	103	53.3	28.6				ug/L	20	Standard
	Mo	98	19.5	16.6	**0.0118**	0.002	19.5	ug/L	13	Standard
	Ag	107	65.7	17.7	**-0.0080**	0.002	28.8	ug/L	72	Standard
	Cd	111	12.6	12.0	**-0.0042**	0.001	24.6	mg/L	5	Standard
	Cd	114	40.7	52.4	**0.0031**	0.006	194.4	ug/L	7	Standard
>	**In**	115	488240.5	1.4				ug/L	477820	Standard
	Sn	118	410.0	15.9	**0.0105**	0.013	127.3	ug/L	343	Standard
	Sb	123	148.7	18.0	**0.0353**	0.007	19.5	ug/L	56	Standard
	Ba	135	344.0	4.2	**0.1505**	0.010	6.6	ug/L	36	Standard
	Ce	140	415.0	16.2				ug/L	65	Standard
>	**Tb**	159	975784.0	0.9				ug/L	939481	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	16.7	50.0	**-0.0013**	0.001	91.4	ug/L	5	Standard
	Tl	205	10.0	86.6	**-0.0045**	0.002	42.1	ug/L	2	Standard
	Pb	206	293.7	0.7	**0.0080**	0.001	9.5	ug/L	222	Standard
	Pb	207	240.3	5.0	**0.0035**	0.003	77.0	ug/L	186	Standard
	Pb	208	908.7	1.7	**0.0064**	0.001	15.2	ug/L	717	Standard
	U	238	11.3	35.7	**-0.0038**	0.001	22.7	ug/L	2	Standard
>	**Bi**	209	462155.8	0.8				ug/L	440279	Standard

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	Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
	Mg	24	38.3	27.2	**-0.0362**	0.027	75.2	mg/L	45	Standard
	K	39	8.3	34.6	**-0.1360**	0.096	70.8	mg/L	10	Standard
	Ca	43	26.7	43.3	**-2.8521**	2.582	90.5	mg/L	47	Standard
	Fe	54	46.1	5.8	**-0.0576**	0.006	10.8	mg/L	46	Standard
	Fe	57	781.7	14.5	**1.1111**	1.060	95.4	mg/L	627	Standard
>	**Sc-1**	45	26371.3	1.9				mg/L	24506	Standard
	Cl	35	47726.4	1.8				ug/L	47100	Standard
	Kr	83	5.3	65.8				ug/L	8	Standard
	Br	81	516.7	16.9				ug/L	427	Standard
	P	31	10436.9	3.8				ug/L	10519	Standard
	S	34	2321.8	9.0				ug/L	2003	Standard
	Sr	88	181.7	19.9				ug/L	132	Standard
	C	12	236.7	14.8				mg/L	177	Standard
	N	14	0.0					mg/L	3	Standard
	Hg	202	3.3	173.2				mg/L	10	Standard
	Dy	164	9.2	98.3				mg/L	13	Standard
	Ho-1	165	10.0	50.0				mg/L	7	Standard
	Er	166	16.7	124.9				mg/L	7	Standard
	I	127	1610.1	14.8				mg/L	2225	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		100.744	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		105.376	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.181
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.969
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: LCSW R7 WG535816-03
Sample Date/Time: Sunday, August 23, 2015 18:10:24
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	54258.8	4.1				ug/L	53498	Standard
	Be	9	30397.1	2.8	**50.9361**	1.211	2.4	ug/L	12	Standard
	Al	27	25725.2	1.4	**0.3556**	0.010	2.8	ug/L	487	Standard
	Sc	45	26827.1	2.4				ug/L	24506	Standard
	Ti	47	26.3	15.3	**0.0044**	0.021	476.2	ug/L	21	Standard
	V	51	212501.8	1.4	**50.6223**	0.514	1.0	ug/L	1268	Standard
	Cr	52	285421.7	0.9	**51.3468**	0.201	0.4	ug/L	7921	Standard
	Cr	53	35097.3	0.9	**51.2107**	0.271	0.5	ug/L	442	Standard
	Mn	55	196054.5	2.5	**54.8989**	1.179	2.1	ug/L	545	Standard
	Co	59	190656.1	1.2	**50.1000**	0.450	0.9	ug/L	183	Standard
	Ni	60	73773.5	1.0	**50.9821**	0.476	0.9	ug/L	131	Standard
	Cu	65	72623.6	0.6	**51.7851**	0.605	1.2	ug/L	231	Standard
	Zn	66	42324.7	0.4	**52.7324**	0.259	0.5	ug/L	306	Standard
>	Ge	72	349684.9	0.6				ug/L	330478	Standard
	As	75	39660.9	1.4	**49.1903**	0.689	1.4	ug/L	-23	Standard
	Se	82	3291.8	2.1	**49.4391**	1.105	2.2	ug/L	27	Standard
	Se-1	77	2419.9	1.7	**49.7575**	0.699	1.4	ug/L	92	Standard
>	Ga	71	30.0	16.7				mg/L	37	Standard
	Rb	85	145.0	10.3				ug/L	25	Standard
	Y	89	325624.3	1.9				ug/L	312467	Standard
>	Rh	103	58.3	35.7				ug/L	20	Standard
	Mo	98	42.1	10.9	**0.0276**	0.003	10.9	ug/L	13	Standard
	Ag	107	254137.1	1.1	**50.6282**	0.094	0.2	ug/L	72	Standard
	Cd	111	70302.0	1.6	**49.7610**	0.896	1.8	mg/L	5	Standard
	Cd	114	183655.5	1.3	**49.5620**	1.100	2.2	ug/L	7	Standard
>	In	115	495567.1	0.9				ug/L	477820	Standard
	Sn	118	413.3	11.0	**0.0100**	0.010	99.7	ug/L	343	Standard
	Sb	123	194942.4	0.9	**50.5790**	0.467	0.9	ug/L	56	Standard
	Ba	135	98384.1	0.8	**49.7951**	0.331	0.7	ug/L	36	Standard
	Ce	140	418.3	6.6				ug/L	65	Standard
>	Tb	159	982567.2	2.1				ug/L	939481	Standard
	Ho	165	13.3	108.3				ug/L	7	Standard
	Tl	203	334311.2	1.5	**49.9130**	0.438	0.9	ug/L	5	Standard
	Tl	205	228760.8	1.0	**50.1987**	0.283	0.6	ug/L	2	Standard
	Pb	206	213078.6	0.8	**51.0499**	0.536	1.0	ug/L	222	Standard
	Pb	207	185494.6	0.7	**49.1199**	0.293	0.6	ug/L	186	Standard
	Pb	208	688376.7	0.7	**51.1500**	0.318	0.6	ug/L	717	Standard
	U	238	228738.8	1.2	**49.4333**	0.261	0.5	ug/L	2	Standard
>	Bi	209	461921.0	0.6				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	136.7	2.1	**0.2157**	0.012	5.6	mg/L	45	Standard
K	39	11.7	65.5	**-0.0216**	0.271	1253.3	mg/L	10	Standard
Ca	43	33.3	31.2	**-1.5567**	2.330	149.7	mg/L	47	Standard
Fe	54	74.8	10.9	**0.0071**	0.020	276.9	mg/L	46	Standard
Fe	57	773.4	10.8	**0.9223**	0.898	97.4	mg/L	627	Standard
> **Sc-1**	45	26827.1	2.4				mg/L	24506	Standard
Cl	35	47595.3	0.9				ug/L	47100	Standard
Kr	83	4.7	53.9				ug/L	8	Standard
Br	81	563.3	7.2				ug/L	427	Standard
P	31	10436.9	4.5				ug/L	10519	Standard
S	34	2213.5	1.6				ug/L	2003	Standard
Sr	88	150.0	3.3				ug/L	132	Standard
C	12	166.7	50.0				mg/L	177	Standard
N	14	6.7	86.6				mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	15.1	103.1				mg/L	13	Standard
Ho-1	165	13.3	108.3				mg/L	7	Standard
Er	166	33.3	17.3				mg/L	7	Standard
I	127	1886.8	7.5				mg/L	2225	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		101.423	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		105.812	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.714
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.915
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW R7 WG535816-03
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Method 6020 - Summary Report

Sample ID: L1508102603 WG535816-01
Sample Date/Time: Sunday, August 23, 2015 18:13:36
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57191.1	0.9				ug/L	53498	Standard
	Be	9	21.7	35.3	**0.0144**	0.012	86.5	ug/L	12	Standard
	Al	27	2623518.0	0.5	**35.4324**	0.260	0.7	ug/L	487	Standard
	Sc	45	26015.6	0.2				ug/L	24506	Standard
	Ti	47	1838.1	1.3	**9.2699**	0.260	2.8	ug/L	21	Standard
	V	51	8265.8	1.5	**1.6347**	0.025	1.5	ug/L	1268	Standard
	Cr	52	30626.3	2.4	**4.1124**	0.164	4.0	ug/L	7921	Standard
	Cr	53	4700.7	9.7	**6.1993**	0.732	11.8	ug/L	442	Standard
	Mn	55	96265.3	2.7	**26.7610**	0.910	3.4	ug/L	545	Standard
	Co	59	1094.4	1.4	**0.2318**	0.008	3.5	ug/L	183	Standard
	Ni	60	2749.2	1.7	**1.8081**	0.060	3.3	ug/L	131	Standard
	Cu	65	51620.8	1.2	**36.6150**	0.990	2.7	ug/L	231	Standard
	Zn	66	9531.3	1.4	**11.4754**	0.313	2.7	ug/L	306	Standard
>	**Ge**	72	351125.9	1.5				ug/L	330478	Standard
	As	75	557.3	5.5	**0.7401**	0.048	6.4	ug/L	-23	Standard
	Se	82	34.7	16.6	**0.1001**	0.085	84.9	ug/L	27	Standard
	Se-1	77	159.0	3.5	**1.4348**	0.069	4.8	ug/L	92	Standard
>	**Ga**	71	640.0	9.8				mg/L	37	Standard
	Rb	85	2553.5	3.0				ug/L	25	Standard
	Y	89	330057.1	2.0				ug/L	312467	Standard
>	**Rh**	103	73.3	40.0				ug/L	20	Standard
	Mo	98	304.8	15.4	**0.2152**	0.037	17.2	ug/L	13	Standard
	Ag	107	212.7	1.4	**0.0213**	0.001	4.8	ug/L	72	Standard
	Cd	111	525.6	4.9	**0.3602**	0.019	5.3	mg/L	5	Standard
	Cd	114	1515.5	12.1	**0.4029**	0.057	14.0	ug/L	7	Standard
>	**In**	115	493888.7	1.7				ug/L	477820	Standard
	Sn	118	606.7	5.3	**0.0521**	0.009	17.1	ug/L	343	Standard
	Sb	123	466.5	8.8	**0.1177**	0.013	10.8	ug/L	56	Standard
	Ba	135	57472.1	0.3	**29.1804**	0.419	1.4	ug/L	36	Standard
	Ce	140	875.0	6.2				ug/L	65	Standard
>	**Tb**	159	983785.4	1.5				ug/L	939481	Standard
	Ho	165	25.0	0.0				ug/L	7	Standard
	Tl	203	345.7	13.5	**0.0479**	0.008	16.9	ug/L	5	Standard
	Tl	205	228.3	24.1	**0.0434**	0.012	26.7	ug/L	2	Standard
	Pb	206	2593.9	1.1	**0.5600**	0.018	3.2	ug/L	222	Standard
	Pb	207	2201.5	3.3	**0.5234**	0.012	2.4	ug/L	186	Standard
	Pb	208	8261.2	0.7	**0.5535**	0.016	3.0	ug/L	717	Standard
	U	238	514.7	8.1	**0.1051**	0.011	10.8	ug/L	2	Standard
>	**Bi**	209	461979.8	2.0				ug/L	440279	Standard

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Na	23	1.7	**-4491545337417**7795847289090.484			173.2	mg/L	2	Standard
Mg	24	3687.1	4.2	**9.6628**	0.427	4.4	mg/L	45	Standard
K	39	58.3	21.6	**1.6343**	0.448	27.4	mg/L	10	Standard
Ca	43	145.0	3.4	**22.6367**	1.036	4.6	mg/L	47	Standard
Fe	54	395.0	12.6	**0.7759**	0.119	15.3	mg/L	46	Standard
Fe	57	868.4	2.8	**2.0076**	0.215	10.7	mg/L	627	Standard
Sc-1	45	26015.6	0.2				mg/L	24506	Standard
Cl	35	50992.4	2.4				ug/L	47100	Standard
Kr	83	6.0	16.7				ug/L	8	Standard
Br	81	1316.7	5.5				ug/L	427	Standard
P	31	12596.9	1.8				ug/L	10519	Standard
S	34	2195.2	0.7				ug/L	2003	Standard
Sr	88	190.0	9.5				ug/L	132	Standard
C	12	236.7	19.5				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	16.7	91.7				mg/L	10	Standard
Dy	164	18.2	56.1				mg/L	13	Standard
Ho-1	165	25.0	0.0				mg/L	7	Standard
Er	166	36.7	15.7				mg/L	7	Standard
I	127	11442.7	7.6				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		106.904	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.248	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.363
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.929
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: L1508102603DP WG535816-05
Sample Date/Time: Sunday, August 23, 2015 18:16:47
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57980.7	1.7				ug/L	53498	Standard
	Be	9	25.0	52.9	**0.0190**	0.020	106.2	ug/L	12	Standard
	Al	27	2758239.8	1.3	**36.7510**	0.809	2.2	ug/L	487	Standard
	Sc	45	26999.1	3.4				ug/L	24506	Standard
	Ti	47	1901.1	3.6	**9.7045**	0.361	3.7	ug/L	21	Standard
	V	51	8851.6	3.7	**1.7996**	0.081	4.5	ug/L	1268	Standard
	Cr	52	32015.1	0.4	**4.4376**	0.038	0.9	ug/L	7921	Standard
	Cr	53	5499.3	3.1	**7.4671**	0.218	2.9	ug/L	442	Standard
	Mn	55	102571.0	0.9	**28.8599**	0.412	1.4	ug/L	545	Standard
	Co	59	1112.7	5.2	**0.2400**	0.014	5.9	ug/L	183	Standard
	Ni	60	2835.3	1.9	**1.8899**	0.042	2.2	ug/L	131	Standard
	Cu	65	54293.1	0.2	**38.9669**	0.252	0.6	ug/L	231	Standard
	Zn	66	9724.5	1.7	**11.8587**	0.256	2.2	ug/L	306	Standard
>	**Ge**	72	347027.2	0.5				ug/L	330478	Standard
	As	75	588.9	7.3	**0.7873**	0.054	6.9	ug/L	-23	Standard
	Se	82	37.6	18.6	**0.1520**	0.109	71.4	ug/L	27	Standard
	Se-1	77	166.0	7.3	**1.6256**	0.250	15.4	ug/L	92	Standard
>	**Ga**	71	661.7	4.2				mg/L	37	Standard
	Rb	85	2638.6	3.1				ug/L	25	Standard
	Y	89	338031.3	1.4				ug/L	312467	Standard
>	**Rh**	103	63.3	31.9				ug/L	20	Standard
	Mo	98	336.9	1.8	**0.2312**	0.003	1.4	ug/L	13	Standard
	Ag	107	213.3	10.7	**0.0202**	0.004	19.1	ug/L	72	Standard
	Cd	111	554.5	5.2	**0.3699**	0.015	4.0	mg/L	5	Standard
	Cd	114	1534.6	4.7	**0.3963**	0.020	4.9	ug/L	7	Standard
>	**In**	115	507554.6	1.5				ug/L	477820	Standard
	Sn	118	640.0	8.5	**0.0554**	0.010	18.6	ug/L	343	Standard
	Sb	123	341.0	5.9	**0.0825**	0.004	4.7	ug/L	56	Standard
	Ba	135	60853.3	1.4	**30.0627**	0.318	1.1	ug/L	36	Standard
	Ce	140	1155.0	6.9				ug/L	65	Standard
>	**Tb**	159	992506.4	0.2				ug/L	939481	Standard
	Ho	165	25.0	52.9				ug/L	7	Standard
	Tl	203	350.0	14.9	**0.0481**	0.007	15.5	ug/L	5	Standard
	Tl	205	250.0	12.5	**0.0478**	0.007	14.1	ug/L	2	Standard
	Pb	206	2466.9	2.3	**0.5253**	0.010	1.9	ug/L	222	Standard
	Pb	207	2034.8	0.8	**0.4757**	0.003	0.7	ug/L	186	Standard
	Pb	208	7676.4	0.8	**0.5060**	0.001	0.2	ug/L	717	Standard
	U	238	506.7	7.0	**0.1025**	0.007	6.6	ug/L	2	Standard
>	**Bi**	209	465071.3	0.8				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	3860.5	7.5	**9.7438**	0.513	5.3	mg/L	45	Standard
K	39	70.0	14.3	**1.9646**	0.421	21.4	mg/L	10	Standard
Ca	43	146.7	15.7	**21.9140**	5.267	24.0	mg/L	47	Standard
Fe	54	383.6	11.5	**0.7168**	0.113	15.7	mg/L	46	Standard
Fe	57	996.7	3.8	**2.8746**	0.622	21.6	mg/L	627	Standard
> **Sc-1**	45	26999.1	3.4				mg/L	24506	Standard
Cl	35	53187.2	0.7				ug/L	47100	Standard
Kr	83	3.7	41.7				ug/L	8	Standard
Br	81	1353.4	10.6				ug/L	427	Standard
P	31	13182.4	1.4				ug/L	10519	Standard
S	34	2396.9	3.1				ug/L	2003	Standard
Sr	88	206.7	6.1				ug/L	132	Standard
C	12	313.3	31.0				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	34.9	42.1				mg/L	13	Standard
Ho-1	165	25.0	52.9				mg/L	7	Standard
Er	166	36.7	41.7				mg/L	7	Standard
I	127	11534.4	5.0				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.380	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.008	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.223
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.631
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: L1508102603S WG535816-06
Sample Date/Time: Sunday, August 23, 2015 18:19:59
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59277.5	2.8				ug/L	53498	Standard
	Be	9	32488.1	1.2	**49.8217**	0.905	1.8	ug/L	12	Standard
	Al	27	2621048.6	1.2	**34.1762**	1.336	3.9	ug/L	487	Standard
	Sc	45	26782.0	2.5				ug/L	24506	Standard
	Ti	47	1826.4	2.1	**9.2700**	0.085	0.9	ug/L	21	Standard
	V	51	226334.7	1.5	**54.0922**	1.355	2.5	ug/L	1268	Standard
	Cr	52	308131.9	1.6	**55.7086**	1.080	1.9	ug/L	7921	Standard
	Cr	53	40166.5	3.1	**58.8621**	1.321	2.2	ug/L	442	Standard
	Mn	55	291978.2	0.7	**82.0680**	0.409	0.5	ug/L	545	Standard
	Co	59	192255.8	1.1	**50.6536**	0.213	0.4	ug/L	183	Standard
	Ni	60	74051.2	1.5	**51.3063**	0.162	0.3	ug/L	131	Standard
	Cu	65	121069.8	0.2	**86.6761**	1.012	1.2	ug/L	231	Standard
	Zn	66	49647.5	1.3	**62.1012**	0.951	1.5	ug/L	306	Standard
>	Ge	72	348775.3	1.2				ug/L	330478	Standard
	As	75	41031.3	1.0	**51.0219**	0.385	0.8	ug/L	-23	Standard
	Se	82	3350.2	2.3	**50.4599**	1.378	2.7	ug/L	27	Standard
	Se-1	77	2522.2	2.3	**52.0842**	0.889	1.7	ug/L	92	Standard
>	Ga	71	671.7	5.7				mg/L	37	Standard
	Rb	85	2591.9	5.3				ug/L	25	Standard
	Y	89	330754.2	2.5				ug/L	312467	Standard
>	Rh	103	66.7	26.3				ug/L	20	Standard
	Mo	98	323.5	2.7	**0.2217**	0.006	2.5	ug/L	13	Standard
	Ag	107	258409.5	1.1	**50.2361**	0.731	1.5	ug/L	72	Standard
	Cd	111	74110.0	0.9	**51.1858**	0.559	1.1	mg/L	5	Standard
	Cd	114	197516.5	0.3	**52.0069**	0.329	0.6	ug/L	7	Standard
>	In	115	507854.4	0.4				ug/L	477820	Standard
	Sn	118	980.0	5.6	**0.1267**	0.012	9.2	ug/L	343	Standard
	Sb	123	206185.8	0.5	**52.2012**	0.386	0.7	ug/L	56	Standard
	Ba	135	157095.3	1.0	**77.5988**	0.542	0.7	ug/L	36	Standard
	Ce	140	955.0	1.4				ug/L	65	Standard
>	Tb	159	979810.9	1.1				ug/L	939481	Standard
	Ho	165	25.0	20.0				ug/L	7	Standard
	Tl	203	340687.2	0.9	**50.1554**	0.201	0.4	ug/L	5	Standard
	Tl	205	234384.4	1.8	**50.7229**	1.436	2.8	ug/L	2	Standard
	Pb	206	218491.6	1.2	**51.6133**	0.243	0.5	ug/L	222	Standard
	Pb	207	189430.8	0.5	**49.4621**	0.302	0.6	ug/L	186	Standard
	Pb	208	700429.6	0.6	**51.3207**	0.646	1.3	ug/L	717	Standard
	U	238	237321.5	0.4	**50.5739**	0.335	0.7	ug/L	2	Standard
>	Bi	209	468477.8	1.0				ug/L	440279	Standard

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Na	23	1.7	**-436655633524**75630974267552.969			173.2	mg/L	2	Standard
Mg	24	3583.8	1.8	**9.1180**	0.234	2.6	mg/L	45	Standard
K	39	70.0	53.9	**1.9542**	1.232	63.0	mg/L	10	Standard
Ca	43	115.0	37.9	**15.4978**	9.115	58.8	mg/L	47	Standard
Fe	54	405.4	7.8	**0.7749**	0.098	12.6	mg/L	46	Standard
Fe	57	1011.7	7.2	**3.0613**	0.424	13.8	mg/L	627	Standard
> **Sc-1**	45	26782.0	2.5				mg/L	24506	Standard
Cl	35	54054.3	0.9				ug/L	47100	Standard
Kr	83	5.3	75.8				ug/L	8	Standard
Br	81	1266.7	14.9				ug/L	427	Standard
P	31	12493.5	0.9				ug/L	10519	Standard
S	34	2183.5	4.0				ug/L	2003	Standard
Sr	88	196.7	8.9				ug/L	132	Standard
C	12	303.3	34.3				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	16.7	69.3				mg/L	10	Standard
Dy	164	47.9	20.4				mg/L	13	Standard
Ho-1	165	25.0	20.0				mg/L	7	Standard
Er	166	43.3	13.3				mg/L	7	Standard
I	127	11305.9	4.5				mg/L	2225	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		110.804	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		105.537	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1508102603S WG535816-06
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.286
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.405
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: L1508102603SD WG535816-07
Sample Date/Time: Sunday, August 23, 2015 18:23:11
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60137.7	5.5				ug/L	53498	Standard
	Be	9	33234.8	3.5	**50.3720**	4.206	8.4	ug/L	12	Standard
	Al	27	2655453.9	2.5	**34.1417**	1.037	3.0	ug/L	487	Standard
	Sc	45	26923.9	3.5				ug/L	24506	Standard
	Ti	47	1851.4	1.5	**9.4064**	0.151	1.6	ug/L	21	Standard
	V	51	225776.7	0.1	**53.9891**	0.355	0.7	ug/L	1268	Standard
	Cr	52	310141.0	0.0	**56.1212**	0.434	0.8	ug/L	7921	Standard
	Cr	53	39005.1	1.0	**57.1862**	0.166	0.3	ug/L	442	Standard
	Mn	55	283950.7	2.0	**79.8562**	1.022	1.3	ug/L	545	Standard
	Co	59	192870.5	0.4	**50.8532**	0.326	0.6	ug/L	183	Standard
	Ni	60	74801.6	1.9	**51.8630**	0.579	1.1	ug/L	131	Standard
	Cu	65	121117.2	1.5	**86.7624**	0.858	1.0	ug/L	231	Standard
	Zn	66	49002.8	0.6	**61.3296**	0.234	0.4	ug/L	306	Standard
>	**Ge**	72	348524.0	0.8				ug/L	330478	Standard
	As	75	40817.0	1.6	**50.7886**	0.462	0.9	ug/L	-23	Standard
	Se	82	3350.9	1.0	**50.5035**	0.619	1.2	ug/L	27	Standard
	Se-1	77	2458.9	2.5	**50.7627**	0.939	1.9	ug/L	92	Standard
>	**Ga**	71	626.7	6.8				mg/L	37	Standard
	Rb	85	2580.2	1.0				ug/L	25	Standard
	Y	89	334190.7	1.2				ug/L	312467	Standard
>	**Rh**	103	100.0	5.0				ug/L	20	Standard
	Mo	98	320.5	0.5	**0.2174**	0.002	1.0	ug/L	13	Standard
	Ag	107	257642.3	1.2	**49.5627**	0.819	1.7	ug/L	72	Standard
	Cd	111	74849.3	0.5	**51.1549**	0.404	0.8	mg/L	5	Standard
	Cd	114	198676.8	2.1	**51.7637**	1.063	2.1	ug/L	7	Standard
>	**In**	115	513230.8	0.5				ug/L	477820	Standard
	Sn	118	731.7	6.2	**0.0730**	0.009	12.7	ug/L	343	Standard
	Sb	123	206066.0	1.5	**51.6245**	0.864	1.7	ug/L	56	Standard
	Ba	135	156458.3	0.4	**76.4768**	0.525	0.7	ug/L	36	Standard
	Ce	140	940.0	5.4				ug/L	65	Standard
>	**Tb**	159	992226.2	0.6				ug/L	939481	Standard
	Ho	165	41.7	38.6				ug/L	7	Standard
	Tl	203	341198.9	1.1	**50.0193**	0.222	0.4	ug/L	5	Standard
	Tl	205	233896.5	0.3	**50.3982**	0.469	0.9	ug/L	2	Standard
	Pb	206	219842.8	0.6	**51.7182**	0.609	1.2	ug/L	222	Standard
	Pb	207	189599.9	0.3	**49.2994**	0.510	1.0	ug/L	186	Standard
	Pb	208	700380.6	0.3	**51.1003**	0.444	0.9	ug/L	717	Standard
	U	238	238214.4	0.4	**50.5508**	0.330	0.7	ug/L	2	Standard
>	**Bi**	209	470451.5	0.9				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	3523.7	3.0	**8.9256**	0.581	6.5	mg/L	45	Standard
K	39	53.3	23.6	**1.3985**	0.461	33.0	mg/L	10	Standard
Ca	43	166.7	19.1	**25.9891**	5.768	22.2	mg/L	47	Standard
Fe	54	343.8	9.3	**0.6285**	0.100	16.0	mg/L	46	Standard
Fe	57	975.0	2.2	**2.6946**	0.134	5.0	mg/L	627	Standard
> **Sc-1**	45	26923.9	3.5				mg/L	24506	Standard
Cl	35	53828.8	1.5				ug/L	47100	Standard
Kr	83	4.0	25.0				ug/L	8	Standard
Br	81	1136.7	8.0				ug/L	427	Standard
P	31	12595.2	1.7				ug/L	10519	Standard
S	34	2385.2	6.2				ug/L	2003	Standard
Sr	88	210.0	10.9				ug/L	132	Standard
C	12	216.7	25.4				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	38.1	52.5				mg/L	13	Standard
Ho-1	165	41.7	38.6				mg/L	7	Standard
Er	166	40.0					mg/L	7	Standard
I	127	11796.3	5.9				mg/L	2225	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		112.412	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		105.461	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.411
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.853
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: L1508099702
Sample Date/Time: Sunday, August 23, 2015 18:26:22
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58141.4	1.8				ug/L	53498	Standard
	Be	9	56.7	10.2	**0.0684**	0.008	11.0	ug/L	12	Standard
	Al	27	395424.5	1.8	**5.2448**	0.134	2.6	ug/L	487	Standard
	Sc	45	26576.6	1.2				ug/L	24506	Standard
	Ti	47	3841.2	1.4	**20.1465**	0.220	1.1	ug/L	21	Standard
	V	51	38368.5	0.6	**9.1220**	0.050	0.6	ug/L	1268	Standard
	Cr	52	15640.4	1.7	**1.4397**	0.045	3.2	ug/L	7921	Standard
	Cr	53	1993.5	9.9	**2.2996**	0.295	12.8	ug/L	442	Standard
	Mn	55	42967.5	1.4	**12.2330**	0.084	0.7	ug/L	545	Standard
	Co	59	1470.7	0.7	**0.3429**	0.002	0.5	ug/L	183	Standard
	Ni	60	1322.4	3.9	**0.8534**	0.036	4.2	ug/L	131	Standard
	Cu	65	110407.6	2.1	**81.0392**	1.157	1.4	ug/L	231	Standard
	Zn	66	26712.2	1.3	**34.0590**	0.213	0.6	ug/L	306	Standard
>	**Ge**	72	340083.1	0.8				ug/L	330478	Standard
	As	75	6032.3	1.0	**7.7367**	0.044	0.6	ug/L	-23	Standard
	Se	82	69.2	25.6	**0.6567**	0.281	42.8	ug/L	27	Standard
	Se-1	77	141.0	13.1	**1.1515**	0.424	36.8	ug/L	92	Standard
>	**Ga**	71	1085.0	3.7				mg/L	37	Standard
	Rb	85	18616.4	0.2				ug/L	25	Standard
	Y	89	340362.5	1.2				ug/L	312467	Standard
>	**Rh**	103	70.0	7.1				ug/L	20	Standard
	Mo	98	1759.3	3.7	**1.2206**	0.042	3.4	ug/L	13	Standard
	Ag	107	512.7	10.8	**0.0788**	0.011	13.9	ug/L	72	Standard
	Cd	111	301.1	16.1	**0.1955**	0.033	16.8	mg/L	5	Standard
	Cd	114	815.9	4.3	**0.2076**	0.010	5.0	ug/L	7	Standard
>	**In**	115	505906.7	0.7				ug/L	477820	Standard
	Sn	118	2203.5	3.9	**0.3851**	0.017	4.3	ug/L	343	Standard
	Sb	123	2974.7	2.0	**0.7522**	0.017	2.3	ug/L	56	Standard
	Ba	135	15972.4	0.5	**7.8966**	0.016	0.2	ug/L	36	Standard
	Ce	140	48191.5	1.0				ug/L	65	Standard
>	**Tb**	159	967043.4	2.4				ug/L	939481	Standard
	Ho	165	641.7	12.8				ug/L	7	Standard
	Tl	203	245.0	33.6	**0.0325**	0.012	37.3	ug/L	5	Standard
	Tl	205	118.3	37.9	**0.0192**	0.010	52.4	ug/L	2	Standard
	Pb	206	37722.9	0.8	**8.9231**	0.123	1.4	ug/L	222	Standard
	Pb	207	32196.8	0.8	**8.4165**	0.105	1.2	ug/L	186	Standard
	Pb	208	120193.5	0.6	**8.8177**	0.035	0.4	ug/L	717	Standard
	U	238	272.7	15.6	**0.0523**	0.010	18.3	ug/L	2	Standard
>	**Bi**	209	465193.8	1.0				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	7558.6	0.5	**19.5295**	0.321	1.6	mg/L	45	Standard
K	39	76.7	22.9	**2.2275**	0.634	28.5	mg/L	10	Standard
Ca	43	53.3	5.4	**2.6874**	0.656	24.4	mg/L	47	Standard
Fe	54	335.4	3.0	**0.6170**	0.030	4.8	mg/L	46	Standard
Fe	57	821.7	17.5	**1.4251**	1.395	97.9	mg/L	627	Standard
> **Sc-1**	45	26576.6	1.2				mg/L	24506	Standard
Cl	35	51738.9	1.3				ug/L	47100	Standard
Kr	83	4.7	12.4				ug/L	8	Standard
Br	81	1186.7	7.2				ug/L	427	Standard
P	31	14343.5	2.6				ug/L	10519	Standard
S	34	2211.8	3.8				ug/L	2003	Standard
Sr	88	203.3	10.2				ug/L	132	Standard
C	12	253.3	32.1				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	23.3	89.2				mg/L	10	Standard
Dy	164	1112.9	3.8				mg/L	13	Standard
Ho-1	165	641.7	12.8				mg/L	7	Standard
Er	166	706.7	8.6				mg/L	7	Standard
I	127	12034.8	5.2				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.680	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.907	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.878
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.659
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: L1508099702PS WG536146-01
Sample Date/Time: Sunday, August 23, 2015 18:29:34
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	56389.8	2.5				ug/L	53498	Standard
	Be	9	33657.4	4.1	**54.2288**	0.992	1.8	ug/L	12	Standard
	Al	27	393091.3	1.5	**5.3769**	0.146	2.7	ug/L	487	Standard
	Sc	45	25773.6	3.9				ug/L	24506	Standard
	Ti	47	3818.8	1.9	**19.4810**	0.435	2.2	ug/L	21	Standard
	V	51	250215.1	1.4	**59.6840**	0.854	1.4	ug/L	1268	Standard
	Cr	52	295042.6	2.2	**53.1407**	0.937	1.8	ug/L	7921	Standard
	Cr	53	36604.2	2.1	**53.4593**	1.368	2.6	ug/L	442	Standard
	Mn	55	236226.8	1.4	**66.2026**	0.539	0.8	ug/L	545	Standard
	Co	59	198845.0	0.9	**52.2673**	0.202	0.4	ug/L	183	Standard
	Ni	60	74103.8	1.5	**51.2235**	0.733	1.4	ug/L	131	Standard
	Cu	65	184309.4	1.7	**131.7173**	1.900	1.4	ug/L	231	Standard
	Zn	66	66985.4	0.6	**83.7443**	0.535	0.6	ug/L	306	Standard
>	Ge	72	349596.6	0.6				ug/L	330478	Standard
	As	75	46936.7	1.1	**58.2179**	0.300	0.5	ug/L	-23	Standard
	Se	82	3458.6	0.7	**51.9770**	0.224	0.4	ug/L	27	Standard
	Se-1	77	2482.9	0.8	**51.1184**	0.277	0.5	ug/L	92	Standard
>	Ga	71	925.0	2.5				mg/L	37	Standard
	Rb	85	18391.2	1.4				ug/L	25	Standard
	Y	89	334585.4	3.6				ug/L	312467	Standard
>	Rh	103	70.0	21.4				ug/L	20	Standard
	Mo	98	1730.8	1.1	**1.2276**	0.022	1.8	ug/L	13	Standard
	Ag	107	258933.0	2.0	**51.6458**	0.633	1.2	ug/L	72	Standard
	Cd	111	74703.7	2.5	**52.9358**	0.924	1.7	mg/L	5	Standard
	Cd	114	198524.0	1.8	**53.6327**	0.616	1.1	ug/L	7	Standard
>	In	115	494947.7	0.8				ug/L	477820	Standard
	Sn	118	2143.5	6.2	**0.3825**	0.031	8.1	ug/L	343	Standard
	Sb	123	204089.0	1.2	**53.0161**	0.325	0.6	ug/L	56	Standard
	Ba	135	117495.5	0.3	**59.5479**	0.314	0.5	ug/L	36	Standard
	Ce	140	46972.7	2.6				ug/L	65	Standard
>	Tb	159	962891.0	0.4				ug/L	939481	Standard
	Ho	165	676.7	15.2				ug/L	7	Standard
	Tl	203	343590.5	0.4	**50.9715**	0.400	0.8	ug/L	5	Standard
	Tl	205	237976.1	1.0	**51.8887**	0.836	1.6	ug/L	2	Standard
	Pb	206	253588.6	0.8	**60.3743**	0.388	0.6	ug/L	222	Standard
	Pb	207	225642.8	0.6	**59.3806**	0.570	1.0	ug/L	186	Standard
	Pb	208	823194.9	0.4	**60.7868**	0.552	0.9	ug/L	717	Standard
	U	238	241626.2	0.8	**51.8838**	0.303	0.6	ug/L	2	Standard
>	Bi	209	464929.1	1.2				ug/L	440279	Standard

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Na	23	1.7	**-4719080700188**1736875377302.906			173.2	mg/L	2	Standard
Mg	24	7481.8	1.9	**19.9454**	0.455	2.3	mg/L	45	Standard
K	39	90.0	36.4	**2.7978**	1.211	43.3	mg/L	10	Standard
Ca	43	46.7	37.6	**1.6495**	4.118	249.6	mg/L	47	Standard
Fe	54	357.3	8.5	**0.6962**	0.097	13.9	mg/L	46	Standard
Fe	57	821.7	8.1	**1.6691**	0.890	53.3	mg/L	627	Standard
Sc-1	45	25773.6	3.9				mg/L	24506	Standard
Cl	35	51693.4	0.9				ug/L	47100	Standard
Kr	83	5.3	47.2				ug/L	8	Standard
Br	81	1203.4	4.7				ug/L	427	Standard
P	31	14361.8	2.4				ug/L	10519	Standard
S	34	2211.8	4.4				ug/L	2003	Standard
Sr	88	195.0	7.7				ug/L	132	Standard
C	12	243.3	35.0				mg/L	177	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	23.3	24.7				mg/L	10	Standard
Dy	164	1046.2	17.3				mg/L	13	Standard
Ho-1	165	676.7	15.2				mg/L	7	Standard
Er	166	636.7	27.3				mg/L	7	Standard
I	127	11394.3	1.2				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		105.406	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		105.785	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1508099702PS WG536146-01
Report Date/Time: Sunday, August 23, 2015 18:31:51
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.584
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.599
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cu 65 Upper, S, EEE	Cu	65	

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: L1508099702SDL WG536146-02
Sample Date/Time: Sunday, August 23, 2015 18:32:45
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54631.7	2.3				ug/L	53498	Standard
	Be	9	21.7	13.3	**0.0160**	0.006	35.2	ug/L	12	Standard
	Al	27	81104.8	1.1	**1.1366**	0.039	3.4	ug/L	487	Standard
	Sc	45	24870.4	4.4				ug/L	24506	Standard
	Ti	47	761.4	4.3	**3.9178**	0.258	6.6	ug/L	21	Standard
	V	51	8708.6	1.7	**1.8222**	0.043	2.4	ug/L	1268	Standard
	Cr	52	8982.3	3.2	**0.1820**	0.021	11.5	ug/L	7921	Standard
	Cr	53	838.4	4.1	**0.5511**	0.069	12.6	ug/L	442	Standard
	Mn	55	9140.8	0.6	**2.4798**	0.074	3.0	ug/L	545	Standard
	Co	59	529.0	2.4	**0.0892**	0.007	7.6	ug/L	183	Standard
	Ni	60	388.3	9.5	**0.1903**	0.025	13.1	ug/L	131	Standard
	Cu	65	23131.0	1.5	**16.9592**	0.566	3.3	ug/L	231	Standard
	Zn	66	6379.7	2.2	**7.8425**	0.208	2.6	ug/L	306	Standard
>	**Ge**	72	337906.3	2.3				ug/L	330478	Standard
	As	75	1226.0	4.0	**1.6246**	0.076	4.7	ug/L	-23	Standard
	Se	82	43.1	13.6	**0.2538**	0.102	40.0	ug/L	27	Standard
	Se-1	77	102.0	6.1	**0.3061**	0.088	28.8	ug/L	92	Standard
>	**Ga**	71	208.3	27.3				mg/L	37	Standard
	Rb	85	3877.2	2.1				ug/L	25	Standard
	Y	89	317990.0	2.2				ug/L	312467	Standard
>	**Rh**	103	35.0	51.5				ug/L	20	Standard
	Mo	98	369.8	6.0	**0.2650**	0.019	7.0	ug/L	13	Standard
	Ag	107	211.7	46.8	**0.0215**	0.020	90.8	ug/L	72	Standard
	Cd	111	89.1	63.1	**0.0507**	0.040	78.2	mg/L	5	Standard
	Cd	114	213.9	54.5	**0.0505**	0.031	62.0	ug/L	7	Standard
>	**In**	115	486798.8	1.0				ug/L	477820	Standard
	Sn	118	723.4	8.9	**0.0794**	0.013	15.8	ug/L	343	Standard
	Sb	123	1323.5	5.5	**0.3456**	0.016	4.5	ug/L	56	Standard
	Ba	135	3294.4	4.2	**1.6716**	0.056	3.3	ug/L	36	Standard
	Ce	140	9513.0	1.7				ug/L	65	Standard
>	**Tb**	159	947246.1	0.3				ug/L	939481	Standard
	Ho	165	130.0	3.8				ug/L	7	Standard
	Tl	203	142.3	102.7	**0.0177**	0.022	125.0	ug/L	5	Standard
	Tl	205	86.7	31.8	**0.0126**	0.006	48.0	ug/L	2	Standard
	Pb	206	7873.4	1.9	**1.8517**	0.029	1.6	ug/L	222	Standard
	Pb	207	6694.8	1.7	**1.7388**	0.029	1.7	ug/L	186	Standard
	Pb	208	25160.9	0.1	**1.8360**	0.009	0.5	ug/L	717	Standard
	U	238	112.7	20.8	**0.0184**	0.005	28.6	ug/L	2	Standard
>	**Bi**	209	455753.7	0.5				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	1515.1	4.0	**4.0847**	0.334	8.2	mg/L	45	Standard
K	39	16.7	62.4	**0.2019**	0.406	201.1	mg/L	10	Standard
Ca	43	36.7	7.9	**-0.2834**	0.726	256.2	mg/L	47	Standard
Fe	54	132.3	19.4	**0.1641**	0.061	37.4	mg/L	46	Standard
Fe	57	806.7	10.6	**1.7662**	0.498	28.2	mg/L	627	Standard
> **Sc-1**	45	24870.4	4.4				mg/L	24506	Standard
Cl	35	48117.6	0.1				ug/L	47100	Standard
Kr	83	3.7	56.8				ug/L	8	Standard
Br	81	653.3	11.3				ug/L	427	Standard
P	31	10995.7	3.3				ug/L	10519	Standard
S	34	2211.8	5.1				ug/L	2003	Standard
Sr	88	190.0	4.6				ug/L	132	Standard
C	12	166.7	64.2				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	6.7	86.6				mg/L	10	Standard
Dy	164	216.5	37.2				mg/L	13	Standard
Ho-1	165	130.0	3.8				mg/L	7	Standard
Er	166	143.3	14.5				mg/L	7	Standard
I	127	3872.2	4.7				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.120	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.248	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.879
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.515
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: L1508099702SDL WG536146-02
Sample Date/Time: Sunday, August 23, 2015 18:35:57
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54298.8	3.1				ug/L	53498	Standard
	Be	9	18.3	56.8	**0.0103**	0.016	158.6	ug/L	12	Standard
	Al	27	16569.1	1.4	**0.2250**	0.008	3.4	ug/L	487	Standard
	Sc	45	25072.4	3.6				ug/L	24506	Standard
	Ti	47	160.0	13.8	**0.7272**	0.130	17.9	ug/L	21	Standard
	V	51	2748.7	3.5	**0.3484**	0.033	9.3	ug/L	1268	Standard
	Cr	52	7474.8	1.7	**-0.0951**	0.024	25.2	ug/L	7921	Standard
	Cr	53	456.7	2.5	**-0.0286**	0.013	43.7	ug/L	442	Standard
	Mn	55	2418.9	1.9	**0.5301**	0.007	1.3	ug/L	545	Standard
	Co	59	257.3	8.0	**0.0157**	0.005	31.9	ug/L	183	Standard
	Ni	60	166.0	4.2	**0.0321**	0.006	19.9	ug/L	131	Standard
	Cu	65	4840.1	2.1	**3.4395**	0.115	3.3	ug/L	231	Standard
	Zn	66	2322.5	2.3	**2.5887**	0.035	1.3	ug/L	306	Standard
>	**Ge**	72	335188.2	1.4				ug/L	330478	Standard
	As	75	228.6	14.2	**0.3475**	0.041	11.7	ug/L	-23	Standard
	Se	82	23.6	13.6	**-0.0500**	0.047	93.1	ug/L	27	Standard
	Se-1	77	95.3	10.2	**0.1763**	0.203	115.2	ug/L	92	Standard
>	**Ga**	71	55.0	24.1				mg/L	37	Standard
	Rb	85	813.4	8.3				ug/L	25	Standard
	Y	89	321431.8	2.5				ug/L	312467	Standard
>	**Rh**	103	28.3	20.4				ug/L	20	Standard
	Mo	98	74.5	7.5	**0.0513**	0.004	8.1	ug/L	13	Standard
	Ag	107	91.0	4.8	**-0.0029**	0.001	32.2	ug/L	72	Standard
	Cd	111	19.2	3.0	**0.0005**	0.000	98.8	mg/L	5	Standard
	Cd	114	54.2	33.2	**0.0067**	0.005	72.4	ug/L	7	Standard
>	**In**	115	489701.5	0.5				ug/L	477820	Standard
	Sn	118	401.7	1.4	**0.0085**	0.001	16.2	ug/L	343	Standard
	Sb	123	302.6	4.3	**0.0756**	0.004	5.0	ug/L	56	Standard
	Ba	135	691.0	1.8	**0.3278**	0.008	2.4	ug/L	36	Standard
	Ce	140	1860.1	6.7				ug/L	65	Standard
>	**Tb**	159	938458.6	1.4				ug/L	939481	Standard
	Ho	165	45.0	33.3				ug/L	7	Standard
	Tl	203	19.7	38.2	**-0.0008**	0.001	138.7	ug/L	5	Standard
	Tl	205	10.0	50.0	**-0.0044**	0.001	24.6	ug/L	2	Standard
	Pb	206	1767.8	2.6	**0.3694**	0.012	3.4	ug/L	222	Standard
	Pb	207	1477.7	0.3	**0.3388**	0.005	1.4	ug/L	186	Standard
	Pb	208	5572.7	1.1	**0.3610**	0.009	2.5	ug/L	717	Standard
	U	238	16.0	34.8	**-0.0027**	0.001	46.3	ug/L	2	Standard
>	**Bi**	209	453638.4	1.4				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	378.3	5.5	**0.9067**	0.047	5.1	mg/L	45	Standard
K	39	11.7	24.7	**0.0042**	0.117	2791.0	mg/L	10	Standard
Ca	43	40.0	33.1	**0.4579**	3.198	698.5	mg/L	47	Standard
Fe	54	81.2	28.5	**0.0343**	0.054	158.3	mg/L	46	Standard
Fe	57	806.7	4.6	**1.7324**	0.623	36.0	mg/L	627	Standard
> **Sc-1**	45	25072.4	3.6				mg/L	24506	Standard
Cl	35	48347.0	1.2				ug/L	47100	Standard
Kr	83	6.0	28.9				ug/L	8	Standard
Br	81	513.3	21.5				ug/L	427	Standard
P	31	10987.3	1.1				ug/L	10519	Standard
S	34	2155.2	2.4				ug/L	2003	Standard
Sr	88	178.3	15.4				ug/L	132	Standard
C	12	156.7	44.8				mg/L	177	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	78.4	25.2				mg/L	13	Standard
Ho-1	165	45.0	33.3				mg/L	7	Standard
Er	166	33.3	17.3				mg/L	7	Standard
I	127	1956.8	5.1				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.498	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.425	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.486
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.034
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Sunday, August 23, 2015 18:39:10
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	54215.2	2.7				ug/L	53498	Standard
	Be	9	29303.3	1.4	**49.1362**	1.191	2.4	ug/L	12	Standard
	Al	27	3391714.3	1.7	**48.3385**	1.056	2.2	ug/L	487	Standard
	Sc	45	25331.2	1.1				ug/L	24506	Standard
	Ti	47	20000.9	1.3	**104.9567**	0.751	0.7	ug/L	21	Standard
	V	51	211724.8	1.8	**51.6251**	0.759	1.5	ug/L	1268	Standard
	Cr	52	278642.9	0.4	**51.3020**	0.405	0.8	ug/L	7921	Standard
	Cr	53	34454.1	0.8	**51.4595**	0.991	1.9	ug/L	442	Standard
	Mn	55	186618.5	1.7	**53.4760**	0.550	1.0	ug/L	545	Standard
	Co	59	189684.4	1.1	**51.0128**	0.312	0.6	ug/L	183	Standard
	Ni	60	73005.5	1.1	**51.6327**	0.122	0.2	ug/L	131	Standard
	Cu	65	70638.3	0.9	**51.5459**	0.284	0.6	ug/L	231	Standard
	Zn	66	39805.9	1.9	**50.7341**	0.459	0.9	ug/L	306	Standard
>	Ge	72	341690.5	1.1				ug/L	330478	Standard
	As	75	40091.1	1.8	**50.8861**	0.824	1.6	ug/L	-23	Standard
	Se	82	3306.5	2.2	**50.8293**	0.706	1.4	ug/L	27	Standard
	Se-1	77	2405.2	4.4	**50.6444**	2.142	4.2	ug/L	92	Standard
>	Ga	71	28.3	27.0				mg/L	37	Standard
	Rb	85	601.7	5.7				ug/L	25	Standard
	Y	89	321097.1	1.4				ug/L	312467	Standard
>	Rh	103	30.0	44.1				ug/L	20	Standard
	Mo	98	136876.5	1.4	**99.4784**	1.838	1.8	ug/L	13	Standard
	Ag	107	250788.4	1.4	**51.1737**	1.202	2.3	ug/L	72	Standard
	Cd	111	70369.9	0.0	**51.0102**	0.484	0.9	mg/L	5	Standard
	Cd	114	187437.5	1.3	**51.8018**	1.136	2.2	ug/L	7	Standard
>	In	115	483904.4	1.0				ug/L	477820	Standard
	Sn	118	222765.8	1.0	**48.9598**	0.984	2.0	ug/L	343	Standard
	Sb	123	190201.0	0.5	**50.5414**	0.754	1.5	ug/L	56	Standard
	Ba	135	97938.2	0.5	**50.7684**	0.755	1.5	ug/L	36	Standard
	Ce	140	70.0	12.4				ug/L	65	Standard
>	Tb	159	932090.2	1.1				ug/L	939481	Standard
	Ho	165	10.0					ug/L	7	Standard
	Tl	203	331407.0	0.8	**50.5404**	0.432	0.9	ug/L	5	Standard
	Tl	205	226908.3	1.2	**50.8587**	0.662	1.3	ug/L	2	Standard
	Pb	206	205472.2	0.1	**50.2790**	0.077	0.2	ug/L	222	Standard
	Pb	207	187197.7	0.8	**50.6335**	0.428	0.8	ug/L	186	Standard
	Pb	208	674280.6	0.8	**51.1746**	0.442	0.9	ug/L	717	Standard
	U	238	227828.9	0.9	**50.2919**	0.467	0.9	ug/L	2	Standard
>	Bi	209	452240.6	0.1				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	1893.5	6.9	**5.0344**	0.417	8.3	mg/L	45	Standard
K	39	156.7	21.7	**5.2552**	1.241	23.6	mg/L	10	Standard
Ca	43	51.7	20.1	**2.8813**	2.371	82.3	mg/L	47	Standard
Fe	54	2202.4	4.5	**5.2304**	0.305	5.8	mg/L	46	Standard
Fe	57	1356.7	3.6	**6.8797**	0.598	8.7	mg/L	627	Standard
Sc-1	45	25331.2	1.1				mg/L	24506	Standard
Cl	35	45932.2	2.5				ug/L	47100	Standard
Kr	83	6.0	33.3				ug/L	8	Standard
Br	81	526.7	10.5				ug/L	427	Standard
P	31	11549.4	3.4				ug/L	10519	Standard
S	34	2496.9	6.3				ug/L	2003	Standard
Sr	88	178.3	11.3				ug/L	132	Standard
C	12	176.7	40.9				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	16.0	183.6				mg/L	13	Standard
Ho-1	165	10.0					mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	515.0	11.9				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	98.272		
Al	27	96.677		
Sc	45			
Ti	47	104.957		
V	51	103.250		
Cr	52	102.604		
Cr	53			
Mn	55	106.952		
Co	59	102.026		
Ni	60	103.265		
Cu	65	103.092		
Zn	66	101.468		
Ge	72		103.393	
As	75	101.772		
Se	82	101.659		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	99.478		
Ag	107	102.347		
Cd	111	102.020		
Cd	114			
In	115			101.273
Sn	118	97.920		
Sb	123	101.083		
Ba	135	101.537		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.081		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.349		
U	238	100.584		
Bi	209			102.717
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Sunday, August 23, 2015 18:41:26
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Sunday, August 23, 2015 18:42:21
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52862.1	0.6				ug/L	53498	Standard
	Be	9	25.0	34.6	**0.0230**	0.015	65.7	ug/L	12	Standard
	Al	27	880.0	79.3	**0.0019**	0.010	533.0	ug/L	487	Standard
	Sc	45	23940.6	1.3				ug/L	24506	Standard
	Ti	47	26.0	26.6	**0.0098**	0.036	363.0	ug/L	21	Standard
	V	51	1011.8	8.2	**-0.0834**	0.016	19.3	ug/L	1268	Standard
	Cr	52	6600.1	3.3	**-0.2481**	0.031	12.7	ug/L	7921	Standard
	Cr	53	431.7	11.1	**-0.0595**	0.063	105.4	ug/L	442	Standard
	Mn	55	636.3	9.0	**0.0099**	0.015	147.8	ug/L	545	Standard
	Co	59	207.7	16.6	**0.0027**	0.009	319.7	ug/L	183	Standard
	Ni	60	122.7	11.5	**0.0018**	0.009	503.1	ug/L	131	Standard
	Cu	65	275.3	6.3	**0.0341**	0.009	26.7	ug/L	231	Standard
	Zn	66	327.3	6.3	**-0.0216**	0.019	87.7	ug/L	306	Standard
>	**Ge**	72	330963.2	1.9				ug/L	330478	Standard
	As	75	-30.2	117.2	**0.0119**	0.047	396.4	ug/L	-23	Standard
	Se	82	22.1	46.0	**-0.0714**	0.155	217.2	ug/L	27	Standard
	Se-1	77	86.7	3.5	**0.0099**	0.106	1075.7	ug/L	92	Standard
>	**Ga**	71	23.3	65.5				mg/L	37	Standard
	Rb	85	35.0	14.3				ug/L	25	Standard
	Y	89	320397.4	1.1				ug/L	312467	Standard
>	**Rh**	103	36.7	51.6				ug/L	20	Standard
	Mo	98	65.2	56.4	**0.0459**	0.026	57.3	ug/L	13	Standard
	Ag	107	140.0	66.8	**0.0077**	0.019	244.8	ug/L	72	Standard
	Cd	111	15.2	134.5	**-0.0022**	0.015	681.4	mg/L	5	Standard
	Cd	114	65.9	130.4	**0.0102**	0.024	232.1	ug/L	7	Standard
>	**In**	115	473647.4	1.7				ug/L	477820	Standard
	Sn	118	465.0	20.7	**0.0256**	0.020	78.6	ug/L	343	Standard
	Sb	123	779.0	13.3	**0.2073**	0.024	11.8	ug/L	56	Standard
	Ba	135	45.7	32.9	**-0.0022**	0.008	351.4	ug/L	36	Standard
	Ce	140	28.3	27.0				ug/L	65	Standard
>	**Tb**	159	919808.6	1.4				ug/L	939481	Standard
	Ho	165	8.3	124.9				ug/L	7	Standard
	Tl	203	76.0	136.7	**0.0078**	0.016	203.1	ug/L	5	Standard
	Tl	205	63.3	118.5	**0.0076**	0.017	220.9	ug/L	2	Standard
	Pb	206	277.7	19.9	**0.0063**	0.013	209.3	ug/L	222	Standard
	Pb	207	219.0	30.3	**-0.0003**	0.018	6453.4	ug/L	186	Standard
	Pb	208	852.3	23.7	**0.0042**	0.015	358.8	ug/L	717	Standard
	U	238	37.7	113.9	**0.0021**	0.009	453.2	ug/L	2	Standard
>	**Bi**	209	447424.3	1.1				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	51.7	40.3	**0.0121**	0.058	479.8	mg/L	45	Standard
K	39	5.0	0.0	**-0.2331**	0.002	1.1	mg/L	10	Standard
Ca	43	35.0	51.5	**-0.3306**	4.273	1292.6	mg/L	47	Standard
Fe	54	84.5	35.5	**0.0533**	0.079	148.6	mg/L	46	Standard
Fe	57	766.7	3.0	**1.6817**	0.231	13.7	mg/L	627	Standard
> **Sc-1**	45	23940.6	1.3				mg/L	24506	Standard
Cl	35	45694.1	0.9				ug/L	47100	Standard
Kr	83	5.0	20.0				ug/L	8	Standard
Br	81	523.3	12.1				ug/L	427	Standard
P	31	10945.6	2.1				ug/L	10519	Standard
S	34	2211.8	4.7				ug/L	2003	Standard
Sr	88	165.0	5.2				ug/L	132	Standard
C	12	166.7	34.1				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	2.7	219.6				mg/L	13	Standard
Ho-1	165	8.3	124.9				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	7	Standard
I	127	2001.8	5.5				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.147	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.127	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	101.623	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

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Method 6020 - Summary Report

Sample ID: L1508105506
Sample Date/Time: Sunday, August 23, 2015 18:45:33
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1000
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52515.9	1.1				ug/L	53498	Standard
	Be	9	26.7	92.5	**0.0263**	0.043	164.4	ug/L	12	Standard
	Al	27	24411.3	1.7	**0.3483**	0.010	2.9	ug/L	487	Standard
	Sc	45	24579.9	0.9				ug/L	24506	Standard
	Ti	47	22.3	11.3	**-0.0106**	0.013	125.2	ug/L	21	Standard
	V	51	-115.3	217.1	**-0.3683**	0.063	17.1	ug/L	1268	Standard
	Cr	52	178727.1	1.3	**33.1813**	0.373	1.1	ug/L	7921	Standard
	Cr	53	22092.8	4.1	**33.5527**	1.554	4.6	ug/L	442	Standard
	Mn	55	965.7	6.4	**0.1057**	0.020	18.7	ug/L	545	Standard
	Co	59	248.7	24.6	**0.0137**	0.017	127.1	ug/L	183	Standard
	Ni	60	135.7	5.3	**0.0106**	0.005	46.1	ug/L	131	Standard
	Cu	65	323.3	5.8	**0.0686**	0.015	22.0	ug/L	231	Standard
	Zn	66	1193.4	2.5	**1.1165**	0.047	4.2	ug/L	306	Standard
>	**Ge**	72	333531.2	0.7				ug/L	330478	Standard
	As	75	-5.4	415.3	**0.0452**	0.029	64.3	ug/L	-23	Standard
	Se	82	29.7	18.6	**0.0485**	0.088	181.2	ug/L	27	Standard
	Se-1	77	87.0	5.3	**0.0015**	0.116	7976.6	ug/L	92	Standard
>	**Ga**	71	28.3	10.2				mg/L	37	Standard
	Rb	85	28.3	10.2				ug/L	25	Standard
	Y	89	311534.1	1.7				ug/L	312467	Standard
>	**Rh**	103	18.3	41.7				ug/L	20	Standard
	Mo	98	42.6	67.6	**0.0291**	0.021	73.4	ug/L	13	Standard
	Ag	107	131.0	65.5	**0.0058**	0.018	310.6	ug/L	72	Standard
	Cd	111	5.3	54.7	**-0.0094**	0.002	22.5	mg/L	5	Standard
	Cd	114	35.9	77.4	**0.0019**	0.008	406.4	ug/L	7	Standard
>	**In**	115	479657.3	0.6				ug/L	477820	Standard
	Sn	118	1706.8	9.6	**0.3002**	0.037	12.4	ug/L	343	Standard
	Sb	123	250.8	23.8	**0.0634**	0.016	25.9	ug/L	56	Standard
	Ba	135	74.7	15.9	**0.0127**	0.006	49.1	ug/L	36	Standard
	Ce	140	20.0	100.0				ug/L	65	Standard
>	**Tb**	159	945162.4	1.5				ug/L	939481	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	55.0	126.1	**0.0047**	0.011	230.6	ug/L	5	Standard
	Tl	205	51.7	148.1	**0.0051**	0.017	342.7	ug/L	2	Standard
	Pb	206	293.7	24.8	**0.0100**	0.019	186.9	ug/L	222	Standard
	Pb	207	238.7	38.2	**0.0049**	0.026	521.2	ug/L	186	Standard
	Pb	208	939.7	25.5	**0.0106**	0.019	178.9	ug/L	717	Standard
	U	238	49.7	127.9	**0.0048**	0.014	295.2	ug/L	2	Standard
>	**Bi**	209	450234.9	0.9				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	140.0	16.4	**0.2573**	0.066	25.8	mg/L	45	Standard
K	39	11.7	89.2	**0.0107**	0.390	3644.0	mg/L	10	Standard
Ca	43	35.0	0.0	**-0.5749**	0.074	12.9	mg/L	47	Standard
Fe	54	93.9	29.7	**0.0710**	0.070	99.2	mg/L	46	Standard
Fe	57	775.0	7.0	**1.5593**	0.458	29.4	mg/L	627	Standard
Sc-1	45	24579.9	0.9				mg/L	24506	Standard
Cl	35	44088.7	1.4				ug/L	47100	Standard
Kr	83	4.7	32.7				ug/L	8	Standard
Br	81	483.3	14.5				ug/L	427	Standard
P	31	10375.2	2.1				ug/L	10519	Standard
S	34	2256.8	5.3				ug/L	2003	Standard
Sr	88	181.7	13.6				ug/L	132	Standard
C	12	183.3	24.6				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	10.0	173.2				mg/L	10	Standard
Dy	164	16.0	91.1				mg/L	13	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	7	Standard
I	127	1591.8	6.6				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.165	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.924	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.384
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.261
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508093701
Sample Date/Time: Sunday, August 23, 2015 18:48:45
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54427.6	3.0				ug/L	53498	Standard
	Be	9	16.7	45.8	**0.0075**	0.012	157.1	ug/L	12	Standard
	Al	27	6794527.0	0.2	**96.4930**	2.692	2.8	ug/L	487	Standard
	Sc	45	25408.0	3.5				ug/L	24506	Standard
	Ti	47	135.7	7.2	**0.6062**	0.055	9.1	ug/L	21	Standard
	V	51	1835.8	21.0	**0.1262**	0.098	77.7	ug/L	1268	Standard
	Cr	52	8451.4	3.0	**0.1166**	0.052	44.6	ug/L	7921	Standard
	Cr	53	9061.1	11.3	**13.4583**	1.665	12.4	ug/L	442	Standard
	Mn	55	101292.5	0.6	**29.9285**	0.370	1.2	ug/L	545	Standard
	Co	59	734.0	2.7	**0.1493**	0.006	3.8	ug/L	183	Standard
	Ni	60	1925.5	2.7	**1.3223**	0.043	3.2	ug/L	131	Standard
	Cu	65	4780.1	3.6	**3.4437**	0.117	3.4	ug/L	231	Standard
	Zn	66	9402.9	0.6	**12.0447**	0.018	0.1	ug/L	306	Standard
>	**Ge**	72	330541.7	0.7				ug/L	330478	Standard
	As	75	861.0	7.1	**1.1804**	0.075	6.4	ug/L	-23	Standard
	Se	82	50.8	12.4	**0.3921**	0.101	25.6	ug/L	27	Standard
	Se-1	77	457.7	8.7	**8.3973**	0.888	10.6	ug/L	92	Standard
>	**Ga**	71	81.7	30.2				mg/L	37	Standard
	Rb	85	26408.0	0.9				ug/L	25	Standard
	Y	89	309475.3	0.5				ug/L	312467	Standard
>	**Rh**	103	213.3	23.1				ug/L	20	Standard
	Mo	98	3992.4	0.8	**2.9960**	0.014	0.5	ug/L	13	Standard
	Ag	107	74.0	16.2	**-0.0057**	0.003	46.3	ug/L	72	Standard
	Cd	111	45.5	15.8	**0.0209**	0.006	26.5	mg/L	5	Standard
	Cd	114	156.4	29.6	**0.0365**	0.013	36.0	ug/L	7	Standard
>	**In**	115	468285.8	1.0				ug/L	477820	Standard
	Sn	118	506.7	14.1	**0.0365**	0.017	46.7	ug/L	343	Standard
	Sb	123	2702.2	0.5	**0.7382**	0.012	1.6	ug/L	56	Standard
	Ba	135	66036.3	1.2	**35.3651**	0.631	1.8	ug/L	36	Standard
	Ce	140	378.3	23.8				ug/L	65	Standard
>	**Tb**	159	923194.3	1.1				ug/L	939481	Standard
	Ho	165	25.0	60.0				ug/L	7	Standard
	Tl	203	74.3	10.1	**0.0082**	0.001	15.2	ug/L	5	Standard
	Tl	205	43.3	33.3	**0.0036**	0.003	95.0	ug/L	2	Standard
	Pb	206	515.3	2.9	**0.0711**	0.004	5.3	ug/L	222	Standard
	Pb	207	417.7	3.1	**0.0594**	0.003	5.8	ug/L	186	Standard
	Pb	208	1641.4	1.7	**0.0706**	0.002	2.8	ug/L	717	Standard
	U	238	276.0	6.2	**0.0581**	0.004	6.5	ug/L	2	Standard
>	**Bi**	209	427833.3	0.3				ug/L	440279	Standard

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Na	23	1.7	**-4709575879938**1572247061509.234			173.2	mg/L	2	Standard
Mg	24	22488.4	4.2	**61.1001**	3.134	5.1	mg/L	45	Standard
K	39	121.7	20.7	**3.9578**	0.788	19.9	mg/L	10	Standard
Ca	43	201.7	25.3	**35.6386**	9.525	26.7	mg/L	47	Standard
Fe	54	71.0	39.8	**0.0082**	0.073	890.2	mg/L	46	Standard
Fe	57	945.0	5.4	**2.9457**	0.769	26.1	mg/L	627	Standard
> **Sc-1**	45	25408.0	3.5				mg/L	24506	Standard
Cl	35	56038.2	3.9				ug/L	47100	Standard
Kr	83	4.0	66.1				ug/L	8	Standard
Br	81	2013.5	5.3				ug/L	427	Standard
P	31	12945.5	2.4				ug/L	10519	Standard
S	34	2133.5	5.2				ug/L	2003	Standard
Sr	88	333.3	6.9				ug/L	132	Standard
C	12	233.3	17.3				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	51.4	62.5				mg/L	13	Standard
Ho-1	165	25.0	60.0				mg/L	7	Standard
Er	166	40.0					mg/L	7	Standard
I	127	32139.1	2.2				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.738	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.019	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.005
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.173
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: L1508093801
Sample Date/Time: Sunday, August 23, 2015 18:51:56
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56465.1	2.2				ug/L	53498	Standard
	Be	9	28.3	56.7	**0.0256**	0.026	102.2	ug/L	12	Standard
	Al	27	7483688.1	1.2	**102.4124**	1.925	1.9	ug/L	487	Standard
	Sc	45	26581.6	0.4				ug/L	24506	Standard
	Ti	47	1712.1	35.0	**8.7309**	3.066	35.1	ug/L	21	Standard
	V	51	2746.6	15.6	**0.3249**	0.102	31.3	ug/L	1268	Standard
	Cr	52	11664.5	2.9	**0.6409**	0.055	8.5	ug/L	7921	Standard
	Cr	53	9978.3	5.5	**14.1732**	0.911	6.4	ug/L	442	Standard
	Mn	55	511484.8	1.8	**144.8309**	1.853	1.3	ug/L	545	Standard
	Co	59	899.7	4.4	**0.1840**	0.012	6.5	ug/L	183	Standard
	Ni	60	2477.2	1.9	**1.6426**	0.024	1.5	ug/L	131	Standard
	Cu	65	45399.6	1.0	**32.6057**	0.530	1.6	ug/L	231	Standard
	Zn	66	25032.7	0.9	**31.2912**	0.432	1.4	ug/L	306	Standard
>	**Ge**	72	346510.9	0.6				ug/L	330478	Standard
	As	75	3621.0	1.0	**4.5796**	0.070	1.5	ug/L	-23	Standard
	Se	82	503.7	4.6	**7.2771**	0.345	4.7	ug/L	27	Standard
	Se-1	77	477.0	8.0	**8.3414**	0.889	10.7	ug/L	92	Standard
>	**Ga**	71	120.0	16.7				mg/L	37	Standard
	Rb	85	30001.4	2.5				ug/L	25	Standard
	Y	89	327605.6	3.9				ug/L	312467	Standard
>	**Rh**	103	231.7	13.2				ug/L	20	Standard
	Mo	98	4442.4	1.3	**3.2043**	0.014	0.4	ug/L	13	Standard
	Ag	107	444.7	4.5	**0.0688**	0.003	4.7	ug/L	72	Standard
	Cd	111	79.4	6.1	**0.0439**	0.003	7.2	mg/L	5	Standard
	Cd	114	209.7	9.8	**0.0494**	0.005	10.7	ug/L	7	Standard
>	**In**	115	487195.2	0.9				ug/L	477820	Standard
	Sn	118	3243.7	2.9	**0.6303**	0.018	2.8	ug/L	343	Standard
	Sb	123	2674.9	1.6	**0.7022**	0.017	2.4	ug/L	56	Standard
	Ba	135	159314.5	0.6	**82.0370**	0.439	0.5	ug/L	36	Standard
	Ce	140	2555.2	8.7				ug/L	65	Standard
>	**Tb**	159	961996.6	1.4				ug/L	939481	Standard
	Ho	165	70.0	43.4				ug/L	7	Standard
	Tl	203	80.7	34.2	**0.0083**	0.004	50.6	ug/L	5	Standard
	Tl	205	50.0	20.0	**0.0044**	0.002	51.4	ug/L	2	Standard
	Pb	206	2368.9	1.2	**0.5080**	0.010	1.9	ug/L	222	Standard
	Pb	207	1932.5	3.4	**0.4541**	0.014	3.1	ug/L	186	Standard
	Pb	208	7431.4	1.0	**0.4938**	0.007	1.5	ug/L	717	Standard
	U	238	3778.5	1.1	**0.8135**	0.006	0.8	ug/L	2	Standard
>	**Bi**	209	460168.2	0.6				ug/L	440279	Standard

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Na	23	1.7	-4399422820027620023848269	2.078	173.2	mg/L	2	Standard
Mg	24	23560.0	2.0	**61.1474**	1.443	2.4	mg/L	45	Standard
K	39	161.7	17.6	**5.1604**	0.995	19.3	mg/L	10	Standard
Ca	43	188.3	5.5	**31.0905**	2.110	6.8	mg/L	47	Standard
Fe	54	157.5	3.7	**0.2017**	0.015	7.5	mg/L	46	Standard
Fe	57	943.4	12.1	**2.5182**	1.047	41.6	mg/L	627	Standard
Sc-1	45	26581.6	0.4				mg/L	24506	Standard
Cl	35	59829.9	1.3				ug/L	47100	Standard
Kr	83	3.0	57.7				ug/L	8	Standard
Br	81	37031.9	1.0				ug/L	427	Standard
P	31	14001.5	4.0				ug/L	10519	Standard
S	34	2230.2	3.2				ug/L	2003	Standard
Sr	88	326.7	9.7				ug/L	132	Standard
C	12	630.0	8.2				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	10.0	100.0				mg/L	10	Standard
Dy	164	91.1	51.0				mg/L	13	Standard
Ho-1	165	70.0	43.4				mg/L	7	Standard
Er	166	116.7	17.8				mg/L	7	Standard
I	127	59595.3	2.3				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		105.547	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		104.852	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.962
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.517
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508093901
Sample Date/Time: Sunday, August 23, 2015 18:55:08
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	54173.4	1.7				ug/L	53498	Standard
	Be	9	13.3	43.3	**0.0022**	0.009	423.2	ug/L	12	Standard
	Al	27	6966623.1	0.4	**99.3658**	1.740	1.8	ug/L	487	Standard
	Sc	45	25019.0	0.9				ug/L	24506	Standard
	Ti	47	139.0	5.2	**0.6204**	0.038	6.1	ug/L	21	Standard
	V	51	2081.4	5.2	**0.1858**	0.026	14.0	ug/L	1268	Standard
	Cr	52	8536.1	2.1	**0.1247**	0.017	13.8	ug/L	7921	Standard
	Cr	53	10438.6	2.4	**15.5328**	0.522	3.4	ug/L	442	Standard
	Mn	55	60657.2	0.5	**17.7613**	0.141	0.8	ug/L	545	Standard
	Co	59	680.0	3.4	**0.1334**	0.008	6.2	ug/L	183	Standard
	Ni	60	1881.5	1.6	**1.2835**	0.039	3.0	ug/L	131	Standard
	Cu	65	3753.5	1.6	**2.6528**	0.012	0.5	ug/L	231	Standard
	Zn	66	6597.4	1.5	**8.2714**	0.058	0.7	ug/L	306	Standard
>	Ge	72	332184.6	1.2				ug/L	330478	Standard
	As	75	791.5	8.1	**1.0839**	0.074	6.8	ug/L	-23	Standard
	Se	82	52.3	15.9	**0.4113**	0.125	30.4	ug/L	27	Standard
	Se-1	77	531.3	5.8	**10.0023**	0.646	6.5	ug/L	92	Standard
>	Ga	71	110.0	12.0				mg/L	37	Standard
	Rb	85	27703.6	1.1				ug/L	25	Standard
	Y	89	311240.9	0.3				ug/L	312467	Standard
>	Rh	103	220.0	25.6				ug/L	20	Standard
	Mo	98	3770.3	2.8	**2.8467**	0.118	4.2	ug/L	13	Standard
	Ag	107	85.3	12.5	**-0.0032**	0.002	73.9	ug/L	72	Standard
	Cd	111	25.6	5.4	**0.0061**	0.001	14.0	mg/L	5	Standard
	Cd	114	101.1	35.4	**0.0208**	0.010	47.0	ug/L	7	Standard
>	In	115	465597.7	1.6				ug/L	477820	Standard
	Sn	118	518.3	2.4	**0.0397**	0.001	2.4	ug/L	343	Standard
	Sb	123	2411.4	3.1	**0.6620**	0.012	1.7	ug/L	56	Standard
	Ba	135	67088.5	0.6	**36.1371**	0.372	1.0	ug/L	36	Standard
	Ce	140	520.0	5.4				ug/L	65	Standard
>	Tb	159	932082.2	0.9				ug/L	939481	Standard
	Ho	165	40.0	45.1				ug/L	7	Standard
	Tl	203	41.7	11.1	**0.0028**	0.001	29.1	ug/L	5	Standard
	Tl	205	25.0	34.6	**-0.0008**	0.002	253.3	ug/L	2	Standard
	Pb	206	468.0	7.7	**0.0573**	0.011	18.4	ug/L	222	Standard
	Pb	207	387.0	4.5	**0.0492**	0.006	12.6	ug/L	186	Standard
	Pb	208	1488.4	1.1	**0.0568**	0.002	3.8	ug/L	717	Standard
	U	238	326.3	5.8	**0.0689**	0.004	5.8	ug/L	2	Standard
>	Bi	209	433595.3	1.2				ug/L	440279	Standard

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Na	23	1.7	**-466076112218**80726750655672.109			173.2	mg/L	2	Standard
Mg	24	22485.0	0.3	**62.0027**	0.386	0.6	mg/L	45	Standard
K	39	141.7	15.9	**4.7733**	0.817	17.1	mg/L	10	Standard
Ca	43	198.3	8.1	**35.8185**	3.826	10.7	mg/L	47	Standard
Fe	54	84.2	17.7	**0.0428**	0.037	86.2	mg/L	46	Standard
Fe	57	955.0	5.0	**3.1673**	0.549	17.3	mg/L	627	Standard
Sc-1	45	25019.0	0.9				mg/L	24506	Standard
Cl	35	58568.3	1.6				ug/L	47100	Standard
Kr	83	5.0	52.9				ug/L	8	Standard
Br	81	2513.5	2.7				ug/L	427	Standard
P	31	13165.7	0.8				ug/L	10519	Standard
S	34	2043.5	4.2				ug/L	2003	Standard
Sr	88	338.3	5.2				ug/L	132	Standard
C	12	180.0	48.1				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	44.1	91.6				mg/L	13	Standard
Ho-1	165	40.0	45.1				mg/L	7	Standard
Er	166	53.3	60.3				mg/L	7	Standard
I	127	40713.0	3.0				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		101.263	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.517	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.442
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.482
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508094001
Sample Date/Time: Sunday, August 23, 2015 18:58:19
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	58440.8	1.8				ug/L	53498	Standard
	Be	9	28.3	66.8	0.0244	0.031	125.5	ug/L	12	Standard
	Al	27	9251401.1	2.4	122.3474	4.717	3.9	ug/L	487	Standard
	Sc	45	26765.3	0.3				ug/L	24506	Standard
	Ti	47	1046.4	5.8	5.3614	0.388	7.2	ug/L	21	Standard
	V	51	2800.5	5.7	0.3468	0.042	12.2	ug/L	1268	Standard
	Cr	52	13672.8	1.5	1.0489	0.064	6.1	ug/L	7921	Standard
	Cr	53	12036.5	4.3	17.4709	0.853	4.9	ug/L	442	Standard
	Mn	55	160633.1	1.0	45.9356	0.695	1.5	ug/L	545	Standard
	Co	59	988.0	3.8	0.2106	0.008	3.6	ug/L	183	Standard
	Ni	60	2822.3	1.1	1.9086	0.039	2.0	ug/L	131	Standard
	Cu	65	88427.0	0.3	64.4739	1.126	1.7	ug/L	231	Standard
	Zn	66	43540.1	0.6	55.4534	0.657	1.2	ug/L	306	Standard
>	Ge	72	342250.1	1.4				ug/L	330478	Standard
	As	75	871.6	4.4	1.1558	0.062	5.4	ug/L	-23	Standard
	Se	82	64.5	2.6	0.5760	0.033	5.7	ug/L	27	Standard
	Se-1	77	589.7	2.4	10.9281	0.401	3.7	ug/L	92	Standard
>	Ga	71	116.7	13.1				mg/L	37	Standard
	Rb	85	28154.5	4.1				ug/L	25	Standard
	Y	89	325693.2	2.6				ug/L	312467	Standard
>	Rh	103	283.3	11.5				ug/L	20	Standard
	Mo	98	3246.7	3.5	2.3565	0.072	3.1	ug/L	13	Standard
	Ag	107	353.3	12.8	0.0508	0.009	17.5	ug/L	72	Standard
	Cd	111	90.3	8.8	0.0522	0.006	11.6	mg/L	5	Standard
	Cd	114	232.0	8.4	0.0560	0.006	10.1	ug/L	7	Standard
>	In	115	484032.8	1.0				ug/L	477820	Standard
	Sn	118	3405.4	5.1	0.6703	0.031	4.6	ug/L	343	Standard
	Sb	123	1207.0	1.3	0.3168	0.006	1.8	ug/L	56	Standard
	Ba	135	221343.1	0.7	114.7356	1.140	1.0	ug/L	36	Standard
	Ce	140	3180.3	3.3				ug/L	65	Standard
>	Tb	159	960038.0	2.3				ug/L	939481	Standard
	Ho	165	90.0	25.5				ug/L	7	Standard
	Tl	203	87.0	9.8	0.0092	0.001	13.4	ug/L	5	Standard
	Tl	205	71.7	22.4	0.0091	0.003	37.2	ug/L	2	Standard
	Pb	206	2582.2	1.7	0.5600	0.009	1.7	ug/L	222	Standard
	Pb	207	2151.8	2.9	0.5132	0.019	3.7	ug/L	186	Standard
	Pb	208	8043.2	1.1	0.5401	0.012	2.2	ug/L	717	Standard
	U	238	5231.6	1.4	1.1300	0.014	1.2	ug/L	2	Standard
>	Bi	209	459677.5	0.9				ug/L	440279	Standard

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Na	23	1.7	**-436492588539**7560273404781	4.797	173.2	mg/L	2	Standard
Mg	24	23848.8	2.6	**61.4659**	1.381	2.2	mg/L	45	Standard
K	39	131.7	35.3	**4.0921**	1.593	38.9	mg/L	10	Standard
Ca	43	211.7	11.9	**35.6982**	5.253	14.7	mg/L	47	Standard
Fe	54	202.1	1.6	**0.3025**	0.006	2.0	mg/L	46	Standard
Fe	57	1003.4	4.2	**2.9982**	0.355	11.8	mg/L	627	Standard
> **Sc-1**	45	26765.3	0.3				mg/L	24506	Standard
Cl	35	60744.2	0.8				ug/L	47100	Standard
Kr	83	4.3	74.2				ug/L	8	Standard
Br	81	1730.1	5.9				ug/L	427	Standard
P	31	14066.5	3.7				ug/L	10519	Standard
S	34	2273.5	3.2				ug/L	2003	Standard
Sr	88	371.7	15.6				ug/L	132	Standard
C	12	720.0	10.5				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	30.0	88.2				mg/L	10	Standard
Dy	164	109.0	15.4				mg/L	13	Standard
Ho-1	165	90.0	25.5				mg/L	7	Standard
Er	166	90.0	48.4				mg/L	7	Standard
I	127	10093.4	4.1				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.240	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.562	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.300
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.406
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1508094001
Sample Date/Time: Sunday, August 23, 2015 19:01:30
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53691.8	5.6				ug/L	53498	Standard
	Be	9	10.0	100.0	**-0.0032**	0.017	551.8	ug/L	12	Standard
	Al	27	915748.1	2.9	**13.1794**	0.362	2.7	ug/L	487	Standard
	Sc	45	25416.3	2.3				ug/L	24506	Standard
	Ti	47	111.0	22.7	**0.4582**	0.123	26.9	ug/L	21	Standard
	V	51	1551.0	2.0	**0.0459**	0.015	31.8	ug/L	1268	Standard
	Cr	52	9164.4	3.0	**0.2185**	0.022	10.2	ug/L	7921	Standard
	Cr	53	2028.5	5.8	**2.3778**	0.214	9.0	ug/L	442	Standard
	Mn	55	16912.4	1.7	**4.7431**	0.068	1.4	ug/L	545	Standard
	Co	59	266.0	6.2	**0.0176**	0.005	29.0	ug/L	183	Standard
	Ni	60	418.7	3.6	**0.2123**	0.006	2.9	ug/L	131	Standard
	Cu	65	9325.5	1.6	**6.7377**	0.138	2.1	ug/L	231	Standard
	Zn	66	5567.4	1.6	**6.7920**	0.152	2.2	ug/L	306	Standard
>	**Ge**	72	337598.4	1.8				ug/L	330478	Standard
	As	75	51.8	59.1	**0.1181**	0.038	32.2	ug/L	-23	Standard
	Se	82	28.0	7.5	**0.0175**	0.041	232.5	ug/L	27	Standard
	Se-1	77	143.7	6.3	**1.2334**	0.233	18.9	ug/L	92	Standard
>	**Ga**	71	36.7	75.1				mg/L	37	Standard
	Rb	85	2823.6	2.7				ug/L	25	Standard
	Y	89	317107.6	1.1				ug/L	312467	Standard
>	**Rh**	103	61.7	28.5				ug/L	20	Standard
	Mo	98	326.9	3.8	**0.2395**	0.007	2.9	ug/L	13	Standard
	Ag	107	94.7	6.8	**-0.0016**	0.001	71.7	ug/L	72	Standard
	Cd	111	16.2	31.7	**-0.0013**	0.004	275.7	mg/L	5	Standard
	Cd	114	28.8	15.8	**0.0000**	0.001	65535.8	ug/L	7	Standard
>	**In**	115	475461.1	1.7				ug/L	477820	Standard
	Sn	118	665.0	13.9	**0.0704**	0.023	33.0	ug/L	343	Standard
	Sb	123	176.9	8.5	**0.0440**	0.005	10.3	ug/L	56	Standard
	Ba	135	22373.8	1.6	**11.7827**	0.037	0.3	ug/L	36	Standard
	Ce	140	340.0	5.1				ug/L	65	Standard
>	**Tb**	159	934480.5	2.6				ug/L	939481	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	21.7	18.7	**-0.0005**	0.001	135.7	ug/L	5	Standard
	Tl	205	18.3	41.7	**-0.0025**	0.002	71.9	ug/L	2	Standard
	Pb	206	463.7	7.7	**0.0531**	0.006	12.1	ug/L	222	Standard
	Pb	207	396.0	0.8	**0.0490**	0.002	4.7	ug/L	186	Standard
	Pb	208	1456.4	0.8	**0.0514**	0.002	3.4	ug/L	717	Standard
	U	238	525.0	3.9	**0.1116**	0.002	2.2	ug/L	2	Standard
>	**Bi**	209	444458.4	2.2				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	2283.5	2.5	**6.0797**	0.300	4.9	mg/L	45	Standard
K	39	23.3	49.5	**0.4122**	0.404	98.1	mg/L	10	Standard
Ca	43	38.3	32.8	**-0.1440**	2.587	1796.3	mg/L	47	Standard
Fe	54	65.9	24.3	**-0.0056**	0.036	637.7	mg/L	46	Standard
Fe	57	788.4	8.6	**1.4357**	0.572	39.8	mg/L	627	Standard
> **Sc-1**	45	25416.3	2.3				mg/L	24506	Standard
Cl	35	51252.5	0.6				ug/L	47100	Standard
Kr	83	2.7	57.3				ug/L	8	Standard
Br	81	563.3	16.5				ug/L	427	Standard
P	31	10507.0	2.0				ug/L	10519	Standard
S	34	2230.2	2.8				ug/L	2003	Standard
Sr	88	203.3	20.5				ug/L	132	Standard
C	12	196.7	32.7				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	6.7	173.2				mg/L	10	Standard
Dy	164	8.1	132.7				mg/L	13	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	40.0	43.3				mg/L	7	Standard
I	127	2476.9	0.8				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.363	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.155	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.506
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.949
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508094101
Sample Date/Time: Sunday, August 23, 2015 19:04:42
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	57447.1	3.1				ug/L	53498	Standard
	Be	9	15.0	66.7	**0.0038**	0.016	431.4	ug/L	12	Standard
	Al	27	6902140.8	2.3	**92.8907**	4.155	4.5	ug/L	487	Standard
	Sc	45	26180.9	1.2				ug/L	24506	Standard
	Ti	47	1216.4	4.8	**6.2616**	0.281	4.5	ug/L	21	Standard
	V	51	4233.3	8.0	**0.7005**	0.097	13.8	ug/L	1268	Standard
	Cr	52	14418.5	1.8	**1.1947**	0.018	1.5	ug/L	7921	Standard
	Cr	53	9723.1	2.8	**13.9958**	0.227	1.6	ug/L	442	Standard
	Mn	55	614371.2	1.0	**176.5454**	3.798	2.2	ug/L	545	Standard
	Co	59	1072.7	1.9	**0.2340**	0.008	3.3	ug/L	183	Standard
	Ni	60	2854.3	2.2	**1.9351**	0.055	2.8	ug/L	131	Standard
	Cu	65	80813.3	1.6	**59.0099**	0.295	0.5	ug/L	231	Standard
	Zn	66	63086.1	1.7	**80.6974**	0.492	0.6	ug/L	306	Standard
>	Ge	72	341592.8	1.3				ug/L	330478	Standard
	As	75	3407.4	1.2	**4.3742**	0.084	1.9	ug/L	-23	Standard
	Se	82	61.1	14.9	**0.5264**	0.153	29.1	ug/L	27	Standard
	Se-1	77	476.7	7.6	**8.4803**	0.810	9.6	ug/L	92	Standard
>	Ga	71	160.0	8.3				mg/L	37	Standard
	Rb	85	27994.2	3.1				ug/L	25	Standard
	Y	89	318035.4	1.6				ug/L	312467	Standard
>	Rh	103	220.0	4.5				ug/L	20	Standard
	Mo	98	4995.1	2.1	**3.6644**	0.108	3.0	ug/L	13	Standard
	Ag	107	1486.7	6.1	**0.2851**	0.017	5.9	ug/L	72	Standard
	Cd	111	203.5	9.2	**0.1357**	0.013	9.4	mg/L	5	Standard
	Cd	114	616.7	6.7	**0.1640**	0.011	6.8	ug/L	7	Standard
>	In	115	479162.4	0.9				ug/L	477820	Standard
	Sn	118	5714.4	4.3	**1.1914**	0.055	4.6	ug/L	343	Standard
	Sb	123	2770.8	1.9	**0.7398**	0.019	2.5	ug/L	56	Standard
	Ba	135	181317.1	0.3	**94.9373**	0.593	0.6	ug/L	36	Standard
	Ce	140	6212.9	2.9				ug/L	65	Standard
>	Tb	159	946687.7	0.3				ug/L	939481	Standard
	Ho	165	173.3	9.3				ug/L	7	Standard
	Tl	203	61.7	2.5	**0.0051**	0.000	2.3	ug/L	5	Standard
	Tl	205	35.0	37.8	**0.0008**	0.003	364.2	ug/L	2	Standard
	Pb	206	5568.4	0.6	**1.2295**	0.024	1.9	ug/L	222	Standard
	Pb	207	4619.4	0.5	**1.1243**	0.012	1.0	ug/L	186	Standard
	Pb	208	17445.6	1.0	**1.1940**	0.010	0.8	ug/L	717	Standard
	U	238	4474.7	2.3	**0.9290**	0.010	1.1	ug/L	2	Standard
>	Bi	209	477641.6	1.3				ug/L	440279	Standard

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Na	23	3.3	**-896930783951**55352968867524.280			173.2	mg/L	2	Standard
Mg	24	20852.7	3.1	**54.9375**	1.864	3.4	mg/L	45	Standard
K	39	140.0	16.4	**4.4791**	0.751	16.8	mg/L	10	Standard
Ca	43	185.0	18.9	**30.9327**	6.975	22.5	mg/L	47	Standard
Fe	54	343.5	14.4	**0.6473**	0.109	16.8	mg/L	46	Standard
Fe	57	995.0	1.3	**3.1239**	0.020	0.7	mg/L	627	Standard
> **Sc-1**	45	26180.9	1.2				mg/L	24506	Standard
Cl	35	59658.6	0.8				ug/L	47100	Standard
Kr	83	3.0	66.7				ug/L	8	Standard
Br	81	1483.4	5.1				ug/L	427	Standard
P	31	13624.5	3.2				ug/L	10519	Standard
S	34	2440.2	5.3				ug/L	2003	Standard
Sr	88	310.0	16.8				ug/L	132	Standard
C	12	703.3	3.6				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	226.7	13.5				mg/L	10	Standard
Dy	164	190.4	26.3				mg/L	13	Standard
Ho-1	165	173.3	9.3				mg/L	7	Standard
Er	166	130.0	7.7				mg/L	7	Standard
I	127	30951.6	1.9				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.383	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.363	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.281
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.486
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508094201
Sample Date/Time: Sunday, August 23, 2015 19:07:53
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	111577.4	7.1				ug/L	53498	Standard
	Be	9	95.0	13.9	**0.0581**	0.017	29.0	ug/L	12	Standard
	Al	27	S	S	**S**	S	S	ug/L	487	Standard
	Sc	45	23294.6	3.0				ug/L	24506	Standard
	Ti	47	460.0	21.0	**2.5526**	0.509	20.0	ug/L	21	Standard
	V	51	4224.9	41.0	**0.8140**	0.465	57.2	ug/L	1268	Standard
	Cr	52	21623.1	2.1	**3.0277**	0.202	6.7	ug/L	7921	Standard
	Cr	53	105699.2	2.4	**177.6250**	8.559	4.8	ug/L	442	Standard
	Mn	55	39804443.6	0.7	**12743.6069**	221.553	1.7	ug/L	545	Standard
	Co	59	207505.8	1.6	**62.1675**	2.189	3.5	ug/L	183	Standard
	Ni	60	943664.2	0.7	**744.3591**	14.210	1.9	ug/L	131	Standard
	Cu	65	16352.5	2.1	**13.1585**	0.377	2.9	ug/L	231	Standard
	Zn	66	481244.0	2.4	**688.5546**	7.680	1.1	ug/L	306	Standard
>	**Ge**	72	306936.5	2.3				ug/L	330478	Standard
	As	75	10033.3	5.9	**14.2190**	0.891	6.3	ug/L	-23	Standard
	Se	82	11080.6	2.1	**190.8167**	3.300	1.7	ug/L	27	Standard
	Se-1	77	14887.3	2.0	**360.6485**	13.458	3.7	ug/L	92	Standard
>	**Ga**	71	795.0	4.1				mg/L	37	Standard
	Rb	85	99994.1	2.8				ug/L	25	Standard
	Y	89	321714.7	2.8				ug/L	312467	Standard
>	**Rh**	103	1340.1	6.1				ug/L	20	Standard
	Mo	98	56780.4	2.6	**40.4910**	0.824	2.0	ug/L	13	Standard
	Ag	107	162.7	5.2	**0.0113**	0.002	21.7	ug/L	72	Standard
	Cd	111	57896.3	2.8	**41.1736**	0.490	1.2	mg/L	5	Standard
	Cd	114	150135.9	2.9	**40.7035**	0.313	0.8	ug/L	7	Standard
>	**In**	115	493270.1	3.5				ug/L	477820	Standard
	Sn	118	1306.7	5.6	**0.2033**	0.012	5.9	ug/L	343	Standard
	Sb	123	5272.6	0.7	**1.3714**	0.038	2.7	ug/L	56	Standard
	Ba	135	56391.4	0.2	**28.6848**	0.969	3.4	ug/L	36	Standard
	Ce	140	2546.9	3.8				ug/L	65	Standard
>	**Tb**	159	931489.3	1.7				ug/L	939481	Standard
	Ho	165	101.7	19.9				ug/L	7	Standard
	Tl	203	20765.9	1.0	**3.5173**	0.043	1.2	ug/L	5	Standard
	Tl	205	14760.5	3.6	**3.6710**	0.082	2.2	ug/L	2	Standard
	Pb	206	871.7	1.2	**0.1751**	0.006	3.5	ug/L	222	Standard
	Pb	207	649.0	6.8	**0.1354**	0.017	12.4	ug/L	186	Standard
	Pb	208	2344.7	5.0	**0.1370**	0.013	9.8	ug/L	717	Standard
	U	238	443833.5	2.0	**108.9168**	0.381	0.4	ug/L	2	Standard
>	**Bi**	209	406813.4	1.7				ug/L	440279	Standard

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Na	23	30.0	**-909548273115**317179506353569.120			34.9	mg/L	2	Standard
Mg	24	70512.2	4.0	**209.4287**	14.351	6.9	mg/L	45	Standard
K	39	733.4	8.1	**28.4778**	2.196	7.7	mg/L	10	Standard
Ca	43	1170.0	7.6	**272.2403**	15.230	5.6	mg/L	47	Standard
Fe	54	105.3	12.1	**0.1143**	0.032	28.3	mg/L	46	Standard
Fe	57	2225.2	1.4	**17.0102**	0.748	4.4	mg/L	627	Standard
Sc-1	45	23294.6	3.0				mg/L	24506	Standard
Cl	35	1434617.9	9.1				ug/L	47100	Standard
Kr	83	5.7	27.0				ug/L	8	Standard
Br	81	274845.7	5.7				ug/L	427	Standard
P	31	23803.8	7.7				ug/L	10519	Standard
S	34	4547.3	3.1				ug/L	2003	Standard
Sr	88	1405.1	0.9				ug/L	132	Standard
C	12	1623.4	19.6				mg/L	177	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	96.7	21.5				mg/L	10	Standard
Dy	164	124.9	44.0				mg/L	13	Standard
Ho-1	165	101.7	19.9				mg/L	7	Standard
Er	166	106.7	28.6				mg/L	7	Standard
I	127	5654071.6	16.7				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		208.565	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		92.877	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.233
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	92.399
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Cr 53 Upper, S, EEE	Cr	53	

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Mn 55 Upper, S, EEE	Mn	55
Ni 60 Upper, S, EEE	Ni	60
Zn 66 Upper, S, EEE	Zn	66
Se 82 Upper, S, EEE	Se	82
Se-1 77 Upper, S, EEE	Se-1	77
U 238 Upper, S, EEE	U	238

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Method 6020 - Summary Report

Sample ID: L1508099202
Sample Date/Time: Sunday, August 23, 2015 19:11:05
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72225.3	4.1				ug/L	53498	Standard
	Be	9	13.3	21.7	**-0.0032**	0.004	129.9	ug/L	12	Standard
	Al	27	3637573.7	2.3	**38.9508**	2.030	5.2	ug/L	487	Standard
	Sc	45	24670.1	2.1				ug/L	24506	Standard
	Ti	47	30.7	24.9	**0.0390**	0.043	111.2	ug/L	21	Standard
	V	51	1444.9	29.5	**0.0342**	0.112	329.3	ug/L	1268	Standard
	Cr	52	11673.8	2.8	**0.7904**	0.084	10.6	ug/L	7921	Standard
	Cr	53	5514.3	12.9	**8.0624**	1.184	14.7	ug/L	442	Standard
	Mn	55	6311.8	38.7	**1.7301**	0.737	42.6	ug/L	545	Standard
	Co	59	395.0	4.8	**0.0570**	0.006	9.9	ug/L	183	Standard
	Ni	60	911.7	19.9	**0.5912**	0.128	21.7	ug/L	131	Standard
	Cu	65	433.0	2.2	**0.1597**	0.004	2.7	ug/L	231	Standard
	Zn	66	1469.1	4.5	**1.5322**	0.072	4.7	ug/L	306	Standard
>	**Ge**	72	324625.3	0.9				ug/L	330478	Standard
	As	75	156.6	8.7	**0.2610**	0.019	7.2	ug/L	-23	Standard
	Se	82	91.2	16.3	**1.0664**	0.255	23.9	ug/L	27	Standard
	Se-1	77	349.3	9.2	**6.0964**	0.791	13.0	ug/L	92	Standard
>	**Ga**	71	36.7	7.9				mg/L	37	Standard
	Rb	85	728.4	1.7				ug/L	25	Standard
	Y	89	336955.8	0.9				ug/L	312467	Standard
>	**Rh**	103	51.7	34.0				ug/L	20	Standard
	Mo	98	58.1	13.2	**0.0350**	0.004	12.6	ug/L	13	Standard
	Ag	107	80.7	3.6	**-0.0067**	0.000	4.2	ug/L	72	Standard
	Cd	111	21.2	30.7	**0.0004**	0.004	1140.1	mg/L	5	Standard
	Cd	114	38.0	43.9	**0.0011**	0.004	342.4	ug/L	7	Standard
>	**In**	115	547613.4	2.0				ug/L	477820	Standard
	Sn	118	321.7	12.6	**-0.0163**	0.007	42.7	ug/L	343	Standard
	Sb	123	75.8	5.9	**0.0139**	0.001	7.0	ug/L	56	Standard
	Ba	135	2882.3	2.6	**1.2947**	0.036	2.8	ug/L	36	Standard
	Ce	140	55.0	24.1				ug/L	65	Standard
>	**Tb**	159	1000087.0	3.0				ug/L	939481	Standard
	Ho	165	11.7	49.5				ug/L	7	Standard
	Tl	203	33.3	15.4	**0.0010**	0.001	77.6	ug/L	5	Standard
	Tl	205	28.3	27.0	**-0.0006**	0.002	263.2	ug/L	2	Standard
	Pb	206	289.3	5.3	**0.0046**	0.004	95.1	ug/L	222	Standard
	Pb	207	242.7	13.3	**0.0019**	0.009	465.0	ug/L	186	Standard
	Pb	208	909.0	2.5	**0.0040**	0.001	26.9	ug/L	717	Standard
	U	238	2459.9	5.0	**0.5065**	0.027	5.3	ug/L	2	Standard
>	**Bi**	209	479029.4	1.3				ug/L	440279	Standard

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Na	23	1.7	**-4704837801578149018113689**9.187			173.2	mg/L	2	Standard
Mg	24	8579.1	3.7	**23.9227**	1.305	5.5	mg/L	45	Standard
K	39	3.3	173.2	**-0.2979**	0.220	73.9	mg/L	10	Standard
Ca	43	91.7	3.1	**12.2472**	0.626	5.1	mg/L	47	Standard
Fe	54	84.0	27.2	**0.0445**	0.054	121.5	mg/L	46	Standard
Fe	57	963.4	4.5	**3.3836**	0.606	17.9	mg/L	627	Standard
Sc-1	45	24670.1	2.1				mg/L	24506	Standard
Cl	35	101363.2	5.1				ug/L	47100	Standard
Kr	83	6.0	88.2				ug/L	8	Standard
Br	81	6411.4	8.6				ug/L	427	Standard
P	31	13481.0	1.4				ug/L	10519	Standard
S	34	2465.2	3.0				ug/L	2003	Standard
Sr	88	208.3	6.0				ug/L	132	Standard
C	12	330.0	32.1				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	22.7	26.2				mg/L	13	Standard
Ho-1	165	11.7	49.5				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	7	Standard
I	127	226397.8	39.0				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		135.006	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.229	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.607
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.801
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: L1508099204
Sample Date/Time: Sunday, August 23, 2015 19:14:17
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69782.0	2.2				ug/L	53498	Standard
	Be	9	13.3	43.3	**-0.0027**	0.008	283.3	ug/L	12	Standard
	Al	27	285998.0	1.9	**3.1565**	0.085	2.7	ug/L	487	Standard
	Sc	45	24509.8	3.7				ug/L	24506	Standard
	Ti	47	34.7	13.0	**0.0595**	0.026	43.9	ug/L	21	Standard
	V	51	1556.0	10.5	**0.0591**	0.043	72.2	ug/L	1268	Standard
	Cr	52	10447.9	2.9	**0.5277**	0.030	5.6	ug/L	7921	Standard
	Cr	53	1816.8	3.1	**2.1386**	0.068	3.2	ug/L	442	Standard
	Mn	55	3874.8	3.5	**0.9839**	0.025	2.5	ug/L	545	Standard
	Co	59	248.3	6.0	**0.0148**	0.003	23.3	ug/L	183	Standard
	Ni	60	278.7	8.6	**0.1181**	0.014	12.2	ug/L	131	Standard
	Cu	65	330.0	1.4	**0.0784**	0.007	9.3	ug/L	231	Standard
	Zn	66	1916.5	2.5	**2.1165**	0.014	0.6	ug/L	306	Standard
>	**Ge**	72	327354.4	1.9				ug/L	330478	Standard
	As	75	126.8	16.8	**0.2197**	0.026	11.8	ug/L	-23	Standard
	Se	82	36.1	23.9	**0.1601**	0.132	82.5	ug/L	27	Standard
	Se-1	77	155.0	6.4	**1.5894**	0.204	12.8	ug/L	92	Standard
>	**Ga**	71	33.3	31.2				mg/L	37	Standard
	Rb	85	6816.5	3.6				ug/L	25	Standard
	Y	89	329069.5	3.5				ug/L	312467	Standard
>	**Rh**	103	50.0	52.9				ug/L	20	Standard
	Mo	98	189.9	6.2	**0.1225**	0.009	7.1	ug/L	13	Standard
	Ag	107	81.7	9.5	**-0.0062**	0.001	21.9	ug/L	72	Standard
	Cd	111	7.6	47.8	**-0.0083**	0.002	28.5	mg/L	5	Standard
	Cd	114	13.5	161.6	**-0.0048**	0.005	112.7	ug/L	7	Standard
>	**In**	115	535336.8	0.9				ug/L	477820	Standard
	Sn	118	430.0	2.3	**0.0067**	0.002	34.3	ug/L	343	Standard
	Sb	123	81.7	12.7	**0.0157**	0.002	14.7	ug/L	56	Standard
	Ba	135	7858.0	0.5	**3.6575**	0.045	1.2	ug/L	36	Standard
	Ce	140	171.7	13.1				ug/L	65	Standard
>	**Tb**	159	990538.9	1.4				ug/L	939481	Standard
	Ho	165	6.7	86.6				ug/L	7	Standard
	Tl	203	16.3	47.6	**-0.0015**	0.001	74.1	ug/L	5	Standard
	Tl	205	16.7	62.4	**-0.0031**	0.002	71.2	ug/L	2	Standard
	Pb	206	292.3	5.6	**0.0051**	0.003	59.1	ug/L	222	Standard
	Pb	207	249.7	4.8	**0.0036**	0.003	91.5	ug/L	186	Standard
	Pb	208	918.3	2.2	**0.0046**	0.001	28.4	ug/L	717	Standard
	U	238	254.0	2.4	**0.0466**	0.001	2.1	ug/L	2	Standard
>	**Bi**	209	479738.1	1.1				ug/L	440279	Standard

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Na	23	1.7	**-4987841647088**6391951528511.906			173.2	mg/L	2	Standard
Mg	24	1855.1	2.2	**5.1011**	0.222	4.4	mg/L	45	Standard
K	39	16.7	45.8	**0.2071**	0.314	151.6	mg/L	10	Standard
Ca	43	35.0	37.8	**-0.5325**	3.048	572.3	mg/L	47	Standard
Fe	54	84.1	22.0	**0.0465**	0.043	93.2	mg/L	46	Standard
Fe	57	856.7	10.9	**2.4000**	1.025	42.7	mg/L	627	Standard
> **Sc-1**	45	24509.8	3.7				mg/L	24506	Standard
Cl	35	84397.8	1.7				ug/L	47100	Standard
Kr	83	3.0	57.7				ug/L	8	Standard
Br	81	1540.1	10.7				ug/L	427	Standard
P	31	13139.0	2.4				ug/L	10519	Standard
S	34	2440.2	1.2				ug/L	2003	Standard
Sr	88	233.3	16.1				ug/L	132	Standard
C	12	280.0	27.0				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	9.0	111.0				mg/L	13	Standard
Ho-1	165	6.7	86.6				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	7	Standard
I	127	100598.1	3.0				mg/L	2225	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		130.440	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.055	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.037
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.962
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Sunday, August 23, 2015 19:17:29
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63352.2	1.9				ug/L	53498	Standard
	Be	9	35889.1	2.9	**51.4789**	0.915	1.8	ug/L	12	Standard
	Al	27	3896862.3	3.7	**47.5026**	0.860	1.8	ug/L	487	Standard
	Sc	45	24009.1	6.0				ug/L	24506	Standard
	Ti	47	18817.0	1.9	**106.7112**	1.347	1.3	ug/L	21	Standard
	V	51	203424.8	2.2	**53.6114**	0.509	0.9	ug/L	1268	Standard
	Cr	52	266342.6	0.6	**53.0479**	0.852	1.6	ug/L	7921	Standard
	Cr	53	34369.0	2.3	**55.5167**	0.370	0.7	ug/L	442	Standard
	Mn	55	182014.3	4.7	**56.3530**	1.636	2.9	ug/L	545	Standard
	Co	59	188422.5	1.4	**54.7695**	0.944	1.7	ug/L	183	Standard
	Ni	60	67854.9	1.1	**51.8648**	0.626	1.2	ug/L	131	Standard
	Cu	65	65607.7	1.0	**51.7422**	0.811	1.6	ug/L	231	Standard
	Zn	66	36645.9	1.9	**50.4745**	0.692	1.4	ug/L	306	Standard
>	Ge	72	316212.6	2.1				ug/L	330478	Standard
	As	75	37502.7	0.4	**51.4471**	0.920	1.8	ug/L	-23	Standard
	Se	82	3257.6	0.5	**54.1622**	1.345	2.5	ug/L	27	Standard
	Se-1	77	2345.5	4.4	**53.4667**	1.807	3.4	ug/L	92	Standard
>	Ga	71	43.3	17.6				mg/L	37	Standard
	Rb	85	551.7	5.0				ug/L	25	Standard
	Y	89	316633.5	2.0				ug/L	312467	Standard
>	Rh	103	25.0	20.0				ug/L	20	Standard
	Mo	98	149012.8	1.2	**100.7238**	1.663	1.7	ug/L	13	Standard
	Ag	107	266384.1	1.8	**50.5493**	1.003	2.0	ug/L	72	Standard
	Cd	111	79081.5	1.1	**53.3179**	0.895	1.7	mg/L	5	Standard
	Cd	114	206899.2	1.5	**53.1785**	0.998	1.9	ug/L	7	Standard
>	In	115	520283.2	0.6				ug/L	477820	Standard
	Sn	118	240159.0	2.3	**49.0901**	1.357	2.8	ug/L	343	Standard
	Sb	123	206545.4	0.4	**51.0441**	0.485	1.0	ug/L	56	Standard
	Ba	135	100261.6	0.4	**48.3351**	0.508	1.1	ug/L	36	Standard
	Ce	140	93.3	43.6				ug/L	65	Standard
>	Tb	159	973627.2	1.0				ug/L	939481	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	345484.4	1.0	**51.0049**	0.354	0.7	ug/L	5	Standard
	Tl	205	239627.1	1.8	**51.9932**	0.758	1.5	ug/L	2	Standard
	Pb	206	218938.8	0.2	**51.8672**	0.304	0.6	ug/L	222	Standard
	Pb	207	197045.0	0.4	**51.5978**	0.349	0.7	ug/L	186	Standard
	Pb	208	686600.5	0.8	**50.4453**	0.317	0.6	ug/L	717	Standard
	U	238	239185.0	1.2	**51.1131**	0.524	1.0	ug/L	2	Standard
>	Bi	209	467150.3	0.4				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	2048.5	5.1	**5.7676**	0.244	4.2	mg/L	45	Standard
K	39	146.7	15.7	**5.1677**	0.663	12.8	mg/L	10	Standard
Ca	43	68.3	22.4	**7.4734**	3.942	52.8	mg/L	47	Standard
Fe	54	2079.0	5.3	**5.2154**	0.352	6.8	mg/L	46	Standard
Fe	57	1388.4	3.1	**7.9218**	0.436	5.5	mg/L	627	Standard
Sc-1	45	24009.1	6.0				mg/L	24506	Standard
Cl	35	68425.9	6.4				ug/L	47100	Standard
Kr	83	5.3	21.7				ug/L	8	Standard
Br	81	796.7	11.7				ug/L	427	Standard
P	31	12390.1	3.9				ug/L	10519	Standard
S	34	2490.2	10.4				ug/L	2003	Standard
Sr	88	181.7	6.4				ug/L	132	Standard
C	12	256.7	44.8				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	15.2	75.8				mg/L	13	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	30.0	0.0				mg/L	7	Standard
I	127	34790.4	13.3				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.958		
Al	27	95.005		
Sc	45			
Ti	47	106.711		
V	51	107.223		
Cr	52	106.096		
Cr	53			
Mn	55	112.706		
Co	59	109.539		
Ni	60	103.730		
Cu	65	103.484		
Zn	66	100.949		
Ge	72		95.683	
As	75	102.894		
Se	82	108.324		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	100.724		
Ag	107	101.099		
Cd	111	106.636		
Cd	114			
> In	115			108.887
Sn	118	98.180		
Sb	123	102.088		
Ba	135	96.670		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	102.010		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.891		
U	238	102.226		
> Bi	209			106.103
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Mn	55	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Sunday, August 23, 2015 19:20:41
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63245.2	3.7				ug/L	53498	Standard
	Be	9	20.0	66.1	**0.0090**	0.019	215.4	ug/L	12	Standard
	Al	27	10429.8	72.6	**0.1181**	0.097	82.3	ug/L	487	Standard
	Sc	45	23322.9	2.8				ug/L	24506	Standard
	Ti	47	24.3	4.7	**0.0075**	0.007	88.8	ug/L	21	Standard
	V	51	1045.8	14.8	**-0.0622**	0.037	59.3	ug/L	1268	Standard
	Cr	52	6926.3	3.4	**-0.1190**	0.028	23.2	ug/L	7921	Standard
	Cr	53	1166.7	9.9	**1.1770**	0.159	13.5	ug/L	442	Standard
	Mn	55	1140.4	48.1	**0.1742**	0.164	94.1	ug/L	545	Standard
	Co	59	240.3	16.1	**0.0150**	0.010	67.9	ug/L	183	Standard
	Ni	60	157.7	19.6	**0.0328**	0.022	66.1	ug/L	131	Standard
	Cu	65	284.3	3.5	**0.0513**	0.005	10.6	ug/L	231	Standard
	Zn	66	334.3	9.7	**0.0094**	0.045	477.7	ug/L	306	Standard
>	**Ge**	72	315741.8	1.6				ug/L	330478	Standard
	As	75	-23.7	97.3	**0.0197**	0.032	160.5	ug/L	-23	Standard
	Se	82	30.4	13.4	**0.0874**	0.074	85.1	ug/L	27	Standard
	Se-1	77	106.7	5.5	**0.5756**	0.116	20.2	ug/L	92	Standard
>	**Ga**	71	18.3	15.7				mg/L	37	Standard
	Rb	85	23.3	44.6				ug/L	25	Standard
	Y	89	321418.4	2.7				ug/L	312467	Standard
>	**Rh**	103	23.3	24.7				ug/L	20	Standard
	Mo	98	70.4	32.6	**0.0449**	0.016	34.7	ug/L	13	Standard
	Ag	107	115.3	29.8	**0.0004**	0.007	1648.7	ug/L	72	Standard
	Cd	111	11.8	60.7	**-0.0054**	0.005	89.6	mg/L	5	Standard
	Cd	114	34.3	74.1	**0.0006**	0.006	1075.5	ug/L	7	Standard
>	**In**	115	525852.4	0.6				ug/L	477820	Standard
	Sn	118	586.7	7.1	**0.0400**	0.009	22.4	ug/L	343	Standard
	Sb	123	753.2	7.5	**0.1803**	0.014	8.0	ug/L	56	Standard
	Ba	135	58.0	12.4	**0.0013**	0.003	261.6	ug/L	36	Standard
	Ce	140	28.3	20.4				ug/L	65	Standard
>	**Tb**	159	966433.3	2.0				ug/L	939481	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	55.0	76.0	**0.0043**	0.006	143.6	ug/L	5	Standard
	Tl	205	48.3	67.3	**0.0039**	0.007	183.5	ug/L	2	Standard
	Pb	206	260.0	11.4	**-0.0008**	0.007	904.6	ug/L	222	Standard
	Pb	207	212.7	9.7	**-0.0045**	0.005	117.4	ug/L	186	Standard
	Pb	208	820.3	14.6	**-0.0009**	0.009	1015.3	ug/L	717	Standard
	U	238	38.3	96.1	**0.0019**	0.008	406.6	ug/L	2	Standard
>	**Bi**	209	467479.5	1.2				ug/L	440279	Standard

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Na	23	1.7	**-5066732001538775837254986**7.828			173.2	mg/L	2	Standard
Mg	24	43.3	33.3	**-0.0076**	0.046	604.0	mg/L	45	Standard
K	39	8.3	91.7	**-0.1017**	0.293	288.3	mg/L	10	Standard
Ca	43	31.7	24.1	**-0.9222**	1.947	211.2	mg/L	47	Standard
Fe	54	67.6	4.4	**0.0140**	0.013	90.8	mg/L	46	Standard
Fe	57	813.4	9.0	**2.3849**	0.965	40.5	mg/L	627	Standard
Sc-1	45	23322.9	2.8				mg/L	24506	Standard
Cl	35	64636.9	1.1				ug/L	47100	Standard
Kr	83	7.7	27.2				ug/L	8	Standard
Br	81	633.3	15.8				ug/L	427	Standard
P	31	12079.8	3.0				ug/L	10519	Standard
S	34	2415.2	4.0				ug/L	2003	Standard
Sr	88	170.0	13.5				ug/L	132	Standard
C	12	210.0	52.4				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	9.5	110.1				mg/L	13	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	25526.6	8.3				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.541	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.052
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.178
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508099206
Sample Date/Time: Sunday, August 23, 2015 19:23:53
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62041.9	4.0				ug/L	53498	Standard
	Be	9	6.7	86.6	**-0.0104**	0.008	80.2	ug/L	12	Standard
	Al	27	3685366.6	1.7	**45.9106**	1.038	2.3	ug/L	487	Standard
	Sc	45	23565.0	1.1				ug/L	24506	Standard
	Ti	47	36.3	23.1	**0.0779**	0.046	58.6	ug/L	21	Standard
	V	51	1247.6	18.9	**-0.0045**	0.062	1367.0	ug/L	1268	Standard
	Cr	52	8195.2	5.6	**0.1612**	0.077	48.0	ug/L	7921	Standard
	Cr	53	3902.2	7.2	**5.7361**	0.392	6.8	ug/L	442	Standard
	Mn	55	10340.5	3.0	**3.0767**	0.070	2.3	ug/L	545	Standard
	Co	59	396.3	0.9	**0.0619**	0.002	3.6	ug/L	183	Standard
	Ni	60	862.0	6.1	**0.5807**	0.034	5.8	ug/L	131	Standard
	Cu	65	392.3	4.8	**0.1406**	0.013	9.5	ug/L	231	Standard
	Zn	66	1420.4	2.0	**1.5444**	0.020	1.3	ug/L	306	Standard
>	**Ge**	72	312009.4	1.1				ug/L	330478	Standard
	As	75	142.1	22.5	**0.2495**	0.045	18.1	ug/L	-23	Standard
	Se	82	99.5	10.2	**1.2649**	0.153	12.1	ug/L	27	Standard
	Se-1	77	225.3	8.0	**3.4501**	0.464	13.5	ug/L	92	Standard
>	**Ga**	71	25.0	20.0				mg/L	37	Standard
	Rb	85	311.7	5.6				ug/L	25	Standard
	Y	89	317960.0	0.7				ug/L	312467	Standard
>	**Rh**	103	55.0	9.1				ug/L	20	Standard
	Mo	98	37.4	19.0	**0.0233**	0.005	19.9	ug/L	13	Standard
	Ag	107	75.0	14.0	**-0.0069**	0.002	27.5	ug/L	72	Standard
	Cd	111	29.9	38.5	**0.0072**	0.008	107.9	mg/L	5	Standard
	Cd	114	61.2	19.2	**0.0079**	0.003	41.2	ug/L	7	Standard
>	**In**	115	513113.6	1.0				ug/L	477820	Standard
	Sn	118	451.7	11.1	**0.0149**	0.009	63.7	ug/L	343	Standard
	Sb	123	250.0	7.6	**0.0588**	0.005	8.0	ug/L	56	Standard
	Ba	135	2568.6	0.5	**1.2300**	0.017	1.4	ug/L	36	Standard
	Ce	140	96.7	13.0				ug/L	65	Standard
>	**Tb**	159	951034.4	0.3				ug/L	939481	Standard
	Ho	165	16.7	124.9				ug/L	7	Standard
	Tl	203	40.7	22.8	**0.0023**	0.001	61.6	ug/L	5	Standard
	Tl	205	21.7	13.3	**-0.0018**	0.001	33.8	ug/L	2	Standard
	Pb	206	289.7	6.6	**0.0079**	0.004	51.8	ug/L	222	Standard
	Pb	207	253.7	4.9	**0.0079**	0.003	43.6	ug/L	186	Standard
	Pb	208	897.0	2.5	**0.0063**	0.002	25.9	ug/L	717	Standard
	U	238	2175.2	1.8	**0.4694**	0.004	0.9	ug/L	2	Standard
>	**Bi**	209	456587.6	1.0				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	8047.1	1.6	**23.4738**	0.290	1.2	mg/L	45	Standard
K	39	23.3	24.7	**0.4859**	0.236	48.6	mg/L	10	Standard
Ca	43	93.3	16.4	**13.5945**	3.423	25.2	mg/L	47	Standard
Fe	54	72.6	21.5	**0.0254**	0.043	170.4	mg/L	46	Standard
Fe	57	873.4	6.7	**2.8927**	0.504	17.4	mg/L	627	Standard
> **Sc-1**	45	23565.0	1.1				mg/L	24506	Standard
Cl	35	72384.0	3.5				ug/L	47100	Standard
Kr	83	7.0	37.8				ug/L	8	Standard
Br	81	6508.1	5.2				ug/L	427	Standard
P	31	12448.4	2.1				ug/L	10519	Standard
S	34	2195.2	8.7				ug/L	2003	Standard
Sr	88	268.3	4.3				ug/L	132	Standard
C	12	253.3	8.2				mg/L	177	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	8.6	11.2				mg/L	13	Standard
Ho-1	165	16.7	124.9				mg/L	7	Standard
Er	166	30.0	66.7				mg/L	7	Standard
I	127	63760.5	0.7				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.971	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.412	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.386
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.704
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508099208
Sample Date/Time: Sunday, August 23, 2015 19:27:05
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61687.0	2.5				ug/L	53498	Standard
	Be	9	15.0	33.3	**0.0019**	0.007	362.7	ug/L	12	Standard
	Al	27	281904.5	4.0	**3.5195**	0.095	2.7	ug/L	487	Standard
	Sc	45	23945.6	1.7				ug/L	24506	Standard
	Ti	47	29.0	21.5	**0.0301**	0.034	114.6	ug/L	21	Standard
	V	51	1895.1	3.1	**0.1518**	0.017	11.3	ug/L	1268	Standard
	Cr	52	8867.3	3.7	**0.2365**	0.079	33.3	ug/L	7921	Standard
	Cr	53	1335.1	4.8	**1.4033**	0.126	9.0	ug/L	442	Standard
	Mn	55	2976.3	15.5	**0.7257**	0.146	20.1	ug/L	545	Standard
	Co	59	274.7	6.8	**0.0232**	0.006	26.3	ug/L	183	Standard
	Ni	60	385.3	5.5	**0.2004**	0.014	6.8	ug/L	131	Standard
	Cu	65	310.7	2.4	**0.0664**	0.009	13.2	ug/L	231	Standard
	Zn	66	1270.7	2.4	**1.2708**	0.061	4.8	ug/L	306	Standard
>	**Ge**	72	323470.1	1.2				ug/L	330478	Standard
	As	75	-0.7	2771.8	**0.0510**	0.027	52.7	ug/L	-23	Standard
	Se	82	31.7	19.2	**0.0979**	0.105	107.6	ug/L	27	Standard
	Se-1	77	114.0	7.8	**0.6839**	0.173	25.3	ug/L	92	Standard
>	**Ga**	71	20.0	86.6				mg/L	37	Standard
	Rb	85	1001.7	3.8				ug/L	25	Standard
	Y	89	318098.9	2.2				ug/L	312467	Standard
>	**Rh**	103	60.0	33.3				ug/L	20	Standard
	Mo	98	446.4	4.8	**0.3001**	0.014	4.7	ug/L	13	Standard
	Ag	107	88.3	30.3	**-0.0044**	0.005	118.3	ug/L	72	Standard
	Cd	111	20.7	70.2	**0.0008**	0.010	1302.7	mg/L	5	Standard
	Cd	114	49.2	34.9	**0.0046**	0.004	96.5	ug/L	7	Standard
>	**In**	115	519162.4	1.0				ug/L	477820	Standard
	Sn	118	401.7	9.5	**0.0036**	0.009	237.5	ug/L	343	Standard
	Sb	123	163.3	8.8	**0.0366**	0.004	10.5	ug/L	56	Standard
	Ba	135	9338.5	1.0	**4.4881**	0.077	1.7	ug/L	36	Standard
	Ce	140	60.0	22.0				ug/L	65	Standard
>	**Tb**	159	965739.1	0.5				ug/L	939481	Standard
	Ho	165	10.0	100.0				ug/L	7	Standard
	Tl	203	39.3	85.2	**0.0019**	0.005	252.3	ug/L	5	Standard
	Tl	205	16.7	69.3	**-0.0031**	0.002	80.5	ug/L	2	Standard
	Pb	206	255.7	7.3	**-0.0021**	0.004	200.3	ug/L	222	Standard
	Pb	207	229.3	8.0	**-0.0004**	0.005	1103.6	ug/L	186	Standard
	Pb	208	845.0	0.7	**0.0006**	0.001	105.7	ug/L	717	Standard
	U	238	180.7	9.1	**0.0321**	0.003	10.7	ug/L	2	Standard
>	**Bi**	209	469890.3	0.7				ug/L	440279	Standard

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Na	23	1.7	**-4956128139298**5842657460728.656			173.2	mg/L	2	Standard
Mg	24	785.0	4.0	**2.1309**	0.114	5.4	mg/L	45	Standard
K	39	13.3	78.1	**0.0824**	0.388	470.5	mg/L	10	Standard
Ca	43	48.3	47.8	**2.7938**	5.562	199.1	mg/L	47	Standard
Fe	54	58.7	25.4	**-0.0135**	0.040	299.1	mg/L	46	Standard
Fe	57	876.7	5.5	**2.7839**	0.338	12.1	mg/L	627	Standard
> **Sc-1**	45	23945.6	1.7				mg/L	24506	Standard
Cl	35	69639.0	0.5				ug/L	47100	Standard
Kr	83	4.3	70.5				ug/L	8	Standard
Br	81	1443.4	1.1				ug/L	427	Standard
P	31	11802.9	3.9				ug/L	10519	Standard
S	34	2341.8	2.4				ug/L	2003	Standard
Sr	88	203.3	17.3				ug/L	132	Standard
C	12	223.3	23.0				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	31.9	48.9				mg/L	13	Standard
Ho-1	165	10.0	100.0				mg/L	7	Standard
Er	166	30.0	33.3				mg/L	7	Standard
I	127	36363.6	0.5				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.308	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.880	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.652
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.725
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508099210
Sample Date/Time: Sunday, August 23, 2015 19:30:16
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62639.3	2.5				ug/L	53498	Standard
	Be	9	15.0	57.7	**0.0019**	0.013	693.9	ug/L	12	Standard
	Al	27	1764004.0	3.6	**21.7432**	0.295	1.4	ug/L	487	Standard
	Sc	45	24317.8	2.2				ug/L	24506	Standard
	Ti	47	51.3	7.9	**0.1518**	0.021	13.9	ug/L	21	Standard
	V	51	1294.6	6.1	**-0.0064**	0.023	358.5	ug/L	1268	Standard
	Cr	52	8537.4	3.1	**0.1571**	0.064	40.6	ug/L	7921	Standard
	Cr	53	2140.2	4.3	**2.6638**	0.135	5.1	ug/L	442	Standard
	Mn	55	17790.4	2.5	**5.1828**	0.145	2.8	ug/L	545	Standard
	Co	59	491.7	3.8	**0.0838**	0.004	4.9	ug/L	183	Standard
	Ni	60	538.3	5.7	**0.3120**	0.026	8.4	ug/L	131	Standard
	Cu	65	351.0	5.0	**0.0955**	0.015	15.5	ug/L	231	Standard
	Zn	66	1861.1	1.0	**2.0529**	0.030	1.5	ug/L	306	Standard
>	**Ge**	72	325989.0	0.8				ug/L	330478	Standard
	As	75	33.3	49.2	**0.0962**	0.022	22.5	ug/L	-23	Standard
	Se	82	51.9	14.8	**0.4211**	0.120	28.5	ug/L	27	Standard
	Se-1	77	144.0	8.7	**1.3511**	0.260	19.3	ug/L	92	Standard
>	**Ga**	71	25.0	52.9				mg/L	37	Standard
	Rb	85	236.7	8.0				ug/L	25	Standard
	Y	89	326654.8	2.2				ug/L	312467	Standard
>	**Rh**	103	38.3	19.9				ug/L	20	Standard
	Mo	98	30.8	12.6	**0.0185**	0.003	14.1	ug/L	13	Standard
	Ag	107	75.3	11.1	**-0.0070**	0.002	23.1	ug/L	72	Standard
	Cd	111	23.3	16.2	**0.0024**	0.002	104.6	mg/L	5	Standard
	Cd	114	46.6	33.7	**0.0038**	0.004	104.9	ug/L	7	Standard
>	**In**	115	522717.0	0.5				ug/L	477820	Standard
	Sn	118	436.7	9.7	**0.0101**	0.008	82.0	ug/L	343	Standard
	Sb	123	91.7	12.6	**0.0187**	0.003	14.7	ug/L	56	Standard
	Ba	135	2675.2	1.1	**1.2580**	0.019	1.5	ug/L	36	Standard
	Ce	140	188.3	4.1				ug/L	65	Standard
>	**Tb**	159	963435.4	2.3				ug/L	939481	Standard
	Ho	165	15.0	66.7				ug/L	7	Standard
	Tl	203	25.3	25.7	**-0.0001**	0.001	893.0	ug/L	5	Standard
	Tl	205	30.0	60.1	**-0.0002**	0.004	2109.5	ug/L	2	Standard
	Pb	206	288.3	2.2	**0.0056**	0.002	28.5	ug/L	222	Standard
	Pb	207	226.7	6.0	**-0.0011**	0.004	322.3	ug/L	186	Standard
	Pb	208	871.3	3.4	**0.0025**	0.002	89.1	ug/L	717	Standard
	U	238	873.4	4.8	**0.1792**	0.009	5.1	ug/L	2	Standard
>	**Bi**	209	470103.2	0.2				ug/L	440279	Standard

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Na	23	3.3	-988084566941711412672116	94.370	173.2	mg/L	2	Standard
Mg	24	4080.6	5.6	11.4701	0.727	6.3	mg/L	45	Standard
K	39	8.3	124.9	-0.1125	0.386	342.7	mg/L	10	Standard
Ca	43	68.3	15.2	7.2167	2.754	38.2	mg/L	47	Standard
Fe	54	70.9	28.4	0.0152	0.052	342.0	mg/L	46	Standard
Fe	57	863.4	7.9	2.5234	0.697	27.6	mg/L	627	Standard
> Sc-1	45	24317.8	2.2				mg/L	24506	Standard
Cl	35	73846.2	1.6				ug/L	47100	Standard
Kr	83	4.7	32.7				ug/L	8	Standard
Br	81	3270.4	2.6				ug/L	427	Standard
P	31	12675.3	2.1				ug/L	10519	Standard
S	34	2296.8	6.6				ug/L	2003	Standard
Sr	88	191.7	11.8				ug/L	132	Standard
C	12	230.0	4.3				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	10.0	100.0				mg/L	10	Standard
Dy	164	29.2	33.4				mg/L	13	Standard
Ho-1	165	15.0	66.7				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	7	Standard
I	127	65359.2	4.7				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.088	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.642	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.396
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.774
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508101913
Sample Date/Time: Sunday, August 23, 2015 19:33:28
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64612.5	1.6				ug/L	53498	Standard
	Be	9	46.7	12.4	**0.0457**	0.009	19.9	ug/L	12	Standard
	Al	27	3246324.0	0.8	**38.8115**	0.448	1.2	ug/L	487	Standard
	Sc	45	24698.5	1.4				ug/L	24506	Standard
	Ti	47	246.0	41.2	**1.2227**	0.560	45.8	ug/L	21	Standard
	V	51	1814.7	4.7	**0.1266**	0.021	16.2	ug/L	1268	Standard
	Cr	52	9327.2	1.4	**0.3113**	0.023	7.4	ug/L	7921	Standard
	Cr	53	1163.4	6.5	**1.1111**	0.126	11.4	ug/L	442	Standard
	Mn	55	433954.0	0.8	**130.4292**	1.526	1.2	ug/L	545	Standard
	Co	59	5348.3	1.0	**1.4523**	0.019	1.3	ug/L	183	Standard
	Ni	60	4327.6	2.1	**3.1214**	0.069	2.2	ug/L	131	Standard
	Cu	65	955.0	6.9	**0.5581**	0.051	9.2	ug/L	231	Standard
	Zn	66	3395.7	0.8	**4.1153**	0.025	0.6	ug/L	306	Standard
>	**Ge**	72	326424.8	0.3				ug/L	330478	Standard
	As	75	88.8	52.8	**0.1700**	0.062	36.7	ug/L	-23	Standard
	Se	82	28.9	29.3	**0.0470**	0.138	293.8	ug/L	27	Standard
	Se-1	77	111.3	3.2	**0.6003**	0.079	13.1	ug/L	92	Standard
>	**Ga**	71	86.7	3.3				mg/L	37	Standard
	Rb	85	10623.7	2.0				ug/L	25	Standard
	Y	89	332874.3	1.8				ug/L	312467	Standard
>	**Rh**	103	70.0	12.4				ug/L	20	Standard
	Mo	98	225.6	9.3	**0.1489**	0.016	10.7	ug/L	13	Standard
	Ag	107	90.0	16.4	**-0.0044**	0.003	61.3	ug/L	72	Standard
	Cd	111	53.1	16.8	**0.0223**	0.006	29.0	mg/L	5	Standard
	Cd	114	126.2	38.9	**0.0240**	0.012	50.6	ug/L	7	Standard
>	**In**	115	525459.4	1.4				ug/L	477820	Standard
	Sn	118	513.3	12.9	**0.0253**	0.015	57.5	ug/L	343	Standard
	Sb	123	189.7	8.5	**0.0425**	0.003	7.9	ug/L	56	Standard
	Ba	135	9826.5	1.4	**4.6670**	0.072	1.6	ug/L	36	Standard
	Ce	140	2711.9	22.9				ug/L	65	Standard
>	**Tb**	159	986270.6	0.6				ug/L	939481	Standard
	Ho	165	171.7	20.7				ug/L	7	Standard
	Tl	203	86.3	3.5	**0.0089**	0.000	3.5	ug/L	5	Standard
	Tl	205	61.7	36.6	**0.0066**	0.005	71.1	ug/L	2	Standard
	Pb	206	522.7	5.9	**0.0610**	0.008	13.3	ug/L	222	Standard
	Pb	207	464.7	8.5	**0.0610**	0.009	15.1	ug/L	186	Standard
	Pb	208	1731.7	2.0	**0.0656**	0.002	3.5	ug/L	717	Standard
	U	238	209.0	9.4	**0.0382**	0.004	10.1	ug/L	2	Standard
>	**Bi**	209	469433.8	1.1				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	1663.4	6.3	**4.5217**	0.332	7.3	mg/L	45	Standard
K	39	23.3	53.9	**0.4430**	0.473	106.7	mg/L	10	Standard
Ca	43	133.3	30.5	**21.7126**	9.541	43.9	mg/L	47	Standard
Fe	54	87.5	45.6	**0.0537**	0.101	187.5	mg/L	46	Standard
Fe	57	973.4	14.3	**3.4580**	1.302	37.6	mg/L	627	Standard
> **Sc-1**	45	24698.5	1.4				mg/L	24506	Standard
Cl	35	88123.6	2.2				ug/L	47100	Standard
Kr	83	5.0	52.9				ug/L	8	Standard
Br	81	1116.7	3.6				ug/L	427	Standard
P	31	13329.2	4.4				ug/L	10519	Standard
S	34	2311.8	3.7				ug/L	2003	Standard
Sr	88	223.3	13.7				ug/L	132	Standard
C	12	323.3	18.6				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	257.7	14.9				mg/L	13	Standard
Ho-1	165	171.7	20.7				mg/L	7	Standard
Er	166	186.7	15.5				mg/L	7	Standard
I	127	16433.9	2.2				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		120.776	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.774	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	109.970
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	106.622
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508102601
Sample Date/Time: Sunday, August 23, 2015 19:36:39
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	623570.1	4.8				ug/L	53498	Standard
	Be	9	18.3	31.5	**-0.0174**	0.001	4.0	ug/L	12	Standard
	Al	27	2806795.8	1.1	**3.4727**	0.188	5.4	ug/L	487	Standard
	Sc	45	23453.2	6.8				ug/L	24506	Standard
	Ti	47	580.7	6.5	**3.1864**	0.332	10.4	ug/L	21	Standard
	V	51	1711.0	8.4	**0.1155**	0.024	20.4	ug/L	1268	Standard
	Cr	52	90641.3	1.0	**17.1190**	0.572	3.3	ug/L	7921	Standard
	Cr	53	15494.6	1.7	**24.7468**	0.992	4.0	ug/L	442	Standard
	Mn	55	176210.7	2.2	**54.8053**	1.212	2.2	ug/L	545	Standard
	Co	59	47918.3	0.7	**13.9521**	0.529	3.8	ug/L	183	Standard
	Ni	60	87689.7	1.7	**67.3646**	2.823	4.2	ug/L	131	Standard
	Cu	65	150402.0	2.1	**119.3515**	3.517	2.9	ug/L	231	Standard
	Zn	66	21552.7	0.7	**29.6411**	1.211	4.1	ug/L	306	Standard
>	Ge	72	314995.3	3.8				ug/L	330478	Standard
	As	75	740.1	3.6	**1.0700**	0.007	0.6	ug/L	-23	Standard
	Se	82	58.6	13.8	**0.5634**	0.133	23.6	ug/L	27	Standard
	Se-1	77	299.7	4.7	**5.1590**	0.099	1.9	ug/L	92	Standard
>	Ga	71	465.0	6.7				mg/L	37	Standard
	Rb	85	18946.8	1.1				ug/L	25	Standard
	Y	89	328671.1	2.2				ug/L	312467	Standard
>	Rh	103	41.7	73.3				ug/L	20	Standard
	Mo	98	2717.6	1.3	**1.9144**	0.046	2.4	ug/L	13	Standard
	Ag	107	1396.4	3.9	**0.2553**	0.012	4.7	ug/L	72	Standard
	Cd	111	231.8	8.9	**0.1496**	0.011	7.3	mg/L	5	Standard
	Cd	114	615.7	9.4	**0.1567**	0.010	6.4	ug/L	7	Standard
>	In	115	498883.3	3.4				ug/L	477820	Standard
	Sn	118	4387.3	7.8	**0.8570**	0.045	5.2	ug/L	343	Standard
	Sb	123	825.6	2.2	**0.2092**	0.011	5.3	ug/L	56	Standard
	Ba	135	59123.5	1.6	**29.7307**	0.829	2.8	ug/L	36	Standard
	Ce	140	30265.2	1.4				ug/L	65	Standard
>	Tb	159	935336.9	2.7				ug/L	939481	Standard
	Ho	165	523.3	8.0				ug/L	7	Standard
	Tl	203	183.7	6.7	**0.0247**	0.002	7.8	ug/L	5	Standard
	Tl	205	153.3	24.5	**0.0283**	0.008	28.7	ug/L	2	Standard
	Pb	206	7298.8	2.2	**1.7595**	0.048	2.7	ug/L	222	Standard
	Pb	207	5942.5	1.0	**1.5795**	0.043	2.7	ug/L	186	Standard
	Pb	208	22339.1	1.1	**1.6680**	0.014	0.8	ug/L	717	Standard
	U	238	826.7	1.3	**0.1797**	0.004	2.0	ug/L	2	Standard
>	Bi	209	443968.1	1.6				ug/L	440279	Standard

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Na	23	1.7	-532274119386	92192581833	124.047	173.2	mg/L	2	Standard
Mg	24	6783.2	5.4	**19.9514**	2.158	10.8	mg/L	45	Standard
K	39	501.7	20.5	**19.4114**	5.243	27.0	mg/L	10	Standard
Ca	43	111.7	52.3	**18.7740**	15.822	84.3	mg/L	47	Standard
Fe	54	421.9	14.7	**0.9461**	0.088	9.3	mg/L	46	Standard
Fe	57	991.7	9.3	**4.2050**	1.428	34.0	mg/L	627	Standard
> Sc-1	45	23453.2	6.8				mg/L	24506	Standard
Cl	35	63613.3	3.0				ug/L	47100	Standard
Kr	83	4.0	25.0				ug/L	8	Standard
Br	81	1860.1	3.0				ug/L	427	Standard
P	31	13792.9	1.6				ug/L	10519	Standard
S	34	2438.5	5.6				ug/L	2003	Standard
Sr	88	245.0	3.5				ug/L	132	Standard
C	12	376.7	13.6				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	63.3	24.1				mg/L	10	Standard
Dy	164	830.0	10.5				mg/L	13	Standard
Ho-1	165	523.3	8.0				mg/L	7	Standard
Er	166	486.7	28.5				mg/L	7	Standard
I	127	23540.0	3.4				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		1165.603	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.315	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.408
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.838
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: L1508102602
Sample Date/Time: Sunday, August 23, 2015 19:39:51
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67644.0	2.3				ug/L	53498	Standard
	Be	9	11.7	24.7	**-0.0044**	0.004	81.4	ug/L	12	Standard
	Al	27	2818365.9	4.1	**32.1791**	1.052	3.3	ug/L	487	Standard
	Sc	45	25524.8	1.1				ug/L	24506	Standard
	Ti	47	438.7	3.4	**2.2059**	0.082	3.7	ug/L	21	Standard
	V	51	1209.3	7.5	**-0.0386**	0.024	62.9	ug/L	1268	Standard
	Cr	52	46065.9	0.7	**7.3163**	0.122	1.7	ug/L	7921	Standard
	Cr	53	7530.2	2.5	**10.8308**	0.375	3.5	ug/L	442	Standard
	Mn	55	116724.7	2.3	**33.8415**	0.564	1.7	ug/L	545	Standard
	Co	59	1566.1	4.3	**0.3726**	0.021	5.7	ug/L	183	Standard
	Ni	60	5363.3	2.5	**3.7637**	0.068	1.8	ug/L	131	Standard
	Cu	65	43205.9	0.8	**31.8966**	0.342	1.1	ug/L	231	Standard
	Zn	66	7571.9	3.6	**9.4150**	0.294	3.1	ug/L	306	Standard
>	Ge	72	337047.4	0.7				ug/L	330478	Standard
	As	75	344.0	2.0	**0.4943**	0.012	2.5	ug/L	-23	Standard
	Se	82	36.5	1.0	**0.1513**	0.006	4.2	ug/L	27	Standard
	Se-1	77	165.0	8.9	**1.7083**	0.301	17.6	ug/L	92	Standard
>	Ga	71	96.7	24.4				mg/L	37	Standard
	Rb	85	1571.7	7.5				ug/L	25	Standard
	Y	89	329846.9	0.9				ug/L	312467	Standard
>	Rh	103	40.0	43.3				ug/L	20	Standard
	Mo	98	326.6	4.2	**0.2150**	0.011	5.0	ug/L	13	Standard
	Ag	107	32260.0	0.7	**6.0044**	0.102	1.7	ug/L	72	Standard
	Cd	111	2896.8	2.1	**1.9084**	0.018	1.0	mg/L	5	Standard
	Cd	114	7249.8	0.9	**1.8256**	0.038	2.1	ug/L	7	Standard
>	In	115	528845.9	1.2				ug/L	477820	Standard
	Sn	118	1130.0	1.9	**0.1488**	0.007	4.7	ug/L	343	Standard
	Sb	123	213.2	7.8	**0.0480**	0.004	9.0	ug/L	56	Standard
	Ba	135	51867.6	0.4	**24.5880**	0.277	1.1	ug/L	36	Standard
	Ce	140	1440.1	6.3				ug/L	65	Standard
>	Tb	159	983579.7	1.3				ug/L	939481	Standard
	Ho	165	46.7	12.4				ug/L	7	Standard
	Tl	203	77.7	11.0	**0.0075**	0.001	17.8	ug/L	5	Standard
	Tl	205	91.7	32.0	**0.0131**	0.006	49.7	ug/L	2	Standard
	Pb	206	1681.1	0.8	**0.3321**	0.004	1.1	ug/L	222	Standard
	Pb	207	1483.1	0.7	**0.3245**	0.006	1.9	ug/L	186	Standard
	Pb	208	5395.4	1.0	**0.3315**	0.007	2.2	ug/L	717	Standard
	U	238	643.7	11.8	**0.1299**	0.017	13.3	ug/L	2	Standard
>	Bi	209	472196.8	0.9				ug/L	440279	Standard

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Na	23	3.3	**-9132633004257**9096464097324.734			86.6	mg/L	2	Standard
Mg	24	4040.5	1.5	**10.8097**	0.263	2.4	mg/L	45	Standard
K	39	30.0	33.3	**0.6533**	0.358	54.8	mg/L	10	Standard
Ca	43	113.3	9.2	**16.3137**	2.529	15.5	mg/L	47	Standard
Fe	54	154.1	18.5	**0.2084**	0.068	32.5	mg/L	46	Standard
Fe	57	896.7	14.3	**2.4394**	1.291	52.9	mg/L	627	Standard
Sc-1	45	25524.8	1.1				mg/L	24506	Standard
Cl	35	64572.0	1.6				ug/L	47100	Standard
Kr	83	3.7	31.5				ug/L	8	Standard
Br	81	1296.7	6.6				ug/L	427	Standard
P	31	13459.3	1.9				ug/L	10519	Standard
S	34	2301.8	3.9				ug/L	2003	Standard
Sr	88	195.0	4.4				ug/L	132	Standard
C	12	293.3	43.8				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	10.0	100.0				mg/L	10	Standard
Dy	164	51.1	40.5				mg/L	13	Standard
Ho-1	165	46.7	12.4				mg/L	7	Standard
Er	166	46.7	24.7				mg/L	7	Standard
I	127	25765.2	1.5				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		126.443	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.988	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.679
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.249
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: FBLANK R7 WG535816-04
Sample Date/Time: Sunday, August 23, 2015 19:43:02
Number of Replicates: 3
Autosampler Position: 346
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63303.8	4.7				ug/L	53498	Standard
	Be	9	10.0	50.0	**-0.0056**	0.007	131.7	ug/L	12	Standard
	Al	27	4740.8	29.7	**0.0468**	0.017	35.6	ug/L	487	Standard
	Sc	45	24327.8	0.6				ug/L	24506	Standard
	Ti	47	68.7	18.2	**0.2480**	0.075	30.2	ug/L	21	Standard
	V	51	1293.7	3.3	**-0.0068**	0.009	130.1	ug/L	1268	Standard
	Cr	52	8057.5	0.8	**0.0616**	0.041	66.1	ug/L	7921	Standard
	Cr	53	918.4	1.9	**0.7248**	0.058	8.0	ug/L	442	Standard
	Mn	55	1148.4	14.6	**0.1675**	0.054	32.4	ug/L	545	Standard
	Co	59	233.3	6.8	**0.0110**	0.006	52.9	ug/L	183	Standard
	Ni	60	155.3	3.5	**0.0275**	0.006	23.0	ug/L	131	Standard
	Cu	65	234.0	2.3	**0.0056**	0.004	75.5	ug/L	231	Standard
	Zn	66	1571.7	1.7	**1.6626**	0.021	1.3	ug/L	306	Standard
>	**Ge**	72	326048.5	2.1				ug/L	330478	Standard
	As	75	65.2	77.0	**0.1393**	0.067	48.4	ug/L	-23	Standard
	Se	82	56.7	15.1	**0.4988**	0.143	28.6	ug/L	27	Standard
	Se-1	77	105.0	5.8	**0.4574**	0.107	23.3	ug/L	92	Standard
>	**Ga**	71	30.0	60.1				mg/L	37	Standard
	Rb	85	63.3	31.9				ug/L	25	Standard
	Y	89	327700.8	2.7				ug/L	312467	Standard
>	**Rh**	103	26.7	28.6				ug/L	20	Standard
	Mo	98	18.3	54.5	**0.0100**	0.007	65.5	ug/L	13	Standard
	Ag	107	80.0	11.9	**-0.0061**	0.002	32.7	ug/L	72	Standard
	Cd	111	20.9	45.4	**0.0008**	0.006	750.9	mg/L	5	Standard
	Cd	114	47.7	79.7	**0.0041**	0.010	238.0	ug/L	7	Standard
>	**In**	115	520490.8	1.3				ug/L	477820	Standard
	Sn	118	460.0	17.9	**0.0154**	0.017	112.3	ug/L	343	Standard
	Sb	123	95.8	23.8	**0.0198**	0.006	29.2	ug/L	56	Standard
	Ba	135	255.7	11.3	**0.0968**	0.013	13.4	ug/L	36	Standard
	Ce	140	193.3	4.0				ug/L	65	Standard
>	**Tb**	159	970591.1	1.6				ug/L	939481	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	30.3	38.5	**0.0007**	0.002	272.6	ug/L	5	Standard
	Tl	205	11.7	49.5	**-0.0041**	0.001	29.6	ug/L	2	Standard
	Pb	206	297.7	2.3	**0.0079**	0.002	19.2	ug/L	222	Standard
	Pb	207	241.3	10.0	**0.0029**	0.007	226.5	ug/L	186	Standard
	Pb	208	912.0	5.4	**0.0057**	0.005	88.9	ug/L	717	Standard
	U	238	6.3	32.9	**-0.0049**	0.000	9.6	ug/L	2	Standard
>	**Bi**	209	468973.3	2.8				ug/L	440279	Standard

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Na	23	1.7	-4830208822048	3661670909488.187		173.2	mg/L	2	Standard
Mg	24	53.3	5.4	**0.0149**	0.008	52.7	mg/L	45	Standard
K	39	13.3	21.7	**0.0781**	0.108	137.9	mg/L	10	Standard
Ca	43	25.0	40.0	**-2.7919**	2.308	82.7	mg/L	47	Standard
Fe	54	90.9	24.5	**0.0657**	0.055	84.5	mg/L	46	Standard
Fe	57	815.0	7.2	**2.0383**	0.599	29.4	mg/L	627	Standard
> Sc-1	45	24327.8	0.6				mg/L	24506	Standard
Cl	35	65341.3	0.7				ug/L	47100	Standard
Kr	83	7.3	20.8				ug/L	8	Standard
Br	81	3423.7	2.1				ug/L	427	Standard
P	31	12326.7	3.7				ug/L	10519	Standard
S	34	2436.9	6.0				ug/L	2003	Standard
Sr	88	221.7	13.0				ug/L	132	Standard
C	12	203.3	33.5				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	6.0	100.4				mg/L	13	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	7	Standard
I	127	8574.1	0.7				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.330	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.660	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.930
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.517
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: FBLANK R7 WG535816-04
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Method 6020 - Summary Report

Sample ID: FBLANK R7 WG535761-01
Sample Date/Time: Sunday, August 23, 2015 19:46:14
Number of Replicates: 3
Autosampler Position: 347
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63690.3	2.0				ug/L	53498	Standard
	Be	9	15.0	66.7	**0.0012**	0.014	1168.4	ug/L	12	Standard
	Al	27	5967.8	4.8	**0.0614**	0.002	3.6	ug/L	487	Standard
	Sc	45	24434.7	2.9				ug/L	24506	Standard
	Ti	47	56.3	5.1	**0.1758**	0.016	9.2	ug/L	21	Standard
	V	51	1323.1	3.8	**-0.0032**	0.013	390.1	ug/L	1268	Standard
	Cr	52	8575.1	1.9	**0.1443**	0.035	24.0	ug/L	7921	Standard
	Cr	53	803.4	0.4	**0.5267**	0.002	0.4	ug/L	442	Standard
	Mn	55	1290.7	3.8	**0.2055**	0.014	6.7	ug/L	545	Standard
	Co	59	237.0	7.2	**0.0112**	0.005	42.4	ug/L	183	Standard
	Ni	60	198.0	3.5	**0.0574**	0.005	9.5	ug/L	131	Standard
	Cu	65	631.7	3.1	**0.3052**	0.016	5.2	ug/L	231	Standard
	Zn	66	1983.5	1.2	**2.1865**	0.032	1.5	ug/L	306	Standard
>	**Ge**	72	329852.8	0.2				ug/L	330478	Standard
	As	75	-21.1	149.5	**0.0243**	0.041	170.5	ug/L	-23	Standard
	Se	82	20.6	34.0	**-0.0915**	0.112	122.7	ug/L	27	Standard
	Se-1	77	96.0	16.3	**0.2268**	0.356	157.0	ug/L	92	Standard
>	**Ga**	71	30.0	16.7				mg/L	37	Standard
	Rb	85	55.0	32.8				ug/L	25	Standard
	Y	89	321518.7	2.6				ug/L	312467	Standard
>	**Rh**	103	20.0	90.1				ug/L	20	Standard
	Mo	98	16.8	23.5	**0.0092**	0.003	27.9	ug/L	13	Standard
	Ag	107	77.7	0.7	**-0.0063**	0.000	1.6	ug/L	72	Standard
	Cd	111	26.0	7.7	**0.0045**	0.001	32.0	mg/L	5	Standard
	Cd	114	68.9	26.7	**0.0099**	0.005	49.9	ug/L	7	Standard
>	**In**	115	512692.3	1.0				ug/L	477820	Standard
	Sn	118	598.3	5.4	**0.0454**	0.005	11.9	ug/L	343	Standard
	Sb	123	74.0	2.6	**0.0147**	0.001	4.5	ug/L	56	Standard
	Ba	135	316.0	12.1	**0.1283**	0.019	14.8	ug/L	36	Standard
	Ce	140	250.0	12.2				ug/L	65	Standard
>	**Tb**	159	969844.5	2.4				ug/L	939481	Standard
	Ho	165	13.3	94.4				ug/L	7	Standard
	Tl	203	32.0	13.6	**0.0009**	0.001	62.8	ug/L	5	Standard
	Tl	205	36.7	41.7	**0.0014**	0.003	249.9	ug/L	2	Standard
	Pb	206	625.0	4.0	**0.0864**	0.005	5.5	ug/L	222	Standard
	Pb	207	519.0	5.7	**0.0765**	0.010	12.5	ug/L	186	Standard
	Pb	208	1958.4	2.3	**0.0834**	0.004	5.2	ug/L	717	Standard
	U	238	25.0	24.3	**-0.0009**	0.001	142.1	ug/L	2	Standard
>	**Bi**	209	465363.5	1.5				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	31.7	9.1	**-0.0470**	0.009	19.5	mg/L	45	Standard
K	39	5.0	100.0	**-0.2404**	0.182	75.7	mg/L	10	Standard
Ca	43	35.0	37.8	**-0.4749**	3.244	683.1	mg/L	47	Standard
Fe	54	74.0	23.4	**0.0214**	0.041	190.4	mg/L	46	Standard
Fe	57	858.4	2.2	**2.4314**	0.104	4.3	mg/L	627	Standard
> **Sc-1**	45	24434.7	2.9				mg/L	24506	Standard
Cl	35	64403.3	2.0				ug/L	47100	Standard
Kr	83	5.0	52.9				ug/L	8	Standard
Br	81	563.3	6.7				ug/L	427	Standard
P	31	12366.7	1.6				ug/L	10519	Standard
S	34	2306.8	8.5				ug/L	2003	Standard
Sr	88	185.0	0.0				ug/L	132	Standard
C	12	240.0	32.5				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	18.7	89.6				mg/L	13	Standard
Ho-1	165	13.3	94.4				mg/L	7	Standard
Er	166	26.7	43.3				mg/L	7	Standard
I	127	7016.6	0.3				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.053	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.811	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.298
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.697
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: FBLANK R7 WG535761-01
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Sunday, August 23, 2015 19:49:27
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60842.2	5.5				ug/L	53498	Standard
	Be	9	34138.4	1.7	**51.0591**	1.872	3.7	ug/L	12	Standard
	Al	27	3771130.2	2.4	**47.9542**	2.353	4.9	ug/L	487	Standard
	Sc	45	24347.9	2.1				ug/L	24506	Standard
	Ti	47	19487.9	1.0	**105.6429**	2.110	2.0	ug/L	21	Standard
	V	51	209719.4	0.8	**52.8327**	0.994	1.9	ug/L	1268	Standard
	Cr	52	274612.6	0.2	**52.2551**	0.965	1.8	ug/L	7921	Standard
	Cr	53	33707.5	0.5	**52.0082**	1.002	1.9	ug/L	442	Standard
	Mn	55	187607.0	0.6	**55.5417**	0.906	1.6	ug/L	545	Standard
	Co	59	192902.9	0.8	**53.5892**	0.538	1.0	ug/L	183	Standard
	Ni	60	71574.0	1.5	**52.2862**	0.634	1.2	ug/L	131	Standard
	Cu	65	68961.6	0.7	**51.9815**	0.663	1.3	ug/L	231	Standard
	Zn	66	38781.9	1.5	**51.0590**	0.334	0.7	ug/L	306	Standard
>	Ge	72	330832.6	1.7				ug/L	330478	Standard
	As	75	38961.4	1.5	**51.0754**	0.144	0.3	ug/L	-23	Standard
	Se	82	3339.8	1.3	**53.0501**	0.273	0.5	ug/L	27	Standard
	Se-1	77	2385.2	1.1	**51.9258**	0.340	0.7	ug/L	92	Standard
>	Ga	71	35.0	24.7				mg/L	37	Standard
	Rb	85	578.3	10.6				ug/L	25	Standard
	Y	89	322751.4	0.6				ug/L	312467	Standard
>	Rh	103	28.3	10.2				ug/L	20	Standard
	Mo	98	147368.2	1.0	**101.2077**	1.506	1.5	ug/L	13	Standard
	Ag	107	268498.1	0.3	**51.7667**	0.325	0.6	ug/L	72	Standard
	Cd	111	78210.2	0.6	**53.5735**	0.525	1.0	mg/L	5	Standard
	Cd	114	206110.2	2.1	**53.8234**	1.199	2.2	ug/L	7	Standard
>	In	115	512086.1	0.9				ug/L	477820	Standard
	Sn	118	236816.6	1.4	**49.1846**	1.139	2.3	ug/L	343	Standard
	Sb	123	205503.9	1.1	**51.6037**	1.021	2.0	ug/L	56	Standard
	Ba	135	101342.8	0.9	**49.6381**	0.397	0.8	ug/L	36	Standard
	Ce	140	101.7	33.5				ug/L	65	Standard
>	Tb	159	980487.2	1.0				ug/L	939481	Standard
	Ho	165	8.3	124.9				ug/L	7	Standard
	Tl	203	346581.5	0.6	**50.9218**	0.227	0.4	ug/L	5	Standard
	Tl	205	238486.4	2.6	**51.4992**	1.352	2.6	ug/L	2	Standard
	Pb	206	216681.5	0.9	**51.0847**	0.541	1.1	ug/L	222	Standard
	Pb	207	197102.1	0.3	**51.3639**	0.115	0.2	ug/L	186	Standard
	Pb	208	697759.5	0.5	**51.0198**	0.165	0.3	ug/L	717	Standard
	U	238	239696.1	0.5	**50.9771**	0.295	0.6	ug/L	2	Standard
>	Bi	209	469403.6	0.2				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	2045.1	6.2	**5.6740**	0.418	7.4	mg/L	45	Standard
K	39	158.3	15.6	**5.5601**	1.044	18.8	mg/L	10	Standard
Ca	43	45.0	22.2	**1.7931**	2.280	127.1	mg/L	47	Standard
Fe	54	2227.3	4.0	**5.5116**	0.276	5.0	mg/L	46	Standard
Fe	57	1433.4	7.7	**8.1644**	1.192	14.6	mg/L	627	Standard
Sc-1	45	24347.9	2.1				mg/L	24506	Standard
Cl	35	59914.3	2.5				ug/L	47100	Standard
Kr	83	6.0	16.7				ug/L	8	Standard
Br	81	633.3	19.0				ug/L	427	Standard
P	31	12918.8	2.6				ug/L	10519	Standard
S	34	2651.9	6.1				ug/L	2003	Standard
Sr	88	196.7	15.5				ug/L	132	Standard
C	12	226.7	58.3				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	19.0	91.0				mg/L	13	Standard
Ho-1	165	8.3	124.9				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	5917.8	7.2				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.118		
Al	27	95.908		
Sc	45			
Ti	47	105.643		
V	51	105.665		
Cr	52	104.510		
Cr	53			
Mn	55	111.083		
Co	59	107.178		
Ni	60	104.572		
Cu	65	103.963		
Zn	66	102.118		
Ge	72		100.107	
As	75	102.151		
Se	82	106.100		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.208		
Ag	107	103.533		
Cd	111	107.147		
Cd	114			
In	115		107.171	
Sn	118	98.369		
Sb	123	103.207		
Ba	135	99.276		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.844		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.040		
U	238	101.954		
Bi	209		106.615	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Mn	55	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Sunday, August 23, 2015 19:52:39
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61482.8	0.2				ug/L	53498	Standard
	Be	9	13.3	78.1	**-0.0004**	0.015	3877.2	ug/L	12	Standard
	Al	27	1288.4	33.5	**0.0052**	0.005	103.1	ug/L	487	Standard
	Sc	45	24002.3	2.4				ug/L	24506	Standard
	Ti	47	26.7	19.2	**0.0169**	0.029	168.4	ug/L	21	Standard
	V	51	998.7	6.8	**-0.0811**	0.017	21.5	ug/L	1268	Standard
	Cr	52	6477.4	2.3	**-0.2447**	0.031	12.6	ug/L	7921	Standard
	Cr	53	660.0	14.9	**0.3207**	0.158	49.3	ug/L	442	Standard
	Mn	55	654.7	9.3	**0.0197**	0.019	95.4	ug/L	545	Standard
	Co	59	224.3	10.8	**0.0088**	0.007	79.4	ug/L	183	Standard
	Ni	60	125.7	16.8	**0.0060**	0.016	263.3	ug/L	131	Standard
	Cu	65	244.3	14.9	**0.0147**	0.028	189.4	ug/L	231	Standard
	Zn	66	309.7	6.0	**-0.0359**	0.026	72.1	ug/L	306	Standard
>	**Ge**	72	323981.5	0.1				ug/L	330478	Standard
	As	75	-19.5	67.4	**0.0259**	0.018	68.0	ug/L	-23	Standard
	Se	82	21.4	26.1	**-0.0725**	0.091	126.2	ug/L	27	Standard
	Se-1	77	96.7	11.4	**0.2814**	0.257	91.2	ug/L	92	Standard
>	**Ga**	71	10.0	50.0				mg/L	37	Standard
	Rb	85	28.3	44.4				ug/L	25	Standard
	Y	89	325896.2	1.1				ug/L	312467	Standard
>	**Rh**	103	20.0	25.0				ug/L	20	Standard
	Mo	98	75.3	49.6	**0.0491**	0.026	52.1	ug/L	13	Standard
	Ag	107	115.3	54.2	**0.0008**	0.012	1453.8	ug/L	72	Standard
	Cd	111	13.8	93.3	**-0.0038**	0.009	231.1	mg/L	5	Standard
	Cd	114	30.3	88.8	**-0.0002**	0.007	3097.0	ug/L	7	Standard
>	**In**	115	515590.4	0.3				ug/L	477820	Standard
	Sn	118	546.7	6.9	**0.0341**	0.008	23.5	ug/L	343	Standard
	Sb	123	786.4	10.3	**0.1923**	0.021	10.7	ug/L	56	Standard
	Ba	135	47.3	41.5	**-0.0033**	0.010	290.4	ug/L	36	Standard
	Ce	140	26.7	28.6				ug/L	65	Standard
>	**Tb**	159	963008.8	1.2				ug/L	939481	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	56.0	115.1	**0.0044**	0.009	214.1	ug/L	5	Standard
	Tl	205	16.7	124.9	**-0.0030**	0.005	148.2	ug/L	2	Standard
	Pb	206	259.0	17.3	**-0.0009**	0.010	1160.5	ug/L	222	Standard
	Pb	207	231.0	16.7	**0.0005**	0.010	2154.7	ug/L	186	Standard
	Pb	208	776.3	8.6	**-0.0040**	0.005	119.5	ug/L	717	Standard
	U	238	25.3	96.2	**-0.0009**	0.005	604.2	ug/L	2	Standard
>	**Bi**	209	466347.3	0.6				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	73.3	33.6	**0.0736**	0.067	91.3	mg/L	45	Standard
K	39	3.3	173.2	**-0.2942**	0.226	77.0	mg/L	10	Standard
Ca	43	28.3	62.0	**-1.8993**	4.127	217.3	mg/L	47	Standard
Fe	54	57.9	17.6	**-0.0162**	0.027	167.4	mg/L	46	Standard
Fe	57	815.0	3.1	**2.1463**	0.053	2.5	mg/L	627	Standard
> **Sc-1**	45	24002.3	2.4				mg/L	24506	Standard
Cl	35	59616.4	0.8				ug/L	47100	Standard
Kr	83	4.0	43.3				ug/L	8	Standard
Br	81	546.7	21.2				ug/L	427	Standard
P	31	12510.2	1.9				ug/L	10519	Standard
S	34	2445.2	3.0				ug/L	2003	Standard
Sr	88	141.7	16.7				ug/L	132	Standard
C	12	166.7	39.0				mg/L	177	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	12.5	48.4				mg/L	13	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	7	Standard
I	127	6501.4	2.2				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.034	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.905
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.921
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Sunday, August 23, 2015 19:55:52
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60013.6	1.0				ug/L	53498	Standard
	Be	9	130.0	27.7	**0.1771**	0.056	31.4	ug/L	12	Standard
	Al	27	1056.7	23.1	**0.0027**	0.003	118.7	ug/L	487	Standard
	Sc	45	23600.0	2.3				ug/L	24506	Standard
	Ti	47	32.7	21.7	**0.0503**	0.040	78.5	ug/L	21	Standard
	V	51	2529.4	1.0	**0.3155**	0.007	2.4	ug/L	1268	Standard
	Cr	52	11042.7	2.9	**0.6695**	0.062	9.3	ug/L	7921	Standard
	Cr	53	1150.0	1.6	**1.1045**	0.035	3.2	ug/L	442	Standard
	Mn	55	2476.5	1.0	**0.5725**	0.010	1.7	ug/L	545	Standard
	Co	59	1712.8	3.8	**0.4317**	0.020	4.7	ug/L	183	Standard
	Ni	60	2295.5	1.2	**1.6282**	0.018	1.1	ug/L	131	Standard
	Cu	65	1313.7	5.0	**0.8412**	0.054	6.4	ug/L	231	Standard
	Zn	66	4739.1	0.3	**5.9755**	0.024	0.4	ug/L	306	Standard
>	Ge	72	323805.8	0.4				ug/L	330478	Standard
	As	75	260.5	11.5	**0.4006**	0.041	10.3	ug/L	-23	Standard
	Se	82	37.8	11.3	**0.1957**	0.072	36.8	ug/L	27	Standard
	Se-1	77	111.3	6.4	**0.6214**	0.173	27.9	ug/L	92	Standard
>	Ga	71	16.7	17.3				mg/L	37	Standard
	Rb	85	21.7	74.2				ug/L	25	Standard
	Y	89	319369.7	1.6				ug/L	312467	Standard
>	Rh	103	16.7	62.4				ug/L	20	Standard
	Mo	98	31.0	48.8	**0.0190**	0.010	53.2	ug/L	13	Standard
	Ag	107	2138.2	3.2	**0.3918**	0.008	2.0	ug/L	72	Standard
	Cd	111	361.3	6.3	**0.2347**	0.015	6.2	mg/L	5	Standard
	Cd	114	967.5	13.7	**0.2449**	0.032	13.1	ug/L	7	Standard
>	In	115	511127.9	1.3				ug/L	477820	Standard
	Sn	118	590.0	9.4	**0.0440**	0.010	23.0	ug/L	343	Standard
	Sb	123	1786.9	3.5	**0.4456**	0.011	2.5	ug/L	56	Standard
	Ba	135	1473.4	5.3	**0.6970**	0.037	5.3	ug/L	36	Standard
	Ce	140	20.0	50.0				ug/L	65	Standard
>	Tb	159	962826.0	0.7				ug/L	939481	Standard
	Ho	165	6.7	86.6				ug/L	7	Standard
	Tl	203	578.7	20.1	**0.0824**	0.017	21.1	ug/L	5	Standard
	Tl	205	388.3	11.5	**0.0784**	0.009	12.0	ug/L	2	Standard
	Pb	206	1162.0	3.2	**0.2158**	0.010	4.8	ug/L	222	Standard
	Pb	207	938.7	2.4	**0.1882**	0.005	2.6	ug/L	186	Standard
	Pb	208	3496.8	4.2	**0.1984**	0.011	5.4	ug/L	717	Standard
	U	238	1905.5	2.5	**0.4047**	0.009	2.1	ug/L	2	Standard
>	Bi	209	462852.4	0.5				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	40.0	25.0	**-0.0198**	0.027	138.2	mg/L	45	Standard
K	39	6.7	114.6	**-0.1657**	0.293	177.0	mg/L	10	Standard
Ca	43	43.3	13.3	**1.7262**	1.286	74.5	mg/L	47	Standard
Fe	54	62.5	25.3	**-0.0012**	0.044	3692.0	mg/L	46	Standard
Fe	57	825.0	1.2	**2.3933**	0.288	12.0	mg/L	627	Standard
Sc-1	45	23600.0	2.3				mg/L	24506	Standard
Cl	35	59011.4	1.4				ug/L	47100	Standard
Kr	83	2.7	57.3				ug/L	8	Standard
Br	81	636.7	21.1				ug/L	427	Standard
P	31	11674.5	3.2				ug/L	10519	Standard
S	34	2393.5	0.5				ug/L	2003	Standard
Sr	88	215.0	21.3				ug/L	132	Standard
C	12	236.7	21.3				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	6.3	86.9				mg/L	13	Standard
Ho-1	165	6.7	86.6				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	7	Standard
I	127	5124.2	5.9				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	88.529		
Al	27			
Sc	45			
Ti	47			
V	51	78.875		
Cr	52	83.689		
Cr	53			
Mn	55	114.505		
Co	59	107.923		
Ni	60	101.761		
Cu	65	105.148		
Zn	66	95.607		
Ge	72		97.981	
As	75	100.154		
Se	82	48.923		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	97.953		
Cd	111	97.794		
Cd	114			
> In	115			106.971
Sn	118			
Sb	123	111.396		
Ba	135	92.935		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	103.019		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.204		
U	238	101.184		
> Bi	209			105.127
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 8	Se	82	

Sample ID: QC Std 8
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Method 6020 - Summary Report

Sample ID: PBS M6 WG535777-02
Sample Date/Time: Sunday, August 23, 2015 19:59:04
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60776.7	2.0				ug/L	53498	Standard
	Be	9	13.3	21.7	**-0.0001**	0.005	5311.8	ug/L	12	Standard
	Al	27	3528.7	6.7	**0.0340**	0.004	11.3	ug/L	487	Standard
	Sc	45	24119.2	1.5				ug/L	24506	Standard
	Ti	47	32.3	17.0	**0.0490**	0.031	63.4	ug/L	21	Standard
	V	51	1077.9	2.3	**-0.0596**	0.006	9.6	ug/L	1268	Standard
	Cr	52	7170.0	1.6	**-0.1008**	0.032	32.3	ug/L	7921	Standard
	Cr	53	673.3	10.9	**0.3465**	0.126	36.3	ug/L	442	Standard
	Mn	55	1190.7	1.1	**0.1835**	0.004	2.1	ug/L	545	Standard
	Co	59	222.3	2.9	**0.0084**	0.002	26.7	ug/L	183	Standard
	Ni	60	624.0	1.7	**0.3801**	0.010	2.5	ug/L	131	Standard
	Cu	65	270.0	7.6	**0.0354**	0.017	48.9	ug/L	231	Standard
	Zn	66	1630.1	2.2	**1.7633**	0.054	3.1	ug/L	306	Standard
>	**Ge**	72	322793.0	0.8				ug/L	330478	Standard
	As	75	-44.4	44.5	**-0.0074**	0.026	350.8	ug/L	-23	Standard
	Se	82	18.8	51.1	**-0.1135**	0.159	140.3	ug/L	27	Standard
	Se-1	77	95.7	7.1	**0.2664**	0.156	58.7	ug/L	92	Standard
>	**Ga**	71	28.3	62.0				mg/L	37	Standard
	Rb	85	50.0	10.0				ug/L	25	Standard
	Y	89	331136.2	2.8				ug/L	312467	Standard
>	**Rh**	103	20.0	66.1				ug/L	20	Standard
	Mo	98	31.7	32.0	**0.0199**	0.007	35.5	ug/L	13	Standard
	Ag	107	88.3	11.6	**-0.0039**	0.002	50.6	ug/L	72	Standard
	Cd	111	29.6	31.3	**0.0074**	0.006	87.4	mg/L	5	Standard
	Cd	114	51.2	46.6	**0.0055**	0.006	116.5	ug/L	7	Standard
>	**In**	115	503332.1	0.6				ug/L	477820	Standard
	Sn	118	451.7	3.6	**0.0167**	0.003	20.4	ug/L	343	Standard
	Sb	123	208.8	3.4	**0.0495**	0.002	3.3	ug/L	56	Standard
	Ba	135	235.7	4.6	**0.0911**	0.005	5.9	ug/L	36	Standard
	Ce	140	228.3	15.5				ug/L	65	Standard
>	**Tb**	159	950914.0	1.1				ug/L	939481	Standard
	Ho	165	15.0	0.0				ug/L	7	Standard
	Tl	203	27.7	65.1	**0.0003**	0.003	807.7	ug/L	5	Standard
	Tl	205	13.3	43.3	**-0.0037**	0.001	35.1	ug/L	2	Standard
	Pb	206	404.3	6.3	**0.0350**	0.007	19.7	ug/L	222	Standard
	Pb	207	333.7	3.6	**0.0286**	0.004	14.8	ug/L	186	Standard
	Pb	208	1268.0	5.3	**0.0334**	0.005	14.5	ug/L	717	Standard
	U	238	10.7	53.3	**-0.0039**	0.001	31.6	ug/L	2	Standard
>	**Bi**	209	460384.1	1.2				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	63.3	12.1	**0.0447**	0.019	43.3	mg/L	45	Standard
K	39	5.0	173.2	**-0.2319**	0.334	144.2	mg/L	10	Standard
Ca	43	33.3	8.7	**-0.8140**	0.586	71.9	mg/L	47	Standard
Fe	54	61.1	29.1	**-0.0086**	0.047	549.6	mg/L	46	Standard
Fe	57	830.0	5.8	**2.2544**	0.379	16.8	mg/L	627	Standard
> **Sc-1**	45	24119.2	1.5				mg/L	24506	Standard
Cl	35	59659.9	1.1				ug/L	47100	Standard
Kr	83	4.0	25.0				ug/L	8	Standard
Br	81	640.0	6.8				ug/L	427	Standard
P	31	12011.4	4.1				ug/L	10519	Standard
S	34	2405.2	1.6				ug/L	2003	Standard
Sr	88	218.3	15.2				ug/L	132	Standard
C	12	200.0	20.0				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	5.5	124.0				mg/L	13	Standard
Ho-1	165	15.0	0.0				mg/L	7	Standard
Er	166	23.3	99.0				mg/L	7	Standard
I	127	6371.3	1.0				mg/L	2225	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		113.606	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.675	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.339
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.566
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBS M6 WG535777-02
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Method 6020 - Summary Report

Sample ID: LCSS M6 WG535777-03
Sample Date/Time: Sunday, August 23, 2015 20:02:15
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62502.0	1.4				ug/L	53498	Standard
	Be	9	16495.6	1.9	**23.9742**	0.356	1.5	ug/L	12	Standard
	Al	27	2962.0	5.1	**0.0257**	0.002	7.3	ug/L	487	Standard
	Sc	45	24534.9	1.7				ug/L	24506	Standard
	Ti	47	36.7	4.2	**0.0694**	0.009	13.1	ug/L	21	Standard
	V	51	104281.4	0.5	**26.2556**	0.188	0.7	ug/L	1268	Standard
	Cr	52	139608.6	0.8	**25.9691**	0.224	0.9	ug/L	7921	Standard
	Cr	53	17121.3	4.1	**26.2159**	1.197	4.6	ug/L	442	Standard
	Mn	55	93060.6	0.6	**27.6238**	0.131	0.5	ug/L	545	Standard
	Co	59	93998.7	0.6	**26.2427**	0.397	1.5	ug/L	183	Standard
	Ni	60	34861.4	0.7	**25.5767**	0.392	1.5	ug/L	131	Standard
	Cu	65	34088.6	0.5	**25.7606**	0.179	0.7	ug/L	231	Standard
	Zn	66	20134.0	2.0	**26.4484**	0.394	1.5	ug/L	306	Standard
>	**Ge**	72	328845.2	1.0				ug/L	330478	Standard
	As	75	18728.9	1.0	**24.7277**	0.279	1.1	ug/L	-23	Standard
	Se	82	1586.8	3.1	**25.1323**	0.521	2.1	ug/L	27	Standard
	Se-1	77	1178.7	1.7	**24.8395**	0.744	3.0	ug/L	92	Standard
>	**Ga**	71	30.0	33.3				mg/L	37	Standard
	Rb	85	30.0	28.9				ug/L	25	Standard
	Y	89	327798.0	0.3				ug/L	312467	Standard
>	**Rh**	103	21.7	13.3				ug/L	20	Standard
	Mo	98	41.6	16.4	**0.0260**	0.004	16.0	ug/L	13	Standard
	Ag	107	130740.4	1.2	**25.0252**	0.469	1.9	ug/L	72	Standard
	Cd	111	38400.8	0.4	**26.1200**	0.469	1.8	mg/L	5	Standard
	Cd	114	100602.9	3.2	**26.0811**	0.471	1.8	ug/L	7	Standard
>	**In**	115	515644.1	1.7				ug/L	477820	Standard
	Sn	118	446.7	5.3	**0.0134**	0.003	25.1	ug/L	343	Standard
	Sb	123	104718.0	1.1	**26.1118**	0.307	1.2	ug/L	56	Standard
	Ba	135	49174.3	0.8	**23.9120**	0.592	2.5	ug/L	36	Standard
	Ce	140	200.0	9.0				ug/L	65	Standard
>	**Tb**	159	964715.8	2.2				ug/L	939481	Standard
	Ho	165	13.3	43.3				ug/L	7	Standard
	Tl	203	169314.1	0.4	**24.6542**	0.269	1.1	ug/L	5	Standard
	Tl	205	119247.4	0.8	**25.5196**	0.411	1.6	ug/L	2	Standard
	Pb	206	108799.9	0.3	**25.3910**	0.146	0.6	ug/L	222	Standard
	Pb	207	94615.2	0.5	**24.4053**	0.111	0.5	ug/L	186	Standard
	Pb	208	345349.8	0.3	**24.9963**	0.162	0.6	ug/L	717	Standard
	U	238	117174.3	0.5	**24.6948**	0.132	0.5	ug/L	2	Standard
>	**Bi**	209	473630.9	0.9				ug/L	440279	Standard

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Na	23	1.7	**-486842284023**	84323557120160.594		173.2	mg/L	2	Standard
Mg	24	58.3	27.6	**0.0280**	0.047	167.3	mg/L	45	Standard
K	39	8.3	34.6	**-0.1122**	0.111	98.7	mg/L	10	Standard
Ca	43	35.0	24.7	**-0.5729**	1.882	328.4	mg/L	47	Standard
Fe	54	80.2	25.1	**0.0375**	0.055	146.7	mg/L	46	Standard
Fe	57	863.4	5.9	**2.4476**	0.555	22.7	mg/L	627	Standard
Sc-1	45	24534.9	1.7				mg/L	24506	Standard
Cl	35	59434.4	1.9				ug/L	47100	Standard
Kr	83	3.0	33.3				ug/L	8	Standard
Br	81	576.7	16.1				ug/L	427	Standard
P	31	12109.8	1.0				ug/L	10519	Standard
S	34	2353.5	4.6				ug/L	2003	Standard
Sr	88	190.0	17.3				ug/L	132	Standard
C	12	196.7	51.9				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	5.5	101.6				mg/L	13	Standard
Ho-1	165	13.3	43.3				mg/L	7	Standard
Er	166	23.3	24.7				mg/L	7	Standard
I	127	5639.4	3.6				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		116.831	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.506	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.916
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.575
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508096502 WG535777-01
Sample Date/Time: Sunday, August 23, 2015 20:05:27
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54201.8	3.1				ug/L	53498	Standard
	Be	9	193.3	4.0	**0.3041**	0.004	1.3	ug/L	12	Standard
	Al	27	9008885.1	1.7	**128.4714**	3.855	3.0	ug/L	487	Standard
	Sc	45	24905.5	1.7				ug/L	24506	Standard
	Ti	47	1739.1	5.5	**9.7636**	0.589	6.0	ug/L	21	Standard
	V	51	36899.9	2.5	**9.4652**	0.242	2.6	ug/L	1268	Standard
	Cr	52	50387.3	0.8	**8.8043**	0.056	0.6	ug/L	7921	Standard
	Cr	53	5586.0	3.4	**8.4257**	0.287	3.4	ug/L	442	Standard
	Mn	55	2726028.2	2.2	**848.3009**	13.583	1.6	ug/L	545	Standard
	Co	59	18491.9	1.8	**5.3347**	0.079	1.5	ug/L	183	Standard
	Ni	60	29452.6	2.4	**22.5009**	0.482	2.1	ug/L	131	Standard
	Cu	65	7430.8	2.1	**5.7158**	0.091	1.6	ug/L	231	Standard
	Zn	66	22547.4	1.3	**30.9366**	0.296	1.0	ug/L	306	Standard
>	**Ge**	72	315618.6	0.8				ug/L	330478	Standard
	As	75	2268.5	0.9	**3.1662**	0.052	1.7	ug/L	-23	Standard
	Se	82	115.0	12.1	**1.5087**	0.249	16.5	ug/L	27	Standard
	Se-1	77	120.7	5.5	**0.9087**	0.161	17.7	ug/L	92	Standard
>	**Ga**	71	2471.9	3.2				mg/L	37	Standard
	Rb	85	44040.7	4.3				ug/L	25	Standard
	Y	89	412768.6	3.0				ug/L	312467	Standard
>	**Rh**	103	206.7	25.2				ug/L	20	Standard
	Mo	98	1269.1	2.9	**0.9984**	0.007	0.7	ug/L	13	Standard
	Ag	107	272.7	0.8	**0.0391**	0.002	4.9	ug/L	72	Standard
	Cd	111	610.1	9.3	**0.4661**	0.032	6.9	mg/L	5	Standard
	Cd	114	1633.2	4.7	**0.4815**	0.011	2.3	ug/L	7	Standard
>	**In**	115	446028.5	2.8				ug/L	477820	Standard
	Sn	118	320.0	1.6	**-0.0024**	0.001	43.0	ug/L	343	Standard
	Sb	123	139.4	7.0	**0.0363**	0.002	6.1	ug/L	56	Standard
	Ba	135	433658.8	1.0	**244.0508**	4.666	1.9	ug/L	36	Standard
	Ce	140	415504.6	1.7				ug/L	65	Standard
>	**Tb**	159	910644.7	0.5				ug/L	939481	Standard
	Ho	165	11149.1	3.1				ug/L	7	Standard
	Tl	203	292.3	9.7	**0.0467**	0.004	9.3	ug/L	5	Standard
	Tl	205	150.0	6.7	**0.0315**	0.002	6.6	ug/L	2	Standard
	Pb	206	29254.2	2.0	**8.0645**	0.075	0.9	ug/L	222	Standard
	Pb	207	23565.3	1.8	**7.1760**	0.075	1.0	ug/L	186	Standard
	Pb	208	85878.4	2.9	**7.3373**	0.125	1.7	ug/L	717	Standard
	U	238	4288.6	2.7	**1.0672**	0.017	1.6	ug/L	2	Standard
>	**Bi**	209	398823.0	1.2				ug/L	440279	Standard

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Na	23	38.3	**-108283561979022282681569725**1.660		20.6	mg/L	2	Standard
Mg	24	148.3	10.8	**0.2754**	0.048	17.3	mg/L	45	Standard
K	39	40.0	45.1	**1.0494**	0.659	62.8	mg/L	10	Standard
Ca	43	2425.2	1.6	**536.3438**	16.492	3.1	mg/L	47	Standard
Fe	54	3576.1	3.1	**8.7464**	0.409	4.7	mg/L	46	Standard
Fe	57	3245.3	7.0	**25.3962**	2.318	9.1	mg/L	627	Standard
Sc-1	45	24905.5	1.7				mg/L	24506	Standard
Cl	35	55751.2	4.9				ug/L	47100	Standard
Kr	83	3.7	41.7				ug/L	8	Standard
Br	81	3710.5	5.2				ug/L	427	Standard
P	31	13085.7	3.6				ug/L	10519	Standard
S	34	2428.5	0.8				ug/L	2003	Standard
Sr	88	333.3	5.7				ug/L	132	Standard
C	12	483.3	26.2				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	6.7	86.6				mg/L	10	Standard
Dy	164	17124.4	4.0				mg/L	13	Standard
Ho-1	165	11149.1	3.1				mg/L	7	Standard
Er	166	10420.3	4.1				mg/L	7	Standard
I	127	18269.3	1.3				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		101.316	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.504	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	93.346
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	90.584
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1508096502S WG535777-04
Sample Date/Time: Sunday, August 23, 2015 20:08:38
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	46949.3	3.3				ug/L	53498	Standard
	Be	9	12920.5	2.8	**25.0262**	1.349	5.4	ug/L	12	Standard
	Al	27	8733392.6	1.7	**143.7986**	4.784	3.3	ug/L	487	Standard
	Sc	45	24352.9	3.3				ug/L	24506	Standard
	Ti	47	1317.1	5.2	**7.5909**	0.478	6.3	ug/L	21	Standard
	V	51	124892.4	1.2	**33.8621**	1.117	3.3	ug/L	1268	Standard
	Cr	52	158260.3	0.9	**31.9434**	0.966	3.0	ug/L	7921	Standard
	Cr	53	19160.4	1.5	**31.6357**	0.257	0.8	ug/L	442	Standard
	Mn	55	3429472.2	1.3	**1099.9205**	32.039	2.9	ug/L	545	Standard
	Co	59	102662.0	1.8	**30.7868**	1.223	4.0	ug/L	183	Standard
	Ni	60	57270.7	2.1	**45.1788**	1.506	3.3	ug/L	131	Standard
	Cu	65	35105.0	0.3	**28.4994**	0.587	2.1	ug/L	231	Standard
	Zn	66	52654.7	1.0	**75.0952**	2.127	2.8	ug/L	306	Standard
>	Ge	72	306376.1	2.1				ug/L	330478	Standard
	As	75	19476.9	0.4	**27.6027**	0.631	2.3	ug/L	-23	Standard
	Se	82	1504.4	0.2	**25.5932**	0.557	2.2	ug/L	27	Standard
	Se-1	77	1131.7	1.3	**25.6553**	0.227	0.9	ug/L	92	Standard
>	Ga	71	1918.5	7.8				mg/L	37	Standard
	Rb	85	31699.8	2.5				ug/L	25	Standard
	Y	89	422631.6	2.9				ug/L	312467	Standard
>	Rh	103	200.0	21.4				ug/L	20	Standard
	Mo	98	1025.5	4.0	**0.8574**	0.046	5.4	ug/L	13	Standard
	Ag	107	101403.6	2.3	**23.8490**	0.830	3.5	ug/L	72	Standard
	Cd	111	30486.6	2.1	**25.4761**	0.698	2.7	mg/L	5	Standard
	Cd	114	79602.8	1.4	**25.3581**	0.205	0.8	ug/L	7	Standard
>	In	115	419701.9	1.4				ug/L	477820	Standard
	Sn	118	1153.4	1.8	**0.2139**	0.006	2.8	ug/L	343	Standard
	Sb	123	5825.1	1.7	**1.7810**	0.038	2.1	ug/L	56	Standard
	Ba	135	318335.8	1.4	**190.3462**	4.241	2.2	ug/L	36	Standard
	Ce	140	397529.8	1.4				ug/L	65	Standard
>	Tb	159	861385.7	1.9				ug/L	939481	Standard
	Ho	165	11886.3	1.6				ug/L	7	Standard
	Tl	203	135997.6	0.3	**24.9692**	0.285	1.1	ug/L	5	Standard
	Tl	205	92607.2	1.8	**24.9916**	0.754	3.0	ug/L	2	Standard
	Pb	206	113564.7	0.9	**33.4404**	0.714	2.1	ug/L	222	Standard
	Pb	207	98107.6	1.0	**31.9274**	0.440	1.4	ug/L	186	Standard
	Pb	208	347824.2	0.4	**31.7618**	0.524	1.6	ug/L	717	Standard
	U	238	97762.7	1.2	**25.9829**	0.633	2.4	ug/L	2	Standard
>	Bi	209	375645.4	1.2				ug/L	440279	Standard

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Na	23	28.3	**-818561585522**1	94354728771	541.984	11.5	mg/L	2	Standard
Mg	24	136.7	22.1	**0.2501**	0.077	30.9	mg/L	45	Standard
K	39	35.0	14.3	**0.8945**	0.180	20.1	mg/L	10	Standard
Ca	43	2465.2	2.9	**558.4927**	35.508	6.4	mg/L	47	Standard
Fe	54	3695.8	4.0	**9.2536**	0.406	4.4	mg/L	46	Standard
Fe	57	3408.7	4.6	**27.7352**	1.685	6.1	mg/L	627	Standard
> **Sc-1**	45	24352.9	3.3				mg/L	24506	Standard
Cl	35	49243.2	0.7				ug/L	47100	Standard
Kr	83	6.7	34.6				ug/L	8	Standard
Br	81	746.7	6.3				ug/L	427	Standard
P	31	12910.5	2.8				ug/L	10519	Standard
S	34	2405.2	8.7				ug/L	2003	Standard
Sr	88	323.3	18.4				ug/L	132	Standard
C	12	336.7	11.2				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	6.7	86.6				mg/L	10	Standard
Dy	164	18165.9	2.0				mg/L	13	Standard
Ho-1	165	11886.3	1.6				mg/L	7	Standard
Er	166	11391.0	4.1				mg/L	7	Standard
I	127	13349.2	2.3				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		87.760	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.707	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1508096502S WG535777-04
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	87.837	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	85.320	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1508096502SD WG535777-05
Sample Date/Time: Sunday, August 23, 2015 20:11:50
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	46113.4	2.3				ug/L	53498	Standard
	Be	9	12717.0	1.0	**25.0566**	0.360	1.4	ug/L	12	Standard
	Al	27	10972694.6	1.5	**183.8542**	1.407	0.8	ug/L	487	Standard
	Sc	45	24431.4	1.5				ug/L	24506	Standard
	Ti	47	1020.7	11.8	**5.6733**	0.683	12.0	ug/L	21	Standard
	V	51	140006.0	0.6	**36.8532**	0.494	1.3	ug/L	1268	Standard
	Cr	52	158727.5	1.4	**31.0391**	0.622	2.0	ug/L	7921	Standard
	Cr	53	19090.4	1.8	**30.5616**	0.546	1.8	ug/L	442	Standard
	Mn	55	4975888.3	2.1	**1548.3987**	42.058	2.7	ug/L	545	Standard
	Co	59	103097.0	2.1	**29.9903**	0.880	2.9	ug/L	183	Standard
	Ni	60	56736.0	0.7	**43.4151**	0.311	0.7	ug/L	131	Standard
	Cu	65	34884.1	1.5	**27.4706**	0.528	1.9	ug/L	231	Standard
	Zn	66	36621.2	0.8	**50.5210**	0.784	1.6	ug/L	306	Standard
>	**Ge**	72	315711.2	0.9				ug/L	330478	Standard
	As	75	19518.9	2.1	**26.8391**	0.650	2.4	ug/L	-23	Standard
	Se	82	1540.9	2.5	**25.4309**	0.697	2.7	ug/L	27	Standard
	Se-1	77	1147.7	1.8	**25.2192**	0.731	2.9	ug/L	92	Standard
>	**Ga**	71	1943.5	1.5				mg/L	37	Standard
	Rb	85	28725.5	0.1				ug/L	25	Standard
	Y	89	418757.6	1.9				ug/L	312467	Standard
>	**Rh**	103	150.0	36.1				ug/L	20	Standard
	Mo	98	1410.9	2.7	**1.2007**	0.039	3.3	ug/L	13	Standard
	Ag	107	101957.0	1.6	**24.3905**	0.424	1.7	ug/L	72	Standard
	Cd	111	29349.8	1.4	**24.9478**	0.196	0.8	mg/L	5	Standard
	Cd	114	77594.0	3.1	**25.1457**	0.653	2.6	ug/L	7	Standard
>	**In**	115	412519.2	0.6				ug/L	477820	Standard
	Sn	118	286.7	6.1	**-0.0048**	0.004	87.0	ug/L	343	Standard
	Sb	123	8775.4	2.0	**2.7313**	0.040	1.5	ug/L	56	Standard
	Ba	135	501190.2	0.4	**304.8683**	1.147	0.4	ug/L	36	Standard
	Ce	140	406129.2	2.1				ug/L	65	Standard
>	**Tb**	159	872688.3	0.9				ug/L	939481	Standard
	Ho	165	12977.2	2.7				ug/L	7	Standard
	Tl	203	135420.3	1.7	**24.7731**	0.250	1.0	ug/L	5	Standard
	Tl	205	92508.2	1.3	**24.8720**	0.274	1.1	ug/L	2	Standard
	Pb	206	122265.7	1.4	**35.8744**	0.258	0.7	ug/L	222	Standard
	Pb	207	102912.7	0.7	**33.3753**	0.294	0.9	ug/L	186	Standard
	Pb	208	366773.9	0.8	**33.3740**	0.102	0.3	ug/L	717	Standard
	U	238	96112.2	1.3	**25.4511**	0.399	1.6	ug/L	2	Standard
>	**Bi**	209	376959.8	0.7				ug/L	440279	Standard

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Na	23	20.0	**-5752787484498**6880306996069	2.779	1.5	mg/L	2	Standard
Mg	24	145.0	3.4	**0.2738**	0.017	6.1	mg/L	45	Standard
K	39	33.3	70.9	**0.8235**	0.880	106.8	mg/L	10	Standard
Ca	43	2288.5	7.7	**515.9268**	48.170	9.3	mg/L	47	Standard
Fe	54	5595.3	2.2	**14.0423**	0.203	1.4	mg/L	46	Standard
Fe	57	3727.1	6.0	**30.7741**	2.601	8.5	mg/L	627	Standard
> **Sc-1**	45	24431.4	1.5				mg/L	24506	Standard
Cl	35	46545.4	1.7				ug/L	47100	Standard
Kr	83	2.7	57.3				ug/L	8	Standard
Br	81	710.0	14.1				ug/L	427	Standard
P	31	13741.2	4.4				ug/L	10519	Standard
S	34	2408.5	3.0				ug/L	2003	Standard
Sr	88	305.0	11.5				ug/L	132	Standard
C	12	313.3	35.2				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	16.7	69.3				mg/L	10	Standard
Dy	164	20431.6	4.0				mg/L	13	Standard
Ho-1	165	12977.2	2.7				mg/L	7	Standard
Er	166	11891.3	4.6				mg/L	7	Standard
I	127	10125.1	3.3				mg/L	2225	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		86.197	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.532	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	86.334
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	85.618
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1508089601
Sample Date/Time: Sunday, August 23, 2015 20:15:01
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	45008.5	3.4				ug/L	53498	Standard
	Be	9	210.0	12.6	**0.4052**	0.064	15.9	ug/L	12	Standard
	Al	27	11420102.7	1.1	**196.1316**	4.632	2.4	ug/L	487	Standard
	Sc	45	26037.4	5.1				ug/L	24506	Standard
	Ti	47	2761.9	6.0	**15.8751**	0.806	5.1	ug/L	21	Standard
	V	51	57917.8	1.3	**15.3460**	0.280	1.8	ug/L	1268	Standard
	Cr	52	90658.1	0.5	**17.4300**	0.273	1.6	ug/L	7921	Standard
	Cr	53	10440.3	2.7	**16.7117**	0.259	1.6	ug/L	442	Standard
	Mn	55	3039821.0	1.0	**964.1784**	7.398	0.8	ug/L	545	Standard
	Co	59	24849.7	1.8	**7.3262**	0.059	0.8	ug/L	183	Standard
	Ni	60	34278.7	1.4	**26.7107**	0.634	2.4	ug/L	131	Standard
	Cu	65	14181.6	0.5	**11.2830**	0.079	0.7	ug/L	231	Standard
	Zn	66	31619.6	0.5	**44.4137**	0.342	0.8	ug/L	306	Standard
>	Ge	72	309687.9	1.2				ug/L	330478	Standard
	As	75	2753.8	2.5	**3.9056**	0.143	3.6	ug/L	-23	Standard
	Se	82	121.1	13.2	**1.6509**	0.298	18.1	ug/L	27	Standard
	Se-1	77	130.7	5.0	**1.2061**	0.195	16.2	ug/L	92	Standard
>	Ga	71	4374.0	3.1				mg/L	37	Standard
	Rb	85	79513.2	3.1				ug/L	25	Standard
	Y	89	418799.2	0.5				ug/L	312467	Standard
>	Rh	103	168.3	21.1				ug/L	20	Standard
	Mo	98	1355.4	3.6	**1.2046**	0.045	3.7	ug/L	13	Standard
	Ag	107	348.3	3.7	**0.0658**	0.003	4.8	ug/L	72	Standard
	Cd	111	615.0	1.5	**0.5330**	0.008	1.5	mg/L	5	Standard
	Cd	114	1564.0	3.7	**0.5214**	0.020	3.7	ug/L	7	Standard
>	In	115	394995.5	0.1				ug/L	477820	Standard
	Sn	118	413.3	4.2	**0.0326**	0.005	14.7	ug/L	343	Standard
	Sb	123	90.6	8.9	**0.0256**	0.003	10.2	ug/L	56	Standard
	Ba	135	516887.4	1.5	**328.3676**	5.266	1.6	ug/L	36	Standard
	Ce	140	506997.6	1.5				ug/L	65	Standard
>	Tb	159	864931.2	0.5				ug/L	939481	Standard
	Ho	165	13280.8	1.9				ug/L	7	Standard
	Tl	203	421.3	3.0	**0.0752**	0.002	2.8	ug/L	5	Standard
	Tl	205	303.3	26.4	**0.0768**	0.021	27.6	ug/L	2	Standard
	Pb	206	33054.7	1.0	**9.8936**	0.171	1.7	ug/L	222	Standard
	Pb	207	26677.1	0.6	**8.8205**	0.061	0.7	ug/L	186	Standard
	Pb	208	96788.7	1.4	**8.9794**	0.093	1.0	ug/L	717	Standard
	U	238	4517.0	1.6	**1.2196**	0.012	1.0	ug/L	2	Standard
>	Bi	209	367909.7	1.3				ug/L	440279	Standard

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Na	23	26.7	**-7186749786451**	49848378537740.375		6.9	mg/L	2	Standard
Mg	24	445.0	10.0	**1.0508**	0.175	16.6	mg/L	45	Standard
K	39	95.0	5.3	**2.9341**	0.314	10.7	mg/L	10	Standard
Ca	43	2346.8	5.8	**496.4705**	38.270	7.7	mg/L	47	Standard
Fe	54	4597.8	1.9	**10.8116**	0.691	6.4	mg/L	46	Standard
Fe	57	3592.1	3.6	**27.2644**	1.314	4.8	mg/L	627	Standard
Sc-1	45	26037.4	5.1				mg/L	24506	Standard
Cl	35	44608.2	1.2				ug/L	47100	Standard
Kr	83	6.0	86.6				ug/L	8	Standard
Br	81	2820.3	6.2				ug/L	427	Standard
P	31	12788.7	1.9				ug/L	10519	Standard
S	34	2503.5	5.3				ug/L	2003	Standard
Sr	88	325.0	19.6				ug/L	132	Standard
C	12	333.3	29.1				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	20.0	50.0				mg/L	10	Standard
Dy	164	20845.8	0.7				mg/L	13	Standard
Ho-1	165	13280.8	1.9				mg/L	7	Standard
Er	166	12722.0	4.7				mg/L	7	Standard
I	127	21997.6	3.2				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		84.132	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.709	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	82.666
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	83.563
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1508089602
Sample Date/Time: Sunday, August 23, 2015 20:18:13
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	44032.3	4.6				ug/L	53498	Standard
	Be	9	165.0	13.2	**0.3201**	0.034	10.8	ug/L	12	Standard
	Al	27	10047177.1	2.1	**176.4310**	5.090	2.9	ug/L	487	Standard
	Sc	45	25227.7	1.8				ug/L	24506	Standard
	Ti	47	1465.1	2.7	**8.1780**	0.244	3.0	ug/L	21	Standard
	V	51	39569.4	0.6	**10.1428**	0.105	1.0	ug/L	1268	Standard
	Cr	52	67276.7	2.0	**12.2302**	0.315	2.6	ug/L	7921	Standard
	Cr	53	7788.7	1.4	**11.9989**	0.135	1.1	ug/L	442	Standard
	Mn	55	3974765.5	1.8	**1233.3325**	25.030	2.0	ug/L	545	Standard
	Co	59	23581.0	2.6	**6.7974**	0.188	2.8	ug/L	183	Standard
	Ni	60	31849.1	2.0	**24.2657**	0.495	2.0	ug/L	131	Standard
	Cu	65	10765.8	2.0	**8.3340**	0.187	2.2	ug/L	231	Standard
	Zn	66	29973.6	0.6	**41.1508**	0.386	0.9	ug/L	306	Standard
>	Ge	72	316577.1	0.4				ug/L	330478	Standard
	As	75	3315.4	1.4	**4.5894**	0.079	1.7	ug/L	-23	Standard
	Se	82	101.7	2.4	**1.2792**	0.040	3.1	ug/L	27	Standard
	Se-1	77	121.7	11.9	**0.9232**	0.337	36.5	ug/L	92	Standard
>	Ga	71	2528.5	4.8				mg/L	37	Standard
	Rb	85	45436.4	1.3				ug/L	25	Standard
	Y	89	426693.9	1.4				ug/L	312467	Standard
>	Rh	103	243.3	11.3				ug/L	20	Standard
	Mo	98	2029.4	0.7	**1.7647**	0.030	1.7	ug/L	13	Standard
	Ag	107	329.3	8.8	**0.0593**	0.008	12.7	ug/L	72	Standard
	Cd	111	560.1	0.6	**0.4732**	0.007	1.4	mg/L	5	Standard
	Cd	114	1472.4	6.7	**0.4791**	0.025	5.2	ug/L	7	Standard
>	In	115	403977.8	1.8				ug/L	477820	Standard
	Sn	118	286.7	14.6	**-0.0033**	0.011	332.9	ug/L	343	Standard
	Sb	123	135.0	8.6	**0.0391**	0.004	9.6	ug/L	56	Standard
	Ba	135	403404.7	1.3	**250.5809**	1.642	0.7	ug/L	36	Standard
	Ce	140	438604.4	0.1				ug/L	65	Standard
>	Tb	159	853460.5	2.4				ug/L	939481	Standard
	Ho	165	13087.3	5.0				ug/L	7	Standard
	Tl	203	311.7	10.1	**0.0549**	0.005	9.1	ug/L	5	Standard
	Tl	205	223.3	6.8	**0.0552**	0.003	5.8	ug/L	2	Standard
	Pb	206	41086.6	1.5	**12.3777**	0.051	0.4	ug/L	222	Standard
	Pb	207	33344.0	1.1	**11.0993**	0.093	0.8	ug/L	186	Standard
	Pb	208	121102.8	1.2	**11.3116**	0.139	1.2	ug/L	717	Standard
	U	238	4205.3	1.5	**1.1412**	0.023	2.0	ug/L	2	Standard
>	Bi	209	365962.8	1.8				ug/L	440279	Standard

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Na	23	28.3	**-7958415770796722690749773**34.370		84.5	mg/L	2	Standard
Mg	24	185.0	16.4	**0.3698**	0.079	21.3	mg/L	45	Standard
K	39	56.7	25.5	**1.6439**	0.556	33.8	mg/L	10	Standard
Ca	43	2506.9	2.3	**547.5107**	19.391	3.5	mg/L	47	Standard
Fe	54	4463.5	3.6	**10.8135**	0.461	4.3	mg/L	46	Standard
Fe	57	3590.4	2.0	**28.2913**	0.863	3.0	mg/L	627	Standard
Sc-1	45	25227.7	1.8				mg/L	24506	Standard
Cl	35	44818.2	2.4				ug/L	47100	Standard
Kr	83	7.3	7.9				ug/L	8	Standard
Br	81	860.0	18.1				ug/L	427	Standard
P	31	13410.9	2.5				ug/L	10519	Standard
S	34	2371.9	5.8				ug/L	2003	Standard
Sr	88	353.3	14.2				ug/L	132	Standard
C	12	380.0	16.0				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	36.7	41.7				mg/L	10	Standard
Dy	164	19977.8	4.8				mg/L	13	Standard
Ho-1	165	13087.3	5.0				mg/L	7	Standard
Er	166	12098.2	4.5				mg/L	7	Standard
I	127	19434.1	4.5				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		82.307	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.794	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		84.546
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		83.121
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1508089602PS WG536147-01
Sample Date/Time: Sunday, August 23, 2015 20:21:24
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	43168.1	1.8				ug/L	53498	Standard
	Be	9	24660.1	4.9	**51.8962**	1.723	3.3	ug/L	12	Standard
	Al	27	9810515.5	1.4	**175.5912**	2.021	1.2	ug/L	487	Standard
	Sc	45	26362.9	1.6				ug/L	24506	Standard
	Ti	47	1431.1	2.1	**8.0369**	0.133	1.7	ug/L	21	Standard
	V	51	238629.2	0.7	**63.2838**	0.225	0.4	ug/L	1268	Standard
	Cr	52	314667.9	1.3	**63.2801**	0.527	0.8	ug/L	7921	Standard
	Cr	53	37817.2	3.7	**61.4860**	2.060	3.4	ug/L	442	Standard
	Mn	55	4099868.0	1.4	**1280.3320**	13.337	1.0	ug/L	545	Standard
	Co	59	197775.4	0.2	**57.7874**	0.170	0.3	ug/L	183	Standard
	Ni	60	97433.3	0.3	**74.8979**	0.406	0.5	ug/L	131	Standard
	Cu	65	72654.1	0.5	**57.6133**	0.312	0.5	ug/L	231	Standard
	Zn	66	66481.5	1.2	**92.4221**	0.721	0.8	ug/L	306	Standard
>	**Ge**	72	314538.3	0.5				ug/L	330478	Standard
	As	75	42040.0	1.5	**57.9564**	0.698	1.2	ug/L	-23	Standard
	Se	82	3190.8	1.4	**53.3081**	0.592	1.1	ug/L	27	Standard
	Se-1	77	2331.8	1.6	**53.4451**	0.775	1.4	ug/L	92	Standard
>	**Ga**	71	2611.9	3.8				mg/L	37	Standard
	Rb	85	45951.3	4.1				ug/L	25	Standard
	Y	89	423952.8	0.4				ug/L	312467	Standard
>	**Rh**	103	265.0	6.8				ug/L	20	Standard
	Mo	98	2017.1	2.5	**1.7957**	0.057	3.2	ug/L	13	Standard
	Ag	107	207402.6	1.9	**51.8874**	0.502	1.0	ug/L	72	Standard
	Cd	111	58201.5	1.0	**51.7339**	0.084	0.2	mg/L	5	Standard
	Cd	114	151108.8	3.2	**51.1984**	1.116	2.2	ug/L	7	Standard
>	**In**	115	394603.9	1.0				ug/L	477820	Standard
	Sn	118	305.0	14.0	**0.0035**	0.012	338.6	ug/L	343	Standard
	Sb	123	160649.5	1.7	**52.3437**	0.605	1.2	ug/L	56	Standard
	Ba	135	481107.8	1.3	**305.9288**	1.158	0.4	ug/L	36	Standard
	Ce	140	426038.9	1.1				ug/L	65	Standard
>	**Tb**	159	860938.5	1.3				ug/L	939481	Standard
	Ho	165	12578.6	3.9				ug/L	7	Standard
	Tl	203	282448.6	1.2	**53.5409**	0.668	1.2	ug/L	5	Standard
	Tl	205	186490.7	0.3	**51.9562**	0.066	0.1	ug/L	2	Standard
	Pb	206	220011.0	1.2	**66.9390**	0.766	1.1	ug/L	222	Standard
	Pb	207	194936.0	0.3	**65.5561**	0.180	0.3	ug/L	186	Standard
	Pb	208	673396.1	1.4	**63.5403**	0.857	1.3	ug/L	717	Standard
	U	238	195054.3	1.1	**53.5191**	0.458	0.9	ug/L	2	Standard
>	**Bi**	209	363834.3	0.4				ug/L	440279	Standard

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Na	23	48.3	**-1290713924433**	293968036804984.620		22.8	mg/L	2	Standard
Mg	24	233.3	12.2	**0.4746**	0.065	13.7	mg/L	45	Standard
K	39	55.0	45.5	**1.4832**	0.841	56.7	mg/L	10	Standard
Ca	43	2530.2	3.7	**528.6349**	27.836	5.3	mg/L	47	Standard
Fe	54	4574.3	3.9	**10.6002**	0.443	4.2	mg/L	46	Standard
Fe	57	3618.8	3.9	**27.0856**	1.820	6.7	mg/L	627	Standard
Sc-1	45	26362.9	1.6				mg/L	24506	Standard
Cl	35	42449.4	1.7				ug/L	47100	Standard
Kr	83	5.0	60.0				ug/L	8	Standard
Br	81	900.0	12.6				ug/L	427	Standard
P	31	13155.7	1.8				ug/L	10519	Standard
S	34	2296.8	1.9				ug/L	2003	Standard
Sr	88	321.7	14.8				ug/L	132	Standard
C	12	276.7	18.2				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	10.0	100.0				mg/L	10	Standard
Dy	164	19739.2	3.6				mg/L	13	Standard
Ho-1	165	12578.6	3.9				mg/L	7	Standard
Er	166	11851.3	0.9				mg/L	7	Standard
I	127	18149.2	1.5				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		80.692	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.177	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	82.584
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	82.637
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1508089602SDL WG536147-02
Sample Date/Time: Sunday, August 23, 2015 20:24:35
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	43856.8	2.9				ug/L	53498	Standard
	Be	9	71.7	10.7	**0.1285**	0.016	12.5	ug/L	12	Standard
	Al	27	2173390.7	0.9	**38.3005**	1.247	3.3	ug/L	487	Standard
	Sc	45	25007.3	5.3				ug/L	24506	Standard
	Ti	47	306.7	4.3	**1.5923**	0.059	3.7	ug/L	21	Standard
	V	51	9727.0	3.8	**2.2136**	0.073	3.3	ug/L	1268	Standard
	Cr	52	21156.8	1.3	**2.7517**	0.090	3.3	ug/L	7921	Standard
	Cr	53	2040.1	9.3	**2.5732**	0.333	13.0	ug/L	442	Standard
	Mn	55	857943.4	0.4	**263.6895**	2.534	1.0	ug/L	545	Standard
	Co	59	5081.5	0.6	**1.4085**	0.014	1.0	ug/L	183	Standard
	Ni	60	7360.5	2.3	**5.4895**	0.091	1.7	ug/L	131	Standard
	Cu	65	2503.2	1.1	**1.7868**	0.042	2.4	ug/L	231	Standard
	Zn	66	7573.9	1.9	**9.9626**	0.132	1.3	ug/L	306	Standard
>	Ge	72	319447.0	1.1				ug/L	330478	Standard
	As	75	684.4	6.5	**0.9798**	0.050	5.1	ug/L	-23	Standard
	Se	82	45.2	26.6	**0.3252**	0.193	59.3	ug/L	27	Standard
	Se-1	77	96.3	22.4	**0.3080**	0.526	170.9	ug/L	92	Standard
>	Ga	71	510.0	12.0				mg/L	37	Standard
	Rb	85	9491.3	3.0				ug/L	25	Standard
	Y	89	320621.7	2.7				ug/L	312467	Standard
>	Rh	103	65.0	7.7				ug/L	20	Standard
	Mo	98	396.5	5.1	**0.3404**	0.013	3.9	ug/L	13	Standard
	Ag	107	317.7	53.9	**0.0555**	0.040	72.7	ug/L	72	Standard
	Cd	111	165.6	30.2	**0.1292**	0.041	31.7	mg/L	5	Standard
	Cd	114	474.6	24.3	**0.1477**	0.036	24.5	ug/L	7	Standard
>	In	115	406838.4	1.4				ug/L	477820	Standard
	Sn	118	265.0	18.0	**-0.0094**	0.013	138.7	ug/L	343	Standard
	Sb	123	802.7	12.9	**0.2496**	0.029	11.7	ug/L	56	Standard
	Ba	135	86209.0	2.1	**53.1488**	0.807	1.5	ug/L	36	Standard
	Ce	140	91029.3	1.1				ug/L	65	Standard
>	Tb	159	873572.9	1.5				ug/L	939481	Standard
	Ho	165	2798.6	4.5				ug/L	7	Standard
	Tl	203	325.7	68.3	**0.0546**	0.040	72.5	ug/L	5	Standard
	Tl	205	150.0	28.5	**0.0330**	0.011	33.9	ug/L	2	Standard
	Pb	206	9060.7	2.2	**2.5549**	0.050	2.0	ug/L	222	Standard
	Pb	207	7475.8	1.7	**2.3266**	0.020	0.9	ug/L	186	Standard
	Pb	208	27072.5	0.3	**2.3643**	0.023	1.0	ug/L	717	Standard
	U	238	1023.0	4.6	**0.2600**	0.012	4.5	ug/L	2	Standard
>	Bi	209	383571.8	0.9				ug/L	440279	Standard

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Na	23	8.3	**-2371306124336**	90342267987493.359		38.1	mg/L	2	Standard
Mg	24	86.7	18.5	**0.1048**	0.057	54.4	mg/L	45	Standard
K	39	20.0	43.3	**0.3200**	0.359	112.2	mg/L	10	Standard
Ca	43	553.3	6.7	**115.7351**	14.604	12.6	mg/L	47	Standard
Fe	54	1025.1	5.3	**2.3775**	0.052	2.2	mg/L	46	Standard
Fe	57	1336.7	5.8	**6.8613**	0.738	10.8	mg/L	627	Standard
> **Sc-1**	45	25007.3	5.3				mg/L	24506	Standard
Cl	35	45872.0	1.6				ug/L	47100	Standard
Kr	83	5.7	27.0				ug/L	8	Standard
Br	81	656.7	8.8				ug/L	427	Standard
P	31	12598.6	0.6				ug/L	10519	Standard
S	34	2248.5	3.5				ug/L	2003	Standard
Sr	88	216.7	15.0				ug/L	132	Standard
C	12	143.3	28.2				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	3858.7	5.7				mg/L	13	Standard
Ho-1	165	2798.6	4.5				mg/L	7	Standard
Er	166	2613.6	8.5				mg/L	7	Standard
I	127	6558.1	4.8				mg/L	2225	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		81.979	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.662	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	85.145
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	87.120
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508089602SDL WG536147-02
Sample Date/Time: Sunday, August 23, 2015 20:27:46
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	45856.1	5.2				ug/L	53498	Standard
	Be	9	15.0	57.7	**0.0102**	0.019	185.8	ug/L	12	Standard
	Al	27	445084.7	2.2	**7.4960**	0.227	3.0	ug/L	487	Standard
	Sc	45	24317.9	4.1				ug/L	24506	Standard
	Ti	47	79.7	14.4	**0.3132**	0.062	19.7	ug/L	21	Standard
	V	51	3143.4	2.3	**0.4793**	0.010	2.0	ug/L	1268	Standard
	Cr	52	11229.5	3.7	**0.7206**	0.093	12.9	ug/L	7921	Standard
	Cr	53	686.7	5.5	**0.3706**	0.067	18.0	ug/L	442	Standard
	Mn	55	173776.3	1.0	**52.8585**	0.283	0.5	ug/L	545	Standard
	Co	59	1200.0	4.8	**0.2879**	0.012	4.3	ug/L	183	Standard
	Ni	60	1576.1	1.9	**1.0976**	0.035	3.2	ug/L	131	Standard
	Cu	65	742.0	5.4	**0.4026**	0.024	6.0	ug/L	231	Standard
	Zn	66	2538.5	4.7	**3.0102**	0.180	6.0	ug/L	306	Standard
>	**Ge**	72	321898.1	1.2				ug/L	330478	Standard
	As	75	88.5	34.5	**0.1713**	0.042	24.4	ug/L	-23	Standard
	Se	82	28.9	27.0	**0.0523**	0.124	237.1	ug/L	27	Standard
	Se-1	77	83.0	10.7	**-0.0229**	0.184	804.9	ug/L	92	Standard
>	**Ga**	71	143.3	15.7				mg/L	37	Standard
	Rb	85	1968.5	1.9				ug/L	25	Standard
	Y	89	297043.8	1.2				ug/L	312467	Standard
>	**Rh**	103	26.7	28.6				ug/L	20	Standard
	Mo	98	93.9	13.9	**0.0776**	0.010	13.0	ug/L	13	Standard
	Ag	107	96.3	26.5	**0.0017**	0.006	331.3	ug/L	72	Standard
	Cd	111	29.8	41.9	**0.0119**	0.010	83.9	mg/L	5	Standard
	Cd	114	96.2	34.1	**0.0230**	0.010	44.8	ug/L	7	Standard
>	**In**	115	412865.1	2.1				ug/L	477820	Standard
	Sn	118	391.7	6.3	**0.0222**	0.004	20.1	ug/L	343	Standard
	Sb	123	194.4	8.4	**0.0566**	0.004	7.7	ug/L	56	Standard
	Ba	135	17348.3	1.5	**10.5194**	0.107	1.0	ug/L	36	Standard
	Ce	140	19073.7	1.6				ug/L	65	Standard
>	**Tb**	159	863512.8	1.4				ug/L	939481	Standard
	Ho	165	556.7	4.2				ug/L	7	Standard
	Tl	203	54.0	95.4	**0.0055**	0.009	161.3	ug/L	5	Standard
	Tl	205	15.0	66.7	**-0.0028**	0.003	89.7	ug/L	2	Standard
	Pb	206	1991.5	1.0	**0.4918**	0.015	3.0	ug/L	222	Standard
	Pb	207	1661.4	2.6	**0.4507**	0.011	2.4	ug/L	186	Standard
	Pb	208	6043.5	0.0	**0.4604**	0.008	1.8	ug/L	717	Standard
	U	238	193.7	7.0	**0.0423**	0.004	9.5	ug/L	2	Standard
>	**Bi**	209	398250.9	1.6				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	33.3	31.2	**-0.0420**	0.028	67.5	mg/L	45	Standard
K	39	10.0	86.6	**-0.0420**	0.332	791.0	mg/L	10	Standard
Ca	43	118.3	21.7	**18.7405**	6.105	32.6	mg/L	47	Standard
Fe	54	271.2	10.0	**0.5252**	0.049	9.4	mg/L	46	Standard
Fe	57	955.0	9.1	**3.4286**	0.732	21.4	mg/L	627	Standard
> **Sc-1**	45	24317.9	4.1				mg/L	24506	Standard
Cl	35	47319.8	1.1				ug/L	47100	Standard
Kr	83	3.3	45.8				ug/L	8	Standard
Br	81	580.0	6.0				ug/L	427	Standard
P	31	12441.8	0.8				ug/L	10519	Standard
S	34	2211.8	4.8				ug/L	2003	Standard
Sr	88	185.0	9.7				ug/L	132	Standard
C	12	170.0	42.4				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	790.5	8.3				mg/L	13	Standard
Ho-1	165	556.7	4.2				mg/L	7	Standard
Er	166	476.7	8.5				mg/L	7	Standard
I	127	3917.2	4.2				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		85.716	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.404	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		86.406
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.454
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Sunday, August 23, 2015 20:30:59
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	45299.3	2.9				ug/L	53498	Standard
	Be	9	26745.3	1.6	**53.6877**	1.865	3.5	ug/L	12	Standard
	Al	27	3098353.3	1.0	**52.8551**	1.119	2.1	ug/L	487	Standard
	Sc	45	25321.1	1.1				ug/L	24506	Standard
	Ti	47	19320.6	1.1	**103.8572**	2.108	2.0	ug/L	21	Standard
	V	51	200440.0	1.5	**50.0573**	1.326	2.6	ug/L	1268	Standard
	Cr	52	266991.0	1.2	**50.3220**	0.948	1.9	ug/L	7921	Standard
	Cr	53	33605.6	0.8	**51.4062**	0.865	1.7	ug/L	442	Standard
	Mn	55	184102.7	2.0	**54.0484**	1.658	3.1	ug/L	545	Standard
	Co	59	180458.8	1.4	**49.7120**	1.065	2.1	ug/L	183	Standard
	Ni	60	70854.3	0.3	**51.3280**	0.433	0.8	ug/L	131	Standard
	Cu	65	69160.5	0.9	**51.6971**	0.994	1.9	ug/L	231	Standard
	Zn	66	38677.0	1.8	**50.4902**	0.673	1.3	ug/L	306	Standard
>	Ge	72	333606.7	1.1				ug/L	330478	Standard
	As	75	38861.3	0.2	**50.5247**	0.685	1.4	ug/L	-23	Standard
	Se	82	3227.9	0.4	**50.8318**	0.809	1.6	ug/L	27	Standard
	Se-1	77	2399.5	0.4	**51.8006**	0.755	1.5	ug/L	92	Standard
>	Ga	71	43.3	53.3				mg/L	37	Standard
	Rb	85	486.7	3.6				ug/L	25	Standard
	Y	89	306521.5	3.2				ug/L	312467	Standard
>	Rh	103	25.0	0.0				ug/L	20	Standard
	Mo	98	121915.9	0.7	**100.4464**	1.346	1.3	ug/L	13	Standard
	Ag	107	233536.4	0.7	**54.0166**	0.316	0.6	ug/L	72	Standard
	Cd	111	63425.1	1.7	**52.1192**	0.877	1.7	mg/L	5	Standard
	Cd	114	167082.4	4.0	**52.3538**	2.491	4.8	ug/L	7	Standard
>	In	115	426854.8	0.9				ug/L	477820	Standard
	Sn	118	197769.8	3.0	**49.2736**	1.590	3.2	ug/L	343	Standard
	Sb	123	170901.9	1.4	**51.4805**	0.831	1.6	ug/L	56	Standard
	Ba	135	91146.4	1.2	**53.5591**	0.468	0.9	ug/L	36	Standard
	Ce	140	91.7	37.1				ug/L	65	Standard
>	Tb	159	895455.5	2.6				ug/L	939481	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	304785.4	0.8	**51.3234**	0.970	1.9	ug/L	5	Standard
	Tl	205	202936.8	1.1	**50.2225**	0.859	1.7	ug/L	2	Standard
	Pb	206	192274.6	0.3	**51.9545**	0.975	1.9	ug/L	222	Standard
	Pb	207	173888.8	0.5	**51.9394**	1.217	2.3	ug/L	186	Standard
	Pb	208	611891.6	1.0	**51.2755**	0.794	1.5	ug/L	717	Standard
	U	238	201211.9	0.5	**49.0422**	0.732	1.5	ug/L	2	Standard
>	Bi	209	409659.2	1.9				ug/L	440279	Standard

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Na	23	3.3	**-913577641181**58236289118397.120		173.2	mg/L	2	Standard
Mg	24	1826.8	3.7	**4.8530**	0.235	4.8	mg/L	45	Standard
K	39	186.7	10.8	**6.3402**	0.683	10.8	mg/L	10	Standard
Ca	43	51.7	27.9	**2.8972**	3.292	113.6	mg/L	47	Standard
Fe	54	2026.3	2.1	**4.7997**	0.149	3.1	mg/L	46	Standard
Fe	57	1288.4	9.5	**6.2237**	1.058	17.0	mg/L	627	Standard
Sc-1	45	25321.1	1.1				mg/L	24506	Standard
Cl	35	41460.7	1.8				ug/L	47100	Standard
Kr	83	4.0	25.0				ug/L	8	Standard
Br	81	520.0	8.4				ug/L	427	Standard
P	31	13109.0	3.5				ug/L	10519	Standard
S	34	2628.6	0.7				ug/L	2003	Standard
Sr	88	165.0	3.0				ug/L	132	Standard
C	12	136.7	84.8				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	6.7	173.2				mg/L	10	Standard
Dy	164	12.2	51.9				mg/L	13	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	23.3	65.5				mg/L	7	Standard
I	127	2641.9	7.9				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	107.375		
Al	27	105.710		
Sc	45			
Ti	47	103.857		
V	51	100.115		
Cr	52	100.644		
Cr	53			
Mn	55	108.097		
Co	59	99.424		
Ni	60	102.656		
Cu	65	103.394		
Zn	66	100.980		
Ge	72		100.947	
As	75	101.049		
Se	82	101.664		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	100.446		
Ag	107	108.033		
Cd	111	104.238		
Cd	114			
> In	115			89.334
Sn	118	98.547		
Sb	123	102.961		
Ba	135	107.118		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	102.647		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.551		
U	238	98.084		
> Bi	209			93.045
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Sunday, August 23, 2015 20:34:11
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	47827.1	2.1				ug/L	53498	Standard
	Be	9	16.7	45.8	**0.0117**	0.015	128.3	ug/L	12	Standard
	Al	27	955.0	69.6	**0.0043**	0.010	237.9	ug/L	487	Standard
	Sc	45	24584.9	3.0				ug/L	24506	Standard
	Ti	47	20.0	47.7	**-0.0220**	0.052	238.3	ug/L	21	Standard
	V	51	974.0	5.9	**-0.0930**	0.009	9.9	ug/L	1268	Standard
	Cr	52	6529.4	3.5	**-0.2625**	0.028	10.8	ug/L	7921	Standard
	Cr	53	451.7	18.4	**-0.0293**	0.115	392.2	ug/L	442	Standard
	Mn	55	646.0	12.9	**0.0128**	0.024	187.0	ug/L	545	Standard
	Co	59	204.3	8.2	**0.0019**	0.006	297.3	ug/L	183	Standard
	Ni	60	117.3	30.0	**-0.0021**	0.026	1223.8	ug/L	131	Standard
	Cu	65	224.3	10.4	**-0.0044**	0.018	414.1	ug/L	231	Standard
	Zn	66	316.7	7.2	**-0.0354**	0.033	92.8	ug/L	306	Standard
>	**Ge**	72	331102.8	2.2				ug/L	330478	Standard
	As	75	-10.3	338.7	**0.0392**	0.046	117.1	ug/L	-23	Standard
	Se	82	22.8	1.5	**-0.0576**	0.014	23.6	ug/L	27	Standard
	Se-1	77	87.7	18.3	**0.0256**	0.319	1249.1	ug/L	92	Standard
>	**Ga**	71	21.7	35.3				mg/L	37	Standard
	Rb	85	30.0	44.1				ug/L	25	Standard
	Y	89	308909.8	2.0				ug/L	312467	Standard
>	**Rh**	103	21.7	58.1				ug/L	20	Standard
	Mo	98	51.5	23.7	**0.0398**	0.010	24.7	ug/L	13	Standard
	Ag	107	97.7	24.3	**0.0011**	0.005	484.9	ug/L	72	Standard
	Cd	111	13.9	100.0	**-0.0020**	0.011	571.6	mg/L	5	Standard
	Cd	114	33.7	76.3	**0.0024**	0.008	338.0	ug/L	7	Standard
>	**In**	115	430561.9	0.3				ug/L	477820	Standard
	Sn	118	421.7	18.9	**0.0255**	0.020	77.2	ug/L	343	Standard
	Sb	123	668.0	8.1	**0.1956**	0.016	8.0	ug/L	56	Standard
	Ba	135	55.0	46.4	**0.0057**	0.015	260.7	ug/L	36	Standard
	Ce	140	28.3	10.2				ug/L	65	Standard
>	**Tb**	159	901590.3	1.6				ug/L	939481	Standard
	Ho	165	15.0	0.0				ug/L	7	Standard
	Tl	203	41.0	110.1	**0.0030**	0.007	254.0	ug/L	5	Standard
	Tl	205	16.7	96.4	**-0.0026**	0.004	150.5	ug/L	2	Standard
	Pb	206	221.7	4.1	**-0.0037**	0.002	62.6	ug/L	222	Standard
	Pb	207	205.7	2.4	**-0.0000**	0.002	9443.2	ug/L	186	Standard
	Pb	208	678.7	5.6	**-0.0055**	0.004	67.2	ug/L	717	Standard
	U	238	12.0	57.7	**-0.0034**	0.002	49.2	ug/L	2	Standard
>	**Bi**	209	418810.5	1.4				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	46.7	27.0	**-0.0060**	0.032	533.1	mg/L	45	Standard
K	39	13.3	43.3	**0.0777**	0.235	302.0	mg/L	10	Standard
Ca	43	31.7	36.5	**-1.3506**	2.537	187.8	mg/L	47	Standard
Fe	54	64.7	7.8	**-0.0023**	0.018	756.9	mg/L	46	Standard
Fe	57	836.7	13.8	**2.1480**	0.898	41.8	mg/L	627	Standard
> **Sc-1**	45	24584.9	3.0				mg/L	24506	Standard
Cl	35	40870.4	0.7				ug/L	47100	Standard
Kr	83	5.0	72.1				ug/L	8	Standard
Br	81	536.7	10.8				ug/L	427	Standard
P	31	12983.9	2.9				ug/L	10519	Standard
S	34	2371.9	2.8				ug/L	2003	Standard
Sr	88	160.0	5.4				ug/L	132	Standard
C	12	116.7	52.4				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	16.5	92.2				mg/L	13	Standard
Ho-1	165	15.0	0.0				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	3438.7	2.2				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.189	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.110
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.124
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Sunday, August 23, 2015 20:36:28
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Method 6020 - Summary Report

Sample ID: L1508089603
Sample Date/Time: Sunday, August 23, 2015 20:37:24
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	42158.8	7.1				ug/L	53498	Standard
	Be	9	185.0	12.4	**0.3783**	0.030	8.0	ug/L	12	Standard
	Al	27	8887786.6	0.7	**163.3528**	10.331	6.3	ug/L	487	Standard
	Sc	45	24554.9	2.8				ug/L	24506	Standard
	Ti	47	2133.2	1.0	**12.2944**	0.331	2.7	ug/L	21	Standard
	V	51	47116.1	1.8	**12.4785**	0.286	2.3	ug/L	1268	Standard
	Cr	52	68887.3	0.9	**12.9395**	0.205	1.6	ug/L	7921	Standard
	Cr	53	7870.4	2.7	**12.4836**	0.552	4.4	ug/L	442	Standard
	Mn	55	3921104.2	0.7	**1249.6854**	33.434	2.7	ug/L	545	Standard
	Co	59	21379.7	1.1	**6.3265**	0.192	3.0	ug/L	183	Standard
	Ni	60	31265.9	0.9	**24.4661**	0.518	2.1	ug/L	131	Standard
	Cu	65	14741.5	1.5	**11.7918**	0.353	3.0	ug/L	231	Standard
	Zn	66	34951.3	0.6	**49.3761**	1.290	2.6	ug/L	306	Standard
>	**Ge**	72	308320.0	2.1				ug/L	330478	Standard
	As	75	2989.2	1.8	**4.2535**	0.117	2.8	ug/L	-23	Standard
	Se	82	101.5	7.7	**1.3221**	0.132	10.0	ug/L	27	Standard
	Se-1	77	120.3	10.2	**0.9717**	0.341	35.1	ug/L	92	Standard
>	**Ga**	71	3188.7	1.8				mg/L	37	Standard
	Rb	85	58706.9	0.8				ug/L	25	Standard
	Y	89	406068.2	1.1				ug/L	312467	Standard
>	**Rh**	103	245.0	15.9				ug/L	20	Standard
	Mo	98	1493.1	2.5	**1.4082**	0.010	0.7	ug/L	13	Standard
	Ag	107	326.0	11.9	**0.0652**	0.010	14.8	ug/L	72	Standard
	Cd	111	529.3	2.2	**0.4859**	0.017	3.5	mg/L	5	Standard
	Cd	114	1416.7	1.8	**0.5011**	0.018	3.6	ug/L	7	Standard
>	**In**	115	372312.5	3.2				ug/L	477820	Standard
	Sn	118	313.3	16.1	**0.0111**	0.016	147.7	ug/L	343	Standard
	Sb	123	279.3	13.9	**0.0926**	0.014	14.9	ug/L	56	Standard
	Ba	135	497358.9	0.8	**335.3814**	8.362	2.5	ug/L	36	Standard
	Ce	140	464196.0	2.3				ug/L	65	Standard
>	**Tb**	159	819053.3	2.4				ug/L	939481	Standard
	Ho	165	12141.5	2.9				ug/L	7	Standard
	Tl	203	391.7	12.7	**0.0734**	0.011	15.2	ug/L	5	Standard
	Tl	205	220.0	17.2	**0.0570**	0.011	20.0	ug/L	2	Standard
	Pb	206	35764.2	1.1	**11.2407**	0.170	1.5	ug/L	222	Standard
	Pb	207	29041.1	0.5	**10.0858**	0.218	2.2	ug/L	186	Standard
	Pb	208	105016.2	0.8	**10.2329**	0.184	1.8	ug/L	717	Standard
	U	238	5151.5	1.6	**1.4609**	0.035	2.4	ug/L	2	Standard
>	**Bi**	209	350650.7	2.2				ug/L	440279	Standard

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Na	23	40.0	**-114510621669014357032448**1503.690			12.5	mg/L	2	Standard
Mg	24	220.0	14.2	**0.4826**	0.083	17.2	mg/L	45	Standard
K	39	71.7	26.4	**2.2430**	0.645	28.8	mg/L	10	Standard
Ca	43	2545.2	4.8	**572.1074**	44.410	7.8	mg/L	47	Standard
Fe	54	4248.4	1.3	**10.5724**	0.264	2.5	mg/L	46	Standard
Fe	57	3375.4	3.1	**27.1406**	1.729	6.4	mg/L	627	Standard
Sc-1	45	24554.9	2.8				mg/L	24506	Standard
Cl	35	41964.8	4.0				ug/L	47100	Standard
Kr	83	4.7	61.9				ug/L	8	Standard
Br	81	1390.1	4.5				ug/L	427	Standard
P	31	12370.1	2.7				ug/L	10519	Standard
S	34	2336.8	5.4				ug/L	2003	Standard
Sr	88	338.3	10.4				ug/L	132	Standard
C	12	316.7	29.8				mg/L	177	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	13.3	86.6				mg/L	10	Standard
Dy	164	18896.4	2.2				mg/L	13	Standard
Ho-1	165	12141.5	2.9				mg/L	7	Standard
Er	166	11120.7	3.1				mg/L	7	Standard
I	127	31953.7	3.0				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		78.805	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		93.295	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		77.919
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		79.643
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1508089604
Sample Date/Time: Sunday, August 23, 2015 20:40:35
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	40691.2	1.3				ug/L	53498	Standard
	Be	9	146.7	25.1	**0.3080**	0.084	27.4	ug/L	12	Standard
	Al	27	8278173.9	1.5	**157.1944**	3.672	2.3	ug/L	487	Standard
	Sc	45	26104.1	1.3				ug/L	24506	Standard
	Ti	47	1524.7	2.2	**8.6122**	0.138	1.6	ug/L	21	Standard
	V	51	32028.2	2.0	**8.2394**	0.120	1.5	ug/L	1268	Standard
	Cr	52	48027.3	1.2	**8.4004**	0.162	1.9	ug/L	7921	Standard
	Cr	53	5209.2	3.0	**7.8774**	0.238	3.0	ug/L	442	Standard
	Mn	55	3137333.9	0.7	**984.3364**	6.747	0.7	ug/L	545	Standard
	Co	59	20014.5	0.4	**5.8261**	0.018	0.3	ug/L	183	Standard
	Ni	60	31810.7	1.3	**24.5078**	0.177	0.7	ug/L	131	Standard
	Cu	65	9540.7	2.2	**7.4500**	0.160	2.2	ug/L	231	Standard
	Zn	66	22508.0	0.9	**31.1388**	0.467	1.5	ug/L	306	Standard
>	Ge	72	313070.4	0.6				ug/L	330478	Standard
	As	75	4596.8	1.1	**6.4133**	0.061	1.0	ug/L	-23	Standard
	Se	82	117.3	7.3	**1.5627**	0.143	9.2	ug/L	27	Standard
	Se-1	77	102.3	7.2	**0.4937**	0.164	33.2	ug/L	92	Standard
>	Ga	71	2281.8	3.9				mg/L	37	Standard
	Rb	85	37003.5	4.1				ug/L	25	Standard
	Y	89	407577.1	1.9				ug/L	312467	Standard
>	Rh	103	240.0	9.5				ug/L	20	Standard
	Mo	98	1333.5	3.5	**1.2514**	0.042	3.3	ug/L	13	Standard
	Ag	107	442.3	3.4	**0.0955**	0.004	4.3	ug/L	72	Standard
	Cd	111	590.7	6.0	**0.5408**	0.034	6.3	mg/L	5	Standard
	Cd	114	1638.8	5.9	**0.5778**	0.033	5.8	ug/L	7	Standard
>	In	115	374057.3	0.2				ug/L	477820	Standard
	Sn	118	298.3	15.5	**0.0061**	0.013	213.1	ug/L	343	Standard
	Sb	123	203.3	9.2	**0.0660**	0.006	9.5	ug/L	56	Standard
	Ba	135	408227.6	1.3	**273.8525**	4.212	1.5	ug/L	36	Standard
	Ce	140	373695.7	0.6				ug/L	65	Standard
>	Tb	159	838568.8	1.8				ug/L	939481	Standard
	Ho	165	11496.0	2.0				ug/L	7	Standard
	Tl	203	239.0	11.7	**0.0431**	0.006	13.4	ug/L	5	Standard
	Tl	205	130.0	10.2	**0.0308**	0.003	11.3	ug/L	2	Standard
	Pb	206	29469.3	0.8	**9.2219**	0.059	0.6	ug/L	222	Standard
	Pb	207	23812.0	0.7	**8.2318**	0.053	0.6	ug/L	186	Standard
	Pb	208	85577.0	1.2	**8.3001**	0.023	0.3	ug/L	717	Standard
	U	238	4040.9	3.0	**1.1407**	0.024	2.1	ug/L	2	Standard
>	Bi	209	351701.6	1.0				ug/L	440279	Standard

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Na	23	33.3	**-894592613297**327803976341603.310		36.6	mg/L	2	Standard
Mg	24	505.0	6.0	**1.2005**	0.069	5.7	mg/L	45	Standard
K	39	46.7	34.4	**1.2120**	0.541	44.6	mg/L	10	Standard
Ca	43	2723.6	4.2	**574.9555**	16.569	2.9	mg/L	47	Standard
Fe	54	3992.6	6.2	**9.3189**	0.466	5.0	mg/L	46	Standard
Fe	57	3662.1	4.3	**27.8083**	1.816	6.5	mg/L	627	Standard
Sc-1	45	26104.1	1.3				mg/L	24506	Standard
Cl	35	40918.5	1.1				ug/L	47100	Standard
Kr	83	6.0	60.1				ug/L	8	Standard
Br	81	2043.5	2.0				ug/L	427	Standard
P	31	12902.2	1.4				ug/L	10519	Standard
S	34	2155.2	3.4				ug/L	2003	Standard
Sr	88	341.7	9.5				ug/L	132	Standard
C	12	223.3	10.3				mg/L	177	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	30.0	0.0				mg/L	10	Standard
Dy	164	17563.8	4.1				mg/L	13	Standard
Ho-1	165	11496.0	2.0				mg/L	7	Standard
Er	166	10583.7	3.4				mg/L	7	Standard
I	127	18029.1	3.2				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		76.062	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.733	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	78.284
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	79.881
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1508089604
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Method 6020 - Summary Report

Sample ID: L1508089605
Sample Date/Time: Sunday, August 23, 2015 20:43:46
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	40303.6	4.5				ug/L	53498	Standard
	Be	9	125.0	14.4	**0.2631**	0.049	18.8	ug/L	12	Standard
	Al	27	9721394.6	1.5	**186.6100**	9.254	5.0	ug/L	487	Standard
	Sc	45	26276.1	1.2				ug/L	24506	Standard
	Ti	47	1454.7	2.1	**7.8701**	0.153	1.9	ug/L	21	Standard
	V	51	42349.5	1.9	**10.5413**	0.231	2.2	ug/L	1268	Standard
	Cr	52	55774.1	1.3	**9.5310**	0.091	1.0	ug/L	7921	Standard
	Cr	53	6433.0	3.1	**9.4648**	0.251	2.7	ug/L	442	Standard
	Mn	55	3725109.6	1.0	**1121.0217**	15.388	1.4	ug/L	545	Standard
	Co	59	21380.4	0.6	**5.9705**	0.029	0.5	ug/L	183	Standard
	Ni	60	29890.5	1.5	**22.0805**	0.457	2.1	ug/L	131	Standard
	Cu	65	9718.8	0.6	**7.2748**	0.015	0.2	ug/L	231	Standard
	Zn	66	26671.8	0.2	**35.4515**	0.242	0.7	ug/L	306	Standard
>	Ge	72	326418.8	0.7				ug/L	330478	Standard
	As	75	2118.3	2.2	**2.8634**	0.042	1.5	ug/L	-23	Standard
	Se	82	91.5	6.1	**1.0617**	0.088	8.3	ug/L	27	Standard
	Se-1	77	123.0	20.2	**0.8687**	0.576	66.3	ug/L	92	Standard
>	Ga	71	2843.6	3.4				mg/L	37	Standard
	Rb	85	41575.3	1.2				ug/L	25	Standard
	Y	89	422513.9	3.8				ug/L	312467	Standard
>	Rh	103	141.7	36.1				ug/L	20	Standard
	Mo	98	1292.3	3.1	**1.2047**	0.032	2.6	ug/L	13	Standard
	Ag	107	291.0	3.6	**0.0551**	0.003	5.0	ug/L	72	Standard
	Cd	111	518.1	1.3	**0.4695**	0.004	0.8	mg/L	5	Standard
	Cd	114	1290.3	1.3	**0.4502**	0.008	1.9	ug/L	7	Standard
>	In	115	376510.3	0.6				ug/L	477820	Standard
	Sn	118	303.3	15.0	**0.0070**	0.013	188.2	ug/L	343	Standard
	Sb	123	133.8	13.1	**0.0418**	0.006	13.7	ug/L	56	Standard
	Ba	135	347781.9	0.7	**231.7809**	2.344	1.0	ug/L	36	Standard
	Ce	140	440899.9	0.8				ug/L	65	Standard
>	Tb	159	845680.1	0.3				ug/L	939481	Standard
	Ho	165	13159.0	1.6				ug/L	7	Standard
	Tl	203	232.3	3.6	**0.0410**	0.002	4.3	ug/L	5	Standard
	Tl	205	138.3	8.3	**0.0325**	0.003	9.3	ug/L	2	Standard
	Pb	206	29875.1	0.5	**9.1873**	0.112	1.2	ug/L	222	Standard
	Pb	207	24092.5	0.6	**8.1845**	0.100	1.2	ug/L	186	Standard
	Pb	208	87599.4	0.7	**8.3502**	0.086	1.0	ug/L	717	Standard
	U	238	3025.3	1.0	**0.8377**	0.005	0.6	ug/L	2	Standard
>	Bi	209	357889.9	0.7				ug/L	440279	Standard

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Na	23	40.0	**-1070847626639**	240599288423097.940		22.5	mg/L	2	Standard
Mg	24	146.7	14.2	**0.2495**	0.057	23.0	mg/L	45	Standard
K	39	35.0	37.8	**0.7963**	0.455	57.2	mg/L	10	Standard
Ca	43	2101.8	4.7	**438.9972**	22.940	5.2	mg/L	47	Standard
Fe	54	4529.9	1.9	**10.5319**	0.315	3.0	mg/L	46	Standard
Fe	57	3355.4	1.0	**24.7576**	0.037	0.1	mg/L	627	Standard
Sc-1	45	26276.1	1.2				mg/L	24506	Standard
Cl	35	41189.9	0.1				ug/L	47100	Standard
Kr	83	4.0	66.1				ug/L	8	Standard
Br	81	883.4	7.7				ug/L	427	Standard
P	31	13379.2	2.9				ug/L	10519	Standard
S	34	2398.5	2.2				ug/L	2003	Standard
Sr	88	303.3	11.2				ug/L	132	Standard
C	12	220.0	36.4				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	10.0					mg/L	10	Standard
Dy	164	19488.9	3.0				mg/L	13	Standard
Ho-1	165	13159.0	1.6				mg/L	7	Standard
Er	166	12338.4	1.4				mg/L	7	Standard
I	127	12905.5	1.6				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		75.337	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.772	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	78.797
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	81.287
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1508089605
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Method 6020 - Summary Report

Sample ID: L1508089606
Sample Date/Time: Sunday, August 23, 2015 20:46:57
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	48735.0	4.0				ug/L	53498	Standard
	Be	9	2045.1	10.0	**3.7897**	0.242	6.4	ug/L	12	Standard
	Al	27	4530392.2	3.1	**71.8460**	2.039	2.8	ug/L	487	Standard
	Sc	45	34975.3	1.5				ug/L	24506	Standard
	Ti	47	4445.7	1.1	**23.7879**	0.519	2.2	ug/L	21	Standard
	V	51	116812.8	1.1	**29.0153**	0.366	1.3	ug/L	1268	Standard
	Cr	52	180958.9	0.8	**33.5993**	0.743	2.2	ug/L	7921	Standard
	Cr	53	22396.5	2.6	**34.0001**	0.960	2.8	ug/L	442	Standard
	Mn	55	3198362.8	1.4	**941.5364**	25.451	2.7	ug/L	545	Standard
	Co	59	114698.2	1.5	**31.5663**	0.796	2.5	ug/L	183	Standard
	Ni	60	96759.3	1.2	**70.1089**	1.750	2.5	ug/L	131	Standard
	Cu	65	114981.0	1.5	**86.0256**	1.679	2.0	ug/L	231	Standard
	Zn	66	96406.1	0.5	**126.5018**	2.306	1.8	ug/L	306	Standard
>	Ge	72	333739.3	1.3				ug/L	330478	Standard
	As	75	12277.6	0.8	**15.9930**	0.332	2.1	ug/L	-23	Standard
	Se	82	69.3	11.0	**0.6772**	0.124	18.3	ug/L	27	Standard
	Se-1	77	166.7	7.8	**1.7825**	0.268	15.0	ug/L	92	Standard
>	Ga	71	22755.4	1.8				mg/L	37	Standard
	Rb	85	392738.6	1.0				ug/L	25	Standard
	Y	89	733063.6	0.7				ug/L	312467	Standard
>	Rh	103	73.3	3.9				ug/L	20	Standard
	Mo	98	1216.7	6.3	**1.0101**	0.044	4.3	ug/L	13	Standard
	Ag	107	1042.0	15.5	**0.2219**	0.032	14.2	ug/L	72	Standard
	Cd	111	227.5	5.8	**0.1757**	0.008	4.6	mg/L	5	Standard
	Cd	114	660.8	3.1	**0.2012**	0.008	4.2	ug/L	7	Standard
>	In	115	422448.2	2.4				ug/L	477820	Standard
	Sn	118	280.0	5.4	**-0.0083**	0.003	31.3	ug/L	343	Standard
	Sb	123	167.2	60.7	**0.0465**	0.029	63.0	ug/L	56	Standard
	Ba	135	392508.8	1.1	**233.2162**	5.646	2.4	ug/L	36	Standard
	Ce	140	1605297.7	1.7				ug/L	65	Standard
>	Tb	159	939702.8	1.1				ug/L	939481	Standard
	Ho	165	46880.8	0.8				ug/L	7	Standard
	Tl	203	2281.2	6.3	**0.3786**	0.016	4.2	ug/L	5	Standard
	Tl	205	1476.7	9.0	**0.3573**	0.030	8.5	ug/L	2	Standard
	Pb	206	146156.6	2.7	**39.3166**	0.334	0.9	ug/L	222	Standard
	Pb	207	119017.4	1.6	**35.3888**	0.302	0.9	ug/L	186	Standard
	Pb	208	439423.1	1.3	**36.6662**	0.541	1.5	ug/L	717	Standard
	U	238	7909.7	2.9	**1.9140**	0.016	0.8	ug/L	2	Standard
>	Bi	209	411230.3	2.4				ug/L	440279	Standard

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Na	23	1.7	**-340085788521**	58904586465205.273		173.2	mg/L	2	Standard
Mg	24	136.7	7.6	**0.1337**	0.024	18.2	mg/L	45	Standard
K	39	215.0	10.7	**5.2155**	0.550	10.5	mg/L	10	Standard
Ca	43	140.0	21.4	**13.8810**	5.030	36.2	mg/L	47	Standard
Fe	54	17996.2	1.3	**31.7606**	0.594	1.9	mg/L	46	Standard
Fe	57	5337.6	2.8	**30.7797**	1.481	4.8	mg/L	627	Standard
Sc-1	45	34975.3	1.5				mg/L	24506	Standard
Cl	35	38556.4	3.6				ug/L	47100	Standard
Kr	83	3.3	17.3				ug/L	8	Standard
Br	81	726.7	10.0				ug/L	427	Standard
P	31	13249.1	3.7				ug/L	10519	Standard
S	34	2378.5	1.6				ug/L	2003	Standard
Sr	88	208.3	17.7				ug/L	132	Standard
C	12	126.7	16.4				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	236.7	10.6				mg/L	10	Standard
Dy	164	79170.4	1.3				mg/L	13	Standard
Ho-1	165	46880.8	0.8				mg/L	7	Standard
Er	166	41119.1	1.2				mg/L	7	Standard
I	127	5077.5	2.2				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		91.098	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.987	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		88.411
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.402
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1508089606
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Method 6020 - Summary Report

Sample ID: L1508096501
Sample Date/Time: Sunday, August 23, 2015 20:50:09
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	41607.1	4.9				ug/L	53498	Standard
	Be	9	135.0	9.8	**0.2745**	0.015	5.6	ug/L	12	Standard
	Al	27	8244573.3	4.3	**153.1139**	0.918	0.6	ug/L	487	Standard
	Sc	45	25600.0	2.6				ug/L	24506	Standard
	Ti	47	1182.7	3.0	**6.7384**	0.113	1.7	ug/L	21	Standard
	V	51	40512.2	3.3	**10.6519**	0.255	2.4	ug/L	1268	Standard
	Cr	52	49183.1	2.6	**8.7711**	0.229	2.6	ug/L	7921	Standard
	Cr	53	5556.0	4.0	**8.5680**	0.253	3.0	ug/L	442	Standard
	Mn	55	3462968.3	1.1	**1100.7387**	18.783	1.7	ug/L	545	Standard
	Co	59	18274.7	1.7	**5.3851**	0.117	2.2	ug/L	183	Standard
	Ni	60	30602.5	0.8	**23.8836**	0.305	1.3	ug/L	131	Standard
	Cu	65	7471.8	0.6	**5.8751**	0.101	1.7	ug/L	231	Standard
	Zn	66	24946.5	0.7	**35.0175**	0.440	1.3	ug/L	306	Standard
>	**Ge**	72	309077.0	1.9				ug/L	330478	Standard
	As	75	2002.6	1.2	**2.8601**	0.083	2.9	ug/L	-23	Standard
	Se	82	97.6	12.2	**1.2533**	0.234	18.7	ug/L	27	Standard
	Se-1	77	110.0	6.9	**0.7140**	0.231	32.4	ug/L	92	Standard
>	**Ga**	71	2266.8	4.7				mg/L	37	Standard
	Rb	85	30420.5	2.2				ug/L	25	Standard
	Y	89	407812.0	2.2				ug/L	312467	Standard
>	**Rh**	103	198.3	14.8				ug/L	20	Standard
	Mo	98	855.6	2.3	**0.8077**	0.014	1.8	ug/L	13	Standard
	Ag	107	235.0	8.9	**0.0411**	0.004	9.9	ug/L	72	Standard
	Cd	111	474.3	0.3	**0.4348**	0.010	2.4	mg/L	5	Standard
	Cd	114	1256.7	12.3	**0.4453**	0.068	15.2	ug/L	7	Standard
>	**In**	115	371554.8	2.6				ug/L	477820	Standard
	Sn	118	250.0	3.5	**-0.0071**	0.004	59.9	ug/L	343	Standard
	Sb	123	180.5	8.1	**0.0585**	0.003	5.9	ug/L	56	Standard
	Ba	135	289762.2	2.3	**195.7223**	4.498	2.3	ug/L	36	Standard
	Ce	140	372927.0	2.4				ug/L	65	Standard
>	**Tb**	159	813405.2	2.0				ug/L	939481	Standard
	Ho	165	11821.3	1.5				ug/L	7	Standard
	Tl	203	172.0	12.1	**0.0303**	0.004	11.6	ug/L	5	Standard
	Tl	205	125.0	0.0	**0.0299**	0.001	2.1	ug/L	2	Standard
	Pb	206	30190.0	0.4	**9.5759**	0.141	1.5	ug/L	222	Standard
	Pb	207	24539.2	1.4	**8.5979**	0.039	0.5	ug/L	186	Standard
	Pb	208	88183.0	1.6	**8.6697**	0.149	1.7	ug/L	717	Standard
	U	238	3145.7	2.8	**0.8985**	0.016	1.7	ug/L	2	Standard
>	**Bi**	209	347121.0	1.8				ug/L	440279	Standard

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Na	23	16.7	**-4650301380964**59377841166430.870			98.8	mg/L	2	Standard
Mg	24	220.0	33.5	**0.4549**	0.186	40.9	mg/L	45	Standard
K	39	38.3	7.5	**0.9512**	0.122	12.8	mg/L	10	Standard
Ca	43	2360.2	2.2	**507.5403**	22.227	4.4	mg/L	47	Standard
Fe	54	4085.8	1.8	**9.7398**	0.289	3.0	mg/L	46	Standard
Fe	57	3367.0	7.0	**25.7082**	2.615	10.2	mg/L	627	Standard
Sc-1	45	25600.0	2.6				mg/L	24506	Standard
Cl	35	43967.8	4.8				ug/L	47100	Standard
Kr	83	3.0	88.2				ug/L	8	Standard
Br	81	1063.4	12.0				ug/L	427	Standard
P	31	12917.2	2.0				ug/L	10519	Standard
S	34	2398.5	7.8				ug/L	2003	Standard
Sr	88	291.7	11.4				ug/L	132	Standard
C	12	253.3	2.3				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	13.3	43.3				mg/L	10	Standard
Dy	164	18060.8	4.2				mg/L	13	Standard
Ho-1	165	11821.3	1.5				mg/L	7	Standard
Er	166	10937.3	1.7				mg/L	7	Standard
I	127	11777.9	2.0				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		77.774	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.524	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	77.760
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	78.841
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Sunday, August 23, 2015 20:53:23
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	43928.6	2.9				ug/L	53498	Standard
	Be	9	24868.7	0.5	**51.4739**	1.423	2.8	ug/L	12	Standard
	Al	27	3005902.8	1.5	**52.8707**	0.724	1.4	ug/L	487	Standard
	Sc	45	25222.6	0.9				ug/L	24506	Standard
	Ti	47	19484.5	1.9	**104.8215**	1.442	1.4	ug/L	21	Standard
	V	51	204790.1	0.8	**51.1912**	0.288	0.6	ug/L	1268	Standard
	Cr	52	269365.7	0.7	**50.8285**	0.131	0.3	ug/L	7921	Standard
	Cr	53	33127.9	2.0	**50.7114**	1.114	2.2	ug/L	442	Standard
	Mn	55	186971.0	2.3	**54.9360**	1.307	2.4	ug/L	545	Standard
	Co	59	178989.1	0.9	**49.3496**	0.538	1.1	ug/L	183	Standard
	Ni	60	70956.8	1.8	**51.4471**	0.669	1.3	ug/L	131	Standard
	Cu	65	68861.2	1.7	**51.5137**	0.589	1.1	ug/L	231	Standard
	Zn	66	38920.3	1.0	**50.8599**	0.292	0.6	ug/L	306	Standard
>	Ge	72	333281.4	0.5				ug/L	330478	Standard
	As	75	38958.1	1.0	**50.6974**	0.754	1.5	ug/L	-23	Standard
	Se	82	3243.8	1.6	**51.1279**	0.691	1.4	ug/L	27	Standard
	Se-1	77	2396.5	2.2	**51.7849**	1.438	2.8	ug/L	92	Standard
>	Ga	71	30.0	72.6				mg/L	37	Standard
	Rb	85	601.7	9.0				ug/L	25	Standard
	Y	89	302332.5	2.2				ug/L	312467	Standard
>	Rh	103	25.0	0.0				ug/L	20	Standard
	Mo	98	115592.2	1.1	**101.3025**	2.000	2.0	ug/L	13	Standard
	Ag	107	223475.0	0.2	**54.9826**	0.664	1.2	ug/L	72	Standard
	Cd	111	59316.9	1.6	**51.8415**	0.094	0.2	mg/L	5	Standard
	Cd	114	157079.8	2.4	**52.3322**	0.544	1.0	ug/L	7	Standard
>	In	115	401328.9	1.4				ug/L	477820	Standard
	Sn	118	188566.3	1.4	**49.9740**	1.095	2.2	ug/L	343	Standard
	Sb	123	162976.6	0.5	**52.2218**	0.930	1.8	ug/L	56	Standard
	Ba	135	87784.3	1.4	**54.8659**	0.436	0.8	ug/L	36	Standard
	Ce	140	205.0	24.0				ug/L	65	Standard
>	Tb	159	873273.5	2.4				ug/L	939481	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	294531.2	0.3	**51.7246**	0.445	0.9	ug/L	5	Standard
	Tl	205	195537.0	0.6	**50.4718**	0.772	1.5	ug/L	2	Standard
	Pb	206	187092.4	0.4	**52.7243**	0.606	1.1	ug/L	222	Standard
	Pb	207	169229.2	0.8	**52.7175**	1.003	1.9	ug/L	186	Standard
	Pb	208	591213.4	0.1	**51.6721**	0.526	1.0	ug/L	717	Standard
	U	238	191923.6	0.5	**48.7888**	0.695	1.4	ug/L	2	Standard
>	Bi	209	392743.5	1.1				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	1728.4	8.2	**4.6002**	0.367	8.0	mg/L	45	Standard
K	39	205.0	22.0	**7.0286**	1.573	22.4	mg/L	10	Standard
Ca	43	51.7	39.1	**2.8962**	4.392	151.7	mg/L	47	Standard
Fe	54	1942.9	4.9	**4.6146**	0.277	6.0	mg/L	46	Standard
Fe	57	1186.7	7.0	**5.3058**	0.800	15.1	mg/L	627	Standard
Sc-1	45	25222.6	0.9				mg/L	24506	Standard
Cl	35	39492.1	2.1				ug/L	47100	Standard
Kr	83	4.7	32.7				ug/L	8	Standard
Br	81	560.0	18.9				ug/L	427	Standard
P	31	13587.8	2.2				ug/L	10519	Standard
S	34	2321.8	1.4				ug/L	2003	Standard
Sr	88	191.7	5.4				ug/L	132	Standard
C	12	126.7	24.1				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	10.0	100.0				mg/L	10	Standard
Dy	164	16.3	126.9				mg/L	13	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	1901.8	0.2				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.948		
Al	27	105.741		
Sc	45			
Ti	47	104.822		
V	51	102.382		
Cr	52	101.657		
Cr	53			
Mn	55	109.872		
Co	59	98.699		
Ni	60	102.894		
Cu	65	103.027		
Zn	66	101.720		
Ge	72		100.848	
As	75	101.395		
Se	82	102.256		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.303		
Ag	107	109.965		
Cd	111	103.683		
Cd	114			
In	115			83.992
Sn	118	99.948		
Sb	123	104.444		
Ba	135	109.732		
Ce	140			
Tb	159			
Ho	165			
Tl	203	103.449		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.344		
U	238	97.578		
Bi	209			89.203
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Sunday, August 23, 2015 20:56:34
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	43893.5	2.5				ug/L	53498	Standard
	Be	9	16.7	45.8	**0.0144**	0.016	110.4	ug/L	12	Standard
	Al	27	1103.4	41.9	**0.0084**	0.008	96.2	ug/L	487	Standard
	Sc	45	25274.4	2.1				ug/L	24506	Standard
	Ti	47	18.3	54.9	**-0.0314**	0.055	176.5	ug/L	21	Standard
	V	51	1080.5	2.5	**-0.0664**	0.005	7.4	ug/L	1268	Standard
	Cr	52	6606.4	3.4	**-0.2495**	0.038	15.3	ug/L	7921	Standard
	Cr	53	386.7	5.2	**-0.1304**	0.028	21.6	ug/L	442	Standard
	Mn	55	797.4	24.7	**0.0572**	0.057	100.4	ug/L	545	Standard
	Co	59	232.3	9.6	**0.0095**	0.006	61.8	ug/L	183	Standard
	Ni	60	100.7	17.5	**-0.0144**	0.012	85.8	ug/L	131	Standard
	Cu	65	199.7	9.3	**-0.0233**	0.014	61.0	ug/L	231	Standard
	Zn	66	294.3	7.7	**-0.0660**	0.029	44.4	ug/L	306	Standard
>	**Ge**	72	331639.4	0.8				ug/L	330478	Standard
	As	75	-37.2	72.2	**0.0034**	0.035	1014.0	ug/L	-23	Standard
	Se	82	20.1	19.4	**-0.1019**	0.060	58.7	ug/L	27	Standard
	Se-1	77	95.3	17.1	**0.2015**	0.382	189.7	ug/L	92	Standard
>	**Ga**	71	25.0	34.6				mg/L	37	Standard
	Rb	85	45.0	11.1				ug/L	25	Standard
	Y	89	307948.3	1.2				ug/L	312467	Standard
>	**Rh**	103	18.3	15.7				ug/L	20	Standard
	Mo	98	53.7	40.9	**0.0430**	0.019	43.3	ug/L	13	Standard
	Ag	107	101.7	40.4	**0.0028**	0.010	349.1	ug/L	72	Standard
	Cd	111	14.5	77.3	**-0.0011**	0.009	885.2	mg/L	5	Standard
	Cd	114	62.9	68.7	**0.0121**	0.014	115.0	ug/L	7	Standard
>	**In**	115	417293.4	0.3				ug/L	477820	Standard
	Sn	118	390.0	11.2	**0.0207**	0.011	54.9	ug/L	343	Standard
	Sb	123	672.0	10.7	**0.2032**	0.023	11.2	ug/L	56	Standard
	Ba	135	90.3	63.3	**0.0280**	0.034	123.0	ug/L	36	Standard
	Ce	140	70.0	68.1				ug/L	65	Standard
>	**Tb**	159	869877.2	0.1				ug/L	939481	Standard
	Ho	165	15.0	88.2				ug/L	7	Standard
	Tl	203	69.3	64.4	**0.0081**	0.008	94.1	ug/L	5	Standard
	Tl	205	36.7	114.4	**0.0026**	0.010	408.4	ug/L	2	Standard
	Pb	206	234.7	23.7	**0.0024**	0.015	604.9	ug/L	222	Standard
	Pb	207	195.7	16.9	**-0.0004**	0.009	2378.6	ug/L	186	Standard
	Pb	208	716.7	5.9	**0.0003**	0.003	1164.9	ug/L	717	Standard
	U	238	33.3	60.6	**0.0020**	0.005	247.7	ug/L	2	Standard
>	**Bi**	209	400482.4	1.0				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	35.3	**-0.0182**	0.042	228.1	mg/L	45	Standard
K	39	10.0	100.0	**-0.0594**	0.371	623.8	mg/L	10	Standard
Ca	43	25.0	34.6	**-3.0305**	1.790	59.1	mg/L	47	Standard
Fe	54	54.3	10.4	**-0.0324**	0.016	48.0	mg/L	46	Standard
Fe	57	770.0	8.6	**1.3149**	0.756	57.5	mg/L	627	Standard
Sc-1	45	25274.4	2.1				mg/L	24506	Standard
Cl	35	39864.4	1.2				ug/L	47100	Standard
Kr	83	3.0	33.3				ug/L	8	Standard
Br	81	570.0	4.6				ug/L	427	Standard
P	31	12912.2	2.5				ug/L	10519	Standard
S	34	2576.9	6.4				ug/L	2003	Standard
Sr	88	203.3	3.8				ug/L	132	Standard
C	12	156.7	44.8				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	19.4	55.4				mg/L	13	Standard
Ho-1	165	15.0	88.2				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	7	Standard
I	127	2818.6	3.7				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.352	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		87.333
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.961
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

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Method 6020 - Summary Report

Sample ID: PBW A4 WG536019-02
Sample Date/Time: Sunday, August 23, 2015 20:59:48
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	43290.1	0.8				ug/L	53498	Standard
	Be	9	8.3	34.6	**-0.0026**	0.006	239.5	ug/L	12	Standard
	Al	27	793.4	17.4	**0.0032**	0.002	74.9	ug/L	487	Standard
	Sc	45	25456.4	5.0				ug/L	24506	Standard
	Ti	47	16.0	41.0	**-0.0444**	0.035	79.2	ug/L	21	Standard
	V	51	800.5	40.4	**-0.1377**	0.081	58.9	ug/L	1268	Standard
	Cr	52	7122.3	2.5	**-0.1503**	0.042	27.9	ug/L	7921	Standard
	Cr	53	6808.2	15.4	**9.8828**	1.695	17.1	ug/L	442	Standard
	Mn	55	820.4	7.7	**0.0638**	0.018	28.7	ug/L	545	Standard
	Co	59	192.7	7.1	**-0.0016**	0.004	223.5	ug/L	183	Standard
	Ni	60	125.3	6.2	**0.0035**	0.006	162.7	ug/L	131	Standard
	Cu	65	254.0	8.1	**0.0174**	0.015	87.3	ug/L	231	Standard
	Zn	66	1455.4	2.3	**1.4701**	0.047	3.2	ug/L	306	Standard
>	**Ge**	72	332072.3	0.5				ug/L	330478	Standard
	As	75	16.8	81.8	**0.0740**	0.018	24.3	ug/L	-23	Standard
	Se	82	18.1	15.8	**-0.1334**	0.045	33.5	ug/L	27	Standard
	Se-1	77	447.7	11.4	**8.1289**	1.197	14.7	ug/L	92	Standard
>	**Ga**	71	33.3	48.2				mg/L	37	Standard
	Rb	85	23.3	53.9				ug/L	25	Standard
	Y	89	313329.2	2.0				ug/L	312467	Standard
>	**Rh**	103	18.3	41.7				ug/L	20	Standard
	Mo	98	16.2	29.7	**0.0116**	0.004	36.4	ug/L	13	Standard
	Ag	107	72.0	14.6	**-0.0040**	0.003	67.6	ug/L	72	Standard
	Cd	111	8.3	78.6	**-0.0062**	0.006	90.2	mg/L	5	Standard
	Cd	114	12.9	75.3	**-0.0039**	0.003	79.8	ug/L	7	Standard
>	**In**	115	413068.5	1.4				ug/L	477820	Standard
	Sn	118	326.7	8.4	**0.0054**	0.006	119.0	ug/L	343	Standard
	Sb	123	191.6	12.8	**0.0558**	0.008	14.9	ug/L	56	Standard
	Ba	135	54.0	21.4	**0.0064**	0.007	109.1	ug/L	36	Standard
	Ce	140	31.7	32.9				ug/L	65	Standard
>	**Tb**	159	871709.6	2.1				ug/L	939481	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	21.7	9.6	**-0.0000**	0.000	845.6	ug/L	5	Standard
	Tl	205	18.3	83.3	**-0.0020**	0.004	195.4	ug/L	2	Standard
	Pb	206	241.7	3.5	**0.0052**	0.003	56.0	ug/L	222	Standard
	Pb	207	202.7	9.6	**0.0025**	0.006	222.7	ug/L	186	Standard
	Pb	208	762.7	6.7	**0.0050**	0.005	101.4	ug/L	717	Standard
	U	238	5.0	20.0	**-0.0050**	0.000	5.0	ug/L	2	Standard
>	**Bi**	209	395946.5	1.0				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	46.7	16.4	**-0.0091**	0.027	290.7	mg/L	45	Standard
K	39	8.3	34.6	**-0.1247**	0.103	82.5	mg/L	10	Standard
Ca	43	28.3	20.4	**-2.3441**	0.948	40.5	mg/L	47	Standard
Fe	54	62.7	51.1	**-0.0127**	0.080	633.9	mg/L	46	Standard
Fe	57	788.4	9.0	**1.4179**	0.326	23.0	mg/L	627	Standard
> **Sc-1**	45	25456.4	5.0				mg/L	24506	Standard
Cl	35	40403.8	0.8				ug/L	47100	Standard
Kr	83	5.7	20.4				ug/L	8	Standard
Br	81	556.7	9.9				ug/L	427	Standard
P	31	12098.2	1.9				ug/L	10519	Standard
S	34	2385.2	1.3				ug/L	2003	Standard
Sr	88	180.0	14.7				ug/L	132	Standard
C	12	96.7	39.2				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	29.7	32.9				mg/L	13	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	3640.4	3.9				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		80.920	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.483	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		86.448
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		89.931
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: LCSW A4 WG536019-03
Sample Date/Time: Sunday, August 23, 2015 21:03:00
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	47089.8	4.9				ug/L	53498	Standard
	Be	9	263.3	17.1	**0.4900**	0.100	20.5	ug/L	12	Standard
	Al	27	64666.0	1.2	**1.0517**	0.054	5.2	ug/L	487	Standard
	Sc	45	25476.4	1.2				ug/L	24506	Standard
	Ti	47	2046.1	2.4	**10.8742**	0.332	3.0	ug/L	21	Standard
	V	51	40673.9	0.7	**9.8780**	0.031	0.3	ug/L	1268	Standard
	Cr	52	34641.6	1.2	**5.1835**	0.075	1.4	ug/L	7921	Standard
	Cr	53	24403.1	10.3	**37.0808**	3.632	9.8	ug/L	442	Standard
	Mn	55	19742.9	1.3	**5.6315**	0.113	2.0	ug/L	545	Standard
	Co	59	7509.9	1.7	**2.0144**	0.026	1.3	ug/L	183	Standard
	Ni	60	7301.8	2.1	**5.2073**	0.145	2.8	ug/L	131	Standard
	Cu	65	7384.1	1.2	**5.3601**	0.105	2.0	ug/L	231	Standard
	Zn	66	9687.1	0.3	**12.2957**	0.121	1.0	ug/L	306	Standard
>	Ge	72	333841.2	0.7				ug/L	330478	Standard
	As	75	3105.3	2.4	**4.0818**	0.082	2.0	ug/L	-23	Standard
	Se	82	276.4	3.9	**3.9644**	0.201	5.1	ug/L	27	Standard
	Se-1	77	1101.4	5.4	**22.7002**	1.263	5.6	ug/L	92	Standard
>	Ga	71	48.3	43.1				mg/L	37	Standard
	Rb	85	78.3	45.3				ug/L	25	Standard
	Y	89	308122.3	2.0				ug/L	312467	Standard
>	Rh	103	15.0	66.7				ug/L	20	Standard
	Mo	98	12057.6	0.7	**10.1383**	0.052	0.5	ug/L	13	Standard
	Ag	107	18542.0	1.7	**4.3583**	0.067	1.5	ug/L	72	Standard
	Cd	111	592.2	3.7	**0.4837**	0.019	4.0	mg/L	5	Standard
	Cd	114	1674.9	12.6	**0.5277**	0.069	13.0	ug/L	7	Standard
>	In	115	418146.7	0.2				ug/L	477820	Standard
	Sn	118	38221.5	2.2	**9.6567**	0.191	2.0	ug/L	343	Standard
	Sb	123	41853.9	1.5	**12.8664**	0.172	1.3	ug/L	56	Standard
	Ba	135	17996.3	0.7	**10.7741**	0.078	0.7	ug/L	36	Standard
	Ce	140	48.3	58.8				ug/L	65	Standard
>	Tb	159	864200.3	0.9				ug/L	939481	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	30312.0	1.3	**5.1939**	0.056	1.1	ug/L	5	Standard
	Tl	205	20151.7	1.2	**5.0725**	0.072	1.4	ug/L	2	Standard
	Pb	206	19964.5	0.6	**5.4372**	0.046	0.9	ug/L	222	Standard
	Pb	207	17588.2	0.8	**5.2950**	0.054	1.0	ug/L	186	Standard
	Pb	208	62337.5	0.6	**5.2645**	0.034	0.6	ug/L	717	Standard
	U	238	2.7	94.4	**-0.0056**	0.001	11.1	ug/L	2	Standard
>	Bi	209	402230.5	0.4				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	256.7	21.5	**0.5592**	0.145	26.0	mg/L	45	Standard
K	39	25.0	52.9	**0.4751**	0.475	99.9	mg/L	10	Standard
Ca	43	15.0	100.0	**-5.2315**	3.336	63.8	mg/L	47	Standard
Fe	54	74.7	30.2	**0.0162**	0.057	350.3	mg/L	46	Standard
Fe	57	838.4	7.5	**1.8995**	0.687	36.2	mg/L	627	Standard
Sc-1	45	25476.4	1.2				mg/L	24506	Standard
Cl	35	41760.1	0.3				ug/L	47100	Standard
Kr	83	3.0	88.2				ug/L	8	Standard
Br	81	466.7	8.7				ug/L	427	Standard
P	31	12468.5	7.9				ug/L	10519	Standard
S	34	2401.9	2.0				ug/L	2003	Standard
Sr	88	173.3	28.9				ug/L	132	Standard
C	12	116.7	38.7				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	9.2	106.1				mg/L	13	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	7	Standard
I	127	3840.5	3.8				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		88.022	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.018	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		87.511
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.358
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW A4 WG536019-03
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Method 6020 - Summary Report

Sample ID: L1508099901 WG536019-01
Sample Date/Time: Sunday, August 23, 2015 21:06:11
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	45891.1	1.9				ug/L	53498	Standard
	Be	9	11.7	24.7	**0.0030**	0.005	177.0	ug/L	12	Standard
	Al	27	573.3	2.8	**-0.0013**	0.000	23.9	ug/L	487	Standard
	Sc	45	25319.5	2.1				ug/L	24506	Standard
	Ti	47	16.7	6.9	**-0.0419**	0.007	15.5	ug/L	21	Standard
	V	51	1193.0	25.7	**-0.0426**	0.075	176.8	ug/L	1268	Standard
	Cr	52	7522.5	3.3	**-0.0923**	0.053	57.4	ug/L	7921	Standard
	Cr	53	6484.7	16.3	**9.2391**	1.663	18.0	ug/L	442	Standard
	Mn	55	693.3	1.6	**0.0234**	0.003	11.6	ug/L	545	Standard
	Co	59	221.3	7.5	**0.0055**	0.004	78.9	ug/L	183	Standard
	Ni	60	215.7	12.4	**0.0671**	0.019	27.9	ug/L	131	Standard
	Cu	65	286.3	5.5	**0.0389**	0.013	32.3	ug/L	231	Standard
	Zn	66	1675.1	3.3	**1.7303**	0.066	3.8	ug/L	306	Standard
>	**Ge**	72	336679.9	0.4				ug/L	330478	Standard
	As	75	-58.2	34.3	**-0.0228**	0.025	111.4	ug/L	-23	Standard
	Se	82	18.6	23.9	**-0.1292**	0.070	54.5	ug/L	27	Standard
	Se-1	77	502.7	3.5	**9.2077**	0.384	4.2	ug/L	92	Standard
>	**Ga**	71	23.3	86.6				mg/L	37	Standard
	Rb	85	3472.1	5.7				ug/L	25	Standard
	Y	89	305652.9	3.4				ug/L	312467	Standard
>	**Rh**	103	13.3	21.7				ug/L	20	Standard
	Mo	98	174.7	9.9	**0.1433**	0.015	10.3	ug/L	13	Standard
	Ag	107	73.7	14.6	**-0.0041**	0.002	56.9	ug/L	72	Standard
	Cd	111	5.5	54.8	**-0.0086**	0.003	30.0	mg/L	5	Standard
	Cd	114	22.8	49.7	**-0.0009**	0.004	380.8	ug/L	7	Standard
>	**In**	115	422234.5	1.2				ug/L	477820	Standard
	Sn	118	331.7	13.5	**0.0049**	0.012	247.3	ug/L	343	Standard
	Sb	123	90.6	12.9	**0.0237**	0.003	14.0	ug/L	56	Standard
	Ba	135	759.7	1.3	**0.4252**	0.011	2.5	ug/L	36	Standard
	Ce	140	23.3	61.9				ug/L	65	Standard
>	**Tb**	159	884369.6	1.1				ug/L	939481	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	33.0	40.1	**0.0018**	0.002	124.3	ug/L	5	Standard
	Tl	205	25.0	72.1	**-0.0004**	0.005	1170.1	ug/L	2	Standard
	Pb	206	240.3	3.2	**0.0035**	0.002	56.1	ug/L	222	Standard
	Pb	207	203.0	15.2	**0.0014**	0.009	677.5	ug/L	186	Standard
	Pb	208	801.3	2.8	**0.0070**	0.002	32.2	ug/L	717	Standard
	U	238	1.0	100.0	**-0.0060**	0.000	4.1	ug/L	2	Standard
>	**Bi**	209	403974.7	0.5				ug/L	440279	Standard

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Na	23	1.7	**-4626638712680135733186383.656**			173.2	mg/L	2	Standard
Mg	24	800.0	11.3	**2.0506**	0.274	13.3	mg/L	45	Standard
K	39	33.3	22.9	**0.7829**	0.268	34.2	mg/L	10	Standard
Ca	43	53.3	30.1	**3.2538**	3.616	111.1	mg/L	47	Standard
Fe	54	47.8	16.2	**-0.0490**	0.018	37.2	mg/L	46	Standard
Fe	57	846.7	4.1	**2.0232**	0.302	14.9	mg/L	627	Standard
Sc-1	45	25319.5	2.1				mg/L	24506	Standard
Cl	35	40057.6	1.4				ug/L	47100	Standard
Kr	83	5.0	52.9				ug/L	8	Standard
Br	81	486.7	11.3				ug/L	427	Standard
P	31	11704.5	0.8				ug/L	10519	Standard
S	34	2160.2	13.7				ug/L	2003	Standard
Sr	88	205.0	20.0				ug/L	132	Standard
C	12	183.3	8.3				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	6.2	186.8				mg/L	13	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	3382.0	3.0				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		85.782	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.877	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1508099901 WG536019-01
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		88.367
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.754
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: L1508099901S WG536019-04
Sample Date/Time: Sunday, August 23, 2015 21:09:23
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	47124.9	3.1				ug/L	53498	Standard
	Be	9	240.0	2.1	**0.4434**	0.024	5.4	ug/L	12	Standard
	Al	27	64353.2	3.9	**1.0439**	0.009	0.8	ug/L	487	Standard
	Sc	45	25948.9	3.7				ug/L	24506	Standard
	Ti	47	1960.1	1.6	**10.3627**	0.228	2.2	ug/L	21	Standard
	V	51	41697.5	1.3	**10.0869**	0.093	0.9	ug/L	1268	Standard
	Cr	52	34291.1	1.3	**5.0850**	0.092	1.8	ug/L	7921	Standard
	Cr	53	16472.4	12.6	**24.6455**	2.665	10.8	ug/L	442	Standard
	Mn	55	19648.1	2.9	**5.5755**	0.076	1.4	ug/L	545	Standard
	Co	59	7409.1	0.7	**1.9774**	0.029	1.4	ug/L	183	Standard
	Ni	60	7280.7	1.1	**5.1674**	0.075	1.5	ug/L	131	Standard
	Cu	65	7365.5	1.2	**5.3203**	0.051	1.0	ug/L	231	Standard
	Zn	66	9154.8	2.4	**11.5391**	0.269	2.3	ug/L	306	Standard
>	**Ge**	72	335422.8	2.1				ug/L	330478	Standard
	As	75	3157.2	1.1	**4.1310**	0.086	2.1	ug/L	-23	Standard
	Se	82	278.3	3.5	**3.9744**	0.238	6.0	ug/L	27	Standard
	Se-1	77	1071.4	4.9	**21.9101**	0.754	3.4	ug/L	92	Standard
>	**Ga**	71	41.7	18.3				mg/L	37	Standard
	Rb	85	3600.4	8.3				ug/L	25	Standard
	Y	89	311424.8	3.0				ug/L	312467	Standard
>	**Rh**	103	33.3	17.3				ug/L	20	Standard
	Mo	98	12122.0	2.9	**10.0444**	0.129	1.3	ug/L	13	Standard
	Ag	107	18283.7	1.8	**4.2352**	0.034	0.8	ug/L	72	Standard
	Cd	111	599.0	4.1	**0.4822**	0.023	4.7	mg/L	5	Standard
	Cd	114	1653.4	8.8	**0.5129**	0.042	8.1	ug/L	7	Standard
>	**In**	115	424262.8	1.8				ug/L	477820	Standard
	Sn	118	37594.9	1.5	**9.3624**	0.281	3.0	ug/L	343	Standard
	Sb	123	41269.9	1.6	**12.5042**	0.023	0.2	ug/L	56	Standard
	Ba	135	18465.2	0.7	**10.8984**	0.237	2.2	ug/L	36	Standard
	Ce	140	91.7	131.4				ug/L	65	Standard
>	**Tb**	159	884159.5	2.3				ug/L	939481	Standard
	Ho	165	11.7	89.2				ug/L	7	Standard
	Tl	203	29590.5	0.4	**5.0127**	0.063	1.3	ug/L	5	Standard
	Tl	205	19814.6	1.4	**4.9304**	0.064	1.3	ug/L	2	Standard
	Pb	206	19799.6	0.9	**5.3294**	0.018	0.3	ug/L	222	Standard
	Pb	207	17490.1	1.4	**5.2041**	0.036	0.7	ug/L	186	Standard
	Pb	208	61732.0	0.2	**5.1528**	0.055	1.1	ug/L	717	Standard
	U	238	8.7	124.5	**-0.0041**	0.003	63.3	ug/L	2	Standard
>	**Bi**	209	406879.8	1.0				ug/L	440279	Standard

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Na	23	1.7	-4565211826807907178831337	6.812		173.2	mg/L	2	Standard
Mg	24	1133.4	4.0	**2.8831**	0.037	1.3	mg/L	45	Standard
K	39	56.7	10.2	**1.5866**	0.271	17.1	mg/L	10	Standard
Ca	43	46.7	16.4	**1.4886**	1.264	84.9	mg/L	47	Standard
Fe	54	59.6	26.1	**-0.0236**	0.036	153.0	mg/L	46	Standard
Fe	57	865.0	10.1	**1.9893**	0.622	31.3	mg/L	627	Standard
Sc-1	45	25948.9	3.7				mg/L	24506	Standard
Cl	35	42113.8	2.9				ug/L	47100	Standard
Kr	83	2.3	89.2				ug/L	8	Standard
Br	81	610.0	10.2				ug/L	427	Standard
P	31	11657.8	2.9				ug/L	10519	Standard
S	34	2138.5	4.2				ug/L	2003	Standard
Sr	88	191.7	5.4				ug/L	132	Standard
C	12	166.7	40.8				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	28.9	121.2				mg/L	13	Standard
Ho-1	165	11.7	89.2				mg/L	7	Standard
Er	166	23.3	99.0				mg/L	7	Standard
I	127	3312.0	2.6				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		88.088	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.496	
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	88.791
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	92.414
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: L1508099901SD WG536019-05
Sample Date/Time: Sunday, August 23, 2015 21:12:34
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	48355.4	2.6				ug/L	53498	Standard
	Be	9	286.7	4.4	**0.5194**	0.034	6.6	ug/L	12	Standard
	Al	27	64957.3	1.1	**1.0273**	0.021	2.1	ug/L	487	Standard
	Sc	45	26404.7	0.2				ug/L	24506	Standard
	Ti	47	2044.1	2.1	**10.6250**	0.269	2.5	ug/L	21	Standard
	V	51	41502.1	1.4	**9.8613**	0.201	2.0	ug/L	1268	Standard
	Cr	52	34977.7	0.8	**5.1018**	0.011	0.2	ug/L	7921	Standard
	Cr	53	22037.7	6.8	**32.6839**	2.075	6.3	ug/L	442	Standard
	Mn	55	19308.6	1.7	**5.3806**	0.103	1.9	ug/L	545	Standard
	Co	59	7425.2	0.5	**1.9469**	0.018	0.9	ug/L	183	Standard
	Ni	60	7393.1	0.2	**5.1572**	0.042	0.8	ug/L	131	Standard
	Cu	65	7323.4	2.3	**5.1955**	0.127	2.5	ug/L	231	Standard
	Zn	66	9043.7	1.6	**11.1919**	0.253	2.3	ug/L	306	Standard
>	Ge	72	341219.5	0.6				ug/L	330478	Standard
	As	75	3120.2	4.4	**4.0140**	0.184	4.6	ug/L	-23	Standard
	Se	82	269.5	4.1	**3.7619**	0.196	5.2	ug/L	27	Standard
	Se-1	77	1147.0	2.0	**23.1698**	0.489	2.1	ug/L	92	Standard
>	Ga	71	43.3	29.0				mg/L	37	Standard
	Rb	85	3603.8	3.2				ug/L	25	Standard
	Y	89	314745.6	0.3				ug/L	312467	Standard
>	Rh	103	21.7	13.3				ug/L	20	Standard
	Mo	98	12272.8	1.1	**10.0207**	0.099	1.0	ug/L	13	Standard
	Ag	107	18595.7	1.2	**4.2441**	0.056	1.3	ug/L	72	Standard
	Cd	111	616.1	4.8	**0.4887**	0.023	4.8	mg/L	5	Standard
	Cd	114	1644.9	8.9	**0.5028**	0.046	9.2	ug/L	7	Standard
>	In	115	430605.1	0.2				ug/L	477820	Standard
	Sn	118	37912.4	2.1	**9.2987**	0.182	2.0	ug/L	343	Standard
	Sb	123	42447.7	0.9	**12.6716**	0.128	1.0	ug/L	56	Standard
	Ba	135	18625.8	1.1	**10.8284**	0.117	1.1	ug/L	36	Standard
	Ce	140	38.3	19.9				ug/L	65	Standard
>	Tb	159	883354.3	1.0				ug/L	939481	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	30284.6	1.1	**5.0981**	0.018	0.4	ug/L	5	Standard
	Tl	205	20208.5	0.5	**4.9976**	0.069	1.4	ug/L	2	Standard
	Pb	206	19830.0	1.6	**5.3047**	0.115	2.2	ug/L	222	Standard
	Pb	207	17495.1	0.2	**5.1736**	0.080	1.6	ug/L	186	Standard
	Pb	208	62078.4	0.3	**5.1496**	0.058	1.1	ug/L	717	Standard
	U	238	0.7	86.6	**-0.0061**	0.000	2.3	ug/L	2	Standard
>	Bi	209	409433.6	1.4				ug/L	440279	Standard

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Na	23	1.7	**-4440364200987**6909364002225.266			173.2	mg/L	2	Standard
Mg	24	1118.4	3.8	**2.7916**	0.105	3.8	mg/L	45	Standard
K	39	70.0	18.9	**2.0095**	0.464	23.1	mg/L	10	Standard
Ca	43	55.0	31.5	**3.1054**	3.636	117.1	mg/L	47	Standard
Fe	54	99.9	12.6	**0.0687**	0.030	43.3	mg/L	46	Standard
Fe	57	775.0	15.6	**1.0356**	1.099	106.1	mg/L	627	Standard
Sc-1	45	26404.7	0.2				mg/L	24506	Standard
Cl	35	43459.6	0.1				ug/L	47100	Standard
Kr	83	3.7	31.5				ug/L	8	Standard
Br	81	590.0	10.3				ug/L	427	Standard
P	31	11482.7	3.8				ug/L	10519	Standard
S	34	2358.5	3.0				ug/L	2003	Standard
Sr	88	185.0	15.0				ug/L	132	Standard
C	12	183.3	57.3				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	9.5	177.6				mg/L	13	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	3123.7	7.1				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.388	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.250	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.119
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.994
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: L1508085201
Sample Date/Time: Sunday, August 23, 2015 21:15:45
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	46270.5	0.7				ug/L	53498	Standard
	Be	9	10.0	50.0	**-0.0004**	0.010	2382.9	ug/L	12	Standard
	Al	27	1095.0	7.2	**0.0073**	0.001	18.7	ug/L	487	Standard
	Sc	45	26378.0	4.5				ug/L	24506	Standard
	Ti	47	18.7	38.0	**-0.0320**	0.037	115.6	ug/L	21	Standard
	V	51	1262.4	5.5	**-0.0268**	0.016	61.6	ug/L	1268	Standard
	Cr	52	8497.7	3.5	**0.0869**	0.059	67.7	ug/L	7921	Standard
	Cr	53	7977.1	1.4	**11.4666**	0.272	2.4	ug/L	442	Standard
	Mn	55	843.0	4.2	**0.0659**	0.012	18.2	ug/L	545	Standard
	Co	59	297.7	9.5	**0.0260**	0.007	28.3	ug/L	183	Standard
	Ni	60	440.3	5.2	**0.2270**	0.014	6.1	ug/L	131	Standard
	Cu	65	1327.4	2.9	**0.8073**	0.026	3.2	ug/L	231	Standard
	Zn	66	1807.8	3.3	**1.8919**	0.097	5.1	ug/L	306	Standard
>	**Ge**	72	338429.0	0.8				ug/L	330478	Standard
	As	75	-29.9	179.4	**0.0135**	0.069	510.8	ug/L	-23	Standard
	Se	82	36.6	3.2	**0.1497**	0.023	15.2	ug/L	27	Standard
	Se-1	77	598.0	0.6	**11.2553**	0.088	0.8	ug/L	92	Standard
>	**Ga**	71	288.3	17.1				mg/L	37	Standard
	Rb	85	10640.4	2.5				ug/L	25	Standard
	Y	89	314222.4	2.1				ug/L	312467	Standard
>	**Rh**	103	30.0	44.1				ug/L	20	Standard
	Mo	98	280.8	4.0	**0.2275**	0.008	3.6	ug/L	13	Standard
	Ag	107	74.0	13.7	**-0.0043**	0.003	58.9	ug/L	72	Standard
	Cd	111	6.9	22.5	**-0.0076**	0.001	16.9	mg/L	5	Standard
	Cd	114	21.1	16.1	**-0.0015**	0.001	67.7	ug/L	7	Standard
>	**In**	115	429819.3	1.1				ug/L	477820	Standard
	Sn	118	331.7	18.1	**0.0033**	0.015	442.0	ug/L	343	Standard
	Sb	123	115.5	4.6	**0.0307**	0.001	4.8	ug/L	56	Standard
	Ba	135	13920.1	0.7	**8.1018**	0.140	1.7	ug/L	36	Standard
	Ce	140	20.0	66.1				ug/L	65	Standard
>	**Tb**	159	898573.2	0.4				ug/L	939481	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	50.7	8.9	**0.0048**	0.001	15.3	ug/L	5	Standard
	Tl	205	33.3	48.2	**0.0017**	0.004	234.5	ug/L	2	Standard
	Pb	206	275.3	8.3	**0.0132**	0.007	50.0	ug/L	222	Standard
	Pb	207	238.0	1.5	**0.0120**	0.001	7.3	ug/L	186	Standard
	Pb	208	859.7	3.1	**0.0120**	0.003	21.7	ug/L	717	Standard
	U	238	1.0	100.0	**-0.0060**	0.000	4.1	ug/L	2	Standard
>	**Bi**	209	403733.7	0.5				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	2305.2	5.0	**5.9178**	0.486	8.2	mg/L	45	Standard
K	39	215.0	25.9	**7.0422**	1.791	25.4	mg/L	10	Standard
Ca	43	68.3	27.7	**5.9667**	4.076	68.3	mg/L	47	Standard
Fe	54	59.2	8.7	**-0.0268**	0.010	35.5	mg/L	46	Standard
Fe	57	901.7	3.9	**2.2186**	0.620	28.0	mg/L	627	Standard
> **Sc-1**	45	26378.0	4.5				mg/L	24506	Standard
Cl	35	44031.2	1.2				ug/L	47100	Standard
Kr	83	4.3	35.3				ug/L	8	Standard
Br	81	743.4	8.1				ug/L	427	Standard
P	31	11260.9	3.2				ug/L	10519	Standard
S	34	2240.2	4.3				ug/L	2003	Standard
Sr	88	210.0	2.4				ug/L	132	Standard
C	12	163.3	47.6				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	2.5	255.2				mg/L	13	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	16.7	91.7				mg/L	7	Standard
I	127	9297.9	6.3				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		86.491	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.406	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	89.954
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	91.699
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: L1508085201PS WG536148-01
Sample Date/Time: Sunday, August 23, 2015 21:18:57
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	45887.7	2.1				ug/L	53498	Standard
	Be	9	27538.3	1.1	**54.5495**	0.883	1.6	ug/L	12	Standard
	Al	27	1156.7	10.6	**0.0085**	0.002	19.5	ug/L	487	Standard
	Sc	45	24795.3	4.6				ug/L	24506	Standard
	Ti	47	16.0	12.5	**-0.0440**	0.009	20.3	ug/L	21	Standard
	V	51	209974.4	1.2	**53.0106**	1.403	2.6	ug/L	1268	Standard
	Cr	52	283692.4	1.0	**54.1475**	1.178	2.2	ug/L	7921	Standard
	Cr	53	42071.7	2.4	**65.2613**	3.222	4.9	ug/L	442	Standard
	Mn	55	190349.9	0.5	**56.4839**	1.707	3.0	ug/L	545	Standard
	Co	59	184838.7	0.8	**51.4762**	2.034	4.0	ug/L	183	Standard
	Ni	60	72997.4	0.8	**53.4549**	1.686	3.2	ug/L	131	Standard
	Cu	65	73372.6	0.7	**55.4391**	1.385	2.5	ug/L	231	Standard
	Zn	66	41633.1	0.6	**54.9761**	1.551	2.8	ug/L	306	Standard
>	Ge	72	330234.6	3.1				ug/L	330478	Standard
	As	75	39684.9	0.6	**52.1449**	1.433	2.7	ug/L	-23	Standard
	Se	82	3268.6	0.9	**52.0460**	2.134	4.1	ug/L	27	Standard
	Se-1	77	2900.6	0.7	**63.7213**	1.955	3.1	ug/L	92	Standard
>	Ga	71	296.7	5.4				mg/L	37	Standard
	Rb	85	10723.8	1.9				ug/L	25	Standard
	Y	89	301120.9	5.0				ug/L	312467	Standard
>	Rh	103	33.3	31.2				ug/L	20	Standard
	Mo	98	312.8	2.2	**0.2646**	0.004	1.5	ug/L	13	Standard
	Ag	107	223417.6	0.8	**53.5275**	1.524	2.8	ug/L	72	Standard
	Cd	111	62998.9	0.3	**53.6340**	1.935	3.6	mg/L	5	Standard
	Cd	114	167197.5	1.6	**54.2805**	2.654	4.9	ug/L	7	Standard
>	In	115	412367.9	3.7				ug/L	477820	Standard
	Sn	118	381.7	4.6	**0.0198**	0.004	21.5	ug/L	343	Standard
	Sb	123	172402.5	0.7	**53.7941**	1.622	3.0	ug/L	56	Standard
	Ba	135	105855.5	0.7	**64.4528**	2.484	3.9	ug/L	36	Standard
	Ce	140	26.7	60.3				ug/L	65	Standard
>	Tb	159	855379.4	4.5				ug/L	939481	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	306365.1	1.4	**53.0553**	1.513	2.9	ug/L	5	Standard
	Tl	205	206323.9	1.6	**52.5089**	1.259	2.4	ug/L	2	Standard
	Pb	206	195426.2	0.2	**54.3255**	2.147	4.0	ug/L	222	Standard
	Pb	207	176107.9	0.3	**54.1140**	2.207	4.1	ug/L	186	Standard
	Pb	208	619016.2	0.6	**53.3736**	2.320	4.3	ug/L	717	Standard
	U	238	204328.6	0.6	**51.2431**	2.335	4.6	ug/L	2	Standard
>	Bi	209	398540.0	3.9				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	2378.5	2.9	**6.5061**	0.395	6.1	mg/L	45	Standard
K	39	196.7	16.5	**6.8899**	1.466	21.3	mg/L	10	Standard
Ca	43	65.0	26.6	**6.0354**	3.411	56.5	mg/L	47	Standard
Fe	54	64.6	12.7	**-0.0043**	0.019	445.8	mg/L	46	Standard
Fe	57	843.4	2.2	**2.1673**	0.230	10.6	mg/L	627	Standard
> **Sc-1**	45	24795.3	4.6				mg/L	24506	Standard
Cl	35	45424.7	1.0				ug/L	47100	Standard
Kr	83	5.3	10.8				ug/L	8	Standard
Br	81	860.0	5.8				ug/L	427	Standard
P	31	11125.8	4.5				ug/L	10519	Standard
S	34	2205.2	3.4				ug/L	2003	Standard
Sr	88	153.3	18.0				ug/L	132	Standard
C	12	160.0	34.8				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	6.7	86.6				mg/L	10	Standard
Dy	164	2.9	203.0				mg/L	13	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	11467.7	3.8				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		85.775	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.926	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		86.302
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.520
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: L1508085201SDL WG536148-02
Sample Date/Time: Sunday, August 23, 2015 21:22:08
Number of Replicates: 3
Autosampler Position: 227
Sample Description: 250
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	43783.2	0.9				ug/L	53498	Standard
	Be	9	15.0	88.2	**0.0112**	0.028	248.1	ug/L	12	Standard
	Al	27	726.7	31.6	**0.0019**	0.004	212.4	ug/L	487	Standard
	Sc	45	25162.5	1.4				ug/L	24506	Standard
	Ti	47	16.3	18.7	**-0.0426**	0.017	39.9	ug/L	21	Standard
	V	51	1292.6	11.5	**-0.0138**	0.036	263.3	ug/L	1268	Standard
	Cr	52	8695.5	1.5	**0.1538**	0.023	15.0	ug/L	7921	Standard
	Cr	53	4507.3	4.4	**6.2806**	0.338	5.4	ug/L	442	Standard
	Mn	55	870.7	27.0	**0.0785**	0.071	89.9	ug/L	545	Standard
	Co	59	259.3	6.9	**0.0168**	0.005	29.3	ug/L	183	Standard
	Ni	60	197.0	12.0	**0.0554**	0.016	29.6	ug/L	131	Standard
	Cu	65	444.0	2.4	**0.1600**	0.008	4.9	ug/L	231	Standard
	Zn	66	1516.4	2.8	**1.5474**	0.053	3.4	ug/L	306	Standard
>	**Ge**	72	332611.9	0.6				ug/L	330478	Standard
	As	75	-21.1	311.2	**0.0242**	0.086	352.9	ug/L	-23	Standard
	Se	82	20.7	20.8	**-0.0933**	0.067	71.9	ug/L	27	Standard
	Se-1	77	228.3	6.1	**3.1810**	0.303	9.5	ug/L	92	Standard
>	**Ga**	71	66.7	11.5				mg/L	37	Standard
	Rb	85	2293.5	6.0				ug/L	25	Standard
	Y	89	313156.7	1.1				ug/L	312467	Standard
>	**Rh**	103	15.0	88.2				ug/L	20	Standard
	Mo	98	73.6	13.2	**0.0587**	0.008	13.2	ug/L	13	Standard
	Ag	107	138.0	32.6	**0.0108**	0.010	95.6	ug/L	72	Standard
	Cd	111	13.1	81.1	**-0.0024**	0.009	364.4	mg/L	5	Standard
	Cd	114	43.2	65.7	**0.0055**	0.009	162.7	ug/L	7	Standard
>	**In**	115	424308.0	0.6				ug/L	477820	Standard
	Sn	118	315.0	8.4	**0.0002**	0.006	2881.4	ug/L	343	Standard
	Sb	123	693.3	7.9	**0.2063**	0.017	8.3	ug/L	56	Standard
	Ba	135	2869.3	4.1	**1.6704**	0.061	3.7	ug/L	36	Standard
	Ce	140	130.0	146.8				ug/L	65	Standard
>	**Tb**	159	895795.6	1.4				ug/L	939481	Standard
	Ho	165	11.7	107.9				ug/L	7	Standard
	Tl	203	97.7	60.5	**0.0126**	0.010	78.1	ug/L	5	Standard
	Tl	205	46.7	117.5	**0.0049**	0.014	277.1	ug/L	2	Standard
	Pb	206	273.3	10.9	**0.0115**	0.007	64.7	ug/L	222	Standard
	Pb	207	237.3	10.0	**0.0108**	0.006	60.2	ug/L	186	Standard
	Pb	208	837.0	8.4	**0.0090**	0.006	64.4	ug/L	717	Standard
	U	238	30.3	95.3	**0.0011**	0.007	632.2	ug/L	2	Standard
>	**Bi**	209	409550.6	0.9				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	496.7	7.4	**1.2292**	0.120	9.7	mg/L	45	Standard
K	39	43.3	40.5	**1.1622**	0.660	56.8	mg/L	10	Standard
Ca	43	23.3	44.6	**-3.3507**	2.335	69.7	mg/L	47	Standard
Fe	54	52.5	60.8	**-0.0362**	0.080	219.8	mg/L	46	Standard
Fe	57	845.0	5.3	**2.0589**	0.470	22.8	mg/L	627	Standard
> **Sc-1**	45	25162.5	1.4				mg/L	24506	Standard
Cl	35	43900.2	1.5				ug/L	47100	Standard
Kr	83	4.7	81.1				ug/L	8	Standard
Br	81	620.0	9.7				ug/L	427	Standard
P	31	10987.3	4.3				ug/L	10519	Standard
S	34	2166.8	1.2				ug/L	2003	Standard
Sr	88	171.7	1.7				ug/L	132	Standard
C	12	96.7	26.0				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	35.7	103.7				mg/L	13	Standard
Ho-1	165	11.7	107.9				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	7	Standard
I	127	4238.9	2.5				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		81.841	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.646	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		88.801
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.021
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Sunday, August 23, 2015 21:25:21
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	46633.3	1.9				ug/L	53498	Standard
	Be	9	25967.2	1.0	**50.6211**	1.407	2.8	ug/L	12	Standard
	Al	27	2996552.3	1.1	**49.6502**	1.248	2.5	ug/L	487	Standard
	Sc	45	25239.3	2.6				ug/L	24506	Standard
	Ti	47	19581.6	0.7	**102.1628**	1.127	1.1	ug/L	21	Standard
	V	51	203387.5	2.2	**49.2952**	1.353	2.7	ug/L	1268	Standard
	Cr	52	269108.5	0.5	**49.2021**	0.951	1.9	ug/L	7921	Standard
	Cr	53	33585.5	2.4	**49.8365**	0.732	1.5	ug/L	442	Standard
	Mn	55	187564.5	0.5	**53.4391**	0.472	0.9	ug/L	545	Standard
	Co	59	179409.0	1.0	**47.9660**	0.267	0.6	ug/L	183	Standard
	Ni	60	70920.9	0.9	**49.8689**	0.820	1.6	ug/L	131	Standard
	Cu	65	69842.9	0.9	**50.6732**	1.060	2.1	ug/L	231	Standard
	Zn	66	39342.0	0.9	**49.8485**	0.494	1.0	ug/L	306	Standard
>	Ge	72	343694.2	1.3				ug/L	330478	Standard
	As	75	39043.4	0.7	**49.2761**	0.954	1.9	ug/L	-23	Standard
	Se	82	3224.9	0.8	**49.2818**	0.773	1.6	ug/L	27	Standard
	Se-1	77	2418.2	3.6	**50.6383**	2.307	4.6	ug/L	92	Standard
>	Ga	71	43.3	13.3				mg/L	37	Standard
	Rb	85	493.3	13.2				ug/L	25	Standard
	Y	89	310417.2	2.4				ug/L	312467	Standard
>	Rh	103	20.0	66.1				ug/L	20	Standard
	Mo	98	117223.7	0.7	**97.4612**	1.286	1.3	ug/L	13	Standard
	Ag	107	228258.5	0.5	**53.2811**	0.819	1.5	ug/L	72	Standard
	Cd	111	61120.6	0.8	**50.6835**	0.423	0.8	mg/L	5	Standard
	Cd	114	161025.9	1.4	**50.9044**	0.666	1.3	ug/L	7	Standard
>	In	115	423000.2	1.0				ug/L	477820	Standard
	Sn	118	194508.9	0.3	**48.9027**	0.649	1.3	ug/L	343	Standard
	Sb	123	167778.0	0.9	**50.9978**	0.095	0.2	ug/L	56	Standard
	Ba	135	89806.4	1.1	**53.2519**	0.038	0.1	ug/L	36	Standard
	Ce	140	133.3	75.8				ug/L	65	Standard
>	Tb	159	891923.9	2.5				ug/L	939481	Standard
	Ho	165	21.7	48.0				ug/L	7	Standard
	Tl	203	302124.9	0.6	**50.3717**	0.710	1.4	ug/L	5	Standard
	Tl	205	201663.2	0.6	**49.4148**	0.646	1.3	ug/L	2	Standard
	Pb	206	189142.9	0.3	**50.5993**	0.574	1.1	ug/L	222	Standard
	Pb	207	171074.1	1.1	**50.5851**	0.580	1.1	ug/L	186	Standard
	Pb	208	604587.5	0.7	**50.1597**	0.130	0.3	ug/L	717	Standard
	U	238	201182.9	0.2	**48.5494**	0.338	0.7	ug/L	2	Standard
>	Bi	209	413694.2	0.8				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	1740.1	5.0	**4.6361**	0.354	7.6	mg/L	45	Standard
K	39	180.0	21.7	**6.1496**	1.567	25.5	mg/L	10	Standard
Ca	43	46.7	24.7	**1.8357**	2.765	150.7	mg/L	47	Standard
Fe	54	1911.7	10.9	**4.5419**	0.600	13.2	mg/L	46	Standard
Fe	57	1270.1	5.4	**6.0885**	0.348	5.7	mg/L	627	Standard
> **Sc-1**	45	25239.3	2.6				mg/L	24506	Standard
Cl	35	39653.8	1.0				ug/L	47100	Standard
Kr	83	4.7	89.2				ug/L	8	Standard
Br	81	476.7	20.7				ug/L	427	Standard
P	31	12239.9	2.0				ug/L	10519	Standard
S	34	2448.5	1.5				ug/L	2003	Standard
Sr	88	188.3	24.7				ug/L	132	Standard
C	12	160.0	54.1				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	6.0	87.0				mg/L	13	Standard
Ho-1	165	21.7	48.0				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	7	Standard
I	127	1621.8	10.2				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	101.242		
Al	27	99.300		
Sc	45			
Ti	47	102.163		
V	51	98.590		
Cr	52	98.404		
Cr	53			
Mn	55	106.878		
Co	59	95.932		
Ni	60	99.738		
Cu	65	101.346		
Zn	66	99.697		
> Ge	72		103.999	
As	75	98.552		
Se	82	98.564		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	97.461		
Ag	107	106.562		
Cd	111	101.367		
Cd	114			
In	115			88.527
Sn	118	97.805		
Sb	123	101.996		
Ba	135	106.504		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.743		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.319		
U	238	97.099		
Bi	209			93.962
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Sunday, August 23, 2015 21:28:33
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	45474.8	2.8				ug/L	53498	Standard
	Be	9	15.0	88.2	**0.0095**	0.025	267.2	ug/L	12	Standard
	Al	27	1035.0	75.7	**0.0064**	0.013	197.4	ug/L	487	Standard
	Sc	45	25928.8	3.3				ug/L	24506	Standard
	Ti	47	20.3	7.5	**-0.0220**	0.008	36.6	ug/L	21	Standard
	V	51	1036.5	5.5	**-0.0805**	0.015	18.4	ug/L	1268	Standard
	Cr	52	6675.8	2.1	**-0.2507**	0.026	10.5	ug/L	7921	Standard
	Cr	53	721.7	2.8	**0.3797**	0.033	8.8	ug/L	442	Standard
	Mn	55	861.0	51.4	**0.0735**	0.131	177.5	ug/L	545	Standard
	Co	59	210.7	7.8	**0.0028**	0.005	163.7	ug/L	183	Standard
	Ni	60	123.0	13.1	**0.0009**	0.012	1308.9	ug/L	131	Standard
	Cu	65	192.0	1.8	**-0.0307**	0.002	7.1	ug/L	231	Standard
	Zn	66	297.7	2.2	**-0.0660**	0.009	13.6	ug/L	306	Standard
>	**Ge**	72	335460.3	0.3				ug/L	330478	Standard
	As	75	-53.7	19.2	**-0.0174**	0.014	77.8	ug/L	-23	Standard
	Se	82	16.4	37.7	**-0.1636**	0.097	59.3	ug/L	27	Standard
	Se-1	77	106.0	0.9	**0.4130**	0.027	6.6	ug/L	92	Standard
>	**Ga**	71	15.0	57.7				mg/L	37	Standard
	Rb	85	15.0	66.7				ug/L	25	Standard
	Y	89	321977.0	1.1				ug/L	312467	Standard
>	**Rh**	103	10.0	50.0				ug/L	20	Standard
	Mo	98	56.2	30.6	**0.0432**	0.013	30.5	ug/L	13	Standard
	Ag	107	108.0	40.6	**0.0033**	0.010	301.8	ug/L	72	Standard
	Cd	111	19.8	99.9	**0.0028**	0.016	569.9	mg/L	5	Standard
	Cd	114	49.7	66.5	**0.0073**	0.010	141.6	ug/L	7	Standard
>	**In**	115	433458.7	1.6				ug/L	477820	Standard
	Sn	118	445.0	14.1	**0.0307**	0.017	55.5	ug/L	343	Standard
	Sb	123	692.2	13.8	**0.2016**	0.029	14.5	ug/L	56	Standard
	Ba	135	50.3	29.0	**0.0028**	0.009	305.2	ug/L	36	Standard
	Ce	140	30.0	104.1				ug/L	65	Standard
>	**Tb**	159	901513.9	2.7				ug/L	939481	Standard
	Ho	165	11.7	49.5				ug/L	7	Standard
	Tl	203	60.7	96.1	**0.0062**	0.010	153.7	ug/L	5	Standard
	Tl	205	33.3	60.6	**0.0015**	0.005	328.7	ug/L	2	Standard
	Pb	206	228.7	18.7	**-0.0012**	0.011	868.7	ug/L	222	Standard
	Pb	207	185.3	10.3	**-0.0054**	0.005	95.4	ug/L	186	Standard
	Pb	208	766.3	16.6	**0.0024**	0.011	438.1	ug/L	717	Standard
	U	238	32.0	65.6	**0.0014**	0.005	351.5	ug/L	2	Standard
>	**Bi**	209	413876.6	1.1				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	60.0	22.0	**0.0226**	0.031	135.3	mg/L	45	Standard
K	39	3.3	173.2	**-0.3090**	0.201	65.0	mg/L	10	Standard
Ca	43	18.3	15.7	**-4.5964**	0.503	10.9	mg/L	47	Standard
Fe	54	80.6	24.7	**0.0261**	0.043	163.1	mg/L	46	Standard
Fe	57	808.4	4.6	**1.4822**	0.428	28.9	mg/L	627	Standard
Sc-1	45	25928.8	3.3				mg/L	24506	Standard
Cl	35	39743.4	1.0				ug/L	47100	Standard
Kr	83	3.0	66.7				ug/L	8	Standard
Br	81	590.0	7.8				ug/L	427	Standard
P	31	11853.0	4.5				ug/L	10519	Standard
S	34	2388.5	3.6				ug/L	2003	Standard
Sr	88	188.3	12.3				ug/L	132	Standard
C	12	96.7	36.3				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	16.2	38.3				mg/L	13	Standard
Ho-1	165	11.7	49.5				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	2496.9	0.8				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.508	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	90.716
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.003
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

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Method 6020 - Summary Report

Sample ID: PBS M8 WG535953-02
Sample Date/Time: Sunday, August 23, 2015 21:31:46
Number of Replicates: 3
Autosampler Position: 228
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	46128.5	4.0				ug/L	53498	Standard
	Be	9	13.3	78.1	**0.0057**	0.019	339.4	ug/L	12	Standard
	Al	27	1660.1	15.9	**0.0168**	0.003	20.5	ug/L	487	Standard
	Sc	45	25563.2	4.7				ug/L	24506	Standard
	Ti	47	25.0	20.8	**0.0011**	0.028	2596.5	ug/L	21	Standard
	V	51	1123.2	8.9	**-0.0629**	0.025	39.7	ug/L	1268	Standard
	Cr	52	7052.3	1.6	**-0.1979**	0.022	11.3	ug/L	7921	Standard
	Cr	53	790.0	11.6	**0.4670**	0.135	28.9	ug/L	442	Standard
	Mn	55	862.7	1.6	**0.0701**	0.004	5.2	ug/L	545	Standard
	Co	59	209.7	3.9	**0.0017**	0.002	123.5	ug/L	183	Standard
	Ni	60	152.0	7.0	**0.0202**	0.008	37.5	ug/L	131	Standard
	Cu	65	205.7	9.7	**-0.0228**	0.015	63.8	ug/L	231	Standard
	Zn	66	1296.1	2.6	**1.2171**	0.047	3.8	ug/L	306	Standard
>	**Ge**	72	340429.3	0.4				ug/L	330478	Standard
	As	75	-35.8	71.8	**0.0064**	0.033	515.7	ug/L	-23	Standard
	Se	82	24.7	39.6	**-0.0392**	0.151	385.3	ug/L	27	Standard
	Se-1	77	103.7	21.4	**0.3260**	0.480	147.4	ug/L	92	Standard
>	**Ga**	71	33.3	17.3				mg/L	37	Standard
	Rb	85	36.7	7.9				ug/L	25	Standard
	Y	89	311609.9	2.7				ug/L	312467	Standard
>	**Rh**	103	20.0	43.3				ug/L	20	Standard
	Mo	98	28.3	3.4	**0.0208**	0.001	3.3	ug/L	13	Standard
	Ag	107	92.7	24.0	**-0.0000**	0.005	12302.6	ug/L	72	Standard
	Cd	111	16.9	46.8	**0.0005**	0.006	1230.9	mg/L	5	Standard
	Cd	114	52.3	56.6	**0.0082**	0.009	114.2	ug/L	7	Standard
>	**In**	115	431688.1	1.4				ug/L	477820	Standard
	Sn	118	411.7	7.7	**0.0228**	0.008	36.6	ug/L	343	Standard
	Sb	123	287.4	5.3	**0.0818**	0.006	6.9	ug/L	56	Standard
	Ba	135	188.7	12.8	**0.0834**	0.015	18.4	ug/L	36	Standard
	Ce	140	180.0	9.6				ug/L	65	Standard
>	**Tb**	159	893731.5	1.9				ug/L	939481	Standard
	Ho	165	15.0	88.2				ug/L	7	Standard
	Tl	203	59.3	58.9	**0.0060**	0.006	96.4	ug/L	5	Standard
	Tl	205	15.0	57.7	**-0.0030**	0.002	70.2	ug/L	2	Standard
	Pb	206	264.0	10.6	**0.0081**	0.008	93.4	ug/L	222	Standard
	Pb	207	225.7	8.4	**0.0065**	0.006	88.9	ug/L	186	Standard
	Pb	208	825.0	2.1	**0.0071**	0.001	18.0	ug/L	717	Standard
	U	238	12.7	31.9	**-0.0032**	0.001	30.3	ug/L	2	Standard
>	**Bi**	209	414861.8	0.7				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	50.0	36.1	**-0.0025**	0.043	1694.6	mg/L	45	Standard
K	39	5.0	100.0	**-0.2413**	0.182	75.4	mg/L	10	Standard
Ca	43	28.3	81.5	**-2.2969**	5.157	224.5	mg/L	47	Standard
Fe	54	56.1	22.7	**-0.0297**	0.031	104.5	mg/L	46	Standard
Fe	57	860.0	12.8	**2.1146**	1.385	65.5	mg/L	627	Standard
> **Sc-1**	45	25563.2	4.7				mg/L	24506	Standard
Cl	35	39663.2	1.1				ug/L	47100	Standard
Kr	83	2.3	65.5				ug/L	8	Standard
Br	81	606.7	13.3				ug/L	427	Standard
P	31	11986.4	2.1				ug/L	10519	Standard
S	34	2331.8	6.9				ug/L	2003	Standard
Sr	88	186.7	9.4				ug/L	132	Standard
C	12	120.0	76.4				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	9.5	100.0				mg/L	13	Standard
Ho-1	165	15.0	88.2				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	1683.4	1.6				mg/L	2225	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		86.225	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		103.011	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	90.345
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	94.227
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSS M8 WG535953-03
Sample Date/Time: Sunday, August 23, 2015 21:34:58
Number of Replicates: 3
Autosampler Position: 229
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	46282.3	2.8				ug/L	53498	Standard
	Be	9	12648.6	2.3	**24.8402**	0.970	3.9	ug/L	12	Standard
	Al	27	1938.5	5.3	**0.0214**	0.002	7.3	ug/L	487	Standard
	Sc	45	24493.1	4.0				ug/L	24506	Standard
	Ti	47	24.7	6.2	**0.0018**	0.008	407.2	ug/L	21	Standard
	V	51	100652.4	0.9	**24.9562**	0.280	1.1	ug/L	1268	Standard
	Cr	52	138220.3	1.2	**25.2997**	0.438	1.7	ug/L	7921	Standard
	Cr	53	16924.4	0.6	**25.5148**	0.017	0.1	ug/L	442	Standard
	Mn	55	94877.1	0.1	**27.7540**	0.172	0.6	ug/L	545	Standard
	Co	59	88841.1	1.4	**24.4377**	0.493	2.0	ug/L	183	Standard
	Ni	60	35251.3	0.8	**25.4851**	0.340	1.3	ug/L	131	Standard
	Cu	65	35160.1	1.6	**26.1874**	0.555	2.1	ug/L	231	Standard
	Zn	66	20682.8	0.3	**26.7813**	0.232	0.9	ug/L	306	Standard
>	**Ge**	72	333698.4	0.6				ug/L	330478	Standard
	As	75	18929.1	0.7	**24.6285**	0.269	1.1	ug/L	-23	Standard
	Se	82	1564.5	1.7	**24.4112**	0.559	2.3	ug/L	27	Standard
	Se-1	77	1206.4	1.1	**25.0661**	0.450	1.8	ug/L	92	Standard
>	**Ga**	71	23.3	68.9				mg/L	37	Standard
	Rb	85	101.7	19.9				ug/L	25	Standard
	Y	89	317231.5	2.7				ug/L	312467	Standard
>	**Rh**	103	30.0	33.3				ug/L	20	Standard
	Mo	98	22.3	14.2	**0.0157**	0.003	16.5	ug/L	13	Standard
	Ag	107	112224.1	0.6	**25.3583**	0.183	0.7	ug/L	72	Standard
	Cd	111	30934.8	1.5	**24.8389**	0.471	1.9	mg/L	5	Standard
	Cd	114	81524.7	2.9	**24.9557**	0.672	2.7	ug/L	7	Standard
>	**In**	115	436739.8	0.6				ug/L	477820	Standard
	Sn	118	345.0	2.5	**0.0053**	0.002	45.9	ug/L	343	Standard
	Sb	123	86332.3	0.4	**25.4146**	0.214	0.8	ug/L	56	Standard
	Ba	135	44550.4	0.3	**25.5724**	0.076	0.3	ug/L	36	Standard
	Ce	140	168.3	11.2				ug/L	65	Standard
>	**Tb**	159	897295.7	1.5				ug/L	939481	Standard
	Ho	165	16.7	75.5				ug/L	7	Standard
	Tl	203	149559.2	0.2	**25.2689**	0.207	0.8	ug/L	5	Standard
	Tl	205	100072.7	1.0	**24.8477**	0.213	0.9	ug/L	2	Standard
	Pb	206	96421.2	0.4	**26.1130**	0.368	1.4	ug/L	222	Standard
	Pb	207	83455.2	0.5	**24.9803**	0.295	1.2	ug/L	186	Standard
	Pb	208	305067.1	0.4	**25.6236**	0.368	1.4	ug/L	717	Standard
	U	238	98929.9	1.0	**24.1937**	0.396	1.6	ug/L	2	Standard
>	**Bi**	209	408192.5	1.1				ug/L	440279	Standard

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	Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
	Mg	24	53.3	21.7	**0.0144**	0.036	246.6	mg/L	45	Standard
	K	39	10.0	86.6	**-0.0408**	0.348	853.2	mg/L	10	Standard
	Ca	43	35.0	62.3	**-0.6264**	4.732	755.4	mg/L	47	Standard
	Fe	54	63.5	39.9	**-0.0049**	0.063	1308.8	mg/L	46	Standard
	Fe	57	868.4	7.8	**2.5022**	0.415	16.6	mg/L	627	Standard
>	**Sc-1**	45	24493.1	4.0				mg/L	24506	Standard
	Cl	35	40365.0	1.3				ug/L	47100	Standard
	Kr	83	4.3	35.3				ug/L	8	Standard
	Br	81	620.0	1.6				ug/L	427	Standard
	P	31	11741.2	3.0				ug/L	10519	Standard
	S	34	2253.5	3.0				ug/L	2003	Standard
	Sr	88	190.0	13.9				ug/L	132	Standard
	C	12	140.0	50.0				mg/L	177	Standard
	N	14	0.0					mg/L	3	Standard
	Hg	202	0.0					mg/L	10	Standard
	Dy	164	19.4	137.1				mg/L	13	Standard
	Ho-1	165	16.7	75.5				mg/L	7	Standard
	Er	166	13.3	43.3				mg/L	7	Standard
	I	127	1926.8	10.9				mg/L	2225	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		86.513	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.975	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.402
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.712
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSS M8 WG535953-03
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Method 6020 - Summary Report

Sample ID: L1508100026 WG535953-01
Sample Date/Time: Sunday, August 23, 2015 21:38:09
Number of Replicates: 3
Autosampler Position: 230
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	48300.2	2.6				ug/L	53498	Standard
	Be	9	441.7	16.5	**0.8111**	0.134	16.6	ug/L	12	Standard
	Al	27	907001.8	2.6	**14.4981**	0.167	1.2	ug/L	487	Standard
	Sc	45	31021.7	1.8				ug/L	24506	Standard
	Ti	47	4510.3	2.7	**24.1002**	0.483	2.0	ug/L	21	Standard
	V	51	121730.6	1.0	**30.2143**	0.476	1.6	ug/L	1268	Standard
	Cr	52	266490.6	0.9	**50.1362**	0.228	0.5	ug/L	7921	Standard
	Cr	53	33527.1	3.5	**51.1908**	1.595	3.1	ug/L	442	Standard
	Mn	55	1718926.0	1.1	**505.2257**	6.806	1.3	ug/L	545	Standard
	Co	59	50529.1	0.2	**13.8565**	0.125	0.9	ug/L	183	Standard
	Ni	60	214806.4	1.0	**155.5260**	0.606	0.4	ug/L	131	Standard
	Cu	65	46803.9	1.5	**34.8668**	0.294	0.8	ug/L	231	Standard
	Zn	66	304139.4	1.0	**399.5146**	1.077	0.3	ug/L	306	Standard
>	Ge	72	334143.8	0.8				ug/L	330478	Standard
	As	75	9985.8	1.3	**12.9990**	0.074	0.6	ug/L	-23	Standard
	Se	82	415.4	4.0	**6.1632**	0.314	5.1	ug/L	27	Standard
	Se-1	77	399.3	4.1	**6.9837**	0.430	6.2	ug/L	92	Standard
>	Ga	71	5060.8	2.7				mg/L	37	Standard
	Rb	85	77228.0	0.6				ug/L	25	Standard
	Y	89	1211579.4	1.9				ug/L	312467	Standard
>	Rh	103	70.0	24.7				ug/L	20	Standard
	Mo	98	6555.5	1.2	**5.2530**	0.091	1.7	ug/L	13	Standard
	Ag	107	1131.0	1.7	**0.2334**	0.005	2.0	ug/L	72	Standard
	Cd	111	3664.8	3.7	**2.9170**	0.078	2.7	mg/L	5	Standard
	Cd	114	9563.5	2.4	**2.9070**	0.039	1.3	ug/L	7	Standard
>	In	115	438725.2	1.3				ug/L	477820	Standard
	Sn	118	540.0	3.7	**0.0522**	0.004	7.1	ug/L	343	Standard
	Sb	123	224.5	11.1	**0.0619**	0.007	11.6	ug/L	56	Standard
	Ba	135	61265.6	1.3	**35.0174**	0.056	0.2	ug/L	36	Standard
	Ce	140	762419.9	0.1				ug/L	65	Standard
>	Tb	159	951688.1	0.9				ug/L	939481	Standard
	Ho	165	59879.8	0.3				ug/L	7	Standard
	Tl	203	2056.1	3.8	**0.3383**	0.010	2.8	ug/L	5	Standard
	Tl	205	1358.4	3.9	**0.3258**	0.016	5.0	ug/L	2	Standard
	Pb	206	32489.1	1.1	**8.6252**	0.174	2.0	ug/L	222	Standard
	Pb	207	23628.4	1.3	**6.9232**	0.136	2.0	ug/L	186	Standard
	Pb	208	90842.8	0.7	**7.4720**	0.078	1.0	ug/L	717	Standard
	U	238	29114.3	1.4	**7.0082**	0.089	1.3	ug/L	2	Standard
>	Bi	209	414422.4	1.3				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	111.7	9.3	**0.1121**	0.022	19.6	mg/L	45	Standard
K	39	55.0	15.7	**1.2013**	0.241	20.1	mg/L	10	Standard
Ca	43	145.0	12.4	**17.6083**	3.273	18.6	mg/L	47	Standard
Fe	54	8808.3	1.5	**17.4509**	0.198	1.1	mg/L	46	Standard
Fe	57	2943.6	2.3	**16.8537**	0.873	5.2	mg/L	627	Standard
Sc-1	45	31021.7	1.8				mg/L	24506	Standard
Cl	35	40030.1	0.5				ug/L	47100	Standard
Kr	83	3.3	45.8				ug/L	8	Standard
Br	81	586.7	7.7				ug/L	427	Standard
P	31	13529.4	6.4				ug/L	10519	Standard
S	34	2435.2	0.9				ug/L	2003	Standard
Sr	88	238.3	13.5				ug/L	132	Standard
C	12	163.3	30.2				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	210.0	23.8				mg/L	10	Standard
Dy	164	85314.5	0.7				mg/L	13	Standard
Ho-1	165	59879.8	0.3				mg/L	7	Standard
Er	166	57562.5	2.0				mg/L	7	Standard
I	127	10135.1	6.7				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.285	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.109	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	91.818
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.127
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1508100026S WG535953-04
Sample Date/Time: Sunday, August 23, 2015 21:41:21
Number of Replicates: 3
Autosampler Position: 231
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	50365.3	1.5				ug/L	53498	Standard
	Be	9	14737.2	2.3	**26.5872**	0.824	3.1	ug/L	12	Standard
	Al	27	1205118.4	0.3	**18.4792**	0.330	1.8	ug/L	487	Standard
	Sc	45	32994.2	0.6				ug/L	24506	Standard
	Ti	47	5323.9	2.2	**28.6093**	0.023	0.1	ug/L	21	Standard
	V	51	240083.0	2.2	**60.2018**	0.141	0.2	ug/L	1268	Standard
	Cr	52	417839.5	0.4	**79.8996**	2.104	2.6	ug/L	7921	Standard
	Cr	53	52622.9	1.9	**81.1960**	2.899	3.6	ug/L	442	Standard
	Mn	55	2267434.8	1.3	**669.7789**	12.536	1.9	ug/L	545	Standard
	Co	59	151054.7	1.3	**41.7385**	0.885	2.1	ug/L	183	Standard
	Ni	60	271602.2	1.1	**197.6408**	2.602	1.3	ug/L	131	Standard
	Cu	65	85183.8	1.0	**63.9187**	0.998	1.6	ug/L	231	Standard
	Zn	66	329406.0	1.3	**434.8622**	4.471	1.0	ug/L	306	Standard
>	Ge	72	332570.1	2.3				ug/L	330478	Standard
	As	75	26994.8	1.1	**35.2250**	0.482	1.4	ug/L	-23	Standard
	Se	82	1536.5	2.1	**24.0532**	0.603	2.5	ug/L	27	Standard
	Se-1	77	1202.7	1.8	**25.0769**	0.361	1.4	ug/L	92	Standard
>	Ga	71	5417.6	2.8				mg/L	37	Standard
	Rb	85	88633.6	2.5				ug/L	25	Standard
	Y	89	1490448.3	0.8				ug/L	312467	Standard
>	Rh	103	58.3	9.9				ug/L	20	Standard
	Mo	98	5014.7	0.1	**3.8622**	0.065	1.7	ug/L	13	Standard
	Ag	107	114438.9	0.9	**24.7479**	0.518	2.1	ug/L	72	Standard
	Cd	111	37962.7	0.9	**29.1705**	0.225	0.8	mg/L	5	Standard
	Cd	114	100830.4	0.5	**29.5427**	0.569	1.9	ug/L	7	Standard
>	In	115	456418.4	1.5				ug/L	477820	Standard
	Sn	118	961.7	7.0	**0.1455**	0.012	8.6	ug/L	343	Standard
	Sb	123	4964.8	1.0	**1.3949**	0.011	0.8	ug/L	56	Standard
	Ba	135	132356.3	0.5	**72.7541**	0.790	1.1	ug/L	36	Standard
	Ce	140	1014346.7	1.7				ug/L	65	Standard
>	Tb	159	979601.1	1.9				ug/L	939481	Standard
	Ho	165	79677.3	1.6				ug/L	7	Standard
	Tl	203	152386.2	0.6	**24.5007**	0.131	0.5	ug/L	5	Standard
	Tl	205	101896.6	1.9	**24.0798**	0.646	2.7	ug/L	2	Standard
	Pb	206	136694.5	0.2	**35.2505**	0.390	1.1	ug/L	222	Standard
	Pb	207	113265.8	0.8	**32.2807**	0.347	1.1	ug/L	186	Standard
	Pb	208	412705.7	0.2	**33.0045**	0.322	1.0	ug/L	717	Standard
	U	238	143182.7	0.5	**33.3255**	0.526	1.6	ug/L	2	Standard
>	Bi	209	428937.6	1.1				ug/L	440279	Standard

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Na	23	1.7	**-3526065459736**1073245270662.656			173.2	mg/L	2	Standard
Mg	24	161.7	3.6	**0.2021**	0.012	5.8	mg/L	45	Standard
K	39	56.7	18.4	**1.1529**	0.297	25.7	mg/L	10	Standard
Ca	43	148.3	7.0	**16.6027**	1.631	9.8	mg/L	47	Standard
Fe	54	8201.1	2.3	**15.2539**	0.259	1.7	mg/L	46	Standard
Fe	57	3015.3	0.9	**16.0000**	0.162	1.0	mg/L	627	Standard
Sc-1	45	32994.2	0.6				mg/L	24506	Standard
Cl	35	41442.6	1.0				ug/L	47100	Standard
Kr	83	5.7	10.2				ug/L	8	Standard
Br	81	1046.7	17.8				ug/L	427	Standard
P	31	13130.7	0.8				ug/L	10519	Standard
S	34	2418.5	4.7				ug/L	2003	Standard
Sr	88	230.0	12.1				ug/L	132	Standard
C	12	170.0	25.6				mg/L	177	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	353.3	16.1				mg/L	10	Standard
Dy	164	111912.9	1.7				mg/L	13	Standard
Ho-1	165	79677.3	1.6				mg/L	7	Standard
Er	166	73313.7	2.3				mg/L	7	Standard
I	127	11132.4	1.6				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.145	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.633	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.521
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.424
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1508100026SD WG535953-05
Sample Date/Time: Sunday, August 23, 2015 21:44:32
Number of Replicates: 3
Autosampler Position: 232
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	52358.8	4.4				ug/L	53498	Standard
	Be	9	15299.4	1.1	**26.5774**	1.158	4.4	ug/L	12	Standard
	Al	27	1459535.7	1.2	**21.5461**	0.686	3.2	ug/L	487	Standard
	Sc	45	34265.4	1.4				ug/L	24506	Standard
	Ti	47	6575.8	0.7	**34.8758**	0.307	0.9	ug/L	21	Standard
	V	51	301294.8	1.1	**74.5872**	1.043	1.4	ug/L	1268	Standard
	Cr	52	575163.3	0.9	**108.9712**	1.210	1.1	ug/L	7921	Standard
	Cr	53	71349.3	1.4	**108.7729**	2.387	2.2	ug/L	442	Standard
	Mn	55	2681902.1	1.3	**781.1199**	11.657	1.5	ug/L	545	Standard
	Co	59	163722.6	1.3	**44.6029**	0.257	0.6	ug/L	183	Standard
	Ni	60	360263.8	1.2	**258.5118**	3.287	1.3	ug/L	131	Standard
	Cu	65	108854.0	1.6	**80.5777**	1.292	1.6	ug/L	231	Standard
	Zn	66	494732.0	0.9	**644.1973**	4.183	0.6	ug/L	306	Standard
>	Ge	72	337241.6	0.7				ug/L	330478	Standard
	As	75	33981.8	0.7	**43.7078**	0.301	0.7	ug/L	-23	Standard
	Se	82	2040.0	1.4	**31.6174**	0.474	1.5	ug/L	27	Standard
	Se-1	77	1589.8	0.5	**33.2766**	0.429	1.3	ug/L	92	Standard
>	Ga	71	7858.7	3.3				mg/L	37	Standard
	Rb	85	119561.6	1.5				ug/L	25	Standard
	Y	89	1696403.5	2.1				ug/L	312467	Standard
>	Rh	103	101.7	19.9				ug/L	20	Standard
	Mo	98	11638.1	0.9	**8.8387**	0.073	0.8	ug/L	13	Standard
	Ag	107	117460.0	2.0	**25.0362**	0.146	0.6	ug/L	72	Standard
	Cd	111	39404.5	2.3	**29.8456**	0.185	0.6	mg/L	5	Standard
	Cd	114	103396.8	3.0	**29.8579**	0.608	2.0	ug/L	7	Standard
>	In	115	462976.1	1.7				ug/L	477820	Standard
	Sn	118	1000.0	4.9	**0.1514**	0.015	9.9	ug/L	343	Standard
	Sb	123	1949.6	4.9	**0.5375**	0.023	4.2	ug/L	56	Standard
	Ba	135	157629.6	2.1	**85.4124**	0.808	0.9	ug/L	36	Standard
	Ce	140	1160761.4	1.8				ug/L	65	Standard
>	Tb	159	980847.0	3.4				ug/L	939481	Standard
	Ho	165	89803.7	1.4				ug/L	7	Standard
	Tl	203	149506.1	1.5	**23.9743**	0.112	0.5	ug/L	5	Standard
	Tl	205	101336.1	1.1	**23.8842**	0.404	1.7	ug/L	2	Standard
	Pb	206	151832.7	0.8	**39.0581**	0.104	0.3	ug/L	222	Standard
	Pb	207	123007.0	0.9	**34.9719**	0.422	1.2	ug/L	186	Standard
	Pb	208	454651.1	0.5	**36.2710**	0.303	0.8	ug/L	717	Standard
	U	238	150108.3	0.6	**34.8453**	0.200	0.6	ug/L	2	Standard
>	Bi	209	430040.2	1.0				ug/L	440279	Standard

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Na	23	1.7	**-3363653154855826018163247**5.008			173.2	mg/L	2	Standard
Mg	24	193.3	8.3	**0.2533**	0.030	12.0	mg/L	45	Standard
K	39	73.3	28.4	**1.5454**	0.581	37.6	mg/L	10	Standard
Ca	43	171.7	11.8	**19.4669**	3.034	15.6	mg/L	47	Standard
Fe	54	13944.4	2.8	**25.0861**	0.856	3.4	mg/L	46	Standard
Fe	57	4212.3	2.1	**23.6147**	0.907	3.8	mg/L	627	Standard
Sc-1	45	34265.4	1.4				mg/L	24506	Standard
Cl	35	42827.1	2.1				ug/L	47100	Standard
Kr	83	4.3	58.1				ug/L	8	Standard
Br	81	866.7	8.7				ug/L	427	Standard
P	31	13599.4	1.9				ug/L	10519	Standard
S	34	2648.6	1.6				ug/L	2003	Standard
Sr	88	258.3	5.9				ug/L	132	Standard
C	12	190.0	32.0				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	343.3	8.9				mg/L	10	Standard
Dy	164	126337.2	0.8				mg/L	13	Standard
Ho-1	165	89803.7	1.4				mg/L	7	Standard
Er	166	83315.4	4.2				mg/L	7	Standard
I	127	12917.2	2.4				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		97.871	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.047	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.893
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.674
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

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Ni 60 Upper, S, EEE	Ni	60
Zn 66 Upper, S, EEE	Zn	66

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Method 6020 - Summary Report

Sample ID: L1508100002
Sample Date/Time: Sunday, August 23, 2015 21:47:43
Number of Replicates: 3
Autosampler Position: 233
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53882.3	1.8				ug/L	53498	Standard
	Be	9	493.3	6.1	**0.8126**	0.055	6.7	ug/L	12	Standard
	Al	27	647341.4	0.6	**9.2731**	0.165	1.8	ug/L	487	Standard
	Sc	45	32484.8	1.3				ug/L	24506	Standard
	Ti	47	3731.1	4.7	**19.7327**	0.755	3.8	ug/L	21	Standard
	V	51	67812.9	1.2	**16.5282**	0.084	0.5	ug/L	1268	Standard
	Cr	52	394516.4	0.7	**74.2859**	1.037	1.4	ug/L	7921	Standard
	Cr	53	48261.7	0.9	**73.3567**	1.146	1.6	ug/L	442	Standard
	Mn	55	1778002.7	0.8	**518.0124**	11.931	2.3	ug/L	545	Standard
	Co	59	39251.4	1.0	**10.6554**	0.155	1.5	ug/L	183	Standard
	Ni	60	240404.5	1.6	**172.5465**	4.311	2.5	ug/L	131	Standard
	Cu	65	60652.5	0.5	**44.8351**	0.559	1.2	ug/L	231	Standard
	Zn	66	309729.7	1.2	**403.2930**	8.523	2.1	ug/L	306	Standard
>	**Ge**	72	337167.5	1.6				ug/L	330478	Standard
	As	75	7668.9	0.5	**9.9074**	0.121	1.2	ug/L	-23	Standard
	Se	82	574.7	2.4	**8.6076**	0.285	3.3	ug/L	27	Standard
	Se-1	77	541.0	4.1	**10.0384**	0.313	3.1	ug/L	92	Standard
>	**Ga**	71	4504.0	5.9				mg/L	37	Standard
	Rb	85	84535.3	3.2				ug/L	25	Standard
	Y	89	1292371.0	1.9				ug/L	312467	Standard
>	**Rh**	103	61.7	26.1				ug/L	20	Standard
	Mo	98	4913.4	1.6	**3.6467**	0.079	2.2	ug/L	13	Standard
	Ag	107	466.7	5.3	**0.0761**	0.006	7.5	ug/L	72	Standard
	Cd	111	1628.4	1.6	**1.1933**	0.027	2.2	mg/L	5	Standard
	Cd	114	4150.1	2.4	**1.1638**	0.021	1.8	ug/L	7	Standard
>	**In**	115	473563.7	0.7				ug/L	477820	Standard
	Sn	118	1196.7	7.4	**0.1904**	0.022	11.3	ug/L	343	Standard
	Sb	123	137.2	5.6	**0.0334**	0.002	6.6	ug/L	56	Standard
	Ba	135	170016.2	0.4	**90.0719**	0.909	1.0	ug/L	36	Standard
	Ce	140	955983.2	0.1				ug/L	65	Standard
>	**Tb**	159	1008766.5	1.9				ug/L	939481	Standard
	Ho	165	65079.5	0.4				ug/L	7	Standard
	Tl	203	2162.8	1.6	**0.3377**	0.005	1.5	ug/L	5	Standard
	Tl	205	1380.1	4.1	**0.3137**	0.013	4.1	ug/L	2	Standard
	Pb	206	30584.2	1.2	**7.6968**	0.107	1.4	ug/L	222	Standard
	Pb	207	22427.3	1.0	**6.2289**	0.090	1.4	ug/L	186	Standard
	Pb	208	85843.4	0.3	**6.6931**	0.017	0.3	ug/L	717	Standard
	U	238	29838.7	0.7	**6.8149**	0.019	0.3	ug/L	2	Standard
>	**Bi**	209	436750.8	0.5				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	135.0	19.6	**0.1508**	0.057	37.7	mg/L	45	Standard
K	39	56.7	10.2	**1.1780**	0.180	15.3	mg/L	10	Standard
Ca	43	121.7	12.6	**12.4212**	2.755	22.2	mg/L	47	Standard
Fe	54	9193.2	4.0	**17.3896**	0.582	3.3	mg/L	46	Standard
Fe	57	3253.7	3.7	**18.1170**	0.890	4.9	mg/L	627	Standard
> **Sc-1**	45	32484.8	1.3				mg/L	24506	Standard
Cl	35	43415.4	0.6				ug/L	47100	Standard
Kr	83	3.7	68.6				ug/L	8	Standard
Br	81	1170.0	6.7				ug/L	427	Standard
P	31	13432.6	2.5				ug/L	10519	Standard
S	34	2543.5	3.0				ug/L	2003	Standard
Sr	88	188.3	10.7				ug/L	132	Standard
C	12	153.3	44.4				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	320.0	17.4				mg/L	10	Standard
Dy	164	95097.0	1.8				mg/L	13	Standard
Ho-1	165	65079.5	0.4				mg/L	7	Standard
Er	166	61497.9	1.7				mg/L	7	Standard
I	127	27508.3	1.6				mg/L	2225	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		100.719	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		102.024	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.109
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.199
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1508100004
Sample Date/Time: Sunday, August 23, 2015 21:50:55
Number of Replicates: 3
Autosampler Position: 234
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53179.9	3.1				ug/L	53498	Standard
	Be	9	388.3	16.2	**0.6431**	0.098	15.2	ug/L	12	Standard
	Al	27	451550.3	1.0	**6.5523**	0.154	2.4	ug/L	487	Standard
	Sc	45	29293.3	2.7				ug/L	24506	Standard
	Ti	47	2695.9	1.3	**14.2128**	0.360	2.5	ug/L	21	Standard
	V	51	57585.0	1.5	**13.9721**	0.367	2.6	ug/L	1268	Standard
	Cr	52	313197.1	0.8	**58.5922**	0.375	0.6	ug/L	7921	Standard
	Cr	53	39342.7	1.5	**59.5955**	0.130	0.2	ug/L	442	Standard
	Mn	55	1014726.8	1.5	**295.2248**	5.470	1.9	ug/L	545	Standard
	Co	59	19758.9	1.8	**5.3318**	0.155	2.9	ug/L	183	Standard
	Ni	60	137456.4	0.9	**98.5112**	1.431	1.5	ug/L	131	Standard
	Cu	65	47471.3	1.0	**35.0157**	0.226	0.6	ug/L	231	Standard
	Zn	66	228908.1	2.2	**297.6085**	6.619	2.2	ug/L	306	Standard
>	**Ge**	72	337499.9	1.3				ug/L	330478	Standard
	As	75	4886.4	0.7	**6.3255**	0.109	1.7	ug/L	-23	Standard
	Se	82	420.5	3.6	**6.1755**	0.161	2.6	ug/L	27	Standard
	Se-1	77	425.7	3.6	**7.4794**	0.446	6.0	ug/L	92	Standard
>	**Ga**	71	3488.7	10.4				mg/L	37	Standard
	Rb	85	67225.5	0.9				ug/L	25	Standard
	Y	89	877041.0	2.0				ug/L	312467	Standard
>	**Rh**	103	40.0	33.1				ug/L	20	Standard
	Mo	98	2196.5	2.6	**1.6581**	0.035	2.1	ug/L	13	Standard
	Ag	107	299.0	3.3	**0.0422**	0.002	4.7	ug/L	72	Standard
	Cd	111	1061.4	1.6	**0.7872**	0.011	1.5	mg/L	5	Standard
	Cd	114	2671.6	2.4	**0.7600**	0.022	3.0	ug/L	7	Standard
>	**In**	115	465182.6	0.6				ug/L	477820	Standard
	Sn	118	510.0	11.9	**0.0380**	0.014	37.1	ug/L	343	Standard
	Sb	123	136.5	6.8	**0.0339**	0.003	7.9	ug/L	56	Standard
	Ba	135	119374.1	1.5	**64.3706**	0.739	1.1	ug/L	36	Standard
	Ce	140	584161.5	0.3				ug/L	65	Standard
>	**Tb**	159	962686.1	1.8				ug/L	939481	Standard
	Ho	165	40021.2	3.2				ug/L	7	Standard
	Tl	203	1260.4	6.4	**0.1983**	0.014	6.9	ug/L	5	Standard
	Tl	205	853.4	3.4	**0.1945**	0.007	3.4	ug/L	2	Standard
	Pb	206	23383.4	1.1	**5.9618**	0.098	1.6	ug/L	222	Standard
	Pb	207	17551.2	0.3	**4.9375**	0.055	1.1	ug/L	186	Standard
	Pb	208	66367.5	1.1	**5.2413**	0.054	1.0	ug/L	717	Standard
	U	238	19345.7	1.1	**4.4848**	0.079	1.8	ug/L	2	Standard
>	**Bi**	209	430112.8	0.9				ug/L	440279	Standard

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Na	23	3.3	**-806499788621**69898765303280.297			86.7	mg/L	2	Standard
Mg	24	120.0	18.2	**0.1470**	0.054	36.9	mg/L	45	Standard
K	39	33.3	8.7	**0.6187**	0.064	10.3	mg/L	10	Standard
Ca	43	68.3	8.4	**4.5053**	0.975	21.6	mg/L	47	Standard
Fe	54	6623.8	5.0	**13.8795**	1.040	7.5	mg/L	46	Standard
Fe	57	2415.2	1.6	**13.8497**	0.431	3.1	mg/L	627	Standard
Sc-1	45	29293.3	2.7				mg/L	24506	Standard
Cl	35	42699.4	2.7				ug/L	47100	Standard
Kr	83	4.0	43.3				ug/L	8	Standard
Br	81	856.7	11.9				ug/L	427	Standard
P	31	12763.7	3.6				ug/L	10519	Standard
S	34	2363.5	3.2				ug/L	2003	Standard
Sr	88	178.3	14.1				ug/L	132	Standard
C	12	153.3	49.4				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	316.7	25.5				mg/L	10	Standard
Dy	164	58155.5	4.0				mg/L	13	Standard
Ho-1	165	40021.2	3.2				mg/L	7	Standard
Er	166	36941.7	3.0				mg/L	7	Standard
I	127	19906.4	4.8				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.406	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.125	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.355
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.691
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1508100004PS WG536149-01
Sample Date/Time: Sunday, August 23, 2015 21:54:06
Number of Replicates: 3
Autosampler Position: 235
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52375.4	0.2				ug/L	53498	Standard
	Be	9	30163.3	1.0	**52.3374**	0.618	1.2	ug/L	12	Standard
	Al	27	445533.2	2.5	**6.5612**	0.155	2.4	ug/L	487	Standard
	Sc	45	29510.4	3.2				ug/L	24506	Standard
	Ti	47	2682.9	1.1	**14.1545**	0.412	2.9	ug/L	21	Standard
	V	51	262021.4	1.2	**64.8214**	1.287	2.0	ug/L	1268	Standard
	Cr	52	582493.5	0.5	**110.3932**	2.638	2.4	ug/L	7921	Standard
	Cr	53	72928.4	0.8	**111.2150**	3.444	3.1	ug/L	442	Standard
	Mn	55	1195175.1	1.4	**347.9765**	4.531	1.3	ug/L	545	Standard
	Co	59	206340.5	0.3	**56.2354**	1.135	2.0	ug/L	183	Standard
	Ni	60	208342.1	1.3	**149.4509**	1.477	1.0	ug/L	131	Standard
	Cu	65	117749.5	0.6	**87.1834**	1.725	2.0	ug/L	231	Standard
	Zn	66	267341.6	0.5	**347.9276**	6.558	1.9	ug/L	306	Standard
>	**Ge**	72	337307.5	2.3				ug/L	330478	Standard
	As	75	44509.5	1.1	**57.2314**	0.793	1.4	ug/L	-23	Standard
	Se	82	3661.0	2.6	**57.0626**	0.321	0.6	ug/L	27	Standard
	Se-1	77	2674.9	2.4	**57.3044**	0.085	0.1	ug/L	92	Standard
>	**Ga**	71	3513.7	2.2				mg/L	37	Standard
	Rb	85	67798.1	3.1				ug/L	25	Standard
	Y	89	868528.8	0.7				ug/L	312467	Standard
>	**Rh**	103	61.7	26.1				ug/L	20	Standard
	Mo	98	2186.5	1.3	**1.6455**	0.023	1.4	ug/L	13	Standard
	Ag	107	246241.6	1.9	**52.1057**	1.508	2.9	ug/L	72	Standard
	Cd	111	70379.5	0.8	**52.9059**	0.915	1.7	mg/L	5	Standard
	Cd	114	185539.8	1.1	**53.1725**	1.076	2.0	ug/L	7	Standard
>	**In**	115	466656.8	1.0				ug/L	477820	Standard
	Sn	118	541.7	15.4	**0.0447**	0.018	39.6	ug/L	343	Standard
	Sb	123	184248.8	0.6	**50.7695**	0.767	1.5	ug/L	56	Standard
	Ba	135	214429.7	0.1	**115.2938**	1.290	1.1	ug/L	36	Standard
	Ce	140	567345.4	0.5				ug/L	65	Standard
>	**Tb**	159	971253.5	0.3				ug/L	939481	Standard
	Ho	165	39148.9	1.4				ug/L	7	Standard
	Tl	203	323211.2	1.1	**51.1989**	0.903	1.8	ug/L	5	Standard
	Tl	205	215311.0	1.6	**50.1234**	0.716	1.4	ug/L	2	Standard
	Pb	206	225197.6	0.8	**57.2433**	0.142	0.2	ug/L	222	Standard
	Pb	207	198977.4	0.5	**55.9069**	0.514	0.9	ug/L	186	Standard
	Pb	208	709012.3	0.8	**55.8958**	0.436	0.8	ug/L	717	Standard
	U	238	233781.8	0.4	**53.6027**	0.602	1.1	ug/L	2	Standard
>	**Bi**	209	435426.1	1.0				ug/L	440279	Standard

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Na	23	5.0	**-119130777732583821232383511.341**			3.2	mg/L	2	Standard
Mg	24	105.0	8.2	**0.1099**	0.028	25.0	mg/L	45	Standard
K	39	51.7	31.1	**1.1731**	0.443	37.7	mg/L	10	Standard
Ca	43	80.0	6.3	**6.6215**	0.734	11.1	mg/L	47	Standard
Fe	54	6385.2	0.7	**13.2672**	0.447	3.4	mg/L	46	Standard
Fe	57	2401.9	5.0	**13.6216**	1.584	11.6	mg/L	627	Standard
Sc-1	45	29510.4	3.2				mg/L	24506	Standard
Cl	35	41322.3	0.5				ug/L	47100	Standard
Kr	83	4.3	53.3				ug/L	8	Standard
Br	81	763.4	4.0				ug/L	427	Standard
P	31	12611.9	4.8				ug/L	10519	Standard
S	34	2331.8	4.8				ug/L	2003	Standard
Sr	88	193.3	23.3				ug/L	132	Standard
C	12	200.0	39.1				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	373.3	9.4				mg/L	10	Standard
Dy	164	57726.0	2.3				mg/L	13	Standard
Ho-1	165	39148.9	1.4				mg/L	7	Standard
Er	166	37312.6	3.3				mg/L	7	Standard
I	127	20255.2	3.7				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.902	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.067	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.664
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.898
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

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Ni 60 Upper, S, EEE	Ni	60
Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1508100004SDL WG536149-02
Sample Date/Time: Sunday, August 23, 2015 21:57:18
Number of Replicates: 3
Autosampler Position: 236
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52992.5	1.7				ug/L	53498	Standard
	Be	9	65.0	30.8	**0.0912**	0.033	35.9	ug/L	12	Standard
	Al	27	91448.5	0.6	**1.3227**	0.030	2.2	ug/L	487	Standard
	Sc	45	25481.4	3.3				ug/L	24506	Standard
	Ti	47	520.3	6.7	**2.6507**	0.197	7.4	ug/L	21	Standard
	V	51	12382.3	3.7	**2.7517**	0.109	4.0	ug/L	1268	Standard
	Cr	52	68478.8	1.5	**11.6698**	0.242	2.1	ug/L	7921	Standard
	Cr	53	8349.0	1.6	**12.1301**	0.225	1.9	ug/L	442	Standard
	Mn	55	208791.9	2.4	**60.8839**	1.214	2.0	ug/L	545	Standard
	Co	59	4225.6	0.8	**1.1023**	0.005	0.4	ug/L	183	Standard
	Ni	60	28390.9	1.4	**20.3726**	0.333	1.6	ug/L	131	Standard
	Cu	65	9878.6	0.6	**7.1834**	0.044	0.6	ug/L	231	Standard
	Zn	66	47401.0	0.6	**61.5559**	0.512	0.8	ug/L	306	Standard
>	**Ge**	72	335903.7	0.4				ug/L	330478	Standard
	As	75	931.3	4.5	**1.2530**	0.050	4.0	ug/L	-23	Standard
	Se	82	107.1	16.9	**1.2650**	0.278	22.0	ug/L	27	Standard
	Se-1	77	143.0	6.9	**1.2331**	0.225	18.2	ug/L	92	Standard
>	**Ga**	71	816.7	6.3				mg/L	37	Standard
	Rb	85	13951.4	0.9				ug/L	25	Standard
	Y	89	440686.5	1.7				ug/L	312467	Standard
>	**Rh**	103	16.7	34.6				ug/L	20	Standard
	Mo	98	442.7	7.2	**0.3326**	0.026	7.7	ug/L	13	Standard
	Ag	107	135.3	12.2	**0.0075**	0.004	47.1	ug/L	72	Standard
	Cd	111	209.6	2.9	**0.1448**	0.005	3.2	mg/L	5	Standard
	Cd	114	529.9	3.6	**0.1443**	0.004	3.0	ug/L	7	Standard
>	**In**	115	465067.6	0.8				ug/L	477820	Standard
	Sn	118	315.0	5.7	**-0.0067**	0.004	65.4	ug/L	343	Standard
	Sb	123	741.8	5.4	**0.2012**	0.010	4.7	ug/L	56	Standard
	Ba	135	24126.9	0.7	**12.9929**	0.128	1.0	ug/L	36	Standard
	Ce	140	119136.7	2.1				ug/L	65	Standard
>	**Tb**	159	928152.2	0.4				ug/L	939481	Standard
	Ho	165	8120.5	2.1				ug/L	7	Standard
	Tl	203	299.3	3.5	**0.0443**	0.001	2.7	ug/L	5	Standard
	Tl	205	198.3	9.5	**0.0402**	0.004	9.6	ug/L	2	Standard
	Pb	206	4935.8	1.6	**1.2141**	0.034	2.8	ug/L	222	Standard
	Pb	207	3646.1	1.3	**0.9821**	0.026	2.7	ug/L	186	Standard
	Pb	208	14255.6	1.1	**1.0821**	0.019	1.7	ug/L	717	Standard
	U	238	3987.5	2.5	**0.9229**	0.028	3.1	ug/L	2	Standard
>	**Bi**	209	428517.1	1.3				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	56.7	27.0	**0.0170**	0.042	244.7	mg/L	45	Standard
K	39	26.7	39.0	**0.5311**	0.356	67.0	mg/L	10	Standard
Ca	43	30.0	44.1	**-1.9086**	3.058	160.2	mg/L	47	Standard
Fe	54	1365.9	8.3	**3.1628**	0.315	10.0	mg/L	46	Standard
Fe	57	1193.4	10.8	**5.2489**	1.113	21.2	mg/L	627	Standard
> **Sc-1**	45	25481.4	3.3				mg/L	24506	Standard
Cl	35	41058.9	1.3				ug/L	47100	Standard
Kr	83	5.7	44.4				ug/L	8	Standard
Br	81	603.3	7.5				ug/L	427	Standard
P	31	11756.2	2.8				ug/L	10519	Standard
S	34	2231.8	4.0				ug/L	2003	Standard
Sr	88	235.0	16.9				ug/L	132	Standard
C	12	126.7	29.9				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	66.7	22.9				mg/L	10	Standard
Dy	164	11610.6	4.9				mg/L	13	Standard
Ho-1	165	8120.5	2.1				mg/L	7	Standard
Er	166	7531.9	3.1				mg/L	7	Standard
I	127	5946.2	2.4				mg/L	2225	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		99.056	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.642	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.331
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.328
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: L1508100004SDL WG536149-02
Sample Date/Time: Sunday, August 23, 2015 22:00:29
Number of Replicates: 3
Autosampler Position: 237
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51658.0	2.9				ug/L	53498	Standard
	Be	9	20.0	90.1	**0.0151**	0.031	207.3	ug/L	12	Standard
	Al	27	18825.0	2.5	**0.2708**	0.012	4.6	ug/L	487	Standard
	Sc	45	25668.4	1.2				ug/L	24506	Standard
	Ti	47	116.7	3.6	**0.4982**	0.032	6.4	ug/L	21	Standard
	V	51	3299.5	3.3	**0.4913**	0.038	7.8	ug/L	1268	Standard
	Cr	52	18447.2	1.5	**2.0478**	0.029	1.4	ug/L	7921	Standard
	Cr	53	2096.8	8.0	**2.5263**	0.304	12.0	ug/L	442	Standard
	Mn	55	42126.2	1.0	**12.2461**	0.245	2.0	ug/L	545	Standard
	Co	59	1024.7	3.7	**0.2280**	0.008	3.5	ug/L	183	Standard
	Ni	60	5831.1	0.2	**4.1503**	0.106	2.6	ug/L	131	Standard
	Cu	65	2182.8	0.8	**1.4658**	0.048	3.3	ug/L	231	Standard
	Zn	66	10682.1	0.6	**13.6391**	0.407	3.0	ug/L	306	Standard
>	**Ge**	72	333177.0	2.3				ug/L	330478	Standard
	As	75	137.6	14.8	**0.2307**	0.023	9.8	ug/L	-23	Standard
	Se	82	38.5	20.6	**0.1906**	0.133	69.7	ug/L	27	Standard
	Se-1	77	98.7	10.2	**0.2641**	0.208	78.7	ug/L	92	Standard
>	**Ga**	71	161.7	9.4				mg/L	37	Standard
	Rb	85	2785.3	3.2				ug/L	25	Standard
	Y	89	350334.0	0.4				ug/L	312467	Standard
>	**Rh**	103	21.7	53.3				ug/L	20	Standard
	Mo	98	101.8	14.4	**0.0762**	0.012	15.2	ug/L	13	Standard
	Ag	107	79.7	14.1	**-0.0040**	0.002	57.9	ug/L	72	Standard
	Cd	111	52.1	8.7	**0.0268**	0.004	13.5	mg/L	5	Standard
	Cd	114	158.1	23.9	**0.0382**	0.011	29.1	ug/L	7	Standard
>	**In**	115	456349.9	0.5				ug/L	477820	Standard
	Sn	118	320.0	15.4	**-0.0041**	0.012	288.3	ug/L	343	Standard
	Sb	123	204.8	11.7	**0.0539**	0.007	12.9	ug/L	56	Standard
	Ba	135	4869.4	0.9	**2.6514**	0.024	0.9	ug/L	36	Standard
	Ce	140	24137.5	1.1				ug/L	65	Standard
>	**Tb**	159	921845.3	1.0				ug/L	939481	Standard
	Ho	165	1620.1	5.1				ug/L	7	Standard
	Tl	203	62.7	3.3	**0.0063**	0.000	5.5	ug/L	5	Standard
	Tl	205	35.0	75.6	**0.0017**	0.006	372.7	ug/L	2	Standard
	Pb	206	1197.4	2.0	**0.2495**	0.007	2.7	ug/L	222	Standard
	Pb	207	904.7	3.5	**0.2003**	0.009	4.3	ug/L	186	Standard
	Pb	208	3302.8	1.7	**0.2056**	0.005	2.2	ug/L	717	Standard
	U	238	776.4	2.5	**0.1759**	0.004	2.4	ug/L	2	Standard
>	**Bi**	209	425406.4	0.2				ug/L	440279	Standard

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Na	23	1.7	**-4523698858247835276260614**0.094			173.2	mg/L	2	Standard
Mg	24	50.0	43.6	**-0.0025**	0.057	2317.9	mg/L	45	Standard
K	39	16.7	86.6	**0.1730**	0.518	299.4	mg/L	10	Standard
Ca	43	36.7	7.9	**-0.5512**	0.595	107.9	mg/L	47	Standard
Fe	54	330.3	10.9	**0.6316**	0.078	12.3	mg/L	46	Standard
Fe	57	888.4	2.9	**2.3068**	0.319	13.8	mg/L	627	Standard
> **Sc-1**	45	25668.4	1.2				mg/L	24506	Standard
Cl	35	39901.1	0.6				ug/L	47100	Standard
Kr	83	4.3	13.3				ug/L	8	Standard
Br	81	646.7	7.8				ug/L	427	Standard
P	31	11474.3	2.2				ug/L	10519	Standard
S	34	2081.8	2.6				ug/L	2003	Standard
Sr	88	188.3	12.3				ug/L	132	Standard
C	12	176.7	14.2				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	10.0	100.0				mg/L	10	Standard
Dy	164	2524.4	7.5				mg/L	13	Standard
Ho-1	165	1620.1	5.1				mg/L	7	Standard
Er	166	1443.4	11.1				mg/L	7	Standard
I	127	2703.6	3.8				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		96.561	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.817	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.507
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.622
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Sunday, August 23, 2015 22:03:42
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	52295.1	2.4				ug/L	53498	Standard
	Be	9	27728.7	2.9	**48.2251**	2.525	5.2	ug/L	12	Standard
	Al	27	3291897.2	1.4	**48.6385**	1.107	2.3	ug/L	487	Standard
	Sc	45	24473.1	1.0				ug/L	24506	Standard
	Ti	47	19385.1	0.3	**104.2170**	0.848	0.8	ug/L	21	Standard
	V	51	207042.3	0.3	**51.7205**	0.341	0.7	ug/L	1268	Standard
	Cr	52	269874.8	1.1	**50.8883**	0.372	0.7	ug/L	7921	Standard
	Cr	53	33218.0	1.6	**50.8090**	0.464	0.9	ug/L	442	Standard
	Mn	55	188080.7	1.6	**55.2283**	1.357	2.5	ug/L	545	Standard
	Co	59	184346.7	0.7	**50.7919**	0.593	1.2	ug/L	183	Standard
	Ni	60	70417.6	0.2	**51.0229**	0.610	1.2	ug/L	131	Standard
	Cu	65	68221.2	0.3	**51.0006**	0.632	1.2	ug/L	231	Standard
	Zn	66	38396.6	0.8	**50.1325**	0.123	0.2	ug/L	306	Standard
>	Ge	72	333534.7	1.0				ug/L	330478	Standard
	As	75	38031.7	1.3	**49.4573**	0.911	1.8	ug/L	-23	Standard
	Se	82	3229.0	0.7	**50.8602**	0.864	1.7	ug/L	27	Standard
	Se-1	77	2371.5	2.4	**51.1779**	1.055	2.1	ug/L	92	Standard
>	Ga	71	45.0	29.4				mg/L	37	Standard
	Rb	85	586.7	4.3				ug/L	25	Standard
	Y	89	317757.5	0.5				ug/L	312467	Standard
>	Rh	103	28.3	10.2				ug/L	20	Standard
	Mo	98	128305.9	1.0	**98.3495**	1.985	2.0	ug/L	13	Standard
	Ag	107	240547.8	0.3	**51.7642**	0.805	1.6	ug/L	72	Standard
	Cd	111	66676.0	1.4	**50.9766**	1.112	2.2	mg/L	5	Standard
	Cd	114	176131.5	0.9	**51.3304**	0.236	0.5	ug/L	7	Standard
>	In	115	458844.1	1.3				ug/L	477820	Standard
	Sn	118	205303.6	1.9	**47.5771**	0.604	1.3	ug/L	343	Standard
	Sb	123	178334.0	0.8	**49.9754**	0.600	1.2	ug/L	56	Standard
	Ba	135	93060.9	0.1	**50.8756**	0.644	1.3	ug/L	36	Standard
	Ce	140	96.7	14.9				ug/L	65	Standard
>	Tb	159	911752.9	1.4				ug/L	939481	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	311119.8	0.5	**50.5475**	0.496	1.0	ug/L	5	Standard
	Tl	205	206499.3	0.2	**49.3088**	0.413	0.8	ug/L	2	Standard
	Pb	206	195726.8	0.8	**51.0257**	0.601	1.2	ug/L	222	Standard
	Pb	207	177510.4	0.1	**51.1512**	0.299	0.6	ug/L	186	Standard
	Pb	208	621842.0	0.6	**50.2783**	0.524	1.0	ug/L	717	Standard
	U	238	207882.4	0.4	**48.8877**	0.435	0.9	ug/L	2	Standard
>	Bi	209	424512.3	0.7				ug/L	440279	Standard

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Na	23	1.7	**-4808357658578**3283197656087.469			173.2	mg/L	2	Standard
Mg	24	1785.1	8.3	**4.9072**	0.430	8.8	mg/L	45	Standard
K	39	160.0	14.3	**5.5739**	0.818	14.7	mg/L	10	Standard
Ca	43	45.0	48.4	**1.7794**	5.056	284.2	mg/L	47	Standard
Fe	54	1899.0	11.3	**4.6519**	0.590	12.7	mg/L	46	Standard
Fe	57	1328.4	13.7	**7.0557**	1.862	26.4	mg/L	627	Standard
Sc-1	45	24473.1	1.0				mg/L	24506	Standard
Cl	35	41604.4	0.8				ug/L	47100	Standard
Kr	83	5.3	78.1				ug/L	8	Standard
Br	81	573.3	5.6				ug/L	427	Standard
P	31	11571.1	2.8				ug/L	10519	Standard
S	34	2331.8	2.9				ug/L	2003	Standard
Sr	88	201.7	14.9				ug/L	132	Standard
C	12	163.3	100.7				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	15.9	186.3				mg/L	13	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	16.7	124.9				mg/L	7	Standard
I	127	1276.7	5.9				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	96.450		
Al	27	97.277		
Sc	45			
Ti	47	104.217		
V	51	103.441		
Cr	52	101.777		
Cr	53			
Mn	55	110.457		
Co	59	101.584		
Ni	60	102.046		
Cu	65	102.001		
Zn	66	100.265		
Ge	72		100.925	
As	75	98.915		
Se	82	101.720		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.349		
Ag	107	103.528		
Cd	111	101.953		
Cd	114			
> In	115		96.029	
Sn	118	95.154		
Sb	123	99.951		
Ba	135	101.751		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.095		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.557		
U	238	97.775		
> Bi	209		96.419	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Mn	55	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Sunday, August 23, 2015 22:06:54
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50932.1	1.6				ug/L	53498	Standard
	Be	9	16.7	124.9	**0.0097**	0.037	386.3	ug/L	12	Standard
	Al	27	1328.4	97.3	**0.0093**	0.020	213.2	ug/L	487	Standard
	Sc	45	25337.8	1.7				ug/L	24506	Standard
	Ti	47	30.7	55.5	**0.0343**	0.092	267.6	ug/L	21	Standard
	V	51	1093.4	5.4	**-0.0642**	0.020	30.5	ug/L	1268	Standard
	Cr	52	6872.9	6.1	**-0.2037**	0.077	37.8	ug/L	7921	Standard
	Cr	53	445.0	8.8	**-0.0416**	0.073	175.8	ug/L	442	Standard
	Mn	55	952.7	54.8	**0.1021**	0.154	151.2	ug/L	545	Standard
	Co	59	248.3	28.9	**0.0137**	0.020	146.7	ug/L	183	Standard
	Ni	60	173.3	53.4	**0.0381**	0.067	177.1	ug/L	131	Standard
	Cu	65	218.3	11.0	**-0.0099**	0.019	187.4	ug/L	231	Standard
	Zn	66	371.0	24.1	**0.0337**	0.120	355.4	ug/L	306	Standard
>	**Ge**	72	333212.2	2.1				ug/L	330478	Standard
	As	75	-38.4	26.7	**0.0019**	0.014	758.5	ug/L	-23	Standard
	Se	82	19.0	31.7	**-0.1212**	0.089	73.6	ug/L	27	Standard
	Se-1	77	92.3	16.9	**0.1257**	0.381	302.9	ug/L	92	Standard
>	**Ga**	71	21.7	26.6				mg/L	37	Standard
	Rb	85	51.7	36.6				ug/L	25	Standard
	Y	89	322363.6	1.3				ug/L	312467	Standard
>	**Rh**	103	23.3	81.1				ug/L	20	Standard
	Mo	98	52.5	37.9	**0.0377**	0.015	41.1	ug/L	13	Standard
	Ag	107	107.0	22.0	**0.0015**	0.005	346.0	ug/L	72	Standard
	Cd	111	22.2	88.3	**0.0036**	0.015	417.0	mg/L	5	Standard
	Cd	114	33.1	141.0	**0.0015**	0.014	910.8	ug/L	7	Standard
>	**In**	115	464344.9	1.2				ug/L	477820	Standard
	Sn	118	443.3	13.6	**0.0230**	0.015	65.5	ug/L	343	Standard
	Sb	123	699.8	6.5	**0.1900**	0.015	7.8	ug/L	56	Standard
	Ba	135	64.3	46.1	**0.0085**	0.016	192.6	ug/L	36	Standard
	Ce	140	116.7	118.5				ug/L	65	Standard
>	**Tb**	159	929396.8	2.2				ug/L	939481	Standard
	Ho	165	16.7	75.5				ug/L	7	Standard
	Tl	203	50.0	75.0	**0.0043**	0.006	142.1	ug/L	5	Standard
	Tl	205	51.7	132.1	**0.0058**	0.016	284.8	ug/L	2	Standard
	Pb	206	229.0	6.3	**-0.0025**	0.004	163.9	ug/L	222	Standard
	Pb	207	196.0	19.5	**-0.0034**	0.011	326.7	ug/L	186	Standard
	Pb	208	855.3	31.8	**0.0083**	0.022	270.4	ug/L	717	Standard
	U	238	84.0	117.6	**0.0136**	0.023	172.2	ug/L	2	Standard
>	**Bi**	209	423378.8	0.5				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	40.0	62.5	**-0.0283**	0.066	234.4	mg/L	45	Standard
K	39	3.3	86.6	**-0.3029**	0.106	34.9	mg/L	10	Standard
Ca	43	21.7	48.0	**-3.7575**	2.313	61.5	mg/L	47	Standard
Fe	54	57.6	26.9	**-0.0253**	0.035	139.6	mg/L	46	Standard
Fe	57	870.0	9.2	**2.2323**	0.625	28.0	mg/L	627	Standard
Sc-1	45	25337.8	1.7				mg/L	24506	Standard
Cl	35	43192.1	1.3				ug/L	47100	Standard
Kr	83	2.3	65.5				ug/L	8	Standard
Br	81	573.3	14.8				ug/L	427	Standard
P	31	10875.6	0.8				ug/L	10519	Standard
S	34	2196.8	7.2				ug/L	2003	Standard
Sr	88	190.0	24.1				ug/L	132	Standard
C	12	136.7	47.6				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	19.2	54.6				mg/L	13	Standard
Ho-1	165	16.7	75.5				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	7	Standard
I	127	2168.5	4.7				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.827	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.180
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.161
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508100006
Sample Date/Time: Sunday, August 23, 2015 22:10:06
Number of Replicates: 3
Autosampler Position: 238
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52858.8	3.8				ug/L	53498	Standard
	Be	9	110.0	40.4	**0.1676**	0.070	41.7	ug/L	12	Standard
	Al	27	1455857.5	1.4	**21.2888**	0.837	3.9	ug/L	487	Standard
	Sc	45	28326.5	1.3				ug/L	24506	Standard
	Ti	47	1865.8	2.2	**9.6282**	0.258	2.7	ug/L	21	Standard
	V	51	29309.0	2.1	**6.8208**	0.135	2.0	ug/L	1268	Standard
	Cr	52	151934.0	0.8	**27.1393**	0.118	0.4	ug/L	7921	Standard
	Cr	53	18945.2	5.0	**27.8269**	1.296	4.7	ug/L	442	Standard
	Mn	55	678613.3	1.4	**194.0456**	2.727	1.4	ug/L	545	Standard
	Co	59	15464.9	2.0	**4.0897**	0.095	2.3	ug/L	183	Standard
	Ni	60	81565.0	1.4	**57.4339**	0.891	1.6	ug/L	131	Standard
	Cu	65	20351.0	0.4	**14.6586**	0.115	0.8	ug/L	231	Standard
	Zn	66	134106.2	0.7	**171.2278**	1.533	0.9	ug/L	306	Standard
>	**Ge**	72	343257.8	0.4				ug/L	330478	Standard
	As	75	3015.5	1.7	**3.8579**	0.051	1.3	ug/L	-23	Standard
	Se	82	327.5	2.5	**4.6312**	0.132	2.9	ug/L	27	Standard
	Se-1	77	183.0	5.2	**2.0361**	0.225	11.1	ug/L	92	Standard
>	**Ga**	71	1563.4	5.4				mg/L	37	Standard
	Rb	85	23691.9	3.0				ug/L	25	Standard
	Y	89	686386.8	2.7				ug/L	312467	Standard
>	**Rh**	103	36.7	64.4				ug/L	20	Standard
	Mo	98	1952.4	1.9	**1.4544**	0.031	2.1	ug/L	13	Standard
	Ag	107	216.0	13.3	**0.0240**	0.006	26.1	ug/L	72	Standard
	Cd	111	555.5	7.1	**0.4004**	0.032	8.0	mg/L	5	Standard
	Cd	114	1387.4	7.2	**0.3857**	0.031	8.0	ug/L	7	Standard
>	**In**	115	471368.1	0.8				ug/L	477820	Standard
	Sn	118	473.3	8.9	**0.0281**	0.009	33.1	ug/L	343	Standard
	Sb	123	354.8	4.7	**0.0929**	0.005	5.6	ug/L	56	Standard
	Ba	135	44785.4	0.8	**23.8171**	0.180	0.8	ug/L	36	Standard
	Ce	140	292776.9	1.3				ug/L	65	Standard
>	**Tb**	159	954492.4	2.8				ug/L	939481	Standard
	Ho	165	24865.4	4.0				ug/L	7	Standard
	Tl	203	810.0	2.8	**0.1247**	0.004	3.0	ug/L	5	Standard
	Tl	205	540.0	20.3	**0.1192**	0.025	21.0	ug/L	2	Standard
	Pb	206	11427.6	1.4	**2.8499**	0.069	2.4	ug/L	222	Standard
	Pb	207	8448.4	0.9	**2.3192**	0.010	0.4	ug/L	186	Standard
	Pb	208	32284.1	0.3	**2.4902**	0.018	0.7	ug/L	717	Standard
	U	238	8590.8	1.6	**1.9665**	0.048	2.5	ug/L	2	Standard
>	**Bi**	209	434841.0	1.0				ug/L	440279	Standard

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Na	23	1.7	-4145132003467	1795792340834.859		173.2	mg/L	2	Standard
Mg	24	88.3	27.9	**0.0794**	0.062	78.4	mg/L	45	Standard
K	39	15.0	66.7	**0.0596**	0.318	534.6	mg/L	10	Standard
Ca	43	73.3	7.9	**5.9501**	1.292	21.7	mg/L	47	Standard
Fe	54	2647.9	5.7	**5.6335**	0.322	5.7	mg/L	46	Standard
Fe	57	1531.7	4.5	**7.0035**	0.680	9.7	mg/L	627	Standard
> Sc-1	45	28326.5	1.3				mg/L	24506	Standard
Cl	35	42795.0	0.6				ug/L	47100	Standard
Kr	83	6.0	33.3				ug/L	8	Standard
Br	81	14270.1	4.2				ug/L	427	Standard
P	31	11662.8	1.8				ug/L	10519	Standard
S	34	2363.5	8.3				ug/L	2003	Standard
Sr	88	203.3	29.1				ug/L	132	Standard
C	12	193.3	28.5				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	93.3	16.4				mg/L	10	Standard
Dy	164	35136.4	6.3				mg/L	13	Standard
Ho-1	165	24865.4	4.0				mg/L	7	Standard
Er	166	22690.3	1.6				mg/L	7	Standard
I	127	9639.7	3.2				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.806	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.867	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.650
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.765
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1508100008
Sample Date/Time: Sunday, August 23, 2015 22:13:18
Number of Replicates: 3
Autosampler Position: 239
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52223.3	4.0				ug/L	53498	Standard
	Be	9	78.3	22.4	**0.1164**	0.032	27.4	ug/L	12	Standard
	Al	27	879876.4	0.8	**13.0192**	0.496	3.8	ug/L	487	Standard
	Sc	45	25922.2	1.1				ug/L	24506	Standard
	Ti	47	1086.7	3.8	**5.7649**	0.252	4.4	ug/L	21	Standard
	V	51	18398.1	2.6	**4.3230**	0.151	3.5	ug/L	1268	Standard
	Cr	52	84084.7	1.5	**14.9227**	0.269	1.8	ug/L	7921	Standard
	Cr	53	10248.5	2.1	**15.2919**	0.242	1.6	ug/L	442	Standard
	Mn	55	440035.4	0.4	**130.4551**	1.958	1.5	ug/L	545	Standard
	Co	59	9248.8	2.0	**2.5156**	0.025	1.0	ug/L	183	Standard
	Ni	60	45579.1	1.3	**33.2491**	0.224	0.7	ug/L	131	Standard
	Cu	65	11717.5	1.0	**8.6835**	0.071	0.8	ug/L	231	Standard
	Zn	66	68653.5	1.2	**90.6989**	0.378	0.4	ug/L	306	Standard
>	**Ge**	72	330966.1	1.3				ug/L	330478	Standard
	As	75	1559.5	2.8	**2.0938**	0.073	3.5	ug/L	-23	Standard
	Se	82	122.4	1.8	**1.5372**	0.061	3.9	ug/L	27	Standard
	Se-1	77	155.7	6.2	**1.5654**	0.189	12.1	ug/L	92	Standard
>	**Ga**	71	791.7	9.7				mg/L	37	Standard
	Rb	85	11861.3	5.4				ug/L	25	Standard
	Y	89	546184.2	2.0				ug/L	312467	Standard
>	**Rh**	103	26.7	47.2				ug/L	20	Standard
	Mo	98	1260.9	4.4	**0.9507**	0.043	4.6	ug/L	13	Standard
	Ag	107	168.7	6.4	**0.0145**	0.002	14.8	ug/L	72	Standard
	Cd	111	390.9	7.6	**0.2814**	0.022	7.9	mg/L	5	Standard
	Cd	114	1015.0	5.4	**0.2836**	0.017	5.9	ug/L	7	Standard
>	**In**	115	465374.4	0.6				ug/L	477820	Standard
	Sn	118	435.0	16.0	**0.0207**	0.015	74.1	ug/L	343	Standard
	Sb	123	237.2	8.9	**0.0617**	0.006	9.9	ug/L	56	Standard
	Ba	135	19080.0	0.5	**10.2628**	0.116	1.1	ug/L	36	Standard
	Ce	140	164688.8	1.9				ug/L	65	Standard
>	**Tb**	159	924225.0	1.6				ug/L	939481	Standard
	Ho	165	15693.1	2.5				ug/L	7	Standard
	Tl	203	521.3	2.2	**0.0812**	0.002	3.0	ug/L	5	Standard
	Tl	205	348.3	15.3	**0.0768**	0.012	16.2	ug/L	2	Standard
	Pb	206	6833.9	0.9	**1.7281**	0.025	1.5	ug/L	222	Standard
	Pb	207	4907.1	1.5	**1.3608**	0.013	1.0	ug/L	186	Standard
	Pb	208	18630.1	0.9	**1.4526**	0.008	0.5	ug/L	717	Standard
	U	238	5604.4	0.9	**1.3168**	0.011	0.8	ug/L	2	Standard
>	**Bi**	209	422911.4	0.7				ug/L	440279	Standard

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Na	23	1.7	**-4507999351387**8080839170917.437			173.2	mg/L	2	Standard
Mg	24	91.7	31.5	**0.1077**	0.076	71.0	mg/L	45	Standard
K	39	16.7	17.3	**0.1649**	0.097	58.6	mg/L	10	Standard
Ca	43	48.3	15.8	**1.8808**	1.569	83.4	mg/L	47	Standard
Fe	54	1461.0	5.8	**3.3319**	0.227	6.8	mg/L	46	Standard
Fe	57	1113.4	1.4	**4.3177**	0.197	4.6	mg/L	627	Standard
Sc-1	45	25922.2	1.1				mg/L	24506	Standard
Cl	35	42181.3	0.7				ug/L	47100	Standard
Kr	83	5.0	20.0				ug/L	8	Standard
Br	81	866.7	18.8				ug/L	427	Standard
P	31	11929.7	1.9				ug/L	10519	Standard
S	34	2343.5	1.7				ug/L	2003	Standard
Sr	88	180.0	9.6				ug/L	132	Standard
C	12	153.3	22.9				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	60.0	16.7				mg/L	10	Standard
Dy	164	21962.1	4.9				mg/L	13	Standard
Ho-1	165	15693.1	2.5				mg/L	7	Standard
Er	166	14296.7	3.1				mg/L	7	Standard
I	127	4652.4	3.6				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		97.618	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.148	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.395
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.055
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508100010
Sample Date/Time: Sunday, August 23, 2015 22:16:29
Number of Replicates: 3
Autosampler Position: 240
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51842.1	6.2				ug/L	53498	Standard
	Be	9	290.0	15.3	**0.4881**	0.065	13.3	ug/L	12	Standard
	Al	27	573725.9	0.8	**8.5602**	0.506	5.9	ug/L	487	Standard
	Sc	45	28947.6	2.5				ug/L	24506	Standard
	Ti	47	2285.2	2.0	**12.0803**	0.003	0.0	ug/L	21	Standard
	V	51	54194.0	1.3	**13.1906**	0.244	1.9	ug/L	1268	Standard
	Cr	52	285216.9	0.5	**53.4788**	0.883	1.7	ug/L	7921	Standard
	Cr	53	35583.4	1.6	**54.0845**	0.399	0.7	ug/L	442	Standard
	Mn	55	1282785.8	1.6	**375.0587**	11.333	3.0	ug/L	545	Standard
	Co	59	32425.7	1.3	**8.8245**	0.101	1.1	ug/L	183	Standard
	Ni	60	153057.9	0.9	**110.2095**	1.304	1.2	ug/L	131	Standard
	Cu	65	37153.2	1.6	**27.4950**	0.394	1.4	ug/L	231	Standard
	Zn	66	255817.1	1.4	**334.2152**	7.014	2.1	ug/L	306	Standard
>	**Ge**	72	335967.0	2.0				ug/L	330478	Standard
	As	75	5466.8	0.3	**7.1034**	0.134	1.9	ug/L	-23	Standard
	Se	82	420.3	4.4	**6.2016**	0.163	2.6	ug/L	27	Standard
	Se-1	77	371.7	6.9	**6.3159**	0.504	8.0	ug/L	92	Standard
>	**Ga**	71	2456.9	5.0				mg/L	37	Standard
	Rb	85	43972.1	3.9				ug/L	25	Standard
	Y	89	894492.4	4.7				ug/L	312467	Standard
>	**Rh**	103	38.3	94.4				ug/L	20	Standard
	Mo	98	4346.5	0.3	**3.3091**	0.075	2.3	ug/L	13	Standard
	Ag	107	327.0	10.8	**0.0486**	0.006	12.7	ug/L	72	Standard
	Cd	111	939.2	3.4	**0.7003**	0.016	2.3	mg/L	5	Standard
	Cd	114	2377.2	6.9	**0.6801**	0.036	5.4	ug/L	7	Standard
>	**In**	115	461740.0	2.0				ug/L	477820	Standard
	Sn	118	483.3	6.1	**0.0327**	0.006	19.4	ug/L	343	Standard
	Sb	123	171.8	18.5	**0.0439**	0.008	17.9	ug/L	56	Standard
	Ba	135	52711.5	0.7	**28.6264**	0.363	1.3	ug/L	36	Standard
	Ce	140	432468.7	0.8				ug/L	65	Standard
>	**Tb**	159	939204.5	1.0				ug/L	939481	Standard
	Ho	165	39534.8	1.2				ug/L	7	Standard
	Tl	203	1832.1	2.5	**0.2923**	0.011	3.9	ug/L	5	Standard
	Tl	205	1220.0	15.3	**0.2825**	0.037	13.3	ug/L	2	Standard
	Pb	206	21407.1	0.8	**5.4947**	0.105	1.9	ug/L	222	Standard
	Pb	207	15901.3	0.3	**4.5024**	0.091	2.0	ug/L	186	Standard
	Pb	208	61266.3	0.3	**4.8714**	0.097	2.0	ug/L	717	Standard
	U	238	15910.0	0.2	**3.7157**	0.090	2.4	ug/L	2	Standard
>	**Bi**	209	426947.2	2.3				ug/L	440279	Standard

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Na	23	1.7	**-409359618291**70903165744827.172			173.2	mg/L	2	Standard
Mg	24	95.0	5.3	**0.0905**	0.017	18.5	mg/L	45	Standard
K	39	38.3	52.7	**0.7851**	0.629	80.2	mg/L	10	Standard
Ca	43	83.3	15.1	**7.5402**	2.148	28.5	mg/L	47	Standard
Fe	54	6546.6	0.7	**13.8696**	0.299	2.2	mg/L	46	Standard
Fe	57	2476.9	3.3	**14.6096**	1.049	7.2	mg/L	627	Standard
Sc-1	45	28947.6	2.5				mg/L	24506	Standard
Cl	35	41846.4	2.4				ug/L	47100	Standard
Kr	83	3.0	57.7				ug/L	8	Standard
Br	81	753.4	16.8				ug/L	427	Standard
P	31	12343.4	5.0				ug/L	10519	Standard
S	34	2238.5	5.0				ug/L	2003	Standard
Sr	88	223.3	12.3				ug/L	132	Standard
C	12	166.7	50.0				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	183.3	11.4				mg/L	10	Standard
Dy	164	56892.6	2.2				mg/L	13	Standard
Ho-1	165	39534.8	1.2				mg/L	7	Standard
Er	166	37386.1	1.0				mg/L	7	Standard
I	127	9239.5	5.1				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		96.905	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.661	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.635
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.972
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1508100012
Sample Date/Time: Sunday, August 23, 2015 22:19:41
Number of Replicates: 3
Autosampler Position: 241
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	53833.8	1.8				ug/L	53498	Standard
	Be	9	270.0	21.0	**0.4349**	0.087	20.1	ug/L	12	Standard
	Al	27	415246.6	0.1	**5.9497**	0.097	1.6	ug/L	487	Standard
	Sc	45	29482.0	2.3				ug/L	24506	Standard
	Ti	47	2504.2	1.3	**13.0471**	0.099	0.8	ug/L	21	Standard
	V	51	56795.4	1.5	**13.6215**	0.136	1.0	ug/L	1268	Standard
	Cr	52	248871.1	1.0	**45.7345**	1.030	2.3	ug/L	7921	Standard
	Cr	53	30313.6	2.1	**45.2625**	1.451	3.2	ug/L	442	Standard
	Mn	55	1900417.3	0.9	**547.1652**	11.872	2.2	ug/L	545	Standard
	Co	59	29257.9	0.3	**7.8353**	0.143	1.8	ug/L	183	Standard
	Ni	60	114157.5	1.8	**80.9101**	1.073	1.3	ug/L	131	Standard
	Cu	65	28813.0	1.5	**20.9539**	0.067	0.3	ug/L	231	Standard
	Zn	66	117576.6	2.2	**151.0032**	3.951	2.6	ug/L	306	Standard
>	Ge	72	341183.4	1.7				ug/L	330478	Standard
	As	75	5182.5	0.6	**6.6339**	0.091	1.4	ug/L	-23	Standard
	Se	82	574.9	2.6	**8.5060**	0.349	4.1	ug/L	27	Standard
	Se-1	77	261.0	9.0	**3.7745**	0.602	15.9	ug/L	92	Standard
>	Ga	71	2170.2	3.5				mg/L	37	Standard
	Rb	85	42837.2	1.9				ug/L	25	Standard
	Y	89	931731.2	1.9				ug/L	312467	Standard
>	Rh	103	31.7	45.6				ug/L	20	Standard
	Mo	98	2031.2	1.8	**1.4887**	0.031	2.1	ug/L	13	Standard
	Ag	107	332.7	10.7	**0.0473**	0.007	14.6	ug/L	72	Standard
	Cd	111	1117.3	5.9	**0.8048**	0.044	5.4	mg/L	5	Standard
	Cd	114	2949.4	5.3	**0.8150**	0.038	4.7	ug/L	7	Standard
>	In	115	479103.4	0.6				ug/L	477820	Standard
	Sn	118	593.3	6.3	**0.0531**	0.008	15.2	ug/L	343	Standard
	Sb	123	167.1	13.7	**0.0409**	0.006	14.4	ug/L	56	Standard
	Ba	135	132759.1	0.3	**69.5124**	0.279	0.4	ug/L	36	Standard
	Ce	140	498448.5	1.1				ug/L	65	Standard
>	Tb	159	989683.3	1.2				ug/L	939481	Standard
	Ho	165	42522.9	1.3				ug/L	7	Standard
	Tl	203	2233.5	4.3	**0.3489**	0.015	4.2	ug/L	5	Standard
	Tl	205	1543.4	17.3	**0.3517**	0.063	17.8	ug/L	2	Standard
	Pb	206	22551.1	0.7	**5.6596**	0.024	0.4	ug/L	222	Standard
	Pb	207	16788.3	0.9	**4.6481**	0.021	0.4	ug/L	186	Standard
	Pb	208	65173.3	0.5	**5.0676**	0.042	0.8	ug/L	717	Standard
	U	238	19751.2	0.6	**4.5096**	0.017	0.4	ug/L	2	Standard
>	Bi	209	436683.4	0.8				ug/L	440279	Standard

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Na	23	1.7	-401623252469	69563187877783.961		173.2	mg/L	2	Standard
Mg	24	138.3	41.6	**0.1880**	0.137	73.1	mg/L	45	Standard
K	39	33.3	8.7	**0.6129**	0.084	13.7	mg/L	10	Standard
Ca	43	71.7	14.5	**5.0917**	2.260	44.4	mg/L	47	Standard
Fe	54	5683.0	2.4	**11.8005**	0.529	4.5	mg/L	46	Standard
Fe	57	2273.5	0.3	**12.5628**	0.376	3.0	mg/L	627	Standard
> Sc-1	45	29482.0	2.3				mg/L	24506	Standard
Cl	35	42660.6	0.8				ug/L	47100	Standard
Kr	83	7.0	51.5				ug/L	8	Standard
Br	81	31175.4	4.0				ug/L	427	Standard
P	31	12688.6	2.8				ug/L	10519	Standard
S	34	2391.9	2.6				ug/L	2003	Standard
Sr	88	223.3	9.3				ug/L	132	Standard
C	12	163.3	24.7				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	223.3	13.7				mg/L	10	Standard
Dy	164	61704.6	2.9				mg/L	13	Standard
Ho-1	165	42522.9	1.3				mg/L	7	Standard
Er	166	39986.0	1.7				mg/L	7	Standard
I	127	14798.9	4.4				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.628	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.239	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.268	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.183	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1508100014
Sample Date/Time: Sunday, August 23, 2015 22:22:52
Number of Replicates: 3
Autosampler Position: 242
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53601.4	3.4				ug/L	53498	Standard
	Be	9	288.3	8.2	**0.4703**	0.058	12.3	ug/L	12	Standard
	Al	27	310982.4	0.3	**4.4754**	0.170	3.8	ug/L	487	Standard
	Sc	45	29730.8	0.2				ug/L	24506	Standard
	Ti	47	2208.8	1.1	**11.4273**	0.094	0.8	ug/L	21	Standard
	V	51	48849.8	2.8	**11.6017**	0.364	3.1	ug/L	1268	Standard
	Cr	52	259990.1	0.7	**47.5614**	0.190	0.4	ug/L	7921	Standard
	Cr	53	32089.0	3.9	**47.6655**	1.582	3.3	ug/L	442	Standard
	Mn	55	970484.8	2.0	**277.7039**	4.295	1.5	ug/L	545	Standard
	Co	59	28430.3	1.7	**7.5676**	0.085	1.1	ug/L	183	Standard
	Ni	60	186169.5	0.7	**131.2681**	1.024	0.8	ug/L	131	Standard
	Cu	65	36501.6	1.4	**26.4441**	0.511	1.9	ug/L	231	Standard
	Zn	66	282637.0	1.0	**361.5650**	4.811	1.3	ug/L	306	Standard
>	**Ge**	72	343087.3	0.6				ug/L	330478	Standard
	As	75	5158.0	1.1	**6.5654**	0.062	0.9	ug/L	-23	Standard
	Se	82	326.4	4.0	**4.6151**	0.168	3.7	ug/L	27	Standard
	Se-1	77	319.3	1.1	**5.0069**	0.105	2.1	ug/L	92	Standard
>	**Ga**	71	3090.3	1.6				mg/L	37	Standard
	Rb	85	48748.3	1.1				ug/L	25	Standard
	Y	89	993569.5	1.9				ug/L	312467	Standard
>	**Rh**	103	40.0	21.7				ug/L	20	Standard
	Mo	98	3688.4	0.9	**2.7082**	0.062	2.3	ug/L	13	Standard
	Ag	107	316.7	7.1	**0.0441**	0.005	11.1	ug/L	72	Standard
	Cd	111	1056.3	2.6	**0.7613**	0.032	4.2	mg/L	5	Standard
	Cd	114	2769.4	2.9	**0.7658**	0.027	3.5	ug/L	7	Standard
>	**In**	115	478659.5	1.4				ug/L	477820	Standard
	Sn	118	466.7	12.6	**0.0251**	0.014	54.1	ug/L	343	Standard
	Sb	123	115.6	7.3	**0.0272**	0.002	7.9	ug/L	56	Standard
	Ba	135	32423.0	1.2	**16.9749**	0.344	2.0	ug/L	36	Standard
	Ce	140	518023.5	0.5				ug/L	65	Standard
>	**Tb**	159	983487.8	0.4				ug/L	939481	Standard
	Ho	165	46867.4	1.0				ug/L	7	Standard
	Tl	203	868.7	1.1	**0.1321**	0.002	1.3	ug/L	5	Standard
	Tl	205	550.0	12.0	**0.1199**	0.016	13.1	ug/L	2	Standard
	Pb	206	20678.1	0.5	**5.1341**	0.043	0.8	ug/L	222	Standard
	Pb	207	14994.1	1.2	**4.1046**	0.045	1.1	ug/L	186	Standard
	Pb	208	57608.7	0.4	**4.4288**	0.014	0.3	ug/L	717	Standard
	U	238	21834.1	1.6	**4.9381**	0.093	1.9	ug/L	2	Standard
>	**Bi**	209	440908.6	0.4				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	101.7	7.5	**0.0997**	0.018	17.6	mg/L	45	Standard
K	39	43.3	46.6	**0.9140**	0.627	68.6	mg/L	10	Standard
Ca	43	76.7	26.4	**5.8871**	3.820	64.9	mg/L	47	Standard
Fe	54	5662.1	3.2	**11.6496**	0.388	3.3	mg/L	46	Standard
Fe	57	2266.8	0.3	**12.3474**	0.092	0.7	mg/L	627	Standard
> **Sc-1**	45	29730.8	0.2				mg/L	24506	Standard
Cl	35	42168.6	1.3				ug/L	47100	Standard
Kr	83	4.0	66.1				ug/L	8	Standard
Br	81	1583.4	3.2				ug/L	427	Standard
P	31	12555.2	3.5				ug/L	10519	Standard
S	34	2188.5	3.4				ug/L	2003	Standard
Sr	88	200.0	6.6				ug/L	132	Standard
C	12	190.0	43.1				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	130.0	33.5				mg/L	10	Standard
Dy	164	67066.8	1.3				mg/L	13	Standard
Ho-1	165	46867.4	1.0				mg/L	7	Standard
Er	166	43295.1	1.1				mg/L	7	Standard
I	127	10406.9	0.5				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.194	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.816	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.176
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.143
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1508100014
Report Date/Time: Sunday, August 23, 2015 22:25:09
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Method 6020 - Summary Report

Sample ID: L1508100016
Sample Date/Time: Sunday, August 23, 2015 22:26:04
Number of Replicates: 3
Autosampler Position: 243
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53539.4	1.6				ug/L	53498	Standard
	Be	9	328.3	4.4	**0.5373**	0.016	2.9	ug/L	12	Standard
	Al	27	417518.0	0.8	**6.0153**	0.119	2.0	ug/L	487	Standard
	Sc	45	30088.2	1.6				ug/L	24506	Standard
	Ti	47	2604.9	1.7	**13.8545**	0.178	1.3	ug/L	21	Standard
	V	51	50961.3	1.5	**12.4409**	0.095	0.8	ug/L	1268	Standard
	Cr	52	291787.3	1.6	**55.0061**	1.196	2.2	ug/L	7921	Standard
	Cr	53	35503.2	1.1	**54.2212**	0.983	1.8	ug/L	442	Standard
	Mn	55	914214.2	0.4	**268.4260**	1.475	0.5	ug/L	545	Standard
	Co	59	28344.5	1.1	**7.7427**	0.031	0.4	ug/L	183	Standard
	Ni	60	168696.3	0.6	**122.0450**	1.697	1.4	ug/L	131	Standard
	Cu	65	40289.5	0.4	**29.9699**	0.122	0.4	ug/L	231	Standard
	Zn	66	241002.4	1.0	**316.2707**	3.452	1.1	ug/L	306	Standard
>	**Ge**	72	334382.3	0.8				ug/L	330478	Standard
	As	75	4826.4	1.0	**6.3054**	0.049	0.8	ug/L	-23	Standard
	Se	82	276.3	2.0	**3.9541**	0.074	1.9	ug/L	27	Standard
	Se-1	77	294.7	4.9	**4.6379**	0.355	7.7	ug/L	92	Standard
>	**Ga**	71	3080.3	4.0				mg/L	37	Standard
	Rb	85	55782.5	1.8				ug/L	25	Standard
	Y	89	1126932.5	1.7				ug/L	312467	Standard
>	**Rh**	103	46.7	44.6				ug/L	20	Standard
	Mo	98	3050.2	1.9	**2.2396**	0.038	1.7	ug/L	13	Standard
	Ag	107	331.0	5.0	**0.0470**	0.003	7.3	ug/L	72	Standard
	Cd	111	813.9	1.0	**0.5836**	0.011	1.8	mg/L	5	Standard
	Cd	114	2232.7	4.0	**0.6160**	0.024	3.9	ug/L	7	Standard
>	**In**	115	478467.8	0.7				ug/L	477820	Standard
	Sn	118	525.0	7.6	**0.0380**	0.008	21.1	ug/L	343	Standard
	Sb	123	131.4	10.7	**0.0314**	0.004	12.3	ug/L	56	Standard
	Ba	135	42350.8	1.5	**22.1884**	0.487	2.2	ug/L	36	Standard
	Ce	140	623876.3	1.2				ug/L	65	Standard
>	**Tb**	159	981836.3	1.5				ug/L	939481	Standard
	Ho	165	58286.9	0.5				ug/L	7	Standard
	Tl	203	682.3	5.5	**0.1045**	0.006	5.3	ug/L	5	Standard
	Tl	205	471.7	9.1	**0.1034**	0.010	9.4	ug/L	2	Standard
	Pb	206	25843.0	0.7	**6.5320**	0.070	1.1	ug/L	222	Standard
	Pb	207	19154.8	1.1	**5.3421**	0.052	1.0	ug/L	186	Standard
	Pb	208	73504.3	0.7	**5.7558**	0.048	0.8	ug/L	717	Standard
	U	238	23338.6	1.1	**5.3601**	0.073	1.4	ug/L	2	Standard
>	**Bi**	209	434231.2	0.5				ug/L	440279	Standard

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Na	23	1.7	**-3863553807576691871492497**3.211			173.2	mg/L	2	Standard
Mg	24	131.7	11.6	**0.1660**	0.037	22.0	mg/L	45	Standard
K	39	40.0	50.0	**0.7966**	0.607	76.2	mg/L	10	Standard
Ca	43	68.3	46.5	**4.1403**	5.802	140.1	mg/L	47	Standard
Fe	54	5917.1	2.9	**12.0335**	0.201	1.7	mg/L	46	Standard
Fe	57	2415.2	5.9	**13.3330**	1.445	10.8	mg/L	627	Standard
> **Sc-1**	45	30088.2	1.6				mg/L	24506	Standard
Cl	35	42390.6	1.6				ug/L	47100	Standard
Kr	83	5.3	39.0				ug/L	8	Standard
Br	81	1240.1	5.6				ug/L	427	Standard
P	31	12029.8	2.9				ug/L	10519	Standard
S	34	2371.9	3.0				ug/L	2003	Standard
Sr	88	238.3	24.3				ug/L	132	Standard
C	12	146.7	3.9				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	200.0	13.2				mg/L	10	Standard
Dy	164	84620.1	1.6				mg/L	13	Standard
Ho-1	165	58286.9	0.5				mg/L	7	Standard
Er	166	53163.1	1.1				mg/L	7	Standard
I	127	12238.3	1.7				mg/L	2225	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		100.078	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.182	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.135
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.626
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1508100018
Sample Date/Time: Sunday, August 23, 2015 22:29:15
Number of Replicates: 3
Autosampler Position: 244
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55916.4	3.2				ug/L	53498	Standard
	Be	9	515.0	2.6	**0.8174**	0.008	1.0	ug/L	12	Standard
	Al	27	807386.2	0.9	**11.1512**	0.300	2.7	ug/L	487	Standard
	Sc	45	32646.8	1.2				ug/L	24506	Standard
	Ti	47	3348.7	2.3	**17.6360**	0.471	2.7	ug/L	21	Standard
	V	51	92878.1	0.5	**22.6791**	0.328	1.4	ug/L	1268	Standard
	Cr	52	244622.3	0.6	**45.3010**	0.570	1.3	ug/L	7921	Standard
	Cr	53	30367.1	1.9	**45.7161**	1.302	2.8	ug/L	442	Standard
	Mn	55	1374727.9	2.3	**398.8842**	5.696	1.4	ug/L	545	Standard
	Co	59	42985.2	0.9	**11.6301**	0.087	0.7	ug/L	183	Standard
	Ni	60	215919.3	0.6	**154.3730**	1.794	1.2	ug/L	131	Standard
	Cu	65	39269.8	1.1	**28.8590**	0.454	1.6	ug/L	231	Standard
	Zn	66	308300.5	0.8	**399.9226**	6.583	1.6	ug/L	306	Standard
>	**Ge**	72	338407.6	1.0				ug/L	330478	Standard
	As	75	5830.3	2.2	**7.5162**	0.157	2.1	ug/L	-23	Standard
	Se	82	185.6	6.4	**2.4821**	0.177	7.1	ug/L	27	Standard
	Se-1	77	249.0	4.9	**3.5485**	0.216	6.1	ug/L	92	Standard
>	**Ga**	71	5709.4	2.9				mg/L	37	Standard
	Rb	85	95619.1	0.6				ug/L	25	Standard
	Y	89	1335320.9	1.3				ug/L	312467	Standard
>	**Rh**	103	61.7	33.8				ug/L	20	Standard
	Mo	98	2157.6	0.9	**1.5744**	0.018	1.1	ug/L	13	Standard
	Ag	107	1141.4	4.4	**0.2129**	0.008	3.8	ug/L	72	Standard
	Cd	111	3734.9	2.0	**2.7094**	0.029	1.1	mg/L	5	Standard
	Cd	114	9385.9	2.1	**2.6004**	0.065	2.5	ug/L	7	Standard
>	**In**	115	481258.0	0.9				ug/L	477820	Standard
	Sn	118	883.4	0.9	**0.1167**	0.002	1.9	ug/L	343	Standard
	Sb	123	141.5	21.2	**0.0339**	0.008	23.9	ug/L	56	Standard
	Ba	135	91386.1	1.3	**47.6318**	0.972	2.0	ug/L	36	Standard
	Ce	140	945434.7	0.4				ug/L	65	Standard
>	**Tb**	159	1002651.7	1.9				ug/L	939481	Standard
	Ho	165	69485.6	0.7				ug/L	7	Standard
	Tl	203	1929.1	1.5	**0.3001**	0.004	1.3	ug/L	5	Standard
	Tl	205	1286.7	10.0	**0.2914**	0.030	10.3	ug/L	2	Standard
	Pb	206	33131.9	0.6	**8.3239**	0.057	0.7	ug/L	222	Standard
	Pb	207	24073.1	0.5	**6.6749**	0.041	0.6	ug/L	186	Standard
	Pb	208	92850.9	1.0	**7.2279**	0.083	1.2	ug/L	717	Standard
	U	238	37736.6	1.3	**8.6010**	0.125	1.5	ug/L	2	Standard
>	**Bi**	209	437741.0	0.2				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	150.0	13.3	**0.1807**	0.039	21.5	mg/L	45	Standard
K	39	56.7	56.0	**1.1660**	0.888	76.2	mg/L	10	Standard
Ca	43	88.3	32.2	**6.5605**	4.675	71.3	mg/L	47	Standard
Fe	54	7007.1	2.8	**13.1537**	0.508	3.9	mg/L	46	Standard
Fe	57	2761.9	7.2	**14.3544**	1.257	8.8	mg/L	627	Standard
> **Sc-1**	45	32646.8	1.2				mg/L	24506	Standard
Cl	35	44138.9	1.5				ug/L	47100	Standard
Kr	83	4.0	43.3				ug/L	8	Standard
Br	81	750.0	16.2				ug/L	427	Standard
P	31	12463.5	1.6				ug/L	10519	Standard
S	34	2463.5	4.8				ug/L	2003	Standard
Sr	88	221.7	16.3				ug/L	132	Standard
C	12	160.0	51.2				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	180.0	33.8				mg/L	10	Standard
Dy	164	101797.9	1.5				mg/L	13	Standard
Ho-1	165	69485.6	0.7				mg/L	7	Standard
Er	166	64098.7	3.6				mg/L	7	Standard
I	127	6773.2	2.9				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.521	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.400	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.719
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.423
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1508100020
Sample Date/Time: Sunday, August 23, 2015 22:32:27
Number of Replicates: 3
Autosampler Position: 245
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	56324.5	2.2				ug/L	53498	Standard
	Be	9	615.0	16.2	**0.9710**	0.146	15.0	ug/L	12	Standard
	Al	27	961952.0	1.6	**13.1855**	0.106	0.8	ug/L	487	Standard
	Sc	45	32753.7	0.8				ug/L	24506	Standard
	Ti	47	3758.5	3.7	**19.6033**	0.408	2.1	ug/L	21	Standard
	V	51	115475.5	1.9	**28.0045**	1.181	4.2	ug/L	1268	Standard
	Cr	52	302883.1	1.9	**55.8677**	0.180	0.3	ug/L	7921	Standard
	Cr	53	37234.0	1.6	**55.6648**	2.177	3.9	ug/L	442	Standard
	Mn	55	1133320.7	0.9	**325.5621**	4.403	1.4	ug/L	545	Standard
	Co	59	46766.7	0.6	**12.5322**	0.223	1.8	ug/L	183	Standard
	Ni	60	267387.1	0.6	**189.2896**	3.456	1.8	ug/L	131	Standard
	Cu	65	55775.8	1.8	**40.6474**	0.696	1.7	ug/L	231	Standard
	Zn	66	446611.9	1.2	**573.7635**	12.440	2.2	ug/L	306	Standard
>	Ge	72	341873.8	2.2				ug/L	330478	Standard
	As	75	8299.0	1.0	**10.5739**	0.333	3.2	ug/L	-23	Standard
	Se	82	464.4	3.8	**6.7787**	0.417	6.1	ug/L	27	Standard
	Se-1	77	455.7	2.9	**8.0169**	0.461	5.7	ug/L	92	Standard
>	Ga	71	5716.1	3.9				mg/L	37	Standard
	Rb	85	102453.8	3.0				ug/L	25	Standard
	Y	89	1370099.1	2.5				ug/L	312467	Standard
>	Rh	103	43.3	13.3				ug/L	20	Standard
	Mo	98	4349.0	2.2	**3.2052**	0.068	2.1	ug/L	13	Standard
	Ag	107	1223.7	2.2	**0.2322**	0.004	1.7	ug/L	72	Standard
	Cd	111	3504.0	1.3	**2.5651**	0.045	1.7	mg/L	5	Standard
	Cd	114	9298.4	1.8	**2.5999**	0.046	1.8	ug/L	7	Standard
>	In	115	476822.5	0.7				ug/L	477820	Standard
	Sn	118	786.7	4.6	**0.0969**	0.007	7.2	ug/L	343	Standard
	Sb	123	108.2	19.8	**0.0253**	0.006	22.1	ug/L	56	Standard
	Ba	135	88903.1	1.0	**46.7647**	0.617	1.3	ug/L	36	Standard
	Ce	140	916198.6	1.2				ug/L	65	Standard
>	Tb	159	1002720.3	0.9				ug/L	939481	Standard
	Ho	165	73407.4	2.0				ug/L	7	Standard
	Tl	203	1634.4	0.2	**0.2525**	0.001	0.5	ug/L	5	Standard
	Tl	205	1116.7	5.3	**0.2508**	0.015	6.1	ug/L	2	Standard
	Pb	206	56945.1	0.1	**14.2828**	0.083	0.6	ug/L	222	Standard
	Pb	207	42971.5	0.8	**11.9051**	0.161	1.4	ug/L	186	Standard
	Pb	208	162477.3	0.5	**12.6331**	0.130	1.0	ug/L	717	Standard
	U	238	42518.9	0.5	**9.6455**	0.091	0.9	ug/L	2	Standard
>	Bi	209	439848.2	0.6				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	136.7	11.8	**0.1520**	0.036	23.9	mg/L	45	Standard
K	39	55.0	15.7	**1.1180**	0.255	22.8	mg/L	10	Standard
Ca	43	113.3	10.2	**10.8063**	1.838	17.0	mg/L	47	Standard
Fe	54	9925.1	3.1	**18.6323**	0.487	2.6	mg/L	46	Standard
Fe	57	3343.7	3.8	**18.5766**	0.773	4.2	mg/L	627	Standard
Sc-1	45	32753.7	0.8				mg/L	24506	Standard
Cl	35	44306.0	1.8				ug/L	47100	Standard
Kr	83	4.3	70.5				ug/L	8	Standard
Br	81	646.7	13.9				ug/L	427	Standard
P	31	12668.6	2.2				ug/L	10519	Standard
S	34	2421.9	3.1				ug/L	2003	Standard
Sr	88	215.0	9.3				ug/L	132	Standard
C	12	193.3	34.4				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	253.3	30.7				mg/L	10	Standard
Dy	164	106428.2	2.2				mg/L	13	Standard
Ho-1	165	73407.4	2.0				mg/L	7	Standard
Er	166	67654.2	3.4				mg/L	7	Standard
I	127	8564.1	2.8				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		105.284	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.448	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.791
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.902
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1508100020
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Method 6020 - Summary Report

Sample ID: L1508100022
Sample Date/Time: Sunday, August 23, 2015 22:35:38
Number of Replicates: 3
Autosampler Position: 246
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54912.7	2.1				ug/L	53498	Standard
	Be	9	183.3	17.5	**0.2839**	0.058	20.3	ug/L	12	Standard
	Al	27	228530.6	0.7	**3.2054**	0.073	2.3	ug/L	487	Standard
	Sc	45	27827.2	2.7				ug/L	24506	Standard
	Ti	47	1905.1	0.3	**10.0325**	0.156	1.6	ug/L	21	Standard
	V	51	29628.0	2.6	**7.0419**	0.104	1.5	ug/L	1268	Standard
	Cr	52	128398.1	0.2	**23.1815**	0.364	1.6	ug/L	7921	Standard
	Cr	53	15694.8	4.0	**23.4108**	1.282	5.5	ug/L	442	Standard
	Mn	55	775480.1	0.2	**226.2063**	3.412	1.5	ug/L	545	Standard
	Co	59	18540.0	0.6	**5.0131**	0.090	1.8	ug/L	183	Standard
	Ni	60	71392.8	0.5	**51.2668**	0.886	1.7	ug/L	131	Standard
	Cu	65	14111.9	0.9	**10.3160**	0.092	0.9	ug/L	231	Standard
	Zn	66	79297.0	1.8	**103.0712**	0.501	0.5	ug/L	306	Standard
>	**Ge**	72	336571.9	1.3				ug/L	330478	Standard
	As	75	2840.4	1.5	**3.7086**	0.067	1.8	ug/L	-23	Standard
	Se	82	130.0	5.0	**1.6240**	0.122	7.5	ug/L	27	Standard
	Se-1	77	198.3	6.8	**2.4562**	0.321	13.1	ug/L	92	Standard
>	**Ga**	71	1425.1	9.6				mg/L	37	Standard
	Rb	85	26267.8	2.2				ug/L	25	Standard
	Y	89	648275.7	2.6				ug/L	312467	Standard
>	**Rh**	103	35.0	14.3				ug/L	20	Standard
	Mo	98	1424.9	2.2	**1.0284**	0.014	1.3	ug/L	13	Standard
	Ag	107	267.7	4.9	**0.0331**	0.003	8.6	ug/L	72	Standard
	Cd	111	730.5	1.9	**0.5139**	0.010	1.9	mg/L	5	Standard
	Cd	114	1793.3	1.6	**0.4853**	0.012	2.4	ug/L	7	Standard
>	**In**	115	486173.3	0.9				ug/L	477820	Standard
	Sn	118	441.7	12.1	**0.0179**	0.011	61.4	ug/L	343	Standard
	Sb	123	141.9	3.1	**0.0337**	0.001	4.3	ug/L	56	Standard
	Ba	135	35857.0	0.7	**18.4827**	0.159	0.9	ug/L	36	Standard
	Ce	140	285948.2	0.9				ug/L	65	Standard
>	**Tb**	159	967716.7	2.2				ug/L	939481	Standard
	Ho	165	23010.8	2.6				ug/L	7	Standard
	Tl	203	1523.4	3.6	**0.2336**	0.009	3.7	ug/L	5	Standard
	Tl	205	1080.0	5.1	**0.2407**	0.012	5.0	ug/L	2	Standard
	Pb	206	12247.9	0.5	**3.0040**	0.020	0.7	ug/L	222	Standard
	Pb	207	9075.7	1.0	**2.4513**	0.032	1.3	ug/L	186	Standard
	Pb	208	34949.7	0.2	**2.6525**	0.008	0.3	ug/L	717	Standard
	U	238	9709.4	0.9	**2.1841**	0.015	0.7	ug/L	2	Standard
>	**Bi**	209	442565.9	0.3				ug/L	440279	Standard

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Na	23	1.7	**-411087289688**	71202407208574.484		173.2	mg/L	2	Standard
Mg	24	85.0	36.7	**0.0759**	0.082	108.5	mg/L	45	Standard
K	39	15.0	57.7	**0.0741**	0.293	395.0	mg/L	10	Standard
Ca	43	50.0	17.3	**1.5390**	1.936	125.8	mg/L	47	Standard
Fe	54	3208.1	3.2	**6.9931**	0.396	5.7	mg/L	46	Standard
Fe	57	1665.1	0.3	**8.3972**	0.431	5.1	mg/L	627	Standard
Sc-1	45	27827.2	2.7				mg/L	24506	Standard
Cl	35	43161.4	0.3				ug/L	47100	Standard
Kr	83	5.0	60.0				ug/L	8	Standard
Br	81	640.0	4.7				ug/L	427	Standard
P	31	12064.8	2.2				ug/L	10519	Standard
S	34	2286.8	9.4				ug/L	2003	Standard
Sr	88	206.7	12.4				ug/L	132	Standard
C	12	173.3	53.3				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	90.0	29.4				mg/L	10	Standard
Dy	164	34455.4	0.9				mg/L	13	Standard
Ho-1	165	23010.8	2.6				mg/L	7	Standard
Er	166	21698.9	2.9				mg/L	7	Standard
I	127	5992.9	2.2				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.645	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.844	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	101.748
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	100.519
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1508100024
Sample Date/Time: Sunday, August 23, 2015 22:38:49
Number of Replicates: 3
Autosampler Position: 247
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	55824.3	2.1				ug/L	53498	Standard
	Be	9	536.7	9.6	**0.8552**	0.100	11.7	ug/L	12	Standard
	Al	27	1181888.7	1.0	**16.3530**	0.481	2.9	ug/L	487	Standard
	Sc	45	32728.6	1.0				ug/L	24506	Standard
	Ti	47	5089.5	2.3	**26.6815**	0.486	1.8	ug/L	21	Standard
	V	51	97582.1	2.2	**23.6761**	0.545	2.3	ug/L	1268	Standard
	Cr	52	391172.3	0.6	**72.8429**	0.784	1.1	ug/L	7921	Standard
	Cr	53	49723.1	1.7	**74.7919**	1.787	2.4	ug/L	442	Standard
	Mn	55	1881000.3	1.3	**542.1067**	4.770	0.9	ug/L	545	Standard
	Co	59	47490.3	1.1	**12.7650**	0.057	0.5	ug/L	183	Standard
	Ni	60	259190.6	0.9	**184.0430**	2.580	1.4	ug/L	131	Standard
	Cu	65	51864.3	0.4	**37.9029**	0.129	0.3	ug/L	231	Standard
	Zn	66	376668.2	1.1	**485.2997**	6.951	1.4	ug/L	306	Standard
>	Ge	72	340764.8	0.7				ug/L	330478	Standard
	As	75	10261.5	1.6	**13.0977**	0.129	1.0	ug/L	-23	Standard
	Se	82	381.2	3.3	**5.5032**	0.233	4.2	ug/L	27	Standard
	Se-1	77	354.3	5.9	**5.8206**	0.431	7.4	ug/L	92	Standard
>	Ga	71	6343.0	3.2				mg/L	37	Standard
	Rb	85	97746.0	2.2				ug/L	25	Standard
	Y	89	1281392.6	0.6				ug/L	312467	Standard
>	Rh	103	85.0	47.1				ug/L	20	Standard
	Mo	98	18146.3	0.4	**13.1366**	0.183	1.4	ug/L	13	Standard
	Ag	107	830.4	3.7	**0.1476**	0.007	4.7	ug/L	72	Standard
	Cd	111	2375.6	0.7	**1.7027**	0.019	1.1	mg/L	5	Standard
	Cd	114	6572.5	3.6	**1.8021**	0.087	4.8	ug/L	7	Standard
>	In	115	485775.8	1.7				ug/L	477820	Standard
	Sn	118	645.0	13.2	**0.0625**	0.018	28.6	ug/L	343	Standard
	Sb	123	148.0	8.4	**0.0353**	0.003	7.9	ug/L	56	Standard
	Ba	135	112280.5	0.3	**57.9907**	1.175	2.0	ug/L	36	Standard
	Ce	140	939589.5	1.1				ug/L	65	Standard
>	Tb	159	1004866.5	1.7				ug/L	939481	Standard
	Ho	165	64572.3	1.6				ug/L	7	Standard
	Tl	203	3162.7	2.5	**0.4895**	0.011	2.3	ug/L	5	Standard
	Tl	205	2110.1	3.2	**0.4772**	0.014	3.0	ug/L	2	Standard
	Pb	206	46487.2	0.2	**11.5875**	0.044	0.4	ug/L	222	Standard
	Pb	207	35679.6	0.5	**9.8229**	0.073	0.7	ug/L	186	Standard
	Pb	208	134449.3	0.7	**10.3887**	0.101	1.0	ug/L	717	Standard
	U	238	28920.9	1.7	**6.5248**	0.127	1.9	ug/L	2	Standard
>	Bi	209	442136.6	0.3				ug/L	440279	Standard

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Na	23	1.7	**-3564790883406**1743989284194.406			173.2	mg/L	2	Standard
Mg	24	173.3	38.4	**0.2291**	0.139	60.7	mg/L	45	Standard
K	39	51.7	45.7	**1.0251**	0.662	64.6	mg/L	10	Standard
Ca	43	101.7	32.7	**8.8274**	5.632	63.8	mg/L	47	Standard
Fe	54	9940.5	3.9	**18.6741**	0.579	3.1	mg/L	46	Standard
Fe	57	3348.7	3.2	**18.6337**	0.646	3.5	mg/L	627	Standard
Sc-1	45	32728.6	1.0				mg/L	24506	Standard
Cl	35	43809.3	1.3				ug/L	47100	Standard
Kr	83	4.7	32.7				ug/L	8	Standard
Br	81	1230.1	10.2				ug/L	427	Standard
P	31	12376.7	1.6				ug/L	10519	Standard
S	34	2366.9	6.7				ug/L	2003	Standard
Sr	88	221.7	13.6				ug/L	132	Standard
C	12	156.7	30.2				mg/L	177	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	243.3	16.6				mg/L	10	Standard
Dy	164	90431.4	1.0				mg/L	13	Standard
Ho-1	165	64572.3	1.6				mg/L	7	Standard
Er	166	60928.9	1.3				mg/L	7	Standard
I	127	10025.0	1.5				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.349	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.113	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	101.665
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.422
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Sunday, August 23, 2015 22:42:03
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	54482.8	1.2				ug/L	53498	Standard
	Be	9	29316.7	1.7	**48.8985**	0.574	1.2	ug/L	12	Standard
	Al	27	3374317.4	1.5	**47.8390**	0.226	0.5	ug/L	487	Standard
	Sc	45	25431.3	4.0				ug/L	24506	Standard
	Ti	47	19172.1	0.6	**102.5127**	0.580	0.6	ug/L	21	Standard
	V	51	206345.9	1.0	**51.2678**	0.792	1.5	ug/L	1268	Standard
	Cr	52	272003.7	1.1	**51.0185**	0.591	1.2	ug/L	7921	Standard
	Cr	53	33583.8	1.3	**51.1021**	0.992	1.9	ug/L	442	Standard
	Mn	55	189673.9	0.7	**55.3902**	0.397	0.7	ug/L	545	Standard
	Co	59	184250.9	0.9	**50.4903**	0.450	0.9	ug/L	183	Standard
	Ni	60	70717.0	1.5	**50.9589**	0.419	0.8	ug/L	131	Standard
	Cu	65	68671.3	0.9	**51.0581**	0.423	0.8	ug/L	231	Standard
	Zn	66	38863.1	1.7	**50.4696**	0.570	1.1	ug/L	306	Standard
>	Ge	72	335335.0	0.6				ug/L	330478	Standard
	As	75	38236.3	0.3	**49.4526**	0.157	0.3	ug/L	-23	Standard
	Se	82	3222.7	1.3	**50.4801**	0.637	1.3	ug/L	27	Standard
	Se-1	77	2283.5	1.6	**48.9377**	1.117	2.3	ug/L	92	Standard
>	Ga	71	40.0	21.7				mg/L	37	Standard
	Rb	85	595.0	11.8				ug/L	25	Standard
	Y	89	323946.6	0.8				ug/L	312467	Standard
>	Rh	103	16.7	62.4				ug/L	20	Standard
	Mo	98	130513.2	0.1	**94.9648**	1.434	1.5	ug/L	13	Standard
	Ag	107	245556.8	1.4	**50.1540**	0.089	0.2	ug/L	72	Standard
	Cd	111	68982.2	0.8	**50.0593**	0.296	0.6	mg/L	5	Standard
	Cd	114	176890.0	4.2	**48.9394**	2.150	4.4	ug/L	7	Standard
>	In	115	483365.9	1.4				ug/L	477820	Standard
	Sn	118	214927.1	1.0	**47.2912**	1.120	2.4	ug/L	343	Standard
	Sb	123	181867.5	1.1	**48.3775**	0.172	0.4	ug/L	56	Standard
	Ba	135	94463.6	0.3	**49.0214**	0.557	1.1	ug/L	36	Standard
	Ce	140	358.3	28.6				ug/L	65	Standard
>	Tb	159	934060.6	0.1				ug/L	939481	Standard
	Ho	165	45.0	44.4				ug/L	7	Standard
	Tl	203	316300.4	0.3	**50.3159**	0.427	0.8	ug/L	5	Standard
	Tl	205	211482.4	0.1	**49.4448**	0.510	1.0	ug/L	2	Standard
	Pb	206	197963.7	1.5	**50.5326**	1.041	2.1	ug/L	222	Standard
	Pb	207	179458.2	0.6	**50.6350**	0.802	1.6	ug/L	186	Standard
	Pb	208	633423.4	0.6	**50.1435**	0.248	0.5	ug/L	717	Standard
	U	238	213218.8	0.4	**49.0948**	0.289	0.6	ug/L	2	Standard
>	Bi	209	433574.1	1.0				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	1876.8	6.3	**4.9625**	0.121	2.4	mg/L	45	Standard
K	39	151.7	21.4	**5.0563**	1.168	23.1	mg/L	10	Standard
Ca	43	56.7	13.5	**3.9272**	1.605	40.9	mg/L	47	Standard
Fe	54	1987.2	3.5	**4.6886**	0.298	6.4	mg/L	46	Standard
Fe	57	1338.4	12.6	**6.7079**	2.151	32.1	mg/L	627	Standard
Sc-1	45	25431.3	4.0				mg/L	24506	Standard
Cl	35	43901.5	2.4				ug/L	47100	Standard
Kr	83	3.3	17.3				ug/L	8	Standard
Br	81	676.7	12.4				ug/L	427	Standard
P	31	11879.7	3.4				ug/L	10519	Standard
S	34	2291.8	3.8				ug/L	2003	Standard
Sr	88	175.0	17.8				ug/L	132	Standard
C	12	190.0	60.7				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	10.0	100.0				mg/L	10	Standard
Dy	164	38.6	55.6				mg/L	13	Standard
Ho-1	165	45.0	44.4				mg/L	7	Standard
Er	166	30.0	115.5				mg/L	7	Standard
I	127	1230.1	12.9				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	97.797		
Al	27	95.678		
Sc	45			
Ti	47	102.513		
V	51	102.536		
Cr	52	102.037		
Cr	53			
Mn	55	110.780		
Co	59	100.981		
Ni	60	101.918		
Cu	65	102.116		
Zn	66	100.939		
Ge	72		101.470	
As	75	98.905		
Se	82	100.960		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	94.965		
Ag	107	100.308		
Cd	111	100.119		
Cd	114			
> In	115		101.161	
Sn	118	94.582		
Sb	123	96.755		
Ba	135	98.043		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.632		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.287		
U	238	98.190		
> Bi	209		98.477	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Mn	55	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Sunday, August 23, 2015 22:45:14
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49614.5	2.9				ug/L	53498	Standard
	Be	9	18.3	56.8	**0.0133**	0.019	139.9	ug/L	12	Standard
	Al	27	621.7	5.4	**-0.0013**	0.001	41.8	ug/L	487	Standard
	Sc	45	24029.0	1.9				ug/L	24506	Standard
	Ti	47	15.3	19.9	**-0.0445**	0.018	40.1	ug/L	21	Standard
	V	51	1000.7	3.2	**-0.0768**	0.007	9.6	ug/L	1268	Standard
	Cr	52	6494.1	2.9	**-0.2226**	0.023	10.2	ug/L	7921	Standard
	Cr	53	416.7	4.5	**-0.0583**	0.033	57.4	ug/L	442	Standard
	Mn	55	698.7	3.1	**0.0360**	0.004	10.4	ug/L	545	Standard
	Co	59	222.3	4.0	**0.0091**	0.002	17.0	ug/L	183	Standard
	Ni	60	127.3	6.6	**0.0086**	0.005	60.1	ug/L	131	Standard
	Cu	65	180.7	7.9	**-0.0324**	0.011	34.6	ug/L	231	Standard
	Zn	66	290.3	4.2	**-0.0563**	0.021	38.0	ug/L	306	Standard
>	**Ge**	72	319348.7	1.8				ug/L	330478	Standard
	As	75	-38.1	49.3	**0.0002**	0.026	11855.9	ug/L	-23	Standard
	Se	82	16.8	51.2	**-0.1450**	0.140	96.8	ug/L	27	Standard
	Se-1	77	91.0	13.0	**0.1831**	0.297	162.2	ug/L	92	Standard
>	**Ga**	71	18.3	41.7				mg/L	37	Standard
	Rb	85	28.3	71.3				ug/L	25	Standard
	Y	89	307123.4	1.1				ug/L	312467	Standard
>	**Rh**	103	13.3	21.7				ug/L	20	Standard
	Mo	98	56.9	13.6	**0.0427**	0.006	13.9	ug/L	13	Standard
	Ag	107	78.7	17.4	**-0.0038**	0.003	76.3	ug/L	72	Standard
	Cd	111	6.5	49.1	**-0.0081**	0.003	31.0	mg/L	5	Standard
	Cd	114	17.4	71.5	**-0.0029**	0.004	131.5	ug/L	7	Standard
>	**In**	115	444848.9	0.7				ug/L	477820	Standard
	Sn	118	408.3	7.5	**0.0190**	0.008	41.5	ug/L	343	Standard
	Sb	123	700.5	4.6	**0.1986**	0.010	4.9	ug/L	56	Standard
	Ba	135	47.0	11.3	**0.0001**	0.003	1964.8	ug/L	36	Standard
	Ce	140	58.3	54.4				ug/L	65	Standard
>	**Tb**	159	882998.6	0.7				ug/L	939481	Standard
	Ho	165	21.7	26.6				ug/L	7	Standard
	Tl	203	27.7	39.8	**0.0008**	0.002	227.3	ug/L	5	Standard
	Tl	205	18.3	78.7	**-0.0021**	0.004	168.3	ug/L	2	Standard
	Pb	206	215.7	13.4	**-0.0046**	0.007	147.1	ug/L	222	Standard
	Pb	207	195.7	2.8	**-0.0022**	0.002	112.2	ug/L	186	Standard
	Pb	208	681.3	5.9	**-0.0046**	0.003	61.0	ug/L	717	Standard
	U	238	15.0	46.7	**-0.0027**	0.002	61.1	ug/L	2	Standard
>	**Bi**	209	413202.3	1.5				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	61.7	59.8	**0.0414**	0.107	257.5	mg/L	45	Standard
K	39	8.3	69.3	**-0.1082**	0.215	198.9	mg/L	10	Standard
Ca	43	21.7	58.1	**-3.4934**	2.907	83.2	mg/L	47	Standard
Fe	54	61.1	12.9	**-0.0078**	0.024	300.8	mg/L	46	Standard
Fe	57	835.0	7.5	**2.3486**	0.791	33.7	mg/L	627	Standard
> **Sc-1**	45	24029.0	1.9				mg/L	24506	Standard
Cl	35	42054.3	1.7				ug/L	47100	Standard
Kr	83	4.3	48.0				ug/L	8	Standard
Br	81	526.7	6.7				ug/L	427	Standard
P	31	10945.6	2.5				ug/L	10519	Standard
S	34	2215.2	4.7				ug/L	2003	Standard
Sr	88	176.7	14.5				ug/L	132	Standard
C	12	116.7	24.7				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	8.7	120.3				mg/L	13	Standard
Ho-1	165	21.7	26.6				mg/L	7	Standard
Er	166	26.7	57.3				mg/L	7	Standard
I	127	1831.8	4.1				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.632	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.100
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.850
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Monday, August 24, 2015 11:40:53

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1345	2025	0.677	
Mg	23.985	24.025	4501	2019	0.704	
Co	58.933	58.925	11692	2022	0.695	
In	114.904	114.875	22859	2027	0.695	
U	238.050	238.025	47454	2042	0.686	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	3.011
5.575	3.342
5.625	3.908
5.675	1.881
5.725	2.656
5.775	2.070
5.825	2.309
5.875	1.789
5.925	2.700
5.975	2.567
6.025	1.613
6.075	2.431
6.125	5.510
6.175	26.307
6.225	94.786
6.275	71.261
6.325	81.441
6.375	59.266
6.425	10.814
6.475	8.569
6.525	5.400
6.575	2.695
6.625	0.768
6.675	1.435
6.725	1.924
6.775	1.912
6.825	2.348

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6.875	2.290
6.925	2.034
6.975	1.759
7.025	2.410
7.075	1.456
7.125	1.261
7.175	1.561
7.225	5.048
7.275	21.812
7.325	108.653
7.375	21.066
7.425	74.975
7.475	70.711
7.525	38.030
7.575	59.266
7.625	79.057
7.675	100.000
7.725	49.793
7.775	39.123
7.825	82.402
7.875	72.436
7.925	38.030
7.975	52.705
8.025	91.287
8.075	74.689
8.125	47.507
8.175	86.402
8.225	79.057
8.275	85.267
8.325	38.030
8.375	81.441
8.425	61.237
8.475	108.653
22.525	136.931
22.575	63.888
22.625	46.771
22.675	43.853
22.725	18.887
22.775	23.458
22.825	24.744
22.875	29.323
22.925	32.165
22.975	13.608
23.025	37.378
23.075	30.292
23.125	44.377
23.175	48.244

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23.225	24.362
23.275	10.687
23.325	50.187
23.375	24.686
23.425	42.950
23.475	25.979
23.525	8.524
23.575	4.826
23.625	1.647
23.675	2.195
23.725	2.023
23.775	0.574
23.825	1.562
23.875	0.969
23.925	2.008
23.975	1.194
24.025	1.239
24.075	1.611
24.125	0.641
24.175	1.162
24.225	0.780
24.275	1.113
24.325	2.006
24.375	19.174
24.425	26.146
24.475	24.594
24.525	3.096
24.575	5.023
24.625	3.887
24.675	2.600
24.725	1.010
24.775	2.089
24.825	1.419
24.875	0.753
24.925	1.247
24.975	1.733
25.025	1.899
25.075	1.649
25.125	1.442
25.175	1.933
25.225	2.565
25.275	2.262
25.325	19.088
25.375	20.328
25.425	55.902
25.475	32.478
57.525	7.065

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57.575	4.939
57.625	4.533
57.675	2.195
57.725	2.542
57.775	1.636
57.825	1.643
57.875	0.973
57.925	1.600
57.975	1.818
58.025	2.682
58.075	2.484
58.125	1.466
58.175	4.308
58.225	9.722
58.275	4.443
58.325	48.627
58.375	46.904
58.425	10.726
58.475	6.655
58.525	6.121
58.575	3.218
58.625	2.521
58.675	1.688
58.725	2.504
58.775	2.683
58.825	1.672
58.875	0.829
58.925	2.363
58.975	1.261
59.025	1.802
59.075	1.858
59.125	1.108
59.175	4.059
59.225	5.533
59.275	28.295
59.325	67.748
59.375	44.605
59.425	63.738
59.475	15.972
59.525	12.448
59.575	10.546
59.625	4.902
59.675	5.584
59.725	2.309
59.775	2.604
59.825	2.890
59.875	5.208

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59.925	3.471
59.975	6.011
60.025	3.884
60.075	2.865
60.125	8.124
60.175	6.706
60.225	16.831
60.275	42.426
60.325	52.705
60.375	58.330
60.425	89.694
60.475	41.286
113.525	8.958
113.575	4.806
113.625	3.651
113.675	2.572
113.725	3.226
113.775	2.102
113.825	1.801
113.875	3.802
113.925	0.883
113.975	1.081
114.025	2.509
114.075	4.905
114.125	3.330
114.175	8.367
114.225	12.608
114.275	18.349
114.325	28.085
114.375	29.211
114.425	13.284
114.475	7.215
114.525	3.742
114.575	1.716
114.625	1.602
114.675	1.853
114.725	1.009
114.775	2.528
114.825	1.568
114.875	1.516
114.925	1.325
114.975	1.547
115.025	2.236
115.075	2.093
115.125	1.610
115.175	2.380
115.225	2.570

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115.275	5.279
115.325	32.394
115.375	39.491
115.425	32.439
115.475	19.543
115.525	19.759
115.575	21.512
115.625	7.908
115.675	6.182
115.725	3.188
115.775	8.444
115.825	7.459
115.875	4.141
115.925	10.968
115.975	5.910
116.025	5.257
116.075	8.080
116.125	38.485
116.175	4.580
116.225	15.060
116.275	23.458
116.325	51.349
116.375	44.605
116.425	77.812
116.475	50.146
236.525	
236.575	42.390
236.625	30.609
236.675	26.146
236.725	48.445
236.775	26.503
236.825	23.903
236.875	31.923
236.925	40.019
236.975	44.032
237.025	26.307
237.075	33.503
237.125	38.360
237.175	30.859
237.225	50.620
237.275	13.305
237.325	45.018
237.375	40.126
237.425	29.881
237.475	20.410
237.525	14.286
237.575	8.137

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237.625	8.479
237.675	5.416
237.725	4.124
237.775	2.582
237.825	1.664
237.875	1.600
237.925	2.218
237.975	2.145
238.025	1.689
238.075	2.394
238.125	1.894
238.175	2.402
238.225	1.796
238.275	2.736
238.325	2.090
238.375	3.259
238.425	3.123
238.475	5.170
238.525	14.735
238.575	27.407
238.625	28.284
238.675	20.328
238.725	27.809
238.775	26.146
238.825	39.692
238.875	9.781
238.925	45.026
238.975	25.650
239.025	53.420
239.075	35.392
239.125	24.661
239.175	41.612
239.225	23.570
239.275	19.457
239.325	29.186
239.375	32.165
239.425	28.838
239.475	25.913

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SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 8/24/2015 11:45:36 AM
End Time: 8/24/2015 11:48:10 AM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 2676.50
        Obtained Intensity (Mg 23.985): 91997.06
        Obtained Intensity (In 114.904): 74901.82
        Obtained Intensity (U 238.05): 41848.32
        Obtained Intensity (Bkgd 220): 0.60
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.022 (=5912.89 / 268024.69)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.003 (=911.29 / 268024.69)
```

Report Date/Time: Monday, August 24, 2015 11:48:10
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SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 8/24/2015 11:45:36 AM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 2676.50
                Obtained Intensity (Mg 23.985): 91997.06
                Obtained Intensity (In 114.904): 74901.82
                Obtained Intensity (U 238.05): 41848.32
                Obtained Intensity (Bkgd 220): 0.60
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.022 (=5912.89 / 268024.69)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.003 (=911.29 / 268024.69)
[Passed]  Optimum value(s): N/A

End Time: 8/24/2015 11:48:10 AM
```


Approved: August 25, 2015

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Monday, August 24, 2015 12:04:41
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	43933.6	3.2				ug/L		Standard
	Be	9	0.0					ug/L		Standard
	Al	27	410.0	8.8				ug/L		Standard
	Sc	45	30378.8	2.2				ug/L		Standard
	Ti	47	21.3	47.9				ug/L		Standard
	V	51	1362.2	4.5				ug/L		Standard
	Cr	52	8310.6	0.3				ug/L		Standard
	Cr	53	325.0	4.6				ug/L		Standard
	Mn	55	694.3	2.2				ug/L		Standard
	Co	59	199.3	9.0				ug/L		Standard
	Ni	60	211.7	10.3				ug/L		Standard
	Cu	65	149.0	10.8				ug/L		Standard
	Zn	66	205.7	1.2				ug/L		Standard
>	Ge	72	319179.3	0.9				ug/L		Standard
	As	75	-50.8	76.1				ug/L		Standard
	Se	82	19.3	9.4				ug/L		Standard
	Se-1	77	89.3	14.0				ug/L		Standard
>	Ga	71	25.0	40.0				mg/L		Standard
	Rb	85	26.7	10.8				ug/L		Standard
	Y	89	295131.7	0.4				ug/L		Standard
>	Rh	103	20.0	0.0				ug/L		Standard
	Mo	98	10.7	28.8				ug/L		Standard
	Ag	107	63.7	17.2				ug/L		Standard
	Cd	111	7.3	15.8				mg/L		Standard
	Cd	114	9.7	37.3				ug/L		Standard
>	In	115	418014.1	1.2				ug/L		Standard
	Sn	118	385.0	14.0				ug/L		Standard
	Sb	123	53.5	24.5				ug/L		Standard
	Ba	135	44.0	11.4				ug/L		Standard
	Ce	140	33.3	37.7				ug/L		Standard
>	Tb	159	854905.1	1.1				ug/L		Standard
	Ho	165	13.3	78.1				ug/L		Standard
	Tl	203	4.0	50.0				ug/L		Standard
	Tl	205	5.0	100.0				ug/L		Standard
	Pb	206	182.0	8.8				ug/L		Standard
	Pb	207	160.3	14.4				ug/L		Standard
	Pb	208	604.0	4.1				ug/L		Standard
	U	238	2.7	21.7				ug/L		Standard
>	Bi	209	395375.1	0.9				ug/L		Standard

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	Na	23	0.0		mg/L	Standard
	Mg	24	46.7	43.3	mg/L	Standard
	K	39	21.7	35.3	mg/L	Standard
	Ca	43	28.3	56.7	mg/L	Standard
	Fe	54	72.5	17.1	mg/L	Standard
	Fe	57	703.3	6.5	mg/L	Standard
>	**Sc-1**	45	30378.8	2.2	mg/L	Standard
	Cl	35	14530.3	0.6	ug/L	Standard
	Kr	83	4.7	89.2	ug/L	Standard
	Br	81	496.7	15.1	ug/L	Standard
	P	31	10346.9	4.2	ug/L	Standard
	S	34	1535.1	3.4	ug/L	Standard
	Sr	88	176.7	11.8	ug/L	Standard
	C	12	153.3	38.2	mg/L	Standard
	N	14	0.0		mg/L	Standard
	Hg	202	3.3	173.2	mg/L	Standard
	Dy	164	6.5	93.0	mg/L	Standard
	Ho-1	165	13.3	78.1	mg/L	Standard
	Er	166	3.3	173.2	mg/L	Standard
	I	127	1945.1	0.9	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: Blank
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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Monday, August 24, 2015 12:07:53
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	41993.1	2.6				ug/L	43934	Standard
	Be	9	6.7	86.6				ug/L	0	Standard
	Al	27	473.3	8.5				ug/L	410	Standard
	Sc	45	30200.1	1.0				ug/L	30379	Standard
	Ti	47	20.7	32.9				ug/L	21	Standard
	V	51	1372.7	6.2				ug/L	1362	Standard
	Cr	52	8232.6	1.2				ug/L	8311	Standard
	Cr	53	365.0	11.9				ug/L	325	Standard
	Mn	55	722.0	2.1				ug/L	694	Standard
	Co	59	210.7	4.3				ug/L	199	Standard
	Ni	60	234.3	6.2				ug/L	212	Standard
	Cu	65	129.3	12.6				ug/L	149	Standard
	Zn	66	225.0	6.5				ug/L	206	Standard
>	Ge	72	319894.7	0.3				ug/L	319179	Standard
	As	75	-7.7	318.9				ug/L	-51	Standard
	Se	82	30.7	9.6				ug/L	19	Standard
	Se-1	77	90.0	18.3				ug/L	89	Standard
>	Ga	71	26.7	21.7				mg/L	25	Standard
	Rb	85	28.3	44.4				ug/L	27	Standard
	Y	89	296868.0	3.9				ug/L	295132	Standard
>	Rh	103	11.7	137.8				ug/L	20	Standard
	Mo	98	8.9	12.8				ug/L	11	Standard
	Ag	107	58.3	9.7				ug/L	64	Standard
	Cd	111	4.6	12.4				mg/L	7	Standard
	Cd	114	22.4	113.8				ug/L	10	Standard
>	In	115	414895.6	0.6				ug/L	418014	Standard
	Sn	118	345.0	15.3				ug/L	385	Standard
	Sb	123	27.6	53.0				ug/L	54	Standard
	Ba	135	49.0	12.4				ug/L	44	Standard
	Ce	140	16.7	17.3				ug/L	33	Standard
>	Tb	159	849288.2	2.3				ug/L	854905	Standard
	Ho	165	13.3	21.7				ug/L	13	Standard
	Tl	203	1.3	114.6				ug/L	4	Standard
	Tl	205	5.0	100.0				ug/L	5	Standard
	Pb	206	184.0	17.0				ug/L	182	Standard
	Pb	207	152.3	17.3				ug/L	160	Standard
	Pb	208	616.0	4.9				ug/L	604	Standard
	U	238	1.0	100.0				ug/L	3	Standard
>	Bi	209	394246.5	0.7				ug/L	395375	Standard

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Na	23	1.7	173.2	mg/L	0	Standard
Mg	24	50.0	26.5	mg/L	47	Standard
K	39	20.0	43.3	mg/L	22	Standard
Ca	43	40.0	37.5	mg/L	28	Standard
Fe	54	62.1	52.7	mg/L	72	Standard
Fe	57	781.7	3.2	mg/L	703	Standard
> **Sc-1**	45	30200.1	1.0	mg/L	30379	Standard
Cl	35	14976.1	2.2	ug/L	14530	Standard
Kr	83	4.3	26.6	ug/L	5	Standard
Br	81	520.0	6.9	ug/L	497	Standard
P	31	10783.8	1.9	ug/L	10347	Standard
S	34	1635.1	3.2	ug/L	1535	Standard
Sr	88	203.3	18.8	ug/L	177	Standard
C	12	123.3	12.4	mg/L	153	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	0.0		mg/L	3	Standard
Dy	164	19.7	89.4	mg/L	7	Standard
Ho-1	165	13.3	21.7	mg/L	13	Standard
Er	166	6.7	173.2	mg/L	3	Standard
I	127	1855.1	3.6	mg/L	1945	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Monday, August 24, 2015 12:11:04
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	43118.0	2.3				ug/L	43934	Standard
	Be	9	30.0	28.9				ug/L	0	Standard
	Al	27	4007.2	2.4				ug/L	410	Standard
	Sc	45	29612.2	0.8				ug/L	30379	Standard
	Ti	47	44.7	15.2				ug/L	21	Standard
	V	51	1544.7	6.3				ug/L	1362	Standard
	Cr	52	8456.7	0.5				ug/L	8311	Standard
	Cr	53	426.7	12.5				ug/L	325	Standard
	Mn	55	1004.7	3.8				ug/L	694	Standard
	Co	59	417.7	2.6				ug/L	199	Standard
	Ni	60	369.3	2.4				ug/L	212	Standard
	Cu	65	241.0	4.3				ug/L	149	Standard
	Zn	66	507.7	2.6				ug/L	206	Standard
>	**Ge**	72	321632.0	0.6				ug/L	319179	Standard
	As	75	-47.0	17.6				ug/L	-51	Standard
	Se	82	20.6	4.5				ug/L	19	Standard
	Se-1	77	97.0	7.4				ug/L	89	Standard
>	**Ga**	71	16.7	96.4				mg/L	25	Standard
	Rb	85	31.7	79.5				ug/L	27	Standard
	Y	89	286471.6	1.6				ug/L	295132	Standard
>	**Rh**	103	6.7	114.6				ug/L	20	Standard
	Mo	98	163.1	5.9				ug/L	11	Standard
	Ag	107	339.7	6.1				ug/L	64	Standard
	Cd	111	84.9	7.9				mg/L	7	Standard
	Cd	114	214.2	3.2				ug/L	10	Standard
>	**In**	115	410588.8	1.3				ug/L	418014	Standard
	Sn	118	588.3	13.0				ug/L	385	Standard
	Sb	123	249.6	6.2				ug/L	54	Standard
	Ba	135	149.0	2.9				ug/L	44	Standard
	Ce	140	15.0	57.7				ug/L	33	Standard
>	**Tb**	159	837267.1	1.2				ug/L	854905	Standard
	Ho	165	13.3	21.7				ug/L	13	Standard
	Tl	203	345.0	12.3				ug/L	4	Standard
	Tl	205	231.7	8.2				ug/L	5	Standard
	Pb	206	464.3	3.5				ug/L	182	Standard
	Pb	207	402.0	7.2				ug/L	160	Standard
	Pb	208	1443.0	3.1				ug/L	604	Standard
	U	238	246.7	9.7				ug/L	3	Standard
>	**Bi**	209	394842.6	0.3				ug/L	395375	Standard

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Na	23	1.7	173.2	mg/L	0	Standard
Mg	24	46.7	40.6	mg/L	47	Standard
K	39	18.3	15.7	mg/L	22	Standard
Ca	43	23.3	89.2	mg/L	28	Standard
Fe	54	84.3	44.7	mg/L	72	Standard
Fe	57	760.0	3.4	mg/L	703	Standard
Sc-1	45	29612.2	0.8	mg/L	30379	Standard
Cl	35	14619.7	0.9	ug/L	14530	Standard
Kr	83	4.7	24.7	ug/L	5	Standard
Br	81	516.7	12.6	ug/L	497	Standard
P	31	10073.3	2.1	ug/L	10347	Standard
S	34	1495.1	6.9	ug/L	1535	Standard
Sr	88	176.7	15.6	ug/L	177	Standard
C	12	163.3	27.6	mg/L	153	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	3.3	173.2	mg/L	3	Standard
Dy	164	3.0	187.1	mg/L	7	Standard
Ho-1	165	13.3	21.7	mg/L	13	Standard
Er	166	6.7	86.6	mg/L	3	Standard
I	127	1768.4	5.9	mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Monday, August 24, 2015 12:14:15
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	42965.9	4.1				ug/L	43934	Standard
	Be	9	28942.7	5.7	**50.0000**	1.538	3.1	ug/L	0	Standard
	Al	27	3285626.5	1.3	**50.0000**	1.678	3.4	ug/L	410	Standard
	Sc	45	30260.2	2.1				ug/L	30379	Standard
	Ti	47	21936.9	1.6	**100.0000**	2.321	2.3	ug/L	21	Standard
	V	51	224232.1	0.6	**50.0000**	0.510	1.0	ug/L	1362	Standard
	Cr	52	299699.3	1.8	**50.0000**	0.770	1.5	ug/L	8311	Standard
	Cr	53	37050.3	2.7	**50.0000**	1.431	2.9	ug/L	325	Standard
	Mn	55	208210.6	0.8	**50.0000**	0.873	1.7	ug/L	694	Standard
	Co	59	200049.7	0.5	**50.0000**	0.673	1.3	ug/L	199	Standard
	Ni	60	79974.9	0.8	**50.0000**	0.761	1.5	ug/L	212	Standard
	Cu	65	77884.0	1.2	**50.0000**	0.411	0.8	ug/L	149	Standard
	Zn	66	44165.6	0.6	**50.0000**	0.561	1.1	ug/L	206	Standard
>	**Ge**	72	326540.1	0.9				ug/L	319179	Standard
	As	75	43896.9	1.7	**50.0000**	0.967	1.9	ug/L	-51	Standard
	Se	82	3685.7	0.7	**50.0000**	0.763	1.5	ug/L	19	Standard
	Se-1	77	2663.6	1.3	**50.0000**	0.663	1.3	ug/L	89	Standard
>	**Ga**	71	43.3	17.6				mg/L	25	Standard
	Rb	85	578.3	8.7				ug/L	27	Standard
	Y	89	294491.5	1.5				ug/L	295132	Standard
>	**Rh**	103	33.3	37.7				ug/L	20	Standard
	Mo	98	143122.2	1.2	**100.0000**	1.680	1.7	ug/L	11	Standard
	Ag	107	264761.8	1.3	**50.0000**	0.914	1.8	ug/L	64	Standard
	Cd	111	71621.7	0.2	**50.0000**	0.583	1.2	mg/L	7	Standard
	Cd	114	188038.4	0.3	**50.0000**	0.665	1.3	ug/L	10	Standard
>	**In**	115	414428.2	1.1				ug/L	418014	Standard
	Sn	118	231071.7	3.5	**50.0000**	1.956	3.9	ug/L	385	Standard
	Sb	123	193440.6	1.1	**50.0000**	0.758	1.5	ug/L	54	Standard
	Ba	135	100227.1	0.6	**50.0000**	0.714	1.4	ug/L	44	Standard
	Ce	140	80.0	6.3				ug/L	33	Standard
>	**Tb**	159	840176.0	1.0				ug/L	854905	Standard
	Ho	165	10.0	50.0				ug/L	13	Standard
	Tl	203	342899.6	0.9	**50.0000**	0.912	1.8	ug/L	4	Standard
	Tl	205	238196.4	1.6	**50.0000**	1.276	2.6	ug/L	5	Standard
	Pb	206	215499.5	1.0	**50.0000**	1.046	2.1	ug/L	182	Standard
	Pb	207	194052.4	0.5	**50.0000**	0.792	1.6	ug/L	160	Standard
	Pb	208	712991.9	0.5	**50.0000**	0.731	1.5	ug/L	604	Standard
	U	238	241769.1	1.8	**50.0000**	1.303	2.6	ug/L	3	Standard
>	**Bi**	209	393183.3	1.1				ug/L	395375	Standard

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Na	23	0.0		**5.0000**	0.000	0.0	mg/L	0	Standard
Mg	24	2088.5	1.7	**5.0000**	0.180	3.6	mg/L	47	Standard
K	39	360.0	14.7	**5.0000**	0.889	17.8	mg/L	22	Standard
Ca	43	66.7	30.3	**5.0000**	2.297	45.9	mg/L	28	Standard
Fe	54	2224.5	7.4	**5.0000**	0.441	8.8	mg/L	72	Standard
Fe	57	1235.1	6.9	**5.0000**	0.710	14.2	mg/L	703	Standard
> **Sc-1**	45	30260.2	2.1				mg/L	30379	Standard
Cl	35	13808.3	2.2				ug/L	14530	Standard
Kr	83	5.3	39.0				ug/L	5	Standard
Br	81	596.7	6.3				ug/L	497	Standard
P	31	11150.8	3.6				ug/L	10347	Standard
S	34	1820.1	4.4				ug/L	1535	Standard
Sr	88	175.0	17.1				ug/L	177	Standard
C	12	146.7	27.6				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	124.9				mg/L	3	Standard
Dy	164	16.0	98.9				mg/L	7	Standard
Ho-1	165	10.0	50.0				mg/L	13	Standard
Er	166	13.3	114.6				mg/L	3	Standard
I	127	1228.4	6.9				mg/L	1945	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Monday, August 24, 2015 12:17:27
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	42561.4	0.8				ug/L	43934	Standard
	Be	9	56180.6	0.8	**98.9942**	1.022	1.0	ug/L	0	Standard
	Al	27	6368233.8	1.4	**98.8661**	1.109	1.1	ug/L	410	Standard
	Sc	45	29831.0	1.8				ug/L	30379	Standard
	Ti	47	42898.7	1.3	**200.7491**	4.648	2.3	ug/L	21	Standard
	V	51	437343.1	0.7	**100.3668**	1.383	1.4	ug/L	1362	Standard
	Cr	52	582790.0	0.5	**100.7780**	1.708	1.7	ug/L	8311	Standard
	Cr	53	72089.5	3.0	**100.3573**	2.329	2.3	ug/L	325	Standard
	Mn	55	403173.2	1.2	**99.9545**	2.443	2.4	ug/L	694	Standard
	Co	59	393618.3	1.0	**100.6857**	2.277	2.3	ug/L	199	Standard
	Ni	60	154747.6	1.1	**99.9045**	0.222	0.2	ug/L	212	Standard
	Cu	65	149445.7	0.5	**99.4542**	0.994	1.0	ug/L	149	Standard
	Zn	66	86213.6	0.5	**100.5299**	1.666	1.7	ug/L	206	Standard
>	Ge	72	317086.9	1.3				ug/L	319179	Standard
	As	75	86539.6	1.6	**100.6941**	1.301	1.3	ug/L	-51	Standard
	Se	82	7163.1	0.5	**100.1535**	1.162	1.2	ug/L	19	Standard
	Se-1	77	5210.6	1.4	**101.2978**	1.932	1.9	ug/L	89	Standard
>	Ga	71	66.7	56.3				mg/L	25	Standard
	Rb	85	1130.0	8.1				ug/L	27	Standard
	Y	89	290007.8	1.4				ug/L	295132	Standard
>	Rh	103	53.3	56.5				ug/L	20	Standard
	Mo	98	279827.1	1.0	**200.7027**	3.973	2.0	ug/L	11	Standard
	Ag	107	510193.7	0.9	**99.6255**	1.313	1.3	ug/L	64	Standard
	Cd	111	140913.7	0.7	**100.6607**	0.362	0.4	mg/L	7	Standard
	Cd	114	371344.0	2.9	**100.8380**	1.921	1.9	ug/L	10	Standard
>	In	115	402349.5	1.0				ug/L	418014	Standard
	Sn	118	477294.8	2.0	**103.1293**	2.557	2.5	ug/L	385	Standard
	Sb	123	382416.9	0.8	**100.9037**	0.698	0.7	ug/L	54	Standard
	Ba	135	196225.1	0.4	**100.4253**	1.412	1.4	ug/L	44	Standard
	Ce	140	120.0	20.8				ug/L	33	Standard
>	Tb	159	834649.5	1.1				ug/L	854905	Standard
	Ho	165	13.3	43.3				ug/L	13	Standard
	Tl	203	674109.2	0.5	**100.4362**	0.890	0.9	ug/L	4	Standard
	Tl	205	462904.2	1.5	**99.8607**	2.275	2.3	ug/L	5	Standard
	Pb	206	423593.7	0.4	**100.4571**	1.022	1.0	ug/L	182	Standard
	Pb	207	381129.7	0.4	**100.4168**	1.037	1.0	ug/L	160	Standard
	Pb	208	1388424.2	0.7	**99.9865**	0.500	0.5	ug/L	604	Standard
	U	238	480713.3	0.6	**101.0048**	1.827	1.8	ug/L	3	Standard
>	Bi	209	383099.9	1.2				ug/L	395375	Standard

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Na	23	1.7	173.2	**-0.1440**	17.699	12287.9	mg/L	0	Standard
Mg	24	3915.5	3.0	**9.8013**	0.461	4.7	mg/L	47	Standard
K	39	745.0	8.1	**10.3731**	0.998	9.6	mg/L	22	Standard
Ca	43	108.3	13.3	**10.0384**	1.865	18.6	mg/L	28	Standard
Fe	54	4300.1	4.1	**9.9927**	0.379	3.8	mg/L	72	Standard
Fe	57	1856.8	5.6	**10.9422**	1.011	9.2	mg/L	703	Standard
Sc-1	45	29831.0	1.8				mg/L	30379	Standard
Cl	35	12865.5	0.4				ug/L	14530	Standard
Kr	83	5.0	20.0				ug/L	5	Standard
Br	81	563.3	25.9				ug/L	497	Standard
P	31	11080.7	0.2				ug/L	10347	Standard
S	34	1733.4	8.8				ug/L	1535	Standard
Sr	88	208.3	1.4				ug/L	177	Standard
C	12	113.3	25.5				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	2.7	235.5				mg/L	7	Standard
Ho-1	165	13.3	43.3				mg/L	13	Standard
Er	166	13.3	114.6				mg/L	3	Standard
I	127	595.0	8.5				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998
Corr. Coef.	Fe	57	Correlation coefficient < 0.998

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Monday, August 24, 2015 12:20:40
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	43382.0	1.2				ug/L	43934	Standard
	Be	9	30063.2	3.5	**51.9709**	1.774	3.4	ug/L	0	Standard
	Al	27	3500659.9	0.7	**53.3224**	1.001	1.9	ug/L	410	Standard
	Sc	45	30767.9	2.3				ug/L	30379	Standard
	Ti	47	23752.9	0.8	**107.9758**	0.685	0.6	ug/L	21	Standard
	V	51	235532.9	0.9	**52.3934**	0.610	1.2	ug/L	1362	Standard
	Cr	52	314344.0	0.2	**52.1588**	0.382	0.7	ug/L	8311	Standard
	Cr	53	39110.4	0.4	**52.6725**	0.310	0.6	ug/L	325	Standard
	Mn	55	218120.4	1.7	**52.4604**	0.909	1.7	ug/L	694	Standard
	Co	59	212536.0	0.4	**52.8089**	0.322	0.6	ug/L	199	Standard
	Ni	60	83204.2	1.2	**52.1265**	0.850	1.6	ug/L	212	Standard
	Cu	65	81581.7	1.5	**52.7207**	1.041	2.0	ug/L	149	Standard
	Zn	66	46656.7	0.6	**52.6202**	0.128	0.2	ug/L	206	Standard
>	**Ge**	72	326215.7	0.5				ug/L	319179	Standard
	As	75	46219.6	1.1	**52.3247**	0.678	1.3	ug/L	-51	Standard
	Se	82	3836.8	0.5	**52.0292**	0.531	1.0	ug/L	19	Standard
	Se-1	77	2842.9	1.9	**52.8524**	1.118	2.1	ug/L	89	Standard
>	**Ga**	71	68.3	29.6				mg/L	25	Standard
	Rb	85	565.0	20.4				ug/L	27	Standard
	Y	89	291229.6	4.7				ug/L	295132	Standard
>	**Rh**	103	43.3	24.0				ug/L	20	Standard
	Mo	98	153187.2	0.3	**105.7666**	0.988	0.9	ug/L	11	Standard
	Ag	107	275422.2	1.0	**51.7701**	0.413	0.8	ug/L	64	Standard
	Cd	111	76033.8	1.0	**52.2873**	0.313	0.6	mg/L	7	Standard
	Cd	114	202006.5	1.7	**52.8161**	0.759	1.4	ug/L	10	Standard
>	**In**	115	417904.5	0.9				ug/L	418014	Standard
	Sn	118	243950.0	1.0	**50.7062**	0.497	1.0	ug/L	385	Standard
	Sb	123	206653.3	1.0	**52.4890**	0.261	0.5	ug/L	54	Standard
	Ba	135	106301.3	1.7	**52.3595**	0.439	0.8	ug/L	44	Standard
	Ce	140	236.7	16.1				ug/L	33	Standard
>	**Tb**	159	853009.2	1.8				ug/L	854905	Standard
	Ho	165	10.0	50.0				ug/L	13	Standard
	Tl	203	363448.2	0.6	**52.2330**	0.583	1.1	ug/L	4	Standard
	Tl	205	249031.7	1.0	**51.8163**	0.631	1.2	ug/L	5	Standard
	Pb	206	226498.8	0.9	**51.7833**	0.430	0.8	ug/L	182	Standard
	Pb	207	204748.1	0.3	**52.0076**	0.244	0.5	ug/L	160	Standard
	Pb	208	741921.1	0.4	**51.5130**	0.426	0.8	ug/L	604	Standard
	U	238	256618.4	1.1	**52.0028**	0.282	0.5	ug/L	3	Standard
>	**Bi**	209	397154.2	0.6				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	2188.5	1.1	**5.2574**	0.065	1.2	mg/L	47	Standard
K	39	340.0	3.9	**4.4442**	0.238	5.4	mg/L	22	Standard
Ca	43	71.7	14.5	**5.4331**	1.175	21.6	mg/L	28	Standard
Fe	54	2249.4	1.3	**4.9723**	0.065	1.3	mg/L	72	Standard
Fe	57	1338.4	6.6	**5.3546**	1.134	21.2	mg/L	703	Standard
Sc-1	45	30767.9	2.3				mg/L	30379	Standard
Cl	35	13061.0	2.0				ug/L	14530	Standard
Kr	83	6.7	17.3				ug/L	5	Standard
Br	81	523.3	14.5				ug/L	497	Standard
P	31	11554.4	2.5				ug/L	10347	Standard
S	34	1611.8	3.6				ug/L	1535	Standard
Sr	88	176.7	11.4				ug/L	177	Standard
C	12	210.0	20.8				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	9.4	112.0				mg/L	7	Standard
Ho-1	165	10.0	50.0				mg/L	13	Standard
Er	166	13.3	86.6				mg/L	3	Standard
I	127	836.7	5.1				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	103.942		
Al	27	106.645		
Sc	45			
Ti	47	107.976		
V	51	104.787		
Cr	52	104.318		
Cr	53			
Mn	55	104.921		
Co	59	105.618		
Ni	60	104.253		
Cu	65	105.441		
Zn	66	105.240		
Ge	72		102.205	
As	75	104.649		
Se	82	104.058		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	105.767		
Ag	107	103.540		
Cd	111	104.575		
Cd	114			
> In	115		99.974	
Sn	118	101.412		
Sb	123	104.978		
Ba	135	104.719		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	104.466		
Tl	205			
Pb	206	103.567		
Pb	207	104.015		
Pb	208	103.026		
U	238	104.006		
> Bi	209		100.450	
Na	23	201.491		
Mg	24	105.148		
K	39	88.885		
Ca	43	108.662		
Fe	54	99.447		
Fe	57	107.093		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	K	39	
QC Std 1	Ca	43	

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QC Std 1	Fe	57

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Monday, August 24, 2015 12:23:53
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	43679.6	2.0				ug/L	43934	Standard
	Be	9	10.0	50.0	**0.0151**	0.008	55.0	ug/L	0	Standard
	Al	27	573.3	7.8	**-0.0028**	0.001	19.2	ug/L	410	Standard
	Sc	45	30362.1	1.1				ug/L	30379	Standard
	Ti	47	22.3	23.0	**-0.0036**	0.024	661.0	ug/L	21	Standard
	V	51	1015.9	5.0	**-0.0712**	0.011	15.4	ug/L	1362	Standard
	Cr	52	6750.8	1.1	**-0.2514**	0.012	4.6	ug/L	8311	Standard
	Cr	53	341.7	21.2	**-0.0698**	0.100	143.3	ug/L	325	Standard
	Mn	55	717.0	5.1	**-0.0214**	0.009	42.8	ug/L	694	Standard
	Co	59	199.3	8.5	**-0.0054**	0.004	80.4	ug/L	199	Standard
	Ni	60	184.3	8.8	**-0.0687**	0.010	14.6	ug/L	212	Standard
	Cu	65	159.0	8.5	**-0.0044**	0.009	203.6	ug/L	149	Standard
	Zn	66	223.0	2.3	**-0.2804**	0.007	2.3	ug/L	206	Standard
>	**Ge**	72	323431.6	0.2				ug/L	319179	Standard
	As	75	-47.4	27.3	**0.0498**	0.015	29.4	ug/L	-51	Standard
	Se	82	25.0	13.6	**0.1089**	0.047	43.4	ug/L	19	Standard
	Se-1	77	92.3	11.7	**-0.0505**	0.213	421.0	ug/L	89	Standard
>	**Ga**	71	23.3	65.5				mg/L	25	Standard
	Rb	85	31.7	32.9				ug/L	27	Standard
	Y	89	294645.5	2.8				ug/L	295132	Standard
>	**Rh**	103	25.0	60.0				ug/L	20	Standard
	Mo	98	84.9	16.3	**0.0435**	0.009	20.6	ug/L	11	Standard
	Ag	107	86.7	26.0	**0.0012**	0.004	342.0	ug/L	64	Standard
	Cd	111	12.2	38.8	**-0.0012**	0.003	266.1	mg/L	7	Standard
	Cd	114	18.1	75.2	**-0.0023**	0.004	151.9	ug/L	10	Standard
>	**In**	115	420753.0	1.0				ug/L	418014	Standard
	Sn	118	566.7	21.1	**0.0423**	0.024	57.7	ug/L	385	Standard
	Sb	123	903.3	3.8	**0.2134**	0.009	4.1	ug/L	54	Standard
	Ba	135	51.0	27.8	**0.0002**	0.007	3271.9	ug/L	44	Standard
	Ce	140	18.3	41.7				ug/L	33	Standard
>	**Tb**	159	851892.7	0.5				ug/L	854905	Standard
	Ho	165	8.3	34.6				ug/L	13	Standard
	Tl	203	32.7	39.5	**0.0048**	0.002	38.0	ug/L	4	Standard
	Tl	205	11.7	24.7	**0.0039**	0.001	15.6	ug/L	5	Standard
	Pb	206	209.3	9.1	**-0.0092**	0.004	44.7	ug/L	182	Standard
	Pb	207	160.7	19.1	**-0.0121**	0.008	62.2	ug/L	160	Standard
	Pb	208	662.3	4.6	**-0.0050**	0.002	37.9	ug/L	604	Standard
	U	238	18.7	35.7	**0.0035**	0.001	38.1	ug/L	3	Standard
>	**Bi**	209	398539.9	0.6				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	48.3	21.5	**0.0066**	0.027	415.8	mg/L	47	Standard
K	39	11.7	49.5	**-0.0950**	0.081	85.6	mg/L	22	Standard
Ca	43	28.3	73.5	**0.4980**	2.390	480.0	mg/L	28	Standard
Fe	54	67.9	28.0	**-0.0380**	0.044	115.3	mg/L	72	Standard
Fe	57	776.7	7.1	**-0.0216**	0.489	2264.5	mg/L	703	Standard
Sc-1	45	30362.1	1.1				mg/L	30379	Standard
Cl	35	13368.6	1.5				ug/L	14530	Standard
Kr	83	1.7	91.7				ug/L	5	Standard
Br	81	443.3	12.8				ug/L	497	Standard
P	31	11387.6	3.6				ug/L	10347	Standard
S	34	1763.4	4.4				ug/L	1535	Standard
Sr	88	166.7	30.3				ug/L	177	Standard
C	12	206.7	7.4				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	2.4	225.8				mg/L	7	Standard
Ho-1	165	8.3	34.6				mg/L	13	Standard
Er	166	20.0	50.0				mg/L	3	Standard
I	127	1778.4	6.1				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.332	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.655
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.800
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Na	23	
QC Std 2	Ca	43	

Sample ID: QC Std 2
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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Monday, August 24, 2015 12:27:05
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	42156.9	2.0				ug/L	43934	Standard
	Be	9	131.7	9.6	**0.2323**	0.022	9.6	ug/L	0	Standard
	Al	27	850.0	91.4	**0.0021**	0.013	607.0	ug/L	410	Standard
	Sc	45	30906.5	2.8				ug/L	30379	Standard
	Ti	47	23.0	11.5	**-0.0005**	0.011	2454.5	ug/L	21	Standard
	V	51	2837.6	0.5	**0.3407**	0.009	2.8	ug/L	1362	Standard
	Cr	52	11765.6	1.7	**0.6134**	0.051	8.4	ug/L	8311	Standard
	Cr	53	985.0	5.3	**0.8152**	0.086	10.5	ug/L	325	Standard
	Mn	55	2739.6	2.3	**0.4719**	0.017	3.7	ug/L	694	Standard
	Co	59	1752.4	2.4	**0.3849**	0.015	3.9	ug/L	199	Standard
	Ni	60	2623.2	2.2	**1.4801**	0.045	3.1	ug/L	212	Standard
	Cu	65	1449.1	2.9	**0.8395**	0.036	4.3	ug/L	149	Standard
	Zn	66	5532.3	0.5	**5.8291**	0.067	1.2	ug/L	206	Standard
>	**Ge**	72	323025.0	1.0				ug/L	319179	Standard
	As	75	302.8	10.0	**0.4495**	0.038	8.4	ug/L	-51	Standard
	Se	82	48.2	4.1	**0.4278**	0.034	7.9	ug/L	19	Standard
	Se-1	77	100.7	10.6	**0.1129**	0.200	177.1	ug/L	89	Standard
>	**Ga**	71	11.7	65.5				mg/L	25	Standard
	Rb	85	26.7	21.7				ug/L	27	Standard
	Y	89	290350.1	4.0				ug/L	295132	Standard
>	**Rh**	103	8.3	69.3				ug/L	20	Standard
	Mo	98	32.8	19.5	**0.0080**	0.005	56.2	ug/L	11	Standard
	Ag	107	2075.5	1.7	**0.3763**	0.010	2.6	ug/L	64	Standard
	Cd	111	350.2	5.4	**0.2321**	0.015	6.4	mg/L	7	Standard
	Cd	114	875.4	13.0	**0.2227**	0.032	14.4	ug/L	10	Standard
>	**In**	115	416837.8	1.1				ug/L	418014	Standard
	Sn	118	608.3	2.9	**0.0522**	0.005	9.2	ug/L	385	Standard
	Sb	123	1808.5	1.9	**0.4462**	0.011	2.4	ug/L	54	Standard
	Ba	135	1521.1	2.8	**0.7268**	0.016	2.3	ug/L	44	Standard
	Ce	140	20.0	43.3				ug/L	33	Standard
>	**Tb**	159	835732.5	1.3				ug/L	854905	Standard
	Ho	165	10.0	50.0				ug/L	13	Standard
	Tl	203	532.7	4.5	**0.0777**	0.004	5.5	ug/L	4	Standard
	Tl	205	396.7	14.2	**0.0851**	0.012	14.4	ug/L	5	Standard
	Pb	206	1088.4	4.2	**0.1954**	0.011	5.6	ug/L	182	Standard
	Pb	207	911.0	2.1	**0.1818**	0.006	3.6	ug/L	160	Standard
	Pb	208	3623.5	4.1	**0.2042**	0.012	6.0	ug/L	604	Standard
	U	238	1990.1	2.6	**0.4082**	0.015	3.6	ug/L	3	Standard
>	**Bi**	209	392219.7	1.0				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	50.0	36.1	**0.0078**	0.042	543.4	mg/L	47	Standard
K	39	13.3	57.3	**-0.0742**	0.108	146.1	mg/L	22	Standard
Ca	43	35.0	37.8	**1.1927**	1.418	118.9	mg/L	28	Standard
Fe	54	67.7	18.4	**-0.0405**	0.033	80.7	mg/L	72	Standard
Fe	57	645.0	14.5	**-1.4157**	0.995	70.3	mg/L	703	Standard
Sc-1	45	30906.5	2.8				mg/L	30379	Standard
Cl	35	13434.6	1.2				ug/L	14530	Standard
Kr	83	7.0	42.9				ug/L	5	Standard
Br	81	486.7	30.1				ug/L	497	Standard
P	31	10979.0	3.7				ug/L	10347	Standard
S	34	1651.8	1.2				ug/L	1535	Standard
Sr	88	201.7	10.0				ug/L	177	Standard
C	12	203.3	32.0				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	3	Standard
Dy	164	6.0	86.6				mg/L	7	Standard
Ho-1	165	10.0	50.0				mg/L	13	Standard
Er	166	13.3	86.6				mg/L	3	Standard
I	127	566.7	3.6				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	116.148		
Al	27	0.208		
Sc	45			
Ti	47			
V	51	85.178		
Cr	52	76.678		
Cr	53			
Mn	55	94.389		
Co	59	96.226		
Ni	60	92.509		
Cu	65	104.937		
Zn	66	93.265		
Ge	72		101.205	
As	75	112.387		
Se	82	106.945		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	94.077		
Cd	111	96.709		
Cd	114			
> In	115			99.719
Sn	118			
Sb	123	111.542		
Ba	135	96.900		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	97.075		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.087		
U	238	102.046		
> Bi	209			99.202
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Monday, August 24, 2015 12:30:17
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	41276.2	3.1				ug/L	43934	Standard
	Be	9	16.7	62.4	**0.0280**	0.018	65.2	ug/L	0	Standard
	Al	27	3379519.8	1.1	**54.1181**	1.108	2.0	ug/L	410	Standard
	Sc	45	29856.1	1.9				ug/L	30379	Standard
	Ti	47	23977.3	1.1	**112.9080**	0.637	0.6	ug/L	21	Standard
	V	51	950.5	9.8	**-0.0801**	0.022	28.0	ug/L	1362	Standard
	Cr	52	7276.7	1.0	**-0.1270**	0.026	20.9	ug/L	8311	Standard
	Cr	53	2970.3	14.3	**3.6537**	0.656	18.0	ug/L	325	Standard
	Mn	55	988.0	1.6	**0.0511**	0.004	8.5	ug/L	694	Standard
	Co	59	330.3	2.8	**0.0297**	0.002	8.2	ug/L	199	Standard
	Ni	60	723.4	5.1	**0.2858**	0.030	10.6	ug/L	212	Standard
	Cu	65	540.0	2.8	**0.2539**	0.005	1.9	ug/L	149	Standard
	Zn	66	773.4	2.1	**0.3762**	0.031	8.3	ug/L	206	Standard
>	Ge	72	314941.4	1.5				ug/L	319179	Standard
	As	75	13.0	184.6	**0.1188**	0.028	23.4	ug/L	-51	Standard
	Se	82	28.0	31.8	**0.1586**	0.120	75.7	ug/L	19	Standard
	Se-1	77	256.3	0.6	**3.2666**	0.103	3.1	ug/L	89	Standard
>	Ga	71	108.3	25.4				mg/L	25	Standard
	Rb	85	608.3	14.0				ug/L	27	Standard
	Y	89	288062.9	1.3				ug/L	295132	Standard
>	Rh	103	31.7	48.2				ug/L	20	Standard
	Mo	98	145115.2	2.1	**101.7855**	1.780	1.7	ug/L	11	Standard
	Ag	107	89.3	15.4	**0.0021**	0.003	122.1	ug/L	64	Standard
	Cd	111	-19.2	70.5	**-0.0228**	0.009	41.1	mg/L	7	Standard
	Cd	114	689.1	14.6	**0.1762**	0.028	15.7	ug/L	10	Standard
>	In	115	411331.4	0.7				ug/L	418014	Standard
	Sn	118	468.3	9.9	**0.0242**	0.009	39.2	ug/L	385	Standard
	Sb	123	188.0	10.1	**0.0340**	0.005	14.0	ug/L	54	Standard
	Ba	135	231.7	11.5	**0.0912**	0.013	13.8	ug/L	44	Standard
	Ce	140	136.7	11.2				ug/L	33	Standard
>	Tb	159	844736.4	2.2				ug/L	854905	Standard
	Ho	165	10.0	50.0				ug/L	13	Standard
	Tl	203	20.3	10.2	**0.0031**	0.000	10.3	ug/L	4	Standard
	Tl	205	10.0	100.0	**0.0036**	0.002	58.4	ug/L	5	Standard
	Pb	206	379.3	5.1	**0.0323**	0.004	11.8	ug/L	182	Standard
	Pb	207	284.0	3.6	**0.0214**	0.002	9.0	ug/L	160	Standard
	Pb	208	1157.4	3.8	**0.0317**	0.002	7.3	ug/L	604	Standard
	U	238	8.0	97.6	**0.0014**	0.002	117.2	ug/L	3	Standard
>	Bi	209	386570.4	1.2				ug/L	395375	Standard

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Na	23	3.3	173.2	**-10.4886**	35.616	339.6	mg/L	0	Standard
Mg	24	5309.3	3.7	**13.3179**	0.633	4.8	mg/L	47	Standard
K	39	341.7	22.4	**4.6020**	1.023	22.2	mg/L	22	Standard
Ca	43	185.0	14.0	**19.0297**	2.729	14.3	mg/L	28	Standard
Fe	54	5580.2	4.1	**13.0205**	0.682	5.2	mg/L	72	Standard
Fe	57	2116.8	6.5	**13.5207**	1.053	7.8	mg/L	703	Standard
Sc-1	45	29856.1	1.9				mg/L	30379	Standard
Cl	35	12683.3	2.0				ug/L	14530	Standard
Kr	83	5.0	40.0				ug/L	5	Standard
Br	81	533.3	12.8				ug/L	497	Standard
P	31	9427.9	4.3				ug/L	10347	Standard
S	34	1685.1	5.9				ug/L	1535	Standard
Sr	88	168.3	9.1				ug/L	177	Standard
C	12	276.7	11.0				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	3	Standard
Dy	164	25.9	62.9				mg/L	7	Standard
Ho-1	165	10.0	50.0				mg/L	13	Standard
Er	166	16.7	124.9				mg/L	3	Standard
I	127	550.0	15.9				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27	1.082		
Sc	45			
Ti	47	112.908		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.672	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	101.785		
Ag	107			
Cd	111			
Cd	114			
> In	115		98.401	
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209		97.773	
Na	23	-83.909		
Mg	24	266.358		
K	39	92.039		
Ca	43	126.865		
Fe	54	104.164		
Fe	57	108.166		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	

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QC Std 4	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Monday, August 24, 2015 12:33:28
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	44784.4	2.3				ug/L	43934	Standard
	Be	9	61200.0	1.6	**102.4967**	1.326	1.3	ug/L	0	Standard
	Al	27	3593554.3	0.9	**53.0413**	1.725	3.3	ug/L	410	Standard
	Sc	45	30350.4	1.2				ug/L	30379	Standard
	Ti	47	23981.0	1.2	**112.4933**	0.565	0.5	ug/L	21	Standard
	V	51	457736.2	0.3	**105.3750**	1.023	1.0	ug/L	1362	Standard
	Cr	52	598013.6	0.9	**103.7550**	1.195	1.2	ug/L	8311	Standard
	Cr	53	77623.3	0.8	**108.4482**	1.752	1.6	ug/L	325	Standard
	Mn	55	423562.0	0.8	**105.3175**	0.343	0.3	ug/L	694	Standard
	Co	59	408321.6	1.8	**104.7415**	1.150	1.1	ug/L	199	Standard
	Ni	60	157463.5	1.5	**101.9641**	0.762	0.7	ug/L	212	Standard
	Cu	65	152620.5	0.8	**101.8701**	0.509	0.5	ug/L	149	Standard
	Zn	66	88407.2	0.7	**103.4024**	0.434	0.4	ug/L	206	Standard
>	**Ge**	72	316129.0	0.8				ug/L	319179	Standard
	As	75	88626.4	1.4	**103.4268**	0.819	0.8	ug/L	-51	Standard
	Se	82	7333.0	0.6	**102.8400**	0.810	0.8	ug/L	19	Standard
	Se-1	77	5484.0	1.4	**107.0400**	2.377	2.2	ug/L	89	Standard
>	**Ga**	71	120.0	4.2				mg/L	25	Standard
	Rb	85	663.3	3.5				ug/L	27	Standard
	Y	89	295857.9	1.8				ug/L	295132	Standard
>	**Rh**	103	40.0	43.3				ug/L	20	Standard
	Mo	98	153856.8	0.4	**105.0320**	1.011	1.0	ug/L	11	Standard
	Ag	107	494742.1	3.1	**91.9752**	3.485	3.8	ug/L	64	Standard
	Cd	111	151957.1	1.2	**103.3408**	2.061	2.0	mg/L	7	Standard
	Cd	114	400041.7	1.2	**103.4339**	2.059	2.0	ug/L	10	Standard
>	**In**	115	422664.0	0.8				ug/L	418014	Standard
	Sn	118	615.0	7.2	**0.0518**	0.010	19.2	ug/L	385	Standard
	Sb	123	408874.1	1.1	**102.6957**	0.550	0.5	ug/L	54	Standard
	Ba	135	206619.7	0.8	**100.6534**	0.316	0.3	ug/L	44	Standard
	Ce	140	76.7	7.5				ug/L	33	Standard
>	**Tb**	159	857898.7	1.8				ug/L	854905	Standard
	Ho	165	11.7	65.5				ug/L	13	Standard
	Tl	203	697252.8	1.0	**100.9586**	0.700	0.7	ug/L	4	Standard
	Tl	205	484816.5	0.9	**101.6379**	1.223	1.2	ug/L	5	Standard
	Pb	206	444832.6	0.6	**102.5248**	0.624	0.6	ug/L	182	Standard
	Pb	207	403635.4	0.1	**103.3537**	0.298	0.3	ug/L	160	Standard
	Pb	208	1454645.8	0.2	**101.8109**	0.431	0.4	ug/L	604	Standard
	U	238	502721.7	0.3	**102.6490**	0.611	0.6	ug/L	3	Standard
>	**Bi**	209	394171.1	0.3				ug/L	395375	Standard

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Na	23	1.7	173.2	**0.0470**	17.368	36935.3	mg/L	0	Standard
Mg	24	5287.6	3.1	**13.0376**	0.257	2.0	mg/L	47	Standard
K	39	431.7	11.0	**5.7944**	0.702	12.1	mg/L	22	Standard
Ca	43	178.3	19.9	**17.9007**	3.891	21.7	mg/L	28	Standard
Fe	54	5588.1	3.3	**12.8161**	0.314	2.4	mg/L	72	Standard
Fe	57	2161.8	3.5	**13.6356**	0.992	7.3	mg/L	703	Standard
> **Sc-1**	45	30350.4	1.2				mg/L	30379	Standard
Cl	35	13637.5	0.6				ug/L	14530	Standard
Kr	83	6.0	28.9				ug/L	5	Standard
Br	81	556.7	1.0				ug/L	497	Standard
P	31	10628.7	5.3				ug/L	10347	Standard
S	34	1608.4	3.9				ug/L	1535	Standard
Sr	88	176.7	15.6				ug/L	177	Standard
C	12	326.7	28.9				mg/L	153	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	19.7	49.6				mg/L	7	Standard
Ho-1	165	11.7	65.5				mg/L	13	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	1818.4	1.8				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	102.497		
Al	27	1.061		
Sc	45			
Ti	47	112.493		
V	51	105.375		
Cr	52	103.755		
Cr	53			
Mn	55	105.317		
Co	59	104.741		
Ni	60	101.964		
Cu	65	101.870		
Zn	66	103.402		
> Ge	72		99.044	
As	75	103.427		
Se	82	102.840		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	105.032		
Ag	107	91.975		
Cd	111	103.341		
Cd	114			
In	115		101.112	
Sn	118			
Sb	123	102.696		
Ba	135	100.653		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.959		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.811		
U	238	102.649		
Bi	209		99.695	
Na	23	0.376		
Mg	24	260.752		
K	39	115.889		
Ca	43	119.338		
Fe	54	102.529		
Fe	57	109.085		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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QC Std 5	Ca	43

Sample ID: QC Std 5
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, August 24, 2015 12:36:42
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	43828.3	1.1				ug/L	43934	Standard
	Be	9	29722.5	1.5	**50.8567**	0.577	1.1	ug/L	0	Standard
	Al	27	3346737.6	2.0	**50.4559**	1.239	2.5	ug/L	410	Standard
	Sc	45	29806.0	4.4				ug/L	30379	Standard
	Ti	47	21880.1	1.0	**101.9887**	0.821	0.8	ug/L	21	Standard
	V	51	224141.6	0.8	**51.1216**	0.510	1.0	ug/L	1362	Standard
	Cr	52	296404.9	2.0	**50.3846**	0.833	1.7	ug/L	8311	Standard
	Cr	53	36542.3	0.8	**50.4450**	0.549	1.1	ug/L	325	Standard
	Mn	55	209845.4	1.6	**51.7503**	0.618	1.2	ug/L	694	Standard
	Co	59	201918.3	0.9	**51.4458**	0.325	0.6	ug/L	199	Standard
	Ni	60	78244.5	1.0	**50.2606**	0.736	1.5	ug/L	212	Standard
	Cu	65	76506.0	1.3	**50.6917**	0.528	1.0	ug/L	149	Standard
	Zn	66	43654.8	0.8	**50.4662**	0.192	0.4	ug/L	206	Standard
>	Ge	72	318114.9	0.5				ug/L	319179	Standard
	As	75	43125.0	0.3	**50.0679**	0.133	0.3	ug/L	-51	Standard
	Se	82	3686.1	1.0	**51.2522**	0.480	0.9	ug/L	19	Standard
	Se-1	77	2686.2	1.2	**51.1537**	0.707	1.4	ug/L	89	Standard
>	Ga	71	60.0	36.3				mg/L	25	Standard
	Rb	85	573.3	9.8				ug/L	27	Standard
	Y	89	292228.2	1.3				ug/L	295132	Standard
>	Rh	103	23.3	44.6				ug/L	20	Standard
	Mo	98	147552.4	0.7	**100.6384**	0.596	0.6	ug/L	11	Standard
	Ag	107	265372.5	0.8	**49.2761**	0.214	0.4	ug/L	64	Standard
	Cd	111	74605.5	1.2	**50.6832**	0.422	0.8	mg/L	7	Standard
	Cd	114	197998.6	1.3	**51.1439**	0.796	1.6	ug/L	10	Standard
>	In	115	423018.3	0.4				ug/L	418014	Standard
	Sn	118	227592.0	1.8	**46.7257**	0.705	1.5	ug/L	385	Standard
	Sb	123	199258.5	1.8	**49.9966**	0.754	1.5	ug/L	54	Standard
	Ba	135	102093.8	1.2	**49.6792**	0.448	0.9	ug/L	44	Standard
	Ce	140	116.7	25.8				ug/L	33	Standard
>	Tb	159	846699.8	1.1				ug/L	854905	Standard
	Ho	165	8.3	34.6				ug/L	13	Standard
	Tl	203	348241.8	1.1	**50.0348**	0.185	0.4	ug/L	4	Standard
	Tl	205	240735.8	0.5	**50.0794**	0.134	0.3	ug/L	5	Standard
	Pb	206	220772.6	0.9	**50.4617**	0.117	0.2	ug/L	182	Standard
	Pb	207	199845.1	0.9	**50.7496**	0.118	0.2	ug/L	160	Standard
	Pb	208	717897.8	0.9	**49.8324**	0.380	0.8	ug/L	604	Standard
	U	238	245318.5	1.1	**49.7030**	0.213	0.4	ug/L	3	Standard
>	Bi	209	397233.7	0.7				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	2056.8	8.3	**5.1080**	0.564	11.0	mg/L	47	Standard
K	39	385.0	11.1	**5.2593**	0.851	16.2	mg/L	22	Standard
Ca	43	58.3	21.6	**4.1672**	1.759	42.2	mg/L	28	Standard
Fe	54	2282.5	6.7	**5.2227**	0.410	7.8	mg/L	72	Standard
Fe	57	1356.7	9.2	**5.9393**	1.029	17.3	mg/L	703	Standard
> **Sc-1**	45	29806.0	4.4				mg/L	30379	Standard
Cl	35	13710.9	1.6				ug/L	14530	Standard
Kr	83	4.0	66.1				ug/L	5	Standard
Br	81	563.3	3.7				ug/L	497	Standard
P	31	10742.1	2.1				ug/L	10347	Standard
S	34	1641.8	2.2				ug/L	1535	Standard
Sr	88	195.0	11.2				ug/L	177	Standard
C	12	150.0	23.1				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	9.0	108.0				mg/L	7	Standard
Ho-1	165	8.3	34.6				mg/L	13	Standard
Er	166	20.0	50.0				mg/L	3	Standard
I	127	541.7	12.0				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	101.713		
Al	27	100.912		
Sc	45			
Ti	47	101.989		
V	51	102.243		
Cr	52	100.769		
Cr	53			
Mn	55	103.501		
Co	59	102.892		
Ni	60	100.521		
Cu	65	101.383		
Zn	66	100.932		
> Ge	72		99.666	
As	75	100.136		
Se	82	102.504		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	100.638		
Ag	107	98.552		
Cd	111	101.366		
Cd	114			
> In	115			101.197
Sn	118	93.451		
Sb	123	99.993		
Ba	135	99.358		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.070		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.665		
U	238	99.406		
> Bi	209			100.470
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, August 24, 2015 12:39:54
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	44512.0	2.2				ug/L	43934	Standard
	Be	9	25.0	40.0	**0.0400**	0.016	40.2	ug/L	0	Standard
	Al	27	1336.7	30.6	**0.0085**	0.006	75.3	ug/L	410	Standard
	Sc	45	30208.4	3.2				ug/L	30379	Standard
	Ti	47	26.0	15.4	**0.0153**	0.018	116.6	ug/L	21	Standard
	V	51	1223.6	16.3	**-0.0192**	0.048	250.3	ug/L	1362	Standard
	Cr	52	7027.3	1.5	**-0.1821**	0.026	14.2	ug/L	8311	Standard
	Cr	53	498.3	15.2	**0.1568**	0.099	63.3	ug/L	325	Standard
	Mn	55	796.0	11.8	**0.0014**	0.025	1743.5	ug/L	694	Standard
	Co	59	288.7	33.4	**0.0185**	0.025	136.7	ug/L	199	Standard
	Ni	60	215.0	5.7	**-0.0468**	0.007	14.0	ug/L	212	Standard
	Cu	65	161.3	1.9	**-0.0010**	0.002	175.0	ug/L	149	Standard
	Zn	66	236.7	8.7	**-0.2597**	0.027	10.2	ug/L	206	Standard
>	**Ge**	72	317731.8	0.9				ug/L	319179	Standard
	As	75	-11.2	404.2	**0.0907**	0.053	58.0	ug/L	-51	Standard
	Se	82	25.8	18.7	**0.1264**	0.070	55.0	ug/L	19	Standard
	Se-1	77	101.3	6.4	**0.1595**	0.137	85.7	ug/L	89	Standard
>	**Ga**	71	21.7	26.6				mg/L	25	Standard
	Rb	85	26.7	28.6				ug/L	27	Standard
	Y	89	292631.1	1.8				ug/L	295132	Standard
>	**Rh**	103	20.0	25.0				ug/L	20	Standard
	Mo	98	144.2	44.3	**0.0834**	0.042	50.7	ug/L	11	Standard
	Ag	107	310.0	94.3	**0.0422**	0.053	126.3	ug/L	64	Standard
	Cd	111	69.2	110.1	**0.0372**	0.051	137.0	mg/L	7	Standard
	Cd	114	205.1	106.3	**0.0456**	0.055	121.5	ug/L	10	Standard
>	**In**	115	422761.7	1.1				ug/L	418014	Standard
	Sn	118	556.7	21.1	**0.0396**	0.023	57.8	ug/L	385	Standard
	Sb	123	1159.0	16.0	**0.2762**	0.043	15.6	ug/L	54	Standard
	Ba	135	163.7	87.0	**0.0545**	0.068	124.8	ug/L	44	Standard
	Ce	140	20.0	43.3				ug/L	33	Standard
>	**Tb**	159	866730.0	2.4				ug/L	854905	Standard
	Ho	165	8.3	91.7				ug/L	13	Standard
	Tl	203	352.7	118.5	**0.0503**	0.060	118.3	ug/L	4	Standard
	Tl	205	95.0	32.9	**0.0211**	0.006	30.6	ug/L	5	Standard
	Pb	206	360.7	52.5	**0.0249**	0.043	172.9	ug/L	182	Standard
	Pb	207	303.3	43.8	**0.0236**	0.034	142.4	ug/L	160	Standard
	Pb	208	906.7	25.0	**0.0115**	0.016	136.4	ug/L	604	Standard
	U	238	91.0	69.5	**0.0180**	0.013	70.8	ug/L	3	Standard
>	**Bi**	209	401173.1	0.6				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	46.7	93.6	**0.0028**	0.111	3927.3	mg/L	47	Standard
K	39	8.3	34.6	**-0.1403**	0.044	31.0	mg/L	22	Standard
Ca	43	35.0	37.8	**1.2945**	1.501	116.0	mg/L	28	Standard
Fe	54	76.0	20.5	**-0.0174**	0.041	233.6	mg/L	72	Standard
Fe	57	765.0	9.1	**-0.1048**	0.457	436.3	mg/L	703	Standard
> **Sc-1**	45	30208.4	3.2				mg/L	30379	Standard
Cl	35	13789.6	1.7				ug/L	14530	Standard
Kr	83	4.0	50.0				ug/L	5	Standard
Br	81	480.0	6.3				ug/L	497	Standard
P	31	10900.6	2.6				ug/L	10347	Standard
S	34	1608.4	8.9				ug/L	1535	Standard
Sr	88	190.0	14.7				ug/L	177	Standard
C	12	146.7	21.9				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	3.2	186.4				mg/L	7	Standard
Ho-1	165	8.3	91.7				mg/L	13	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	1825.1	6.8				mg/L	1945	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.546	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.136
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.466
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	
QC Std 7	Tl	203	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW B7 WG536161-03
Sample Date/Time: Monday, August 24, 2015 12:43:06
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	46120.1	1.3				ug/L	43934	Standard
	Be	9	10.0	50.0	**0.0144**	0.008	57.8	ug/L	0	Standard
	Al	27	9049.4	2.0	**0.1183**	0.004	3.5	ug/L	410	Standard
	Sc	45	31265.6	1.8				ug/L	30379	Standard
	Ti	47	23.7	28.8	**0.0011**	0.032	2876.5	ug/L	21	Standard
	V	51	1173.6	3.2	**-0.0400**	0.008	20.4	ug/L	1362	Standard
	Cr	52	7516.5	1.3	**-0.1409**	0.040	28.3	ug/L	8311	Standard
	Cr	53	431.7	18.8	**0.0425**	0.098	231.6	ug/L	325	Standard
	Mn	55	64132.5	1.5	**15.1589**	0.142	0.9	ug/L	694	Standard
	Co	59	225.0	5.0	**0.0002**	0.004	2220.1	ug/L	199	Standard
	Ni	60	644.3	1.1	**0.2164**	0.012	5.4	ug/L	212	Standard
	Cu	65	536.7	5.2	**0.2364**	0.019	8.2	ug/L	149	Standard
	Zn	66	1440.1	1.8	**1.0909**	0.051	4.6	ug/L	206	Standard
>	**Ge**	72	328938.7	1.9				ug/L	319179	Standard
	As	75	-18.9	82.3	**0.0829**	0.017	20.6	ug/L	-51	Standard
	Se	82	25.5	18.3	**0.1095**	0.058	52.7	ug/L	19	Standard
	Se-1	77	88.0	15.4	**-0.1662**	0.227	136.7	ug/L	89	Standard
>	**Ga**	71	46.7	12.4				mg/L	25	Standard
	Rb	85	136.7	8.4				ug/L	27	Standard
	Y	89	300575.8	1.4				ug/L	295132	Standard
>	**Rh**	103	23.3	75.3				ug/L	20	Standard
	Mo	98	37.1	24.1	**0.0102**	0.006	59.2	ug/L	11	Standard
	Ag	107	82.3	46.1	**0.0001**	0.007	11276.1	ug/L	64	Standard
	Cd	111	11.6	92.9	**-0.0018**	0.007	409.9	mg/L	7	Standard
	Cd	114	34.5	61.8	**0.0018**	0.005	309.6	ug/L	10	Standard
>	**In**	115	430388.7	0.5				ug/L	418014	Standard
	Sn	118	455.0	4.0	**0.0172**	0.003	19.6	ug/L	385	Standard
	Sb	123	135.2	9.3	**0.0188**	0.003	16.8	ug/L	54	Standard
	Ba	135	344.0	8.9	**0.1399**	0.015	10.4	ug/L	44	Standard
	Ce	140	338.3	9.0				ug/L	33	Standard
>	**Tb**	159	881771.3	0.4				ug/L	854905	Standard
	Ho	165	13.3	21.7				ug/L	13	Standard
	Tl	203	26.3	74.9	**0.0038**	0.003	71.9	ug/L	4	Standard
	Tl	205	15.0	0.0	**0.0046**	0.000	0.6	ug/L	5	Standard
	Pb	206	273.0	4.5	**0.0047**	0.002	47.5	ug/L	182	Standard
	Pb	207	237.3	2.3	**0.0067**	0.002	23.7	ug/L	160	Standard
	Pb	208	888.7	3.6	**0.0100**	0.002	16.2	ug/L	604	Standard
	U	238	12.3	73.6	**0.0022**	0.002	83.6	ug/L	3	Standard
>	**Bi**	209	402986.4	0.9				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	46.7	27.0	**-0.0009**	0.032	3774.5	mg/L	47	Standard
K	39	40.0	37.5	**0.2872**	0.212	73.7	mg/L	22	Standard
Ca	43	40.0	33.1	**1.7484**	1.531	87.6	mg/L	28	Standard
Fe	54	81.2	44.3	**-0.0133**	0.079	593.9	mg/L	72	Standard
Fe	57	773.4	4.1	**-0.2739**	0.211	77.1	mg/L	703	Standard
> **Sc-1**	45	31265.6	1.8				mg/L	30379	Standard
Cl	35	14043.8	2.5				ug/L	14530	Standard
Kr	83	5.7	44.4				ug/L	5	Standard
Br	81	520.0	6.9				ug/L	497	Standard
P	31	11107.4	3.7				ug/L	10347	Standard
S	34	1653.4	6.8				ug/L	1535	Standard
Sr	88	198.3	28.1				ug/L	177	Standard
C	12	140.0	28.6				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	13.0	46.6				mg/L	7	Standard
Ho-1	165	13.3	21.7				mg/L	13	Standard
Er	166	6.7	173.2				mg/L	3	Standard
I	127	8804.3	16.2				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.977	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.058	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.960
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.925
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW B7 WG536161-03
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Method 6020 - Summary Report

Sample ID: LCSW B7 WG536161-04
Sample Date/Time: Monday, August 24, 2015 12:46:17
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	46504.6	1.8				ug/L	43934	Standard
	Be	9	32013.8	2.9	**51.6268**	1.336	2.6	ug/L	0	Standard
	Al	27	8572.4	5.3	**0.1105**	0.009	7.9	ug/L	410	Standard
	Sc	45	31481.0	1.2				ug/L	30379	Standard
	Ti	47	29.7	10.8	**0.0300**	0.014	46.2	ug/L	21	Standard
	V	51	236802.4	1.0	**53.1220**	0.890	1.7	ug/L	1362	Standard
	Cr	52	313288.7	1.1	**52.4294**	1.118	2.1	ug/L	8311	Standard
	Cr	53	38813.1	5.0	**52.7217**	3.027	5.7	ug/L	325	Standard
	Mn	55	219400.8	0.8	**53.2108**	0.286	0.5	ug/L	694	Standard
	Co	59	209822.3	0.9	**52.5732**	0.930	1.8	ug/L	199	Standard
	Ni	60	81896.4	1.7	**51.7401**	1.440	2.8	ug/L	212	Standard
	Cu	65	80032.5	0.9	**52.1498**	0.779	1.5	ug/L	149	Standard
	Zn	66	45557.7	0.2	**51.8033**	0.462	0.9	ug/L	206	Standard
>	Ge	72	323524.1	1.1				ug/L	319179	Standard
	As	75	43966.3	1.3	**50.1933**	0.731	1.5	ug/L	-51	Standard
	Se	82	3688.0	1.5	**50.4258**	1.248	2.5	ug/L	19	Standard
	Se-1	77	2739.9	1.4	**51.3169**	1.278	2.5	ug/L	89	Standard
>	Ga	71	31.7	32.9				mg/L	25	Standard
	Rb	85	50.0	17.3				ug/L	27	Standard
	Y	89	296950.6	1.8				ug/L	295132	Standard
>	Rh	103	40.0	12.5				ug/L	20	Standard
	Mo	98	47.5	34.3	**0.0168**	0.011	63.6	ug/L	11	Standard
	Ag	107	277855.6	0.1	**50.2137**	0.234	0.5	ug/L	64	Standard
	Cd	111	77396.7	0.8	**51.1719**	0.274	0.5	mg/L	7	Standard
	Cd	114	200634.8	1.7	**50.4350**	0.848	1.7	ug/L	10	Standard
>	In	115	434659.1	0.4				ug/L	418014	Standard
	Sn	118	445.0	1.1	**0.0143**	0.001	6.4	ug/L	385	Standard
	Sb	123	212994.5	1.0	**52.0142**	0.531	1.0	ug/L	54	Standard
	Ba	135	105255.4	1.6	**49.8457**	0.672	1.3	ug/L	44	Standard
	Ce	140	243.3	19.7				ug/L	33	Standard
>	Tb	159	879975.5	0.9				ug/L	854905	Standard
	Ho	165	16.7	45.8				ug/L	13	Standard
	Tl	203	355169.6	0.3	**49.7994**	0.485	1.0	ug/L	4	Standard
	Tl	205	248457.8	2.0	**50.4336**	0.800	1.6	ug/L	5	Standard
	Pb	206	232964.7	0.9	**51.9658**	0.688	1.3	ug/L	182	Standard
	Pb	207	199274.6	1.0	**49.3847**	0.874	1.8	ug/L	160	Standard
	Pb	208	744263.5	0.5	**50.4144**	0.245	0.5	ug/L	604	Standard
	U	238	252318.8	1.3	**49.8857**	0.510	1.0	ug/L	3	Standard
>	Bi	209	407079.0	0.8				ug/L	395375	Standard

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Na	23	3.3	86.6	**-9.0905**	16.601	182.6	mg/L	0	Standard
Mg	24	50.0	20.0	**0.0062**	0.024	392.4	mg/L	47	Standard
K	39	18.3	15.7	**-0.0106**	0.041	384.8	mg/L	22	Standard
Ca	43	43.3	46.6	**2.0791**	2.250	108.2	mg/L	28	Standard
Fe	54	74.0	44.5	**-0.0301**	0.073	241.1	mg/L	72	Standard
Fe	57	718.4	10.3	**-0.8402**	0.768	91.4	mg/L	703	Standard
Sc-1	45	31481.0	1.2				mg/L	30379	Standard
Cl	35	14021.8	1.1				ug/L	14530	Standard
Kr	83	5.3	10.8				ug/L	5	Standard
Br	81	730.0	9.0				ug/L	497	Standard
P	31	11287.5	5.8				ug/L	10347	Standard
S	34	1573.4	6.3				ug/L	1535	Standard
Sr	88	175.0	14.8				ug/L	177	Standard
C	12	236.7	17.1				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	18.7	57.4				mg/L	7	Standard
Ho-1	165	16.7	45.8				mg/L	13	Standard
Er	166	26.7	78.1				mg/L	3	Standard
I	127	2765.3	4.9				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		105.852	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.361	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.982
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.960
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW B7 WG536161-04
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Method 6020 - Summary Report

Sample ID: L1508122021 WG536161-02
Sample Date/Time: Monday, August 24, 2015 12:49:29
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	46498.0	3.1				ug/L	43934	Standard
	Be	9	26.7	10.8	**0.0411**	0.006	14.4	ug/L	0	Standard
	Al	27	5120027.5	1.0	**72.8139**	2.840	3.9	ug/L	410	Standard
	Sc	45	31329.0	1.8				ug/L	30379	Standard
	Ti	47	194.0	48.1	**0.7769**	0.421	54.2	ug/L	21	Standard
	V	51	2012.6	7.4	**0.1503**	0.032	21.1	ug/L	1362	Standard
	Cr	52	11593.1	1.2	**0.5665**	0.017	2.9	ug/L	8311	Standard
	Cr	53	1393.4	15.3	**1.3590**	0.285	21.0	ug/L	325	Standard
	Mn	55	3319666.3	0.7	**802.2317**	1.388	0.2	ug/L	694	Standard
	Co	59	2509.2	4.7	**0.5695**	0.027	4.7	ug/L	199	Standard
	Ni	60	3214.3	1.6	**1.8379**	0.027	1.5	ug/L	212	Standard
	Cu	65	805.4	3.9	**0.4138**	0.018	4.4	ug/L	149	Standard
	Zn	66	3731.5	1.5	**3.7204**	0.078	2.1	ug/L	206	Standard
>	**Ge**	72	325791.8	0.5				ug/L	319179	Standard
	As	75	326.0	16.5	**0.4725**	0.059	12.5	ug/L	-51	Standard
	Se	82	161.3	5.4	**1.9647**	0.109	5.5	ug/L	19	Standard
	Se-1	77	164.3	2.9	**1.3235**	0.106	8.0	ug/L	89	Standard
>	**Ga**	71	95.0	39.7				mg/L	25	Standard
	Rb	85	2977.0	2.4				ug/L	27	Standard
	Y	89	302722.7	0.7				ug/L	295132	Standard
>	**Rh**	103	75.0	20.0				ug/L	20	Standard
	Mo	98	231.5	11.9	**0.1411**	0.019	13.4	ug/L	11	Standard
	Ag	107	195.3	106.9	**0.0209**	0.038	183.9	ug/L	64	Standard
	Cd	111	142.0	58.6	**0.0858**	0.056	65.3	mg/L	7	Standard
	Cd	114	273.2	65.0	**0.0627**	0.045	72.6	ug/L	10	Standard
>	**In**	115	428939.3	0.5				ug/L	418014	Standard
	Sn	118	565.0	10.7	**0.0398**	0.013	31.6	ug/L	385	Standard
	Sb	123	600.0	22.6	**0.1341**	0.034	25.3	ug/L	54	Standard
	Ba	135	115802.9	0.7	**55.5759**	0.198	0.4	ug/L	44	Standard
	Ce	140	3317.0	0.8				ug/L	33	Standard
>	**Tb**	159	878718.6	0.7				ug/L	854905	Standard
	Ho	165	126.7	13.9				ug/L	13	Standard
	Tl	203	294.7	95.6	**0.0423**	0.041	96.3	ug/L	4	Standard
	Tl	205	133.3	70.9	**0.0292**	0.020	68.1	ug/L	5	Standard
	Pb	206	436.0	25.6	**0.0422**	0.026	62.6	ug/L	182	Standard
	Pb	207	374.3	28.9	**0.0417**	0.028	67.7	ug/L	160	Standard
	Pb	208	1256.0	16.8	**0.0358**	0.015	43.3	ug/L	604	Standard
	U	238	1631.4	3.9	**0.3276**	0.017	5.1	ug/L	3	Standard
>	**Bi**	209	400625.6	1.2				ug/L	395375	Standard

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Na	23	3.3	173.2	**-8.7516**	32.608	372.6	mg/L	0	Standard
Mg	24	3670.4	1.1	**8.7339**	0.212	2.4	mg/L	47	Standard
K	39	216.7	13.5	**2.6792**	0.344	12.8	mg/L	22	Standard
Ca	43	378.3	23.0	**39.7113**	9.335	23.5	mg/L	28	Standard
Fe	54	123.8	30.4	**0.0833**	0.086	102.7	mg/L	72	Standard
Fe	57	891.7	13.2	**0.8433**	1.140	135.1	mg/L	703	Standard
> **Sc-1**	45	31329.0	1.8				mg/L	30379	Standard
Cl	35	16335.5	2.6				ug/L	14530	Standard
Kr	83	5.7	50.9				ug/L	5	Standard
Br	81	9963.3	6.5				ug/L	497	Standard
P	31	12423.4	0.9				ug/L	10347	Standard
S	34	1675.1	1.5				ug/L	1535	Standard
Sr	88	216.7	17.5				ug/L	177	Standard
C	12	570.0	14.0				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	140.0	22.8				mg/L	7	Standard
Ho-1	165	126.7	13.9				mg/L	13	Standard
Er	166	140.0	21.4				mg/L	3	Standard
I	127	46384.2	0.8				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.837	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.072	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.614
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.328
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508122021DP WG536161-07
Sample Date/Time: Monday, August 24, 2015 12:52:41
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	46457.8	0.8				ug/L	43934	Standard
	Be	9	25.0	91.7	**0.0386**	0.037	97.0	ug/L	0	Standard
	Al	27	5048969.4	1.9	**71.8112**	1.490	2.1	ug/L	410	Standard
	Sc	45	32045.5	0.6				ug/L	30379	Standard
	Ti	47	88.7	15.3	**0.3026**	0.059	19.5	ug/L	21	Standard
	V	51	1778.3	5.0	**0.1029**	0.020	19.5	ug/L	1362	Standard
	Cr	52	10951.3	0.7	**0.4805**	0.021	4.3	ug/L	8311	Standard
	Cr	53	1636.8	11.7	**1.7175**	0.242	14.1	ug/L	325	Standard
	Mn	55	3334918.8	0.9	**816.0662**	11.136	1.4	ug/L	694	Standard
	Co	59	2465.5	2.0	**0.5664**	0.017	3.1	ug/L	199	Standard
	Ni	60	3031.3	1.9	**1.7465**	0.024	1.4	ug/L	212	Standard
	Cu	65	846.4	5.5	**0.4474**	0.031	7.0	ug/L	149	Standard
	Zn	66	2909.6	2.9	**2.8250**	0.131	4.6	ug/L	206	Standard
>	**Ge**	72	321767.0	1.1				ug/L	319179	Standard
	As	75	309.4	13.3	**0.4580**	0.043	9.5	ug/L	-51	Standard
	Se	82	161.7	6.8	**1.9976**	0.135	6.7	ug/L	19	Standard
	Se-1	77	151.0	9.9	**1.1029**	0.292	26.5	ug/L	89	Standard
>	**Ga**	71	48.3	6.0				mg/L	25	Standard
	Rb	85	2720.2	4.8				ug/L	27	Standard
	Y	89	300127.0	1.2				ug/L	295132	Standard
>	**Rh**	103	78.3	19.5				ug/L	20	Standard
	Mo	98	206.6	7.1	**0.1238**	0.011	8.8	ug/L	11	Standard
	Ag	107	116.0	27.1	**0.0062**	0.006	93.4	ug/L	64	Standard
	Cd	111	128.2	22.0	**0.0760**	0.019	24.8	mg/L	7	Standard
	Cd	114	305.6	22.1	**0.0705**	0.017	23.9	ug/L	10	Standard
>	**In**	115	430841.2	0.9				ug/L	418014	Standard
	Sn	118	475.0	10.0	**0.0212**	0.010	48.7	ug/L	385	Standard
	Sb	123	392.5	8.3	**0.0822**	0.008	9.3	ug/L	54	Standard
	Ba	135	115477.7	0.3	**55.1781**	0.527	1.0	ug/L	44	Standard
	Ce	140	2438.5	4.3				ug/L	33	Standard
>	**Tb**	159	868381.1	0.9				ug/L	854905	Standard
	Ho	165	58.3	26.2				ug/L	13	Standard
	Tl	203	160.7	18.1	**0.0232**	0.004	18.7	ug/L	4	Standard
	Tl	205	131.7	25.8	**0.0288**	0.007	23.3	ug/L	5	Standard
	Pb	206	432.3	4.2	**0.0419**	0.005	12.3	ug/L	182	Standard
	Pb	207	345.3	7.0	**0.0348**	0.006	17.5	ug/L	160	Standard
	Pb	208	1362.7	6.7	**0.0437**	0.007	15.6	ug/L	604	Standard
	U	238	1708.8	0.6	**0.3454**	0.006	1.6	ug/L	3	Standard
>	**Bi**	209	397865.2	1.2				ug/L	395375	Standard

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Na	23	5.0	100.0	**-18.1434**	28.329	156.1	mg/L	0	Standard
Mg	24	3713.8	0.6	**8.6359**	0.034	0.4	mg/L	47	Standard
K	39	136.7	21.1	**1.5541**	0.372	24.0	mg/L	22	Standard
Ca	43	333.3	11.3	**33.8686**	4.001	11.8	mg/L	28	Standard
Fe	54	75.5	37.0	**-0.0296**	0.061	205.4	mg/L	72	Standard
Fe	57	958.4	8.0	**1.2763**	0.759	59.5	mg/L	703	Standard
Sc-1	45	32045.5	0.6				mg/L	30379	Standard
Cl	35	17358.6	2.2				ug/L	14530	Standard
Kr	83	5.0	34.6				ug/L	5	Standard
Br	81	9182.8	5.4				ug/L	497	Standard
P	31	12431.8	1.9				ug/L	10347	Standard
S	34	1701.8	3.0				ug/L	1535	Standard
Sr	88	200.0	10.9				ug/L	177	Standard
C	12	463.3	12.5				mg/L	153	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	3	Standard
Dy	164	87.6	51.3				mg/L	7	Standard
Ho-1	165	58.3	26.2				mg/L	13	Standard
Er	166	120.0	36.3				mg/L	3	Standard
I	127	46671.8	3.9				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.745	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.811	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.069
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.630
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1508122021DP WG536161-07
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Method 6020 - Summary Report

Sample ID: L1508107304 WG536161-01
Sample Date/Time: Monday, August 24, 2015 12:55:52
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49278.4	3.2				ug/L	43934	Standard
	Be	9	11.7	24.7	**0.0157**	0.004	24.1	ug/L	0	Standard
	Al	27	3278939.7	2.1	**43.9729**	0.717	1.6	ug/L	410	Standard
	Sc	45	31604.6	4.2				ug/L	30379	Standard
	Ti	47	69.3	14.2	**0.2175**	0.046	21.4	ug/L	21	Standard
	V	51	1708.4	3.7	**0.0914**	0.013	14.3	ug/L	1362	Standard
	Cr	52	9957.6	2.4	**0.3281**	0.038	11.5	ug/L	8311	Standard
	Cr	53	2937.0	1.0	**3.5580**	0.025	0.7	ug/L	325	Standard
	Mn	55	41127.7	0.4	**9.9836**	0.062	0.6	ug/L	694	Standard
	Co	59	884.7	2.5	**0.1702**	0.006	3.5	ug/L	199	Standard
	Ni	60	1238.4	0.6	**0.6127**	0.007	1.1	ug/L	212	Standard
	Cu	65	2411.9	2.9	**1.4930**	0.050	3.4	ug/L	149	Standard
	Zn	66	1478.7	2.8	**1.1906**	0.043	3.6	ug/L	206	Standard
>	**Ge**	72	318170.7	0.4				ug/L	319179	Standard
	As	75	195.5	15.0	**0.3303**	0.034	10.3	ug/L	-51	Standard
	Se	82	101.5	3.5	**1.1826**	0.048	4.1	ug/L	19	Standard
	Se-1	77	174.3	13.6	**1.5966**	0.470	29.4	ug/L	89	Standard
>	**Ga**	71	36.7	20.8				mg/L	25	Standard
	Rb	85	856.7	5.9				ug/L	27	Standard
	Y	89	294315.0	1.9				ug/L	295132	Standard
>	**Rh**	103	63.3	32.9				ug/L	20	Standard
	Mo	98	58.8	27.1	**0.0247**	0.010	42.2	ug/L	11	Standard
	Ag	107	79.3	36.6	**-0.0005**	0.005	1009.3	ug/L	64	Standard
	Cd	111	49.2	28.4	**0.0233**	0.009	39.1	mg/L	7	Standard
	Cd	114	150.6	38.2	**0.0312**	0.014	46.1	ug/L	10	Standard
>	**In**	115	430611.6	0.6				ug/L	418014	Standard
	Sn	118	848.4	1.4	**0.0966**	0.002	2.5	ug/L	385	Standard
	Sb	123	120.5	20.8	**0.0152**	0.006	39.9	ug/L	54	Standard
	Ba	135	5999.2	1.4	**2.8447**	0.058	2.0	ug/L	44	Standard
	Ce	140	143.3	23.2				ug/L	33	Standard
>	**Tb**	159	867390.8	0.4				ug/L	854905	Standard
	Ho	165	8.3	91.7				ug/L	13	Standard
	Tl	203	85.3	81.8	**0.0124**	0.010	81.1	ug/L	4	Standard
	Tl	205	38.3	30.1	**0.0094**	0.002	25.1	ug/L	5	Standard
	Pb	206	234.0	12.5	**-0.0035**	0.007	188.5	ug/L	182	Standard
	Pb	207	210.0	7.0	**0.0004**	0.004	1028.4	ug/L	160	Standard
	Pb	208	775.0	2.8	**0.0028**	0.002	58.9	ug/L	604	Standard
	U	238	2583.6	1.0	**0.5213**	0.007	1.4	ug/L	3	Standard
>	**Bi**	209	398703.8	0.5				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	9264.5	0.8	**22.0430**	0.917	4.2	mg/L	47	Standard
K	39	21.7	66.6	**0.0326**	0.194	596.1	mg/L	22	Standard
Ca	43	106.7	17.7	**9.1317**	2.191	24.0	mg/L	28	Standard
Fe	54	65.9	45.0	**-0.0502**	0.059	117.9	mg/L	72	Standard
Fe	57	856.7	7.1	**0.4384**	0.518	118.1	mg/L	703	Standard
> **Sc-1**	45	31604.6	4.2				mg/L	30379	Standard
Cl	35	18104.1	1.6				ug/L	14530	Standard
Kr	83	2.7	57.3				ug/L	5	Standard
Br	81	5290.9	12.1				ug/L	497	Standard
P	31	12149.9	0.6				ug/L	10347	Standard
S	34	1675.1	3.4				ug/L	1535	Standard
Sr	88	256.7	22.7				ug/L	177	Standard
C	12	286.7	13.2				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	23.0	68.2				mg/L	7	Standard
Ho-1	165	8.3	91.7				mg/L	13	Standard
Er	166	6.7	173.2				mg/L	3	Standard
I	127	250274.8	3.2				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.165	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.684	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.014
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.842
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 25, 2015

Method 6020 - Summary Report

Sample ID: L1508107304S WG536161-05
Sample Date/Time: Monday, August 24, 2015 12:59:03
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	47778.6	1.6				ug/L	43934	Standard
	Be	9	6363.0	3.2	**9.9879**	0.372	3.7	ug/L	0	Standard
	Al	27	3122034.7	0.7	**43.1786**	0.816	1.9	ug/L	410	Standard
	Sc	45	30757.9	2.6				ug/L	30379	Standard
	Ti	47	55.3	12.0	**0.1547**	0.032	21.0	ug/L	21	Standard
	V	51	48625.8	2.1	**10.9624**	0.136	1.2	ug/L	1362	Standard
	Cr	52	69563.0	0.9	**10.8654**	0.316	2.9	ug/L	8311	Standard
	Cr	53	10315.2	3.5	**13.9995**	0.753	5.4	ug/L	325	Standard
	Mn	55	82529.8	1.3	**20.4365**	0.516	2.5	ug/L	694	Standard
	Co	59	41233.4	0.7	**10.5642**	0.114	1.1	ug/L	199	Standard
	Ni	60	16863.0	1.8	**10.7945**	0.360	3.3	ug/L	212	Standard
	Cu	65	15747.5	0.8	**10.4518**	0.264	2.5	ug/L	149	Standard
	Zn	66	10585.7	1.3	**11.9508**	0.092	0.8	ug/L	206	Standard
>	**Ge**	72	315081.0	1.7				ug/L	319179	Standard
	As	75	8913.5	1.6	**10.5340**	0.332	3.2	ug/L	-51	Standard
	Se	82	823.2	1.8	**11.3785**	0.396	3.5	ug/L	19	Standard
	Se-1	77	670.7	4.3	**11.5226**	0.730	6.3	ug/L	89	Standard
>	**Ga**	71	23.3	53.9				mg/L	25	Standard
	Rb	85	843.4	7.4				ug/L	27	Standard
	Y	89	294851.9	1.8				ug/L	295132	Standard
>	**Rh**	103	80.0	28.6				ug/L	20	Standard
	Mo	98	49.8	17.4	**0.0190**	0.006	29.3	ug/L	11	Standard
	Ag	107	49561.3	0.7	**9.1113**	0.185	2.0	ug/L	64	Standard
	Cd	111	15426.1	1.7	**10.3801**	0.126	1.2	mg/L	7	Standard
	Cd	114	40824.3	3.2	**10.4454**	0.251	2.4	ug/L	10	Standard
>	**In**	115	426839.6	2.4				ug/L	418014	Standard
	Sn	118	400.0	13.2	**0.0066**	0.010	145.1	ug/L	385	Standard
	Sb	123	42678.2	0.5	**10.6049**	0.210	2.0	ug/L	54	Standard
	Ba	135	26130.8	0.4	**12.5880**	0.300	2.4	ug/L	44	Standard
	Ce	140	98.3	11.7				ug/L	33	Standard
>	**Tb**	159	858210.4	2.7				ug/L	854905	Standard
	Ho	165	13.3	57.3				ug/L	13	Standard
	Tl	203	69839.9	0.8	**10.0970**	0.182	1.8	ug/L	4	Standard
	Tl	205	48671.4	1.6	**10.1906**	0.332	3.3	ug/L	5	Standard
	Pb	206	45351.4	1.3	**10.3839**	0.069	0.7	ug/L	182	Standard
	Pb	207	39084.0	1.0	**9.9439**	0.139	1.4	ug/L	160	Standard
	Pb	208	145826.6	0.1	**10.1450**	0.194	1.9	ug/L	604	Standard
	U	238	52487.1	2.1	**10.7030**	0.415	3.9	ug/L	3	Standard
>	**Bi**	209	394861.4	1.8				ug/L	395375	Standard

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Na	23	5.0	100.0	**-19.6376**	29.561	150.5	mg/L	0	Standard
Mg	24	9041.0	3.4	**22.0917**	1.037	4.7	mg/L	47	Standard
K	39	21.7	53.3	**0.0385**	0.150	389.2	mg/L	22	Standard
Ca	43	71.7	24.5	**5.4747**	2.216	40.5	mg/L	28	Standard
Fe	54	82.1	10.8	**-0.0074**	0.020	269.4	mg/L	72	Standard
Fe	57	861.7	5.8	**0.7205**	0.702	97.4	mg/L	703	Standard
> **Sc-1**	45	30757.9	2.6				mg/L	30379	Standard
Cl	35	18245.6	1.7				ug/L	14530	Standard
Kr	83	4.7	32.7				ug/L	5	Standard
Br	81	5174.2	4.7				ug/L	497	Standard
P	31	11817.9	0.7				ug/L	10347	Standard
S	34	1671.8	7.4				ug/L	1535	Standard
Sr	88	221.7	12.4				ug/L	177	Standard
C	12	340.0	15.3				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	-0.6	86.6				mg/L	7	Standard
Ho-1	165	13.3	57.3				mg/L	13	Standard
Er	166	13.3	86.6				mg/L	3	Standard
I	127	198076.0	6.0				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.752	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.716	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.111	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.870	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 25, 2015

Method 6020 - Summary Report

Sample ID: L1508107304SD WG536161-06
Sample Date/Time: Monday, August 24, 2015 13:02:15
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49219.9	2.7				ug/L	43934	Standard
	Be	9	6399.7	1.3	**9.7561**	0.394	4.0	ug/L	0	Standard
	Al	27	3271573.0	0.4	**43.9370**	1.303	3.0	ug/L	410	Standard
	Sc	45	31435.9	1.9				ug/L	30379	Standard
	Ti	47	78.7	15.4	**0.2594**	0.058	22.3	ug/L	21	Standard
	V	51	47975.8	0.9	**10.6517**	0.151	1.4	ug/L	1362	Standard
	Cr	52	68942.5	0.6	**10.5768**	0.101	1.0	ug/L	8311	Standard
	Cr	53	10311.8	3.7	**13.7786**	0.604	4.4	ug/L	325	Standard
	Mn	55	82880.1	0.9	**20.2192**	0.089	0.4	ug/L	694	Standard
	Co	59	41081.0	0.4	**10.3708**	0.026	0.2	ug/L	199	Standard
	Ni	60	16568.7	0.8	**10.4436**	0.125	1.2	ug/L	212	Standard
	Cu	65	15588.7	1.3	**10.1911**	0.086	0.8	ug/L	149	Standard
	Zn	66	10402.6	1.5	**11.5563**	0.132	1.1	ug/L	206	Standard
>	**Ge**	72	319701.4	0.5				ug/L	319179	Standard
	As	75	8869.3	1.6	**10.3293**	0.207	2.0	ug/L	-51	Standard
	Se	82	828.6	3.0	**11.2833**	0.403	3.6	ug/L	19	Standard
	Se-1	77	710.0	5.5	**12.0983**	0.836	6.9	ug/L	89	Standard
>	**Ga**	71	38.3	27.2				mg/L	25	Standard
	Rb	85	793.4	6.2				ug/L	27	Standard
	Y	89	298313.1	0.3				ug/L	295132	Standard
>	**Rh**	103	71.7	8.1				ug/L	20	Standard
	Mo	98	56.9	16.1	**0.0239**	0.006	24.7	ug/L	11	Standard
	Ag	107	52331.6	0.3	**9.6423**	0.089	0.9	ug/L	64	Standard
	Cd	111	15261.6	1.2	**10.2939**	0.205	2.0	mg/L	7	Standard
	Cd	114	39498.3	1.6	**10.1313**	0.243	2.4	ug/L	10	Standard
>	**In**	115	425803.0	0.8				ug/L	418014	Standard
	Sn	118	426.7	5.8	**0.0124**	0.006	45.4	ug/L	385	Standard
	Sb	123	42779.0	0.3	**10.6529**	0.063	0.6	ug/L	54	Standard
	Ba	135	25939.5	1.4	**12.5229**	0.275	2.2	ug/L	44	Standard
	Ce	140	125.0	14.4				ug/L	33	Standard
>	**Tb**	159	861620.4	0.6				ug/L	854905	Standard
	Ho	165	13.3	43.3				ug/L	13	Standard
	Tl	203	69635.7	1.0	**9.8964**	0.192	1.9	ug/L	4	Standard
	Tl	205	48303.6	2.6	**9.9407**	0.337	3.4	ug/L	5	Standard
	Pb	206	45493.9	0.9	**10.2389**	0.052	0.5	ug/L	182	Standard
	Pb	207	38840.7	0.6	**9.7130**	0.134	1.4	ug/L	160	Standard
	Pb	208	144050.9	0.8	**9.8489**	0.136	1.4	ug/L	604	Standard
	U	238	52237.2	0.9	**10.4673**	0.102	1.0	ug/L	3	Standard
>	**Bi**	209	401656.8	1.0				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	9181.1	5.3	**21.9557**	1.547	7.0	mg/L	47	Standard
K	39	20.0	25.0	**0.0113**	0.063	554.4	mg/L	22	Standard
Ca	43	121.7	2.4	**10.8635**	0.095	0.9	mg/L	28	Standard
Fe	54	66.0	42.4	**-0.0467**	0.066	140.3	mg/L	72	Standard
Fe	57	815.0	13.9	**0.0880**	1.115	1266.5	mg/L	703	Standard
> **Sc-1**	45	31435.9	1.9				mg/L	30379	Standard
Cl	35	18375.1	1.2				ug/L	14530	Standard
Kr	83	2.7	78.1				ug/L	5	Standard
Br	81	7982.1	3.3				ug/L	497	Standard
P	31	12365.0	1.9				ug/L	10347	Standard
S	34	1563.4	5.8				ug/L	1535	Standard
Sr	88	233.3	10.1				ug/L	177	Standard
C	12	246.7	16.9				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	22.2	69.0				mg/L	7	Standard
Ho-1	165	13.3	43.3				mg/L	13	Standard
Er	166	23.3	24.7				mg/L	3	Standard
I	127	121103.8	1.6				mg/L	1945	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		112.032	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.164	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1508107304SD WG536161-06
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.863
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.589
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 25, 2015

Method 6020 - Summary Report

Sample ID: L1508077605
Sample Date/Time: Monday, August 24, 2015 13:05:27
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	47255.3	4.6				ug/L	43934	Standard
	Be	9	101.7	15.0	**0.1592**	0.022	14.0	ug/L	0	Standard
	Al	27	1796421.1	1.1	**25.1378**	0.892	3.5	ug/L	410	Standard
	Sc	45	30853.1	1.7				ug/L	30379	Standard
	Ti	47	280.0	35.7	**1.1913**	0.459	38.5	ug/L	21	Standard
	V	51	1884.9	10.7	**0.1292**	0.045	35.0	ug/L	1362	Standard
	Cr	52	10457.6	10.0	**0.4045**	0.184	45.4	ug/L	8311	Standard
	Cr	53	4930.8	4.2	**6.2976**	0.292	4.6	ug/L	325	Standard
	Mn	55	223200.2	1.4	**54.7119**	0.759	1.4	ug/L	694	Standard
	Co	59	16230.4	2.0	**4.0583**	0.068	1.7	ug/L	199	Standard
	Ni	60	2586.9	2.2	**1.4719**	0.041	2.8	ug/L	212	Standard
	Cu	65	652.0	8.0	**0.3219**	0.033	10.3	ug/L	149	Standard
	Zn	66	3487.4	3.6	**3.5120**	0.134	3.8	ug/L	206	Standard
>	**Ge**	72	320121.8	0.3				ug/L	319179	Standard
	As	75	95.0	57.2	**0.2132**	0.062	29.2	ug/L	-51	Standard
	Se	82	63.8	9.0	**0.6500**	0.079	12.2	ug/L	19	Standard
	Se-1	77	242.0	7.3	**2.9012**	0.334	11.5	ug/L	89	Standard
>	**Ga**	71	95.0	5.3				mg/L	25	Standard
	Rb	85	19914.7	2.1				ug/L	27	Standard
	Y	89	312879.4	1.2				ug/L	295132	Standard
>	**Rh**	103	23.3	49.5				ug/L	20	Standard
	Mo	98	25.1	20.6	**0.0023**	0.004	156.3	ug/L	11	Standard
	Ag	107	78.0	17.3	**-0.0007**	0.002	365.0	ug/L	64	Standard
	Cd	111	36.9	2.7	**0.0153**	0.000	3.2	mg/L	7	Standard
	Cd	114	115.6	18.5	**0.0225**	0.006	24.7	ug/L	10	Standard
>	**In**	115	427581.9	0.8				ug/L	418014	Standard
	Sn	118	413.3	8.9	**0.0093**	0.008	84.7	ug/L	385	Standard
	Sb	123	99.1	5.7	**0.0101**	0.002	15.7	ug/L	54	Standard
	Ba	135	124200.0	0.6	**59.7978**	0.204	0.3	ug/L	44	Standard
	Ce	140	27097.5	1.6				ug/L	33	Standard
>	**Tb**	159	850406.0	1.6				ug/L	854905	Standard
	Ho	165	1680.1	6.9				ug/L	13	Standard
	Tl	203	224.3	6.8	**0.0324**	0.002	7.7	ug/L	4	Standard
	Tl	205	141.7	8.9	**0.0310**	0.003	8.9	ug/L	5	Standard
	Pb	206	378.7	6.6	**0.0298**	0.006	21.6	ug/L	182	Standard
	Pb	207	310.3	5.2	**0.0261**	0.005	19.3	ug/L	160	Standard
	Pb	208	1259.7	4.6	**0.0366**	0.003	8.2	ug/L	604	Standard
	U	238	104.7	15.9	**0.0209**	0.003	15.0	ug/L	3	Standard
>	**Bi**	209	397282.3	1.2				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	8305.6	2.7	**20.2102**	0.411	2.0	mg/L	47	Standard
K	39	165.0	16.0	**2.0188**	0.389	19.3	mg/L	22	Standard
Ca	43	66.7	58.3	**4.7980**	4.281	89.2	mg/L	28	Standard
Fe	54	175.8	14.0	**0.2070**	0.059	28.3	mg/L	72	Standard
Fe	57	803.4	9.2	**0.1259**	0.830	658.8	mg/L	703	Standard
> **Sc-1**	45	30853.1	1.7				mg/L	30379	Standard
Cl	35	17406.0	1.8				ug/L	14530	Standard
Kr	83	4.7	44.6				ug/L	5	Standard
Br	81	2790.3	3.4				ug/L	497	Standard
P	31	11831.3	1.9				ug/L	10347	Standard
S	34	1646.8	5.5				ug/L	1535	Standard
Sr	88	175.0	7.6				ug/L	177	Standard
C	12	280.0	12.4				mg/L	153	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	3	Standard
Dy	164	2544.7	7.9				mg/L	7	Standard
Ho-1	165	1680.1	6.9				mg/L	13	Standard
Er	166	1646.8	6.7				mg/L	3	Standard
I	127	98898.4	0.8				mg/L	1945	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		107.561	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.295	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1508077605
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.289
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.482
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 25, 2015

Method 6020 - Summary Report

Sample ID: L1508077605PS WG536244-01
Sample Date/Time: Monday, August 24, 2015 13:08:38
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	47693.3	2.4				ug/L	43934	Standard
	Be	9	32882.3	1.5	**51.7350**	1.976	3.8	ug/L	0	Standard
	Al	27	1776782.9	1.2	**24.6188**	0.742	3.0	ug/L	410	Standard
	Sc	45	31816.7	0.4				ug/L	30379	Standard
	Ti	47	236.7	30.6	**0.9768**	0.323	33.1	ug/L	21	Standard
	V	51	235468.6	0.3	**52.7340**	0.366	0.7	ug/L	1362	Standard
	Cr	52	312649.4	1.7	**52.2260**	0.673	1.3	ug/L	8311	Standard
	Cr	53	43011.0	1.8	**58.3689**	0.607	1.0	ug/L	325	Standard
	Mn	55	441063.3	1.3	**106.9949**	0.880	0.8	ug/L	694	Standard
	Co	59	225676.7	0.9	**56.4541**	0.176	0.3	ug/L	199	Standard
	Ni	60	83902.4	1.3	**52.9166**	0.273	0.5	ug/L	212	Standard
	Cu	65	80331.1	0.9	**52.2593**	0.569	1.1	ug/L	149	Standard
	Zn	66	48581.1	1.0	**55.1845**	0.082	0.1	ug/L	206	Standard
>	**Ge**	72	324038.3	1.0				ug/L	319179	Standard
	As	75	45215.2	0.5	**51.5334**	0.261	0.5	ug/L	-51	Standard
	Se	82	3812.9	1.0	**52.0567**	1.047	2.0	ug/L	19	Standard
	Se-1	77	2941.6	0.8	**55.1343**	0.783	1.4	ug/L	89	Standard
>	**Ga**	71	110.0	25.3				mg/L	25	Standard
	Rb	85	19986.5	0.8				ug/L	27	Standard
	Y	89	310378.8	1.3				ug/L	295132	Standard
>	**Rh**	103	43.3	33.3				ug/L	20	Standard
	Mo	98	33.3	14.6	**0.0077**	0.003	40.8	ug/L	11	Standard
	Ag	107	275015.6	0.8	**50.2673**	0.650	1.3	ug/L	64	Standard
	Cd	111	77166.3	0.8	**51.6029**	0.708	1.4	mg/L	7	Standard
	Cd	114	202562.3	2.8	**51.5059**	1.752	3.4	ug/L	10	Standard
>	**In**	115	429773.2	0.6				ug/L	418014	Standard
	Sn	118	508.3	7.5	**0.0281**	0.008	28.6	ug/L	385	Standard
	Sb	123	209164.2	1.2	**51.6584**	0.331	0.6	ug/L	54	Standard
	Ba	135	229436.5	0.7	**109.9259**	1.273	1.2	ug/L	44	Standard
	Ce	140	28176.2	1.8				ug/L	33	Standard
>	**Tb**	159	866982.4	1.7				ug/L	854905	Standard
	Ho	165	1751.8	3.4				ug/L	13	Standard
	Tl	203	360634.1	0.5	**51.1958**	0.447	0.9	ug/L	4	Standard
	Tl	205	247476.7	1.5	**50.8656**	0.909	1.8	ug/L	5	Standard
	Pb	206	224651.6	1.0	**50.7325**	0.348	0.7	ug/L	182	Standard
	Pb	207	202889.1	1.0	**50.9045**	0.287	0.6	ug/L	160	Standard
	Pb	208	743279.9	0.8	**50.9758**	0.229	0.4	ug/L	604	Standard
	U	238	255626.6	1.3	**51.1700**	0.441	0.9	ug/L	3	Standard
>	**Bi**	209	402056.0	0.4				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	8514.1	0.7	**20.0899**	0.164	0.8	mg/L	47	Standard
K	39	150.0	23.3	**1.7458**	0.462	26.5	mg/L	22	Standard
Ca	43	73.3	15.7	**5.3503**	1.292	24.2	mg/L	28	Standard
Fe	54	183.0	13.1	**0.2107**	0.054	25.7	mg/L	72	Standard
Fe	57	916.7	7.1	**0.9452**	0.590	62.4	mg/L	703	Standard
> **Sc-1**	45	31816.7	0.4				mg/L	30379	Standard
Cl	35	17034.9	0.8				ug/L	14530	Standard
Kr	83	4.0	25.0				ug/L	5	Standard
Br	81	2853.6	3.8				ug/L	497	Standard
P	31	12021.4	3.0				ug/L	10347	Standard
S	34	1675.1	8.2				ug/L	1535	Standard
Sr	88	201.7	15.7				ug/L	177	Standard
C	12	333.3	37.7				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	99.0				mg/L	3	Standard
Dy	164	2529.1	4.3				mg/L	7	Standard
Ho-1	165	1751.8	3.4				mg/L	13	Standard
Er	166	1623.4	2.9				mg/L	3	Standard
I	127	101115.1	4.5				mg/L	1945	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		108.558	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.522	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	102.813
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.690
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1508077605SDL WG536244-02
Sample Date/Time: Monday, August 24, 2015 13:11:50
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48071.2	4.7				ug/L	43934	Standard
	Be	9	21.7	35.3	**0.0316**	0.011	33.6	ug/L	0	Standard
	Al	27	357966.1	2.6	**4.9131**	0.119	2.4	ug/L	410	Standard
	Sc	45	31521.1	0.6				ug/L	30379	Standard
	Ti	47	68.3	66.7	**0.2058**	0.206	100.1	ug/L	21	Standard
	V	51	1366.7	8.7	**0.0074**	0.030	401.8	ug/L	1362	Standard
	Cr	52	9103.1	1.3	**0.1493**	0.014	9.4	ug/L	8311	Standard
	Cr	53	1536.7	8.0	**1.5663**	0.189	12.0	ug/L	325	Standard
	Mn	55	47527.4	2.1	**11.3517**	0.352	3.1	ug/L	694	Standard
	Co	59	3549.4	0.7	**0.8331**	0.011	1.3	ug/L	199	Standard
	Ni	60	732.0	2.6	**0.2777**	0.017	6.0	ug/L	212	Standard
	Cu	65	270.3	5.2	**0.0678**	0.008	11.1	ug/L	149	Standard
	Zn	66	2019.8	1.3	**1.7790**	0.023	1.3	ug/L	206	Standard
>	**Ge**	72	324181.6	1.0				ug/L	319179	Standard
	As	75	-6.5	243.4	**0.0966**	0.018	18.6	ug/L	-51	Standard
	Se	82	31.3	2.4	**0.1939**	0.015	7.5	ug/L	19	Standard
	Se-1	77	120.3	11.3	**0.4872**	0.262	53.8	ug/L	89	Standard
>	**Ga**	71	35.0	28.6				mg/L	25	Standard
	Rb	85	3960.5	3.4				ug/L	27	Standard
	Y	89	301711.6	1.7				ug/L	295132	Standard
>	**Rh**	103	20.0	43.3				ug/L	20	Standard
	Mo	98	25.5	18.1	**0.0023**	0.003	128.7	ug/L	11	Standard
	Ag	107	79.7	15.6	**-0.0006**	0.002	385.5	ug/L	64	Standard
	Cd	111	16.3	30.4	**0.0013**	0.003	248.0	mg/L	7	Standard
	Cd	114	51.7	46.9	**0.0060**	0.006	101.2	ug/L	10	Standard
>	**In**	115	433886.0	0.6				ug/L	418014	Standard
	Sn	118	435.0	12.4	**0.0124**	0.010	83.2	ug/L	385	Standard
	Sb	123	750.1	12.6	**0.1690**	0.023	13.8	ug/L	54	Standard
	Ba	135	25135.8	0.9	**11.9063**	0.081	0.7	ug/L	44	Standard
	Ce	140	5461.0	1.6				ug/L	33	Standard
>	**Tb**	159	868714.4	1.4				ug/L	854905	Standard
	Ho	165	358.3	14.0				ug/L	13	Standard
	Tl	203	86.3	15.7	**0.0123**	0.002	15.6	ug/L	4	Standard
	Tl	205	38.3	45.8	**0.0093**	0.004	38.9	ug/L	5	Standard
	Pb	206	249.0	6.0	**-0.0010**	0.003	302.7	ug/L	182	Standard
	Pb	207	218.7	9.9	**0.0018**	0.006	325.6	ug/L	160	Standard
	Pb	208	843.7	6.7	**0.0066**	0.003	52.1	ug/L	604	Standard
	U	238	37.7	12.3	**0.0072**	0.001	12.3	ug/L	3	Standard
>	**Bi**	209	404800.8	0.8				ug/L	395375	Standard

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Na	23	1.7	173.2	**0.5931**	16.422	2768.7	mg/L	0	Standard
Mg	24	1643.4	6.8	**3.8218**	0.250	6.5	mg/L	47	Standard
K	39	46.7	52.9	**0.3721**	0.337	90.4	mg/L	22	Standard
Ca	43	46.7	43.3	**2.4514**	2.289	93.4	mg/L	28	Standard
Fe	54	79.4	6.6	**-0.0178**	0.013	70.1	mg/L	72	Standard
Fe	57	796.7	2.6	**-0.1106**	0.222	200.7	mg/L	703	Standard
> **Sc-1**	45	31521.1	0.6				mg/L	30379	Standard
Cl	35	16996.2	0.3				ug/L	14530	Standard
Kr	83	5.0	72.1				ug/L	5	Standard
Br	81	1070.0	9.8				ug/L	497	Standard
P	31	11164.1	3.8				ug/L	10347	Standard
S	34	1611.8	9.2				ug/L	1535	Standard
Sr	88	200.0	13.9				ug/L	177	Standard
C	12	213.3	10.8				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	523.9	20.3				mg/L	7	Standard
Ho-1	165	358.3	14.0				mg/L	13	Standard
Er	166	406.7	19.7				mg/L	3	Standard
I	127	24287.8	0.9				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.418	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.567	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.797
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.384
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, August 24, 2015 13:15:03
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	46352.5	1.7				ug/L	43934	Standard
	Be	9	30295.3	0.4	**49.0220**	0.795	1.6	ug/L	0	Standard
	Al	27	3446471.5	0.6	**49.1330**	0.819	1.7	ug/L	410	Standard
	Sc	45	30959.9	2.2				ug/L	30379	Standard
	Ti	47	22672.3	0.5	**104.0680**	1.859	1.8	ug/L	21	Standard
	V	51	230946.6	0.3	**51.8694**	0.700	1.4	ug/L	1362	Standard
	Cr	52	305501.2	0.3	**51.1577**	0.707	1.4	ug/L	8311	Standard
	Cr	53	37424.5	2.0	**50.8668**	0.637	1.3	ug/L	325	Standard
	Mn	55	212597.5	0.5	**51.6302**	1.051	2.0	ug/L	694	Standard
	Co	59	206041.8	0.5	**51.6958**	1.042	2.0	ug/L	199	Standard
	Ni	60	80377.0	0.9	**50.8436**	1.194	2.3	ug/L	212	Standard
	Cu	65	77390.8	0.3	**50.4944**	0.925	1.8	ug/L	149	Standard
	Zn	66	43943.6	0.4	**50.0162**	0.597	1.2	ug/L	206	Standard
>	Ge	72	323113.5	1.6				ug/L	319179	Standard
	As	75	43646.9	1.4	**49.8964**	0.924	1.9	ug/L	-51	Standard
	Se	82	3667.8	2.2	**50.2076**	0.984	2.0	ug/L	19	Standard
	Se-1	77	2730.9	1.7	**51.2123**	1.415	2.8	ug/L	89	Standard
>	Ga	71	50.0	10.0				mg/L	25	Standard
	Rb	85	595.0	8.5				ug/L	27	Standard
	Y	89	292117.6	0.9				ug/L	295132	Standard
>	Rh	103	25.0	34.6				ug/L	20	Standard
	Mo	98	146371.0	0.1	**98.3145**	0.863	0.9	ug/L	11	Standard
	Ag	107	270674.6	1.2	**49.4936**	0.205	0.4	ug/L	64	Standard
	Cd	111	75768.3	1.1	**50.6893**	0.393	0.8	mg/L	7	Standard
	Cd	114	198455.2	1.5	**50.4792**	0.743	1.5	ug/L	10	Standard
>	In	115	429570.3	0.9				ug/L	418014	Standard
	Sn	118	228015.2	2.4	**46.0953**	0.760	1.6	ug/L	385	Standard
	Sb	123	201641.1	1.6	**49.8230**	0.479	1.0	ug/L	54	Standard
	Ba	135	101921.3	0.2	**48.8411**	0.336	0.7	ug/L	44	Standard
	Ce	140	71.7	21.3				ug/L	33	Standard
>	Tb	159	861181.0	1.1				ug/L	854905	Standard
	Ho	165	16.7	17.3				ug/L	13	Standard
	Tl	203	351638.4	0.6	**50.0167**	0.482	1.0	ug/L	4	Standard
	Tl	205	242378.4	1.0	**49.9123**	0.182	0.4	ug/L	5	Standard
	Pb	206	219845.5	0.6	**49.7439**	0.128	0.3	ug/L	182	Standard
	Pb	207	198518.1	0.5	**49.9062**	0.421	0.8	ug/L	160	Standard
	Pb	208	717363.0	0.4	**49.2950**	0.477	1.0	ug/L	604	Standard
	U	238	248843.5	0.6	**49.9110**	0.205	0.4	ug/L	3	Standard
>	Bi	209	401272.3	0.6				ug/L	395375	Standard

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Na	23	1.7	173.2	**0.3553**	16.834	4737.8	mg/L	0	Standard
Mg	24	2101.8	8.2	**5.0189**	0.527	10.5	mg/L	47	Standard
K	39	378.3	5.3	**4.9374**	0.189	3.8	mg/L	22	Standard
Ca	43	78.3	9.8	**6.1537**	0.997	16.2	mg/L	28	Standard
Fe	54	2406.9	5.1	**5.2966**	0.159	3.0	mg/L	72	Standard
Fe	57	1433.4	5.6	**6.1895**	1.067	17.2	mg/L	703	Standard
> **Sc-1**	45	30959.9	2.2				mg/L	30379	Standard
Cl	35	15706.8	0.6				ug/L	14530	Standard
Kr	83	4.7	49.5				ug/L	5	Standard
Br	81	590.0	17.9				ug/L	497	Standard
P	31	11132.4	4.0				ug/L	10347	Standard
S	34	1841.8	7.8				ug/L	1535	Standard
Sr	88	213.3	21.8				ug/L	177	Standard
C	12	210.0	23.8				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	10.0	100.0				mg/L	7	Standard
Ho-1	165	16.7	17.3				mg/L	13	Standard
Er	166	0.0					mg/L	3	Standard
I	127	3525.4	10.7				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	98.044		
Al	27	98.266		
Sc	45			
Ti	47	104.068		
V	51	103.739		
Cr	52	102.315		
Cr	53			
Mn	55	103.260		
Co	59	103.392		
Ni	60	101.687		
Cu	65	100.989		
Zn	66	100.032		
> Ge	72		101.233	
As	75	99.793		
Se	82	100.415		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.315		
Ag	107	98.987		
Cd	111	101.379		
Cd	114			
> In	115			102.765
Sn	118	92.191		
Sb	123	99.646		
Ba	135	97.682		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.033		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.590		
U	238	99.822		
> Bi	209			101.492
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, August 24, 2015 13:18:15
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	46263.9	0.6				ug/L	43934	Standard
	Be	9	26.7	43.3	**0.0412**	0.018	44.6	ug/L	0	Standard
	Al	27	758.4	57.0	**-0.0006**	0.006	1099.8	ug/L	410	Standard
	Sc	45	30732.8	2.2				ug/L	30379	Standard
	Ti	47	22.0	31.5	**-0.0031**	0.032	1033.0	ug/L	21	Standard
	V	51	1180.8	10.2	**-0.0287**	0.026	91.1	ug/L	1362	Standard
	Cr	52	7244.7	2.0	**-0.1413**	0.021	14.5	ug/L	8311	Standard
	Cr	53	440.0	16.4	**0.0765**	0.093	121.9	ug/L	325	Standard
	Mn	55	798.4	16.1	**0.0024**	0.032	1373.0	ug/L	694	Standard
	Co	59	219.7	11.6	**0.0008**	0.006	760.7	ug/L	199	Standard
	Ni	60	196.3	4.3	**-0.0585**	0.006	10.1	ug/L	212	Standard
	Cu	65	158.7	13.3	**-0.0025**	0.014	572.1	ug/L	149	Standard
	Zn	66	226.3	9.5	**-0.2712**	0.027	10.1	ug/L	206	Standard
>	**Ge**	72	317019.2	1.2				ug/L	319179	Standard
	As	75	-53.8	4.4	**0.0413**	0.003	6.5	ug/L	-51	Standard
	Se	82	29.6	13.5	**0.1803**	0.056	31.1	ug/L	19	Standard
	Se-1	77	90.7	4.2	**-0.0471**	0.090	190.4	ug/L	89	Standard
>	**Ga**	71	21.7	58.1				mg/L	25	Standard
	Rb	85	38.3	49.4				ug/L	27	Standard
	Y	89	297442.3	2.4				ug/L	295132	Standard
>	**Rh**	103	15.0	33.3				ug/L	20	Standard
	Mo	98	76.3	9.5	**0.0369**	0.004	11.3	ug/L	11	Standard
	Ag	107	156.7	70.2	**0.0141**	0.021	148.6	ug/L	64	Standard
	Cd	111	41.1	144.8	**0.0187**	0.041	219.7	mg/L	7	Standard
	Cd	114	78.2	135.5	**0.0134**	0.028	207.8	ug/L	10	Standard
>	**In**	115	426551.6	2.0				ug/L	418014	Standard
	Sn	118	501.7	7.7	**0.0276**	0.010	34.8	ug/L	385	Standard
	Sb	123	808.2	1.8	**0.1867**	0.005	2.5	ug/L	54	Standard
	Ba	135	106.0	92.3	**0.0270**	0.049	180.0	ug/L	44	Standard
	Ce	140	23.3	44.6				ug/L	33	Standard
>	**Tb**	159	863758.4	1.5				ug/L	854905	Standard
	Ho	165	15.0	33.3				ug/L	13	Standard
	Tl	203	125.7	139.2	**0.0181**	0.025	138.6	ug/L	4	Standard
	Tl	205	28.3	113.5	**0.0074**	0.007	90.7	ug/L	5	Standard
	Pb	206	250.0	30.6	**0.0000**	0.01	132647.0	ug/L	182	Standard
	Pb	207	196.7	32.1	**-0.0031**	0.016	518.6	ug/L	160	Standard
	Pb	208	677.0	7.5	**-0.0041**	0.004	88.1	ug/L	604	Standard
	U	238	28.3	95.5	**0.0054**	0.005	101.1	ug/L	3	Standard
>	**Bi**	209	399720.5	0.7				ug/L	395375	Standard

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Na	23	1.7	173.2	**0.1857**	17.128	9223.5	mg/L	0	Standard
Mg	24	46.7	22.3	**0.0007**	0.025	3463.9	mg/L	47	Standard
K	39	8.3	91.7	**-0.1433**	0.107	74.5	mg/L	22	Standard
Ca	43	26.7	21.7	**0.2956**	0.719	243.4	mg/L	28	Standard
Fe	54	74.2	34.6	**-0.0261**	0.055	209.4	mg/L	72	Standard
Fe	57	776.7	2.3	**-0.1073**	0.324	301.6	mg/L	703	Standard
Sc-1	45	30732.8	2.2				mg/L	30379	Standard
Cl	35	15803.6	1.2				ug/L	14530	Standard
Kr	83	5.3	10.8				ug/L	5	Standard
Br	81	583.3	2.6				ug/L	497	Standard
P	31	11422.6	2.0				ug/L	10347	Standard
S	34	1821.8	1.7				ug/L	1535	Standard
Sr	88	196.7	16.9				ug/L	177	Standard
C	12	146.7	27.6				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	12.5	119.0				mg/L	7	Standard
Ho-1	165	15.0	33.3				mg/L	13	Standard
Er	166	16.7	91.7				mg/L	3	Standard
I	127	3505.4	2.5				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.323	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.042
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.099
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, August 24, 2015 14:11:28
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	45068.6	1.7				ug/L	43934	Standard
	Be	9	30547.4	1.2	**50.8374**	0.943	1.9	ug/L	0	Standard
	Al	27	3274084.1	0.3	**48.0050**	0.788	1.6	ug/L	410	Standard
	Sc	45	30537.4	1.9				ug/L	30379	Standard
	Ti	47	22380.2	0.9	**102.1284**	1.289	1.3	ug/L	21	Standard
	V	51	225652.1	0.8	**50.3797**	0.675	1.3	ug/L	1362	Standard
	Cr	52	301510.4	2.6	**50.1694**	1.266	2.5	ug/L	8311	Standard
	Cr	53	36717.8	0.9	**49.6102**	0.381	0.8	ug/L	325	Standard
	Mn	55	210562.1	2.1	**50.8301**	0.885	1.7	ug/L	694	Standard
	Co	59	201723.0	0.6	**50.3133**	0.099	0.2	ug/L	199	Standard
	Ni	60	79987.9	0.4	**50.2979**	0.327	0.7	ug/L	212	Standard
	Cu	65	78462.3	0.6	**50.8950**	0.301	0.6	ug/L	149	Standard
	Zn	66	44333.4	1.0	**50.1685**	0.285	0.6	ug/L	206	Standard
>	**Ge**	72	324954.1	0.5				ug/L	319179	Standard
	As	75	43613.5	0.7	**49.5719**	0.578	1.2	ug/L	-51	Standard
	Se	82	3650.7	1.0	**49.6850**	0.511	1.0	ug/L	19	Standard
	Se-1	77	2760.3	1.9	**51.4706**	1.265	2.5	ug/L	89	Standard
>	**Ga**	71	38.3	19.9				mg/L	25	Standard
	Rb	85	558.3	5.8				ug/L	27	Standard
	Y	89	291175.0	1.5				ug/L	295132	Standard
>	**Rh**	103	28.3	27.0				ug/L	20	Standard
	Mo	98	143691.3	0.5	**100.3238**	0.620	0.6	ug/L	11	Standard
	Ag	107	262569.7	0.7	**49.9121**	0.710	1.4	ug/L	64	Standard
	Cd	111	73174.2	1.1	**50.8880**	0.596	1.2	mg/L	7	Standard
	Cd	114	192197.3	1.5	**50.8152**	0.366	0.7	ug/L	10	Standard
>	**In**	115	413253.8	0.9				ug/L	418014	Standard
	Sn	118	224700.7	0.9	**47.2247**	0.190	0.4	ug/L	385	Standard
	Sb	123	194435.5	1.9	**49.9381**	0.600	1.2	ug/L	54	Standard
	Ba	135	100282.1	1.4	**49.9501**	0.329	0.7	ug/L	44	Standard
	Ce	140	65.0	40.0				ug/L	33	Standard
>	**Tb**	159	851166.1	1.8				ug/L	854905	Standard
	Ho	165	1.7	173.2				ug/L	13	Standard
	Tl	203	343433.0	0.3	**50.3257**	0.162	0.3	ug/L	4	Standard
	Tl	205	232319.5	1.7	**49.2901**	0.931	1.9	ug/L	5	Standard
	Pb	206	216279.4	0.3	**50.4182**	0.208	0.4	ug/L	182	Standard
	Pb	207	193698.0	1.0	**50.1657**	0.364	0.7	ug/L	160	Standard
	Pb	208	711943.1	1.6	**50.4024**	0.879	1.7	ug/L	604	Standard
	U	238	244171.8	0.9	**50.4565**	0.641	1.3	ug/L	3	Standard
>	**Bi**	209	389491.7	0.4				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	2165.2	2.2	**5.2395**	0.086	1.6	mg/L	47	Standard
K	39	355.0	1.4	**4.6881**	0.154	3.3	mg/L	22	Standard
Ca	43	65.0	7.7	**4.7220**	0.436	9.2	mg/L	28	Standard
Fe	54	2233.7	3.6	**4.9743**	0.166	3.3	mg/L	72	Standard
Fe	57	1310.1	8.1	**5.1724**	1.261	24.4	mg/L	703	Standard
> **Sc-1**	45	30537.4	1.9				mg/L	30379	Standard
Cl	35	14226.7	1.0				ug/L	14530	Standard
Kr	83	6.7	22.9				ug/L	5	Standard
Br	81	563.3	5.7				ug/L	497	Standard
P	31	11841.3	1.6				ug/L	10347	Standard
S	34	1818.4	8.7				ug/L	1535	Standard
Sr	88	175.0	18.7				ug/L	177	Standard
C	12	183.3	55.7				mg/L	153	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	9.7	181.8				mg/L	7	Standard
Ho-1	165	1.7	173.2				mg/L	13	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	1190.0	8.5				mg/L	1945	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	101.675		
	Al	27	96.010		
	Sc	45			
	Ti	47	102.128		
	V	51	100.759		
	Cr	52	100.339		
	Cr	53			
	Mn	55	101.660		
	Co	59	100.627		
	Ni	60	100.596		
	Cu	65	101.790		
	Zn	66	100.337		
>	Ge	72		101.809	
	As	75	99.144		
	Se	82	99.370		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	100.324		
Ag	107	99.824		
Cd	111	101.776		
Cd	114			
> In	115			98.861
Sn	118	94.449		
Sb	123	99.876		
Ba	135	99.900		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.651		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.805		
U	238	100.913		
> Bi	209			98.512
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, August 24, 2015 14:14:48
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	44221.1	0.8				ug/L	43934	Standard
	Be	9	6.7	43.3	**0.0093**	0.005	52.7	ug/L	0	Standard
	Al	27	428.3	11.5	**-0.0050**	0.001	15.0	ug/L	410	Standard
	Sc	45	30079.8	2.3				ug/L	30379	Standard
	Ti	47	15.7	22.4	**-0.0333**	0.016	49.2	ug/L	21	Standard
	V	51	992.1	5.7	**-0.0738**	0.016	21.3	ug/L	1362	Standard
	Cr	52	6948.9	1.1	**-0.2030**	0.017	8.4	ug/L	8311	Standard
	Cr	53	368.3	6.4	**-0.0275**	0.026	94.5	ug/L	325	Standard
	Mn	55	712.7	2.7	**-0.0204**	0.003	14.1	ug/L	694	Standard
	Co	59	190.0	10.5	**-0.0071**	0.006	78.2	ug/L	199	Standard
	Ni	60	162.3	7.7	**-0.0813**	0.009	11.4	ug/L	212	Standard
	Cu	65	141.7	6.9	**-0.0147**	0.006	43.1	ug/L	149	Standard
	Zn	66	238.0	8.7	**-0.2599**	0.025	9.8	ug/L	206	Standard
>	**Ge**	72	319625.2	1.3				ug/L	319179	Standard
	As	75	-37.9	47.9	**0.0604**	0.020	33.7	ug/L	-51	Standard
	Se	82	25.3	36.0	**0.1166**	0.124	106.3	ug/L	19	Standard
	Se-1	77	90.7	15.8	**-0.0645**	0.257	398.3	ug/L	89	Standard
>	**Ga**	71	21.7	13.3				mg/L	25	Standard
	Rb	85	40.0	37.5				ug/L	27	Standard
	Y	89	294777.1	1.8				ug/L	295132	Standard
>	**Rh**	103	6.7	43.3				ug/L	20	Standard
	Mo	98	46.6	29.1	**0.0170**	0.009	54.8	ug/L	11	Standard
	Ag	107	71.0	12.5	**-0.0019**	0.002	89.4	ug/L	64	Standard
	Cd	111	12.2	77.9	**-0.0012**	0.006	516.1	mg/L	7	Standard
	Cd	114	24.3	112.3	**-0.0008**	0.007	935.4	ug/L	10	Standard
>	**In**	115	425749.5	0.6				ug/L	418014	Standard
	Sn	118	521.7	2.0	**0.0318**	0.003	8.3	ug/L	385	Standard
	Sb	123	688.7	3.2	**0.1572**	0.006	3.9	ug/L	54	Standard
	Ba	135	48.7	25.7	**-0.0012**	0.006	512.9	ug/L	44	Standard
	Ce	140	18.3	41.7				ug/L	33	Standard
>	**Tb**	159	847054.6	0.8				ug/L	854905	Standard
	Ho	165	5.0	0.0				ug/L	13	Standard
	Tl	203	20.7	74.1	**0.0031**	0.002	71.1	ug/L	4	Standard
	Tl	205	11.7	65.5	**0.0039**	0.002	40.3	ug/L	5	Standard
	Pb	206	197.0	4.6	**-0.0120**	0.002	17.0	ug/L	182	Standard
	Pb	207	160.3	8.6	**-0.0122**	0.003	28.4	ug/L	160	Standard
	Pb	208	629.3	5.1	**-0.0073**	0.002	29.9	ug/L	604	Standard
	U	238	8.7	17.6	**0.0015**	0.000	20.9	ug/L	3	Standard
>	**Bi**	209	398439.2	0.2				ug/L	395375	Standard

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Na	23	1.7	173.2	**0.2632**	16.994	6455.7	mg/L	0	Standard
Mg	24	36.7	43.8	**-0.0218**	0.040	183.1	mg/L	47	Standard
K	39	15.0	100.0	**-0.0431**	0.218	504.7	mg/L	22	Standard
Ca	43	33.3	43.3	**1.1147**	1.609	144.3	mg/L	28	Standard
Fe	54	67.7	17.3	**-0.0373**	0.024	65.1	mg/L	72	Standard
Fe	57	726.7	5.6	**-0.4407**	0.473	107.3	mg/L	703	Standard
> **Sc-1**	45	30079.8	2.3				mg/L	30379	Standard
Cl	35	14312.1	1.1				ug/L	14530	Standard
Kr	83	4.7	81.1				ug/L	5	Standard
Br	81	553.3	16.8				ug/L	497	Standard
P	31	11214.1	0.4				ug/L	10347	Standard
S	34	1741.8	4.0				ug/L	1535	Standard
Sr	88	198.3	19.6				ug/L	177	Standard
C	12	93.3	27.0				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	16.0	125.3				mg/L	7	Standard
Ho-1	165	5.0	0.0				mg/L	13	Standard
Er	166	13.3	114.6				mg/L	3	Standard
I	127	1915.1	5.0				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.140	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.851
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.775
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1508107302
Sample Date/Time: Monday, August 24, 2015 14:28:51
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	45596.9	2.9				ug/L	43934	Standard
	Be	9	1.7	173.2	**0.0008**	0.005	599.1	ug/L	0	Standard
	Al	27	3251248.9	1.4	**47.1462**	1.918	4.1	ug/L	410	Standard
	Sc	45	30327.0	3.4				ug/L	30379	Standard
	Ti	47	83.3	14.0	**0.2775**	0.054	19.3	ug/L	21	Standard
	V	51	1266.5	12.9	**-0.0136**	0.039	286.2	ug/L	1362	Standard
	Cr	52	8386.7	5.4	**0.0346**	0.090	260.4	ug/L	8311	Standard
	Cr	53	1860.1	13.5	**2.0232**	0.365	18.0	ug/L	325	Standard
	Mn	55	184440.3	1.4	**44.8482**	0.612	1.4	ug/L	694	Standard
	Co	59	1650.8	1.9	**0.3600**	0.005	1.4	ug/L	199	Standard
	Ni	60	1031.0	1.4	**0.4703**	0.015	3.1	ug/L	212	Standard
	Cu	65	354.3	2.3	**0.1238**	0.005	4.4	ug/L	149	Standard
	Zn	66	1740.4	4.2	**1.4697**	0.097	6.6	ug/L	206	Standard
>	**Ge**	72	322463.1	0.8				ug/L	319179	Standard
	As	75	371.8	12.4	**0.5289**	0.054	10.3	ug/L	-51	Standard
	Se	82	129.1	0.9	**1.5440**	0.024	1.5	ug/L	19	Standard
	Se-1	77	152.0	4.6	**1.1162**	0.145	13.0	ug/L	89	Standard
>	**Ga**	71	30.0	16.7				mg/L	25	Standard
	Rb	85	2335.2	3.4				ug/L	27	Standard
	Y	89	290874.4	1.8				ug/L	295132	Standard
>	**Rh**	103	73.3	17.2				ug/L	20	Standard
	Mo	98	184.0	11.5	**0.1112**	0.016	14.7	ug/L	11	Standard
	Ag	107	67.0	7.8	**-0.0025**	0.001	46.7	ug/L	64	Standard
	Cd	111	9.9	32.7	**-0.0028**	0.002	78.0	mg/L	7	Standard
	Cd	114	21.6	102.5	**-0.0014**	0.006	400.4	ug/L	10	Standard
>	**In**	115	422488.5	1.5				ug/L	418014	Standard
	Sn	118	500.0	18.2	**0.0281**	0.018	63.6	ug/L	385	Standard
	Sb	123	232.9	20.6	**0.0440**	0.012	27.0	ug/L	54	Standard
	Ba	135	8956.0	1.9	**4.3412**	0.068	1.6	ug/L	44	Standard
	Ce	140	761.7	7.5				ug/L	33	Standard
>	**Tb**	159	847321.5	2.4				ug/L	854905	Standard
	Ho	165	13.3	21.7				ug/L	13	Standard
	Tl	203	29.3	10.4	**0.0044**	0.000	11.1	ug/L	4	Standard
	Tl	205	13.3	86.6	**0.0043**	0.002	56.5	ug/L	5	Standard
	Pb	206	267.3	4.0	**0.0050**	0.003	53.9	ug/L	182	Standard
	Pb	207	232.3	7.8	**0.0070**	0.006	79.1	ug/L	160	Standard
	Pb	208	843.3	0.4	**0.0085**	0.001	13.3	ug/L	604	Standard
	U	238	216.7	8.5	**0.0441**	0.003	7.2	ug/L	3	Standard
>	**Bi**	209	392434.1	1.7				ug/L	395375	Standard

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Na	23	1.7	173.2	**-0.1180**	17.654	14957.6	mg/L	0	Standard
Mg	24	8359.0	2.7	**20.7232**	1.227	5.9	mg/L	47	Standard
K	39	30.0	50.0	**0.1659**	0.218	131.4	mg/L	22	Standard
Ca	43	101.7	10.2	**9.0716**	1.544	17.0	mg/L	28	Standard
Fe	54	290.7	15.0	**0.4832**	0.115	23.8	mg/L	72	Standard
Fe	57	755.0	9.2	**-0.2221**	0.687	309.6	mg/L	703	Standard
> **Sc-1**	45	30327.0	3.4				mg/L	30379	Standard
Cl	35	15901.7	2.6				ug/L	14530	Standard
Kr	83	5.0	20.0				ug/L	5	Standard
Br	81	7885.4	2.4				ug/L	497	Standard
P	31	11511.0	1.7				ug/L	10347	Standard
S	34	1680.1	2.6				ug/L	1535	Standard
Sr	88	235.0	19.5				ug/L	177	Standard
C	12	230.0	4.3				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	3	Standard
Dy	164	26.3	56.4				mg/L	7	Standard
Ho-1	165	13.3	21.7				mg/L	13	Standard
Er	166	6.7	173.2				mg/L	3	Standard
I	127	127042.1	1.3				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.786	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.029	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.070
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.256
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 25, 2015

Method 6020 - Summary Report

Sample ID: L1508090404
Sample Date/Time: Monday, August 24, 2015 14:32:03
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	46777.2	4.8				ug/L	43934	Standard
	Be	9	15.0	66.7	**0.0218**	0.016	71.8	ug/L	0	Standard
	Al	27	4537065.2	1.3	**64.1621**	2.420	3.8	ug/L	410	Standard
	Sc	45	30674.4	3.8				ug/L	30379	Standard
	Ti	47	122.0	7.5	**0.4646**	0.037	8.0	ug/L	21	Standard
	V	51	1924.2	0.1	**0.1424**	0.005	3.3	ug/L	1362	Standard
	Cr	52	11775.6	2.4	**0.6525**	0.058	8.8	ug/L	8311	Standard
	Cr	53	6044.5	9.4	**7.9212**	0.821	10.4	ug/L	325	Standard
	Mn	55	29080.2	2.4	**7.0254**	0.220	3.1	ug/L	694	Standard
	Co	59	395.3	3.0	**0.0458**	0.003	5.8	ug/L	199	Standard
	Ni	60	1535.1	2.3	**0.8070**	0.013	1.6	ug/L	212	Standard
	Cu	65	509.7	7.6	**0.2311**	0.025	10.8	ug/L	149	Standard
	Zn	66	1931.8	2.8	**1.7275**	0.085	4.9	ug/L	206	Standard
>	**Ge**	72	317168.8	1.0				ug/L	319179	Standard
	As	75	1223.7	7.5	**1.5257**	0.102	6.7	ug/L	-51	Standard
	Se	82	514.8	4.7	**6.9759**	0.299	4.3	ug/L	19	Standard
	Se-1	77	303.7	3.8	**4.1662**	0.214	5.1	ug/L	89	Standard
>	**Ga**	71	25.0	34.6				mg/L	25	Standard
	Rb	85	648.3	7.7				ug/L	27	Standard
	Y	89	292466.2	1.7				ug/L	295132	Standard
>	**Rh**	103	73.3	3.9				ug/L	20	Standard
	Mo	98	67.0	14.3	**0.0319**	0.006	20.3	ug/L	11	Standard
	Ag	107	70.7	20.6	**-0.0016**	0.003	166.8	ug/L	64	Standard
	Cd	111	52.5	1.1	**0.0268**	0.001	2.0	mg/L	7	Standard
	Cd	114	110.0	22.6	**0.0220**	0.007	30.0	ug/L	10	Standard
>	**In**	115	415376.3	0.6				ug/L	418014	Standard
	Sn	118	433.3	11.6	**0.0160**	0.011	66.0	ug/L	385	Standard
	Sb	123	113.7	7.5	**0.0145**	0.002	13.9	ug/L	54	Standard
	Ba	135	20829.0	1.3	**10.3024**	0.102	1.0	ug/L	44	Standard
	Ce	140	171.7	17.1				ug/L	33	Standard
>	**Tb**	159	840576.3	2.0				ug/L	854905	Standard
	Ho	165	15.0	33.3				ug/L	13	Standard
	Tl	203	29.7	17.0	**0.0045**	0.001	17.2	ug/L	4	Standard
	Tl	205	21.7	13.3	**0.0061**	0.001	10.7	ug/L	5	Standard
	Pb	206	293.7	10.6	**0.0121**	0.007	57.6	ug/L	182	Standard
	Pb	207	257.3	3.7	**0.0143**	0.002	13.4	ug/L	160	Standard
	Pb	208	948.3	0.7	**0.0168**	0.001	5.7	ug/L	604	Standard
	U	238	2977.3	2.6	**0.6191**	0.012	2.0	ug/L	3	Standard
>	**Bi**	209	386861.8	0.9				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	17722.0	3.5	**43.5718**	2.856	6.6	mg/L	47	Standard
K	39	33.3	69.3	**0.1961**	0.296	151.1	mg/L	22	Standard
Ca	43	198.3	10.2	**20.0766**	3.029	15.1	mg/L	28	Standard
Fe	54	79.1	0.4	**-0.0135**	0.007	51.9	mg/L	72	Standard
Fe	57	873.4	7.6	**0.8497**	0.679	79.9	mg/L	703	Standard
> **Sc-1**	45	30674.4	3.8				mg/L	30379	Standard
Cl	35	15702.8	1.2				ug/L	14530	Standard
Kr	83	5.3	78.1				ug/L	5	Standard
Br	81	36647.6	4.0				ug/L	497	Standard
P	31	12780.4	3.7				ug/L	10347	Standard
S	34	1555.1	4.7				ug/L	1535	Standard
Sr	88	203.3	15.8				ug/L	177	Standard
C	12	500.0					mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	9.4	7.8				mg/L	7	Standard
Ho-1	165	15.0	33.3				mg/L	13	Standard
Er	166	13.3	114.6				mg/L	3	Standard
I	127	38057.8	4.2				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.472	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.370	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.369
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.847
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 25, 2015

Method 6020 - Summary Report

Sample ID: L1508094201
Sample Date/Time: Monday, August 24, 2015 14:35:14
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	47009.6	3.9				ug/L	43934	Standard
	Be	9	8.3	69.3	**0.0111**	0.009	77.1	ug/L	0	Standard
	Al	27	7953626.2	1.4	**111.8742**	2.989	2.7	ug/L	410	Standard
	Sc	45	30661.0	0.5				ug/L	30379	Standard
	Ti	47	27.0	17.0	**0.0193**	0.021	109.0	ug/L	21	Standard
	V	51	1863.0	22.5	**0.1252**	0.098	78.1	ug/L	1362	Standard
	Cr	52	11130.1	8.2	**0.5240**	0.159	30.3	ug/L	8311	Standard
	Cr	53	2348.5	10.1	**2.7228**	0.341	12.5	ug/L	325	Standard
	Mn	55	502964.0	1.5	**123.7219**	2.467	2.0	ug/L	694	Standard
	Co	59	2412.9	2.7	**0.5570**	0.012	2.2	ug/L	199	Standard
	Ni	60	13323.2	1.5	**8.3626**	0.136	1.6	ug/L	212	Standard
	Cu	65	408.3	5.3	**0.1616**	0.017	10.2	ug/L	149	Standard
	Zn	66	7577.9	1.1	**8.2744**	0.123	1.5	ug/L	206	Standard
>	**Ge**	72	319661.3	0.8				ug/L	319179	Standard
	As	75	22.3	147.9	**0.1298**	0.038	29.5	ug/L	-51	Standard
	Se	82	133.2	4.6	**1.6177**	0.098	6.1	ug/L	19	Standard
	Se-1	77	238.0	2.9	**2.8301**	0.128	4.5	ug/L	89	Standard
>	**Ga**	71	36.7	7.9				mg/L	25	Standard
	Rb	85	1103.4	6.9				ug/L	27	Standard
	Y	89	294290.6	0.2				ug/L	295132	Standard
>	**Rh**	103	30.0	16.7				ug/L	20	Standard
	Mo	98	541.7	2.9	**0.3542**	0.011	3.2	ug/L	11	Standard
	Ag	107	64.0	6.8	**-0.0031**	0.001	19.3	ug/L	64	Standard
	Cd	111	637.0	4.1	**0.4225**	0.017	4.0	mg/L	7	Standard
	Cd	114	1716.3	9.1	**0.4360**	0.047	10.7	ug/L	10	Standard
>	**In**	115	423867.2	1.7				ug/L	418014	Standard
	Sn	118	391.7	21.1	**0.0055**	0.016	292.9	ug/L	385	Standard
	Sb	123	108.4	8.2	**0.0126**	0.002	19.4	ug/L	54	Standard
	Ba	135	646.0	6.0	**0.2892**	0.020	6.8	ug/L	44	Standard
	Ce	140	43.3	24.0				ug/L	33	Standard
>	**Tb**	159	854421.2	1.2				ug/L	854905	Standard
	Ho	165	11.7	49.5				ug/L	13	Standard
	Tl	203	268.7	8.7	**0.0389**	0.003	8.6	ug/L	4	Standard
	Tl	205	186.7	10.8	**0.0406**	0.004	11.1	ug/L	5	Standard
	Pb	206	234.0	5.9	**-0.0031**	0.003	100.9	ug/L	182	Standard
	Pb	207	195.3	9.0	**-0.0029**	0.004	148.4	ug/L	160	Standard
	Pb	208	720.0	7.0	**-0.0006**	0.003	577.7	ug/L	604	Standard
	U	238	4804.8	1.0	**0.9781**	0.006	0.6	ug/L	3	Standard
>	**Bi**	209	395264.8	0.7				ug/L	395375	Standard

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Na	23	1.7	173.2	**0.2020**	17.100	8467.2	mg/L	0	Standard
Mg	24	600.0	2.2	**1.3637**	0.036	2.6	mg/L	47	Standard
K	39	13.3	21.7	**-0.0735**	0.040	55.0	mg/L	22	Standard
Ca	43	75.0	35.3	**5.8428**	3.018	51.6	mg/L	28	Standard
Fe	54	77.5	23.0	**-0.0174**	0.040	232.2	mg/L	72	Standard
Fe	57	781.7	11.3	**-0.0457**	0.852	1861.8	mg/L	703	Standard
Sc-1	45	30661.0	0.5				mg/L	30379	Standard
Cl	35	19267.0	7.8				ug/L	14530	Standard
Kr	83	4.3	13.3				ug/L	5	Standard
Br	81	3273.7	4.0				ug/L	497	Standard
P	31	10980.6	3.6				ug/L	10347	Standard
S	34	1551.7	1.3				ug/L	1535	Standard
Sr	88	198.3	14.3				ug/L	177	Standard
C	12	140.0	7.1				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	5.5	101.6				mg/L	7	Standard
Ho-1	165	11.7	49.5				mg/L	13	Standard
Er	166	23.3	24.7				mg/L	3	Standard
I	127	64132.2	3.4				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		107.001	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.151	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.400	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.972	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508099202
Sample Date/Time: Monday, August 24, 2015 14:38:25
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	47641.5	3.4				ug/L	43934	Standard
	Be	9	5.0	100.0	**0.0061**	0.008	135.1	ug/L	0	Standard
	Al	27	5559514.1	1.3	**77.1489**	2.051	2.7	ug/L	410	Standard
	Sc	45	30524.1	2.7				ug/L	30379	Standard
	Ti	47	56.3	16.1	**0.1553**	0.043	27.6	ug/L	21	Standard
	V	51	1744.8	8.4	**0.0973**	0.028	28.5	ug/L	1362	Standard
	Cr	52	13724.9	2.7	**0.9726**	0.022	2.2	ug/L	8311	Standard
	Cr	53	5697.7	3.9	**7.3676**	0.385	5.2	ug/L	325	Standard
	Mn	55	2485.5	12.5	**0.4150**	0.065	15.7	ug/L	694	Standard
	Co	59	486.7	3.0	**0.0681**	0.006	8.7	ug/L	199	Standard
	Ni	60	1377.4	6.8	**0.6969**	0.048	7.0	ug/L	212	Standard
	Cu	65	605.3	2.2	**0.2915**	0.014	4.9	ug/L	149	Standard
	Zn	66	1660.1	1.6	**1.3919**	0.040	2.9	ug/L	206	Standard
>	**Ge**	72	319974.1	1.9				ug/L	319179	Standard
	As	75	323.9	9.8	**0.4772**	0.040	8.3	ug/L	-51	Standard
	Se	82	152.1	2.8	**1.8779**	0.087	4.6	ug/L	19	Standard
	Se-1	77	304.0	3.1	**4.1196**	0.109	2.6	ug/L	89	Standard
>	**Ga**	71	26.7	39.0				mg/L	25	Standard
	Rb	85	1243.4	12.7				ug/L	27	Standard
	Y	89	291635.1	3.2				ug/L	295132	Standard
>	**Rh**	103	105.0	12.6				ug/L	20	Standard
	Mo	98	60.9	4.7	**0.0268**	0.002	7.7	ug/L	11	Standard
	Ag	107	70.3	9.5	**-0.0019**	0.001	56.7	ug/L	64	Standard
	Cd	111	21.9	21.0	**0.0054**	0.003	61.1	mg/L	7	Standard
	Cd	114	43.1	46.4	**0.0041**	0.005	128.2	ug/L	10	Standard
>	**In**	115	423855.7	1.1				ug/L	418014	Standard
	Sn	118	383.3	2.7	**0.0039**	0.003	78.0	ug/L	385	Standard
	Sb	123	102.6	14.1	**0.0112**	0.004	32.3	ug/L	54	Standard
	Ba	135	5377.3	1.0	**2.5884**	0.048	1.8	ug/L	44	Standard
	Ce	140	90.0	38.9				ug/L	33	Standard
>	**Tb**	159	866647.3	1.7				ug/L	854905	Standard
	Ho	165	21.7	48.0				ug/L	13	Standard
	Tl	203	35.0	12.5	**0.0053**	0.001	11.1	ug/L	4	Standard
	Tl	205	21.7	53.3	**0.0062**	0.003	41.4	ug/L	5	Standard
	Pb	206	253.3	12.2	**0.0027**	0.008	296.3	ug/L	182	Standard
	Pb	207	224.7	6.9	**0.0058**	0.003	55.9	ug/L	160	Standard
	Pb	208	861.0	1.6	**0.0106**	0.002	17.8	ug/L	604	Standard
	U	238	4748.1	1.4	**0.9877**	0.008	0.9	ug/L	3	Standard
>	**Bi**	209	386788.8	1.5				ug/L	395375	Standard

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Na	23	3.3	173.2	**-10.2485**	35.201	343.5	mg/L	0	Standard
Mg	24	16408.9	1.1	**40.4849**	0.671	1.7	mg/L	47	Standard
K	39	36.7	51.6	**0.2567**	0.274	106.6	mg/L	22	Standard
Ca	43	215.0	8.1	**22.0503**	1.975	9.0	mg/L	28	Standard
Fe	54	80.9	12.8	**-0.0091**	0.019	210.9	mg/L	72	Standard
Fe	57	836.7	8.0	**0.5437**	0.886	162.9	mg/L	703	Standard
Sc-1	45	30524.1	2.7				mg/L	30379	Standard
Cl	35	19268.2	0.8				ug/L	14530	Standard
Kr	83	6.0	60.1				ug/L	5	Standard
Br	81	10380.2	2.1				ug/L	497	Standard
P	31	11934.7	1.9				ug/L	10347	Standard
S	34	1551.7	5.9				ug/L	1535	Standard
Sr	88	255.0	10.9				ug/L	177	Standard
C	12	143.3	34.4				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	29.0	105.8				mg/L	7	Standard
Ho-1	165	21.7	48.0				mg/L	13	Standard
Er	166	20.0	86.6				mg/L	3	Standard
I	127	74007.3	5.0				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		108.440	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.249	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.397
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.828
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508099204
Sample Date/Time: Monday, August 24, 2015 14:41:37
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52505.9	2.4				ug/L	43934	Standard
	Be	9	15.0	33.3	**0.0195**	0.007	38.3	ug/L	0	Standard
	Al	27	2289647.5	2.1	**28.8080**	0.225	0.8	ug/L	410	Standard
	Sc	45	31509.4	3.4				ug/L	30379	Standard
	Ti	47	272.7	3.8	**1.1622**	0.049	4.2	ug/L	21	Standard
	V	51	1850.5	11.0	**0.1226**	0.045	36.8	ug/L	1362	Standard
	Cr	52	16105.9	3.1	**1.3936**	0.072	5.2	ug/L	8311	Standard
	Cr	53	2290.2	7.6	**2.6454**	0.224	8.5	ug/L	325	Standard
	Mn	55	29891.8	3.2	**7.1795**	0.202	2.8	ug/L	694	Standard
	Co	59	491.0	0.8	**0.0695**	0.001	1.7	ug/L	199	Standard
	Ni	60	1171.0	3.2	**0.5671**	0.028	4.9	ug/L	212	Standard
	Cu	65	600.3	2.0	**0.2891**	0.010	3.5	ug/L	149	Standard
	Zn	66	6986.3	0.6	**7.5996**	0.071	0.9	ug/L	206	Standard
>	**Ge**	72	319140.5	0.6				ug/L	319179	Standard
	As	75	1852.0	1.0	**2.2427**	0.021	0.9	ug/L	-51	Standard
	Se	82	100.8	15.4	**1.1687**	0.224	19.1	ug/L	19	Standard
	Se-1	77	145.3	2.6	**1.0159**	0.091	8.9	ug/L	89	Standard
>	**Ga**	71	55.0	59.6				mg/L	25	Standard
	Rb	85	68886.3	2.5				ug/L	27	Standard
	Y	89	297118.3	0.6				ug/L	295132	Standard
>	**Rh**	103	221.7	23.0				ug/L	20	Standard
	Mo	98	1622.2	1.7	**1.0772**	0.046	4.3	ug/L	11	Standard
	Ag	107	79.3	9.5	**-0.0005**	0.001	266.8	ug/L	64	Standard
	Cd	111	38.4	18.8	**0.0161**	0.004	25.9	mg/L	7	Standard
	Cd	114	115.5	27.7	**0.0226**	0.009	39.6	ug/L	10	Standard
>	**In**	115	429026.0	2.8				ug/L	418014	Standard
	Sn	118	480.0	4.8	**0.0227**	0.007	32.6	ug/L	385	Standard
	Sb	123	277.9	2.5	**0.0543**	0.003	5.1	ug/L	54	Standard
	Ba	135	76947.2	0.6	**36.9361**	1.270	3.4	ug/L	44	Standard
	Ce	140	1606.8	8.3				ug/L	33	Standard
>	**Tb**	159	857181.5	1.4				ug/L	854905	Standard
	Ho	165	31.7	24.1				ug/L	13	Standard
	Tl	203	48.3	40.5	**0.0071**	0.003	40.4	ug/L	4	Standard
	Tl	205	30.0	33.3	**0.0077**	0.002	27.0	ug/L	5	Standard
	Pb	206	386.7	4.2	**0.0313**	0.004	12.5	ug/L	182	Standard
	Pb	207	340.3	4.5	**0.0334**	0.003	9.3	ug/L	160	Standard
	Pb	208	1257.0	1.4	**0.0362**	0.002	5.6	ug/L	604	Standard
	U	238	2608.9	3.0	**0.5266**	0.021	4.0	ug/L	3	Standard
>	**Bi**	209	398660.0	1.1				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	17710.3	2.2	**42.3436**	1.255	3.0	mg/L	47	Standard
K	39	248.3	22.2	**3.1082**	0.819	26.4	mg/L	22	Standard
Ca	43	101.7	19.9	**8.6468**	2.550	29.5	mg/L	28	Standard
Fe	54	112.0	13.9	**0.0562**	0.043	75.9	mg/L	72	Standard
Fe	57	758.4	7.6	**-0.4647**	0.641	138.0	mg/L	703	Standard
> **Sc-1**	45	31509.4	3.4				mg/L	30379	Standard
Cl	35	17195.8	1.4				ug/L	14530	Standard
Kr	83	4.7	96.6				ug/L	5	Standard
Br	81	5404.3	4.0				ug/L	497	Standard
P	31	14800.6	1.3				ug/L	10347	Standard
S	34	1560.1	2.0				ug/L	1535	Standard
Sr	88	320.0	14.3				ug/L	177	Standard
C	12	623.3	6.5				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	41.6	77.8				mg/L	7	Standard
Ho-1	165	31.7	24.1				mg/L	13	Standard
Er	166	36.7	31.5				mg/L	3	Standard
I	127	448656.5	9.2				mg/L	1945	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		119.512	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.988	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.634
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.831
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508099202
Sample Date/Time: Monday, August 24, 2015 14:49:24
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54528.0	2.6				ug/L	43934	Standard
	Be	9	15.0	66.7	**0.0189**	0.014	75.1	ug/L	0	Standard
	Al	27	27599656.6	2.5	**334.4801**	0.721	0.2	ug/L	410	Standard
	Sc	45	31345.7	1.3				ug/L	30379	Standard
	Ti	47	199.7	4.5	**0.8804**	0.054	6.1	ug/L	21	Standard
	V	51	1846.0	22.0	**0.1479**	0.100	67.4	ug/L	1362	Standard
	Cr	52	26730.9	1.3	**3.5334**	0.112	3.2	ug/L	8311	Standard
	Cr	53	20944.5	3.0	**30.3976**	1.212	4.0	ug/L	325	Standard
	Mn	55	7431.8	2.1	**1.7514**	0.046	2.6	ug/L	694	Standard
	Co	59	1542.7	3.1	**0.3612**	0.017	4.7	ug/L	199	Standard
	Ni	60	5046.5	2.9	**3.2589**	0.128	3.9	ug/L	212	Standard
	Cu	65	1438.1	0.3	**0.9025**	0.012	1.3	ug/L	149	Standard
	Zn	66	2640.9	1.4	**2.7293**	0.060	2.2	ug/L	206	Standard
>	**Ge**	72	300549.8	1.0				ug/L	319179	Standard
	As	75	1797.2	6.4	**2.3083**	0.152	6.6	ug/L	-51	Standard
	Se	82	708.5	0.8	**10.2406**	0.162	1.6	ug/L	19	Standard
	Se-1	77	1210.7	5.8	**23.4486**	1.683	7.2	ug/L	89	Standard
>	**Ga**	71	50.0	30.0				mg/L	25	Standard
	Rb	85	5907.8	4.4				ug/L	27	Standard
	Y	89	282070.5	2.1				ug/L	295132	Standard
>	**Rh**	103	423.3	8.9				ug/L	20	Standard
	Mo	98	193.2	9.0	**0.1209**	0.010	8.5	ug/L	11	Standard
	Ag	107	73.3	10.2	**-0.0009**	0.002	174.6	ug/L	64	Standard
	Cd	111	89.5	13.6	**0.0532**	0.009	17.1	mg/L	7	Standard
	Cd	114	217.0	3.8	**0.0507**	0.003	5.0	ug/L	10	Standard
>	**In**	115	411151.8	1.7				ug/L	418014	Standard
	Sn	118	421.7	11.4	**0.0145**	0.011	78.3	ug/L	385	Standard
	Sb	123	240.4	12.5	**0.0475**	0.007	14.8	ug/L	54	Standard
	Ba	135	25562.9	1.5	**12.7843**	0.407	3.2	ug/L	44	Standard
	Ce	140	301.7	11.0				ug/L	33	Standard
>	**Tb**	159	835184.3	1.0				ug/L	854905	Standard
	Ho	165	13.3	86.6				ug/L	13	Standard
	Tl	203	30.7	10.5	**0.0049**	0.001	11.7	ug/L	4	Standard
	Tl	205	23.3	32.7	**0.0067**	0.002	24.1	ug/L	5	Standard
	Pb	206	313.3	7.1	**0.0204**	0.004	19.6	ug/L	182	Standard
	Pb	207	285.7	5.6	**0.0254**	0.003	11.0	ug/L	160	Standard
	Pb	208	1053.3	5.5	**0.0281**	0.005	18.7	ug/L	604	Standard
	U	238	23551.3	2.0	**5.1447**	0.053	1.0	ug/L	3	Standard
>	**Bi**	209	368438.2	2.2				ug/L	395375	Standard

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Na	23	8.3	124.9	**-37.7351**	59.331	157.2	mg/L	0	Standard
Mg	24	81676.3	1.8	**196.6073**	1.953	1.0	mg/L	47	Standard
K	39	115.0	15.7	**1.3028**	0.251	19.2	mg/L	22	Standard
Ca	43	780.0	5.5	**84.8809**	4.069	4.8	mg/L	28	Standard
Fe	54	88.3	24.4	**0.0035**	0.051	1454.5	mg/L	72	Standard
Fe	57	1245.1	5.5	**4.2039**	0.529	12.6	mg/L	703	Standard
> **Sc-1**	45	31345.7	1.3				mg/L	30379	Standard
Cl	35	24928.5	5.5				ug/L	14530	Standard
Kr	83	3.0	66.7				ug/L	5	Standard
Br	81	52313.5	0.3				ug/L	497	Standard
P	31	15531.3	3.9				ug/L	10347	Standard
S	34	1748.4	3.2				ug/L	1535	Standard
Sr	88	493.3	7.1				ug/L	177	Standard
C	12	413.3	13.8				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	28.6	34.2				mg/L	7	Standard
Ho-1	165	13.3	86.6				mg/L	13	Standard
Er	166	30.0	33.3				mg/L	3	Standard
I	127	340664.2	6.5				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.114	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.163	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.358
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.187
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1508099206
Sample Date/Time: Monday, August 24, 2015 14:54:14
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50358.6	2.6				ug/L	43934	Standard
	Be	9	5.0	0.0	**0.0055**	0.000	3.5	ug/L	0	Standard
	Al	27	3421194.6	1.4	**44.9151**	1.780	4.0	ug/L	410	Standard
	Sc	45	31542.8	0.5				ug/L	30379	Standard
	Ti	47	58.0	40.4	**0.1590**	0.106	66.9	ug/L	21	Standard
	V	51	1735.2	15.2	**0.0900**	0.062	68.8	ug/L	1362	Standard
	Cr	52	10183.1	2.0	**0.3325**	0.024	7.3	ug/L	8311	Standard
	Cr	53	4243.9	4.3	**5.2649**	0.238	4.5	ug/L	325	Standard
	Mn	55	12005.8	0.8	**2.7173**	0.018	0.6	ug/L	694	Standard
	Co	59	408.7	2.1	**0.0468**	0.001	3.1	ug/L	199	Standard
	Ni	60	1131.7	2.5	**0.5297**	0.022	4.1	ug/L	212	Standard
	Cu	65	373.3	3.6	**0.1347**	0.010	7.1	ug/L	149	Standard
	Zn	66	1638.1	1.5	**1.3393**	0.034	2.6	ug/L	206	Standard
>	**Ge**	72	324539.4	0.7				ug/L	319179	Standard
	As	75	265.3	8.8	**0.4052**	0.027	6.6	ug/L	-51	Standard
	Se	82	124.0	7.4	**1.4629**	0.115	7.9	ug/L	19	Standard
	Se-1	77	260.7	8.9	**3.1965**	0.416	13.0	ug/L	89	Standard
>	**Ga**	71	33.3	62.5				mg/L	25	Standard
	Rb	85	388.3	2.0				ug/L	27	Standard
	Y	89	295753.9	1.2				ug/L	295132	Standard
>	**Rh**	103	66.7	8.7				ug/L	20	Standard
	Mo	98	25.3	10.6	**0.0021**	0.002	79.7	ug/L	11	Standard
	Ag	107	70.7	11.4	**-0.0022**	0.001	63.6	ug/L	64	Standard
	Cd	111	28.3	7.3	**0.0091**	0.001	12.4	mg/L	7	Standard
	Cd	114	59.0	17.2	**0.0078**	0.003	35.3	ug/L	10	Standard
>	**In**	115	436106.2	1.4				ug/L	418014	Standard
	Sn	118	348.3	3.0	**-0.0053**	0.003	57.3	ug/L	385	Standard
	Sb	123	88.5	7.5	**0.0070**	0.001	19.2	ug/L	54	Standard
	Ba	135	2666.6	1.8	**1.2348**	0.036	2.9	ug/L	44	Standard
	Ce	140	80.0	50.0				ug/L	33	Standard
>	**Tb**	159	863738.7	1.0				ug/L	854905	Standard
	Ho	165	11.7	65.5				ug/L	13	Standard
	Tl	203	35.0	20.6	**0.0051**	0.001	19.9	ug/L	4	Standard
	Tl	205	21.7	35.3	**0.0059**	0.002	25.9	ug/L	5	Standard
	Pb	206	248.0	11.4	**-0.0010**	0.007	665.9	ug/L	182	Standard
	Pb	207	231.0	2.4	**0.0050**	0.001	21.5	ug/L	160	Standard
	Pb	208	828.7	2.1	**0.0058**	0.001	16.4	ug/L	604	Standard
	U	238	2326.5	1.3	**0.4639**	0.004	0.8	ug/L	3	Standard
>	**Bi**	209	403349.4	0.5				ug/L	395375	Standard

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Na	23	1.7	173.2	**0.5192**	16.550	3187.5	mg/L	0	Standard
Mg	24	8974.3	4.1	**21.3669**	0.877	4.1	mg/L	47	Standard
K	39	25.0	60.0	**0.0787**	0.203	258.2	mg/L	22	Standard
Ca	43	135.0	7.4	**12.3082**	1.138	9.2	mg/L	28	Standard
Fe	54	54.2	46.2	**-0.0748**	0.055	74.1	mg/L	72	Standard
Fe	57	818.4	9.2	**0.0907**	0.736	811.6	mg/L	703	Standard
Sc-1	45	31542.8	0.5				mg/L	30379	Standard
Cl	35	19893.7	1.7				ug/L	14530	Standard
Kr	83	6.3	55.5				ug/L	5	Standard
Br	81	7628.6	7.2				ug/L	497	Standard
P	31	11501.0	2.7				ug/L	10347	Standard
S	34	1756.8	10.1				ug/L	1535	Standard
Sr	88	228.3	13.4				ug/L	177	Standard
C	12	183.3	11.4				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	13.3	86.6				mg/L	7	Standard
Ho-1	165	11.7	65.5				mg/L	13	Standard
Er	166	0.0					mg/L	3	Standard
I	127	47407.4	3.4				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.624	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.679	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.328
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.017
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508099208
Sample Date/Time: Monday, August 24, 2015 14:57:26
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49380.4	3.4				ug/L	43934	Standard
	Be	9	8.3	34.6	**0.0108**	0.005	43.5	ug/L	0	Standard
	Al	27	2496121.1	0.6	**33.4196**	1.187	3.6	ug/L	410	Standard
	Sc	45	33393.5	5.2				ug/L	30379	Standard
	Ti	47	165.0	7.0	**0.6513**	0.054	8.3	ug/L	21	Standard
	V	51	6888.6	1.9	**1.2543**	0.041	3.2	ug/L	1362	Standard
	Cr	52	14182.6	3.0	**1.0266**	0.083	8.1	ug/L	8311	Standard
	Cr	53	4432.3	2.4	**5.5442**	0.135	2.4	ug/L	325	Standard
	Mn	55	22725.7	1.9	**5.3379**	0.071	1.3	ug/L	694	Standard
	Co	59	730.0	1.6	**0.1278**	0.003	2.0	ug/L	199	Standard
	Ni	60	2881.6	3.5	**1.6421**	0.067	4.1	ug/L	212	Standard
	Cu	65	888.7	2.2	**0.4721**	0.008	1.7	ug/L	149	Standard
	Zn	66	2281.8	1.7	**2.0858**	0.040	1.9	ug/L	206	Standard
>	**Ge**	72	323385.8	0.8				ug/L	319179	Standard
	As	75	568.0	3.4	**0.7513**	0.027	3.5	ug/L	-51	Standard
	Se	82	164.0	11.9	**2.0170**	0.255	12.7	ug/L	19	Standard
	Se-1	77	243.0	5.0	**2.8742**	0.257	8.9	ug/L	89	Standard
>	**Ga**	71	45.0	11.1				mg/L	25	Standard
	Rb	85	10331.9	1.6				ug/L	27	Standard
	Y	89	298720.3	2.3				ug/L	295132	Standard
>	**Rh**	103	450.0	7.7				ug/L	20	Standard
	Mo	98	4115.4	1.2	**2.6698**	0.045	1.7	ug/L	11	Standard
	Ag	107	85.0	23.6	**0.0001**	0.003	4030.7	ug/L	64	Standard
	Cd	111	75.6	10.6	**0.0397**	0.005	12.8	mg/L	7	Standard
	Cd	114	204.2	30.6	**0.0433**	0.015	34.2	ug/L	10	Standard
>	**In**	115	442470.7	2.2				ug/L	418014	Standard
	Sn	118	401.7	2.6	**0.0042**	0.003	78.1	ug/L	385	Standard
	Sb	123	298.5	2.2	**0.0571**	0.003	5.4	ug/L	54	Standard
	Ba	135	93809.2	0.7	**43.6497**	0.751	1.7	ug/L	44	Standard
	Ce	140	370.0	8.4				ug/L	33	Standard
>	**Tb**	159	876017.1	0.8				ug/L	854905	Standard
	Ho	165	25.0	52.9				ug/L	13	Standard
	Tl	203	85.7	23.6	**0.0123**	0.003	23.3	ug/L	4	Standard
	Tl	205	51.7	20.1	**0.0122**	0.002	17.1	ug/L	5	Standard
	Pb	206	299.7	2.9	**0.0112**	0.002	18.0	ug/L	182	Standard
	Pb	207	260.3	8.4	**0.0129**	0.005	40.8	ug/L	160	Standard
	Pb	208	970.7	4.5	**0.0161**	0.003	17.1	ug/L	604	Standard
	U	238	1739.8	3.9	**0.3495**	0.011	3.2	ug/L	3	Standard
>	**Bi**	209	400244.1	0.8				ug/L	395375	Standard

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Na	23	3.3	86.6	**-8.4995**	16.089	189.3	mg/L	0	Standard
Mg	24	7663.6	1.5	**17.2499**	1.082	6.3	mg/L	47	Standard
K	39	85.0	31.1	**0.8145**	0.274	33.6	mg/L	22	Standard
Ca	43	388.3	14.2	**38.1230**	4.357	11.4	mg/L	28	Standard
Fe	54	82.1	21.7	**-0.0224**	0.037	164.3	mg/L	72	Standard
Fe	57	950.0	6.4	**0.8684**	0.919	105.8	mg/L	703	Standard
> **Sc-1**	45	33393.5	5.2				mg/L	30379	Standard
Cl	35	17943.3	0.6				ug/L	14530	Standard
Kr	83	7.0	75.6				ug/L	5	Standard
Br	81	9826.5	3.7				ug/L	497	Standard
P	31	14995.8	2.2				ug/L	10347	Standard
S	34	1795.1	5.1				ug/L	1535	Standard
Sr	88	445.0	4.9				ug/L	177	Standard
C	12	413.3	9.8				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	3	Standard
Dy	164	47.4	108.9				mg/L	7	Standard
Ho-1	165	25.0	52.9				mg/L	13	Standard
Er	166	53.3	10.8				mg/L	3	Standard
I	127	210372.1	4.2				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.398	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.318	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.851
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.231
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508099210
Sample Date/Time: Monday, August 24, 2015 15:00:37
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50047.5	1.7				ug/L	43934	Standard
	Be	9	10.0	50.0	**0.0131**	0.008	59.2	ug/L	0	Standard
	Al	27	1650557.5	1.4	**21.7898**	0.632	2.9	ug/L	410	Standard
	Sc	45	31915.3	3.5				ug/L	30379	Standard
	Ti	47	45.3	20.0	**0.0979**	0.040	41.2	ug/L	21	Standard
	V	51	1621.9	2.6	**0.0586**	0.011	18.9	ug/L	1362	Standard
	Cr	52	8918.6	1.2	**0.0920**	0.028	30.4	ug/L	8311	Standard
	Cr	53	1995.1	4.0	**2.1471**	0.125	5.8	ug/L	325	Standard
	Mn	55	20507.5	1.6	**4.7014**	0.062	1.3	ug/L	694	Standard
	Co	59	468.0	1.3	**0.0598**	0.001	1.6	ug/L	199	Standard
	Ni	60	683.0	2.4	**0.2393**	0.012	5.1	ug/L	212	Standard
	Cu	65	285.3	6.2	**0.0744**	0.010	13.4	ug/L	149	Standard
	Zn	66	2036.8	0.1	**1.7590**	0.015	0.9	ug/L	206	Standard
>	**Ge**	72	329757.2	0.7				ug/L	319179	Standard
	As	75	45.6	81.9	**0.1547**	0.041	26.8	ug/L	-51	Standard
	Se	82	66.8	8.4	**0.6650**	0.070	10.5	ug/L	19	Standard
	Se-1	77	156.3	5.8	**1.1322**	0.153	13.5	ug/L	89	Standard
>	**Ga**	71	31.7	32.9				mg/L	25	Standard
	Rb	85	271.7	18.6				ug/L	27	Standard
	Y	89	306196.4	0.7				ug/L	295132	Standard
>	**Rh**	103	43.3	29.0				ug/L	20	Standard
	Mo	98	28.3	12.6	**0.0039**	0.003	65.8	ug/L	11	Standard
	Ag	107	78.7	16.1	**-0.0009**	0.002	243.1	ug/L	64	Standard
	Cd	111	21.6	28.3	**0.0046**	0.004	83.0	mg/L	7	Standard
	Cd	114	65.7	24.3	**0.0093**	0.004	42.8	ug/L	10	Standard
>	**In**	115	440478.2	1.5				ug/L	418014	Standard
	Sn	118	410.0	13.9	**0.0062**	0.011	183.2	ug/L	385	Standard
	Sb	123	51.1	12.9	**-0.0022**	0.002	70.0	ug/L	54	Standard
	Ba	135	2629.9	1.5	**1.2050**	0.016	1.3	ug/L	44	Standard
	Ce	140	225.0	9.7				ug/L	33	Standard
>	**Tb**	159	871620.5	0.7				ug/L	854905	Standard
	Ho	165	6.7	43.3				ug/L	13	Standard
	Tl	203	29.3	5.2	**0.0042**	0.000	5.3	ug/L	4	Standard
	Tl	205	16.7	45.8	**0.0049**	0.002	32.0	ug/L	5	Standard
	Pb	206	232.7	5.9	**-0.0049**	0.003	66.7	ug/L	182	Standard
	Pb	207	207.3	5.0	**-0.0013**	0.003	204.4	ug/L	160	Standard
	Pb	208	800.3	0.6	**0.0034**	0.001	16.1	ug/L	604	Standard
	U	238	902.7	5.5	**0.1783**	0.009	5.1	ug/L	3	Standard
>	**Bi**	209	406788.8	0.5				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	4469.0	4.6	**10.4563**	0.199	1.9	mg/L	47	Standard
K	39	8.3	34.6	**-0.1483**	0.036	23.9	mg/L	22	Standard
Ca	43	61.7	18.7	**4.0197**	1.095	27.2	mg/L	28	Standard
Fe	54	67.6	15.1	**-0.0467**	0.018	38.6	mg/L	72	Standard
Fe	57	778.4	13.2	**-0.3832**	0.826	215.7	mg/L	703	Standard
Sc-1	45	31915.3	3.5				mg/L	30379	Standard
Cl	35	18592.1	2.0				ug/L	14530	Standard
Kr	83	5.0	20.0				ug/L	5	Standard
Br	81	3557.1	4.9				ug/L	497	Standard
P	31	11757.9	3.4				ug/L	10347	Standard
S	34	1705.1	4.6				ug/L	1535	Standard
Sr	88	215.0	10.7				ug/L	177	Standard
C	12	163.3	17.7				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	9.7	98.4				mg/L	7	Standard
Ho-1	165	6.7	43.3				mg/L	13	Standard
Er	166	6.7	173.2				mg/L	3	Standard
I	127	60020.3	1.3				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.916	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.314	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.374
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.887
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, August 24, 2015 15:03:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48450.7	0.9				ug/L	43934	Standard
	Be	9	30732.8	2.9	**47.5624**	0.958	2.0	ug/L	0	Standard
	Al	27	3421638.6	1.3	**46.6571**	0.281	0.6	ug/L	410	Standard
	Sc	45	30587.5	1.0				ug/L	30379	Standard
	Ti	47	22427.3	1.1	**102.7554**	0.955	0.9	ug/L	21	Standard
	V	51	233220.3	0.6	**52.2900**	0.224	0.4	ug/L	1362	Standard
	Cr	52	302452.3	1.4	**50.5408**	0.660	1.3	ug/L	8311	Standard
	Cr	53	38211.5	1.0	**51.8632**	0.570	1.1	ug/L	325	Standard
	Mn	55	215807.8	2.0	**52.3151**	0.950	1.8	ug/L	694	Standard
	Co	59	205884.7	1.9	**51.5609**	0.943	1.8	ug/L	199	Standard
	Ni	60	78952.9	1.4	**49.8463**	0.668	1.3	ug/L	212	Standard
	Cu	65	77059.1	0.4	**50.1867**	0.327	0.7	ug/L	149	Standard
	Zn	66	43346.2	0.5	**49.2423**	0.316	0.6	ug/L	206	Standard
>	**Ge**	72	323638.0	0.2				ug/L	319179	Standard
	As	75	43563.3	0.5	**49.7140**	0.167	0.3	ug/L	-51	Standard
	Se	82	3701.3	0.9	**50.5818**	0.354	0.7	ug/L	19	Standard
	Se-1	77	2744.9	4.1	**51.3854**	2.142	4.2	ug/L	89	Standard
>	**Ga**	71	48.3	46.6				mg/L	25	Standard
	Rb	85	626.7	8.1				ug/L	27	Standard
	Y	89	300368.6	3.3				ug/L	295132	Standard
>	**Rh**	103	28.3	73.5				ug/L	20	Standard
	Mo	98	148635.2	0.9	**98.9575**	1.313	1.3	ug/L	11	Standard
	Ag	107	270240.4	0.7	**48.9825**	0.540	1.1	ug/L	64	Standard
	Cd	111	76545.8	0.3	**50.7606**	0.420	0.8	mg/L	7	Standard
	Cd	114	201854.1	1.2	**50.8943**	0.821	1.6	ug/L	10	Standard
>	**In**	115	433378.2	0.5				ug/L	418014	Standard
	Sn	118	230037.1	2.4	**46.1038**	1.326	2.9	ug/L	385	Standard
	Sb	123	202446.6	1.4	**49.5869**	0.945	1.9	ug/L	54	Standard
	Ba	135	102521.0	0.7	**48.6968**	0.566	1.2	ug/L	44	Standard
	Ce	140	76.7	3.8				ug/L	33	Standard
>	**Tb**	159	866017.9	0.8				ug/L	854905	Standard
	Ho	165	6.7	43.3				ug/L	13	Standard
	Tl	203	351755.7	0.6	**49.9141**	0.540	1.1	ug/L	4	Standard
	Tl	205	244783.2	0.8	**50.2887**	0.471	0.9	ug/L	5	Standard
	Pb	206	220291.2	0.5	**49.7262**	0.311	0.6	ug/L	182	Standard
	Pb	207	198553.8	0.2	**49.7964**	0.488	1.0	ug/L	160	Standard
	Pb	208	736852.2	0.4	**50.5141**	0.446	0.9	ug/L	604	Standard
	U	238	251465.8	1.1	**50.3156**	0.438	0.9	ug/L	3	Standard
>	**Bi**	209	402244.5	1.0				ug/L	395375	Standard

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Na	23	3.3	86.6	**-9.5054**	16.957	178.4	mg/L	0	Standard
Mg	24	2185.2	0.6	**5.2802**	0.057	1.1	mg/L	47	Standard
K	39	406.7	17.7	**5.4020**	1.037	19.2	mg/L	22	Standard
Ca	43	81.7	19.7	**6.6470**	1.946	29.3	mg/L	28	Standard
Fe	54	2245.9	2.8	**4.9941**	0.150	3.0	mg/L	72	Standard
Fe	57	1423.4	8.8	**6.2413**	1.160	18.6	mg/L	703	Standard
> **Sc-1**	45	30587.5	1.0				mg/L	30379	Standard
Cl	35	16461.6	2.5				ug/L	14530	Standard
Kr	83	3.7	41.7				ug/L	5	Standard
Br	81	723.4	5.6				ug/L	497	Standard
P	31	11486.0	2.9				ug/L	10347	Standard
S	34	1911.8	6.3				ug/L	1535	Standard
Sr	88	198.3	14.3				ug/L	177	Standard
C	12	176.7	29.0				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	16.5	34.2				mg/L	7	Standard
Ho-1	165	6.7	43.3				mg/L	13	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	3393.7	24.8				mg/L	1945	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	95.125		
	Al	27	93.314		
	Sc	45			
	Ti	47	102.755		
	V	51	104.580		
	Cr	52	101.082		
	Cr	53			
	Mn	55	104.630		
	Co	59	103.122		
	Ni	60	99.693		
	Cu	65	100.373		
	Zn	66	98.485		
>	Ge	72		101.397	
	As	75	99.428		
	Se	82	101.164		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	98.957		
Ag	107	97.965		
Cd	111	101.521		
Cd	114			
In	115			103.675
Sn	118	92.208		
Sb	123	99.174		
Ba	135	97.394		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.828		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.028		
U	238	100.631		
Bi	209			101.737
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, August 24, 2015 15:07:02
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	46721.9	2.1				ug/L	43934	Standard
	Be	9	10.0	50.0	**0.0142**	0.008	59.0	ug/L	0	Standard
	Al	27	880.0	54.2	**0.0011**	0.007	631.9	ug/L	410	Standard
	Sc	45	30261.9	3.8				ug/L	30379	Standard
	Ti	47	20.3	22.2	**-0.0108**	0.022	204.4	ug/L	21	Standard
	V	51	1164.5	7.4	**-0.0328**	0.018	54.4	ug/L	1362	Standard
	Cr	52	7099.7	2.6	**-0.1681**	0.040	23.5	ug/L	8311	Standard
	Cr	53	616.7	13.8	**0.3220**	0.101	31.5	ug/L	325	Standard
	Mn	55	797.0	9.8	**0.0020**	0.023	1159.1	ug/L	694	Standard
	Co	59	212.3	13.5	**-0.0010**	0.009	885.2	ug/L	199	Standard
	Ni	60	185.7	4.4	**-0.0655**	0.006	9.7	ug/L	212	Standard
	Cu	65	167.3	4.2	**0.0031**	0.004	132.1	ug/L	149	Standard
	Zn	66	224.0	5.1	**-0.2742**	0.019	6.8	ug/L	206	Standard
>	**Ge**	72	317470.4	2.4				ug/L	319179	Standard
	As	75	-74.6	21.0	**0.0175**	0.016	91.5	ug/L	-51	Standard
	Se	82	14.8	18.7	**-0.0269**	0.042	157.2	ug/L	19	Standard
	Se-1	77	101.7	2.8	**0.1689**	0.101	60.1	ug/L	89	Standard
>	**Ga**	71	20.0	25.0				mg/L	25	Standard
	Rb	85	21.7	13.3				ug/L	27	Standard
	Y	89	299345.7	2.1				ug/L	295132	Standard
>	**Rh**	103	23.3	44.6				ug/L	20	Standard
	Mo	98	76.1	18.4	**0.0360**	0.010	27.7	ug/L	11	Standard
	Ag	107	104.7	49.5	**0.0040**	0.010	239.5	ug/L	64	Standard
	Cd	111	6.5	49.1	**-0.0051**	0.002	42.3	mg/L	7	Standard
	Cd	114	22.5	61.2	**-0.0014**	0.003	257.0	ug/L	10	Standard
>	**In**	115	434280.9	1.5				ug/L	418014	Standard
	Sn	118	528.3	9.7	**0.0310**	0.010	31.8	ug/L	385	Standard
	Sb	123	735.1	6.9	**0.1653**	0.015	9.0	ug/L	54	Standard
	Ba	135	70.7	49.7	**0.0089**	0.017	192.2	ug/L	44	Standard
	Ce	140	23.3	65.5				ug/L	33	Standard
>	**Tb**	159	865030.1	0.6				ug/L	854905	Standard
	Ho	165	13.3	43.3				ug/L	13	Standard
	Tl	203	64.7	137.2	**0.0093**	0.013	136.1	ug/L	4	Standard
	Tl	205	20.0	25.0	**0.0056**	0.001	19.1	ug/L	5	Standard
	Pb	206	237.7	23.6	**-0.0035**	0.013	371.6	ug/L	182	Standard
	Pb	207	208.0	25.0	**-0.0009**	0.014	1471.2	ug/L	160	Standard
	Pb	208	669.0	9.8	**-0.0053**	0.005	95.0	ug/L	604	Standard
	U	238	22.3	80.3	**0.0042**	0.004	87.1	ug/L	3	Standard
>	**Bi**	209	405620.9	1.3				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	43.3	76.8	**-0.0035**	0.088	2538.5	mg/L	47	Standard
K	39	10.0		**-0.1179**	0.005	4.6	mg/L	22	Standard
Ca	43	40.0	12.5	**1.9045**	0.763	40.1	mg/L	28	Standard
Fe	54	75.9	19.1	**-0.0193**	0.029	147.8	mg/L	72	Standard
Fe	57	766.7	8.8	**-0.0955**	0.562	588.4	mg/L	703	Standard
Sc-1	45	30261.9	3.8				mg/L	30379	Standard
Cl	35	15685.5	2.0				ug/L	14530	Standard
Kr	83	4.7	99.0				ug/L	5	Standard
Br	81	610.0	4.3				ug/L	497	Standard
P	31	11534.4	2.5				ug/L	10347	Standard
S	34	1828.4	1.8				ug/L	1535	Standard
Sr	88	191.7	12.9				ug/L	177	Standard
C	12	156.7	9.8				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	12.4	93.4				mg/L	7	Standard
Ho-1	165	13.3	43.3				mg/L	13	Standard
Er	166	20.0	50.0				mg/L	3	Standard
I	127	3078.6	2.2				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.465	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.891
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.591
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Monday, August 24, 2015 15:10:14
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	46977.8	3.1				ug/L	43934	Standard
	Be	9	148.3	13.6	**0.2349**	0.032	13.8	ug/L	0	Standard
	Al	27	380.0	13.4	**-0.0061**	0.001	10.4	ug/L	410	Standard
	Sc	45	30009.7	1.2				ug/L	30379	Standard
	Ti	47	17.3	16.7	**-0.0241**	0.013	54.8	ug/L	21	Standard
	V	51	2930.4	1.6	**0.3814**	0.018	4.7	ug/L	1362	Standard
	Cr	52	12156.5	1.1	**0.7428**	0.035	4.7	ug/L	8311	Standard
	Cr	53	1063.4	1.5	**0.9658**	0.025	2.5	ug/L	325	Standard
	Mn	55	2795.6	4.3	**0.5057**	0.024	4.8	ug/L	694	Standard
	Co	59	1734.8	2.9	**0.3933**	0.010	2.4	ug/L	199	Standard
	Ni	60	2637.6	0.9	**1.5390**	0.023	1.5	ug/L	212	Standard
	Cu	65	1525.4	3.8	**0.9189**	0.038	4.2	ug/L	149	Standard
	Zn	66	5407.6	2.9	**5.8696**	0.130	2.2	ug/L	206	Standard
>	**Ge**	72	313695.0	1.0				ug/L	319179	Standard
	As	75	275.1	12.7	**0.4273**	0.044	10.3	ug/L	-51	Standard
	Se	82	48.8	9.2	**0.4562**	0.069	15.2	ug/L	19	Standard
	Se-1	77	115.0	3.1	**0.4579**	0.049	10.7	ug/L	89	Standard
>	**Ga**	71	13.3	78.1				mg/L	25	Standard
	Rb	85	41.7	59.2				ug/L	27	Standard
	Y	89	292663.7	2.2				ug/L	295132	Standard
>	**Rh**	103	16.7	34.6				ug/L	20	Standard
	Mo	98	19.5	3.9	**-0.0014**	0.001	41.8	ug/L	11	Standard
	Ag	107	2118.1	2.5	**0.3765**	0.011	2.9	ug/L	64	Standard
	Cd	111	360.3	4.6	**0.2341**	0.013	5.3	mg/L	7	Standard
	Cd	114	957.4	8.2	**0.2390**	0.018	7.6	ug/L	10	Standard
>	**In**	115	425151.8	0.8				ug/L	418014	Standard
	Sn	118	595.0	8.0	**0.0470**	0.011	22.6	ug/L	385	Standard
	Sb	123	1756.1	3.3	**0.4240**	0.011	2.6	ug/L	54	Standard
	Ba	135	1498.4	1.3	**0.7011**	0.007	1.1	ug/L	44	Standard
	Ce	140	16.7	96.4				ug/L	33	Standard
>	**Tb**	159	849632.6	1.9				ug/L	854905	Standard
	Ho	165	10.0	100.0				ug/L	13	Standard
	Tl	203	557.7	6.2	**0.0794**	0.004	5.3	ug/L	4	Standard
	Tl	205	401.7	14.9	**0.0842**	0.012	13.7	ug/L	5	Standard
	Pb	206	1103.4	2.8	**0.1931**	0.004	2.3	ug/L	182	Standard
	Pb	207	929.4	3.1	**0.1812**	0.009	4.9	ug/L	160	Standard
	Pb	208	3497.5	1.8	**0.1898**	0.007	3.5	ug/L	604	Standard
	U	238	1981.5	0.5	**0.3973**	0.004	0.9	ug/L	3	Standard
>	**Bi**	209	401145.2	1.0				ug/L	395375	Standard

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Na	23	3.3	173.2	**-10.1937**	35.106	344.4	mg/L	0	Standard
Mg	24	36.7	7.9	**-0.0215**	0.008	38.0	mg/L	47	Standard
K	39	18.3	31.5	**0.0018**	0.085	4690.6	mg/L	22	Standard
Ca	43	25.0	69.3	**0.1759**	2.071	1177.7	mg/L	28	Standard
Fe	54	80.5	25.2	**-0.0068**	0.045	665.7	mg/L	72	Standard
Fe	57	796.7	11.6	**0.2775**	1.008	363.4	mg/L	703	Standard
> **Sc-1**	45	30009.7	1.2				mg/L	30379	Standard
Cl	35	15655.4	1.2				ug/L	14530	Standard
Kr	83	5.0	40.0				ug/L	5	Standard
Br	81	580.0	17.0				ug/L	497	Standard
P	31	10668.8	1.6				ug/L	10347	Standard
S	34	1726.8	9.7				ug/L	1535	Standard
Sr	88	178.3	18.0				ug/L	177	Standard
C	12	183.3	24.6				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	6.0	193.9				mg/L	7	Standard
Ho-1	165	10.0	100.0				mg/L	13	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	1551.7	2.2				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	117.440		
Al	27			
Sc	45			
Ti	47			
V	51	95.357		
Cr	52	92.852		
Cr	53			
Mn	55	101.135		
Co	59	98.322		
Ni	60	96.185		
Cu	65	114.859		
Zn	66	93.913		
> Ge	72		98.282	
As	75	106.833		
Se	82	114.059		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	94.128		
Cd	111	97.560		
Cd	114			
> In	115			101.708
Sn	118			
Sb	123	105.990		
Ba	135	93.482		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.303		
Tl	205			
Pb	206			
Pb	207			
Pb	208	94.909		
U	238	99.321		
> Bi	209			101.459
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
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Method 6020 - Summary Report

Sample ID: L1508122010
Sample Date/Time: Monday, August 24, 2015 15:13:27
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49067.7	3.3				ug/L	43934	Standard
	Be	9	11.7	49.5	**0.0158**	0.009	55.0	ug/L	0	Standard
	Al	27	4370407.4	0.7	**58.8854**	1.683	2.9	ug/L	410	Standard
	Sc	45	33680.8	3.1				ug/L	30379	Standard
	Ti	47	1032.7	2.4	**4.4047**	0.070	1.6	ug/L	21	Standard
	V	51	6549.1	1.3	**1.1062**	0.021	1.9	ug/L	1362	Standard
	Cr	52	14502.9	3.4	**0.9616**	0.103	10.7	ug/L	8311	Standard
	Cr	53	1181.7	10.6	**1.0055**	0.172	17.2	ug/L	325	Standard
	Mn	55	539550.5	1.6	**124.8422**	1.031	0.8	ug/L	694	Standard
	Co	59	1225.0	3.9	**0.2371**	0.009	3.7	ug/L	199	Standard
	Ni	60	1862.8	3.0	**0.9387**	0.028	2.9	ug/L	212	Standard
	Cu	65	2503.9	0.7	**1.4483**	0.019	1.3	ug/L	149	Standard
	Zn	66	8427.3	2.3	**8.6800**	0.128	1.5	ug/L	206	Standard
>	**Ge**	72	339805.0	0.9				ug/L	319179	Standard
	As	75	5277.9	2.6	**5.8286**	0.148	2.5	ug/L	-51	Standard
	Se	82	56.7	19.1	**0.5066**	0.143	28.2	ug/L	19	Standard
	Se-1	77	108.3	6.9	**0.1589**	0.148	93.3	ug/L	89	Standard
>	**Ga**	71	338.3	20.8				mg/L	25	Standard
	Rb	85	7908.7	1.7				ug/L	27	Standard
	Y	89	334637.7	2.1				ug/L	295132	Standard
>	**Rh**	103	53.3	30.1				ug/L	20	Standard
	Mo	98	575.1	3.6	**0.3525**	0.009	2.6	ug/L	11	Standard
	Ag	107	107.3	17.7	**0.0037**	0.003	92.1	ug/L	64	Standard
	Cd	111	57.2	36.2	**0.0269**	0.013	48.6	mg/L	7	Standard
	Cd	114	167.4	9.6	**0.0335**	0.004	13.2	ug/L	10	Standard
>	**In**	115	451963.3	1.4				ug/L	418014	Standard
	Sn	118	718.4	13.2	**0.0633**	0.016	26.0	ug/L	385	Standard
	Sb	123	543.5	6.2	**0.1131**	0.007	5.8	ug/L	54	Standard
	Ba	135	102353.3	2.0	**46.6292**	1.550	3.3	ug/L	44	Standard
	Ce	140	98935.4	1.9				ug/L	33	Standard
>	**Tb**	159	912908.1	0.3				ug/L	854905	Standard
	Ho	165	1873.4	5.4				ug/L	13	Standard
	Tl	203	43.7	50.5	**0.0061**	0.003	49.9	ug/L	4	Standard
	Tl	205	18.3	41.7	**0.0051**	0.001	29.0	ug/L	5	Standard
	Pb	206	603331.6	0.3	**131.7379**	1.585	1.2	ug/L	182	Standard
	Pb	207	501727.8	1.1	**121.7115**	2.527	2.1	ug/L	160	Standard
	Pb	208	1923258.0	0.8	**127.5177**	1.205	0.9	ug/L	604	Standard
	U	238	395.3	5.1	**0.0762**	0.003	4.6	ug/L	3	Standard
>	**Bi**	209	416148.2	1.0				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	1498.4	7.5	**3.2471**	0.274	8.4	mg/L	47	Standard
K	39	118.3	32.0	**1.2301**	0.452	36.7	mg/L	22	Standard
Ca	43	121.7	16.6	**9.9890**	2.385	23.9	mg/L	28	Standard
Fe	54	842.7	8.1	**1.5765**	0.195	12.4	mg/L	72	Standard
Fe	57	1025.0	5.4	**1.4445**	0.718	49.7	mg/L	703	Standard
Sc-1	45	33680.8	3.1				mg/L	30379	Standard
Cl	35	16808.0	1.7				ug/L	14530	Standard
Kr	83	5.0	40.0				ug/L	5	Standard
Br	81	2516.9	9.9				ug/L	497	Standard
P	31	12153.2	4.1				ug/L	10347	Standard
S	34	1808.4	4.9				ug/L	1535	Standard
Sr	88	210.0	6.3				ug/L	177	Standard
C	12	1580.1	11.6				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	3	Standard
Dy	164	2522.1	4.9				mg/L	7	Standard
Ho-1	165	1873.4	5.4				mg/L	13	Standard
Er	166	1700.1	6.1				mg/L	3	Standard
I	127	118606.2	3.7				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.686	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.462	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	108.122	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	105.254	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Pb 206 Upper, S, EEE	Pb	206	
Pb 207 Upper, S, EEE	Pb	207	

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Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1508122001
Sample Date/Time: Monday, August 24, 2015 15:16:39
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54441.0	1.9				ug/L	43934	Standard
	Be	9	2848.6	7.2	**3.9251**	0.330	8.4	ug/L	0	Standard
	Al	27	13985214.8	2.2	**169.8396**	6.993	4.1	ug/L	410	Standard
	Sc	45	65893.0	2.2				ug/L	30379	Standard
	Ti	47	119514.6	1.8	**546.1320**	15.568	2.9	ug/L	21	Standard
	V	51	348389.8	0.4	**77.9909**	2.058	2.6	ug/L	1362	Standard
	Cr	52	248122.8	0.5	**41.0602**	0.973	2.4	ug/L	8311	Standard
	Cr	53	33490.3	2.5	**45.2397**	2.010	4.4	ug/L	325	Standard
	Mn	55	23015254.0	1.8	**5579.0889**	30.732	0.6	ug/L	694	Standard
	Co	59	59367.1	0.7	**14.7751**	0.244	1.7	ug/L	199	Standard
	Ni	60	74914.4	0.8	**47.1201**	1.048	2.2	ug/L	212	Standard
	Cu	65	51178.3	0.8	**33.1752**	0.595	1.8	ug/L	149	Standard
	Zn	66	600799.4	0.9	**686.9200**	9.579	1.4	ug/L	206	Standard
>	**Ge**	72	324883.4	2.3				ug/L	319179	Standard
	As	75	18472.4	0.2	**21.0672**	0.490	2.3	ug/L	-51	Standard
	Se	82	628.0	1.9	**8.3558**	0.124	1.5	ug/L	19	Standard
	Se-1	77	599.3	5.7	**9.7429**	0.785	8.1	ug/L	89	Standard
>	**Ga**	71	40475.7	3.6				mg/L	25	Standard
	Rb	85	512542.8	1.5				ug/L	27	Standard
	Y	89	2512762.1	0.6				ug/L	295132	Standard
>	**Rh**	103	71.7	4.0				ug/L	20	Standard
	Mo	98	3138.7	1.9	**2.0752**	0.064	3.1	ug/L	11	Standard
	Ag	107	1669.8	2.3	**0.2878**	0.011	3.7	ug/L	64	Standard
	Cd	111	3759.9	1.3	**2.4837**	0.030	1.2	mg/L	7	Standard
	Cd	114	9994.5	3.7	**2.5121**	0.067	2.7	ug/L	10	Standard
>	**In**	115	433493.2	1.4				ug/L	418014	Standard
	Sn	118	3252.0	5.3	**0.5776**	0.027	4.6	ug/L	385	Standard
	Sb	123	2220.9	0.3	**0.5295**	0.008	1.5	ug/L	54	Standard
	Ba	135	295800.3	0.6	**140.5310**	2.628	1.9	ug/L	44	Standard
	Ce	140	3470996.3	0.4				ug/L	33	Standard
>	**Tb**	159	1029276.0	1.9				ug/L	854905	Standard
	Ho	165	194482.3	2.3				ug/L	13	Standard
	Tl	203	4024.9	2.1	**0.5819**	0.017	2.9	ug/L	4	Standard
	Tl	205	2823.6	4.2	**0.5925**	0.030	5.1	ug/L	5	Standard
	Pb	206	241737.2	0.6	**55.5879**	0.798	1.4	ug/L	182	Standard
	Pb	207	188783.5	0.6	**48.2212**	0.440	0.9	ug/L	160	Standard
	Pb	208	725818.8	0.6	**50.6792**	0.357	0.7	ug/L	604	Standard
	U	238	11572.1	0.4	**2.3582**	0.021	0.9	ug/L	3	Standard
>	**Bi**	209	394921.8	0.9				ug/L	395375	Standard

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Na	23	6.7	114.6	**-8.3379**	20.986	251.7	mg/L	0	Standard
Mg	24	9716.4	1.8	**11.0216**	0.251	2.3	mg/L	47	Standard
K	39	476.7	4.0	**2.8179**	0.074	2.6	mg/L	22	Standard
Ca	43	476.7	13.4	**22.6791**	2.878	12.7	mg/L	28	Standard
Fe	54	52618.8	1.9	**56.2518**	0.793	1.4	mg/L	72	Standard
Fe	57	13803.0	1.4	**54.9745**	1.270	2.3	mg/L	703	Standard
> **Sc-1**	45	65893.0	2.2				mg/L	30379	Standard
Cl	35	16666.5	2.5				ug/L	14530	Standard
Kr	83	4.0	86.6				ug/L	5	Standard
Br	81	33036.0	3.5				ug/L	497	Standard
P	31	39693.6	2.3				ug/L	10347	Standard
S	34	1498.4	5.7				ug/L	1535	Standard
Sr	88	218.3	16.6				ug/L	177	Standard
C	12	563.3	5.4				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	433.3	16.2				mg/L	3	Standard
Dy	164	280370.6	3.0				mg/L	7	Standard
Ho-1	165	194482.3	2.3				mg/L	13	Standard
Er	166	185712.0	3.2				mg/L	3	Standard
I	127	88553.1	2.3				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.916	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.787	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.703
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.885
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ti 47 Upper, S, EEE	Ti	47	

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Mn 55 Upper, S, EEE	Mn	55
Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

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Sample ID: L1508122002
Sample Date/Time: Monday, August 24, 2015 15:19:50
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50395.4	2.4				ug/L	43934	Standard
	Be	9	13.3	78.1	**0.0177**	0.015	85.1	ug/L	0	Standard
	Al	27	7257944.7	0.9	**95.1904**	1.893	2.0	ug/L	410	Standard
	Sc	45	31290.6	1.2				ug/L	30379	Standard
	Ti	47	76.0	35.8	**0.2519**	0.127	50.5	ug/L	21	Standard
	V	51	1633.7	9.7	**0.0781**	0.037	47.0	ug/L	1362	Standard
	Cr	52	9686.1	1.2	**0.2983**	0.034	11.5	ug/L	8311	Standard
	Cr	53	3473.7	24.0	**4.3511**	1.136	26.1	ug/L	325	Standard
	Mn	55	2356905.1	0.6	**589.1748**	3.855	0.7	ug/L	694	Standard
	Co	59	680.0	5.3	**0.1199**	0.010	8.5	ug/L	199	Standard
	Ni	60	2639.6	3.9	**1.5336**	0.074	4.8	ug/L	212	Standard
	Cu	65	1237.4	3.0	**0.7216**	0.021	2.9	ug/L	149	Standard
	Zn	66	2773.9	4.6	**2.7370**	0.151	5.5	ug/L	206	Standard
>	**Ge**	72	314933.9	0.9				ug/L	319179	Standard
	As	75	568.4	10.8	**0.7692**	0.073	9.4	ug/L	-51	Standard
	Se	82	259.6	11.1	**3.4297**	0.424	12.4	ug/L	19	Standard
	Se-1	77	228.0	6.5	**2.6997**	0.264	9.8	ug/L	89	Standard
>	**Ga**	71	60.0	8.3				mg/L	25	Standard
	Rb	85	10582.0	1.8				ug/L	27	Standard
	Y	89	303124.2	1.3				ug/L	295132	Standard
>	**Rh**	103	70.0	18.9				ug/L	20	Standard
	Mo	98	95.4	3.0	**0.0486**	0.001	2.4	ug/L	11	Standard
	Ag	107	76.0	18.6	**-0.0013**	0.002	187.8	ug/L	64	Standard
	Cd	111	357.1	3.8	**0.2263**	0.008	3.5	mg/L	7	Standard
	Cd	114	895.5	6.9	**0.2178**	0.014	6.4	ug/L	10	Standard
>	**In**	115	435217.4	1.2				ug/L	418014	Standard
	Sn	118	416.7	2.5	**0.0085**	0.003	29.8	ug/L	385	Standard
	Sb	123	110.0	8.1	**0.0123**	0.002	15.2	ug/L	54	Standard
	Ba	135	38110.5	1.8	**18.0087**	0.143	0.8	ug/L	44	Standard
	Ce	140	2503.6	29.5				ug/L	33	Standard
>	**Tb**	159	869844.6	0.7				ug/L	854905	Standard
	Ho	165	291.7	19.9				ug/L	13	Standard
	Tl	203	226.7	4.4	**0.0326**	0.002	4.6	ug/L	4	Standard
	Tl	205	161.7	17.0	**0.0350**	0.005	15.7	ug/L	5	Standard
	Pb	206	519.0	16.4	**0.0616**	0.020	32.2	ug/L	182	Standard
	Pb	207	431.0	14.9	**0.0565**	0.017	29.4	ug/L	160	Standard
	Pb	208	1657.0	13.4	**0.0640**	0.016	24.5	ug/L	604	Standard
	U	238	628.3	5.6	**0.1267**	0.006	5.0	ug/L	3	Standard
>	**Bi**	209	398218.4	0.8				ug/L	395375	Standard

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Na	23	3.3	86.6	**-9.1996**	16.695	181.5	mg/L	0	Standard
Mg	24	9282.8	1.4	**22.2864**	0.403	1.8	mg/L	47	Standard
K	39	240.0	11.6	**3.0044**	0.381	12.7	mg/L	22	Standard
Ca	43	400.0	9.0	**42.2434**	3.625	8.6	mg/L	28	Standard
Fe	54	78.9	6.8	**-0.0177**	0.012	65.9	mg/L	72	Standard
Fe	57	953.4	9.1	**1.4430**	0.844	58.5	mg/L	703	Standard
> **Sc-1**	45	31290.6	1.2				mg/L	30379	Standard
Cl	35	18257.7	2.5				ug/L	14530	Standard
Kr	83	4.7	32.7				ug/L	5	Standard
Br	81	18628.1	4.5				ug/L	497	Standard
P	31	12920.5	2.2				ug/L	10347	Standard
S	34	1698.4	8.2				ug/L	1535	Standard
Sr	88	243.3	24.5				ug/L	177	Standard
C	12	556.7	9.9				mg/L	153	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	376.0	8.9				mg/L	7	Standard
Ho-1	165	291.7	19.9				mg/L	13	Standard
Er	166	293.3	24.2				mg/L	3	Standard
I	127	96823.5	2.7				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.708	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.670	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.115
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.719
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508122004
Sample Date/Time: Monday, August 24, 2015 15:23:01
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51475.7	2.6				ug/L	43934	Standard
	Be	9	356.7	7.2	**0.5185**	0.051	9.8	ug/L	0	Standard
	Al	27	6998517.4	0.9	**89.8644**	1.764	2.0	ug/L	410	Standard
	Sc	45	37867.3	2.9				ug/L	30379	Standard
	Ti	47	15260.3	1.3	**69.9267**	0.652	0.9	ug/L	21	Standard
	V	51	52197.1	0.7	**11.4772**	0.111	1.0	ug/L	1362	Standard
	Cr	52	30533.1	1.8	**3.8360**	0.076	2.0	ug/L	8311	Standard
	Cr	53	4415.6	2.5	**5.5206**	0.161	2.9	ug/L	325	Standard
	Mn	55	3576976.9	0.9	**870.7073**	6.021	0.7	ug/L	694	Standard
	Co	59	46984.1	1.2	**11.7309**	0.116	1.0	ug/L	199	Standard
	Ni	60	18802.0	0.2	**11.7365**	0.049	0.4	ug/L	212	Standard
	Cu	65	17774.4	0.7	**11.4996**	0.040	0.3	ug/L	149	Standard
	Zn	66	149259.3	0.5	**170.9756**	0.385	0.2	ug/L	206	Standard
>	**Ge**	72	323441.5	0.4				ug/L	319179	Standard
	As	75	2848.8	1.2	**3.3500**	0.029	0.9	ug/L	-51	Standard
	Se	82	80.6	20.7	**0.8718**	0.225	25.9	ug/L	19	Standard
	Se-1	77	238.7	5.7	**2.7880**	0.248	8.9	ug/L	89	Standard
>	**Ga**	71	3770.5	6.4				mg/L	25	Standard
	Rb	85	38936.8	6.0				ug/L	27	Standard
	Y	89	677591.4	3.2				ug/L	295132	Standard
>	**Rh**	103	111.7	23.0				ug/L	20	Standard
	Mo	98	903.0	6.6	**0.5662**	0.034	6.0	ug/L	11	Standard
	Ag	107	561.0	2.7	**0.0833**	0.002	2.6	ug/L	64	Standard
	Cd	111	932.8	1.8	**0.5884**	0.011	1.8	mg/L	7	Standard
	Cd	114	2630.1	6.9	**0.6339**	0.044	7.0	ug/L	10	Standard
>	**In**	115	448465.5	0.7				ug/L	418014	Standard
	Sn	118	873.4	7.2	**0.0946**	0.012	12.7	ug/L	385	Standard
	Sb	123	1455.0	2.4	**0.3299**	0.006	2.0	ug/L	54	Standard
	Ba	135	147532.2	0.9	**67.7269**	0.549	0.8	ug/L	44	Standard
	Ce	140	576396.0	0.7				ug/L	33	Standard
>	**Tb**	159	899607.2	0.6				ug/L	854905	Standard
	Ho	165	29839.4	1.5				ug/L	13	Standard
	Tl	203	488.7	3.8	**0.0700**	0.002	3.1	ug/L	4	Standard
	Tl	205	348.3	6.5	**0.0736**	0.005	7.2	ug/L	5	Standard
	Pb	206	247714.4	1.1	**56.3449**	0.325	0.6	ug/L	182	Standard
	Pb	207	203588.4	0.9	**51.4442**	0.076	0.1	ug/L	160	Standard
	Pb	208	776392.3	0.4	**53.6299**	0.312	0.6	ug/L	604	Standard
	U	238	2374.9	0.8	**0.4785**	0.006	1.2	ug/L	3	Standard
>	**Bi**	209	399218.9	0.8				ug/L	395375	Standard

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Na	23	5.0	100.0	**-13.4202**	23.579	175.7	mg/L	0	Standard
Mg	24	9141.1	2.2	**18.1167**	0.392	2.2	mg/L	47	Standard
K	39	333.3	3.1	**3.4902**	0.229	6.6	mg/L	22	Standard
Ca	43	295.0	5.1	**24.6703**	0.940	3.8	mg/L	28	Standard
Fe	54	14568.1	3.6	**27.0072**	1.106	4.1	mg/L	72	Standard
Fe	57	4539.0	4.8	**28.2144**	2.575	9.1	mg/L	703	Standard
> **Sc-1**	45	37867.3	2.9				mg/L	30379	Standard
Cl	35	16336.8	2.2				ug/L	14530	Standard
Kr	83	4.3	13.3				ug/L	5	Standard
Br	81	2703.6	0.9				ug/L	497	Standard
P	31	16717.6	2.1				ug/L	10347	Standard
S	34	1988.5	5.7				ug/L	1535	Standard
Sr	88	205.0	4.9				ug/L	177	Standard
C	12	930.0	8.4				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	53.9				mg/L	3	Standard
Dy	164	39146.4	2.4				mg/L	7	Standard
Ho-1	165	29839.4	1.5				mg/L	13	Standard
Er	166	30086.5	2.4				mg/L	3	Standard
I	127	63074.6	5.3				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.167	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.335	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	107.285
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.972
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1508122005
Sample Date/Time: Monday, August 24, 2015 15:26:12
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	46979.4	1.5				ug/L	43934	Standard
	Be	9	20.0	86.6	**0.0300**	0.028	92.5	ug/L	0	Standard
	Al	27	4655819.1	0.9	**65.4843**	0.418	0.6	ug/L	410	Standard
	Sc	45	31347.4	1.8				ug/L	30379	Standard
	Ti	47	62.0	25.1	**0.1866**	0.073	39.1	ug/L	21	Standard
	V	51	1264.0	5.9	**-0.0070**	0.017	248.9	ug/L	1362	Standard
	Cr	52	8121.5	1.5	**0.0246**	0.017	69.7	ug/L	8311	Standard
	Cr	53	1190.0	4.1	**1.1419**	0.080	7.0	ug/L	325	Standard
	Mn	55	1705914.5	1.7	**427.1863**	5.553	1.3	ug/L	694	Standard
	Co	59	968.0	2.2	**0.1945**	0.005	2.6	ug/L	199	Standard
	Ni	60	1615.4	1.2	**0.8684**	0.005	0.5	ug/L	212	Standard
	Cu	65	436.3	3.9	**0.1850**	0.013	7.0	ug/L	149	Standard
	Zn	66	1867.1	2.2	**1.6711**	0.051	3.1	ug/L	206	Standard
>	**Ge**	72	314330.5	0.7				ug/L	319179	Standard
	As	75	672.5	1.7	**0.8924**	0.015	1.7	ug/L	-51	Standard
	Se	82	109.5	12.2	**1.3144**	0.198	15.0	ug/L	19	Standard
	Se-1	77	183.0	4.3	**1.8113**	0.157	8.6	ug/L	89	Standard
>	**Ga**	71	50.0	40.0				mg/L	25	Standard
	Rb	85	8445.7	4.8				ug/L	27	Standard
	Y	89	305530.3	5.3				ug/L	295132	Standard
>	**Rh**	103	90.0	22.2				ug/L	20	Standard
	Mo	98	209.1	4.8	**0.1256**	0.006	4.9	ug/L	11	Standard
	Ag	107	83.7	21.1	**0.0003**	0.003	1047.1	ug/L	64	Standard
	Cd	111	11.2	10.5	**-0.0020**	0.001	40.4	mg/L	7	Standard
	Cd	114	16.9	72.0	**-0.0027**	0.003	112.3	ug/L	10	Standard
>	**In**	115	430202.5	0.9				ug/L	418014	Standard
	Sn	118	426.7	20.1	**0.0114**	0.017	146.5	ug/L	385	Standard
	Sb	123	149.0	14.0	**0.0223**	0.005	24.3	ug/L	54	Standard
	Ba	135	117240.2	0.9	**56.1021**	0.469	0.8	ug/L	44	Standard
	Ce	140	4534.0	2.1				ug/L	33	Standard
>	**Tb**	159	858264.2	1.2				ug/L	854905	Standard
	Ho	165	316.7	12.3				ug/L	13	Standard
	Tl	203	17.7	34.1	**0.0027**	0.001	32.3	ug/L	4	Standard
	Tl	205	11.7	137.8	**0.0040**	0.003	85.4	ug/L	5	Standard
	Pb	206	3893.8	0.9	**0.8510**	0.009	1.1	ug/L	182	Standard
	Pb	207	3283.4	0.3	**0.7976**	0.001	0.2	ug/L	160	Standard
	Pb	208	12715.1	2.7	**0.8493**	0.021	2.5	ug/L	604	Standard
	U	238	61.0	12.4	**0.0123**	0.002	12.3	ug/L	3	Standard
>	**Bi**	209	389869.6	0.3				ug/L	395375	Standard

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Na	23	3.3	86.6	**-9.0021**	16.526	183.6	mg/L	0	Standard
Mg	24	8665.8	2.2	**20.7643**	0.695	3.3	mg/L	47	Standard
K	39	285.0	24.9	**3.6030**	0.925	25.7	mg/L	22	Standard
Ca	43	270.0	3.2	**27.5856**	1.284	4.7	mg/L	28	Standard
Fe	54	3113.1	2.9	**6.8246**	0.228	3.3	mg/L	72	Standard
Fe	57	1560.1	5.4	**7.2244**	1.059	14.7	mg/L	703	Standard
> **Sc-1**	45	31347.4	1.8				mg/L	30379	Standard
Cl	35	15667.4	2.5				ug/L	14530	Standard
Kr	83	3.3	34.6				ug/L	5	Standard
Br	81	6458.0	5.5				ug/L	497	Standard
P	31	13761.3	4.9				ug/L	10347	Standard
S	34	1898.5	5.6				ug/L	1535	Standard
Sr	88	235.0	7.7				ug/L	177	Standard
C	12	373.3	9.4				mg/L	153	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	237.5	20.4				mg/L	7	Standard
Ho-1	165	316.7	12.3				mg/L	13	Standard
Er	166	330.0	13.2				mg/L	3	Standard
I	127	109421.1	5.2				mg/L	1945	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		106.933	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.481	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.916
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.608
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508122007
Sample Date/Time: Monday, August 24, 2015 15:29:24
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	46265.6	2.8				ug/L	43934	Standard
	Be	9	55.0	24.1	**0.0876**	0.024	27.5	ug/L	0	Standard
	Al	27	10346253.8	1.8	**147.7986**	1.517	1.0	ug/L	410	Standard
	Sc	45	32565.0	1.8				ug/L	30379	Standard
	Ti	47	2090.5	1.4	**9.7357**	0.099	1.0	ug/L	21	Standard
	V	51	7064.4	1.1	**1.3347**	0.009	0.7	ug/L	1362	Standard
	Cr	52	12402.4	3.7	**0.7749**	0.069	8.9	ug/L	8311	Standard
	Cr	53	2396.9	1.9	**2.8355**	0.077	2.7	ug/L	325	Standard
	Mn	55	2383734.2	0.9	**595.1985**	2.220	0.4	ug/L	694	Standard
	Co	59	4051.5	0.8	**0.9873**	0.009	0.9	ug/L	199	Standard
	Ni	60	5284.6	3.0	**3.2521**	0.108	3.3	ug/L	212	Standard
	Cu	65	3508.7	2.5	**2.2423**	0.045	2.0	ug/L	149	Standard
	Zn	66	17339.2	0.9	**19.9029**	0.067	0.3	ug/L	206	Standard
>	**Ge**	72	315284.6	0.6				ug/L	319179	Standard
	As	75	5252.0	2.3	**6.2432**	0.123	2.0	ug/L	-51	Standard
	Se	82	621.1	0.7	**8.5189**	0.066	0.8	ug/L	19	Standard
	Se-1	77	289.3	6.8	**3.9179**	0.409	10.4	ug/L	89	Standard
>	**Ga**	71	506.7	8.6				mg/L	25	Standard
	Rb	85	21301.6	3.0				ug/L	27	Standard
	Y	89	346389.2	2.1				ug/L	295132	Standard
>	**Rh**	103	156.7	22.4				ug/L	20	Standard
	Mo	98	633.4	4.0	**0.4228**	0.020	4.8	ug/L	11	Standard
	Ag	107	183.3	9.4	**0.0195**	0.003	15.5	ug/L	64	Standard
	Cd	111	111.1	7.3	**0.0669**	0.005	7.0	mg/L	7	Standard
	Cd	114	311.0	5.0	**0.0744**	0.005	7.1	ug/L	10	Standard
>	**In**	115	417916.3	1.4				ug/L	418014	Standard
	Sn	118	583.3	5.8	**0.0467**	0.008	17.4	ug/L	385	Standard
	Sb	123	441.5	6.2	**0.0977**	0.008	8.2	ug/L	54	Standard
	Ba	135	834304.9	0.6	**411.1487**	3.362	0.8	ug/L	44	Standard
	Ce	140	129274.2	0.4				ug/L	33	Standard
>	**Tb**	159	837651.8	1.0				ug/L	854905	Standard
	Ho	165	4165.6	2.0				ug/L	13	Standard
	Tl	203	69.0	11.3	**0.0106**	0.001	11.1	ug/L	4	Standard
	Tl	205	51.7	44.7	**0.0129**	0.005	39.5	ug/L	5	Standard
	Pb	206	20803.9	0.4	**4.9978**	0.053	1.1	ug/L	182	Standard
	Pb	207	16963.2	0.4	**4.5258**	0.042	0.9	ug/L	160	Standard
	Pb	208	64893.6	1.8	**4.7363**	0.056	1.2	ug/L	604	Standard
	U	238	539.3	3.2	**0.1157**	0.004	3.6	ug/L	3	Standard
>	**Bi**	209	374136.7	0.7				ug/L	395375	Standard

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Na	23	1.7	173.2	**0.9379**	15.825	1687.3	mg/L	0	Standard
Mg	24	23059.2	2.2	**53.3690**	1.985	3.7	mg/L	47	Standard
K	39	523.3	8.1	**6.5792**	0.574	8.7	mg/L	22	Standard
Ca	43	335.0	2.6	**33.4916**	1.606	4.8	mg/L	28	Standard
Fe	54	3886.0	4.7	**8.2446**	0.540	6.6	mg/L	72	Standard
Fe	57	1951.8	4.5	**10.2648**	1.125	11.0	mg/L	703	Standard
> **Sc-1**	45	32565.0	1.8				mg/L	30379	Standard
Cl	35	15334.4	2.4				ug/L	14530	Standard
Kr	83	3.3	45.8				ug/L	5	Standard
Br	81	44211.1	3.0				ug/L	497	Standard
P	31	13070.6	1.7				ug/L	10347	Standard
S	34	1756.8	4.4				ug/L	1535	Standard
Sr	88	355.0	7.5				ug/L	177	Standard
C	12	603.3	1.0				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	3	Standard
Dy	164	5976.6	5.4				mg/L	7	Standard
Ho-1	165	4165.6	2.0				mg/L	13	Standard
Er	166	4133.9	4.2				mg/L	3	Standard
I	127	306900.9	3.3				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.308	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.780	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.977
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.628
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1508122008
Sample Date/Time: Monday, August 24, 2015 15:32:35
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	45429.7	3.0				ug/L	43934	Standard
	Be	9	11.7	65.5	**0.0172**	0.012	71.1	ug/L	0	Standard
	Al	27	8418361.8	0.8	**122.5385**	4.661	3.8	ug/L	410	Standard
	Sc	45	30281.9	2.4				ug/L	30379	Standard
	Ti	47	80.3	10.4	**0.2702**	0.041	15.3	ug/L	21	Standard
	V	51	1630.3	5.9	**0.0748**	0.022	29.5	ug/L	1362	Standard
	Cr	52	9348.9	1.7	**0.2274**	0.018	7.9	ug/L	8311	Standard
	Cr	53	1881.8	3.7	**2.0959**	0.111	5.3	ug/L	325	Standard
	Mn	55	1684384.9	1.3	**418.1780**	4.862	1.2	ug/L	694	Standard
	Co	59	1040.0	3.7	**0.2108**	0.011	5.3	ug/L	199	Standard
	Ni	60	3438.4	0.7	**2.0386**	0.012	0.6	ug/L	212	Standard
	Cu	65	946.4	2.0	**0.5222**	0.014	2.7	ug/L	149	Standard
	Zn	66	1978.1	3.0	**1.7821**	0.065	3.6	ug/L	206	Standard
>	**Ge**	72	317052.3	0.7				ug/L	319179	Standard
	As	75	6887.5	0.9	**8.1103**	0.038	0.5	ug/L	-51	Standard
	Se	82	1065.6	2.3	**14.7001**	0.388	2.6	ug/L	19	Standard
	Se-1	77	261.3	1.2	**3.3309**	0.097	2.9	ug/L	89	Standard
>	**Ga**	71	70.0	14.3				mg/L	25	Standard
	Rb	85	18020.7	2.9				ug/L	27	Standard
	Y	89	294479.8	1.9				ug/L	295132	Standard
>	**Rh**	103	150.0	8.8				ug/L	20	Standard
	Mo	98	656.0	5.4	**0.4490**	0.028	6.2	ug/L	11	Standard
	Ag	107	74.0	6.2	**-0.0007**	0.001	130.5	ug/L	64	Standard
	Cd	111	11.1	18.8	**-0.0017**	0.001	85.8	mg/L	7	Standard
	Cd	114	32.2	25.5	**0.0016**	0.002	137.8	ug/L	10	Standard
>	**In**	115	408320.9	0.6				ug/L	418014	Standard
	Sn	118	538.3	6.0	**0.0399**	0.007	17.3	ug/L	385	Standard
	Sb	123	300.4	10.0	**0.0636**	0.007	11.7	ug/L	54	Standard
	Ba	135	841289.2	0.2	**424.3088**	1.838	0.4	ug/L	44	Standard
	Ce	140	4577.4	4.5				ug/L	33	Standard
>	**Tb**	159	838139.0	1.4				ug/L	854905	Standard
	Ho	165	338.3	12.9				ug/L	13	Standard
	Tl	203	18.3	16.7	**0.0029**	0.000	16.0	ug/L	4	Standard
	Tl	205	10.0	132.3	**0.0037**	0.003	78.3	ug/L	5	Standard
	Pb	206	3458.4	0.3	**0.7786**	0.001	0.2	ug/L	182	Standard
	Pb	207	2934.3	1.6	**0.7347**	0.015	2.0	ug/L	160	Standard
	Pb	208	10923.9	2.3	**0.7504**	0.017	2.2	ug/L	604	Standard
	U	238	389.7	4.9	**0.0831**	0.004	5.1	ug/L	3	Standard
>	**Bi**	209	376262.0	0.3				ug/L	395375	Standard

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Na	23	5.0	100.0	**-19.5812**	29.188	149.1	mg/L	0	Standard
Mg	24	22894.0	0.3	**56.9888**	1.418	2.5	mg/L	47	Standard
K	39	593.3	6.1	**8.0771**	0.498	6.2	mg/L	22	Standard
Ca	43	371.7	13.5	**40.3938**	4.802	11.9	mg/L	28	Standard
Fe	54	3106.1	4.5	**7.0572**	0.386	5.5	mg/L	72	Standard
Fe	57	1590.1	2.7	**8.0345**	0.425	5.3	mg/L	703	Standard
> **Sc-1**	45	30281.9	2.4				mg/L	30379	Standard
Cl	35	14560.3	3.4				ug/L	14530	Standard
Kr	83	3.0	33.3				ug/L	5	Standard
Br	81	78228.1	0.9				ug/L	497	Standard
P	31	12962.2	6.4				ug/L	10347	Standard
S	34	1783.4	7.5				ug/L	1535	Standard
Sr	88	293.3	14.5				ug/L	177	Standard
C	12	863.4	10.5				mg/L	153	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	312.1	9.2				mg/L	7	Standard
Ho-1	165	338.3	12.9				mg/L	13	Standard
Er	166	443.3	8.5				mg/L	3	Standard
I	127	369623.3	4.5				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.405	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.334	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.681
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.166
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1508122011
Sample Date/Time: Monday, August 24, 2015 15:35:46
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	46123.5	3.8				ug/L	43934	Standard
	Be	9	13.3	57.3	**0.0200**	0.013	65.7	ug/L	0	Standard
	Al	27	5908534.1	0.6	**84.7169**	2.940	3.5	ug/L	410	Standard
	Sc	45	32469.8	1.0				ug/L	30379	Standard
	Ti	47	59.0	5.9	**0.1611**	0.017	10.6	ug/L	21	Standard
	V	51	1595.6	9.2	**0.0552**	0.039	70.3	ug/L	1362	Standard
	Cr	52	8921.6	0.6	**0.1014**	0.034	33.3	ug/L	8311	Standard
	Cr	53	1073.4	6.7	**0.9157**	0.122	13.4	ug/L	325	Standard
	Mn	55	473075.5	1.2	**113.4519**	1.933	1.7	ug/L	694	Standard
	Co	59	1457.7	2.5	**0.3055**	0.013	4.3	ug/L	199	Standard
	Ni	60	3259.0	1.6	**1.8539**	0.068	3.7	ug/L	212	Standard
	Cu	65	590.7	0.8	**0.2723**	0.007	2.7	ug/L	149	Standard
	Zn	66	1786.8	1.0	**1.4891**	0.036	2.4	ug/L	206	Standard
>	**Ge**	72	327862.7	1.8				ug/L	319179	Standard
	As	75	6620.6	0.5	**7.5479**	0.142	1.9	ug/L	-51	Standard
	Se	82	323.8	0.7	**4.1547**	0.107	2.6	ug/L	19	Standard
	Se-1	77	148.0	9.1	**0.9899**	0.242	24.4	ug/L	89	Standard
>	**Ga**	71	48.3	15.8				mg/L	25	Standard
	Rb	85	25005.6	2.7				ug/L	27	Standard
	Y	89	301978.2	1.1				ug/L	295132	Standard
>	**Rh**	103	78.3	14.7				ug/L	20	Standard
	Mo	98	1270.8	3.0	**0.8567**	0.028	3.3	ug/L	11	Standard
	Ag	107	75.3	34.3	**-0.0009**	0.005	557.9	ug/L	64	Standard
	Cd	111	5.3	37.8	**-0.0059**	0.001	22.7	mg/L	7	Standard
	Cd	114	17.1	25.3	**-0.0026**	0.001	44.0	ug/L	10	Standard
>	**In**	115	420862.5	0.9				ug/L	418014	Standard
	Sn	118	355.0	16.2	**-0.0014**	0.012	808.9	ug/L	385	Standard
	Sb	123	644.8	2.1	**0.1481**	0.003	2.0	ug/L	54	Standard
	Ba	135	444029.6	0.7	**217.2747**	2.849	1.3	ug/L	44	Standard
	Ce	140	1170.0	7.9				ug/L	33	Standard
>	**Tb**	159	862240.5	0.3				ug/L	854905	Standard
	Ho	165	291.7	16.2				ug/L	13	Standard
	Tl	203	26.3	88.0	**0.0040**	0.003	85.7	ug/L	4	Standard
	Tl	205	15.0	33.3	**0.0047**	0.001	22.3	ug/L	5	Standard
	Pb	206	4417.0	0.1	**0.9761**	0.005	0.5	ug/L	182	Standard
	Pb	207	3685.8	1.6	**0.9048**	0.020	2.2	ug/L	160	Standard
	Pb	208	13703.4	0.1	**0.9223**	0.004	0.5	ug/L	604	Standard
	U	238	431.0	3.2	**0.0890**	0.003	3.0	ug/L	3	Standard
>	**Bi**	209	388684.8	0.5				ug/L	395375	Standard

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Na	23	1.7	173.2	**0.8693**	15.944	1834.2	mg/L	0	Standard
Mg	24	6884.9	2.0	**15.8946**	0.216	1.4	mg/L	47	Standard
K	39	590.0	3.4	**7.4709**	0.266	3.6	mg/L	22	Standard
Ca	43	155.0	23.3	**14.0661**	4.034	28.7	mg/L	28	Standard
Fe	54	1325.5	12.0	**2.6882**	0.328	12.2	mg/L	72	Standard
Fe	57	1168.4	6.4	**3.0868**	0.590	19.1	mg/L	703	Standard
> **Sc-1**	45	32469.8	1.0				mg/L	30379	Standard
Cl	35	15047.5	1.6				ug/L	14530	Standard
Kr	83	5.7	10.2				ug/L	5	Standard
Br	81	22890.6	1.3				ug/L	497	Standard
P	31	12745.4	1.1				ug/L	10347	Standard
S	34	1770.1	3.1				ug/L	1535	Standard
Sr	88	203.3	30.7				ug/L	177	Standard
C	12	550.0	14.4				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	163.1	6.7				mg/L	7	Standard
Ho-1	165	291.7	16.2				mg/L	13	Standard
Er	166	423.3	27.7				mg/L	3	Standard
I	127	824852.8	3.1				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.984	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.721	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.681
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.308
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1508122013
Sample Date/Time: Monday, August 24, 2015 15:38:58
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49429.2	8.3				ug/L	43934	Standard
	Be	9	491.7	6.8	**0.7480**	0.086	11.6	ug/L	0	Standard
	Al	27	15004389.7	5.4	**200.9043**	5.721	2.8	ug/L	410	Standard
	Sc	45	32092.3	2.1				ug/L	30379	Standard
	Ti	47	407.0	7.7	**1.8873**	0.134	7.1	ug/L	21	Standard
	V	51	1622.1	1.8	**0.0903**	0.007	7.4	ug/L	1362	Standard
	Cr	52	8834.2	0.7	**0.2095**	0.016	7.8	ug/L	8311	Standard
	Cr	53	1925.1	1.6	**2.2821**	0.068	3.0	ug/L	325	Standard
	Mn	55	28602765.3	0.2	**7435.8274**	78.427	1.1	ug/L	694	Standard
	Co	59	14947.7	0.9	**3.9485**	0.050	1.3	ug/L	199	Standard
	Ni	60	11871.3	1.3	**7.8512**	0.020	0.3	ug/L	212	Standard
	Cu	65	87716.5	0.9	**61.0547**	0.117	0.2	ug/L	149	Standard
	Zn	66	29467.3	0.7	**35.6168**	0.142	0.4	ug/L	206	Standard
>	**Ge**	72	302937.7	1.1				ug/L	319179	Standard
	As	75	5093.1	0.9	**6.3009**	0.103	1.6	ug/L	-51	Standard
	Se	82	136.4	12.3	**1.7655**	0.238	13.5	ug/L	19	Standard
	Se-1	77	190.7	6.4	**2.1097**	0.297	14.1	ug/L	89	Standard
>	**Ga**	71	678.3	9.6				mg/L	25	Standard
	Rb	85	16041.8	3.3				ug/L	27	Standard
	Y	89	407111.7	2.0				ug/L	295132	Standard
>	**Rh**	103	141.7	25.5				ug/L	20	Standard
	Mo	98	1423.8	4.0	**0.9333**	0.017	1.8	ug/L	11	Standard
	Ag	107	95.7	6.1	**0.0024**	0.001	59.0	ug/L	64	Standard
	Cd	111	565.1	10.6	**0.3649**	0.031	8.6	mg/L	7	Standard
	Cd	114	1521.1	3.9	**0.3768**	0.017	4.6	ug/L	10	Standard
>	**In**	115	433281.7	2.3				ug/L	418014	Standard
	Sn	118	708.4	11.8	**0.0677**	0.020	29.9	ug/L	385	Standard
	Sb	123	592.8	3.5	**0.1307**	0.004	3.4	ug/L	54	Standard
	Ba	135	20804.9	0.9	**9.8665**	0.145	1.5	ug/L	44	Standard
	Ce	140	1035324.1	0.9				ug/L	33	Standard
>	**Tb**	159	870171.8	2.8				ug/L	854905	Standard
	Ho	165	15321.1	1.7				ug/L	13	Standard
	Tl	203	126.7	11.4	**0.0189**	0.002	11.0	ug/L	4	Standard
	Tl	205	111.7	22.1	**0.0254**	0.005	19.3	ug/L	5	Standard
	Pb	206	16238.4	1.7	**3.7791**	0.026	0.7	ug/L	182	Standard
	Pb	207	13181.1	1.8	**3.4063**	0.019	0.6	ug/L	160	Standard
	Pb	208	50231.2	2.0	**3.5521**	0.014	0.4	ug/L	604	Standard
	U	238	2301.2	3.7	**0.4810**	0.013	2.7	ug/L	3	Standard
>	**Bi**	209	384811.3	2.0				ug/L	395375	Standard

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Na	23	5.0	0.0	**-18.0641**	0.585	3.2	mg/L	0	Standard
Mg	24	50631.3	5.3	**119.0206**	6.494	5.5	mg/L	47	Standard
K	39	303.3	7.4	**3.7669**	0.375	10.0	mg/L	22	Standard
Ca	43	395.0	19.7	**40.6724**	9.145	22.5	mg/L	28	Standard
Fe	54	11086.3	3.5	**24.2287**	1.041	4.3	mg/L	72	Standard
Fe	57	3772.1	3.6	**27.4674**	0.622	2.3	mg/L	703	Standard
> **Sc-1**	45	32092.3	2.1				mg/L	30379	Standard
Cl	35	27366.1	7.6				ug/L	14530	Standard
Kr	83	7.0	57.1				ug/L	5	Standard
Br	81	6984.9	6.1				ug/L	497	Standard
P	31	13824.7	6.9				ug/L	10347	Standard
S	34	1578.4	6.1				ug/L	1535	Standard
Sr	88	228.3	13.4				ug/L	177	Standard
C	12	556.7	23.4				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	22936.6	0.9				mg/L	7	Standard
Ho-1	165	15321.1	1.7				mg/L	13	Standard
Er	166	15487.9	0.4				mg/L	3	Standard
I	127	328559.5	7.7				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.509	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.911	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	103.652
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	97.328
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508122014
Sample Date/Time: Monday, August 24, 2015 15:42:10
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53449.1	1.9				ug/L	43934	Standard
	Be	9	20.0	25.0	**0.0262**	0.008	28.7	ug/L	0	Standard
	Al	27	14590651.7	0.8	**180.4212**	3.060	1.7	ug/L	410	Standard
	Sc	45	29957.9	2.6				ug/L	30379	Standard
	Ti	47	77.3	13.5	**0.2789**	0.055	19.7	ug/L	21	Standard
	V	51	1255.6	7.3	**0.0067**	0.023	344.2	ug/L	1362	Standard
	Cr	52	8164.2	2.0	**0.1093**	0.040	36.2	ug/L	8311	Standard
	Cr	53	1490.1	5.9	**1.6774**	0.132	7.9	ug/L	325	Standard
	Mn	55	25674861.1	0.6	**6775.5136**	76.582	1.1	ug/L	694	Standard
	Co	59	12931.2	1.2	**3.4607**	0.052	1.5	ug/L	199	Standard
	Ni	60	10493.3	1.2	**7.0259**	0.075	1.1	ug/L	212	Standard
	Cu	65	1295.1	3.8	**0.8084**	0.035	4.3	ug/L	149	Standard
	Zn	66	4602.7	4.2	**5.1959**	0.248	4.8	ug/L	206	Standard
>	**Ge**	72	298422.3	0.9				ug/L	319179	Standard
	As	75	339.5	1.6	**0.5232**	0.010	1.8	ug/L	-51	Standard
	Se	82	122.3	4.6	**1.5858**	0.088	5.6	ug/L	19	Standard
	Se-1	77	156.3	9.0	**1.4472**	0.323	22.3	ug/L	89	Standard
>	**Ga**	71	226.7	6.7				mg/L	25	Standard
	Rb	85	14703.8	3.2				ug/L	27	Standard
	Y	89	298719.3	0.3				ug/L	295132	Standard
>	**Rh**	103	135.0	0.0				ug/L	20	Standard
	Mo	98	465.1	4.1	**0.2841**	0.010	3.5	ug/L	11	Standard
	Ag	107	64.0	11.3	**-0.0038**	0.001	33.0	ug/L	64	Standard
	Cd	111	102.9	10.3	**0.0564**	0.007	12.1	mg/L	7	Standard
	Cd	114	246.2	11.4	**0.0529**	0.007	12.8	ug/L	10	Standard
>	**In**	115	449140.4	0.9				ug/L	418014	Standard
	Sn	118	513.3	16.2	**0.0247**	0.016	66.9	ug/L	385	Standard
	Sb	123	116.7	3.0	**0.0131**	0.001	7.6	ug/L	54	Standard
	Ba	135	17298.2	1.1	**7.9071**	0.026	0.3	ug/L	44	Standard
	Ce	140	10650.4	2.4				ug/L	33	Standard
>	**Tb**	159	872879.6	1.1				ug/L	854905	Standard
	Ho	165	458.3	17.9				ug/L	13	Standard
	Tl	203	58.3	6.9	**0.0084**	0.001	7.2	ug/L	4	Standard
	Tl	205	48.3	15.8	**0.0115**	0.002	14.5	ug/L	5	Standard
	Pb	206	520.0	2.4	**0.0612**	0.004	5.9	ug/L	182	Standard
	Pb	207	442.0	4.1	**0.0586**	0.004	7.4	ug/L	160	Standard
	Pb	208	1665.7	0.7	**0.0639**	0.002	2.9	ug/L	604	Standard
	U	238	614.7	3.9	**0.1232**	0.004	3.0	ug/L	3	Standard
>	**Bi**	209	400438.9	0.9				ug/L	395375	Standard

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Na	23	6.7	43.3	**-30.3283**	18.306	60.4	mg/L	0	Standard
Mg	24	47930.7	2.6	**120.7601**	5.363	4.4	mg/L	47	Standard
K	39	308.3	16.4	**4.1330**	0.818	19.8	mg/L	22	Standard
Ca	43	353.3	10.8	**38.8435**	5.128	13.2	mg/L	28	Standard
Fe	54	1749.2	2.7	**3.9315**	0.092	2.3	mg/L	72	Standard
Fe	57	1380.1	5.1	**6.1205**	0.994	16.2	mg/L	703	Standard
> **Sc-1**	45	29957.9	2.6				mg/L	30379	Standard
Cl	35	29894.2	4.5				ug/L	14530	Standard
Kr	83	3.0	66.7				ug/L	5	Standard
Br	81	5784.4	6.1				ug/L	497	Standard
P	31	13457.6	3.5				ug/L	10347	Standard
S	34	1571.7	7.4				ug/L	1535	Standard
Sr	88	180.0	12.1				ug/L	177	Standard
C	12	593.3	20.0				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	318.8	17.7				mg/L	7	Standard
Ho-1	165	458.3	17.9				mg/L	13	Standard
Er	166	790.0	4.6				mg/L	3	Standard
I	127	276793.9	5.6				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		121.659	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.497	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.446
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.281
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, August 24, 2015 15:45:22
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	53143.1	3.5				ug/L	43934	Standard
	Be	9	35757.2	2.5	**50.4751**	1.074	2.1	ug/L	0	Standard
	Al	27	3816342.7	2.7	**47.4536**	0.368	0.8	ug/L	410	Standard
	Sc	45	30524.1	1.4				ug/L	30379	Standard
	Ti	47	22205.6	0.5	**106.5624**	2.037	1.9	ug/L	21	Standard
	V	51	227403.9	2.2	**53.3988**	1.023	1.9	ug/L	1362	Standard
	Cr	52	301583.3	2.0	**52.8466**	1.561	3.0	ug/L	8311	Standard
	Cr	53	36799.7	3.0	**52.3288**	2.333	4.5	ug/L	325	Standard
	Mn	55	208790.7	1.7	**53.0128**	1.218	2.3	ug/L	694	Standard
	Co	59	202750.3	0.9	**53.1764**	0.398	0.7	ug/L	199	Standard
	Ni	60	77837.1	1.1	**51.4686**	0.476	0.9	ug/L	212	Standard
	Cu	65	74837.0	0.7	**51.0438**	0.485	1.0	ug/L	149	Standard
	Zn	66	42091.1	0.3	**50.0895**	0.964	1.9	ug/L	206	Standard
>	Ge	72	309066.9	1.6				ug/L	319179	Standard
	As	75	42414.3	0.9	**50.6886**	0.649	1.3	ug/L	-51	Standard
	Se	82	3706.3	0.4	**53.0587**	0.737	1.4	ug/L	19	Standard
	Se-1	77	2642.6	2.3	**51.8144**	0.599	1.2	ug/L	89	Standard
>	Ga	71	50.0	17.3				mg/L	25	Standard
	Rb	85	658.3	5.4				ug/L	27	Standard
	Y	89	301626.3	1.2				ug/L	295132	Standard
>	Rh	103	63.3	12.1				ug/L	20	Standard
	Mo	98	157448.8	1.2	**99.4858**	0.762	0.8	ug/L	11	Standard
	Ag	107	280898.4	1.7	**48.3210**	0.676	1.4	ug/L	64	Standard
	Cd	111	81585.2	1.6	**51.3474**	0.680	1.3	mg/L	7	Standard
	Cd	114	213819.0	2.2	**51.1614**	0.736	1.4	ug/L	10	Standard
>	In	115	456616.2	0.7				ug/L	418014	Standard
	Sn	118	241926.4	1.4	**46.0137**	0.437	0.9	ug/L	385	Standard
	Sb	123	212385.4	0.9	**49.3701**	0.106	0.2	ug/L	54	Standard
	Ba	135	104383.3	0.4	**47.0561**	0.193	0.4	ug/L	44	Standard
	Ce	140	106.7	36.4				ug/L	33	Standard
>	Tb	159	882028.6	1.0				ug/L	854905	Standard
	Ho	165	10.0	50.0				ug/L	13	Standard
	Tl	203	361421.2	0.5	**49.2473**	0.356	0.7	ug/L	4	Standard
	Tl	205	250679.0	2.2	**49.4593**	1.420	2.9	ug/L	5	Standard
	Pb	206	227114.7	1.3	**49.2287**	0.582	1.2	ug/L	182	Standard
	Pb	207	206409.5	0.8	**49.7079**	0.267	0.5	ug/L	160	Standard
	Pb	208	748932.2	0.8	**49.2994**	0.101	0.2	ug/L	604	Standard
	U	238	259906.7	0.7	**49.9403**	0.500	1.0	ug/L	3	Standard
>	Bi	209	418875.6	0.7				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	2260.2	4.8	**5.4752**	0.207	3.8	mg/L	47	Standard
K	39	398.3	18.0	**5.2968**	1.042	19.7	mg/L	22	Standard
Ca	43	83.3	51.0	**6.8422**	4.932	72.1	mg/L	28	Standard
Fe	54	2258.9	1.7	**5.0357**	0.138	2.7	mg/L	72	Standard
Fe	57	1348.4	9.6	**5.5495**	1.405	25.3	mg/L	703	Standard
Sc-1	45	30524.1	1.4				mg/L	30379	Standard
Cl	35	17996.7	3.1				ug/L	14530	Standard
Kr	83	6.0	16.7				ug/L	5	Standard
Br	81	856.7	8.2				ug/L	497	Standard
P	31	12398.4	2.4				ug/L	10347	Standard
S	34	1715.1	4.9				ug/L	1535	Standard
Sr	88	233.3	14.3				ug/L	177	Standard
C	12	216.7	34.6				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	9.7	103.3				mg/L	7	Standard
Ho-1	165	10.0	50.0				mg/L	13	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	9341.3	25.3				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	100.950		
Al	27	94.907		
Sc	45			
Ti	47	106.562		
V	51	106.798		
Cr	52	105.693		
Cr	53			
Mn	55	106.026		
Co	59	106.353		
Ni	60	102.937		
Cu	65	102.088		
Zn	66	100.179		
Ge	72		96.832	
As	75	101.377		
Se	82	106.117		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	99.486		
Ag	107	96.642		
Cd	111	102.695		
Cd	114			
In	115			109.235
Sn	118	92.027		
Sb	123	98.740		
Ba	135	94.112		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.495		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.599		
U	238	99.881		
Bi	209			105.944
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, August 24, 2015 15:48:34
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51025.8	1.9				ug/L	43934	Standard
	Be	9	16.7	34.6	**0.0226**	0.009	38.8	ug/L	0	Standard
	Al	27	645.0	32.9	**-0.0031**	0.003	88.2	ug/L	410	Standard
	Sc	45	30806.4	6.0				ug/L	30379	Standard
	Ti	47	20.3	14.2	**-0.0083**	0.014	162.7	ug/L	21	Standard
	V	51	1087.4	1.3	**-0.0434**	0.004	9.4	ug/L	1362	Standard
	Cr	52	7229.7	1.5	**-0.1098**	0.025	23.0	ug/L	8311	Standard
	Cr	53	468.3	11.9	**0.1348**	0.083	61.5	ug/L	325	Standard
	Mn	55	902.0	6.1	**0.0341**	0.015	43.0	ug/L	694	Standard
	Co	59	202.0	8.6	**-0.0023**	0.005	205.0	ug/L	199	Standard
	Ni	60	188.0	14.5	**-0.0606**	0.019	30.7	ug/L	212	Standard
	Cu	65	194.7	12.3	**0.0250**	0.017	68.0	ug/L	149	Standard
	Zn	66	247.7	1.6	**-0.2385**	0.006	2.4	ug/L	206	Standard
>	**Ge**	72	308724.2	0.5				ug/L	319179	Standard
	As	75	-39.0	26.2	**0.0573**	0.012	21.5	ug/L	-51	Standard
	Se	82	21.8	36.9	**0.0785**	0.115	146.0	ug/L	19	Standard
	Se-1	77	99.3	8.6	**0.1765**	0.166	93.9	ug/L	89	Standard
>	**Ga**	71	13.3	21.7				mg/L	25	Standard
	Rb	85	30.0	28.9				ug/L	27	Standard
	Y	89	300505.3	2.5				ug/L	295132	Standard
>	**Rh**	103	38.3	58.8				ug/L	20	Standard
	Mo	98	52.8	44.1	**0.0188**	0.014	76.8	ug/L	11	Standard
	Ag	107	79.3	9.5	**-0.0012**	0.001	111.2	ug/L	64	Standard
	Cd	111	8.9	78.8	**-0.0039**	0.004	114.9	mg/L	7	Standard
	Cd	114	21.6	65.8	**-0.0018**	0.003	187.6	ug/L	10	Standard
>	**In**	115	454112.6	0.9				ug/L	418014	Standard
	Sn	118	498.3	11.0	**0.0207**	0.011	54.3	ug/L	385	Standard
	Sb	123	746.0	8.0	**0.1598**	0.013	7.9	ug/L	54	Standard
	Ba	135	48.0	18.2	**-0.0030**	0.004	132.7	ug/L	44	Standard
	Ce	140	35.0	28.6				ug/L	33	Standard
>	**Tb**	159	865182.7	1.0				ug/L	854905	Standard
	Ho	165	11.7	65.5				ug/L	13	Standard
	Tl	203	18.3	67.3	**0.0026**	0.002	64.4	ug/L	4	Standard
	Tl	205	8.3	91.7	**0.0032**	0.002	48.1	ug/L	5	Standard
	Pb	206	205.3	8.8	**-0.0119**	0.003	28.8	ug/L	182	Standard
	Pb	207	174.3	1.8	**-0.0104**	0.001	8.7	ug/L	160	Standard
	Pb	208	667.7	1.5	**-0.0065**	0.001	18.4	ug/L	604	Standard
	U	238	13.7	62.2	**0.0024**	0.002	69.8	ug/L	3	Standard
>	**Bi**	209	415012.5	1.2				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	48.3	57.0	**0.0042**	0.066	1579.9	mg/L	47	Standard
K	39	11.7	65.5	**-0.1011**	0.096	94.8	mg/L	22	Standard
Ca	43	38.3	30.1	**1.6637**	1.506	90.5	mg/L	28	Standard
Fe	54	76.1	10.3	**-0.0216**	0.009	40.6	mg/L	72	Standard
Fe	57	838.4	13.2	**0.4633**	0.896	193.4	mg/L	703	Standard
> **Sc-1**	45	30806.4	6.0				mg/L	30379	Standard
Cl	35	18024.1	2.1				ug/L	14530	Standard
Kr	83	5.0	0.0				ug/L	5	Standard
Br	81	726.7	6.4				ug/L	497	Standard
P	31	12228.3	0.2				ug/L	10347	Standard
S	34	1745.1	2.9				ug/L	1535	Standard
Sr	88	186.7	13.7				ug/L	177	Standard
C	12	193.3	43.4				mg/L	153	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	12.5	126.5				mg/L	7	Standard
Ho-1	165	11.7	65.5				mg/L	13	Standard
Er	166	16.7	91.7				mg/L	3	Standard
I	127	5592.7	9.7				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.724	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.636
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.967
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508122010
Sample Date/Time: Monday, August 24, 2015 15:57:33
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50594.3	0.8				ug/L	43934	Standard
	Be	9	13.3	78.1	**0.0179**	0.016	87.4	ug/L	0	Standard
	Al	27	458591.0	2.5	**5.9780**	0.102	1.7	ug/L	410	Standard
	Sc	45	31472.7	2.6				ug/L	30379	Standard
	Ti	47	110.0	14.5	**0.4005**	0.074	18.5	ug/L	21	Standard
	V	51	1719.9	6.0	**0.0887**	0.019	21.5	ug/L	1362	Standard
	Cr	52	8270.6	1.2	**0.0146**	0.033	227.9	ug/L	8311	Standard
	Cr	53	545.0	9.3	**0.2111**	0.063	29.7	ug/L	325	Standard
	Mn	55	52362.0	0.8	**12.5946**	0.106	0.8	ug/L	694	Standard
	Co	59	293.3	4.6	**0.0185**	0.003	18.5	ug/L	199	Standard
	Ni	60	360.0	4.9	**0.0435**	0.011	26.2	ug/L	212	Standard
	Cu	65	443.0	4.8	**0.1819**	0.010	5.5	ug/L	149	Standard
	Zn	66	2069.5	1.4	**1.8489**	0.005	0.2	ug/L	206	Standard
>	**Ge**	72	322410.6	1.4				ug/L	319179	Standard
	As	75	454.5	5.5	**0.6233**	0.025	4.1	ug/L	-51	Standard
	Se	82	29.0	26.9	**0.1651**	0.106	64.4	ug/L	19	Standard
	Se-1	77	97.3	1.6	**0.0524**	0.038	72.8	ug/L	89	Standard
>	**Ga**	71	55.0	48.1				mg/L	25	Standard
	Rb	85	775.0	2.2				ug/L	27	Standard
	Y	89	302621.3	1.9				ug/L	295132	Standard
>	**Rh**	103	25.0	34.6				ug/L	20	Standard
	Mo	98	63.2	9.1	**0.0260**	0.004	14.7	ug/L	11	Standard
	Ag	107	71.0	20.3	**-0.0026**	0.002	94.6	ug/L	64	Standard
	Cd	111	11.5	13.3	**-0.0021**	0.001	47.5	mg/L	7	Standard
	Cd	114	17.4	97.7	**-0.0028**	0.004	148.5	ug/L	10	Standard
>	**In**	115	448492.3	0.9				ug/L	418014	Standard
	Sn	118	468.3	8.0	**0.0160**	0.007	40.6	ug/L	385	Standard
	Sb	123	236.5	7.4	**0.0414**	0.004	9.0	ug/L	54	Standard
	Ba	135	10025.6	0.7	**4.5795**	0.072	1.6	ug/L	44	Standard
	Ce	140	9921.6	2.0				ug/L	33	Standard
>	**Tb**	159	889601.1	1.5				ug/L	854905	Standard
	Ho	165	198.3	21.1				ug/L	13	Standard
	Tl	203	7.3	7.9	**0.0011**	0.000	7.1	ug/L	4	Standard
	Tl	205	0.0		**0.0015**	0.000	0.0	ug/L	5	Standard
	Pb	206	60106.3	0.6	**13.1330**	0.075	0.6	ug/L	182	Standard
	Pb	207	50293.3	0.3	**12.2080**	0.036	0.3	ug/L	160	Standard
	Pb	208	189873.6	0.5	**12.6013**	0.067	0.5	ug/L	604	Standard
	U	238	35.3	27.9	**0.0066**	0.002	29.1	ug/L	3	Standard
>	**Bi**	209	414222.1	0.1				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	211.7	7.2	**0.3936**	0.026	6.7	mg/L	47	Standard
K	39	38.3	19.9	**0.2582**	0.092	35.7	mg/L	22	Standard
Ca	43	45.0	29.4	**2.2909**	1.578	68.9	mg/L	28	Standard
Fe	54	156.0	17.7	**0.1555**	0.070	45.2	mg/L	72	Standard
Fe	57	768.4	12.6	**-0.3543**	1.069	301.8	mg/L	703	Standard
> **Sc-1**	45	31472.7	2.6				mg/L	30379	Standard
Cl	35	17390.0	1.0				ug/L	14530	Standard
Kr	83	4.7	12.4				ug/L	5	Standard
Br	81	873.4	13.2				ug/L	497	Standard
P	31	11664.5	2.0				ug/L	10347	Standard
S	34	1626.8	3.6				ug/L	1535	Standard
Sr	88	185.0	21.1				ug/L	177	Standard
C	12	326.7	12.4				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	357.0	23.8				mg/L	7	Standard
Ho-1	165	198.3	21.1				mg/L	13	Standard
Er	166	133.3	70.9				mg/L	3	Standard
I	127	13707.9	5.1				mg/L	1945	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		115.161	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.012	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.291
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.767
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508122016
Sample Date/Time: Monday, August 24, 2015 16:00:44
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	46952.7	4.2				ug/L	43934	Standard
	Be	9	23.3	99.0	**0.0351**	0.036	103.5	ug/L	0	Standard
	Al	27	9529820.7	1.2	**134.2589**	5.282	3.9	ug/L	410	Standard
	Sc	45	30833.0	2.2				ug/L	30379	Standard
	Ti	47	319.3	84.4	**1.4552**	1.342	92.3	ug/L	21	Standard
	V	51	1553.3	28.7	**0.0706**	0.111	156.6	ug/L	1362	Standard
	Cr	52	10066.7	4.0	**0.4148**	0.049	11.9	ug/L	8311	Standard
	Cr	53	7640.4	29.6	**10.5255**	3.220	30.6	ug/L	325	Standard
	Mn	55	3071215.7	0.3	**789.4836**	13.868	1.8	ug/L	694	Standard
	Co	59	2124.5	2.6	**0.5073**	0.010	2.0	ug/L	199	Standard
	Ni	60	3207.0	3.4	**1.9611**	0.038	1.9	ug/L	212	Standard
	Cu	65	919.0	3.0	**0.5254**	0.013	2.5	ug/L	149	Standard
	Zn	66	1966.5	4.0	**1.8485**	0.055	3.0	ug/L	206	Standard
>	**Ge**	72	306335.0	1.7				ug/L	319179	Standard
	As	75	331.8	29.0	**0.5019**	0.110	21.9	ug/L	-51	Standard
	Se	82	116.3	4.6	**1.4516**	0.054	3.8	ug/L	19	Standard
	Se-1	77	653.7	16.5	**11.5503**	2.185	18.9	ug/L	89	Standard
>	**Ga**	71	80.0	22.5				mg/L	25	Standard
	Rb	85	5290.9	1.4				ug/L	27	Standard
	Y	89	288511.0	0.3				ug/L	295132	Standard
>	**Rh**	103	131.7	37.5				ug/L	20	Standard
	Mo	98	372.8	5.1	**0.2438**	0.018	7.3	ug/L	11	Standard
	Ag	107	88.0	18.0	**0.0016**	0.003	185.5	ug/L	64	Standard
	Cd	111	132.5	10.0	**0.0821**	0.010	12.7	mg/L	7	Standard
	Cd	114	262.0	19.2	**0.0618**	0.014	22.2	ug/L	10	Standard
>	**In**	115	416523.7	1.8				ug/L	418014	Standard
	Sn	118	546.7	2.6	**0.0394**	0.004	9.7	ug/L	385	Standard
	Sb	123	219.8	5.9	**0.0415**	0.004	9.0	ug/L	54	Standard
	Ba	135	178236.6	0.9	**88.1152**	1.096	1.2	ug/L	44	Standard
	Ce	140	1286.7	14.6				ug/L	33	Standard
>	**Tb**	159	846136.0	1.1				ug/L	854905	Standard
	Ho	165	45.0	40.1				ug/L	13	Standard
	Tl	203	245.7	3.8	**0.0373**	0.001	3.9	ug/L	4	Standard
	Tl	205	166.7	36.7	**0.0380**	0.013	35.4	ug/L	5	Standard
	Pb	206	452.7	5.6	**0.0521**	0.006	12.2	ug/L	182	Standard
	Pb	207	387.0	8.3	**0.0507**	0.009	17.1	ug/L	160	Standard
	Pb	208	1377.0	4.1	**0.0498**	0.004	8.8	ug/L	604	Standard
	U	238	2861.6	2.3	**0.6098**	0.015	2.4	ug/L	3	Standard
>	**Bi**	209	377487.6	0.2				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	56500.2	1.1	**138.2601**	1.773	1.3	mg/L	47	Standard
K	39	165.0	9.1	**2.0166**	0.183	9.1	mg/L	22	Standard
Ca	43	465.0	2.2	**50.3902**	2.075	4.1	mg/L	28	Standard
Fe	54	147.5	6.8	**0.1422**	0.025	17.4	mg/L	72	Standard
Fe	57	1038.4	3.4	**2.4057**	0.454	18.9	mg/L	703	Standard
> **Sc-1**	45	30833.0	2.2				mg/L	30379	Standard
Cl	35	17363.3	1.7				ug/L	14530	Standard
Kr	83	4.0	25.0				ug/L	5	Standard
Br	81	7608.6	3.1				ug/L	497	Standard
P	31	12798.7	1.3				ug/L	10347	Standard
S	34	1640.1	10.7				ug/L	1535	Standard
Sr	88	230.0	13.6				ug/L	177	Standard
C	12	396.7	13.9				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	83.3	12.0				mg/L	7	Standard
Ho-1	165	45.0	40.1				mg/L	13	Standard
Er	166	70.0	65.5				mg/L	3	Standard
I	127	466804.5	4.9				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.872	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.976	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.643
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.476
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508122017
Sample Date/Time: Monday, August 24, 2015 16:03:56
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51196.4	2.6				ug/L	43934	Standard
	Be	9	13.3	94.4	**0.0174**	0.018	106.1	ug/L	0	Standard
	Al	27	8494178.4	1.9	**109.6741**	3.286	3.0	ug/L	410	Standard
	Sc	45	32571.6	1.9				ug/L	30379	Standard
	Ti	47	156.3	5.5	**0.6233**	0.048	7.7	ug/L	21	Standard
	V	51	4946.3	2.7	**0.8339**	0.043	5.1	ug/L	1362	Standard
	Cr	52	11807.3	2.9	**0.6502**	0.043	6.6	ug/L	8311	Standard
	Cr	53	1318.4	12.4	**1.2990**	0.221	17.0	ug/L	325	Standard
	Mn	55	12829.8	6.6	**2.9765**	0.169	5.7	ug/L	694	Standard
	Co	59	790.4	0.9	**0.1461**	0.002	1.1	ug/L	199	Standard
	Ni	60	2866.9	1.3	**1.6616**	0.008	0.5	ug/L	212	Standard
	Cu	65	1096.4	5.6	**0.6194**	0.044	7.1	ug/L	149	Standard
	Zn	66	2915.9	3.3	**2.8673**	0.067	2.3	ug/L	206	Standard
>	**Ge**	72	318330.1	1.5				ug/L	319179	Standard
	As	75	2306.0	0.6	**2.7740**	0.029	1.0	ug/L	-51	Standard
	Se	82	128.2	11.6	**1.5567**	0.227	14.6	ug/L	19	Standard
	Se-1	77	180.0	3.9	**1.7081**	0.187	11.0	ug/L	89	Standard
>	**Ga**	71	63.3	29.9				mg/L	25	Standard
	Rb	85	20402.1	2.3				ug/L	27	Standard
	Y	89	297443.5	1.9				ug/L	295132	Standard
>	**Rh**	103	86.7	21.8				ug/L	20	Standard
	Mo	98	1226.4	0.9	**0.7819**	0.005	0.7	ug/L	11	Standard
	Ag	107	76.0	16.0	**-0.0015**	0.002	132.0	ug/L	64	Standard
	Cd	111	22.4	2.6	**0.0050**	0.000	5.4	mg/L	7	Standard
	Cd	114	58.2	33.1	**0.0073**	0.005	63.5	ug/L	10	Standard
>	**In**	115	444325.4	0.9				ug/L	418014	Standard
	Sn	118	376.7	15.4	**-0.0011**	0.011	960.2	ug/L	385	Standard
	Sb	123	2895.6	2.4	**0.6775**	0.019	2.9	ug/L	54	Standard
	Ba	135	49932.5	1.5	**23.1203**	0.375	1.6	ug/L	44	Standard
	Ce	140	1706.8	9.9				ug/L	33	Standard
>	**Tb**	159	867865.7	1.3				ug/L	854905	Standard
	Ho	165	175.0	12.5				ug/L	13	Standard
	Tl	203	122.0	8.6	**0.0174**	0.002	8.9	ug/L	4	Standard
	Tl	205	91.7	27.5	**0.0203**	0.005	25.7	ug/L	5	Standard
	Pb	206	368.0	1.9	**0.0259**	0.002	7.4	ug/L	182	Standard
	Pb	207	312.3	5.4	**0.0253**	0.004	16.9	ug/L	160	Standard
	Pb	208	1159.0	1.1	**0.0283**	0.001	4.2	ug/L	604	Standard
	U	238	4813.4	1.6	**0.9587**	0.019	2.0	ug/L	3	Standard
>	**Bi**	209	404004.8	0.4				ug/L	395375	Standard

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Na	23	5.0	100.0	**-17.9509**	28.046	156.2	mg/L	0	Standard
Mg	24	1788.4	1.6	**4.0329**	0.115	2.9	mg/L	47	Standard
K	39	325.0	12.6	**3.9917**	0.597	14.9	mg/L	22	Standard
Ca	43	336.7	20.2	**33.5965**	6.969	20.7	mg/L	28	Standard
Fe	54	105.9	7.5	**0.0337**	0.013	39.0	mg/L	72	Standard
Fe	57	1078.4	6.4	**2.2343**	0.696	31.1	mg/L	703	Standard
> **Sc-1**	45	32571.6	1.9				mg/L	30379	Standard
Cl	35	19306.3	2.0				ug/L	14530	Standard
Kr	83	3.7	31.5				ug/L	5	Standard
Br	81	1720.1	20.4				ug/L	497	Standard
P	31	13792.9	3.0				ug/L	10347	Standard
S	34	1700.1	1.6				ug/L	1535	Standard
Sr	88	241.7	13.5				ug/L	177	Standard
C	12	513.3	4.1				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	225.7	30.3				mg/L	7	Standard
Ho-1	165	175.0	12.5				mg/L	13	Standard
Er	166	230.0	19.0				mg/L	3	Standard
I	127	23071.0	8.5				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.531	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.734	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.294
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.183
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Approved: August 25, 2015

Method 6020 - Summary Report

Sample ID: L1508122018
Sample Date/Time: Monday, August 24, 2015 16:07:07
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49798.4	1.2				ug/L	43934	Standard
	Be	9	25.0	52.9	**0.0356**	0.020	55.3	ug/L	0	Standard
	Al	27	9317881.1	0.9	**123.6446**	0.846	0.7	ug/L	410	Standard
	Sc	45	32185.8	1.2				ug/L	30379	Standard
	Ti	47	83.7	7.3	**0.2828**	0.026	9.3	ug/L	21	Standard
	V	51	1634.6	13.2	**0.0732**	0.049	67.4	ug/L	1362	Standard
	Cr	52	11064.7	4.7	**0.5155**	0.110	21.3	ug/L	8311	Standard
	Cr	53	2300.2	20.4	**2.6631**	0.686	25.8	ug/L	325	Standard
	Mn	55	1021713.8	1.0	**251.8299**	4.616	1.8	ug/L	694	Standard
	Co	59	2959.0	1.0	**0.6966**	0.001	0.2	ug/L	199	Standard
	Ni	60	2552.5	1.8	**1.4543**	0.046	3.1	ug/L	212	Standard
	Cu	65	782.7	3.7	**0.4096**	0.022	5.4	ug/L	149	Standard
	Zn	66	1971.5	4.2	**1.7581**	0.092	5.2	ug/L	206	Standard
>	**Ge**	72	319293.1	1.1				ug/L	319179	Standard
	As	75	5087.6	2.3	**5.9760**	0.072	1.2	ug/L	-51	Standard
	Se	82	780.3	3.5	**10.6217**	0.264	2.5	ug/L	19	Standard
	Se-1	77	177.3	11.6	**1.6462**	0.441	26.8	ug/L	89	Standard
>	**Ga**	71	56.7	45.3				mg/L	25	Standard
	Rb	85	14460.2	1.3				ug/L	27	Standard
	Y	89	303883.9	0.8				ug/L	295132	Standard
>	**Rh**	103	66.7	18.9				ug/L	20	Standard
	Mo	98	1676.3	1.1	**1.0826**	0.009	0.8	ug/L	11	Standard
	Ag	107	93.7	4.3	**0.0017**	0.001	38.3	ug/L	64	Standard
	Cd	111	44.4	18.5	**0.0194**	0.005	27.1	mg/L	7	Standard
	Cd	114	114.4	18.1	**0.0213**	0.005	23.9	ug/L	10	Standard
>	**In**	115	440826.8	0.7				ug/L	418014	Standard
	Sn	118	583.3	7.3	**0.0403**	0.008	20.0	ug/L	385	Standard
	Sb	123	363.6	3.1	**0.0731**	0.003	4.5	ug/L	54	Standard
	Ba	135	708503.9	0.6	**330.9821**	1.904	0.6	ug/L	44	Standard
	Ce	140	570.0	14.7				ug/L	33	Standard
>	**Tb**	159	858909.5	0.6				ug/L	854905	Standard
	Ho	165	146.7	25.6				ug/L	13	Standard
	Tl	203	48.7	8.3	**0.0070**	0.001	7.3	ug/L	4	Standard
	Tl	205	33.3	22.9	**0.0084**	0.002	19.1	ug/L	5	Standard
	Pb	206	1272.1	2.6	**0.2306**	0.007	3.0	ug/L	182	Standard
	Pb	207	1067.7	2.6	**0.2152**	0.005	2.4	ug/L	160	Standard
	Pb	208	4050.5	0.8	**0.2271**	0.002	1.1	ug/L	604	Standard
	U	238	249.7	10.2	**0.0497**	0.005	10.2	ug/L	3	Standard
>	**Bi**	209	402212.6	0.9				ug/L	395375	Standard

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Na	23	3.3	173.2	**-8.5559**	32.269	377.2	mg/L	0	Standard
Mg	24	8352.3	1.0	**19.4788**	0.048	0.2	mg/L	47	Standard
K	39	158.3	17.4	**1.8368**	0.390	21.2	mg/L	22	Standard
Ca	43	265.0	23.6	**26.2125**	6.680	25.5	mg/L	28	Standard
Fe	54	2172.3	3.6	**4.5745**	0.165	3.6	mg/L	72	Standard
Fe	57	1460.1	2.7	**5.8972**	0.444	7.5	mg/L	703	Standard
Sc-1	45	32185.8	1.2				mg/L	30379	Standard
Cl	35	17582.9	2.0				ug/L	14530	Standard
Kr	83	3.7	103.3				ug/L	5	Standard
Br	81	59021.4	2.4				ug/L	497	Standard
P	31	13642.8	0.6				ug/L	10347	Standard
S	34	1808.4	6.6				ug/L	1535	Standard
Sr	88	213.3	7.2				ug/L	177	Standard
C	12	533.3	1.1				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	3	Standard
Dy	164	118.0	19.3				mg/L	7	Standard
Ho-1	165	146.7	25.6				mg/L	13	Standard
Er	166	180.0	33.8				mg/L	3	Standard
I	127	426995.9	3.4				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		113.349	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.036	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	105.457
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.729
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1508122019
Sample Date/Time: Monday, August 24, 2015 16:10:18
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50119.5	3.6				ug/L	43934	Standard
	Be	9	3.3	86.6	**0.0029**	0.004	144.8	ug/L	0	Standard
	Al	27	7659529.9	2.5	**101.0324**	2.973	2.9	ug/L	410	Standard
	Sc	45	32887.3	2.3				ug/L	30379	Standard
	Ti	47	78.7	7.2	**0.2557**	0.024	9.3	ug/L	21	Standard
	V	51	1724.9	4.7	**0.0897**	0.017	18.4	ug/L	1362	Standard
	Cr	52	10090.4	2.8	**0.3271**	0.060	18.5	ug/L	8311	Standard
	Cr	53	2036.8	4.8	**2.2623**	0.115	5.1	ug/L	325	Standard
	Mn	55	1051155.8	1.8	**256.3832**	6.099	2.4	ug/L	694	Standard
	Co	59	1367.4	2.4	**0.2885**	0.006	2.1	ug/L	199	Standard
	Ni	60	2993.0	2.4	**1.7172**	0.062	3.6	ug/L	212	Standard
	Cu	65	2893.6	1.5	**1.7861**	0.027	1.5	ug/L	149	Standard
	Zn	66	3241.3	0.6	**3.1970**	0.028	0.9	ug/L	206	Standard
>	**Ge**	72	322660.2	0.8				ug/L	319179	Standard
	As	75	1597.1	4.1	**1.9286**	0.089	4.6	ug/L	-51	Standard
	Se	82	151.5	6.1	**1.8518**	0.135	7.3	ug/L	19	Standard
	Se-1	77	163.3	4.4	**1.3349**	0.153	11.5	ug/L	89	Standard
>	**Ga**	71	40.0	25.0				mg/L	25	Standard
	Rb	85	9177.8	1.6				ug/L	27	Standard
	Y	89	307713.2	2.8				ug/L	295132	Standard
>	**Rh**	103	71.7	16.1				ug/L	20	Standard
	Mo	98	1937.4	1.7	**1.2607**	0.029	2.3	ug/L	11	Standard
	Ag	107	117.7	8.7	**0.0061**	0.002	32.4	ug/L	64	Standard
	Cd	111	10.0	14.8	**-0.0029**	0.001	32.6	mg/L	7	Standard
	Cd	114	30.0	90.8	**0.0005**	0.007	1474.7	ug/L	10	Standard
>	**In**	115	438417.2	0.9				ug/L	418014	Standard
	Sn	118	2361.9	6.5	**0.3938**	0.029	7.4	ug/L	385	Standard
	Sb	123	1555.8	3.1	**0.3623**	0.015	4.1	ug/L	54	Standard
	Ba	135	819616.6	1.0	**385.0010**	3.354	0.9	ug/L	44	Standard
	Ce	140	848.4	1.4				ug/L	33	Standard
>	**Tb**	159	860337.2	1.6				ug/L	854905	Standard
	Ho	165	115.0	15.7				ug/L	13	Standard
	Tl	203	28.0	14.3	**0.0041**	0.001	13.7	ug/L	4	Standard
	Tl	205	16.7	105.4	**0.0050**	0.004	73.8	ug/L	5	Standard
	Pb	206	777.0	3.9	**0.1204**	0.006	4.8	ug/L	182	Standard
	Pb	207	665.0	3.3	**0.1158**	0.007	5.9	ug/L	160	Standard
	Pb	208	2592.1	0.5	**0.1288**	0.002	1.7	ug/L	604	Standard
	U	238	153.0	3.0	**0.0306**	0.001	2.1	ug/L	3	Standard
>	**Bi**	209	398293.4	0.9				ug/L	395375	Standard

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Na	23	3.3	86.6	**-7.9978**	15.653	195.7	mg/L	0	Standard
Mg	24	7843.7	3.9	**17.8891**	0.350	2.0	mg/L	47	Standard
K	39	130.0	17.6	**1.4198**	0.270	19.0	mg/L	22	Standard
Ca	43	198.3	3.9	**18.4900**	1.144	6.2	mg/L	28	Standard
Fe	54	571.3	13.6	**1.0303**	0.149	14.4	mg/L	72	Standard
Fe	57	1026.7	7.6	**1.6803**	0.925	55.0	mg/L	703	Standard
> **Sc-1**	45	32887.3	2.3				mg/L	30379	Standard
Cl	35	17985.3	1.7				ug/L	14530	Standard
Kr	83	6.0	28.9				ug/L	5	Standard
Br	81	9506.3	4.4				ug/L	497	Standard
P	31	13122.3	2.4				ug/L	10347	Standard
S	34	1913.5	5.1				ug/L	1535	Standard
Sr	88	253.3	7.5				ug/L	177	Standard
C	12	436.7	27.3				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	102.2	1.1				mg/L	7	Standard
Ho-1	165	115.0	15.7				mg/L	13	Standard
Er	166	163.3	14.1				mg/L	3	Standard
I	127	554066.3	4.7				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.080	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.091	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.881
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.738
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1508122020
Sample Date/Time: Monday, August 24, 2015 16:13:30
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49517.5	3.1				ug/L	43934	Standard
	Be	9	11.7	49.5	**0.0157**	0.009	55.4	ug/L	0	Standard
	Al	27	6712994.7	1.4	**89.6424**	3.405	3.8	ug/L	410	Standard
	Sc	45	32084.0	4.9				ug/L	30379	Standard
	Ti	47	95.7	22.5	**0.3383**	0.103	30.5	ug/L	21	Standard
	V	51	1694.9	11.6	**0.0861**	0.043	50.2	ug/L	1362	Standard
	Cr	52	10291.2	0.3	**0.3767**	0.017	4.5	ug/L	8311	Standard
	Cr	53	950.0	11.4	**0.7798**	0.158	20.3	ug/L	325	Standard
	Mn	55	3178459.5	1.1	**782.2539**	9.192	1.2	ug/L	694	Standard
	Co	59	4855.4	2.0	**1.1760**	0.009	0.8	ug/L	199	Standard
	Ni	60	6321.0	3.3	**3.8671**	0.147	3.8	ug/L	212	Standard
	Cu	65	641.7	4.8	**0.3156**	0.025	7.9	ug/L	149	Standard
	Zn	66	3263.7	2.5	**3.2547**	0.068	2.1	ug/L	206	Standard
>	**Ge**	72	319919.2	1.3				ug/L	319179	Standard
	As	75	1531.9	1.2	**1.8691**	0.042	2.2	ug/L	-51	Standard
	Se	82	384.4	4.3	**5.1063**	0.294	5.8	ug/L	19	Standard
	Se-1	77	106.0	4.3	**0.2374**	0.102	42.9	ug/L	89	Standard
>	**Ga**	71	80.0	28.6				mg/L	25	Standard
	Rb	85	5464.3	2.6				ug/L	27	Standard
	Y	89	299287.0	0.2				ug/L	295132	Standard
>	**Rh**	103	70.0	12.4				ug/L	20	Standard
	Mo	98	299.6	2.0	**0.1816**	0.007	3.7	ug/L	11	Standard
	Ag	107	69.0	8.1	**-0.0027**	0.001	29.5	ug/L	64	Standard
	Cd	111	21.6	10.4	**0.0046**	0.002	34.8	mg/L	7	Standard
	Cd	114	43.6	28.3	**0.0038**	0.003	79.8	ug/L	10	Standard
>	**In**	115	440703.3	1.7				ug/L	418014	Standard
	Sn	118	488.3	15.5	**0.0217**	0.016	73.9	ug/L	385	Standard
	Sb	123	185.0	1.4	**0.0300**	0.000	1.0	ug/L	54	Standard
	Ba	135	123223.4	0.3	**57.5698**	0.885	1.5	ug/L	44	Standard
	Ce	140	1645.1	5.1				ug/L	33	Standard
>	**Tb**	159	873467.4	0.6				ug/L	854905	Standard
	Ho	165	206.7	7.8				ug/L	13	Standard
	Tl	203	42.7	21.7	**0.0061**	0.001	21.8	ug/L	4	Standard
	Tl	205	21.7	26.6	**0.0059**	0.001	19.4	ug/L	5	Standard
	Pb	206	319.7	5.8	**0.0148**	0.005	30.9	ug/L	182	Standard
	Pb	207	252.0	2.4	**0.0099**	0.002	20.4	ug/L	160	Standard
	Pb	208	947.7	3.3	**0.0136**	0.002	12.6	ug/L	604	Standard
	U	238	408.3	5.0	**0.0807**	0.004	5.3	ug/L	3	Standard
>	**Bi**	209	405655.9	0.9				ug/L	395375	Standard

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Na	23	5.0	0.0	**-18.1094**	1.418	7.8	mg/L	0	Standard
Mg	24	2328.5	2.7	**5.3706**	0.174	3.2	mg/L	47	Standard
K	39	138.3	9.1	**1.5833**	0.253	16.0	mg/L	22	Standard
Ca	43	318.3	17.2	**32.4329**	7.880	24.3	mg/L	28	Standard
Fe	54	937.1	7.4	**1.8677**	0.089	4.8	mg/L	72	Standard
Fe	57	1175.0	9.8	**3.3332**	1.612	48.4	mg/L	703	Standard
> **Sc-1**	45	32084.0	4.9				mg/L	30379	Standard
Cl	35	19204.8	1.1				ug/L	14530	Standard
Kr	83	4.3	81.0				ug/L	5	Standard
Br	81	27074.2	1.6				ug/L	497	Standard
P	31	13190.7	3.2				ug/L	10347	Standard
S	34	1688.4	4.2				ug/L	1535	Standard
Sr	88	246.7	11.2				ug/L	177	Standard
C	12	620.0	9.8				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	3	Standard
Dy	164	167.8	27.2				mg/L	7	Standard
Ho-1	165	206.7	7.8				mg/L	13	Standard
Er	166	323.3	7.8				mg/L	3	Standard
I	127	94220.8	4.6				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.710	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.232	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.428
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.600
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, August 24, 2015 16:16:43
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	47661.5	1.5				ug/L	43934	Standard
	Be	9	32050.6	3.0	**50.4411**	1.882	3.7	ug/L	0	Standard
	Al	27	3479725.3	2.0	**48.2400**	0.971	2.0	ug/L	410	Standard
	Sc	45	30263.5	1.4				ug/L	30379	Standard
	Ti	47	22554.1	0.9	**108.9661**	1.989	1.8	ug/L	21	Standard
	V	51	228200.9	1.0	**53.9592**	1.102	2.0	ug/L	1362	Standard
	Cr	52	303192.3	1.5	**53.5057**	1.443	2.7	ug/L	8311	Standard
	Cr	53	37516.4	1.9	**53.7169**	1.772	3.3	ug/L	325	Standard
	Mn	55	208464.2	2.5	**53.2763**	0.697	1.3	ug/L	694	Standard
	Co	59	200761.5	1.2	**53.0089**	0.290	0.5	ug/L	199	Standard
	Ni	60	78619.6	3.4	**52.3488**	2.083	4.0	ug/L	212	Standard
	Cu	65	76402.8	1.5	**52.4737**	1.336	2.5	ug/L	149	Standard
	Zn	66	42788.0	1.7	**51.2735**	1.164	2.3	ug/L	206	Standard
>	Ge	72	306984.8	1.4				ug/L	319179	Standard
	As	75	42777.5	1.6	**51.4640**	0.685	1.3	ug/L	-51	Standard
	Se	82	3609.4	1.3	**52.0106**	0.175	0.3	ug/L	19	Standard
	Se-1	77	2623.9	6.4	**51.7807**	2.842	5.5	ug/L	89	Standard
>	Ga	71	41.7	27.7				mg/L	25	Standard
	Rb	85	601.7	11.8				ug/L	27	Standard
	Y	89	295807.2	2.2				ug/L	295132	Standard
>	Rh	103	41.7	18.3				ug/L	20	Standard
	Mo	98	148413.6	1.2	**99.5928**	2.451	2.5	ug/L	11	Standard
	Ag	107	267021.3	1.3	**48.7995**	1.986	4.1	ug/L	64	Standard
	Cd	111	76514.4	2.0	**51.1372**	1.209	2.4	mg/L	7	Standard
	Cd	114	201092.9	2.0	**51.1355**	2.664	5.2	ug/L	10	Standard
>	In	115	430177.5	3.3				ug/L	418014	Standard
	Sn	118	230709.9	0.3	**46.6149**	1.644	3.5	ug/L	385	Standard
	Sb	123	202982.9	1.3	**50.1345**	2.252	4.5	ug/L	54	Standard
	Ba	135	102712.0	1.0	**49.1832**	1.632	3.3	ug/L	44	Standard
	Ce	140	176.7	119.3				ug/L	33	Standard
>	Tb	159	860128.4	3.0				ug/L	854905	Standard
	Ho	165	18.3	126.0				ug/L	13	Standard
	Tl	203	351951.6	1.4	**51.0147**	1.118	2.2	ug/L	4	Standard
	Tl	205	240859.7	1.8	**50.5406**	0.811	1.6	ug/L	5	Standard
	Pb	206	220784.7	0.6	**50.9233**	1.676	3.3	ug/L	182	Standard
	Pb	207	198935.5	0.7	**50.9786**	1.729	3.4	ug/L	160	Standard
	Pb	208	722071.1	1.3	**50.5696**	1.397	2.8	ug/L	604	Standard
	U	238	248044.1	1.4	**50.7167**	1.969	3.9	ug/L	3	Standard
>	Bi	209	393943.2	3.3				ug/L	395375	Standard

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Na	23	1.7	173.2	**0.2920**	16.944	5802.7	mg/L	0	Standard
Mg	24	2148.5	3.3	**5.2483**	0.247	4.7	mg/L	47	Standard
K	39	391.7	11.5	**5.2519**	0.695	13.2	mg/L	22	Standard
Ca	43	85.0	23.5	**7.1462**	2.457	34.4	mg/L	28	Standard
Fe	54	2374.2	2.3	**5.3509**	0.200	3.7	mg/L	72	Standard
Fe	57	1413.4	5.2	**6.2951**	0.692	11.0	mg/L	703	Standard
Sc-1	45	30263.5	1.4				mg/L	30379	Standard
Cl	35	16910.1	2.3				ug/L	14530	Standard
Kr	83	3.3	45.8				ug/L	5	Standard
Br	81	936.7	12.9				ug/L	497	Standard
P	31	12171.6	2.7				ug/L	10347	Standard
S	34	1875.1	6.6				ug/L	1535	Standard
Sr	88	205.0	13.6				ug/L	177	Standard
C	12	256.7	13.7				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	9.2	173.2				mg/L	7	Standard
Ho-1	165	18.3	126.0				mg/L	13	Standard
Er	166	16.7	173.2				mg/L	3	Standard
I	127	7013.3	18.0				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	100.882		
Al	27	96.480		
Sc	45			
Ti	47	108.966		
V	51	107.918		
Cr	52	107.011		
Cr	53			
Mn	55	106.553		
Co	59	106.018		
Ni	60	104.698		
Cu	65	104.947		
Zn	66	102.547		
> Ge	72		96.179	
As	75	102.928		
Se	82	104.021		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	99.593		
Ag	107	97.599		
Cd	111	102.274		
Cd	114			
In	115		102.910	
Sn	118	93.230		
Sb	123	100.269		
Ba	135	98.366		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.029		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.139		
U	238	101.433		
Bi	209		99.638	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, August 24, 2015 16:19:55
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	47775.2	2.3				ug/L	43934	Standard
	Be	9	8.3	34.6	**0.0110**	0.004	38.9	ug/L	0	Standard
	Al	27	901.7	35.6	**0.0010**	0.004	419.2	ug/L	410	Standard
	Sc	45	30119.9	1.1				ug/L	30379	Standard
	Ti	47	19.0	29.3	**-0.0167**	0.026	153.1	ug/L	21	Standard
	V	51	1081.7	5.3	**-0.0501**	0.012	24.0	ug/L	1362	Standard
	Cr	52	7087.3	2.6	**-0.1617**	0.042	25.8	ug/L	8311	Standard
	Cr	53	443.3	3.3	**0.0856**	0.025	29.7	ug/L	325	Standard
	Mn	55	764.7	16.0	**-0.0050**	0.030	591.2	ug/L	694	Standard
	Co	59	195.7	4.6	**-0.0050**	0.002	39.6	ug/L	199	Standard
	Ni	60	212.7	8.3	**-0.0472**	0.010	22.2	ug/L	212	Standard
	Cu	65	162.7	8.6	**0.0007**	0.009	1321.6	ug/L	149	Standard
	Zn	66	247.3	9.2	**-0.2452**	0.025	10.1	ug/L	206	Standard
>	**Ge**	72	315246.2	0.8				ug/L	319179	Standard
	As	75	-84.1	8.7	**0.0056**	0.008	139.9	ug/L	-51	Standard
	Se	82	14.7	62.2	**-0.0272**	0.130	480.4	ug/L	19	Standard
	Se-1	77	88.3	9.2	**-0.0846**	0.150	177.1	ug/L	89	Standard
>	**Ga**	71	26.7	10.8				mg/L	25	Standard
	Rb	85	25.0	20.0				ug/L	27	Standard
	Y	89	295019.6	0.8				ug/L	295132	Standard
>	**Rh**	103	36.7	43.8				ug/L	20	Standard
	Mo	98	63.3	30.5	**0.0275**	0.013	46.4	ug/L	11	Standard
	Ag	107	72.7	6.2	**-0.0018**	0.001	42.7	ug/L	64	Standard
	Cd	111	8.5	18.0	**-0.0038**	0.001	26.3	mg/L	7	Standard
	Cd	114	21.4	104.6	**-0.0016**	0.006	347.8	ug/L	10	Standard
>	**In**	115	433392.3	0.6				ug/L	418014	Standard
	Sn	118	445.0	13.7	**0.0146**	0.013	86.7	ug/L	385	Standard
	Sb	123	705.9	12.6	**0.1584**	0.022	13.9	ug/L	54	Standard
	Ba	135	59.3	16.4	**0.0035**	0.005	135.1	ug/L	44	Standard
	Ce	140	16.7	62.4				ug/L	33	Standard
>	**Tb**	159	847607.0	1.6				ug/L	854905	Standard
	Ho	165	16.7	17.3				ug/L	13	Standard
	Tl	203	16.0	16.5	**0.0024**	0.000	15.6	ug/L	4	Standard
	Tl	205	13.3	78.1	**0.0042**	0.002	50.2	ug/L	5	Standard
	Pb	206	198.0	12.6	**-0.0125**	0.006	45.3	ug/L	182	Standard
	Pb	207	166.3	9.6	**-0.0114**	0.004	34.4	ug/L	160	Standard
	Pb	208	621.3	1.9	**-0.0086**	0.001	9.1	ug/L	604	Standard
	U	238	14.0	68.1	**0.0025**	0.002	76.0	ug/L	3	Standard
>	**Bi**	209	405524.9	0.2				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	33.3	31.2	**-0.0302**	0.026	86.3	mg/L	47	Standard
K	39	10.0	132.3	**-0.1160**	0.189	163.2	mg/L	22	Standard
Ca	43	35.0	37.8	**1.3229**	1.544	116.7	mg/L	28	Standard
Fe	54	70.7	33.8	**-0.0299**	0.057	190.7	mg/L	72	Standard
Fe	57	815.0	12.8	**0.4292**	1.102	256.8	mg/L	703	Standard
> **Sc-1**	45	30119.9	1.1				mg/L	30379	Standard
Cl	35	16354.2	2.0				ug/L	14530	Standard
Kr	83	4.3	26.6				ug/L	5	Standard
Br	81	666.7	13.9				ug/L	497	Standard
P	31	11617.8	0.3				ug/L	10347	Standard
S	34	1831.8	6.7				ug/L	1535	Standard
Sr	88	170.0	20.6				ug/L	177	Standard
C	12	170.0	27.0				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	13.0	86.6				mg/L	7	Standard
Ho-1	165	16.7	17.3				mg/L	13	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	5049.2	7.7				mg/L	1945	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.768	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.679
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.567
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Approved: August 25, 2015

Method 6020 - Summary Report

Sample ID: PBW M4 WG535951-01
Sample Date/Time: Monday, August 24, 2015 16:23:07
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	45386.2	0.5				ug/L	43934	Standard
	Be	9	10.0	86.6	**0.0145**	0.014	98.4	ug/L	0	Standard
	Al	27	1511.7	20.7	**0.0106**	0.005	44.0	ug/L	410	Standard
	Sc	45	28884.2	3.3				ug/L	30379	Standard
	Ti	47	20.3	17.3	**-0.0074**	0.018	239.3	ug/L	21	Standard
	V	51	1054.6	5.9	**-0.0491**	0.016	31.9	ug/L	1362	Standard
	Cr	52	6314.6	0.3	**-0.2653**	0.008	3.1	ug/L	8311	Standard
	Cr	53	353.3	11.4	**-0.0263**	0.063	240.2	ug/L	325	Standard
	Mn	55	853.7	3.8	**0.0235**	0.009	36.4	ug/L	694	Standard
	Co	59	197.0	4.0	**-0.0032**	0.002	77.9	ug/L	199	Standard
	Ni	60	255.7	10.4	**-0.0144**	0.016	112.8	ug/L	212	Standard
	Cu	65	171.7	2.4	**0.0101**	0.003	29.9	ug/L	149	Standard
	Zn	66	1142.4	3.0	**0.8496**	0.030	3.5	ug/L	206	Standard
>	**Ge**	72	306229.2	0.9				ug/L	319179	Standard
	As	75	-36.0	29.0	**0.0606**	0.012	20.6	ug/L	-51	Standard
	Se	82	33.1	12.1	**0.2460**	0.063	25.5	ug/L	19	Standard
	Se-1	77	82.7	6.7	**-0.1475**	0.128	87.0	ug/L	89	Standard
>	**Ga**	71	26.7	10.8				mg/L	25	Standard
	Rb	85	33.3	31.2				ug/L	27	Standard
	Y	89	279677.7	0.7				ug/L	295132	Standard
>	**Rh**	103	18.3	56.8				ug/L	20	Standard
	Mo	98	25.2	14.1	**0.0030**	0.002	73.1	ug/L	11	Standard
	Ag	107	75.0	32.0	**-0.0006**	0.005	761.8	ug/L	64	Standard
	Cd	111	8.6	46.9	**-0.0035**	0.003	84.4	mg/L	7	Standard
	Cd	114	29.0	26.9	**0.0007**	0.002	310.8	ug/L	10	Standard
>	**In**	115	412553.6	1.9				ug/L	418014	Standard
	Sn	118	285.0	27.6	**-0.0147**	0.016	110.7	ug/L	385	Standard
	Sb	123	144.4	9.0	**0.0227**	0.004	16.3	ug/L	54	Standard
	Ba	135	91.0	11.2	**0.0208**	0.006	28.4	ug/L	44	Standard
	Ce	140	38.3	27.2				ug/L	33	Standard
>	**Tb**	159	826546.7	1.6				ug/L	854905	Standard
	Ho	165	5.0	173.2				ug/L	13	Standard
	Tl	203	21.3	61.2	**0.0033**	0.002	59.3	ug/L	4	Standard
	Tl	205	5.0	100.0	**0.0026**	0.001	41.1	ug/L	5	Standard
	Pb	206	218.7	11.1	**-0.0059**	0.005	93.3	ug/L	182	Standard
	Pb	207	196.3	4.7	**-0.0019**	0.002	125.9	ug/L	160	Standard
	Pb	208	768.3	1.7	**0.0036**	0.001	35.3	ug/L	604	Standard
	U	238	13.7	40.3	**0.0025**	0.001	44.2	ug/L	3	Standard
>	**Bi**	209	389617.3	0.6				ug/L	395375	Standard

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Na	23	3.3	86.6	**-10.7345**	18.049	168.1	mg/L	0	Standard
Mg	24	51.7	34.0	**0.0223**	0.050	225.4	mg/L	47	Standard
K	39	13.3	57.3	**-0.0631**	0.109	172.6	mg/L	22	Standard
Ca	43	33.3	37.7	**1.2801**	1.501	117.3	mg/L	28	Standard
Fe	54	52.8	33.4	**-0.0661**	0.045	68.5	mg/L	72	Standard
Fe	57	750.0	10.7	**0.0835**	0.593	709.9	mg/L	703	Standard
> **Sc-1**	45	28884.2	3.3				mg/L	30379	Standard
Cl	35	14946.7	0.9				ug/L	14530	Standard
Kr	83	6.7	45.8				ug/L	5	Standard
Br	81	693.3	4.4				ug/L	497	Standard
P	31	7416.8	2.2				ug/L	10347	Standard
S	34	1671.8	5.7				ug/L	1535	Standard
Sr	88	206.7	16.5				ug/L	177	Standard
C	12	140.0	18.9				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	6.2	100.1				mg/L	7	Standard
Ho-1	165	5.0	173.2				mg/L	13	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	4795.8	3.4				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.306	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.943	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.694
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.544
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 25, 2015

Method 6020 - Summary Report

Sample ID: LCSS M4 WG535951-02
Sample Date/Time: Monday, August 24, 2015 16:26:19
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	44181.0	0.8				ug/L	43934	Standard
	Be	9	7505.2	2.9	**12.7363**	0.264	2.1	ug/L	0	Standard
	Al	27	2705.2	2.8	**0.0291**	0.001	5.0	ug/L	410	Standard
	Sc	45	29133.0	1.3				ug/L	30379	Standard
	Ti	47	18.0	47.5	**-0.0187**	0.042	223.2	ug/L	21	Standard
	V	51	56130.1	1.3	**13.0785**	0.194	1.5	ug/L	1362	Standard
	Cr	52	77202.5	1.3	**12.6062**	0.233	1.8	ug/L	8311	Standard
	Cr	53	9214.5	4.0	**12.8193**	0.585	4.6	ug/L	325	Standard
	Mn	55	51892.7	1.0	**13.1511**	0.163	1.2	ug/L	694	Standard
	Co	59	49975.0	0.6	**13.1880**	0.051	0.4	ug/L	199	Standard
	Ni	60	19294.9	0.9	**12.7391**	0.173	1.4	ug/L	212	Standard
	Cu	65	19436.5	1.6	**13.3013**	0.272	2.0	ug/L	149	Standard
	Zn	66	12267.0	1.0	**14.3544**	0.225	1.6	ug/L	206	Standard
>	**Ge**	72	306184.5	0.5				ug/L	319179	Standard
	As	75	10370.6	0.7	**12.5871**	0.040	0.3	ug/L	-51	Standard
	Se	82	926.2	1.6	**13.2076**	0.274	2.1	ug/L	19	Standard
	Se-1	77	740.4	2.4	**13.3322**	0.326	2.4	ug/L	89	Standard
>	**Ga**	71	18.3	83.3				mg/L	25	Standard
	Rb	85	36.7	56.8				ug/L	27	Standard
	Y	89	282771.0	0.4				ug/L	295132	Standard
>	**Rh**	103	18.3	31.5				ug/L	20	Standard
	Mo	98	32.2	4.4	**0.0078**	0.001	13.0	ug/L	11	Standard
	Ag	107	65736.0	1.3	**12.4912**	0.133	1.1	ug/L	64	Standard
	Cd	111	18811.3	0.8	**13.0829**	0.136	1.0	mg/L	7	Standard
	Cd	114	48647.2	2.9	**12.8655**	0.392	3.0	ug/L	10	Standard
>	**In**	115	412997.6	0.2				ug/L	418014	Standard
	Sn	118	280.0	6.4	**-0.0158**	0.004	24.8	ug/L	385	Standard
	Sb	123	50481.0	0.4	**12.9633**	0.048	0.4	ug/L	54	Standard
	Ba	135	25365.2	1.0	**12.6239**	0.106	0.8	ug/L	44	Standard
	Ce	140	35.0	37.8				ug/L	33	Standard
>	**Tb**	159	835533.0	0.2				ug/L	854905	Standard
	Ho	165	11.7	65.5				ug/L	13	Standard
	Tl	203	85340.0	1.5	**12.6396**	0.159	1.3	ug/L	4	Standard
	Tl	205	59911.6	2.7	**12.8514**	0.491	3.8	ug/L	5	Standard
	Pb	206	55538.9	1.0	**13.0457**	0.299	2.3	ug/L	182	Standard
	Pb	207	48158.1	1.0	**12.5681**	0.245	2.0	ug/L	160	Standard
	Pb	208	179719.9	0.3	**12.8229**	0.193	1.5	ug/L	604	Standard
	U	238	59123.5	0.3	**12.3490**	0.186	1.5	ug/L	3	Standard
>	**Bi**	209	385372.5	1.3				ug/L	395375	Standard

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Na	23	1.7	173.2	**-0.1371**	17.687	12902.0	mg/L	0	Standard
Mg	24	50.0	52.9	**0.0162**	0.069	428.1	mg/L	47	Standard
K	39	26.7	21.7	**0.1314**	0.088	66.8	mg/L	22	Standard
Ca	43	16.7	91.7	**-0.7724**	1.829	236.7	mg/L	28	Standard
Fe	54	54.7	23.7	**-0.0632**	0.032	50.7	mg/L	72	Standard
Fe	57	798.4	1.3	**0.5258**	0.100	18.9	mg/L	703	Standard
Sc-1	45	29133.0	1.3				mg/L	30379	Standard
Cl	35	15307.1	1.2				ug/L	14530	Standard
Kr	83	3.0	100.0				ug/L	5	Standard
Br	81	790.0	14.4				ug/L	497	Standard
P	31	7216.7	1.2				ug/L	10347	Standard
S	34	1740.1	9.2				ug/L	1535	Standard
Sr	88	206.7	12.2				ug/L	177	Standard
C	12	190.0	32.9				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	9.2	108.8				mg/L	7	Standard
Ho-1	165	11.7	65.5				mg/L	13	Standard
Er	166	16.7	69.3				mg/L	3	Standard
I	127	3770.5	4.6				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.563	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.929	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: LCSS M4 WG535951-02
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.800
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.470
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSS M4 WG535951-02
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Method 6020 - Summary Report

Sample ID: LCSS M4 WG535951-03
Sample Date/Time: Monday, August 24, 2015 16:29:31
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	45010.1	3.6				ug/L	43934	Standard
	Be	9	7563.6	1.0	**12.6124**	0.519	4.1	ug/L	0	Standard
	Al	27	2405.2	5.8	**0.0239**	0.003	12.2	ug/L	410	Standard
	Sc	45	28593.6	2.1				ug/L	30379	Standard
	Ti	47	18.7	11.2	**-0.0144**	0.011	74.4	ug/L	21	Standard
	V	51	56007.2	0.4	**13.2149**	0.020	0.2	ug/L	1362	Standard
	Cr	52	76299.6	1.1	**12.6139**	0.154	1.2	ug/L	8311	Standard
	Cr	53	9146.1	4.3	**12.8818**	0.507	3.9	ug/L	325	Standard
	Mn	55	51235.1	0.1	**13.1456**	0.063	0.5	ug/L	694	Standard
	Co	59	48932.6	0.9	**13.0728**	0.083	0.6	ug/L	199	Standard
	Ni	60	19139.4	1.1	**12.7935**	0.109	0.9	ug/L	212	Standard
	Cu	65	18827.0	1.4	**13.0413**	0.146	1.1	ug/L	149	Standard
	Zn	66	12058.5	0.2	**14.2827**	0.088	0.6	ug/L	206	Standard
>	**Ge**	72	302426.1	0.5				ug/L	319179	Standard
	As	75	10281.0	1.3	**12.6328**	0.105	0.8	ug/L	-51	Standard
	Se	82	891.8	1.3	**12.8685**	0.238	1.9	ug/L	19	Standard
	Se-1	77	694.0	3.6	**12.5580**	0.448	3.6	ug/L	89	Standard
>	**Ga**	71	21.7	13.3				mg/L	25	Standard
	Rb	85	31.7	24.1				ug/L	27	Standard
	Y	89	277094.6	1.7				ug/L	295132	Standard
>	**Rh**	103	20.0	66.1				ug/L	20	Standard
	Mo	98	31.3	21.9	**0.0075**	0.005	65.1	ug/L	11	Standard
	Ag	107	65224.8	0.9	**12.5157**	0.162	1.3	ug/L	64	Standard
	Cd	111	18255.3	0.2	**12.8199**	0.024	0.2	mg/L	7	Standard
	Cd	114	48703.0	1.6	**13.0057**	0.208	1.6	ug/L	10	Standard
>	**In**	115	409003.2	0.4				ug/L	418014	Standard
	Sn	118	318.3	13.2	**-0.0071**	0.009	128.1	ug/L	385	Standard
	Sb	123	50706.3	0.2	**13.1486**	0.046	0.4	ug/L	54	Standard
	Ba	135	24655.0	0.8	**12.3899**	0.059	0.5	ug/L	44	Standard
	Ce	140	50.0	34.6				ug/L	33	Standard
>	**Tb**	159	830754.0	1.9				ug/L	854905	Standard
	Ho	165	6.7	43.3				ug/L	13	Standard
	Tl	203	84781.2	1.5	**12.3944**	0.290	2.3	ug/L	4	Standard
	Tl	205	57294.8	1.1	**12.1275**	0.199	1.6	ug/L	5	Standard
	Pb	206	55006.7	0.3	**12.7495**	0.162	1.3	ug/L	182	Standard
	Pb	207	47229.8	0.2	**12.1624**	0.104	0.9	ug/L	160	Standard
	Pb	208	174771.6	0.4	**12.3047**	0.162	1.3	ug/L	604	Standard
	U	238	58471.3	1.1	**12.0523**	0.121	1.0	ug/L	3	Standard
>	**Bi**	209	390463.2	1.0				ug/L	395375	Standard

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Na	23	1.7	173.2	**-0.6494**	18.574	2860.4	mg/L	0	Standard
Mg	24	50.0	17.3	**0.0185**	0.025	135.7	mg/L	47	Standard
K	39	15.0	88.2	**-0.0376**	0.191	506.6	mg/L	22	Standard
Ca	43	30.0	92.8	**0.9015**	3.433	380.8	mg/L	28	Standard
Fe	54	51.5	16.8	**-0.0688**	0.021	30.8	mg/L	72	Standard
Fe	57	781.7	9.9	**0.5010**	0.710	141.8	mg/L	703	Standard
> **Sc-1**	45	28593.6	2.1				mg/L	30379	Standard
Cl	35	14940.7	1.5				ug/L	14530	Standard
Kr	83	5.3	10.8				ug/L	5	Standard
Br	81	730.0	23.7				ug/L	497	Standard
P	31	7260.1	2.1				ug/L	10347	Standard
S	34	1613.4	4.2				ug/L	1535	Standard
Sr	88	166.7	26.2				ug/L	177	Standard
C	12	173.3	43.3				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	15.9	72.0				mg/L	7	Standard
Ho-1	165	6.7	43.3				mg/L	13	Standard
Er	166	16.7	91.7				mg/L	3	Standard
I	127	2993.6	7.6				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.450	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.751	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.844
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.758
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSS M4 WG535951-03
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Method 6020 - Summary Report

Sample ID: L1508100001
Sample Date/Time: Monday, August 24, 2015 16:32:42
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	45578.5	3.5				ug/L	43934	Standard
	Be	9	1.7	173.2	**0.0007**	0.005	660.0	ug/L	0	Standard
	Al	27	192551.1	1.9	**2.7814**	0.047	1.7	ug/L	410	Standard
	Sc	45	30438.9	3.3				ug/L	30379	Standard
	Ti	47	88.7	4.6	**0.3241**	0.018	5.5	ug/L	21	Standard
	V	51	9202.5	2.9	**1.8952**	0.085	4.5	ug/L	1362	Standard
	Cr	52	7640.3	4.6	**-0.0230**	0.075	327.3	ug/L	8311	Standard
	Cr	53	378.3	29.6	**0.0110**	0.166	1508.5	ug/L	325	Standard
	Mn	55	11050.4	2.5	**2.6481**	0.051	1.9	ug/L	694	Standard
	Co	59	270.0	8.6	**0.0162**	0.006	35.4	ug/L	199	Standard
	Ni	60	742.0	1.7	**0.3119**	0.011	3.4	ug/L	212	Standard
	Cu	65	174.7	3.8	**0.0123**	0.004	28.6	ug/L	149	Standard
	Zn	66	2135.8	2.9	**2.0575**	0.053	2.6	ug/L	206	Standard
>	**Ge**	72	305952.7	1.0				ug/L	319179	Standard
	As	75	198.7	11.2	**0.3431**	0.025	7.1	ug/L	-51	Standard
	Se	82	37.2	8.6	**0.3050**	0.046	15.0	ug/L	19	Standard
	Se-1	77	97.7	7.4	**0.1620**	0.167	103.3	ug/L	89	Standard
>	**Ga**	71	26.7	65.8				mg/L	25	Standard
	Rb	85	2593.6	3.6				ug/L	27	Standard
	Y	89	281710.4	1.9				ug/L	295132	Standard
>	**Rh**	103	13.3	78.1				ug/L	20	Standard
	Mo	98	50.0	18.6	**0.0196**	0.006	32.7	ug/L	11	Standard
	Ag	107	65.3	11.3	**-0.0028**	0.002	54.4	ug/L	64	Standard
	Cd	111	12.6	32.3	**-0.0009**	0.003	282.5	mg/L	7	Standard
	Cd	114	38.5	35.1	**0.0030**	0.003	114.2	ug/L	10	Standard
>	**In**	115	421299.9	1.2				ug/L	418014	Standard
	Sn	118	241.7	10.6	**-0.0249**	0.005	21.4	ug/L	385	Standard
	Sb	123	1417.8	4.4	**0.3429**	0.019	5.5	ug/L	54	Standard
	Ba	135	2760.9	2.7	**1.3251**	0.041	3.1	ug/L	44	Standard
	Ce	140	13.3	57.3				ug/L	33	Standard
>	**Tb**	159	830888.1	0.5				ug/L	854905	Standard
	Ho	165	8.3	91.7				ug/L	13	Standard
	Tl	203	125.0	20.3	**0.0183**	0.004	20.0	ug/L	4	Standard
	Tl	205	76.7	18.8	**0.0176**	0.003	17.0	ug/L	5	Standard
	Pb	206	188.7	5.0	**-0.0132**	0.003	19.5	ug/L	182	Standard
	Pb	207	170.7	6.7	**-0.0090**	0.003	30.0	ug/L	160	Standard
	Pb	208	671.3	5.9	**-0.0037**	0.003	84.1	ug/L	604	Standard
	U	238	5.3	39.0	**0.0008**	0.000	52.3	ug/L	3	Standard
>	**Bi**	209	393052.5	0.9				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	198.3	5.8	**0.3780**	0.019	5.1	mg/L	47	Standard
K	39	51.7	5.6	**0.4641**	0.049	10.6	mg/L	22	Standard
Ca	43	48.3	15.8	**2.8459**	1.059	37.2	mg/L	28	Standard
Fe	54	54.4	51.1	**-0.0681**	0.068	100.2	mg/L	72	Standard
Fe	57	820.0	5.6	**0.3850**	0.299	77.6	mg/L	703	Standard
> **Sc-1**	45	30438.9	3.3				mg/L	30379	Standard
Cl	35	15725.5	3.0				ug/L	14530	Standard
Kr	83	5.7	10.2				ug/L	5	Standard
Br	81	576.7	12.3				ug/L	497	Standard
P	31	8359.0	2.7				ug/L	10347	Standard
S	34	1533.4	1.8				ug/L	1535	Standard
Sr	88	191.7	10.5				ug/L	177	Standard
C	12	296.7	27.2				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	9.2	108.8				mg/L	7	Standard
Ho-1	165	8.3	91.7				mg/L	13	Standard
Er	166	16.7	69.3				mg/L	3	Standard
I	127	6303.0	4.4				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.744	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.856	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.786
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.413
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 25, 2015

Method 6020 - Summary Report

Sample ID: L1508100003
Sample Date/Time: Monday, August 24, 2015 16:35:54
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	47437.5	2.9				ug/L	43934	Standard
	Be	9	10.0	50.0	**0.0138**	0.008	56.0	ug/L	0	Standard
	Al	27	112076.3	0.8	**1.5505**	0.035	2.3	ug/L	410	Standard
	Sc	45	29462.0	0.7				ug/L	30379	Standard
	Ti	47	70.0	11.3	**0.2279**	0.039	17.2	ug/L	21	Standard
	V	51	8195.0	1.1	**1.6215**	0.020	1.2	ug/L	1362	Standard
	Cr	52	7592.2	1.0	**-0.0554**	0.009	16.7	ug/L	8311	Standard
	Cr	53	365.0	7.6	**-0.0181**	0.041	227.6	ug/L	325	Standard
	Mn	55	20243.8	0.2	**4.9272**	0.025	0.5	ug/L	694	Standard
	Co	59	317.3	7.8	**0.0274**	0.007	24.9	ug/L	199	Standard
	Ni	60	614.3	7.6	**0.2194**	0.032	14.6	ug/L	212	Standard
	Cu	65	155.3	10.5	**-0.0028**	0.011	387.9	ug/L	149	Standard
	Zn	66	2040.5	0.7	**1.9004**	0.023	1.2	ug/L	206	Standard
>	**Ge**	72	311181.4	0.4				ug/L	319179	Standard
	As	75	152.8	26.7	**0.2850**	0.049	17.3	ug/L	-51	Standard
	Se	82	30.0	39.2	**0.1938**	0.170	87.5	ug/L	19	Standard
	Se-1	77	99.7	9.3	**0.1681**	0.196	116.5	ug/L	89	Standard
>	**Ga**	71	33.3	52.7				mg/L	25	Standard
	Rb	85	1523.4	6.4				ug/L	27	Standard
	Y	89	281883.0	0.5				ug/L	295132	Standard
>	**Rh**	103	23.3	12.4				ug/L	20	Standard
	Mo	98	14.6	27.7	**-0.0046**	0.003	62.8	ug/L	11	Standard
	Ag	107	52.7	12.9	**-0.0051**	0.001	23.5	ug/L	64	Standard
	Cd	111	19.6	2.9	**0.0040**	0.000	8.0	mg/L	7	Standard
	Cd	114	38.2	38.1	**0.0030**	0.004	131.4	ug/L	10	Standard
>	**In**	115	419161.5	1.4				ug/L	418014	Standard
	Sn	118	255.0	13.7	**-0.0219**	0.007	34.1	ug/L	385	Standard
	Sb	123	1491.5	2.6	**0.3633**	0.012	3.2	ug/L	54	Standard
	Ba	135	2161.2	2.1	**1.0375**	0.037	3.6	ug/L	44	Standard
	Ce	140	18.3	56.8				ug/L	33	Standard
>	**Tb**	159	843932.2	1.3				ug/L	854905	Standard
	Ho	165	6.7	43.3				ug/L	13	Standard
	Tl	203	45.0	25.2	**0.0065**	0.002	24.8	ug/L	4	Standard
	Tl	205	38.3	45.8	**0.0094**	0.004	38.7	ug/L	5	Standard
	Pb	206	203.7	3.7	**-0.0107**	0.002	15.9	ug/L	182	Standard
	Pb	207	164.3	3.5	**-0.0114**	0.001	11.6	ug/L	160	Standard
	Pb	208	649.7	6.5	**-0.0061**	0.003	47.3	ug/L	604	Standard
	U	238	3.3	96.4	**0.0004**	0.001	168.8	ug/L	3	Standard
>	**Bi**	209	400878.0	0.3				ug/L	395375	Standard

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Na	23	1.7	173.2	**-0.2158**	17.823	8258.9	mg/L	0	Standard
Mg	24	198.3	21.4	**0.3940**	0.106	26.9	mg/L	47	Standard
K	39	25.0	105.8	**0.1013**	0.379	374.1	mg/L	22	Standard
Ca	43	38.3	7.5	**1.8109**	0.317	17.5	mg/L	28	Standard
Fe	54	55.5	18.4	**-0.0628**	0.025	39.6	mg/L	72	Standard
Fe	57	803.4	7.6	**0.4823**	0.569	118.0	mg/L	703	Standard
> **Sc-1**	45	29462.0	0.7				mg/L	30379	Standard
Cl	35	16141.3	1.5				ug/L	14530	Standard
Kr	83	5.3	28.6				ug/L	5	Standard
Br	81	636.7	8.9				ug/L	497	Standard
P	31	7997.1	2.8				ug/L	10347	Standard
S	34	1568.4	5.4				ug/L	1535	Standard
Sr	88	180.0	34.8				ug/L	177	Standard
C	12	220.0	4.5				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	22.5	68.3				mg/L	7	Standard
Ho-1	165	6.7	43.3				mg/L	13	Standard
Er	166	16.7	69.3				mg/L	3	Standard
I	127	3778.8	2.2				mg/L	1945	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		107.975	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.494	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.274
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.392
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508100005
Sample Date/Time: Monday, August 24, 2015 16:39:05
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	47190.0	1.2				ug/L	43934	Standard
	Be	9	15.0	100.0	**0.0219**	0.024	108.2	ug/L	0	Standard
	Al	27	281888.0	0.1	**3.9365**	0.055	1.4	ug/L	410	Standard
	Sc	45	29787.6	1.2				ug/L	30379	Standard
	Ti	47	59.7	8.4	**0.1787**	0.023	12.6	ug/L	21	Standard
	V	51	9116.6	1.3	**1.8391**	0.017	0.9	ug/L	1362	Standard
	Cr	52	7903.4	1.9	**0.0014**	0.039	2715.6	ug/L	8311	Standard
	Cr	53	460.0	5.0	**0.1180**	0.038	32.0	ug/L	325	Standard
	Mn	55	5463.3	2.9	**1.1878**	0.048	4.0	ug/L	694	Standard
	Co	59	268.7	4.3	**0.0147**	0.002	16.7	ug/L	199	Standard
	Ni	60	465.0	6.4	**0.1212**	0.020	16.7	ug/L	212	Standard
	Cu	65	195.0	7.6	**0.0242**	0.011	43.6	ug/L	149	Standard
	Zn	66	2428.2	2.8	**2.3652**	0.055	2.3	ug/L	206	Standard
>	**Ge**	72	310960.7	0.9				ug/L	319179	Standard
	As	75	156.0	15.2	**0.2888**	0.028	9.7	ug/L	-51	Standard
	Se	82	32.2	16.4	**0.2252**	0.073	32.6	ug/L	19	Standard
	Se-1	77	93.3	7.6	**0.0421**	0.160	379.2	ug/L	89	Standard
>	**Ga**	71	38.3	15.1				mg/L	25	Standard
	Rb	85	1366.7	8.7				ug/L	27	Standard
	Y	89	280003.6	0.1				ug/L	295132	Standard
>	**Rh**	103	20.0	66.1				ug/L	20	Standard
	Mo	98	62.5	5.7	**0.0279**	0.002	6.7	ug/L	11	Standard
	Ag	107	62.3	13.0	**-0.0034**	0.001	39.3	ug/L	64	Standard
	Cd	111	8.9	11.2	**-0.0035**	0.001	17.2	mg/L	7	Standard
	Cd	114	23.3	27.6	**-0.0010**	0.002	174.9	ug/L	10	Standard
>	**In**	115	423376.8	1.4				ug/L	418014	Standard
	Sn	118	313.3	9.8	**-0.0105**	0.006	53.4	ug/L	385	Standard
	Sb	123	3450.2	1.0	**0.8508**	0.008	0.9	ug/L	54	Standard
	Ba	135	1388.4	0.8	**0.6507**	0.011	1.7	ug/L	44	Standard
	Ce	140	20.0	25.0				ug/L	33	Standard
>	**Tb**	159	844227.5	1.2				ug/L	854905	Standard
	Ho	165	10.0	50.0				ug/L	13	Standard
	Tl	203	43.7	17.5	**0.0063**	0.001	16.5	ug/L	4	Standard
	Tl	205	28.3	10.2	**0.0073**	0.001	7.3	ug/L	5	Standard
	Pb	206	229.7	2.1	**-0.0048**	0.001	30.0	ug/L	182	Standard
	Pb	207	173.0	10.4	**-0.0092**	0.004	44.9	ug/L	160	Standard
	Pb	208	678.3	6.3	**-0.0041**	0.003	75.9	ug/L	604	Standard
	U	238	4.3	13.3	**0.0006**	0.000	19.1	ug/L	3	Standard
>	**Bi**	209	400564.9	1.0				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	130.0	3.8	**0.2156**	0.010	4.7	mg/L	47	Standard
K	39	26.7	54.1	**0.1212**	0.204	168.5	mg/L	22	Standard
Ca	43	63.3	19.9	**4.7123**	1.429	30.3	mg/L	28	Standard
Fe	54	46.1	22.4	**-0.0868**	0.024	27.1	mg/L	72	Standard
Fe	57	820.0	7.6	**0.5602**	0.566	101.0	mg/L	703	Standard
> **Sc-1**	45	29787.6	1.2				mg/L	30379	Standard
Cl	35	16058.5	2.1				ug/L	14530	Standard
Kr	83	7.3	15.7				ug/L	5	Standard
Br	81	753.4	16.9				ug/L	497	Standard
P	31	8320.6	7.0				ug/L	10347	Standard
S	34	1611.8	8.1				ug/L	1535	Standard
Sr	88	171.7	30.6				ug/L	177	Standard
C	12	320.0	16.2				mg/L	153	Standard
N	14	6.7	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	5.9	100.8				mg/L	7	Standard
Ho-1	165	10.0	50.0				mg/L	13	Standard
Er	166	16.7	34.6				mg/L	3	Standard
I	127	4148.9	2.6				mg/L	1945	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		107.412	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.425	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.283
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.313
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508100007
Sample Date/Time: Monday, August 24, 2015 16:42:16
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	45611.9	0.7				ug/L	43934	Standard
	Be	9	5.0	0.0	**0.0062**	0.000	0.9	ug/L	0	Standard
	Al	27	175313.6	1.7	**2.5286**	0.040	1.6	ug/L	410	Standard
	Sc	45	30104.9	1.8				ug/L	30379	Standard
	Ti	47	62.3	21.8	**0.1936**	0.070	36.0	ug/L	21	Standard
	V	51	13831.4	0.5	**2.9615**	0.045	1.5	ug/L	1362	Standard
	Cr	52	7385.5	1.4	**-0.0851**	0.014	16.8	ug/L	8311	Standard
	Cr	53	346.7	16.8	**-0.0423**	0.076	180.3	ug/L	325	Standard
	Mn	55	3176.0	19.8	**0.6105**	0.146	23.9	ug/L	694	Standard
	Co	59	250.3	6.6	**0.0103**	0.005	52.2	ug/L	199	Standard
	Ni	60	503.7	3.3	**0.1483**	0.014	9.3	ug/L	212	Standard
	Cu	65	152.3	4.5	**-0.0044**	0.003	66.3	ug/L	149	Standard
	Zn	66	1311.7	3.3	**1.0385**	0.049	4.7	ug/L	206	Standard
>	**Ge**	72	309500.7	1.7				ug/L	319179	Standard
	As	75	384.9	6.3	**0.5623**	0.029	5.2	ug/L	-51	Standard
	Se	82	29.5	31.2	**0.1902**	0.136	71.4	ug/L	19	Standard
	Se-1	77	94.7	11.4	**0.0779**	0.227	291.3	ug/L	89	Standard
>	**Ga**	71	103.3	60.9				mg/L	25	Standard
	Rb	85	1063.4	1.5				ug/L	27	Standard
	Y	89	291229.2	1.2				ug/L	295132	Standard
>	**Rh**	103	8.3	91.7				ug/L	20	Standard
	Mo	98	21.7	35.9	**0.0000**	0.005	11382.9	ug/L	11	Standard
	Ag	107	85.7	34.9	**0.0008**	0.006	692.8	ug/L	64	Standard
	Cd	111	8.3	101.1	**-0.0039**	0.006	146.7	mg/L	7	Standard
	Cd	114	24.9	66.7	**-0.0006**	0.004	720.8	ug/L	10	Standard
>	**In**	115	427102.4	1.2				ug/L	418014	Standard
	Sn	118	313.3	27.5	**-0.0109**	0.018	167.8	ug/L	385	Standard
	Sb	123	2180.5	2.2	**0.5277**	0.018	3.5	ug/L	54	Standard
	Ba	135	673.7	15.3	**0.3005**	0.053	17.7	ug/L	44	Standard
	Ce	140	36.7	90.8				ug/L	33	Standard
>	**Tb**	159	850390.9	1.4				ug/L	854905	Standard
	Ho	165	6.7	114.6				ug/L	13	Standard
	Tl	203	64.0	72.7	**0.0092**	0.007	72.5	ug/L	4	Standard
	Tl	205	33.3	22.9	**0.0084**	0.002	18.7	ug/L	5	Standard
	Pb	206	214.0	17.4	**-0.0084**	0.009	105.2	ug/L	182	Standard
	Pb	207	176.3	14.7	**-0.0084**	0.007	81.4	ug/L	160	Standard
	Pb	208	607.3	5.1	**-0.0091**	0.002	26.8	ug/L	604	Standard
	U	238	5.3	109.9	**0.0008**	0.001	150.5	ug/L	3	Standard
>	**Bi**	209	401512.6	0.8				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	146.7	30.6	**0.2553**	0.117	46.0	mg/L	47	Standard
K	39	25.0	80.0	**0.0914**	0.276	301.8	mg/L	22	Standard
Ca	43	35.0	14.3	**1.3229**	0.572	43.2	mg/L	28	Standard
Fe	54	55.6	18.6	**-0.0655**	0.023	35.6	mg/L	72	Standard
Fe	57	853.4	6.8	**0.8026**	0.434	54.1	mg/L	703	Standard
> **Sc-1**	45	30104.9	1.8				mg/L	30379	Standard
Cl	35	15896.3	2.7				ug/L	14530	Standard
Kr	83	7.7	27.2				ug/L	5	Standard
Br	81	583.3	18.8				ug/L	497	Standard
P	31	8525.7	1.6				ug/L	10347	Standard
S	34	1606.8	1.3				ug/L	1535	Standard
Sr	88	203.3	5.1				ug/L	177	Standard
C	12	296.7	1.9				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	6.7	173.2				mg/L	7	Standard
Ho-1	165	6.7	114.6				mg/L	13	Standard
Er	166	0.0					mg/L	3	Standard
I	127	3428.7	4.3				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.820	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.968	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.174
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.552
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508100007PS WG536272-01
Sample Date/Time: Monday, August 24, 2015 16:45:28
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	46554.8	3.9				ug/L	43934	Standard
	Be	9	32626.8	2.9	**52.6291**	3.139	6.0	ug/L	0	Standard
	Al	27	184856.0	1.7	**2.6144**	0.080	3.1	ug/L	410	Standard
	Sc	45	29475.3	1.4				ug/L	30379	Standard
	Ti	47	51.3	2.2	**0.1421**	0.011	7.5	ug/L	21	Standard
	V	51	234640.9	1.9	**55.4698**	2.301	4.1	ug/L	1362	Standard
	Cr	52	297011.0	0.8	**52.3517**	1.472	2.8	ug/L	8311	Standard
	Cr	53	36582.5	2.2	**52.3312**	1.949	3.7	ug/L	325	Standard
	Mn	55	212155.2	1.4	**54.1972**	1.166	2.2	ug/L	694	Standard
	Co	59	205042.8	0.7	**54.1153**	1.410	2.6	ug/L	199	Standard
	Ni	60	79238.7	0.8	**52.7300**	1.496	2.8	ug/L	212	Standard
	Cu	65	78685.8	0.7	**54.0079**	1.288	2.4	ug/L	149	Standard
	Zn	66	46384.6	0.8	**55.5934**	1.323	2.4	ug/L	206	Standard
>	**Ge**	72	307236.1	2.3				ug/L	319179	Standard
	As	75	44413.3	0.5	**53.4031**	1.406	2.6	ug/L	-51	Standard
	Se	82	3736.1	1.7	**53.8186**	1.595	3.0	ug/L	19	Standard
	Se-1	77	2719.2	2.5	**53.7429**	2.663	5.0	ug/L	89	Standard
>	**Ga**	71	161.7	31.0				mg/L	25	Standard
	Rb	85	1081.7	4.4				ug/L	27	Standard
	Y	89	284165.1	0.7				ug/L	295132	Standard
>	**Rh**	103	26.7	28.6				ug/L	20	Standard
	Mo	98	25.7	31.8	**0.0027**	0.006	201.6	ug/L	11	Standard
	Ag	107	267348.2	1.7	**49.1754**	1.441	2.9	ug/L	64	Standard
	Cd	111	77594.8	1.3	**52.2056**	0.257	0.5	mg/L	7	Standard
	Cd	114	204421.8	0.5	**52.2946**	0.460	0.9	ug/L	10	Standard
>	**In**	115	427149.0	1.3				ug/L	418014	Standard
	Sn	118	363.3	11.5	**-0.0008**	0.008	982.4	ug/L	385	Standard
	Sb	123	203418.4	0.9	**50.5572**	1.044	2.1	ug/L	54	Standard
	Ba	135	104168.5	1.0	**50.2086**	1.078	2.1	ug/L	44	Standard
	Ce	140	23.3	81.1				ug/L	33	Standard
>	**Tb**	159	831073.0	0.6				ug/L	854905	Standard
	Ho	165	5.0	0.0				ug/L	13	Standard
	Tl	203	357424.1	0.4	**51.0814**	0.813	1.6	ug/L	4	Standard
	Tl	205	246336.4	0.8	**50.9797**	1.464	2.9	ug/L	5	Standard
	Pb	206	224423.6	0.6	**51.0237**	0.787	1.5	ug/L	182	Standard
	Pb	207	203012.4	0.3	**51.2821**	0.956	1.9	ug/L	160	Standard
	Pb	208	735819.3	0.8	**50.8125**	1.387	2.7	ug/L	604	Standard
	U	238	249166.7	0.2	**50.2162**	0.912	1.8	ug/L	3	Standard
>	**Bi**	209	399445.2	2.0				ug/L	395375	Standard

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Na	23	1.7	173.2	**-0.1371**	17.687	12902.0	mg/L	0	Standard
Mg	24	140.0	6.2	**0.2450**	0.027	10.8	mg/L	47	Standard
K	39	25.0	20.0	**0.1026**	0.074	72.5	mg/L	22	Standard
Ca	43	50.0	52.0	**3.1801**	3.011	94.7	mg/L	28	Standard
Fe	54	44.5	51.3	**-0.0891**	0.055	61.6	mg/L	72	Standard
Fe	57	861.7	6.8	**1.0748**	0.629	58.5	mg/L	703	Standard
> **Sc-1**	45	29475.3	1.4				mg/L	30379	Standard
Cl	35	15499.9	0.6				ug/L	14530	Standard
Kr	83	8.3	30.2				ug/L	5	Standard
Br	81	590.0	6.1				ug/L	497	Standard
P	31	8060.5	1.6				ug/L	10347	Standard
S	34	1618.4	4.9				ug/L	1535	Standard
Sr	88	183.3	16.4				ug/L	177	Standard
C	12	266.7	18.5				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	9.4	7.8				mg/L	7	Standard
Ho-1	165	5.0	0.0				mg/L	13	Standard
Er	166	13.3	114.6				mg/L	3	Standard
I	127	3110.3	9.2				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.966	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.258	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.185
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.029
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508100007SDL WG536272-02
Sample Date/Time: Monday, August 24, 2015 16:48:39
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48766.7	3.0				ug/L	43934	Standard
	Be	9	8.3	91.7	**0.0111**	0.012	109.1	ug/L	0	Standard
	Al	27	38513.9	2.0	**0.5106**	0.006	1.1	ug/L	410	Standard
	Sc	45	30627.6	1.7				ug/L	30379	Standard
	Ti	47	24.0	12.5	**0.0066**	0.014	219.2	ug/L	21	Standard
	V	51	4072.3	0.5	**0.6391**	0.006	1.0	ug/L	1362	Standard
	Cr	52	7717.0	0.9	**-0.0555**	0.017	30.8	ug/L	8311	Standard
	Cr	53	413.3	19.3	**0.0411**	0.111	269.6	ug/L	325	Standard
	Mn	55	1765.4	7.4	**0.2435**	0.032	13.2	ug/L	694	Standard
	Co	59	231.7	17.6	**0.0040**	0.010	255.2	ug/L	199	Standard
	Ni	60	301.3	3.7	**0.0099**	0.008	79.7	ug/L	212	Standard
	Cu	65	199.3	9.3	**0.0248**	0.012	48.4	ug/L	149	Standard
	Zn	66	1546.4	1.7	**1.2802**	0.027	2.1	ug/L	206	Standard
>	**Ge**	72	316320.5	0.3				ug/L	319179	Standard
	As	75	73.0	9.9	**0.1890**	0.009	4.6	ug/L	-51	Standard
	Se	82	24.9	11.5	**0.1153**	0.040	34.6	ug/L	19	Standard
	Se-1	77	86.0	7.6	**-0.1365**	0.125	91.5	ug/L	89	Standard
>	**Ga**	71	38.3	19.9				mg/L	25	Standard
	Rb	85	283.3	16.4				ug/L	27	Standard
	Y	89	295600.8	0.8				ug/L	295132	Standard
>	**Rh**	103	21.7	26.6				ug/L	20	Standard
	Mo	98	17.4	2.8	**-0.0032**	0.000	12.1	ug/L	11	Standard
	Ag	107	124.3	49.7	**0.0072**	0.011	150.9	ug/L	64	Standard
	Cd	111	10.6	39.1	**-0.0025**	0.003	109.7	mg/L	7	Standard
	Cd	114	40.5	36.7	**0.0031**	0.004	121.2	ug/L	10	Standard
>	**In**	115	439231.5	0.6				ug/L	418014	Standard
	Sn	118	353.3	20.6	**-0.0048**	0.015	301.9	ug/L	385	Standard
	Sb	123	1519.7	4.2	**0.3528**	0.013	3.8	ug/L	54	Standard
	Ba	135	207.7	9.2	**0.0727**	0.009	13.1	ug/L	44	Standard
	Ce	140	11.7	65.5				ug/L	33	Standard
>	**Tb**	159	874082.0	1.7				ug/L	854905	Standard
	Ho	165	8.3	91.7				ug/L	13	Standard
	Tl	203	79.0	57.6	**0.0112**	0.006	56.6	ug/L	4	Standard
	Tl	205	55.0	63.6	**0.0126**	0.007	55.7	ug/L	5	Standard
	Pb	206	515.3	15.4	**0.0581**	0.017	29.6	ug/L	182	Standard
	Pb	207	451.3	20.5	**0.0590**	0.023	38.1	ug/L	160	Standard
	Pb	208	1511.4	5.0	**0.0515**	0.004	8.7	ug/L	604	Standard
	U	238	37.7	80.8	**0.0071**	0.006	83.7	ug/L	3	Standard
>	**Bi**	209	407307.3	0.8				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	61.7	24.8	**0.0379**	0.036	95.7	mg/L	47	Standard
K	39	15.0	33.3	**-0.0506**	0.067	132.8	mg/L	22	Standard
Ca	43	25.0	40.0	**0.1115**	1.188	1064.8	mg/L	28	Standard
Fe	54	64.4	28.2	**-0.0470**	0.044	94.0	mg/L	72	Standard
Fe	57	838.4	15.1	**0.5039**	1.097	217.7	mg/L	703	Standard
Sc-1	45	30627.6	1.7				mg/L	30379	Standard
Cl	35	16335.5	2.0				ug/L	14530	Standard
Kr	83	3.0	57.7				ug/L	5	Standard
Br	81	693.3	13.7				ug/L	497	Standard
P	31	10653.7	1.1				ug/L	10347	Standard
S	34	1636.8	6.1				ug/L	1535	Standard
Sr	88	205.0	21.7				ug/L	177	Standard
C	12	163.3	46.0				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	3	Standard
Dy	164	9.2	111.3				mg/L	7	Standard
Ho-1	165	8.3	91.7				mg/L	13	Standard
Er	166	16.7	34.6				mg/L	3	Standard
I	127	2215.2	5.9				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.001	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.104	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.076
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.018
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 25, 2015

Method 6020 - Summary Report

Sample ID: L1508100007SDL WG536272-02
Sample Date/Time: Monday, August 24, 2015 16:51:51
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49751.6	1.6				ug/L	43934	Standard
	Be	9	5.0	100.0	**0.0056**	0.008	134.3	ug/L	0	Standard
	Al	27	8355.6	6.4	**0.0996**	0.007	7.1	ug/L	410	Standard
	Sc	45	31400.8	0.2				ug/L	30379	Standard
	Ti	47	22.7	20.8	**-0.0004**	0.022	5845.0	ug/L	21	Standard
	V	51	1721.2	4.5	**0.0945**	0.019	19.7	ug/L	1362	Standard
	Cr	52	7662.9	1.2	**-0.0725**	0.023	32.2	ug/L	8311	Standard
	Cr	53	438.3	10.4	**0.0731**	0.067	91.7	ug/L	325	Standard
	Mn	55	988.0	2.3	**0.0486**	0.004	9.1	ug/L	694	Standard
	Co	59	217.3	3.7	**0.0001**	0.002	3483.3	ug/L	199	Standard
	Ni	60	212.0	3.3	**-0.0488**	0.005	9.8	ug/L	212	Standard
	Cu	65	158.0	5.6	**-0.0034**	0.006	165.6	ug/L	149	Standard
	Zn	66	1479.4	1.7	**1.1918**	0.032	2.7	ug/L	206	Standard
>	**Ge**	72	318107.1	0.6				ug/L	319179	Standard
	As	75	-38.7	57.2	**0.0591**	0.025	43.1	ug/L	-51	Standard
	Se	82	25.1	23.5	**0.1163**	0.083	71.1	ug/L	19	Standard
	Se-1	77	92.3	5.6	**-0.0210**	0.095	454.1	ug/L	89	Standard
>	**Ga**	71	28.3	20.4				mg/L	25	Standard
	Rb	85	76.7	21.0				ug/L	27	Standard
	Y	89	298257.1	0.8				ug/L	295132	Standard
>	**Rh**	103	10.0	100.0				ug/L	20	Standard
	Mo	98	11.4	31.3	**-0.0072**	0.002	32.5	ug/L	11	Standard
	Ag	107	71.0	7.0	**-0.0024**	0.001	34.8	ug/L	64	Standard
	Cd	111	5.6	36.9	**-0.0058**	0.001	23.5	mg/L	7	Standard
	Cd	114	12.5	29.5	**-0.0039**	0.001	23.7	ug/L	10	Standard
>	**In**	115	443299.9	0.4				ug/L	418014	Standard
	Sn	118	340.0	9.2	**-0.0081**	0.006	72.3	ug/L	385	Standard
	Sb	123	368.7	8.3	**0.0738**	0.007	9.6	ug/L	54	Standard
	Ba	135	80.7	2.6	**0.0127**	0.001	6.4	ug/L	44	Standard
	Ce	140	21.7	13.3				ug/L	33	Standard
>	**Tb**	159	879485.6	0.4				ug/L	854905	Standard
	Ho	165	8.3	69.3				ug/L	13	Standard
	Tl	203	12.3	30.7	**0.0018**	0.001	27.9	ug/L	4	Standard
	Tl	205	15.0	33.3	**0.0045**	0.001	23.0	ug/L	5	Standard
	Pb	206	205.0	3.5	**-0.0115**	0.002	15.8	ug/L	182	Standard
	Pb	207	197.3	8.5	**-0.0043**	0.004	84.7	ug/L	160	Standard
	Pb	208	722.0	2.0	**-0.0023**	0.002	66.5	ug/L	604	Standard
	U	238	3.0	33.3	**0.0003**	0.000	64.6	ug/L	3	Standard
>	**Bi**	209	410287.3	1.2				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	38.3	7.5	**-0.0216**	0.007	32.7	mg/L	47	Standard
K	39	11.7	49.5	**-0.1005**	0.078	78.0	mg/L	22	Standard
Ca	43	36.7	15.7	**1.3422**	0.648	48.2	mg/L	28	Standard
Fe	54	72.6	27.8	**-0.0325**	0.046	140.7	mg/L	72	Standard
Fe	57	821.7	4.6	**0.1559**	0.363	232.9	mg/L	703	Standard
> **Sc-1**	45	31400.8	0.2				mg/L	30379	Standard
Cl	35	16428.9	1.6				ug/L	14530	Standard
Kr	83	3.0	66.7				ug/L	5	Standard
Br	81	513.3	6.0				ug/L	497	Standard
P	31	11045.7	1.5				ug/L	10347	Standard
S	34	1625.1	5.5				ug/L	1535	Standard
Sr	88	208.3	7.7				ug/L	177	Standard
C	12	163.3	18.7				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	2.5	222.5				mg/L	7	Standard
Ho-1	165	8.3	69.3				mg/L	13	Standard
Er	166	16.7	34.6				mg/L	3	Standard
I	127	2076.8	5.2				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.243	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.664	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.049
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.772
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 25, 2015

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, August 24, 2015 16:55:04
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	47883.9	3.5				ug/L	43934	Standard
	Be	9	31454.3	4.2	**49.2595**	1.046	2.1	ug/L	0	Standard
	Al	27	3433569.5	1.7	**47.3966**	0.995	2.1	ug/L	410	Standard
	Sc	45	30866.5	5.2				ug/L	30379	Standard
	Ti	47	22426.9	0.9	**103.7459**	2.471	2.4	ug/L	21	Standard
	V	51	230713.2	0.8	**52.2221**	0.937	1.8	ug/L	1362	Standard
	Cr	52	299366.8	1.8	**50.5098**	1.602	3.2	ug/L	8311	Standard
	Cr	53	37407.8	1.0	**51.2482**	0.731	1.4	ug/L	325	Standard
	Mn	55	215645.7	1.6	**52.7847**	1.572	3.0	ug/L	694	Standard
	Co	59	206652.5	1.0	**52.2542**	1.320	2.5	ug/L	199	Standard
	Ni	60	78419.8	0.4	**49.9838**	0.851	1.7	ug/L	212	Standard
	Cu	65	77690.3	0.3	**51.0840**	0.928	1.8	ug/L	149	Standard
	Zn	66	44060.3	0.5	**50.5448**	0.782	1.5	ug/L	206	Standard
>	**Ge**	72	320628.5	1.6				ug/L	319179	Standard
	As	75	43534.7	1.1	**50.1502**	0.435	0.9	ug/L	-51	Standard
	Se	82	3693.6	1.8	**50.9552**	0.689	1.4	ug/L	19	Standard
	Se-1	77	2649.6	1.1	**50.0237**	0.592	1.2	ug/L	89	Standard
>	**Ga**	71	46.7	53.9				mg/L	25	Standard
	Rb	85	625.0	5.2				ug/L	27	Standard
	Y	89	295287.0	1.9				ug/L	295132	Standard
>	**Rh**	103	23.3	61.9				ug/L	20	Standard
	Mo	98	148478.4	0.8	**97.9965**	0.841	0.9	ug/L	11	Standard
	Ag	107	266587.4	1.3	**47.9032**	0.804	1.7	ug/L	64	Standard
	Cd	111	76594.5	0.8	**50.3522**	0.167	0.3	mg/L	7	Standard
	Cd	114	200192.3	2.2	**50.0344**	0.890	1.8	ug/L	10	Standard
>	**In**	115	437154.0	0.5				ug/L	418014	Standard
	Sn	118	236006.0	2.0	**46.8925**	1.184	2.5	ug/L	385	Standard
	Sb	123	201608.1	1.9	**48.9548**	1.141	2.3	ug/L	54	Standard
	Ba	135	104173.6	0.6	**49.0545**	0.543	1.1	ug/L	44	Standard
	Ce	140	85.0	23.5				ug/L	33	Standard
>	**Tb**	159	871249.4	1.5				ug/L	854905	Standard
	Ho	165	10.0					ug/L	13	Standard
	Tl	203	350961.2	0.4	**49.6042**	0.554	1.1	ug/L	4	Standard
	Tl	205	240687.1	1.8	**49.2635**	1.656	3.4	ug/L	5	Standard
	Pb	206	217880.5	0.9	**48.9852**	0.327	0.7	ug/L	182	Standard
	Pb	207	197597.8	0.7	**49.3581**	0.388	0.8	ug/L	160	Standard
	Pb	208	719893.8	0.7	**49.1606**	1.092	2.2	ug/L	604	Standard
	U	238	246954.9	1.5	**49.2288**	1.465	3.0	ug/L	3	Standard
>	**Bi**	209	403863.1	1.5				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	2188.5	7.8	**5.2552**	0.589	11.2	mg/L	47	Standard
K	39	381.7	12.9	**5.0329**	0.928	18.4	mg/L	22	Standard
Ca	43	70.0	7.1	**5.2191**	0.418	8.0	mg/L	28	Standard
Fe	54	2460.3	3.9	**5.4550**	0.502	9.2	mg/L	72	Standard
Fe	57	1391.7	11.3	**5.8798**	2.145	36.5	mg/L	703	Standard
> **Sc-1**	45	30866.5	5.2				mg/L	30379	Standard
Cl	35	15901.7	1.1				ug/L	14530	Standard
Kr	83	5.3	71.0				ug/L	5	Standard
Br	81	670.0	17.2				ug/L	497	Standard
P	31	12021.4	2.9				ug/L	10347	Standard
S	34	1880.1	4.7				ug/L	1535	Standard
Sr	88	203.3	9.3				ug/L	177	Standard
C	12	150.0	20.0				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	6.5	173.2				mg/L	7	Standard
Ho-1	165	10.0					mg/L	13	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	1111.7	11.1				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	98.519		
Al	27	94.793		
Sc	45			
Ti	47	103.746		
V	51	104.444		
Cr	52	101.020		
Cr	53			
Mn	55	105.569		
Co	59	104.508		
Ni	60	99.968		
Cu	65	102.168		
Zn	66	101.090		
> Ge	72		100.454	
As	75	100.300		
Se	82	101.910		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	97.997		
Ag	107	95.806		
Cd	111	100.704		
Cd	114			
In	115			104.579
Sn	118	93.785		
Sb	123	97.910		
Ba	135	98.109		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.208		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.321		
U	238	98.458		
Bi	209			102.147
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, August 24, 2015 16:58:16
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48248.4	3.5				ug/L	43934	Standard
	Be	9	6.7	43.3	**0.0083**	0.004	50.1	ug/L	0	Standard
	Al	27	598.3	17.4	**-0.0032**	0.002	52.1	ug/L	410	Standard
	Sc	45	31365.8	1.5				ug/L	30379	Standard
	Ti	47	19.0	18.2	**-0.0177**	0.015	85.2	ug/L	21	Standard
	V	51	1111.2	4.7	**-0.0460**	0.010	22.4	ug/L	1362	Standard
	Cr	52	7164.7	2.2	**-0.1617**	0.037	23.0	ug/L	8311	Standard
	Cr	53	421.7	14.9	**0.0496**	0.099	198.8	ug/L	325	Standard
	Mn	55	703.7	6.6	**-0.0220**	0.014	61.5	ug/L	694	Standard
	Co	59	220.7	4.8	**0.0008**	0.002	226.2	ug/L	199	Standard
	Ni	60	199.0	11.4	**-0.0573**	0.016	28.8	ug/L	212	Standard
	Cu	65	152.3	7.7	**-0.0073**	0.009	118.5	ug/L	149	Standard
	Zn	66	247.0	9.6	**-0.2482**	0.034	13.8	ug/L	206	Standard
>	**Ge**	72	318737.0	2.1				ug/L	319179	Standard
	As	75	-51.1	34.1	**0.0445**	0.022	48.5	ug/L	-51	Standard
	Se	82	17.8	25.9	**0.0137**	0.070	510.3	ug/L	19	Standard
	Se-1	77	97.3	22.6	**0.0746**	0.430	577.0	ug/L	89	Standard
>	**Ga**	71	13.3	21.7				mg/L	25	Standard
	Rb	85	33.3	70.9				ug/L	27	Standard
	Y	89	294172.4	2.1				ug/L	295132	Standard
>	**Rh**	103	21.7	13.3				ug/L	20	Standard
	Mo	98	67.6	31.5	**0.0297**	0.014	47.5	ug/L	11	Standard
	Ag	107	92.3	16.0	**0.0015**	0.003	181.3	ug/L	64	Standard
	Cd	111	7.5	53.1	**-0.0046**	0.003	57.7	mg/L	7	Standard
	Cd	114	45.3	13.8	**0.0042**	0.002	38.5	ug/L	10	Standard
>	**In**	115	440412.8	0.7				ug/L	418014	Standard
	Sn	118	2846.9	5.7	**0.4874**	0.029	5.9	ug/L	385	Standard
	Sb	123	815.3	7.4	**0.1820**	0.015	8.1	ug/L	54	Standard
	Ba	135	49.7	14.3	**-0.0015**	0.003	229.5	ug/L	44	Standard
	Ce	140	13.3	78.1				ug/L	33	Standard
>	**Tb**	159	871076.2	2.0				ug/L	854905	Standard
	Ho	165	5.0	100.0				ug/L	13	Standard
	Tl	203	40.0	69.7	**0.0057**	0.004	67.4	ug/L	4	Standard
	Tl	205	21.7	35.3	**0.0059**	0.002	25.8	ug/L	5	Standard
	Pb	206	207.3	2.9	**-0.0102**	0.001	8.9	ug/L	182	Standard
	Pb	207	177.3	9.3	**-0.0085**	0.004	43.3	ug/L	160	Standard
	Pb	208	667.0	3.7	**-0.0053**	0.001	26.6	ug/L	604	Standard
	U	238	23.3	19.8	**0.0044**	0.001	20.1	ug/L	3	Standard
>	**Bi**	209	403970.6	1.1				ug/L	395375	Standard

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Na	23	1.7	173.2	**0.5495**	16.498	3002.2	mg/L	0	Standard
Mg	24	43.3	48.0	**-0.0100**	0.049	490.3	mg/L	47	Standard
K	39	8.3	124.9	**-0.1442**	0.144	99.8	mg/L	22	Standard
Ca	43	25.0	52.9	**0.0473**	1.514	3199.4	mg/L	28	Standard
Fe	54	84.5	30.6	**-0.0059**	0.056	949.2	mg/L	72	Standard
Fe	57	768.4	0.4	**-0.3426**	0.124	36.1	mg/L	703	Standard
Sc-1	45	31365.8	1.5				mg/L	30379	Standard
Cl	35	16504.3	2.3				ug/L	14530	Standard
Kr	83	5.3	39.0				ug/L	5	Standard
Br	81	596.7	10.2				ug/L	497	Standard
P	31	11831.3	1.5				ug/L	10347	Standard
S	34	1935.1	4.7				ug/L	1535	Standard
Sr	88	190.0	27.5				ug/L	177	Standard
C	12	113.3	35.7				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	9.4	107.0				mg/L	7	Standard
Ho-1	165	5.0	100.0				mg/L	13	Standard
Er	166	13.3	86.6				mg/L	3	Standard
I	127	1858.4	2.4				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.861	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.358
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.174
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sn	118	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1508100009
Sample Date/Time: Monday, August 24, 2015 17:01:31
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	44914.8	1.3				ug/L	43934	Standard
	Be	9	10.0	50.0	**0.0147**	0.008	56.2	ug/L	0	Standard
	Al	27	218339.1	2.2	**3.2013**	0.073	2.3	ug/L	410	Standard
	Sc	45	29562.1	0.4				ug/L	30379	Standard
	Ti	47	110.7	6.7	**0.4251**	0.038	8.9	ug/L	21	Standard
	V	51	6511.5	4.0	**1.2359**	0.059	4.7	ug/L	1362	Standard
	Cr	52	7277.1	3.9	**-0.1037**	0.053	50.7	ug/L	8311	Standard
	Cr	53	385.0	4.7	**0.0137**	0.025	183.4	ug/L	325	Standard
	Mn	55	22594.2	2.6	**5.5567**	0.144	2.6	ug/L	694	Standard
	Co	59	329.0	2.9	**0.0309**	0.003	8.9	ug/L	199	Standard
	Ni	60	1135.4	3.1	**0.5673**	0.022	3.9	ug/L	212	Standard
	Cu	65	163.0	9.7	**0.0030**	0.011	359.8	ug/L	149	Standard
	Zn	66	1972.8	4.5	**1.8339**	0.105	5.7	ug/L	206	Standard
>	**Ge**	72	309297.4	0.5				ug/L	319179	Standard
	As	75	885.1	13.6	**1.1589**	0.146	12.6	ug/L	-51	Standard
	Se	82	261.0	16.0	**3.5151**	0.608	17.3	ug/L	19	Standard
	Se-1	77	88.0	9.1	**-0.0563**	0.172	305.5	ug/L	89	Standard
>	**Ga**	71	30.0	44.1				mg/L	25	Standard
	Rb	85	2540.2	2.7				ug/L	27	Standard
	Y	89	285548.1	2.1				ug/L	295132	Standard
>	**Rh**	103	13.3	57.3				ug/L	20	Standard
	Mo	98	43.7	15.8	**0.0154**	0.005	30.5	ug/L	11	Standard
	Ag	107	65.0	14.1	**-0.0028**	0.002	60.8	ug/L	64	Standard
	Cd	111	11.5	21.8	**-0.0016**	0.002	117.2	mg/L	7	Standard
	Cd	114	45.5	17.5	**0.0049**	0.002	43.5	ug/L	10	Standard
>	**In**	115	419447.7	1.4				ug/L	418014	Standard
	Sn	118	291.7	6.5	**-0.0143**	0.004	30.8	ug/L	385	Standard
	Sb	123	756.6	7.7	**0.1772**	0.017	9.8	ug/L	54	Standard
	Ba	135	1078.0	2.1	**0.5047**	0.016	3.3	ug/L	44	Standard
	Ce	140	36.7	43.8				ug/L	33	Standard
>	**Tb**	159	828526.5	1.5				ug/L	854905	Standard
	Ho	165	3.3	86.6				ug/L	13	Standard
	Tl	203	113.7	4.0	**0.0165**	0.001	3.8	ug/L	4	Standard
	Tl	205	75.0	17.6	**0.0172**	0.003	16.1	ug/L	5	Standard
	Pb	206	209.3	8.0	**-0.0088**	0.004	42.4	ug/L	182	Standard
	Pb	207	164.0	7.6	**-0.0110**	0.003	28.1	ug/L	160	Standard
	Pb	208	664.0	1.1	**-0.0045**	0.000	8.7	ug/L	604	Standard
	U	238	8.0	25.0	**0.0013**	0.000	30.5	ug/L	3	Standard
>	**Bi**	209	395572.9	0.3				ug/L	395375	Standard

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Na	23	1.7	173.2	**-0.1458**	17.702	12143.5	mg/L	0	Standard
Mg	24	158.3	4.8	**0.2906**	0.019	6.6	mg/L	47	Standard
K	39	45.0	40.1	**0.3883**	0.257	66.2	mg/L	22	Standard
Ca	43	43.3	24.0	**2.3898**	1.222	51.1	mg/L	28	Standard
Fe	54	62.7	19.8	**-0.0461**	0.029	63.6	mg/L	72	Standard
Fe	57	785.0	5.1	**0.2727**	0.434	159.3	mg/L	703	Standard
Sc-1	45	29562.1	0.4				mg/L	30379	Standard
Cl	35	15453.9	2.1				ug/L	14530	Standard
Kr	83	4.7	53.9				ug/L	5	Standard
Br	81	18711.6	3.4				ug/L	497	Standard
P	31	8020.5	1.6				ug/L	10347	Standard
S	34	1626.8	10.2				ug/L	1535	Standard
Sr	88	185.0	13.5				ug/L	177	Standard
C	12	220.0	9.1				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	3	Standard
Dy	164	16.0	37.7				mg/L	7	Standard
Ho-1	165	3.3	86.6				mg/L	13	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	5022.5	3.4				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		102.233	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.904	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.343
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.050
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508100011
Sample Date/Time: Monday, August 24, 2015 17:04:42
Number of Replicates: 3
Autosampler Position: 346
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	46752.0	2.0				ug/L	43934	Standard
	Be	9	121.7	6.3	**0.1933**	0.013	6.8	ug/L	0	Standard
	Al	27	1048660.2	1.1	**14.8134**	0.170	1.1	ug/L	410	Standard
	Sc	45	30754.5	2.3				ug/L	30379	Standard
	Ti	47	1146.4	4.4	**5.3876**	0.230	4.3	ug/L	21	Standard
	V	51	4707.6	1.2	**0.8088**	0.011	1.4	ug/L	1362	Standard
	Cr	52	10814.5	3.3	**0.5295**	0.068	12.8	ug/L	8311	Standard
	Cr	53	750.0	12.2	**0.5358**	0.129	24.1	ug/L	325	Standard
	Mn	55	720171.7	2.7	**182.9067**	4.387	2.4	ug/L	694	Standard
	Co	59	5029.2	3.5	**1.2621**	0.044	3.5	ug/L	199	Standard
	Ni	60	19793.6	0.6	**12.9209**	0.045	0.3	ug/L	212	Standard
	Cu	65	358.7	7.1	**0.1363**	0.017	12.3	ug/L	149	Standard
	Zn	66	19651.1	0.7	**23.0441**	0.112	0.5	ug/L	206	Standard
>	**Ge**	72	309724.7	0.3				ug/L	319179	Standard
	As	75	1977.3	4.2	**2.4567**	0.095	3.8	ug/L	-51	Standard
	Se	82	34.0	15.1	**0.2534**	0.073	28.7	ug/L	19	Standard
	Se-1	77	102.3	9.3	**0.2312**	0.194	83.9	ug/L	89	Standard
>	**Ga**	71	63.3	50.1				mg/L	25	Standard
	Rb	85	8354.0	4.4				ug/L	27	Standard
	Y	89	288784.7	1.2				ug/L	295132	Standard
>	**Rh**	103	26.7	10.8				ug/L	20	Standard
	Mo	98	239.9	3.3	**0.1485**	0.005	3.5	ug/L	11	Standard
	Ag	107	65.3	9.2	**-0.0029**	0.001	36.5	ug/L	64	Standard
	Cd	111	842.1	4.5	**0.5612**	0.025	4.4	mg/L	7	Standard
	Cd	114	2145.1	3.2	**0.5458**	0.021	3.8	ug/L	10	Standard
>	**In**	115	424132.3	0.7				ug/L	418014	Standard
	Sn	118	313.3	9.2	**-0.0105**	0.006	58.0	ug/L	385	Standard
	Sb	123	933.2	2.5	**0.2191**	0.007	3.2	ug/L	54	Standard
	Ba	135	110203.4	1.2	**53.4861**	0.350	0.7	ug/L	44	Standard
	Ce	140	1140.0	6.9				ug/L	33	Standard
>	**Tb**	159	839458.0	0.2				ug/L	854905	Standard
	Ho	165	153.3	5.0				ug/L	13	Standard
	Tl	203	686.7	3.2	**0.0985**	0.003	3.4	ug/L	4	Standard
	Tl	205	468.3	4.0	**0.0986**	0.004	3.7	ug/L	5	Standard
	Pb	206	287.3	3.8	**0.0086**	0.002	25.4	ug/L	182	Standard
	Pb	207	236.0	7.2	**0.0070**	0.005	65.5	ug/L	160	Standard
	Pb	208	856.7	6.6	**0.0085**	0.004	46.6	ug/L	604	Standard
	U	238	275.7	3.4	**0.0554**	0.002	3.3	ug/L	3	Standard
>	**Bi**	209	398496.4	0.4				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	290.0	10.3	**0.5984**	0.075	12.5	mg/L	47	Standard
K	39	76.7	10.0	**0.8037**	0.131	16.3	mg/L	22	Standard
Ca	43	123.3	10.2	**11.3415**	1.155	10.2	mg/L	28	Standard
Fe	54	64.2	21.0	**-0.0485**	0.030	61.4	mg/L	72	Standard
Fe	57	868.4	6.0	**0.7700**	0.352	45.7	mg/L	703	Standard
> **Sc-1**	45	30754.5	2.3				mg/L	30379	Standard
Cl	35	15542.6	1.9				ug/L	14530	Standard
Kr	83	2.7	86.6				ug/L	5	Standard
Br	81	970.0	10.5				ug/L	497	Standard
P	31	8380.7	4.0				ug/L	10347	Standard
S	34	1648.4	1.8				ug/L	1535	Standard
Sr	88	221.7	12.4				ug/L	177	Standard
C	12	243.3	26.4				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	169.2	32.6				mg/L	7	Standard
Ho-1	165	153.3	5.0				mg/L	13	Standard
Er	166	156.7	25.8				mg/L	3	Standard
I	127	20695.8	1.3				mg/L	1945	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		106.415	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.038	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.464
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.789
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508100013
Sample Date/Time: Monday, August 24, 2015 17:07:54
Number of Replicates: 3
Autosampler Position: 347
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	46698.5	2.3				ug/L	43934	Standard
	Be	9	10.0	50.0	**0.0140**	0.008	55.3	ug/L	0	Standard
	Al	27	171640.3	1.9	**2.4177**	0.019	0.8	ug/L	410	Standard
	Sc	45	29971.3	2.6				ug/L	30379	Standard
	Ti	47	111.7	8.1	**0.4261**	0.044	10.4	ug/L	21	Standard
	V	51	7011.6	2.2	**1.3423**	0.035	2.6	ug/L	1362	Standard
	Cr	52	7166.0	1.4	**-0.1328**	0.006	4.4	ug/L	8311	Standard
	Cr	53	418.3	10.8	**0.0575**	0.067	117.0	ug/L	325	Standard
	Mn	55	22544.8	0.6	**5.5041**	0.085	1.5	ug/L	694	Standard
	Co	59	378.3	5.2	**0.0432**	0.005	11.5	ug/L	199	Standard
	Ni	60	2141.8	3.8	**1.2244**	0.043	3.5	ug/L	212	Standard
	Cu	65	173.7	4.7	**0.0094**	0.004	44.1	ug/L	149	Standard
	Zn	66	2864.6	1.1	**2.8812**	0.004	0.1	ug/L	206	Standard
>	**Ge**	72	311501.1	1.2				ug/L	319179	Standard
	As	75	436.0	11.2	**0.6198**	0.058	9.4	ug/L	-51	Standard
	Se	82	28.0	42.4	**0.1637**	0.165	100.9	ug/L	19	Standard
	Se-1	77	87.7	4.3	**-0.0758**	0.087	115.1	ug/L	89	Standard
>	**Ga**	71	21.7	48.0				mg/L	25	Standard
	Rb	85	2555.2	7.9				ug/L	27	Standard
	Y	89	280442.1	1.8				ug/L	295132	Standard
>	**Rh**	103	28.3	73.5				ug/L	20	Standard
	Mo	98	15.4	31.6	**-0.0043**	0.003	75.3	ug/L	11	Standard
	Ag	107	54.3	6.5	**-0.0050**	0.001	14.1	ug/L	64	Standard
	Cd	111	35.3	9.9	**0.0142**	0.003	17.6	mg/L	7	Standard
	Cd	114	88.5	43.5	**0.0156**	0.010	63.8	ug/L	10	Standard
>	**In**	115	428511.7	0.7				ug/L	418014	Standard
	Sn	118	305.0	15.6	**-0.0129**	0.010	76.3	ug/L	385	Standard
	Sb	123	912.2	2.3	**0.2115**	0.004	1.7	ug/L	54	Standard
	Ba	135	1143.4	3.6	**0.5247**	0.017	3.3	ug/L	44	Standard
	Ce	140	43.3	13.3				ug/L	33	Standard
>	**Tb**	159	849021.7	0.7				ug/L	854905	Standard
	Ho	165	5.0	0.0				ug/L	13	Standard
	Tl	203	39.3	8.9	**0.0057**	0.001	9.0	ug/L	4	Standard
	Tl	205	28.3	27.0	**0.0074**	0.002	21.6	ug/L	5	Standard
	Pb	206	209.0	5.3	**-0.0094**	0.002	25.8	ug/L	182	Standard
	Pb	207	162.0	1.6	**-0.0119**	0.001	5.0	ug/L	160	Standard
	Pb	208	696.3	3.2	**-0.0028**	0.001	50.0	ug/L	604	Standard
	U	238	2.0	50.0	**0.0001**	0.000	173.3	ug/L	3	Standard
>	**Bi**	209	399646.8	0.3				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	155.0	14.1	**0.2776**	0.064	23.2	mg/L	47	Standard
K	39	41.7	27.7	**0.3353**	0.178	53.2	mg/L	22	Standard
Ca	43	53.3	23.6	**3.5255**	1.633	46.3	mg/L	28	Standard
Fe	54	50.8	37.7	**-0.0763**	0.045	58.5	mg/L	72	Standard
Fe	57	795.0	7.1	**0.2589**	0.430	166.1	mg/L	703	Standard
> **Sc-1**	45	29971.3	2.6				mg/L	30379	Standard
Cl	35	16134.6	1.8				ug/L	14530	Standard
Kr	83	4.7	44.6				ug/L	5	Standard
Br	81	756.7	3.3				ug/L	497	Standard
P	31	8198.9	1.3				ug/L	10347	Standard
S	34	1651.8	3.4				ug/L	1535	Standard
Sr	88	216.7	17.3				ug/L	177	Standard
C	12	240.0	7.2				mg/L	153	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	6.0	100.4				mg/L	7	Standard
Ho-1	165	5.0	0.0				mg/L	13	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	3117.0	5.5				mg/L	1945	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		106.293	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.594	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.511
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.080
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508100015
Sample Date/Time: Monday, August 24, 2015 17:11:05
Number of Replicates: 3
Autosampler Position: 348
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	46765.4	1.4				ug/L	43934	Standard
	Be	9	5.0	100.0	**0.0061**	0.008	133.8	ug/L	0	Standard
	Al	27	280178.5	3.2	**3.9489**	0.163	4.1	ug/L	410	Standard
	Sc	45	30519.1	2.6				ug/L	30379	Standard
	Ti	47	167.7	5.9	**0.6978**	0.049	7.0	ug/L	21	Standard
	V	51	6417.8	2.3	**1.2122**	0.036	3.0	ug/L	1362	Standard
	Cr	52	7507.2	2.5	**-0.0639**	0.033	51.6	ug/L	8311	Standard
	Cr	53	428.3	8.8	**0.0752**	0.054	71.7	ug/L	325	Standard
	Mn	55	126354.8	2.1	**31.9389**	0.577	1.8	ug/L	694	Standard
	Co	59	900.4	1.6	**0.1805**	0.003	1.6	ug/L	199	Standard
	Ni	60	4175.6	1.7	**2.5801**	0.042	1.6	ug/L	212	Standard
	Cu	65	182.7	6.3	**0.0163**	0.008	50.7	ug/L	149	Standard
	Zn	66	5944.2	1.0	**6.5985**	0.096	1.5	ug/L	206	Standard
>	**Ge**	72	309636.6	0.4				ug/L	319179	Standard
	As	75	760.9	1.5	**1.0096**	0.014	1.4	ug/L	-51	Standard
	Se	82	33.2	5.2	**0.2417**	0.026	10.8	ug/L	19	Standard
	Se-1	77	95.0	17.3	**0.0822**	0.325	395.6	ug/L	89	Standard
>	**Ga**	71	18.3	41.7				mg/L	25	Standard
	Rb	85	2942.0	2.0				ug/L	27	Standard
	Y	89	289797.4	1.7				ug/L	295132	Standard
>	**Rh**	103	20.0	25.0				ug/L	20	Standard
	Mo	98	180.3	7.7	**0.1067**	0.009	8.6	ug/L	11	Standard
	Ag	107	68.7	12.6	**-0.0024**	0.001	61.7	ug/L	64	Standard
	Cd	111	75.6	4.8	**0.0412**	0.003	6.8	mg/L	7	Standard
	Cd	114	211.1	22.0	**0.0468**	0.012	25.1	ug/L	10	Standard
>	**In**	115	428867.7	0.9				ug/L	418014	Standard
	Sn	118	331.7	16.6	**-0.0076**	0.011	142.5	ug/L	385	Standard
	Sb	123	1229.5	1.8	**0.2899**	0.008	2.6	ug/L	54	Standard
	Ba	135	4106.2	1.9	**1.9471**	0.034	1.7	ug/L	44	Standard
	Ce	140	65.0	40.7				ug/L	33	Standard
>	**Tb**	159	844487.9	1.1				ug/L	854905	Standard
	Ho	165	16.7	45.8				ug/L	13	Standard
	Tl	203	82.7	4.6	**0.0119**	0.001	4.4	ug/L	4	Standard
	Tl	205	36.7	20.8	**0.0091**	0.002	18.1	ug/L	5	Standard
	Pb	206	221.7	11.5	**-0.0068**	0.006	81.8	ug/L	182	Standard
	Pb	207	165.3	7.8	**-0.0113**	0.003	28.2	ug/L	160	Standard
	Pb	208	706.0	5.7	**-0.0024**	0.003	105.1	ug/L	604	Standard
	U	238	11.0	65.6	**0.0019**	0.001	75.3	ug/L	3	Standard
>	**Bi**	209	401973.0	0.8				ug/L	395375	Standard

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Na	23	1.7	173.2	**0.4287**	16.707	3897.3	mg/L	0	Standard
Mg	24	218.3	11.3	**0.4255**	0.048	11.3	mg/L	47	Standard
K	39	43.3	17.6	**0.3441**	0.095	27.7	mg/L	22	Standard
Ca	43	46.7	27.0	**2.6027**	1.384	53.2	mg/L	28	Standard
Fe	54	42.7	35.8	**-0.0965**	0.038	39.7	mg/L	72	Standard
Fe	57	776.7	15.5	**-0.0382**	1.342	3507.6	mg/L	703	Standard
> **Sc-1**	45	30519.1	2.6				mg/L	30379	Standard
Cl	35	16066.5	1.6				ug/L	14530	Standard
Kr	83	5.7	10.2				ug/L	5	Standard
Br	81	683.3	17.7				ug/L	497	Standard
P	31	8469.0	2.7				ug/L	10347	Standard
S	34	1678.4	6.7				ug/L	1535	Standard
Sr	88	203.3	19.9				ug/L	177	Standard
C	12	213.3	17.7				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	16.0	75.6				mg/L	7	Standard
Ho-1	165	16.7	45.8				mg/L	13	Standard
Er	166	13.3	114.6				mg/L	3	Standard
I	127	5902.8	1.6				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.446	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.010	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.596
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.669
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508100017
Sample Date/Time: Monday, August 24, 2015 17:14:17
Number of Replicates: 3
Autosampler Position: 349
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48627.9	1.8				ug/L	43934	Standard
	Be	9	5.0	100.0	**0.0058**	0.008	133.1	ug/L	0	Standard
	Al	27	181951.2	1.7	**2.4613**	0.007	0.3	ug/L	410	Standard
	Sc	45	30764.5	1.1				ug/L	30379	Standard
	Ti	47	99.3	11.9	**0.3694**	0.054	14.7	ug/L	21	Standard
	V	51	14983.7	1.6	**3.2276**	0.105	3.3	ug/L	1362	Standard
	Cr	52	7030.6	0.6	**-0.1509**	0.017	11.3	ug/L	8311	Standard
	Cr	53	351.7	3.6	**-0.0354**	0.013	35.9	ug/L	325	Standard
	Mn	55	14259.0	2.0	**3.4269**	0.120	3.5	ug/L	694	Standard
	Co	59	321.0	7.2	**0.0287**	0.007	22.8	ug/L	199	Standard
	Ni	60	936.4	3.3	**0.4341**	0.028	6.5	ug/L	212	Standard
	Cu	65	194.0	3.6	**0.0239**	0.005	21.8	ug/L	149	Standard
	Zn	66	2198.8	2.5	**2.0998**	0.086	4.1	ug/L	206	Standard
>	**Ge**	72	310032.2	1.3				ug/L	319179	Standard
	As	75	515.4	2.1	**0.7166**	0.010	1.4	ug/L	-51	Standard
	Se	82	28.6	14.0	**0.1748**	0.063	35.8	ug/L	19	Standard
	Se-1	77	89.7	8.4	**-0.0272**	0.151	554.7	ug/L	89	Standard
>	**Ga**	71	33.3	77.0				mg/L	25	Standard
	Rb	85	3177.0	4.5				ug/L	27	Standard
	Y	89	287592.1	0.6				ug/L	295132	Standard
>	**Rh**	103	8.3	91.7				ug/L	20	Standard
	Mo	98	40.2	10.2	**0.0126**	0.003	23.8	ug/L	11	Standard
	Ag	107	64.3	3.2	**-0.0031**	0.000	13.6	ug/L	64	Standard
	Cd	111	64.9	6.2	**0.0344**	0.003	8.8	mg/L	7	Standard
	Cd	114	137.8	25.8	**0.0285**	0.009	32.7	ug/L	10	Standard
>	**In**	115	424949.4	0.9				ug/L	418014	Standard
	Sn	118	270.0	6.7	**-0.0195**	0.003	17.1	ug/L	385	Standard
	Sb	123	850.1	3.2	**0.1979**	0.006	3.2	ug/L	54	Standard
	Ba	135	2833.9	3.3	**1.3486**	0.039	2.9	ug/L	44	Standard
	Ce	140	46.7	49.5				ug/L	33	Standard
>	**Tb**	159	838804.9	1.1				ug/L	854905	Standard
	Ho	165	13.3	78.1				ug/L	13	Standard
	Tl	203	66.3	13.7	**0.0094**	0.001	14.5	ug/L	4	Standard
	Tl	205	46.7	22.3	**0.0110**	0.002	19.1	ug/L	5	Standard
	Pb	206	207.3	7.0	**-0.0106**	0.003	32.9	ug/L	182	Standard
	Pb	207	193.7	9.8	**-0.0048**	0.005	109.6	ug/L	160	Standard
	Pb	208	659.3	8.0	**-0.0062**	0.003	48.8	ug/L	604	Standard
	U	238	2.0	132.3	**0.0001**	0.001	472.3	ug/L	3	Standard
>	**Bi**	209	407318.5	1.2				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	181.7	16.6	**0.3326**	0.079	23.6	mg/L	47	Standard
K	39	43.3	17.6	**0.3413**	0.111	32.6	mg/L	22	Standard
Ca	43	51.7	22.3	**3.1387**	1.271	40.5	mg/L	28	Standard
Fe	54	31.1	52.0	**-0.1246**	0.037	29.7	mg/L	72	Standard
Fe	57	805.0	5.0	**0.1571**	0.418	266.2	mg/L	703	Standard
> **Sc-1**	45	30764.5	1.1				mg/L	30379	Standard
Cl	35	15923.7	0.8				ug/L	14530	Standard
Kr	83	4.7	44.6				ug/L	5	Standard
Br	81	676.7	20.7				ug/L	497	Standard
P	31	8847.6	1.4				ug/L	10347	Standard
S	34	1673.4	7.8				ug/L	1535	Standard
Sr	88	195.0	9.2				ug/L	177	Standard
C	12	206.7	7.4				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	13.0	89.8				mg/L	7	Standard
Ho-1	165	13.3	78.1				mg/L	13	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	5037.5	3.9				mg/L	1945	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		110.685	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.134	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.659
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.021
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508100019
Sample Date/Time: Monday, August 24, 2015 17:17:29
Number of Replicates: 3
Autosampler Position: 350
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48419.0	4.7				ug/L	43934	Standard
	Be	9	8.3	91.7	**0.0112**	0.012	110.1	ug/L	0	Standard
	Al	27	114514.5	1.1	**1.5534**	0.062	4.0	ug/L	410	Standard
	Sc	45	29388.5	0.8				ug/L	30379	Standard
	Ti	47	85.0	16.7	**0.3026**	0.072	23.7	ug/L	21	Standard
	V	51	12013.6	1.8	**2.5370**	0.069	2.7	ug/L	1362	Standard
	Cr	52	8122.8	1.0	**0.0496**	0.017	35.1	ug/L	8311	Standard
	Cr	53	420.0	22.7	**0.0652**	0.142	218.0	ug/L	325	Standard
	Mn	55	3918.8	0.9	**0.8028**	0.017	2.1	ug/L	694	Standard
	Co	59	228.7	4.2	**0.0047**	0.003	64.6	ug/L	199	Standard
	Ni	60	437.0	3.9	**0.1045**	0.011	10.8	ug/L	212	Standard
	Cu	65	163.0	8.0	**0.0031**	0.009	287.7	ug/L	149	Standard
	Zn	66	1654.4	4.6	**1.4527**	0.076	5.3	ug/L	206	Standard
>	**Ge**	72	309023.7	0.8				ug/L	319179	Standard
	As	75	159.7	22.9	**0.2943**	0.043	14.6	ug/L	-51	Standard
	Se	82	42.6	12.2	**0.3777**	0.071	18.8	ug/L	19	Standard
	Se-1	77	93.7	12.5	**0.0596**	0.235	393.6	ug/L	89	Standard
>	**Ga**	71	56.7	22.2				mg/L	25	Standard
	Rb	85	1745.1	3.6				ug/L	27	Standard
	Y	89	286107.9	1.1				ug/L	295132	Standard
>	**Rh**	103	16.7	96.4				ug/L	20	Standard
	Mo	98	29.9	12.6	**0.0055**	0.002	42.1	ug/L	11	Standard
	Ag	107	70.3	7.2	**-0.0021**	0.001	51.7	ug/L	64	Standard
	Cd	111	16.9	11.8	**0.0019**	0.001	75.3	mg/L	7	Standard
	Cd	114	49.4	50.2	**0.0057**	0.007	115.2	ug/L	10	Standard
>	**In**	115	427795.0	1.5				ug/L	418014	Standard
	Sn	118	271.7	22.1	**-0.0196**	0.012	59.6	ug/L	385	Standard
	Sb	123	1295.6	1.2	**0.3071**	0.005	1.7	ug/L	54	Standard
	Ba	135	1104.4	1.5	**0.5070**	0.007	1.4	ug/L	44	Standard
	Ce	140	96.7	92.7				ug/L	33	Standard
>	**Tb**	159	844634.8	1.3				ug/L	854905	Standard
	Ho	165	18.3	15.7				ug/L	13	Standard
	Tl	203	18.7	27.5	**0.0028**	0.001	26.3	ug/L	4	Standard
	Tl	205	11.7	89.2	**0.0039**	0.002	54.8	ug/L	5	Standard
	Pb	206	206.3	11.3	**-0.0100**	0.005	53.3	ug/L	182	Standard
	Pb	207	166.7	12.7	**-0.0107**	0.005	48.4	ug/L	160	Standard
	Pb	208	664.3	3.2	**-0.0050**	0.002	31.8	ug/L	604	Standard
	U	238	4.0	66.1	**0.0005**	0.001	102.5	ug/L	3	Standard
>	**Bi**	209	399807.6	0.4				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	173.3	20.3	**0.3316**	0.091	27.4	mg/L	47	Standard
K	39	36.7	15.7	**0.2725**	0.087	31.8	mg/L	22	Standard
Ca	43	56.7	22.2	**4.0172**	1.481	36.9	mg/L	28	Standard
Fe	54	47.7	6.0	**-0.0813**	0.007	8.5	mg/L	72	Standard
Fe	57	796.7	13.3	**0.4394**	1.103	250.9	mg/L	703	Standard
> **Sc-1**	45	29388.5	0.8				mg/L	30379	Standard
Cl	35	15970.4	2.5				ug/L	14530	Standard
Kr	83	3.7	68.6				ug/L	5	Standard
Br	81	1806.8	7.2				ug/L	497	Standard
P	31	8277.3	1.0				ug/L	10347	Standard
S	34	1645.1	4.2				ug/L	1535	Standard
Sr	88	206.7	24.2				ug/L	177	Standard
C	12	320.0	8.3				mg/L	153	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	5.5	116.6				mg/L	7	Standard
Ho-1	165	18.3	15.7				mg/L	13	Standard
Er	166	23.3	65.5				mg/L	3	Standard
I	127	2845.3	0.3				mg/L	1945	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		110.209	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.818	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.340
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.121
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 25, 2015

Method 6020 - Summary Report

Sample ID: L1508100021
Sample Date/Time: Monday, August 24, 2015 17:20:40
Number of Replicates: 3
Autosampler Position: 351
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	47317.1	2.4				ug/L	43934	Standard
	Be	9	11.7	137.8	**0.0164**	0.025	153.0	ug/L	0	Standard
	Al	27	78407.4	0.4	**1.0841**	0.032	2.9	ug/L	410	Standard
	Sc	45	29548.8	2.6				ug/L	30379	Standard
	Ti	47	71.3	18.5	**0.2368**	0.062	26.3	ug/L	21	Standard
	V	51	5724.7	1.6	**1.0528**	0.022	2.1	ug/L	1362	Standard
	Cr	52	7484.8	3.6	**-0.0638**	0.051	80.0	ug/L	8311	Standard
	Cr	53	446.7	13.4	**0.1036**	0.088	84.6	ug/L	325	Standard
	Mn	55	5807.1	0.9	**1.2853**	0.018	1.4	ug/L	694	Standard
	Co	59	271.0	3.9	**0.0158**	0.003	16.0	ug/L	199	Standard
	Ni	60	462.7	4.2	**0.1218**	0.014	11.3	ug/L	212	Standard
	Cu	65	174.7	12.1	**0.0113**	0.015	132.3	ug/L	149	Standard
	Zn	66	1633.1	3.7	**1.4293**	0.071	5.0	ug/L	206	Standard
>	**Ge**	72	308722.9	0.4				ug/L	319179	Standard
	As	75	13.2	244.8	**0.1196**	0.038	32.1	ug/L	-51	Standard
	Se	82	25.1	17.3	**0.1263**	0.062	49.3	ug/L	19	Standard
	Se-1	77	86.0	35.2	**-0.0957**	0.610	637.6	ug/L	89	Standard
>	**Ga**	71	33.3	22.9				mg/L	25	Standard
	Rb	85	1251.7	5.2				ug/L	27	Standard
	Y	89	281862.1	2.6				ug/L	295132	Standard
>	**Rh**	103	21.7	87.4				ug/L	20	Standard
	Mo	98	12.0	39.8	**-0.0065**	0.003	49.2	ug/L	11	Standard
	Ag	107	62.7	2.4	**-0.0034**	0.000	11.5	ug/L	64	Standard
	Cd	111	12.0	25.1	**-0.0014**	0.002	151.6	mg/L	7	Standard
	Cd	114	26.0	37.8	**-0.0004**	0.002	694.0	ug/L	10	Standard
>	**In**	115	425715.3	1.0				ug/L	418014	Standard
	Sn	118	336.7	18.0	**-0.0059**	0.013	220.7	ug/L	385	Standard
	Sb	123	2367.0	0.8	**0.5758**	0.005	0.8	ug/L	54	Standard
	Ba	135	584.7	5.3	**0.2581**	0.015	5.7	ug/L	44	Standard
	Ce	140	121.7	134.2				ug/L	33	Standard
>	**Tb**	159	847607.0	1.2				ug/L	854905	Standard
	Ho	165	13.3	114.6				ug/L	13	Standard
	Tl	203	21.7	13.3	**0.0032**	0.000	11.9	ug/L	4	Standard
	Tl	205	16.7	34.6	**0.0050**	0.001	24.5	ug/L	5	Standard
	Pb	206	229.0	4.3	**-0.0048**	0.002	46.4	ug/L	182	Standard
	Pb	207	171.0	2.7	**-0.0096**	0.001	12.0	ug/L	160	Standard
	Pb	208	649.3	7.3	**-0.0061**	0.003	47.7	ug/L	604	Standard
	U	238	2.3	24.7	**0.0002**	0.000	61.2	ug/L	3	Standard
>	**Bi**	209	399916.0	0.9				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	145.0	26.0	**0.2569**	0.098	38.3	mg/L	47	Standard
K	39	18.3	41.7	**0.0072**	0.115	1602.7	mg/L	22	Standard
Ca	43	26.7	60.3	**0.4324**	1.984	458.9	mg/L	28	Standard
Fe	54	39.1	23.2	**-0.1028**	0.019	18.5	mg/L	72	Standard
Fe	57	773.4	5.9	**0.1530**	0.264	172.7	mg/L	703	Standard
> **Sc-1**	45	29548.8	2.6				mg/L	30379	Standard
Cl	35	15812.9	0.7				ug/L	14530	Standard
Kr	83	4.3	35.3				ug/L	5	Standard
Br	81	523.3	31.4				ug/L	497	Standard
P	31	8422.3	2.4				ug/L	10347	Standard
S	34	1548.4	6.0				ug/L	1535	Standard
Sr	88	170.0	16.4				ug/L	177	Standard
C	12	210.0	4.8				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	13.0	46.6				mg/L	7	Standard
Ho-1	165	13.3	114.6				mg/L	13	Standard
Er	166	6.7	173.2				mg/L	3	Standard
I	127	2270.2	0.8				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.701	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.724	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.842
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.148
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508100023
Sample Date/Time: Monday, August 24, 2015 17:23:52
Number of Replicates: 3
Autosampler Position: 352
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	47561.3	4.6				ug/L	43934	Standard
	Be	9	5.0	173.2	**0.0061**	0.014	228.9	ug/L	0	Standard
	Al	27	171707.9	2.7	**2.3774**	0.120	5.1	ug/L	410	Standard
	Sc	45	29991.3	1.8				ug/L	30379	Standard
	Ti	47	87.0	6.4	**0.3181**	0.019	6.0	ug/L	21	Standard
	V	51	10800.2	1.9	**2.2910**	0.100	4.4	ug/L	1362	Standard
	Cr	52	7701.3	2.7	**-0.0041**	0.061	1503.4	ug/L	8311	Standard
	Cr	53	476.7	6.1	**0.1562**	0.031	20.2	ug/L	325	Standard
	Mn	55	6768.2	0.4	**1.5561**	0.041	2.6	ug/L	694	Standard
	Co	59	265.7	7.8	**0.0154**	0.005	30.3	ug/L	199	Standard
	Ni	60	500.3	5.7	**0.1516**	0.015	10.0	ug/L	212	Standard
	Cu	65	174.3	6.6	**0.0127**	0.006	45.6	ug/L	149	Standard
	Zn	66	1785.1	5.7	**1.6432**	0.107	6.5	ug/L	206	Standard
>	**Ge**	72	304300.8	1.9				ug/L	319179	Standard
	As	75	153.4	5.6	**0.2898**	0.013	4.5	ug/L	-51	Standard
	Se	82	26.4	6.9	**0.1501**	0.019	12.8	ug/L	19	Standard
	Se-1	77	103.7	8.2	**0.2942**	0.144	49.0	ug/L	89	Standard
>	**Ga**	71	43.3	37.1				mg/L	25	Standard
	Rb	85	1511.7	7.2				ug/L	27	Standard
	Y	89	280510.2	2.1				ug/L	295132	Standard
>	**Rh**	103	11.7	89.2				ug/L	20	Standard
	Mo	98	42.5	9.6	**0.0142**	0.003	19.0	ug/L	11	Standard
	Ag	107	68.0	4.4	**-0.0024**	0.001	20.9	ug/L	64	Standard
	Cd	111	21.2	28.4	**0.0049**	0.004	82.9	mg/L	7	Standard
	Cd	114	49.3	29.6	**0.0057**	0.004	66.6	ug/L	10	Standard
>	**In**	115	424584.8	0.4				ug/L	418014	Standard
	Sn	118	275.0	16.2	**-0.0185**	0.009	48.9	ug/L	385	Standard
	Sb	123	1627.1	2.3	**0.3923**	0.008	2.0	ug/L	54	Standard
	Ba	135	1266.4	0.9	**0.5895**	0.004	0.7	ug/L	44	Standard
	Ce	140	75.0	6.7				ug/L	33	Standard
>	**Tb**	159	833089.1	0.5				ug/L	854905	Standard
	Ho	165	10.0	100.0				ug/L	13	Standard
	Tl	203	43.3	5.8	**0.0063**	0.000	6.0	ug/L	4	Standard
	Tl	205	40.0	21.7	**0.0098**	0.002	18.7	ug/L	5	Standard
	Pb	206	181.3	3.6	**-0.0154**	0.001	9.1	ug/L	182	Standard
	Pb	207	170.3	9.4	**-0.0096**	0.004	42.5	ug/L	160	Standard
	Pb	208	628.3	1.9	**-0.0073**	0.001	12.3	ug/L	604	Standard
	U	238	18.3	130.7	**0.0034**	0.005	141.5	ug/L	3	Standard
>	**Bi**	209	397569.5	0.4				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	160.0	30.1	**0.2903**	0.129	44.3	mg/L	47	Standard
K	39	28.3	56.7	**0.1460**	0.233	159.7	mg/L	22	Standard
Ca	43	55.0	41.7	**3.7233**	2.796	75.1	mg/L	28	Standard
Fe	54	54.3	47.0	**-0.0686**	0.059	85.6	mg/L	72	Standard
Fe	57	745.0	15.8	**-0.2281**	1.271	557.3	mg/L	703	Standard
> **Sc-1**	45	29991.3	1.8				mg/L	30379	Standard
Cl	35	15607.4	1.9				ug/L	14530	Standard
Kr	83	3.3	45.8				ug/L	5	Standard
Br	81	513.3	28.1				ug/L	497	Standard
P	31	8255.6	5.6				ug/L	10347	Standard
S	34	1575.1	6.2				ug/L	1535	Standard
Sr	88	195.0	16.0				ug/L	177	Standard
C	12	273.3	18.0				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	15.9	37.3				mg/L	7	Standard
Ho-1	165	10.0	100.0				mg/L	13	Standard
Er	166	16.7	34.6				mg/L	3	Standard
I	127	3430.4	7.0				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.257	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.338	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.572
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.555
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508100025
Sample Date/Time: Monday, August 24, 2015 17:27:03
Number of Replicates: 3
Autosampler Position: 353
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	47579.7	3.8				ug/L	43934	Standard
	Be	9	8.3	69.3	**0.0112**	0.009	81.5	ug/L	0	Standard
	Al	27	126943.2	3.1	**1.7520**	0.017	1.0	ug/L	410	Standard
	Sc	45	29532.1	1.4				ug/L	30379	Standard
	Ti	47	53.7	12.4	**0.1499**	0.031	20.7	ug/L	21	Standard
	V	51	15738.3	1.1	**3.3903**	0.023	0.7	ug/L	1362	Standard
	Cr	52	6939.6	1.8	**-0.1720**	0.024	14.1	ug/L	8311	Standard
	Cr	53	383.3	12.1	**0.0082**	0.069	842.9	ug/L	325	Standard
	Mn	55	4422.3	0.7	**0.9231**	0.013	1.4	ug/L	694	Standard
	Co	59	237.3	6.0	**0.0065**	0.004	58.5	ug/L	199	Standard
	Ni	60	392.7	2.7	**0.0733**	0.008	10.4	ug/L	212	Standard
	Cu	65	168.7	11.2	**0.0062**	0.013	213.6	ug/L	149	Standard
	Zn	66	1786.1	1.0	**1.5965**	0.018	1.1	ug/L	206	Standard
>	**Ge**	72	311196.1	0.5				ug/L	319179	Standard
	As	75	237.5	13.8	**0.3852**	0.040	10.4	ug/L	-51	Standard
	Se	82	26.4	43.7	**0.1420**	0.167	117.4	ug/L	19	Standard
	Se-1	77	99.0	13.2	**0.1548**	0.272	175.5	ug/L	89	Standard
>	**Ga**	71	45.0	55.6				mg/L	25	Standard
	Rb	85	1155.0	7.9				ug/L	27	Standard
	Y	89	286597.2	3.4				ug/L	295132	Standard
>	**Rh**	103	20.0	50.0				ug/L	20	Standard
	Mo	98	22.9	16.0	**0.0009**	0.003	299.9	ug/L	11	Standard
	Ag	107	68.7	21.9	**-0.0023**	0.003	120.9	ug/L	64	Standard
	Cd	111	25.6	11.9	**0.0078**	0.002	26.7	mg/L	7	Standard
	Cd	114	53.0	68.0	**0.0066**	0.009	139.1	ug/L	10	Standard
>	**In**	115	425570.9	0.7				ug/L	418014	Standard
	Sn	118	260.0	15.3	**-0.0216**	0.008	38.7	ug/L	385	Standard
	Sb	123	1809.1	1.6	**0.4369**	0.009	2.2	ug/L	54	Standard
	Ba	135	510.0	5.6	**0.2221**	0.013	6.0	ug/L	44	Standard
	Ce	140	18.3	78.7				ug/L	33	Standard
>	**Tb**	159	833214.7	0.8				ug/L	854905	Standard
	Ho	165	5.0	100.0				ug/L	13	Standard
	Tl	203	39.3	32.3	**0.0057**	0.002	32.3	ug/L	4	Standard
	Tl	205	11.7	24.7	**0.0039**	0.001	14.6	ug/L	5	Standard
	Pb	206	200.7	6.3	**-0.0116**	0.003	23.5	ug/L	182	Standard
	Pb	207	174.7	6.7	**-0.0090**	0.003	35.0	ug/L	160	Standard
	Pb	208	650.0	5.3	**-0.0064**	0.002	31.5	ug/L	604	Standard
	U	238	5.7	44.4	**0.0008**	0.001	59.9	ug/L	3	Standard
>	**Bi**	209	403095.9	0.8				ug/L	395375	Standard

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Na	23	3.3	86.6	**-10.1995**	17.561	172.2	mg/L	0	Standard
Mg	24	161.7	7.1	**0.2993**	0.024	7.9	mg/L	47	Standard
K	39	40.0	43.3	**0.3161**	0.246	77.7	mg/L	22	Standard
Ca	43	38.3	39.8	**1.8083**	1.862	103.0	mg/L	28	Standard
Fe	54	67.6	23.0	**-0.0340**	0.039	113.5	mg/L	72	Standard
Fe	57	808.4	2.3	**0.5183**	0.289	55.7	mg/L	703	Standard
> **Sc-1**	45	29532.1	1.4				mg/L	30379	Standard
Cl	35	15489.2	1.3				ug/L	14530	Standard
Kr	83	3.0	33.3				ug/L	5	Standard
Br	81	783.4	21.3				ug/L	497	Standard
P	31	8354.0	2.6				ug/L	10347	Standard
S	34	1561.7	4.7				ug/L	1535	Standard
Sr	88	206.7	10.1				ug/L	177	Standard
C	12	250.0	16.0				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	6.2	93.3				mg/L	7	Standard
Ho-1	165	5.0	100.0				mg/L	13	Standard
Er	166	10.0					mg/L	3	Standard
I	127	2666.9	9.3				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.299	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.499	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.808
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.953
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, August 24, 2015 17:30:16
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48612.9	3.1				ug/L	43934	Standard
	Be	9	31945.3	1.8	**49.3005**	1.253	2.5	ug/L	0	Standard
	Al	27	3460871.8	1.4	**47.0541**	0.989	2.1	ug/L	410	Standard
	Sc	45	31215.5	2.2				ug/L	30379	Standard
	Ti	47	22932.3	1.2	**106.5626**	0.630	0.6	ug/L	21	Standard
	V	51	232283.9	0.6	**52.8226**	0.295	0.6	ug/L	1362	Standard
	Cr	52	303305.3	1.2	**51.4276**	0.634	1.2	ug/L	8311	Standard
	Cr	53	38097.8	1.9	**52.4520**	1.257	2.4	ug/L	325	Standard
	Mn	55	218387.4	2.8	**53.6996**	1.545	2.9	ug/L	694	Standard
	Co	59	207317.4	0.2	**52.6593**	0.354	0.7	ug/L	199	Standard
	Ni	60	80285.5	1.0	**51.4156**	0.811	1.6	ug/L	212	Standard
	Cu	65	77134.5	0.9	**50.9537**	0.867	1.7	ug/L	149	Standard
	Zn	66	43931.3	0.7	**50.6332**	0.801	1.6	ug/L	206	Standard
>	**Ge**	72	319115.3	0.8				ug/L	319179	Standard
	As	75	43346.5	0.5	**50.1702**	0.634	1.3	ug/L	-51	Standard
	Se	82	3660.3	0.7	**50.7364**	0.754	1.5	ug/L	19	Standard
	Se-1	77	2725.9	3.1	**51.7698**	1.765	3.4	ug/L	89	Standard
>	**Ga**	71	50.0	17.3				mg/L	25	Standard
	Rb	85	626.7	2.0				ug/L	27	Standard
	Y	89	305351.3	0.5				ug/L	295132	Standard
>	**Rh**	103	36.7	41.7				ug/L	20	Standard
	Mo	98	148545.7	1.1	**96.9823**	1.600	1.6	ug/L	11	Standard
	Ag	107	272793.5	0.3	**48.4859**	0.208	0.4	ug/L	64	Standard
	Cd	111	77625.0	1.4	**50.4803**	0.949	1.9	mg/L	7	Standard
	Cd	114	202584.2	0.5	**50.0858**	0.061	0.1	ug/L	10	Standard
>	**In**	115	441945.2	0.6				ug/L	418014	Standard
	Sn	118	234877.3	2.6	**46.1539**	0.954	2.1	ug/L	385	Standard
	Sb	123	208605.1	0.3	**50.1026**	0.223	0.4	ug/L	54	Standard
	Ba	135	103575.2	0.8	**48.2444**	0.671	1.4	ug/L	44	Standard
	Ce	140	85.0	10.2				ug/L	33	Standard
>	**Tb**	159	863963.6	2.0				ug/L	854905	Standard
	Ho	165	16.7	45.8				ug/L	13	Standard
	Tl	203	352788.0	1.3	**49.1924**	0.675	1.4	ug/L	4	Standard
	Tl	205	242038.2	1.6	**48.8606**	0.497	1.0	ug/L	5	Standard
	Pb	206	221023.1	0.5	**49.0279**	0.593	1.2	ug/L	182	Standard
	Pb	207	198537.3	0.7	**48.9269**	0.305	0.6	ug/L	160	Standard
	Pb	208	729039.1	1.4	**49.1136**	0.990	2.0	ug/L	604	Standard
	U	238	248904.1	0.2	**48.9425**	0.483	1.0	ug/L	3	Standard
>	**Bi**	209	409331.1	0.8				ug/L	395375	Standard

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Na	23	1.7	173.2	**0.4734**	16.630	3512.8	mg/L	0	Standard
Mg	24	2138.5	4.2	**5.0631**	0.325	6.4	mg/L	47	Standard
K	39	398.3	10.1	**5.1677**	0.503	9.7	mg/L	22	Standard
Ca	43	48.3	11.9	**2.6835**	0.639	23.8	mg/L	28	Standard
Fe	54	2338.6	2.0	**5.1022**	0.213	4.2	mg/L	72	Standard
Fe	57	1328.4	4.9	**5.0544**	0.507	10.0	mg/L	703	Standard
> **Sc-1**	45	31215.5	2.2				mg/L	30379	Standard
Cl	35	16021.1	2.0				ug/L	14530	Standard
Kr	83	5.0	40.0				ug/L	5	Standard
Br	81	573.3	15.7				ug/L	497	Standard
P	31	12556.9	5.1				ug/L	10347	Standard
S	34	1936.8	7.2				ug/L	1535	Standard
Sr	88	205.0	9.8				ug/L	177	Standard
C	12	156.7	42.5				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	3	Standard
Dy	164	3.0	201.4				mg/L	7	Standard
Ho-1	165	16.7	45.8				mg/L	13	Standard
Er	166	6.7	173.2				mg/L	3	Standard
I	127	856.7	9.7				mg/L	1945	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	98.601		
	Al	27	94.108		
	Sc	45			
	Ti	47	106.563		
	V	51	105.645		
	Cr	52	102.855		
	Cr	53			
	Mn	55	107.399		
	Co	59	105.319		
	Ni	60	102.831		
	Cu	65	101.907		
	Zn	66	101.266		
>	Ge	72		99.980	
	As	75	100.340		
	Se	82	101.473		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	96.982		
Ag	107	96.972		
Cd	111	100.961		
Cd	114			
In	115			105.725
Sn	118	92.308		
Sb	123	100.205		
Ba	135	96.489		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.385		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.227		
U	238	97.885		
Bi	209			103.530
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, August 24, 2015 17:33:27
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48230.0	3.5				ug/L	43934	Standard
	Be	9	8.3	34.6	**0.0110**	0.005	42.3	ug/L	0	Standard
	Al	27	773.4	52.9	**-0.0007**	0.006	894.4	ug/L	410	Standard
	Sc	45	31015.1	2.9				ug/L	30379	Standard
	Ti	47	21.7	16.2	**-0.0059**	0.016	265.5	ug/L	21	Standard
	V	51	1126.7	4.1	**-0.0443**	0.010	22.8	ug/L	1362	Standard
	Cr	52	7006.0	2.0	**-0.1986**	0.018	9.2	ug/L	8311	Standard
	Cr	53	380.0	6.6	**-0.0135**	0.032	237.9	ug/L	325	Standard
	Mn	55	734.0	1.7	**-0.0159**	0.004	24.6	ug/L	694	Standard
	Co	59	215.3	20.5	**-0.0010**	0.011	1135.8	ug/L	199	Standard
	Ni	60	210.7	8.9	**-0.0510**	0.012	22.9	ug/L	212	Standard
	Cu	65	154.3	3.8	**-0.0068**	0.004	52.0	ug/L	149	Standard
	Zn	66	238.0	5.1	**-0.2611**	0.015	5.9	ug/L	206	Standard
>	**Ge**	72	321038.2	0.5				ug/L	319179	Standard
	As	75	-30.6	170.0	**0.0688**	0.060	86.6	ug/L	-51	Standard
	Se	82	19.9	25.8	**0.0402**	0.071	175.9	ug/L	19	Standard
	Se-1	77	81.3	22.0	**-0.2530**	0.346	136.8	ug/L	89	Standard
>	**Ga**	71	13.3	21.7				mg/L	25	Standard
	Rb	85	21.7	35.3				ug/L	27	Standard
	Y	89	292938.8	2.1				ug/L	295132	Standard
>	**Rh**	103	25.0	52.9				ug/L	20	Standard
	Mo	98	64.5	38.0	**0.0275**	0.015	55.8	ug/L	11	Standard
	Ag	107	96.0	29.0	**0.0021**	0.005	219.0	ug/L	64	Standard
	Cd	111	9.2	45.0	**-0.0035**	0.003	73.6	mg/L	7	Standard
	Cd	114	30.5	101.9	**0.0006**	0.008	1285.6	ug/L	10	Standard
>	**In**	115	439489.4	1.6				ug/L	418014	Standard
	Sn	118	2776.9	1.4	**0.4750**	0.014	3.1	ug/L	385	Standard
	Sb	123	776.2	9.4	**0.1729**	0.016	9.4	ug/L	54	Standard
	Ba	135	55.3	29.7	**0.0011**	0.007	643.2	ug/L	44	Standard
	Ce	140	11.7	24.7				ug/L	33	Standard
>	**Tb**	159	868237.2	1.5				ug/L	854905	Standard
	Ho	165	6.7	86.6				ug/L	13	Standard
	Tl	203	38.0	94.2	**0.0054**	0.005	91.9	ug/L	4	Standard
	Tl	205	31.7	105.1	**0.0079**	0.007	85.0	ug/L	5	Standard
	Pb	206	236.0	20.3	**-0.0042**	0.011	253.6	ug/L	182	Standard
	Pb	207	172.3	10.8	**-0.0100**	0.005	44.9	ug/L	160	Standard
	Pb	208	692.3	19.0	**-0.0039**	0.009	225.1	ug/L	604	Standard
	U	238	34.3	127.8	**0.0065**	0.009	133.3	ug/L	3	Standard
>	**Bi**	209	406631.3	0.3				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	53.3	37.9	**0.0165**	0.052	313.6	mg/L	47	Standard
K	39	13.3	43.3	**-0.0771**	0.073	94.8	mg/L	22	Standard
Ca	43	28.3	27.0	**0.4397**	0.818	186.1	mg/L	28	Standard
Fe	54	67.6	18.9	**-0.0421**	0.028	66.6	mg/L	72	Standard
Fe	57	720.0	6.9	**-0.7321**	0.293	40.1	mg/L	703	Standard
Sc-1	45	31015.1	2.9				mg/L	30379	Standard
Cl	35	16134.6	1.2				ug/L	14530	Standard
Kr	83	6.0	44.1				ug/L	5	Standard
Br	81	606.7	10.1				ug/L	497	Standard
P	31	12360.0	1.6				ug/L	10347	Standard
S	34	1935.1	7.7				ug/L	1535	Standard
Sr	88	226.7	14.2				ug/L	177	Standard
C	12	153.3	26.4				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	5.2	212.9				mg/L	7	Standard
Ho-1	165	6.7	86.6				mg/L	13	Standard
Er	166	30.0	33.3				mg/L	3	Standard
I	127	1578.4	6.7				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.582	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.137
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.847
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sn	118	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBS M5 WG535367-02
Sample Date/Time: Monday, August 24, 2015 17:58:37
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49549.2	2.0				ug/L	43934	Standard
	Be	9	6.7	114.6	**0.0080**	0.011	141.2	ug/L	0	Standard
	Al	27	2036.8	2.0	**0.0158**	0.001	6.7	ug/L	410	Standard
	Sc	45	31524.4	0.8				ug/L	30379	Standard
	Ti	47	21.0	33.0	**-0.0110**	0.030	275.6	ug/L	21	Standard
	V	51	1326.1	5.3	**-0.0044**	0.018	411.3	ug/L	1362	Standard
	Cr	52	8276.3	2.9	**-0.0042**	0.061	1447.3	ug/L	8311	Standard
	Cr	53	363.3	6.5	**-0.0452**	0.040	88.5	ug/L	325	Standard
	Mn	55	978.7	3.6	**0.0396**	0.005	13.6	ug/L	694	Standard
	Co	59	183.7	9.2	**-0.0098**	0.005	48.4	ug/L	199	Standard
	Ni	60	325.3	5.1	**0.0186**	0.014	73.2	ug/L	212	Standard
	Cu	65	216.7	5.5	**0.0316**	0.005	17.2	ug/L	149	Standard
	Zn	66	1304.1	3.4	**0.9451**	0.027	2.9	ug/L	206	Standard
>	**Ge**	72	327025.8	1.7				ug/L	319179	Standard
	As	75	-70.3	23.3	**0.0245**	0.020	80.7	ug/L	-51	Standard
	Se	82	21.6	25.1	**0.0585**	0.075	128.1	ug/L	19	Standard
	Se-1	77	87.3	3.3	**-0.1656**	0.081	48.7	ug/L	89	Standard
>	**Ga**	71	38.3	32.8				mg/L	25	Standard
	Rb	85	43.3	6.7				ug/L	27	Standard
	Y	89	301497.9	3.7				ug/L	295132	Standard
>	**Rh**	103	15.0	115.5				ug/L	20	Standard
	Mo	98	19.5	20.5	**-0.0018**	0.003	140.4	ug/L	11	Standard
	Ag	107	64.3	8.0	**-0.0034**	0.001	28.4	ug/L	64	Standard
	Cd	111	5.6	36.9	**-0.0058**	0.001	24.0	mg/L	7	Standard
	Cd	114	21.1	81.3	**-0.0017**	0.004	249.5	ug/L	10	Standard
>	**In**	115	437959.7	1.0				ug/L	418014	Standard
	Sn	118	333.3	17.5	**-0.0086**	0.011	129.3	ug/L	385	Standard
	Sb	123	268.4	10.8	**0.0505**	0.007	13.1	ug/L	54	Standard
	Ba	135	128.0	3.4	**0.0355**	0.002	5.3	ug/L	44	Standard
	Ce	140	181.7	16.1				ug/L	33	Standard
>	**Tb**	159	862527.6	1.8				ug/L	854905	Standard
	Ho	165	10.0	86.6				ug/L	13	Standard
	Tl	203	6.3	32.9	**0.0010**	0.000	28.8	ug/L	4	Standard
	Tl	205	0.0		**0.0015**	0.000	0.0	ug/L	5	Standard
	Pb	206	290.3	6.7	**0.0081**	0.004	43.6	ug/L	182	Standard
	Pb	207	244.3	3.7	**0.0080**	0.002	24.8	ug/L	160	Standard
	Pb	208	944.7	3.6	**0.0134**	0.002	13.5	ug/L	604	Standard
	U	238	4.3	48.0	**0.0006**	0.000	71.6	ug/L	3	Standard
>	**Bi**	209	405914.8	1.4				ug/L	395375	Standard

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Na	23	1.7	173.2	**0.6111**	16.391	2682.4	mg/L	0	Standard
Mg	24	46.7	71.3	**-0.0023**	0.080	3455.3	mg/L	47	Standard
K	39	18.3	68.6	**-0.0106**	0.170	1612.9	mg/L	22	Standard
Ca	43	33.3	37.7	**0.9560**	1.421	148.7	mg/L	28	Standard
Fe	54	99.3	40.2	**0.0263**	0.088	333.9	mg/L	72	Standard
Fe	57	850.0	9.5	**0.3963**	0.795	200.7	mg/L	703	Standard
Sc-1	45	31524.4	0.8				mg/L	30379	Standard
Cl	35	16515.7	0.9				ug/L	14530	Standard
Kr	83	4.3	13.3				ug/L	5	Standard
Br	81	640.0	11.8				ug/L	497	Standard
P	31	11494.4	2.8				ug/L	10347	Standard
S	34	1736.8	3.6				ug/L	1535	Standard
Sr	88	170.0	23.3				ug/L	177	Standard
C	12	190.0	19.0				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	26.3	56.4				mg/L	7	Standard
Ho-1	165	10.0	86.6				mg/L	13	Standard
Er	166	6.7	173.2				mg/L	3	Standard
I	127	2338.5	1.8				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		112.782	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.458	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.772
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.666
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 25, 2015

Method 6020 - Summary Report

Sample ID: LCSS M5 WG535367-03
Sample Date/Time: Monday, August 24, 2015 18:01:48
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48848.6	1.0				ug/L	43934	Standard
	Be	9	15988.4	2.7	**24.5501**	0.901	3.7	ug/L	0	Standard
	Al	27	1353.4	1.5	**0.0069**	0.000	3.8	ug/L	410	Standard
	Sc	45	31395.8	1.6				ug/L	30379	Standard
	Ti	47	26.7	20.7	**0.0165**	0.025	154.9	ug/L	21	Standard
	V	51	115451.4	1.1	**25.7754**	0.433	1.7	ug/L	1362	Standard
	Cr	52	160051.3	1.4	**26.1238**	0.410	1.6	ug/L	8311	Standard
	Cr	53	19362.4	2.4	**26.0541**	0.567	2.2	ug/L	325	Standard
	Mn	55	109577.5	1.2	**26.5095**	0.386	1.5	ug/L	694	Standard
	Co	59	103164.1	1.2	**25.8496**	0.384	1.5	ug/L	199	Standard
	Ni	60	40194.6	1.4	**25.3258**	0.423	1.7	ug/L	212	Standard
	Cu	65	39851.7	0.9	**25.9436**	0.401	1.5	ug/L	149	Standard
	Zn	66	22973.1	0.2	**25.8870**	0.210	0.8	ug/L	206	Standard
>	**Ge**	72	323139.9	0.6				ug/L	319179	Standard
	As	75	21228.3	1.1	**24.3177**	0.407	1.7	ug/L	-51	Standard
	Se	82	1826.2	1.8	**24.8790**	0.601	2.4	ug/L	19	Standard
	Se-1	77	1366.1	2.7	**24.6867**	0.568	2.3	ug/L	89	Standard
>	**Ga**	71	25.0	20.0				mg/L	25	Standard
	Rb	85	50.0	36.1				ug/L	27	Standard
	Y	89	300463.6	1.2				ug/L	295132	Standard
>	**Rh**	103	28.3	10.2				ug/L	20	Standard
	Mo	98	25.6	12.7	**0.0022**	0.002	95.4	ug/L	11	Standard
	Ag	107	134827.3	1.6	**24.1378**	0.334	1.4	ug/L	64	Standard
	Cd	111	38270.9	1.1	**25.0707**	0.273	1.1	mg/L	7	Standard
	Cd	114	100855.1	1.5	**25.1202**	0.304	1.2	ug/L	10	Standard
>	**In**	115	438611.5	0.3				ug/L	418014	Standard
	Sn	118	356.7	4.3	**-0.0041**	0.003	76.4	ug/L	385	Standard
	Sb	123	104544.0	1.2	**25.2921**	0.236	0.9	ug/L	54	Standard
	Ba	135	51518.4	0.7	**24.1654**	0.148	0.6	ug/L	44	Standard
	Ce	140	243.3	7.8				ug/L	33	Standard
>	**Tb**	159	866017.0	1.1				ug/L	854905	Standard
	Ho	165	11.7	24.7				ug/L	13	Standard
	Tl	203	175772.7	0.4	**24.8655**	0.095	0.4	ug/L	4	Standard
	Tl	205	122115.2	1.3	**25.0116**	0.330	1.3	ug/L	5	Standard
	Pb	206	112585.1	0.7	**25.3083**	0.176	0.7	ug/L	182	Standard
	Pb	207	96658.3	0.8	**24.1397**	0.191	0.8	ug/L	160	Standard
	Pb	208	367700.1	0.8	**25.1044**	0.192	0.8	ug/L	604	Standard
	U	238	123396.8	0.5	**24.6154**	0.108	0.4	ug/L	3	Standard
>	**Bi**	209	403459.1	0.0				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	31.7	9.1	**-0.0376**	0.007	18.7	mg/L	47	Standard
K	39	18.3	68.6	**-0.0091**	0.171	1892.9	mg/L	22	Standard
Ca	43	25.0	52.9	**0.0191**	1.434	7514.8	mg/L	28	Standard
Fe	54	86.5	29.2	**-0.0007**	0.060	9041.5	mg/L	72	Standard
Fe	57	815.0	4.9	**0.0942**	0.376	399.0	mg/L	703	Standard
> **Sc-1**	45	31395.8	1.6				mg/L	30379	Standard
Cl	35	16104.6	0.6				ug/L	14530	Standard
Kr	83	4.0	25.0				ug/L	5	Standard
Br	81	646.7	12.5				ug/L	497	Standard
P	31	11516.0	4.8				ug/L	10347	Standard
S	34	1705.1	5.3				ug/L	1535	Standard
Sr	88	210.0	10.4				ug/L	177	Standard
C	12	190.0	60.7				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	2.1	294.3				mg/L	7	Standard
Ho-1	165	11.7	24.7				mg/L	13	Standard
Er	166	26.7	21.7				mg/L	3	Standard
I	127	2106.8	2.5				mg/L	1945	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		111.187	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.241	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.927
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.045
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSS M5 WG535367-03
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Method 6020 - Summary Report

Sample ID: L1508067914 WG535367-01
Sample Date/Time: Monday, August 24, 2015 18:05:00
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50380.4	3.5				ug/L	43934	Standard
	Be	9	375.0	5.8	**0.5562**	0.024	4.3	ug/L	0	Standard
	Al	27	135749.0	2.4	**1.7697**	0.021	1.2	ug/L	410	Standard
	Sc	45	34616.2	2.5				ug/L	30379	Standard
	Ti	47	3601.1	1.8	**15.6407**	0.469	3.0	ug/L	21	Standard
	V	51	83123.8	0.6	**17.5693**	0.384	2.2	ug/L	1362	Standard
	Cr	52	85951.5	1.1	**12.6644**	0.372	2.9	ug/L	8311	Standard
	Cr	53	9621.4	6.7	**12.0479**	1.028	8.5	ug/L	325	Standard
	Mn	55	1381936.1	1.5	**320.3280**	4.050	1.3	ug/L	694	Standard
	Co	59	13571.4	2.5	**3.1879**	0.081	2.5	ug/L	199	Standard
	Ni	60	5873.8	1.4	**3.3628**	0.072	2.1	ug/L	212	Standard
	Cu	65	9753.5	1.4	**5.9609**	0.169	2.8	ug/L	149	Standard
	Zn	66	11211.1	0.9	**11.7377**	0.289	2.5	ug/L	206	Standard
>	**Ge**	72	339551.5	1.6				ug/L	319179	Standard
	As	75	2545.0	0.6	**2.8666**	0.029	1.0	ug/L	-51	Standard
	Se	82	89.3	4.9	**0.9343**	0.058	6.2	ug/L	19	Standard
	Se-1	77	134.3	9.6	**0.6412**	0.249	38.9	ug/L	89	Standard
>	**Ga**	71	8739.2	1.1				mg/L	25	Standard
	Rb	85	95818.7	1.5				ug/L	27	Standard
	Y	89	338458.2	3.5				ug/L	295132	Standard
>	**Rh**	103	26.7	75.8				ug/L	20	Standard
	Mo	98	539.3	4.2	**0.3247**	0.016	5.1	ug/L	11	Standard
	Ag	107	503.0	3.6	**0.0712**	0.004	5.1	ug/L	64	Standard
	Cd	111	107.3	15.6	**0.0578**	0.011	19.0	mg/L	7	Standard
	Cd	114	321.1	7.9	**0.0695**	0.007	9.4	ug/L	10	Standard
>	**In**	115	458729.8	0.7				ug/L	418014	Standard
	Sn	118	765.0	10.8	**0.0703**	0.016	22.5	ug/L	385	Standard
	Sb	123	387.8	2.1	**0.0752**	0.002	2.4	ug/L	54	Standard
	Ba	135	160857.1	0.6	**72.1944**	0.616	0.9	ug/L	44	Standard
	Ce	140	525192.5	1.8				ug/L	33	Standard
>	**Tb**	159	905284.4	0.7				ug/L	854905	Standard
	Ho	165	2528.5	7.0				ug/L	13	Standard
	Tl	203	589.7	5.9	**0.0798**	0.005	6.4	ug/L	4	Standard
	Tl	205	416.7	1.4	**0.0830**	0.001	1.3	ug/L	5	Standard
	Pb	206	185714.0	1.1	**39.9120**	0.373	0.9	ug/L	182	Standard
	Pb	207	153421.9	0.5	**36.6293**	0.166	0.5	ug/L	160	Standard
	Pb	208	590472.4	0.5	**38.5390**	0.413	1.1	ug/L	604	Standard
	U	238	3837.5	0.2	**0.7310**	0.003	0.4	ug/L	3	Standard
>	**Bi**	209	422355.9	0.6				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	60.0	25.0	**0.0168**	0.031	186.9	mg/L	47	Standard
K	39	38.3	32.8	**0.2138**	0.162	75.8	mg/L	22	Standard
Ca	43	36.7	41.7	**0.9717**	1.608	165.5	mg/L	28	Standard
Fe	54	6551.0	4.7	**13.1826**	0.609	4.6	mg/L	72	Standard
Fe	57	2371.9	2.7	**12.8313**	0.924	7.2	mg/L	703	Standard
> **Sc-1**	45	34616.2	2.5				mg/L	30379	Standard
Cl	35	15284.4	1.5				ug/L	14530	Standard
Kr	83	3.7	31.5				ug/L	5	Standard
Br	81	1076.7	12.1				ug/L	497	Standard
P	31	12134.9	1.3				ug/L	10347	Standard
S	34	1685.1	7.0				ug/L	1535	Standard
Sr	88	196.7	12.8				ug/L	177	Standard
C	12	920.0	6.1				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	206.7	14.0				mg/L	3	Standard
Dy	164	4318.7	5.1				mg/L	7	Standard
Ho-1	165	2528.5	7.0				mg/L	13	Standard
Er	166	2336.8	6.8				mg/L	3	Standard
I	127	36886.5	3.4				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.674	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.383	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	109.740
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	106.824
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1508067914 WG535367-01
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Method 6020 - Summary Report

Sample ID: L1508067914S WG535367-04
Sample Date/Time: Monday, August 24, 2015 18:08:11
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52801.9	3.6				ug/L	43934	Standard
	Be	9	17263.2	2.2	**24.5417**	1.154	4.7	ug/L	0	Standard
	Al	27	239235.6	0.5	**2.9850**	0.094	3.1	ug/L	410	Standard
	Sc	45	36883.2	1.0				ug/L	30379	Standard
	Ti	47	6749.5	0.7	**29.2083**	0.444	1.5	ug/L	21	Standard
	V	51	257272.0	0.6	**54.6338**	0.508	0.9	ug/L	1362	Standard
	Cr	52	303634.6	0.2	**47.9764**	0.517	1.1	ug/L	8311	Standard
	Cr	53	37198.9	1.0	**47.7696**	0.959	2.0	ug/L	325	Standard
	Mn	55	1552208.9	1.2	**357.4845**	7.956	2.2	ug/L	694	Standard
	Co	59	122470.7	1.3	**29.0214**	0.639	2.2	ug/L	199	Standard
	Ni	60	52326.2	1.5	**31.2115**	0.381	1.2	ug/L	212	Standard
	Cu	65	55705.6	1.1	**34.3176**	0.237	0.7	ug/L	149	Standard
	Zn	66	39999.7	1.9	**42.9575**	0.682	1.6	ug/L	206	Standard
>	**Ge**	72	341801.6	1.0				ug/L	319179	Standard
	As	75	19230.0	1.7	**20.8392**	0.250	1.2	ug/L	-51	Standard
	Se	82	1123.3	0.9	**14.3680**	0.074	0.5	ug/L	19	Standard
	Se-1	77	832.4	2.6	**13.4436**	0.521	3.9	ug/L	89	Standard
>	**Ga**	71	17478.4	1.8				mg/L	25	Standard
	Rb	85	150056.1	0.9				ug/L	27	Standard
	Y	89	342062.2	1.8				ug/L	295132	Standard
>	**Rh**	103	31.7	39.7				ug/L	20	Standard
	Mo	98	944.2	5.2	**0.5837**	0.036	6.1	ug/L	11	Standard
	Ag	107	139654.7	0.7	**24.0788**	0.403	1.7	ug/L	64	Standard
	Cd	111	40171.6	0.2	**25.3431**	0.313	1.2	mg/L	7	Standard
	Cd	114	105500.5	2.0	**25.3032**	0.335	1.3	ug/L	10	Standard
>	**In**	115	455487.7	1.1				ug/L	418014	Standard
	Sn	118	650.0	2.3	**0.0494**	0.004	7.1	ug/L	385	Standard
	Sb	123	3562.9	2.0	**0.8162**	0.026	3.2	ug/L	54	Standard
	Ba	135	231746.5	1.7	**104.7643**	1.841	1.8	ug/L	44	Standard
	Ce	140	578501.3	2.5				ug/L	33	Standard
>	**Tb**	159	898220.2	2.1				ug/L	854905	Standard
	Ho	165	2838.6	4.6				ug/L	13	Standard
	Tl	203	179517.9	0.4	**24.1591**	0.288	1.2	ug/L	4	Standard
	Tl	205	123701.4	2.4	**24.1014**	0.517	2.1	ug/L	5	Standard
	Pb	206	302530.1	0.1	**64.7838**	0.617	1.0	ug/L	182	Standard
	Pb	207	253117.8	0.3	**60.2158**	0.701	1.2	ug/L	160	Standard
	Pb	208	974441.9	0.5	**63.3685**	0.814	1.3	ug/L	604	Standard
	U	238	130817.7	0.6	**24.8244**	0.153	0.6	ug/L	3	Standard
>	**Bi**	209	424130.9	0.8				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	50.0	26.5	**-0.0113**	0.028	244.1	mg/L	47	Standard
K	39	33.3	37.7	**0.1268**	0.149	117.2	mg/L	22	Standard
Ca	43	26.7	28.6	**-0.2261**	0.723	319.8	mg/L	28	Standard
Fe	54	13408.7	3.7	**25.4980**	0.840	3.3	mg/L	72	Standard
Fe	57	3948.8	1.4	**24.3466**	0.764	3.1	mg/L	703	Standard
> **Sc-1**	45	36883.2	1.0				mg/L	30379	Standard
Cl	35	14470.9	0.4				ug/L	14530	Standard
Kr	83	4.7	49.5				ug/L	5	Standard
Br	81	1183.4	1.3				ug/L	497	Standard
P	31	12521.8	1.0				ug/L	10347	Standard
S	34	1731.8	8.3				ug/L	1535	Standard
Sr	88	191.7	10.5				ug/L	177	Standard
C	12	910.0	20.9				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	190.0	15.8				mg/L	3	Standard
Dy	164	5124.3	2.9				mg/L	7	Standard
Ho-1	165	2838.6	4.6				mg/L	13	Standard
Er	166	2503.5	12.5				mg/L	3	Standard
I	127	40245.1	2.9				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		120.186	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.088	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.965
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.273
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1508067914SD WG535367-05
Sample Date/Time: Monday, August 24, 2015 18:11:23
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54083.0	0.9				ug/L	43934	Standard
	Be	9	16837.7	0.8	**23.3478**	0.335	1.4	ug/L	0	Standard
	Al	27	316287.2	0.3	**3.8534**	0.022	0.6	ug/L	410	Standard
	Sc	45	35817.3	0.7				ug/L	30379	Standard
	Ti	47	9393.9	1.1	**40.7651**	0.115	0.3	ug/L	21	Standard
	V	51	278036.4	1.3	**59.1800**	1.116	1.9	ug/L	1362	Standard
	Cr	52	291409.0	0.4	**46.0761**	0.576	1.3	ug/L	8311	Standard
	Cr	53	35850.7	1.2	**46.1042**	0.914	2.0	ug/L	325	Standard
	Mn	55	1488733.8	0.6	**343.4513**	1.046	0.3	ug/L	694	Standard
	Co	59	121714.6	0.8	**28.8921**	0.165	0.6	ug/L	199	Standard
	Ni	60	51919.1	0.8	**31.0275**	0.481	1.5	ug/L	212	Standard
	Cu	65	60785.4	1.7	**37.5293**	0.783	2.1	ug/L	149	Standard
	Zn	66	44998.1	1.2	**48.4842**	0.408	0.8	ug/L	206	Standard
>	**Ge**	72	341164.0	0.8				ug/L	319179	Standard
	As	75	19802.9	1.0	**21.4969**	0.037	0.2	ug/L	-51	Standard
	Se	82	1475.8	1.1	**18.9880**	0.367	1.9	ug/L	19	Standard
	Se-1	77	1126.4	1.6	**18.8803**	0.487	2.6	ug/L	89	Standard
>	**Ga**	71	21585.4	2.7				mg/L	25	Standard
	Rb	85	171235.6	1.4				ug/L	27	Standard
	Y	89	349459.6	1.5				ug/L	295132	Standard
>	**Rh**	103	33.3	43.3				ug/L	20	Standard
	Mo	98	1195.8	2.4	**0.7322**	0.022	3.0	ug/L	11	Standard
	Ag	107	136383.4	1.0	**23.1779**	0.411	1.8	ug/L	64	Standard
	Cd	111	39635.0	0.5	**24.6459**	0.174	0.7	mg/L	7	Standard
	Cd	114	103797.2	1.5	**24.5396**	0.241	1.0	ug/L	10	Standard
>	**In**	115	462084.2	0.7				ug/L	418014	Standard
	Sn	118	520.0	11.7	**0.0231**	0.011	47.6	ug/L	385	Standard
	Sb	123	2301.3	2.3	**0.5143**	0.014	2.7	ug/L	54	Standard
	Ba	135	247569.6	0.6	**110.3170**	0.577	0.5	ug/L	44	Standard
	Ce	140	983904.1	2.2				ug/L	33	Standard
>	**Tb**	159	909415.7	0.5				ug/L	854905	Standard
	Ho	165	3998.9	4.0				ug/L	13	Standard
	Tl	203	174476.3	1.3	**23.6062**	0.417	1.8	ug/L	4	Standard
	Tl	205	123676.1	1.1	**24.2271**	0.377	1.6	ug/L	5	Standard
	Pb	206	287499.5	1.1	**61.8920**	0.914	1.5	ug/L	182	Standard
	Pb	207	240869.3	0.9	**57.6057**	0.784	1.4	ug/L	160	Standard
	Pb	208	932333.1	0.9	**60.9508**	0.769	1.3	ug/L	604	Standard
	U	238	128608.2	0.5	**24.5361**	0.240	1.0	ug/L	3	Standard
>	**Bi**	209	421869.9	0.5				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	46.7	52.9	**-0.0156**	0.051	327.7	mg/L	47	Standard
K	39	38.3	27.2	**0.1963**	0.121	61.7	mg/L	22	Standard
Ca	43	21.7	58.1	**-0.6434**	1.226	190.5	mg/L	28	Standard
Fe	54	13334.3	3.8	**26.1147**	0.867	3.3	mg/L	72	Standard
Fe	57	3997.2	1.1	**25.6997**	0.513	2.0	mg/L	703	Standard
Sc-1	45	35817.3	0.7				mg/L	30379	Standard
Cl	35	14492.9	2.4				ug/L	14530	Standard
Kr	83	5.3	78.1				ug/L	5	Standard
Br	81	1200.0	12.9				ug/L	497	Standard
P	31	12258.3	0.2				ug/L	10347	Standard
S	34	1495.1	4.7				ug/L	1535	Standard
Sr	88	223.3	12.9				ug/L	177	Standard
C	12	996.7	15.7				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	173.3	28.5				mg/L	3	Standard
Dy	164	8017.8	6.2				mg/L	7	Standard
Ho-1	165	3998.9	4.0				mg/L	13	Standard
Er	166	3640.4	8.7				mg/L	3	Standard
I	127	40982.1	3.6				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		123.102	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.888	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.543
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.701
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1508067914SD WG535367-05
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Method 6020 - Summary Report

Sample ID: L1508067901
Sample Date/Time: Monday, August 24, 2015 18:14:34
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52551.0	1.4				ug/L	43934	Standard
	Be	9	505.0	23.3	**0.7185**	0.167	23.2	ug/L	0	Standard
	Al	27	714050.5	0.7	**8.9693**	0.162	1.8	ug/L	410	Standard
	Sc	45	36856.4	1.0				ug/L	30379	Standard
	Ti	47	12570.9	2.0	**54.8228**	1.583	2.9	ug/L	21	Standard
	V	51	173060.2	1.5	**36.8754**	0.767	2.1	ug/L	1362	Standard
	Cr	52	151238.4	0.9	**23.3363**	0.425	1.8	ug/L	8311	Standard
	Cr	53	18222.6	2.4	**23.2628**	0.382	1.6	ug/L	325	Standard
	Mn	55	2254176.5	0.4	**522.3036**	4.803	0.9	ug/L	694	Standard
	Co	59	17459.1	1.4	**4.1145**	0.090	2.2	ug/L	199	Standard
	Ni	60	12006.1	1.8	**7.0612**	0.070	1.0	ug/L	212	Standard
	Cu	65	17071.6	0.2	**10.5056**	0.080	0.8	ug/L	149	Standard
	Zn	66	31931.6	0.6	**34.3935**	0.094	0.3	ug/L	206	Standard
>	**Ge**	72	339762.7	0.8				ug/L	319179	Standard
	As	75	4424.9	2.4	**4.9040**	0.120	2.5	ug/L	-51	Standard
	Se	82	86.3	9.4	**0.8936**	0.098	10.9	ug/L	19	Standard
	Se-1	77	147.7	1.7	**0.8853**	0.052	5.9	ug/L	89	Standard
>	**Ga**	71	22243.0	3.5				mg/L	25	Standard
	Rb	85	250734.7	1.7				ug/L	27	Standard
	Y	89	387221.1	1.3				ug/L	295132	Standard
>	**Rh**	103	40.0	25.0				ug/L	20	Standard
	Mo	98	1077.2	4.6	**0.6547**	0.031	4.7	ug/L	11	Standard
	Ag	107	514.7	6.3	**0.0721**	0.005	7.5	ug/L	64	Standard
	Cd	111	316.7	5.0	**0.1865**	0.009	5.0	mg/L	7	Standard
	Cd	114	857.3	5.8	**0.1947**	0.011	5.7	ug/L	10	Standard
>	**In**	115	464400.5	0.3				ug/L	418014	Standard
	Sn	118	846.7	0.9	**0.0838**	0.002	2.3	ug/L	385	Standard
	Sb	123	227.6	4.3	**0.0375**	0.002	5.6	ug/L	54	Standard
	Ba	135	367905.6	0.7	**163.1309**	1.149	0.7	ug/L	44	Standard
	Ce	140	1166281.5	1.5				ug/L	33	Standard
>	**Tb**	159	922248.2	0.7				ug/L	854905	Standard
	Ho	165	6899.9	1.4				ug/L	13	Standard
	Tl	203	1489.7	3.0	**0.1995**	0.006	3.1	ug/L	4	Standard
	Tl	205	995.0	15.6	**0.1945**	0.032	16.2	ug/L	5	Standard
	Pb	206	141330.8	1.1	**30.0671**	0.737	2.5	ug/L	182	Standard
	Pb	207	116055.4	0.1	**27.4258**	0.443	1.6	ug/L	160	Standard
	Pb	208	447814.1	0.9	**28.9328**	0.684	2.4	ug/L	604	Standard
	U	238	5826.1	1.1	**1.0993**	0.027	2.5	ug/L	3	Standard
>	**Bi**	209	426563.1	1.5				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	41.7	6.9	**-0.0285**	0.006	20.0	mg/L	47	Standard
K	39	98.3	17.9	**0.8775**	0.213	24.3	mg/L	22	Standard
Ca	43	56.7	71.9	**2.6565**	3.915	147.4	mg/L	28	Standard
Fe	54	12809.4	1.9	**24.3676**	0.239	1.0	mg/L	72	Standard
Fe	57	3975.5	2.3	**24.5799**	0.562	2.3	mg/L	703	Standard
> **Sc-1**	45	36856.4	1.0				mg/L	30379	Standard
Cl	35	14637.7	2.4				ug/L	14530	Standard
Kr	83	3.3	124.9				ug/L	5	Standard
Br	81	1150.0	9.1				ug/L	497	Standard
P	31	13235.8	1.9				ug/L	10347	Standard
S	34	1583.4	8.9				ug/L	1535	Standard
Sr	88	223.3	11.0				ug/L	177	Standard
C	12	1586.8	13.6				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	160.0	39.0				mg/L	3	Standard
Dy	164	11569.1	1.1				mg/L	7	Standard
Ho-1	165	6899.9	1.4				mg/L	13	Standard
Er	166	6031.2	4.5				mg/L	3	Standard
I	127	37899.1	4.3				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.614	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.449	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	111.097	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	107.888	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1508067901
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Method 6020 - Summary Report

Sample ID: L1508067902
Sample Date/Time: Monday, August 24, 2015 18:17:45
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52405.5	1.0				ug/L	43934	Standard
	Be	9	483.3	10.4	**0.6902**	0.079	11.4	ug/L	0	Standard
	Al	27	1052370.6	0.3	**13.2597**	0.097	0.7	ug/L	410	Standard
	Sc	45	38936.6	0.8				ug/L	30379	Standard
	Ti	47	22073.1	2.6	**97.8701**	1.670	1.7	ug/L	21	Standard
	V	51	217452.4	2.0	**47.1684**	1.399	3.0	ug/L	1362	Standard
	Cr	52	459882.3	1.3	**75.0490**	1.004	1.3	ug/L	8311	Standard
	Cr	53	56358.0	0.8	**74.2686**	0.666	0.9	ug/L	325	Standard
	Mn	55	3537596.3	2.0	**832.8824**	5.784	0.7	ug/L	694	Standard
	Co	59	25330.2	1.3	**6.0917**	0.120	2.0	ug/L	199	Standard
	Ni	60	10966.3	0.9	**6.5412**	0.116	1.8	ug/L	212	Standard
	Cu	65	17016.6	0.8	**10.6416**	0.080	0.8	ug/L	149	Standard
	Zn	66	29096.2	0.7	**31.8092**	0.661	2.1	ug/L	206	Standard
>	**Ge**	72	334387.7	1.4				ug/L	319179	Standard
	As	75	6149.7	1.1	**6.8831**	0.130	1.9	ug/L	-51	Standard
	Se	82	71.0	13.6	**0.7091**	0.135	19.0	ug/L	19	Standard
	Se-1	77	131.0	7.3	**0.6181**	0.213	34.5	ug/L	89	Standard
>	**Ga**	71	26580.0	1.7				mg/L	25	Standard
	Rb	85	208065.8	1.6				ug/L	27	Standard
	Y	89	357765.3	3.0				ug/L	295132	Standard
>	**Rh**	103	30.0	16.7				ug/L	20	Standard
	Mo	98	1022.8	1.1	**0.6371**	0.008	1.3	ug/L	11	Standard
	Ag	107	765.7	4.0	**0.1179**	0.005	4.4	ug/L	64	Standard
	Cd	111	336.1	4.9	**0.2038**	0.010	4.9	mg/L	7	Standard
	Cd	114	871.7	6.5	**0.2033**	0.014	6.8	ug/L	10	Standard
>	**In**	115	452882.7	0.2				ug/L	418014	Standard
	Sn	118	808.4	5.4	**0.0805**	0.008	10.4	ug/L	385	Standard
	Sb	123	248.9	3.7	**0.0438**	0.002	5.0	ug/L	54	Standard
	Ba	135	229361.3	0.3	**104.2777**	0.478	0.5	ug/L	44	Standard
	Ce	140	1148136.3	0.8				ug/L	33	Standard
>	**Tb**	159	902999.6	0.9				ug/L	854905	Standard
	Ho	165	5309.3	1.7				ug/L	13	Standard
	Tl	203	1346.4	3.9	**0.1827**	0.007	4.0	ug/L	4	Standard
	Tl	205	976.7	5.6	**0.1933**	0.010	5.3	ug/L	5	Standard
	Pb	206	162920.6	0.9	**35.1356**	0.176	0.5	ug/L	182	Standard
	Pb	207	132794.1	0.2	**31.8147**	0.113	0.4	ug/L	160	Standard
	Pb	208	517989.5	0.9	**33.9257**	0.248	0.7	ug/L	604	Standard
	U	238	9822.9	1.1	**1.8784**	0.013	0.7	ug/L	3	Standard
>	**Bi**	209	420799.8	0.4				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	55.0	9.1	**-0.0071**	0.010	143.3	mg/L	47	Standard
K	39	91.7	35.1	**0.7417**	0.348	46.9	mg/L	22	Standard
Ca	43	58.3	9.9	**2.5088**	0.556	22.2	mg/L	28	Standard
Fe	54	24938.5	3.6	**45.0846**	1.972	4.4	mg/L	72	Standard
Fe	57	6934.9	2.7	**45.5869**	1.633	3.6	mg/L	703	Standard
> **Sc-1**	45	38936.6	0.8				mg/L	30379	Standard
Cl	35	14124.6	1.7				ug/L	14530	Standard
Kr	83	6.3	77.9				ug/L	5	Standard
Br	81	1180.0	12.5				ug/L	497	Standard
P	31	13075.6	2.3				ug/L	10347	Standard
S	34	1541.7	7.3				ug/L	1535	Standard
Sr	88	195.0	14.3				ug/L	177	Standard
C	12	1123.4	16.2				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	176.7	23.6				mg/L	3	Standard
Dy	164	9215.5	6.1				mg/L	7	Standard
Ho-1	165	5309.3	1.7				mg/L	13	Standard
Er	166	4817.4	3.5				mg/L	3	Standard
I	127	101291.1	3.5				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.283	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.765	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.341
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.431
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1508067902PS WG535626-01
Sample Date/Time: Monday, August 24, 2015 18:20:57
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52154.6	0.3				ug/L	43934	Standard
	Be	9	35073.9	1.9	**50.4334**	1.039	2.1	ug/L	0	Standard
	Al	27	1041557.5	1.4	**13.1862**	0.203	1.5	ug/L	410	Standard
	Sc	45	38178.0	1.7				ug/L	30379	Standard
	Ti	47	21826.7	2.3	**95.3918**	2.934	3.1	ug/L	21	Standard
	V	51	461012.4	1.1	**98.8620**	1.806	1.8	ug/L	1362	Standard
	Cr	52	773568.0	1.1	**125.3339**	1.956	1.6	ug/L	8311	Standard
	Cr	53	95637.7	2.4	**124.5591**	3.111	2.5	ug/L	325	Standard
	Mn	55	3764837.3	0.3	**873.6016**	6.661	0.8	ug/L	694	Standard
	Co	59	247594.7	0.9	**59.1553**	0.987	1.7	ug/L	199	Standard
	Ni	60	96014.3	1.2	**57.8497**	0.884	1.5	ug/L	212	Standard
	Cu	65	101104.9	1.0	**62.8372**	1.146	1.8	ug/L	149	Standard
	Zn	66	74091.1	1.7	**80.6141**	0.815	1.0	ug/L	206	Standard
>	**Ge**	72	339317.2	0.8				ug/L	319179	Standard
	As	75	53135.3	0.6	**57.8213**	0.602	1.0	ug/L	-51	Standard
	Se	82	4057.3	0.8	**52.9012**	0.826	1.6	ug/L	19	Standard
	Se-1	77	2914.3	1.7	**52.0583**	0.733	1.4	ug/L	89	Standard
>	**Ga**	71	27528.3	1.1				mg/L	25	Standard
	Rb	85	208481.3	1.0				ug/L	27	Standard
	Y	89	360412.0	1.7				ug/L	295132	Standard
>	**Rh**	103	28.3	71.3				ug/L	20	Standard
	Mo	98	1015.8	5.6	**0.6337**	0.029	4.5	ug/L	11	Standard
	Ag	107	288175.5	0.9	**50.0955**	1.025	2.0	ug/L	64	Standard
	Cd	111	82135.2	0.5	**52.2374**	0.928	1.8	mg/L	7	Standard
	Cd	114	215619.5	2.1	**52.1413**	1.570	3.0	ug/L	10	Standard
>	**In**	115	451942.2	1.4				ug/L	418014	Standard
	Sn	118	855.0	11.7	**0.0899**	0.021	23.0	ug/L	385	Standard
	Sb	123	217543.1	0.2	**51.1012**	0.854	1.7	ug/L	54	Standard
	Ba	135	334963.9	0.7	**152.6313**	1.728	1.1	ug/L	44	Standard
	Ce	140	1122421.3	0.9				ug/L	33	Standard
>	**Tb**	159	897233.4	0.9				ug/L	854905	Standard
	Ho	165	5389.3	3.8				ug/L	13	Standard
	Tl	203	373214.3	0.4	**49.6989**	0.083	0.2	ug/L	4	Standard
	Tl	205	260071.6	1.2	**50.1406**	0.465	0.9	ug/L	5	Standard
	Pb	206	392089.3	0.7	**83.0969**	0.363	0.4	ug/L	182	Standard
	Pb	207	342634.6	0.7	**80.6742**	0.564	0.7	ug/L	160	Standard
	Pb	208	1284117.2	0.3	**82.6465**	0.582	0.7	ug/L	604	Standard
	U	238	274856.2	1.4	**51.6124**	0.667	1.3	ug/L	3	Standard
>	**Bi**	209	428606.1	0.5				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	53.3	23.6	**-0.0081**	0.026	326.7	mg/L	47	Standard
K	39	85.0	15.6	**0.6875**	0.138	20.0	mg/L	22	Standard
Ca	43	63.3	9.1	**3.0770**	0.592	19.2	mg/L	28	Standard
Fe	54	25718.2	1.9	**47.4168**	0.385	0.8	mg/L	72	Standard
Fe	57	6858.2	5.9	**46.0616**	3.591	7.8	mg/L	703	Standard
Sc-1	45	38178.0	1.7				mg/L	30379	Standard
Cl	35	14215.3	0.8				ug/L	14530	Standard
Kr	83	6.0	72.6				ug/L	5	Standard
Br	81	1190.0	5.0				ug/L	497	Standard
P	31	13222.4	1.7				ug/L	10347	Standard
S	34	1596.8	4.6				ug/L	1535	Standard
Sr	88	188.3	8.5				ug/L	177	Standard
C	12	1146.7	6.5				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	180.0	25.5				mg/L	3	Standard
Dy	164	8805.1	2.2				mg/L	7	Standard
Ho-1	165	5389.3	3.8				mg/L	13	Standard
Er	166	4890.8	4.2				mg/L	3	Standard
I	127	101534.8	5.7				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		118.712	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.309	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.116
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.405
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1508067902SDL WG535626-02
Sample Date/Time: Monday, August 24, 2015 18:24:08
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	51074.3	1.5				ug/L	43934	Standard
	Be	9	123.3	13.0	**0.1790**	0.022	12.5	ug/L	0	Standard
	Al	27	210330.2	2.0	**2.7107**	0.082	3.0	ug/L	410	Standard
	Sc	45	32225.9	2.3				ug/L	30379	Standard
	Ti	47	4271.3	1.4	**19.3091**	0.071	0.4	ug/L	21	Standard
	V	51	44117.9	1.5	**9.5591**	0.050	0.5	ug/L	1362	Standard
	Cr	52	95876.1	0.4	**14.9112**	0.115	0.8	ug/L	8311	Standard
	Cr	53	11607.8	3.2	**15.2423**	0.659	4.3	ug/L	325	Standard
	Mn	55	716090.5	3.0	**172.4772**	3.689	2.1	ug/L	694	Standard
	Co	59	5167.5	1.5	**1.2287**	0.023	1.9	ug/L	199	Standard
	Ni	60	2341.2	1.1	**1.2850**	0.025	2.0	ug/L	212	Standard
	Cu	65	3605.1	1.5	**2.2239**	0.047	2.1	ug/L	149	Standard
	Zn	66	7543.5	2.2	**8.0489**	0.148	1.8	ug/L	206	Standard
>	Ge	72	326548.3	1.0				ug/L	319179	Standard
	As	75	1175.8	0.4	**1.4310**	0.014	1.0	ug/L	-51	Standard
	Se	82	31.5	22.7	**0.1927**	0.093	48.1	ug/L	19	Standard
	Se-1	77	92.3	6.2	**-0.0671**	0.127	189.0	ug/L	89	Standard
>	Ga	71	5290.9	5.9				mg/L	25	Standard
	Rb	85	41809.3	1.3				ug/L	27	Standard
	Y	89	317152.4	3.4				ug/L	295132	Standard
>	Rh	103	30.0	28.9				ug/L	20	Standard
	Mo	98	221.0	3.4	**0.1272**	0.007	5.4	ug/L	11	Standard
	Ag	107	229.0	9.3	**0.0250**	0.003	13.9	ug/L	64	Standard
	Cd	111	83.5	5.5	**0.0439**	0.003	5.8	mg/L	7	Standard
	Cd	114	223.5	12.9	**0.0473**	0.006	13.3	ug/L	10	Standard
>	In	115	449774.3	1.5				ug/L	418014	Standard
	Sn	118	551.7	8.4	**0.0319**	0.009	26.9	ug/L	385	Standard
	Sb	123	840.8	3.2	**0.1840**	0.006	3.4	ug/L	54	Standard
	Ba	135	46806.2	0.2	**21.4112**	0.370	1.7	ug/L	44	Standard
	Ce	140	230041.9	1.9				ug/L	33	Standard
>	Tb	159	880202.9	0.8				ug/L	854905	Standard
	Ho	165	1141.7	3.7				ug/L	13	Standard
	Tl	203	304.0	10.7	**0.0421**	0.005	10.8	ug/L	4	Standard
	Tl	205	225.0	11.8	**0.0465**	0.005	10.6	ug/L	5	Standard
	Pb	206	32879.3	0.6	**7.1749**	0.049	0.7	ug/L	182	Standard
	Pb	207	26796.7	0.9	**6.4948**	0.042	0.6	ug/L	160	Standard
	Pb	208	104755.3	1.1	**6.9454**	0.023	0.3	ug/L	604	Standard
	U	238	1996.5	1.2	**0.3885**	0.007	1.8	ug/L	3	Standard
>	Bi	209	413289.4	1.2				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	51.7	34.0	**0.0070**	0.039	564.7	mg/L	47	Standard
K	39	31.7	24.1	**0.1607**	0.109	68.0	mg/L	22	Standard
Ca	43	26.7	28.6	**0.1475**	0.845	572.8	mg/L	28	Standard
Fe	54	5295.1	2.4	**11.4245**	0.492	4.3	mg/L	72	Standard
Fe	57	1993.5	4.8	**10.8223**	0.630	5.8	mg/L	703	Standard
> **Sc-1**	45	32225.9	2.3				mg/L	30379	Standard
Cl	35	13682.2	3.6				ug/L	14530	Standard
Kr	83	3.7	83.3				ug/L	5	Standard
Br	81	723.4	8.4				ug/L	497	Standard
P	31	12640.3	4.7				ug/L	10347	Standard
S	34	1535.1	5.9				ug/L	1535	Standard
Sr	88	218.3	9.3				ug/L	177	Standard
C	12	313.3	43.4				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	20.0				mg/L	3	Standard
Dy	164	1822.8	1.8				mg/L	7	Standard
Ho-1	165	1141.7	3.7				mg/L	13	Standard
Er	166	1056.7	2.7				mg/L	3	Standard
I	127	23139.3	2.7				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.253	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.309	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.598
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.531
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508067902SDL WG535626-02
Sample Date/Time: Monday, August 24, 2015 18:27:25
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49163.0	2.1				ug/L	43934	Standard
	Be	9	31.7	24.1	**0.0464**	0.012	25.9	ug/L	0	Standard
	Al	27	41005.4	1.8	**0.5399**	0.012	2.3	ug/L	410	Standard
	Sc	45	31312.3	2.9				ug/L	30379	Standard
	Ti	47	852.4	3.0	**3.8341**	0.094	2.5	ug/L	21	Standard
	V	51	9229.4	2.6	**1.7980**	0.079	4.4	ug/L	1362	Standard
	Cr	52	24093.5	0.4	**2.7602**	0.043	1.5	ug/L	8311	Standard
	Cr	53	2521.9	2.4	**2.9469**	0.052	1.8	ug/L	325	Standard
	Mn	55	137104.6	0.8	**33.4324**	0.168	0.5	ug/L	694	Standard
	Co	59	1157.0	2.1	**0.2370**	0.004	1.5	ug/L	199	Standard
	Ni	60	599.7	2.3	**0.1975**	0.005	2.6	ug/L	212	Standard
	Cu	65	820.0	5.9	**0.4312**	0.031	7.2	ug/L	149	Standard
	Zn	66	2469.2	2.1	**2.3217**	0.064	2.8	ug/L	206	Standard
>	**Ge**	72	321081.4	1.2				ug/L	319179	Standard
	As	75	199.4	18.6	**0.3329**	0.043	12.9	ug/L	-51	Standard
	Se	82	22.9	28.1	**0.0816**	0.088	108.4	ug/L	19	Standard
	Se-1	77	85.0	5.1	**-0.1802**	0.105	58.5	ug/L	89	Standard
>	**Ga**	71	1078.4	10.7				mg/L	25	Standard
	Rb	85	7797.0	0.6				ug/L	27	Standard
	Y	89	306292.3	3.4				ug/L	295132	Standard
>	**Rh**	103	10.0	86.6				ug/L	20	Standard
	Mo	98	50.1	5.9	**0.0177**	0.001	8.2	ug/L	11	Standard
	Ag	107	110.7	9.3	**0.0045**	0.002	35.1	ug/L	64	Standard
	Cd	111	20.9	12.8	**0.0039**	0.002	42.0	mg/L	7	Standard
	Cd	114	55.4	60.7	**0.0066**	0.008	126.1	ug/L	10	Standard
>	**In**	115	447039.2	1.5				ug/L	418014	Standard
	Sn	118	418.3	6.6	**0.0067**	0.006	96.8	ug/L	385	Standard
	Sb	123	217.7	13.4	**0.0372**	0.007	19.9	ug/L	54	Standard
	Ba	135	9072.4	1.2	**4.1551**	0.037	0.9	ug/L	44	Standard
	Ce	140	44919.8	1.9				ug/L	33	Standard
>	**Tb**	159	872738.8	1.2				ug/L	854905	Standard
	Ho	165	216.7	21.4				ug/L	13	Standard
	Tl	203	63.0	8.4	**0.0090**	0.001	7.1	ug/L	4	Standard
	Tl	205	46.7	27.0	**0.0111**	0.003	22.9	ug/L	5	Standard
	Pb	206	6559.4	1.0	**1.4199**	0.038	2.7	ug/L	182	Standard
	Pb	207	5413.6	2.1	**1.3012**	0.039	3.0	ug/L	160	Standard
	Pb	208	20905.3	0.6	**1.3784**	0.039	2.8	ug/L	604	Standard
	U	238	396.7	0.6	**0.0788**	0.001	1.5	ug/L	3	Standard
>	**Bi**	209	403873.4	2.1				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	38.3	19.9	**-0.0215**	0.017	79.0	mg/L	47	Standard
K	39	6.7	43.3	**-0.1687**	0.036	21.4	mg/L	22	Standard
Ca	43	30.0	33.3	**0.6110**	1.172	191.9	mg/L	28	Standard
Fe	54	1132.1	5.1	**2.3589**	0.085	3.6	mg/L	72	Standard
Fe	57	1076.7	3.4	**2.6149**	0.317	12.1	mg/L	703	Standard
> **Sc-1**	45	31312.3	2.9				mg/L	30379	Standard
Cl	35	13612.1	1.5				ug/L	14530	Standard
Kr	83	3.0	33.3				ug/L	5	Standard
Br	81	606.7	6.7				ug/L	497	Standard
P	31	12218.3	2.3				ug/L	10347	Standard
S	34	1495.1	5.8				ug/L	1535	Standard
Sr	88	161.7	12.9				ug/L	177	Standard
C	12	200.0	13.2				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	347.7	11.3				mg/L	7	Standard
Ho-1	165	216.7	21.4				mg/L	13	Standard
Er	166	186.7	15.5				mg/L	3	Standard
I	127	5932.8	4.3				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.903	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.596	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	106.944
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	102.149
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 25, 2015

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, August 24, 2015 18:30:38
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	46808.9	2.8				ug/L	43934	Standard
	Be	9	30672.7	4.6	**49.1414**	1.822	3.7	ug/L	0	Standard
	Al	27	3408195.5	0.9	**48.1339**	1.589	3.3	ug/L	410	Standard
	Sc	45	30502.4	3.4				ug/L	30379	Standard
	Ti	47	22421.6	2.1	**104.7183**	2.578	2.5	ug/L	21	Standard
	V	51	231477.7	0.6	**52.9050**	0.618	1.2	ug/L	1362	Standard
	Cr	52	301326.5	0.4	**51.3463**	0.382	0.7	ug/L	8311	Standard
	Cr	53	37593.3	3.1	**52.0189**	2.084	4.0	ug/L	325	Standard
	Mn	55	216788.6	0.9	**53.5725**	0.592	1.1	ug/L	694	Standard
	Co	59	204858.7	0.8	**52.2981**	0.889	1.7	ug/L	199	Standard
	Ni	60	79956.8	2.0	**51.4556**	0.720	1.4	ug/L	212	Standard
	Cu	65	77096.0	1.5	**51.1769**	0.343	0.7	ug/L	149	Standard
	Zn	66	43300.8	1.3	**50.1456**	0.165	0.3	ug/L	206	Standard
>	Ge	72	317528.9	1.0				ug/L	319179	Standard
	As	75	42703.6	2.0	**49.6679**	0.578	1.2	ug/L	-51	Standard
	Se	82	3600.4	1.1	**50.1485**	0.035	0.1	ug/L	19	Standard
	Se-1	77	2648.9	3.4	**50.5042**	1.258	2.5	ug/L	89	Standard
>	Ga	71	56.7	28.4				mg/L	25	Standard
	Rb	85	648.3	11.7				ug/L	27	Standard
	Y	89	297732.2	1.4				ug/L	295132	Standard
>	Rh	103	28.3	53.9				ug/L	20	Standard
	Mo	98	146910.8	1.1	**96.9583**	1.456	1.5	ug/L	11	Standard
	Ag	107	269279.7	1.3	**48.3841**	0.799	1.7	ug/L	64	Standard
	Cd	111	76512.1	0.3	**50.2968**	0.437	0.9	mg/L	7	Standard
	Cd	114	203187.1	0.7	**50.7843**	0.642	1.3	ug/L	10	Standard
>	In	115	437190.2	0.9				ug/L	418014	Standard
	Sn	118	233759.5	0.7	**46.4391**	0.438	0.9	ug/L	385	Standard
	Sb	123	203436.5	0.4	**49.3930**	0.237	0.5	ug/L	54	Standard
	Ba	135	104531.7	0.7	**49.2217**	0.784	1.6	ug/L	44	Standard
	Ce	140	215.0	36.9				ug/L	33	Standard
>	Tb	159	864646.7	2.3				ug/L	854905	Standard
	Ho	165	8.3	69.3				ug/L	13	Standard
	Tl	203	351455.8	0.2	**49.9619**	0.543	1.1	ug/L	4	Standard
	Tl	205	242786.4	0.5	**49.9701**	0.620	1.2	ug/L	5	Standard
	Pb	206	217109.8	0.6	**49.0986**	0.749	1.5	ug/L	182	Standard
	Pb	207	197776.1	0.1	**49.6902**	0.410	0.8	ug/L	160	Standard
	Pb	208	723987.4	0.7	**49.7232**	0.778	1.6	ug/L	604	Standard
	U	238	246917.8	0.7	**49.4985**	0.763	1.5	ug/L	3	Standard
>	Bi	209	401518.6	1.0				ug/L	395375	Standard

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Na	23	1.7	173.2	**0.4780**	16.622	3477.3	mg/L	0	Standard
Mg	24	1910.1	1.4	**4.6171**	0.145	3.1	mg/L	47	Standard
K	39	325.0	16.1	**4.2828**	0.798	18.6	mg/L	22	Standard
Ca	43	55.0	31.5	**3.5535**	1.824	51.3	mg/L	28	Standard
Fe	54	2340.8	5.3	**5.2267**	0.158	3.0	mg/L	72	Standard
Fe	57	1315.1	6.0	**5.2481**	1.189	22.6	mg/L	703	Standard
> **Sc-1**	45	30502.4	3.4				mg/L	30379	Standard
Cl	35	14246.0	0.2				ug/L	14530	Standard
Kr	83	4.0	66.1				ug/L	5	Standard
Br	81	596.7	12.4				ug/L	497	Standard
P	31	12843.8	3.2				ug/L	10347	Standard
S	34	1686.8	1.0				ug/L	1535	Standard
Sr	88	165.0	26.4				ug/L	177	Standard
C	12	120.0	52.0				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	15.9	37.5				mg/L	7	Standard
Ho-1	165	8.3	69.3				mg/L	13	Standard
Er	166	16.7	91.7				mg/L	3	Standard
I	127	1148.4	10.6				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	98.283		
Al	27	96.268		
Sc	45			
Ti	47	104.718		
V	51	105.810		
Cr	52	102.693		
Cr	53			
Mn	55	107.145		
Co	59	104.596		
Ni	60	102.911		
Cu	65	102.354		
Zn	66	100.291		
> Ge	72		99.483	
As	75	99.336		
Se	82	100.297		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	96.958		
Ag	107	96.768		
Cd	111	100.594		
Cd	114			
> In	115			104.587
Sn	118	92.878		
Sb	123	98.786		
Ba	135	98.443		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.924		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.446		
U	238	98.997		
> Bi	209			101.554
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Approved: August 25, 2015

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, August 24, 2015 18:33:50
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48081.2	1.2				ug/L	43934	Standard
	Be	9	16.7	69.3	**0.0240**	0.018	74.4	ug/L	0	Standard
	Al	27	668.3	39.7	**-0.0023**	0.004	158.0	ug/L	410	Standard
	Sc	45	30841.4	0.0				ug/L	30379	Standard
	Ti	47	21.3	30.5	**-0.0062**	0.029	471.4	ug/L	21	Standard
	V	51	1029.1	7.7	**-0.0631**	0.016	24.6	ug/L	1362	Standard
	Cr	52	6578.4	0.9	**-0.2556**	0.010	4.1	ug/L	8311	Standard
	Cr	53	338.3	22.1	**-0.0642**	0.104	162.7	ug/L	325	Standard
	Mn	55	864.7	15.0	**0.0190**	0.030	155.9	ug/L	694	Standard
	Co	59	221.0	3.2	**0.0013**	0.001	111.6	ug/L	199	Standard
	Ni	60	170.7	11.3	**-0.0749**	0.012	15.5	ug/L	212	Standard
	Cu	65	149.0	5.7	**-0.0088**	0.005	51.0	ug/L	149	Standard
	Zn	66	207.7	12.4	**-0.2929**	0.027	9.2	ug/L	206	Standard
>	**Ge**	72	316347.4	1.3				ug/L	319179	Standard
	As	75	-43.4	64.0	**0.0530**	0.033	61.9	ug/L	-51	Standard
	Se	82	19.0	27.8	**0.0322**	0.072	223.0	ug/L	19	Standard
	Se-1	77	87.7	8.3	**-0.1043**	0.120	114.5	ug/L	89	Standard
>	**Ga**	71	36.7	34.3				mg/L	25	Standard
	Rb	85	58.3	13.1				ug/L	27	Standard
	Y	89	299973.8	0.7				ug/L	295132	Standard
>	**Rh**	103	16.7	34.6				ug/L	20	Standard
	Mo	98	67.5	29.3	**0.0299**	0.013	43.0	ug/L	11	Standard
	Ag	107	93.7	15.1	**0.0019**	0.002	134.4	ug/L	64	Standard
	Cd	111	12.5	48.6	**-0.0013**	0.004	307.0	mg/L	7	Standard
	Cd	114	44.8	25.7	**0.0042**	0.003	67.8	ug/L	10	Standard
>	**In**	115	437153.6	0.6				ug/L	418014	Standard
	Sn	118	2926.9	4.9	**0.5076**	0.026	5.1	ug/L	385	Standard
	Sb	123	761.4	9.8	**0.1703**	0.017	10.2	ug/L	54	Standard
	Ba	135	67.7	36.5	**0.0071**	0.011	161.0	ug/L	44	Standard
	Ce	140	58.3	76.8				ug/L	33	Standard
>	**Tb**	159	847878.4	1.9				ug/L	854905	Standard
	Ho	165	6.7	114.6				ug/L	13	Standard
	Tl	203	45.3	68.0	**0.0066**	0.004	65.9	ug/L	4	Standard
	Tl	205	28.3	66.8	**0.0074**	0.004	52.4	ug/L	5	Standard
	Pb	206	248.3	12.5	**-0.0003**	0.007	2458.2	ug/L	182	Standard
	Pb	207	195.3	14.5	**-0.0033**	0.007	202.2	ug/L	160	Standard
	Pb	208	728.0	7.9	**-0.0005**	0.004	792.1	ug/L	604	Standard
	U	238	31.3	84.8	**0.0060**	0.005	88.0	ug/L	3	Standard
>	**Bi**	209	398421.3	1.2				ug/L	395375	Standard

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Na	23	1.7	173.2	**0.3174**	16.900	5324.0	mg/L	0	Standard
Mg	24	45.0	48.4	**-0.0036**	0.053	1462.2	mg/L	47	Standard
K	39	21.7	70.5	**0.0402**	0.211	524.0	mg/L	22	Standard
Ca	43	30.0	44.1	**0.6553**	1.512	230.7	mg/L	28	Standard
Fe	54	80.7	25.7	**-0.0111**	0.047	426.2	mg/L	72	Standard
Fe	57	780.0	5.2	**-0.1061**	0.398	374.9	mg/L	703	Standard
> **Sc-1**	45	30841.4	0.0				mg/L	30379	Standard
Cl	35	14139.9	0.5				ug/L	14530	Standard
Kr	83	6.0	16.7				ug/L	5	Standard
Br	81	580.0	20.3				ug/L	497	Standard
P	31	12395.1	0.6				ug/L	10347	Standard
S	34	1591.8	3.7				ug/L	1535	Standard
Sr	88	201.7	2.9				ug/L	177	Standard
C	12	153.3	35.9				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	25.9	59.3				mg/L	7	Standard
Ho-1	165	6.7	114.6				mg/L	13	Standard
Er	166	16.7	34.6				mg/L	3	Standard
I	127	1633.4	6.5				mg/L	1945	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.113	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.579
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.770
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sn	118	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1508067903
Sample Date/Time: Monday, August 24, 2015 18:37:03
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51602.9	5.1				ug/L	43934	Standard
	Be	9	345.0	5.0	**0.4996**	0.016	3.3	ug/L	0	Standard
	Al	27	510108.2	0.3	**6.5315**	0.306	4.7	ug/L	410	Standard
	Sc	45	35790.6	3.2				ug/L	30379	Standard
	Ti	47	2736.2	2.3	**12.1154**	0.294	2.4	ug/L	21	Standard
	V	51	68989.6	1.1	**14.8494**	0.170	1.1	ug/L	1362	Standard
	Cr	52	63002.4	1.7	**9.1269**	0.161	1.8	ug/L	8311	Standard
	Cr	53	7195.0	0.6	**9.0699**	0.042	0.5	ug/L	325	Standard
	Mn	55	4979273.9	1.6	**1179.7063**	19.871	1.7	ug/L	694	Standard
	Co	59	74315.2	1.2	**18.0884**	0.204	1.1	ug/L	199	Standard
	Ni	60	7964.1	1.2	**4.7292**	0.062	1.3	ug/L	212	Standard
	Cu	65	17723.0	0.7	**11.1564**	0.096	0.9	ug/L	149	Standard
	Zn	66	16790.3	1.0	**18.2408**	0.222	1.2	ug/L	206	Standard
>	**Ge**	72	332336.6	0.2				ug/L	319179	Standard
	As	75	1547.9	2.7	**1.8205**	0.049	2.7	ug/L	-51	Standard
	Se	82	82.6	12.5	**0.8689**	0.137	15.7	ug/L	19	Standard
	Se-1	77	187.7	12.7	**1.7009**	0.443	26.0	ug/L	89	Standard
>	**Ga**	71	6794.9	2.4				mg/L	25	Standard
	Rb	85	111300.7	1.7				ug/L	27	Standard
	Y	89	408947.3	0.9				ug/L	295132	Standard
>	**Rh**	103	25.0	60.0				ug/L	20	Standard
	Mo	98	503.2	3.8	**0.3072**	0.013	4.3	ug/L	11	Standard
	Ag	107	370.0	5.9	**0.0495**	0.005	9.3	ug/L	64	Standard
	Cd	111	184.1	10.4	**0.1078**	0.011	10.3	mg/L	7	Standard
	Cd	114	440.8	9.0	**0.0998**	0.010	10.3	ug/L	10	Standard
>	**In**	115	451217.2	1.2				ug/L	418014	Standard
	Sn	118	655.0	7.5	**0.0515**	0.010	20.1	ug/L	385	Standard
	Sb	123	426.1	6.0	**0.0858**	0.007	7.8	ug/L	54	Standard
	Ba	135	197384.8	1.1	**90.0691**	0.408	0.5	ug/L	44	Standard
	Ce	140	2627912.5	0.6				ug/L	33	Standard
>	**Tb**	159	903348.1	2.3				ug/L	854905	Standard
	Ho	165	10902.3	3.2				ug/L	13	Standard
	Tl	203	815.4	1.8	**0.1126**	0.002	2.1	ug/L	4	Standard
	Tl	205	598.3	12.8	**0.1209**	0.014	11.7	ug/L	5	Standard
	Pb	206	96784.5	0.4	**21.2066**	0.295	1.4	ug/L	182	Standard
	Pb	207	79710.5	0.9	**19.4015**	0.256	1.3	ug/L	160	Standard
	Pb	208	310876.8	0.8	**20.6875**	0.192	0.9	ug/L	604	Standard
	U	238	7909.1	1.4	**1.5381**	0.012	0.8	ug/L	3	Standard
>	**Bi**	209	413778.3	1.0				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	56.7	60.1	**0.0072**	0.076	1057.5	mg/L	47	Standard
K	39	78.3	29.5	**0.6740**	0.282	41.8	mg/L	22	Standard
Ca	43	48.3	21.5	**1.9712**	0.885	44.9	mg/L	28	Standard
Fe	54	7504.9	4.2	**14.6226**	0.235	1.6	mg/L	72	Standard
Fe	57	2678.6	4.9	**14.7300**	1.489	10.1	mg/L	703	Standard
Sc-1	45	35790.6	3.2				mg/L	30379	Standard
Cl	35	13779.6	2.0				ug/L	14530	Standard
Kr	83	4.3	53.3				ug/L	5	Standard
Br	81	1003.4	1.2				ug/L	497	Standard
P	31	12229.9	0.3				ug/L	10347	Standard
S	34	1483.4	4.5				ug/L	1535	Standard
Sr	88	166.7	12.1				ug/L	177	Standard
C	12	933.4	4.5				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	130.0	13.3				mg/L	3	Standard
Dy	164	20916.9	4.9				mg/L	7	Standard
Ho-1	165	10902.3	3.2				mg/L	13	Standard
Er	166	10820.5	3.3				mg/L	3	Standard
I	127	129146.0	5.8				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		117.456	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		104.122	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.943
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.655
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508067904
Sample Date/Time: Monday, August 24, 2015 18:40:15
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51709.8	0.4				ug/L	43934	Standard
	Be	9	453.3	1.7	**0.6555**	0.012	1.8	ug/L	0	Standard
	Al	27	590923.0	0.5	**7.5406**	0.062	0.8	ug/L	410	Standard
	Sc	45	35533.3	0.7				ug/L	30379	Standard
	Ti	47	2593.6	1.9	**11.6817**	0.293	2.5	ug/L	21	Standard
	V	51	61507.3	0.4	**13.4427**	0.046	0.3	ug/L	1362	Standard
	Cr	52	85698.0	1.0	**13.1752**	0.225	1.7	ug/L	8311	Standard
	Cr	53	10101.7	2.7	**13.1866**	0.290	2.2	ug/L	325	Standard
	Mn	55	577492.2	0.9	**139.0480**	1.984	1.4	ug/L	694	Standard
	Co	59	34843.0	1.2	**8.6000**	0.056	0.6	ug/L	199	Standard
	Ni	60	7353.8	0.7	**4.4321**	0.050	1.1	ug/L	212	Standard
	Cu	65	12502.8	0.8	**7.9776**	0.070	0.9	ug/L	149	Standard
	Zn	66	12870.8	1.3	**14.1086**	0.109	0.8	ug/L	206	Standard
>	**Ge**	72	326622.0	0.6				ug/L	319179	Standard
	As	75	1326.7	4.6	**1.6012**	0.077	4.8	ug/L	-51	Standard
	Se	82	53.8	19.6	**0.4979**	0.145	29.2	ug/L	19	Standard
	Se-1	77	132.3	5.7	**0.7008**	0.157	22.4	ug/L	89	Standard
>	**Ga**	71	7713.6	2.2				mg/L	25	Standard
	Rb	85	189535.0	1.7				ug/L	27	Standard
	Y	89	354114.1	1.3				ug/L	295132	Standard
>	**Rh**	103	15.0	33.3				ug/L	20	Standard
	Mo	98	371.6	6.8	**0.2212**	0.017	7.6	ug/L	11	Standard
	Ag	107	318.3	3.9	**0.0400**	0.002	5.0	ug/L	64	Standard
	Cd	111	135.1	14.1	**0.0759**	0.012	15.7	mg/L	7	Standard
	Cd	114	344.0	21.5	**0.0757**	0.018	23.8	ug/L	10	Standard
>	**In**	115	454739.7	0.3				ug/L	418014	Standard
	Sn	118	471.7	1.6	**0.0154**	0.001	8.0	ug/L	385	Standard
	Sb	123	300.5	9.7	**0.0556**	0.007	12.4	ug/L	54	Standard
	Ba	135	206565.3	0.7	**93.5263**	0.474	0.5	ug/L	44	Standard
	Ce	140	2329119.8	1.6				ug/L	33	Standard
>	**Tb**	159	903623.5	0.9				ug/L	854905	Standard
	Ho	165	3810.5	3.9				ug/L	13	Standard
	Tl	203	1062.7	3.2	**0.1472**	0.005	3.3	ug/L	4	Standard
	Tl	205	735.0	3.4	**0.1487**	0.005	3.5	ug/L	5	Standard
	Pb	206	78040.8	0.3	**17.1395**	0.140	0.8	ug/L	182	Standard
	Pb	207	63707.3	0.1	**15.5422**	0.082	0.5	ug/L	160	Standard
	Pb	208	249221.9	0.7	**16.6247**	0.171	1.0	ug/L	604	Standard
	U	238	7202.7	2.8	**1.4051**	0.045	3.2	ug/L	3	Standard
>	**Bi**	209	412525.9	0.5				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	41.7	25.0	**-0.0252**	0.022	88.7	mg/L	47	Standard
K	39	103.3	22.3	**0.9782**	0.275	28.1	mg/L	22	Standard
Ca	43	46.7	34.4	**1.8622**	1.628	87.4	mg/L	28	Standard
Fe	54	6099.8	4.9	**11.9381**	0.609	5.1	mg/L	72	Standard
Fe	57	2406.9	5.2	**12.5797**	0.933	7.4	mg/L	703	Standard
Sc-1	45	35533.3	0.7				mg/L	30379	Standard
Cl	35	14145.9	0.4				ug/L	14530	Standard
Kr	83	3.0	33.3				ug/L	5	Standard
Br	81	940.0	7.0				ug/L	497	Standard
P	31	11979.7	1.9				ug/L	10347	Standard
S	34	1311.7	4.7				ug/L	1535	Standard
Sr	88	203.3	10.2				ug/L	177	Standard
C	12	1060.0	10.9				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	110.0	45.5				mg/L	3	Standard
Dy	164	6332.7	4.4				mg/L	7	Standard
Ho-1	165	3810.5	3.9				mg/L	13	Standard
Er	166	3730.5	7.7				mg/L	3	Standard
I	127	45182.3	3.2				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		117.700	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.332	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	108.786
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	104.338
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1508067904
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Method 6020 - Summary Report

Sample ID: L1508067905
Sample Date/Time: Monday, August 24, 2015 18:43:26
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53465.8	1.1				ug/L	43934	Standard
	Be	9	508.3	11.7	**0.7109**	0.080	11.3	ug/L	0	Standard
	Al	27	560181.7	1.1	**6.9136**	0.152	2.2	ug/L	410	Standard
	Sc	45	41144.1	2.1				ug/L	30379	Standard
	Ti	47	6889.2	1.1	**30.5916**	0.473	1.5	ug/L	21	Standard
	V	51	171153.2	0.4	**37.1989**	0.775	2.1	ug/L	1362	Standard
	Cr	52	284752.9	0.5	**46.1109**	0.831	1.8	ug/L	8311	Standard
	Cr	53	34619.5	2.2	**45.5758**	0.029	0.1	ug/L	325	Standard
	Mn	55	708677.0	1.6	**167.3204**	1.680	1.0	ug/L	694	Standard
	Co	59	22857.9	1.6	**5.5135**	0.185	3.4	ug/L	199	Standard
	Ni	60	6135.2	2.2	**3.5909**	0.024	0.7	ug/L	212	Standard
	Cu	65	22134.2	2.0	**13.9257**	0.241	1.7	ug/L	149	Standard
	Zn	66	11457.3	2.3	**12.2450**	0.245	2.0	ug/L	206	Standard
>	**Ge**	72	333188.4	2.2				ug/L	319179	Standard
	As	75	2659.8	1.1	**3.0470**	0.076	2.5	ug/L	-51	Standard
	Se	82	64.7	8.5	**0.6295**	0.092	14.5	ug/L	19	Standard
	Se-1	77	138.0	1.3	**0.7581**	0.084	11.1	ug/L	89	Standard
>	**Ga**	71	24181.0	1.9				mg/L	25	Standard
	Rb	85	168239.1	1.8				ug/L	27	Standard
	Y	89	365592.4	3.1				ug/L	295132	Standard
>	**Rh**	103	21.7	53.3				ug/L	20	Standard
	Mo	98	692.2	7.8	**0.4306**	0.036	8.3	ug/L	11	Standard
	Ag	107	694.7	7.9	**0.1067**	0.010	9.0	ug/L	64	Standard
	Cd	111	110.0	15.2	**0.0610**	0.011	17.8	mg/L	7	Standard
	Cd	114	226.5	28.9	**0.0482**	0.016	33.3	ug/L	10	Standard
>	**In**	115	448620.5	0.2				ug/L	418014	Standard
	Sn	118	501.7	1.5	**0.0225**	0.002	6.7	ug/L	385	Standard
	Sb	123	216.3	3.9	**0.0367**	0.002	5.7	ug/L	54	Standard
	Ba	135	139046.8	1.0	**63.8071**	0.550	0.9	ug/L	44	Standard
	Ce	140	2367760.1	0.7				ug/L	33	Standard
>	**Tb**	159	895898.4	0.5				ug/L	854905	Standard
	Ho	165	5972.8	1.0				ug/L	13	Standard
	Tl	203	1275.4	6.9	**0.1757**	0.013	7.2	ug/L	4	Standard
	Tl	205	855.0	5.1	**0.1719**	0.009	5.4	ug/L	5	Standard
	Pb	206	112449.4	0.1	**24.5918**	0.130	0.5	ug/L	182	Standard
	Pb	207	91693.6	1.1	**22.2751**	0.176	0.8	ug/L	160	Standard
	Pb	208	355915.7	0.4	**23.6389**	0.132	0.6	ug/L	604	Standard
	U	238	14643.1	0.9	**2.8416**	0.022	0.8	ug/L	3	Standard
>	**Bi**	209	414692.1	0.4				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	50.0	26.5	**-0.0222**	0.024	106.0	mg/L	47	Standard
K	39	71.7	26.4	**0.4822**	0.196	40.6	mg/L	22	Standard
Ca	43	45.0	38.5	**1.0625**	1.388	130.6	mg/L	28	Standard
Fe	54	19877.8	2.4	**33.9577**	0.874	2.6	mg/L	72	Standard
Fe	57	5767.8	4.2	**34.2760**	2.506	7.3	mg/L	703	Standard
> **Sc-1**	45	41144.1	2.1				mg/L	30379	Standard
Cl	35	13792.9	2.3				ug/L	14530	Standard
Kr	83	3.7	87.7				ug/L	5	Standard
Br	81	990.0	7.0				ug/L	497	Standard
P	31	12558.5	3.9				ug/L	10347	Standard
S	34	1406.7	4.1				ug/L	1535	Standard
Sr	88	220.0	6.0				ug/L	177	Standard
C	12	713.4	4.5				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	340.0	23.5				mg/L	3	Standard
Dy	164	10181.7	3.2				mg/L	7	Standard
Ho-1	165	5972.8	1.0				mg/L	13	Standard
Er	166	5884.5	5.1				mg/L	3	Standard
I	127	87805.5	2.7				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		121.697	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.389	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.322
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.886
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

Approved: August 25, 2015

Method 6020 - Summary Report

Sample ID: L1508067906
Sample Date/Time: Monday, August 24, 2015 18:46:38
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52582.8	2.6				ug/L	43934	Standard
	Be	9	283.3	14.3	**0.4013**	0.047	11.6	ug/L	0	Standard
	Al	27	522060.1	0.2	**6.5528**	0.182	2.8	ug/L	410	Standard
	Sc	45	35271.0	2.0				ug/L	30379	Standard
	Ti	47	4692.7	1.1	**20.4667**	0.130	0.6	ug/L	21	Standard
	V	51	90234.7	0.5	**19.1502**	0.243	1.3	ug/L	1362	Standard
	Cr	52	104334.0	0.6	**15.7199**	0.224	1.4	ug/L	8311	Standard
	Cr	53	12039.8	2.5	**15.2422**	0.308	2.0	ug/L	325	Standard
	Mn	55	1069177.0	1.3	**248.4703**	0.197	0.1	ug/L	694	Standard
	Co	59	12393.1	1.2	**2.9147**	0.050	1.7	ug/L	199	Standard
	Ni	60	6066.2	2.2	**3.4892**	0.097	2.8	ug/L	212	Standard
	Cu	65	8462.4	2.3	**5.1709**	0.105	2.0	ug/L	149	Standard
	Zn	66	17945.6	2.0	**19.1656**	0.577	3.0	ug/L	206	Standard
>	**Ge**	72	338599.4	1.3				ug/L	319179	Standard
	As	75	2665.8	1.2	**3.0058**	0.045	1.5	ug/L	-51	Standard
	Se	82	69.2	6.4	**0.6735**	0.069	10.3	ug/L	19	Standard
	Se-1	77	137.3	9.6	**0.7054**	0.276	39.2	ug/L	89	Standard
>	**Ga**	71	9723.1	3.1				mg/L	25	Standard
	Rb	85	137074.0	1.0				ug/L	27	Standard
	Y	89	367510.6	2.6				ug/L	295132	Standard
>	**Rh**	103	20.0	66.1				ug/L	20	Standard
	Mo	98	488.8	4.4	**0.2824**	0.010	3.5	ug/L	11	Standard
	Ag	107	339.3	7.9	**0.0412**	0.005	11.3	ug/L	64	Standard
	Cd	111	172.2	5.8	**0.0948**	0.006	5.9	mg/L	7	Standard
	Cd	114	485.0	11.0	**0.1046**	0.012	11.6	ug/L	10	Standard
>	**In**	115	474769.8	1.1				ug/L	418014	Standard
	Sn	118	620.0	5.0	**0.0388**	0.005	11.7	ug/L	385	Standard
	Sb	123	222.0	4.0	**0.0351**	0.002	4.5	ug/L	54	Standard
	Ba	135	156619.1	1.5	**67.9191**	1.247	1.8	ug/L	44	Standard
	Ce	140	1550989.4	0.4				ug/L	33	Standard
>	**Tb**	159	911404.7	0.1				ug/L	854905	Standard
	Ho	165	3945.5	3.2				ug/L	13	Standard
	Tl	203	729.7	4.9	**0.0986**	0.004	3.8	ug/L	4	Standard
	Tl	205	548.3	12.3	**0.1087**	0.013	12.0	ug/L	5	Standard
	Pb	206	84934.1	0.8	**18.2123**	0.214	1.2	ug/L	182	Standard
	Pb	207	69517.1	0.6	**16.5600**	0.300	1.8	ug/L	160	Standard
	Pb	208	272111.7	0.6	**17.7221**	0.172	1.0	ug/L	604	Standard
	U	238	6550.1	1.4	**1.2471**	0.012	1.0	ug/L	3	Standard
>	**Bi**	209	422620.2	1.2				ug/L	395375	Standard

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Na	23	1.7	173.2	**1.3443**	15.121	1124.8	mg/L	0	Standard
Mg	24	45.0	33.3	**-0.0178**	0.031	171.5	mg/L	47	Standard
K	39	35.0	49.5	**0.1622**	0.203	125.4	mg/L	22	Standard
Ca	43	61.7	26.1	**3.3827**	1.556	46.0	mg/L	28	Standard
Fe	54	7921.0	4.0	**15.6855**	0.830	5.3	mg/L	72	Standard
Fe	57	2698.6	5.4	**15.2203**	1.498	9.8	mg/L	703	Standard
Sc-1	45	35271.0	2.0				mg/L	30379	Standard
Cl	35	14448.9	0.9				ug/L	14530	Standard
Kr	83	6.0	60.1				ug/L	5	Standard
Br	81	1013.4	8.9				ug/L	497	Standard
P	31	12495.2	3.0				ug/L	10347	Standard
S	34	1428.4	7.3				ug/L	1535	Standard
Sr	88	150.0	21.9				ug/L	177	Standard
C	12	1343.4	6.3				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	110.0	50.6				mg/L	3	Standard
Dy	164	6360.8	6.1				mg/L	7	Standard
Ho-1	165	3945.5	3.2				mg/L	13	Standard
Er	166	3630.4	6.0				mg/L	3	Standard
I	127	40575.9	2.3				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.687	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.084	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.577
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.891
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1508067906
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Method 6020 - Summary Report

Sample ID: L1508067907
Sample Date/Time: Monday, August 24, 2015 18:49:49
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54352.4	3.5				ug/L	43934	Standard
	Be	9	341.7	18.6	**0.4688**	0.080	17.1	ug/L	0	Standard
	Al	27	440905.7	2.5	**5.3506**	0.057	1.1	ug/L	410	Standard
	Sc	45	35623.5	2.3				ug/L	30379	Standard
	Ti	47	5691.1	0.4	**24.2618**	0.307	1.3	ug/L	21	Standard
	V	51	93958.0	1.6	**19.4792**	0.384	2.0	ug/L	1362	Standard
	Cr	52	91230.9	1.3	**13.2190**	0.325	2.5	ug/L	8311	Standard
	Cr	53	10370.2	2.8	**12.7402**	0.512	4.0	ug/L	325	Standard
	Mn	55	1168863.2	1.0	**265.3066**	1.368	0.5	ug/L	694	Standard
	Co	59	10492.0	1.0	**2.4002**	0.029	1.2	ug/L	199	Standard
	Ni	60	7152.7	1.8	**4.0465**	0.123	3.0	ug/L	212	Standard
	Cu	65	10349.2	1.3	**6.1970**	0.017	0.3	ug/L	149	Standard
	Zn	66	22734.4	1.9	**23.8342**	0.346	1.4	ug/L	206	Standard
>	**Ge**	72	346700.7	1.1				ug/L	319179	Standard
	As	75	2213.6	1.5	**2.4573**	0.051	2.1	ug/L	-51	Standard
	Se	82	61.6	17.6	**0.5551**	0.148	26.6	ug/L	19	Standard
	Se-1	77	124.0	2.9	**0.4025**	0.079	19.6	ug/L	89	Standard
>	**Ga**	71	9911.6	1.9				mg/L	25	Standard
	Rb	85	174954.4	1.3				ug/L	27	Standard
	Y	89	360009.2	1.6				ug/L	295132	Standard
>	**Rh**	103	28.3	40.8				ug/L	20	Standard
	Mo	98	553.1	7.6	**0.3261**	0.026	7.8	ug/L	11	Standard
	Ag	107	360.7	1.0	**0.0455**	0.000	0.7	ug/L	64	Standard
	Cd	111	233.0	1.8	**0.1335**	0.003	1.9	mg/L	7	Standard
	Cd	114	540.0	4.9	**0.1189**	0.005	4.2	ug/L	10	Standard
>	**In**	115	468381.1	1.1				ug/L	418014	Standard
	Sn	118	746.7	0.4	**0.0639**	0.002	2.4	ug/L	385	Standard
	Sb	123	296.3	7.9	**0.0527**	0.006	11.2	ug/L	54	Standard
	Ba	135	224041.4	0.9	**98.5007**	1.962	2.0	ug/L	44	Standard
	Ce	140	868488.8	0.9				ug/L	33	Standard
>	**Tb**	159	910301.6	0.5				ug/L	854905	Standard
	Ho	165	3547.1	4.7				ug/L	13	Standard
	Tl	203	939.7	4.5	**0.1268**	0.007	5.7	ug/L	4	Standard
	Tl	205	630.0	5.2	**0.1244**	0.006	4.6	ug/L	5	Standard
	Pb	206	104093.7	0.5	**22.2789**	0.308	1.4	ug/L	182	Standard
	Pb	207	85175.1	0.1	**20.2509**	0.270	1.3	ug/L	160	Standard
	Pb	208	331733.9	0.9	**21.5643**	0.402	1.9	ug/L	604	Standard
	U	238	4693.4	0.4	**0.8914**	0.010	1.2	ug/L	3	Standard
>	**Bi**	209	423675.6	1.4				ug/L	395375	Standard

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Na	23	1.7	173.2	**1.4583**	14.924	1023.3	mg/L	0	Standard
Mg	24	45.0	22.2	**-0.0185**	0.021	113.1	mg/L	47	Standard
K	39	60.0	30.0	**0.4551**	0.201	44.3	mg/L	22	Standard
Ca	43	60.0	25.0	**3.1868**	1.614	50.6	mg/L	28	Standard
Fe	54	6900.7	1.7	**13.5030**	0.503	3.7	mg/L	72	Standard
Fe	57	2493.5	1.9	**13.2717**	0.813	6.1	mg/L	703	Standard
Sc-1	45	35623.5	2.3				mg/L	30379	Standard
Cl	35	14793.9	0.6				ug/L	14530	Standard
Kr	83	3.0	33.3				ug/L	5	Standard
Br	81	956.7	10.5				ug/L	497	Standard
P	31	12288.3	6.8				ug/L	10347	Standard
S	34	1326.7	1.4				ug/L	1535	Standard
Sr	88	201.7	26.5				ug/L	177	Standard
C	12	1533.4	7.2				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	173.3	8.8				mg/L	3	Standard
Dy	164	5953.5	2.3				mg/L	7	Standard
Ho-1	165	3547.1	4.7				mg/L	13	Standard
Er	166	3293.7	3.2				mg/L	3	Standard
I	127	36393.7	3.6				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		123.715	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		108.623	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.049
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.158
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508067908
Sample Date/Time: Monday, August 24, 2015 18:53:01
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54332.3	2.5				ug/L	43934	Standard
	Be	9	521.7	10.7	**0.7172**	0.060	8.4	ug/L	0	Standard
	Al	27	536081.4	1.3	**6.5108**	0.135	2.1	ug/L	410	Standard
	Sc	45	45312.8	4.9				ug/L	30379	Standard
	Ti	47	17654.6	1.4	**77.3358**	1.361	1.8	ug/L	21	Standard
	V	51	309386.9	0.7	**66.4205**	0.359	0.5	ug/L	1362	Standard
	Cr	52	314927.6	0.1	**50.3238**	0.189	0.4	ug/L	8311	Standard
	Cr	53	38483.8	0.8	**49.9335**	0.476	1.0	ug/L	325	Standard
	Mn	55	1248705.1	0.5	**290.3968**	2.747	0.9	ug/L	694	Standard
	Co	59	38950.7	0.9	**9.2839**	0.109	1.2	ug/L	199	Standard
	Ni	60	10889.2	1.6	**6.4137**	0.092	1.4	ug/L	212	Standard
	Cu	65	53068.8	0.8	**33.0176**	0.387	1.2	ug/L	149	Standard
	Zn	66	31615.6	1.2	**34.1870**	0.515	1.5	ug/L	206	Standard
>	**Ge**	72	338408.1	0.5				ug/L	319179	Standard
	As	75	7122.4	1.4	**7.8607**	0.072	0.9	ug/L	-51	Standard
	Se	82	73.4	14.8	**0.7281**	0.140	19.3	ug/L	19	Standard
	Se-1	77	161.7	9.2	**1.1549**	0.261	22.6	ug/L	89	Standard
>	**Ga**	71	53785.3	0.3				mg/L	25	Standard
	Rb	85	163317.3	1.7				ug/L	27	Standard
	Y	89	387112.6	2.1				ug/L	295132	Standard
>	**Rh**	103	31.7	9.1				ug/L	20	Standard
	Mo	98	1508.9	3.0	**0.9321**	0.029	3.2	ug/L	11	Standard
	Ag	107	664.3	5.9	**0.0986**	0.008	8.1	ug/L	64	Standard
	Cd	111	135.5	7.3	**0.0752**	0.007	9.0	mg/L	7	Standard
	Cd	114	309.1	1.2	**0.0664**	0.000	0.2	ug/L	10	Standard
>	**In**	115	459919.6	1.1				ug/L	418014	Standard
	Sn	118	530.0	6.8	**0.0255**	0.008	31.1	ug/L	385	Standard
	Sb	123	169.7	8.6	**0.0246**	0.003	12.1	ug/L	54	Standard
	Ba	135	140885.1	1.5	**63.0616**	0.578	0.9	ug/L	44	Standard
	Ce	140	4014049.2	0.4				ug/L	33	Standard
>	**Tb**	159	902672.9	1.8				ug/L	854905	Standard
	Ho	165	7440.2	3.6				ug/L	13	Standard
	Tl	203	1264.1	1.5	**0.1735**	0.002	1.4	ug/L	4	Standard
	Tl	205	903.4	6.6	**0.1810**	0.013	7.4	ug/L	5	Standard
	Pb	206	118744.5	0.7	**25.8903**	0.273	1.1	ug/L	182	Standard
	Pb	207	96702.0	0.8	**23.4227**	0.375	1.6	ug/L	160	Standard
	Pb	208	377261.6	0.2	**24.9822**	0.337	1.3	ug/L	604	Standard
	U	238	11934.7	1.3	**2.3091**	0.058	2.5	ug/L	3	Standard
>	**Bi**	209	416020.4	1.3				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	36.7	31.5	**-0.0523**	0.021	41.0	mg/L	47	Standard
K	39	80.0	25.0	**0.4888**	0.158	32.4	mg/L	22	Standard
Ca	43	25.0	20.0	**-0.8150**	0.460	56.4	mg/L	28	Standard
Fe	54	39846.8	0.4	**62.0538**	2.906	4.7	mg/L	72	Standard
Fe	57	10350.2	0.9	**60.7134**	2.760	4.5	mg/L	703	Standard
> **Sc-1**	45	45312.8	4.9				mg/L	30379	Standard
Cl	35	13863.0	1.6				ug/L	14530	Standard
Kr	83	4.3	66.6				ug/L	5	Standard
Br	81	956.7	7.9				ug/L	497	Standard
P	31	13085.7	2.5				ug/L	10347	Standard
S	34	1581.7	3.6				ug/L	1535	Standard
Sr	88	175.0	2.9				ug/L	177	Standard
C	12	1260.1	7.1				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	130.0	35.3				mg/L	3	Standard
Dy	164	12954.7	1.0				mg/L	7	Standard
Ho-1	165	7440.2	3.6				mg/L	13	Standard
Er	166	7051.6	6.2				mg/L	3	Standard
I	127	51253.4	5.2				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.669	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.024	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.025
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.222
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508067909
Sample Date/Time: Monday, August 24, 2015 18:56:13
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55687.2	2.3				ug/L	43934	Standard
	Be	9	263.3	2.2	**0.3527**	0.006	1.8	ug/L	0	Standard
	Al	27	194466.8	1.2	**2.2975**	0.076	3.3	ug/L	410	Standard
	Sc	45	35326.1	0.8				ug/L	30379	Standard
	Ti	47	2953.3	3.3	**12.7615**	0.569	4.5	ug/L	21	Standard
	V	51	70324.2	1.7	**14.7642**	0.510	3.5	ug/L	1362	Standard
	Cr	52	82954.5	0.3	**12.1230**	0.288	2.4	ug/L	8311	Standard
	Cr	53	9889.9	4.9	**12.3409**	0.608	4.9	ug/L	325	Standard
	Mn	55	1175818.4	0.4	**271.5645**	5.693	2.1	ug/L	694	Standard
	Co	59	17837.2	0.4	**4.1920**	0.070	1.7	ug/L	199	Standard
	Ni	60	5398.6	1.1	**3.0640**	0.078	2.6	ug/L	212	Standard
	Cu	65	16787.6	1.1	**10.2998**	0.288	2.8	ug/L	149	Standard
	Zn	66	18683.8	0.6	**19.8418**	0.288	1.5	ug/L	206	Standard
>	**Ge**	72	340814.7	1.9				ug/L	319179	Standard
	As	75	1316.8	4.9	**1.5284**	0.080	5.2	ug/L	-51	Standard
	Se	82	64.2	10.6	**0.6011**	0.080	13.3	ug/L	19	Standard
	Se-1	77	128.7	1.2	**0.5272**	0.039	7.3	ug/L	89	Standard
>	**Ga**	71	9092.7	3.7				mg/L	25	Standard
	Rb	85	148477.5	1.9				ug/L	27	Standard
	Y	89	355637.6	1.5				ug/L	295132	Standard
>	**Rh**	103	26.7	21.7				ug/L	20	Standard
	Mo	98	352.1	5.9	**0.2003**	0.011	5.6	ug/L	11	Standard
	Ag	107	341.0	10.0	**0.0418**	0.006	14.4	ug/L	64	Standard
	Cd	111	134.5	11.2	**0.0723**	0.009	12.9	mg/L	7	Standard
	Cd	114	332.7	16.4	**0.0699**	0.012	17.4	ug/L	10	Standard
>	**In**	115	472508.1	0.8				ug/L	418014	Standard
	Sn	118	398.3	11.7	**-0.0014**	0.009	621.2	ug/L	385	Standard
	Sb	123	115.4	12.8	**0.0114**	0.003	27.4	ug/L	54	Standard
	Ba	135	134640.6	0.8	**58.6646**	0.903	1.5	ug/L	44	Standard
	Ce	140	832873.9	1.5				ug/L	33	Standard
>	**Tb**	159	916003.3	2.0				ug/L	854905	Standard
	Ho	165	4213.9	2.3				ug/L	13	Standard
	Tl	203	847.7	6.2	**0.1142**	0.007	6.0	ug/L	4	Standard
	Tl	205	568.3	4.1	**0.1123**	0.004	3.7	ug/L	5	Standard
	Pb	206	72971.3	0.9	**15.5899**	0.034	0.2	ug/L	182	Standard
	Pb	207	60042.1	0.6	**14.2500**	0.058	0.4	ug/L	160	Standard
	Pb	208	234597.8	0.9	**15.2248**	0.204	1.3	ug/L	604	Standard
	U	238	4465.7	0.2	**0.8476**	0.008	0.9	ug/L	3	Standard
>	**Bi**	209	423917.4	0.8				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	70.0	32.7	**0.0356**	0.048	134.2	mg/L	47	Standard
K	39	35.0	37.8	**0.1621**	0.155	95.9	mg/L	22	Standard
Ca	43	30.0	44.1	**0.2141**	1.301	607.8	mg/L	28	Standard
Fe	54	6328.2	4.3	**12.4686**	0.632	5.1	mg/L	72	Standard
Fe	57	2336.8	4.9	**12.1131**	1.055	8.7	mg/L	703	Standard
> **Sc-1**	45	35326.1	0.8				mg/L	30379	Standard
Cl	35	14320.1	1.2				ug/L	14530	Standard
Kr	83	4.7	44.6				ug/L	5	Standard
Br	81	963.4	9.4				ug/L	497	Standard
P	31	12992.2	3.1				ug/L	10347	Standard
S	34	1413.4	8.4				ug/L	1535	Standard
Sr	88	225.0	8.0				ug/L	177	Standard
C	12	873.4	14.9				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	100.0	0.0				mg/L	3	Standard
Dy	164	7242.6	5.5				mg/L	7	Standard
Ho-1	165	4213.9	2.3				mg/L	13	Standard
Er	166	3740.5	4.7				mg/L	3	Standard
I	127	55864.6	4.5				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		126.753	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.778	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.036
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.219
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

Approved: August 25, 2015

Method 6020 - Summary Report

Sample ID: L1508067910
Sample Date/Time: Monday, August 24, 2015 18:59:24
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58323.9	5.7				ug/L	43934	Standard
	Be	9	588.3	9.6	**0.7581**	0.107	14.1	ug/L	0	Standard
	Al	27	811360.6	1.5	**9.1959**	0.375	4.1	ug/L	410	Standard
	Sc	45	39422.9	0.9				ug/L	30379	Standard
	Ti	47	15112.5	1.8	**63.8531**	1.261	2.0	ug/L	21	Standard
	V	51	258055.4	2.2	**53.3952**	1.263	2.4	ug/L	1362	Standard
	Cr	52	225693.3	0.9	**34.3623**	0.547	1.6	ug/L	8311	Standard
	Cr	53	26930.6	1.5	**33.5433**	0.841	2.5	ug/L	325	Standard
	Mn	55	1738236.5	1.8	**390.0889**	7.295	1.9	ug/L	694	Standard
	Co	59	27695.6	0.9	**6.3518**	0.086	1.4	ug/L	199	Standard
	Ni	60	15627.1	1.6	**8.9515**	0.077	0.9	ug/L	212	Standard
	Cu	65	34133.1	1.7	**20.4466**	0.191	0.9	ug/L	149	Standard
	Zn	66	45933.5	0.8	**48.1362**	0.121	0.3	ug/L	206	Standard
>	**Ge**	72	350751.7	1.0				ug/L	319179	Standard
	As	75	6725.0	2.0	**7.1705**	0.137	1.9	ug/L	-51	Standard
	Se	82	89.5	10.0	**0.8986**	0.103	11.4	ug/L	19	Standard
	Se-1	77	177.3	15.8	**1.3339**	0.528	39.6	ug/L	89	Standard
>	**Ga**	71	37541.5	2.6				mg/L	25	Standard
	Rb	85	315715.5	2.9				ug/L	27	Standard
	Y	89	389763.7	1.6				ug/L	295132	Standard
>	**Rh**	103	23.3	75.3				ug/L	20	Standard
	Mo	98	1384.1	5.8	**0.8226**	0.046	5.6	ug/L	11	Standard
	Ag	107	625.0	5.5	**0.0880**	0.005	5.7	ug/L	64	Standard
	Cd	111	323.9	3.7	**0.1857**	0.006	3.1	mg/L	7	Standard
	Cd	114	844.1	10.1	**0.1863**	0.018	9.8	ug/L	10	Standard
>	**In**	115	477019.9	0.9				ug/L	418014	Standard
	Sn	118	530.0	20.9	**0.0220**	0.021	94.8	ug/L	385	Standard
	Sb	123	140.2	8.6	**0.0167**	0.003	16.2	ug/L	54	Standard
	Ba	135	302839.0	0.8	**130.7306**	1.732	1.3	ug/L	44	Standard
	Ce	140	1803276.5	1.0				ug/L	33	Standard
>	**Tb**	159	928896.7	1.6				ug/L	854905	Standard
	Ho	165	6969.9	5.0				ug/L	13	Standard
	Tl	203	1932.8	2.1	**0.2596**	0.007	2.7	ug/L	4	Standard
	Tl	205	1436.7	9.4	**0.2808**	0.027	9.6	ug/L	5	Standard
	Pb	206	140172.1	1.0	**29.9129**	0.194	0.6	ug/L	182	Standard
	Pb	207	113878.0	0.5	**26.9964**	0.125	0.5	ug/L	160	Standard
	Pb	208	449279.1	0.3	**29.1184**	0.122	0.4	ug/L	604	Standard
	U	238	8294.9	1.4	**1.5702**	0.031	2.0	ug/L	3	Standard
>	**Bi**	209	425140.5	0.7				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	103.3	12.2	**0.0841**	0.024	28.2	mg/L	47	Standard
K	39	75.0	13.3	**0.5513**	0.115	20.8	mg/L	22	Standard
Ca	43	40.0	45.1	**0.7988**	1.600	200.3	mg/L	28	Standard
Fe	54	20763.3	2.0	**37.0352**	1.000	2.7	mg/L	72	Standard
Fe	57	5956.2	3.7	**37.5018**	1.603	4.3	mg/L	703	Standard
Sc-1	45	39422.9	0.9				mg/L	30379	Standard
Cl	35	14552.3	1.1				ug/L	14530	Standard
Kr	83	3.0	33.3				ug/L	5	Standard
Br	81	1266.7	12.0				ug/L	497	Standard
P	31	13229.1	3.0				ug/L	10347	Standard
S	34	1320.1	2.1				ug/L	1535	Standard
Sr	88	191.7	17.0				ug/L	177	Standard
C	12	1383.4	15.7				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	150.0	20.0				mg/L	3	Standard
Dy	164	13282.8	5.9				mg/L	7	Standard
Ho-1	165	6969.9	5.0				mg/L	13	Standard
Er	166	6471.4	8.6				mg/L	3	Standard
I	127	50905.4	1.8				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.755	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.892	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.116
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.528
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1508067911
Sample Date/Time: Monday, August 24, 2015 19:02:36
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54290.5	3.2				ug/L	43934	Standard
	Be	9	295.0	11.9	**0.4052**	0.043	10.5	ug/L	0	Standard
	Al	27	115051.9	1.0	**1.3897**	0.032	2.3	ug/L	410	Standard
	Sc	45	34073.3	1.1				ug/L	30379	Standard
	Ti	47	1533.4	4.7	**6.6544**	0.278	4.2	ug/L	21	Standard
	V	51	44009.3	1.8	**9.2400**	0.096	1.0	ug/L	1362	Standard
	Cr	52	58128.7	2.0	**8.1874**	0.139	1.7	ug/L	8311	Standard
	Cr	53	6766.5	5.0	**8.3804**	0.379	4.5	ug/L	325	Standard
	Mn	55	1245804.1	2.0	**291.2497**	5.972	2.1	ug/L	694	Standard
	Co	59	8841.9	1.6	**2.0757**	0.015	0.7	ug/L	199	Standard
	Ni	60	5739.4	0.5	**3.3112**	0.029	0.9	ug/L	212	Standard
	Cu	65	8828.2	2.6	**5.4319**	0.172	3.2	ug/L	149	Standard
	Zn	66	21285.9	1.4	**22.9636**	0.131	0.6	ug/L	206	Standard
>	**Ge**	72	336633.4	0.9				ug/L	319179	Standard
	As	75	759.4	4.6	**0.9353**	0.036	3.8	ug/L	-51	Standard
	Se	82	73.4	11.7	**0.7346**	0.122	16.6	ug/L	19	Standard
	Se-1	77	122.0	11.3	**0.4307**	0.237	54.9	ug/L	89	Standard
>	**Ga**	71	5054.2	3.0				mg/L	25	Standard
	Rb	85	125025.5	1.5				ug/L	27	Standard
	Y	89	334255.7	1.6				ug/L	295132	Standard
>	**Rh**	103	20.0	66.1				ug/L	20	Standard
	Mo	98	251.6	7.2	**0.1396**	0.011	7.8	ug/L	11	Standard
	Ag	107	337.7	5.1	**0.0414**	0.003	7.2	ug/L	64	Standard
	Cd	111	125.4	2.1	**0.0671**	0.002	2.6	mg/L	7	Standard
	Cd	114	302.1	7.0	**0.0632**	0.005	8.1	ug/L	10	Standard
>	**In**	115	470492.8	0.3				ug/L	418014	Standard
	Sn	118	480.0	5.8	**0.0139**	0.005	36.9	ug/L	385	Standard
	Sb	123	206.6	9.0	**0.0321**	0.004	12.8	ug/L	54	Standard
	Ba	135	120436.4	0.2	**52.6938**	0.056	0.1	ug/L	44	Standard
	Ce	140	284294.4	1.4				ug/L	33	Standard
>	**Tb**	159	906139.3	0.3				ug/L	854905	Standard
	Ho	165	2020.1	8.7				ug/L	13	Standard
	Tl	203	667.7	0.9	**0.0916**	0.000	0.2	ug/L	4	Standard
	Tl	205	440.0	10.8	**0.0889**	0.010	11.5	ug/L	5	Standard
	Pb	206	73917.9	0.1	**16.0763**	0.130	0.8	ug/L	182	Standard
	Pb	207	60916.9	1.3	**14.7166**	0.067	0.5	ug/L	160	Standard
	Pb	208	237363.7	0.6	**15.6802**	0.127	0.8	ug/L	604	Standard
	U	238	3302.7	1.4	**0.6380**	0.013	2.1	ug/L	3	Standard
>	**Bi**	209	416491.0	0.9				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	60.0	30.0	**0.0190**	0.039	206.0	mg/L	47	Standard
K	39	35.0	14.3	**0.1780**	0.059	33.1	mg/L	22	Standard
Ca	43	26.7	28.6	**-0.0087**	0.822	9426.9	mg/L	28	Standard
Fe	54	3372.7	3.0	**6.7995**	0.148	2.2	mg/L	72	Standard
Fe	57	1631.8	5.0	**6.6492**	0.659	9.9	mg/L	703	Standard
Sc-1	45	34073.3	1.1				mg/L	30379	Standard
Cl	35	14445.6	1.4				ug/L	14530	Standard
Kr	83	4.3	53.3				ug/L	5	Standard
Br	81	920.0	9.7				ug/L	497	Standard
P	31	12275.0	5.2				ug/L	10347	Standard
S	34	1271.7	2.9				ug/L	1535	Standard
Sr	88	180.0	7.3				ug/L	177	Standard
C	12	686.7	6.1				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	170.0	46.7				mg/L	3	Standard
Dy	164	3369.6	4.3				mg/L	7	Standard
Ho-1	165	2020.1	8.7				mg/L	13	Standard
Er	166	1756.8	5.8				mg/L	3	Standard
I	127	35745.5	3.1				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		123.574	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		105.468	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	112.554
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	105.341
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508067912
Sample Date/Time: Monday, August 24, 2015 19:05:47
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53710.0	1.7				ug/L	43934	Standard
	Be	9	711.7	11.2	**0.9914**	0.105	10.6	ug/L	0	Standard
	Al	27	1411883.7	2.3	**17.3613**	0.358	2.1	ug/L	410	Standard
	Sc	45	45926.2	3.8				ug/L	30379	Standard
	Ti	47	18223.3	0.3	**79.6747**	0.366	0.5	ug/L	21	Standard
	V	51	286876.0	1.8	**61.4454**	0.895	1.5	ug/L	1362	Standard
	Cr	52	223221.2	1.5	**35.1861**	0.245	0.7	ug/L	8311	Standard
	Cr	53	27321.3	1.0	**35.2239**	0.177	0.5	ug/L	325	Standard
	Mn	55	2013288.9	0.8	**467.4131**	2.049	0.4	ug/L	694	Standard
	Co	59	58008.5	0.4	**13.8270**	0.155	1.1	ug/L	199	Standard
	Ni	60	24755.5	1.4	**14.7880**	0.147	1.0	ug/L	212	Standard
	Cu	65	59010.7	2.3	**36.6516**	0.557	1.5	ug/L	149	Standard
	Zn	66	51252.9	1.4	**55.6429**	0.400	0.7	ug/L	206	Standard
>	**Ge**	72	339062.3	0.8				ug/L	319179	Standard
	As	75	4294.2	1.9	**4.7719**	0.099	2.1	ug/L	-51	Standard
	Se	82	87.3	9.9	**0.9092**	0.110	12.1	ug/L	19	Standard
	Se-1	77	213.3	2.2	**2.1064**	0.093	4.4	ug/L	89	Standard
>	**Ga**	71	45797.5	2.8				mg/L	25	Standard
	Rb	85	184076.7	1.8				ug/L	27	Standard
	Y	89	673061.3	0.3				ug/L	295132	Standard
>	**Rh**	103	18.3	31.5				ug/L	20	Standard
	Mo	98	606.2	1.5	**0.3741**	0.006	1.7	ug/L	11	Standard
	Ag	107	399.0	11.9	**0.0547**	0.008	14.7	ug/L	64	Standard
	Cd	111	99.6	2.7	**0.0541**	0.002	3.1	mg/L	7	Standard
	Cd	114	234.5	6.8	**0.0500**	0.004	8.0	ug/L	10	Standard
>	**In**	115	449899.8	0.3				ug/L	418014	Standard
	Sn	118	515.0	4.9	**0.0248**	0.005	19.1	ug/L	385	Standard
	Sb	123	67.7	4.3	**0.0014**	0.001	46.9	ug/L	54	Standard
	Ba	135	204955.7	1.4	**93.7948**	1.001	1.1	ug/L	44	Standard
	Ce	140	5975762.4	1.1				ug/L	33	Standard
>	**Tb**	159	902673.0	1.8				ug/L	854905	Standard
	Ho	165	37065.3	1.7				ug/L	13	Standard
	Tl	203	1703.4	0.5	**0.2384**	0.003	1.4	ug/L	4	Standard
	Tl	205	1178.4	3.1	**0.2402**	0.009	3.5	ug/L	5	Standard
	Pb	206	149025.6	0.3	**33.1488**	0.554	1.7	ug/L	182	Standard
	Pb	207	122071.8	0.2	**30.1631**	0.380	1.3	ug/L	160	Standard
	Pb	208	477447.9	0.5	**32.2509**	0.283	0.9	ug/L	604	Standard
	U	238	9478.0	0.8	**1.8695**	0.026	1.4	ug/L	3	Standard
>	**Bi**	209	408007.8	1.3				ug/L	395375	Standard

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Na	23	3.3	86.6	**-2.9913**	11.339	379.1	mg/L	0	Standard
Mg	24	45.0	29.4	**-0.0398**	0.022	55.6	mg/L	47	Standard
K	39	110.0	22.7	**0.7554**	0.193	25.6	mg/L	22	Standard
Ca	43	25.0	40.0	**-0.8647**	0.711	82.2	mg/L	28	Standard
Fe	54	31546.0	0.6	**48.3943**	1.592	3.3	mg/L	72	Standard
Fe	57	8532.4	0.2	**47.9326**	2.151	4.5	mg/L	703	Standard
Sc-1	45	45926.2	3.8				mg/L	30379	Standard
Cl	35	13480.7	2.9				ug/L	14530	Standard
Kr	83	4.0	25.0				ug/L	5	Standard
Br	81	843.4	14.1				ug/L	497	Standard
P	31	13220.8	5.5				ug/L	10347	Standard
S	34	1455.1	13.6				ug/L	1535	Standard
Sr	88	206.7	9.8				ug/L	177	Standard
C	12	383.3	33.0				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	113.3	22.2				mg/L	3	Standard
Dy	164	56368.4	4.3				mg/L	7	Standard
Ho-1	165	37065.3	1.7				mg/L	13	Standard
Er	166	36176.6	5.7				mg/L	3	Standard
I	127	46650.2	5.7				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		122.253	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.229	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.628
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.195
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

Approved: August 25, 2015

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, August 24, 2015 19:09:00
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48862.0	2.3				ug/L	43934	Standard
	Be	9	31582.9	2.0	**48.4917**	1.581	3.3	ug/L	0	Standard
	Al	27	3406530.7	0.5	**46.0740**	0.875	1.9	ug/L	410	Standard
	Sc	45	30697.7	1.6				ug/L	30379	Standard
	Ti	47	22756.7	1.2	**104.9493**	0.834	0.8	ug/L	21	Standard
	V	51	233706.8	0.3	**52.7475**	0.606	1.1	ug/L	1362	Standard
	Cr	52	302379.0	1.0	**50.8677**	0.073	0.1	ug/L	8311	Standard
	Cr	53	37673.5	2.4	**51.4576**	0.777	1.5	ug/L	325	Standard
	Mn	55	220960.9	0.9	**53.9226**	0.450	0.8	ug/L	694	Standard
	Co	59	208657.4	1.1	**52.5995**	0.550	1.0	ug/L	199	Standard
	Ni	60	79574.4	1.3	**50.5685**	0.209	0.4	ug/L	212	Standard
	Cu	65	77313.1	1.6	**50.6794**	0.341	0.7	ug/L	149	Standard
	Zn	66	43903.5	1.0	**50.2144**	0.748	1.5	ug/L	206	Standard
>	**Ge**	72	321538.8	0.9				ug/L	319179	Standard
	As	75	42988.0	0.4	**49.3800**	0.236	0.5	ug/L	-51	Standard
	Se	82	3647.4	0.6	**50.1715**	0.300	0.6	ug/L	19	Standard
	Se-1	77	2688.9	2.3	**50.6498**	1.653	3.3	ug/L	89	Standard
>	**Ga**	71	46.7	27.0				mg/L	25	Standard
	Rb	85	793.4	5.4				ug/L	27	Standard
	Y	89	301878.0	1.3				ug/L	295132	Standard
>	**Rh**	103	36.7	15.7				ug/L	20	Standard
	Mo	98	147805.7	0.9	**95.6911**	1.112	1.2	ug/L	11	Standard
	Ag	107	269969.6	0.5	**47.5931**	1.212	2.5	ug/L	64	Standard
	Cd	111	78101.7	0.5	**50.3675**	0.779	1.5	mg/L	7	Standard
	Cd	114	204087.4	0.8	**50.0485**	1.386	2.8	ug/L	10	Standard
>	**In**	115	445720.9	2.1				ug/L	418014	Standard
	Sn	118	240449.8	1.2	**46.8683**	1.256	2.7	ug/L	385	Standard
	Sb	123	204812.3	0.6	**48.7916**	1.292	2.6	ug/L	54	Standard
	Ba	135	104066.5	0.6	**48.0768**	1.236	2.6	ug/L	44	Standard
	Ce	140	1910.1	44.9				ug/L	33	Standard
>	**Tb**	159	868397.7	0.3				ug/L	854905	Standard
	Ho	165	8.3	34.6				ug/L	13	Standard
	Tl	203	351165.3	0.6	**50.0145**	0.372	0.7	ug/L	4	Standard
	Tl	205	243293.2	1.9	**50.1688**	0.993	2.0	ug/L	5	Standard
	Pb	206	216573.9	0.6	**49.0685**	0.402	0.8	ug/L	182	Standard
	Pb	207	195019.7	0.3	**49.0914**	0.522	1.1	ug/L	160	Standard
	Pb	208	728597.8	1.6	**50.1328**	0.807	1.6	ug/L	604	Standard
	U	238	247739.8	1.1	**49.7542**	0.350	0.7	ug/L	3	Standard
>	**Bi**	209	400746.4	0.7				ug/L	395375	Standard

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Na	23	1.7	173.2	**0.4209**	16.721	3972.3	mg/L	0	Standard
Mg	24	1996.8	7.0	**4.7959**	0.300	6.3	mg/L	47	Standard
K	39	318.3	21.3	**4.1629**	1.012	24.3	mg/L	22	Standard
Ca	43	68.3	33.8	**5.0712**	2.648	52.2	mg/L	28	Standard
Fe	54	2392.4	4.1	**5.3131**	0.230	4.3	mg/L	72	Standard
Fe	57	1356.7	5.9	**5.5409**	0.602	10.9	mg/L	703	Standard
> **Sc-1**	45	30697.7	1.6				mg/L	30379	Standard
Cl	35	14502.3	1.8				ug/L	14530	Standard
Kr	83	2.3	24.7				ug/L	5	Standard
Br	81	606.7	6.7				ug/L	497	Standard
P	31	12648.6	1.4				ug/L	10347	Standard
S	34	1705.1	4.4				ug/L	1535	Standard
Sr	88	198.3	6.3				ug/L	177	Standard
C	12	166.7	18.3				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	15.7	36.8				mg/L	7	Standard
Ho-1	165	8.3	34.6				mg/L	13	Standard
Er	166	20.0	0.0				mg/L	3	Standard
I	127	1630.1	29.3				mg/L	1945	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	96.983		
	Al	27	92.148		
	Sc	45			
	Ti	47	104.949		
	V	51	105.495		
	Cr	52	101.735		
	Cr	53			
	Mn	55	107.845		
	Co	59	105.199		
	Ni	60	101.137		
	Cu	65	101.359		
	Zn	66	100.429		
>	Ge	72		100.739	
	As	75	98.760		
	Se	82	100.343		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	95.691		
Ag	107	95.186		
Cd	111	100.735		
Cd	114			
In	115			106.628
Sn	118	93.737		
Sb	123	97.583		
Ba	135	96.154		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.029		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.266		
U	238	99.508		
Bi	209			101.359
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, August 24, 2015 19:12:12
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49836.9	2.8				ug/L	43934	Standard
	Be	9	11.7	65.5	**0.0155**	0.011	73.0	ug/L	0	Standard
	Al	27	865.0	12.1	**0.0000**	0.001	3442.2	ug/L	410	Standard
	Sc	45	31998.8	1.5				ug/L	30379	Standard
	Ti	47	22.3	18.6	**-0.0043**	0.020	469.1	ug/L	21	Standard
	V	51	1165.0	6.8	**-0.0399**	0.020	49.6	ug/L	1362	Standard
	Cr	52	6894.9	1.4	**-0.2373**	0.026	11.0	ug/L	8311	Standard
	Cr	53	300.0	7.3	**-0.1305**	0.035	26.8	ug/L	325	Standard
	Mn	55	1069.7	9.2	**0.0622**	0.026	41.9	ug/L	694	Standard
	Co	59	238.7	11.0	**0.0040**	0.007	182.5	ug/L	199	Standard
	Ni	60	167.3	14.1	**-0.0805**	0.013	16.7	ug/L	212	Standard
	Cu	65	165.3	7.3	**-0.0012**	0.009	753.5	ug/L	149	Standard
	Zn	66	259.7	3.1	**-0.2411**	0.007	2.8	ug/L	206	Standard
>	**Ge**	72	326424.8	1.3				ug/L	319179	Standard
	As	75	-33.4	126.3	**0.0658**	0.048	72.7	ug/L	-51	Standard
	Se	82	30.2	26.5	**0.1750**	0.104	59.7	ug/L	19	Standard
	Se-1	77	101.3	21.4	**0.1080**	0.434	402.0	ug/L	89	Standard
>	**Ga**	71	33.3	31.2				mg/L	25	Standard
	Rb	85	103.3	7.4				ug/L	27	Standard
	Y	89	303489.9	1.6				ug/L	295132	Standard
>	**Rh**	103	20.0	25.0				ug/L	20	Standard
	Mo	98	65.9	33.2	**0.0274**	0.014	51.1	ug/L	11	Standard
	Ag	107	97.7	5.8	**0.0020**	0.001	49.0	ug/L	64	Standard
	Cd	111	11.5	26.3	**-0.0022**	0.002	87.5	mg/L	7	Standard
	Cd	114	41.5	28.1	**0.0030**	0.003	94.2	ug/L	10	Standard
>	**In**	115	452172.2	0.4				ug/L	418014	Standard
	Sn	118	2803.6	3.4	**0.4645**	0.017	3.6	ug/L	385	Standard
	Sb	123	783.4	13.0	**0.1694**	0.024	14.0	ug/L	54	Standard
	Ba	135	101.7	22.3	**0.0216**	0.010	48.1	ug/L	44	Standard
	Ce	140	653.3	26.0				ug/L	33	Standard
>	**Tb**	159	869792.5	1.0				ug/L	854905	Standard
	Ho	165	10.0					ug/L	13	Standard
	Tl	203	45.3	28.4	**0.0064**	0.002	27.9	ug/L	4	Standard
	Tl	205	21.7	13.3	**0.0059**	0.001	9.5	ug/L	5	Standard
	Pb	206	244.0	8.9	**-0.0028**	0.005	189.6	ug/L	182	Standard
	Pb	207	210.3	10.2	**-0.0010**	0.005	499.2	ug/L	160	Standard
	Pb	208	790.7	6.6	**0.0024**	0.004	165.6	ug/L	604	Standard
	U	238	29.7	24.4	**0.0055**	0.001	26.5	ug/L	3	Standard
>	**Bi**	209	410078.5	0.8				ug/L	395375	Standard

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Na	23	1.7	173.2	**0.5070**	16.571	3268.2	mg/L	0	Standard
Mg	24	46.7	32.7	**-0.0040**	0.035	867.3	mg/L	47	Standard
K	39	6.7	86.6	**-0.1696**	0.077	45.4	mg/L	22	Standard
Ca	43	23.3	61.9	**-0.2116**	1.559	736.8	mg/L	28	Standard
Fe	54	64.0	38.9	**-0.0546**	0.054	99.6	mg/L	72	Standard
Fe	57	853.4	4.7	**0.3068**	0.393	128.1	mg/L	703	Standard
> **Sc-1**	45	31998.8	1.5				mg/L	30379	Standard
Cl	35	14896.0	0.5				ug/L	14530	Standard
Kr	83	5.7	44.4				ug/L	5	Standard
Br	81	640.0	23.0				ug/L	497	Standard
P	31	12877.1	4.5				ug/L	10347	Standard
S	34	1720.1	3.4				ug/L	1535	Standard
Sr	88	176.7	23.1				ug/L	177	Standard
C	12	176.7	27.9				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	39.2	0.7				mg/L	7	Standard
Ho-1	165	10.0					mg/L	13	Standard
Er	166	16.7	34.6				mg/L	3	Standard
I	127	1578.4	12.0				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.270	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.172
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.719
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sn	118	

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Method 6020 - Summary Report

Sample ID: L1508067913
Sample Date/Time: Monday, August 24, 2015 19:15:24
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53740.2	2.7				ug/L	43934	Standard
	Be	9	333.3	8.3	**0.4628**	0.027	5.9	ug/L	0	Standard
	Al	27	183199.3	1.1	**2.2429**	0.088	3.9	ug/L	410	Standard
	Sc	45	35661.9	0.8				ug/L	30379	Standard
	Ti	47	3528.4	3.0	**15.1397**	0.293	1.9	ug/L	21	Standard
	V	51	80085.3	0.9	**16.7163**	0.244	1.5	ug/L	1362	Standard
	Cr	52	77251.5	1.5	**11.0910**	0.126	1.1	ug/L	8311	Standard
	Cr	53	8869.3	1.5	**10.9237**	0.313	2.9	ug/L	325	Standard
	Mn	55	747586.3	2.2	**171.1839**	1.391	0.8	ug/L	694	Standard
	Co	59	8704.5	4.4	**2.0001**	0.059	2.9	ug/L	199	Standard
	Ni	60	6012.2	1.6	**3.4040**	0.003	0.1	ug/L	212	Standard
	Cu	65	9139.1	1.4	**5.5118**	0.049	0.9	ug/L	149	Standard
	Zn	66	13455.0	2.1	**14.0237**	0.386	2.8	ug/L	206	Standard
>	**Ge**	72	343501.4	1.5				ug/L	319179	Standard
	As	75	1579.6	2.7	**1.7986**	0.025	1.4	ug/L	-51	Standard
	Se	82	74.0	3.9	**0.7227**	0.045	6.2	ug/L	19	Standard
	Se-1	77	146.3	5.3	**0.8320**	0.161	19.3	ug/L	89	Standard
>	**Ga**	71	6032.9	4.8				mg/L	25	Standard
	Rb	85	117557.7	1.3				ug/L	27	Standard
	Y	89	386357.6	1.0				ug/L	295132	Standard
>	**Rh**	103	36.7	34.3				ug/L	20	Standard
	Mo	98	389.6	4.7	**0.2253**	0.010	4.4	ug/L	11	Standard
	Ag	107	390.0	8.1	**0.0504**	0.005	9.3	ug/L	64	Standard
	Cd	111	160.3	9.0	**0.0889**	0.008	9.0	mg/L	7	Standard
	Cd	114	399.0	3.2	**0.0861**	0.004	5.0	ug/L	10	Standard
>	**In**	115	468405.3	1.3				ug/L	418014	Standard
	Sn	118	533.3	14.3	**0.0243**	0.015	62.0	ug/L	385	Standard
	Sb	123	459.7	6.1	**0.0896**	0.005	5.9	ug/L	54	Standard
	Ba	135	163832.0	0.2	**72.0182**	1.084	1.5	ug/L	44	Standard
	Ce	140	1178632.0	1.4				ug/L	33	Standard
>	**Tb**	159	913688.4	2.3				ug/L	854905	Standard
	Ho	165	6641.5	5.4				ug/L	13	Standard
	Tl	203	745.0	2.0	**0.1008**	0.002	1.5	ug/L	4	Standard
	Tl	205	510.0	6.4	**0.1013**	0.006	6.0	ug/L	5	Standard
	Pb	206	89607.6	1.3	**19.2369**	0.231	1.2	ug/L	182	Standard
	Pb	207	73699.5	0.9	**17.5763**	0.196	1.1	ug/L	160	Standard
	Pb	208	288031.8	0.5	**18.7812**	0.131	0.7	ug/L	604	Standard
	U	238	5793.4	1.9	**1.1041**	0.015	1.4	ug/L	3	Standard
>	**Bi**	209	422167.8	0.6				ug/L	395375	Standard

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Na	23	1.7	173.2	**1.6623**	14.570	876.5	mg/L	0	Standard
Mg	24	53.3	14.3	**-0.0010**	0.015	1596.3	mg/L	47	Standard
K	39	36.7	43.8	**0.1780**	0.189	106.1	mg/L	22	Standard
Ca	43	16.7	17.3	**-1.1257**	0.281	24.9	mg/L	28	Standard
Fe	54	5111.8	0.5	**9.9360**	0.119	1.2	mg/L	72	Standard
Fe	57	1995.1	4.3	**9.0616**	0.810	8.9	mg/L	703	Standard
> **Sc-1**	45	35661.9	0.8				mg/L	30379	Standard
Cl	35	14428.2	0.8				ug/L	14530	Standard
Kr	83	5.3	39.0				ug/L	5	Standard
Br	81	970.0	16.6				ug/L	497	Standard
P	31	12775.4	2.8				ug/L	10347	Standard
S	34	1366.7	3.4				ug/L	1535	Standard
Sr	88	208.3	13.6				ug/L	177	Standard
C	12	810.0	18.3				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	123.3	23.4				mg/L	3	Standard
Dy	164	10269.8	3.3				mg/L	7	Standard
Ho-1	165	6641.5	5.4				mg/L	13	Standard
Er	166	5717.7	8.0				mg/L	3	Standard
I	127	64291.3	4.2				mg/L	1945	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		122.321	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		107.620	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.055
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.777
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, August 24, 2015 19:18:37
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	48721.6	2.1				ug/L	43934	Standard
	Be	9	32700.3	3.2	**50.3364**	1.423	2.8	ug/L	0	Standard
	Al	27	3448746.6	2.3	**46.7679**	0.640	1.4	ug/L	410	Standard
	Sc	45	32095.6	2.3				ug/L	30379	Standard
	Ti	47	22912.0	0.7	**105.0820**	0.553	0.5	ug/L	21	Standard
	V	51	233408.8	1.1	**52.3848**	0.639	1.2	ug/L	1362	Standard
	Cr	52	305496.2	0.9	**51.1149**	0.242	0.5	ug/L	8311	Standard
	Cr	53	38331.8	1.3	**52.0779**	0.497	1.0	ug/L	325	Standard
	Mn	55	222236.4	0.8	**53.9328**	0.245	0.5	ug/L	694	Standard
	Co	59	209002.7	0.7	**52.3958**	0.534	1.0	ug/L	199	Standard
	Ni	60	81569.3	0.7	**51.5608**	1.004	1.9	ug/L	212	Standard
	Cu	65	78123.3	1.7	**50.9285**	0.608	1.2	ug/L	149	Standard
	Zn	66	43892.5	1.5	**49.9160**	0.432	0.9	ug/L	206	Standard
>	Ge	72	323336.6	1.2				ug/L	319179	Standard
	As	75	43362.5	0.9	**49.5349**	0.603	1.2	ug/L	-51	Standard
	Se	82	3653.9	0.3	**49.9832**	0.616	1.2	ug/L	19	Standard
	Se-1	77	2617.9	1.2	**48.9711**	0.345	0.7	ug/L	89	Standard
>	Ga	71	53.3	10.8				mg/L	25	Standard
	Rb	85	701.7	11.3				ug/L	27	Standard
	Y	89	305132.3	1.5				ug/L	295132	Standard
>	Rh	103	28.3	10.2				ug/L	20	Standard
	Mo	98	147467.2	1.5	**96.5514**	0.641	0.7	ug/L	11	Standard
	Ag	107	268675.6	0.2	**47.8964**	0.567	1.2	ug/L	64	Standard
	Cd	111	77415.3	1.4	**50.4922**	0.956	1.9	mg/L	7	Standard
	Cd	114	204317.1	2.3	**50.6590**	0.787	1.6	ug/L	10	Standard
>	In	115	440654.5	1.0				ug/L	418014	Standard
	Sn	118	235306.5	0.5	**46.3786**	0.245	0.5	ug/L	385	Standard
	Sb	123	204494.0	0.8	**49.2617**	0.686	1.4	ug/L	54	Standard
	Ba	135	104156.1	1.3	**48.6567**	0.685	1.4	ug/L	44	Standard
	Ce	140	676.7	43.7				ug/L	33	Standard
>	Tb	159	866485.0	0.7				ug/L	854905	Standard
	Ho	165	10.0	50.0				ug/L	13	Standard
	Tl	203	348437.6	1.0	**49.5918**	0.265	0.5	ug/L	4	Standard
	Tl	205	242678.3	1.5	**50.0118**	1.032	2.1	ug/L	5	Standard
	Pb	206	216779.8	0.3	**49.0823**	0.176	0.4	ug/L	182	Standard
	Pb	207	194336.7	0.8	**48.8845**	0.092	0.2	ug/L	160	Standard
	Pb	208	724396.2	1.2	**49.8092**	0.419	0.8	ug/L	604	Standard
	U	238	245544.3	0.2	**49.2824**	0.286	0.6	ug/L	3	Standard
>	Bi	209	401008.5	0.6				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	2146.8	5.7	**4.9340**	0.188	3.8	mg/L	47	Standard
K	39	330.0	18.9	**4.1041**	0.722	17.6	mg/L	22	Standard
Ca	43	61.7	16.9	**4.0157**	1.272	31.7	mg/L	28	Standard
Fe	54	2316.5	2.7	**4.9053**	0.081	1.6	mg/L	72	Standard
Fe	57	1378.4	3.8	**5.1702**	0.276	5.3	mg/L	703	Standard
> **Sc-1**	45	32095.6	2.3				mg/L	30379	Standard
Cl	35	14455.6	1.5				ug/L	14530	Standard
Kr	83	4.3	74.2				ug/L	5	Standard
Br	81	593.3	21.1				ug/L	497	Standard
P	31	12129.9	1.6				ug/L	10347	Standard
S	34	1580.1	6.7				ug/L	1535	Standard
Sr	88	176.7	27.9				ug/L	177	Standard
C	12	140.0	32.7				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	9.2	119.1				mg/L	7	Standard
Ho-1	165	10.0	50.0				mg/L	13	Standard
Er	166	16.7	124.9				mg/L	3	Standard
I	127	1421.7	24.2				mg/L	1945	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	100.673		
	Al	27	93.536		
	Sc	45			
	Ti	47	105.082		
	V	51	104.770		
	Cr	52	102.230		
	Cr	53			
	Mn	55	107.866		
	Co	59	104.792		
	Ni	60	103.122		
	Cu	65	101.857		
	Zn	66	99.832		
>	Ge	72		101.302	
	As	75	99.070		
	Se	82	99.966		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	96.551		
Ag	107	95.793		
Cd	111	100.984		
Cd	114			
> In	115			105.416
Sn	118	92.757		
Sb	123	98.523		
Ba	135	97.313		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.184		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.618		
U	238	98.565		
> Bi	209			101.425
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, August 24, 2015 19:21:49
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49689.7	3.1				ug/L	43934	Standard
	Be	9	15.0	57.7	**0.0204**	0.012	59.7	ug/L	0	Standard
	Al	27	773.4	14.2	**-0.0011**	0.002	155.2	ug/L	410	Standard
	Sc	45	31883.5	3.7				ug/L	30379	Standard
	Ti	47	23.7	6.5	**0.0019**	0.007	377.3	ug/L	21	Standard
	V	51	1182.1	3.5	**-0.0353**	0.010	27.7	ug/L	1362	Standard
	Cr	52	7197.7	3.8	**-0.1821**	0.044	24.1	ug/L	8311	Standard
	Cr	53	366.7	19.6	**-0.0387**	0.097	252.0	ug/L	325	Standard
	Mn	55	914.7	5.7	**0.0254**	0.013	52.0	ug/L	694	Standard
	Co	59	230.0	7.9	**0.0020**	0.005	235.1	ug/L	199	Standard
	Ni	60	179.0	7.9	**-0.0727**	0.009	11.9	ug/L	212	Standard
	Cu	65	147.3	2.0	**-0.0126**	0.002	14.5	ug/L	149	Standard
	Zn	66	246.3	2.6	**-0.2553**	0.008	3.1	ug/L	206	Standard
>	**Ge**	72	325398.4	0.2				ug/L	319179	Standard
	As	75	-50.2	23.0	**0.0470**	0.013	27.8	ug/L	-51	Standard
	Se	82	25.6	35.3	**0.1143**	0.124	108.4	ug/L	19	Standard
	Se-1	77	88.3	10.7	**-0.1386**	0.186	133.9	ug/L	89	Standard
>	**Ga**	71	25.0	20.0				mg/L	25	Standard
	Rb	85	50.0	34.6				ug/L	27	Standard
	Y	89	302967.7	1.2				ug/L	295132	Standard
>	**Rh**	103	16.7	105.4				ug/L	20	Standard
	Mo	98	72.1	19.2	**0.0317**	0.010	31.5	ug/L	11	Standard
	Ag	107	107.0	16.2	**0.0038**	0.004	93.5	ug/L	64	Standard
	Cd	111	13.8	40.2	**-0.0007**	0.004	548.9	mg/L	7	Standard
	Cd	114	43.1	44.8	**0.0035**	0.005	138.7	ug/L	10	Standard
>	**In**	115	450494.1	2.9				ug/L	418014	Standard
	Sn	118	2926.9	1.3	**0.4907**	0.018	3.6	ug/L	385	Standard
	Sb	123	761.4	8.2	**0.1652**	0.019	11.5	ug/L	54	Standard
	Ba	135	82.7	5.5	**0.0131**	0.002	17.2	ug/L	44	Standard
	Ce	140	278.3	7.3				ug/L	33	Standard
>	**Tb**	159	868538.7	0.2				ug/L	854905	Standard
	Ho	165	6.7	86.6				ug/L	13	Standard
	Tl	203	35.7	18.7	**0.0051**	0.001	19.1	ug/L	4	Standard
	Tl	205	26.7	28.6	**0.0069**	0.002	22.7	ug/L	5	Standard
	Pb	206	236.0	6.5	**-0.0045**	0.004	87.3	ug/L	182	Standard
	Pb	207	190.7	8.4	**-0.0058**	0.004	75.3	ug/L	160	Standard
	Pb	208	760.0	4.1	**0.0004**	0.002	572.0	ug/L	604	Standard
	U	238	32.0	24.4	**0.0060**	0.002	26.2	ug/L	3	Standard
>	**Bi**	209	409463.7	1.0				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	60.0	28.9	**0.0288**	0.044	152.4	mg/L	47	Standard
K	39	11.7	107.9	**-0.1021**	0.172	168.8	mg/L	22	Standard
Ca	43	23.3	81.1	**-0.1587**	2.167	1365.1	mg/L	28	Standard
Fe	54	76.1	16.8	**-0.0270**	0.030	112.5	mg/L	72	Standard
Fe	57	808.4	11.7	**-0.0842**	0.904	1073.6	mg/L	703	Standard
> **Sc-1**	45	31883.5	3.7				mg/L	30379	Standard
Cl	35	14416.2	1.0				ug/L	14530	Standard
Kr	83	5.0	34.6				ug/L	5	Standard
Br	81	593.3	7.6				ug/L	497	Standard
P	31	12345.0	2.6				ug/L	10347	Standard
S	34	1646.8	3.4				ug/L	1535	Standard
Sr	88	185.0	16.2				ug/L	177	Standard
C	12	156.7	37.4				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	2.5	239.4				mg/L	7	Standard
Ho-1	165	6.7	86.6				mg/L	13	Standard
Er	166	16.7	69.3				mg/L	3	Standard
I	127	1546.7	1.8				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.948	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.770
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.563
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sn	118	

Sample ID: QC Std 7
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2.4 General Chemistry Data

2.4.1 Method 9056

2.4.1.1 Summary Data

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-01	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW18-081715	**Prep Method:**	9056	**Prep Date:**	08/18/2015 13:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG535546	**Analyst:**	ALS	**Run Date:**	08/18/2015 19:09
Collect Date:	08/17/2015 08:30	**Dilution:**	5	**File ID:**	I2_081815-18
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1060	J	2.00	1.00	0.500
Nitrate	14797-55-8	1.00	U	2.00	1.00	0.500
Nitrite	14797-65-0	1.00	U	2.00	1.00	0.500
Sulfate	14808-79-8	156		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-01	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW18-081715	**Prep Method:**	9056	**Prep Date:**	08/18/2015 13:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG535546	**Analyst:**	ALS	**Run Date:**	08/18/2015 19:27
Collect Date:	08/17/2015 08:30	**Dilution:**	50	**File ID:**	I2_081815-19
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	806		20.0	10.0	5.00
Nitrate	14797-55-8	10.0	U	20.0	10.0	5.00
Nitrite	14797-65-0	10.0	U	20.0	10.0	5.00
Sulfate	14808-79-8	117		100	50.0	25.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-03	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW24-081715	**Prep Method:**	9056	**Prep Date:**	08/18/2015 13:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG535546	**Analyst:**	ALS	**Run Date:**	08/18/2015 19:46
Collect Date:	08/17/2015 09:55	**Dilution:**	2	**File ID:**	I2_081815-20
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	538	J	0.800	0.400	0.200
Nitrate	14797-55-8	0.400	U	0.800	0.400	0.200
Nitrite	14797-65-0	0.400	U	0.800	0.400	0.200
Sulfate	14808-79-8	101		4.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-03	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW24-081715	**Prep Method:**	9056	**Prep Date:**	08/18/2015 13:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG535546	**Analyst:**	ALS	**Run Date:**	08/18/2015 20:04
Collect Date:	08/17/2015 09:55	**Dilution:**	20	**File ID:**	I2_081815-21
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	427		8.00	4.00	2.00
Nitrate	14797-55-8	4.00	U	8.00	4.00	2.00
Nitrite	14797-65-0	4.00	U	8.00	4.00	2.00
Sulfate	14808-79-8	96.0		40.0	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-05	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW23-081715	**Prep Method:**	9056	**Prep Date:**	08/18/2015 13:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG535546	**Analyst:**	ALS	**Run Date:**	08/18/2015 20:22
Collect Date:	08/17/2015 11:20	**Dilution:**	10	**File ID:**	I2_081815-22
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	2780	J	4.00	2.00	1.00
Nitrate	14797-55-8	2.00	U	4.00	2.00	1.00
Nitrite	14797-65-0	2.00	U	4.00	2.00	1.00
Sulfate	14808-79-8	78.6		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-05	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW23-081715	**Prep Method:**	9056	**Prep Date:**	08/18/2015 13:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG535546	**Analyst:**	ALS	**Run Date:**	08/18/2015 20:40
Collect Date:	08/17/2015 11:20	**Dilution:**	100	**File ID:**	I2_081815-23
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	2070		40.0	20.0	10.0
Nitrate	14797-55-8	20.0	U	40.0	20.0	10.0
Nitrite	14797-65-0	20.0	U	40.0	20.0	10.0
Sulfate	14808-79-8	77.0	J	200	100	50.0

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-07	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW08-081715	**Prep Method:**	9056	**Prep Date:**	08/18/2015 13:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG535546	**Analyst:**	ALS	**Run Date:**	08/18/2015 20:58
Collect Date:	08/17/2015 14:50	**Dilution:**	5	**File ID:**	I2_081815-24
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	480	J	2.00	1.00	0.500
Nitrate	14797-55-8	1.00	U	2.00	1.00	0.500
Nitrite	14797-65-0	1.00	U	2.00	1.00	0.500
Sulfate	14808-79-8	313		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-07	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW08-081715	**Prep Method:**	9056	**Prep Date:**	08/18/2015 13:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG535546	**Analyst:**	ALS	**Run Date:**	08/18/2015 21:17
Collect Date:	08/17/2015 14:50	**Dilution:**	20	**File ID:**	I2_081815-25
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	408		8.00	4.00	2.00
Nitrate	14797-55-8	4.00	U	8.00	4.00	2.00
Nitrite	14797-65-0	4.00	U	8.00	4.00	2.00
Sulfate	14808-79-8	290		40.0	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.4.1.2 QC Summary Data

Example Calculations - Ion Chromatography

A. Methods 9056/300.0 (Quadratic with Offset)

1. Retrieve Curve Data from the ICAL Curve

c2 = the value of curve constant
c1= the curve slope
c0 = the curve offset

2. Obtain the area, y , from the instrument raw data

3. Calculate the concentration of the analyte, f(y), where:

$$f(y) = \frac{1}{2 * c_2} * \left(-c_1 \pm \sqrt{c_1^2 - 4 * c_2 * (c_0 - y)}\right)$$

Example Calculation:

Value of constant, c2, (curve):	0.0003
Value of curve constant, c1, (slope):	0.0869
Value of curve constant, c0, (offset):	-0.0103
Area of target analyte, y, (uS*min):	2.993
Calculated concentration, f(y), (mg/L):	31.1998864
or:	-40.1161215 *
Dilution factor (D):	1.00
Concentration of analyte in sample (mg/L):	31.200

* There are two possible solutions, but only one is valid.

B. Method 314.0 - Perchlorate (Linear)

Retrieve Curve Data from Linear Plot

c1 = the curve slope

Obtain the area, y , from the quantitation report

Calculate the concentration of the analyte, f(y), where:

f (y) = y / c1

Example Calculation:

Value of c1, slope:	0.0034
Area of target analyte, y:	0.083
Calculated concentration:	24.4117647
Dilution Factor:	1
Concentration in sample:	24.4117647

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC2 Dataset: 080315 ICAL IC2.SEQ
Analyst1: AED Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 17

Maintenance Log ID: 53330 Syringe Filter Lot#: 00195722
Eluent ID#: RGT34279
Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
Workgroups:

Internal STD: NA Surrogate STD: NA Calibration STD STD69215 (02/17/15)
CCV STD: STD69215 LCS STD: STD69216 MS/MSD STD: STD69216

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I2_080315-01	ELUENT	1	1		08/03/15 14:06
2	I2_080315-02	DI WATER	1	1		08/03/15 14:25
3	I2_080315-03	WG533569-01 STD \#6	1	1		08/03/15 14:43
4	I2_080315-04	WG533569-02 STD \#5	1	1		08/03/15 15:01
5	I2_080315-05	WG533569-03 STD \#4	1	1		08/03/15 15:19
6	I2_080315-06	WG533569-04 STD \#3	1	1		08/03/15 15:37
7	I2_080315-07	WG533569-05 STD \#2	1	1		08/03/15 15:56
8	I2_080315-08	WG533569-06 STD \#1	1	1		08/03/15 16:14
9	I2_080315-09	WG533569-07 SSCV	1	1		08/03/15 16:32
10	I2_080315-10	LCRV Level \#6	1	1		08/03/15 16:50
11	I2_080315-11	LCRV Level \#2	1	1		08/03/15 17:08
12	I2_080315-12	LCRV Eluent Blank	1	1		08/03/15 17:27
13	I2_080315-13	END	1	1		08/03/15 17:45

Comments

Seq.	Rerun	Dil.	Reason	Analytes

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC2 Dataset: 081815 IC2.SEQ
Analyst1: ALS Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 17

Maintenance Log ID: 53359 Syringe Filter Lot#: 00198584
Eluent ID#: RGT34503
Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
Workgroups: WG535546
Internal STD: NA Surrogate STD: NA Calibration STD STD71545 (08/03/15)
CCV STD: STD71545 LCS STD: STD71546 MS/MSD STD: STD71546

Comments: Fractions L15080904-01,03,05,07 were analyzed at dilutions due to CL and/or SO4 exceeding 200ppm.

Fractions L15080841,L15080842, and L15080844 were analyzed at a dilution to high CL results and strong precipitation reaction.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I2_081815-01	ELUENT	1	1		08/18/15 13:59
2	I2_081815-02	DI WATER	1	1		08/18/15 14:18
3	I2_081815-03	WG535580-01 ANION CCV	1	1		08/18/15 14:36
4	I2_081815-04	WG535580-02 ANION CCB	1	1		08/18/15 14:54
5	I2_081815-05	WG535546-01 ANION BLANK	1	1		08/18/15 15:12
6	I2_081815-06	WG535546-02 ANION LCS	1	1		08/18/15 15:31
7	I2_081815-07	WG535315 FLUID BLANK	1	1		08/18/15 15:49
8	I2_081815-08	L15080671-04 (F,CL,SO4)	18	1		08/18/15 16:07
9	I2_081815-09	L15080671-04 1/3 (F,CL,SO4)	18	3		08/18/15 16:25
10	I2_081815-10	L15080901-01 (CL,NO3,SO4) REF	1	1		08/18/15 16:43
11	I2_081815-11	WG535546-04 DUP 0901-01	1	1		08/18/15 17:02
12	I2_081815-12	L15080901-02 (CL,NO3,SO4) MS	1	1		08/18/15 17:20
13	I2_081815-13	L15080901-03 (CL,NO3,SO4) MSD	1	1		08/18/15 17:38
14	I2_081815-14	L15080901-04 (CL,NO3,SO4)	1	1		08/18/15 17:56
15	I2_081815-15	WG535580-03 ANION CCV	1	1		08/18/15 18:14
16	I2_081815-16	WG535580-04 ANION CCB	1	1		08/18/15 18:33
17	I2_081815-17	L15080901-05 (CL,NO3,SO4)	1	1		08/18/15 18:51
18	I2_081815-18	L15080904-01 1/5 (CL,NO2,NO3,SO4)	1	5		08/18/15 19:09
19	I2_081815-19	L15080904-01 1/50 (CL,NO2,NO3,SO4)	1	50		08/18/15 19:27
20	I2_081815-20	L15080904-03 1/2 (CL,NO2,NO3,SO4)	1	2		08/18/15 19:46
21	I2_081815-21	L15080904-03 1/20 (CL,NO2,NO3,SO4)	1	20		08/18/15 20:04
22	I2_081815-22	L15080904-05 1/10 (CL,NO2,NO3,SO4)	1	10		08/18/15 20:22
23	I2_081815-23	L15080904-05 1/100 (CL,NO2,NO3,SO4)	1	100		08/18/15 20:40
24	I2_081815-24	L15080904-07 1/5 (CL,NO2,NO3,SO4)	1	5		08/18/15 20:58
25	I2_081815-25	L15080904-07 1/20 (CL,NO2,NO3,SO4)	1	20		08/18/15 21:17
26	I2_081815-26	L15080790-03 1/2 CL	1	2		08/18/15 21:35
27	I2_081815-27	WG535580-05 ANION CCV	1	1		08/18/15 21:53
28	I2_081815-28	WG535580-06 ANION CCB	1	1		08/18/15 22:11
29	I2_081815-29	L15080841-02 1/10,000 (CL,BR,SO4)	1	10000		08/18/15 22:30
30	I2_081815-30	L15080842-01 1/10,000 (CL,BR,SO4)	1	10000		08/18/15 22:48
31	I2_081815-31	L15080844-01 1/10,000 (CL,BR,SO4)	1	10000		08/18/15 23:06
32	I2_081815-32	WG535580-07 ANION CCV	1	1		08/18/15 23:24

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC2 Dataset: 081815 IC2.SEQ

Analyst1: ALS Analyst2: NA

Method: 300/9056 SOP: IC01 Rev: 17

Maintenance Log ID: 53359 Syringe Filter Lot#: 00198584

Eluent ID#: RGT34503

Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM

Workgroups: WG535546

Internal STD: NA Surrogate STD: NA STD71545 (08/03/15)

CCV STD: STD71545 LCS STD: STD71546 STD71546

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
33	I2_081815-33	WG535580-08 ANION CCB	1	1		08/18/15 23:42
34	I2_081815-34	END	1	1		08/19/15 00:01

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 2 Approved: 19-AUG-15

Microbac Laboratories Inc.

Data Checklist

Date: 03-AUG-2015
Analyst: AED
Analyst: NA
Method: 9056/300
Instrument: IC2
Curve Workgroup: NA
Runlog ID: 69606
Analytical Workgroups: WG533569 IC2 ICAL

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	NA
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	NA
Recoveries	NA
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	NA
TCL hits	NA
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	NA
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	AED
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
04-AUG-2015

Secondary Reviewer:
19-AUG-2015

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-19-2015 11:38:56

Microbac Laboratories Inc.

Data Checklist

Date: 18-AUG-2015
Analyst: ALS
Analyst: NA
Method: 9056/300
Instrument: IC2
Curve Workgroup: NA
Runlog ID: 69897
Analytical Workgroups: 08-0671,0790,0841,0842,0844,0901,0904

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	X
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	X
Check for completeness	X
Primary Reviewer	ALS
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 19-AUG-2015

Secondary Reviewer: 19-AUG-2015

CHECKLIST1 - Modified 03/05/2008

Generated: AUG-19-2015 12:02:07

Microbac Laboratories Inc.

00645414

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 9056 AAB#: WG535546

Login Number: L15080904

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW18-081715	01	08/17/15					08/18/2015	1.2	2		08/18/15	1.5	2	
50WW18-081715	01	08/17/15					08/18/2015	1.2	2		08/18/15	1.4	2	
50WW24-081715	03	08/17/15					08/18/2015	1.1	2		08/18/15	1.4	2	
50WW24-081715	03	08/17/15					08/18/2015	1.1	2		08/18/15	1.4	2	
50WW23-081715	05	08/17/15					08/18/2015	1.1	2		08/18/15	1.4	2	
50WW23-081715	05	08/17/15					08/18/2015	1.1	2		08/18/15	1.4	2	
50WW08-081715	07	08/17/15					08/18/2015	.9	2		08/18/15	1.3	2	
50WW08-081715	07	08/17/15					08/18/2015	.9	2		08/18/15	1.3	2	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4340677
Report generated 08/19/2015 13:34

METHOD BLANK SUMMARY

Login Number: L15080904
Blank File ID: I2_081815-05
Prep Date: 08/18/15 13:00
Analyzed Date: 08/18/15 15:12
Analyst: ALS

Work Group: WG535546
Blank Sample ID: WG535546-01
Instrument ID: IC2
Method: 9056

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG535546-02	I2_081815-06	08/18/15 15:31	01
DUP	WG535546-04	I2_081815-11	08/18/15 17:02	01
50WW18-081715	L15080904-01	I2_081815-18	08/18/15 19:09	DL01
50WW18-081715	L15080904-01	I2_081815-19	08/18/15 19:27	DL02
50WW24-081715	L15080904-03	I2_081815-20	08/18/15 19:46	DL01
50WW24-081715	L15080904-03	I2_081815-21	08/18/15 20:04	DL02
50WW23-081715	L15080904-05	I2_081815-22	08/18/15 20:22	DL01
50WW23-081715	L15080904-05	I2_081815-23	08/18/15 20:40	DL02
50WW08-081715	L15080904-07	I2_081815-24	08/18/15 20:58	DL01
50WW08-081715	L15080904-07	I2_081815-25	08/18/15 21:17	DL02

Report Name: BLANK_SUMMARY
PDF File ID: 4340679
Report generated 08/19/2015 13:34

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15080904 Prep Date: 08/18/15 13:00 Sample ID: WG535546-01
Instrument ID: IC2 Run Date: 08/18/15 15:12 Prep Method: 9056
File ID: I2 081815-05 Analyst: ALS Method: 9056
Workgroup (AAB#): WG535546 Matrix: Water Units: mg/L
Contract #: Cal ID: IC2 - 03-AUG-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Chloride	0.100	0.400	0.100	1	U
Nitrate	0.100	0.400	0.100	1	U
Nitrite	0.100	0.400	0.100	1	U
Sulfate	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4340680
19-AUG-2015 13:34

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15080904 Run Date: 08/18/2015 Sample ID: WG535546-02
Instrument ID: IC2 Run Time: 15:31 Prep Method: 9056
File ID: I2 081815-06 Analyst: ALS Method: 9056
Workgroup (AAB#): WG535546 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD71546 Cal ID: IC2 - 03-AUG-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Chloride	8.00	8.24	103	90 - 110	
Nitrate	5.42	5.29	97.6	90 - 110	
Nitrite	4.87	4.89	100	90 - 110	
Sulfate	40.0	39.3	98.2	90 - 110	

LCS - Modified 03/06/2008
PDF File ID: 4340681
Report generated: 08/19/2015 13:34

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L15080904
Analytical Method: 9056
ICAL Workgroup: WG533569

Instrument ID: IC2
Initial Calibration Date: 03-AUG-15 16:14
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Chloride		5.425	8.21	0.99800	
Nitrate		2.145	11.5	0.99700	
Nitrite		2.773	7.31	1.00000	
Sulfate		7.062	16.0	0.99600	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4340682
Report generated 08/19/2015 13:34

Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number: L15080904
Analytical Method: 9056
Instrument ID: IC2
Initial Calibration Date: 03-AUG-15 16:14
Column ID: F

Analyte	WG533569-01			WG533569-02			WG533569-03		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	24.0	5.09400000	4.711	12.0	2.31500000	5.184	8.00	1.45300000	5.506
Nitrate	16.3	9.09800000	1.788	8.13	4.10300000	1.982	5.42	2.52000000	2.151
Nitrite	14.6	5.74700000	2.543	7.31	2.80200000	2.608	4.87	1.78800000	2.724
Sulfate	120	21.5820000	5.560	60.0	9.61600000	6.240	40.0	5.87200000	6.812

INT_CAL - Modified 03/06/2008
PDF File ID: 4340682
Report generated 08/19/2015 13:34

Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number: L15080904
Analytical Method: 9056
Instrument ID: IC2
Initial Calibration Date: 03-AUG-15 16:14
Column ID: F

Analyte	WG533569-04			WG533569-05			WG533569-06		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	4.00	0.716000000	5.587	1.00	0.176000000	5.682	0.200	0.0340000000	5.882
Nitrate	2.71	1.22300000	2.217	0.678	0.300000000	2.258	0.134	0.0540000000	2.473
Nitrite	2.44	0.889000000	2.740	0.609	0.210000000	2.900	0.122	0.0390000000	3.123
Sulfate	20.0	2.74900000	7.275	5.00	0.636000000	7.862	1.00	0.116000000	8.621

INT_CAL - Modified 03/06/2008
PDF File ID: 4340682
Report generated 08/19/2015 13:34

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15080904 Run Date: 08/03/2015 Sample ID: WG533569-07
Instrument ID: IC2 Run Time: 16:32 Method: 9056
File ID: I2 080315-09 Analyst: AED QC Key: DOD4
ICal Workgroup: WG533569 Cal ID: IC2 - 03-AUG-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloride		8.00	7.48	mg/L	5.38	6.60	10	
Nitrate		5.42	5.03	mg/L	2.08	7.20	10	
Nitrite		4.87	4.72	mg/L	2.70	3.10	10	
Sulfate		40.0	36.7	mg/L	6.63	8.40	10	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4340683
Report generated 08/19/2015 13:34

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15080904
Run Date: 08/18/2015
Sample ID: WG535580-02
Instrument ID: IC2
Run Time: 14:54
Method: 9056
File ID: I2 081815-04
Analyst: ALS
Units: mg/L
Workgroup (AAB#): WG535546
Cal ID: IC2 - 03-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4340685
Report generated 08/19/2015 13:35

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15080904
Run Date: 08/18/2015
Sample ID: WG535580-04
Instrument ID: IC2
Run Time: 18:33
Method: 9056
File ID: I2 081815-16
Analyst: ALS
Units: mg/L
Workgroup (AAB#): WG535546
Cal ID: IC2 - 03-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4340685
Report generated 08/19/2015 13:35

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15080904
Run Date: 08/18/2015
Sample ID: WG535580-06
Instrument ID: IC2
Run Time: 22:11
Method: 9056
File ID: I2 081815-28
Analyst: ALS
Units: mg/L
Workgroup (AAB#): WG535546
Cal ID: IC2 - 03-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4340685
Report generated 08/19/2015 13:35

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080904
Run Date: 08/18/2015
Sample ID: WG535580-01
Instrument ID: IC2
Run Time: 14:36
Method: 9056
File ID: I2 081815-03
Analyst: ALS
QC Key: DOD4
Workgroup (AAB#): WG535546
Cal ID: IC2 - 03-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.26	mg/L	4.87	3.21	10	
Nitrate		5.42	5.39	mg/L	1.94	0.638	10	
Nitrite		4.87	4.80	mg/L	2.65	1.45	10	
Sulfate		40.0	38.7	mg/L	6.28	3.31	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4340684
Report generated 08/19/2015 13:34

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080904
Run Date: 08/18/2015
Sample ID: WG535580-03
Instrument ID: IC2
Run Time: 18:14
Method: 9056
File ID: I2 081815-15
Analyst: ALS
QC Key: DOD4
Workgroup (AAB#): WG535546
Cal ID: IC2 - 03-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.24	mg/L	4.88	3.05	10	
Nitrate		5.42	5.30	mg/L	1.97	2.30	10	
Nitrite		4.87	4.98	mg/L	2.55	2.31	10	
Sulfate		40.0	39.3	mg/L	6.17	1.64	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4340684
Report generated 08/19/2015 13:34

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080904
Run Date: 08/18/2015
Sample ID: WG535580-05
Instrument ID: IC2
Run Time: 21:53
Method: 9056
File ID: I2 081815-27
Analyst: ALS
QC Key: DOD4
Workgroup (AAB#): WG535546
Cal ID: IC2 - 03-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.25	mg/L	4.88	3.10	10	
Nitrate		5.42	5.32	mg/L	1.97	1.97	10	
Nitrite		4.87	4.92	mg/L	2.59	0.936	10	
Sulfate		40.0	39.3	mg/L	6.17	1.70	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4340684
Report generated 08/19/2015 13:34

2.4.1.3 Sample Data

18 L15080904-01 1/5 (CL,NO2,NO3,SO4)

1,5 ALS (CL>200PPM)

Sample Name:	**L15080904-01 1/5 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**25.0**
Vial Number:	**18**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/18/2015 19:09**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

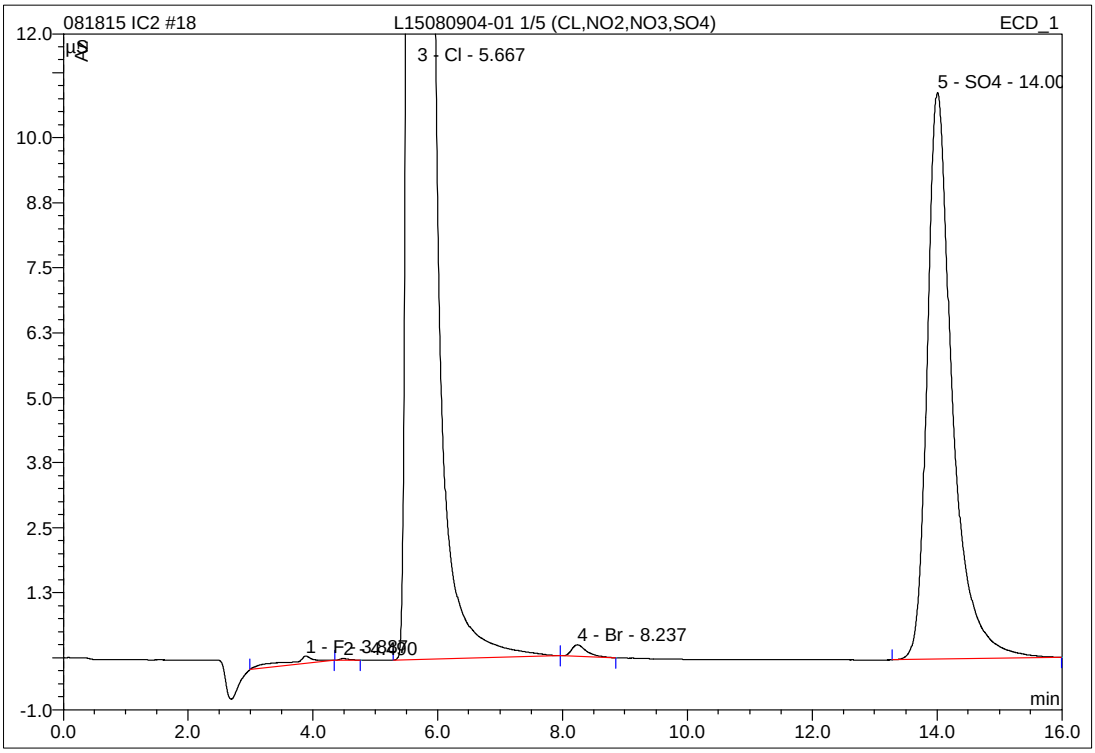

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.89	F	0.145	0.080	0.17	0.242	BMB
2	4.49	n.a.	0.034	0.006	0.01	n.a.	BMB
3	5.67	Cl	155.148	42.425	88.95	211.508	BMB
4	8.24	Br	0.223	0.063	0.13	0.885	bMB
5	14.01	SO4	10.899	5.120	10.74	31.200	BMB
Total:			166.449	47.694	100.00	243.836	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

19 L15080904-01 1/50 (CL,NO2,NO3,SO4)

1,50 ALS (CL>ICAL)

Sample Name:	**L15080904-01 1/50 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**25.0**
Vial Number:	**19**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/18/2015 19:27**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

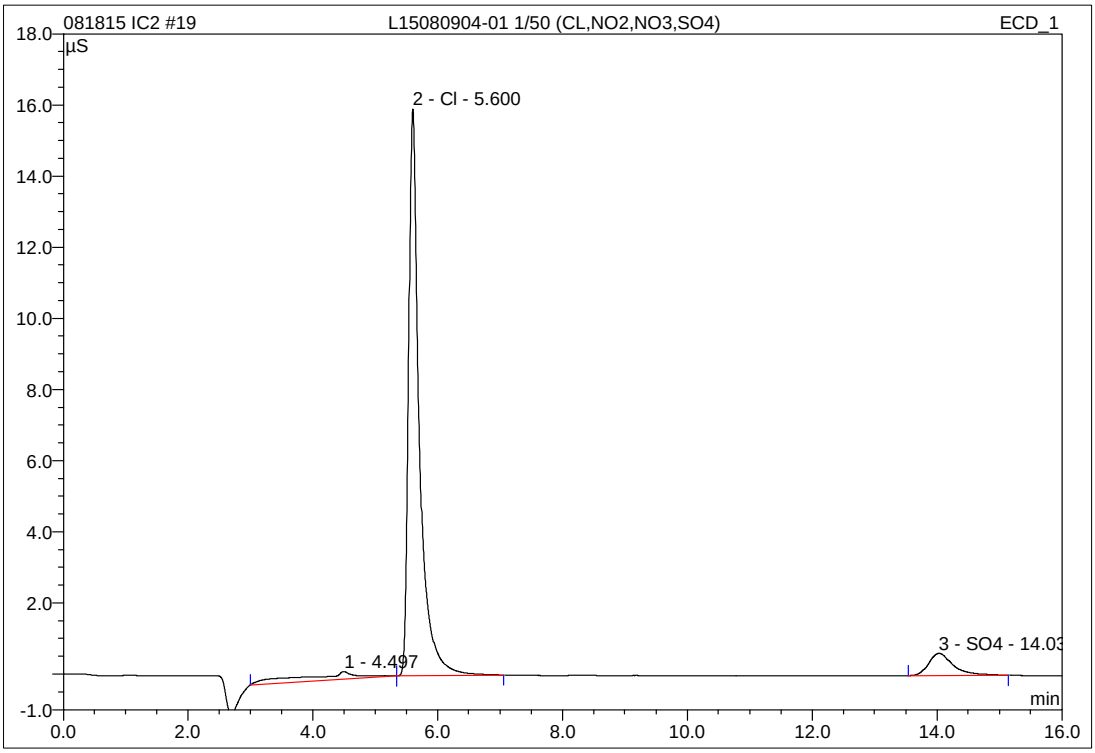

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	4.50	n.a.	0.217	0.231	6.18	n.a.	BMB
2	5.60	Cl	15.930	3.219	86.14	16.111	bMB
3	14.03	SO4	0.624	0.287	7.68	2.346	BMB
Total:			16.771	3.737	100.00	18.457	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

20 L15080904-03 1/2 (CL,NO2,NO3,SO4)

1,2 ALS (CL>200PPM)

Sample Name:	**L15080904-03 1/2 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**25.0**
Vial Number:	**20**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/18/2015 19:46**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

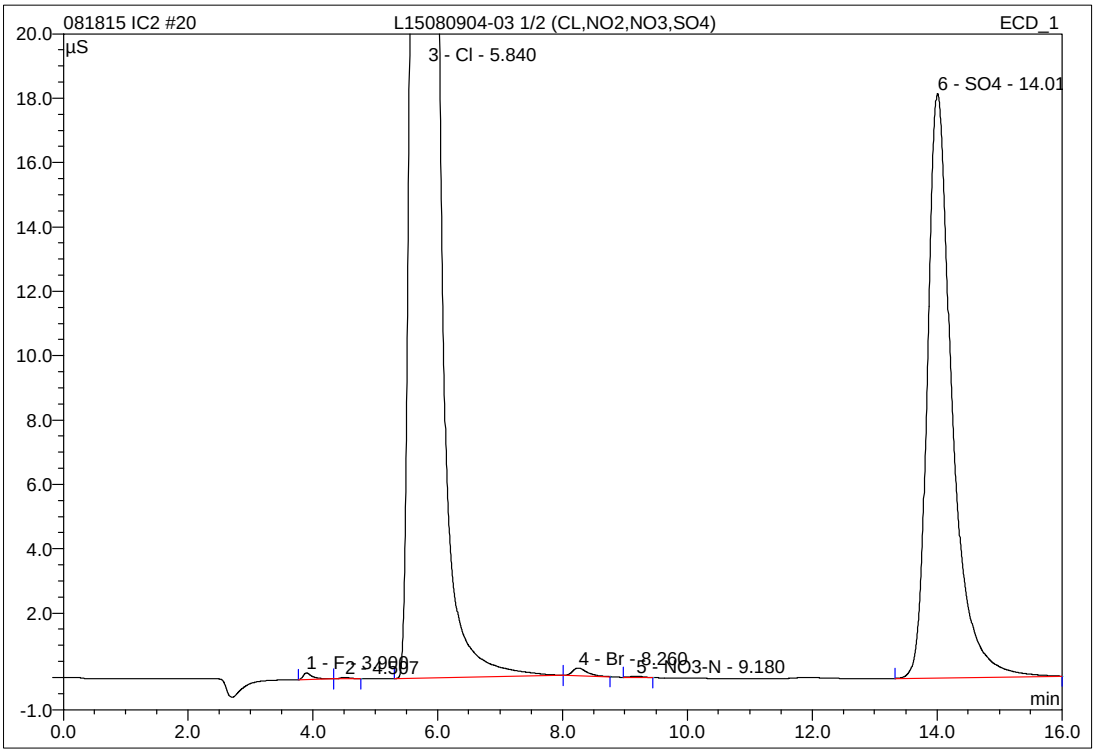

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.90	F	0.206	0.037	0.06	0.103	BMB
2	4.51	n.a.	0.046	0.008	0.01	n.a.	BMB
3	5.84	Cl	218.151	53.969	86.48	269.039	BMB
4	8.26	Br	0.241	0.065	0.10	0.905	BMB
5	9.18	NO3-N	0.036	0.009	0.01	0.082	BMB
6	14.01	SO4	18.158	8.316	13.33	50.277	BMB
Total:			236.840	62.403	100.00	320.406	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

21 L15080904-03 1/20 (CL,NO2,NO3,SO4)

1,20 ALS (CL>ICAL)

Sample Name:	**L15080904-03 1/20 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**25.0**
Vial Number:	**21**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/18/2015 20:04**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

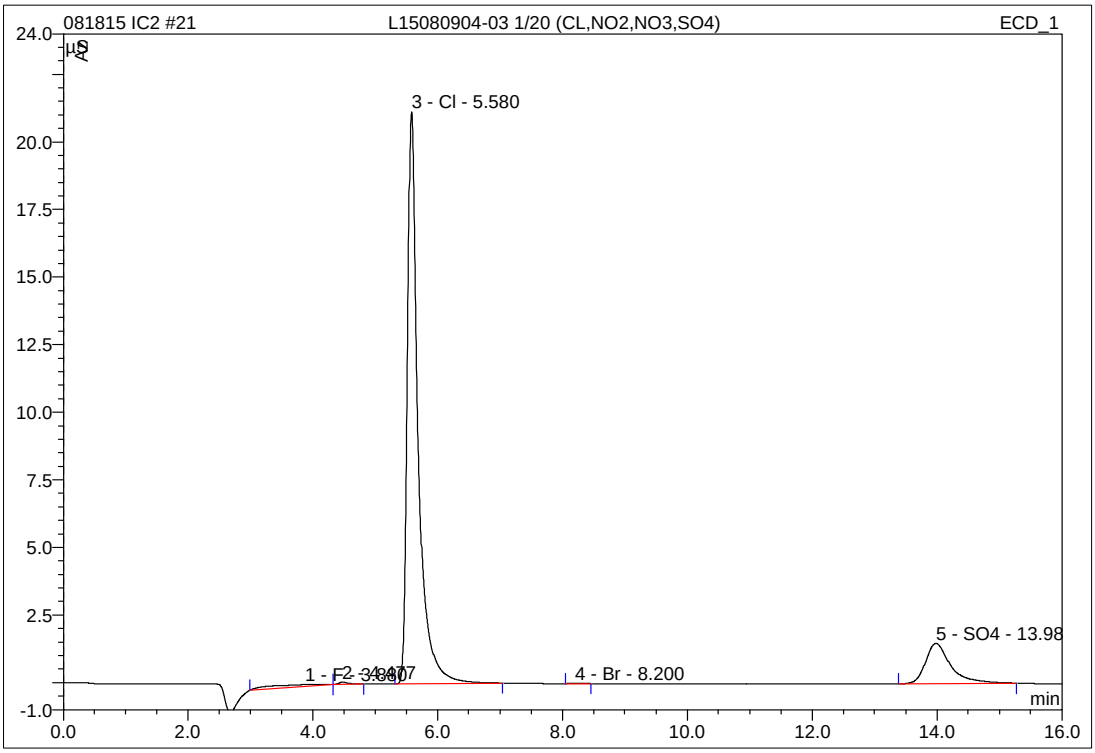

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.88	F	0.074	0.085	1.67	0.259	BMB
2	4.48	n.a.	0.085	0.015	0.30	n.a.	bMB
3	5.58	Cl	21.156	4.272	84.18	21.362	BMB
4	8.20	Br	0.023	0.005	0.10	0.107	BMB
5	13.98	SO4	1.485	0.698	13.75	4.799	BMB
Total:			22.822	5.075	100.00	26.526	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

22 L15080904-05 1/10 (CL,NO2,NO3,SO4)

1,10 ALS (CL>200PPM)

Sample Name:	**L15080904-05 1/10 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**25.0**
Vial Number:	**22**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/18/2015 20:22**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

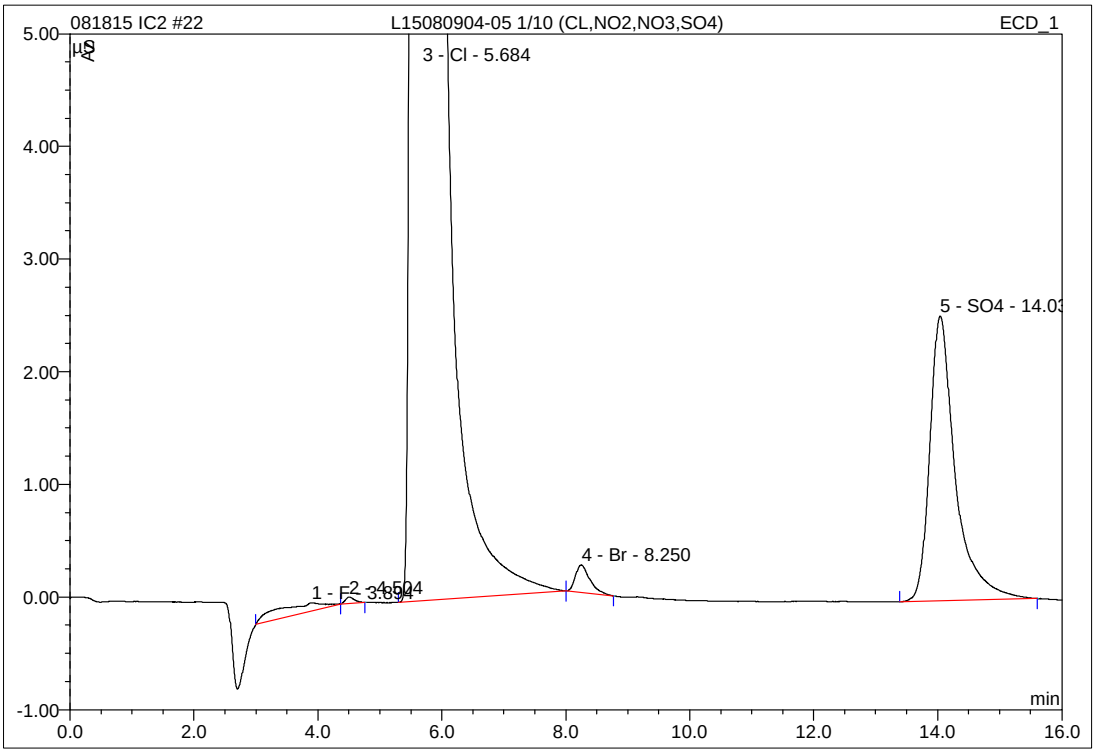

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.89	F	0.073	0.079	0.14	0.239	BMB
2	4.50	n.a.	0.055	0.009	0.02	n.a.	BMB
3	5.68	Cl	241.752	55.858	97.61	278.454	BMb
4	8.25	Br	0.245	0.067	0.12	0.931	bMB
5	14.04	SO4	2.529	1.211	2.12	7.862	BMB
Total:			244.653	57.223	100.00	287.486	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

23 L15080904-05 1/100 (CL,NO2,NO3,SO4)

1,100 ALS (CL>ICAL)

Sample Name:	**L15080904-05 1/100 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**25.0**
Vial Number:	**23**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/18/2015 20:40**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

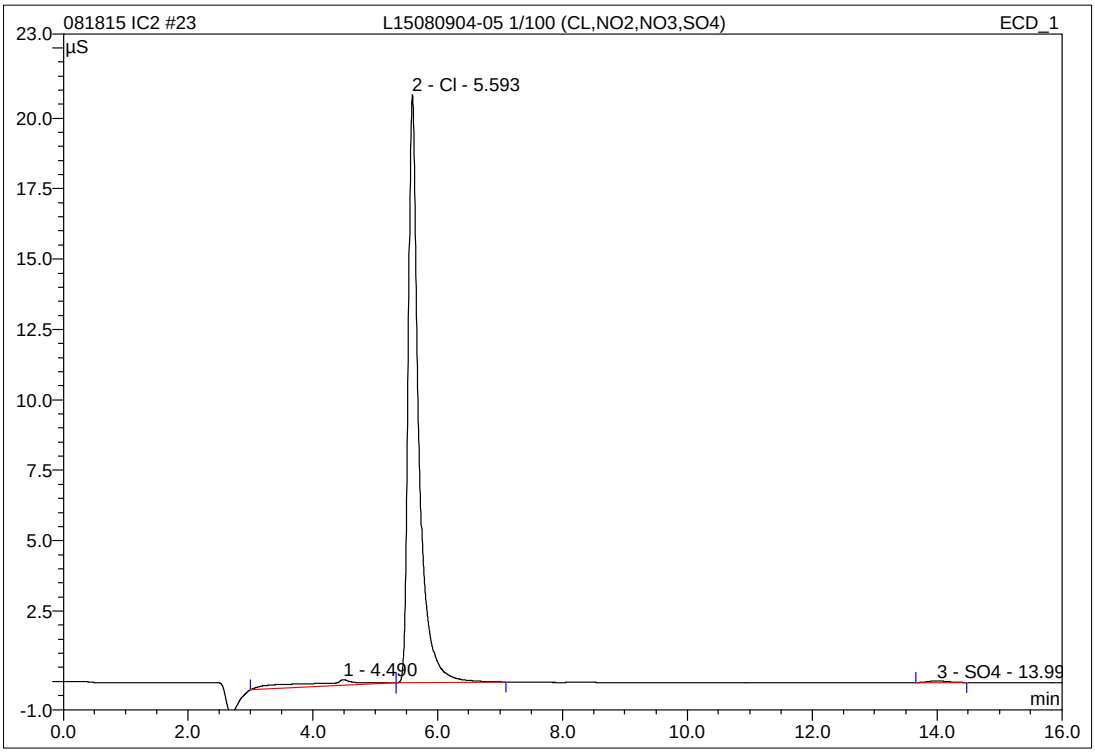

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	4.49	n.a.	0.204	0.226	5.17	n.a.	BMB
2	5.59	Cl	20.884	4.130	94.31	20.653	bMB
3	14.00	SO4	0.061	0.023	0.52	0.770	BMB
Total:			21.150	4.379	100.00	21.422	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

24 L15080904-07 1/5 (CL,NO2,NO3,SO4)

1,5 ALS (CL,SO4>200PPM)

Sample Name:	**L15080904-07 1/5 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**25.0**
Vial Number:	**24**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/18/2015 20:58**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

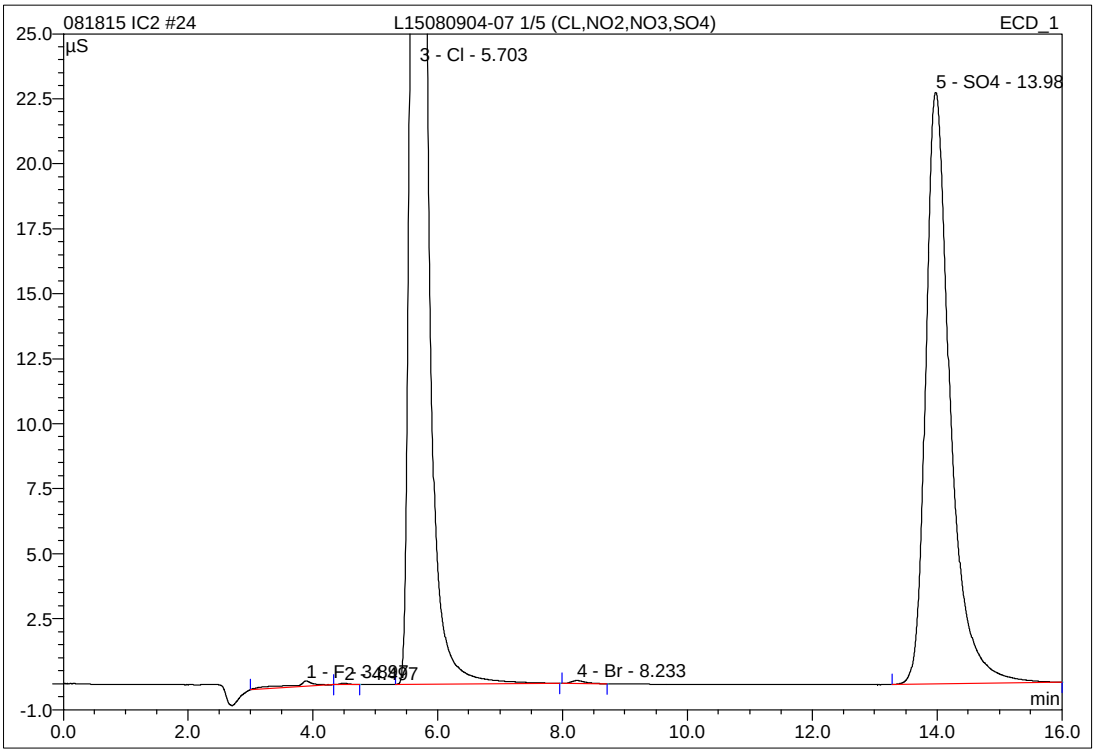

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.90	F	0.210	0.096	0.32	0.295	BMB
2	4.50	n.a.	0.058	0.010	0.03	n.a.	bMB
3	5.70	Cl	74.543	19.262	64.68	96.067	BMB
4	8.23	Br	0.113	0.030	0.10	0.445	BMB
5	13.98	SO4	22.758	10.382	34.86	62.608	BMB
Total:			97.682	29.779	100.00	159.415	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

25 L15080904-07 1/20 (CL,NO2,NO3,SO4)

1,20 ALS (CL>ICAL)

Sample Name:	**L15080904-07 1/20 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**25.0**
Vial Number:	**25**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/18/2015 21:17**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

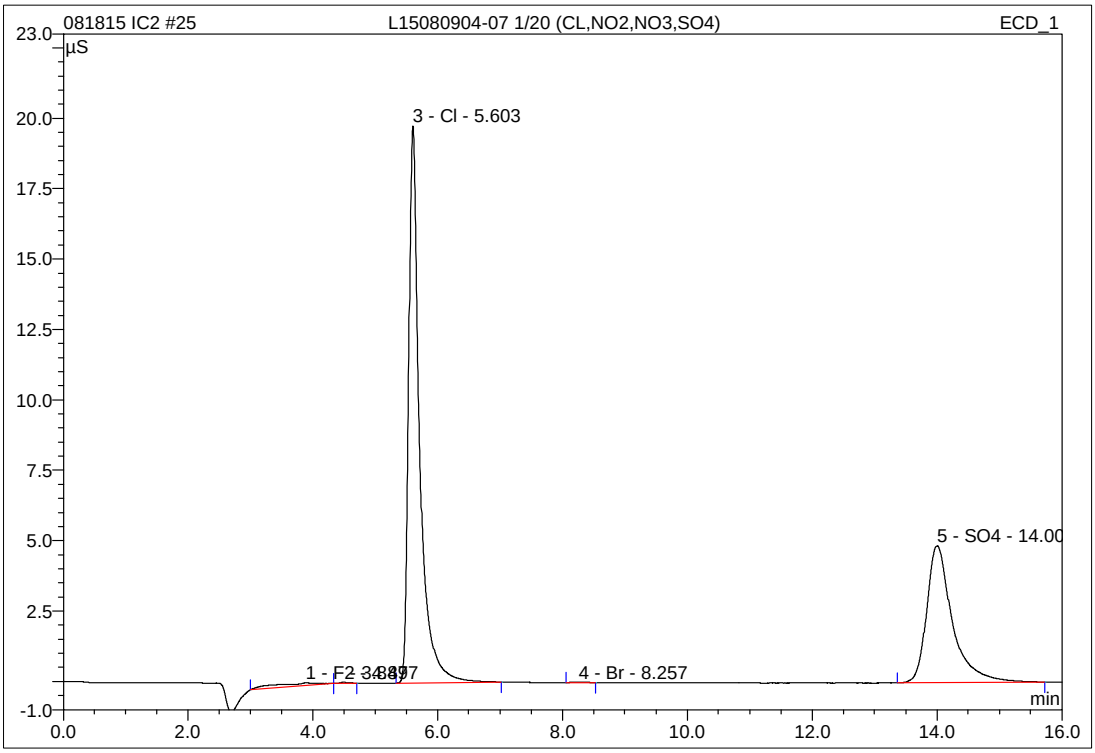

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.89	F	0.103	0.099	1.52	0.304	BMB
2	4.50	n.a.	0.040	0.007	0.10	n.a.	bMB
3	5.60	Cl	19.779	4.079	62.63	20.399	BMB
4	8.26	Br	0.026	0.006	0.09	0.119	BMB
5	14.00	SO4	4.860	2.322	35.66	14.496	BMB
Total:			24.808	6.513	100.00	35.317	

2.4.1.4 Standards Data

3 WG533569-01 STD #6

1,1 AED STD71715

Sample Name:	**WG533569-01 STD #6**	*Injection Volume:*	**25.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/03/2015 14:43**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

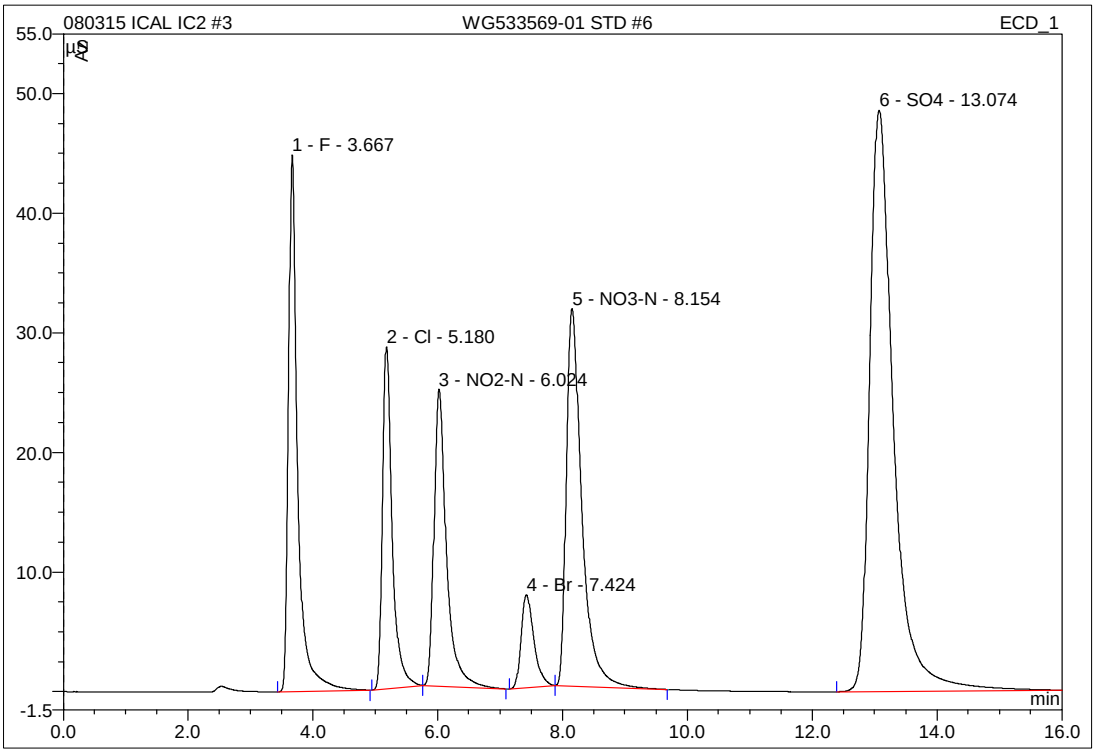

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.67	F	44.847	7.653	15.00	24.644	BMB
2	5.18	Cl	28.577	5.094	9.99	25.455	BMb
3	6.02	NO2-N	24.807	5.747	11.27	14.934	bMB
4	7.42	Br	7.771	1.837	3.60	24.664	BMb
5	8.15	NO3-N	31.557	9.098	17.84	17.397	bMB
6	13.07	SO4	48.562	21.582	42.31	129.474	BMB
Total:			186.121	51.010	100.00	236.568	

4 WG533569-02 STD #5

1,1 AED STD71715

Sample Name:	**WG533569-02 STD #5**	*Injection Volume:*	**25.0**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/03/2015 15:01**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

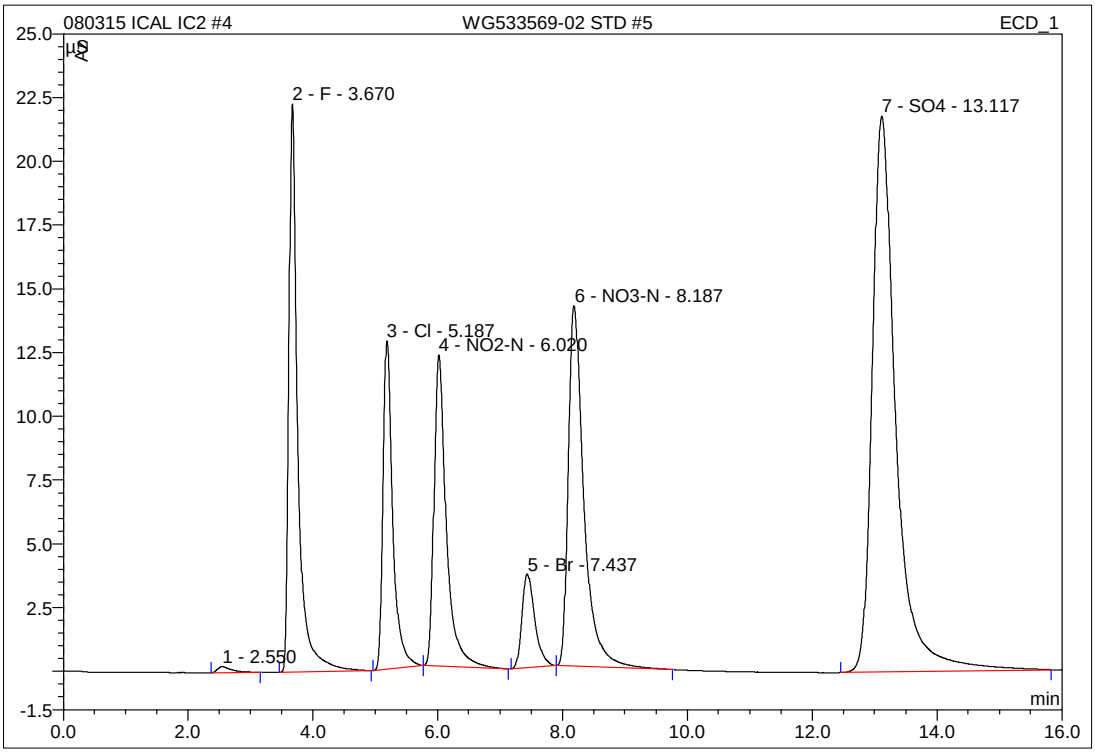

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.55	n.a.	0.232	0.060	0.25	n.a.	BMB
2	3.67	F	22.283	3.709	15.79	11.936	BMB
3	5.19	Cl	12.875	2.315	9.86	11.605	BMb
4	6.02	NO2-N	12.209	2.802	11.93	7.301	bMB
5	7.44	Br	3.673	0.879	3.74	11.828	BMb
6	8.19	NO3-N	14.133	4.103	17.47	7.881	bMB
7	13.12	SO4	21.786	9.616	40.95	58.039	BMB
Total:			87.191	23.484	100.00	108.591	

5 WG533569-03 STD #4

1,1 AED STD71715

Sample Name:	**WG533569-03 STD #4**	*Injection Volume:*	**25.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/03/2015 15:19**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

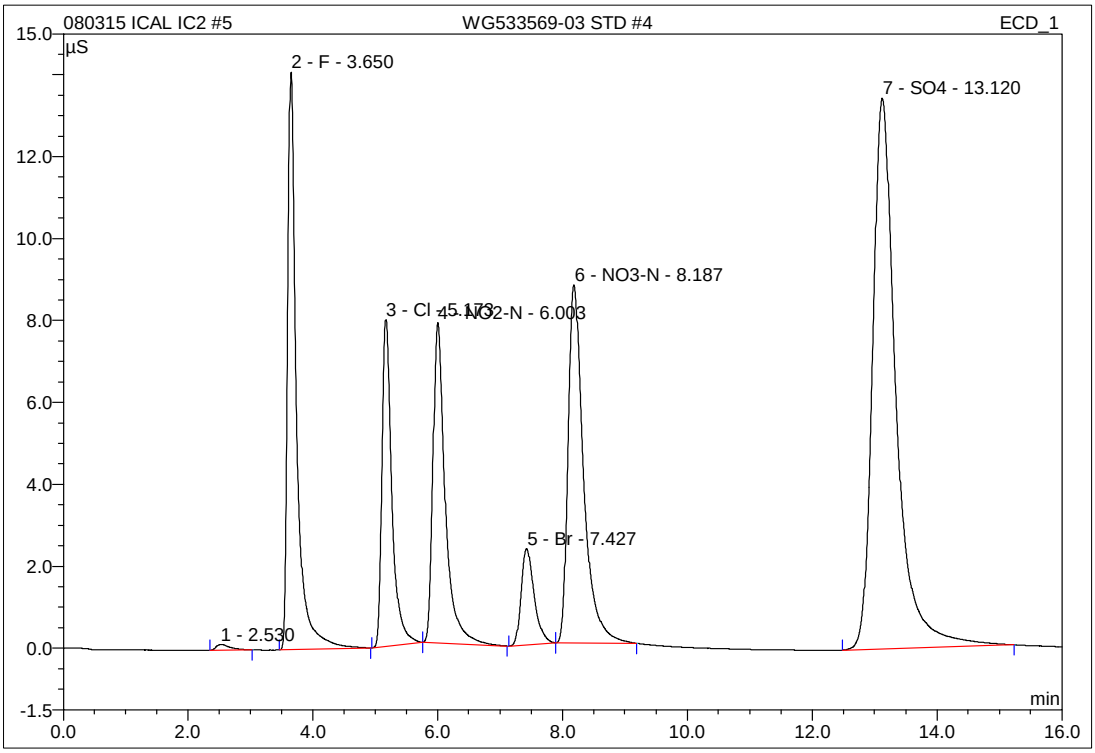

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.53	n.a.	0.143	0.036	0.25	n.a.	BMB
2	3.65	F	14.095	2.348	16.10	7.551	BMB
3	5.17	Cl	7.978	1.453	9.96	7.312	BMb
4	6.00	NO2-N	7.818	1.788	12.26	4.670	bMB
5	7.43	Br	2.352	0.566	3.88	7.625	BMB
6	8.19	NO3-N	8.740	2.520	17.28	4.866	bMB
7	13.12	SO4	13.444	5.872	40.27	35.687	BMB
Total:			54.570	14.583	100.00	67.710	

00645441

5 WG533569-03 STD #4

1,1 AED STD71715

Sample Name:	**WG533569-03 STD #4**	*Injection Volume:*	**25.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**8/3/2015 15:19**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

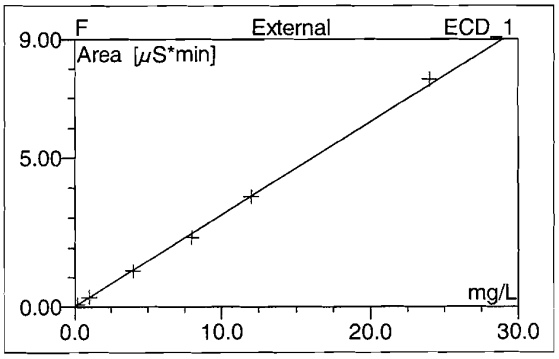

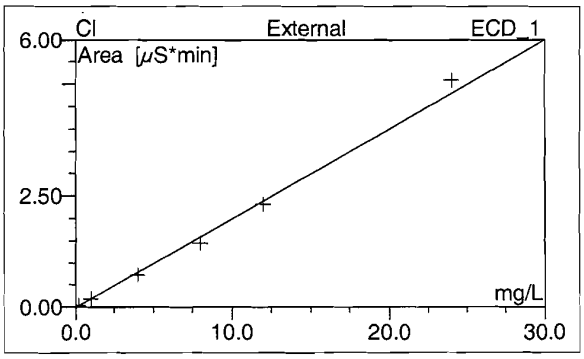

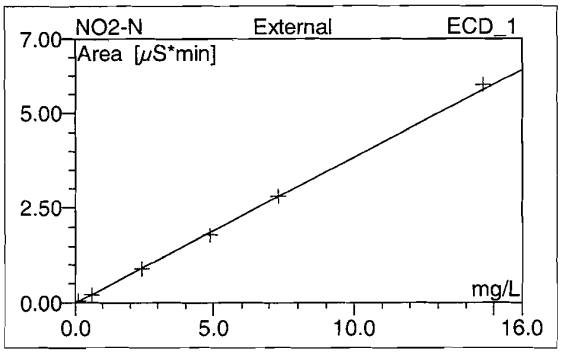

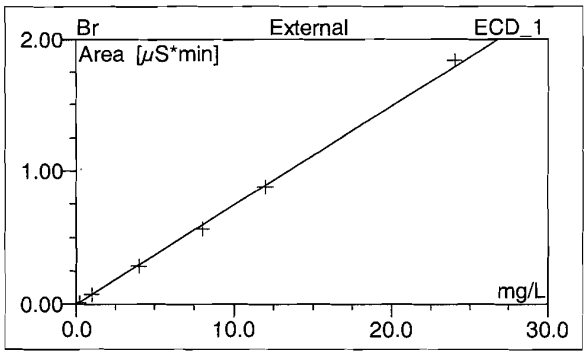

No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	2.53	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	3.65	F	XLOff	6	99.9442	0.0045	0.3104	0.0000
3	5.17	Cl	XLOff	6	99.7675	-0.0139	0.2006	0.0000
4	6.00	NO2-N	XLOff	6	99.9587	-0.0135	0.3857	0.0000
5	7.43	Br	XLOff	6	99.9503	-0.0028	0.0746	0.0000
6	8.19	NO3-N	XLOff	6	99.6785	-0.0340	0.5249	0.0000
7	13.12	SO4	XLOff	6	99.5716	-0.1060	0.1675	0.0000
Average:					99.8118	-0.0276	0.2773	0.0000

5 WG533569-03 STD #4

1,1 AED STD71715

Sample Name:	**WG533569-03 STD #4**	*Injection Volume:*	**25.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**8/3/2015 15:19**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

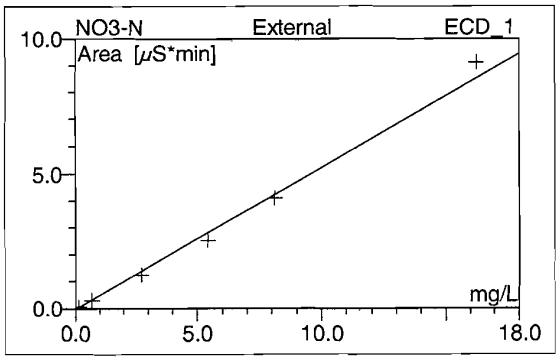

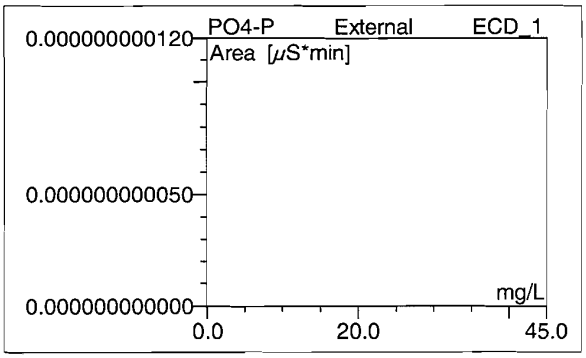

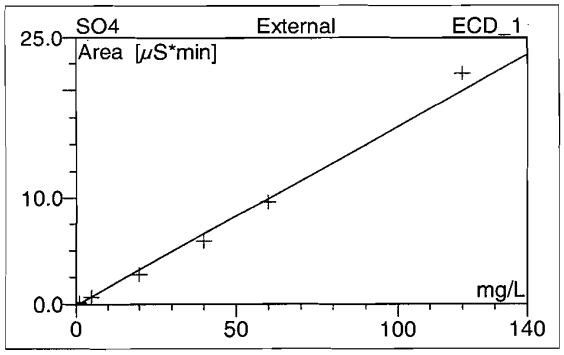

No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	2.53	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	3.65	F	XLOff	6	99.9442	0.0045	0.3104	0.0000
3	5.17	Cl	XLOff	6	99.7675	-0.0139	0.2006	0.0000
4	6.00	NO2-N	XLOff	6	99.9587	-0.0135	0.3857	0.0000
5	7.43	Br	XLOff	6	99.9503	-0.0028	0.0746	0.0000
6	8.19	NO3-N	XLOff	6	99.6785	-0.0340	0.5249	0.0000
7	13.12	SO4	XLOff	6	99.5716	-0.1060	0.1675	0.0000
Average:					99.8118	-0.0276	0.2773	0.0000

6 WG533569-04 STD #3

1,1 AED STD71715

Sample Name:	**WG533569-04 STD #3**	*Injection Volume:*	**25.0**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/03/2015 15:37**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

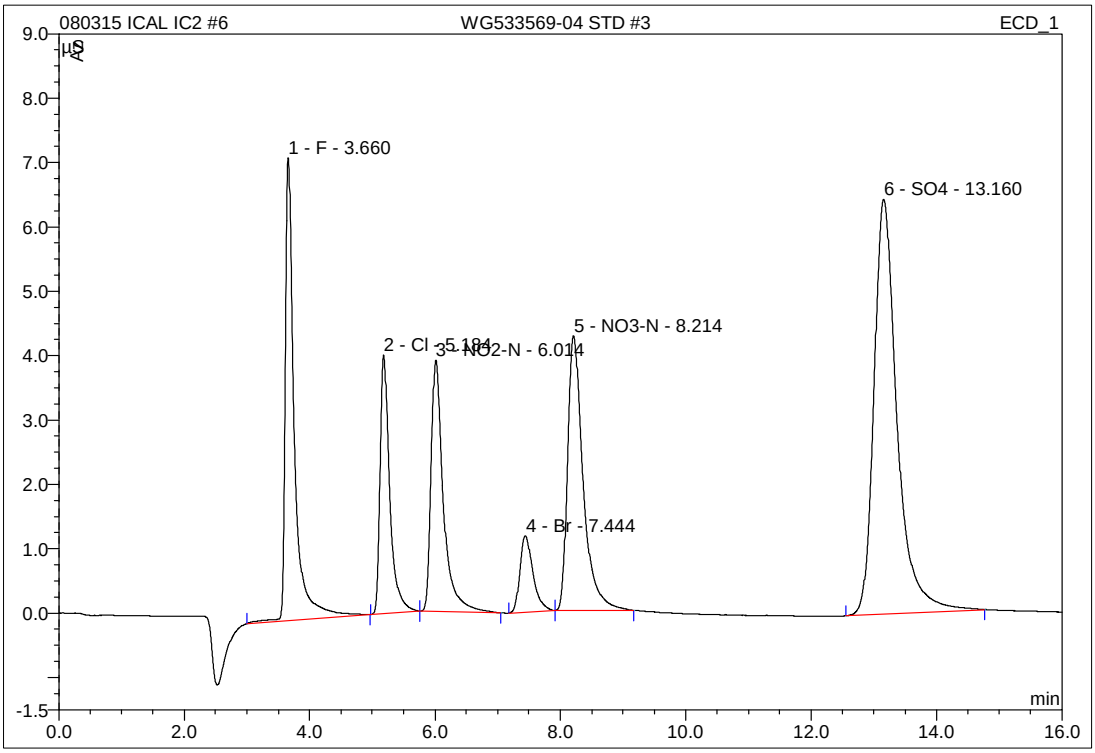

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.66	F	7.188	1.206	17.06	3.871	BMB
2	5.18	Cl	4.017	0.716	10.13	3.639	BMb
3	6.01	NO2-N	3.908	0.889	12.57	2.339	bMB
4	7.44	Br	1.187	0.286	4.05	3.872	BMB
5	8.21	NO3-N	4.268	1.223	17.30	2.394	BMB
6	13.16	SO4	6.444	2.749	38.89	17.045	BMB
Total:			27.012	7.069	100.00	33.160	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

7 WG533569-05 STD #2

1,1 AED STD71715

Sample Name:	**WG533569-05 STD #2**	*Injection Volume:*	**25.0**
Vial Number:	**7**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/03/2015 15:56**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

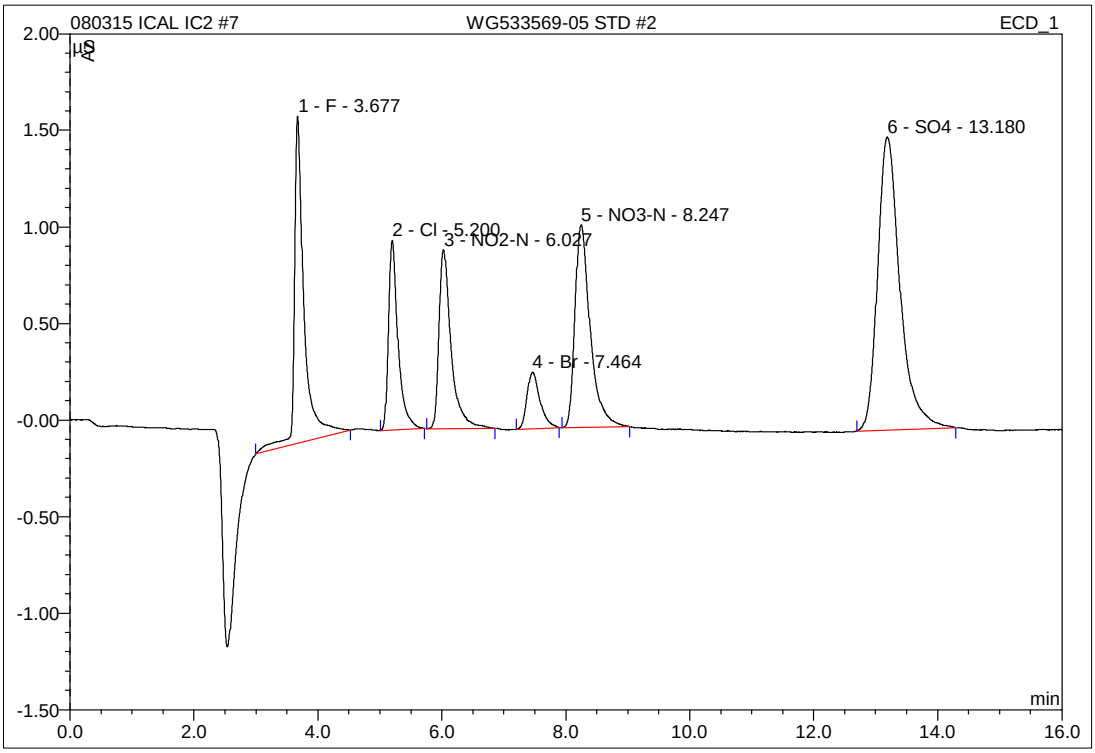

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.68	F	1.694	0.309	18.15	0.981	BMB
2	5.20	Cl	0.982	0.176	10.36	0.949	BMB
3	6.03	NO2-N	0.926	0.210	12.33	0.579	BMB
4	7.46	Br	0.293	0.072	4.20	0.997	BMB
5	8.25	NO3-N	1.048	0.300	17.59	0.635	BMB
6	13.18	SO4	1.519	0.636	37.37	4.432	BMB
Total:			6.462	1.703	100.00	8.574	

8 WG533569-06 STD #1

1,1 AED STD71715

Sample Name:	**WG533569-06 STD #1**	*Injection Volume:*	**25.0**
Vial Number:	**8**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/03/2015 16:14**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

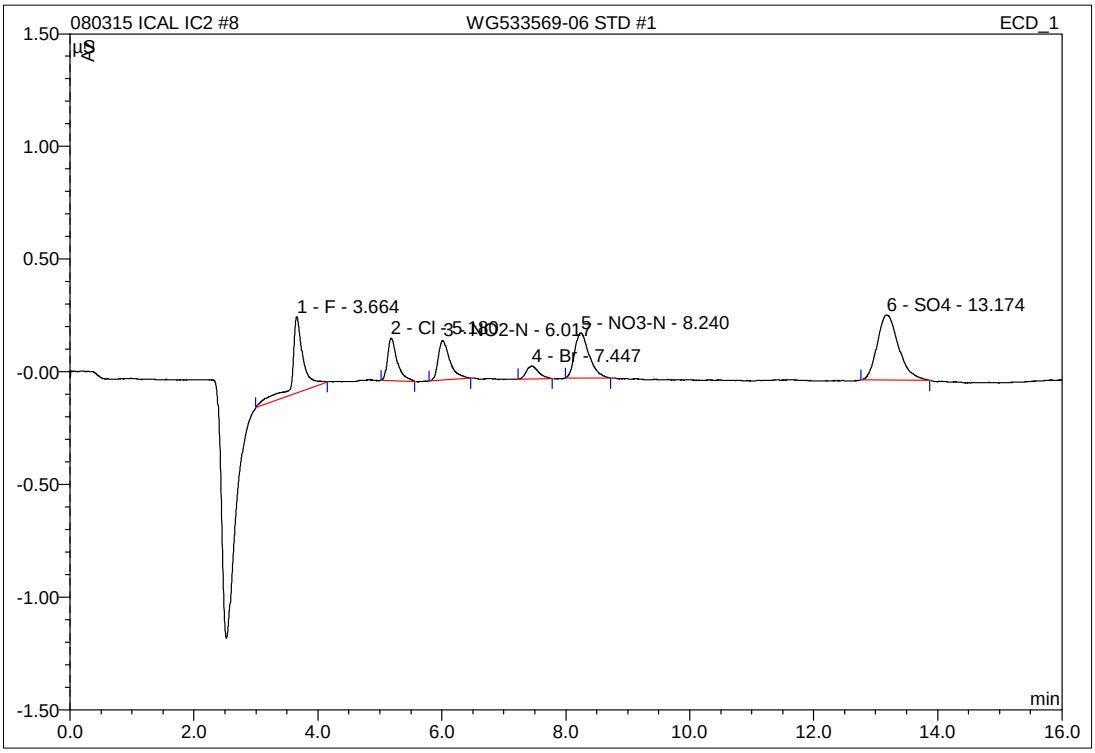

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.66	F	0.339	0.072	21.92	0.217	BMB
2	5.18	Cl	0.188	0.034	10.44	0.240	BMB
3	6.02	NO2-N	0.175	0.039	11.76	0.135	BMB
4	7.45	Br	0.057	0.013	4.02	0.214	BMB
5	8.24	NO3-N	0.201	0.054	16.59	0.168	BMB
6	13.17	SO4	0.290	0.116	35.26	1.323	BMB
Total:			1.251	0.328	100.00	2.297	

9 WG533569-07 SSCV

1,1 AED STD71716

Sample Name:	**WG533569-07 SSCV**	*Injection Volume:*	**25.0**
Vial Number:	**9**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/03/2015 16:32**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

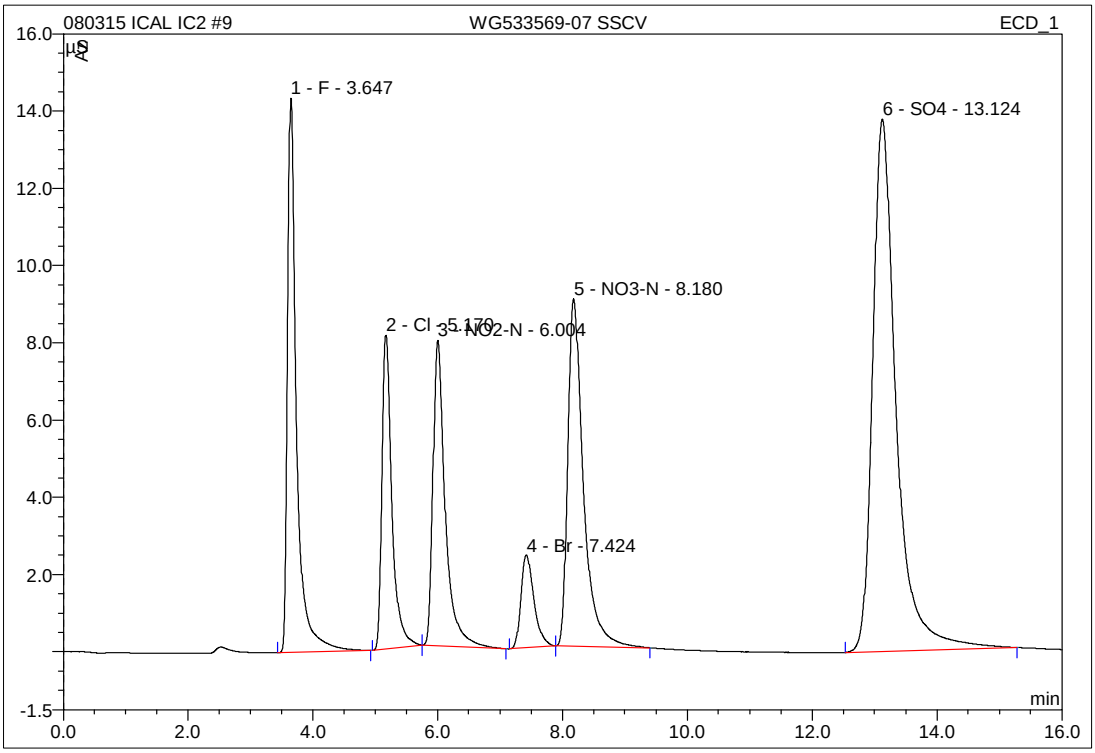

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.65	F	14.345	2.395	16.06	7.703	BMB
2	5.17	Cl	8.120	1.486	9.97	7.476	BMb
3	6.00	NO2-N	7.914	1.807	12.12	4.719	bMB
4	7.42	Br	2.406	0.580	3.89	7.809	BMB
5	8.18	NO3-N	8.988	2.608	17.49	5.033	BMB
6	13.12	SO4	13.783	6.034	40.47	36.657	BMB
Total:			55.556	14.910	100.00	69.397	

9 WG533569-07 SSCV

1,1 AED STD71716

Sample Name:	**WG533569-07 SSCV**	*Injection Volume:*	**25.0**
Vial Number:	**9**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**8/3/2015 16:32**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

WG533569-07 SSC	Actual mg/L	Recovered mg/L	%Difference	
F	8.00	7.7027	-3.72	PASS
Cl	8	7.4765	-6.54	PASS
NO2-N	4.8714	4.7193	-3.12	PASS
NO3-N	5.4216	5.0331	-7.17	PASS
Br	8	7.8092	-2.38	PASS
SO4	40	36.6566	-8.36	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!

3 WG535580-01 ANION CCV

1,1 ALS STD71545 (_____ psi)

Sample Name:	**WG535580-01 ANION CCV**	*Injection Volume:*	**25.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/18/2015 14:36**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

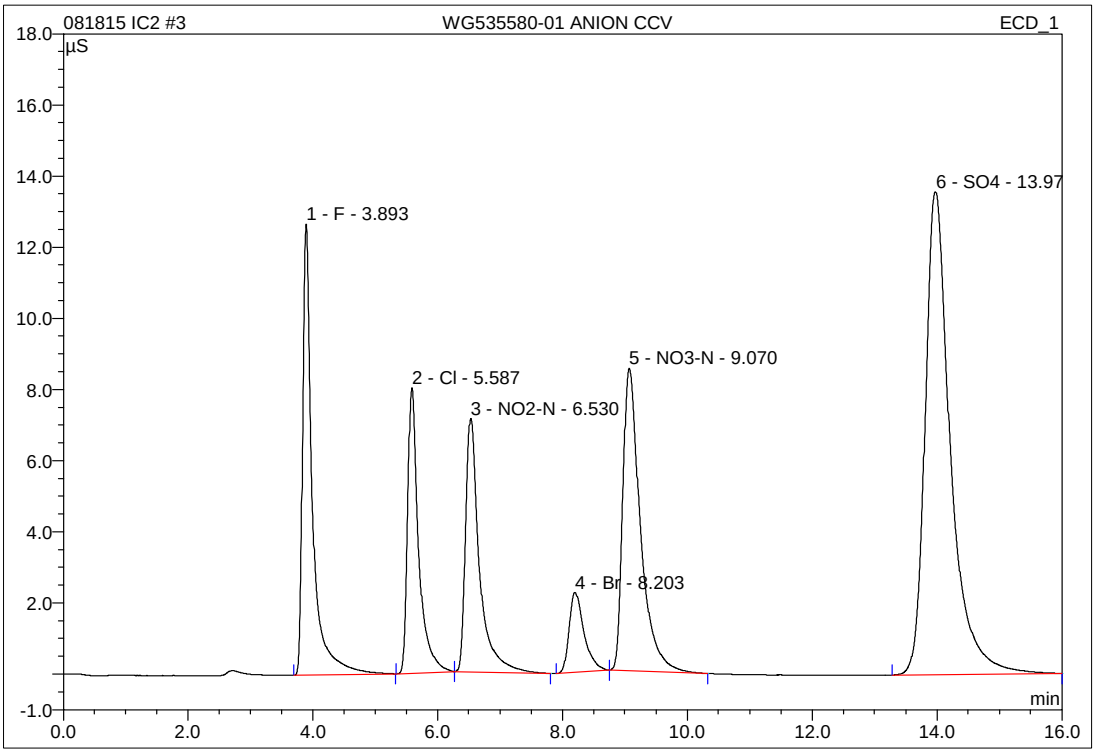

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.89	F	12.682	2.333	14.95	7.501	BMB
2	5.59	Cl	8.025	1.643	10.53	8.257	BMB
3	6.53	NO2-N	7.128	1.838	11.78	4.801	BMB
4	8.20	Br	2.254	0.625	4.00	8.413	BMB
5	9.07	NO3-N	8.506	2.794	17.90	5.387	bMB
6	13.98	SO4	13.572	6.373	40.84	38.678	BMB
Total:			52.167	15.605	100.00	73.037	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

3 WG535580-01 ANION CCV

1,1 ALS STD71545 (_____ psi)

Sample Name:	**WG535580-01 ANION CCV**	*Injection Volume:*	**25.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**8/18/2015 14:36**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

WG535580-01 ANI(	Actual mg/L	Recovered mg/L	%Difference	
F	8.00	7.5010	-6.24	PASS
Cl	8	8.2566	3.21	PASS
NO2-N	4.8714	4.8009	-1.45	PASS
NO3-N	5.4216	5.3875	-0.63	PASS
Br	8	8.4128	5.16	PASS
SO4	40	38.6781	-3.30	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!

15 WG535580-03 ANION CCV

1,1 ALS STD71545

Sample Name:	**WG535580-03 ANION CCV**	*Injection Volume:*	**25.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/18/2015 18:14**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

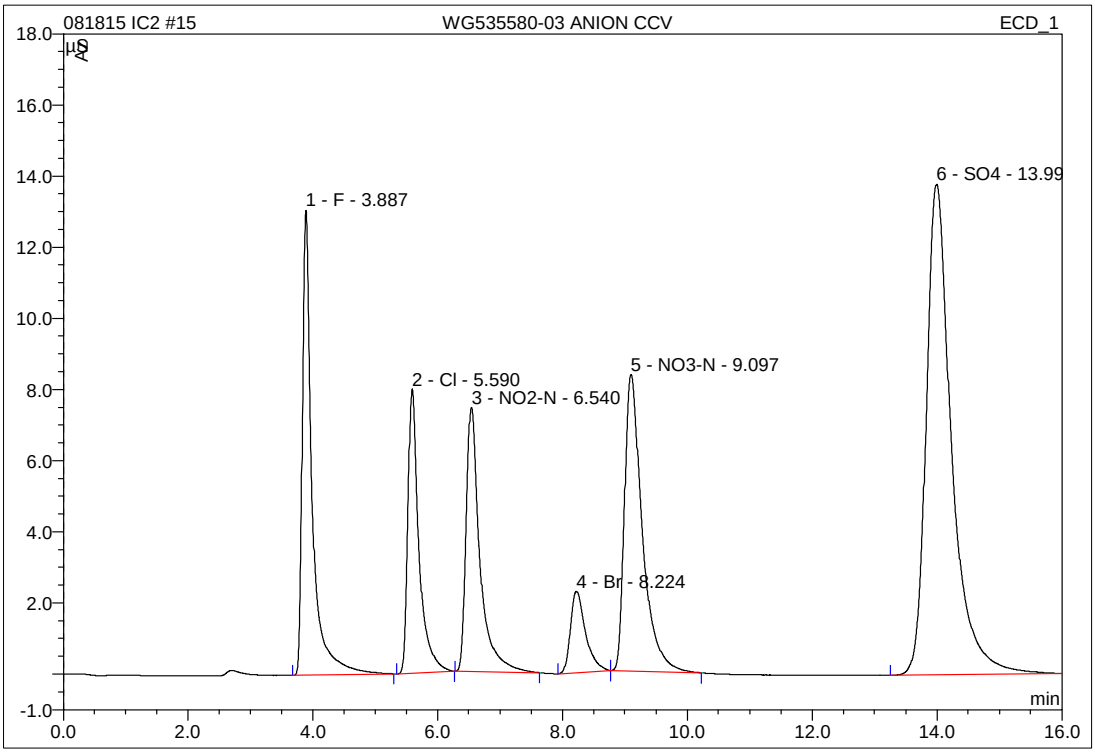

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.89	F	13.068	2.406	15.20	7.737	BMB
2	5.59	Cl	7.985	1.640	10.36	8.244	BMB
3	6.54	NO2-N	7.430	1.909	12.06	4.984	BMB
4	8.22	Br	2.278	0.639	4.04	8.603	BMb
5	9.10	NO3-N	8.339	2.746	17.35	5.297	bMB
6	13.99	SO4	13.795	6.484	40.98	39.343	BMB
Total:			52.895	15.825	100.00	74.208	

15 WG535580-03 ANION CCV

1,1 ALS STD71545

Sample Name:	**WG535580-03 ANION CCV**	*Injection Volume:*	**25.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**8/18/2015 18:14**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

WG535580-03 ANI(	Actual mg/L	Recovered mg/L	%Difference	
F	8.00	7.7369	-3.29	PASS
Cl	8	8.2438	3.05	PASS
NO2-N	4.8714	4.9843	2.32	PASS
NO3-N	5.4216	5.2968	-2.30	PASS
Br	8	8.6033	7.54	PASS
SO4	40	39.3433	-1.64	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!

27 WG535580-05 ANION CCV

1,1 ALS STD71545

Sample Name:	**WG535580-05 ANION CCV**	*Injection Volume:*	**25.0**
Vial Number:	**27**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/18/2015 21:53**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

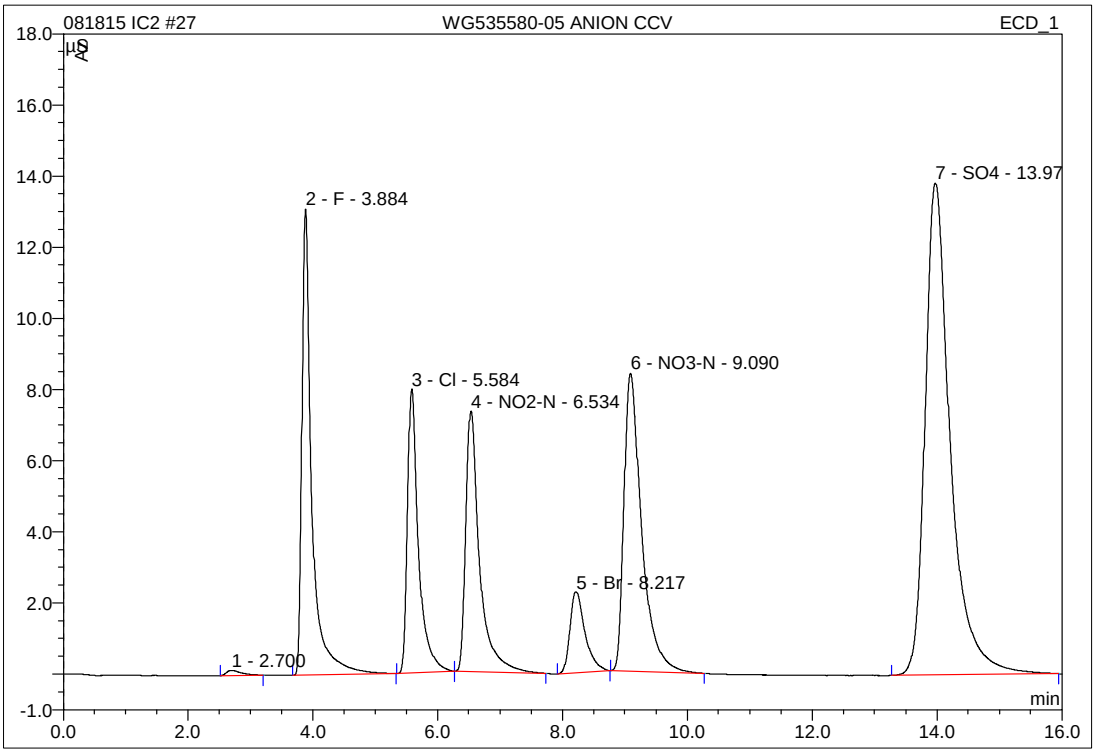

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.70	n.a.	0.146	0.040	0.25	n.a.	BMB
2	3.88	F	13.102	2.409	15.20	7.747	BMB
3	5.58	Cl	7.992	1.641	10.36	8.248	BMB
4	6.53	NO2-N	7.322	1.883	11.88	4.917	BMB
5	8.22	Br	2.280	0.637	4.02	8.577	BMB
6	9.09	NO3-N	8.368	2.756	17.39	5.315	BMB
7	13.97	SO4	13.831	6.480	40.90	39.319	BMB
Total:			53.041	15.846	100.00	74.123	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

27 WG535580-05 ANION CCV

1,1 ALS STD71545

Sample Name:	**WG535580-05 ANION CCV**	*Injection Volume:*	**25.0**
Vial Number:	**27**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**8/18/2015 21:53**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

WG535580-05 ANI(	Actual mg/L	Recovered mg/L	%Difference	
F	8.00	7.7471	-3.16	PASS
Cl	8	8.2485	3.11	PASS
NO2-N	4.8714	4.9170	0.94	PASS
NO3-N	5.4216	5.3151	-1.96	PASS
Br	8	8.5771	7.21	PASS
SO4	40	39.3187	-1.70	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!

4 WG535580-02 ANION CCB

1,1 ALS

Sample Name:	**WG535580-02 ANION CCB**	*Injection Volume:*	**25.0**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/18/2015 14:54**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

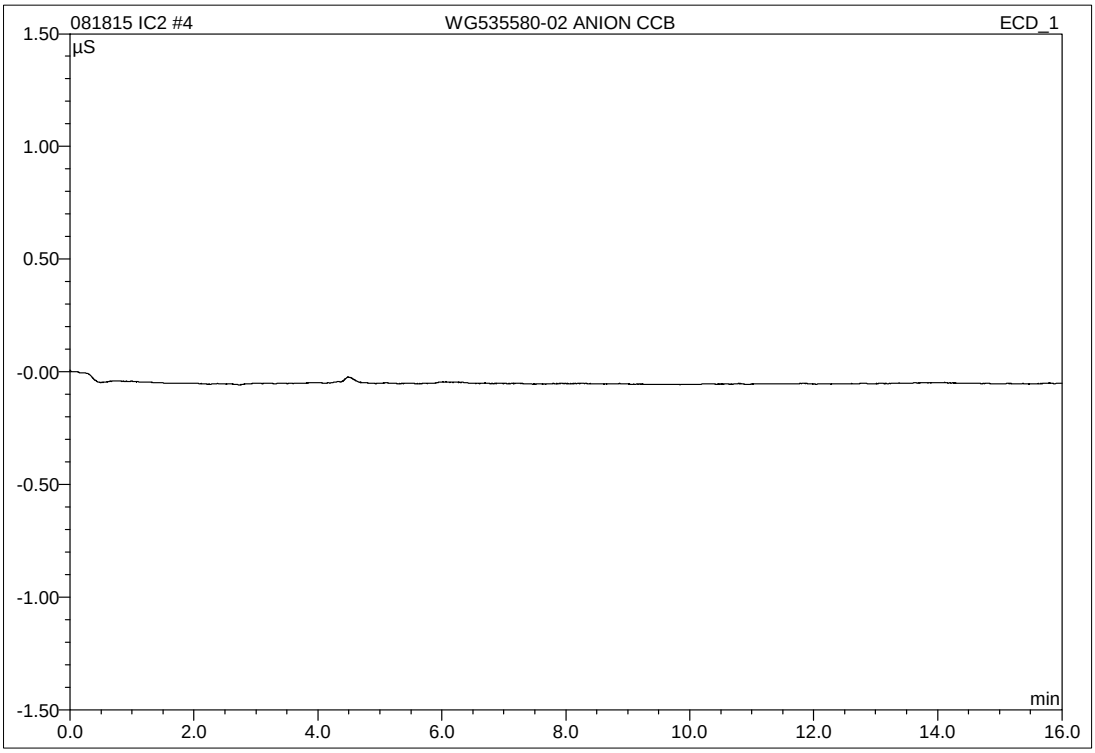

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

16 WG535580-04 ANION CCB

1,1 ALS

Sample Name:	**WG535580-04 ANION CCB**	*Injection Volume:*	**25.0**
Vial Number:	**16**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/18/2015 18:33**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

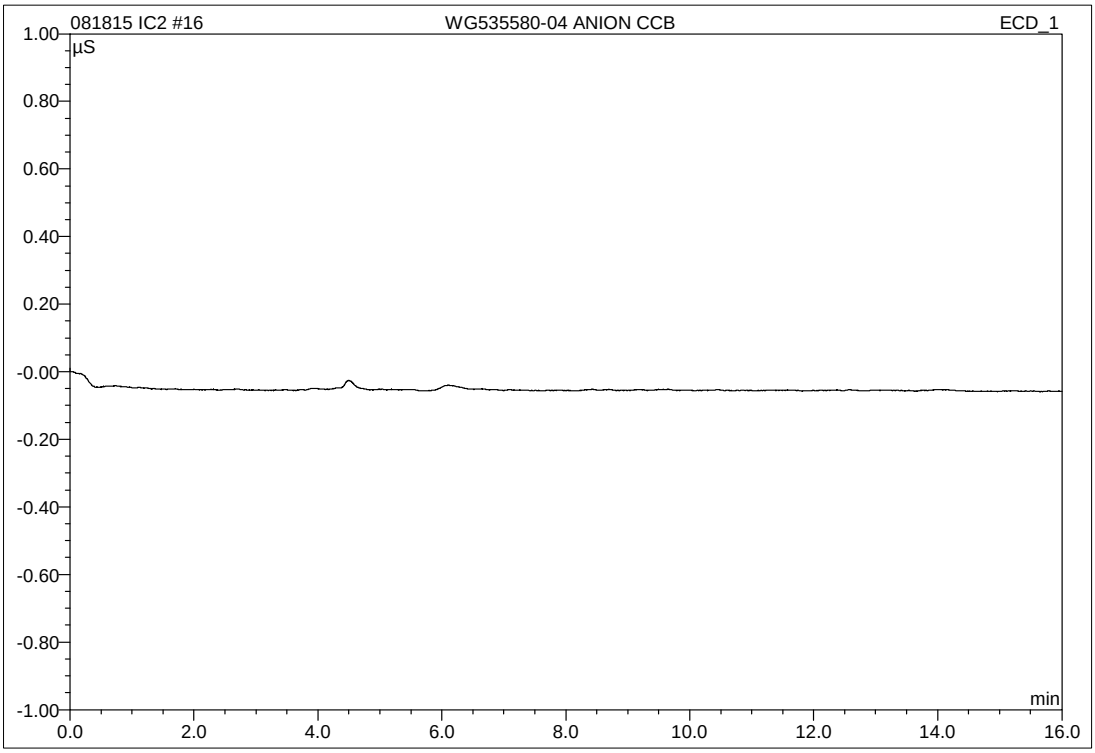

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

28 WG535580-06 ANION CCB

1,1 ALS

Sample Name:	**WG535580-06 ANION CCB**	*Injection Volume:*	**25.0**
Vial Number:	**28**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/18/2015 22:11**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

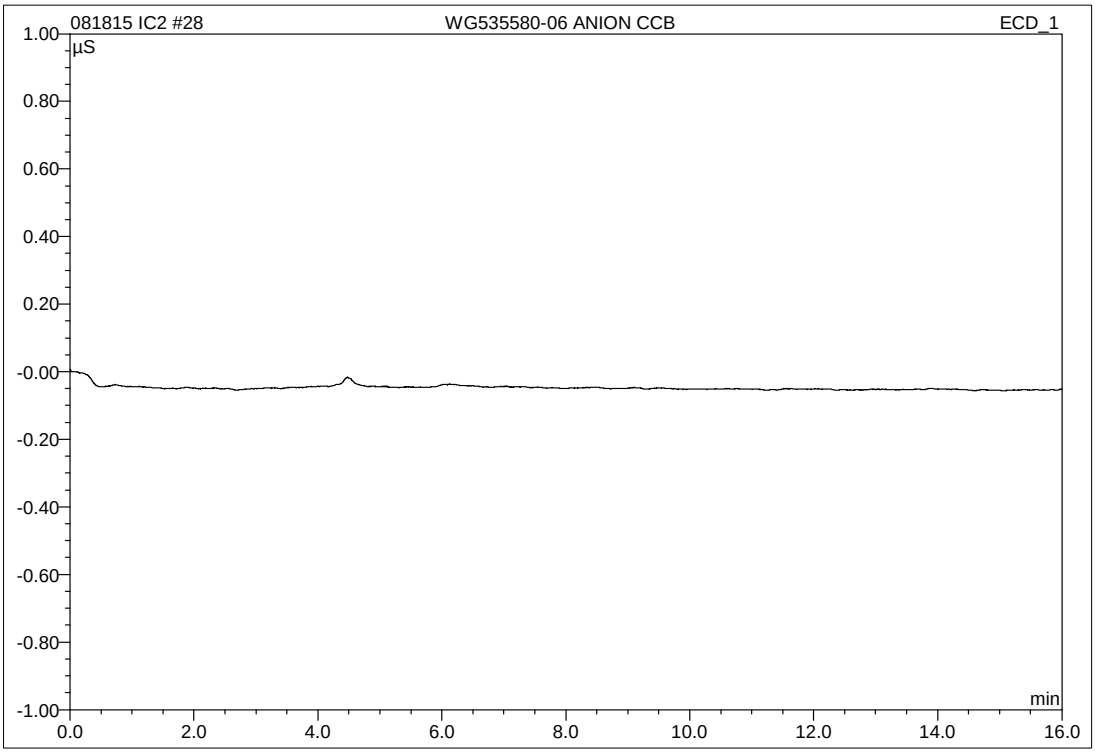

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

RETENTION TIME WINDOWS

Lab Name: MICROBAC Laboratories, Inc.

Instrument ID: IC1

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	6/5/2013	6/5/2013	6/6/2013
File #	WG432976-05	WG432976-07	WG433275-01
Time	16:16	18:25	16:50

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.41	3.40	3.41	0.017
Cl	4.87	4.87	4.88	0.017
NO2-N	5.67	5.66	5.67	0.017
Br	7.01	6.99	7.02	0.046
NO3-N	7.76	7.74	7.77	0.046
SO4	13.35	13.35	13.35	0.000

Instrument ID: IC2

IC Column: AS14A-4mm

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	3/2/2015	3/4/2015	3/5/2015
File #	WG514023-02	WG514341-02	WG514431-02
Time	23:15	18:47	17:41

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.33	3.33	3.32	0.017
Cl	4.75	4.78	4.76	0.043
NO2-N	5.54	5.59	5.56	0.082
Br	6.86	6.98	6.93	0.180
NO3-N	7.59	7.73	7.67	0.222
SO4	12.42	12.38	12.34	0.116

Instrument ID: IC3

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	5/20/2014	5/21/2014	5/21/2014
File #	WG476910-05	WG476934-01	WG476934-03
Time	12:41	9:54	13:59

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.41	3.41	3.41	0.000
Cl	5.11	5.09	5.07	0.050
NO2-N	6.14	6.11	6.07	0.101
Br	7.90	7.84	7.75	0.220
NO3-N	8.94	8.86	8.76	0.271
SO4	13.35	13.39	13.42	0.101

2.4.1.5 Raw QC Data

5 WG535546-01 ANION BLANK

1,1 ALS

Sample Name:	**WG535546-01 ANION BLANK**	*Injection Volume:*	**25.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/18/2015 15:12**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

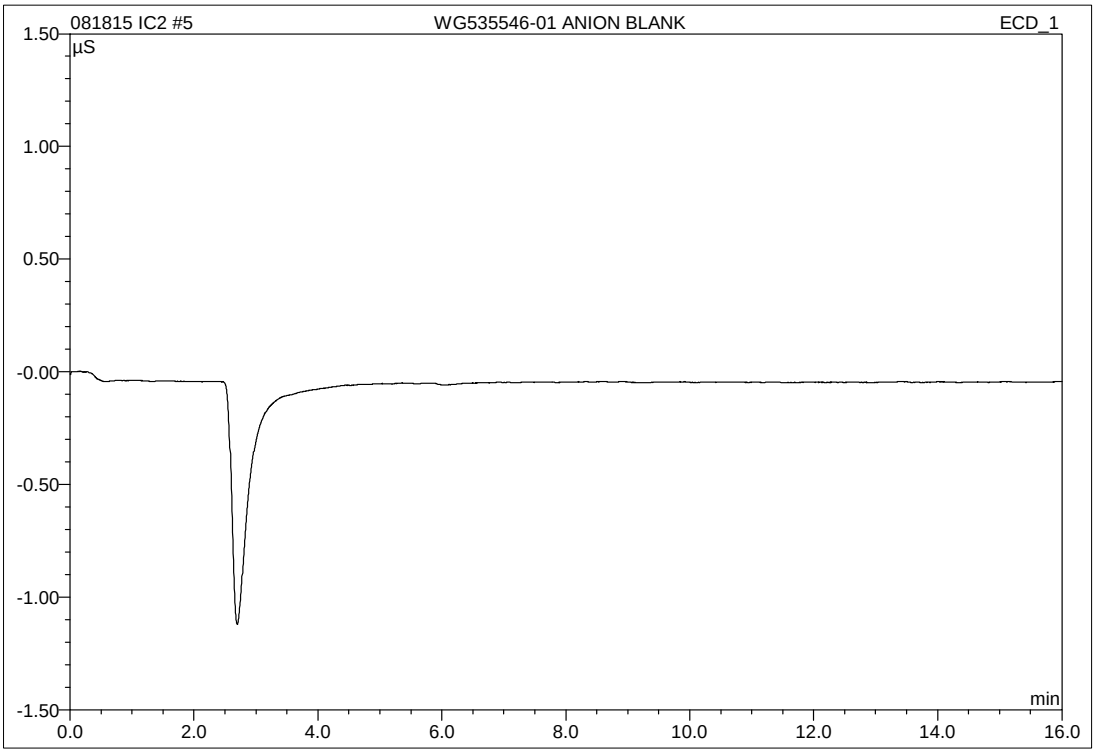

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

6 WG535546-02 ANION LCS

1,1 ALS STD71546

Sample Name:	**WG535546-02 ANION LCS**	*Injection Volume:*	**25.0**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/18/2015 15:31**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

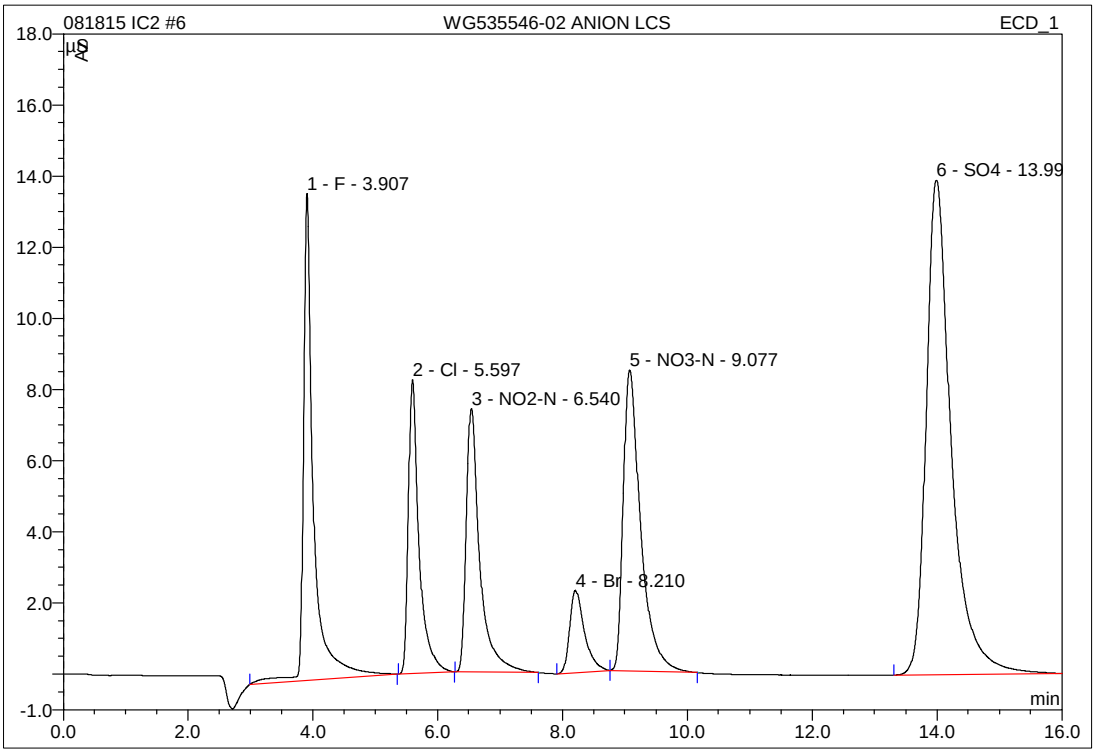

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.91	F	13.685	2.578	16.17	8.290	BMB
2	5.60	Cl	8.254	1.639	10.28	8.238	BMB
3	6.54	NO2-N	7.412	1.874	11.76	4.894	BMB
4	8.21	Br	2.308	0.636	3.99	8.562	BMb
5	9.08	NO3-N	8.454	2.741	17.20	5.287	bMB
6	13.99	SO4	13.897	6.471	40.60	39.262	BMB
Total:			54.010	15.938	100.00	74.532	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

6 WG535546-02 ANION LCS

1,1 ALS STD71546

Sample Name:	**WG535546-02 ANION LCS**	*Injection Volume:*	**25.0**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/18/2015 15:31**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

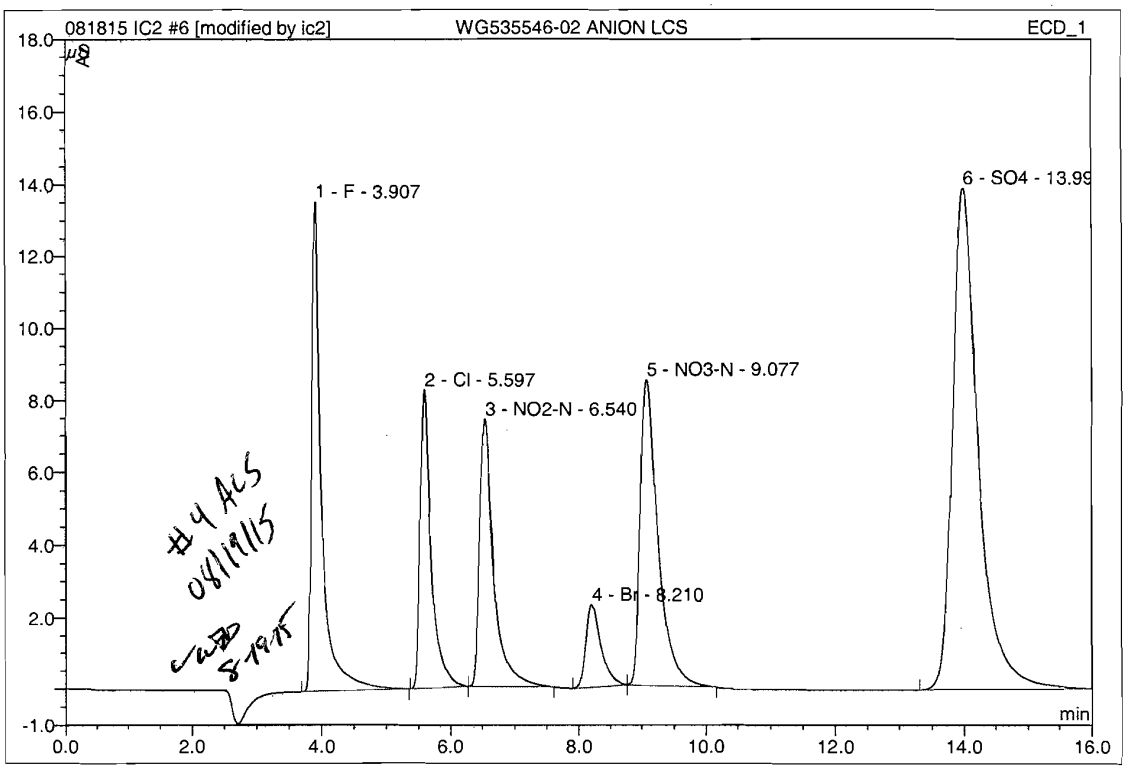

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.91	F	13.585	2.405	15.26	7.734	BMB*
2	5.60	Cl	8.254	1.639	10.40	8.238	BMB
3	6.54	NO2-N	7.412	1.874	11.89	4.894	BMB
4	8.21	Br	2.308	0.636	4.03	8.562	BMb
5	9.08	NO3-N	8.454	2.741	17.39	5.287	bMB
6	13.99	SO4	13.897	6.471	41.04	39.262	BMB
Total:			53.910	15.765	100.00	73.976	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

2.4.2 Alkalinity Data

2.4.2.1 Summary Data

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW18-081715	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	08/19/2015 13:19
Workgroup #:	WG535657	**Analyst:**	DCM	**Run Date:**	08/19/2015 13:27
Collect Date:	08/17/2015 08:30	**Dilution:**	2	**File ID:**	SC150819004.020
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	330		80.0	40.0	20.0

Certificate of Analysis

Sample #:	L15080904-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW24-081715	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	08/19/2015 13:19
Workgroup #:	WG535657	**Analyst:**	DCM	**Run Date:**	08/19/2015 13:28
Collect Date:	08/17/2015 09:55	**Dilution:**	1	**File ID:**	SC150819004.023
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	272		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L15080904-05	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW23-081715	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	08/19/2015 13:19
Workgroup #:	WG535657	**Analyst:**	DCM	**Run Date:**	08/19/2015 13:29
Collect Date:	08/17/2015 11:20	**Dilution:**	1	**File ID:**	SC150819004.024
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	243		40.0	20.0	10.0

Certificate of Analysis

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15080904-07	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW08-081715	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	08/19/2015 13:19
Workgroup #:	WG535657	**Analyst:**	DCM	**Run Date:**	08/19/2015 13:29
Collect Date:	08/17/2015 14:50	**Dilution:**	2	**File ID:**	SC150819004.025
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	414		80.0	40.0	20.0

2.4.2.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809
Value of b from plot:	0.0004135
Absorbance of unknown from quantitation report (y):	0.31
Calculated concentration (x):	0.03964483
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	0.0396 mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796
Value of B from plot:	318.9056
Value of C from plot:	-2.2712
Absorbance of unknown from quantitation report (x):	0.1583
Calculated concentration (y):	50.7495108
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	50.75 mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 19-AUG-2015
Analyst: DCM
Analyst: NA
Method: ALK
Instrument: SC
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG535608 WG535641 WG535657

Calibration/Linearity	08-19-2015
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DCM
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
20-AUG-2015

Secondary Reviewer:
25-AUG-2015

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-25-2015 11:39:38

Microbac Laboratories Inc.

00645469

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 310.2 AAB#: WG535657

Login Number: L15080904

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW18-081715	01	08/17/15					08/19/2015	2.2	14		08/19/15	2.2	14	
50WW24-081715	03	08/17/15					08/19/2015	2.1	14		08/19/15	2.1	14	
50WW23-081715	05	08/17/15					08/19/2015	2.1	14		08/19/15	2.1	14	
50WW08-081715	07	08/17/15					08/19/2015	1.9	14		08/19/15	1.9	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4345897
Report generated 08/21/2015 10:40

METHOD BLANK SUMMARY

Login Number: L15080904
Blank File ID: SC150819004.012
Prep Date: 08/19/15 13:22
Analyzed Date: 08/19/15 13:22
Analyst: DCM

Work Group: WG535657
Blank Sample ID: WG535657-01
Instrument ID: SMARTCHEM
Method: 310.2

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG535657-02	SC150819004.013	08/19/15 13:22	01
LCS2	WG535657-03	SC150819004.014	08/19/15 13:23	01
50WW18-081715	L15080904-01	SC150819004.020	08/19/15 13:27	DL01
50WW24-081715	L15080904-03	SC150819004.023	08/19/15 13:28	01
50WW23-081715	L15080904-05	SC150819004.024	08/19/15 13:29	01
50WW08-081715	L15080904-07	SC150819004.025	08/19/15 13:29	DL01
DUP	WG535657-08	SC150819004.036	08/19/15 13:36	01

Report Name: BLANK_SUMMARY
PDF File ID: 4345898
Report generated 08/21/2015 10:40

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15080904 Prep Date: 08/19/15 13:22 Sample ID: WG535657-01
Instrument ID: SMARTCHEM Run Date: 08/19/15 13:22 Prep Method: 310.2
File ID: SC150819004.012 Analyst: DCM Method: 310.2
Workgroup (AAB#): WG535657 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-19-AUG-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Alkalinity, Total (as CaCO3)	10.0	40.0	10.3	1	J

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4345899
21-AUG-2015 10:40

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15080904 Analyst: DCM Prep Method: 310.2
Instrument ID: SMARTCHEM Matrix: Water Method: 310.2
Workgroup (AAB#): WG535657 Units: mg/L
QC Key: DOD4 Lot #: STD71900

Sample ID: WG535657-02 LCS File ID: SC150819004.013 Run Date: 08/19/2015 13:22
Sample ID: WG535657-03 LCS2 File ID: SC150819004.014 Run Date: 08/19/2015 13:23

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Alkalinity, Total (as CaCO3)	200	200	100	200	200	99.8	0.456	85 - 115	20	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4345900
Report generated: 08/21/2015 10:40

2.4.2.3 Raw Data

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

WORKGROUP: WG535608
535641
535657

Daily Check

- [x] Lamp On
- [x] Probe Rinse Full
- [x] DI Water > ½ Full
- [x] Wash Solution > ½ Full
- [ ] NO3 Reagent bottle connected / purged
- [ ] NO3 pH adj to pH 5-9

Syringe filter lot # _____

- [x] WBL Run
- [x] Reagents Full
- [x] Dilution H_2O Full
- [x] Waste Container Check

1) **Workgroup** _____
Plan # 20150819002
2) **Workgroup** _____
Plan # 20150819003
3) **Workgroup** _____
Plan # 20150819004

Instrument: SC1 [x] SC2 [ ]

	Analyte	1	2	3
		Alk		
		Dilution		
SC Prepared Curve				
Position				
1-1	ICV			
1-2	Blk			
1-3	LCS			
1-4	LCSDup			
1-5	~~WG~~ 535324-01	1/10		
1-6	02			
1-7	08-677-01	1/25		
1-8	02	1/50		
1-9	03	1/50		
1-10	04	1/25		
1-11	08-908-02	1/4		color
1-12	03	1/4		color
1-13	05	1/4		color
1-14	06	1/4		color
1-15	08-901-01			
1-16	MS 02			
1-17	MSD 03			
1-18	04			
1-19	05			
1-20	08-904-01	1/2		
1-21	03			
1-22	05			
2-1	07	1/2		
2-2	Dup 08-904-05			
2-3				

Position	Analyte	1	2	3
2-4 1	ICV			
2-5 2	Blk			
2-6 3	LCS			
2-7 4	LCSDup			
2-8 5	08-908-02	1/4		color
2-9 6	03	1/4		color
2-10 7	05	1/4		color
2-11 8	06	1/4		color
2-12 9	08-901-01			
2-13 10	MS 02			
2-14 11	MSD 03			
2-15 12	04			
2-16 13	05			
2-17 14	08-904-01	1/2		
2-18 15	03			
2-19 16	05			
2-20 17	07	1/2		
2-21 18	Dup 08-904-05			
2-22 19				
2-23				
2-24				
2-25				
2-26				
3-1	ICV			
3-2	Blk			

NOTES:
* Run NO2 std on NO3 runs
* LCSD must be run if no MS or Duplicate
*MS(10% sample): NO3, TKN, NH3, PHOS

DCN#112634

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

WORKGROUP: WG535608

Position	Analyte	1	2	3
	L			
3-3	LCS			
3-4	LCSDUP			
3-5	08-901-01			
3-6	MS 02			
3-7	MSD 03			
3-8	04			
3-9	05			
3-10	08-904-01	1/2		
3-11	03			
3-12	05			
3-13	07	1/2		
3-14	08-992-01	1/2		
3-15	03			

Position	Analyte	1	2	3
3-16	08-992-05			
3-17	07			
3-18	09	1/2		
3-19	08-995-01			
3-20	02			
3-21	04			
3-22	DUP 08-995-04			
3-23	Blk 0			
3-24				
3-25				
3-26				
3-27				
3-28				

	Chloride	EPA 325.2/SM 4500-CI E-2000
	Nitrate-Nitrite	EPA 353.2/SM 4500-NO3 F-2000
✓	Alkalinity	EPA 310.2
	Sulfate	EPA 375.4/SM 426C (15th)/ SM4500-504 E-1997

	Ammonia	EPA 350.1/SM 4500-NH3 B-1997
	TKN	EPA 351.2
	Phos	EPA 365.4

Analyte	Alk		Reagents
SOP & Revision	K3102R17		RGT 34505
Curve Stock (SC made)	Std 70552		
NO2 STD			
ICV	Std 71610		
CCV	Std 71896		
LCS	Std 71900		
MS	Std 70284 Dilution 0.4(2500)/10=100		

Comments:

Analyst: David Merfield

Date: 8/19/15

DCN#112634

MICROBAC (OVD)

SMARTCHEM200 INST1 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.0	0.7777	0.00		11:04:37 AM
DIL-1	RBL	0.0	0.8003	0.00	R	11:04:55 AM
DIL-1	RBL	0.0	0.7878	0.00		11:05:48 AM
DIL-1	Std-1	0.0	0.0017	0.00	INV	11:06:06 AM
SR5-1	Std-2	10.0	-0.0060	0.00		11:07:00 AM
SR5-2	Std-3	20.0	-0.0365	0.00		11:07:18 AM
SR5-3	Std-4	50.0	-0.0732	0.00		11:08:12 AM
SR5-4	Std-5	100.0	-0.1601	0.00		11:08:31 AM
SR5-5	Std-6	200.0	-0.3412	0.00		11:09:25 AM
SR5-6	Std-7	250.0	-0.4538	0.00		11:09:42 AM
SR5-7	Std-8	300.0	-0.5264	0.00		11:10:37 AM
ST-3	1CCV (150 mg/L)	153.7	-0.2594	102.45		11:10:54 AM
ST-2	2CCB (0 mg/L)	11.2	-0.0134	0.00		11:11:49 AM
1	ICV	255.7	-0.4494	0.00		11:12:07 AM
2	WG535608-01 BLK	13.8	-0.0175	0.00		11:13:01 AM
3	WG535608-02 LCS	199.0	-0.3423	0.00		11:13:19 AM
4	WG535608-03 LCSDUP	197.8	-0.3401	0.00		11:14:13 AM
5	WG535324-01 (10) FB1	206.7	-0.3566	0.00		11:14:31 AM
6	WG535324-02 FB2	-75.0	0.1266	0.00	INV,><,LL	11:15:25 AM
7	L15080677-01 (25)	145.8	-0.2452	0.00		11:15:43 AM
8	L15080677-02 (50)	103.1	-0.1698	0.00		11:16:37 AM
9	L15080677-03 (50)	90.4	-0.1476	0.00		11:16:55 AM
10	L15080677-04 (25)	83.0	-0.1349	0.00		11:17:49 AM
ST-3	1CCV (150 mg/L)	153.8	-0.2596	102.52		11:18:07 AM
ST-2	2CCB (0 mg/L)	18.3	-0.0250	0.00		11:19:01 AM
11	L15080908-02 (4)	259.0	-0.4559	0.00		11:19:19 AM
12	L15080908-03 (4)	149.2	-0.2513	0.00		11:20:13 AM
13	L15080908-05 (4)	254.0	-0.4462	0.00		11:20:31 AM
14	L15080908-06 (4)	138.4	-0.2321	0.00		11:21:25 AM
15	L15080901-01	92.6	-0.1515	0.00		11:21:43 AM
16	L15080901-02 MS	175.3	-0.2987	0.00		11:22:37 AM
17	L15080901-03 MSD	175.5	-0.2990	0.00		11:22:55 AM

Report Date :08/19/2015 **Run Date :8/19/2015** **Operator : WESTCO** **Plan # :20150819002**

Plan Description : ALK-A1-DCM/08/19/2015

MICROBAC (OVD)

SMARTCHEM200 INST1 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
18	L15080901-04	X 74.7	-0.1206	0.00		11:23:49 AM
19	L15080901-05	X 74.7	-0.1206	0.00		11:24:07 AM
20	L15080904-01 (2)	X 173.8	-0.2959	0.00		11:25:01 AM
ST-3	1CCV (150 mg/L)	157.1	-0.2656	104.74		11:25:19 AM
ST-2	2CCB (0 mg/L)	30.5	-0.0455	0.00		11:26:13 AM
21	L15080904-03	X277.6	-0.4920	0.00		11:26:31 AM
22	L15080904-05 WG-07 REF	255.5	-0.4491	0.00		11:27:25 AM
23	L15080904-07 (2)	X 214.9	-0.3719	0.00		11:27:43 AM
24	WG535608-08 DUP	255.0	-0.4481	0.00		11:28:37 AM
25	ID 25	27.9	-0.0411	0.00		11:28:55 AM
ST-3	1CCV (150 mg/L)	161.0	-0.2727	107.36		11:29:49 AM
ST-2	2CCB (0 mg/L)	29.3	-0.0435	0.00		11:30:07 AM

Report Date :08/19/2015 **Run Date :8/19/2015** **Operator : WESTCO** **Plan # :20150819002**

Plan Description : ALK-A1-DCM/08/19/2015

Calibrant Report - WALK -

Calib Lot #:010104 Exp Date:6/21/2020 User:MICROBAC

Plan # : 20150819002 Description : [ALK-A1-DCM/08/19/2015] Unit

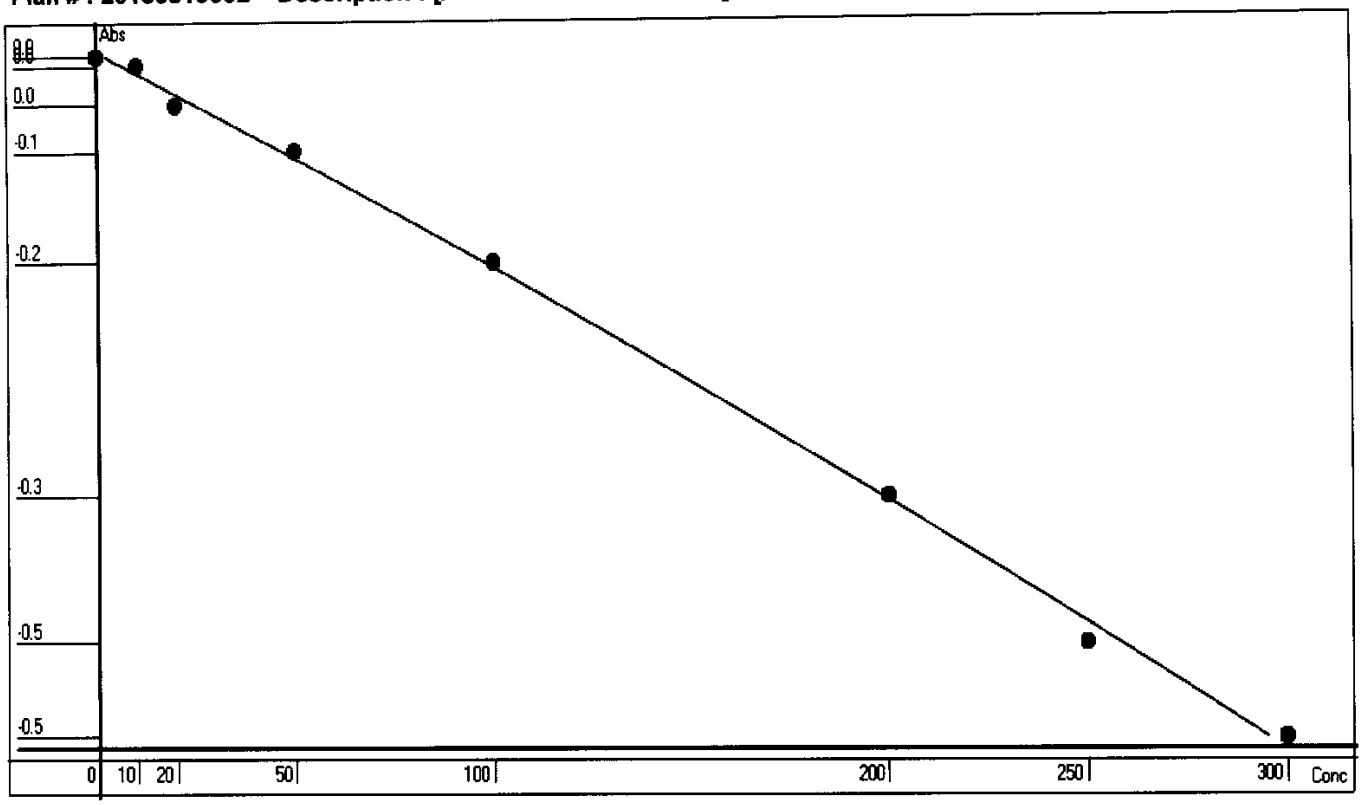

Point	OD	Conc	Recalc Conc	% Error
1	0.0017	0	2.1356	213.56
2	-0.0060	10	6.7941	-32.06
3	-0.0365	20	25.1336	25.67
4	-0.0732	50	46.9624	-6.08
5	-0.1601	100	97.6104	-2.39
6	-0.3411	200	198.4102	-0.79
7	-0.4538	250	257.9702	3.19
8	-0.5264	300	295.0362	-1.65

Conc= -96.7741*Abso^2 -605.4082*Abso +3.1651 R^2=0.9985

RBL
0.7828
0

Report Date 8/19/2015 Run Date 8/19/2015

MICROBAC (OVD)

SMARTCHEM200 INST1 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.0	0.7429	0.00		12:06:09 PM
DIL-1	RBL	0.0	0.7441	0.00		12:06:27 PM
DIL-1	RBL	0.0	0.7495	0.00		12:07:21 PM
DIL-1	Std-1	0.0	0.0083	0.00	INV	12:07:39 PM
SR5-1	Std-2	10.0	-0.0092	0.00		12:08:34 PM
SR5-2	Std-3	20.0	-0.0367	0.00		12:08:51 PM
SR5-3	Std-4	50.0	-0.0776	0.00		12:09:46 PM
SR5-4	Std-5	100.0	-0.1636	0.00		12:10:04 PM
SR5-5	Std-6	200.0	-0.3388	0.00		12:10:57 PM
SR5-6	Std-7	250.0	-0.4535	0.00		12:11:15 PM
SR5-7	Std-8	300.0	-0.5283	0.00		12:12:09 PM
ST-3	1CCV (150 mg/L)	147.3	-0.2497	98.19		12:12:27 PM
ST-2	2CCB (0 mg/L)	5.9	-0.0044	0.00		12:13:22 PM
1	ICV	257.0	-0.4526	0.00		12:13:40 PM
2	WG535641-01 BLK	19.0	-0.0264	0.00		12:14:34 PM
3	WG535641-02 LCS	196.8	-0.3398	0.00		12:14:52 PM
4	WG535641-03 LCSDUP	199.1	-0.3440	0.00		12:15:46 PM
5	L15080908-02 (4)	259.7	-0.4579	0.00		12:16:04 PM
6	L15080908-03 (4)	142.2	-0.2406	0.00		12:16:58 PM
7	L15080908-05 (4)	252.8	-0.4447	0.00		12:17:16 PM
8	L15080908-06 (4)	134.7	-0.2272	0.00		12:18:10 PM
9	L15080901-01	X 87.2	-0.1434	0.00		12:18:28 PM
10	L15080901-02 MS	X 161.2	-0.2748	0.00		12:19:22 PM
ST-3	1CCV (150 mg/L)	152.0	-0.2582	101.34		12:19:40 PM
ST-2	2CCB (0 mg/L)	18.4	-0.0253	0.00		12:20:34 PM
11	L15080901-03 MSD	X 160.5	-0.2736	0.00		12:20:52 PM
12	L15080901-04	72.8	-0.1184	0.00		12:21:46 PM
13	L15080901-05	76.5	-0.1248	0.00		12:22:04 PM
14	L15080904-01 (2)	177.5	-0.3044	0.00		12:22:58 PM
15	L15080904-03	274.3	-0.4858	0.00		12:23:16 PM
16	L15080904-05 WG-07 REF	248.8	-0.4370	0.00		12:24:10 PM
17	L15080904-07 (2)	X 214.2	-0.3720	0.00		12:24:28 PM

Report Date :08/19/2015 **Run Date :8/19/2015** **Operator : WESTCO** **Plan # :20150819003**

Plan Description : ALK-B1-DCM/08/19/2015

MICROBAC (OVD)
SMARTCHEM200 INST1 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
18	**WG535641-08 DUP**	**251.4**	**-0.4421**	**0.00**		**12:25:22 PM**
19	**ID 19**	**35.3**	**-0.0540**	**0.00**		**12:25:40 PM**
ST-3	**1CCV (150 mg/L)**	**167.7**	**-0.2865**	**111.77**		**12:26:34 PM**
ST-2	**2CCB (0 mg/L)**	**31.4**	**-0.0473**	**0.00**		**12:26:52 PM**

Report Date :08/19/2015 **Run Date :8/19/2015** **Operator : WESTCO** **Plan # :20150819003**

Plan Description : ALK-B1-DCM/08/19/2015

Calibrant Report - WALK -

Calib Lot #:010104 Exp Date:6/21/2020 User:MICROBAC

Plan # : 20150819003 Description : [ALK-B1-DCM/08/19/2015] Unit

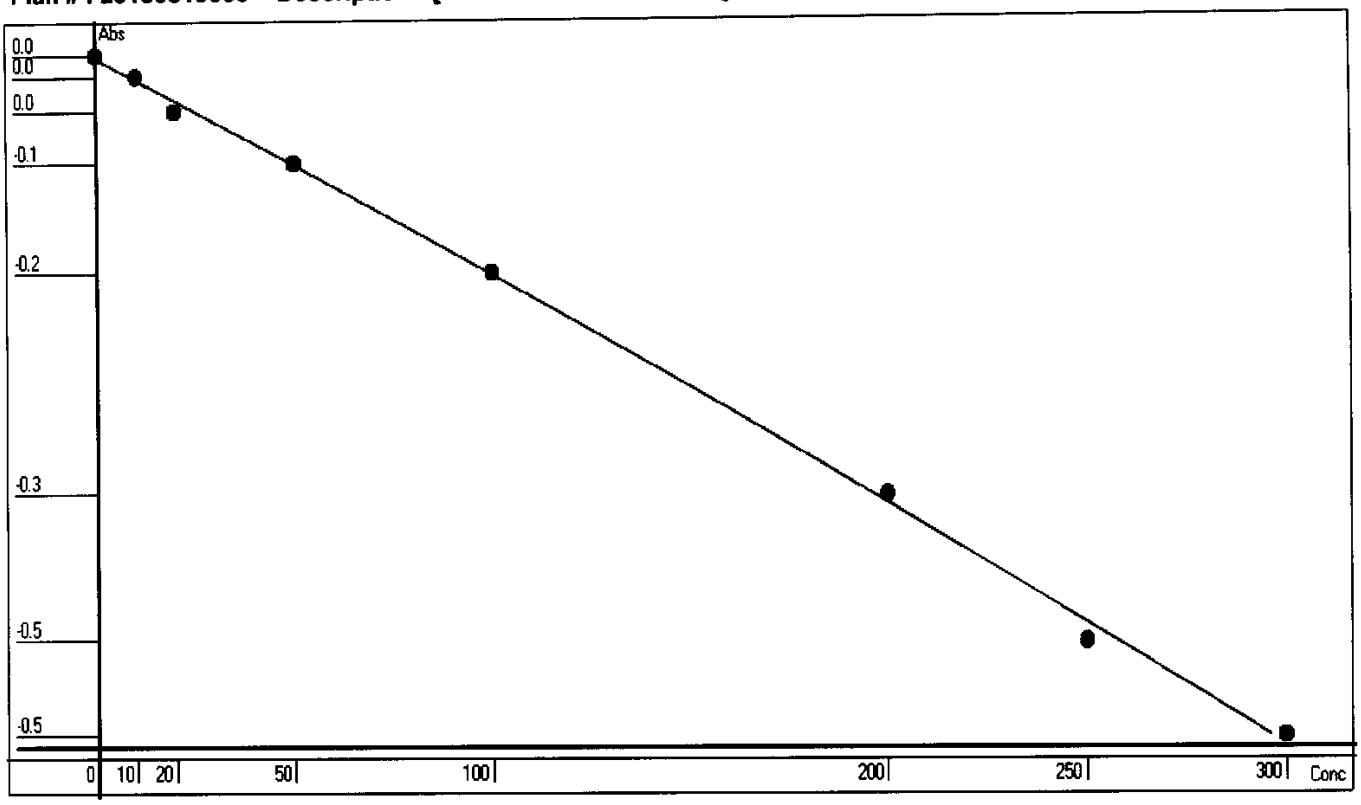

Point	OD	Conc	Recalc Conc	% Error
1	0.0083	0	-1.6394	-163.94
2	-0.0092	10	8.7972	-12.03
3	-0.0367	20	25.0989	25.49
4	-0.0776	50	49.1211	-1.76
5	-0.1636	100	98.7632	-1.24
6	-0.3388	200	196.2491	-1.88
7	-0.4535	250	257.4225	2.97
8	-0.5283	300	296.1867	-1.27

Conc= -79.6568*Abso^2 -596.446*Abso +3.3166 R^2=0.9988

RBL
0.7435
0

Report Date 8/19/2015 Run Date 8/19/2015

MICROBAC (OVD)

SMARTCHEM200 INST1 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.0	0.6118	0.00		1:13:57 PM
DIL-1	RBL	0.0	0.6154	0.00		1:14:15 PM
DIL-1	RBL	0.0	0.6151	0.00		1:15:09 PM
DIL-1	Std-1	0.0	-0.0029	0.00		1:15:27 PM
SR5-1	Std-2	10.0	-0.0196	0.00		1:16:21 PM
SR5-2	Std-3	20.0	-0.0309	0.00		1:16:39 PM
SR5-3	Std-4	50.0	-0.0654	0.00		1:17:33 PM
SR5-4	Std-5	100.0	-0.1359	0.00		1:17:51 PM
SR5-5	Std-6	200.0	-0.2940	0.00		1:18:45 PM
SR5-6	Std-7	250.0	-0.3855	0.00		1:19:03 PM
SR5-7	Std-8	300.0	-0.4382	0.00		1:19:58 PM
ST-3	1CCV (150 mg/L)	150.3	-0.2167	100.17		1:20:17 PM
ST-2	2CCB (0 mg/L)	12.3	-0.0185	0.00		1:21:10 PM
1	ICV	252.3	-0.3736	0.00		1:21:27 PM
2	WG535657-01 BLK	10.3	-0.0157	0.00		1:22:22 PM
3	WG535657-02 LCS	200.5	-0.2927	0.00		1:22:40 PM
4	WG535657-03 LCSDUP	199.5	-0.2913	0.00		1:23:34 PM
5	L15080901-01	74.4	-0.1059	0.00		1:23:52 PM
6	L15080901-02 MS	149.0	-0.2148	0.00		1:24:46 PM
7	L15080901-03 MSD	150.3	-0.2168	0.00		1:25:04 PM
8	L15080901-04	52.7	-0.0750	0.00		1:25:58 PM
9	L15080901-05	60.4	-0.0860	0.00		1:26:16 PM
10	L15080904-01 (2)	165.1	-0.2390	0.00		1:27:10 PM
ST-3	1CCV (150 mg/L)	148.2	-0.2137	98.83		1:27:28 PM
ST-2	2CCB (0 mg/L)	10.5	-0.0160	0.00		1:28:22 PM
11	L15080904-03	271.8	-0.4048	0.00		1:28:40 PM
12	L15080904-05	243.1	-0.3591	0.00		1:29:34 PM
13	L15080904-07 (2)	207.1	-0.3030	0.00		1:29:52 PM
14	L15080992-01 (2)	186.7	-0.2717	0.00		1:30:46 PM
15	L15080992-03	272.6	-0.4061	0.00		1:31:04 PM
16	L15080992-05	293.3	-0.4397	0.00	><	1:31:58 PM
17	L15080992-07	283.6	-0.4238	0.00		1:32:16 PM
18	L15080992-09 (2)	152.7	-0.2203	0.00		1:33:10 PM
19	L15080995-01	236.7	-0.3490	0.00		1:33:28 PM
20	L15080995-02	31.7	-0.0455	0.00		1:34:22 PM
ST-3	1CCV (150 mg/L)	151.4	-0.2184	100.93		1:34:40 PM

Report Date :08/20/2015 **Run Date :08/19/2015** **Operator : WESTCO** **Plan # :20150819004**

Plan Description : ALK-C1-DCM/08/19/2015

MICROBAC (OVD)

SMARTCHEM200 INST1 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
ST-2	2CCB (0 mg/L)	15.4	-0.0227	0.00		1:35:34 PM
21	L15080995-04	38.3	-0.0547	0.00		1:35:52 PM
22	WG535608-08 DUP	38.2	-0.0546	0.00		1:36:46 PM
23	ID 23	14.9	-0.0221	0.00		1:37:04 PM
ST-3	1CCV (150 mg/L)	154.1	-0.2224	102.71		1:37:58 PM

dim 8/20/15

57

Report Date :08/20/2015 **Run Date :08/19/2015** **Operator : WESTCO** **Plan # :20150819004**

Plan Description : ALK-C1-DCM/08/19/2015

Calibrant Report - WALK -

Calib Lot #:010104 Exp Date:6/21/2020 User:MICROBAC

Plan # : 20150819004 Description : [ALK-C1-DCM/08/19/2015] Unit [mg/L]

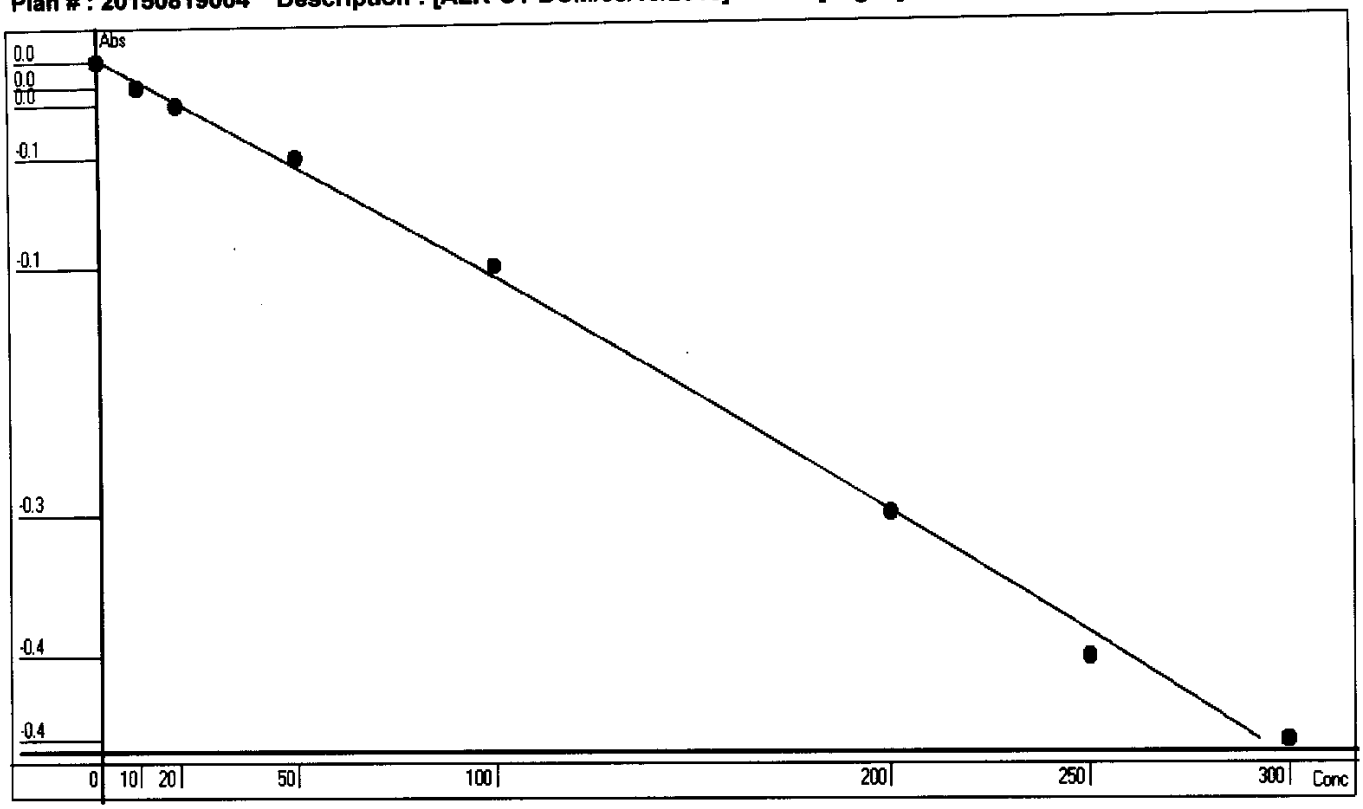

Point	OD	Conc	Recalc Conc	% Error
1	-0.0029	0	1.0794	107.94
2	-0.0196	10	13.1581	31.58
3	-0.0309	20	21.2903	6.45
4	-0.0654	50	45.9152	-8.17
5	-0.1359	100	95.2820	-4.72
6	-0.2940	200	201.3336	0.67
7	-0.3855	250	259.7685	3.91
8	-0.4382	300	292.4454	-2.52

Conc= -128.8296*Abso^2 -726.1719*Abso -1.0254 R^2=0.9979

RBL
0.6153
0

Report Date 8/20/2015 Run Date 8/19/2015

2.4.3 Phosphorus Data

2.4.3.1 Summary Data

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW18-081715	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	08/21/2015 09:45
Workgroup #:	WG535957	**Analyst:**	DCM	**Run Date:**	08/21/2015 09:51
Collect Date:	08/17/2015 08:30	**Dilution:**	1	**File ID:**	S2150821002.016
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW24-081715	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	08/21/2015 09:45
Workgroup #:	WG535957	**Analyst:**	DCM	**Run Date:**	08/21/2015 09:51
Collect Date:	08/17/2015 09:55	**Dilution:**	1	**File ID:**	S2150821002.017
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-05	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW23-081715	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	08/21/2015 09:45
Workgroup #:	WG535957	**Analyst:**	DCM	**Run Date:**	08/21/2015 09:52
Collect Date:	08/17/2015 11:20	**Dilution:**	1	**File ID:**	S2150821002.018
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.347	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-07	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW08-081715	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	08/21/2015 09:45
Workgroup #:	WG535957	**Analyst:**	DCM	**Run Date:**	08/21/2015 09:53
Collect Date:	08/17/2015 14:50	**Dilution:**	1	**File ID:**	S2150821002.021
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.256	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.4.3.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809
Value of b from plot:	0.0004135
Absorbance of unknown from quantitation report (y):	0.31
Calculated concentration (x):	0.03964483
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	0.0396 mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796
Value of B from plot:	318.9056
Value of C from plot:	-2.2712
Absorbance of unknown from quantitation report (x):	0.1583
Calculated concentration (y):	50.7495108
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	50.75 mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 21-AUG-2015
Analyst: DCM
Analyst: NA
Method: PHOS
Instrument: SC
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG535957

Calibration/Linearity	08-21-2015
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DCM
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
24-AUG-2015

Secondary Reviewer:
25-AUG-2015

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-25-2015 11:31:19

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 365.4 AAB#: WG535957

Login Number: L15080904

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW18-081715	01	08/17/15					08/21/2015	4.1	28		08/21/15	4.1	28	
50WW24-081715	03	08/17/15					08/21/2015	4	28		08/21/15	4	28	
50WW23-081715	05	08/17/15					08/21/2015	3.9	28		08/21/15	3.9	28	
50WW08-081715	07	08/17/15					08/21/2015	3.8	28		08/21/15	3.8	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4351440
Report generated 08/25/2015 08:22

METHOD BLANK SUMMARY

Login Number: L15080904
Blank File ID: S2150821002.010
Prep Date: 08/21/15 09:47
Analyzed Date: 08/21/15 09:47
Analyst: DCM

Work Group: WG535957
Blank Sample ID: WG535957-01
Instrument ID: SMARTCHEM2
Method: 365.4

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG535957-02	S2150821002.011	08/21/15 09:47	01
50WW18-081715	L15080904-01	S2150821002.016	08/21/15 09:51	01
50WW24-081715	L15080904-03	S2150821002.017	08/21/15 09:51	01
50WW23-081715	L15080904-05	S2150821002.018	08/21/15 09:52	01
50WW08-081715	L15080904-07	S2150821002.021	08/21/15 09:53	01
DUP	WG535957-04	S2150821002.028	08/21/15 09:58	01

Report Name: BLANK_SUMMARY
PDF File ID: 4351441
Report generated 08/25/2015 08:22

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15080904 Prep Date: 08/21/15 09:47 Sample ID: WG535957-01
Instrument ID: SMARTCHEM2 Run Date: 08/21/15 09:47 Prep Method: 365.4
File ID: S2150821002.010 Analyst: DCM Method: 365.4
Workgroup (AAB#): WG535957 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-21-AUG-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Phosphorus, Total	0.100	0.400	-0.125	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4351442
25-AUG-2015 08:22

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15080904 Run Date: 08/21/2015 Sample ID: WG535957-02
Instrument ID: SMARTCHEM2 Run Time: 09:47 Prep Method: 365.4
File ID: S2150821002.011 Analyst: DCM Method: 365.4
Workgroup (AAB#): WG535957 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD71788 Cal ID: SMARTC-21-AUG-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Phosphorus, Total	1.00	0.982	98.2	70 - 130	

LCS - Modified 03/06/2008
PDF File ID: 4351443
Report generated: 08/25/2015 08:22

2.4.3.3 Raw Data

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

WORKGROUP: WG535957

Daily Check

- [x] Lamp On
- [x] Probe Rinse Full
- [x] DI Water > ½ Full
- [x] Wash Solution > ½ Full
- [ ] NO3 Reagent bottle connected / purged
- [ ] NO3 pH adj to pH 5-9

Syringe filter lot # _____

- [x] WBL Run
- [x] Reagents Full
- [x] Dilution H_2O Full
- [x] Waste Container Check

1) **Workgroup** _____
Plan # _____
2) **Workgroup** _____
Plan # _____
3) **Workgroup** _____
Plan # _____

Instrument: SC1 [ ] SC2 [x]

	Analyte	1	2	3
		PHOS		
		Dilution		
SC Prepared Curve				
Position				
1-1	ICV			
1-2	Blk			
1-3	LCS			
1-4	08-622-01			
1-5	02			
1-6	03			
1-7	04			
1-8	08-904-01			
1-9	03			
1-10	05			
1-11	07			
1-12	08-992-01			
1-13	03			
1-14	05			
1-15	07			
1-16	09			
1-17	08-1001-02	1mL/250		
1-18	DUP 08-622-03			
1-19	MS08-622-03			
1-20	MS 08-622-04			
1-21	08-1001-02	1mL/250		
1-22				
2-1				
2-2				
2-3				

Position	Analyte	1	2	3
2-4				
2-5				
2-6				
2-7				
2-8				
2-9				
2-10				
2-11				
2-12				
2-13				
2-14				
2-15				
2-16				
2-17				
2-18				
2-19				
2-20				
2-21				
2-22				
2-23				
2-24				
2-25				
2-26				
3-1				
3-2				

NOTES:
* Run NO2 std on NO3 runs
* LCSD must be run if no MS or Duplicate
*MS(10% sample): NO3, TKN, NH3, PHOS

DCN#112689

SMARTCHEM RUN LOG
(smartchem2, smartchem3)

WORKGROUP: WG535957

Position	Analyte	1	2	3
3-3				
3-4				
3-5				
3-6				
3-7				
3-8				
3-9				
3-10				
3-11				
3-12				
3-13				
3-14				
3-15				

Position	Analyte	1	2	3
3-16				
3-17				
3-18				
3-19				
3-20				
3-21				
3-22				
3-23				
3-24				
3-25				
3-26				
3-27				
3-28				

	Chloride	EPA 325.2/SM 4500-CI E-2000
	Nitrate-Nitrite	EPA 353.2/SM 4500-NO3 F-2000
	Alkalinity	EPA 310.2
	Sulfate	EPA 375.4/SM 426C (15th)/ SM4500-504 E-1997

	Ammonia	EPA 350.1/SM 4500-NH3 B-1997
	TKN	EPA 351.2
✓	Phos	EPA 365.4

Analyte	PHOS		Reagents
SOP & Revision	K 3654 R18		RGT 34471
Curve Stock (SC made)			RGT 34313
NO2 STD			RGT 34527
ICV	Digest		
CCV	see Log		
LCS			
MS	Dilution		

Comments: _____

Analyst: David Mayfield Date: 8/21/15

DCN#112689

TKN/Phosphorus Digestion Log

TKN WG: _____ Phos WG: _____

TKN Std: Std 71953 Phos Std: Std 71833

TKN CCV: 1/2 (Std 71953) Phos CCV: 1/2 (Std 71953)

TKN ICV: Std 71708 Phos ICV: Std 71787

TKN LCS: Std 71707 Phos LCS: Std 71788

MS/MSD: Std 72041

Daily Dilution: 1(25)/25 = 1

Block Digester Temperature: 380 °C Digest Reagent: RGT 34441

	Sample	Volume	TKN Dilution	Phos Dilution		Sample	Volume	TKN Dilution	Phos Dilution
1	Std		5	2	26	08-904-07			✓
2	Std		5	2	27	08-992-01			✓
3	ICVT		2		28	03			✓
4	ICVP			1.5	29	05			✓
5	LCST		1		30	07			✓
6	LCSP			1	31	09			✓
7	08-622-01		✓	✓	32	08-1001-02	1/250		✓
8	02		✓	✓	33	08-841-02	1/10	✓	*
9	03		✓	✓	34	DUP 08-622-03		✓	✓
10	04		✓	✓	35	MS 08-622-03		✓	✓
11	08-908-02	1/50	✓		36	MS 08-622-04		✓	✓
12	05	1/50	✓		37				
13	08-1034-01		✓		38				
14	02		✓		39				
15	03		✓		40				
16	04		✓		41				
17	05		✓		42				
18	06		✓		43				
19	07		✓		44				
20	08		✓		45				
21	09		✓		46				
22	10		✓		47				
23	08-904-01			✓	48				
24	03			✓	49				
25	05			✓	50				

Analyst: David Merkle Date: 8/20/15

* Diluted due to matrix interference

MICROBAC (OVD)
SMARTCHEM200 INST2 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WTPH -Unit [mg/L] - EPA 365.4 TOTAL PHOSPHORUS

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.000	0.0268	0.00		9:40:13 AM
DIL-1	RBL	0.000	0.0275	0.00		9:40:30 AM
DIL-1	RBL	0.000	0.0291	0.00		9:41:25 AM
SR5-1	Std-1	0.010	0.0183	0.00		9:41:42 AM
SR5-2	Std-2	0.200	0.0378	0.00		9:42:37 AM
SR5-3	Std-3	0.500	0.0771	0.00		9:42:54 AM
SR5-4	Std-4	1.000	0.1478	0.00		9:43:49 AM
SR5-5	Std-5	1.500	0.2144	0.00		9:44:07 AM
ST-1	Std-6	2.000	0.2886	0.00		9:45:01 AM
ST-3	1CCV (1 mg/L)	1.012	0.1503	101.19		9:45:19 AM
ST-2	2CCB (0 mg/L)	0.070	0.0215	0.00		9:46:13 AM
1	ICV	1.496	0.2165	0.00		9:46:31 AM
2	WG535957-01 BLK	-0.125	-0.0052	0.00	INV,><,LL	9:47:25 AM
3	WG535957-02 LCS	0.982	0.1462	0.00		9:47:43 AM
4	L15080622-01	-0.099	-0.0018	0.00	INV,><,LL	9:48:37 AM
5	L15080622-02	-0.110	-0.0032	0.00	INV,><,LL	9:48:55 AM
6	L15080622-03	0.036	0.0168	0.00	><	9:49:49 AM
7	L15080622-04	-0.020	0.0092	0.00	><,LL	9:50:07 AM
8	L15080904-01	0.045	0.0181	0.00	><	9:51:01 AM
9	L15080904-03	-0.001	0.0118	0.00	><,LL	9:51:19 AM
10	L15080904-05	0.347	0.0593	0.00	EPL	9:52:13 AM
ST-3	1CCV (1 mg/L)	0.992	0.1476	99.21		9:52:31 AM
ST-2	2CCB (0 mg/L)	0.037	0.0170	0.00	><	9:53:25 AM
11	L15080904-07	0.256	0.0469	0.00	EPL	9:53:43 AM
12	L15080992-01	1.191	0.1748	0.00	EPL	9:54:37 AM
13	L15080992-03	1.840	0.2635	0.00	EPL	9:54:55 AM
14	L15080992-05	1.963	0.2804	0.00	EPL	9:55:49 AM
15	L15080992-07	-0.124	-0.0051	0.00	INV,><,LL	9:56:07 AM
16	L15080992-09	0.359	0.0610	0.00	EPL	9:57:01 AM
17	L15081001-02 (250)	X0.149	0.0323	0.00		9:57:19 AM
18	WG535957-04 DUP	0.002	0.0121	0.00	><	9:58:13 AM
19	WG535957-05 MS	0.918	0.1374	0.00		9:58:31 AM

Report Date :08/21/2015 **Run Date :8/21/2015** **Operator : WESTCO** **Plan # :20150821002**

Plan Description : PHOS-A2-DCM/08/21/2015

MICROBAC (OVD)
SMARTCHEM200 INST2 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WTPH -Unit [mg/L] - EPA 365.4 TOTAL PHOSPHORUS

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
20	WG535957-07 MS	0.980	0.1460	0.00		9:59:25 AM
ST-3	1CCV (1 mg/L)	1.009	0.1499	100.90		9:59:43 AM
ST-2	2CCB (0 mg/L)	0.042	0.0176	0.00	><	10:00:37 AM
21	ID 21 08-1001-02 (250)	1.492	0.2160	0.00	EPL	10:00:55 AM
22	ID 22	0.997	0.1483	0.00		10:01:49 AM
23	ID 23	-0.114	-0.0038	0.00	INV,><,LL	10:02:07 AM
ST-3	1CCV (1 mg/L)	1.048	0.1553	104.84		10:03:01 AM
ST-2	2CCB (0 mg/L)	0.045	0.0181	0.00	><	10:03:19 AM

Report Date :08/21/2015 Run Date :8/21/2015 Operator : WESTCO Plan # :20150821002

Plan Description : PHOS-A2-DCM/08/21/2015

Calibrant Report - WTPH -

Calib Lot #:010104 Exp Date:6/18/2020 User:MICROBAC

Plan # : 20150821002 Description : [PHOS-A2-DCM/08/21/2015] Unit

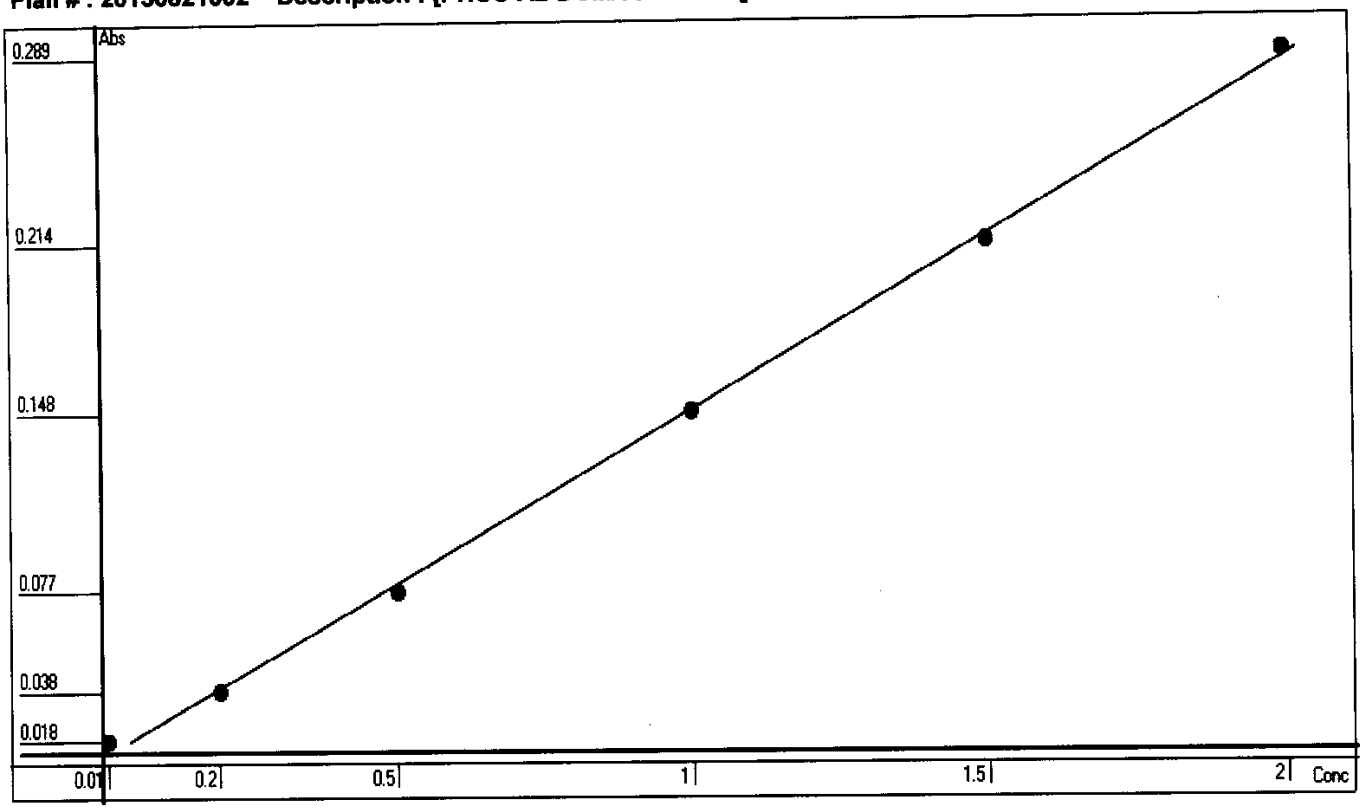

Point	OD	Conc	Recalc Conc	% Error
1	0.0182	0.01	0.0465	365.00
2	0.0378	0.2	0.1898	-5.10
3	0.0771	0.5	0.4771	-4.58
4	0.1478	1	0.9940	-0.60
5	0.2144	1.5	1.4809	-1.27
6	0.2885	2	2.0227	1.14

Conc= +7.3113*Abso -0.0866 R^2=0.9990

RBL
0.0271
0

Report Date 8/21/2015 Run Date 8/21/2015

2.4.4 Sulfide Data

2.4.4.1 Summary Data

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-01	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW18-081715	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG535595	**Analyst:**	TB	**Run Date:**	08/19/2015 15:01
Collect Date:	08/17/2015 08:30	**Dilution:**	1	**File ID:**	ET.1508191501-04
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-03	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW24-081715	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG535595	**Analyst:**	TB	**Run Date:**	08/19/2015 15:01
Collect Date:	08/17/2015 09:55	**Dilution:**	1	**File ID:**	ET.1508191501-05
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-05	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW23-081715	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG535595	**Analyst:**	TB	**Run Date:**	08/19/2015 15:01
Collect Date:	08/17/2015 11:20	**Dilution:**	1	**File ID:**	ET.1508191501-06
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-07	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW08-081715	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG535595	**Analyst:**	TB	**Run Date:**	08/19/2015 15:01
Collect Date:	08/17/2015 14:50	**Dilution:**	1	**File ID:**	ET.1508191501-07
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.4.4.2 QC Summary Data

Example Total Sulfide(Liquid) Calculations

[mL Iodine * N Iodide) - (mL titrant * N titrant)] * 16000/(volume * dilution) = mg/L Sulfide

where:

mL Iodine = mL of Iodine used
N Iodine = normality of Iodine
mL titrant = mL of titrant used
N titrant = normality of titrant
16000 = factor: 1mL of 0.025 N iodine reacts with 0.4mg sulfide
volume = mL filtered of mL titrated(if not filtered)
dilution = dilution in decimal form (1/5 = 0.2)

Example Total Sulfide(Soil) Calculations

[(mL Iodine * N Iodine) - (mL titrant * N titrant)] * 16.03/weight = mg/kg sulfide

where:

mL Iodine = mL of Iodine used
N Iodine = normality of Iodine
mL titrant = normality of titrant
16.03 = 32.06 grams per 2 equivalents
weight = kg of sample used

Microbac Laboratories Inc.

Data Checklist

Date: 18-AUG-2015
Analyst: TB
Analyst: NA
Method: S
Instrument: BURET
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG535595

Calibration/Linearity	08/18/2015
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	TB
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
21-AUG-2015

Secondary Reviewer:
27-AUG-2015

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-27-2015 07:49:40

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: SM4500-S-(-2)-F-

AAB#: WG535595

Login Number: L15080904

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW18-081715	01	08/17/15					08/19/2015	2.3	7		08/19/15	2.3	7	
50WW24-081715	03	08/17/15					08/19/2015	2.2	7		08/19/15	2.2	7	
50WW23-081715	05	08/17/15					08/19/2015	2.2	7		08/19/15	2.2	7	
50WW08-081715	07	08/17/15					08/19/2015	2	7		08/19/15	2	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4353567
Report generated 08/26/2015 09:18

METHOD BLANK SUMMARY

Login Number: L15080904
Blank File ID: ET.1508191501-01
Prep Date: 08/19/15 15:01
Analyzed Date: 08/19/15 15:01
Analyst: TB

Work Group: WG535595
Blank Sample ID: WG535595-01
Instrument ID: BURET
Method: SM4500-S-(-2)-F-

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG535595-02	ET.1508191501-02	08/19/15 15:01	
LCS2	WG535595-03	ET.1508191501-03	08/19/15 15:01	
50WW18-081715	L15080904-01	ET.1508191501-04	08/19/15 15:01	
50WW24-081715	L15080904-03	ET.1508191501-05	08/19/15 15:01	
50WW23-081715	L15080904-05	ET.1508191501-06	08/19/15 15:01	
50WW08-081715	L15080904-07	ET.1508191501-07	08/19/15 15:01	

Report Name: BLANK_SUMMARY
PDF File ID: 4353568
Report generated 08/26/2015 09:18

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15080904 Prep Date: 08/19/15 15:01 Sample ID: WG535595-01
Instrument ID: BURET Run Date: 08/19/15 15:01 Prep Method: SM4500-S-(-2)-F
File ID: ET.1508191501-01 Analyst: TB Method: SM4500-S-(-2)-F
Workgroup (AAB#): WG535595 Matrix: Water Units: mg/L
Contract #: Cal ID: BURET-

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Sulfide	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4353569
26-AUG-2015 09:18

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15080904 Analyst: TB Prep Method: SM4500-S-(-2)-F
Instrument ID: BURET Matrix: Water Method: SM4500-S-(-2)-F
Workgroup (AAB#): WG535595 Units: mg/L
QC Key: DOD4 Lot #: STD72077

Sample ID: WG535595-02 LCS File ID: ET.1508191501-02 Run Date: 08/19/2015 15:01
Sample ID: WG535595-03 LCS2 File ID: ET.1508191501-03 Run Date: 08/19/2015 15:01

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Sulfide	21.0	20.0	95.2	21.0	20.0	95.2	0.00	85 - 115	10	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4353570
Report generated: 08/26/2015 09:18

2.4.4.3 Raw Data

SULFIDE
(sulfide1)

WORKGROUP: WG535595

Water:
EPA 376.1 / SM4500-S(-2)-F
SOP K3761 Revision #: 16

Soil:
SM846 9030B/9034
SOP K9030 Revision #: _____

Instrument: Buret

LCS: SH 72077

Iodine standardization (0.025N) COA: 18311
mL 0.025N titrant: 10.0
Volume I: 10.0 mL
Normality I: 0.025

(0.1 N I) COA: 18088
mL 0.025 N titrant: 8.0
Volume I: ~~0.10~~ 2.0 mL
Normality I: 0.10

TB 8/19/15

Stock standardization (in duplicate) 5.0 mL stock
mL I 1) 10.0 2) 10.0
N I 1) 0.10 2) 0.10
mL 0.025 titrant 1) 22.5 2) 22.5
LCS daily dilution: 3(1400)/200 = 21.0 mg/L

1400 = stock conc (mg/L)

Titrant: T- 1606-05-06

SAMPLE	Volume Filtered mL	mL Iodine	N Iodine	0.025 N Sodium Thiosulfate (mL)
BLANK	200	15.0	0.025	15.0
LCS (mL)	200	15.0	0.025	5.0
LCSDUP (mL)	200	15.0	0.025	5.0
8-904-01	480	15.0	0.025	15.0
03	480	15.0	0.025	15.0
05	500	15.0	0.025	14.6
07	480	15.0	0.025	15.0
992-01	490	15.0	0.025	14.5
03	480	15.0	0.025	14.8
05	510	15.0	0.025	14.9
07	470	15.0	0.025	15.0
09	480	15.0	0.025	15.0
1025-01	175	15.0	0.025	15.0
8-0001-01	200	15.0	0.025	14.6
02	200	15.0	0.025	14.5
03	200	15.0	0.025	14.5

7(1400)/200 = 49.0

20(49)/1000 = 0.98

Analyst: Tom Boyle Date/Time: 1500 8/19/15

DCN#112630

Microbac Laboratories Inc.
TITRAMETRIC REPORT

Workgroup (AAB#): WG535595
Product: EPA 376.1\9034
Analyte: Sulfide

Analyst: TB
Run Date: 08/19/2015 15:01

SAMPLE NUMBER	Volume	Vol I	Nor I	Vol T	Nor T	Dil	Analytical	Reported	Units
WG535595-01	200.0	15	.025	15	.025	1	0	0	mg/L
WG535595-02	200.0	15	.025	5	.025	1	20.0	20.00	mg/L
WG535595-03	200.0	15	.025	5	.025	1	20.0	20.00	mg/L
L15080904-01	480.0	15	.025	15	.025	1	0	ND	mg/L
L15080904-03	480.0	15	.025	15	.025	1	0	ND	mg/L
L15080904-05	500.0	15	.025	14.6	.025	1	0.320	ND	mg/L
L15080904-07	480.0	15	.025	15	.025	1	0	ND	mg/L
L15080992-01	490.0	15	.025	14.5	.025	1	0.408	ND	mg/L
L15080992-03	480.0	15	.025	14.8	.025	1	0.167	ND	mg/L
L15080992-05	510.0	15	.025	14.9	.025	1	0.0784	ND	mg/L
L15080992-07	470.0	15	.025	15	.025	1	0	ND	mg/L
L15080992-09	480.0	15	.025	15	.025	1	0	ND	mg/L
L15080001-01	200.0	15	.025	14.6	.025	1	0.800	0.8000	mg/L
L15080001-02	200.0	15	.025	14.5	.025	1	1.00	1.000	mg/L
L15080001-03	200.0	15	.025	14.5	.025	1	1.00	1.000	mg/L

SULFIDE_REPORT - Modified 03/06/2008

Report generated 08/21/2015 11:01

[redacted]

Microbac Laboratories Inc.
TITRAMETRIC REPORT

Workgroup (AAB#): WG535595
Product: 9030
Analyte: Sulfide, Dissolved

Analyst: TB
Run Date: 08/19/2015 15:01

SAMPLE NUMBER	Volume	Vol I	Nor I	Vol T	Nor T	Dil	Analytical	Reported	Units
L15081025-01	175.0	15	.025	15	.025	1	0	ND	mg/L

SULFIDE_REPORT - Modified 03/06/2008

Report generated 08/21/2015 11:01

[redacted]

2.4.5 Total Organic Carbon Data

2.4.5.1 Summary Data

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-01	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW18-081715	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	05/27/2015 15:47
Workgroup #:	WG535967	**Analyst:**	DIH	**Run Date:**	08/22/2015 02:55
Collect Date:	08/17/2015 08:30	**Dilution:**	5	**File ID:**	TC08212015.059
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	5.00	U	10.0	5.00	2.50

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-03	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW24-081715	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	05/27/2015 15:47
Workgroup #:	WG535967	**Analyst:**	DIH	**Run Date:**	08/22/2015 03:08
Collect Date:	08/17/2015 09:55	**Dilution:**	4	**File ID:**	TC08212015.060
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	4.00	U	8.00	4.00	2.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-05	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW23-081715	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	05/27/2015 15:47
Workgroup #:	WG535967	**Analyst:**	DIH	**Run Date:**	08/21/2015 14:17
Collect Date:	08/17/2015 11:20	**Dilution:**	5	**File ID:**	TC08212015.018
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	5.00	U	10.0	5.00	2.50

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080904-07	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW08-081715	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	05/27/2015 15:47
Workgroup #:	WG535967	**Analyst:**	DIH	**Run Date:**	08/22/2015 03:21
Collect Date:	08/17/2015 14:50	**Dilution:**	4	**File ID:**	TC08212015.061
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	4.00	U	8.00	4.00	2.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080904
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.4.5.2 QC Summary Data

Total Organic Carbon Example Calculations
(Direct Readout Parameter)

(Readout)/(dilution) = mg/L

where:

Readout = direct readout from the instrument
dilution = dilution in decimal form (ex. 1/5 dilution = 0.2)

Microbac Laboratories Inc.

Data Checklist

Date: 21-AUG-2015
Analyst: DIH
Analyst: NA
Method: TOC
Instrument: TOC
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG535967

Calibration/Linearity	5/27/2015
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DIH
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
25-AUG-2015

Secondary Reviewer:
25-AUG-2015

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-25-2015 11:16:56

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 415.1 AAB#: WG535967

Login Number: L15080904

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW18-081715	01	08/17/15					08/22/2015	4.8	28		08/22/15	4.8	28	
50WW24-081715	03	08/17/15					08/22/2015	4.7	28		08/22/15	4.7	28	
50WW23-081715	05	08/17/15					08/21/2015	4.1	28		08/21/15	4.1	28	
50WW08-081715	07	08/17/15					08/22/2015	4.5	28		08/22/15	4.5	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4351931
Report generated 08/25/2015 10:59

METHOD BLANK SUMMARY

Login Number: L15080904
Blank File ID: TC08212015.003
Prep Date: 08/21/15 10:35
Analyzed Date: 08/21/15 10:35
Analyst: DIH

Work Group: WG535967
Blank Sample ID: WG535967-01
Instrument ID: TOC-VWP
Method: 415.1

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG535967-02	TC08212015.004	08/21/15 10:49	01
LCS2	WG535967-03	TC08212015.005	08/21/15 11:02	01
DUP	WG535967-05	TC08212015.009	08/21/15 12:00	01
50WW23-081715	L15080904-05	TC08212015.018	08/21/15 14:17	DL01
50WW18-081715	L15080904-01	TC08212015.059	08/22/15 02:55	DL01
50WW24-081715	L15080904-03	TC08212015.060	08/22/15 03:08	DL01
50WW08-081715	L15080904-07	TC08212015.061	08/22/15 03:21	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4351932
Report generated 08/25/2015 10:59

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15080904 Prep Date: 08/21/15 10:35 Sample ID: WG535967-01
Instrument ID: TOC-VWP Run Date: 08/21/15 10:35 Prep Method: 415.1
File ID: TC08212015.003 Analyst: DIH Method: 415.1
Workgroup (AAB#): WG535967 Matrix: Water Units: mg/L
Contract #: Cal ID: TOC-VW-27-MAY-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Total Organic Carbon	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4351933
25-AUG-2015 10:59

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15080904 Analyst: DIH Prep Method: 415.1
Instrument ID: TOC-VWP Matrix: Water Method: 415.1
Workgroup (AAB#): WG535967 Units: mg/L
QC Key: DOD4 Lot #: STD69935

Sample ID: WG535967-02 LCS File ID: TC08212015.004 Run Date: 08/21/2015 10:49
Sample ID: WG535967-03 LCS2 File ID: TC08212015.005 Run Date: 08/21/2015 11:02

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Total Organic Carbon	25.0	23.6	94.3	25.0	21.5	86.2	9.00	85 - 115	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4351934
Report generated: 08/25/2015 10:59

2.4.5.3 Raw Data

Curve wg525298

Total Organic Carbon

MAKE DAILY

CCV (TOC): _____ (5/200)(1000) = 25mg/L

LCS (TOC): _____ (5/200)(1000) = 25mg/L

CCV (TIC): _____ (5/200)(1000) = 25mg/L

see below

MS (TOC): _____

Calibration Curve Date: _____

Reagent: ~~RGT 33399~~ 33691 ~~RGT 32721~~

☑ SM5310-C : Matrix 2 WG_____

☐ EPA 415.1/9060A(mod): Matrix 1 WG_____ SOP: K 4151 Rev. 18

WG_____ Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

- ☑ drain reservoir filled
- ☑ ASI water bottle full
- ☑ dilution water bottle full
- ☑ 3rd bottle full
- ☑ sufficient gas
- ☑ sufficient persulfate
- ☑ sufficient acid
- ☑ waste container

Position	Sample ID	Dilution	Position	Sample ID	Dilution	Position	Sample ID	Dilution
1	TC curve		26	TC curve		51		
2	TC curve		27	std 65368		52	see SOP for	
3	TC ICV		28			53	curve points	
4	~~TOC~~ TIC ICV		29	TIC curve		54		
5	on		30	std 68972		55		
6			31			56		
7			32			57		
8			33	TOC(TC)		58		
9			34	ICV		59	5/200(1000) = 25	
10			35	std 69935		60		
11			36			61		
12			37	TIC ICV		62		
13	all points		38	std 68222		63		
14	analyzed		39			64		
15	in duplicate		40			65		
16			41			66		
17			42			67		
18			43			68		
19			44			69		
20			45			70		
21			46			71		
22			47			72		
23			48			73		
24			49			74		
25			50			75		

Analyst: [signature] Date/Time: 5/27/15

DCN#110878

C:\TOC3201\Data\05-27-2015-DIH-CURVE.t32

	Analysis	Sample Name	Result	Status	Date / Time	Vial	
1	TC	TCCURVE		Complete	5/27/2015 3:55:16 PM	0, 1, 2,	
2	IC	TICCURVE		Complete	5/27/2015 5:11:46 PM	0, 6, 7,	
3	TC	TC ICV	TC:24.70mg/L	Complete	5/27/2015 5:28:06 PM	11	98.8%
4	IC	TIC ICV	IC:24.92mg/L	Complete	5/27/2015 5:40:34 PM	12	99.7%

5/28/2015 7:38:55 AM

1/1

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Cal. Curve

Sample Name: TCCURVE
Sample ID: Untitled
Cal. Curve: TCCURVE-05-27-2015.2015_05_27_14_45_03.cal
Status Completed

Type	Anal.
Standard	TC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	14.21	500uL	1	*******		5/27/2015 2:48:37 PM
2	14.13	500uL	1	*******		5/27/2015 2:52:11 PM

Acid Add. 0.000%
Mean Area 14.17

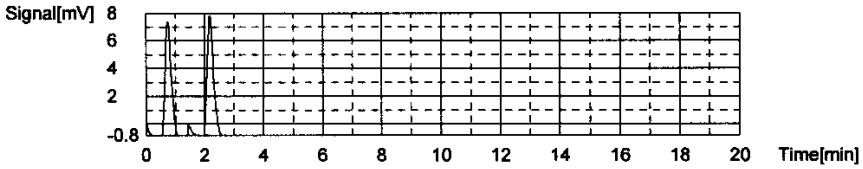

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	72.68	500uL	1	*******		5/27/2015 2:57:41 PM
2	73.82	500uL	1	*******		5/27/2015 3:01:49 PM

Acid Add. 0.000%
Mean Area 73.25

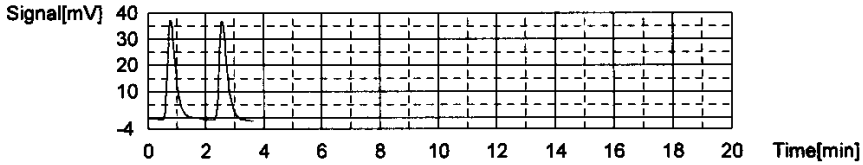

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	231.5	500uL	1	*******		5/27/2015 3:07:44 PM
2	231.3	500uL	1	*******		5/27/2015 3:12:05 PM

Acid Add. 0.000%
Mean Area 231.4

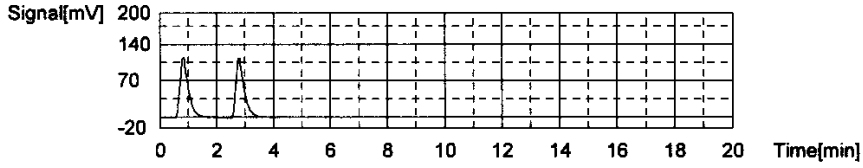

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	440.2	500uL	1	*******		5/27/2015 3:18:32 PM
2	435.3	500uL	1	*******		5/27/2015 3:23:03 PM

Acid Add. 0.000%
Mean Area 437.8

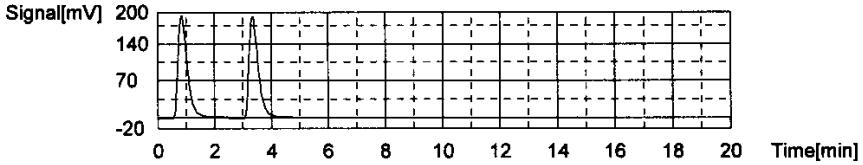

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1094	500uL	1	*******		5/27/2015 3:31:04 PM
2	1079	500uL	1	*******		5/27/2015 3:38:10 PM

Acid Add. 0.000%
Mean Area 1087

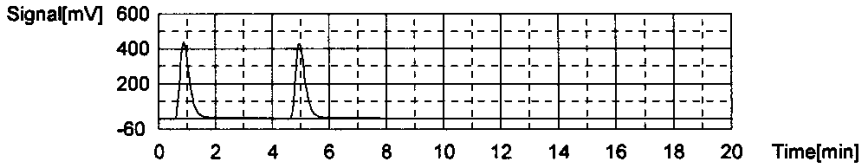

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	2210	500uL	1	T******		5/27/2015 3:47:01 PM
2	2208	500uL	1	T******		5/27/2015 3:55:16 PM

Acid Add. 0.000%
Mean Area 2209

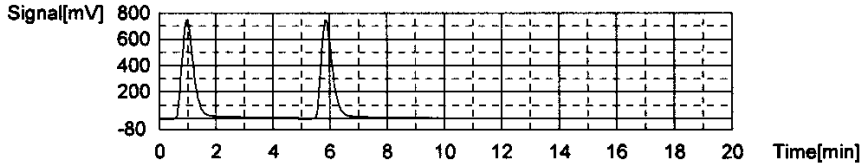

Slope: 43.70
Intercept 12.49
r^2 0.999746 ✓
Zero Shift No

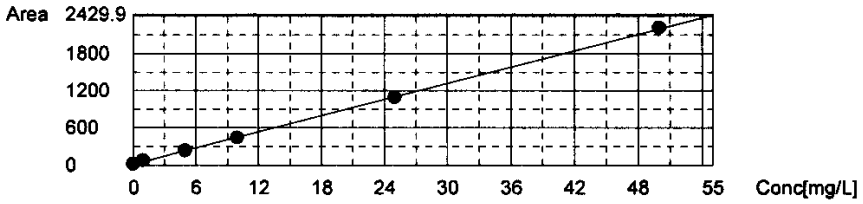

Cal. Curve

Sample Name: TICCURVE
Sample ID: Untitled
Cal. Curve: TICCURVE-05-27-2015.2015_05_27_15_55_16.cal
Status Completed

Type	Anal.
Standard	IC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	12.69	500uL	1	*******		5/27/2015 3:59:17 PM
2	12.56	500uL	1	*******		5/27/2015 4:03:21 PM

Acid Add. 10.00%
Mean Area 12.63

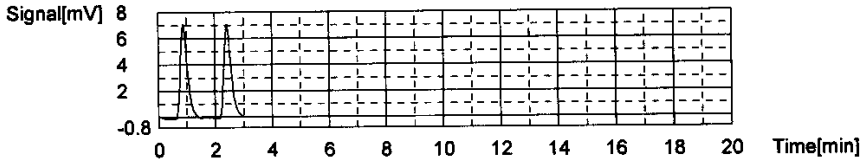

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	56.24	500uL	1	*******		5/27/2015 4:11:08 PM
2	56.43	500uL	1	*******		5/27/2015 4:15:44 PM

Acid Add. 10.00%
Mean Area 56.34

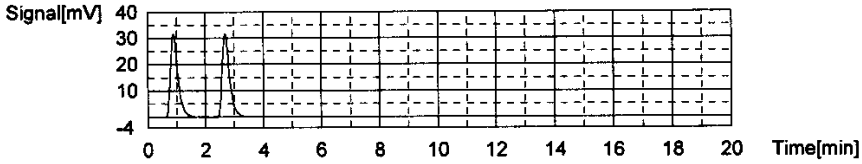

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	178.6	500uL	1	*******		5/27/2015 4:23:48 PM
2	185.6	500uL	1	*******		5/27/2015 4:28:40 PM

Acid Add. 10.00%
Mean Area 182.1

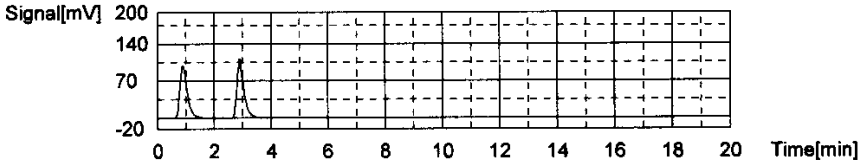

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	339.3	500uL	1	*******		5/27/2015 4:37:04 PM
2	343.0	500uL	1	*******		5/27/2015 4:42:04 PM

Acid Add. 10.00%
Mean Area 341.1

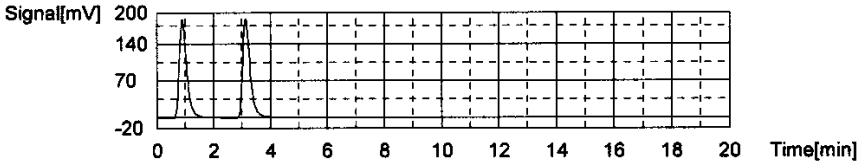

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	802.7	500uL	1	*******		5/27/2015 4:50:52 PM
2	804.1	500uL	1	*******		5/27/2015 4:56:25 PM

Acid Add. 10.00%
Mean Area 803.4

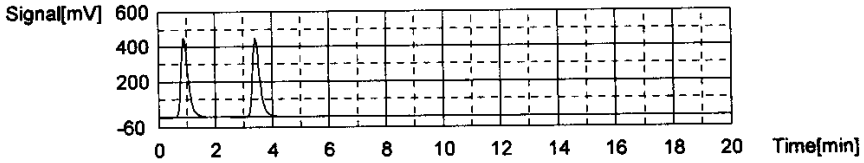

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1592	500uL	1	*******		5/27/2015 5:05:46 PM
2	1578	500uL	1	*******		5/27/2015 5:11:46 PM

Acid Add. 10.00%
Mean Area 1585

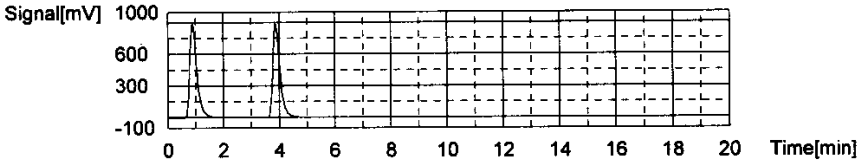

Slope: 31.27
Intercept 22.45
r^2 0.999917
Zero Shift No

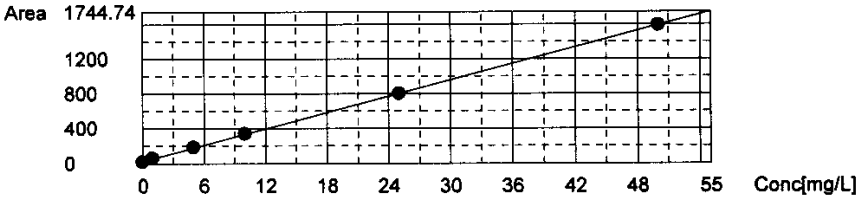

Sample

Sample Name: TC ICV
Sample ID: Untitled
Origin: TCCURVE-05-27-2015.cal
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TC	1.000	TC:24.70mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1111	25.13mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_05	5/27/2015 5:21:56 PM
2	1073	24.27mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_05	5/27/2015 5:28:06 PM

Mean Area 1092
Mean Conc. 24.70mg/L

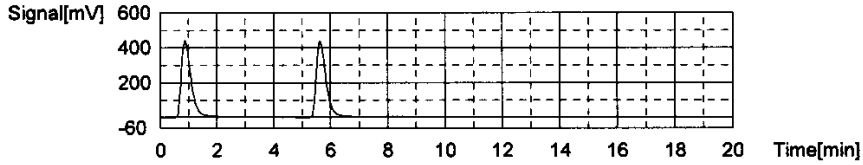

Sample

Sample Name:	TIC ICV
Sample ID:	Untitled
Origin:	TICCURVE-05-27-2015.cal
Status	Completed
Chk. Result	

Type	Anal.	Dil.	Result
Unknown	IC	1.000	IC:24.92mg/L

1. Det

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	800.1	24.87mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/27/2015 5:35:10 PM
2	803.2	24.97mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/27/2015 5:40:34 PM

Mean Area	801.7
Mean Conc.	24.92mg/L

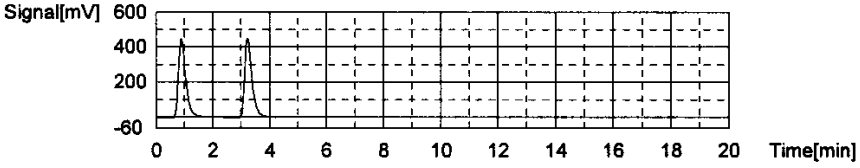

WORKGROUP: WG535967 ~~535971~~

Total Organic Carbon

MAKE DAILY

CCV (TOC): std 65368 (5/200)(1000) = 25mg/L

LCS (TOC): std 69935/71349 (5/200)(1000) = 25mg/L

CCV (TIC): std 71349 (5/200)(1000) = 25mg/L

MS (TOC): 0.4/40(1000) = 40

Calibration Curve Date: 5/27/15

Reagent: RGT 34171, RGT 34459

☑ SM5310-C: Matrix 2 WG 535967

☑ EPA 415.1/9060A(mod): Matrix 1 WG 535971 SOP: K 4151 Rev. _____

WG _____ Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

☑ drain reservoir filled
☑ ASI water bottle full
☑ dilution water bottle full
☑ 3rd bottle full
☑ sufficient gas
☑ sufficient persulfate
☑ sufficient acid
☑ waste container

Position	Sample ID	Dilution
1	TIC 25	
2	CCV 25	
3	BLK	
4	LCS 25	
5	LCSDUP	
6	08-776-09	1/10
7	08-899-01	
8	08-901-01	
9	DUP 01	
10	MS 02	
11	MSD 03	
12	04	
13	05	
14	CCV	
15	CCB	
16	08-904-01	1/3
17	03	
18	05	1/5
19	07	
20	08-992-01	1/2
21	08-992-03	1/3
22	05	1/2
23	07	1/3
24	09	1/3
25	08-995-01	1/3

Position	Sample ID	Dilution
26	CCV	
27	CCB	
28	08-995-02	1/5
29	04	1/3
30	08-1073-01	1/5
31	03	1/3
32	~~DUP~~ BLK	
33	LCS 25	
34	LCSDUP	
35	08-935-01	
36	08-936-01	
37	02	
38	CCV	
39	CCB	
40	08-936-03	
41	04	
42	05	
43	06	
44	07	
45	08-1075-01	
46	02	
47	08-1076-01	1/50
48	08-1077-01	1/50
49	08-1095-01	
50	CCV	

Position	Sample ID	Dilution
51	CCB	
52	08-1010-01	
53	02	
54	03	
55	DUP	
56	MS	
57	08-901-04	1/3
58	-05	1/3
59	08-904-01	1/5
60	03	1/4
61	07	1/4
62	CCV	
63	CCB	
64	08-992-05	1/4
65	09	1/5
66	08-995-01	1/5
67		
68		
69	CCV	
70	CCB	
71		
72		
73		
74		
75		

Analyst: Deanna Dession Date/Time: 8/21/15

DCN#112693

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	Analysis	Sample Name	Result	Status	Date / Time	Vial
1	TOC	TIC 25	!!Error!! TOC:-1.152mg/L TC:22.89mg/L IC:24.04mg/L	Complete	8/21/2015 10:17:44 A	1
2	TOC	CCV 25	!!Error!! TOC:22.67mg/L TC:22.21mg/L IC:-0.4624mg/L	Complete	8/21/2015 10:30:15 A	2
3	TOC	WG535967-01 BLK	!!Error!! TOC:0.3575mg/L TC:-0.03691mg/L IC:-0.3944mg	Complete	8/21/2015 10:39:34 A	0
4	TOC	WG535967-02 LCS	TOC:23.57mg/L TC:43.94mg/L IC:20.37mg/L	Complete	8/21/2015 10:55:05 A	4
5	TOC	WG535967-03 LCSDUP	TOC:21.54mg/L TC:41.63mg/L IC:20.09mg/L	Complete	8/21/2015 11:08:40 A	5
6	TOC	L15080776-09 (10)	TOC:17.61mg/L TC:23.85mg/L IC:6.240mg/L	Complete	8/21/2015 11:22:09 A	6
7	TOC	L15080899-01	TOC:12.04mg/L TC:38.45mg/L IC:26.41mg/L	Complete	8/21/2015 11:38:15 A	7
8	TOC	L15080901-01	!!Error!! TOC:-0.8513mg/L TC:40.67mg/L IC:41.52mg/L	Complete	8/21/2015 11:51:54 A	8
9	TOC	WG535967-05 DUP	TOC:0.03409mg/L TC:40.21mg/L IC:40.18mg/L	Complete	8/21/2015 12:06:27 P	9
10	TOC	L15080901-02 MS	TOC:9.701mg/L TC:40.37mg/L IC:30.67mg/L	Complete	8/21/2015 12:21:21 P	10
11	TOC	L15080901-03 MSD	TOC:8.403mg/L TC:38.47mg/L IC:30.07mg/L	Complete	8/21/2015 12:35:33 P	11
12	TOC		!!Error!! TOC:-22.88mg/L TC:80.23mg/L IC:103.1mg/L	Complete	8/21/2015 12:53:46 P	12
13	TOC		!!Error!! TOC:-23.34mg/L TC:80.51mg/L IC:103.8mg/L	Complete	8/21/2015 1:11:46 PM	13
14	TOC	CCV	TOC:23.36mg/L TC:23.69mg/L IC:0.3337mg/L	Complete	8/21/2015 1:25:43 PM	14
15	TOC	CCB	!!Error!! TOC:0.2675mg/L TC:0.01091mg/L IC:-0.2566mg/L	Complete	8/21/2015 1:35:13 PM	0
16	TOC		!!Error!! TOC:-8.590mg/L TC:53.30mg/L IC:61.89mg/L	Complete	8/21/2015 1:51:45 PM	16
17	TOC		!!Error!! TOC:-21.84mg/L TC:86.23mg/L IC:108.1mg/L	Complete	8/21/2015 2:09:40 PM	17
18	TOC	L15080904-05 (5)	TOC:0.1746mg/L TC:12.54mg/L IC:12.37mg/L	Complete	8/21/2015 2:22:40 PM	18
19	TOC		!!Error!! TOC:-21.26mg/L TC:85.33mg/L IC:106.6mg/L	Complete	8/21/2015 2:40:41 PM	19
20	TOC	L15080992-01 (2)	TOC:1.173mg/L TC:19.14mg/L IC:17.96mg/L	Complete	8/21/2015 2:54:18 PM	20
21	TOC	L15080992-03 (3)	!!Error!! TOC:-1.192mg/L TC:34.13mg/L IC:35.32mg/L	Complete	8/21/2015 3:08:39 PM	21
22	TOC		!!Error!! TOC:-4.279mg/L TC:52.43mg/L IC:56.71mg/L	Complete	8/21/2015 3:24:47 PM	22
23	TOC	L15080992-07 (3)	!!Error!! TOC:-0.8804mg/L TC:34.63mg/L IC:35.51mg/L	Complete	8/21/2015 3:38:59 PM	23
24	TOC		!!Error!! TOC:-10.01mg/L TC:51.81mg/L IC:61.83mg/L	Complete	8/21/2015 3:54:48 PM	24
25	TOC		!!Error!! TOC:-8.167mg/L TC:56.99mg/L IC:65.15mg/L	Complete	8/21/2015 4:12:02 PM	25
26	TOC	CCV	!!Error!! TOC:23.33mg/L TC:23.08mg/L IC:-0.2518mg/L	Complete	8/21/2015 4:39:50 PM	26
27	TOC	CCB	!!Error!! TOC:0.3152mg/L TC:-0.03028mg/L IC:-0.3455mg	Complete	8/21/2015 4:49:11 PM	0
28	TOC	L15080995-02 X	TOC:0.4095mg/L TC:4.139mg/L IC:3.730mg/L	Complete	8/21/2015 5:01:38 PM	28
29	TOC	L15080995-04 (3) X	!!Error!! TOC:-0.5999mg/L TC:30.03mg/L IC:30.63mg/L	Complete	8/21/2015 5:16:45 PM	29
30	TOC	L15081073-01 (5) X	TOC:7.115mg/L TC:28.36mg/L IC:21.25mg/L	Complete	8/21/2015 5:30:48 PM	30
31	TOC	~~L15081073-03 (3)~~	!!Error!! TOC:-13.72mg/L TC:55.34mg/L IC:69.05mg/L	Complete	8/21/2015 5:47:05 PM	31
32	TOC	WG535971-01 BLK X	!!Error!! TOC:0.3144mg/L TC:0.06067mg/L IC:-0.2537mg/L	Complete	8/21/2015 6:04:58 PM	0
33	TOC	CCV WG535971-02 LCS	96% TOC:23.88mg/L TC:35.11mg/L IC:11.23mg/L	Complete	8/21/2015 6:31:40 PM	33
34	TOC	WG535971-03 LCSDUP	95% TOC:23.63mg/L TC:34.52mg/L IC:10.88mg/L	Complete	8/21/2015 6:58:37 PM	34
35	TOC	L15080935-01	TOC:1.234mg/L TC:4.290mg/L IC:3.057mg/L	Complete	8/21/2015 7:23:07 PM	35
36	TOC	L15080936-01	!!Error!! TOC:0.4910mg/L TC:0.07646mg/L IC:-0.4145mg/L	Complete	8/21/2015 7:43:30 PM	36
37	TOC	L15080936-02	!!Error!! TOC:0.5834mg/L TC:0.1547mg/L IC:-0.4287mg/L	Complete	8/21/2015 8:03:36 PM	37
38	TOC	CCV	!!Error!! TOC:20.37mg/L TC:19.93mg/L IC:-0.4340mg/L	Complete	8/21/2015 8:16:01 PM	38
39	TOC	CCB	!!Error!! TOC:0.3536mg/L TC:-0.03829mg/L IC:-0.3918mg	Complete	8/21/2015 8:25:30 PM	0
40	TOC	L15080936-03 X	!!Error!! TOC:1.034mg/L TC:0.6067mg/L IC:-0.4274mg/L	Complete	8/21/2015 8:45:43 PM	40
41	TOC	L15080936-04	!!Error!! TOC:0.7416mg/L TC:0.3014mg/L IC:-0.4402mg/L	Complete	8/21/2015 9:05:45 PM	41
42	TOC	L15080936-05	!!Error!! TOC:0.5907mg/L TC:0.1552mg/L IC:-0.4356mg/L	Complete	8/21/2015 9:25:38 PM	42
43	TOC	L15080936-06	!!Error!! TOC:0.5897mg/L TC:0.1466mg/L IC:-0.4431mg/L	Complete	8/21/2015 9:45:22 PM	43
44	TOC	L15080936-07	!!Error!! TOC:0.5331mg/L TC:0.08481mg/L IC:-0.4483mg/L	Complete	8/21/2015 10:05:00 P	44
45	TOC	L15081075-01	!!Error!! TOC:4.280mg/L TC:3.962mg/L IC:-0.3185mg/L	Complete	8/21/2015 10:29:41 P	45
46	TOC	L15081075-02	!!Error!! TOC:0.6338mg/L TC:0.4183mg/L IC:-0.2155mg/L	Complete	8/21/2015 10:49:55 P	46
47	TOC	L15081076-01 (50)	!!Error!! TOC:31.08mg/L TC:30.73mg/L IC:-0.3508mg/L	Complete	8/21/2015 11:15:50 P	47
48	TOC	L15081077-01 (50)	!!Error!! TOC:24.12mg/L TC:23.76mg/L IC:-0.3559mg/L	Complete	8/21/2015 11:38:52 P	48
49	TOC	L15081095-01	TOC:40.89mg/L TC:41.00mg/L IC:0.1132mg/L	Complete	8/22/2015 12:04:32 A	49
50	TOC	CCV	!!Error!! TOC:23.70mg/L TC:23.26mg/L IC:-0.4449mg/L	Complete	8/22/2015 12:17:31 A	50
51	TOC	CCB	!!Error!! TOC:0.3522mg/L TC:-0.05064mg/L IC:-0.4028mg	Complete	8/22/2015 12:26:51 A	0
52	TOC	L15081010-01 X	TOC:5.712mg/L TC:16.63mg/L IC:10.92mg/L	Complete	8/22/2015 12:50:11 A	52
53	TOC	L15081010-02	TOC:6.358mg/L TC:9.008mg/L IC:2.651mg/L	Complete	8/22/2015 1:12:22 AM	53
54	TOC	L15081010-03	TOC:3.842mg/L TC:6.757mg/L IC:2.914mg/L	Complete	8/22/2015 1:34:52 AM	54
55	TOC	WG535971-05 DUP	TOC:3.996mg/L TC:6.644mg/L IC:2.647mg/L	Complete	8/22/2015 1:58:08 AM	55
56	TOC	WG535971-06 MS	TOC:13.36mg/L TC:15.11mg/L IC:1.747mg/L	Complete	8/22/2015 2:20:29 AM	56
57	TOC	L15080901-04 (3)	TOC:0.5880mg/L TC:16.36mg/L IC:15.77mg/L	Complete	8/22/2015 2:33:58 AM	57
58	TOC	L15080901-05 (3)	TOC:15.29mg/L TC:39.82mg/L IC:24.53mg/L	Complete	8/22/2015 2:48:02 AM	58
59	TOC	L15080904-01 (5)	TOC:0.1844mg/L TC:7.787mg/L IC:7.602mg/L	Complete	8/22/2015 3:00:55 AM	59
60	TOC	L15080904-03 (4)	TOC:0.08639mg/L TC:8.677mg/L IC:8.590mg/L	Complete	8/22/2015 3:13:40 AM	60
61	TOC	L15080904-07 (4)	!!Error!! TOC:-0.1174mg/L TC:7.597mg/L IC:7.714mg/L	Complete	8/22/2015 3:26:20 AM	61
62	TOC	CCV	!!Error!! TOC:21.31mg/L TC:20.90mg/L IC:-0.4098mg/L	Complete	8/22/2015 3:38:50 AM	62
63	TOC	CCB	!!Error!! TOC:0.3553mg/L TC:-0.04355mg/L IC:-0.3989mg	Complete	8/22/2015 3:48:04 AM	0
64	TOC		TOC:6.956mg/L TC:38.41mg/L IC:31.45mg/L	Complete	8/22/2015 4:01:57 AM	64
65	TOC		!!Error!! TOC:-0.2709mg/L TC:8.127mg/L IC:8.398mg/L	Complete	8/22/2015 4:14:30 AM	65
66	TOC		TOC:0.8085mg/L TC:13.24mg/L IC:12.43mg/L	Complete	8/22/2015 4:27:53 AM	66
67	TOC		!!Error!! TOC:0.4793mg/L TC:0.1265mg/L IC:-0.3528mg/L	Complete	8/22/2015 4:39:27 AM	67

8/24/2015 9:06:06 AM

1/2

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	Analysis	Sample Name	Result	Status	Date / Time	Vial
68	TOC		!!Error!! TOC:0.4455mg/L TC:0.04820mg/L IC:-0.3973mg/L	Complete	8/22/2015 4:50:58 AM	68
69	TOC		!!Error!! TOC:20.69mg/L TC:20.26mg/L IC:-0.4281mg/L	Complete	8/22/2015 5:03:30 AM	2
70	TOC		!!Error!! TOC:0.3502mg/L TC:-0.05179mg/L IC:-0.4019mg/	Complete	8/22/2015 5:12:49 AM	0

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Sample

Sample Name: TIC 25
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-1.152mg/L TC:22.89mg/L IC:24.04mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1013	22.89mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 10:12:01 AM

Mean Area 1013
Mean Conc. 22.89mg/L

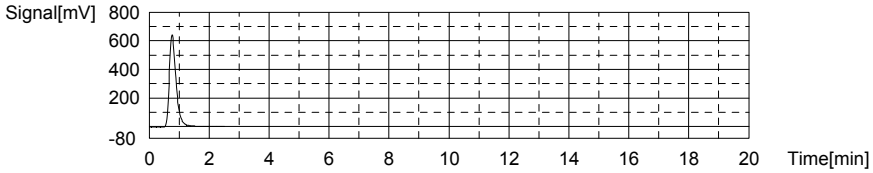

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	774.4	24.04mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 10:17:44 AM

Mean Area 774.4
Mean Conc. 24.04mg/L

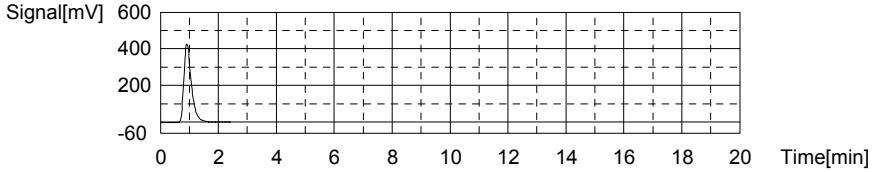

Sample

Sample Name: CCV 25
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:22.67mg/L TC:22.21mg/L IC:-0.4624mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	983.1	22.21mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 10:25:41 AM

Mean Area 983.1
Mean Conc. 22.21mg/L

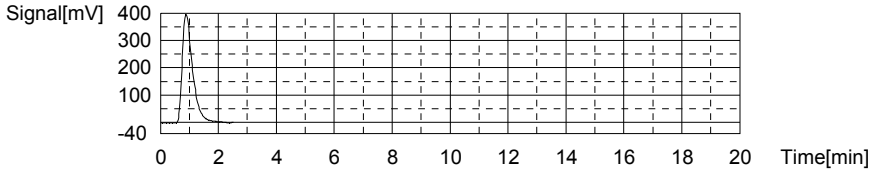

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.993	-0.4624mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_18	8/21/2015 10:30:15 AM

Mean Area 7.993
Mean Conc. -0.4624mg/L

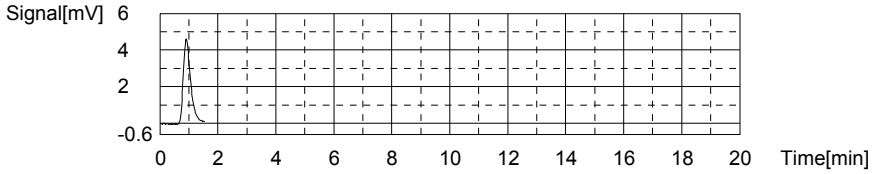

Sample

Sample Name: WG535967-01 BLK
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.3575mg/L TC:-0.03691mg/L IC:-0.3944mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.88	-0.03691mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 10:35:27 AM

Mean Area 10.88
Mean Conc. -0.03691mg/L

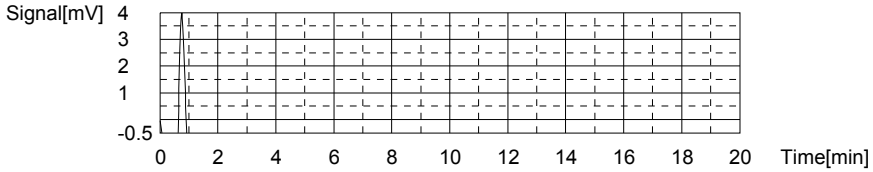

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.12	-0.3944mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_18	8/21/2015 10:39:34 AM

Mean Area 10.12
Mean Conc. -0.3944mg/L

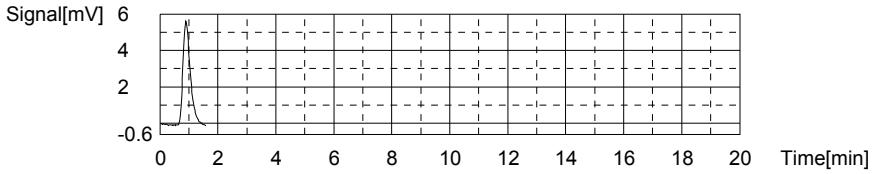

Sample

Sample Name: WG535967-02 LCS
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:23.57mg/L TC:43.94mg/L IC:20.37mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1933	43.94mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 10:49:37 AM

Mean Area 1933
Mean Conc. 43.94mg/L

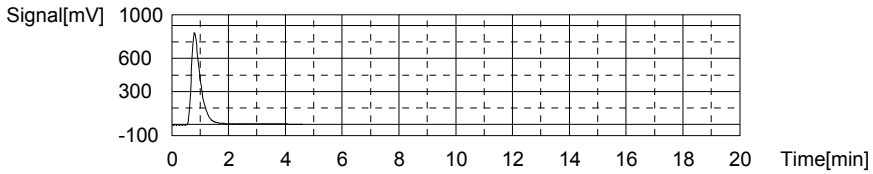

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	659.6	20.37mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 10:55:05 AM

Mean Area 659.6
Mean Conc. 20.37mg/L

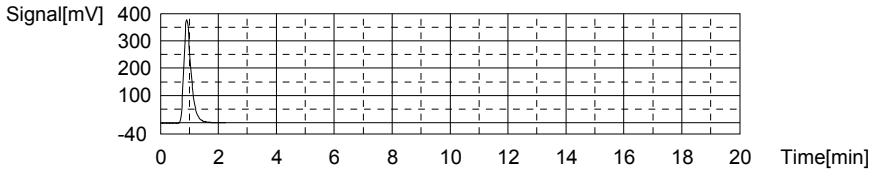

Sample

Sample Name: WG535967-03 LCSDUP
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:21.54mg/L TC:41.63mg/L IC:20.09mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1832	41.63mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 11:02:56 AM

Mean Area 1832
Mean Conc. 41.63mg/L

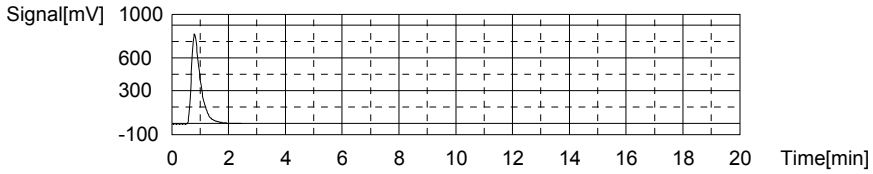

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	650.7	20.09mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 11:08:40 AM

Mean Area 650.7
Mean Conc. 20.09mg/L

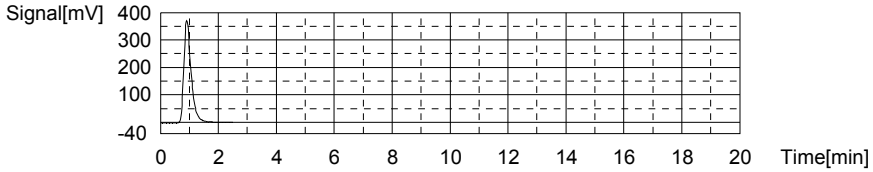

Sample

Sample Name: L15080776-09 (10)
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:17.61mg/L TC:23.85mg/L IC:6.240mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1055	23.85mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 11:17:00 AM

Mean Area 1055
Mean Conc. 23.85mg/L

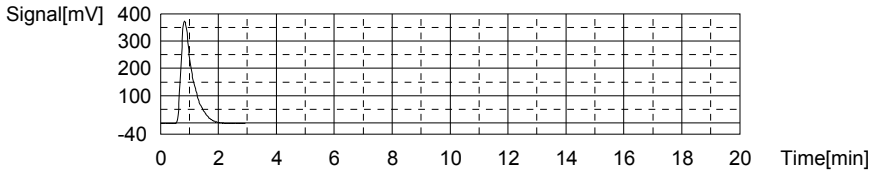

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	217.6	6.240mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 11:22:09 AM

Mean Area 217.6
Mean Conc. 6.240mg/L

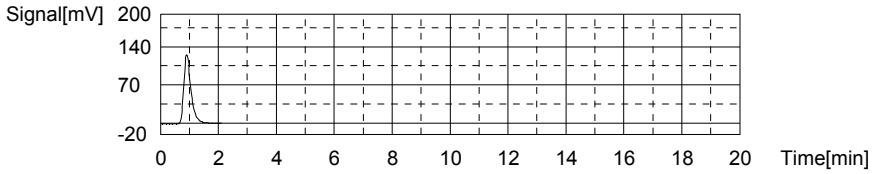

Sample

Sample Name: L15080899-01
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:12.04mg/L TC:38.45mg/L IC:26.41mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1693	38.45mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 11:32:29 AM

Mean Area 1693
Mean Conc. 38.45mg/L

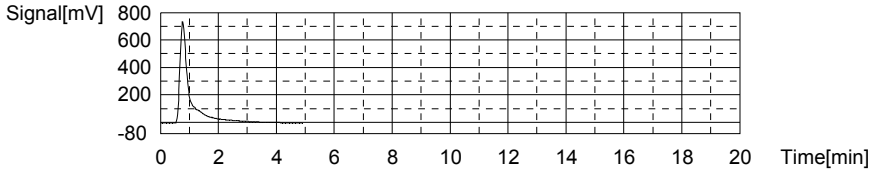

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	848.5	26.41mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 11:38:15 AM

Mean Area 848.5
Mean Conc. 26.41mg/L

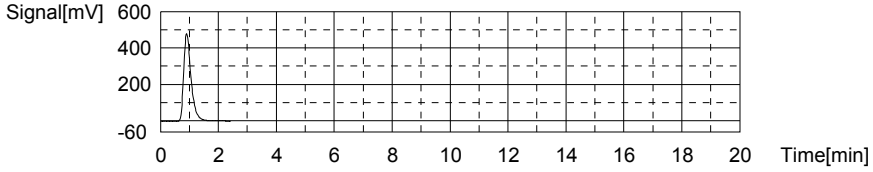

Sample

Sample Name: L15080901-01
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-0.8513mg/L TC:40.67mg/L IC:41.52mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1790	40.67mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 11:45:42 AM

Mean Area 1790
Mean Conc. 40.67mg/L

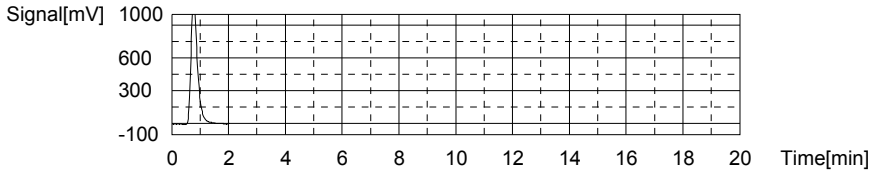

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1321	41.52mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_18	8/21/2015 11:51:54 AM

Mean Area 1321
Mean Conc. 41.52mg/L

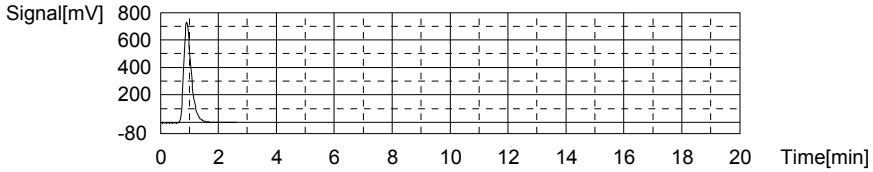

Sample

Sample Name: WG535967-05 DUP
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.03409mg/L TC:40.21mg/L IC:40.18mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1770	40.21mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 12:00:30 PM

Mean Area 1770
Mean Conc. 40.21mg/L

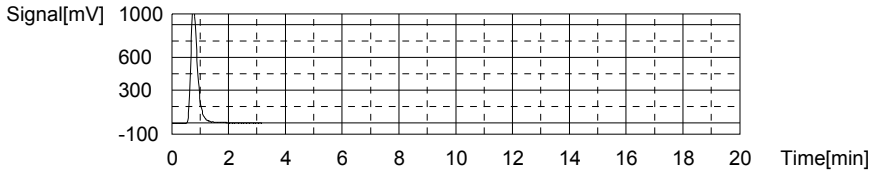

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1279	40.18mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_18	8/21/2015 12:06:27 PM

Mean Area 1279
Mean Conc. 40.18mg/L

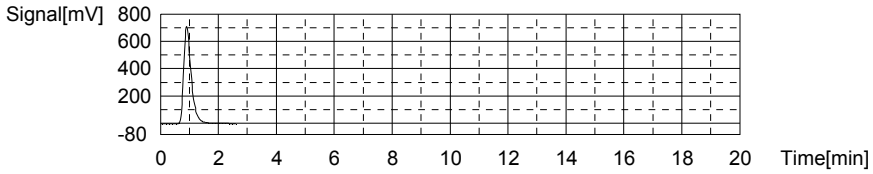

Sample

Sample Name: L15080901-02 MS
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:9.701mg/L TC:40.37mg/L IC:30.67mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1777	40.37mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 12:15:27 PM

Mean Area 1777
Mean Conc. 40.37mg/L

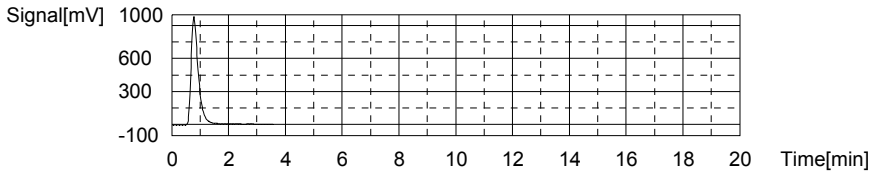

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	981.7	30.67mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 12:21:21 PM

Mean Area 981.7
Mean Conc. 30.67mg/L

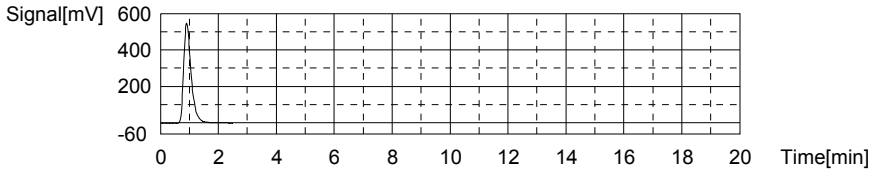

Sample

Sample Name: L15080901-03 MSD
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:8.403mg/L TC:38.47mg/L IC:30.07mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1694	38.47mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 12:29:34 PM

Mean Area 1694
Mean Conc. 38.47mg/L

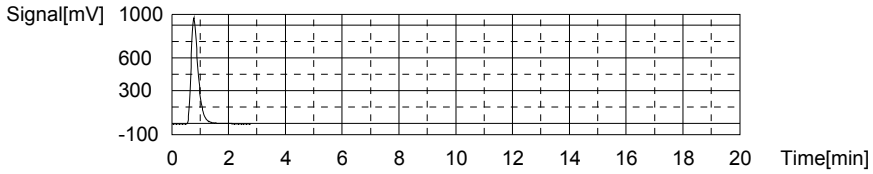

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	962.9	30.07mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_18	8/21/2015 12:35:33 PM

Mean Area 962.9
Mean Conc. 30.07mg/L

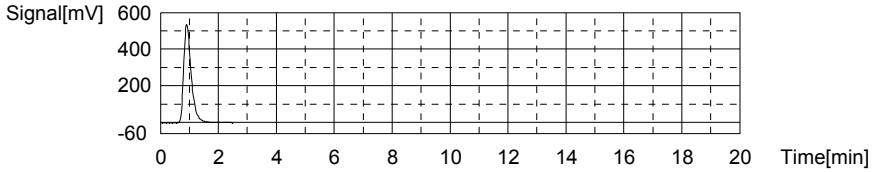

Sample

Sample Name:
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-22.88mg/L TC:80.23mg/L IC:103.1mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3519	80.23mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 12:45:57 PM

Mean Area 3519
Mean Conc. 80.23mg/L

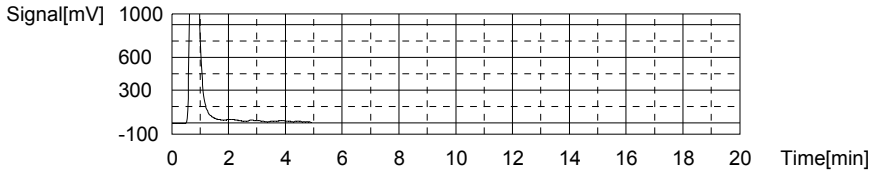

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3247	103.1mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_18	8/21/2015 12:53:46 PM

Mean Area 3247
Mean Conc. 103.1mg/L

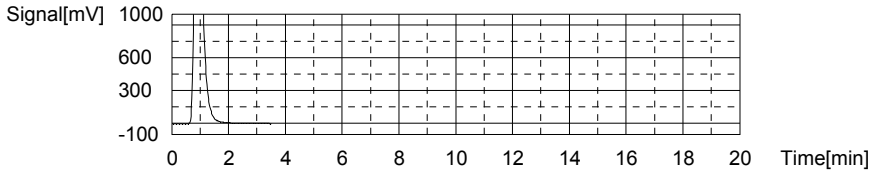

Sample

Sample Name:
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-23.34mg/L TC:80.51mg/L IC:103.8mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3531	80.51mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 1:04:06 PM

Mean Area 3531
Mean Conc. 80.51mg/L

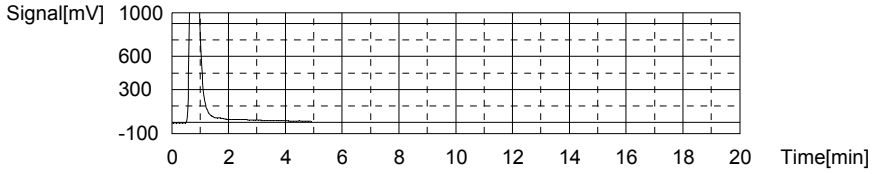

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3270	103.8mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 1:11:46 PM

Mean Area 3270
Mean Conc. 103.8mg/L

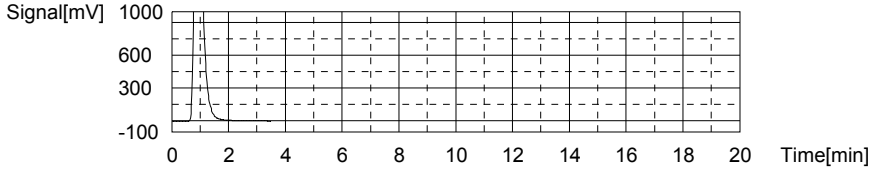

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:23.36mg/L TC:23.69mg/L IC:0.3337mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1048	23.69mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 1:20:28 PM

Mean Area 1048
Mean Conc. 23.69mg/L

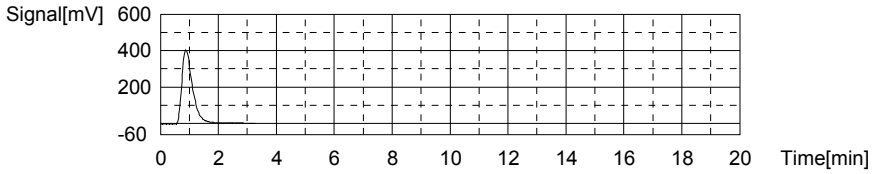

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	32.89	0.3337mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_18	8/21/2015 1:25:43 PM

Mean Area 32.89
Mean Conc. 0.3337mg/L

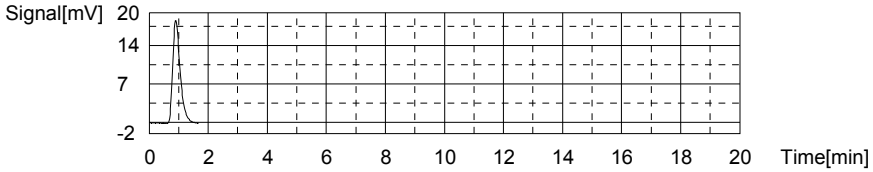

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.2675mg/L TC:0.01091mg/L IC:-0.2566mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	12.97	0.01091mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 1:31:05 PM

Mean Area 12.97
Mean Conc. 0.01091mg/L

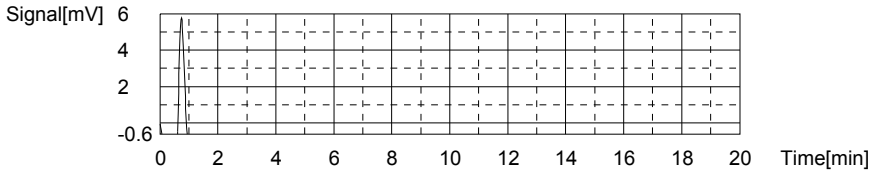

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	14.43	-0.2566mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_18	8/21/2015 1:35:13 PM

Mean Area 14.43
Mean Conc. -0.2566mg/L

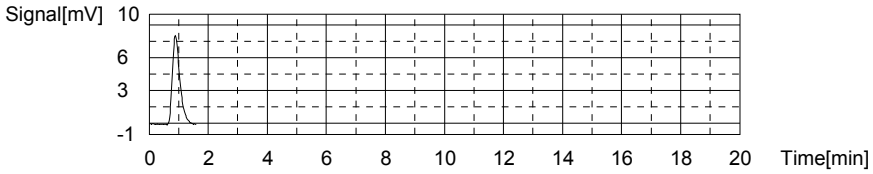

Sample

Sample Name:
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-8.590mg/L TC:53.30mg/L IC:61.89mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2342	53.30mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 1:45:19 PM

Mean Area 2342
Mean Conc. 53.30mg/L

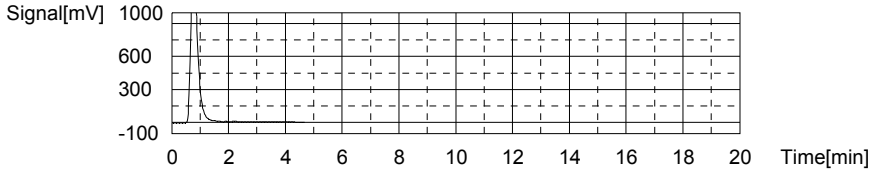

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1958	61.89mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 1:51:45 PM

Mean Area 1958
Mean Conc. 61.89mg/L

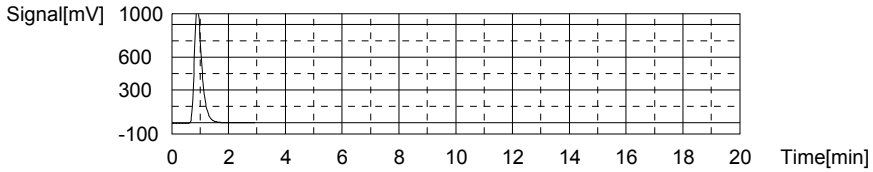

Sample

Sample Name:
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-21.84mg/L TC:86.23mg/L IC:108.1mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3781	86.23mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 2:02:04 PM

Mean Area 3781
Mean Conc. 86.23mg/L

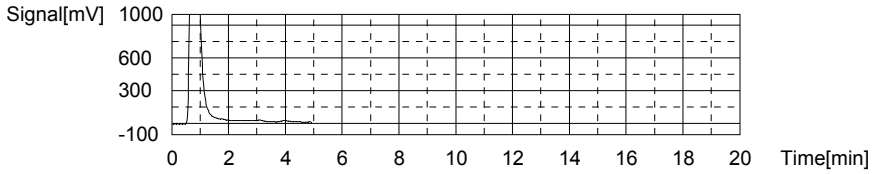

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3402	108.1mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 2:09:40 PM

Mean Area 3402
Mean Conc. 108.1mg/L

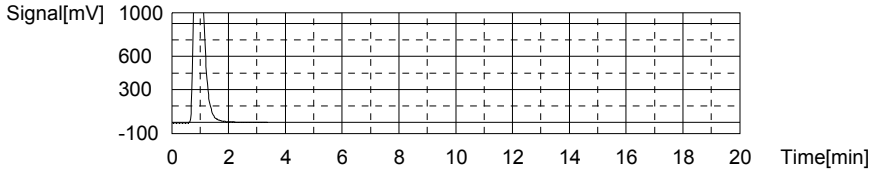

Sample

Sample Name: L15080904-05 (5)
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1746mg/L TC:12.54mg/L IC:12.37mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	560.6	12.54mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 2:17:10 PM

Mean Area 560.6
Mean Conc. 12.54mg/L

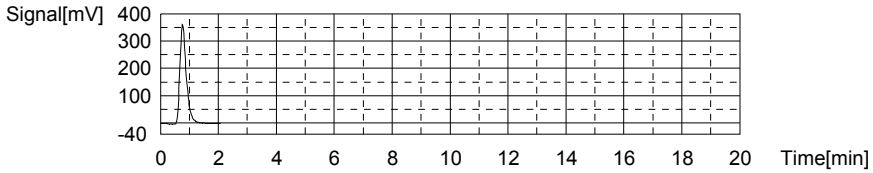

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	409.2	12.37mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 2:22:40 PM

Mean Area 409.2
Mean Conc. 12.37mg/L

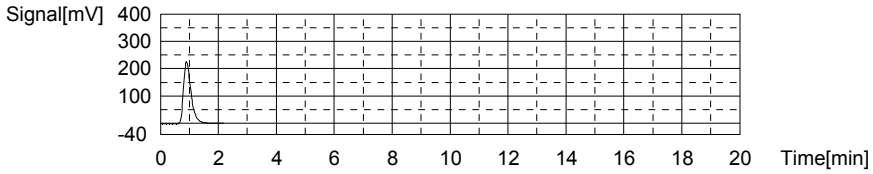

Sample

Sample Name:
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-21.26mg/L TC:85.33mg/L IC:106.6mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3742	85.33mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 2:33:00 PM

Mean Area 3742
Mean Conc. 85.33mg/L

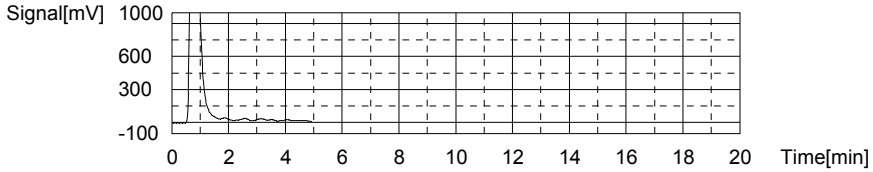

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3356	106.6mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 2:40:41 PM

Mean Area 3356
Mean Conc. 106.6mg/L

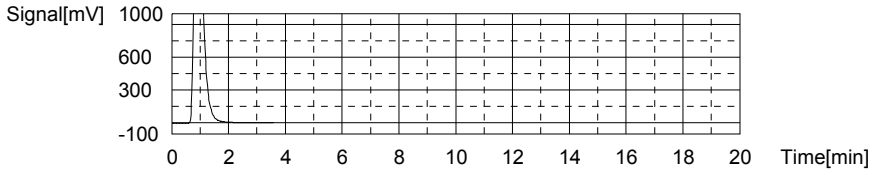

Sample

Sample Name: L15080992-01 (2)
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.173mg/L TC:19.14mg/L IC:17.96mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	848.8	19.14mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 2:48:37 PM

Mean Area 848.8
Mean Conc. 19.14mg/L

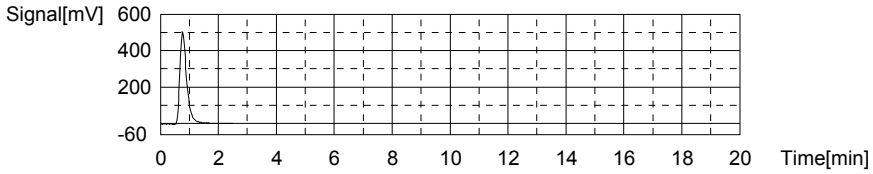

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	584.2	17.96mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_18	8/21/2015 2:54:18 PM

Mean Area 584.2
Mean Conc. 17.96mg/L

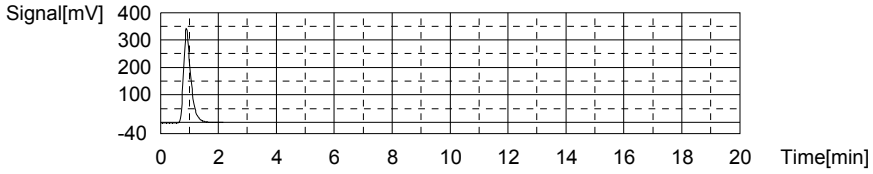

Sample

Sample Name: L15080992-03 (3)
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-1.192mg/L TC:34.13mg/L IC:35.32mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1504	34.13mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 3:02:51 PM

Mean Area 1504
Mean Conc. 34.13mg/L

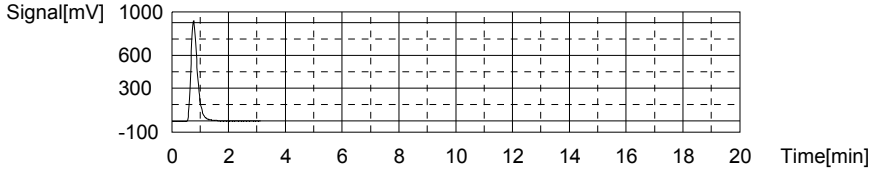

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1127	35.32mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_18	8/21/2015 3:08:39 PM

Mean Area 1127
Mean Conc. 35.32mg/L

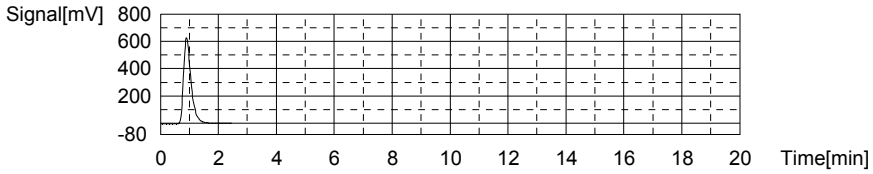

Sample

Sample Name:
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-4.279mg/L TC:52.43mg/L IC:56.71mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2304	52.43mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 3:18:27 PM

Mean Area 2304
Mean Conc. 52.43mg/L

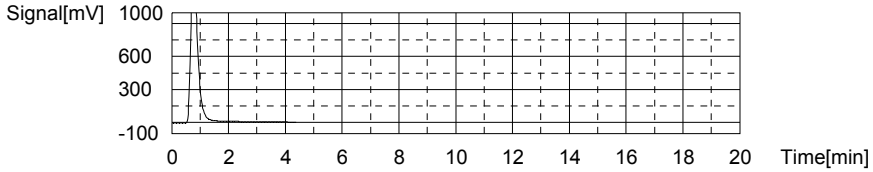

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1796	56.71mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 3:24:47 PM

Mean Area 1796
Mean Conc. 56.71mg/L

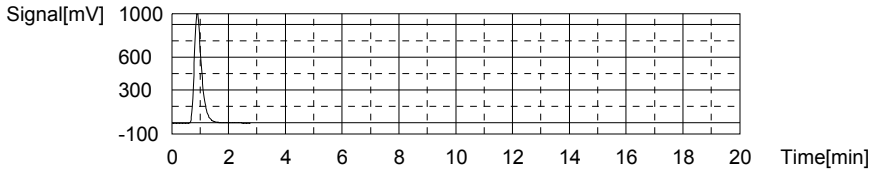

Sample

Sample Name: L15080992-07 (3)
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-0.8804mg/L TC:34.63mg/L IC:35.51mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1526	34.63mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 3:33:24 PM

Mean Area 1526
Mean Conc. 34.63mg/L

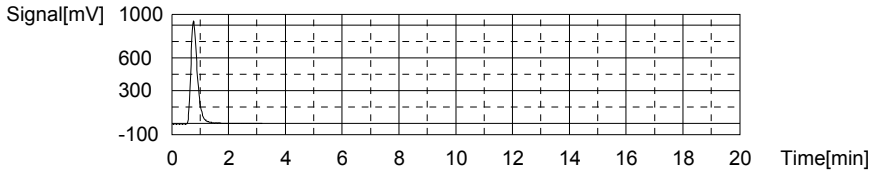

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1133	35.51mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 3:38:59 PM

Mean Area 1133
Mean Conc. 35.51mg/L

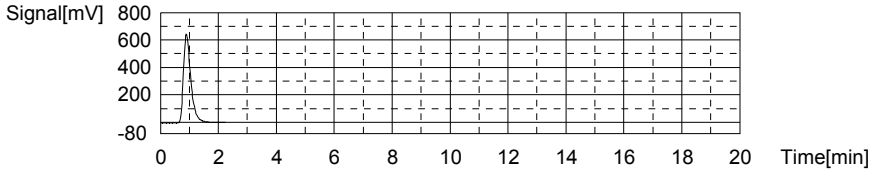

Sample

Sample Name:
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-10.01mg/L TC:51.81mg/L IC:61.83mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2277	51.81mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 3:48:33 PM

Mean Area 2277
Mean Conc. 51.81mg/L

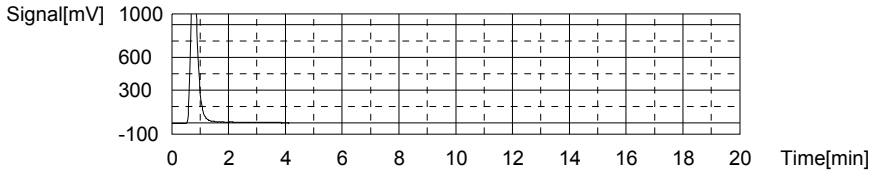

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1956	61.83mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 3:54:48 PM

Mean Area 1956
Mean Conc. 61.83mg/L

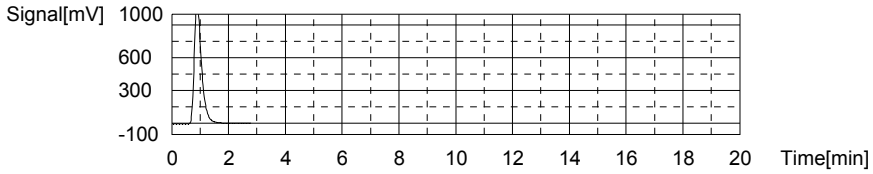

Sample

Sample Name:
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-8.167mg/L TC:56.99mg/L IC:65.15mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2503	56.99mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 4:05:07 PM

Mean Area 2503
Mean Conc. 56.99mg/L

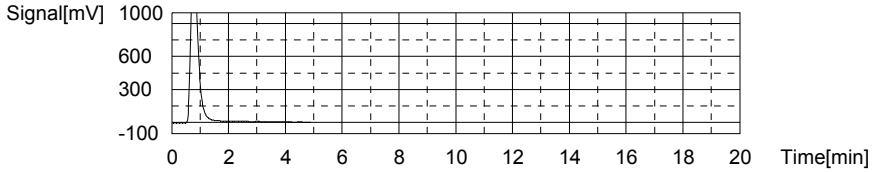

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2060	65.15mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 4:12:02 PM

Mean Area 2060
Mean Conc. 65.15mg/L

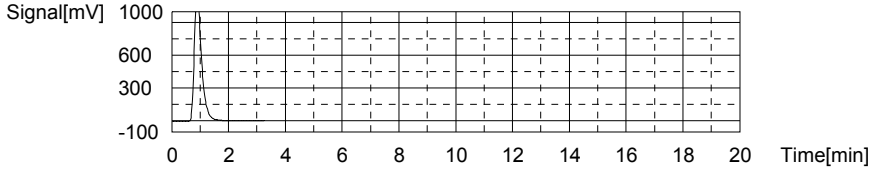

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:23.33mg/L TC:23.08mg/L IC:-0.2518mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1021	23.08mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 4:35:05 PM

Mean Area 1021
Mean Conc. 23.08mg/L

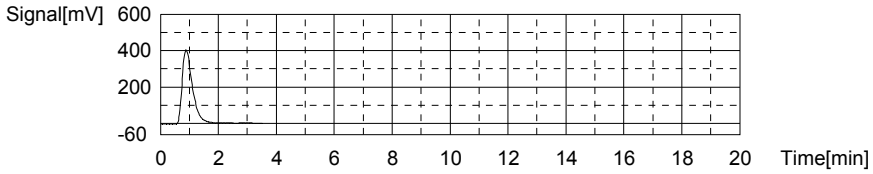

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	14.58	-0.2518mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 4:39:50 PM

Mean Area 14.58
Mean Conc. -0.2518mg/L

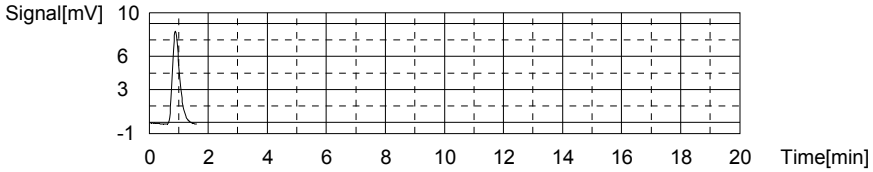

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.3152mg/L TC:-0.03028mg/L IC:-0.3455mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.17	-0.03028mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 4:45:09 PM

Mean Area 11.17
Mean Conc. -0.03028mg/L

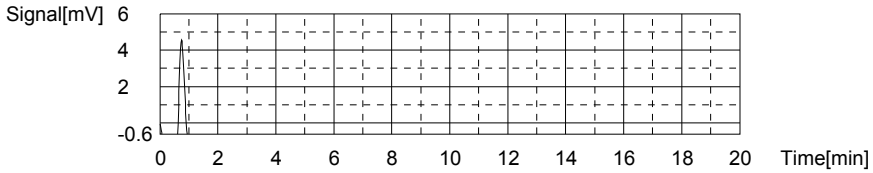

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.65	-0.3455mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 4:49:11 PM

Mean Area 11.65
Mean Conc. -0.3455mg/L

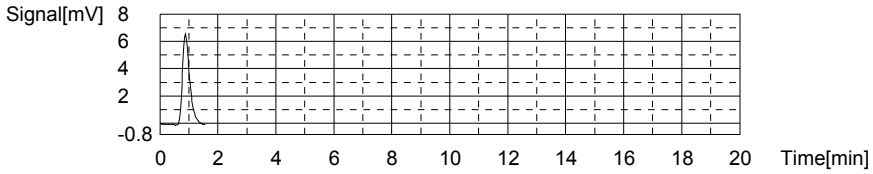

Sample

Sample Name: L15080995-02
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.4095mg/L TC:4.139mg/L IC:3.730mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	193.4	4.139mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 4:56:37 PM

Mean Area 193.4
Mean Conc. 4.139mg/L

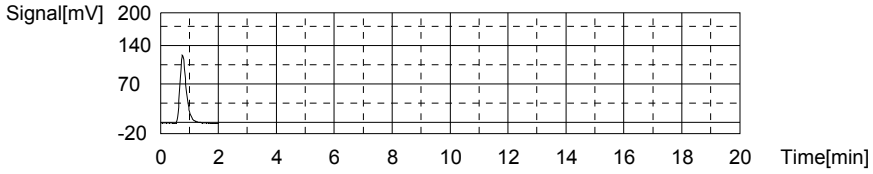

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	139.1	3.730mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 5:01:38 PM

Mean Area 139.1
Mean Conc. 3.730mg/L

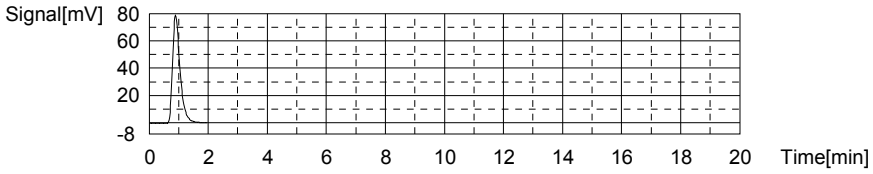

Sample

Sample Name: L15080995-04 (3)
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-0.5999mg/L TC:30.03mg/L IC:30.63mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1325	30.03mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 5:10:48 PM

Mean Area 1325
Mean Conc. 30.03mg/L

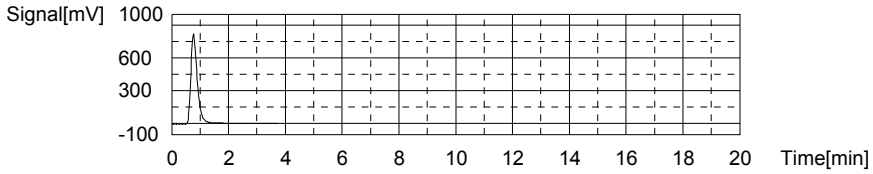

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	980.4	30.63mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 5:16:45 PM

Mean Area 980.4
Mean Conc. 30.63mg/L

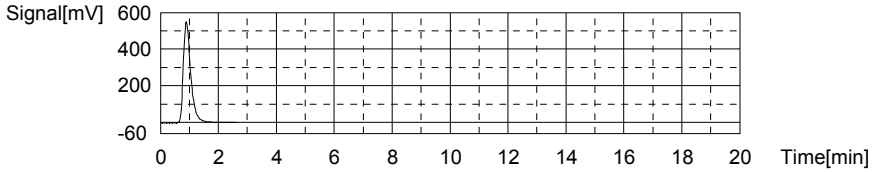

Sample

Sample Name: L15081073-01 (5)
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.115mg/L TC:28.36mg/L IC:21.25mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1252	28.36mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 5:24:56 PM

Mean Area 1252
Mean Conc. 28.36mg/L

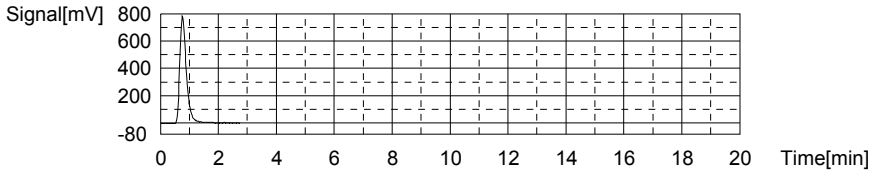

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	686.9	21.25mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 5:30:48 PM

Mean Area 686.9
Mean Conc. 21.25mg/L

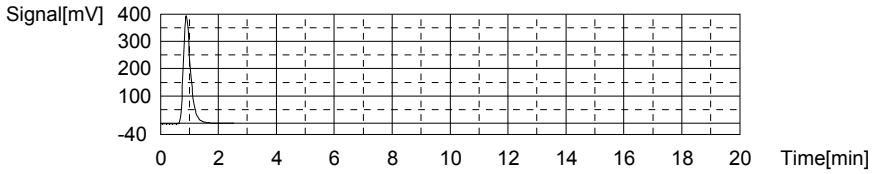

Sample

Sample Name: L15081073-03 (3)
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-13.72mg/L TC:55.34mg/L IC:69.05mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2431	55.34mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 5:40:20 PM

Mean Area 2431
Mean Conc. 55.34mg/L

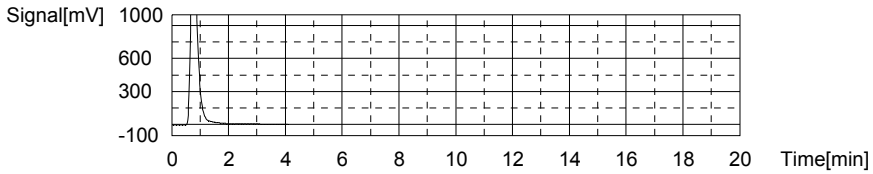

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2182	69.05mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 5:47:05 PM

Mean Area 2182
Mean Conc. 69.05mg/L

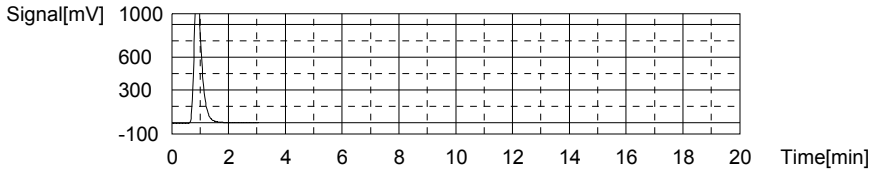

Sample

Sample Name: WG535971-01 BLK
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.3144mg/L TC:0.06067mg/L IC:-0.2537mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	17.38	0.1118mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 5:52:55 PM
2	12.91	0.00954mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 5:56:41 PM

Mean Area 15.15
Mean Conc. 0.06067mg/L

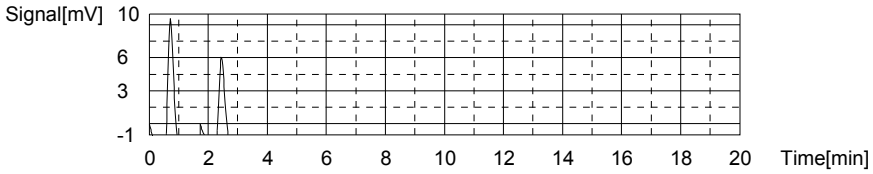

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	16.43	-0.1926mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 6:00:51 PM
2	12.61	-0.3148mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 6:04:58 PM

Mean Area 14.52
Mean Conc. -0.2537mg/L

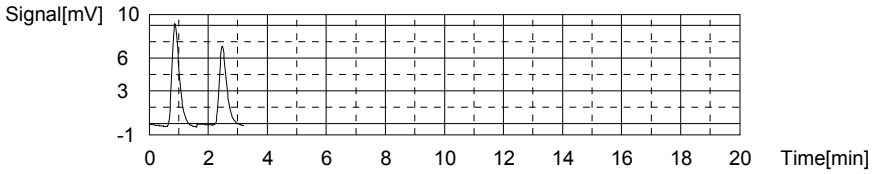

Sample

Sample Name: WG535971-02 LCS
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:23.88mg/L TC:35.11mg/L IC:11.23mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1568	35.59mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 6:14:32 PM
2	1526	34.63mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 6:21:25 PM

Mean Area 1547
Mean Conc. 35.11mg/L

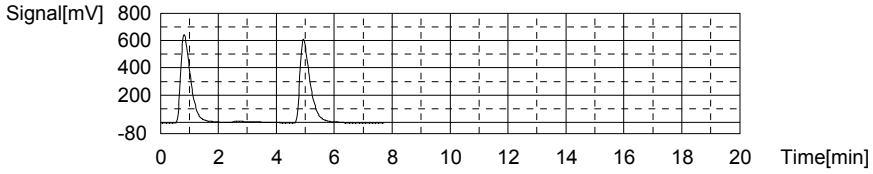

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	374.5	11.26mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 6:26:48 PM
2	372.6	11.20mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 6:31:40 PM

Mean Area 373.6
Mean Conc. 11.23mg/L

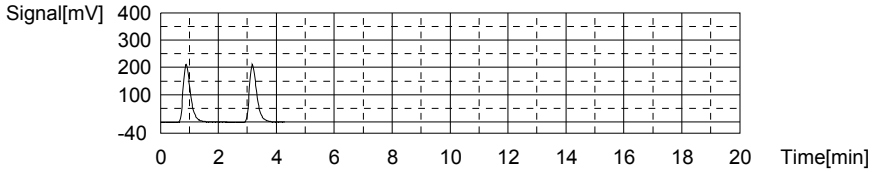

Sample

Sample Name: WG535971-03 LCSDUP
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:23.63mg/L TC:34.52mg/L IC:10.88mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1514	34.36mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 6:41:27 PM
2	1528	34.68mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 6:48:23 PM

Mean Area 1521
Mean Conc. 34.52mg/L

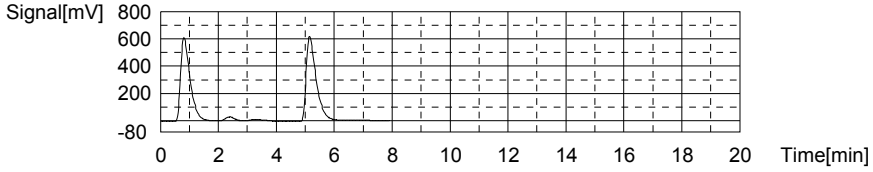

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	362.9	10.89mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 6:53:38 PM
2	362.7	10.88mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 6:58:37 PM

Mean Area 362.8
Mean Conc. 10.88mg/L

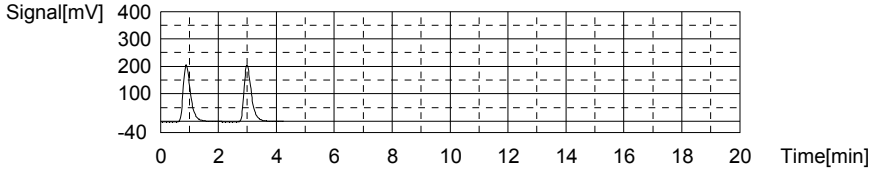

Sample

Sample Name: L15080935-01
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.234mg/L TC:4.290mg/L IC:3.057mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	248.3	5.395mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 7:08:53 PM
2	151.7	3.185mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 7:13:43 PM

Mean Area 200.0
Mean Conc. 4.290mg/L

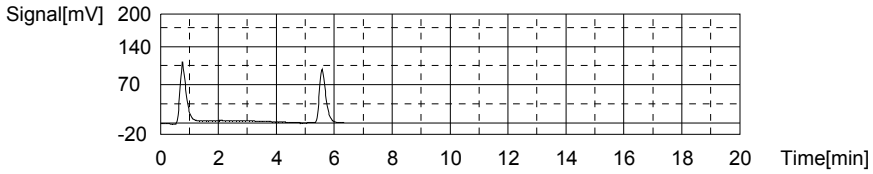

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	118.9	3.084mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 7:18:34 PM
2	117.2	3.030mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 7:23:07 PM

Mean Area 118.1
Mean Conc. 3.057mg/L

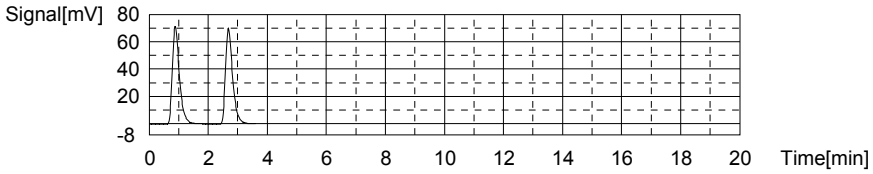

Sample

Sample Name: L15080936-01
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.4910mg/L TC:0.07646mg/L IC:-0.4145mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.21	-0.05224mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 7:30:36 PM
2	21.46	0.2052mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 7:34:42 PM

Mean Area 15.84
Mean Conc. 0.07646mg/L

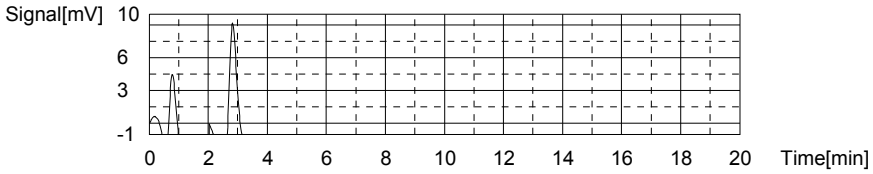

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.764	-0.4058mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 7:39:15 PM
2	9.218	-0.4232mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 7:43:30 PM

Mean Area 9.491
Mean Conc. -0.4145mg/L

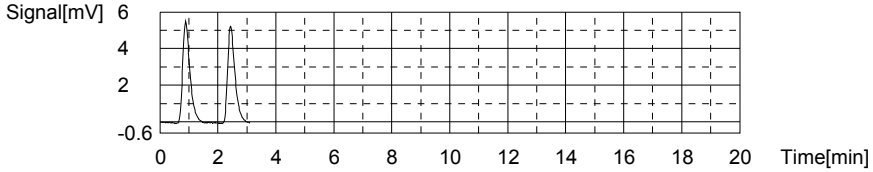

Sample

Sample Name: L15080936-02
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.5834mg/L TC:0.1547mg/L IC:-0.4287mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	20.07	0.1734mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 7:50:45 PM
2	18.44	0.1361mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 7:54:46 PM

Mean Area 19.26
Mean Conc. 0.1547mg/L

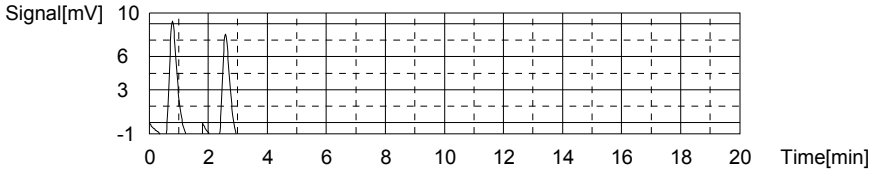

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.142	-0.4257mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 7:59:18 PM
2	8.954	-0.4317mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 8:03:36 PM

Mean Area 9.048
Mean Conc. -0.4287mg/L

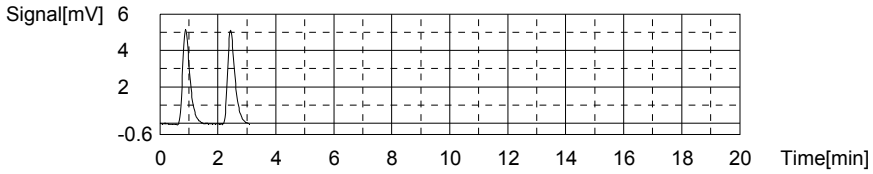

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:20.37mg/L TC:19.93mg/L IC:-0.4340mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	883.7	19.93mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 8:11:33 PM

Mean Area 883.7
Mean Conc. 19.93mg/L

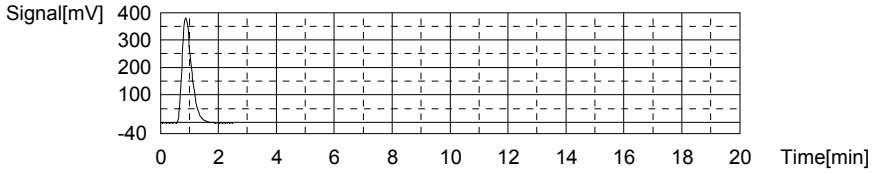

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.881	-0.4340mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 8:16:01 PM

Mean Area 8.881
Mean Conc. -0.4340mg/L

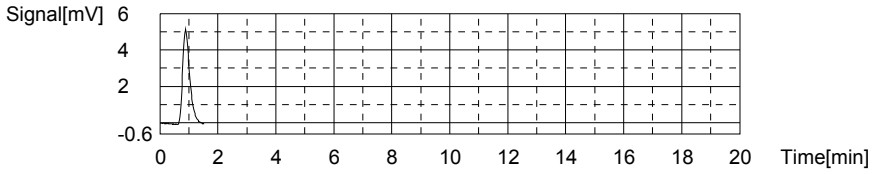

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.3536mg/L TC:-0.03829mg/L IC:-0.3918mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.82	-0.03829mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 8:21:25 PM

Mean Area 10.82
Mean Conc. -0.03829mg/L

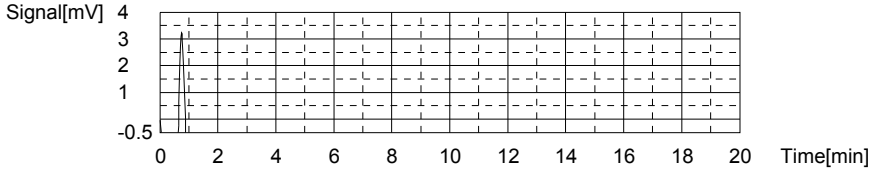

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.20	-0.3918mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 8:25:30 PM

Mean Area 10.20
Mean Conc. -0.3918mg/L

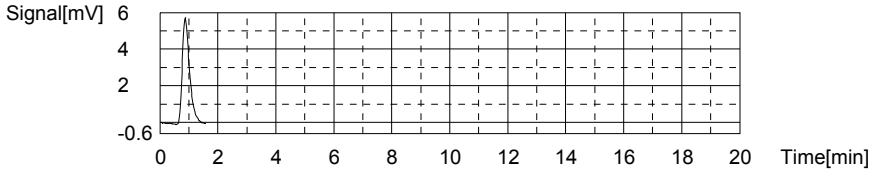

Sample

Sample Name: L15080936-03
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:1.034mg/L TC:0.6067mg/L IC:-0.4274mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	39.25	0.6122mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 8:32:37 PM
2	38.77	0.6012mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 8:37:00 PM

Mean Area 39.01
Mean Conc. 0.6067mg/L

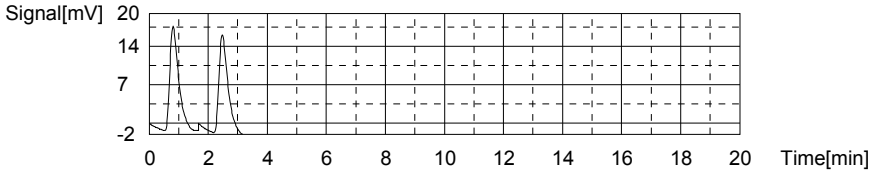

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.205	-0.4237mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 8:41:29 PM
2	8.971	-0.4311mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 8:45:43 PM

Mean Area 9.088
Mean Conc. -0.4274mg/L

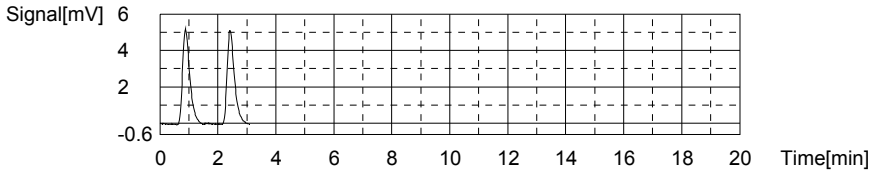

Sample

Sample Name: L15080936-04
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.7416mg/L TC:0.3014mg/L IC:-0.4402mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	25.66	0.3013mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 8:52:54 PM
2	25.67	0.3015mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 8:57:01 PM

Mean Area 25.66
Mean Conc. 0.3014mg/L

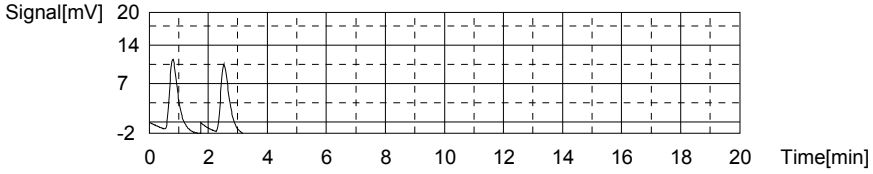

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.734	-0.4387mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_18	8/21/2015 9:01:29 PM
2	8.641	-0.4417mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_18	8/21/2015 9:05:45 PM

Mean Area 8.688
Mean Conc. -0.4402mg/L

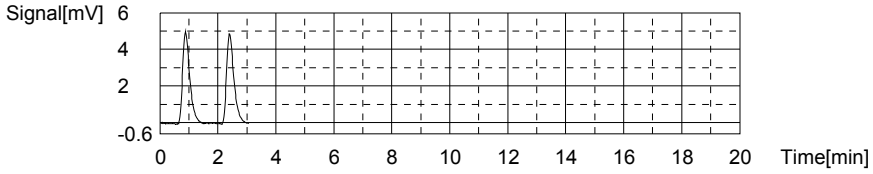

Sample

Sample Name: L15080936-05
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.5907mg/L TC:0.1552mg/L IC:-0.4356mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	19.55	0.1615mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 9:12:54 PM
2	19.00	0.1489mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 9:16:55 PM

Mean Area 19.27
Mean Conc. 0.1552mg/L

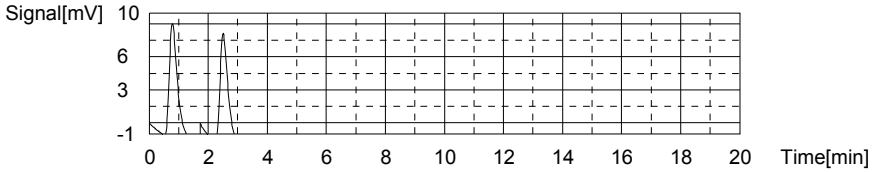

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.904	-0.4333mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_18	8/21/2015 9:21:25 PM
2	8.761	-0.4379mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_18	8/21/2015 9:25:38 PM

Mean Area 8.832
Mean Conc. -0.4356mg/L

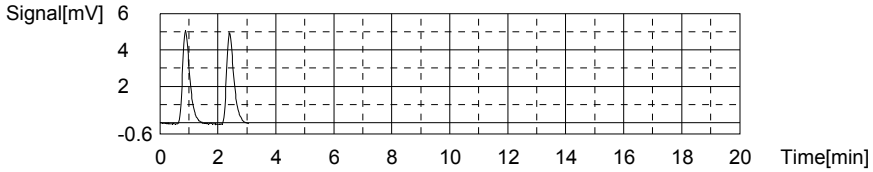

Sample

Sample Name: L15080936-06
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.5897mg/L TC:0.1466mg/L IC:-0.4431mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	19.29	0.1555mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 9:32:43 PM
2	18.51	0.1377mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 9:36:43 PM

Mean Area 18.90
Mean Conc. 0.1466mg/L

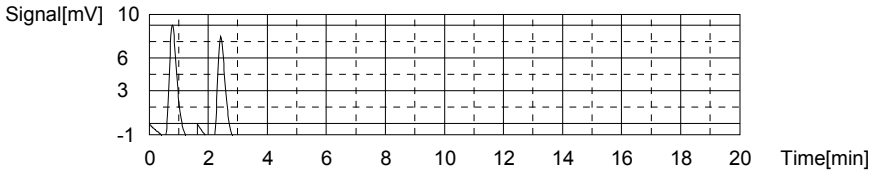

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.670	-0.4408mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 9:41:09 PM
2	8.524	-0.4454mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 9:45:22 PM

Mean Area 8.597
Mean Conc. -0.4431mg/L

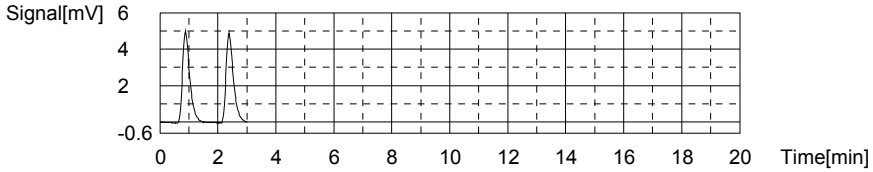

Sample

Sample Name: L15080936-07
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.5331mg/L TC:0.08481mg/L IC:-0.4483mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	16.71	0.09648mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 9:52:24 PM
2	15.69	0.07314mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 9:56:20 PM

Mean Area 16.20
Mean Conc. 0.08481mg/L

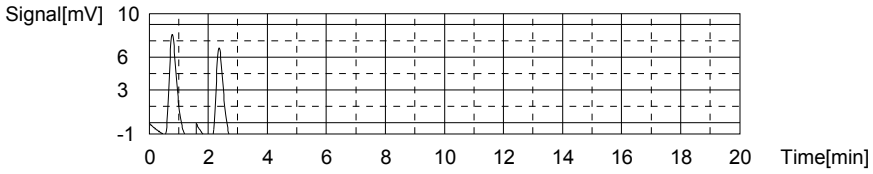

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.410	-0.4491mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 10:00:47 PM
2	8.457	-0.4476mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 10:05:00 PM

Mean Area 8.434
Mean Conc. -0.4483mg/L

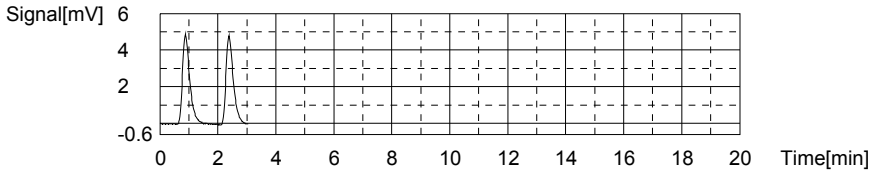

Sample

Sample Name: L15081075-01
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:4.280mg/L TC:3.962mg/L IC:-0.3185mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	185.4	3.956mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 10:13:27 PM
2	185.9	3.968mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 10:20:09 PM

Mean Area 185.7
Mean Conc. 3.962mg/L

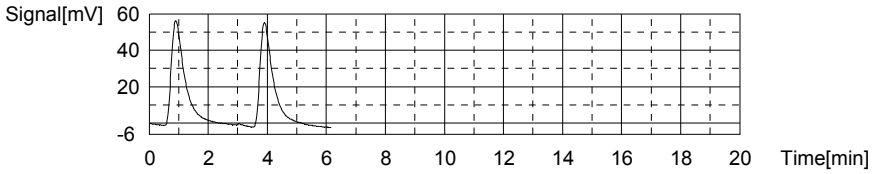

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	12.60	-0.3151mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_18	8/21/2015 10:25:02 PM
2	12.39	-0.3218mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_18	8/21/2015 10:29:41 PM

Mean Area 12.50
Mean Conc. -0.3185mg/L

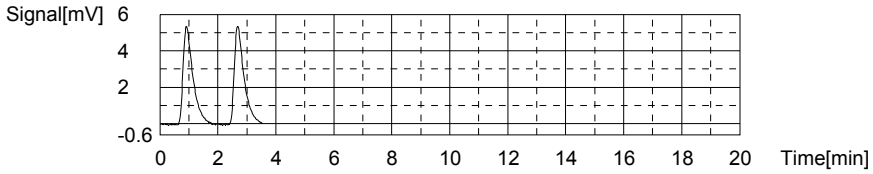

Sample

Sample Name: L15081075-02
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.6338mg/L TC:0.4183mg/L IC:-0.2155mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	30.87	0.4205mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 10:36:57 PM
2	30.68	0.4161mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 10:41:01 PM

Mean Area 30.77
Mean Conc. 0.4183mg/L

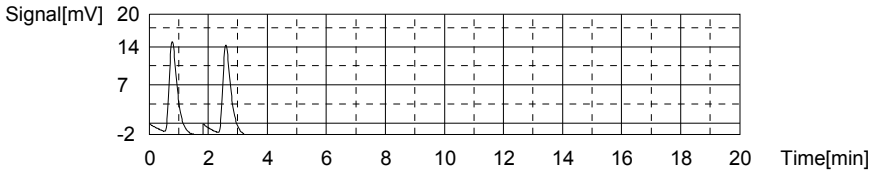

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	15.69	-0.2163mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 10:45:34 PM
2	15.74	-0.2147mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 10:49:55 PM

Mean Area 15.72
Mean Conc. -0.2155mg/L

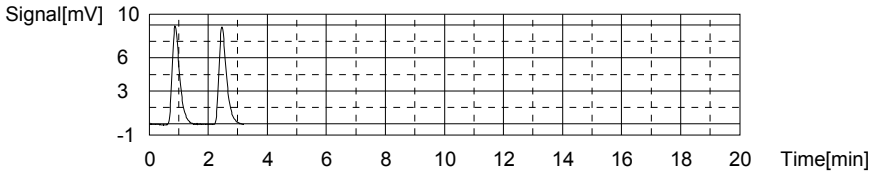

Sample

Sample Name: L15081076-01 (50)
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:31.08mg/L TC:30.73mg/L IC:-0.3508mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1376	31.20mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 10:59:56 PM
2	1335	30.26mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 11:07:00 PM

Mean Area 1356
Mean Conc. 30.73mg/L

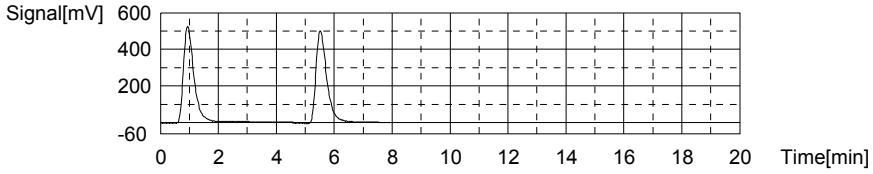

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.60	-0.3471mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 11:11:32 PM
2	11.37	-0.3544mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 11:15:50 PM

Mean Area 11.49
Mean Conc. -0.3508mg/L

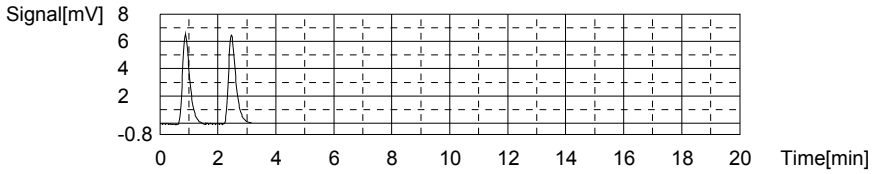

Sample

Sample Name: L15081077-01 (50)
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.12mg/L TC:23.76mg/L IC:-0.3559mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1075	24.31mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 11:25:16 PM
2	1027	23.21mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 11:30:06 PM

Mean Area 1051
Mean Conc. 23.76mg/L

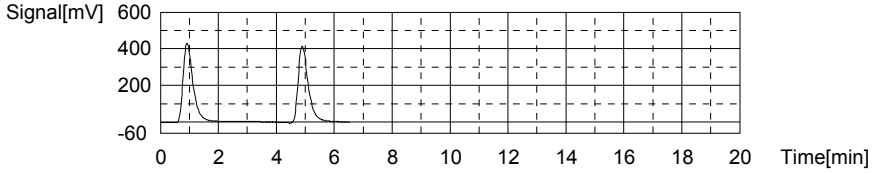

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.40	-0.3535mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_18	8/21/2015 11:34:37 PM
2	11.25	-0.3583mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_18	8/21/2015 11:38:52 PM

Mean Area 11.32
Mean Conc. -0.3559mg/L

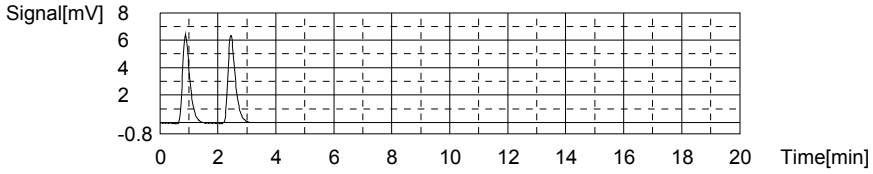

Sample

Sample Name: L15081095-01
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:40.89mg/L TC:41.00mg/L IC:0.1132mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1827	41.52mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 11:48:48 PM
2	1782	40.49mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 11:55:34 PM

Mean Area 1805
Mean Conc. 41.00mg/L

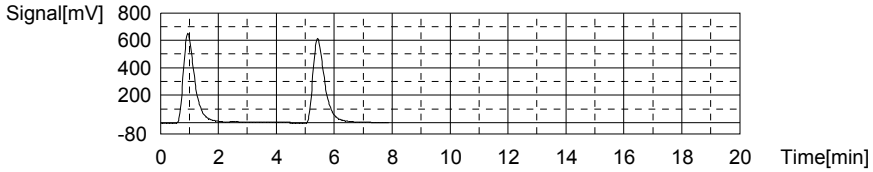

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	25.85	0.1086mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_18	8/22/2015 12:00:10 AM
2	26.14	0.1179mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_18	8/22/2015 12:04:32 AM

Mean Area 26.00
Mean Conc. 0.1132mg/L

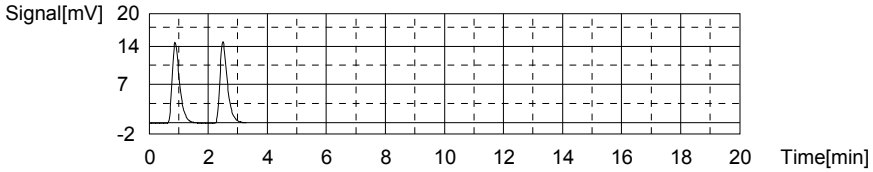

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:23.70mg/L TC:23.26mg/L IC:-0.4449mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1029	23.26mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/22/2015 12:13:04 AM

Mean Area 1029
Mean Conc. 23.26mg/L

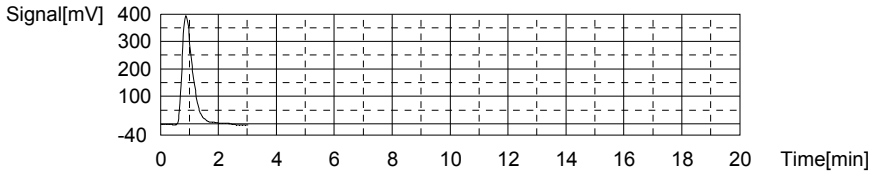

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.541	-0.4449mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/22/2015 12:17:31 AM

Mean Area 8.541
Mean Conc. -0.4449mg/L

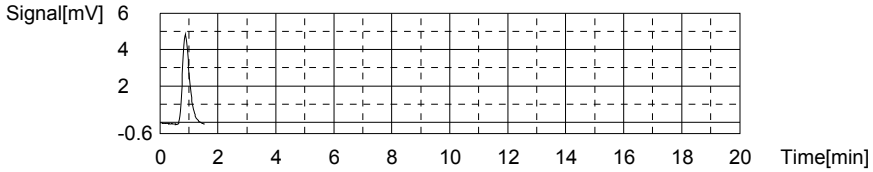

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.3522mg/L TC:-0.05064mg/L IC:-0.4028mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.28	-0.05064mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	8/22/2015 12:22:48 AM

Mean Area 10.28
Mean Conc. -0.05064mg/L

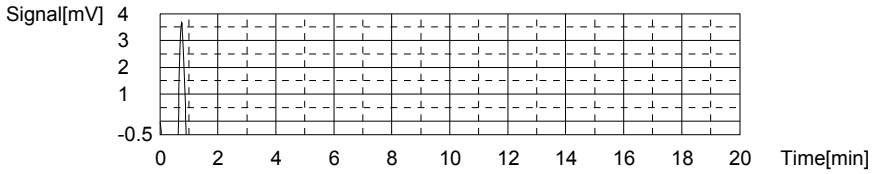

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.857	-0.4028mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/22/2015 12:26:51 AM

Mean Area 9.857
Mean Conc. -0.4028mg/L

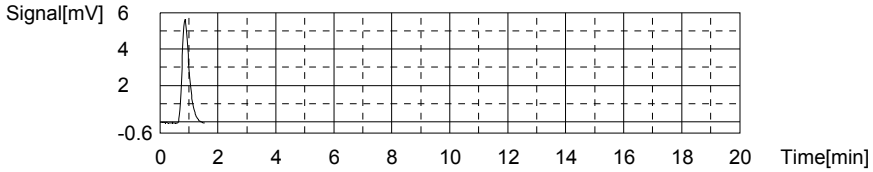

Sample

Sample Name: L15081010-01
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.712mg/L TC:16.63mg/L IC:10.92mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	736.5	16.57mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/22/2015 12:34:36 AM
2	742.1	16.69mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/22/2015 12:40:09 AM

Mean Area 739.3
Mean Conc. 16.63mg/L

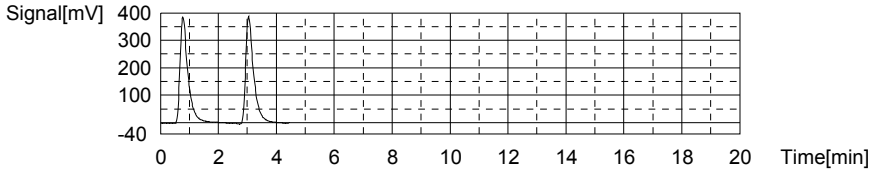

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	362.1	10.86mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_18	8/22/2015 12:45:17 AM
2	365.7	10.98mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_18	8/22/2015 12:50:11 AM

Mean Area 363.9
Mean Conc. 10.92mg/L

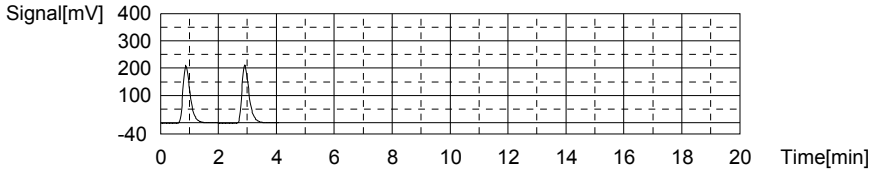

Sample

Sample Name: L15081010-02
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.358mg/L TC:9.008mg/L IC:2.651mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	410.3	9.102mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/22/2015 12:58:22 AM
2	402.1	8.915mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/22/2015 1:03:02 AM

Mean Area 406.2
Mean Conc. 9.008mg/L

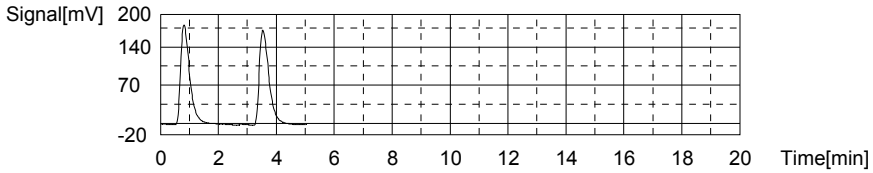

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	105.9	2.668mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/22/2015 1:07:51 AM
2	104.8	2.633mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/22/2015 1:12:22 AM

Mean Area 105.4
Mean Conc. 2.651mg/L

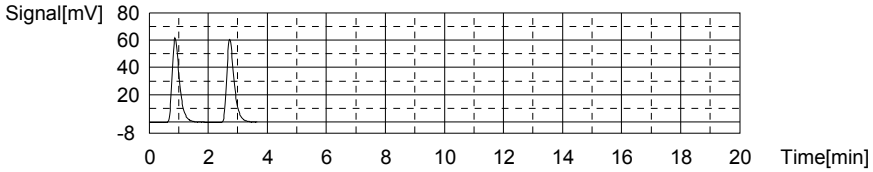

Sample

Sample Name: L15081010-03
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.842mg/L TC:6.757mg/L IC:2.914mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	306.1	6.718mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/22/2015 1:19:48 AM
2	309.5	6.796mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/22/2015 1:25:31 AM

Mean Area 307.8
Mean Conc. 6.757mg/L

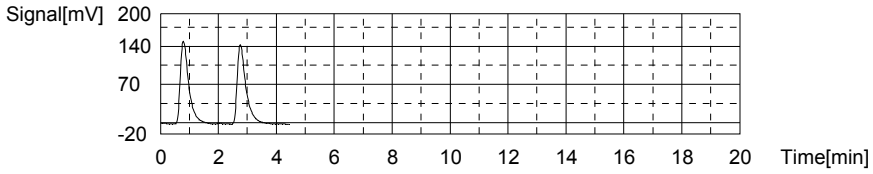

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	114.7	2.950mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/22/2015 1:30:18 AM
2	112.5	2.879mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/22/2015 1:34:52 AM

Mean Area 113.6
Mean Conc. 2.914mg/L

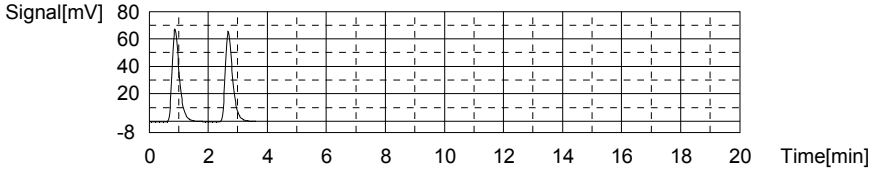

Sample

Sample Name: WG535971-05 DUP
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.996mg/L TC:6.644mg/L IC:2.647mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	303.6	6.661mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/22/2015 1:42:59 AM
2	302.1	6.626mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/22/2015 1:48:44 AM

Mean Area 302.9
Mean Conc. 6.644mg/L

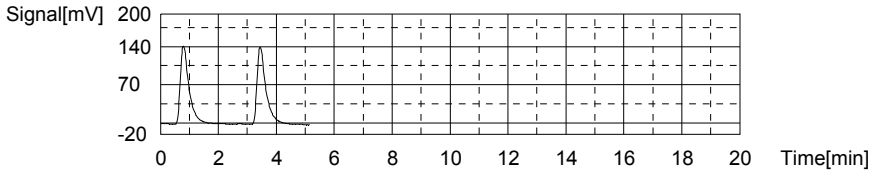

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	106.9	2.700mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/22/2015 1:53:32 AM
2	103.6	2.595mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/22/2015 1:58:08 AM

Mean Area 105.3
Mean Conc. 2.647mg/L

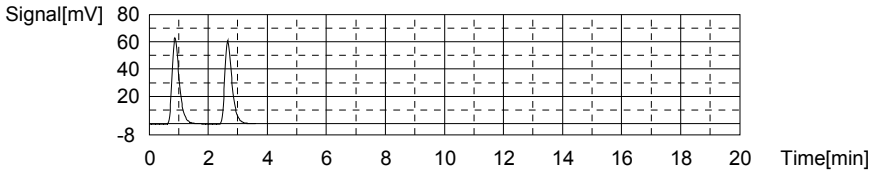

Sample

Sample Name: WG535971-06 MS
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:13.36mg/L TC:15.11mg/L IC:1.747mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	676.0	15.18mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/22/2015 2:05:50 AM
2	669.3	15.03mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/22/2015 2:11:19 AM

Mean Area 672.7
Mean Conc. 15.11mg/L

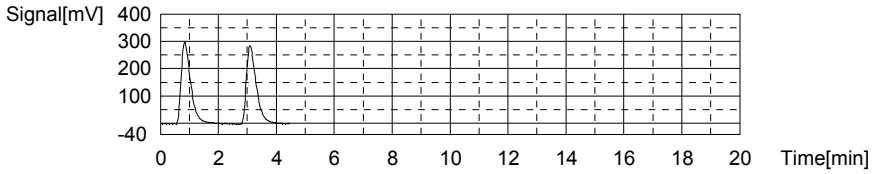

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	76.48	1.728mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/22/2015 2:16:01 AM
2	77.72	1.767mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/22/2015 2:20:29 AM

Mean Area 77.10
Mean Conc. 1.747mg/L

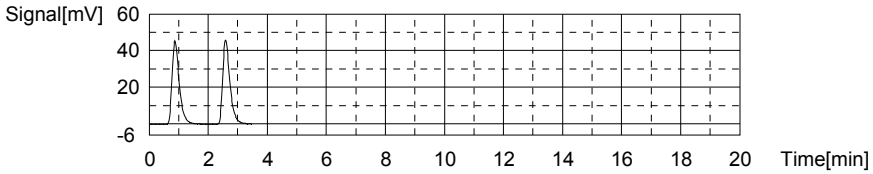

Sample

Sample Name: L15080901-04 (3)
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.5880mg/L TC:16.36mg/L IC:15.77mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	727.5	16.36mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/22/2015 2:28:24 AM

Mean Area 727.5
Mean Conc. 16.36mg/L

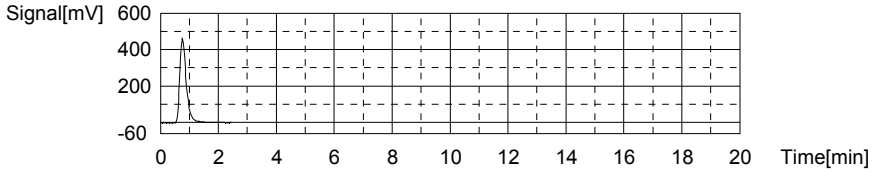

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	515.7	15.77mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/22/2015 2:33:58 AM

Mean Area 515.7
Mean Conc. 15.77mg/L

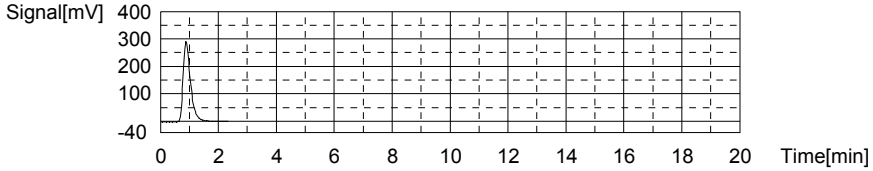

Sample

Sample Name: L15080901-05 (3)
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:15.29mg/L TC:39.82mg/L IC:24.53mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1753	39.82mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/22/2015 2:42:10 AM

Mean Area 1753
Mean Conc. 39.82mg/L

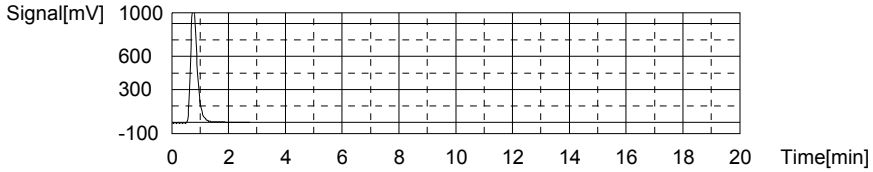

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	789.7	24.53mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/22/2015 2:48:02 AM

Mean Area 789.7
Mean Conc. 24.53mg/L

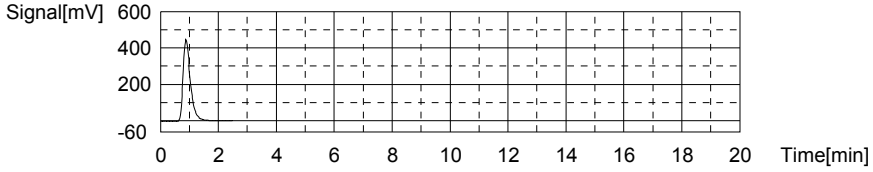

Sample

Sample Name: L15080904-01 (5)
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1844mg/L TC:7.787mg/L IC:7.602mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	352.8	7.787mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/22/2015 2:55:47 AM

Mean Area 352.8
Mean Conc. 7.787mg/L

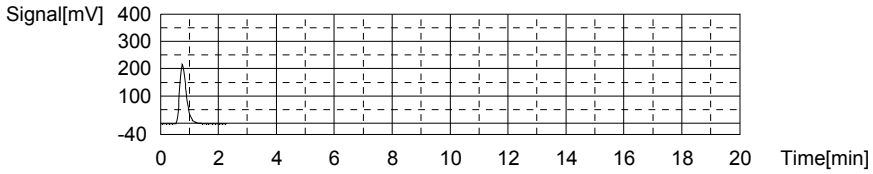

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	260.2	7.602mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/22/2015 3:00:55 AM

Mean Area 260.2
Mean Conc. 7.602mg/L

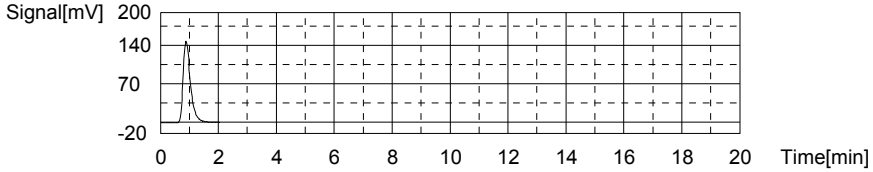

Sample

Sample Name: L15080904-03 (4)
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.08639mg/L TC:8.677mg/L IC:8.590mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	391.7	8.677mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/22/2015 3:08:26 AM

Mean Area 391.7
Mean Conc. 8.677mg/L

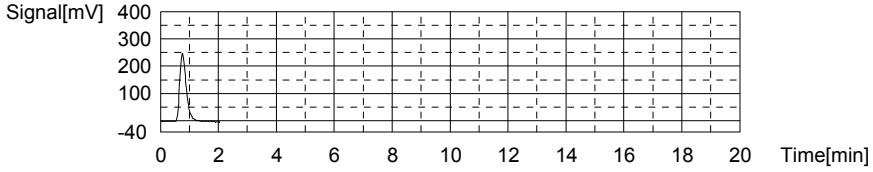

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	291.1	8.590mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/22/2015 3:13:40 AM

Mean Area 291.1
Mean Conc. 8.590mg/L

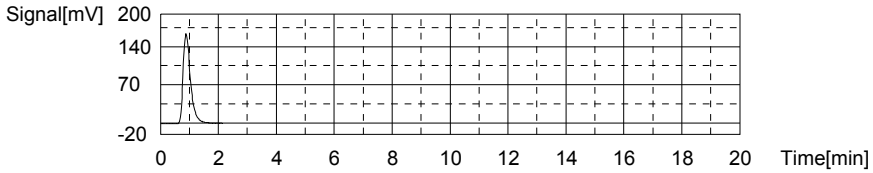

Sample

Sample Name: L15080904-07 (4)
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-0.1174mg/L TC:7.597mg/L IC:7.714mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	344.5	7.597mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/22/2015 3:21:07 AM

Mean Area 344.5
Mean Conc. 7.597mg/L

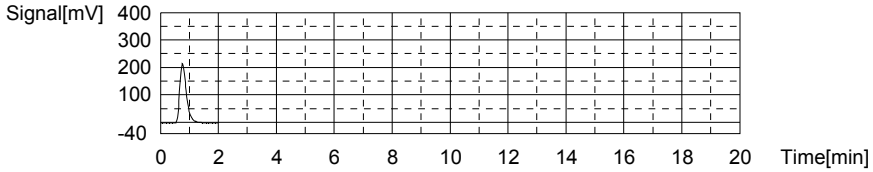

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	263.7	7.714mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/22/2015 3:26:20 AM

Mean Area 263.7
Mean Conc. 7.714mg/L

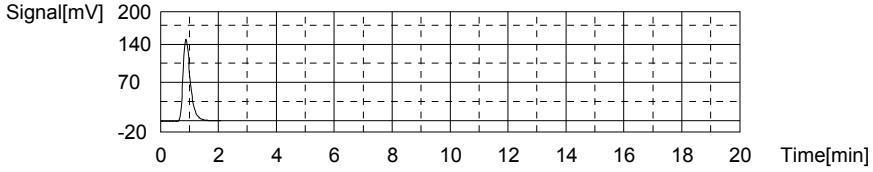

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:21.31mg/L TC:20.90mg/L IC:-0.4098mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	925.8	20.90mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/22/2015 3:34:23 AM

Mean Area 925.8
Mean Conc. 20.90mg/L

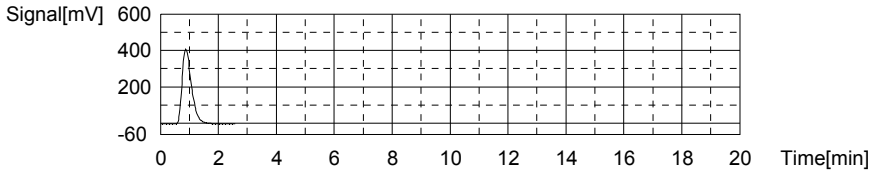

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.639	-0.4098mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/22/2015 3:38:50 AM

Mean Area 9.639
Mean Conc. -0.4098mg/L

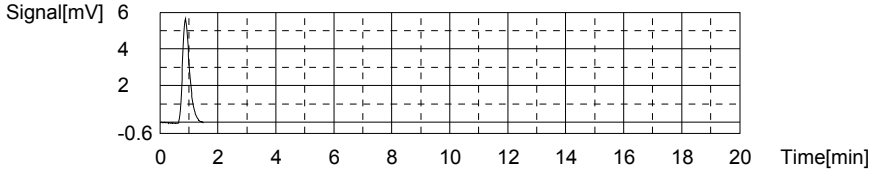

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.3553mg/L TC:-0.04355mg/L IC:-0.3989mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.59	-0.04355mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	8/22/2015 3:44:05 AM

Mean Area 10.59
Mean Conc. -0.04355mg/L

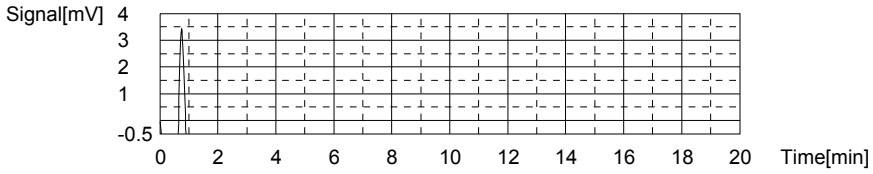

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.980	-0.3989mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/22/2015 3:48:04 AM

Mean Area 9.980
Mean Conc. -0.3989mg/L

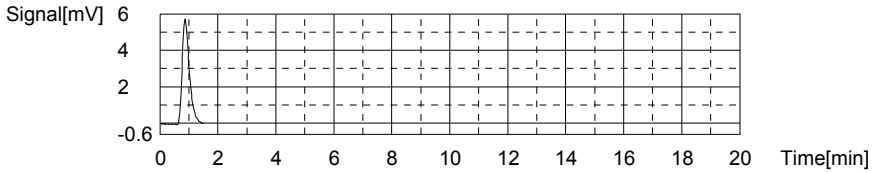

Sample

Sample Name:
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.956mg/L TC:38.41mg/L IC:31.45mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1691	38.41mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/22/2015 3:56:12 AM

Mean Area 1691
Mean Conc. 38.41mg/L

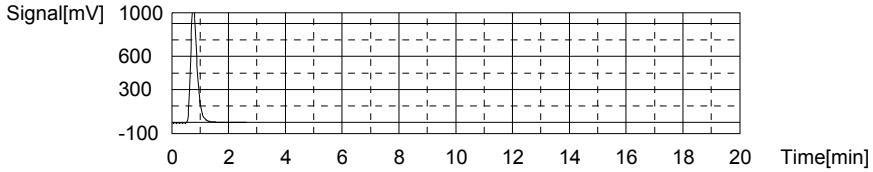

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1006	31.45mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/22/2015 4:01:57 AM

Mean Area 1006
Mean Conc. 31.45mg/L

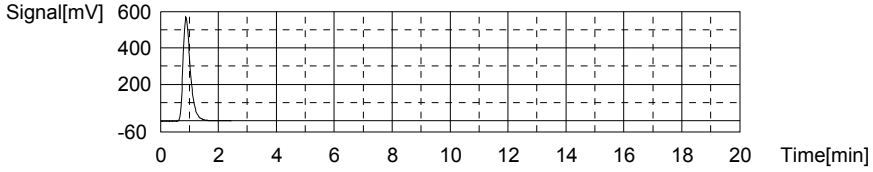

Sample

Sample Name:
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-0.2709mg/L TC:8.127mg/L IC:8.398mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	367.7	8.127mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/22/2015 4:09:30 AM

Mean Area 367.7
Mean Conc. 8.127mg/L

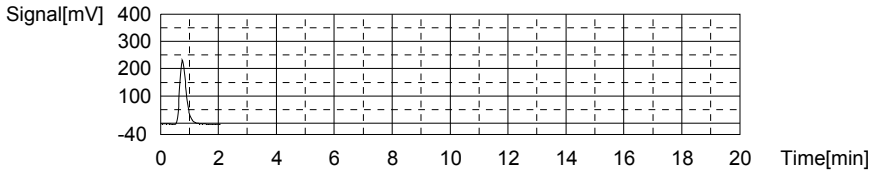

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	285.1	8.398mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/22/2015 4:14:30 AM

Mean Area 285.1
Mean Conc. 8.398mg/L

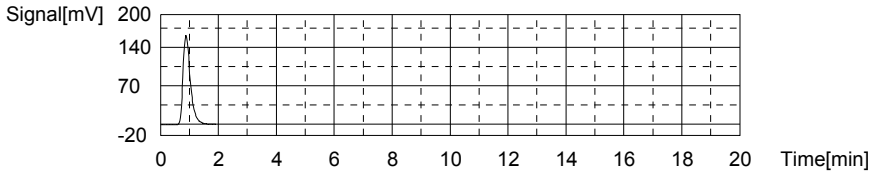

Sample

Sample Name:
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.8085mg/L TC:13.24mg/L IC:12.43mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	591.1	13.24mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	8/22/2015 4:22:16 AM

Mean Area 591.1
Mean Conc. 13.24mg/L

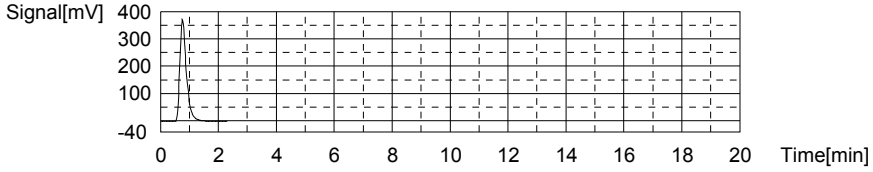

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	411.2	12.43mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/22/2015 4:27:53 AM

Mean Area 411.2
Mean Conc. 12.43mg/L

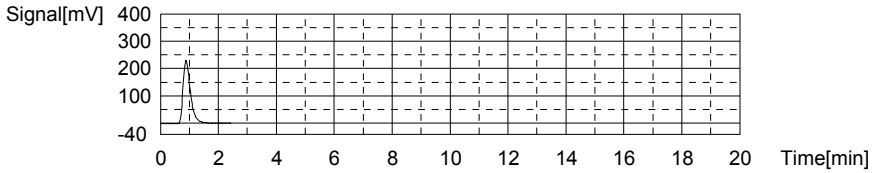

Sample

Sample Name:
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.4793mg/L TC:0.1265mg/L IC:-0.3528mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	18.02	0.1265mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/22/2015 4:34:55 AM

Mean Area 18.02
Mean Conc. 0.1265mg/L

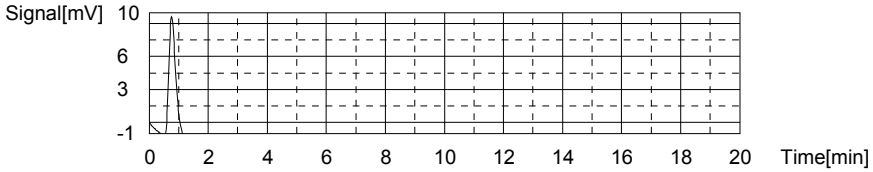

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.42	-0.3528mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/22/2015 4:39:27 AM

Mean Area 11.42
Mean Conc. -0.3528mg/L

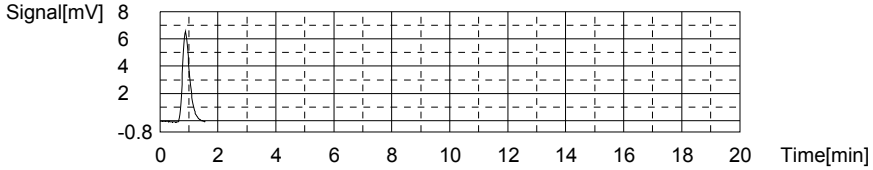

Sample

Sample Name:
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.4455mg/L TC:0.04820mg/L IC:-0.3973mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	14.60	0.04820mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/22/2015 4:46:29 AM

Mean Area 14.60
Mean Conc. 0.04820mg/L

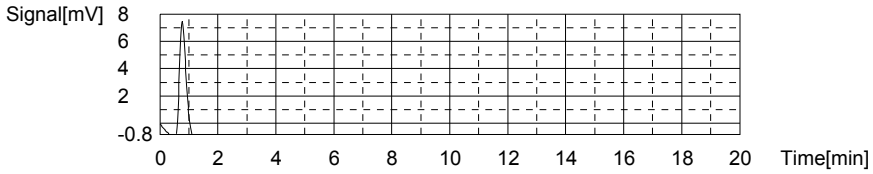

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.03	-0.3973mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/22/2015 4:50:58 AM

Mean Area 10.03
Mean Conc. -0.3973mg/L

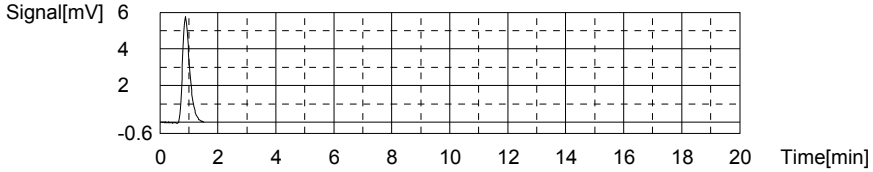

Sample

Sample Name:
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:20.69mg/L TC:20.26mg/L IC:-0.4281mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	898.0	20.26mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	8/22/2015 4:59:04 AM

Mean Area 898.0
Mean Conc. 20.26mg/L

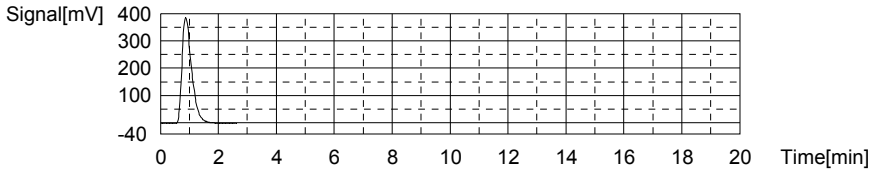

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.066	-0.4281mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/22/2015 5:03:30 AM

Mean Area 9.066
Mean Conc. -0.4281mg/L

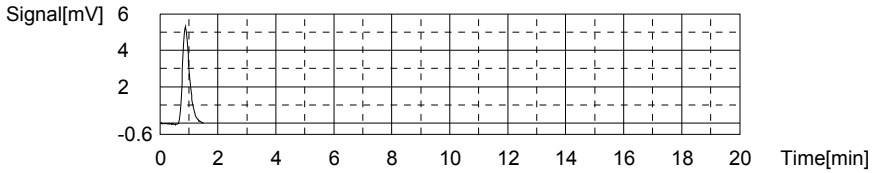

Sample

Sample Name:
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.3502mg/L TC:-0.05179mg/L IC:-0.4019mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.23	-0.05179mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/22/2015 5:08:47 AM

Mean Area 10.23
Mean Conc. -0.05179mg/L

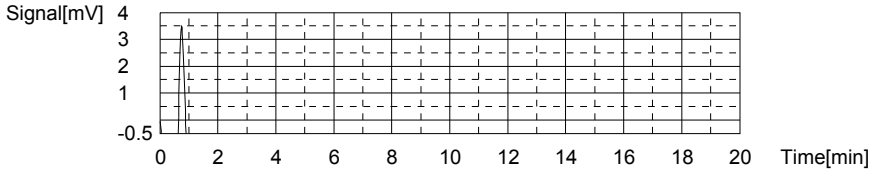

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.884	-0.4019mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/22/2015 5:12:49 AM

Mean Area 9.884
Mean Conc. -0.4019mg/L

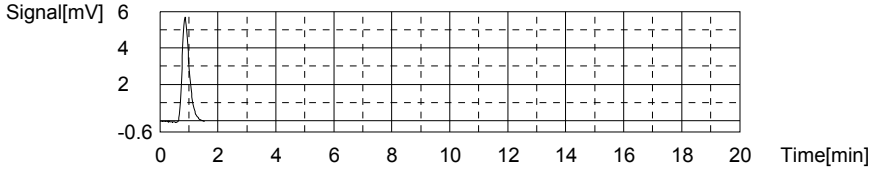

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
August 28, 2015

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001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK
EPT - ETHAN P. TIDD
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
August 28, 2015

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count
TNTC, B	Too numerous to count. Analyte present in method blank.

Microbac Laboratories Inc.
List of Valid Qualifiers
August 28, 2015

Qualkey: DOD

TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Mark Heaston
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD	pH:	
Project Name/Location:	Longhorn		
Project Number:	60256135.0002GA		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Dissolved Gases / Carbon Dioxide	Alkalinity	Sulfide	Chloride / Sulfate Nitrate / Nitrite	TOC / Total Phosphorous	Dissolved Iron / Dissolved Manganese	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 50	50WW18-081715			8/17/15	0830		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW18FF-081715			8/17/15	0830		✓	W	1								✓					
	50WW24-081715			8/17/15	0955		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW24FF-081715			8/17/15	0955		✓	W	1								✓					
	50WW23-081715			8/17/15	1120		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW23FF-081715			8/17/15	1120		✓	W	1								✓					
	50WW08-081715			8/17/15	1450		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW08FF-081715			8/17/15	1450		✓	W	1								✓					
	TRIP BLANK			8/17/15			✓	W	2	✓												

Comments: STANDARD TAT

Microbac OVD
Received: 08/18/2015 09:36
By: CARA STRICKLER 221000074069
Cara Strickler

Relinquished by: (Signature) Scott Beesinger	Date 8/17/15	Time 1600	Received	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Received (Signature)	Time	Remarks:

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15080904
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 28-AUG-2015

Samplenum	Container ID	Products
L15080904-01	618343	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	18-AUG-2015 13:22	BRG		
2	ANALYZ	V1	ORG4	18-AUG-2015 15:29	JDS	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	18-AUG-2015 13:22	BRG		
2	ANALYZ	V1	ORG4	18-AUG-2015 15:29	JDS	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	18-AUG-2015 13:22	BRG		
2	ANALYZ	V1	ORG4	18-AUG-2015 15:29	JDS	CLS	

Samplenum	Container ID	Products
L15080904-01	618344	RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	18-AUG-2015 13:22	BRG		
2	ANALYZ	V1	ORG1	18-AUG-2015 14:02	JDS	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	18-AUG-2015 13:22	BRG		
2	ANALYZ	V1	ORG1	18-AUG-2015 14:02	JDS	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	18-AUG-2015 13:22	BRG		
2	ANALYZ	V1	ORG1	18-AUG-2015 14:02	JDS	CLS	

Samplenum	Container ID	Products
L15080904-01	618345	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	18-AUG-2015 13:22	BRG		
2	PREP	L1	SEM	18-AUG-2015 13:26	ALS	BRG	
3	STORE	SEM	A1	20-AUG-2015 12:18	BRG	ALS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15080904
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 28-AUG-2015

Samplenum	Container ID	Products
L15080904-01	618346	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	18-AUG-2015 13:22	BRG		
2	ANALYZ	W1	WET	19-AUG-2015 10:28	DCM	CLS	
3	STORE	WET	A1	24-AUG-2015 15:57	CLS	DCM	

Samplenum	Container ID	Products
L15080904-01	618347	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	18-AUG-2015 13:22	BRG		
2	ANALYZ	W1	SEM	24-AUG-2015 12:04	JWR	CLS	
3	STORE	SEM	A1	27-AUG-2015 12:47	CLS	JWR	

Samplenum	Container ID	Products
L15080904-01	618348	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	18-AUG-2015 13:22	BRG		<2
2	ANALYZ	W1	WET	20-AUG-2015 08:17	DCM	CLS	
3	STORE	WET	A1	24-AUG-2015 15:55	CLS	DCM	

Samplenum	Container ID	Products
L15080904-01	618349	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	18-AUG-2015 13:22	BRG		
2	ANALYZ	W1	WET	19-AUG-2015 12:44	TB	AZH	
3	STORE	WET	A1	21-AUG-2015 17:35	CLS	TB	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15080904
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 28-AUG-2015

Samplenum	Container ID	Products
L15080904-02	618350	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	18-AUG-2015 13:22	BRG		
2	PREP	W1	DIG	18-AUG-2015 15:15	ERP	BRG	
3	STORE	DIG	A1	20-AUG-2015 14:26	BRG	AC	
4	ANALYZ*	DIG	METALS	20-AUG-2015 16:20	BKT	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L15080904-03	618351	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	18-AUG-2015 13:22	BRG		
2	ANALYZ	V1	ORG4	18-AUG-2015 15:29	JDS	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	18-AUG-2015 13:22	BRG		
2	ANALYZ	V1	ORG4	18-AUG-2015 15:29	JDS	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	18-AUG-2015 13:22	BRG		
2	ANALYZ	V1	ORG4	18-AUG-2015 15:29	JDS	CLS	

Samplenum	Container ID	Products
L15080904-03	618352	RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	18-AUG-2015 13:22	BRG		
2	ANALYZ	V1	ORG1	18-AUG-2015 14:02	JDS	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	18-AUG-2015 13:22	BRG		
2	ANALYZ	V1	ORG1	18-AUG-2015 14:02	JDS	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	18-AUG-2015 13:22	BRG		
2	ANALYZ	V1	ORG1	18-AUG-2015 14:02	JDS	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15080904
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 28-AUG-2015

Samplenum	Container ID	Products
L15080904-03	618353	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	18-AUG-2015 13:22	BRG		
2	PREP	L1	SEM	18-AUG-2015 13:26	ALS	BRG	
3	STORE	SEM	A1	20-AUG-2015 12:18	BRG	ALS	

Samplenum	Container ID	Products
L15080904-03	618354	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	18-AUG-2015 13:22	BRG		
2	ANALYZ	W1	WET	19-AUG-2015 10:28	DCM	CLS	
3	STORE	WET	A1	24-AUG-2015 15:57	CLS	DCM	

Samplenum	Container ID	Products
L15080904-03	618355	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	18-AUG-2015 13:22	BRG		
2	ANALYZ	W1	SEM	24-AUG-2015 12:04	JWR	CLS	
3	STORE	SEM	A1	27-AUG-2015 12:48	CLS	JWR	

Samplenum	Container ID	Products
L15080904-03	618356	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	18-AUG-2015 13:22	BRG		<2
2	ANALYZ	W1	WET	20-AUG-2015 08:17	DCM	CLS	
3	STORE	WET	A1	24-AUG-2015 15:55	CLS	DCM	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15080904
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 28-AUG-2015

Samplenum	Container ID	Products
L15080904-03	618357	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	18-AUG-2015 13:22	BRG		
2	ANALYZ	W1	WET	19-AUG-2015 12:44	TB	AZH	
3	STORE	WET	A1	21-AUG-2015 17:35	CLS	TB	

Samplenum	Container ID	Products
L15080904-04	618358	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	18-AUG-2015 13:22	BRG		
2	PREP	W1	DIG	18-AUG-2015 15:15	ERP	BRG	
3	STORE	DIG	A1	20-AUG-2015 14:26	BRG	AC	
4	ANALYZ*	DIG	METALS	20-AUG-2015 16:20	BKT	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L15080904-05	618359	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		18-AUG-2015 13:22	BRG		

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	18-AUG-2015 13:22	BRG		
2	ANALYZ	V1	ORG4	18-AUG-2015 15:29	JDS	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	18-AUG-2015 13:22	BRG		
2	ANALYZ	V1	ORG4	18-AUG-2015 15:29	JDS	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15080904
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 28-AUG-2015

Samplenum	Container ID	Products
L15080904-05	618360	RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	18-AUG-2015 13:22	BRG		
2	ANALYZ	V1	ORG1	18-AUG-2015 14:03	JDS	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	18-AUG-2015 13:22	BRG		
2	ANALYZ	V1	ORG1	18-AUG-2015 14:03	JDS	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	18-AUG-2015 13:22	BRG		
2	ANALYZ	V1	ORG1	18-AUG-2015 14:03	JDS	CLS	

Samplenum	Container ID	Products
L15080904-05	618361	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	18-AUG-2015 13:22	BRG		
2	PREP	L1	SEM	18-AUG-2015 13:26	ALS	BRG	
3	STORE	SEM	A1	20-AUG-2015 12:18	BRG	ALS	

Samplenum	Container ID	Products
L15080904-05	618362	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	18-AUG-2015 13:22	BRG		
2	ANALYZ	W1	WET	19-AUG-2015 10:28	DCM	CLS	
3	STORE	WET	A1	24-AUG-2015 15:57	CLS	DCM	

Samplenum	Container ID	Products
L15080904-05	618363	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	18-AUG-2015 13:22	BRG		
2	ANALYZ	W1	SEM	24-AUG-2015 12:04	JWR	CLS	
3	STORE	SEM	A1	27-AUG-2015 12:48	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15080904
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 28-AUG-2015

Samplenum	Container ID	Products
L15080904-05	618364	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	18-AUG-2015 13:22	BRG		<2
2	ANALYZ	W1	WET	20-AUG-2015 08:17	DCM	CLS	
3	STORE	WET	A1	24-AUG-2015 15:55	CLS	DCM	

Samplenum	Container ID	Products
L15080904-05	618365	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	18-AUG-2015 13:22	BRG		
2	ANALYZ	W1	WET	19-AUG-2015 12:44	TB	AZH	
3	STORE	WET	A1	21-AUG-2015 17:35	CLS	TB	

Samplenum	Container ID	Products
L15080904-06	618366	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	18-AUG-2015 13:22	BRG		
2	PREP	W1	DIG	18-AUG-2015 15:15	ERP	BRG	
3	STORE	DIG	A1	20-AUG-2015 14:26	BRG	AC	
4	ANALYZ*	DIG	METALS	20-AUG-2015 16:20	BKT	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15080904
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 28-AUG-2015

Samplenum	Container ID	Products
L15080904-07	618367	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	18-AUG-2015 13:22	BRG		
2	ANALYZ	V1	ORG4	18-AUG-2015 15:29	JDS	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	18-AUG-2015 13:22	BRG		
2	ANALYZ	V1	ORG4	18-AUG-2015 15:29	JDS	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	18-AUG-2015 13:22	BRG		
2	ANALYZ	V1	ORG4	18-AUG-2015 15:29	JDS	CLS	

Samplenum	Container ID	Products
L15080904-07	618368	RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	18-AUG-2015 13:22	BRG		
2	ANALYZ	V1	ORG1	18-AUG-2015 14:03	JDS	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	18-AUG-2015 13:22	BRG		
2	ANALYZ	V1	ORG1	18-AUG-2015 14:03	JDS	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	18-AUG-2015 13:22	BRG		
2	ANALYZ	V1	ORG1	18-AUG-2015 14:03	JDS	CLS	

Samplenum	Container ID	Products
L15080904-07	618369	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	18-AUG-2015 13:22	BRG		
2	PREP	L1	SEM	18-AUG-2015 13:26	ALS	BRG	
3	STORE	SEM	A1	20-AUG-2015 12:18	BRG	ALS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15080904
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 28-AUG-2015

Samplenum	Container ID	Products
L15080904-07	618370	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	18-AUG-2015 13:22	BRG		
2	ANALYZ	W1	WET	19-AUG-2015 10:28	DCM	CLS	
3	STORE	WET	A1	24-AUG-2015 15:57	CLS	DCM	

Samplenum	Container ID	Products
L15080904-07	618371	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	18-AUG-2015 13:22	BRG		
2	ANALYZ	W1	SEM	24-AUG-2015 12:04	JWR	CLS	
3	STORE	SEM	A1	27-AUG-2015 12:48	CLS	JWR	

Samplenum	Container ID	Products
L15080904-07	618372	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	18-AUG-2015 13:22	BRG		<2
2	ANALYZ	W1	WET	20-AUG-2015 08:17	DCM	CLS	
3	STORE	WET	A1	24-AUG-2015 15:55	CLS	DCM	

Samplenum	Container ID	Products
L15080904-07	618373	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	18-AUG-2015 13:22	BRG		
2	ANALYZ	W1	WET	19-AUG-2015 12:44	TB	AZH	
3	STORE	WET	A1	21-AUG-2015 17:35	CLS	TB	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15080904
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 28-AUG-2015

Samplenum	Container ID	Products
L15080904-08	618374	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	18-AUG-2015 13:22	BRG		
2	PREP	W1	DIG	18-AUG-2015 15:15	ERP	BRG	
3	STORE	DIG	A1	20-AUG-2015 14:26	BRG	AC	
4	ANALYZ*	DIG	METALS	20-AUG-2015 16:20	BKT	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L15080904-09	618375	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	18-AUG-2015 13:22	BRG		
2	ANALYZ	V1	ORG4	18-AUG-2015 15:29	JDS	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	18-AUG-2015 13:22	BRG		
2	ANALYZ	V1	ORG4	18-AUG-2015 15:29	JDS	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - July 27, 2015

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVL NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVL MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVL HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVL HPLC12/HPLC/UV

Acetate
Formate

OVL RSK01/GC-FID

Acetylene
Propane

OVL K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVL MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVL MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L15080992

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on August 28 2015

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

The following discrepancies were noted:

Discrepancy	Resolution
Sample ID: 50WW12-081815 (1 of 3) voa vials received w/headspace. BRG Sample ID: Trip Blank. (1 of 2) voa vials received w/headspace. BRG	Please proceed.

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00113008	I	4.0		J2317161996	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	No

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
50WW22-081815	L15080992-01	08/18/2015 08:05	08/19/2015 09:53
50WW22FF-081815	L15080992-02	08/18/2015 08:05	08/19/2015 09:53
50WW25-081815	L15080992-03	08/18/2015 09:40	08/19/2015 09:53
50WW25FF-081815	L15080992-04	08/18/2015 09:40	08/19/2015 09:53
50WW12-081815	L15080992-05	08/18/2015 11:05	08/19/2015 09:53
50WW12FF-081815	L15080992-06	08/18/2015 11:05	08/19/2015 09:53
50WW06-081815	L15080992-07	08/18/2015 13:40	08/19/2015 09:53
50WW06FF-081815	L15080992-08	08/18/2015 13:40	08/19/2015 09:53
50WW11-081815	L15080992-09	08/18/2015 14:50	08/19/2015 09:53
50WW11FF-081815	L15080992-10	08/18/2015 14:50	08/19/2015 09:53
TRIP BLANK	L15080992-11	08/18/2015 00:01	08/19/2015 09:53

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L15080992
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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2.4.4.1 Summary Data 1656
2.4.4.2 QC Summary Data 1663
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Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	8260
Prep Batch Number(s):	535683, 536091	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-08-28 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden	Franci Bolden	Analyst I	2015-08-28 03:46:05

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	8260
Prep Batch Number(s):	535683, 536091	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-08-28 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	8260
Prep Batch Number(s):	535683, 536091	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-08-28 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	8260
Prep Batch Number(s):	535683, 536091	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-08-28 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			2
Was the ICAL curve verified for each analyte?		X			1
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	8260
Prep Batch Number(s):	535683, 536091	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-08-28 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	8260
Prep Batch Number(s):	535683, 536091	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-08-28 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) Carbon disulfide was below the LCL in the ICV.
2) Bromomethane was below the LCL in CCV WG536091-02.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	535908, 536040	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-08-27 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden	Franci Bolden	Analyst I	2015-08-27 19:24:34

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	535908, 536040	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-08-27 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	535908, 536040	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-08-27 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	535908, 536040	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-08-27 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	535908, 536040	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-08-27 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	535908, 536040	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-08-27 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There were no exceptions.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG536249	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-08-28 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2015-08-28 19:27:55

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG536249	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-08-28 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG536249	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-08-28 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG536249	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-08-28 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG536249	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-08-28 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG536249	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-08-28 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG536019	**Reviewer Name:**	Maren Beery
LRC Date:	2015-08-26 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Maren Beery	Maren Beery	Metals Supervisor	2015-08-26 16:18:10

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG536019	**Reviewer Name:**	Maren Beery
LRC Date:	2015-08-26 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?			X		
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG536019	**Reviewer Name:**	Maren Beery
LRC Date:	2015-08-26 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG536019	**Reviewer Name:**	Maren Beery
LRC Date:	2015-08-26 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG536019	**Reviewer Name:**	Maren Beery
LRC Date:	2015-08-26 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG536019	**Reviewer Name:**	Maren Beery
LRC Date:	2015-08-26 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG535816	**Reviewer Name:**	Maren Beery
LRC Date:	2015-08-26 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Maren Beery	Maren Beery	Metals Supervisor	2015-08-26 16:05:30

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG535816	**Reviewer Name:**	Maren Beery
LRC Date:	2015-08-26 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG535816	**Reviewer Name:**	Maren Beery
LRC Date:	2015-08-26 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				ER#1
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG535816	**Reviewer Name:**	Maren Beery
LRC Date:	2015-08-26 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				ER#2
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG535816	**Reviewer Name:**	Maren Beery
LRC Date:	2015-08-26 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG535816	**Reviewer Name:**	Maren Beery
LRC Date:	2015-08-26 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - Due to high levels of target analyte, client samples 06 and 10 were analyzed at dilutions for manganese.

ER#2 - Due to continuing calibration verification failure for manganese on 23-AUG-2015 at 19:17, all client samples were reanalyzed on a later calibration for manganese.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG535677	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-08-19 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Adriane Steed	Adriane Steed		2015-08-20 14:35:37

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG535677	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-08-19 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?	X				
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG535677	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-08-19 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG535677	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-08-19 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG535677	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-08-19 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG535677	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-08-19 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. Fractions -01,05,09 were analyzed at dilutions only due to their high analyte concentrations (Cl and/or SO4) which were over 200 ppm. Any sample that has a single anion load greater than 200 ppm (or a total anion load greater than 400 ppm) will be diluted in order to prevent damage to the IC from repeated overloading of the analytical column and oversaturation of the suppressor membranes.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG535657	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-28 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-08-28 16:21:20

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG535657	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-28 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG535657	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-28 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG535657	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-28 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG535657	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-28 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG535657	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-28 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG535957	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-28 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-08-28 16:23:01

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG535957	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-28 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG535957	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-28 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG535957	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-28 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG535957	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-28 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG535957	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-28 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	S
Prep Batch Number(s):	WG535595	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-28 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-08-28 16:24:42

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	S
Prep Batch Number(s):	WG535595	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-28 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	S
Prep Batch Number(s):	WG535595	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-28 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	S
Prep Batch Number(s):	WG535595	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-28 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	S
Prep Batch Number(s):	WG535595	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-28 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	S
Prep Batch Number(s):	WG535595	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-28 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG535967, WG536390	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-28 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-08-28 16:24:04

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG535967, WG536390	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-28 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG535967, WG536390	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-28 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG535967, WG536390	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-28 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG535967, WG536390	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-28 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15080992
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG535967, WG536390	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-28 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW22-081815	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG535683	**Analyst:**	TMB	**Run Date:**	08/20/2015 22:30
Collect Date:	08/18/2015 08:05	**Dilution:**	1	**File ID:**	8M406918
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	95.6	70	120	
Toluene-d8	98.8	85	120	
4-Bromofluorobenzene	95.4	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-01	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW22-081815	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG535908	**Analyst:**	JDS	**Run Date:**	08/20/2015 16:52
Collect Date:	08/18/2015 08:05	**Dilution:**	1	**File ID:**	16G48281
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	52100		10000	5000	2500
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW22-081815	**Prep Method:**	6850	**Prep Date:**	08/24/2015 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG536249	**Analyst:**	JWR	**Run Date:**	08/24/2015 22:09
Collect Date:	08/18/2015 08:05	**Dilution:**	1	**File ID:**	1LM.LM31450
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3.62		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15080992-01	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW22-081815	**Prep Method:**	9056	**Prep Date:**	08/19/2015 12:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG535677	**Analyst:**	ALS	**Run Date:**	08/19/2015 15:43
Collect Date:	08/18/2015 08:05	**Dilution:**	5	**File ID:**	I2_081915-09
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	1.00	U	2.00	1.00	0.500
Nitrite	14797-65-0	1.00	U	2.00	1.00	0.500

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-01	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW22-081815	**Prep Method:**	9056	**Prep Date:**	08/19/2015 12:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG535677	**Analyst:**	ALS	**Run Date:**	08/19/2015 16:01
Collect Date:	08/18/2015 08:05	**Dilution:**	50	**File ID:**	I2_081915-10
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	963		20.0	10.0	5.00
Sulfate	14808-79-8	521		100	50.0	25.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW22-081815	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	08/19/2015 13:19
Workgroup #:	WG535657	**Analyst:**	DCM	**Run Date:**	08/19/2015 13:30
Collect Date:	08/18/2015 08:05	**Dilution:**	2	**File ID:**	SC150819004.026
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	373		80.0	40.0	20.0

Certificate of Analysis

Sample #:	L15080992-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW22-081815	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	08/21/2015 09:45
Workgroup #:	WG535957	**Analyst:**	DCM	**Run Date:**	08/21/2015 09:54
Collect Date:	08/18/2015 08:05	**Dilution:**	1	**File ID:**	S2150821002.022
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	1.19		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15080992-01	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW22-081815	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG535595	**Analyst:**	TB	**Run Date:**	08/19/2015 15:01
Collect Date:	08/18/2015 08:05	**Dilution:**	1	**File ID:**	ET.1508191501-08
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-01	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW22-081815	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	05/27/2015 15:47
Workgroup #:	WG535967	**Analyst:**	DIH	**Run Date:**	08/21/2015 14:48
Collect Date:	08/18/2015 08:05	**Dilution:**	2	**File ID:**	TC08212015.020
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	2.35	J	4.00	2.00	1.00

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-02	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	50WW22FF-081815	**Prep Method:**	3015	**Prep Date:**	08/21/2015 11:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	08/23/2015 10:12
Workgroup #:	WG536058	**Analyst:**	KHR	**Run Date:**	08/23/2015 13:32
Collect Date:	08/18/2015 08:05	**Dilution:**	1	**File ID:**	P2.082315.133257
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.100	U	0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW22FF-081815	**Prep Method:**	3015	**Prep Date:**	08/20/2015 11:07
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	08/24/2015 12:17
Workgroup #:	WG536146	**Analyst:**	BKT	**Run Date:**	08/24/2015 14:49
Collect Date:	08/18/2015 08:05	**Dilution:**	1	**File ID:**	NI.082415.144924
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.00438		0.00400	0.00200	0.00100

Certificate of Analysis

Sample #:	L15080992-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW25-081815	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG535683	**Analyst:**	TMB	**Run Date:**	08/20/2015 22:59
Collect Date:	08/18/2015 09:40	**Dilution:**	1	**File ID:**	8M406919
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	92.6	70	120	
Toluene-d8	98.5	85	120	
4-Bromofluorobenzene	97.9	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-03	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW25-081815	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG535908	**Analyst:**	JDS	**Run Date:**	08/20/2015 17:03
Collect Date:	08/18/2015 09:40	**Dilution:**	1	**File ID:**	16G48282
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	31.3		5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-03	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW25-081815	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG536040	**Analyst:**	JDS	**Run Date:**	08/21/2015 15:23
Collect Date:	08/18/2015 09:40	**Dilution:**	5	**File ID:**	16G48297
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	240000		50000	25000	12500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW25-081815	**Prep Method:**	6850	**Prep Date:**	08/24/2015 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG536249	**Analyst:**	JWR	**Run Date:**	08/24/2015 22:28
Collect Date:	08/18/2015 09:40	**Dilution:**	5	**File ID:**	1LM.LM31451
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	24.7		2.00	1.00	0.500

Certificate of Analysis

Sample #:	L15080992-03	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW25-081815	**Prep Method:**	9056	**Prep Date:**	08/19/2015 12:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG535677	**Analyst:**	ALS	**Run Date:**	08/19/2015 16:20
Collect Date:	08/18/2015 09:40	**Dilution:**	1	**File ID:**	I2_081915-11
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	0.200	U	0.400	0.200	0.100
Nitrite	14797-65-0	0.200	U	0.400	0.200	0.100
Sulfate	14808-79-8	66.4		2.00	1.00	0.500

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-03	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW25-081815	**Prep Method:**	9056	**Prep Date:**	08/19/2015 12:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG535677	**Analyst:**	ALS	**Run Date:**	08/19/2015 16:38
Collect Date:	08/18/2015 09:40	**Dilution:**	2	**File ID:**	I2_081915-12
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	28.3		0.800	0.400	0.200

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW25-081815	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	08/19/2015 13:19
Workgroup #:	WG535657	**Analyst:**	DCM	**Run Date:**	08/19/2015 13:31
Collect Date:	08/18/2015 09:40	**Dilution:**	1	**File ID:**	SC150819004.027
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	273		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L15080992-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW25-081815	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	08/21/2015 09:45
Workgroup #:	WG535957	**Analyst:**	DCM	**Run Date:**	08/21/2015 09:54
Collect Date:	08/18/2015 09:40	**Dilution:**	1	**File ID:**	S2150821002.023
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	1.84		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15080992-03	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW25-081815	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG535595	**Analyst:**	TB	**Run Date:**	08/19/2015 15:01
Collect Date:	08/18/2015 09:40	**Dilution:**	1	**File ID:**	ET.1508191501-09
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-03	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW25-081815	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	05/27/2015 15:47
Workgroup #:	WG535967	**Analyst:**	DIH	**Run Date:**	08/21/2015 15:02
Collect Date:	08/18/2015 09:40	**Dilution:**	3	**File ID:**	TC08212015.021
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	3.00	U	6.00	3.00	1.50

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-04	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	50WW25FF-081815	**Prep Method:**	3015	**Prep Date:**	08/21/2015 11:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	08/23/2015 10:12
Workgroup #:	WG536058	**Analyst:**	KHR	**Run Date:**	08/23/2015 13:35
Collect Date:	08/18/2015 09:40	**Dilution:**	1	**File ID:**	P2.082315.133522
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.0837	J	0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.

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Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW25FF-081815	**Prep Method:**	3015	**Prep Date:**	08/20/2015 11:07
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	08/24/2015 12:17
Workgroup #:	WG536146	**Analyst:**	BKT	**Run Date:**	08/24/2015 14:41
Collect Date:	08/18/2015 09:40	**Dilution:**	1	**File ID:**	NI.082415.144137
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0179		0.00400	0.00200	0.00100

Certificate of Analysis

Sample #:	L15080992-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW12-081815	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG535683	**Analyst:**	TMB	**Run Date:**	08/20/2015 23:27
Collect Date:	08/18/2015 11:05	**Dilution:**	1	**File ID:**	8M406920
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

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Project Name: Longhorn Army Ammunition
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Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	5.59		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

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Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
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Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	94.7	70	120	
Toluene-d8	99.6	85	120	
4-Bromofluorobenzene	95.4	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-05	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW12-081815	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG535908	**Analyst:**	JDS	**Run Date:**	08/20/2015 17:15
Collect Date:	08/18/2015 11:05	**Dilution:**	1	**File ID:**	16G48283
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-05	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW12-081815	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG536040	**Analyst:**	JDS	**Run Date:**	08/21/2015 15:34
Collect Date:	08/18/2015 11:05	**Dilution:**	5	**File ID:**	16G48298
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	259000		50000	25000	12500

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L15080992
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Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW12-081815	**Prep Method:**	6850	**Prep Date:**	08/24/2015 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG536249	**Analyst:**	JWR	**Run Date:**	08/24/2015 22:47
Collect Date:	08/18/2015 11:05	**Dilution:**	10000	**File ID:**	1LM.LM31452
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	17300		4000	2000	1000

Certificate of Analysis

Sample #:	L15080992-05	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW12-081815	**Prep Method:**	9056	**Prep Date:**	08/19/2015 12:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG535677	**Analyst:**	ALS	**Run Date:**	08/19/2015 16:56
Collect Date:	08/18/2015 11:05	**Dilution:**	5	**File ID:**	I2_081915-13
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	1.00	U	2.00	1.00	0.500
Nitrite	14797-65-0	1.00	U	2.00	1.00	0.500
Sulfate	14808-79-8	576		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

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Certificate of Analysis

Sample #:	L15080992-05	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW12-081815	**Prep Method:**	9056	**Prep Date:**	08/20/2015 13:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG535887	**Analyst:**	ALS	**Run Date:**	08/20/2015 21:10
Collect Date:	08/18/2015 11:05	**Dilution:**	100	**File ID:**	I2_082015-25
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1250		40.0	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Project #: 2551.096
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Certificate of Analysis

Sample #:	L15080992-05	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW12-081815	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	08/19/2015 13:19
Workgroup #:	WG535657	**Analyst:**	DCM	**Run Date:**	08/19/2015 13:31
Collect Date:	08/18/2015 11:05	**Dilution:**	1	**File ID:**	SC150819004.028
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	293		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L15080992-05	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW12-081815	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	08/21/2015 09:45
Workgroup #:	WG535957	**Analyst:**	DCM	**Run Date:**	08/21/2015 09:55
Collect Date:	08/18/2015 11:05	**Dilution:**	1	**File ID:**	S2150821002.024
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	1.96		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15080992-05	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW12-081815	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG535595	**Analyst:**	TB	**Run Date:**	08/19/2015 15:01
Collect Date:	08/18/2015 11:05	**Dilution:**	1	**File ID:**	ET.1508191501-10
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Project #: 2551.096
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Certificate of Analysis

Sample #:	L15080992-05	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW12-081815	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	05/27/2015 15:47
Workgroup #:	WG536390	**Analyst:**	DIH	**Run Date:**	08/26/2015 16:32
Collect Date:	08/18/2015 11:05	**Dilution:**	4	**File ID:**	TC08262015.006
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	26.3		8.00	4.00	2.00

Certificate of Analysis

Sample #:	L15080992-06	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	50WW12FF-081815	**Prep Method:**	3015	**Prep Date:**	08/21/2015 11:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	08/23/2015 10:12
Workgroup #:	WG536058	**Analyst:**	KHR	**Run Date:**	08/23/2015 13:37
Collect Date:	08/18/2015 11:05	**Dilution:**	1	**File ID:**	P2.082315.133745
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.100	U	0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L15080992
Lab Project #: 2551.096
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Certificate of Analysis

Sample #:	L15080992-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW12FF-081815	**Prep Method:**	3015	**Prep Date:**	08/20/2015 11:07
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	08/24/2015 12:17
Workgroup #:	WG536146	**Analyst:**	BKT	**Run Date:**	08/24/2015 14:54
Collect Date:	08/18/2015 11:05	**Dilution:**	10	**File ID:**	NI.082415.145414
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0679		0.0400	0.0200	0.0100

Certificate of Analysis

Sample #:	L15080992-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW06-081815	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG535683	**Analyst:**	TMB	**Run Date:**	08/20/2015 23:56
Collect Date:	08/18/2015 13:40	**Dilution:**	1	**File ID:**	8M406921
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

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Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.874	J	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	34.7		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	90.0	70	120	
Toluene-d8	99.4	85	120	
4-Bromofluorobenzene	97.2	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-07	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW06-081815	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG535908	**Analyst:**	JDS	**Run Date:**	08/20/2015 17:27
Collect Date:	08/18/2015 13:40	**Dilution:**	1	**File ID:**	16G48284
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	205000		10000	5000	2500
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW06-081815	**Prep Method:**	6850	**Prep Date:**	08/24/2015 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG536249	**Analyst:**	JWR	**Run Date:**	08/24/2015 23:06
Collect Date:	08/18/2015 13:40	**Dilution:**	1000	**File ID:**	1LM.LM31453
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2050		400	200	100

Certificate of Analysis

Sample #:	L15080992-07	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW06-081815	**Prep Method:**	9056	**Prep Date:**	08/19/2015 12:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG535677	**Analyst:**	ALS	**Run Date:**	08/19/2015 18:09
Collect Date:	08/18/2015 13:40	**Dilution:**	1	**File ID:**	I2_081915-17
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	0.200	U	0.400	0.200	0.100
Nitrite	14797-65-0	0.200	U	0.400	0.200	0.100
Sulfate	14808-79-8	55.2		2.00	1.00	0.500

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-07	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW06-081815	**Prep Method:**	9056	**Prep Date:**	08/19/2015 12:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG535677	**Analyst:**	ALS	**Run Date:**	08/19/2015 18:27
Collect Date:	08/18/2015 13:40	**Dilution:**	10	**File ID:**	I2_081915-18
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	98.6		4.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-07	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW06-081815	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	08/19/2015 13:19
Workgroup #:	WG535657	**Analyst:**	DCM	**Run Date:**	08/19/2015 13:32
Collect Date:	08/18/2015 13:40	**Dilution:**	1	**File ID:**	SC150819004.029
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	284		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L15080992-07	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW06-081815	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	08/21/2015 09:45
Workgroup #:	WG535957	**Analyst:**	DCM	**Run Date:**	08/21/2015 09:56
Collect Date:	08/18/2015 13:40	**Dilution:**	1	**File ID:**	S2150821002.025
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-07	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW06-081815	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG535595	**Analyst:**	TB	**Run Date:**	08/19/2015 15:01
Collect Date:	08/18/2015 13:40	**Dilution:**	1	**File ID:**	ET.1508191501-11
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-07	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW06-081815	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	05/27/2015 15:47
Workgroup #:	WG535967	**Analyst:**	DIH	**Run Date:**	08/21/2015 15:33
Collect Date:	08/18/2015 13:40	**Dilution:**	3	**File ID:**	TC08212015.023
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	3.00	U	6.00	3.00	1.50

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-08	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	50WW06FF-081815	**Prep Method:**	3015	**Prep Date:**	08/21/2015 11:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	08/23/2015 10:12
Workgroup #:	WG536058	**Analyst:**	KHR	**Run Date:**	08/23/2015 13:40
Collect Date:	08/18/2015 13:40	**Dilution:**	1	**File ID:**	P2.082315.134009
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.100	U	0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW06FF-081815	**Prep Method:**	3015	**Prep Date:**	08/20/2015 11:07
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	08/24/2015 12:17
Workgroup #:	WG536146	**Analyst:**	BKT	**Run Date:**	08/24/2015 14:57
Collect Date:	08/18/2015 13:40	**Dilution:**	1	**File ID:**	NI.082415.145726
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0133		0.00400	0.00200	0.00100

Certificate of Analysis

Sample #:	L15080992-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW11-081815	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG535683	**Analyst:**	TMB	**Run Date:**	08/21/2015 00:25
Collect Date:	08/18/2015 14:50	**Dilution:**	1	**File ID:**	8M406922
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.292	J	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.538	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	3.08		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	16.7		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	13.1		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	36.3		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.820	J	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	2.48		1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	1.29		1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.6	85	115	
1,2-Dichloroethane-d4	93.3	70	120	
Toluene-d8	98.8	85	120	
4-Bromofluorobenzene	95.2	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW11-081815	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536091	**Analyst:**	TMB	**Run Date:**	08/21/2015 17:29
Collect Date:	08/18/2015 14:50	**Dilution:**	50	**File ID:**	8M406939
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Trichloroethene	79-01-6	1550		50.0	25.0	12.5

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	88.7	70	120	
Toluene-d8	98.3	85	120	
4-Bromofluorobenzene	97.0	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-09	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW11-081815	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG535908	**Analyst:**	JDS	**Run Date:**	08/20/2015 17:38
Collect Date:	08/18/2015 14:50	**Dilution:**	1	**File ID:**	16G48285
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	5.17		5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-09	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW11-081815	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG536040	**Analyst:**	JDS	**Run Date:**	08/21/2015 15:45
Collect Date:	08/18/2015 14:50	**Dilution:**	5	**File ID:**	16G48299
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	534000		50000	25000	12500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-09	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW11-081815	**Prep Method:**	6850	**Prep Date:**	08/24/2015 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG536249	**Analyst:**	JWR	**Run Date:**	08/24/2015 23:44
Collect Date:	08/18/2015 14:50	**Dilution:**	10000	**File ID:**	1LM.LM31455
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	17600		4000	2000	1000

Certificate of Analysis

Sample #:	L15080992-09	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW11-081815	**Prep Method:**	9056	**Prep Date:**	08/19/2015 12:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG535677	**Analyst:**	ALS	**Run Date:**	08/19/2015 18:45
Collect Date:	08/18/2015 14:50	**Dilution:**	5	**File ID:**	I2_081915-19
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	1.00	U	2.00	1.00	0.500
Nitrite	14797-65-0	1.00	U	2.00	1.00	0.500
Sulfate	14808-79-8	408		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-09	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW11-081815	**Prep Method:**	9056	**Prep Date:**	08/19/2015 12:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG535677	**Analyst:**	ALS	**Run Date:**	08/19/2015 19:03
Collect Date:	08/18/2015 14:50	**Dilution:**	20	**File ID:**	I2_081915-20
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	392		8.00	4.00	2.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-09	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW11-081815	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	08/19/2015 13:19
Workgroup #:	WG535657	**Analyst:**	DCM	**Run Date:**	08/19/2015 13:33
Collect Date:	08/18/2015 14:50	**Dilution:**	2	**File ID:**	SC150819004.030
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	305		80.0	40.0	20.0

Certificate of Analysis

Sample #:	L15080992-09	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW11-081815	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	08/21/2015 09:45
Workgroup #:	WG535957	**Analyst:**	DCM	**Run Date:**	08/21/2015 09:57
Collect Date:	08/18/2015 14:50	**Dilution:**	1	**File ID:**	S2150821002.026
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.359	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-09	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW11-081815	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG535595	**Analyst:**	TB	**Run Date:**	08/19/2015 15:01
Collect Date:	08/18/2015 14:50	**Dilution:**	1	**File ID:**	ET.1508191501-12
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-09	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW11-081815	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	05/27/2015 15:47
Workgroup #:	WG536390	**Analyst:**	DIH	**Run Date:**	08/26/2015 16:45
Collect Date:	08/18/2015 14:50	**Dilution:**	5	**File ID:**	TC08262015.007
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	14.7		10.0	5.00	2.50

Certificate of Analysis

Sample #:	L15080992-10	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	50WW11FF-081815	**Prep Method:**	3015	**Prep Date:**	08/21/2015 11:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	08/23/2015 10:12
Workgroup #:	WG536058	**Analyst:**	KHR	**Run Date:**	08/23/2015 13:42
Collect Date:	08/18/2015 14:50	**Dilution:**	1	**File ID:**	P2.082315.134233
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.0983	J	0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-10	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW11FF-081815	**Prep Method:**	3015	**Prep Date:**	08/20/2015 11:07
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	08/24/2015 12:17
Workgroup #:	WG536146	**Analyst:**	BKT	**Run Date:**	08/24/2015 15:00
Collect Date:	08/18/2015 14:50	**Dilution:**	10	**File ID:**	NI.082415.150037
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.118		0.0400	0.0200	0.0100

Certificate of Analysis

Sample #:	L15080992-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG535683	**Analyst:**	TMB	**Run Date:**	08/20/2015 17:15
Collect Date:	08/18/2015 00:01	**Dilution:**	1	**File ID:**	8M406907
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

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Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.5	85	115	
1,2-Dichloroethane-d4	91.0	70	120	
Toluene-d8	99.3	85	120	
4-Bromofluorobenzene	96.0	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW22-081815	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG535683	**Analyst:**	TMB	**Run Date:**	08/20/2015 22:30
Collect Date:	08/18/2015 08:05	**Dilution:**	1	**File ID:**	8M406918
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

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Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	95.6	70	120	
Toluene-d8	98.8	85	120	
4-Bromofluorobenzene	95.4	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW25-081815	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG535683	**Analyst:**	TMB	**Run Date:**	08/20/2015 22:59
Collect Date:	08/18/2015 09:40	**Dilution:**	1	**File ID:**	8M406919
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	92.6	70	120	
Toluene-d8	98.5	85	120	
4-Bromofluorobenzene	97.9	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW12-081815	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG535683	**Analyst:**	TMB	**Run Date:**	08/20/2015 23:27
Collect Date:	08/18/2015 11:05	**Dilution:**	1	**File ID:**	8M406920
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	5.59		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	94.7	70	120	
Toluene-d8	99.6	85	120	
4-Bromofluorobenzene	95.4	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW06-081815	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG535683	**Analyst:**	TMB	**Run Date:**	08/20/2015 23:56
Collect Date:	08/18/2015 13:40	**Dilution:**	1	**File ID:**	8M406921
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.874	J	1.00	0.500	0.250

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	34.7		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	90.0	70	120	
Toluene-d8	99.4	85	120	
4-Bromofluorobenzene	97.2	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW11-081815	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG535683	**Analyst:**	TMB	**Run Date:**	08/21/2015 00:25
Collect Date:	08/18/2015 14:50	**Dilution:**	1	**File ID:**	8M406922
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.292	J	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.538	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	3.08		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	16.7		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	13.1		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	36.3		1.00	0.500	0.250

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.820	J	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	2.48		1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	1200	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	1.29		1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.6	85	115	
1,2-Dichloroethane-d4	93.3	70	120	
Toluene-d8	98.8	85	120	
4-Bromofluorobenzene	95.2	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

J	Estimated value ; the analyte concentration was greater than the highest standard
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW11-081815	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536091	**Analyst:**	TMB	**Run Date:**	08/21/2015 17:29
Collect Date:	08/18/2015 14:50	**Dilution:**	50	**File ID:**	8M406939
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	250	U	500	250	125
Benzene	71-43-2	12.5	U	50.0	12.5	6.25
Bromobenzene	108-86-1	12.5	U	50.0	12.5	6.25
Bromochloromethane	74-97-5	20.0	U	50.0	20.0	10.0
Bromodichloromethane	75-27-4	25.0	U	50.0	25.0	12.5
Bromoform	75-25-2	50.0	U	100	50.0	25.0
Bromomethane	74-83-9	50.0	Q	100	50.0	25.0
2-Butanone	78-93-3	250	U	500	250	125
n-Butylbenzene	104-51-8	25.0	U	50.0	25.0	12.5
sec-Butylbenzene	135-98-8	25.0	U	50.0	25.0	12.5
tert-Butylbenzene	98-06-6	25.0	U	50.0	25.0	12.5
Carbon disulfide	75-15-0	50.0	U	100	50.0	25.0
Carbon tetrachloride	56-23-5	25.0	U	50.0	25.0	12.5
Chlorobenzene	108-90-7	12.5	U	50.0	12.5	6.25
Chlorodibromomethane	124-48-1	25.0	U	50.0	25.0	12.5
Chloroethane	75-00-3	50.0	U	100	50.0	25.0
Chloroform	67-66-3	12.5	U	50.0	12.5	6.25
Chloromethane	74-87-3	50.0	U	100	50.0	25.0
2-Chlorotoluene	95-49-8	12.5	U	50.0	12.5	6.25
4-Chlorotoluene	106-43-4	25.0	U	50.0	25.0	12.5
1,2-Dibromo-3-chloropropane	96-12-8	100	U	250	100	50.0
1,2-Dibromoethane	106-93-4	25.0	U	50.0	25.0	12.5
Dibromomethane	74-95-3	25.0	U	50.0	25.0	12.5
1,2-Dichlorobenzene	95-50-1	12.5	U	50.0	12.5	6.25
1,3-Dichlorobenzene	541-73-1	25.0	U	50.0	25.0	12.5
1,4-Dichlorobenzene	106-46-7	12.5	U	50.0	12.5	6.25
Dichlorodifluoromethane	75-71-8	25.0	U	50.0	25.0	12.5
1,1-Dichloroethane	75-34-3	12.5	U	50.0	12.5	6.25
1,2-Dichloroethane	107-06-2	13.7	J	50.0	25.0	12.5
1,1-Dichloroethene	75-35-4	50.0	U	100	50.0	25.0
cis-1,2-Dichloroethene	156-59-2	34.4	J	50.0	25.0	12.5

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	25.0	U	50.0	25.0	12.5
1,2-Dichloropropane	78-87-5	20.0	U	50.0	20.0	10.0
1,3-Dichloropropane	142-28-9	20.0	U	50.0	20.0	10.0
2,2-Dichloropropane	594-20-7	25.0	U	50.0	25.0	12.5
cis-1,3-Dichloropropene	10061-01-5	25.0	U	50.0	25.0	12.5
trans-1,3-Dichloropropene	10061-02-6	50.0	U	100	50.0	25.0
1,1-Dichloropropene	563-58-6	25.0	U	50.0	25.0	12.5
Ethylbenzene	100-41-4	25.0	U	50.0	25.0	12.5
2-Hexanone	591-78-6	250	U	500	250	125
Hexachlorobutadiene	87-68-3	25.0	U	50.0	25.0	12.5
Isopropylbenzene	98-82-8	25.0	U	50.0	25.0	12.5
p-Isopropyltoluene	99-87-6	25.0	U	50.0	25.0	12.5
4-Methyl-2-pentanone	108-10-1	250	U	500	250	125
Methylene chloride	75-09-2	25.0	U	50.0	25.0	12.5
Naphthalene	91-20-3	20.0	U	50.0	20.0	10.0
n-Propylbenzene	103-65-1	12.5	U	50.0	12.5	6.25
Styrene	100-42-5	12.5	U	50.0	12.5	6.25
1,1,1,2-Tetrachloroethane	630-20-6	25.0	U	50.0	25.0	12.5
1,1,2,2-Tetrachloroethane	79-34-5	20.0	U	50.0	20.0	10.0
Tetrachloroethene	127-18-4	25.0	U	50.0	25.0	12.5
Toluene	108-88-3	25.0	U	50.0	25.0	12.5
1,2,3-Trichlorobenzene	87-61-6	15.0	U	50.0	15.0	7.50
1,2,4-Trichlorobenzene	120-82-1	20.0	U	50.0	20.0	10.0
1,1,1-Trichloroethane	71-55-6	25.0	U	50.0	25.0	12.5
1,1,2-Trichloroethane	79-00-5	25.0	U	50.0	25.0	12.5
Trichloroethene	79-01-6	1550		50.0	25.0	12.5
Trichlorofluoromethane	75-69-4	25.0	U	50.0	25.0	12.5
1,2,3-Trichloropropane	96-18-4	50.0	U	100	50.0	25.0
1,2,4-Trimethylbenzene	95-63-6	25.0	U	50.0	25.0	12.5
1,3,5-Trimethylbenzene	108-67-8	25.0	U	50.0	25.0	12.5
Vinyl chloride	75-01-4	25.0	U	50.0	25.0	12.5
o-Xylene	95-47-6	25.0	U	50.0	25.0	12.5
m-,p-Xylene	179601-23-1	50.0	U	100	50.0	25.0

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	88.7	70	120	
Toluene-d8	98.3	85	120	
4-Bromofluorobenzene	97.0	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG535683	**Analyst:**	TMB	**Run Date:**	08/20/2015 17:15
Collect Date:	08/18/2015 00:01	**Dilution:**	1	**File ID:**	8M406907
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.5	85	115	
1,2-Dichloroethane-d4	91.0	70	120	
Toluene-d8	99.3	85	120	
4-Bromofluorobenzene	96.0	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 100214
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 19
Method: 624 SOP: MSV10 Rev: 12
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 16
Maintenance Log ID: 51878

Internal Standard: STD66600 Surrogate Standard: STD66600
CCV: STD66818; STD66687 LCS: STD66693; STD66677 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG494714; WG494980

Comments: File # 8m400369 and 70 were skipped and not used.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M400354	RINSE	NA	1	1		10/02/14 10:24
8M400355	WG494714-01 50ng BFB STD 8260	NA	1	1	STD66476	10/02/14 11:16
8M400356	WG494714-01 50ng BFB STD 8260	NA	1	1	STD66476	10/02/14 11:33
8M400357	WG494714-01 50ng BFB STD 8260	NA	1	1	STD66476	10/02/14 11:58
8M400358	WG494714-02 5ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 12:24
8M400359	WG494714-03 20ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 12:53
8M400360	WG494714-04 50ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 13:22
8M400361	WG494714-05 100ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 13:51
8M400362	WG494714-06 200ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 14:19
8M400363	WG494714-07 300ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 14:48
8M400364	WG494714-08 400ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 15:16
8M400365	WG494714-09 500ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 15:45
8M400366	RINSE	NA	1	1		10/02/14 16:14
8M400367	WG494714-10 100ug/L ALT SRC STD A9/F	NA	1	1	STD66677	10/02/14 16:47
8M400368	WG494979-01 50ug/L CCV STD 8260	NA	1	1	STD66687	10/02/14 17:22
8M400371	WG494980-02 20ug/L LCS STD 624	NA	2	1	STD66693	10/02/14 17:51
8M400372	WG494980-03 20ug/L LCSDUP STD 624	NA	2	1	STD66693	10/02/14 18:20
8M400373	RINSE	NA	2	1		10/02/14 18:49
8M400374	WG494980-01 VBLK1002 BLANK STD 624	NA	2	1		10/02/14 19:18
8M400375	L14100004-01 LOD 826-SPE A9/FOO	NA	1	1		10/02/14 19:47
8M400376	L14100006-01 LOQ 826-SPE A9/FOO	NA	1	1		10/02/14 20:16
8M400377	L14100004-01 LOD 826-SPE	NA	1	1		10/02/14 20:45
8M400378	L14100006-01 LOQ 826-SPE	NA	1	1		10/02/14 21:14
8M400379	L14100004-01 LOD 826-SPE	NA	1	1		10/02/14 21:42
8M400380	L14100006-01 LOQ 826-SPE	NA	1	1		10/02/14 22:12
8M400381	L14100098-10 A 624-SPE	5	2	1		10/02/14 22:40
8M400382	L14100089-02 A 624-SPE	5	2	1		10/02/14 23:09
8M400383	L14100098-04 A 624-SPE	<2	2	1		10/02/14 23:38
8M400384	L14100098-05 A 624-SPE	<2	2	1		10/03/14 00:06
8M400385	L14100098-06 A 624-SPE	<2	2	1		10/03/14 00:36
8M400386	L14100098-07 A 624-SPE	<2	2	1		10/03/14 01:06
8M400387	L14100098-08 A 624-SPE	<2	2	1		10/03/14 01:34
8M400388	L14100098-09 A 624-SPE	<2	2	1		10/03/14 02:04
8M400389	L14100110-01 A 624-SPE2	<2	2	1		10/03/14 02:32

Approved: October 03, 2014

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 100214
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 19
Method: 624 SOP: MSV10 Rev: 12
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 16
Maintenance Log ID: 51878

Internal Standard: STD66600 Surrogate Standard: STD66600
CCV: STD66818; STD66687 LCS: STD66693; STD66677 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG494714; WG494980

Comments: File # 8m400369 and 70 were skipped and not used.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M400390	L14100110-02 A 624-SPE1	<2	2	1		10/03/14 03:02
8M400391	RINSE	NA	1	1		10/03/14 03:30
8M400392	RINSE	NA	1	1		10/03/14 03:59

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 8M400355				
	Tune failed, DNR.			
3	X			
File ID: 8M400356				
	Tune failed, DNR.			
4				
File ID: 8M400357				
	Purged BFB.			
30	X	100	Over Calibration Range	TCE
File ID: 8M400385				
31	X	1	Carry-over contamination	
File ID: 8M400386				
	DNR.			
32	X	1	Carry-over contamination	
File ID: 8M400387				
	DNR.			
33	X	50	Over Calibration Range	TCE
File ID: 8M400388				
34	X	1	Carry-over contamination	
File ID: 8M400389				
	DNR.			

Approved: October 03, 2014

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 073015
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 22
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD71712 Surrogate Standard: STD71712
CCV: STD71744 LCS: STD71618 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG533051

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M406467	RINSE	NA	1	1		07/30/15 08:51
8M406468	RINSE	NA	1	1		07/30/15 09:26
8M406469	RINSE	NA	1	1		07/30/15 09:55
8M406470	RINSE	NA	1	1		07/30/15 10:39
8M406471	RINSE	NA	1	1		07/30/15 11:08
8M406472	RINSE	NA	1	1		07/30/15 11:36
8M406473	RINSE	NA	1	1		07/30/15 12:05
8M406474	RINSE	NA	1	1		07/30/15 12:50
8M406475	RINSE	NA	1	1		07/30/15 13:18
8M406476	RINSE	NA	1	1		07/30/15 13:47
8M406477	WG533051-01 50ng BFB STD 8260	NA	1	1	STD71644	07/30/15 14:17
8M406478	RINSE	NA	1	1		07/30/15 14:41
8M406479	WG533051-04 1ug/L STD 8260	NA	1	1	STD71744	07/30/15 15:09
8M406480	WG533051-05 2ug/L STD 8260	NA	1	1	STD71744	07/30/15 15:37
8M406481	WG533051-06 5ug/L STD 8260	NA	1	1	STD71744	07/30/15 16:06
8M406482	WG533051-07 20ug/L STD 8260	NA	1	1	STD71744	07/30/15 16:35
8M406483	WG533051-08 50ug/L STD 8260	NA	1	1	STD71744	07/30/15 17:04
8M406484	WG533051-09 100ug/L STD 8260	NA	1	1	STD71744	07/30/15 17:33
8M406485	WG533051-10 200ug/L STD 8260	NA	1	1	STD71744	07/30/15 18:01
8M406486	WG533051-11 300ug/L STD 8260	NA	1	1	STD71744	07/30/15 18:29
8M406487	RINSE W/MEOH	NA	1	1		07/30/15 18:58
8M406488	RINSE	NA	1	1		07/30/15 19:26
8M406489	RINSE	NA	1	1		07/30/15 19:54
8M406490	WG533051-02 0.3ug/L STD 8260	NA	1	1	STD71744	07/30/15 20:22
8M406491	WG533051-03 0.4ug/L STD 8260	NA	1	1	STD71744	07/30/15 20:51
8M406492	WG533051-12 50ug/L ALT SRC STD 8260	NA	1	1	STD71618	07/30/15 21:20
8M406493	WG533051-13 50ug/L CCV STD 8260 DOD	NA	1	1	STD71744	07/30/15 21:49
8M406494	RINSE	NA	1	1		07/30/15 22:18
8M406495	RINSE	NA	1	1		07/30/15 22:46
8M406496	RINSE	NA	1	1		07/30/15 23:16
8M406497	RINSE	NA	1	1		07/30/15 23:44
8M406498	RINSE	NA	1	1		07/31/15 00:13
8M406499	RINSE	NA	1	1		07/31/15 00:42
8M406500	RINSE	NA	1	1		07/31/15 01:11

Approved: July 31, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 073015
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 22
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD71712 Surrogate Standard: STD71712
CCV: STD71744 LCS: STD71618 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG533051

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M406501	RINSE	NA	1	1		07/31/15 01:39

Approved: July 31, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 082015
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 22
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53368

Internal Standard: STD71712 Surrogate Standard: STD71712
CCV: STD71981 LCS: STD72078 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG535683

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M406900	WG535682-01 50ng BFB STD 8260	NA	1	1	STD71644	08/20/15 14:00
8M406901	WG535682-02 50ug/L CCV STD 8260	NA	1	1	STD71981	08/20/15 14:24
8M406902	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD71574	08/20/15 14:52
8M406903	WG535683-01 VBLK0820 BLANK STD 826	NA	1	1		08/20/15 15:21
8M406904	WG535683-02 20ug/L LCS STD 8260	NA	1	1	STD72078	08/20/15 15:49
8M406905	WG535683-03 20ug/L LCSDUP STD 8260	NA	1	1	STD72078	08/20/15 16:17
8M406906	L15080991-03 B TB 826-A9	<2	1	1		08/20/15 16:46
8M406907	L15080992-11 A TB 826-LOW	<2	1	1		08/20/15 17:15
8M406908	L15080995-05 A TB 826-SPE	<2	1	1		08/20/15 17:43
8M406909	L15081066-02 A TB 826-SPE	<2	1	1		08/20/15 18:12
8M406910	L15081066-01 A 826-SPE	<2	1	1		08/20/15 18:41
8M406911	L15080995-04 A 826-SPE	<2	1	1		08/20/15 19:09
8M406912	L15080995-03 A 826-SPE	<2	1	1		08/20/15 19:38
8M406913	L15080995-02 A 826-SPE	<2	1	1		08/20/15 20:06
8M406914	L15080995-01 A 826-SPE	<2	1	1		08/20/15 20:35
8M406915	L15080991-01 A 826-A9	2.5	1	1		08/20/15 21:04
8M406916	L15080991-02 A 826-A9	2.5	1	1		08/20/15 21:32
8M406917	L15080944-01 A 826-SPE	<2	1	1		08/20/15 22:01
8M406918	L15080992-01 A 826-LOW	<2	1	1		08/20/15 22:30
8M406919	L15080992-03 A 826-LOW	<2	1	1		08/20/15 22:59
8M406920	L15080992-05 A 826-LOW	<2	1	1		08/20/15 23:27
8M406921	L15080992-07 A 826-LOW	<2	1	1		08/20/15 23:56
8M406922	L15080992-09 A 826-LOW	<2	1	1		08/21/15 00:25
8M406923	L15080832-01 A 10X 826-TC	NA	17	10		08/21/15 00:54
8M406924	L15080832-02 A 10X 826-TC	NA	17	10		08/21/15 01:23
8M406925	RINSE	NA	1	1		08/21/15 01:52
8M406926	RINSE	NA	1	1		08/21/15 02:21
8M406927	WG535683-04 VBLK0820 BLANK STD 624	NA	2	1		08/21/15 02:50
8M406928	L15081094-01 A 624	<2	2	1		08/21/15 03:19
8M406929	CCV	NA	1	1		08/21/15 03:48
8M406930	RINSE	NA	1	1		08/21/15 04:17
8M406931	RINSE	NA	1	1		08/21/15 04:46

Approved: August 21, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS8	Dataset:	082015		
Analyst1:	TMB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	22
Method:	624	SOP:	MSV10	Rev:	13
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:	53368				

Internal Standard: STD71712 Surrogate Standard: STD71712

CCV: STD71981 LCS: STD72078 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG535683

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
3				
File ID: 8M406902				
	Not needed, DNR.			
23	X	50	Over Calibration Range	TCE
File ID: 8M406922				
24	X	10	Carry-over contamination	
File ID: 8M406923				
	Possible TCE carry over.			
25	X	10	Carry-over contamination	
File ID: 8M406924				
	Possible TCE carry over.			

Approved: August 21, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 082115
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 22
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD71712 Surrogate Standard: STD71712
CCV: STD71981 LCS: STD72078 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG536091

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M406932	WG536090-01 50ng BFB STD 8260	NA	1	1	STD71644	08/21/15 14:30
8M406933	WG536090-01 50ng BFB STD 8260	NA	1	1	STD71644	08/21/15 14:44
8M406934	WG536090-02 50ug/L CCV STD 8260	NA	1	1	STD71981	08/21/15 15:07
8M406935	RINSE	NA	1	1		08/21/15 15:36
8M406936	WG536091-01 VBLK0821 BLANK STD 826	NA	1	1		08/21/15 16:04
8M406937	WG536091-02 20ug/L LCS STD 8260	NA	1	1	STD72078	08/21/15 16:33
8M406938	WG536091-03 20ug/L LCSDUP STD 8260	NA	1	1	STD72078	08/21/15 17:01
8M406939	L15080992-09 B 50X 826-LOW D1	<2	1	50		08/21/15 17:29
8M406940	L15081106-04 TB A 826-SPE	<2	1	1		08/21/15 17:58
8M406941	L15081073-08 TB A 826-LOW	<2	1	1		08/21/15 18:28
8M406942	L15081166-02 TB A 826-SPE	<2	1	1		08/21/15 18:57
8M406943	L15081166-01 RB A 826-SPE	<2	1	1		08/21/15 19:26
8M406944	L15081166-03 A 826-SPE	<2	1	1		08/21/15 19:55
8M406945	L15081166-04 A 826-SPE	<2	1	1		08/21/15 20:24
8M406946	L15081166-05 A 826-SPE	<2	1	1		08/21/15 20:53
8M406947	L15081166-06 A 826-SPE	<2	1	1		08/21/15 21:21
8M406948	L15081166-07 A 826-SPE	<2	1	1		08/21/15 21:50
8M406949	L15081166-08 A 826-SPE	<2	1	1		08/21/15 22:18
8M406950	L15081073-01 A 826-LOW	<2	1	1		08/21/15 22:47
8M406951	L15081073-07 A 826-LOW	<2	1	1		08/21/15 23:16
8M406952	L15081073-03 A 5X 826-LOW	<2	1	5		08/21/15 23:45
8M406953	L15081073-05 A 826-LOW	<2	1	1		08/22/15 00:13
8M406954	L15081073-06 A 826-LOW	<2	1	1		08/22/15 00:42
8M406955	L15081107-03 20X A 826-SPE	<2	1	20		08/22/15 01:10
8M406956	L15081107-02 A 826-SPE	<2	1	1		08/22/15 01:38
8M406957	L15081107-01 A 2X 826-SPE	<2	1	2		08/22/15 02:06
8M406958	CCV	NA	1	1		08/22/15 02:35
8M406959	RINSE	NA	1	1		08/22/15 03:03
8M406960	RINSE	NA	1	1		08/22/15 03:31

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1	X			

Approved: August 25, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 082115
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 22
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD71712 Surrogate Standard: STD71712
CCV: STD71981 LCS: STD72078 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG536091

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
File ID: 8M406932				
	Tune failed, DNR.			
21	X	100	Over Calibration Range	TCE
File ID: 8M406952				
24	X	2.5	Analyzed too dilute	
File ID: 8M406955				
26	X	100	Over Calibration Range	BENZENE, EB
File ID: 8M406957				

Approved: August 25, 2015

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Microbac Laboratories Inc.

Data Checklist

Date: 02-OCT-2014
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 63840
Analytical Workgroups: WG494714; WG494980

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
03-OCT-2014
Tiffany Bailey

Secondary Reviewer:
03-OCT-2014

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-03-2014 13:21:54

Microbac Laboratories Inc.

Data Checklist

Date: 30-JUL-2015
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 69569
Analytical Workgroups: WG533051

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
31-JUL-2015
Tiffany Bailey

Secondary Reviewer:
31-JUL-2015

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-31-2015 18:12:12

Microbac Laboratories Inc.

Data Checklist

Date: 20-AUG-2015
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 69962
Analytical Workgroups: WG535683

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	X
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
21-AUG-2015
Tiffany Bailey

Secondary Reviewer:
21-AUG-2015
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-21-2015 16:22:31

Microbac Laboratories Inc.

Data Checklist

Date: 21-AUG-2015
Analyst: TMB
Analyst: NA
Method: 8260B
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 69996
Analytical Workgroups: WG536091

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
24-AUG-2015
Tiffany Bailey

Secondary Reviewer:
25-AUG-2015
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-25-2015 08:55:14

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG535683

Login Number: L15080992

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW22-081815	01	08/18/15					08/20/2015	2.6	14		08/20/15	2.6	14	
50WW25-081815	03	08/18/15					08/20/2015	2.6	14		08/20/15	2.6	14	
50WW12-081815	05	08/18/15					08/20/2015	2.5	14		08/20/15	2.5	14	
50WW06-081815	07	08/18/15					08/20/2015	2.4	14		08/20/15	2.4	14	
50WW11-081815	09	08/18/15					08/21/2015	2.4	14		08/21/15	2.4	14	
TRIP BLANK	11	08/18/15					08/20/2015	2.7	14		08/20/15	2.7	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4345847
Report generated 08/27/2015 23:16

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG536091

Login Number: L15080992

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW11-081815	09	08/18/15					08/21/2015	3.1	14		08/21/15	3.1	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4345847
Report generated 08/27/2015 23:16

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L15080992
Instrument Id: HPMS8
Workgroup (AAB#): WG536091

Method: 8260
CAL ID: HPMS8-30-JUL-15
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L15080992-09	50.0	DL01	88.7	101	97.0	98.3
WG536091-01	1.00	01	91.0	101	94.1	99.9
WG536091-02	1.00	01	91.9	99.1	90.9	98.7
WG536091-03	1.00	01	88.8	99.6	92.4	97.7

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4345852
Report generated: 08/27/2015 23:15

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L15080992
Instrument Id: HPMS8
Workgroup (AAB#): WG535683

Method: 8260
CAL ID: HPMS8-30-JUL-15
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L15080992-01	1.00	01	95.6	101	95.4	98.8
L15080992-03	1.00	01	92.6	106	97.9	98.5
L15080992-05	1.00	01	94.7	102	95.4	99.6
L15080992-07	1.00	01	90.0	104	97.2	99.4
L15080992-09	1.00	01	93.3	99.6	95.2	98.8
L15080992-11	1.00	01	91.0	98.5	96.0	99.3
WG535683-01	1.00	01	93.5	102	96.8	96.6
WG535683-02	1.00	01	90.1	98.9	95.1	98.8
WG535683-03	1.00	01	91.6	98.6	93.7	97.4
WG535683-04	1.00	01	89.9	99.9	97.3	100

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4345852
Report generated: 08/27/2015 23:15

METHOD BLANK SUMMARY

Login Number: L15080992
Blank File ID: 8M406903
Prep Date: 08/20/15 15:21
Analyzed Date: 08/20/15 15:21
Analyst: TMB

Work Group: WG535683
Blank Sample ID: WG535683-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG535683-02	8M406904	08/20/15 15:49	01
LCS2	WG535683-03	8M406905	08/20/15 16:17	01
TRIP BLANK	L15080992-11	8M406907	08/20/15 17:15	01
50WW22-081815	L15080992-01	8M406918	08/20/15 22:30	01
50WW25-081815	L15080992-03	8M406919	08/20/15 22:59	01
50WW12-081815	L15080992-05	8M406920	08/20/15 23:27	01
50WW06-081815	L15080992-07	8M406921	08/20/15 23:56	01
50WW11-081815	L15080992-09	8M406922	08/21/15 00:25	01

Report Name: BLANK_SUMMARY
PDF File ID: 4358690
Report generated 08/27/2015 23:15

METHOD BLANK SUMMARY

Login Number: L15080992
Blank File ID: 8M406936
Prep Date: 08/21/15 16:04
Analyzed Date: 08/21/15 16:04
Analyst: TMB

Work Group: WG536091
Blank Sample ID: WG536091-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG536091-02	8M406937	08/21/15 16:33	01
LCS2	WG536091-03	8M406938	08/21/15 17:01	01
50WW11-081815	L15080992-09	8M406939	08/21/15 17:29	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4358690
Report generated 08/27/2015 23:15

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L15080992 Prep Date: 08/20/15 15:21 Sample ID: WG535683-01
Instrument ID: HPMS8 Run Date: 08/20/15 15:21 Prep Method: 5030B/5030C/503
File ID: 8M406903 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG535683 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-30-JUL-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4358691
27-AUG-2015 23:15

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15080992 Prep Date: 08/20/15 15:21 Sample ID: WG535683-01
Instrument ID: HPMS8 Run Date: 08/20/15 15:21 Prep Method: 5030B/5030C/503
File ID: 8M406903 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG535683 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-30-JUL-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	102	85 - 115	PASS
1,2-Dichloroethane-d4	93.5	70 - 120	PASS
Toluene-d8	96.6	85 - 120	PASS
4-Bromofluorobenzene	96.8	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4358691
27-AUG-2015 23:15

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15080992 Prep Date: 08/21/15 16:04 Sample ID: WG536091-01
Instrument ID: HPMS8 Run Date: 08/21/15 16:04 Prep Method: 5030B/5030C/503
File ID: 8M406936 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG536091 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-30-JUL-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4358691
27-AUG-2015 23:15

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15080992 Prep Date: 08/21/15 16:04 Sample ID: WG536091-01
Instrument ID: HPMS8 Run Date: 08/21/15 16:04 Prep Method: 5030B/5030C/503
File ID: 8M406936 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG536091 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-30-JUL-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	101	85 - 115	PASS
1,2-Dichloroethane-d4	91.0	70 - 120	PASS
Toluene-d8	99.9	85 - 120	PASS
4-Bromofluorobenzene	94.1	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4358691
27-AUG-2015 23:15

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15080992 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG536091 Units: ug/L
QC Key: DOD4 Lot #: STD72078

Sample ID: WG536091-02 LCS File ID: 8M406937 Run Date: 08/21/2015 16:33
Sample ID: WG536091-03 LCS2 File ID: 8M406938 Run Date: 08/21/2015 17:01

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	19.7	98.4	20.0	19.9	99.6	1.18	80 - 130	30	
1,1,1-Trichloroethane	20.0	20.2	101	20.0	20.2	101	0.237	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	18.7	93.5	20.0	19.1	95.3	1.90	65 - 130	30	
1,1,2-Trichloroethane	20.0	19.6	98.2	20.0	18.9	94.5	3.86	75 - 125	30	
1,1-Dichloroethane	20.0	19.5	97.4	20.0	19.5	97.3	0.123	70 - 135	30	
1,1-Dichloroethene	20.0	17.5	87.4	20.0	17.5	87.5	0.125	70 - 130	30	
1,1-Dichloropropene	20.0	19.2	95.9	20.0	19.3	96.7	0.859	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	17.1	85.4	20.0	17.4	86.8	1.62	55 - 140	30	
1,2,3-Trichloropropane	20.0	16.9	84.6	20.0	17.8	88.8	4.76	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	17.6	87.8	20.0	18.1	90.3	2.84	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	18.9	94.5	20.0	19.4	96.9	2.52	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	15.2	76.2	20.0	15.1	75.7	0.677	50 - 130	30	
1,2-Dibromoethane	20.0	17.7	88.5	20.0	18.9	94.7	6.81	80 - 120	30	
1,2-Dichlorobenzene	20.0	20.3	101	20.0	20.4	102	0.452	70 - 120	30	
1,2-Dichloroethane	20.0	18.7	93.7	20.0	18.4	92.1	1.66	70 - 130	30	
1,2-Dichloropropane	20.0	20.7	104	20.0	20.9	105	0.788	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	19.4	96.9	20.0	19.4	97.1	0.258	75 - 130	30	
1,3-Dichlorobenzene	20.0	19.5	97.3	20.0	20.2	101	3.60	75 - 125	30	
1,3-Dichloropropane	20.0	19.9	99.5	20.0	19.4	97.1	2.45	75 - 125	30	
1,4-Dichlorobenzene	20.0	18.4	92.0	20.0	18.2	91.0	1.07	75 - 125	30	
2,2-Dichloropropane	20.0	20.0	99.9	20.0	18.3	91.6	8.74	70 - 135	30	
2-Butanone	20.0	18.1	90.7	20.0	18.1	90.3	0.513	30 - 150	30	
2-Chlorotoluene	20.0	19.8	99.2	20.0	20.4	102	2.90	75 - 125	30	
2-Hexanone	20.0	19.3	96.5	20.0	18.4	92.0	4.80	55 - 130	30	
4-Chlorotoluene	20.0	19.8	98.9	20.0	19.9	99.3	0.392	75 - 130	30	
4-Methyl-2-pentanone	20.0	20.0	100	20.0	19.8	98.9	1.09	60 - 135	30	
Acetone	20.0	16.2	81.0	20.0	15.8	78.9	2.62	40 - 140	30	
Benzene	20.0	21.1	105	20.0	21.0	105	0.203	80 - 120	30	
Bromobenzene	20.0	18.6	93.1	20.0	18.6	92.8	0.335	75 - 125	30	
Bromochloromethane	20.0	19.8	99.2	20.0	19.5	97.6	1.58	65 - 130	30	
Bromodichloromethane	20.0	20.0	100	20.0	19.2	95.9	4.45	75 - 120	30	
Bromoform	20.0	19.8	98.9	20.0	19.4	97.2	1.74	70 - 130	30	
Bromomethane	20.0	12.6	62.9	20.0	12.4	62.1	1.40	30 - 145	30	
Carbon disulfide	20.0	17.3	86.4	20.0	16.6	83.0	4.03	35 - 160	30	
Carbon tetrachloride	20.0	20.3	101	20.0	20.3	102	0.226	65 - 140	30	
Chlorobenzene	20.0	21.1	106	20.0	20.9	104	1.28	80 - 120	30	
Chloroethane	20.0	21.5	107	20.0	21.3	106	0.882	60 - 135	30	
Chloroform	20.0	19.9	99.3	20.0	19.9	99.5	0.195	65 - 135	30	
Chloromethane	20.0	20.3	102	20.0	21.6	108	6.19	40 - 125	30	
cis-1,2-Dichloroethene	20.0	20.1	101	20.0	19.2	95.8	4.95	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4345848
Report generated: 08/27/2015 23:16

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15080992 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG536091 Units: ug/L
QC Key: DOD4 Lot #: STD72078

Sample ID: WG536091-02 LCS File ID: 8M406937 Run Date: 08/21/2015 16:33
Sample ID: WG536091-03 LCS2 File ID: 8M406938 Run Date: 08/21/2015 17:01

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	21.8	109	20.0	21.2	106	2.91	70 - 130	30	
Chlorodibromomethane	20.0	19.2	96.1	20.0	19.9	99.5	3.46	60 - 135	30	
Dibromomethane	20.0	20.2	101	20.0	19.5	97.5	3.61	75 - 125	30	
Dichlorodifluoromethane	20.0	20.5	102	20.0	22.4	112	9.13	30 - 155	30	
Ethylbenzene	20.0	20.0	100	20.0	19.8	99.0	0.987	75 - 125	30	
Hexachlorobutadiene	20.0	15.9	79.3	20.0	16.0	80.2	1.03	50 - 140	30	
Isopropylbenzene	20.0	21.4	107	20.0	21.0	105	1.60	75 - 125	30	
m-,p-Xylene	40.0	40.6	102	40.0	41.4	103	1.78	75 - 130	30	
Methylene chloride	20.0	18.7	93.5	20.0	19.5	97.4	4.12	55 - 140	30	
n-Butylbenzene	20.0	18.5	92.3	20.0	18.8	94.0	1.86	70 - 135	30	
n-Propylbenzene	20.0	19.3	96.4	20.0	19.8	98.8	2.46	70 - 130	30	
Naphthalene	20.0	18.1	90.6	20.0	18.5	92.3	1.89	55 - 140	30	
o-Xylene	20.0	21.6	108	20.0	20.9	105	3.09	80 - 120	30	
p-Isopropyltoluene	20.0	18.5	92.6	20.0	19.1	95.4	3.05	75 - 130	30	
sec-Butylbenzene	20.0	19.9	99.4	20.0	20.4	102	2.58	70 - 125	30	
Styrene	20.0	20.5	103	20.0	20.4	102	0.526	65 - 135	30	
tert-Butylbenzene	20.0	19.1	95.3	20.0	20.0	99.9	4.77	70 - 130	30	
Tetrachloroethene	20.0	19.8	98.8	20.0	19.7	98.6	0.238	45 - 150	30	
Toluene	20.0	20.0	99.8	20.0	20.1	101	0.713	75 - 120	30	
trans-1,2-Dichloroethene	20.0	19.0	95.0	20.0	18.8	94.1	0.924	60 - 140	30	
trans-1,3-Dichloropropene	20.0	18.8	94.2	20.0	18.2	91.1	3.34	55 - 140	30	
Trichloroethene	20.0	18.5	92.3	20.0	18.5	92.3	0.0259	70 - 125	30	
Trichlorofluoromethane	20.0	17.4	87.0	20.0	17.4	86.8	0.313	60 - 145	30	
Vinyl chloride	20.0	22.8	114	20.0	24.2	121	5.84	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	91.9	88.8	70 - 120	PASS
Dibromofluoromethane	99.1	99.6	85 - 115	PASS
4-Bromofluorobenzene	90.9	92.4	75 - 120	PASS
Toluene-d8	98.7	97.7	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4345848
Report generated: 08/27/2015 23:16

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15080992 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG535683 Units: ug/L
QC Key: DOD4 Lot #: STD71810

Sample ID: WG535683-02 LCS File ID: 8M406904 Run Date: 08/20/2015 15:49
Sample ID: WG535683-03 LCS2 File ID: 8M406905 Run Date: 08/20/2015 16:17

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	19.4	97.1	20.0	20.1	100	3.35	80 - 130	30	
1,1,1-Trichloroethane	20.0	19.3	96.6	20.0	20.0	100	3.57	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	19.6	97.8	20.0	19.6	98.1	0.303	65 - 130	30	
1,1,2-Trichloroethane	20.0	19.1	95.5	20.0	18.5	92.5	3.15	75 - 125	30	
1,1-Dichloroethane	20.0	19.4	96.9	20.0	19.4	96.8	0.152	70 - 135	30	
1,1-Dichloroethene	20.0	17.2	85.8	20.0	17.7	88.5	3.15	70 - 130	30	
1,1-Dichloropropene	20.0	18.7	93.7	20.0	19.6	98.2	4.60	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	17.5	87.7	20.0	18.2	90.8	3.55	55 - 140	30	
1,2,3-Trichloropropane	20.0	18.1	90.3	20.0	19.3	96.4	6.54	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	17.2	86.2	20.0	18.2	90.9	5.28	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	19.3	96.5	20.0	19.8	98.9	2.47	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	17.9	89.5	20.0	18.5	92.3	3.13	50 - 130	30	
1,2-Dibromoethane	20.0	19.0	94.8	20.0	18.5	92.7	2.22	80 - 120	30	
1,2-Dichlorobenzene	20.0	20.0	100	20.0	20.4	102	2.02	70 - 120	30	
1,2-Dichloroethane	20.0	18.5	92.6	20.0	19.0	95.0	2.59	70 - 130	30	
1,2-Dichloropropane	20.0	20.3	102	20.0	21.5	108	5.71	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	19.6	97.9	20.0	20.1	100	2.48	75 - 130	30	
1,3-Dichlorobenzene	20.0	19.9	99.5	20.0	20.1	101	1.14	75 - 125	30	
1,3-Dichloropropane	20.0	19.7	98.3	20.0	19.3	96.3	2.04	75 - 125	30	
1,4-Dichlorobenzene	20.0	18.6	92.8	20.0	18.6	93.2	0.339	75 - 125	30	
2,2-Dichloropropane	20.0	20.1	101	20.0	20.4	102	1.24	70 - 135	30	
2-Butanone	20.0	22.6	113	20.0	22.8	114	0.974	30 - 150	30	
2-Chlorotoluene	20.0	19.8	98.8	20.0	20.5	103	3.77	75 - 125	30	
2-Hexanone	20.0	19.6	98.2	20.0	20.3	101	3.22	55 - 130	30	
4-Chlorotoluene	20.0	20.2	101	20.0	20.2	101	0.243	75 - 130	30	
4-Methyl-2-pentanone	20.0	22.4	112	20.0	21.6	108	3.68	60 - 135	30	
Acetone	20.0	20.7	103	20.0	20.4	102	1.34	40 - 140	30	
Benzene	20.0	20.7	104	20.0	21.0	105	1.17	80 - 120	30	
Bromobenzene	20.0	18.5	92.4	20.0	18.9	94.7	2.41	75 - 125	30	
Bromochloromethane	20.0	19.6	98.2	20.0	19.2	96.2	2.10	65 - 130	30	
Bromodichloromethane	20.0	19.5	97.3	20.0	19.9	99.7	2.46	75 - 120	30	
Bromoform	20.0	19.7	98.7	20.0	19.4	96.9	1.90	70 - 130	30	
Bromomethane	20.0	11.1	55.3	20.0	12.5	62.5	12.2	30 - 145	30	
Carbon disulfide	20.0	16.6	83.0	20.0	17.0	85.0	2.37	35 - 160	30	
Carbon tetrachloride	20.0	19.2	95.9	20.0	20.1	100	4.71	65 - 140	30	
Chlorobenzene	20.0	21.1	106	20.0	21.2	106	0.329	80 - 120	30	
Chloroethane	20.0	21.9	110	20.0	22.9	115	4.50	60 - 135	30	
Chloroform	20.0	19.6	97.8	20.0	19.8	99.2	1.37	65 - 135	30	
Chloromethane	20.0	21.3	106	20.0	23.0	115	7.93	40 - 125	30	
cis-1,2-Dichloroethene	20.0	20.1	100	20.0	19.2	95.9	4.56	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4345848
Report generated: 08/27/2015 23:16

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15080992 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG535683 Units: ug/L
QC Key: DOD4 Lot #: STD71810

Sample ID: WG535683-02 LCS File ID: 8M406904 Run Date: 08/20/2015 15:49
Sample ID: WG535683-03 LCS2 File ID: 8M406905 Run Date: 08/20/2015 16:17

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	21.1	106	20.0	21.1	105	0.188	70 - 130	30	
Chlorodibromomethane	20.0	18.9	94.5	20.0	19.1	95.4	0.992	60 - 135	30	
Dibromomethane	20.0	19.6	98.1	20.0	20.4	102	3.77	75 - 125	30	
Dichlorodifluoromethane	20.0	21.5	107	20.0	23.5	118	9.08	30 - 155	30	
Ethylbenzene	20.0	19.7	98.5	20.0	20.3	101	2.97	75 - 125	30	
Hexachlorobutadiene	20.0	16.2	81.0	20.0	17.3	86.6	6.66	50 - 140	30	
Isopropylbenzene	20.0	21.0	105	20.0	21.4	107	1.88	75 - 125	30	
m-,p-Xylene	40.0	41.2	103	40.0	42.0	105	1.80	75 - 130	30	
Methylene chloride	20.0	19.4	96.9	20.0	19.8	99.1	2.16	55 - 140	30	
n-Butylbenzene	20.0	18.6	92.8	20.0	19.2	95.8	3.14	70 - 135	30	
n-Propylbenzene	20.0	19.8	98.8	20.0	20.4	102	3.24	70 - 130	30	
Naphthalene	20.0	18.2	90.8	20.0	18.7	93.4	2.76	55 - 140	30	
o-Xylene	20.0	21.0	105	20.0	21.2	106	0.769	80 - 120	30	
p-Isopropyltoluene	20.0	19.0	95.2	20.0	19.3	96.5	1.38	75 - 130	30	
sec-Butylbenzene	20.0	20.2	101	20.0	20.9	105	3.58	70 - 125	30	
Styrene	20.0	20.6	103	20.0	20.8	104	0.765	65 - 135	30	
tert-Butylbenzene	20.0	19.5	97.3	20.0	19.9	99.3	2.08	70 - 130	30	
Tetrachloroethene	20.0	19.7	98.4	20.0	20.0	100	1.88	45 - 150	30	
Toluene	20.0	19.9	99.4	20.0	20.1	100	0.902	75 - 120	30	
trans-1,2-Dichloroethene	20.0	18.7	93.4	20.0	18.6	93.1	0.301	60 - 140	30	
trans-1,3-Dichloropropene	20.0	18.8	93.8	20.0	18.5	92.5	1.44	55 - 140	30	
Trichloroethene	20.0	18.3	91.3	20.0	18.7	93.3	2.11	70 - 125	30	
Trichlorofluoromethane	20.0	17.7	88.6	20.0	18.1	90.4	1.98	60 - 145	30	
Vinyl chloride	20.0	23.8	119	20.0	25.3	126	5.82	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	90.1	91.6	70 - 120	PASS
Dibromofluoromethane	98.9	98.6	85 - 115	PASS
4-Bromofluorobenzene	95.1	93.7	75 - 120	PASS
Toluene-d8	98.8	97.4	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4345848
Report generated: 08/27/2015 23:16

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15080992
Instrument: HPMS8
Analyst: TMB
Workgroup: WG494714

Tune ID: WG494714-01
Run Date: 10/02/2014
Run Time: 11:58
File ID: 8M400357
Cal ID: HPMS8 - 02-OCT-14

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.7	5158	PASS
75.0	95.0	30.0	60.0	51.7	12312	PASS
95.0	95.0	100	100	100	23818	PASS
96.0	95.0	5.00	9.00	7.56	1800	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	69.7	16590	PASS
175	174	5.00	9.00	7.78	1290	PASS
176	174	95.0	101	97.3	16145	PASS
177	176	5.00	9.00	6.34	1023	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG494714-02	STD	01	10/02/2014 12:24	
WG494714-03	STD	01	10/02/2014 12:53	
WG494714-04	STD	01	10/02/2014 13:22	
WG494714-05	STD	01	10/02/2014 13:51	
WG494714-06	STD	01	10/02/2014 14:19	
WG494714-07	STD	01	10/02/2014 14:48	
WG494714-08	STD	01	10/02/2014 15:16	
WG494714-09	STD	01	10/02/2014 15:45	
WG494714-10	SSCV	01	10/02/2014 16:47	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4345850
Report generated 08/27/2015 23:15

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15080992
Instrument: HPMS8
Analyst: TMB
Workgroup: WG533051

Tune ID: WG533051-01
Run Date: 07/30/2015
Run Time: 14:17
File ID: 8M406477
Cal ID: HPMS8 - 30-JUL-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.2	6881	PASS
75.0	95.0	30.0	60.0	50.6	15643	PASS
95.0	95.0	100	100	100	30939	PASS
96.0	95.0	5.00	9.00	6.97	2155	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	76.8	23758	PASS
175	174	5.00	9.00	7.90	1877	PASS
176	174	95.0	101	95.4	22662	PASS
177	176	5.00	9.00	6.56	1487	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG533051-04	STD	01	07/30/2015 15:09	
WG533051-05	STD	01	07/30/2015 15:37	
WG533051-06	STD	01	07/30/2015 16:06	
WG533051-07	STD	01	07/30/2015 16:35	
WG533051-08	STD-CCV	01	07/30/2015 17:04	
WG533051-09	STD	01	07/30/2015 17:33	
WG533051-10	STD	01	07/30/2015 18:01	
WG533051-11	STD	01	07/30/2015 18:29	
WG533051-02	STD	01	07/30/2015 20:22	
WG533051-03	STD	01	07/30/2015 20:51	
WG533051-12	SSCV	01	07/30/2015 21:20	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4345850
Report generated 08/27/2015 23:15

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15080992
Instrument: HPMS8
Analyst: TMB
Workgroup: WG535682

Tune ID: WG535682-01
Run Date: 08/20/2015
Run Time: 14:00
File ID: 8M406900
Cal ID: HPMS8 - 30-JUL-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	16.9	5274	PASS
75.0	95.0	30.0	60.0	50.2	15653	PASS
95.0	95.0	100	100	100	31202	PASS
96.0	95.0	5.00	9.00	6.67	2081	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	81.9	25551	PASS
175	174	5.00	9.00	8.00	2045	PASS
176	174	95.0	101	96.0	24522	PASS
177	176	5.00	9.00	6.65	1630	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG535682-02	CCV	01	08/20/2015 14:24	
WG535683-01	BLANK	01	08/20/2015 15:21	
WG535683-02	LCS	01	08/20/2015 15:49	
WG535683-03	LCS2	01	08/20/2015 16:17	
L15080992-11	TRIP BLANK	01	08/20/2015 17:15	
L15080992-01	50WW22-081815	01	08/20/2015 22:30	
L15080992-03	50WW25-081815	01	08/20/2015 22:59	
L15080992-05	50WW12-081815	01	08/20/2015 23:27	
L15080992-07	50WW06-081815	01	08/20/2015 23:56	
L15080992-09	50WW11-081815	01	08/21/2015 00:25	
WG535683-04	BLANK2	01	08/21/2015 02:50	*

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4345850
Report generated 08/27/2015 23:15

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15080992
Instrument: HPMS8
Analyst: TMB
Workgroup: WG536090

Tune ID: WG536090-01
Run Date: 08/21/2015
Run Time: 14:44
File ID: 8M406933
Cal ID: HPMS8 - 30-JUL-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	23.0	7489	PASS
75.0	95.0	30.0	60.0	48.7	15849	PASS
95.0	95.0	100	100	100	32530	PASS
96.0	95.0	5.00	9.00	6.84	2226	PASS
173	174	0	2.00	0.839	249	PASS
174	95.0	50.0	100	91.3	29688	PASS
175	174	5.00	9.00	6.26	1858	PASS
176	174	95.0	101	95.3	28306	PASS
177	176	5.00	9.00	7.84	2220	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG536090-02	CCV	01	08/21/2015 15:07	
WG536091-01	BLANK	01	08/21/2015 16:04	
WG536091-02	LCS	01	08/21/2015 16:33	
WG536091-03	LCS2	01	08/21/2015 17:01	
L15080992-09	50WW11-081815	DL01	08/21/2015 17:29	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4345850
Report generated 08/27/2015 23:15

Calibration Table Report
Method: A9FOOWTR.M
Title: A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Calibration: Fri Oct 03 12:32:07 2014
Curve: WG494714
Calibration Files

	Compound	5 8M400358.D	20 8M400359.D	50 8M400360.D	100 8M400361.D	200 8M400362.D	300 8M400363.D	400 8M400364.D	500 8M400365.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD											
T	Acetonitrile	0.015	0.015	0.015	0.016	0.017	0.016	0.015	0.016	0.016	4.015		
T	3-Chloro-1-propene	0.416	0.403	0.416	0.438	0.434	0.423	0.407	0.394	0.416	3.619		
T	2-Chloro-1,3-butadiene	0.467	0.479	0.496	0.520	0.522	0.508	0.485	0.462	0.493	4.640		
T	Ethyl Acetate	0.104	0.115	0.123	0.133	0.135	0.133	0.126	0.130	0.125	8.569		
T	Methacrylonitrile	0.062	0.065	0.072	0.077	0.080	0.080	0.077	0.081	0.074	9.397		
T	Isobutyl Alcohol			0.004	0.005	0.005	0.005	0.005	0.005	0.005	9.693		
T	1-Butanol			0.002	0.002	0.003	0.003	0.003	0.003	0.003	21.690	0.995	
T	Methyl methacrylate	0.115	0.123	0.137	0.147	0.154	0.151	0.145	0.150	0.140	10.193		
T	2-Nitropropane	0.032	0.035	0.039	0.043	0.047	0.046	0.046	0.048	0.042	14.057		
I	Chlorobenzene-d5	ISTD											
I	1,4-Dichlorobenzene-d4	ISTD											
T	Cyclohexanone			0.039	0.043	0.037	0.043	0.036	0.038	0.039	7.787		

Fri Oct 03 12:35:36 2014

Calibration Table Report
Method: 8260WT.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Calibration: Fri Jul 31 13:26:17 2015
Curve: WG533051
Calibration Files

	Compound	0.3 8M406490.D	0.4 8M406491.D	1 8M406479.D	2 8M406480.D	5 8M406481.D	20 8M406482.D	50 8M406483.D	100 8M406484.D	200 8M406485.D	300 8M406486.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane		0.369	0.335	0.337	0.352	0.419	0.438	0.375	0.398	0.415	0.382	9.830		
P	Chloromethane			0.496	0.461	0.454	0.420	0.428	0.381	0.387	0.383	0.426	9.858		
C	Vinyl Chloride	0.386	0.326	0.285	0.312	0.300	0.304	0.327	0.289	0.300	0.307	0.313	9.241		
T	1,3-Butadiene		0.275	0.268	0.278	0.264	0.279	0.290	0.287	0.264	0.269	0.275	3.453		
T	Bromomethane		0.210	0.220	0.207	0.204	0.191	0.206	0.196	0.212	0.233	0.209	6.087		
T	Chloroethane		0.197	0.190	0.189	0.195	0.192	0.201	0.186	0.195	0.212	0.195	3.891		
T	Trichlorofluoromethane		0.389	0.385	0.380	0.392	0.406	0.425	0.383	0.420	0.467	0.405	7.002		
T	Diethyl ether			0.159	0.150	0.147	0.148	0.150	0.152		0.167	0.153	4.796		
T	Isoprene		0.264	0.302	0.317	0.312	0.317	0.332	0.329	0.330	0.351	0.317	7.664		
T	Acrolein				0.008	0.007	0.008	0.008	0.009		0.012	0.009	18.571		0.999
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.209	0.208	0.239	0.230	0.249	0.218	0.240	0.259	0.231	8.057		
T	Acetone					0.038	0.031	0.030	0.028	0.030	0.032	0.032	11.525		
C	1,1-Dichloroethene		0.388	0.368	0.396	0.388	0.383	0.407	0.370	0.402	0.431	0.393	4.947		
T	Tert-Butyl Alcohol				0.009	0.008	0.008	0.008	0.008		0.009	0.008	7.482		
T	Dimethyl Sulfide		0.223	0.246	0.244	0.248	0.234	0.251	0.252	0.252	0.270	0.247	5.309		
T	Iodomethane			0.109	0.131	0.161	0.201	0.242	0.246	0.242	0.249	0.198	28.680	0.999	
T	Methyl acetate					0.123	0.114	0.117	0.120	0.119	0.140	0.122	7.548		
T	Methylene Chloride			0.265	0.259	0.247	0.241	0.255	0.237	0.241	0.256	0.250	3.986		
T	Carbon Disulfide			0.815	0.851	0.801	0.796	0.827	0.808	0.758	0.759	0.802	3.956		
T	Acrylonitrile			0.052	0.045	0.047	0.048	0.053	0.054		0.068	0.052	14.572		
T	Methyl Tert Butyl Ether			0.411	0.463	0.411	0.427	0.448	0.437	0.448	0.489	0.442	5.983		
T	trans-1,2-Dichloroethene		0.362	0.331	0.360	0.376	0.358	0.384	0.363	0.381	0.399	0.368	5.284		
T	n-Hexane					0.385	0.389	0.411	0.399	0.390	0.414	0.398	3.043		
T	Diisopropyl ether			0.955	0.899	0.890	0.887	0.892	0.870		0.866	0.894	3.291		
T	Vinyl Acetate		0.191	0.230	0.228	0.244	0.229	0.226	0.253	0.236	0.221	0.229	7.579		
P	1,1-Dichloroethane		0.493	0.494	0.508	0.486	0.488	0.509	0.473	0.490	0.506	0.494	2.419		
T	Ethyl-Tert-Butyl ether			0.691	0.657	0.649	0.655	0.657	0.666		0.695	0.667	2.747		
T	2-Butanone					0.048	0.049	0.054	0.054	0.054	0.061	0.053	8.650		
T	Propionitrile			0.015	0.017	0.016	0.017	0.017	0.017		0.020	0.017	9.548		
T	2,2-Dichloropropane		0.332	0.389	0.401	0.379	0.371	0.395	0.361	0.385	0.412	0.381	6.207		
T	cis-1,2-Dichloroethene		0.227	0.254	0.277	0.267	0.267	0.276	0.264	0.270	0.282	0.265	6.143		
C	Chloroform	0.429	0.474	0.436	0.452	0.454	0.433	0.455	0.432	0.439	0.452	0.446	3.208		
T	1-Bromopropane			0.037	0.051	0.047	0.046	0.048	0.047	0.048	0.052	0.047	9.309		
T	Bromochloromethane		0.131	0.140	0.136	0.134	0.136	0.138	0.134	0.135	0.143	0.137	2.506		
T	Tetrahydrofuran			0.037	0.037	0.035	0.035	0.035	0.037		0.042	0.037	6.632		
S	Dibromofluoromethane			0.192	0.213	0.221	0.222	0.228	0.211	0.230	0.247	0.220	7.264		
T	1,1,1-Trichloroethane		0.353	0.418	0.404	0.409	0.405	0.430	0.398	0.428	0.455	0.411	6.772		
T	Cyclohexane			0.444	0.457	0.479	0.481	0.503	0.486	0.482	0.505	0.480	4.363		
T	1,1-Dichloropropene			0.339	0.353	0.351	0.352	0.368	0.330	0.353	0.370	0.352	3.752		
T	Tert-Amyl-Methyl ether			0.526	0.487	0.486	0.485	0.488	0.496		0.529	0.499	3.912		
T	Carbon Tetrachloride		0.318	0.335	0.357	0.362	0.363	0.389	0.357	0.385	0.41	0.364	7.63917		
S	1,2-Dichloroethane-d4			0.209	0.22	0.215	0.223	0.214	0.206	0.222	0.243	0.2191	5.20847		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.307	0.297	0.281	0.286	0.286	0.306	0.296	0.305	0.324	0.2985	4.50732		
T	Benzene	1.133	1.057	1.046	1.001	1.012	0.994	1.017	0.923	0.857	0.8	0.984	10.0188		
T	Trichloroethene		0.368	0.314	0.267	0.272	0.262	0.272	0.249	0.255	0.27	0.2809	13.2826		
T	Methylcyclohexane					0.394	0.404	0.414	0.409	0.401	0.422	0.4073	2.41832		
C	1,2-Dichloropropane		0.234	0.258	0.268	0.28	0.278	0.291	0.276	0.279	0.291	0.2726	6.49559		
T	Bromodichloromethane		0.302	0.357	0.323	0.33	0.335	0.355	0.339	0.344	0.359	0.3383	5.45197		
T	1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.001	12.4415		
T	Dibromomethane		0.119	0.121	0.127	0.117	0.12	0.129	0.125	0.127	0.138	0.1247	5.15203		
T	2-Chloroethyl Vinyl Ether					0.104	0.103	0.117	0.116	0.117	0.126	0.1139	7.6344		
T	4-Methyl-2-Pentanone					0.043	0.048	0.051	0.052	0.052	0.057	0.0505	9.18805		
T	cis-1,3-Dichloropropene		0.371	0.358	0.365	0.359	0.368	0.392	0.378	0.375	0.386	0.3724	3.14004		

T	Dimethyl Disulfide					0.172	0.186	0.204	0.209	0.213	0.227	0.2017	9.86408	
I	Chlorobenzene-d5	ISTD												
S	Toluene-d8			1.285	1.243	1.202	1.261	1.223	1.083	1.173	1.179	1.206	5.24163	
C	Toluene		1.727	1.565	1.526	1.549	1.523	1.521	1.342	1.267	1.128	1.461	12.4282	
T	Ethyl Methacrylate			0.251	0.251	0.262	0.28	0.288	0.285	0.299	0.315	0.2788	8.25598	
T	Paraldehyde											0	0	
T	trans-1,3-Dichloropropene			0.375	0.408	0.425	0.439	0.451	0.436	0.455	0.468	0.4322	6.8352	
T	1,1,2-Trichloroethane		0.22	0.209	0.222	0.234	0.227	0.238	0.225	0.237	0.248	0.229	5.13936	
T	2-Hexanone					0.055	0.062	0.065	0.065	0.068	0.074	0.0647	10.2519	
T	1,3-Dichloropropane		0.361	0.393	0.415	0.394	0.395	0.414	0.391	0.408	0.416	0.3985	4.38549	
T	Tetrachloroethene		0.303	0.322	0.287	0.307	0.317	0.321	0.284	0.309	0.324	0.308	4.80669	
T	Dibromochloromethane		0.272	0.256	0.306	0.283	0.305	0.317	0.309	0.327	0.34	0.3016	8.85969	
T	1,2-Dibromoethane		0.194	0.213	0.224	0.228	0.221	0.226	0.221	0.233	0.243	0.2226	6.09499	
T	1-Chlorohexane		0.588	0.484	0.496	0.509	0.522	0.527	0.504	0.505	0.512	0.5163	5.78352	
P	Chlorobenzene		0.973	0.951	0.968	1.001	0.985	0.971	0.888	0.863	0.818	0.9354	6.74964	
T	1,1,1,2-Tetrachloroethane		0.276	0.283	0.325	0.341	0.341	0.36	0.335	0.357	0.372	0.3323	9.95609	
C	Ethylbenzene		0.52	0.558	0.509	0.543	0.535	0.541	0.498	0.519	0.528	0.528	3.49701	
T	m-,p-Xylene		0.66	0.665	0.664	0.68	0.652	0.655	0.58	0.552	0.506	0.624	9.8816	
T	o-Xylene			0.549	0.641	0.623	0.635	0.649	0.597	0.61	0.607	0.6141	5.19856	
T	Styrene		1.005	1.009	1.045	1.033	1.042	1.068	0.976	0.953	0.894	1.0029	5.40326	
P	Bromoform			0.154	0.17	0.176	0.175	0.186	0.183	0.199	0.21	0.1813	9.52014	
T	Isopropylbenzene		1.642	1.585	1.646	1.672	1.651	1.651	1.448	1.35	1.192	1.5372	11.0657	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.387	0.462	0.444	0.465	0.443	0.455	0.458	0.485	0.488	0.4542	6.48844	
S	p-Bromofluorobenzene			0.983	0.868	0.836	0.835	0.837	0.78	0.868	0.911	0.8647	7.01404	
T	1,2,3-Trichloropropane			0.099	0.133	0.137	0.121	0.128	0.126	0.133	0.143	0.1275	10.3847	
T	trans-1,4-Dichloro-2-Butene			0.092	0.112	0.14	0.147	0.16	0.165	0.176	0.191	0.148	22.1797	0.996
T	n-Propylbenzene		4.089	3.784	3.926	3.944	3.771	3.81	3.286	2.837		3.6808	11.2499	
T	Bromobenzene	0.855	0.749	0.738	0.784	0.729	0.711	0.739	0.707	0.718	0.725	0.7456	5.96592	
T	1,3,5-Trimethylbenzene		2.6	2.463	2.606	2.578	2.54	2.571	2.328	2.207	1.978	2.4301	8.96614	
T	2-Chlorotoluene		2.315	2.476	2.401	2.377	2.265	2.394	2.104	2.081	1.822	2.2483	9.27831	
T	4-Chlorotoluene		2.503	2.148	2.29	2.282	2.192	2.19	2.08	1.876	1.722	2.1425	10.7892	
T	a-Methylstyrene					1.329	1.324	1.364	1.339	1.296	1.266	1.3197	2.6258	
T	tert-Butylbenzene			0.522	0.535	0.533	0.52	0.538	0.498	0.526	0.54	0.5265	2.57613	
T	1,2,4-Trimethylbenzene		2.578	2.481	2.72	2.608	2.588	2.633	2.38	2.208	1.964	2.4621	9.79915	
T	sec-Butylbenzene			3.249	3.275	3.286	3.228	3.272	2.843	2.591	2.243	2.9984	13.2796	
T	p-Isopropyltoluene			2.713	2.812	2.791	2.738	2.805	2.468	2.285	2.015	2.5785	11.4555	
T	1,3-Dichlorobenzene		1.659	1.472	1.547	1.485	1.459	1.488	1.388	1.358	1.302	1.462	7.21195	
T	1,4-Dichlorobenzene	1.816	1.821	1.439	1.577	1.509	1.434	1.478	1.375	1.345	1.276	1.5071	12.2459	
T	n-Butylbenzene			2.506	2.674	2.705	2.642	2.745	2.433	2.235	1.951	2.4864	11.0376	
T	1,2-Dichlorobenzene	1.389	1.322	1.317	1.311	1.314	1.285	1.318	1.249	1.223	1.182	1.2908	4.55521	
T	1,2-Dibromo-3-Chloropropane				0.077	0.067	0.073	0.082	0.08	0.087	0.091	0.0795	10.0106	
T	1,2,4-Trichlorobenzene		1.183	0.94	0.996	0.951	0.974	1.023	0.967	0.966	0.94	0.9933	7.63182	
T	Hexachlorobutadiene		0.59	0.517	0.49	0.495	0.488	0.506	0.471	0.488	0.505	0.5055	6.81586	
T	Naphthalene		1.141	1.257	1.216	1.207	1.264	1.417	1.392	1.384	1.321	1.2888	7.39825	
T	1,2,3-Trichlorobenzene	0.945	1.047	0.737	0.843	0.819	0.821	0.866	0.841	0.831	0.821	0.8572	9.80847	

Fri Jul 31 14:00:52 2015

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15080992 Run Date: 07/30/2015 Sample ID: WG533051-12
Instrument ID: HPMS8 Run Time: 21:20 Method: 8260B
File ID: 8M406492 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG533051 Cal ID: HPMS8 - 30-JUL-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	48.3	ug/L	0.430	3.50	20	
1,1-Dichloroethene	CCC	50.0	44.0	ug/L	0.345	12.0	20	
1,2-Dichloropropane	CCC	50.0	49.2	ug/L	0.268	1.60	20	
Ethylbenzene	CCC	50.0	49.1	ug/L	0.519	1.80	20	
Toluene	CCC	50.0	48.3	ug/L	1.41	3.40	20	
Vinyl Chloride	CCC	50.0	47.8	ug/L	0.300	4.30	20	
Bromoform	SPCC	50.0	49.0	ug/L	0.178	2.00	20	
Chlorobenzene	SPCC	50.0	50.7	ug/L	0.948	1.40	20	
Chloromethane	SPCC	50.0	46.9	ug/L	0.400	6.20	20	
1,1-Dichloroethane	SPCC	50.0	46.9	ug/L	0.463	6.30	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.3	ug/L	0.448	1.50	20	
Acetone		50.0	50.1	ug/L	0.0316	0.100	20	
Benzene		50.0	48.0	ug/L	0.945	3.90	20	
Bromobenzene		50.0	47.7	ug/L	0.711	4.60	20	
Bromochloromethane		50.0	48.3	ug/L	0.132	3.40	20	
Bromodichloromethane		50.0	47.5	ug/L	0.321	5.10	20	
Bromomethane		50.0	45.7	ug/L	0.191	8.70	20	
2-Butanone		50.0	52.9	ug/L	0.0565	5.80	20	
n-Butylbenzene		50.0	51.6	ug/L	2.57	3.20	20	
sec-Butylbenzene		50.0	53.3	ug/L	3.20	6.60	20	
tert-Butylbenzene		50.0	52.0	ug/L	0.548	4.00	20	
Carbon Disulfide		50.0	34.2	ug/L	0.549	31.6	20	*
Carbon Tetrachloride		50.0	49.6	ug/L	0.361	0.700	20	
Dibromochloromethane		50.0	47.9	ug/L	0.289	4.10	20	
Chloroethane		50.0	50.6	ug/L	0.198	1.20	20	
2-Chlorotoluene		50.0	54.0	ug/L	2.43	8.10	20	
4-Chlorotoluene		50.0	52.5	ug/L	2.25	5.00	20	
1,2-Dibromo-3-Chloropropane		50.0	46.3	ug/L	0.0736	7.50	20	
1,2-Dibromoethane		50.0	47.5	ug/L	0.211	5.10	20	
Dibromomethane		50.0	47.1	ug/L	0.118	5.80	20	
1,2-Dichlorobenzene		50.0	50.4	ug/L	1.30	0.800	20	
1,3-Dichlorobenzene		50.0	50.0	ug/L	1.46	0	20	
1,4-Dichlorobenzene		50.0	46.7	ug/L	1.41	6.70	20	
Dichlorodifluoromethane		50.0	49.9	ug/L	0.381	0.300	20	
1,2-Dichloroethane		50.0	46.4	ug/L	0.277	7.20	20	
cis-1,2-Dichloroethene		50.0	47.6	ug/L	0.253	4.70	20	
trans-1,2-Dichloroethene		50.0	46.6	ug/L	0.344	6.70	20	
1,3-Dichloropropane		50.0	48.7	ug/L	0.388	2.60	20	
2,2-Dichloropropane		50.0	46.0	ug/L	0.350	8.00	20	
cis-1,3-Dichloropropene		50.0	50.3	ug/L	0.375	0.600	20	
trans-1,3-Dichloropropene		50.0	47.1	ug/L	0.407	5.80	20	
1,1-Dichloropropene		50.0	46.6	ug/L	0.328	6.90	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4345849
Report generated 08/27/2015 23:15

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15080992 Run Date: 07/30/2015 Sample ID: WG533051-12
Instrument ID: HPMS8 Run Time: 21:20 Method: 8260B
File ID: 8M406492 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG533051 Cal ID: HPMS8 - 30-JUL-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	52.8	ug/L	0.0683	5.60	20	
Hexachlorobutadiene		50.0	46.1	ug/L	0.466	7.80	20	
Isopropylbenzene		50.0	51.4	ug/L	1.58	2.80	20	
p-Isopropyltoluene		50.0	50.7	ug/L	2.62	1.40	20	
4-Methyl-2-Pentanone		50.0	50.6	ug/L	0.0511	1.20	20	
Methylene Chloride		50.0	46.2	ug/L	0.231	7.50	20	
Naphthalene		50.0	50.7	ug/L	1.31	1.30	20	
n-Propylbenzene		50.0	51.1	ug/L	3.76	2.20	20	
Styrene		50.0	50.0	ug/L	1.00	0	20	
1,1,1,2-Tetrachloroethane		50.0	49.1	ug/L	0.326	1.80	20	
Tetrachloroethene		50.0	47.9	ug/L	0.295	4.20	20	
1,2,3-Trichlorobenzene		50.0	47.3	ug/L	0.811	5.40	20	
1,2,4-Trichlorobenzene		50.0	47.7	ug/L	0.947	4.60	20	
1,1,1-Trichloroethane		50.0	48.9	ug/L	0.402	2.20	20	
1,1,2-Trichloroethane		50.0	47.4	ug/L	0.217	5.20	20	
Trichloroethene		50.0	43.8	ug/L	0.246	12.5	20	
Trichlorofluoromethane		50.0	45.9	ug/L	0.372	8.20	20	
1,2,3-Trichloropropane		50.0	48.2	ug/L	0.123	3.60	20	
1,2,4-Trimethylbenzene		50.0	51.3	ug/L	2.53	2.60	20	
1,3,5-Trimethylbenzene		50.0	52.2	ug/L	2.54	4.40	20	
o-Xylene		50.0	51.3	ug/L	0.631	2.70	20	
m-,p-Xylene		100	100	ug/L	0.626	0.200	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4345849
Report generated 08/27/2015 23:15

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080992 Run Date: 08/20/2015 Sample ID: WG535682-02
Instrument ID: HPMS8 Run Time: 14:24 Method: 8260B
File ID: 8M406901 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG535683 Cal ID: HPMS8 - 30-JUL-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.7	ug/L	0.452	1.43	20	
1,1-Dichloroethene	CCC	50.0	51.3	ug/L	0.403	2.64	20	
1,2-Dichloropropane	CCC	50.0	53.6	ug/L	0.292	7.28	20	
Ethylbenzene	CCC	50.0	51.4	ug/L	0.543	2.89	20	
Toluene	CCC	50.0	51.5	ug/L	1.51	3.08	20	
Vinyl Chloride	CCC	50.0	59.0	ug/L	0.370	18.0	20	
Bromoform	SPCC	50.0	49.1	ug/L	0.178	1.81	20	
Chlorobenzene	SPCC	50.0	51.5	ug/L	0.963	2.91	20	
Chloromethane	SPCC	50.0	52.1	ug/L	0.444	4.18	20	
1,1-Dichloroethane	SPCC	50.0	52.0	ug/L	0.513	3.93	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	48.4	ug/L	0.440	3.15	20	
Xylenes		150	159	ug/L	0.655	5.93	20	
Acetone		50.0	52.7	ug/L	0.0332	5.46	20	
Benzene		50.0	53.1	ug/L	1.04	6.13	20	
Bromobenzene		50.0	48.0	ug/L	0.716	3.91	20	
Bromochloromethane		50.0	50.1	ug/L	0.137	0.185	20	
Bromodichloromethane		50.0	49.2	ug/L	0.333	1.57	20	
Bromomethane		50.0	35.2	ug/L	0.147	29.6	20	*
2-Butanone		50.0	53.4	ug/L	0.0570	6.73	20	
n-Butylbenzene		50.0	51.4	ug/L	2.56	2.77	20	
sec-Butylbenzene		50.0	51.9	ug/L	3.11	3.70	20	
tert-Butylbenzene		50.0	50.7	ug/L	0.534	1.34	20	
Carbon Disulfide		50.0	51.8	ug/L	0.831	3.57	20	
Carbon Tetrachloride		50.0	51.7	ug/L	0.376	3.36	20	
Dibromochloromethane		50.0	49.9	ug/L	0.301	0.110	20	
Chloroethane		50.0	53.6	ug/L	0.209	7.26	20	
2-Chlorotoluene		50.0	50.8	ug/L	2.28	1.58	20	
4-Chlorotoluene		50.0	50.2	ug/L	2.15	0.336	20	
1,2-Dibromo-3-Chloropropane		50.0	44.2	ug/L	0.0703	11.6	20	
1,2-Dibromoethane		50.0	49.1	ug/L	0.219	1.74	20	
Dibromomethane		50.0	49.1	ug/L	0.123	1.75	20	
1,2-Dichlorobenzene		50.0	50.0	ug/L	1.29	0.0442	20	
1,3-Dichlorobenzene		50.0	50.8	ug/L	1.49	1.68	20	
1,4-Dichlorobenzene		50.0	48.8	ug/L	1.47	2.31	20	
Dichlorodifluoromethane		50.0	55.8	ug/L	0.426	11.6	20	
1,2-Dichloroethane		50.0	47.6	ug/L	0.284	4.86	20	
cis-1,2-Dichloroethene		50.0	53.6	ug/L	0.284	7.11	20	
trans-1,2-Dichloroethene		50.0	53.1	ug/L	0.391	6.11	20	
1,3-Dichloropropane		50.0	48.9	ug/L	0.389	2.30	20	
2,2-Dichloropropane		50.0	54.2	ug/L	0.413	8.40	20	
cis-1,3-Dichloropropene		50.0	51.7	ug/L	0.385	3.35	20	
trans-1,3-Dichloropropene		50.0	50.0	ug/L	0.432	0.0498	20	

CCV - Modified 03/05/2008
PDF File ID: 4345851
Report generated 08/27/2015 23:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080992 Run Date: 08/20/2015 Sample ID: WG535682-02
Instrument ID: HPMS8 Run Time: 14:24 Method: 8260B
File ID: 8M406901 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG535683 Cal ID: HPMS8 - 30-JUL-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	52.4	ug/L	0.369	4.81	20	
2-Hexanone		50.0	48.6	ug/L	0.0629	2.74	20	
Hexachlorobutadiene		50.0	47.3	ug/L	0.478	5.47	20	
Isopropylbenzene		50.0	53.1	ug/L	1.63	6.12	20	
p-Isopropyltoluene		50.0	51.5	ug/L	2.66	3.02	20	
4-Methyl-2-Pentanone		50.0	47.4	ug/L	0.0479	5.28	20	
Methylene Chloride		50.0	51.1	ug/L	0.255	2.12	20	
Naphthalene		50.0	47.6	ug/L	1.23	4.75	20	
n-Propylbenzene		50.0	50.1	ug/L	3.69	0.229	20	
Styrene		50.0	52.4	ug/L	1.05	4.74	20	
1,1,1,2-Tetrachloroethane		50.0	52.4	ug/L	0.349	4.89	20	
Tetrachloroethene		50.0	53.0	ug/L	0.326	5.97	20	
1,2,3-Trichlorobenzene		50.0	46.2	ug/L	0.791	7.68	20	
1,2,4-Trichlorobenzene		50.0	47.9	ug/L	0.951	4.22	20	
1,1,1-Trichloroethane		50.0	51.3	ug/L	0.422	2.58	20	
1,1,2-Trichloroethane		50.0	48.6	ug/L	0.223	2.81	20	
Trichloroethene		50.0	48.2	ug/L	0.271	3.68	20	
Trichlorofluoromethane		50.0	50.6	ug/L	0.410	1.23	20	
1,2,3-Trichloropropane		50.0	44.1	ug/L	0.112	11.9	20	
1,2,4-Trimethylbenzene		50.0	51.7	ug/L	2.55	3.37	20	
1,3,5-Trimethylbenzene		50.0	50.8	ug/L	2.47	1.54	20	
o-Xylene		50.0	52.6	ug/L	0.646	5.21	20	
m-,p-Xylene		100	106	ug/L	0.663	6.30	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4345851
Report generated 08/27/2015 23:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080992
Run Date: 08/21/2015
Sample ID: WG536090-02
Instrument ID: HPMS8
Run Time: 15:07
Method: 8260B
File ID: 8M406934
Analyst: TMB
QC Key: DOD4
Workgroup (AAB#): WG536091
Cal ID: HPMS8 - 30-JUL-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	51.0	ug/L	0.455	1.96	20	
1,1-Dichloroethene	CCC	50.0	51.4	ug/L	0.404	2.80	20	
1,2-Dichloropropane	CCC	50.0	52.9	ug/L	0.288	5.74	20	
Ethylbenzene	CCC	50.0	51.9	ug/L	0.548	3.70	20	
Toluene	CCC	50.0	51.1	ug/L	1.49	2.13	20	
Vinyl Chloride	CCC	50.0	57.3	ug/L	0.359	14.6	20	
Bromoform	SPCC	50.0	51.3	ug/L	0.186	2.52	20	
Chlorobenzene	SPCC	50.0	52.0	ug/L	0.973	3.99	20	
Chloromethane	SPCC	50.0	49.3	ug/L	0.420	1.42	20	
1,1-Dichloroethane	SPCC	50.0	52.1	ug/L	0.515	4.24	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.2	ug/L	0.447	1.66	20	
Trichloroethene		50.0	47.9	ug/L	0.269	4.19	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4345851
Report generated 08/27/2015 23:16

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15080992
Instrument ID: HPMS8
Workgroup (AAB#): WG535683

ICAL CCV Number: WG533051-08
CAL ID: HPMS8-30-JUL-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG533051-08	NA	NA	356726	645629	905123
Upper Limit	NA	NA	713452	1291258	1810246
Lower Limit	NA	NA	178363	322815	452562
L15080992-01	1.00	01	372020	682630	893503
L15080992-03	1.00	01	352177	657971	845646
L15080992-05	1.00	01	351695	640584	840416
L15080992-07	1.00	01	335781	636029	840842
L15080992-09	1.00	01	333936	622450	844826
L15080992-11	1.00	01	384708	715793	930292
WG535683-01	1.00	01	404865	757275	967255
WG535683-02	1.00	01	434918	766908	1024791
WG535683-03	1.00	01	439322	786463	1022919

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4358692
Report generated 08/27/2015 23:15

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15080992
Instrument ID: HPMS8
Workgroup (AAB#): WG536091

ICAL CCV Number: WG533051-08
CAL ID: HPMS8-30-JUL-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG533051-08	NA	NA	356726	645629	905123
Upper Limit	NA	NA	713452	1291258	1810246
Lower Limit	NA	NA	178363	322815	452562
L15080992-09	50.0	DL01	352162	659938	830527
WG536091-01	1.00	01	345303	634702	819252
WG536091-02	1.00	01	372422	636539	845633
WG536091-03	1.00	01	379376	665879	880255

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4358692
Report generated 08/27/2015 23:15

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15080992
Instrument ID: HPMS8
Workgroup (AAB#): WG535683

ICAL CCV Number: WG533051-08
CAL ID: HPMS8-30-JUL-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG533051-08	NA	NA	17.6	14.58	10.71
Upper Limit	NA	NA	18.1	15.08	11.21
Lower Limit	NA	NA	17.1	14.08	10.21
L15080992-01	1.00	01	17.6	14.58	10.71
L15080992-03	1.00	01	17.6	14.58	10.71
L15080992-05	1.00	01	17.6	14.58	10.71
L15080992-07	1.00	01	17.6	14.58	10.71
L15080992-09	1.00	01	17.6	14.58	10.71
L15080992-11	1.00	01	17.6	14.58	10.71
WG535683-01	1.00	01	17.6	14.58	10.71
WG535683-02	1.00	01	17.6	14.58	10.71
WG535683-03	1.00	01	17.6	14.58	10.71

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4358693
Report generated: 08/27/2015 23:16

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15080992
Instrument ID: HPMS8
Workgroup (AAB#): WG536091

ICAL CCV Number: WG533051-08
CAL ID: HPMS8-30-JUL-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG533051-08	NA	NA	17.6	14.58	10.71
Upper Limit	NA	NA	18.1	15.08	11.21
Lower Limit	NA	NA	17.1	14.08	10.21
L15080992-09	50.0	DL01	17.6	14.58	10.71
WG536091-01	1.00	01	17.6	14.58	10.71
WG536091-02	1.00	01	17.6	14.58	10.71
WG536091-03	1.00	01	17.6	14.58	10.71

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4358693
Report generated: 08/27/2015 23:16

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082015\8M406918.D Vial: 19
Acq On : 20 Aug 2015 22:30 Operator: TMB
Sample : L15080992-01 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 21 08:48:39 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	893503	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	682630	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	372020	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	198882	25.2607 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.04%		
43) 1,2-Dichloroethane-d4	10.31	65	187170	23.9067 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 95.64%		
58) Toluene-d8	12.69	98	813427	24.7014 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.80%		
80) p-Bromofluorobenzene	16.08	95	306853	23.8466 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.40%		

Target Compounds					Qvalue
3) Chloromethane	3.63	50	3116	0.2045 ug/L #	43
12) 1,1,2-Trichloro-1,2,2-Trif	6.18	101	8507	1.0284 ug/L	93
13) Acetone	6.26	43	1245	1.1050 ug/L #	48

(#) = qualifier out of range (m) = manual integration
8M406918.D 8260WT.M Fri Aug 21 08:48:39 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082015\8M406918.D Vial: 19
Acq On : 20 Aug 2015 22:30 Operator: TMB
Sample : L15080992-01 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 21 8:48 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

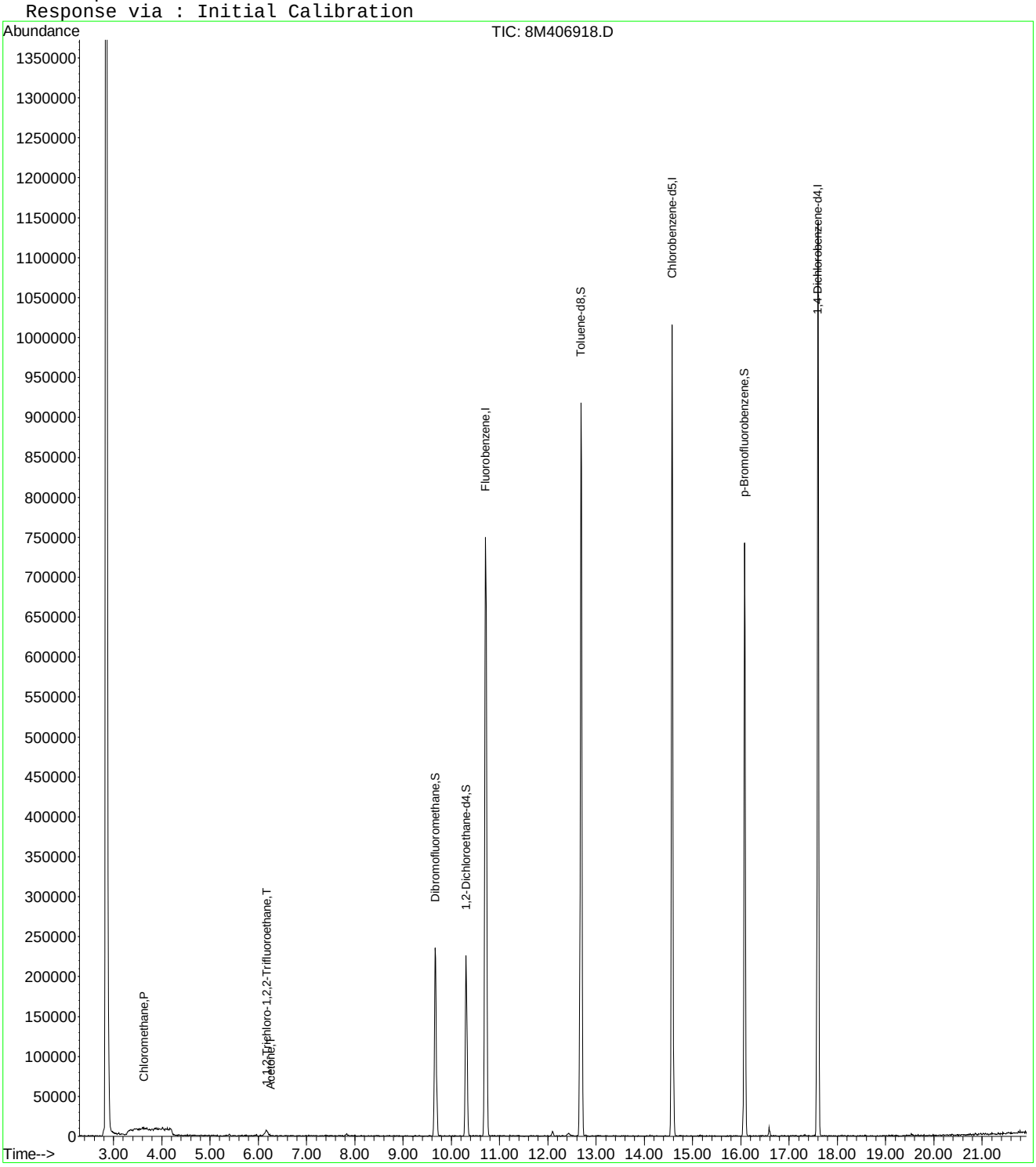

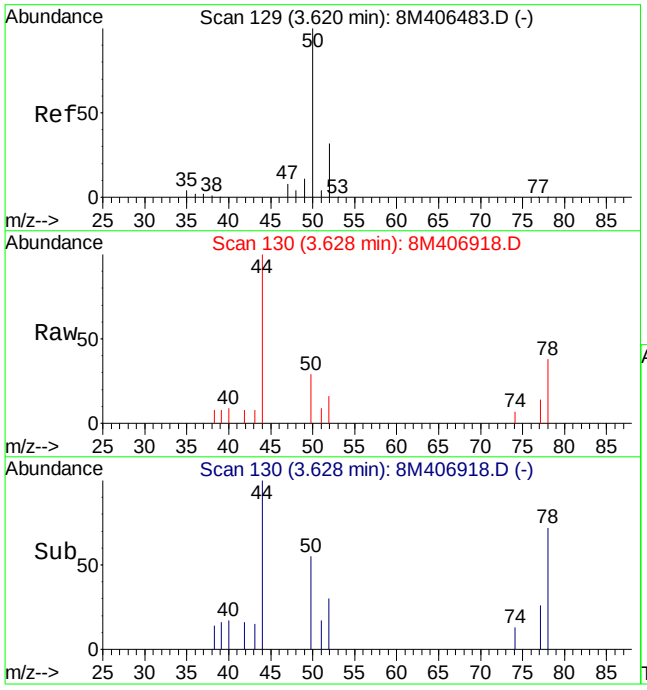

#3
Chloromethane
Concen: 0.20 ug/L
RT: 3.63 min Scan# 130
Delta R.T. 0.01 min
Lab File: 8M406918.D
Acq: 20 Aug 2015 22:30

Tgt Ion: 50 Resp: 3116

Ion	Ratio	Lower	Upper
50	100		
52	63.7	19.2	44.8#

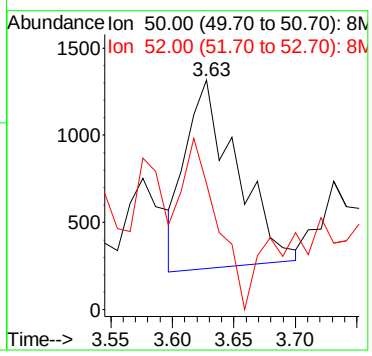

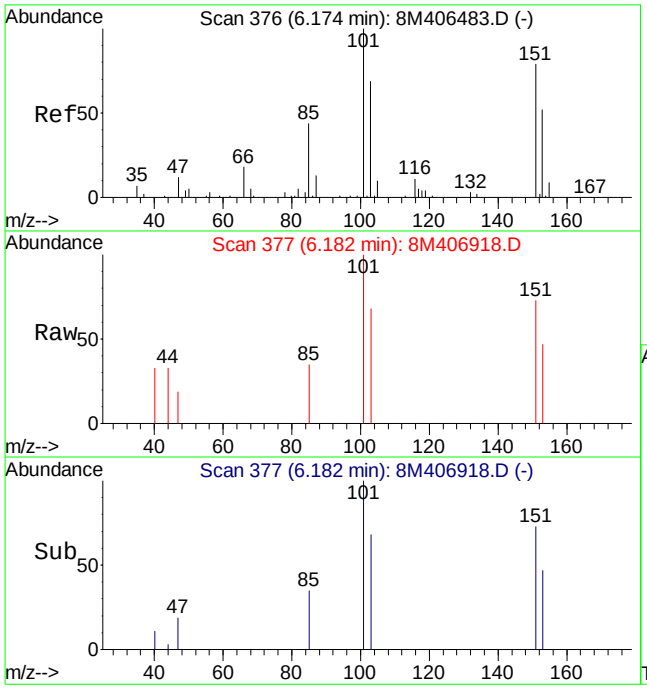

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 1.03 ug/L
RT: 6.18 min Scan# 377
Delta R.T. 0.02 min
Lab File: 8M406918.D
Acq: 20 Aug 2015 22:30

Tgt Ion:101 Resp: 8507

Ion	Ratio	Lower	Upper
101	100		
151	71.8	38.1	118.1

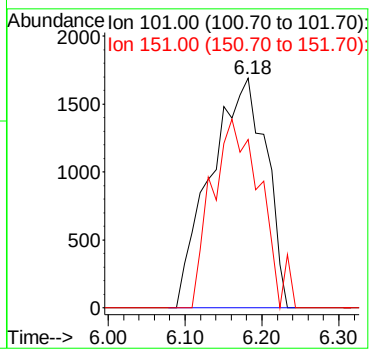

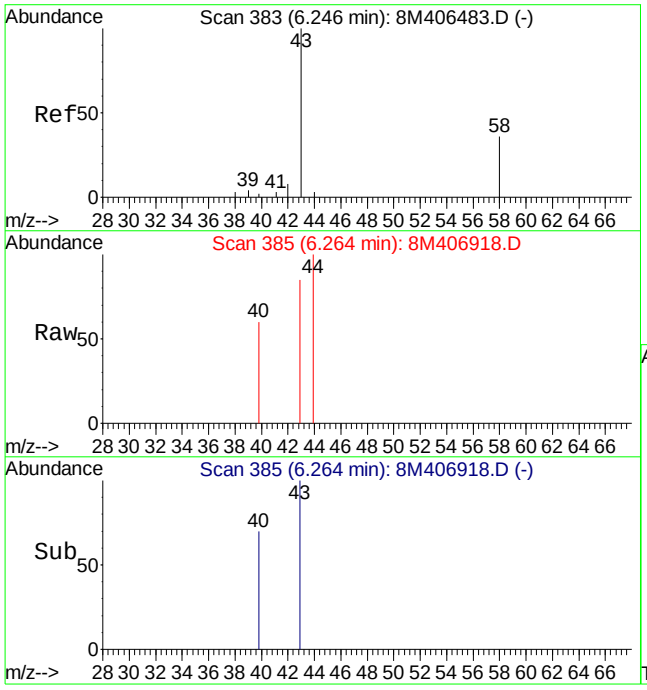

#13
Acetone
Concen: 1.10 ug/L
RT: 6.26 min Scan# 385
Delta R.T. 0.02 min
Lab File: 8M406918.D
Acq: 20 Aug 2015 22:30

Tgt Ion: 43 Resp: 1245

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

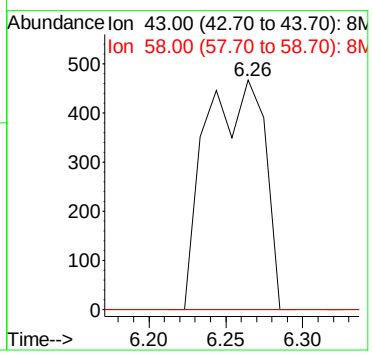

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082015\8M406919.D Vial: 20
Acq On : 20 Aug 2015 22:59 Operator: TMB
Sample : L15080992-03 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 21 08:48:40 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	845646	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	657971	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	352177	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	196599	26.3839 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 105.52%		
43) 1,2-Dichloroethane-d4	10.31	65	171578	23.1554 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 92.64%		
58) Toluene-d8	12.69	98	781857	24.6325 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.52%		
80) p-Bromofluorobenzene	16.08	95	298224	24.4818 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.92%		

Target Compounds					Qvalue
3) Chloromethane	3.63	50	4665	0.3235 ug/L #	58
13) Acetone	6.27	43	2017	1.8915 ug/L #	48
20) Carbon Disulfide	7.30	76	12503	0.4609 ug/L #	89
28) Ethyl-Tert-Butyl ether	8.61	59	4469	0.1980 ug/L #	39

(#) = qualifier out of range (m) = manual integration
8M406919.D 8260WT.M Fri Aug 21 08:48:41 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082015\8M406919.D Vial: 20
Acq On : 20 Aug 2015 22:59 Operator: TMB
Sample : L15080992-03 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 21 8:48 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

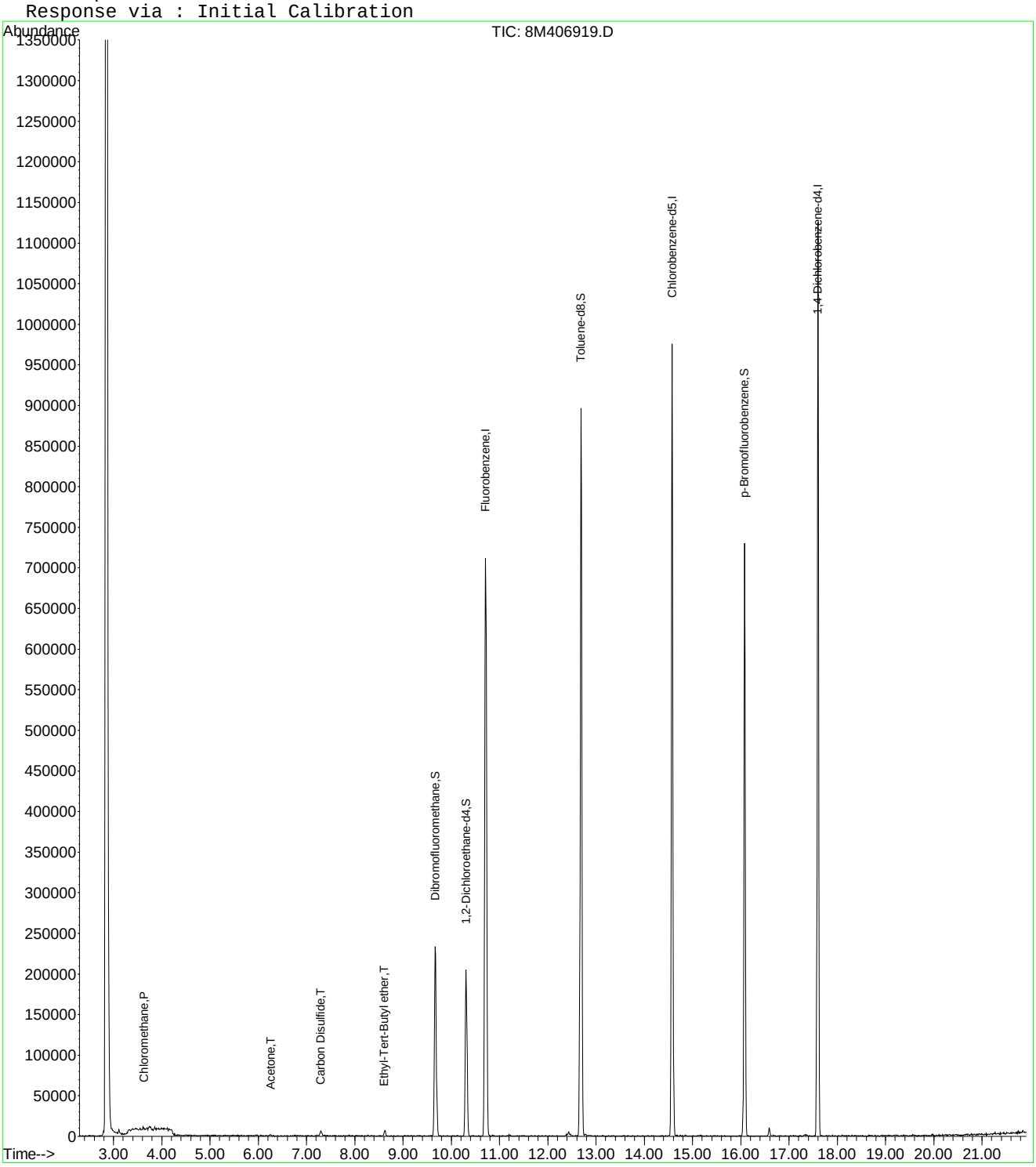

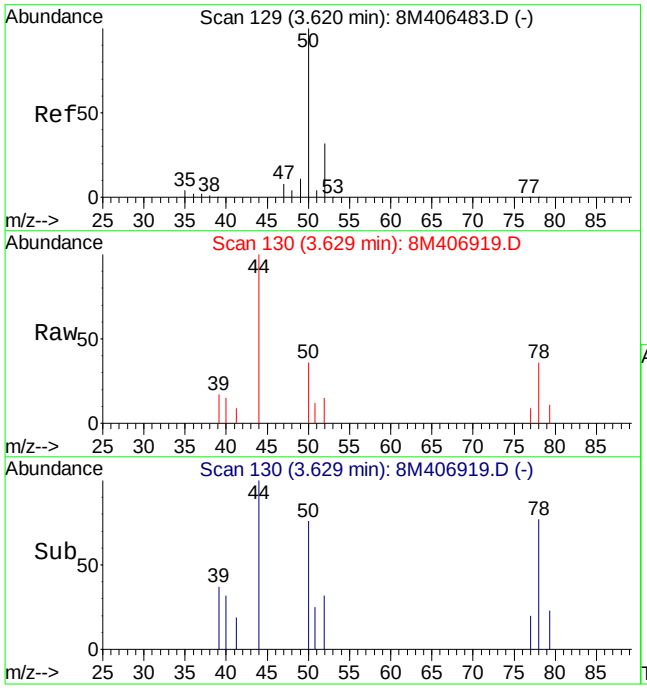

#3
Chloromethane
Concen: 0.32 ug/L
RT: 3.63 min Scan# 130
Delta R.T. 0.01 min
Lab File: 8M406919.D
Acq: 20 Aug 2015 22:59

Tgt Ion: 50 Resp: 4665

Ion	Ratio	Lower	Upper
50	100		
52	55.2	19.2	44.8#

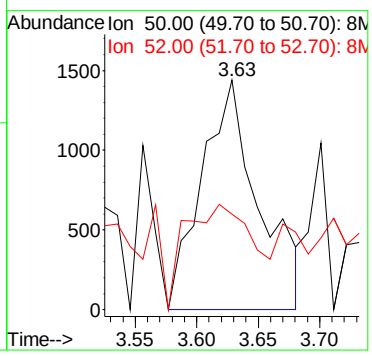

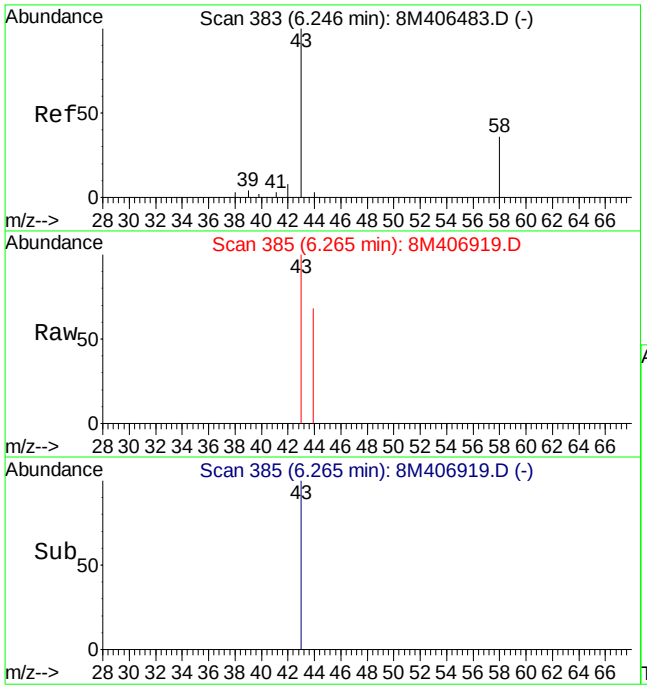

#13
Acetone
Concen: 1.89 ug/L
RT: 6.27 min Scan# 385
Delta R.T. 0.02 min
Lab File: 8M406919.D
Acq: 20 Aug 2015 22:59

Tgt Ion: 43 Resp: 2017

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

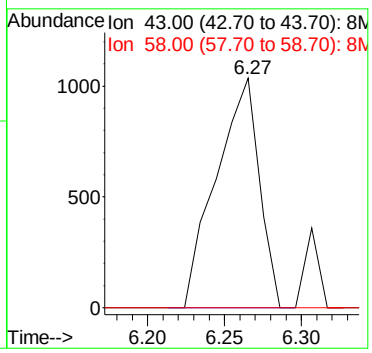

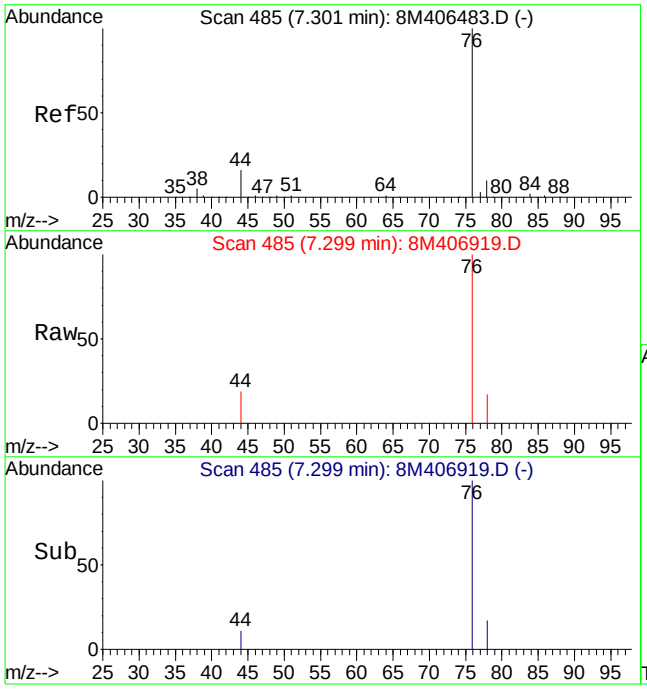

#20
Carbon Disulfide
Concen: 0.46 ug/L
RT: 7.30 min Scan# 485
Delta R.T. -0.00 min
Lab File: 8M406919.D
Acq: 20 Aug 2015 22:59

Tgt Ion: 76 Resp: 12503

Ion	Ratio	Lower	Upper
76	100		
78	13.4	5.7	13.3#

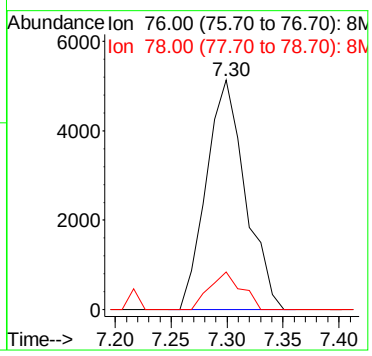

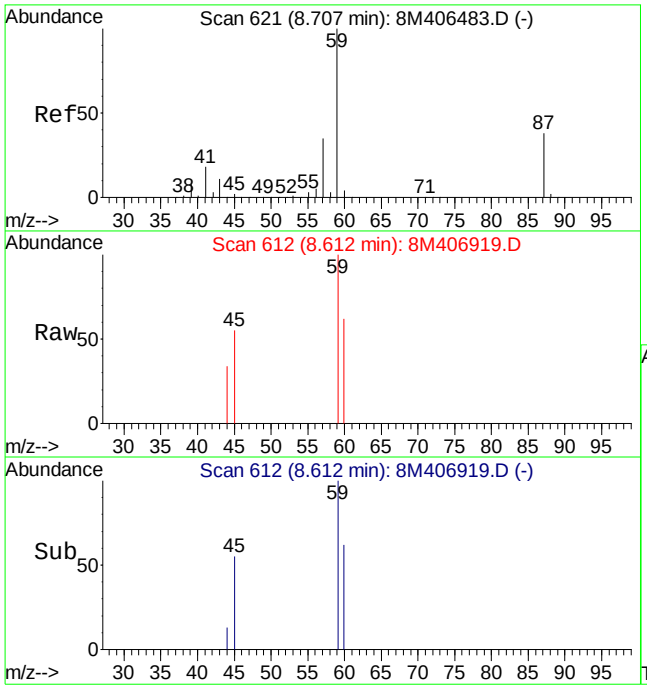

#28
Ethyl-Tert-Butyl ether
Concen: 0.20 ug/L
RT: 8.61 min Scan# 612
Delta R.T. -0.09 min
Lab File: 8M406919.D
Acq: 20 Aug 2015 22:59

Tgt Ion: 59 Resp: 4469

Ion	Ratio	Lower	Upper
59	100		
87	0.0	22.5	52.5#
57	0.0	20.0	46.6#

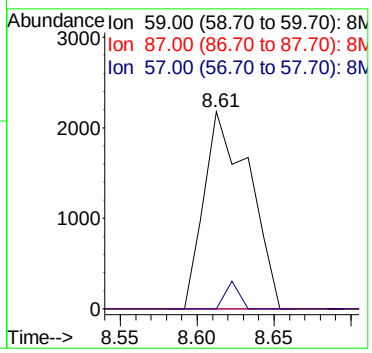

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082015\8M406920.D Vial: 21
Acq On : 20 Aug 2015 23:27 Operator: TMB
Sample : L15080992-05 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 21 08:48:41 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	840416	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	640584	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	351695	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	188089	25.3989 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.60%		
43) 1,2-Dichloroethane-d4	10.31	65	174299	23.6690 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.68%		
58) Toluene-d8	12.69	98	769164	24.8903 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.56%		
80) p-Bromofluorobenzene	16.08	95	290089	23.8466 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.40%		

Target Compounds					Qvalue
3) Chloromethane	3.62	50	4250	0.2966 ug/L #	58
14) 1,1-Dichloroethene	6.48	61	1895	0.1436 ug/L	75
47) Trichloroethene	11.22	130	52753	5.5874 ug/L	92

(#) = qualifier out of range (m) = manual integration
8M406920.D 8260WT.M Fri Aug 21 08:48:42 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082015\8M406920.D Vial: 21
Acq On : 20 Aug 2015 23:27 Operator: TMB
Sample : L15080992-05 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 21 8:48 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

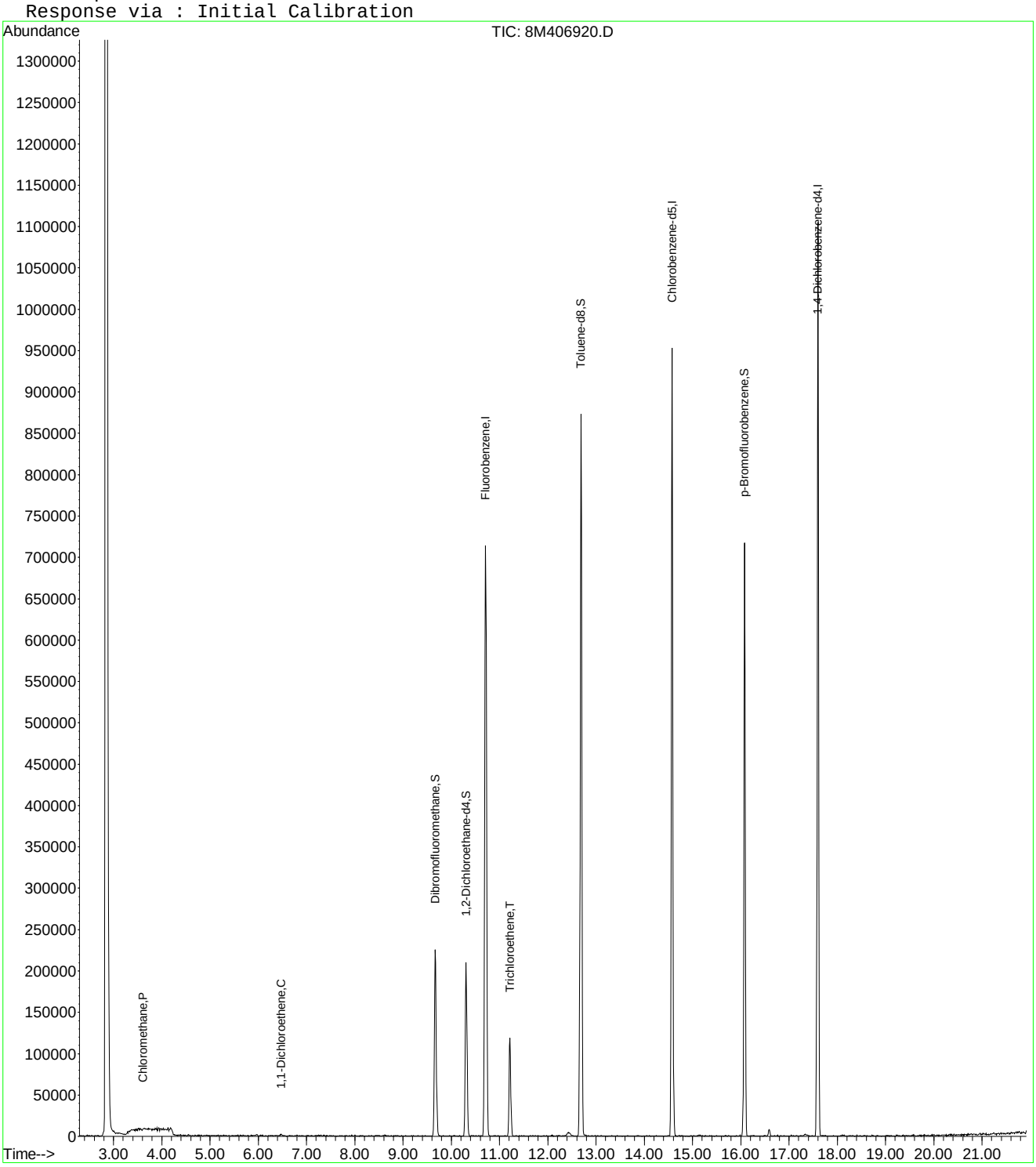

8M406920.D 8260WT.M Fri Aug 21 08:48:42 2015 Page 2

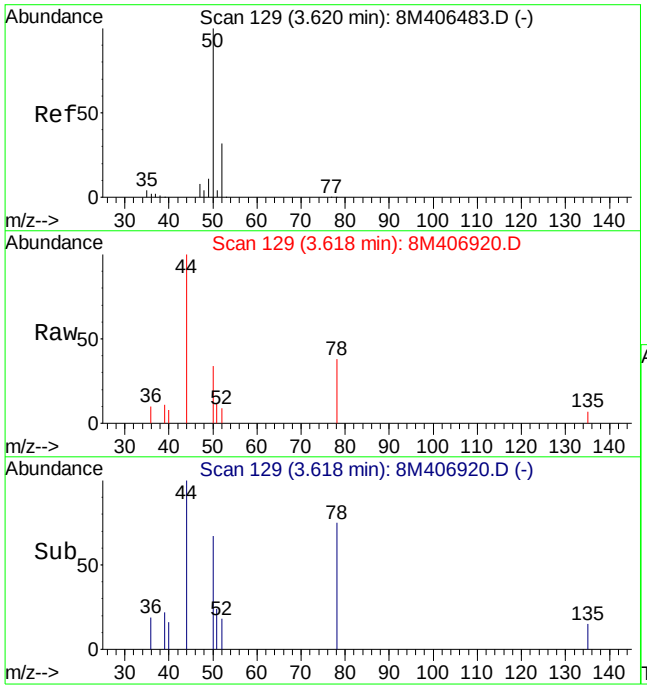

#3
Chloromethane
Concen: 0.30 ug/L
RT: 3.62 min Scan# 129
Delta R.T. -0.00 min
Lab File: 8M406920.D
Acq: 20 Aug 2015 23:27

Tgt Ion: 50 Resp: 4250

Ion	Ratio	Lower	Upper
50	100		
52	8.3	19.2	44.8#

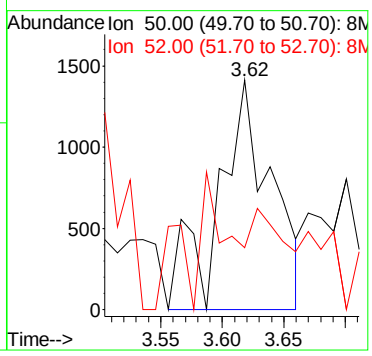

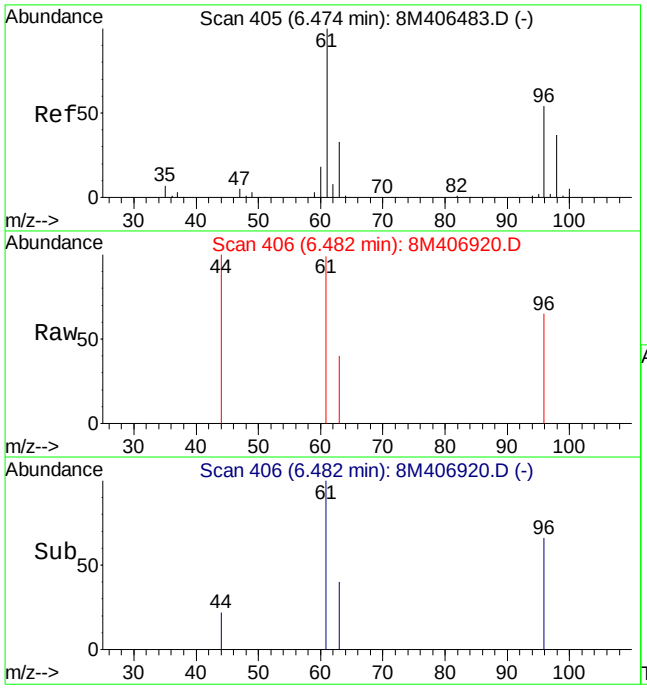

#14
1,1-Dichloroethene
Concen: 0.14 ug/L
RT: 6.48 min Scan# 406
Delta R.T. 0.01 min
Lab File: 8M406920.D
Acq: 20 Aug 2015 23:27

Tgt Ion: 61 Resp: 1895

Ion	Ratio	Lower	Upper
61	100		
96	71.3	32.3	75.3

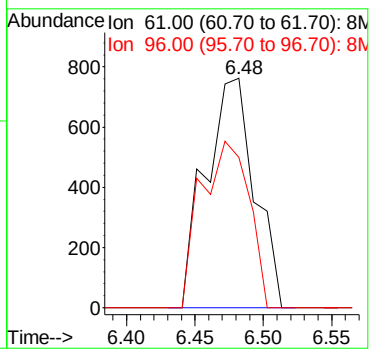

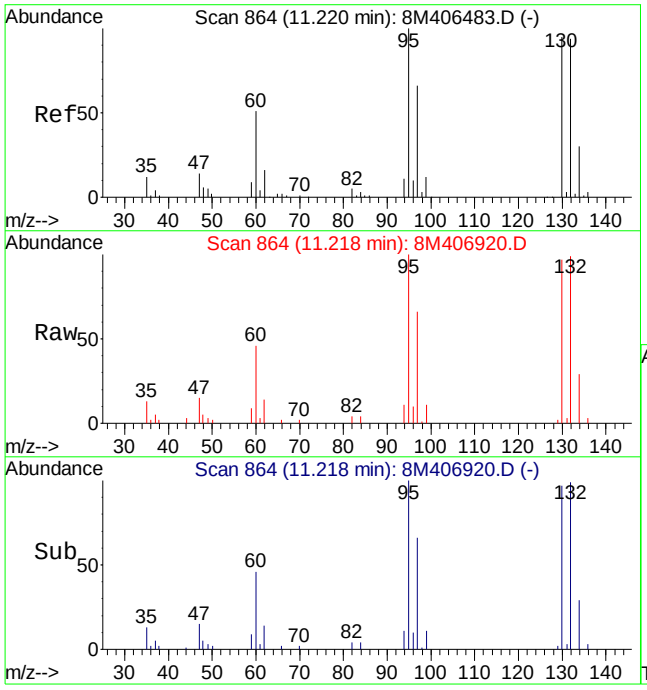

#47
Trichloroethene
Concen: 5.59 ug/L
RT: 11.22 min Scan# 864
Delta R.T. -0.00 min
Lab File: 8M406920.D
Acq: 20 Aug 2015 23:27

Tgt Ion:130 Resp: 52753

Ion	Ratio	Lower	Upper
130	100		
132	91.2	59.0	137.6
95	98.4	65.0	151.8

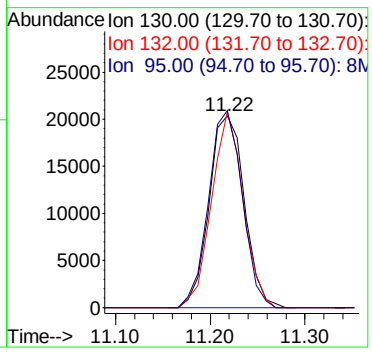

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082015\8M406921.D Vial: 22
Acq On : 20 Aug 2015 23:56 Operator: TMB
Sample : L15080992-07 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 21 08:48:43 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	840842	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	636029	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	335781	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	192438	25.9730 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.88%		
43) 1,2-Dichloroethane-d4	10.31	65	165767	22.4990 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 90.00%		
58) Toluene-d8	12.69	98	762497	24.8513 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.40%		
80) p-Bromofluorobenzene	16.08	95	282325	24.3083 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.24%		

Target Compounds

					Qvalue
3) Chloromethane	3.62	50	5102	0.3559 ug/L #	43
13) Acetone	6.23	43	2418	2.2805 ug/L #	64
14) 1,1-Dichloroethene	6.46	61	2786	0.2110 ug/L	76
32) cis-1,2-Dichloroethene	9.18	96	7787	0.8736 ug/L	80
47) Trichloroethene	11.22	130	327953	34.7180 ug/L	95
48) Methylcyclohexane	11.22	83	4718	0.3444 ug/L #	1

(#) = qualifier out of range (m) = manual integration
8M406921.D 8260WT.M Fri Aug 21 08:48:43 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082015\8M406921.D Vial: 22
Acq On : 20 Aug 2015 23:56 Operator: TMB
Sample : L15080992-07 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 21 8:48 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

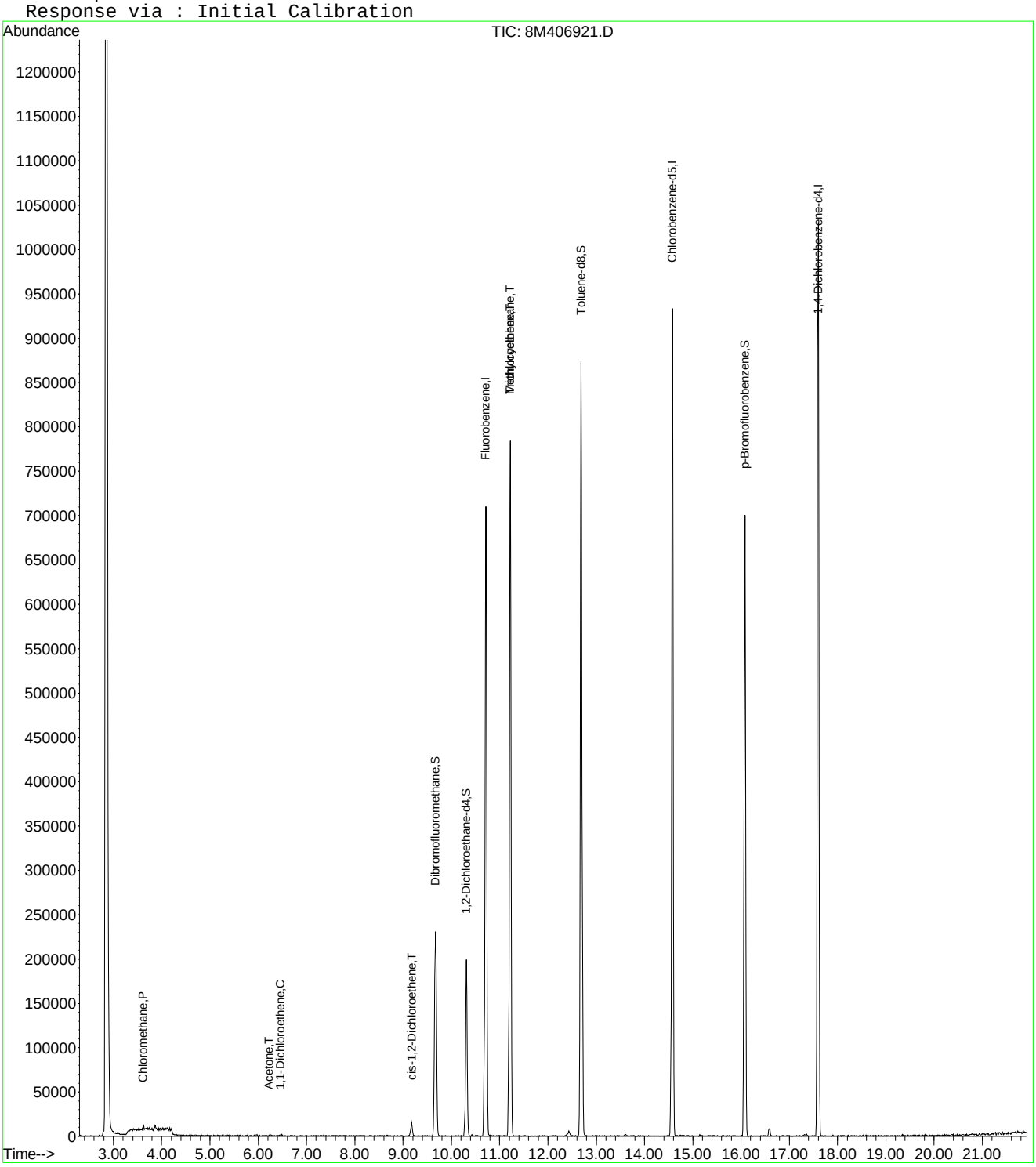

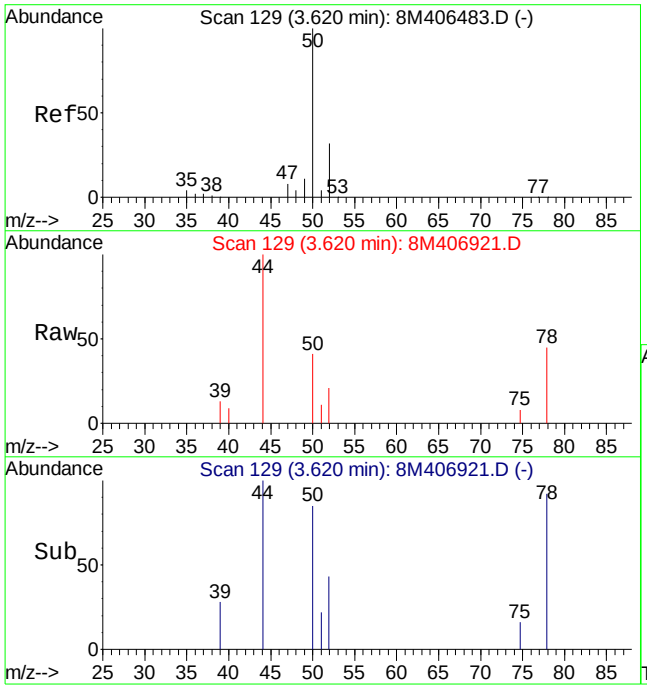

#3
Chloromethane
Concen: 0.36 ug/L
RT: 3.62 min Scan# 129
Delta R.T. 0.00 min
Lab File: 8M406921.D
Acq: 20 Aug 2015 23:56

Tgt Ion: 50 Resp: 5102

Ion	Ratio	Lower	Upper
50	100		
52	63.7	19.2	44.8#

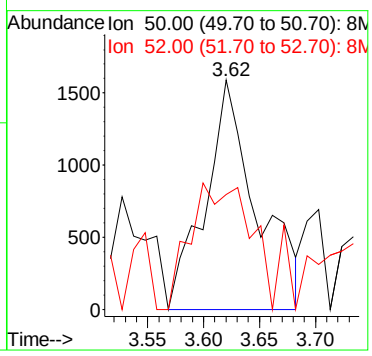

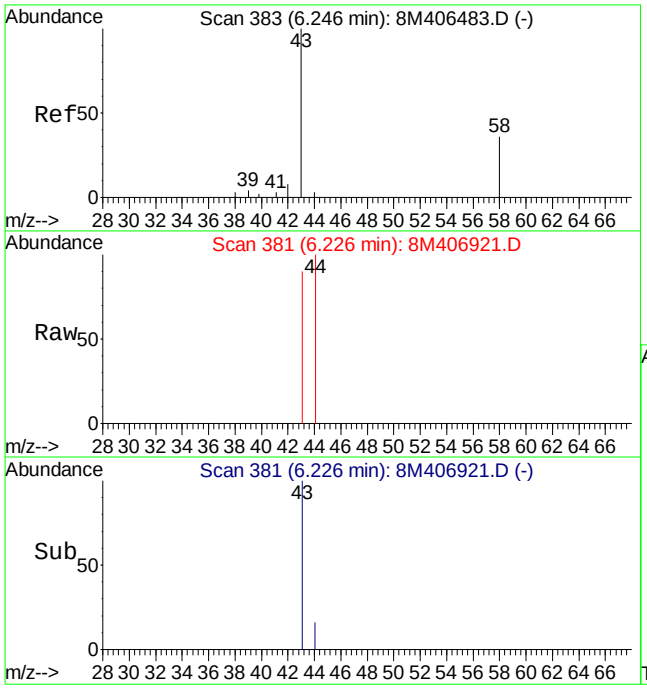

#13
Acetone
Concen: 2.28 ug/L
RT: 6.23 min Scan# 381
Delta R.T. -0.02 min
Lab File: 8M406921.D
Acq: 20 Aug 2015 23:56

Tgt Ion: 43 Resp: 2418

Ion	Ratio	Lower	Upper
43	100		
58	8.7	16.4	38.2#

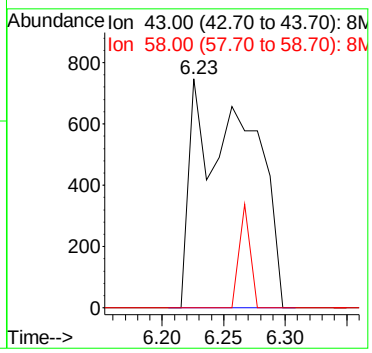

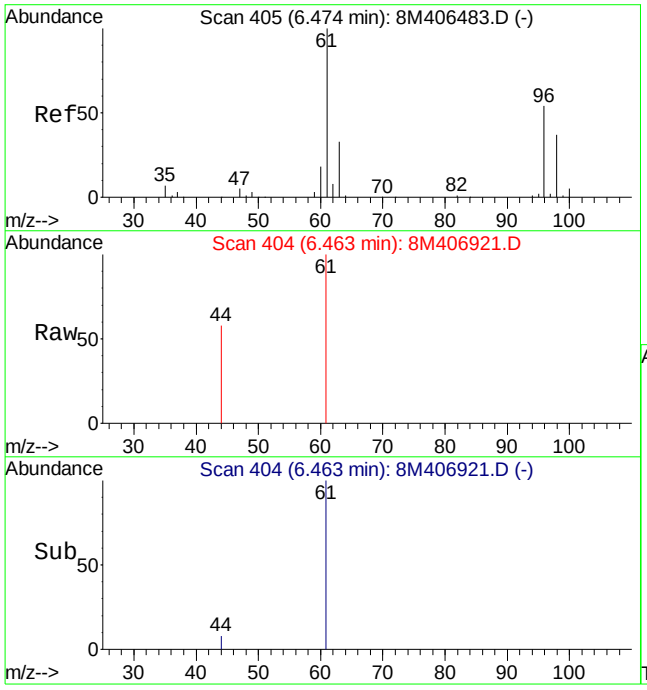

#14
1,1-Dichloroethene
Concen: 0.21 ug/L
RT: 6.46 min Scan# 404
Delta R.T. -0.01 min
Lab File: 8M406921.D
Acq: 20 Aug 2015 23:56

Tgt Ion: 61 Resp: 2786

Ion	Ratio	Lower	Upper
61	100		
96	36.7	32.3	75.3

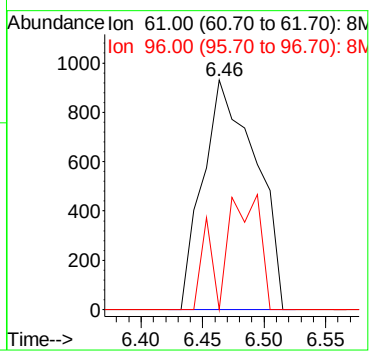

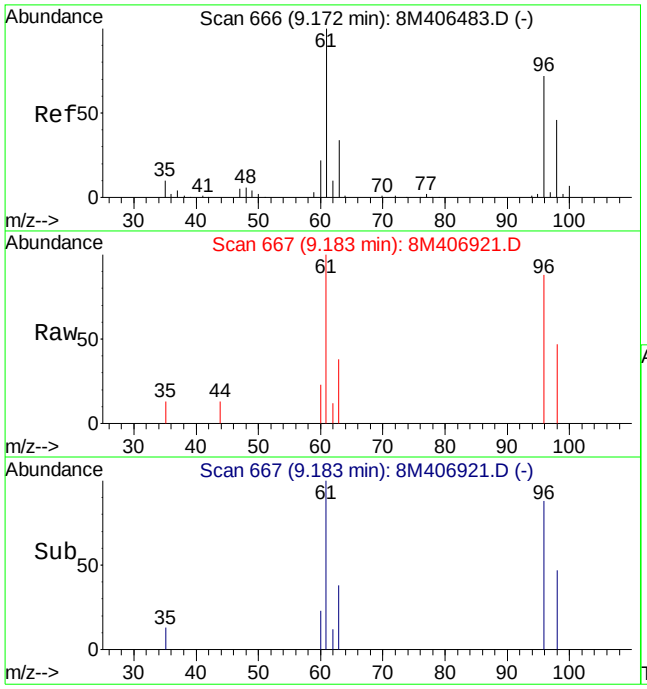

#32
cis-1,2-Dichloroethene
Concen: 0.87 ug/L
RT: 9.18 min Scan# 667
Delta R.T. 0.01 min
Lab File: 8M406921.D
Acq: 20 Aug 2015 23:56

Tgt Ion: 96 Resp: 7787

Ion	Ratio	Lower	Upper
96	100		
61	139.8	99.8	233.0

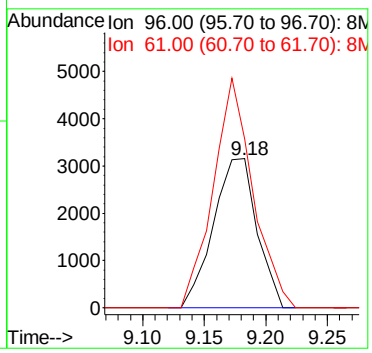

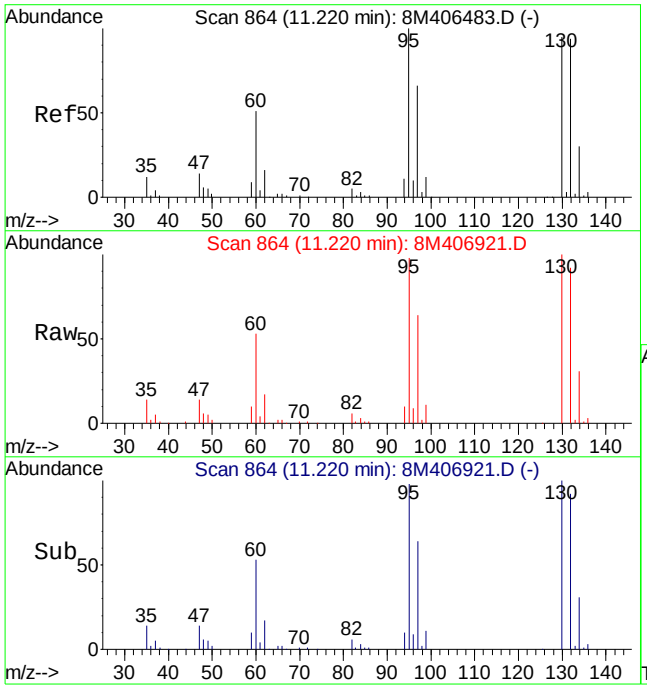

#47
Trichloroethene
Concen: 34.72 ug/L
RT: 11.22 min Scan# 864
Delta R.T. 0.00 min
Lab File: 8M406921.D
Acq: 20 Aug 2015 23:56

Tgt Ion:130 Resp: 327953

Ion	Ratio	Lower	Upper
130	100		
132	94.8	59.0	137.6
95	100.9	65.0	151.8

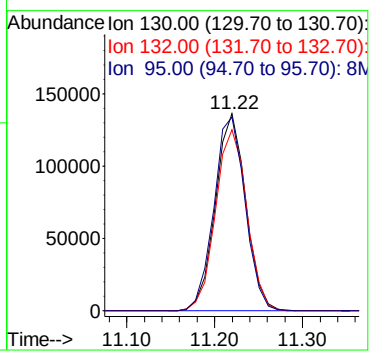

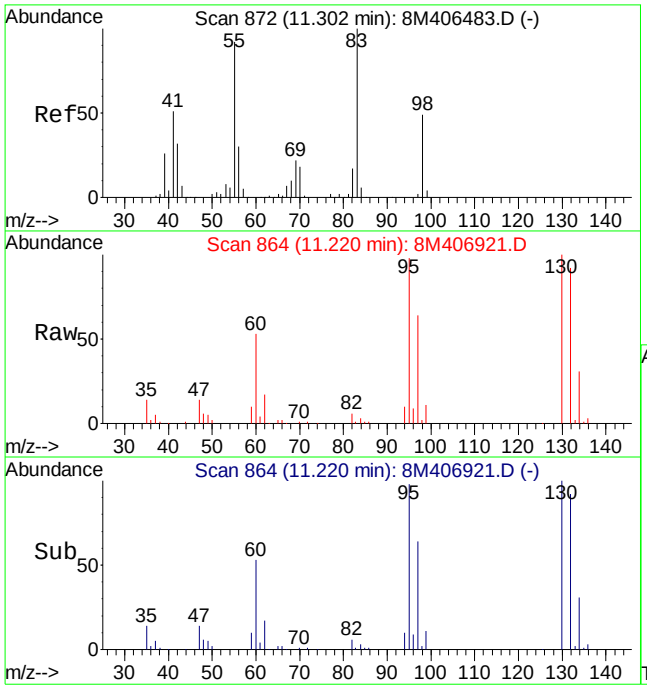

#48
Methylcyclohexane
Concen: 0.34 ug/L
RT: 11.22 min Scan# 864
Delta R.T. -0.08 min
Lab File: 8M406921.D
Acq: 20 Aug 2015 23:56

Tgt Ion: 83 Resp: 4718

Ion	Ratio	Lower	Upper
83	100		
55	0.0	54.8	128.0#
98	179.4	29.0	67.8#

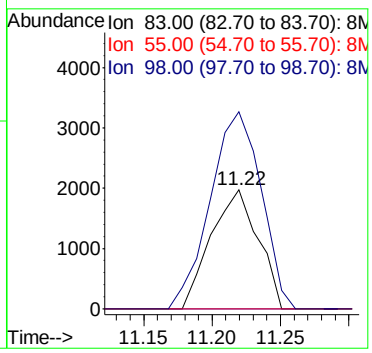

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082015\8M406922.D Vial: 23
Acq On : 21 Aug 2015 00:25 Operator: TMB
Sample : L15080992-09 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 21 08:48:44 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	844826	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	622450	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	333936	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	185406	24.9059 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.64%		
43) 1,2-Dichloroethane-d4	10.31	65	172642	23.3216 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 93.28%		
58) Toluene-d8	12.69	98	741789	24.7038 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.80%		
80) p-Bromofluorobenzene	16.08	95	274845	23.7950 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.20%		

Target Compounds

					Qvalue
3) Chloromethane	3.62	50	4577	0.3177 ug/L	99
4) Vinyl Chloride	3.86	62	13712	1.2944 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.18	101	2610	0.3337 ug/L #	4
13) Acetone	6.26	43	1943	1.8238 ug/L	87
14) 1,1-Dichloroethene	6.47	61	173179	13.0517 ug/L	98
23) trans-1,2-Dichloroethene	7.71	61	10206	0.8201 ug/L	94
27) 1,1-Dichloroethane	8.33	63	51474	3.0841 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	324822	36.2705 ug/L	80
33) Chloroform	9.39	83	8101	0.5378 ug/L	98
39) Cyclohexane	9.95	56	7693	0.4747 ug/L	93
45) 1,2-Dichloroethane	10.43	62	168902	16.7423 ug/L	92
46) Benzene	10.46	78	9699	0.2917 ug/L #	1
47) Trichloroethene	11.22	130	11419037	1203.1506 ug/L	99
48) Methylcyclohexane	11.22	83	308848	22.4405 ug/L #	1
63) 1,1,2-Trichloroethane	13.18	97	916	0.1607 ug/L #	32
66) Tetrachloroethene	13.61	164	18998	2.4771 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M406922.D 8260WT.M Fri Aug 21 08:48:45 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082015\8M406922.D Vial: 23
Acq On : 21 Aug 2015 00:25 Operator: TMB
Sample : L15080992-09 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 21 8:48 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

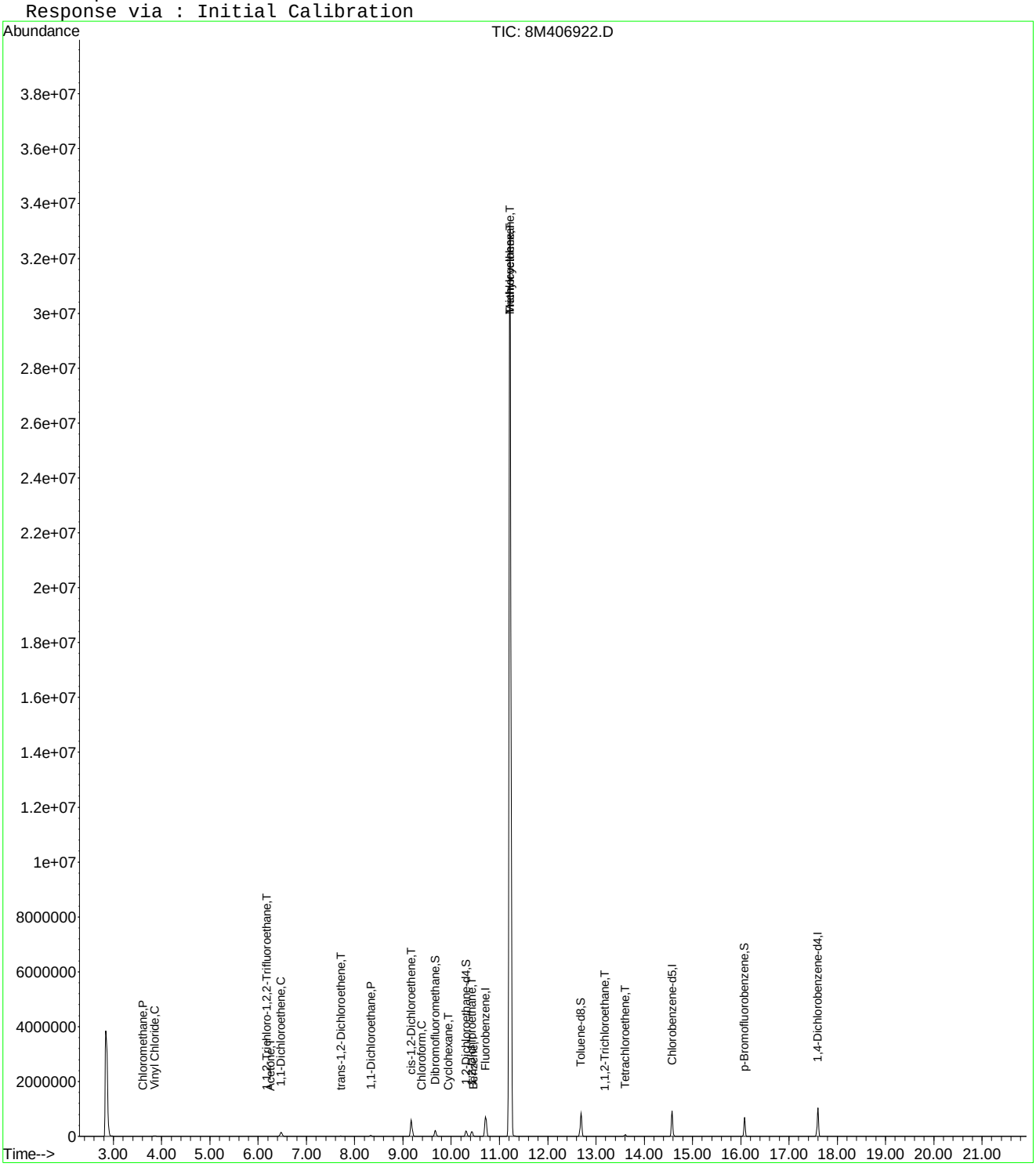

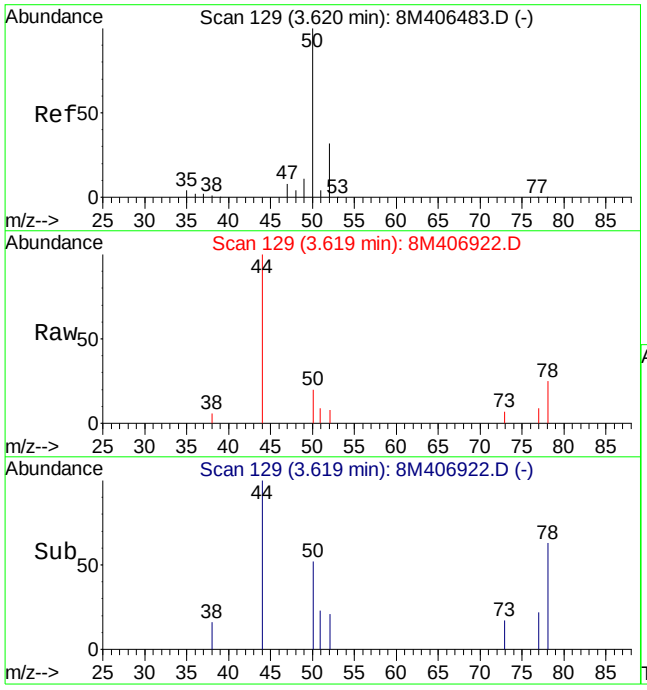

#3
Chloromethane
Concen: 0.32 ug/L
RT: 3.62 min Scan# 129
Delta R.T. 0.00 min
Lab File: 8M406922.D
Acq: 21 Aug 2015 00:25

Tgt Ion: 50 Resp: 4577

Ion	Ratio	Lower	Upper
50	100		
52	31.6	19.2	44.8

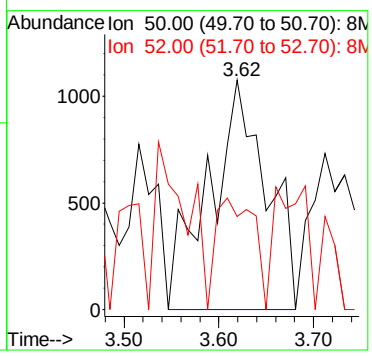

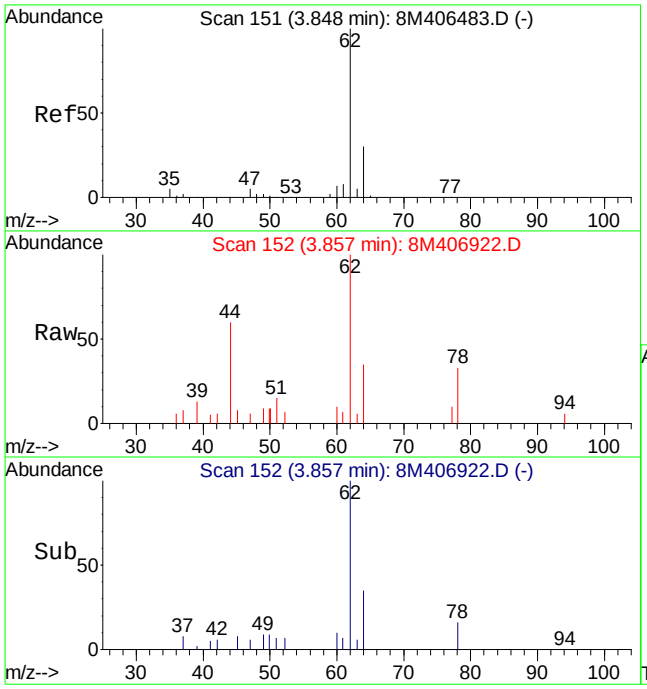

#4
Vinyl Chloride
Concen: 1.29 ug/L
RT: 3.86 min Scan# 152
Delta R.T. 0.01 min
Lab File: 8M406922.D
Acq: 21 Aug 2015 00:25

Tgt Ion: 62 Resp: 13712

Ion	Ratio	Lower	Upper
62	100		
64	29.1	18.2	42.6

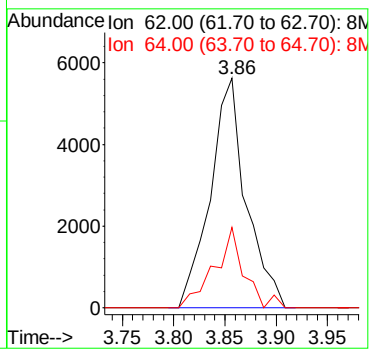

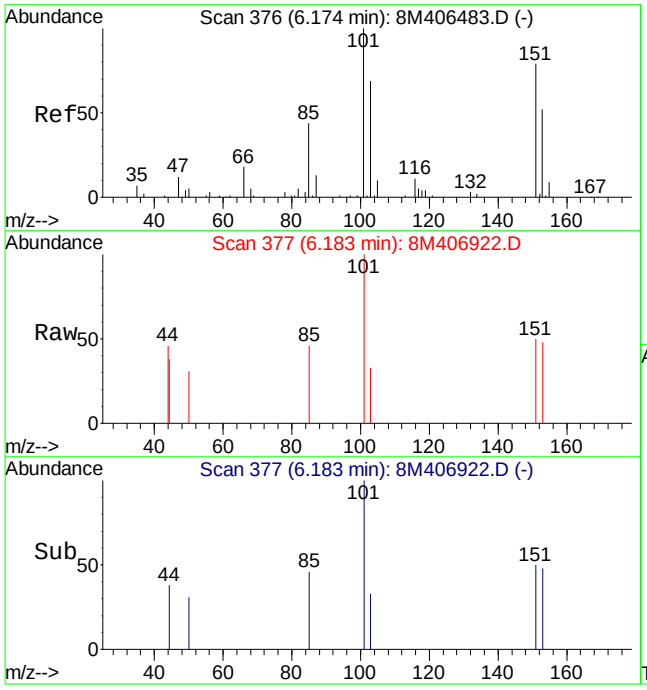

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 0.33 ug/L
RT: 6.18 min Scan# 377
Delta R.T. 0.02 min
Lab File: 8M406922.D
Acq: 21 Aug 2015 00:25

Tgt Ion:101 Resp: 2610

Ion	Ratio	Lower	Upper
101	100		
151	161.4	38.1	118.1#

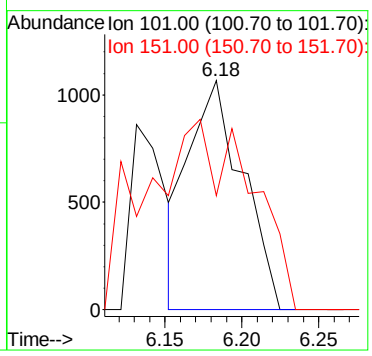

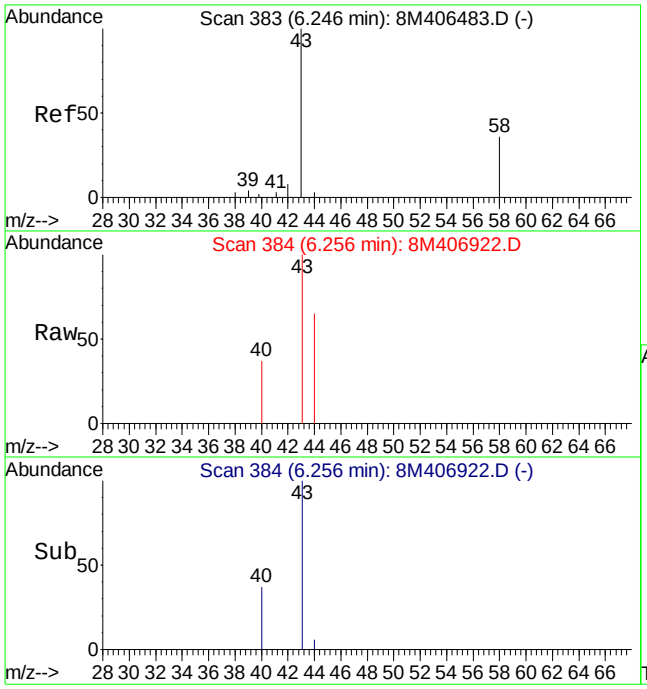

#13
Acetone
Concen: 1.82 ug/L
RT: 6.26 min Scan# 384
Delta R.T. 0.01 min
Lab File: 8M406922.D
Acq: 21 Aug 2015 00:25

Tgt Ion: 43 Resp: 1943

Ion	Ratio	Lower	Upper
43	100		
58	20.6	16.4	38.2

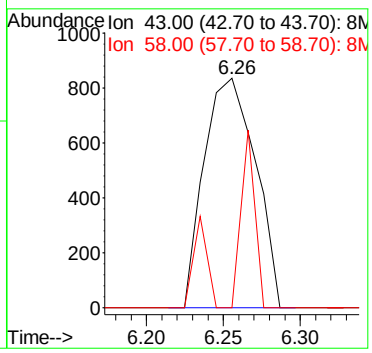

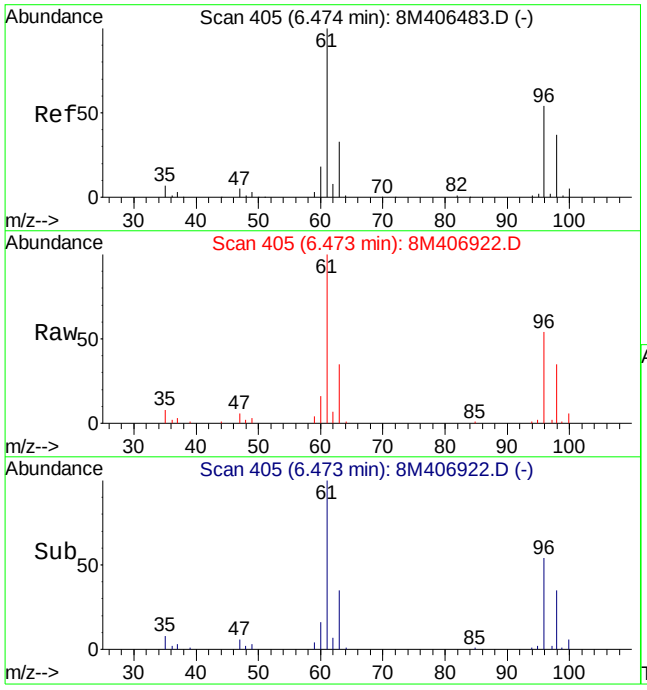

#14
1,1-Dichloroethene
Concen: 13.05 ug/L
RT: 6.47 min Scan# 405
Delta R.T. 0.00 min
Lab File: 8M406922.D
Acq: 21 Aug 2015 00:25

Tgt Ion: 61 Resp: 173179

Ion	Ratio	Lower	Upper
61	100		
96	55.5	32.3	75.3

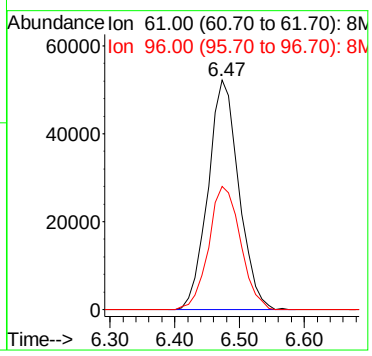

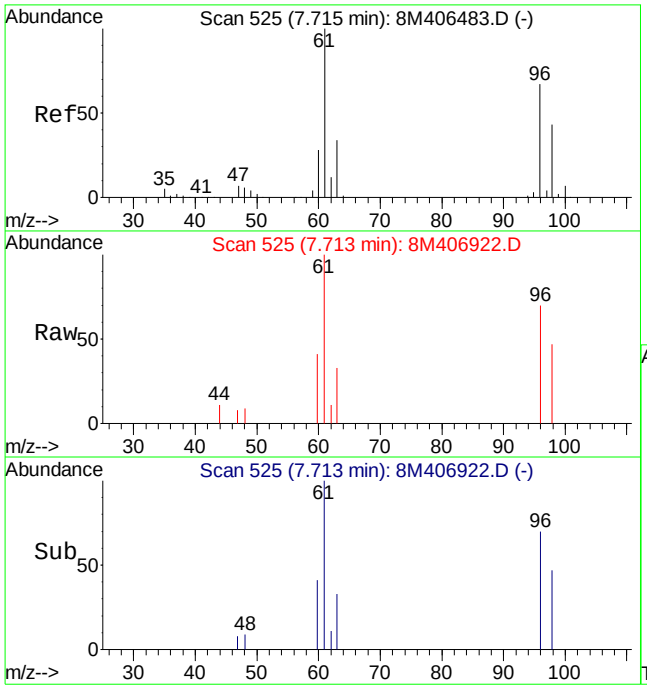

#23
trans-1,2-Dichloroethene
Concen: 0.82 ug/L
RT: 7.71 min Scan# 525
Delta R.T. 0.00 min
Lab File: 8M406922.D
Acq: 21 Aug 2015 00:25

Tgt Ion: 61 Resp: 10206

Ion	Ratio	Lower	Upper
61	100		
96	67.0	37.4	87.4

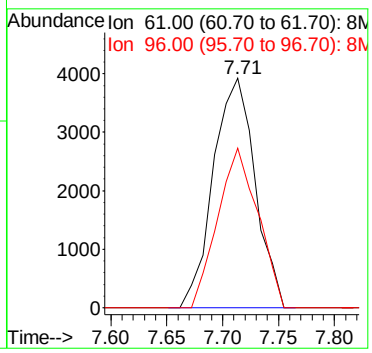

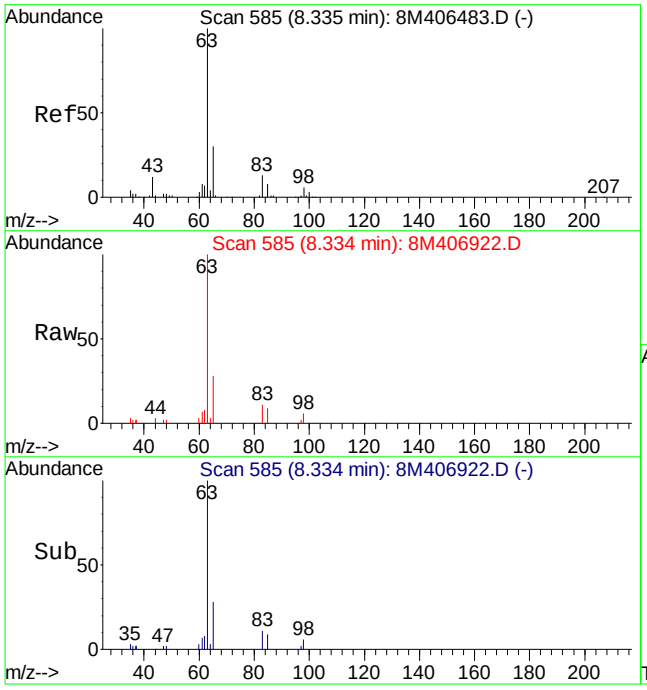

#27
1,1-Dichloroethane
Concen: 3.08 ug/L
RT: 8.33 min Scan# 585
Delta R.T. 0.00 min
Lab File: 8M406922.D
Acq: 21 Aug 2015 00:25

Tgt Ion: 63 Resp: 51474

Ion	Ratio	Lower	Upper
63	100		
65	30.3	18.4	43.0
83	12.1	7.7	18.1

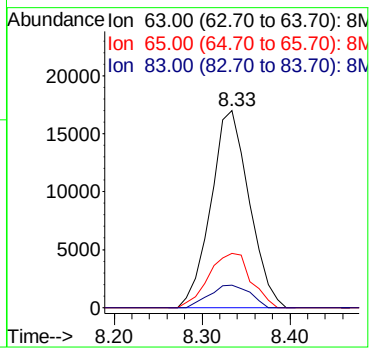

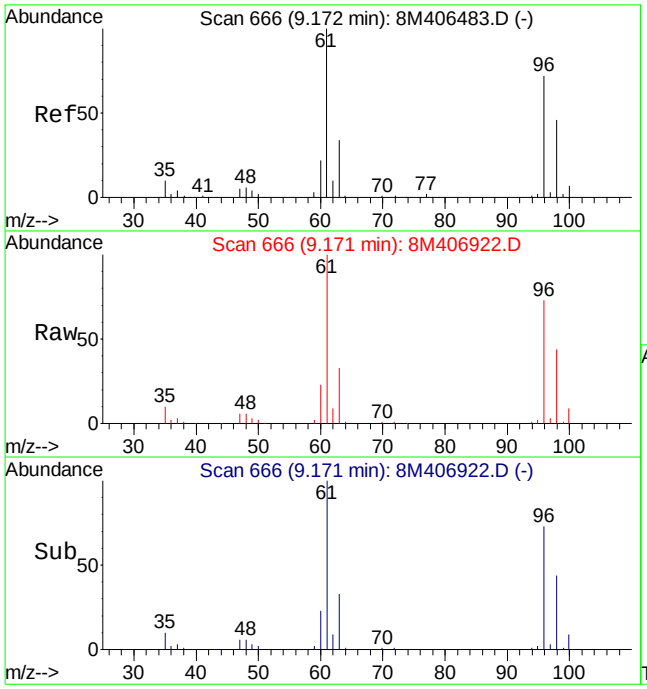

#32
cis-1,2-Dichloroethene
Concen: 36.27 ug/L
RT: 9.17 min Scan# 666
Delta R.T. 0.00 min
Lab File: 8M406922.D
Acq: 21 Aug 2015 00:25

Tgt Ion: 96 Resp: 324822

Ion	Ratio	Lower	Upper
96	100		
61	139.9	99.8	233.0

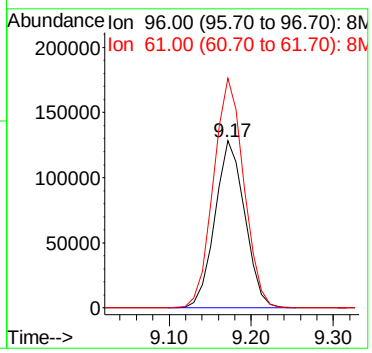

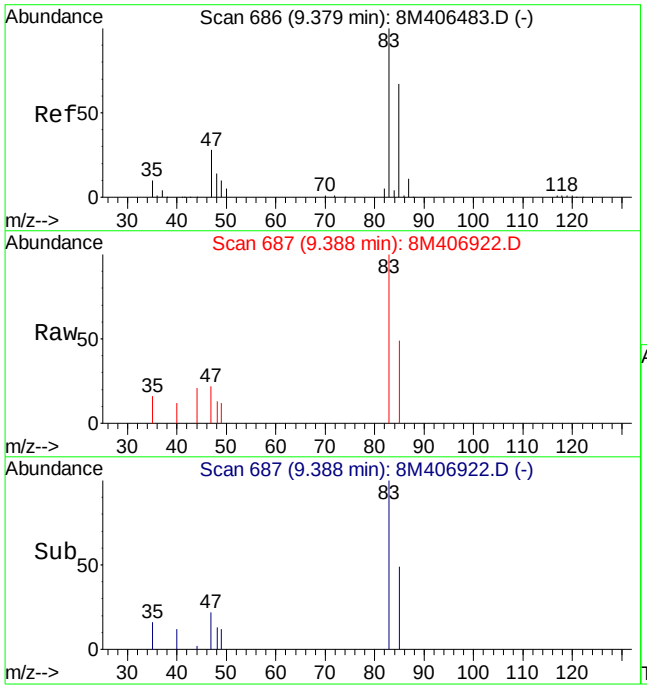

#33
Chloroform
Concen: 0.54 ug/L
RT: 9.39 min Scan# 687
Delta R.T. 0.01 min
Lab File: 8M406922.D
Acq: 21 Aug 2015 00:25

Tgt Ion: 83 Resp: 8101

Ion	Ratio	Lower	Upper
83	100		
85	63.4	38.8	90.4

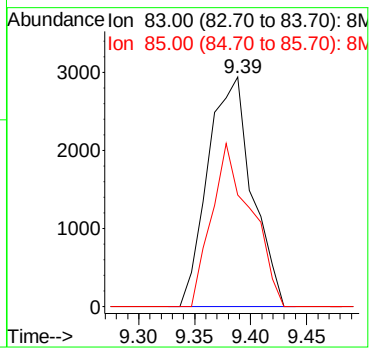

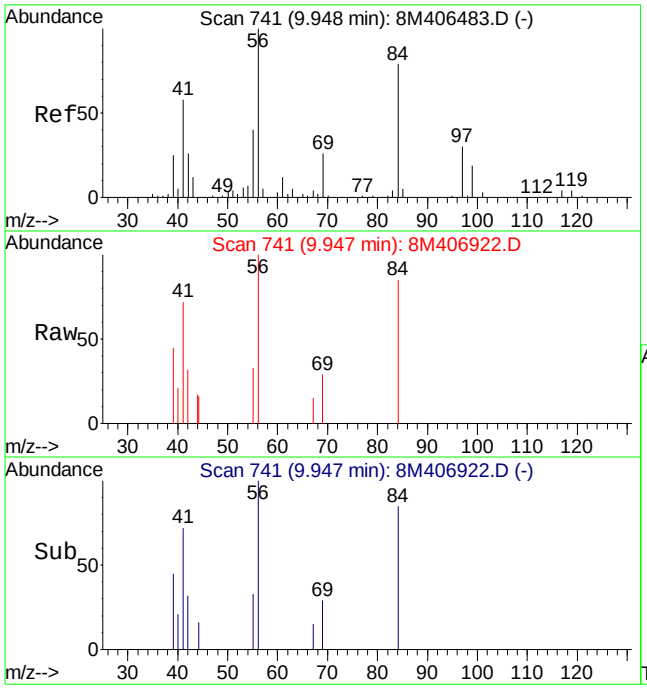

#39
Cyclohexane
Concen: 0.47 ug/L
RT: 9.95 min Scan# 741
Delta R.T. 0.00 min
Lab File: 8M406922.D
Acq: 21 Aug 2015 00:25

Tgt Ion: 56 Resp: 7693

Ion	Ratio	Lower	Upper
56	100		
84	83.9	45.4	105.8
69	26.7	15.8	37.0

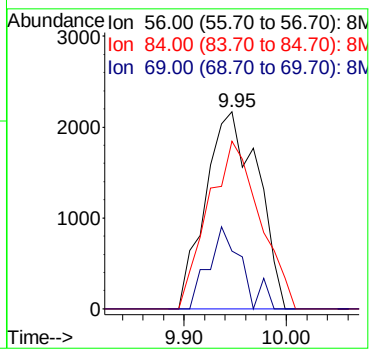

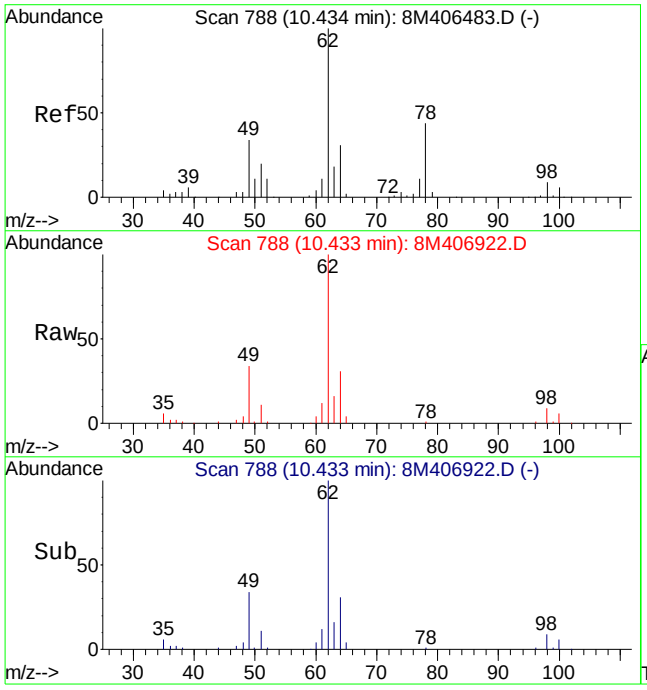

#45
1,2-Dichloroethane
Concen: 16.74 ug/L
RT: 10.43 min Scan# 788
Delta R.T. 0.00 min
Lab File: 8M406922.D
Acq: 21 Aug 2015 00:25

Tgt Ion: 62 Resp: 168902

Ion	Ratio	Lower	Upper
62	100		
64	31.7	18.8	44.0
49	33.3	25.3	58.9

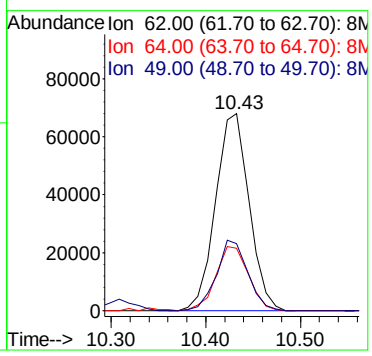

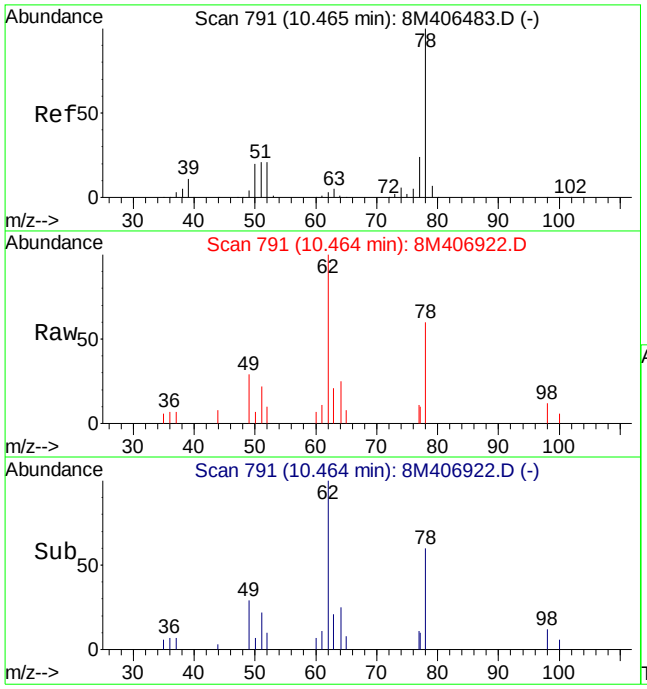

#46
Benzene
Concen: 0.29 ug/L
RT: 10.46 min Scan# 791
Delta R.T. -0.01 min
Lab File: 8M406922.D
Acq: 21 Aug 2015 00:25

Tgt Ion: 78 Resp: 9699

Ion	Ratio	Lower	Upper
78	100		
52	19.1	12.1	28.1
51	210.7	14.6	34.2#

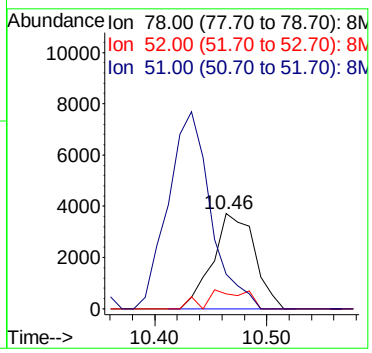

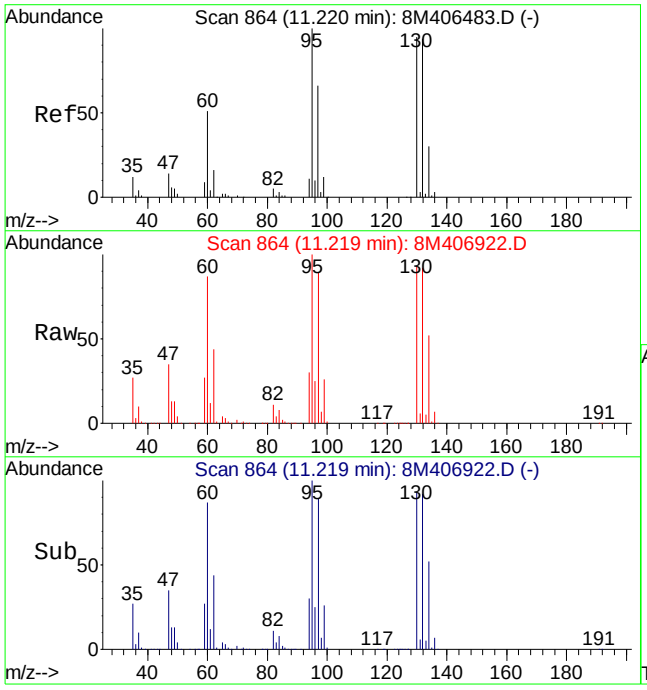

#47
Trichloroethene
Concen: 1203.15 ug/L
RT: 11.22 min Scan# 864
Delta R.T. 0.00 min
Lab File: 8M406922.D
Acq: 21 Aug 2015 00:25

Tgt Ion:130 Resp:11419037

Ion	Ratio	Lower	Upper
130	100		
132	98.0	59.0	137.6
95	107.6	65.0	151.8

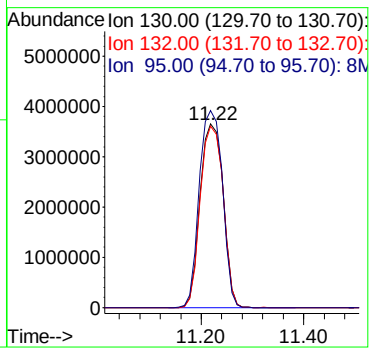

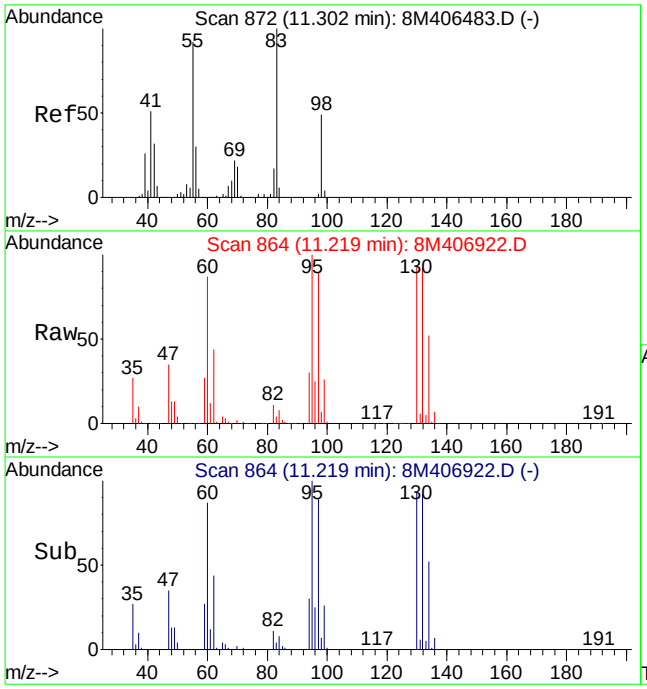

#48
Methylcyclohexane
Concen: 22.44 ug/L
RT: 11.22 min Scan# 864
Delta R.T. -0.08 min
Lab File: 8M406922.D
Acq: 21 Aug 2015 00:25

Tgt Ion: 83 Resp: 308848

Ion	Ratio	Lower	Upper
83	100		
55	0.1	54.8	128.0#
98	200.6	29.0	67.8#

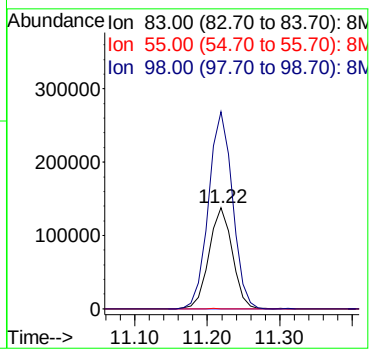

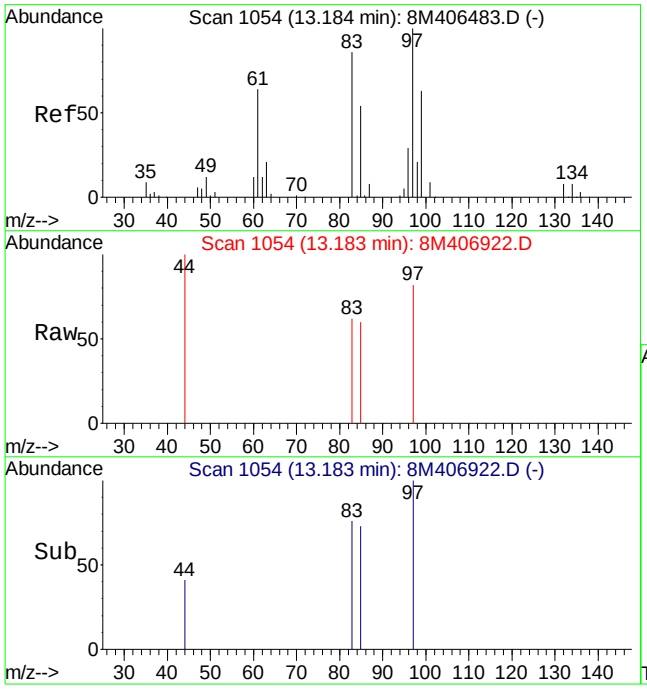

#63
1,1,2-Trichloroethane
Concen: 0.16 ug/L
RT: 13.18 min Scan# 1054
Delta R.T. 0.00 min
Lab File: 8M406922.D
Acq: 21 Aug 2015 00:25

Tgt Ion: 97 Resp: 916

Ion	Ratio	Lower	Upper
97	100		
83	23.4	51.1	119.1#

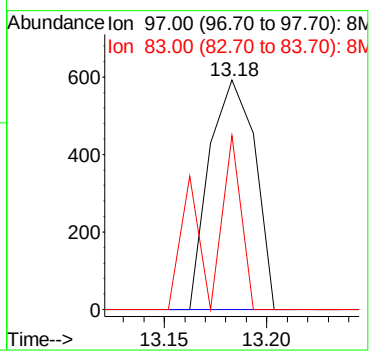

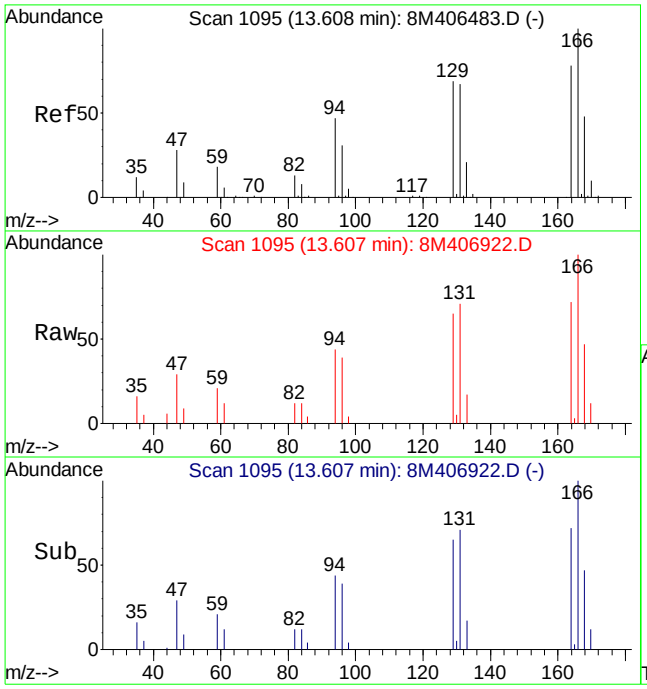

#66
Tetrachloroethene
Concen: 2.48 ug/L
RT: 13.61 min Scan# 1095
Delta R.T. 0.00 min
Lab File: 8M406922.D
Acq: 21 Aug 2015 00:25

Tgt Ion:164 Resp: 18998

Ion	Ratio	Lower	Upper
164	100		
129	89.2	54.3	126.7
94	65.8	38.3	89.5

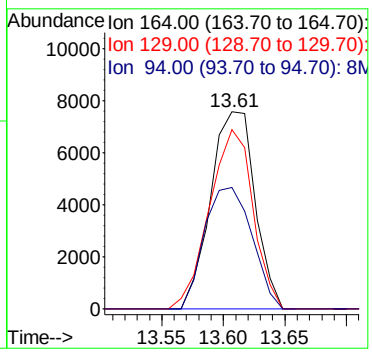

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082115\8M406939.D Vial: 7
Acq On : 21 Aug 2015 17:29 Operator: TMB
Sample : L15080992-09 B 50X 826-LOW D1 Inst : HPMS8
Misc : 1,50 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 24 08:25:52 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	830527	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	659938	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	352162	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	184790	25.2506 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.00%		
43) 1,2-Dichloroethane-d4	10.31	65	161408	22.1794 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 88.72%		
58) Toluene-d8	12.69	98	782033	24.5646 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.24%		
80) p-Bromofluorobenzene	16.08	95	295295	24.2424 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.96%		
Target Compounds					Qvalue
13) Acetone	6.28	43	201	0.1919 ug/L #	48
15) Tert-Butyl Alcohol	6.59	59	22560	82.0097 ug/L	95
30) Propionitrile	9.00	54	967	1.7144 ug/L #	56
32) cis-1,2-Dichloroethene	9.18	96	6058	0.6881 ug/L	71
36) Tetrahydrofuran	9.64	42	270	0.2214 ug/L #	40
45) 1,2-Dichloroethane	10.44	62	2709	0.2732 ug/L	81
47) Trichloroethene	11.22	130	288976	30.9718 ug/L	94
51) 1,4-Dioxane	11.72	88	5047	158.4759 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M406939.D 8260WT.M Mon Aug 24 08:25:53 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082115\8M406939.D Vial: 7
Acq On : 21 Aug 2015 17:29 Operator: TMB
Sample : L15080992-09 B 50X 826-LOW D1 Inst : HPMS8
Misc : 1,50 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 24 8:25 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

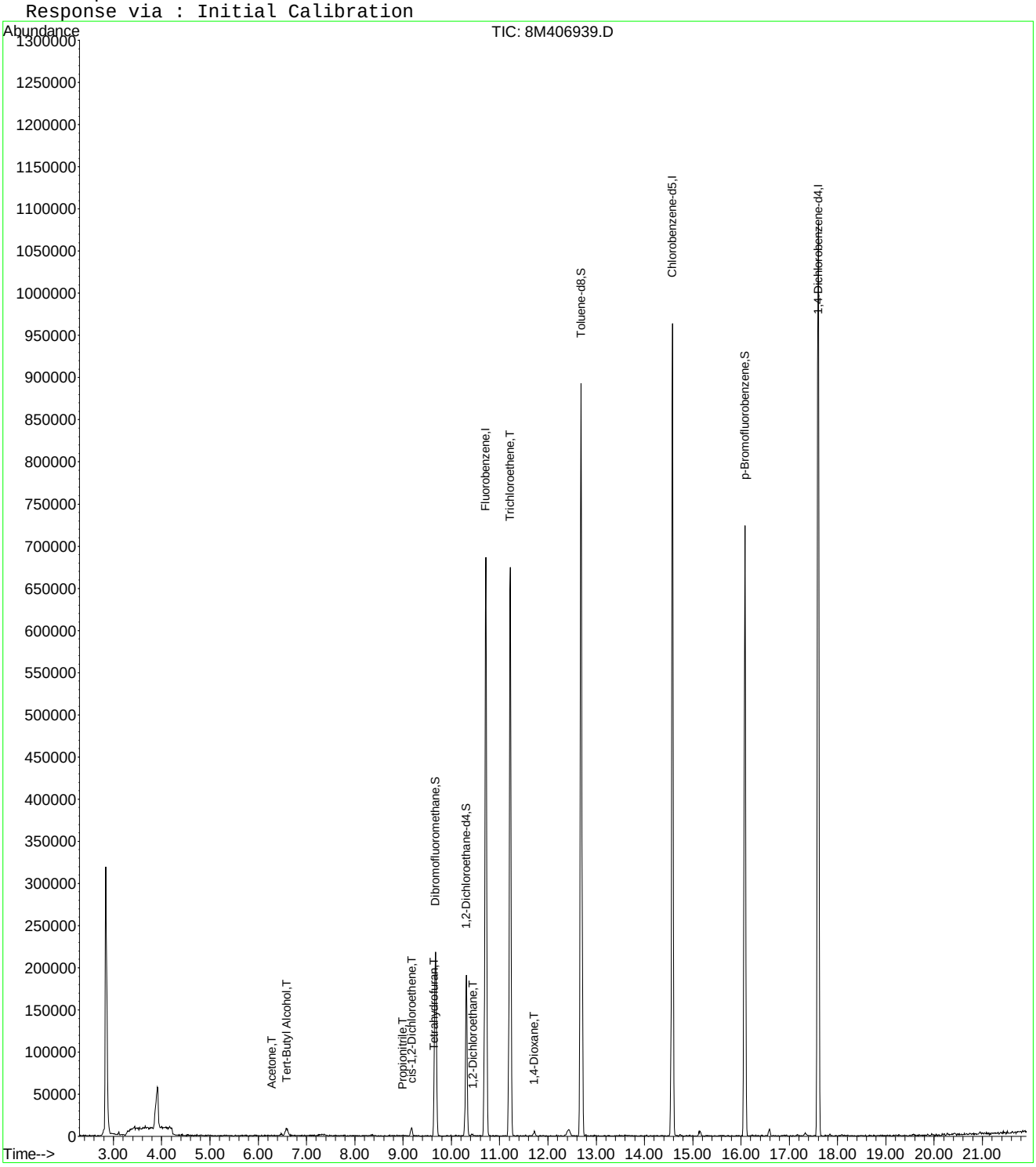

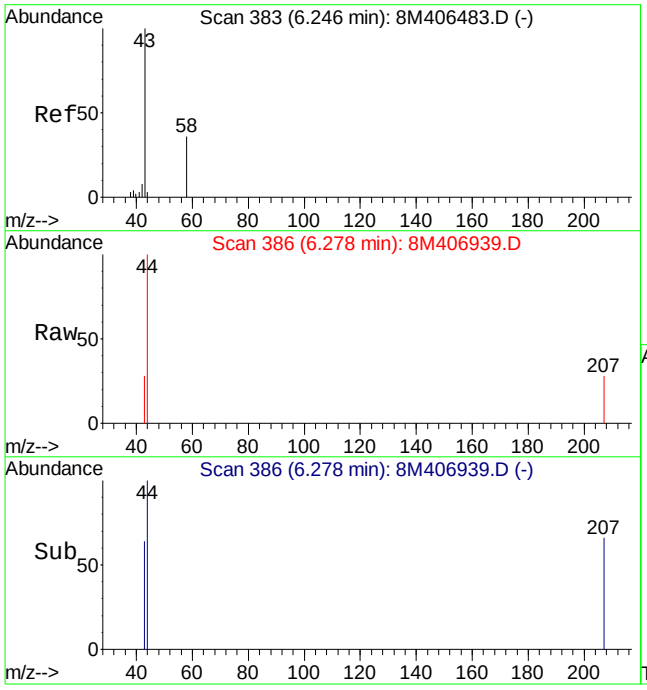

#13
Acetone
Concen: 0.19 ug/L
RT: 6.28 min Scan# 386
Delta R.T. 0.03 min
Lab File: 8M406939.D
Acq: 21 Aug 2015 17:29

Tgt Ion: 43 Resp: 201

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

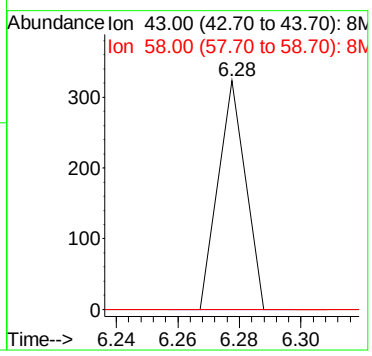

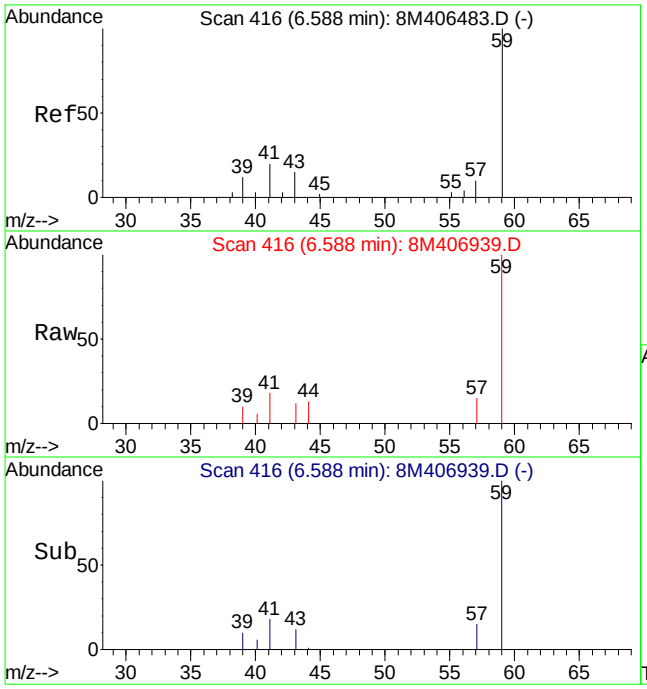

#15
Tert-Butyl Alcohol
Concen: 82.01 ug/L
RT: 6.59 min Scan# 416
Delta R.T. 0.00 min
Lab File: 8M406939.D
Acq: 21 Aug 2015 17:29

Tgt Ion: 59 Resp: 22560

Ion	Ratio	Lower	Upper
59	100		
41	21.5	14.2	33.0
57	7.8	6.5	15.3

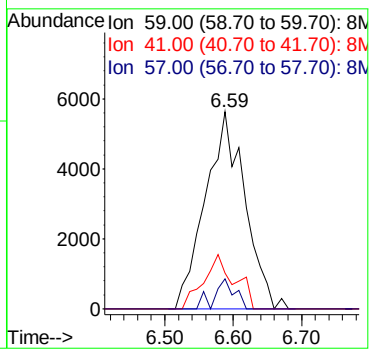

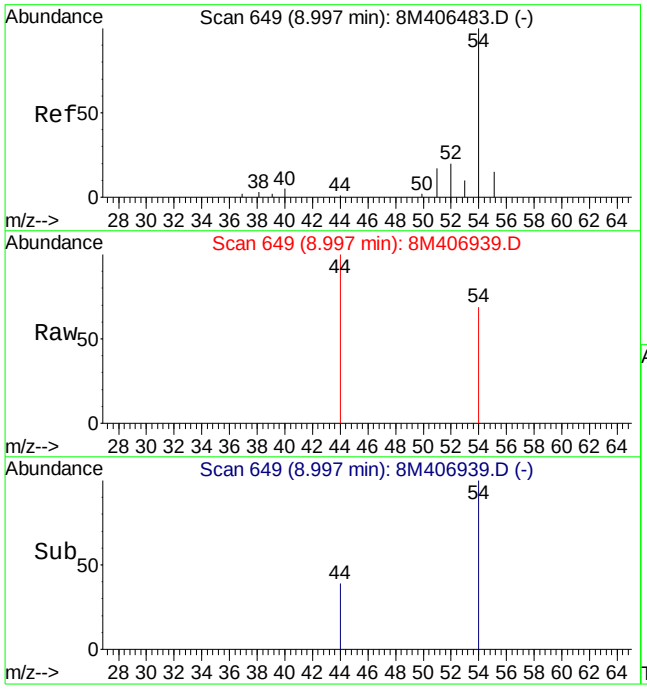

#30
Propionitrile
Concen: 1.71 ug/L
RT: 9.00 min Scan# 649
Delta R.T. 0.00 min
Lab File: 8M406939.D
Acq: 21 Aug 2015 17:29

Tgt Ion: 54 Resp: 967

Ion	Ratio	Lower	Upper
54	100		
52	0.0	12.4	28.8#

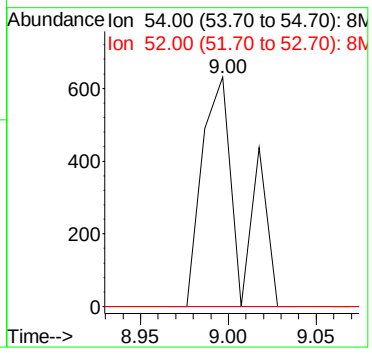

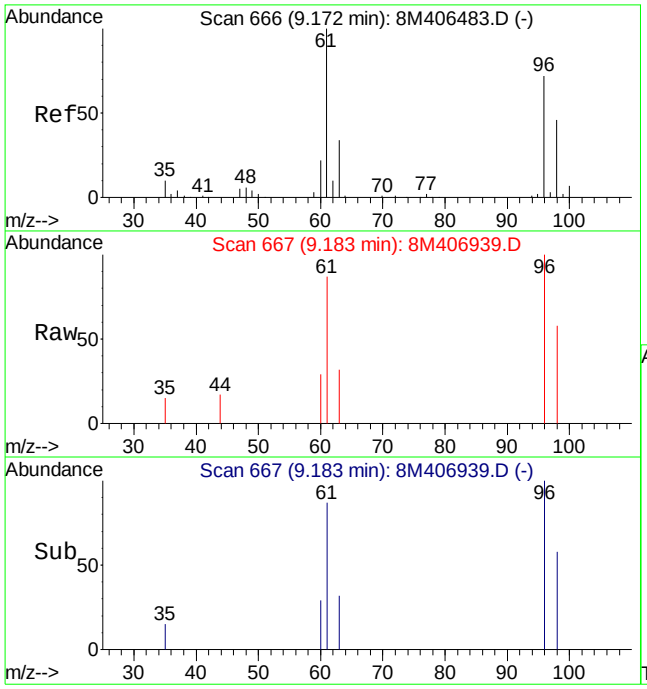

#32
cis-1,2-Dichloroethene
Concen: 0.69 ug/L
RT: 9.18 min Scan# 667
Delta R.T. 0.01 min
Lab File: 8M406939.D
Acq: 21 Aug 2015 17:29

Tgt Ion: 96 Resp: 6058

Ion	Ratio	Lower	Upper
96	100		
61	126.5	99.8	233.0

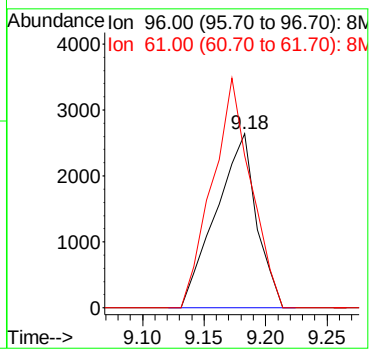

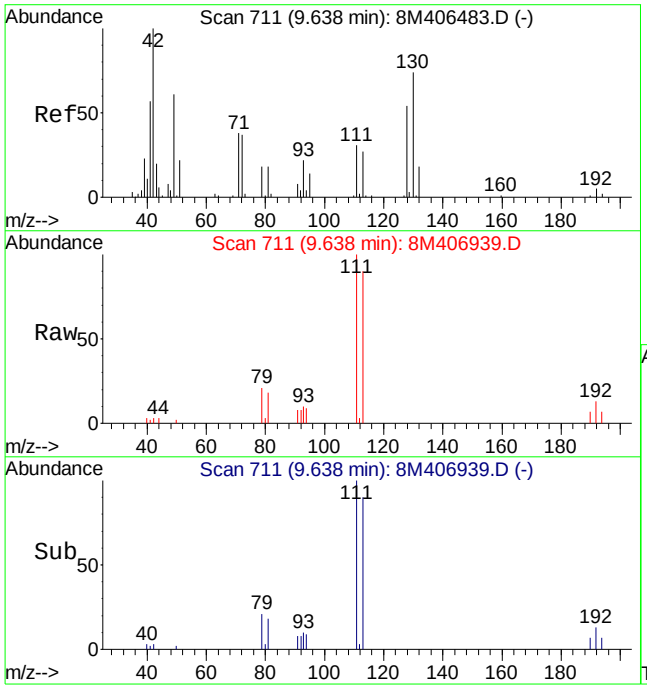

#36
Tetrahydrofuran
Concen: 0.22 ug/L
RT: 9.64 min Scan# 711
Delta R.T. 0.00 min
Lab File: 8M406939.D
Acq: 21 Aug 2015 17:29

Tgt Ion: 42 Resp: 270

Ion	Ratio	Lower	Upper
42	100		
72	0.0	22.4	52.4#
71	0.0	19.5	45.5#

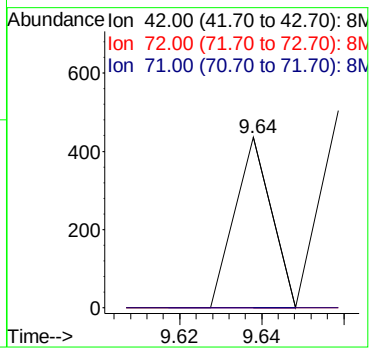

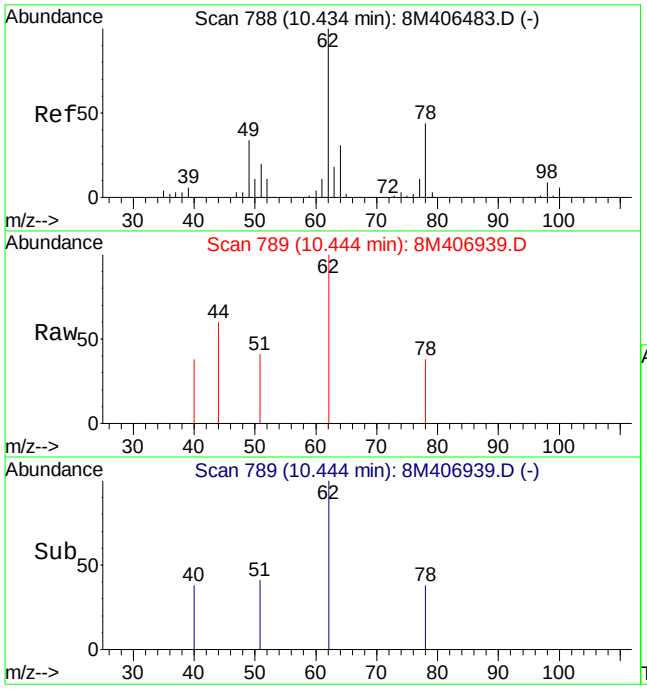

#45
1,2-Dichloroethane
Concen: 0.27 ug/L
RT: 10.44 min Scan# 789
Delta R.T. 0.01 min
Lab File: 8M406939.D
Acq: 21 Aug 2015 17:29

Tgt Ion: 62 Resp: 2709

Ion	Ratio	Lower	Upper
62	100		
64	22.5	18.8	44.0
49	28.4	25.3	58.9

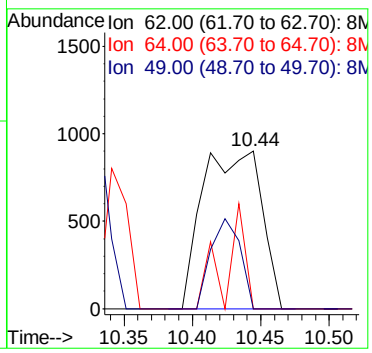

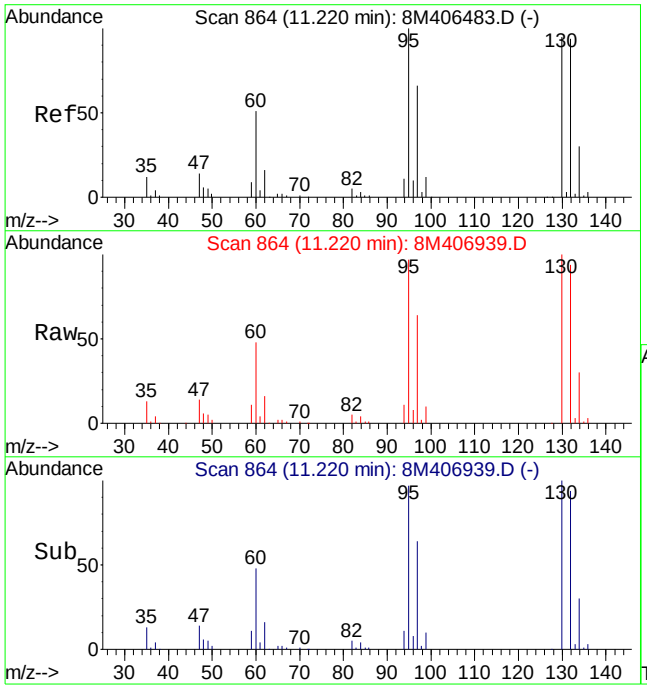

#47
Trichloroethene
Concen: 30.97 ug/L
RT: 11.22 min Scan# 864
Delta R.T. 0.00 min
Lab File: 8M406939.D
Acq: 21 Aug 2015 17:29

Tgt Ion:130 Resp: 288976

Ion	Ratio	Lower	Upper
130	100		
132	95.5	59.0	137.6
95	100.1	65.0	151.8

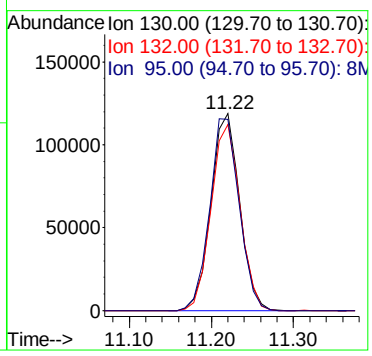

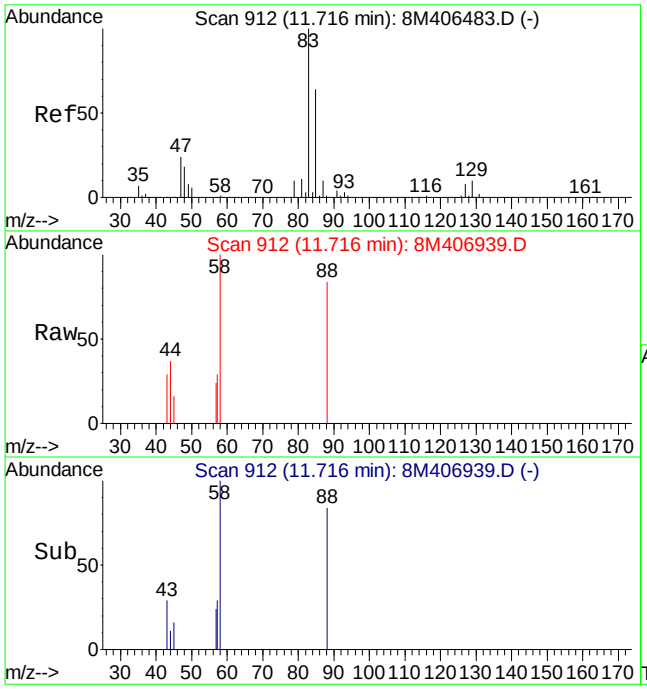

#51
1,4-Dioxane
Concen: 158.48 ug/L
RT: 11.72 min Scan# 912
Delta R.T. 0.00 min
Lab File: 8M406939.D
Acq: 21 Aug 2015 17:29

Tgt Ion: 88 Resp: 5047

Ion	Ratio	Lower	Upper
88	100		
58	79.4	46.9	109.3

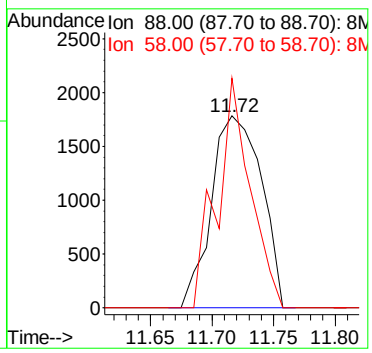

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082015\8M406907.D Vial: 8
Acq On : 20 Aug 2015 17:15 Operator: TMB
Sample : L15080992-11 A TB 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 21 08:48:14 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	930292	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	715793	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	384708	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	201871	24.6264 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.52%		
43) 1,2-Dichloroethane-d4	10.31	65	185362	22.7395 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 90.96%		
58) Toluene-d8	12.69	98	857209	24.8249 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.28%		
80) p-Bromofluorobenzene	16.08	95	319454	24.0071 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.04%		

Target Compounds					Qvalue
13) Acetone	6.24	43	1667	1.4210 ug/L #	48
19) Methylene Chloride	7.26	84	2103	0.2260 ug/L	81
36) Tetrahydrofuran	9.64	42	418	0.3060 ug/L #	40

(#) = qualifier out of range (m) = manual integration
8M406907.D 8260WT.M Fri Aug 21 08:48:14 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082015\8M406907.D Vial: 8
Acq On : 20 Aug 2015 17:15 Operator: TMB
Sample : L15080992-11 A TB 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 21 8:48 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

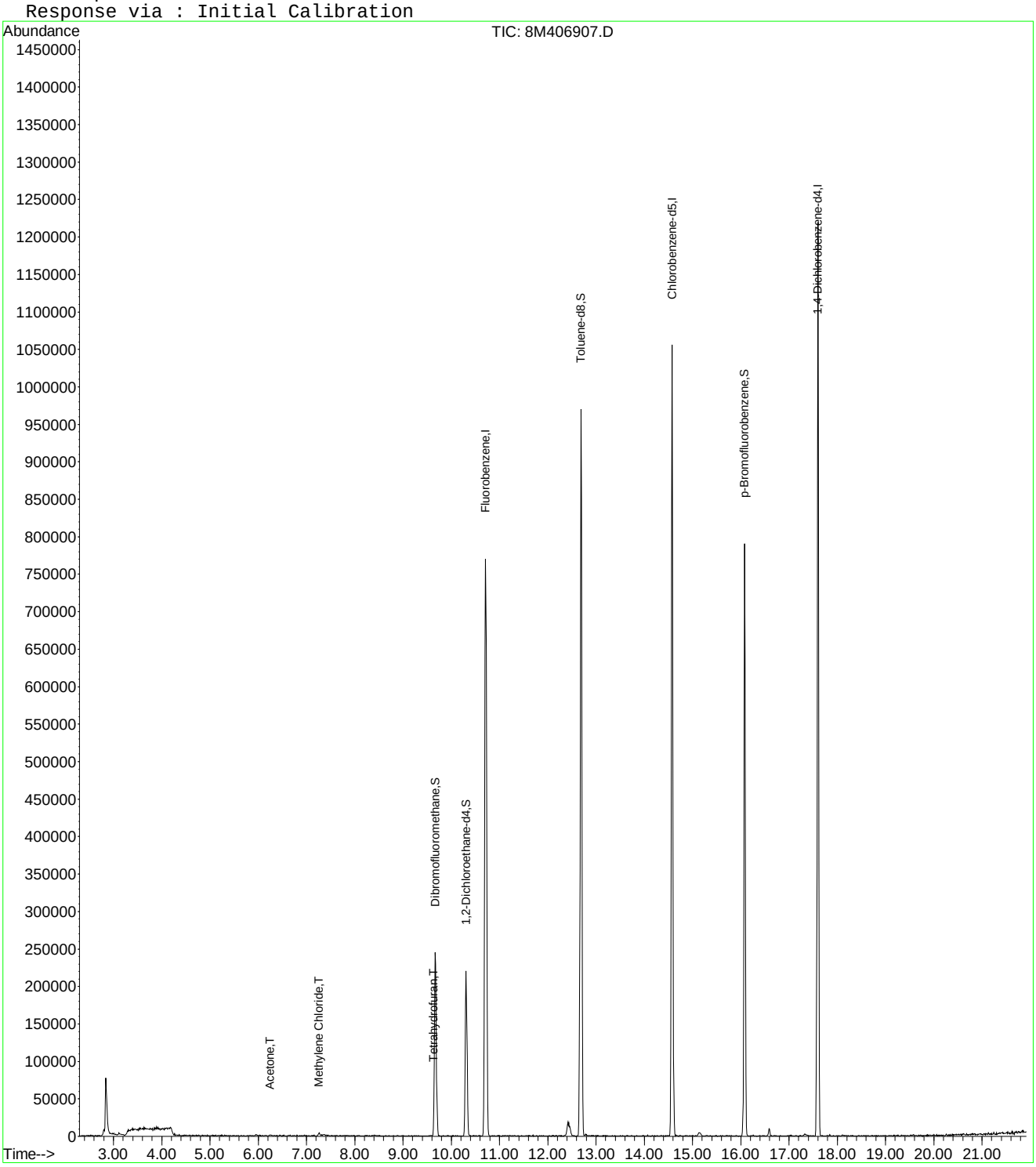

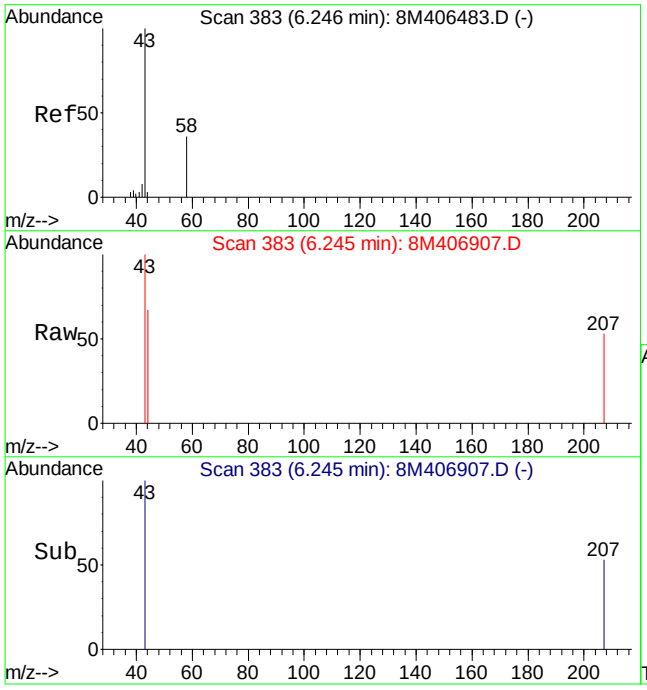

#13
Acetone
Concen: 1.42 ug/L
RT: 6.24 min Scan# 383
Delta R.T. 0.00 min
Lab File: 8M406907.D
Acq: 20 Aug 2015 17:15

Tgt Ion: 43 Resp: 1667

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

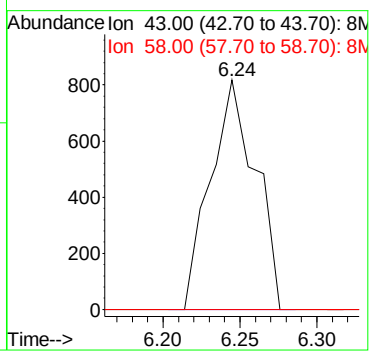

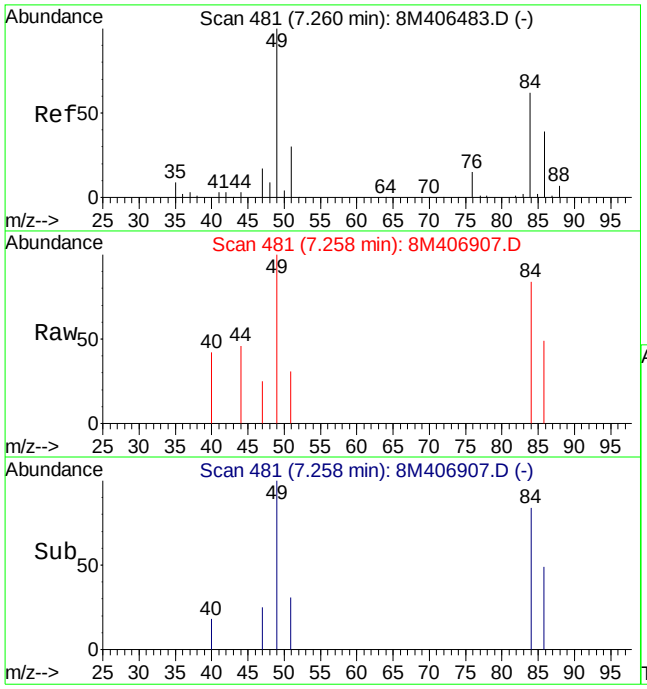

#19
Methylene Chloride
Concen: 0.23 ug/L
RT: 7.26 min Scan# 481
Delta R.T. 0.00 min
Lab File: 8M406907.D
Acq: 20 Aug 2015 17:15

Tgt Ion: 84 Resp: 2103

Ion	Ratio	Lower	Upper
84	100		
49	190.5	98.6	230.2

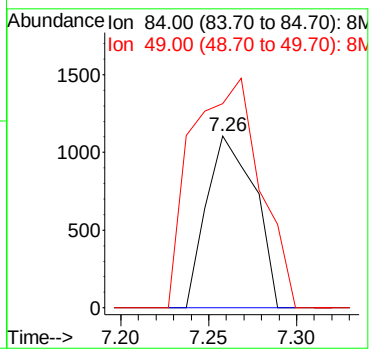

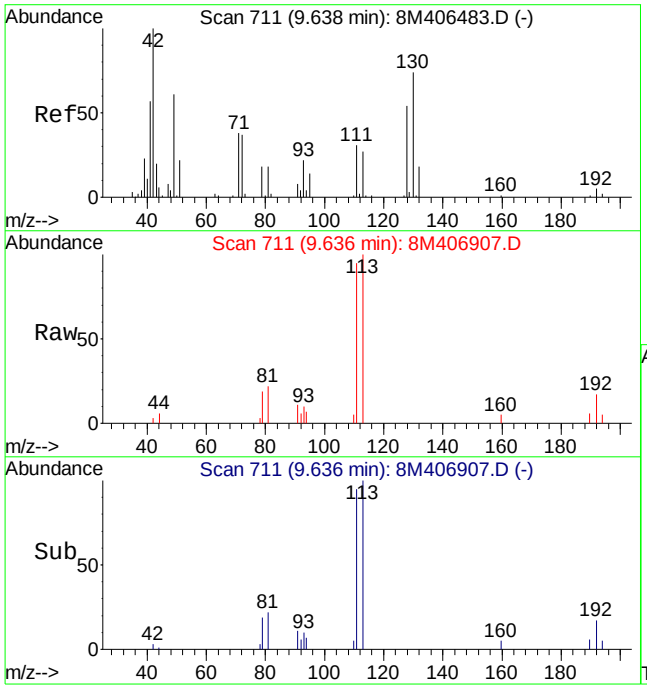

#36
Tetrahydrofuran
Concen: 0.31 ug/L
RT: 9.64 min Scan# 711
Delta R.T. 0.00 min
Lab File: 8M406907.D
Acq: 20 Aug 2015 17:15

Tgt Ion: 42 Resp: 418

Ion	Ratio	Lower	Upper
42	100		
72	0.0	22.4	52.4#
71	0.0	19.5	45.5#

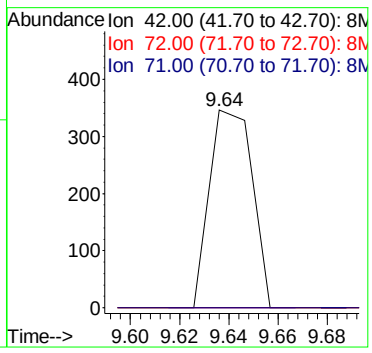

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400358.D Vial: 2
Acq On : 2 Oct 2014 12:24 Operator: TMB
Sample : WG494714-02 5ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:40 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	619208	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	544510	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	254129	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	1884	4.8234 ug/L #	23
3) 3-Chloro-1-propene	7.26	41	51461	4.9911 ug/L	88
4) 2-Chloro-1,3-butadiene	8.64	53	57885	4.7445 ug/L	89
5) Ethyl Acetate	9.28	43	12831	4.1474 ug/L	98
6) Methacrylonitrile	9.44	67	7738	4.2085 ug/L #	61
7) Isobutyl Alcohol	9.28	43	12831	104.0280 ug/L #	12
9) Methyl methacrylate	11.60	41	14247	4.0960 ug/L	83
10) 2-Nitropropane	11.94	43	3986	3.8294 ug/L	98
13) Cyclohexanone	16.03	55	1559	3.8882 ug/L #	43

(#) = qualifier out of range (m) = manual integration
8M400358.D A9FOOWTR.M Fri Oct 03 12:32:40 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400358.D Vial: 2
Acq On : 2 Oct 2014 12:24 Operator: TMB
Sample : WG494714-02 5ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

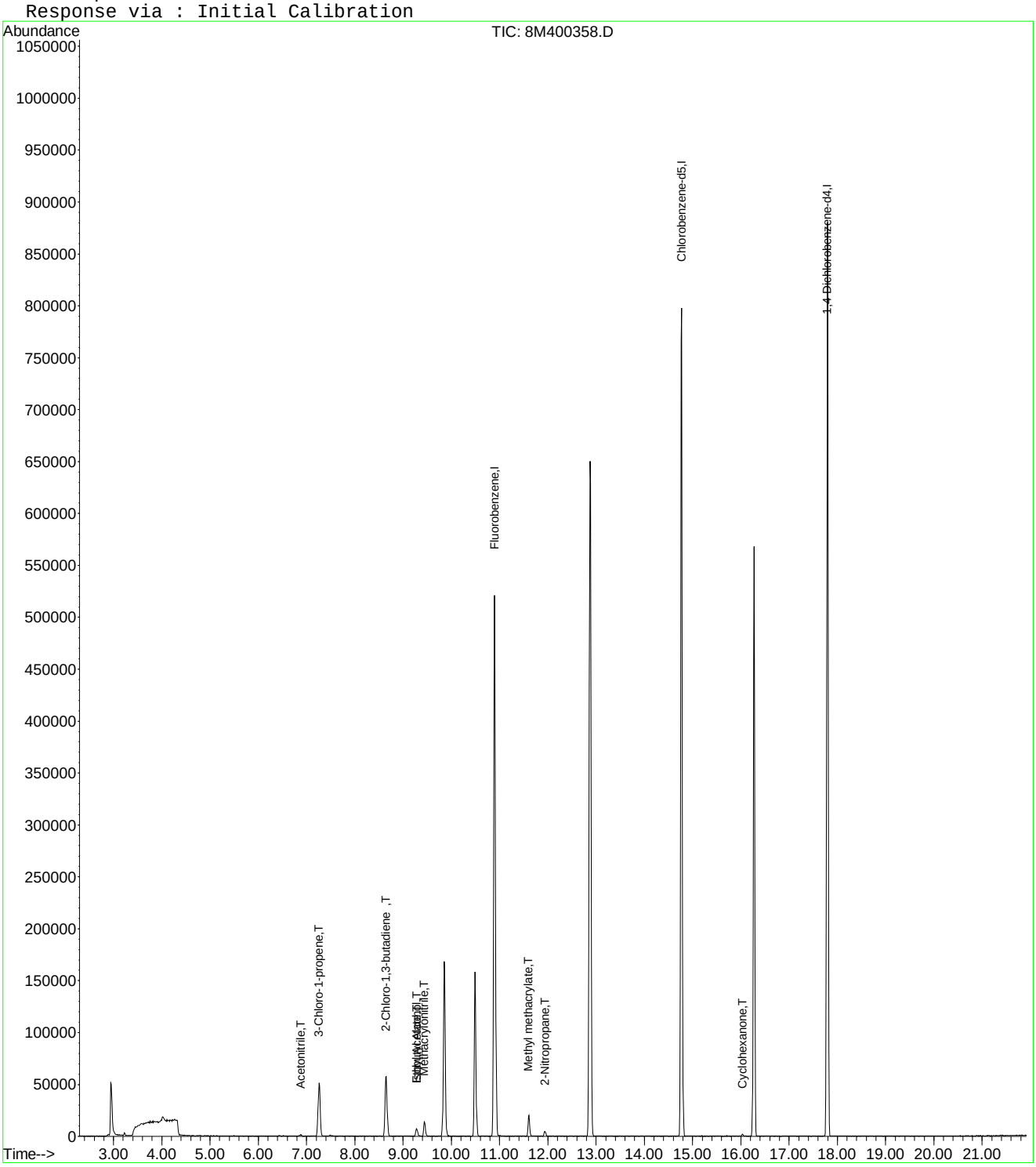

8M400358.D A9FOOWTR.M Fri Oct 03 12:32:41 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400359.D Vial: 3
Acq On : 2 Oct 2014 12:53 Operator: TMB
Sample : WG494714-03 20ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:41 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	590707	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	530005	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	246254	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	7263	19.4920 ug/L	97
3) 3-Chloro-1-propene	7.26	41	190581	19.3757 ug/L	90
4) 2-Chloro-1,3-butadiene	8.65	53	226534	19.4636 ug/L	90
5) Ethyl Acetate	9.28	43	54503	18.4670 ug/L	94
6) Methacrylonitrile	9.44	67	30898	17.6155 ug/L #	65
7) Isobutyl Alcohol	9.45	43	3143	26.7115 ug/L #	95
9) Methyl methacrylate	11.61	41	58234	17.5500 ug/L	72
10) 2-Nitropropane	11.94	43	16687	16.8050 ug/L	98
13) Cyclohexanone	16.03	55	7124	18.3357 ug/L	88

(#) = qualifier out of range (m) = manual integration
8M400359.D A9FOOWTR.M Fri Oct 03 12:32:41 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400359.D Vial: 3
Acq On : 2 Oct 2014 12:53 Operator: TMB
Sample : WG494714-03 20ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

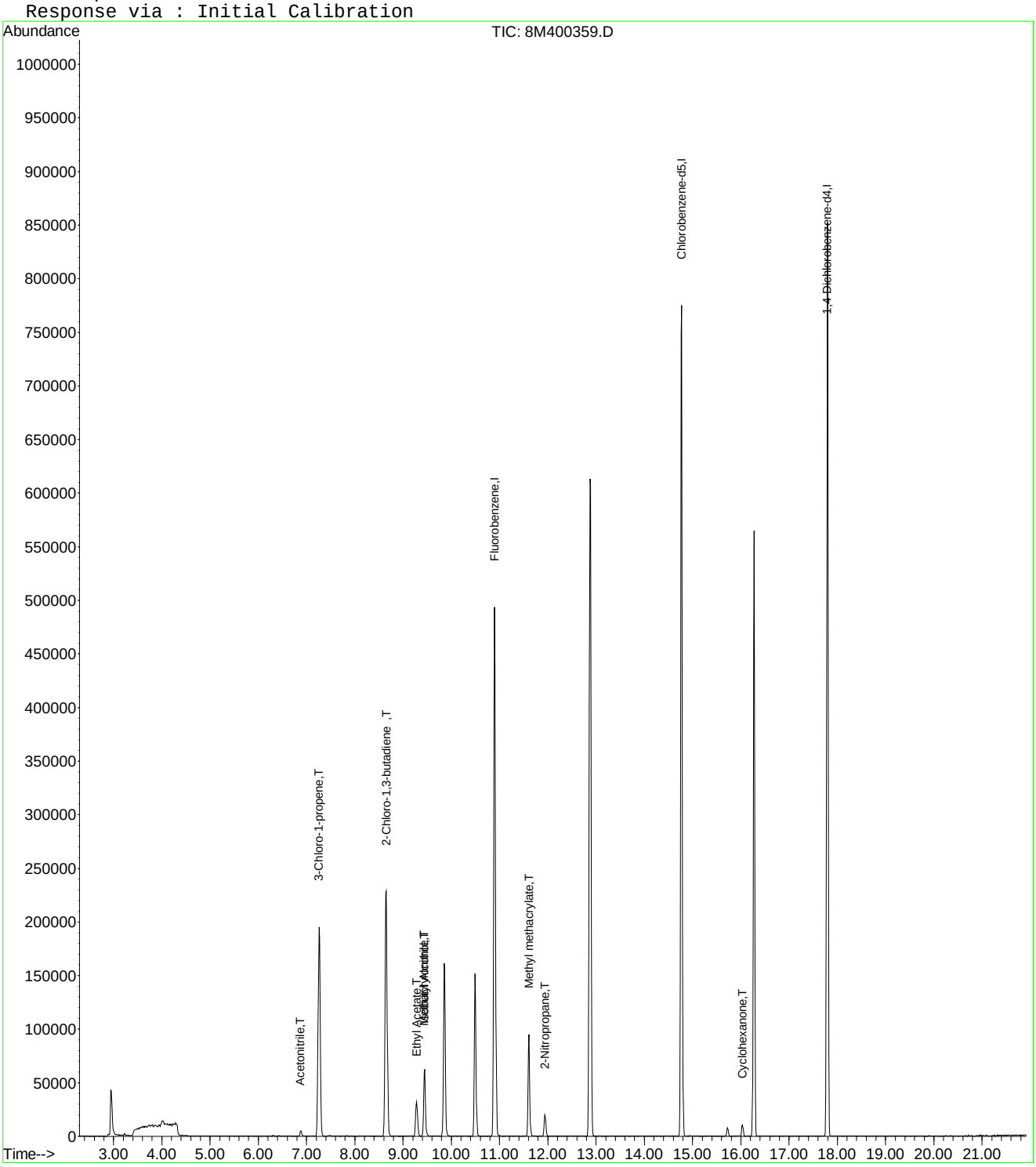

8M400359.D A9FOOWTR.M Fri Oct 03 12:32:42 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400360.D Vial: 4
Acq On : 2 Oct 2014 13:22 Operator: TMB
Sample : WG494714-04 50ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:42 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	590667	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	524443	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	249595	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	17698	47.5001 ug/L	100
3) 3-Chloro-1-propene	7.26	41	491365	49.9588 ug/L	90
4) 2-Chloro-1,3-butadiene	8.65	53	586258	50.3743 ug/L	90
5) Ethyl Acetate	9.27	43	145862	49.4250 ug/L	93
6) Methacrylonitrile	9.44	67	84924	48.4200 ug/L #	62
7) Isobutyl Alcohol	9.46	43	9563	81.2789 ug/L #	95
8) 1-Butanol	10.38	56	1895	48.4971 ug/L	87
9) Methyl methacrylate	11.61	41	161451	48.6599 ug/L	75
10) 2-Nitropropane	11.94	43	45766	46.0929 ug/L	98
13) Cyclohexanone	16.04	55	19698	50.0200 ug/L	89

(#) = qualifier out of range (m) = manual integration
8M400360.D A9FOOWTR.M Fri Oct 03 12:32:42 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400360.D Vial: 4
Acq On : 2 Oct 2014 13:22 Operator: TMB
Sample : WG494714-04 50ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

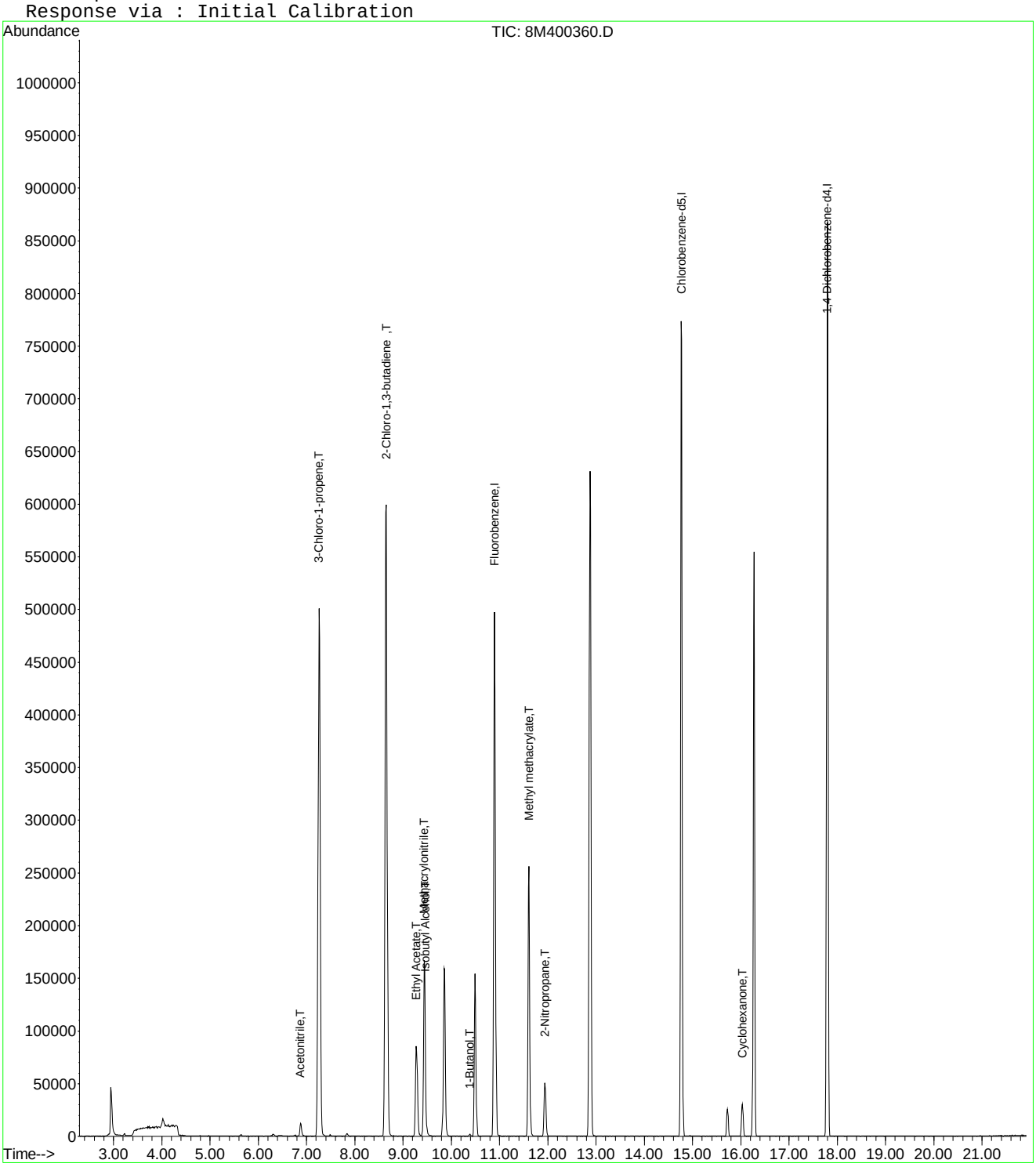

8M400360.D A9FOOWTR.M Fri Oct 03 12:32:42 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400361.D Vial: 5
Acq On : 2 Oct 2014 13:51 Operator: TMB
Sample : WG494714-05 100ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:43 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	595542	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	525736	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	251203	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	38265	101.8596 ug/L	98
3) 3-Chloro-1-propene	7.26	41	1042545	105.1315 ug/L	90
4) 2-Chloro-1,3-butadiene	8.65	53	1239135	105.6013 ug/L	88
5) Ethyl Acetate	9.27	43	315872	106.1564 ug/L	93
6) Methacrylonitrile	9.44	67	182857	103.4038 ug/L #	63
7) Isobutyl Alcohol	9.45	43	23247	195.9661 ug/L #	92
8) 1-Butanol	10.38	56	5482	96.3312 ug/L	88
9) Methyl methacrylate	11.61	41	351287	105.0082 ug/L	73
10) 2-Nitropropane	11.94	43	103249	103.1352 ug/L	99
13) Cyclohexanone	16.04	55	43523	109.8125 ug/L	88

(#) = qualifier out of range (m) = manual integration
8M400361.D A9FOOWTR.M Fri Oct 03 12:32:43 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400361.D Vial: 5
Acq On : 2 Oct 2014 13:51 Operator: TMB
Sample : WG494714-05 100ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

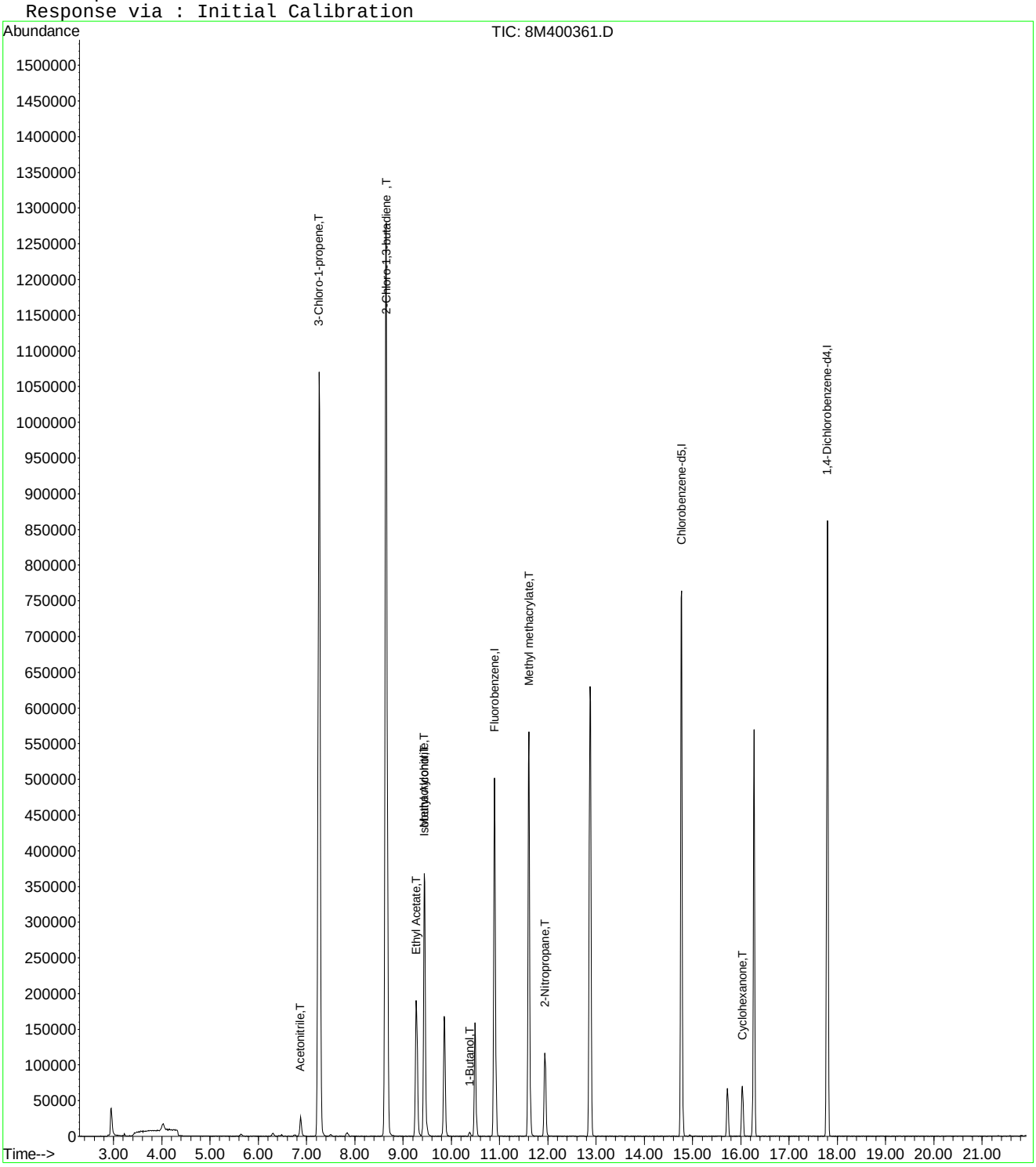

8M400361.D A9FOOWTR.M Fri Oct 03 12:32:43 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400362.D Vial: 6
Acq On : 2 Oct 2014 14:19 Operator: TMB
Sample : WG494714-06 200ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:43 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	605985	25.00 ug/L	-0.02
11) Chlorobenzene-d5	14.77	117	543073	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.80	152	256990	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	81322	212.7447 ug/L	93
3) 3-Chloro-1-propene	7.26	41	2105378	208.6501 ug/L	89
4) 2-Chloro-1,3-butadiene	8.65	53	2530154	211.9083 ug/L	84
5) Ethyl Acetate	9.28	43	654842	216.2828 ug/L	92
6) Methacrylonitrile	9.44	67	386897	215.0159 ug/L #	62
7) Isobutyl Alcohol	9.44	43	51188	424.0654 ug/L	97
8) 1-Butanol	10.37	56	13189	196.5131 ug/L	88
9) Methyl methacrylate	11.60	41	747593	219.6225 ug/L	71
10) 2-Nitropropane	11.94	43	227212	223.0503 ug/L	99
13) Cyclohexanone	16.03	55	76140	187.7821 ug/L	85

(#) = qualifier out of range (m) = manual integration
8M400362.D A9FOOWTR.M Fri Oct 03 12:32:44 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400362.D Vial: 6
Acq On : 2 Oct 2014 14:19 Operator: TMB
Sample : WG494714-06 200ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

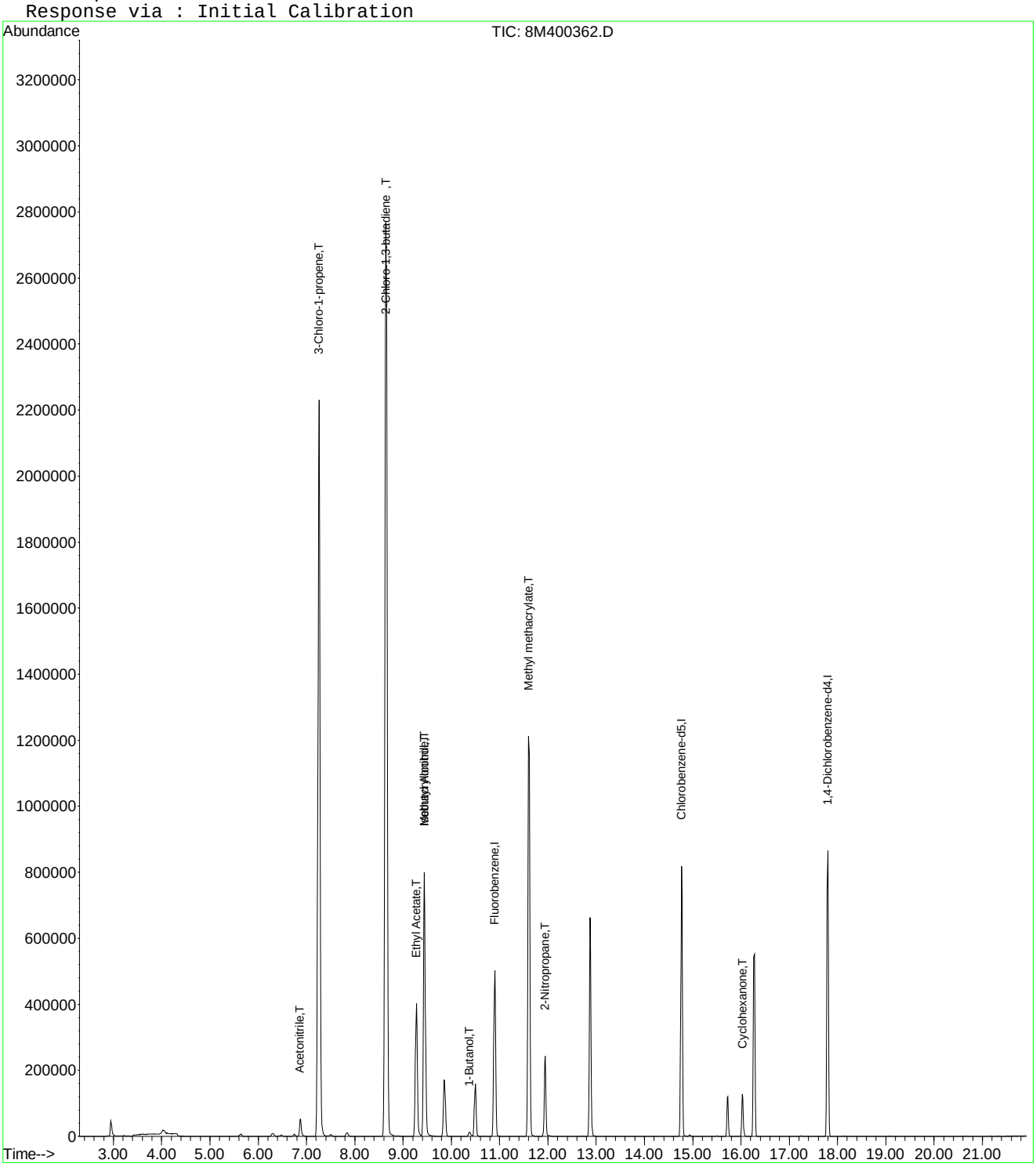

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400363.D Vial: 7
Acq On : 2 Oct 2014 14:48 Operator: TMB
Sample : WG494714-07 300ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:45 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	617316	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	555877	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	259867	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	120718	310.0110 ug/L	94
3) 3-Chloro-1-propene	7.26	41	3133181	304.8093 ug/L	86
4) 2-Chloro-1,3-butadiene	8.64	53	3764580	309.5080 ug/L	79
5) Ethyl Acetate	9.27	43	984728	319.2685 ug/L	92
6) Methacrylonitrile	9.44	67	589378	321.5315 ug/L #	62
7) Isobutyl Alcohol	9.45	43	76604	622.9747 ug/L	98
8) 1-Butanol	10.37	56	23186	322.5015 ug/L	89
9) Methyl methacrylate	11.61	41	1120843	323.2293 ug/L	70
10) 2-Nitropropane	11.94	43	340074	327.7172 ug/L	99
13) Cyclohexanone	16.03	55	133635	325.9318 ug/L	85

(#) = qualifier out of range (m) = manual integration
8M400363.D A9FOOWTR.M Fri Oct 03 12:32:45 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400363.D Vial: 7
Acq On : 2 Oct 2014 14:48 Operator: TMB
Sample : WG494714-07 300ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

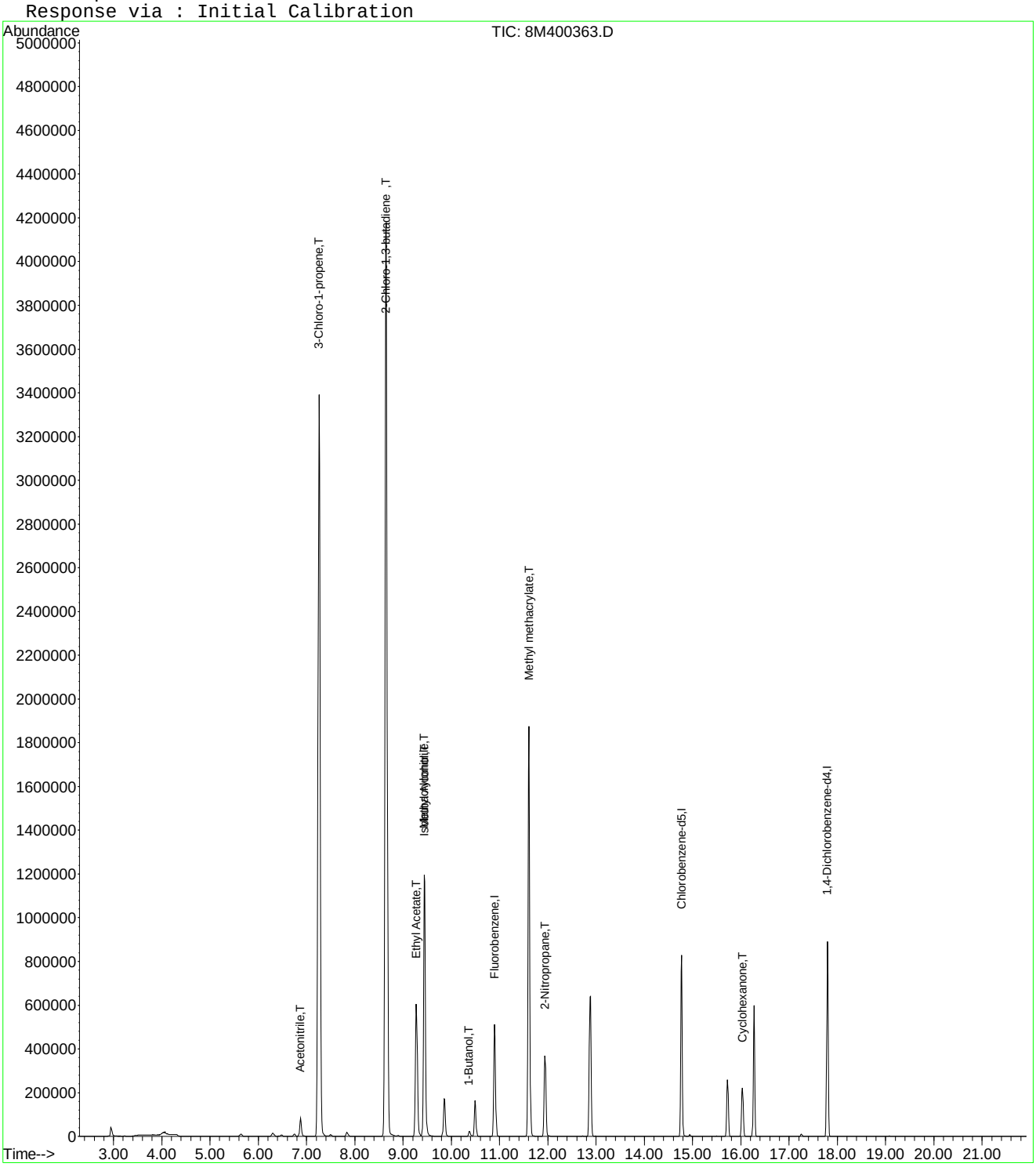

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400364.D Vial: 8
Acq On : 2 Oct 2014 15:16 Operator: TMB
Sample : WG494714-08 400ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:46 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	618926	25.00 ug/L	-0.02
11) Chlorobenzene-d5	14.77	117	559909	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.80	152	262346	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	151708	388.5818 ug/L	95
3) 3-Chloro-1-propene	7.26	41	4028272	390.8682 ug/L	83
4) 2-Chloro-1,3-butadiene	8.65	53	4802050	393.7774 ug/L	74
5) Ethyl Acetate	9.28	43	1250397	404.3491 ug/L	91
6) Methacrylonitrile	9.44	67	762998	415.1660 ug/L #	61
7) Isobutyl Alcohol	9.45	43	102436	830.8840 ug/L #	97
8) 1-Butanol	10.37	56	28243	386.8957 ug/L	89
9) Methyl methacrylate	11.60	41	1436773	413.2595 ug/L	68
10) 2-Nitropropane	11.94	43	451706	434.1607 ug/L	98
13) Cyclohexanone	16.03	55	150327	363.1785 ug/L	84

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400364.D Vial: 8
Acq On : 2 Oct 2014 15:16 Operator: TMB
Sample : WG494714-08 400ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

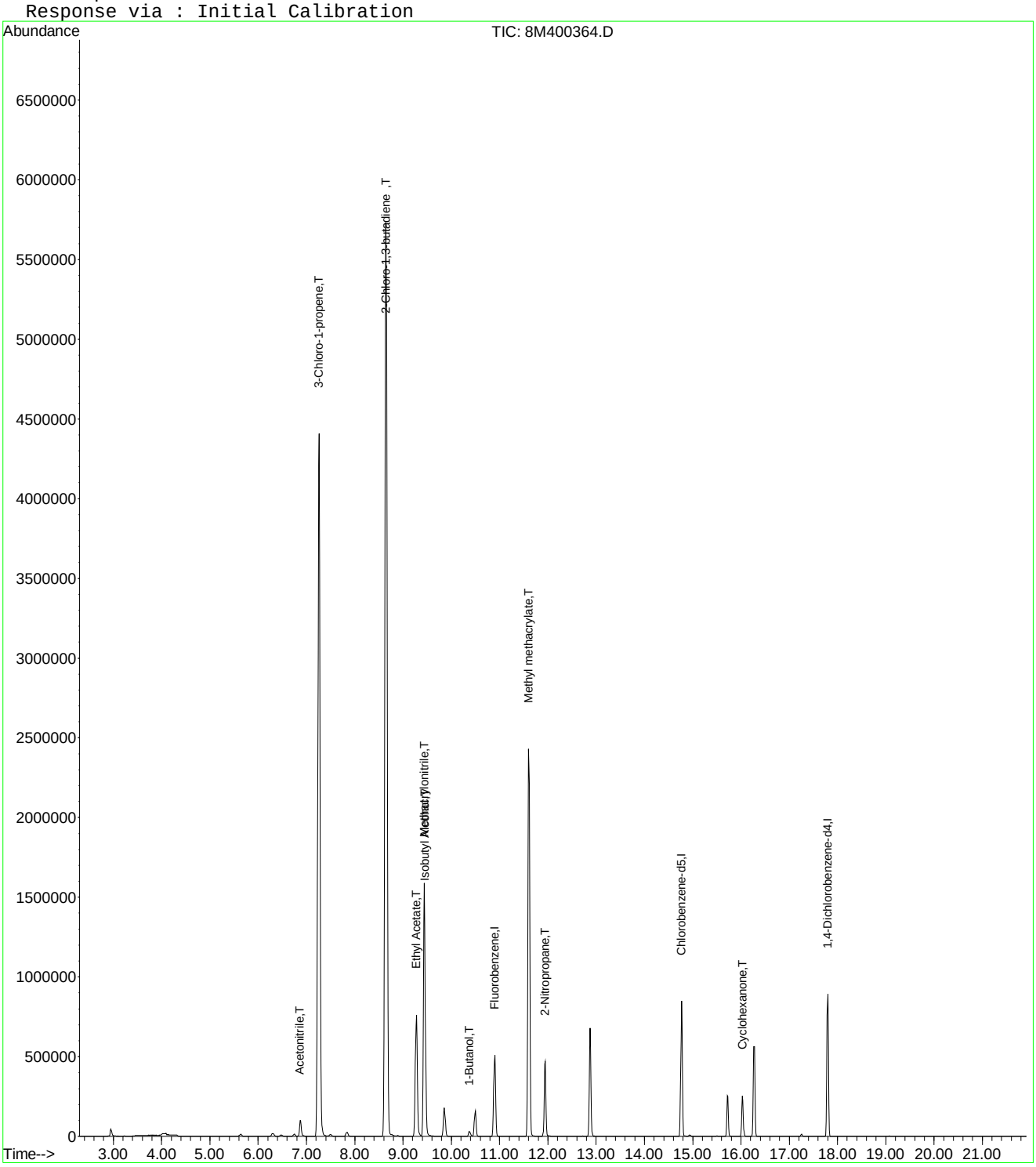

8M400364.D A9FOOWTR.M Fri Oct 03 12:32:47 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400365.D Vial: 9
Acq On : 2 Oct 2014 15:45 Operator: TMB
Sample : WG494714-09 500ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:47 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	611679	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	574048	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	266141	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	197468	511.7830 ug/L	95
3) 3-Chloro-1-propene	7.26	41	4817953	473.0307 ug/L	79
4) 2-Chloro-1,3-butadiene	8.64	53	5656851	469.3686 ug/L	68
5) Ethyl Acetate	9.27	43	1590123	520.3008 ug/L	90
6) Methacrylonitrile	9.44	67	990168	545.1581 ug/L #	61
7) Isobutyl Alcohol	9.45	43	130410	1070.3205 ug/L	98
8) 1-Butanol	10.38	56	36529	499.2614 ug/L	87
9) Methyl methacrylate	11.61	41	1840524	535.6626 ug/L	68
10) 2-Nitropropane	11.94	43	590003	573.8046 ug/L	98
13) Cyclohexanone	16.04	55	203273	484.0894 ug/L	84

(#) = qualifier out of range (m) = manual integration
8M400365.D A9FOOWTR.M Fri Oct 03 12:32:47 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400365.D Vial: 9
Acq On : 2 Oct 2014 15:45 Operator: TMB
Sample : WG494714-09 500ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

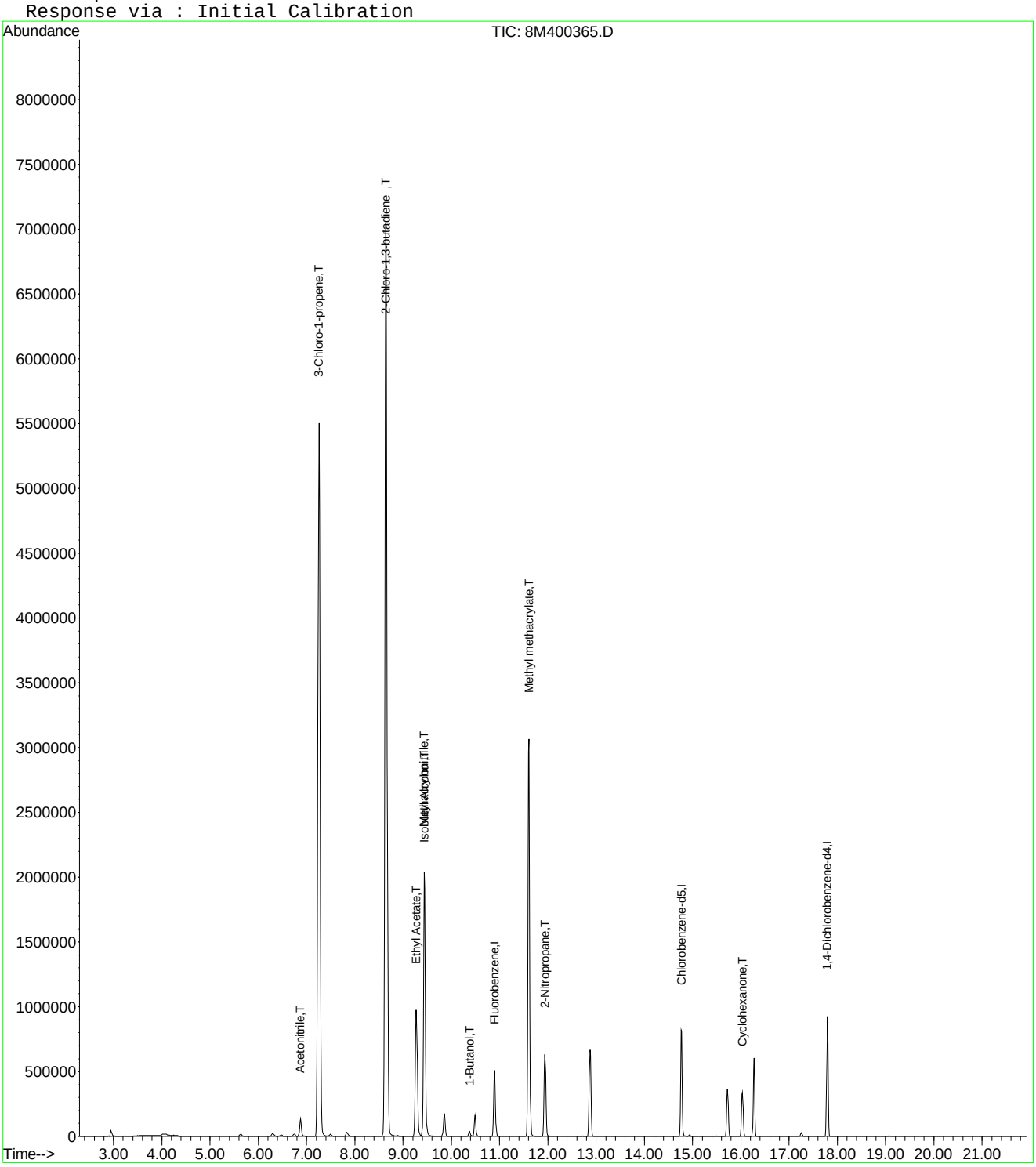

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400367.D Vial: 11
Acq On : 2 Oct 2014 16:47 Operator: TMB
Sample : WG494714-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66677 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:48 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	548066	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	508831	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	240116	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	36847	106.5815 ug/L	98
3) 3-Chloro-1-propene	7.26	41	1001386	109.7284 ug/L	90
4) 2-Chloro-1,3-butadiene	8.64	53	982184	90.9542 ug/L	89
5) Ethyl Acetate	9.27	43	328991	120.1430 ug/L	94
6) Methacrylonitrile	9.44	67	174278	107.0895 ug/L #	64
7) Isobutyl Alcohol	9.45	43	21185	194.0538 ug/L	99
8) 1-Butanol	10.39	56	5303	100.0865 ug/L	77
9) Methyl methacrylate	11.61	41	317777	103.2198 ug/L	73
10) 2-Nitropropane	11.94	43	95761	103.9416 ug/L	99
13) Cyclohexanone	16.03	55	11614	30.6562 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M400367.D A9FOOWTR.M Fri Oct 03 12:32:49 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400367.D Vial: 11
Acq On : 2 Oct 2014 16:47 Operator: TMB
Sample : WG494714-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66677 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

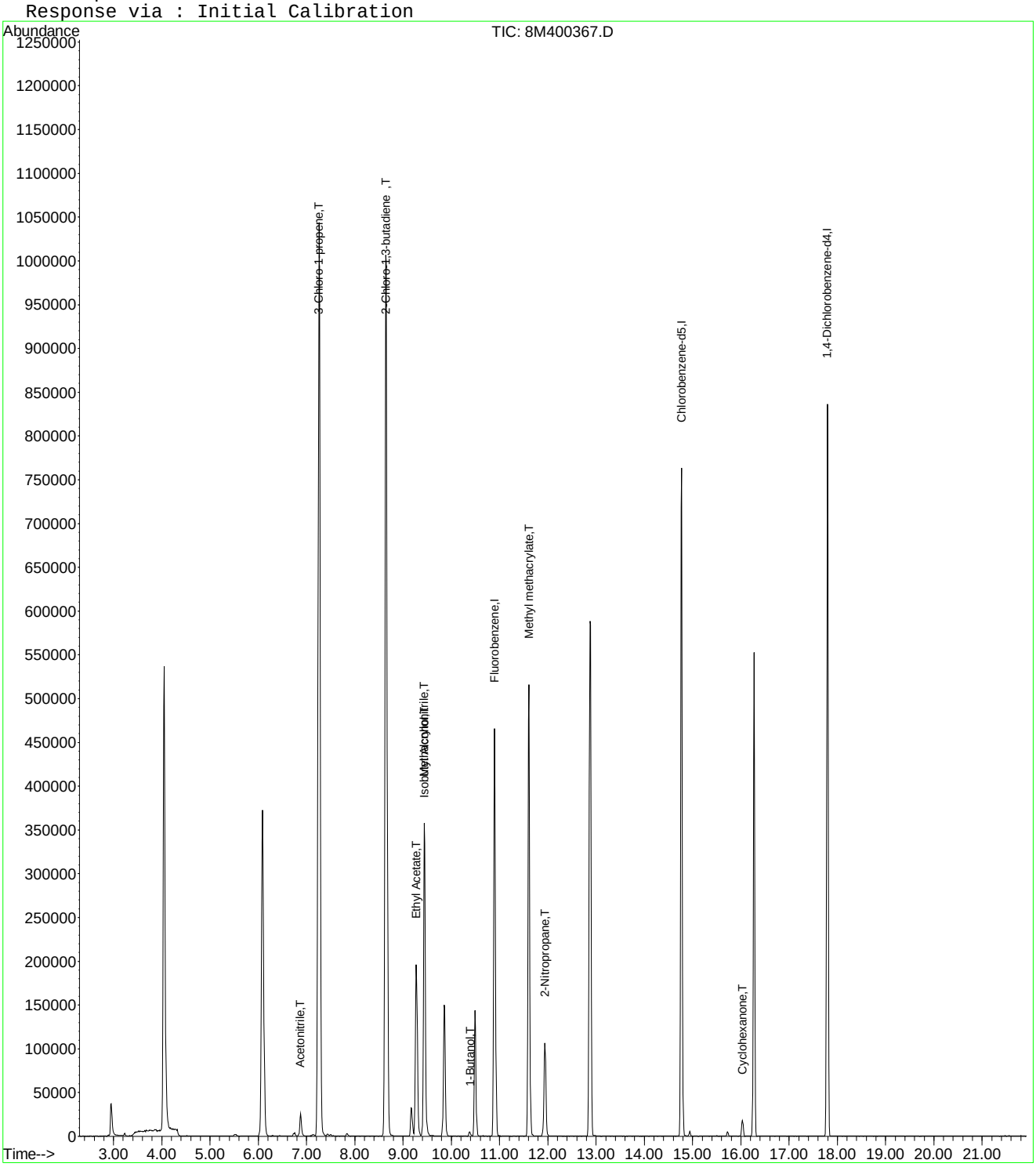

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\100214\8M400367.D Vial: 11
Acq On : 2 Oct 2014 16:47 Operator: TMB
Sample : WG494714-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66677 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	92	-0.03
2	T	Acetonitrile	100.0000	106.5815	-6.6	96	-0.02
3	T	3-Chloro-1-propene	100.0000	109.7284	-9.7	96	-0.03
4	T	2-Chloro-1,3-butadiene	100.0000	90.9542	9.0	79	-0.03
5	T	Ethyl Acetate	100.0000	120.1430	-20.1	104	-0.02
6	T	Methacrylonitrile	100.0000	107.0895	-7.1	95	-0.03
7	T	Isobutyl Alcohol	200.0000	194.0538	3.0	91	-0.02
8	T	1-Butanol	100.0000	100.0865	-0.1	97	0.00
9	T	Methyl methacrylate	100.0000	103.2198	-3.2	90	-0.02
10	T	2-Nitropropane	100.0000	103.9416	-3.9	93	-0.03
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	97	-0.03
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	96	-0.04
13	T	Cyclohexanone	100.0000	30.6562	69.3	27	-0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M400367.D A9FOOWTR.M Fri Oct 03 12:33:23 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406479.D Vial: 3
Acq On : 30 Jul 2015 15:09 Operator: TMB
Sample : WG533051-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:04 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	855570	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	610993	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	330138	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	3287	0.4360 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.76%#	
43) 1,2-Dichloroethane-d4	10.32	65	3577	0.4771 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	1.92%#	
58) Toluene-d8	12.69	98	15700	0.5327 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.12%#	
80) p-Bromofluorobenzene	16.08	95	6489	0.5683 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	11451	0.8764 ug/L	94
3) Chloromethane	3.62	50	16976	1.1637 ug/L	91
4) Vinyl Chloride	3.86	62	9759	0.9097 ug/L	85
5) 1,3-Butadiene	3.91	54	9164	0.9744 ug/L #	73
6) Bromomethane	4.74	94	7543	1.0556 ug/L	92
7) Chloroethane	4.90	64	6509	0.9744 ug/L	95
8) Trichlorofluoromethane	5.40	101	13188	0.9507 ug/L	98
9) Diethyl ether	5.91	59	27288	5.1969 ug/L	93
10) Isoprene	5.95	67	10349	0.9532 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	7136	0.9010 ug/L	81
13) Acetone	6.24	43	1885	1.7472 ug/L #	48
14) 1,1-Dichloroethene	6.47	61	12577	0.9360 ug/L	90
15) Tert-Butyl Alcohol	6.61	59	3097	10.9286 ug/L #	58
16) Dimethyl Sulfide	6.73	62	8416	0.9976 ug/L	99
17) Iodomethane	6.98	142	3742	1.3194 ug/L	77
18) Methyl acetate	6.99	43	4174	0.9970 ug/L #	80
19) Methylene Chloride	7.27	84	9077	1.0605 ug/L	93
20) Carbon Disulfide	7.31	76	27875	1.0157 ug/L	100
21) Acrylonitrile	7.44	53	4457	2.4861 ug/L	100
22) Methyl Tert Butyl Ether	7.47	73	14050	0.9295 ug/L	94
23) trans-1,2-Dichloroethene	7.70	61	11341	0.8999 ug/L	93
24) n-Hexane	7.79	57	12352	0.9067 ug/L	90
25) Diisopropyl ether	8.14	45	163476	5.3419 ug/L	96
26) Vinyl Acetate	8.30	43	7858	1.0046 ug/L #	87
27) 1,1-Dichloroethane	8.33	63	16892	0.9994 ug/L	97
28) Ethyl-Tert-Butyl ether	8.72	59	118161	5.1752 ug/L	99
29) 2-Butanone	8.90	43	1905	1.0428 ug/L #	57
30) Propionitrile	9.00	54	2543	4.3767 ug/L #	56
31) 2,2-Dichloropropane	9.12	77	13296	1.0208 ug/L	94
32) cis-1,2-Dichloroethene	9.18	96	8705	0.9598 ug/L	91
33) Chloroform	9.39	83	14935	0.9791 ug/L	95
34) 1-Bromopropane	9.51	122	1278	0.7928 ug/L	88
35) Bromochloromethane	9.61	130	4797	1.0268 ug/L	98
36) Tetrahydrofuran	9.65	42	6338	5.0444 ug/L	96
38) 1,1,1-Trichloroethane	9.90	97	14299	1.0163 ug/L	92
39) Cyclohexane	9.95	56	15187	0.9254 ug/L	97
40) 1,1-Dichloropropene	10.11	75	11610	0.9638 ug/L	99
41) Tert-Amyl-Methyl ether	10.22	73	90014	5.2666 ug/L	98
42) Carbon Tetrachloride	10.26	117	11478	0.9213 ug/L	92
45) 1,2-Dichloroethane	10.44	62	10157	0.9942 ug/L	91

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406479.D Vial: 3
Acq On : 30 Jul 2015 15:09 Operator: TMB
Sample : WG533051-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:04 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	10.46	78	35799	1.0631 ug/L		95
47)	Trichloroethene	11.23	130	10735	1.1169 ug/L		94
48)	Methylcyclohexane	11.29	83	12274	0.8806 ug/L		93
49)	1,2-Dichloropropane	11.42	63	8833	0.9468 ug/L		98
50)	Bromodichloromethane	11.73	83	12231	1.0564 ug/L		91
52)	Dibromomethane	11.82	93	4139	0.9699 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.02	63	3341	0.8574 ug/L	#	81
54)	4-Methyl-2-Pentanone	12.04	58	1468	0.8486 ug/L	#	64
55)	cis-1,3-Dichloropropene	12.36	75	12247	0.9610 ug/L		98
56)	Dimethyl Disulfide	12.62	79	4052	0.5869 ug/L		66
59)	Toluene	12.79	91	38254	1.0714 ug/L		97
60)	Ethyl Methacrylate	12.88	69	6131	0.8997 ug/L		95
62)	trans-1,3-Dichloropropene	12.96	75	9175	0.8687 ug/L		92
63)	1,1,2-Trichloroethane	13.17	97	5099	0.9113 ug/L		94
64)	2-Hexanone	13.12	58	1248	0.7895 ug/L	#	83
65)	1,3-Dichloropropane	13.48	76	9612	0.9870 ug/L		98
66)	Tetrachloroethene	13.61	164	7876	1.0462 ug/L		87
67)	Dibromochloromethane	13.87	129	6256	0.8487 ug/L		93
68)	1,2-Dibromoethane	14.12	107	5204	0.9565 ug/L		90
69)	1-Chlorohexane	14.22	91	11819	0.9366 ug/L		96
70)	Chlorobenzene	14.63	112	23245	1.0168 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.65	131	6924	0.8525 ug/L		95
72)	Ethylbenzene	14.66	106	13644	1.0573 ug/L		99
73)	m-,p-Xylene	14.74	106	32527	2.1330 ug/L		100
74)	o-Xylene	15.31	106	13412	0.8937 ug/L		80
75)	Styrene	15.34	104	24649	1.0056 ug/L		98
76)	Bromoform	15.83	173	3759	0.8482 ug/L		93
77)	Isopropylbenzene	15.74	105	38730	1.0309 ug/L		96
79)	1,1,2,2-Tetrachloroethane	15.95	83	6103	1.0174 ug/L	#	96
81)	1,2,3-Trichloropropane	16.14	110	1310	0.7780 ug/L	#	17
82)	trans-1,4-Dichloro-2-Buten	16.19	53	1214	1.3077 ug/L	#	1
83)	n-Propylbenzene	16.24	91	49968	1.0280 ug/L		96
84)	Bromobenzene	16.36	156	9745	0.9898 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	32520	1.0134 ug/L		98
86)	2-Chlorotoluene	16.51	91	32697	1.1013 ug/L		96
87)	4-Chlorotoluene	16.56	91	28365	1.0025 ug/L		99
88)	a-Methylstyrene	16.83	118	15462	0.8872 ug/L		100
89)	tert-Butylbenzene	16.89	134	6892	0.9913 ug/L		98
90)	1,2,4-Trimethylbenzene	16.95	105	32767	1.0078 ug/L		95
91)	sec-Butylbenzene	17.16	105	42903	1.0835 ug/L		100
92)	p-Isopropyltoluene	17.32	119	35830	1.0523 ug/L		100
93)	1,3-Dichlorobenzene	17.51	146	19432	1.0065 ug/L		95
94)	1,4-Dichlorobenzene	17.64	146	19007	0.9550 ug/L		85
95)	n-Butylbenzene	17.84	91	33094	1.0079 ug/L		98
96)	1,2-Dichlorobenzene	18.13	146	17388	1.0201 ug/L		93
97)	1,2-Dibromo-3-Chloropropan	19.12	75	277	0.2638 ug/L	#	1
98)	1,2,4-Trichlorobenzene	20.27	180	12417	0.9466 ug/L		95
99)	Hexachlorobutadiene	20.41	225	6827	1.0228 ug/L		89
100)	Naphthalene	20.64	128	16604	0.9756 ug/L		97
101)	1,2,3-Trichlorobenzene	20.95	180	9728	0.8594 ug/L		97

(#) = qualifier out of range (m) = manual integration
8M406479.D 8260WT.M Fri Jul 31 14:02:04 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406479.D Vial: 3
Acq On : 30 Jul 2015 15:09 Operator: TMB
Sample : WG533051-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

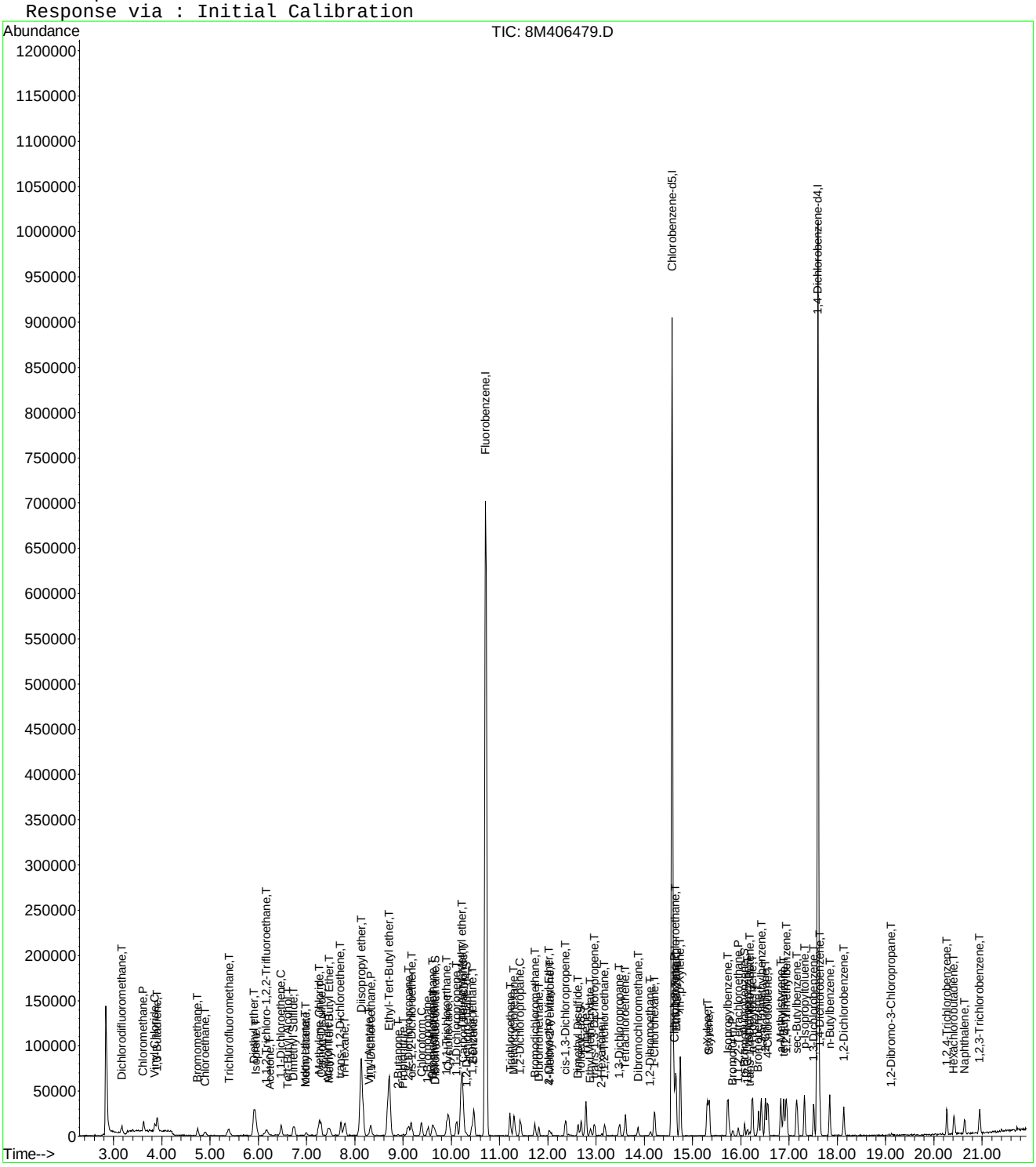

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\073015\8M406479.D Vial: 3
Acq On : 30 Jul 2015 15:09 Operator: TMB
Sample : WG533051-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.8764	12.4	100	0.00
3	P	Chloromethane	1.0000	1.1637	-16.4	100	0.00
4	C	Vinyl Chloride	1.0000	0.9097	9.0	100	0.01
5	T	1,3-Butadiene	1.0000	0.9744	2.6	100	0.02
6	T	Bromomethane	1.0000	1.0556	-5.6	100	0.00
7	T	Chloroethane	1.0000	0.9744	2.6	100	0.00
8	T	Trichlorofluoromethane	1.0000	0.9507	4.9	100	0.00
9	T	Diethyl ether	5.0000	5.1970	-3.9	100	0.00
10	T	Isoprene	1.0000	0.9532	4.7	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.15#
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	0.9010	9.9	100	0.00
13	T	Acetone	-1.0000	1.7472	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	0.9360	6.4	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	10.9286	0.0	100	0.02
16	T	Dimethyl Sulfide	1.0000	0.9976	0.2	100	-0.01
17	T	Iodomethane	1.0000	1.3194	-31.9#	100	-0.01
18	T	Methyl acetate	-1.0000	0.9970	0.0	100	-0.02
19	T	Methylene Chloride	1.0000	1.0605	-6.0	100	0.00
20	T	Carbon Disulfide	1.0000	1.0157	-1.6	100	0.00
21	T	Acrylonitrile	2.5000	2.4861	0.6	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9295	7.0	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	0.8999	10.0	100	-0.01
24	T	n-Hexane	-1.0000	0.9067	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	5.3419	-6.8	100	0.00
26	T	Vinyl Acetate	1.0000	1.0046	-0.5	100	0.00
27	P	1,1-Dichloroethane	1.0000	0.9994	0.1	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	5.1752	-3.5	100	0.00
29	T	2-Butanone	-1.0000	1.0428	0.0	100	0.00
30	T	Propionitrile	5.0000	4.3767	12.5	100	0.00
31	T	2,2-Dichloropropane	1.0000	1.0208	-2.1	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	0.9598	4.0	100	0.00
33	C	Chloroform	1.0000	0.9791	2.1	100	0.00
34		1-Bromopropane	1.0000	0.7928	20.7	100	-0.01
35	T	Bromochloromethane	1.0000	1.0268	-2.7	100	0.00
36	T	Tetrahydrofuran	5.0000	5.0444	-0.9	100	0.00
37	S	Dibromofluoromethane	0.5000	0.4360	12.8	100	0.00
38	T	1,1,1-Trichloroethane	1.0000	1.0163	-1.6	100	-0.01
39	T	Cyclohexane	1.0000	0.9254	7.5	100	0.00
40	T	1,1-Dichloropropene	1.0000	0.9638	3.6	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	5.2666	-5.3	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.9213	7.9	100	0.00
43	S	1,2-Dichloroethane-d4	0.5000	0.4771	4.6	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	1.0000	0.9942	0.6	100	0.00
46	T	Benzene	1.0000	1.0631	-6.3	100	-0.01
47	T	Trichloroethene	1.0000	1.1169	-11.7	100	0.00
48	T	Methylcyclohexane	-1.0000	0.8806	0.0	100	-0.01
49	C	1,2-Dichloropropane	1.0000	0.9468	5.3	100	-0.01
50	T	Bromodichloromethane	1.0000	1.0564	-5.6	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	1.0000	0.9699	3.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.8574	0.0	100	-0.01
54	T	4-Methyl-2-Pentanone	-1.0000	0.8486	0.0	100	-0.02

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\073015\8M406479.D Vial: 3
Acq On : 30 Jul 2015 15:09 Operator: TMB
Sample : WG533051-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9610	3.9	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.5869	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	0.5000	0.5327	-6.5	100	0.00
59	C	Toluene	1.0000	1.0714	-7.1	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.8996	10.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	1.0000	0.8687	13.1	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.9113	8.9	100	-0.01
64	T	2-Hexanone	-1.0000	0.7895	0.0	100	0.00
65	T	1,3-Dichloropropane	1.0000	0.9870	1.3	100	0.00
66	T	Tetrachloroethene	1.0000	1.0462	-4.6	100	0.00
67	T	Dibromochloromethane	1.0000	0.8487	15.1	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.9565	4.3	100	0.00
69	T	1-Chlorohexane	1.0000	0.9366	6.3	100	0.00
70	P	Chlorobenzene	1.0000	1.0168	-1.7	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.8526	14.7	100	-0.01
72	C	Ethylbenzene	1.0000	1.0573	-5.7	100	0.00
73	T	m-,p-Xylene	2.0000	2.1330	-6.7	100	0.00
74	T	o-Xylene	1.0000	0.8937	10.6	100	0.00
75	T	Styrene	1.0000	1.0056	-0.6	100	0.00
76	P	Bromoform	1.0000	0.8482	15.2	100	-0.01
77	T	Isopropylbenzene	1.0000	1.0309	-3.1	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	1.0174	-1.7	100	0.00
80	S	p-Bromofluorobenzene	0.5000	0.5683	-13.7	100	0.00
81	T	1,2,3-Trichloropropane	1.0000	0.7780	22.2	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	1.0000	1.3077	-30.8#	100	0.00
83	T	n-Propylbenzene	1.0000	1.0280	-2.8	100	0.00
84	T	Bromobenzene	1.0000	0.9898	1.0	100	-0.01
85	T	1,3,5-Trimethylbenzene	1.0000	1.0134	-1.3	100	0.00
86	T	2-Chlorotoluene	1.0000	1.1013	-10.1	100	0.00
87	T	4-Chlorotoluene	1.0000	1.0025	-0.3	100	0.00
88	T	a-Methylstyrene	-1.0000	0.8872	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	0.9913	0.9	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	1.0078	-0.8	100	0.00
91	T	sec-Butylbenzene	1.0000	1.0836	-8.4	100	0.00
92	T	p-Isopropyltoluene	1.0000	1.0523	-5.2	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0065	-0.6	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	0.9550	4.5	100	0.00
95	T	n-Butylbenzene	1.0000	1.0079	-0.8	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0201	-2.0	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.2638	0.0	100	-0.01
98	T	1,2,4-Trichlorobenzene	1.0000	0.9466	5.3	100	0.00
99	T	Hexachlorobutadiene	1.0000	1.0228	-2.3	100	-0.02
100	T	Naphthalene	1.0000	0.9756	2.4	100	-0.01
101	T	1,2,3-Trichlorobenzene	1.0000	0.8594	14.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M406479.D 8260WT.M Fri Jul 31 14:02:50 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406480.D Vial: 4
Acq On : 30 Jul 2015 15:37 Operator: TMB
Sample : WG533051-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:05 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	842185	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	601155	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	323926	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	7165	0.9655 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.88%#	
43) 1,2-Dichloroethane-d4	10.31	65	7402	1.0030 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	4.00%#	
58) Toluene-d8	12.69	98	29887	1.0306 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.12%#	
80) p-Bromofluorobenzene	16.08	95	11241	1.0033 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	22708	1.7655 ug/L	98
3) Chloromethane	3.62	50	31078	2.1643 ug/L	88
4) Vinyl Chloride	3.85	62	21014	1.9899 ug/L	94
5) 1,3-Butadiene	3.90	54	18707	2.0207 ug/L	81
6) Bromomethane	4.73	94	13961	1.9848 ug/L	98
7) Chloroethane	4.91	64	12745	1.9383 ug/L	96
8) Trichlorofluoromethane	5.39	101	25572	1.8727 ug/L	98
9) Diethyl ether	5.91	59	126603	24.4945 ug/L	97
10) Isoprene	5.94	67	21343	1.9970 ug/L	97
11) Acrolein	6.15	56	3415	11.0191 ug/L	84
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	14034	1.8000 ug/L	89
13) Acetone	6.24	43	2345	2.2081 ug/L	82
14) 1,1-Dichloroethene	6.48	61	26690	2.0178 ug/L	99
15) Tert-Butyl Alcohol	6.56	59	14997	53.7622 ug/L #	75
16) Dimethyl Sulfide	6.75	62	16424	1.9777 ug/L	98
17) Iodomethane	7.00	142	8811	1.9392 ug/L	99
18) Methyl acetate	7.00	43	7612	1.8471 ug/L #	79
19) Methylene Chloride	7.27	84	17419	2.0674 ug/L	97
20) Carbon Disulfide	7.30	76	57347	2.1228 ug/L	99
21) Acrylonitrile	7.44	53	19063	10.8024 ug/L	96
22) Methyl Tert Butyl Ether	7.47	73	31185	2.0960 ug/L	98
23) trans-1,2-Dichloroethene	7.71	61	24260	1.9556 ug/L	92
24) n-Hexane	7.79	57	27012	2.0143 ug/L	98
25) Diisopropyl ether	8.14	45	757167	25.1353 ug/L	97
26) Vinyl Acetate	8.31	43	15328	1.9907 ug/L #	86
27) 1,1-Dichloroethane	8.32	63	34218	2.0566 ug/L	97
28) Ethyl-Tert-Butyl ether	8.72	59	553606	24.6321 ug/L	99
29) 2-Butanone	8.90	43	3250	1.8074 ug/L #	57
30) Propionitrile	8.99	54	14005	24.4866 ug/L	91
31) 2,2-Dichloropropane	9.11	77	26994	2.1053 ug/L	90
32) cis-1,2-Dichloroethene	9.17	96	18634	2.0872 ug/L	85
33) Chloroform	9.38	83	30476	2.0297 ug/L	98
34) 1-Bromopropane	9.51	122	3425	2.1584 ug/L	99
35) Bromochloromethane	9.63	130	9189	1.9982 ug/L	94
36) Tetrahydrofuran	9.65	42	30961	25.0332 ug/L	96
38) 1,1,1-Trichloroethane	9.91	97	27246	1.9672 ug/L	98
39) Cyclohexane	9.95	56	30760	1.9042 ug/L	97
40) 1,1-Dichloropropene	10.10	75	23767	2.0043 ug/L	95
41) Tert-Amyl-Methyl ether	10.21	73	409936	24.3659 ug/L	99
42) Carbon Tetrachloride	10.26	117	24059	1.9619 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M406480.D 8260WT.M Fri Jul 31 14:02:05 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406480.D Vial: 4
Acq On : 30 Jul 2015 15:37 Operator: TMB
Sample : WG533051-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:05 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	18911	1.8804 ug/L		96
46)	Benzene	10.47	78	67444	2.0346 ug/L		96
47)	Trichloroethene	11.22	130	18008	1.9033 ug/L		95
48)	Methylcyclohexane	11.30	83	26755	1.9501 ug/L		96
49)	1,2-Dichloropropane	11.43	63	18045	1.9650 ug/L		100
50)	Bromodichloromethane	11.73	83	21770	1.9102 ug/L		95
51)	1,4-Dioxane	11.71	88	1562	48.3679 ug/L	#	29
52)	Dibromomethane	11.82	93	8550	2.0353 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.02	63	6526	1.7013 ug/L		99
54)	4-Methyl-2-Pentanone	12.07	58	2541	1.4923 ug/L		94
55)	cis-1,3-Dichloropropene	12.37	75	24560	1.9578 ug/L		98
56)	Dimethyl Disulfide	12.63	79	11521	1.6952 ug/L		95
59)	Toluene	12.79	91	73403	2.0894 ug/L		95
60)	Ethyl Methacrylate	12.88	69	12053	1.7976 ug/L		99
62)	trans-1,3-Dichloropropene	12.97	75	19611	1.8872 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	10698	1.9432 ug/L		90
64)	2-Hexanone	13.12	58	2502	1.6087 ug/L	#	87
65)	1,3-Dichloropropane	13.48	76	19951	2.0822 ug/L		95
66)	Tetrachloroethene	13.61	164	13782	1.8607 ug/L		95
67)	Dibromochloromethane	13.86	129	14706	2.0278 ug/L		95
68)	1,2-Dibromoethane	14.12	107	10788	2.0153 ug/L		90
69)	1-Chlorohexane	14.22	91	23854	1.9213 ug/L		95
70)	Chlorobenzene	14.63	112	46564	2.0701 ug/L		86
71)	1,1,1,2-Tetrachloroethane	14.66	131	15629	1.9559 ug/L		91
72)	Ethylbenzene	14.66	106	24492	1.9290 ug/L		89
73)	m-,p-Xylene	14.74	106	63849	4.2555 ug/L		98
74)	o-Xylene	15.31	106	30844	2.0889 ug/L		94
75)	Styrene	15.34	104	50259	2.0841 ug/L		95
76)	Bromoform	15.84	173	8154	1.8700 ug/L		90
77)	Isopropylbenzene	15.74	105	79139	2.1409 ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.94	83	11517	1.9568 ug/L		89
81)	1,2,3-Trichloropropane	16.14	110	3439	2.0817 ug/L		56
82)	trans-1,4-Dichloro-2-Buten	16.19	53	2913	2.0454 ug/L	#	7
83)	n-Propylbenzene	16.24	91	101745	2.1333 ug/L		99
84)	Bromobenzene	16.37	156	20327	2.1042 ug/L		88
85)	1,3,5-Trimethylbenzene	16.43	105	67532	2.1448 ug/L		99
86)	2-Chlorotoluene	16.51	91	62208	2.1354 ug/L		99
87)	4-Chlorotoluene	16.55	91	59334	2.1373 ug/L		98
88)	a-Methylstyrene	16.83	118	34116	1.9952 ug/L		98
89)	tert-Butylbenzene	16.89	134	13854	2.0309 ug/L		94
90)	1,2,4-Trimethylbenzene	16.95	105	70483	2.2094 ug/L		98
91)	sec-Butylbenzene	17.16	105	84869	2.1845 ug/L		100
92)	p-Isopropyltoluene	17.32	119	72879	2.1814 ug/L		98
93)	1,3-Dichlorobenzene	17.51	146	40091	2.1164 ug/L		100
94)	1,4-Dichlorobenzene	17.64	146	40876	2.0933 ug/L		93
95)	n-Butylbenzene	17.85	91	69304	2.1512 ug/L		99
96)	1,2-Dichlorobenzene	18.13	146	33974	2.0313 ug/L		95
97)	1,2-Dibromo-3-Chloropropan	19.14	75	1986	1.9274 ug/L		90
98)	1,2,4-Trichlorobenzene	20.28	180	25822	2.0063 ug/L		95
99)	Hexachlorobutadiene	20.42	225	12690	1.9376 ug/L		97
100)	Naphthalene	20.64	128	31513	1.8871 ug/L		98
101)	1,2,3-Trichlorobenzene	20.95	180	21856	1.9678 ug/L		93

(#) = qualifier out of range (m) = manual integration
8M406480.D 8260WT.M Fri Jul 31 14:02:05 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406480.D Vial: 4
Acq On : 30 Jul 2015 15:37 Operator: TMB
Sample : WG533051-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

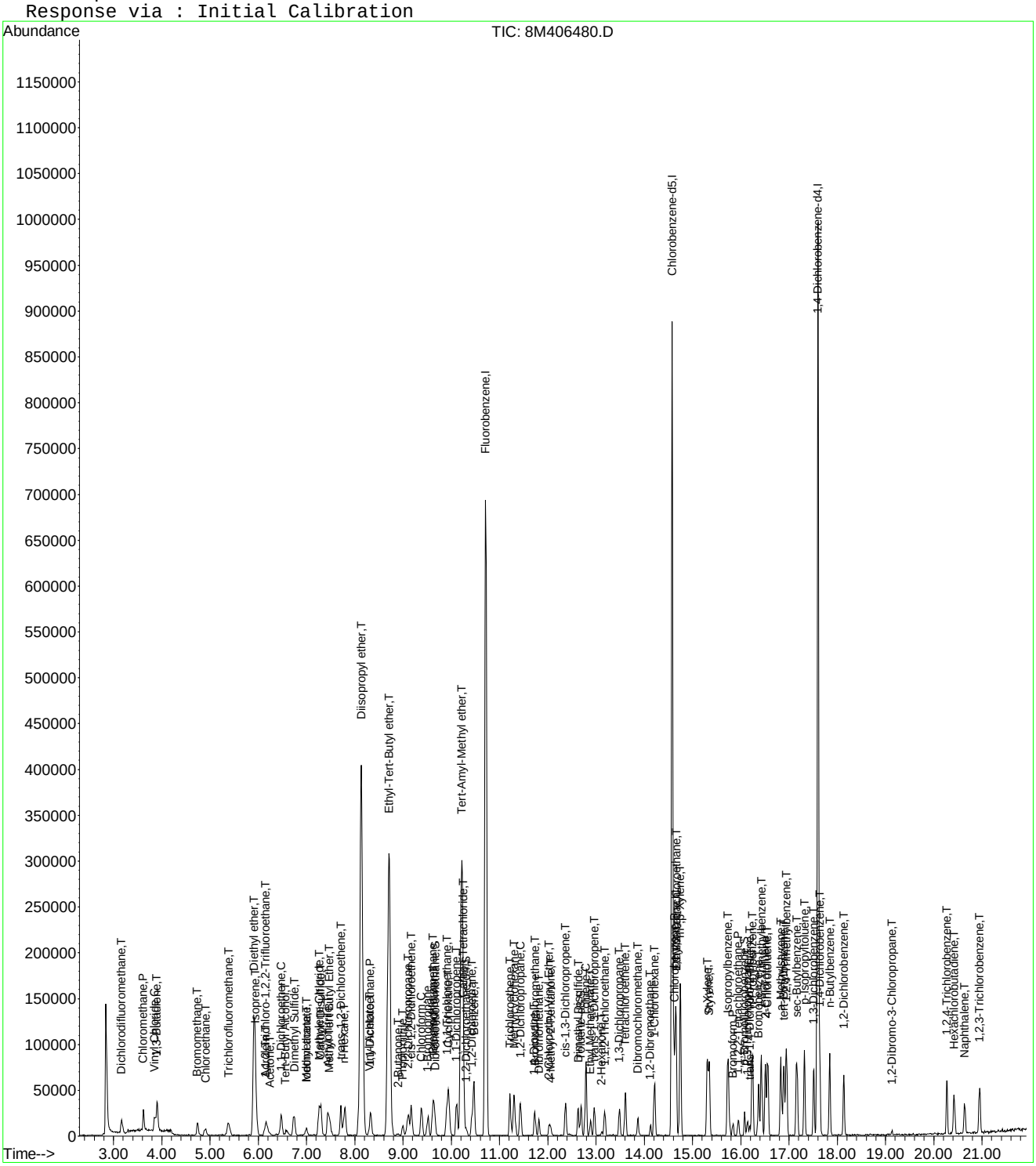

8M406480.D 8260WT.M Fri Jul 31 14:02:06 2015 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\073015\8M406480.D Vial: 4
Acq On : 30 Jul 2015 15:37 Operator: TMB
Sample : WG533051-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.7655	11.7	100	0.00
3	P	Chloromethane	2.0000	2.1643	-8.2	100	0.00
4	C	Vinyl Chloride	2.0000	1.9899	0.5	100	0.00
5	T	1,3-Butadiene	2.0000	2.0207	-1.0	100	0.01
6	T	Bromomethane	2.0000	1.9848	0.8	100	0.00
7	T	Chloroethane	2.0000	1.9383	3.1	100	0.01
8	T	Trichlorofluoromethane	2.0000	1.8727	6.4	100	0.00
9	T	Diethyl ether	25.0000	24.4945	2.0	100	0.00
10	T	Isoprene	2.0000	1.9970	0.1	100	-0.01
11	T	Acrolein	12.5000	11.0191	11.8	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.8000	10.0	100	-0.01
13	T	Acetone	-1.0000	2.2081	0.0	100	0.00
14	C	1,1-Dichloroethene	2.0000	2.0178	-0.9	100	0.01
15	T	Tert-Butyl Alcohol	50.0000	53.7622	-7.5	100	-0.02
16	T	Dimethyl Sulfide	2.0000	1.9777	1.1	100	0.01
17	T	Iodomethane	2.0000	1.9392	3.0	100	0.01
18	T	Methyl acetate	-1.0000	1.8471	0.0	100	0.00
19	T	Methylene Chloride	2.0000	2.0674	-3.4	100	0.01
20	T	Carbon Disulfide	2.0000	2.1228	-6.1	100	0.00
21	T	Acrylonitrile	12.5000	10.8024	13.6	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	2.0960	-4.8	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.9556	2.2	100	0.00
24	T	n-Hexane	-1.0000	2.0143	0.0	100	-0.01
25	T	Diisopropyl ether	25.0000	25.1353	-0.5	100	0.00
26	T	Vinyl Acetate	2.0000	1.9907	0.5	100	0.01
27	P	1,1-Dichloroethane	2.0000	2.0566	-2.8	100	-0.01
28	T	Ethyl-Tert-Butyl ether	25.0000	24.6321	1.5	100	0.01
29	T	2-Butanone	-1.0000	1.8074	0.0	100	0.01
30	T	Propionitrile	25.0000	24.4866	2.1	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1053	-5.3	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0873	-4.4	100	0.00
33	C	Chloroform	2.0000	2.0297	-1.5	100	0.00
34		1-Bromopropane	2.0000	2.1584	-7.9	100	-0.01
35	T	Bromochloromethane	2.0000	1.9982	0.1	100	0.01
36	T	Tetrahydrofuran	25.0000	25.0332	-0.1	100	0.01
37	S	Dibromofluoromethane	1.0000	0.9655	3.4	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.9672	1.6	100	0.00
39	T	Cyclohexane	2.0000	1.9042	4.8	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0043	-0.2	100	-0.01
41	T	Tert-Amyl-Methyl ether	25.0000	24.3659	2.5	100	0.00
42	T	Carbon Tetrachloride	2.0000	1.9619	1.9	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0031	-0.3	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	2.0000	1.8804	6.0	100	0.00
46	T	Benzene	2.0000	2.0346	-1.7	100	0.00
47	T	Trichloroethene	2.0000	1.9033	4.8	100	0.00
48	T	Methylcyclohexane	-1.0000	1.9501	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	1.9650	1.7	100	0.00
50	T	Bromodichloromethane	2.0000	1.9102	4.5	100	0.00
51	T	1,4-Dioxane	-1.0000	48.3679	0.0	100	0.00
52	T	Dibromomethane	2.0000	2.0353	-1.8	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	1.7013	0.0	100	-0.01
54	T	4-Methyl-2-Pentanone	-1.0000	1.4923	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\073015\8M406480.D Vial: 4
Acq On : 30 Jul 2015 15:37 Operator: TMB
Sample : WG533051-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.9578	2.1	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.6952	0.0	100	0.01
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	1.0306	-3.1	100	0.00
59	C	Toluene	2.0000	2.0894	-4.5	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.7976	10.1	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	2.0000	1.8872	5.6	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.9432	2.8	100	0.00
64	T	2-Hexanone	-1.0000	1.6087	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.0822	-4.1	100	0.00
66	T	Tetrachloroethene	2.0000	1.8607	7.0	100	0.00
67	T	Dibromochloromethane	2.0000	2.0278	-1.4	100	-0.01
68	T	1,2-Dibromoethane	2.0000	2.0153	-0.8	100	0.00
69	T	1-Chlorohexane	2.0000	1.9213	3.9	100	0.00
70	P	Chlorobenzene	2.0000	2.0701	-3.5	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.9559	2.2	100	0.00
72	C	Ethylbenzene	2.0000	1.9290	3.6	100	0.00
73	T	m-,p-Xylene	4.0000	4.2555	-6.4	100	0.00
74	T	o-Xylene	2.0000	2.0889	-4.4	100	0.00
75	T	Styrene	2.0000	2.0841	-4.2	100	0.00
76	P	Bromoform	2.0000	1.8700	6.5	100	0.00
77	T	Isopropylbenzene	2.0000	2.1409	-7.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	1.9568	2.2	100	0.00
80	S	p-Bromofluorobenzene	1.0000	1.0033	-0.3	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	2.0817	-4.1	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	2.0454	-2.3	100	0.00
83	T	n-Propylbenzene	2.0000	2.1334	-6.7	100	0.00
84	T	Bromobenzene	2.0000	2.1042	-5.2	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.1448	-7.2	100	0.00
86	T	2-Chlorotoluene	2.0000	2.1354	-6.8	100	0.00
87	T	4-Chlorotoluene	2.0000	2.1373	-6.9	100	-0.01
88	T	a-Methylstyrene	-1.0000	1.9952	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	2.0309	-1.5	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.2094	-10.5	100	0.00
91	T	sec-Butylbenzene	2.0000	2.1845	-9.2	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.1814	-9.1	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.1164	-5.8	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.0933	-4.7	100	0.00
95	T	n-Butylbenzene	2.0000	2.1512	-7.6	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0313	-1.6	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.9274	3.6	100	0.01
98	T	1,2,4-Trichlorobenzene	2.0000	2.0063	-0.3	100	0.00
99	T	Hexachlorobutadiene	2.0000	1.9376	3.1	100	-0.01
100	T	Naphthalene	2.0000	1.8871	5.6	100	-0.01
101	T	1,2,3-Trichlorobenzene	2.0000	1.9678	1.6	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M406480.D 8260WT.M Fri Jul 31 14:03:02 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406481.D Vial: 5
Acq On : 30 Jul 2015 16:06 Operator: TMB
Sample : WG533051-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:06 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	855387	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	612677	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	332830	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.68	111	18863	2.5026 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 10.00%#		
43) 1,2-Dichloroethane-d4	10.31	65	18410	2.4562 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 9.84%#		
58) Toluene-d8	12.68	98	73674	2.4927 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 9.96%#		
80) p-Bromofluorobenzene	16.08	95	27813	2.4159 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 9.68%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	60134	4.6031 ug/L	99
3) Chloromethane	3.62	50	77643	5.3236 ug/L	99
4) Vinyl Chloride	3.84	62	51255	4.7786 ug/L	94
5) 1,3-Butadiene	3.90	54	45203	4.8073 ug/L	83
6) Bromomethane	4.74	94	34945	4.8913 ug/L	99
7) Chloroethane	4.90	64	33390	4.9998 ug/L	98
8) Trichlorofluoromethane	5.39	101	67008	4.8314 ug/L	98
9) Diethyl ether	5.91	59	251096	47.8310 ug/L	99
10) Isoprene	5.95	67	53450	4.9240 ug/L	99
11) Acrolein	6.15	56	6016	23.2099 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	40879	5.1623 ug/L	94
13) Acetone	6.24	43	6548	6.0706 ug/L	97
14) 1,1-Dichloroethene	6.48	61	66355	4.9391 ug/L	96
15) Tert-Butyl Alcohol	6.58	59	27930	98.5799 ug/L	92
16) Dimethyl Sulfide	6.74	62	42375	5.0239 ug/L	91
17) Iodomethane	6.99	142	27526	4.1499 ug/L	98
18) Methyl acetate	7.00	43	21128	5.0477 ug/L #	89
19) Methylene Chloride	7.26	84	42199	4.9312 ug/L	97
20) Carbon Disulfide	7.30	76	137010	4.9935 ug/L	100
21) Acrylonitrile	7.44	53	40009	22.3219 ug/L	96
22) Methyl Tert Butyl Ether	7.47	73	70276	4.6504 ug/L	98
23) trans-1,2-Dichloroethene	7.71	61	64291	5.1026 ug/L	99
24) n-Hexane	7.79	57	65836	4.8337 ug/L	97
25) Diisopropyl ether	8.14	45	1522211	49.7523 ug/L	98
26) Vinyl Acetate	8.30	43	41769	5.3409 ug/L	96
27) 1,1-Dichloroethane	8.33	63	83162	4.9212 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1110375	48.6424 ug/L	99
29) 2-Butanone	8.90	43	8186	4.4822 ug/L	98
30) Propionitrile	8.99	54	27074	46.6060 ug/L	98
31) 2,2-Dichloropropane	9.11	77	64849	4.9797 ug/L	99
32) cis-1,2-Dichloroethene	9.18	96	45762	5.0468 ug/L	93
33) Chloroform	9.38	83	77721	5.0962 ug/L	100
34) 1-Bromopropane	9.52	122	8030	4.9822 ug/L	96
35) Bromochloromethane	9.61	130	22966	4.9171 ug/L	95
36) Tetrahydrofuran	9.63	42	59578	47.4278 ug/L	96
38) 1,1,1-Trichloroethane	9.91	97	70007	4.9767 ug/L	97
39) Cyclohexane	9.95	56	81916	4.9927 ug/L	97
40) 1,1-Dichloropropene	10.11	75	60071	4.9876 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	830703	48.6134 ug/L	100
42) Carbon Tetrachloride	10.26	117	61930	4.9721 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M406481.D 8260WT.M Fri Jul 31 14:02:06 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406481.D Vial: 5
Acq On : 30 Jul 2015 16:06 Operator: TMB
Sample : WG533051-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:06 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	48928	4.7901 ug/L		98
46)	Benzene	10.47	78	173193	5.1442 ug/L		98
47)	Trichloroethene	11.22	130	46467	4.8355 ug/L		97
48)	Methylcyclohexane	11.30	83	67444	4.8399 ug/L		97
49)	1,2-Dichloropropane	11.43	63	47873	5.1327 ug/L		97
50)	Bromodichloromethane	11.73	83	56499	4.8809 ug/L		98
51)	1,4-Dioxane	11.73	88	3529	107.5902 ug/L	#	63
52)	Dibromomethane	11.82	93	19997	4.6868 ug/L		93
53)	2-Chloroethyl Vinyl Ether	12.03	63	17790	4.5663 ug/L		96
54)	4-Methyl-2-Pentanone	12.05	58	7369	4.2609 ug/L		92
55)	cis-1,3-Dichloropropene	12.36	75	61410	4.8198 ug/L		99
56)	Dimethyl Disulfide	12.63	79	29344	4.2511 ug/L		98
59)	Toluene	12.79	91	189851	5.3024 ug/L		99
60)	Ethyl Methacrylate	12.88	69	32117	4.6998 ug/L		99
62)	trans-1,3-Dichloropropene	12.96	75	52110	4.9202 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	28717	5.1180 ug/L		98
64)	2-Hexanone	13.12	58	6680	4.2143 ug/L	#	91
65)	1,3-Dichloropropane	13.49	76	48239	4.9397 ug/L		96
66)	Tetrachloroethene	13.61	164	37579	4.9780 ug/L		98
67)	Dibromochloromethane	13.87	129	34634	4.6858 ug/L		98
68)	1,2-Dibromoethane	14.12	107	27979	5.1285 ug/L		93
69)	1-Chlorohexane	14.22	91	62398	4.9313 ug/L		98
70)	Chlorobenzene	14.63	112	122630	5.3493 ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.66	131	41727	5.1237 ug/L		99
72)	Ethylbenzene	14.66	106	66582	5.1453 ug/L		100
73)	m-,p-Xylene	14.74	106	166752	10.9050 ug/L		96
74)	o-Xylene	15.31	106	76340	5.0729 ug/L		98
75)	Styrene	15.34	104	126606	5.1512 ug/L		98
76)	Bromoform	15.83	173	21576	4.8551 ug/L		96
77)	Isopropylbenzene	15.74	105	204868	5.4380 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.94	83	30972	5.1216 ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	9098	5.3598 ug/L		52
82)	trans-1,4-Dichloro-2-Buten	16.19	53	9344	4.6938 ug/L	#	51
83)	n-Propylbenzene	16.24	91	262533	5.3574 ug/L		99
84)	Bromobenzene	16.37	156	48547	4.8909 ug/L		97
85)	1,3,5-Trimethylbenzene	16.43	105	171622	5.3048 ug/L		97
86)	2-Chlorotoluene	16.51	91	158232	5.2863 ug/L		100
87)	4-Chlorotoluene	16.55	91	151910	5.3257 ug/L		97
88)	a-Methylstyrene	16.83	118	88491	5.0367 ug/L		98
89)	tert-Butylbenzene	16.89	134	35466	5.0600 ug/L		96
90)	1,2,4-Trimethylbenzene	16.94	105	173574	5.2953 ug/L		98
91)	sec-Butylbenzene	17.16	105	218704	5.4789 ug/L		99
92)	p-Isopropyltoluene	17.32	119	185799	5.4124 ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	98863	5.0792 ug/L		98
94)	1,4-Dichlorobenzene	17.64	146	100465	5.0072 ug/L		99
95)	n-Butylbenzene	17.84	91	180077	5.4401 ug/L		99
96)	1,2-Dichlorobenzene	18.13	146	87449	5.0887 ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.13	75	4483	4.2343 ug/L		71
98)	1,2,4-Trichlorobenzene	20.27	180	63290	4.7858 ug/L		98
99)	Hexachlorobutadiene	20.42	225	32926	4.8928 ug/L		97
100)	Naphthalene	20.65	128	80359	4.6834 ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	54533	4.7786 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M406481.D 8260WT.M Fri Jul 31 14:02:06 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406481.D Vial: 5
Acq On : 30 Jul 2015 16:06 Operator: TMB
Sample : WG533051-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

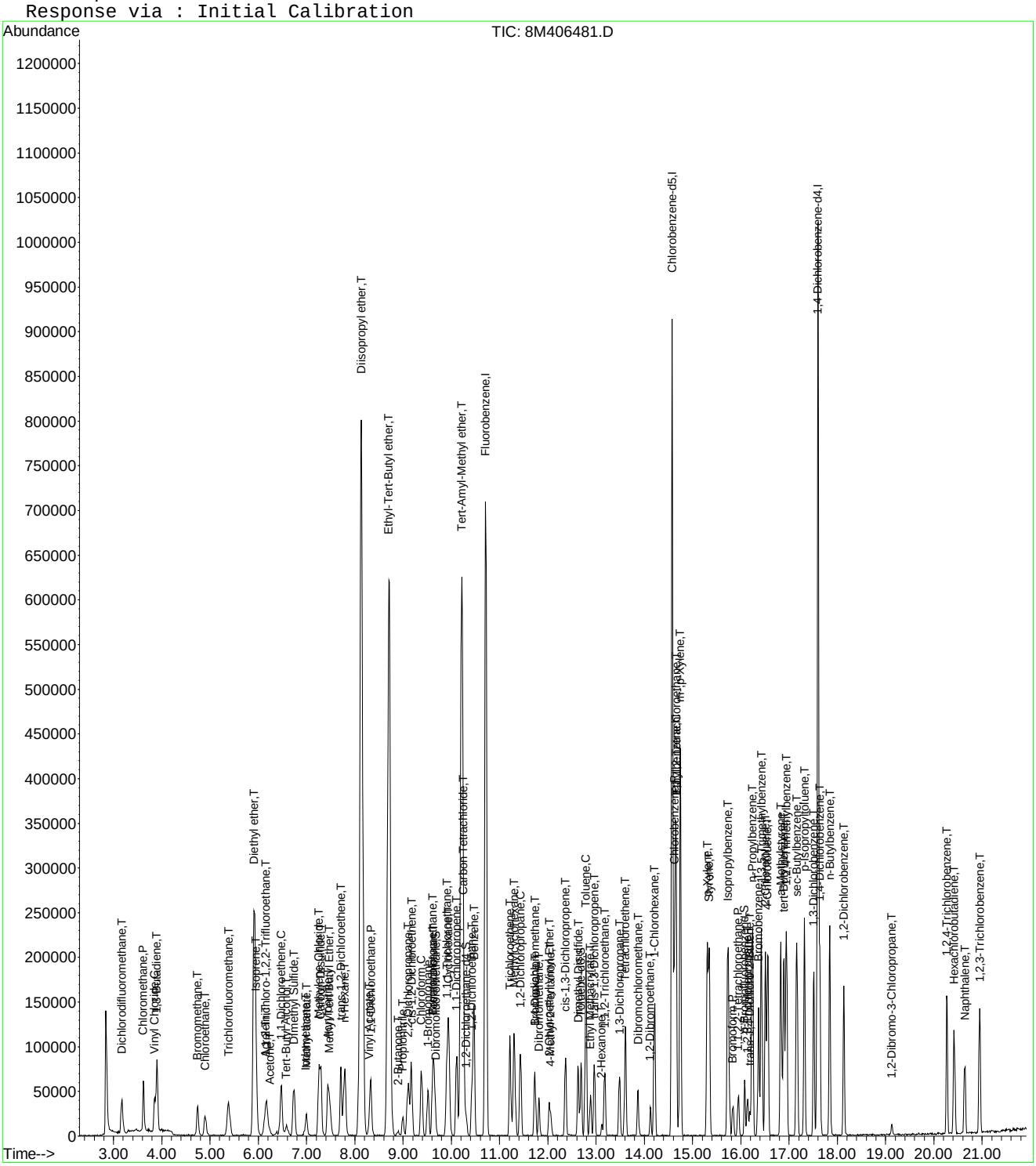

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\073015\8M406481.D Vial: 5
Acq On : 30 Jul 2015 16:06 Operator: TMB
Sample : WG533051-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.6031	7.9	100	0.00
3	P	Chloromethane	5.0000	5.3236	-6.5	100	0.00
4	C	Vinyl Chloride	5.0000	4.7786	4.4	100	0.00
5	T	1,3-Butadiene	5.0000	4.8073	3.9	100	0.00
6	T	Bromomethane	5.0000	4.8913	2.2	100	0.00
7	T	Chloroethane	5.0000	4.9998	0.0	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.8315	3.4	100	0.00
9	T	Diethyl ether	50.0000	47.8310	4.3	100	0.00
10	T	Isoprene	5.0000	4.9240	1.5	100	0.00
11	T	Acrolein	25.0000	23.2099	7.2	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	5.1623	-3.2	100	0.00
13	T	Acetone	5.0000	6.0705	-21.4	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.9391	1.2	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	98.5799	1.4	100	0.00
16	T	Dimethyl Sulfide	5.0000	5.0239	-0.5	100	0.00
17	T	Iodomethane	5.0000	4.1499	17.0	100	0.00
18	T	Methyl acetate	5.0000	5.0477	-1.0	100	-0.01
19	T	Methylene Chloride	5.0000	4.9312	1.4	100	0.00
20	T	Carbon Disulfide	5.0000	4.9935	0.1	100	0.00
21	T	Acrylonitrile	25.0000	22.3219	10.7	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.6504	7.0	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	5.1026	-2.1	100	0.00
24	T	n-Hexane	5.0000	4.8337	3.3	100	0.00
25	T	Diisopropyl ether	50.0000	49.7523	0.5	100	0.00
26	T	Vinyl Acetate	5.0000	5.3409	-6.8	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.9212	1.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	48.6424	2.7	100	0.00
29	T	2-Butanone	5.0000	4.4822	10.4	100	0.00
30	T	Propionitrile	50.0000	46.6060	6.8	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.9797	0.4	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	5.0468	-0.9	100	0.00
33	C	Chloroform	5.0000	5.0962	-1.9	100	0.00
34		1-Bromopropane	5.0000	4.9822	0.4	100	0.00
35	T	Bromochloromethane	5.0000	4.9171	1.7	100	0.00
36	T	Tetrahydrofuran	50.0000	47.4278	5.1	100	0.00
37	S	Dibromofluoromethane	2.5000	2.5026	-0.1	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.9767	0.5	100	0.00
39	T	Cyclohexane	5.0000	4.9927	0.1	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.9876	0.2	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	48.6134	2.8	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.9721	0.6	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.4562	1.8	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	5.0000	4.7901	4.2	100	0.00
46	T	Benzene	5.0000	5.1442	-2.9	100	0.00
47	T	Trichloroethene	5.0000	4.8355	3.3	100	0.00
48	T	Methylcyclohexane	5.0000	4.8399	3.2	100	0.00
49	C	1,2-Dichloropropane	5.0000	5.1327	-2.7	100	0.00
50	T	Bromodichloromethane	5.0000	4.8809	2.4	100	0.00
51	T	1,4-Dioxane	100.0000	107.5902	-7.6	100	0.02
52	T	Dibromomethane	5.0000	4.6868	6.3	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.5663	8.7	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.2609	14.8	100	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\073015\8M406481.D Vial: 5
Acq On : 30 Jul 2015 16:06 Operator: TMB
Sample : WG533051-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.8198	3.6	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.2511	15.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.4927	0.3	100	0.00
59	C	Toluene	5.0000	5.3024	-6.0	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.6998	6.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	5.0000	4.9202	1.6	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	5.1180	-2.4	100	0.00
64	T	2-Hexanone	5.0000	4.2143	15.7	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.9397	1.2	100	0.00
66	T	Tetrachloroethene	5.0000	4.9780	0.4	100	0.00
67	T	Dibromochloromethane	5.0000	4.6857	6.3	100	0.00
68	T	1,2-Dibromoethane	5.0000	5.1285	-2.6	100	0.00
69	T	1-Chlorohexane	5.0000	4.9313	1.4	100	0.00
70	P	Chlorobenzene	5.0000	5.3492	-7.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	5.1237	-2.5	100	0.00
72	C	Ethylbenzene	5.0000	5.1453	-2.9	100	0.00
73	T	m-,p-Xylene	10.0000	10.9050	-9.0	100	0.00
74	T	o-Xylene	5.0000	5.0729	-1.5	100	0.00
75	T	Styrene	5.0000	5.1512	-3.0	100	0.00
76	P	Bromoform	5.0000	4.8551	2.9	100	-0.01
77	T	Isopropylbenzene	5.0000	5.4380	-8.8	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	5.1216	-2.4	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.4160	3.4	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.3598	-7.2	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.6938	6.1	100	0.00
83	T	n-Propylbenzene	5.0000	5.3574	-7.1	100	0.00
84	T	Bromobenzene	5.0000	4.8909	2.2	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	5.3048	-6.1	100	0.00
86	T	2-Chlorotoluene	5.0000	5.2863	-5.7	100	0.00
87	T	4-Chlorotoluene	5.0000	5.3257	-6.5	100	-0.01
88	T	a-Methylstyrene	5.0000	5.0367	-0.7	100	0.00
89	T	tert-Butylbenzene	5.0000	5.0600	-1.2	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.2953	-5.9	100	0.00
91	T	sec-Butylbenzene	5.0000	5.4789	-9.6	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.4124	-8.2	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	5.0792	-1.6	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	5.0072	-0.1	100	0.00
95	T	n-Butylbenzene	5.0000	5.4401	-8.8	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	5.0887	-1.8	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	4.2343	15.3	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.7858	4.3	100	0.00
99	T	Hexachlorobutadiene	5.0000	4.8928	2.1	100	-0.01
100	T	Naphthalene	5.0000	4.6834	6.3	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.7786	4.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M406481.D 8260WT.M Fri Jul 31 14:03:30 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406482.D Vial: 6
Acq On : 30 Jul 2015 16:35 Operator: TMB
Sample : WG533051-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:07 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	878579	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	612458	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	341682	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.68	111	77858	10.0570 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 40.24%#		
43) 1,2-Dichloroethane-d4	10.31	65	78334	10.1753 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 40.72%#		
58) Toluene-d8	12.69	98	308881	10.4545 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 41.80%#		
80) p-Bromofluorobenzene	16.08	95	114109	9.6552 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 38.64%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	294392	21.9402 ug/L	99
3) Chloromethane	3.62	50	295235	19.7083 ug/L	99
4) Vinyl Chloride	3.85	62	213802	19.4071 ug/L	100
5) 1,3-Butadiene	3.90	54	195992	20.2936 ug/L	92
6) Bromomethane	4.74	94	134045	18.2671 ug/L	99
7) Chloroethane	4.90	64	135011	19.6828 ug/L	99
8) Trichlorofluoromethane	5.38	101	285503	20.0421 ug/L	99
9) Diethyl ether	5.91	59	416800	77.2999 ug/L	99
10) Isoprene	5.94	67	222724	19.9765 ug/L	99
11) Acrolein	6.15	56	10886	41.1889 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	161968	19.9137 ug/L	97
13) Acetone	6.25	43	21749	19.6309 ug/L	90
14) 1,1-Dichloroethene	6.47	61	269452	19.5273 ug/L	96
15) Tert-Butyl Alcohol	6.60	59	46659	160.3374 ug/L	96
16) Dimethyl Sulfide	6.74	62	164675	19.0082 ug/L	99
17) Iodomethane	6.99	142	141587	17.2789 ug/L	97
18) Methyl acetate	7.01	43	80285	18.6746 ug/L	97
19) Methylene Chloride	7.26	84	169710	19.3082 ug/L	97
20) Carbon Disulfide	7.30	76	559773	19.8629 ug/L	99
21) Acrylonitrile	7.44	53	67398	36.6102 ug/L	96
22) Methyl Tert Butyl Ether	7.47	73	300217	19.3418 ug/L	99
23) trans-1,2-Dichloroethene	7.71	61	251692	19.4487 ug/L	95
24) n-Hexane	7.79	57	273707	19.5653 ug/L	98
25) Diisopropyl ether	8.14	45	2493814	79.3568 ug/L	98
26) Vinyl Acetate	8.30	43	160888	20.0291 ug/L	100
27) 1,1-Dichloroethane	8.33	63	342819	19.7511 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	1842255	78.5736 ug/L	100
29) 2-Butanone	8.89	43	34580	18.4342 ug/L	100
30) Propionitrile	8.99	54	47189	79.0883 ug/L	100
31) 2,2-Dichloropropane	9.11	77	260916	19.5065 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	187379	20.1194 ug/L	94
33) Chloroform	9.38	83	304643	19.4484 ug/L	99
34) 1-Bromopropane	9.51	122	32572	19.6758 ug/L	95
35) Bromochloromethane	9.61	130	95370	19.8800 ug/L	97
36) Tetrahydrofuran	9.64	42	98153	76.0733 ug/L	95
38) 1,1,1-Trichloroethane	9.91	97	284730	19.7066 ug/L	99
39) Cyclohexane	9.95	56	338069	20.0611 ug/L	98
40) 1,1-Dichloropropene	10.11	75	247480	20.0055 ug/L	100
41) Tert-Amyl-Methyl ether	10.21	73	1363363	77.6791 ug/L	100
42) Carbon Tetrachloride	10.26	117	254833	19.9195 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M406482.D 8260WT.M Fri Jul 31 14:02:08 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406482.D Vial: 6
Acq On : 30 Jul 2015 16:35 Operator: TMB
Sample : WG533051-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:07 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	201171	19.1748 ug/L		100
46)	Benzene	10.47	78	698528	20.2002 ug/L		98
47)	Trichloroethene	11.22	130	183971	18.6392 ug/L		96
48)	Methylcyclohexane	11.30	83	284091	19.8487 ug/L		97
49)	1,2-Dichloropropane	11.43	63	195318	20.3883 ug/L		96
50)	Bromodichloromethane	11.73	83	235526	19.8099 ug/L		99
51)	1,4-Dioxane	11.72	88	4585	136.0950 ug/L		87
52)	Dibromomethane	11.82	93	84217	19.2172 ug/L		95
53)	2-Chloroethyl Vinyl Ether	12.02	63	72635	18.1515 ug/L		99
54)	4-Methyl-2-Pentanone	12.07	58	34061	19.1750 ug/L		95
55)	cis-1,3-Dichloropropene	12.37	75	258884	19.7823 ug/L		98
56)	Dimethyl Disulfide	12.62	79	130981	18.4744 ug/L		99
59)	Toluene	12.79	91	746088	20.8453 ug/L		99
60)	Ethyl Methacrylate	12.88	69	137128	20.0738 ug/L		97
62)	trans-1,3-Dichloropropene	12.96	75	215089	20.3159 ug/L		98
63)	1,1,2-Trichloroethane	13.18	97	111425	19.8655 ug/L		98
64)	2-Hexanone	13.12	58	30148	19.0266 ug/L	#	98
65)	1,3-Dichloropropane	13.48	76	193594	19.8313 ug/L		97
66)	Tetrachloroethene	13.61	164	155127	20.5567 ug/L		95
67)	Dibromochloromethane	13.86	129	149584	20.2450 ug/L		99
68)	1,2-Dibromoethane	14.12	107	108175	19.8353 ug/L		100
69)	1-Chlorohexane	14.22	91	255638	20.2104 ug/L		98
70)	Chlorobenzene	14.63	112	482376	21.0493 ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	167264	20.5459 ug/L		98
72)	Ethylbenzene	14.65	106	262135	20.2644 ug/L		100
73)	m-,p-Xylene	14.74	106	638747	41.7867 ug/L		99
74)	o-Xylene	15.31	106	311292	20.6930 ug/L		97
75)	Styrene	15.34	104	510559	20.7804 ug/L		97
76)	Bromoform	15.84	173	85509	19.2484 ug/L		98
77)	Isopropylbenzene	15.74	105	808892	21.4789 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.94	83	121205	19.5234 ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	33046	18.9636 ug/L		70
82)	trans-1,4-Dichloro-2-Buten	16.18	53	40201	17.1268 ug/L	#	46
83)	n-Propylbenzene	16.24	91	1030697	20.4882 ug/L		99
84)	Bromobenzene	16.37	156	194478	19.0853 ug/L		97
85)	1,3,5-Trimethylbenzene	16.43	105	694288	20.9042 ug/L		97
86)	2-Chlorotoluene	16.51	91	619140	20.1488 ug/L		98
87)	4-Chlorotoluene	16.55	91	599261	20.4646 ug/L		97
88)	a-Methylstyrene	16.83	118	361855	20.0624 ug/L		98
89)	tert-Butylbenzene	16.89	134	142107	19.7494 ug/L		95
90)	1,2,4-Trimethylbenzene	16.95	105	707460	21.0236 ug/L		99
91)	sec-Butylbenzene	17.16	105	882383	21.5323 ug/L		100
92)	p-Isopropyltoluene	17.32	119	748439	21.2376 ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	398721	19.9542 ug/L		99
94)	1,4-Dichlorobenzene	17.64	146	392008	19.0315 ug/L		97
95)	n-Butylbenzene	17.84	91	722188	21.2520 ug/L		99
96)	1,2-Dichlorobenzene	18.13	146	351296	19.9127 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	20012	18.4123 ug/L		88
98)	1,2,4-Trichlorobenzene	20.27	180	266319	19.6166 ug/L		99
99)	Hexachlorobutadiene	20.43	225	133344	19.3015 ug/L		99
100)	Naphthalene	20.64	128	345480	19.6133 ug/L		98
101)	1,2,3-Trichlorobenzene	20.95	180	224501	19.1628 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M406482.D 8260WT.M Fri Jul 31 14:02:08 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406482.D Vial: 6
Acq On : 30 Jul 2015 16:35 Operator: TMB
Sample : WG533051-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

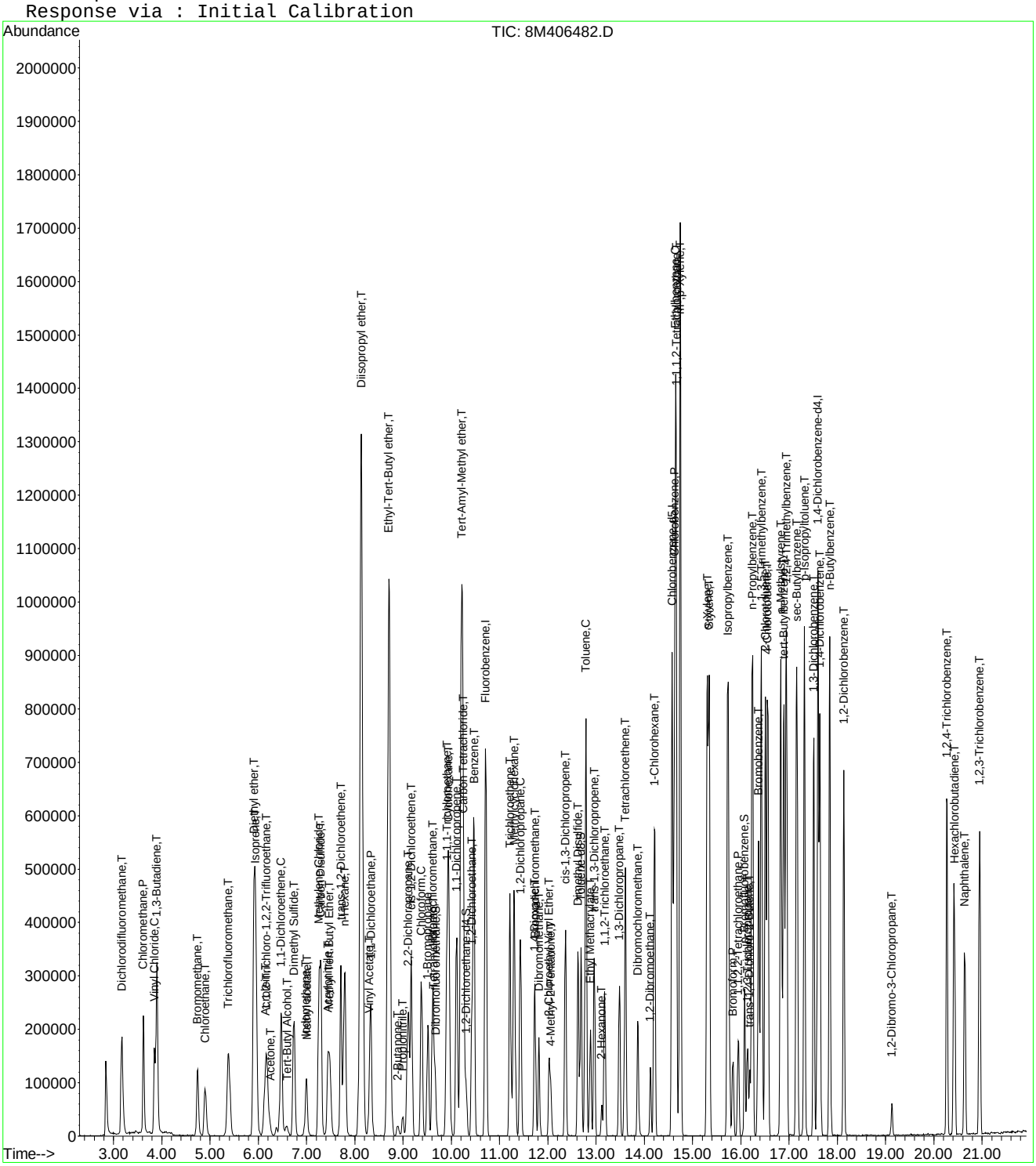

8M406482.D 8260WT.M Fri Jul 31 14:02:08 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406483.D Vial: 7
Acq On : 30 Jul 2015 17:04 Operator: TMB
Sample : WG533051-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:08 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	905123	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	645629	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	356726	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	206363	25.8744 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.48%		
43) 1,2-Dichloroethane-d4	10.31	65	193407	24.3862 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.56%		
58) Toluene-d8	12.69	98	789617	25.3525 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.40%		
80) p-Bromofluorobenzene	16.08	95	298735	24.2110 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.84%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	793389	57.3949 ug/L	98
3) Chloromethane	3.62	50	774629	50.1936 ug/L	100
4) Vinyl Chloride	3.85	62	591558	52.1218 ug/L	100
5) 1,3-Butadiene	3.89	54	525687	52.8348 ug/L	96
6) Bromomethane	4.75	94	372151	49.2279 ug/L	98
7) Chloroethane	4.90	64	363278	51.4079 ug/L	99
8) Trichlorofluoromethane	5.39	101	770145	52.4781 ug/L	99
9) Diethyl ether	5.92	59	543358	97.8162 ug/L	99
10) Isoprene	5.95	67	601625	52.3784 ug/L	100
11) Acrolein	6.15	56	15050	53.2458 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	450283	53.7379 ug/L	100
13) Acetone	6.25	43	54001	47.3125 ug/L	89
14) 1,1-Dichloroethene	6.47	61	737038	51.8469 ug/L	97
15) Tert-Butyl Alcohol	6.59	59	54494	181.7696 ug/L	98
16) Dimethyl Sulfide	6.74	62	453799	50.8451 ug/L	96
17) Iodomethane	6.99	142	438030	50.1373 ug/L	96
18) Methyl acetate	7.01	43	211513	47.7558 ug/L	98
19) Methylene Chloride	7.26	84	462069	51.0288 ug/L	99
20) Carbon Disulfide	7.30	76	1497961	51.5946 ug/L	100
21) Acrylonitrile	7.45	53	95327	50.2625 ug/L	99
22) Methyl Tert Butyl Ether	7.48	73	810723	50.7000 ug/L	98
23) trans-1,2-Dichloroethene	7.71	61	695571	52.1719 ug/L	96
24) n-Hexane	7.80	57	743489	51.5880 ug/L	100
25) Diisopropyl ether	8.14	45	3228603	99.7258 ug/L	98
26) Vinyl Acetate	8.30	43	409257	49.4548 ug/L	100
27) 1,1-Dichloroethane	8.33	63	920738	51.4914 ug/L	100
28) Ethyl-Tert-Butyl ether	8.71	59	2377982	98.4484 ug/L	99
29) 2-Butanone	8.88	43	97575	50.4906 ug/L	100
30) Propionitrile	9.00	54	62717	102.0304 ug/L	99
31) 2,2-Dichloropropane	9.11	77	715194	51.9009 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	500332	52.1466 ug/L	96
33) Chloroform	9.38	83	823551	51.0337 ug/L	98
34) 1-Bromopropane	9.52	122	86861	50.9315 ug/L	97
35) Bromochloromethane	9.62	130	249925	50.5694 ug/L	97
36) Tetrahydrofuran	9.64	42	127091	95.6129 ug/L	97
38) 1,1,1-Trichloroethane	9.92	97	778847	52.3243 ug/L	98
39) Cyclohexane	9.95	56	911186	52.4843 ug/L	99
40) 1,1-Dichloropropene	10.11	75	665469	52.2167 ug/L	99
41) Tert-Amyl-Methyl ether	10.22	73	1766552	97.6994 ug/L	99
42) Carbon Tetrachloride	10.26	117	704730	53.4711 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M406483.D 8260WT.M Fri Jul 31 14:02:09 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406483.D Vial: 7
Acq On : 30 Jul 2015 17:04 Operator: TMB
Sample : WG533051-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:08 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	553108	51.1739	ug/L		99
46)	Benzene	10.46	78	1840314	51.6579	ug/L		99
47)	Trichloroethene	11.22	130	492891	48.4731	ug/L		98
48)	Methylcyclohexane	11.30	83	748840	50.7851	ug/L		100
49)	1,2-Dichloropropane	11.44	63	526138	53.3105	ug/L		95
50)	Bromodichloromethane	11.74	83	642036	52.4176	ug/L		100
51)	1,4-Dioxane	11.72	88	6404	184.5131	ug/L		87
52)	Dibromomethane	11.82	93	233147	51.6407	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.03	63	212458	51.5361	ug/L		99
54)	4-Methyl-2-Pentanone	12.06	58	91945	50.2433	ug/L		97
55)	cis-1,3-Dichloropropene	12.37	75	710508	52.7003	ug/L		99
56)	Dimethyl Disulfide	12.63	79	368941	50.5116	ug/L		99
59)	Toluene	12.79	91	1964017	52.0543	ug/L		99
60)	Ethyl Methacrylate	12.88	69	372212	51.6878	ug/L		97
62)	trans-1,3-Dichloropropene	12.97	75	582148	52.1608	ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	307585	52.0206	ug/L		100
64)	2-Hexanone	13.12	58	83346	49.8978	ug/L	#	98
65)	1,3-Dichloropropane	13.48	76	534141	51.9049	ug/L		97
66)	Tetrachloroethene	13.61	164	414054	52.0494	ug/L		97
67)	Dibromochloromethane	13.87	129	408742	52.4777	ug/L		99
68)	1,2-Dibromoethane	14.13	107	291774	50.7519	ug/L		98
69)	1-Chlorohexane	14.21	91	679889	50.9895	ug/L		100
70)	Chlorobenzene	14.63	112	1254057	51.9113	ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.66	131	464369	54.1101	ug/L		100
72)	Ethylbenzene	14.65	106	698254	51.2055	ug/L		99
73)	m-,p-Xylene	14.75	106	1692501	105.0343	ug/L		94
74)	o-Xylene	15.30	106	838582	52.8805	ug/L		95
75)	Styrene	15.35	104	1379102	53.2472	ug/L		97
76)	Bromoform	15.84	173	239694	51.1839	ug/L		99
77)	Isopropylbenzene	15.73	105	2131296	53.6857	ug/L		98
79)	1,1,2,2-Tetrachloroethane	15.94	83	324676	50.0926	ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	91482	50.2834	ug/L		99
82)	trans-1,4-Dichloro-2-Buten	16.18	53	114476	45.3360	ug/L		95
83)	n-Propylbenzene	16.23	91	2718432	51.7580	ug/L		99
84)	Bromobenzene	16.37	156	526890	49.5262	ug/L		99
85)	1,3,5-Trimethylbenzene	16.43	105	1834447	52.9036	ug/L		97
86)	2-Chlorotoluene	16.51	91	1707990	53.2393	ug/L		98
87)	4-Chlorotoluene	16.55	91	1562668	51.1143	ug/L		97
88)	a-Methylstyrene	16.83	118	973493	51.6973	ug/L		97
89)	tert-Butylbenzene	16.90	134	383962	51.1110	ug/L		95
90)	1,2,4-Trimethylbenzene	16.95	105	1878267	53.4626	ug/L		98
91)	sec-Butylbenzene	17.16	105	2334618	54.5678	ug/L		98
92)	p-Isopropyltoluene	17.32	119	2001322	54.3943	ug/L		98
93)	1,3-Dichlorobenzene	17.52	146	1061972	50.9057	ug/L		99
94)	1,4-Dichlorobenzene	17.64	146	1054477	49.0347	ug/L		96
95)	n-Butylbenzene	17.85	91	1958128	55.1921	ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	939992	51.0349	ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	58169	51.2620	ug/L		98
98)	1,2,4-Trichlorobenzene	20.27	180	729904	51.4962	ug/L		99
99)	Hexachlorobutadiene	20.42	225	360991	50.0496	ug/L		99
100)	Naphthalene	20.64	128	1011034	54.9769	ug/L		98
101)	1,2,3-Trichlorobenzene	20.95	180	617964	50.5233	ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406483.D Vial: 7
Acq On : 30 Jul 2015 17:04 Operator: TMB
Sample : WG533051-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

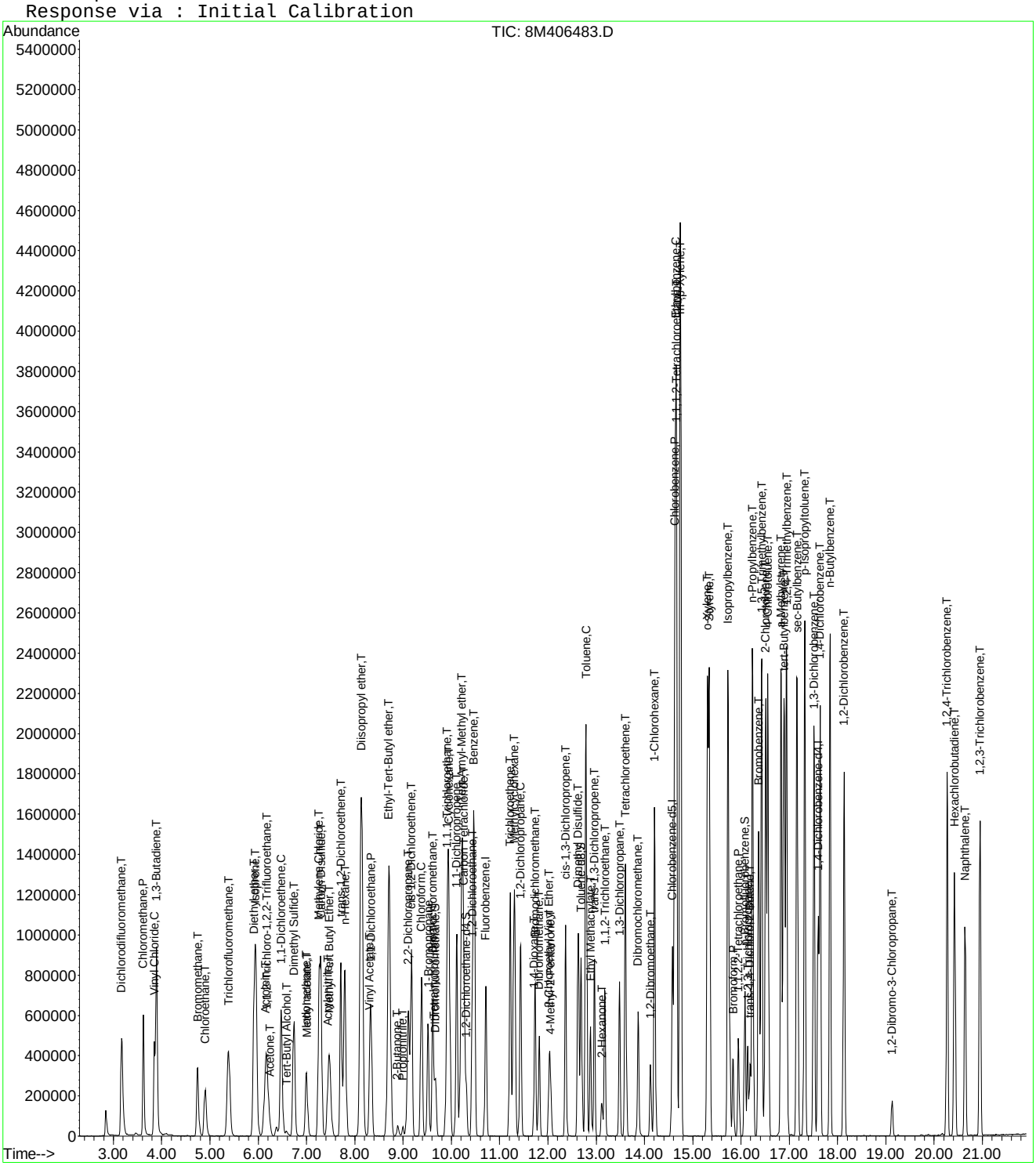

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406484.D Vial: 8
Acq On : 30 Jul 2015 17:33 Operator: TMB
Sample : WG533051-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:09 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	965047	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	693992	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	377100	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.68	111	407361	47.9046 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 191.60%#		
43) 1,2-Dichloroethane-d4	10.31	65	398417	47.1160 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 188.48%#		
58) Toluene-d8	12.69	98	1502516	44.8800 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 179.52%#		
80) p-Bromofluorobenzene	16.08	95	588300	45.1029 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 180.40%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	1447067	98.1828 ug/L	99
3) Chloromethane	3.62	50	1469585	89.3117 ug/L	100
4) Vinyl Chloride	3.85	62	1113972	92.0567 ug/L	99
5) 1,3-Butadiene	3.89	54	1106871	104.3396 ug/L	93
6) Bromomethane	4.74	94	754878	93.6544 ug/L	99
7) Chloroethane	4.90	64	716703	95.1238 ug/L	99
8) Trichlorofluoromethane	5.39	101	1479847	94.5761 ug/L	99
9) Diethyl ether	5.91	59	1171644	197.8242 ug/L	99
10) Isoprene	5.95	67	1270504	103.7437 ug/L	100
11) Acrolein	6.15	56	35545	97.9111 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	839906	94.0124 ug/L	99
13) Acetone	6.25	43	106698	87.6778 ug/L	88
14) 1,1-Dichloroethene	6.47	61	1429955	94.3441 ug/L	98
15) Tert-Butyl Alcohol	6.60	59	119175	372.8351 ug/L	97
16) Dimethyl Sulfide	6.74	62	972688	102.2159 ug/L	97
17) Iodomethane	6.99	142	950888	101.1755 ug/L	97
18) Methyl acetate	7.01	43	462726	97.9879 ug/L	98
19) Methylene Chloride	7.26	84	914681	94.7409 ug/L	100
20) Carbon Disulfide	7.30	76	3117324	100.7035 ug/L	100
21) Acrylonitrile	7.44	53	208069	102.8952 ug/L	99
22) Methyl Tert Butyl Ether	7.47	73	1688263	99.0227 ug/L	98
23) trans-1,2-Dichloroethene	7.71	61	1400434	98.5184 ug/L	97
24) n-Hexane	7.79	57	1539123	100.1628 ug/L	100
25) Diisopropyl ether	8.14	45	6719736	194.6724 ug/L	99
26) Vinyl Acetate	8.30	43	978547	110.9054 ug/L	100
27) 1,1-Dichloroethane	8.33	63	1824047	95.6740 ug/L	99
28) Ethyl-Tert-Butyl ether	8.71	59	5140284	199.5934 ug/L	98
29) 2-Butanone	8.89	43	209399	101.6262 ug/L	99
30) Propionitrile	8.99	54	133996	204.4539 ug/L	100
31) 2,2-Dichloropropane	9.11	77	1395201	94.9614 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	1020076	99.7147 ug/L	96
33) Chloroform	9.39	83	1666101	96.8338 ug/L	99
34) 1-Bromopropane	9.52	122	183147	100.7212 ug/L	100
35) Bromochloromethane	9.61	130	518828	98.4601 ug/L	99
36) Tetrahydrofuran	9.64	42	282096	199.0480 ug/L	97
38) 1,1,1-Trichloroethane	9.91	97	1537931	96.9053 ug/L	98
39) Cyclohexane	9.95	56	1874220	101.2517 ug/L	100
40) 1,1-Dichloropropene	10.11	75	1274818	93.8186 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	3827307	198.5263 ug/L	98
42) Carbon Tetrachloride	10.26	117	1376730	97.9725 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M406484.D 8260WT.M Fri Jul 31 14:02:10 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406484.D Vial: 8
Acq On : 30 Jul 2015 17:33 Operator: TMB
Sample : WG533051-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:09 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	1142285	99.1225	ug/L		99
46)	Benzene	10.47	78	3562491	93.7903	ug/L		99
47)	Trichloroethene	11.22	130	960301	88.5761	ug/L		98
48)	Methylcyclohexane	11.30	83	1578829	100.4249	ug/L		99
49)	1,2-Dichloropropane	11.43	63	1064186	101.1322	ug/L		97
50)	Bromodichloromethane	11.73	83	1308458	100.1928	ug/L		99
51)	1,4-Dioxane	11.72	88	14577	393.9157	ug/L		85
52)	Dibromomethane	11.82	93	483518	100.4464	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.02	63	447158	101.7323	ug/L		98
54)	4-Methyl-2-Pentanone	12.05	58	198955	101.9681	ug/L		99
55)	cis-1,3-Dichloropropene	12.36	75	1459255	101.5160	ug/L		99
56)	Dimethyl Disulfide	12.62	79	805354	103.4142	ug/L		97
59)	Toluene	12.79	91	3726198	91.8768	ug/L		96
60)	Ethyl Methacrylate	12.88	69	790872	102.1721	ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	1209023	100.7799	ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	623496	98.1008	ug/L		97
64)	2-Hexanone	13.12	58	179741	100.1089	ug/L	#	97
65)	1,3-Dichloropropane	13.48	76	1084202	98.0148	ug/L		97
66)	Tetrachloroethene	13.61	164	788124	92.1684	ug/L		98
67)	Dibromochloromethane	13.86	129	858396	102.5278	ug/L		99
68)	1,2-Dibromoethane	14.12	107	613039	99.2024	ug/L		100
69)	1-Chlorohexane	14.22	91	1399721	97.6592	ug/L		99
70)	Chlorobenzene	14.63	112	2464965	94.9258	ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.66	131	930502	100.8698	ug/L		98
72)	Ethylbenzene	14.66	106	1383565	94.3911	ug/L		91
73)	m-,p-Xylene	14.74	106	3220173	185.9131	ug/L		89
74)	o-Xylene	15.31	106	1658540	97.2981	ug/L		92
75)	Styrene	15.34	104	2709684	97.3302	ug/L		100
76)	Bromoform	15.84	173	507847	100.8877	ug/L		99
77)	Isopropylbenzene	15.74	105	4019718	94.1975	ug/L		96
79)	1,1,2,2-Tetrachloroethane	15.94	83	690755	100.8151	ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	190295	98.9452	ug/L		99
82)	trans-1,4-Dichloro-2-Buten	16.19	53	248869	92.3924	ug/L		95
83)	n-Propylbenzene	16.24	91	4956532	89.2720	ug/L		96
84)	Bromobenzene	16.37	156	1065712	94.7617	ug/L		97
85)	1,3,5-Trimethylbenzene	16.43	105	3512095	95.8131	ug/L		95
86)	2-Chlorotoluene	16.51	91	3173720	93.5823	ug/L		96
87)	4-Chlorotoluene	16.56	91	3137655	97.0865	ug/L		96
88)	a-Methylstyrene	16.83	118	2020165	101.4846	ug/L		99
89)	tert-Butylbenzene	16.89	134	751885	94.6795	ug/L		94
90)	1,2,4-Trimethylbenzene	16.95	105	3589344	96.6464	ug/L		96
91)	sec-Butylbenzene	17.16	105	4288380	94.8183	ug/L		96
92)	p-Isopropyltoluene	17.32	119	3722574	95.7102	ug/L		97
93)	1,3-Dichlorobenzene	17.51	146	2093524	94.9313	ug/L		100
94)	1,4-Dichlorobenzene	17.64	146	2074493	91.2550	ug/L		98
95)	n-Butylbenzene	17.84	91	3669233	97.8339	ug/L		97
96)	1,2-Dichlorobenzene	18.13	146	1883412	96.7313	ug/L		100
97)	1,2-Dibromo-3-Chloropropan	19.13	75	121212	101.0480	ug/L		93
98)	1,2,4-Trichlorobenzene	20.27	180	1458227	97.3224	ug/L		99
99)	Hexachlorobutadiene	20.43	225	710996	93.2502	ug/L		99
100)	Naphthalene	20.65	128	2100408	108.0429	ug/L		100
101)	1,2,3-Trichlorobenzene	20.95	180	1268320	98.0924	ug/L		98

(#) = qualifier out of range (m) = manual integration
8M406484.D 8260WT.M Fri Jul 31 14:02:10 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406484.D Vial: 8
Acq On : 30 Jul 2015 17:33 Operator: TMB
Sample : WG533051-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

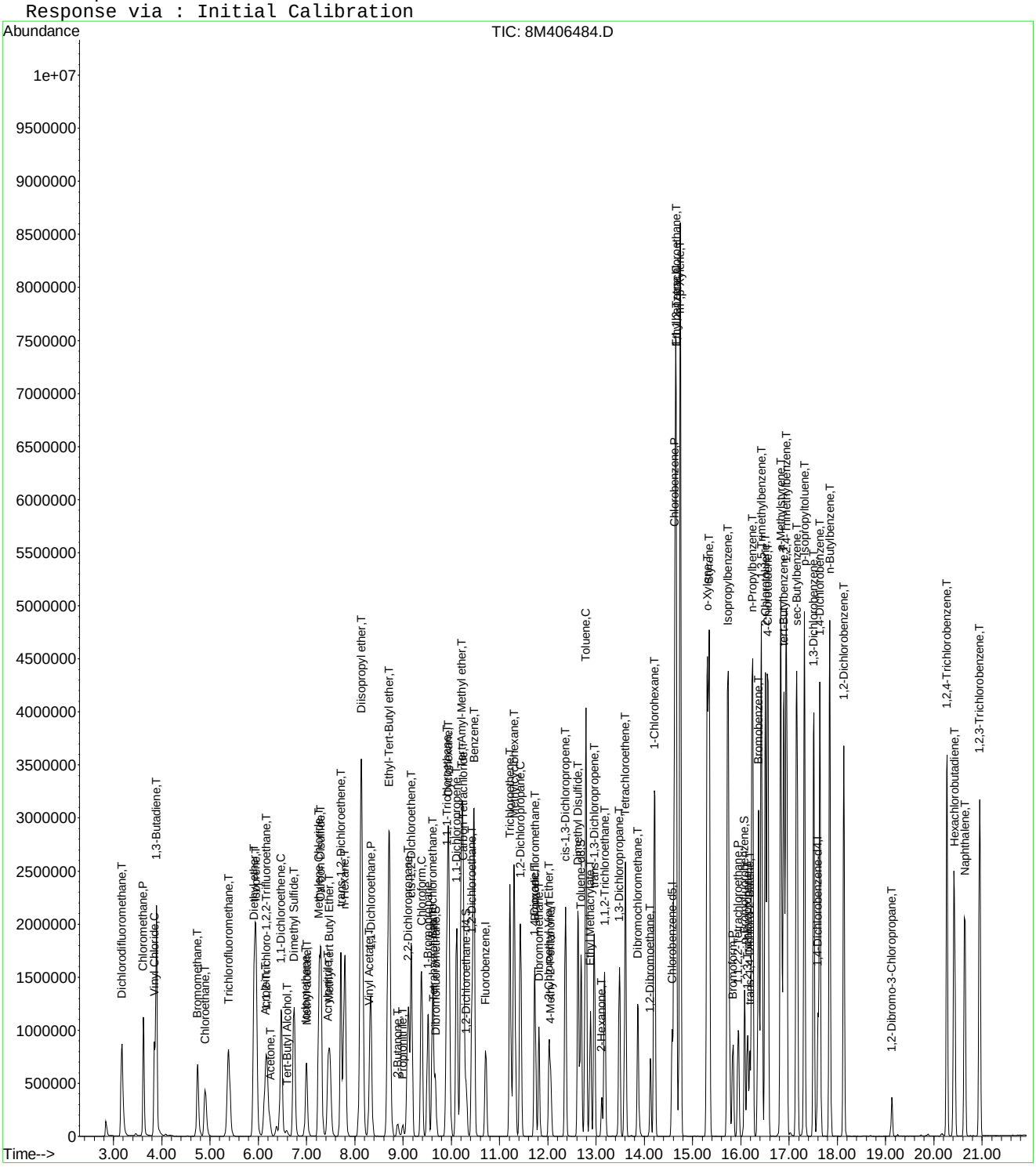

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406485.D Vial: 9
Acq On : 30 Jul 2015 18:01 Operator: TMB
Sample : WG533051-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:10 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	1040394	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	724738	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	397471	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	955134	104.1868 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 416.76%#		
43) 1,2-Dichloroethane-d4	10.31	65	925081	101.4755 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 405.92%#		
58) Toluene-d8	12.69	98	3399366	97.2311 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 388.92%#		
80) p-Bromofluorobenzene	16.08	95	1380717	100.4294 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 401.72%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	3311592	208.4174 ug/L	97
3) Chloromethane	3.62	50	3220138	181.5261 ug/L	97
4) Vinyl Chloride	3.85	62	2492880	191.0878 ug/L	98
5) 1,3-Butadiene	3.89	54	2199328	192.3060 ug/L	90
6) Bromomethane	4.74	94	1766615	203.3032 ug/L	98
7) Chloroethane	4.89	64	1624026	199.9372 ug/L	99
8) Trichlorofluoromethane	5.38	101	3499539	207.4561 ug/L	100
9) Diethyl ether	5.92	59	1482	0.2321 ug/L #	52
10) Isoprene	5.95	67	2748255	208.1580 ug/L	99
11) Acrolein	6.14	56	230	Below Cal #	12
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	1999365	207.5855 ug/L	99
13) Acetone	6.25	43	251669	191.8288 ug/L	89
14) 1,1-Dichloroethene	6.47	61	3348532	204.9261 ug/L	98
15) Tert-Butyl Alcohol	6.47	59	115167	334.2030 ug/L #	58
16) Dimethyl Sulfide	6.74	62	2093852	204.0993 ug/L	97
17) Iodomethane	6.99	142	2010247	197.5620 ug/L	100
18) Methyl acetate	7.00	43	994464	195.3386 ug/L	99
19) Methylene Chloride	7.26	84	2007363	192.8610 ug/L	99
20) Carbon Disulfide	7.30	76	6310743	189.1010 ug/L	97
21) Acrylonitrile	7.46	53	40607	18.6268 ug/L #	26
22) Methyl Tert Butyl Ether	7.48	73	3730350	202.9528 ug/L	97
23) trans-1,2-Dichloroethene	7.70	61	3169136	206.7979 ug/L	97
24) n-Hexane	7.79	57	3249384	196.1483 ug/L	99
26) Vinyl Acetate	8.30	43	1962793	206.3461 ug/L	99
27) 1,1-Dichloroethane	8.34	63	4074812	198.2512 ug/L	98
29) 2-Butanone	8.88	43	450663	202.8775 ug/L	99
30) Propionitrile	8.93	54	1013	1.4337 ug/L #	56
31) 2,2-Dichloropropane	9.11	77	3202826	202.2061 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	2245305	203.5882 ug/L	97
33) Chloroform	9.38	83	3657299	197.1681 ug/L	97
34) 1-Bromopropane	9.51	122	399971	204.0328 ug/L	98
35) Bromochloromethane	9.62	130	1126272	198.2581 ug/L	99
36) Tetrahydrofuran	9.65	42	781	0.5112 ug/L #	40
38) 1,1,1-Trichloroethane	9.92	97	3558174	207.9642 ug/L	100
39) Cyclohexane	9.95	56	4014231	201.1568 ug/L	99
40) 1,1-Dichloropropene	10.11	75	2934077	200.2917 ug/L	98
42) Carbon Tetrachloride	10.26	117	3202446	211.3916 ug/L	100
45) 1,2-Dichloroethane	10.42	62	2535974	204.1237 ug/L	99
46) Benzene	10.47	78	7129962	174.1172 ug/L	92
47) Trichloroethene	11.22	130	2119855	181.3703 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M406485.D 8260WT.M Fri Jul 31 14:02:11 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406485.D Vial: 9
Acq On : 30 Jul 2015 18:01 Operator: TMB
Sample : WG533051-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:10 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
48)	Methylcyclohexane	11.30	83	3333904	196.7026 ug/L		98
49)	1,2-Dichloropropane	11.44	63	2321617	204.6506 ug/L		100
50)	Bromodichloromethane	11.73	83	2863290	203.3727 ug/L		98
51)	1,4-Dioxane	11.73	88	7313	183.3079 ug/L	#	42
52)	Dibromomethane	11.82	93	1057674	203.8094 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	971763	205.0732 ug/L		99
54)	4-Methyl-2-Pentanone	12.06	58	434877	206.7410 ug/L		98
55)	cis-1,3-Dichloropropene	12.37	75	3117841	201.1908 ug/L		96
56)	Dimethyl Disulfide	12.63	79	1770920	210.9322 ug/L		97
59)	Toluene	12.79	91	7346526	173.4585 ug/L		90
60)	Ethyl Methacrylate	12.88	69	1733386	214.4346 ug/L		98
62)	trans-1,3-Dichloropropene	12.97	75	2638443	210.6011 ug/L		98
63)	1,1,2-Trichloroethane	13.18	97	1375417	207.2273 ug/L		99
64)	2-Hexanone	13.12	58	396773	211.6123 ug/L	#	94
65)	1,3-Dichloropropane	13.48	76	2364848	204.7189 ug/L		98
66)	Tetrachloroethene	13.61	164	1792548	200.7390 ug/L		99
67)	Dibromochloromethane	13.87	129	1893932	216.6166 ug/L		99
68)	1,2-Dibromoethane	14.13	107	1353003	209.6556 ug/L		100
69)	1-Chlorohexane	14.21	91	2929109	195.6954 ug/L		97
70)	Chlorobenzene	14.63	112	5005557	184.5862 ug/L		93
71)	1,1,1,2-Tetrachloroethane	14.66	131	2071416	215.0229 ug/L		99
72)	Ethylbenzene	14.65	106	3010230	196.6548 ug/L		72
73)	m-,p-Xylene	14.75	106	6405975	354.1518 ug/L		70
74)	o-Xylene	15.30	106	3538965	198.8053 ug/L		84
75)	Styrene	15.35	104	5528100	190.1421 ug/L		91
76)	Bromoform	15.84	173	1151383	219.0274 ug/L		99
77)	Isopropylbenzene	15.73	105	7826297	175.6197 ug/L		89
79)	1,1,2,2-Tetrachloroethane	15.95	83	1541509	213.4512 ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	423906	209.1164 ug/L		94
82)	trans-1,4-Dichloro-2-Buten	16.18	53	559393	196.1276 ug/L		97
83)	n-Propylbenzene	16.23	91	9019678	154.1273 ug/L		86
84)	Bromobenzene	16.37	156	2284366	192.7125 ug/L		98
85)	1,3,5-Trimethylbenzene	16.43	105	7016916	181.6167 ug/L		90
86)	2-Chlorotoluene	16.51	91	6618013	185.1414 ug/L		93
87)	4-Chlorotoluene	16.56	91	5964330	175.0921 ug/L		89
88)	a-Methylstyrene	16.83	118	4119431	196.3367 ug/L		95
89)	tert-Butylbenzene	16.90	134	1671119	199.6472 ug/L		87
90)	1,2,4-Trimethylbenzene	16.95	105	7021954	179.3824 ug/L		88
91)	sec-Butylbenzene	17.17	105	8237897	172.8090 ug/L		89
92)	p-Isopropyltoluene	17.32	119	7266674	177.2563 ug/L		90
93)	1,3-Dichlorobenzene	17.52	146	4318785	185.7993 ug/L		95
94)	1,4-Dichlorobenzene	17.64	146	4277939	178.5379 ug/L		97
95)	n-Butylbenzene	17.85	91	7108277	179.8165 ug/L		91
96)	1,2-Dichlorobenzene	18.14	146	3887769	189.4407 ug/L		95
97)	1,2-Dibromo-3-Chloropropan	19.13	75	276298	218.5299 ug/L		95
98)	1,2,4-Trichlorobenzene	20.28	180	3070768	194.4400 ug/L		99
99)	Hexachlorobutadiene	20.42	225	1550628	192.9484 ug/L		98
100)	Naphthalene	20.64	128	4400286	214.7458 ug/L		98
101)	1,2,3-Trichlorobenzene	20.95	180	2641708	193.8396 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M406485.D 8260WT.M Fri Jul 31 14:02:11 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406485.D Vial: 9
Acq On : 30 Jul 2015 18:01 Operator: TMB
Sample : WG533051-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

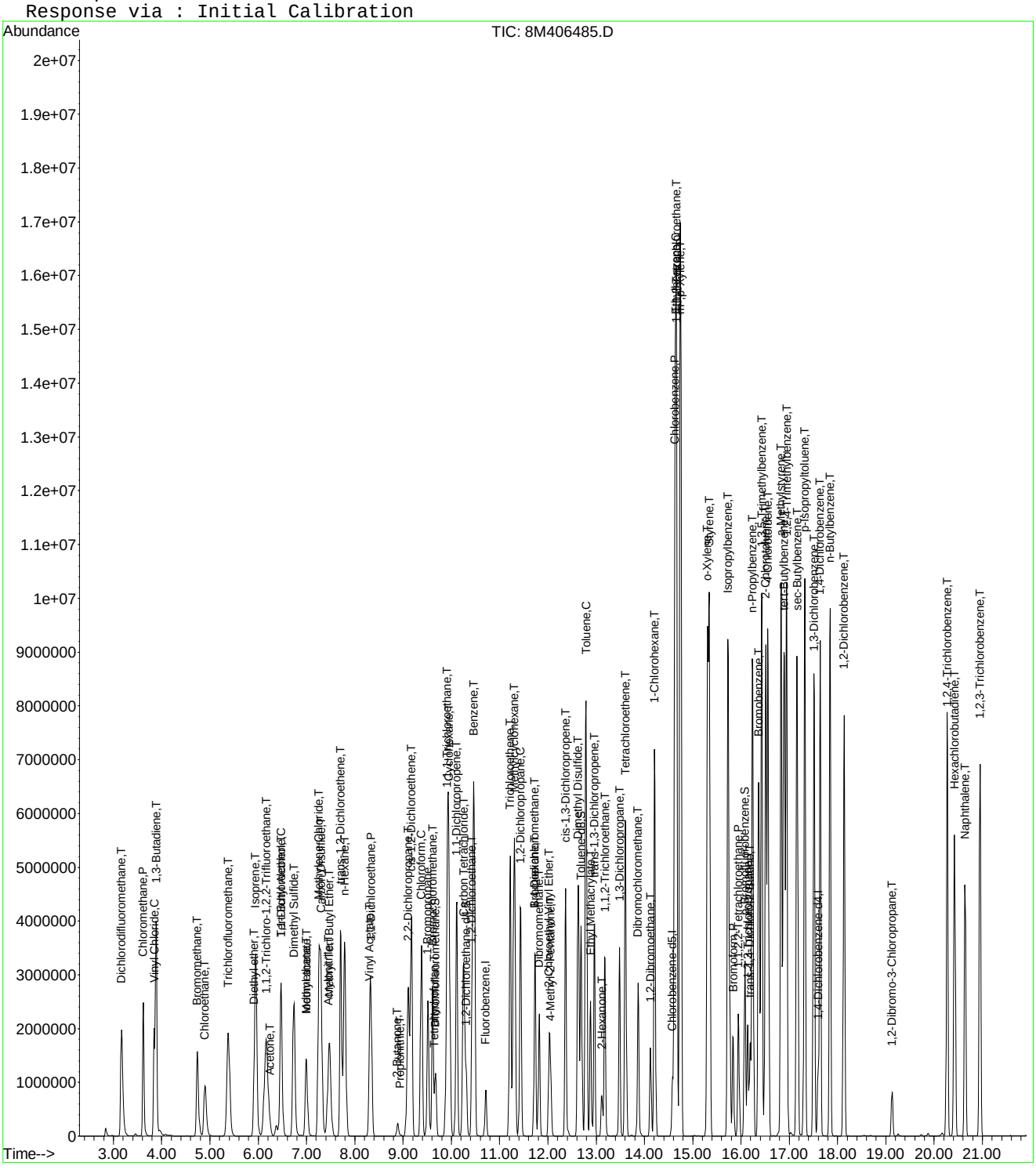

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406486.D Vial: 10
Acq On : 30 Jul 2015 18:29 Operator: TMB
Sample : WG533051-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:12 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	1028584	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	729846	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	400318	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	1523750	168.1203 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 672.48%#		
43) 1,2-Dichloroethane-d4	10.31	65	1500807	166.5192 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 666.08%#		
58) Toluene-d8	12.69	98	5162645	146.6321 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 586.52%#		
80) p-Bromofluorobenzene	16.08	95	2188157	158.0284 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 632.12%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	5117633	325.7800 ug/L	96
3) Chloromethane	3.62	50	4732198	269.8271 ug/L	94
4) Vinyl Chloride	3.85	62	3785878	293.5325 ug/L	95
5) 1,3-Butadiene	3.89	54	3316393	293.3100 ug/L	89
6) Bromomethane	4.74	94	2881777	335.4445 ug/L	98
7) Chloroethane	4.89	64	2610645	325.0921 ug/L	99
8) Trichlorofluoromethane	5.38	101	5765049	345.6818 ug/L	100
9) Diethyl ether	5.92	59	2065500	327.2033 ug/L	98
10) Isoprene	5.95	67	4331415	331.8364 ug/L	97
11) Acrolein	6.14	56	71709	150.4913 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	3194012	335.4281 ug/L	99
13) Acetone	6.25	43	397743	306.6513 ug/L	86
14) 1,1-Dichloroethene	6.47	61	5316346	329.0897 ug/L	96
15) Tert-Butyl Alcohol	6.60	59	224020	657.5476 ug/L	99
16) Dimethyl Sulfide	6.74	62	3335527	328.8653 ug/L	98
17) Iodomethane	6.99	142	3067351	304.4378 ug/L	99
18) Methyl acetate	7.00	43	1728968	343.5137 ug/L	100
19) Methylene Chloride	7.26	84	3154514	306.5554 ug/L	97
20) Carbon Disulfide	7.30	76	9369568	283.9822 ug/L	95
21) Acrylonitrile	7.45	53	419964	194.8536 ug/L	97
22) Methyl Tert Butyl Ether	7.48	73	6031202	331.9001 ug/L	96
23) trans-1,2-Dichloroethene	7.70	61	4927650	325.2394 ug/L	97
24) n-Hexane	7.79	57	5114139	312.2584 ug/L	99
25) Diisopropyl ether	8.14	45	10690367	290.5718 ug/L	96
26) Vinyl Acetate	8.30	43	2722389	289.4876 ug/L	99
27) 1,1-Dichloroethane	8.33	63	6249418	307.5431 ug/L	96
28) Ethyl-Tert-Butyl ether	8.71	59	8582411	312.6635 ug/L	96
29) 2-Butanone	8.89	43	751998	342.4181 ug/L	99
30) Propionitrile	9.00	54	247681	354.5725 ug/L	99
31) 2,2-Dichloropropane	9.11	77	5088250	324.9282 ug/L	97
32) cis-1,2-Dichloroethene	9.17	96	3483978	319.5294 ug/L	98
33) Chloroform	9.38	83	5576785	304.1012 ug/L	95
34) 1-Bromopropane	9.51	122	640622	330.5456 ug/L	99
35) Bromochloromethane	9.62	130	1763334	313.9643 ug/L	100
36) Tetrahydrofuran	9.64	42	516131	341.6878 ug/L	98
38) 1,1,1-Trichloroethane	9.92	97	5610901	331.7050 ug/L	99
39) Cyclohexane	9.95	56	6231793	315.8664 ug/L	99
40) 1,1-Dichloropropene	10.11	75	4572229	315.7021 ug/L	97
41) Tert-Amyl-Methyl ether	10.22	73	6529096	317.7507 ug/L	97
42) Carbon Tetrachloride	10.26	117	5060847	337.8992 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M406486.D 8260WT.M Fri Jul 31 14:02:12 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406486.D Vial: 10
Acq On : 30 Jul 2015 18:29 Operator: TMB
Sample : WG533051-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:12 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	4000729	325.7210 ug/L		98
46)	Benzene	10.46	78	9875498	243.9336 ug/L		85
47)	Trichloroethene	11.22	130	3333538	288.4851 ug/L		98
48)	Methylcyclohexane	11.30	83	5208570	310.8376 ug/L		97
49)	1,2-Dichloropropane	11.44	63	3586239	319.7568 ug/L		98
50)	Bromodichloromethane	11.74	83	4433850	318.5417 ug/L		97
51)	1,4-Dioxane	11.73	88	27597	699.6900 ug/L		83
52)	Dibromomethane	11.82	93	1700087	331.3612 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.03	63	1554095	331.7296 ug/L		98
54)	4-Methyl-2-Pentanone	12.06	58	705495	339.2440 ug/L		99
55)	cis-1,3-Dichloropropene	12.37	75	4762357	310.8380 ug/L		94
56)	Dimethyl Disulfide	12.63	79	2806438	338.1096 ug/L		95
59)	Toluene	12.79	91	9877956	231.5957 ug/L		83
60)	Ethyl Methacrylate	12.88	69	2760219	339.0727 ug/L		99
62)	trans-1,3-Dichloropropene	12.97	75	4102405	325.1631 ug/L		95
63)	1,1,2-Trichloroethane	13.18	97	2171921	324.9424 ug/L		99
64)	2-Hexanone	13.12	58	650699	344.6107 ug/L	#	92
65)	1,3-Dichloropropane	13.48	76	3646600	313.4676 ug/L		99
66)	Tetrachloroethene	13.61	164	2834870	315.2419 ug/L		99
67)	Dibromochloromethane	13.87	129	2977513	338.1666 ug/L		98
68)	1,2-Dibromoethane	14.12	107	2126044	327.1370 ug/L		100
69)	1-Chlorohexane	14.22	91	4484324	297.5033 ug/L		94
70)	Chlorobenzene	14.63	112	7166893	262.4386 ug/L		86
71)	1,1,1,2-Tetrachloroethane	14.66	131	3261834	336.2243 ug/L		99
72)	Ethylbenzene	14.66	106	4621120	299.7795 ug/L		53
73)	m-,p-Xylene	14.74	106	8870609	486.9759 ug/L		59
74)	o-Xylene	15.31	106	5313519	296.4038 ug/L		73
75)	Styrene	15.34	104	7831227	267.4742 ug/L		82
76)	Bromoform	15.84	173	1835375	346.6995 ug/L		99
77)	Isopropylbenzene	15.74	105	10435377	232.5278 ug/L		79
79)	1,1,2,2-Tetrachloroethane	15.94	83	2343040	322.1310 ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	686174	336.0880 ug/L		96
82)	trans-1,4-Dichloro-2-Buten	16.19	53	917720	318.9702 ug/L		94
83)	n-Propylbenzene	16.24	91	11456032	194.3672 ug/L	#	73
84)	Bromobenzene	16.37	156	3483406	291.7753 ug/L		97
85)	1,3,5-Trimethylbenzene	16.43	105	9500295	244.1445 ug/L		82
86)	2-Chlorotoluene	16.51	91	8751876	243.0958 ug/L		85
87)	4-Chlorotoluene	16.56	91	8272493	241.1246 ug/L		80
88)	a-Methylstyrene	16.83	118	6080021	287.7198 ug/L		91
89)	tert-Butylbenzene	16.90	134	2596133	307.9520 ug/L		79
90)	1,2,4-Trimethylbenzene	16.95	105	9434588	239.3014 ug/L		78
91)	sec-Butylbenzene	17.16	105	10777038	224.4655 ug/L	#	79
92)	p-Isopropyltoluene	17.32	119	9679217	234.4264 ug/L		81
93)	1,3-Dichlorobenzene	17.52	146	6256898	267.2648 ug/L		89
94)	1,4-Dichlorobenzene	17.64	146	6127643	253.9157 ug/L		91
95)	n-Butylbenzene	17.85	91	9371345	235.3789 ug/L	#	82
96)	1,2-Dichlorobenzene	18.14	146	5678643	274.7373 ug/L		90
97)	1,2-Dibromo-3-Chloropropan	19.13	75	435677	342.1355 ug/L		95
98)	1,2,4-Trichlorobenzene	20.28	180	4516301	283.9369 ug/L		98
99)	Hexachlorobutadiene	20.42	225	2425051	299.6089 ug/L		97
100)	Naphthalene	20.64	128	6344214	307.4127 ug/L		95
101)	1,2,3-Trichlorobenzene	20.95	180	3945194	287.4262 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M406486.D 8260WT.M Fri Jul 31 14:02:12 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406486.D Vial: 10
Acq On : 30 Jul 2015 18:29 Operator: TMB
Sample : WG533051-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

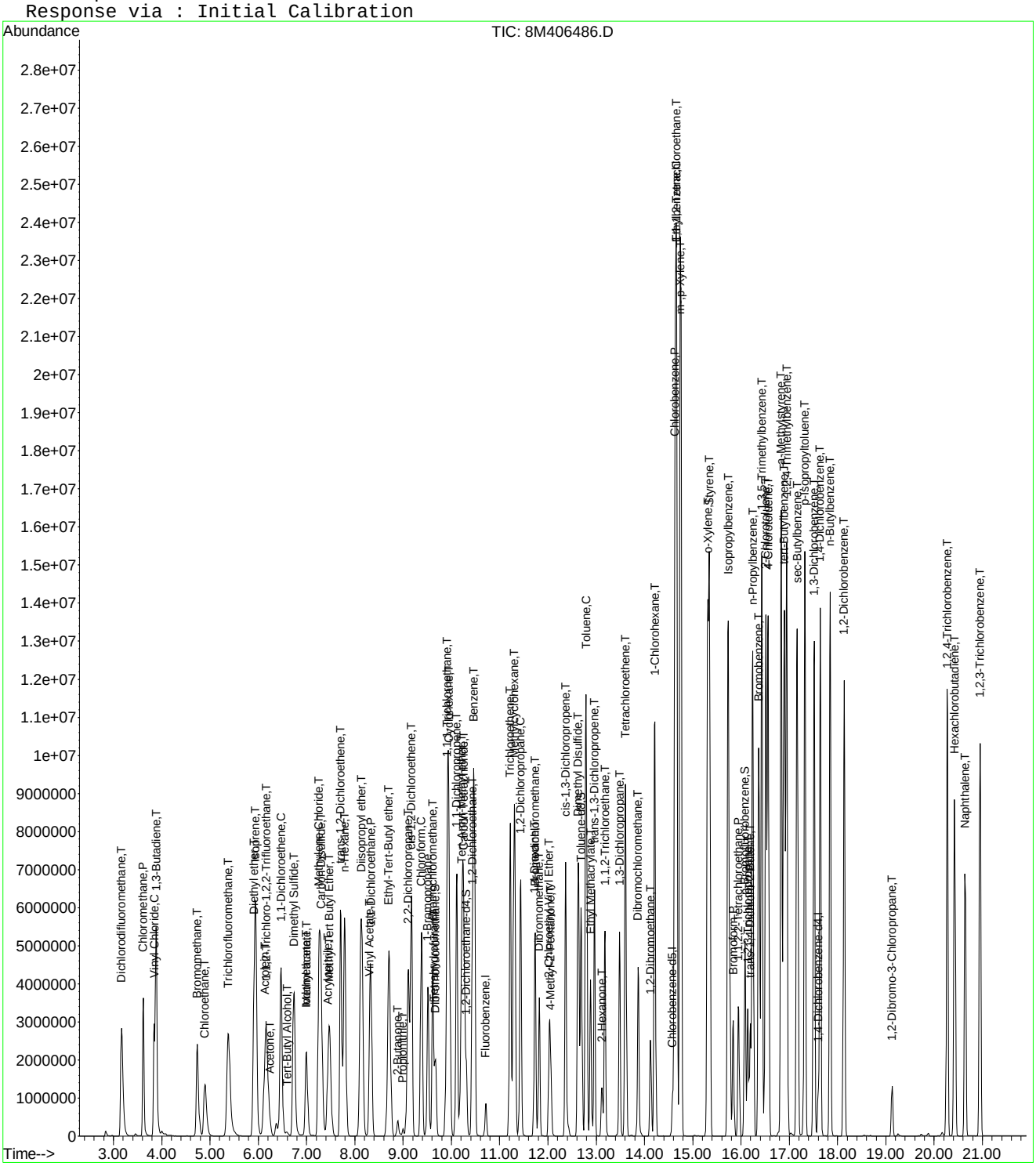

8M406486.D 8260WT.M Fri Jul 31 14:02:12 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406490.D Vial: 14
Acq On : 30 Jul 2015 20:22 Operator: TMB
Sample : WG533051-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:13 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	1008944	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	720402	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	380793	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	12.69	98	983	0.0283 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.12%#	
80) p-Bromofluorobenzene	16.08	95	326	0.0248 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.08%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	4543	0.2948 ug/L	95
3) Chloromethane	3.62	50	6070	0.3528 ug/L #	35
4) Vinyl Chloride	3.85	62	4674	0.3694 ug/L	98
5) 1,3-Butadiene	3.90	54	4380	0.3949 ug/L #	39
6) Bromomethane	4.74	94	2512	0.2981 ug/L	87
7) Chloroethane	4.90	64	2354	0.2988 ug/L #	43
8) Trichlorofluoromethane	5.37	101	4252	0.2599 ug/L #	92
10) Isoprene	5.96	67	3719	0.2905 ug/L	83
12) 1,1,2-Trichloro-1,2,2-Trif	6.19	101	2539	0.2718 ug/L #	46
13) Acetone	6.26	43	1060	0.8331 ug/L #	48
14) 1,1-Dichloroethene	6.47	61	5948	0.3754 ug/L	85
16) Dimethyl Sulfide	6.74	62	2808	0.2822 ug/L	100
17) Iodomethane	7.00	142	2256	1.1018 ug/L #	70
18) Methyl acetate	7.01	43	910	0.1843 ug/L #	64
19) Methylene Chloride	7.27	84	4210	0.4171 ug/L	96
20) Carbon Disulfide	7.30	76	14225	0.4395 ug/L	96
22) Methyl Tert Butyl Ether	7.49	73	4586	0.2573 ug/L #	67
23) trans-1,2-Dichloroethene	7.72	61	4895	0.3294 ug/L	73
24) n-Hexane	7.79	57	6977	0.4343 ug/L	90
26) Vinyl Acetate	8.30	43	2618	0.2838 ug/L #	77
27) 1,1-Dichloroethane	8.34	63	5973	0.2997 ug/L #	89
31) 2,2-Dichloropropane	9.12	77	4517	0.2941 ug/L #	70
32) cis-1,2-Dichloroethene	9.17	96	3851	0.3601 ug/L	65
33) Chloroform	9.38	83	5188	0.2884 ug/L	95
35) Bromochloromethane	9.62	130	1196	0.2171 ug/L	79
36) Tetrahydrofuran	9.65	42	429	0.2895 ug/L #	40
38) 1,1,1-Trichloroethane	9.92	97	4248	0.2560 ug/L	95
39) Cyclohexane	9.95	56	5790	0.2992 ug/L #	93
40) 1,1-Dichloropropene	10.10	75	4587	0.3229 ug/L	95
42) Carbon Tetrachloride	10.26	117	3801	0.2587 ug/L	80
45) 1,2-Dichloroethane	10.42	62	3893	0.3231 ug/L #	83
46) Benzene	10.48	78	13718	0.3454 ug/L	96
47) Trichloroethene	11.22	130	5579	0.4922 ug/L	88
48) Methylcyclohexane	11.31	83	6507	0.3959 ug/L	91
49) 1,2-Dichloropropane	11.44	63	2823	0.2566 ug/L	96
50) Bromodichloromethane	11.73	83	3594	0.2632 ug/L #	96
52) Dibromomethane	11.82	93	1790	0.3557 ug/L	91
53) 2-Chloroethyl Vinyl Ether	12.03	63	851	0.1852 ug/L #	53
55) cis-1,3-Dichloropropene	12.37	75	4421	0.2942 ug/L	98
56) Dimethyl Disulfide	12.62	79	1705	0.2094 ug/L	90

(#) = qualifier out of range (m) = manual integration
8M406490.D 8260WT.M Fri Jul 31 14:02:13 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406490.D Vial: 14
Acq On : 30 Jul 2015 20:22 Operator: TMB
Sample : WG533051-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:13 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
59)	Toluene	12.79	91	14603	0.3469 ug/L		96
60)	Ethyl Methacrylate	12.89	69	1978	0.2462 ug/L		93
62)	trans-1,3-Dichloropropene	12.97	75	3988	0.3202 ug/L		92
63)	1,1,2-Trichloroethane	13.18	97	2047	0.3103 ug/L		84
65)	1,3-Dichloropropane	13.47	76	3431	0.2988 ug/L		98
66)	Tetrachloroethene	13.62	164	3148	0.3547 ug/L		92
67)	Dibromochloromethane	13.87	129	2780	0.3199 ug/L		79
68)	1,2-Dibromoethane	14.13	107	1842	0.2871 ug/L		94
69)	1-Chlorohexane	14.22	91	4991	0.3355 ug/L		87
70)	Chlorobenzene	14.63	112	9008	0.3342 ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.65	131	2729	0.2850 ug/L		98
72)	Ethylbenzene	14.65	106	5606	0.3684 ug/L		87
73)	m-,p-Xylene	14.75	106	12100	0.6730 ug/L		97
74)	o-Xylene	15.30	106	5696	0.3219 ug/L		97
75)	Styrene	15.35	104	8917	0.3086 ug/L		92
76)	Bromoform	15.84	173	1357	0.2597 ug/L	#	39
77)	Isopropylbenzene	15.73	105	14415	0.3254 ug/L		98
79)	1,1,2,2-Tetrachloroethane	15.96	83	1905	0.2753 ug/L	#	86
81)	1,2,3-Trichloropropane	16.14	110	272	0.1401 ug/L	#	1
82)	trans-1,4-Dichloro-2-Buten	16.18	53	534	0.9919 ug/L	#	1
83)	n-Propylbenzene	16.24	91	20221	0.3607 ug/L		99
84)	Bromobenzene	16.36	156	3909	0.3442 ug/L		94
85)	1,3,5-Trimethylbenzene	16.42	105	13127	0.3546 ug/L		100
86)	2-Chlorotoluene	16.51	91	13411	0.3916 ug/L		94
87)	4-Chlorotoluene	16.56	91	13020	0.3990 ug/L		84
88)	a-Methylstyrene	16.83	118	5920	0.2945 ug/L		94
89)	tert-Butylbenzene	16.90	134	2558	0.3190 ug/L		90
90)	1,2,4-Trimethylbenzene	16.94	105	13142	0.3504 ug/L		83
91)	sec-Butylbenzene	17.16	105	16120	0.3530 ug/L		94
92)	p-Isopropyltoluene	17.32	119	15239	0.3880 ug/L		94
93)	1,3-Dichlorobenzene	17.52	146	8224	0.3693 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	8297	0.3614 ug/L	#	66
95)	n-Butylbenzene	17.85	91	14908	0.3936 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	6345	0.3227 ug/L		89
97)	1,2-Dibromo-3-Chloropropan	19.12	75	468	0.3864 ug/L	#	1
98)	1,2,4-Trichlorobenzene	20.27	180	6486	0.4287 ug/L		95
99)	Hexachlorobutadiene	20.42	225	3955	0.5137 ug/L		85
100)	Naphthalene	20.64	128	6840	0.3484 ug/L		97
101)	1,2,3-Trichlorobenzene	20.95	180	4318	0.3307 ug/L		80

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406490.D Vial: 14
Acq On : 30 Jul 2015 20:22 Operator: TMB
Sample : WG533051-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

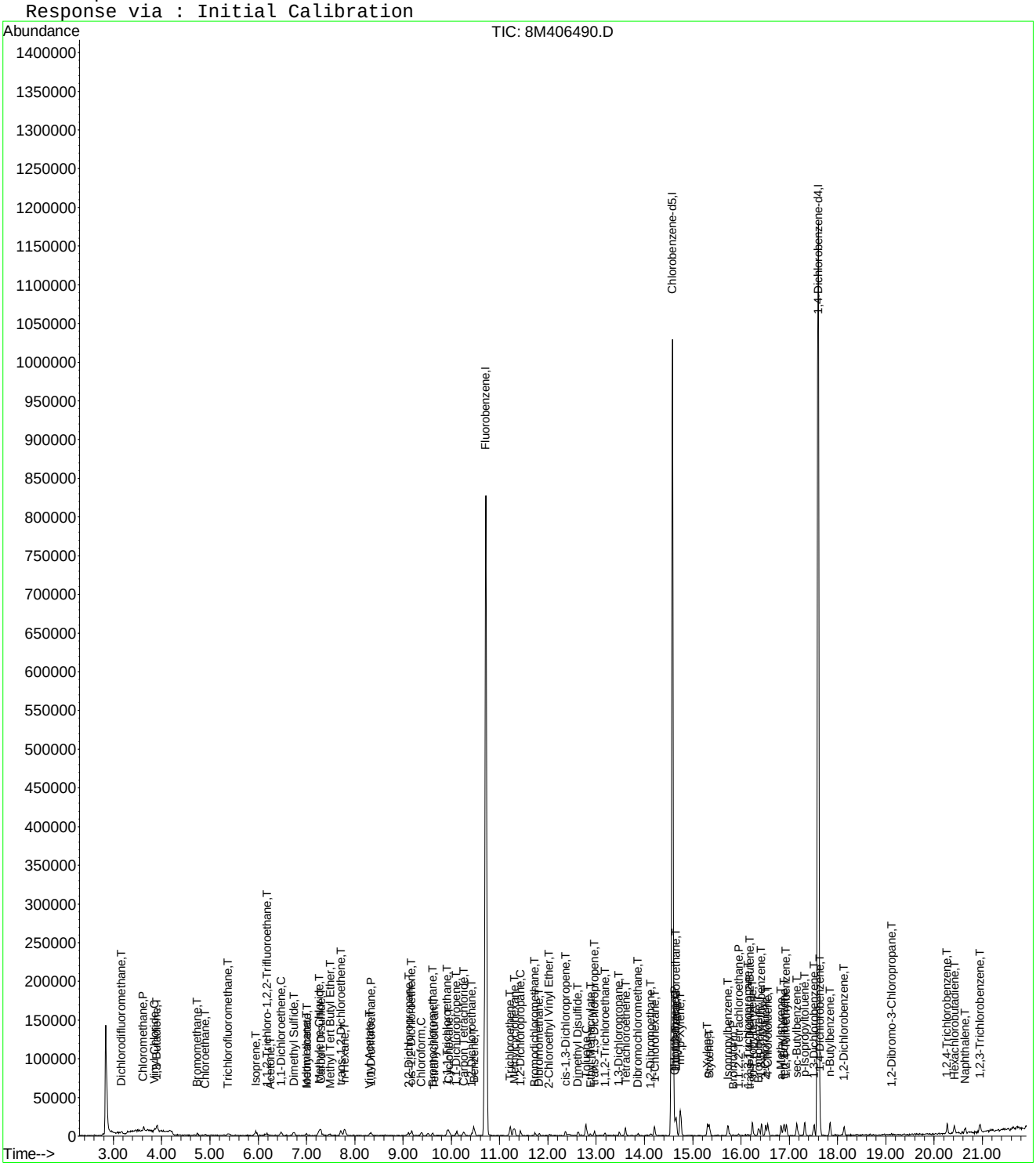

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\073015\8M406490.D Vial: 14
Acq On : 30 Jul 2015 20:22 Operator: TMB
Sample : WG533051-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2948	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.3528	0.0	100	0.00
4	C	Vinyl Chloride	0.3000	0.3695	-23.2#	100	0.00
5	T	1,3-Butadiene	-1.0000	0.3949	0.0	100	0.01
6	T	Bromomethane	-1.0000	0.2981	0.0	100	0.00
7	T	Chloroethane	-1.0000	0.2988	0.0	100	0.00
8	T	Trichlorofluoromethane	-1.0000	0.2599	0.0	100	-0.02
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.91#
10	T	Isoprene	-1.0000	0.2905	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.15#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2718	0.0	100	0.02
13	T	Acetone	-1.0000	0.8331	0.0	100	0.01
14	C	1,1-Dichloroethene	-1.0000	0.3754	0.0	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.59#
16	T	Dimethyl Sulfide	-1.0000	0.2822	0.0	100	0.00
17	T	Iodomethane	-1.0000	1.1018	0.0	0	0.01
18	T	Methyl acetate	-1.0000	0.1843	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4171	0.0	100	0.01
20	T	Carbon Disulfide	-1.0000	0.4395	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.44#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2573	0.0	100	0.01
23	T	trans-1,2-Dichloroethene	-1.0000	0.3294	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.4343	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.14#
26	T	Vinyl Acetate	-1.0000	0.2838	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.2997	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.89#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.00#
31	T	2,2-Dichloropropane	-1.0000	0.2941	0.0	100	0.01
32	T	cis-1,2-Dichloroethene	-1.0000	0.3601	0.0	100	0.00
33	C	Chloroform	0.3000	0.2884	3.9	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.52#
35	T	Bromochloromethane	-1.0000	0.2171	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.2895	0.0	100	0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	-1.0000	0.2560	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.2992	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.3229	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.22#
42	T	Carbon Tetrachloride	-1.0000	0.2587	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	-1.0000	0.3231	0.0	100	0.00
46	T	Benzene	0.3000	0.3454	-15.1	100	0.00
47	T	Trichloroethene	-1.0000	0.4922	0.0	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3959	0.0	100	0.01
49	C	1,2-Dichloropropane	-1.0000	0.2566	0.0	100	0.00
50	T	Bromodichloromethane	-1.0000	0.2632	0.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	-1.0000	0.3557	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1852	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.07#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\073015\8M406490.D Vial: 14
Acq On : 30 Jul 2015 20:22 Operator: TMB
Sample : WG533051-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.2942	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2094	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0283	0.0	100	0.00
59	C	Toluene	-1.0000	0.3469	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2462	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3202	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.3103	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	-1.0000	0.2988	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.3547	0.0	100	0.01
67	T	Dibromochloromethane	-1.0000	0.3199	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.2871	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.3355	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.3342	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.2850	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.3684	0.0	100	0.00
73	T	m-,p-Xylene	-1.0000	0.6730	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.3219	0.0	100	0.00
75	T	Styrene	-1.0000	0.3086	0.0	100	0.00
76	P	Bromoform	-1.0000	0.2597	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.3254	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2753	0.0	100	0.01
80	S	p-Bromofluorobenzene	-1.0000	0.0248	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.1401	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.9919	0.0	0	0.00
83	T	n-Propylbenzene	-1.0000	0.3607	0.0	0	0.00
84	T	Bromobenzene	0.3000	0.3442	-14.7	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.3546	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.3916	0.0	100	0.00
87	T	4-Chlorotoluene	-1.0000	0.3990	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2945	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3190	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.3504	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3530	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.3880	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.3693	0.0	100	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.3614	-20.5	100	0.00
95	T	n-Butylbenzene	-1.0000	0.3936	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.3227	-7.6	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.3864	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	-1.0000	0.4287	0.0	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.5137	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.3484	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.3307	-10.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1
8M406490.D 8260WT.M Fri Jul 31 14:02:28 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406491.D Vial: 15
Acq On : 30 Jul 2015 20:51 Operator: TMB
Sample : WG533051-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:14 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	981988	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	699821	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	372451	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	12.68	98	213	0.0063 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.04%#	
80) p-Bromofluorobenzene	16.08	95	483	0.0375 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.16%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	5792	0.3862 ug/L	92
3) Chloromethane	3.63	50	9042	0.5400 ug/L #	53
4) Vinyl Chloride	3.85	62	5127	0.4164 ug/L	98
5) 1,3-Butadiene	3.91	54	4317	0.3999 ug/L #	60
6) Bromomethane	4.74	94	3296	0.4019 ug/L	92
7) Chloroethane	4.91	64	3096	0.4038 ug/L #	61
8) Trichlorofluoromethane	5.37	101	6112	0.3839 ug/L #	92
10) Isoprene	5.94	67	4151	0.3331 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.18	101	3248	0.3573 ug/L	97
13) Acetone	6.24	43	1636	1.3212 ug/L #	48
14) 1,1-Dichloroethene	6.47	61	6101	0.3956 ug/L	88
16) Dimethyl Sulfide	6.75	62	3496	0.3610 ug/L	97
17) Iodomethane	6.99	142	2328	1.1155 ug/L	87
18) Methyl acetate	7.01	43	1699	0.3536 ug/L #	64
19) Methylene Chloride	7.26	84	4441	0.4521 ug/L	90
20) Carbon Disulfide	7.30	76	16637	0.5282 ug/L	98
22) Methyl Tert Butyl Ether	7.48	73	5955	0.3433 ug/L #	73
23) trans-1,2-Dichloroethene	7.70	61	5685	0.3930 ug/L	82
24) n-Hexane	7.79	57	7224	0.4620 ug/L	92
26) Vinyl Acetate	8.32	43	3001	0.3343 ug/L #	77
27) 1,1-Dichloroethane	8.34	63	7741	0.3990 ug/L	90
29) 2-Butanone	8.91	43	463	0.2208 ug/L #	57
31) 2,2-Dichloropropane	9.11	77	5224	0.3494 ug/L #	67
32) cis-1,2-Dichloroethene	9.18	96	3573	0.3432 ug/L	91
33) Chloroform	9.38	83	7455	0.4258 ug/L	89
35) Bromochloromethane	9.61	130	2065	0.3851 ug/L	94
36) Tetrahydrofuran	9.63	42	202	0.1401 ug/L #	40
38) 1,1,1-Trichloroethane	9.92	97	5545	0.3434 ug/L	94
39) Cyclohexane	9.94	56	7293	0.3872 ug/L	92
40) 1,1-Dichloropropene	10.10	75	6059	0.4382 ug/L	89
42) Carbon Tetrachloride	10.24	117	5004	0.3500 ug/L	97
45) 1,2-Dichloroethane	10.42	62	4821	0.4111 ug/L	91
46) Benzene	10.46	78	16612	0.4298 ug/L	92
47) Trichloroethene	11.22	130	5775	0.5235 ug/L	95
48) Methylcyclohexane	11.31	83	7747	0.4843 ug/L	94
49) 1,2-Dichloropropane	11.44	63	3675	0.3432 ug/L	98
50) Bromodichloromethane	11.72	83	4746	0.3571 ug/L #	95
52) Dibromomethane	11.82	93	1868	0.3814 ug/L	87
53) 2-Chloroethyl Vinyl Ether	12.03	63	1396	0.3121 ug/L #	53
55) cis-1,3-Dichloropropene	12.37	75	5826	0.3983 ug/L	92

(#) = qualifier out of range (m) = manual integration
8M406491.D 8260WT.M Fri Jul 31 14:02:14 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406491.D Vial: 15
Acq On : 30 Jul 2015 20:51 Operator: TMB
Sample : WG533051-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:14 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
56)	Dimethyl Disulfide	12.62	79	1737	0.2192	ug/L		78
59)	Toluene	12.79	91	19337	0.4728	ug/L		99
60)	Ethyl Methacrylate	12.89	69	2609	0.3342	ug/L		94
62)	trans-1,3-Dichloropropene	12.96	75	3967	0.3279	ug/L		85
63)	1,1,2-Trichloroethane	13.19	97	2460	0.3838	ug/L		87
65)	1,3-Dichloropropane	13.49	76	4041	0.3623	ug/L		97
66)	Tetrachloroethene	13.60	164	3390	0.3931	ug/L		99
67)	Dibromochloromethane	13.86	129	3049	0.3611	ug/L		100
68)	1,2-Dibromoethane	14.13	107	2175	0.3490	ug/L		80
69)	1-Chlorohexane	14.21	91	6587	0.4558	ug/L		78
70)	Chlorobenzene	14.63	112	10900	0.4163	ug/L		86
71)	1,1,1,2-Tetrachloroethane	14.66	131	3091	0.3323	ug/L		92
72)	Ethylbenzene	14.66	106	5826	0.3942	ug/L		94
73)	m-,p-Xylene	14.74	106	14777	0.8460	ug/L		92
74)	o-Xylene	15.31	106	7575	0.4407	ug/L		91
75)	Styrene	15.34	104	11258	0.4010	ug/L		99
76)	Bromoform	15.84	173	1447	0.2851	ug/L		95
77)	Isopropylbenzene	15.73	105	18387	0.4273	ug/L		92
79)	1,1,2,2-Tetrachloroethane	15.94	83	2308	0.3411	ug/L	#	90
81)	1,2,3-Trichloropropane	16.15	110	486	0.2559	ug/L	#	1
82)	trans-1,4-Dichloro-2-Buten	16.19	53	794	1.0932	ug/L	#	1
83)	n-Propylbenzene	16.24	91	24368	0.4444	ug/L		97
84)	Bromobenzene	16.37	156	4461	0.4016	ug/L		92
85)	1,3,5-Trimethylbenzene	16.43	105	15495	0.4280	ug/L		95
86)	2-Chlorotoluene	16.51	91	13796	0.4119	ug/L		97
87)	4-Chlorotoluene	16.55	91	14914	0.4672	ug/L		99
88)	a-Methylstyrene	16.83	118	7575	0.3853	ug/L		88
89)	tert-Butylbenzene	16.90	134	3120	0.3978	ug/L		97
90)	1,2,4-Trimethylbenzene	16.94	105	15362	0.4188	ug/L		99
91)	sec-Butylbenzene	17.16	105	20922	0.4684	ug/L		94
92)	p-Isopropyltoluene	17.32	119	16439	0.4279	ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	9884	0.4538	ug/L		98
94)	1,4-Dichlorobenzene	17.64	146	10851	0.4833	ug/L		80
95)	n-Butylbenzene	17.84	91	19783	0.5341	ug/L		98
96)	1,2-Dichlorobenzene	18.13	146	7878	0.4097	ug/L		94
97)	1,2-Dibromo-3-Chloropropan	19.13	75	335	0.2828	ug/L	#	1
98)	1,2,4-Trichlorobenzene	20.27	180	7047	0.4762	ug/L		93
99)	Hexachlorobutadiene	20.43	225	3518	0.4672	ug/L		98
100)	Naphthalene	20.65	128	6798	0.3540	ug/L		95
101)	1,2,3-Trichlorobenzene	20.96	180	6241	0.4887	ug/L		92

(#) = qualifier out of range (m) = manual integration
8M406491.D 8260WT.M Fri Jul 31 14:02:14 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406491.D Vial: 15
Acq On : 30 Jul 2015 20:51 Operator: TMB
Sample : WG533051-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

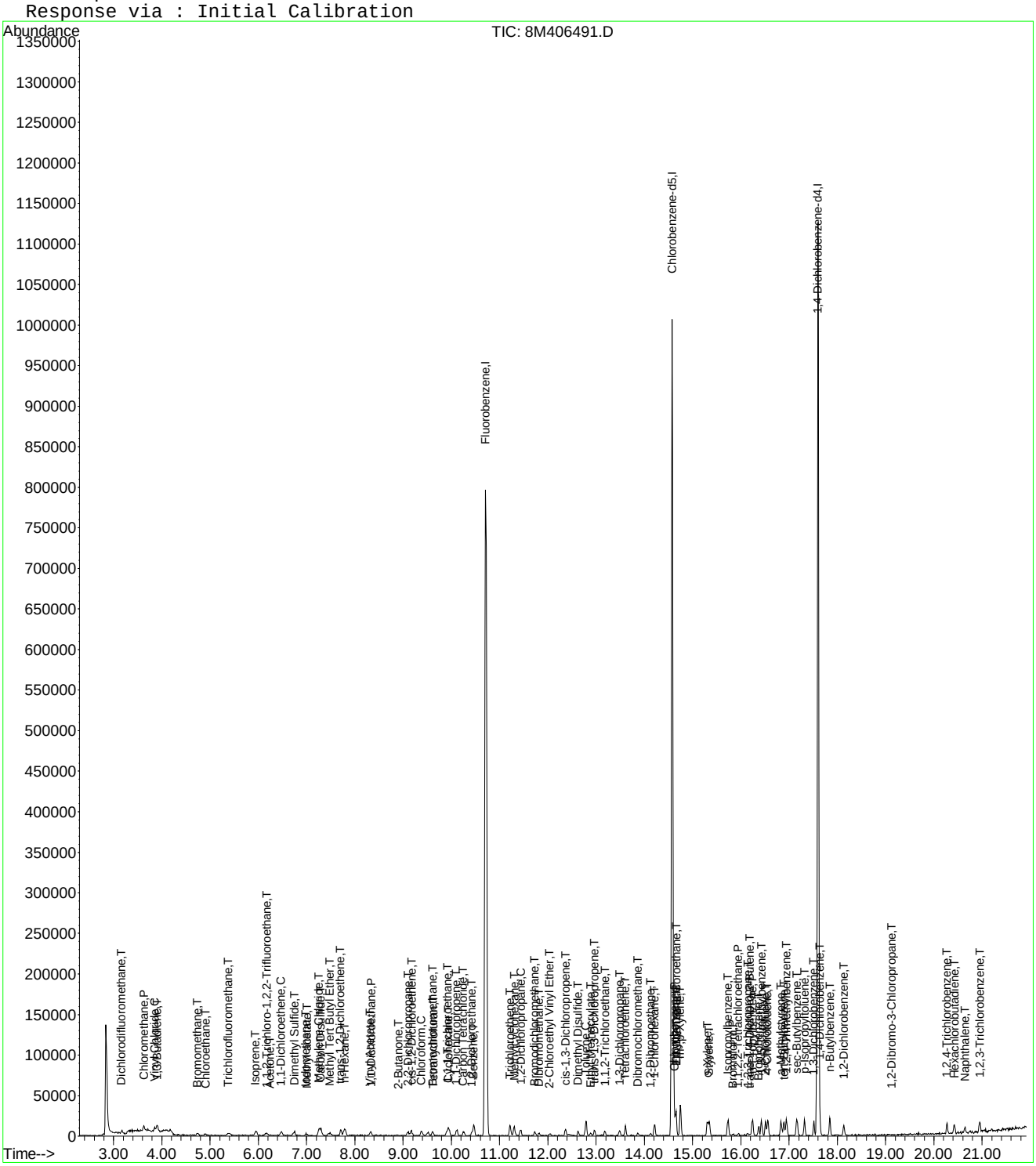

8M406491.D 8260WT.M Fri Jul 31 14:02:15 2015 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\073015\8M406491.D Vial: 15
Acq On : 30 Jul 2015 20:51 Operator: TMB
Sample : WG533051-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	0.4000	0.3862	3.5	100	-0.01
3	P	Chloromethane	-1.0000	0.5400	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.4164	-4.1	100	0.00
5	T	1,3-Butadiene	0.4000	0.3999	0.0	100	0.02
6	T	Bromomethane	0.4000	0.4019	-0.5	100	0.00
7	T	Chloroethane	0.4000	0.4038	-1.0	100	0.00
8	T	Trichlorofluoromethane	0.4000	0.3839	4.0	100	-0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.91#
10	T	Isoprene	0.4000	0.3331	16.7	100	-0.01
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.15#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3573	0.0	100	0.02
13	T	Acetone	-1.0000	1.3212	0.0	100	0.00
14	C	1,1-Dichloroethene	0.4000	0.3956	1.1	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.59#
16	T	Dimethyl Sulfide	0.4000	0.3610	9.7	100	0.00
17	T	Iodomethane	-1.0000	1.1155	0.0	0	0.00
18	T	Methyl acetate	-1.0000	0.3536	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4521	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.5282	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.44#
22	T	Methyl Tert Butyl Ether	-1.0000	0.3433	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.3930	1.7	100	-0.01
24	T	n-Hexane	-1.0000	0.4620	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.14#
26	T	Vinyl Acetate	0.4000	0.3343	16.4	100	0.02
27	P	1,1-Dichloroethane	0.4000	0.3990	0.2	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.2208	0.0	100	0.02
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.00#
31	T	2,2-Dichloropropane	0.4000	0.3494	12.6	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.3432	14.2	100	0.00
33	C	Chloroform	0.4000	0.4258	-6.5	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.52#
35	T	Bromochloromethane	0.4000	0.3851	3.7	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.1401	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	0.4000	0.3434	14.2	100	0.00
39	T	Cyclohexane	-1.0000	0.3872	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4382	0.0	100	-0.01
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.22#
42	T	Carbon Tetrachloride	0.4000	0.3500	12.5	100	-0.01
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	0.4000	0.4111	-2.8	100	-0.01
46	T	Benzene	0.4000	0.4298	-7.4	100	-0.01
47	T	Trichloroethene	0.4000	0.5235	-30.9#	100	0.00
48	T	Methylcyclohexane	-1.0000	0.4843	0.0	100	0.00
49	C	1,2-Dichloropropane	0.4000	0.3432	14.2	100	0.00
50	T	Bromodichloromethane	0.4000	0.3572	10.7	100	-0.01
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	0.4000	0.3814	4.7	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.3121	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.07#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\073015\8M406491.D Vial: 15
Acq On : 30 Jul 2015 20:51 Operator: TMB
Sample : WG533051-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3983	0.4	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2192	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0063	0.0	100	0.00
59	C	Toluene	0.4000	0.4728	-18.2	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3342	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3279	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.3838	4.0	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	0.4000	0.3623	9.4	100	0.00
66	T	Tetrachloroethene	0.4000	0.3932	1.7	100	0.00
67	T	Dibromochloromethane	0.4000	0.3611	9.7	100	-0.01
68	T	1,2-Dibromoethane	0.4000	0.3490	12.7	100	0.00
69	T	1-Chlorohexane	0.4000	0.4557	-13.9	100	0.00
70	P	Chlorobenzene	0.4000	0.4163	-4.1	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3323	16.9	100	0.00
72	C	Ethylbenzene	0.4000	0.3942	1.5	100	0.00
73	T	m-,p-Xylene	0.8000	0.8460	-5.8	100	0.00
74	T	o-Xylene	-1.0000	0.4407	0.0	100	0.00
75	T	Styrene	0.4000	0.4010	-0.3	100	0.00
76	P	Bromoform	-1.0000	0.2851	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.4273	-6.8	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.3411	14.7	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0375	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.2559	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	1.0932	0.0	0	0.00
83	T	n-Propylbenzene	0.4000	0.4444	-11.1	100	0.00
84	T	Bromobenzene	0.4000	0.4016	-0.4	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.4280	-7.0	100	0.00
86	T	2-Chlorotoluene	0.4000	0.4119	-3.0	100	0.00
87	T	4-Chlorotoluene	0.4000	0.4672	-16.8	100	-0.01
88	T	a-Methylstyrene	-1.0000	0.3853	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3978	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	0.4000	0.4188	-4.7	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.4684	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4279	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.4538	-13.4	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.4833	-20.8	100	0.00
95	T	n-Butylbenzene	-1.0000	0.5341	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.4097	-2.4	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.2828	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	0.4000	0.4762	-19.0	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.4672	-16.8	100	0.00
100	T	Naphthalene	0.4000	0.3540	11.5	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.4887	-22.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M406491.D 8260WT.M Fri Jul 31 14:02:37 2015 Page 2

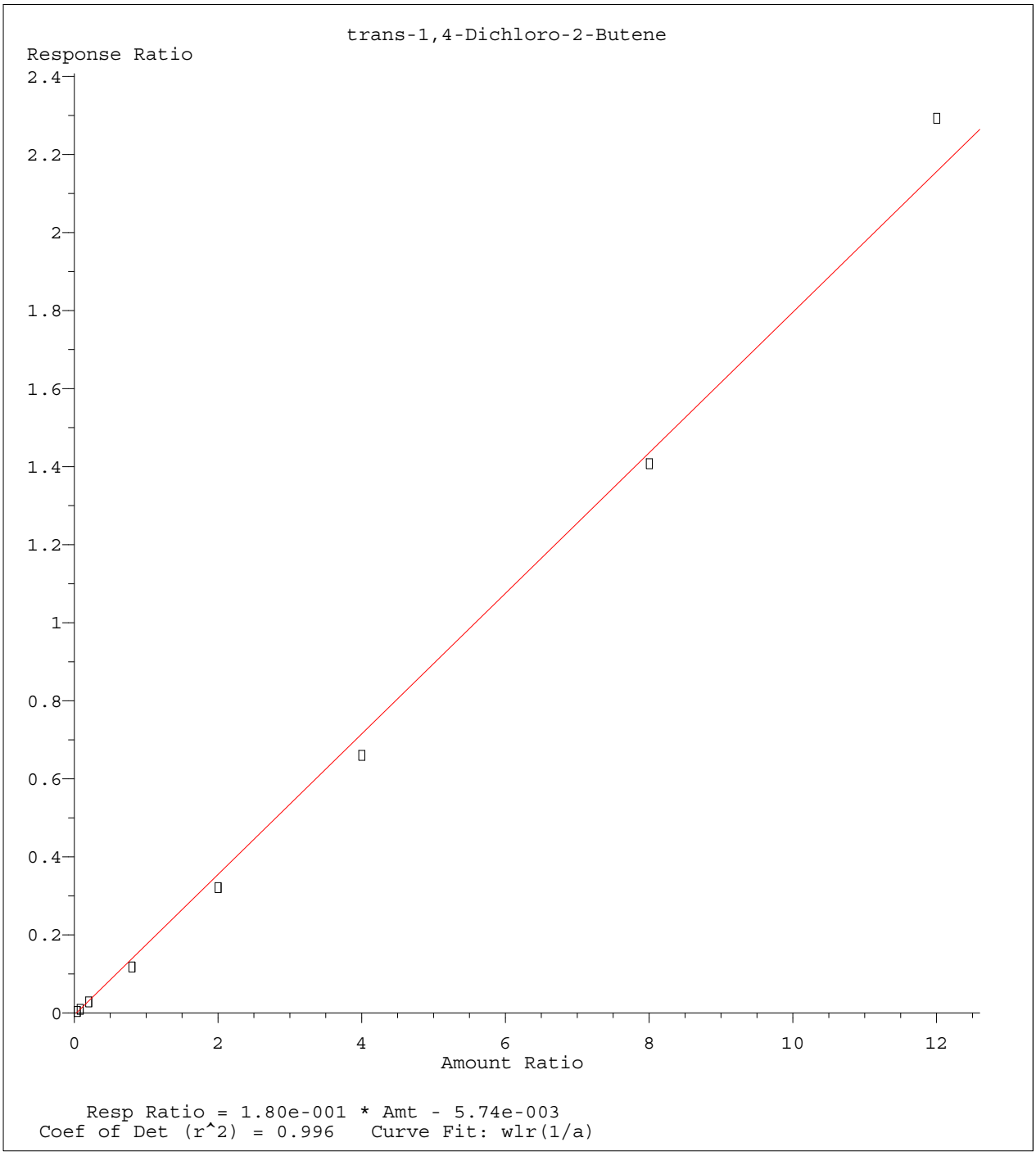

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Fri Jul 31 13:26:17 2015

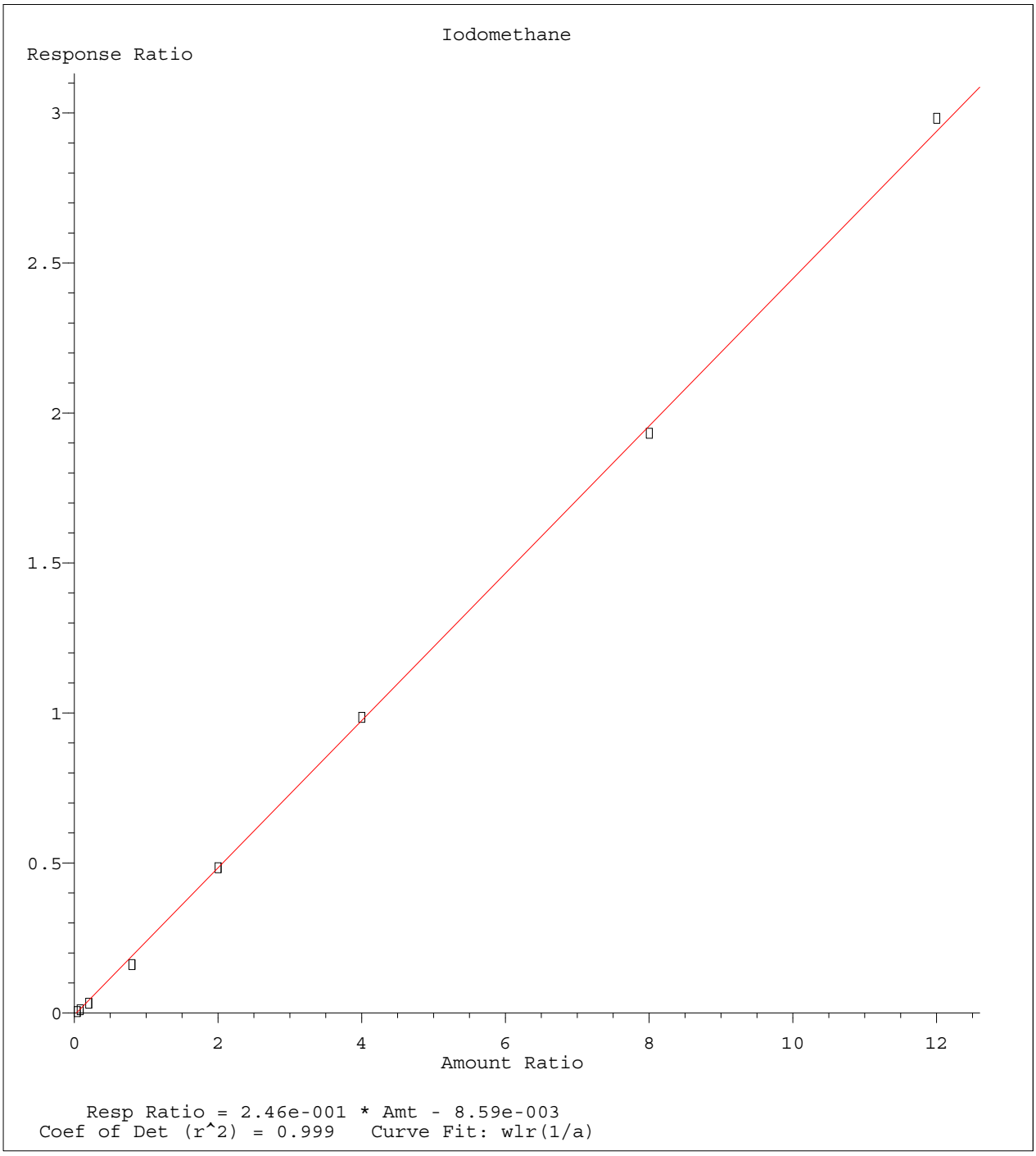

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Fri Jul 31 13:26:17 2015

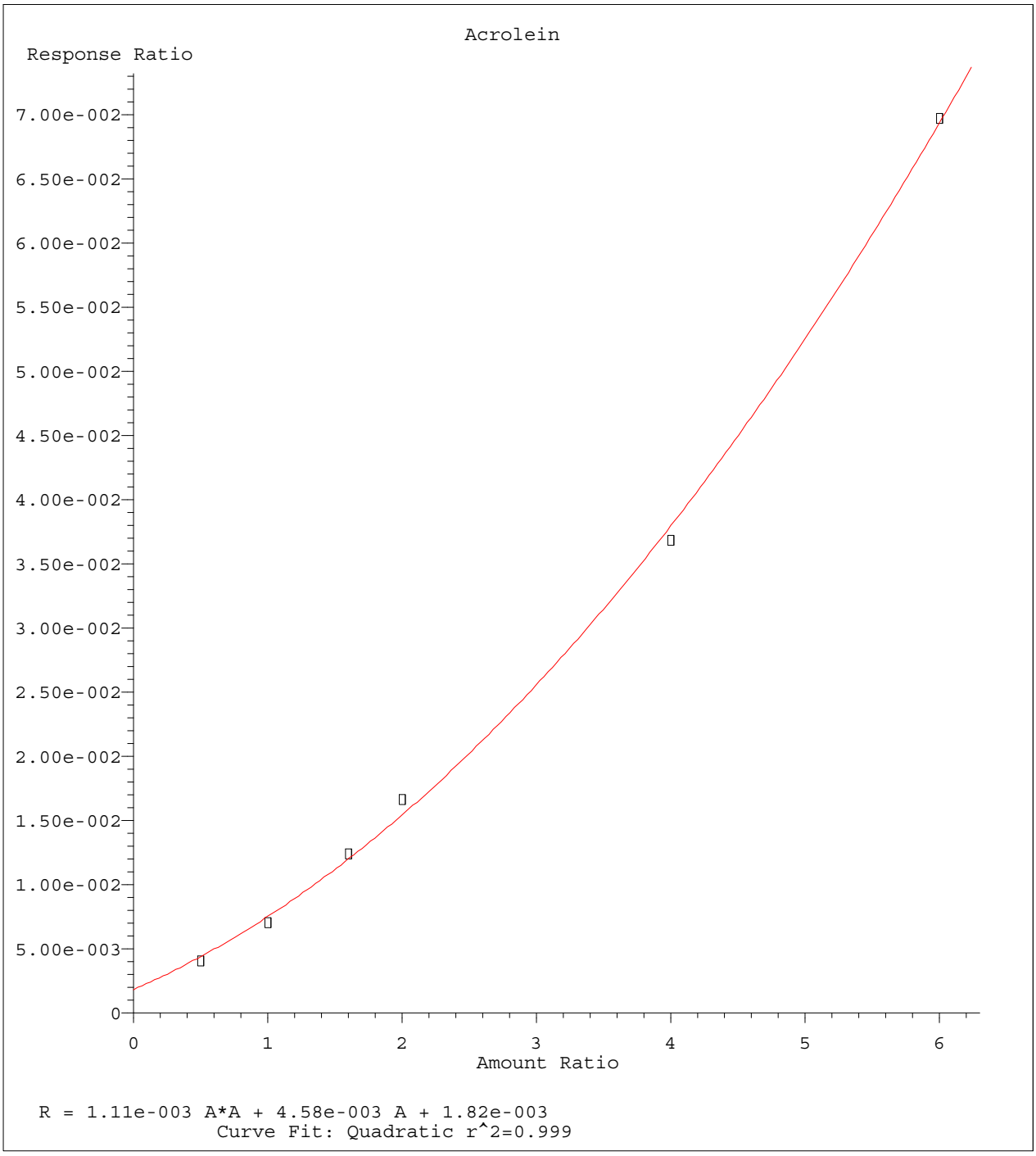

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Fri Jul 31 13:26:17 2015

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406492.D Vial: 16
Acq On : 30 Jul 2015 21:20 Operator: TMB
Sample : WG533051-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD71618 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:15 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	998188	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	705097	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	372507	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	221952	25.2344 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.92%		
43) 1,2-Dichloroethane-d4	10.31	65	213180	24.3733 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.48%		
58) Toluene-d8	12.69	98	842131	24.7582 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.04%		
80) p-Bromofluorobenzene	16.08	95	319261	24.7784 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.12%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	760257	49.8704 ug/L	99
3) Chloromethane	3.62	50	798332	46.9066 ug/L	99
4) Vinyl Chloride	3.85	62	598895	47.8484 ug/L	99
5) 1,3-Butadiene	3.89	54	390174	35.5588 ug/L	91
6) Bromomethane	4.74	94	380637	45.6561 ug/L	98
7) Chloroethane	4.89	64	394516	50.6233 ug/L	99
8) Trichlorofluoromethane	5.38	101	742918	45.9031 ug/L	100
9) Diethyl ether	5.91	59	508023	82.9284 ug/L	99
10) Isoprene	5.94	67	554917	43.8076 ug/L	100
11) Acrolein	6.15	56	25077	73.9767 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	427942	46.3101 ug/L	98
13) Acetone	6.24	43	63026	50.0714 ug/L	85
14) 1,1-Dichloroethene	6.47	61	689436	43.9767 ug/L	96
15) Tert-Butyl Alcohol	6.60	59	62923	190.3168 ug/L	99
16) Dimethyl Sulfide	6.74	62	510518	51.8671 ug/L	96
17) Iodomethane	6.99	142	379173	39.5421 ug/L	97
18) Methyl acetate	7.01	43	192753	39.4626 ug/L	98
19) Methylene Chloride	7.26	84	461816	46.2459 ug/L	98
20) Carbon Disulfide	7.30	76	1095623	34.2184 ug/L	100
21) Acrylonitrile	7.44	53	103087	49.2865 ug/L	97
22) Methyl Tert Butyl Ether	7.48	73	847872	48.0796 ug/L	98
23) trans-1,2-Dichloroethene	7.71	61	685784	46.6421 ug/L	97
24) n-Hexane	7.80	57	587027	36.9341 ug/L	100
25) Diisopropyl ether	8.14	45	3319277	92.9676 ug/L	98
26) Vinyl Acetate	8.30	43	639904	70.1168 ug/L	100
27) 1,1-Dichloroethane	8.33	63	924236	46.8680 ug/L	99
28) Ethyl-Tert-Butyl ether	8.71	59	2407237	90.3679 ug/L	100
29) 2-Butanone	8.89	43	112752	52.9044 ug/L	99
30) Propionitrile	9.00	54	68332	100.8008 ug/L	94
31) 2,2-Dichloropropane	9.11	77	699305	46.0164 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	504121	47.6428 ug/L	95
33) Chloroform	9.38	83	858972	48.2659 ug/L	98
34) 1-Bromopropane	9.52	122	102385	54.4369 ug/L	96
35) Bromochloromethane	9.62	130	263358	48.3192 ug/L	99
36) Tetrahydrofuran	9.64	42	141291	96.3854 ug/L	96
38) 1,1,1-Trichloroethane	9.92	97	802864	48.9090 ug/L	99
39) Cyclohexane	9.95	56	843061	44.0328 ug/L	100
40) 1,1-Dichloropropene	10.11	75	654340	46.5565 ug/L	98
41) Tert-Amyl-Methyl ether	10.22	73	1909722	95.7703 ug/L	100
42) Carbon Tetrachloride	10.26	117	721323	49.6274 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M406492.D 8260WT.M Fri Jul 31 14:02:15 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406492.D Vial: 16
Acq On : 30 Jul 2015 21:20 Operator: TMB
Sample : WG533051-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD71618 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:15 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	552896	46.3850 ug/L		99
46)	Benzene	10.46	78	1887464	48.0417 ug/L		99
47)	Trichloroethene	11.22	130	490661	43.7549 ug/L		97
48)	Methylcyclohexane	11.30	83	742729	45.6744 ug/L		99
49)	1,2-Dichloropropane	11.44	63	535572	49.2069 ug/L		97
50)	Bromodichloromethane	11.73	83	641047	47.4573 ug/L		99
51)	1,4-Dioxane	11.72	88	6953	181.6534 ug/L		83
52)	Dibromomethane	11.82	93	234491	47.0960 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	230887	50.7848 ug/L		100
54)	4-Methyl-2-Pentanone	12.06	58	102085	50.5834 ug/L		98
55)	cis-1,3-Dichloropropene	12.37	75	747778	50.2935 ug/L		99
56)	Dimethyl Disulfide	12.62	79	403465	50.0882 ug/L		95
59)	Toluene	12.79	91	1989406	48.2802 ug/L		98
60)	Ethyl Methacrylate	12.88	69	422204	53.6851 ug/L		94
62)	trans-1,3-Dichloropropene	12.97	75	574201	47.1096 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	306195	47.4179 ug/L		98
64)	2-Hexanone	13.12	58	96303	52.7923 ug/L	#	94
65)	1,3-Dichloropropane	13.48	76	547512	48.7170 ug/L		95
66)	Tetrachloroethene	13.61	164	415959	47.8788 ug/L		99
67)	Dibromochloromethane	13.86	129	407864	47.9485 ug/L		98
68)	1,2-Dibromoethane	14.12	107	297966	47.4577 ug/L		99
69)	1-Chlorohexane	14.22	91	720733	49.4939 ug/L		99
70)	Chlorobenzene	14.63	112	1337432	50.6933 ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.66	131	460306	49.1130 ug/L		100
72)	Ethylbenzene	14.66	106	731345	49.1088 ug/L		95
73)	m-,p-Xylene	14.74	106	1764113	100.2450 ug/L		95
74)	o-Xylene	15.31	106	889253	51.3463 ug/L		96
75)	Styrene	15.34	104	1414087	49.9932 ug/L		100
76)	Bromoform	15.84	173	250708	49.0206 ug/L		98
77)	Isopropylbenzene	15.74	105	2227657	51.3804 ug/L		98
79)	1,1,2,2-Tetrachloroethane	15.94	83	333440	49.2653 ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	91572	48.2006 ug/L		61
82)	trans-1,4-Dichloro-2-Buten	16.18	53	105948	40.2718 ug/L	#	51
83)	n-Propylbenzene	16.24	91	2803567	51.1176 ug/L		99
84)	Bromobenzene	16.37	156	530000	47.7080 ug/L		98
85)	1,3,5-Trimethylbenzene	16.43	105	1890061	52.1983 ug/L		97
86)	2-Chlorotoluene	16.51	91	1810366	54.0398 ug/L		100
87)	4-Chlorotoluene	16.55	91	1675878	52.4950 ug/L		98
88)	a-Methylstyrene	16.83	118	1101871	56.0359 ug/L		99
89)	tert-Butylbenzene	16.89	134	407869	51.9933 ug/L		93
90)	1,2,4-Trimethylbenzene	16.95	105	1882712	51.3188 ug/L		97
91)	sec-Butylbenzene	17.16	105	2381458	53.3045 ug/L		98
92)	p-Isopropyltoluene	17.32	119	1948217	50.7078 ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	1088924	49.9863 ug/L		99
94)	1,4-Dichlorobenzene	17.64	146	1047998	46.6689 ug/L		98
95)	n-Butylbenzene	17.85	91	1912025	51.6095 ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	969811	50.4233 ug/L		100
97)	1,2-Dibromo-3-Chloropropan	19.13	75	54805	46.2513 ug/L		88
98)	1,2,4-Trichlorobenzene	20.28	180	705673	47.6775 ug/L		99
99)	Hexachlorobutadiene	20.43	225	347054	46.0788 ug/L		99
100)	Naphthalene	20.64	128	972942	50.6643 ug/L		99
101)	1,2,3-Trichlorobenzene	20.95	180	603944	47.2852 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M406492.D 8260WT.M Fri Jul 31 14:02:16 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406492.D Vial: 16
Acq On : 30 Jul 2015 21:20 Operator: TMB
Sample : WG533051-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD71618 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

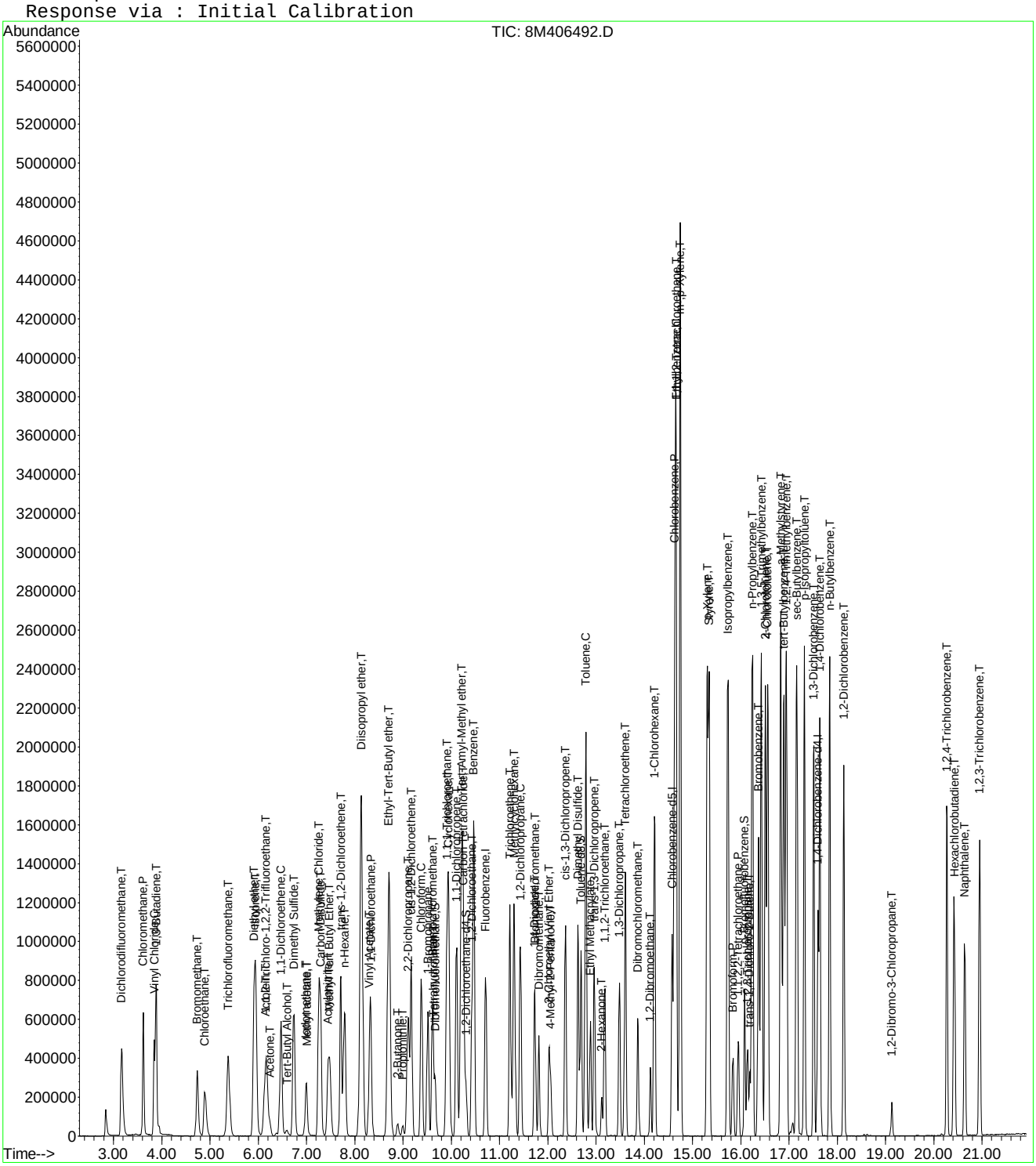

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\073015\8M406492.D Vial: 16
Acq On : 30 Jul 2015 21:20 Operator: TMB
Sample : WG533051-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD71618 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	110	0.00
2	T	Dichlorodifluoromethane	50.0000	49.8704	0.3	96	0.00
3	P	Chloromethane	50.0000	46.9066	6.2	103	0.00
4	C	Vinyl Chloride	50.0000	47.8484	4.3	101	0.00
5	T	1,3-Butadiene	50.0000	35.5588	28.9#	74	0.00
6	T	Bromomethane	50.0000	45.6561	8.7	102	0.00
7	T	Chloroethane	50.0000	50.6233	-1.2	109	-0.01
8	T	Trichlorofluoromethane	50.0000	45.9031	8.2	96	-0.01
9	T	Diethyl ether	100.0000	82.9284	17.1	93	0.00
10	T	Isoprene	50.0000	43.8076	12.4	92	-0.01
11	T	Acrolein	50.0000	73.9767	-48.0#	167	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	46.3100	7.4	95	0.00
13	T	Acetone	50.0000	50.0714	-0.1	117	0.00
14	C	1,1-Dichloroethene	50.0000	43.9767	12.0	94	0.00
15	T	Tert-Butyl Alcohol	200.0000	190.3168	4.8	115	0.01
16	T	Dimethyl Sulfide	50.0000	51.8671	-3.7	112	0.00
17	T	Iodomethane	50.0000	39.5421	20.9	87	0.00
18	T	Methyl acetate	50.0000	39.4626	21.1	91	0.00
19	T	Methylene Chloride	50.0000	46.2459	7.5	100	0.00
20	T	Carbon Disulfide	50.0000	34.2184	31.6#	73	0.00
21	T	Acrylonitrile	50.0000	49.2865	1.4	108	0.00
22	T	Methyl Tert Butyl Ether	50.0000	48.0796	3.8	105	0.00
23	T	trans-1,2-Dichloroethene	50.0000	46.6421	6.7	99	0.00
24	T	n-Hexane	50.0000	36.9341	26.1#	79	0.00
25	T	Diisopropyl ether	100.0000	92.9676	7.0	103	0.00
26	T	Vinyl Acetate	50.0000	70.1168	-40.2#	156	0.00
27	P	1,1-Dichloroethane	50.0000	46.8680	6.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	90.3679	9.6	101	0.00
29	T	2-Butanone	50.0000	52.9044	-5.8	116	0.00
30	T	Propionitrile	100.0000	100.8008	-0.8	109	0.00
31	T	2,2-Dichloropropane	50.0000	46.0164	8.0	98	0.00
32	T	cis-1,2-Dichloroethene	50.0000	47.6428	4.7	101	0.00
33	C	Chloroform	50.0000	48.2659	3.5	104	0.00
34		1-Bromopropane	50.0000	54.4369	-8.9	118	0.00
35	T	Bromochloromethane	50.0000	48.3192	3.4	105	0.00
36	T	Tetrahydrofuran	100.0000	96.3855	3.6	111	0.00
37	S	Dibromofluoromethane	25.0000	25.2344	-0.9	108	0.00
38	T	1,1,1-Trichloroethane	50.0000	48.9090	2.2	103	0.00
39	T	Cyclohexane	50.0000	44.0329	11.9	93	0.00
40	T	1,1-Dichloropropene	50.0000	46.5565	6.9	98	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	95.7703	4.2	108	0.00
42	T	Carbon Tetrachloride	50.0000	49.6274	0.7	102	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.3732	2.5	110	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	46.3850	7.2	100	0.00
46	T	Benzene	50.0000	48.0417	3.9	103	-0.01
47	T	Trichloroethene	50.0000	43.7549	12.5	100	0.00
48	T	Methylcyclohexane	50.0000	45.6744	8.7	99	0.00
49	C	1,2-Dichloropropane	50.0000	49.2069	1.6	102	0.00
50	T	Bromodichloromethane	50.0000	47.4573	5.1	100	0.00
51	T	1,4-Dioxane	200.0000	181.6534	9.2	109	0.01
52	T	Dibromomethane	50.0000	47.0960	5.8	101	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	50.7848	-1.6	109	-0.01
54	T	4-Methyl-2-Pentanone	50.0000	50.5834	-1.2	111	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\073015\8M406492.D Vial: 16
Acq On : 30 Jul 2015 21:20 Operator: TMB
Sample : WG533051-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD71618 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	50.2936	-0.6	105	0.00
56	T	Dimethyl Disulfide	50.0000	50.0882	-0.2	109	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	109	0.00
58	S	Toluene-d8	25.0000	24.7582	1.0	107	0.00
59	C	Toluene	50.0000	48.2802	3.4	101	0.00
60	T	Ethyl Methacrylate	50.0000	53.6851	-7.4	113	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	47.1096	5.8	99	0.00
63	T	1,1,2-Trichloroethane	50.0000	47.4179	5.2	100	0.00
64	T	2-Hexanone	50.0000	52.7923	-5.6	116	0.00
65	T	1,3-Dichloropropane	50.0000	48.7170	2.6	103	0.00
66	T	Tetrachloroethene	50.0000	47.8788	4.2	100	0.00
67	T	Dibromochloromethane	50.0000	47.9485	4.1	100	-0.01
68	T	1,2-Dibromoethane	50.0000	47.4577	5.1	102	0.00
69	T	1-Chlorohexane	50.0000	49.4939	1.0	106	0.00
70	P	Chlorobenzene	50.0000	50.6933	-1.4	107	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	49.1130	1.8	99	0.00
72	C	Ethylbenzene	50.0000	49.1088	1.8	105	0.00
73	T	m-,p-Xylene	100.0000	100.2450	-0.2	104	0.00
74	T	o-Xylene	50.0000	51.3463	-2.7	106	0.00
75	T	Styrene	50.0000	49.9932	0.0	103	0.00
76	P	Bromoform	50.0000	49.0206	2.0	105	0.00
77	T	Isopropylbenzene	50.0000	51.3804	-2.8	105	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	104	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	49.2653	1.5	103	0.00
80	S	p-Bromofluorobenzene	25.0000	24.7784	0.9	107	0.00
81	T	1,2,3-Trichloropropane	50.0000	48.2006	3.6	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	40.2718	19.5	93	-0.01
83	T	n-Propylbenzene	50.0000	51.1176	-2.2	103	0.00
84	T	Bromobenzene	50.0000	47.7080	4.6	101	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	52.1983	-4.4	103	0.00
86	T	2-Chlorotoluene	50.0000	54.0398	-8.1	106	0.00
87	T	4-Chlorotoluene	50.0000	52.4950	-5.0	107	-0.01
88	T	a-Methylstyrene	50.0000	56.0359	-12.1	113	0.00
89	T	tert-Butylbenzene	50.0000	51.9933	-4.0	106	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	51.3188	-2.6	100	0.00
91	T	sec-Butylbenzene	50.0000	53.3045	-6.6	102	0.00
92	T	p-Isopropyltoluene	50.0000	50.7077	-1.4	97	0.00
93	T	1,3-Dichlorobenzene	50.0000	49.9863	0.0	103	0.00
94	T	1,4-Dichlorobenzene	50.0000	46.6689	6.7	99	0.00
95	T	n-Butylbenzene	50.0000	51.6095	-3.2	98	0.00
96	T	1,2-Dichlorobenzene	50.0000	50.4233	-0.8	103	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	46.2513	7.5	94	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	47.6775	4.6	97	0.00
99	T	Hexachlorobutadiene	50.0000	46.0789	7.8	96	0.00
100	T	Naphthalene	50.0000	50.6643	-1.3	96	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	47.2852	5.4	98	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M406492.D 8260WT.M Fri Jul 31 14:04:07 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\082015\8M406901.D Vial: 2
Acq On : 20 Aug 2015 14:24 Operator: TMB
Sample : WG535682-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD71981 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 20 14:46:02 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	1069980	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	772998	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	436961	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	236216	25.0542 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.20%		
43) 1,2-Dichloroethane-d4	10.31	65	208121	22.1983 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 88.80%		
58) Toluene-d8	12.69	98	934737	25.0668 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.28%		
80) p-Bromofluorobenzene	16.08	95	359488	23.7850 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.16%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	912101	55.8165 ug/L	98
3) Chloromethane	3.62	50	950332	52.0909 ug/L	98
4) Vinyl Chloride	3.85	62	791421	58.9877 ug/L	99
5) 1,3-Butadiene	3.89	54	727248	61.8312 ug/L	99
6) Bromomethane	4.74	94	314619	35.2054 ug/L	99
7) Chloroethane	4.90	64	448022	53.6318 ug/L	100
8) Trichlorofluoromethane	5.39	101	878072	50.6137 ug/L	99
9) Diethyl ether	5.91	59	634304	96.5949 ug/L	97
10) Isoprene	5.96	67	719031	52.9549 ug/L	99
11) Acrolein	6.15	56	9718	30.5537 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	528897	53.3947 ug/L	99
13) Acetone	6.25	43	71143	52.7277 ug/L	94
14) 1,1-Dichloroethene	6.47	61	862464	51.3223 ug/L	95
15) Tert-Butyl Alcohol	6.59	59	83963	236.9149 ug/L	99
16) Dimethyl Sulfide	6.73	62	511335	48.4644 ug/L	98
17) Iodomethane	6.99	142	212265	21.0685 ug/L	92
18) Methyl acetate	7.00	43	258021	49.2806 ug/L	98
19) Methylene Chloride	7.26	84	546577	51.0613 ug/L	98
20) Carbon Disulfide	7.30	76	1777330	51.7850 ug/L	99
21) Acrylonitrile	7.43	53	109847	48.9947 ug/L	98
22) Methyl Tert Butyl Ether	7.47	73	901761	47.7045 ug/L	97
23) trans-1,2-Dichloroethene	7.71	61	836173	53.0547 ug/L	96
24) n-Hexane	7.79	57	877311	51.4943 ug/L	97
25) Diisopropyl ether	8.14	45	3995586	104.4012 ug/L	98
26) Vinyl Acetate	8.30	43	623001	63.6843 ug/L	100
27) 1,1-Dichloroethane	8.33	63	1098457	51.9653 ug/L	99
28) Ethyl-Tert-Butyl ether	8.71	59	2849252	99.7844 ug/L	99
29) 2-Butanone	8.88	43	121909	53.3630 ug/L	99
30) Propionitrile	9.00	54	79361	109.2153 ug/L	99
31) 2,2-Dichloropropane	9.11	77	882911	54.2001 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	607424	53.5539 ug/L	95
33) Chloroform	9.38	83	967468	50.7148 ug/L	100
34) 1-Bromopropane	9.51	122	103091	51.1345 ug/L	99
35) Bromochloromethane	9.62	130	292660	50.0925 ug/L	99
36) Tetrahydrofuran	9.64	42	168778	107.4112 ug/L	95
38) 1,1,1-Trichloroethane	9.92	97	902488	51.2891 ug/L	97
39) Cyclohexane	9.95	56	1088441	53.0346 ug/L	98
40) 1,1-Dichloropropene	10.10	75	789533	52.4063 ug/L	98
41) Tert-Amyl-Methyl ether	10.22	73	2100771	98.2825 ug/L	99
42) Carbon Tetrachloride	10.26	117	805213	51.6819 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\082015\8M406901.D Vial: 2
Acq On : 20 Aug 2015 14:24 Operator: TMB
Sample : WG535682-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD71981 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 20 14:46:02 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	607797	47.5696 ug/L		97
46)	Benzene	10.46	78	2234792	53.0657 ug/L		99
47)	Trichloroethene	11.22	130	578902	48.1601 ug/L		97
48)	Methylcyclohexane	11.30	83	888210	50.9559 ug/L		100
49)	1,2-Dichloropropane	11.43	63	625817	53.6404 ug/L		92
50)	Bromodichloromethane	11.74	83	712631	49.2169 ug/L		98
51)	1,4-Dioxane	11.73	88	11321	275.9260 ug/L		98
52)	Dibromomethane	11.82	93	262182	49.1244 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	222159	45.5863 ug/L		99
54)	4-Methyl-2-Pentanone	12.06	58	102450	47.3581 ug/L		98
55)	cis-1,3-Dichloropropene	12.37	75	823565	51.6742 ug/L		99
56)	Dimethyl Disulfide	12.62	79	425022	49.2241 ug/L		97
59)	Toluene	12.79	91	2328149	51.5379 ug/L		98
60)	Ethyl Methacrylate	12.88	69	422271	48.9771 ug/L		99
62)	trans-1,3-Dichloropropene	12.97	75	668452	50.0249 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	344022	48.5961 ug/L		97
64)	2-Hexanone	13.12	58	97256	48.6315 ug/L	#	97
65)	1,3-Dichloropropane	13.48	76	601887	48.8509 ug/L		97
66)	Tetrachloroethene	13.61	164	504667	52.9869 ug/L		93
67)	Dibromochloromethane	13.87	129	465762	49.9452 ug/L		98
68)	1,2-Dibromoethane	14.12	107	338179	49.1312 ug/L		99
69)	1-Chlorohexane	14.21	91	817364	51.1992 ug/L		99
70)	Chlorobenzene	14.63	112	1488219	51.4537 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.66	131	538857	52.4437 ug/L		100
72)	Ethylbenzene	14.65	106	839877	51.4426 ug/L		97
73)	m-,p-Xylene	14.74	106	2050739	106.2961 ug/L		91
74)	o-Xylene	15.30	106	998742	52.6027 ug/L		94
75)	Styrene	15.34	104	1624002	52.3711 ug/L		97
76)	Bromoform	15.84	173	275262	49.0939 ug/L		98
77)	Isopropylbenzene	15.74	105	2522014	53.0600 ug/L		98
79)	1,1,2,2-Tetrachloroethane	15.94	83	384447	48.4230 ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	98170	44.0514 ug/L		92
82)	trans-1,4-Dichloro-2-Buten	16.18	53	116879	37.9211 ug/L		85
83)	n-Propylbenzene	16.23	91	3224114	50.1143 ug/L		98
84)	Bromobenzene	16.37	156	626099	48.0452 ug/L		97
85)	1,3,5-Trimethylbenzene	16.43	105	2156417	50.7698 ug/L		95
86)	2-Chlorotoluene	16.51	91	1995931	50.7907 ug/L		96
87)	4-Chlorotoluene	16.55	91	1878716	50.1682 ug/L		97
88)	a-Methylstyrene	16.83	118	1183198	51.2961 ug/L		99
89)	tert-Butylbenzene	16.90	134	466277	50.6714 ug/L		90
90)	1,2,4-Trimethylbenzene	16.95	105	2224255	51.6856 ug/L		97
91)	sec-Butylbenzene	17.16	105	2717406	51.8522 ug/L		98
92)	p-Isopropyltoluene	17.32	119	2321425	51.5090 ug/L		97
93)	1,3-Dichlorobenzene	17.52	146	1299201	50.8419 ug/L		97
94)	1,4-Dichlorobenzene	17.64	146	1286642	48.8446 ug/L		95
95)	n-Butylbenzene	17.85	91	2233070	51.3843 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	1128564	50.0221 ug/L		97
97)	1,2-Dibromo-3-Chloropropan	19.13	75	61437	44.2004 ug/L		89
98)	1,2,4-Trichlorobenzene	20.28	180	831467	47.8902 ug/L		99
99)	Hexachlorobutadiene	20.42	225	417586	47.2653 ug/L		98
100)	Naphthalene	20.64	128	1072845	47.6259 ug/L		99
101)	1,2,3-Trichlorobenzene	20.95	180	691614	46.1620 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M406901.D 8260WT.M Thu Aug 20 14:46:04 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\082015\8M406901.D Vial: 2
Acq On : 20 Aug 2015 14:24 Operator: TMB
Sample : WG535682-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD71981 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 20 14:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

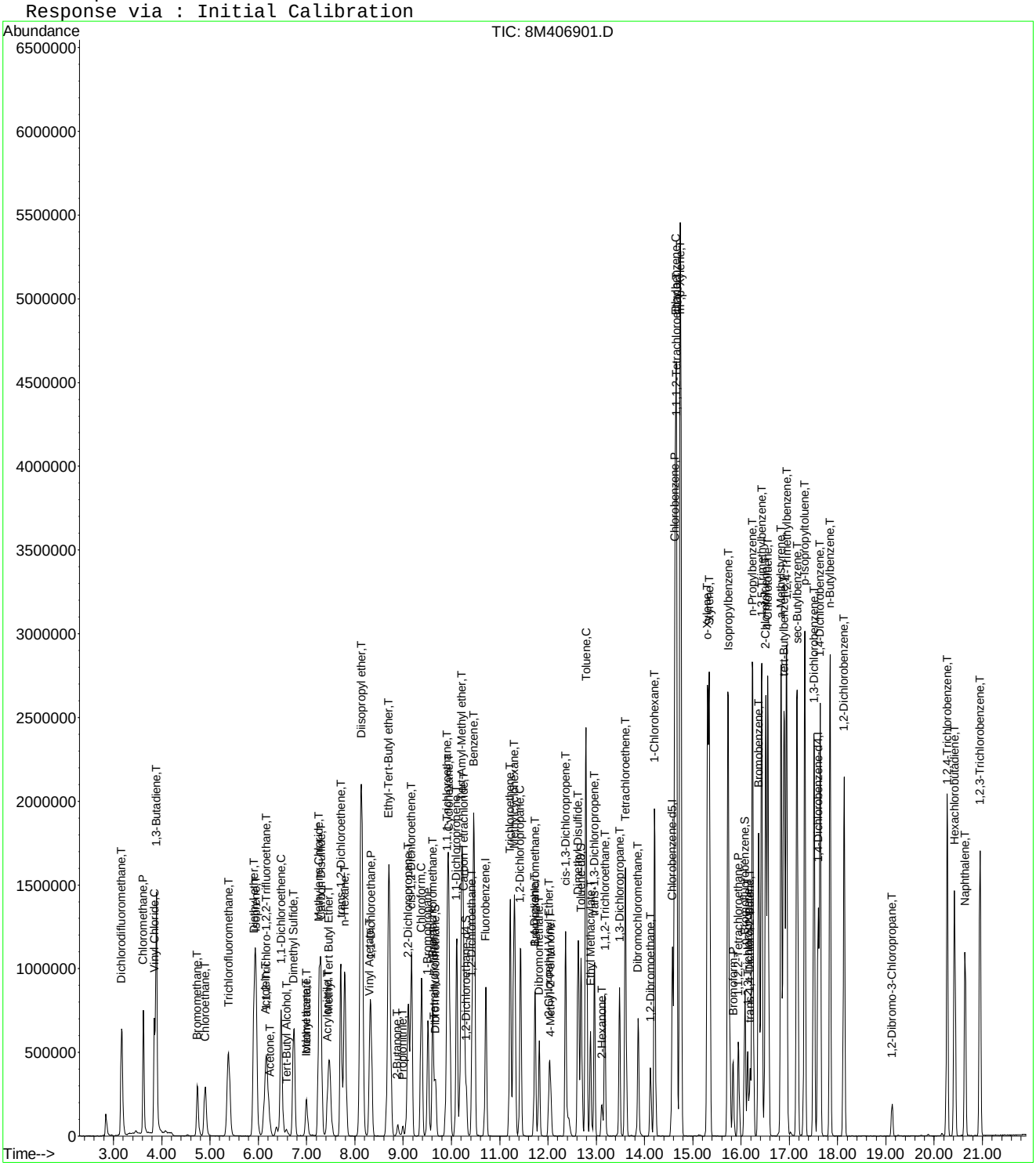

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Continuing Calibration Area and RT check

Instrument: HPMS8
Initial cal date: 30 Jul 2015 17:04
CCV date: 20 Aug 2015 14:24
CCV Filename: 8M406901.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	905123	10.71	645629	14.58	356726	17.60
CCV	1069980	10.71	772998	14.58	436961	17.60

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\082015\8M406901.D Vial: 2
Acq On : 20 Aug 2015 14:24 Operator: TMB
Sample : WG535682-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD71981 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	118	0.00
2	T	Dichlorodifluoromethane	0.3818	0.4262	-11.6	115	0.00
3	P	Chloromethane	0.4263	0.4441	-4.2	123	0.00
4	C	Vinyl Chloride	0.3135	0.3698	-18.0	134	0.00
5	T	1,3-Butadiene	0.2748	0.3398	-23.7	138	0.00
6	T	Bromomethane	0.2088	0.1470	29.6#	85	0.00
7	T	Chloroethane	0.1952	0.2094	-7.3	123	0.00
8	T	Trichlorofluoromethane	0.4053	0.4103	-1.2	114	0.00
9	T	Diethyl ether	0.1534	0.1482	3.4	117	0.00
10	T	Isoprene	0.3172	0.3360	-5.9	120	0.00
11	T	Acrolein	0.0087	0.0045	47.6#	65	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2314	0.2472	-6.8	117	0.00
13	T	Acetone	0.0315	0.0333	-5.5	132	0.00
14	C	1,1-Dichloroethene	0.3926	0.4030	-2.6	117	0.00
15	T	Tert-Butyl Alcohol	0.0083	0.0098	-18.5	154#	0.00
16	T	Dimethyl Sulfide	0.2465	0.2390	3.1	113	0.00
17	T	Iodomethane	0.1976	0.0992	49.8#	48#	0.00
18	T	Methyl acetate	0.1223	0.1206	1.4	122	0.00
19	T	Methylene Chloride	0.2501	0.2554	-2.1	118	0.00
20	T	Carbon Disulfide	0.8019	0.8305	-3.6	119	0.00
21	T	Acrylonitrile	0.0524	0.0513	2.0	115	0.00
22	T	Methyl Tert Butyl Ether	0.4417	0.4214	4.6	111	0.00
23	T	trans-1,2-Dichloroethene	0.3683	0.3907	-6.1	120	0.00
24	T	n-Hexane	0.3981	0.4100	-3.0	118	0.00
25	T	Diisopropyl ether	0.8942	0.9336	-4.4	124	0.00
26	T	Vinyl Acetate	0.2286	0.2911	-27.4#	152#	0.00
27	P	1,1-Dichloroethane	0.4939	0.5133	-3.9	119	0.00
28	T	Ethyl-Tert-Butyl ether	0.6672	0.6657	0.2	120	0.00
29	T	2-Butanone	0.0534	0.0570	-6.7	125	0.00
30	T	Propionitrile	0.0170	0.0185	-9.2	127	0.00
31	T	2,2-Dichloropropane	0.3806	0.4126	-8.4	123	0.00
32	T	cis-1,2-Dichloroethene	0.2650	0.2838	-7.1	121	0.00
33	C	Chloroform	0.4457	0.4521	-1.4	117	0.00
34		1-Bromopropane	0.0471	0.0482	-2.3	119	0.00
35	T	Bromochloromethane	0.1365	0.1368	-0.2	117	0.00
36	T	Tetrahydrofuran	0.0367	0.0394	-7.4	133	0.00
37	S	Dibromofluoromethane	0.2203	0.2208	-0.2	114	0.00
38	T	1,1,1-Trichloroethane	0.4111	0.4217	-2.6	116	0.00
39	T	Cyclohexane	0.4795	0.5086	-6.1	119	0.00
40	T	1,1-Dichloropropene	0.3520	0.3690	-4.8	119	0.00
41	T	Tert-Amyl-Methyl ether	0.4994	0.4908	1.7	119	0.00
42	T	Carbon Tetrachloride	0.3640	0.3763	-3.4	114	0.00
43	S	1,2-Dichloroethane-d4	0.2191	0.1945	11.2	108	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.2985	0.2840	4.9	110	0.00
46	T	Benzene	0.9840	1.0443	-6.1	121	0.00
47	T	Trichloroethene	0.2809	0.2705	3.7	117	0.00
48	T	Methylcyclohexane	0.4073	0.4151	-1.9	119	0.00
49	C	1,2-Dichloropropane	0.2726	0.2924	-7.3	119	0.00
50	T	Bromodichloromethane	0.3383	0.3330	1.6	111	0.00
51	T	1,4-Dioxane	0.0010	0.0013	-37.5#	177#	0.01
52	T	Dibromomethane	0.1247	0.1225	1.7	112	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1139	0.1038	8.8	105	0.00
54	T	4-Methyl-2-Pentanone	0.0505	0.0479	5.3	111	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\082015\8M406901.D Vial: 2
Acq On : 20 Aug 2015 14:24 Operator: TMB
Sample : WG535682-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD71981 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.3724	0.3849	-3.3	116	0.00
56	T	Dimethyl Disulfide	0.2017	0.1986	1.6	115	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	120	0.00
58	S	Toluene-d8	1.2060	1.2092	-0.3	118	0.00
59	C	Toluene	1.4610	1.5059	-3.1	119	0.00
60	T	Ethyl Methacrylate	0.2788	0.2731	2.0	113	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.4322	0.4324	-0.1	115	0.00
63	T	1,1,2-Trichloroethane	0.2289	0.2225	2.8	112	0.00
64	T	2-Hexanone	0.0647	0.0629	2.7	117	0.00
65	T	1,3-Dichloropropane	0.3985	0.3893	2.3	113	0.00
66	T	Tetrachloroethene	0.3080	0.3264	-6.0	122	0.00
67	T	Dibromochloromethane	0.3016	0.3013	0.1	114	0.00
68	T	1,2-Dibromoethane	0.2226	0.2188	1.7	116	0.00
69	T	1-Chlorohexane	0.5163	0.5287	-2.4	120	0.00
70	P	Chlorobenzene	0.9354	0.9626	-2.9	119	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3323	0.3486	-4.9	116	0.00
72	C	Ethylbenzene	0.5280	0.5433	-2.9	120	0.00
73	T	m-,p-Xylene	0.6240	0.6632	-6.3	121	0.00
74	T	o-Xylene	0.6140	0.6460	-5.2	119	0.00
75	T	Styrene	1.0029	1.0505	-4.7	118	0.00
76	P	Bromoform	0.1813	0.1781	1.8	115	0.00
77	T	Isopropylbenzene	1.5372	1.6313	-6.1	118	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	122	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4542	0.4399	3.2	118	0.00
80	S	p-Bromofluorobenzene	0.8647	0.8227	4.9	120	0.00
81	T	1,2,3-Trichloropropane	0.1275	0.1123	11.9	107	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1480	0.1337	9.6	102	0.00
83	T	n-Propylbenzene	3.6808	3.6892	-0.2	119	0.00
84	T	Bromobenzene	0.7456	0.7164	3.9	119	0.00
85	T	1,3,5-Trimethylbenzene	2.4301	2.4675	-1.5	118	0.00
86	T	2-Chlorotoluene	2.2483	2.2839	-1.6	117	0.00
87	T	4-Chlorotoluene	2.1425	2.1498	-0.3	120	0.00
88	T	a-Methylstyrene	1.3197	1.3539	-2.6	122	0.00
89	T	tert-Butylbenzene	0.5265	0.5335	-1.3	121	0.00
90	T	1,2,4-Trimethylbenzene	2.4621	2.5451	-3.4	118	0.00
91	T	sec-Butylbenzene	2.9984	3.1094	-3.7	116	0.00
92	T	p-Isopropyltoluene	2.5785	2.6563	-3.0	116	0.00
93	T	1,3-Dichlorobenzene	1.4620	1.4866	-1.7	122	0.00
94	T	1,4-Dichlorobenzene	1.5071	1.4723	2.3	122	0.00
95	T	n-Butylbenzene	2.4864	2.5552	-2.8	114	0.00
96	T	1,2-Dichlorobenzene	1.2908	1.2914	-0.0	120	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.0795	0.0703	11.6	106	0.00
98	T	1,2,4-Trichlorobenzene	0.9933	0.9514	4.2	114	0.00
99	T	Hexachlorobutadiene	0.5055	0.4778	5.5	116	0.00
100	T	Naphthalene	1.2888	1.2276	4.7	106	0.00
101	T	1,2,3-Trichlorobenzene	0.8572	0.7914	7.7	112	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M406901.D 8260WT.M Thu Aug 20 14:47:15 2015 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\082015\8M406901.D Vial: 2
Acq On : 20 Aug 2015 14:24 Operator: TMB
Sample : WG535682-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD71981 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	118	0.00
2	T	Dichlorodifluoromethane	50.0000	55.8165	-11.6	115	0.00
3	P	Chloromethane	50.0000	52.0909	-4.2	123	0.00
4	C	Vinyl Chloride	50.0000	58.9877	-18.0	134	0.00
5	T	1,3-Butadiene	50.0000	61.8312	-23.7	138	0.00
6	T	Bromomethane	50.0000	35.2054	29.6#	85	0.00
7	T	Chloroethane	50.0000	53.6318	-7.3	123	0.00
8	T	Trichlorofluoromethane	50.0000	50.6137	-1.2	114	0.00
9	T	Diethyl ether	100.0000	96.5949	3.4	117	0.00
10	T	Isoprene	50.0000	52.9549	-5.9	120	0.00
11	T	Acrolein	50.0000	30.5537	38.9#	65	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	53.3947	-6.8	117	0.00
13	T	Acetone	50.0000	52.7277	-5.5	132	0.00
14	C	1,1-Dichloroethene	50.0000	51.3223	-2.6	117	0.00
15	T	Tert-Butyl Alcohol	200.0000	236.9149	-18.5	154	0.00
16	T	Dimethyl Sulfide	50.0000	48.4644	3.1	113	0.00
17	T	Iodomethane	50.0000	21.0685	57.9#	48	0.00
18	T	Methyl acetate	50.0000	49.2806	1.4	122	0.00
19	T	Methylene Chloride	50.0000	51.0613	-2.1	118	0.00
20	T	Carbon Disulfide	50.0000	51.7850	-3.6	119	0.00
21	T	Acrylonitrile	50.0000	48.9947	2.0	115	0.00
22	T	Methyl Tert Butyl Ether	50.0000	47.7045	4.6	111	0.00
23	T	trans-1,2-Dichloroethene	50.0000	53.0547	-6.1	120	0.00
24	T	n-Hexane	50.0000	51.4943	-3.0	118	0.00
25	T	Diisopropyl ether	100.0000	104.4012	-4.4	124	0.00
26	T	Vinyl Acetate	50.0000	63.6844	-27.4#	152	0.00
27	P	1,1-Dichloroethane	50.0000	51.9653	-3.9	119	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	99.7844	0.2	120	0.00
29	T	2-Butanone	50.0000	53.3629	-6.7	125	0.00
30	T	Propionitrile	100.0000	109.2153	-9.2	127	0.00
31	T	2,2-Dichloropropane	50.0000	54.2001	-8.4	123	0.00
32	T	cis-1,2-Dichloroethene	50.0000	53.5539	-7.1	121	0.00
33	C	Chloroform	50.0000	50.7148	-1.4	117	0.00
34		1-Bromopropane	50.0000	51.1345	-2.3	119	0.00
35	T	Bromochloromethane	50.0000	50.0926	-0.2	117	0.00
36	T	Tetrahydrofuran	100.0000	107.4112	-7.4	133	0.00
37	S	Dibromofluoromethane	25.0000	25.0542	-0.2	114	0.00
38	T	1,1,1-Trichloroethane	50.0000	51.2891	-2.6	116	0.00
39	T	Cyclohexane	50.0000	53.0346	-6.1	119	0.00
40	T	1,1-Dichloropropene	50.0000	52.4064	-4.8	119	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	98.2825	1.7	119	0.00
42	T	Carbon Tetrachloride	50.0000	51.6820	-3.4	114	0.00
43	S	1,2-Dichloroethane-d4	25.0000	22.1983	11.2	108	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	47.5696	4.9	110	0.00
46	T	Benzene	50.0000	53.0657	-6.1	121	0.00
47	T	Trichloroethene	50.0000	48.1601	3.7	117	0.00
48	T	Methylcyclohexane	50.0000	50.9559	-1.9	119	0.00
49	C	1,2-Dichloropropane	50.0000	53.6404	-7.3	119	0.00
50	T	Bromodichloromethane	50.0000	49.2169	1.6	111	0.00
51	T	1,4-Dioxane	200.0000	275.9260	-38.0#	177	0.01
52	T	Dibromomethane	50.0000	49.1244	1.8	112	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	45.5863	8.8	105	0.00
54	T	4-Methyl-2-Pentanone	50.0000	47.3581	5.3	111	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\082015\8M406901.D Vial: 2
Acq On : 20 Aug 2015 14:24 Operator: TMB
Sample : WG535682-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD71981 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	51.6743	-3.3	116	0.00
56	T	Dimethyl Disulfide	50.0000	49.2241	1.6	115	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	120	0.00
58	S	Toluene-d8	25.0000	25.0668	-0.3	118	0.00
59	C	Toluene	50.0000	51.5379	-3.1	119	0.00
60	T	Ethyl Methacrylate	50.0000	48.9771	2.0	113	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	50.0249	-0.0	115	0.00
63	T	1,1,2-Trichloroethane	50.0000	48.5961	2.8	112	0.00
64	T	2-Hexanone	50.0000	48.6315	2.7	117	0.00
65	T	1,3-Dichloropropane	50.0000	48.8509	2.3	113	0.00
66	T	Tetrachloroethene	50.0000	52.9869	-6.0	122	0.00
67	T	Dibromochloromethane	50.0000	49.9452	0.1	114	0.00
68	T	1,2-Dibromoethane	50.0000	49.1311	1.7	116	0.00
69	T	1-Chlorohexane	50.0000	51.1992	-2.4	120	0.00
70	P	Chlorobenzene	50.0000	51.4537	-2.9	119	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	52.4437	-4.9	116	0.00
72	C	Ethylbenzene	50.0000	51.4426	-2.9	120	0.00
73	T	m-,p-Xylene	100.0000	106.2961	-6.3	121	0.00
74	T	o-Xylene	50.0000	52.6027	-5.2	119	0.00
75	T	Styrene	50.0000	52.3711	-4.7	118	0.00
76	P	Bromoform	50.0000	49.0939	1.8	115	0.00
77	T	Isopropylbenzene	50.0000	53.0600	-6.1	118	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	122	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	48.4230	3.2	118	0.00
80	S	p-Bromofluorobenzene	25.0000	23.7850	4.9	120	0.00
81	T	1,2,3-Trichloropropane	50.0000	44.0514	11.9	107	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	37.9211	24.2	102	0.00
83	T	n-Propylbenzene	50.0000	50.1143	-0.2	119	0.00
84	T	Bromobenzene	50.0000	48.0452	3.9	119	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	50.7698	-1.5	118	0.00
86	T	2-Chlorotoluene	50.0000	50.7907	-1.6	117	0.00
87	T	4-Chlorotoluene	50.0000	50.1682	-0.3	120	0.00
88	T	a-Methylstyrene	50.0000	51.2961	-2.6	122	0.00
89	T	tert-Butylbenzene	50.0000	50.6714	-1.3	121	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	51.6856	-3.4	118	0.00
91	T	sec-Butylbenzene	50.0000	51.8522	-3.7	116	0.00
92	T	p-Isopropyltoluene	50.0000	51.5090	-3.0	116	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.8419	-1.7	122	0.00
94	T	1,4-Dichlorobenzene	50.0000	48.8446	2.3	122	0.00
95	T	n-Butylbenzene	50.0000	51.3843	-2.8	114	0.00
96	T	1,2-Dichlorobenzene	50.0000	50.0221	-0.0	120	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	44.2004	11.6	106	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	47.8902	4.2	114	0.00
99	T	Hexachlorobutadiene	50.0000	47.2653	5.5	116	0.00
100	T	Naphthalene	50.0000	47.6259	4.7	106	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	46.1620	7.7	112	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M406901.D 8260WT.M Thu Aug 20 14:47:17 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\082115\8M406934.D Vial: 2
Acq On : 21 Aug 2015 15:07 Operator: TMB
Sample : WG536090-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD71981 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 21 15:29:28 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	950085	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	693663	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	393400	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	207733	24.8136 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.24%		
43) 1,2-Dichloroethane-d4	10.31	65	186388	22.3890 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 89.56%		
58) Toluene-d8	12.69	98	830315	24.8132 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.24%		
80) p-Bromofluorobenzene	16.08	95	314361	23.1023 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.40%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	796646	54.9032 ug/L	98
3) Chloromethane	3.62	50	798441	49.2882 ug/L	99
4) Vinyl Chloride	3.85	62	682720	57.3073 ug/L	99
5) 1,3-Butadiene	3.89	54	666770	63.8431 ug/L	98
6) Bromomethane	4.74	94	272856	34.3852 ug/L	100
7) Chloroethane	4.90	64	388910	52.4306 ug/L	99
8) Trichlorofluoromethane	5.39	101	782031	50.7662 ug/L	99
9) Diethyl ether	5.91	59	541643	92.8930 ug/L	98
10) Isoprene	5.94	67	612787	50.8254 ug/L	100
11) Acrolein	6.14	56	9559	33.8386 ug/L	91
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	464986	52.8664 ug/L	99
13) Acetone	6.24	43	59867	49.9697 ug/L	94
14) 1,1-Dichloroethene	6.47	61	766980	51.3999 ug/L	97
15) Tert-Butyl Alcohol	6.59	59	73217	232.6642 ug/L	98
16) Dimethyl Sulfide	6.74	62	445458	47.5486 ug/L	99
17) Iodomethane	6.99	142	190456	21.2802 ug/L	93
18) Methyl acetate	7.01	43	222841	47.9324 ug/L	97
19) Methylene Chloride	7.26	84	476044	50.0842 ug/L	100
20) Carbon Disulfide	7.30	76	1539605	50.5194 ug/L	100
21) Acrylonitrile	7.44	53	96596	48.5213 ug/L	97
22) Methyl Tert Butyl Ether	7.48	73	816331	48.6348 ug/L	97
23) trans-1,2-Dichloroethene	7.71	61	743797	53.1490 ug/L	96
24) n-Hexane	7.80	57	746537	49.3481 ug/L	97
25) Diisopropyl ether	8.14	45	3519037	103.5528 ug/L	98
26) Vinyl Acetate	8.30	43	517246	59.5462 ug/L	98
27) 1,1-Dichloroethane	8.33	63	978306	52.1217 ug/L	100
28) Ethyl-Tert-Butyl ether	8.71	59	2498708	98.5509 ug/L	99
29) 2-Butanone	8.88	43	107239	52.8652 ug/L	97
30) Propionitrile	9.00	54	69321	107.4371 ug/L	97
31) 2,2-Dichloropropane	9.11	77	765791	52.9428 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	531714	52.7948 ug/L	97
33) Chloroform	9.38	83	863535	50.9790 ug/L	100
34) 1-Bromopropane	9.51	122	90896	50.7752 ug/L	95
35) Bromochloromethane	9.61	130	262260	50.5539 ug/L	99
36) Tetrahydrofuran	9.64	42	142379	102.0452 ug/L	95
38) 1,1,1-Trichloroethane	9.92	97	787703	50.4149 ug/L	99
39) Cyclohexane	9.95	56	908861	49.8730 ug/L	99
40) 1,1-Dichloropropene	10.11	75	693232	51.8210 ug/L	98
41) Tert-Amyl-Methyl ether	10.22	73	1861244	98.0650 ug/L	99
42) Carbon Tetrachloride	10.26	117	717870	51.8904 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M406934.D 8260WT.M Fri Aug 21 15:29:29 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\082115\8M406934.D Vial: 2
Acq On : 21 Aug 2015 15:07 Operator: TMB
Sample : WG536090-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD71981 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 21 15:29:28 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	545344	48.0678	ug/L		97
46)	Benzene	10.46	78	1959439	52.3988	ug/L		99
47)	Trichloroethene	11.22	130	511338	47.9075	ug/L		96
48)	Methylcyclohexane	11.30	83	759973	49.1010	ug/L		99
49)	1,2-Dichloropropane	11.44	63	547723	52.8712	ug/L		93
50)	Bromodichloromethane	11.73	83	647807	50.3858	ug/L		100
51)	1,4-Dioxane	11.71	88	8640	237.1564	ug/L		91
52)	Dibromomethane	11.82	93	238533	50.3334	ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	205071	47.3902	ug/L		99
54)	4-Methyl-2-Pentanone	12.06	58	91385	47.5741	ug/L		98
55)	cis-1,3-Dichloropropene	12.37	75	729334	51.5366	ug/L		99
56)	Dimethyl Disulfide	12.62	79	364486	47.5401	ug/L		96
59)	Toluene	12.79	91	2069952	51.0630	ug/L		99
60)	Ethyl Methacrylate	12.88	69	369945	47.8156	ug/L		100
62)	trans-1,3-Dichloropropene	12.97	75	593481	49.4940	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	313146	49.2938	ug/L		97
64)	2-Hexanone	13.12	58	84768	47.2349	ug/L	#	98
65)	1,3-Dichloropropane	13.48	76	546364	49.4162	ug/L		96
66)	Tetrachloroethene	13.61	164	448041	52.4217	ug/L		94
67)	Dibromochloromethane	13.86	129	418633	50.0257	ug/L		100
68)	1,2-Dibromoethane	14.12	107	295061	47.7696	ug/L		100
69)	1-Chlorohexane	14.21	91	698082	48.7286	ug/L		100
70)	Chlorobenzene	14.63	112	1349558	51.9961	ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	469102	50.8765	ug/L		95
72)	Ethylbenzene	14.65	106	759677	51.8521	ug/L		93
73)	m-,p-Xylene	14.74	106	1806992	104.3742	ug/L		93
74)	o-Xylene	15.30	106	891669	52.3345	ug/L		94
75)	Styrene	15.34	104	1457561	52.3795	ug/L		97
76)	Bromoform	15.84	173	257897	51.2575	ug/L		99
77)	Isopropylbenzene	15.74	105	2248581	52.7179	ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.94	83	351470	49.1713	ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	93173	46.4387	ug/L		63
82)	trans-1,4-Dichloro-2-Buten	16.18	53	99307	35.8324	ug/L	#	33
83)	n-Propylbenzene	16.24	91	2869778	49.5459	ug/L		98
84)	Bromobenzene	16.37	156	556934	47.4700	ug/L		96
85)	1,3,5-Trimethylbenzene	16.43	105	1944594	50.8522	ug/L		95
86)	2-Chlorotoluene	16.51	91	1783192	50.4017	ug/L		96
87)	4-Chlorotoluene	16.55	91	1690575	50.1430	ug/L		95
88)	a-Methylstyrene	16.83	118	1045291	50.3353	ug/L		97
89)	tert-Butylbenzene	16.89	134	412328	49.7702	ug/L		92
90)	1,2,4-Trimethylbenzene	16.95	105	1988505	51.3239	ug/L		97
91)	sec-Butylbenzene	17.16	105	2445590	51.8328	ug/L		99
92)	p-Isopropyltoluene	17.32	119	2080367	51.2716	ug/L		97
93)	1,3-Dichlorobenzene	17.51	146	1175323	51.0870	ug/L		97
94)	1,4-Dichlorobenzene	17.64	146	1144891	48.2760	ug/L		96
95)	n-Butylbenzene	17.85	91	2018187	51.5820	ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	1012600	49.8519	ug/L		97
97)	1,2-Dibromo-3-Chloropropan	19.13	75	56037	44.7795	ug/L		92
98)	1,2,4-Trichlorobenzene	20.28	180	743724	47.5797	ug/L		99
99)	Hexachlorobutadiene	20.42	225	364979	45.8852	ug/L		99
100)	Naphthalene	20.64	128	944064	46.5496	ug/L		99
101)	1,2,3-Trichlorobenzene	20.95	180	627139	46.4935	ug/L		96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\082115\8M406934.D Vial: 2
Acq On : 21 Aug 2015 15:07 Operator: TMB
Sample : WG536090-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD71981 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 21 15:29 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

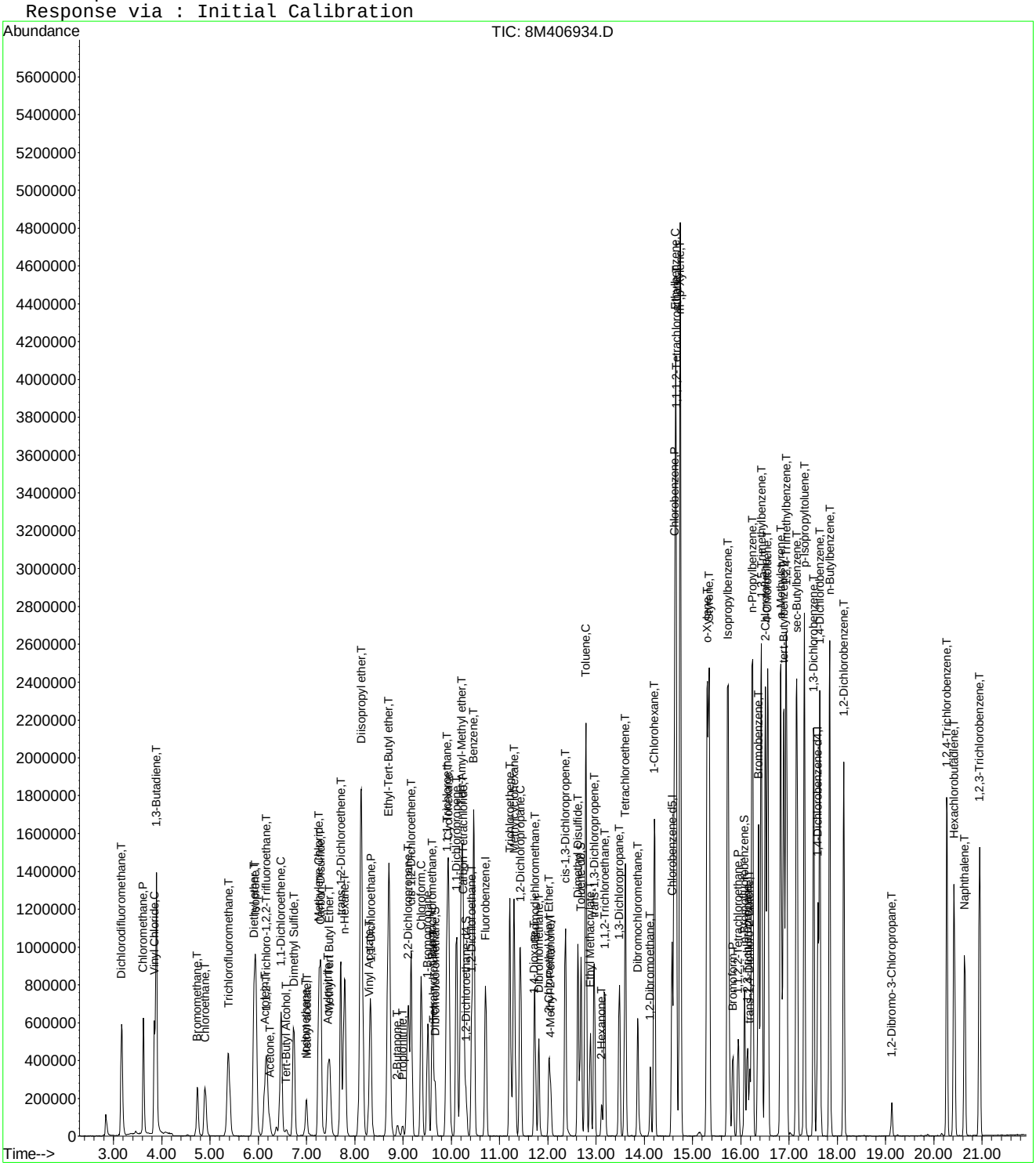
Abundance
TIC: 8M406934.D
Time-->
Dichlorodifluoromethane,T
Chloromethane,P
Vinyl Chloride,C
1,3-Butadiene,T
Bromomethane,T
Chloroethane,T
Trichlorofluoromethane,T
Acetone,T
Tert-Butyl Alcohol,T
Dimethyl Sulfide,T
Diisopropyl ether,T
Ethyl-Tert-Butyl ether,T
Vinyl Acetate,T
Fluorobenzene,I
Benzene,T
Toluene,C
Chlorobenzene,P
1,1,1,2-Tetrachloroethane,T
Ethylbenzene,T
m,p-Xylene,T
o-Xylene,T
Styrene,T
Isopropylbenzene,T
n-Propylbenzene,T
2-Chlorotoluene,T
1,3,5-Trimethylbenzene,T
tert-Butylbenzene,T
1,2,4-Trimethylbenzene,T
sec-Butylbenzene,T
p-Isopropyltoluene,T
1,3-Dichlorobenzene,T
1,4-Dichlorobenzene,T
n-Butylbenzene,T
1,2-Dichlorobenzene,T
1,2-Dibromo-3-Chloropropane,T
Hexachlorobutadiene,T
Naphthalene,T
1,2,3-Trichlorobenzene,T
1,2,4-Trichlorobenzene,T
Tetrachloroethene,T
1-Chlorohexane,T
Chlorobenzene-d5,I
Dibromochloromethane,T
1,2-Dibromoethane,T
1,3-Dichloropropane,T
2-Hexanone,T
1,1,2-Trichloroethane,T
Ethyl Methacrylate,T
Bromobenzene,T
Bromoform,P
Tetrachloroethane,P
Chlorobenzene,S
trans-1,2-Dichloroethene,T
cis-1,3-Dichloropropene,T
Dimethyl Disulfide,T
Chloroform,C
Carbon Tetrachloride,T
1,1-Dichloroethane,T
1,2-Dichloroethane,T
Methyl Tert-Butyl Ether,T
n-Hexane,T
Methyl Acrylonitrile,T
Methylene Chloride,T
Methyl Iodide,T
Acrylonitrile,T
Acrolein,T
Propionitrile,T
2-Butanone,T
Methyl Acrylate,T
Methyl Methacrylate,T
Ethyl Methacrylate,T
Propionitrile,T
Methyl Iodide

Continuing Calibration Area and RT check

Instrument: HPMS8
Initial cal date: 30 Jul 2015 17:04
CCV date: 21 Aug 2015 15:07
CCV Filename: 8M406934.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	905123	10.71	645629	14.58	356726	17.60
CCV	950085	10.71	693663	14.58	393400	17.60

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\082115\8M406934.D Vial: 2
Acq On : 21 Aug 2015 15:07 Operator: TMB
Sample : WG536090-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD71981 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	105	0.00
2	T	Dichlorodifluoromethane	0.3818	0.4193	-9.8	100	0.00
3	P	Chloromethane	0.4263	0.4202	1.4	103	0.00
4	C	Vinyl Chloride	0.3135	0.3593	-14.6	115	0.00
5	T	1,3-Butadiene	0.2748	0.3509	-27.7#	127	0.00
6	T	Bromomethane	0.2088	0.1436	31.2#	73	0.00
7	T	Chloroethane	0.1952	0.2047	-4.9	107	0.00
8	T	Trichlorofluoromethane	0.4053	0.4116	-1.5	102	0.00
9	T	Diethyl ether	0.1534	0.1425	7.1	100	0.00
10	T	Isoprene	0.3172	0.3225	-1.7	102	-0.01
11	T	Acrolein	0.0087	0.0050	42.0#	64	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2314	0.2447	-5.7	103	0.01
13	T	Acetone	0.0315	0.0315	0.1	111	0.00
14	C	1,1-Dichloroethene	0.3926	0.4036	-2.8	104	0.00
15	T	Tert-Butyl Alcohol	0.0083	0.0096	-16.3	134	0.00
16	T	Dimethyl Sulfide	0.2465	0.2344	4.9	98	0.00
17	T	Iodomethane	0.1976	0.1002	49.3#	43#	0.00
18	T	Methyl acetate	0.1223	0.1173	4.1	105	0.00
19	T	Methylene Chloride	0.2501	0.2505	-0.2	103	0.00
20	T	Carbon Disulfide	0.8019	0.8103	-1.0	103	0.00
21	T	Acrylonitrile	0.0524	0.0508	2.9	101	0.00
22	T	Methyl Tert Butyl Ether	0.4417	0.4296	2.7	101	0.00
23	T	trans-1,2-Dichloroethene	0.3683	0.3914	-6.3	107	0.00
24	T	n-Hexane	0.3981	0.3929	1.3	100	0.00
25	T	Diisopropyl ether	0.8942	0.9260	-3.6	109	0.00
26	T	Vinyl Acetate	0.2286	0.2722	-19.1	126	0.00
27	P	1,1-Dichloroethane	0.4939	0.5149	-4.2	106	0.00
28	T	Ethyl-Tert-Butyl ether	0.6672	0.6575	1.4	105	0.00
29	T	2-Butanone	0.0534	0.0564	-5.7	110	-0.01
30	T	Propionitrile	0.0170	0.0182	-7.4	111	0.00
31	T	2,2-Dichloropropane	0.3806	0.4030	-5.9	107	0.00
32	T	cis-1,2-Dichloroethene	0.2650	0.2798	-5.6	106	0.00
33	C	Chloroform	0.4457	0.4545	-2.0	105	0.00
34		1-Bromopropane	0.0471	0.0478	-1.5	105	0.00
35	T	Bromochloromethane	0.1365	0.1380	-1.1	105	-0.01
36	T	Tetrahydrofuran	0.0367	0.0375	-2.0	112	0.00
37	S	Dibromofluoromethane	0.2203	0.2187	0.7	101	0.00
38	T	1,1,1-Trichloroethane	0.4111	0.4145	-0.8	101	0.00
39	T	Cyclohexane	0.4795	0.4783	0.3	100	0.00
40	T	1,1-Dichloropropene	0.3520	0.3648	-3.6	104	0.00
41	T	Tert-Amyl-Methyl ether	0.4994	0.4898	1.9	105	0.00
42	T	Carbon Tetrachloride	0.3640	0.3778	-3.8	102	0.00
43	S	1,2-Dichloroethane-d4	0.2191	0.1962	10.4	96	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.2985	0.2870	3.9	99	-0.01
46	T	Benzene	0.9840	1.0312	-4.8	106	-0.01
47	T	Trichloroethene	0.2809	0.2691	4.2	104	0.00
48	T	Methylcyclohexane	0.4073	0.4000	1.8	101	0.00
49	C	1,2-Dichloropropane	0.2726	0.2883	-5.7	104	0.00
50	T	Bromodichloromethane	0.3383	0.3409	-0.8	101	0.00
51	T	1,4-Dioxane	0.0010	0.0011	-18.7	135	0.00
52	T	Dibromomethane	0.1247	0.1255	-0.7	102	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1139	0.1079	5.2	97	-0.01
54	T	4-Methyl-2-Pentanone	0.0505	0.0481	4.9	99	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\082115\8M406934.D Vial: 2
Acq On : 21 Aug 2015 15:07 Operator: TMB
Sample : WG536090-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD71981 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.3724	0.3838	-3.1	103	0.00
56	T	Dimethyl Disulfide	0.2017	0.1918	4.9	99	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	107	0.00
58	S	Toluene-d8	1.2060	1.1970	0.7	105	0.00
59	C	Toluene	1.4610	1.4920	-2.1	105	0.00
60	T	Ethyl Methacrylate	0.2788	0.2667	4.4	99	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.4322	0.4278	1.0	102	0.00
63	T	1,1,2-Trichloroethane	0.2289	0.2257	1.4	102	0.00
64	T	2-Hexanone	0.0647	0.0611	5.5	102	0.00
65	T	1,3-Dichloropropane	0.3985	0.3938	1.2	102	0.00
66	T	Tetrachloroethene	0.3080	0.3230	-4.8	108	0.00
67	T	Dibromochloromethane	0.3016	0.3018	-0.1	102	-0.01
68	T	1,2-Dibromoethane	0.2226	0.2127	4.5	101	0.00
69	T	1-Chlorohexane	0.5163	0.5032	2.5	103	0.00
70	P	Chlorobenzene	0.9354	0.9728	-4.0	108	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3323	0.3381	-1.8	101	0.00
72	C	Ethylbenzene	0.5280	0.5476	-3.7	109	-0.01
73	T	m-,p-Xylene	0.6240	0.6513	-4.4	107	0.00
74	T	o-Xylene	0.6140	0.6427	-4.7	106	-0.01
75	T	Styrene	1.0029	1.0506	-4.8	106	0.00
76	P	Bromoform	0.1813	0.1859	-2.5	108	0.00
77	T	Isopropylbenzene	1.5372	1.6208	-5.4	106	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	110	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4542	0.4467	1.7	108	0.00
80	S	p-Bromofluorobenzene	0.8647	0.7991	7.6	105	0.00
81	T	1,2,3-Trichloropropane	0.1275	0.1184	7.1	102	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1480	0.1262	14.7	87	-0.01
83	T	n-Propylbenzene	3.6808	3.6474	0.9	106	0.00
84	T	Bromobenzene	0.7456	0.7078	5.1	106	0.00
85	T	1,3,5-Trimethylbenzene	2.4301	2.4715	-1.7	106	0.00
86	T	2-Chlorotoluene	2.2483	2.2664	-0.8	104	0.00
87	T	4-Chlorotoluene	2.1425	2.1487	-0.3	108	-0.01
88	T	a-Methylstyrene	1.3197	1.3285	-0.7	107	0.00
89	T	tert-Butylbenzene	0.5265	0.5241	0.5	107	0.00
90	T	1,2,4-Trimethylbenzene	2.4621	2.5273	-2.6	106	0.00
91	T	sec-Butylbenzene	2.9984	3.1083	-3.7	105	0.00
92	T	p-Isopropyltoluene	2.5785	2.6441	-2.5	104	0.00
93	T	1,3-Dichlorobenzene	1.4620	1.4938	-2.2	111	0.00
94	T	1,4-Dichlorobenzene	1.5071	1.4551	3.4	109	0.00
95	T	n-Butylbenzene	2.4864	2.5651	-3.2	103	0.00
96	T	1,2-Dichlorobenzene	1.2908	1.2870	0.3	108	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.0795	0.0712	10.4	96	0.00
98	T	1,2,4-Trichlorobenzene	0.9933	0.9453	4.8	102	0.00
99	T	Hexachlorobutadiene	0.5055	0.4639	8.2	101	0.00
100	T	Naphthalene	1.2888	1.1999	6.9	93	0.00
101	T	1,2,3-Trichlorobenzene	0.8572	0.7971	7.0	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M406934.D 8260WT.M Fri Aug 21 15:47:40 2015 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\082115\8M406934.D Vial: 2
Acq On : 21 Aug 2015 15:07 Operator: TMB
Sample : WG536090-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD71981 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	105	0.00
2	T	Dichlorodifluoromethane	50.0000	54.9032	-9.8	100	0.00
3	P	Chloromethane	50.0000	49.2882	1.4	103	0.00
4	C	Vinyl Chloride	50.0000	57.3073	-14.6	115	0.00
5	T	1,3-Butadiene	50.0000	63.8431	-27.7#	127	0.00
6	T	Bromomethane	50.0000	34.3852	31.2#	73	0.00
7	T	Chloroethane	50.0000	52.4306	-4.9	107	0.00
8	T	Trichlorofluoromethane	50.0000	50.7662	-1.5	102	0.00
9	T	Diethyl ether	100.0000	92.8930	7.1	100	0.00
10	T	Isoprene	50.0000	50.8254	-1.7	102	-0.01
11	T	Acrolein	50.0000	33.8386	32.3#	64	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	52.8665	-5.7	103	0.01
13	T	Acetone	50.0000	49.9697	0.1	111	0.00
14	C	1,1-Dichloroethene	50.0000	51.3999	-2.8	104	0.00
15	T	Tert-Butyl Alcohol	200.0000	232.6642	-16.3	134	0.00
16	T	Dimethyl Sulfide	50.0000	47.5486	4.9	98	0.00
17	T	Iodomethane	50.0000	21.2802	57.4#	43	0.00
18	T	Methyl acetate	50.0000	47.9324	4.1	105	0.00
19	T	Methylene Chloride	50.0000	50.0842	-0.2	103	0.00
20	T	Carbon Disulfide	50.0000	50.5194	-1.0	103	0.00
21	T	Acrylonitrile	50.0000	48.5213	3.0	101	0.00
22	T	Methyl Tert Butyl Ether	50.0000	48.6348	2.7	101	0.00
23	T	trans-1,2-Dichloroethene	50.0000	53.1490	-6.3	107	0.00
24	T	n-Hexane	50.0000	49.3481	1.3	100	0.00
25	T	Diisopropyl ether	100.0000	103.5528	-3.6	109	0.00
26	T	Vinyl Acetate	50.0000	59.5462	-19.1	126	0.00
27	P	1,1-Dichloroethane	50.0000	52.1217	-4.2	106	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.5509	1.4	105	0.00
29	T	2-Butanone	50.0000	52.8652	-5.7	110	-0.01
30	T	Propionitrile	100.0000	107.4371	-7.4	111	0.00
31	T	2,2-Dichloropropane	50.0000	52.9428	-5.9	107	0.00
32	T	cis-1,2-Dichloroethene	50.0000	52.7948	-5.6	106	0.00
33	C	Chloroform	50.0000	50.9790	-2.0	105	0.00
34		1-Bromopropane	50.0000	50.7752	-1.6	105	0.00
35	T	Bromochloromethane	50.0000	50.5539	-1.1	105	-0.01
36	T	Tetrahydrofuran	100.0000	102.0453	-2.0	112	0.00
37	S	Dibromofluoromethane	25.0000	24.8136	0.7	101	0.00
38	T	1,1,1-Trichloroethane	50.0000	50.4149	-0.8	101	0.00
39	T	Cyclohexane	50.0000	49.8730	0.3	100	0.00
40	T	1,1-Dichloropropene	50.0000	51.8210	-3.6	104	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	98.0650	1.9	105	0.00
42	T	Carbon Tetrachloride	50.0000	51.8904	-3.8	102	0.00
43	S	1,2-Dichloroethane-d4	25.0000	22.3890	10.4	96	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	48.0678	3.9	99	-0.01
46	T	Benzene	50.0000	52.3988	-4.8	106	-0.01
47	T	Trichloroethene	50.0000	47.9075	4.2	104	0.00
48	T	Methylcyclohexane	50.0000	49.1010	1.8	101	0.00
49	C	1,2-Dichloropropane	50.0000	52.8712	-5.7	104	0.00
50	T	Bromodichloromethane	50.0000	50.3858	-0.8	101	0.00
51	T	1,4-Dioxane	200.0000	237.1564	-18.6	135	0.00
52	T	Dibromomethane	50.0000	50.3334	-0.7	102	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	47.3902	5.2	97	-0.01
54	T	4-Methyl-2-Pentanone	50.0000	47.5741	4.9	99	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\082115\8M406934.D Vial: 2
Acq On : 21 Aug 2015 15:07 Operator: TMB
Sample : WG536090-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD71981 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	51.5366	-3.1	103	0.00
56	T	Dimethyl Disulfide	50.0000	47.5401	4.9	99	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	107	0.00
58	S	Toluene-d8	25.0000	24.8132	0.7	105	0.00
59	C	Toluene	50.0000	51.0630	-2.1	105	0.00
60	T	Ethyl Methacrylate	50.0000	47.8156	4.4	99	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	49.4940	1.0	102	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.2938	1.4	102	0.00
64	T	2-Hexanone	50.0000	47.2349	5.5	102	0.00
65	T	1,3-Dichloropropane	50.0000	49.4162	1.2	102	0.00
66	T	Tetrachloroethene	50.0000	52.4217	-4.8	108	0.00
67	T	Dibromochloromethane	50.0000	50.0257	-0.1	102	-0.01
68	T	1,2-Dibromoethane	50.0000	47.7696	4.5	101	0.00
69	T	1-Chlorohexane	50.0000	48.7286	2.5	103	0.00
70	P	Chlorobenzene	50.0000	51.9961	-4.0	108	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	50.8765	-1.8	101	0.00
72	C	Ethylbenzene	50.0000	51.8521	-3.7	109	-0.01
73	T	m-,p-Xylene	100.0000	104.3742	-4.4	107	0.00
74	T	o-Xylene	50.0000	52.3345	-4.7	106	-0.01
75	T	Styrene	50.0000	52.3795	-4.8	106	0.00
76	P	Bromoform	50.0000	51.2575	-2.5	108	0.00
77	T	Isopropylbenzene	50.0000	52.7179	-5.4	106	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	110	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	49.1713	1.7	108	0.00
80	S	p-Bromofluorobenzene	25.0000	23.1024	7.6	105	0.00
81	T	1,2,3-Trichloropropane	50.0000	46.4387	7.1	102	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	35.8324	28.3#	87	-0.01
83	T	n-Propylbenzene	50.0000	49.5459	0.9	106	0.00
84	T	Bromobenzene	50.0000	47.4700	5.1	106	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	50.8522	-1.7	106	0.00
86	T	2-Chlorotoluene	50.0000	50.4017	-0.8	104	0.00
87	T	4-Chlorotoluene	50.0000	50.1430	-0.3	108	-0.01
88	T	a-Methylstyrene	50.0000	50.3353	-0.7	107	0.00
89	T	tert-Butylbenzene	50.0000	49.7702	0.5	107	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	51.3239	-2.6	106	0.00
91	T	sec-Butylbenzene	50.0000	51.8328	-3.7	105	0.00
92	T	p-Isopropyltoluene	50.0000	51.2716	-2.5	104	0.00
93	T	1,3-Dichlorobenzene	50.0000	51.0870	-2.2	111	0.00
94	T	1,4-Dichlorobenzene	50.0000	48.2760	3.4	109	0.00
95	T	n-Butylbenzene	50.0000	51.5819	-3.2	103	0.00
96	T	1,2-Dichlorobenzene	50.0000	49.8519	0.3	108	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	44.7795	10.4	96	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	47.5797	4.8	102	0.00
99	T	Hexachlorobutadiene	50.0000	45.8852	8.2	101	0.00
100	T	Naphthalene	50.0000	46.5496	6.9	93	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	46.4935	7.0	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M406934.D 8260WT.M Fri Aug 21 15:47:45 2015 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\2\DATA\100214\8M400357.D          Vial: 3
Acq On    :  2 Oct 2014  11:58                       Operator: TMB
Sample    : WG494714-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD66476                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

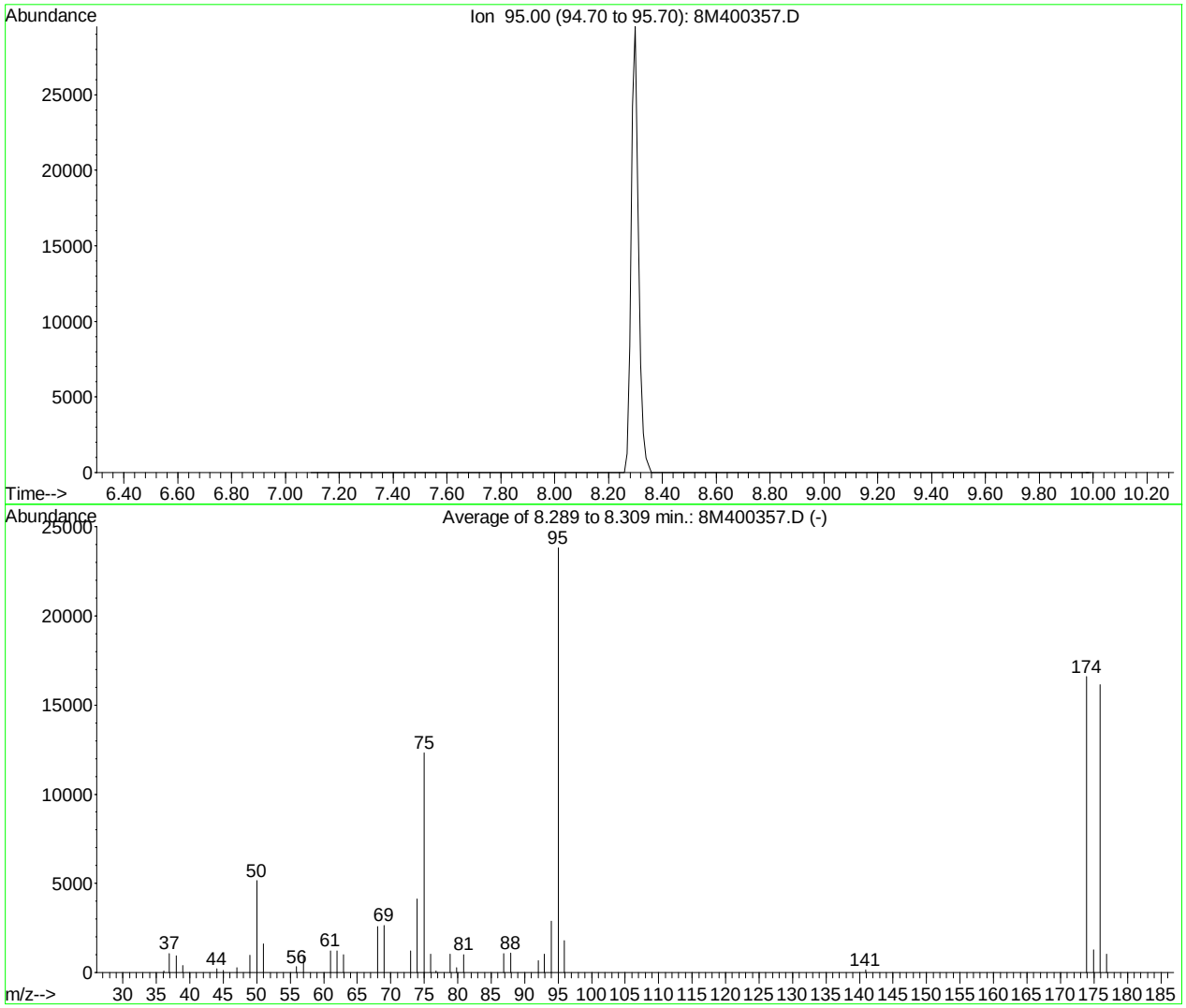

AutoFind: Scans 118, 119, 120; Background Corrected with Scan 113

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.7	5158	PASS
75	95	30	60	51.7	12312	PASS
95	95	100	100	100.0	23818	PASS
96	95	5	9	7.6	1800	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	69.7	16590	PASS
175	174	5	9	7.8	1290	PASS
176	174	95	101	97.3	16145	PASS
177	176	5	9	6.3	1023	PASS

8M400357.D BFB.M Thu Oct 02 12:09:27 2014

BFB

```
Data File : C:\MSDCHEM\2\DATA\073015\8M406477.D          Vial: 1
Acq On    : 30 Jul 2015  14:17                       Operator: TMB
Sample    : WG533051-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD71644                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

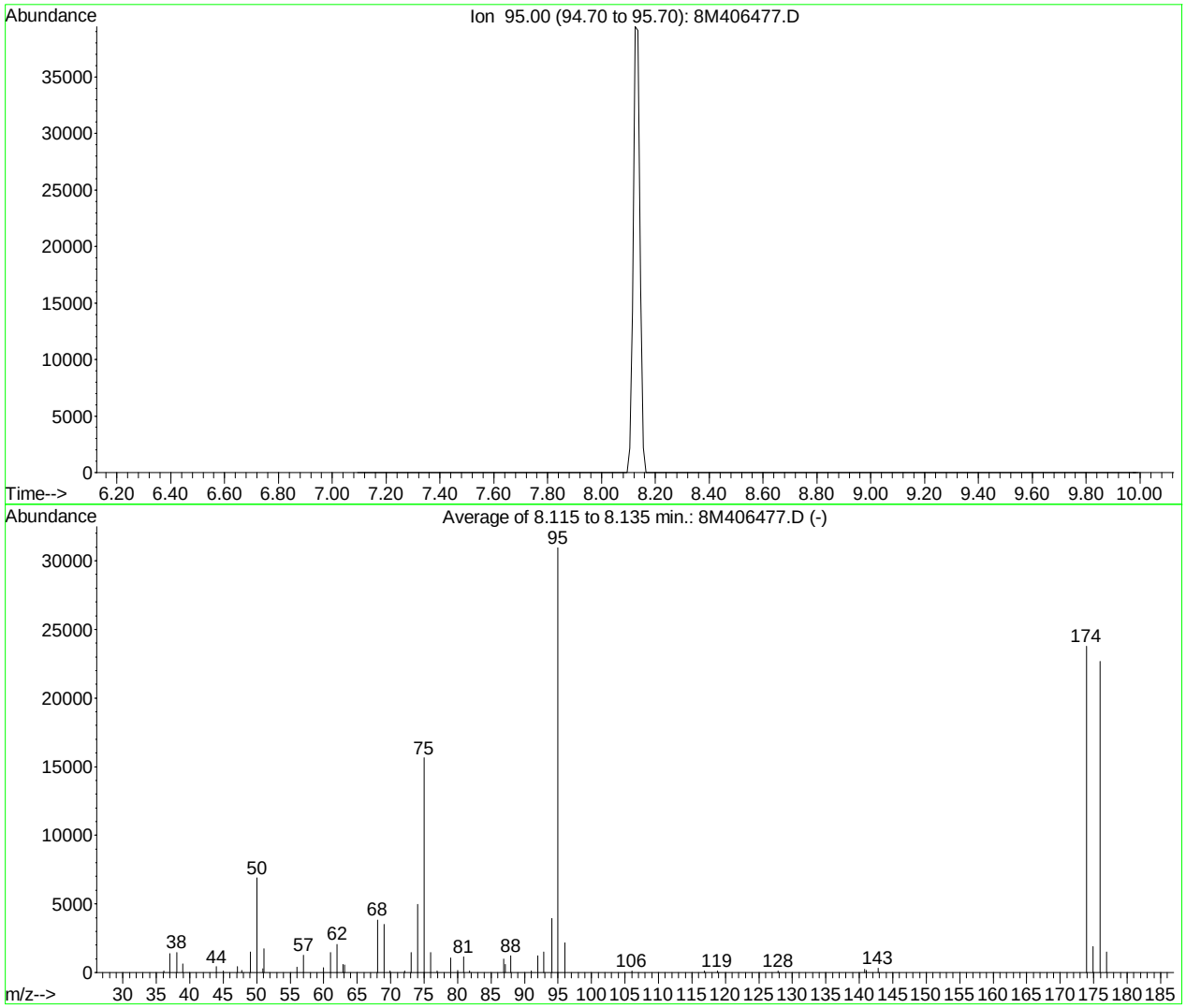

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.2	6881	PASS
75	95	30	60	50.6	15643	PASS
95	95	100	100	100.0	30939	PASS
96	95	5	9	7.0	2155	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	76.8	23758	PASS
175	174	5	9	7.9	1877	PASS
176	174	95	101	95.4	22662	PASS
177	176	5	9	6.6	1487	PASS

8M406477.D BFB.M Thu Jul 30 14:28:24 2015

BFB

```
Data File : C:\MSDCHEM\2\DATA\082015\8M406900.D          Vial: 1
Acq On    : 20 Aug 2015  14:00                       Operator: TMB
Sample    : WG535682-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD71644                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

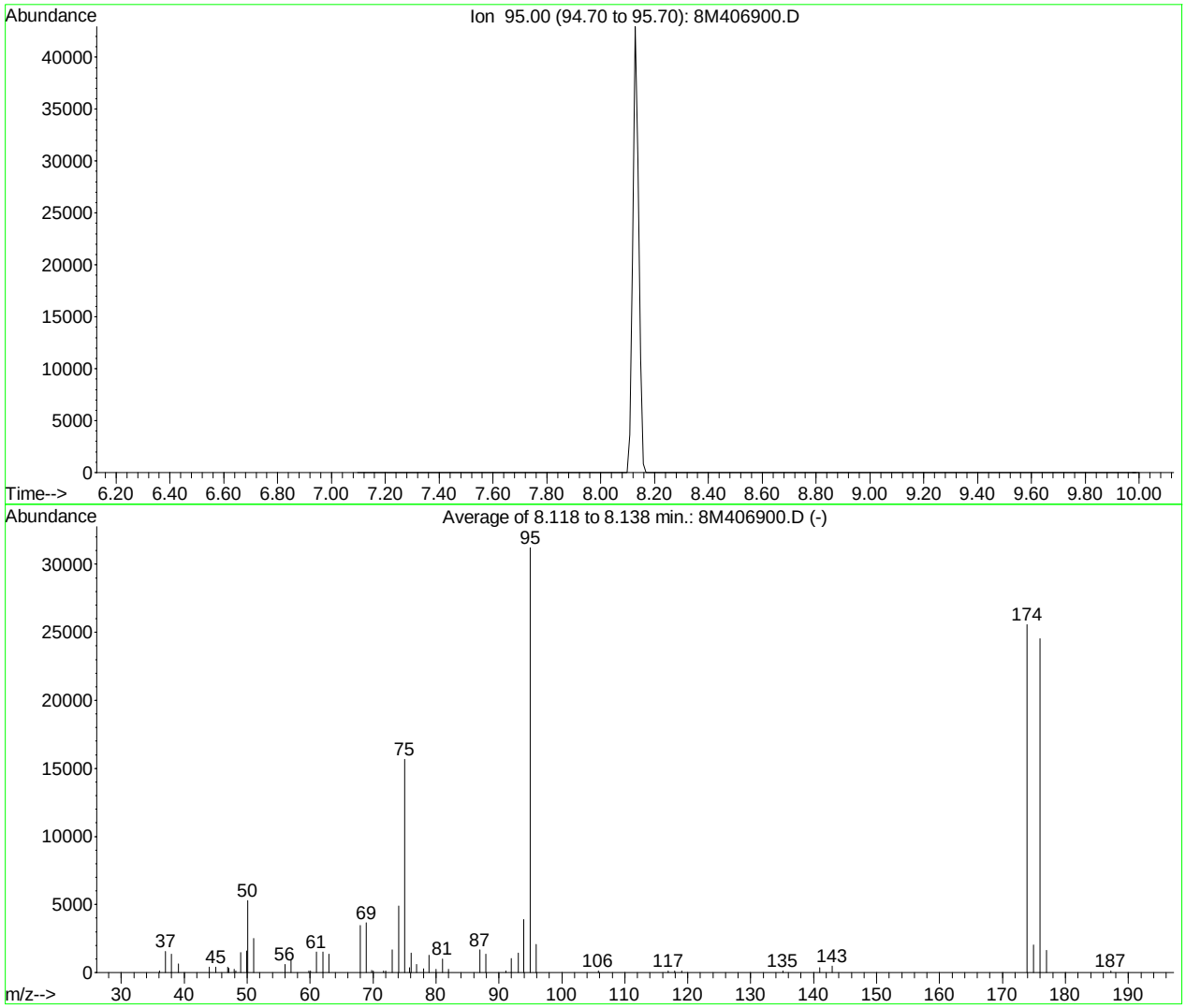

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.9	5274	PASS
75	95	30	60	50.2	15653	PASS
95	95	100	100	100.0	31202	PASS
96	95	5	9	6.7	2081	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	81.9	25551	PASS
175	174	5	9	8.0	2045	PASS
176	174	95	101	96.0	24522	PASS
177	176	5	9	6.6	1630	PASS

8M406900.D BFB.M Thu Aug 20 14:10:36 2015

BFB

```
Data File : C:\MSDCHEM\2\DATA\082115\8M406933.D          Vial: 2
Acq On    : 21 Aug 2015  14:44                       Operator: TMB
Sample    : WG536090-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD71644                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

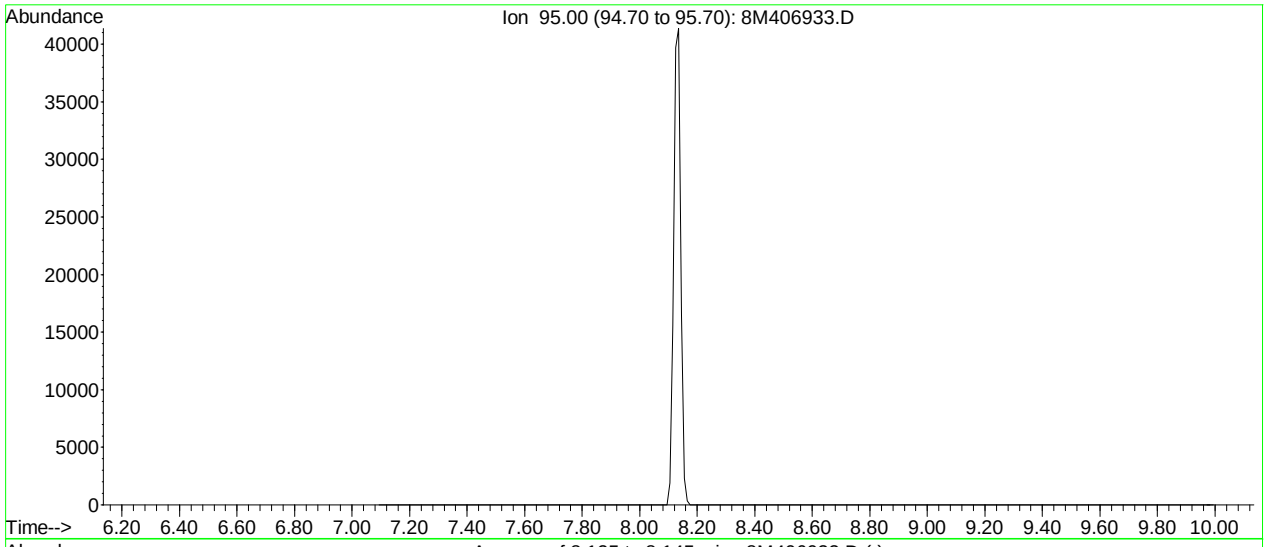

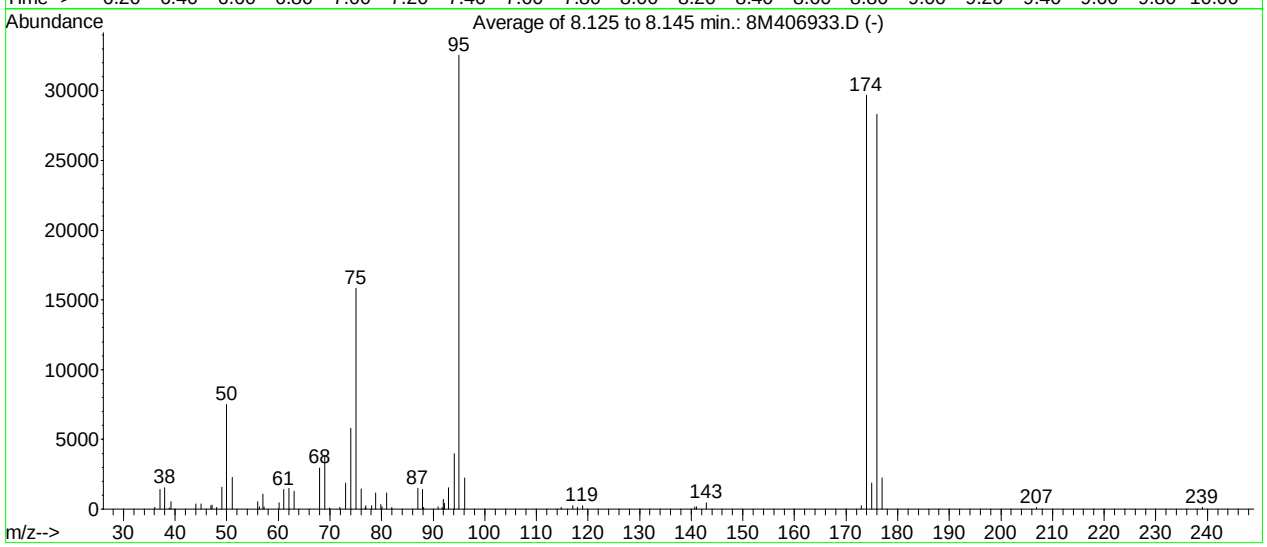

AutoFind: Scans 102, 103, 104; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	23.0	7489	PASS
75	95	30	60	48.7	15849	PASS
95	95	100	100	100.0	32530	PASS
96	95	5	9	6.8	2226	PASS
173	174	0.00	2	0.8	249	PASS
174	95	50	100	91.3	29688	PASS
175	174	5	9	6.3	1858	PASS
176	174	95	101	95.3	28306	PASS
177	176	5	9	7.8	2220	PASS

8M406933.D BFB.M Fri Aug 21 14:54:39 2015

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082015\8M406903.D Vial: 4
Acq On : 20 Aug 2015 15:21 Operator: TMB
Sample : WG535683-01 VBLK0820 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 21 08:48:11 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	967255	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	757275	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	404865	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.68	111	218177	25.5985 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.40%		
43) 1,2-Dichloroethane-d4	10.31	65	198047	23.3672 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 93.48%		
58) Toluene-d8	12.68	98	882036	24.1446 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.56%		
80) p-Bromofluorobenzene	16.08	95	338794	24.1929 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.76%		
Target Compounds					Qvalue
13) Acetone	6.24	43	255	0.2091 ug/L #	48

(#) = qualifier out of range (m) = manual integration
8M406903.D 8260WT.M Fri Aug 21 08:48:12 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082015\8M406903.D Vial: 4
Acq On : 20 Aug 2015 15:21 Operator: TMB
Sample : WG535683-01 VBLK0820 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 21 8:48 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

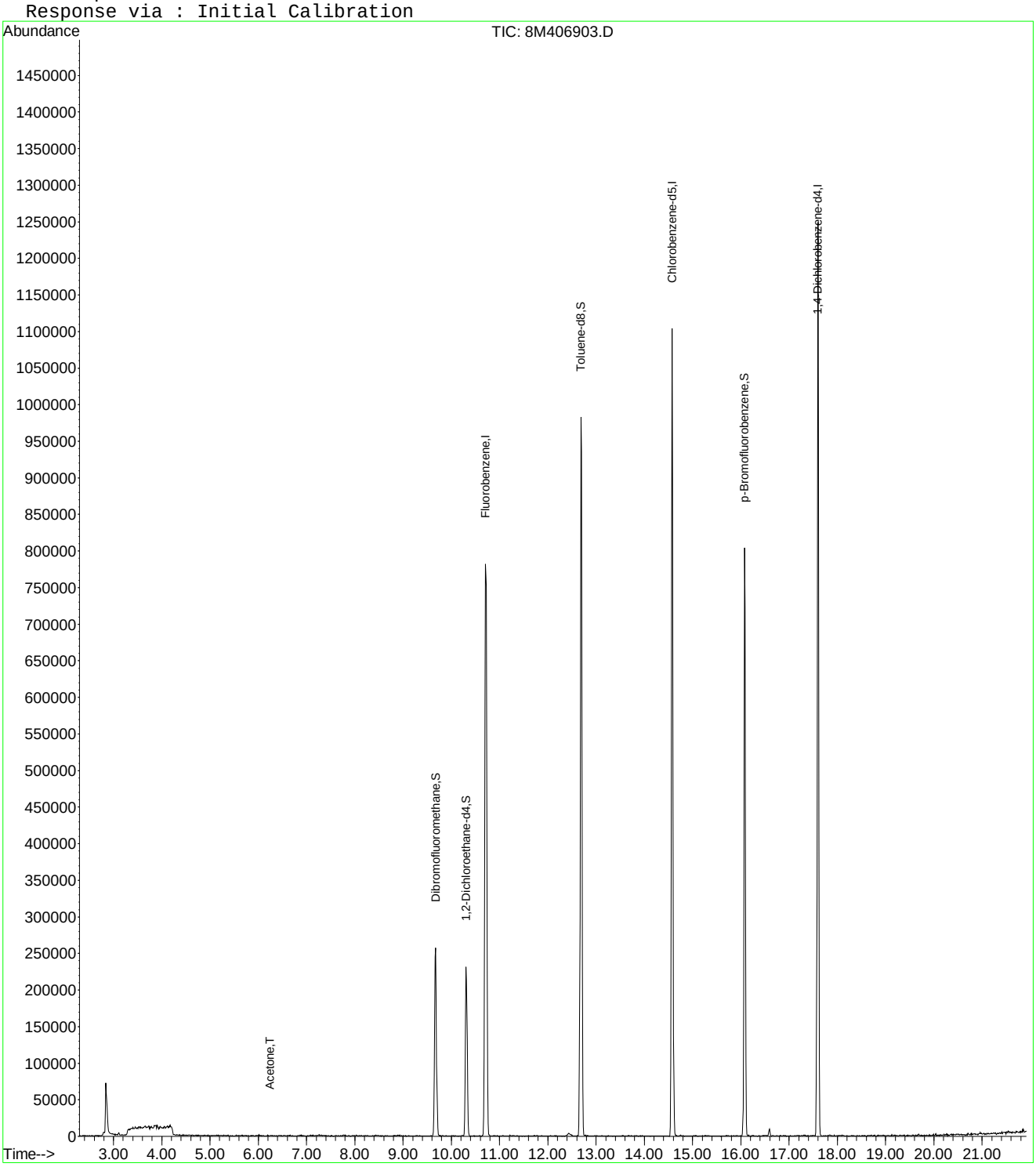

8M406903.D 8260WT.M Fri Aug 21 08:48:12 2015 Page 2

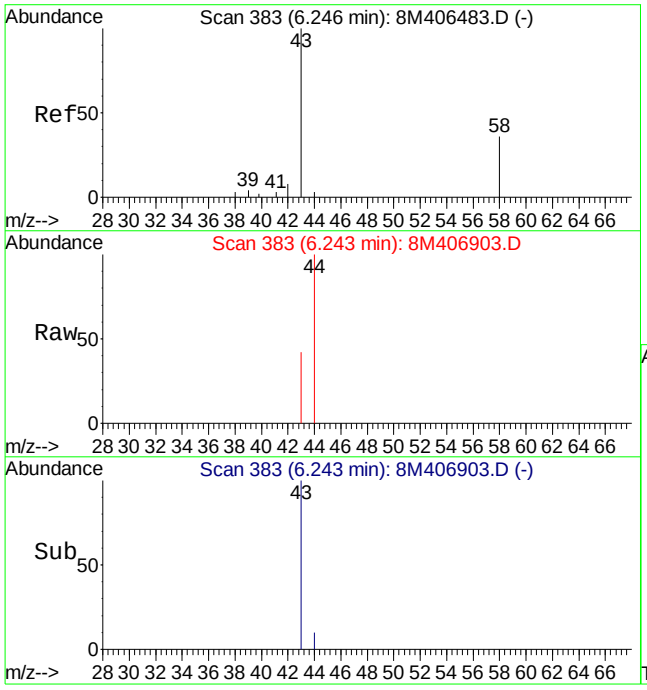

#13
Acetone
Concen: 0.21 ug/L
RT: 6.24 min Scan# 383
Delta R.T. -0.00 min
Lab File: 8M406903.D
Acq: 20 Aug 2015 15:21

Tgt Ion: 43 Resp: 255

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

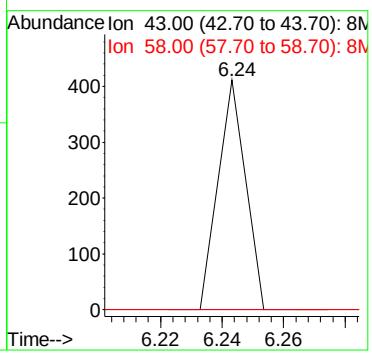

LSC Area Percent Report

Data File : C:\MSDCHEM\2\DATA\082015\8M406903.D Vial: 4
Acq On : 20 Aug 2015 15:21 Operator: TMB
Sample : WG535683-01 VBLK0820 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 200 Area counts
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Signal : TIC

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.844	149	151	155	rVB5	3683	9267	0.37%	0.073%
2	4.568	218	221	225	rVB2	1069	2882	0.11%	0.023%
3	4.630	225	227	230	rVB	1277	2647	0.11%	0.021%
4	4.703	230	234	236	rBV	1388	2785	0.11%	0.022%
5	5.282	288	290	295	rVB	906	1958	0.08%	0.015%
6	5.375	296	299	302	rVB	1241	1517	0.06%	0.012%
7	5.540	311	315	317	rBV	1421	1890	0.07%	0.015%
8	5.664	323	327	330	rBV	1037	2187	0.09%	0.017%
9	5.737	330	334	338	rVB	746	2403	0.10%	0.019%
10	5.788	338	339	342	rBV	896	1594	0.06%	0.012%
11	6.254	381	384	387	rBV	870	1899	0.08%	0.015%
12	6.419	399	400	408	rVB	1024	2899	0.12%	0.023%
13	6.553	408	413	416	rBV	1012	2787	0.11%	0.022%
14	6.657	419	423	425	rBV2	1317	2566	0.10%	0.020%
15	6.864	438	443	445	rVB	1278	2329	0.09%	0.018%
16	6.895	445	446	450	rBV	1171	1795	0.07%	0.014%
17	7.081	460	464	466	rBV2	1545	2893	0.11%	0.023%
18	7.132	468	469	472	rVV	1236	1533	0.06%	0.012%
19	7.194	473	475	477	rVV2	877	1559	0.06%	0.012%
20	7.256	477	481	483	rVV2	2128	3948	0.16%	0.031%
21	7.308	483	486	488	rVB2	1766	3037	0.12%	0.024%
22	7.360	488	491	493	rBV2	1156	2480	0.10%	0.019%
23	7.525	502	507	510	rVB	772	1717	0.07%	0.013%
24	7.598	510	514	518	rBV	877	2564	0.10%	0.020%
25	7.773	528	531	533	rBV	1128	2132	0.08%	0.017%
26	7.867	537	540	544	rVB	878	2128	0.08%	0.017%
27	7.960	544	549	550	rBV	908	1778	0.07%	0.014%
28	8.032	553	556	559	rVB	1153	2066	0.08%	0.016%
29	8.435	593	595	597	rBV	1376	1817	0.07%	0.014%
30	8.673	612	618	621	rVV	897	2106	0.08%	0.017%
31	9.118	656	661	664	rBV	1239	3478	0.14%	0.027%
32	9.273	674	676	680	rVB	855	1702	0.07%	0.013%
33	9.676	707	715	726	rVB	257044	709868	28.16%	5.566%
34	9.821	726	729	731	rBV	1139	1568	0.06%	0.012%
35	10.307	770	776	784	rVB	231488	572856	22.73%	4.491%
36	10.410	784	786	789	rBV	924	2184	0.09%	0.017%
37	10.710	807	815	825	rBV	782073	2093804	83.07%	16.416%
38	11.216	860	864	867	rBV	1363	2343	0.09%	0.018%
39	11.599	898	901	905	rVV	725	1505	0.06%	0.012%
40	11.785	913	919	921	rVV2	526	1913	0.08%	0.015%
41	12.437	973	982	990	rBV2	4250	18720	0.74%	0.147%
42	12.685	997	1006	1017	rVB	982272	2418214	95.94%	18.959%

43	12.809	1017	1018	1023	rBV	765	1521	0.06%	0.012%
44	13.915	1122	1125	1126	rBV	1033	1627	0.06%	0.013%
45	14.577	1181	1189	1203	rVB	1103728	2436398	96.66%	19.102%
46	14.753	1203	1206	1210	rBV2	1388	2819	0.11%	0.022%
47	15.073	1234	1237	1241	rVB	1210	2985	0.12%	0.023%
48	15.208	1241	1250	1252	rBV	1265	4769	0.19%	0.037%
49	15.538	1280	1282	1286	rVB	930	2439	0.10%	0.019%
50	15.611	1286	1289	1293	rBV	806	2845	0.11%	0.022%
51	15.931	1315	1320	1323	rVB	1083	1948	0.08%	0.015%
52	16.076	1327	1334	1341	rBV	803676	1704699	67.63%	13.365%
53	16.241	1348	1350	1355	rBV2	813	2035	0.08%	0.016%
54	16.376	1360	1363	1365	rBV	1274	1637	0.06%	0.013%
55	16.593	1378	1384	1388	rVB	9911	22981	0.91%	0.180%
56	16.655	1388	1390	1397	rBV	1083	4440	0.18%	0.035%
57	16.903	1413	1414	1418	rVB	1084	1616	0.06%	0.013%
58	17.162	1437	1439	1443	rBV	899	1912	0.08%	0.015%
59	17.327	1451	1455	1457	rVB	1370	2111	0.08%	0.017%
60	17.379	1459	1460	1464	rBV	864	1622	0.06%	0.013%
61	17.472	1464	1469	1470	rBV	722	1478	0.06%	0.012%
62	17.513	1470	1473	1475	rBV	919	1995	0.08%	0.016%
63	17.596	1475	1481	1490	rVB	1248392	2520571	100.00%	19.762%
64	17.834	1502	1504	1511	rBV	1514	3862	0.15%	0.030%
65	18.092	1521	1529	1535	rBV	1479	5447	0.22%	0.043%
66	18.196	1535	1539	1543	rVB	1091	2415	0.10%	0.019%
67	18.402	1555	1559	1561	rVB	984	1852	0.07%	0.015%
68	18.526	1567	1571	1573	rVB	994	1723	0.07%	0.014%
69	18.578	1573	1576	1578	rVB	995	1570	0.06%	0.012%
70	18.640	1578	1582	1586	rBV	1066	3076	0.12%	0.024%
71	18.775	1591	1595	1598	rVB	1387	2192	0.09%	0.017%
72	18.847	1601	1602	1605	rBV	1174	1879	0.07%	0.015%
73	18.950	1609	1612	1617	rVB	1217	3572	0.14%	0.028%
74	19.043	1617	1621	1622	rBV	1009	2146	0.09%	0.017%
75	19.126	1626	1629	1632	rVB	2048	2128	0.08%	0.017%
76	19.199	1632	1636	1637	rBV2	1344	2291	0.09%	0.018%
77	19.302	1642	1646	1648	rBV	1011	2200	0.09%	0.017%
78	19.374	1652	1653	1657	rVB2	1201	1897	0.08%	0.015%
79	19.550	1668	1670	1672	rBV	1416	1629	0.06%	0.013%
80	19.685	1678	1683	1687	rBV2	2615	6552	0.26%	0.051%
81	19.850	1697	1699	1704	rVV	1045	2788	0.11%	0.022%
82	19.912	1704	1705	1707	rBV	1820	1598	0.06%	0.013%
83	19.995	1707	1713	1715	rVV2	2172	3510	0.14%	0.028%
84	20.036	1715	1717	1719	rVB	3037	3106	0.12%	0.024%
85	20.098	1719	1723	1725	rBV3	1556	3673	0.15%	0.029%
86	20.129	1725	1726	1728	rBV3	2144	2731	0.11%	0.021%
87	20.212	1732	1734	1735	rVB	2009	1902	0.08%	0.015%
88	20.264	1736	1739	1741	rVB2	2633	4742	0.19%	0.037%
89	20.357	1744	1748	1749	rBV2	1524	2782	0.11%	0.022%
90	20.408	1752	1753	1756	rBV	1527	2480	0.10%	0.019%
91	20.708	1779	1782	1786	rBV4	2584	4073	0.16%	0.032%
92	20.770	1786	1788	1789	rVB2	2269	2073	0.08%	0.016%
93	20.832	1792	1794	1798	rVB2	1568	2757	0.11%	0.022%
94	20.956	1802	1806	1812	rBV3	3731	11633	0.46%	0.091%
95	21.101	1818	1820	1822	rBV2	1636	3106	0.12%	0.024%
96	21.318	1839	1841	1842	rBV2	2105	3079	0.12%	0.024%
97	21.411	1847	1850	1851	rVV	2662	3301	0.13%	0.026%
98	21.546	1858	1863	1865	rBV4	3941	10921	0.43%	0.086%
99	21.721	1877	1880	1884	rBV4	1897	4607	0.18%	0.036%
100	21.856	1890	1893	1895	rBV4	4364	5713	0.23%	0.045%

Sum of corrected areas: 12754772

8M406903.D 8260WT.M Fri Aug 21 10:08:47 2015 Page 2

LSC Report - Integrated Chromatogram

```
File        : C:\MSDCHEM\2\DATA\082015\8M406903.D
Operator    : TMB
Acquired    : 20 Aug 2015  15:21     using AcqMethod 8260WT
Instrument :   HPMS8
Sample Name: WG535683-01 VBLK0820 BLANK STD 8260
Misc Info   : 1,1
Vial Number: 4
Quant File :8260WT.RES (RTE Integrator)
```

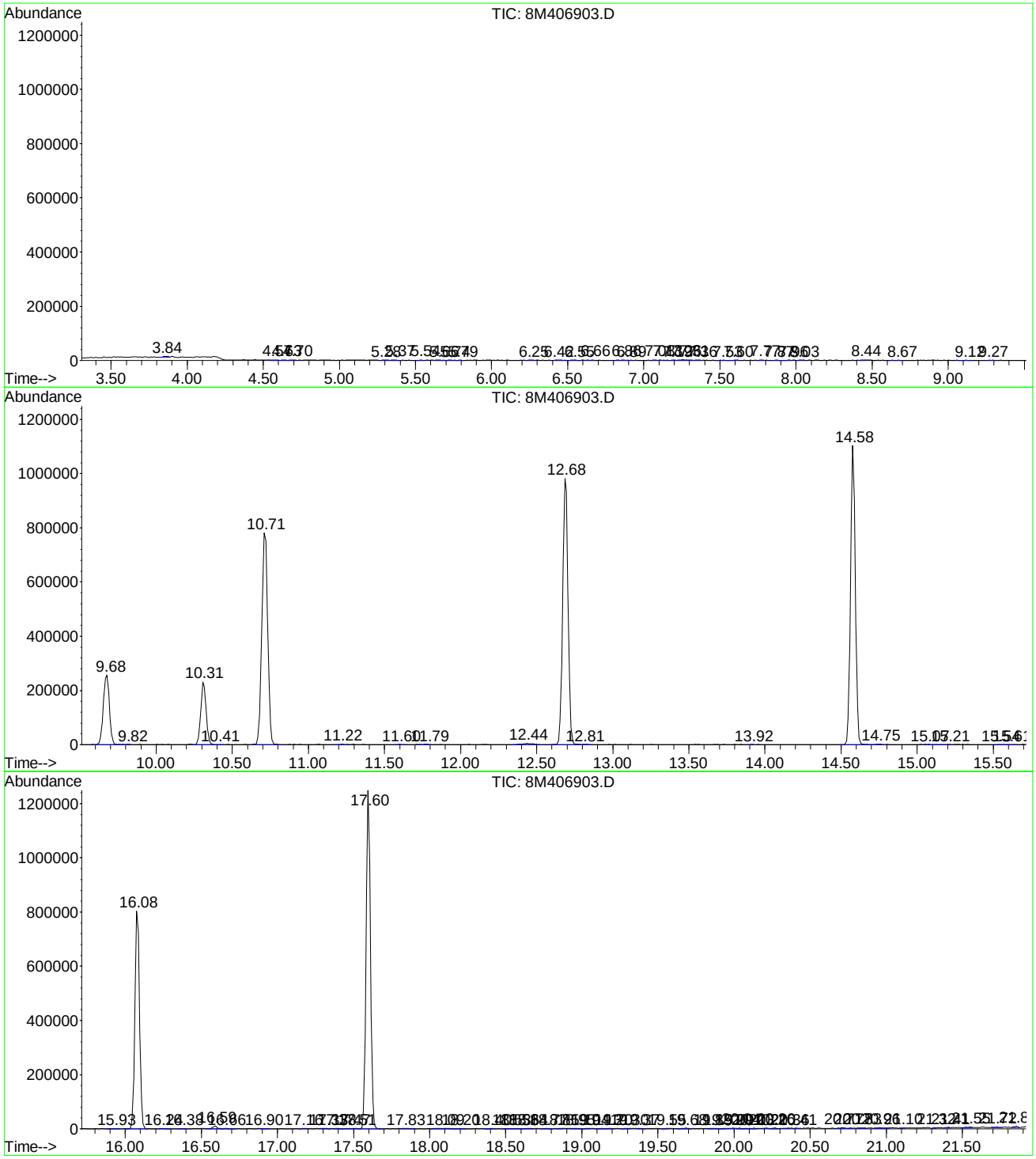

Tentatively Identified Compound (LSC) summary

Operator ID: TMB Date Acquired: 20 Aug 2015 15:21
Data File: C:\MSDCHEM\2\DATA\082015\8M406903.D
Name: WG535683-01 VBLK0820 BLANK STD 8260
Misc: 1,1
Method: C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title: Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Library Searched: C:\DATABASE\NIST02.L

						Internal Standard			
TIC	Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082115\8M406936.D Vial: 4
Acq On : 21 Aug 2015 16:04 Operator: TMB
Sample : WG536091-01 VBLK0821 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 24 08:25:51 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	819252	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	634702	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	345303	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.68	111	182347	25.2597 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.04%		
43) 1,2-Dichloroethane-d4	10.31	65	163372	22.7583 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 91.04%		
58) Toluene-d8	12.69	98	764364	24.9642 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.84%		
80) p-Bromofluorobenzene	16.08	95	281085	23.5342 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.12%		

Target Compounds

					Qvalue
13) Acetone	6.23	43	215	0.2081 ug/L #	48
36) Tetrahydrofuran	9.66	42	249	0.2070 ug/L #	40

(#) = qualifier out of range (m) = manual integration
8M406936.D 8260WT.M Mon Aug 24 08:25:52 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082115\8M406936.D Vial: 4
Acq On : 21 Aug 2015 16:04 Operator: TMB
Sample : WG536091-01 VBLK0821 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 24 8:25 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

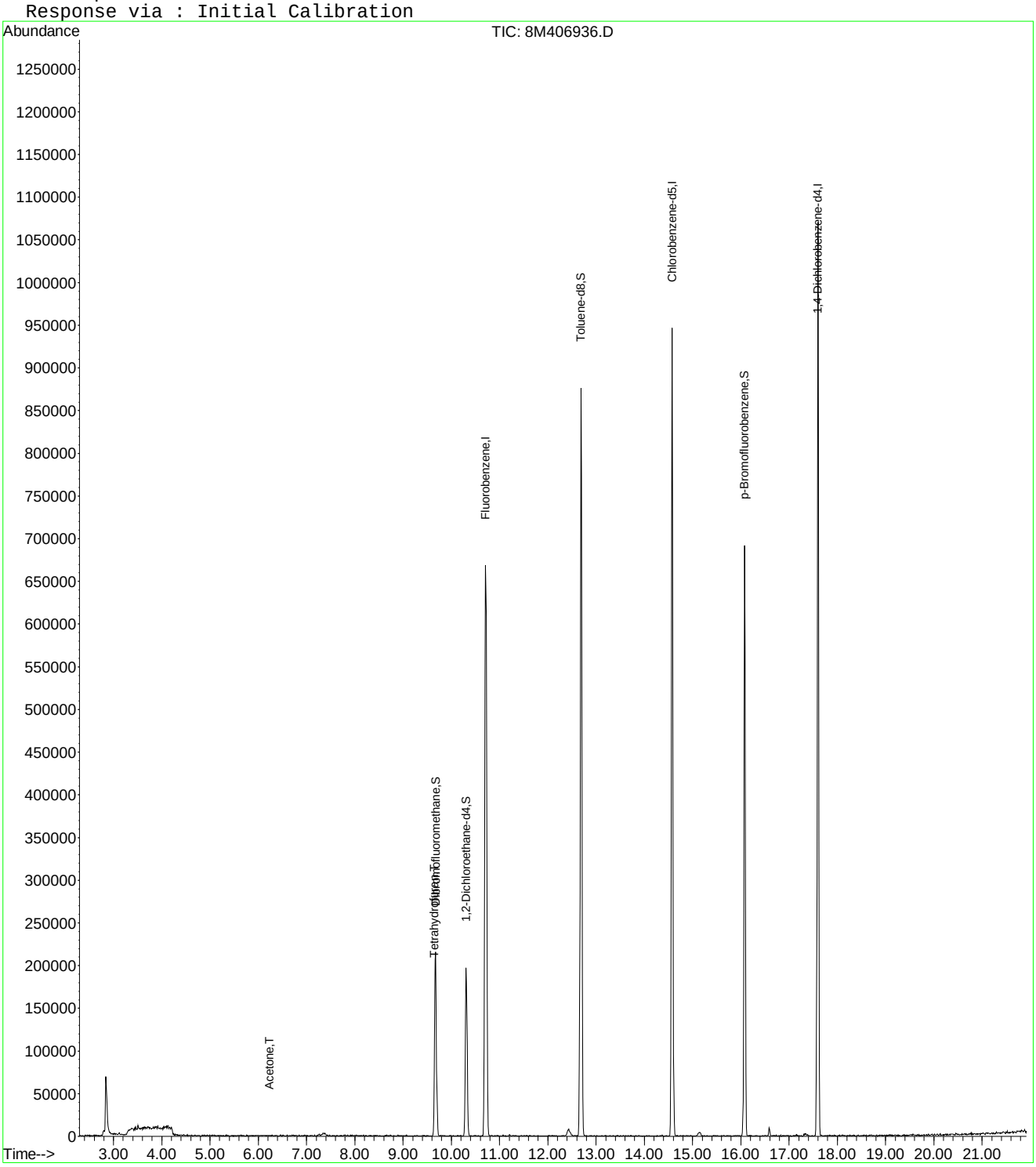

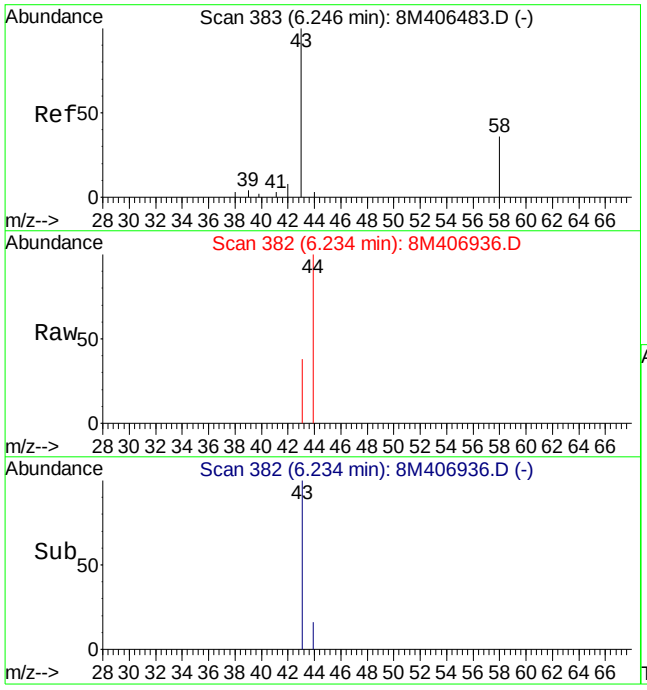

#13
Acetone
Concen: 0.21 ug/L
RT: 6.23 min Scan# 382
Delta R.T. -0.01 min
Lab File: 8M406936.D
Acq: 21 Aug 2015 16:04

Tgt Ion: 43 Resp: 215

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

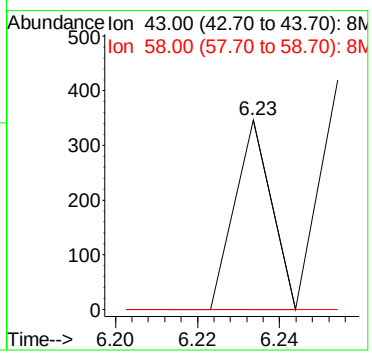

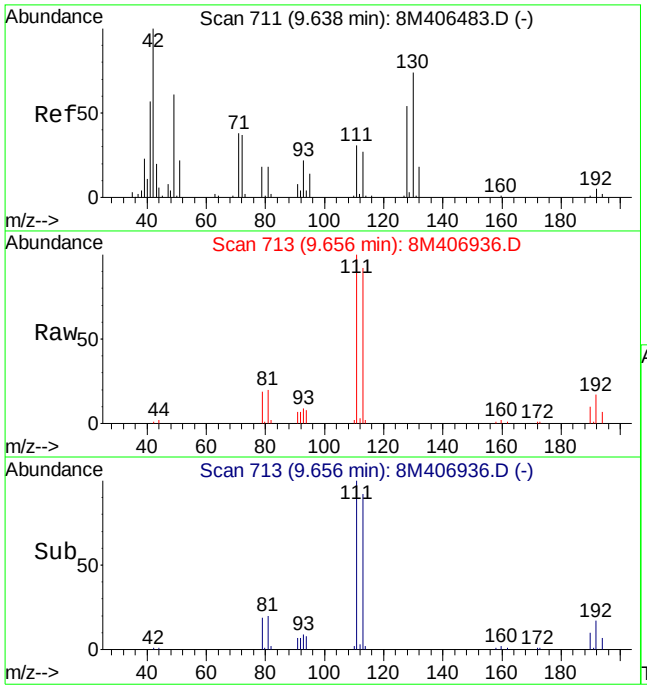

#36
Tetrahydrofuran
Concen: 0.21 ug/L
RT: 9.66 min Scan# 713
Delta R.T. 0.02 min
Lab File: 8M406936.D
Acq: 21 Aug 2015 16:04

Tgt Ion: 42 Resp: 249

Ion	Ratio	Lower	Upper
42	100		
72	0.0	22.4	52.4#
71	0.0	19.5	45.5#

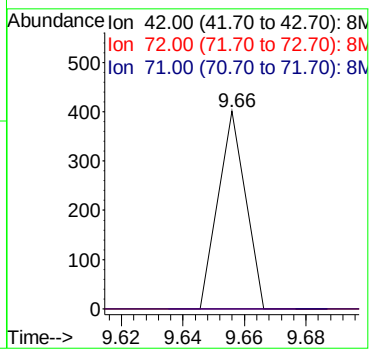

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082015\8M406927.D Vial: 28
Acq On : 21 Aug 2015 2:50 Operator: TMB
Sample : WG535683-04 VBLK0820 BLANK STD 624 Inst : HPMS8
Misc : 2,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 21 08:48:50 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	773443	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	592816	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	314719	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	170252	24.9810 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.92%		
43) 1,2-Dichloroethane-d4	10.31	65	152265	22.4673 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 89.88%		
58) Toluene-d8	12.68	98	715294	25.0123 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.04%		
80) p-Bromofluorobenzene	16.08	95	264701	24.3161 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.28%		

Target Compounds

					Qvalue
3) Chloromethane	3.60	50	1908	0.1447 ug/L #	63
36) Tetrahydrofuran	9.66	42	326	0.2870 ug/L #	40
47) Trichloroethene	11.23	130	1892	0.2177 ug/L	70
82) trans-1,4-Dichloro-2-Buten	16.15	53	208	0.8890 ug/L #	1

(#) = qualifier out of range (m) = manual integration
8M406927.D 8260WT.M Fri Aug 21 08:48:51 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082015\8M406927.D Vial: 28
Acq On : 21 Aug 2015 2:50 Operator: TMB
Sample : WG535683-04 VBLK0820 BLANK STD 624 Inst : HPMS8
Misc : 2,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 21 8:48 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

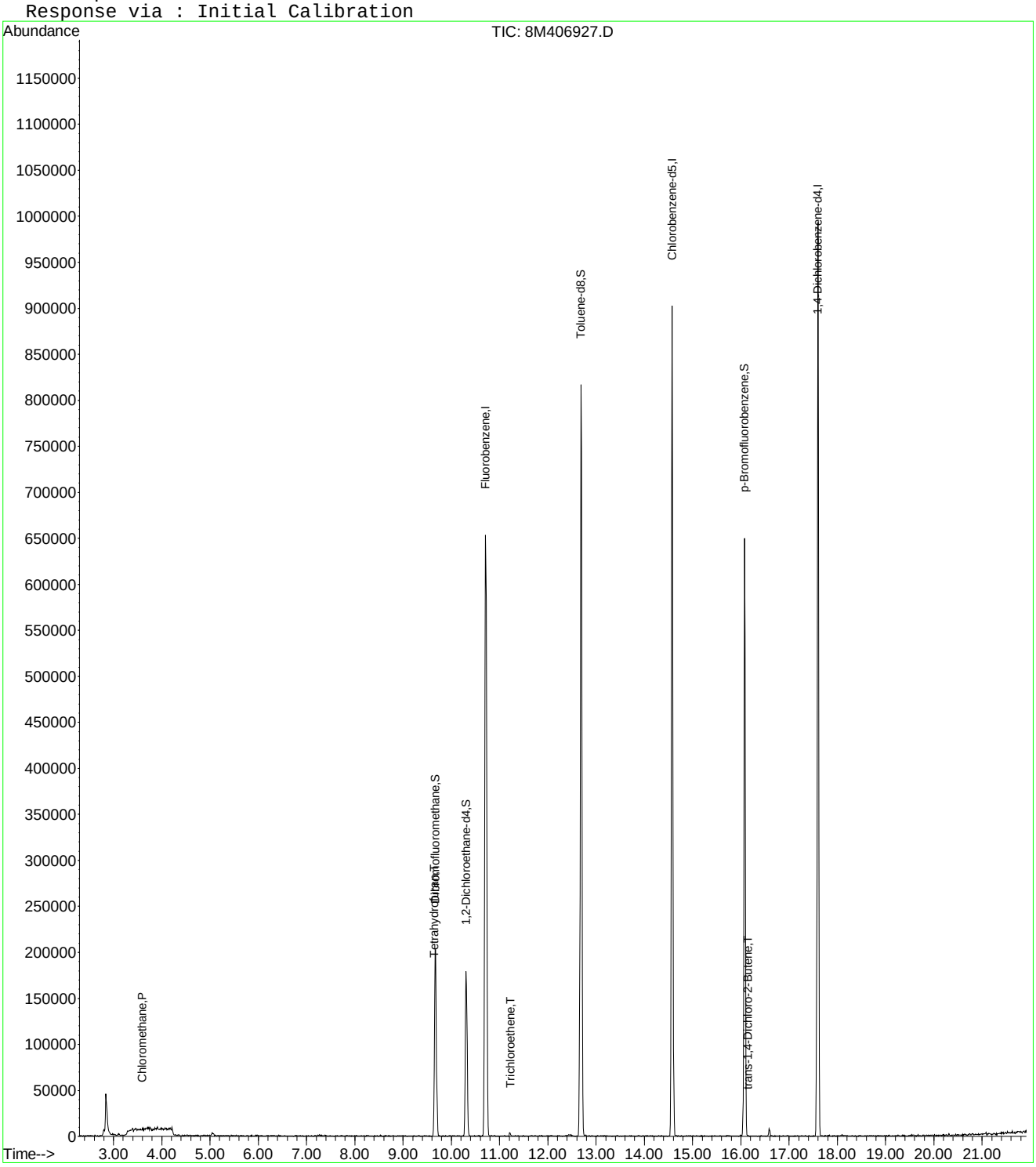

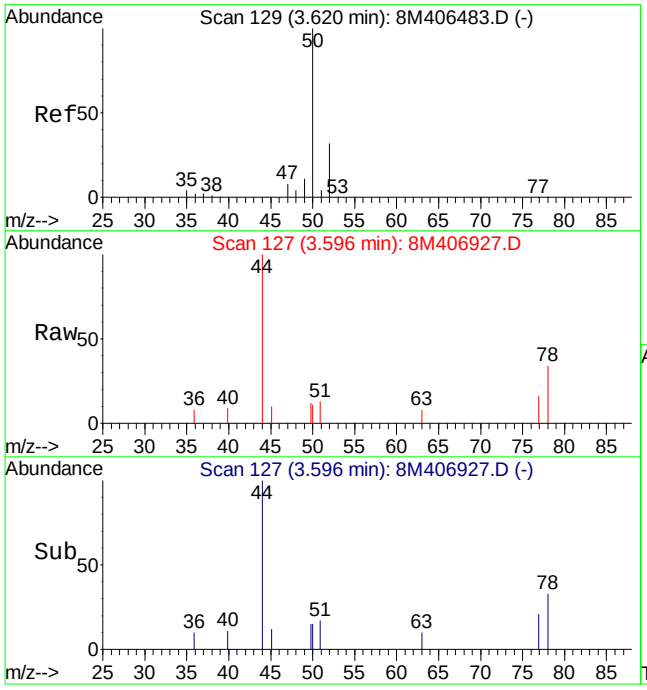

#3
Chloromethane
Concen: 0.14 ug/L
RT: 3.60 min Scan# 127
Delta R.T. -0.02 min
Lab File: 8M406927.D
Acq: 21 Aug 2015 2:50

Tgt Ion: 50 Resp: 1908

Ion	Ratio	Lower	Upper
50	100		
52	11.3	19.2	44.8#

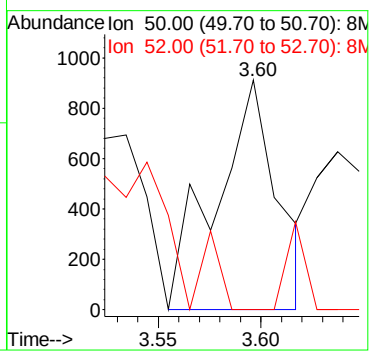

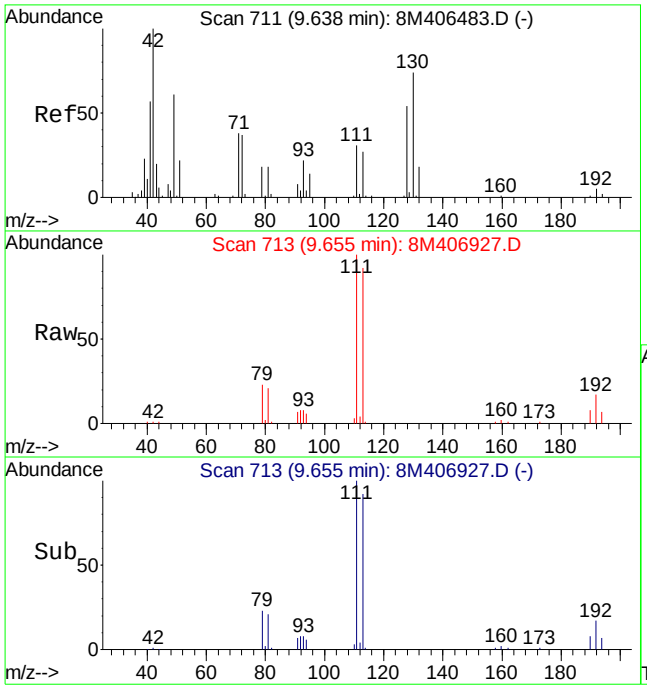

#36
Tetrahydrofuran
Concen: 0.29 ug/L
RT: 9.66 min Scan# 713
Delta R.T. 0.02 min
Lab File: 8M406927.D
Acq: 21 Aug 2015 2:50

Tgt Ion: 42 Resp: 326

Ion	Ratio	Lower	Upper
42	100		
72	0.0	22.4	52.4#
71	0.0	19.5	45.5#

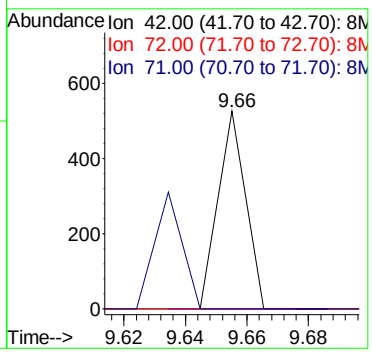

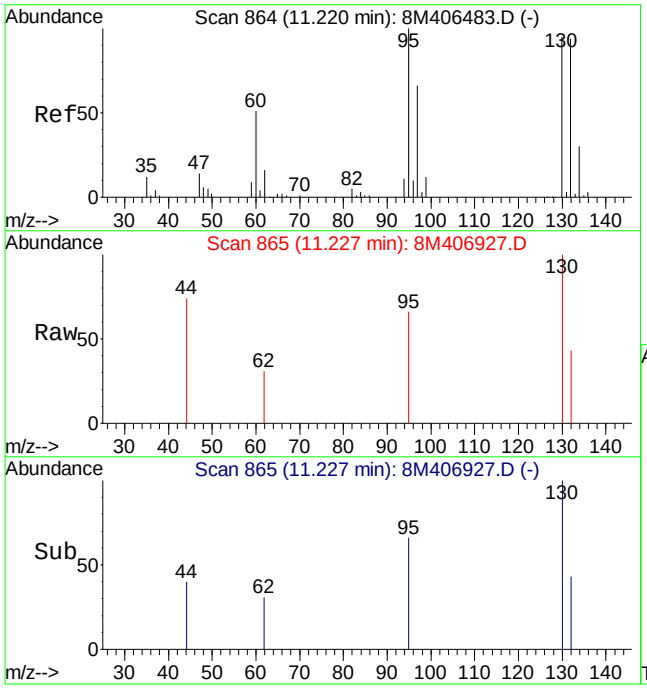

#47
Trichloroethene
Concen: 0.22 ug/L
RT: 11.23 min Scan# 865
Delta R.T. 0.01 min
Lab File: 8M406927.D
Acq: 21 Aug 2015 2:50

Tgt Ion:130 Resp: 1892

Ion	Ratio	Lower	Upper
130	100		
132	81.1	59.0	137.6
95	65.2	65.0	151.8

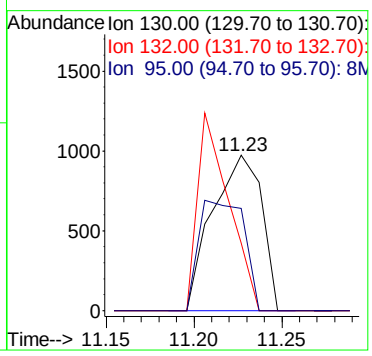

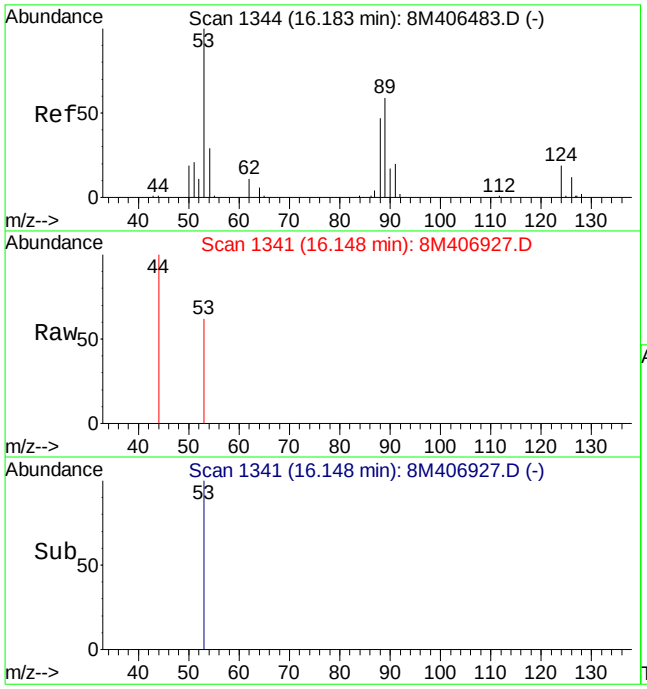

#82
trans-1,4-Dichloro-2-Butene
Concen: 0.89 ug/L
RT: 16.15 min Scan# 1341
Delta R.T. -0.04 min
Lab File: 8M406927.D
Acq: 21 Aug 2015 2:50

Tgt Ion: 53 Resp: 208

Ion	Ratio	Lower	Upper
53	100		
75	63899.5	58.5	136.5#
89	0.0	33.5	78.1#

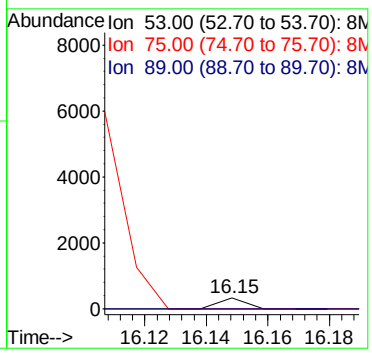

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\082015\8M406904.D Vial: 5
Acq On : 20 Aug 2015 15:49 Operator: TMB
Sample : WG535683-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD72078 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 20 16:11:17 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	1024791	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	766908	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	434918	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.68	111	223370	24.7364 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.96%		
43) 1,2-Dichloroethane-d4	10.31	65	202279	22.5266 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 90.12%		
58) Toluene-d8	12.68	98	914120	24.7086 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.84%		
80) p-Bromofluorobenzene	16.08	95	357716	23.7790 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.12%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	336051	21.4716 ug/L	100
3) Chloromethane	3.62	50	372024	21.2911 ug/L	97
4) Vinyl Chloride	3.84	62	306127	23.8230 ug/L	99
5) 1,3-Butadiene	3.89	54	180844	16.0535 ug/L	94
6) Bromomethane	4.73	94	94632	11.0561 ug/L	97
7) Chloroethane	4.90	64	175302	21.9104 ug/L	99
8) Trichlorofluoromethane	5.37	101	294528	17.7257 ug/L	98
9) Diethyl ether	5.91	59	594400	94.5096 ug/L	98
10) Isoprene	5.94	67	275720	21.2015 ug/L	96
11) Acrolein	6.15	56	25552	73.5536 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	185399	19.5423 ug/L	100
13) Acetone	6.24	43	26745	20.6961 ug/L	89
14) 1,1-Dichloroethene	6.47	61	276181	17.1593 ug/L	93
15) Tert-Butyl Alcohol	6.59	59	83971	247.3855 ug/L	98
16) Dimethyl Sulfide	6.74	62	222908	22.0589 ug/L	96
17) Iodomethane	7.00	142	45264	5.3704 ug/L	96
18) Methyl acetate	7.01	43	78095	15.5734 ug/L	96
19) Methylene Chloride	7.26	84	198785	19.3894 ug/L	100
20) Carbon Disulfide	7.30	76	545656	16.5995 ug/L	99
21) Acrylonitrile	7.44	53	42653	19.8633 ug/L	98
22) Methyl Tert Butyl Ether	7.48	73	343210	18.9569 ug/L	99
23) trans-1,2-Dichloroethene	7.71	61	281879	18.6737 ug/L	95
24) n-Hexane	7.79	57	282718	17.3260 ug/L	97
25) Diisopropyl ether	8.14	45	3627153	98.9535 ug/L	98
26) Vinyl Acetate	8.30	43	309377	33.0196 ug/L	99
27) 1,1-Dichloroethane	8.33	63	392492	19.3866 ug/L	99
28) Ethyl-Tert-Butyl ether	8.71	59	2541572	92.9340 ug/L	99
29) 2-Butanone	8.89	43	49458	22.6038 ug/L	99
30) Propionitrile	8.99	54	79488	114.2137 ug/L	98
31) 2,2-Dichloropropane	9.11	77	314024	20.1273 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	218173	20.0836 ug/L	93
33) Chloroform	9.39	83	357412	19.5618 ug/L	99
34) 1-Bromopropane	9.52	122	40952	21.2085 ug/L	100
35) Bromochloromethane	9.61	130	109917	19.6433 ug/L	99
36) Tetrahydrofuran	9.63	42	159788	106.1740 ug/L	96
38) 1,1,1-Trichloroethane	9.91	97	325501	19.3142 ug/L	98
39) Cyclohexane	9.94	56	366741	18.6575 ug/L	99
40) 1,1-Dichloropropene	10.11	75	270517	18.7477 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	2005716	97.9732 ug/L	100
42) Carbon Tetrachloride	10.25	117	286079	19.1714 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M406904.D 8260WT.M Thu Aug 20 16:11:19 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\082015\8M406904.D Vial: 5
Acq On : 20 Aug 2015 15:49 Operator: TMB
Sample : WG535683-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD72078 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 20 16:11:17 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	226569	18.5145 ug/L		98
46)	Benzene	10.47	78	836151	20.7301 ug/L		98
47)	Trichloroethene	11.22	130	210276	18.2647 ug/L		95
48)	Methylcyclohexane	11.30	83	306104	18.3353 ug/L		100
49)	1,2-Dichloropropane	11.43	63	227282	20.3400 ug/L		95
50)	Bromodichloromethane	11.73	83	269920	19.4637 ug/L		99
51)	1,4-Dioxane	11.72	88	9245	235.2638 ug/L		85
52)	Dibromomethane	11.82	93	100284	19.6185 ug/L		96
53)	2-Chloroethyl Vinyl Ether	12.02	63	95082	20.3709 ug/L		99
54)	4-Methyl-2-Pentanone	12.06	58	46334	22.3626 ug/L		91
55)	cis-1,3-Dichloropropene	12.36	75	322249	21.1110 ug/L		99
56)	Dimethyl Disulfide	12.62	79	159421	19.2776 ug/L		89
59)	Toluene	12.79	91	890685	19.8736 ug/L		99
60)	Ethyl Methacrylate	12.88	69	179030	20.9297 ug/L		97
62)	trans-1,3-Dichloropropene	12.96	75	248684	18.7585 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	134091	19.0919 ug/L		99
64)	2-Hexanone	13.12	58	38975	19.6437 ug/L	#	89
65)	1,3-Dichloropropane	13.48	76	240349	19.6623 ug/L		97
66)	Tetrachloroethene	13.60	164	185877	19.6709 ug/L		94
67)	Dibromochloromethane	13.87	129	174813	18.8946 ug/L		98
68)	1,2-Dibromoethane	14.12	107	129456	18.9569 ug/L		98
69)	1-Chlorohexane	14.21	91	298967	18.8758 ug/L		98
70)	Chlorobenzene	14.63	112	606081	21.1210 ug/L		95
71)	1,1,1,2-Tetrachloroethane	14.66	131	197994	19.4226 ug/L		99
72)	Ethylbenzene	14.66	106	319144	19.7029 ug/L		97
73)	m-,p-Xylene	14.74	106	788964	41.2192 ug/L		96
74)	o-Xylene	15.31	106	395594	21.0010 ug/L		94
75)	Styrene	15.34	104	633590	20.5944 ug/L		95
76)	Bromoform	15.84	173	109817	19.7418 ug/L		98
77)	Isopropylbenzene	15.73	105	988973	20.9720 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	154604	19.5646 ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	40043	18.0527 ug/L		57
82)	trans-1,4-Dichloro-2-Buten	16.19	53	41825	14.1444 ug/L	#	46
83)	n-Propylbenzene	16.24	91	1264719	19.7506 ug/L		100
84)	Bromobenzene	16.37	156	239771	18.4858 ug/L		99
85)	1,3,5-Trimethylbenzene	16.43	105	827682	19.5781 ug/L		96
86)	2-Chlorotoluene	16.51	91	772601	19.7528 ug/L		99
87)	4-Chlorotoluene	16.56	91	753430	20.2137 ug/L		97
88)	a-Methylstyrene	16.83	118	451391	19.6614 ug/L		98
89)	tert-Butylbenzene	16.89	134	178143	19.4501 ug/L		92
90)	1,2,4-Trimethylbenzene	16.94	105	826889	19.3049 ug/L		97
91)	sec-Butylbenzene	17.16	105	1053101	20.1891 ug/L		99
92)	p-Isopropyltoluene	17.32	119	854211	19.0427 ug/L		100
93)	1,3-Dichlorobenzene	17.51	146	506150	19.9003 ug/L		94
94)	1,4-Dichlorobenzene	17.64	146	486865	18.5696 ug/L		95
95)	n-Butylbenzene	17.84	91	802756	18.5587 ug/L		99
96)	1,2-Dichlorobenzene	18.13	146	450023	20.0404 ug/L		97
97)	1,2-Dibromo-3-Chloropropan	19.13	75	24766	17.9014 ug/L		94
98)	1,2,4-Trichlorobenzene	20.27	180	298020	17.2457 ug/L		97
99)	Hexachlorobutadiene	20.43	225	142465	16.2009 ug/L		98
100)	Naphthalene	20.64	128	407298	18.1658 ug/L		97
101)	1,2,3-Trichlorobenzene	20.95	180	261488	17.5351 ug/L		97

(#) = qualifier out of range (m) = manual integration
8M406904.D 8260WT.M Thu Aug 20 16:11:19 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\082015\8M406904.D Vial: 5
Acq On : 20 Aug 2015 15:49 Operator: TMB
Sample : WG535683-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD72078 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 20 16:11 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

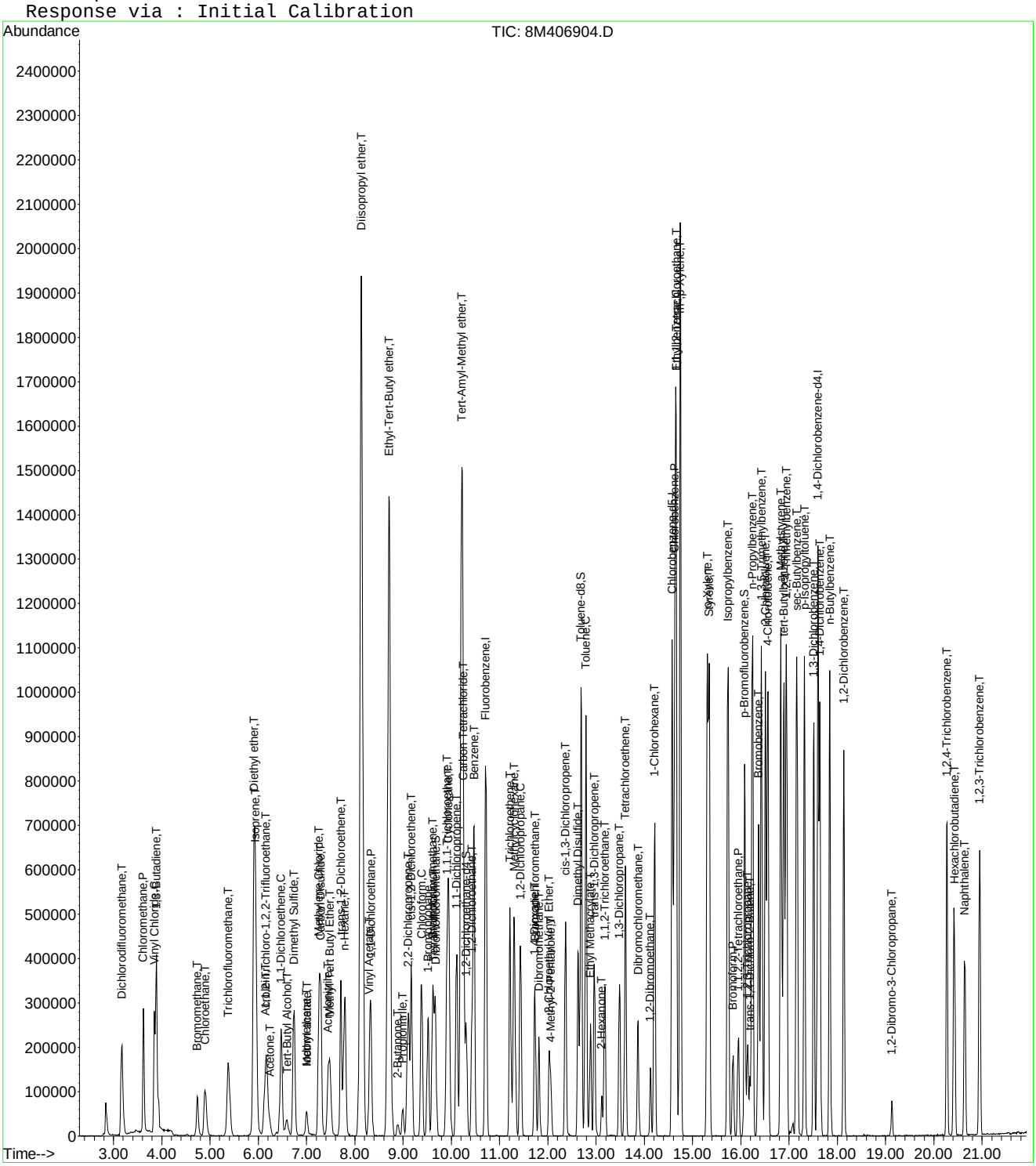

8M406904.D 8260WT.M Thu Aug 20 16:11:19 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\082115\8M406937.D Vial: 5
Acq On : 21 Aug 2015 16:33 Operator: TMB
Sample : WG536091-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD72078 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 21 16:55:00 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	845633	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	636539	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	372422	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	184523	24.7637 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.04%		
43) 1,2-Dichloroethane-d4	10.31	65	170179	22.9670 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 91.88%		
58) Toluene-d8	12.69	98	757338	24.6634 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.64%		
80) p-Bromofluorobenzene	16.08	95	292787	22.7289 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 90.92%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	264462	20.4775 ug/L	99
3) Chloromethane	3.62	50	293349	20.3453 ug/L	99
4) Vinyl Chloride	3.84	62	241883	22.8114 ug/L	99
5) 1,3-Butadiene	3.89	54	176591	18.9971 ug/L	90
6) Bromomethane	4.73	94	88919	12.5896 ug/L	96
7) Chloroethane	4.90	64	141625	21.4514 ug/L	100
8) Trichlorofluoromethane	5.39	101	238644	17.4053 ug/L	97
9) Diethyl ether	5.91	59	507090	97.7092 ug/L	99
10) Isoprene	5.94	67	237185	22.1024 ug/L	96
11) Acrolein	6.15	56	24493	82.3013 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	151803	19.3910 ug/L	95
13) Acetone	6.25	43	17279	16.2039 ug/L	98
14) 1,1-Dichloroethene	6.47	61	232202	17.4834 ug/L	98
15) Tert-Butyl Alcohol	6.58	59	23901	85.3325 ug/L	98
16) Dimethyl Sulfide	6.74	62	185444	22.2395 ug/L	96
17) Iodomethane	6.99	142	42854	6.0328 ug/L	88
18) Methyl acetate	7.01	43	58652	14.1742 ug/L	97
19) Methylene Chloride	7.26	84	158203	18.7003 ug/L	95
20) Carbon Disulfide	7.30	76	468534	17.2731 ug/L	99
21) Acrylonitrile	7.44	53	31151	17.5803 ug/L	100
22) Methyl Tert Butyl Ether	7.47	73	290480	19.4436 ug/L	99
23) trans-1,2-Dichloroethene	7.71	61	236706	19.0034 ug/L	94
24) n-Hexane	7.79	57	232334	17.2549 ug/L	96
25) Diisopropyl ether	8.14	45	3107301	102.7311 ug/L	99
26) Vinyl Acetate	8.30	43	256099	33.1242 ug/L	99
27) 1,1-Dichloroethane	8.33	63	325485	19.4830 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	2158288	95.6390 ug/L	99
29) 2-Butanone	8.89	43	32763	18.1460 ug/L	96
30) Propionitrile	8.99	54	44925	78.2273 ug/L	95
31) 2,2-Dichloropropane	9.11	77	257291	19.9849 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	180408	20.1256 ug/L	93
33) Chloroform	9.38	83	299370	19.8564 ug/L	99
34) 1-Bromopropane	9.52	122	35184	22.0817 ug/L	99
35) Bromochloromethane	9.61	130	91577	19.8331 ug/L	99
36) Tetrahydrofuran	9.64	42	108854	87.6540 ug/L	96
38) 1,1,1-Trichloroethane	9.91	97	281158	20.2175 ug/L	98
39) Cyclohexane	9.95	56	312711	19.2793 ug/L	99
40) 1,1-Dichloropropene	10.11	75	228371	19.1800 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1687717	99.9059 ug/L	100
42) Carbon Tetrachloride	10.26	117	249504	20.2628 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M406937.D 8260WT.M Fri Aug 21 16:55:01 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\082115\8M406937.D Vial: 5
Acq On : 21 Aug 2015 16:33 Operator: TMB
Sample : WG536091-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD72078 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 21 16:55:00 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	189142	18.7306 ug/L		95
46)	Benzene	10.47	78	701469	21.0756 ug/L		97
47)	Trichloroethene	11.22	130	175410	18.4642 ug/L		95
48)	Methylcyclohexane	11.30	83	257472	18.6897 ug/L		98
49)	1,2-Dichloropropane	11.43	63	191290	20.7458 ug/L		94
50)	Bromodichloromethane	11.73	83	229422	20.0483 ug/L		99
51)	1,4-Dioxane	11.71	88	1699	52.3956 ug/L	#	41
52)	Dibromomethane	11.82	93	85275	20.2167 ug/L		96
53)	2-Chloroethyl Vinyl Ether	12.02	63	78136	20.2869 ug/L		99
54)	4-Methyl-2-Pentanone	12.05	58	34186	19.9951 ug/L		92
55)	cis-1,3-Dichloropropene	12.36	75	274858	21.8212 ug/L		99
56)	Dimethyl Disulfide	12.62	79	135462	19.8508 ug/L		88
59)	Toluene	12.79	91	742769	19.9675 ug/L		100
60)	Ethyl Methacrylate	12.88	69	147200	20.7331 ug/L		96
62)	trans-1,3-Dichloropropene	12.96	75	207261	18.8359 ug/L		98
63)	1,1,2-Trichloroethane	13.18	97	114491	19.6399 ug/L		99
64)	2-Hexanone	13.12	58	31791	19.3045 ug/L	#	95
65)	1,3-Dichloropropane	13.48	76	201951	19.9048 ug/L		96
66)	Tetrachloroethene	13.61	164	155012	19.7643 ug/L		93
67)	Dibromochloromethane	13.86	129	147591	19.2195 ug/L		99
68)	1,2-Dibromoethane	14.12	107	100330	17.7009 ug/L		93
69)	1-Chlorohexane	14.22	91	248592	18.9099 ug/L		97
70)	Chlorobenzene	14.63	112	503539	21.1415 ug/L		94
71)	1,1,1,2-Tetrachloroethane	14.66	131	166523	19.6810 ug/L		100
72)	Ethylbenzene	14.66	106	268948	20.0046 ug/L		96
73)	m-,p-Xylene	14.74	106	645366	40.6225 ug/L		99
74)	o-Xylene	15.31	106	337089	21.5602 ug/L		93
75)	Styrene	15.34	104	523850	20.5147 ug/L		96
76)	Bromoform	15.84	173	91322	19.7793 ug/L		98
77)	Isopropylbenzene	15.74	105	836524	21.3723 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.94	83	126555	18.7026 ug/L		96
81)	1,2,3-Trichloropropane	16.14	110	32155	16.9292 ug/L		62
82)	trans-1,4-Dichloro-2-Buten	16.18	53	37335	14.7109 ug/L	#	50
83)	n-Propylbenzene	16.24	91	1056928	19.2754 ug/L		100
84)	Bromobenzene	16.37	156	206846	18.6235 ug/L		92
85)	1,3,5-Trimethylbenzene	16.43	105	701419	19.3757 ug/L		98
86)	2-Chlorotoluene	16.51	91	664703	19.8460 ug/L		99
87)	4-Chlorotoluene	16.55	91	631146	19.7745 ug/L		97
88)	a-Methylstyrene	16.83	118	403659	20.5328 ug/L		95
89)	tert-Butylbenzene	16.89	134	149417	19.0514 ug/L		91
90)	1,2,4-Trimethylbenzene	16.95	105	693499	18.9077 ug/L		96
91)	sec-Butylbenzene	17.16	105	887856	19.8775 ug/L		100
92)	p-Isopropyltoluene	17.32	119	711222	18.5158 ug/L		98
93)	1,3-Dichlorobenzene	17.51	146	423704	19.4543 ug/L		97
94)	1,4-Dichlorobenzene	17.64	146	412916	18.3919 ug/L		96
95)	n-Butylbenzene	17.84	91	683481	18.4528 ug/L		99
96)	1,2-Dichlorobenzene	18.13	146	389895	20.2764 ug/L		96
97)	1,2-Dibromo-3-Chloropropan	19.13	75	18059	15.2439 ug/L		88
98)	1,2,4-Trichlorobenzene	20.27	180	259793	17.5564 ug/L		97
99)	Hexachlorobutadiene	20.43	225	119495	15.8691 ug/L		98
100)	Naphthalene	20.64	128	347726	18.1114 ug/L		97
101)	1,2,3-Trichlorobenzene	20.95	180	218126	17.0819 ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\082115\8M406937.D Vial: 5
Acq On : 21 Aug 2015 16:33 Operator: TMB
Sample : WG536091-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD72078 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 21 16:55 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

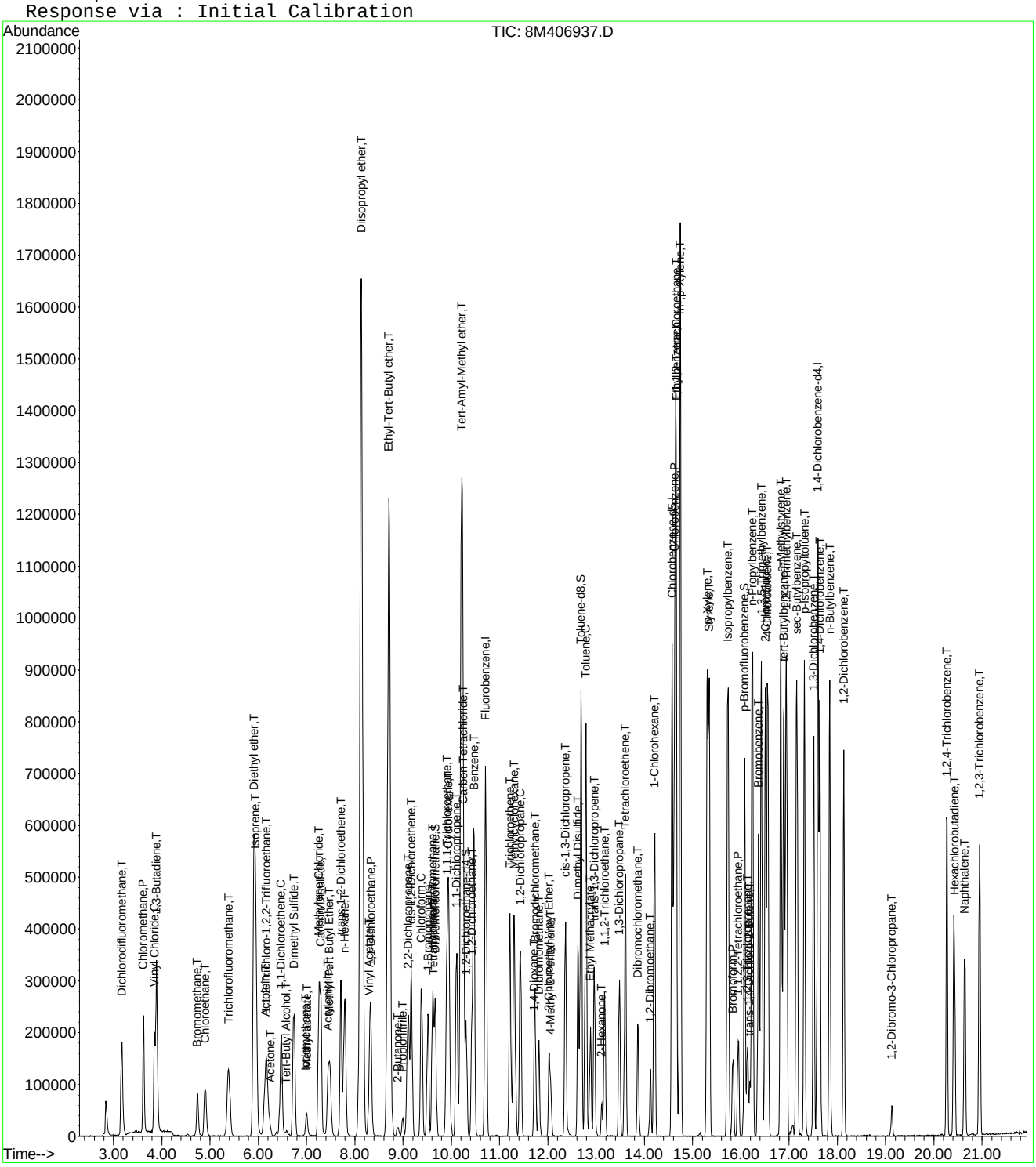

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\082015\8M406905.D Vial: 6
Acq On : 20 Aug 2015 16:17 Operator: TMB
Sample : WG535683-03 20ug/L LCSDUP STD 8260 Inst : HPMS8
Misc : 1,1 STD72078 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 20 16:39:45 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	1022919	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	786463	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	439322	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	222072	24.6376 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.56%		
43) 1,2-Dichloroethane-d4	10.31	65	205161	22.8893 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 91.56%		
58) Toluene-d8	12.69	98	924022	24.3552 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.44%		
80) p-Bromofluorobenzene	16.08	95	356128	23.4361 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.76%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	367335	23.5134 ug/L	98
3) Chloromethane	3.62	50	401992	23.0483 ug/L	97
4) Vinyl Chloride	3.85	62	323891	25.2515 ug/L	99
5) 1,3-Butadiene	3.89	54	180368	16.0405 ug/L	91
6) Bromomethane	4.74	94	106760	12.4959 ug/L	96
7) Chloroethane	4.89	64	183045	22.9200 ug/L	99
8) Trichlorofluoromethane	5.38	101	299878	18.0808 ug/L	98
9) Diethyl ether	5.91	59	573194	91.3046 ug/L	98
10) Isoprene	5.95	67	280001	21.5701 ug/L	97
11) Acrolein	6.15	56	28974	80.9523 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	190280	20.0935 ug/L	99
13) Acetone	6.25	43	26341	20.4208 ug/L	95
14) 1,1-Dichloroethene	6.47	61	284497	17.7083 ug/L	96
15) Tert-Butyl Alcohol	6.60	59	80314	237.0446 ug/L	100
16) Dimethyl Sulfide	6.74	62	226287	22.4343 ug/L	97
17) Iodomethane	7.00	142	50819	5.9314 ug/L	96
18) Methyl acetate	7.01	43	79239	15.8305 ug/L	97
19) Methylene Chloride	7.26	84	202746	19.8120 ug/L	99
20) Carbon Disulfide	7.30	76	557727	16.9978 ug/L	99
21) Acrylonitrile	7.44	53	43098	20.1072 ug/L	100
22) Methyl Tert Butyl Ether	7.48	73	344009	19.0358 ug/L	100
23) trans-1,2-Dichloroethene	7.71	61	280518	18.6175 ug/L	96
24) n-Hexane	7.79	57	296823	18.2237 ug/L	98
25) Diisopropyl ether	8.14	45	3598789	98.3594 ug/L	98
26) Vinyl Acetate	8.30	43	294954	31.5379 ug/L	99
27) 1,1-Dichloroethane	8.33	63	391179	19.3571 ug/L	99
28) Ethyl-Tert-Butyl ether	8.71	59	2511563	92.0048 ug/L	99
29) 2-Butanone	8.89	43	49851	22.8251 ug/L	99
30) Propionitrile	9.00	54	77390	111.4027 ug/L	99
31) 2,2-Dichloropropane	9.11	77	317373	20.3792 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	208059	19.1876 ug/L	100
33) Chloroform	9.38	83	361691	19.8322 ug/L	99
34) 1-Bromopropane	9.51	122	43160	22.3929 ug/L	99
35) Bromochloromethane	9.62	130	107436	19.2351 ug/L	96
36) Tetrahydrofuran	9.64	42	156085	103.9033 ug/L	95
38) 1,1,1-Trichloroethane	9.92	97	336729	20.0170 ug/L	100
39) Cyclohexane	9.95	56	375825	19.1547 ug/L	99
40) 1,1-Dichloropropene	10.11	75	282740	19.6307 ug/L	98
41) Tert-Amyl-Methyl ether	10.22	73	1993723	97.5656 ug/L	100
42) Carbon Tetrachloride	10.26	117	299327	20.0959 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M406905.D 8260WT.M Thu Aug 20 16:39:46 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\082015\8M406905.D Vial: 6
Acq On : 20 Aug 2015 16:17 Operator: TMB
Sample : WG535683-03 20ug/L LCSDUP STD 8260 Inst : HPMS8
Misc : 1,1 STD72078 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 20 16:39:45 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	232092	19.0005 ug/L		98
46)	Benzene	10.46	78	844471	20.9747 ug/L		98
47)	Trichloroethene	11.22	130	214377	18.6550 ug/L		97
48)	Methylcyclohexane	11.30	83	321357	19.2842 ug/L		99
49)	1,2-Dichloropropane	11.44	63	240197	21.5351 ug/L		91
50)	Bromodichloromethane	11.74	83	276124	19.9475 ug/L		99
51)	1,4-Dioxane	11.73	88	9825	250.4810 ug/L		96
52)	Dibromomethane	11.82	93	103943	20.3716 ug/L		96
53)	2-Chloroethyl Vinyl Ether	12.02	63	94471	20.2770 ug/L		99
54)	4-Methyl-2-Pentanone	12.07	58	44576	21.5535 ug/L		99
55)	cis-1,3-Dichloropropene	12.37	75	321057	21.0714 ug/L		97
56)	Dimethyl Disulfide	12.62	79	162499	19.6857 ug/L		90
59)	Toluene	12.79	91	921671	20.0536 ug/L		100
60)	Ethyl Methacrylate	12.88	69	180247	20.5480 ug/L		95
62)	trans-1,3-Dichloropropene	12.97	75	251383	18.4906 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	133247	18.5000 ug/L		97
64)	2-Hexanone	13.12	58	41276	20.2861 ug/L	#	100
65)	1,3-Dichloropropane	13.48	76	241497	19.2650 ug/L		97
66)	Tetrachloroethene	13.61	164	194242	20.0450 ug/L		95
67)	Dibromochloromethane	13.87	129	181057	19.0829 ug/L		97
68)	1,2-Dibromoethane	14.12	107	129843	18.5408 ug/L		100
69)	1-Chlorohexane	14.22	91	312491	19.2391 ug/L		98
70)	Chlorobenzene	14.63	112	623581	21.1906 ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	209953	20.0836 ug/L		100
72)	Ethylbenzene	14.66	106	337156	20.2973 ug/L		96
73)	m-,p-Xylene	14.74	106	823765	41.9672 ug/L		95
74)	o-Xylene	15.31	106	408813	21.1631 ug/L		95
75)	Styrene	15.34	104	654738	20.7526 ug/L		96
76)	Bromoform	15.84	173	110503	19.3711 ug/L		100
77)	Isopropylbenzene	15.74	105	1033460	21.3704 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.94	83	156643	19.6239 ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	43182	19.2728 ug/L		55
82)	trans-1,4-Dichloro-2-Buten	16.18	53	41508	13.9105 ug/L	#	40
83)	n-Propylbenzene	16.24	91	1319558	20.4004 ug/L		100
84)	Bromobenzene	16.37	156	248110	18.9370 ug/L		96
85)	1,3,5-Trimethylbenzene	16.43	105	857015	20.0688 ug/L		97
86)	2-Chlorotoluene	16.51	91	810403	20.5116 ug/L		96
87)	4-Chlorotoluene	16.55	91	759211	20.1646 ug/L		96
88)	a-Methylstyrene	16.83	118	472979	20.3952 ug/L		99
89)	tert-Butylbenzene	16.88	134	183721	19.8581 ug/L		93
90)	1,2,4-Trimethylbenzene	16.95	105	856159	19.7879 ug/L		97
91)	sec-Butylbenzene	17.16	105	1102595	20.9261 ug/L		100
92)	p-Isopropyltoluene	17.32	119	874887	19.3081 ug/L		98
93)	1,3-Dichlorobenzene	17.52	146	517141	20.1286 ug/L		97
94)	1,4-Dichlorobenzene	17.64	146	493463	18.6326 ug/L		96
95)	n-Butylbenzene	17.85	91	836744	19.1505 ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	463864	20.4497 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	25811	18.4697 ug/L		92
98)	1,2,4-Trichlorobenzene	20.27	180	317358	18.1807 ug/L		98
99)	Hexachlorobutadiene	20.42	225	153824	17.3173 ug/L		99
100)	Naphthalene	20.64	128	422949	18.6747 ug/L		97
101)	1,2,3-Trichlorobenzene	20.95	180	273693	18.1695 ug/L		97

(#) = qualifier out of range (m) = manual integration
8M406905.D 8260WT.M Thu Aug 20 16:39:46 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\082015\8M406905.D Vial: 6
Acq On : 20 Aug 2015 16:17 Operator: TMB
Sample : WG535683-03 20ug/L LCSDUP STD 8260 Inst : HPMS8
Misc : 1,1 STD72078 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 20 16:39 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

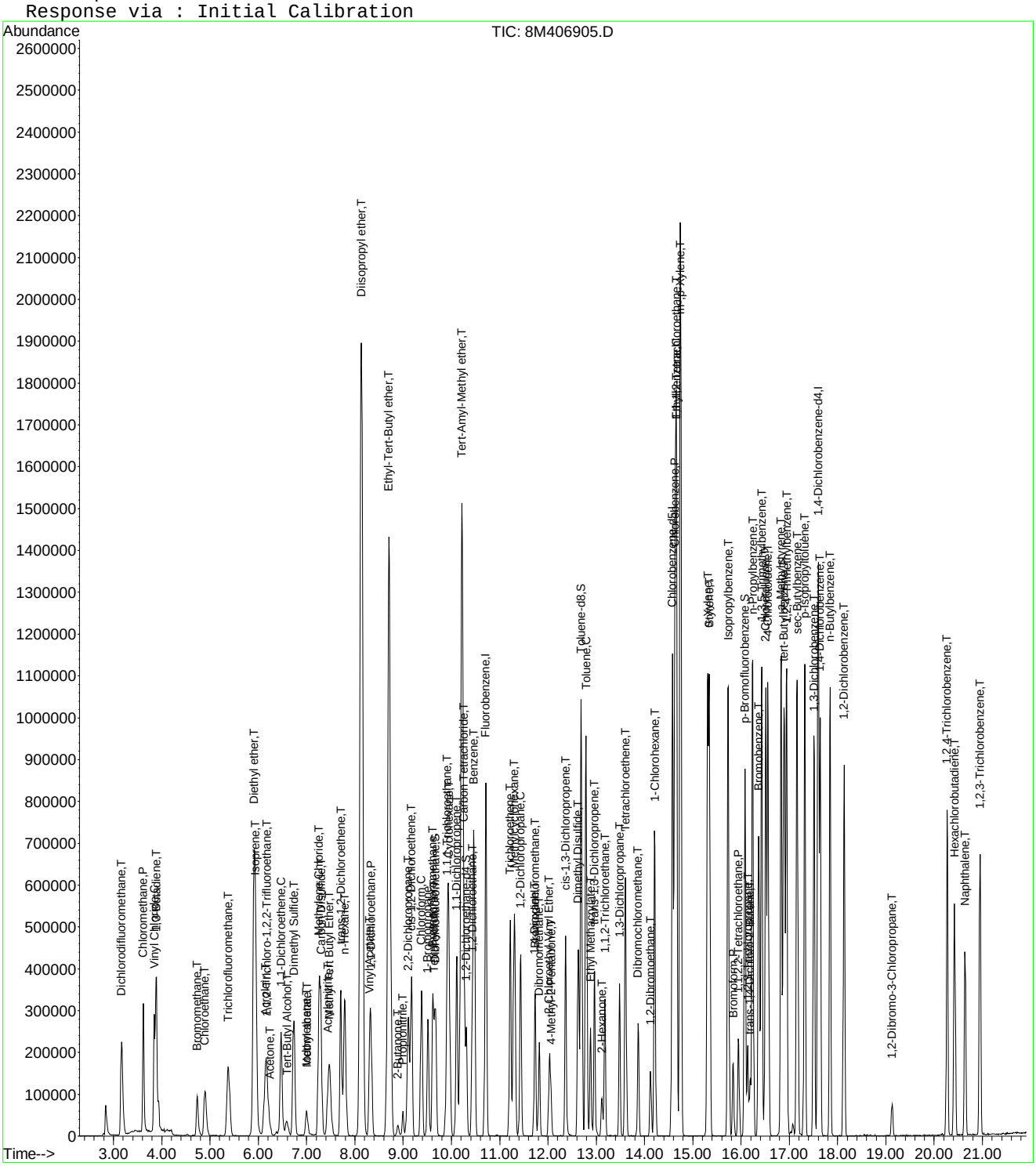

8M406905.D 8260WT.M Thu Aug 20 16:39:46 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\082115\8M406938.D Vial: 6
Acq On : 21 Aug 2015 17:01 Operator: TMB
Sample : WG536091-03 20ug/L LCSDUP STD 8260 Inst : HPMS8
Misc : 1,1 STD72078 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 21 17:23:14 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	880255	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	665879	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	379376	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	193058	24.8900 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.56%		
43) 1,2-Dichloroethane-d4	10.31	65	171246	22.2020 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 88.80%		
58) Toluene-d8	12.69	98	784476	24.4215 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.68%		
80) p-Bromofluorobenzene	16.08	95	303255	23.1100 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.44%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	301626	22.4365 ug/L	98
3) Chloromethane	3.62	50	324857	21.6444 ug/L	100
4) Vinyl Chloride	3.85	62	266943	24.1846 ug/L	98
5) 1,3-Butadiene	3.89	54	168297	17.3928 ug/L	95
6) Bromomethane	4.74	94	91275	12.4149 ug/L	98
7) Chloroethane	4.90	64	146129	21.2631 ug/L	99
8) Trichlorofluoromethane	5.38	101	247638	17.3509 ug/L	99
9) Diethyl ether	5.91	59	502930	93.0961 ug/L	97
10) Isoprene	5.95	67	245044	21.9366 ug/L	95
11) Acrolein	6.15	56	22397	74.6939 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	161654	19.8372 ug/L	98
13) Acetone	6.24	43	17522	15.7855 ug/L	88
14) 1,1-Dichloroethene	6.47	61	242011	17.5052 ug/L	95
15) Tert-Butyl Alcohol	6.60	59	43611	149.5780 ug/L	98
16) Dimethyl Sulfide	6.73	62	184170	21.2180 ug/L	98
17) Iodomethane	7.00	142	47597	6.3784 ug/L	87
18) Methyl acetate	7.01	43	59388	13.7875 ug/L	99
19) Methylene Chloride	7.26	84	171616	19.4879 ug/L	100
20) Carbon Disulfide	7.30	76	468462	16.5912 ug/L	100
21) Acrylonitrile	7.43	53	32614	17.6820 ug/L	98
22) Methyl Tert Butyl Ether	7.47	73	294896	18.9629 ug/L	97
23) trans-1,2-Dichloroethene	7.71	61	244130	18.8285 ug/L	95
24) n-Hexane	7.78	57	224317	16.0042 ug/L	98
25) Diisopropyl ether	8.14	45	3188346	101.2646 ug/L	98
26) Vinyl Acetate	8.30	43	221955	27.5788 ug/L	99
27) 1,1-Dichloroethane	8.33	63	338394	19.4590 ug/L	100
28) Ethyl-Tert-Butyl ether	8.70	59	2214360	94.2643 ug/L	99
29) 2-Butanone	8.89	43	33930	18.0532 ug/L	96
30) Propionitrile	8.99	54	44310	74.1217 ug/L	100
31) 2,2-Dichloropropane	9.11	77	245401	18.3116 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	178720	19.1531 ug/L	96
33) Chloroform	9.38	83	312234	19.8951 ug/L	100
34) 1-Bromopropane	9.52	122	35642	21.4893 ug/L	95
35) Bromochloromethane	9.61	130	93830	19.5217 ug/L	98
36) Tetrahydrofuran	9.64	42	107691	83.3068 ug/L	96
38) 1,1,1-Trichloroethane	9.91	97	291977	20.1697 ug/L	98
39) Cyclohexane	9.95	56	314377	18.6197 ug/L	99
40) 1,1-Dichloropropene	10.11	75	239772	19.3455 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1753115	99.6954 ug/L	100
42) Carbon Tetrachloride	10.26	117	260307	20.3087 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M406938.D 8260WT.M Fri Aug 21 17:23:15 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\082115\8M406938.D Vial: 6
Acq On : 21 Aug 2015 17:01 Operator: TMB
Sample : WG536091-03 20ug/L LCSDUP STD 8260 Inst : HPMS8
Misc : 1,1 STD72078 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 21 17:23:14 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	193646	18.4224 ug/L		97
46)	Benzene	10.47	78	728708	21.0328 ug/L		98
47)	Trichloroethene	11.22	130	182639	18.4690 ug/L		98
48)	Methylcyclohexane	11.30	83	267951	18.6854 ug/L		97
49)	1,2-Dichloropropane	11.43	63	200698	20.9100 ug/L		96
50)	Bromodichloromethane	11.73	83	228429	19.1764 ug/L		99
51)	1,4-Dioxane	11.72	88	5893	174.5868 ug/L		86
52)	Dibromomethane	11.82	93	85619	19.4999 ug/L		96
53)	2-Chloroethyl Vinyl Ether	12.02	63	78027	19.4618 ug/L		99
54)	4-Methyl-2-Pentanone	12.07	58	35200	19.7784 ug/L		95
55)	cis-1,3-Dichloropropene	12.36	75	277904	21.1952 ug/L		99
56)	Dimethyl Disulfide	12.62	79	133178	18.7485 ug/L		88
59)	Toluene	12.79	91	782568	20.1104 ug/L		99
60)	Ethyl Methacrylate	12.88	69	151445	20.3911 ug/L		95
62)	trans-1,3-Dichloropropene	12.96	75	209683	18.2164 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	115236	18.8967 ug/L		99
64)	2-Hexanone	13.12	58	31697	18.3994 ug/L	#	94
65)	1,3-Dichloropropane	13.48	76	206143	19.4227 ug/L		96
66)	Tetrachloroethene	13.61	164	161771	19.7173 ug/L		95
67)	Dibromochloromethane	13.86	129	159832	19.8965 ug/L		98
68)	1,2-Dibromoethane	14.12	107	112354	18.9488 ug/L		98
69)	1-Chlorohexane	14.22	91	257316	18.7110 ug/L		95
70)	Chlorobenzene	14.63	112	520062	20.8731 ug/L		95
71)	1,1,1,2-Tetrachloroethane	14.66	131	176260	19.9139 ug/L		99
72)	Ethylbenzene	14.65	106	278580	19.8080 ug/L		98
73)	m-,p-Xylene	14.74	106	687242	41.3523 ug/L		96
74)	o-Xylene	15.31	106	341879	20.9031 ug/L		97
75)	Styrene	15.34	104	545120	20.4070 ug/L		96
76)	Bromoform	15.84	173	93883	19.4380 ug/L		98
77)	Isopropylbenzene	15.74	105	861199	21.0332 ug/L		98
79)	1,1,2,2-Tetrachloroethane	15.94	83	131386	19.0606 ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	34351	17.7539 ug/L		51
82)	trans-1,4-Dichloro-2-Buten	16.18	53	32678	12.7522 ug/L	#	39
83)	n-Propylbenzene	16.24	91	1103497	19.7558 ug/L		100
84)	Bromobenzene	16.37	156	210004	18.5613 ug/L		98
85)	1,3,5-Trimethylbenzene	16.43	105	716364	19.4258 ug/L		97
86)	2-Chlorotoluene	16.51	91	697036	20.4299 ug/L		98
87)	4-Chlorotoluene	16.55	91	645457	19.8522 ug/L		96
88)	a-Methylstyrene	16.83	118	401636	20.0555 ug/L		97
89)	tert-Butylbenzene	16.89	134	159640	19.9817 ug/L		87
90)	1,2,4-Trimethylbenzene	16.95	105	724458	19.3897 ug/L		96
91)	sec-Butylbenzene	17.16	105	928102	20.3977 ug/L		99
92)	p-Isopropyltoluene	17.32	119	746967	19.0899 ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	447460	20.1684 ug/L		94
94)	1,4-Dichlorobenzene	17.64	146	416130	18.1953 ug/L		97
95)	n-Butylbenzene	17.84	91	709347	18.8001 ug/L		99
96)	1,2-Dichlorobenzene	18.13	146	398974	20.3682 ug/L		96
97)	1,2-Dibromo-3-Chloropropan	19.13	75	18272	15.1410 ug/L		82
98)	1,2,4-Trichlorobenzene	20.27	180	272256	18.0614 ug/L		97
99)	Hexachlorobutadiene	20.42	225	122981	16.0327 ug/L		98
100)	Naphthalene	20.64	128	360979	18.4570 ug/L		99
101)	1,2,3-Trichlorobenzene	20.95	180	225818	17.3601 ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\082115\8M406938.D Vial: 6
Acq On : 21 Aug 2015 17:01 Operator: TMB
Sample : WG536091-03 20ug/L LCSDUP STD 8260 Inst : HPMS8
Misc : 1,1 STD72078 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 21 17:23 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

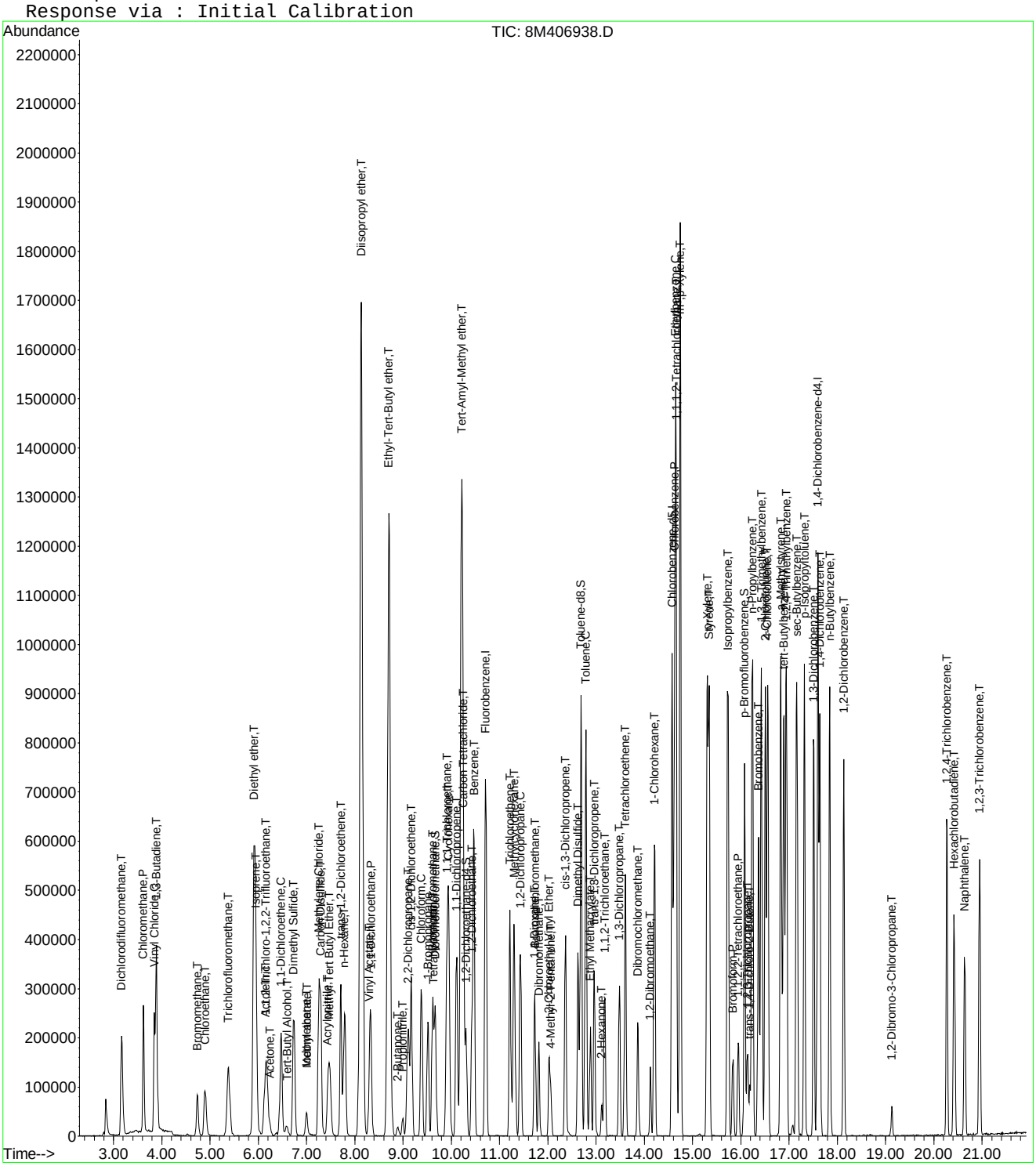

8M406938.D 8260WT.M Fri Aug 21 17:23:15 2015 Page 3

2.1.2 RSK 175

2.1.2.1 Summary Data

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-01	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW22-081815	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG535908	**Analyst:**	JDS	**Run Date:**	08/20/2015 16:52
Collect Date:	08/18/2015 08:05	**Dilution:**	1	**File ID:**	16G48281
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	52100		10000	5000	2500
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-03	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW25-081815	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG535908	**Analyst:**	JDS	**Run Date:**	08/20/2015 17:03
Collect Date:	08/18/2015 09:40	**Dilution:**	1	**File ID:**	16G48282
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	352000	J	10000	5000	2500
Methane	74-82-8	31.3		5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-03	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW25-081815	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG536040	**Analyst:**	JDS	**Run Date:**	08/21/2015 15:23
Collect Date:	08/18/2015 09:40	**Dilution:**	5	**File ID:**	16G48297
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	240000		50000	25000	12500
Methane	74-82-8	11.4	J	25.0	10.0	5.00
ethene	74-85-1	10.0	U	25.0	10.0	5.00
ethane	74-84-0	10.0	U	25.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-05	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW12-081815	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG535908	**Analyst:**	JDS	**Run Date:**	08/20/2015 17:15
Collect Date:	08/18/2015 11:05	**Dilution:**	1	**File ID:**	16G48283
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	359000	J	10000	5000	2500
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-05	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW12-081815	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG536040	**Analyst:**	JDS	**Run Date:**	08/21/2015 15:34
Collect Date:	08/18/2015 11:05	**Dilution:**	5	**File ID:**	16G48298
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	259000		50000	25000	12500
Methane	74-82-8	10.0	U	25.0	10.0	5.00
ethene	74-85-1	10.0	U	25.0	10.0	5.00
ethane	74-84-0	10.0	U	25.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-07	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW06-081815	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG535908	**Analyst:**	JDS	**Run Date:**	08/20/2015 17:27
Collect Date:	08/18/2015 13:40	**Dilution:**	1	**File ID:**	16G48284
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	205000		10000	5000	2500
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-09	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW11-081815	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG535908	**Analyst:**	JDS	**Run Date:**	08/20/2015 17:38
Collect Date:	08/18/2015 14:50	**Dilution:**	1	**File ID:**	16G48285
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	890000	J	10000	5000	2500
Methane	74-82-8	5.17		5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-09	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW11-081815	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG536040	**Analyst:**	JDS	**Run Date:**	08/21/2015 15:45
Collect Date:	08/18/2015 14:50	**Dilution:**	5	**File ID:**	16G48299
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	534000		50000	25000	12500
Methane	74-82-8	10.0	U	25.0	10.0	5.00
ethene	74-85-1	10.0	U	25.0	10.0	5.00
ethane	74-84-0	10.0	U	25.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.2.2 QC Summary Data

RSK-175 - Example Calculation for Methane

1.0 Linear Calibration Models

Option A - Average RF Method

ICAL_x	ICAL_r		RF
1.67	19901		11917
6.67	69174		10371
16.7	176923		10594
66.7	685135		10272
133	1324853		9961
300	2845104		9484
		Average RF:	**10433**

Where:
ICAL_x = the ICAL concentration
ICAL_r = the ICAL response (area)
RF = calibration factor = ICAL_r / ICAL_x

Option B - Agilent Linear Regression Constant

ICAL_x	ICAL_r	[ICAL_r}^2	[ICAL-x][ICAL-r]
1.67	19901	396049801	33235
6.67	69174	4785042276	461391
16.7	176923	31301747929	2954614
66.7	685135	4.6941E+11	45698505
133	1324853	1.75524E+12	176205449
300	2845104	8.09462E+12	853531200
Summation:		**1.03557E+13**	**1078884393**

Agilent Linear Regression Constant : **9598.567853**
(1.03557E+13)/1078884393)

2.0 Calculate the concentration in extract, Cx

Where:

y = area response of methane from quant report	**1157414**
a = average RF (or Agilent regression constant)	**10433.00**
Cx = y/a	**110.9377935**

3.0 Calculate the concentration in sample

Cs = Cx (MW/Tf) (HS/S) (DF)

Where:

Cx = Concentration in extract	**110.9377935**	umol/mol
MW = molecular weight of analyte	**16.04**	ug/umol
TF = temperature factor = (22.4)(313/273)	**25.68**	L/mol
HS = headspace volume	**0.015**	L
S = sample volume remaining after headspace removal	**0.00547**	L
DF = dilution factor	**2**	
Cs = calculated sample concentration	**380.034301**	ug/L

RSK-175 - Example Calculation for Carbon Dioxide

ICAL Plot - Quadratic Regression (y = Ax^2 + Bx +C)

Ax^2 + Bx + (C - y) = 0

Step 1 - Calculate the concentration in extract, Cx

Data from quadratic regression plot:		
Value of A from plot:	**0.916**	
Value of B from plot:	**1540**	
Value of C from plot:	**0**	
Response for methane from quantitation report (y):	**8763828**	
Value of C - y	**-8763828**	
Solving for Cx using the quadratic formula:		
Root 1 - Computed Cx1:	**2364.716284**	umol/mol
Root 2 - Computed Cx2:	**-4045.938991**	

Step 2 - Calculate the concentration in sample

Cs = Cx (MW/Tf) (HS/S) (DF)

Where:

Cx = Concentration in extract :	**2364.716284**	umol/mol
MW = molecular weight of analyte:	**44.0**	ug/umol
TF = temperature factor = (22.4)(313/273):	**25.68**	L/mol
HS = initial headspace volume (extraction log):	**0.015**	L
S = final volume (extraction log):	**0.00547**	L
DF = dilution factor:	**10**	
Cs = calculated sample concentration:	**111106.798**	ug/L

Other Notes:

Temperature of headspace = 40 C = 313 K

Analyte	**MW (g/mol)**
Methane	16.04
Ethane	30.07
Ethene	28.05
Propane	44.1
Carbon Dioxide	44.0

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 030315
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG514119

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G46874	RINSE	NA	1	1		03/03/15 14:05
16G46875	WG514119-01 0.67umol/mol STD RSK175	NA	1	1	STD67276	03/03/15 14:17
16G46876	WG514119-02 1.67umol/mol STD RSK175	NA	1	1	STD67276	03/03/15 14:30
16G46877	WG514119-03 33.3umol/mol STD RSK175	NA	1	1	STD67276	03/03/15 14:42
16G46878	WG514119-04 66.7umol/mol STD RSK175	NA	1	1	STD67274	03/03/15 14:53
16G46879	WG514119-05 133umol/mol STD RSK175	NA	1	1	STD67274	03/03/15 15:05
16G46880	WG514119-06 333umol/mol STD RSK175	NA	1	1	STD67274	03/03/15 15:17
16G46881	WG514119-07 533umol/mol STD RSK175	NA	1	1	STD67274	03/03/15 15:29
16G46882	RINSE	NA	1	1		03/03/15 15:41
16G46883	WG514119-08 133umol/mol ALT SRC STD	NA	1	1	STD68250	03/03/15 16:14
16G46884	WG514119-08 133umol/mol ALT SRC STD	NA	1	1	STD68250	03/03/15 17:10

Comments

Seq.	Rerun	Dil.	Reason	Analytes
10	X			
File ID: 16G46883				
	Wrong vial taken up by HT3 autosampler			

Approved: March 11, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 082015
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG535908

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G48276	WG535907-01 133umol/mol CCV RSK175	NA	1	1	STD67274	08/20/15 15:30
16G48277	WG535908-01 BLANK RSK175	NA	1	1		08/20/15 16:05
16G48278	WG535908-02 67umol/mol LCS RSK175	NA	1	1	STD68250	08/20/15 16:17
16G48279	WG535908-03 67umol/mol LCS2 RSK175	NA	1	1	STD68250	08/20/15 16:29
16G48280	L15080932-01 B D1 20X RSK175	<2	1	20		08/20/15 16:40
16G48281	L15080992-01 A RSK175	6	1	1		08/20/15 16:52
16G48282	L15080992-03 A RSK175	5	1	1		08/20/15 17:03
16G48283	L15080992-05 A RSK175	5	1	1		08/20/15 17:15
16G48284	L15080992-07 A RSK175	6	1	1		08/20/15 17:27
16G48285	L15080992-09 A RSK175	6	1	1		08/20/15 17:38
16G48286	L15080995-01 A RSK175	<2	1	1		08/20/15 17:50
16G48287	WG535907-02 133umol/mol CCV RSK175	NA	1	1	STD67274	08/20/15 18:01
16G48288	L15080995-02 A RSK175	<2	1	1		08/20/15 18:13
16G48289	L15080995-04 A RSK175	<2	1	1		08/20/15 18:24
16G48290	L15081073-01 A RSK175	6	1	1		08/20/15 18:36
16G48291	L15081073-03 A RSK175	6	1	1		08/20/15 18:47
16G48292	WG535907-03 133umol/mol CCV RSK175	NA	1	1	STD67274	08/20/15 18:58

Comments

Seq.	Rerun	Dil.	Reason	Analytes
7	X	5	Over Calibration Range	CO2
File ID: 16G48282				
	L15080992-03			
8	X	5	Over Calibration Range	CO2
File ID: 16G48283				
	L15080992-05			
10	X	5	Over Calibration Range	CO2
File ID: 16G48285				
	L15080992-09			
11	X	20	Over Calibration Range	m
File ID: 16G48286				
	L15080995-01			
14	X	5	Over Calibration Range	m
File ID: 16G48289				

Approved: August 27, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 082015
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG535908

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
	L15080995-04			
15	X	5	Over Calibration Range	CO2
File ID: 16G48290				
	L15081073-01			
16	X	5	Over Calibration Range	CO2
File ID: 16G48291				
	L15081073-03			

Approved: August 27, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 082115
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG536040

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G48293	WG536037-01 133umol/mol CCV RSK175	NA	1	1	STD67274	08/21/15 12:03
16G48294	WG536040-01 BLANK RSK175	NA	1	1		08/21/15 14:48
16G48295	WG536040-02 67umol/mol LCS RSK175	NA	1	1	STD6820	08/21/15 15:00
16G48296	WG536040-03 67umol/mol LCS2 RSK175	NA	1	1	STD6820	08/21/15 15:11
16G48297	L15080992-03 B D1 5X RSK175	6	1	5		08/21/15 15:23
16G48298	L15080992-05 B D1 5X RSK175	6	1	5		08/21/15 15:34
16G48299	L15080992-09 B D1 5X RSK175	6	1	5		08/21/15 15:45
16G48300	L15080995-01 B D1 20X RSK175	<2	1	20		08/21/15 15:57
16G48301	L15080995-04 B D1 5X RSK175	<2	1	5		08/21/15 16:09
16G48302	L15081073-01 B D1 5X RSK175	6	1	5		08/21/15 16:20
16G48303	L15081073-03 B D1 5X RSK175	6	1	1		08/21/15 16:32
16G48304	WG536037-02 133umol/mol CCV RSK175	NA	1	1	STD67274	08/21/15 16:43

Approved: August 25, 2015

Page: 1

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B202656

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG514119-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-04	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-05	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-06	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-07	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-08	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B211172

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG535907-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG535907-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG535907-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L15081073-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080995-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080995-04	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080992-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG535908-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080932-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080992-07	15	mL	15	mL					5.47	mL	5.47	mL	40
L15081073-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080992-05	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080995-02	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080992-09	15	mL	15	mL					5.47	mL	5.47	mL	40
WG535908-03	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
WG535908-02	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L15080992-03	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B211213

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG536037-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG536037-02	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080995-04	15	mL	15	mL					5.47	mL	5.47	mL	40
WG536040-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080992-05	15	mL	15	mL					5.47	mL	5.47	mL	40
L15081073-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080992-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG536040-02	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L15080995-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG536040-03	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L15080992-09	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAR-2015
Analyst: JDS
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 66688
Analytical Workgroups: WG514119

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	NA
Project/Client Specific Requirements	NA
Special Standards	NA
Blanks	NA
TCL's	NA
Surrogates	NA
LCS (Laboratory Control Sample)	NA
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	NA
Surrogates	NA
Calculations & Correct Factors	NA
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
06-MAR-2015

Secondary Reviewer:
11-MAR-2015

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-11-2015 12:34:12

Microbac Laboratories Inc.

Data Checklist

Date: 20-AUG-2015
Analyst: JDS
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 70003
Analytical Workgroups: WG535908

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	NA
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	X
Surrogates	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
25-AUG-2015

Secondary Reviewer:
27-AUG-2015

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-27-2015 15:08:44

Microbac Laboratories Inc.

Data Checklist

Date: 21-AUG-2015
Analyst: JDS
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 70022
Analytical Workgroups: WG536040

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	NA
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	X
Surrogates	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
25-AUG-2015

Secondary Reviewer:
25-AUG-2015

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-25-2015 16:53:41

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: RSK175 AAB#: WG535908

Login Number: L15080992

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW22-081815	01	08/18/15					08/20/2015	2.4	7		08/20/15	2.4	7	
50WW25-081815	03	08/18/15					08/20/2015	2.3	7		08/20/15	2.3	7	
50WW12-081815	05	08/18/15					08/20/2015	2.3	7		08/20/15	2.3	7	
50WW06-081815	07	08/18/15					08/20/2015	2.2	7		08/20/15	2.2	7	
50WW11-081815	09	08/18/15					08/20/2015	2.1	7		08/20/15	2.1	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4351613
Report generated 08/25/2015 11:02

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: RSK175 AAB#: WG536040

Login Number: L15080992

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW25-081815	03	08/18/15					08/21/2015	3.2	7		08/21/15	3.2	7	
50WW12-081815	05	08/18/15					08/21/2015	3.2	7		08/21/15	3.2	7	
50WW11-081815	09	08/18/15					08/21/2015	3	7		08/21/15	3	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4351613
Report generated 08/25/2015 11:02

METHOD BLANK SUMMARY

Login Number: L15080992
Blank File ID: 16G48277
Prep Date: 08/20/15 16:05
Analyzed Date: 08/20/15 16:05
Analyst: JDS

Work Group: WG535908
Blank Sample ID: WG535908-01
Instrument ID: HP16
Method: RSK175

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG535908-02	16G48278	08/20/15 16:17	01
LCS2	WG535908-03	16G48279	08/20/15 16:29	01
50WW22-081815	L15080992-01	16G48281	08/20/15 16:52	01
50WW25-081815	L15080992-03	16G48282	08/20/15 17:03	01
50WW12-081815	L15080992-05	16G48283	08/20/15 17:15	01
50WW06-081815	L15080992-07	16G48284	08/20/15 17:27	01
50WW11-081815	L15080992-09	16G48285	08/20/15 17:38	01

Report Name: BLANK_SUMMARY
PDF File ID: 4351615
Report generated 08/25/2015 11:02

METHOD BLANK SUMMARY

Login Number: L15080992
Blank File ID: 16G48294
Prep Date: 08/21/15 14:48
Analyzed Date: 08/21/15 14:48
Analyst: JDS

Work Group: WG536040
Blank Sample ID: WG536040-01
Instrument ID: HP16
Method: RSK175

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG536040-02	16G48295	08/21/15 15:00	01
LCS2	WG536040-03	16G48296	08/21/15 15:11	01
50WW25-081815	L15080992-03	16G48297	08/21/15 15:23	DL01
50WW12-081815	L15080992-05	16G48298	08/21/15 15:34	DL01
50WW11-081815	L15080992-09	16G48299	08/21/15 15:45	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4351615
Report generated 08/25/2015 11:02

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15080992 Prep Date: 08/20/15 16:05 Sample ID: WG535908-01
Instrument ID: HP16 Run Date: 08/20/15 16:05 Prep Method: 5021
File ID: 16G48277 Analyst: JDS Method: RSK175
Workgroup (AAB#): WG535908 Matrix: Water Units: ug/L
Contract #: Cal ID: HP16 - 03-MAR-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Carbon Dioxide	2500	10000	2500	1	U
Methane	1.00	5.00	1.00	1	U
ethene	1.00	5.00	1.00	1	U
ethane	1.00	5.00	1.00	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4351616
25-AUG-2015 11:02

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15080992 Prep Date: 08/21/15 14:48 Sample ID: WG536040-01
Instrument ID: HP16 Run Date: 08/21/15 14:48 Prep Method: 5021
File ID: 16G48294 Analyst: JDS Method: RSK175
Workgroup (AAB#): WG536040 Matrix: Water Units: ug/L
Contract #: Cal ID: HP16 - 03-MAR-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Carbon Dioxide	2500	10000	2500	1	U
Methane	1.00	5.00	1.00	1	U
ethene	1.00	5.00	1.00	1	U
ethane	1.00	5.00	1.00	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4351616
25-AUG-2015 11:02

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15080992 Analyst: JDS Prep Method: 5021
Instrument ID: HP16 Matrix: Water Method: RSK175
Workgroup (AAB#): WG536040 Units: ug/L
QC Key: DOD4 Lot #: STD68250

Sample ID: WG536040-02 LCS File ID: 16G48295 Run Date: 08/21/2015 15:00
Sample ID: WG536040-03 LCS2 File ID: 16G48296 Run Date: 08/21/2015 15:11

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Methane	114	115	101	114	116	102	0.874	85 - 115	20	
ethene	200	204	102	200	208	104	1.76	85 - 115	20	
ethane	214	212	99.1	214	216	101	1.86	85 - 115	20	
Carbon Dioxide	31300	30300	96.9	31300	33100	106	8.78	10 - 200	40	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4351617
Report generated: 08/25/2015 11:02

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15080992 Analyst: JDS Prep Method: 5021
Instrument ID: HP16 Matrix: Water Method: RSK175
Workgroup (AAB#): WG535908 Units: ug/L
QC Key: DOD4 Lot #: STD68250

Sample ID: WG535908-02 LCS File ID: 16G48278 Run Date: 08/20/2015 16:17
Sample ID: WG535908-03 LCS2 File ID: 16G48279 Run Date: 08/20/2015 16:29

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Methane	114	109	95.6	114	111	97.1	1.54	85 - 115	20	
ethene	200	190	95.2	200	192	96.4	1.28	85 - 115	20	
ethane	214	198	92.4	214	200	93.6	1.24	85 - 115	20	
Carbon Dioxide	31300	30700	98.1	31300	28900	92.2	6.21	10 - 200	40	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4351617
Report generated: 08/25/2015 11:02

Calibration Table Report
Method: RSKEXT1.M
Title: RSK175 HP16 (SOP: OVL RSK01) 030315
Last Calibration: Fri Mar 06 11:52:33 2015
Curve:WG514119
Calibration Files

		0.67	1.67	33.3	66.7	133	333	533			
		16G46875.	16G46876.	16G46877.	16G46878.	16G46879.	16G46880.	16G46881.D			
	Compound								Avg	%RSD	Linear
T	methane		442542.3	201716.7	175611.6	187516.9	186065.3	188702.9	230359.0	45.3	0.999
T	ethene		322209.5	334124.6	295911.1	313430.8	319356.4	318282.1	317219.0	3.9	
T	acetylene		316851.9	343603.6	313507.6	354933.8	357109.5	344601.6	338435.0	5.6	
T	ethane	381661.4	339569.9	346403.4	312338.4	328333.4	335709.7	335266.3	339897.0	6.3	
T	propane	528069.3	481580.8	518227.1	469331.7	483950.9	500133.6	493547.4	496406.0	4.2	
T	n-butane	686564.3	616037.4	680754.9	613926.5	634552.4	659898.4	646188.9	648275.0	4.5	
	Signal #2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
T	carbon dioxide		3977.4	5604.2	5581.8	6054.5	6060.7	5810.7	5514.9	14.2	

Fri Mar 06 11:59:12 2015

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15080992 Run Date: 03/03/2015 Sample ID: WG514119-08
Instrument ID: HP16 Run Time: 17:10 Method: RSK175
File ID: 16G46884 Analyst: JDS QC Key: DOD4
ICal Workgroup: WG514119 Cal ID: HP16 - 03-MAR-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
carbon dioxide		62500	65100	ug/L	5740	4.10	15	
methane		228	236	ug/L	195000	3.50	15	
ethene		398	407	ug/L	324000	2.20	15	
ethane		427	423	ug/L	337000	0.900	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4351618
Report generated 08/25/2015 11:02

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080992
Run Date: 08/20/2015
Sample ID: WG535907-01
Instrument ID: HP16
Run Time: 15:30
Method: RSK175
File ID: 16G48276
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG535908
Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62500	70000	ug/L	6180	12.0	15	
methane		228	210	ug/L	174000	7.62	15	
ethene		398	382	ug/L	304000	4.09	15	
ethane		427	403	ug/L	321000	5.71	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4351620
Report generated 08/25/2015 11:02

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080992
Run Date: 08/20/2015
Sample ID: WG535907-02
Instrument ID: HP16
Run Time: 18:01
Method: RSK175
File ID: 16G48287
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG535908
Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62500	63600	ug/L	5610	1.81	15	
methane		228	221	ug/L	183000	3.04	15	
ethene		398	388	ug/L	309000	2.56	15	
ethane		427	408	ug/L	325000	4.32	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4351620
Report generated 08/25/2015 11:02

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080992
Run Date: 08/21/2015
Sample ID: WG536037-01
Instrument ID: HP16
Run Time: 12:03
Method: RSK175
File ID: 16G48293
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG536040
Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62500	66100	ug/L	5830	5.78	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4351620
Report generated 08/25/2015 11:02

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080992
Run Date: 08/21/2015
Sample ID: WG536037-02
Instrument ID: HP16
Run Time: 16:43
Method: RSK175
File ID: 16G48304
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG536040
Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62500	62500	ug/L	5520	0.0635	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4351620
Report generated 08/25/2015 11:02

2.1.2.3 Sample Data

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\082015\16G48281.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\082015\16G48281.D\TCD2B.CH
Acq On    : 20 Aug 2015  16:52                      Operator: JDS
Sample    : L15080992-01 A RSK175                   Inst    : HP16
Misc      : 1,1                                     Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Aug 20 16:58:23 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                   Signal #2 Phase:
Signal #1 Info  :                   Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	335312	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	61087276	11076.818	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\082015\16G48281.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\082015\16G48281.D\TCD2B.CH
Acq On    : 20 Aug 2015  16:52                        Operator: JDS
Sample    : L15080992-01 A RSK175                     Inst    : HP16
Misc      : 1,1                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Aug 20 16:58 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

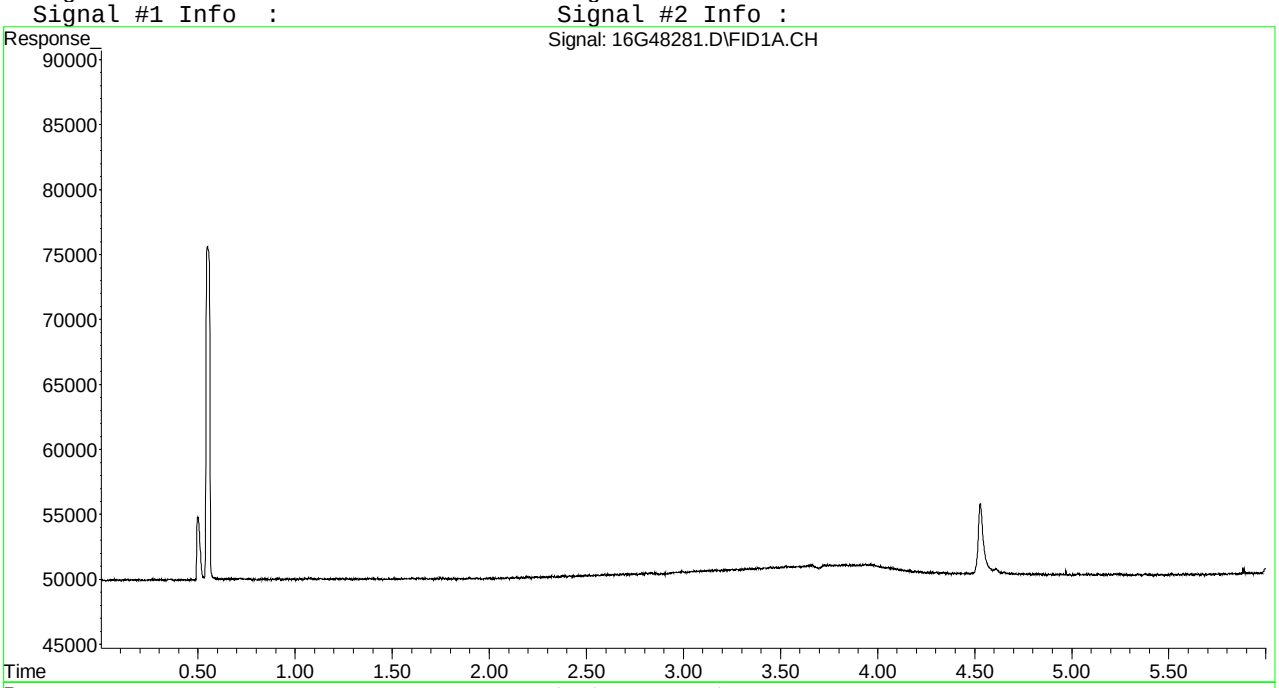

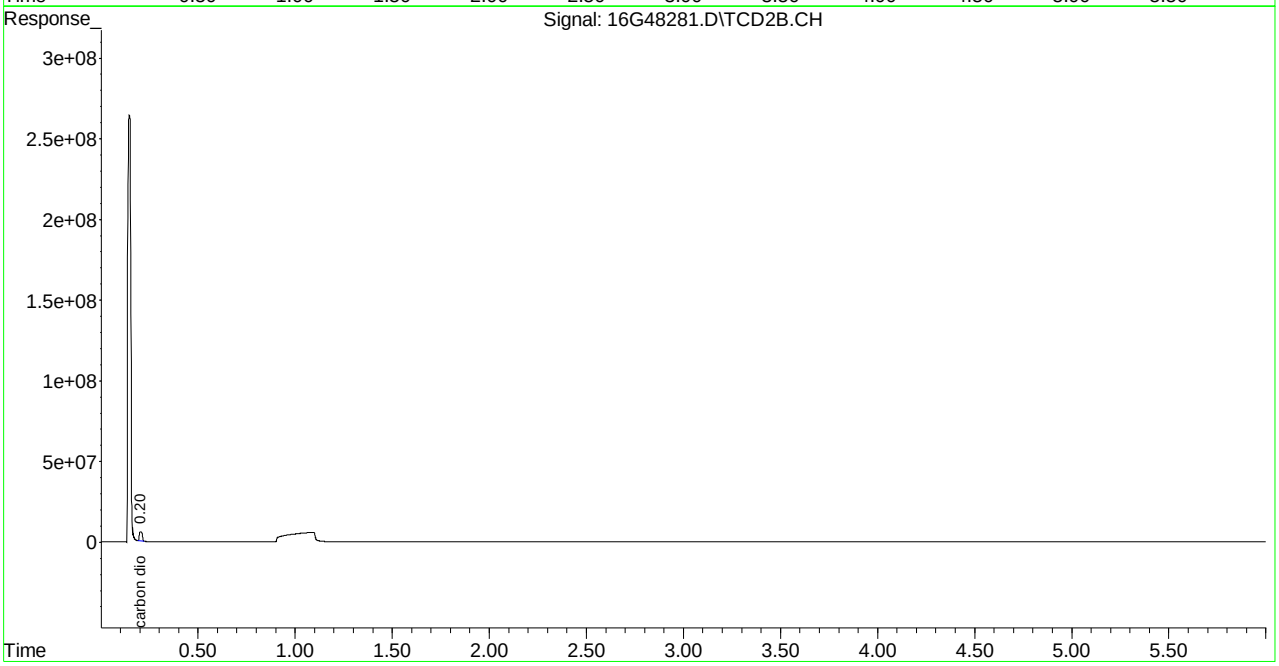

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\082015\16G48282.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\082015\16G48282.D\TCD2B.CH
Acq On : 20 Aug 2015 17:03 Operator: JDS
Sample : L15080992-03 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 20 17:09:59 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	3805357	18.302	umol/
2) T	ethene	1.06	50764	0.160	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.40	21666	0.064	umol/
5) T	propane	3.84	8905	0.018	umol/
6) T	n-butane	5.35	18103	0.028	umol/
8) T	carbon dioxide	0.20	413481153	74975.603	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G48282.D RSKEXT1.M Fri Aug 21 10:53:37 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\082015\16G48282.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\082015\16G48282.D\TCD2B.CH
Acq On : 20 Aug 2015 17:03 Operator: JDS
Sample : L15080992-03 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 20 17:09 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

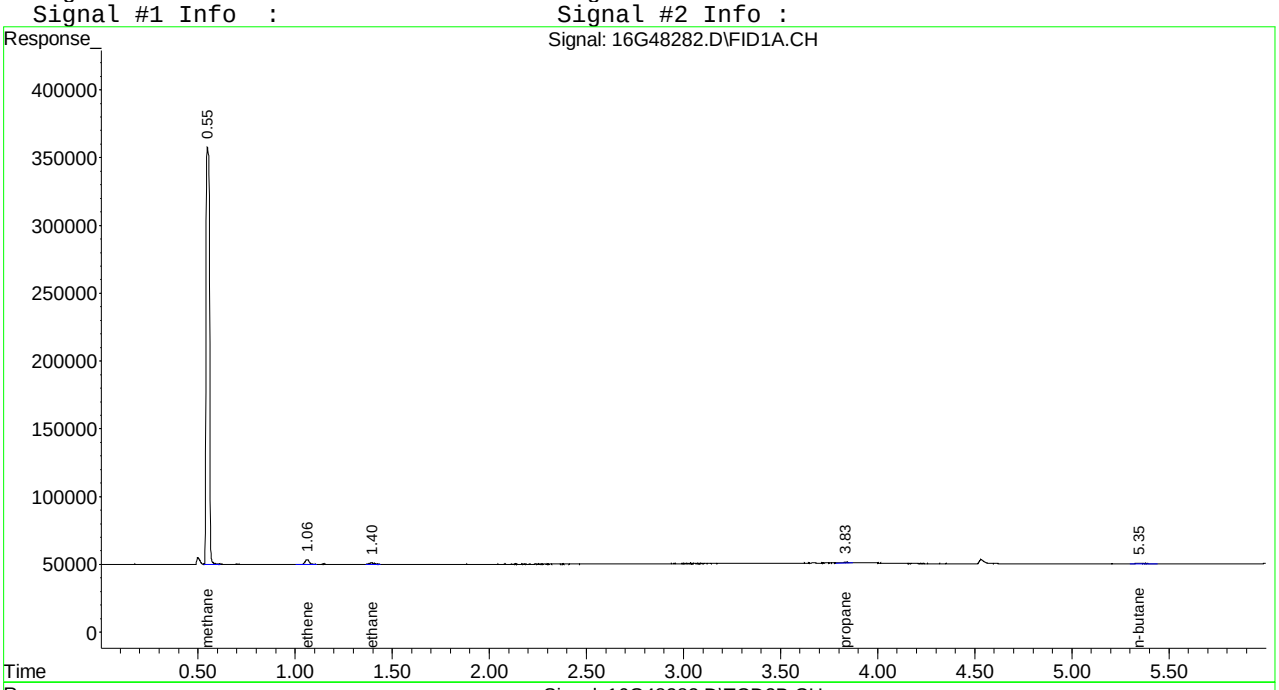

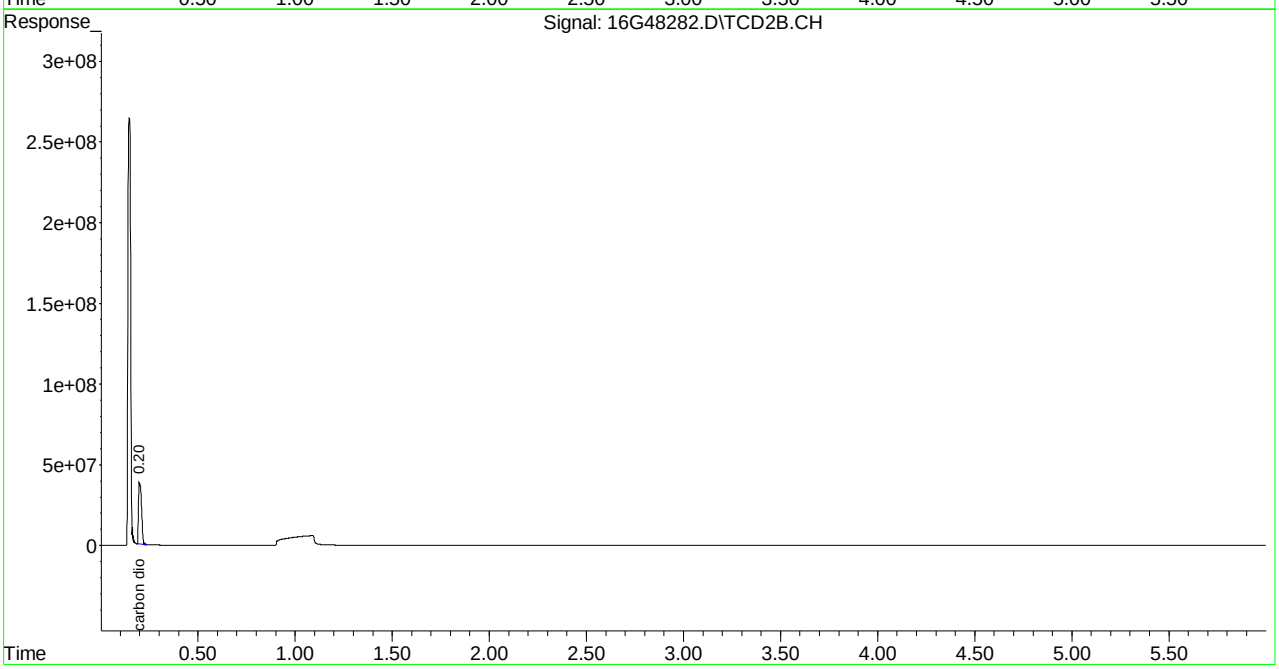

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\082115\16G48297.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\082115\16G48297.D\TCD2B.CH
Acq On    : 21 Aug 2015  15:23                        Operator: JDS
Sample    : L15080992-03 B D1 5X RSK175               Inst    : HP16
Misc      : 1,5                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Aug 25 10:01:13 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	656782	1.330	umol/
2) T	ethene	1.07	9867	0.031	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	56250438	10199.765	umol/

Signal #1 : C:\MSDCHEM\1\DATA\082115\16G48297.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\082115\16G48297.D\TCD2B.CH
Acq On : 21 Aug 2015 15:23 Operator: JDS
Sample : L15080992-03 B D1 5X RSK175 Inst : HP16
Misc : 1,5 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 25 10:01 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

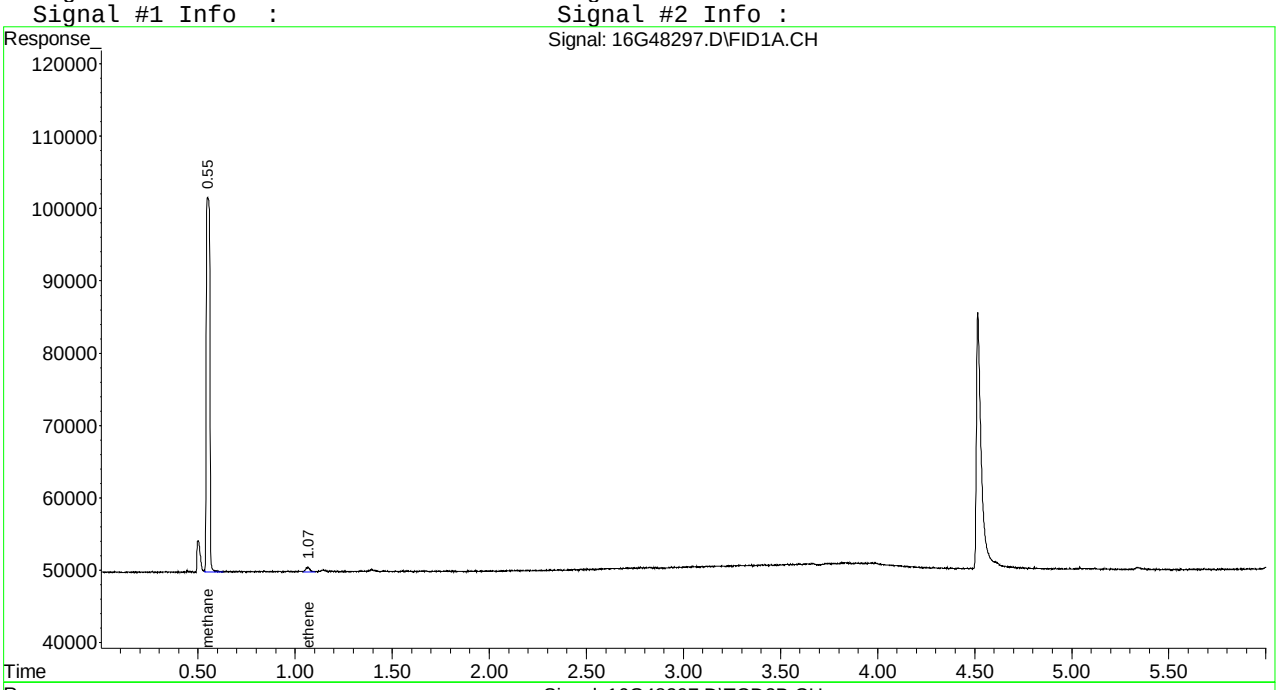

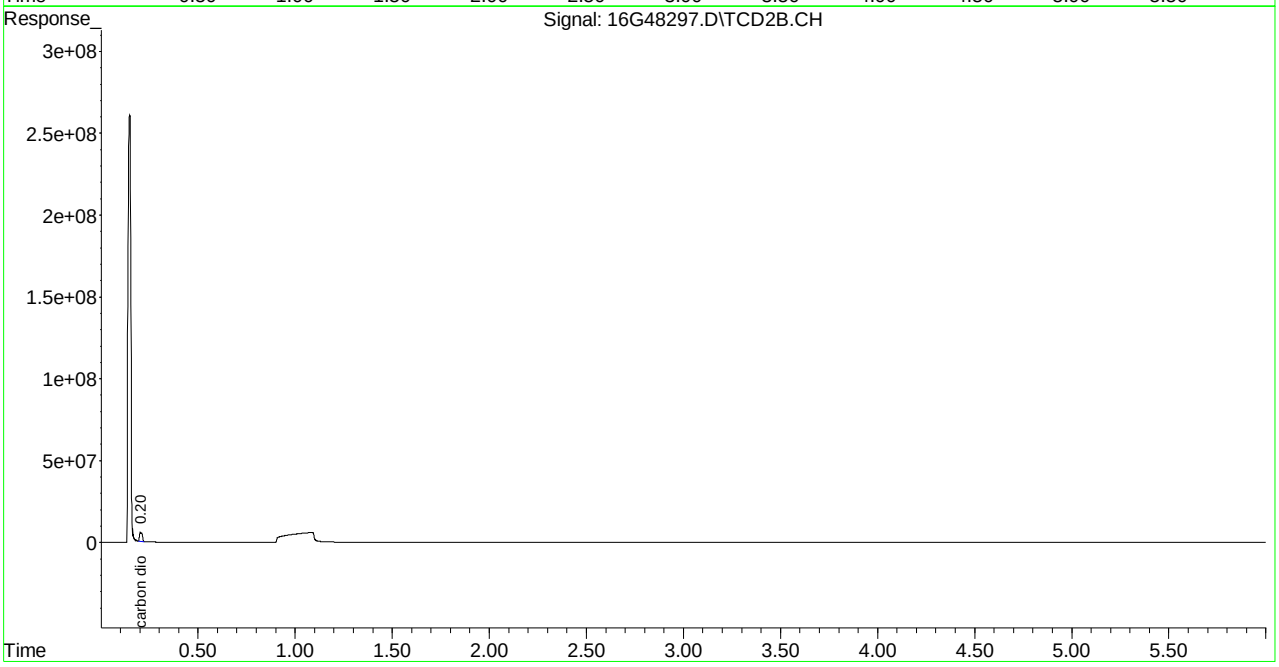

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\082015\16G48283.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDchem\1\DATA\082015\16G48283.D\TCD2B.CH
Acq On : 20 Aug 2015 17:15 Operator: JDS
Sample : L15080992-05 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 20 17:21:48 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	302700	N.D.	umol/
2) T	ethene	1.06	9402	0.030	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	420766714	76296.677	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G48283.D RSKEXT1.M Thu Aug 20 17:21:48 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\082015\16G48283.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDchem\1\DATA\082015\16G48283.D\TCD2B.CH
Acq On : 20 Aug 2015 17:15 Operator: JDS
Sample : L15080992-05 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 20 17:21 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

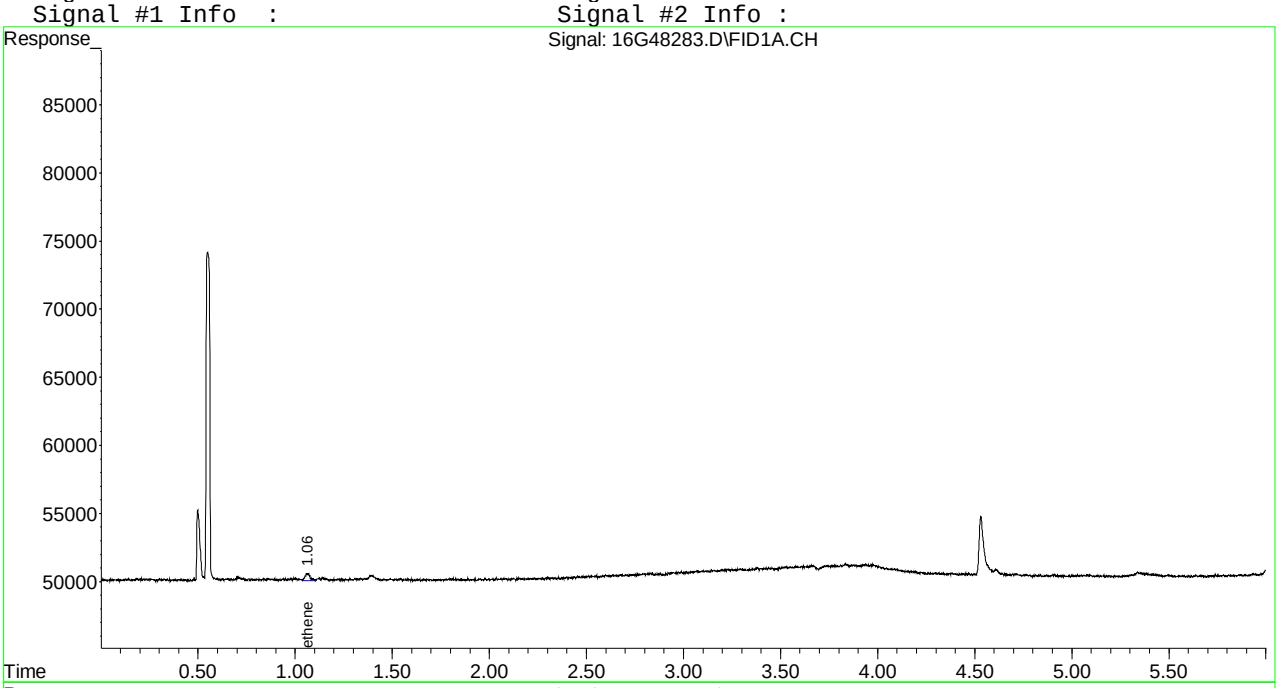

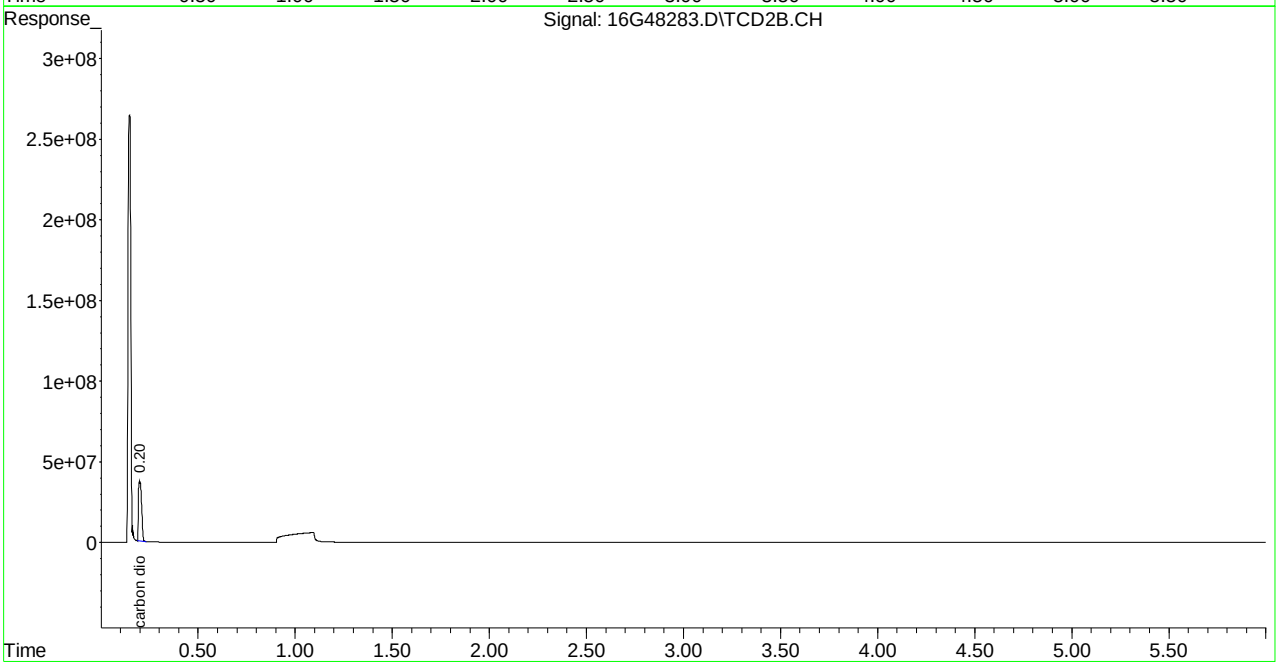

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\082115\16G48298.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\082115\16G48298.D\TCD2B.CH
Acq On    : 21 Aug 2015  15:34                        Operator: JDS
Sample    : L15080992-05 B D1 5X RSK175               Inst    : HP16
Misc      : 1,5                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Aug 25 10:01:14 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	255629	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	60782133	11021.487	umol/

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\082115\16G48298.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\082115\16G48298.D\TCD2B.CH
Acq On    : 21 Aug 2015  15:34                        Operator: JDS
Sample    : L15080992-05 B D1 5X RSK175               Inst    : HP16
Misc      : 1,5                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Aug 25 10:01 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

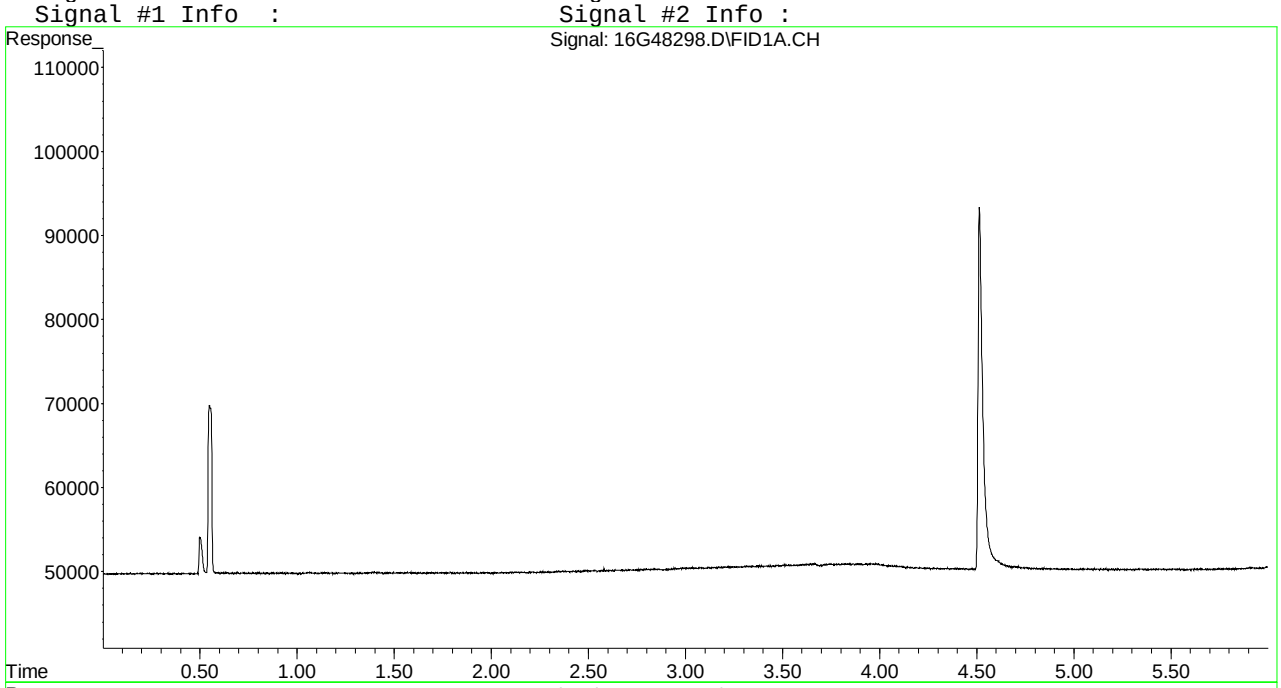

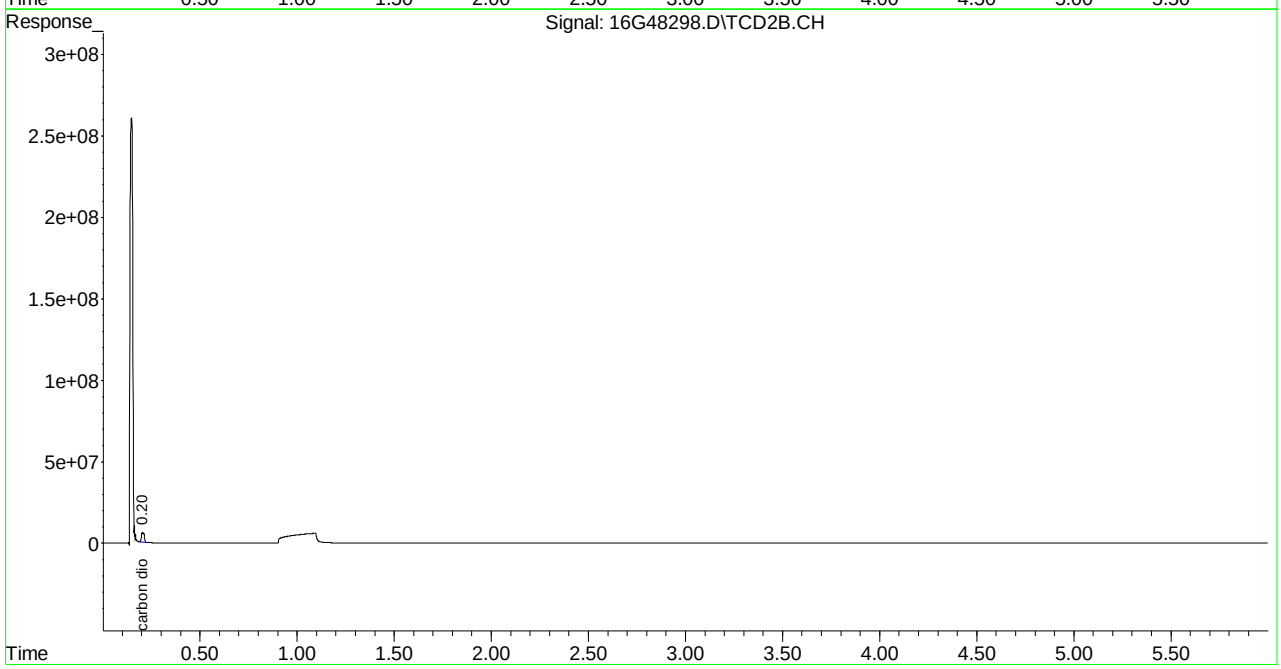

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDchem\1\DATA\082015\16G48284.D\FID1A.CH Vial: 9
Signal #2 : C:\MSDchem\1\DATA\082015\16G48284.D\TCD2B.CH
Acq On    : 20 Aug 2015  17:27                      Operator: JDS
Sample    : L15080992-07 A RSK175                   Inst    : HP16
Misc      : 1,1                                     Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Aug 20 17:33:20 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                   Signal #2 Phase:
Signal #1 Info  :                   Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	292482	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.40	9324	0.027	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	5.35	7002	0.011	umol/
8) T	carbon dioxide	0.20	240879524	43678.139	umol/

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\082015\16G48284.D\FID1A.CH Vial: 9
Signal #2 : C:\MSDchem\1\DATA\082015\16G48284.D\TCD2B.CH
Acq On : 20 Aug 2015 17:27 Operator: JDS
Sample : L15080992-07 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 20 17:33 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

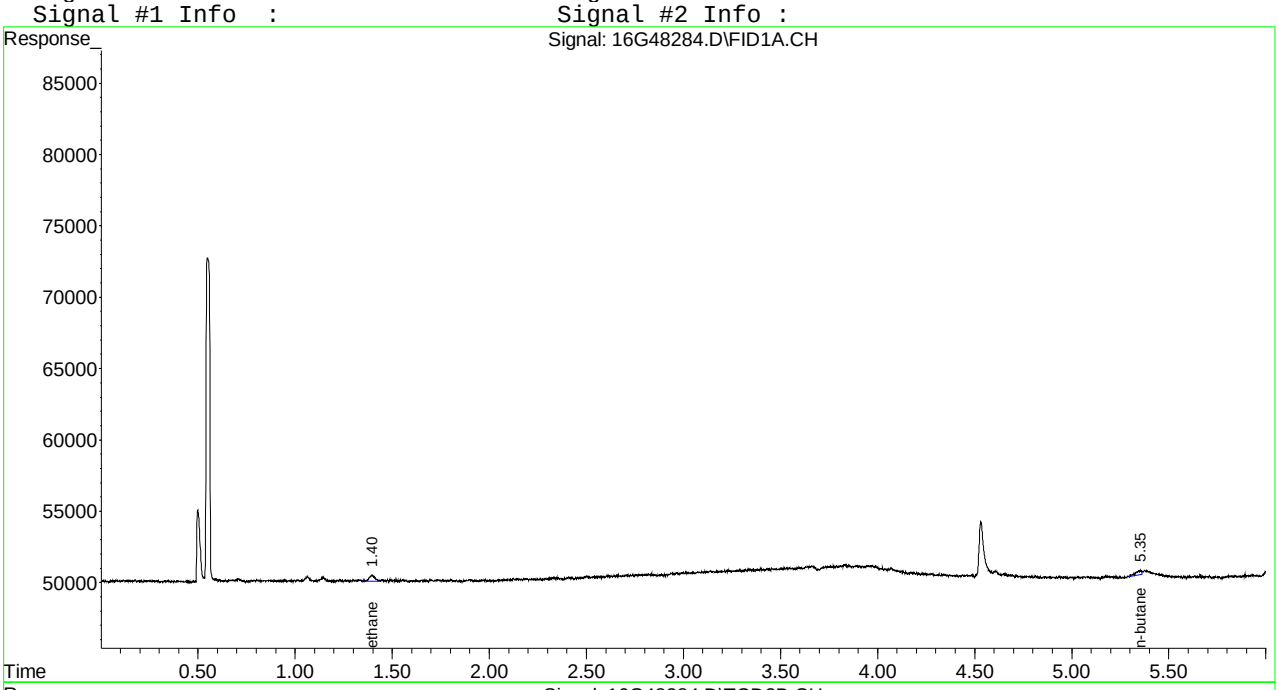

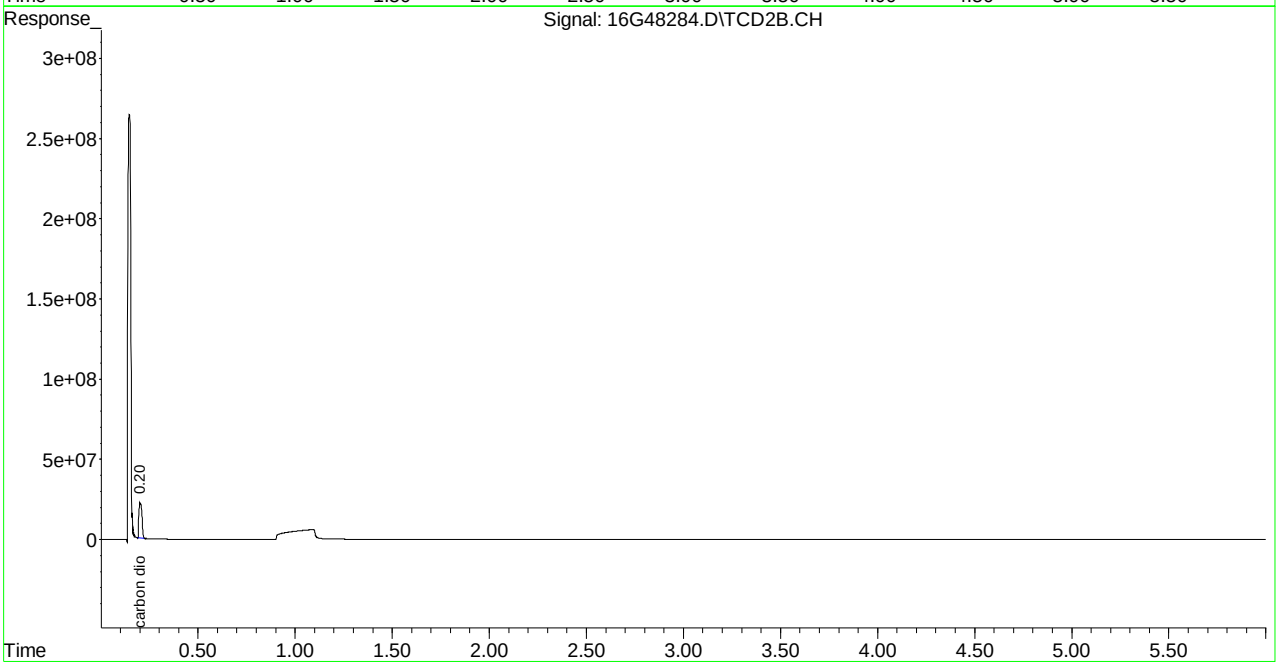

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\082015\16G48285.D\FID1A.CH Vial: 10
Signal #2 : C:\MSDchem\1\DATA\082015\16G48285.D\TCD2B.CH
Acq On : 20 Aug 2015 17:38 Operator: JDS
Sample : L15080992-09 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 20 17:44:50 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	970999	3.024	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.40	12946	0.038	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	5.36	3496	0.005	umol/
8) T	carbon dioxide	0.19	1044112550	189326.568	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G48285.D RSKEXT1.M Thu Aug 20 17:44:51 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\082015\16G48285.D\FID1A.CH Vial: 10
Signal #2 : C:\MSDchem\1\DATA\082015\16G48285.D\TCD2B.CH
Acq On : 20 Aug 2015 17:38 Operator: JDS
Sample : L15080992-09 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 20 17:44 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

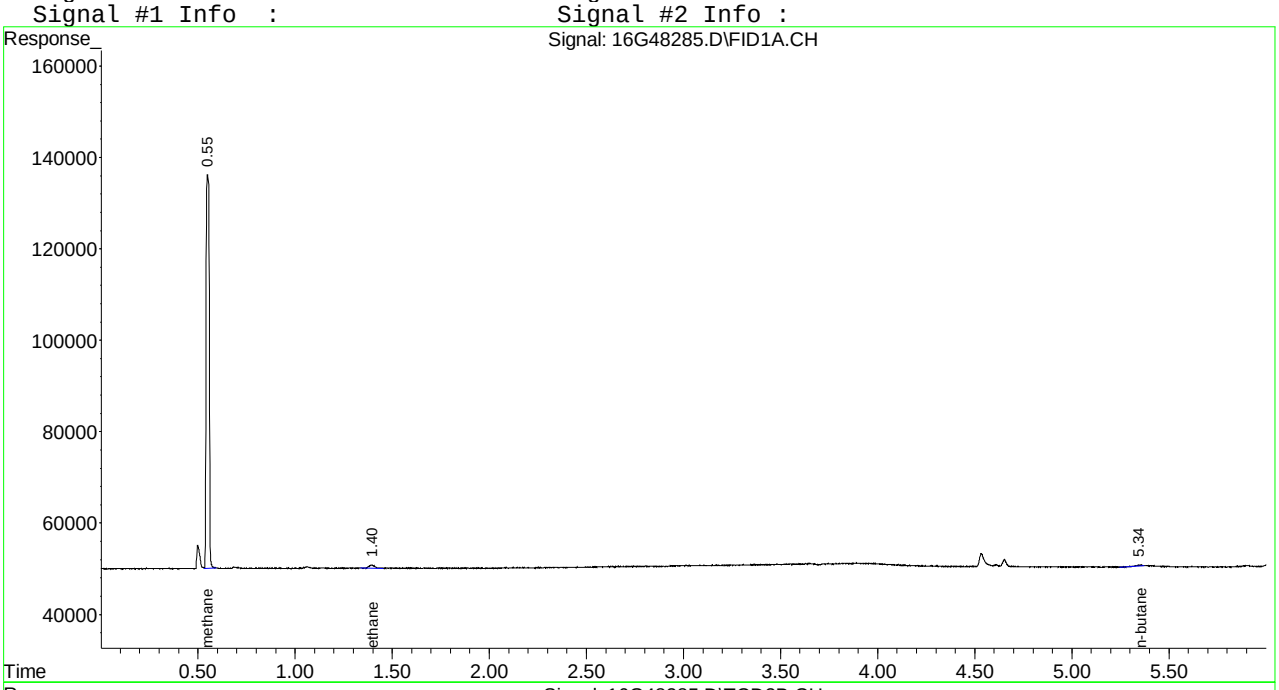

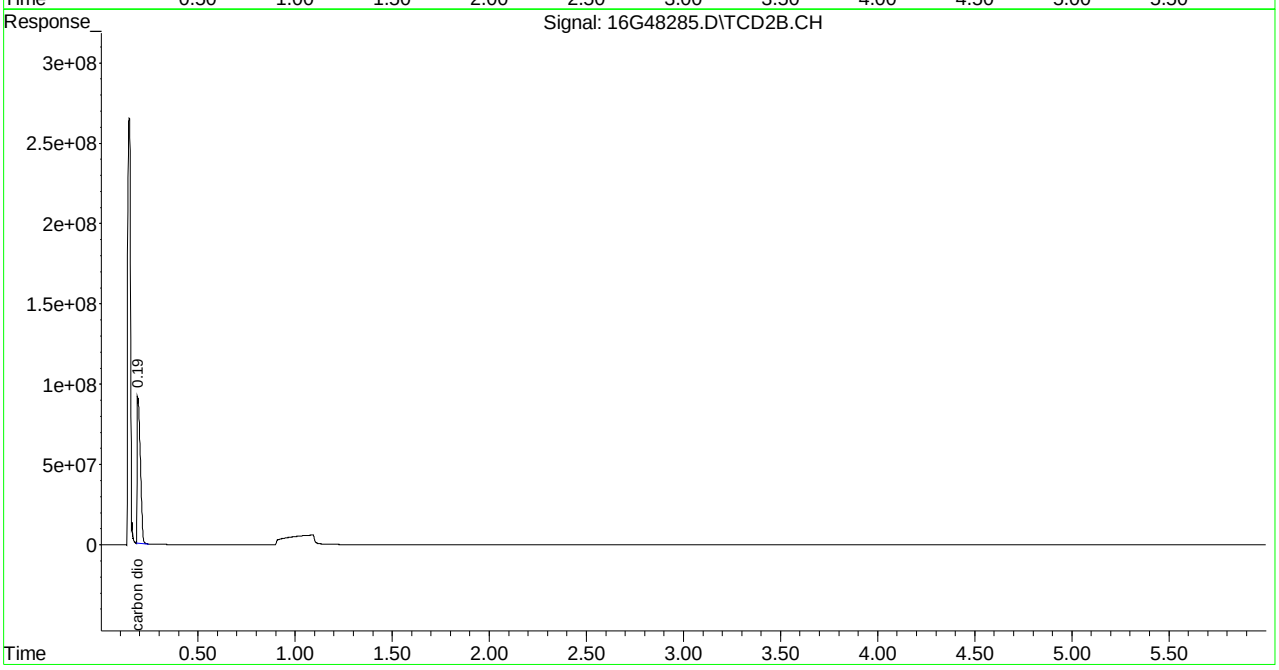

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\082115\16G48299.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\082115\16G48299.D\TCD2B.CH
Acq On    : 21 Aug 2015  15:45                        Operator: JDS
Sample    : L15080992-09 B D1 5X RSK175               Inst    : HP16
Misc      : 1,5                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Aug 25 10:01:30 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	307625	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	125448447	22747.283	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

16G48299.D RSKEXT1.M Tue Aug 25 10:01:33 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\082115\16G48299.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\082115\16G48299.D\TCD2B.CH
Acq On : 21 Aug 2015 15:45 Operator: JDS
Sample : L15080992-09 B D1 5X RSK175 Inst : HP16
Misc : 1,5 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 25 10:01 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

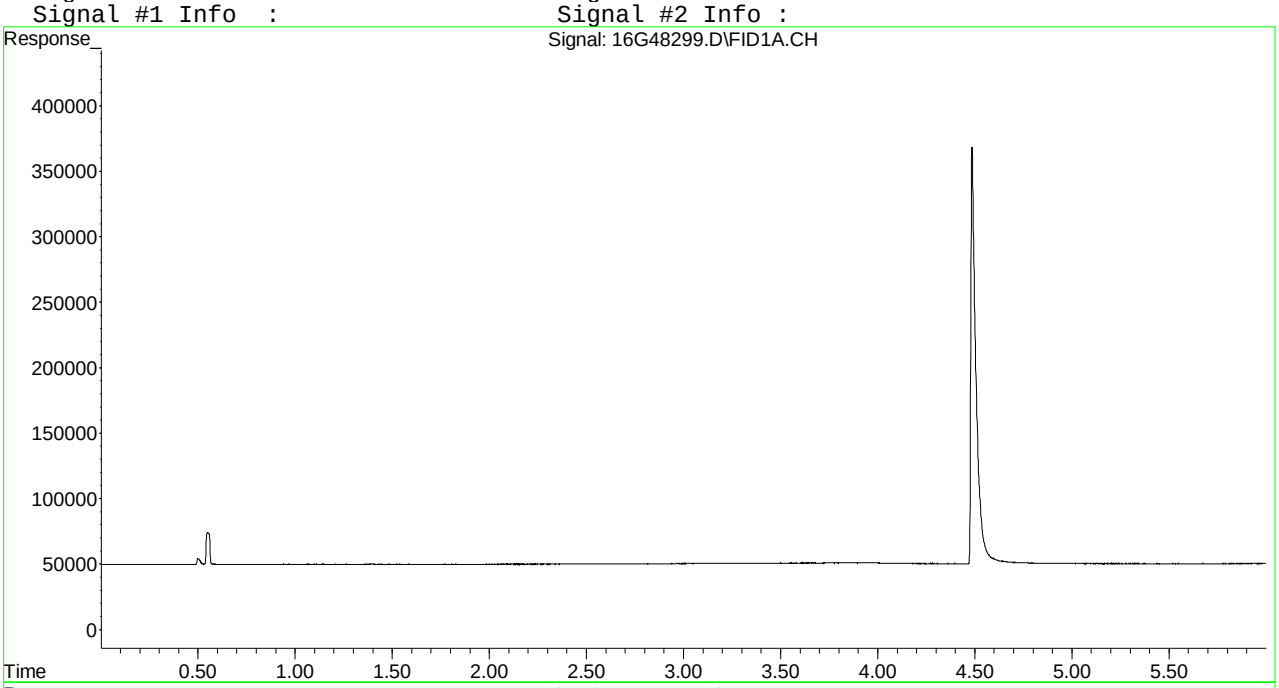

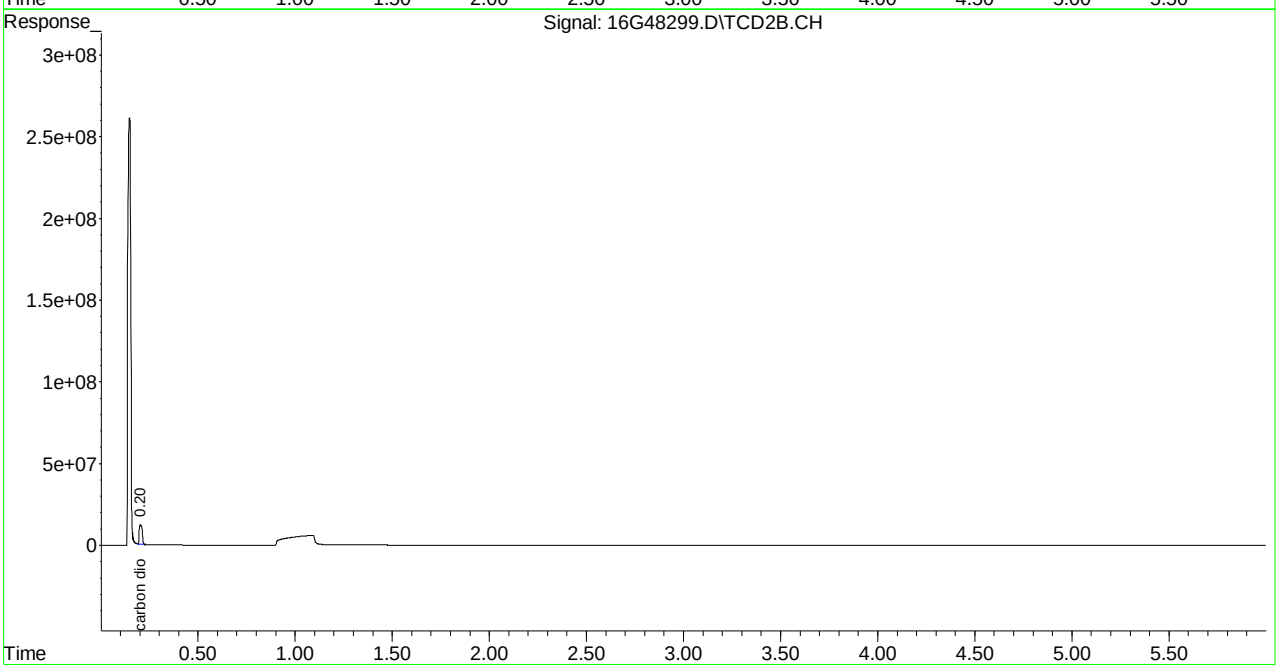

2.1.2.4 Standards Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46875.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46875.D\TCD2B.CH
Acq On : 03 Mar 2015 14:17 Operator: JDS
Sample : WG514119-01 0.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:54:08 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	566979	0.846	umol/
2) T	ethene	1.06	233416	0.736	umol/
3) T	acetylene	1.14	213812	0.632	umol/
4) T	ethane	1.39	254568	0.749	umol/
5) T	propane	3.83	352222	0.710	umol/
6) T	n-butane	5.34	457938	0.706	umol/
8) T	carbon dioxide	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46875.D RSKEXT1.M Fri Mar 06 11:56:43 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46875.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46875.D\TCD2B.CH
Acq On : 03 Mar 2015 14:17 Operator: JDS
Sample : WG514119-01 0.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:54 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

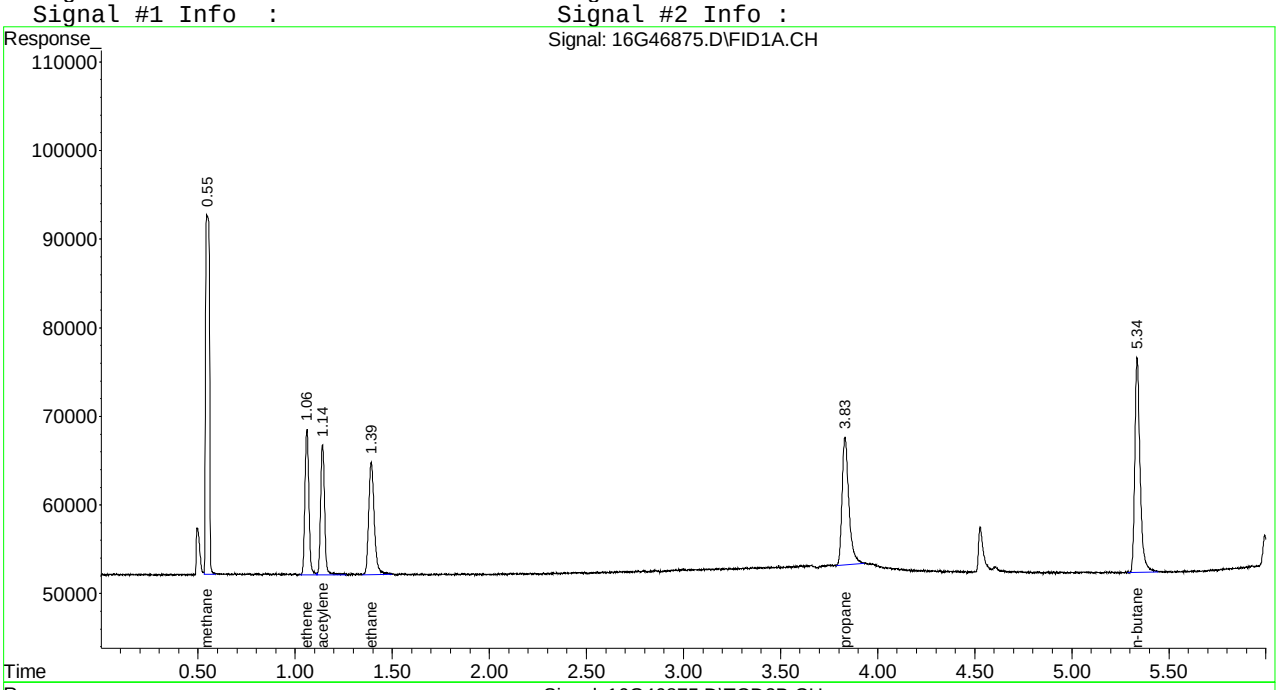

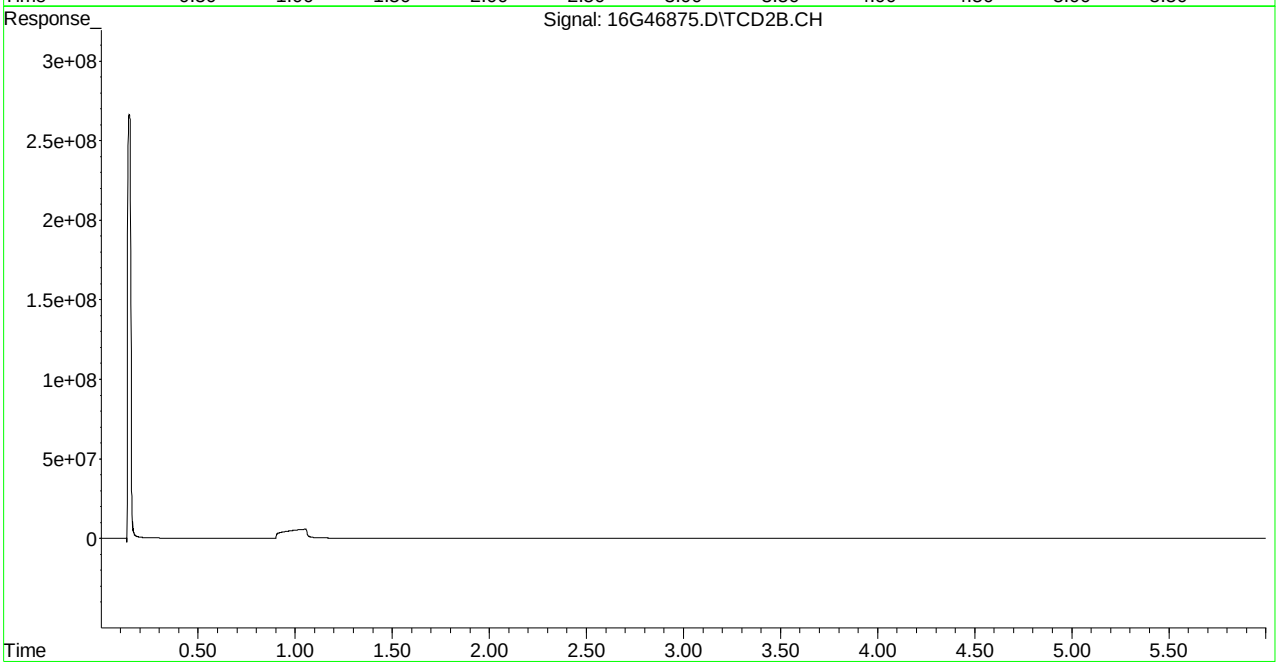

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46875.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46875.D\TCD2B.CH
Acq On : 03 Mar 2015 14:17 Operator: JDS
Sample : WG514119-01 0.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	-1.000	0.846	0.0	0	0.00
2	T	ethene	-1.000	0.736	0.0	100	0.00
3	T	acetylene	-1.000	0.632	0.0	100	0.00
4	T	ethane	0.667	0.749	-12.3	100	0.00
5	T	propane	0.667	0.710	-6.4	100	0.00
6	T	n-butane	0.667	0.706	-5.8	100	0.00

Signal #2

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46875.D RSKEXT1.M Fri Mar 06 11:55:53 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46875.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46875.D\TCD2B.CH
Acq On    : 03 Mar 2015  14:17                        Operator: JDS
Sample    : WG514119-01 0.67umol/mol STD RSK175       Inst    : HP16
Misc      : 1,1 STD67276                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%
```

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
	Signal #2					
8 T	carbon dioxide	-1.000	0.000	0.0	0	-0.21

```
---------------------------------------------------------------------------
(#) = Out of Range            SPCC's out = 0  CCC's out = 0
16G46875.D  RSKEXT1.M      Fri Mar 06 11:55:53 2015                    Page 2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46876.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46876.D\TCD2B.CH
Acq On : 03 Mar 2015 14:30 Operator: JDS
Sample : WG514119-02 1.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:08 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	739046	1.773	umol/
2) T	ethene	1.06	538090	1.696	umol/
3) T	acetylene	1.14	529143	1.564	umol/
4) T	ethane	1.39	567082	1.668	umol/
5) T	propane	3.83	804240	1.620	umol/
6) T	n-butane	5.34	1028782	1.587	umol/
8) T	carbon dioxide	0.20	7954783	1442.423	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46876.D RSKEXT1.M Fri Mar 06 11:57:08 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46876.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46876.D\TCD2B.CH
Acq On : 03 Mar 2015 14:30 Operator: JDS
Sample : WG514119-02 1.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

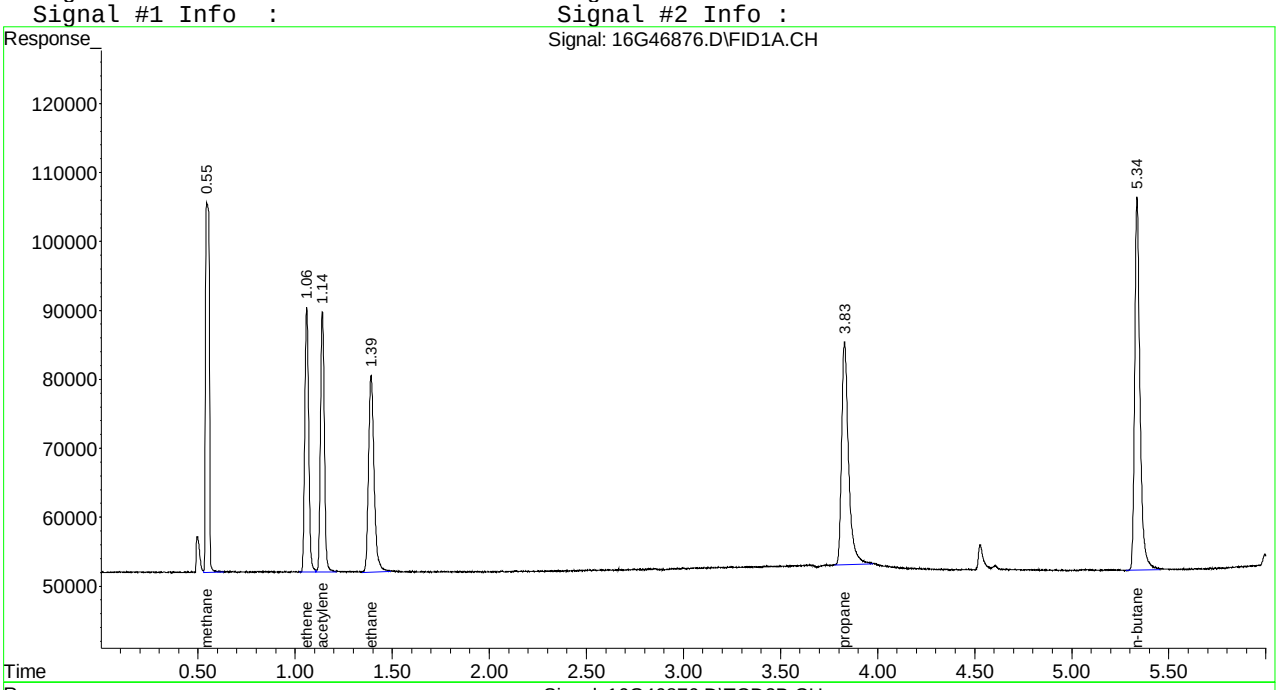

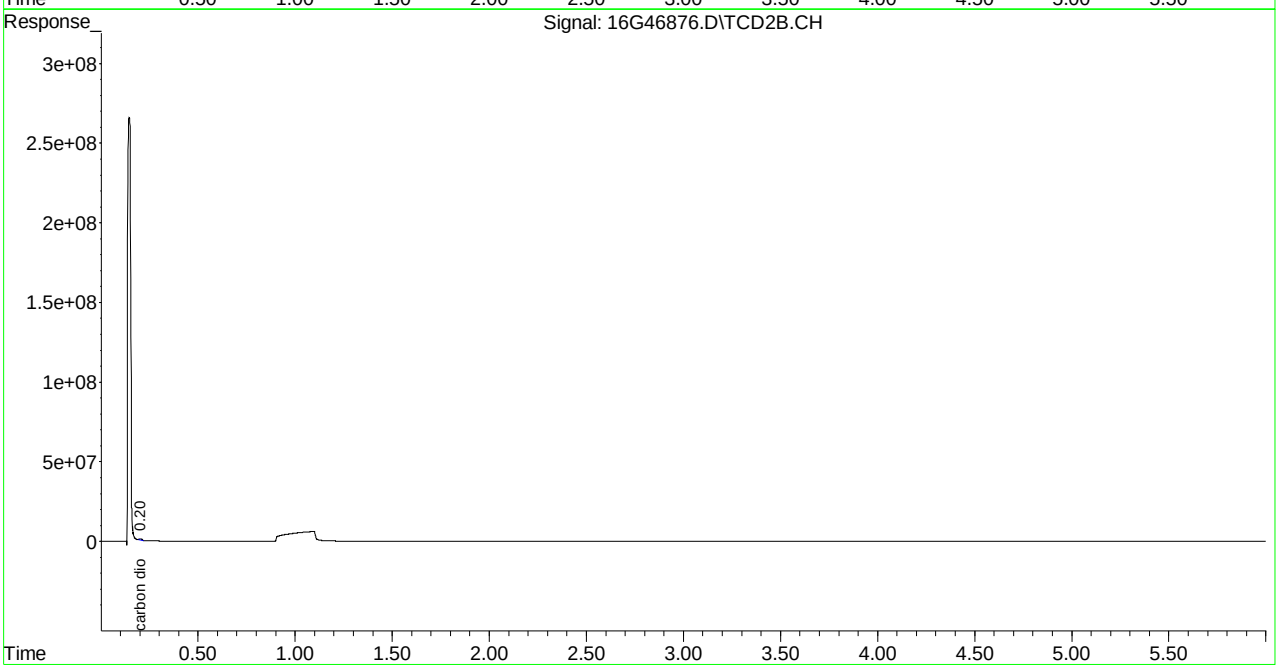

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46876.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46876.D\TCD2B.CH
Acq On : 03 Mar 2015 14:30 Operator: JDS
Sample : WG514119-02 1.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	1.670	1.773	-6.2	100	0.00
2	T	ethene	1.670	1.696	-1.6	100	0.00
3	T	acetylene	1.670	1.564	6.3	100	0.00
4	T	ethane	1.670	1.668	0.1	100	0.00
5	T	propane	1.670	1.620	3.0	100	0.00
6	T	n-butane	1.670	1.587	5.0	100	0.00

Signal #2

8	T	carbon dioxide	2000.000	1442.423	27.9#	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46876.D RSKEXT1.M Fri Mar 06 11:52:49 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46876.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46876.D\TCD2B.CH
Acq On    : 03 Mar 2015  14:30                        Operator: JDS
Sample    : WG514119-02 1.67umol/mol STD RSK175       Inst    : HP16
Misc      : 1,1 STD67276                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46877.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46877.D\TCD2B.CH
Acq On : 03 Mar 2015 14:42 Operator: JDS
Sample : WG514119-03 33.3umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:10 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	6717167	33.998	umol/
2) T	ethene	1.06	11126351	35.075	umol/
3) T	acetylene	1.14	11442001	33.809	umol/
4) T	ethane	1.39	11535235	33.937	umol/
5) T	propane	3.83	17256964	34.764	umol/
6) T	n-butane	5.34	22669140	34.968	umol/
8) T	carbon dioxide	0.20	18661832	3383.908	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46877.D RSKEXT1.M Fri Mar 06 11:57:10 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46877.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46877.D\TCD2B.CH
Acq On : 03 Mar 2015 14:42 Operator: JDS
Sample : WG514119-03 33.3umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

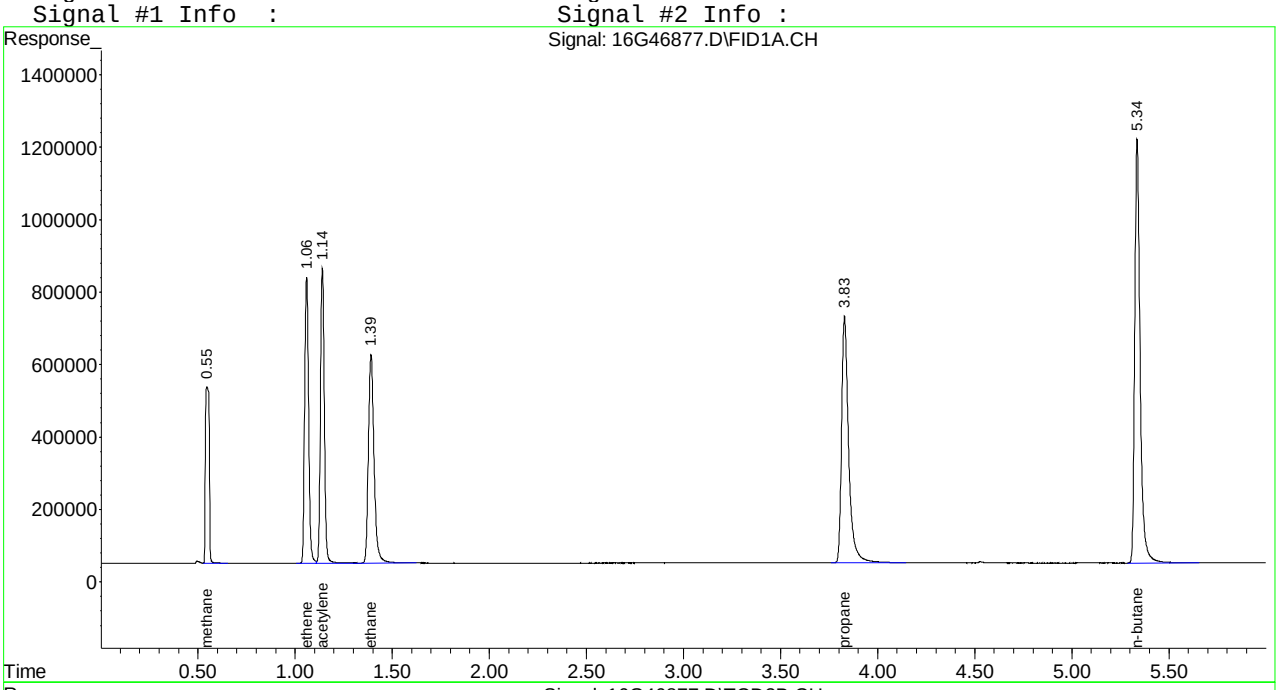

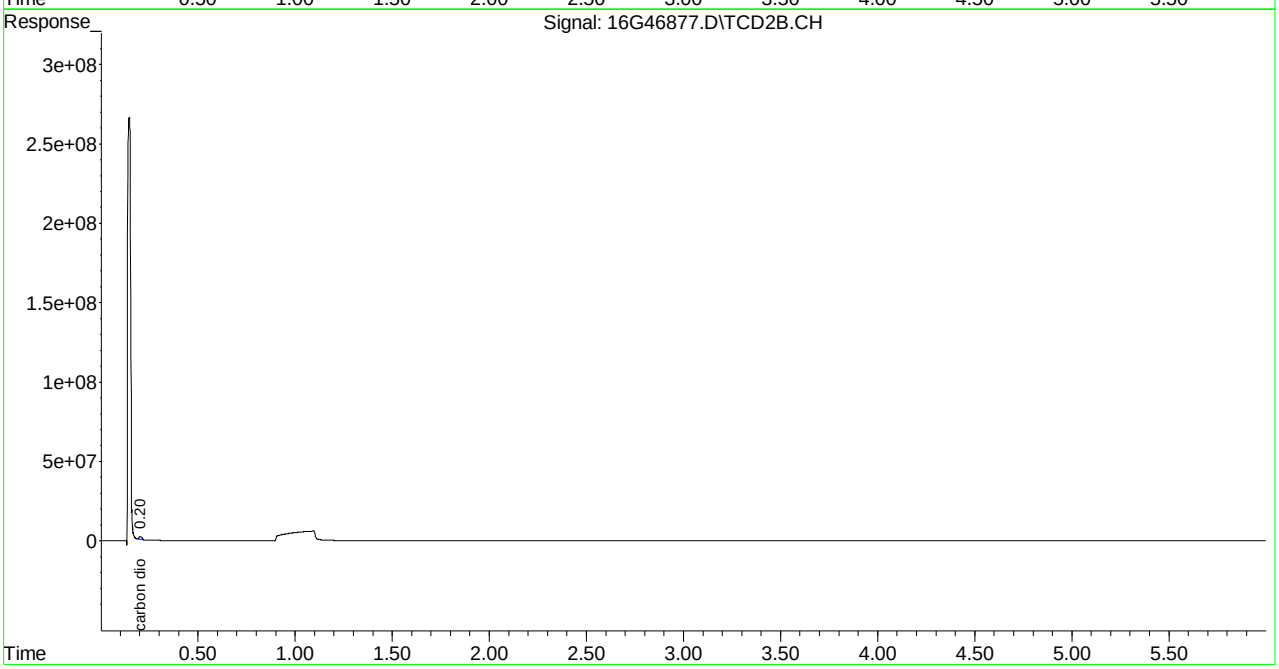

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46878.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46878.D\TCD2B.CH
Acq On : 03 Mar 2015 14:53 Operator: JDS
Sample : WG514119-04 66.7umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:11 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	11713293	60.930	umol/
2) T	ethene	1.06	19737271	62.220	umol/
3) T	acetylene	1.14	20910957	61.787	umol/
4) T	ethane	1.39	20832969	61.292	umol/
5) T	propane	3.83	31304425	63.062	umol/
6) T	n-butane	5.33	40948894	63.166	umol/
8) T	carbon dioxide	0.20	37230879	6750.991	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46878.D RSKEXT1.M Fri Mar 06 11:57:11 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46878.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46878.D\TCD2B.CH
Acq On : 03 Mar 2015 14:53 Operator: JDS
Sample : WG514119-04 66.7umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

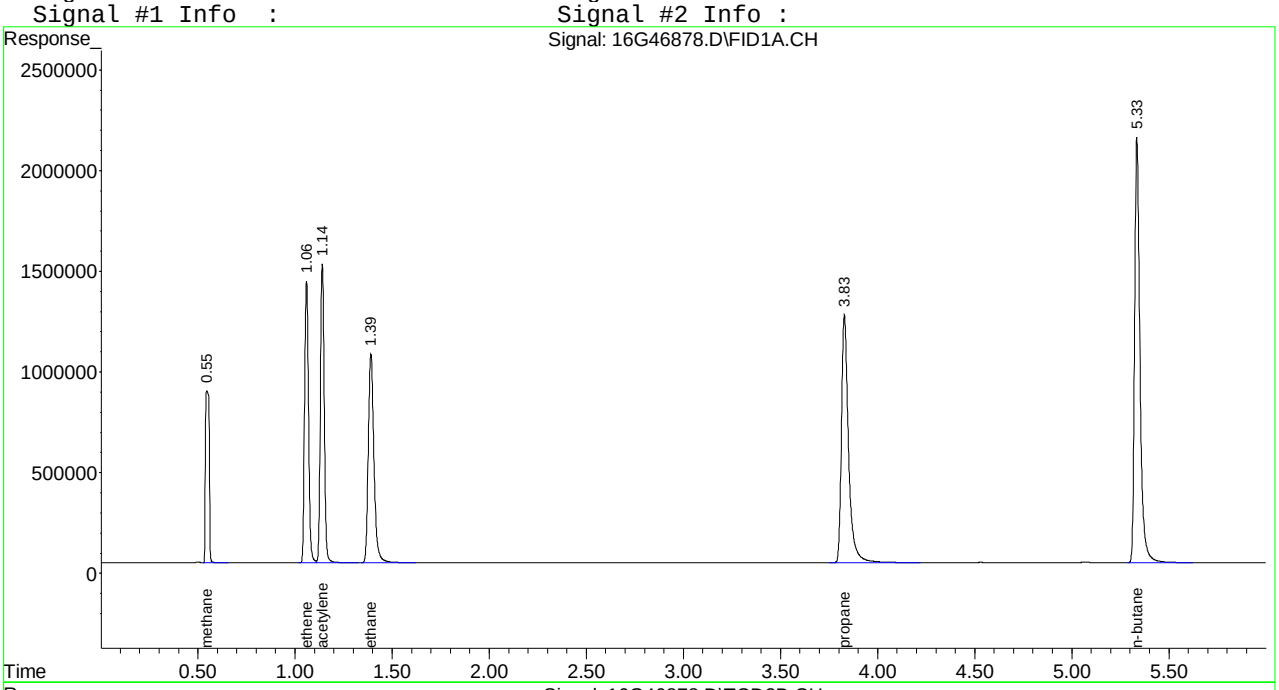

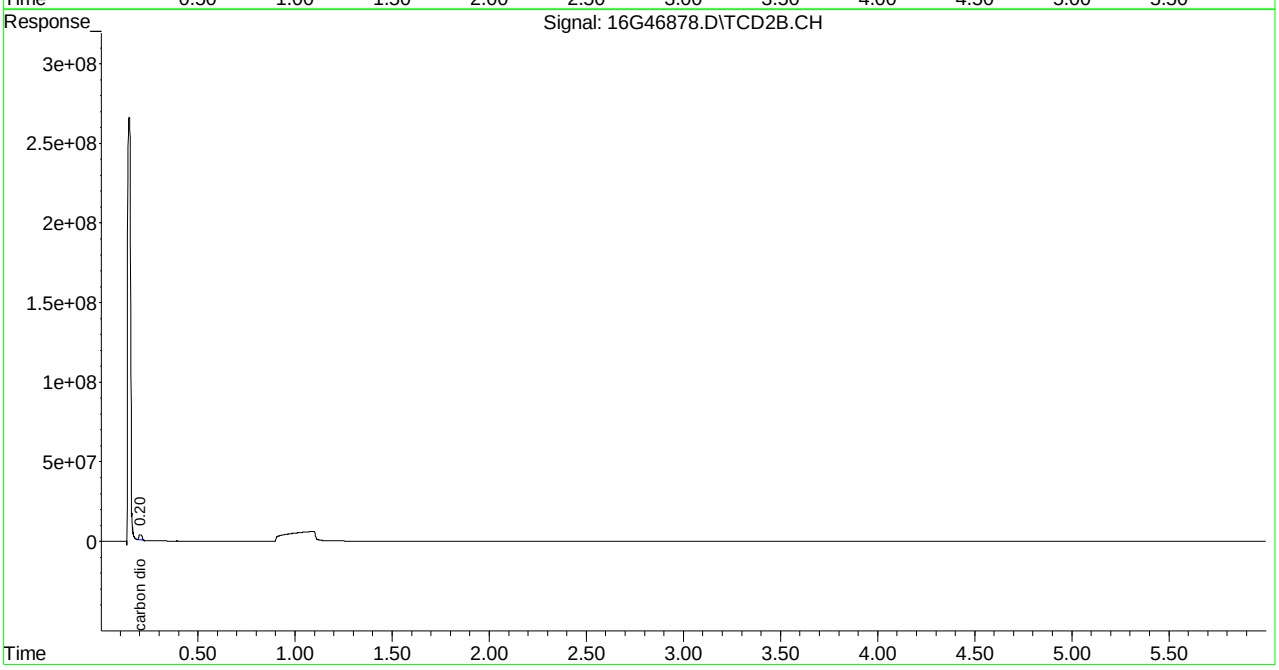

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46879.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46879.D\TCD2B.CH
Acq On : 03 Mar 2015 15:05 Operator: JDS
Sample : WG514119-05 133umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:11 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	24939741	132.227	umol/
2) T	ethene	1.06	41686300	131.412	umol/
3) T	acetylene	1.14	47206199	139.484	umol/
4) T	ethane	1.39	43668346	128.475	umol/
5) T	propane	3.83	64365472	129.663	umol/
6) T	n-butane	5.33	84395468	130.185	umol/
8) T	carbon dioxide	0.20	80524699	14601.362	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46879.D RSKEXT1.M Fri Mar 06 11:57:12 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46879.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46879.D\TCD2B.CH
Acq On : 03 Mar 2015 15:05 Operator: JDS
Sample : WG514119-05 133umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

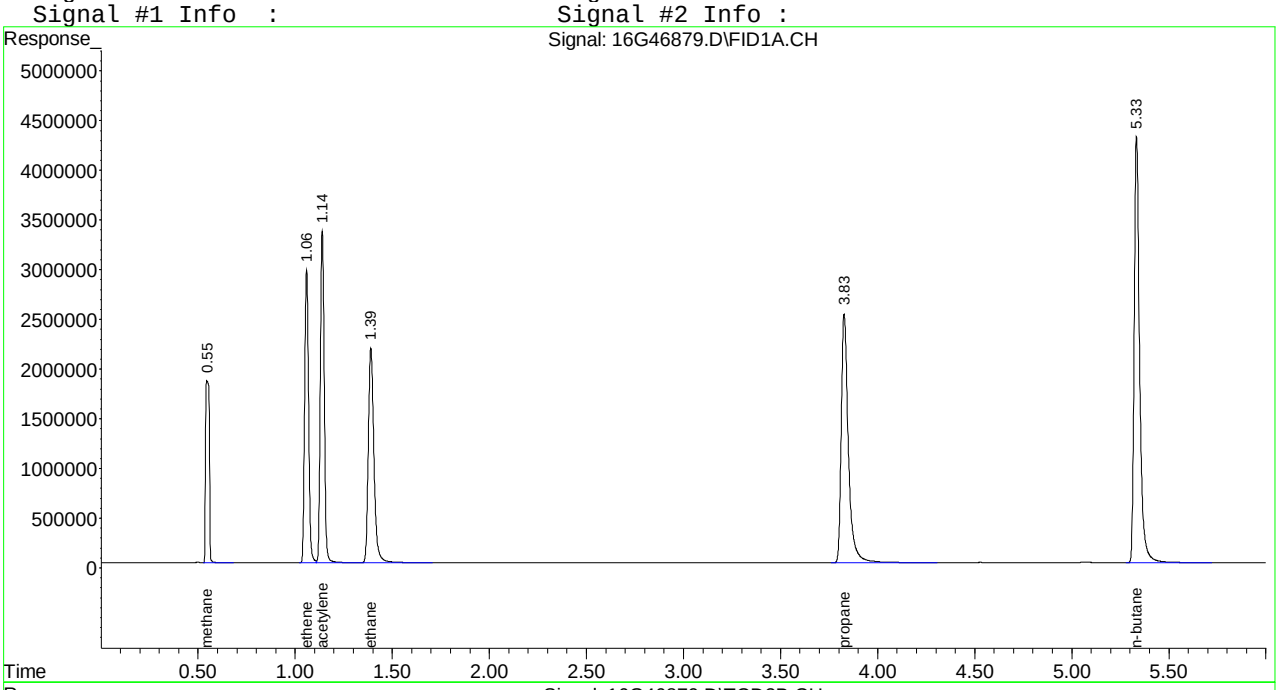

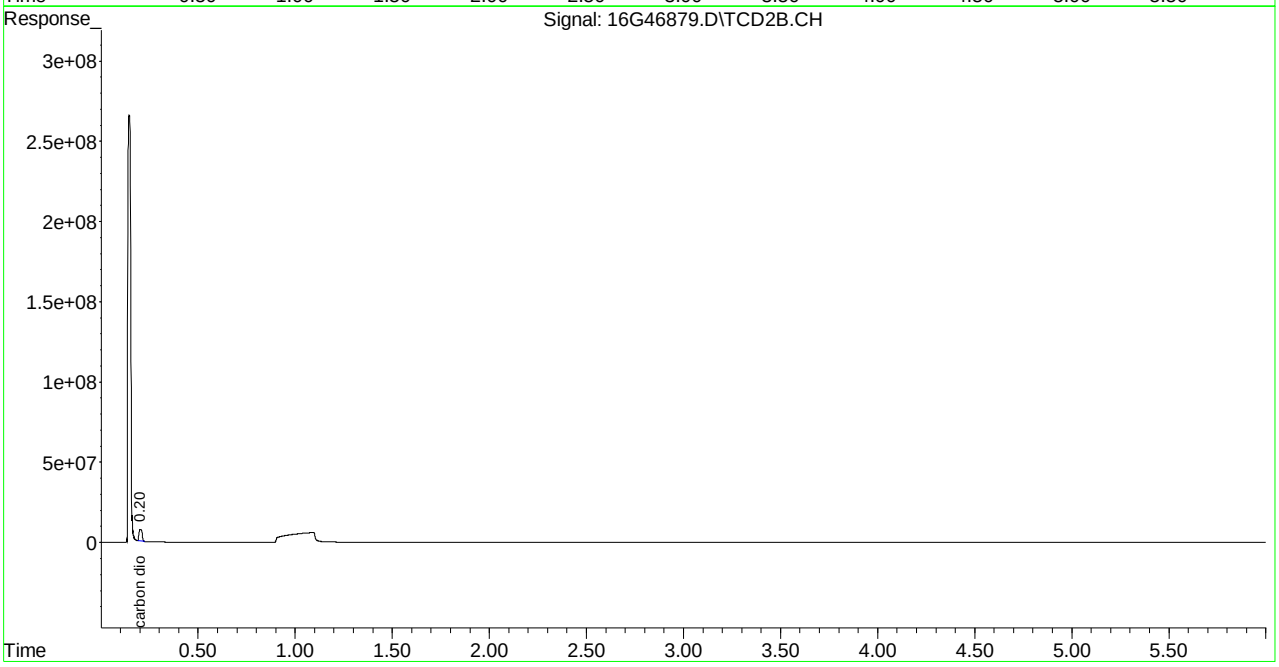

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46880.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46880.D\TCD2B.CH
Acq On : 03 Mar 2015 15:17 Operator: JDS
Sample : WG514119-06 333umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:12 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	61959752	331.783	umol/
2) T	ethene	1.06	106345688	335.244	umol/
3) T	acetylene	1.14	118917475	351.375	umol/
4) T	ethane	1.39	111791323	328.897	umol/
5) T	propane	3.83	166544491	335.501	umol/
6) T	n-butane	5.33	219746160	338.971	umol/
8) T	carbon dioxide	0.20	201820251	36595.610	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46880.D RSKEXT1.M Fri Mar 06 11:57:12 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46880.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46880.D\TCD2B.CH
Acq On : 03 Mar 2015 15:17 Operator: JDS
Sample : WG514119-06 333umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

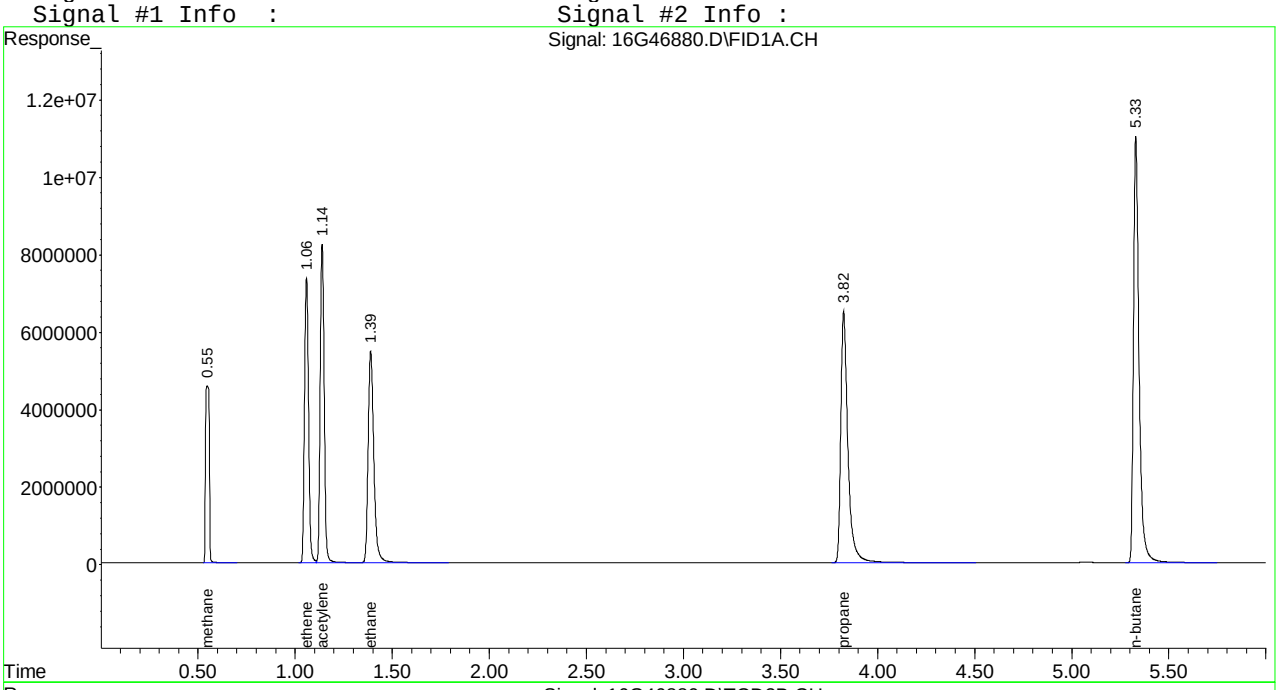

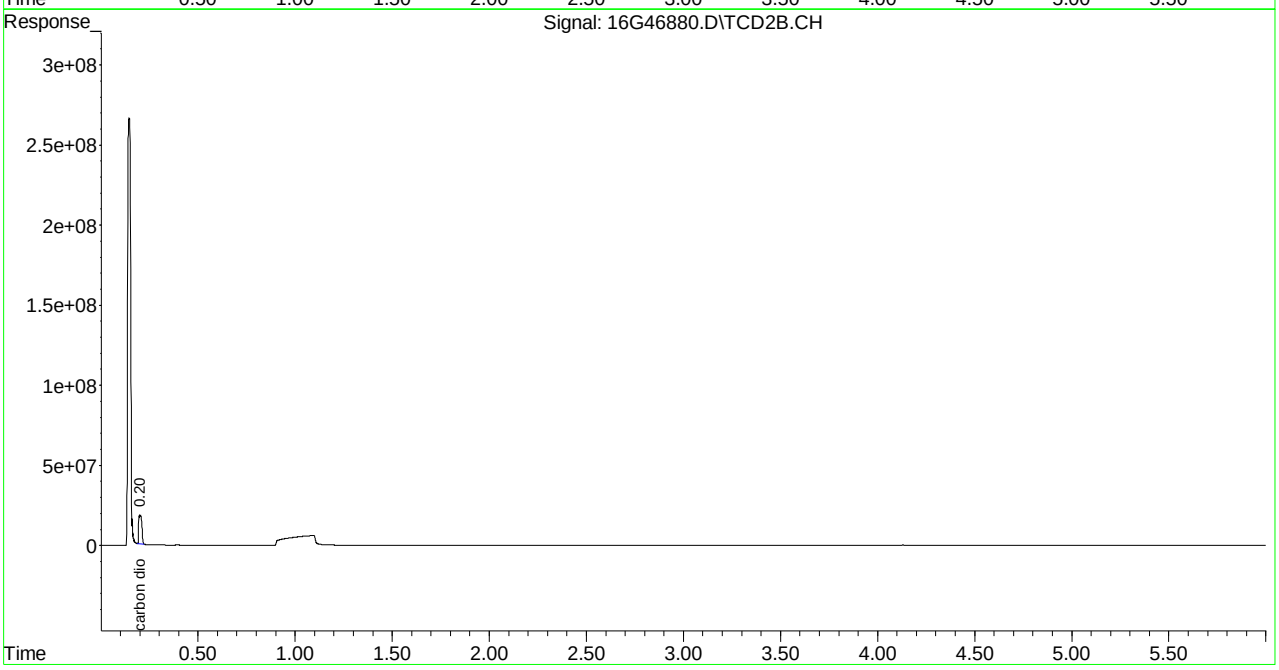

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46881.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46881.D\TCD2B.CH
Acq On : 03 Mar 2015 15:29 Operator: JDS
Sample : WG514119-07 533umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:13 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	100578633	539.958	umol/
2) T	ethene	1.06	169644372	534.786	umol/
3) T	acetylene	1.14	183672662	542.712	umol/
4) T	ethane	1.39	178696917	525.738	umol/
5) T	propane	3.82	263060772	529.931	umol/
6) T	n-butane	5.33	344418707	531.285	umol/
8) T	carbon dioxide	0.20	309711021	56159.199	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46881.D RSKEXT1.M Fri Mar 06 11:57:13 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46881.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46881.D\TCD2B.CH
Acq On : 03 Mar 2015 15:29 Operator: JDS
Sample : WG514119-07 533umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

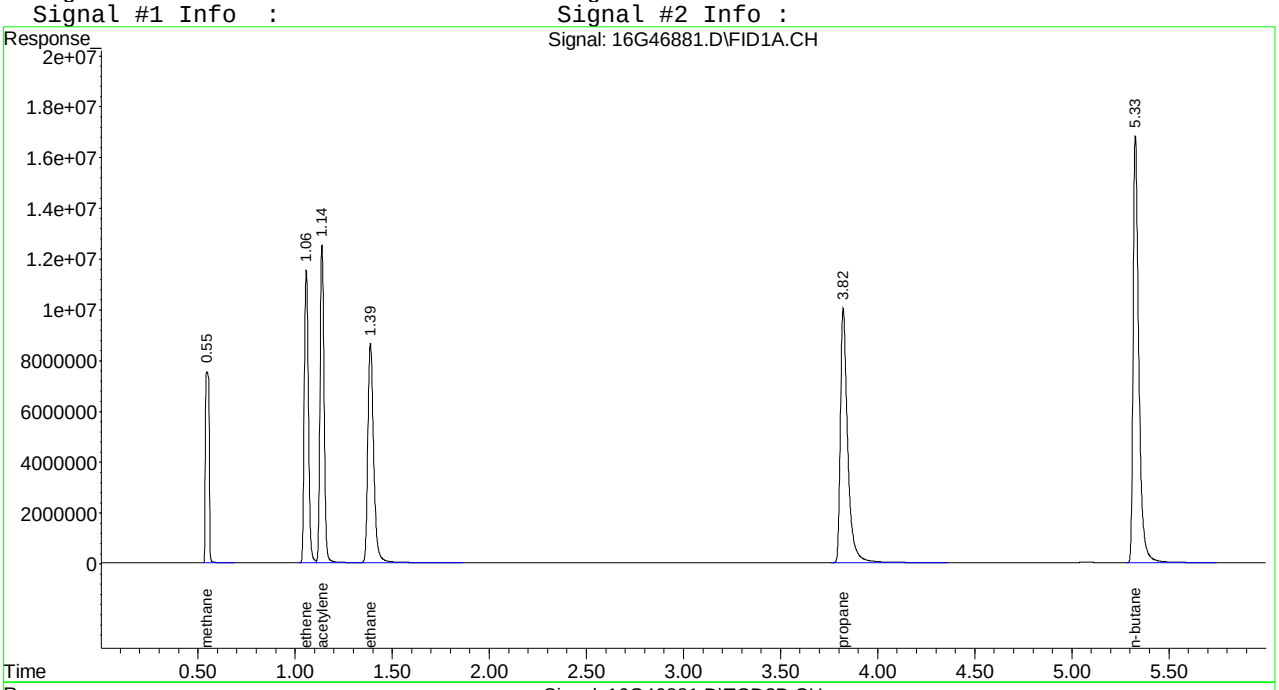

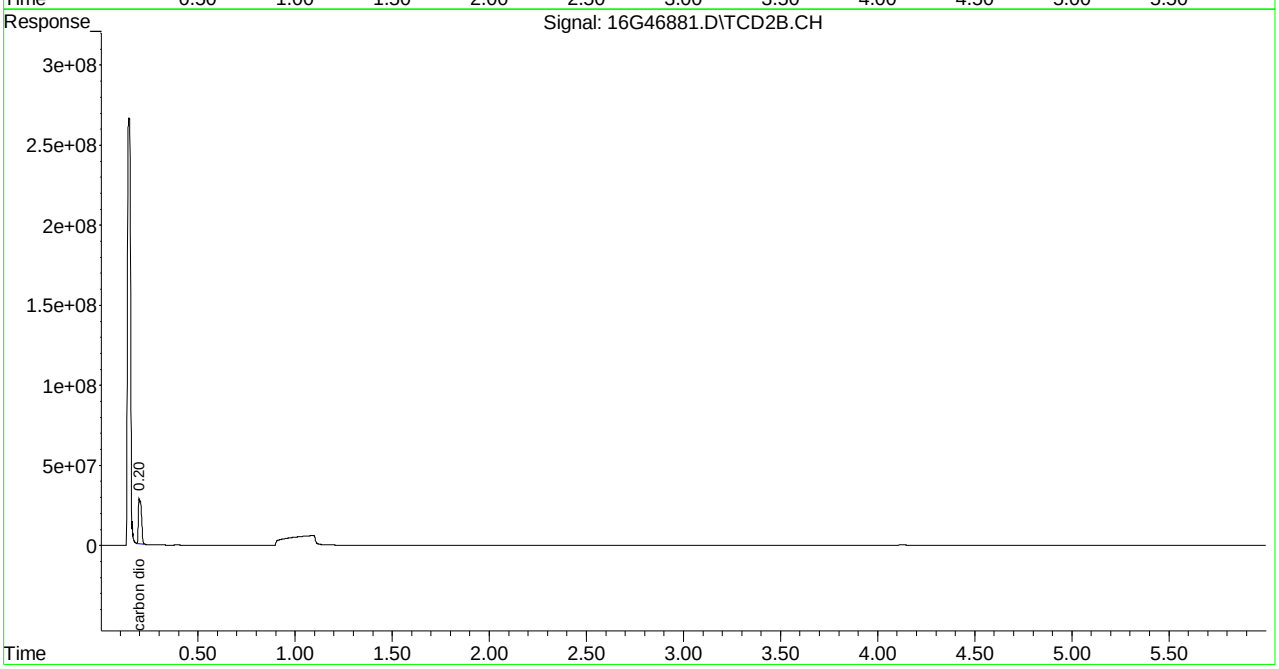

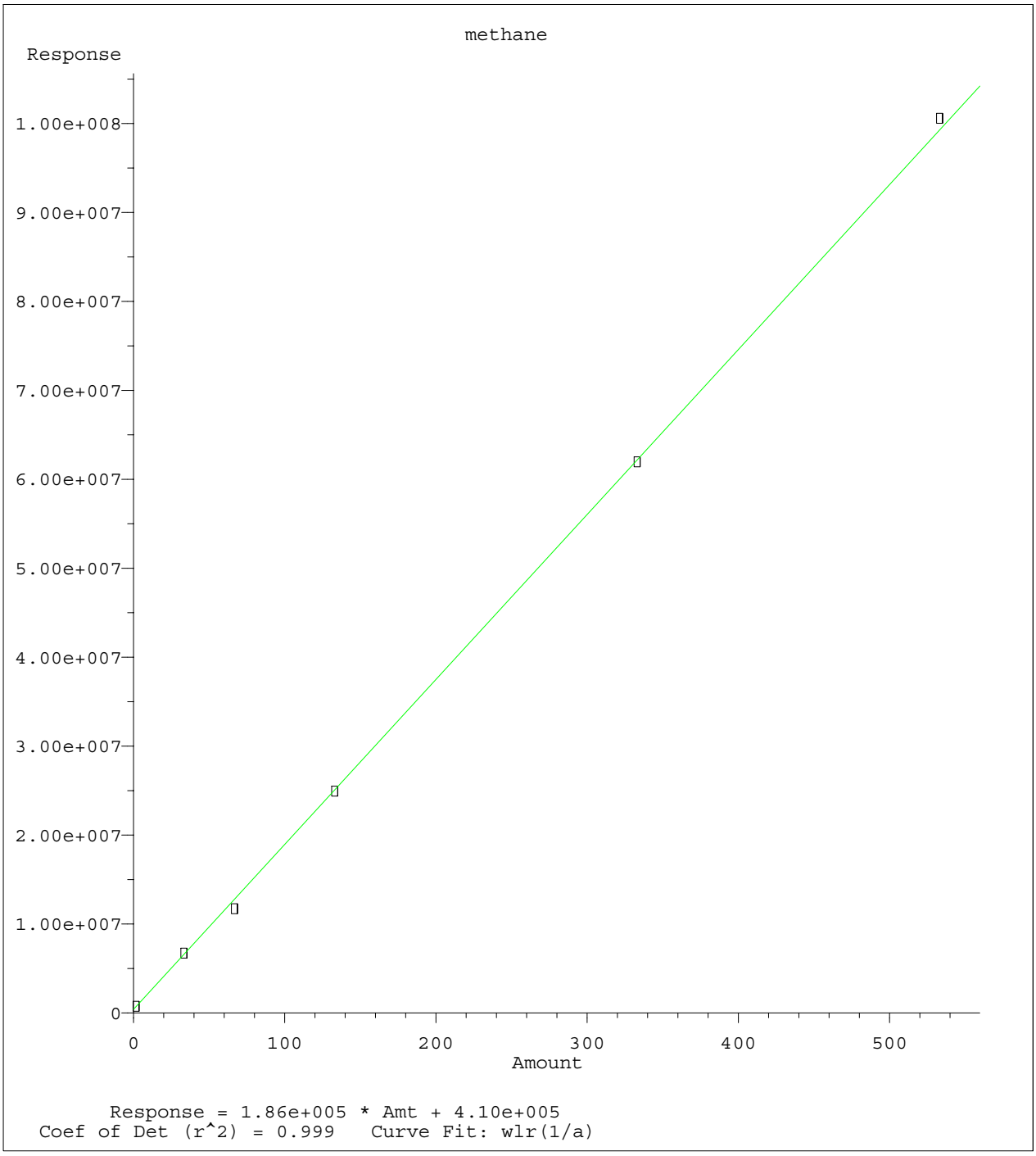

Method Name: C:\MSDCHEM\1\METHODS\RSKEXT1.M
Calibration Table Last Updated: Fri Mar 06 11:52:33 2015

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46884.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46884.D\TCD2B.CH
Acq On : 03 Mar 2015 17:10 Operator: JDS
Sample : WG514119-08 133umol/mol ALT SRC STD RSK1 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:58:49 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	25936090	137.598	umol/
2) T	ethene	1.06	43111404	135.904	umol/
3) T	acetylene	1.14	47098795	139.167	umol/
4) T	ethane	1.39	44778091	131.740	umol/
5) T	propane	3.83	64822008	130.583	umol/
6) T	n-butane	5.33	82856392	127.811	umol/
8) T	carbon dioxide	0.20	76359751	13846.141	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46884.D RSKEXT1.M Fri Mar 06 11:58:49 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46884.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46884.D\TCD2B.CH
Acq On : 03 Mar 2015 17:10 Operator: JDS
Sample : WG514119-08 133umol/mol ALT SRC STD RSK1 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:58 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

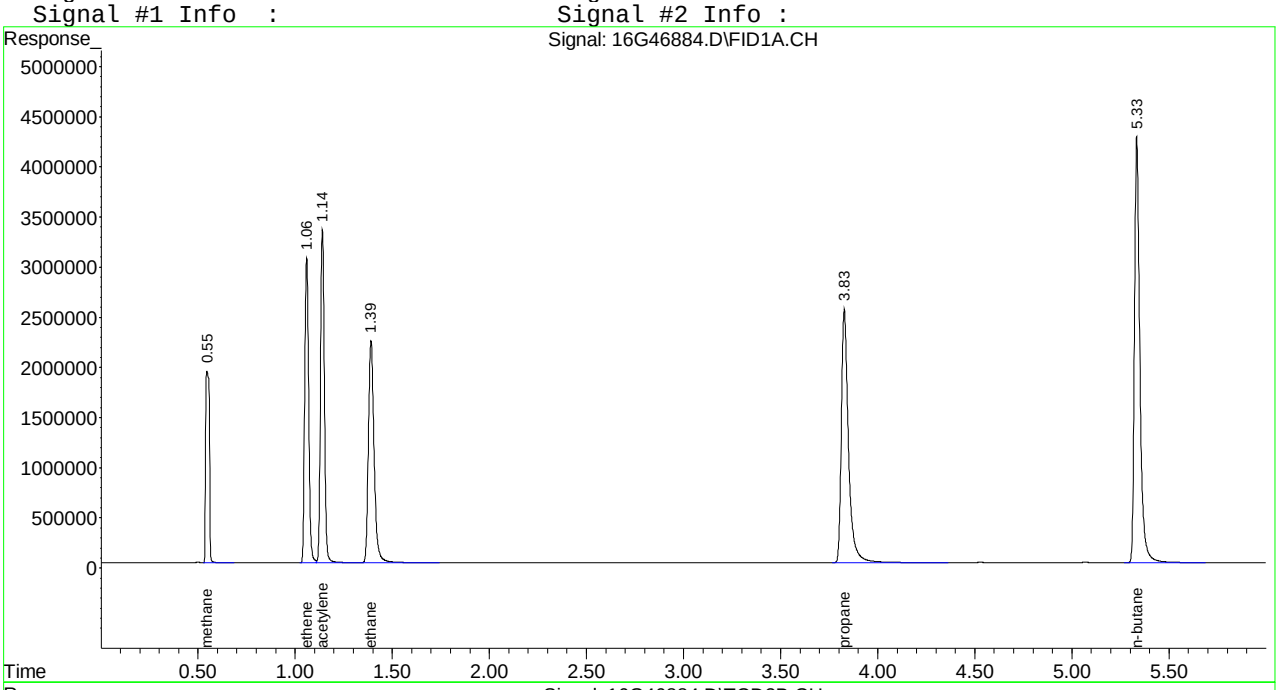

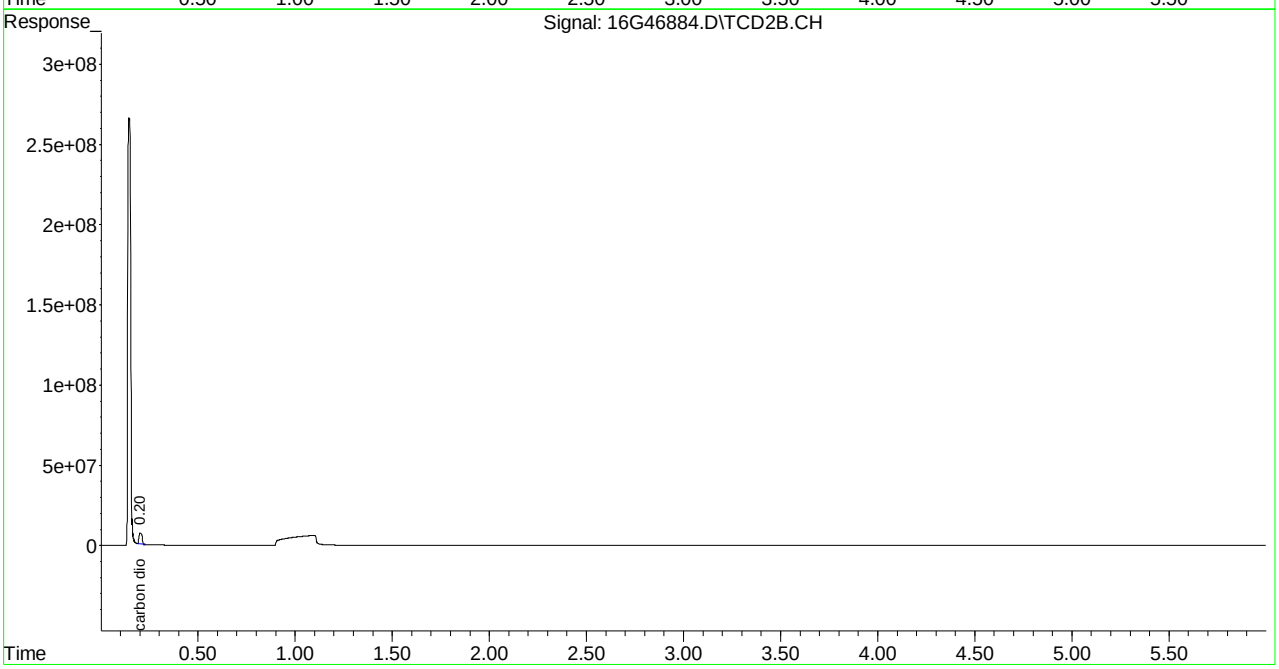

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46884.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46884.D\TCD2B.CH
Acq On : 03 Mar 2015 17:10 Operator: JDS
Sample : WG514119-08 133umol/mol ALT SRC STD RSK1 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	137.598	-3.5	104	0.00
2	T	ethene	133.000	135.904	-2.2	103	0.00
3	T	acetylene	133.000	139.167	-4.6	100	0.00
4	T	ethane	133.000	131.740	0.9	103	0.00
5	T	propane	133.000	130.583	1.8	101	0.00
6	T	n-butane	133.000	127.811	3.9	98	0.00
		Signal #2					
8	T	carbon dioxide	13300.000	13846.141	-4.1	95	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46884.D RSKEXT1.M Fri Mar 06 11:59:02 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46884.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46884.D\TCD2B.CH
Acq On    : 03 Mar 2015  17:10                        Operator: JDS
Sample    : WG514119-08 133umol/mol ALT SRC STD RSK1 Inst    : HP16
Misc      : 1,1 STD68250                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

```
---------------------------------------------------------------------------
 (#) = Out of Range            SPCC's out = 0  CCC's out = 0
 16G46884.D  RSKEXT1.M      Fri Mar 06 11:59:02 2015                    Page 2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\082015\16G48276.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDchem\1\DATA\082015\16G48276.D\TCD2B.CH
Acq On : 20 Aug 2015 15:30 Operator: JDS
Sample : WG535907-01 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 20 15:36:46 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	23204220	122.872	umol/
2) T	ethene	1.06	40466387	127.566	umol/
3) T	acetylene	1.14	44984832	132.920	umol/
4) T	ethane	1.40	42626890	125.411	umol/
5) T	propane	3.83	64295970	129.523	umol/
6) T	n-butane	5.34	85298719	131.578	umol/
8) T	carbon dioxide	0.20	82173682	14900.368	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G48276.D RSKEXT1.M Thu Aug 20 15:36:46 2015 Page 1

Signal #1 : C:\MSDchem\1\DATA\082015\16G48276.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDchem\1\DATA\082015\16G48276.D\TCD2B.CH
Acq On : 20 Aug 2015 15:30 Operator: JDS
Sample : WG535907-01 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 20 15:36 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

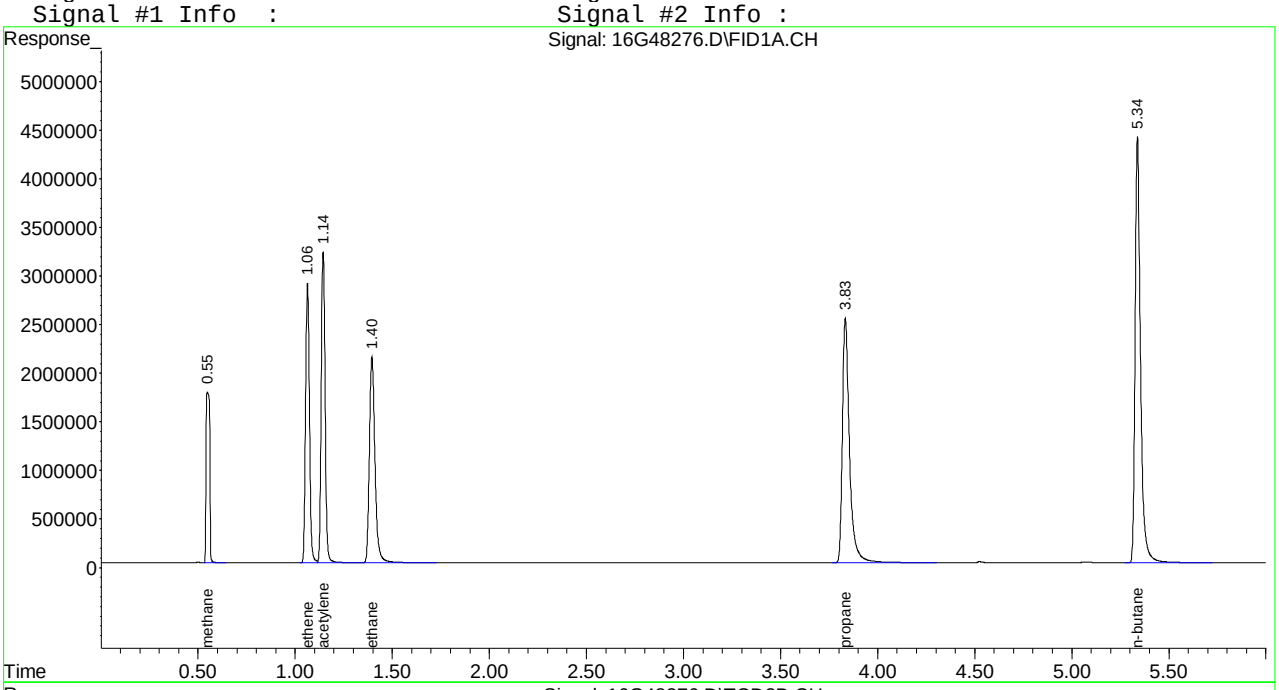

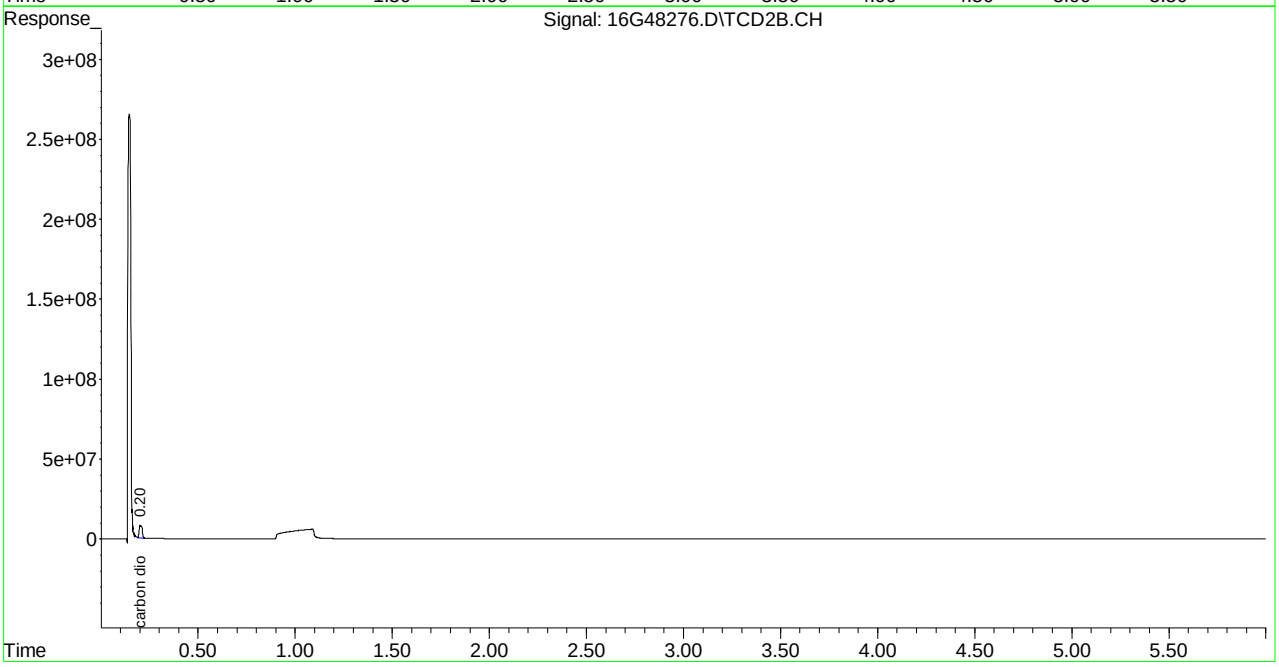

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\082015\16G48276.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\082015\16G48276.D\TCD2B.CH
Acq On : 20 Aug 2015 15:30 Operator: JDS
Sample : WG535907-01 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	122.872	7.6	93	0.00
2	T	ethene	133.000	127.566	4.1	97	0.00
3	T	acetylene	133.000	132.920	0.1	95	0.00
4	T	ethane	133.000	125.411	5.7	98	0.00
5	T	propane	133.000	129.523	2.6	100	0.00
6	T	n-butane	133.000	131.578	1.1	101	0.00

Signal #2

8	T	carbon dioxide	13300.000	14900.368	-12.0	102	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G48276.D RSKEXT1.M Fri Aug 21 08:58:10 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\082015\16G48276.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\082015\16G48276.D\TCD2B.CH
Acq On    : 20 Aug 2015  15:30                      Operator: JDS
Sample    : WG535907-01 133umol/mol CCV RSK175      Inst    : HP16
Misc      : 1,1 STD67274                            Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\082015\16G48287.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\082015\16G48287.D\TCD2B.CH
Acq On : 20 Aug 2015 18:01 Operator: JDS
Sample : WG535907-02 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 20 18:07:37 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	24332061	128.951	umol/
2) T	ethene	1.06	41111910	129.601	umol/
3) T	acetylene	1.14	43675111	129.050	umol/
4) T	ethane	1.39	43255674	127.261	umol/
5) T	propane	3.83	64006213	128.939	umol/
6) T	n-butane	5.34	83326024	128.535	umol/
8) T	carbon dioxide	0.21	74673700	13540.413	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G48287.D RSKEXT1.M Thu Aug 20 18:07:37 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\082015\16G48287.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\082015\16G48287.D\TCD2B.CH
Acq On : 20 Aug 2015 18:01 Operator: JDS
Sample : WG535907-02 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 20 18:07 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

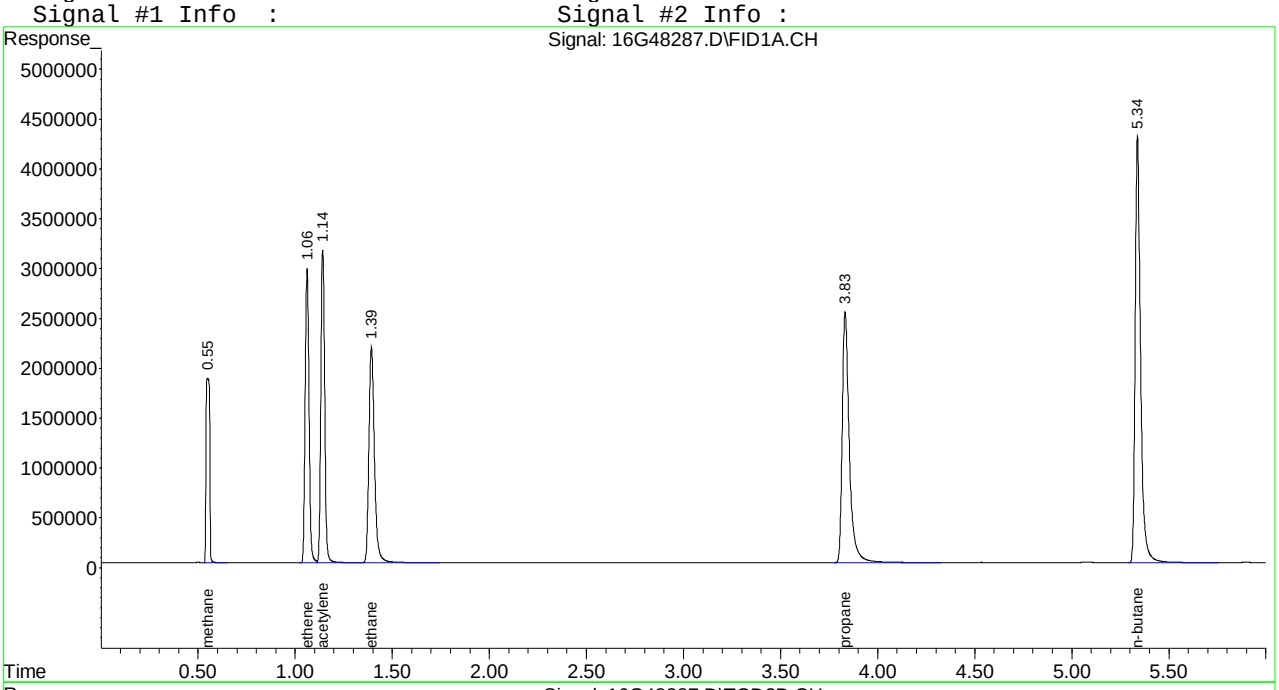

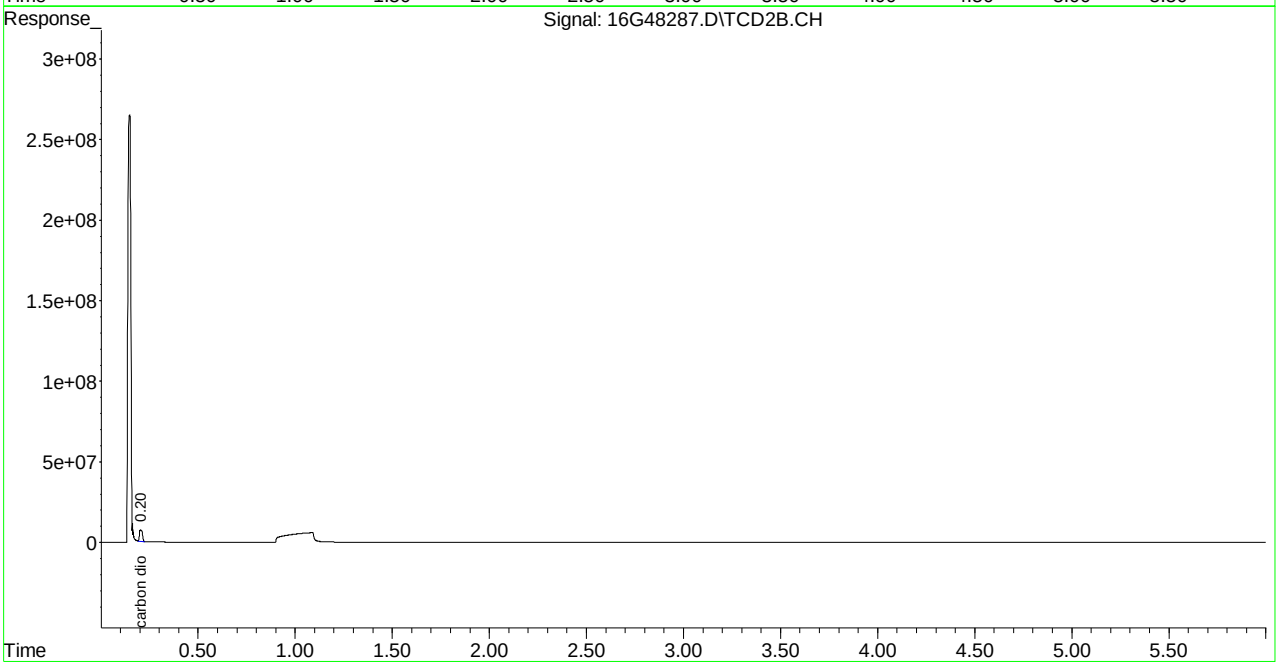

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\082015\16G48287.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\082015\16G48287.D\TCD2B.CH
Acq On : 20 Aug 2015 18:01 Operator: JDS
Sample : WG535907-02 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	128.951	3.0	98	0.00
2	T	ethene	133.000	129.601	2.6	99	0.00
3	T	acetylene	133.000	129.050	3.0	93	0.00
4	T	ethane	133.000	127.261	4.3	99	0.00
5	T	propane	133.000	128.939	3.1	99	0.00
6	T	n-butane	133.000	128.535	3.4	99	0.00

Signal #2

8	T	carbon dioxide	13300.000	13540.413	-1.8	93	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G48287.D RSKEXT1.M Fri Aug 21 08:58:17 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\082015\16G48287.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\082015\16G48287.D\TCD2B.CH
Acq On    : 20 Aug 2015  18:01                      Operator: JDS
Sample    : WG535907-02 133umol/mol CCV RSK175      Inst    : HP16
Misc      : 1,1 STD67274                            Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\082115\16G48293.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\082115\16G48293.D\TCD2B.CH
Acq On : 21 Aug 2015 12:03 Operator: JDS
Sample : WG536037-01 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 25 10:00:43 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	23652786	125.290	umol/
2) T	ethene	1.06	40052661	126.262	umol/
3) T	acetylene	1.15	44375721	131.120	umol/
4) T	ethane	1.40	42030260	123.656	umol/
5) T	propane	3.83	61923186	124.743	umol/
6) T	n-butane	5.34	81202974	125.260	umol/
8) T	carbon dioxide	0.20	77588571	14068.960	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G48293.D RSKEXT1.M Tue Aug 25 10:00:44 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\082115\16G48293.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\082115\16G48293.D\TCD2B.CH
Acq On : 21 Aug 2015 12:03 Operator: JDS
Sample : WG536037-01 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 25 10:00 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

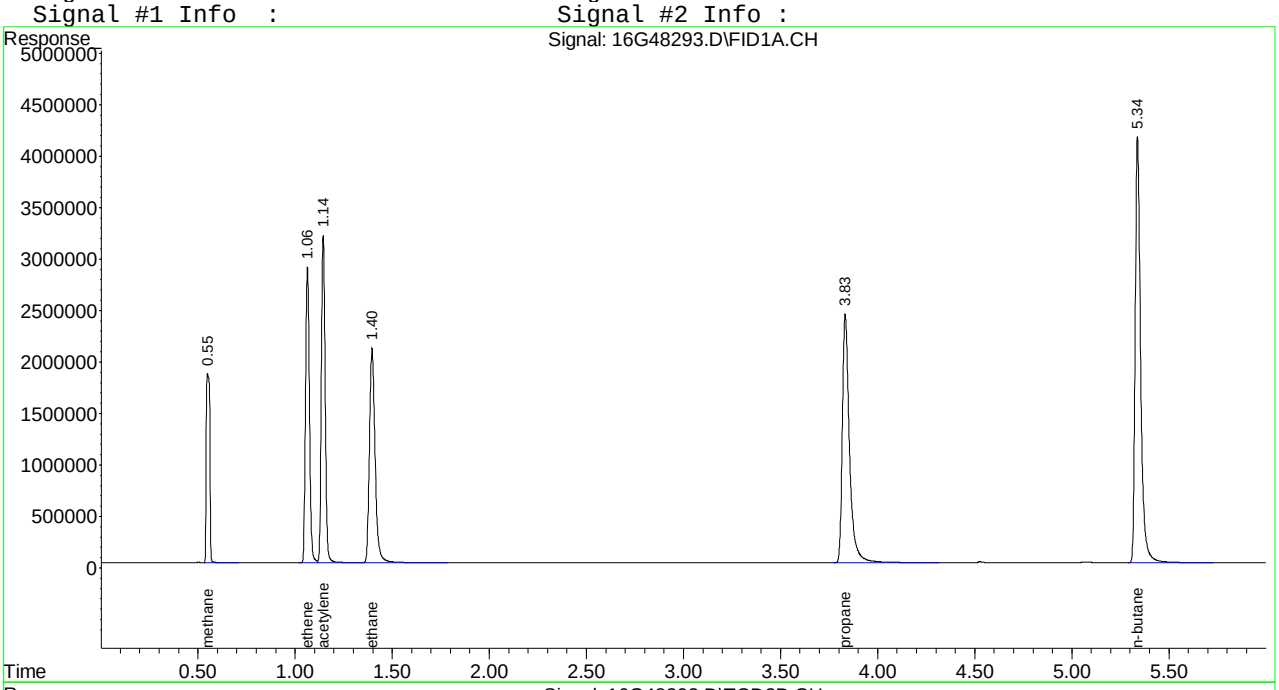

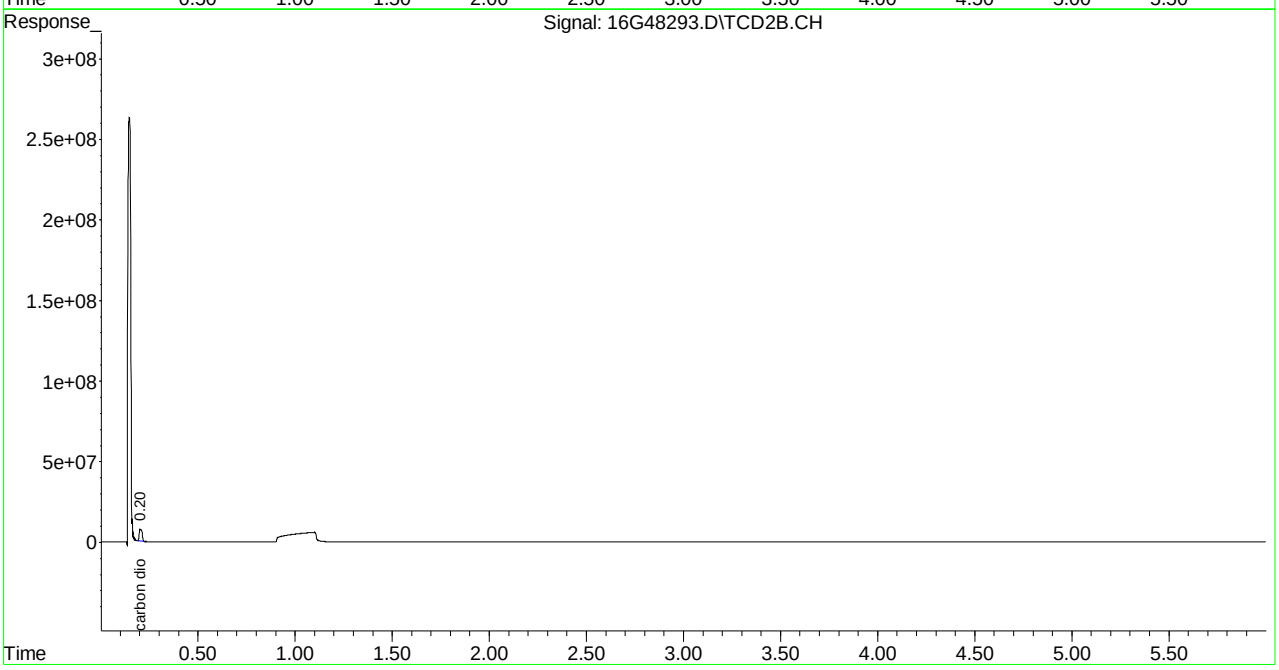

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\082115\16G48293.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\082115\16G48293.D\TCD2B.CH
Acq On : 21 Aug 2015 12:03 Operator: JDS
Sample : WG536037-01 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	125.290	5.8	95	0.00
2	T	ethene	133.000	126.262	5.1	96	0.00
3	T	acetylene	133.000	131.120	1.4	94	0.00
4	T	ethane	133.000	123.656	7.0	96	0.00
5	T	propane	133.000	124.743	6.2	96	0.00
6	T	n-butane	133.000	125.260	5.8	96	0.00

Signal #2

8	T	carbon dioxide	13300.000	14068.960	-5.8	96	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G48293.D RSKEXT1.M Tue Aug 25 10:02:16 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\082115\16G48293.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\082115\16G48293.D\TCD2B.CH
Acq On    : 21 Aug 2015  12:03                        Operator: JDS
Sample    : WG536037-01 133umol/mol CCV RSK175        Inst    : HP16
Misc      : 1,1 STD67274                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\082115\16G48304.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\082115\16G48304.D\TCD2B.CH
Acq On : 21 Aug 2015 16:43 Operator: JDS
Sample : WG536037-02 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 25 10:02:07 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	24044685	127.402	umol/
2) T	ethene	1.06	40854069	128.788	umol/
3) T	acetylene	1.14	42676544	126.100	umol/
4) T	ethane	1.39	43044152	126.639	umol/
5) T	propane	3.83	64047831	129.023	umol/
6) T	n-butane	5.34	84139257	129.790	umol/
8) T	carbon dioxide	0.21	73394427	13308.446	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G48304.D RSKEXT1.M Tue Aug 25 10:02:08 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\082115\16G48304.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\082115\16G48304.D\TCD2B.CH
Acq On : 21 Aug 2015 16:43 Operator: JDS
Sample : WG536037-02 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 25 10:02 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

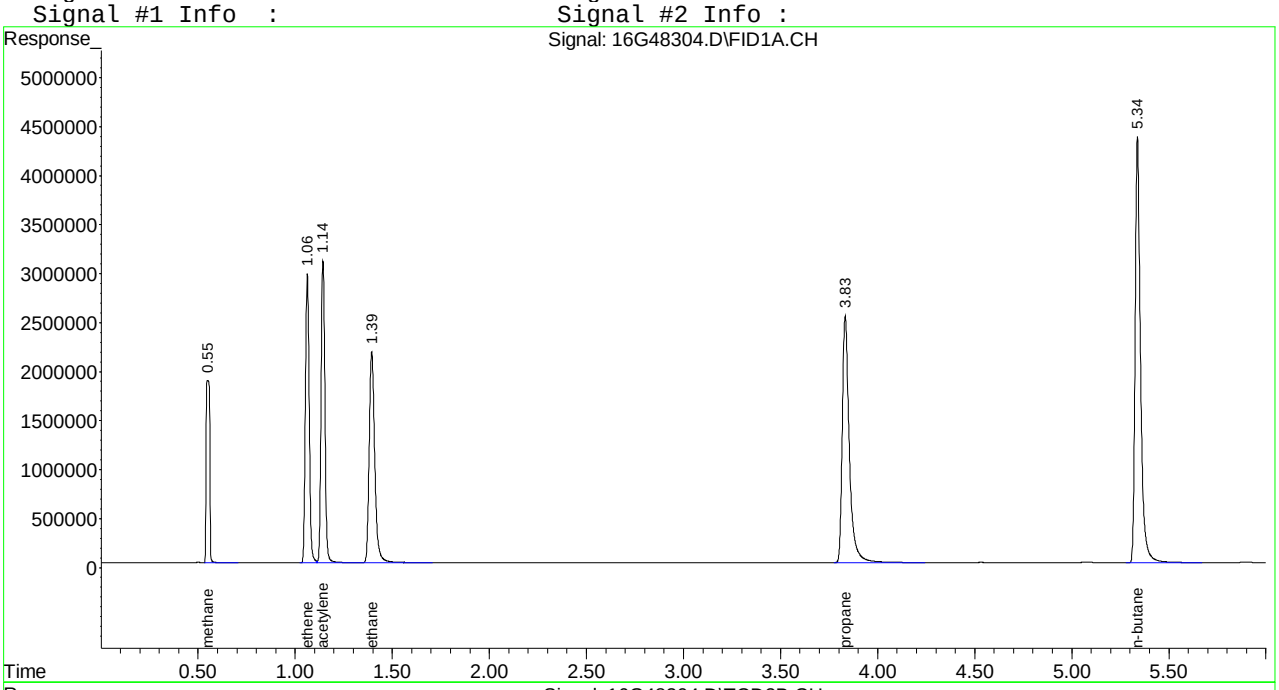

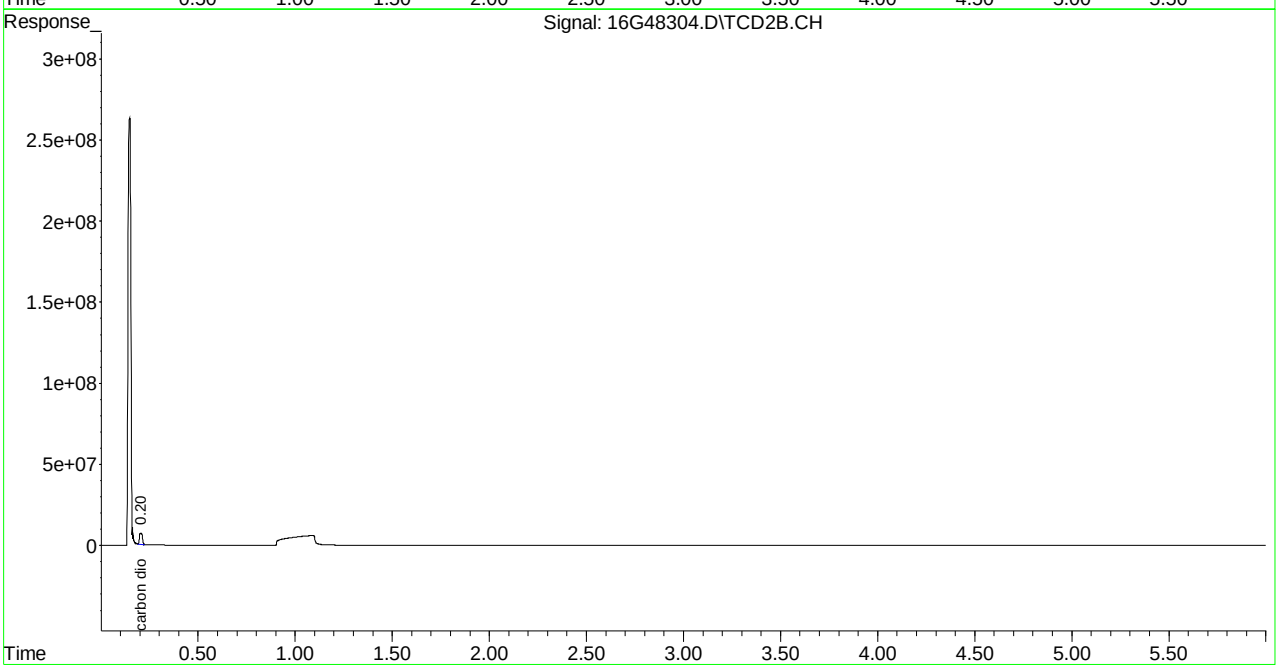

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\082115\16G48304.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\082115\16G48304.D\TCD2B.CH
Acq On : 21 Aug 2015 16:43 Operator: JDS
Sample : WG536037-02 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	127.402	4.2	96	0.00
2	T	ethene	133.000	128.788	3.2	98	0.00
3	T	acetylene	133.000	126.100	5.2	90	0.00
4	T	ethane	133.000	126.639	4.8	99	0.00
5	T	propane	133.000	129.023	3.0	100	0.00
6	T	n-butane	133.000	129.790	2.4	100	0.00

Signal #2

8	T	carbon dioxide	13300.000	13308.446	-0.1	91	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G48304.D RSKEXT1.M Tue Aug 25 10:02:22 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\082115\16G48304.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\082115\16G48304.D\TCD2B.CH
Acq On    : 21 Aug 2015  16:43                      Operator: JDS
Sample    : WG536037-02 133umol/mol CCV RSK175      Inst    : HP16
Misc      : 1,1 STD67274                            Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Microbac Laboratories Inc.
Daily Retention Time Window Determination

Login #: L15080992 **Run Date:** 08/20/2015 **Sample ID:** WG535907-01
Instrument: HP16 **Run Time:** 15:30 **Method:** RSK175
Workgroup (AAB#): WG535908 **File ID:** 16G48276

RT Standard	Analysis Date	File ID	Analyst
WG507817-01	01/13/2015	16G46159	JDS
WG507448-01	01/09/2015	16G46148	JDS
WG507013-01	01/06/2015	16G46125	JDS

Analyte	RT #1	RT #2	RT #3	STD	Lower	Upper
METHANE	.54	.55	.55	.55	0.520	0.580
ETHENE	1.06	1.06	1.06	1.06	1.030	1.090
ETHANE	1.39	1.39	1.39	1.4	1.370	1.430
PROPANE	3.82	3.83	3.83	3.83	3.800	3.860
N-BUTANE	5.33	5.34	5.34	5.34	5.310	5.370
CARBON DIOXIDE	.2	.2	.2	.2	0.170	0.230
ACETYLENE	1.14	1.14	1.14	1.14	1.110	1.170

RT_WIN - Modified 01/06/2010
PDF File ID: 4351622
Report generated 08/25/2015 11:02

Microbac Laboratories Inc.
Daily Retention Time Window Determination

Login #: L15080992 **Run Date:** 08/21/2015 **Sample ID:** WG536037-01
Instrument: HP16 **Run Time:** 12:03 **Method:** RSK175
Workgroup (AAB#): WG536040 **File ID:** 16G48293

RT Standard	Analysis Date	File ID	Analyst
WG507817-01	01/13/2015	16G46159	JDS
WG507448-01	01/09/2015	16G46148	JDS
WG507013-01	01/06/2015	16G46125	JDS

Analyte	RT #1	RT #2	RT #3	STD	Lower	Upper
METHANE	.54	.55	.55	.55	0.520	0.580
ETHENE	1.06	1.06	1.06	1.06	1.030	1.090
ETHANE	1.39	1.39	1.39	1.4	1.370	1.430
PROPANE	3.82	3.83	3.83	3.83	3.800	3.860
N-BUTANE	5.33	5.34	5.34	5.34	5.310	5.370
CARBON DIOXIDE	.2	.2	.2	.2	0.170	0.230
ACETYLENE	1.14	1.14	1.14	1.15	1.120	1.180

RT_WIN - Modified 01/06/2010
PDF File ID: 4351622
Report generated 08/25/2015 11:02

2.1.2.5 Raw QC Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\082015\16G48277.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\082015\16G48277.D\TCD2B.CH
Acq On : 20 Aug 2015 16:05 Operator: JDS
Sample : WG535908-01 BLANK RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 20 16:12:05 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	320376	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G48277.D RSKEXT1.M Thu Aug 20 16:22:20 2015 Page 1

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\082015\16G48277.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\082015\16G48277.D\TCD2B.CH
Acq On    : 20 Aug 2015  16:05                        Operator: JDS
Sample    : WG535908-01 BLANK  RSK175                 Inst    : HP16
Misc      : 1,1                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Aug 20 16:12 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

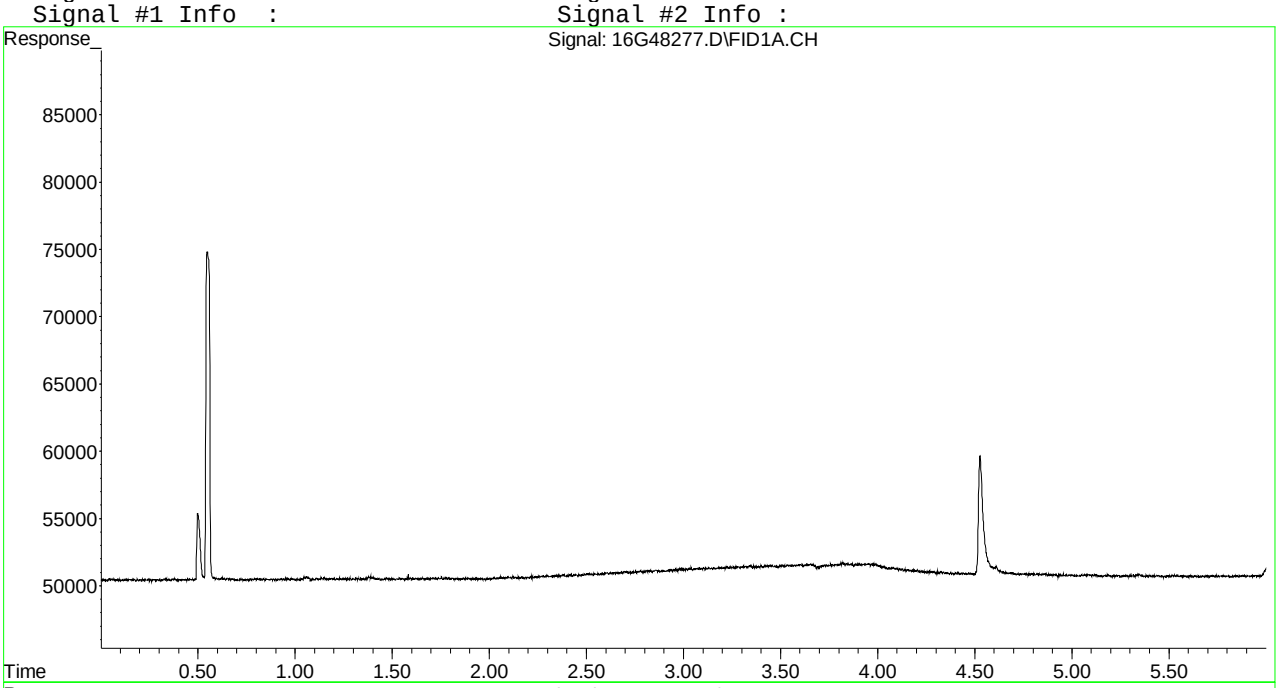

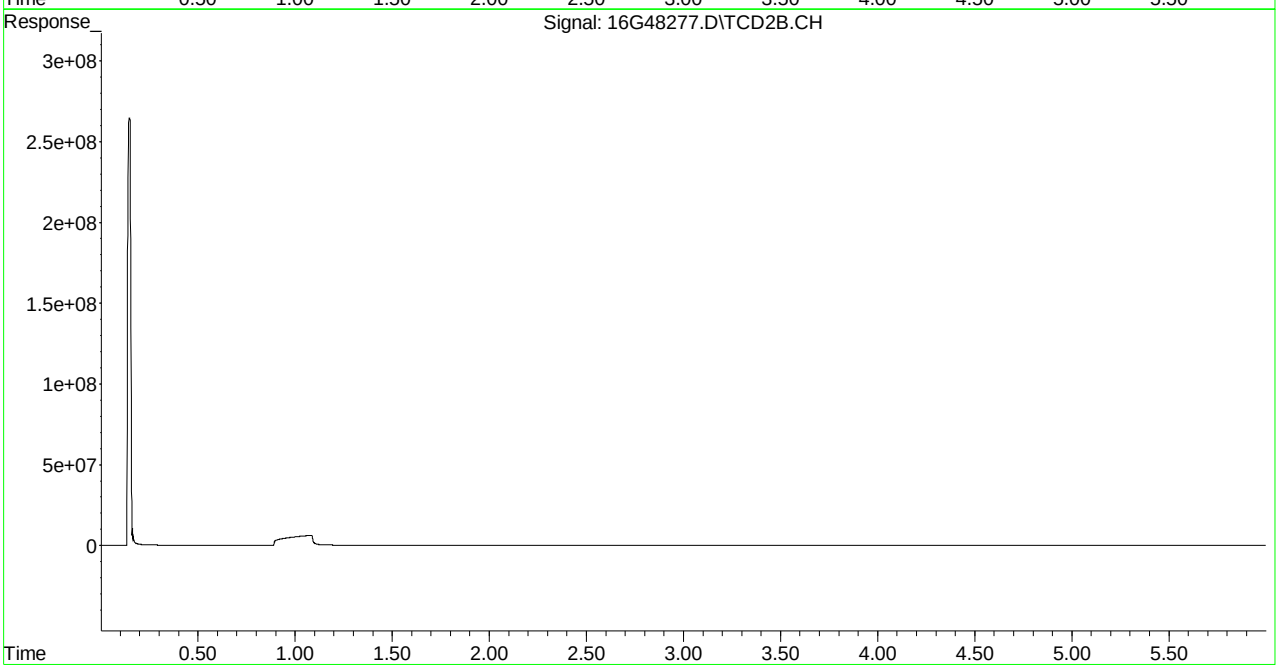

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\082115\16G48294.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\082115\16G48294.D\TCD2B.CH
Acq On : 21 Aug 2015 14:48 Operator: JDS
Sample : WG536040-01 BLANK RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 25 10:00:45 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	299056	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G48294.D RSKEXT1.M Tue Aug 25 10:00:57 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\082115\16G48294.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\082115\16G48294.D\TCD2B.CH
Acq On : 21 Aug 2015 14:48 Operator: JDS
Sample : WG536040-01 BLANK RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 25 10:00 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

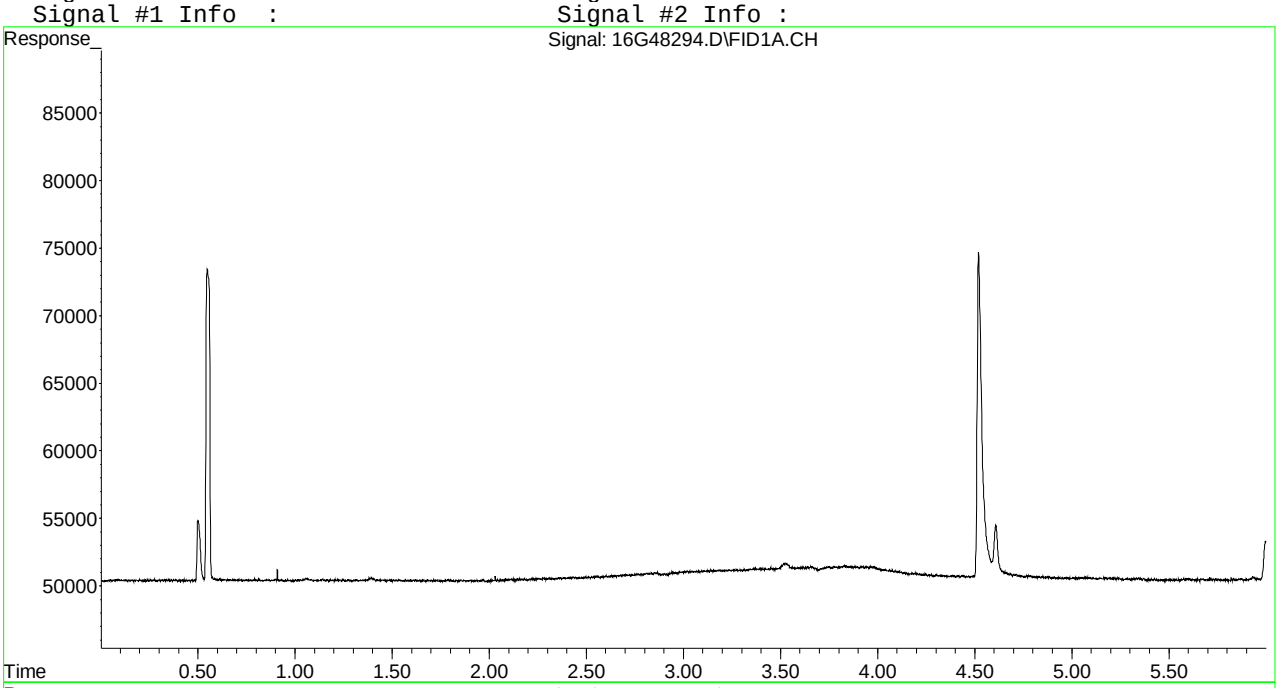

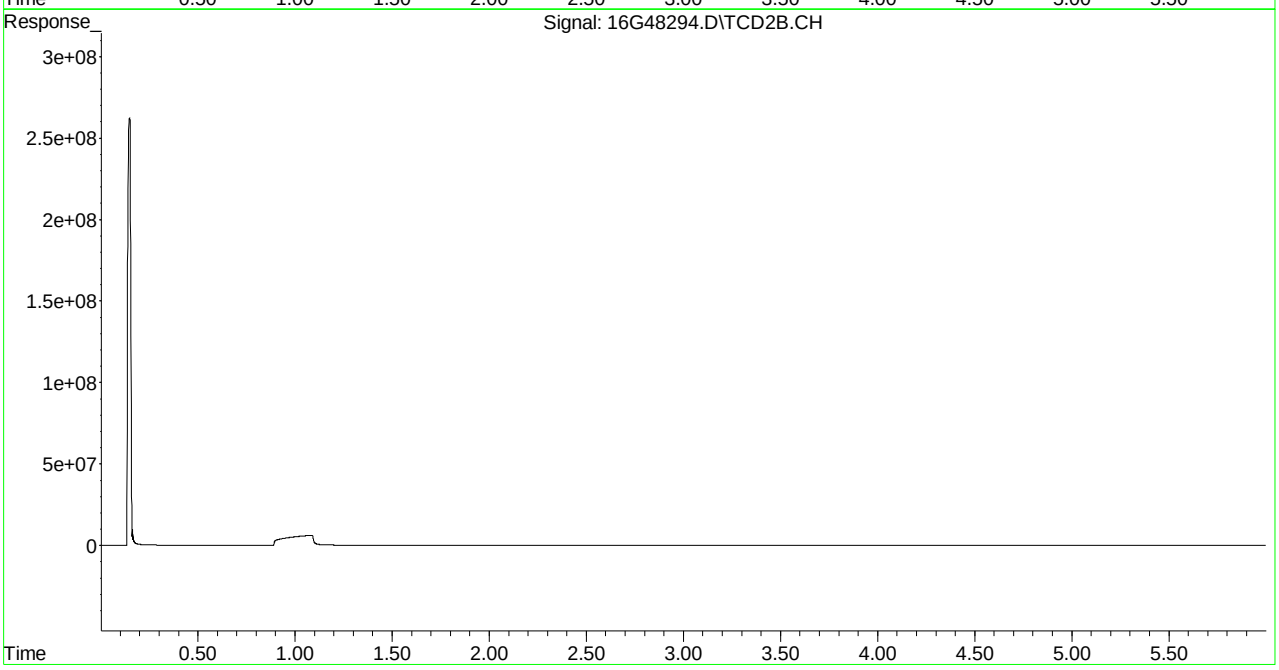

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\082015\16G48278.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDchem\1\DATA\082015\16G48278.D\TCD2B.CH
Acq On : 20 Aug 2015 16:17 Operator: JDS
Sample : WG535908-02 67umol/mol LCS RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 20 16:23:45 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	12232970	63.731	umol/
2) T	ethene	1.06	20123842	63.438	umol/
3) T	acetylene	1.14	20561957	60.756	umol/
4) T	ethane	1.40	20936043	61.595	umol/
5) T	propane	3.83	30263631	60.966	umol/
6) T	n-butane	5.34	38385958	59.212	umol/
8) T	carbon dioxide	0.20	36060875	6538.837	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G48278.D RSKEXT1.M Thu Aug 20 16:23:45 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\082015\16G48278.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDchem\1\DATA\082015\16G48278.D\TCD2B.CH
Acq On : 20 Aug 2015 16:17 Operator: JDS
Sample : WG535908-02 67umol/mol LCS RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 20 16:23 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

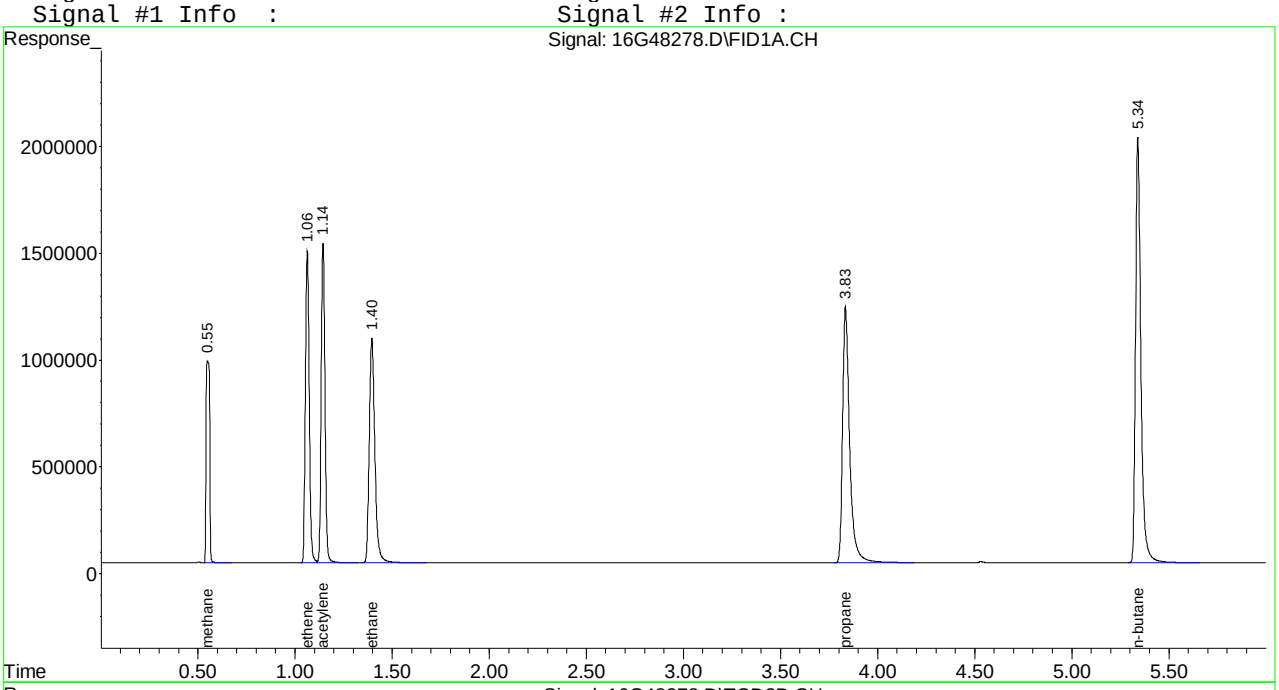

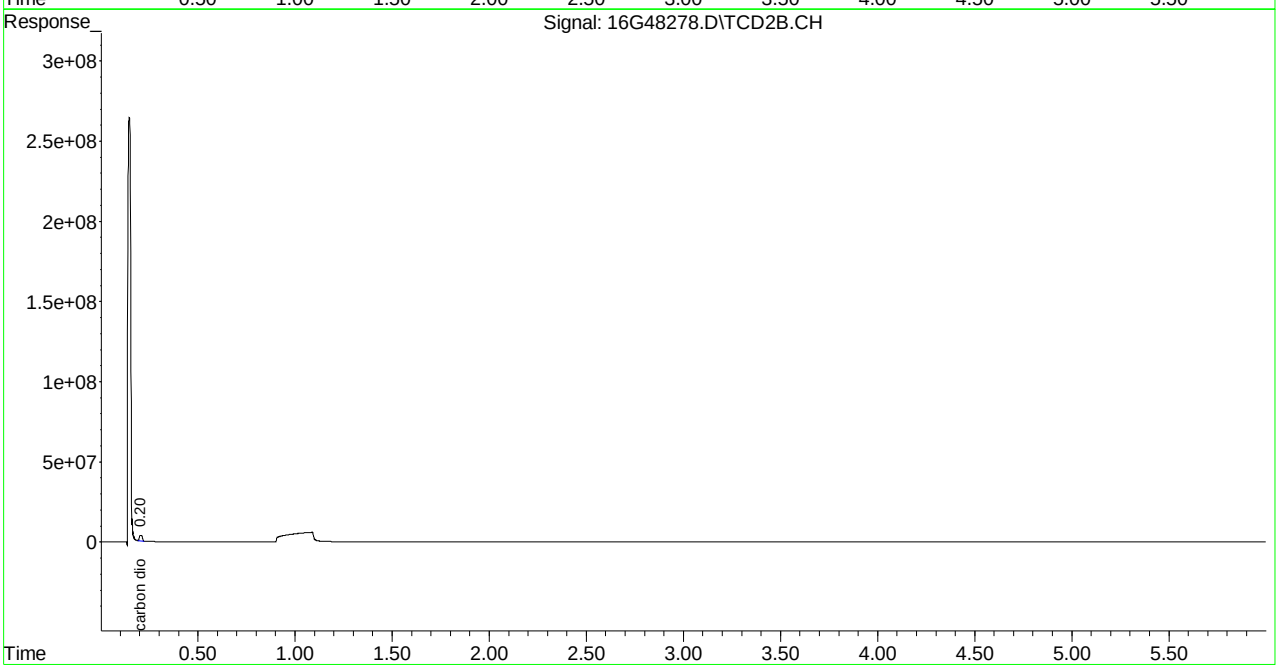

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\082115\16G48295.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\082115\16G48295.D\TCD2B.CH
Acq On : 21 Aug 2015 15:00 Operator: JDS
Sample : WG536040-02 67umol/mol LCS RSK175 Inst : HP16
Misc : 1,1 STD6820 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 25 10:01:10 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	12873183	67.182	umol/
2) T	ethene	1.06	21608776	68.119	umol/
3) T	acetylene	1.15	22730148	67.163	umol/
4) T	ethane	1.40	22456010	66.067	umol/
5) T	propane	3.83	32725191	65.924	umol/
6) T	n-butane	5.34	41413515	63.883	umol/
8) T	carbon dioxide	0.20	35610443	6457.161	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G48295.D RSKEXT1.M Tue Aug 25 10:01:11 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\082115\16G48295.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\082115\16G48295.D\TCD2B.CH
Acq On : 21 Aug 2015 15:00 Operator: JDS
Sample : WG536040-02 67umol/mol LCS RSK175 Inst : HP16
Misc : 1,1 STD6820 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 25 10:01 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

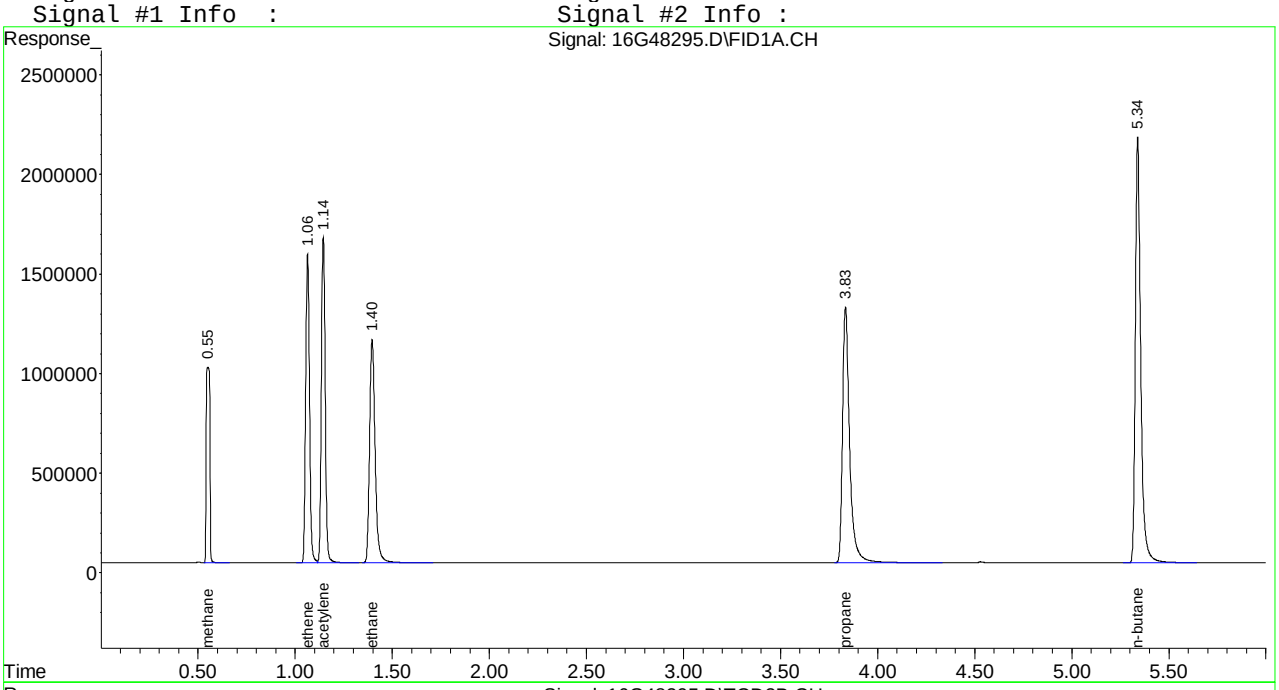

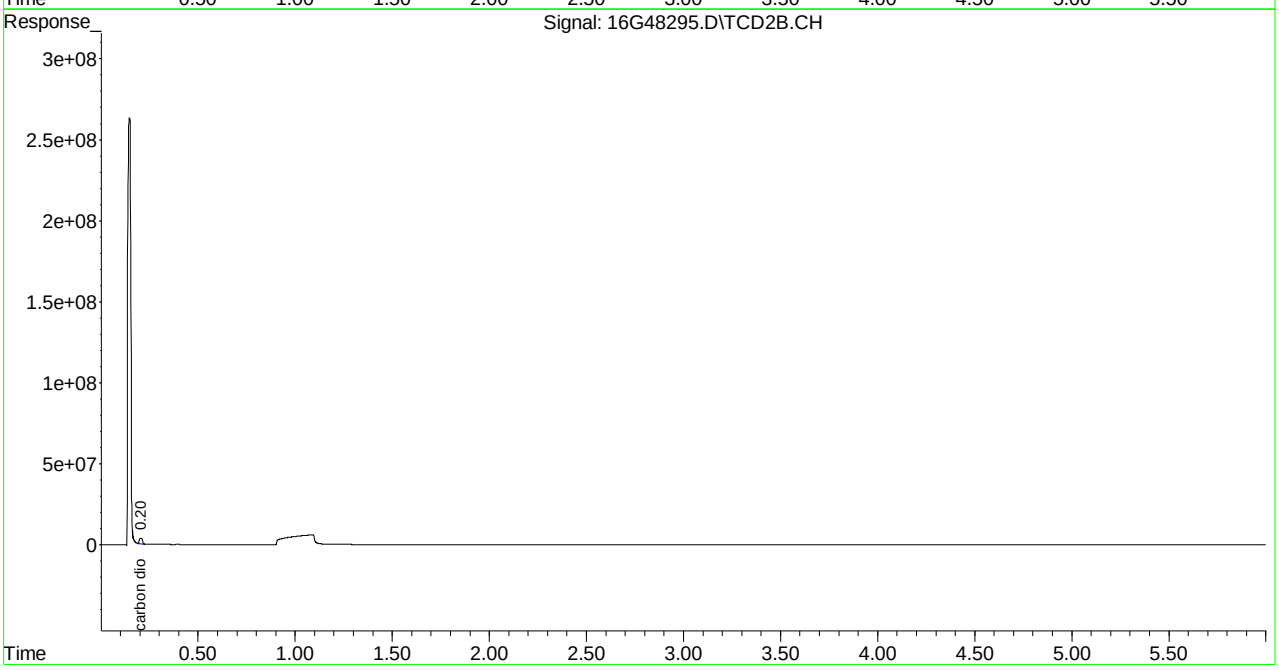

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\082015\16G48279.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDchem\1\DATA\082015\16G48279.D\TCD2B.CH
Acq On : 20 Aug 2015 16:29 Operator: JDS
Sample : WG535908-03 67umol/mol LCS2 RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 20 16:35:22 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	12416118	64.719	umol/
2) T	ethene	1.06	20385854	64.264	umol/
3) T	acetylene	1.14	20931853	61.849	umol/
4) T	ethane	1.39	21199738	62.371	umol/
5) T	propane	3.83	30489813	61.421	umol/
6) T	n-butane	5.34	38601421	59.545	umol/
8) T	carbon dioxide	0.20	33889263	6145.063	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G48279.D RSKEXT1.M Thu Aug 20 16:35:22 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\082015\16G48279.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDchem\1\DATA\082015\16G48279.D\TCD2B.CH
Acq On : 20 Aug 2015 16:29 Operator: JDS
Sample : WG535908-03 67umol/mol LCS2 RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 20 16:35 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

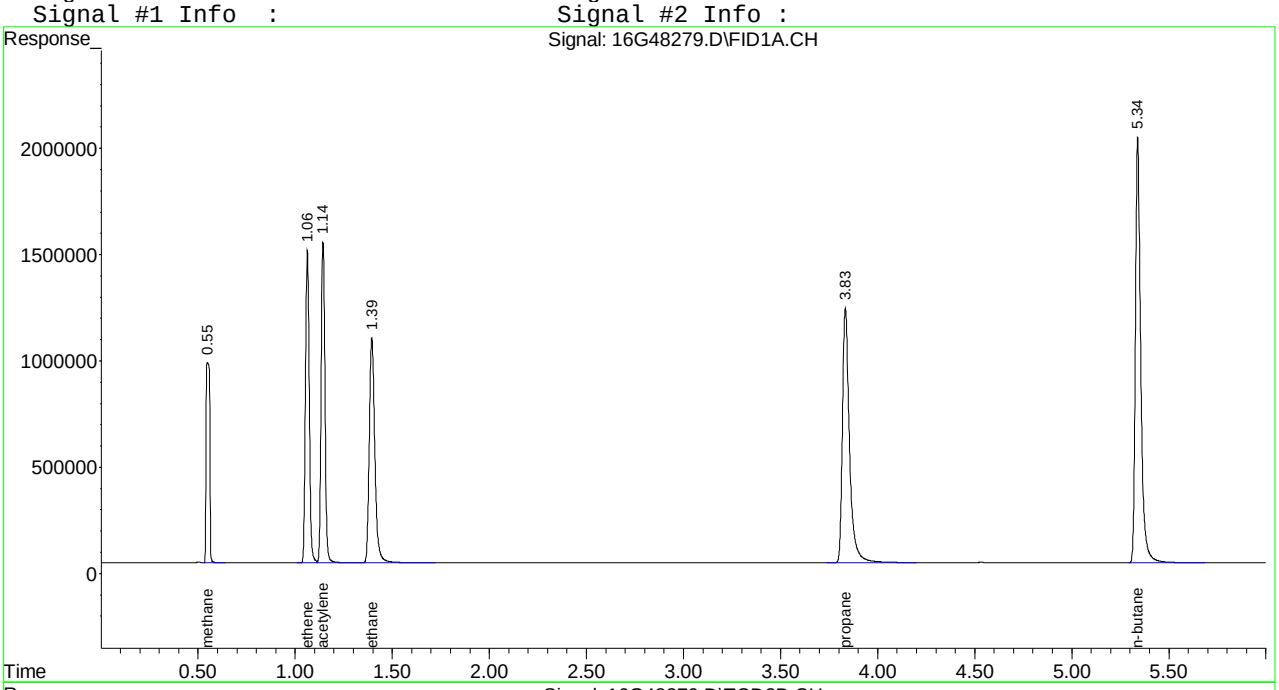

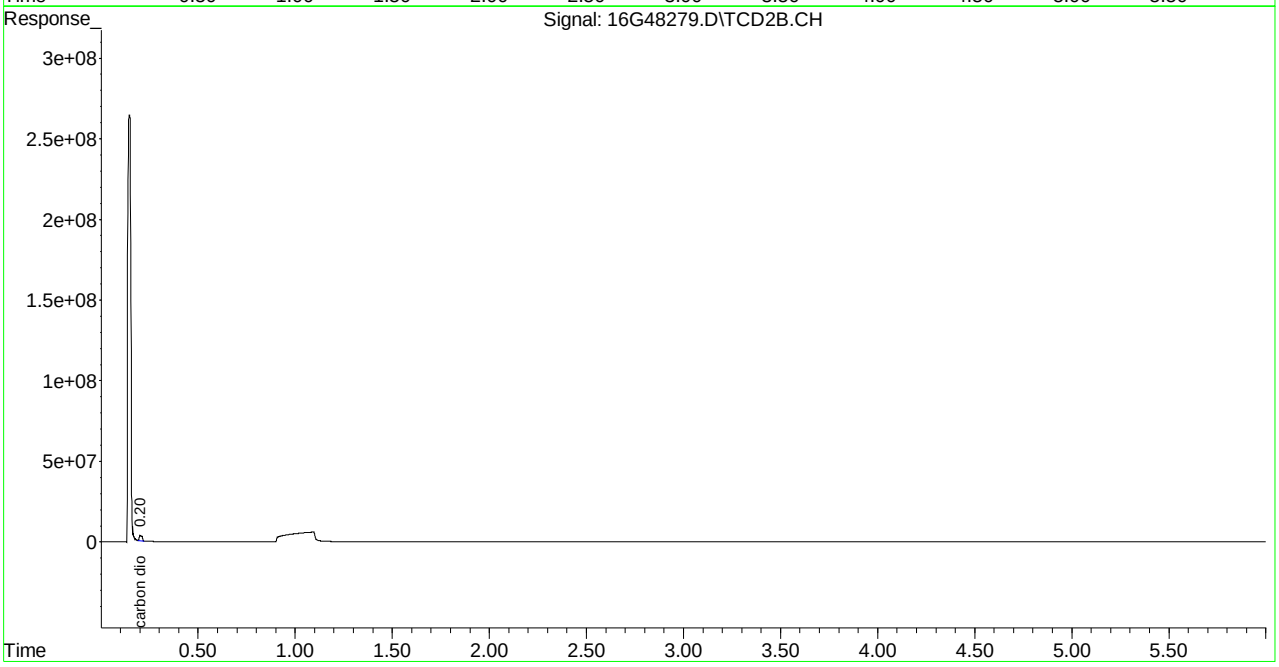

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\082115\16G48296.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\082115\16G48296.D\TCD2B.CH
Acq On : 21 Aug 2015 15:11 Operator: JDS
Sample : WG536040-03 67umol/mol LCS2 RSK175 Inst : HP16
Misc : 1,1 STD6820 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 25 10:01:13 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	12982521	67.772	umol/
2) T	ethene	1.06	21991413	69.326	umol/
3) T	acetylene	1.14	22807062	67.390	umol/
4) T	ethane	1.40	22877992	67.309	umol/
5) T	propane	3.84	33796069	68.082	umol/
6) T	n-butane	5.34	43780163	67.533	umol/
8) T	carbon dioxide	0.20	38880467	7050.107	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G48296.D RSKEXT1.M Tue Aug 25 10:01:13 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\082115\16G48296.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\082115\16G48296.D\TCD2B.CH
Acq On : 21 Aug 2015 15:11 Operator: JDS
Sample : WG536040-03 67umol/mol LCS2 RSK175 Inst : HP16
Misc : 1,1 STD6820 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 25 10:01 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

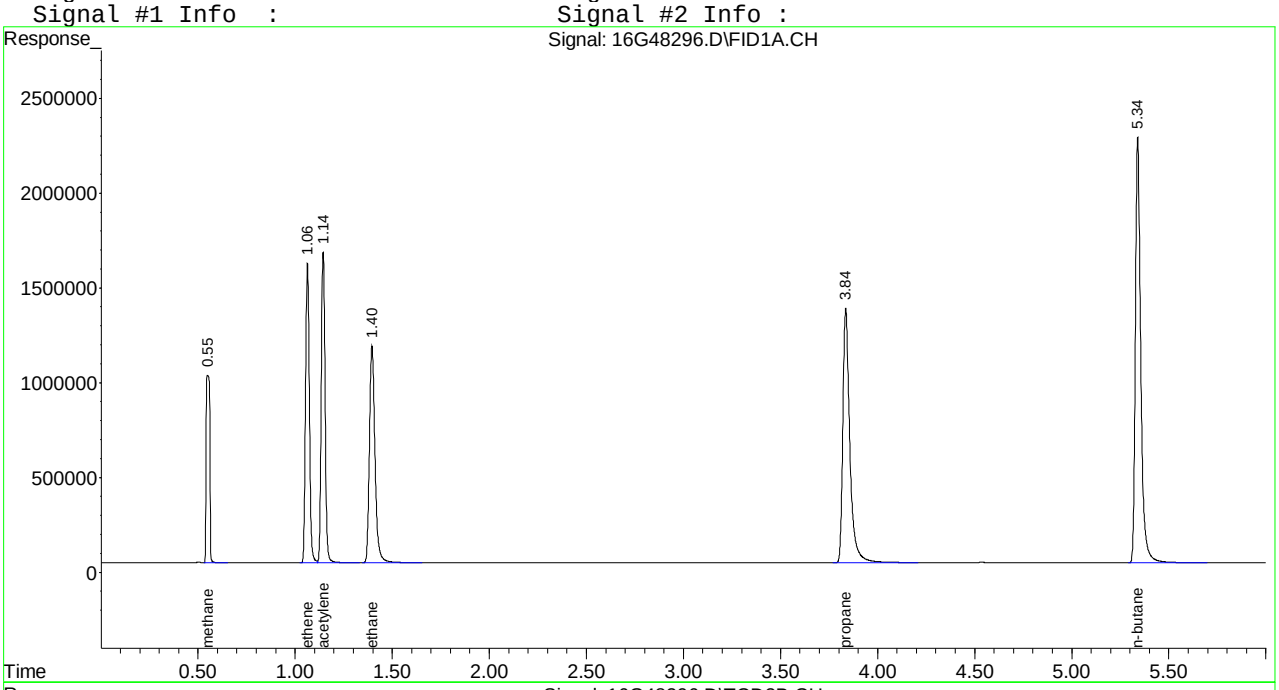

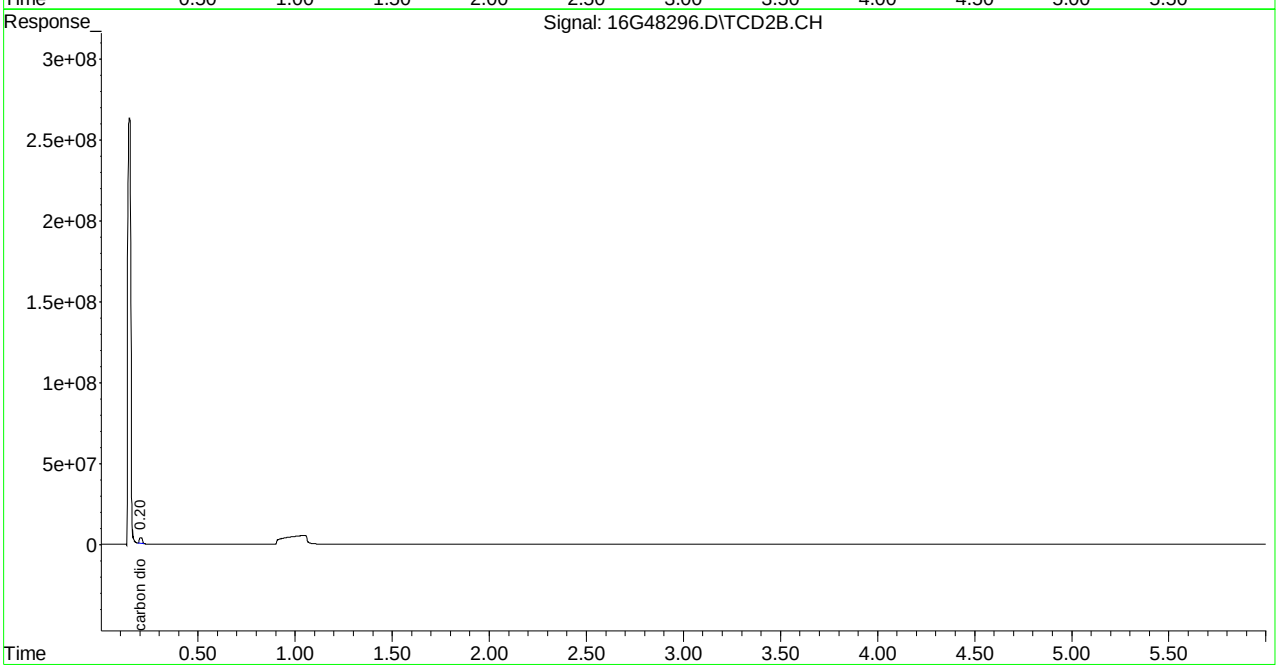

2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW22-081815	**Prep Method:**	6850	**Prep Date:**	08/24/2015 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG536249	**Analyst:**	JWR	**Run Date:**	08/24/2015 22:09
Collect Date:	08/18/2015 08:05	**Dilution:**	1	**File ID:**	1LM.LM31450
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3.62		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15080992-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW25-081815	**Prep Method:**	6850	**Prep Date:**	08/24/2015 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG536249	**Analyst:**	JWR	**Run Date:**	08/24/2015 22:28
Collect Date:	08/18/2015 09:40	**Dilution:**	5	**File ID:**	1LM.LM31451
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	24.7		2.00	1.00	0.500

Certificate of Analysis

Sample #:	L15080992-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW12-081815	**Prep Method:**	6850	**Prep Date:**	08/24/2015 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG536249	**Analyst:**	JWR	**Run Date:**	08/24/2015 22:47
Collect Date:	08/18/2015 11:05	**Dilution:**	10000	**File ID:**	1LM.LM31452
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	17300		4000	2000	1000

Certificate of Analysis

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15080992-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW06-081815	**Prep Method:**	6850	**Prep Date:**	08/24/2015 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG536249	**Analyst:**	JWR	**Run Date:**	08/24/2015 23:06
Collect Date:	08/18/2015 13:40	**Dilution:**	1000	**File ID:**	1LM.LM31453
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2050		400	200	100

Certificate of Analysis

Sample #:	L15080992-09	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW11-081815	**Prep Method:**	6850	**Prep Date:**	08/24/2015 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG536249	**Analyst:**	JWR	**Run Date:**	08/24/2015 23:44
Collect Date:	08/18/2015 14:50	**Dilution:**	10000	**File ID:**	1LM.LM31455
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	17600		4000	2000	1000

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1415 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG536249-01 MCT	10,020.	
-02 Blank	0.51	
-03 LCS	0.63	
-04 LCS2	0.71	
L15080772-01	1.40	
L15080899-01	2,840.	
L15080904-01	3,200.	
-03	1,704.	
-05	6,230.	
-07	2,520.	
L15080943-01	180.4	
L15080992-01	4,390.	
-03	651.	
-05	4,940.	
-07	876.	
-09	2,510.	
L15081073-01	2,550.	
-03	2,470.	Sample will need reanalyzed
-05	1,542.	
-06	1,541.	
-07	2,500.	

Analyst: John Richards

Date/Time: 08/24/15 17:20

DCN#112743

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 080515_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 140701254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: ICAL-Only

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD69537 (08/05/2015)

CCV STD: NA LCS STD: NA MS/MSD STD: NA

Comments: ICAL WG533952 : Alternate Source STD69913

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM31292	WG533952-01 CCB	1	1		08/05/15 22:09
2	1LM.LM31293	WG533952-02 STD (0.1 ug/L)	1	1	STD69537	08/05/15 22:28
3	1LM.LM31294	WG533952-03 STD (0.2 ug/L)	1	1	STD69537	08/05/15 22:47
4	1LM.LM31295	WG533952-04 STD (0.5 ug/L)	1	1	STD69537	08/05/15 23:06
5	1LM.LM31296	WG533952-05 STD (1.0 ug/L)	1	1	STD69537	08/05/15 23:25
6	1LM.LM31297	WG533952-06 STD (2.0 ug/L)	1	1	STD69537	08/05/15 23:44
7	1LM.LM31298	WG533952-07 STD (5.0 ug/L)	1	1	STD69537	08/06/15 00:03
8	1LM.LM31299	WG533952-08 STD (10 ug/L)	1	1	STD69537	08/06/15 00:22
9	1LM.LM31300	WG533952-09 SSCV (1.0 ug/L)	1	1	STD69913	08/06/15 00:41

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 10-AUG-15

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 082415_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 140701254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG536249 (waters)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD69537 (08/05/2015)

CCV STD: STD69537 LCS STD: STD69913 MS/MSD STD: NA

Comments: Samples were analyzed neat and/or at dilutions based on their historical results. The result for sample L15081073-03 at a 100x dilution was over the calibration range. The result for this sample at this dilution will not be reported. This sample will be prepared and reanalyzed at a further dilution in a separate workgroup.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM31431	WG536250-01 CCB	1	1		08/24/15 16:09
2	1LM.LM31432	WG536250-02 CCV (1.0ug/L)	1	1	STD69537	08/24/15 16:28
3	1LM.LM31433	WG536249-05 MRL (0.2ug/L)	1	1	STD69537	08/24/15 16:47
4	1LM.LM31434	WG536249-01 MCT (0.2ug/L)	1	1	STD69913	08/24/15 17:06
5	1LM.LM31435	WG536249-02 BLANK	1	1		08/24/15 17:25
6	1LM.LM31436	WG536249-03 LCS (0.2ug/L)	1	1	STD69913	08/24/15 17:44
7	1LM.LM31437	WG536249-04 LCS2 (0.2ug/L)	1	1	STD69913	08/24/15 18:03
8	1LM.LM31438	L15080772-01	1	1		08/24/15 18:22
9	1LM.LM31439	L15080899-01	1	1		08/24/15 18:41
10	1LM.LM31440	L15080899-01 (RR 5x)(NR)	1	5		08/24/15 19:00
11	1LM.LM31441	L15080943-01	1	1		08/24/15 19:19
12	1LM.LM31442	L15080904-01	1	1		08/24/15 19:38
13	1LM.LM31443	L15080904-03	1	1		08/24/15 19:57
14	1LM.LM31444	WG536250-03 CCV (1.0ug/L)	1	1	STD69537	08/24/15 20:16
15	1LM.LM31445	WG536249-06 MRL (0.2ug/L)	1	1	STD69537	08/24/15 20:34
16	1LM.LM31446	WG536250-04 CCB	1	1		08/24/15 20:53
17	1LM.LM31447	L15080904-05	1	1		08/24/15 21:12
18	1LM.LM31448	L15080904-05 (RR 5x)(NR)	1	5		08/24/15 21:31
19	1LM.LM31449	L15080904-07 (50x)	1	50		08/24/15 21:50
20	1LM.LM31450	L15080992-01	1	1		08/24/15 22:09
21	1LM.LM31451	L15080992-03 (5x)	1	5		08/24/15 22:28
22	1LM.LM31452	L15080992-05 (10,000x)	1	10000		08/24/15 22:47
23	1LM.LM31453	L15080992-07 (1,000x)	1	1000		08/24/15 23:06
24	1LM.LM31454	L15080992-09 (1,000x)(NR)	1	1000		08/24/15 23:25
25	1LM.LM31455	L15080992-09 (RR 10,000x)	1	10000		08/24/15 23:44
26	1LM.LM31456	WG536250-05 CCV (1.0ug/L)	1	1	STD69537	08/25/15 00:03
27	1LM.LM31457	WG536249-07 MRL (0.2ug/L)	1	1	STD69537	08/25/15 00:22
28	1LM.LM31458	WG536250-06 CCB	1	1		08/25/15 00:41
29	1LM.LM31459	L15081073-01	1	1		08/25/15 01:00
30	1LM.LM31460	L15081073-03 (100x)(NR)	1	100		08/25/15 01:18
31	1LM.LM31461	L15081073-05	1	1		08/25/15 01:37
32	1LM.LM31462	L15081073-06	1	1		08/25/15 01:56

Page: 1 Approved: 28-AUG-15

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 082415_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 140701254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG536249 (waters)

Internal STD: COA18071 Surrogate STD: NA STD69537 (08/05/2015)

CCV STD: STD69537 LCS STD: STD69913 NA

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
33	1LM.LM31463	L15081073-07	1	1		08/25/15 02:15
34	1LM.LM31464	WG536250-07 CCV (1.0ug/L)	1	1	STD69537	08/25/15 02:34
35	1LM.LM31465	WG536249-08 MRL (0.2ug/L)	1	1	STD69537	08/25/15 02:53
36	1LM.LM31466	WG536250-08 CCB	1	1		08/25/15 03:12

Comments

Seq.	Rerun	Dil.	Reason	Analytes
10				
	L15080899-01 (RR 5x)(NR) : The result for this sample will be reported from its analysis as neat.			
18				
	L15080904-05 (RR 5x)(NR) : The result for this sample will be reported from its analysis as neat.			
24	X	10000	Over Calibration Range	
	L15080992-09 (1,000x)(NR) : The result for this sample will be reported from its analysis at a 10,000x dilution.			
30	X	5000	Over Calibration Range	
	L15081073-03 (100x)(NR) : The result for this sample at this dilution will not be reported. This sample will be prepared and reanalyzed at a further dilution in a separate workgroup.			

Page: 2 Approved: 28-AUG-15

Microbac Laboratories Inc.

Data Checklist

Date: 05-AUG-2015
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG533952
Runlog ID: 69666
Analytical Workgroups: ICAL ONLY

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	NA
Limit of quantitation verification (LOQV) (LCMS)	NA
Special standards	NA
Blanks	NA
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	NA
Recoveries	NA
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	NA
Samples	NA
TCL hits	NA
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 06-AUG-2015 John Richards

Secondary Reviewer: 10-AUG-2015 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-10-2015 15:44:17

Microbac Laboratories Inc.

Data Checklist

Date: 24-AUG-2015
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 70121
Analytical Workgroups: L15080772, 0899, 0904, 0943, 0992, 1073

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	LSB

Primary Reviewer: 28-AUG-2015 John Richards

Secondary Reviewer: 28-AUG-2015 Leslie Bucisa

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-28-2015 13:45:21

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG536249

Login Number: L15080992

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW22-081815	01	08/18/15					08/24/2015	6.3	28		08/24/15	.3	28	
50WW25-081815	03	08/18/15					08/24/2015	6.2	28		08/24/15	.3	28	
50WW12-081815	05	08/18/15					08/24/2015	6.2	28		08/24/15	.3	28	
50WW06-081815	07	08/18/15					08/24/2015	6.1	28		08/24/15	.3	28	
50WW11-081815	09	08/18/15					08/24/2015	6	28		08/24/15	.4	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4360078
Report generated 08/28/2015 15:29

METHOD BLANK SUMMARY

Login Number: L15080992
Blank File ID: 1LM.LM31435
Prep Date: 08/24/15 15:00
Analyzed Date: 08/24/15 17:25
Analyst: JWR

Work Group: WG536249
Blank Sample ID: WG536249-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG536249-05	1LM.LM31433	08/24/15 16:47	01
MCT	WG536249-01	1LM.LM31434	08/24/15 17:06	01
LCS	WG536249-03	1LM.LM31436	08/24/15 17:44	01
LCS2	WG536249-04	1LM.LM31437	08/24/15 18:03	01
QCMRL	WG536249-06	1LM.LM31445	08/24/15 20:34	01
50WW22-081815	L15080992-01	1LM.LM31450	08/24/15 22:09	01
50WW25-081815	L15080992-03	1LM.LM31451	08/24/15 22:28	DL01
50WW12-081815	L15080992-05	1LM.LM31452	08/24/15 22:47	DL01
50WW06-081815	L15080992-07	1LM.LM31453	08/24/15 23:06	DL01
50WW11-081815	L15080992-09	1LM.LM31455	08/24/15 23:44	DL01
QCMRL	WG536249-07	1LM.LM31457	08/25/15 00:22	01
QCMRL	WG536249-08	1LM.LM31465	08/25/15 02:53	01

Report Name: BLANK_SUMMARY
PDF File ID: 4360079
Report generated 08/28/2015 15:29

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15080992 Prep Date: 08/24/15 15:00 Sample ID: WG536249-02
Instrument ID: LCMS1 Run Date: 08/24/15 17:25 Prep Method: 6850
File ID: 1LM.LM31435 Analyst: JWR Method: 6850
Workgroup (AAB#): WG536249 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-06-AUG-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4360080
28-AUG-2015 15:29

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15080992 Analyst: JWR Prep Method: 6850
Instrument ID: LCMS1 Matrix: Water Method: 6850
Workgroup (AAB#): WG536249 Units: ug/L
QC Key: DOD4 Lot #: STD69913

Sample ID: WG536249-03 LCS File ID: 1LM.LM31436 Run Date: 08/24/2015 17:44
Sample ID: WG536249-04 LCS2 File ID: 1LM.LM31437 Run Date: 08/24/2015 18:03

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Perchlorate	0.200	0.206	103	0.200	0.210	105	1.92	80 - 120	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4360081
Report generated: 08/28/2015 15:29

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L15080992
Analytical Method: 6850
ICAL Workgroup: WG533952

Instrument ID: LCMS1
Initial Calibration Date: 06-AUG-15 00:22
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.372	8.13	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4360721
Report generated 08/28/2015 15:29

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15080992

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 06-AUG-15 00:22

Column ID: F

Analyte	WG533952-02			WG533952-03			WG533952-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	11400.0000	1.406	0.200	25600.0000	1.446	0.500	59400.0000	1.351

INT_CAL - Modified 03/06/2008
PDF File ID: 4360721
Report generated 08/28/2015 15:29

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15080992

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 06-AUG-15 00:22

Column ID: F

Analyte	WG533952-05			WG533952-06			WG533952-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	112000.000	1.326	2.00	231000.000	1.381	5.00	550000.000	1.342

INT_CAL - Modified 03/06/2008
PDF File ID: 4360721
Report generated 08/28/2015 15:29

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15080992

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 06-AUG-15 00:22

Column ID: F

Analyte	WG533952-08		
	CONC	RESP	RF
Perchlorate	10.0	975000.000	1.354

INT_CAL - Modified 03/06/2008
PDF File ID: 4360721
Report generated 08/28/2015 15:29

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15080992 Run Date: 08/06/2015 Sample ID: WG533952-09
Instrument ID: LCMS1 Run Time: 00:41 Method: 6850
File ID: 1LM.LM31300 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG533952 Cal ID: LCMS1 - 06-AUG-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.956	ug/L	1.30	4.40	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4360722
Report generated 08/28/2015 15:29

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15080992
Run Date: 08/24/2015
Sample ID: WG536250-01
Instrument ID: LCMS1
Run Time: 16:09
Method: 6850
File ID: 1LM.LM31431
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG536249
Cal ID: LCMS1 - 06-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4360084
Report generated 08/28/2015 15:29

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15080992
Run Date: 08/24/2015
Sample ID: WG536250-04
Instrument ID: LCMS1
Run Time: 20:53
Method: 6850
File ID: 1LM.LM31446
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG536249
Cal ID: LCMS1 - 06-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4360084
Report generated 08/28/2015 15:29

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15080992
Run Date: 08/25/2015
Sample ID: WG536250-06
Instrument ID: LCMS1
Run Time: 00:41
Method: 6850
File ID: 1LM.LM31458
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG536249
Cal ID: LCMS1 - 06-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4360084
Report generated 08/28/2015 15:29

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15080992
Run Date: 08/25/2015
Sample ID: WG536250-08
Instrument ID: LCMS1
Run Time: 03:12
Method: 6850
File ID: 1LM.LM31466
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG536249
Cal ID: LCMS1 - 06-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4360084
Report generated 08/28/2015 15:29

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080992
Run Date: 08/24/2015
Sample ID: WG536250-02
Instrument ID: LCMS1
Run Time: 16:28
Method: 6850
File ID: 1LM.LM31432
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG536249
Cal ID: LCMS1 - 06-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.05	ug/L	1.43	5.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4360083
Report generated 08/28/2015 15:29

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080992
Run Date: 08/24/2015
Sample ID: WG536250-03
Instrument ID: LCMS1
Run Time: 20:16
Method: 6850
File ID: 1LM.LM31444
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG536249
Cal ID: LCMS1 - 06-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.37	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4360083
Report generated 08/28/2015 15:29

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080992
Run Date: 08/25/2015
Sample ID: WG536250-05
Instrument ID: LCMS1
Run Time: 00:03
Method: 6850
File ID: 1LM.LM31456
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG536249
Cal ID: LCMS1 - 06-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.991	ug/L	1.35	0.900	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4360083
Report generated 08/28/2015 15:29

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080992
Run Date: 08/25/2015
Sample ID: WG536250-07
Instrument ID: LCMS1
Run Time: 02:34
Method: 6850
File ID: 1LM.LM31464
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG536249
Cal ID: LCMS1 - 06-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.979	ug/L	1.33	2.10	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4360083
Report generated 08/28/2015 15:29

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15080992 Run Date: 08/24/2015 Sample ID: WG536249-05
Instrument ID: LCMS1 Run Time: 16:47 Prep Method: 6850
File ID: 1LM.LM31433 Analyst: JWR Method: 6850
Workgroup (AAB#): WG536249 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-06-AUG-15

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.213	107	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4360082
Report generated 08/28/2015 15:29

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15080992 Run Date: 08/24/2015 Sample ID: WG536249-06

Instrument ID: LCMS1 Run Time: 20:34 Prep Method: 6850

File ID: 1LM.LM31445 Analyst: JWR Method: 6850

Workgroup (AAB#): WG536249 Matrix: Water Units: ug/L

Contract #: Cal ID: LCMS1-06-AUG-15

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.196	98.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4360082
Report generated 08/28/2015 15:29

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15080992 Run Date: 08/25/2015 Sample ID: WG536249-07
Instrument ID: LCMS1 Run Time: 00:22 Prep Method: 6850
File ID: 1LM.LM31457 Analyst: JWR Method: 6850
Workgroup (AAB#): WG536249 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-06-AUG-15

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.210	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4360082
Report generated 08/28/2015 15:29

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15080992 Run Date: 08/25/2015 Sample ID: WG536249-08
Instrument ID: LCMS1 Run Time: 02:53 Prep Method: 6850
File ID: 1LM.LM31465 Analyst: JWR Method: 6850
Workgroup (AAB#): WG536249 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-06-AUG-15

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4360082
Report generated 08/28/2015 15:29

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L15080992
Instrument ID: LCMS1
Workgroup (AAB#): WG536249

ICAL CCV Number: WG533952-05
CAL ID: LCMS1-06-AUG-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG533952	NA	NA	414000
Upper Limit	NA	NA	621000
Lower Limit	NA	NA	207000
L15080992-01	1.00	01	414000
L15080992-03	5.00	DL01	449000
L15080992-05	10000	DL01	451000
L15080992-07	1000	DL01	421000
L15080992-09	10000	DL01	396000
WG536249-02	1.00	01	397000
WG536249-03	1.00	01	399000
WG536249-04	1.00	01	367000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4360085
Report generated 08/28/2015 15:29

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080992	**Prep Method:**	6850	**Samplenum:**	L15080992-01
Instrument:	LCMS1	**Prep Date:**	08/24/2015 15:00	**File ID:**	1LM.LM31450
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/24/2015 22:09	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	405000	127000	3.19	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080992	**Prep Method:**	6850	**Samplenum:**	L15080992-03
Instrument:	LCMS1	**Prep Date:**	08/24/2015 15:00	**File ID:**	1LM.LM31451
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/24/2015 22:28	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	598000	190000	3.15	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080992	**Prep Method:**	6850	**Samplenum:**	L15080992-05
Instrument:	LCMS1	**Prep Date:**	08/24/2015 15:00	**File ID:**	1LM.LM31452
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/24/2015 22:47	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	211000	66200	3.19	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080992	**Prep Method:**	6850	**Samplenum:**	L15080992-07
Instrument:	LCMS1	**Prep Date:**	08/24/2015 15:00	**File ID:**	1LM.LM31453
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/24/2015 23:06	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	233000	73500	3.17	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080992	**Prep Method:**	6850	**Samplenum:**	L15080992-09
Instrument:	LCMS1	**Prep Date:**	08/24/2015 15:00	**File ID:**	1LM.LM31455
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/24/2015 23:44	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	189000	57600	3.28	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080992	**Prep Method:**		**Samplenum:**	WG533952-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31293
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/05/2015 22:28	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	11400	3660	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080992	**Prep Method:**		**Samplenum:**	WG533952-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31294
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/05/2015 22:47	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	25600	7580	3.38	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080992	**Prep Method:**		**Samplenum:**	WG533952-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31295
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/05/2015 23:06	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	59400	19000	3.13	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080992	**Prep Method:**		**Samplenum:**	WG533952-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31296
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/05/2015 23:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	112000	35600	3.15	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080992	**Prep Method:**		**Samplenum:**	WG533952-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31297
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/05/2015 23:44	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	231000	70300	3.29	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080992	**Prep Method:**		**Samplenum:**	WG533952-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31298
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/06/2015 00:03	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	550000	170000	3.24	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080992	**Prep Method:**		**Samplenum:**	WG533952-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31299
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/06/2015 00:22	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	975000	304000	3.21	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080992	**Prep Method:**		**Samplenum:**	WG533952-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31300
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/06/2015 00:41	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	109000	34100	3.20	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080992	**Prep Method:**	6850	**Samplenum:**	WG536249-01
Instrument:	LCMS1	**Prep Date:**	08/24/2015 15:00	**File ID:**	1LM.LM31434
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/24/2015 17:06	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	20900	6270	3.33	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080992	**Prep Method:**	6850	**Samplenum:**	WG536249-02
Instrument:	LCMS1	**Prep Date:**	08/24/2015 15:00	**File ID:**	1LM.LM31435
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/24/2015 17:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080992	**Prep Method:**	6850	**Samplenum:**	WG536249-03
Instrument:	LCMS1	**Prep Date:**	08/24/2015 15:00	**File ID:**	1LM.LM31436
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/24/2015 17:44	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	22900	7710	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080992	**Prep Method:**	6850	**Samplenum:**	WG536249-04
Instrument:	LCMS1	**Prep Date:**	08/24/2015 15:00	**File ID:**	1LM.LM31437
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/24/2015 18:03	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	21400	6620	3.23	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080992	**Prep Method:**	6850	**Samplenum:**	WG536249-05
Instrument:	LCMS1	**Prep Date:**	08/24/2015 15:00	**File ID:**	1LM.LM31433
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/24/2015 16:47	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	21500	6560	3.28	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080992	**Prep Method:**	6850	**Samplenum:**	WG536249-06
Instrument:	LCMS1	**Prep Date:**	08/24/2015 15:00	**File ID:**	1LM.LM31445
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/24/2015 20:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	22800	7970	2.86	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080992	**Prep Method:**	6850	**Samplenum:**	WG536249-07
Instrument:	LCMS1	**Prep Date:**	08/24/2015 15:00	**File ID:**	1LM.LM31457
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/25/2015 00:22	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	24100	8120	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080992	**Prep Method:**	6850	**Samplenum:**	WG536249-08
Instrument:	LCMS1	**Prep Date:**	08/24/2015 15:00	**File ID:**	1LM.LM31465
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/25/2015 02:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	24100	7860	3.07	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080992	**Prep Method:**		**Samplenum:**	WG536250-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31431
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/24/2015 16:09	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080992	**Prep Method:**		**Samplenum:**	WG536250-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31432
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/24/2015 16:28	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	105000	32100	3.27	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080992	**Prep Method:**		**Samplenum:**	WG536250-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31444
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/24/2015 20:16	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	124000	39200	3.16	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080992	**Prep Method:**		**Samplenum:**	WG536250-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31446
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/24/2015 20:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	203	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080992	**Prep Method:**		**Samplenum:**	WG536250-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31456
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/25/2015 00:03	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	110000	33700	3.26	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080992	**Prep Method:**		**Samplenum:**	WG536250-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31458
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/25/2015 00:41	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	173	340	0.509	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080992	**Prep Method:**		**Samplenum:**	WG536250-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31464
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/25/2015 02:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	123000	37800	3.25	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15080992	**Prep Method:**		**Samplenum:**	WG536250-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31466
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/25/2015 03:12	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	85.8	0.000	2.3	3.8	*

2.2.1.3 Sample Data

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Data File	LM31450.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/24/2015 10:09:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15080992-01	**Injection Vial**	17.00
Data File	LM31450.wiff	**Injection Volume**	10.00
Acquisition Date	8/24/2015 10:09:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	L15080992-01	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.140e+05	9.27	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.050e+05	9.28	N/A	3.62
Perchlorate conf	1.270e+05	9.27	N/A	3.64

O18LP (Internal Standard)

RT (Exp. RT): 9.27(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

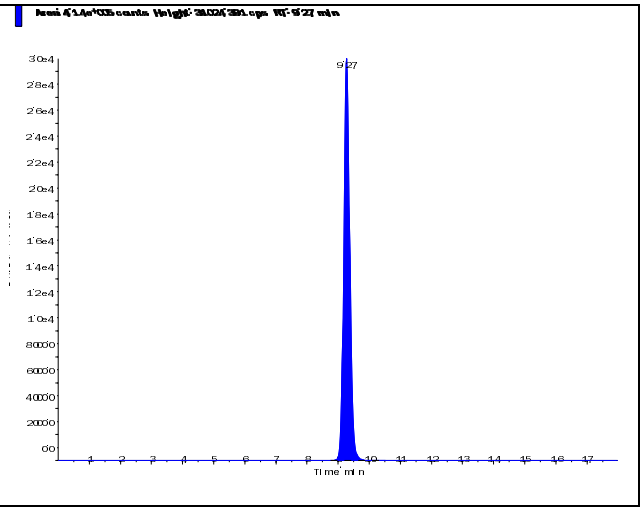

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.28 (9.52) min
Calculated conc:	3.62 ng/ml
Area Ratio:	0.978
Sample Type:	(Unknown)

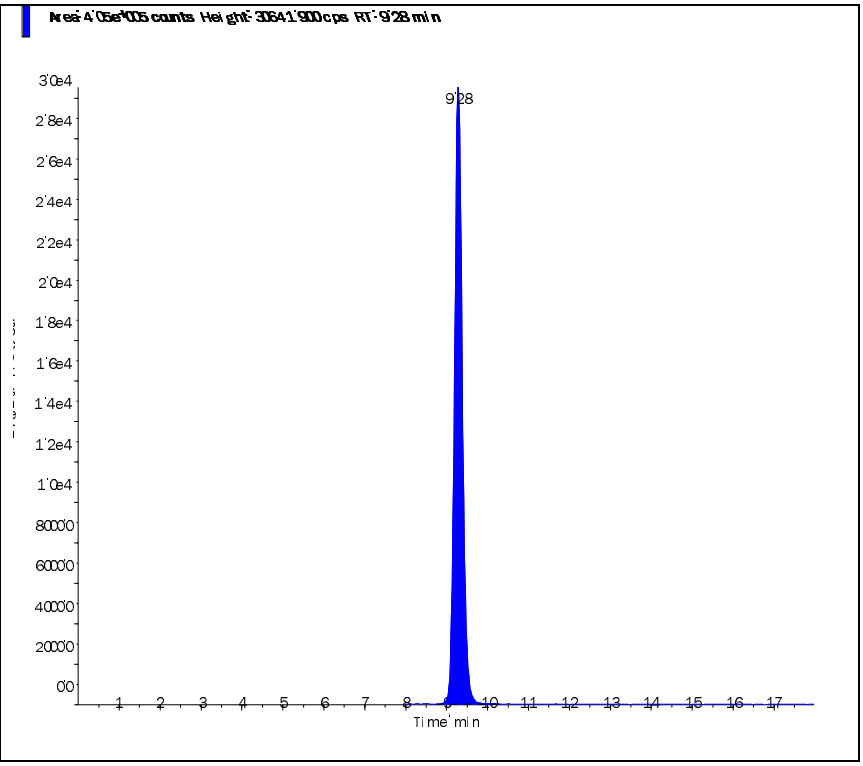

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.27 (9.48) min
Calculated conc:	3.64 ng/ml
Area Ratio:	0.306
Sample Type:	(Unknown)

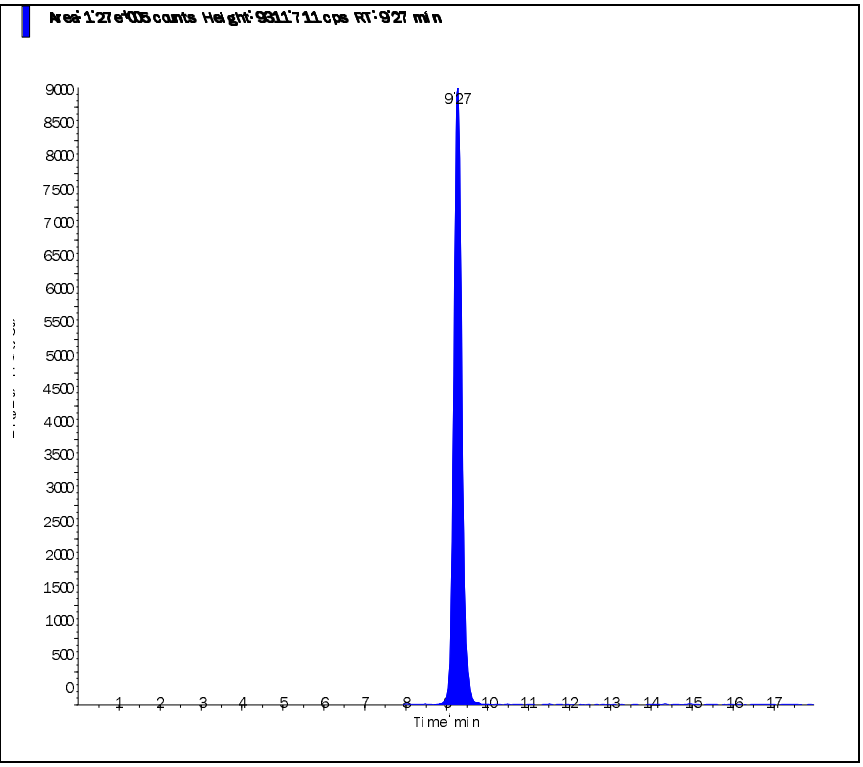

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Data File	LM31451.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/24/2015 10:28:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15080992-03 (5x)	**Injection Vial**	18.00
Data File	LM31451.wiff	**Injection Volume**	10.00
Acquisition Date	8/24/2015 10:28:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	L15080992-03	**Dilution Factor**	1.00
Sample Comment	1,5 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.490e+05	9.62	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.980e+05	9.64	N/A	4.93
Perchlorate conf	1.900e+05	9.62	N/A	5.04

O18LP (Internal Standard)

RT (Exp. RT): 9.62(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

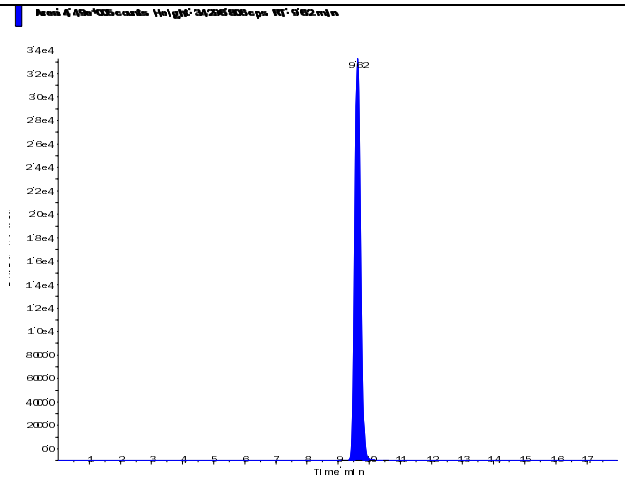

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.52) min
Calculated conc:	4.93 ng/ml
Area Ratio:	1.332
Sample Type:	(Unknown)

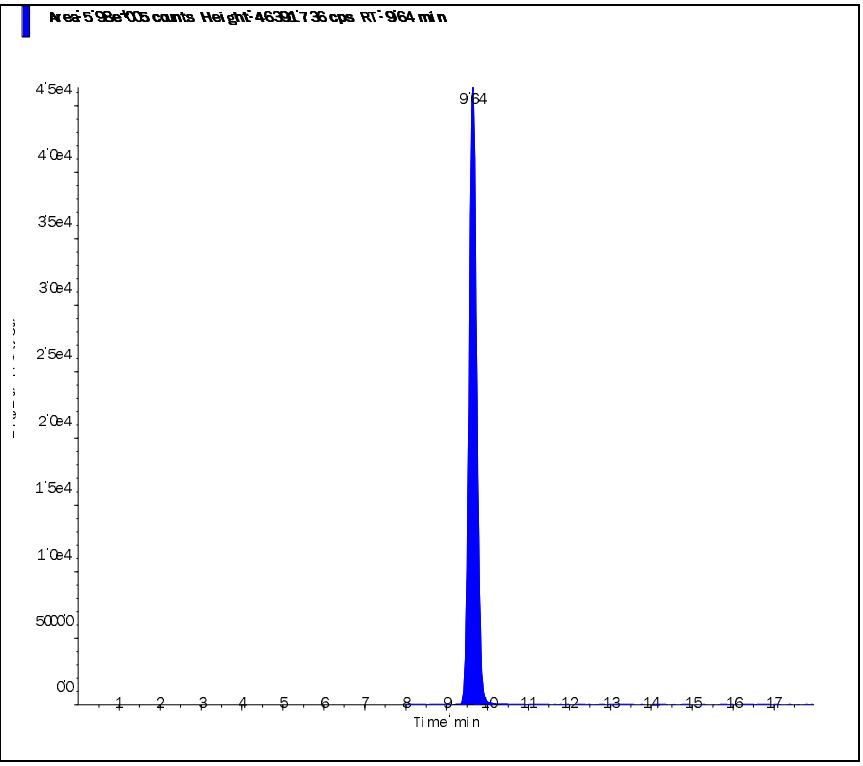

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.62 (9.48) min
Calculated conc:	5.04 ng/ml
Area Ratio:	0.423
Sample Type:	(Unknown)

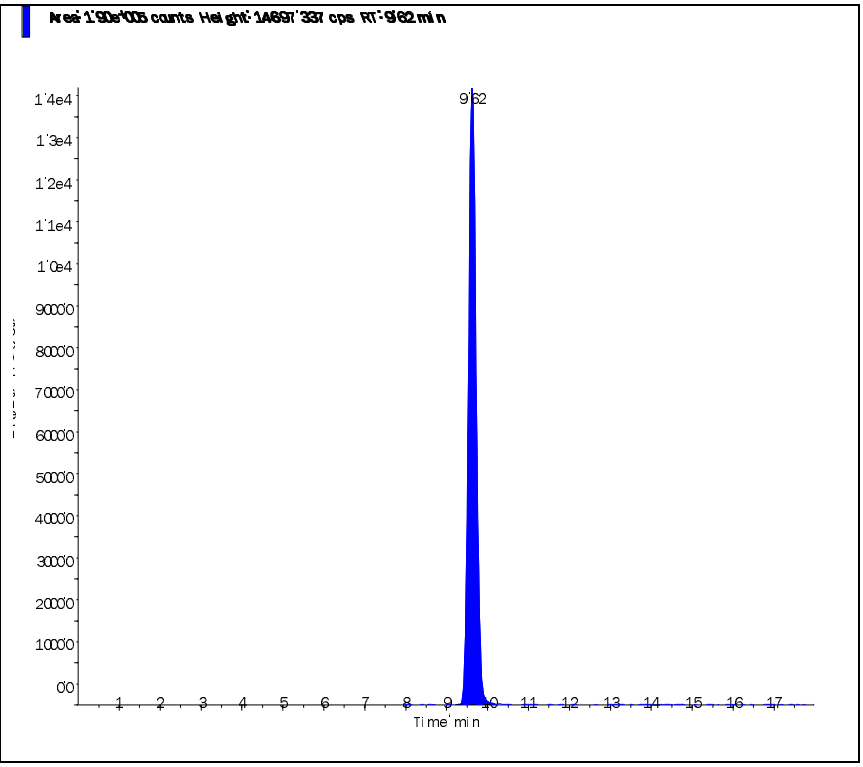

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Data File	LM31452.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/24/2015 10:47:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15080992-05 (10,000x)	**Injection Vial**	19.00
Data File	LM31452.wiff	**Injection Volume**	10.00
Acquisition Date	8/24/2015 10:47:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	L15080992-05	**Dilution Factor**	1.00
Sample Comment	1,10000 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.510e+05	9.71	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.110e+05	9.73	N/A	1.73
Perchlorate conf	6.620e+04	9.71	N/A	1.74

O18LP (Internal Standard)

RT (Exp. RT): 9.71(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

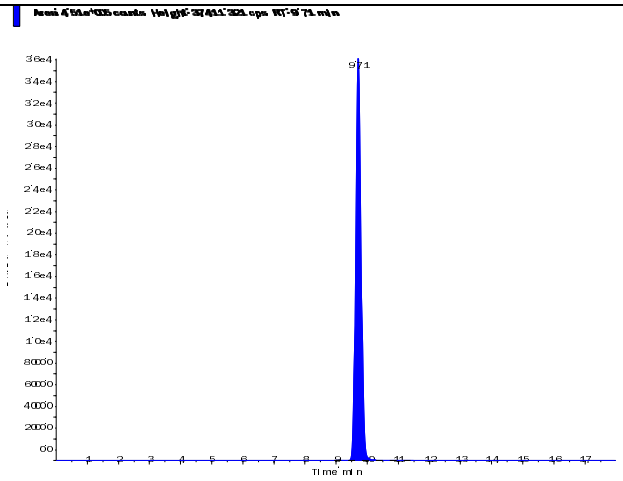

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.73 (9.52) min Calculated conc: 1.73 ng/ml Area Ratio: 0.469 Sample Type: (Unknown)	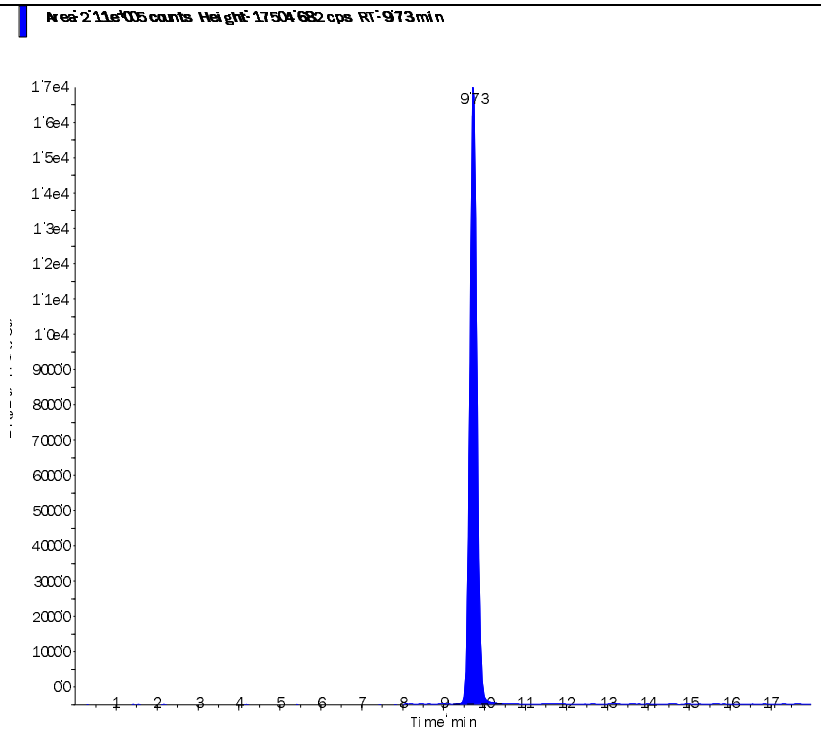
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.71 (9.48) min Calculated conc: 1.74 ng/ml Area Ratio: 0.147 Sample Type: (Unknown)	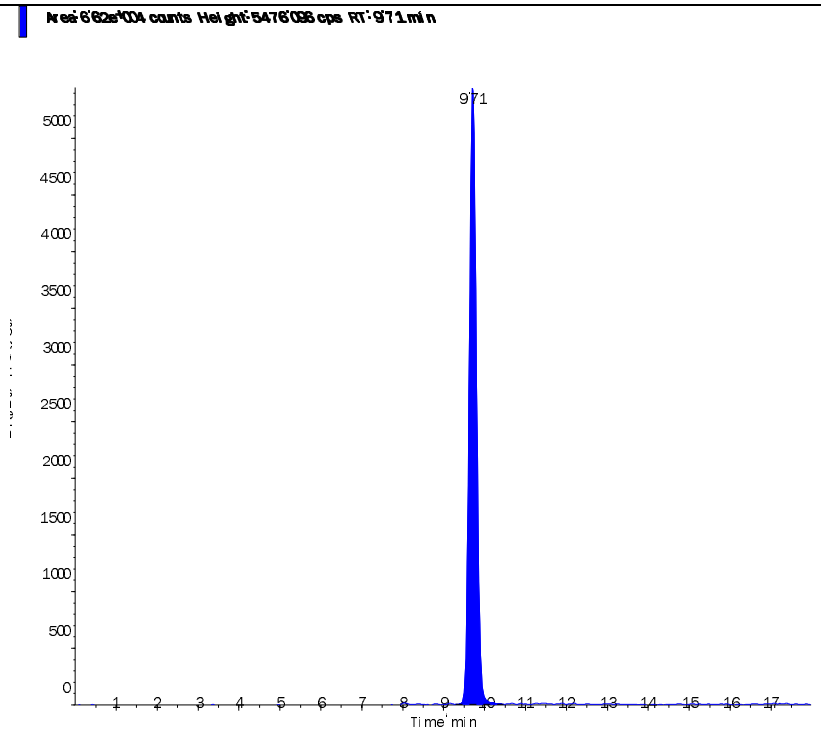

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Data File	LM31453.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/24/2015 11:06:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15080992-07 (1,000x)	**Injection Vial**	20.00
Data File	LM31453.wiff	**Injection Volume**	10.00
Acquisition Date	8/24/2015 11:06:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	L15080992-07	**Dilution Factor**	1.00
Sample Comment	1,1000 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.210e+05	9.72	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.330e+05	9.73	N/A	2.05
Perchlorate conf	7.350e+04	9.72	N/A	2.08

O18LP (Internal Standard)

RT (Exp. RT): 9.72(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

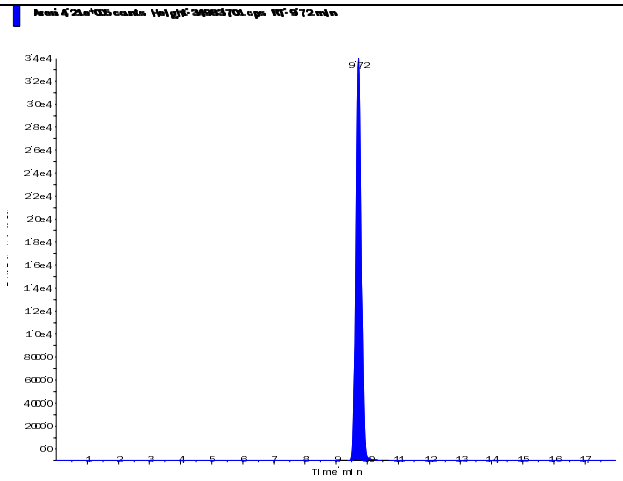

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.73 (9.52) min
Calculated conc:	2.05 ng/ml
Area Ratio:	0.555
Sample Type:	(Unknown)

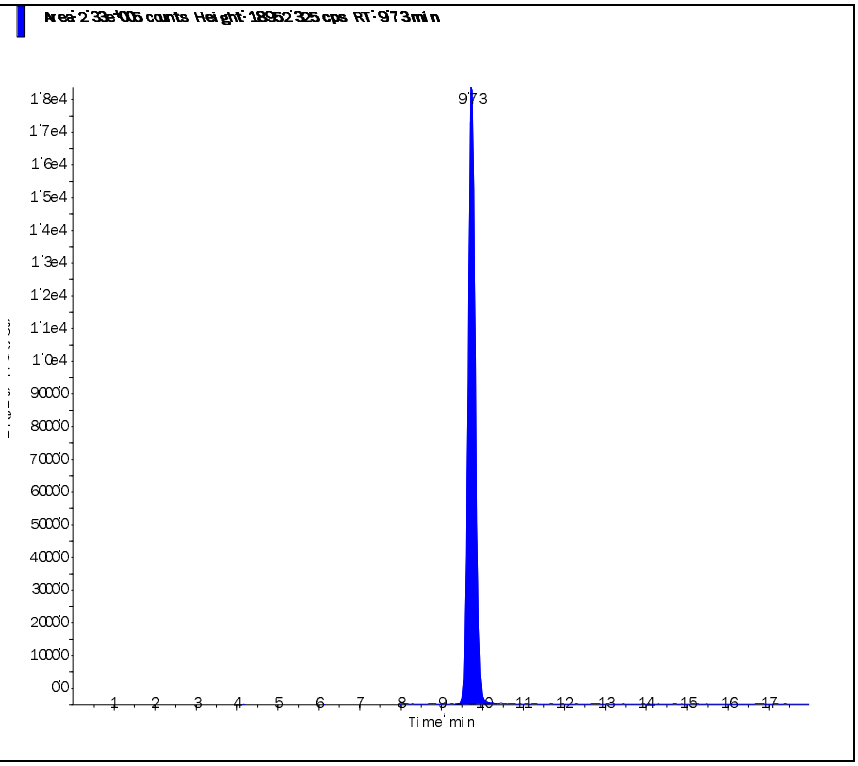

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.72 (9.48) min
Calculated conc:	2.08 ng/ml
Area Ratio:	0.175
Sample Type:	(Unknown)

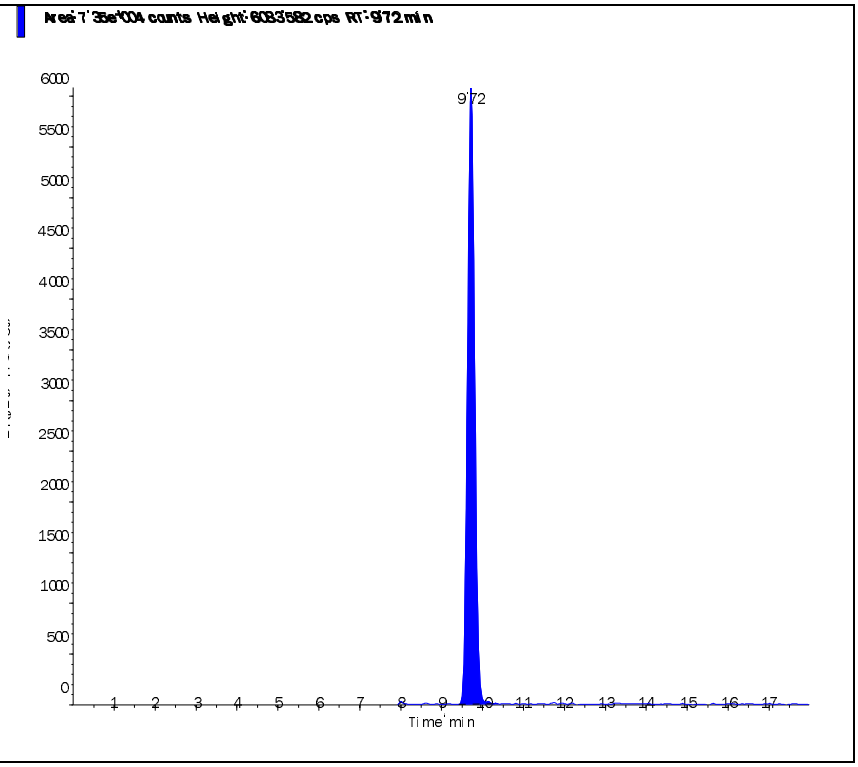

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Data File	LM31455.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/24/2015 11:44:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15080992-09 (RR 10,000x)	**Injection Vial**	22.00
Data File	LM31455.wiff	**Injection Volume**	10.00
Acquisition Date	8/24/2015 11:44:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	L15080992-09	**Dilution Factor**	1.00
Sample Comment	1,10000 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.960e+05	9.72	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.890e+05	9.73	N/A	1.76
Perchlorate conf	5.760e+04	9.72	N/A	1.73

O18LP (Internal Standard)

RT (Exp. RT): 9.72(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

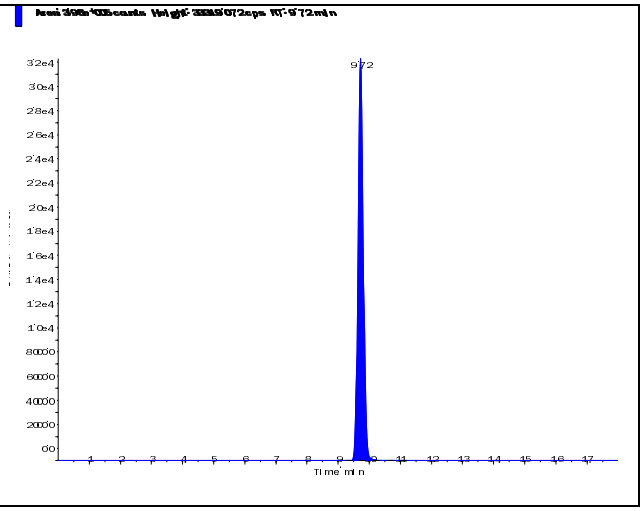

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.73 (9.52) min
Calculated conc:	1.76 ng/ml
Area Ratio:	0.478
Sample Type:	(Unknown)

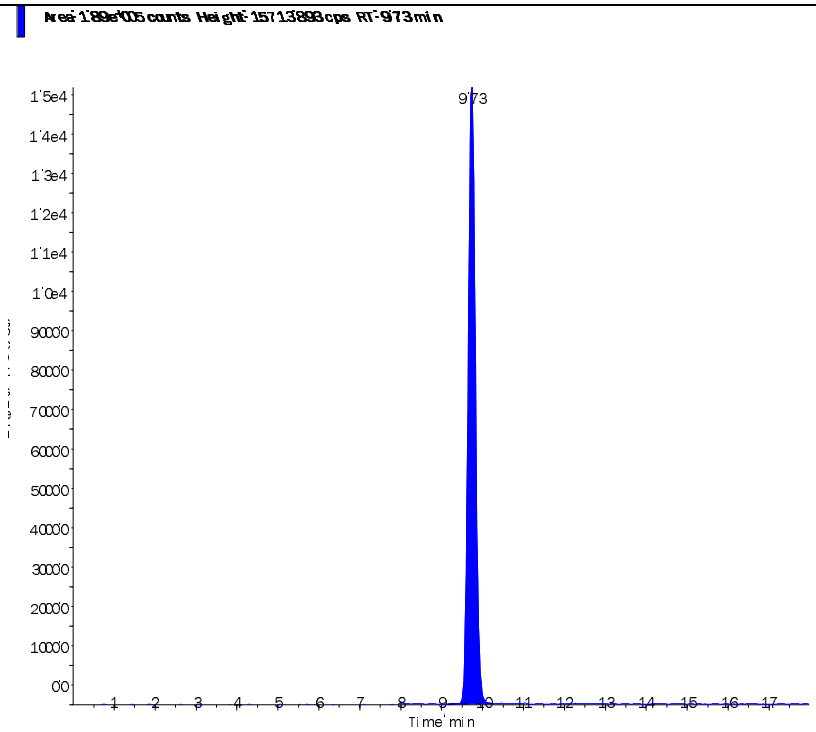

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.72 (9.48) min
Calculated conc:	1.73 ng/ml
Area Ratio:	0.146
Sample Type:	(Unknown)

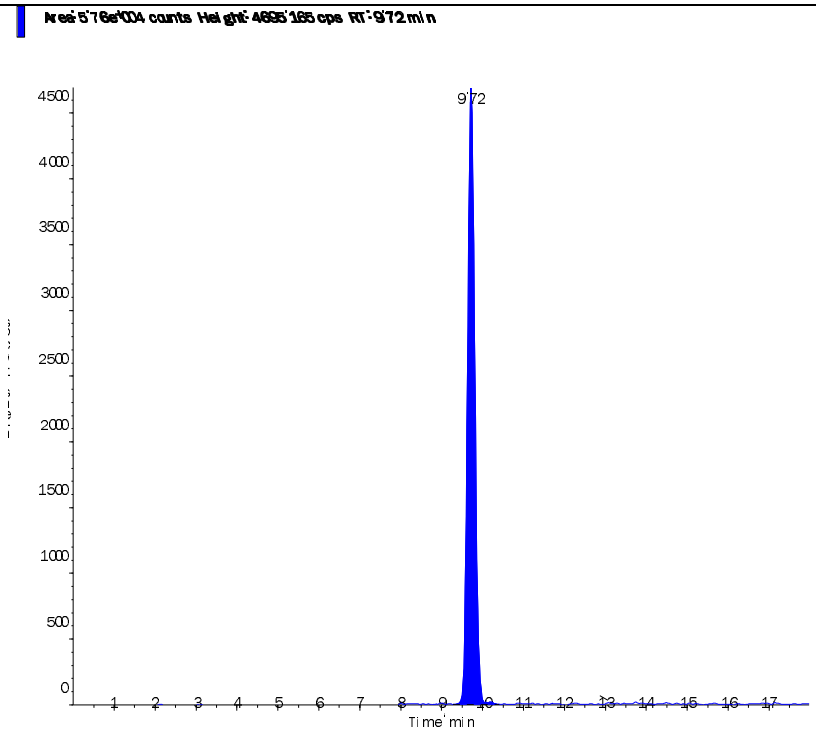

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2.2.1.4 Standards Data

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Data File	LM31292.wiff	**Result Table**	082715_JWR.rdb
Acquisition Date	8/5/2015 10:09:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG533952-01 CCB	**Injection Vial**	1.00
Data File	LM31292.wiff	**Injection Volume**	10.00
Acquisition Date	8/5/2015 10:09:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082715_JWR.rdb
Sample ID	WG533952-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.160e+05	9.71	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.040e+03	9.73	N/A	0.0122
Perchlorate conf	6.020e+02	9.74	N/A	0.0108

O18LP (Internal Standard)

RT (Exp. RT): 9.71(9.50) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

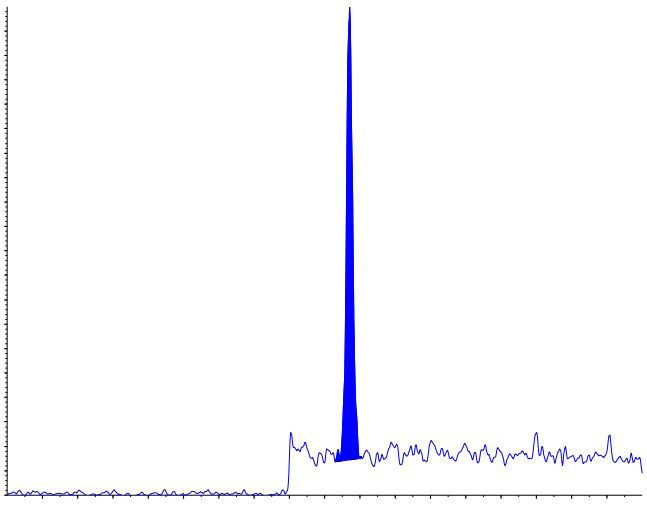

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.73 (9.52) min Calculated conc: 0.0122 ng/ml Area Ratio: 0.005 Sample Type: (Unknown)	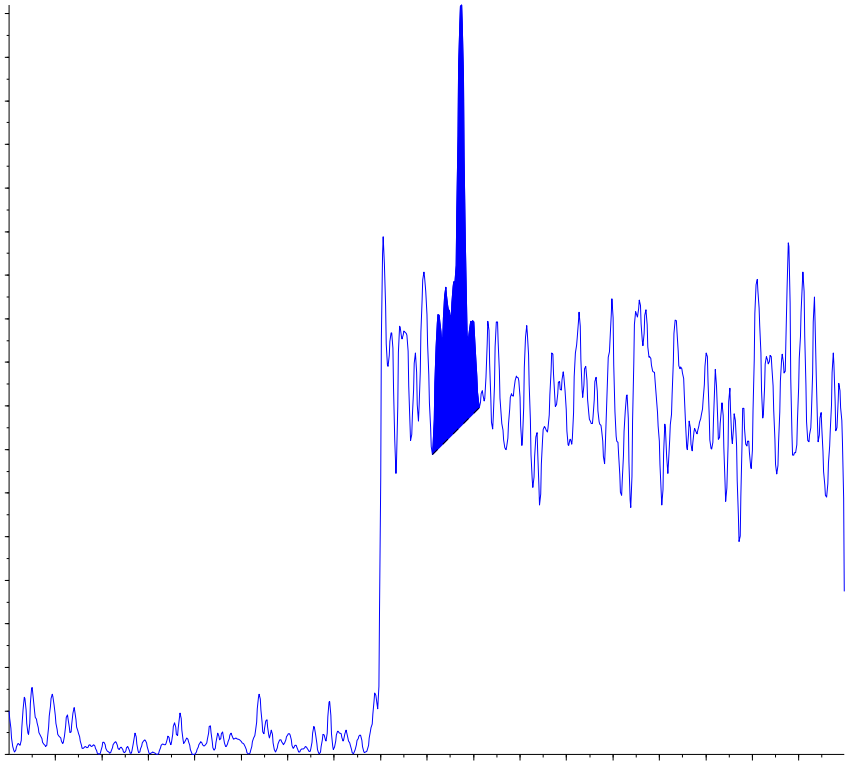
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.74 (9.48) min Calculated conc: 0.0108 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	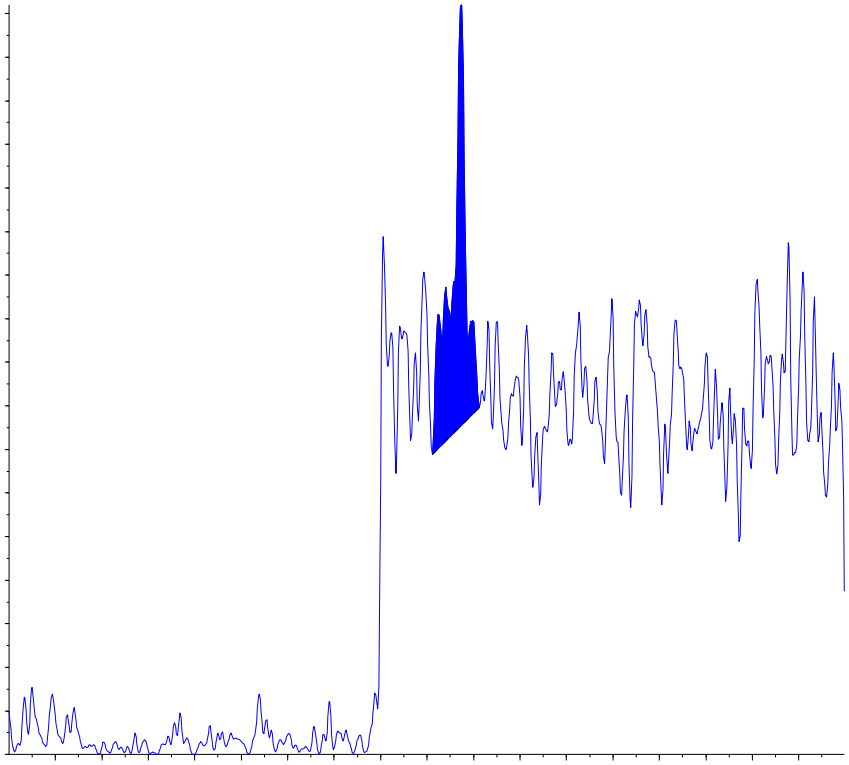

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Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM31292.wiff	**Result Table**	080515_JWR.rdb
Acquisition Date	8/5/2015 10:09:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.35 x + 0.00162 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	98.1	N/A	N/A
0.20	1	0.21	104.1	N/A	N/A
0.50	1	0.49	98.8	N/A	N/A
1.00	1	0.98	97.6	N/A	N/A
2.00	1	2.04	101.9	N/A	N/A
5.00	1	4.96	99.3	N/A	N/A
10.00	1	10.02	100.2	N/A	N/A

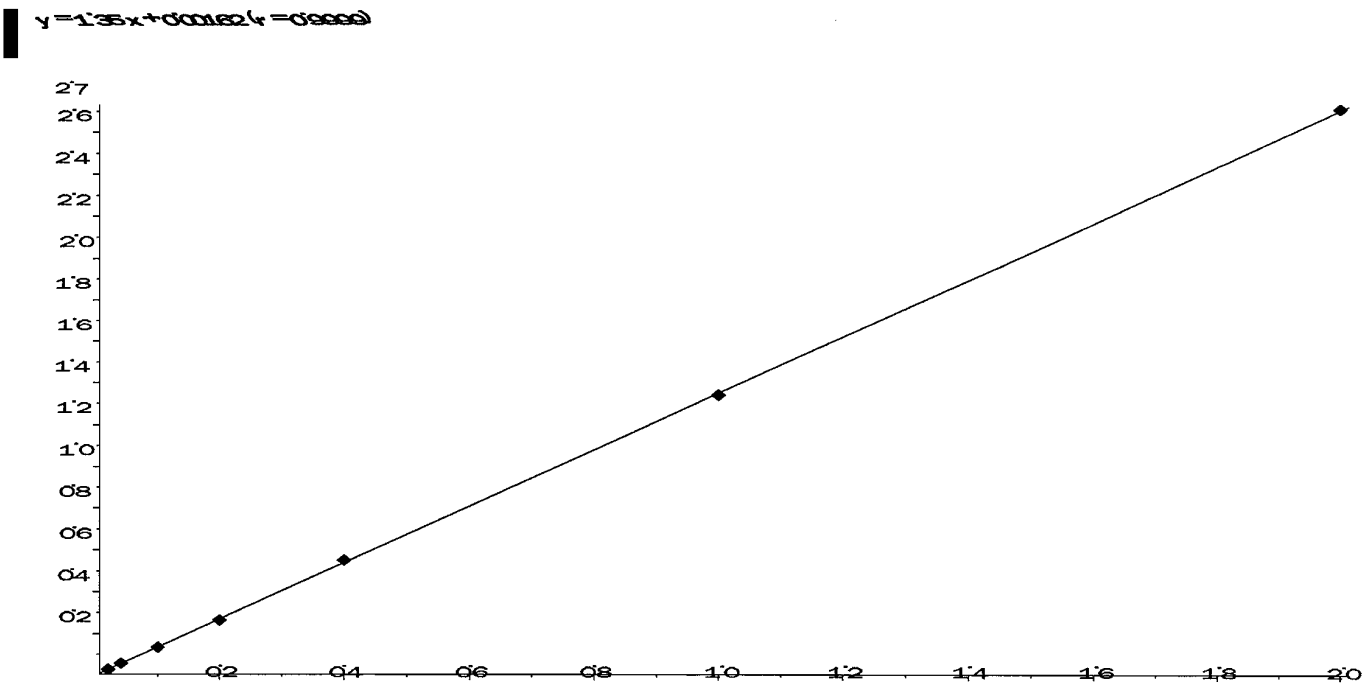

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Created with Analyst Reporter
Printed: 8/6/2015 1:49 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM31292.wiff	**Result Table**	080515_JWR.rdb
Acquisition Date	8/5/2015 10:09:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.42 x + 0.000545 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	100.9	N/A	N/A
0.20	1	0.20	98.7	N/A	N/A
0.50	1	0.51	101.5	N/A	N/A
1.00	1	1.00	99.5	N/A	N/A
2.00	1	2.00	99.9	N/A	N/A
5.00	1	4.94	98.8	N/A	N/A
10.00	1	10.06	100.6	N/A	N/A

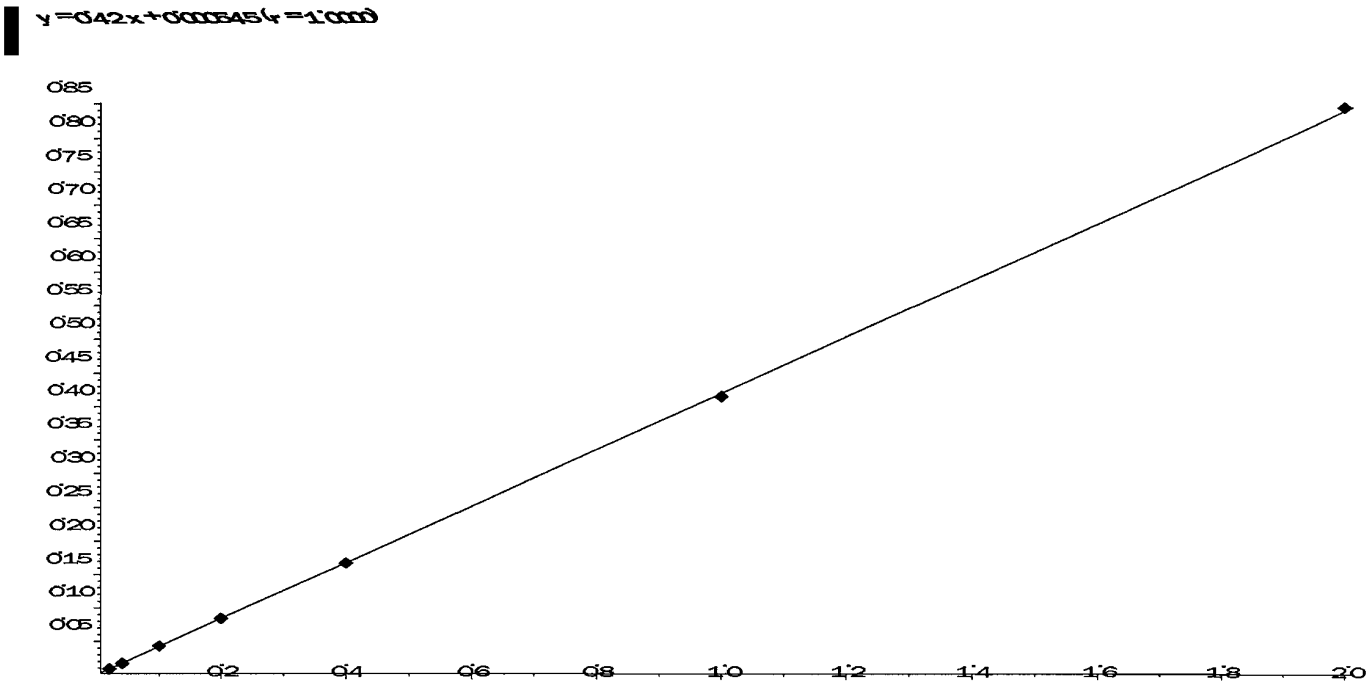

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Data File	LM31293.wiff	**Result Table**	082715_JWR.rdb
Acquisition Date	8/5/2015 10:28:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG533952-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM31293.wiff	**Injection Volume**	10.00
Acquisition Date	8/5/2015 10:28:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	082715_JWR.rdb
Sample ID	WG533952-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.060e+05	9.69	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.140e+04	9.70	0.10	0.0981
Perchlorate conf	3.660e+03	9.69	0.10	0.101

O18LP (Internal Standard)

RT (Exp. RT): 9.69(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

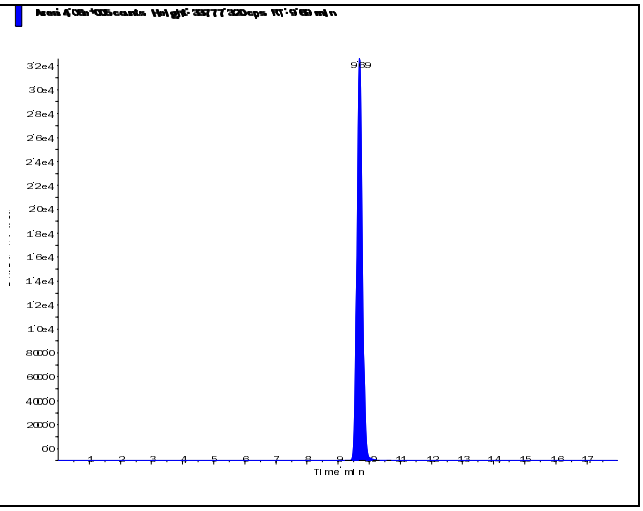

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.70 (9.52) min Calculated conc: 0.0981 ng/ml Area Ratio: 0.028 Sample Type: (Standard)	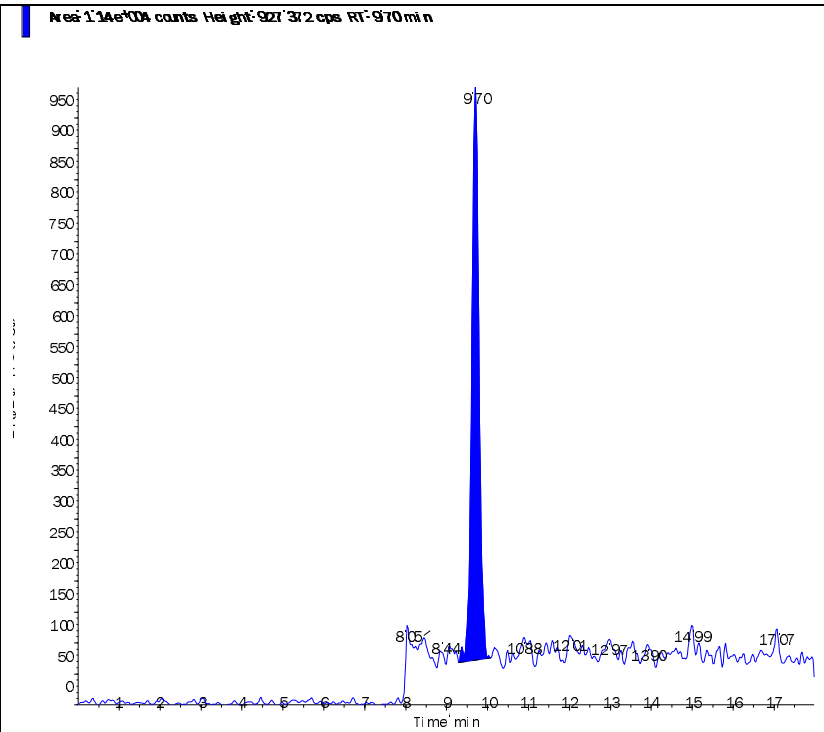
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.69 (9.48) min Calculated conc: 0.101 ng/ml Area Ratio: 0.009 Sample Type: (Standard)	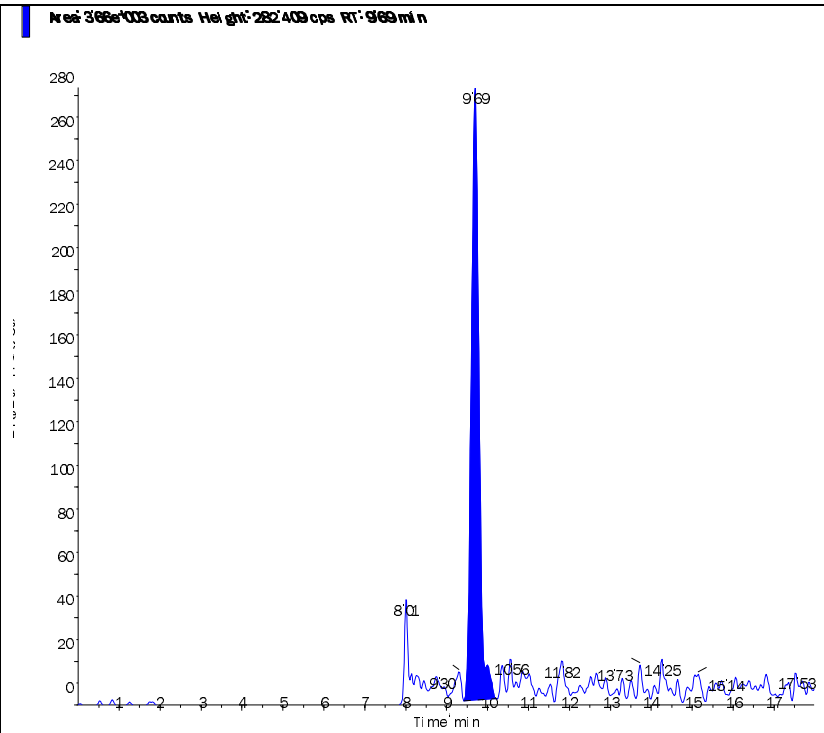

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Data File	LM31294.wiff	**Result Table**	082715_JWR.rdb
Acquisition Date	8/5/2015 10:47:26 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG533952-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM31294.wiff	**Injection Volume**	10.00
Acquisition Date	8/5/2015 10:47:26 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	082715_JWR.rdb
Sample ID	WG533952-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.430e+05	9.50	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.560e+04	9.51	0.20	0.208
Perchlorate conf	7.580e+03	9.48	0.20	0.197

O18LP (Internal Standard)

RT (Exp. RT): 9.50(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

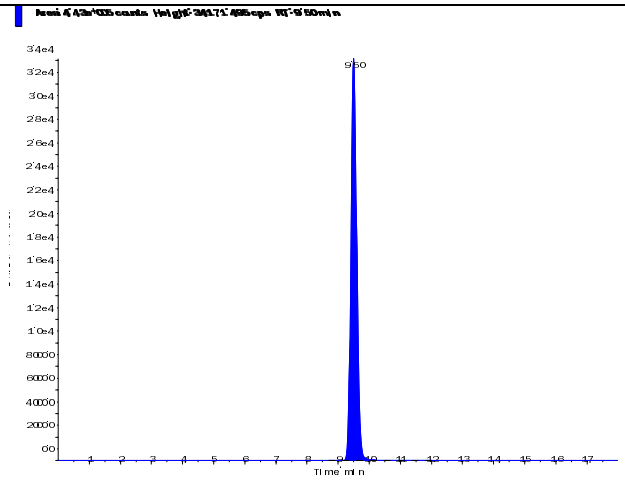

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.51 (9.52) min
Calculated conc:	0.208 ng/ml
Area Ratio:	0.058
Sample Type:	(Standard)

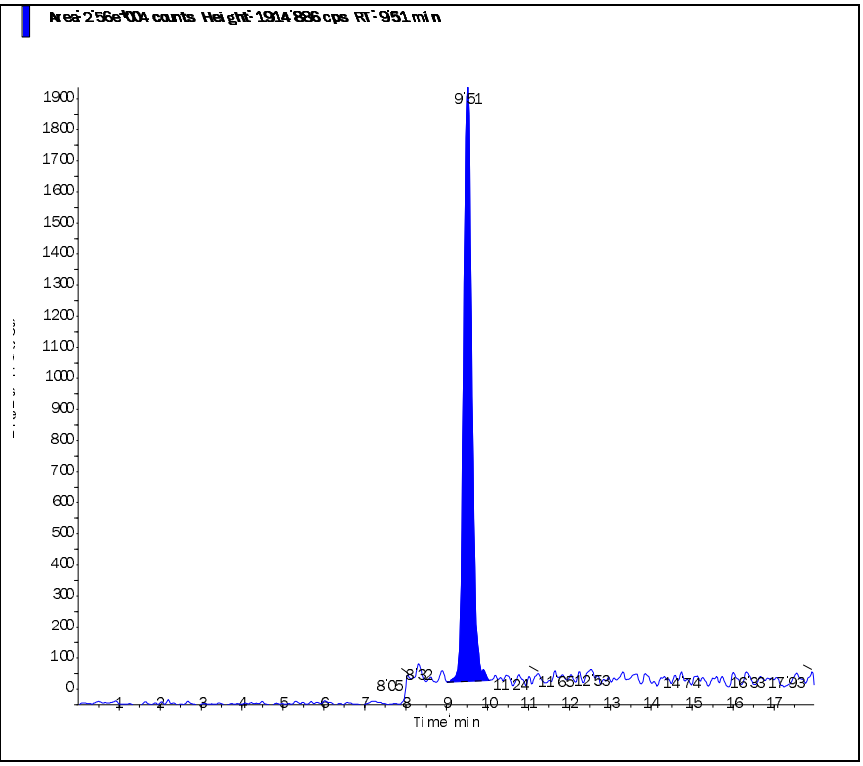

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.48 (9.48) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.017
Sample Type:	(Standard)

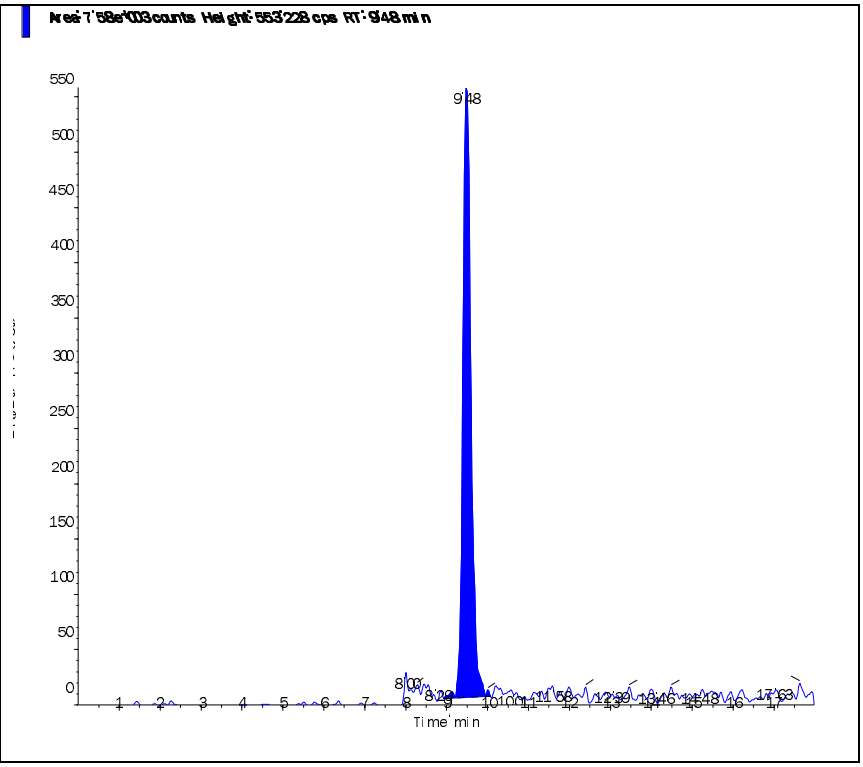

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Data File	LM31295.wiff	**Result Table**	082715_JWR.rdb
Acquisition Date	8/5/2015 11:06:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG533952-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM31295.wiff	**Injection Volume**	10.00
Acquisition Date	8/5/2015 11:06:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	082715_JWR.rdb
Sample ID	WG533952-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.400e+05	9.52	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.940e+04	9.52	0.50	0.494
Perchlorate conf	1.900e+04	9.51	0.50	0.508

O18LP (Internal Standard)

RT (Exp. RT): 9.52(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

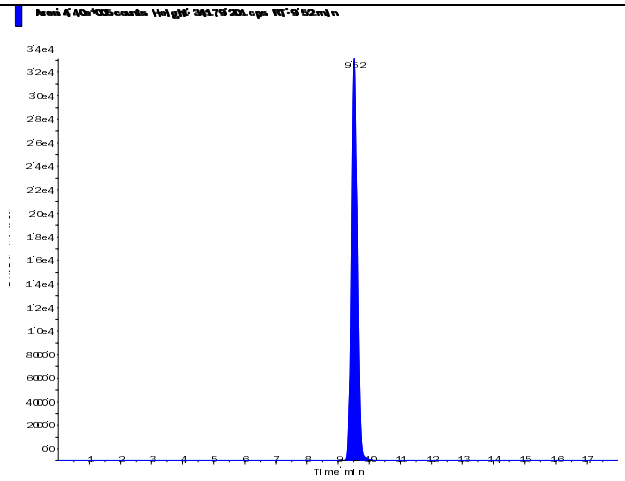

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.52 (9.52) min
Calculated conc:	0.494 ng/ml
Area Ratio:	0.135
Sample Type:	(Standard)

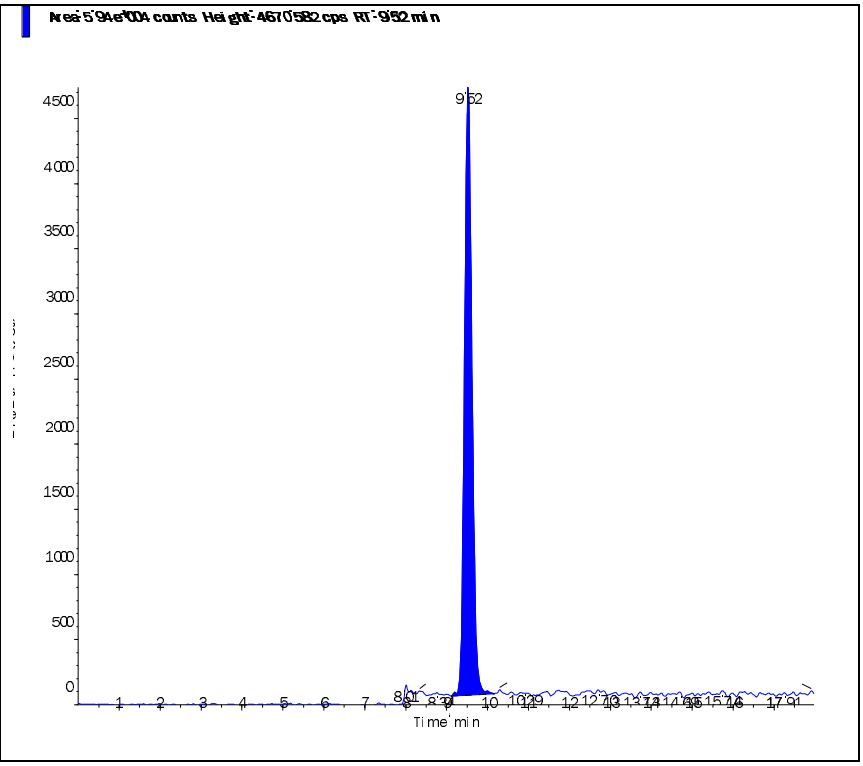

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.51 (9.48) min
Calculated conc:	0.508 ng/ml
Area Ratio:	0.043
Sample Type:	(Standard)

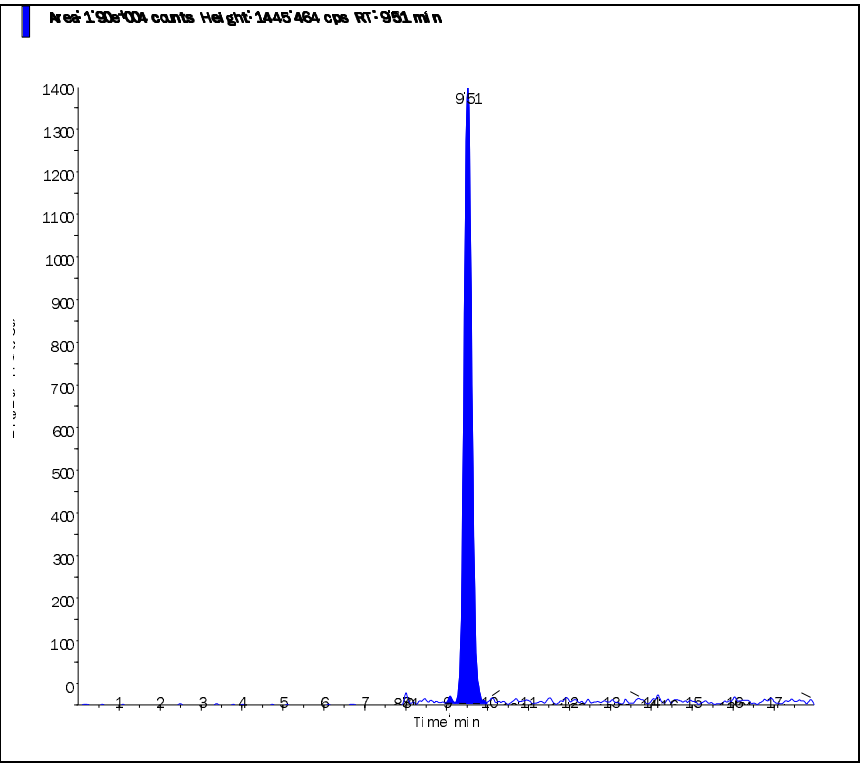

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Data File	LM31296.wiff	**Result Table**	082715_JWR.rdb
Acquisition Date	8/5/2015 11:25:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG533952-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM31296.wiff	**Injection Volume**	10.00
Acquisition Date	8/5/2015 11:25:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	082715_JWR.rdb
Sample ID	WG533952-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.230e+05	9.61	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.120e+05	9.63	1.00	0.976
Perchlorate conf	3.560e+04	9.60	1.00	0.995

O18LP (Internal Standard)

RT (Exp. RT): 9.61(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

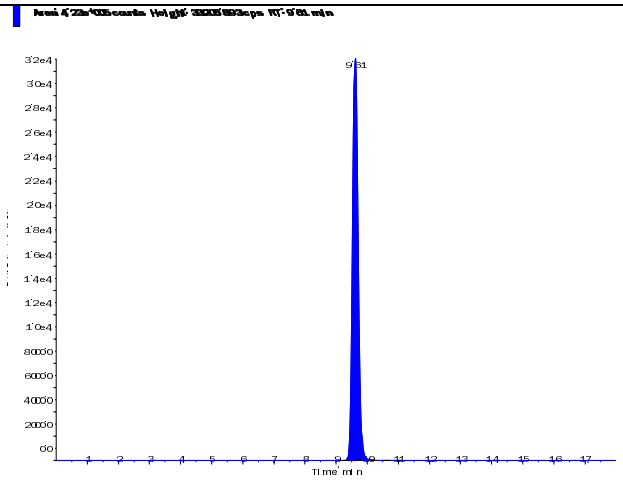

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.63 (9.52) min
Calculated conc:	0.976 ng/ml
Area Ratio:	0.265
Sample Type:	(Standard)

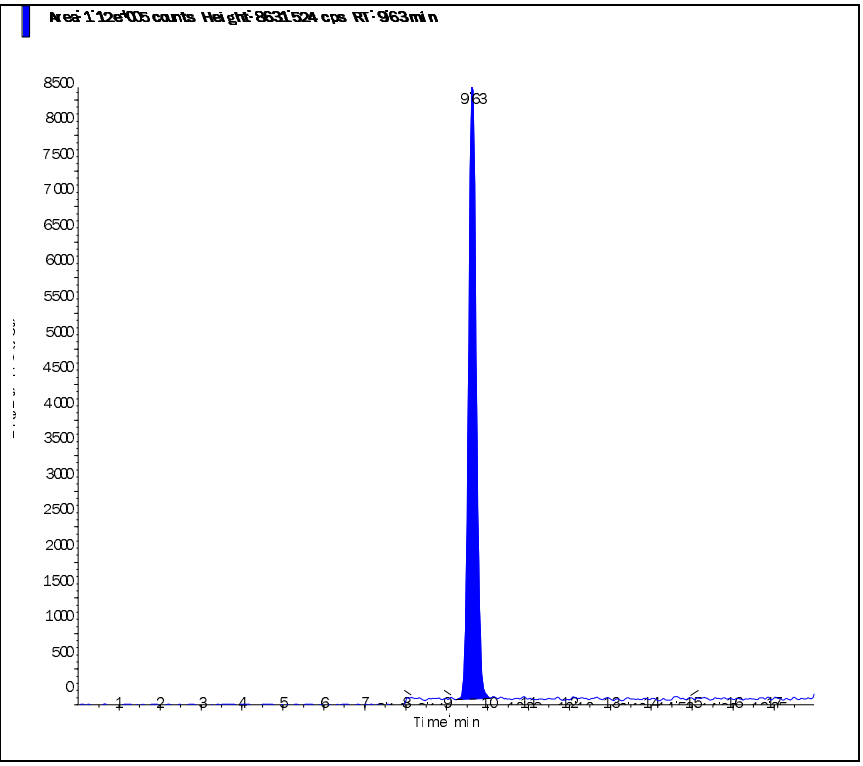

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.60 (9.48) min
Calculated conc:	0.995 ng/ml
Area Ratio:	0.084
Sample Type:	(Standard)

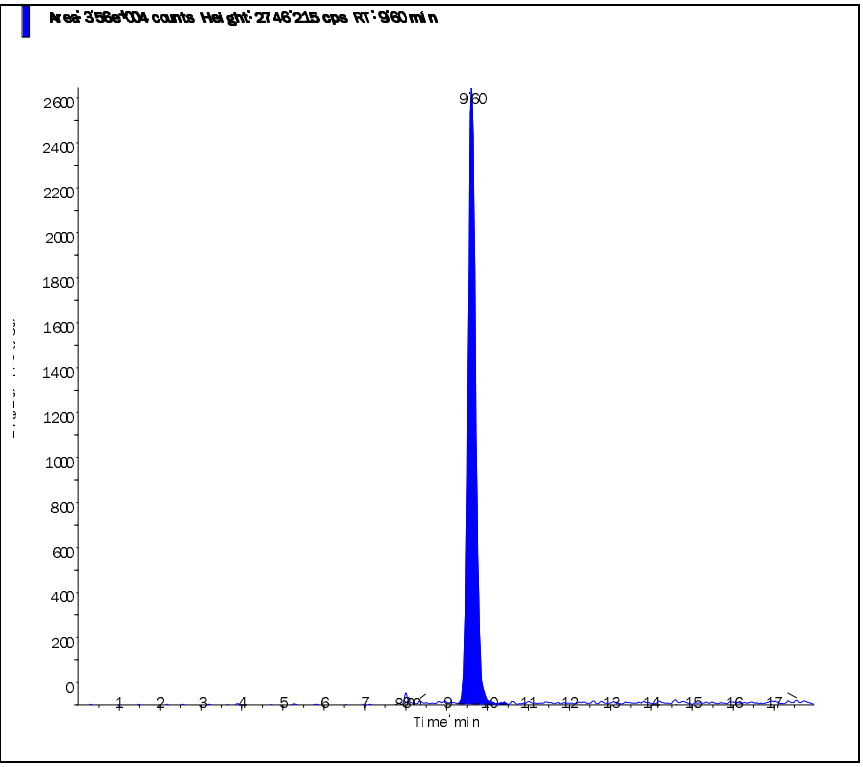

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Data File	LM31297.wiff	**Result Table**	082715_JWR.rdb
Acquisition Date	8/5/2015 11:44:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG533952-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM31297.wiff	**Injection Volume**	10.00
Acquisition Date	8/5/2015 11:44:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	082715_JWR.rdb
Sample ID	WG533952-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.180e+05	9.46	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.310e+05	9.47	2.00	2.04
Perchlorate conf	7.030e+04	9.46	2.00	2.00

O18LP (Internal Standard)

RT (Exp. RT): 9.46(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

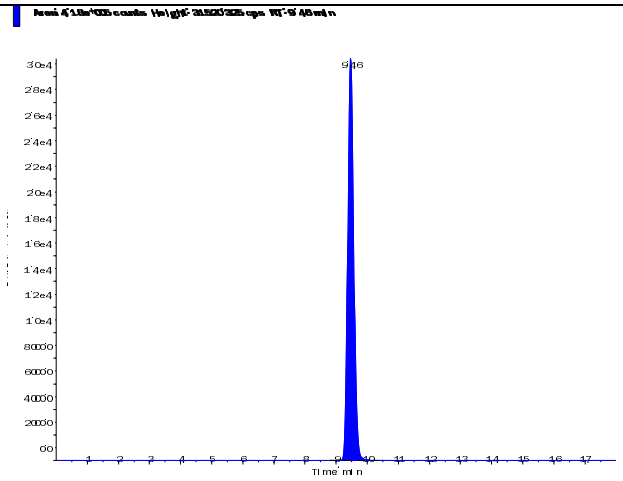

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.47 (9.52) min
Calculated conc:	2.04 ng/ml
Area Ratio:	0.552
Sample Type:	(Standard)

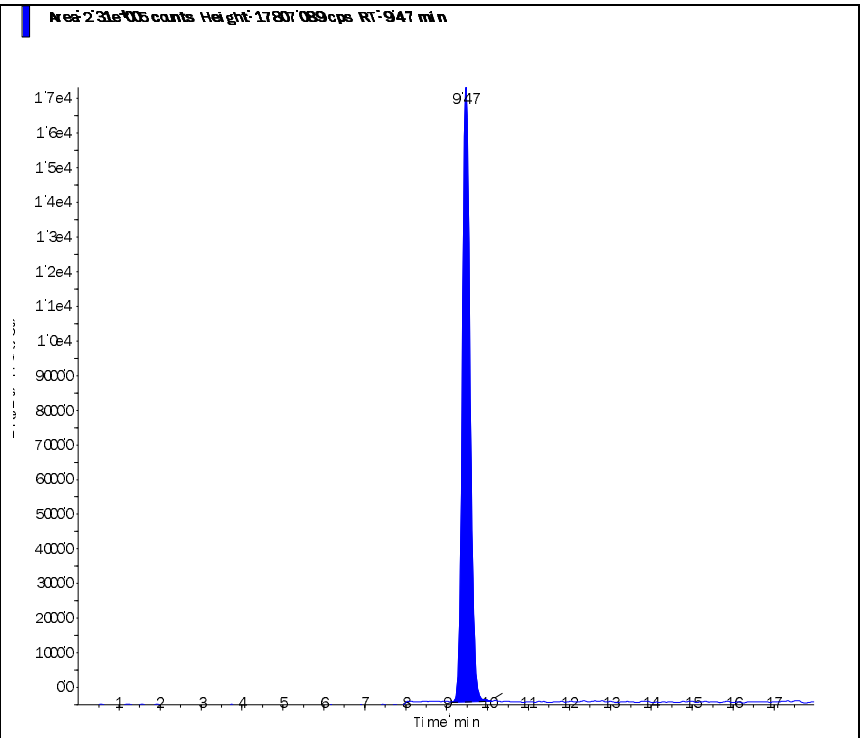

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.46 (9.48) min
Calculated conc:	2.00 ng/ml
Area Ratio:	0.168
Sample Type:	(Standard)

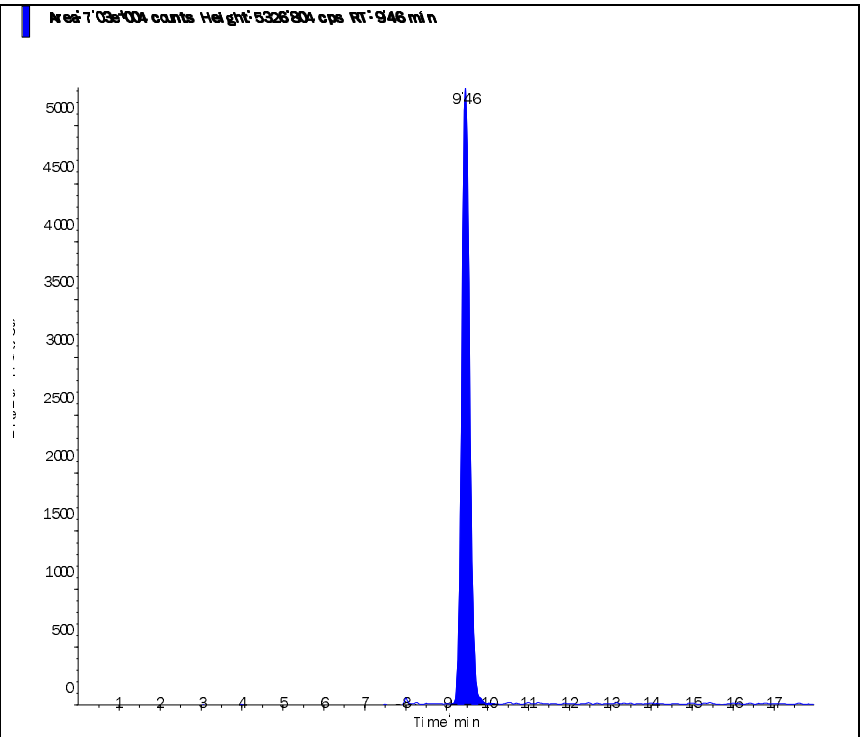

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Created with Analyst Reporter
Printed: 8/28/2015 10:59 AM

Data File	LM31298.wiff	**Result Table**	082715_JWR.rdb
Acquisition Date	8/6/2015 12:03:11 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG533952-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM31298.wiff	**Injection Volume**	10.00
Acquisition Date	8/6/2015 12:03:11 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	082715_JWR.rdb
Sample ID	WG533952-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.100e+05	9.57	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.500e+05	9.58	5.00	4.96
Perchlorate conf	1.700e+05	9.56	5.00	4.94

O18LP (Internal Standard)

RT (Exp. RT): 9.57(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

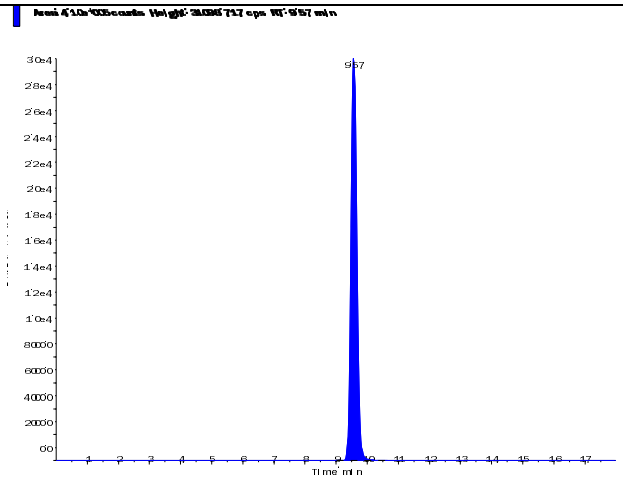

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.58 (9.52) min Calculated conc: 4.96 ng/ml Area Ratio: 1.342 Sample Type: (Standard)	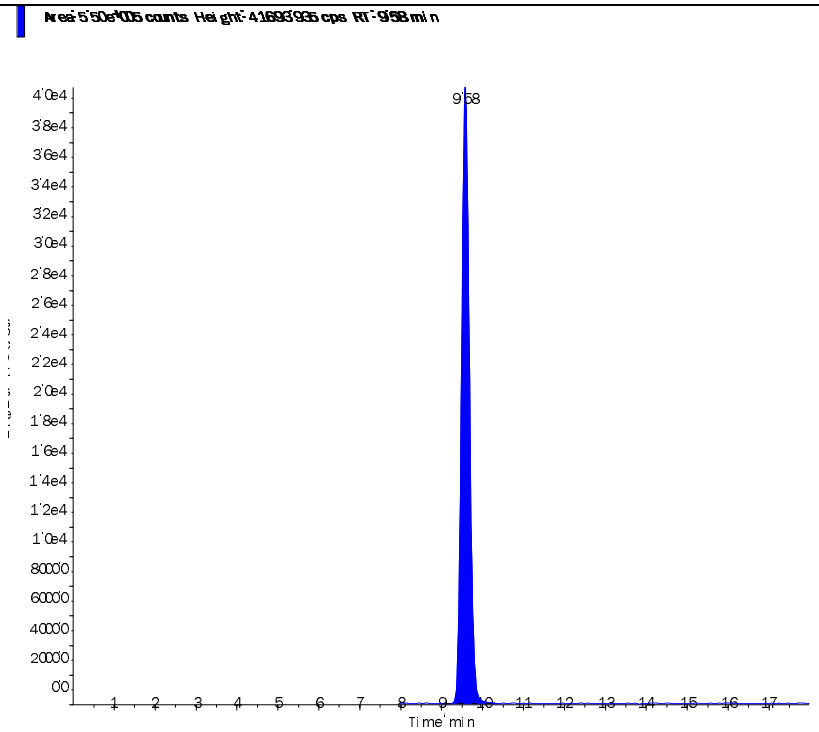
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.56 (9.48) min Calculated conc: 4.94 ng/ml Area Ratio: 0.415 Sample Type: (Standard)	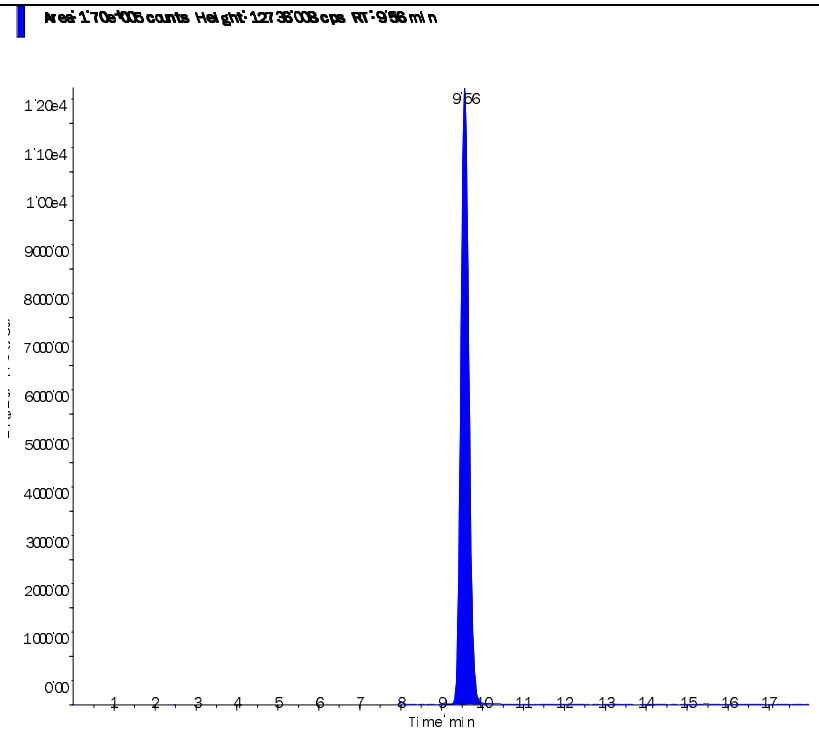

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Created with Analyst Reporter
Printed: 8/28/2015 10:59 AM

Data File	LM31299.wiff	**Result Table**	082715_JWR.rdb
Acquisition Date	8/6/2015 12:22:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG533952-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM31299.wiff	**Injection Volume**	10.00
Acquisition Date	8/6/2015 12:22:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	082715_JWR.rdb
Sample ID	WG533952-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.600e+05	9.65	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	9.750e+05	9.66	10.00	10.00
Perchlorate conf	3.040e+05	9.64	10.00	10.10

O18LP (Internal Standard)

RT (Exp. RT): 9.65(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

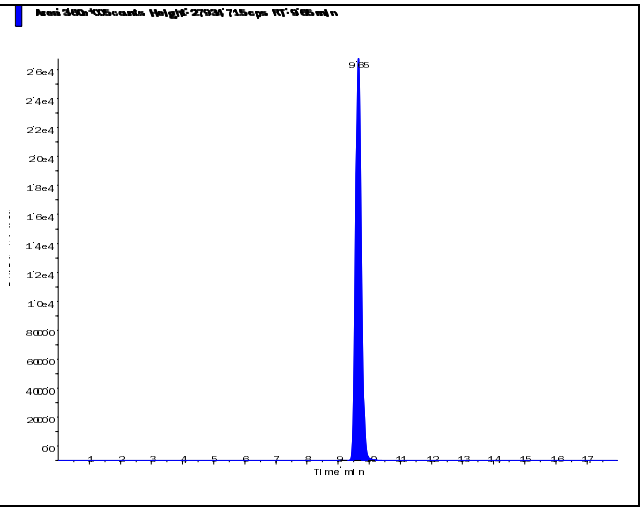

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Printed: 8/28/2015 10:59 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.66 (9.52) min
Calculated conc:	10.00 ng/ml
Area Ratio:	2.709
Sample Type:	(Standard)

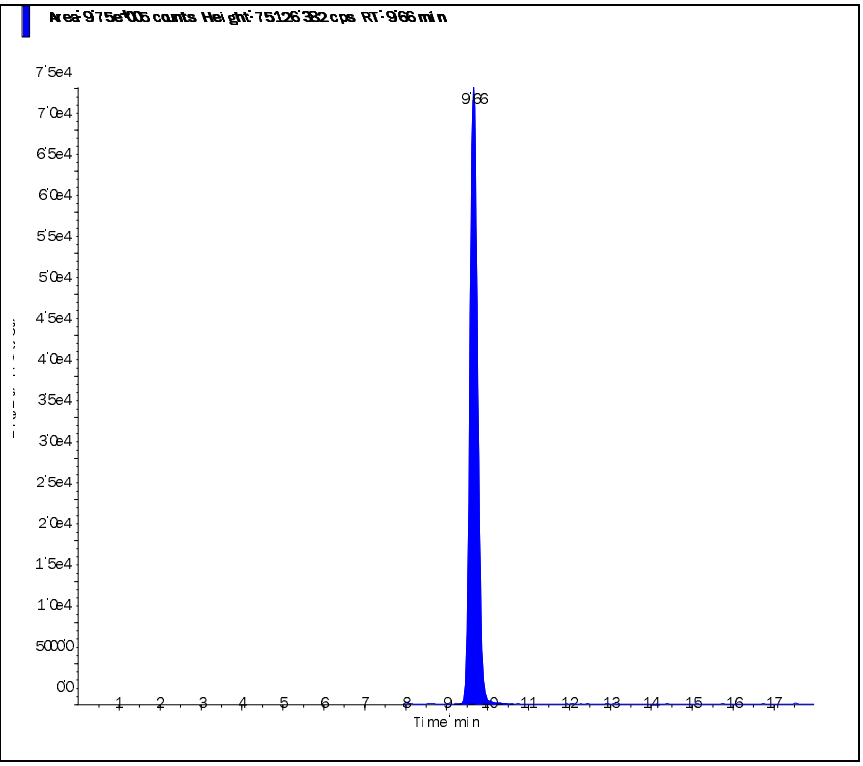

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.64 (9.48) min
Calculated conc:	10.10 ng/ml
Area Ratio:	0.845
Sample Type:	(Standard)

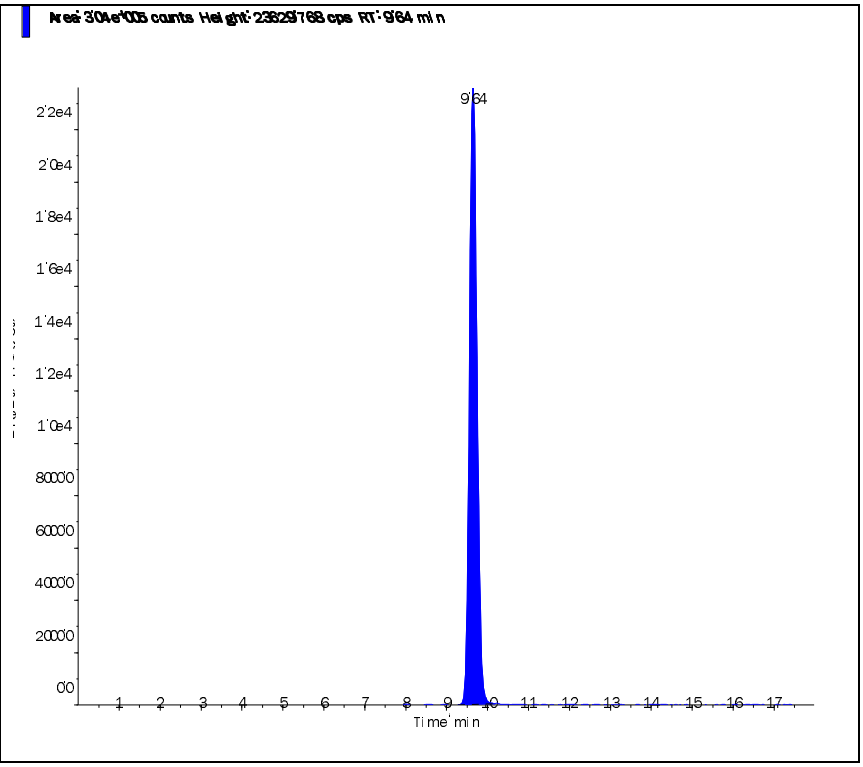

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Printed: 8/6/2015 1:53 PM

Data File	LM31300.wiff	**Result Table**	080515_JWR.rdb
Acquisition Date	8/6/2015 12:41:03 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG533952-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM31300.wiff	**Injection Volume**	10.00
Acquisition Date	8/6/2015 12:41:03 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	080515_JWR.rdb
Sample ID	WG533952-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD69913	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.180e+05	9.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.090e+05	9.71	1.00	0.956
Perchlorate conf	3.410e+04	9.70	1.00	0.964

O18LP (Internal Standard)

RT (Exp. RT): 9.70(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

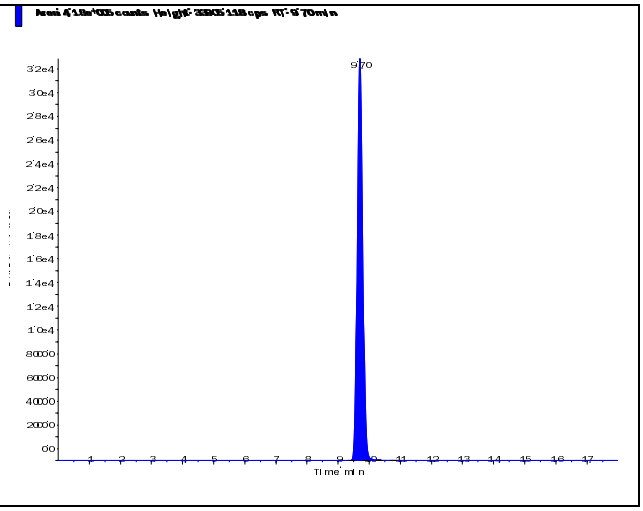

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.71 (9.52) min
Calculated conc:	0.956 ng/ml
Area Ratio:	0.26
Sample Type:	(Quality Control)

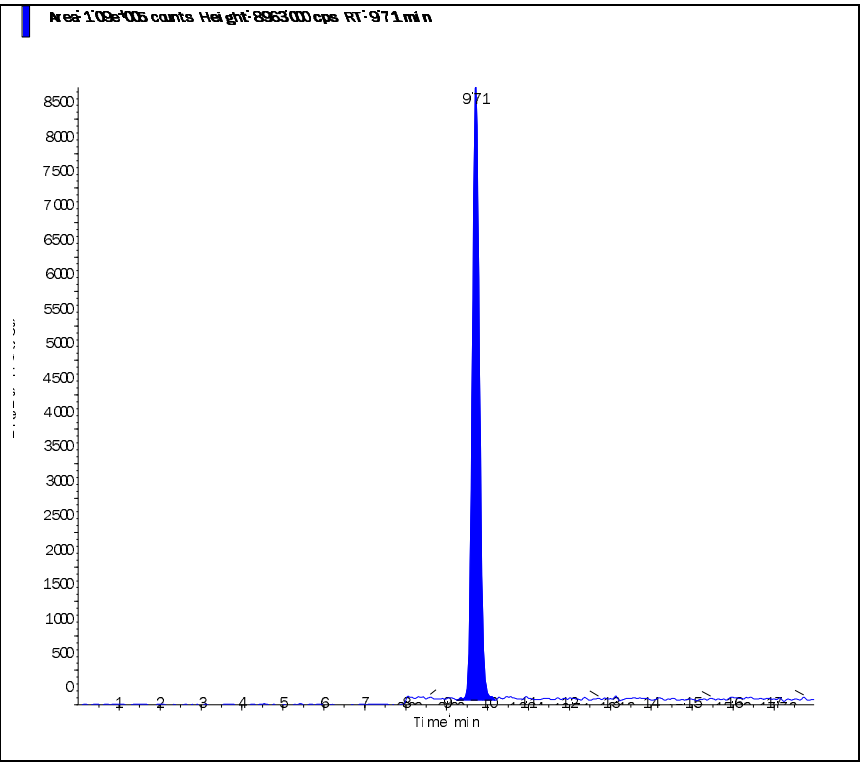

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.70 (9.48) min
Calculated conc:	0.964 ng/ml
Area Ratio:	0.081
Sample Type:	(Quality Control)

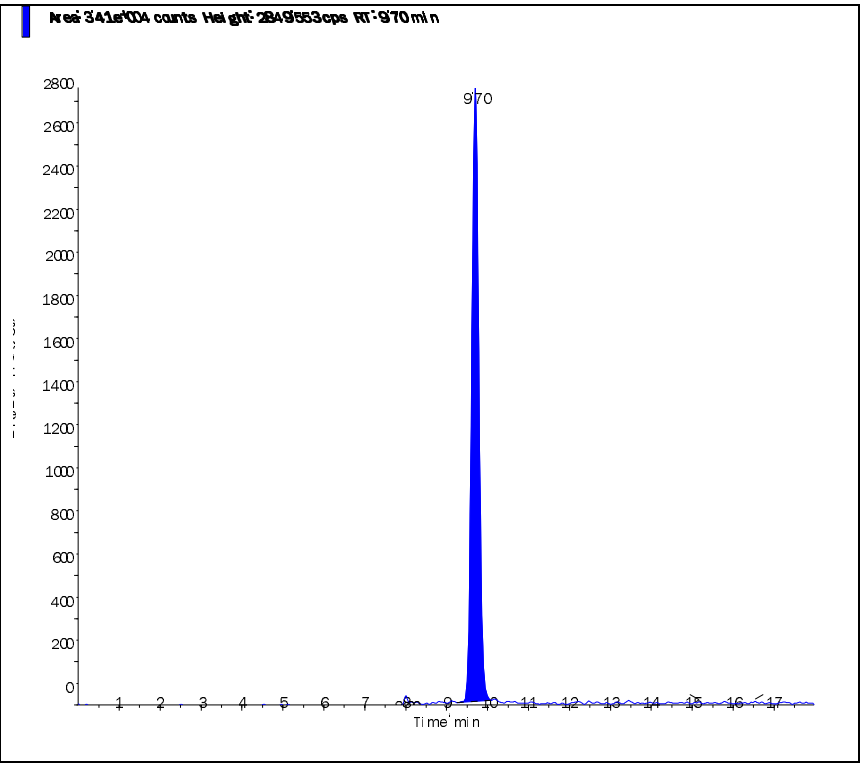

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Printed: 8/27/2015 11:31 AM

Data File	LM31432.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/24/2015 4:28:47 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536250-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM31432.wiff	**Injection Volume**	10.00
Acquisition Date	8/24/2015 4:28:47 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	WG536250-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.660e+05	9.62	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.050e+05	9.62	1.00	1.05
Perchlorate conf	3.210e+04	9.61	1.00	1.04

O18LP (Internal Standard)

RT (Exp. RT): 9.62(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

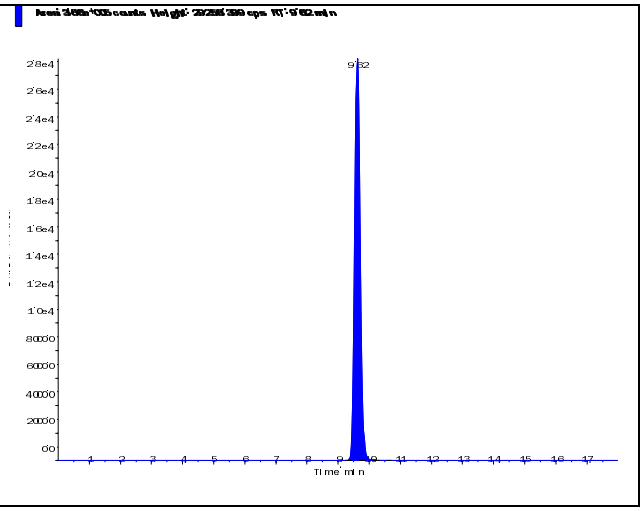

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.62 (9.52) min Calculated conc: 1.05 ng/ml Area Ratio: 0.286 Sample Type: (Quality Control)	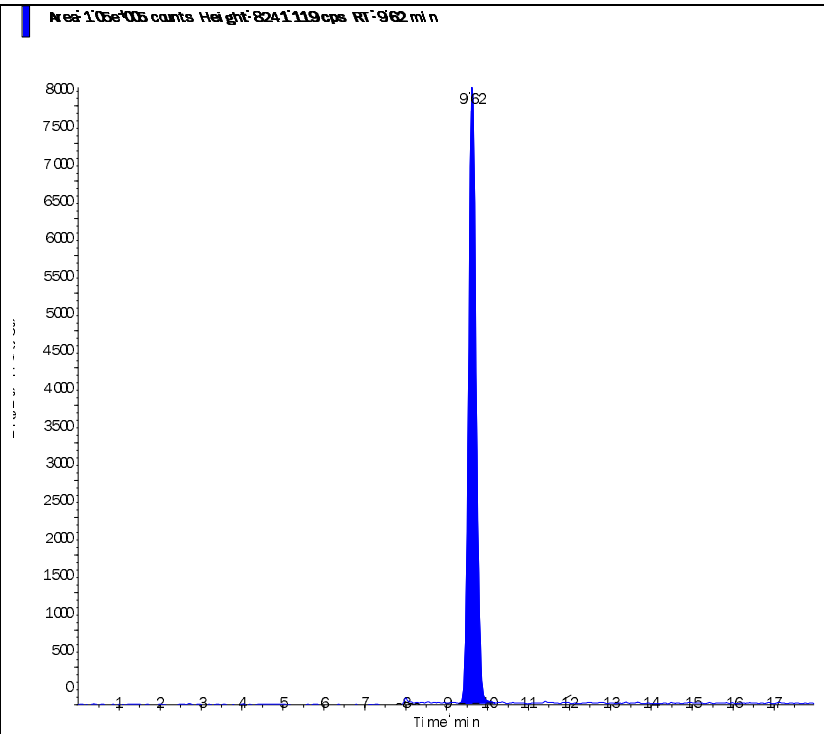
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.61 (9.48) min Calculated conc: 1.04 ng/ml Area Ratio: 0.088 Sample Type: (Quality Control)	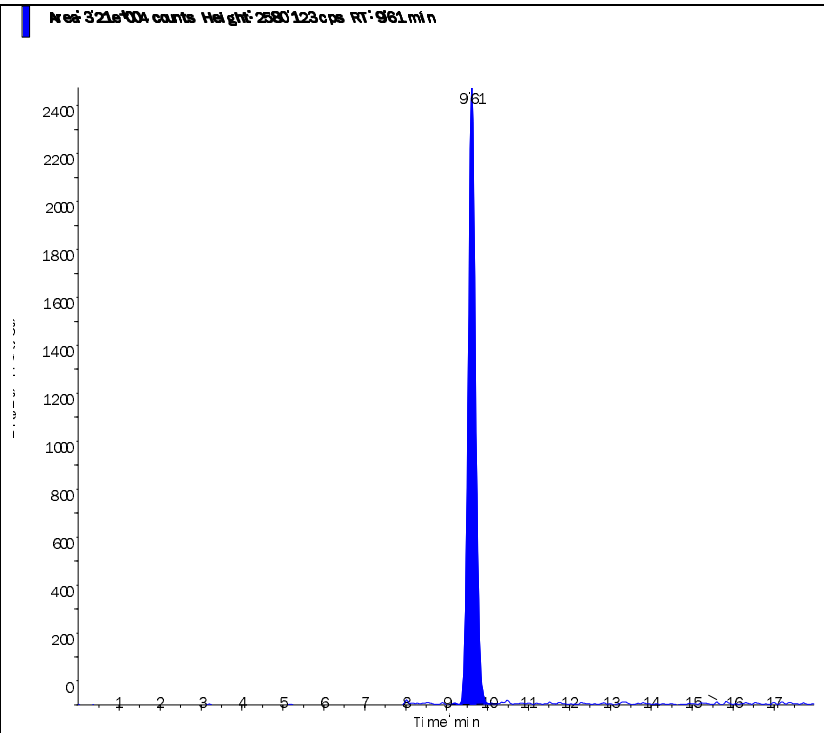

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Printed: 8/27/2015 11:35 AM

Data File	LM31444.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/24/2015 8:16:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536250-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM31444.wiff	**Injection Volume**	10.00
Acquisition Date	8/24/2015 8:16:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	WG536250-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.530e+05	9.60	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.240e+05	9.61	1.00	1.01
Perchlorate conf	3.920e+04	9.60	1.00	1.03

O18LP (Internal Standard)

RT (Exp. RT): 9.60(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

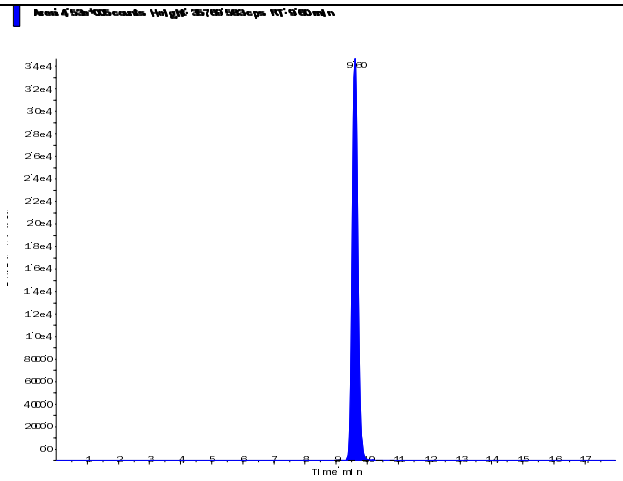

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.61 (9.52) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.274
Sample Type:	(Quality Control)

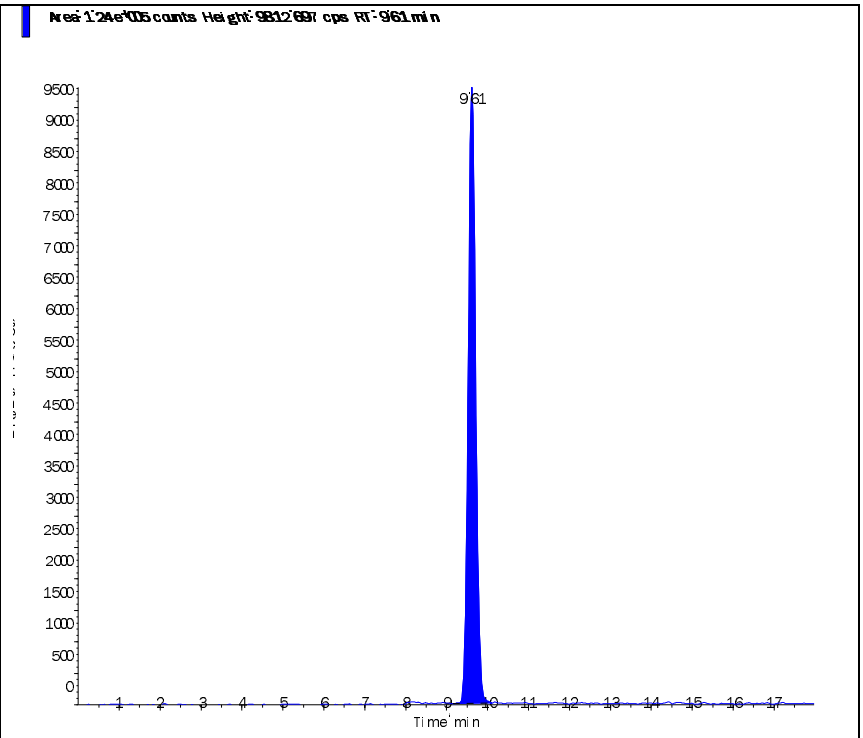

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.60 (9.48) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.087
Sample Type:	(Quality Control)

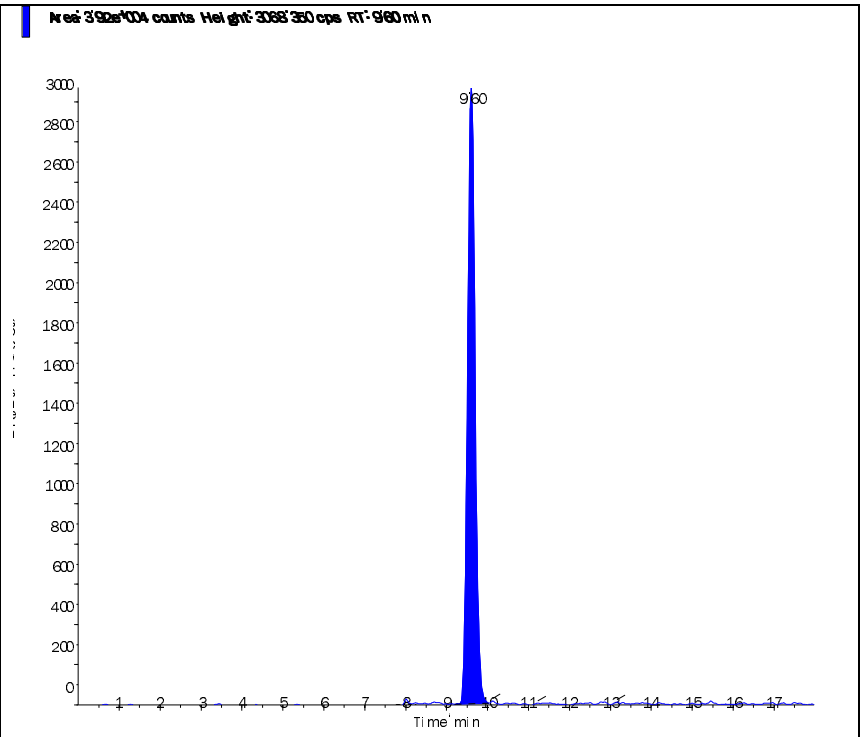

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Printed: 8/27/2015 11:39 AM

Data File	LM31456.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/25/2015 12:03:13 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536250-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM31456.wiff	**Injection Volume**	10.00
Acquisition Date	8/25/2015 12:03:13 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	WG536250-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.070e+05	9.60	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.100e+05	9.61	1.00	0.991
Perchlorate conf	3.370e+04	9.60	1.00	0.98

O18LP (Internal Standard)

RT (Exp. RT): 9.60(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

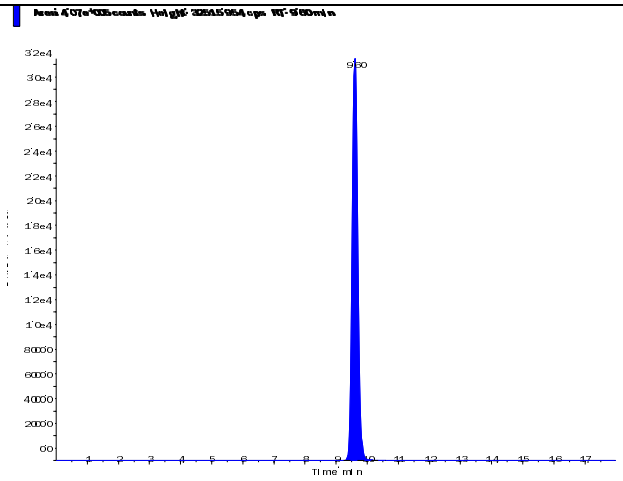

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.61 (9.52) min
Calculated conc:	0.991 ng/ml
Area Ratio:	0.269
Sample Type:	(Quality Control)

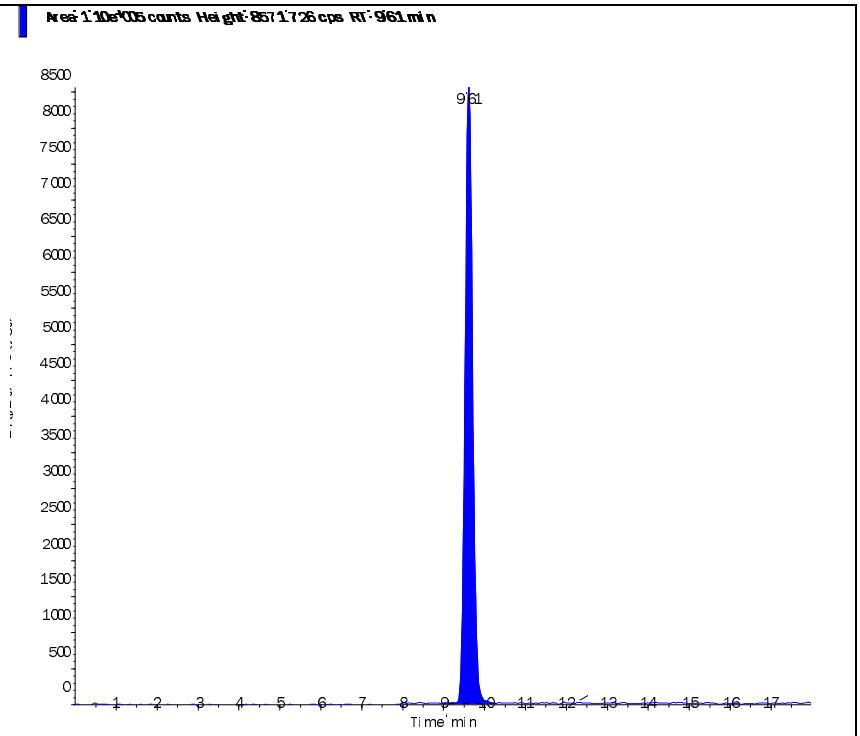

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.60 (9.48) min
Calculated conc:	0.98 ng/ml
Area Ratio:	0.083
Sample Type:	(Quality Control)

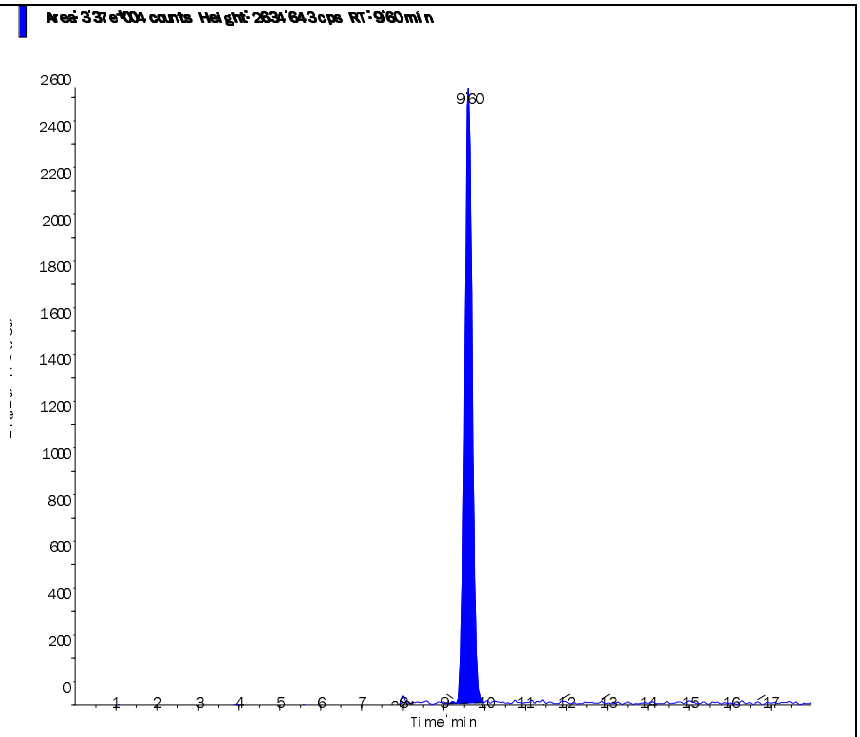

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Data File	LM31464.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/25/2015 2:34:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536250-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM31464.wiff	**Injection Volume**	10.00
Acquisition Date	8/25/2015 2:34:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	WG536250-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.640e+05	9.59	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.230e+05	9.60	1.00	0.979
Perchlorate conf	3.780e+04	9.59	1.00	0.965

O18LP (Internal Standard)

RT (Exp. RT): 9.59(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

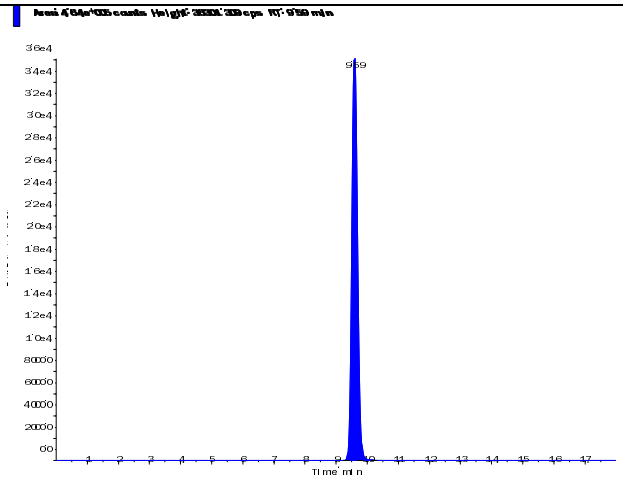

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.60 (9.52) min
Calculated conc:	0.979 ng/ml
Area Ratio:	0.266
Sample Type:	(Quality Control)

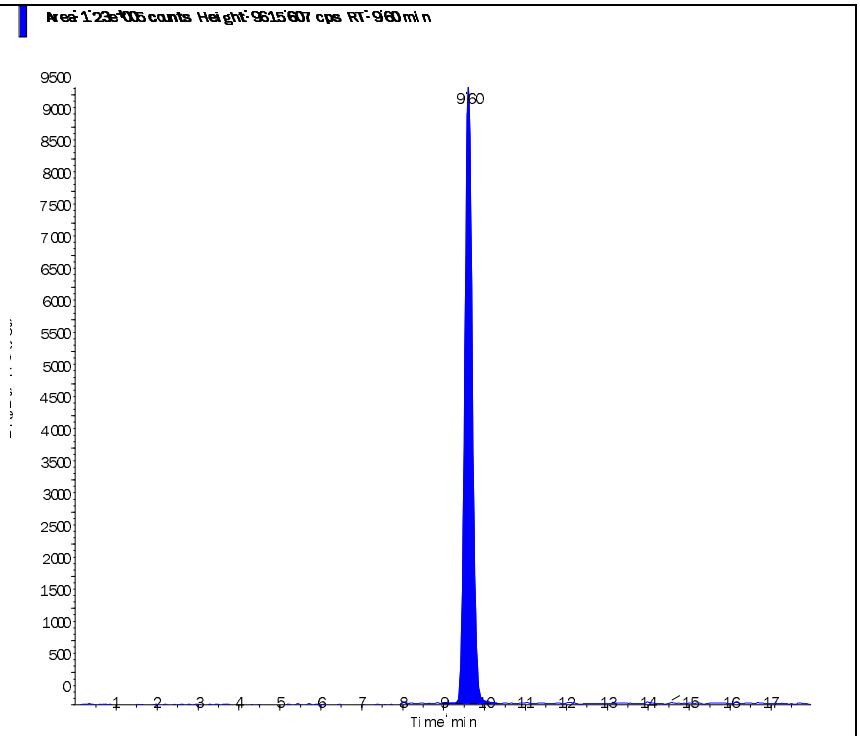

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.59 (9.48) min
Calculated conc:	0.965 ng/ml
Area Ratio:	0.082
Sample Type:	(Quality Control)

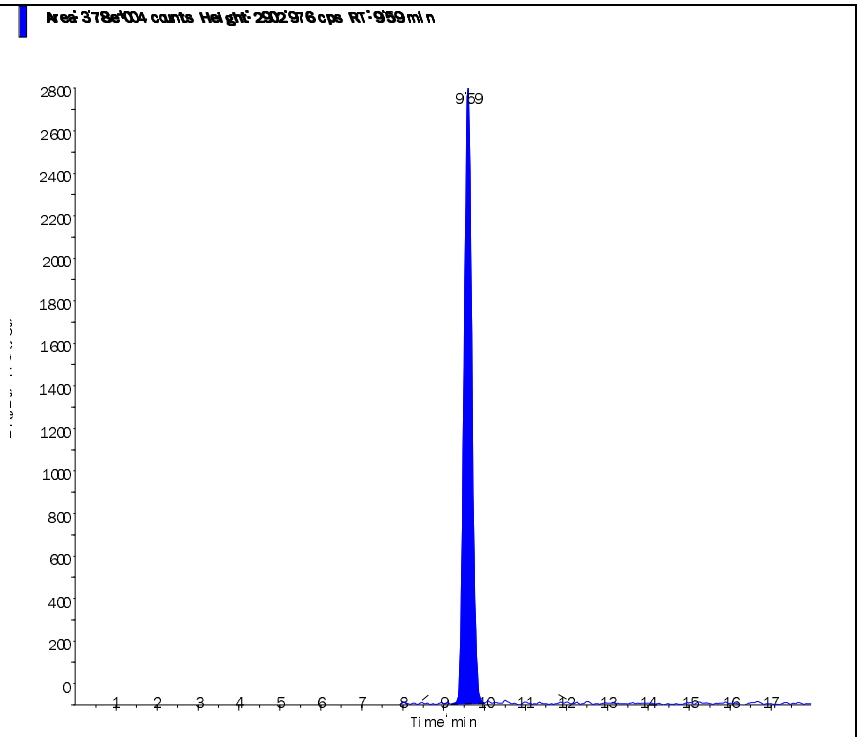

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Data File	LM31433.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/24/2015 4:47:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536249-05 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM31433.wiff	**Injection Volume**	10.00
Acquisition Date	8/24/2015 4:47:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	WG536249-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.650e+05	9.73	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.150e+04	9.73	N/A	0.213
Perchlorate conf	6.560e+03	9.73	N/A	0.208

O18LP (Internal Standard)

RT (Exp. RT): 9.73(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

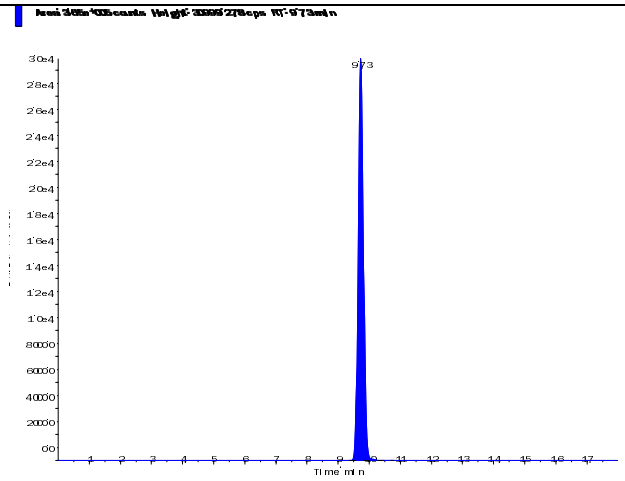

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.73 (9.52) min Calculated conc: 0.213 ng/ml Area Ratio: 0.059 Sample Type: (Unknown)	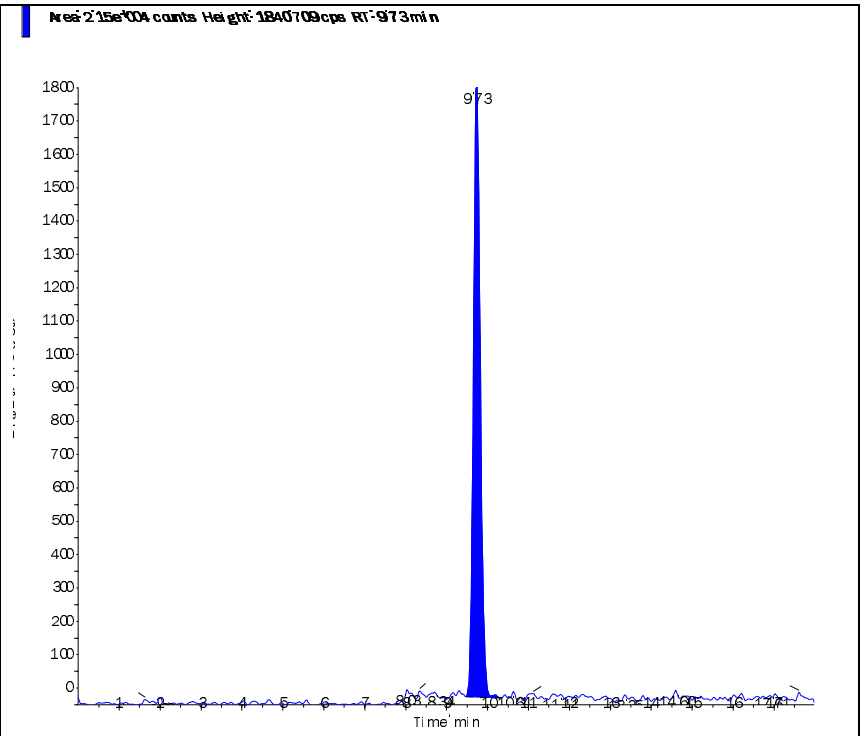
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.73 (9.48) min Calculated conc: 0.208 ng/ml Area Ratio: 0.018 Sample Type: (Unknown)	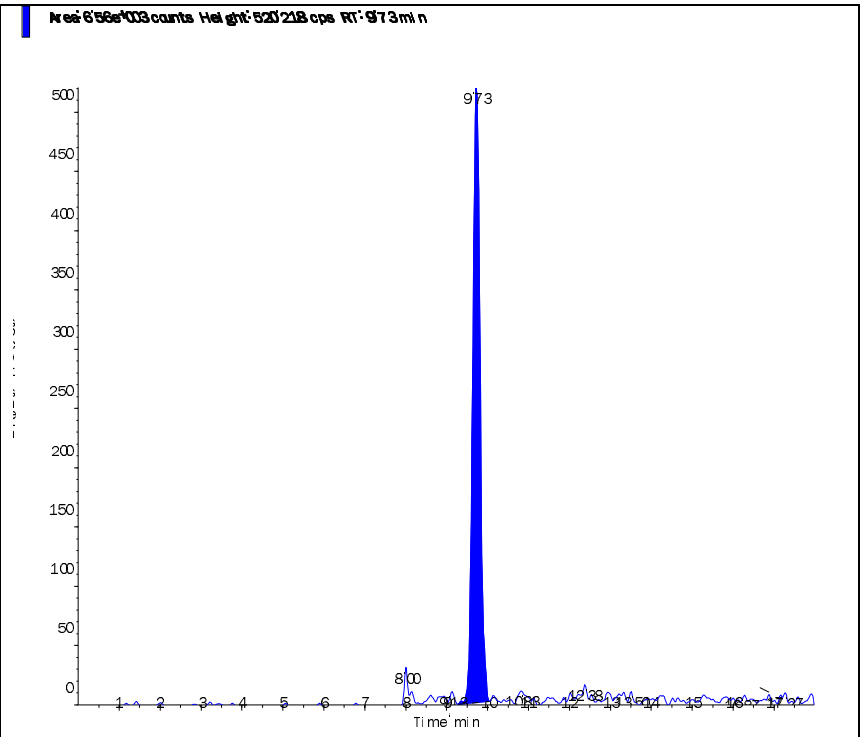

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Data File	LM31445.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/24/2015 8:34:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536249-06 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM31445.wiff	**Injection Volume**	10.00
Acquisition Date	8/24/2015 8:34:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	WG536249-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.180e+05	9.71	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.280e+04	9.72	N/A	0.196
Perchlorate conf	7.970e+03	9.71	N/A	0.221

O18LP (Internal Standard)

RT (Exp. RT): 9.71(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

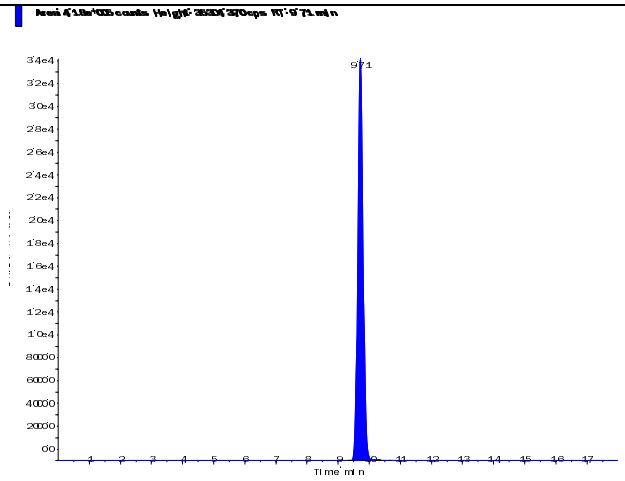

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.72 (9.52) min Calculated conc: 0.196 ng/ml Area Ratio: 0.054 Sample Type: (Unknown)	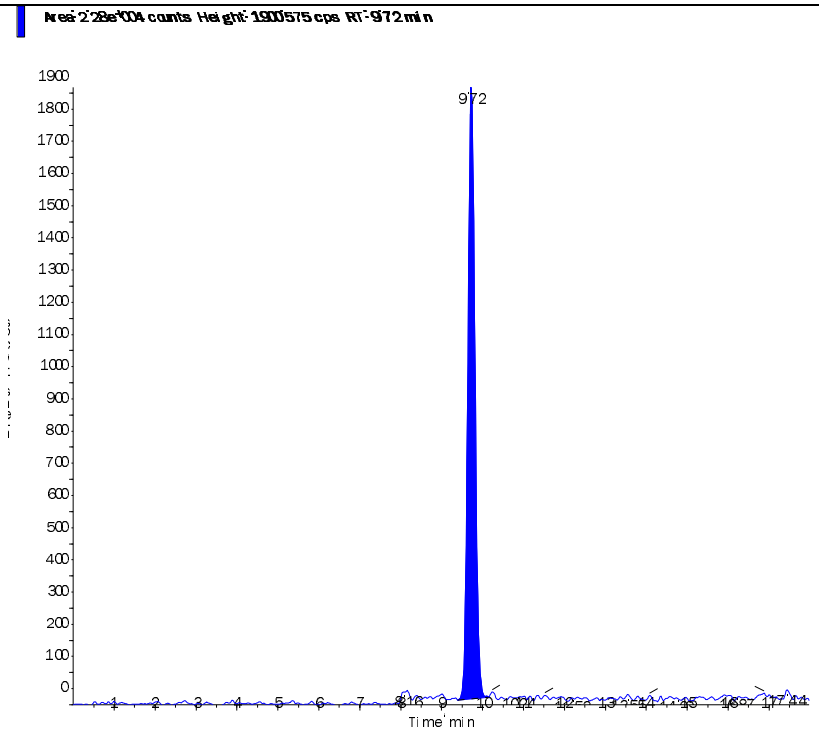
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.71 (9.48) min Calculated conc: 0.221 ng/ml Area Ratio: 0.019 Sample Type: (Unknown)	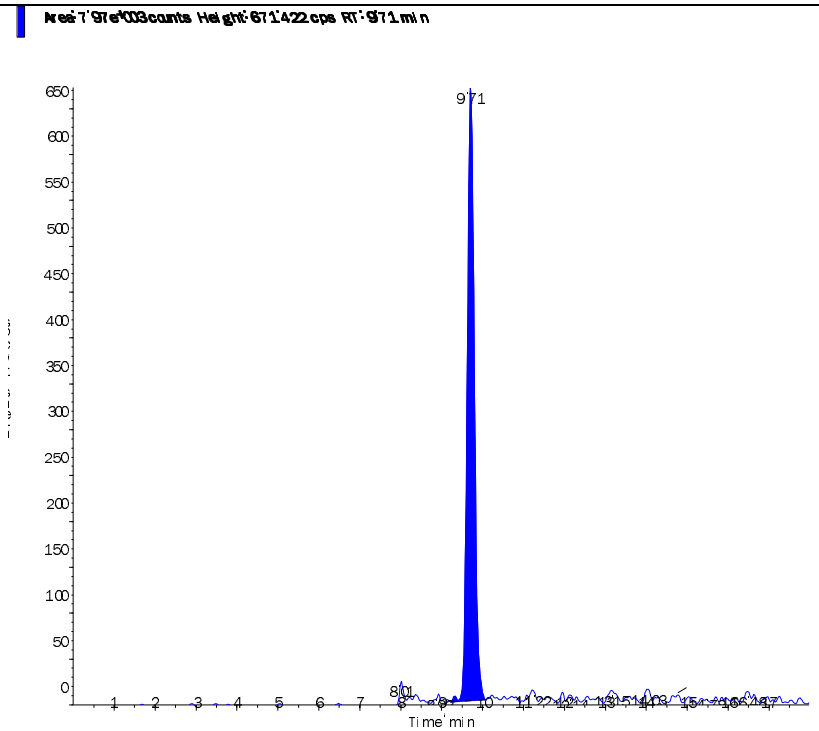

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Printed: 8/27/2015 11:39 AM

Data File	LM31457.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/25/2015 12:22:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536249-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM31457.wiff	**Injection Volume**	10.00
Acquisition Date	8/25/2015 12:22:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	WG536249-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.140e+05	9.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.410e+04	9.72	N/A	0.21
Perchlorate conf	8.120e+03	9.71	N/A	0.228

O18LP (Internal Standard)

RT (Exp. RT): 9.70(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

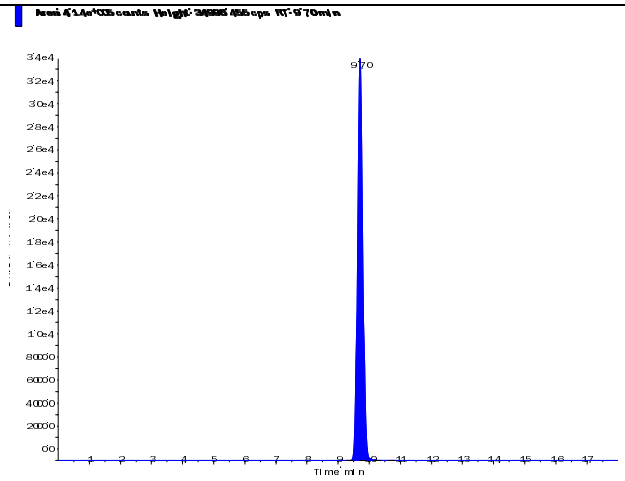

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.72 (9.52) min Calculated conc: 0.21 ng/ml Area Ratio: 0.058 Sample Type: (Unknown)	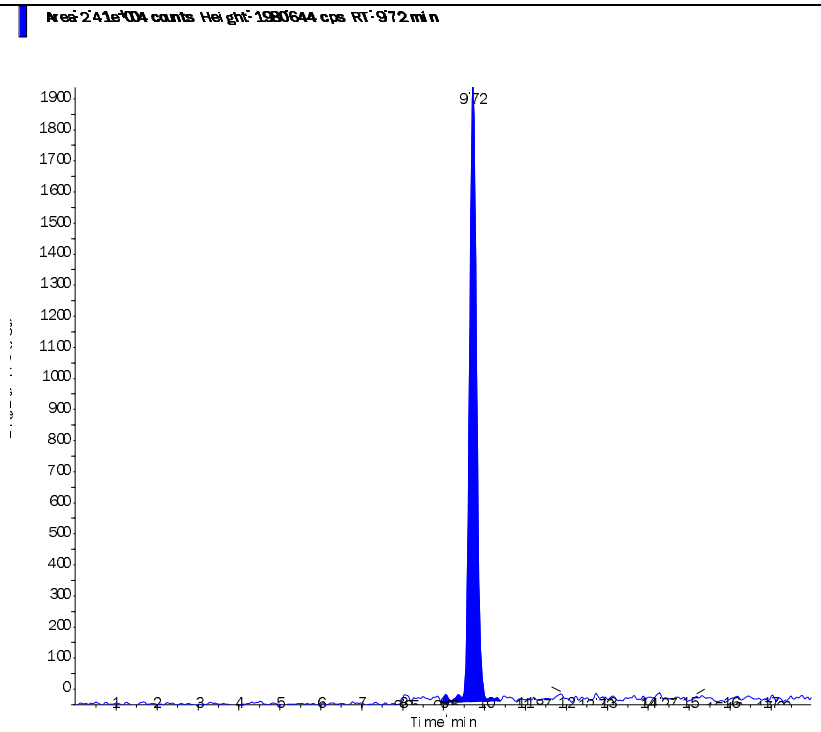
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.71 (9.48) min Calculated conc: 0.228 ng/ml Area Ratio: 0.02 Sample Type: (Unknown)	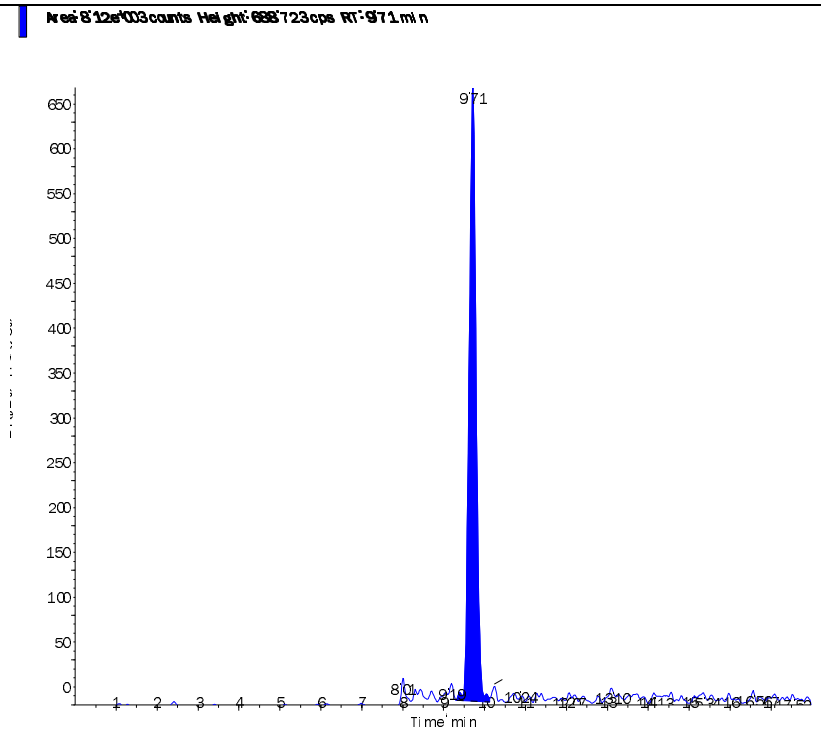

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Data File	LM31465.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/25/2015 2:53:38 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536249-08 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM31465.wiff	**Injection Volume**	10.00
Acquisition Date	8/25/2015 2:53:38 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	WG536249-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.220e+05	9.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.410e+04	9.72	N/A	0.206
Perchlorate conf	7.860e+03	9.69	N/A	0.216

O18LP (Internal Standard)

RT (Exp. RT): 9.70(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

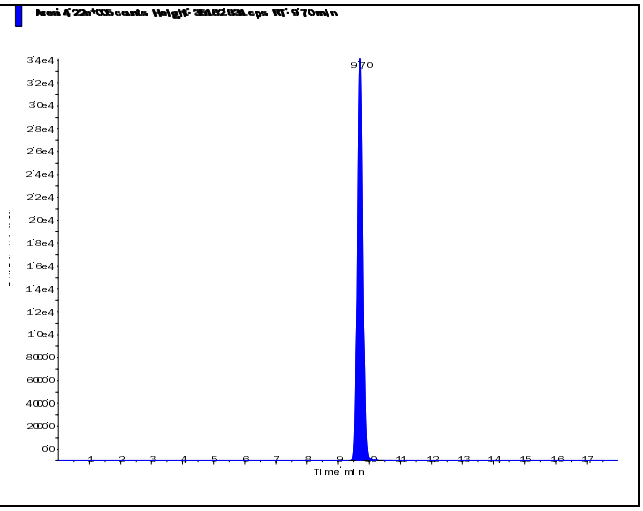

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.72 (9.52) min Calculated conc: 0.206 ng/ml Area Ratio: 0.057 Sample Type: (Unknown)	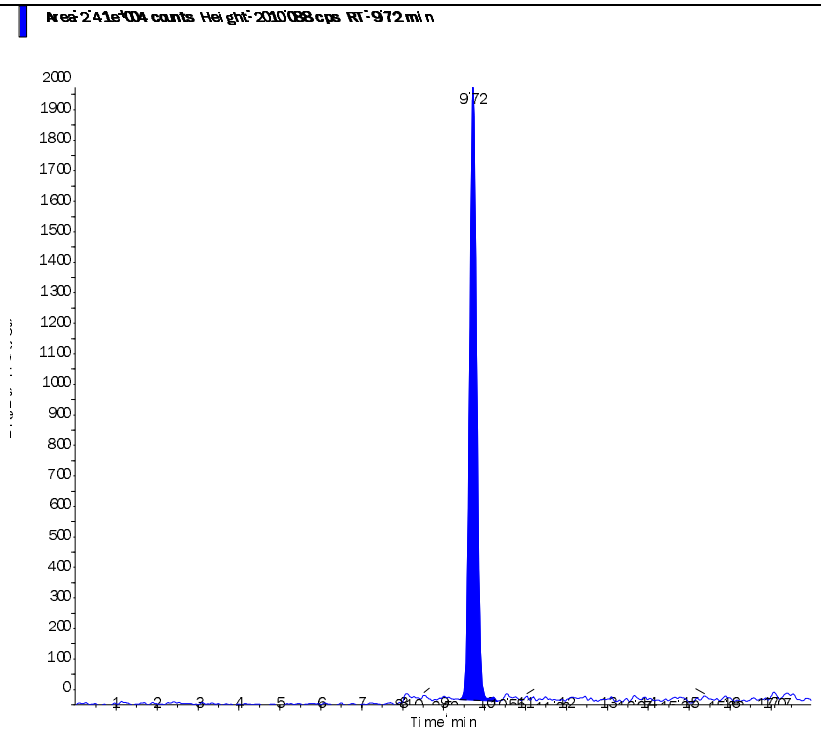
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.69 (9.48) min Calculated conc: 0.216 ng/ml Area Ratio: 0.019 Sample Type: (Unknown)	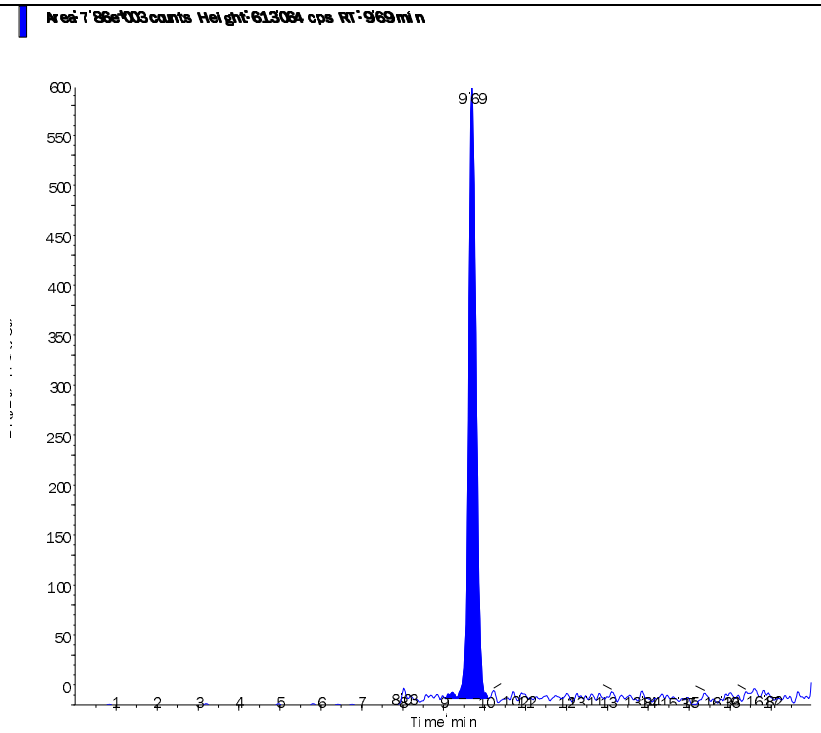

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Printed: 8/27/2015 11:30 AM

Data File	LM31431.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/24/2015 4:09:55 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536250-01 CCB	**Injection Vial**	1.00
Data File	LM31431.wiff	**Injection Volume**	10.00
Acquisition Date	8/24/2015 4:09:55 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	WG536250-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.470e+05	9.74	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.74(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

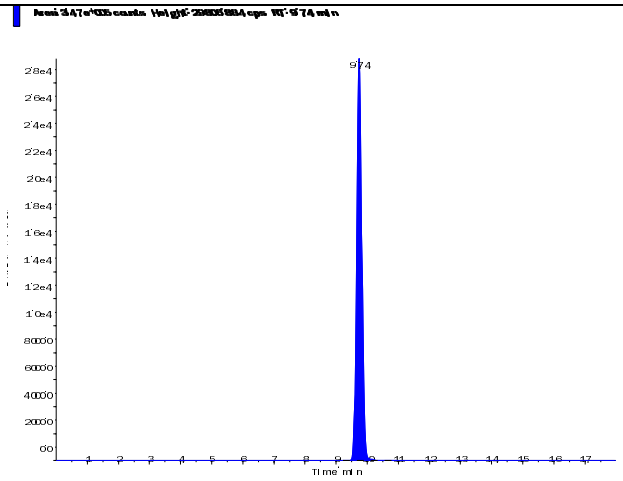

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.52) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

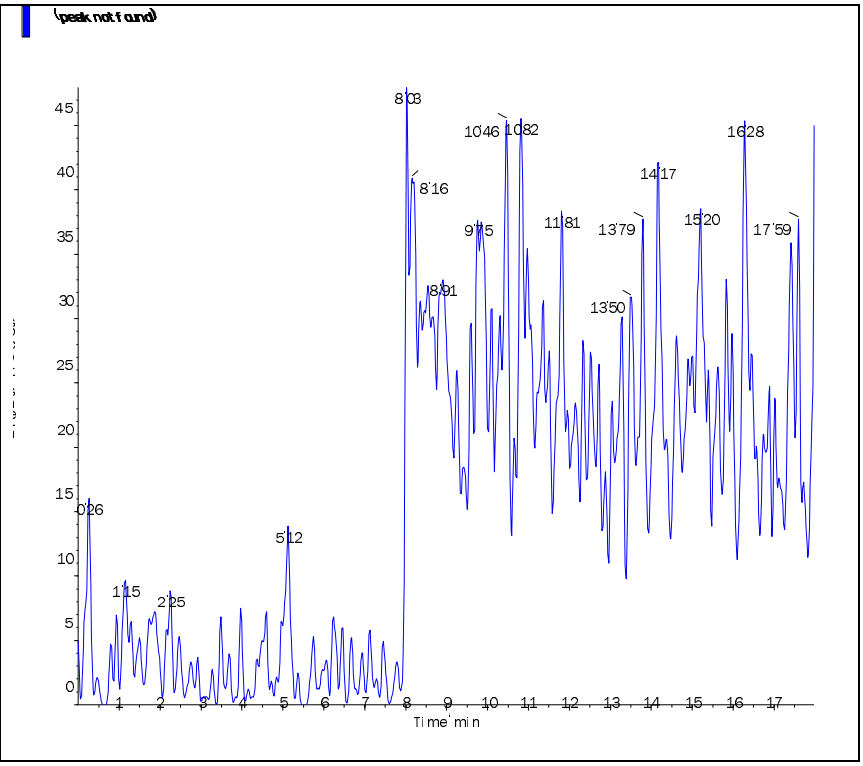

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.48) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

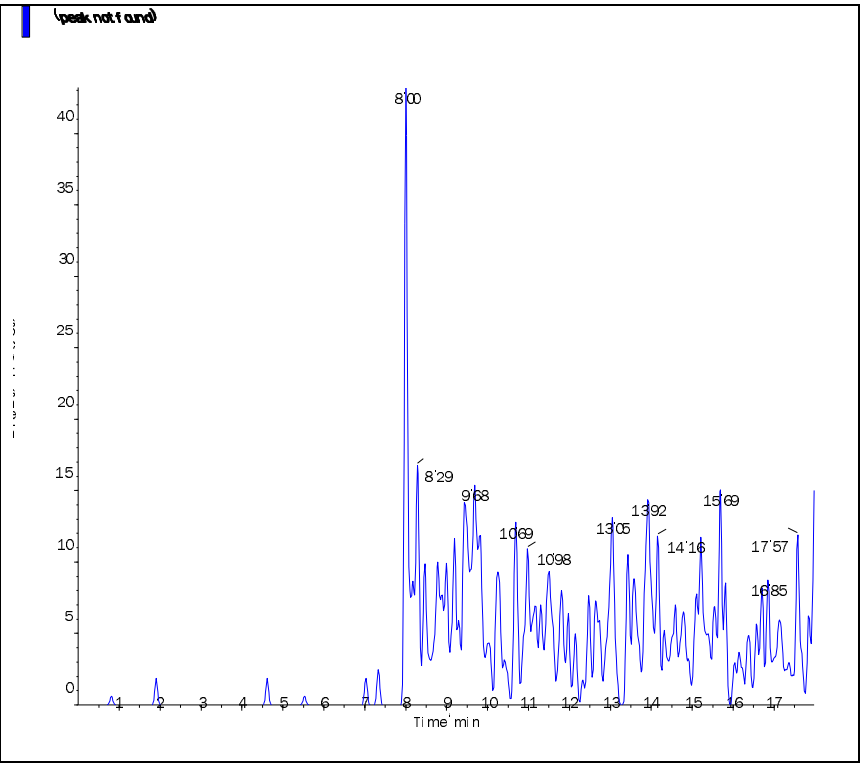

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Data File	LM31446.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/24/2015 8:53:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536250-04 CCB	**Injection Vial**	1.00
Data File	LM31446.wiff	**Injection Volume**	10.00
Acquisition Date	8/24/2015 8:53:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	WG536250-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.030e+05	9.72	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	2.030e+02	9.69	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.72(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

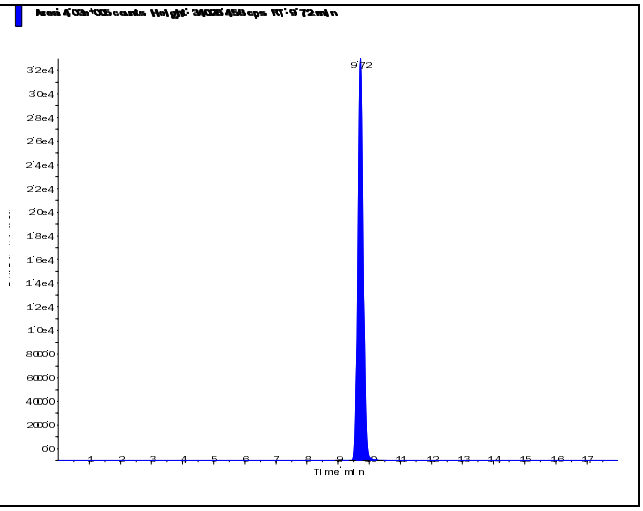

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.52) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	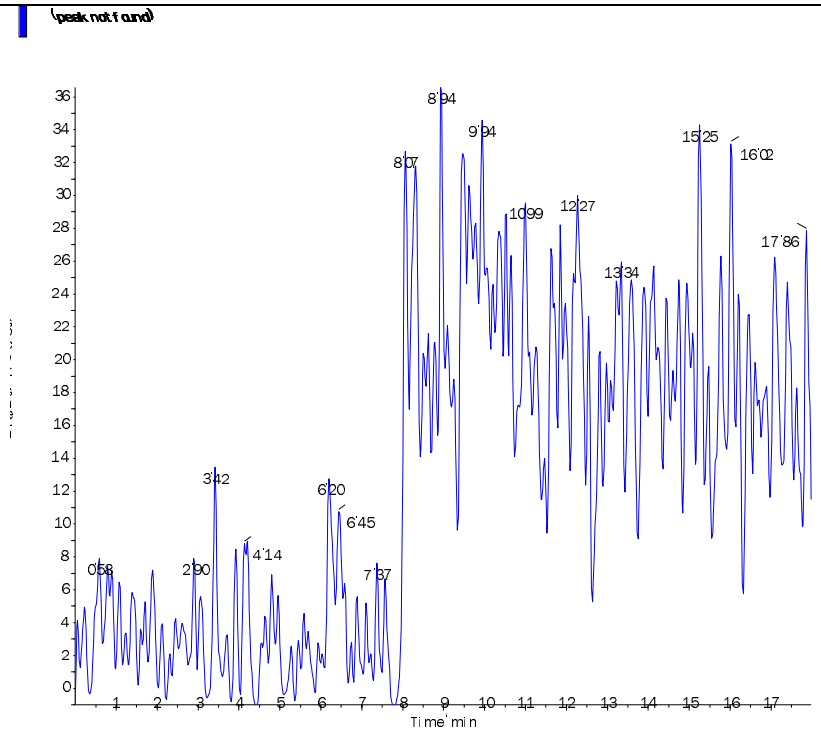
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.69 (9.48) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	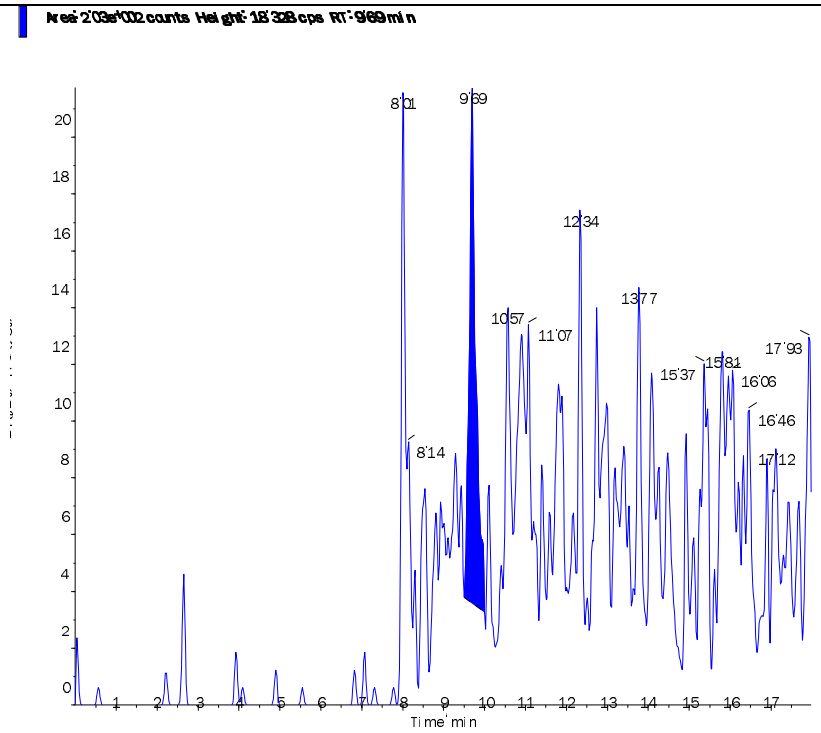

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Printed: 8/27/2015 11:39 AM

Data File	LM31458.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/25/2015 12:41:05 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536250-06 CCB	**Injection Vial**	1.00
Data File	LM31458.wiff	**Injection Volume**	10.00
Acquisition Date	8/25/2015 12:41:05 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	WG536250-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.180e+05	9.71	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.730e+02	9.63	N/A	< 0
Perchlorate conf	3.400e+02	9.75	N/A	0.0032

O18LP (Internal Standard)

RT (Exp. RT): 9.71(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

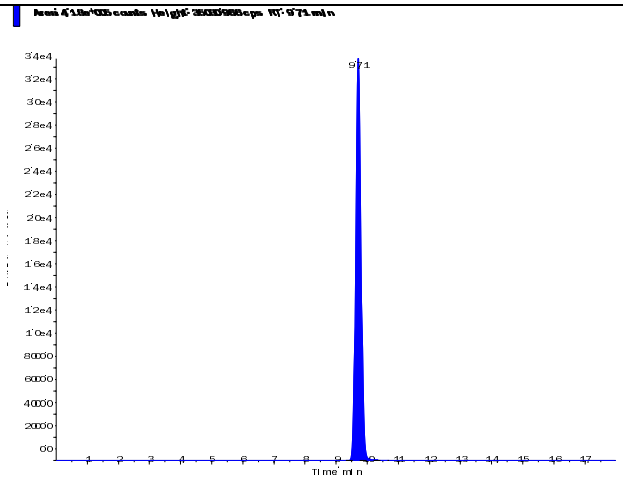

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.63 (9.52) min Calculated conc: < 0 ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	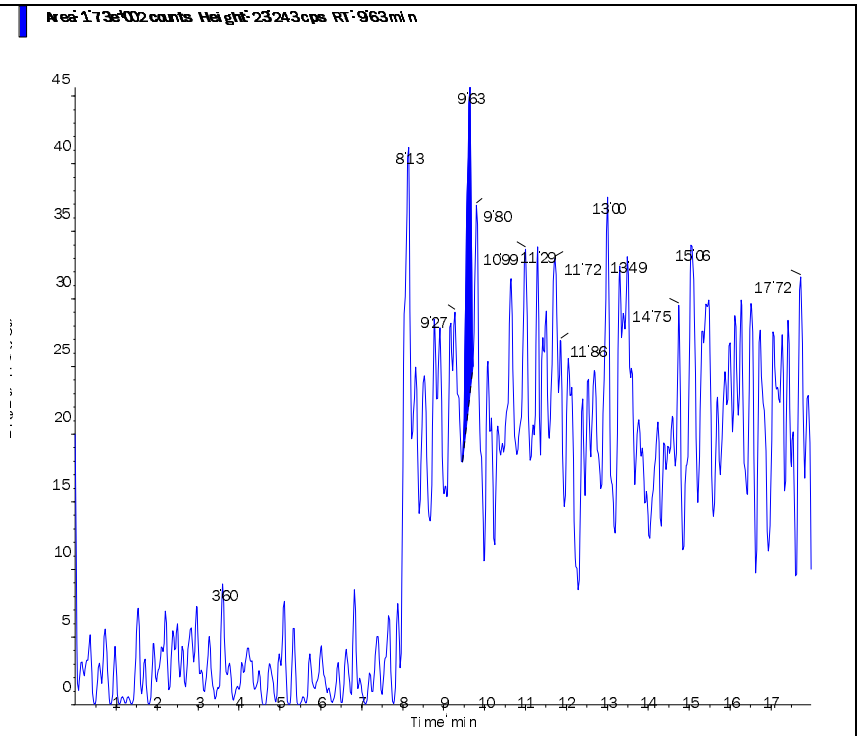
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.75 (9.48) min Calculated conc: 0.0032 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	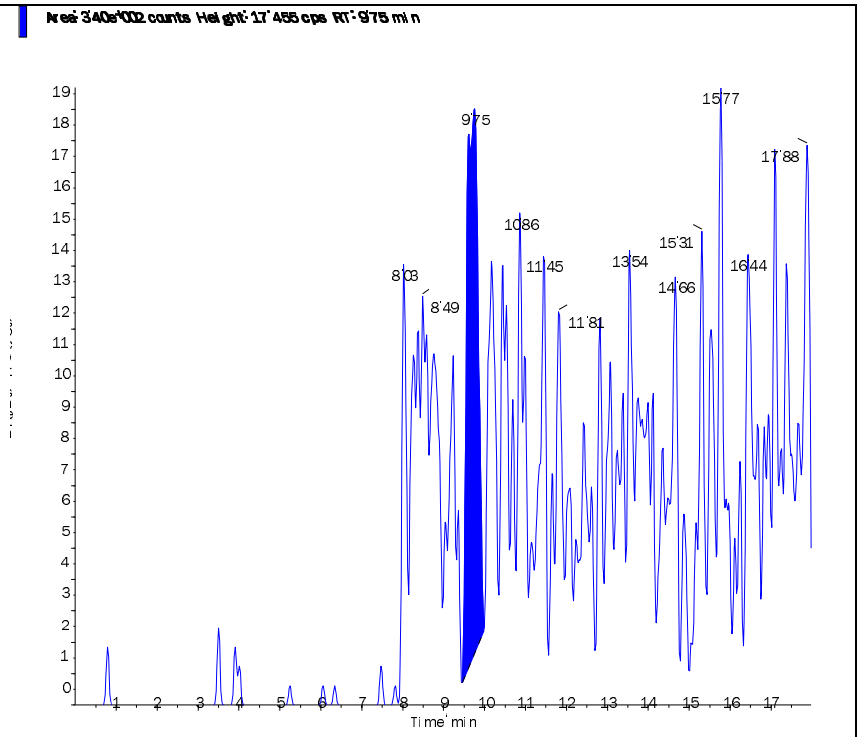

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Data File	LM31466.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/25/2015 3:12:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536250-08 CCB	**Injection Vial**	1.00
Data File	LM31466.wiff	**Injection Volume**	10.00
Acquisition Date	8/25/2015 3:12:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	WG536250-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.150e+05	9.71	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	8.580e+01	9.62	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.71(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

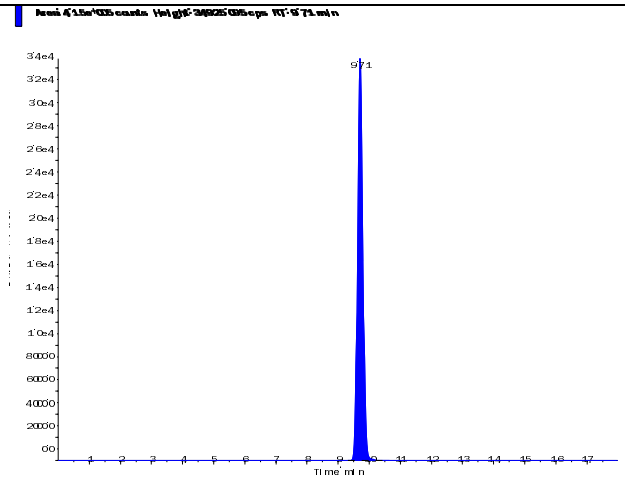

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.52) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

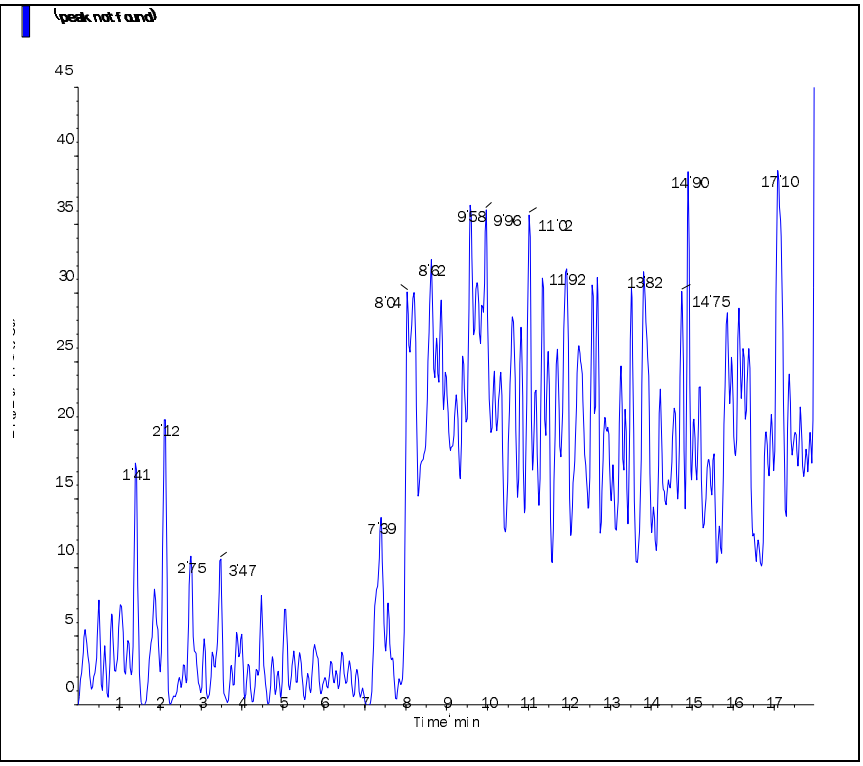

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.62 (9.48) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

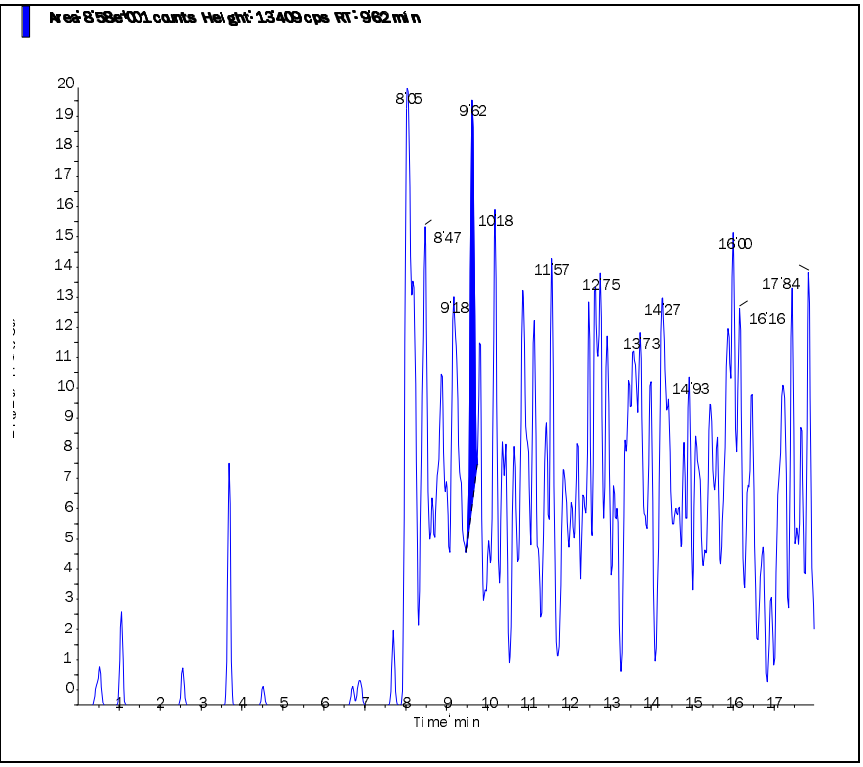

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Printed: 8/27/2015 11:31 AM

Data File	LM31434.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/24/2015 5:06:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536249-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM31434.wiff	**Injection Volume**	10.00
Acquisition Date	8/24/2015 5:06:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	WG536249-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD69913	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.560e+05	9.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.090e+04	9.31	N/A	0.212
Perchlorate conf	6.270e+03	9.29	N/A	0.203

O18LP (Internal Standard)

RT (Exp. RT): 9.30(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

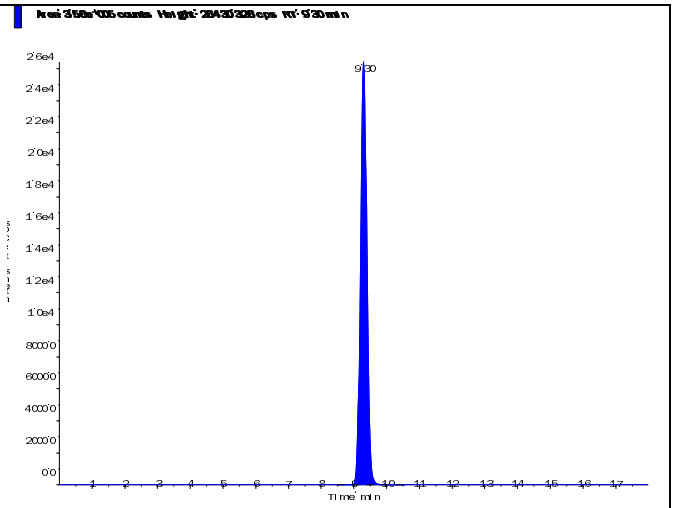

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

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Printed: 8/27/2015 11:31 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.31 (9.52) min Calculated conc: 0.212 ng/ml Area Ratio: 0.059 Sample Type: (Unknown)	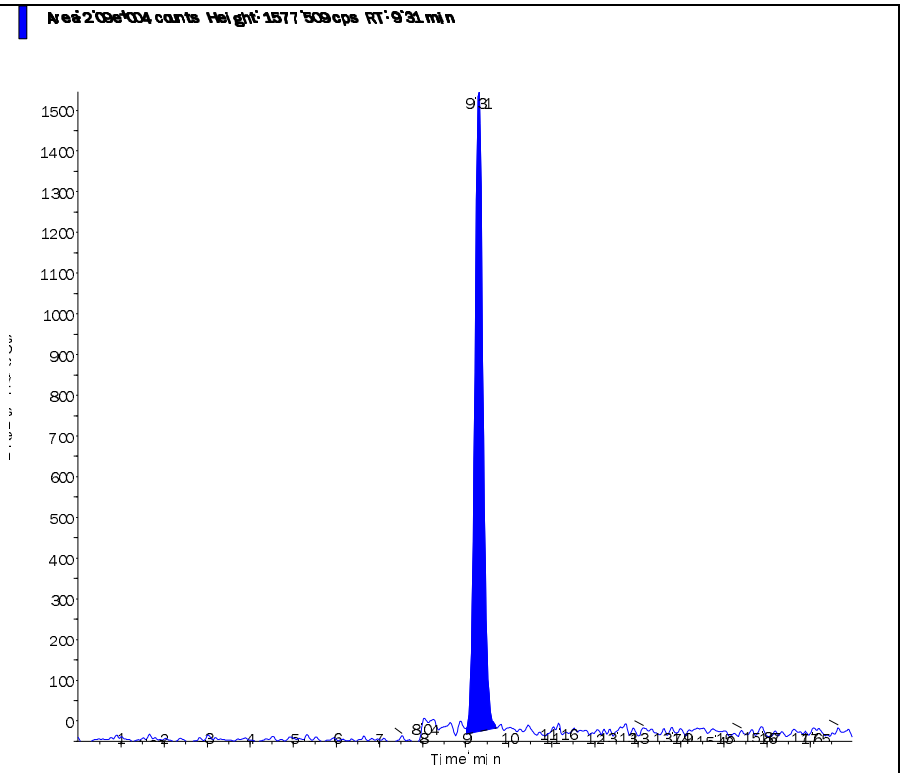
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.29 (9.48) min Calculated conc: 0.203 ng/ml Area Ratio: 0.018 Sample Type: (Unknown)	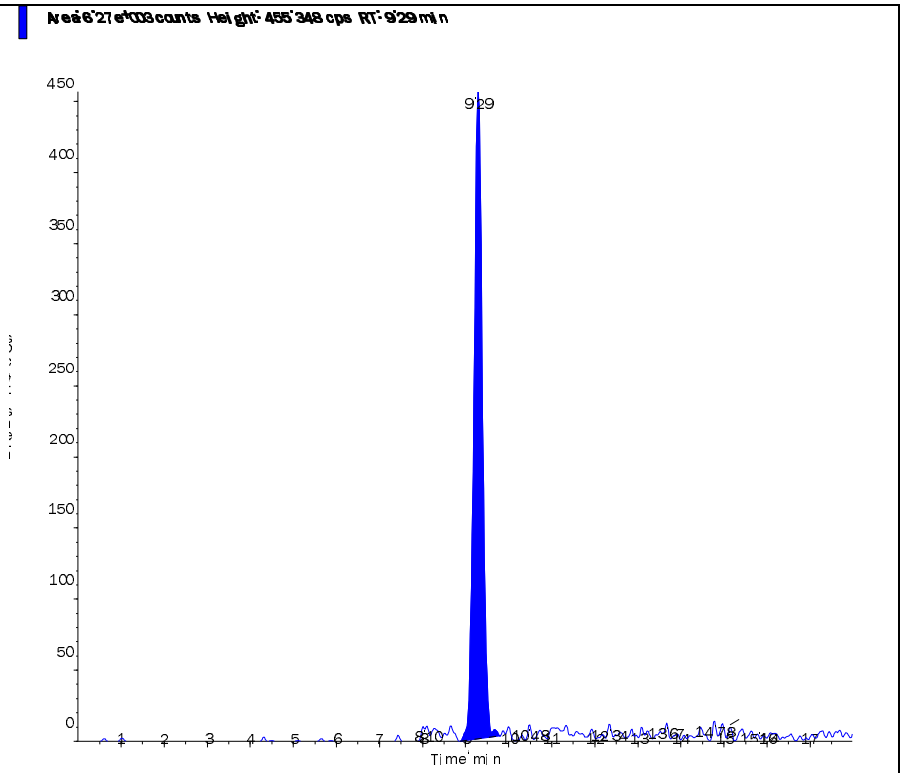

s.dataFile Page 2 of 2

2.2.1.5 Raw QC Data

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Created with Analyst Reporter
Printed: 8/27/2015 11:31 AM

Data File	LM31435.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/24/2015 5:25:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536249-02 BLANK	**Injection Vial**	5.00
Data File	LM31435.wiff	**Injection Volume**	10.00
Acquisition Date	8/24/2015 5:25:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	WG536249-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.970e+05	9.73	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.73(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

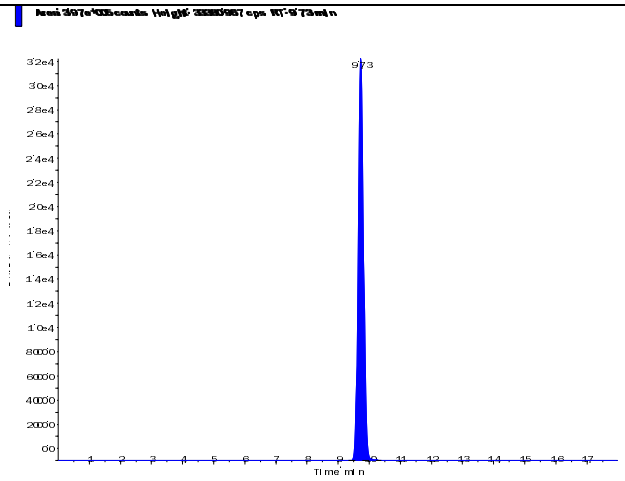

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.52) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

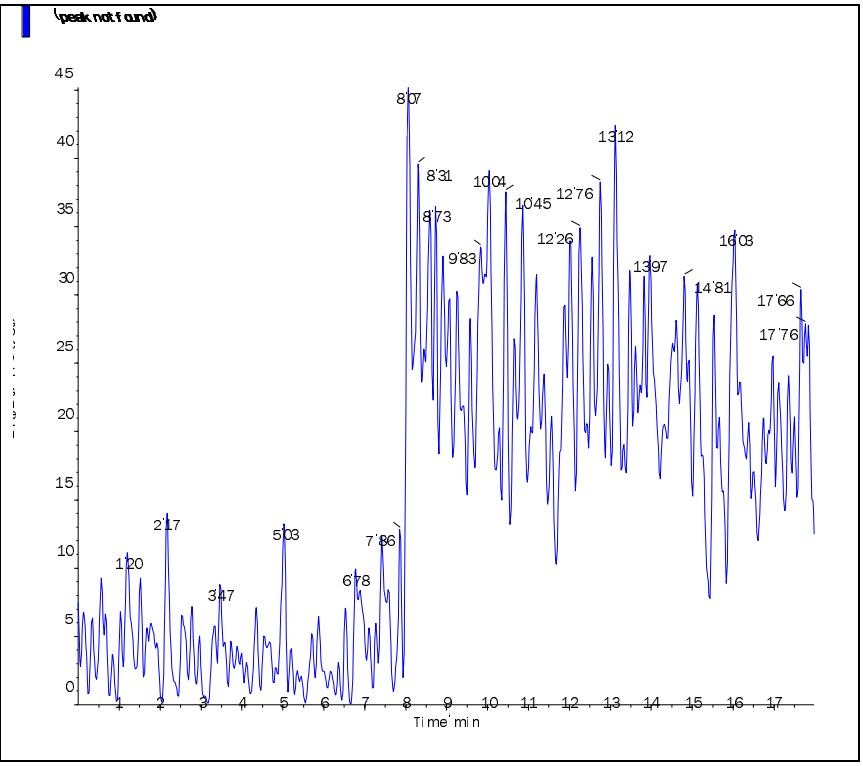

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.48) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

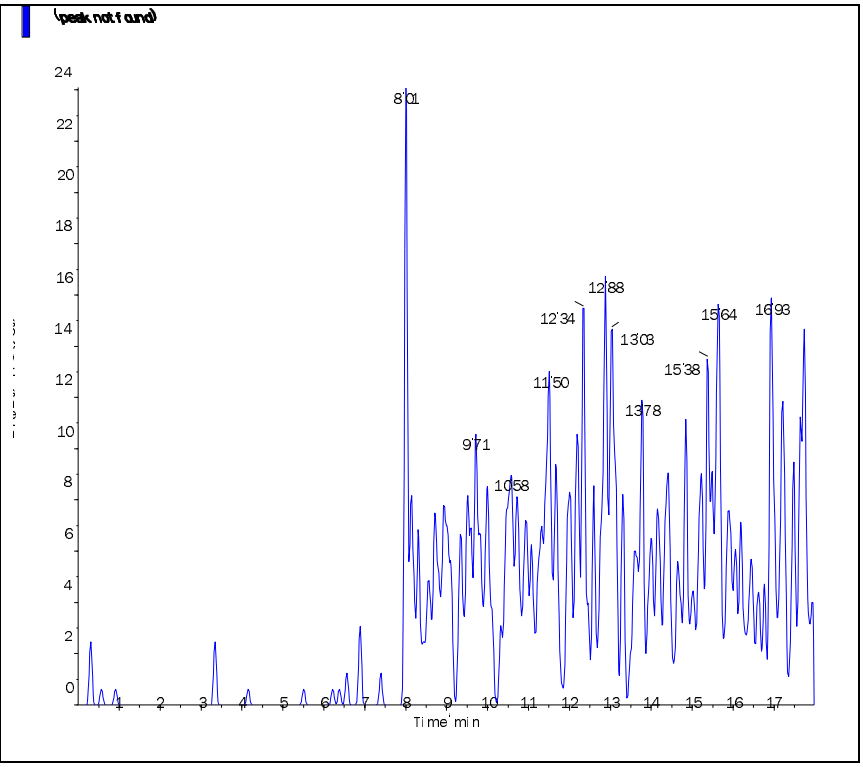

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Applied Biosystems | MDS SCIEX

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Printed: 8/27/2015 11:32 AM

Data File	LM31436.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/24/2015 5:44:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536249-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM31436.wiff	**Injection Volume**	10.00
Acquisition Date	8/24/2015 5:44:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	WG536249-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD69913	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.990e+05	9.71	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.290e+04	9.72	N/A	0.206
Perchlorate conf	7.710e+03	9.70	N/A	0.224

O18LP (Internal Standard)

RT (Exp. RT): 9.71(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

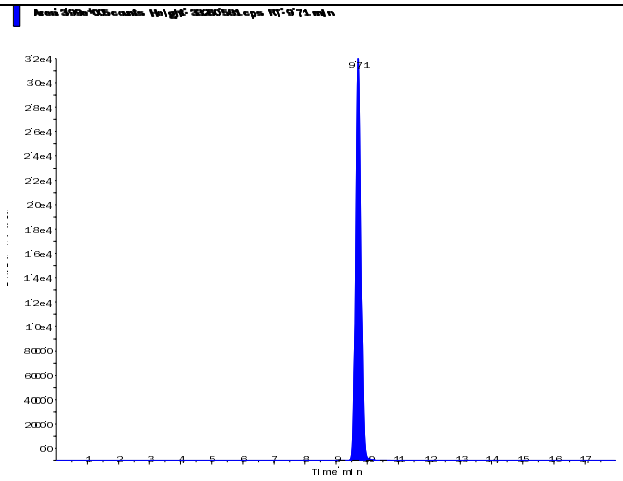

s.dataFile Page 1 of 2

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Printed: 8/27/2015 11:32 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.72 (9.52) min Calculated conc: 0.206 ng/ml Area Ratio: 0.057 Sample Type: (Unknown)	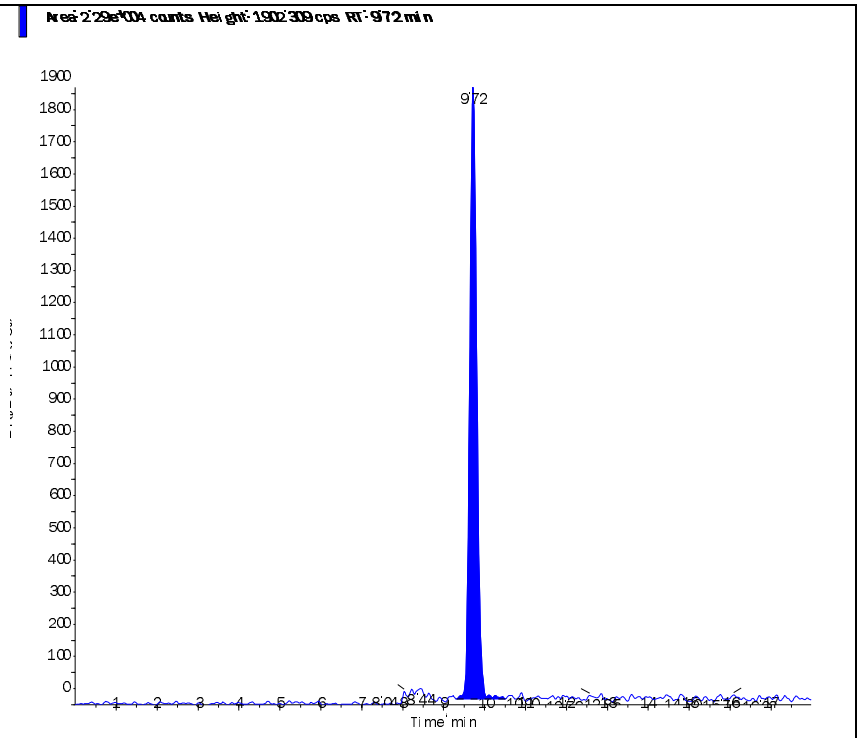
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.70 (9.48) min Calculated conc: 0.224 ng/ml Area Ratio: 0.019 Sample Type: (Unknown)	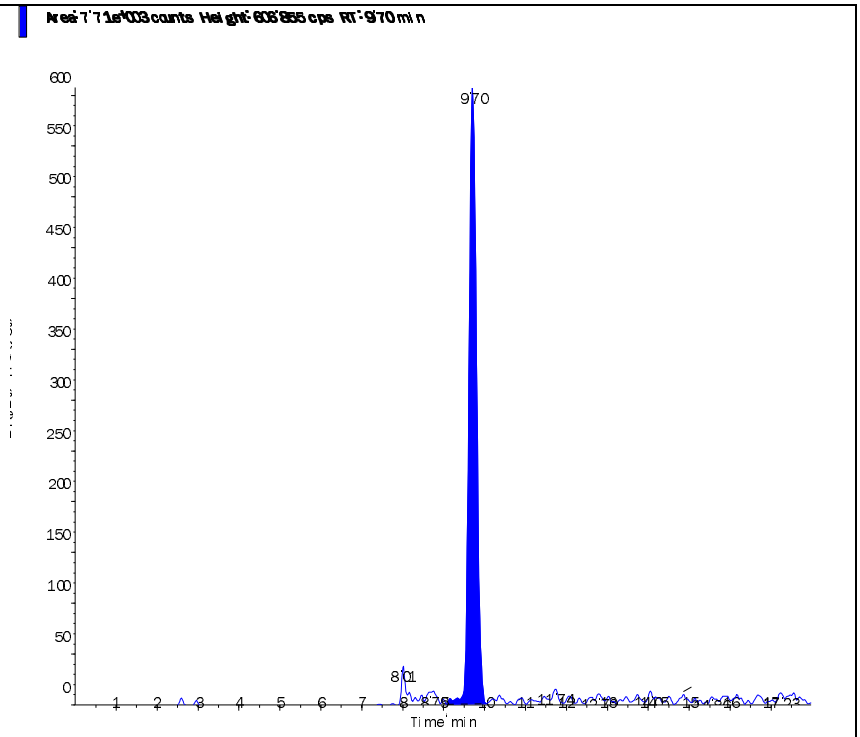

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 8/27/2015 11:32 AM

Data File	LM31437.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/24/2015 6:03:26 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536249-04 LCS2 (0.2ug/L)	**Injection Vial**	7.00
Data File	LM31437.wiff	**Injection Volume**	10.00
Acquisition Date	8/24/2015 6:03:26 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	WG536249-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD69913	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.670e+05	9.72	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.140e+04	9.73	N/A	0.21
Perchlorate conf	6.620e+03	9.72	N/A	0.209

O18LP (Internal Standard)

RT (Exp. RT): 9.72(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

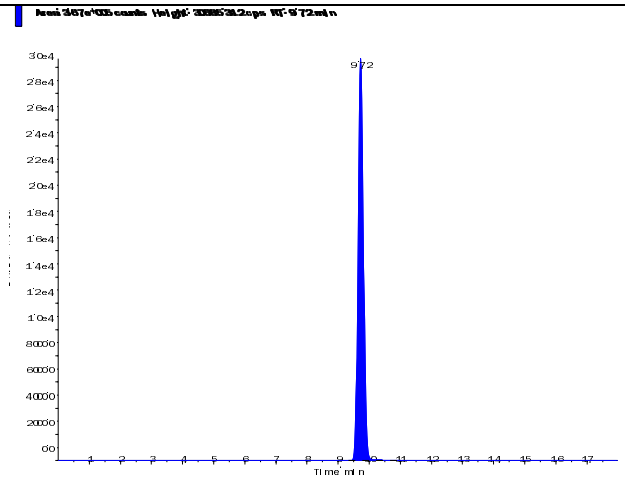

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Applied Biosystems | MDS SCIEX

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Printed: 8/27/2015 11:32 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.73 (9.52) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.058
Sample Type:	(Unknown)

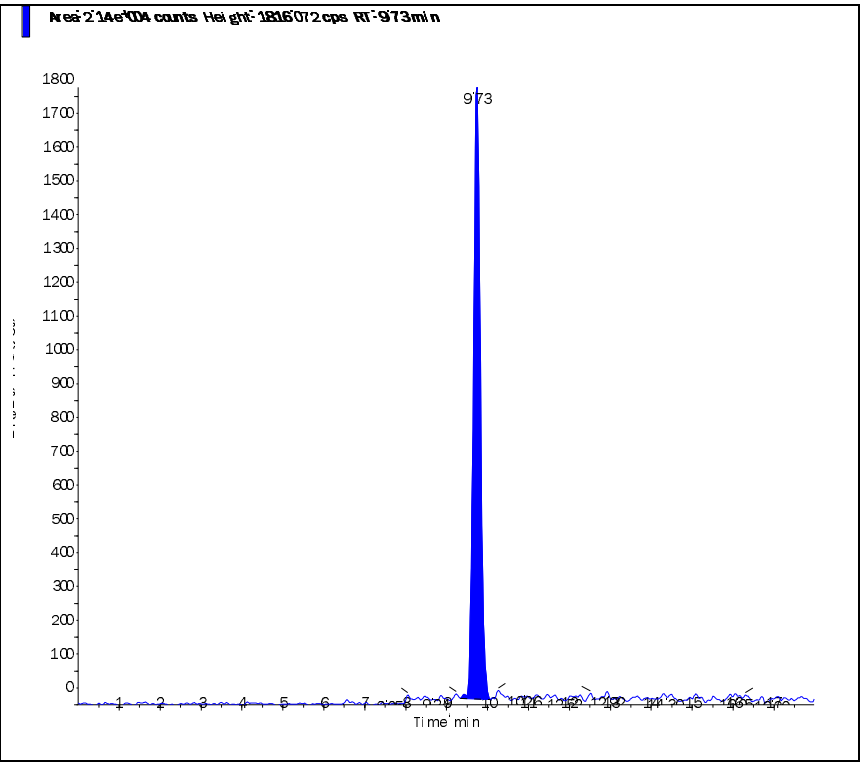

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.72 (9.48) min
Calculated conc:	0.209 ng/ml
Area Ratio:	0.018
Sample Type:	(Unknown)

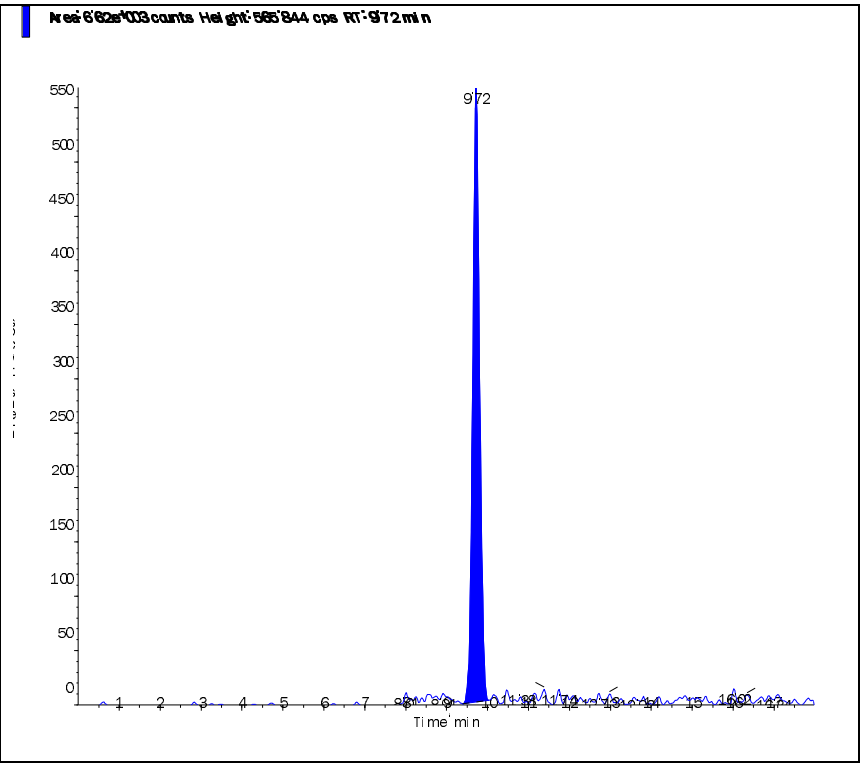

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2.3 Metals Data

2.3.1 Metals I C P Data

2.3.1.1 Summary Data

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-02	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	50WW22FF-081815	**Prep Method:**	3015	**Prep Date:**	08/21/2015 11:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	08/23/2015 10:12
Workgroup #:	WG536058	**Analyst:**	KHR	**Run Date:**	08/23/2015 13:32
Collect Date:	08/18/2015 08:05	**Dilution:**	1	**File ID:**	P2.082315.133257
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.100	U	0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-04	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	50WW25FF-081815	**Prep Method:**	3015	**Prep Date:**	08/21/2015 11:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	08/23/2015 10:12
Workgroup #:	WG536058	**Analyst:**	KHR	**Run Date:**	08/23/2015 13:35
Collect Date:	08/18/2015 09:40	**Dilution:**	1	**File ID:**	P2.082315.133522
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.0837	J	0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-06	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	50WW12FF-081815	**Prep Method:**	3015	**Prep Date:**	08/21/2015 11:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	08/23/2015 10:12
Workgroup #:	WG536058	**Analyst:**	KHR	**Run Date:**	08/23/2015 13:37
Collect Date:	08/18/2015 11:05	**Dilution:**	1	**File ID:**	P2.082315.133745
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.100	U	0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-08	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	50WW06FF-081815	**Prep Method:**	3015	**Prep Date:**	08/21/2015 11:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	08/23/2015 10:12
Workgroup #:	WG536058	**Analyst:**	KHR	**Run Date:**	08/23/2015 13:40
Collect Date:	08/18/2015 13:40	**Dilution:**	1	**File ID:**	P2.082315.134009
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.100	U	0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-10	**PrePrep Method:**	N/A	**Instrument:**	PE-ICP2
Client ID:	50WW11FF-081815	**Prep Method:**	3015	**Prep Date:**	08/21/2015 11:08
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	08/23/2015 10:12
Workgroup #:	WG536058	**Analyst:**	KHR	**Run Date:**	08/23/2015 13:42
Collect Date:	08/18/2015 14:50	**Dilution:**	1	**File ID:**	P2.082315.134233
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.0983	J	0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.3.1.2 QC Summary Data

Example 6010 Calculations
Perkin Elmer Optima 4300 DV

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG536019
Analyst: ERP
Spike Analyst: ERP
Run Date: 08/21/2015 11:08
Method: 3015
Balance: BAL019
Instrument: MW-4
Instrument Start: 08/21/2015 11:08

SOP: ME407 Revison 17
Spike Solution: STD71782
Spike Witness: VC
HNO3 Lot #: COA18384
HCL Lot #: COA18326
ICP Filters- fisher-Lot# RGT32945
40 & 50 ML. DIGESTION TU COA18222

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG536019-02	BLANK	1	40 mL	50 mL	205.553 g	205.538 g		
2	WG535942-01	FBLK1	17	5 mL	50 mL	204.033 g	204.014 g		
3	WG535942-02	FBLK2	17	5 mL	50 mL	205.181 g	205.146 g		
4	WG536019-03	LCS	1	40 mL	50 mL	206.906 g	206.854 g	5 mL	
5	L15080852-01	SAMP	17	5 mL	50 mL	203.463 g	203.417 g		08/25/15
6	L15080968-01	SAMP	1	40 mL	50 mL	207.043 g	207.004 g		08/26/15
7	L15080992-02	SAMP	1	40 mL	50 mL	203.624 g	203.575 g		08/28/15
8	L15080992-04	SAMP	1	40 mL	50 mL	205.553 g	205.504 g		08/28/15
9	L15080992-06	SAMP	1	40 mL	50 mL	205.176 g	205.139 g		08/28/15
10	L15080992-08	SAMP	1	40 mL	50 mL	205.104 g	205.067 g		08/28/15
11	L15080992-10	SAMP	1	40 mL	50 mL	204.346 g	204.285 g		08/28/15
12	WG536019-01	REF	17	5 mL	50 mL	205.517 g	205.474 g		
13	L15080999-01	SAMP	17	5 mL	50 mL	205.517 g	205.474 g		08/24/15
14	L15081045-01	SAMP	1	40 mL	50 mL	206.643 g	206.59 g		08/27/15
15	L15081046-01	SAMP	1	40 mL	50 mL	204.278 g	204.229 g		08/27/15
16	L15081047-01	SAMP	1	40 mL	50 mL	206.565 g	206.511 g		08/27/15
17	L15081047-02	SAMP	1	40 mL	50 mL	206.274 g	206.232 g		08/27/15
18	L15081048-01	SAMP	1	40 mL	50 mL	205.091 g	205.04 g		08/27/15
19	L15081050-01	SAMP	1	40 mL	50 mL	208.06 g	208.015 g		08/27/15
20	L15081050-02	SAMP	1	40 mL	50 mL	203.075 g	203.033 g		08/27/15
21	L15081050-03	SAMP	1	40 mL	50 mL	205.583 g	205.537 g		08/27/15
22	L15081085-02	SAMP	17	5 mL	50 mL	206.469 g	206.411 g		08/27/15
23	L15081089-02	SAMP	17	5 mL	50 mL	207.057 g	207.002 g		08/27/15
24	WG536019-04	MS	1	5 mL	50 mL	208.7 g	208.649 g	5 mL	
25	WG536019-05	MSD	1	5 mL	50 mL	210.291 g	210.229 g	5 mL	

Analyst: Erin Potter

Reviewer: Vicki Collins

MW_DIG - Modified 09/30/2009
PDF ID: 4346351
Report generated: 08/21/2015 12:01

TCLP Non-Volatile

Analyst(s): CPD
Date: 8/20/15
Filter Lot #: 9486030
Microbac SOP: TCLP01 Rev #: 12

Analyst / Date		Analyst / Date	
CPD	8/20/15	CPD	8/21/15
Time On	Temp On °C	Time Off	Temp Off °C
1538	23.2	0808	21.8

Agitator Speed 30 ± 2 rpm ☑

D3987 Time ON: 1538 Temp 23.2 / OFF: 0942 / 22.0

Jug #	Sample #	Tests	Method	Fluid #	Matrix *	% Solid	Pretest pH Initial	Pretest pH Final	Int. Wt. (g)	Fluid Vol. (mL)	Final extract pH
D	08-0999-01	ME	1311	F1-144	S	100	11.77	1.79	100.05	2001	12.19
D	08-0852-01	↓	↓	F2-363	↓	↓	12.52	11.95	25.65	513	11.00
D	08-0965-01	300	1312	SPLP F1	↓	↓	NA	NA	100.36	2007	10.16
D	-02	↓	↓	↓	↓	↓	↓	↓	100.35	2007	9.99
C-14	08-1085-02	ME, SV, Pest, Herb, pH-L	1311	F1-144	↓	↓	10.22	1.30	100.06	2001	4.86
C-31	08-1089-02	↓ ↓ ↓ ↓ ↓	↓	↓	↓	↓	9.20	1.17	100.55	2011	4.71
D	08-1085-04	D3987	D3987	DI	↓	↓	NA	NA	70.28	1406	8.18
D	08-1089-04	↓	↓	↓	↓	↓	↓	↓	70.01	1400	7.68
D	08-0933-01	↓	D3987	↓	↓	↓	↓	↓	70.23	1405	4.65
D	08-1085-04	06-HEM	D3987	↓	S	100	NA	NA	70.19	1404	8.18
D	08-1089-04	06-HEM	D3987	↓	↓	↓	↓	↓	70.16	1403	7.68
NA	FBIK1	ME, SV, Pest, Herb, pH-L	1311	F1-144	NA	NA	NA	NA	CPD 8/21/15 100	CPD 8/21/15 100	4.88
↓	FBIK2	↓	↓	F2-363	↓	↓	↓	↓	↓	↓	2.83
↓	SPLP FBIK1	300	1312	SPLP F1-45	↓	↓	↓	↓	↓	↓	4.19
↓	DI	D3987	D3987	DI	↓	↓	↓	↓	↓	↓	7.34

CPD 8/21/15

*Matrix Code: (S = solid, sand, soil or sludge) (P = paint) (O = organic) (W = water or aqueous waste)
D = Disposable plastic jug
TCLP Pretest weight will be 5.0 g (± 0.1) unless otherwise noted.
Temperature shall be maintained at 23° ± 2 for 18 ± 2 hours unless otherwise noted.

Comments:

Peer Review By:

Microbac Laboratories Inc.

Instrument Run Log

Instrument: PE-ICP2 Dataset: 082315HR.CSV

Analyst1: KHR Analyst2: N/A

Method: 6010/200.7 SOP: ME600E Rev: 18

Maintenance Log ID:

Calibration Std: STD71998 ICV Std: STD71999 Post Spike: STD71485

ICSA: STD72072 ICSAB: STD72095 Int. Std: RGT33135

CCV: STD72042 LLCCV: STD71998 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 536024, 535615, 536058

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	P2.082315.100317	WG536162-01	Calibration Point		1		08/23/15 10:03
2	P2.082315.100539	WG536162-02	Calibration Point		1		08/23/15 10:05
3	P2.082315.100800	WG536162-03	Calibration Point		1		08/23/15 10:08
4	P2.082315.101022	WG536162-04	Calibration Point		1		08/23/15 10:10
5	P2.082315.101246	WG536162-05	Calibration Point		1		08/23/15 10:12
6	P2.082315.101514	WG536162-06	Initial Calibration Verification		1		08/23/15 10:15
7	P2.082315.101737	WG536162-07	Initial Calib Blank		1		08/23/15 10:17
8	P2.082315.102001	WG536162-08	Low Level Initial Calibration V		1		08/23/15 10:20
9	P2.082315.102222	WG536162-09	Interference Check		1		08/23/15 10:22
10	P2.082315.102445	WG536162-10	Interference Check		1		08/23/15 10:24
11	P2.082315.102708	WG536162-11	CCV		1		08/23/15 10:27
12	P2.082315.102936	WG536162-12	CCB		1		08/23/15 10:29
13	P2.082315.103750	WG535824-02	Method/Prep Blank	40/50	1		08/23/15 10:37
14	P2.082315.104012	WG535824-03	Laboratory Control S	40/50	1		08/23/15 10:40
15	P2.082315.104235	WG535764-01	Fluid Blank 1		1		08/23/15 10:42
16	P2.082315.104500	WG535824-01	Reference Sample		1	L15080997-01	08/23/15 10:45
17	P2.082315.104723	WG535824-04	Matrix Spike	5/50	1	L15080997-01	08/23/15 10:47
18	P2.082315.104947	WG535824-05	Matrix Spike Duplica	5/50	1	L15080997-01	08/23/15 10:49
19	P2.082315.105214	L15080998-01	13837-SSP0520	5/50	1		08/23/15 10:52
20	P2.082315.105438	WG536024-01	Post Digestion Spike		1	L15080998-01	08/23/15 10:54
21	P2.082315.105702	WG536024-02	Serial Dilution		5	L15080998-01	08/23/15 10:57
22	P2.082315.110023	WG536162-13	CCV		1		08/23/15 11:00
23	P2.082315.110248	WG536162-14	CCB		1		08/23/15 11:02
24	P2.082315.110512	L15080844-01	HH-17	40/50	50		08/23/15 11:05
25	P2.082315.110739	L15080844-02	HH-17	40/50	50		08/23/15 11:07
26	P2.082315.111002	L15080904-02	50WW18FF-081715	40/50	1		08/23/15 11:10
27	P2.082315.111226	L15080904-04	50WW24FF-081715	40/50	1		08/23/15 11:12
28	P2.082315.111449	L15080904-06	50WW23FF-081715	40/50	1		08/23/15 11:14
29	P2.082315.111713	L15080904-08	50WW08FF-081715	40/50	1		08/23/15 11:17
30	P2.082315.112034	L15080971-01	59-8-14.2 S1	40/50	1		08/23/15 11:20
31	P2.082315.112257	L15080973-01	27-3-13 W1	40/50	1		08/23/15 11:22
32	P2.082315.112523	L15080973-02	27-3-13 P1	40/50	1		08/23/15 11:25
33	P2.082315.112745	L15080973-03	27-3-13 S3	40/50	1		08/23/15 11:27
34	P2.082315.113008	WG536162-15	CCV		1		08/23/15 11:30

Page: 1 Approved: August 24, 2015

Maren Berry

Microbac Laboratories Inc.

Instrument Run Log

Instrument: PE-ICP2 Dataset: 082315HR.CSV
Analyst1: KHR Analyst2: N/A
Method: 6010/200.7 SOP: ME600E Rev: 18
Maintenance Log ID:

Calibration Std: STD71998 ICV Std: STD71999 Post Spike: STD71485
ICSA: STD72072 ICSAB: STD72095 Int. Std: RGT33135
CCV: STD72042 LLCCV: STD71998 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 536024, 535615, 536058

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	P2.082315.113233	WG536162-16	CCB		1		08/23/15 11:32
36	P2.082315.113457	WG536162-17	Low Level Continuing Calibra		1		08/23/15 11:34
37	P2.082315.113722	L15080912-01	R-18	20/50	20		08/23/15 11:37
38	P2.082315.113949	L15080912-02	R-18	20/50	20		08/23/15 11:39
39	P2.082315.114212	L15080973-04	27-3-13 S1	40/50	1		08/23/15 11:42
40	P2.082315.114433	L15080975-01	59-9-1.6	40/50	1		08/23/15 11:44
41	P2.082315.114655	L15080985-01	27-2-5.01 W1	40/50	1		08/23/15 11:46
42	P2.082315.114918	L15080985-02	27-2-5.01 W1	40/50	1		08/23/15 11:49
43	P2.082315.115141	L15080986-01	1804-104 W1	40/50	1		08/23/15 11:51
44	P2.082315.115403	WG536162-18	CCV		1		08/23/15 11:54
45	P2.082315.115631	WG536162-19	CCB		1		08/23/15 11:56
46	P2.082315.115932	L15080844-01	HH-17		200		08/23/15 11:59
47	P2.082315.120202	L15080912-01	R-18	20/50	200		08/23/15 12:02
48	P2.082315.120433	L15080841-02	NM-17	40/50	100		08/23/15 12:04
49	P2.082315.120656	L15080842-01	DC-17		100		08/23/15 12:06
50	P2.082315.121719	L15080844-01	HH-17	40/50	500		08/23/15 12:17
51	P2.082315.121948	L15080912-01	R-18	20/50	500		08/23/15 12:19
52	P2.082315.122214	L15080841-02	NM-17	40/50	200		08/23/15 12:22
53	P2.082315.122436	L15080842-01	DC-17	40/50	500		08/23/15 12:24
54	P2.082315.122659	WG536162-20	CCV		1		08/23/15 12:26
55	P2.082315.122924	WG536162-21	CCB		1		08/23/15 12:29
56	P2.082315.123259	L15080844-01	HH-17	40/50	1000		08/23/15 12:32
57	P2.082315.123523	WG536162-22	CCV		1		08/23/15 12:35
58	P2.082315.123748	WG536162-23	CCB		1		08/23/15 12:37
59	P2.082315.125753	WG536019-02	Method/Prep Blank	40/50	1		08/23/15 12:57
60	P2.082315.130113	WG536019-03	Laboratory Control S	40/50	1		08/23/15 13:01
61	P2.082315.130339	WG535942-01	Fluid Blank 1		1		08/23/15 13:03
62	P2.082315.130701	WG535942-02	Fluid Blank 2		1		08/23/15 13:07
63	P2.082315.131020	WG536019-01	Reference Sample		1	L15080999-01	08/23/15 13:10
64	P2.082315.131243	WG536019-04	Matrix Spike	5/50	1	L15080999-01	08/23/15 13:12
65	P2.082315.131507	WG536019-05	Matrix Spike Duplica	5/50	1	L15080999-01	08/23/15 13:15
66	P2.082315.131734	WG536058-01	Post Digestion Spike		1	L15080999-01	08/23/15 13:17
67	P2.082315.131958	WG536058-02	Serial Dilution		1	L15080999-01	08/23/15 13:19
68	P2.082315.132223	WG536162-24	CCV		1		08/23/15 13:22

Page: 2 Approved: August 24, 2015

Marcia Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: PE-ICP2 Dataset: 082315HR.CSV

Analyst1: KHR Analyst2: N/A

Method: 6010/200.7 SOP: ME600E Rev: 18

Maintenance Log ID:

Calibration Std: STD71998 ICV Std: STD71999 Post Spike: STD71485

ICSA: STD72072 ICSAB: STD72095 Int. Std: RGT33135

CCV: STD72042 LLCCV: STD71998 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 536024, 535615, 536058

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	P2.082315.132451	WG536162-25	CCB		1		08/23/15 13:24
70	P2.082315.132809	L15080852-01	AWV 19 BAGS	5/50	1		08/23/15 13:28
71	P2.082315.133034	L15080968-01	40547-R3-01	40/50	1		08/23/15 13:30
72	P2.082315.133257	L15080992-02	50WW22FF-081815	40/50	1		08/23/15 13:32
73	P2.082315.133522	L15080992-04	50WW25FF-081815	40/50	1		08/23/15 13:35
74	P2.082315.133745	L15080992-06	50WW12FF-081815	40/50	1		08/23/15 13:37
75	P2.082315.134009	L15080992-08	50WW06FF-081815	40/50	1		08/23/15 13:40
76	P2.082315.134233	L15080992-10	50WW11FF-081815	40/50	1		08/23/15 13:42
77	P2.082315.134456	L15081045-01	27-1-9.12 W1	40/50	1		08/23/15 13:44
78	P2.082315.134719	L15081046-01	2402-107-B W2	40/50	1		08/23/15 13:47
79	P2.082315.134945	L15081047-01	45-20-17 S1	40/50	1		08/23/15 13:49
80	P2.082315.135207	WG536162-26	CCV		1		08/23/15 13:52
81	P2.082315.135432	WG536162-27	CCB		1		08/23/15 13:54
82	P2.082315.135750	WG536162-28	Low Level Continuing Calibra		1		08/23/15 13:57
83	P2.082315.140012	L15081047-02	45-20-17 S2	40/50	1		08/23/15 14:00
84	P2.082315.140235	L15081048-01	2402-113-B W1	40/50	1		08/23/15 14:02
85	P2.082315.140458	L15081050-01	2402-102 S2	40/50	1		08/23/15 14:04
86	P2.082315.140721	L15081050-02	2402-102 S1	40/50	1		08/23/15 14:07
87	P2.082315.140944	WG536162-29	CCV		1		08/23/15 14:09
88	P2.082315.141209	WG536162-30	CCB		1		08/23/15 14:12

Page: 3 Approved: August 24, 2015

Maren Berry

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 23-AUG-2015
Analyst: KHR
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: PE-ICP2
Curve Workgroup: 536162
Runlog ID: 69987
Analytical Workgroups: 536024, 535615, 536058

Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	
Level 4	0904, 0997, 0998, 0992
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	KHR
Secondary Reviewer	MMB
Comments	

Primary Reviewer: 24-AUG-2015 Kym H. Rhoden

Secondary Reviewer: 24-AUG-2015 Maren Berry

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-24-2015 14:46:30

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010C

AAB#: WG536058

Login Number: L15080992

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW22FF-081815	02	08/18/15					08/21/2015	3.1	180		08/23/15	5.2	180	
50WW25FF-081815	04	08/18/15					08/21/2015	3.1	180		08/23/15	5.2	180	
50WW12FF-081815	06	08/18/15					08/21/2015	3	180		08/23/15	5.1	180	
50WW06FF-081815	08	08/18/15					08/21/2015	2.9	180		08/23/15	5	180	
50WW11FF-081815	10	08/18/15					08/21/2015	2.8	180		08/23/15	5	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4349004
Report generated 08/24/2015 10:18

METHOD BLANK SUMMARY

Login Number: L15080992
Blank File ID: P2.082315.125753
Prep Date: 08/21/15 11:08
Analyzed Date: 08/23/15 12:57
Analyst: KHR

Work Group: WG536058
Blank Sample ID: WG536019-02
Instrument ID: PE-ICP2
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG536019-03	P2.082315.130113	08/23/15 13:01	01
50WW22FF-081815	L15080992-02	P2.082315.133257	08/23/15 13:32	01
50WW25FF-081815	L15080992-04	P2.082315.133522	08/23/15 13:35	01
50WW12FF-081815	L15080992-06	P2.082315.133745	08/23/15 13:37	01
50WW06FF-081815	L15080992-08	P2.082315.134009	08/23/15 13:40	01
50WW11FF-081815	L15080992-10	P2.082315.134233	08/23/15 13:42	01

Report Name: BLANK_SUMMARY
PDF File ID: 4349005
Report generated 08/24/2015 10:20

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15080992 Prep Date: 08/21/15 11:08 Sample ID: WG536019-02
Instrument ID: PE-ICP2 Run Date: 08/23/15 12:57 Prep Method: 3015
File ID: P2.082315.125753 Analyst: KHR Method: 6010C
Workgroup (AAB#): WG536058 Matrix: Water Units: mg/L
Contract #: Cal ID: PE-ICP - 23-AUG-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Iron, Dissolved	0.0500	0.200	0.0500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4349006
24-AUG-2015 10:20

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15080992 Run Date: 08/23/2015 Sample ID: WG536019-03
Instrument ID: PE-ICP2 Run Time: 13:01 Prep Method: 3015
File ID: P2.082315.130113 Analyst: KHR Method: 6010C
Workgroup (AAB#): WG536058 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD71782 Cal ID: PE-ICP - 23-AUG-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Iron, Dissolved	2.50	2.61	104	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4349007
Report generated: 08/24/2015 10:20

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L15080992 Cal ID: PE-ICP2- Worknum: WG536058
Instrument ID: PE-ICP2 Contract #: Method: 6010C
Parent ID: WG536019-01 File ID: P2.082315.131020 Dil: 1 Matrix: WATER
Sample ID: WG536019-04 MS File ID: P2.082315.131243 Dil: 1 Units: mg/L
Sample ID: WG536019-05 MSD File ID: P2.082315.131507 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Iron	ND	20.0	19.6	98.2	20.0	20.3	102	3.45	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4349008
Report generated 08/24/2015 10:20

Microbac Laboratories Inc.
Serial Dilution Report

Login: L15080992 **Worknum:** WG536058
Instrument: PE-ICP2 **Method:** 6010C
Serial Dil: WG536058-02 **File ID:** P2.082315.131958 **Dil:** 5 **Units:** mg/L
Sample: L15080999-01 **File ID:** P2.082315.131020 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Iron	ND	U	ND	U		

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 50 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 50 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4349002
08/24/2015 10:20

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L15080992 **Worknum:** WG536058
Instrument ID: PE-ICP2 **Method:** 6010C
Post Spike ID: WG536058-01 **File ID:** P2.082315.131734 **Dil:** 1 **Units:** mg/L
Sample ID: L15080999-01 **File ID:** P2.082315.131020 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
IRON	2.06		0	U	2	103.0	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4349003
Report generated: 08/24/2015 10:20

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L15080992	Workgroup (AAB#):	WG536058
Analytical Method:	6010C	Instrument ID:	PE-ICP2
ICAL Worknum:	WG536162	Initial Calibration Date:	23-AUG-2015 10:12

	WG536162-01		WG536162-02		WG536162-03		WG536162-04		WG536162-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
IRON	0	142	.04	328	.08	624	4	40100	8	79300	.999984	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4349011
Report generated: 24-AUG-2015 10:20

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L15080992
Instrument ID: PE-ICP2
File ID: P2.082315.101737
Workgroup (AAB#): WG536058
Matrix: WATER

Run Date: 08/23/2015
Run Time: 10:17
Analyst: KHR
Cal ID: PE-ICP2 - 23-AUG-15

Sample ID: WG536162-07
Method: 6010C
Units: mg/L

Analytes	MDL	RDL	Concentration	Qualifier
IRON	.04	.16	.04	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4349013
Report generated 08/24/2015 10:20

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15080992
Run Date: 08/23/2015
Sample ID: WG536162-12
Instrument ID: PE-ICP2
Run Time: 10:29
Method: 6010C
File ID: P2.082315.102936
Analyst: KHR
Units: mg/L
Workgroup (AAB#): WG536058
Cal ID: PE-ICP - 23-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4349016
Report generated 08/24/2015 10:21

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15080992
Run Date: 08/23/2015
Sample ID: WG536162-23
Instrument ID: PE-ICP2
Run Time: 12:37
Method: 6010C
File ID: P2.082315.123748
Analyst: KHR
Units: mg/L
Workgroup (AAB#): WG536058
Cal ID: PE-ICP - 23-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4349016
Report generated 08/24/2015 10:21

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15080992
Run Date: 08/23/2015
Sample ID: WG536162-25
Instrument ID: PE-ICP2
Run Time: 13:24
Method: 6010C
File ID: P2.082315.132451
Analyst: KHR
Units: mg/L
Workgroup (AAB#): WG536058
Cal ID: PE-ICP - 23-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4349016
Report generated 08/24/2015 10:21

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15080992
Run Date: 08/23/2015
Sample ID: WG536162-27
Instrument ID: PE-ICP2
Run Time: 13:54
Method: 6010C
File ID: P2.082315.135432
Analyst: KHR
Units: mg/L
Workgroup (AAB#): WG536058
Cal ID: PE-ICP - 23-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4349016
Report generated 08/24/2015 10:21

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L15080992
Run Date: 08/23/2015
Sample ID: WG536162-06
Instrument ID: PE-ICP2
Run Time: 10:15
Method: 6010C
File ID: P2.082315.101514
Analyst: KHR
Units: mg/L
Workgroup (AAB#): WG536058
Cal ID: PE-ICP - 23-AUG-15
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Iron		4	4.02	101	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4349012
Report generated 08/24/2015 10:20

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080992
Run Date: 08/23/2015
Sample ID: WG536162-11
Instrument ID: PE-ICP2
Run Time: 10:27
Method: 6010C
File ID: P2.082315.102708
Analyst: KHR
QC Key: DOD4
Workgroup (AAB#): WG536058
Cal ID: PE-ICP - 23-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.01	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4349015
Report generated 08/24/2015 10:20

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080992
Run Date: 08/23/2015
Sample ID: WG536162-22
Instrument ID: PE-ICP2
Run Time: 12:35
Method: 6010C
File ID: P2.082315.123523
Analyst: KHR
QC Key: DOD4
Workgroup (AAB#): WG536058
Cal ID: PE-ICP - 23-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.03	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4349015
Report generated 08/24/2015 10:20

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080992
Run Date: 08/23/2015
Sample ID: WG536162-24
Instrument ID: PE-ICP2
Run Time: 13:22
Method: 6010C
File ID: P2.082315.132223
Analyst: KHR
QC Key: DOD4
Workgroup (AAB#): WG536058
Cal ID: PE-ICP - 23-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	3.83	mg/L	95.8	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4349015
Report generated 08/24/2015 10:20

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080992
Run Date: 08/23/2015
Sample ID: WG536162-26
Instrument ID: PE-ICP2
Run Time: 13:52
Method: 6010C
File ID: P2.082315.135207
Analyst: KHR
QC Key: DOD4
Workgroup (AAB#): WG536058
Cal ID: PE-ICP - 23-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.04	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4349015
Report generated 08/24/2015 10:20

Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15080992
Run Date: 08/23/2015
Sample ID: WG536162-08
Instrument ID: PE-ICP2
Run Time: 10:20
Method: 6010C
File ID: P2.082315.102001
Analyst: KHR
QC Key: DOD4
Workgroup (AAB#): WG536058
Cal ID: PE-ICP - 23-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		0.160	0.154	mg/L	96.3	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4349108
Report generated 08/24/2015 10:25

Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15080992
Run Date: 08/23/2015
Sample ID: WG536162-17
Instrument ID: PE-ICP2
Run Time: 11:34
Method: 6010C
File ID: P2.082315.113457
Analyst: KHR
QC Key: DOD4
Workgroup (AAB#): WG536058
Cal ID: PE-ICP - 23-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		0.160	0.153	mg/L	95.7	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4349108
Report generated 08/24/2015 10:25

Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15080992
Run Date: 08/23/2015
Sample ID: WG536162-28
Instrument ID: PE-ICP2
Run Time: 13:57
Method: 6010C
File ID: P2.082315.135750
Analyst: KHR
QC Key: DOD4
Workgroup (AAB#): WG536058
Cal ID: PE-ICP - 23-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		0.160	0.152	mg/L	94.8	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4349108
Report generated 08/24/2015 10:25

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L15080992
Instrument ID: PE-ICP2
Sol. A : WG536162-09 **File ID:** P2.082315.102222
Sol. AB : WG536162-10 **File ID:** P2.082315.102445

Workgroup (AAB#): WG536058
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Iron	100	99.2	99.2	100	104	104	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4349014
Report generated 08/24/2015 10:20

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15080992 **Date:** 01/02/2015
Insturment ID: PE-ICP2 **Method:** 6010C

Analyte	Wave Length	AG	AL	AS	B	BA
ALUMINUM	396.15	0	0	0.206	0	0
ANTIMONY	206.84	0	0	-0.740	0	0
ARSENIC	188.98	0	0.0709	0	0	0
BARIUM	233.53	0	0	0	0	0
BERYLLIUM	234.86	0	0	0	0	0
BORON	249.68	0	0	0	0	0
CADMIUM	228.80	0	0	5.00	0	0
CALCIUM	227.55	0	0	0	0	0
CHROMIUM	267.72	0	0	0	0	0
COBALT	228.62	0	0	0	0	0.337
COPPER	327.39	0	0	0	0	0
IRON	239.56	0	0	0	0	0
LEAD	220.35	0	-0.160	0	0	0
LITHIUM	670.78	0	0	0	0	0
MAGNESIUM	279.08	0	0	0	0	0
MANGANESE	257.61	0	0	0	0	0
MOLYBDENUM	202.03	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
POTASSIUM	766.49	0	0	0	0	0
SELENIUM	196.03	0	-0.0380	0	0	0
SILICON	251.61	0	0	0	0	0
SILVER	328.07	0	0	0	0	0
SODIUM	589.59	0	0	0	0	0
STRONTIUM	407.77	0	0	0	0	0
THALLIUM	190.80	0	0.000100	0	0	0
TIN	189.93	0	0	0	0	0
TITANIUM	334.94	0	0	0	0	0
VANADIUM	290.88	0	0	0.200	0	0.0400
ZINC	206.20	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4349010
Report generated: 08/24/2015 10:19

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15080992 **Date:** 01/02/2015
Insturment ID: PE-ICP2 **Method:** 6010C

Analyte	Wave Length	BE	CA	CD	CO	CR
ALUMINUM	396.15	0	0	0	0	0
ANTIMONY	206.84	0	0	0	0.730	8.46
ARSENIC	188.98	0	-0.0220	0	0	-0.490
BARIUM	233.53	0	0	0	-0.192	0
BERYLLIUM	234.86	0	0	0	0	-0.0220
BORON	249.68	0	0	24.1	5.90	1.50
CADMIUM	228.80	0	0	0	-3.64	0
CALCIUM	227.55	0	0	0	0	0
CHROMIUM	267.72	0	0	0	0	0
COBALT	228.62	0	0	0	0	-0.200
COPPER	327.39	0	0	0	0.280	-0.0400
IRON	239.56	0	0	0	2.77	0
LEAD	220.35	0	0	0	0.462	0.0550
LITHIUM	670.78	0	0	0	0	0
MAGNESIUM	279.08	0	0	0	0	0
MANGANESE	257.61	0	0	0	0	0
MOLYBDENUM	202.03	0	0	0	0	0
NICKEL	231.60	0	0	0	1.05	0
POTASSIUM	766.49	0	0	0	0	0
SELENIUM	196.03	0	0	0	-0.250	0
SILICON	251.61	0	0	0	0	0
SILVER	328.07	0	0	0	0	0
SODIUM	589.59	0	0	0	0	0
STRONTIUM	407.77	0	0.0319	0	0	0
THALLIUM	190.80	0	0	0	1.00	0
TIN	189.93	0	0	0	0	0
TITANIUM	334.94	0	-0.150	0	0	0.297
VANADIUM	290.88	0	0	0	0	0
ZINC	206.20	0	0	0	0	-8.16

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4349010
Report generated: 08/24/2015 10:19

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15080992 **Date:** 01/02/2015
Insturment ID: PE-ICP2 **Method:** 6010C

Analyte	Wave Length	CU	FE	K	LI	MG
ALUMINUM	396.15	0	-0.119	0	0	0
ANTIMONY	206.84	0	-0.0366	0	0	0
ARSENIC	188.98	0	-0.250	0	0	0
BARIUM	233.53	0	0.0703	0	0	0
BERYLLIUM	234.86	0	0.224	0	0	0
BORON	249.68	0	-3.19	0	0	0
CADMIUM	228.80	0	0.00436	0	0	0
CALCIUM	227.55	0	0	0	0	0
CHROMIUM	267.72	0	0.0292	0	0	0
COBALT	228.62	0	0.0262	0	0	0
COPPER	327.39	0	-0.0434	0	0.154	0
IRON	239.56	0	0	0	0	0.0200
LEAD	220.35	0	0.0327	0	0	0
LITHIUM	670.78	0	0	0	0	0
MAGNESIUM	279.08	0	0.540	0	0	0
MANGANESE	257.61	0	-0.0240	0	0	0
MOLYBDENUM	202.03	0	-0.0159	0	0	0
NICKEL	231.60	0	0	0	0	0
POTASSIUM	766.49	0	0	0	0	0
SELENIUM	196.03	0	-0.253	0	0	0
SILICON	251.61	0	0	0	0	0
SILVER	328.07	0.0710	-0.421	0	0	0
SODIUM	589.59	0	0	0	0	0
STRONTIUM	407.77	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.93	0	0	0	0	0
TITANIUM	334.94	0	0	0	0	0
VANADIUM	290.88	0	-0.0729	0	0	0.0260
ZINC	206.20	-0.200	0.00660	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4349010
Report generated: 08/24/2015 10:19

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15080992 **Date:** 01/02/2015
Insturment ID: PE-ICP2 **Method:** 6010C

Analyte	Wave Length	MN	MO	NA	NI	PB
ALUMINUM	396.15	0	69.0	0	0	0
ANTIMONY	206.84	0	-1.46	0	-0.745	0
ARSENIC	188.98	0	5.34	0	0	0
BARIUM	233.53	0	-0.750	0	0	0
BERYLLIUM	234.86	-0.100	-0.376	0	-0.00970	0
BORON	249.68	0	-1.00	0	0	0
CADMIUM	228.80	0	0.0420	0	-0.0400	0
CALCIUM	227.55	0	-10.0	0	-150	0
CHROMIUM	267.72	0	0.170	0	0	0
COBALT	228.62	0	-1.80	0	0.129	0
COPPER	327.39	0	-0.0774	0	0.150	0
IRON	239.56	0	0	0	0	0
LEAD	220.35	0.600	-0.500	0	-0.190	0
LITHIUM	670.78	0	0	0	0	0
MAGNESIUM	279.08	0	0	0	0	0
MANGANESE	257.61	0	-0.0200	0	0	0
MOLYBDENUM	202.03	-0.209	0	0	0	0
NICKEL	231.60	0	0	0	0	0
POTASSIUM	766.49	0	0	1.00	0	0
SELENIUM	196.03	0.300	0	0	-0.376	0
SILICON	251.61	0	11.1	0	0	0
SILVER	328.07	0.130	0	0	0	0
SODIUM	589.59	0	0	0	0	0
STRONTIUM	407.77	0	0	0	0	0
THALLIUM	190.80	1.00	0.00100	0	0	0
TIN	189.93	0	0	0	0	0
TITANIUM	334.94	0	0	0	0	0
VANADIUM	290.88	0	0.178	0	0	0
ZINC	206.20	0	0	0	-0.200	-0.100

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4349010
Report generated: 08/24/2015 10:19

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15080992 **Date:** 01/02/2015
Insturment ID: PE-ICP2 **Method:** 6010C

Analyte	Wave Length	SB	SE	SI	SN	SR
ALUMINUM	396.15	0	0	0	0	0
ANTIMONY	206.84	0	0	0	0	0
ARSENIC	188.98	0	0	0	0	0
BARIUM	233.53	0	0	0	0	0
BERYLLIUM	234.86	0	0	0	0	0
BORON	249.68	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	227.55	0	0	0	0	0
CHROMIUM	267.72	0	0	0	0	0
COBALT	228.62	0	0	0	0	0
COPPER	327.39	0	0.0700	0	0	0
IRON	239.56	0	0	0	0	0
LEAD	220.35	-0.0100	0	0	0	0
LITHIUM	670.78	0	0	0	0	0
MAGNESIUM	279.08	0	0	0	0	0
MANGANESE	257.61	0	0	0	0	0
MOLYBDENUM	202.03	0	0	0	0	0
NICKEL	231.60	-0.0500	0	0	0	0
POTASSIUM	766.49	0	0	0	0	0
SELENIUM	196.03	0	0	0	0	0
SILICON	251.61	0	0	0	0	0
SILVER	328.07	0	0	0	0	0.200
SODIUM	589.59	0	0	0	0	0
STRONTIUM	407.77	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.93	0	0	0	0	0
TITANIUM	334.94	0	0	0	0	0
VANADIUM	290.88	0	0	0	0	0
ZINC	206.20	-0.300	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4349010
Report generated: 08/24/2015 10:19

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15080992 **Date:** 01/02/2015
Insturment ID: PE-ICP2 **Method:** 6010C

Analyte	Wave Length	TI	TL	V	ZN
ALUMINUM	396.15	0	0	0	0
ANTIMONY	206.84	0	0	-0.920	0
ARSENIC	188.98	0	0	0.0990	0
BARIUM	233.53	0	0	0.360	0
BERYLLIUM	234.86	0	0	0	0
BORON	249.68	0	0	0	0
CADMIUM	228.80	0	0	0.0800	0
CALCIUM	227.55	0	0	0	0
CHROMIUM	267.72	0	0	-0.567	-0.0400
COBALT	228.62	2.21	0	0	0
COPPER	327.39	-1.05	0	-0.440	-0.0600
IRON	239.56	0	0	0	0
LEAD	220.35	0	0	-0.224	0
LITHIUM	670.78	0	0	0	0
MAGNESIUM	279.08	0	0	0	0
MANGANESE	257.61	0	0	0.00100	0
MOLYBDENUM	202.03	0	0	-0.480	0
NICKEL	231.60	0	0.400	0	0
POTASSIUM	766.49	0	0	0	0
SELENIUM	196.03	-0.220	0	-0.100	0
SILICON	251.61	0	0	0	0
SILVER	328.07	0	0	-2.05	0
SODIUM	589.59	0	0	0	0
STRONTIUM	407.77	0	0	0	0
THALLIUM	190.80	-8.00	0	-2.76	0
TIN	189.93	0	0	0	0
TITANIUM	334.94	0	0	0	0
VANADIUM	290.88	0	0	0	0
ZINC	206.20	0	0	-0.100	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4349010
Report generated: 08/24/2015 10:19

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L15080992 **Date:** 08/12/2015
Insturment ID: PE-ICP2 **Method:** 6010C

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	630.0
Antimony	10.00	45.0
Arsenic	10.00	36.0
Barium	10.00	72.0
Beryllium	10.00	4.5
Boron	10.00	45.0
Cadmium	10.00	4.5
Calcium	10.00	900.0
Chromium	10.00	45.0
Cobalt	10.00	45.0
Copper	10.00	90.0
Iron	10.00	900.0
Lead	10.00	162.0
Lithium	10.00	0.9
Magnesium	10.00	900.0
Manganese	10.00	18.0
Molybdenum	10.00	45.0
Nickel	10.00	90.0
Phosphorus	10.00	72.0
Potassium	10.00	90.0
Selenium	10.00	45.0
Silicon	10.00	22.5
Silver	10.00	1.8
Sodium	10.00	180.0
Strontium	10.00	4.5
Thallium	10.00	9.0
Tin	10.00	45.0
Titanium	10.00	18.0
Vanadium	10.00	90.0
Zinc	10.00	45.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4349009
Report generated: 08/24/2015 10:19

2.3.1.3 Raw Data

==========

Reprocessing Begun
Logged In Analyst: peicp2 Technique: ICP Continuous

Results Data Set (original): 082315H
Results Library (original): C:\pe\peicp2\Results\results2.mdb
Results Data Set (reprocessed): 082315HR
Results Library (reprocessed): C:\pe\peicp2\Results\results2.mdb

==========

Sequence No.: 1 Autosampler Location: 1
Sample ID: S0 Date Collected: 8/23/2015 10:03:17 AM
Analyst: Data Type: Reprocessed on 8/23/2015 10:36:38 AM
Logged In Analyst (Original) : peicp2
Initial Sample Wt: Initial Sample Vol:
Dilution: Sample Prep Vol:

Nebulizer Parameters: S0

Analyte	Back Pressure	Flow
All	200.0 kPa	0.31 L/min

Mean Data: S0

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	2491789.3	103013.44	4.13%		
YRADIAL	148197.4	3097.94	2.09%		
Ga 417.206	989959.6	45539.02	4.60%		
GaRADIAL	34997.8	694.02	1.98%		
Ag 328.068†	836.0	291.05	34.82%	[0.00]	mg/L
Al 396.153†	8.6	113.86	>999.9%	[0.00]	mg/L
As 188.979†	13.1	3.00	22.89%	[0.00]	mg/L
Ba 233.527†	315.4	88.32	28.01%	[0.00]	mg/L
Be 234.861†	-1267.6	69.51	5.48%	[0.00]	mg/L
B 249.677†	266.8	20.95	7.85%	[0.00]	mg/L
Ca 227.546†	-60.2	15.91	26.43%	[0.00]	mg/L
Cd 228.802†	9.9	7.38	74.49%	[0.00]	mg/L
Co 228.616†	-93.7	3.81	4.07%	[0.00]	mg/L
Cr 267.716†	294.0	32.89	11.19%	[0.00]	mg/L
Cu 327.393†	-311.0	152.27	48.96%	[0.00]	mg/L
Fe 239.562†	142.4	23.07	16.20%	[0.00]	mg/L
Mg 279.077†	-80.6	37.67	46.72%	[0.00]	mg/L
Mn 257.610†	1356.2	38.88	2.87%	[0.00]	mg/L
Mo 202.031†	111.6	12.10	10.84%	[0.00]	mg/L
Ni 231.604†	-107.5	24.53	22.82%	[0.00]	mg/L
Pb 220.353†	-228.2	34.07	14.93%	[0.00]	mg/L
Sb 206.836†	58.2	11.63	19.98%	[0.00]	mg/L
Se 196.026†	-3.8	10.92	288.30%	[0.00]	mg/L
Si 251.611†	1243.6	121.79	9.79%	[0.00]	mg/L
Sn 189.927†	-5.9	6.98	117.83%	[0.00]	mg/L
Ti 334.940†	2617.9	346.33	13.23%	[0.00]	mg/L
Tl 190.801†	-46.8	6.50	13.89%	[0.00]	mg/L
V 290.880†	8575.4	30.10	0.35%	[0.00]	mg/L
Zn 206.200†	103.0	11.65	11.31%	[0.00]	mg/L
K 766.490†	34.7	91.19	262.52%	[0.00]	mg/L
Na 589.592†	677.7	238.81	35.24%	[0.00]	mg/L
Sr 407.771†	747.9	56.86	7.60%	[0.00]	mg/L
Li 670.784†	424.3	117.08	27.59%	[0.00]	mg/L
P 214.914†	-105.6	13.87	13.14%	[0.00]	mg/L

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Sequence No.: 2 Autosampler Location: 2
Sample ID: S1 Date Collected: 8/23/2015 10:05:39 AM
Analyst: Data Type: Reprocessed on 8/23/2015 10:36:39 AM
Logged In Analyst (Original) : peicp2
Initial Sample Wt: Initial Sample Vol:
Dilution: Sample Prep Vol:

Nebulizer Parameters: S1

Approved: August 24, 2015
Kym H. Rhoden

Analyte	Back Pressure	Flow
All	200.0 kPa	0.31 L/min

Mean Data: S1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	2504632.4	93814.66	3.75%		
YRADIAL	148470.1	2170.57	1.46%		
Ga 417.206	995914.7	39547.64	3.97%		
GaRADIAL	35098.8	599.11	1.71%		
Ag 328.068†	575.3	66.10	11.49%	[0.0032]	mg/L
Al 396.153†	226.5	60.02	26.50%	[0.08]	mg/L
Ba 233.527†	1116.6	57.03	5.11%	[0.008]	mg/L
Be 234.861†	470.6	14.51	3.08%	[0.0004]	mg/L
Cd 228.802†	10.4	6.61	63.39%	[0.0004]	mg/L
Co 228.616†	71.0	8.99	12.66%	[0.0016]	mg/L
Cr 267.716†	593.8	48.03	8.09%	[0.004]	mg/L
Cu 327.393†	666.7	126.66	19.00%	[0.004]	mg/L
Fe 239.562†	328.2	15.17	4.62%	[0.032]	mg/L
Mg 279.077†	224.4	29.66	13.22%	[0.08]	mg/L
Mn 257.610†	3020.8	204.91	6.78%	[0.004]	mg/L
Mo 202.031†	273.5	12.89	4.71%	[0.008]	mg/L
Ni 231.604†	298.8	46.08	15.42%	[0.004]	mg/L
Pb 220.353†	86.7	21.21	24.47%	[0.004]	mg/L
Sb 206.836†	19.3	5.27	27.33%	[0.0096]	mg/L
Si 251.611†	1336.5	151.08	11.30%	[0.04]	mg/L
Sn 189.927†	84.6	2.75	3.25%	[0.008]	mg/L
Ti 334.940†	6040.0	245.07	4.06%	[0.008]	mg/L
V 290.880†	1133.9	157.28	13.87%	[0.008]	mg/L
Zn 206.200†	677.1	34.79	5.14%	[0.008]	mg/L
K 766.490†	407.6	38.76	9.51%	[0.4]	mg/L
Na 589.592†	2615.0	187.65	7.18%	[0.4]	mg/L
Sr 407.771†	6301.7	114.13	1.81%	[0.008]	mg/L
Li 670.784†	244.4	72.45	29.64%	[0.008]	mg/L
P 214.914†	171.1	8.91	5.21%	[0.08]	mg/L

Sequence No.: 3
Sample ID: S2
Analyst:
Logged In Analyst (Original) : peicp2
Initial Sample Wt:
Dilution:

Autosampler Location: 3
Date Collected: 8/23/2015 10:08:00 AM
Data Type: Reprocessed on 8/23/2015 10:36:40 AM
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: S2

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: S2

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	2436866.0	165586.97	6.80%		
YRADIAL	152620.2	1107.13	0.73%		
Ga 417.206	964302.5	72784.87	7.55%		
GaRADIAL	35864.5	188.81	0.53%		
Ag 328.068†	1501.7	99.65	6.64%	[0.0064]	mg/L
Al 396.153†	323.6	15.07	4.66%	[0.16]	mg/L
As 188.979†	28.4	2.79	9.83%	[0.0064]	mg/L
Ba 233.527†	2649.9	261.55	9.87%	[0.016]	mg/L
Be 234.861†	985.8	9.37	0.95%	[0.0008]	mg/L
B 249.677†	572.9	27.96	4.88%	[0.008]	mg/L
Ca 227.546†	30.6	9.06	29.65%	[0.16]	mg/L
Cd 228.802†	35.8	0.25	0.69%	[0.0008]	mg/L
Co 228.616†	140.2	4.06	2.90%	[0.0032]	mg/L
Cr 267.716†	1208.7	62.84	5.20%	[0.008]	mg/L
Cu 327.393†	1572.2	272.31	17.32%	[0.008]	mg/L
Fe 239.562†	624.1	40.22	6.44%	[0.064]	mg/L
Mg 279.077†	498.0	20.20	4.06%	[0.16]	mg/L
Mn 257.610†	6300.5	357.62	5.68%	[0.008]	mg/L

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Mo 202.031†	580.8	53.34	9.18%	[0.016]	mg/L
Ni 231.604†	759.3	9.91	1.30%	[0.008]	mg/L
Pb 220.353†	126.6	20.25	15.99%	[0.008]	mg/L
Sb 206.836†	51.7	7.47	14.44%	[0.0192]	mg/L
Se 196.026†	2.3	5.20	227.33%	[0.0062]	mg/L
Si 251.611†	3150.7	409.88	13.01%	[0.08]	mg/L
Sn 189.927†	200.6	10.77	5.37%	[0.016]	mg/L
Ti 334.940†	12510.6	319.54	2.55%	[0.016]	mg/L
Tl 190.801†	10.2	8.26	81.30%	[0.008]	mg/L
V 290.880†	2644.6	389.99	14.75%	[0.016]	mg/L
Zn 206.200†	1511.1	64.46	4.27%	[0.016]	mg/L
K 766.490†	872.6	74.60	8.55%	[0.8]	mg/L
Na 589.592†	5576.5	138.35	2.48%	[0.8]	mg/L
Sr 407.771†	12346.1	183.43	1.49%	[0.016]	mg/L
Li 670.784†	605.9	96.98	16.00%	[0.016]	mg/L
P 214.914†	363.0	24.64	6.79%	[0.16]	mg/L

Sequence No.: 4 **Autosampler Location: 4**
Sample ID: S3 **Date Collected: 8/23/2015 10:10:22 AM**
Analyst: **Data Type: Reprocessed on 8/23/2015 10:36:41 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: S3

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: S3

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	2452375.0	105198.36	4.29%		
YRADIAL	153265.9	365.50	0.24%		
Ga 417.206	925073.6	41433.16	4.48%		
GaRADIAL	37244.9	153.90	0.41%		
Ag 328.068†	108119.5	1418.60	1.31%	[0.40]	mg/L
Al 396.153†	21629.2	83.45	0.39%	[10.00]	mg/L
As 188.979†	1365.7	52.40	3.84%	[0.40]	mg/L
Ba 233.527†	152437.1	2249.66	1.48%	[1.00]	mg/L
Be 234.861†	66178.8	1048.56	1.58%	[0.05]	mg/L
B 249.677†	37356.8	728.59	1.95%	[0.50]	mg/L
Ca 227.546†	3130.5	95.77	3.06%	[10.00]	mg/L
Cd 228.802†	1950.3	74.05	3.80%	[0.05]	mg/L
Co 228.616†	9518.2	277.59	2.92%	[0.20]	mg/L
Cr 267.716†	71779.4	887.69	1.24%	[0.50]	mg/L
Cu 327.393†	88988.7	743.08	0.84%	[0.50]	mg/L
Fe 239.562†	40120.9	260.54	0.65%	[4.00]	mg/L
Mg 279.077†	19592.8	30.85	0.16%	[10.00]	mg/L
Mn 257.610†	372030.2	4262.07	1.15%	[0.50]	mg/L
Mo 202.031†	35190.3	472.35	1.34%	[1.00]	mg/L
Ni 231.604†	38431.7	662.82	1.72%	[0.50]	mg/L
Pb 220.353†	8077.8	237.73	2.94%	[0.50]	mg/L
Sb 206.836†	3277.6	91.36	2.79%	[1.20]	mg/L
Se 196.026†	441.9	24.82	5.62%	[0.40]	mg/L
Si 251.611†	211570.5	2223.27	1.05%	[5.00]	mg/L
Sn 189.927†	12223.3	339.44	2.78%	[1.00]	mg/L
Ti 334.940†	791110.0	8298.50	1.05%	[1.00]	mg/L
Tl 190.801†	1303.3	36.66	2.81%	[0.50]	mg/L
V 290.880†	169341.9	1914.89	1.13%	[1.00]	mg/L
Zn 206.200†	86695.2	1673.91	1.93%	[1.00]	mg/L
K 766.490†	51920.0	220.92	0.43%	[50.00]	mg/L
Na 589.592†	321042.7	4206.63	1.31%	[50.00]	mg/L
Sr 407.771†	783654.2	14600.75	1.86%	[1.00]	mg/L
Li 670.784†	33506.3	148.82	0.44%	[1.00]	mg/L
P 214.914†	22785.9	657.28	2.88%	[10]	mg/L

Sequence No.: 5 **Autosampler Location: 5**
Sample ID: S4 **Date Collected: 8/23/2015 10:12:46 AM**

Approved: August 24, 2015

Analyst:
Logged In Analyst (Original) : peicp2
Initial Sample Wt:
Dilution:

Data Type: Reprocessed on 8/23/2015 10:36:41 AM
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: S4

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: S4

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Calib Conc.	Units
Y 371.029	2429218.6	31752.43	1.31%		
YRADIAL	149721.1	6668.40	4.45%		
Ga 417.206	893085.5	17627.56	1.97%		
GaRADIAL	36976.2	1263.12	3.42%		
Ag 328.068†	222034.7	2179.72	0.98%	[0.80]	mg/L
Al 396.153†	42715.0	351.65	0.82%	[20.00]	mg/L
As 188.979†	2823.7	28.36	1.00%	[0.80]	mg/L
Ba 233.527†	304960.7	241.33	0.08%	[2.00]	mg/L
Be 234.861†	135741.6	1110.23	0.82%	[0.10]	mg/L
B 249.677†	77581.6	934.75	1.20%	[1.00]	mg/L
Ca 227.546†	6496.4	57.03	0.88%	[20.00]	mg/L
Cd 228.802†	3984.9	32.29	0.81%	[0.10]	mg/L
Co 228.616†	18845.1	178.39	0.95%	[0.40]	mg/L
Cr 267.716†	143582.6	454.24	0.32%	[1.00]	mg/L
Cu 327.393†	181928.6	1981.94	1.09%	[1.00]	mg/L
Fe 239.562†	79324.4	525.46	0.66%	[8.00]	mg/L
Mg 279.077†	38828.2	221.91	0.57%	[20.00]	mg/L
Mn 257.610†	740830.2	474.62	0.06%	[1.00]	mg/L
Mo 202.031†	70914.5	216.94	0.31%	[2.00]	mg/L
Ni 231.604†	76235.6	202.49	0.27%	[1.00]	mg/L
Pb 220.353†	15965.7	143.36	0.90%	[1.00]	mg/L
Sb 206.836†	6724.9	74.24	1.10%	[2.40]	mg/L
Se 196.026†	910.0	7.07	0.78%	[0.80]	mg/L
Si 251.611†	431584.8	3292.58	0.76%	[10.00]	mg/L
Sn 189.927†	24119.5	260.40	1.08%	[2.00]	mg/L
Ti 334.940†	1594807.1	4045.53	0.25%	[2.00]	mg/L
Tl 190.801†	2565.0	25.80	1.01%	[1.00]	mg/L
V 290.880†	339670.5	402.40	0.12%	[2.00]	mg/L
Zn 206.200†	171757.6	378.59	0.22%	[2.00]	mg/L
K 766.490†	103172.6	1171.40	1.14%	[100.00]	mg/L
Na 589.592†	635770.8	18708.26	2.94%	[100.00]	mg/L
Sr 407.771†	1597682.3	62669.78	3.92%	[2.00]	mg/L
Li 670.784†	64529.6	568.00	0.88%	[2.00]	mg/L
P 214.914†	44536.7	395.21	0.89%	[20]	mg/L

Calibration Summary

Analyte	Stds.	Equation	Intercept	Slope	Curvature	Corr. Coef.	Reslope
Ag 328.068	4	Lin, Calc Int	-545.1	276900	0.00000	0.999924	
Al 396.153	4	Lin, Calc Int	45.6	2138	0.00000	0.999981	
As 188.979	3	Wt. Lin	6.2	3461	0.00000	0.999838	
Ba 233.527	4	Lin, Calc Int	27.9	152500	0.00000	1.000000	
Be 234.861	4	Lin, Calc Int	-264.9	1354000	0.00000	0.999928	
B 249.677	3	Lin, Calc Int	-282.6	77350	0.00000	0.999819	
Ca 227.546	3	Lin, Calc Int	-31.1	324.3	0.00000	0.999836	
Cd 228.802	4	Lin, Calc Int	-5.8	39750	0.00000	0.999946	
Co 228.616	4	Lin, Calc Int	7.2	47190	0.00000	0.999987	
Cr 267.716	4	Lin, Calc Int	23.4	143600	0.00000	1.000000	
Cu 327.393	4	Lin, Calc Int	-228.9	181400	0.00000	0.999943	
Fe 239.562	4	Lin, Calc Int	57.3	9930	0.00000	0.999984	
Mg 279.077	4	Lin, Calc Int	102.5	1939	0.00000	0.999987	
Mn 257.610	4	Lin, Calc Int	336.1	741100	0.00000	0.999998	
Mo 202.031	4	Lin, Calc Int	-32.3	35420	0.00000	0.999993	
Ni 231.604	4	Lin, Calc Int	83.9	76260	0.00000	0.999991	
Pb 220.353	4	Lin, Calc Int	18.6	15980	0.00000	0.999984	
Sb 206.836	4	Lin, Calc Int	-13.6	2795	0.00000	0.999927	
Se 196.026	3	Wt. Lin	-4.7	1130	0.00000	0.999928	

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Si 251.611	4	Lin, Calc Int	-742.8	43080	0.00000	0.999957
Sn 189.927	4	Lin, Calc Int	19.0	12080	0.00000	0.999978
Ti 334.940	4	Lin, Calc Int	-968.3	796700	0.00000	0.999993
Tl 190.801	3	Lin, Calc Int	-0.9	2574	0.00000	0.999950
V 290.880	4	Lin, Calc Int	-154.8	169800	0.00000	0.999999
Zn 206.200	4	Lin, Calc Int	141.4	85960	0.00000	0.999990
K 766.490	4	Non Lin, Calc Int	8.7	1045	-0.13199	1.000000
Na 589.592	4	Non Lin, Calc Int	137.2	6480	-1.23831	1.000000
Sr 407.771	4	Lin, Calc Int	-2056.7	797000	0.00000	0.999958
Li 670.784	4	Lin, Calc Int	178.4	32410	0.00000	0.999829
P 214.914	4	Lin, Calc Int	64.4	2233	0.00000	0.999936

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Sequence No.: 6 **Autosampler Location: 11**
Sample ID: ICV **Date Collected: 8/23/2015 10:15:14 AM**
Analyst: **Data Type: Reprocessed on 8/23/2015 10:36:42 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: ICV

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: ICV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2559886.5						99205.15	3.88%
YRADIAL	153750.2						2266.54	1.47%
Ga 417.206	963806.7						38150.82	3.96%
GaRADIAL	37306.7						515.34	1.38%
Ag 328.068†	108754.4	0.398	mg/L	0.0047	0.398	mg/L	0.0047	1.18%
QC value within limits for Ag 328.068 Recovery = 99.54%								
Al 396.153†	22083.5	10.3	mg/L	0.08	10.3	mg/L	0.08	0.73%
QC value within limits for Al 396.153 Recovery = 102.68%								
As 188.979†	1350.8	0.384	mg/L	0.0107	0.384	mg/L	0.0107	2.80%
QC value within limits for As 188.979 Recovery = 95.96%								
Ba 233.527†	156605.9	1.03	mg/L	0.003	1.03	mg/L	0.003	0.30%
QC value within limits for Ba 233.527 Recovery = 102.73%								
Be 234.861†	66871.6	0.0491	mg/L	0.00042	0.0491	mg/L	0.00042	0.85%
QC value within limits for Be 234.861 Recovery = 98.20%								
B 249.677†	38288.2	0.512	mg/L	0.0021	0.512	mg/L	0.0021	0.41%
QC value within limits for B 249.677 Recovery = 102.36%								
Ca 227.546†	3035.3	9.53	mg/L	0.225	9.53	mg/L	0.225	2.36%
QC value within limits for Ca 227.546 Recovery = 95.25%								
Cd 228.802†	1904.9	0.0467	mg/L	0.00117	0.0467	mg/L	0.00117	2.51%
QC value less than the lower limit for Cd 228.802 Recovery = 93.47%								
Co 228.616†	9248.9	0.195	mg/L	0.0035	0.195	mg/L	0.0035	1.78%
QC value within limits for Co 228.616 Recovery = 97.47%								
Cr 267.716†	73037.1	0.509	mg/L	0.0017	0.509	mg/L	0.0017	0.33%
QC value within limits for Cr 267.716 Recovery = 101.82%								
Cu 327.393†	90551.1	0.502	mg/L	0.0028	0.502	mg/L	0.0028	0.56%
QC value within limits for Cu 327.393 Recovery = 100.40%								
Fe 239.562†	39999.6	4.02	mg/L	0.046	4.02	mg/L	0.046	1.16%
QC value within limits for Fe 239.562 Recovery = 100.54%								
Mg 279.077†	19858.9	10.2	mg/L	0.06	10.2	mg/L	0.06	0.58%
QC value within limits for Mg 279.077 Recovery = 101.88%								
Mn 257.610†	375880.9	0.507	mg/L	0.0009	0.507	mg/L	0.0009	0.17%
QC value within limits for Mn 257.610 Recovery = 101.34%								
Mo 202.031†	33583.9	0.950	mg/L	0.0056	0.950	mg/L	0.0056	0.59%
QC value less than the lower limit for Mo 202.031 Recovery = 94.98%								
Ni 231.604†	39112.5	0.511	mg/L	0.0004	0.511	mg/L	0.0004	0.08%
QC value within limits for Ni 231.604 Recovery = 102.29%								
Pb 220.353†	7901.5	0.496	mg/L	0.0084	0.496	mg/L	0.0084	1.68%
QC value within limits for Pb 220.353 Recovery = 99.16%								
Sb 206.836†	3101.2	1.11	mg/L	0.024	1.11	mg/L	0.024	2.11%
QC value less than the lower limit for Sb 206.836 Recovery = 92.77%								
Se 196.026†	423.4	0.380	mg/L	0.0051	0.380	mg/L	0.0051	1.35%
QC value within limits for Se 196.026 Recovery = 95.03%								
Si 251.611†	214653.7	4.99	mg/L	0.055	4.99	mg/L	0.055	1.10%

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QC value within limits for Si 251.611 Recovery = 99.79%
Sn 189.927† 11980.5 0.990 mg/L 0.0133 0.990 mg/L 0.0133 1.35%
QC value within limits for Sn 189.927 Recovery = 99.01%
Ti 334.940† 793711.2 0.998 mg/L 0.0007 0.998 mg/L 0.0007 0.07%
QC value within limits for Ti 334.940 Recovery = 99.79%
Tl 190.801† 1285.3 0.510 mg/L 0.0055 0.510 mg/L 0.0055 1.07%
QC value within limits for Tl 190.801 Recovery = 101.93%
V 290.880† 169567.3 0.999 mg/L 0.0024 0.999 mg/L 0.0024 0.24%
QC value within limits for V 290.880 Recovery = 99.95%
Zn 206.200† 88059.1 1.03 mg/L 0.005 1.03 mg/L 0.005 0.45%
QC value within limits for Zn 206.200 Recovery = 102.77%
K 766.490† 51792.1 49.8 mg/L 0.22 49.8 mg/L 0.22 0.45%
QC value within limits for K 766.490 Recovery = 99.65%
Na 589.592† 314347.9 48.9 mg/L 0.74 48.9 mg/L 0.74 1.50%
QC value within limits for Na 589.592 Recovery = 97.89%
Sr 407.771† 761248.8 0.957 mg/L 0.0141 0.957 mg/L 0.0141 1.47%
QC value within limits for Sr 407.771 Recovery = 95.74%
Li 670.784† 33587.5 1.03 mg/L 0.007 1.03 mg/L 0.007 0.69%
QC value within limits for Li 670.784 Recovery = 103.10%
P 214.914† 22036.9 9.84 mg/L 0.149 9.84 mg/L 0.149 1.52%
QC value within limits for P 214.914 Recovery = 98.39%
QC Failed. Continue with analysis.

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Sequence No.: 7 **Autosampler Location: 1**
Sample ID: ICB **Date Collected: 8/23/2015 10:17:37 AM**
Analyst: **Data Type: Reprocessed on 8/23/2015 10:36:43 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: ICB

Analyte	Back Pressure	Flow
All	200.0 kPa	0.31 L/min

Mean Data: ICB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2443044.8						87393.74	3.58%
YRADIAL	145895.9						5351.45	3.67%
Ga 417.206	974087.3						42735.32	4.39%
GaRADIAL	34459.3						1138.67	3.30%
Ag 328.068†	-501.5	0.00016	mg/L	0.000424	0.00016	mg/L	0.000424	269.29%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	8.7	-0.0173	mg/L	0.02095	-0.0173	mg/L	0.02095	120.79%
QC value within limits for Al 396.153 Recovery = Not calculated								
As 188.979†	8.2	0.00056	mg/L	0.001007	0.00056	mg/L	0.001007	179.01%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	-81.2	-0.00071	mg/L	0.000101	-0.00071	mg/L	0.000101	14.12%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 234.861†	-50.3	0.00016	mg/L	0.000057	0.00016	mg/L	0.000057	35.27%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	473.9	0.00976	mg/L	0.001527	0.00976	mg/L	0.001527	15.64%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	-13.5	0.0542	mg/L	0.04718	0.0542	mg/L	0.04718	87.01%
QC value within limits for Ca 227.546 Recovery = Not calculated								
Cd 228.802†	-3.0	0.00006	mg/L	0.000257	0.00006	mg/L	0.000257	396.83%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	-25.8	-0.00070	mg/L	0.000358	-0.00070	mg/L	0.000358	51.24%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	43.6	0.00014	mg/L	0.000932	0.00014	mg/L	0.000932	659.43%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	251.2	0.00265	mg/L	0.001013	0.00265	mg/L	0.001013	38.23%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	-3.2	-0.00610	mg/L	0.005581	-0.00610	mg/L	0.005581	91.56%
QC value within limits for Fe 239.562 Recovery = Not calculated								
Mg 279.077†	103.5	0.00053	mg/L	0.004005	0.00053	mg/L	0.004005	750.32%
QC value within limits for Mg 279.077 Recovery = Not calculated								
Mn 257.610†	149.6	-0.00025	mg/L	0.000084	-0.00025	mg/L	0.000084	33.40%
QC value within limits for Mn 257.610 Recovery = Not calculated								

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Mo 202.031†	23.1	0.00156 mg/L	0.000367	0.00156 mg/L	0.000367	23.51%
QC value within limits for Mo 202.031 Recovery = Not calculated						
Ni 231.604†	-18.4	-0.00134 mg/L	0.000173	-0.00134 mg/L	0.000173	12.88%
QC value within limits for Ni 231.604 Recovery = Not calculated						
Pb 220.353†	1.9	-0.00105 mg/L	0.000070	-0.00105 mg/L	0.000070	6.69%
QC value within limits for Pb 220.353 Recovery = Not calculated						
Sb 206.836†	5.4	0.00682 mg/L	0.003782	0.00682 mg/L	0.003782	55.48%
QC value within limits for Sb 206.836 Recovery = Not calculated						
Se 196.026†	-12.7	-0.00705 mg/L	0.003858	-0.00705 mg/L	0.003858	54.71%
QC value within limits for Se 196.026 Recovery = Not calculated						
Si 251.611†	-262.8	0.0111 mg/L	0.00130	0.0111 mg/L	0.00130	11.65%
QC value within limits for Si 251.611 Recovery = Not calculated						
Sn 189.927†	88.7	0.00576 mg/L	0.001319	0.00576 mg/L	0.001319	22.89%
QC value within limits for Sn 189.927 Recovery = Not calculated						
Ti 334.940†	-9.7	0.00121 mg/L	0.000112	0.00121 mg/L	0.000112	9.26%
QC value within limits for Ti 334.940 Recovery = Not calculated						
Tl 190.801†	3.7	0.00179 mg/L	0.002775	0.00179 mg/L	0.002775	154.89%
QC value within limits for Tl 190.801 Recovery = Not calculated						
V 290.880†	101.0	0.00150 mg/L	0.001784	0.00150 mg/L	0.001784	118.55%
QC value within limits for V 290.880 Recovery = Not calculated						
Zn 206.200†	29.1	-0.00130 mg/L	0.000185	-0.00130 mg/L	0.000185	14.16%
QC value within limits for Zn 206.200 Recovery = Not calculated						
K 766.490†	56.7	0.0459 mg/L	0.12063	0.0459 mg/L	0.12063	262.98%
QC value within limits for K 766.490 Recovery = Not calculated						
Na 589.592†	357.4	0.0340 mg/L	0.02401	0.0340 mg/L	0.02401	70.63%
QC value within limits for Na 589.592 Recovery = Not calculated						
Sr 407.771†	-221.2	0.00230 mg/L	0.000051	0.00230 mg/L	0.000051	2.21%
QC value within limits for Sr 407.771 Recovery = Not calculated						
Li 670.784†	32.1	-0.00452 mg/L	0.005521	-0.00452 mg/L	0.005521	122.28%
QC value within limits for Li 670.784 Recovery = Not calculated						
P 214.914†	18.7	-0.0204 mg/L	0.00328	-0.0204 mg/L	0.00328	16.06%
QC value within limits for P 214.914 Recovery = Not calculated						

All analyte(s) passed QC.

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Sequence No.: 8 **Autosampler Location: 14**
Sample ID: LLICV **Date Collected: 8/23/2015 10:20:01 AM**
Analyst: KHR **Data Type: Reprocessed on 8/23/2015 10:36:44 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: LLICV

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: LLICV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2484428.3						113102.93	4.55%
YRADIAL	152279.3						2136.74	1.40%
Ga 417.206	990914.4						48650.62	4.91%
GaRADIAL	36174.0						352.95	0.98%
Ag 328.068†	3846.2	0.0160	mg/L	0.00125	0.0160	mg/L	0.00125	7.82%
Al 396.153†	954.0	0.423	mg/L	0.0236	0.423	mg/L	0.0236	5.58%
As 188.979†	63.9	0.0165	mg/L	0.00053	0.0165	mg/L	0.00053	3.22%
Ba 233.527†	6008.7	0.0392	mg/L	0.00128	0.0392	mg/L	0.00128	3.27%
Be 234.861†	2494.8	0.00202	mg/L	0.000040	0.00202	mg/L	0.000040	1.96%
B 249.677†	1599.3	0.0248	mg/L	0.00093	0.0248	mg/L	0.00093	3.73%
Ca 227.546†	98.1	0.401	mg/L	0.0376	0.401	mg/L	0.0376	9.37%
Cd 228.802†	77.3	0.00203	mg/L	0.000118	0.00203	mg/L	0.000118	5.79%
Co 228.616†	363.7	0.00752	mg/L	0.000122	0.00752	mg/L	0.000122	1.62%
Cr 267.716†	2978.3	0.0206	mg/L	0.00069	0.0206	mg/L	0.00069	3.35%
Cu 327.393†	3441.8	0.0203	mg/L	0.00015	0.0203	mg/L	0.00015	0.74%
Fe 239.562†	1587.1	0.154	mg/L	0.0025	0.154	mg/L	0.0025	1.61%
Mg 279.077†	899.7	0.411	mg/L	0.0214	0.411	mg/L	0.0214	5.21%
Mn 257.610†	15547.4	0.0205	mg/L	0.00068	0.0205	mg/L	0.00068	3.33%
Mo 202.031†	1387.4	0.0401	mg/L	0.00161	0.0401	mg/L	0.00161	4.01%
Ni 231.604†	1582.0	0.0196	mg/L	0.00065	0.0196	mg/L	0.00065	3.29%
Pb 220.353†	327.2	0.0194	mg/L	0.00179	0.0194	mg/L	0.00179	9.22%

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Sb 206.836†	121.6	0.0483 mg/L	0.00284	0.0483 mg/L	0.00284	5.88%
Se 196.026†	8.8	0.0120 mg/L	0.00303	0.0120 mg/L	0.00303	25.31%
Si 251.611†	7755.5	0.197 mg/L	0.0076	0.197 mg/L	0.0076	3.87%
Sn 189.927†	531.6	0.0424 mg/L	0.00117	0.0424 mg/L	0.00117	2.77%
Ti 334.940†	31616.4	0.0409 mg/L	0.00017	0.0409 mg/L	0.00017	0.41%
Tl 190.801†	51.7	0.0209 mg/L	0.00184	0.0209 mg/L	0.00184	8.84%
V 290.880†	6646.2	0.0400 mg/L	0.00095	0.0400 mg/L	0.00095	2.38%
Zn 206.200†	3678.1	0.0413 mg/L	0.00129	0.0413 mg/L	0.00129	3.12%
K 766.490†	2203.8	2.10 mg/L	0.156	2.10 mg/L	0.156	7.45%
Na 589.592†	13850.8	2.12 mg/L	0.031	2.12 mg/L	0.031	1.47%
Sr 407.771†	31720.9	0.0424 mg/L	0.00011	0.0424 mg/L	0.00011	0.26%
Li 670.784†	1371.0	0.0368 mg/L	0.00253	0.0368 mg/L	0.00253	6.89%
P 214.914†	864.7	0.358 mg/L	0.0161	0.358 mg/L	0.0161	4.48%

Sequence No.: 9 **Autosampler Location: 12**
Sample ID: ICSA **Date Collected: 8/23/2015 10:22:22 AM**
Analyst: **Data Type: Reprocessed on 8/23/2015 10:36:45 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: ICSA

Analyte	Back Pressure	Flow
All	200.0 kPa	0.31 L/min

Mean Data: ICSA

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2383159.5						93552.87	3.93%
YRADIAL	144610.9						1204.41	0.83%
Ga 417.206	883137.7						36940.71	4.18%
GaRADIAL	35656.4						255.55	0.72%
Ag 328.068†	-11933.7	0.00033	mg/L	0.001341	0.00033	mg/L	0.001341	410.66%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	556295.0	260	mg/L	1.3	260	mg/L	1.3	0.51%
QC value within limits for Al 396.153 Recovery = 104.05%								
As 188.979†	-4.6	0.00179	mg/L	0.007257	0.00179	mg/L	0.007257	406.39%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	549.9	0.00014	mg/L	0.000087	0.00014	mg/L	0.000087	61.65%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 234.861†	30282.1	0.00003	mg/L	0.000380	0.00003	mg/L	0.000380	>999.9%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	-30808.4	-0.0176	mg/L	0.00514	-0.0176	mg/L	0.00514	29.28%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	88019.8	271	mg/L	3.1	271	mg/L	3.1	1.16%
QC value within limits for Ca 227.546 Recovery = 108.59%								
Cd 228.802†	2.4	0.00018	mg/L	0.000244	0.00018	mg/L	0.000244	134.16%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	-9.0	-0.00291	mg/L	0.000364	-0.00291	mg/L	0.000364	12.50%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	248.6	0.00211	mg/L	0.000222	0.00211	mg/L	0.000222	10.48%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	-1434.9	0.00000	mg/L	0.001547	0.00000	mg/L	0.001547	>999.9%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	985488.2	99.2	mg/L	0.89	99.2	mg/L	0.89	0.90%
QC value within limits for Fe 239.562 Recovery = 99.23%								
Mg 279.077†	480602.6	248	mg/L	2.3	248	mg/L	2.3	0.93%
QC value within limits for Mg 279.077 Recovery = 99.11%								
Mn 257.610†	-480.4	-0.00285	mg/L	0.000288	-0.00285	mg/L	0.000288	10.10%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	-178.9	0.00196	mg/L	0.001002	0.00196	mg/L	0.001002	50.99%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	-91.1	-0.00229	mg/L	0.000107	-0.00229	mg/L	0.000107	4.67%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	-802.8	0.00284	mg/L	0.000595	0.00284	mg/L	0.000595	20.96%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	-13.3	0.00372	mg/L	0.006322	0.00372	mg/L	0.006322	169.91%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	-29.0	0.00005	mg/L	0.005748	0.00005	mg/L	0.005748	>999.9%

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QC value within limits for Se 196.026 Recovery = Not calculated
Si 251.611† 2639.3 0.0786 mg/L 0.00278 0.0786 mg/L 0.00278 3.54%
QC value within limits for Si 251.611 Recovery = Not calculated
Sn 189.927† -146.0 -0.0137 mg/L 0.00218 -0.0137 mg/L 0.00218 15.94%
QC value within limits for Sn 189.927 Recovery = Not calculated
Ti 334.940† -16128.7 -0.00160 mg/L 0.000623 -0.00160 mg/L 0.000623 38.97%
QC value within limits for Ti 334.940 Recovery = Not calculated
Tl 190.801† -53.2 -0.0205 mg/L 0.00519 -0.0205 mg/L 0.00519 25.26%
QC value within limits for Tl 190.801 Recovery = Not calculated
V 290.880† -2543.1 -0.00403 mg/L 0.001959 -0.00403 mg/L 0.001959 48.59%
QC value within limits for V 290.880 Recovery = Not calculated
Zn 206.200† 292.3 0.00416 mg/L 0.000194 0.00416 mg/L 0.000194 4.65%
QC value within limits for Zn 206.200 Recovery = Not calculated
K 766.490† -315.2 -0.310 mg/L 0.0725 -0.310 mg/L 0.0725 23.37%
QC value within limits for K 766.490 Recovery = Not calculated
Na 589.592† 897.3 0.117 mg/L 0.0075 0.117 mg/L 0.0075 6.35%
QC value within limits for Na 589.592 Recovery = Not calculated
Sr 407.771† 1776.6 -0.00385 mg/L 0.000056 -0.00385 mg/L 0.000056 1.46%
QC value within limits for Sr 407.771 Recovery = Not calculated
Li 670.784† 192.8 0.00044 mg/L 0.001338 0.00044 mg/L 0.001338 302.71%
QC value within limits for Li 670.784 Recovery = Not calculated
P 214.914† 219.4 0.0694 mg/L 0.00395 0.0694 mg/L 0.00395 5.69%
QC value within limits for P 214.914 Recovery = Not calculated
All analyte(s) passed QC.

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Sequence No.: 10 **Autosampler Location: 13**
Sample ID: ICSAB **Date Collected: 8/23/2015 10:24:45 AM**
Analyst: **Data Type: Reprocessed on 8/23/2015 10:36:46 AM**
Logged In Analyst (Original) : peicp2
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: ICSAB

Analyte	**Back Pressure**	**Flow**
All	201.0 kPa	0.31 L/min

Mean Data: ICSAB

Analyte	**Mean Corrected Intensity**	**Calib. Conc.**	**Units**	**Std.Dev.**	**Sample Conc.**	**Units**	**Std.Dev.**	**RSD**
Y 371.029	2370748.3						63393.46	2.67%
YRADIAL	146341.3						3780.57	2.58%
Ga 417.206	876315.6						24358.36	2.78%
GaRADIAL	35842.5						680.93	1.90%
Ag 328.068†	135757.8	0.536	mg/L	0.0058	0.536	mg/L	0.0058	1.09%
QC value within limits for Ag 328.068 Recovery = 107.23%								
Al 396.153†	579110.5	271	mg/L	3.2	271	mg/L	3.2	1.20%
QC value within limits for Al 396.153 Recovery = 108.32%								
As 188.979†	855.4	0.251	mg/L	0.0055	0.251	mg/L	0.0055	2.19%
QC value within limits for As 188.979 Recovery = 100.30%								
Ba 233.527†	39228.7	0.254	mg/L	0.0020	0.254	mg/L	0.0020	0.78%
QC value within limits for Ba 233.527 Recovery = 101.46%								
Be 234.861†	387761.0	0.263	mg/L	0.0010	0.263	mg/L	0.0010	0.39%
QC value within limits for Be 234.861 Recovery = 105.21%								
B 249.677†	-31857.6	-0.0264	mg/L	0.00500	-0.0264	mg/L	0.00500	18.91%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	90992.0	281	mg/L	1.6	281	mg/L	1.6	0.56%
QC value within limits for Ca 227.546 Recovery = 112.28%								
Cd 228.802†	19416.3	0.488	mg/L	0.0132	0.488	mg/L	0.0132	2.69%
QC value within limits for Cd 228.802 Recovery = 97.64%								
Co 228.616†	11104.1	0.232	mg/L	0.0058	0.232	mg/L	0.0058	2.51%
QC value within limits for Co 228.616 Recovery = 92.95%								
Cr 267.716†	36617.3	0.256	mg/L	0.0023	0.256	mg/L	0.0023	0.90%
QC value within limits for Cr 267.716 Recovery = 102.26%								
Cu 327.393†	42464.1	0.242	mg/L	0.0035	0.242	mg/L	0.0035	1.45%
QC value within limits for Cu 327.393 Recovery = 96.92%								
Fe 239.562†	1033090.5	104	mg/L	1.0	104	mg/L	1.0	0.95%
QC value within limits for Fe 239.562 Recovery = 104.03%								
Mg 279.077†	493473.1	254	mg/L	4.7	254	mg/L	4.7	1.83%
QC value within limits for Mg 279.077 Recovery = 101.76%								

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Mn 257.610†          186410.6       0.249 mg/L        0.0016       0.249 mg/L        0.0016   0.63%
   QC value within limits for Mn 257.610  Recovery = 99.70%
Mo 202.031†            -182.1     0.00235 mg/L      0.000816     0.00235 mg/L      0.000816  34.71%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†           35605.1       0.465 mg/L        0.0021       0.465 mg/L        0.0021   0.44%
   QC value within limits for Ni 231.604  Recovery = 93.07%
Pb 220.353†            7186.1       0.505 mg/L        0.0094       0.505 mg/L        0.0094   1.87%
   QC value within limits for Pb 220.353  Recovery = 100.96%
Sb 206.836†            1401.3       0.509 mg/L        0.0146       0.509 mg/L        0.0146   2.87%
   QC value within limits for Sb 206.836  Recovery = 101.70%
Se 196.026†             275.2       0.270 mg/L        0.0079       0.270 mg/L        0.0079   2.94%
   QC value within limits for Se 196.026  Recovery = 108.12%
Si 251.611†              37.2      0.0182 mg/L       0.00117      0.0182 mg/L       0.00117   6.46%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†            -137.3     -0.0129 mg/L       0.00195     -0.0129 mg/L       0.00195  15.07%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†          -17050.4    -0.00224 mg/L      0.000300    -0.00224 mg/L      0.000300  13.38%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†            1288.4       0.501 mg/L        0.0159       0.501 mg/L        0.0159   3.17%
   QC value within limits for Tl 190.801  Recovery = 100.17%
V 290.880†            42542.6       0.262 mg/L        0.0009       0.262 mg/L        0.0009   0.35%
   QC value within limits for V 290.880  Recovery = 104.80%
Zn 206.200†           40255.8       0.472 mg/L        0.0019       0.472 mg/L        0.0019   0.40%
   QC value within limits for Zn 206.200  Recovery = 94.33%
K 766.490†             5096.4        4.87 mg/L         0.265        4.87 mg/L         0.265   5.44%
   QC value within limits for K 766.490  Recovery = 97.34%
Na 589.592†           35106.7        5.40 mg/L         0.075        5.40 mg/L         0.075   1.40%
   QC value within limits for Na 589.592  Recovery = 108.04%
Sr 407.771†            1957.3    -0.00392 mg/L      0.000187    -0.00392 mg/L      0.000187   4.79%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†             172.5    -0.00018 mg/L      0.002902    -0.00018 mg/L      0.002902 >999.9%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†             -352.8      -0.187 mg/L        0.0062      -0.187 mg/L        0.0062   3.33%
   QC value within limits for P 214.914  Recovery = Not calculated
All analyte(s) passed QC.

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Sequence No.: 11                                    Autosampler Location: 6
Sample ID: CCV                                      Date Collected: 8/23/2015 10:27:08 AM
Analyst:                                            Data Type: Reprocessed on 8/23/2015 10:36:46 AM
Logged In Analyst (Original) : peicp2
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

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Nebulizer Parameters: CCV
Analyte                 Back Pressure    Flow
All                     200.0 kPa        0.31 L/min

----------------------------------------------------------------------------------------------------------
Mean Data: CCV
                   Mean Corrected        Calib.                          Sample
Analyte               Intensity     Conc. Units      Std.Dev.     Conc. Units      Std.Dev.   RSD
Y 371.029            2580243.6                                                    49782.06   1.93%
YRADIAL               152153.0                                                     1872.87   1.23%
Ga 417.206            966772.3                                                    20507.82   2.12%
GaRADIAL               37179.5                                                      352.55   0.95%
Ag 328.068†           108337.0       0.397 mg/L        0.0035       0.397 mg/L        0.0035   0.87%
   QC value within limits for Ag 328.068  Recovery = 99.15%
Al 396.153†            21522.5        10.0 mg/L          0.09        10.0 mg/L          0.09   0.92%
   QC value within limits for Al 396.153  Recovery = 100.04%
As 188.979†             1337.4       0.380 mg/L        0.0011       0.380 mg/L        0.0011   0.28%
   QC value within limits for As 188.979  Recovery = 94.93%
Ba 233.527†           152909.9        1.00 mg/L         0.002        1.00 mg/L         0.002   0.15%
   QC value within limits for Ba 233.527  Recovery = 100.31%
Be 234.861†            66412.8      0.0488 mg/L       0.00031      0.0488 mg/L       0.00031   0.64%
   QC value within limits for Be 234.861  Recovery = 97.56%
B 249.677†             37892.7       0.507 mg/L        0.0072       0.507 mg/L        0.0072   1.42%
   QC value within limits for B 249.677  Recovery = 101.34%
Ca 227.546†             3028.2        9.50 mg/L         0.063        9.50 mg/L         0.063   0.66%
   QC value within limits for Ca 227.546  Recovery = 95.03%
Cd 228.802†             1909.1      0.0469 mg/L       0.00017      0.0469 mg/L       0.00017   0.36%
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Approved: August 24, 2015

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Analysis Begun

Start Time: 8/23/2015 10:37:48 AM **Plasma On Time: 8/23/2015 7:45:07 AM**
Logged In Analyst: peicp2 **Technique: ICP Continuous**
Spectrometer Model: Optima 4300 DV, S/N 077N4011401 **Autosampler Model: Cetac**

Sample Information File: C:\pe\peicp2\Sample Information\SUNDAY.sif
Batch ID:
Results Data Set: 082315HR
Results Library: C:\pe\peicp2\Results\results2.mdb

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Sequence No.: 1 **Autosampler Location: 15**
Sample ID: PBW AA WG535824-02 **Date Collected: 8/23/2015 10:37:50 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: PBW AA WG535824-02

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: PBW AA WG535824-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2494852.3						30035.00	1.20%
YRADIAL	145273.4						5328.87	3.67%
Ga 417.206	999356.8						10819.35	1.08%
GaRADIAL	34480.9						1062.24	3.08%
Ag 328.068†	-434.7	0.00040	mg/L	0.000846	0.00040	mg/L	0.000846	211.63%
Al 396.153†	37.6	-0.00379	mg/L	0.041670	-0.00379	mg/L	0.041670	>999.9%
As 188.979†	5.7	-0.00016	mg/L	0.000504	-0.00016	mg/L	0.000504	320.17%
Ba 233.527†	-151.4	-0.00118	mg/L	0.000067	-0.00118	mg/L	0.000067	5.67%
Be 234.861†	-131.8	0.00010	mg/L	0.000005	0.00010	mg/L	0.000005	4.79%
B 249.677†	34.3	0.00409	mg/L	0.000650	0.00409	mg/L	0.000650	15.90%
Ca 227.546†	-22.9	0.0251	mg/L	0.03744	0.0251	mg/L	0.03744	149.24%
Cd 228.802†	10.6	0.00041	mg/L	0.000079	0.00041	mg/L	0.000079	19.24%
Co 228.616†	-16.2	-0.00050	mg/L	0.000217	-0.00050	mg/L	0.000217	43.77%
Cr 267.716†	61.7	0.00027	mg/L	0.000131	0.00027	mg/L	0.000131	49.11%
Cu 327.393†	108.3	0.00186	mg/L	0.001432	0.00186	mg/L	0.001432	76.94%
Fe 239.562†	55.3	-0.00021	mg/L	0.003143	-0.00021	mg/L	0.003143	>999.9%
Mg 279.077†	160.7	0.0300	mg/L	0.02596	0.0300	mg/L	0.02596	86.45%
Mn 257.610†	-728.3	-0.00144	mg/L	0.000008	-0.00144	mg/L	0.000008	0.59%
Mo 202.031†	9.1	0.00117	mg/L	0.000381	0.00117	mg/L	0.000381	32.61%
Ni 231.604†	-21.5	-0.00138	mg/L	0.000187	-0.00138	mg/L	0.000187	13.52%
Pb 220.353†	-9.0	-0.00173	mg/L	0.001005	-0.00173	mg/L	0.001005	58.11%
Sb 206.836†	-2.5	0.00398	mg/L	0.001195	0.00398	mg/L	0.001195	30.03%
Se 196.026†	-5.0	-0.00024	mg/L	0.003343	-0.00024	mg/L	0.003343	>999.9%
Si 251.611†	-449.3	0.00680	mg/L	0.000754	0.00680	mg/L	0.000754	11.09%
Sn 189.927†	-17.6	-0.00303	mg/L	0.000568	-0.00303	mg/L	0.000568	18.74%
Ti 334.940†	-84.7	0.00111	mg/L	0.000125	0.00111	mg/L	0.000125	11.29%
Tl 190.801†	-7.6	-0.00259	mg/L	0.000761	-0.00259	mg/L	0.000761	29.43%
V 290.880†	-21.0	0.00079	mg/L	0.001277	0.00079	mg/L	0.001277	162.29%
Zn 206.200†	79.9	-0.00071	mg/L	0.000154	-0.00071	mg/L	0.000154	21.55%
K 766.490†	9.3	0.00059	mg/L	0.040246	0.00059	mg/L	0.040246	>999.9%
Na 589.592†	126.4	-0.00166	mg/L	0.019972	-0.00166	mg/L	0.019972	>999.9%
Sr 407.771†	-419.6	0.00205	mg/L	0.000036	0.00205	mg/L	0.000036	1.76%
Li 670.784†	106.8	-0.00221	mg/L	0.001612	-0.00221	mg/L	0.001612	72.87%
P 214.914†	-21.7	-0.0385	mg/L	0.00065	-0.0385	mg/L	0.00065	1.68%

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Sequence No.: 2 **Autosampler Location: 16**
Sample ID: LCSW AA WG535824-03 **Date Collected: 8/23/2015 10:40:12 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Approved: August 24, 2015

Kym H. Rhoden

Nebulizer Parameters: LCSW AA WG535824-03

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: LCSW AA WG535824-03

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2452105.6						55058.00	2.25%
YRADIAL	144297.2						3026.92	2.10%
Ga 417.206	945823.6						20369.38	2.15%
GaRADIAL	35454.4						779.51	2.20%
Ag 328.068†	56190.5	0.207	mg/L	0.0028	0.207	mg/L	0.0028	1.35%
Al 396.153†	11662.4	5.41	mg/L	0.025	5.41	mg/L	0.025	0.47%
As 188.979†	683.1	0.193	mg/L	0.0047	0.193	mg/L	0.0047	2.41%
Ba 233.527†	81381.6	0.534	mg/L	0.0033	0.534	mg/L	0.0033	0.63%
Be 234.861†	33145.8	0.0244	mg/L	0.00030	0.0244	mg/L	0.00030	1.22%
B 249.677†	77604.6	1.01	mg/L	0.022	1.01	mg/L	0.022	2.12%
Ca 227.546†	1537.4	4.87	mg/L	0.025	4.87	mg/L	0.025	0.51%
Cd 228.802†	975.0	0.0240	mg/L	0.00006	0.0240	mg/L	0.00006	0.27%
Co 228.616†	4960.4	0.105	mg/L	0.0013	0.105	mg/L	0.0013	1.22%
Cr 267.716†	38734.0	0.270	mg/L	0.0020	0.270	mg/L	0.0020	0.75%
Cu 327.393†	46500.8	0.258	mg/L	0.0053	0.258	mg/L	0.0053	2.03%
Fe 239.562†	21771.1	2.19	mg/L	0.004	2.19	mg/L	0.004	0.18%
Mg 279.077†	10676.7	5.45	mg/L	0.038	5.45	mg/L	0.038	0.69%
Mn 257.610†	201164.5	0.271	mg/L	0.0029	0.271	mg/L	0.0029	1.07%
Mo 202.031†	18630.4	0.527	mg/L	0.0039	0.527	mg/L	0.0039	0.73%
Ni 231.604†	21219.2	0.277	mg/L	0.0024	0.277	mg/L	0.0024	0.88%
Pb 220.353†	4242.6	0.266	mg/L	0.0039	0.266	mg/L	0.0039	1.46%
Sb 206.836†	1634.0	0.589	mg/L	0.0048	0.589	mg/L	0.0048	0.81%
Se 196.026†	218.1	0.198	mg/L	0.0055	0.198	mg/L	0.0055	2.80%
Si 251.611†	109758.7	2.56	mg/L	0.023	2.56	mg/L	0.023	0.90%
Sn 189.927†	6684.8	0.552	mg/L	0.0062	0.552	mg/L	0.0062	1.13%
Ti 334.940†	420525.2	0.529	mg/L	0.0050	0.529	mg/L	0.0050	0.95%
Tl 190.801†	679.3	0.270	mg/L	0.0030	0.270	mg/L	0.0030	1.10%
V 290.880†	90785.1	0.536	mg/L	0.0055	0.536	mg/L	0.0055	1.03%
Zn 206.200†	45726.6	0.533	mg/L	0.0047	0.533	mg/L	0.0047	0.88%
K 766.490†	27524.1	26.4	mg/L	0.33	26.4	mg/L	0.33	1.25%
Na 589.592†	173552.6	26.9	mg/L	0.12	26.9	mg/L	0.12	0.43%
Sr 407.771†	432832.6	0.545	mg/L	0.0058	0.545	mg/L	0.0058	1.06%
Li 670.784†	18078.5	0.552	mg/L	0.0085	0.552	mg/L	0.0085	1.54%
P 214.914†	11469.3	5.11	mg/L	0.046	5.11	mg/L	0.046	0.89%

Sequence No.: 3
Sample ID: FBLK1 WG535764-01
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 17
Date Collected: 8/23/2015 10:42:35 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: FBLK1 WG535764-01

Analyte	Back Pressure	Flow
All	200.0 kPa	0.31 L/min

Mean Data: FBLK1 WG535764-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2421955.0						110763.28	4.57%
YRADIAL	145888.9						1928.82	1.32%
Ga 417.206	886984.6						43496.59	4.90%
GaRADIAL	34324.7						332.26	0.97%
Ag 328.068†	-246.4	0.00108	mg/L	0.000121	0.00108	mg/L	0.000121	11.19%
Al 396.153†	43.1	-0.00126	mg/L	0.008642	-0.00126	mg/L	0.008642	687.21%
As 188.979†	21.0	0.00425	mg/L	0.002607	0.00425	mg/L	0.002607	61.27%
Ba 233.527†	-131.9	-0.00105	mg/L	0.000102	-0.00105	mg/L	0.000102	9.73%
Be 234.861†	-342.2	-0.00006	mg/L	0.000070	-0.00006	mg/L	0.000070	125.25%
B 249.677†	636.7	0.0119	mg/L	0.00233	0.0119	mg/L	0.00233	19.60%
Ca 227.546†	-46.0	-0.0459	mg/L	0.09457	-0.0459	mg/L	0.09457	205.89%
Cd 228.802†	4.5	0.00023	mg/L	0.000229	0.00023	mg/L	0.000229	97.87%
Co 228.616†	-36.1	-0.00092	mg/L	0.000175	-0.00092	mg/L	0.000175	19.12%

Approved: August 24, 2015

Cr 267.716†	59.9	0.00025	mg/L	0.000302	0.00025	mg/L	0.000302	118.59%
Cu 327.393†	161.8	0.00216	mg/L	0.000367	0.00216	mg/L	0.000367	17.01%
Fe 239.562†	30.9	-0.00266	mg/L	0.001358	-0.00266	mg/L	0.001358	51.10%
Mg 279.077†	72.5	-0.0155	mg/L	0.01309	-0.0155	mg/L	0.01309	84.59%
Mn 257.610†	-728.8	-0.00144	mg/L	0.000032	-0.00144	mg/L	0.000032	2.22%
Mo 202.031†	21.4	0.00151	mg/L	0.000193	0.00151	mg/L	0.000193	12.77%
Ni 231.604†	-15.9	-0.00131	mg/L	0.000425	-0.00131	mg/L	0.000425	32.53%
Pb 220.353†	-6.1	-0.00154	mg/L	0.001438	-0.00154	mg/L	0.001438	93.17%
Sb 206.836†	17.0	0.0109	mg/L	0.00372	0.0109	mg/L	0.00372	33.99%
Se 196.026†	-0.8	0.00348	mg/L	0.009908	0.00348	mg/L	0.009908	285.09%
Si 251.611†	-361.1	0.00884	mg/L	0.001125	0.00884	mg/L	0.001125	12.72%
Sn 189.927†	-3.0	-0.00183	mg/L	0.000343	-0.00183	mg/L	0.000343	18.78%
Ti 334.940†	219.6	0.00149	mg/L	0.000353	0.00149	mg/L	0.000353	23.70%
Tl 190.801†	-4.2	-0.00126	mg/L	0.001265	-0.00126	mg/L	0.001265	100.54%
V 290.880†	12.0	0.00098	mg/L	0.000963	0.00098	mg/L	0.000963	98.25%
Zn 206.200†	318.7	0.00207	mg/L	0.000220	0.00207	mg/L	0.000220	10.64%
K 766.490†	122.0	-0.0229	mg/L	0.10265	-0.0229	mg/L	0.10265	447.33%
Na 589.592†	830169.7	131	mg/L	1.4	131	mg/L	1.4	1.07%
Sr 407.771†	-108.8	0.00245	mg/L	0.000018	0.00245	mg/L	0.000018	0.72%
Li 670.784†	65.9	-0.00347	mg/L	0.001883	-0.00347	mg/L	0.001883	54.23%
P 214.914†	-17.7	-0.0367	mg/L	0.00666	-0.0367	mg/L	0.00666	18.13%

Sequence No.: 4
Sample ID: L1508099701 WG535824-01
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 18
Date Collected: 8/23/2015 10:45:00 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1508099701 WG535824-01

Analyte	Back Pressure	Flow
All	200.0 kPa	0.31 L/min

Mean Data: L1508099701 WG535824-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	2349300.3						92546.54	3.94%
YRADIAL	138070.2						1780.69	1.29%
Ga 417.206	864877.2						33644.66	3.89%
GaRADIAL	33294.4						296.75	0.89%
Ag 328.068†	-36.7	0.00177	mg/L	0.000280	0.00177	mg/L	0.000280	15.80%
Al 396.153†	48.7	0.00133	mg/L	0.026318	0.00133	mg/L	0.026318	>999.9%
As 188.979†	27.8	0.00792	mg/L	0.003719	0.00792	mg/L	0.003719	46.95%
Ba 233.527†	10587.1	0.0693	mg/L	0.00240	0.0693	mg/L	0.00240	3.46%
Be 234.861†	-352.5	-0.00006	mg/L	0.000034	-0.00006	mg/L	0.000034	54.51%
B 249.677†	1803.0	0.0269	mg/L	0.00061	0.0269	mg/L	0.00061	2.28%
Ca 227.546†	25145.1	77.6	mg/L	2.57	77.6	mg/L	2.57	3.31%
Cd 228.802†	55.5	0.00151	mg/L	0.000159	0.00151	mg/L	0.000159	10.52%
Co 228.616†	-29.2	-0.00078	mg/L	0.000275	-0.00078	mg/L	0.000275	35.20%
Cr 267.716†	128.0	0.00073	mg/L	0.000145	0.00073	mg/L	0.000145	19.91%
Cu 327.393†	6838.9	0.0390	mg/L	0.00078	0.0390	mg/L	0.00078	2.01%
Fe 239.562†	11.5	-0.00464	mg/L	0.003785	-0.00464	mg/L	0.003785	81.55%
Mg 279.077†	3045.5	1.52	mg/L	0.067	1.52	mg/L	0.067	4.41%
Mn 257.610†	9726.3	0.0127	mg/L	0.00049	0.0127	mg/L	0.00049	3.88%
Mo 202.031†	47.8	0.00226	mg/L	0.000246	0.00226	mg/L	0.000246	10.85%
Ni 231.604†	29.9	-0.00070	mg/L	0.000263	-0.00070	mg/L	0.000263	37.55%
Pb 220.353†	41.4	0.00142	mg/L	0.001348	0.00142	mg/L	0.001348	95.14%
Sb 206.836†	15.2	0.0103	mg/L	0.00305	0.0103	mg/L	0.00305	29.59%
Se 196.026†	-11.4	-0.00595	mg/L	0.010604	-0.00595	mg/L	0.010604	178.25%
Si 251.611†	23274.4	0.557	mg/L	0.0172	0.557	mg/L	0.0172	3.09%
Sn 189.927†	-125.9	-0.0120	mg/L	0.00139	-0.0120	mg/L	0.00139	11.57%
Ti 334.940†	-4813.7	0.00016	mg/L	0.000573	0.00016	mg/L	0.000573	365.38%
Tl 190.801†	-28.3	-0.0107	mg/L	0.00577	-0.0107	mg/L	0.00577	54.15%
V 290.880†	234.9	0.00225	mg/L	0.001336	0.00225	mg/L	0.001336	59.38%
Zn 206.200†	2711.5	0.0299	mg/L	0.00112	0.0299	mg/L	0.00112	3.73%
K 766.490†	2011.6	1.78	mg/L	0.119	1.78	mg/L	0.119	6.68%
Na 589.592†	839973.7	133	mg/L	0.8	133	mg/L	0.8	0.59%
Sr 407.771†	243497.9	0.306	mg/L	0.0029	0.306	mg/L	0.0029	0.95%
Li 670.784†	145.3	-0.00102	mg/L	0.004271	-0.00102	mg/L	0.004271	418.00%
P 214.914†	262.5	0.0887	mg/L	0.00463	0.0887	mg/L	0.00463	5.22%

Approved: August 24, 2015

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Sequence No.: 5 **Autosampler Location: 19**
Sample ID: L1508099701MS WG535824-04 **Date Collected: 8/23/2015 10:47:23 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508099701MS WG535824-04

Analyte	Back Pressure	Flow
All	200.0 kPa	0.31 L/min

Mean Data: L1508099701MS WG535824-04

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2271186.4						31481.26	1.39%
YRADIAL	139604.2						1296.84	0.93%
Ga 417.206	837835.9						7812.26	0.93%
GaRADIAL	34002.9						357.95	1.05%
Ag 328.068†	59203.8	0.218	mg/L	0.0010	0.218	mg/L	0.0010	0.48%
Al 396.153†	11641.4	5.40	mg/L	0.070	5.40	mg/L	0.070	1.29%
As 188.979†	740.9	0.211	mg/L	0.0019	0.211	mg/L	0.0019	0.89%
Ba 233.527†	90193.9	0.592	mg/L	0.0022	0.592	mg/L	0.0022	0.37%
Be 234.861†	35359.8	0.0261	mg/L	0.00010	0.0261	mg/L	0.00010	0.37%
B 249.677†	82266.5	1.07	mg/L	0.002	1.07	mg/L	0.002	0.16%
Ca 227.546†	27411.1	84.6	mg/L	0.99	84.6	mg/L	0.99	1.16%
Cd 228.802†	1063.8	0.0262	mg/L	0.00017	0.0262	mg/L	0.00017	0.66%
Co 228.616†	4781.0	0.101	mg/L	0.0012	0.101	mg/L	0.0012	1.16%
Cr 267.716†	38580.6	0.269	mg/L	0.0012	0.269	mg/L	0.0012	0.43%
Cu 327.393†	54070.2	0.300	mg/L	0.0019	0.300	mg/L	0.0019	0.63%
Fe 239.562†	21261.8	2.14	mg/L	0.024	2.14	mg/L	0.024	1.11%
Mg 279.077†	13140.3	6.72	mg/L	0.155	6.72	mg/L	0.155	2.31%
Mn 257.610†	205167.8	0.276	mg/L	0.0013	0.276	mg/L	0.0013	0.47%
Mo 202.031†	19127.3	0.541	mg/L	0.0054	0.541	mg/L	0.0054	1.00%
Ni 231.604†	20374.9	0.266	mg/L	0.0025	0.266	mg/L	0.0025	0.94%
Pb 220.353†	4152.2	0.260	mg/L	0.0050	0.260	mg/L	0.0050	1.93%
Sb 206.836†	1739.4	0.627	mg/L	0.0083	0.627	mg/L	0.0083	1.32%
Se 196.026†	222.5	0.202	mg/L	0.0185	0.202	mg/L	0.0185	9.18%
Si 251.611†	140166.6	3.26	mg/L	0.012	3.26	mg/L	0.012	0.37%
Sn 189.927†	6443.8	0.532	mg/L	0.0044	0.532	mg/L	0.0044	0.82%
Ti 334.940†	420119.9	0.534	mg/L	0.0020	0.534	mg/L	0.0020	0.38%
Tl 190.801†	627.0	0.249	mg/L	0.0037	0.249	mg/L	0.0037	1.50%
V 290.880†	92918.7	0.548	mg/L	0.0013	0.548	mg/L	0.0013	0.24%
Zn 206.200†	46446.3	0.541	mg/L	0.0028	0.541	mg/L	0.0028	0.52%
K 766.490†	29727.6	28.4	mg/L	0.38	28.4	mg/L	0.38	1.32%
Na 589.592†	999345.4	159	mg/L	1.8	159	mg/L	1.8	1.16%
Sr 407.771†	667077.2	0.837	mg/L	0.0111	0.837	mg/L	0.0111	1.33%
Li 670.784†	17456.1	0.533	mg/L	0.0055	0.533	mg/L	0.0055	1.03%
P 214.914†	12395.0	5.52	mg/L	0.061	5.52	mg/L	0.061	1.11%

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Sequence No.: 6 **Autosampler Location: 20**
Sample ID: L1508099701SD WG535824-05 **Date Collected: 8/23/2015 10:49:47 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508099701SD WG535824-05

Analyte	Back Pressure	Flow
All	200.0 kPa	0.31 L/min

Mean Data: L1508099701SD WG535824-05

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2308396.3						62554.75	2.71%
YRADIAL	131686.5						6284.80	4.77%
Ga 417.206	852823.3						24391.82	2.86%
GaRADIAL	32516.5						1309.86	4.03%

Approved: August 24, 2015

Kym H. Rhoden

Ag 328.068†	59228.8	0.218	mg/L	0.0009	0.218	mg/L	0.0009	0.39%
Al 396.153†	11620.1	5.39	mg/L	0.053	5.39	mg/L	0.053	0.99%
As 188.979†	732.8	0.209	mg/L	0.0039	0.209	mg/L	0.0039	1.85%
Ba 233.527†	90445.3	0.593	mg/L	0.0033	0.593	mg/L	0.0033	0.56%
Be 234.861†	35827.2	0.0264	mg/L	0.00014	0.0264	mg/L	0.00014	0.51%
B 249.677†	83266.8	1.09	mg/L	0.011	1.09	mg/L	0.011	1.00%
Ca 227.546†	27158.9	83.9	mg/L	2.52	83.9	mg/L	2.52	3.00%
Cd 228.802†	1057.2	0.0260	mg/L	0.00068	0.0260	mg/L	0.00068	2.63%
Co 228.616†	4735.5	0.0998	mg/L	0.00255	0.0998	mg/L	0.00255	2.56%
Cr 267.716†	38826.7	0.271	mg/L	0.0027	0.271	mg/L	0.0027	1.00%
Cu 327.393†	54455.8	0.302	mg/L	0.0018	0.302	mg/L	0.0018	0.59%
Fe 239.562†	21094.6	2.12	mg/L	0.030	2.12	mg/L	0.030	1.44%
Mg 279.077†	13090.7	6.70	mg/L	0.043	6.70	mg/L	0.043	0.64%
Mn 257.610†	206114.0	0.278	mg/L	0.0008	0.278	mg/L	0.0008	0.30%
Mo 202.031†	18927.3	0.536	mg/L	0.0132	0.536	mg/L	0.0132	2.47%
Ni 231.604†	20191.7	0.264	mg/L	0.0067	0.264	mg/L	0.0067	2.53%
Pb 220.353†	4117.7	0.258	mg/L	0.0093	0.258	mg/L	0.0093	3.59%
Sb 206.836†	1724.7	0.621	mg/L	0.0175	0.621	mg/L	0.0175	2.82%
Se 196.026†	222.5	0.202	mg/L	0.0104	0.202	mg/L	0.0104	5.14%
Si 251.611†	140478.2	3.27	mg/L	0.021	3.27	mg/L	0.021	0.64%
Sn 189.927†	6355.3	0.524	mg/L	0.0127	0.524	mg/L	0.0127	2.42%
Ti 334.940†	421444.2	0.535	mg/L	0.0024	0.535	mg/L	0.0024	0.45%
Tl 190.801†	616.9	0.245	mg/L	0.0051	0.245	mg/L	0.0051	2.08%
V 290.880†	92914.8	0.548	mg/L	0.0025	0.548	mg/L	0.0025	0.45%
Zn 206.200†	46703.9	0.544	mg/L	0.0049	0.544	mg/L	0.0049	0.91%
K 766.490†	29466.4	28.1	mg/L	0.29	28.1	mg/L	0.29	1.04%
Na 589.592†	1015556.1	162	mg/L	9.0	162	mg/L	9.0	5.57%
Sr 407.771†	685816.6	0.860	mg/L	0.0507	0.860	mg/L	0.0507	5.89%
Li 670.784†	17507.5	0.535	mg/L	0.0023	0.535	mg/L	0.0023	0.42%
P 214.914†	12302.6	5.48	mg/L	0.131	5.48	mg/L	0.131	2.40%

Sequence No.: 7
Sample ID: L1508099801
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 21
Date Collected: 8/23/2015 10:52:14 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1508099801

Analyte	Back Pressure	Flow
All	200.0 kPa	0.31 L/min

Mean Data: L1508099801

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2370406.7						56874.67	2.40%
YRADIAL	137455.1						4977.19	3.62%
Ga 417.206	874329.1						25062.46	2.87%
GaRADIAL	33031.4						1102.10	3.34%
Ag 328.068†	-210.0	0.00118	mg/L	0.000269	0.00118	mg/L	0.000269	22.82%
Al 396.153†	159.2	0.0530	mg/L	0.04866	0.0530	mg/L	0.04866	91.79%
As 188.979†	24.4	0.00597	mg/L	0.001135	0.00597	mg/L	0.001135	19.02%
Ba 233.527†	16248.0	0.106	mg/L	0.0001	0.106	mg/L	0.0001	0.11%
Be 234.861†	-291.0	-0.00001	mg/L	0.000027	-0.00001	mg/L	0.000027	249.24%
B 249.677†	2353.3	0.0340	mg/L	0.00196	0.0340	mg/L	0.00196	5.78%
Ca 227.546†	10611.5	32.8	mg/L	0.18	32.8	mg/L	0.18	0.54%
Cd 228.802†	180.0	0.00464	mg/L	0.000061	0.00464	mg/L	0.000061	1.31%
Co 228.616†	-26.5	-0.00075	mg/L	0.000305	-0.00075	mg/L	0.000305	40.89%
Cr 267.716†	96.9	0.00054	mg/L	0.000117	0.00054	mg/L	0.000117	21.73%
Cu 327.393†	536.2	0.00426	mg/L	0.001117	0.00426	mg/L	0.001117	26.22%
Fe 239.562†	126.2	0.00691	mg/L	0.004032	0.00691	mg/L	0.004032	58.36%
Mg 279.077†	3277.6	1.64	mg/L	0.083	1.64	mg/L	0.083	5.09%
Mn 257.610†	66993.2	0.0899	mg/L	0.00058	0.0899	mg/L	0.00058	0.65%
Mo 202.031†	49.3	0.00232	mg/L	0.000252	0.00232	mg/L	0.000252	10.85%
Ni 231.604†	111.7	0.00037	mg/L	0.000184	0.00037	mg/L	0.000184	49.80%
Pb 220.353†	451.7	0.0271	mg/L	0.00120	0.0271	mg/L	0.00120	4.43%
Sb 206.836†	40.8	0.0195	mg/L	0.00260	0.0195	mg/L	0.00260	13.37%
Se 196.026†	-7.4	-0.00235	mg/L	0.015181	-0.00235	mg/L	0.015181	645.44%
Si 251.611†	18946.5	0.457	mg/L	0.0022	0.457	mg/L	0.0022	0.48%
Sn 189.927†	-61.3	-0.00665	mg/L	0.000528	-0.00665	mg/L	0.000528	7.94%

Approved: August 24, 2015

Ti 334.940†	-1724.0	0.00116	mg/L	0.000369	0.00116	mg/L	0.000369 31.87%
Tl 190.801†	-19.7	-0.00740	mg/L	0.001153	-0.00740	mg/L	0.001153 15.59%
V 290.880†	-17.1	0.00076	mg/L	0.000982	0.00076	mg/L	0.000982 128.65%
Zn 206.200†	56641.4	0.657	mg/L	0.0027	0.657	mg/L	0.0027 0.40%
K 766.490†	886.0	0.708	mg/L	0.0566	0.708	mg/L	0.0566 8.00%
Na 589.592†	833221.6	132	mg/L	0.8	132	mg/L	0.8 0.60%
Sr 407.771†	97779.4	0.124	mg/L	0.0006	0.124	mg/L	0.0006 0.52%
Li 670.784†	41.2	-0.00424	mg/L	0.003691	-0.00424	mg/L	0.003691 87.11%
P 214.914†	171.8	0.0481	mg/L	0.00577	0.0481	mg/L	0.00577 11.99%

Sequence No.: 8 **Autosampler Location: 22**
Sample ID: L1508099801PS WG536024-01 **Date Collected: 8/23/2015 10:54:38 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508099801PS WG536024-01

Analyte	Back Pressure	Flow
All	200.0 kPa	0.31 L/min

Mean Data: L1508099801PS WG536024-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2262666.3						45768.42	2.02%
YRADIAL	134552.4						4107.16	3.05%
Ga 417.206	837520.5						17254.37	2.06%
GaRADIAL	32962.9						708.37	2.15%
Ag 328.068†	58375.4	0.215	mg/L	0.0017	0.215	mg/L	0.0017	0.78%
Al 396.153†	11755.5	5.46	mg/L	0.106	5.46	mg/L	0.106	1.94%
As 188.979†	726.5	0.206	mg/L	0.0107	0.206	mg/L	0.0107	5.18%
Ba 233.527†	95383.8	0.626	mg/L	0.0065	0.626	mg/L	0.0065	1.04%
Be 234.861†	35001.8	0.0258	mg/L	0.00008	0.0258	mg/L	0.00008	0.29%
B 249.677†	82141.1	1.07	mg/L	0.005	1.07	mg/L	0.005	0.47%
Ca 227.546†	11366.1	35.2	mg/L	1.35	35.2	mg/L	1.35	3.85%
Cd 228.802†	1157.6	0.0285	mg/L	0.00093	0.0285	mg/L	0.00093	3.25%
Co 228.616†	4753.1	0.100	mg/L	0.0041	0.100	mg/L	0.0041	4.14%
Cr 267.716†	38310.7	0.267	mg/L	0.0034	0.267	mg/L	0.0034	1.28%
Cu 327.393†	48471.1	0.269	mg/L	0.0012	0.269	mg/L	0.0012	0.46%
Fe 239.562†	21178.3	2.13	mg/L	0.040	2.13	mg/L	0.040	1.90%
Mg 279.077†	13251.8	6.78	mg/L	0.133	6.78	mg/L	0.133	1.96%
Mn 257.610†	256593.7	0.346	mg/L	0.0038	0.346	mg/L	0.0038	1.11%
Mo 202.031†	18619.3	0.527	mg/L	0.0227	0.527	mg/L	0.0227	4.31%
Ni 231.604†	20332.1	0.265	mg/L	0.0114	0.265	mg/L	0.0114	4.29%
Pb 220.353†	4465.3	0.280	mg/L	0.0112	0.280	mg/L	0.0112	4.02%
Sb 206.836†	1697.2	0.612	mg/L	0.0234	0.612	mg/L	0.0234	3.82%
Se 196.026†	218.3	0.198	mg/L	0.0107	0.198	mg/L	0.0107	5.38%
Si 251.611†	132375.9	3.08	mg/L	0.032	3.08	mg/L	0.032	1.03%
Sn 189.927†	6364.9	0.525	mg/L	0.0246	0.525	mg/L	0.0246	4.68%
Ti 334.940†	421545.9	0.532	mg/L	0.0047	0.532	mg/L	0.0047	0.89%
Tl 190.801†	625.4	0.249	mg/L	0.0111	0.249	mg/L	0.0111	4.46%
V 290.880†	91732.0	0.541	mg/L	0.0061	0.541	mg/L	0.0061	1.12%
Zn 206.200†	94096.7	1.10	mg/L	0.014	1.10	mg/L	0.014	1.29%
K 766.490†	28487.9	27.2	mg/L	0.15	27.2	mg/L	0.15	0.57%
Na 589.592†	933793.8	148	mg/L	4.0	148	mg/L	4.0	2.71%
Sr 407.771†	533350.5	0.671	mg/L	0.0236	0.671	mg/L	0.0236	3.51%
Li 670.784†	17590.9	0.537	mg/L	0.0081	0.537	mg/L	0.0081	1.51%
P 214.914†	11875.7	5.29	mg/L	0.236	5.29	mg/L	0.236	4.46%

Sequence No.: 9 **Autosampler Location: 23**
Sample ID: L1508099801DL WG536024-02 **Date Collected: 8/23/2015 10:57:02 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508099801DL WG536024-02

Analyte	Back Pressure	Flow
All	200.0 kPa	0.31 L/min

Approved: August 24, 2015

Kym H. Rhoden

Mean Data: L1508099801DL WG536024-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2308147.8						53620.10	2.32%
YRADIAL	134847.9						3490.61	2.59%
Ga 417.206	884620.2						21925.89	2.48%
GaRADIAL	32915.1						547.50	1.66%
Ag 328.068†	-317.9	0.00082	mg/L	0.000570	0.00082	mg/L	0.000570	69.63%
Al 396.153†	12.5	-0.0156	mg/L	0.00583	-0.0156	mg/L	0.00583	37.48%
As 188.979†	10.4	0.00135	mg/L	0.001723	0.00135	mg/L	0.001723	127.83%
Ba 233.527†	3199.8	0.0208	mg/L	0.00033	0.0208	mg/L	0.00033	1.59%
Be 234.861†	-213.5	0.00004	mg/L	0.000018	0.00004	mg/L	0.000018	46.08%
B 249.677†	811.4	0.0141	mg/L	0.00328	0.0141	mg/L	0.00328	23.26%
Ca 227.546†	1962.7	6.15	mg/L	0.097	6.15	mg/L	0.097	1.57%
Cd 228.802†	40.2	0.00115	mg/L	0.000180	0.00115	mg/L	0.000180	15.71%
Co 228.616†	-14.7	-0.00047	mg/L	0.000279	-0.00047	mg/L	0.000279	59.48%
Cr 267.716†	1.5	-0.00015	mg/L	0.000161	-0.00015	mg/L	0.000161	110.02%
Cu 327.393†	254.0	0.00267	mg/L	0.002644	0.00267	mg/L	0.002644	98.93%
Fe 239.562†	66.0	0.00087	mg/L	0.000517	0.00087	mg/L	0.000517	59.44%
Mg 279.077†	705.4	0.311	mg/L	0.0052	0.311	mg/L	0.0052	1.66%
Mn 257.610†	13178.8	0.0173	mg/L	0.00041	0.0173	mg/L	0.00041	2.39%
Mo 202.031†	25.0	0.00162	mg/L	0.000203	0.00162	mg/L	0.000203	12.50%
Ni 231.604†	20.7	-0.00082	mg/L	0.000193	-0.00082	mg/L	0.000193	23.37%
Pb 220.353†	92.6	0.00461	mg/L	0.000640	0.00461	mg/L	0.000640	13.88%
Sb 206.836†	13.0	0.00954	mg/L	0.002745	0.00954	mg/L	0.002745	28.79%
Se 196.026†	-4.1	0.00054	mg/L	0.005744	0.00054	mg/L	0.005744	>999.9%
Si 251.611†	3319.4	0.0943	mg/L	0.00170	0.0943	mg/L	0.00170	1.80%
Sn 189.927†	-4.9	-0.00198	mg/L	0.000472	-0.00198	mg/L	0.000472	23.80%
Ti 334.940†	-445.1	0.00105	mg/L	0.000289	0.00105	mg/L	0.000289	27.49%
Tl 190.801†	-15.7	-0.00575	mg/L	0.001343	-0.00575	mg/L	0.001343	23.35%
V 290.880†	326.6	0.00283	mg/L	0.001195	0.00283	mg/L	0.001195	42.29%
Zn 206.200†	11234.1	0.129	mg/L	0.0018	0.129	mg/L	0.0018	1.39%
K 766.490†	-102.3	-0.132	mg/L	0.0331	-0.132	mg/L	0.0331	25.11%
Na 589.592†	164642.3	25.5	mg/L	0.26	25.5	mg/L	0.26	1.04%
Sr 407.771†	19081.9	0.0263	mg/L	0.00013	0.0263	mg/L	0.00013	0.49%
Li 670.784†	142.9	-0.00110	mg/L	0.003295	-0.00110	mg/L	0.003295	300.74%
P 214.914†	38.5	-0.0116	mg/L	0.00839	-0.0116	mg/L	0.00839	72.37%

Sequence No.: 10 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 8/23/2015 11:00:23 AM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	200.0 kPa	0.31 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2407172.2						59422.78	2.47%
YRADIAL	145213.1						3608.72	2.49%
Ga 417.206	908630.9						24509.01	2.70%
GaRADIAL	35999.4						751.54	2.09%
Ag 328.068†	107801.3	0.395	mg/L	0.0080	0.395	mg/L	0.0080	2.03%
QC value within limits for Ag 328.068 Recovery = 98.65%								
Al 396.153†	20912.5	9.72	mg/L	0.168	9.72	mg/L	0.168	1.73%
QC value within limits for Al 396.153 Recovery = 97.18%								
As 188.979†	1314.6	0.373	mg/L	0.0071	0.373	mg/L	0.0071	1.90%
QC value within limits for As 188.979 Recovery = 93.27%								
Ba 233.527†	150220.2	0.985	mg/L	0.0088	0.985	mg/L	0.0088	0.89%
QC value within limits for Ba 233.527 Recovery = 98.55%								
Be 234.861†	64779.9	0.0476	mg/L	0.00058	0.0476	mg/L	0.00058	1.22%
QC value within limits for Be 234.861 Recovery = 95.20%								
B 249.677†	37018.5	0.495	mg/L	0.0102	0.495	mg/L	0.0102	2.06%
QC value within limits for B 249.677 Recovery = 99.01%								

Approved: August 24, 2015

Ca 227.546†	2985.8	9.37 mg/L	0.114	9.37 mg/L	0.114	1.22%
QC value within limits for Ca 227.546 Recovery = 93.71%						
Cd 228.802†	1905.4	0.0468 mg/L	0.00098	0.0468 mg/L	0.00098	2.08%
QC value within limits for Cd 228.802 Recovery = 93.59%						
Co 228.616†	9158.8	0.193 mg/L	0.0037	0.193 mg/L	0.0037	1.90%
QC value within limits for Co 228.616 Recovery = 96.59%						
Cr 267.716†	70957.7	0.495 mg/L	0.0062	0.495 mg/L	0.0062	1.26%
QC value within limits for Cr 267.716 Recovery = 98.92%						
Cu 327.393†	88869.9	0.493 mg/L	0.0071	0.493 mg/L	0.0071	1.45%
QC value within limits for Cu 327.393 Recovery = 98.54%						
Fe 239.562†	38842.1	3.91 mg/L	0.053	3.91 mg/L	0.053	1.37%
QC value within limits for Fe 239.562 Recovery = 97.63%						
Mg 279.077†	18967.9	9.73 mg/L	0.201	9.73 mg/L	0.201	2.06%
QC value within limits for Mg 279.077 Recovery = 97.28%						
Mn 257.610†	366133.3	0.494 mg/L	0.0048	0.494 mg/L	0.0048	0.97%
QC value within limits for Mn 257.610 Recovery = 98.71%						
Mo 202.031†	35337.0	0.999 mg/L	0.0210	0.999 mg/L	0.0210	2.10%
QC value within limits for Mo 202.031 Recovery = 99.93%						
Ni 231.604†	37691.9	0.493 mg/L	0.0066	0.493 mg/L	0.0066	1.35%
QC value within limits for Ni 231.604 Recovery = 98.56%						
Pb 220.353†	7858.1	0.493 mg/L	0.0105	0.493 mg/L	0.0105	2.13%
QC value within limits for Pb 220.353 Recovery = 98.60%						
Sb 206.836†	3098.6	1.11 mg/L	0.021	1.11 mg/L	0.021	1.90%
QC value within limits for Sb 206.836 Recovery = 92.70%						
Se 196.026†	446.5	0.400 mg/L	0.0122	0.400 mg/L	0.0122	3.04%
QC value within limits for Se 196.026 Recovery = 100.12%						
Si 251.611†	209495.9	4.87 mg/L	0.069	4.87 mg/L	0.069	1.42%
QC value within limits for Si 251.611 Recovery = 97.38%						
Sn 189.927†	11830.5	0.978 mg/L	0.0208	0.978 mg/L	0.0208	2.13%
QC value within limits for Sn 189.927 Recovery = 97.77%						
Ti 334.940†	780483.3	0.981 mg/L	0.0108	0.981 mg/L	0.0108	1.11%
QC value within limits for Ti 334.940 Recovery = 98.13%						
Tl 190.801†	1274.0	0.505 mg/L	0.0079	0.505 mg/L	0.0079	1.56%
QC value within limits for Tl 190.801 Recovery = 101.02%						
V 290.880†	167038.3	0.985 mg/L	0.0104	0.985 mg/L	0.0104	1.05%
QC value within limits for V 290.880 Recovery = 98.46%						
Zn 206.200†	84907.4	0.991 mg/L	0.0061	0.991 mg/L	0.0061	0.62%
QC value within limits for Zn 206.200 Recovery = 99.09%						
K 766.490†	50616.1	48.7 mg/L	0.92	48.7 mg/L	0.92	1.89%
QC value within limits for K 766.490 Recovery = 97.37%						
Na 589.592†	317216.1	49.4 mg/L	1.51	49.4 mg/L	1.51	3.06%
QC value within limits for Na 589.592 Recovery = 98.79%						
Sr 407.771†	785806.7	0.988 mg/L	0.0325	0.988 mg/L	0.0325	3.29%
QC value within limits for Sr 407.771 Recovery = 98.82%						
Li 670.784†	32249.1	0.990 mg/L	0.0190	0.990 mg/L	0.0190	1.92%
QC value within limits for Li 670.784 Recovery = 98.97%						
P 214.914†	21908.2	9.78 mg/L	0.201	9.78 mg/L	0.201	2.05%
QC value within limits for P 214.914 Recovery = 97.81%						

All analyte(s) passed QC.

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Sequence No.: 11 **Autosampler Location: 1**
Sample ID: CCB **Date Collected: 8/23/2015 11:02:48 AM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCB

Analyte	Back Pressure	Flow
All	200.0 kPa	0.31 L/min

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2280394.2						88543.31	3.88%
YRADIAL	140228.9						1629.85	1.16%
Ga 417.206	902372.1						39346.70	4.36%
GaRADIAL	33445.0						139.81	0.42%
Ag 328.068†	-400.3	0.00053	mg/L	0.001109	0.00053	mg/L	0.001109	210.50%
QC value within limits for Ag 328.068 Recovery = Not calculated								

Approved: August 24, 2015

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Al 396.153†              30.6    -0.00708 mg/L      0.008540    -0.00708 mg/L      0.008540 120.57%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†              10.0     0.00107 mg/L      0.001967     0.00107 mg/L      0.001967 183.53%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†             -27.7    -0.00036 mg/L      0.000043    -0.00036 mg/L      0.000043  11.79%
   QC value within limits for Ba 233.527  Recovery = Not calculated
Be 234.861†            -164.9     0.00008 mg/L      0.000061     0.00008 mg/L      0.000061  80.98%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†              507.6      0.0102 mg/L       0.00183      0.0102 mg/L       0.00183  17.94%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†             -27.8      0.0103 mg/L       0.01926      0.0103 mg/L       0.01926 187.26%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†               1.3     0.00017 mg/L      0.000190     0.00017 mg/L      0.000190 112.34%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†             -20.4    -0.00058 mg/L      0.000307    -0.00058 mg/L      0.000307  52.57%
   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†              -3.1    -0.00018 mg/L      0.000395    -0.00018 mg/L      0.000395 215.66%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†             191.4     0.00232 mg/L      0.001168     0.00232 mg/L      0.001168  50.35%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†               0.3    -0.00574 mg/L      0.005735    -0.00574 mg/L      0.005735  99.94%
   QC value within limits for Fe 239.562  Recovery = Not calculated
Mg 279.077†              67.0     -0.0183 mg/L       0.03149     -0.0183 mg/L       0.03149 172.17%
   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†            -134.4    -0.00063 mg/L      0.000061    -0.00063 mg/L      0.000061   9.68%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†              16.2     0.00137 mg/L      0.000488     0.00137 mg/L      0.000488  35.66%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†              12.6    -0.00093 mg/L      0.000365    -0.00093 mg/L      0.000365  39.15%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†             -13.5    -0.00201 mg/L      0.000903    -0.00201 mg/L      0.000903  44.98%
   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†               8.3     0.00786 mg/L      0.002307     0.00786 mg/L      0.002307  29.36%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†              -3.3     0.00126 mg/L      0.003947     0.00126 mg/L      0.003947 312.83%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†            -323.8     0.00971 mg/L      0.002696     0.00971 mg/L      0.002696  27.76%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†              58.9     0.00330 mg/L      0.001300     0.00330 mg/L      0.001300  39.36%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†             -28.6     0.00118 mg/L      0.000331     0.00118 mg/L      0.000331  28.06%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†              -5.0    -0.00158 mg/L      0.002021    -0.00158 mg/L      0.002021 128.15%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†              444.5     0.00353 mg/L      0.000826     0.00353 mg/L      0.000826  23.43%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†              40.5    -0.00117 mg/L      0.000079    -0.00117 mg/L      0.000079   6.75%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†              104.0      0.0911 mg/L       0.05833      0.0911 mg/L       0.05833  64.00%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†             348.2      0.0326 mg/L       0.00475      0.0326 mg/L       0.00475  14.59%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†              10.5     0.00259 mg/L      0.000060     0.00259 mg/L      0.000060   2.30%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†              45.7    -0.00410 mg/L      0.003677    -0.00410 mg/L      0.003677  89.74%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†                4.8     -0.0267 mg/L       0.00544     -0.0267 mg/L       0.00544  20.42%
   QC value within limits for P 214.914  Recovery = Not calculated
All analyte(s) passed QC.

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Sequence No.: 12                                    Autosampler Location: 24
Sample ID: L1508084401 0.02                         Date Collected: 8/23/2015 11:05:12 AM
Analyst: KHR                                        Data Type: Original
Initial Sample Wt:                                  Initial Sample Vol:
Dilution:                                           Sample Prep Vol:

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Nebulizer Parameters: L1508084401 0.02
Analyte                 Back Pressure    Flow
All                     200.0 kPa        0.31 L/min
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Approved: August 24, 2015

Mean Data: L1508084401 0.02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2226256.8						33932.13	1.52%
YRADIAL	132920.3						4295.08	3.23%
Ga 417.206	775988.4						13322.11	1.72%
GaRADIAL	32018.1						1139.95	3.56%
Ag 328.068†	1410.0	0.00800	mg/L	0.001645	0.00800	mg/L	0.001645	20.55%
Al 396.153†	85.4	0.0189	mg/L	0.04631	0.0189	mg/L	0.04631	244.46%
As 188.979†	15.2	0.00936	mg/L	0.001307	0.00936	mg/L	0.001307	13.96%
Ba 233.527†	1224581.5	8.03	mg/L	0.039	8.03	mg/L	0.039	0.49%
Be 234.861†	678.8	0.00019	mg/L	0.000068	0.00019	mg/L	0.000068	36.39%
B 249.677†	31516.6	0.420	mg/L	0.0018	0.420	mg/L	0.0018	0.43%
Ca 227.546†	91127.2	281	mg/L	0.8	281	mg/L	0.8	0.27%
Cd 228.802†	-2.3	0.00006	mg/L	0.000156	0.00006	mg/L	0.000156	250.98%
Co 228.616†	-150.0	-0.00606	mg/L	0.000161	-0.00606	mg/L	0.000161	2.65%
Cr 267.716†	325.9	0.00212	mg/L	0.000133	0.00212	mg/L	0.000133	6.29%
Cu 327.393†	-546.5	-0.00176	mg/L	0.001275	-0.00176	mg/L	0.001275	72.61%
Fe 239.562†	23002.7	2.31	mg/L	0.032	2.31	mg/L	0.032	1.38%
Mg 279.077†	52894.3	27.2	mg/L	0.42	27.2	mg/L	0.42	1.54%
Mn 257.610†	118307.2	0.159	mg/L	0.0007	0.159	mg/L	0.0007	0.41%
Mo 202.031†	-92.3	-0.00152	mg/L	0.000346	-0.00152	mg/L	0.000346	22.77%
Ni 231.604†	69.4	-0.00018	mg/L	0.000214	-0.00018	mg/L	0.000214	119.37%
Pb 220.353†	38.9	0.00110	mg/L	0.001016	0.00110	mg/L	0.001016	92.22%
Sb 206.836†	23.7	0.0134	mg/L	0.00165	0.0134	mg/L	0.00165	12.27%
Se 196.026†	-16.6	-0.0108	mg/L	0.01444	-0.0108	mg/L	0.01444	134.10%
Si 251.611†	12135.8	0.299	mg/L	0.0069	0.299	mg/L	0.0069	2.30%
Sn 189.927†	-159.5	-0.0148	mg/L	0.00090	-0.0148	mg/L	0.00090	6.09%
Ti 334.940†	-16987.4	-0.00206	mg/L	0.000265	-0.00206	mg/L	0.000265	12.83%
Tl 190.801†	-42.1	-0.0163	mg/L	0.00193	-0.0163	mg/L	0.00193	11.84%
V 290.880†	-488.1	-0.00261	mg/L	0.001099	-0.00261	mg/L	0.001099	42.14%
Zn 206.200†	580.3	0.00518	mg/L	0.000271	0.00518	mg/L	0.000271	5.22%
K 766.490†	10952.4	9.69	mg/L	0.062	9.69	mg/L	0.062	0.64%
Na 589.592†	4378370.6	798	mg/L	61.3	798	mg/L	61.3	7.68%
Sr 407.771†	Saturated2							
Li 670.784†	29714.9	0.911	mg/L	0.0050	0.911	mg/L	0.0050	0.55%
P 214.914†	37.8	-0.0119	mg/L	0.00309	-0.0119	mg/L	0.00309	25.93%

Sequence No.: 13
Sample ID: L1508084402 0.02
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 25
Date Collected: 8/23/2015 11:07:39 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1508084402 0.02

Analyte	Back Pressure	Flow
All	200.0 kPa	0.31 L/min

Mean Data: L1508084402 0.02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2195607.5						74686.91	3.40%
YRADIAL	135184.9						8169.49	6.04%
Ga 417.206	765335.4						29367.26	3.84%
GaRADIAL	32482.8						1685.00	5.19%
Ag 328.068†	1170.7	0.00708	mg/L	0.001637	0.00708	mg/L	0.001637	23.12%
Al 396.153†	83.5	0.0180	mg/L	0.03750	0.0180	mg/L	0.03750	207.97%
As 188.979†	-1.6	0.00408	mg/L	0.000703	0.00408	mg/L	0.000703	17.22%
Ba 233.527†	1141611.7	7.49	mg/L	0.059	7.49	mg/L	0.059	0.78%
Be 234.861†	698.0	0.00023	mg/L	0.000253	0.00023	mg/L	0.000253	109.45%
B 249.677†	29561.3	0.394	mg/L	0.0074	0.394	mg/L	0.0074	1.89%
Ca 227.546†	85210.9	263	mg/L	3.3	263	mg/L	3.3	1.27%
Cd 228.802†	-2.5	0.00008	mg/L	0.000187	0.00008	mg/L	0.000187	226.23%
Co 228.616†	-134.8	-0.00555	mg/L	0.000274	-0.00555	mg/L	0.000274	4.94%
Cr 267.716†	291.9	0.00188	mg/L	0.000383	0.00188	mg/L	0.000383	20.34%
Cu 327.393†	-519.6	-0.00161	mg/L	0.000665	-0.00161	mg/L	0.000665	41.38%
Fe 239.562†	21695.8	2.18	mg/L	0.050	2.18	mg/L	0.050	2.31%
Mg 279.077†	49531.2	25.5	mg/L	0.25	25.5	mg/L	0.25	0.97%

Approved: August 24, 2015

Kyn H. Rhoden

Mn 257.610†	110936.2	0.149	mg/L	0.0016	0.149	mg/L	0.0016	1.05%
Mo 202.031†	-87.3	-0.00139	mg/L	0.000342	-0.00139	mg/L	0.000342	24.57%
Ni 231.604†	49.4	-0.00044	mg/L	0.000393	-0.00044	mg/L	0.000393	89.27%
Pb 220.353†	42.9	0.00136	mg/L	0.000320	0.00136	mg/L	0.000320	23.51%
Sb 206.836†	20.0	0.0121	mg/L	0.00595	0.0121	mg/L	0.00595	49.18%
Se 196.026†	-17.5	-0.0115	mg/L	0.00970	-0.0115	mg/L	0.00970	84.14%
Si 251.611†	11210.8	0.277	mg/L	0.0061	0.277	mg/L	0.0061	2.20%
Sn 189.927†	-165.2	-0.0152	mg/L	0.00076	-0.0152	mg/L	0.00076	5.00%
Ti 334.940†	-16109.5	-0.00213	mg/L	0.000357	-0.00213	mg/L	0.000357	16.74%
Tl 190.801†	-48.9	-0.0189	mg/L	0.00278	-0.0189	mg/L	0.00278	14.68%
V 290.880†	-604.9	-0.00325	mg/L	0.000465	-0.00325	mg/L	0.000465	14.29%
Zn 206.200†	594.8	0.00534	mg/L	0.000145	0.00534	mg/L	0.000145	2.72%
K 766.490†	10048.9	8.87	mg/L	0.111	8.87	mg/L	0.111	1.25%
Na 589.592†	4165216.4	751	mg/L	34.2	751	mg/L	34.2	4.56%
Sr 407.771†	Saturated2							
Li 670.784†	27769.5	0.851	mg/L	0.0100	0.851	mg/L	0.0100	1.17%
P 214.914†	26.3	-0.0170	mg/L	0.00815	-0.0170	mg/L	0.00815	47.81%

Sequence No.: 14 **Autosampler Location: 26**
Sample ID: L1508090402 **Date Collected: 8/23/2015 11:10:02 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508090402

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508090402

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	2215669.6						47137.02	2.13%
YRADIAL	136327.2						1755.30	1.29%
Ga 417.206	812362.6						21583.68	2.66%
GaRADIAL	33873.0						480.77	1.42%
Ag 328.068†	754.1	0.00411	mg/L	0.000606	0.00411	mg/L	0.000606	14.74%
Al 396.153†	86.6	0.0190	mg/L	0.04292	0.0190	mg/L	0.04292	225.72%
As 188.979†	15.6	0.00552	mg/L	0.003358	0.00552	mg/L	0.003358	60.87%
Ba 233.527†	17331.8	0.114	mg/L	0.0036	0.114	mg/L	0.0036	3.17%
Be 234.861†	-325.6	-0.00006	mg/L	0.000042	-0.00006	mg/L	0.000042	70.78%
B 249.677†	1260.8	0.0203	mg/L	0.00164	0.0203	mg/L	0.00164	8.09%
Ca 227.546†	41283.8	127	mg/L	1.3	127	mg/L	1.3	1.04%
Cd 228.802†	20.4	0.00064	mg/L	0.000253	0.00064	mg/L	0.000253	39.45%
Co 228.616†	-18.0	-0.00055	mg/L	0.000191	-0.00055	mg/L	0.000191	34.85%
Cr 267.716†	760.3	0.00513	mg/L	0.000152	0.00513	mg/L	0.000152	2.97%
Cu 327.393†	-225.2	0.00001	mg/L	0.000929	0.00001	mg/L	0.000929	>999.9%
Fe 239.562†	991.0	0.0929	mg/L	0.00843	0.0929	mg/L	0.00843	9.08%
Mg 279.077†	109597.6	56.5	mg/L	0.60	56.5	mg/L	0.60	1.06%
Mn 257.610†	34823.8	0.0465	mg/L	0.00025	0.0465	mg/L	0.00025	0.54%
Mo 202.031†	111.3	0.00407	mg/L	0.000732	0.00407	mg/L	0.000732	18.01%
Ni 231.604†	150.9	0.00089	mg/L	0.000279	0.00089	mg/L	0.000279	31.54%
Pb 220.353†	12.3	-0.00042	mg/L	0.000809	-0.00042	mg/L	0.000809	191.42%
Sb 206.836†	17.7	0.0112	mg/L	0.00296	0.0112	mg/L	0.00296	26.56%
Se 196.026†	-39.0	-0.0304	mg/L	0.00251	-0.0304	mg/L	0.00251	8.25%
Si 251.611†	730215.6	17.0	mg/L	0.24	17.0	mg/L	0.24	1.44%
Sn 189.927†	-129.4	-0.0123	mg/L	0.00139	-0.0123	mg/L	0.00139	11.35%
Ti 334.940†	-7831.5	-0.00044	mg/L	0.000229	-0.00044	mg/L	0.000229	52.28%
Tl 190.801†	-33.6	-0.0128	mg/L	0.00426	-0.0128	mg/L	0.00426	33.26%
V 290.880†	-1481.1	-0.00927	mg/L	0.000533	-0.00927	mg/L	0.000533	5.75%
Zn 206.200†	378.0	0.00280	mg/L	0.000226	0.00280	mg/L	0.000226	8.06%
K 766.490†	2203.9	1.79	mg/L	0.090	1.79	mg/L	0.090	5.02%
Na 589.592†	1915319.5	314	mg/L	3.0	314	mg/L	3.0	0.94%
Sr 407.771†	2379734.7	2.98	mg/L	0.025	2.98	mg/L	0.025	0.83%
Li 670.784†	1942.5	0.0544	mg/L	0.00381	0.0544	mg/L	0.00381	7.00%
P 214.914†	244.1	0.0805	mg/L	0.00527	0.0805	mg/L	0.00527	6.54%

Sequence No.: 15 **Autosampler Location: 27**
Sample ID: L1508090404 **Date Collected: 8/23/2015 11:12:26 AM**

Approved: August 24, 2015

Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508090404

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508090404

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2126924.2						93983.25	4.42%
YRADIAL	141214.8						4592.43	3.25%
Ga 417.206	783960.0						40976.48	5.23%
GaRADIAL	34848.6						1120.51	3.22%
Ag 328.068†	114.6	0.00224	mg/L	0.000515	0.00224	mg/L	0.000515	22.98%
Al 396.153†	70.7	0.0116	mg/L	0.02122	0.0116	mg/L	0.02122	182.82%
As 188.979†	10.4	0.00299	mg/L	0.002722	0.00299	mg/L	0.002722	90.90%
Ba 233.527†	7629.4	0.0499	mg/L	0.00323	0.0499	mg/L	0.00323	6.48%
Be 234.861†	-405.6	-0.00010	mg/L	0.000057	-0.00010	mg/L	0.000057	55.21%
B 249.677†	1573.5	0.0241	mg/L	0.00114	0.0241	mg/L	0.00114	4.73%
Ca 227.546†	26483.5	81.8	mg/L	5.90	81.8	mg/L	5.90	7.21%
Cd 228.802†	12.4	0.00045	mg/L	0.000141	0.00045	mg/L	0.000141	31.45%
Co 228.616†	-40.9	-0.00102	mg/L	0.000621	-0.00102	mg/L	0.000621	60.88%
Cr 267.716†	457.8	0.00302	mg/L	0.000214	0.00302	mg/L	0.000214	7.09%
Cu 327.393†	-248.3	-0.00011	mg/L	0.001360	-0.00011	mg/L	0.001360	>999.9%
Fe 239.562†	223.9	0.0162	mg/L	0.00180	0.0162	mg/L	0.00180	11.14%
Mg 279.077†	59101.7	30.4	mg/L	0.05	30.4	mg/L	0.05	0.16%
Mn 257.610†	23357.7	0.0311	mg/L	0.00209	0.0311	mg/L	0.00209	6.74%
Mo 202.031†	78.6	0.00314	mg/L	0.000577	0.00314	mg/L	0.000577	18.40%
Ni 231.604†	90.8	0.00010	mg/L	0.000378	0.00010	mg/L	0.000378	388.61%
Pb 220.353†	-2.2	-0.00132	mg/L	0.001572	-0.00132	mg/L	0.001572	119.32%
Sb 206.836†	26.0	0.0142	mg/L	0.00184	0.0142	mg/L	0.00184	13.00%
Se 196.026†	-21.9	-0.0153	mg/L	0.00872	-0.0153	mg/L	0.00872	57.16%
Si 251.611†	732313.3	17.0	mg/L	0.12	17.0	mg/L	0.12	0.71%
Sn 189.927†	-133.2	-0.0126	mg/L	0.00180	-0.0126	mg/L	0.00180	14.29%
Ti 334.940†	-4814.5	0.00042	mg/L	0.000529	0.00042	mg/L	0.000529	126.04%
Tl 190.801†	-25.9	-0.00977	mg/L	0.002325	-0.00977	mg/L	0.002325	23.79%
V 290.880†	-578.7	-0.00329	mg/L	0.001709	-0.00329	mg/L	0.001709	51.99%
Zn 206.200†	245.5	0.00124	mg/L	0.000263	0.00124	mg/L	0.000263	21.19%
K 766.490†	1362.3	1.09	mg/L	0.030	1.09	mg/L	0.030	2.71%
Na 589.592†	1269257.0	204	mg/L	0.4	204	mg/L	0.4	0.19%
Sr 407.771†	553320.5	0.694	mg/L	0.0021	0.694	mg/L	0.0021	0.30%
Li 670.784†	1048.4	0.0268	mg/L	0.00064	0.0268	mg/L	0.00064	2.39%
P 214.914†	365.3	0.135	mg/L	0.0090	0.135	mg/L	0.0090	6.68%

Sequence No.: 16 **Autosampler Location: 28**
Sample ID: L1508090406 **Date Collected: 8/23/2015 11:14:49 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508090406

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508090406

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2074302.3						32998.08	1.59%
YRADIAL	133415.5						3487.65	2.61%
Ga 417.206	734115.2						16633.32	2.27%
GaRADIAL	32846.6						734.03	2.23%
Ag 328.068†	2502.0	0.0103	mg/L	0.00155	0.0103	mg/L	0.00155	15.08%
Al 396.153†	81.3	0.0165	mg/L	0.02678	0.0165	mg/L	0.02678	161.82%
As 188.979†	8.9	0.00940	mg/L	0.002854	0.00940	mg/L	0.002854	30.37%
Ba 233.527†	54849.1	0.360	mg/L	0.0073	0.360	mg/L	0.0073	2.02%

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Be 234.861†	-435.9	-0.00012	mg/L	0.000018	-0.00012	mg/L	0.000018	15.16%
B 249.677†	1815.7	0.0271	mg/L	0.00064	0.0271	mg/L	0.00064	2.37%
Ca 227.546†	127436.0	393	mg/L	7.1	393	mg/L	7.1	1.80%
Cd 228.802†	30.2	0.00090	mg/L	0.000351	0.00090	mg/L	0.000351	39.03%
Co 228.616†	-39.0	-0.00103	mg/L	0.000207	-0.00103	mg/L	0.000207	20.00%
Cr 267.716†	663.4	0.00445	mg/L	0.000234	0.00445	mg/L	0.000234	5.26%
Cu 327.393†	-1050.3	-0.00457	mg/L	0.001247	-0.00457	mg/L	0.001247	27.28%
Fe 239.562†	119.4	0.00353	mg/L	0.005036	0.00353	mg/L	0.005036	142.66%
Mg 279.077†	263887.2	136	mg/L	0.9	136	mg/L	0.9	0.64%
Mn 257.610†	36199.8	0.0484	mg/L	0.00087	0.0484	mg/L	0.00087	1.81%
Mo 202.031†	87.2	0.00338	mg/L	0.000571	0.00338	mg/L	0.000571	16.89%
Ni 231.604†	699.9	0.00809	mg/L	0.000540	0.00809	mg/L	0.000540	6.67%
Pb 220.353†	-3.7	-0.00142	mg/L	0.000911	-0.00142	mg/L	0.000911	64.09%
Sb 206.836†	32.1	0.0163	mg/L	0.00308	0.0163	mg/L	0.00308	18.88%
Se 196.026†	-27.6	-0.0202	mg/L	0.00563	-0.0202	mg/L	0.00563	27.84%
Si 251.611†	858652.1	19.9	mg/L	0.37	19.9	mg/L	0.37	1.85%
Sn 189.927†	-218.0	-0.0196	mg/L	0.00093	-0.0196	mg/L	0.00093	4.76%
Ti 334.940†	-22726.6	-0.00208	mg/L	0.000592	-0.00208	mg/L	0.000592	28.45%
Tl 190.801†	-50.3	-0.0195	mg/L	0.00224	-0.0195	mg/L	0.00224	11.48%
V 290.880†	-2120.4	-0.0151	mg/L	0.00043	-0.0151	mg/L	0.00043	2.87%
Zn 206.200†	408.5	0.00315	mg/L	0.000199	0.00315	mg/L	0.000199	6.31%
K 766.490†	4200.5	3.58	mg/L	0.048	3.58	mg/L	0.048	1.33%
Na 589.592†	2556173.3	430	mg/L	2.4	430	mg/L	2.4	0.56%
Sr 407.771†	2791649.2	3.49	mg/L	0.008	3.49	mg/L	0.008	0.23%
Li 670.784†	2702.9	0.0779	mg/L	0.00246	0.0779	mg/L	0.00246	3.16%
P 214.914†	135.4	0.0318	mg/L	0.00139	0.0318	mg/L	0.00139	4.36%

Sequence No.: 17
Sample ID: L1508090408
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 29
Date Collected: 8/23/2015 11:17:13 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1508090408

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508090408

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2225233.6						35071.37	1.58%
YRADIAL	129303.1						6754.98	5.22%
Ga 417.206	820500.0						15713.34	1.92%
GaRADIAL	32354.3						1377.64	4.26%
Ag 328.068†	116.4	0.00212	mg/L	0.000909	0.00212	mg/L	0.000909	42.77%
Al 396.153†	125.5	0.0372	mg/L	0.00884	0.0372	mg/L	0.00884	23.78%
As 188.979†	19.9	0.00582	mg/L	0.002241	0.00582	mg/L	0.002241	38.49%
Ba 233.527†	4205.2	0.0274	mg/L	0.00093	0.0274	mg/L	0.00093	3.40%
Be 234.861†	-324.8	-0.00004	mg/L	0.000025	-0.00004	mg/L	0.000025	64.28%
B 249.677†	2702.8	0.0386	mg/L	0.00092	0.0386	mg/L	0.00092	2.39%
Ca 227.546†	28048.0	86.6	mg/L	2.80	86.6	mg/L	2.80	3.24%
Cd 228.802†	20.7	0.00064	mg/L	0.000250	0.00064	mg/L	0.000250	38.79%
Co 228.616†	-24.2	-0.00066	mg/L	0.000495	-0.00066	mg/L	0.000495	75.43%
Cr 267.716†	335.1	0.00217	mg/L	0.000076	0.00217	mg/L	0.000076	3.52%
Cu 327.393†	-216.2	0.00005	mg/L	0.001091	0.00005	mg/L	0.001091	>999.9%
Fe 239.562†	57.7	-0.00090	mg/L	0.001336	-0.00090	mg/L	0.001336	148.48%
Mg 279.077†	91531.6	47.2	mg/L	0.42	47.2	mg/L	0.42	0.88%
Mn 257.610†	27526.5	0.0367	mg/L	0.00129	0.0367	mg/L	0.00129	3.52%
Mo 202.031†	103.0	0.00382	mg/L	0.000502	0.00382	mg/L	0.000502	13.14%
Ni 231.604†	58.0	-0.00033	mg/L	0.000295	-0.00033	mg/L	0.000295	88.45%
Pb 220.353†	-10.8	-0.00186	mg/L	0.000432	-0.00186	mg/L	0.000432	23.27%
Sb 206.836†	19.6	0.0119	mg/L	0.00500	0.0119	mg/L	0.00500	42.15%
Se 196.026†	-24.5	-0.0175	mg/L	0.00326	-0.0175	mg/L	0.00326	18.61%
Si 251.611†	767114.4	17.8	mg/L	0.13	17.8	mg/L	0.13	0.72%
Sn 189.927†	-113.8	-0.0110	mg/L	0.00048	-0.0110	mg/L	0.00048	4.37%
Ti 334.940†	-5304.7	0.00011	mg/L	0.000697	0.00011	mg/L	0.000697	607.58%
Tl 190.801†	-27.9	-0.0106	mg/L	0.00187	-0.0106	mg/L	0.00187	17.69%
V 290.880†	-793.7	-0.00499	mg/L	0.000679	-0.00499	mg/L	0.000679	13.60%
Zn 206.200†	577.7	0.00510	mg/L	0.000392	0.00510	mg/L	0.000392	7.69%

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K 766.490†	1318.4	0.950 mg/L	0.0306	0.950 mg/L	0.0306	3.22%
Na 589.592†	1851297.6	303 mg/L	2.0	303 mg/L	2.0	0.67%
Sr 407.771†	1001909.5	1.26 mg/L	0.004	1.26 mg/L	0.004	0.34%
Li 670.784†	2388.5	0.0682 mg/L	0.00478	0.0682 mg/L	0.00478	7.00%
P 214.914†	197.2	0.0595 mg/L	0.00919	0.0595 mg/L	0.00919	15.45%

Sequence No.: 18 **Autosampler Location: 30**
Sample ID: L1508097101 **Date Collected: 8/23/2015 11:20:34 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508097101

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508097101

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2394891.6						64977.08	2.71%
YRADIAL	139595.2						1901.69	1.36%
Ga 417.206	933170.5						31422.99	3.37%
GaRADIAL	34589.6						380.71	1.10%
Ag 328.068†	-110.7	0.00148	mg/L	0.000169	0.00148	mg/L	0.000169	11.40%
Al 396.153†	126.2	0.0376	mg/L	0.01299	0.0376	mg/L	0.01299	34.60%
As 188.979†	12.7	0.00278	mg/L	0.002421	0.00278	mg/L	0.002421	87.17%
Ba 233.527†	21554.5	0.141	mg/L	0.0044	0.141	mg/L	0.0044	3.11%
Be 234.861†	-221.3	0.00002	mg/L	0.000020	0.00002	mg/L	0.000020	118.58%
B 249.677†	3207.3	0.0454	mg/L	0.00223	0.0454	mg/L	0.00223	4.90%
Ca 227.546†	13165.9	40.7	mg/L	1.55	40.7	mg/L	1.55	3.80%
Cd 228.802†	13.0	0.00046	mg/L	0.000084	0.00046	mg/L	0.000084	18.22%
Co 228.616†	-33.2	-0.00089	mg/L	0.000446	-0.00089	mg/L	0.000446	49.82%
Cr 267.716†	132.0	0.00076	mg/L	0.000167	0.00076	mg/L	0.000167	22.08%
Cu 327.393†	-8.8	0.00122	mg/L	0.001296	0.00122	mg/L	0.001296	106.53%
Fe 239.562†	783.6	0.0728	mg/L	0.00547	0.0728	mg/L	0.00547	7.51%
Mg 279.077†	28985.8	14.9	mg/L	0.23	14.9	mg/L	0.23	1.55%
Mn 257.610†	1761.8	0.00192	mg/L	0.000113	0.00192	mg/L	0.000113	5.90%
Mo 202.031†	82.0	0.00323	mg/L	0.000393	0.00323	mg/L	0.000393	12.16%
Ni 231.604†	-29.3	-0.00148	mg/L	0.000366	-0.00148	mg/L	0.000366	24.75%
Pb 220.353†	23.8	0.00033	mg/L	0.000634	0.00033	mg/L	0.000634	192.90%
Sb 206.836†	7.1	0.00740	mg/L	0.001250	0.00740	mg/L	0.001250	16.90%
Se 196.026†	-11.0	-0.00558	mg/L	0.003529	-0.00558	mg/L	0.003529	63.25%
Si 251.611†	199252.3	4.64	mg/L	0.063	4.64	mg/L	0.063	1.36%
Sn 189.927†	-88.0	-0.00886	mg/L	0.000771	-0.00886	mg/L	0.000771	8.70%
Ti 334.940†	-2767.9	0.00035	mg/L	0.000368	0.00035	mg/L	0.000368	104.03%
Tl 190.801†	-28.8	-0.0109	mg/L	0.00361	-0.0109	mg/L	0.00361	33.23%
V 290.880†	-527.4	-0.00258	mg/L	0.000612	-0.00258	mg/L	0.000612	23.77%
Zn 206.200†	164.0	0.00027	mg/L	0.000086	0.00027	mg/L	0.000086	31.40%
K 766.490†	984.6	0.919	mg/L	0.1213	0.919	mg/L	0.1213	13.20%
Na 589.592†	101162.9	15.6	mg/L	0.11	15.6	mg/L	0.11	0.73%
Sr 407.771†	451098.4	0.567	mg/L	0.0048	0.567	mg/L	0.0048	0.84%
Li 670.784†	193.5	0.00046	mg/L	0.002859	0.00046	mg/L	0.002859	614.87%
P 214.914†	17.9	-0.0208	mg/L	0.00754	-0.0208	mg/L	0.00754	36.26%

Sequence No.: 19 **Autosampler Location: 31**
Sample ID: L1508097301 **Date Collected: 8/23/2015 11:22:57 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508097301

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508097301

Mean Corrected Calib. Sample

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Method: 200.7-6010-3015 ASX **Page 15** **Date: 8/23/2015 11:27:43 AM**

Analyte	Intensity	Conc.	Units	Std.Dev.	Conc.	Units	Std.Dev.	RSD
Y 371.029	2330317.7						108643.07	4.66%
YRADIAL	138507.9						3948.70	2.85%
Ga 417.206	913979.5						45267.56	4.95%
GaRADIAL	34241.6						819.96	2.39%
Ag 328.068†	-37.3	0.00181	mg/L	0.000801	0.00181	mg/L	0.000801	44.13%
Al 396.153†	82.6	0.0172	mg/L	0.02100	0.0172	mg/L	0.02100	122.21%
As 188.979†	8.4	0.00201	mg/L	0.001523	0.00201	mg/L	0.001523	75.94%
Ba 233.527†	13936.2	0.0912	mg/L	0.00304	0.0912	mg/L	0.00304	3.33%
Be 234.861†	-259.8	0.00000	mg/L	0.000078	0.00000	mg/L	0.000078	>999.9%
B 249.677†	724.0	0.0131	mg/L	0.00048	0.0131	mg/L	0.00048	3.66%
Ca 227.546†	20382.1	62.9	mg/L	2.41	62.9	mg/L	2.41	3.84%
Cd 228.802†	6.4	0.00030	mg/L	0.000126	0.00030	mg/L	0.000126	42.05%
Co 228.616†	-28.5	-0.00077	mg/L	0.000088	-0.00077	mg/L	0.000088	11.41%
Cr 267.716†	109.7	0.00060	mg/L	0.000181	0.00060	mg/L	0.000181	30.15%
Cu 327.393†	851.5	0.00595	mg/L	0.000706	0.00595	mg/L	0.000706	11.85%
Fe 239.562†	302.2	0.0246	mg/L	0.00394	0.0246	mg/L	0.00394	16.03%
Mg 279.077†	9782.8	4.99	mg/L	0.105	4.99	mg/L	0.105	2.11%
Mn 257.610†	-109.3	-0.00060	mg/L	0.000068	-0.00060	mg/L	0.000068	11.29%
Mo 202.031†	51.1	0.00236	mg/L	0.000404	0.00236	mg/L	0.000404	17.14%
Ni 231.604†	8.3	-0.00098	mg/L	0.000416	-0.00098	mg/L	0.000416	42.27%
Pb 220.353†	35.6	0.00107	mg/L	0.001492	0.00107	mg/L	0.001492	139.83%
Sb 206.836†	12.4	0.00933	mg/L	0.001559	0.00933	mg/L	0.001559	16.71%
Se 196.026†	-14.1	-0.00833	mg/L	0.005406	-0.00833	mg/L	0.005406	64.94%
Si 251.611†	133593.1	3.12	mg/L	0.033	3.12	mg/L	0.033	1.05%
Sn 189.927†	-122.3	-0.0117	mg/L	0.00046	-0.0117	mg/L	0.00046	3.95%
Ti 334.940†	-4549.7	-0.00045	mg/L	0.000262	-0.00045	mg/L	0.000262	57.56%
Tl 190.801†	-29.6	-0.0112	mg/L	0.00603	-0.0112	mg/L	0.00603	54.05%
V 290.880†	-53.7	0.00047	mg/L	0.001944	0.00047	mg/L	0.001944	417.89%
Zn 206.200†	631.5	0.00571	mg/L	0.000115	0.00571	mg/L	0.000115	2.01%
K 766.490†	668.5	0.623	mg/L	0.0264	0.623	mg/L	0.0264	4.23%
Na 589.592†	52191.9	8.05	mg/L	0.032	8.05	mg/L	0.032	0.40%
Sr 407.771†	118204.6	0.149	mg/L	0.0012	0.149	mg/L	0.0012	0.80%
Li 670.784†	196.2	0.00055	mg/L	0.001982	0.00055	mg/L	0.001982	362.32%
P 214.914†	-23.2	-0.0392	mg/L	0.00620	-0.0392	mg/L	0.00620	15.82%

Sequence No.: 20 **Autosampler Location: 32**
Sample ID: L1508097302 **Date Collected: 8/23/2015 11:25:23 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508097302

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508097302

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2291264.5						93565.05	4.08%
YRADIAL	137908.2						2772.12	2.01%
Ga 417.206	895129.5						41301.79	4.61%
GaRADIAL	33151.2						497.12	1.50%
Ag 328.068†	-171.6	0.00152	mg/L	0.000946	0.00152	mg/L	0.000946	62.06%
Al 396.153†	690.4	0.301	mg/L	0.0082	0.301	mg/L	0.0082	2.73%
As 188.979†	12.9	0.00245	mg/L	0.003083	0.00245	mg/L	0.003083	126.08%
Ba 233.527†	7725.1	0.0505	mg/L	0.00162	0.0505	mg/L	0.00162	3.21%
Be 234.861†	-144.5	-0.00001	mg/L	0.000070	-0.00001	mg/L	0.000070	499.24%
B 249.677†	1485.4	0.0246	mg/L	0.00114	0.0246	mg/L	0.00114	4.61%
Ca 227.546†	6408.4	19.9	mg/L	0.64	19.9	mg/L	0.64	3.20%
Cd 228.802†	8.4	0.00034	mg/L	0.000071	0.00034	mg/L	0.000071	20.63%
Co 228.616†	-23.1	-0.00067	mg/L	0.000150	-0.00067	mg/L	0.000150	22.25%
Cr 267.716†	154.9	0.00092	mg/L	0.000149	0.00092	mg/L	0.000149	16.23%
Cu 327.393†	79.6	0.00174	mg/L	0.000475	0.00174	mg/L	0.000475	27.33%
Fe 239.562†	4747.2	0.472	mg/L	0.0053	0.472	mg/L	0.0053	1.12%
Mg 279.077†	8729.7	4.45	mg/L	0.075	4.45	mg/L	0.075	1.68%
Mn 257.610†	23202.6	0.0308	mg/L	0.00103	0.0308	mg/L	0.00103	3.33%
Mo 202.031†	77.5	0.00313	mg/L	0.000349	0.00313	mg/L	0.000349	11.12%
Ni 231.604†	30.3	-0.00070	mg/L	0.000098	-0.00070	mg/L	0.000098	14.09%

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Pb 220.353†	2.2	-0.00099	mg/L	0.000338	-0.00099	mg/L	0.000338	34.10%
Sb 206.836†	0.9	0.00520	mg/L	0.002602	0.00520	mg/L	0.002602	50.03%
Se 196.026†	-7.5	-0.00244	mg/L	0.011745	-0.00244	mg/L	0.011745	480.56%
Si 251.611†	22693.2	0.544	mg/L	0.0164	0.544	mg/L	0.0164	3.02%
Sn 189.927†	-63.3	-0.00681	mg/L	0.000477	-0.00681	mg/L	0.000477	7.01%
Ti 334.940†	1295.9	0.00412	mg/L	0.000712	0.00412	mg/L	0.000712	17.29%
Tl 190.801†	-16.0	-0.00584	mg/L	0.001552	-0.00584	mg/L	0.001552	26.57%
V 290.880†	148.3	0.00174	mg/L	0.000739	0.00174	mg/L	0.000739	42.34%
Zn 206.200†	164.1	0.00028	mg/L	0.000227	0.00028	mg/L	0.000227	79.80%
K 766.490†	969.8	0.908	mg/L	0.0570	0.908	mg/L	0.0570	6.28%
Na 589.592†	79913.5	12.3	mg/L	0.05	12.3	mg/L	0.05	0.38%
Sr 407.771†	83577.7	0.107	mg/L	0.0008	0.107	mg/L	0.0008	0.74%
Li 670.784†	113.7	-0.00200	mg/L	0.003456	-0.00200	mg/L	0.003456	172.96%
P 214.914†	52.4	-0.00535	mg/L	0.010419	-0.00535	mg/L	0.010419	194.61%

Sequence No.: 21 **Autosampler Location: 33**
Sample ID: L1508097303 **Date Collected: 8/23/2015 11:27:45 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508097303

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508097303

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2274981.5						12963.99	0.57%
YRADIAL	131147.1						8275.81	6.31%
Ga 417.206	891601.2						5770.13	0.65%
GaRADIAL	32790.6						1790.77	5.46%
Ag 328.068†	70.5	0.00220	mg/L	0.000296	0.00220	mg/L	0.000296	13.43%
Al 396.153†	253.0	0.0965	mg/L	0.00556	0.0965	mg/L	0.00556	5.76%
As 188.979†	8.2	0.00165	mg/L	0.002796	0.00165	mg/L	0.002796	169.73%
Ba 233.527†	11117.4	0.0727	mg/L	0.00134	0.0727	mg/L	0.00134	1.84%
Be 234.861†	-265.9	-0.00003	mg/L	0.000017	-0.00003	mg/L	0.000017	67.29%
B 249.677†	2235.1	0.0331	mg/L	0.00023	0.0331	mg/L	0.00023	0.69%
Ca 227.546†	16234.7	50.2	mg/L	0.85	50.2	mg/L	0.85	1.70%
Cd 228.802†	3.0	0.00021	mg/L	0.000047	0.00021	mg/L	0.000047	21.91%
Co 228.616†	-34.5	-0.00089	mg/L	0.000032	-0.00089	mg/L	0.000032	3.57%
Cr 267.716†	162.8	0.00097	mg/L	0.000101	0.00097	mg/L	0.000101	10.42%
Cu 327.393†	136.0	0.00202	mg/L	0.000723	0.00202	mg/L	0.000723	35.79%
Fe 239.562†	1357.9	0.131	mg/L	0.0131	0.131	mg/L	0.0131	9.99%
Mg 279.077†	16345.6	8.38	mg/L	0.819	8.38	mg/L	0.819	9.78%
Mn 257.610†	3873.7	0.00477	mg/L	0.000119	0.00477	mg/L	0.000119	2.49%
Mo 202.031†	355.1	0.0109	mg/L	0.00003	0.0109	mg/L	0.00003	0.27%
Ni 231.604†	19.0	-0.00084	mg/L	0.000244	-0.00084	mg/L	0.000244	28.90%
Pb 220.353†	-0.8	-0.00120	mg/L	0.000964	-0.00120	mg/L	0.000964	80.62%
Sb 206.836†	9.5	0.00830	mg/L	0.002913	0.00830	mg/L	0.002913	35.09%
Se 196.026†	-6.1	-0.00120	mg/L	0.005003	-0.00120	mg/L	0.005003	416.22%
Si 251.611†	143643.7	3.35	mg/L	0.008	3.35	mg/L	0.008	0.23%
Sn 189.927†	-101.5	-0.00998	mg/L	0.001937	-0.00998	mg/L	0.001937	19.41%
Ti 334.940†	-2354.5	0.00148	mg/L	0.000297	0.00148	mg/L	0.000297	20.05%
Tl 190.801†	-30.8	-0.0116	mg/L	0.00049	-0.0116	mg/L	0.00049	4.24%
V 290.880†	-96.7	0.00014	mg/L	0.001004	0.00014	mg/L	0.001004	714.62%
Zn 206.200†	111.9	-0.00033	mg/L	0.000194	-0.00033	mg/L	0.000194	58.60%
K 766.490†	2877.9	2.74	mg/L	0.226	2.74	mg/L	0.226	8.23%
Na 589.592†	51732.6	7.97	mg/L	0.065	7.97	mg/L	0.065	0.82%
Sr 407.771†	290603.0	0.366	mg/L	0.0032	0.366	mg/L	0.0032	0.87%
Li 670.784†	150.4	-0.00086	mg/L	0.001635	-0.00086	mg/L	0.001635	189.18%
P 214.914†	31.3	-0.0148	mg/L	0.00695	-0.0148	mg/L	0.00695	47.03%

Sequence No.: 22 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 8/23/2015 11:30:08 AM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Approved: August 24, 2015

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2316758.5						46644.28	2.01%
YRADIAL	145716.3						4483.25	3.08%
Ga 417.206	865997.8						23042.46	2.66%
GaRADIAL	35971.3						782.19	2.17%
Ag 328.068†	109991.6	0.403	mg/L	0.0037	0.403	mg/L	0.0037	0.92%
QC value within limits for Ag 328.068 Recovery = 100.65%								
Al 396.153†	21487.2	9.99	mg/L	0.067	9.99	mg/L	0.067	0.67%
QC value within limits for Al 396.153 Recovery = 99.86%								
As 188.979†	1349.0	0.383	mg/L	0.0080	0.383	mg/L	0.0080	2.08%
QC value within limits for As 188.979 Recovery = 95.74%								
Ba 233.527†	151487.8	0.994	mg/L	0.0119	0.994	mg/L	0.0119	1.19%
QC value within limits for Ba 233.527 Recovery = 99.38%								
Be 234.861†	66142.7	0.0486	mg/L	0.00022	0.0486	mg/L	0.00022	0.46%
QC value within limits for Be 234.861 Recovery = 97.18%								
B 249.677†	37538.2	0.502	mg/L	0.0069	0.502	mg/L	0.0069	1.37%
QC value within limits for B 249.677 Recovery = 100.42%								
Ca 227.546†	3098.2	9.72	mg/L	0.198	9.72	mg/L	0.198	2.03%
QC value within limits for Ca 227.546 Recovery = 97.18%								
Cd 228.802†	1956.8	0.0480	mg/L	0.00108	0.0480	mg/L	0.00108	2.26%
QC value within limits for Cd 228.802 Recovery = 96.10%								
Co 228.616†	9350.6	0.197	mg/L	0.0029	0.197	mg/L	0.0029	1.47%
QC value within limits for Co 228.616 Recovery = 98.62%								
Cr 267.716†	71938.3	0.501	mg/L	0.0041	0.501	mg/L	0.0041	0.83%
QC value within limits for Cr 267.716 Recovery = 100.29%								
Cu 327.393†	91122.9	0.505	mg/L	0.0062	0.505	mg/L	0.0062	1.24%
QC value within limits for Cu 327.393 Recovery = 101.03%								
Fe 239.562†	39823.7	4.00	mg/L	0.034	4.00	mg/L	0.034	0.86%
QC value within limits for Fe 239.562 Recovery = 100.10%								
Mg 279.077†	19289.3	9.89	mg/L	0.165	9.89	mg/L	0.165	1.66%
QC value within limits for Mg 279.077 Recovery = 98.94%								
Mn 257.610†	369842.5	0.499	mg/L	0.0054	0.499	mg/L	0.0054	1.09%
QC value within limits for Mn 257.610 Recovery = 99.71%								
Mo 202.031†	36090.9	1.02	mg/L	0.014	1.02	mg/L	0.014	1.42%
QC value within limits for Mo 202.031 Recovery = 102.06%								
Ni 231.604†	38137.3	0.499	mg/L	0.0047	0.499	mg/L	0.0047	0.95%
QC value within limits for Ni 231.604 Recovery = 99.73%								
Pb 220.353†	7939.7	0.498	mg/L	0.0072	0.498	mg/L	0.0072	1.45%
QC value within limits for Pb 220.353 Recovery = 99.63%								
Sb 206.836†	3193.3	1.15	mg/L	0.025	1.15	mg/L	0.025	2.16%
QC value within limits for Sb 206.836 Recovery = 95.53%								
Se 196.026†	448.0	0.402	mg/L	0.0148	0.402	mg/L	0.0148	3.70%
QC value within limits for Se 196.026 Recovery = 100.46%								
Si 251.611†	213307.6	4.96	mg/L	0.042	4.96	mg/L	0.042	0.85%
QC value within limits for Si 251.611 Recovery = 99.15%								
Sn 189.927†	12058.8	0.997	mg/L	0.0148	0.997	mg/L	0.0148	1.49%
QC value within limits for Sn 189.927 Recovery = 99.66%								
Ti 334.940†	790762.7	0.994	mg/L	0.0078	0.994	mg/L	0.0078	0.78%
QC value within limits for Ti 334.940 Recovery = 99.42%								
Tl 190.801†	1299.8	0.515	mg/L	0.0080	0.515	mg/L	0.0080	1.56%
QC value within limits for Tl 190.801 Recovery = 103.06%								
V 290.880†	169112.8	0.997	mg/L	0.0086	0.997	mg/L	0.0086	0.86%
QC value within limits for V 290.880 Recovery = 99.68%								
Zn 206.200†	85317.5	0.996	mg/L	0.0101	0.996	mg/L	0.0101	1.02%
QC value within limits for Zn 206.200 Recovery = 99.58%								
K 766.490†	51871.1	49.9	mg/L	0.20	49.9	mg/L	0.20	0.41%
QC value within limits for K 766.490 Recovery = 99.80%								
Na 589.592†	324599.4	50.6	mg/L	0.56	50.6	mg/L	0.56	1.10%
QC value within limits for Na 589.592 Recovery = 101.12%								
Sr 407.771†	798012.8	1.00	mg/L	0.018	1.00	mg/L	0.018	1.76%
QC value within limits for Sr 407.771 Recovery = 100.35%								
Li 670.784†	33213.6	1.02	mg/L	0.007	1.02	mg/L	0.007	0.67%
QC value within limits for Li 670.784 Recovery = 101.94%								

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P 214.914†	22242.0	9.93 mg/L	0.147	9.93 mg/L	0.147	1.48%

QC value within limits for P 214.914 Recovery = 99.30%

All analyte(s) passed QC.

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Sequence No.: 23 **Autosampler Location: 1**
Sample ID: CCB **Date Collected: 8/23/2015 11:32:33 AM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCB

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2318863.2						73663.76	3.18%
YRADIAL	139119.3						3013.84	2.17%
Ga 417.206	919520.8						34776.79	3.78%
GaRADIAL	33129.1						794.30	2.40%
Ag 328.068†	-281.7	0.00096	mg/L	0.000899	0.00096	mg/L	0.000899	94.07%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	35.9	-0.00463	mg/L	0.020730	-0.00463	mg/L	0.020730	447.51%
QC value within limits for Al 396.153 Recovery = Not calculated								
As 188.979†	21.5	0.00442	mg/L	0.002654	0.00442	mg/L	0.002654	60.08%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	230.8	0.00133	mg/L	0.000091	0.00133	mg/L	0.000091	6.87%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 234.861†	-135.4	0.00010	mg/L	0.000043	0.00010	mg/L	0.000043	44.83%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	339.1	0.00804	mg/L	0.002054	0.00804	mg/L	0.002054	25.55%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	-22.2	0.0273	mg/L	0.03879	0.0273	mg/L	0.03879	142.02%
QC value within limits for Ca 227.546 Recovery = Not calculated								
Cd 228.802†	1.6	0.00016	mg/L	0.000078	0.00016	mg/L	0.000078	48.75%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	-12.0	-0.00041	mg/L	0.000342	-0.00041	mg/L	0.000342	83.82%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	119.7	0.00067	mg/L	0.000344	0.00067	mg/L	0.000344	51.19%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	169.1	0.00220	mg/L	0.000068	0.00220	mg/L	0.000068	3.08%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	61.7	0.00044	mg/L	0.005187	0.00044	mg/L	0.005187	>999.9%
QC value within limits for Fe 239.562 Recovery = Not calculated								
Mg 279.077†	87.1	-0.00794	mg/L	0.047301	-0.00794	mg/L	0.047301	595.68%
QC value within limits for Mg 279.077 Recovery = Not calculated								
Mn 257.610†	-273.5	-0.00082	mg/L	0.000019	-0.00082	mg/L	0.000019	2.28%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	12.7	0.00127	mg/L	0.000562	0.00127	mg/L	0.000562	44.24%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	-1.3	-0.00112	mg/L	0.000200	-0.00112	mg/L	0.000200	17.90%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	-6.0	-0.00154	mg/L	0.001661	-0.00154	mg/L	0.001661	107.94%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	10.6	0.00868	mg/L	0.001044	0.00868	mg/L	0.001044	12.03%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	-4.8	-0.00003	mg/L	0.005065	-0.00003	mg/L	0.005065	>999.9%
QC value within limits for Se 196.026 Recovery = Not calculated								
Si 251.611†	-269.3	0.0110	mg/L	0.00032	0.0110	mg/L	0.00032	2.94%
QC value within limits for Si 251.611 Recovery = Not calculated								
Sn 189.927†	47.4	0.00235	mg/L	0.001876	0.00235	mg/L	0.001876	79.87%
QC value within limits for Sn 189.927 Recovery = Not calculated								
Ti 334.940†	-35.3	0.00117	mg/L	0.000286	0.00117	mg/L	0.000286	24.38%
QC value within limits for Ti 334.940 Recovery = Not calculated								
Tl 190.801†	-4.5	-0.00138	mg/L	0.000709	-0.00138	mg/L	0.000709	51.46%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 290.880†	262.6	0.00246	mg/L	0.000537	0.00246	mg/L	0.000537	21.86%
QC value within limits for V 290.880 Recovery = Not calculated								

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Zn 206.200†	51.4	-0.00104 mg/L	0.000095	-0.00104 mg/L	0.000095	9.18%
QC value within limits for Zn 206.200 Recovery = Not calculated						
K 766.490†	27.4	0.0179 mg/L	0.17081	0.0179 mg/L	0.17081	955.79%
QC value within limits for K 766.490 Recovery = Not calculated						
Na 589.592†	492.7	0.0549 mg/L	0.01493	0.0549 mg/L	0.01493	27.21%
QC value within limits for Na 589.592 Recovery = Not calculated						
Sr 407.771†	1200.5	0.00409 mg/L	0.000031	0.00409 mg/L	0.000031	0.75%
QC value within limits for Sr 407.771 Recovery = Not calculated						
Li 670.784†	3.4	-0.00540 mg/L	0.001785	-0.00540 mg/L	0.001785	33.05%
QC value within limits for Li 670.784 Recovery = Not calculated						
P 214.914†	5.8	-0.0262 mg/L	0.00514	-0.0262 mg/L	0.00514	19.60%
QC value within limits for P 214.914 Recovery = Not calculated						

All analyte(s) passed QC.

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Sequence No.: 24 **Autosampler Location: 34**
Sample ID: LLCCV **Date Collected: 8/23/2015 11:34:57 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: LLCCV

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: LLCCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	2234420.5						77797.79	3.48%
YRADIAL	134270.7						8460.95	6.30%
Ga 417.206	874252.4						34924.42	3.99%
GaRADIAL	32293.2						1489.17	4.61%
Ag 328.068†	3802.5	0.0158	mg/L	0.00105	0.0158	mg/L	0.00105	6.64%
Al 396.153†	815.0	0.358	mg/L	0.0421	0.358	mg/L	0.0421	11.76%
As 188.979†	55.5	0.0140	mg/L	0.00172	0.0140	mg/L	0.00172	12.28%
Ba 233.527†	6471.5	0.0423	mg/L	0.00152	0.0423	mg/L	0.00152	3.59%
Be 234.861†	2461.4	0.00200	mg/L	0.000042	0.00200	mg/L	0.000042	2.13%
B 249.677†	1682.0	0.0259	mg/L	0.00104	0.0259	mg/L	0.00104	4.01%
Ca 227.546†	97.0	0.398	mg/L	0.0641	0.398	mg/L	0.0641	16.12%
Cd 228.802†	81.7	0.00215	mg/L	0.000119	0.00215	mg/L	0.000119	5.52%
Co 228.616†	355.4	0.00735	mg/L	0.000123	0.00735	mg/L	0.000123	1.68%
Cr 267.716†	2918.2	0.0202	mg/L	0.00058	0.0202	mg/L	0.00058	2.85%
Cu 327.393†	3783.0	0.0222	mg/L	0.00088	0.0222	mg/L	0.00088	3.95%
Fe 239.562†	1577.7	0.153	mg/L	0.0142	0.153	mg/L	0.0142	9.25%
Mg 279.077†	892.1	0.407	mg/L	0.0791	0.407	mg/L	0.0791	19.43%
Mn 257.610†	14426.9	0.0190	mg/L	0.00024	0.0190	mg/L	0.00024	1.25%
Mo 202.031†	1453.0	0.0420	mg/L	0.00147	0.0420	mg/L	0.00147	3.50%
Ni 231.604†	1682.7	0.0210	mg/L	0.00060	0.0210	mg/L	0.00060	2.85%
Pb 220.353†	320.4	0.0190	mg/L	0.00188	0.0190	mg/L	0.00188	9.89%
Sb 206.836†	134.7	0.0530	mg/L	0.00239	0.0530	mg/L	0.00239	4.51%
Se 196.026†	24.2	0.0256	mg/L	0.00510	0.0256	mg/L	0.00510	19.90%
Si 251.611†	7629.2	0.194	mg/L	0.0054	0.194	mg/L	0.0054	2.80%
Sn 189.927†	513.3	0.0409	mg/L	0.00118	0.0409	mg/L	0.00118	2.88%
Ti 334.940†	30759.6	0.0398	mg/L	0.00036	0.0398	mg/L	0.00036	0.91%
Tl 190.801†	42.0	0.0171	mg/L	0.00216	0.0171	mg/L	0.00216	12.62%
V 290.880†	6927.5	0.0417	mg/L	0.00127	0.0417	mg/L	0.00127	3.04%
Zn 206.200†	3686.5	0.0414	mg/L	0.00159	0.0414	mg/L	0.00159	3.84%
K 766.490†	2194.1	2.09	mg/L	0.233	2.09	mg/L	0.233	11.13%
Na 589.592†	13796.1	2.11	mg/L	0.024	2.11	mg/L	0.024	1.15%
Sr 407.771†	32397.6	0.0432	mg/L	0.00011	0.0432	mg/L	0.00011	0.25%
Li 670.784†	1488.6	0.0404	mg/L	0.00195	0.0404	mg/L	0.00195	4.83%
P 214.914†	887.8	0.369	mg/L	0.0172	0.369	mg/L	0.0172	4.66%

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Sequence No.: 25 **Autosampler Location: 35**
Sample ID: L1508091201 0.05 **Date Collected: 8/23/2015 11:37:22 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Approved: August 24, 2015

Nebulizer Parameters: L1508091201 0.05

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508091201 0.05

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2217716.0						15461.42	0.70%
YRADIAL	133901.1						3050.61	2.28%
Ga 417.206	767748.5						9268.41	1.21%
GaRADIAL	32344.0						716.19	2.21%
Ag 328.068†	2520.8	0.0121	mg/L	0.00201	0.0121	mg/L	0.00201	16.59%
Al 396.153†	72.0	0.0127	mg/L	0.04747	0.0127	mg/L	0.04747	374.44%
As 188.979†	-1.6	0.00800	mg/L	0.002680	0.00800	mg/L	0.002680	33.50%
Ba 233.527†	1182306.3	7.75	mg/L	0.057	7.75	mg/L	0.057	0.73%
Be 234.861†	929.1	0.00033	mg/L	0.000257	0.00033	mg/L	0.000257	77.24%
B 249.677†	106633.3	1.39	mg/L	0.018	1.39	mg/L	0.018	1.29%
Ca 227.546†	141887.3	438	mg/L	3.8	438	mg/L	3.8	0.86%
Cd 228.802†	3.0	0.00022	mg/L	0.000329	0.00022	mg/L	0.000329	150.31%
Co 228.616†	-158.9	-0.00614	mg/L	0.000447	-0.00614	mg/L	0.000447	7.28%
Cr 267.716†	222.8	0.00140	mg/L	0.000305	0.00140	mg/L	0.000305	21.77%
Cu 327.393†	-982.4	-0.00425	mg/L	0.001651	-0.00425	mg/L	0.001651	38.84%
Fe 239.562†	25199.7	2.53	mg/L	0.029	2.53	mg/L	0.029	1.16%
Mg 279.077†	71970.5	37.1	mg/L	0.27	37.1	mg/L	0.27	0.73%
Mn 257.610†	193904.0	0.261	mg/L	0.0024	0.261	mg/L	0.0024	0.94%
Mo 202.031†	-90.2	-0.00143	mg/L	0.000276	-0.00143	mg/L	0.000276	19.30%
Ni 231.604†	70.7	-0.00016	mg/L	0.000318	-0.00016	mg/L	0.000318	195.68%
Pb 220.353†	79.0	0.00354	mg/L	0.000623	0.00354	mg/L	0.000623	17.59%
Sb 206.836†	25.4	0.0141	mg/L	0.00501	0.0141	mg/L	0.00501	35.64%
Se 196.026†	-20.2	-0.0140	mg/L	0.00600	-0.0140	mg/L	0.00600	42.92%
Si 251.611†	10643.9	0.264	mg/L	0.0030	0.264	mg/L	0.0030	1.15%
Sn 189.927†	-185.0	-0.0169	mg/L	0.00078	-0.0169	mg/L	0.00078	4.61%
Ti 334.940†	-24808.1	-0.00183	mg/L	0.000286	-0.00183	mg/L	0.000286	15.62%
Tl 190.801†	-39.7	-0.0156	mg/L	0.00367	-0.0156	mg/L	0.00367	23.53%
V 290.880†	-741.6	-0.00431	mg/L	0.001335	-0.00431	mg/L	0.001335	30.99%
Zn 206.200†	321.4	0.00217	mg/L	0.000167	0.00217	mg/L	0.000167	7.69%
K 766.490†	22625.4	20.6	mg/L	0.20	20.6	mg/L	0.20	1.00%
Na 589.592†	5717847.7	1120	mg/L	29.5	1120	mg/L	29.5	2.62%
Sr 407.771†	Saturated2							
Li 670.784†	49768.4	1.53	mg/L	0.020	1.53	mg/L	0.020	1.29%
P 214.914†	124.6	0.0270	mg/L	0.00275	0.0270	mg/L	0.00275	10.21%

Sequence No.: 26
Sample ID: L1508091202 0.05
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 36
Date Collected: 8/23/2015 11:39:49 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1508091202 0.05

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508091202 0.05

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2147968.2						50722.87	2.36%
YRADIAL	132902.7						5380.69	4.05%
Ga 417.206	741227.9						21100.89	2.85%
GaRADIAL	32123.7						1162.13	3.62%
Ag 328.068†	2588.9	0.0123	mg/L	0.00114	0.0123	mg/L	0.00114	9.29%
Al 396.153†	73.6	0.0135	mg/L	0.02134	0.0135	mg/L	0.02134	158.61%
As 188.979†	4.9	0.00968	mg/L	0.003183	0.00968	mg/L	0.003183	32.89%
Ba 233.527†	1150221.6	7.54	mg/L	0.033	7.54	mg/L	0.033	0.44%
Be 234.861†	487.3	0.00002	mg/L	0.000165	0.00002	mg/L	0.000165	911.83%
B 249.677†	103861.7	1.36	mg/L	0.019	1.36	mg/L	0.019	1.37%
Ca 227.546†	138856.5	428	mg/L	4.6	428	mg/L	4.6	1.08%
Cd 228.802†	10.0	0.00039	mg/L	0.000314	0.00039	mg/L	0.000314	81.04%

Approved: August 24, 2015

Co 228.616†	-141.6	-0.00570	mg/L	0.000112	-0.00570	mg/L	0.000112	1.96%
Cr 267.716†	237.0	0.00150	mg/L	0.000201	0.00150	mg/L	0.000201	13.42%
Cu 327.393†	-743.1	-0.00293	mg/L	0.001311	-0.00293	mg/L	0.001311	44.76%
Fe 239.562†	24648.5	2.48	mg/L	0.023	2.48	mg/L	0.023	0.93%
Mg 279.077†	70159.3	36.1	mg/L	0.11	36.1	mg/L	0.11	0.29%
Mn 257.610†	189302.8	0.255	mg/L	0.0010	0.255	mg/L	0.0010	0.41%
Mo 202.031†	-113.3	-0.00208	mg/L	0.000389	-0.00208	mg/L	0.000389	18.68%
Ni 231.604†	66.5	-0.00022	mg/L	0.000121	-0.00022	mg/L	0.000121	55.77%
Pb 220.353†	42.2	0.00125	mg/L	0.002283	0.00125	mg/L	0.002283	183.32%
Sb 206.836†	19.6	0.0120	mg/L	0.00170	0.0120	mg/L	0.00170	14.20%
Se 196.026†	-13.6	-0.00814	mg/L	0.004522	-0.00814	mg/L	0.004522	55.57%
Si 251.611†	10708.6	0.266	mg/L	0.0073	0.266	mg/L	0.0073	2.75%
Sn 189.927†	-184.7	-0.0169	mg/L	0.00043	-0.0169	mg/L	0.00043	2.53%
Ti 334.940†	-24341.0	-0.00184	mg/L	0.000336	-0.00184	mg/L	0.000336	18.19%
Tl 190.801†	-41.0	-0.0160	mg/L	0.00239	-0.0160	mg/L	0.00239	14.89%
V 290.880†	-606.9	-0.00349	mg/L	0.001807	-0.00349	mg/L	0.001807	51.75%
Zn 206.200†	511.0	0.00437	mg/L	0.000469	0.00437	mg/L	0.000469	10.72%
K 766.490†	21833.6	19.8	mg/L	0.08	19.8	mg/L	0.08	0.39%
Na 589.592†	5661334.9	1110	mg/L	75.0	1110	mg/L	75.0	6.75%
Sr 407.771†	Saturated2							
Li 670.784†	48698.5	1.50	mg/L	0.011	1.50	mg/L	0.011	0.75%
P 214.914†	132.7	0.0306	mg/L	0.00519	0.0306	mg/L	0.00519	16.96%

Sequence No.: 27
Sample ID: L1508097304
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 37
Date Collected: 8/23/2015 11:42:12 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1508097304

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508097304

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2312901.8						46978.92	2.03%
YRADIAL	142385.4						5751.50	4.04%
Ga 417.206	905303.4						19159.67	2.12%
GaRADIAL	34433.7						1203.31	3.49%
Ag 328.068†	71.6	0.00233	mg/L	0.000316	0.00233	mg/L	0.000316	13.53%
Al 396.153†	1057.8	0.473	mg/L	0.0209	0.473	mg/L	0.0209	4.42%
As 188.979†	-1.0	-0.00071	mg/L	0.000835	-0.00071	mg/L	0.000835	118.29%
Ba 233.527†	12961.4	0.0848	mg/L	0.00097	0.0848	mg/L	0.00097	1.14%
Be 234.861†	-175.3	-0.00001	mg/L	0.000020	-0.00001	mg/L	0.000020	177.33%
B 249.677†	4086.7	0.0578	mg/L	0.00200	0.0578	mg/L	0.00200	3.47%
Ca 227.546†	19833.6	61.2	mg/L	1.07	61.2	mg/L	1.07	1.74%
Cd 228.802†	3.7	0.00025	mg/L	0.000098	0.00025	mg/L	0.000098	39.72%
Co 228.616†	-25.1	-0.00073	mg/L	0.000173	-0.00073	mg/L	0.000173	23.83%
Cr 267.716†	276.6	0.00177	mg/L	0.000379	0.00177	mg/L	0.000379	21.45%
Cu 327.393†	-68.0	0.00092	mg/L	0.001585	0.00092	mg/L	0.001585	173.08%
Fe 239.562†	3534.1	0.350	mg/L	0.0036	0.350	mg/L	0.0036	1.03%
Mg 279.077†	13804.9	7.07	mg/L	0.090	7.07	mg/L	0.090	1.28%
Mn 257.610†	8904.7	0.0116	mg/L	0.00018	0.0116	mg/L	0.00018	1.52%
Mo 202.031†	60.8	0.00265	mg/L	0.000236	0.00265	mg/L	0.000236	8.89%
Ni 231.604†	50.5	-0.00043	mg/L	0.000487	-0.00043	mg/L	0.000487	112.66%
Pb 220.353†	32.7	0.00097	mg/L	0.001574	0.00097	mg/L	0.001574	162.81%
Sb 206.836†	14.3	0.00999	mg/L	0.004658	0.00999	mg/L	0.004658	46.61%
Se 196.026†	-13.0	-0.00726	mg/L	0.014715	-0.00726	mg/L	0.014715	202.58%
Si 251.611†	203265.8	4.74	mg/L	0.012	4.74	mg/L	0.012	0.25%
Sn 189.927†	-111.8	-0.0108	mg/L	0.00118	-0.0108	mg/L	0.00118	10.86%
Ti 334.940†	2259.6	0.00798	mg/L	0.003301	0.00798	mg/L	0.003301	41.34%
Tl 190.801†	-28.7	-0.0108	mg/L	0.00211	-0.0108	mg/L	0.00211	19.64%
V 290.880†	-17.5	0.00068	mg/L	0.001830	0.00068	mg/L	0.001830	269.40%
Zn 206.200†	471.6	0.00387	mg/L	0.000149	0.00387	mg/L	0.000149	3.86%
K 766.490†	866.3	0.811	mg/L	0.1448	0.811	mg/L	0.1448	17.86%
Na 589.592†	65269.7	10.1	mg/L	0.33	10.1	mg/L	0.33	3.31%
Sr 407.771†	153821.1	0.194	mg/L	0.0066	0.194	mg/L	0.0066	3.41%
Li 670.784†	245.3	0.00206	mg/L	0.005535	0.00206	mg/L	0.005535	268.40%

Approved: August 24, 2015

P 214.914†	43.5	-0.00936 mg/L	0.002617	-0.00936 mg/L	0.002617	27.95%

Sequence No.: 28 **Autosampler Location: 38**
Sample ID: L1508097501 **Date Collected: 8/23/2015 11:44:33 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508097501

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508097501

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2164443.1						61436.37	2.84%
YRADIAL	126248.8						8239.45	6.53%
Ga 417.206	830425.5						31526.99	3.80%
GaRADIAL	32036.2						1675.88	5.23%
Ag 328.068†	469.7	0.00359	mg/L	0.001328	0.00359	mg/L	0.001328	36.98%
Al 396.153†	12.7	-0.0155	mg/L	0.02789	-0.0155	mg/L	0.02789	179.96%
As 188.979†	-5.2	-0.00132	mg/L	0.004312	-0.00132	mg/L	0.004312	326.39%
Ba 233.527†	15354.5	0.101	mg/L	0.0038	0.101	mg/L	0.0038	3.82%
Be 234.861†	-437.4	-0.00013	mg/L	0.000092	-0.00013	mg/L	0.000092	71.91%
B 249.677†	1989.9	0.0294	mg/L	0.00123	0.0294	mg/L	0.00123	4.20%
Ca 227.546†	29281.4	90.4	mg/L	4.16	90.4	mg/L	4.16	4.60%
Cd 228.802†	8.6	0.00038	mg/L	0.000244	0.00038	mg/L	0.000244	64.92%
Co 228.616†	-24.2	-0.00068	mg/L	0.000156	-0.00068	mg/L	0.000156	22.92%
Cr 267.716†	196.8	0.00121	mg/L	0.000358	0.00121	mg/L	0.000358	29.65%
Cu 327.393†	5759.4	0.0330	mg/L	0.00137	0.0330	mg/L	0.00137	4.16%
Fe 239.562†	95.5	0.00361	mg/L	0.003749	0.00361	mg/L	0.003749	103.84%
Mg 279.077†	22922.0	11.8	mg/L	0.35	11.8	mg/L	0.35	3.00%
Mn 257.610†	-32.4	-0.00050	mg/L	0.000064	-0.00050	mg/L	0.000064	12.78%
Mo 202.031†	63.6	0.00270	mg/L	0.000714	0.00270	mg/L	0.000714	26.39%
Ni 231.604†	6.1	-0.00101	mg/L	0.000185	-0.00101	mg/L	0.000185	18.27%
Pb 220.353†	-7.9	-0.00166	mg/L	0.001231	-0.00166	mg/L	0.001231	74.12%
Sb 206.836†	21.9	0.0127	mg/L	0.00253	0.0127	mg/L	0.00253	19.93%
Se 196.026†	-11.8	-0.00625	mg/L	0.011520	-0.00625	mg/L	0.011520	184.45%
Si 251.611†	201928.2	4.70	mg/L	0.021	4.70	mg/L	0.021	0.45%
Sn 189.927†	-143.2	-0.0134	mg/L	0.00067	-0.0134	mg/L	0.00067	4.96%
Ti 334.940†	-5713.0	-0.00015	mg/L	0.000252	-0.00015	mg/L	0.000252	164.13%
Tl 190.801†	-43.4	-0.0166	mg/L	0.00241	-0.0166	mg/L	0.00241	14.58%
V 290.880†	-186.8	-0.00050	mg/L	0.001038	-0.00050	mg/L	0.001038	208.53%
Zn 206.200†	1754.2	0.0188	mg/L	0.00068	0.0188	mg/L	0.00068	3.64%
K 766.490†	1363.8	1.27	mg/L	0.116	1.27	mg/L	0.116	9.07%
Na 589.592†	154651.5	24.0	mg/L	0.23	24.0	mg/L	0.23	0.95%
Sr 407.771†	285134.1	0.357	mg/L	0.0031	0.357	mg/L	0.0031	0.88%
Li 670.784†	393.7	0.00664	mg/L	0.004178	0.00664	mg/L	0.004178	62.91%
P 214.914†	-99.1	-0.0732	mg/L	0.00271	-0.0732	mg/L	0.00271	3.70%

Sequence No.: 29 **Autosampler Location: 39**
Sample ID: L1508098501 **Date Collected: 8/23/2015 11:46:55 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508098501

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508098501

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2275346.7						78062.24	3.43%
YRADIAL	136878.2						3613.71	2.64%
Ga 417.206	840380.5						30821.54	3.67%

Approved: August 24, 2015

Kym H. Rhoden

GaRADIAL	33498.6							912.44	2.72%
Ag 328.068†	-420.5	0.00079	mg/L	0.000848	0.00079	mg/L	0.000848	108.00%
Al 396.153†	1054.9	0.472	mg/L	0.0205	0.472	mg/L	0.0205	4.35%
As 188.979†	9.5	0.00120	mg/L	0.001710	0.00120	mg/L	0.001710	142.29%
Ba 233.527†	25882.1	0.170	mg/L	0.0021	0.170	mg/L	0.0021	1.26%
Be 234.861†	-109.9	-0.00008	mg/L	0.000047	-0.00008	mg/L	0.000047	59.55%
B 249.677†	15195.6	0.203	mg/L	0.0022	0.203	mg/L	0.0022	1.09%
Ca 227.546†	1494.2	4.70	mg/L	0.109	4.70	mg/L	0.109	2.33%
Cd 228.802†	0.9	0.00016	mg/L	0.000106	0.00016	mg/L	0.000106	65.59%
Co 228.616†	3.6	-0.00016	mg/L	0.000126	-0.00016	mg/L	0.000126	78.19%
Cr 267.716†	705.5	0.00476	mg/L	0.000367	0.00476	mg/L	0.000367	7.71%
Cu 327.393†	6967.4	0.0397	mg/L	0.00133	0.0397	mg/L	0.00133	3.34%
Fe 239.562†	8826.3	0.883	mg/L	0.0204	0.883	mg/L	0.0204	2.31%
Mg 279.077†	1715.7	0.832	mg/L	0.0545	0.832	mg/L	0.0545	6.55%
Mn 257.610†	42630.5	0.0571	mg/L	0.00052	0.0571	mg/L	0.00052	0.91%
Mo 202.031†	66.6	0.00286	mg/L	0.000268	0.00286	mg/L	0.000268	9.38%
Ni 231.604†	124.3	0.00053	mg/L	0.000253	0.00053	mg/L	0.000253	47.48%
Pb 220.353†	47.8	0.00187	mg/L	0.002202	0.00187	mg/L	0.002202	117.91%
Sb 206.836†	9.9	0.00843	mg/L	0.003639	0.00843	mg/L	0.003639	43.18%
Se 196.026†	-13.0	-0.00738	mg/L	0.009302	-0.00738	mg/L	0.009302	126.09%
Si 251.611†	167585.9	3.91	mg/L	0.047	3.91	mg/L	0.047	1.20%
Sn 189.927†	-3.4	-0.00185	mg/L	0.000474	-0.00185	mg/L	0.000474	25.55%
Ti 334.940†	2345.5	0.00446	mg/L	0.000188	0.00446	mg/L	0.000188	4.21%
Tl 190.801†	-17.0	-0.00624	mg/L	0.006710	-0.00624	mg/L	0.006710	107.50%
V 290.880†	490.6	0.00392	mg/L	0.000925	0.00392	mg/L	0.000925	23.61%
Zn 206.200†	1310.1	0.0137	mg/L	0.00013	0.0137	mg/L	0.00013	0.94%
K 766.490†	1103.2	0.879	mg/L	0.0912	0.879	mg/L	0.0912	10.38%
Na 589.592†	1057872.7	169	mg/L	1.5	169	mg/L	1.5	0.91%
Sr 407.771†	122243.8	0.156	mg/L	0.0007	0.156	mg/L	0.0007	0.45%
Li 670.784†	455.9	0.00856	mg/L	0.003083	0.00856	mg/L	0.003083	36.00%
P 214.914†	73.7	0.00418	mg/L	0.002892	0.00418	mg/L	0.002892	69.18%

Sequence No.: 30 **Autosampler Location: 40**
Sample ID: L1508098502 **Date Collected: 8/23/2015 11:49:18 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508098502

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508098502

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2390630.6						109514.40	4.58%
YRADIAL	138726.7						6389.34	4.61%
Ga 417.206	893419.6						44999.16	5.04%
GaRADIAL	34321.0						1392.58	4.06%
Ag 328.068†	-434.0	0.00038	mg/L	0.000862	0.00038	mg/L	0.000862	224.34%
Al 396.153†	117.0	0.0333	mg/L	0.00311	0.0333	mg/L	0.00311	9.33%
As 188.979†	7.8	0.00050	mg/L	0.000692	0.00050	mg/L	0.000692	137.91%
Ba 233.527†	18812.2	0.123	mg/L	0.0052	0.123	mg/L	0.0052	4.23%
Be 234.861†	-315.0	-0.00004	mg/L	0.000045	-0.00004	mg/L	0.000045	108.02%
B 249.677†	15853.5	0.209	mg/L	0.0033	0.209	mg/L	0.0033	1.60%
Ca 227.546†	820.8	2.63	mg/L	0.183	2.63	mg/L	0.183	6.95%
Cd 228.802†	17.0	0.00057	mg/L	0.000118	0.00057	mg/L	0.000118	20.77%
Co 228.616†	-35.3	-0.00094	mg/L	0.000077	-0.00094	mg/L	0.000077	8.14%
Cr 267.716†	631.7	0.00424	mg/L	0.000382	0.00424	mg/L	0.000382	9.01%
Cu 327.393†	2475.4	0.0149	mg/L	0.00137	0.0149	mg/L	0.00137	9.17%
Fe 239.562†	332.2	0.0277	mg/L	0.00523	0.0277	mg/L	0.00523	18.89%
Mg 279.077†	1528.8	0.736	mg/L	0.0458	0.736	mg/L	0.0458	6.23%
Mn 257.610†	5673.1	0.00720	mg/L	0.000396	0.00720	mg/L	0.000396	5.49%
Mo 202.031†	41.0	0.00207	mg/L	0.000275	0.00207	mg/L	0.000275	13.26%
Ni 231.604†	34.4	-0.00065	mg/L	0.000251	-0.00065	mg/L	0.000251	38.97%
Pb 220.353†	-16.6	-0.00220	mg/L	0.001986	-0.00220	mg/L	0.001986	90.18%
Sb 206.836†	3.0	0.00593	mg/L	0.002221	0.00593	mg/L	0.002221	37.47%
Se 196.026†	-5.8	-0.00092	mg/L	0.002328	-0.00092	mg/L	0.002328	252.44%
Si 251.611†	145220.0	3.39	mg/L	0.036	3.39	mg/L	0.036	1.07%

Approved: August 24, 2015

Sn 189.927†	-16.8	-0.00297	mg/L	0.000722	-0.00297	mg/L	0.000722 24.35%
Ti 334.940†	324.1	0.00179	mg/L	0.000186	0.00179	mg/L	0.000186 10.39%
Tl 190.801†	-16.7	-0.00612	mg/L	0.005345	-0.00612	mg/L	0.005345 87.29%
V 290.880†	115.1	0.00157	mg/L	0.000651	0.00157	mg/L	0.000651 41.51%
Zn 206.200†	418.1	0.00326	mg/L	0.000311	0.00326	mg/L	0.000311 9.55%
K 766.490†	969.0	0.747	mg/L	0.0520	0.747	mg/L	0.0520 6.96%
Na 589.592†	1078169.6	172	mg/L	1.2	172	mg/L	1.2 0.70%
Sr 407.771†	116104.4	0.148	mg/L	0.0015	0.148	mg/L	0.0015 1.02%
Li 670.784†	349.6	0.00528	mg/L	0.001991	0.00528	mg/L	0.001991 37.69%
P 214.914†	68.3	0.00175	mg/L	0.005099	0.00175	mg/L	0.005099 291.37%

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Sequence No.: 31 **Autosampler Location: 41**
Sample ID: L1508098601 **Date Collected: 8/23/2015 11:51:41 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508098601

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508098601

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2284192.1						85650.53	3.75%
YRADIAL	138929.5						5321.68	3.83%
Ga 417.206	879032.8						39098.38	4.45%
GaRADIAL	33445.2						990.56	2.96%
Ag 328.068†	-38.7	0.00187	mg/L	0.000123	0.00187	mg/L	0.000123	6.56%
Al 396.153†	11.0	-0.0164	mg/L	0.02869	-0.0164	mg/L	0.02869	175.00%
As 188.979†	6.8	0.00136	mg/L	0.001295	0.00136	mg/L	0.001295	94.99%
Ba 233.527†	50958.1	0.334	mg/L	0.0034	0.334	mg/L	0.0034	1.02%
Be 234.861†	-245.7	-0.00004	mg/L	0.000062	-0.00004	mg/L	0.000062	158.94%
B 249.677†	2297.6	0.0346	mg/L	0.00112	0.0346	mg/L	0.00112	3.25%
Ca 227.546†	16760.0	51.8	mg/L	2.02	51.8	mg/L	2.02	3.90%
Cd 228.802†	13.9	0.00049	mg/L	0.000184	0.00049	mg/L	0.000184	37.51%
Co 228.616†	-45.6	-0.00122	mg/L	0.000214	-0.00122	mg/L	0.000214	17.53%
Cr 267.716†	131.6	0.00075	mg/L	0.000180	0.00075	mg/L	0.000180	23.90%
Cu 327.393†	30.5	0.00145	mg/L	0.001171	0.00145	mg/L	0.001171	80.78%
Fe 239.562†	3324.5	0.329	mg/L	0.0068	0.329	mg/L	0.0068	2.06%
Mg 279.077†	14742.3	7.55	mg/L	0.095	7.55	mg/L	0.095	1.26%
Mn 257.610†	144837.1	0.195	mg/L	0.0013	0.195	mg/L	0.0013	0.68%
Mo 202.031†	183.4	0.00615	mg/L	0.000284	0.00615	mg/L	0.000284	4.62%
Ni 231.604†	-42.8	-0.00165	mg/L	0.000122	-0.00165	mg/L	0.000122	7.39%
Pb 220.353†	44.1	0.00146	mg/L	0.000067	0.00146	mg/L	0.000067	4.55%
Sb 206.836†	17.3	0.0111	mg/L	0.00287	0.0111	mg/L	0.00287	25.85%
Se 196.026†	-12.2	-0.00672	mg/L	0.006326	-0.00672	mg/L	0.006326	94.17%
Si 251.611†	223709.1	5.21	mg/L	0.016	5.21	mg/L	0.016	0.31%
Sn 189.927†	-90.0	-0.00903	mg/L	0.000634	-0.00903	mg/L	0.000634	7.02%
Ti 334.940†	-3605.3	0.00001	mg/L	0.000134	0.00001	mg/L	0.000134	985.07%
Tl 190.801†	-31.8	-0.0122	mg/L	0.00541	-0.0122	mg/L	0.00541	44.34%
V 290.880†	-262.2	-0.00079	mg/L	0.001952	-0.00079	mg/L	0.001952	247.43%
Zn 206.200†	107.3	-0.00038	mg/L	0.000291	-0.00038	mg/L	0.000291	76.51%
K 766.490†	1244.8	1.15	mg/L	0.106	1.15	mg/L	0.106	9.21%
Na 589.592†	201290.8	31.2	mg/L	0.55	31.2	mg/L	0.55	1.78%
Sr 407.771†	265888.9	0.335	mg/L	0.0045	0.335	mg/L	0.0045	1.33%
Li 670.784†	329.9	0.00467	mg/L	0.003641	0.00467	mg/L	0.003641	77.89%
P 214.914†	9.4	-0.0246	mg/L	0.00182	-0.0246	mg/L	0.00182	7.39%

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Sequence No.: 32 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 8/23/2015 11:54:03 AM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow

Approved: August 24, 2015

Kym H. Rhoden

All 201.0 kPa 0.31 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2406725.5						51256.24	2.13%
YRADIAL	146338.7						2540.52	1.74%
Ga 417.206	903614.4						18982.17	2.10%
GaRADIAL	36259.8						583.49	1.61%
Ag 328.068†	109186.6	0.400	mg/L	0.0034	0.400	mg/L	0.0034	0.84%
QC value within limits for Ag 328.068 Recovery = 99.92%								
Al 396.153†	21438.5	9.96	mg/L	0.075	9.96	mg/L	0.075	0.75%
QC value within limits for Al 396.153 Recovery = 99.64%								
As 188.979†	1333.3	0.379	mg/L	0.0049	0.379	mg/L	0.0049	1.30%
QC value within limits for As 188.979 Recovery = 94.63%								
Ba 233.527†	151584.0	0.994	mg/L	0.0057	0.994	mg/L	0.0057	0.58%
QC value within limits for Ba 233.527 Recovery = 99.44%								
Be 234.861†	66257.4	0.0487	mg/L	0.00044	0.0487	mg/L	0.00044	0.91%
QC value within limits for Be 234.861 Recovery = 97.33%								
B 249.677†	37502.9	0.502	mg/L	0.0056	0.502	mg/L	0.0056	1.12%
QC value within limits for B 249.677 Recovery = 100.35%								
Ca 227.546†	3014.3	9.46	mg/L	0.191	9.46	mg/L	0.191	2.02%
QC value within limits for Ca 227.546 Recovery = 94.60%								
Cd 228.802†	1921.9	0.0472	mg/L	0.00099	0.0472	mg/L	0.00099	2.09%
QC value within limits for Cd 228.802 Recovery = 94.37%								
Co 228.616†	9227.1	0.195	mg/L	0.0033	0.195	mg/L	0.0033	1.72%
QC value within limits for Co 228.616 Recovery = 97.30%								
Cr 267.716†	71952.6	0.502	mg/L	0.0033	0.502	mg/L	0.0033	0.66%
QC value within limits for Cr 267.716 Recovery = 100.31%								
Cu 327.393†	90402.9	0.501	mg/L	0.0054	0.501	mg/L	0.0054	1.09%
QC value within limits for Cu 327.393 Recovery = 100.23%								
Fe 239.562†	40096.5	4.03	mg/L	0.035	4.03	mg/L	0.035	0.86%
QC value within limits for Fe 239.562 Recovery = 100.79%								
Mg 279.077†	19598.1	10.1	mg/L	0.13	10.1	mg/L	0.13	1.26%
QC value within limits for Mg 279.077 Recovery = 100.53%								
Mn 257.610†	369349.0	0.498	mg/L	0.0024	0.498	mg/L	0.0024	0.49%
QC value within limits for Mn 257.610 Recovery = 99.58%								
Mo 202.031†	35535.4	1.00	mg/L	0.018	1.00	mg/L	0.018	1.79%
QC value within limits for Mo 202.031 Recovery = 100.49%								
Ni 231.604†	38359.8	0.502	mg/L	0.0025	0.502	mg/L	0.0025	0.50%
QC value within limits for Ni 231.604 Recovery = 100.31%								
Pb 220.353†	7842.6	0.492	mg/L	0.0087	0.492	mg/L	0.0087	1.77%
QC value within limits for Pb 220.353 Recovery = 98.41%								
Sb 206.836†	3106.5	1.12	mg/L	0.019	1.12	mg/L	0.019	1.72%
QC value within limits for Sb 206.836 Recovery = 92.94%								
Se 196.026†	441.0	0.396	mg/L	0.0097	0.396	mg/L	0.0097	2.46%
QC value within limits for Se 196.026 Recovery = 98.92%								
Si 251.611†	212359.7	4.94	mg/L	0.029	4.94	mg/L	0.029	0.58%
QC value within limits for Si 251.611 Recovery = 98.71%								
Sn 189.927†	11902.4	0.984	mg/L	0.0159	0.984	mg/L	0.0159	1.61%
QC value within limits for Sn 189.927 Recovery = 98.36%								
Ti 334.940†	789426.2	0.993	mg/L	0.0066	0.993	mg/L	0.0066	0.66%
QC value within limits for Ti 334.940 Recovery = 99.25%								
Tl 190.801†	1282.8	0.509	mg/L	0.0065	0.509	mg/L	0.0065	1.28%
QC value within limits for Tl 190.801 Recovery = 101.73%								
V 290.880†	168599.1	0.994	mg/L	0.0064	0.994	mg/L	0.0064	0.65%
QC value within limits for V 290.880 Recovery = 99.38%								
Zn 206.200†	85848.1	1.00	mg/L	0.006	1.00	mg/L	0.006	0.61%
QC value within limits for Zn 206.200 Recovery = 100.20%								
K 766.490†	52024.3	50.0	mg/L	0.33	50.0	mg/L	0.33	0.66%
QC value within limits for K 766.490 Recovery = 100.10%								
Na 589.592†	329846.8	51.4	mg/L	1.47	51.4	mg/L	1.47	2.85%
QC value within limits for Na 589.592 Recovery = 102.77%								
Sr 407.771†	812694.0	1.02	mg/L	0.031	1.02	mg/L	0.031	3.02%
QC value within limits for Sr 407.771 Recovery = 102.19%								
Li 670.784†	33299.8	1.02	mg/L	0.008	1.02	mg/L	0.008	0.76%
QC value within limits for Li 670.784 Recovery = 102.21%								
P 214.914†	21945.7	9.80	mg/L	0.172	9.80	mg/L	0.172	1.75%
QC value within limits for P 214.914 Recovery = 97.98%								

All analyte(s) passed QC.

Approved: August 24, 2015

Lynn H. Rhoden

Sequence No.: 33
Sample ID: CCB
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 1
Date Collected: 8/23/2015 11:56:31 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: CCB

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2371090.2						92966.08	3.92%
YRADIAL	142307.1						5443.17	3.82%
Ga 417.206	937911.5						40674.05	4.34%
GaRADIAL	33912.0						1172.22	3.46%
Ag 328.068†	-353.5	0.00069	mg/L	0.000254	0.00069	mg/L	0.000254	36.73%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	70.5	0.0116	mg/L	0.01818	0.0116	mg/L	0.01818	157.09%
QC value within limits for Al 396.153 Recovery = Not calculated								
As 188.979†	9.7	0.00099	mg/L	0.000620	0.00099	mg/L	0.000620	62.70%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	364.9	0.00221	mg/L	0.000121	0.00221	mg/L	0.000121	5.49%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 234.861†	-140.0	0.00009	mg/L	0.000059	0.00009	mg/L	0.000059	62.80%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	515.9	0.0103	mg/L	0.00087	0.0103	mg/L	0.00087	8.48%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	-12.9	0.0561	mg/L	0.04769	0.0561	mg/L	0.04769	84.98%
QC value within limits for Ca 227.546 Recovery = Not calculated								
Cd 228.802†	1.0	0.00016	mg/L	0.000267	0.00016	mg/L	0.000267	164.56%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	-15.7	-0.00049	mg/L	0.000237	-0.00049	mg/L	0.000237	48.80%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	-76.9	-0.00070	mg/L	0.001048	-0.00070	mg/L	0.001048	150.20%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	101.2	0.00182	mg/L	0.000554	0.00182	mg/L	0.000554	30.40%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	23.4	-0.00341	mg/L	0.001415	-0.00341	mg/L	0.001415	41.47%
QC value within limits for Fe 239.562 Recovery = Not calculated								
Mg 279.077†	126.4	0.0123	mg/L	0.03126	0.0123	mg/L	0.03126	253.47%
QC value within limits for Mg 279.077 Recovery = Not calculated								
Mn 257.610†	-287.1	-0.00084	mg/L	0.000039	-0.00084	mg/L	0.000039	4.68%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	-0.2	0.00090	mg/L	0.000115	0.00090	mg/L	0.000115	12.72%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	-28.1	-0.00147	mg/L	0.000395	-0.00147	mg/L	0.000395	26.95%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	7.8	-0.00068	mg/L	0.001008	-0.00068	mg/L	0.001008	148.96%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	9.7	0.00837	mg/L	0.001429	0.00837	mg/L	0.001429	17.07%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	-6.5	-0.00161	mg/L	0.001619	-0.00161	mg/L	0.001619	100.40%
QC value within limits for Se 196.026 Recovery = Not calculated								
Si 251.611†	-284.2	0.0106	mg/L	0.00120	0.0106	mg/L	0.00120	11.31%
QC value within limits for Si 251.611 Recovery = Not calculated								
Sn 189.927†	38.8	0.00164	mg/L	0.000955	0.00164	mg/L	0.000955	58.27%
QC value within limits for Sn 189.927 Recovery = Not calculated								
Ti 334.940†	-212.1	0.00095	mg/L	0.000201	0.00095	mg/L	0.000201	21.12%
QC value within limits for Ti 334.940 Recovery = Not calculated								
Tl 190.801†	-9.2	-0.00322	mg/L	0.000641	-0.00322	mg/L	0.000641	19.89%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 290.880†	116.1	0.00159	mg/L	0.002063	0.00159	mg/L	0.002063	129.42%
QC value within limits for V 290.880 Recovery = Not calculated								
Zn 206.200†	20.7	-0.00141	mg/L	0.000137	-0.00141	mg/L	0.000137	9.71%
QC value within limits for Zn 206.200 Recovery = Not calculated								
K 766.490†	14.3	0.00526	mg/L	0.160209	0.00526	mg/L	0.160209	>999.9%
QC value within limits for K 766.490 Recovery = Not calculated								

Approved: August 24, 2015

Lynn H. Rhoden

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Na 589.592†              774.7      0.0984 mg/L       0.01227      0.0984 mg/L       0.01227  12.47%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†             2000.5     0.00509 mg/L      0.000036     0.00509 mg/L      0.000036   0.71%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†              157.3    -0.00065 mg/L      0.002680    -0.00065 mg/L      0.002680 409.79%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†                7.4     -0.0255 mg/L       0.00583     -0.0255 mg/L       0.00583  22.84%
   QC value within limits for P 214.914  Recovery = Not calculated
All analyte(s) passed QC.
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Approved: August 24, 2015

Lynn H. Rhoden

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Analysis Begun

Start Time: 8/23/2015 11:59:30 AM **Plasma On Time: 8/23/2015 7:45:07 AM**
Logged In Analyst: peicp2 **Technique: ICP Continuous**
Spectrometer Model: Optima 4300 DV, S/N 077N4011401 **Autosampler Model: Cetac**

Sample Information File: C:\pe\peicp2\Sample Information\SUNDAY.sif
Batch ID:
Results Data Set: 082315HR
Results Library: C:\pe\peicp2\Results\results2.mdb

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Sequence No.: 1 **Autosampler Location: 42**
Sample ID: L1508084401 0.005 **Date Collected: 8/23/2015 11:59:32 AM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508084401 0.005

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508084401 0.005

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2234474.6						137040.19	6.13%
YRADIAL	139259.9						5648.86	4.06%
Ga 417.206	807972.8						51382.85	6.36%
GaRADIAL	32808.6						1160.77	3.54%
Ag 328.068†	44.6	0.00022	mg/L	0.001246	0.00022	mg/L	0.001246	559.46%
Al 396.153†	81.0	0.0166	mg/L	0.02985	0.0166	mg/L	0.02985	180.06%
As 188.979†	6.1	0.00155	mg/L	0.002881	0.00155	mg/L	0.002881	185.53%
Ba 233.527†	304417.6	2.00	mg/L	0.009	2.00	mg/L	0.009	0.46%
Be 234.861†	-36.4	0.00004	mg/L	0.000051	0.00004	mg/L	0.000051	118.78%
B 249.677†	7854.5	0.107	mg/L	0.0074	0.107	mg/L	0.0074	6.88%
Ca 227.546†	21481.5	66.3	mg/L	4.69	66.3	mg/L	4.69	7.08%
Cd 228.802†	-2.3	0.00008	mg/L	0.000143	0.00008	mg/L	0.000143	174.10%
Co 228.616†	-60.8	-0.00212	mg/L	0.000305	-0.00212	mg/L	0.000305	14.41%
Cr 267.716†	118.9	0.00067	mg/L	0.000135	0.00067	mg/L	0.000135	20.17%
Cu 327.393†	88.5	0.00175	mg/L	0.001847	0.00175	mg/L	0.001847	105.49%
Fe 239.562†	5753.0	0.573	mg/L	0.0065	0.573	mg/L	0.0065	1.13%
Mg 279.077†	13267.0	6.79	mg/L	0.070	6.79	mg/L	0.070	1.03%
Mn 257.610†	30773.1	0.0411	mg/L	0.00296	0.0411	mg/L	0.00296	7.20%
Mo 202.031†	-26.0	0.00022	mg/L	0.000295	0.00022	mg/L	0.000295	133.03%
Ni 231.604†	19.0	-0.00084	mg/L	0.000266	-0.00084	mg/L	0.000266	31.49%
Pb 220.353†	32.7	0.00084	mg/L	0.001462	0.00084	mg/L	0.001462	174.00%
Sb 206.836†	13.7	0.00978	mg/L	0.005491	0.00978	mg/L	0.005491	56.13%
Se 196.026†	-15.1	-0.00924	mg/L	0.004260	-0.00924	mg/L	0.004260	46.08%
Si 251.611†	3020.0	0.0873	mg/L	0.01780	0.0873	mg/L	0.01780	20.38%
Sn 189.927†	-99.8	-0.00983	mg/L	0.000899	-0.00983	mg/L	0.000899	9.14%
Ti 334.940†	-4588.4	-0.00029	mg/L	0.000817	-0.00029	mg/L	0.000817	286.01%
Tl 190.801†	-24.2	-0.00911	mg/L	0.004782	-0.00911	mg/L	0.004782	52.50%
V 290.880†	123.1	0.00148	mg/L	0.001966	0.00148	mg/L	0.001966	133.25%
Zn 206.200†	366.1	0.00264	mg/L	0.000322	0.00264	mg/L	0.000322	12.22%
K 766.490†	2546.9	2.25	mg/L	0.127	2.25	mg/L	0.127	5.63%
Na 589.592†	1122528.3	179	mg/L	3.2	179	mg/L	3.2	1.77%
Sr 407.771†	8544505.5	10.7	mg/L	0.45	10.7	mg/L	0.45	4.15%
Li 670.784†	7461.0	0.225	mg/L	0.0072	0.225	mg/L	0.0072	3.22%
P 214.914†	15.0	-0.0221	mg/L	0.01234	-0.0221	mg/L	0.01234	55.83%

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Sequence No.: 2 **Autosampler Location: 43**
Sample ID: L1508091201 0.005 **Date Collected: 8/23/2015 12:02:02 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Approved: August 24, 2015

Lynn H. Rhoden

Nebulizer Parameters: L1508091201 0.005

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508091201 0.005

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2378906.0						51032.41	2.15%
YRADIAL	144952.7						3522.51	2.43%
Ga 417.206	879410.9						23547.78	2.68%
GaRADIAL	35056.0						853.38	2.43%
Ag 328.068†	49.7	0.00114	mg/L	0.001394	0.00114	mg/L	0.001394	122.46%
Al 396.153†	21.7	-0.0112	mg/L	0.03059	-0.0112	mg/L	0.03059	273.38%
As 188.979†	2.0	-0.00027	mg/L	0.001569	-0.00027	mg/L	0.001569	575.97%
Ba 233.527†	122093.8	0.801	mg/L	0.0075	0.801	mg/L	0.0075	0.94%
Be 234.861†	-13.8	0.00013	mg/L	0.000012	0.00013	mg/L	0.000012	8.98%
B 249.677†	10570.6	0.141	mg/L	0.0045	0.141	mg/L	0.0045	3.15%
Ca 227.546†	12831.8	39.7	mg/L	1.25	39.7	mg/L	1.25	3.14%
Cd 228.802†	-1.1	0.00012	mg/L	0.000106	0.00012	mg/L	0.000106	87.58%
Co 228.616†	-25.8	-0.00097	mg/L	0.000188	-0.00097	mg/L	0.000188	19.39%
Cr 267.716†	14.3	-0.00006	mg/L	0.000147	-0.00006	mg/L	0.000147	235.57%
Cu 327.393†	-303.5	-0.00042	mg/L	0.001950	-0.00042	mg/L	0.001950	464.18%
Fe 239.562†	2645.8	0.261	mg/L	0.0058	0.261	mg/L	0.0058	2.21%
Mg 279.077†	7904.4	4.02	mg/L	0.120	4.02	mg/L	0.120	2.99%
Mn 257.610†	20319.2	0.0270	mg/L	0.00080	0.0270	mg/L	0.00080	2.97%
Mo 202.031†	-18.3	0.00041	mg/L	0.000308	0.00041	mg/L	0.000308	74.24%
Ni 231.604†	30.0	-0.00070	mg/L	0.000414	-0.00070	mg/L	0.000414	58.98%
Pb 220.353†	23.5	0.00028	mg/L	0.001069	0.00028	mg/L	0.001069	387.99%
Sb 206.836†	7.1	0.00741	mg/L	0.001754	0.00741	mg/L	0.001754	23.66%
Se 196.026†	-12.3	-0.00674	mg/L	0.008900	-0.00674	mg/L	0.008900	131.97%
Si 251.611†	786.5	0.0355	mg/L	0.00576	0.0355	mg/L	0.00576	16.22%
Sn 189.927†	-61.8	-0.00669	mg/L	0.000726	-0.00669	mg/L	0.000726	10.85%
Ti 334.940†	-2909.6	0.00011	mg/L	0.000786	0.00011	mg/L	0.000786	718.14%
Tl 190.801†	-19.7	-0.00734	mg/L	0.003716	-0.00734	mg/L	0.003716	50.66%
V 290.880†	-382.3	-0.00143	mg/L	0.001046	-0.00143	mg/L	0.001046	72.97%
Zn 206.200†	304.1	0.00190	mg/L	0.000107	0.00190	mg/L	0.000107	5.64%
K 766.490†	2249.4	2.05	mg/L	0.049	2.05	mg/L	0.049	2.40%
Na 589.592†	615678.1	96.8	mg/L	0.24	96.8	mg/L	0.24	0.25%
Sr 407.771†	4430667.7	5.56	mg/L	0.126	5.56	mg/L	0.126	2.27%
Li 670.784†	5331.9	0.159	mg/L	0.0026	0.159	mg/L	0.0026	1.64%
P 214.914†	31.4	-0.0148	mg/L	0.00216	-0.0148	mg/L	0.00216	14.63%

Sequence No.: 3
Sample ID: L1508084102 0.01
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 44
Date Collected: 8/23/2015 12:04:33 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1508084102 0.01

Analyte	Back Pressure	Flow
All	200.0 kPa	0.31 L/min

Mean Data: L1508084102 0.01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2434854.0						23463.62	0.96%
YRADIAL	148778.6						3193.30	2.15%
Ga 417.206	883073.8						10711.28	1.21%
GaRADIAL	35742.7						524.53	1.47%
Ag 328.068†	145.8	0.00271	mg/L	0.000805	0.00271	mg/L	0.000805	29.69%
Al 396.153†	0.5	-0.0210	mg/L	0.03419	-0.0210	mg/L	0.03419	162.78%
As 188.979†	12.4	0.00331	mg/L	0.000829	0.00331	mg/L	0.000829	25.04%
Ba 233.527†	2796.3	0.0181	mg/L	0.00044	0.0181	mg/L	0.00044	2.41%
Be 234.861†	237.2	0.00012	mg/L	0.000170	0.00012	mg/L	0.000170	147.55%
B 249.677†	222.1	0.0110	mg/L	0.00058	0.0110	mg/L	0.00058	5.27%
Ca 227.546†	17909.2	55.3	mg/L	1.16	55.3	mg/L	1.16	2.10%
Cd 228.802†	2.6	0.00020	mg/L	0.000096	0.00020	mg/L	0.000096	48.52%
Co 228.616†	-26.0	-0.00073	mg/L	0.000653	-0.00073	mg/L	0.000653	89.21%

Approved: August 24, 2015

Kym H. Rhoden

Cr 267.716†	35.9	0.00009	mg/L	0.000154	0.00009	mg/L	0.000154	166.86%
Cu 327.393†	-17.9	0.00123	mg/L	0.002931	0.00123	mg/L	0.002931	237.52%
Fe 239.562†	11721.6	1.17	mg/L	0.008	1.17	mg/L	0.008	0.65%
Mg 279.077†	21215.1	10.9	mg/L	0.05	10.9	mg/L	0.05	0.47%
Mn 257.610†	80690.8	0.108	mg/L	0.0015	0.108	mg/L	0.0015	1.34%
Mo 202.031†	-8.5	0.00076	mg/L	0.000207	0.00076	mg/L	0.000207	27.08%
Ni 231.604†	24.2	-0.00078	mg/L	0.000170	-0.00078	mg/L	0.000170	21.87%
Pb 220.353†	31.7	0.00071	mg/L	0.002437	0.00071	mg/L	0.002437	342.65%
Sb 206.836†	2.3	0.00575	mg/L	0.002048	0.00575	mg/L	0.002048	35.61%
Se 196.026†	-8.9	-0.00381	mg/L	0.009142	-0.00381	mg/L	0.009142	240.06%
Si 251.611†	1645.0	0.0554	mg/L	0.00187	0.0554	mg/L	0.00187	3.37%
Sn 189.927†	-86.6	-0.00875	mg/L	0.000666	-0.00875	mg/L	0.000666	7.61%
Ti 334.940†	-3985.0	-0.00024	mg/L	0.000255	-0.00024	mg/L	0.000255	108.45%
Tl 190.801†	-23.4	-0.00889	mg/L	0.000640	-0.00889	mg/L	0.000640	7.20%
V 290.880†	-614.4	-0.00280	mg/L	0.000797	-0.00280	mg/L	0.000797	28.50%
Zn 206.200†	336.9	0.00230	mg/L	0.000120	0.00230	mg/L	0.000120	5.20%
K 766.490†	1019.6	0.749	mg/L	0.1250	0.749	mg/L	0.1250	16.68%
Na 589.592†	1355178.3	218	mg/L	6.1	218	mg/L	6.1	2.80%
Sr 407.771†	1010183.1	1.27	mg/L	0.045	1.27	mg/L	0.045	3.55%
Li 670.784†	990.4	0.0251	mg/L	0.00304	0.0251	mg/L	0.00304	12.14%
P 214.914†	33.0	-0.0140	mg/L	0.00361	-0.0140	mg/L	0.00361	25.72%

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Sequence No.: 4 **Autosampler Location: 45**
Sample ID: L1508084201 0.01 **Date Collected: 8/23/2015 12:06:56 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508084201 0.01

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508084201 0.01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2285353.3						82400.54	3.61%
YRADIAL	144288.3						8330.23	5.77%
Ga 417.206	809760.4						33636.48	4.15%
GaRADIAL	33713.0						1723.12	5.11%
Ag 328.068†	581.7	0.00441	mg/L	0.001112	0.00441	mg/L	0.001112	25.21%
Al 396.153†	66.2	0.00976	mg/L	0.022956	0.00976	mg/L	0.022956	235.25%
As 188.979†	6.7	0.00341	mg/L	0.001598	0.00341	mg/L	0.001598	46.89%
Ba 233.527†	333841.4	2.19	mg/L	0.019	2.19	mg/L	0.019	0.85%
Be 234.861†	21.1	0.00003	mg/L	0.000029	0.00003	mg/L	0.000029	104.48%
B 249.677†	25345.9	0.335	mg/L	0.0067	0.335	mg/L	0.0067	2.00%
Ca 227.546†	45185.0	139	mg/L	2.4	139	mg/L	2.4	1.70%
Cd 228.802†	5.9	0.00029	mg/L	0.000138	0.00029	mg/L	0.000138	48.12%
Co 228.616†	-58.3	-0.00213	mg/L	0.000383	-0.00213	mg/L	0.000383	17.99%
Cr 267.716†	108.4	0.00060	mg/L	0.000231	0.00060	mg/L	0.000231	38.62%
Cu 327.393†	-180.0	0.00024	mg/L	0.001395	0.00024	mg/L	0.001395	575.65%
Fe 239.562†	8466.3	0.847	mg/L	0.0148	0.847	mg/L	0.0148	1.75%
Mg 279.077†	25815.8	13.3	mg/L	0.08	13.3	mg/L	0.08	0.57%
Mn 257.610†	68065.3	0.0914	mg/L	0.00091	0.0914	mg/L	0.00091	0.99%
Mo 202.031†	-55.0	-0.00057	mg/L	0.000379	-0.00057	mg/L	0.000379	66.45%
Ni 231.604†	47.5	-0.00047	mg/L	0.000216	-0.00047	mg/L	0.000216	46.15%
Pb 220.353†	41.1	0.00132	mg/L	0.001520	0.00132	mg/L	0.001520	114.98%
Sb 206.836†	14.6	0.0101	mg/L	0.00329	0.0101	mg/L	0.00329	32.48%
Se 196.026†	-21.1	-0.0146	mg/L	0.00272	-0.0146	mg/L	0.00272	18.61%
Si 251.611†	6264.1	0.163	mg/L	0.0091	0.163	mg/L	0.0091	5.60%
Sn 189.927†	-146.2	-0.0137	mg/L	0.00016	-0.0137	mg/L	0.00016	1.18%
Ti 334.940†	-9108.2	-0.00127	mg/L	0.000284	-0.00127	mg/L	0.000284	22.45%
Tl 190.801†	-39.3	-0.0151	mg/L	0.00483	-0.0151	mg/L	0.00483	32.01%
V 290.880†	-234.2	-0.00076	mg/L	0.002356	-0.00076	mg/L	0.002356	310.25%
Zn 206.200†	779.3	0.00745	mg/L	0.000344	0.00745	mg/L	0.000344	4.61%
K 766.490†	6928.1	6.28	mg/L	0.051	6.28	mg/L	0.051	0.82%
Na 589.592†	2113138.2	349	mg/L	9.1	349	mg/L	9.1	2.60%
Sr 407.771†	Saturated2							
Li 670.784†	16018.7	0.489	mg/L	0.0039	0.489	mg/L	0.0039	0.80%
P 214.914†	39.1	-0.0113	mg/L	0.00262	-0.0113	mg/L	0.00262	23.15%

Approved: August 24, 2015

Kym H. Rhoden

User canceled analysis.

Approved: August 24, 2015

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Analysis Begun

Start Time: 8/23/2015 12:17:17 PM **Plasma On Time: 8/23/2015 7:45:07 AM**
Logged In Analyst: peicp2 **Technique: ICP Continuous**
Spectrometer Model: Optima 4300 DV, S/N 077N4011401 **Autosampler Model: Cetac**

Sample Information File: C:\pe\peicp2\Sample Information\SUNDAY.sif
Batch ID:
Results Data Set: 082315HR
Results Library: C:\pe\peicp2\Results\results2.mdb

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Sequence No.: 1 **Autosampler Location: 46**
Sample ID: L1508084401 0.002 **Date Collected: 8/23/2015 12:17:19 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508084401 0.002

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508084401 0.002

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2323275.6						80588.52	3.47%
YRADIAL	135285.6						5209.50	3.85%
Ga 417.206	866139.7						32603.65	3.76%
GaRADIAL	32920.8						1168.88	3.55%
Ag 328.068†	-69.3	0.00088	mg/L	0.000979	0.00088	mg/L	0.000979	111.14%
Al 396.153†	0.7	-0.0210	mg/L	0.02269	-0.0210	mg/L	0.02269	107.94%
As 188.979†	8.3	0.00122	mg/L	0.002764	0.00122	mg/L	0.002764	226.14%
Ba 233.527†	124096.0	0.814	mg/L	0.0088	0.814	mg/L	0.0088	1.08%
Be 234.861†	-132.8	0.00005	mg/L	0.000055	0.00005	mg/L	0.000055	120.33%
B 249.677†	3139.4	0.0451	mg/L	0.00107	0.0451	mg/L	0.00107	2.36%
Ca 227.546†	8169.9	25.3	mg/L	0.53	25.3	mg/L	0.53	2.09%
Cd 228.802†	11.6	0.00043	mg/L	0.000164	0.00043	mg/L	0.000164	38.16%
Co 228.616†	-32.1	-0.00111	mg/L	0.000150	-0.00111	mg/L	0.000150	13.47%
Cr 267.716†	43.4	0.00014	mg/L	0.000316	0.00014	mg/L	0.000316	223.86%
Cu 327.393†	-249.0	-0.00011	mg/L	0.000187	-0.00011	mg/L	0.000187	171.71%
Fe 239.562†	2411.1	0.237	mg/L	0.0050	0.237	mg/L	0.0050	2.10%
Mg 279.077†	5853.6	2.97	mg/L	0.073	2.97	mg/L	0.073	2.48%
Mn 257.610†	11924.5	0.0156	mg/L	0.00028	0.0156	mg/L	0.00028	1.82%
Mo 202.031†	-19.8	0.00037	mg/L	0.000442	0.00037	mg/L	0.000442	120.01%
Ni 231.604†	8.8	-0.00098	mg/L	0.000168	-0.00098	mg/L	0.000168	17.13%
Pb 220.353†	16.2	-0.00018	mg/L	0.001093	-0.00018	mg/L	0.001093	622.17%
Sb 206.836†	15.4	0.0104	mg/L	0.00170	0.0104	mg/L	0.00170	16.32%
Se 196.026†	-16.1	-0.0101	mg/L	0.00859	-0.0101	mg/L	0.00859	85.08%
Si 251.611†	799.4	0.0358	mg/L	0.00137	0.0358	mg/L	0.00137	3.82%
Sn 189.927†	-57.8	-0.00636	mg/L	0.002349	-0.00636	mg/L	0.002349	36.92%
Ti 334.940†	-1884.1	0.00047	mg/L	0.000201	0.00047	mg/L	0.000201	42.44%
Tl 190.801†	-18.4	-0.00682	mg/L	0.002563	-0.00682	mg/L	0.002563	37.59%
V 290.880†	-119.4	0.00014	mg/L	0.000331	0.00014	mg/L	0.000331	240.78%
Zn 206.200†	316.5	0.00205	mg/L	0.000168	0.00205	mg/L	0.000168	8.19%
K 766.490†	1113.1	0.983	mg/L	0.1115	0.983	mg/L	0.1115	11.34%
Na 589.592†	471650.8	73.8	mg/L	0.48	73.8	mg/L	0.48	0.65%
Sr 407.771†	3722536.7	4.67	mg/L	0.265	4.67	mg/L	0.265	5.67%
Li 670.784†	3239.1	0.0944	mg/L	0.00623	0.0944	mg/L	0.00623	6.59%
P 214.914†	3.0	-0.0275	mg/L	0.00822	-0.0275	mg/L	0.00822	29.89%

==========

Sequence No.: 2 **Autosampler Location: 47**
Sample ID: L1508091201 0.002 **Date Collected: 8/23/2015 12:19:48 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Approved: August 24, 2015

Lynn H. Rhoden

Nebulizer Parameters: L1508091201 0.002

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508091201 0.002

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2333131.2						129940.15	5.57%
YRADIAL	141295.3						3081.64	2.18%
Ga 417.206	883802.5						55716.44	6.30%
GaRADIAL	34349.5						836.30	2.43%
Ag 328.068†	-412.6	0.00007	mg/L	0.000486	0.00007	mg/L	0.000486	655.84%
Al 396.153†	31.9	-0.00642	mg/L	0.026132	-0.00642	mg/L	0.026132	406.81%
As 188.979†	2.8	-0.00063	mg/L	0.002750	-0.00063	mg/L	0.002750	439.16%
Ba 233.527†	49342.3	0.323	mg/L	0.0024	0.323	mg/L	0.0024	0.75%
Be 234.861†	-143.9	0.00007	mg/L	0.000075	0.00007	mg/L	0.000075	114.21%
B 249.677†	4262.1	0.0592	mg/L	0.00297	0.0592	mg/L	0.00297	5.03%
Ca 227.546†	4997.6	15.5	mg/L	0.71	15.5	mg/L	0.71	4.60%
Cd 228.802†	10.5	0.00041	mg/L	0.000048	0.00041	mg/L	0.000048	11.65%
Co 228.616†	-32.5	-0.00095	mg/L	0.000380	-0.00095	mg/L	0.000380	39.93%
Cr 267.716†	11.5	-0.00008	mg/L	0.000200	-0.00008	mg/L	0.000200	243.92%
Cu 327.393†	162.0	0.00215	mg/L	0.001299	0.00215	mg/L	0.001299	60.35%
Fe 239.562†	1132.5	0.108	mg/L	0.0127	0.108	mg/L	0.0127	11.71%
Mg 279.077†	3394.3	1.70	mg/L	0.012	1.70	mg/L	0.012	0.71%
Mn 257.610†	7880.3	0.0102	mg/L	0.00046	0.0102	mg/L	0.00046	4.56%
Mo 202.031†	-12.0	0.00058	mg/L	0.000124	0.00058	mg/L	0.000124	21.23%
Ni 231.604†	-3.9	-0.00115	mg/L	0.000354	-0.00115	mg/L	0.000354	30.81%
Pb 220.353†	22.8	0.00025	mg/L	0.001181	0.00025	mg/L	0.001181	476.82%
Sb 206.836†	5.4	0.00681	mg/L	0.004791	0.00681	mg/L	0.004791	70.38%
Se 196.026†	-11.6	-0.00607	mg/L	0.007463	-0.00607	mg/L	0.007463	123.04%
Si 251.611†	44.2	0.0183	mg/L	0.00136	0.0183	mg/L	0.00136	7.45%
Sn 189.927†	-27.9	-0.00389	mg/L	0.001055	-0.00389	mg/L	0.001055	27.12%
Ti 334.940†	-1512.2	0.00031	mg/L	0.000666	0.00031	mg/L	0.000666	212.80%
Tl 190.801†	-13.3	-0.00483	mg/L	0.002363	-0.00483	mg/L	0.002363	48.92%
V 290.880†	-124.1	0.00014	mg/L	0.001369	0.00014	mg/L	0.001369	966.74%
Zn 206.200†	289.2	0.00172	mg/L	0.000195	0.00172	mg/L	0.000195	11.29%
K 766.490†	919.5	0.833	mg/L	0.0230	0.833	mg/L	0.0230	2.76%
Na 589.592†	252687.7	39.3	mg/L	0.55	39.3	mg/L	0.55	1.39%
Sr 407.771†	1785730.1	2.24	mg/L	0.017	2.24	mg/L	0.017	0.74%
Li 670.784†	2286.2	0.0650	mg/L	0.00305	0.0650	mg/L	0.00305	4.69%
P 214.914†	17.8	-0.0208	mg/L	0.00622	-0.0208	mg/L	0.00622	29.82%

Sequence No.: 3 **Autosampler Location: 48**
Sample ID: L1508084102 0.005 **Date Collected: 8/23/2015 12:22:14 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508084102 0.005

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508084102 0.005

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2362215.1						30287.29	1.28%
YRADIAL	142446.1						5250.78	3.69%
Ga 417.206	876192.1						15722.16	1.79%
GaRADIAL	33723.4						1034.55	3.07%
Ag 328.068†	-251.8	0.00116	mg/L	0.000601	0.00116	mg/L	0.000601	51.64%
Al 396.153†	90.0	0.0208	mg/L	0.01404	0.0208	mg/L	0.01404	67.59%
As 188.979†	4.8	0.00034	mg/L	0.000707	0.00034	mg/L	0.000707	209.37%
Ba 233.527†	1499.1	0.00963	mg/L	0.000475	0.00963	mg/L	0.000475	4.93%
Be 234.861†	28.7	0.00009	mg/L	0.000030	0.00009	mg/L	0.000030	34.27%
B 249.677†	120.5	0.00749	mg/L	0.000647	0.00749	mg/L	0.000647	8.64%
Ca 227.546†	8754.2	27.1	mg/L	1.17	27.1	mg/L	1.17	4.32%
Cd 228.802†	6.0	0.00030	mg/L	0.000186	0.00030	mg/L	0.000186	62.62%
Co 228.616†	-22.8	-0.00065	mg/L	0.000374	-0.00065	mg/L	0.000374	57.54%

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Cr 267.716†	49.5	0.00018	mg/L	0.000131	0.00018	mg/L	0.000131	70.78%
Cu 327.393†	12.3	0.00137	mg/L	0.001010	0.00137	mg/L	0.001010	73.89%
Fe 239.562†	6020.4	0.600	mg/L	0.0115	0.600	mg/L	0.0115	1.91%
Mg 279.077†	11226.0	5.74	mg/L	0.125	5.74	mg/L	0.125	2.18%
Mn 257.610†	40884.9	0.0547	mg/L	0.00044	0.0547	mg/L	0.00044	0.81%
Mo 202.031†	-11.4	0.00064	mg/L	0.000545	0.00064	mg/L	0.000545	85.61%
Ni 231.604†	15.1	-0.00090	mg/L	0.000338	-0.00090	mg/L	0.000338	37.61%
Pb 220.353†	11.4	-0.00050	mg/L	0.002036	-0.00050	mg/L	0.002036	406.97%
Sb 206.836†	7.2	0.00748	mg/L	0.001159	0.00748	mg/L	0.001159	15.49%
Se 196.026†	-8.8	-0.00369	mg/L	0.007142	-0.00369	mg/L	0.007142	193.39%
Si 251.611†	622.3	0.0317	mg/L	0.00227	0.0317	mg/L	0.00227	7.17%
Sn 189.927†	-51.1	-0.00581	mg/L	0.001156	-0.00581	mg/L	0.001156	19.89%
Ti 334.940†	-2424.7	-0.00009	mg/L	0.000247	-0.00009	mg/L	0.000247	277.08%
Tl 190.801†	-15.8	-0.00584	mg/L	0.003601	-0.00584	mg/L	0.003601	61.71%
V 290.880†	-346.3	-0.00118	mg/L	0.000286	-0.00118	mg/L	0.000286	24.32%
Zn 206.200†	283.7	0.00167	mg/L	0.000147	0.00167	mg/L	0.000147	8.78%
K 766.490†	595.8	0.444	mg/L	0.0429	0.444	mg/L	0.0429	9.67%
Na 589.592†	747895.7	118	mg/L	3.3	118	mg/L	3.3	2.76%
Sr 407.771†	542920.2	0.683	mg/L	0.0190	0.683	mg/L	0.0190	2.79%
Li 670.784†	526.0	0.0107	mg/L	0.00417	0.0107	mg/L	0.00417	38.91%
P 214.914†	19.0	-0.0203	mg/L	0.00513	-0.0203	mg/L	0.00513	25.30%

Sequence No.: 4
Sample ID: L1508084201 0.002
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 49
Date Collected: 8/23/2015 12:24:36 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1508084201 0.002

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508084201 0.002

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	2407900.2						84781.82	3.52%
YRADIAL	142910.6						886.35	0.62%
Ga 417.206	900162.2						37105.53	4.12%
GaRADIAL	35158.8						199.74	0.57%
Ag 328.068†	-175.0	0.00053	mg/L	0.000840	0.00053	mg/L	0.000840	158.01%
Al 396.153†	-25.4	-0.0332	mg/L	0.03259	-0.0332	mg/L	0.03259	98.16%
As 188.979†	5.4	0.00038	mg/L	0.002442	0.00038	mg/L	0.002442	635.91%
Ba 233.527†	69425.2	0.455	mg/L	0.0022	0.455	mg/L	0.0022	0.47%
Be 234.861†	-79.2	0.00010	mg/L	0.000041	0.00010	mg/L	0.000041	41.41%
B 249.677†	5153.1	0.0709	mg/L	0.00434	0.0709	mg/L	0.00434	6.12%
Ca 227.546†	8632.9	26.7	mg/L	1.32	26.7	mg/L	1.32	4.95%
Cd 228.802†	1.4	0.00018	mg/L	0.000150	0.00018	mg/L	0.000150	83.10%
Co 228.616†	-20.3	-0.00074	mg/L	0.000111	-0.00074	mg/L	0.000111	15.06%
Cr 267.716†	26.4	0.00002	mg/L	0.000102	0.00002	mg/L	0.000102	483.59%
Cu 327.393†	-56.0	0.00095	mg/L	0.002282	0.00095	mg/L	0.002282	240.53%
Fe 239.562†	1811.5	0.177	mg/L	0.0080	0.177	mg/L	0.0080	4.51%
Mg 279.077†	5688.1	2.88	mg/L	0.085	2.88	mg/L	0.085	2.96%
Mn 257.610†	14007.0	0.0184	mg/L	0.00083	0.0184	mg/L	0.00083	4.52%
Mo 202.031†	-27.2	0.00016	mg/L	0.000203	0.00016	mg/L	0.000203	129.92%
Ni 231.604†	-4.5	-0.00115	mg/L	0.000174	-0.00115	mg/L	0.000174	15.04%
Pb 220.353†	2.7	-0.00102	mg/L	0.000501	-0.00102	mg/L	0.000501	48.94%
Sb 206.836†	6.3	0.00712	mg/L	0.003387	0.00712	mg/L	0.003387	47.54%
Se 196.026†	-5.3	-0.00052	mg/L	0.004902	-0.00052	mg/L	0.004902	940.02%
Si 251.611†	841.9	0.0368	mg/L	0.00233	0.0368	mg/L	0.00233	6.33%
Sn 189.927†	-49.6	-0.00568	mg/L	0.000736	-0.00568	mg/L	0.000736	12.95%
Ti 334.940†	-2011.5	0.00041	mg/L	0.000441	0.00041	mg/L	0.000441	108.64%
Tl 190.801†	-21.4	-0.00799	mg/L	0.002608	-0.00799	mg/L	0.002608	32.62%
V 290.880†	-354.8	-0.00124	mg/L	0.001370	-0.00124	mg/L	0.001370	110.33%
Zn 206.200†	296.8	0.00181	mg/L	0.000183	0.00181	mg/L	0.000183	10.11%
K 766.490†	1358.8	1.22	mg/L	0.024	1.22	mg/L	0.024	1.95%
Na 589.592†	439992.9	68.8	mg/L	0.18	68.8	mg/L	0.18	0.26%
Sr 407.771†	3479511.7	4.37	mg/L	0.029	4.37	mg/L	0.029	0.67%
Li 670.784†	3317.3	0.0969	mg/L	0.00184	0.0969	mg/L	0.00184	1.90%
P 214.914†	32.7	-0.0142	mg/L	0.00283	-0.0142	mg/L	0.00283	19.98%

Approved: August 24, 2015

Sequence No.: 5
Sample ID: CCV
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 6
Date Collected: 8/23/2015 12:26:59 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2346092.9						107992.01	4.60%
YRADIAL	139440.1						2246.59	1.61%
Ga 417.206	875587.4						45590.34	5.21%
GaRADIAL	34656.7						523.12	1.51%
Ag 328.068†	109405.4	0.400	mg/L	0.0028	0.400	mg/L	0.0028	0.70%
QC value within limits for Ag 328.068 Recovery = 100.11%								
Al 396.153†	21164.7	9.84	mg/L	0.088	9.84	mg/L	0.088	0.89%
QC value within limits for Al 396.153 Recovery = 98.36%								
As 188.979†	1338.0	0.380	mg/L	0.0214	0.380	mg/L	0.0214	5.63%
QC value within limits for As 188.979 Recovery = 94.96%								
Ba 233.527†	150362.2	0.986	mg/L	0.0119	0.986	mg/L	0.0119	1.21%
QC value within limits for Ba 233.527 Recovery = 98.64%								
Be 234.861†	66042.6	0.0485	mg/L	0.00053	0.0485	mg/L	0.00053	1.09%
QC value within limits for Be 234.861 Recovery = 97.04%								
B 249.677†	36991.9	0.495	mg/L	0.0033	0.495	mg/L	0.0033	0.66%
QC value within limits for B 249.677 Recovery = 98.97%								
Ca 227.546†	3043.1	9.55	mg/L	0.535	9.55	mg/L	0.535	5.61%
QC value within limits for Ca 227.546 Recovery = 95.49%								
Cd 228.802†	1939.4	0.0476	mg/L	0.00282	0.0476	mg/L	0.00282	5.93%
QC value within limits for Cd 228.802 Recovery = 95.24%								
Co 228.616†	9224.1	0.195	mg/L	0.0108	0.195	mg/L	0.0108	5.54%
QC value within limits for Co 228.616 Recovery = 97.28%								
Cr 267.716†	71246.7	0.497	mg/L	0.0052	0.497	mg/L	0.0052	1.05%
QC value within limits for Cr 267.716 Recovery = 99.32%								
Cu 327.393†	90415.9	0.501	mg/L	0.0046	0.501	mg/L	0.0046	0.91%
QC value within limits for Cu 327.393 Recovery = 100.25%								
Fe 239.562†	39361.4	3.96	mg/L	0.031	3.96	mg/L	0.031	0.77%
QC value within limits for Fe 239.562 Recovery = 98.94%								
Mg 279.077†	19072.0	9.78	mg/L	0.127	9.78	mg/L	0.127	1.30%
QC value within limits for Mg 279.077 Recovery = 97.82%								
Mn 257.610†	366910.8	0.495	mg/L	0.0047	0.495	mg/L	0.0047	0.94%
QC value within limits for Mn 257.610 Recovery = 98.92%								
Mo 202.031†	35591.1	1.01	mg/L	0.053	1.01	mg/L	0.053	5.29%
QC value within limits for Mo 202.031 Recovery = 100.65%								
Ni 231.604†	38156.5	0.499	mg/L	0.0050	0.499	mg/L	0.0050	1.01%
QC value within limits for Ni 231.604 Recovery = 99.78%								
Pb 220.353†	7868.2	0.494	mg/L	0.0274	0.494	mg/L	0.0274	5.55%
QC value within limits for Pb 220.353 Recovery = 98.73%								
Sb 206.836†	3130.1	1.12	mg/L	0.067	1.12	mg/L	0.067	6.00%
QC value within limits for Sb 206.836 Recovery = 93.64%								
Se 196.026†	449.2	0.403	mg/L	0.0221	0.403	mg/L	0.0221	5.48%
QC value within limits for Se 196.026 Recovery = 100.71%								
Si 251.611†	211850.6	4.92	mg/L	0.024	4.92	mg/L	0.024	0.49%
QC value within limits for Si 251.611 Recovery = 98.48%								
Sn 189.927†	11875.8	0.981	mg/L	0.0541	0.981	mg/L	0.0541	5.52%
QC value within limits for Sn 189.927 Recovery = 98.14%								
Ti 334.940†	784235.2	0.986	mg/L	0.0074	0.986	mg/L	0.0074	0.76%
QC value within limits for Ti 334.940 Recovery = 98.60%								
Tl 190.801†	1291.6	0.512	mg/L	0.0274	0.512	mg/L	0.0274	5.35%
QC value within limits for Tl 190.801 Recovery = 102.40%								
V 290.880†	167973.9	0.990	mg/L	0.0076	0.990	mg/L	0.0076	0.77%
QC value within limits for V 290.880 Recovery = 99.01%								
Zn 206.200†	85106.5	0.993	mg/L	0.0187	0.993	mg/L	0.0187	1.88%
QC value within limits for Zn 206.200 Recovery = 99.33%								
K 766.490†	51385.9	49.4	mg/L	0.50	49.4	mg/L	0.50	1.01%

Approved: August 24, 2015

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   QC value within limits for K 766.490  Recovery = 98.86%
Na 589.592†          329856.3        51.4 mg/L          1.85        51.4 mg/L          1.85   3.59%
   QC value within limits for Na 589.592  Recovery = 102.77%
Sr 407.771†          816215.0        1.03 mg/L         0.040        1.03 mg/L         0.040   3.91%
   QC value within limits for Sr 407.771  Recovery = 102.63%
Li 670.784†           32842.7        1.01 mg/L         0.006        1.01 mg/L         0.006   0.62%
   QC value within limits for Li 670.784  Recovery = 100.80%
P 214.914†            21839.9        9.75 mg/L         0.529        9.75 mg/L         0.529   5.43%
   QC value within limits for P 214.914  Recovery = 97.50%
All analyte(s) passed QC.
```

Sequence No.: 6 **Autosampler Location: 1**
Sample ID: CCB **Date Collected: 8/23/2015 12:29:24 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCB

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2244861.8						129794.49	5.78%
YRADIAL	140638.9						5295.33	3.77%
Ga 417.206	885316.1						57434.69	6.49%
GaRADIAL	33764.9						1023.00	3.03%
Ag 328.068†	-311.4	0.00085	mg/L	0.000686	0.00085	mg/L	0.000686	80.82%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	-12.0	-0.0270	mg/L	0.00304	-0.0270	mg/L	0.00304	11.26%
QC value within limits for Al 396.153 Recovery = Not calculated								
As 188.979†	-5.0	-0.00324	mg/L	0.002310	-0.00324	mg/L	0.002310	71.37%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	197.0	0.00111	mg/L	0.000150	0.00111	mg/L	0.000150	13.54%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 234.861†	-213.7	0.00004	mg/L	0.000056	0.00004	mg/L	0.000056	140.99%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	284.2	0.00730	mg/L	0.000435	0.00730	mg/L	0.000435	5.96%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	-23.8	0.0224	mg/L	0.02998	0.0224	mg/L	0.02998	134.11%
QC value within limits for Ca 227.546 Recovery = Not calculated								
Cd 228.802†	6.2	0.00032	mg/L	0.000028	0.00032	mg/L	0.000028	8.93%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	-19.7	-0.00057	mg/L	0.000187	-0.00057	mg/L	0.000187	32.73%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	111.7	0.00062	mg/L	0.001199	0.00062	mg/L	0.001199	194.30%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	-10.1	0.00121	mg/L	0.000137	0.00121	mg/L	0.000137	11.33%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	-6.6	-0.00644	mg/L	0.000315	-0.00644	mg/L	0.000315	4.89%
QC value within limits for Fe 239.562 Recovery = Not calculated								
Mg 279.077†	115.5	0.00675	mg/L	0.005052	0.00675	mg/L	0.005052	74.80%
QC value within limits for Mg 279.077 Recovery = Not calculated								
Mn 257.610†	-468.3	-0.00109	mg/L	0.000110	-0.00109	mg/L	0.000110	10.15%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	31.9	0.00181	mg/L	0.000332	0.00181	mg/L	0.000332	18.33%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	-2.2	-0.00113	mg/L	0.000133	-0.00113	mg/L	0.000133	11.81%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	-20.4	-0.00245	mg/L	0.001337	-0.00245	mg/L	0.001337	54.63%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	17.2	0.0110	mg/L	0.00156	0.0110	mg/L	0.00156	14.11%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	-3.8	0.00084	mg/L	0.000724	0.00084	mg/L	0.000724	86.20%
QC value within limits for Se 196.026 Recovery = Not calculated								
Si 251.611†	-296.0	0.0104	mg/L	0.00250	0.0104	mg/L	0.00250	24.12%
QC value within limits for Si 251.611 Recovery = Not calculated								
Sn 189.927†	28.5	0.00078	mg/L	0.000547	0.00078	mg/L	0.000547	70.25%

Approved: August 24, 2015

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   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†                98.9     0.00134 mg/L      0.000515     0.00134 mg/L      0.000515  38.41%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†                -8.8    -0.00304 mg/L      0.004724    -0.00304 mg/L      0.004724 155.18%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†               545.0     0.00412 mg/L      0.002944     0.00412 mg/L      0.002944  71.47%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†                25.2    -0.00134 mg/L      0.000189    -0.00134 mg/L      0.000189  14.07%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†                 83.3      0.0713 mg/L       0.14425      0.0713 mg/L       0.14425 202.29%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†               728.0      0.0912 mg/L       0.02597      0.0912 mg/L       0.02597  28.49%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†              1830.8     0.00488 mg/L      0.000143     0.00488 mg/L      0.000143   2.93%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†               194.4     0.00049 mg/L      0.004444     0.00049 mg/L      0.004444 905.47%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†                  3.2     -0.0274 mg/L       0.00789     -0.0274 mg/L       0.00789  28.78%
   QC value within limits for P 214.914  Recovery = Not calculated
All analyte(s) passed QC.
```

Approved: August 24, 2015

Lynn H. Rhoden

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Analysis Begun

Start Time: 8/23/2015 12:32:57 PM **Plasma On Time: 8/23/2015 7:45:07 AM**
Logged In Analyst: peicp2 **Technique: ICP Continuous**
Spectrometer Model: Optima 4300 DV, S/N 077N4011401 **Autosampler Model: Cetac**

Sample Information File: C:\pe\peicp2\Sample Information\SUNDAY.sif
Batch ID:
Results Data Set: 082315HR
Results Library: C:\pe\peicp2\Results\results2.mdb

==========

Sequence No.: 1 **Autosampler Location: 50**
Sample ID: L1508084401 0.001 **Date Collected: 8/23/2015 12:32:59 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508084401 0.001

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508084401 0.001

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2353665.6						57256.25	2.43%
YRADIAL	141806.6						1076.05	0.76%
Ga 417.206	893482.9						23930.47	2.68%
GaRADIAL	34814.5						444.08	1.28%
Ag 328.068†	-70.8	0.00129	mg/L	0.000535	0.00129	mg/L	0.000535	41.56%
Al 396.153†	-0.7	-0.0217	mg/L	0.01445	-0.0217	mg/L	0.01445	66.61%
As 188.979†	12.2	0.00204	mg/L	0.001675	0.00204	mg/L	0.001675	81.92%
Ba 233.527†	64677.4	0.424	mg/L	0.0013	0.424	mg/L	0.0013	0.30%
Be 234.861†	-124.5	0.00008	mg/L	0.000020	0.00008	mg/L	0.000020	25.54%
B 249.677†	1661.4	0.0256	mg/L	0.00062	0.0256	mg/L	0.00062	2.42%
Ca 227.546†	4086.8	12.7	mg/L	0.32	12.7	mg/L	0.32	2.53%
Cd 228.802†	4.5	0.00025	mg/L	0.000119	0.00025	mg/L	0.000119	48.22%
Co 228.616†	-15.8	-0.00063	mg/L	0.000081	-0.00063	mg/L	0.000081	12.81%
Cr 267.716†	-0.2	-0.00016	mg/L	0.000243	-0.00016	mg/L	0.000243	148.29%
Cu 327.393†	-344.0	-0.00063	mg/L	0.002115	-0.00063	mg/L	0.002115	334.39%
Fe 239.562†	1246.7	0.120	mg/L	0.0042	0.120	mg/L	0.0042	3.47%
Mg 279.077†	3134.5	1.56	mg/L	0.020	1.56	mg/L	0.020	1.29%
Mn 257.610†	5834.5	0.00742	mg/L	0.000198	0.00742	mg/L	0.000198	2.66%
Mo 202.031†	-8.6	0.00068	mg/L	0.000365	0.00068	mg/L	0.000365	53.99%
Ni 231.604†	61.3	-0.00029	mg/L	0.000332	-0.00029	mg/L	0.000332	112.74%
Pb 220.353†	13.8	-0.00031	mg/L	0.000752	-0.00031	mg/L	0.000752	240.06%
Sb 206.836†	10.9	0.00877	mg/L	0.003198	0.00877	mg/L	0.003198	36.48%
Se 196.026†	-9.9	-0.00456	mg/L	0.012707	-0.00456	mg/L	0.012707	278.78%
Si 251.611†	179.6	0.0214	mg/L	0.00066	0.0214	mg/L	0.00066	3.06%
Sn 189.927†	-19.4	-0.00318	mg/L	0.000425	-0.00318	mg/L	0.000425	13.35%
Ti 334.940†	-982.0	0.00080	mg/L	0.000132	0.00080	mg/L	0.000132	16.57%
Tl 190.801†	-6.7	-0.00226	mg/L	0.003395	-0.00226	mg/L	0.003395	149.98%
V 290.880†	-163.2	-0.00009	mg/L	0.000722	-0.00009	mg/L	0.000722	821.99%
Zn 206.200†	203.5	0.00073	mg/L	0.000110	0.00073	mg/L	0.000110	15.14%
K 766.490†	603.1	0.532	mg/L	0.0148	0.532	mg/L	0.0148	2.78%
Na 589.592†	239674.7	37.2	mg/L	0.16	37.2	mg/L	0.16	0.43%
Sr 407.771†	1885350.5	2.37	mg/L	0.021	2.37	mg/L	0.021	0.88%
Li 670.784†	1604.9	0.0440	mg/L	0.00269	0.0440	mg/L	0.00269	6.12%
P 214.914†	19.8	-0.0200	mg/L	0.00305	-0.0200	mg/L	0.00305	15.30%

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Sequence No.: 2 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 8/23/2015 12:35:23 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Approved: August 24, 2015

Lynn H. Rhoden

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2324107.2						63680.02	2.74%
YRADIAL	139924.2						3614.94	2.58%
Ga 417.206	868593.0						27958.72	3.22%
GaRADIAL	34578.4						742.36	2.15%
Ag 328.068†	109771.8	0.402	mg/L	0.0029	0.402	mg/L	0.0029	0.73%
QC value within limits for Ag 328.068 Recovery = 100.45%								
Al 396.153†	21555.1	10.0	mg/L	0.06	10.0	mg/L	0.06	0.63%
QC value within limits for Al 396.153 Recovery = 100.19%								
As 188.979†	1301.9	0.370	mg/L	0.0087	0.370	mg/L	0.0087	2.36%
QC value within limits for As 188.979 Recovery = 92.38%								
Ba 233.527†	151319.5	0.993	mg/L	0.0037	0.993	mg/L	0.0037	0.37%
QC value within limits for Ba 233.527 Recovery = 99.27%								
Be 234.861†	66236.6	0.0486	mg/L	0.00008	0.0486	mg/L	0.00008	0.17%
QC value within limits for Be 234.861 Recovery = 97.29%								
B 249.677†	37169.8	0.497	mg/L	0.0055	0.497	mg/L	0.0055	1.10%
QC value within limits for B 249.677 Recovery = 99.49%								
Ca 227.546†	2992.2	9.39	mg/L	0.150	9.39	mg/L	0.150	1.60%
QC value within limits for Ca 227.546 Recovery = 93.91%								
Cd 228.802†	1897.1	0.0466	mg/L	0.00104	0.0466	mg/L	0.00104	2.22%
QC value within limits for Cd 228.802 Recovery = 93.19%								
Co 228.616†	9051.6	0.191	mg/L	0.0036	0.191	mg/L	0.0036	1.91%
QC value within limits for Co 228.616 Recovery = 95.42%								
Cr 267.716†	71561.3	0.499	mg/L	0.0011	0.499	mg/L	0.0011	0.22%
QC value within limits for Cr 267.716 Recovery = 99.76%								
Cu 327.393†	90771.9	0.503	mg/L	0.0051	0.503	mg/L	0.0051	1.02%
QC value within limits for Cu 327.393 Recovery = 100.64%								
Fe 239.562†	40049.8	4.03	mg/L	0.038	4.03	mg/L	0.038	0.95%
QC value within limits for Fe 239.562 Recovery = 100.67%								
Mg 279.077†	19153.8	9.82	mg/L	0.082	9.82	mg/L	0.082	0.83%
QC value within limits for Mg 279.077 Recovery = 98.24%								
Mn 257.610†	370092.3	0.499	mg/L	0.0028	0.499	mg/L	0.0028	0.56%
QC value within limits for Mn 257.610 Recovery = 99.78%								
Mo 202.031†	34918.0	0.987	mg/L	0.0181	0.987	mg/L	0.0181	1.83%
QC value within limits for Mo 202.031 Recovery = 98.75%								
Ni 231.604†	38224.4	0.500	mg/L	0.0029	0.500	mg/L	0.0029	0.58%
QC value within limits for Ni 231.604 Recovery = 99.96%								
Pb 220.353†	7673.6	0.481	mg/L	0.0074	0.481	mg/L	0.0074	1.53%
QC value within limits for Pb 220.353 Recovery = 96.30%								
Sb 206.836†	3046.5	1.09	mg/L	0.021	1.09	mg/L	0.021	1.89%
QC value within limits for Sb 206.836 Recovery = 91.15%								
Se 196.026†	441.3	0.396	mg/L	0.0107	0.396	mg/L	0.0107	2.71%
QC value within limits for Se 196.026 Recovery = 98.98%								
Si 251.611†	212746.4	4.94	mg/L	0.018	4.94	mg/L	0.018	0.36%
QC value within limits for Si 251.611 Recovery = 98.90%								
Sn 189.927†	11622.7	0.960	mg/L	0.0163	0.960	mg/L	0.0163	1.70%
QC value within limits for Sn 189.927 Recovery = 96.05%								
Ti 334.940†	790661.2	0.994	mg/L	0.0045	0.994	mg/L	0.0045	0.46%
QC value within limits for Ti 334.940 Recovery = 99.40%								
Tl 190.801†	1260.6	0.500	mg/L	0.0113	0.500	mg/L	0.0113	2.26%
QC value within limits for Tl 190.801 Recovery = 100.01%								
V 290.880†	169185.7	0.997	mg/L	0.0051	0.997	mg/L	0.0051	0.51%
QC value within limits for V 290.880 Recovery = 99.72%								
Zn 206.200†	85331.6	0.996	mg/L	0.0062	0.996	mg/L	0.0062	0.62%
QC value within limits for Zn 206.200 Recovery = 99.59%								
K 766.490†	52261.1	50.3	mg/L	0.38	50.3	mg/L	0.38	0.75%
QC value within limits for K 766.490 Recovery = 100.56%								
Na 589.592†	327822.8	51.1	mg/L	0.76	51.1	mg/L	0.76	1.50%
QC value within limits for Na 589.592 Recovery = 102.13%								
Sr 407.771†	805129.4	1.01	mg/L	0.016	1.01	mg/L	0.016	1.57%
QC value within limits for Sr 407.771 Recovery = 101.24%								
Li 670.784†	33631.0	1.03	mg/L	0.004	1.03	mg/L	0.004	0.43%
QC value within limits for Li 670.784 Recovery = 103.23%								
P 214.914†	21312.4	9.51	mg/L	0.149	9.51	mg/L	0.149	1.57%
QC value within limits for P 214.914 Recovery = 95.14%								

Approved: August 24, 2015

Lynn H. Rhoden

All analyte(s) passed QC.

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Sequence No.: 3 **Autosampler Location: 1**
Sample ID: CCB **Date Collected: 8/23/2015 12:37:48 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCB

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2407418.5						14697.30	0.61%
YRADIAL	143363.9						6242.93	4.35%
Ga 417.206	950236.2						5959.13	0.63%
GaRADIAL	34265.9						1245.57	3.64%
Ag 328.068†	-262.5	0.00102	mg/L	0.000131	0.00102	mg/L	0.000131	12.83%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	-22.2	-0.0318	mg/L	0.02711	-0.0318	mg/L	0.02711	85.26%
QC value within limits for Al 396.153 Recovery = Not calculated								
As 188.979†	12.2	0.00171	mg/L	0.003787	0.00171	mg/L	0.003787	221.43%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	140.5	0.00074	mg/L	0.000106	0.00074	mg/L	0.000106	14.36%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 234.861†	-105.2	0.00012	mg/L	0.000013	0.00012	mg/L	0.000013	10.81%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	362.1	0.00831	mg/L	0.002698	0.00831	mg/L	0.002698	32.47%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	-14.4	0.0515	mg/L	0.03884	0.0515	mg/L	0.03884	75.41%
QC value within limits for Ca 227.546 Recovery = Not calculated								
Cd 228.802†	7.6	0.00033	mg/L	0.000142	0.00033	mg/L	0.000142	43.64%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	-27.9	-0.00074	mg/L	0.000223	-0.00074	mg/L	0.000223	30.02%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	-16.4	-0.00028	mg/L	0.000517	-0.00028	mg/L	0.000517	187.04%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	240.2	0.00259	mg/L	0.001110	0.00259	mg/L	0.001110	42.89%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	-9.3	-0.00671	mg/L	0.002495	-0.00671	mg/L	0.002495	37.18%
QC value within limits for Fe 239.562 Recovery = Not calculated								
Mg 279.077†	123.7	0.0109	mg/L	0.03175	0.0109	mg/L	0.03175	290.04%
QC value within limits for Mg 279.077 Recovery = Not calculated								
Mn 257.610†	-452.3	-0.00106	mg/L	0.000052	-0.00106	mg/L	0.000052	4.92%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	11.6	0.00124	mg/L	0.000548	0.00124	mg/L	0.000548	44.33%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	3.6	-0.00105	mg/L	0.000093	-0.00105	mg/L	0.000093	8.85%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	23.2	0.00028	mg/L	0.000493	0.00028	mg/L	0.000493	176.85%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	16.8	0.0109	mg/L	0.00480	0.0109	mg/L	0.00480	44.13%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	-2.8	0.00174	mg/L	0.002958	0.00174	mg/L	0.002958	170.22%
QC value within limits for Se 196.026 Recovery = Not calculated								
Si 251.611†	-347.1	0.00917	mg/L	0.000366	0.00917	mg/L	0.000366	3.99%
QC value within limits for Si 251.611 Recovery = Not calculated								
Sn 189.927†	47.0	0.00231	mg/L	0.000769	0.00231	mg/L	0.000769	33.30%
QC value within limits for Sn 189.927 Recovery = Not calculated								
Ti 334.940†	-90.1	0.00111	mg/L	0.000303	0.00111	mg/L	0.000303	27.41%
QC value within limits for Ti 334.940 Recovery = Not calculated								
Tl 190.801†	-8.2	-0.00280	mg/L	0.000852	-0.00280	mg/L	0.000852	30.49%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 290.880†	87.1	0.00142	mg/L	0.001676	0.00142	mg/L	0.001676	117.89%
QC value within limits for V 290.880 Recovery = Not calculated								
Zn 206.200†	43.1	-0.00114	mg/L	0.000131	-0.00114	mg/L	0.000131	11.42%
QC value within limits for Zn 206.200 Recovery = Not calculated								

Approved: August 24, 2015

Lynn H. Rhoden

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K 766.490†                 3.5    -0.00508 mg/L      0.054627    -0.00508 mg/L      0.054627 >999.9%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†              724.6      0.0906 mg/L       0.02572      0.0906 mg/L       0.02572  28.37%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†             1564.4     0.00454 mg/L      0.000137     0.00454 mg/L      0.000137   3.01%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†               44.0    -0.00415 mg/L      0.006112    -0.00415 mg/L      0.006112 147.29%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†                24.2     -0.0180 mg/L       0.00704     -0.0180 mg/L       0.00704  39.16%
   QC value within limits for P 214.914  Recovery = Not calculated
All analyte(s) passed QC.
```

Approved: August 24, 2015

Lynn H. Rhoden

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Analysis Begun

Start Time: 8/23/2015 12:57:52 PM **Plasma On Time: 8/23/2015 7:45:07 AM**
Logged In Analyst: peicp2 **Technique: ICP Continuous**
Spectrometer Model: Optima 4300 DV, S/N 077N4011401 **Autosampler Model: Cetac**

Sample Information File: C:\pe\peicp2\Sample Information\SUNDAY2.sif
Batch ID:
Results Data Set: 082315HR
Results Library: C:\pe\peicp2\Results\results2.mdb

==========

Method Loaded
Method Name: 200.7-6010-3015 ASX **Method Last Saved: 8/14/2015 2:29:43 PM**
IEC File: PLUS-P.iec **SMF File:**
Method Description: STANDARD

==========

Sequence No.: 1 **Autosampler Location: 71**
Sample ID: PBW A4 WG536019-02 **Date Collected: 8/23/2015 12:57:53 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: PBW A4 WG536019-02

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: PBW A4 WG536019-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2381374.3						59424.66	2.50%
YRADIAL	135469.5						12988.81	9.59%
Ga 417.206	952703.5						27296.42	2.87%
GaRADIAL	32774.6						2848.10	8.69%
Ag 328.068†	-272.3	0.00099	mg/L	0.000345	0.00099	mg/L	0.000345	34.89%
Al 396.153†	-24.6	-0.0329	mg/L	0.00239	-0.0329	mg/L	0.00239	7.27%
As 188.979†	5.9	-0.00011	mg/L	0.000473	-0.00011	mg/L	0.000473	418.35%
Ba 233.527†	-120.4	-0.00097	mg/L	0.000124	-0.00097	mg/L	0.000124	12.76%
Be 234.861†	-268.2	0.00000	mg/L	0.000024	0.00000	mg/L	0.000024	>999.9%
B 249.677†	27.4	0.00397	mg/L	0.000233	0.00397	mg/L	0.000233	5.87%
Ca 227.546†	-50.9	-0.0610	mg/L	0.02494	-0.0610	mg/L	0.02494	40.86%
Cd 228.802†	1.4	0.00018	mg/L	0.000122	0.00018	mg/L	0.000122	68.75%
Co 228.616†	-36.7	-0.00093	mg/L	0.000388	-0.00093	mg/L	0.000388	41.65%
Cr 267.716†	34.1	0.00008	mg/L	0.000245	0.00008	mg/L	0.000245	321.78%
Cu 327.393†	-31.8	0.00109	mg/L	0.000727	0.00109	mg/L	0.000727	66.72%
Fe 239.562†	-40.7	-0.00987	mg/L	0.001165	-0.00987	mg/L	0.001165	11.80%
Mg 279.077†	92.2	-0.00528	mg/L	0.005943	-0.00528	mg/L	0.005943	112.57%
Mn 257.610†	-892.6	-0.00166	mg/L	0.000052	-0.00166	mg/L	0.000052	3.13%
Mo 202.031†	14.4	0.00132	mg/L	0.000336	0.00132	mg/L	0.000336	25.47%
Ni 231.604†	-22.6	-0.00139	mg/L	0.000171	-0.00139	mg/L	0.000171	12.26%
Pb 220.353†	-24.0	-0.00267	mg/L	0.001184	-0.00267	mg/L	0.001184	44.31%
Sb 206.836†	6.4	0.00715	mg/L	0.004758	0.00715	mg/L	0.004758	66.50%
Se 196.026†	-7.6	-0.00254	mg/L	0.011770	-0.00254	mg/L	0.011770	463.90%
Si 251.611†	-547.7	0.00451	mg/L	0.000581	0.00451	mg/L	0.000581	12.87%
Sn 189.927†	-9.0	-0.00232	mg/L	0.000322	-0.00232	mg/L	0.000322	13.86%
Ti 334.940†	48.1	0.00127	mg/L	0.000057	0.00127	mg/L	0.000057	4.47%
Tl 190.801†	-13.8	-0.00499	mg/L	0.000728	-0.00499	mg/L	0.000728	14.61%
V 290.880†	490.3	0.00380	mg/L	0.001862	0.00380	mg/L	0.001862	49.05%
Zn 206.200†	41.0	-0.00117	mg/L	0.000035	-0.00117	mg/L	0.000035	2.97%
K 766.490†	33.5	0.0237	mg/L	0.14273	0.0237	mg/L	0.14273	601.42%
Na 589.592†	441.9	0.0470	mg/L	0.01872	0.0470	mg/L	0.01872	39.80%
Sr 407.771†	-33.7	0.00254	mg/L	0.000258	0.00254	mg/L	0.000258	10.17%
Li 670.784†	42.7	-0.00419	mg/L	0.003455	-0.00419	mg/L	0.003455	82.51%
P 214.914†	-25.4	-0.0402	mg/L	0.00196	-0.0402	mg/L	0.00196	4.88%

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Sequence No.: 2 **Autosampler Location: 72**

Approved: August 24, 2015

Sample ID: LCSW A4 WG536019-03
Analyst: KHR
Initial Sample Wt:
Dilution:

Date Collected: 8/23/2015 1:01:13 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: LCSW A4 WG536019-03

Analyte	Back Pressure	Flow
All	202.0 kPa	0.31 L/min

Mean Data: LCSW A4 WG536019-03

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2299885.2						123309.59	5.36%
YRADIAL	145566.9						2090.66	1.44%
Ga 417.206	875954.4						53686.38	6.13%
GaRADIAL	35099.0						397.45	1.13%
Ag 328.068†	56216.2	0.207	mg/L	0.0052	0.207	mg/L	0.0052	2.52%
Al 396.153†	11343.1	5.26	mg/L	0.047	5.26	mg/L	0.047	0.89%
As 188.979†	686.0	0.194	mg/L	0.0133	0.194	mg/L	0.0133	6.87%
Ba 233.527†	79104.8	0.519	mg/L	0.0034	0.519	mg/L	0.0034	0.65%
Be 234.861†	32575.5	0.0240	mg/L	0.00048	0.0240	mg/L	0.00048	2.00%
B 249.677†	76176.8	0.995	mg/L	0.0169	0.995	mg/L	0.0169	1.70%
Ca 227.546†	1514.7	4.80	mg/L	0.289	4.80	mg/L	0.289	6.01%
Cd 228.802†	989.5	0.0244	mg/L	0.00156	0.0244	mg/L	0.00156	6.41%
Co 228.616†	4879.6	0.103	mg/L	0.0057	0.103	mg/L	0.0057	5.51%
Cr 267.716†	37883.8	0.264	mg/L	0.0009	0.264	mg/L	0.0009	0.35%
Cu 327.393†	46427.2	0.258	mg/L	0.0067	0.258	mg/L	0.0067	2.58%
Fe 239.562†	20780.8	2.09	mg/L	0.009	2.09	mg/L	0.009	0.42%
Mg 279.077†	10119.8	5.17	mg/L	0.046	5.17	mg/L	0.046	0.90%
Mn 257.610†	194929.7	0.263	mg/L	0.0021	0.263	mg/L	0.0021	0.80%
Mo 202.031†	18370.7	0.520	mg/L	0.0285	0.520	mg/L	0.0285	5.49%
Ni 231.604†	20796.1	0.271	mg/L	0.0147	0.271	mg/L	0.0147	5.42%
Pb 220.353†	4203.6	0.263	mg/L	0.0146	0.263	mg/L	0.0146	5.55%
Sb 206.836†	1611.6	0.581	mg/L	0.0397	0.581	mg/L	0.0397	6.83%
Se 196.026†	216.0	0.196	mg/L	0.0069	0.196	mg/L	0.0069	3.53%
Si 251.611†	107968.9	2.52	mg/L	0.044	2.52	mg/L	0.044	1.73%
Sn 189.927†	6526.4	0.539	mg/L	0.0293	0.539	mg/L	0.0293	5.44%
Ti 334.940†	410730.2	0.517	mg/L	0.0041	0.517	mg/L	0.0041	0.80%
Tl 190.801†	669.2	0.266	mg/L	0.0161	0.266	mg/L	0.0161	6.06%
V 290.880†	88521.7	0.522	mg/L	0.0054	0.522	mg/L	0.0054	1.03%
Zn 206.200†	43973.6	0.512	mg/L	0.0037	0.512	mg/L	0.0037	0.72%
K 766.490†	27061.3	26.0	mg/L	0.15	26.0	mg/L	0.15	0.57%
Na 589.592†	173483.6	26.9	mg/L	0.60	26.9	mg/L	0.60	2.22%
Sr 407.771†	414472.9	0.522	mg/L	0.0138	0.522	mg/L	0.0138	2.64%
Li 670.784†	17502.3	0.535	mg/L	0.0093	0.535	mg/L	0.0093	1.74%
P 214.914†	11200.9	4.99	mg/L	0.273	4.99	mg/L	0.273	5.47%

Sequence No.: 3
Sample ID: FBLK1 WG535942-01
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 73
Date Collected: 8/23/2015 1:03:39 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: FBLK1 WG535942-01

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: FBLK1 WG535942-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2326972.6						35165.25	1.51%
YRADIAL	139256.6						6395.89	4.59%
Ga 417.206	851864.8						13068.97	1.53%
GaRADIAL	33515.4						1399.11	4.17%
Ag 328.068†	-355.8	0.00068	mg/L	0.000393	0.00068	mg/L	0.000393	57.43%
Al 396.153†	-6.7	-0.0246	mg/L	0.00420	-0.0246	mg/L	0.00420	17.12%
As 188.979†	0.3	-0.00171	mg/L	0.001728	-0.00171	mg/L	0.001728	100.83%

Approved: August 24, 2015

Kym H. Rhoden

Ba 233.527†	-115.2	-0.00094	mg/L	0.000201	-0.00094	mg/L	0.000201	21.48%
Be 234.861†	-483.9	-0.00016	mg/L	0.000019	-0.00016	mg/L	0.000019	12.10%
B 249.677†	242.6	0.00675	mg/L	0.001055	0.00675	mg/L	0.001055	15.62%
Ca 227.546†	-42.9	-0.0364	mg/L	0.04769	-0.0364	mg/L	0.04769	130.83%
Cd 228.802†	12.5	0.00047	mg/L	0.000306	0.00047	mg/L	0.000306	65.68%
Co 228.616†	-29.7	-0.00078	mg/L	0.000185	-0.00078	mg/L	0.000185	23.69%
Cr 267.716†	17.0	-0.00004	mg/L	0.000793	-0.00004	mg/L	0.000793	>999.9%
Cu 327.393†	181.0	0.00226	mg/L	0.000957	0.00226	mg/L	0.000957	42.33%
Fe 239.562†	-26.5	-0.00844	mg/L	0.001268	-0.00844	mg/L	0.001268	15.03%
Mg 279.077†	111.1	0.00446	mg/L	0.007221	0.00446	mg/L	0.007221	161.91%
Mn 257.610†	-828.3	-0.00157	mg/L	0.000035	-0.00157	mg/L	0.000035	2.25%
Mo 202.031†	44.1	0.00216	mg/L	0.000242	0.00216	mg/L	0.000242	11.21%
Ni 231.604†	-19.5	-0.00135	mg/L	0.000121	-0.00135	mg/L	0.000121	8.94%
Pb 220.353†	-3.4	-0.00138	mg/L	0.000904	-0.00138	mg/L	0.000904	65.38%
Sb 206.836†	11.8	0.00909	mg/L	0.002105	0.00909	mg/L	0.002105	23.15%
Se 196.026†	5.0	0.00856	mg/L	0.009509	0.00856	mg/L	0.009509	111.12%
Si 251.611†	-10.1	0.0170	mg/L	0.00045	0.0170	mg/L	0.00045	2.65%
Sn 189.927†	0.2	-0.00156	mg/L	0.001249	-0.00156	mg/L	0.001249	80.01%
Ti 334.940†	22.8	0.00124	mg/L	0.000147	0.00124	mg/L	0.000147	11.81%
Tl 190.801†	-12.5	-0.00448	mg/L	0.000565	-0.00448	mg/L	0.000565	12.62%
V 290.880†	211.5	0.00216	mg/L	0.000922	0.00216	mg/L	0.000922	42.80%
Zn 206.200†	223.0	0.00095	mg/L	0.000119	0.00095	mg/L	0.000119	12.48%
K 766.490†	218.0	0.0607	mg/L	0.06064	0.0607	mg/L	0.06064	99.87%
Na 589.592†	880347.4	140	mg/L	1.1	140	mg/L	1.1	0.80%
Sr 407.771†	104.3	0.00271	mg/L	0.000112	0.00271	mg/L	0.000112	4.15%
Li 670.784†	100.4	-0.00241	mg/L	0.002736	-0.00241	mg/L	0.002736	113.60%
P 214.914†	5.7	-0.0263	mg/L	0.00583	-0.0263	mg/L	0.00583	22.18%

Sequence No.: 4 **Autosampler Location: 74**
Sample ID: FBLK2 WG535942-02 **Date Collected: 8/23/2015 1:07:01 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: FBLK2 WG535942-02

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: FBLK2 WG535942-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2316349.5						94113.47	4.06%
YRADIAL	138447.9						7024.77	5.07%
Ga 417.206	916771.4						42359.64	4.62%
GaRADIAL	33538.5						1371.86	4.09%
Ag 328.068†	-387.9	0.00058	mg/L	0.001015	0.00058	mg/L	0.001015	176.42%
Al 396.153†	-22.7	-0.0320	mg/L	0.00624	-0.0320	mg/L	0.00624	19.46%
As 188.979†	7.3	0.00031	mg/L	0.002329	0.00031	mg/L	0.002329	749.83%
Ba 233.527†	-120.3	-0.00097	mg/L	0.000173	-0.00097	mg/L	0.000173	17.83%
Be 234.861†	-361.1	-0.00007	mg/L	0.000071	-0.00007	mg/L	0.000071	102.11%
B 249.677†	120.7	0.00519	mg/L	0.000277	0.00519	mg/L	0.000277	5.34%
Ca 227.546†	-52.7	-0.0667	mg/L	0.06814	-0.0667	mg/L	0.06814	102.12%
Cd 228.802†	7.5	0.00033	mg/L	0.000139	0.00033	mg/L	0.000139	42.24%
Co 228.616†	-39.3	-0.00099	mg/L	0.000214	-0.00099	mg/L	0.000214	21.68%
Cr 267.716†	42.5	0.00014	mg/L	0.000087	0.00014	mg/L	0.000087	64.20%
Cu 327.393†	42.0	0.00150	mg/L	0.000834	0.00150	mg/L	0.000834	55.63%
Fe 239.562†	-2.0	-0.00597	mg/L	0.000708	-0.00597	mg/L	0.000708	11.86%
Mg 279.077†	116.4	0.00720	mg/L	0.006621	0.00720	mg/L	0.006621	92.00%
Mn 257.610†	-866.6	-0.00162	mg/L	0.000035	-0.00162	mg/L	0.000035	2.18%
Mo 202.031†	29.1	0.00173	mg/L	0.000259	0.00173	mg/L	0.000259	14.95%
Ni 231.604†	-30.6	-0.00150	mg/L	0.000128	-0.00150	mg/L	0.000128	8.54%
Pb 220.353†	-11.9	-0.00191	mg/L	0.000846	-0.00191	mg/L	0.000846	44.21%
Sb 206.836†	6.4	0.00715	mg/L	0.001197	0.00715	mg/L	0.001197	16.73%
Se 196.026†	-7.6	-0.00254	mg/L	0.005743	-0.00254	mg/L	0.005743	225.72%
Si 251.611†	-406.8	0.00778	mg/L	0.001192	0.00778	mg/L	0.001192	15.31%
Sn 189.927†	-8.2	-0.00225	mg/L	0.001143	-0.00225	mg/L	0.001143	50.71%
Ti 334.940†	23.4	0.00124	mg/L	0.000353	0.00124	mg/L	0.000353	28.45%
Tl 190.801†	-11.5	-0.00409	mg/L	0.000071	-0.00409	mg/L	0.000071	1.74%
V 290.880†	717.7	0.00514	mg/L	0.002544	0.00514	mg/L	0.002544	49.53%

Approved: August 24, 2015

Zn 206.200†	310.8	0.00197	mg/L	0.000168	0.00197	mg/L	0.000168 8.53%
K 766.490†	23.4	0.0140	mg/L	0.11369	0.0140	mg/L	0.11369 813.71%
Na 589.592†	729.6	0.0914	mg/L	0.01870	0.0914	mg/L	0.01870 20.46%
Sr 407.771†	44.4	0.00264	mg/L	0.000065	0.00264	mg/L	0.000065 2.48%
Li 670.784†	53.7	-0.00385	mg/L	0.005699	-0.00385	mg/L	0.005699 148.05%
P 214.914†	6.1	-0.0261	mg/L	0.01015	-0.0261	mg/L	0.01015 38.94%

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Sequence No.: 5 **Autosampler Location: 75**
Sample ID: L1508099901 WG536019-01 **Date Collected: 8/23/2015 1:10:20 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508099901 WG536019-01

Analyte	Back Pressure	Flow
All	202.0 kPa	0.31 L/min

Mean Data: L1508099901 WG536019-01

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2386009.2						24144.52	1.01%
YRADIAL	145195.1						8322.09	5.73%
Ga 417.206	876827.8						14645.20	1.67%
GaRADIAL	35255.7						1742.48	4.94%
Ag 328.068†	1035.4	0.00562	mg/L	0.000420	0.00562	mg/L	0.000420	7.47%
Al 396.153†	-7.4	-0.0251	mg/L	0.04782	-0.0251	mg/L	0.04782	190.29%
As 188.979†	1.2	0.00167	mg/L	0.001461	0.00167	mg/L	0.001461	87.28%
Ba 233.527†	2921.2	0.0190	mg/L	0.00013	0.0190	mg/L	0.00013	0.67%
Be 234.861†	-348.6	-0.00006	mg/L	0.000010	-0.00006	mg/L	0.000010	18.52%
B 249.677†	241.9	0.00674	mg/L	0.000655	0.00674	mg/L	0.000655	9.72%
Ca 227.546†	46875.4	145	mg/L	1.6	145	mg/L	1.6	1.13%
Cd 228.802†	14.1	0.00050	mg/L	0.000201	0.00050	mg/L	0.000201	39.81%
Co 228.616†	-34.8	-0.00086	mg/L	0.000179	-0.00086	mg/L	0.000179	20.78%
Cr 267.716†	212.2	0.00132	mg/L	0.000100	0.00132	mg/L	0.000100	7.61%
Cu 327.393†	-135.5	0.00050	mg/L	0.000818	0.00050	mg/L	0.000818	162.24%
Fe 239.562†	-54.5	-0.0113	mg/L	0.00538	-0.0113	mg/L	0.00538	47.74%
Mg 279.077†	76.5	-0.0134	mg/L	0.02910	-0.0134	mg/L	0.02910	217.45%
Mn 257.610†	-963.7	-0.00175	mg/L	0.000025	-0.00175	mg/L	0.000025	1.41%
Mo 202.031†	260.5	0.00826	mg/L	0.000387	0.00826	mg/L	0.000387	4.69%
Ni 231.604†	47.9	-0.00046	mg/L	0.000063	-0.00046	mg/L	0.000063	13.48%
Pb 220.353†	40.8	0.00139	mg/L	0.002030	0.00139	mg/L	0.002030	146.33%
Sb 206.836†	14.2	0.00996	mg/L	0.004516	0.00996	mg/L	0.004516	45.36%
Se 196.026†	-8.5	-0.00331	mg/L	0.004231	-0.00331	mg/L	0.004231	127.83%
Si 251.611†	4744.0	0.127	mg/L	0.0018	0.127	mg/L	0.0018	1.40%
Sn 189.927†	-166.8	-0.0154	mg/L	0.00119	-0.0154	mg/L	0.00119	7.73%
Ti 334.940†	-9407.0	-0.00131	mg/L	0.000247	-0.00131	mg/L	0.000247	18.90%
Tl 190.801†	-40.8	-0.0156	mg/L	0.00403	-0.0156	mg/L	0.00403	25.92%
V 290.880†	319.2	0.00279	mg/L	0.001167	0.00279	mg/L	0.001167	41.85%
Zn 206.200†	231.1	0.00106	mg/L	0.000087	0.00106	mg/L	0.000087	8.27%
K 766.490†	35562.7	34.0	mg/L	0.35	34.0	mg/L	0.35	1.04%
Na 589.592†	866534.2	137	mg/L	1.1	137	mg/L	1.1	0.81%
Sr 407.771†	337586.3	0.422	mg/L	0.0026	0.422	mg/L	0.0026	0.62%
Li 670.784†	462.4	0.00876	mg/L	0.001133	0.00876	mg/L	0.001133	12.93%
P 214.914†	5.9	-0.0262	mg/L	0.00556	-0.0262	mg/L	0.00556	21.27%

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Sequence No.: 6 **Autosampler Location: 76**
Sample ID: L1508099901MS WG536019-04 **Date Collected: 8/23/2015 1:12:43 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508099901MS WG536019-04

Analyte	Back Pressure	Flow
All	202.0 kPa	0.31 L/min

Mean Data: L1508099901MS WG536019-04

Approved: August 24, 2015

Kym H. Rhoden

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	2341253.4						150278.20	6.42%
YRADIAL	146783.1						4565.55	3.11%
Ga 417.206	870217.9						65542.22	7.53%
GaRADIAL	35498.7						1032.10	2.91%
Ag 328.068†	57101.2	0.210	mg/L	0.0060	0.210	mg/L	0.0060	2.85%
Al 396.153†	10998.9	5.10	mg/L	0.033	5.10	mg/L	0.033	0.64%
As 188.979†	720.7	0.207	mg/L	0.0153	0.207	mg/L	0.0153	7.40%
Ba 233.527†	79662.1	0.523	mg/L	0.0060	0.523	mg/L	0.0060	1.14%
Be 234.861†	33980.4	0.0251	mg/L	0.00072	0.0251	mg/L	0.00072	2.88%
B 249.677†	75705.2	0.989	mg/L	0.0309	0.989	mg/L	0.0309	3.12%
Ca 227.546†	46873.7	145	mg/L	4.0	145	mg/L	4.0	2.75%
Cd 228.802†	989.1	0.0243	mg/L	0.00217	0.0243	mg/L	0.00217	8.93%
Co 228.616†	4673.0	0.0985	mg/L	0.00720	0.0985	mg/L	0.00720	7.31%
Cr 267.716†	36659.4	0.255	mg/L	0.0031	0.255	mg/L	0.0031	1.23%
Cu 327.393†	45785.2	0.254	mg/L	0.0083	0.254	mg/L	0.0083	3.27%
Fe 239.562†	19568.7	1.96	mg/L	0.007	1.96	mg/L	0.007	0.35%
Mg 279.077†	9422.0	4.81	mg/L	0.092	4.81	mg/L	0.092	1.91%
Mn 257.610†	188403.7	0.254	mg/L	0.0026	0.254	mg/L	0.0026	1.01%
Mo 202.031†	18818.7	0.533	mg/L	0.0396	0.533	mg/L	0.0396	7.44%
Ni 231.604†	19971.1	0.261	mg/L	0.0198	0.261	mg/L	0.0198	7.58%
Pb 220.353†	4049.7	0.254	mg/L	0.0179	0.254	mg/L	0.0179	7.05%
Sb 206.836†	1667.2	0.601	mg/L	0.0549	0.601	mg/L	0.0549	9.14%
Se 196.026†	242.4	0.219	mg/L	0.0266	0.219	mg/L	0.0266	12.15%
Si 251.611†	116331.1	2.71	mg/L	0.057	2.71	mg/L	0.057	2.11%
Sn 189.927†	6207.6	0.512	mg/L	0.0374	0.512	mg/L	0.0374	7.30%
Ti 334.940†	397464.6	0.509	mg/L	0.0070	0.509	mg/L	0.0070	1.37%
Tl 190.801†	604.6	0.240	mg/L	0.0203	0.240	mg/L	0.0203	8.44%
V 290.880†	88954.3	0.525	mg/L	0.0086	0.525	mg/L	0.0086	1.63%
Zn 206.200†	42112.9	0.491	mg/L	0.0020	0.491	mg/L	0.0020	0.40%
K 766.490†	59255.2	57.0	mg/L	0.42	57.0	mg/L	0.42	0.74%
Na 589.592†	958556.6	152	mg/L	2.8	152	mg/L	2.8	1.84%
Sr 407.771†	697882.2	0.874	mg/L	0.0214	0.874	mg/L	0.0214	2.45%
Li 670.784†	16474.4	0.503	mg/L	0.0038	0.503	mg/L	0.0038	0.76%
P 214.914†	11891.3	5.30	mg/L	0.397	5.30	mg/L	0.397	7.49%

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Sequence No.: 7 **Autosampler Location: 77**
Sample ID: L1508099901SD WG536019-05 **Date Collected: 8/23/2015 1:15:07 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508099901SD WG536019-05

Analyte	Back Pressure	Flow
All	202.0 kPa	0.31 L/min

Mean Data: L1508099901SD WG536019-05

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	2409319.1						26274.39	1.09%
YRADIAL	151585.0						2051.85	1.35%
Ga 417.206	897360.9						10285.13	1.15%
GaRADIAL	36515.2						458.20	1.25%
Ag 328.068†	57714.3	0.212	mg/L	0.0030	0.212	mg/L	0.0030	1.41%
Al 396.153†	11138.5	5.17	mg/L	0.046	5.17	mg/L	0.046	0.89%
As 188.979†	694.7	0.199	mg/L	0.0052	0.199	mg/L	0.0052	2.62%
Ba 233.527†	81092.9	0.532	mg/L	0.0021	0.532	mg/L	0.0021	0.39%
Be 234.861†	34552.8	0.0255	mg/L	0.00016	0.0255	mg/L	0.00016	0.63%
B 249.677†	77886.7	1.02	mg/L	0.014	1.02	mg/L	0.014	1.39%
Ca 227.546†	48083.8	148	mg/L	1.4	148	mg/L	1.4	0.93%
Cd 228.802†	974.6	0.0240	mg/L	0.00054	0.0240	mg/L	0.00054	2.25%
Co 228.616†	4609.1	0.0971	mg/L	0.00178	0.0971	mg/L	0.00178	1.83%
Cr 267.716†	37699.5	0.263	mg/L	0.0006	0.263	mg/L	0.0006	0.24%
Cu 327.393†	46649.9	0.259	mg/L	0.0014	0.259	mg/L	0.0014	0.54%
Fe 239.562†	20253.1	2.03	mg/L	0.024	2.03	mg/L	0.024	1.20%
Mg 279.077†	9575.8	4.88	mg/L	0.023	4.88	mg/L	0.023	0.47%
Mn 257.610†	191349.7	0.258	mg/L	0.0008	0.258	mg/L	0.0008	0.30%
Mo 202.031†	18511.9	0.524	mg/L	0.0087	0.524	mg/L	0.0087	1.65%

Approved: August 24, 2015
Kym H. Rhoden

Ni 231.604†	19635.8	0.256 mg/L	0.0041	0.256 mg/L	0.0041	1.59%
Pb 220.353†	3954.4	0.248 mg/L	0.0031	0.248 mg/L	0.0031	1.24%
Sb 206.836†	1639.1	0.591 mg/L	0.0089	0.591 mg/L	0.0089	1.51%
Se 196.026†	221.3	0.201 mg/L	0.0085	0.201 mg/L	0.0085	4.23%
Si 251.611†	117479.8	2.74 mg/L	0.023	2.74 mg/L	0.023	0.83%
Sn 189.927†	6109.1	0.504 mg/L	0.0089	0.504 mg/L	0.0089	1.76%
Ti 334.940†	404933.3	0.519 mg/L	0.0022	0.519 mg/L	0.0022	0.42%
Tl 190.801†	593.7	0.236 mg/L	0.0066	0.236 mg/L	0.0066	2.80%
V 290.880†	90531.6	0.534 mg/L	0.0031	0.534 mg/L	0.0031	0.58%
Zn 206.200†	43123.4	0.503 mg/L	0.0023	0.503 mg/L	0.0023	0.46%
K 766.490†	60639.2	58.3 mg/L	0.35	58.3 mg/L	0.35	0.60%
Na 589.592†	1010269.6	161 mg/L	2.8	161 mg/L	2.8	1.72%
Sr 407.771†	733967.9	0.919 mg/L	0.0172	0.919 mg/L	0.0172	1.87%
Li 670.784†	16782.2	0.512 mg/L	0.0023	0.512 mg/L	0.0023	0.44%
P 214.914†	11661.8	5.19 mg/L	0.092	5.19 mg/L	0.092	1.77%

Sequence No.: 8 **Autosampler Location: 78**
Sample ID: L1508099901PS WG536058-01 **Date Collected: 8/23/2015 1:17:34 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508099901PS WG536058-01

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508099901PS WG536058-01

Analyte	Mean Corrected Intensity	Calib. Conc. Units	Std.Dev.	Sample Conc. Units	Std.Dev.	RSD
Y 371.029	2369099.0				27495.35	1.16%
YRADIAL	143747.3				4156.80	2.89%
Ga 417.206	881224.1				10313.35	1.17%
GaRADIAL	34809.4				994.44	2.86%
Ag 328.068†	58518.6	0.215 mg/L	0.0005	0.215 mg/L	0.0005	0.23%
Al 396.153†	11389.1	5.28 mg/L	0.058	5.28 mg/L	0.058	1.11%
As 188.979†	725.6	0.208 mg/L	0.0076	0.208 mg/L	0.0076	3.66%
Ba 233.527†	81171.8	0.532 mg/L	0.0031	0.532 mg/L	0.0031	0.59%
Be 234.861†	34982.1	0.0258 mg/L	0.00012	0.0258 mg/L	0.00012	0.48%
B 249.677†	78803.9	1.03 mg/L	0.007	1.03 mg/L	0.007	0.64%
Ca 227.546†	43308.4	134 mg/L	0.7	134 mg/L	0.7	0.52%
Cd 228.802†	979.4	0.0240 mg/L	0.00056	0.0240 mg/L	0.00056	2.32%
Co 228.616†	4668.3	0.0984 mg/L	0.00284	0.0984 mg/L	0.00284	2.89%
Cr 267.716†	37834.8	0.264 mg/L	0.0009	0.264 mg/L	0.0009	0.33%
Cu 327.393†	47069.6	0.262 mg/L	0.0010	0.262 mg/L	0.0010	0.38%
Fe 239.562†	20519.6	2.06 mg/L	0.035	2.06 mg/L	0.035	1.68%
Mg 279.077†	9895.2	5.05 mg/L	0.067	5.05 mg/L	0.067	1.32%
Mn 257.610†	192887.7	0.260 mg/L	0.0015	0.260 mg/L	0.0015	0.59%
Mo 202.031†	18760.8	0.531 mg/L	0.0139	0.531 mg/L	0.0139	2.62%
Ni 231.604†	19944.2	0.260 mg/L	0.0069	0.260 mg/L	0.0069	2.65%
Pb 220.353†	4036.3	0.253 mg/L	0.0058	0.253 mg/L	0.0058	2.28%
Sb 206.836†	1661.7	0.599 mg/L	0.0152	0.599 mg/L	0.0152	2.54%
Se 196.026†	230.5	0.209 mg/L	0.0078	0.209 mg/L	0.0078	3.73%
Si 251.611†	117307.7	2.73 mg/L	0.012	2.73 mg/L	0.012	0.45%
Sn 189.927†	6222.4	0.513 mg/L	0.0157	0.513 mg/L	0.0157	3.06%
Ti 334.940†	408966.0	0.523 mg/L	0.0022	0.523 mg/L	0.0022	0.43%
Tl 190.801†	617.5	0.245 mg/L	0.0087	0.245 mg/L	0.0087	3.53%
V 290.880†	90936.7	0.536 mg/L	0.0044	0.536 mg/L	0.0044	0.83%
Zn 206.200†	43573.1	0.508 mg/L	0.0018	0.508 mg/L	0.0018	0.35%
K 766.490†	58135.2	55.9 mg/L	0.47	55.9 mg/L	0.47	0.84%
Na 589.592†	946022.6	150 mg/L	6.3	150 mg/L	6.3	4.20%
Sr 407.771†	717805.2	0.899 mg/L	0.0361	0.899 mg/L	0.0361	4.01%
Li 670.784†	17270.4	0.527 mg/L	0.0073	0.527 mg/L	0.0073	1.39%
P 214.914†	11817.0	5.26 mg/L	0.144	5.26 mg/L	0.144	2.74%

Sequence No.: 9 **Autosampler Location: 79**
Sample ID: L1508099901DL WG536058-02 **Date Collected: 8/23/2015 1:19:58 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**

Approved: August 24, 2015

Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508099901DL WG536058-02

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508099901DL WG536058-02

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2575198.3						66156.54	2.57%
YRADIAL	152667.2						1936.75	1.27%
Ga 417.206	990894.5						21911.01	2.21%
GaRADIAL	37570.7						407.31	1.08%
Ag 328.068†	-238.7	0.00108	mg/L	0.000716	0.00108	mg/L	0.000716	66.16%
Al 396.153†	81.9	0.0169	mg/L	0.02256	0.0169	mg/L	0.02256	133.75%
As 188.979†	8.1	0.00112	mg/L	0.001818	0.00112	mg/L	0.001818	162.06%
Ba 233.527†	621.1	0.00389	mg/L	0.000188	0.00389	mg/L	0.000188	4.84%
Be 234.861†	-86.1	0.00014	mg/L	0.000006	0.00014	mg/L	0.000006	4.20%
B 249.677†	812.3	0.0141	mg/L	0.00177	0.0141	mg/L	0.00177	12.58%
Ca 227.546†	8544.9	26.4	mg/L	0.37	26.4	mg/L	0.37	1.41%
Cd 228.802†	0.3	0.00015	mg/L	0.000192	0.00015	mg/L	0.000192	129.44%
Co 228.616†	-13.2	-0.00043	mg/L	0.000416	-0.00043	mg/L	0.000416	97.98%
Cr 267.716†	40.7	0.00012	mg/L	0.000242	0.00012	mg/L	0.000242	202.35%
Cu 327.393†	54.1	0.00156	mg/L	0.000704	0.00156	mg/L	0.000704	45.24%
Fe 239.562†	-66.5	-0.0125	mg/L	0.00197	-0.0125	mg/L	0.00197	15.79%
Mg 279.077†	89.3	-0.00680	mg/L	0.009693	-0.00680	mg/L	0.009693	142.51%
Mn 257.610†	-563.0	-0.00121	mg/L	0.000023	-0.00121	mg/L	0.000023	1.92%
Mo 202.031†	49.2	0.00230	mg/L	0.000243	0.00230	mg/L	0.000243	10.55%
Ni 231.604†	43.5	-0.00052	mg/L	0.000165	-0.00052	mg/L	0.000165	31.42%
Pb 220.353†	43.4	0.00156	mg/L	0.000998	0.00156	mg/L	0.000998	64.09%
Sb 206.836†	-1.8	0.00422	mg/L	0.003718	0.00422	mg/L	0.003718	88.04%
Se 196.026†	-2.3	0.00210	mg/L	0.001822	0.00210	mg/L	0.001822	86.56%
Si 251.611†	581.4	0.0307	mg/L	0.00111	0.0307	mg/L	0.00111	3.60%
Sn 189.927†	-18.3	-0.00309	mg/L	0.000866	-0.00309	mg/L	0.000866	28.01%
Ti 334.940†	-2431.0	-0.00014	mg/L	0.000258	-0.00014	mg/L	0.000258	186.25%
Tl 190.801†	-21.7	-0.00809	mg/L	0.002679	-0.00809	mg/L	0.002679	33.11%
V 290.880†	-255.1	-0.00059	mg/L	0.000335	-0.00059	mg/L	0.000335	56.53%
Zn 206.200†	299.1	0.00184	mg/L	0.000193	0.00184	mg/L	0.000193	10.53%
K 766.490†	6944.9	6.62	mg/L	0.043	6.62	mg/L	0.043	0.65%
Na 589.592†	174960.2	27.1	mg/L	0.23	27.1	mg/L	0.23	0.83%
Sr 407.771†	68464.9	0.0876	mg/L	0.00066	0.0876	mg/L	0.00066	0.75%
Li 670.784†	178.1	-0.00001	mg/L	0.000971	-0.00001	mg/L	0.000971	>999.9%
P 214.914†	27.1	-0.0167	mg/L	0.00394	-0.0167	mg/L	0.00394	23.60%

Sequence No.: 10 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 8/23/2015 1:22:23 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	202.0 kPa	0.31 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2583963.1						65318.80	2.53%
YRADIAL	152205.3						2934.82	1.93%
Ga 417.206	969750.6						25626.84	2.64%
GaRADIAL	37477.4						377.99	1.01%
Ag 328.068†	105912.9	0.388	mg/L	0.0080	0.388	mg/L	0.0080	2.06%
QC value within limits for Ag 328.068 Recovery = 96.93%								
Al 396.153†	20569.6	9.56	mg/L	0.174	9.56	mg/L	0.174	1.82%
QC value within limits for Al 396.153 Recovery = 95.59%								
As 188.979†	1294.5	0.367	mg/L	0.0142	0.367	mg/L	0.0142	3.87%
QC value within limits for As 188.979 Recovery = 91.86%								

Approved: August 24, 2015

Ba 233.527†	148211.9	0.972 mg/L	0.0144	0.972 mg/L	0.0144	1.48%
QC value within limits for Ba 233.527 Recovery = 97.23%						
Be 234.861†	64408.0	0.0473 mg/L	0.00088	0.0473 mg/L	0.00088	1.86%
QC value within limits for Be 234.861 Recovery = 94.66%						
B 249.677†	36672.4	0.490 mg/L	0.0132	0.490 mg/L	0.0132	2.70%
QC value within limits for B 249.677 Recovery = 98.06%						
Ca 227.546†	2936.0	9.22 mg/L	0.322	9.22 mg/L	0.322	3.49%
QC value within limits for Ca 227.546 Recovery = 92.17%						
Cd 228.802†	1872.4	0.0460 mg/L	0.00166	0.0460 mg/L	0.00166	3.61%
QC value within limits for Cd 228.802 Recovery = 91.96%						
Co 228.616†	8993.5	0.190 mg/L	0.0060	0.190 mg/L	0.0060	3.16%
QC value within limits for Co 228.616 Recovery = 94.83%						
Cr 267.716†	69840.4	0.487 mg/L	0.0066	0.487 mg/L	0.0066	1.35%
QC value within limits for Cr 267.716 Recovery = 97.36%						
Cu 327.393†	87338.5	0.484 mg/L	0.0084	0.484 mg/L	0.0084	1.74%
QC value within limits for Cu 327.393 Recovery = 96.85%						
Fe 239.562†	38118.3	3.83 mg/L	0.065	3.83 mg/L	0.065	1.69%
QC value within limits for Fe 239.562 Recovery = 95.81%						
Mg 279.077†	18683.3	9.58 mg/L	0.062	9.58 mg/L	0.062	0.64%
QC value within limits for Mg 279.077 Recovery = 95.81%						
Mn 257.610†	359558.7	0.485 mg/L	0.0063	0.485 mg/L	0.0063	1.31%
QC value within limits for Mn 257.610 Recovery = 96.94%						
Mo 202.031†	34280.8	0.969 mg/L	0.0158	0.969 mg/L	0.0158	1.63%
QC value within limits for Mo 202.031 Recovery = 96.95%						
Ni 231.604†	37462.0	0.490 mg/L	0.0084	0.490 mg/L	0.0084	1.72%
QC value within limits for Ni 231.604 Recovery = 97.96%						
Pb 220.353†	7746.8	0.486 mg/L	0.0152	0.486 mg/L	0.0152	3.12%
QC value within limits for Pb 220.353 Recovery = 97.19%						
Sb 206.836†	2982.4	1.07 mg/L	0.036	1.07 mg/L	0.036	3.39%
QC value less than the lower limit for Sb 206.836 Recovery = 89.24%						
Se 196.026†	455.3	0.408 mg/L	0.0145	0.408 mg/L	0.0145	3.55%
QC value within limits for Se 196.026 Recovery = 102.06%						
Si 251.611†	206412.1	4.80 mg/L	0.067	4.80 mg/L	0.067	1.41%
QC value within limits for Si 251.611 Recovery = 95.96%						
Sn 189.927†	11653.0	0.963 mg/L	0.0317	0.963 mg/L	0.0317	3.29%
QC value within limits for Sn 189.927 Recovery = 96.30%						
Ti 334.940†	766951.2	0.964 mg/L	0.0136	0.964 mg/L	0.0136	1.41%
QC value within limits for Ti 334.940 Recovery = 96.43%						
Tl 190.801†	1281.6	0.508 mg/L	0.0131	0.508 mg/L	0.0131	2.58%
QC value within limits for Tl 190.801 Recovery = 101.58%						
V 290.880†	163591.3	0.964 mg/L	0.0149	0.964 mg/L	0.0149	1.54%
QC value within limits for V 290.880 Recovery = 96.43%						
Zn 206.200†	84901.4	0.991 mg/L	0.0121	0.991 mg/L	0.0121	1.22%
QC value within limits for Zn 206.200 Recovery = 99.08%						
K 766.490†	50638.3	48.7 mg/L	0.50	48.7 mg/L	0.50	1.04%
QC value within limits for K 766.490 Recovery = 97.42%						
Na 589.592†	319787.0	49.8 mg/L	0.37	49.8 mg/L	0.37	0.75%
QC value within limits for Na 589.592 Recovery = 99.60%						
Sr 407.771†	785246.9	0.987 mg/L	0.0134	0.987 mg/L	0.0134	1.36%
QC value within limits for Sr 407.771 Recovery = 98.75%						
Li 670.784†	32075.5	0.984 mg/L	0.0153	0.984 mg/L	0.0153	1.56%
QC value within limits for Li 670.784 Recovery = 98.43%						
P 214.914†	21426.5	9.57 mg/L	0.290	9.57 mg/L	0.290	3.03%
QC value within limits for P 214.914 Recovery = 95.65%						

QC Failed. Continue with analysis.

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Sequence No.: 11 **Autosampler Location: 1**
Sample ID: CCB **Date Collected: 8/23/2015 1:24:51 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCB

Analyte	**Back Pressure**	**Flow**
All	202.0 kPa	0.31 L/min

Mean Data: CCB

Analyte	**Mean Corrected Intensity**	**Calib. Conc.**	**Units**	**Std.Dev.**	**Sample Conc.**	**Units**	**Std.Dev.**	**RSD**

Approved: August 24, 2015

Lynn H. Rhoden

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Y 371.029            2443508.8                                                    98723.34   4.04%
YRADIAL               141906.9                                                     7817.27   5.51%
Ga 417.206            972241.0                                                    43825.56   4.51%
GaRADIAL               34036.4                                                     1885.88   5.54%
Ag 328.068†              -477.4     0.00025 mg/L      0.000158     0.00025 mg/L      0.000158  63.89%
   QC value within limits for Ag 328.068  Recovery = Not calculated
Al 396.153†              -14.1     -0.0280 mg/L       0.00826     -0.0280 mg/L       0.00826  29.48%
   QC value within limits for Al 396.153  Recovery = Not calculated
As 188.979†                8.7     0.00071 mg/L      0.002690     0.00071 mg/L      0.002690 380.08%
   QC value within limits for As 188.979  Recovery = Not calculated
Ba 233.527†               27.8     0.00000 mg/L      0.000089     0.00000 mg/L      0.000089 >999.9%
   QC value within limits for Ba 233.527  Recovery = Not calculated
Be 234.861†              -91.9     0.00013 mg/L      0.000059     0.00013 mg/L      0.000059  45.06%
   QC value within limits for Be 234.861  Recovery = Not calculated
B 249.677†               325.8     0.00784 mg/L      0.000797     0.00784 mg/L      0.000797  10.18%
   QC value within limits for B 249.677  Recovery = Not calculated
Ca 227.546†              -28.9     0.00670 mg/L      0.024441     0.00670 mg/L      0.024441 364.87%
   QC value within limits for Ca 227.546  Recovery = Not calculated
Cd 228.802†               -4.8     0.00002 mg/L      0.000219     0.00002 mg/L      0.000219 >999.9%
   QC value within limits for Cd 228.802  Recovery = Not calculated
Co 228.616†              -12.0    -0.00041 mg/L      0.000170    -0.00041 mg/L      0.000170  41.82%
   QC value within limits for Co 228.616  Recovery = Not calculated
Cr 267.716†               33.4     0.00007 mg/L      0.000078     0.00007 mg/L      0.000078 110.13%
   QC value within limits for Cr 267.716  Recovery = Not calculated
Cu 327.393†              170.9     0.00221 mg/L      0.001245     0.00221 mg/L      0.001245  56.42%
   QC value within limits for Cu 327.393  Recovery = Not calculated
Fe 239.562†              -26.4    -0.00843 mg/L      0.001014    -0.00843 mg/L      0.001014  12.03%
   QC value within limits for Fe 239.562  Recovery = Not calculated
Mg 279.077†               95.3    -0.00370 mg/L      0.006147    -0.00370 mg/L      0.006147 166.09%
   QC value within limits for Mg 279.077  Recovery = Not calculated
Mn 257.610†             -572.0    -0.00123 mg/L      0.000049    -0.00123 mg/L      0.000049   4.00%
   QC value within limits for Mn 257.610  Recovery = Not calculated
Mo 202.031†               23.2     0.00157 mg/L      0.000438     0.00157 mg/L      0.000438  27.96%
   QC value within limits for Mo 202.031  Recovery = Not calculated
Ni 231.604†               30.6    -0.00070 mg/L      0.000533    -0.00070 mg/L      0.000533  76.38%
   QC value within limits for Ni 231.604  Recovery = Not calculated
Pb 220.353†               17.7    -0.00007 mg/L      0.002415    -0.00007 mg/L      0.002415 >999.9%
   QC value within limits for Pb 220.353  Recovery = Not calculated
Sb 206.836†                9.6     0.00831 mg/L      0.002011     0.00831 mg/L      0.002011  24.19%
   QC value within limits for Sb 206.836  Recovery = Not calculated
Se 196.026†               -8.1    -0.00303 mg/L      0.010087    -0.00303 mg/L      0.010087 332.98%
   QC value within limits for Se 196.026  Recovery = Not calculated
Si 251.611†              -411.4     0.00768 mg/L      0.000518     0.00768 mg/L      0.000518   6.75%
   QC value within limits for Si 251.611  Recovery = Not calculated
Sn 189.927†               25.2     0.00051 mg/L      0.001442     0.00051 mg/L      0.001442 281.83%
   QC value within limits for Sn 189.927  Recovery = Not calculated
Ti 334.940†              -436.6     0.00067 mg/L      0.000086     0.00067 mg/L      0.000086  12.86%
   QC value within limits for Ti 334.940  Recovery = Not calculated
Tl 190.801†               -2.3    -0.00053 mg/L      0.002050    -0.00053 mg/L      0.002050 389.88%
   QC value within limits for Tl 190.801  Recovery = Not calculated
V 290.880†               412.8     0.00334 mg/L      0.002326     0.00334 mg/L      0.002326  69.62%
   QC value within limits for V 290.880  Recovery = Not calculated
Zn 206.200†               24.5    -0.00136 mg/L      0.000073    -0.00136 mg/L      0.000073   5.35%
   QC value within limits for Zn 206.200  Recovery = Not calculated
K 766.490†                56.4      0.0456 mg/L       0.11359      0.0456 mg/L       0.11359 249.34%
   QC value within limits for K 766.490  Recovery = Not calculated
Na 589.592†              664.9      0.0814 mg/L       0.00629      0.0814 mg/L       0.00629   7.73%
   QC value within limits for Na 589.592  Recovery = Not calculated
Sr 407.771†             1414.1     0.00435 mg/L      0.000363     0.00435 mg/L      0.000363   8.34%
   QC value within limits for Sr 407.771  Recovery = Not calculated
Li 670.784†              162.6    -0.00049 mg/L      0.002662    -0.00049 mg/L      0.002662 543.97%
   QC value within limits for Li 670.784  Recovery = Not calculated
P 214.914†                29.3     -0.0157 mg/L       0.00338     -0.0157 mg/L       0.00338  21.55%
   QC value within limits for P 214.914  Recovery = Not calculated
All analyte(s) passed QC.

==========================================================================================
Sequence No.: 12                                  Autosampler Location: 80
Sample ID: L1508085201                            Date Collected: 8/23/2015 1:28:09 PM
Analyst: KHR                                      Data Type: Original
Initial Sample Wt:                                Initial Sample Vol:
Dilution:                                         Sample Prep Vol:
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Approved: August 24, 2015

Kym H. Rhoden

Nebulizer Parameters: L1508085201

Analyte	Back Pressure	Flow
All	202.0 kPa	0.31 L/min

Mean Data: L1508085201

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2295779.7						139228.13	6.06%
YRADIAL	151270.0						2958.40	1.96%
Ga 417.206	797874.9						53532.94	6.71%
GaRADIAL	35981.0						639.12	1.78%
Ag 328.068†	3222.4	0.0135	mg/L	0.00094	0.0135	mg/L	0.00094	6.96%
Al 396.153†	3376.0	1.56	mg/L	0.032	1.56	mg/L	0.032	2.06%
As 188.979†	3.0	0.0103	mg/L	0.00322	0.0103	mg/L	0.00322	31.39%
Ba 233.527†	59612.7	0.391	mg/L	0.0033	0.391	mg/L	0.0033	0.83%
Be 234.861†	-528.1	-0.00019	mg/L	0.000111	-0.00019	mg/L	0.000111	58.57%
B 249.677†	1962.7	0.0290	mg/L	0.00120	0.0290	mg/L	0.00120	4.13%
Ca 227.546†	168432.8	519	mg/L	5.5	519	mg/L	5.5	1.05%
Cd 228.802†	-0.1	0.00014	mg/L	0.000398	0.00014	mg/L	0.000398	276.71%
Co 228.616†	-30.3	-0.00083	mg/L	0.000237	-0.00083	mg/L	0.000237	28.64%
Cr 267.716†	135.1	0.00078	mg/L	0.000196	0.00078	mg/L	0.000196	25.12%
Cu 327.393†	7109.7	0.0404	mg/L	0.00267	0.0404	mg/L	0.00267	6.60%
Fe 239.562†	61.9	0.00046	mg/L	0.002871	0.00046	mg/L	0.002871	624.12%
Mg 279.077†	171.0	0.0353	mg/L	0.03241	0.0353	mg/L	0.03241	91.70%
Mn 257.610†	-526.8	-0.00116	mg/L	0.000050	-0.00116	mg/L	0.000050	4.26%
Mo 202.031†	481.4	0.0145	mg/L	0.00048	0.0145	mg/L	0.00048	3.28%
Ni 231.604†	31.4	-0.00068	mg/L	0.000156	-0.00068	mg/L	0.000156	23.08%
Pb 220.353†	9.5	-0.00022	mg/L	0.002338	-0.00022	mg/L	0.002338	>999.9%
Sb 206.836†	18.7	0.0116	mg/L	0.00229	0.0116	mg/L	0.00229	19.79%
Se 196.026†	-14.2	-0.00823	mg/L	0.003172	-0.00823	mg/L	0.003172	38.55%
Si 251.611†	17855.7	0.432	mg/L	0.0316	0.432	mg/L	0.0316	7.31%
Sn 189.927†	-208.0	-0.0188	mg/L	0.00095	-0.0188	mg/L	0.00095	5.06%
Ti 334.940†	-27214.8	0.00040	mg/L	0.004472	0.00040	mg/L	0.004472	>999.9%
Tl 190.801†	-56.1	-0.0217	mg/L	0.00593	-0.0217	mg/L	0.00593	27.33%
V 290.880†	622.5	0.00456	mg/L	0.001771	0.00456	mg/L	0.001771	38.86%
Zn 206.200†	2004.0	0.0217	mg/L	0.00097	0.0217	mg/L	0.00097	4.48%
K 766.490†	275778.5	273	mg/L	1.0	273	mg/L	1.0	0.38%
Na 589.592†	2243817.1	373	mg/L	1.3	373	mg/L	1.3	0.35%
Sr 407.771†	521213.6	0.640	mg/L	0.0034	0.640	mg/L	0.0034	0.53%
Li 670.784†	3451.4	0.101	mg/L	0.0016	0.101	mg/L	0.0016	1.61%
P 214.914†	-16.2	-0.0361	mg/L	0.00627	-0.0361	mg/L	0.00627	17.36%

Sequence No.: 13
Sample ID: L1508096801
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 81
Date Collected: 8/23/2015 1:30:34 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1508096801

Analyte	Back Pressure	Flow
All	202.0 kPa	0.31 L/min

Mean Data: L1508096801

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2408854.3						82995.55	3.45%
YRADIAL	153236.2						2820.49	1.84%
Ga 417.206	937009.1						37329.35	3.98%
GaRADIAL	37976.0						617.77	1.63%
Ag 328.068†	-83.9	0.00202	mg/L	0.000271	0.00202	mg/L	0.000271	13.42%
Al 396.153†	1871.5	0.854	mg/L	0.0491	0.854	mg/L	0.0491	5.75%
As 188.979†	13.1	0.00287	mg/L	0.001943	0.00287	mg/L	0.001943	67.74%
Ba 233.527†	10610.5	0.0694	mg/L	0.00259	0.0694	mg/L	0.00259	3.73%
Be 234.861†	39.1	0.00002	mg/L	0.000032	0.00002	mg/L	0.000032	176.12%
B 249.677†	3665.0	0.0548	mg/L	0.00227	0.0548	mg/L	0.00227	4.14%
Ca 227.546†	11017.6	34.1	mg/L	1.41	34.1	mg/L	1.41	4.14%

Approved: August 24, 2015

Cd 228.802†	-4.9	0.00001	mg/L	0.000066	0.00001	mg/L	0.000066	780.74%
Co 228.616†	-15.6	-0.00055	mg/L	0.000060	-0.00055	mg/L	0.000060	10.87%
Cr 267.716†	240.6	0.00152	mg/L	0.000236	0.00152	mg/L	0.000236	15.54%
Cu 327.393†	274.3	0.00286	mg/L	0.000533	0.00286	mg/L	0.000533	18.67%
Fe 239.562†	9840.0	0.985	mg/L	0.0097	0.985	mg/L	0.0097	0.98%
Mg 279.077†	12238.4	6.26	mg/L	0.024	6.26	mg/L	0.024	0.39%
Mn 257.610†	114909.8	0.155	mg/L	0.0019	0.155	mg/L	0.0019	1.22%
Mo 202.031†	115.2	0.00426	mg/L	0.000580	0.00426	mg/L	0.000580	13.64%
Ni 231.604†	127.2	0.00057	mg/L	0.000254	0.00057	mg/L	0.000254	44.25%
Pb 220.353†	34.8	0.00108	mg/L	0.000472	0.00108	mg/L	0.000472	43.85%
Sb 206.836†	13.4	0.00968	mg/L	0.003569	0.00968	mg/L	0.003569	36.86%
Se 196.026†	-21.0	-0.0144	mg/L	0.00362	-0.0144	mg/L	0.00362	25.11%
Si 251.611†	216527.2	5.04	mg/L	0.090	5.04	mg/L	0.090	1.78%
Sn 189.927†	-77.8	-0.00802	mg/L	0.000791	-0.00802	mg/L	0.000791	9.86%
Ti 334.940†	8425.0	0.0140	mg/L	0.00125	0.0140	mg/L	0.00125	8.96%
Tl 190.801†	-26.7	-0.0101	mg/L	0.00270	-0.0101	mg/L	0.00270	26.79%
V 290.880†	31.5	0.00109	mg/L	0.001264	0.00109	mg/L	0.001264	115.57%
Zn 206.200†	643.1	0.00588	mg/L	0.000325	0.00588	mg/L	0.000325	5.54%
K 766.490†	3039.8	2.88	mg/L	0.020	2.88	mg/L	0.020	0.70%
Na 589.592†	153224.7	23.7	mg/L	0.06	23.7	mg/L	0.06	0.25%
Sr 407.771†	161681.6	0.204	mg/L	0.0007	0.204	mg/L	0.0007	0.33%
Li 670.784†	156.3	-0.00068	mg/L	0.002976	-0.00068	mg/L	0.002976	436.02%
P 214.914†	252.6	0.0843	mg/L	0.00523	0.0843	mg/L	0.00523	6.20%

Sequence No.: 14 **Autosampler Location: 82**
Sample ID: L1508099202 **Date Collected: 8/23/2015 1:32:57 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508099202

Analyte	Back Pressure	Flow
All	202.0 kPa	0.31 L/min

Mean Data: L1508099202

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2337093.4						124712.88	5.34%
YRADIAL	145401.4						2296.04	1.58%
Ga 417.206	858905.3						56738.01	6.61%
GaRADIAL	36288.3						762.56	2.10%
Ag 328.068†	1126.8	0.00555	mg/L	0.000316	0.00555	mg/L	0.000316	5.69%
Al 396.153†	22.8	-0.0108	mg/L	0.00925	-0.0108	mg/L	0.00925	85.88%
As 188.979†	-0.3	0.00305	mg/L	0.003595	0.00305	mg/L	0.003595	118.03%
Ba 233.527†	4447.9	0.0290	mg/L	0.00146	0.0290	mg/L	0.00146	5.03%
Be 234.861†	-388.5	-0.00009	mg/L	0.000093	-0.00009	mg/L	0.000093	98.19%
B 249.677†	8362.2	0.112	mg/L	0.0071	0.112	mg/L	0.0071	6.38%
Ca 227.546†	72846.6	225	mg/L	4.1	225	mg/L	4.1	1.82%
Cd 228.802†	9.7	0.00040	mg/L	0.000092	0.00040	mg/L	0.000092	23.20%
Co 228.616†	-27.7	-0.00071	mg/L	0.000672	-0.00071	mg/L	0.000672	95.04%
Cr 267.716†	1268.7	0.00867	mg/L	0.000645	0.00867	mg/L	0.000645	7.44%
Cu 327.393†	-637.0	-0.00228	mg/L	0.001838	-0.00228	mg/L	0.001838	80.50%
Fe 239.562†	244.7	0.0172	mg/L	0.00125	0.0172	mg/L	0.00125	7.26%
Mg 279.077†	159656.8	82.3	mg/L	0.72	82.3	mg/L	0.72	0.88%
Mn 257.610†	1604.7	0.00171	mg/L	0.000141	0.00171	mg/L	0.000141	8.26%
Mo 202.031†	62.7	0.00268	mg/L	0.000668	0.00268	mg/L	0.000668	24.98%
Ni 231.604†	98.5	0.00020	mg/L	0.000087	0.00020	mg/L	0.000087	43.27%
Pb 220.353†	25.9	0.00045	mg/L	0.000646	0.00045	mg/L	0.000646	144.71%
Sb 206.836†	6.1	0.00698	mg/L	0.001713	0.00698	mg/L	0.001713	24.55%
Se 196.026†	-23.9	-0.0170	mg/L	0.01096	-0.0170	mg/L	0.01096	64.48%
Si 251.611†	656806.0	15.3	mg/L	0.19	15.3	mg/L	0.19	1.22%
Sn 189.927†	-174.6	-0.0160	mg/L	0.00085	-0.0160	mg/L	0.00085	5.28%
Ti 334.940†	-14019.5	-0.00196	mg/L	0.000557	-0.00196	mg/L	0.000557	28.44%
Tl 190.801†	-47.8	-0.0184	mg/L	0.00416	-0.0184	mg/L	0.00416	22.63%
V 290.880†	-2338.8	-0.0150	mg/L	0.00089	-0.0150	mg/L	0.00089	5.93%
Zn 206.200†	309.7	0.00203	mg/L	0.000365	0.00203	mg/L	0.000365	17.97%
K 766.490†	3543.1	2.96	mg/L	0.174	2.96	mg/L	0.174	5.87%
Na 589.592†	2517347.2	423	mg/L	6.7	423	mg/L	6.7	1.59%
Sr 407.771†	1868929.5	2.34	mg/L	0.017	2.34	mg/L	0.017	0.73%

Approved: August 24, 2015

Li 670.784†	3317.2	0.0969	mg/L	0.00059	0.0969	mg/L	0.00059	0.61%
P 214.914†	164.6	0.0449	mg/L	0.00724	0.0449	mg/L	0.00724	16.14%

Sequence No.: 15 **Autosampler Location: 83**
Sample ID: L1508099204 **Date Collected: 8/23/2015 1:35:22 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508099204

Analyte	Back Pressure	Flow
All	202.0 kPa	0.31 L/min

Mean Data: L1508099204

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2534681.4						33087.09	1.31%
YRADIAL	152682.5						1680.35	1.10%
Ga 417.206	969974.4						10230.78	1.05%
GaRADIAL	37683.9						440.66	1.17%
Ag 328.068†	-301.5	0.00063	mg/L	0.000158	0.00063	mg/L	0.000158	25.02%
Al 396.153†	34.7	-0.00531	mg/L	0.002590	-0.00531	mg/L	0.002590	48.78%
As 188.979†	22.3	0.00510	mg/L	0.000671	0.00510	mg/L	0.000671	13.16%
Ba 233.527†	13450.1	0.0880	mg/L	0.00096	0.0880	mg/L	0.00096	1.09%
Be 234.861†	-210.2	0.00003	mg/L	0.000011	0.00003	mg/L	0.000011	38.11%
B 249.677†	3483.6	0.0489	mg/L	0.00025	0.0489	mg/L	0.00025	0.51%
Ca 227.546†	6883.9	21.3	mg/L	0.18	21.3	mg/L	0.18	0.84%
Cd 228.802†	2.3	0.00018	mg/L	0.000208	0.00018	mg/L	0.000208	117.61%
Co 228.616†	-24.0	-0.00068	mg/L	0.000272	-0.00068	mg/L	0.000272	39.81%
Cr 267.716†	435.3	0.00287	mg/L	0.000183	0.00287	mg/L	0.000183	6.37%
Cu 327.393†	551.6	0.00430	mg/L	0.000415	0.00430	mg/L	0.000415	9.64%
Fe 239.562†	723.7	0.0670	mg/L	0.00271	0.0670	mg/L	0.00271	4.05%
Mg 279.077†	15027.0	7.70	mg/L	0.184	7.70	mg/L	0.184	2.39%
Mn 257.610†	11090.5	0.0145	mg/L	0.00016	0.0145	mg/L	0.00016	1.08%
Mo 202.031†	151.4	0.00519	mg/L	0.000439	0.00519	mg/L	0.000439	8.46%
Ni 231.604†	27.9	-0.00073	mg/L	0.000192	-0.00073	mg/L	0.000192	26.31%
Pb 220.353†	-1.7	-0.00129	mg/L	0.001572	-0.00129	mg/L	0.001572	122.30%
Sb 206.836†	2.4	0.00571	mg/L	0.001152	0.00571	mg/L	0.001152	20.19%
Se 196.026†	-19.7	-0.0133	mg/L	0.00702	-0.0133	mg/L	0.00702	52.76%
Si 251.611†	521528.8	12.1	mg/L	0.02	12.1	mg/L	0.02	0.14%
Sn 189.927†	-53.6	-0.00602	mg/L	0.002279	-0.00602	mg/L	0.002279	37.89%
Ti 334.940†	-1058.5	0.00125	mg/L	0.000376	0.00125	mg/L	0.000376	29.98%
Tl 190.801†	-29.6	-0.0112	mg/L	0.00300	-0.0112	mg/L	0.00300	26.85%
V 290.880†	-539.3	-0.00246	mg/L	0.002010	-0.00246	mg/L	0.002010	81.74%
Zn 206.200†	1286.0	0.0133	mg/L	0.00012	0.0133	mg/L	0.00012	0.89%
K 766.490†	8567.2	8.10	mg/L	0.183	8.10	mg/L	0.183	2.26%
Na 589.592†	618442.5	97.2	mg/L	0.38	97.2	mg/L	0.38	0.39%
Sr 407.771†	1077543.1	1.35	mg/L	0.009	1.35	mg/L	0.009	0.63%
Li 670.784†	2195.0	0.0622	mg/L	0.00296	0.0622	mg/L	0.00296	4.76%
P 214.914†	110.8	0.0208	mg/L	0.00580	0.0208	mg/L	0.00580	27.87%

Sequence No.: 16 **Autosampler Location: 84**
Sample ID: L1508099206 **Date Collected: 8/23/2015 1:37:45 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508099206

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508099206

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2426929.0						41036.51	1.69%
YRADIAL	144793.6						5516.73	3.81%

Approved: August 24, 2015

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Ga 417.206	881541.4					15131.00	1.72%
GaRADIAL	36130.7					1078.10	2.98%
Ag 328.068†	1652.7	0.00741	mg/L	0.000692	0.00741 mg/L	0.000692	9.34%
Al 396.153†	32.8	-0.00616	mg/L	0.018583	-0.00616 mg/L	0.018583	301.74%
As 188.979†	0.2	0.00384	mg/L	0.001490	0.00384 mg/L	0.001490	38.78%
Ba 233.527†	4132.6	0.0269	mg/L	0.00063	0.0269 mg/L	0.00063	2.33%
Be 234.861†	-291.6	-0.00001	mg/L	0.000026	-0.00001 mg/L	0.000026	213.94%
B 249.677†	3930.1	0.0544	mg/L	0.00106	0.0544 mg/L	0.00106	1.94%
Ca 227.546†	82373.6	254	mg/L	2.8	254 mg/L	2.8	1.09%
Cd 228.802†	16.8	0.00058	mg/L	0.000187	0.00058 mg/L	0.000187	32.48%
Co 228.616†	-19.0	-0.00052	mg/L	0.000249	-0.00052 mg/L	0.000249	48.00%
Cr 267.716†	337.7	0.00218	mg/L	0.000302	0.00218 mg/L	0.000302	13.86%
Cu 327.393†	-276.9	-0.00030	mg/L	0.001750	-0.00030 mg/L	0.001750	590.88%
Fe 239.562†	29.8	-0.00483	mg/L	0.002898	-0.00483 mg/L	0.002898	59.99%
Mg 279.077†	200300.0	103	mg/L	1.0	103 mg/L	1.0	0.99%
Mn 257.610†	42007.0	0.0562	mg/L	0.00058	0.0562 mg/L	0.00058	1.03%
Mo 202.031†	82.4	0.00324	mg/L	0.000392	0.00324 mg/L	0.000392	12.10%
Ni 231.604†	400.6	0.00416	mg/L	0.000219	0.00416 mg/L	0.000219	5.27%
Pb 220.353†	42.7	0.00147	mg/L	0.000449	0.00147 mg/L	0.000449	30.59%
Sb 206.836†	17.5	0.0111	mg/L	0.00286	0.0111 mg/L	0.00286	25.75%
Se 196.026†	-37.6	-0.0291	mg/L	0.00901	-0.0291 mg/L	0.00901	30.97%
Si 251.611†	876603.7	20.4	mg/L	0.19	20.4 mg/L	0.19	0.95%
Sn 189.927†	-173.3	-0.0159	mg/L	0.00095	-0.0159 mg/L	0.00095	5.99%
Ti 334.940†	-15209.2	-0.00156	mg/L	0.000236	-0.00156 mg/L	0.000236	15.11%
Tl 190.801†	-51.3	-0.0198	mg/L	0.00253	-0.0198 mg/L	0.00253	12.79%
V 290.880†	-2460.4	-0.0163	mg/L	0.00136	-0.0163 mg/L	0.00136	8.38%
Zn 206.200†	357.6	0.00254	mg/L	0.000111	0.00254 mg/L	0.000111	4.37%
K 766.490†	2576.7	1.98	mg/L	0.082	1.98 mg/L	0.082	4.13%
Na 589.592†	2829585.8	481	mg/L	7.4	481 mg/L	7.4	1.53%
Sr 407.771†	1961859.8	2.46	mg/L	0.016	2.46 mg/L	0.016	0.65%
Li 670.784†	2087.4	0.0589	mg/L	0.00231	0.0589 mg/L	0.00231	3.93%
P 214.914†	231.6	0.0749	mg/L	0.00509	0.0749 mg/L	0.00509	6.80%

Sequence No.: 17 **Autosampler Location: 85**
Sample ID: L1508099208 **Date Collected: 8/23/2015 1:40:09 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508099208

Analyte	**Back Pressure**	**Flow**
All	202.0 kPa	0.31 L/min

Mean Data: L1508099208

Analyte	**Mean Corrected Intensity**	**Calib. Conc.**	**Units**	**Std.Dev.**	**Sample Conc.**	**Units**	**Std.Dev.**	**RSD**
Y 371.029	2471705.5						62522.83	2.53%
YRADIAL	146835.2						5378.09	3.66%
Ga 417.206	945386.7						24279.14	2.57%
GaRADIAL	36771.8						1112.55	3.03%
Ag 328.068†	659.2	0.00384	mg/L	0.000786	0.00384	mg/L	0.000786	20.49%
Al 396.153†	23.5	-0.0107	mg/L	0.02811	-0.0107	mg/L	0.02811	261.71%
As 188.979†	6.7	0.00248	mg/L	0.002582	0.00248	mg/L	0.002582	104.30%
Ba 233.527†	16569.6	0.109	mg/L	0.0036	0.109	mg/L	0.0036	3.30%
Be 234.861†	-232.2	0.00003	mg/L	0.000037	0.00003	mg/L	0.000037	122.89%
B 249.677†	2856.0	0.0406	mg/L	0.00137	0.0406	mg/L	0.00137	3.39%
Ca 227.546†	35277.0	109	mg/L	1.4	109	mg/L	1.4	1.27%
Cd 228.802†	3.5	0.00023	mg/L	0.000220	0.00023	mg/L	0.000220	95.61%
Co 228.616†	-36.0	-0.00092	mg/L	0.000415	-0.00092	mg/L	0.000415	45.23%
Cr 267.716†	379.3	0.00248	mg/L	0.000286	0.00248	mg/L	0.000286	11.54%
Cu 327.393†	97.3	0.00179	mg/L	0.000436	0.00179	mg/L	0.000436	24.38%
Fe 239.562†	5.9	-0.00535	mg/L	0.005093	-0.00535	mg/L	0.005093	95.21%
Mg 279.077†	16630.7	8.52	mg/L	0.308	8.52	mg/L	0.308	3.61%
Mn 257.610†	7919.4	0.0102	mg/L	0.00042	0.0102	mg/L	0.00042	4.07%
Mo 202.031†	300.8	0.00940	mg/L	0.000335	0.00940	mg/L	0.000335	3.56%
Ni 231.604†	57.3	-0.00034	mg/L	0.000290	-0.00034	mg/L	0.000290	85.28%
Pb 220.353†	21.7	0.00019	mg/L	0.000819	0.00019	mg/L	0.000819	431.85%
Sb 206.836†	11.4	0.00895	mg/L	0.001980	0.00895	mg/L	0.001980	22.11%
Se 196.026†	-19.6	-0.0132	mg/L	0.00611	-0.0132	mg/L	0.00611	46.44%

Approved: August 24, 2015

Si 251.611†	550432.5	12.8	mg/L	0.17	12.8	mg/L	0.17	1.36%
Sn 189.927†	-132.2	-0.0125	mg/L	0.00026	-0.0125	mg/L	0.00026	2.07%
Ti 334.940†	-7612.4	-0.00135	mg/L	0.000471	-0.00135	mg/L	0.000471	34.83%
Tl 190.801†	-47.5	-0.0182	mg/L	0.00197	-0.0182	mg/L	0.00197	10.85%
V 290.880†	-170.2	-0.00032	mg/L	0.000903	-0.00032	mg/L	0.000903	282.70%
Zn 206.200†	178.0	0.00045	mg/L	0.000116	0.00045	mg/L	0.000116	25.84%
K 766.490†	2718.7	2.55	mg/L	0.134	2.55	mg/L	0.134	5.24%
Na 589.592†	271657.7	42.2	mg/L	0.13	42.2	mg/L	0.13	0.30%
Sr 407.771†	2024125.6	2.54	mg/L	0.021	2.54	mg/L	0.021	0.81%
Li 670.784†	637.2	0.0142	mg/L	0.00362	0.0142	mg/L	0.00362	25.59%
P 214.914†	71.8	0.00335	mg/L	0.006170	0.00335	mg/L	0.006170	184.21%

Sequence No.: 18 **Autosampler Location: 86**
Sample ID: L1508099210 **Date Collected: 8/23/2015 1:42:33 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508099210

Analyte	Back Pressure	Flow
All	202.0 kPa	0.31 L/min

Mean Data: L1508099210

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2435505.6						103678.54	4.26%
YRADIAL	149731.0						4654.43	3.11%
Ga 417.206	897205.5						42935.45	4.79%
GaRADIAL	36704.8						706.45	1.92%
Ag 328.068†	550.4	0.00370	mg/L	0.000775	0.00370	mg/L	0.000775	20.97%
Al 396.153†	129.5	0.0390	mg/L	0.01337	0.0390	mg/L	0.01337	34.27%
As 188.979†	3.7	0.00163	mg/L	0.003166	0.00163	mg/L	0.003166	193.63%
Ba 233.527†	4225.7	0.0275	mg/L	0.00107	0.0275	mg/L	0.00107	3.87%
Be 234.861†	-272.2	-0.00001	mg/L	0.000077	-0.00001	mg/L	0.000077	667.98%
B 249.677†	2613.6	0.0377	mg/L	0.00147	0.0377	mg/L	0.00147	3.89%
Ca 227.546†	34863.6	108	mg/L	0.6	108	mg/L	0.6	0.56%
Cd 228.802†	16.8	0.00057	mg/L	0.000259	0.00057	mg/L	0.000259	45.24%
Co 228.616†	15.2	0.00018	mg/L	0.000543	0.00018	mg/L	0.000543	298.73%
Cr 267.716†	250.6	0.00158	mg/L	0.000202	0.00158	mg/L	0.000202	12.81%
Cu 327.393†	-165.6	0.00034	mg/L	0.000571	0.00034	mg/L	0.000571	169.38%
Fe 239.562†	848.1	0.0786	mg/L	0.00465	0.0786	mg/L	0.00465	5.91%
Mg 279.077†	98778.7	50.9	mg/L	0.25	50.9	mg/L	0.25	0.49%
Mn 257.610†	74334.2	0.0999	mg/L	0.00111	0.0999	mg/L	0.00111	1.11%
Mo 202.031†	152.8	0.00525	mg/L	0.000583	0.00525	mg/L	0.000583	11.11%
Ni 231.604†	192.8	0.00144	mg/L	0.000193	0.00144	mg/L	0.000193	13.45%
Pb 220.353†	13.0	-0.00040	mg/L	0.001034	-0.00040	mg/L	0.001034	255.58%
Sb 206.836†	10.2	0.00852	mg/L	0.001954	0.00852	mg/L	0.001954	22.93%
Se 196.026†	-31.9	-0.0241	mg/L	0.00336	-0.0241	mg/L	0.00336	13.95%
Si 251.611†	817000.4	19.0	mg/L	0.14	19.0	mg/L	0.14	0.76%
Sn 189.927†	-117.4	-0.0113	mg/L	0.00039	-0.0113	mg/L	0.00039	3.41%
Ti 334.940†	-6357.0	0.00014	mg/L	0.000707	0.00014	mg/L	0.000707	494.36%
Tl 190.801†	-46.6	-0.0179	mg/L	0.00141	-0.0179	mg/L	0.00141	7.89%
V 290.880†	-1476.3	-0.00909	mg/L	0.001088	-0.00909	mg/L	0.001088	11.96%
Zn 206.200†	1485.9	0.0157	mg/L	0.00081	0.0157	mg/L	0.00081	5.18%
K 766.490†	1772.1	1.45	mg/L	0.090	1.45	mg/L	0.090	6.17%
Na 589.592†	1464318.4	237	mg/L	1.8	237	mg/L	1.8	0.75%
Sr 407.771†	1054435.4	1.32	mg/L	0.009	1.32	mg/L	0.009	0.66%
Li 670.784†	2229.0	0.0633	mg/L	0.00426	0.0633	mg/L	0.00426	6.73%
P 214.914†	148.2	0.0375	mg/L	0.00691	0.0375	mg/L	0.00691	18.40%

Sequence No.: 19 **Autosampler Location: 87**
Sample ID: L1508104501 **Date Collected: 8/23/2015 1:44:56 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508104501

Approved: August 24, 2015

Kym H. Rhoden

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508104501

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2560226.4						78918.60	3.08%
YRADIAL	154798.0						3745.56	2.42%
Ga 417.206	992019.8						30639.69	3.09%
GaRADIAL	37922.1						801.84	2.11%
Ag 328.068†	-270.4	0.00122	mg/L	0.000497	0.00122	mg/L	0.000497	40.77%
Al 396.153†	630.3	0.273	mg/L	0.0396	0.273	mg/L	0.0396	14.47%
As 188.979†	5.9	0.00115	mg/L	0.005395	0.00115	mg/L	0.005395	469.86%
Ba 233.527†	56979.1	0.374	mg/L	0.0016	0.374	mg/L	0.0016	0.43%
Be 234.861†	82.1	0.00008	mg/L	0.000031	0.00008	mg/L	0.000031	40.62%
B 249.677†	4297.0	0.0626	mg/L	0.00185	0.0626	mg/L	0.00185	2.96%
Ca 227.546†	15625.6	48.3	mg/L	1.35	48.3	mg/L	1.35	2.79%
Cd 228.802†	4.0	0.00025	mg/L	0.000087	0.00025	mg/L	0.000087	34.92%
Co 228.616†	22.7	0.00018	mg/L	0.000274	0.00018	mg/L	0.000274	149.87%
Cr 267.716†	141.0	0.00082	mg/L	0.000278	0.00082	mg/L	0.000278	33.85%
Cu 327.393†	1350.5	0.00876	mg/L	0.000893	0.00876	mg/L	0.000893	10.19%
Fe 239.562†	8843.0	0.885	mg/L	0.0142	0.885	mg/L	0.0142	1.61%
Mg 279.077†	18439.7	9.46	mg/L	0.137	9.46	mg/L	0.137	1.45%
Mn 257.610†	149393.4	0.201	mg/L	0.0007	0.201	mg/L	0.0007	0.36%
Mo 202.031†	35.5	0.00201	mg/L	0.000551	0.00201	mg/L	0.000551	27.45%
Ni 231.604†	113.0	0.00039	mg/L	0.000488	0.00039	mg/L	0.000488	126.41%
Pb 220.353†	63.8	0.00273	mg/L	0.000473	0.00273	mg/L	0.000473	17.30%
Sb 206.836†	2.9	0.00594	mg/L	0.001737	0.00594	mg/L	0.001737	29.23%
Se 196.026†	-15.4	-0.00954	mg/L	0.007221	-0.00954	mg/L	0.007221	75.71%
Si 251.611†	298261.3	6.94	mg/L	0.027	6.94	mg/L	0.027	0.39%
Sn 189.927†	-103.9	-0.0102	mg/L	0.00144	-0.0102	mg/L	0.00144	14.16%
Ti 334.940†	-1257.4	0.00274	mg/L	0.000413	0.00274	mg/L	0.000413	15.09%
Tl 190.801†	-26.8	-0.0103	mg/L	0.00331	-0.0103	mg/L	0.00331	32.26%
V 290.880†	-705.8	-0.00336	mg/L	0.001220	-0.00336	mg/L	0.001220	36.31%
Zn 206.200†	571.7	0.00504	mg/L	0.000174	0.00504	mg/L	0.000174	3.46%
K 766.490†	838.1	0.758	mg/L	0.0479	0.758	mg/L	0.0479	6.32%
Na 589.592†	232297.5	36.1	mg/L	1.71	36.1	mg/L	1.71	4.75%
Sr 407.771†	434437.7	0.546	mg/L	0.0280	0.546	mg/L	0.0280	5.12%
Li 670.784†	255.3	0.00237	mg/L	0.001155	0.00237	mg/L	0.001155	48.74%
P 214.914†	56.7	-0.00342	mg/L	0.002837	-0.00342	mg/L	0.002837	83.01%

Sequence No.: 20
Sample ID: L1508104601
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 88
Date Collected: 8/23/2015 1:47:19 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1508104601

Analyte	Back Pressure	Flow
All	202.0 kPa	0.31 L/min

Mean Data: L1508104601

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2542244.4						116666.79	4.59%
YRADIAL	146449.2						7539.64	5.15%
Ga 417.206	996989.9						51299.27	5.15%
GaRADIAL	36384.7						1668.55	4.59%
Ag 328.068†	344.5	0.00366	mg/L	0.000786	0.00366	mg/L	0.000786	21.48%
Al 396.153†	2096.5	0.959	mg/L	0.0222	0.959	mg/L	0.0222	2.32%
As 188.979†	1.4	0.00053	mg/L	0.001935	0.00053	mg/L	0.001935	362.77%
Ba 233.527†	14343.7	0.0939	mg/L	0.00325	0.0939	mg/L	0.00325	3.46%
Be 234.861†	269.0	0.00011	mg/L	0.000147	0.00011	mg/L	0.000147	129.02%
B 249.677†	1152.1	0.0233	mg/L	0.00073	0.0233	mg/L	0.00073	3.13%
Ca 227.546†	25384.8	78.4	mg/L	3.28	78.4	mg/L	3.28	4.19%
Cd 228.802†	2.8	0.00022	mg/L	0.000064	0.00022	mg/L	0.000064	28.46%
Co 228.616†	29.5	0.00039	mg/L	0.000211	0.00039	mg/L	0.000211	54.31%
Cr 267.716†	269.8	0.00172	mg/L	0.000301	0.00172	mg/L	0.000301	17.47%

Approved: August 24, 2015

Cu 327.393†	678.7	0.00510	mg/L	0.001147	0.00510	mg/L	0.001147	22.50%
Fe 239.562†	12624.2	1.27	mg/L	0.016	1.27	mg/L	0.016	1.24%
Mg 279.077†	14306.8	7.33	mg/L	0.080	7.33	mg/L	0.080	1.09%
Mn 257.610†	41105.8	0.0550	mg/L	0.00046	0.0550	mg/L	0.00046	0.83%
Mo 202.031†	72.9	0.00306	mg/L	0.000293	0.00306	mg/L	0.000293	9.59%
Ni 231.604†	136.5	0.00070	mg/L	0.000364	0.00070	mg/L	0.000364	52.27%
Pb 220.353†	39.3	0.00143	mg/L	0.000332	0.00143	mg/L	0.000332	23.27%
Sb 206.836†	11.4	0.00898	mg/L	0.004806	0.00898	mg/L	0.004806	53.54%
Se 196.026†	-7.4	-0.00240	mg/L	0.005926	-0.00240	mg/L	0.005926	246.72%
Si 251.611†	232234.5	5.41	mg/L	0.065	5.41	mg/L	0.065	1.19%
Sn 189.927†	-120.6	-0.0116	mg/L	0.00108	-0.0116	mg/L	0.00108	9.33%
Ti 334.940†	7644.7	0.0158	mg/L	0.00557	0.0158	mg/L	0.00557	35.19%
Tl 190.801†	-36.4	-0.0138	mg/L	0.00316	-0.0138	mg/L	0.00316	22.99%
V 290.880†	-477.2	-0.00188	mg/L	0.000545	-0.00188	mg/L	0.000545	28.95%
Zn 206.200†	375.3	0.00277	mg/L	0.000302	0.00277	mg/L	0.000302	10.90%
K 766.490†	1068.9	1.01	mg/L	0.061	1.01	mg/L	0.061	6.04%
Na 589.592†	41119.8	6.33	mg/L	0.028	6.33	mg/L	0.028	0.45%
Sr 407.771†	286371.7	0.359	mg/L	0.0115	0.359	mg/L	0.0115	3.21%
Li 670.784†	284.5	0.00327	mg/L	0.004041	0.00327	mg/L	0.004041	123.47%
P 214.914†	138.7	0.0333	mg/L	0.00449	0.0333	mg/L	0.00449	13.49%

Sequence No.: 21
Sample ID: L1508104701
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 89
Date Collected: 8/23/2015 1:49:45 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1508104701

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508104701

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2439032.5						133929.24	5.49%
YRADIAL	153529.9						4696.02	3.06%
Ga 417.206	945431.8						52728.82	5.58%
GaRADIAL	38316.1						1126.11	2.94%
Ag 328.068†	253.9	0.00284	mg/L	0.000252	0.00284	mg/L	0.000252	8.87%
Al 396.153†	104.5	0.0274	mg/L	0.02035	0.0274	mg/L	0.02035	74.24%
As 188.979†	7.3	0.00227	mg/L	0.002020	0.00227	mg/L	0.002020	89.00%
Ba 233.527†	12073.4	0.0790	mg/L	0.00525	0.0790	mg/L	0.00525	6.65%
Be 234.861†	-265.8	-0.00001	mg/L	0.000085	-0.00001	mg/L	0.000085	>999.9%
B 249.677†	1790.0	0.0269	mg/L	0.00183	0.0269	mg/L	0.00183	6.79%
Ca 227.546†	28813.0	88.9	mg/L	5.75	88.9	mg/L	5.75	6.47%
Cd 228.802†	-4.1	0.00004	mg/L	0.000134	0.00004	mg/L	0.000134	368.25%
Co 228.616†	-29.0	-0.00078	mg/L	0.000253	-0.00078	mg/L	0.000253	32.55%
Cr 267.716†	136.6	0.00079	mg/L	0.000247	0.00079	mg/L	0.000247	31.39%
Cu 327.393†	-10.3	0.00120	mg/L	0.002708	0.00120	mg/L	0.002708	225.36%
Fe 239.562†	372.0	0.0315	mg/L	0.00312	0.0315	mg/L	0.00312	9.92%
Mg 279.077†	18948.1	9.72	mg/L	0.154	9.72	mg/L	0.154	1.58%
Mn 257.610†	3522.5	0.00430	mg/L	0.000415	0.00430	mg/L	0.000415	9.66%
Mo 202.031†	83.7	0.00328	mg/L	0.000160	0.00328	mg/L	0.000160	4.89%
Ni 231.604†	-1.8	-0.00112	mg/L	0.000126	-0.00112	mg/L	0.000126	11.24%
Pb 220.353†	42.3	0.00149	mg/L	0.001125	0.00149	mg/L	0.001125	75.75%
Sb 206.836†	16.8	0.0109	mg/L	0.00319	0.0109	mg/L	0.00319	29.26%
Se 196.026†	-14.8	-0.00893	mg/L	0.006485	-0.00893	mg/L	0.006485	72.62%
Si 251.611†	210086.9	4.89	mg/L	0.006	4.89	mg/L	0.006	0.13%
Sn 189.927†	-128.8	-0.0122	mg/L	0.00149	-0.0122	mg/L	0.00149	12.21%
Ti 334.940†	-5574.7	-0.00007	mg/L	0.000258	-0.00007	mg/L	0.000258	356.50%
Tl 190.801†	-28.7	-0.0108	mg/L	0.00190	-0.0108	mg/L	0.00190	17.51%
V 290.880†	-556.1	-0.00261	mg/L	0.000172	-0.00261	mg/L	0.000172	6.57%
Zn 206.200†	168.1	0.00032	mg/L	0.000084	0.00032	mg/L	0.000084	26.30%
K 766.490†	1870.9	1.77	mg/L	0.015	1.77	mg/L	0.015	0.85%
Na 589.592†	102563.1	15.9	mg/L	0.23	15.9	mg/L	0.23	1.43%
Sr 407.771†	215817.5	0.271	mg/L	0.0028	0.271	mg/L	0.0028	1.02%
Li 670.784†	128.5	-0.00154	mg/L	0.003499	-0.00154	mg/L	0.003499	226.84%
P 214.914†	37.0	-0.0123	mg/L	0.00893	-0.0123	mg/L	0.00893	72.89%

Approved: August 24, 2015

Sequence No.: 22
Sample ID: CCV
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 6
Date Collected: 8/23/2015 1:52:07 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2605298.5						55666.61	2.14%
YRADIAL	158852.4						1549.72	0.98%
Ga 417.206	975216.0						30442.73	3.12%
GaRADIAL	38842.4						514.43	1.32%
Ag 328.068†	108402.5	0.397	mg/L	0.0037	0.397	mg/L	0.0037	0.92%
QC value within limits for Ag 328.068 Recovery = 99.22%								
Al 396.153†	21452.9	9.97	mg/L	0.110	9.97	mg/L	0.110	1.11%
QC value within limits for Al 396.153 Recovery = 99.72%								
As 188.979†	1374.0	0.390	mg/L	0.0101	0.390	mg/L	0.0101	2.58%
QC value within limits for As 188.979 Recovery = 97.59%								
Ba 233.527†	152519.4	1.00	mg/L	0.002	1.00	mg/L	0.002	0.21%
QC value within limits for Ba 233.527 Recovery = 100.05%								
Be 234.861†	66178.5	0.0486	mg/L	0.00051	0.0486	mg/L	0.00051	1.04%
QC value within limits for Be 234.861 Recovery = 97.20%								
B 249.677†	37163.9	0.497	mg/L	0.0096	0.497	mg/L	0.0096	1.94%
QC value within limits for B 249.677 Recovery = 99.47%								
Ca 227.546†	3075.3	9.65	mg/L	0.294	9.65	mg/L	0.294	3.05%
QC value within limits for Ca 227.546 Recovery = 96.48%								
Cd 228.802†	1971.5	0.0484	mg/L	0.00124	0.0484	mg/L	0.00124	2.57%
QC value within limits for Cd 228.802 Recovery = 96.78%								
Co 228.616†	9420.6	0.199	mg/L	0.0033	0.199	mg/L	0.0033	1.68%
QC value within limits for Co 228.616 Recovery = 99.34%								
Cr 267.716†	71863.6	0.501	mg/L	0.0009	0.501	mg/L	0.0009	0.17%
QC value within limits for Cr 267.716 Recovery = 100.18%								
Cu 327.393†	89485.9	0.496	mg/L	0.0060	0.496	mg/L	0.0060	1.21%
QC value within limits for Cu 327.393 Recovery = 99.22%								
Fe 239.562†	40182.7	4.04	mg/L	0.040	4.04	mg/L	0.040	0.98%
QC value within limits for Fe 239.562 Recovery = 101.00%								
Mg 279.077†	19480.7	9.99	mg/L	0.065	9.99	mg/L	0.065	0.65%
QC value within limits for Mg 279.077 Recovery = 99.92%								
Mn 257.610†	370723.8	0.500	mg/L	0.0009	0.500	mg/L	0.0009	0.19%
QC value within limits for Mn 257.610 Recovery = 99.95%								
Mo 202.031†	35034.0	0.991	mg/L	0.0061	0.991	mg/L	0.0061	0.61%
QC value within limits for Mo 202.031 Recovery = 99.08%								
Ni 231.604†	38340.0	0.501	mg/L	0.0012	0.501	mg/L	0.0012	0.23%
QC value within limits for Ni 231.604 Recovery = 100.26%								
Pb 220.353†	8101.4	0.508	mg/L	0.0089	0.508	mg/L	0.0089	1.76%
QC value within limits for Pb 220.353 Recovery = 101.65%								
Sb 206.836†	3129.9	1.12	mg/L	0.029	1.12	mg/L	0.029	2.60%
QC value within limits for Sb 206.836 Recovery = 93.63%								
Se 196.026†	474.7	0.425	mg/L	0.0065	0.425	mg/L	0.0065	1.52%
QC value within limits for Se 196.026 Recovery = 106.37%								
Si 251.611†	213194.5	4.96	mg/L	0.047	4.96	mg/L	0.047	0.94%
QC value within limits for Si 251.611 Recovery = 99.10%								
Sn 189.927†	12311.0	1.02	mg/L	0.017	1.02	mg/L	0.017	1.63%
QC value within limits for Sn 189.927 Recovery = 101.75%								
Ti 334.940†	789566.7	0.993	mg/L	0.0020	0.993	mg/L	0.0020	0.20%
QC value within limits for Ti 334.940 Recovery = 99.27%								
Tl 190.801†	1326.3	0.526	mg/L	0.0078	0.526	mg/L	0.0078	1.49%
QC value within limits for Tl 190.801 Recovery = 105.11%								
V 290.880†	169012.9	0.996	mg/L	0.0033	0.996	mg/L	0.0033	0.33%
QC value within limits for V 290.880 Recovery = 99.62%								
Zn 206.200†	87245.7	1.02	mg/L	0.003	1.02	mg/L	0.003	0.33%
QC value within limits for Zn 206.200 Recovery = 101.82%								
K 766.490†	52214.3	50.2	mg/L	0.41	50.2	mg/L	0.41	0.82%
QC value within limits for K 766.490 Recovery = 100.47%								

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Na 589.592†	323676.5	50.4 mg/L	0.55	50.4 mg/L	0.55	1.09%
QC value within limits for Na 589.592 Recovery = 100.83%						
Sr 407.771†	791521.9	0.995 mg/L	0.0120	0.995 mg/L	0.0120	1.21%
QC value within limits for Sr 407.771 Recovery = 99.53%						
Li 670.784†	32998.1	1.01 mg/L	0.011	1.01 mg/L	0.011	1.07%
QC value within limits for Li 670.784 Recovery = 101.28%						
P 214.914†	22505.2	10.0 mg/L	0.18	10.0 mg/L	0.18	1.77%
QC value within limits for P 214.914 Recovery = 100.48%						

All analyte(s) passed QC.

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Sequence No.: 23 **Autosampler Location: 1**
Sample ID: CCB **Date Collected: 8/23/2015 1:54:32 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCB

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2600139.5						35369.66	1.36%
YRADIAL	150474.1						1044.39	0.69%
Ga 417.206	1043229.1						15297.30	1.47%
GaRADIAL	35845.6						149.23	0.42%
Ag 328.068†	-239.5	0.00110	mg/L	0.000148	0.00110	mg/L	0.000148	13.46%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	-8.8	-0.0255	mg/L	0.00312	-0.0255	mg/L	0.00312	12.23%
QC value within limits for Al 396.153 Recovery = Not calculated								
As 188.979†	9.6	0.00098	mg/L	0.002515	0.00098	mg/L	0.002515	257.97%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	35.1	0.00005	mg/L	0.000006	0.00005	mg/L	0.000006	13.31%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 234.861†	17.4	0.00021	mg/L	0.000021	0.00021	mg/L	0.000021	10.14%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	175.6	0.00589	mg/L	0.000528	0.00589	mg/L	0.000528	8.97%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	-8.3	0.0702	mg/L	0.06633	0.0702	mg/L	0.06633	94.48%
QC value within limits for Ca 227.546 Recovery = Not calculated								
Cd 228.802†	3.4	0.00022	mg/L	0.000150	0.00022	mg/L	0.000150	66.90%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	-15.0	-0.00047	mg/L	0.000018	-0.00047	mg/L	0.000018	3.83%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	6.0	-0.00012	mg/L	0.000224	-0.00012	mg/L	0.000224	184.12%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	309.3	0.00297	mg/L	0.000734	0.00297	mg/L	0.000734	24.73%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	-36.9	-0.00949	mg/L	0.000171	-0.00949	mg/L	0.000171	1.80%
QC value within limits for Fe 239.562 Recovery = Not calculated								
Mg 279.077†	110.1	0.00395	mg/L	0.005939	0.00395	mg/L	0.005939	150.23%
QC value within limits for Mg 279.077 Recovery = Not calculated								
Mn 257.610†	-638.9	-0.00132	mg/L	0.000029	-0.00132	mg/L	0.000029	2.23%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	2.2	0.00097	mg/L	0.000305	0.00097	mg/L	0.000305	31.40%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	9.0	-0.00098	mg/L	0.000489	-0.00098	mg/L	0.000489	49.93%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	5.4	-0.00084	mg/L	0.000975	-0.00084	mg/L	0.000975	116.62%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	1.2	0.00530	mg/L	0.002098	0.00530	mg/L	0.002098	39.61%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	-0.3	0.00392	mg/L	0.002440	0.00392	mg/L	0.002440	62.31%
QC value within limits for Se 196.026 Recovery = Not calculated								
Si 251.611†	-285.4	0.0106	mg/L	0.00037	0.0106	mg/L	0.00037	3.53%
QC value within limits for Si 251.611 Recovery = Not calculated								
Sn 189.927†	42.1	0.00191	mg/L	0.000516	0.00191	mg/L	0.000516	27.01%
QC value within limits for Sn 189.927 Recovery = Not calculated								

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Ti 334.940†	-209.5	0.00096	mg/L	0.000215	0.00096	mg/L	0.000215	22.42%
QC value within limits for Ti 334.940 Recovery = Not calculated								
Tl 190.801†	-2.8	-0.00074	mg/L	0.001514	-0.00074	mg/L	0.001514	204.59%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 290.880†	-257.7	-0.00061	mg/L	0.001236	-0.00061	mg/L	0.001236	203.13%
QC value within limits for V 290.880 Recovery = Not calculated								
Zn 206.200†	18.8	-0.00143	mg/L	0.000306	-0.00143	mg/L	0.000306	21.48%
QC value within limits for Zn 206.200 Recovery = Not calculated								
K 766.490†	-81.9	-0.0868	mg/L	0.01423	-0.0868	mg/L	0.01423	16.40%
QC value within limits for K 766.490 Recovery = Not calculated								
Na 589.592†	714.0	0.0890	mg/L	0.00640	0.0890	mg/L	0.00640	7.19%
QC value within limits for Na 589.592 Recovery = Not calculated								
Sr 407.771†	1762.8	0.00479	mg/L	0.000133	0.00479	mg/L	0.000133	2.77%
QC value within limits for Sr 407.771 Recovery = Not calculated								
Li 670.784†	63.8	-0.00354	mg/L	0.001968	-0.00354	mg/L	0.001968	55.66%
QC value within limits for Li 670.784 Recovery = Not calculated								
P 214.914†	30.1	-0.0154	mg/L	0.00228	-0.0154	mg/L	0.00228	14.86%
QC value within limits for P 214.914 Recovery = Not calculated								

All analyte(s) passed QC.

Sequence No.: 24 **Autosampler Location: 90**
Sample ID: LLCCV **Date Collected: 8/23/2015 1:57:50 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: LLCCV

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: LLCCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2577807.4						74495.12	2.89%
YRADIAL	152774.5						2118.19	1.39%
Ga 417.206	1028048.7						28449.16	2.77%
GaRADIAL	36576.0						300.56	0.82%
Ag 328.068†	3884.1	0.0161	mg/L	0.00013	0.0161	mg/L	0.00013	0.83%
Al 396.153†	872.8	0.385	mg/L	0.0102	0.385	mg/L	0.0102	2.64%
As 188.979†	51.5	0.0129	mg/L	0.00051	0.0129	mg/L	0.00051	3.99%
Ba 233.527†	5966.8	0.0390	mg/L	0.00077	0.0390	mg/L	0.00077	1.99%
Be 234.861†	2437.5	0.00198	mg/L	0.000023	0.00198	mg/L	0.000023	1.16%
B 249.677†	1482.8	0.0233	mg/L	0.00082	0.0233	mg/L	0.00082	3.52%
Ca 227.546†	112.0	0.444	mg/L	0.0643	0.444	mg/L	0.0643	14.48%
Cd 228.802†	69.8	0.00186	mg/L	0.000191	0.00186	mg/L	0.000191	10.30%
Co 228.616†	350.8	0.00725	mg/L	0.000403	0.00725	mg/L	0.000403	5.56%
Cr 267.716†	2916.0	0.0202	mg/L	0.00054	0.0202	mg/L	0.00054	2.70%
Cu 327.393†	3601.1	0.0212	mg/L	0.00082	0.0212	mg/L	0.00082	3.85%
Fe 239.562†	1564.4	0.152	mg/L	0.0043	0.152	mg/L	0.0043	2.81%
Mg 279.077†	949.2	0.437	mg/L	0.0272	0.437	mg/L	0.0272	6.23%
Mn 257.610†	14447.1	0.0190	mg/L	0.00037	0.0190	mg/L	0.00037	1.93%
Mo 202.031†	1357.4	0.0393	mg/L	0.00063	0.0393	mg/L	0.00063	1.61%
Ni 231.604†	1594.4	0.0198	mg/L	0.00063	0.0198	mg/L	0.00063	3.17%
Pb 220.353†	326.5	0.0194	mg/L	0.00012	0.0194	mg/L	0.00012	0.64%
Sb 206.836†	113.1	0.0453	mg/L	0.00185	0.0453	mg/L	0.00185	4.08%
Se 196.026†	14.0	0.0166	mg/L	0.00523	0.0166	mg/L	0.00523	31.49%
Si 251.611†	7622.2	0.194	mg/L	0.0055	0.194	mg/L	0.0055	2.85%
Sn 189.927†	506.1	0.0403	mg/L	0.00115	0.0403	mg/L	0.00115	2.86%
Ti 334.940†	31072.8	0.0402	mg/L	0.00048	0.0402	mg/L	0.00048	1.19%
Tl 190.801†	44.5	0.0180	mg/L	0.00157	0.0180	mg/L	0.00157	8.73%
V 290.880†	6368.9	0.0384	mg/L	0.00210	0.0384	mg/L	0.00210	5.48%
Zn 206.200†	3655.5	0.0411	mg/L	0.00061	0.0411	mg/L	0.00061	1.49%
K 766.490†	2170.2	2.07	mg/L	0.066	2.07	mg/L	0.066	3.19%
Na 589.592†	14086.3	2.15	mg/L	0.018	2.15	mg/L	0.018	0.81%
Sr 407.771†	33698.2	0.0448	mg/L	0.00031	0.0448	mg/L	0.00031	0.70%
Li 670.784†	1379.3	0.0371	mg/L	0.00337	0.0371	mg/L	0.00337	9.08%
P 214.914†	870.7	0.361	mg/L	0.0109	0.361	mg/L	0.0109	3.02%

Approved: August 24, 2015

Sequence No.: 25
Sample ID: L1508104702
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 91
Date Collected: 8/23/2015 2:00:12 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1508104702

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508104702

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2506256.9						57321.38	2.29%
YRADIAL	149788.5						9194.41	6.14%
Ga 417.206	971304.0						27836.29	2.87%
GaRADIAL	37192.5						2172.43	5.84%
Ag 328.068†	63.1	0.00215	mg/L	0.000552	0.00215	mg/L	0.000552	25.67%
Al 396.153†	92.4	0.0218	mg/L	0.03249	0.0218	mg/L	0.03249	149.14%
As 188.979†	-4.3	-0.00163	mg/L	0.002205	-0.00163	mg/L	0.002205	135.51%
Ba 233.527†	9569.2	0.0626	mg/L	0.00149	0.0626	mg/L	0.00149	2.38%
Be 234.861†	-232.3	0.00002	mg/L	0.000043	0.00002	mg/L	0.000043	224.64%
B 249.677†	1457.7	0.0226	mg/L	0.00088	0.0226	mg/L	0.00088	3.89%
Ca 227.546†	20953.2	64.7	mg/L	1.70	64.7	mg/L	1.70	2.62%
Cd 228.802†	3.4	0.00024	mg/L	0.000120	0.00024	mg/L	0.000120	49.60%
Co 228.616†	-34.6	-0.00090	mg/L	0.000111	-0.00090	mg/L	0.000111	12.39%
Cr 267.716†	144.1	0.00084	mg/L	0.000192	0.00084	mg/L	0.000192	22.91%
Cu 327.393†	-171.7	0.00031	mg/L	0.000849	0.00031	mg/L	0.000849	271.26%
Fe 239.562†	311.9	0.0254	mg/L	0.00205	0.0254	mg/L	0.00205	8.07%
Mg 279.077†	20651.7	10.6	mg/L	0.63	10.6	mg/L	0.63	5.93%
Mn 257.610†	-273.5	-0.00082	mg/L	0.000010	-0.00082	mg/L	0.000010	1.27%
Mo 202.031†	49.0	0.00229	mg/L	0.000349	0.00229	mg/L	0.000349	15.23%
Ni 231.604†	15.5	-0.00089	mg/L	0.000246	-0.00089	mg/L	0.000246	27.69%
Pb 220.353†	21.5	0.00019	mg/L	0.001475	0.00019	mg/L	0.001475	793.01%
Sb 206.836†	16.1	0.0106	mg/L	0.00049	0.0106	mg/L	0.00049	4.60%
Se 196.026†	-8.4	-0.00322	mg/L	0.004044	-0.00322	mg/L	0.004044	125.48%
Si 251.611†	190530.0	4.44	mg/L	0.060	4.44	mg/L	0.060	1.36%
Sn 189.927†	-103.2	-0.0101	mg/L	0.00129	-0.0101	mg/L	0.00129	12.71%
Ti 334.940†	-3821.9	0.00057	mg/L	0.000415	0.00057	mg/L	0.000415	72.64%
Tl 190.801†	-29.9	-0.0113	mg/L	0.00098	-0.0113	mg/L	0.00098	8.62%
V 290.880†	-776.7	-0.00394	mg/L	0.000665	-0.00394	mg/L	0.000665	16.88%
Zn 206.200†	135.1	-0.00006	mg/L	0.000052	-0.00006	mg/L	0.000052	81.98%
K 766.490†	1224.8	1.13	mg/L	0.120	1.13	mg/L	0.120	10.62%
Na 589.592†	206374.1	32.0	mg/L	0.48	32.0	mg/L	0.48	1.49%
Sr 407.771†	189034.4	0.238	mg/L	0.0033	0.238	mg/L	0.0033	1.40%
Li 670.784†	98.3	-0.00247	mg/L	0.002948	-0.00247	mg/L	0.002948	119.16%
P 214.914†	30.3	-0.0153	mg/L	0.00549	-0.0153	mg/L	0.00549	35.96%

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Sequence No.: 26
Sample ID: L1508104801
Analyst: KHR
Initial Sample Wt:
Dilution:

Autosampler Location: 92
Date Collected: 8/23/2015 2:02:35 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: L1508104801

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508104801

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2525374.0						5046.00	0.20%
YRADIAL	148756.8						2429.53	1.63%
Ga 417.206	993882.2						6067.29	0.61%
GaRADIAL	37161.9						595.35	1.60%
Ag 328.068†	-49.3	0.00172	mg/L	0.000863	0.00172	mg/L	0.000863	50.25%
Al 396.153†	43.5	-0.00110	mg/L	0.009215	-0.00110	mg/L	0.009215	834.52%

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As 188.979†	5.0	0.00072	mg/L	0.001491	0.00072	mg/L	0.001491	205.86%
Ba 233.527†	8498.8	0.0556	mg/L	0.00147	0.0556	mg/L	0.00147	2.65%
Be 234.861†	-194.8	0.00005	mg/L	0.000027	0.00005	mg/L	0.000027	54.61%
B 249.677†	1465.7	0.0227	mg/L	0.00089	0.0227	mg/L	0.00089	3.94%
Ca 227.546†	16193.2	50.0	mg/L	1.33	50.0	mg/L	1.33	2.67%
Cd 228.802†	5.2	0.00028	mg/L	0.000102	0.00028	mg/L	0.000102	37.01%
Co 228.616†	-36.5	-0.00093	mg/L	0.000057	-0.00093	mg/L	0.000057	6.09%
Cr 267.716†	99.6	0.00053	mg/L	0.000040	0.00053	mg/L	0.000040	7.53%
Cu 327.393†	1488.6	0.00946	mg/L	0.000686	0.00946	mg/L	0.000686	7.25%
Fe 239.562†	185.0	0.0126	mg/L	0.00597	0.0126	mg/L	0.00597	47.40%
Mg 279.077†	26325.2	13.5	mg/L	0.34	13.5	mg/L	0.34	2.49%
Mn 257.610†	1772.7	0.00194	mg/L	0.000086	0.00194	mg/L	0.000086	4.45%
Mo 202.031†	68.5	0.00284	mg/L	0.000237	0.00284	mg/L	0.000237	8.33%
Ni 231.604†	25.8	-0.00076	mg/L	0.000184	-0.00076	mg/L	0.000184	24.29%
Pb 220.353†	26.5	0.00049	mg/L	0.000945	0.00049	mg/L	0.000945	193.27%
Sb 206.836†	14.2	0.00997	mg/L	0.004046	0.00997	mg/L	0.004046	40.60%
Se 196.026†	-16.1	-0.0101	mg/L	0.01023	-0.0101	mg/L	0.01023	101.34%
Si 251.611†	201429.5	4.69	mg/L	0.046	4.69	mg/L	0.046	0.98%
Sn 189.927†	-107.2	-0.0104	mg/L	0.00077	-0.0104	mg/L	0.00077	7.42%
Ti 334.940†	-3615.5	-0.00011	mg/L	0.000094	-0.00011	mg/L	0.000094	84.44%
Tl 190.801†	-21.5	-0.00804	mg/L	0.001006	-0.00804	mg/L	0.001006	12.51%
V 290.880†	-1090.1	-0.00586	mg/L	0.001820	-0.00586	mg/L	0.001820	31.06%
Zn 206.200†	973.9	0.00969	mg/L	0.000644	0.00969	mg/L	0.000644	6.65%
K 766.490†	1010.5	0.950	mg/L	0.0512	0.950	mg/L	0.0512	5.39%
Na 589.592†	60148.7	9.28	mg/L	0.149	9.28	mg/L	0.149	1.60%
Sr 407.771†	261383.0	0.329	mg/L	0.0047	0.329	mg/L	0.0047	1.43%
Li 670.784†	306.5	0.00395	mg/L	0.000942	0.00395	mg/L	0.000942	23.84%
P 214.914†	-10.7	-0.0336	mg/L	0.00412	-0.0336	mg/L	0.00412	12.26%

Sequence No.: 27 **Autosampler Location: 93**
Sample ID: L1508105001 **Date Collected: 8/23/2015 2:04:58 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508105001

Analyte	Back Pressure	Flow
All	202.0 kPa	0.31 L/min

Mean Data: L1508105001

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2548371.1						63651.56	2.50%
YRADIAL	156102.3						4189.48	2.68%
Ga 417.206	1015773.4						28694.26	2.82%
GaRADIAL	37383.8						981.44	2.63%
Ag 328.068†	-179.8	0.00143	mg/L	0.001077	0.00143	mg/L	0.001077	75.17%
Al 396.153†	510.6	0.217	mg/L	0.0161	0.217	mg/L	0.0161	7.38%
As 188.979†	-0.9	-0.00124	mg/L	0.001191	-0.00124	mg/L	0.001191	96.07%
Ba 233.527†	4532.2	0.0295	mg/L	0.00043	0.0295	mg/L	0.00043	1.45%
Be 234.861†	-81.8	0.00007	mg/L	0.000049	0.00007	mg/L	0.000049	73.05%
B 249.677†	996.8	0.0178	mg/L	0.00052	0.0178	mg/L	0.00052	2.94%
Ca 227.546†	11111.1	34.4	mg/L	0.57	34.4	mg/L	0.57	1.67%
Cd 228.802†	4.1	0.00026	mg/L	0.000039	0.00026	mg/L	0.000039	15.05%
Co 228.616†	-19.4	-0.00058	mg/L	0.000178	-0.00058	mg/L	0.000178	30.39%
Cr 267.716†	126.7	0.00072	mg/L	0.000159	0.00072	mg/L	0.000159	22.09%
Cu 327.393†	1105.7	0.00738	mg/L	0.000805	0.00738	mg/L	0.000805	10.90%
Fe 239.562†	3479.8	0.345	mg/L	0.0060	0.345	mg/L	0.0060	1.74%
Mg 279.077†	7573.0	3.85	mg/L	0.029	3.85	mg/L	0.029	0.76%
Mn 257.610†	73799.5	0.0991	mg/L	0.00082	0.0991	mg/L	0.00082	0.82%
Mo 202.031†	23.0	0.00160	mg/L	0.000257	0.00160	mg/L	0.000257	16.07%
Ni 231.604†	26.8	-0.00074	mg/L	0.000249	-0.00074	mg/L	0.000249	33.50%
Pb 220.353†	12.3	-0.00042	mg/L	0.001551	-0.00042	mg/L	0.001551	368.34%
Sb 206.836†	6.5	0.00719	mg/L	0.001118	0.00719	mg/L	0.001118	15.55%
Se 196.026†	-0.2	0.00396	mg/L	0.003168	0.00396	mg/L	0.003168	79.97%
Si 251.611†	150371.7	3.51	mg/L	0.038	3.51	mg/L	0.038	1.08%
Sn 189.927†	-71.1	-0.00746	mg/L	0.000304	-0.00746	mg/L	0.000304	4.07%
Ti 334.940†	752.1	0.00436	mg/L	0.001119	0.00436	mg/L	0.001119	25.65%
Tl 190.801†	-21.6	-0.00810	mg/L	0.000748	-0.00810	mg/L	0.000748	9.24%

Approved: August 24, 2015

V 290.880†	-338.2	-0.00112	mg/L	0.000780	-0.00112	mg/L	0.000780	69.41%
Zn 206.200†	150.1	0.00012	mg/L	0.000164	0.00012	mg/L	0.000164	139.07%
K 766.490†	1971.3	1.88	mg/L	0.053	1.88	mg/L	0.053	2.80%
Na 589.592†	16499.0	2.53	mg/L	0.058	2.53	mg/L	0.058	2.29%
Sr 407.771†	59968.4	0.0767	mg/L	0.00106	0.0767	mg/L	0.00106	1.39%
Li 670.784†	141.4	-0.00114	mg/L	0.002221	-0.00114	mg/L	0.002221	194.46%
P 214.914†	74.2	0.00441	mg/L	0.005378	0.00441	mg/L	0.005378	121.97%

Sequence No.: 28 **Autosampler Location: 94**
Sample ID: L1508105002 **Date Collected: 8/23/2015 2:07:21 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: L1508105002

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: L1508105002

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2439717.6						118334.35	4.85%
YRADIAL	152116.2						4511.63	2.97%
Ga 417.206	957537.0						55180.08	5.76%
GaRADIAL	36461.1						1014.58	2.78%
Ag 328.068†	-107.5	0.00172	mg/L	0.000666	0.00172	mg/L	0.000666	38.84%
Al 396.153†	526.7	0.225	mg/L	0.0064	0.225	mg/L	0.0064	2.85%
As 188.979†	5.5	0.00086	mg/L	0.002060	0.00086	mg/L	0.002060	239.48%
Ba 233.527†	9074.9	0.0593	mg/L	0.00303	0.0593	mg/L	0.00303	5.10%
Be 234.861†	-114.7	0.00002	mg/L	0.000032	0.00002	mg/L	0.000032	153.76%
B 249.677†	1509.6	0.0248	mg/L	0.00113	0.0248	mg/L	0.00113	4.57%
Ca 227.546†	14487.9	44.8	mg/L	2.77	44.8	mg/L	2.77	6.19%
Cd 228.802†	1.0	0.00017	mg/L	0.000109	0.00017	mg/L	0.000109	64.22%
Co 228.616†	-31.1	-0.00084	mg/L	0.000141	-0.00084	mg/L	0.000141	16.81%
Cr 267.716†	138.8	0.00080	mg/L	0.000200	0.00080	mg/L	0.000200	24.83%
Cu 327.393†	44.9	0.00154	mg/L	0.001121	0.00154	mg/L	0.001121	72.81%
Fe 239.562†	4337.7	0.431	mg/L	0.0032	0.431	mg/L	0.0032	0.75%
Mg 279.077†	12980.0	6.64	mg/L	0.063	6.64	mg/L	0.063	0.95%
Mn 257.610†	53449.2	0.0717	mg/L	0.00049	0.0717	mg/L	0.00049	0.68%
Mo 202.031†	38.0	0.00202	mg/L	0.000151	0.00202	mg/L	0.000151	7.48%
Ni 231.604†	42.2	-0.00054	mg/L	0.000484	-0.00054	mg/L	0.000484	89.58%
Pb 220.353†	9.4	-0.00059	mg/L	0.001064	-0.00059	mg/L	0.001064	181.16%
Sb 206.836†	14.6	0.0101	mg/L	0.00150	0.0101	mg/L	0.00150	14.81%
Se 196.026†	-9.7	-0.00444	mg/L	0.008287	-0.00444	mg/L	0.008287	186.53%
Si 251.611†	156091.2	3.64	mg/L	0.060	3.64	mg/L	0.060	1.65%
Sn 189.927†	-101.8	-0.0100	mg/L	0.00140	-0.0100	mg/L	0.00140	14.01%
Ti 334.940†	-590.9	0.00335	mg/L	0.000589	0.00335	mg/L	0.000589	17.59%
Tl 190.801†	-29.1	-0.0110	mg/L	0.00449	-0.0110	mg/L	0.00449	40.74%
V 290.880†	-564.1	-0.00251	mg/L	0.001849	-0.00251	mg/L	0.001849	73.53%
Zn 206.200†	129.4	-0.00012	mg/L	0.000203	-0.00012	mg/L	0.000203	168.81%
K 766.490†	2399.2	2.28	mg/L	0.136	2.28	mg/L	0.136	5.94%
Na 589.592†	53359.6	8.23	mg/L	0.249	8.23	mg/L	0.249	3.02%
Sr 407.771†	119319.3	0.151	mg/L	0.0039	0.151	mg/L	0.0039	2.57%
Li 670.784†	63.4	-0.00355	mg/L	0.001583	-0.00355	mg/L	0.001583	44.58%
P 214.914†	56.8	-0.00339	mg/L	0.006840	-0.00339	mg/L	0.006840	202.03%

Sequence No.: 29 **Autosampler Location: 6**
Sample ID: CCV **Date Collected: 8/23/2015 2:09:44 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Approved: August 24, 2015

Kym H. Rhoden

Mean Data: CCV

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2591304.3						43007.55	1.66%
YRADIAL	154462.5						3889.46	2.52%
Ga 417.206	976869.5						21816.73	2.23%
GaRADIAL	38131.9						703.24	1.84%
Ag 328.068†	105337.7	0.386	mg/L	0.0046	0.386	mg/L	0.0046	1.19%
QC value within limits for Ag 328.068 Recovery = 96.42%								
Al 396.153†	20518.2	9.54	mg/L	0.144	9.54	mg/L	0.144	1.51%
QC value within limits for Al 396.153 Recovery = 95.35%								
As 188.979†	1300.1	0.369	mg/L	0.0108	0.369	mg/L	0.0108	2.93%
QC value within limits for As 188.979 Recovery = 92.27%								
Ba 233.527†	148546.3	0.974	mg/L	0.0105	0.974	mg/L	0.0105	1.08%
QC value within limits for Ba 233.527 Recovery = 97.45%								
Be 234.861†	64149.8	0.0471	mg/L	0.00062	0.0471	mg/L	0.00062	1.31%
QC value within limits for Be 234.861 Recovery = 94.27%								
B 249.677†	36235.9	0.485	mg/L	0.0080	0.485	mg/L	0.0080	1.64%
QC value within limits for B 249.677 Recovery = 96.94%								
Ca 227.546†	2938.5	9.22	mg/L	0.230	9.22	mg/L	0.230	2.50%
QC value within limits for Ca 227.546 Recovery = 92.24%								
Cd 228.802†	1877.8	0.0461	mg/L	0.00144	0.0461	mg/L	0.00144	3.12%
QC value within limits for Cd 228.802 Recovery = 92.23%								
Co 228.616†	9067.4	0.191	mg/L	0.0046	0.191	mg/L	0.0046	2.38%
QC value within limits for Co 228.616 Recovery = 95.61%								
Cr 267.716†	69706.4	0.486	mg/L	0.0023	0.486	mg/L	0.0023	0.48%
QC value within limits for Cr 267.716 Recovery = 97.17%								
Cu 327.393†	86991.0	0.482	mg/L	0.0092	0.482	mg/L	0.0092	1.90%
QC value within limits for Cu 327.393 Recovery = 96.46%								
Fe 239.562†	38224.7	3.84	mg/L	0.077	3.84	mg/L	0.077	2.01%
QC value within limits for Fe 239.562 Recovery = 96.07%								
Mg 279.077†	18602.5	9.54	mg/L	0.133	9.54	mg/L	0.133	1.40%
QC value within limits for Mg 279.077 Recovery = 95.40%								
Mn 257.610†	361959.6	0.488	mg/L	0.0056	0.488	mg/L	0.0056	1.14%
QC value within limits for Mn 257.610 Recovery = 97.58%								
Mo 202.031†	34284.8	0.970	mg/L	0.0055	0.970	mg/L	0.0055	0.56%
QC value within limits for Mo 202.031 Recovery = 96.96%								
Ni 231.604†	37273.7	0.487	mg/L	0.0056	0.487	mg/L	0.0056	1.15%
QC value within limits for Ni 231.604 Recovery = 97.46%								
Pb 220.353†	7792.5	0.489	mg/L	0.0123	0.489	mg/L	0.0123	2.51%
QC value within limits for Pb 220.353 Recovery = 97.76%								
Sb 206.836†	2979.3	1.07	mg/L	0.029	1.07	mg/L	0.029	2.72%
QC value less than the lower limit for Sb 206.836 Recovery = 89.15%								
Se 196.026†	450.2	0.404	mg/L	0.0132	0.404	mg/L	0.0132	3.26%
QC value within limits for Se 196.026 Recovery = 100.93%								
Si 251.611†	206968.5	4.81	mg/L	0.077	4.81	mg/L	0.077	1.60%
QC value within limits for Si 251.611 Recovery = 96.22%								
Sn 189.927†	11794.0	0.975	mg/L	0.0236	0.975	mg/L	0.0236	2.42%
QC value within limits for Sn 189.927 Recovery = 97.47%								
Ti 334.940†	769487.6	0.967	mg/L	0.0084	0.967	mg/L	0.0084	0.87%
QC value within limits for Ti 334.940 Recovery = 96.75%								
Tl 190.801†	1284.9	0.509	mg/L	0.0159	0.509	mg/L	0.0159	3.13%
QC value within limits for Tl 190.801 Recovery = 101.84%								
V 290.880†	164855.3	0.972	mg/L	0.0104	0.972	mg/L	0.0104	1.07%
QC value within limits for V 290.880 Recovery = 97.17%								
Zn 206.200†	84605.1	0.987	mg/L	0.0084	0.987	mg/L	0.0084	0.85%
QC value within limits for Zn 206.200 Recovery = 98.73%								
K 766.490†	50196.8	48.3	mg/L	0.98	48.3	mg/L	0.98	2.03%
QC value within limits for K 766.490 Recovery = 96.56%								
Na 589.592†	313880.0	48.9	mg/L	2.76	48.9	mg/L	2.76	5.65%
QC value within limits for Na 589.592 Recovery = 97.75%								
Sr 407.771†	777334.4	0.978	mg/L	0.0604	0.978	mg/L	0.0604	6.17%
QC value within limits for Sr 407.771 Recovery = 97.76%								
Li 670.784†	31483.9	0.966	mg/L	0.0149	0.966	mg/L	0.0149	1.54%
QC value within limits for Li 670.784 Recovery = 96.61%								
P 214.914†	21551.7	9.62	mg/L	0.225	9.62	mg/L	0.225	2.34%
QC value within limits for P 214.914 Recovery = 96.21%								

QC Failed. Continue with analysis.

==========

Sequence No.: 30 **Autosampler Location: 1**
Sample ID: CCB **Date Collected: 8/23/2015 2:12:09 PM**

Approved: August 24, 2015

Analyst:
Initial Sample Wt:
Dilution:

Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: CCB

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2597151.0						15608.94	0.60%
YRADIAL	157907.8						1712.80	1.08%
Ga 417.206	1038156.2						9485.26	0.91%
GaRADIAL	37326.0						452.12	1.21%
Ag 328.068†	-205.4	0.00122	mg/L	0.001250	0.00122	mg/L	0.001250	102.63%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 396.153†	3.7	-0.0197	mg/L	0.02805	-0.0197	mg/L	0.02805	142.68%
QC value within limits for Al 396.153 Recovery = Not calculated								
As 188.979†	6.9	0.00020	mg/L	0.001234	0.00020	mg/L	0.001234	631.82%
QC value within limits for As 188.979 Recovery = Not calculated								
Ba 233.527†	-4.9	-0.00021	mg/L	0.000053	-0.00021	mg/L	0.000053	24.93%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 234.861†	-18.0	0.00018	mg/L	0.000011	0.00018	mg/L	0.000011	6.07%
QC value within limits for Be 234.861 Recovery = Not calculated								
B 249.677†	287.6	0.00734	mg/L	0.000840	0.00734	mg/L	0.000840	11.45%
QC value within limits for B 249.677 Recovery = Not calculated								
Ca 227.546†	-16.0	0.0464	mg/L	0.04540	0.0464	mg/L	0.04540	97.84%
QC value within limits for Ca 227.546 Recovery = Not calculated								
Cd 228.802†	-4.3	0.00003	mg/L	0.000207	0.00003	mg/L	0.000207	622.30%
QC value within limits for Cd 228.802 Recovery = Not calculated								
Co 228.616†	-17.0	-0.00051	mg/L	0.000212	-0.00051	mg/L	0.000212	41.35%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	16.0	-0.00005	mg/L	0.000046	-0.00005	mg/L	0.000046	86.91%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 327.393†	-20.4	0.00115	mg/L	0.002041	0.00115	mg/L	0.002041	177.46%
QC value within limits for Cu 327.393 Recovery = Not calculated								
Fe 239.562†	-42.8	-0.0101	mg/L	0.00028	-0.0101	mg/L	0.00028	2.76%
QC value within limits for Fe 239.562 Recovery = Not calculated								
Mg 279.077†	81.2	-0.0110	mg/L	0.03463	-0.0110	mg/L	0.03463	316.07%
QC value within limits for Mg 279.077 Recovery = Not calculated								
Mn 257.610†	-629.0	-0.00130	mg/L	0.000040	-0.00130	mg/L	0.000040	3.08%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	1.4	0.00095	mg/L	0.000544	0.00095	mg/L	0.000544	57.37%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Ni 231.604†	-8.4	-0.00121	mg/L	0.000192	-0.00121	mg/L	0.000192	15.92%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	21.7	0.00019	mg/L	0.001229	0.00019	mg/L	0.001229	644.29%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	4.5	0.00650	mg/L	0.003492	0.00650	mg/L	0.003492	53.76%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	-5.6	-0.00081	mg/L	0.005314	-0.00081	mg/L	0.005314	659.76%
QC value within limits for Se 196.026 Recovery = Not calculated								
Si 251.611†	-290.2	0.0105	mg/L	0.00100	0.0105	mg/L	0.00100	9.57%
QC value within limits for Si 251.611 Recovery = Not calculated								
Sn 189.927†	53.2	0.00283	mg/L	0.000896	0.00283	mg/L	0.000896	31.73%
QC value within limits for Sn 189.927 Recovery = Not calculated								
Ti 334.940†	-121.0	0.00107	mg/L	0.000144	0.00107	mg/L	0.000144	13.54%
QC value within limits for Ti 334.940 Recovery = Not calculated								
Tl 190.801†	-4.3	-0.00132	mg/L	0.005545	-0.00132	mg/L	0.005545	419.36%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 290.880†	-474.4	-0.00188	mg/L	0.000441	-0.00188	mg/L	0.000441	23.40%
QC value within limits for V 290.880 Recovery = Not calculated								
Zn 206.200†	24.3	-0.00136	mg/L	0.000170	-0.00136	mg/L	0.000170	12.52%
QC value within limits for Zn 206.200 Recovery = Not calculated								
K 766.490†	3.2	-0.00533	mg/L	0.039125	-0.00533	mg/L	0.039125	734.62%
QC value within limits for K 766.490 Recovery = Not calculated								
Na 589.592†	343.5	0.0318	mg/L	0.02314	0.0318	mg/L	0.02314	72.66%
QC value within limits for Na 589.592 Recovery = Not calculated								
Sr 407.771†	1344.7	0.00427	mg/L	0.000213	0.00427	mg/L	0.000213	4.99%

Approved: August 24, 2015

Lynn H. Rhoden

QC value within limits for Sr 407.771 Recovery = Not calculated

Li 670.784†	24.3	-0.00476 mg/L	0.002867	-0.00476 mg/L	0.002867	60.27%

QC value within limits for Li 670.784 Recovery = Not calculated

P 214.914†	22.5	-0.0187 mg/L	0.00322	-0.0187 mg/L	0.00322	17.21%

QC value within limits for P 214.914 Recovery = Not calculated

All analyte(s) passed QC.

==========

Sequence No.: 31 **Autosampler Location: 95**
Sample ID: BLK **Date Collected: 8/23/2015 2:14:30 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: BLK

Analyte	Back Pressure	Flow
All	201.0 kPa	0.31 L/min

Mean Data: BLK

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	2616606.4						148140.52	5.66%
YRADIAL	152774.3						4754.75	3.11%
Ga 417.206	1048999.1						64763.56	6.17%
GaRADIAL	37785.8						1081.89	2.86%
Ag 328.068†	-527.1	0.00006	mg/L	0.000351	0.00006	mg/L	0.000351	614.77%
Al 396.153†	-27.7	-0.0343	mg/L	0.01440	-0.0343	mg/L	0.01440	41.98%
As 188.979†	9.4	0.00091	mg/L	0.002231	0.00091	mg/L	0.002231	244.39%
Ba 233.527†	-148.3	-0.00115	mg/L	0.000123	-0.00115	mg/L	0.000123	10.68%
Be 234.861†	1.9	0.00020	mg/L	0.000031	0.00020	mg/L	0.000031	15.60%
B 249.677†	55.5	0.00433	mg/L	0.000390	0.00433	mg/L	0.000390	9.00%
Ca 227.546†	-19.7	0.0351	mg/L	0.04229	0.0351	mg/L	0.04229	120.34%
Cd 228.802†	1.0	0.00016	mg/L	0.000224	0.00016	mg/L	0.000224	137.03%
Co 228.616†	-12.3	-0.00041	mg/L	0.000337	-0.00041	mg/L	0.000337	81.56%
Cr 267.716†	-13.7	-0.00026	mg/L	0.000091	-0.00026	mg/L	0.000091	35.05%
Cu 327.393†	-123.9	0.00058	mg/L	0.000974	0.00058	mg/L	0.000974	168.02%
Fe 239.562†	-58.4	-0.0117	mg/L	0.00351	-0.0117	mg/L	0.00351	30.15%
Mg 279.077†	125.2	0.0117	mg/L	0.03063	0.0117	mg/L	0.03063	260.92%
Mn 257.610†	-988.6	-0.00179	mg/L	0.000039	-0.00179	mg/L	0.000039	2.21%
Mo 202.031†	-8.8	0.00066	mg/L	0.000480	0.00066	mg/L	0.000480	72.71%
Ni 231.604†	11.8	-0.00094	mg/L	0.000034	-0.00094	mg/L	0.000034	3.59%
Pb 220.353†	25.7	0.00044	mg/L	0.001152	0.00044	mg/L	0.001152	263.34%
Sb 206.836†	0.8	0.00517	mg/L	0.002566	0.00517	mg/L	0.002566	49.67%
Se 196.026†	-4.7	-0.00002	mg/L	0.003269	-0.00002	mg/L	0.003269	>999.9%
Si 251.611†	-478.3	0.00613	mg/L	0.000724	0.00613	mg/L	0.000724	11.80%
Sn 189.927†	6.8	-0.00101	mg/L	0.000307	-0.00101	mg/L	0.000307	30.28%
Ti 334.940†	-523.3	0.00056	mg/L	0.000472	0.00056	mg/L	0.000472	84.11%
Tl 190.801†	-1.4	-0.00019	mg/L	0.002499	-0.00019	mg/L	0.002499	>999.9%
V 290.880†	-393.1	-0.00141	mg/L	0.000602	-0.00141	mg/L	0.000602	42.82%
Zn 206.200†	61.1	-0.00094	mg/L	0.000216	-0.00094	mg/L	0.000216	23.13%
K 766.490†	10.8	0.00200	mg/L	0.043719	0.00200	mg/L	0.043719	>999.9%
Na 589.592†	196.6	0.00918	mg/L	0.006273	0.00918	mg/L	0.006273	68.36%
Sr 407.771†	47.1	0.00264	mg/L	0.000239	0.00264	mg/L	0.000239	9.05%
Li 670.784†	-21.5	-0.00617	mg/L	0.002703	-0.00617	mg/L	0.002703	43.81%
P 214.914†	34.0	-0.0136	mg/L	0.00597	-0.0136	mg/L	0.00597	43.89%

==========

Sequence No.: 32 **Autosampler Location: 96**
Sample ID: BLK **Date Collected: 8/23/2015 2:16:52 PM**
Analyst: KHR **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: BLK

Analyte	Back Pressure	Flow
All	202.0 kPa	0.31 L/min

Mean Data: BLK

Approved: August 24, 2015

Kym H. Rhoden

2.3.2 Metals ICP-MS Data

2.3.2.1 Summary Data

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW22FF-081815	**Prep Method:**	3015	**Prep Date:**	08/20/2015 11:07
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	08/24/2015 12:17
Workgroup #:	WG536146	**Analyst:**	BKT	**Run Date:**	08/24/2015 14:49
Collect Date:	08/18/2015 08:05	**Dilution:**	1	**File ID:**	NI.082415.144924
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.00438		0.00400	0.00200	0.00100

Certificate of Analysis

Sample #:	L15080992-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW25FF-081815	**Prep Method:**	3015	**Prep Date:**	08/20/2015 11:07
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	08/24/2015 12:17
Workgroup #:	WG536146	**Analyst:**	BKT	**Run Date:**	08/24/2015 14:41
Collect Date:	08/18/2015 09:40	**Dilution:**	1	**File ID:**	NI.082415.144137
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0179		0.00400	0.00200	0.00100

Certificate of Analysis

Sample #:	L15080992-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW12FF-081815	**Prep Method:**	3015	**Prep Date:**	08/20/2015 11:07
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	08/24/2015 12:17
Workgroup #:	WG536146	**Analyst:**	BKT	**Run Date:**	08/24/2015 14:54
Collect Date:	08/18/2015 11:05	**Dilution:**	10	**File ID:**	NI.082415.145414
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0679		0.0400	0.0200	0.0100

Certificate of Analysis

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15080992-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW06FF-081815	**Prep Method:**	3015	**Prep Date:**	08/20/2015 11:07
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	08/24/2015 12:17
Workgroup #:	WG536146	**Analyst:**	BKT	**Run Date:**	08/24/2015 14:57
Collect Date:	08/18/2015 13:40	**Dilution:**	1	**File ID:**	NI.082415.145726
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0133		0.00400	0.00200	0.00100

Certificate of Analysis

Sample #:	L15080992-10	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW11FF-081815	**Prep Method:**	3015	**Prep Date:**	08/20/2015 11:07
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	08/24/2015 12:17
Workgroup #:	WG536146	**Analyst:**	BKT	**Run Date:**	08/24/2015 15:00
Collect Date:	08/18/2015 14:50	**Dilution:**	10	**File ID:**	NI.082415.150037
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.118		0.0400	0.0200	0.0100

2.3.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer NexION 300X

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	100
Vi = Initial volume	40
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/L)	0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	200
Vi = Initial volume	0.5
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/kg)	40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	40
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	50

50 ug/kg = 0.050 mg/kg

Perkin Elmer NexION ICP/MS

STANDARDS KEY

QC Std 1 - ICV
QC Std 2 - ICB
QC Std 3 - LLICV
QC Std 4 - ICSA
QC Std 5 - ICSAB
QC Std 6 - CCV
QC Std 7 - CCB
QC Std 8 - LLCCV

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.00005	0.05	0.1
Sb	10	0	0.00005	0.05	0.1
As	10	0	0.00005	0.05	0.1
Ba	10	0	0.00005	0.05	0.1
Be	10	0	0.00005	0.05	0.1
Ca	1000	0	0.005	5	10
Cd	10	0	0.0005	0.05	0.1
Cr	10	0	0.0005	0.05	0.1
Co	10	0	0.0005	0.05	0.1
Cu	10	0	0.0005	0.05	0.1
Fe	1000	0	0.005	5	10
Pb	10	0	0.00005	0.05	0.1
Mg	1000	0	0.005	5	10
Mn	10	0	0.00005	0.05	0.1
Ni	10	0	0.00005	0.05	0.1
K	1000	0	0.005	5	10
Se	10	0	0.00005	0.05	0.1
Ag	10	0	0.00005	0.05	0.1
Na	1000	0	0.005	5	10
Tl	10	0	0.00005	0.05	0.1
V	10	0	0.00005	0.05	0.1
U	1000	0	0.00005	0.05	0.1
Zn	10	0	0.00005	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG535816
Analyst: VC
Spike Analyst: VC
Run Date: 08/20/2015 11:07
Method: 3015
Balance: BAL016
Instrument: MW-3
Instrument Start: 08/20/2015 11:14

SOP: ME407 Revison 17
Spike Solution: STD68313
Spike Witness: ERP
40 & 50 ML. DIGESTION TU COA18222
HNO3 Lot #: COA18384
MS Filters- fisher-Lot#r RGT32947

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG535816-02	BLANK	1	20 mL	50 mL	182.575 g	182.56 g		
2	WG535761-01	FBLK2	18	20 mL	50 mL	183.129 g	183.112 g		
3	WG535816-04	FLT_BLK	1	20 mL	50 mL	183.793 g	183.791 g		
4	WG535816-03	LCS	1	20 mL	50 mL	181.347 g	181.339 g	.25 mL	
5	L15080937-01	SAMP	2	20 mL	50 mL	183.142 g	183.138 g		08/25/15
6	L15080938-01	SAMP	2	20 mL	50 mL	182.48 g	182.451 g		08/25/15
7	L15080939-01	SAMP	2	20 mL	50 mL	181.962 g	181.937 g		08/25/15
8	L15080940-01	SAMP	2	20 mL	50 mL	179.951 g	179.932 g		08/25/15
9	L15080941-01	SAMP	2	20 mL	50 mL	180.678 g	180.66 g		08/25/15
10	L15080942-01	SAMP	2	20 mL	50 mL	183.366 g	183.361 g		08/25/15
11	L15080992-02	SAMP	1	20 mL	50 mL	181.757 g	181.738 g		08/28/15
12	L15080992-04	SAMP	1	20 mL	50 mL	182.374 g	182.366 g		08/28/15
13	L15080992-06	SAMP	1	20 mL	50 mL	180.169 g	180.133 g		08/28/15
14	L15080992-08	SAMP	1	20 mL	50 mL	180.537 g	180.472 g		08/28/15
15	L15080992-10	SAMP	1	20 mL	50 mL	182.975 g	182.938 g		08/28/15
16	L15080997-02	SAMP	18	20 mL	50 mL	179.969 g	179.943 g		08/24/15
17	L15081019-13	SAMP	2	20 mL	50 mL	180.801 g	180.771 g		08/26/15
18	L15081026-01	SAMP	2	20 mL	50 mL	181.677 g	181.657 g		08/26/15
19	L15081026-02	SAMP	2	20 mL	50 mL	183.309 g	183.292 g		08/26/15
20	WG535816-01	REF	2	20 mL	50 mL	180.635 g	180.63 g		
21	L15081026-03	SAMP	2	20 mL	50 mL	180.635 g	180.63 g		08/26/15
22	L15081055-06	SAMP	2	20 mL	50 mL	182.63 g	182.639 g		08/24/15
23	WG535816-05	DUP	1	20 mL	50 mL	181.178 g	181.188 g		
24	WG535816-06	MS	1	20 mL	50 mL	182.648 g	182.65 g	.25 mL	
25	WG535816-07	MSD	1	20 mL	50 mL	182.983 g	182.911 g	.25 mL	

WG535816-07	FILTERED DIGESTATE
L15080937-01	ph adj
L15080938-01	ph adj
L15080939-01	ph adj
L15080940-01	ph adj FILTERED DIGESTATE
L15080941-01	ph adj FILTERED DIGESTATE
L15080997-02	FILTERED DIGESTATE
L15081026-01	FILTERED DIGESTATE

MW_DIG - Modified 09/30/2009
PDF ID: 4343833
Report generated: 08/20/2015 12:29

Microbac Laboratories Inc.
Microwave Digestion Log

Analyst: Vicki Collins

SOP:
Spike Solution:
Reviewer: Sam Potter
Spike Witness:

Method:
Balance:
Instrument:
Instrument Start:

MW_DIG - Modified 09/30/2009
PDF ID: 4343833
Report generated: 08/20/2015 12:29

TCLP Non-Volatile

Analyst(s): CPD
Date: 8/19/15
Filter Lot #: 9486030
Microbac SOP: TCLP01 Rev #: 12

Analyst / Date		Analyst / Date	
CPD	8/19/15	CPD	8/20/15
Time On	Temp On °C	Time Off	Temp Off °C
1538	24.3	0922	22.7

Agitator Speed 30 ± 2 rpm ☑

Jug #	Sample #	Tests	Method	Fluid #	Matrix *	% Solid	Pretest pH Initial	Pretest pH Final	Int. Wt. (g)	Fluid Vol. (mL)	Final extract pH
D	08-0997-01	ME, pH-L	1311	FI-144	S	100	8.56	2.18	100.18	2004	6.25
	08-0998-01	ME	1311				8.01	1.25	100.22	2004	5.11
	08-1004-01	OG-HEM	1311				7.60	1.57	100.34	2007	5.19
	08-0896-01	300	1312	SPLPF1			NA	NA	100.06	2001	9.69
	-02								100.11	2002	9.72
	-03								100.61	2012	9.69
	-04								100.10	2002	9.65
	-05								100.40	2008	9.72
	-06								100.65	2013	9.97
	08-0997-02	ME, pH-L	1312	SPLPF2					100.31	2006	8.83
NA	FBIK1	ME, pH-L, OG-HEM	1311	FI-144	NA	NA	NA	NA	100	100	4.89
NA	SPLPFBIK1	300	1312	SPLPF1							4.14
NA	SPLPFBIK2	ME, pH-L	2	SPLPF2							5.01

CPD 8/20/15

*Matrix Code: (S = solid, sand, soil or sludge) (P = paint) (O = organic) (W = water or aqueous waste)
D = Disposable plastic jug
TCLP Pretest weight will be 5.0 g (± 0.1) unless otherwise noted.
Temperature shall be maintained at 23° ± 2 for 18 ± 2 hours unless otherwise noted.

Comments:

Peer Review By:

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 082315A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD71328 ICV Std: STD71597 Post Spike: STD69341
ICSA: STD71856 ICSAB: STD71214 Int. Std: RGT31676
CCV: STD71329 LLCCV: STD71773 Tuning Sol : STD71213
Stannous : Hydroxylamine :

Workgroups: 535910,536146,536147,536148,536149

Comments: Rinses were analyzed at sequences 17 and 18 following samples suspected to have high levels of analytes.

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.082315.151539	Blank	Blank		1		08/23/15 15:15
2	NI.082315.151851	WG536152-01	Calibration Point		1		08/23/15 15:18
3	NI.082315.152202	WG536152-02	Calibration Point		1		08/23/15 15:22
4	NI.082315.152514	WG536152-03	Calibration Point		1		08/23/15 15:25
5	NI.082315.152826	WG536152-04	Calibration Point		1		08/23/15 15:28
6	NI.082315.153139	WG536152-05	Initial Calibration Verification		1		08/23/15 15:31
7	NI.082315.153452	WG536152-06	Initial Calib Blank		1		08/23/15 15:34
8	NI.082315.153805	WG536152-07	LLICV		1		08/23/15 15:38
9	NI.082315.154116	WG536152-08	Interference Check		1		08/23/15 15:41
10	NI.082315.154449	WG536152-09	Low Level Initial Calibration V		1		08/23/15 15:44
11	NI.082315.155135	WG536152-10	Interference Check		1		08/23/15 15:51
12	NI.082315.155451	WG536152-11	Interference Check		1		08/23/15 15:54
13	NI.082315.155809	WG536152-12	CCV		1		08/23/15 15:58
14	NI.082315.160225	WG536152-13	CCB		1		08/23/15 16:02
15	NI.082315.160701	L15080991-01	CLAINF12-20150817-B	20/50	1		08/23/15 16:07
16	NI.082315.161013	L15080991-02	CLAEFF12-20150818-B	20/50	1		08/23/15 16:10
17	NI.082315.161324	RINSE	RINSE		1		08/23/15 16:13
18	NI.082315.161635	RINSE	RINSE		1		08/23/15 16:16
19	NI.082315.161948	WG536152-14	CCV		1		08/23/15 16:19
20	NI.082315.162300	WG536152-15	CCB		1		08/23/15 16:23
21	NI.082315.162613	WG536152-16	Low Level Continuing Calibra		1		08/23/15 16:26
22	NI.082315.163924	WG535577-04	Duplicate	20/50	1	L15080906-01	08/23/15 16:39
23	NI.082315.164235	L15080826-01	J5H0162-01	20/50	1		08/23/15 16:42
24	NI.082315.164547	L15080828-01	V5H0346-01	20/50	1		08/23/15 16:45
25	NI.082315.164858	L15080854-01	5080880-01	20/50	1		08/23/15 16:48
26	NI.082315.165210	L15080854-02	5080880-02	20/50	1		08/23/15 16:52
27	NI.082315.165521	L15080854-03	5080880-03	20/50	1		08/23/15 16:55
28	NI.082315.165832	L15080854-04	5080880-04	20/50	1		08/23/15 16:58
29	NI.082315.170144	L15080858-01	V5H0290-02	20/50	1		08/23/15 17:01
30	NI.082315.170455	L15080904-02	50WW18FF-081715	20/50	10		08/23/15 17:04
31	NI.082315.170806	L15080904-04	50WW24FF-081715	20/50	10		08/23/15 17:08
32	NI.082315.171119	WG536152-17	CCV		1		08/23/15 17:11
33	NI.082315.171430	WG536152-18	CCB		1		08/23/15 17:14
34	NI.082315.171742	L15080904-06	50WW23FF-081715	20/50	10		08/23/15 17:17

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Marcia Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 082315A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD71328 ICV Std: STD71597 Post Spike: STD69341
ICSA: STD71856 ICSAB: STD71214 Int. Std: RGT31676
CCV: STD71329 LLCCV: STD71773 Tuning Sol : STD71213
Stannous : Hydroxylamine :

Workgroups: 535910,536146,536147,536148,536149

Comments: Rinses were analyzed at sequences 17 and 18 following samples suspected to have high levels of analytes.

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.082315.172054	L15080904-08	50WW08FF-081715	20/50	10		08/23/15 17:20
36	NI.082315.172405	L15080921-01	POLICE PIT	20/50	1		08/23/15 17:24
37	NI.082315.172717	L15080922-01	004	20/50	1		08/23/15 17:27
38	NI.082315.173028	L15080946-01	V5H0310-02	20/50	1		08/23/15 17:30
39	NI.082315.173824	L15080946-01	V5H0310-02	20/50	5		08/23/15 17:38
40	NI.082315.174135	L15080858-01	V5H0290-02	20/50	10		08/23/15 17:41
41	NI.082315.174448	WG536152-19	CCV		1		08/23/15 17:44
42	NI.082315.174759	WG536152-20	CCB		1		08/23/15 17:47
43	NI.082315.175112	WG536152-21	Low Level Continuing Calibra		1		08/23/15 17:51
44	NI.082315.180713	WG535816-02	Method/Prep Blank	20/50	1		08/23/15 18:07
45	NI.082315.181024	WG535816-03	Laboratory Control S	20/50	1		08/23/15 18:10
46	NI.082315.181336	WG535816-01	Reference Sample		1	L15081026-03	08/23/15 18:13
47	NI.082315.181647	WG535816-05	Duplicate	20/50	1	L15081026-03	08/23/15 18:16
48	NI.082315.181959	WG535816-06	Matrix Spike	20/50	1	L15081026-03	08/23/15 18:19
49	NI.082315.182311	WG535816-07	Matrix Spike Duplica	20/50	1	L15081026-03	08/23/15 18:23
50	NI.082315.182622	L15080997-02	60500-SSP0008-SSP0008	20/50	1		08/23/15 18:26
51	NI.082315.182934	WG536146-01	Post Digestion Spike		1	L15080997-02	08/23/15 18:29
52	NI.082315.183245	WG536146-02	Serial Dilution		5	L15080997-02	08/23/15 18:32
53	NI.082315.183557	WG536146-02	Serial Dilution		25	L15080997-02	08/23/15 18:35
54	NI.082315.183910	WG536152-22	CCV		1		08/23/15 18:39
55	NI.082315.184221	WG536152-23	CCB		1		08/23/15 18:42
56	NI.082315.184533	L15081055-06	OUTFALL 203 GRAB	20/50	1000		08/23/15 18:45
57	NI.082315.184845	L15080937-01	V5H0424-01	20/50	1		08/23/15 18:48
58	NI.082315.185156	L15080938-01	V5H0423-01	20/50	1		08/23/15 18:51
59	NI.082315.185508	L15080939-01	V5H0426-01	20/50	1		08/23/15 18:55
60	NI.082315.185819	L15080940-01	V5H0414-01	20/50	1		08/23/15 18:58
61	NI.082315.190130	L15080940-01	V5H0414-01	20/50	10		08/23/15 19:01
62	NI.082315.190442	L15080941-01	V5H0417-01	20/50	1		08/23/15 19:04
63	NI.082315.190753	L15080942-01	5080569-01	20/50	1		08/23/15 19:07
64	NI.082315.191105	L15080992-02	50WW22FF-081815		10		08/23/15 19:11
65	NI.082315.191417	L15080992-04	50WW25FF-081815		10		08/23/15 19:14
66	NI.082315.191729	WG536152-24	CCV		1		08/23/15 19:17
67	NI.082315.192041	WG536152-25	CCB		1		08/23/15 19:20
68	NI.082315.192353	L15080992-06	50WW12FF-081815		10		08/23/15 19:23

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Maren Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 082315A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD71328 ICV Std: STD71597 Post Spike: STD69341
ICSA: STD71856 ICSAB: STD71214 Int. Std: RGT31676
CCV: STD71329 LLCCV: STD71773 Tuning Sol : STD71213
Stannous : Hydroxylamine :

Workgroups: 535910,536146,536147,536148,536149

Comments: Rinses were analyzed at sequences 17 and 18 following samples suspected to have high levels of analytes.

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.082315.192705	L15080992-08	50WW06FF-081815		10		08/23/15 19:27
70	NI.082315.193016	L15080992-10	50WW11FF-081815		10		08/23/15 19:30
71	NI.082315.193328	L15081019-13	LRA08	20/50	1		08/23/15 19:33
72	NI.082315.193639	L15081026-01	J5H0622-01	20/50	1		08/23/15 19:36
73	NI.082315.193951	L15081026-02	J5H0622-02	20/50	1		08/23/15 19:39
74	NI.082315.194302	WG535816-04	Filter Blank		1		08/23/15 19:43
75	NI.082315.194614	WG535761-01	Fluid Blank 2		1		08/23/15 19:46
76	NI.082315.194927	WG536152-26	CCV		1		08/23/15 19:49
77	NI.082315.195239	WG536152-27	CCB		1		08/23/15 19:52
78	NI.082315.195552	WG536152-28	Low Level Continuing Calibra		1		08/23/15 19:55
79	NI.082315.195904	WG535777-02	Method/Prep Blank	.25/100	1		08/23/15 19:59
80	NI.082315.200215	WG535777-03	Laboratory Control S	.25/100	1		08/23/15 20:02
81	NI.082315.200527	WG535777-01	Reference Sample		1	L15080965-02	08/23/15 20:05
82	NI.082315.200838	WG535777-04	Matrix Spike	.254/100	1	L15080965-02	08/23/15 20:08
83	NI.082315.201150	WG535777-05	Matrix Spike Duplica	.252/100	1	L15080965-02	08/23/15 20:11
84	NI.082315.201501	L15080896-01	SO_01	.251/100	1		08/23/15 20:15
85	NI.082315.201813	L15080896-02	SO_02	.255/100	1		08/23/15 20:18
86	NI.082315.202124	WG536147-01	Post Digestion Spike		1	L15080896-02	08/23/15 20:21
87	NI.082315.202435	WG536147-02	Serial Dilution		5	L15080896-02	08/23/15 20:24
88	NI.082315.202746	WG536147-02	Serial Dilution		25	L15080896-02	08/23/15 20:27
89	NI.082315.203059	WG536152-29	CCV		1		08/23/15 20:30
90	NI.082315.203411	WG536152-30	CCB		1		08/23/15 20:34
91	NI.082315.203724	L15080896-03	SO_03	.255/100	1		08/23/15 20:37
92	NI.082315.204035	L15080896-04	SO_04	.258/100	1		08/23/15 20:40
93	NI.082315.204346	L15080896-05	SO_05	.254/100	1		08/23/15 20:43
94	NI.082315.204657	L15080896-06	SO_06	.257/100	1		08/23/15 20:46
95	NI.082315.205009	L15080965-01	SO_07	.255/100	1		08/23/15 20:50
96	NI.082315.205323	WG536152-31	CCV		1		08/23/15 20:53
97	NI.082315.205634	WG536152-32	CCB		1		08/23/15 20:56
98	NI.082315.205948	WG536019-02	Method/Prep Blank	40/50	50		08/23/15 20:59
99	NI.082315.210300	WG536019-03	Laboratory Control S	40/50	50		08/23/15 21:03
100	NI.082315.210611	WG536019-01	Reference Sample		50	L15080999-01	08/23/15 21:06
101	NI.082315.210923	WG536019-04	Matrix Spike	5/50	50	L15080999-01	08/23/15 21:09
102	NI.082315.211234	WG536019-05	Matrix Spike Duplica	5/50	50	L15080999-01	08/23/15 21:12

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Maren Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 082315A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD71328 ICV Std: STD71597 Post Spike: STD69341
ICSA: STD71856 ICSAB: STD71214 Int. Std: RGT31676
CCV: STD71329 LLCCV: STD71773 Tuning Sol : STD71213
Stannous : Hydroxylamine :

Workgroups: 535910,536146,536147,536148,536149

Comments: Rinses were analyzed at sequences 17 and 18 following samples suspected to have high levels of analytes.

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.082315.211545	L15080852-01	AWV 19 BAGS	5/50	50		08/23/15 21:15
104	NI.082315.211857	WG536148-01	Post Digestion Spike		50	L15080852-01	08/23/15 21:18
105	NI.082315.212208	WG536148-02	Serial Dilution		250	L15080852-01	08/23/15 21:22
106	NI.082315.212521	WG536152-33	CCV		1		08/23/15 21:25
107	NI.082315.212833	WG536152-34	CCB		1		08/23/15 21:28
108	NI.082315.213146	WG535953-02	Method/Prep Blank	.25/100	1		08/23/15 21:31
109	NI.082315.213458	WG535953-03	Laboratory Control S	.25/100	1		08/23/15 21:34
110	NI.082315.213809	WG535953-01	Reference Sample		1	L15081000-26	08/23/15 21:38
111	NI.082315.214121	WG535953-04	Matrix Spike	.255/100	1	L15081000-26	08/23/15 21:41
112	NI.082315.214432	WG535953-05	Matrix Spike Duplica	.253/100	1	L15081000-26	08/23/15 21:44
113	NI.082315.214743	L15081000-02	5010	.257/100	1		08/23/15 21:47
114	NI.082315.215055	L15081000-04	5014	.258/100	1		08/23/15 21:50
115	NI.082315.215406	WG536149-01	Post Digestion Spike		1	L15081000-04	08/23/15 21:54
116	NI.082315.215718	WG536149-02	Serial Dilution		5	L15081000-04	08/23/15 21:57
117	NI.082315.220029	WG536149-02	Serial Dilution		25	L15081000-04	08/23/15 22:00
118	NI.082315.220342	WG536152-35	CCV		1		08/23/15 22:03
119	NI.082315.220654	WG536152-36	CCB		1		08/23/15 22:06
120	NI.082315.221006	L15081000-06	5015	.259/100	1		08/23/15 22:10
121	NI.082315.221318	L15081000-08	5016	.254/100	1		08/23/15 22:13
122	NI.082315.221629	L15081000-10	5017	.256/100	1		08/23/15 22:16
123	NI.082315.221941	L15081000-12	5018	.253/100	1		08/23/15 22:19
124	NI.082315.222252	L15081000-14	5019	.252/100	1		08/23/15 22:22
125	NI.082315.222604	L15081000-16	5020	.254/100	1		08/23/15 22:26
126	NI.082315.222915	L15081000-18	5022	.25/100	1		08/23/15 22:29
127	NI.082315.223227	L15081000-20	5023	.257/100	1		08/23/15 22:32
128	NI.082315.223538	L15081000-22	5024	.251/100	1		08/23/15 22:35
129	NI.082315.223849	L15081000-24	5026	.252/100	1		08/23/15 22:38
130	NI.082315.224203	WG536152-37	CCV		1		08/23/15 22:42
131	NI.082315.224514	WG536152-38	CCB		1		08/23/15 22:45

Comments

Seq.	Rerun	Dil.	Reason	Analytes
8			This sequence was not uploaded due to noncompliance. The following sample was stopped during analysis and the LLICV was immediately reanalyzed.	

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Maren Berry

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 082315A.REP

Analyst1: BKT Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD71328 ICV Std: STD71597 Post Spike: STD69341

ICSA: STD71856 ICSAB: STD71214 Int. Std: RGT31676

CCV: STD71329 LLCCV: STD71773 Tuning Sol : STD71213

Stannous : Hydroxylamine :

Workgroups: 535910,536146,536147,536148,536149

Comments: Rinses were analyzed at sequences 17 and 18 following samples suspected to have high levels of analytes.

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time

Seq.	Rerun	Dil.	Reason	Analytes
9			This sample did not finish analysis. The LLICV was reanalyzed and both interference checks were analyzed later in the calibration.	

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Maren Berry

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 082415A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD71328 ICV Std: STD71597 Post Spike: STD69341
ICSA: STD71856 ICSAB: STD71214 Int. Std: RGT31676
CCV: STD71329 LLCCV: STD71773 Tuning Sol : STD71213
Stannous : Hydroxylamine :

Workgroups: 536244,535910,536146,536272,536626

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.082415.120441	Blank	Blank		1		08/24/15 12:04
2	NI.082415.120753	WG536271-01	Calibration Point		1		08/24/15 12:07
3	NI.082415.121104	WG536271-02	Calibration Point		1		08/24/15 12:11
4	NI.082415.121415	WG536271-03	Calibration Point		1		08/24/15 12:14
5	NI.082415.121727	WG536271-04	Calibration Point		1		08/24/15 12:17
6	NI.082415.122040	WG536271-05	Initial Calibration Verification		1		08/24/15 12:20
7	NI.082415.122353	WG536271-06	Initial Calib Blank		1		08/24/15 12:23
8	NI.082415.122705	WG536271-07	Low Level Initial Calibration V		1		08/24/15 12:27
9	NI.082415.123017	WG536271-08	Interference Check		1		08/24/15 12:30
10	NI.082415.123328	WG536271-09	Interference Check		1		08/24/15 12:33
11	NI.082415.123642	WG536271-10	CCV		1		08/24/15 12:36
12	NI.082415.123954	WG536271-11	CCB		1		08/24/15 12:39
13	NI.082415.124306	WG536161-03	Method/Prep Blank	20/50	1		08/24/15 12:43
14	NI.082415.124617	WG536161-04	Laboratory Control S	20/50	1		08/24/15 12:46
15	NI.082415.124929	WG536161-02	Reference Sample		1	L15081220-21	08/24/15 12:49
16	NI.082415.125241	WG536161-07	Duplicate	20/50	1	L15081220-21	08/24/15 12:52
17	NI.082415.125552	WG536161-01	Reference Sample		5	L15081073-04	08/24/15 12:55
18	NI.082415.125903	WG536161-05	Matrix Spike	20/50	5	L15081073-04	08/24/15 12:59
19	NI.082415.130215	WG536161-06	Matrix Spike Duplica	20/50	5	L15081073-04	08/24/15 13:02
20	NI.082415.130527	L15080776-05	A05-MW08D-Y1S1	20/50	1		08/24/15 13:05
21	NI.082415.130838	WG536244-01	Post Digestion Spike		1	L15080776-05	08/24/15 13:08
22	NI.082415.131150	WG536244-02	Serial Dilution		5	L15080776-05	08/24/15 13:11
23	NI.082415.131503	WG536271-12	CCV		1		08/24/15 13:15
24	NI.082415.131815	WG536271-13	CCB		1		08/24/15 13:18
25	NI.082415.141128	WG536271-14	CCV		1		08/24/15 14:11
26	NI.082415.141448	WG536271-15	CCB		1		08/24/15 14:14
27	NI.082415.142851	L15081073-02	50WW14FF-081915	20/50	5		08/24/15 14:28
28	NI.082415.143203	L15080904-04	50WW24FF-081715	20/50	2		08/24/15 14:32
29	NI.082415.143514	L15080942-01	5080569-01	20/50	100		08/24/15 14:35
30	NI.082415.143825	L15080992-02	50WW22FF-081815		5		08/24/15 14:38
31	NI.082415.144137	L15080992-04	50WW25FF-081815	20/50	1		08/24/15 14:41
32	NI.082415.144924	L15080992-02	50WW22FF-081815	20/50	1		08/24/15 14:49
33	NI.082415.145414	L15080992-06	50WW12FF-081815	20/50	10		08/24/15 14:54
34	NI.082415.145726	L15080992-08	50WW06FF-081815	20/50	1		08/24/15 14:57

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Marcia Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 082415A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD71328 ICV Std: STD71597 Post Spike: STD69341
ICSA: STD71856 ICSAB: STD71214 Int. Std: RGT31676
CCV: STD71329 LLCCV: STD71773 Tuning Sol : STD71213
Stannous : Hydroxylamine :

Workgroups: 536244,535910,536146,536272,536626

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.082415.150037	L15080992-10	50WW11FF-081815	20/50	10		08/24/15 15:00
36	NI.082415.150350	WG536271-16	CCV		1		08/24/15 15:03
37	NI.082415.150702	WG536271-17	CCB		1		08/24/15 15:07
38	NI.082415.151014	WG536271-18	Low Level Continuing Calibra		1		08/24/15 15:10
39	NI.082415.151327	L15081220-10	H5H1225-04	20/50	5		08/24/15 15:13
40	NI.082415.151639	L15081220-01	H5H1225-01	20/50	1		08/24/15 15:16
41	NI.082415.151950	L15081220-02	H5H1225-01	20/50	1		08/24/15 15:19
42	NI.082415.152301	L15081220-04	H5H1225-02	20/50	1		08/24/15 15:23
43	NI.082415.152612	L15081220-05	H5H1225-02	20/50	1		08/24/15 15:26
44	NI.082415.152924	L15081220-07	H5H1225-03	20/50	1		08/24/15 15:29
45	NI.082415.153235	L15081220-08	H5H1225-03	20/50	1		08/24/15 15:32
46	NI.082415.153546	L15081220-11	H5H1225-04	20/50	1		08/24/15 15:35
47	NI.082415.153858	L15081220-13	H5H1225-08	20/50	1		08/24/15 15:38
48	NI.082415.154210	L15081220-14	H5H1225-08	20/50	1		08/24/15 15:42
49	NI.082415.154522	WG536271-19	CCV		1		08/24/15 15:45
50	NI.082415.154834	WG536271-20	CCB		1		08/24/15 15:48
51	NI.082415.155733	L15081220-10	H5H1225-04	20/50	50		08/24/15 15:57
52	NI.082415.160044	L15081220-16	H5H1225-06	20/50	1		08/24/15 16:00
53	NI.082415.160356	L15081220-17	H5H1225-09	20/50	1		08/24/15 16:03
54	NI.082415.160707	L15081220-18	H5H1225-05	20/50	1		08/24/15 16:07
55	NI.082415.161018	L15081220-19	H5H1225-07	20/50	1		08/24/15 16:10
56	NI.082415.161330	L15081220-20	H5H1225-10	20/50	1		08/24/15 16:13
57	NI.082415.161643	WG536271-21	CCV		1		08/24/15 16:16
58	NI.082415.161955	WG536271-22	CCB		1		08/24/15 16:19
59	NI.082415.162307	WG535951-01	Method/Prep Blank	10/100	2		08/24/15 16:23
60	NI.082415.162619	WG535951-02	Laboratory Control S	10/100	2		08/24/15 16:26
61	NI.082415.162931	WG535951-03	Laboratory Control S	10/100	2		08/24/15 16:29
62	NI.082415.163242	L15081000-01	5010	10.011/100	2		08/24/15 16:32
63	NI.082415.163554	L15081000-03	5014	10.041/100	2		08/24/15 16:35
64	NI.082415.163905	L15081000-05	5015	10.026/100	2		08/24/15 16:39
65	NI.082415.164216	L15081000-07	5016	10.05/100	2		08/24/15 16:42
66	NI.082415.164528	WG536272-01	Post Digestion Spike		2	L15081000-07	08/24/15 16:45
67	NI.082415.164839	WG536272-02	Serial Dilution		10	L15081000-07	08/24/15 16:48
68	NI.082415.165151	WG536272-02	Serial Dilution		50	L15081000-07	08/24/15 16:51

Page: 2 Approved: August 25, 2015

Maren Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 082415A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD71328 ICV Std: STD71597 Post Spike: STD69341
ICSA: STD71856 ICSAB: STD71214 Int. Std: RGT31676
CCV: STD71329 LLCCV: STD71773 Tuning Sol : STD71213
Stannous : Hydroxylamine :

Workgroups: 536244,535910,536146,536272,536626

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.082415.165504	WG536271-23	CCV		1		08/24/15 16:55
70	NI.082415.165816	WG536271-24	CCB		1		08/24/15 16:58
71	NI.082415.170131	L15081000-09	5017	10.005/100	2		08/24/15 17:01
72	NI.082415.170442	L15081000-11	5018	10.006/100	2		08/24/15 17:04
73	NI.082415.170754	L15081000-13	5019	10.046/100	2		08/24/15 17:07
74	NI.082415.171105	L15081000-15	5020	10.041/100	2		08/24/15 17:11
75	NI.082415.171417	L15081000-17	5022	10.016/100	2		08/24/15 17:14
76	NI.082415.171729	L15081000-19	5023	10.024/100	2		08/24/15 17:17
77	NI.082415.172040	L15081000-21	5024	10.031/100	2		08/24/15 17:20
78	NI.082415.172352	L15081000-23	5026	10.05/100	2		08/24/15 17:23
79	NI.082415.172703	L15081000-25	5025	10.031/100	2		08/24/15 17:27
80	NI.082415.173016	WG536271-25	CCV		1		08/24/15 17:30
81	NI.082415.173327	WG536271-26	CCB		1		08/24/15 17:33
82	NI.082415.175837	WG535367-02	Method/Prep Blank	.25/100	1		08/24/15 17:58
83	NI.082415.180148	WG535367-03	Laboratory Control S	.25/100	1		08/24/15 18:01
84	NI.082415.180500	WG535367-01	Reference Sample		1	L15080679-14	08/24/15 18:05
85	NI.082415.180811	WG535367-04	Matrix Spike	.254/100	1	L15080679-14	08/24/15 18:08
86	NI.082415.181123	WG535367-05	Matrix Spike Duplica	.253/100	1	L15080679-14	08/24/15 18:11
87	NI.082415.181434	L15080679-01	ORG-B4A-312-24	.25/100	1		08/24/15 18:14
88	NI.082415.181745	L15080679-02	ORG-F1A-312-24	.257/100	1		08/24/15 18:17
89	NI.082415.182057	WG535626-03	Post Digestion Spike		1	L15080679-02	08/24/15 18:20
90	NI.082415.182408	WG535626-04	Serial Dilution		5	L15080679-02	08/24/15 18:24
91	NI.082415.182725	WG535626-04	Serial Dilution		25	L15080679-02	08/24/15 18:27
92	NI.082415.183038	WG536271-27	CCV		1		08/24/15 18:30
93	NI.082415.183350	WG536271-28	CCB		1		08/24/15 18:33
94	NI.082415.183703	L15080679-03	ORG-H2A-312-24	.25/100	1		08/24/15 18:37
95	NI.082415.184015	L15080679-04	ORG-L3A-312-24	.258/100	1		08/24/15 18:40
96	NI.082415.184326	L15080679-05	ORG-N2A-312-24	.258/100	1		08/24/15 18:43
97	NI.082415.184638	L15080679-06	ORG-P4A-312-24	.252/100	1		08/24/15 18:46
98	NI.082415.184949	L15080679-07	ORG-S4A-312-24	.251/100	1		08/24/15 18:49
99	NI.082415.185301	L15080679-08	ORG-U1A-312-24	.257/100	1		08/24/15 18:53
100	NI.082415.185613	L15080679-09	ORG-X4A-312-24	.25/100	1		08/24/15 18:56
101	NI.082415.185924	L15080679-10	ORG-Z2A-312-24	.259/100	1		08/24/15 18:59
102	NI.082415.190236	L15080679-11	ORG-HH1-312-24	.25/100	1		08/24/15 19:02

Page: 3 Approved: August 25, 2015

Marcu Berry

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 082415A.REP

Analyst1: BKT Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD71328 ICV Std: STD71597 Post Spike: STD69341

ICSA: STD71856 ICSAB: STD71214 Int. Std: RGT31676

CCV: STD71329 LLCCV: STD71773 Tuning Sol : STD71213

Stannous : Hydroxylamine :

Workgroups: 536244,535910,536146,536272,536626

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.082415.190547	L15080679-12	ORG-EE1-312-24	.253/100	1		08/24/15 19:05
104	NI.082415.190900	WG536271-29	CCV		1		08/24/15 19:09
105	NI.082415.191212	WG536271-30	CCB		1		08/24/15 19:12
106	NI.082415.191524	L15080679-13	ORG-AA1-312-24	.25/100	1		08/24/15 19:15
107	NI.082415.191837	WG536271-31	CCV		1		08/24/15 19:18
108	NI.082415.192149	WG536271-32	CCB		1		08/24/15 19:21

Page: 4 Approved: August 25, 2015

Maren Berry

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 23-AUG-2015
Analyst: BKT
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 536152
Runlog ID: 69986
Analytical Workgroups: 535910,536146,536147,536148,536149

Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1000
Level 4	904,991,992,997
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BKT
Secondary Reviewer	MMB
Comments	

Primary Reviewer:
24-AUG-2015

Secondary Reviewer:
24-AUG-2015

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-24-2015 14:56:50

Microbac Laboratories Inc.

Data Checklist

Date: 24-AUG-2015
Analyst: BKT
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 536271
Runlog ID: 70001
Analytical Workgroups: 536244,535910,536146,536272,536626

Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1000
Level 4	776,904,992
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BKT
Secondary Reviewer	MMB
Comments	

Primary Reviewer:
25-AUG-2015

Secondary Reviewer:
25-AUG-2015

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-25-2015 12:25:16

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG536146

Login Number: L15080992

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW22FF-081815	02	08/18/15					08/20/2015	2.1	180		08/24/15	6.3	180	
50WW25FF-081815	04	08/18/15					08/20/2015	2.1	180		08/24/15	6.2	180	
50WW12FF-081815	06	08/18/15					08/20/2015	2	180		08/24/15	6.2	180	
50WW06FF-081815	08	08/18/15					08/20/2015	1.9	180		08/24/15	6.1	180	
50WW11FF-081815	10	08/18/15					08/20/2015	1.8	180		08/24/15	6	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4349215
Report generated 08/24/2015 17:42

METHOD BLANK SUMMARY

Login Number: L15080992
Blank File ID: NI.082315.180713
Prep Date: 08/20/15 11:07
Analyzed Date: 08/23/15 18:07
Analyst: BKT

Work Group: WG536146
Blank Sample ID: WG535816-02
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG535816-03	NI.082315.181024	08/23/15 18:10	01
DUP	WG535816-05	NI.082315.181647	08/23/15 18:16	01
FLT_BLK	WG535816-04	NI.082315.194302	08/23/15 19:43	01
50WW25FF-081815	L15080992-04	NI.082415.144137	08/24/15 14:41	01
50WW22FF-081815	L15080992-02	NI.082415.144924	08/24/15 14:49	01
50WW12FF-081815	L15080992-06	NI.082415.145414	08/24/15 14:54	DL01
50WW06FF-081815	L15080992-08	NI.082415.145726	08/24/15 14:57	01
50WW11FF-081815	L15080992-10	NI.082415.150037	08/24/15 15:00	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4349216
Report generated 08/24/2015 17:42

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15080992 Prep Date: 08/20/15 11:07 Sample ID: WG535816-02
Instrument ID: ICP-MS2 Run Date: 08/23/15 18:07 Prep Method: 3015
File ID: NI.082315.180713 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG536146 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-23-AUG-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Manganese, Dissolved	0.00100	0.00400	0.00100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4349217
24-AUG-2015 10:37

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15080992 Run Date: 08/23/2015 Sample ID: WG535816-03
Instrument ID: ICP-MS2 Run Time: 18:10 Prep Method: 3015
File ID: NI.082315.181024 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG536146 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD68313 Cal ID: ICP-MS-23-AUG-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Manganese, Dissolved	0.125	0.137	110	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4349218
Report generated: 08/24/2015 10:37

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L15080992 Cal ID: ICP-MS2 - Worknum: WG536146
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG535816-01 File ID: NI.082315.181336 Dil: 1 Matrix: WATER
Sample ID: WG535816-06 MS File ID: NI.082315.181959 Dil: 1 Units: mg/L
Sample ID: WG535816-07 MSD File ID: NI.082315.182311 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Manganese	0.0669	0.125	0.205	111	0.125	0.200	106	2.73	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4349219
Report generated 08/24/2015 10:37

Microbac Laboratories Inc.
Serial Dilution Report

Login: L15080992 **Worknum:** WG536146
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG536146-02 **File ID:** NI.082315.183245 **Dil:** 5 **Units:** ug/L
Sample: L15080997-02 **File ID:** NI.082315.182622 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Manganese	12.2	X	12.4	X	1.36	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4349213
08/24/2015 10:37

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L15080992 **Worknum:** WG536146
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG536146-01 **File ID:** NI.082315.182934 **Dil:** 1 **Units:** ug/L
Sample ID: L15080997-02 **File ID:** NI.082315.182622 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MANGANESE	66.2		12.2		50	107.9	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4349214
Report generated: 08/24/2015 10:37

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L15080992	Workgroup (AAB#):	WG536146
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG536152	Initial Calibration Date:	23-AUG-2015 15:28

	WG536152-01		WG536152-02		WG536152-03		WG536152-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
MANGANESE	0	571	.4	761	50	173000	100	343000	.999983	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4349223
Report generated: 24-AUG-2015 17:42

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L15080992	Workgroup (AAB#):	WG536146
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG536271	Initial Calibration Date:	24-AUG-2015 12:17

	WG536271-01		WG536271-02		WG536271-03		WG536271-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
MANGANESE	0	722	.4	1000	50	208000	100	403000	1	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4349223
Report generated: 24-AUG-2015 17:42

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L15080992
Run Date: 08/23/2015
Sample ID: WG536152-06
Instrument ID: ICP-MS2
Run Time: 15:34
Method: 6020A
File ID: NI.082315.153452
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG536146
Cal ID: ICP-MS2 - 23-AUG-15
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
MANGANESE	.4	1.6	.4	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4349225
Report generated 08/24/2015 17:42

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L15080992
Run Date: 08/24/2015
Sample ID: WG536271-06
Instrument ID: ICP-MS2
Run Time: 12:23
Method: 6020A
File ID: NI.082415.122353
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG536146
Cal ID: ICP-MS2 - 24-AUG-15
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
MANGANESE	.4	1.6	.4	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4349225
Report generated 08/24/2015 17:42

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15080992
Run Date: 08/23/2015
Sample ID: WG536152-13
Instrument ID: ICP-MS2
Run Time: 16:02
Method: 6020A
File ID: NI.082315.160225
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG536146
Cal ID: ICP-MS - 23-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4349228
Report generated 08/24/2015 17:42

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15080992
Run Date: 08/23/2015
Sample ID: WG536152-20
Instrument ID: ICP-MS2
Run Time: 17:47
Method: 6020A
File ID: NI.082315.174759
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG536146
Cal ID: ICP-MS - 23-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4349228
Report generated 08/24/2015 17:42

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15080992
Run Date: 08/23/2015
Sample ID: WG536152-23
Instrument ID: ICP-MS2
Run Time: 18:42
Method: 6020A
File ID: NI.082315.184221
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG536146
Cal ID: ICP-MS - 23-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4349228
Report generated 08/24/2015 17:42

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15080992
Run Date: 08/23/2015
Sample ID: WG536152-25
Instrument ID: ICP-MS2
Run Time: 19:20
Method: 6020A
File ID: NI.082315.192041
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG536146
Cal ID: ICP-MS - 23-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4349228
Report generated 08/24/2015 17:42

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15080992
Run Date: 08/23/2015
Sample ID: WG536152-27
Instrument ID: ICP-MS2
Run Time: 19:52
Method: 6020A
File ID: NI.082315.195239
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG536146
Cal ID: ICP-MS - 23-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4349228
Report generated 08/24/2015 17:42

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15080992
Run Date: 08/24/2015
Sample ID: WG536271-11
Instrument ID: ICP-MS2
Run Time: 12:39
Method: 6020A
File ID: NI.082415.123954
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG536146
Cal ID: ICP-MS - 24-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4349228
Report generated 08/24/2015 17:42

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15080992
Run Date: 08/24/2015
Sample ID: WG536271-15
Instrument ID: ICP-MS2
Run Time: 14:14
Method: 6020A
File ID: NI.082415.141448
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG536146
Cal ID: ICP-MS - 24-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4349228
Report generated 08/24/2015 17:42

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15080992
Run Date: 08/24/2015
Sample ID: WG536271-17
Instrument ID: ICP-MS2
Run Time: 15:07
Method: 6020A
File ID: NI.082415.150702
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG536146
Cal ID: ICP-MS - 24-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4349228
Report generated 08/24/2015 17:42

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L15080992
Run Date: 08/24/2015
Sample ID: WG536271-05
Instrument ID: ICP-MS2
Run Time: 12:20
Method: 6020A
File ID: NI.082415.122040
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG536146
Cal ID: ICP-MS - 24-AUG-15
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Manganese		50	52.5	105	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4349224
Report generated 08/24/2015 17:42

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L15080992
Run Date: 08/23/2015
Sample ID: WG536152-05
Instrument ID: ICP-MS2
Run Time: 15:31
Method: 6020A
File ID: NI.082315.153139
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG536146
Cal ID: ICP-MS - 23-AUG-15
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Manganese		50	52.6	105	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4349224
Report generated 08/24/2015 17:42

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080992
Run Date: 08/23/2015
Sample ID: WG536152-12
Instrument ID: ICP-MS2
Run Time: 15:58
Method: 6020A
File ID: NI.082315.155809
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG536146
Cal ID: ICP-MS - 23-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0515	mg/L	103	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4349227
Report generated 08/24/2015 17:42

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080992
Run Date: 08/23/2015
Sample ID: WG536152-19
Instrument ID: ICP-MS2
Run Time: 17:44
Method: 6020A
File ID: NI.082315.174448
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG536146
Cal ID: ICP-MS - 23-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0530	mg/L	106	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4349227
Report generated 08/24/2015 17:42

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080992
Run Date: 08/23/2015
Sample ID: WG536152-22
Instrument ID: ICP-MS2
Run Time: 18:39
Method: 6020A
File ID: NI.082315.183910
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG536146
Cal ID: ICP-MS - 23-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0535	mg/L	107	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4349227
Report generated 08/24/2015 17:42

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080992
Run Date: 08/23/2015
Sample ID: WG536152-24
Instrument ID: ICP-MS2
Run Time: 19:17
Method: 6020A
File ID: NI.082315.191729
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG536146
Cal ID: ICP-MS - 23-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0564	mg/L	113	90 - 110		*

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4349227
Report generated 08/24/2015 17:42

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080992
Run Date: 08/23/2015
Sample ID: WG536152-26
Instrument ID: ICP-MS2
Run Time: 19:49
Method: 6020A
File ID: NI.082315.194927
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG536146
Cal ID: ICP-MS - 23-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0555	mg/L	111	90 - 110		*

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4349227
Report generated 08/24/2015 17:42

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080992
Run Date: 08/24/2015
Sample ID: WG536271-10
Instrument ID: ICP-MS2
Run Time: 12:36
Method: 6020A
File ID: NI.082415.123642
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG536146
Cal ID: ICP-MS - 24-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0518	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4349227
Report generated 08/24/2015 17:42

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080992
Run Date: 08/24/2015
Sample ID: WG536271-14
Instrument ID: ICP-MS2
Run Time: 14:11
Method: 6020A
File ID: NI.082415.141128
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG536146
Cal ID: ICP-MS - 24-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0508	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4349227
Report generated 08/24/2015 17:42

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080992
Run Date: 08/24/2015
Sample ID: WG536271-16
Instrument ID: ICP-MS2
Run Time: 15:03
Method: 6020A
File ID: NI.082415.150350
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG536146
Cal ID: ICP-MS - 24-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0523	mg/L	105	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4349227
Report generated 08/24/2015 17:42

Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15080992
Run Date: 08/23/2015
Sample ID: WG536152-09
Instrument ID: ICP-MS2
Run Time: 15:44
Method: 6020A
File ID: NI.082315.154449
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG536146
Cal ID: ICP-MS - 23-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.500	0.538	ug/L	108	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4349244
Report generated 08/24/2015 17:42

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15080992
Run Date: 08/23/2015
Sample ID: WG536152-16
Instrument ID: ICP-MS2
Run Time: 16:26
Method: 6020A
File ID: NI.082315.162613
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG536146
Cal ID: ICP-MS - 23-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.500	0.502	ug/L	100	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4349244
Report generated 08/24/2015 17:42

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15080992
Run Date: 08/23/2015
Sample ID: WG536152-21
Instrument ID: ICP-MS2
Run Time: 17:51
Method: 6020A
File ID: NI.082315.175112
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG536146
Cal ID: ICP-MS - 23-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.500	0.527	ug/L	105	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4349244
Report generated 08/24/2015 17:42

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15080992
Run Date: 08/23/2015
Sample ID: WG536152-28
Instrument ID: ICP-MS2
Run Time: 19:55
Method: 6020A
File ID: NI.082315.195552
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG536146
Cal ID: ICP-MS - 23-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.500	0.573	ug/L	115	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4349244
Report generated 08/24/2015 17:42

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15080992
Run Date: 08/24/2015
Sample ID: WG536271-07
Instrument ID: ICP-MS2
Run Time: 12:27
Method: 6020A
File ID: NI.082415.122705
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG536146
Cal ID: ICP-MS - 24-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.500	0.472	ug/L	94.4	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4349244
Report generated 08/24/2015 17:42

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15080992
Run Date: 08/24/2015
Sample ID: WG536271-18
Instrument ID: ICP-MS2
Run Time: 15:10
Method: 6020A
File ID: NI.082415.151014
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG536146
Cal ID: ICP-MS - 24-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.500	0.506	ug/L	101	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4349244
Report generated 08/24/2015 17:42

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L15080992
Instrument ID: ICP-MS2
Sol. A : WG536152-10 **File ID:** NI.082315.155135
Sol. AB : WG536152-11 **File ID:** NI.082315.155451

Workgroup (AAB#): WG536146
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Manganese	NS	0.0462	NS	100	106	106	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4349226
Report generated 08/24/2015 17:42

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L15080992
Instrument ID: ICP-MS2
Sol. A : WG536271-08 **File ID:** NI.082415.123017
Sol. AB : WG536271-09 **File ID:** NI.082415.123328

Workgroup (AAB#): WG536146
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Manganese	NS	0.0511	NS	100	105	105	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4349226
Report generated 08/24/2015 17:42

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L15080992 **Analytical Method:** 6020
Analytical Workgroup: WG536146 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 23-AUG-2015 15:18

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
WG535816-02	BLANK	23-AUG-2015 18:07	104.969	105.376	102.181
WG535816-03	LCS	23-AUG-2015 18:10	104.915	105.812	103.714
WG535816-04	FLT_BLK	23-AUG-2015 19:43	106.517	98.66	108.93
WG536146-01	PSPK	23-AUG-2015 18:29	105.599	105.785	103.584
WG536146-02	SERIAL	23-AUG-2015 18:32	103.515	102.248	101.879
WG536152-05	ICV	23-AUG-2015 15:31	100.917	101.172	99.7
WG536152-06	ICB	23-AUG-2015 15:34	103.976	104.336	102.144
WG536152-09	LLICV	23-AUG-2015 15:44	103.118	101.067	101.547
WG536152-10	ICS	23-AUG-2015 15:51	100.338	99.636	98.241
WG536152-11	ICS	23-AUG-2015 15:54	99.884	101.408	101.484
WG536152-12	CCV	23-AUG-2015 15:58	105.002	103.515	105.132
WG536152-13	CCB	23-AUG-2015 16:02	104.306	103.902	105.61
WG536152-16	LLCCV	23-AUG-2015 16:26	106.738	102.735	108.624
WG536152-19	CCV	23-AUG-2015 17:44	103.114	102.598	102.215
WG536152-20	CCB	23-AUG-2015 17:47	103.811	101.964	101.813
WG536152-21	LLCCV	23-AUG-2015 17:51	103.493	101.88	100.881
WG536152-22	CCV	23-AUG-2015 18:39	102.717	103.393	101.273
WG536152-23	CCB	23-AUG-2015 18:42	101.623	100.147	99.127
WG536152-24	CCV	23-AUG-2015 19:17	106.103	95.683	108.887
WG536152-25	CCB	23-AUG-2015 19:20	106.178	95.541	110.052
WG536152-26	CCV	23-AUG-2015 19:49	106.615	100.107	107.171
WG536152-27	CCB	23-AUG-2015 19:52	105.921	98.034	107.905
WG536152-28	LLCCV	23-AUG-2015 19:55	105.127	97.981	106.971

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4349237
Report generated: 08/24/2015 17:42

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L15080992 **Analytical Method:** 6020
Analytical Workgroup: WG536146 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 24-AUG-2015 12:07

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L15080992-02	SAMP	24-AUG-2015 14:49	93.187	94.163	98.358
L15080992-04	SAMP	24-AUG-2015 14:41	100.831	99.988	102.634
L15080992-06	SAMP	24-AUG-2015 14:54	102.017	101.679	104.328
L15080992-08	SAMP	24-AUG-2015 14:57	101.231	101.318	105.851
L15080992-10	SAMP	24-AUG-2015 15:00	102.887	103.314	105.374
WG536271-05	ICV	24-AUG-2015 12:20	100.45	102.205	99.974
WG536271-06	ICB	24-AUG-2015 12:23	100.8	101.332	100.655
WG536271-07	LLICV	24-AUG-2015 12:27	99.202	101.205	99.719
WG536271-08	ICS	24-AUG-2015 12:30	97.773	98.672	98.401
WG536271-09	ICS	24-AUG-2015 12:33	99.695	99.044	101.112
WG536271-10	CCV	24-AUG-2015 12:36	100.47	99.666	101.197
WG536271-11	CCB	24-AUG-2015 12:39	101.466	99.546	101.136
WG536271-14	CCV	24-AUG-2015 14:11	98.512	101.809	98.861
WG536271-15	CCB	24-AUG-2015 14:14	100.775	100.14	101.851
WG536271-16	CCV	24-AUG-2015 15:03	101.737	101.397	103.675
WG536271-17	CCB	24-AUG-2015 15:07	102.591	99.465	103.891
WG536271-18	LLCCV	24-AUG-2015 15:10	101.459	98.282	101.708

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4349237
Report generated: 08/24/2015 17:42

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L15080992 **Analytical Method:** 6020
Analytical Workgroup: WG536146 **Matrix:** 18
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 23-AUG-2015 15:18

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L15080997-02	SAMP	23-AUG-2015 18:26	105.659	102.907	105.878
WG535761-01	FBLK2	23-AUG-2015 19:46	105.697	99.811	107.298

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4349237
Report generated: 08/24/2015 17:42

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L15080992 **Date:** 07/08/2015
Insturment ID: ICP-MS2 **Method:** 6020A

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Uranium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4349221
Report generated: 08/24/2015 10:37

2.3.2.3 Raw Data

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Sunday, August 23, 2015 14:55:23

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1344	2025	0.673	
Mg	23.985	23.975	4494	2019	0.711	
Co	58.933	58.925	11694	2022	0.697	
In	114.904	114.925	22865	2027	0.693	
U	238.050	238.025	47459	2042	0.677	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	4.441
5.575	2.703
5.625	3.703
5.675	3.526
5.725	4.063
5.775	3.907
5.825	3.804
5.875	2.636
5.925	1.645
5.975	2.591
6.025	1.764
6.075	3.156
6.125	5.447
6.175	7.624
6.225	149.071
6.275	37.268
6.325	83.853
6.375	85.267
6.425	21.551
6.475	9.715
6.525	4.542
6.575	2.665
6.625	2.784
6.675	1.625
6.725	1.920
6.775	2.503
6.825	1.894

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6.875	0.935
6.925	0.790
6.975	1.563
7.025	1.345
7.075	2.061
7.125	2.065
7.175	1.575
7.225	4.324
7.275	53.926
7.325	37.268
7.375	94.786
7.425	38.030
7.475	91.287
7.525	81.441
7.575	122.475
7.625	139.240
7.675	39.123
7.725	72.436
7.775	55.902
7.825	95.831
7.875	69.722
7.925	106.863
7.975	55.902
8.025	136.931
8.075	55.902
8.125	58.685
8.175	108.327
8.225	50.000
8.275	82.402
8.325	95.831
8.375	104.583
8.425	100.000
8.475	91.287
22.525	55.902
22.575	95.924
22.625	28.524
22.675	13.258
22.725	19.921
22.775	48.725
22.825	23.177
22.875	5.893
22.925	46.264
22.975	23.036
23.025	16.937
23.075	23.111
23.125	30.162
23.175	43.064

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23.225	33.624
23.275	37.769
23.325	24.993
23.375	33.248
23.425	25.074
23.475	35.954
23.525	8.501
23.575	2.046
23.625	2.319
23.675	3.471
23.725	1.963
23.775	1.611
23.825	1.811
23.875	1.270
23.925	0.818
23.975	1.797
24.025	0.889
24.075	1.205
24.125	1.181
24.175	1.159
24.225	2.098
24.275	1.565
24.325	4.792
24.375	45.079
24.425	68.148
24.475	8.712
24.525	6.713
24.575	4.567
24.625	3.198
24.675	2.996
24.725	2.215
24.775	2.220
24.825	2.728
24.875	2.182
24.925	2.379
24.975	3.354
25.025	2.251
25.075	2.919
25.125	2.307
25.175	1.624
25.225	1.419
25.275	6.061
25.325	39.123
25.375	35.355
25.425	51.349
25.475	15.707
57.525	4.400

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57.575	4.046
57.625	2.896
57.675	3.861
57.725	3.236
57.775	2.740
57.825	1.511
57.875	2.537
57.925	2.285
57.975	2.174
58.025	1.685
58.075	3.619
58.125	1.267
58.175	1.298
58.225	3.374
58.275	23.149
58.325	72.111
58.375	58.736
58.425	14.861
58.475	4.200
58.525	10.582
58.575	6.741
58.625	2.202
58.675	4.110
58.725	3.419
58.775	1.732
58.825	3.026
58.875	2.754
58.925	3.557
58.975	3.124
59.025	1.981
59.075	1.171
59.125	3.410
59.175	5.873
59.225	5.492
59.275	23.570
59.325	63.888
59.375	100.000
59.425	47.075
59.475	27.794
59.525	14.938
59.575	7.661
59.625	9.030
59.675	4.606
59.725	1.923
59.775	3.794
59.825	3.736
59.875	4.246

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59.925	3.788
59.975	4.250
60.025	7.344
60.075	2.645
60.125	3.674
60.175	8.336
60.225	13.939
60.275	64.043
60.325	58.685
60.375	39.123
60.425	51.602
60.475	57.051
113.525	16.851
113.575	5.488
113.625	5.170
113.675	5.363
113.725	2.402
113.775	1.328
113.825	4.438
113.875	2.443
113.925	4.401
113.975	2.454
114.025	1.231
114.075	3.077
114.125	2.041
114.175	7.017
114.225	4.370
114.275	16.891
114.325	42.492
114.375	25.074
114.425	17.024
114.475	9.361
114.525	4.072
114.575	2.613
114.625	2.448
114.675	1.056
114.725	2.081
114.775	2.032
114.825	2.280
114.875	2.194
114.925	2.229
114.975	3.153
115.025	1.635
115.075	1.897
115.125	2.468
115.175	1.750
115.225	2.858

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115.275	8.843
115.325	24.594
115.375	71.442
115.425	47.650
115.475	22.780
115.525	6.617
115.575	6.735
115.625	2.497
115.675	2.576
115.725	9.904
115.775	3.692
115.825	4.607
115.875	1.202
115.925	4.092
115.975	1.120
116.025	2.367
116.075	4.457
116.125	4.033
116.175	4.351
116.225	7.533
116.275	10.955
116.325	47.843
116.375	81.312
116.425	34.312
116.475	38.528
236.525	223.607
236.575	46.566
236.625	28.524
236.675	22.588
236.725	15.002
236.775	30.459
236.825	47.650
236.875	44.605
236.925	50.034
236.975	22.222
237.025	16.110
237.075	42.931
237.125	30.322
237.175	37.268
237.225	20.039
237.275	30.492
237.325	106.096
237.375	37.982
237.425	47.453
237.475	24.686
237.525	15.710
237.575	8.006

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237.625	5.317
237.675	4.922
237.725	5.138
237.775	2.510
237.825	3.630
237.875	2.671
237.925	1.723
237.975	1.481
238.025	1.099
238.075	2.079
238.125	2.745
238.175	1.815
238.225	2.825
238.275	2.110
238.325	3.221
238.375	4.666
238.425	9.178
238.475	12.342
238.525	7.846
238.575	40.745
238.625	39.529
238.675	63.191
238.725	58.975
238.775	50.508
238.825	20.412
238.875	43.971
238.925	39.219
238.975	29.315
239.025	23.385
239.075	38.932
239.125	46.187
239.175	33.333
239.225	27.524
239.275	39.529
239.325	50.146
239.375	28.384
239.425	16.563
239.475	25.074

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SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 8/23/2015 2:59:51 PM
End Time: 8/23/2015 3:02:27 PM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 2934.02
        Obtained Intensity (Mg 23.985): 178163.54
        Obtained Intensity (In 114.904): 79055.71
        Obtained Intensity (U 238.05): 42757.58
        Obtained Intensity (Bkgd 220): 0.73
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.019 (=5280.39 / 276518.70)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.004 (=1096.91 / 276518.70)
```

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SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 8/23/2015 2:59:51 PM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 2934.02
                Obtained Intensity (Mg 23.985): 178163.54
                Obtained Intensity (In 114.904): 79055.71
                Obtained Intensity (U 238.05): 42757.58
                Obtained Intensity (Bkgd 220): 0.73
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.019 (=5280.39 / 276518.70)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.004 (=1096.91 / 276518.70)
[Passed]  Optimum value(s): N/A

End Time: 8/23/2015 3:02:27 PM
```


Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Sunday, August 23, 2015 15:15:39
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	53497.6	1.4				ug/L		Standard
	Be	9	11.7	99.0				ug/L		Standard
	Al	27	486.7	6.5				ug/L		Standard
	Sc	45	24506.5	3.1				ug/L		Standard
	Ti	47	21.3	2.7				ug/L		Standard
	V	51	1267.5	3.1				ug/L		Standard
	Cr	52	7921.4	2.0				ug/L		Standard
	Cr	53	441.7	5.6				ug/L		Standard
	Mn	55	545.3	3.5				ug/L		Standard
	Co	59	183.0	7.7				ug/L		Standard
	Ni	60	130.7	5.7				ug/L		Standard
	Cu	65	231.3	1.1				ug/L		Standard
	Zn	66	306.3	5.7				ug/L		Standard
>	Ge	72	330477.7	1.8				ug/L		Standard
	As	75	-22.6	114.0				ug/L		Standard
	Se	82	26.9	28.3				ug/L		Standard
	Se-1	77	92.0	7.1				ug/L		Standard
>	Ga	71	36.7	20.8				mg/L		Standard
	Rb	85	25.0	20.0				ug/L		Standard
	Y	89	312466.8	2.2				ug/L		Standard
>	Rh	103	20.0	25.0				ug/L		Standard
	Mo	98	13.2	22.6				ug/L		Standard
	Ag	107	71.7	3.2				ug/L		Standard
	Cd	111	5.0	34.8				mg/L		Standard
	Cd	114	7.5	103.6				ug/L		Standard
>	In	115	477820.5	0.5				ug/L		Standard
	Sn	118	343.3	9.9				ug/L		Standard
	Sb	123	55.6	27.9				ug/L		Standard
	Ba	135	35.7	10.6				ug/L		Standard
	Ce	140	65.0	50.4				ug/L		Standard
>	Tb	159	939481.2	2.0				ug/L		Standard
	Ho	165	6.7	114.6				ug/L		Standard
	Tl	203	5.3	109.9				ug/L		Standard
	Tl	205	1.7	173.2				ug/L		Standard
	Pb	206	222.0	5.1				ug/L		Standard
	Pb	207	186.3	10.6				ug/L		Standard
	Pb	208	716.7	4.3				ug/L		Standard
	U	238	1.7	124.9				ug/L		Standard
>	Bi	209	440279.4	0.5				ug/L		Standard

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	Na	23	1.7	173.2	mg/L	Standard
	Mg	24	45.0	29.4	mg/L	Standard
	K	39	10.0	50.0	mg/L	Standard
	Ca	43	46.7	44.6	mg/L	Standard
	Fe	54	46.0	12.7	mg/L	Standard
	Fe	57	626.7	8.9	mg/L	Standard
>	**Sc-1**	45	24506.5	3.1	mg/L	Standard
	Cl	35	47099.8	0.8	ug/L	Standard
	Kr	83	8.3	42.1	ug/L	Standard
	Br	81	426.7	25.1	ug/L	Standard
	P	31	10518.7	4.4	ug/L	Standard
	S	34	2003.5	6.4	ug/L	Standard
	Sr	88	131.7	19.5	ug/L	Standard
	C	12	176.7	17.3	mg/L	Standard
	N	14	3.3	173.2	mg/L	Standard
	Hg	202	10.0		mg/L	Standard
	Dy	164	13.0	117.0	mg/L	Standard
	Ho-1	165	6.7	114.6	mg/L	Standard
	Er	166	6.7	86.6	mg/L	Standard
	I	127	2225.2	3.2	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Sunday, August 23, 2015 15:18:51
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52064.3	2.5				ug/L	53498	Standard
	Be	9	8.3	91.7	**-0.0053**	0.014	256.3	ug/L	12	Standard
	Al	27	475.0	14.2	**-0.0039**	0.001	29.9	ug/L	487	Standard
	Sc	45	25069.1	2.6				ug/L	24506	Standard
	Ti	47	19.7	48.9	**-0.0252**	0.051	204.4	ug/L	21	Standard
	V	51	1267.0	1.5	**-0.0217**	0.004	20.3	ug/L	1268	Standard
	Cr	52	7678.9	0.5	**-0.0515**	0.009	17.2	ug/L	7921	Standard
	Cr	53	400.0	14.4	**-0.1142**	0.090	78.6	ug/L	442	Standard
	Mn	55	571.3	3.5	**-0.0109**	0.007	61.7	ug/L	545	Standard
	Co	59	187.7	7.3	**-0.0033**	0.004	117.7	ug/L	183	Standard
	Ni	60	131.3	3.8	**0.0072**	0.003	39.0	ug/L	131	Standard
	Cu	65	219.3	7.0	**-0.0098**	0.011	108.5	ug/L	231	Standard
	Zn	66	325.0	4.3	**-0.0285**	0.022	78.3	ug/L	306	Standard
>	**Ge**	72	334244.4	0.9				ug/L	330478	Standard
	As	75	-58.2	31.9	**-0.0234**	0.024	101.7	ug/L	-23	Standard
	Se	82	16.2	17.8	**-0.1663**	0.047	28.4	ug/L	27	Standard
	Se-1	77	87.3	13.3	**0.0031**	0.246	8030.6	ug/L	92	Standard
>	**Ga**	71	18.3	41.7				mg/L	37	Standard
	Rb	85	36.7	20.8				ug/L	25	Standard
	Y	89	311546.0	1.7				ug/L	312467	Standard
>	**Rh**	103	31.7	65.7				ug/L	20	Standard
	Mo	98	7.4	24.6	**0.0033**	0.001	42.3	ug/L	13	Standard
	Ag	107	68.7	7.3	**-0.0070**	0.001	14.1	ug/L	72	Standard
	Cd	111	5.6	27.0	**-0.0091**	0.001	12.3	mg/L	5	Standard
	Cd	114	18.7	60.6	**-0.0028**	0.003	114.7	ug/L	7	Standard
>	**In**	115	474373.5	1.2				ug/L	477820	Standard
	Sn	118	298.3	16.9	**-0.0119**	0.011	92.7	ug/L	343	Standard
	Sb	123	29.9	16.6	**0.0042**	0.001	29.7	ug/L	56	Standard
	Ba	135	38.7	22.0	**-0.0059**	0.005	80.2	ug/L	36	Standard
	Ce	140	48.3	29.9				ug/L	65	Standard
>	**Tb**	159	942608.1	2.4				ug/L	939481	Standard
	Ho	165	13.3	57.3				ug/L	7	Standard
	Tl	203	5.0	69.3	**-0.0031**	0.001	17.6	ug/L	5	Standard
	Tl	205	3.3	173.2	**-0.0059**	0.001	22.3	ug/L	2	Standard
	Pb	206	218.3	10.5	**-0.0085**	0.006	74.1	ug/L	222	Standard
	Pb	207	189.7	6.6	**-0.0084**	0.004	45.8	ug/L	186	Standard
	Pb	208	683.3	1.4	**-0.0089**	0.000	4.6	ug/L	717	Standard
	U	238	4.0	109.0	**-0.0054**	0.001	18.2	ug/L	2	Standard
>	**Bi**	209	448941.1	1.4				ug/L	440279	Standard

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Na	23	1.7	**-4645943967208**0470110003232.172			173.2	mg/L	2	Standard
Mg	24	41.7	42.1	**-0.0222**	0.047	212.2	mg/L	45	Standard
K	39	8.3	124.9	**-0.1140**	0.394	345.6	mg/L	10	Standard
Ca	43	30.0	28.9	**-1.8689**	1.782	95.3	mg/L	47	Standard
Fe	54	72.7	14.6	**0.0140**	0.027	190.9	mg/L	46	Standard
Fe	57	695.0	7.3	**0.6515**	0.604	92.7	mg/L	627	Standard
Sc-1	45	25069.1	2.6				mg/L	24506	Standard
Cl	35	47626.1	2.3				ug/L	47100	Standard
Kr	83	5.7	71.3				ug/L	8	Standard
Br	81	410.0	28.8				ug/L	427	Standard
P	31	11325.9	5.8				ug/L	10519	Standard
S	34	1953.5	5.3				ug/L	2003	Standard
Sr	88	153.3	6.8				ug/L	132	Standard
C	12	216.7	37.3				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	12.5	96.6				mg/L	13	Standard
Ho-1	165	13.3	57.3				mg/L	7	Standard
Er	166	16.7	91.7				mg/L	7	Standard
I	127	2133.5	2.9				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: Standard 1
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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 1
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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Sunday, August 23, 2015 15:22:02
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54039.6	2.6				ug/L	53498	Standard
	Be	9	41.7	6.9	**0.0500**	0.004	8.6	ug/L	12	Standard
	Al	27	4263.9	4.7	**0.0500**	0.002	3.6	ug/L	487	Standard
	Sc	45	25169.2	3.2				ug/L	24506	Standard
	Ti	47	42.0	23.0	**0.1000**	0.053	53.2	ug/L	21	Standard
	V	51	1517.7	6.6	**0.0500**	0.025	50.0	ug/L	1268	Standard
	Cr	52	8017.1	1.2	**0.0500**	0.014	28.0	ug/L	7921	Standard
	Cr	53	495.0	16.3	**0.0500**	0.123	245.3	ug/L	442	Standard
	Mn	55	761.0	1.6	**0.0500**	0.004	8.1	ug/L	545	Standard
	Co	59	372.7	2.3	**0.0500**	0.002	4.4	ug/L	183	Standard
	Ni	60	186.0	6.7	**0.0500**	0.010	20.2	ug/L	131	Standard
	Cu	65	292.3	7.1	**0.0500**	0.017	33.7	ug/L	231	Standard
	Zn	66	376.0	6.5	**0.0500**	0.036	72.3	ug/L	306	Standard
>	**Ge**	72	326673.1	0.6				ug/L	330478	Standard
	As	75	-1.4	1797.2	**0.0500**	0.034	68.4	ug/L	-23	Standard
	Se	82	29.1	5.7	**0.0500**	0.028	56.8	ug/L	27	Standard
	Se-1	77	87.3	16.7	**0.0500**	0.338	675.3	ug/L	92	Standard
>	**Ga**	71	13.3	78.1				mg/L	37	Standard
	Rb	85	33.3	22.9				ug/L	25	Standard
	Y	89	314532.2	2.2				ug/L	312467	Standard
>	**Rh**	103	18.3	15.7				ug/L	20	Standard
	Mo	98	138.2	13.1	**0.1000**	0.012	12.4	ug/L	13	Standard
	Ag	107	342.7	10.5	**0.0500**	0.008	16.0	ug/L	72	Standard
	Cd	111	85.6	7.6	**0.0500**	0.005	10.0	mg/L	5	Standard
	Cd	114	206.2	16.7	**0.0500**	0.010	20.2	ug/L	7	Standard
>	**In**	115	475079.4	0.9				ug/L	477820	Standard
	Sn	118	575.0	13.0	**0.0500**	0.016	31.6	ug/L	343	Standard
	Sb	123	199.1	2.8	**0.0500**	0.001	2.2	ug/L	56	Standard
	Ba	135	144.7	17.1	**0.0500**	0.013	25.1	ug/L	36	Standard
	Ce	140	43.3	94.0				ug/L	65	Standard
>	**Tb**	159	940988.0	2.9				ug/L	939481	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	344.3	5.9	**0.0500**	0.003	6.6	ug/L	5	Standard
	Tl	205	246.7	22.3	**0.0500**	0.013	25.1	ug/L	2	Standard
	Pb	206	447.7	7.4	**0.0500**	0.008	16.3	ug/L	222	Standard
	Pb	207	397.0	4.4	**0.0500**	0.005	9.2	ug/L	186	Standard
	Pb	208	1428.0	1.7	**0.0500**	0.002	3.8	ug/L	717	Standard
	U	238	248.7	6.2	**0.0500**	0.004	7.3	ug/L	2	Standard
>	**Bi**	209	441288.8	0.4				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	51.7	20.1	**0.0050**	0.027	537.5	mg/L	45	Standard
K	39	11.7	107.9	**0.0050**	0.474	9470.2	mg/L	10	Standard
Ca	43	38.3	15.1	**0.0050**	1.512	30237.3	mg/L	47	Standard
Fe	54	69.3	25.5	**0.0050**	0.045	901.1	mg/L	46	Standard
Fe	57	631.7	7.5	**0.0050**	0.256	5115.9	mg/L	627	Standard
> **Sc-1**	45	25169.2	3.2				mg/L	24506	Standard
Cl	35	47423.4	1.2				ug/L	47100	Standard
Kr	83	5.3	39.0				ug/L	8	Standard
Br	81	556.7	11.7				ug/L	427	Standard
P	31	10965.6	3.2				ug/L	10519	Standard
S	34	1960.1	9.6				ug/L	2003	Standard
Sr	88	150.0	8.8				ug/L	132	Standard
C	12	136.7	29.6				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	8.4	107.8				mg/L	13	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	33.3	69.3				mg/L	7	Standard
I	127	2185.2	5.0				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 2
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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Sunday, August 23, 2015 15:25:14
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	53524.5	4.6				ug/L	53498	Standard
	Be	9	29498.7	4.1	**50.1451**	2.856	5.7	ug/L	12	Standard
	Al	27	3541433.0	1.5	**51.1643**	1.901	3.7	ug/L	487	Standard
	Sc	45	25107.5	2.0				ug/L	24506	Standard
	Ti	47	18753.3	0.8	**98.9270**	2.118	2.1	ug/L	21	Standard
	V	51	203725.0	1.6	**49.9356**	1.672	3.3	ug/L	1268	Standard
	Cr	52	271268.2	2.2	**50.1790**	1.717	3.4	ug/L	7921	Standard
	Cr	53	33518.7	1.7	**50.2983**	0.781	1.6	ug/L	442	Standard
	Mn	55	172563.5	1.2	**49.7061**	1.470	3.0	ug/L	545	Standard
	Co	59	185554.2	1.7	**50.1744**	1.696	3.4	ug/L	183	Standard
	Ni	60	70578.7	1.8	**50.1872**	1.707	3.4	ug/L	131	Standard
	Cu	65	68755.0	1.0	**50.4384**	1.372	2.7	ug/L	231	Standard
	Zn	66	38982.4	1.8	**49.9497**	1.605	3.2	ug/L	306	Standard
>	Ge	72	339954.8	1.7				ug/L	330478	Standard
	As	75	39112.5	0.5	**49.9084**	1.013	2.0	ug/L	-23	Standard
	Se	82	3209.2	2.5	**49.5749**	0.509	1.0	ug/L	27	Standard
	Se-1	77	2328.5	2.5	**49.2311**	0.961	2.0	ug/L	92	Standard
>	Ga	71	48.3	21.5				mg/L	37	Standard
	Rb	85	631.7	7.9				ug/L	25	Standard
	Y	89	314815.6	1.3				ug/L	312467	Standard
>	Rh	103	28.3	27.0				ug/L	20	Standard
	Mo	98	138945.0	0.3	**101.8300**	1.148	1.1	ug/L	13	Standard
	Ag	107	247120.3	0.6	**50.8479**	0.888	1.7	ug/L	72	Standard
	Cd	111	69056.2	0.4	**50.4800**	0.658	1.3	mg/L	5	Standard
	Cd	114	180477.8	0.6	**50.2933**	0.443	0.9	ug/L	7	Standard
>	In	115	479883.2	1.4				ug/L	477820	Standard
	Sn	118	218105.6	1.9	**48.3447**	1.591	3.3	ug/L	343	Standard
	Sb	123	188569.5	0.5	**50.5304**	0.827	1.6	ug/L	56	Standard
	Ba	135	96777.4	0.5	**50.5901**	0.872	1.7	ug/L	36	Standard
	Ce	140	78.3	18.4				ug/L	65	Standard
>	Tb	159	949219.7	1.8				ug/L	939481	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	324196.0	0.1	**49.7574**	0.904	1.8	ug/L	5	Standard
	Tl	205	219717.0	1.8	**49.5695**	1.660	3.3	ug/L	2	Standard
	Pb	206	202815.1	0.7	**49.9448**	0.845	1.7	ug/L	222	Standard
	Pb	207	183673.3	0.5	**49.9992**	1.065	2.1	ug/L	186	Standard
	Pb	208	654377.0	0.6	**49.9838**	1.167	2.3	ug/L	717	Standard
	U	238	223602.5	0.4	**49.6775**	1.100	2.2	ug/L	2	Standard
>	Bi	209	449460.8	1.8				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	1855.1	0.5	**4.9736**	0.130	2.6	mg/L	45	Standard
K	39	151.7	6.9	**5.1226**	0.401	7.8	mg/L	10	Standard
Ca	43	60.0	30.0	**4.8039**	3.878	80.7	mg/L	47	Standard
Fe	54	2118.9	9.4	**5.0650**	0.393	7.8	mg/L	46	Standard
Fe	57	1180.0	6.7	**5.2976**	0.816	15.4	mg/L	627	Standard
> **Sc-1**	45	25107.5	2.0				mg/L	24506	Standard
Cl	35	43737.1	3.2				ug/L	47100	Standard
Kr	83	4.0	50.0				ug/L	8	Standard
Br	81	430.0	8.1				ug/L	427	Standard
P	31	11324.2	3.6				ug/L	10519	Standard
S	34	2218.5	2.4				ug/L	2003	Standard
Sr	88	190.0	19.9				ug/L	132	Standard
C	12	166.7	12.5				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	15.5	97.9				mg/L	13	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	23.3	24.7				mg/L	7	Standard
I	127	1090.0	3.5				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: Standard 3
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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Sunday, August 23, 2015 15:28:26
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	53957.6	1.4				ug/L	53498	Standard
	Be	9	59177.0	1.3	**99.7100**	2.643	2.7	ug/L	12	Standard
	Al	27	6821343.7	0.5	**97.6725**	1.035	1.1	ug/L	487	Standard
	Sc	45	25571.6	1.2				ug/L	24506	Standard
	Ti	47	37719.9	1.9	**202.1449**	5.259	2.6	ug/L	21	Standard
	V	51	401077.3	0.8	**100.1287**	1.818	1.8	ug/L	1268	Standard
	Cr	52	522746.7	2.1	**99.6421**	3.193	3.2	ug/L	7921	Standard
	Cr	53	64764.9	3.8	**99.4036**	4.742	4.8	ug/L	442	Standard
	Mn	55	343413.3	0.6	**100.5875**	0.908	0.9	ug/L	545	Standard
	Co	59	362876.2	1.4	**99.6514**	1.999	2.0	ug/L	183	Standard
	Ni	60	137908.8	1.0	**99.6259**	1.744	1.8	ug/L	131	Standard
	Cu	65	132879.9	1.8	**99.1237**	2.501	2.5	ug/L	231	Standard
	Zn	66	76615.6	1.1	**100.1005**	1.235	1.2	ug/L	306	Standard
>	Ge	72	334828.1	1.0				ug/L	330478	Standard
	As	75	77375.6	1.0	**100.1831**	1.983	2.0	ug/L	-23	Standard
	Se	82	6401.4	0.5	**100.8498**	1.415	1.4	ug/L	27	Standard
	Se-1	77	4637.0	0.3	**101.5370**	0.905	0.9	ug/L	92	Standard
>	Ga	71	61.7	4.7				mg/L	37	Standard
	Rb	85	1071.7	4.7				ug/L	25	Standard
	Y	89	319068.1	1.1				ug/L	312467	Standard
>	Rh	103	36.7	7.9				ug/L	20	Standard
	Mo	98	271906.2	0.5	**196.3418**	3.234	1.6	ug/L	13	Standard
	Ag	107	484841.9	0.1	**98.3050**	1.292	1.3	ug/L	72	Standard
	Cd	111	137515.2	1.4	**99.0405**	0.558	0.6	mg/L	5	Standard
	Cd	114	362129.6	3.7	**99.4137**	2.936	3.0	ug/L	7	Standard
>	In	115	487077.5	1.4				ug/L	477820	Standard
	Sn	118	472744.0	1.1	**103.3090**	1.647	1.6	ug/L	343	Standard
	Sb	123	374740.0	0.4	**98.9398**	1.711	1.7	ug/L	56	Standard
	Ba	135	191838.5	0.4	**98.8205**	0.972	1.0	ug/L	36	Standard
	Ce	140	161.7	15.6				ug/L	65	Standard
>	Tb	159	952912.9	1.2				ug/L	939481	Standard
	Ho	165	5.0	0.0				ug/L	7	Standard
	Tl	203	645654.6	0.5	**100.4850**	1.395	1.4	ug/L	5	Standard
	Tl	205	440912.5	1.5	**100.8606**	2.288	2.3	ug/L	2	Standard
	Pb	206	400650.7	1.4	**100.1103**	1.917	1.9	ug/L	222	Standard
	Pb	207	362109.3	1.0	**100.0016**	0.711	0.7	ug/L	186	Standard
	Pb	208	1290839.0	0.6	**100.0325**	1.282	1.3	ug/L	717	Standard
	U	238	446784.2	0.8	**100.6447**	0.296	0.3	ug/L	2	Standard
>	Bi	209	443195.1	0.8				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	3768.8	1.8	**10.0528**	0.069	0.7	mg/L	45	Standard
K	39	283.3	8.3	**9.7549**	0.967	9.9	mg/L	10	Standard
Ca	43	86.7	24.0	**10.3921**	4.377	42.1	mg/L	47	Standard
Fe	54	4136.5	1.5	**9.8700**	0.107	1.1	mg/L	46	Standard
Fe	57	1638.4	6.7	**9.4051**	0.878	9.3	mg/L	627	Standard
Sc-1	45	25571.6	1.2				mg/L	24506	Standard
Cl	35	40849.0	1.7				ug/L	47100	Standard
Kr	83	5.7	56.7				ug/L	8	Standard
Br	81	443.3	22.6				ug/L	427	Standard
P	31	11345.9	1.9				ug/L	10519	Standard
S	34	2245.2	1.8				ug/L	2003	Standard
Sr	88	170.0	19.3				ug/L	132	Standard
C	12	180.0	20.0				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	10.0	100.0				mg/L	10	Standard
Dy	164	6.2	86.7				mg/L	13	Standard
Ho-1	165	5.0	0.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	378.3	6.5				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: Standard 4
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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Sunday, August 23, 2015 15:31:39
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	51696.4	2.0				ug/L	53498	Standard
	Be	9	30278.6	1.7	**53.2329**	0.821	1.5	ug/L	12	Standard
	Al	27	3587464.0	1.5	**53.6081**	0.297	0.6	ug/L	487	Standard
	Sc	45	24843.7	4.3				ug/L	24506	Standard
	Ti	47	19772.6	1.8	**106.0401**	0.624	0.6	ug/L	21	Standard
	V	51	207973.8	1.4	**51.8286**	0.318	0.6	ug/L	1268	Standard
	Cr	52	277084.9	1.9	**52.1694**	1.389	2.7	ug/L	7921	Standard
	Cr	53	33871.2	3.0	**51.7021**	1.561	3.0	ug/L	442	Standard
	Mn	55	179491.3	0.6	**52.5777**	1.315	2.5	ug/L	545	Standard
	Co	59	188834.5	1.0	**51.9077**	0.771	1.5	ug/L	183	Standard
	Ni	60	72841.3	0.8	**52.6632**	1.191	2.3	ug/L	131	Standard
	Cu	65	70667.8	0.7	**52.7187**	1.322	2.5	ug/L	231	Standard
	Zn	66	39576.6	1.2	**51.5666**	0.721	1.4	ug/L	306	Standard
>	Ge	72	334351.4	1.9				ug/L	330478	Standard
	As	75	39919.3	1.2	**51.7882**	0.970	1.9	ug/L	-23	Standard
	Se	82	3322.9	2.2	**52.2340**	1.737	3.3	ug/L	27	Standard
	Se-1	77	2370.9	2.2	**51.0611**	2.130	4.2	ug/L	92	Standard
>	Ga	71	66.7	15.6				mg/L	37	Standard
	Rb	85	531.7	10.3				ug/L	25	Standard
	Y	89	314084.7	2.2				ug/L	312467	Standard
>	Rh	103	38.3	30.1				ug/L	20	Standard
	Mo	98	144616.6	0.8	**106.7927**	2.822	2.6	ug/L	13	Standard
	Ag	107	254789.5	0.5	**52.8171**	0.999	1.9	ug/L	72	Standard
	Cd	111	71613.5	0.5	**52.7476**	1.379	2.6	mg/L	5	Standard
	Cd	114	186934.8	2.8	**52.5077**	2.585	4.9	ug/L	7	Standard
>	In	115	476387.7	2.1				ug/L	477820	Standard
	Sn	118	231266.6	0.2	**51.6441**	1.152	2.2	ug/L	343	Standard
	Sb	123	196023.3	0.7	**52.9208**	1.126	2.1	ug/L	56	Standard
	Ba	135	100017.0	0.8	**52.6800**	1.430	2.7	ug/L	36	Standard
	Ce	140	203.3	17.3				ug/L	65	Standard
>	Tb	159	960131.0	2.8				ug/L	939481	Standard
	Ho	165	11.7	99.0				ug/L	7	Standard
	Tl	203	332538.3	0.2	**51.6199**	0.465	0.9	ug/L	5	Standard
	Tl	205	223550.5	0.7	**51.0021**	0.583	1.1	ug/L	2	Standard
	Pb	206	209035.2	1.0	**52.0666**	0.510	1.0	ug/L	222	Standard
	Pb	207	188440.7	1.0	**51.8801**	0.297	0.6	ug/L	186	Standard
	Pb	208	673535.1	0.6	**52.0339**	0.651	1.3	ug/L	717	Standard
	U	238	229870.7	0.8	**51.6498**	0.555	1.1	ug/L	2	Standard
>	Bi	209	444317.6	0.9				ug/L	440279	Standard

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Na	23	1.7	**-4493271685277**7825748511068.094			173.2	mg/L	2	Standard
Mg	24	2010.1	5.9	**5.4667**	0.459	8.4	mg/L	45	Standard
K	39	180.0	16.7	**6.2121**	0.908	14.6	mg/L	10	Standard
Ca	43	63.3	40.5	**5.6663**	5.689	100.4	mg/L	47	Standard
Fe	54	2096.9	4.8	**5.0746**	0.281	5.5	mg/L	46	Standard
Fe	57	1225.0	1.1	**5.8670**	0.576	9.8	mg/L	627	Standard
Sc-1	45	24843.7	4.3				mg/L	24506	Standard
Cl	35	39879.1	1.3				ug/L	47100	Standard
Kr	83	5.7	40.8				ug/L	8	Standard
Br	81	423.3	4.9				ug/L	427	Standard
P	31	11007.3	1.5				ug/L	10519	Standard
S	34	2151.8	2.9				ug/L	2003	Standard
Sr	88	155.0	8.5				ug/L	132	Standard
C	12	253.3	46.8				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	12.7	93.2				mg/L	13	Standard
Ho-1	165	11.7	99.0				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	580.0	4.8				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	106.466		
Al	27	107.216		
Sc	45			
Ti	47	106.040		
V	51	103.657		
Cr	52	104.339		
Cr	53			
Mn	55	105.155		
Co	59	103.815		
Ni	60	105.326		
Cu	65	105.437		
Zn	66	103.133		
Ge	72		101.172	
As	75	103.576		
Se	82	104.468		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	106.793		
Ag	107	105.634		
Cd	111	105.495		
Cd	114			
In	115		99.700	
Sn	118	103.288		
Sb	123	105.842		
Ba	135	105.360		
Ce	140			
Tb	159			
Ho	165			
Tl	203	103.240		
Tl	205			
Pb	206	104.133		
Pb	207	103.760		
Pb	208	104.068		
U	238	103.300		
Bi	209		100.917	
Na	2-898654337054985.500			
Mg	24	109.335		
K	39	124.241		
Ca	43	113.326		
Fe	54	101.491		
Fe	57	117.339		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	K	39	
QC Std 1	Ca	43	

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QC Std 1	Fe	57

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Sunday, August 23, 2015 15:34:52
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54763.8	2.8				ug/L	53498	Standard
	Be	9	58.3	129.0	**0.0788**	0.129	163.4	ug/L	12	Standard
	Al	27	3962.7	127.9	**0.0460**	0.074	160.5	ug/L	487	Standard
	Sc	45	25064.1	1.5				ug/L	24506	Standard
	Ti	47	39.0	54.6	**0.0742**	0.117	157.1	ug/L	21	Standard
	V	51	1021.3	17.5	**-0.0912**	0.043	47.0	ug/L	1268	Standard
	Cr	52	6453.0	3.9	**-0.3261**	0.079	24.3	ug/L	7921	Standard
	Cr	53	496.7	20.5	**0.0148**	0.172	1161.9	ug/L	442	Standard
	Mn	55	774.0	29.8	**0.0429**	0.072	167.5	ug/L	545	Standard
	Co	59	332.7	35.1	**0.0344**	0.033	96.9	ug/L	183	Standard
	Ni	60	165.0	42.7	**0.0288**	0.053	183.3	ug/L	131	Standard
	Cu	65	280.3	20.3	**0.0302**	0.046	153.9	ug/L	231	Standard
	Zn	66	339.3	12.2	**-0.0225**	0.063	279.9	ug/L	306	Standard
>	**Ge**	72	344808.1	2.7				ug/L	330478	Standard
	As	75	-12.8	173.7	**0.0358**	0.028	78.0	ug/L	-23	Standard
	Se	82	21.5	23.9	**-0.0937**	0.074	78.5	ug/L	27	Standard
	Se-1	77	85.0	11.2	**-0.1033**	0.240	232.6	ug/L	92	Standard
>	**Ga**	71	33.3	52.7				mg/L	37	Standard
	Rb	85	26.7	28.6				ug/L	25	Standard
	Y	89	322571.5	1.6				ug/L	312467	Standard
>	**Rh**	103	31.7	24.1				ug/L	20	Standard
	Mo	98	120.9	59.0	**0.0854**	0.053	61.6	ug/L	13	Standard
	Ag	107	158.0	50.6	**0.0109**	0.017	152.6	ug/L	72	Standard
	Cd	111	21.8	119.5	**0.0025**	0.019	751.7	mg/L	5	Standard
	Cd	114	36.2	102.6	**0.0019**	0.010	550.9	ug/L	7	Standard
>	**In**	115	488065.0	1.8				ug/L	477820	Standard
	Sn	118	575.0	8.6	**0.0468**	0.013	27.5	ug/L	343	Standard
	Sb	123	996.4	8.0	**0.2588**	0.024	9.1	ug/L	56	Standard
	Ba	135	61.3	48.7	**0.0053**	0.016	296.7	ug/L	36	Standard
	Ce	140	51.7	59.1				ug/L	65	Standard
>	**Tb**	159	970694.7	2.7				ug/L	939481	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	62.7	121.5	**0.0057**	0.012	203.8	ug/L	5	Standard
	Tl	205	285.0	135.1	**0.0571**	0.086	151.0	ug/L	2	Standard
	Pb	206	304.7	29.7	**0.0115**	0.023	197.0	ug/L	222	Standard
	Pb	207	280.3	41.9	**0.0150**	0.032	213.9	ug/L	186	Standard
	Pb	208	1652.4	75.0	**0.0636**	0.095	149.1	ug/L	717	Standard
	U	238	317.7	136.1	**0.0638**	0.095	149.7	ug/L	2	Standard
>	**Bi**	209	457784.4	1.7				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	30.0	16.7	**-0.0540**	0.013	24.2	mg/L	45	Standard
K	39	16.7	45.8	**0.1886**	0.291	154.1	mg/L	10	Standard
Ca	43	46.7	34.4	**1.8457**	3.440	186.4	mg/L	47	Standard
Fe	54	66.1	60.7	**-0.0023**	0.099	4307.2	mg/L	46	Standard
Fe	57	686.7	8.7	**0.5614**	0.492	87.6	mg/L	627	Standard
> **Sc-1**	45	25064.1	1.5				mg/L	24506	Standard
Cl	35	41163.9	2.0				ug/L	47100	Standard
Kr	83	5.7	44.4				ug/L	8	Standard
Br	81	460.0	37.9				ug/L	427	Standard
P	31	10938.9	2.7				ug/L	10519	Standard
S	34	2120.1	7.0				ug/L	2003	Standard
Sr	88	158.3	14.9				ug/L	132	Standard
C	12	203.3	34.9				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	9.5	112.7				mg/L	13	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	10.0	173.2				mg/L	7	Standard
I	127	1996.8	9.0				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.336	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.144	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	103.976	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	K	39	
QC Std 2	Ca	43	

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QC Std 2	Fe	57

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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Sunday, August 23, 2015 15:38:05
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55523.3	3.3				ug/L	53498	Standard
	Be	9	145.0	31.0	**0.2181**	0.079	36.0	ug/L	12	Standard
	Al	27	376.7	12.3	**-0.0057**	0.000	8.6	ug/L	487	Standard
	Sc	45	26721.9	2.5				ug/L	24506	Standard
	Ti	47	23.3	20.3	**-0.0102**	0.024	231.2	ug/L	21	Standard
	V	51	2527.6	6.0	**0.2709**	0.031	11.4	ug/L	1268	Standard
	Cr	52	10830.9	2.4	**0.4813**	0.024	5.0	ug/L	7921	Standard
	Cr	53	981.7	4.6	**0.7302**	0.075	10.3	ug/L	442	Standard
	Mn	55	2385.2	0.8	**0.4963**	0.013	2.6	ug/L	545	Standard
	Co	59	1658.8	2.1	**0.3846**	0.005	1.2	ug/L	183	Standard
	Ni	60	2365.5	0.3	**1.5619**	0.024	1.5	ug/L	131	Standard
	Cu	65	1437.4	1.1	**0.8622**	0.024	2.7	ug/L	231	Standard
	Zn	66	5014.8	1.9	**5.8921**	0.059	1.0	ug/L	306	Standard
>	**Ge**	72	347127.1	1.2				ug/L	330478	Standard
	As	75	278.0	7.7	**0.3989**	0.024	6.0	ug/L	-23	Standard
	Se	82	44.7	20.6	**0.2581**	0.133	51.5	ug/L	27	Standard
	Se-1	77	109.0	9.6	**0.3988**	0.234	58.7	ug/L	92	Standard
>	**Ga**	71	16.7	45.8				mg/L	37	Standard
	Rb	85	36.7	43.8				ug/L	25	Standard
	Y	89	324154.8	1.8				ug/L	312467	Standard
>	**Rh**	103	16.7	17.3				ug/L	20	Standard
	Mo	98	29.2	10.3	**0.0184**	0.002	12.7	ug/L	13	Standard
	Ag	107	2126.5	0.5	**0.4014**	0.006	1.5	ug/L	72	Standard
	Cd	111	357.3	6.7	**0.2390**	0.017	7.2	mg/L	5	Standard
	Cd	114	973.1	8.8	**0.2541**	0.027	10.7	ug/L	7	Standard
>	**In**	115	497004.0	1.7				ug/L	477820	Standard
	Sn	118	691.7	11.2	**0.0693**	0.015	21.4	ug/L	343	Standard
	Sb	123	1855.5	4.7	**0.4762**	0.022	4.7	ug/L	56	Standard
	Ba	135	1486.4	1.1	**0.7242**	0.005	0.7	ug/L	36	Standard
	Ce	140	16.7	96.4				ug/L	65	Standard
>	**Tb**	159	967178.9	1.5				ug/L	939481	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	562.0	6.7	**0.0796**	0.005	6.1	ug/L	5	Standard
	Tl	205	375.0	9.3	**0.0752**	0.008	11.3	ug/L	2	Standard
	Pb	206	1091.4	3.2	**0.1979**	0.011	5.7	ug/L	222	Standard
	Pb	207	941.7	3.3	**0.1881**	0.011	5.8	ug/L	186	Standard
	Pb	208	3424.5	1.0	**0.1920**	0.003	1.4	ug/L	717	Standard
	U	238	1841.1	1.6	**0.3893**	0.011	2.7	ug/L	2	Standard
>	**Bi**	209	464736.6	1.1				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	31.7	24.1	**-0.0549**	0.019	34.0	mg/L	45	Standard
K	39	6.7	114.6	**-0.1983**	0.261	131.5	mg/L	10	Standard
Ca	43	41.7	18.3	**0.1873**	1.609	859.0	mg/L	47	Standard
Fe	54	57.4	30.9	**-0.0333**	0.038	114.6	mg/L	46	Standard
Fe	57	640.0	14.3	**-0.2506**	0.979	390.5	mg/L	627	Standard
> **Sc-1**	45	26721.9	2.5				mg/L	24506	Standard
Cl	35	42029.6	1.3				ug/L	47100	Standard
Kr	83	3.3	45.8				ug/L	8	Standard
Br	81	450.0	13.5				ug/L	427	Standard
P	31	11229.2	2.0				ug/L	10519	Standard
S	34	2135.2	4.7				ug/L	2003	Standard
Sr	88	160.0	23.6				ug/L	132	Standard
C	12	213.3	41.0				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	9.7	2.9				mg/L	13	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	376.7	9.6				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	109.074		
Al	27	-0.572		
Sc	45			
Ti	47			
V	51	67.713		
Cr	52	60.169		
Cr	53			
Mn	55	99.255		
Co	59	96.154		
Ni	60	97.619		
Cu	65	107.774		
Zn	66	94.274		
> Ge	72		105.038	
As	75	99.728		
Se	82	64.536		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	100.343		
Cd	111	99.579		
Cd	114			
> In	115			104.015
Sn	118			
Sb	123	119.051		
Ba	135	96.562		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.447		
Tl	205			
Pb	206			
Pb	207			
Pb	208	96.012		
U	238	97.337		
> Bi	209			105.555
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	
QC Std 3	V	51	
QC Std 3	Cr	52	

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QC Std 3	Se	82

Sample ID: QC Std 3
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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Sunday, August 23, 2015 15:41:16
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	53830.5	1.9				ug/L	53498	Standard
	Be	9	12.5	84.9	**0.0012**	0.018	1537.2	ug/L	12	Standard
	Al	27	3623277.4	1.5	**51.9947**	0.184	0.4	ug/L	487	Standard
	Sc	45	24287.0	3.3				ug/L	24506	Standard
	Ti	47	20590.5	1.1	**111.5479**	1.099	1.0	ug/L	21	Standard
	V	51	665.8	27.5	**-0.1709**	0.047	27.2	ug/L	1268	Standard
	Cr	52	6843.0	1.6	**-0.2006**	0.023	11.4	ug/L	7921	Standard
	Cr	53	3798.0	4.0	**5.2045**	0.231	4.4	ug/L	442	Standard
	Mn	55	744.0	1.7	**0.0420**	0.004	8.4	ug/L	545	Standard
	Co	59	291.0	2.9	**0.0259**	0.002	9.4	ug/L	183	Standard
	Ni	60	524.5	8.0	**0.2957**	0.031	10.5	ug/L	131	Standard
	Cu	65	483.5	6.3	**0.1915**	0.023	11.8	ug/L	231	Standard
	Zn	66	1112.5	1.5	**1.0210**	0.020	2.0	ug/L	306	Standard
>	Ge	72	331000.5	0.1				ug/L	330478	Standard
	As	75	1.0	2974.4	**0.0533**	0.039	74.0	ug/L	-23	Standard
	Se	82	24.0	16.8	**-0.0393**	0.064	163.1	ug/L	27	Standard
	Se-1	77	254.0	5.0	**3.7856**	0.281	7.4	ug/L	92	Standard
>	Ga	71	105.0	6.7				mg/L	37	Standard
	Rb	85	475.0	11.9				ug/L	25	Standard
	Y	89	318250.1	0.2				ug/L	312467	Standard
>	Rh	103	20.0	106.1				ug/L	20	Standard
	Mo	98	141633.9	0.5	**105.1828**	1.498	1.4	ug/L	13	Standard
	Ag	107	74.5	4.7	**-0.0057**	0.000	7.8	ug/L	72	Standard
	Cd	111	-69.1	19.6	**-0.0645**	0.011	17.0	mg/L	5	Standard
	Cd	114	497.0	4.9	**0.1322**	0.004	3.2	ug/L	7	Standard
>	In	115	473592.6	1.9				ug/L	477820	Standard
	Sn	118	392.5	4.5	**0.0094**	0.002	24.6	ug/L	343	Standard
	Sb	123	168.4	0.8	**0.0419**	0.001	2.9	ug/L	56	Standard
	Ba	135	166.5	0.4	**0.0619**	0.001	2.1	ug/L	36	Standard
	Ce	140	127.5	13.9				ug/L	65	Standard
>	Tb	159	945873.4	0.5				ug/L	939481	Standard
	Ho	165	20.0	35.4				ug/L	7	Standard
	Tl	203	26.0	5.4	**0.0003**	0.000	81.9	ug/L	5	Standard
	Tl	205	2.5	141.4	**-0.0061**	0.001	13.5	ug/L	2	Standard
	Pb	206	374.5	0.9	**0.0326**	0.001	3.2	ug/L	222	Standard
	Pb	207	322.5	3.3	**0.0302**	0.003	10.3	ug/L	186	Standard
	Pb	208	1183.5	0.1	**0.0319**	0.000	0.2	ug/L	717	Standard
	U	238	3.0	0.0	**-0.0056**	0.000	0.0	ug/L	2	Standard
>	Bi	209	436962.8	0.1				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	4698.2	3.7	**13.2374**	0.047	0.4	mg/L	45	Standard
K	39	167.5	6.3	**5.9038**	0.190	3.2	mg/L	10	Standard
Ca	43	115.0	6.1	**17.9889**	2.514	14.0	mg/L	47	Standard
Fe	54	5302.6	0.2	**13.3874**	0.481	3.6	mg/L	46	Standard
Fe	57	2110.1	7.4	**14.9508**	2.246	15.0	mg/L	627	Standard
> **Sc-1**	45	24287.0	3.3				mg/L	24506	Standard
Cl	35	42933.7	0.3				ug/L	47100	Standard
Kr	83	4.0	35.4				ug/L	8	Standard
Br	81	565.0	6.3				ug/L	427	Standard
P	31	9760.6	0.9				ug/L	10519	Standard
S	34	1982.6	4.1				ug/L	2003	Standard
Sr	88	190.0	11.2				ug/L	132	Standard
C	12	310.0	13.7				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	5.0	141.4				mg/L	10	Standard
Dy	164	18.6	3.6				mg/L	13	Standard
Ho-1	165	20.0	35.4				mg/L	7	Standard
Er	166	30.0	47.1				mg/L	7	Standard
I	127	305.0	20.9				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27	1.040		
Sc	45			
Ti	47	111.548		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.158	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	105.183		
Ag	107			
Cd	111			
Cd	114			
In	115			99.115
Sn	118			
Sb	123			
Ba	135			
Ce	140			
Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
Bi	209			99.247
Na	23	0.152		
Mg	24	264.747		
K	39	118.076		
Ca	43	119.926		
Fe	54	107.099		
Fe	57	119.607		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	

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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Sunday, August 23, 2015 15:44:49
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54330.7	4.2				ug/L	53498	Standard
	Be	9	110.0	20.8	**0.1651**	0.044	26.7	ug/L	12	Standard
	Al	27	801.7	47.0	**0.0004**	0.005	1299.6	ug/L	487	Standard
	Sc	45	25397.9	3.0				ug/L	24506	Standard
	Ti	47	21.3	9.8	**-0.0159**	0.014	89.9	ug/L	21	Standard
	V	51	2515.5	1.9	**0.2925**	0.027	9.1	ug/L	1268	Standard
	Cr	52	10898.6	1.5	**0.5756**	0.078	13.6	ug/L	7921	Standard
	Cr	53	1030.0	3.5	**0.8635**	0.078	9.0	ug/L	442	Standard
	Mn	55	2434.5	1.6	**0.5375**	0.013	2.5	ug/L	545	Standard
	Co	59	1677.8	2.3	**0.4076**	0.024	5.9	ug/L	183	Standard
	Ni	60	2436.2	1.4	**1.6789**	0.060	3.6	ug/L	131	Standard
	Cu	65	1391.7	2.1	**0.8692**	0.041	4.7	ug/L	231	Standard
	Zn	66	5016.8	1.1	**6.1495**	0.242	3.9	ug/L	306	Standard
>	**Ge**	72	334004.5	3.2				ug/L	330478	Standard
	As	75	272.2	15.8	**0.4042**	0.045	11.1	ug/L	-23	Standard
	Se	82	46.9	19.0	**0.3196**	0.127	39.8	ug/L	27	Standard
	Se-1	77	111.0	8.3	**0.5324**	0.124	23.3	ug/L	92	Standard
>	**Ga**	71	25.0	34.6				mg/L	37	Standard
	Rb	85	33.3	17.3				ug/L	25	Standard
	Y	89	317516.2	4.2				ug/L	312467	Standard
>	**Rh**	103	20.0	43.3				ug/L	20	Standard
	Mo	98	63.9	35.3	**0.0440**	0.016	37.0	ug/L	13	Standard
	Ag	107	2170.5	2.1	**0.4210**	0.022	5.3	ug/L	72	Standard
	Cd	111	351.9	1.7	**0.2414**	0.012	5.0	mg/L	5	Standard
	Cd	114	924.3	5.2	**0.2471**	0.020	8.2	ug/L	7	Standard
>	**In**	115	485213.6	3.1				ug/L	477820	Standard
	Sn	118	586.7	7.7	**0.0502**	0.014	27.2	ug/L	343	Standard
	Sb	123	1697.5	3.1	**0.4463**	0.022	5.0	ug/L	56	Standard
	Ba	135	1499.4	3.2	**0.7495**	0.030	4.0	ug/L	36	Standard
	Ce	140	31.7	71.2				ug/L	65	Standard
>	**Tb**	159	952913.4	3.0				ug/L	939481	Standard
	Ho	165	13.3	21.7				ug/L	7	Standard
	Tl	203	506.3	1.1	**0.0731**	0.001	1.3	ug/L	5	Standard
	Tl	205	410.0	6.5	**0.0848**	0.004	4.4	ug/L	2	Standard
	Pb	206	1097.0	3.0	**0.2053**	0.004	2.2	ug/L	222	Standard
	Pb	207	936.0	1.3	**0.1924**	0.003	1.5	ug/L	186	Standard
	Pb	208	3402.1	1.0	**0.1964**	0.008	4.3	ug/L	717	Standard
	U	238	1910.5	2.0	**0.4142**	0.018	4.4	ug/L	2	Standard
>	**Bi**	209	454008.5	2.4				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	33.3	22.9	**-0.0456**	0.023	50.0	mg/L	45	Standard
K	39	10.0	132.3	**-0.0678**	0.466	687.5	mg/L	10	Standard
Ca	43	36.7	64.4	**-0.4026**	5.355	1330.0	mg/L	47	Standard
Fe	54	52.6	21.7	**-0.0371**	0.030	81.2	mg/L	46	Standard
Fe	57	688.3	13.8	**0.4832**	0.762	157.7	mg/L	627	Standard
> **Sc-1**	45	25397.9	3.0				mg/L	24506	Standard
Cl	35	40172.5	0.6				ug/L	47100	Standard
Kr	83	6.7	31.2				ug/L	8	Standard
Br	81	470.0	13.3				ug/L	427	Standard
P	31	10790.5	2.8				ug/L	10519	Standard
S	34	2055.1	4.6				ug/L	2003	Standard
Sr	88	176.7	22.7				ug/L	132	Standard
C	12	200.0	44.4				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	6.3	86.9				mg/L	13	Standard
Ho-1	165	13.3	21.7				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	7	Standard
I	127	400.0	3.8				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	82.532		
Al	27	0.041		
Sc	45			
Ti	47			
V	51	73.133		
Cr	52	71.956		
Cr	53			
Mn	55	107.495		
Co	59	101.912		
Ni	60	104.933		
Cu	65	108.655		
Zn	66	98.391		
> Ge	72		101.067	
As	75	101.047		
Se	82	79.906		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	105.247		
Cd	111	100.591		
Cd	114			
> In	115			101.547
Sn	118			
Sb	123	111.583		
Ba	135	99.932		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	91.393		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.220		
U	238	103.538		
> Bi	209			103.118
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

Sample ID: QC Std 3
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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Sunday, August 23, 2015 15:51:35
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	54636.7	0.8				ug/L	53498	Standard
	Be	9	3.3	86.6	**-0.0146**	0.005	32.8	ug/L	12	Standard
	Al	27	3582455.8	0.4	**50.6516**	0.614	1.2	ug/L	487	Standard
	Sc	45	24519.8	1.9				ug/L	24506	Standard
	Ti	47	20815.3	1.7	**113.3545**	1.306	1.2	ug/L	21	Standard
	V	51	766.3	9.7	**-0.1444**	0.018	12.8	ug/L	1268	Standard
	Cr	52	6835.9	3.3	**-0.1951**	0.037	19.0	ug/L	7921	Standard
	Cr	53	3273.7	1.6	**4.4119**	0.092	2.1	ug/L	442	Standard
	Mn	55	754.4	5.7	**0.0462**	0.012	25.9	ug/L	545	Standard
	Co	59	268.7	4.0	**0.0201**	0.003	12.7	ug/L	183	Standard
	Ni	60	539.3	4.7	**0.3086**	0.018	5.7	ug/L	131	Standard
	Cu	65	472.0	1.3	**0.1847**	0.007	3.6	ug/L	231	Standard
	Zn	66	733.0	2.4	**0.5222**	0.018	3.4	ug/L	306	Standard
>	Ge	72	329275.6	0.6				ug/L	330478	Standard
	As	75	-26.9	74.5	**0.0165**	0.026	159.9	ug/L	-23	Standard
	Se	82	26.5	19.8	**0.0027**	0.082	3008.4	ug/L	27	Standard
	Se-1	77	244.3	12.5	**3.5967**	0.697	19.4	ug/L	92	Standard
>	Ga	71	105.0	4.8				mg/L	37	Standard
	Rb	85	608.3	6.3				ug/L	25	Standard
	Y	89	308170.1	3.7				ug/L	312467	Standard
>	Rh	103	28.3	27.0				ug/L	20	Standard
	Mo	98	142218.7	0.3	**106.5658**	1.984	1.9	ug/L	13	Standard
	Ag	107	79.7	4.8	**-0.0045**	0.001	24.2	ug/L	72	Standard
	Cd	111	-60.7	20.3	**-0.0586**	0.009	16.1	mg/L	5	Standard
	Cd	114	494.4	11.4	**0.1330**	0.019	13.9	ug/L	7	Standard
>	In	115	469415.4	1.8				ug/L	477820	Standard
	Sn	118	395.0	12.2	**0.0108**	0.011	105.9	ug/L	343	Standard
	Sb	123	132.5	23.5	**0.0324**	0.008	25.8	ug/L	56	Standard
	Ba	135	169.3	3.5	**0.0642**	0.005	7.4	ug/L	36	Standard
	Ce	140	121.7	17.1				ug/L	65	Standard
>	Tb	159	942451.4	0.8				ug/L	939481	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	17.0	17.6	**-0.0012**	0.000	39.3	ug/L	5	Standard
	Tl	205	16.7	17.3	**-0.0028**	0.001	23.5	ug/L	2	Standard
	Pb	206	373.3	5.4	**0.0312**	0.005	14.8	ug/L	222	Standard
	Pb	207	321.3	2.8	**0.0289**	0.002	7.2	ug/L	186	Standard
	Pb	208	1152.7	1.7	**0.0285**	0.001	3.9	ug/L	717	Standard
	U	238	2.3	137.8	**-0.0057**	0.001	12.6	ug/L	2	Standard
>	Bi	209	441765.7	0.5				ug/L	440279	Standard

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Na	23	5.0	**-1419684977721**40247059543202.090			98.8	mg/L	2	Standard
Mg	24	4665.7	3.0	**13.0278**	0.646	5.0	mg/L	45	Standard
K	39	158.3	6.6	**5.5054**	0.414	7.5	mg/L	10	Standard
Ca	43	126.7	2.3	**20.3699**	1.116	5.5	mg/L	47	Standard
Fe	54	5205.3	2.0	**13.0045**	0.048	0.4	mg/L	46	Standard
Fe	57	1930.1	5.3	**12.9360**	0.677	5.2	mg/L	627	Standard
Sc-1	45	24519.8	1.9				mg/L	24506	Standard
Cl	35	42110.4	0.5				ug/L	47100	Standard
Kr	83	3.0	57.7				ug/L	8	Standard
Br	81	390.0	11.2				ug/L	427	Standard
P	31	9975.0	4.2				ug/L	10519	Standard
S	34	1960.1	5.3				ug/L	2003	Standard
Sr	88	140.0	17.9				ug/L	132	Standard
C	12	316.7	26.3				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	12.7	89.9				mg/L	13	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	7	Standard
I	127	303.3	19.1				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27	1.013		
Sc	45			
Ti	47	113.354		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.636	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	106.566		
Ag	107			
Cd	111			
Cd	114			
In	115			98.241
Sn	118			
Sb	123			
Ba	135			
Ce	140			
Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
Bi	209			100.338
Na	-1135747982180095.700			
Mg	24	260.556		
K	39	110.108		
Ca	43	135.799		
Fe	54	104.036		
Fe	57	103.488		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	

Sample ID: QC Std 4
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QC Std 4	Ca	43

Sample ID: QC Std 4
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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Sunday, August 23, 2015 15:54:51
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	56600.6	2.4				ug/L	53498	Standard
	Be	9	63842.6	2.2	**102.5619**	3.310	3.2	ug/L	12	Standard
	Al	27	3772045.8	1.6	**51.4853**	0.507	1.0	ug/L	487	Standard
	Sc	45	24818.6	0.4				ug/L	24506	Standard
	Ti	47	21381.7	0.6	**114.4125**	1.001	0.9	ug/L	21	Standard
	V	51	414800.3	1.1	**103.4620**	1.476	1.4	ug/L	1268	Standard
	Cr	52	543633.6	1.3	**103.5708**	1.743	1.7	ug/L	7921	Standard
	Cr	53	69917.7	3.3	**107.2331**	3.291	3.1	ug/L	442	Standard
	Mn	55	361231.4	1.6	**105.7163**	1.814	1.7	ug/L	545	Standard
	Co	59	380844.0	0.0	**104.4839**	0.367	0.4	ug/L	183	Standard
	Ni	60	142986.6	1.0	**103.1910**	0.740	0.7	ug/L	131	Standard
	Cu	65	138696.8	2.1	**103.3601**	2.003	1.9	ug/L	231	Standard
	Zn	66	79870.0	0.8	**104.2709**	0.593	0.6	ug/L	306	Standard
>	Ge	72	335131.8	0.3				ug/L	330478	Standard
	As	75	80978.9	0.5	**104.7377**	0.528	0.5	ug/L	-23	Standard
	Se	82	6722.2	0.5	**105.8191**	0.551	0.5	ug/L	27	Standard
	Se-1	77	4983.8	1.9	**109.1665**	1.934	1.8	ug/L	92	Standard
>	Ga	71	131.7	15.3				mg/L	37	Standard
	Rb	85	585.0	10.5				ug/L	25	Standard
	Y	89	319245.9	2.1				ug/L	312467	Standard
>	Rh	103	50.0	55.7				ug/L	20	Standard
	Mo	98	150284.2	1.1	**109.0092**	1.378	1.3	ug/L	13	Standard
	Ag	107	481930.9	2.8	**98.1973**	4.344	4.4	ug/L	72	Standard
	Cd	111	147091.9	1.0	**106.4414**	2.071	1.9	mg/L	5	Standard
	Cd	114	382170.8	1.9	**105.4154**	2.077	2.0	ug/L	7	Standard
>	In	115	484911.6	2.4				ug/L	477820	Standard
	Sn	118	515.0	4.4	**0.0344**	0.008	22.2	ug/L	343	Standard
	Sb	123	402075.2	1.4	**106.6386**	1.847	1.7	ug/L	56	Standard
	Ba	135	200723.2	0.8	**103.8770**	1.630	1.6	ug/L	36	Standard
	Ce	140	71.7	21.3				ug/L	65	Standard
>	Tb	159	944530.4	1.3				ug/L	939481	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	668386.3	1.3	**104.8284**	0.754	0.7	ug/L	5	Standard
	Tl	205	462807.3	0.8	**106.7053**	2.445	2.3	ug/L	2	Standard
	Pb	206	421070.5	0.6	**106.0373**	1.095	1.0	ug/L	222	Standard
	Pb	207	379666.8	0.8	**105.6840**	1.601	1.5	ug/L	186	Standard
	Pb	208	1356837.7	0.2	**105.9776**	1.483	1.4	ug/L	717	Standard
	U	238	471961.7	0.4	**107.1579**	1.423	1.3	ug/L	2	Standard
>	Bi	209	439768.0	1.5				ug/L	440279	Standard

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Na	23	1.7	**-4717176670678170389661894**0.531		173.2	mg/L	2	Standard
Mg	24	4740.7	3.6	**13.0715**	0.526	4.0	mg/L	45	Standard
K	39	143.3	4.0	**4.8769**	0.195	4.0	mg/L	10	Standard
Ca	43	121.7	29.7	**18.9008**	8.228	43.5	mg/L	47	Standard
Fe	54	5273.8	4.7	**13.0190**	0.672	5.2	mg/L	46	Standard
Fe	57	2075.1	4.1	**14.1266**	0.897	6.3	mg/L	627	Standard
Sc-1	45	24818.6	0.4				mg/L	24506	Standard
Cl	35	44443.1	1.4				ug/L	47100	Standard
Kr	83	3.3	75.5				ug/L	8	Standard
Br	81	476.7	11.9				ug/L	427	Standard
P	31	10532.0	3.1				ug/L	10519	Standard
S	34	2026.8	4.8				ug/L	2003	Standard
Sr	88	140.0	3.6				ug/L	132	Standard
C	12	326.7	24.6				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	12.5	127.7				mg/L	13	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	16.7	91.7				mg/L	7	Standard
I	127	1911.8	9.7				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.562		
Al	27	1.030		
Sc	45			
Ti	47	114.413		
V	51	103.462		
Cr	52	103.571		
Cr	53			
Mn	55	105.716		
Co	59	104.484		
Ni	60	103.191		
Cu	65	103.360		
Zn	66	104.271		
Ge	72		101.408	
As	75	104.738		
Se	82	105.819		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	109.009		
Ag	107	98.197		
Cd	111	106.441		
Cd	114			
In	115		101.484	
Sn	118			
Sb	123	106.639		
Ba	135	103.877		
Ce	140			
Tb	159			
Ho	165			
Tl	203	104.828		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.978		
U	238	107.158		
Bi	209		99.884	
Na	2-377374133654293.190			
Mg	24	261.431		
K	39	97.538		
Ca	43	126.005		
Fe	54	104.152		
Fe	57	113.013		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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QC Std 5	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Sunday, August 23, 2015 15:58:09
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56761.1	1.9				ug/L	53498	Standard
	Be	9	32020.5	2.6	**51.2622**	0.589	1.1	ug/L	12	Standard
	Al	27	3631344.7	0.9	**49.4272**	0.841	1.7	ug/L	487	Standard
	Sc	45	25815.3	2.8				ug/L	24506	Standard
	Ti	47	19823.0	1.2	**103.9148**	2.283	2.2	ug/L	21	Standard
	V	51	211028.4	0.6	**51.3967**	0.602	1.2	ug/L	1268	Standard
	Cr	52	276708.3	1.6	**50.8792**	1.345	2.6	ug/L	7921	Standard
	Cr	53	34531.0	1.3	**51.5139**	1.131	2.2	ug/L	442	Standard
	Mn	55	179950.0	2.3	**51.5096**	1.661	3.2	ug/L	545	Standard
	Co	59	189376.0	1.4	**50.8761**	1.147	2.3	ug/L	183	Standard
	Ni	60	72728.8	0.6	**51.3802**	0.710	1.4	ug/L	131	Standard
	Cu	65	70110.5	0.6	**51.1029**	0.771	1.5	ug/L	231	Standard
	Zn	66	39540.9	0.6	**50.3376**	0.253	0.5	ug/L	306	Standard
>	**Ge**	72	342093.1	1.0				ug/L	330478	Standard
	As	75	39789.6	1.9	**50.4403**	0.479	0.9	ug/L	-23	Standard
	Se	82	3351.2	2.6	**51.4609**	1.041	2.0	ug/L	27	Standard
	Se-1	77	2431.2	2.1	**51.1633**	1.588	3.1	ug/L	92	Standard
>	**Ga**	71	50.0	36.1				mg/L	37	Standard
	Rb	85	545.0	2.4				ug/L	25	Standard
	Y	89	322887.4	2.6				ug/L	312467	Standard
>	**Rh**	103	41.7	30.2				ug/L	20	Standard
	Mo	98	143134.9	0.3	**100.2042**	0.927	0.9	ug/L	13	Standard
	Ag	107	259296.0	0.6	**50.9623**	0.589	1.2	ug/L	72	Standard
	Cd	111	72905.4	1.1	**50.9088**	0.854	1.7	mg/L	5	Standard
	Cd	114	190665.9	2.4	**50.7565**	1.384	2.7	ug/L	7	Standard
>	**In**	115	502342.8	0.6				ug/L	477820	Standard
	Sn	118	223701.0	0.6	**47.3546**	0.583	1.2	ug/L	343	Standard
	Sb	123	198459.9	0.8	**50.7987**	0.747	1.5	ug/L	56	Standard
	Ba	135	99135.3	0.3	**49.4991**	0.423	0.9	ug/L	36	Standard
	Ce	140	81.7	9.4				ug/L	65	Standard
>	**Tb**	159	971643.7	1.3				ug/L	939481	Standard
	Ho	165	11.7	107.9				ug/L	7	Standard
	Tl	203	332635.7	0.1	**49.6250**	0.308	0.6	ug/L	5	Standard
	Tl	205	227590.1	1.5	**49.9052**	1.028	2.1	ug/L	2	Standard
	Pb	206	209876.7	1.2	**50.2426**	0.890	1.8	ug/L	222	Standard
	Pb	207	188535.1	0.6	**49.8869**	0.580	1.2	ug/L	186	Standard
	Pb	208	677150.7	0.8	**50.2761**	0.741	1.5	ug/L	717	Standard
	U	238	232040.1	1.1	**50.1059**	0.258	0.5	ug/L	2	Standard
>	**Bi**	209	462302.8	0.7				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	1940.1	2.7	**5.0597**	0.047	0.9	mg/L	45	Standard
K	39	181.7	12.7	**6.0268**	0.695	11.5	mg/L	10	Standard
Ca	43	60.0	25.0	**4.4079**	2.893	65.6	mg/L	47	Standard
Fe	54	2220.7	7.8	**5.1665**	0.286	5.5	mg/L	46	Standard
Fe	57	1220.0	2.2	**5.3583**	0.185	3.5	mg/L	627	Standard
Sc-1	45	25815.3	2.8				mg/L	24506	Standard
Cl	35	42292.9	1.2				ug/L	47100	Standard
Kr	83	5.0	34.6				ug/L	8	Standard
Br	81	520.0	23.1				ug/L	427	Standard
P	31	10695.4	0.9				ug/L	10519	Standard
S	34	2071.8	4.3				ug/L	2003	Standard
Sr	88	158.3	9.6				ug/L	132	Standard
C	12	230.0	19.9				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	19.5	86.6				mg/L	13	Standard
Ho-1	165	11.7	107.9				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	385.0	6.7				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.524		
Al	27	98.854		
Sc	45			
Ti	47	103.915		
V	51	102.793		
Cr	52	101.758		
Cr	53			
Mn	55	103.019		
Co	59	101.752		
Ni	60	102.760		
Cu	65	102.206		
Zn	66	100.675		
Ge	72		103.515	
As	75	100.881		
Se	82	102.922		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	100.204		
Ag	107	101.925		
Cd	111	101.818		
Cd	114			
> In	115			105.132
Sn	118	94.709		
Sb	123	101.597		
Ba	135	98.998		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.250		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.552		
U	238	100.212		
> Bi	209			105.002
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Sunday, August 23, 2015 16:02:25
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56100.3	1.0				ug/L	53498	Standard
	Be	9	13.3	108.3	**0.0014**	0.023	1674.4	ug/L	12	Standard
	Al	27	660.0	36.9	**-0.0018**	0.003	187.1	ug/L	487	Standard
	Sc	45	26568.3	1.7				ug/L	24506	Standard
	Ti	47	22.3	27.4	**-0.0137**	0.034	249.3	ug/L	21	Standard
	V	51	1029.4	10.7	**-0.0878**	0.032	36.5	ug/L	1268	Standard
	Cr	52	6595.8	3.4	**-0.2947**	0.066	22.5	ug/L	7921	Standard
	Cr	53	525.0	15.3	**0.0563**	0.107	189.7	ug/L	442	Standard
	Mn	55	624.0	4.5	**-0.0002**	0.011	4721.5	ug/L	545	Standard
	Co	59	193.3	2.7	**-0.0031**	0.002	76.9	ug/L	183	Standard
	Ni	60	99.0	9.6	**-0.0180**	0.008	45.1	ug/L	131	Standard
	Cu	65	218.7	13.9	**-0.0144**	0.025	171.3	ug/L	231	Standard
	Zn	66	323.3	4.2	**-0.0419**	0.024	57.9	ug/L	306	Standard
>	**Ge**	72	343373.9	1.9				ug/L	330478	Standard
	As	75	-59.9	17.7	**-0.0236**	0.014	59.1	ug/L	-23	Standard
	Se	82	22.2	32.5	**-0.0783**	0.116	148.3	ug/L	27	Standard
	Se-1	77	89.7	12.3	**0.0025**	0.227	9061.3	ug/L	92	Standard
>	**Ga**	71	23.3	65.5				mg/L	37	Standard
	Rb	85	28.3	66.8				ug/L	25	Standard
	Y	89	321894.9	2.6				ug/L	312467	Standard
>	**Rh**	103	23.3	49.5				ug/L	20	Standard
	Mo	98	46.7	32.3	**0.0304**	0.011	35.4	ug/L	13	Standard
	Ag	107	101.0	41.3	**-0.0015**	0.008	559.2	ug/L	72	Standard
	Cd	111	13.9	103.6	**-0.0036**	0.010	282.9	mg/L	5	Standard
	Cd	114	27.7	119.5	**-0.0007**	0.009	1225.9	ug/L	7	Standard
>	**In**	115	504625.3	1.2				ug/L	477820	Standard
	Sn	118	456.7	17.0	**0.0176**	0.016	93.8	ug/L	343	Standard
	Sb	123	721.8	16.9	**0.1801**	0.031	17.4	ug/L	56	Standard
	Ba	135	56.7	57.5	**0.0019**	0.016	865.1	ug/L	36	Standard
	Ce	140	15.0	66.7				ug/L	65	Standard
>	**Tb**	159	974162.4	0.8				ug/L	939481	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	43.7	135.5	**0.0028**	0.009	321.1	ug/L	5	Standard
	Tl	205	20.0	75.0	**-0.0022**	0.003	153.0	ug/L	2	Standard
	Pb	206	248.7	7.8	**-0.0023**	0.006	239.8	ug/L	222	Standard
	Pb	207	225.3	3.4	**-0.0001**	0.003	4485.5	ug/L	186	Standard
	Pb	208	746.3	9.5	**-0.0053**	0.006	116.9	ug/L	717	Standard
	U	238	13.0	120.9	**-0.0034**	0.003	102.4	ug/L	2	Standard
>	**Bi**	209	459238.5	1.5				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	50.0	17.3	**-0.0066**	0.022	339.9	mg/L	45	Standard
K	39	5.0	100.0	**-0.2540**	0.170	67.0	mg/L	10	Standard
Ca	43	23.3	65.5	**-3.6425**	3.198	87.8	mg/L	47	Standard
Fe	54	67.4	41.2	**-0.0087**	0.063	727.3	mg/L	46	Standard
Fe	57	663.3	6.3	**-0.0224**	0.320	1430.3	mg/L	627	Standard
> **Sc-1**	45	26568.3	1.7				mg/L	24506	Standard
Cl	35	41658.5	1.6				ug/L	47100	Standard
Kr	83	5.3	21.7				ug/L	8	Standard
Br	81	463.3	16.3				ug/L	427	Standard
P	31	10945.6	1.5				ug/L	10519	Standard
S	34	1981.8	1.9				ug/L	2003	Standard
Sr	88	158.3	15.6				ug/L	132	Standard
C	12	163.3	15.4				mg/L	177	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	6.3	86.9				mg/L	13	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	7	Standard
I	127	2080.1	5.8				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.902	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.610
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.306
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508099101
Sample Date/Time: Sunday, August 23, 2015 16:07:01
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72138.2	3.8				ug/L	53498	Standard
	Be	9	18.3	56.8	**0.0027**	0.012	443.2	ug/L	12	Standard
	Al	27	121516975.0	4.8	**1301.3709**	33.486	2.6	ug/L	487	Standard
	Sc	45	22932.4	4.8				ug/L	24506	Standard
	Ti	47	110.3	15.1	**0.4974**	0.082	16.6	ug/L	21	Standard
	V	51	4839.4	3.6	**0.9503**	0.064	6.7	ug/L	1268	Standard
	Cr	52	12277.0	3.6	**0.9879**	0.117	11.9	ug/L	7921	Standard
	Cr	53	3207.0	5.7	**4.5367**	0.217	4.8	ug/L	442	Standard
	Mn	55	36638.6	0.6	**11.2580**	0.210	1.9	ug/L	545	Standard
	Co	59	2032.5	2.1	**0.5391**	0.012	2.3	ug/L	183	Standard
	Ni	60	7244.4	2.1	**5.4855**	0.214	3.9	ug/L	131	Standard
	Cu	65	10653.1	1.0	**8.2947**	0.204	2.5	ug/L	231	Standard
	Zn	66	4598.0	4.8	**5.9678**	0.421	7.1	ug/L	306	Standard
>	**Ge**	72	314794.7	1.9				ug/L	330478	Standard
	As	75	2052.8	3.6	**2.8768**	0.056	1.9	ug/L	-23	Standard
	Se	82	3898.7	0.6	**65.1922**	1.402	2.2	ug/L	27	Standard
	Se-1	77	2652.9	1.7	**61.0437**	1.988	3.3	ug/L	92	Standard
>	**Ga**	71	58.3	9.9				mg/L	37	Standard
	Rb	85	16797.6	1.7				ug/L	25	Standard
	Y	89	319316.5	0.7				ug/L	312467	Standard
>	**Rh**	103	588.3	9.4				ug/L	20	Standard
	Mo	98	1460.4	3.9	**1.0550**	0.047	4.5	ug/L	13	Standard
	Ag	107	96.3	39.0	**-0.0017**	0.008	457.6	ug/L	72	Standard
	Cd	111	10.4	20.9	**-0.0057**	0.001	25.9	mg/L	5	Standard
	Cd	114	36.0	61.8	**0.0018**	0.006	343.0	ug/L	7	Standard
>	**In**	115	485869.4	1.2				ug/L	477820	Standard
	Sn	118	585.0	4.8	**0.0495**	0.007	15.1	ug/L	343	Standard
	Sb	123	813.2	6.4	**0.2115**	0.016	7.6	ug/L	56	Standard
	Ba	135	8219.9	1.5	**4.2193**	0.054	1.3	ug/L	36	Standard
	Ce	140	366.7	22.6				ug/L	65	Standard
>	**Tb**	159	925168.1	0.6				ug/L	939481	Standard
	Ho	165	16.7	17.3				ug/L	7	Standard
	Tl	203	97.0	9.9	**0.0126**	0.001	11.4	ug/L	5	Standard
	Tl	205	93.3	17.2	**0.0166**	0.004	23.2	ug/L	2	Standard
	Pb	206	337.0	27.3	**0.0293**	0.024	81.5	ug/L	222	Standard
	Pb	207	292.0	32.9	**0.0276**	0.028	100.8	ug/L	186	Standard
	Pb	208	940.0	15.1	**0.0182**	0.011	60.7	ug/L	717	Standard
	U	238	60422.3	1.3	**14.8331**	0.354	2.4	ug/L	2	Standard
>	**Bi**	209	406604.0	1.1				ug/L	440279	Standard

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Na	23	13.3	**-4097030020119**9448097930	1897.578	23.1	mg/L	2	Standard
Mg	24	232395.7	4.1	**702.5246**	63.196	9.0	mg/L	45	Standard
K	39	163.3	18.5	**6.0870**	0.908	14.9	mg/L	10	Standard
Ca	43	551.7	11.4	**126.1318**	15.137	12.0	mg/L	47	Standard
Fe	54	68.4	6.6	**0.0191**	0.009	45.9	mg/L	46	Standard
Fe	57	1306.7	6.6	**7.7205**	1.074	13.9	mg/L	627	Standard
> **Sc-1**	45	22932.4	4.8				mg/L	24506	Standard
Cl	35	679291.0	7.6				ug/L	47100	Standard
Kr	83	7.0	51.5				ug/L	8	Standard
Br	81	28740.6	2.6				ug/L	427	Standard
P	31	14014.8	5.6				ug/L	10519	Standard
S	34	2908.6	1.3				ug/L	2003	Standard
Sr	88	536.7	1.9				ug/L	132	Standard
C	12	1430.1	14.5				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	8.7	120.3				mg/L	13	Standard
Ho-1	165	16.7	17.3				mg/L	7	Standard
Er	166	26.7	57.3				mg/L	7	Standard
I	127	348928.8	0.7				mg/L	2225	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		134.844	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.254	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.685	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	92.351	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1508099102
Sample Date/Time: Sunday, August 23, 2015 16:10:13
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73842.9	1.4				ug/L	53498	Standard
	Be	9	28.3	56.7	**0.0150**	0.020	134.6	ug/L	12	Standard
	Al	27	119299897.8	0.8	**1248.3519**	16.841	1.3	ug/L	487	Standard
	Sc	45	23177.7	2.5				ug/L	24506	Standard
	Ti	47	550.3	1.1	**3.0790**	0.110	3.6	ug/L	21	Standard
	V	51	35859.6	1.9	**9.4307**	0.386	4.1	ug/L	1268	Standard
	Cr	52	13018.3	2.0	**1.2004**	0.114	9.5	ug/L	7921	Standard
	Cr	53	3660.4	3.3	**5.4183**	0.186	3.4	ug/L	442	Standard
	Mn	55	36555.7	0.8	**11.4857**	0.240	2.1	ug/L	545	Standard
	Co	59	2274.2	3.1	**0.6244**	0.016	2.5	ug/L	183	Standard
	Ni	60	7620.2	1.5	**5.9045**	0.200	3.4	ug/L	131	Standard
	Cu	65	64742.7	1.6	**52.4442**	1.854	3.5	ug/L	231	Standard
	Zn	66	11178.5	0.5	**15.5004**	0.415	2.7	ug/L	306	Standard
>	**Ge**	72	307977.4	2.4				ug/L	330478	Standard
	As	75	2113.8	9.7	**3.0303**	0.345	11.4	ug/L	-23	Standard
	Se	82	3671.9	0.5	**62.7549**	1.800	2.9	ug/L	27	Standard
	Se-1	77	2504.2	3.5	**58.8306**	2.578	4.4	ug/L	92	Standard
>	**Ga**	71	248.3	9.3				mg/L	37	Standard
	Rb	85	16372.2	2.4				ug/L	25	Standard
	Y	89	313870.0	1.8				ug/L	312467	Standard
>	**Rh**	103	685.0	5.1				ug/L	20	Standard
	Mo	98	1445.3	1.2	**1.0386**	0.026	2.5	ug/L	13	Standard
	Ag	107	642.7	3.9	**0.1087**	0.004	4.1	ug/L	72	Standard
	Cd	111	40.1	24.3	**0.0155**	0.007	42.5	mg/L	5	Standard
	Cd	114	113.3	9.6	**0.0229**	0.004	15.4	ug/L	7	Standard
>	**In**	115	488454.9	1.8				ug/L	477820	Standard
	Sn	118	623.3	13.6	**0.0569**	0.016	28.4	ug/L	343	Standard
	Sb	123	745.3	1.3	**0.1924**	0.004	2.3	ug/L	56	Standard
	Ba	135	8447.4	1.9	**4.3143**	0.100	2.3	ug/L	36	Standard
	Ce	140	416.7	7.0				ug/L	65	Standard
>	**Tb**	159	910272.0	1.2				ug/L	939481	Standard
	Ho	165	15.0	66.7				ug/L	7	Standard
	Tl	203	90.3	5.0	**0.0113**	0.001	7.9	ug/L	5	Standard
	Tl	205	56.7	13.5	**0.0073**	0.002	23.2	ug/L	2	Standard
	Pb	206	5649.7	1.1	**1.4583**	0.028	1.9	ug/L	222	Standard
	Pb	207	4680.4	0.7	**1.3321**	0.010	0.7	ug/L	186	Standard
	Pb	208	17086.4	0.8	**1.3650**	0.009	0.6	ug/L	717	Standard
	U	238	57236.2	0.8	**13.8752**	0.203	1.5	ug/L	2	Standard
>	**Bi**	209	411714.1	1.4				ug/L	440279	Standard

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Na	23	15.0	**-4509373918622**55831961701850.370		56.7	mg/L	2	Standard
Mg	24	229930.4	2.2	**685.9581**	19.274	2.8	mg/L	45	Standard
K	39	178.3	22.5	**6.6298**	1.495	22.5	mg/L	10	Standard
Ca	43	536.7	9.2	**121.0800**	13.033	10.8	mg/L	47	Standard
Fe	54	2015.2	5.3	**5.2255**	0.157	3.0	mg/L	46	Standard
Fe	57	1843.4	4.0	**13.1525**	1.000	7.6	mg/L	627	Standard
> **Sc-1**	45	23177.7	2.5				mg/L	24506	Standard
Cl	35	701696.6	2.5				ug/L	47100	Standard
Kr	83	4.3	26.6				ug/L	8	Standard
Br	81	21695.6	6.4				ug/L	427	Standard
P	31	14919.0	5.1				ug/L	10519	Standard
S	34	3043.6	1.8				ug/L	2003	Standard
Sr	88	575.0	11.3				ug/L	132	Standard
C	12	1466.7	0.4				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	25.1	24.2				mg/L	13	Standard
Ho-1	165	15.0	66.7				mg/L	7	Standard
Er	166	33.3	34.6				mg/L	7	Standard
I	127	754316.1	6.6				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		138.030	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.192	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.226	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	93.512	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: RINSE
Sample Date/Time: Sunday, August 23, 2015 16:13:24
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64440.5	6.7				ug/L	53498	Standard
	Be	9	11.7	65.5	**-0.0031**	0.012	385.9	ug/L	12	Standard
	Al	27	32402.1	121.9	**0.3594**	0.436	121.4	ug/L	487	Standard
	Sc	45	25382.9	2.0				ug/L	24506	Standard
	Ti	47	32.7	7.7	**0.0471**	0.013	28.0	ug/L	21	Standard
	V	51	1972.4	3.5	**0.1625**	0.020	12.5	ug/L	1268	Standard
	Cr	52	10864.2	0.1	**0.5965**	0.015	2.6	ug/L	7921	Standard
	Cr	53	701.7	10.7	**0.3682**	0.112	30.4	ug/L	442	Standard
	Mn	55	1498.4	3.1	**0.2680**	0.016	6.0	ug/L	545	Standard
	Co	59	230.0	16.9	**0.0092**	0.011	113.7	ug/L	183	Standard
	Ni	60	206.0	5.1	**0.0635**	0.007	11.2	ug/L	131	Standard
	Cu	65	593.7	20.1	**0.2766**	0.088	31.9	ug/L	231	Standard
	Zn	66	1606.8	11.5	**1.6865**	0.238	14.1	ug/L	306	Standard
>	**Ge**	72	329468.7	0.7				ug/L	330478	Standard
	As	75	36.0	136.5	**0.0992**	0.064	64.8	ug/L	-23	Standard
	Se	82	50.0	27.8	**0.3809**	0.220	57.7	ug/L	27	Standard
	Se-1	77	97.3	3.1	**0.2592**	0.062	23.8	ug/L	92	Standard
>	**Ga**	71	31.7	24.1				mg/L	37	Standard
	Rb	85	48.3	33.3				ug/L	25	Standard
	Y	89	328279.0	1.9				ug/L	312467	Standard
>	**Rh**	103	98.3	11.7				ug/L	20	Standard
	Mo	98	27.3	42.4	**0.0163**	0.008	46.1	ug/L	13	Standard
	Ag	107	93.7	30.9	**-0.0034**	0.005	152.2	ug/L	72	Standard
	Cd	111	11.3	74.1	**-0.0057**	0.005	97.1	mg/L	5	Standard
	Cd	114	30.5	94.1	**-0.0003**	0.007	2266.7	ug/L	7	Standard
>	**In**	115	516780.6	2.0				ug/L	477820	Standard
	Sn	118	480.0	6.3	**0.0202**	0.007	36.6	ug/L	343	Standard
	Sb	123	135.4	19.2	**0.0297**	0.006	19.5	ug/L	56	Standard
	Ba	135	60.7	33.1	**0.0030**	0.009	306.6	ug/L	36	Standard
	Ce	140	28.3	44.4				ug/L	65	Standard
>	**Tb**	159	961746.6	3.3				ug/L	939481	Standard
	Ho	165	13.3	43.3				ug/L	7	Standard
	Tl	203	41.7	121.2	**0.0024**	0.007	314.9	ug/L	5	Standard
	Tl	205	21.7	133.2	**-0.0019**	0.006	327.9	ug/L	2	Standard
	Pb	206	278.0	9.1	**0.0045**	0.005	120.6	ug/L	222	Standard
	Pb	207	252.0	7.8	**0.0069**	0.005	73.8	ug/L	186	Standard
	Pb	208	884.7	13.4	**0.0048**	0.008	172.5	ug/L	717	Standard
	U	238	37.0	136.0	**0.0017**	0.011	633.7	ug/L	2	Standard
>	**Bi**	209	460280.2	2.0				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	121.7	74.6	**0.1974**	0.255	129.3	mg/L	45	Standard
K	39	5.0	100.0	**-0.2452**	0.181	73.8	mg/L	10	Standard
Ca	43	35.0	49.5	**-0.8700**	3.644	418.9	mg/L	47	Standard
Fe	54	72.4	31.1	**0.0114**	0.057	501.5	mg/L	46	Standard
Fe	57	716.7	14.9	**0.7691**	1.023	133.0	mg/L	627	Standard
Sc-1	45	25382.9	2.0				mg/L	24506	Standard
Cl	35	71605.5	2.2				ug/L	47100	Standard
Kr	83	5.7	40.8				ug/L	8	Standard
Br	81	836.7	12.1				ug/L	427	Standard
P	31	11507.7	3.2				ug/L	10519	Standard
S	34	1986.8	5.3				ug/L	2003	Standard
Sr	88	145.0	15.8				ug/L	132	Standard
C	12	296.7	23.7				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	10.0					mg/L	10	Standard
Dy	164	22.9	110.1				mg/L	13	Standard
Ho-1	165	13.3	43.3				mg/L	7	Standard
Er	166	10.0					mg/L	7	Standard
I	127	11998.6	39.9				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		120.455	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.695	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	108.154
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	104.543
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: RINSE
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Method 6020 - Summary Report

Sample ID: RINSE
Sample Date/Time: Sunday, August 23, 2015 16:16:35
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63176.5	3.2				ug/L	53498	Standard
	Be	9	16.7	45.8	**0.0039**	0.011	277.0	ug/L	12	Standard
	Al	27	6084.7	48.2	**0.0632**	0.035	54.9	ug/L	487	Standard
	Sc	45	25369.6	1.1				ug/L	24506	Standard
	Ti	47	27.0	9.8	**0.0128**	0.014	110.9	ug/L	21	Standard
	V	51	1924.3	7.3	**0.1386**	0.035	25.0	ug/L	1268	Standard
	Cr	52	11019.3	1.2	**0.5754**	0.021	3.6	ug/L	7921	Standard
	Cr	53	543.3	3.0	**0.0995**	0.026	26.0	ug/L	442	Standard
	Mn	55	676.0	4.6	**0.0179**	0.009	51.2	ug/L	545	Standard
	Co	59	218.0	3.2	**0.0045**	0.002	42.6	ug/L	183	Standard
	Ni	60	169.0	9.8	**0.0334**	0.012	36.3	ug/L	131	Standard
	Cu	65	378.3	6.3	**0.1065**	0.017	16.1	ug/L	231	Standard
	Zn	66	2241.5	3.5	**2.4626**	0.100	4.0	ug/L	306	Standard
>	**Ge**	72	337492.0	0.2				ug/L	330478	Standard
	As	75	0.8	2647.8	**0.0530**	0.026	49.9	ug/L	-23	Standard
	Se	82	35.2	10.3	**0.1301**	0.056	42.8	ug/L	27	Standard
	Se-1	77	82.3	17.6	**-0.1248**	0.324	260.0	ug/L	92	Standard
>	**Ga**	71	15.0	120.2				mg/L	37	Standard
	Rb	85	31.7	36.5				ug/L	25	Standard
	Y	89	337351.0	0.6				ug/L	312467	Standard
>	**Rh**	103	73.3	32.2				ug/L	20	Standard
	Mo	98	15.1	13.7	**0.0078**	0.001	16.4	ug/L	13	Standard
	Ag	107	70.0	16.1	**-0.0082**	0.002	23.0	ug/L	72	Standard
	Cd	111	4.0	25.2	**-0.0106**	0.001	6.1	mg/L	5	Standard
	Cd	114	11.1	101.5	**-0.0053**	0.003	53.3	ug/L	7	Standard
>	**In**	115	529177.1	1.7				ug/L	477820	Standard
	Sn	118	395.0	8.9	**0.0008**	0.008	1088.9	ug/L	343	Standard
	Sb	123	94.7	14.9	**0.0191**	0.003	16.4	ug/L	56	Standard
	Ba	135	39.7	1.5	**-0.0075**	0.001	7.6	ug/L	36	Standard
	Ce	140	28.3	27.0				ug/L	65	Standard
>	**Tb**	159	1006219.4	1.5				ug/L	939481	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	4.3	58.1	**-0.0032**	0.000	11.6	ug/L	5	Standard
	Tl	205	5.0	100.0	**-0.0056**	0.001	19.3	ug/L	2	Standard
	Pb	206	238.0	7.6	**-0.0068**	0.004	57.6	ug/L	222	Standard
	Pb	207	225.0	9.6	**-0.0020**	0.005	256.5	ug/L	186	Standard
	Pb	208	722.7	2.9	**-0.0088**	0.001	15.8	ug/L	717	Standard
	U	238	6.3	9.1	**-0.0049**	0.000	2.7	ug/L	2	Standard
>	**Bi**	209	473885.5	0.7				ug/L	440279	Standard

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Na	23	1.7	**-4618414017857**9993277293085.312			173.2	mg/L	2	Standard
Mg	24	63.3	24.1	**0.0357**	0.040	112.3	mg/L	45	Standard
K	39	8.3	91.7	**-0.1252**	0.274	218.6	mg/L	10	Standard
Ca	43	50.0	20.0	**2.4935**	2.259	90.6	mg/L	47	Standard
Fe	54	73.8	23.4	**0.0146**	0.042	291.4	mg/L	46	Standard
Fe	57	766.7	5.5	**1.2495**	0.480	38.4	mg/L	627	Standard
Sc-1	45	25369.6	1.1				mg/L	24506	Standard
Cl	35	70543.9	1.2				ug/L	47100	Standard
Kr	83	4.3	81.0				ug/L	8	Standard
Br	81	613.3	5.2				ug/L	427	Standard
P	31	11412.6	0.9				ug/L	10519	Standard
S	34	2226.8	8.9				ug/L	2003	Standard
Sr	88	181.7	20.8				ug/L	132	Standard
C	12	190.0	0.0				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	12.9	45.1				mg/L	13	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	5269.3	17.4				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.092	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.122	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.748
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.633
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Sunday, August 23, 2015 16:19:48
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60425.3	2.7				ug/L	53498	Standard
	Be	9	33598.9	0.7	**50.5594**	1.619	3.2	ug/L	12	Standard
	Al	27	3736613.9	2.3	**47.7862**	1.541	3.2	ug/L	487	Standard
	Sc	45	24892.1	1.8				ug/L	24506	Standard
	Ti	47	19161.1	0.5	**103.3033**	1.179	1.1	ug/L	21	Standard
	V	51	205256.9	0.0	**51.4170**	0.307	0.6	ug/L	1268	Standard
	Cr	52	272218.7	2.1	**51.4936**	1.105	2.1	ug/L	7921	Standard
	Cr	53	33303.2	1.4	**51.0932**	1.056	2.1	ug/L	442	Standard
	Mn	55	179892.6	0.3	**52.9596**	0.309	0.6	ug/L	545	Standard
	Co	59	192046.2	1.2	**53.0615**	0.392	0.7	ug/L	183	Standard
	Ni	60	69999.7	1.5	**50.8579**	0.477	0.9	ug/L	131	Standard
	Cu	65	67512.8	0.8	**50.6084**	0.135	0.3	ug/L	231	Standard
	Zn	66	37928.4	1.4	**49.6550**	0.410	0.8	ug/L	306	Standard
>	Ge	72	332591.8	0.6				ug/L	330478	Standard
	As	75	38711.7	1.0	**50.4787**	0.419	0.8	ug/L	-23	Standard
	Se	82	3285.1	2.2	**51.8942**	1.092	2.1	ug/L	27	Standard
	Se-1	77	2351.8	5.4	**50.8779**	2.502	4.9	ug/L	92	Standard
>	Ga	71	36.7	31.5				mg/L	37	Standard
	Rb	85	536.7	7.8				ug/L	25	Standard
	Y	89	337215.1	1.5				ug/L	312467	Standard
>	Rh	103	93.3	16.4				ug/L	20	Standard
	Mo	98	149341.4	0.5	**101.0232**	0.312	0.3	ug/L	13	Standard
	Ag	107	259754.5	1.0	**49.3299**	0.532	1.1	ug/L	72	Standard
	Cd	111	75877.1	1.8	**51.1948**	0.831	1.6	mg/L	5	Standard
	Cd	114	201129.1	1.5	**51.7355**	0.842	1.6	ug/L	7	Standard
>	In	115	519857.9	0.5				ug/L	477820	Standard
	Sn	118	224695.8	1.7	**45.9608**	0.984	2.1	ug/L	343	Standard
	Sb	123	200616.2	1.2	**49.6201**	0.850	1.7	ug/L	56	Standard
	Ba	135	99561.7	0.4	**48.0355**	0.319	0.7	ug/L	36	Standard
	Ce	140	76.7	24.7				ug/L	65	Standard
>	Tb	159	997013.3	1.6				ug/L	939481	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	336946.8	0.5	**49.8310**	0.664	1.3	ug/L	5	Standard
	Tl	205	237789.9	1.1	**51.6863**	0.911	1.8	ug/L	2	Standard
	Pb	206	212658.0	0.3	**50.4631**	0.529	1.0	ug/L	222	Standard
	Pb	207	191888.8	0.2	**50.3313**	0.500	1.0	ug/L	186	Standard
	Pb	208	685202.5	0.3	**50.4287**	0.476	0.9	ug/L	717	Standard
	U	238	236552.0	0.5	**50.6388**	0.727	1.4	ug/L	2	Standard
>	Bi	209	466381.9	1.0				ug/L	440279	Standard

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Na	23	1.7	**-4625723412580119879723658.406**			173.2	mg/L	2	Standard
Mg	24	2108.5	4.0	**5.7212**	0.266	4.6	mg/L	45	Standard
K	39	135.0	17.0	**4.5530**	0.823	18.1	mg/L	10	Standard
Ca	43	81.7	18.7	**9.7862**	3.237	33.1	mg/L	47	Standard
Fe	54	2145.1	2.1	**5.1804**	0.057	1.1	mg/L	46	Standard
Fe	57	1320.1	8.1	**6.7385**	0.806	12.0	mg/L	627	Standard
Sc-1	45	24892.1	1.8				mg/L	24506	Standard
Cl	35	55482.3	6.5				ug/L	47100	Standard
Kr	83	4.7	68.9				ug/L	8	Standard
Br	81	590.0	20.6				ug/L	427	Standard
P	31	11584.4	3.1				ug/L	10519	Standard
S	34	2296.8	8.6				ug/L	2003	Standard
Sr	88	151.7	36.5				ug/L	132	Standard
C	12	273.3	21.4				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	13.2	116.4				mg/L	13	Standard
Ho-1	165	8.3	69.3				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	2028.5	10.3				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	101.119		
Al	27	95.572		
Sc	45			
Ti	47	103.303		
V	51	102.834		
Cr	52	102.987		
Cr	53			
Mn	55	105.919		
Co	59	106.123		
Ni	60	101.716		
Cu	65	101.217		
Zn	66	99.310		
Ge	72		100.640	
As	75	100.957		
Se	82	103.788		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	101.023		
Ag	107	98.660		
Cd	111	102.390		
Cd	114			
> In	115		108.798	
Sn	118	91.922		
Sb	123	99.240		
Ba	135	96.071		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.662		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.857		
U	238	101.278		
> Bi	209		105.929	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Sunday, August 23, 2015 16:23:00
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61825.9	2.6				ug/L	53498	Standard
	Be	9	16.7	62.4	**0.0047**	0.016	338.4	ug/L	12	Standard
	Al	27	2735.5	116.4	**0.0232**	0.040	171.0	ug/L	487	Standard
	Sc	45	25206.0	4.1				ug/L	24506	Standard
	Ti	47	28.7	23.2	**0.0215**	0.037	170.3	ug/L	21	Standard
	V	51	1090.7	10.5	**-0.0693**	0.028	40.7	ug/L	1268	Standard
	Cr	52	6958.3	2.7	**-0.2074**	0.053	25.7	ug/L	7921	Standard
	Cr	53	435.0	5.0	**-0.0681**	0.042	61.1	ug/L	442	Standard
	Mn	55	638.0	3.3	**0.0064**	0.009	141.7	ug/L	545	Standard
	Co	59	201.0	12.7	**-0.0002**	0.008	3210.1	ug/L	183	Standard
	Ni	60	157.7	4.8	**0.0250**	0.007	26.6	ug/L	131	Standard
	Cu	65	317.7	7.1	**0.0609**	0.015	25.2	ug/L	231	Standard
	Zn	66	380.7	9.0	**0.0380**	0.037	96.8	ug/L	306	Standard
>	**Ge**	72	338414.9	1.7				ug/L	330478	Standard
	As	75	-8.2	257.7	**0.0418**	0.027	64.7	ug/L	-23	Standard
	Se	82	29.7	14.1	**0.0434**	0.073	168.4	ug/L	27	Standard
	Se-1	77	77.7	17.6	**-0.2362**	0.276	116.7	ug/L	92	Standard
>	**Ga**	71	28.3	10.2				mg/L	37	Standard
	Rb	85	36.7	41.7				ug/L	25	Standard
	Y	89	326189.3	1.5				ug/L	312467	Standard
>	**Rh**	103	66.7	4.3				ug/L	20	Standard
	Mo	98	51.7	20.8	**0.0326**	0.007	21.6	ug/L	13	Standard
	Ag	107	88.0	15.8	**-0.0046**	0.003	57.0	ug/L	72	Standard
	Cd	111	5.2	11.5	**-0.0097**	0.000	4.2	mg/L	5	Standard
	Cd	114	10.2	184.8	**-0.0055**	0.005	89.3	ug/L	7	Standard
>	**In**	115	521789.8	1.3				ug/L	477820	Standard
	Sn	118	550.0	7.2	**0.0334**	0.007	21.7	ug/L	343	Standard
	Sb	123	764.1	10.3	**0.1843**	0.017	9.2	ug/L	56	Standard
	Ba	135	34.3	6.7	**-0.0098**	0.001	13.1	ug/L	36	Standard
	Ce	140	26.7	28.6				ug/L	65	Standard
>	**Tb**	159	996586.1	1.8				ug/L	939481	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	14.0	75.6	**-0.0018**	0.002	86.8	ug/L	5	Standard
	Tl	205	5.0	100.0	**-0.0056**	0.001	19.3	ug/L	2	Standard
	Pb	206	247.3	4.5	**-0.0042**	0.002	57.9	ug/L	222	Standard
	Pb	207	219.7	6.1	**-0.0030**	0.003	108.1	ug/L	186	Standard
	Pb	208	751.0	4.2	**-0.0064**	0.002	32.7	ug/L	717	Standard
	U	238	10.3	40.3	**-0.0041**	0.001	21.5	ug/L	2	Standard
>	**Bi**	209	470795.2	0.4				ug/L	440279	Standard

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Na	23	1.7	**-4877562187018448185524995**3.531			173.2	mg/L	2	Standard
Mg	24	60.0	44.1	**0.0268**	0.068	254.3	mg/L	45	Standard
K	39	6.7	114.6	**-0.1834**	0.270	147.3	mg/L	10	Standard
Ca	43	28.3	40.8	**-2.2107**	2.679	121.2	mg/L	47	Standard
Fe	54	52.5	23.5	**-0.0360**	0.035	97.7	mg/L	46	Standard
Fe	57	728.4	7.6	**0.9343**	0.584	62.5	mg/L	627	Standard
Sc-1	45	25206.0	4.1				mg/L	24506	Standard
Cl	35	52722.2	1.2				ug/L	47100	Standard
Kr	83	0.7	86.6				ug/L	8	Standard
Br	81	543.3	5.6				ug/L	427	Standard
P	31	11437.7	3.5				ug/L	10519	Standard
S	34	1998.5	5.9				ug/L	2003	Standard
Sr	88	186.7	3.1				ug/L	132	Standard
C	12	220.0	61.2				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	19.4	51.7				mg/L	13	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	7	Standard
I	127	3092.0	3.9				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.402	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.202
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.931
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Sunday, August 23, 2015 16:26:13
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59916.6	1.7				ug/L	53498	Standard
	Be	9	148.3	10.3	**0.2048**	0.021	10.1	ug/L	12	Standard
	Al	27	1880.2	116.6	**0.0130**	0.028	212.4	ug/L	487	Standard
	Sc	45	24199.3	3.6				ug/L	24506	Standard
	Ti	47	22.0	7.9	**-0.0144**	0.010	71.9	ug/L	21	Standard
	V	51	2805.4	4.0	**0.3537**	0.038	10.7	ug/L	1268	Standard
	Cr	52	11753.9	1.3	**0.7034**	0.049	7.0	ug/L	7921	Standard
	Cr	53	951.7	3.4	**0.7176**	0.067	9.4	ug/L	442	Standard
	Mn	55	2351.8	3.8	**0.5020**	0.035	7.0	ug/L	545	Standard
	Co	59	1706.8	4.6	**0.4076**	0.023	5.5	ug/L	183	Standard
	Ni	60	2326.8	1.0	**1.5713**	0.019	1.2	ug/L	131	Standard
	Cu	65	1445.4	2.1	**0.8913**	0.030	3.3	ug/L	231	Standard
	Zn	66	4899.8	1.7	**5.8857**	0.015	0.3	ug/L	306	Standard
>	Ge	72	339515.7	1.5				ug/L	330478	Standard
	As	75	265.5	14.9	**0.3908**	0.051	13.1	ug/L	-23	Standard
	Se	82	53.6	7.9	**0.4136**	0.074	18.0	ug/L	27	Standard
	Se-1	77	98.3	22.6	**0.2115**	0.453	214.2	ug/L	92	Standard
>	Ga	71	16.7	45.8				mg/L	37	Standard
	Rb	85	31.7	36.5				ug/L	25	Standard
	Y	89	326073.7	1.8				ug/L	312467	Standard
>	Rh	103	43.3	40.5				ug/L	20	Standard
	Mo	98	36.7	65.0	**0.0226**	0.016	71.8	ug/L	13	Standard
	Ag	107	2134.5	2.2	**0.3850**	0.012	3.1	ug/L	72	Standard
	Cd	111	361.0	3.2	**0.2307**	0.006	2.6	mg/L	5	Standard
	Cd	114	982.9	6.8	**0.2451**	0.015	6.3	ug/L	7	Standard
>	In	115	519029.5	1.3				ug/L	477820	Standard
	Sn	118	638.3	1.8	**0.0522**	0.003	5.1	ug/L	343	Standard
	Sb	123	1734.0	1.0	**0.4258**	0.010	2.2	ug/L	56	Standard
	Ba	135	1501.7	2.8	**0.6996**	0.011	1.6	ug/L	36	Standard
	Ce	140	21.7	13.3				ug/L	65	Standard
>	Tb	159	980441.3	0.5				ug/L	939481	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	542.0	6.6	**0.0758**	0.006	7.6	ug/L	5	Standard
	Tl	205	378.3	12.3	**0.0750**	0.011	14.2	ug/L	2	Standard
	Pb	206	1137.0	3.8	**0.2057**	0.012	5.7	ug/L	222	Standard
	Pb	207	943.0	3.5	**0.1856**	0.010	5.4	ug/L	186	Standard
	Pb	208	3532.5	0.7	**0.1971**	0.004	1.9	ug/L	717	Standard
	U	238	1870.4	1.5	**0.3911**	0.005	1.4	ug/L	2	Standard
>	Bi	209	469944.0	0.8				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	36.7	51.6	**-0.0313**	0.056	178.9	mg/L	45	Standard
K	39	6.7	86.6	**-0.1683**	0.222	132.2	mg/L	10	Standard
Ca	43	38.3	19.9	**0.3541**	1.997	563.8	mg/L	47	Standard
Fe	54	74.1	37.4	**0.0227**	0.067	293.8	mg/L	46	Standard
Fe	57	755.0	9.3	**1.4901**	0.759	50.9	mg/L	627	Standard
> **Sc-1**	45	24199.3	3.6				mg/L	24506	Standard
Cl	35	53412.7	0.9				ug/L	47100	Standard
Kr	83	8.3	59.2				ug/L	8	Standard
Br	81	600.0	7.6				ug/L	427	Standard
P	31	11377.6	2.7				ug/L	10519	Standard
S	34	2215.2	5.9				ug/L	2003	Standard
Sr	88	166.7	27.1				ug/L	132	Standard
C	12	170.0	52.3				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	1.7	340.7				mg/L	13	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	33.3	17.3				mg/L	7	Standard
I	127	1145.0	11.2				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	102.424		
Al	27			
Sc	45			
Ti	47			
V	51	88.432		
Cr	52	87.928		
Cr	53			
Mn	55	100.398		
Co	59	101.893		
Ni	60	98.204		
Cu	65	111.414		
Zn	66	94.171		
> Ge	72		102.735	
As	75	97.699		
Se	82	103.403		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	96.243		
Cd	111	96.135		
Cd	114			
> In	115			108.624
Sn	118			
Sb	123	106.446		
Ba	135	93.285		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	94.689		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.562		
U	238	97.780		
> Bi	209			106.738
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508090601DP WG535577-04
Sample Date/Time: Sunday, August 23, 2015 16:39:24
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62413.3	1.5				ug/L	53498	Standard
	Be	9	26.7	43.3	**0.0186**	0.016	86.7	ug/L	12	Standard
	Al	27	3130649.9	1.7	**38.7557**	1.243	3.2	ug/L	487	Standard
	Sc	45	26202.6	2.0				ug/L	24506	Standard
	Ti	47	133.3	27.6	**0.5516**	0.182	33.1	ug/L	21	Standard
	V	51	13254.4	0.9	**2.8344**	0.039	1.4	ug/L	1268	Standard
	Cr	52	12879.5	2.3	**0.8431**	0.074	8.8	ug/L	7921	Standard
	Cr	53	1690.1	12.0	**1.7661**	0.325	18.4	ug/L	442	Standard
	Mn	55	19501.9	2.9	**5.2910**	0.103	1.9	ug/L	545	Standard
	Co	59	587.3	0.8	**0.0993**	0.001	1.0	ug/L	183	Standard
	Ni	60	1817.4	4.0	**1.1686**	0.060	5.1	ug/L	131	Standard
	Cu	65	1423.1	2.9	**0.8428**	0.038	4.5	ug/L	231	Standard
	Zn	66	1400.1	1.1	**1.3009**	0.030	2.3	ug/L	306	Standard
>	**Ge**	72	350222.4	1.1				ug/L	330478	Standard
	As	75	5190.4	2.1	**6.4723**	0.071	1.1	ug/L	-23	Standard
	Se	82	216.0	4.3	**2.8438**	0.108	3.8	ug/L	27	Standard
	Se-1	77	219.3	7.0	**2.7332**	0.362	13.2	ug/L	92	Standard
>	**Ga**	71	3650.4	6.5				mg/L	37	Standard
	Rb	85	9167.8	4.1				ug/L	25	Standard
	Y	89	331772.9	2.5				ug/L	312467	Standard
>	**Rh**	103	68.3	18.4				ug/L	20	Standard
	Mo	98	20228.1	0.9	**13.7301**	0.173	1.3	ug/L	13	Standard
	Ag	107	78.3	5.2	**-0.0063**	0.001	11.2	ug/L	72	Standard
	Cd	111	20.7	38.9	**0.0008**	0.005	688.1	mg/L	5	Standard
	Cd	114	148.2	12.0	**0.0302**	0.005	15.5	ug/L	7	Standard
>	**In**	115	518031.5	0.4				ug/L	477820	Standard
	Sn	118	501.7	14.9	**0.0243**	0.015	63.4	ug/L	343	Standard
	Sb	123	3119.3	0.8	**0.7704**	0.006	0.8	ug/L	56	Standard
	Ba	135	53190.5	0.7	**25.7407**	0.159	0.6	ug/L	36	Standard
	Ce	140	786.7	4.8				ug/L	65	Standard
>	**Tb**	159	985299.2	1.2				ug/L	939481	Standard
	Ho	165	53.3	21.7				ug/L	7	Standard
	Tl	203	1847.4	1.2	**0.2688**	0.007	2.5	ug/L	5	Standard
	Tl	205	1236.7	3.1	**0.2615**	0.006	2.1	ug/L	2	Standard
	Pb	206	413.0	0.8	**0.0355**	0.002	4.7	ug/L	222	Standard
	Pb	207	336.7	3.3	**0.0281**	0.004	14.0	ug/L	186	Standard
	Pb	208	1326.7	3.0	**0.0363**	0.004	10.3	ug/L	717	Standard
	U	238	1173.4	4.1	**0.2444**	0.013	5.3	ug/L	2	Standard
>	**Bi**	209	467498.8	1.2				ug/L	440279	Standard

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Na	23	5.0	**-132589867919**132656729508065.660			100.1	mg/L	2	Standard
Mg	24	3953.8	4.8	**10.3021**	0.625	6.1	mg/L	45	Standard
K	39	38.3	54.3	**0.9256**	0.749	80.9	mg/L	10	Standard
Ca	43	110.0	13.6	**14.9856**	3.634	24.2	mg/L	47	Standard
Fe	54	85.3	24.7	**0.0367**	0.054	148.0	mg/L	46	Standard
Fe	57	800.0	6.0	**1.3236**	0.467	35.3	mg/L	627	Standard
Sc-1	45	26202.6	2.0				mg/L	24506	Standard
Cl	35	64594.9	4.4				ug/L	47100	Standard
Kr	83	3.7	68.6				ug/L	8	Standard
Br	81	3767.1	6.8				ug/L	427	Standard
P	31	12488.5	5.7				ug/L	10519	Standard
S	34	2148.5	2.9				ug/L	2003	Standard
Sr	88	238.3	10.8				ug/L	132	Standard
C	12	300.0	6.7				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	100.0	20.0				mg/L	10	Standard
Dy	164	60.9	62.2				mg/L	13	Standard
Ho-1	165	53.3	21.7				mg/L	7	Standard
Er	166	50.0	20.0				mg/L	7	Standard
I	127	22216.3	8.1				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.666	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.975	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.416
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.182
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: L1508082601
Sample Date/Time: Sunday, August 23, 2015 16:42:35
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	61881.2	2.3				ug/L	53498	Standard
	Be	9	15.0	0.0	**0.0020**	0.001	25.9	ug/L	12	Standard
	Al	27	3557123.5	2.2	**44.4122**	1.157	2.6	ug/L	487	Standard
	Sc	45	24875.4	1.2				ug/L	24506	Standard
	Ti	47	86.3	13.2	**0.3341**	0.054	16.1	ug/L	21	Standard
	V	51	1196.8	21.0	**-0.0380**	0.064	168.2	ug/L	1268	Standard
	Cr	52	14168.3	1.0	**1.2173**	0.019	1.5	ug/L	7921	Standard
	Cr	53	11539.4	4.7	**17.1991**	0.629	3.7	ug/L	442	Standard
	Mn	55	21285.3	0.8	**6.1032**	0.139	2.3	ug/L	545	Standard
	Co	59	755.7	2.7	**0.1538**	0.003	1.7	ug/L	183	Standard
	Ni	60	88859.5	1.1	**64.5211**	0.431	0.7	ug/L	131	Standard
	Cu	65	61650.8	1.1	**46.1546**	0.597	1.3	ug/L	231	Standard
	Zn	66	5785.4	2.4	**7.1828**	0.290	4.0	ug/L	306	Standard
>	Ge	72	332948.1	1.6				ug/L	330478	Standard
	As	75	282.1	71.1	**0.4219**	0.268	63.5	ug/L	-23	Standard
	Se	82	115.5	13.4	**1.4184**	0.276	19.4	ug/L	27	Standard
	Se-1	77	715.4	2.1	**14.1110**	0.545	3.9	ug/L	92	Standard
>	Ga	71	48.3	41.8				mg/L	37	Standard
	Rb	85	6489.7	3.1				ug/L	25	Standard
	Y	89	320920.6	2.0				ug/L	312467	Standard
>	Rh	103	130.0	61.9				ug/L	20	Standard
	Mo	98	1767.9	1.9	**1.2624**	0.029	2.3	ug/L	13	Standard
	Ag	107	120.0	5.5	**0.0028**	0.001	43.2	ug/L	72	Standard
	Cd	111	70.6	9.4	**0.0372**	0.005	12.7	mg/L	5	Standard
	Cd	114	248.6	10.3	**0.0595**	0.007	12.2	ug/L	7	Standard
>	In	115	491663.2	0.5				ug/L	477820	Standard
	Sn	118	42675.1	3.1	**9.1658**	0.271	3.0	ug/L	343	Standard
	Sb	123	1058.3	5.0	**0.2729**	0.013	4.7	ug/L	56	Standard
	Ba	135	40727.3	1.3	**20.7612**	0.241	1.2	ug/L	36	Standard
	Ce	140	530.0	14.3				ug/L	65	Standard
>	Tb	159	944439.6	1.2				ug/L	939481	Standard
	Ho	165	16.7	45.8				ug/L	7	Standard
	Tl	203	66.7	3.5	**0.0069**	0.000	2.6	ug/L	5	Standard
	Tl	205	30.0	33.3	**0.0005**	0.002	542.5	ug/L	2	Standard
	Pb	206	325656.4	0.9	**84.0032**	1.407	1.7	ug/L	222	Standard
	Pb	207	260598.0	0.5	**74.2973**	1.335	1.8	ug/L	186	Standard
	Pb	208	975644.8	0.3	**78.0519**	1.341	1.7	ug/L	717	Standard
	U	238	27.0	9.8	**0.0000**	0.001	10319.5	ug/L	2	Standard
>	Bi	209	429302.4	1.9				ug/L	440279	Standard

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Na	23	1.7	**-4674738226468**0968841203203.797			173.2	mg/L	2	Standard
Mg	24	129894.4	0.3	**360.9265**	3.808	1.1	mg/L	45	Standard
K	39	143.3	29.3	**4.8715**	1.572	32.3	mg/L	10	Standard
Ca	43	141.7	12.4	**23.3491**	4.321	18.5	mg/L	47	Standard
Fe	54	70.3	31.5	**0.0094**	0.055	579.2	mg/L	46	Standard
Fe	57	908.4	14.9	**2.7600**	1.259	45.6	mg/L	627	Standard
Sc-1	45	24875.4	1.2				mg/L	24506	Standard
Cl	35	165393.2	0.7				ug/L	47100	Standard
Kr	83	7.3	7.9				ug/L	8	Standard
Br	81	5991.2	4.4				ug/L	427	Standard
P	31	12153.2	3.3				ug/L	10519	Standard
S	34	2095.1	1.8				ug/L	2003	Standard
Sr	88	188.3	8.1				ug/L	132	Standard
C	12	553.3	15.4				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	11.9	128.4				mg/L	13	Standard
Ho-1	165	16.7	45.8				mg/L	7	Standard
Er	166	30.0	0.0				mg/L	7	Standard
I	127	354116.2	5.9				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		115.671	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.748	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.897
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.507
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: L1508082801
Sample Date/Time: Sunday, August 23, 2015 16:45:47
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65399.2	2.5				ug/L	53498	Standard
	Be	9	18.3	41.7	**0.0056**	0.011	198.9	ug/L	12	Standard
	Al	27	9325136.7	1.4	**110.2230**	4.199	3.8	ug/L	487	Standard
	Sc	45	26187.6	3.1				ug/L	24506	Standard
	Ti	47	161.3	3.8	**0.7097**	0.026	3.7	ug/L	21	Standard
	V	51	1946.4	39.5	**0.1347**	0.190	141.1	ug/L	1268	Standard
	Cr	52	9032.0	2.1	**0.1582**	0.023	14.3	ug/L	7921	Standard
	Cr	53	9256.2	6.5	**13.1691**	0.887	6.7	ug/L	442	Standard
	Mn	55	58210.9	0.3	**16.4195**	0.166	1.0	ug/L	545	Standard
	Co	59	737.7	5.2	**0.1420**	0.009	6.1	ug/L	183	Standard
	Ni	60	2302.8	2.3	**1.5299**	0.024	1.6	ug/L	131	Standard
	Cu	65	5171.9	2.0	**3.5817**	0.099	2.8	ug/L	231	Standard
	Zn	66	6891.6	2.4	**8.3341**	0.241	2.9	ug/L	306	Standard
>	**Ge**	72	344556.5	0.8				ug/L	330478	Standard
	As	75	1218.3	4.0	**1.5837**	0.054	3.4	ug/L	-23	Standard
	Se	82	61.7	3.5	**0.5263**	0.040	7.6	ug/L	27	Standard
	Se-1	77	529.7	3.9	**9.5363**	0.353	3.7	ug/L	92	Standard
>	**Ga**	71	78.3	13.3				mg/L	37	Standard
	Rb	85	36413.7	1.4				ug/L	25	Standard
	Y	89	331481.9	2.7				ug/L	312467	Standard
>	**Rh**	103	336.7	23.0				ug/L	20	Standard
	Mo	98	5125.1	2.8	**3.5461**	0.088	2.5	ug/L	13	Standard
	Ag	107	94.0	10.1	**-0.0030**	0.002	61.4	ug/L	72	Standard
	Cd	111	42.5	22.6	**0.0161**	0.007	40.8	mg/L	5	Standard
	Cd	114	114.5	9.5	**0.0220**	0.003	12.6	ug/L	7	Standard
>	**In**	115	507906.7	0.3				ug/L	477820	Standard
	Sn	118	640.0	2.8	**0.0554**	0.004	7.5	ug/L	343	Standard
	Sb	123	2973.4	2.0	**0.7489**	0.017	2.3	ug/L	56	Standard
	Ba	135	75695.3	1.3	**37.3730**	0.392	1.0	ug/L	36	Standard
	Ce	140	236.7	12.2				ug/L	65	Standard
>	**Tb**	159	997301.2	0.9				ug/L	939481	Standard
	Ho	165	26.7	60.3				ug/L	7	Standard
	Tl	203	49.0	25.5	**0.0036**	0.002	51.0	ug/L	5	Standard
	Tl	205	23.3	24.7	**-0.0015**	0.001	83.6	ug/L	2	Standard
	Pb	206	536.7	6.2	**0.0678**	0.009	13.9	ug/L	222	Standard
	Pb	207	432.3	6.3	**0.0558**	0.009	15.4	ug/L	186	Standard
	Pb	208	1630.0	5.7	**0.0614**	0.007	12.1	ug/L	717	Standard
	U	238	466.3	9.7	**0.0956**	0.009	9.3	ug/L	2	Standard
>	**Bi**	209	456981.6	1.0				ug/L	440279	Standard

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Na	23	5.0	**-138579838622**240027321399398.560			173.2	mg/L	2	Standard
Mg	24	28189.6	3.7	**74.3561**	4.117	5.5	mg/L	45	Standard
K	39	171.7	11.0	**5.6098**	0.830	14.8	mg/L	10	Standard
Ca	43	221.7	6.5	**38.8937**	4.353	11.2	mg/L	47	Standard
Fe	54	87.5	3.8	**0.0417**	0.014	33.7	mg/L	46	Standard
Fe	57	848.4	7.8	**1.7707**	0.560	31.6	mg/L	627	Standard
> **Sc-1**	45	26187.6	3.1				mg/L	24506	Standard
Cl	35	67293.1	1.6				ug/L	47100	Standard
Kr	83	7.0	65.5				ug/L	8	Standard
Br	81	2500.2	0.7				ug/L	427	Standard
P	31	14967.4	3.8				ug/L	10519	Standard
S	34	2071.8	0.4				ug/L	2003	Standard
Sr	88	356.7	11.7				ug/L	132	Standard
C	12	350.0	34.6				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	6.7	173.2				mg/L	10	Standard
Dy	164	41.9	14.9				mg/L	13	Standard
Ho-1	165	26.7	60.3				mg/L	7	Standard
Er	166	30.0	57.7				mg/L	7	Standard
I	127	52492.6	5.5				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		122.247	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.260	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.297
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.794
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1508085401
Sample Date/Time: Sunday, August 23, 2015 16:48:58
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59474.9	3.2				ug/L	53498	Standard
	Be	9	381.7	4.0	**0.5632**	0.006	1.0	ug/L	12	Standard
	Al	27	10161241.9	2.6	**132.0196**	2.559	1.9	ug/L	487	Standard
	Sc	45	21234.9	5.0				ug/L	24506	Standard
	Ti	47	28082.7	1.0	**177.4275**	1.078	0.6	ug/L	21	Standard
	V	51	175098.9	0.8	**51.3763**	0.215	0.4	ug/L	1268	Standard
	Cr	52	200464.8	0.8	**44.2057**	0.164	0.4	ug/L	7921	Standard
	Cr	53	35244.3	1.8	**63.5127**	1.554	2.4	ug/L	442	Standard
	Mn	55	404644.6	0.6	**139.8281**	0.873	0.6	ug/L	545	Standard
	Co	59	17117.7	0.8	**5.4908**	0.021	0.4	ug/L	183	Standard
	Ni	60	78110.5	1.1	**66.5025**	0.349	0.5	ug/L	131	Standard
	Cu	65	11245.5	0.8	**9.7348**	0.144	1.5	ug/L	231	Standard
	Zn	66	57220.2	1.1	**88.0978**	0.476	0.5	ug/L	306	Standard
>	**Ge**	72	283940.6	0.6				ug/L	330478	Standard
	As	75	9319.4	1.7	**14.2712**	0.159	1.1	ug/L	-23	Standard
	Se	82	4550.2	1.7	**84.4574**	1.330	1.6	ug/L	27	Standard
	Se-1	77	3851.2	1.8	**99.3968**	1.791	1.8	ug/L	92	Standard
>	**Ga**	71	3782.1	4.0				mg/L	37	Standard
	Rb	85	200317.7	2.4				ug/L	25	Standard
	Y	89	389986.9	3.3				ug/L	312467	Standard
>	**Rh**	103	410.0	20.3				ug/L	20	Standard
	Mo	98	439559.2	1.3	**372.0623**	14.163	3.8	ug/L	13	Standard
	Ag	107	653.0	1.1	**0.1340**	0.006	4.2	ug/L	72	Standard
	Cd	111	1505.8	7.3	**1.2581**	0.097	7.7	mg/L	5	Standard
	Cd	114	5607.0	2.2	**1.7963**	0.052	2.9	ug/L	7	Standard
>	**In**	115	415743.4	2.7				ug/L	477820	Standard
	Sn	118	1020.0	8.5	**0.1823**	0.017	9.4	ug/L	343	Standard
	Sb	123	6867.2	1.8	**2.1211**	0.069	3.2	ug/L	56	Standard
	Ba	135	77989.5	0.4	**47.0758**	1.466	3.1	ug/L	36	Standard
	Ce	140	161979.8	2.2				ug/L	65	Standard
>	**Tb**	159	814153.0	1.5				ug/L	939481	Standard
	Ho	165	6563.1	1.6				ug/L	7	Standard
	Tl	203	794.4	1.5	**0.1585**	0.003	1.7	ug/L	5	Standard
	Tl	205	545.0	8.4	**0.1571**	0.015	9.2	ug/L	2	Standard
	Pb	206	8022.1	1.6	**2.5716**	0.026	1.0	ug/L	222	Standard
	Pb	207	5925.5	2.6	**2.0902**	0.048	2.3	ug/L	186	Standard
	Pb	208	20948.9	0.7	**2.0723**	0.028	1.3	ug/L	717	Standard
	U	238	25568.9	0.8	**7.5591**	0.066	0.9	ug/L	2	Standard
>	**Bi**	209	337443.7	0.6				ug/L	440279	Standard

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Na	23	113.3	**-3740442189922**331126099834657.060			8.9	mg/L	2	Standard
Mg	24	598562.7	1.6	**1952.6902**	120.625	6.2	mg/L	45	Standard
K	39	648.3	5.8	**27.7065**	3.029	10.9	mg/L	10	Standard
Ca	43	4392.3	4.4	**1152.1060**	109.197	9.5	mg/L	47	Standard
Fe	54	1201.4	10.1	**3.3525**	0.419	12.5	mg/L	46	Standard
Fe	57	5187.6	4.2	**53.0380**	5.010	9.4	mg/L	627	Standard
Sc-1	45	21234.9	5.0				mg/L	24506	Standard
Cl	35	1890411.0	4.2				ug/L	47100	Standard
Kr	83	5.0	60.0				ug/L	8	Standard
Br	81	77775.8	1.7				ug/L	427	Standard
P	31	21238.2	3.6				ug/L	10519	Standard
S	34	4852.4	1.0				ug/L	2003	Standard
Sr	88	451.7	22.2				ug/L	132	Standard
C	12	406.7	22.3				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	2200.2	4.4				mg/L	10	Standard
Dy	164	9242.7	1.2				mg/L	13	Standard
Ho-1	165	6563.1	1.6				mg/L	7	Standard
Er	166	6548.1	7.9				mg/L	7	Standard
I	127	1652702.2	7.9				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.173	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		85.918	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	87.008
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	76.643
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	

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Mo 98 Upper, S, EEE	Mo	98

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Method 6020 - Summary Report

Sample ID: L1508085402
Sample Date/Time: Sunday, August 23, 2015 16:52:10
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	61417.6	1.7				ug/L	53498	Standard
	Be	9	573.3	2.2	**0.8289**	0.030	3.6	ug/L	12	Standard
	Al	27	17227293.6	0.6	**216.7303**	2.446	1.1	ug/L	487	Standard
	Sc	45	21565.3	3.5				ug/L	24506	Standard
	Ti	47	18966.2	0.6	**116.4622**	1.566	1.3	ug/L	21	Standard
	V	51	202113.8	1.3	**57.6983**	0.883	1.5	ug/L	1268	Standard
	Cr	52	187140.1	1.4	**39.9796**	0.681	1.7	ug/L	7921	Standard
	Cr	53	32768.7	1.7	**57.3412**	1.450	2.5	ug/L	442	Standard
	Mn	55	793515.0	1.2	**266.7421**	2.625	1.0	ug/L	545	Standard
	Co	59	20552.3	2.3	**6.4179**	0.098	1.5	ug/L	183	Standard
	Ni	60	83461.6	0.7	**69.0903**	0.701	1.0	ug/L	131	Standard
	Cu	65	10172.4	2.3	**8.5402**	0.231	2.7	ug/L	231	Standard
	Zn	66	82261.7	0.6	**123.3227**	1.531	1.2	ug/L	306	Standard
>	Ge	72	292080.9	1.7				ug/L	330478	Standard
	As	75	9585.7	2.1	**14.2754**	0.496	3.5	ug/L	-23	Standard
	Se	82	5005.1	0.9	**90.3625**	2.069	2.3	ug/L	27	Standard
	Se-1	77	4159.9	1.5	**104.5025**	3.140	3.0	ug/L	92	Standard
>	Ga	71	2823.6	6.1				mg/L	37	Standard
	Rb	85	184744.6	1.4				ug/L	25	Standard
	Y	89	358191.5	2.8				ug/L	312467	Standard
>	Rh	103	403.3	7.0				ug/L	20	Standard
	Mo	98	400965.2	1.1	**327.4040**	2.357	0.7	ug/L	13	Standard
	Ag	107	421.3	6.8	**0.0754**	0.007	8.8	ug/L	72	Standard
	Cd	111	986.2	5.5	**0.7904**	0.050	6.3	mg/L	5	Standard
	Cd	114	4410.3	3.9	**1.3614**	0.051	3.8	ug/L	7	Standard
>	In	115	430694.8	1.4				ug/L	477820	Standard
	Sn	118	1753.4	3.8	**0.3549**	0.018	5.2	ug/L	343	Standard
	Sb	123	8828.1	1.3	**2.6318**	0.018	0.7	ug/L	56	Standard
	Ba	135	101087.4	0.7	**58.8782**	0.602	1.0	ug/L	36	Standard
	Ce	140	106988.1	0.3				ug/L	65	Standard
>	Tb	159	824614.0	1.7				ug/L	939481	Standard
	Ho	165	4262.3	6.0				ug/L	7	Standard
	Tl	203	1228.4	2.5	**0.2403**	0.007	2.9	ug/L	5	Standard
	Tl	205	908.4	2.2	**0.2587**	0.008	3.0	ug/L	2	Standard
	Pb	206	6769.2	0.6	**2.0991**	0.039	1.9	ug/L	222	Standard
	Pb	207	5099.5	2.1	**1.7392**	0.003	0.2	ug/L	186	Standard
	Pb	208	17648.6	0.3	**1.6866**	0.031	1.8	ug/L	717	Standard
	U	238	18791.0	0.5	**5.4011**	0.138	2.6	ug/L	2	Standard
>	Bi	209	347076.9	2.0				ug/L	440279	Standard

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Na	23	100.0	**-324447880070**1082498816073021.900			33.4	mg/L	2	Standard
Mg	24	397733.8	1.8	**1275.9056**	44.497	3.5	mg/L	45	Standard
K	39	460.0	17.0	**19.2072**	3.698	19.3	mg/L	10	Standard
Ca	43	4710.7	4.7	**1213.1545**	26.099	2.2	mg/L	47	Standard
Fe	54	2996.5	6.5	**8.4594**	0.603	7.1	mg/L	46	Standard
Fe	57	5566.0	1.3	**56.2423**	1.387	2.5	mg/L	627	Standard
Sc-1	45	21565.3	3.5				mg/L	24506	Standard
Cl	35	1749948.2	4.5				ug/L	47100	Standard
Kr	83	3.0	33.3				ug/L	8	Standard
Br	81	46695.4	6.3				ug/L	427	Standard
P	31	24523.2	3.9				ug/L	10519	Standard
S	34	4664.1	1.6				ug/L	2003	Standard
Sr	88	430.0	3.1				ug/L	132	Standard
C	12	476.7	28.3				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	1223.4	9.0				mg/L	10	Standard
Dy	164	5714.9	5.8				mg/L	13	Standard
Ho-1	165	4262.3	6.0				mg/L	7	Standard
Er	166	4167.2	6.6				mg/L	7	Standard
I	127	1098707.5	7.2				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		114.804	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		88.381	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	90.137	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	78.831	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	

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Zn 66 Upper, S, EEE	Zn	66
Se-1 77 Upper, S, EEE	Se-1	77
Mo 98 Upper, S, EEE	Mo	98

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Method 6020 - Summary Report

Sample ID: L1508085403
Sample Date/Time: Sunday, August 23, 2015 16:55:21
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67302.9	6.8				ug/L	53498	Standard
	Be	9	23.3	44.6	**0.0115**	0.014	119.2	ug/L	12	Standard
	Al	27	4388428.6	3.8	**50.4371**	1.558	3.1	ug/L	487	Standard
	Sc	45	22710.3	1.4				ug/L	24506	Standard
	Ti	47	127.0	19.2	**0.6083**	0.129	21.2	ug/L	21	Standard
	V	51	20624.4	3.2	**5.2776**	0.120	2.3	ug/L	1268	Standard
	Cr	52	8980.3	4.0	**0.3492**	0.044	12.6	ug/L	7921	Standard
	Cr	53	10842.2	6.8	**17.5072**	1.508	8.6	ug/L	442	Standard
	Mn	55	90136.2	3.7	**28.5740**	0.465	1.6	ug/L	545	Standard
	Co	59	2888.3	3.3	**0.8078**	0.012	1.5	ug/L	183	Standard
	Ni	60	9802.2	3.6	**7.6168**	0.121	1.6	ug/L	131	Standard
	Cu	65	2901.3	1.5	**2.1837**	0.037	1.7	ug/L	231	Standard
	Zn	66	3223.0	2.4	**4.1448**	0.124	3.0	ug/L	306	Standard
>	Ge	72	307905.4	2.1				ug/L	330478	Standard
	As	75	4180.6	5.1	**5.9324**	0.199	3.4	ug/L	-23	Standard
	Se	82	1761.1	0.9	**29.8800**	0.670	2.2	ug/L	27	Standard
	Se-1	77	1420.7	4.4	**32.5186**	0.877	2.7	ug/L	92	Standard
>	Ga	71	4939.1	2.0				mg/L	37	Standard
	Rb	85	227088.1	2.3				ug/L	25	Standard
	Y	89	312347.8	2.3				ug/L	312467	Standard
>	Rh	103	190.0	14.7				ug/L	20	Standard
	Mo	98	527938.7	1.5	**389.2559**	3.090	0.8	ug/L	13	Standard
	Ag	107	73.0	3.6	**-0.0062**	0.001	8.6	ug/L	72	Standard
	Cd	111	-12.7	322.8	**-0.0224**	0.030	132.8	mg/L	5	Standard
	Cd	114	2432.6	5.2	**0.6739**	0.032	4.7	ug/L	7	Standard
>	In	115	476989.1	1.9				ug/L	477820	Standard
	Sn	118	468.3	13.9	**0.0256**	0.013	49.8	ug/L	343	Standard
	Sb	123	14291.2	0.7	**3.8493**	0.049	1.3	ug/L	56	Standard
	Ba	135	47602.7	1.6	**25.0190**	0.139	0.6	ug/L	36	Standard
	Ce	140	1270.1	5.1				ug/L	65	Standard
>	Tb	159	922157.9	1.6				ug/L	939481	Standard
	Ho	165	70.0	12.4				ug/L	7	Standard
	Tl	203	2016.1	1.5	**0.3377**	0.002	0.5	ug/L	5	Standard
	Tl	205	1353.4	5.7	**0.3303**	0.019	5.7	ug/L	2	Standard
	Pb	206	414.7	7.3	**0.0504**	0.008	15.4	ug/L	222	Standard
	Pb	207	338.7	6.1	**0.0417**	0.005	13.1	ug/L	186	Standard
	Pb	208	1178.7	4.0	**0.0383**	0.004	9.7	ug/L	717	Standard
	U	238	13839.0	0.7	**3.3875**	0.034	1.0	ug/L	2	Standard
>	Bi	209	407146.8	1.0				ug/L	440279	Standard

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Na	23	11.7	**-361220260944**	238606549784063.780		66.1	mg/L	2	Standard
Mg	24	290027.2	2.3	**883.1424**	33.080	3.7	mg/L	45	Standard
K	39	473.3	12.2	**18.7139**	2.385	12.7	mg/L	10	Standard
Ca	43	435.0	8.0	**98.5559**	7.390	7.5	mg/L	47	Standard
Fe	54	132.2	17.7	**0.1957**	0.068	34.7	mg/L	46	Standard
Fe	57	1406.7	3.4	**8.9014**	0.621	7.0	mg/L	627	Standard
> **Sc-1**	45	22710.3	1.4				mg/L	24506	Standard
Cl	35	567458.3	2.8				ug/L	47100	Standard
Kr	83	6.3	63.8				ug/L	8	Standard
Br	81	39966.0	3.3				ug/L	427	Standard
P	31	13217.4	3.6				ug/L	10519	Standard
S	34	2653.6	0.9				ug/L	2003	Standard
Sr	88	230.0	22.7				ug/L	132	Standard
C	12	343.3	28.3				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	116.7	26.2				mg/L	10	Standard
Dy	164	90.6	17.9				mg/L	13	Standard
Ho-1	165	70.0	12.4				mg/L	7	Standard
Er	166	56.7	44.4				mg/L	7	Standard
I	127	699658.6	3.5				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		125.805	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.170	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.826
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.475
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	

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Method 6020 - Summary Report

Sample ID: L1508085404
Sample Date/Time: Sunday, August 23, 2015 16:58:32
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65943.4	4.8				ug/L	53498	Standard
	Be	9	26.7	39.0	**0.0166**	0.014	82.9	ug/L	12	Standard
	Al	27	3994321.0	0.4	**46.8666**	2.438	5.2	ug/L	487	Standard
	Sc	45	21829.1	4.5				ug/L	24506	Standard
	Ti	47	67.0	8.3	**0.2762**	0.033	11.8	ug/L	21	Standard
	V	51	1143.2	41.8	**-0.0153**	0.134	879.1	ug/L	1268	Standard
	Cr	52	8763.9	2.5	**0.3822**	0.060	15.6	ug/L	7921	Standard
	Cr	53	12073.1	3.4	**20.4121**	0.531	2.6	ug/L	442	Standard
	Mn	55	142461.7	1.2	**47.1964**	0.787	1.7	ug/L	545	Standard
	Co	59	1179.0	4.3	**0.3123**	0.019	6.1	ug/L	183	Standard
	Ni	60	4589.4	1.4	**3.6727**	0.074	2.0	ug/L	131	Standard
	Cu	65	2338.5	0.2	**1.8064**	0.018	1.0	ug/L	231	Standard
	Zn	66	2660.6	0.7	**3.5015**	0.043	1.2	ug/L	306	Standard
>	Ge	72	295443.5	0.9				ug/L	330478	Standard
	As	75	1900.5	5.7	**2.8398**	0.177	6.2	ug/L	-23	Standard
	Se	82	1107.8	2.7	**19.4394**	0.599	3.1	ug/L	27	Standard
	Se-1	77	1049.4	3.1	**24.5932**	0.870	3.5	ug/L	92	Standard
>	Ga	71	1280.1	2.4				mg/L	37	Standard
	Rb	85	216756.2	0.8				ug/L	25	Standard
	Y	89	301903.5	1.4				ug/L	312467	Standard
>	Rh	103	278.3	8.5				ug/L	20	Standard
	Mo	98	465725.0	0.8	**347.9583**	5.583	1.6	ug/L	13	Standard
	Ag	107	64.7	7.8	**-0.0077**	0.001	14.7	ug/L	72	Standard
	Cd	111	-438.1	1.8	**-0.3398**	0.010	2.9	mg/L	5	Standard
	Cd	114	1071.0	1.2	**0.2962**	0.003	0.9	ug/L	7	Standard
>	In	115	470742.8	1.2				ug/L	477820	Standard
	Sn	118	525.0	11.5	**0.0399**	0.013	31.4	ug/L	343	Standard
	Sb	123	9873.1	1.4	**2.6930**	0.021	0.8	ug/L	56	Standard
	Ba	135	40263.4	1.1	**21.4384**	0.175	0.8	ug/L	36	Standard
	Ce	140	141.7	30.0				ug/L	65	Standard
>	Tb	159	901146.8	0.7				ug/L	939481	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	817.4	1.5	**0.1389**	0.003	2.2	ug/L	5	Standard
	Tl	205	585.0	3.9	**0.1435**	0.005	3.2	ug/L	2	Standard
	Pb	206	303.0	6.4	**0.0226**	0.005	20.4	ug/L	222	Standard
	Pb	207	240.7	6.4	**0.0144**	0.004	30.4	ug/L	186	Standard
	Pb	208	813.0	2.1	**0.0095**	0.001	8.3	ug/L	717	Standard
	U	238	7239.1	1.4	**1.8240**	0.036	2.0	ug/L	2	Standard
>	Bi	209	394925.7	1.0				ug/L	440279	Standard

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Na	23	6.7	**-2135172992041**85416845032312.250		86.8	mg/L	2	Standard
Mg	24	297082.9	1.2	**942.3707**	52.151	5.5	mg/L	45	Standard
K	39	408.3	10.2	**16.7204**	0.968	5.8	mg/L	10	Standard
Ca	43	416.7	30.1	**98.3258**	32.844	33.4	mg/L	47	Standard
Fe	54	125.2	6.1	**0.1908**	0.036	19.1	mg/L	46	Standard
Fe	57	1366.7	6.5	**9.1017**	1.547	17.0	mg/L	627	Standard
> **Sc-1**	45	21829.1	4.5				mg/L	24506	Standard
Cl	35	539734.1	0.8				ug/L	47100	Standard
Kr	83	3.0	66.7				ug/L	8	Standard
Br	81	39083.7	1.2				ug/L	427	Standard
P	31	12623.6	1.5				ug/L	10519	Standard
S	34	2648.6	0.8				ug/L	2003	Standard
Sr	88	206.7	10.1				ug/L	132	Standard
C	12	316.7	21.0				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	46.7	32.7				mg/L	10	Standard
Dy	164	13.0	89.8				mg/L	13	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	743415.0	5.3				mg/L	2225	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		123.264	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		89.399	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.519
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		89.699
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

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Method 6020 - Summary Report

Sample ID: L1508085801
Sample Date/Time: Sunday, August 23, 2015 17:01:44
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65883.1	4.2				ug/L	53498	Standard
	Be	9	18.3	68.6	**0.0050**	0.017	345.9	ug/L	12	Standard
	Al	27	6446034.2	2.2	**75.6242**	1.505	2.0	ug/L	487	Standard
	Sc	45	26478.1	3.2				ug/L	24506	Standard
	Ti	47	575.0	3.7	**2.9123**	0.085	2.9	ug/L	21	Standard
	V	51	1594.7	19.9	**0.0550**	0.080	145.8	ug/L	1268	Standard
	Cr	52	12009.1	3.8	**0.7537**	0.073	9.7	ug/L	7921	Standard
	Cr	53	11604.5	8.6	**16.9614**	1.290	7.6	ug/L	442	Standard
	Mn	55	24027.0	1.6	**6.7821**	0.205	3.0	ug/L	545	Standard
	Co	59	851.7	4.0	**0.1761**	0.011	6.1	ug/L	183	Standard
	Ni	60	2279.2	2.4	**1.5386**	0.025	1.6	ug/L	131	Standard
	Cu	65	58840.4	0.7	**43.2286**	0.487	1.1	ug/L	231	Standard
	Zn	66	99857.3	0.8	**128.9339**	2.351	1.8	ug/L	306	Standard
>	Ge	72	339186.0	1.3				ug/L	330478	Standard
	As	75	1645.7	5.0	**2.1552**	0.132	6.1	ug/L	-23	Standard
	Se	82	721.5	2.9	**10.8477**	0.479	4.4	ug/L	27	Standard
	Se-1	77	535.7	8.3	**9.8487**	0.901	9.1	ug/L	92	Standard
>	Ga	71	138.3	30.7				mg/L	37	Standard
	Rb	85	38443.7	2.1				ug/L	25	Standard
	Y	89	336841.5	0.6				ug/L	312467	Standard
>	Rh	103	213.3	8.2				ug/L	20	Standard
	Mo	98	10677.4	2.4	**7.1144**	0.143	2.0	ug/L	13	Standard
	Ag	107	212.7	6.4	**0.0185**	0.002	12.3	ug/L	72	Standard
	Cd	111	24.2	43.0	**0.0029**	0.007	246.4	mg/L	5	Standard
	Cd	114	140.5	27.3	**0.0275**	0.010	34.8	ug/L	7	Standard
>	In	115	527600.3	0.8				ug/L	477820	Standard
	Sn	118	2218.5	7.1	**0.3690**	0.031	8.5	ug/L	343	Standard
	Sb	123	250.4	1.3	**0.0571**	0.000	0.7	ug/L	56	Standard
	Ba	135	29134.0	1.1	**13.8308**	0.071	0.5	ug/L	36	Standard
	Ce	140	291.7	11.0				ug/L	65	Standard
>	Tb	159	1023973.5	1.3				ug/L	939481	Standard
	Ho	165	16.7	45.8				ug/L	7	Standard
	Tl	203	32.0	24.8	**0.0009**	0.001	132.0	ug/L	5	Standard
	Tl	205	18.3	68.6	**-0.0027**	0.003	101.8	ug/L	2	Standard
	Pb	206	1542.7	1.1	**0.3019**	0.005	1.8	ug/L	222	Standard
	Pb	207	1295.1	2.9	**0.2778**	0.010	3.6	ug/L	186	Standard
	Pb	208	4472.6	0.8	**0.2663**	0.002	0.9	ug/L	717	Standard
	U	238	1009.0	2.1	**0.2084**	0.005	2.3	ug/L	2	Standard
>	Bi	209	469272.8	0.4				ug/L	440279	Standard

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Na	23	6.7	**-178579802716483367076694395.672**			46.7	mg/L	2	Standard
Mg	24	50040.8	1.6	**130.6439**	5.595	4.3	mg/L	45	Standard
K	39	243.3	23.1	**7.9946**	1.773	22.2	mg/L	10	Standard
Ca	43	115.0	15.1	**15.7615**	3.619	23.0	mg/L	47	Standard
Fe	54	132.4	22.7	**0.1437**	0.066	46.2	mg/L	46	Standard
Fe	57	933.4	5.6	**2.4617**	0.456	18.5	mg/L	627	Standard
> **Sc-1**	45	26478.1	3.2				mg/L	24506	Standard
Cl	35	73134.8	0.9				ug/L	47100	Standard
Kr	83	3.3	34.6				ug/L	8	Standard
Br	81	48832.0	3.4				ug/L	427	Standard
P	31	14406.9	4.1				ug/L	10519	Standard
S	34	2180.2	7.5				ug/L	2003	Standard
Sr	88	191.7	19.9				ug/L	132	Standard
C	12	966.7	11.3				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	33.3	62.5				mg/L	10	Standard
Dy	164	38.1	1.3				mg/L	13	Standard
Ho-1	165	16.7	45.8				mg/L	7	Standard
Er	166	40.0	25.0				mg/L	7	Standard
I	127	3158684.6	1.6				mg/L	2225	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		123.151	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		102.635	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.418
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.585
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1508090402
Sample Date/Time: Sunday, August 23, 2015 17:04:55
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60130.8	2.9				ug/L	53498	Standard
	Be	9	15.0	33.3	**0.0027**	0.008	300.7	ug/L	12	Standard
	Al	27	2077885.4	4.1	**26.7094**	1.520	5.7	ug/L	487	Standard
	Sc	45	25558.2	4.1				ug/L	24506	Standard
	Ti	47	60.7	10.6	**0.2058**	0.038	18.6	ug/L	21	Standard
	V	51	1412.6	17.3	**0.0261**	0.061	234.1	ug/L	1268	Standard
	Cr	52	9644.1	1.7	**0.3903**	0.026	6.7	ug/L	7921	Standard
	Cr	53	2983.6	7.3	**4.0377**	0.365	9.0	ug/L	442	Standard
	Mn	55	8909.3	3.7	**2.5254**	0.109	4.3	ug/L	545	Standard
	Co	59	388.0	2.2	**0.0553**	0.003	6.0	ug/L	183	Standard
	Ni	60	1127.4	2.5	**0.7552**	0.019	2.6	ug/L	131	Standard
	Cu	65	654.0	6.3	**0.3317**	0.035	10.6	ug/L	231	Standard
	Zn	66	1552.7	2.1	**1.6523**	0.061	3.7	ug/L	306	Standard
>	**Ge**	72	323696.6	0.8				ug/L	330478	Standard
	As	75	190.0	23.7	**0.3061**	0.059	19.2	ug/L	-23	Standard
	Se	82	125.2	8.0	**1.6254**	0.165	10.2	ug/L	27	Standard
	Se-1	77	177.0	1.1	**2.1380**	0.074	3.5	ug/L	92	Standard
>	**Ga**	71	26.7	57.3				mg/L	37	Standard
	Rb	85	1208.4	6.4				ug/L	25	Standard
	Y	89	324135.3	3.8				ug/L	312467	Standard
>	**Rh**	103	178.3	18.7				ug/L	20	Standard
	Mo	98	153.6	63.4	**0.1047**	0.069	66.3	ug/L	13	Standard
	Ag	107	65.7	26.9	**-0.0085**	0.003	39.4	ug/L	72	Standard
	Cd	111	27.7	16.2	**0.0059**	0.003	56.9	mg/L	5	Standard
	Cd	114	68.5	9.6	**0.0099**	0.002	20.0	ug/L	7	Standard
>	**In**	115	508062.2	1.4				ug/L	477820	Standard
	Sn	118	366.7	16.3	**-0.0020**	0.012	610.9	ug/L	343	Standard
	Sb	123	51.6	22.8	**0.0092**	0.003	34.3	ug/L	56	Standard
	Ba	135	10439.9	1.3	**5.1315**	0.135	2.6	ug/L	36	Standard
	Ce	140	256.7	14.8				ug/L	65	Standard
>	**Tb**	159	976742.7	0.8				ug/L	939481	Standard
	Ho	165	11.7	107.9				ug/L	7	Standard
	Tl	203	30.7	13.2	**0.0008**	0.001	84.1	ug/L	5	Standard
	Tl	205	18.3	78.7	**-0.0025**	0.003	129.6	ug/L	2	Standard
	Pb	206	277.7	5.2	**0.0050**	0.004	84.9	ug/L	222	Standard
	Pb	207	243.0	5.4	**0.0050**	0.003	51.8	ug/L	186	Standard
	Pb	208	836.0	1.2	**0.0017**	0.002	88.4	ug/L	717	Standard
	U	238	1059.0	2.3	**0.2254**	0.009	4.0	ug/L	2	Standard
>	**Bi**	209	456635.6	1.6				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	5851.1	4.5	**15.7283**	1.350	8.6	mg/L	45	Standard
K	39	18.3	41.7	**0.2401**	0.289	120.5	mg/L	10	Standard
Ca	43	68.3	22.4	**6.3634**	2.840	44.6	mg/L	47	Standard
Fe	54	86.2	14.4	**0.0433**	0.030	68.6	mg/L	46	Standard
Fe	57	795.0	3.8	**1.4712**	0.497	33.8	mg/L	627	Standard
> **Sc-1**	45	25558.2	4.1				mg/L	24506	Standard
Cl	35	63883.7	0.7				ug/L	47100	Standard
Kr	83	4.3	48.0				ug/L	8	Standard
Br	81	5454.3	5.8				ug/L	427	Standard
P	31	12640.3	2.7				ug/L	10519	Standard
S	34	2213.5	3.3				ug/L	2003	Standard
Sr	88	195.0	9.2				ug/L	132	Standard
C	12	280.0	9.4				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	12.4	127.2				mg/L	13	Standard
Ho-1	165	11.7	107.9				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	77154.4	3.4				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.399	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.948	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	106.329
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	103.715
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508090404
Sample Date/Time: Sunday, August 23, 2015 17:08:06
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59476.7	5.1				ug/L	53498	Standard
	Be	9	11.7	24.7	**-0.0021**	0.005	263.8	ug/L	12	Standard
	Al	27	1025292.5	1.9	**13.3228**	0.443	3.3	ug/L	487	Standard
	Sc	45	25055.7	0.8				ug/L	24506	Standard
	Ti	47	56.7	6.7	**0.1773**	0.021	12.1	ug/L	21	Standard
	V	51	1345.4	6.5	**0.0019**	0.018	963.7	ug/L	1268	Standard
	Cr	52	9057.0	1.9	**0.2367**	0.025	10.6	ug/L	7921	Standard
	Cr	53	1896.8	3.0	**2.2383**	0.058	2.6	ug/L	442	Standard
	Mn	55	5628.7	2.3	**1.4956**	0.040	2.7	ug/L	545	Standard
	Co	59	239.7	6.9	**0.0118**	0.004	35.6	ug/L	183	Standard
	Ni	60	554.7	5.2	**0.3186**	0.019	6.0	ug/L	131	Standard
	Cu	65	573.7	10.2	**0.2607**	0.045	17.2	ug/L	231	Standard
	Zn	66	1400.4	0.8	**1.4076**	0.031	2.2	ug/L	306	Standard
>	Ge	72	330258.8	1.0				ug/L	330478	Standard
	As	75	244.3	17.6	**0.3726**	0.057	15.4	ug/L	-23	Standard
	Se	82	137.6	5.9	**1.7843**	0.132	7.4	ug/L	27	Standard
	Se-1	77	150.3	4.9	**1.4528**	0.153	10.5	ug/L	92	Standard
>	Ga	71	46.7	22.3				mg/L	37	Standard
	Rb	85	178.3	10.6				ug/L	25	Standard
	Y	89	325782.8	2.1				ug/L	312467	Standard
>	Rh	103	136.7	18.4				ug/L	20	Standard
	Mo	98	65.8	45.6	**0.0432**	0.020	47.4	ug/L	13	Standard
	Ag	107	71.7	16.8	**-0.0074**	0.002	32.3	ug/L	72	Standard
	Cd	111	12.1	42.6	**-0.0049**	0.004	72.9	mg/L	5	Standard
	Cd	114	40.0	29.2	**0.0024**	0.003	129.0	ug/L	7	Standard
>	In	115	508945.2	0.6				ug/L	477820	Standard
	Sn	118	436.7	14.2	**0.0125**	0.013	103.3	ug/L	343	Standard
	Sb	123	59.9	15.2	**0.0112**	0.002	20.3	ug/L	56	Standard
	Ba	135	4160.6	1.5	**2.0253**	0.041	2.0	ug/L	36	Standard
	Ce	140	43.3	24.0				ug/L	65	Standard
>	Tb	159	983599.1	0.9				ug/L	939481	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	40.0	28.2	**0.0022**	0.002	75.7	ug/L	5	Standard
	Tl	205	31.7	48.2	**0.0004**	0.003	892.6	ug/L	2	Standard
	Pb	206	267.3	2.2	**0.0026**	0.002	66.7	ug/L	222	Standard
	Pb	207	226.3	4.6	**0.0006**	0.003	455.5	ug/L	186	Standard
	Pb	208	804.3	0.9	**-0.0006**	0.001	114.4	ug/L	717	Standard
	U	238	521.3	4.4	**0.1078**	0.005	4.2	ug/L	2	Standard
>	Bi	209	456076.9	0.5				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	3738.8	9.9	**10.1825**	1.052	10.3	mg/L	45	Standard
K	39	11.7	49.5	**0.0019**	0.210	10998.3	mg/L	10	Standard
Ca	43	46.7	22.3	**1.8734**	2.301	122.8	mg/L	47	Standard
Fe	54	84.3	35.7	**0.0429**	0.075	175.3	mg/L	46	Standard
Fe	57	783.4	16.6	**1.4947**	1.224	81.9	mg/L	627	Standard
> **Sc-1**	45	25055.7	0.8				mg/L	24506	Standard
Cl	35	59590.3	1.6				ug/L	47100	Standard
Kr	83	4.7	53.9				ug/L	8	Standard
Br	81	7225.1	2.3				ug/L	427	Standard
P	31	12006.4	2.3				ug/L	10519	Standard
S	34	2183.5	3.1				ug/L	2003	Standard
Sr	88	176.7	9.9				ug/L	132	Standard
C	12	266.7	4.3				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	6.7	86.6				mg/L	10	Standard
Dy	164	19.4	88.8				mg/L	13	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	7	Standard
I	127	14879.0	2.1				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.176	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.934	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.514
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.588
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Sunday, August 23, 2015 17:11:19
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	54977.9	2.7				ug/L	53498	Standard
	Be	9	31405.9	3.5	**51.9055**	0.423	0.8	ug/L	12	Standard
	Al	27	3663488.7	1.0	**51.4907**	1.032	2.0	ug/L	487	Standard
	Sc	45	24563.2	3.9				ug/L	24506	Standard
	Ti	47	19220.2	0.8	**108.0910**	1.430	1.3	ug/L	21	Standard
	V	51	201538.7	1.5	**52.6705**	1.023	1.9	ug/L	1268	Standard
	Cr	52	264357.8	1.8	**52.1840**	1.228	2.4	ug/L	7921	Standard
	Cr	53	33637.3	1.5	**53.8659**	0.991	1.8	ug/L	442	Standard
	Mn	55	177047.1	0.9	**54.3720**	0.635	1.2	ug/L	545	Standard
	Co	59	183898.0	0.5	**53.0010**	0.455	0.9	ug/L	183	Standard
	Ni	60	68125.8	1.3	**51.6346**	0.928	1.8	ug/L	131	Standard
	Cu	65	66289.7	0.8	**51.8386**	0.653	1.3	ug/L	231	Standard
	Zn	66	37742.3	0.8	**51.5602**	0.575	1.1	ug/L	306	Standard
>	Ge	72	318856.9	0.5				ug/L	330478	Standard
	As	75	37655.2	1.3	**51.2180**	0.880	1.7	ug/L	-23	Standard
	Se	82	3217.3	1.9	**53.0241**	1.187	2.2	ug/L	27	Standard
	Se-1	77	2309.2	1.6	**52.1624**	0.616	1.2	ug/L	92	Standard
>	Ga	71	45.0	11.1				mg/L	37	Standard
	Rb	85	635.0	18.5				ug/L	25	Standard
	Y	89	316916.0	2.1				ug/L	312467	Standard
>	Rh	103	156.7	1.8				ug/L	20	Standard
	Mo	98	141134.1	1.4	**101.6972**	0.531	0.5	ug/L	13	Standard
	Ag	107	253332.0	0.6	**51.2558**	0.909	1.8	ug/L	72	Standard
	Cd	111	72195.2	1.0	**51.8903**	0.398	0.8	mg/L	5	Standard
	Cd	114	188648.8	1.9	**51.7047**	1.733	3.4	ug/L	7	Standard
>	In	115	488051.3	1.7				ug/L	477820	Standard
	Sn	118	224814.1	1.3	**48.9971**	1.286	2.6	ug/L	343	Standard
	Sb	123	191629.3	1.6	**50.4843**	0.207	0.4	ug/L	56	Standard
	Ba	135	98375.4	1.8	**50.5583**	0.569	1.1	ug/L	36	Standard
	Ce	140	100.0	21.8				ug/L	65	Standard
>	Tb	159	958664.2	1.2				ug/L	939481	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	333297.1	0.6	**50.9258**	0.458	0.9	ug/L	5	Standard
	Tl	205	227648.3	2.7	**51.1280**	1.727	3.4	ug/L	2	Standard
	Pb	206	209529.2	0.6	**51.3700**	0.259	0.5	ug/L	222	Standard
	Pb	207	190660.4	0.2	**51.6697**	0.367	0.7	ug/L	186	Standard
	Pb	208	665658.9	0.4	**50.6166**	0.494	1.0	ug/L	717	Standard
	U	238	227220.3	1.4	**50.2562**	1.011	2.0	ug/L	2	Standard
>	Bi	209	451392.1	0.7				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	1928.5	2.9	**5.3009**	0.365	6.9	mg/L	45	Standard
K	39	193.3	24.4	**6.7669**	1.539	22.7	mg/L	10	Standard
Ca	43	46.7	16.4	**2.0532**	1.318	64.2	mg/L	47	Standard
Fe	54	2110.0	2.8	**5.1668**	0.190	3.7	mg/L	46	Standard
Fe	57	1281.7	6.5	**6.5690**	1.208	18.4	mg/L	627	Standard
> **Sc-1**	45	24563.2	3.9				mg/L	24506	Standard
Cl	35	49593.8	5.0				ug/L	47100	Standard
Kr	83	4.0	50.0				ug/L	8	Standard
Br	81	856.7	5.5				ug/L	427	Standard
P	31	10825.5	3.1				ug/L	10519	Standard
S	34	2173.5	4.1				ug/L	2003	Standard
Sr	88	166.7	22.1				ug/L	132	Standard
C	12	163.3	40.8				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	9.2	8.0				mg/L	13	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	16.7	91.7				mg/L	7	Standard
I	127	4879.1	12.6				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	103.811		
Al	27	102.981		
Sc	45			
Ti	47	108.091		
V	51	105.341		
Cr	52	104.368		
Cr	53			
Mn	55	108.744		
Co	59	106.002		
Ni	60	103.269		
Cu	65	103.677		
Zn	66	103.120		
> Ge	72		96.484	
As	75	102.436		
Se	82	106.048		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	101.697		
Ag	107	102.512		
Cd	111	103.781		
Cd	114			
> In	115			102.141
Sn	118	97.994		
Sb	123	100.969		
Ba	135	101.117		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.852		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.233		
U	238	100.512		
> Bi	209			102.524
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Sunday, August 23, 2015 17:14:30
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	53895.8	3.2				ug/L	53498	Standard
	Be	9	16.7	45.8	**0.0083**	0.014	167.1	ug/L	12	Standard
	Al	27	835.0	8.4	**0.0010**	0.001	132.4	ug/L	487	Standard
	Sc	45	25251.0	2.8				ug/L	24506	Standard
	Ti	47	28.0	16.4	**0.0241**	0.025	105.0	ug/L	21	Standard
	V	51	880.3	15.9	**-0.1120**	0.036	32.4	ug/L	1268	Standard
	Cr	52	6329.7	3.3	**-0.2759**	0.042	15.2	ug/L	7921	Standard
	Cr	53	603.3	8.9	**0.2289**	0.086	37.6	ug/L	442	Standard
	Mn	55	633.7	1.2	**0.0130**	0.002	16.7	ug/L	545	Standard
	Co	59	192.3	3.7	**-0.0004**	0.002	485.1	ug/L	183	Standard
	Ni	60	269.3	7.0	**0.1131**	0.014	12.6	ug/L	131	Standard
	Cu	65	447.7	4.5	**0.1713**	0.015	8.8	ug/L	231	Standard
	Zn	66	471.3	2.9	**0.1825**	0.018	9.6	ug/L	306	Standard
>	Ge	72	324392.5	0.1				ug/L	330478	Standard
	As	75	5.7	157.6	**0.0596**	0.012	20.1	ug/L	-23	Standard
	Se	82	41.9	15.4	**0.2614**	0.104	39.9	ug/L	27	Standard
	Se-1	77	95.7	4.0	**0.2554**	0.085	33.1	ug/L	92	Standard
>	Ga	71	23.3	68.9				mg/L	37	Standard
	Rb	85	43.3	37.1				ug/L	25	Standard
	Y	89	315345.3	1.9				ug/L	312467	Standard
>	Rh	103	120.0	7.2				ug/L	20	Standard
	Mo	98	62.8	17.2	**0.0431**	0.008	18.0	ug/L	13	Standard
	Ag	107	87.3	8.1	**-0.0036**	0.001	39.7	ug/L	72	Standard
	Cd	111	6.2	33.7	**-0.0088**	0.002	17.1	mg/L	5	Standard
	Cd	114	15.2	38.0	**-0.0039**	0.002	40.3	ug/L	7	Standard
>	In	115	486993.1	0.1				ug/L	477820	Standard
	Sn	118	428.3	8.2	**0.0148**	0.008	51.0	ug/L	343	Standard
	Sb	123	700.7	7.4	**0.1811**	0.013	7.4	ug/L	56	Standard
	Ba	135	39.7	25.8	**-0.0059**	0.005	88.4	ug/L	36	Standard
	Ce	140	21.7	58.1				ug/L	65	Standard
>	Tb	159	958917.0	1.9				ug/L	939481	Standard
	Ho	165	15.0	120.2				ug/L	7	Standard
	Tl	203	14.0	12.4	**-0.0017**	0.000	16.2	ug/L	5	Standard
	Tl	205	8.3	34.6	**-0.0048**	0.001	13.6	ug/L	2	Standard
	Pb	206	238.3	7.2	**-0.0044**	0.004	100.0	ug/L	222	Standard
	Pb	207	180.0	7.0	**-0.0118**	0.003	29.5	ug/L	186	Standard
	Pb	208	735.3	7.4	**-0.0057**	0.005	82.6	ug/L	717	Standard
	U	238	7.0	28.6	**-0.0047**	0.000	9.7	ug/L	2	Standard
>	Bi	209	455602.6	1.3				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	78.3	14.7	**0.0775**	0.028	36.5	mg/L	45	Standard
K	39	15.0	33.3	**0.1240**	0.196	157.7	mg/L	10	Standard
Ca	43	26.7	39.0	**-2.6524**	2.221	83.7	mg/L	47	Standard
Fe	54	77.7	9.7	**0.0251**	0.020	78.1	mg/L	46	Standard
Fe	57	730.0	7.5	**0.9317**	0.526	56.5	mg/L	627	Standard
> **Sc-1**	45	25251.0	2.8				mg/L	24506	Standard
Cl	35	47145.3	2.6				ug/L	47100	Standard
Kr	83	5.3	10.8				ug/L	8	Standard
Br	81	573.3	9.6				ug/L	427	Standard
P	31	10737.1	2.8				ug/L	10519	Standard
S	34	2331.8	6.9				ug/L	2003	Standard
Sr	88	175.0	30.2				ug/L	132	Standard
C	12	130.0	81.0				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	9.4	107.0				mg/L	13	Standard
Ho-1	165	15.0	120.2				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	4842.4	11.1				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.159	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.920
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.480
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Se	82	

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Method 6020 - Summary Report

Sample ID: L1508090406
Sample Date/Time: Sunday, August 23, 2015 17:17:42
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56848.3	4.6				ug/L	53498	Standard
	Be	9	23.3	68.9	**0.0165**	0.025	150.2	ug/L	12	Standard
	Al	27	4736394.2	1.8	**64.4413**	2.822	4.4	ug/L	487	Standard
	Sc	45	25558.2	4.1				ug/L	24506	Standard
	Ti	47	50.3	25.3	**0.1417**	0.068	47.9	ug/L	21	Standard
	V	51	1524.4	14.8	**0.0460**	0.055	120.4	ug/L	1268	Standard
	Cr	52	8627.5	7.9	**0.1471**	0.138	93.9	ug/L	7921	Standard
	Cr	53	4290.6	18.8	**5.9704**	1.276	21.4	ug/L	442	Standard
	Mn	55	9013.0	2.3	**2.4931**	0.050	2.0	ug/L	545	Standard
	Co	59	389.0	10.6	**0.0530**	0.011	20.7	ug/L	183	Standard
	Ni	60	1549.1	4.7	**1.0437**	0.052	5.0	ug/L	131	Standard
	Cu	65	553.7	10.1	**0.2440**	0.041	16.6	ug/L	231	Standard
	Zn	66	1343.4	1.6	**1.3256**	0.034	2.5	ug/L	306	Standard
>	**Ge**	72	331367.7	0.4				ug/L	330478	Standard
	As	75	173.5	5.5	**0.2788**	0.012	4.3	ug/L	-23	Standard
	Se	82	114.2	11.8	**1.4023**	0.218	15.5	ug/L	27	Standard
	Se-1	77	229.3	7.2	**3.2227**	0.363	11.3	ug/L	92	Standard
>	**Ga**	71	30.0	28.9				mg/L	37	Standard
	Rb	85	938.4	7.7				ug/L	25	Standard
	Y	89	327343.0	2.5				ug/L	312467	Standard
>	**Rh**	103	165.0	16.0				ug/L	20	Standard
	Mo	98	162.2	133.6	**0.1130**	0.153	135.6	ug/L	13	Standard
	Ag	107	140.7	83.3	**0.0069**	0.023	336.4	ug/L	72	Standard
	Cd	111	61.4	73.8	**0.0304**	0.032	104.4	mg/L	5	Standard
	Cd	114	170.0	59.7	**0.0381**	0.027	70.9	ug/L	7	Standard
>	**In**	115	490368.3	1.1				ug/L	477820	Standard
	Sn	118	496.7	32.2	**0.0288**	0.034	116.4	ug/L	343	Standard
	Sb	123	277.1	30.1	**0.0686**	0.021	30.6	ug/L	56	Standard
	Ba	135	32291.4	0.8	**16.4994**	0.090	0.5	ug/L	36	Standard
	Ce	140	113.3	70.1				ug/L	65	Standard
>	**Tb**	159	955584.1	2.3				ug/L	939481	Standard
	Ho	165	10.0	100.0				ug/L	7	Standard
	Tl	203	142.3	138.5	**0.0181**	0.030	167.7	ug/L	5	Standard
	Tl	205	43.3	76.8	**0.0032**	0.008	238.0	ug/L	2	Standard
	Pb	206	322.7	36.9	**0.0175**	0.029	167.3	ug/L	222	Standard
	Pb	207	281.7	33.5	**0.0169**	0.026	151.5	ug/L	186	Standard
	Pb	208	956.7	24.3	**0.0123**	0.018	144.3	ug/L	717	Standard
	U	238	618.3	3.7	**0.1317**	0.005	3.7	ug/L	2	Standard
>	**Bi**	209	447290.3	0.3				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	7081.7	1.1	**19.0414**	0.792	4.2	mg/L	45	Standard
K	39	13.3	57.3	**0.0543**	0.280	516.2	mg/L	10	Standard
Ca	43	81.7	21.5	**9.4461**	4.481	47.4	mg/L	47	Standard
Fe	54	72.6	4.1	**0.0103**	0.006	59.1	mg/L	46	Standard
Fe	57	846.7	4.8	**1.9508**	0.358	18.3	mg/L	627	Standard
> **Sc-1**	45	25558.2	4.1				mg/L	24506	Standard
Cl	35	54114.5	3.2				ug/L	47100	Standard
Kr	83	7.0	24.7				ug/L	8	Standard
Br	81	6884.9	5.4				ug/L	427	Standard
P	31	11639.5	2.6				ug/L	10519	Standard
S	34	2243.5	7.5				ug/L	2003	Standard
Sr	88	211.7	21.2				ug/L	132	Standard
C	12	200.0	40.9				mg/L	177	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	15.7	94.5				mg/L	13	Standard
Ho-1	165	10.0	100.0				mg/L	7	Standard
Er	166	20.0	132.3				mg/L	7	Standard
I	127	22892.3	2.0				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.263	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.269	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.626
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.592
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508090408
Sample Date/Time: Sunday, August 23, 2015 17:20:54
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55091.7	1.7				ug/L	53498	Standard
	Be	9	16.7	34.6	**0.0073**	0.009	125.3	ug/L	12	Standard
	Al	27	1492934.9	0.5	**20.9311**	0.445	2.1	ug/L	487	Standard
	Sc	45	25055.7	5.7				ug/L	24506	Standard
	Ti	47	44.3	12.4	**0.1065**	0.028	26.2	ug/L	21	Standard
	V	51	1714.7	2.3	**0.0895**	0.015	16.8	ug/L	1268	Standard
	Cr	52	8920.6	4.5	**0.1848**	0.095	51.5	ug/L	7921	Standard
	Cr	53	1808.4	7.3	**2.0583**	0.205	10.0	ug/L	442	Standard
	Mn	55	6668.1	2.2	**1.7754**	0.041	2.3	ug/L	545	Standard
	Co	59	289.3	2.5	**0.0245**	0.002	6.6	ug/L	183	Standard
	Ni	60	491.7	3.1	**0.2671**	0.007	2.6	ug/L	131	Standard
	Cu	65	453.7	8.2	**0.1645**	0.025	15.1	ug/L	231	Standard
	Zn	66	1413.7	1.6	**1.3972**	0.013	0.9	ug/L	306	Standard
>	**Ge**	72	335229.0	1.3				ug/L	330478	Standard
	As	75	61.3	32.7	**0.1310**	0.025	18.9	ug/L	-23	Standard
	Se	82	65.9	3.1	**0.6193**	0.032	5.2	ug/L	27	Standard
	Se-1	77	127.7	9.9	**0.9002**	0.317	35.3	ug/L	92	Standard
>	**Ga**	71	20.0	25.0				mg/L	37	Standard
	Rb	85	243.3	11.9				ug/L	25	Standard
	Y	89	319610.6	2.6				ug/L	312467	Standard
>	**Rh**	103	126.7	16.0				ug/L	20	Standard
	Mo	98	31.7	7.1	**0.0210**	0.002	8.2	ug/L	13	Standard
	Ag	107	62.3	11.4	**-0.0084**	0.002	18.4	ug/L	72	Standard
	Cd	111	18.6	16.4	**0.0003**	0.002	668.9	mg/L	5	Standard
	Cd	114	54.8	49.5	**0.0071**	0.007	104.4	ug/L	7	Standard
>	**In**	115	479824.6	0.7				ug/L	477820	Standard
	Sn	118	380.0	7.3	**0.0055**	0.006	113.3	ug/L	343	Standard
	Sb	123	116.8	16.9	**0.0274**	0.005	19.9	ug/L	56	Standard
	Ba	135	2414.2	0.4	**1.2363**	0.011	0.9	ug/L	36	Standard
	Ce	140	101.7	34.5				ug/L	65	Standard
>	**Tb**	159	951210.7	0.7				ug/L	939481	Standard
	Ho	165	23.3	32.7				ug/L	7	Standard
	Tl	203	31.0	14.1	**0.0010**	0.001	68.7	ug/L	5	Standard
	Tl	205	28.3	71.3	**-0.0001**	0.005	3118.2	ug/L	2	Standard
	Pb	206	243.0	3.2	**-0.0016**	0.002	119.2	ug/L	222	Standard
	Pb	207	228.7	6.0	**0.0030**	0.004	138.2	ug/L	186	Standard
	Pb	208	830.3	1.1	**0.0032**	0.001	24.0	ug/L	717	Standard
	U	238	3254.0	0.7	**0.7268**	0.011	1.4	ug/L	2	Standard
>	**Bi**	209	443246.2	0.7				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	4917.5	2.2	**13.4532**	0.577	4.3	mg/L	45	Standard
K	39	10.0	86.6	**-0.0688**	0.289	420.3	mg/L	10	Standard
Ca	43	60.0	8.3	**4.9099**	1.664	33.9	mg/L	47	Standard
Fe	54	65.9	15.6	**-0.0018**	0.033	1816.4	mg/L	46	Standard
Fe	57	738.4	9.1	**1.0962**	0.979	89.3	mg/L	627	Standard
Sc-1	45	25055.7	5.7				mg/L	24506	Standard
Cl	35	57704.3	1.0				ug/L	47100	Standard
Kr	83	4.3	58.1				ug/L	8	Standard
Br	81	3367.0	5.3				ug/L	427	Standard
P	31	11522.7	1.5				ug/L	10519	Standard
S	34	2153.5	11.4				ug/L	2003	Standard
Sr	88	183.3	11.0				ug/L	132	Standard
C	12	210.0	26.5				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	6.7	86.6				mg/L	10	Standard
Dy	164	6.0	193.9				mg/L	13	Standard
Ho-1	165	23.3	32.7				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	7	Standard
I	127	33644.0	3.4				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		102.980	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.438	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.419
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.674
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508092101
Sample Date/Time: Sunday, August 23, 2015 17:24:05
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58941.1	1.3				ug/L	53498	Standard
	Be	9	23.3	12.4	**0.0159**	0.005	30.3	ug/L	12	Standard
	Al	27	2558994.1	1.0	**33.5339**	0.171	0.5	ug/L	487	Standard
	Sc	45	26643.4	3.3				ug/L	24506	Standard
	Ti	47	848.4	6.2	**4.4481**	0.218	4.9	ug/L	21	Standard
	V	51	48074.4	1.1	**11.7895**	0.299	2.5	ug/L	1268	Standard
	Cr	52	31760.3	2.3	**4.6491**	0.057	1.2	ug/L	7921	Standard
	Cr	53	7668.6	4.2	**11.2044**	0.501	4.5	ug/L	442	Standard
	Mn	55	82145.8	0.6	**24.0983**	0.426	1.8	ug/L	545	Standard
	Co	59	1050.4	2.2	**0.2358**	0.012	5.3	ug/L	183	Standard
	Ni	60	2033.8	2.3	**1.3931**	0.039	2.8	ug/L	131	Standard
	Cu	65	2309.5	1.8	**1.5639**	0.022	1.4	ug/L	231	Standard
	Zn	66	7208.0	0.8	**9.0731**	0.212	2.3	ug/L	306	Standard
>	**Ge**	72	332498.8	2.1				ug/L	330478	Standard
	As	75	647.5	5.6	**0.8965**	0.064	7.2	ug/L	-23	Standard
	Se	82	97.4	9.8	**1.1310**	0.176	15.6	ug/L	27	Standard
	Se-1	77	264.0	1.9	**3.9879**	0.236	5.9	ug/L	92	Standard
>	**Ga**	71	320.0	13.5				mg/L	37	Standard
	Rb	85	59073.4	4.3				ug/L	25	Standard
	Y	89	334577.2	0.6				ug/L	312467	Standard
>	**Rh**	103	136.7	16.9				ug/L	20	Standard
	Mo	98	7311.6	1.6	**5.1544**	0.099	1.9	ug/L	13	Standard
	Ag	107	143.3	48.3	**0.0072**	0.014	194.7	ug/L	72	Standard
	Cd	111	64.0	52.4	**0.0320**	0.024	75.4	mg/L	5	Standard
	Cd	114	262.2	39.5	**0.0623**	0.028	45.5	ug/L	7	Standard
>	**In**	115	498708.7	2.0				ug/L	477820	Standard
	Sn	118	3210.3	2.6	**0.6068**	0.004	0.7	ug/L	343	Standard
	Sb	123	723.0	11.9	**0.1826**	0.022	12.2	ug/L	56	Standard
	Ba	135	26415.3	1.0	**13.2684**	0.235	1.8	ug/L	36	Standard
	Ce	140	11082.4	2.5				ug/L	65	Standard
>	**Tb**	159	968622.8	3.8				ug/L	939481	Standard
	Ho	165	240.0	2.1				ug/L	7	Standard
	Tl	203	153.3	73.8	**0.0195**	0.017	89.0	ug/L	5	Standard
	Tl	205	56.7	18.4	**0.0060**	0.002	38.0	ug/L	2	Standard
	Pb	206	5244.9	2.7	**1.2181**	0.037	3.0	ug/L	222	Standard
	Pb	207	4411.3	1.5	**1.1302**	0.019	1.6	ug/L	186	Standard
	Pb	208	16024.3	0.9	**1.1522**	0.024	2.1	ug/L	717	Standard
	U	238	1078.0	4.4	**0.2310**	0.013	5.5	ug/L	2	Standard
>	**Bi**	209	453887.3	1.4				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	12570.2	1.8	**32.5008**	0.951	2.9	mg/L	45	Standard
K	39	190.0	9.5	**6.1400**	0.840	13.7	mg/L	10	Standard
Ca	43	171.7	4.4	**27.5040**	1.167	4.2	mg/L	47	Standard
Fe	54	244.7	2.4	**0.4043**	0.027	6.7	mg/L	46	Standard
Fe	57	883.4	4.7	**1.9644**	0.570	29.0	mg/L	627	Standard
Sc-1	45	26643.4	3.3				mg/L	24506	Standard
Cl	35	65210.1	2.9				ug/L	47100	Standard
Kr	83	6.3	39.7				ug/L	8	Standard
Br	81	2373.5	6.9				ug/L	427	Standard
P	31	13838.0	3.2				ug/L	10519	Standard
S	34	2228.5	2.3				ug/L	2003	Standard
Sr	88	180.0	17.3				ug/L	132	Standard
C	12	293.3	13.8				mg/L	177	Standard
N	14	6.7	86.6				mg/L	3	Standard
Hg	202	120.0	8.3				mg/L	10	Standard
Dy	164	385.2	22.8				mg/L	13	Standard
Ho-1	165	240.0	2.1				mg/L	7	Standard
Er	166	240.0	31.5				mg/L	7	Standard
I	127	13641.2	6.6				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.175	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.612	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.372
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.091
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508092201
Sample Date/Time: Sunday, August 23, 2015 17:27:17
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58163.2	4.3				ug/L	53498	Standard
	Be	9	35.0	75.6	**0.0337**	0.039	115.7	ug/L	12	Standard
	Al	27	1940031.2	2.0	**25.7776**	0.626	2.4	ug/L	487	Standard
	Sc	45	26334.5	2.5				ug/L	24506	Standard
	Ti	47	1606.8	4.0	**8.4835**	0.433	5.1	ug/L	21	Standard
	V	51	28883.6	0.3	**6.8923**	0.113	1.6	ug/L	1268	Standard
	Cr	52	31109.9	2.0	**4.4785**	0.173	3.9	ug/L	7921	Standard
	Cr	53	5647.7	0.7	**7.9927**	0.120	1.5	ug/L	442	Standard
	Mn	55	191611.9	1.7	**56.0230**	1.272	2.3	ug/L	545	Standard
	Co	59	1377.7	2.3	**0.3234**	0.008	2.4	ug/L	183	Standard
	Ni	60	2060.8	4.4	**1.4016**	0.070	5.0	ug/L	131	Standard
	Cu	65	4528.3	1.6	**3.2080**	0.050	1.6	ug/L	231	Standard
	Zn	66	22287.7	1.2	**28.7848**	0.548	1.9	ug/L	306	Standard
>	**Ge**	72	334983.9	1.2				ug/L	330478	Standard
	As	75	600.6	8.7	**0.8294**	0.077	9.3	ug/L	-23	Standard
	Se	82	68.5	6.0	**0.6610**	0.073	11.0	ug/L	27	Standard
	Se-1	77	187.0	2.5	**2.2232**	0.097	4.4	ug/L	92	Standard
>	**Ga**	71	393.3	11.8				mg/L	37	Standard
	Rb	85	29679.0	2.0				ug/L	25	Standard
	Y	89	331128.4	1.9				ug/L	312467	Standard
>	**Rh**	103	121.7	16.6				ug/L	20	Standard
	Mo	98	2815.5	0.8	**1.9635**	0.006	0.3	ug/L	13	Standard
	Ag	107	1184.4	4.3	**0.2110**	0.012	5.6	ug/L	72	Standard
	Cd	111	182.9	7.1	**0.1141**	0.008	7.0	mg/L	5	Standard
	Cd	114	483.3	8.1	**0.1203**	0.011	9.5	ug/L	7	Standard
>	**In**	115	503689.8	0.9				ug/L	477820	Standard
	Sn	118	2550.2	3.3	**0.4604**	0.016	3.5	ug/L	343	Standard
	Sb	123	3125.7	2.2	**0.7941**	0.022	2.7	ug/L	56	Standard
	Ba	135	22190.9	1.0	**11.0296**	0.035	0.3	ug/L	36	Standard
	Ce	140	21996.0	2.4				ug/L	65	Standard
>	**Tb**	159	978171.8	1.5				ug/L	939481	Standard
	Ho	165	368.3	12.9				ug/L	7	Standard
	Tl	203	107.3	9.7	**0.0123**	0.002	12.4	ug/L	5	Standard
	Tl	205	96.7	20.9	**0.0147**	0.005	30.7	ug/L	2	Standard
	Pb	206	16222.3	1.2	**3.8614**	0.051	1.3	ug/L	222	Standard
	Pb	207	13485.7	1.2	**3.5451**	0.038	1.1	ug/L	186	Standard
	Pb	208	49883.6	0.9	**3.6809**	0.042	1.1	ug/L	717	Standard
	U	238	749.0	5.5	**0.1570**	0.009	5.9	ug/L	2	Standard
>	**Bi**	209	458097.0	0.3				ug/L	440279	Standard

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Na	23	1.7	**-438786346841**7600002463961	5.812	173.2	mg/L	2	Standard
Mg	24	5909.5	4.7	**15.3905**	0.971	6.3	mg/L	45	Standard
K	39	141.7	14.3	**4.5099**	0.642	14.2	mg/L	10	Standard
Ca	43	116.7	28.5	**16.3407**	7.566	46.3	mg/L	47	Standard
Fe	54	356.5	3.1	**0.6745**	0.040	5.9	mg/L	46	Standard
Fe	57	960.0	0.5	**2.7535**	0.223	8.1	mg/L	627	Standard
Sc-1	45	26334.5	2.5				mg/L	24506	Standard
Cl	35	58557.6	0.5				ug/L	47100	Standard
Kr	83	3.0	66.7				ug/L	8	Standard
Br	81	1803.4	7.0				ug/L	427	Standard
P	31	13102.3	4.7				ug/L	10519	Standard
S	34	2185.2	3.5				ug/L	2003	Standard
Sr	88	215.0	22.2				ug/L	132	Standard
C	12	283.3	39.0				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	50.0	0.0				mg/L	10	Standard
Dy	164	577.7	3.8				mg/L	13	Standard
Ho-1	165	368.3	12.9				mg/L	7	Standard
Er	166	396.7	27.7				mg/L	7	Standard
I	127	9806.5	0.6				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		108.721	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.364	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.414
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.047
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508094601
Sample Date/Time: Sunday, August 23, 2015 17:30:28
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59776.0	1.1				ug/L	53498	Standard
	Be	9	11.7	24.7	**-0.0023**	0.005	196.6	ug/L	12	Standard
	Al	27	5651201.6	2.0	**73.0272**	0.680	0.9	ug/L	487	Standard
	Sc	45	26928.9	1.1				ug/L	24506	Standard
	Ti	47	633.3	6.0	**3.1883**	0.193	6.0	ug/L	21	Standard
	V	51	1484.6	23.7	**0.0231**	0.081	351.0	ug/L	1268	Standard
	Cr	52	12216.6	2.4	**0.7718**	0.104	13.4	ug/L	7921	Standard
	Cr	53	12174.9	2.3	**17.6717**	0.897	5.1	ug/L	442	Standard
	Mn	55	26964.6	0.7	**7.5553**	0.144	1.9	ug/L	545	Standard
	Co	59	860.0	4.3	**0.1760**	0.008	4.4	ug/L	183	Standard
	Ni	60	2267.2	3.7	**1.5150**	0.084	5.5	ug/L	131	Standard
	Cu	65	51536.2	1.3	**37.4664**	0.691	1.8	ug/L	231	Standard
	Zn	66	87139.9	2.0	**111.3316**	2.351	2.1	ug/L	306	Standard
>	**Ge**	72	342621.4	2.5				ug/L	330478	Standard
	As	75	270.1	26.7	**0.3935**	0.089	22.7	ug/L	-23	Standard
	Se	82	120.5	7.4	**1.4383**	0.101	7.0	ug/L	27	Standard
	Se-1	77	603.0	5.5	**11.2192**	1.047	9.3	ug/L	92	Standard
>	**Ga**	71	118.3	6.5				mg/L	37	Standard
	Rb	85	38931.6	1.3				ug/L	25	Standard
	Y	89	329448.9	1.7				ug/L	312467	Standard
>	**Rh**	103	123.3	15.3				ug/L	20	Standard
	Mo	98	8057.2	1.1	**5.6320**	0.082	1.5	ug/L	13	Standard
	Ag	107	175.3	10.5	**0.0132**	0.004	28.0	ug/L	72	Standard
	Cd	111	50.6	13.0	**0.0220**	0.005	21.1	mg/L	5	Standard
	Cd	114	132.3	15.7	**0.0271**	0.005	20.0	ug/L	7	Standard
>	**In**	115	502923.8	0.6				ug/L	477820	Standard
	Sn	118	2026.8	4.6	**0.3504**	0.018	5.0	ug/L	343	Standard
	Sb	123	227.1	7.9	**0.0542**	0.005	8.7	ug/L	56	Standard
	Ba	135	28909.9	0.3	**14.3996**	0.132	0.9	ug/L	36	Standard
	Ce	140	253.3	8.0				ug/L	65	Standard
>	**Tb**	159	982912.5	0.6				ug/L	939481	Standard
	Ho	165	18.3	15.7				ug/L	7	Standard
	Tl	203	26.3	28.0	**0.0001**	0.001	928.9	ug/L	5	Standard
	Tl	205	10.0	100.0	**-0.0045**	0.002	48.9	ug/L	2	Standard
	Pb	206	1339.1	1.8	**0.2599**	0.007	2.7	ug/L	222	Standard
	Pb	207	1123.7	5.1	**0.2388**	0.016	6.6	ug/L	186	Standard
	Pb	208	4040.2	0.9	**0.2404**	0.001	0.5	ug/L	717	Standard
	U	238	755.0	2.2	**0.1575**	0.005	3.2	ug/L	2	Standard
>	**Bi**	209	460378.3	0.9				ug/L	440279	Standard

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Na	23	3.3	**-8697631472607**5337533163131.203			86.6	mg/L	2	Standard
Mg	24	43338.6	1.5	**111.1333**	0.960	0.9	mg/L	45	Standard
K	39	195.0	16.8	**6.2321**	1.193	19.1	mg/L	10	Standard
Ca	43	118.3	12.2	**16.0618**	3.252	20.2	mg/L	47	Standard
Fe	54	147.3	11.9	**0.1736**	0.044	25.4	mg/L	46	Standard
Fe	57	906.7	4.7	**2.0760**	0.291	14.0	mg/L	627	Standard
Sc-1	45	26928.9	1.1				mg/L	24506	Standard
Cl	35	62114.4	1.2				ug/L	47100	Standard
Kr	83	8.7	17.6				ug/L	8	Standard
Br	81	6411.4	3.2				ug/L	427	Standard
P	31	12932.2	1.2				ug/L	10519	Standard
S	34	2323.5	0.2				ug/L	2003	Standard
Sr	88	190.0	11.5				ug/L	132	Standard
C	12	860.0	8.1				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	73.3	15.7				mg/L	10	Standard
Dy	164	26.2	58.3				mg/L	13	Standard
Ho-1	165	18.3	15.7				mg/L	7	Standard
Er	166	10.0					mg/L	7	Standard
I	127	2841543.2	0.7				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.736	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.675	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.254
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.565
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1508094601
Sample Date/Time: Sunday, August 23, 2015 17:38:24
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55290.7	1.7				ug/L	53498	Standard
	Be	9	6.7	114.6	**-0.0093**	0.012	133.2	ug/L	12	Standard
	Al	27	1087140.8	1.1	**15.1832**	0.297	2.0	ug/L	487	Standard
	Sc	45	26625.0	1.8				ug/L	24506	Standard
	Ti	47	152.3	5.9	**0.6596**	0.050	7.5	ug/L	21	Standard
	V	51	1243.7	4.0	**-0.0381**	0.014	37.8	ug/L	1268	Standard
	Cr	52	9543.3	2.2	**0.2466**	0.029	11.6	ug/L	7921	Standard
	Cr	53	3258.7	3.2	**4.1407**	0.198	4.8	ug/L	442	Standard
	Mn	55	6235.6	1.6	**1.5913**	0.026	1.6	ug/L	545	Standard
	Co	59	305.0	8.8	**0.0261**	0.007	25.9	ug/L	183	Standard
	Ni	60	626.3	1.7	**0.3503**	0.010	2.9	ug/L	131	Standard
	Cu	65	10937.9	0.9	**7.7332**	0.045	0.6	ug/L	231	Standard
	Zn	66	19145.1	0.4	**23.8562**	0.312	1.3	ug/L	306	Standard
>	**Ge**	72	346068.1	0.9				ug/L	330478	Standard
	As	75	67.1	92.0	**0.1359**	0.077	56.4	ug/L	-23	Standard
	Se	82	45.0	22.9	**0.2652**	0.155	58.4	ug/L	27	Standard
	Se-1	77	190.0	2.4	**2.1550**	0.135	6.2	ug/L	92	Standard
>	**Ga**	71	45.0	22.2				mg/L	37	Standard
	Rb	85	7962.1	3.1				ug/L	25	Standard
	Y	89	333459.5	0.4				ug/L	312467	Standard
>	**Rh**	103	66.7	4.3				ug/L	20	Standard
	Mo	98	1580.3	4.2	**1.1349**	0.023	2.0	ug/L	13	Standard
	Ag	107	88.7	6.5	**-0.0033**	0.001	41.7	ug/L	72	Standard
	Cd	111	14.2	18.5	**-0.0031**	0.002	57.2	mg/L	5	Standard
	Cd	114	48.0	53.1	**0.0050**	0.007	135.8	ug/L	7	Standard
>	**In**	115	488571.0	2.2				ug/L	477820	Standard
	Sn	118	633.3	3.0	**0.0593**	0.004	6.6	ug/L	343	Standard
	Sb	123	88.0	4.8	**0.0193**	0.001	4.2	ug/L	56	Standard
	Ba	135	5743.1	1.7	**2.9238**	0.021	0.7	ug/L	36	Standard
	Ce	140	65.0	33.5				ug/L	65	Standard
>	**Tb**	159	957660.3	0.8				ug/L	939481	Standard
	Ho	165	13.3	78.1				ug/L	7	Standard
	Tl	203	23.7	17.1	**-0.0002**	0.001	336.4	ug/L	5	Standard
	Tl	205	10.0	50.0	**-0.0044**	0.001	26.8	ug/L	2	Standard
	Pb	206	495.3	6.9	**0.0596**	0.006	9.4	ug/L	222	Standard
	Pb	207	374.7	2.8	**0.0419**	0.001	1.4	ug/L	186	Standard
	Pb	208	1498.7	2.9	**0.0534**	0.006	11.2	ug/L	717	Standard
	U	238	158.7	3.5	**0.0290**	0.002	7.0	ug/L	2	Standard
>	**Bi**	209	449558.6	2.4				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	8352.3	0.5	**21.5577**	0.445	2.1	mg/L	45	Standard
K	39	56.7	18.4	**1.5336**	0.389	25.4	mg/L	10	Standard
Ca	43	48.3	15.8	**1.6129**	1.599	99.1	mg/L	47	Standard
Fe	54	97.3	29.7	**0.0604**	0.065	107.8	mg/L	46	Standard
Fe	57	851.7	3.8	**1.6711**	0.184	11.0	mg/L	627	Standard
> **Sc-1**	45	26625.0	1.8				mg/L	24506	Standard
Cl	35	54985.6	0.9				ug/L	47100	Standard
Kr	83	5.7	20.4				ug/L	8	Standard
Br	81	1790.1	1.9				ug/L	427	Standard
P	31	11100.7	2.0				ug/L	10519	Standard
S	34	2265.2	1.6				ug/L	2003	Standard
Sr	88	220.0	4.5				ug/L	132	Standard
C	12	296.7	19.8				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	10.0	100.0				mg/L	10	Standard
Dy	164	22.9	27.1				mg/L	13	Standard
Ho-1	165	13.3	78.1				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	557549.1	3.1				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.352	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.718	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.250
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.108
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508085801
Sample Date/Time: Sunday, August 23, 2015 17:41:35
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55724.0	3.6				ug/L	53498	Standard
	Be	9	6.7	86.6	**-0.0094**	0.009	97.9	ug/L	12	Standard
	Al	27	547520.4	1.6	**7.5842**	0.158	2.1	ug/L	487	Standard
	Sc	45	26149.2	2.2				ug/L	24506	Standard
	Ti	47	81.7	17.4	**0.2951**	0.067	22.8	ug/L	21	Standard
	V	51	1448.2	4.4	**0.0138**	0.015	108.7	ug/L	1268	Standard
	Cr	52	9217.1	3.8	**0.1981**	0.078	39.2	ug/L	7921	Standard
	Cr	53	2115.1	3.7	**2.4534**	0.166	6.8	ug/L	442	Standard
	Mn	55	3042.3	3.5	**0.6907**	0.023	3.3	ug/L	545	Standard
	Co	59	271.0	7.4	**0.0176**	0.006	32.8	ug/L	183	Standard
	Ni	60	411.0	5.3	**0.2017**	0.016	7.9	ug/L	131	Standard
	Cu	65	7013.6	2.3	**4.9334**	0.180	3.7	ug/L	231	Standard
	Zn	66	11347.9	2.1	**14.0549**	0.242	1.7	ug/L	306	Standard
>	**Ge**	72	343661.7	1.6				ug/L	330478	Standard
	As	75	110.7	6.3	**0.1916**	0.009	4.4	ug/L	-23	Standard
	Se	82	89.7	5.6	**0.9606**	0.098	10.2	ug/L	27	Standard
	Se-1	77	141.3	5.4	**1.1238**	0.125	11.1	ug/L	92	Standard
>	**Ga**	71	20.0	90.1				mg/L	37	Standard
	Rb	85	3710.5	6.7				ug/L	25	Standard
	Y	89	333447.2	3.6				ug/L	312467	Standard
>	**Rh**	103	105.0	33.3				ug/L	20	Standard
	Mo	98	949.6	3.8	**0.6828**	0.023	3.3	ug/L	13	Standard
	Ag	107	83.7	7.8	**-0.0043**	0.001	31.7	ug/L	72	Standard
	Cd	111	8.7	11.8	**-0.0070**	0.001	10.8	mg/L	5	Standard
	Cd	114	20.6	90.5	**-0.0024**	0.005	210.0	ug/L	7	Standard
>	**In**	115	487458.7	0.5				ug/L	477820	Standard
	Sn	118	538.3	5.1	**0.0388**	0.006	14.3	ug/L	343	Standard
	Sb	123	76.0	8.6	**0.0162**	0.002	10.9	ug/L	56	Standard
	Ba	135	2825.9	2.6	**1.4284**	0.036	2.5	ug/L	36	Standard
	Ce	140	51.7	22.3				ug/L	65	Standard
>	**Tb**	159	964304.6	0.9				ug/L	939481	Standard
	Ho	165	10.0					ug/L	7	Standard
	Tl	203	19.0	24.1	**-0.0009**	0.001	79.5	ug/L	5	Standard
	Tl	205	10.0	100.0	**-0.0044**	0.002	50.0	ug/L	2	Standard
	Pb	206	385.3	3.5	**0.0322**	0.003	8.2	ug/L	222	Standard
	Pb	207	339.3	5.0	**0.0319**	0.004	12.4	ug/L	186	Standard
	Pb	208	1243.4	1.9	**0.0334**	0.001	2.2	ug/L	717	Standard
	U	238	101.3	4.7	**0.0161**	0.001	5.5	ug/L	2	Standard
>	**Bi**	209	451516.3	1.3				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	4397.3	6.9	**11.4893**	0.746	6.5	mg/L	45	Standard
K	39	25.0	52.9	**0.4480**	0.444	99.2	mg/L	10	Standard
Ca	43	33.3	69.3	**-1.4709**	4.750	323.0	mg/L	47	Standard
Fe	54	91.1	35.7	**0.0507**	0.081	159.3	mg/L	46	Standard
Fe	57	846.7	1.4	**1.7694**	0.202	11.4	mg/L	627	Standard
> **Sc-1**	45	26149.2	2.2				mg/L	24506	Standard
Cl	35	53759.9	0.5				ug/L	47100	Standard
Kr	83	3.3	45.8				ug/L	8	Standard
Br	81	5444.3	1.7				ug/L	427	Standard
P	31	10807.2	1.8				ug/L	10519	Standard
S	34	2186.8	2.2				ug/L	2003	Standard
Sr	88	181.7	22.1				ug/L	132	Standard
C	12	256.7	67.1				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	10.0	100.0				mg/L	10	Standard
Dy	164	8.7	114.7				mg/L	13	Standard
Ho-1	165	10.0					mg/L	7	Standard
Er	166	26.7	21.7				mg/L	7	Standard
I	127	283359.0	1.8				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.162	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.989	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.017
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.552
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Sunday, August 23, 2015 17:44:48
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	52332.0	3.8				ug/L	53498	Standard
	Be	9	29685.7	2.2	**51.5812**	1.513	2.9	ug/L	12	Standard
	Al	27	3468959.8	2.7	**51.2230**	1.044	2.0	ug/L	487	Standard
	Sc	45	25703.5	2.5				ug/L	24506	Standard
	Ti	47	19839.0	1.2	**104.9448**	2.876	2.7	ug/L	21	Standard
	V	51	206781.8	1.4	**50.8144**	1.106	2.2	ug/L	1268	Standard
	Cr	52	275172.4	0.9	**51.0518**	0.665	1.3	ug/L	7921	Standard
	Cr	53	34278.8	2.6	**51.5867**	0.876	1.7	ug/L	442	Standard
	Mn	55	183555.9	1.0	**53.0097**	0.357	0.7	ug/L	545	Standard
	Co	59	187127.2	1.0	**50.7209**	0.744	1.5	ug/L	183	Standard
	Ni	60	71873.4	0.9	**51.2365**	1.114	2.2	ug/L	131	Standard
	Cu	65	69340.7	1.1	**50.9915**	0.295	0.6	ug/L	231	Standard
	Zn	66	39210.7	1.3	**50.3670**	0.671	1.3	ug/L	306	Standard
>	Ge	72	339062.1	1.7				ug/L	330478	Standard
	As	75	39215.9	1.6	**50.1626**	0.486	1.0	ug/L	-23	Standard
	Se	82	3286.7	2.4	**50.9160**	0.395	0.8	ug/L	27	Standard
	Se-1	77	2354.5	2.8	**49.9322**	0.592	1.2	ug/L	92	Standard
>	Ga	71	46.7	16.4				mg/L	37	Standard
	Rb	85	600.0	6.3				ug/L	25	Standard
	Y	89	322124.0	1.9				ug/L	312467	Standard
>	Rh	103	80.0	28.6				ug/L	20	Standard
	Mo	98	136141.7	1.1	**98.0306**	1.457	1.5	ug/L	13	Standard
	Ag	107	249703.9	0.9	**50.4798**	0.838	1.7	ug/L	72	Standard
	Cd	111	70158.1	0.3	**50.3888**	0.634	1.3	mg/L	5	Standard
	Cd	114	188841.1	1.3	**51.7006**	0.226	0.4	ug/L	7	Standard
>	In	115	488406.2	1.0				ug/L	477820	Standard
	Sn	118	216570.3	1.3	**47.1568**	1.020	2.2	ug/L	343	Standard
	Sb	123	189308.0	0.3	**49.8381**	0.374	0.7	ug/L	56	Standard
	Ba	135	98192.2	1.7	**50.4277**	0.879	1.7	ug/L	36	Standard
	Ce	140	98.3	20.5				ug/L	65	Standard
>	Tb	159	956296.3	1.5				ug/L	939481	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	329666.9	0.3	**50.0830**	0.368	0.7	ug/L	5	Standard
	Tl	205	226448.5	2.1	**50.5654**	1.344	2.7	ug/L	2	Standard
	Pb	206	207455.7	0.8	**50.5696**	0.295	0.6	ug/L	222	Standard
	Pb	207	187356.0	0.9	**50.4818**	0.464	0.9	ug/L	186	Standard
	Pb	208	665675.7	0.2	**50.3286**	0.536	1.1	ug/L	717	Standard
	U	238	229294.7	0.9	**50.4249**	0.859	1.7	ug/L	2	Standard
>	Bi	209	453991.1	0.8				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	1935.1	4.2	**5.0671**	0.092	1.8	mg/L	45	Standard
K	39	166.7	33.0	**5.5065**	1.845	33.5	mg/L	10	Standard
Ca	43	76.7	24.7	**8.0824**	3.755	46.5	mg/L	47	Standard
Fe	54	2073.0	10.3	**4.8467**	0.622	12.8	mg/L	46	Standard
Fe	57	1255.1	6.4	**5.7289**	0.549	9.6	mg/L	627	Standard
Sc-1	45	25703.5	2.5				mg/L	24506	Standard
Cl	35	47316.4	1.6				ug/L	47100	Standard
Kr	83	5.3	57.3				ug/L	8	Standard
Br	81	533.3	22.5				ug/L	427	Standard
P	31	11677.8	2.9				ug/L	10519	Standard
S	34	2396.9	6.0				ug/L	2003	Standard
Sr	88	173.3	22.4				ug/L	132	Standard
C	12	206.7	32.2				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	6.7	86.6				mg/L	10	Standard
Dy	164	2.7	219.6				mg/L	13	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	7	Standard
I	127	1918.5	16.1				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	103.162		
Al	27	102.446		
Sc	45			
Ti	47	104.945		
V	51	101.629		
Cr	52	102.104		
Cr	53			
Mn	55	106.019		
Co	59	101.442		
Ni	60	102.473		
Cu	65	101.983		
Zn	66	100.734		
Ge	72		102.598	
As	75	100.325		
Se	82	101.832		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.031		
Ag	107	100.960		
Cd	111	100.778		
Cd	114			
> In	115			102.215
Sn	118	94.314		
Sb	123	99.676		
Ba	135	100.855		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.166		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.657		
U	238	100.850		
> Bi	209			103.114
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Sunday, August 23, 2015 17:47:59
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53745.2	0.8				ug/L	53498	Standard
	Be	9	25.0	40.0	**0.0223**	0.017	77.5	ug/L	12	Standard
	Al	27	1791.8	54.1	**0.0148**	0.014	93.7	ug/L	487	Standard
	Sc	45	25391.3	1.5				ug/L	24506	Standard
	Ti	47	27.3	4.2	**0.0148**	0.005	36.6	ug/L	21	Standard
	V	51	1051.2	1.5	**-0.0780**	0.002	2.6	ug/L	1268	Standard
	Cr	52	6554.1	3.9	**-0.2797**	0.053	19.0	ug/L	7921	Standard
	Cr	53	556.7	6.1	**0.1214**	0.056	46.5	ug/L	442	Standard
	Mn	55	707.7	10.4	**0.0275**	0.023	81.9	ug/L	545	Standard
	Co	59	230.0	15.1	**0.0079**	0.010	123.8	ug/L	183	Standard
	Ni	60	182.0	4.7	**0.0429**	0.007	15.4	ug/L	131	Standard
	Cu	65	328.0	4.3	**0.0696**	0.009	13.2	ug/L	231	Standard
	Zn	66	367.0	6.8	**0.0226**	0.030	133.3	ug/L	306	Standard
>	**Ge**	72	336968.3	0.8				ug/L	330478	Standard
	As	75	-18.2	164.5	**0.0288**	0.038	133.0	ug/L	-23	Standard
	Se	82	18.2	5.9	**-0.1360**	0.017	12.7	ug/L	27	Standard
	Se-1	77	80.7	18.1	**-0.1604**	0.316	197.0	ug/L	92	Standard
>	**Ga**	71	20.0	25.0				mg/L	37	Standard
	Rb	85	35.0	14.3				ug/L	25	Standard
	Y	89	323598.3	1.9				ug/L	312467	Standard
>	**Rh**	103	80.0	43.8				ug/L	20	Standard
	Mo	98	109.4	57.5	**0.0766**	0.045	58.1	ug/L	13	Standard
	Ag	107	114.7	61.4	**0.0020**	0.014	722.7	ug/L	72	Standard
	Cd	111	20.8	124.5	**0.0017**	0.019	1084.0	mg/L	5	Standard
	Cd	114	57.6	139.2	**0.0077**	0.022	285.7	ug/L	7	Standard
>	**In**	115	486481.8	1.4				ug/L	477820	Standard
	Sn	118	523.3	4.5	**0.0358**	0.005	14.7	ug/L	343	Standard
	Sb	123	761.7	6.4	**0.1976**	0.015	7.6	ug/L	56	Standard
	Ba	135	76.7	68.2	**0.0131**	0.027	203.8	ug/L	36	Standard
	Ce	140	20.0	25.0				ug/L	65	Standard
>	**Tb**	159	961866.0	1.8				ug/L	939481	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	80.7	137.9	**0.0083**	0.017	201.0	ug/L	5	Standard
	Tl	205	70.0	53.9	**0.0088**	0.008	93.7	ug/L	2	Standard
	Pb	206	307.3	23.4	**0.0120**	0.017	141.1	ug/L	222	Standard
	Pb	207	265.3	17.0	**0.0109**	0.012	107.2	ug/L	186	Standard
	Pb	208	891.0	11.7	**0.0058**	0.007	129.1	ug/L	717	Standard
	U	238	46.7	26.8	**0.0039**	0.003	68.2	ug/L	2	Standard
>	**Bi**	209	457060.3	0.7				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	66.7	35.4	**0.0443**	0.063	141.3	mg/L	45	Standard
K	39	6.7	114.6	**-0.1817**	0.281	154.8	mg/L	10	Standard
Ca	43	28.3	40.8	**-2.3215**	2.477	106.7	mg/L	47	Standard
Fe	54	66.1	23.2	**-0.0045**	0.037	813.6	mg/L	46	Standard
Fe	57	746.7	1.5	**1.0502**	0.068	6.5	mg/L	627	Standard
> **Sc-1**	45	25391.3	1.5				mg/L	24506	Standard
Cl	35	46270.6	1.9				ug/L	47100	Standard
Kr	83	4.3	70.5				ug/L	8	Standard
Br	81	623.3	11.4				ug/L	427	Standard
P	31	10728.8	1.4				ug/L	10519	Standard
S	34	2353.5	1.2				ug/L	2003	Standard
Sr	88	190.0	7.0				ug/L	132	Standard
C	12	146.7	59.6				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	23.0	107.2				mg/L	13	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	7	Standard
I	127	2806.9	8.4				mg/L	2225	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.964	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.813
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.811
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Sunday, August 23, 2015 17:51:12
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	53084.5	1.5				ug/L	53498	Standard
	Be	9	121.7	30.8	**0.1878**	0.062	32.8	ug/L	12	Standard
	Al	27	503.3	17.3	**-0.0036**	0.001	33.4	ug/L	487	Standard
	Sc	45	25541.5	2.5				ug/L	24506	Standard
	Ti	47	22.3	20.7	**-0.0120**	0.023	190.4	ug/L	21	Standard
	V	51	2632.9	4.4	**0.3164**	0.031	9.9	ug/L	1268	Standard
	Cr	52	11264.5	1.7	**0.6283**	0.065	10.3	ug/L	7921	Standard
	Cr	53	1070.0	4.7	**0.9112**	0.076	8.3	ug/L	442	Standard
	Mn	55	2419.5	3.0	**0.5271**	0.012	2.4	ug/L	545	Standard
	Co	59	1649.8	1.1	**0.3959**	0.008	2.0	ug/L	183	Standard
	Ni	60	2350.8	2.5	**1.6025**	0.042	2.6	ug/L	131	Standard
	Cu	65	1484.4	1.1	**0.9294**	0.032	3.5	ug/L	231	Standard
	Zn	66	4884.5	2.4	**5.9195**	0.133	2.2	ug/L	306	Standard
>	Ge	72	336691.3	1.9				ug/L	330478	Standard
	As	75	290.5	9.0	**0.4255**	0.027	6.3	ug/L	-23	Standard
	Se	82	49.9	9.9	**0.3617**	0.064	17.7	ug/L	27	Standard
	Se-1	77	102.7	3.9	**0.3298**	0.055	16.6	ug/L	92	Standard
>	Ga	71	28.3	83.4				mg/L	37	Standard
	Rb	85	38.3	27.2				ug/L	25	Standard
	Y	89	324461.7	3.5				ug/L	312467	Standard
>	Rh	103	63.3	27.7				ug/L	20	Standard
	Mo	98	22.1	9.4	**0.0139**	0.002	11.7	ug/L	13	Standard
	Ag	107	1969.8	0.5	**0.3824**	0.005	1.3	ug/L	72	Standard
	Cd	111	344.3	8.6	**0.2372**	0.019	8.0	mg/L	5	Standard
	Cd	114	870.2	5.2	**0.2333**	0.010	4.4	ug/L	7	Standard
>	In	115	482028.8	1.0				ug/L	477820	Standard
	Sn	118	553.3	8.4	**0.0434**	0.010	23.1	ug/L	343	Standard
	Sb	123	1694.4	2.6	**0.4482**	0.015	3.4	ug/L	56	Standard
	Ba	135	1449.1	2.7	**0.7280**	0.018	2.4	ug/L	36	Standard
	Ce	140	23.3	44.6				ug/L	65	Standard
>	Tb	159	950114.5	1.4				ug/L	939481	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	564.7	3.4	**0.0816**	0.003	3.1	ug/L	5	Standard
	Tl	205	361.7	5.6	**0.0738**	0.005	6.9	ug/L	2	Standard
	Pb	206	1065.0	5.8	**0.1966**	0.016	8.1	ug/L	222	Standard
	Pb	207	903.7	3.2	**0.1827**	0.007	3.6	ug/L	186	Standard
	Pb	208	3442.8	3.4	**0.1985**	0.010	4.8	ug/L	717	Standard
	U	238	1825.8	0.8	**0.3938**	0.006	1.5	ug/L	2	Standard
>	Bi	209	455657.4	0.8				ug/L	440279	Standard

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Na	23	1.7	**-4613857355297991435358248**4.312		173.2	mg/L	2	Standard
Mg	24	55.0	18.2	**0.0124**	0.029	232.6	mg/L	45	Standard
K	39	10.0	50.0	**-0.0673**	0.172	255.8	mg/L	10	Standard
Ca	43	21.7	58.1	**-3.7743**	2.848	75.5	mg/L	47	Standard
Fe	54	57.5	33.2	**-0.0256**	0.050	194.6	mg/L	46	Standard
Fe	57	773.4	7.5	**1.2657**	0.623	49.2	mg/L	627	Standard
Sc-1	45	25541.5	2.5				mg/L	24506	Standard
Cl	35	46090.7	1.4				ug/L	47100	Standard
Kr	83	4.0	25.0				ug/L	8	Standard
Br	81	460.0	14.3				ug/L	427	Standard
P	31	10468.6	2.9				ug/L	10519	Standard
S	34	2280.2	0.7				ug/L	2003	Standard
Sr	88	173.3	11.7				ug/L	132	Standard
C	12	173.3	46.6				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	9.5	100.0				mg/L	13	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	1055.0	7.2				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	93.901		
Al	27			
Sc	45			
Ti	47			
V	51	79.089		
Cr	52	78.541		
Cr	53			
Mn	55	105.410		
Co	59	98.971		
Ni	60	100.156		
Cu	65	116.180		
Zn	66	94.712		
Ge	72		101.880	
As	75	106.364		
Se	82	90.415		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	95.590		
Cd	111	98.845		
Cd	114			
> In	115			100.881
Sn	118			
Sb	123	112.050		
Ba	135	97.069		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	102.056		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.231		
U	238	98.454		
> Bi	209			103.493
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW R7 WG535816-02
Sample Date/Time: Sunday, August 23, 2015 18:07:13
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53895.8	4.4				ug/L	53498	Standard
	Be	9	11.7	89.2	**-0.0002**	0.018	10269.1	ug/L	12	Standard
	Al	27	6534.7	3.1	**0.0828**	0.002	2.1	ug/L	487	Standard
	Sc	45	26371.3	1.9				ug/L	24506	Standard
	Ti	47	30.7	18.0	**0.0274**	0.029	106.6	ug/L	21	Standard
	V	51	1196.8	6.4	**-0.0514**	0.018	34.5	ug/L	1268	Standard
	Cr	52	7856.7	3.3	**-0.0780**	0.060	77.1	ug/L	7921	Standard
	Cr	53	531.7	3.0	**0.0563**	0.013	23.3	ug/L	442	Standard
	Mn	55	942.7	4.7	**0.0870**	0.009	10.8	ug/L	545	Standard
	Co	59	198.7	1.0	**-0.0025**	0.000	6.9	ug/L	183	Standard
	Ni	60	182.0	6.7	**0.0386**	0.007	18.1	ug/L	131	Standard
	Cu	65	324.3	5.7	**0.0591**	0.014	23.8	ug/L	231	Standard
	Zn	66	1480.4	2.1	**1.4122**	0.037	2.6	ug/L	306	Standard
>	**Ge**	72	348245.1	1.4				ug/L	330478	Standard
	As	75	-38.6	71.8	**0.0042**	0.034	811.3	ug/L	-23	Standard
	Se	82	23.5	26.8	**-0.0651**	0.097	148.8	ug/L	27	Standard
	Se-1	77	87.3	12.6	**-0.0743**	0.235	315.6	ug/L	92	Standard
>	**Ga**	71	55.0					mg/L	37	Standard
	Rb	85	80.0	10.8				ug/L	25	Standard
	Y	89	322701.4	2.2				ug/L	312467	Standard
>	**Rh**	103	53.3	28.6				ug/L	20	Standard
	Mo	98	19.5	16.6	**0.0118**	0.002	19.5	ug/L	13	Standard
	Ag	107	65.7	17.7	**-0.0080**	0.002	28.8	ug/L	72	Standard
	Cd	111	12.6	12.0	**-0.0042**	0.001	24.6	mg/L	5	Standard
	Cd	114	40.7	52.4	**0.0031**	0.006	194.4	ug/L	7	Standard
>	**In**	115	488240.5	1.4				ug/L	477820	Standard
	Sn	118	410.0	15.9	**0.0105**	0.013	127.3	ug/L	343	Standard
	Sb	123	148.7	18.0	**0.0353**	0.007	19.5	ug/L	56	Standard
	Ba	135	344.0	4.2	**0.1505**	0.010	6.6	ug/L	36	Standard
	Ce	140	415.0	16.2				ug/L	65	Standard
>	**Tb**	159	975784.0	0.9				ug/L	939481	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	16.7	50.0	**-0.0013**	0.001	91.4	ug/L	5	Standard
	Tl	205	10.0	86.6	**-0.0045**	0.002	42.1	ug/L	2	Standard
	Pb	206	293.7	0.7	**0.0080**	0.001	9.5	ug/L	222	Standard
	Pb	207	240.3	5.0	**0.0035**	0.003	77.0	ug/L	186	Standard
	Pb	208	908.7	1.7	**0.0064**	0.001	15.2	ug/L	717	Standard
	U	238	11.3	35.7	**-0.0038**	0.001	22.7	ug/L	2	Standard
>	**Bi**	209	462155.8	0.8				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	38.3	27.2	**-0.0362**	0.027	75.2	mg/L	45	Standard
K	39	8.3	34.6	**-0.1360**	0.096	70.8	mg/L	10	Standard
Ca	43	26.7	43.3	**-2.8521**	2.582	90.5	mg/L	47	Standard
Fe	54	46.1	5.8	**-0.0576**	0.006	10.8	mg/L	46	Standard
Fe	57	781.7	14.5	**1.1111**	1.060	95.4	mg/L	627	Standard
> **Sc-1**	45	26371.3	1.9				mg/L	24506	Standard
Cl	35	47726.4	1.8				ug/L	47100	Standard
Kr	83	5.3	65.8				ug/L	8	Standard
Br	81	516.7	16.9				ug/L	427	Standard
P	31	10436.9	3.8				ug/L	10519	Standard
S	34	2321.8	9.0				ug/L	2003	Standard
Sr	88	181.7	19.9				ug/L	132	Standard
C	12	236.7	14.8				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	9.2	98.3				mg/L	13	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	16.7	124.9				mg/L	7	Standard
I	127	1610.1	14.8				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.744	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.376	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.181
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.969
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW R7 WG535816-02
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Method 6020 - Summary Report

Sample ID: LCSW R7 WG535816-03
Sample Date/Time: Sunday, August 23, 2015 18:10:24
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	54258.8	4.1				ug/L	53498	Standard
	Be	9	30397.1	2.8	**50.9361**	1.211	2.4	ug/L	12	Standard
	Al	27	25725.2	1.4	**0.3556**	0.010	2.8	ug/L	487	Standard
	Sc	45	26827.1	2.4				ug/L	24506	Standard
	Ti	47	26.3	15.3	**0.0044**	0.021	476.2	ug/L	21	Standard
	V	51	212501.8	1.4	**50.6223**	0.514	1.0	ug/L	1268	Standard
	Cr	52	285421.7	0.9	**51.3468**	0.201	0.4	ug/L	7921	Standard
	Cr	53	35097.3	0.9	**51.2107**	0.271	0.5	ug/L	442	Standard
	Mn	55	196054.5	2.5	**54.8989**	1.179	2.1	ug/L	545	Standard
	Co	59	190656.1	1.2	**50.1000**	0.450	0.9	ug/L	183	Standard
	Ni	60	73773.5	1.0	**50.9821**	0.476	0.9	ug/L	131	Standard
	Cu	65	72623.6	0.6	**51.7851**	0.605	1.2	ug/L	231	Standard
	Zn	66	42324.7	0.4	**52.7324**	0.259	0.5	ug/L	306	Standard
>	Ge	72	349684.9	0.6				ug/L	330478	Standard
	As	75	39660.9	1.4	**49.1903**	0.689	1.4	ug/L	-23	Standard
	Se	82	3291.8	2.1	**49.4391**	1.105	2.2	ug/L	27	Standard
	Se-1	77	2419.9	1.7	**49.7575**	0.699	1.4	ug/L	92	Standard
>	Ga	71	30.0	16.7				mg/L	37	Standard
	Rb	85	145.0	10.3				ug/L	25	Standard
	Y	89	325624.3	1.9				ug/L	312467	Standard
>	Rh	103	58.3	35.7				ug/L	20	Standard
	Mo	98	42.1	10.9	**0.0276**	0.003	10.9	ug/L	13	Standard
	Ag	107	254137.1	1.1	**50.6282**	0.094	0.2	ug/L	72	Standard
	Cd	111	70302.0	1.6	**49.7610**	0.896	1.8	mg/L	5	Standard
	Cd	114	183655.5	1.3	**49.5620**	1.100	2.2	ug/L	7	Standard
>	In	115	495567.1	0.9				ug/L	477820	Standard
	Sn	118	413.3	11.0	**0.0100**	0.010	99.7	ug/L	343	Standard
	Sb	123	194942.4	0.9	**50.5790**	0.467	0.9	ug/L	56	Standard
	Ba	135	98384.1	0.8	**49.7951**	0.331	0.7	ug/L	36	Standard
	Ce	140	418.3	6.6				ug/L	65	Standard
>	Tb	159	982567.2	2.1				ug/L	939481	Standard
	Ho	165	13.3	108.3				ug/L	7	Standard
	Tl	203	334311.2	1.5	**49.9130**	0.438	0.9	ug/L	5	Standard
	Tl	205	228760.8	1.0	**50.1987**	0.283	0.6	ug/L	2	Standard
	Pb	206	213078.6	0.8	**51.0499**	0.536	1.0	ug/L	222	Standard
	Pb	207	185494.6	0.7	**49.1199**	0.293	0.6	ug/L	186	Standard
	Pb	208	688376.7	0.7	**51.1500**	0.318	0.6	ug/L	717	Standard
	U	238	228738.8	1.2	**49.4333**	0.261	0.5	ug/L	2	Standard
>	Bi	209	461921.0	0.6				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	136.7	2.1	**0.2157**	0.012	5.6	mg/L	45	Standard
K	39	11.7	65.5	**-0.0216**	0.271	1253.3	mg/L	10	Standard
Ca	43	33.3	31.2	**-1.5567**	2.330	149.7	mg/L	47	Standard
Fe	54	74.8	10.9	**0.0071**	0.020	276.9	mg/L	46	Standard
Fe	57	773.4	10.8	**0.9223**	0.898	97.4	mg/L	627	Standard
> **Sc-1**	45	26827.1	2.4				mg/L	24506	Standard
Cl	35	47595.3	0.9				ug/L	47100	Standard
Kr	83	4.7	53.9				ug/L	8	Standard
Br	81	563.3	7.2				ug/L	427	Standard
P	31	10436.9	4.5				ug/L	10519	Standard
S	34	2213.5	1.6				ug/L	2003	Standard
Sr	88	150.0	3.3				ug/L	132	Standard
C	12	166.7	50.0				mg/L	177	Standard
N	14	6.7	86.6				mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	15.1	103.1				mg/L	13	Standard
Ho-1	165	13.3	108.3				mg/L	7	Standard
Er	166	33.3	17.3				mg/L	7	Standard
I	127	1886.8	7.5				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.423	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.812	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.714
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.915
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW R7 WG535816-03
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Method 6020 - Summary Report

Sample ID: L1508102603 WG535816-01
Sample Date/Time: Sunday, August 23, 2015 18:13:36
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	57191.1	0.9				ug/L	53498	Standard
	Be	9	21.7	35.3	**0.0144**	0.012	86.5	ug/L	12	Standard
	Al	27	2623518.0	0.5	**35.4324**	0.260	0.7	ug/L	487	Standard
	Sc	45	26015.6	0.2				ug/L	24506	Standard
	Ti	47	1838.1	1.3	**9.2699**	0.260	2.8	ug/L	21	Standard
	V	51	8265.8	1.5	**1.6347**	0.025	1.5	ug/L	1268	Standard
	Cr	52	30626.3	2.4	**4.1124**	0.164	4.0	ug/L	7921	Standard
	Cr	53	4700.7	9.7	**6.1993**	0.732	11.8	ug/L	442	Standard
	Mn	55	96265.3	2.7	**26.7610**	0.910	3.4	ug/L	545	Standard
	Co	59	1094.4	1.4	**0.2318**	0.008	3.5	ug/L	183	Standard
	Ni	60	2749.2	1.7	**1.8081**	0.060	3.3	ug/L	131	Standard
	Cu	65	51620.8	1.2	**36.6150**	0.990	2.7	ug/L	231	Standard
	Zn	66	9531.3	1.4	**11.4754**	0.313	2.7	ug/L	306	Standard
>	Ge	72	351125.9	1.5				ug/L	330478	Standard
	As	75	557.3	5.5	**0.7401**	0.048	6.4	ug/L	-23	Standard
	Se	82	34.7	16.6	**0.1001**	0.085	84.9	ug/L	27	Standard
	Se-1	77	159.0	3.5	**1.4348**	0.069	4.8	ug/L	92	Standard
>	Ga	71	640.0	9.8				mg/L	37	Standard
	Rb	85	2553.5	3.0				ug/L	25	Standard
	Y	89	330057.1	2.0				ug/L	312467	Standard
>	Rh	103	73.3	40.0				ug/L	20	Standard
	Mo	98	304.8	15.4	**0.2152**	0.037	17.2	ug/L	13	Standard
	Ag	107	212.7	1.4	**0.0213**	0.001	4.8	ug/L	72	Standard
	Cd	111	525.6	4.9	**0.3602**	0.019	5.3	mg/L	5	Standard
	Cd	114	1515.5	12.1	**0.4029**	0.057	14.0	ug/L	7	Standard
>	In	115	493888.7	1.7				ug/L	477820	Standard
	Sn	118	606.7	5.3	**0.0521**	0.009	17.1	ug/L	343	Standard
	Sb	123	466.5	8.8	**0.1177**	0.013	10.8	ug/L	56	Standard
	Ba	135	57472.1	0.3	**29.1804**	0.419	1.4	ug/L	36	Standard
	Ce	140	875.0	6.2				ug/L	65	Standard
>	Tb	159	983785.4	1.5				ug/L	939481	Standard
	Ho	165	25.0	0.0				ug/L	7	Standard
	Tl	203	345.7	13.5	**0.0479**	0.008	16.9	ug/L	5	Standard
	Tl	205	228.3	24.1	**0.0434**	0.012	26.7	ug/L	2	Standard
	Pb	206	2593.9	1.1	**0.5600**	0.018	3.2	ug/L	222	Standard
	Pb	207	2201.5	3.3	**0.5234**	0.012	2.4	ug/L	186	Standard
	Pb	208	8261.2	0.7	**0.5535**	0.016	3.0	ug/L	717	Standard
	U	238	514.7	8.1	**0.1051**	0.011	10.8	ug/L	2	Standard
>	Bi	209	461979.8	2.0				ug/L	440279	Standard

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Na	23	1.7	**-4491545337417**7795847289090.484			173.2	mg/L	2	Standard
Mg	24	3687.1	4.2	**9.6628**	0.427	4.4	mg/L	45	Standard
K	39	58.3	21.6	**1.6343**	0.448	27.4	mg/L	10	Standard
Ca	43	145.0	3.4	**22.6367**	1.036	4.6	mg/L	47	Standard
Fe	54	395.0	12.6	**0.7759**	0.119	15.3	mg/L	46	Standard
Fe	57	868.4	2.8	**2.0076**	0.215	10.7	mg/L	627	Standard
Sc-1	45	26015.6	0.2				mg/L	24506	Standard
Cl	35	50992.4	2.4				ug/L	47100	Standard
Kr	83	6.0	16.7				ug/L	8	Standard
Br	81	1316.7	5.5				ug/L	427	Standard
P	31	12596.9	1.8				ug/L	10519	Standard
S	34	2195.2	0.7				ug/L	2003	Standard
Sr	88	190.0	9.5				ug/L	132	Standard
C	12	236.7	19.5				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	16.7	91.7				mg/L	10	Standard
Dy	164	18.2	56.1				mg/L	13	Standard
Ho-1	165	25.0	0.0				mg/L	7	Standard
Er	166	36.7	15.7				mg/L	7	Standard
I	127	11442.7	7.6				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.904	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.248	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.363
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.929
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508102603DP WG535816-05
Sample Date/Time: Sunday, August 23, 2015 18:16:47
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	57980.7	1.7				ug/L	53498	Standard
	Be	9	25.0	52.9	**0.0190**	0.020	106.2	ug/L	12	Standard
	Al	27	2758239.8	1.3	**36.7510**	0.809	2.2	ug/L	487	Standard
	Sc	45	26999.1	3.4				ug/L	24506	Standard
	Ti	47	1901.1	3.6	**9.7045**	0.361	3.7	ug/L	21	Standard
	V	51	8851.6	3.7	**1.7996**	0.081	4.5	ug/L	1268	Standard
	Cr	52	32015.1	0.4	**4.4376**	0.038	0.9	ug/L	7921	Standard
	Cr	53	5499.3	3.1	**7.4671**	0.218	2.9	ug/L	442	Standard
	Mn	55	102571.0	0.9	**28.8599**	0.412	1.4	ug/L	545	Standard
	Co	59	1112.7	5.2	**0.2400**	0.014	5.9	ug/L	183	Standard
	Ni	60	2835.3	1.9	**1.8899**	0.042	2.2	ug/L	131	Standard
	Cu	65	54293.1	0.2	**38.9669**	0.252	0.6	ug/L	231	Standard
	Zn	66	9724.5	1.7	**11.8587**	0.256	2.2	ug/L	306	Standard
>	Ge	72	347027.2	0.5				ug/L	330478	Standard
	As	75	588.9	7.3	**0.7873**	0.054	6.9	ug/L	-23	Standard
	Se	82	37.6	18.6	**0.1520**	0.109	71.4	ug/L	27	Standard
	Se-1	77	166.0	7.3	**1.6256**	0.250	15.4	ug/L	92	Standard
>	Ga	71	661.7	4.2				mg/L	37	Standard
	Rb	85	2638.6	3.1				ug/L	25	Standard
	Y	89	338031.3	1.4				ug/L	312467	Standard
>	Rh	103	63.3	31.9				ug/L	20	Standard
	Mo	98	336.9	1.8	**0.2312**	0.003	1.4	ug/L	13	Standard
	Ag	107	213.3	10.7	**0.0202**	0.004	19.1	ug/L	72	Standard
	Cd	111	554.5	5.2	**0.3699**	0.015	4.0	mg/L	5	Standard
	Cd	114	1534.6	4.7	**0.3963**	0.020	4.9	ug/L	7	Standard
>	In	115	507554.6	1.5				ug/L	477820	Standard
	Sn	118	640.0	8.5	**0.0554**	0.010	18.6	ug/L	343	Standard
	Sb	123	341.0	5.9	**0.0825**	0.004	4.7	ug/L	56	Standard
	Ba	135	60853.3	1.4	**30.0627**	0.318	1.1	ug/L	36	Standard
	Ce	140	1155.0	6.9				ug/L	65	Standard
>	Tb	159	992506.4	0.2				ug/L	939481	Standard
	Ho	165	25.0	52.9				ug/L	7	Standard
	Tl	203	350.0	14.9	**0.0481**	0.007	15.5	ug/L	5	Standard
	Tl	205	250.0	12.5	**0.0478**	0.007	14.1	ug/L	2	Standard
	Pb	206	2466.9	2.3	**0.5253**	0.010	1.9	ug/L	222	Standard
	Pb	207	2034.8	0.8	**0.4757**	0.003	0.7	ug/L	186	Standard
	Pb	208	7676.4	0.8	**0.5060**	0.001	0.2	ug/L	717	Standard
	U	238	506.7	7.0	**0.1025**	0.007	6.6	ug/L	2	Standard
>	Bi	209	465071.3	0.8				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	3860.5	7.5	**9.7438**	0.513	5.3	mg/L	45	Standard
K	39	70.0	14.3	**1.9646**	0.421	21.4	mg/L	10	Standard
Ca	43	146.7	15.7	**21.9140**	5.267	24.0	mg/L	47	Standard
Fe	54	383.6	11.5	**0.7168**	0.113	15.7	mg/L	46	Standard
Fe	57	996.7	3.8	**2.8746**	0.622	21.6	mg/L	627	Standard
> **Sc-1**	45	26999.1	3.4				mg/L	24506	Standard
Cl	35	53187.2	0.7				ug/L	47100	Standard
Kr	83	3.7	41.7				ug/L	8	Standard
Br	81	1353.4	10.6				ug/L	427	Standard
P	31	13182.4	1.4				ug/L	10519	Standard
S	34	2396.9	3.1				ug/L	2003	Standard
Sr	88	206.7	6.1				ug/L	132	Standard
C	12	313.3	31.0				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	34.9	42.1				mg/L	13	Standard
Ho-1	165	25.0	52.9				mg/L	7	Standard
Er	166	36.7	41.7				mg/L	7	Standard
I	127	11534.4	5.0				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.380	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.008	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	106.223
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	105.631
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: L1508102603S WG535816-06
Sample Date/Time: Sunday, August 23, 2015 18:19:59
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59277.5	2.8				ug/L	53498	Standard
	Be	9	32488.1	1.2	**49.8217**	0.905	1.8	ug/L	12	Standard
	Al	27	2621048.6	1.2	**34.1762**	1.336	3.9	ug/L	487	Standard
	Sc	45	26782.0	2.5				ug/L	24506	Standard
	Ti	47	1826.4	2.1	**9.2700**	0.085	0.9	ug/L	21	Standard
	V	51	226334.7	1.5	**54.0922**	1.355	2.5	ug/L	1268	Standard
	Cr	52	308131.9	1.6	**55.7086**	1.080	1.9	ug/L	7921	Standard
	Cr	53	40166.5	3.1	**58.8621**	1.321	2.2	ug/L	442	Standard
	Mn	55	291978.2	0.7	**82.0680**	0.409	0.5	ug/L	545	Standard
	Co	59	192255.8	1.1	**50.6536**	0.213	0.4	ug/L	183	Standard
	Ni	60	74051.2	1.5	**51.3063**	0.162	0.3	ug/L	131	Standard
	Cu	65	121069.8	0.2	**86.6761**	1.012	1.2	ug/L	231	Standard
	Zn	66	49647.5	1.3	**62.1012**	0.951	1.5	ug/L	306	Standard
>	Ge	72	348775.3	1.2				ug/L	330478	Standard
	As	75	41031.3	1.0	**51.0219**	0.385	0.8	ug/L	-23	Standard
	Se	82	3350.2	2.3	**50.4599**	1.378	2.7	ug/L	27	Standard
	Se-1	77	2522.2	2.3	**52.0842**	0.889	1.7	ug/L	92	Standard
>	Ga	71	671.7	5.7				mg/L	37	Standard
	Rb	85	2591.9	5.3				ug/L	25	Standard
	Y	89	330754.2	2.5				ug/L	312467	Standard
>	Rh	103	66.7	26.3				ug/L	20	Standard
	Mo	98	323.5	2.7	**0.2217**	0.006	2.5	ug/L	13	Standard
	Ag	107	258409.5	1.1	**50.2361**	0.731	1.5	ug/L	72	Standard
	Cd	111	74110.0	0.9	**51.1858**	0.559	1.1	mg/L	5	Standard
	Cd	114	197516.5	0.3	**52.0069**	0.329	0.6	ug/L	7	Standard
>	In	115	507854.4	0.4				ug/L	477820	Standard
	Sn	118	980.0	5.6	**0.1267**	0.012	9.2	ug/L	343	Standard
	Sb	123	206185.8	0.5	**52.2012**	0.386	0.7	ug/L	56	Standard
	Ba	135	157095.3	1.0	**77.5988**	0.542	0.7	ug/L	36	Standard
	Ce	140	955.0	1.4				ug/L	65	Standard
>	Tb	159	979810.9	1.1				ug/L	939481	Standard
	Ho	165	25.0	20.0				ug/L	7	Standard
	Tl	203	340687.2	0.9	**50.1554**	0.201	0.4	ug/L	5	Standard
	Tl	205	234384.4	1.8	**50.7229**	1.436	2.8	ug/L	2	Standard
	Pb	206	218491.6	1.2	**51.6133**	0.243	0.5	ug/L	222	Standard
	Pb	207	189430.8	0.5	**49.4621**	0.302	0.6	ug/L	186	Standard
	Pb	208	700429.6	0.6	**51.3207**	0.646	1.3	ug/L	717	Standard
	U	238	237321.5	0.4	**50.5739**	0.335	0.7	ug/L	2	Standard
>	Bi	209	468477.8	1.0				ug/L	440279	Standard

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Na	23	1.7	**-436655633524**75630974267552.969			173.2	mg/L	2	Standard
Mg	24	3583.8	1.8	**9.1180**	0.234	2.6	mg/L	45	Standard
K	39	70.0	53.9	**1.9542**	1.232	63.0	mg/L	10	Standard
Ca	43	115.0	37.9	**15.4978**	9.115	58.8	mg/L	47	Standard
Fe	54	405.4	7.8	**0.7749**	0.098	12.6	mg/L	46	Standard
Fe	57	1011.7	7.2	**3.0613**	0.424	13.8	mg/L	627	Standard
> **Sc-1**	45	26782.0	2.5				mg/L	24506	Standard
Cl	35	54054.3	0.9				ug/L	47100	Standard
Kr	83	5.3	75.8				ug/L	8	Standard
Br	81	1266.7	14.9				ug/L	427	Standard
P	31	12493.5	0.9				ug/L	10519	Standard
S	34	2183.5	4.0				ug/L	2003	Standard
Sr	88	196.7	8.9				ug/L	132	Standard
C	12	303.3	34.3				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	16.7	69.3				mg/L	10	Standard
Dy	164	47.9	20.4				mg/L	13	Standard
Ho-1	165	25.0	20.0				mg/L	7	Standard
Er	166	43.3	13.3				mg/L	7	Standard
I	127	11305.9	4.5				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.804	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.537	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.286
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.405
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1508102603S WG535816-06
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Method 6020 - Summary Report

Sample ID: L1508102603SD WG535816-07
Sample Date/Time: Sunday, August 23, 2015 18:23:11
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60137.7	5.5				ug/L	53498	Standard
	Be	9	33234.8	3.5	**50.3720**	4.206	8.4	ug/L	12	Standard
	Al	27	2655453.9	2.5	**34.1417**	1.037	3.0	ug/L	487	Standard
	Sc	45	26923.9	3.5				ug/L	24506	Standard
	Ti	47	1851.4	1.5	**9.4064**	0.151	1.6	ug/L	21	Standard
	V	51	225776.7	0.1	**53.9891**	0.355	0.7	ug/L	1268	Standard
	Cr	52	310141.0	0.0	**56.1212**	0.434	0.8	ug/L	7921	Standard
	Cr	53	39005.1	1.0	**57.1862**	0.166	0.3	ug/L	442	Standard
	Mn	55	283950.7	2.0	**79.8562**	1.022	1.3	ug/L	545	Standard
	Co	59	192870.5	0.4	**50.8532**	0.326	0.6	ug/L	183	Standard
	Ni	60	74801.6	1.9	**51.8630**	0.579	1.1	ug/L	131	Standard
	Cu	65	121117.2	1.5	**86.7624**	0.858	1.0	ug/L	231	Standard
	Zn	66	49002.8	0.6	**61.3296**	0.234	0.4	ug/L	306	Standard
>	Ge	72	348524.0	0.8				ug/L	330478	Standard
	As	75	40817.0	1.6	**50.7886**	0.462	0.9	ug/L	-23	Standard
	Se	82	3350.9	1.0	**50.5035**	0.619	1.2	ug/L	27	Standard
	Se-1	77	2458.9	2.5	**50.7627**	0.939	1.9	ug/L	92	Standard
>	Ga	71	626.7	6.8				mg/L	37	Standard
	Rb	85	2580.2	1.0				ug/L	25	Standard
	Y	89	334190.7	1.2				ug/L	312467	Standard
>	Rh	103	100.0	5.0				ug/L	20	Standard
	Mo	98	320.5	0.5	**0.2174**	0.002	1.0	ug/L	13	Standard
	Ag	107	257642.3	1.2	**49.5627**	0.819	1.7	ug/L	72	Standard
	Cd	111	74849.3	0.5	**51.1549**	0.404	0.8	mg/L	5	Standard
	Cd	114	198676.8	2.1	**51.7637**	1.063	2.1	ug/L	7	Standard
>	In	115	513230.8	0.5				ug/L	477820	Standard
	Sn	118	731.7	6.2	**0.0730**	0.009	12.7	ug/L	343	Standard
	Sb	123	206066.0	1.5	**51.6245**	0.864	1.7	ug/L	56	Standard
	Ba	135	156458.3	0.4	**76.4768**	0.525	0.7	ug/L	36	Standard
	Ce	140	940.0	5.4				ug/L	65	Standard
>	Tb	159	992226.2	0.6				ug/L	939481	Standard
	Ho	165	41.7	38.6				ug/L	7	Standard
	Tl	203	341198.9	1.1	**50.0193**	0.222	0.4	ug/L	5	Standard
	Tl	205	233896.5	0.3	**50.3982**	0.469	0.9	ug/L	2	Standard
	Pb	206	219842.8	0.6	**51.7182**	0.609	1.2	ug/L	222	Standard
	Pb	207	189599.9	0.3	**49.2994**	0.510	1.0	ug/L	186	Standard
	Pb	208	700380.6	0.3	**51.1003**	0.444	0.9	ug/L	717	Standard
	U	238	238214.4	0.4	**50.5508**	0.330	0.7	ug/L	2	Standard
>	Bi	209	470451.5	0.9				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	3523.7	3.0	**8.9256**	0.581	6.5	mg/L	45	Standard
K	39	53.3	23.6	**1.3985**	0.461	33.0	mg/L	10	Standard
Ca	43	166.7	19.1	**25.9891**	5.768	22.2	mg/L	47	Standard
Fe	54	343.8	9.3	**0.6285**	0.100	16.0	mg/L	46	Standard
Fe	57	975.0	2.2	**2.6946**	0.134	5.0	mg/L	627	Standard
> **Sc-1**	45	26923.9	3.5				mg/L	24506	Standard
Cl	35	53828.8	1.5				ug/L	47100	Standard
Kr	83	4.0	25.0				ug/L	8	Standard
Br	81	1136.7	8.0				ug/L	427	Standard
P	31	12595.2	1.7				ug/L	10519	Standard
S	34	2385.2	6.2				ug/L	2003	Standard
Sr	88	210.0	10.9				ug/L	132	Standard
C	12	216.7	25.4				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	38.1	52.5				mg/L	13	Standard
Ho-1	165	41.7	38.6				mg/L	7	Standard
Er	166	40.0					mg/L	7	Standard
I	127	11796.3	5.9				mg/L	2225	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		112.412	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		105.461	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1508102603SD WG535816-07
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.411
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.853
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1508102603SD WG535816-07
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Method 6020 - Summary Report

Sample ID: L1508099702
Sample Date/Time: Sunday, August 23, 2015 18:26:22
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58141.4	1.8				ug/L	53498	Standard
	Be	9	56.7	10.2	**0.0684**	0.008	11.0	ug/L	12	Standard
	Al	27	395424.5	1.8	**5.2448**	0.134	2.6	ug/L	487	Standard
	Sc	45	26576.6	1.2				ug/L	24506	Standard
	Ti	47	3841.2	1.4	**20.1465**	0.220	1.1	ug/L	21	Standard
	V	51	38368.5	0.6	**9.1220**	0.050	0.6	ug/L	1268	Standard
	Cr	52	15640.4	1.7	**1.4397**	0.045	3.2	ug/L	7921	Standard
	Cr	53	1993.5	9.9	**2.2996**	0.295	12.8	ug/L	442	Standard
	Mn	55	42967.5	1.4	**12.2330**	0.084	0.7	ug/L	545	Standard
	Co	59	1470.7	0.7	**0.3429**	0.002	0.5	ug/L	183	Standard
	Ni	60	1322.4	3.9	**0.8534**	0.036	4.2	ug/L	131	Standard
	Cu	65	110407.6	2.1	**81.0392**	1.157	1.4	ug/L	231	Standard
	Zn	66	26712.2	1.3	**34.0590**	0.213	0.6	ug/L	306	Standard
>	**Ge**	72	340083.1	0.8				ug/L	330478	Standard
	As	75	6032.3	1.0	**7.7367**	0.044	0.6	ug/L	-23	Standard
	Se	82	69.2	25.6	**0.6567**	0.281	42.8	ug/L	27	Standard
	Se-1	77	141.0	13.1	**1.1515**	0.424	36.8	ug/L	92	Standard
>	**Ga**	71	1085.0	3.7				mg/L	37	Standard
	Rb	85	18616.4	0.2				ug/L	25	Standard
	Y	89	340362.5	1.2				ug/L	312467	Standard
>	**Rh**	103	70.0	7.1				ug/L	20	Standard
	Mo	98	1759.3	3.7	**1.2206**	0.042	3.4	ug/L	13	Standard
	Ag	107	512.7	10.8	**0.0788**	0.011	13.9	ug/L	72	Standard
	Cd	111	301.1	16.1	**0.1955**	0.033	16.8	mg/L	5	Standard
	Cd	114	815.9	4.3	**0.2076**	0.010	5.0	ug/L	7	Standard
>	**In**	115	505906.7	0.7				ug/L	477820	Standard
	Sn	118	2203.5	3.9	**0.3851**	0.017	4.3	ug/L	343	Standard
	Sb	123	2974.7	2.0	**0.7522**	0.017	2.3	ug/L	56	Standard
	Ba	135	15972.4	0.5	**7.8966**	0.016	0.2	ug/L	36	Standard
	Ce	140	48191.5	1.0				ug/L	65	Standard
>	**Tb**	159	967043.4	2.4				ug/L	939481	Standard
	Ho	165	641.7	12.8				ug/L	7	Standard
	Tl	203	245.0	33.6	**0.0325**	0.012	37.3	ug/L	5	Standard
	Tl	205	118.3	37.9	**0.0192**	0.010	52.4	ug/L	2	Standard
	Pb	206	37722.9	0.8	**8.9231**	0.123	1.4	ug/L	222	Standard
	Pb	207	32196.8	0.8	**8.4165**	0.105	1.2	ug/L	186	Standard
	Pb	208	120193.5	0.6	**8.8177**	0.035	0.4	ug/L	717	Standard
	U	238	272.7	15.6	**0.0523**	0.010	18.3	ug/L	2	Standard
>	**Bi**	209	465193.8	1.0				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	7558.6	0.5	**19.5295**	0.321	1.6	mg/L	45	Standard
K	39	76.7	22.9	**2.2275**	0.634	28.5	mg/L	10	Standard
Ca	43	53.3	5.4	**2.6874**	0.656	24.4	mg/L	47	Standard
Fe	54	335.4	3.0	**0.6170**	0.030	4.8	mg/L	46	Standard
Fe	57	821.7	17.5	**1.4251**	1.395	97.9	mg/L	627	Standard
> **Sc-1**	45	26576.6	1.2				mg/L	24506	Standard
Cl	35	51738.9	1.3				ug/L	47100	Standard
Kr	83	4.7	12.4				ug/L	8	Standard
Br	81	1186.7	7.2				ug/L	427	Standard
P	31	14343.5	2.6				ug/L	10519	Standard
S	34	2211.8	3.8				ug/L	2003	Standard
Sr	88	203.3	10.2				ug/L	132	Standard
C	12	253.3	32.1				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	23.3	89.2				mg/L	10	Standard
Dy	164	1112.9	3.8				mg/L	13	Standard
Ho-1	165	641.7	12.8				mg/L	7	Standard
Er	166	706.7	8.6				mg/L	7	Standard
I	127	12034.8	5.2				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.680	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.907	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.878
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.659
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: L1508099702PS WG536146-01
Sample Date/Time: Sunday, August 23, 2015 18:29:34
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56389.8	2.5				ug/L	53498	Standard
	Be	9	33657.4	4.1	**54.2288**	0.992	1.8	ug/L	12	Standard
	Al	27	393091.3	1.5	**5.3769**	0.146	2.7	ug/L	487	Standard
	Sc	45	25773.6	3.9				ug/L	24506	Standard
	Ti	47	3818.8	1.9	**19.4810**	0.435	2.2	ug/L	21	Standard
	V	51	250215.1	1.4	**59.6840**	0.854	1.4	ug/L	1268	Standard
	Cr	52	295042.6	2.2	**53.1407**	0.937	1.8	ug/L	7921	Standard
	Cr	53	36604.2	2.1	**53.4593**	1.368	2.6	ug/L	442	Standard
	Mn	55	236226.8	1.4	**66.2026**	0.539	0.8	ug/L	545	Standard
	Co	59	198845.0	0.9	**52.2673**	0.202	0.4	ug/L	183	Standard
	Ni	60	74103.8	1.5	**51.2235**	0.733	1.4	ug/L	131	Standard
	Cu	65	184309.4	1.7	**131.7173**	1.900	1.4	ug/L	231	Standard
	Zn	66	66985.4	0.6	**83.7443**	0.535	0.6	ug/L	306	Standard
>	**Ge**	72	349596.6	0.6				ug/L	330478	Standard
	As	75	46936.7	1.1	**58.2179**	0.300	0.5	ug/L	-23	Standard
	Se	82	3458.6	0.7	**51.9770**	0.224	0.4	ug/L	27	Standard
	Se-1	77	2482.9	0.8	**51.1184**	0.277	0.5	ug/L	92	Standard
>	**Ga**	71	925.0	2.5				mg/L	37	Standard
	Rb	85	18391.2	1.4				ug/L	25	Standard
	Y	89	334585.4	3.6				ug/L	312467	Standard
>	**Rh**	103	70.0	21.4				ug/L	20	Standard
	Mo	98	1730.8	1.1	**1.2276**	0.022	1.8	ug/L	13	Standard
	Ag	107	258933.0	2.0	**51.6458**	0.633	1.2	ug/L	72	Standard
	Cd	111	74703.7	2.5	**52.9358**	0.924	1.7	mg/L	5	Standard
	Cd	114	198524.0	1.8	**53.6327**	0.616	1.1	ug/L	7	Standard
>	**In**	115	494947.7	0.8				ug/L	477820	Standard
	Sn	118	2143.5	6.2	**0.3825**	0.031	8.1	ug/L	343	Standard
	Sb	123	204089.0	1.2	**53.0161**	0.325	0.6	ug/L	56	Standard
	Ba	135	117495.5	0.3	**59.5479**	0.314	0.5	ug/L	36	Standard
	Ce	140	46972.7	2.6				ug/L	65	Standard
>	**Tb**	159	962891.0	0.4				ug/L	939481	Standard
	Ho	165	676.7	15.2				ug/L	7	Standard
	Tl	203	343590.5	0.4	**50.9715**	0.400	0.8	ug/L	5	Standard
	Tl	205	237976.1	1.0	**51.8887**	0.836	1.6	ug/L	2	Standard
	Pb	206	253588.6	0.8	**60.3743**	0.388	0.6	ug/L	222	Standard
	Pb	207	225642.8	0.6	**59.3806**	0.570	1.0	ug/L	186	Standard
	Pb	208	823194.9	0.4	**60.7868**	0.552	0.9	ug/L	717	Standard
	U	238	241626.2	0.8	**51.8838**	0.303	0.6	ug/L	2	Standard
>	**Bi**	209	464929.1	1.2				ug/L	440279	Standard

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Na	23	1.7	**-4719080700188**1736875377302.906			173.2	mg/L	2	Standard
Mg	24	7481.8	1.9	**19.9454**	0.455	2.3	mg/L	45	Standard
K	39	90.0	36.4	**2.7978**	1.211	43.3	mg/L	10	Standard
Ca	43	46.7	37.6	**1.6495**	4.118	249.6	mg/L	47	Standard
Fe	54	357.3	8.5	**0.6962**	0.097	13.9	mg/L	46	Standard
Fe	57	821.7	8.1	**1.6691**	0.890	53.3	mg/L	627	Standard
Sc-1	45	25773.6	3.9				mg/L	24506	Standard
Cl	35	51693.4	0.9				ug/L	47100	Standard
Kr	83	5.3	47.2				ug/L	8	Standard
Br	81	1203.4	4.7				ug/L	427	Standard
P	31	14361.8	2.4				ug/L	10519	Standard
S	34	2211.8	4.4				ug/L	2003	Standard
Sr	88	195.0	7.7				ug/L	132	Standard
C	12	243.3	35.0				mg/L	177	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	23.3	24.7				mg/L	10	Standard
Dy	164	1046.2	17.3				mg/L	13	Standard
Ho-1	165	676.7	15.2				mg/L	7	Standard
Er	166	636.7	27.3				mg/L	7	Standard
I	127	11394.3	1.2				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.406	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.785	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1508099702PS WG536146-01
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.584
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.599
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cu 65 Upper, S, EEE	Cu	65	

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: L1508099702SDL WG536146-02
Sample Date/Time: Sunday, August 23, 2015 18:32:45
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54631.7	2.3				ug/L	53498	Standard
	Be	9	21.7	13.3	**0.0160**	0.006	35.2	ug/L	12	Standard
	Al	27	81104.8	1.1	**1.1366**	0.039	3.4	ug/L	487	Standard
	Sc	45	24870.4	4.4				ug/L	24506	Standard
	Ti	47	761.4	4.3	**3.9178**	0.258	6.6	ug/L	21	Standard
	V	51	8708.6	1.7	**1.8222**	0.043	2.4	ug/L	1268	Standard
	Cr	52	8982.3	3.2	**0.1820**	0.021	11.5	ug/L	7921	Standard
	Cr	53	838.4	4.1	**0.5511**	0.069	12.6	ug/L	442	Standard
	Mn	55	9140.8	0.6	**2.4798**	0.074	3.0	ug/L	545	Standard
	Co	59	529.0	2.4	**0.0892**	0.007	7.6	ug/L	183	Standard
	Ni	60	388.3	9.5	**0.1903**	0.025	13.1	ug/L	131	Standard
	Cu	65	23131.0	1.5	**16.9592**	0.566	3.3	ug/L	231	Standard
	Zn	66	6379.7	2.2	**7.8425**	0.208	2.6	ug/L	306	Standard
>	**Ge**	72	337906.3	2.3				ug/L	330478	Standard
	As	75	1226.0	4.0	**1.6246**	0.076	4.7	ug/L	-23	Standard
	Se	82	43.1	13.6	**0.2538**	0.102	40.0	ug/L	27	Standard
	Se-1	77	102.0	6.1	**0.3061**	0.088	28.8	ug/L	92	Standard
>	**Ga**	71	208.3	27.3				mg/L	37	Standard
	Rb	85	3877.2	2.1				ug/L	25	Standard
	Y	89	317990.0	2.2				ug/L	312467	Standard
>	**Rh**	103	35.0	51.5				ug/L	20	Standard
	Mo	98	369.8	6.0	**0.2650**	0.019	7.0	ug/L	13	Standard
	Ag	107	211.7	46.8	**0.0215**	0.020	90.8	ug/L	72	Standard
	Cd	111	89.1	63.1	**0.0507**	0.040	78.2	mg/L	5	Standard
	Cd	114	213.9	54.5	**0.0505**	0.031	62.0	ug/L	7	Standard
>	**In**	115	486798.8	1.0				ug/L	477820	Standard
	Sn	118	723.4	8.9	**0.0794**	0.013	15.8	ug/L	343	Standard
	Sb	123	1323.5	5.5	**0.3456**	0.016	4.5	ug/L	56	Standard
	Ba	135	3294.4	4.2	**1.6716**	0.056	3.3	ug/L	36	Standard
	Ce	140	9513.0	1.7				ug/L	65	Standard
>	**Tb**	159	947246.1	0.3				ug/L	939481	Standard
	Ho	165	130.0	3.8				ug/L	7	Standard
	Tl	203	142.3	102.7	**0.0177**	0.022	125.0	ug/L	5	Standard
	Tl	205	86.7	31.8	**0.0126**	0.006	48.0	ug/L	2	Standard
	Pb	206	7873.4	1.9	**1.8517**	0.029	1.6	ug/L	222	Standard
	Pb	207	6694.8	1.7	**1.7388**	0.029	1.7	ug/L	186	Standard
	Pb	208	25160.9	0.1	**1.8360**	0.009	0.5	ug/L	717	Standard
	U	238	112.7	20.8	**0.0184**	0.005	28.6	ug/L	2	Standard
>	**Bi**	209	455753.7	0.5				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	1515.1	4.0	**4.0847**	0.334	8.2	mg/L	45	Standard
K	39	16.7	62.4	**0.2019**	0.406	201.1	mg/L	10	Standard
Ca	43	36.7	7.9	**-0.2834**	0.726	256.2	mg/L	47	Standard
Fe	54	132.3	19.4	**0.1641**	0.061	37.4	mg/L	46	Standard
Fe	57	806.7	10.6	**1.7662**	0.498	28.2	mg/L	627	Standard
> **Sc-1**	45	24870.4	4.4				mg/L	24506	Standard
Cl	35	48117.6	0.1				ug/L	47100	Standard
Kr	83	3.7	56.8				ug/L	8	Standard
Br	81	653.3	11.3				ug/L	427	Standard
P	31	10995.7	3.3				ug/L	10519	Standard
S	34	2211.8	5.1				ug/L	2003	Standard
Sr	88	190.0	4.6				ug/L	132	Standard
C	12	166.7	64.2				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	6.7	86.6				mg/L	10	Standard
Dy	164	216.5	37.2				mg/L	13	Standard
Ho-1	165	130.0	3.8				mg/L	7	Standard
Er	166	143.3	14.5				mg/L	7	Standard
I	127	3872.2	4.7				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.120	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.248	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.879
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.515
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: L1508099702SDL WG536146-02
Sample Date/Time: Sunday, August 23, 2015 18:35:57
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54298.8	3.1				ug/L	53498	Standard
	Be	9	18.3	56.8	**0.0103**	0.016	158.6	ug/L	12	Standard
	Al	27	16569.1	1.4	**0.2250**	0.008	3.4	ug/L	487	Standard
	Sc	45	25072.4	3.6				ug/L	24506	Standard
	Ti	47	160.0	13.8	**0.7272**	0.130	17.9	ug/L	21	Standard
	V	51	2748.7	3.5	**0.3484**	0.033	9.3	ug/L	1268	Standard
	Cr	52	7474.8	1.7	**-0.0951**	0.024	25.2	ug/L	7921	Standard
	Cr	53	456.7	2.5	**-0.0286**	0.013	43.7	ug/L	442	Standard
	Mn	55	2418.9	1.9	**0.5301**	0.007	1.3	ug/L	545	Standard
	Co	59	257.3	8.0	**0.0157**	0.005	31.9	ug/L	183	Standard
	Ni	60	166.0	4.2	**0.0321**	0.006	19.9	ug/L	131	Standard
	Cu	65	4840.1	2.1	**3.4395**	0.115	3.3	ug/L	231	Standard
	Zn	66	2322.5	2.3	**2.5887**	0.035	1.3	ug/L	306	Standard
>	**Ge**	72	335188.2	1.4				ug/L	330478	Standard
	As	75	228.6	14.2	**0.3475**	0.041	11.7	ug/L	-23	Standard
	Se	82	23.6	13.6	**-0.0500**	0.047	93.1	ug/L	27	Standard
	Se-1	77	95.3	10.2	**0.1763**	0.203	115.2	ug/L	92	Standard
>	**Ga**	71	55.0	24.1				mg/L	37	Standard
	Rb	85	813.4	8.3				ug/L	25	Standard
	Y	89	321431.8	2.5				ug/L	312467	Standard
>	**Rh**	103	28.3	20.4				ug/L	20	Standard
	Mo	98	74.5	7.5	**0.0513**	0.004	8.1	ug/L	13	Standard
	Ag	107	91.0	4.8	**-0.0029**	0.001	32.2	ug/L	72	Standard
	Cd	111	19.2	3.0	**0.0005**	0.000	98.8	mg/L	5	Standard
	Cd	114	54.2	33.2	**0.0067**	0.005	72.4	ug/L	7	Standard
>	**In**	115	489701.5	0.5				ug/L	477820	Standard
	Sn	118	401.7	1.4	**0.0085**	0.001	16.2	ug/L	343	Standard
	Sb	123	302.6	4.3	**0.0756**	0.004	5.0	ug/L	56	Standard
	Ba	135	691.0	1.8	**0.3278**	0.008	2.4	ug/L	36	Standard
	Ce	140	1860.1	6.7				ug/L	65	Standard
>	**Tb**	159	938458.6	1.4				ug/L	939481	Standard
	Ho	165	45.0	33.3				ug/L	7	Standard
	Tl	203	19.7	38.2	**-0.0008**	0.001	138.7	ug/L	5	Standard
	Tl	205	10.0	50.0	**-0.0044**	0.001	24.6	ug/L	2	Standard
	Pb	206	1767.8	2.6	**0.3694**	0.012	3.4	ug/L	222	Standard
	Pb	207	1477.7	0.3	**0.3388**	0.005	1.4	ug/L	186	Standard
	Pb	208	5572.7	1.1	**0.3610**	0.009	2.5	ug/L	717	Standard
	U	238	16.0	34.8	**-0.0027**	0.001	46.3	ug/L	2	Standard
>	**Bi**	209	453638.4	1.4				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	378.3	5.5	**0.9067**	0.047	5.1	mg/L	45	Standard
K	39	11.7	24.7	**0.0042**	0.117	2791.0	mg/L	10	Standard
Ca	43	40.0	33.1	**0.4579**	3.198	698.5	mg/L	47	Standard
Fe	54	81.2	28.5	**0.0343**	0.054	158.3	mg/L	46	Standard
Fe	57	806.7	4.6	**1.7324**	0.623	36.0	mg/L	627	Standard
> **Sc-1**	45	25072.4	3.6				mg/L	24506	Standard
Cl	35	48347.0	1.2				ug/L	47100	Standard
Kr	83	6.0	28.9				ug/L	8	Standard
Br	81	513.3	21.5				ug/L	427	Standard
P	31	10987.3	1.1				ug/L	10519	Standard
S	34	2155.2	2.4				ug/L	2003	Standard
Sr	88	178.3	15.4				ug/L	132	Standard
C	12	156.7	44.8				mg/L	177	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	78.4	25.2				mg/L	13	Standard
Ho-1	165	45.0	33.3				mg/L	7	Standard
Er	166	33.3	17.3				mg/L	7	Standard
I	127	1956.8	5.1				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.498	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.425	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.486
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.034
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Sunday, August 23, 2015 18:39:10
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	54215.2	2.7				ug/L	53498	Standard
	Be	9	29303.3	1.4	**49.1362**	1.191	2.4	ug/L	12	Standard
	Al	27	3391714.3	1.7	**48.3385**	1.056	2.2	ug/L	487	Standard
	Sc	45	25331.2	1.1				ug/L	24506	Standard
	Ti	47	20000.9	1.3	**104.9567**	0.751	0.7	ug/L	21	Standard
	V	51	211724.8	1.8	**51.6251**	0.759	1.5	ug/L	1268	Standard
	Cr	52	278642.9	0.4	**51.3020**	0.405	0.8	ug/L	7921	Standard
	Cr	53	34454.1	0.8	**51.4595**	0.991	1.9	ug/L	442	Standard
	Mn	55	186618.5	1.7	**53.4760**	0.550	1.0	ug/L	545	Standard
	Co	59	189684.4	1.1	**51.0128**	0.312	0.6	ug/L	183	Standard
	Ni	60	73005.5	1.1	**51.6327**	0.122	0.2	ug/L	131	Standard
	Cu	65	70638.3	0.9	**51.5459**	0.284	0.6	ug/L	231	Standard
	Zn	66	39805.9	1.9	**50.7341**	0.459	0.9	ug/L	306	Standard
>	Ge	72	341690.5	1.1				ug/L	330478	Standard
	As	75	40091.1	1.8	**50.8861**	0.824	1.6	ug/L	-23	Standard
	Se	82	3306.5	2.2	**50.8293**	0.706	1.4	ug/L	27	Standard
	Se-1	77	2405.2	4.4	**50.6444**	2.142	4.2	ug/L	92	Standard
>	Ga	71	28.3	27.0				mg/L	37	Standard
	Rb	85	601.7	5.7				ug/L	25	Standard
	Y	89	321097.1	1.4				ug/L	312467	Standard
>	Rh	103	30.0	44.1				ug/L	20	Standard
	Mo	98	136876.5	1.4	**99.4784**	1.838	1.8	ug/L	13	Standard
	Ag	107	250788.4	1.4	**51.1737**	1.202	2.3	ug/L	72	Standard
	Cd	111	70369.9	0.0	**51.0102**	0.484	0.9	mg/L	5	Standard
	Cd	114	187437.5	1.3	**51.8018**	1.136	2.2	ug/L	7	Standard
>	In	115	483904.4	1.0				ug/L	477820	Standard
	Sn	118	222765.8	1.0	**48.9598**	0.984	2.0	ug/L	343	Standard
	Sb	123	190201.0	0.5	**50.5414**	0.754	1.5	ug/L	56	Standard
	Ba	135	97938.2	0.5	**50.7684**	0.755	1.5	ug/L	36	Standard
	Ce	140	70.0	12.4				ug/L	65	Standard
>	Tb	159	932090.2	1.1				ug/L	939481	Standard
	Ho	165	10.0					ug/L	7	Standard
	Tl	203	331407.0	0.8	**50.5404**	0.432	0.9	ug/L	5	Standard
	Tl	205	226908.3	1.2	**50.8587**	0.662	1.3	ug/L	2	Standard
	Pb	206	205472.2	0.1	**50.2790**	0.077	0.2	ug/L	222	Standard
	Pb	207	187197.7	0.8	**50.6335**	0.428	0.8	ug/L	186	Standard
	Pb	208	674280.6	0.8	**51.1746**	0.442	0.9	ug/L	717	Standard
	U	238	227828.9	0.9	**50.2919**	0.467	0.9	ug/L	2	Standard
>	Bi	209	452240.6	0.1				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	1893.5	6.9	**5.0344**	0.417	8.3	mg/L	45	Standard
K	39	156.7	21.7	**5.2552**	1.241	23.6	mg/L	10	Standard
Ca	43	51.7	20.1	**2.8813**	2.371	82.3	mg/L	47	Standard
Fe	54	2202.4	4.5	**5.2304**	0.305	5.8	mg/L	46	Standard
Fe	57	1356.7	3.6	**6.8797**	0.598	8.7	mg/L	627	Standard
Sc-1	45	25331.2	1.1				mg/L	24506	Standard
Cl	35	45932.2	2.5				ug/L	47100	Standard
Kr	83	6.0	33.3				ug/L	8	Standard
Br	81	526.7	10.5				ug/L	427	Standard
P	31	11549.4	3.4				ug/L	10519	Standard
S	34	2496.9	6.3				ug/L	2003	Standard
Sr	88	178.3	11.3				ug/L	132	Standard
C	12	176.7	40.9				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	16.0	183.6				mg/L	13	Standard
Ho-1	165	10.0					mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	515.0	11.9				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	98.272		
Al	27	96.677		
Sc	45			
Ti	47	104.957		
V	51	103.250		
Cr	52	102.604		
Cr	53			
Mn	55	106.952		
Co	59	102.026		
Ni	60	103.265		
Cu	65	103.092		
Zn	66	101.468		
Ge	72		103.393	
As	75	101.772		
Se	82	101.659		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
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Rb	85			
Y	89			
Rh	103			
Mo	98	99.478		
Ag	107	102.347		
Cd	111	102.020		
Cd	114			
In	115			101.273
Sn	118	97.920		
Sb	123	101.083		
Ba	135	101.537		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.081		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.349		
U	238	100.584		
Bi	209			102.717
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Sunday, August 23, 2015 18:41:26
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Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Sunday, August 23, 2015 18:42:21
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	52862.1	0.6				ug/L	53498	Standard
	Be	9	25.0	34.6	**0.0230**	0.015	65.7	ug/L	12	Standard
	Al	27	880.0	79.3	**0.0019**	0.010	533.0	ug/L	487	Standard
	Sc	45	23940.6	1.3				ug/L	24506	Standard
	Ti	47	26.0	26.6	**0.0098**	0.036	363.0	ug/L	21	Standard
	V	51	1011.8	8.2	**-0.0834**	0.016	19.3	ug/L	1268	Standard
	Cr	52	6600.1	3.3	**-0.2481**	0.031	12.7	ug/L	7921	Standard
	Cr	53	431.7	11.1	**-0.0595**	0.063	105.4	ug/L	442	Standard
	Mn	55	636.3	9.0	**0.0099**	0.015	147.8	ug/L	545	Standard
	Co	59	207.7	16.6	**0.0027**	0.009	319.7	ug/L	183	Standard
	Ni	60	122.7	11.5	**0.0018**	0.009	503.1	ug/L	131	Standard
	Cu	65	275.3	6.3	**0.0341**	0.009	26.7	ug/L	231	Standard
	Zn	66	327.3	6.3	**-0.0216**	0.019	87.7	ug/L	306	Standard
>	Ge	72	330963.2	1.9				ug/L	330478	Standard
	As	75	-30.2	117.2	**0.0119**	0.047	396.4	ug/L	-23	Standard
	Se	82	22.1	46.0	**-0.0714**	0.155	217.2	ug/L	27	Standard
	Se-1	77	86.7	3.5	**0.0099**	0.106	1075.7	ug/L	92	Standard
>	Ga	71	23.3	65.5				mg/L	37	Standard
	Rb	85	35.0	14.3				ug/L	25	Standard
	Y	89	320397.4	1.1				ug/L	312467	Standard
>	Rh	103	36.7	51.6				ug/L	20	Standard
	Mo	98	65.2	56.4	**0.0459**	0.026	57.3	ug/L	13	Standard
	Ag	107	140.0	66.8	**0.0077**	0.019	244.8	ug/L	72	Standard
	Cd	111	15.2	134.5	**-0.0022**	0.015	681.4	mg/L	5	Standard
	Cd	114	65.9	130.4	**0.0102**	0.024	232.1	ug/L	7	Standard
>	In	115	473647.4	1.7				ug/L	477820	Standard
	Sn	118	465.0	20.7	**0.0256**	0.020	78.6	ug/L	343	Standard
	Sb	123	779.0	13.3	**0.2073**	0.024	11.8	ug/L	56	Standard
	Ba	135	45.7	32.9	**-0.0022**	0.008	351.4	ug/L	36	Standard
	Ce	140	28.3	27.0				ug/L	65	Standard
>	Tb	159	919808.6	1.4				ug/L	939481	Standard
	Ho	165	8.3	124.9				ug/L	7	Standard
	Tl	203	76.0	136.7	**0.0078**	0.016	203.1	ug/L	5	Standard
	Tl	205	63.3	118.5	**0.0076**	0.017	220.9	ug/L	2	Standard
	Pb	206	277.7	19.9	**0.0063**	0.013	209.3	ug/L	222	Standard
	Pb	207	219.0	30.3	**-0.0003**	0.018	6453.4	ug/L	186	Standard
	Pb	208	852.3	23.7	**0.0042**	0.015	358.8	ug/L	717	Standard
	U	238	37.7	113.9	**0.0021**	0.009	453.2	ug/L	2	Standard
>	Bi	209	447424.3	1.1				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	51.7	40.3	**0.0121**	0.058	479.8	mg/L	45	Standard
K	39	5.0	0.0	**-0.2331**	0.002	1.1	mg/L	10	Standard
Ca	43	35.0	51.5	**-0.3306**	4.273	1292.6	mg/L	47	Standard
Fe	54	84.5	35.5	**0.0533**	0.079	148.6	mg/L	46	Standard
Fe	57	766.7	3.0	**1.6817**	0.231	13.7	mg/L	627	Standard
> **Sc-1**	45	23940.6	1.3				mg/L	24506	Standard
Cl	35	45694.1	0.9				ug/L	47100	Standard
Kr	83	5.0	20.0				ug/L	8	Standard
Br	81	523.3	12.1				ug/L	427	Standard
P	31	10945.6	2.1				ug/L	10519	Standard
S	34	2211.8	4.7				ug/L	2003	Standard
Sr	88	165.0	5.2				ug/L	132	Standard
C	12	166.7	34.1				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	2.7	219.6				mg/L	13	Standard
Ho-1	165	8.3	124.9				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	7	Standard
I	127	2001.8	5.5				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.147	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.127	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	101.623	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

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Method 6020 - Summary Report

Sample ID: L1508105506
Sample Date/Time: Sunday, August 23, 2015 18:45:33
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1000
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52515.9	1.1				ug/L	53498	Standard
	Be	9	26.7	92.5	**0.0263**	0.043	164.4	ug/L	12	Standard
	Al	27	24411.3	1.7	**0.3483**	0.010	2.9	ug/L	487	Standard
	Sc	45	24579.9	0.9				ug/L	24506	Standard
	Ti	47	22.3	11.3	**-0.0106**	0.013	125.2	ug/L	21	Standard
	V	51	-115.3	217.1	**-0.3683**	0.063	17.1	ug/L	1268	Standard
	Cr	52	178727.1	1.3	**33.1813**	0.373	1.1	ug/L	7921	Standard
	Cr	53	22092.8	4.1	**33.5527**	1.554	4.6	ug/L	442	Standard
	Mn	55	965.7	6.4	**0.1057**	0.020	18.7	ug/L	545	Standard
	Co	59	248.7	24.6	**0.0137**	0.017	127.1	ug/L	183	Standard
	Ni	60	135.7	5.3	**0.0106**	0.005	46.1	ug/L	131	Standard
	Cu	65	323.3	5.8	**0.0686**	0.015	22.0	ug/L	231	Standard
	Zn	66	1193.4	2.5	**1.1165**	0.047	4.2	ug/L	306	Standard
>	**Ge**	72	333531.2	0.7				ug/L	330478	Standard
	As	75	-5.4	415.3	**0.0452**	0.029	64.3	ug/L	-23	Standard
	Se	82	29.7	18.6	**0.0485**	0.088	181.2	ug/L	27	Standard
	Se-1	77	87.0	5.3	**0.0015**	0.116	7976.6	ug/L	92	Standard
>	**Ga**	71	28.3	10.2				mg/L	37	Standard
	Rb	85	28.3	10.2				ug/L	25	Standard
	Y	89	311534.1	1.7				ug/L	312467	Standard
>	**Rh**	103	18.3	41.7				ug/L	20	Standard
	Mo	98	42.6	67.6	**0.0291**	0.021	73.4	ug/L	13	Standard
	Ag	107	131.0	65.5	**0.0058**	0.018	310.6	ug/L	72	Standard
	Cd	111	5.3	54.7	**-0.0094**	0.002	22.5	mg/L	5	Standard
	Cd	114	35.9	77.4	**0.0019**	0.008	406.4	ug/L	7	Standard
>	**In**	115	479657.3	0.6				ug/L	477820	Standard
	Sn	118	1706.8	9.6	**0.3002**	0.037	12.4	ug/L	343	Standard
	Sb	123	250.8	23.8	**0.0634**	0.016	25.9	ug/L	56	Standard
	Ba	135	74.7	15.9	**0.0127**	0.006	49.1	ug/L	36	Standard
	Ce	140	20.0	100.0				ug/L	65	Standard
>	**Tb**	159	945162.4	1.5				ug/L	939481	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	55.0	126.1	**0.0047**	0.011	230.6	ug/L	5	Standard
	Tl	205	51.7	148.1	**0.0051**	0.017	342.7	ug/L	2	Standard
	Pb	206	293.7	24.8	**0.0100**	0.019	186.9	ug/L	222	Standard
	Pb	207	238.7	38.2	**0.0049**	0.026	521.2	ug/L	186	Standard
	Pb	208	939.7	25.5	**0.0106**	0.019	178.9	ug/L	717	Standard
	U	238	49.7	127.9	**0.0048**	0.014	295.2	ug/L	2	Standard
>	**Bi**	209	450234.9	0.9				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	140.0	16.4	**0.2573**	0.066	25.8	mg/L	45	Standard
K	39	11.7	89.2	**0.0107**	0.390	3644.0	mg/L	10	Standard
Ca	43	35.0	0.0	**-0.5749**	0.074	12.9	mg/L	47	Standard
Fe	54	93.9	29.7	**0.0710**	0.070	99.2	mg/L	46	Standard
Fe	57	775.0	7.0	**1.5593**	0.458	29.4	mg/L	627	Standard
> **Sc-1**	45	24579.9	0.9				mg/L	24506	Standard
Cl	35	44088.7	1.4				ug/L	47100	Standard
Kr	83	4.7	32.7				ug/L	8	Standard
Br	81	483.3	14.5				ug/L	427	Standard
P	31	10375.2	2.1				ug/L	10519	Standard
S	34	2256.8	5.3				ug/L	2003	Standard
Sr	88	181.7	13.6				ug/L	132	Standard
C	12	183.3	24.6				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	10.0	173.2				mg/L	10	Standard
Dy	164	16.0	91.1				mg/L	13	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	7	Standard
I	127	1591.8	6.6				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.165	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.924	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	100.384
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	102.261
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508093701
Sample Date/Time: Sunday, August 23, 2015 18:48:45
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	54427.6	3.0				ug/L	53498	Standard
	Be	9	16.7	45.8	**0.0075**	0.012	157.1	ug/L	12	Standard
	Al	27	6794527.0	0.2	**96.4930**	2.692	2.8	ug/L	487	Standard
	Sc	45	25408.0	3.5				ug/L	24506	Standard
	Ti	47	135.7	7.2	**0.6062**	0.055	9.1	ug/L	21	Standard
	V	51	1835.8	21.0	**0.1262**	0.098	77.7	ug/L	1268	Standard
	Cr	52	8451.4	3.0	**0.1166**	0.052	44.6	ug/L	7921	Standard
	Cr	53	9061.1	11.3	**13.4583**	1.665	12.4	ug/L	442	Standard
	Mn	55	101292.5	0.6	**29.9285**	0.370	1.2	ug/L	545	Standard
	Co	59	734.0	2.7	**0.1493**	0.006	3.8	ug/L	183	Standard
	Ni	60	1925.5	2.7	**1.3223**	0.043	3.2	ug/L	131	Standard
	Cu	65	4780.1	3.6	**3.4437**	0.117	3.4	ug/L	231	Standard
	Zn	66	9402.9	0.6	**12.0447**	0.018	0.1	ug/L	306	Standard
>	Ge	72	330541.7	0.7				ug/L	330478	Standard
	As	75	861.0	7.1	**1.1804**	0.075	6.4	ug/L	-23	Standard
	Se	82	50.8	12.4	**0.3921**	0.101	25.6	ug/L	27	Standard
	Se-1	77	457.7	8.7	**8.3973**	0.888	10.6	ug/L	92	Standard
>	Ga	71	81.7	30.2				mg/L	37	Standard
	Rb	85	26408.0	0.9				ug/L	25	Standard
	Y	89	309475.3	0.5				ug/L	312467	Standard
>	Rh	103	213.3	23.1				ug/L	20	Standard
	Mo	98	3992.4	0.8	**2.9960**	0.014	0.5	ug/L	13	Standard
	Ag	107	74.0	16.2	**-0.0057**	0.003	46.3	ug/L	72	Standard
	Cd	111	45.5	15.8	**0.0209**	0.006	26.5	mg/L	5	Standard
	Cd	114	156.4	29.6	**0.0365**	0.013	36.0	ug/L	7	Standard
>	In	115	468285.8	1.0				ug/L	477820	Standard
	Sn	118	506.7	14.1	**0.0365**	0.017	46.7	ug/L	343	Standard
	Sb	123	2702.2	0.5	**0.7382**	0.012	1.6	ug/L	56	Standard
	Ba	135	66036.3	1.2	**35.3651**	0.631	1.8	ug/L	36	Standard
	Ce	140	378.3	23.8				ug/L	65	Standard
>	Tb	159	923194.3	1.1				ug/L	939481	Standard
	Ho	165	25.0	60.0				ug/L	7	Standard
	Tl	203	74.3	10.1	**0.0082**	0.001	15.2	ug/L	5	Standard
	Tl	205	43.3	33.3	**0.0036**	0.003	95.0	ug/L	2	Standard
	Pb	206	515.3	2.9	**0.0711**	0.004	5.3	ug/L	222	Standard
	Pb	207	417.7	3.1	**0.0594**	0.003	5.8	ug/L	186	Standard
	Pb	208	1641.4	1.7	**0.0706**	0.002	2.8	ug/L	717	Standard
	U	238	276.0	6.2	**0.0581**	0.004	6.5	ug/L	2	Standard
>	Bi	209	427833.3	0.3				ug/L	440279	Standard

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Na	23	1.7	**-4709575879938**1572247061509.234			173.2	mg/L	2	Standard
Mg	24	22488.4	4.2	**61.1001**	3.134	5.1	mg/L	45	Standard
K	39	121.7	20.7	**3.9578**	0.788	19.9	mg/L	10	Standard
Ca	43	201.7	25.3	**35.6386**	9.525	26.7	mg/L	47	Standard
Fe	54	71.0	39.8	**0.0082**	0.073	890.2	mg/L	46	Standard
Fe	57	945.0	5.4	**2.9457**	0.769	26.1	mg/L	627	Standard
> **Sc-1**	45	25408.0	3.5				mg/L	24506	Standard
Cl	35	56038.2	3.9				ug/L	47100	Standard
Kr	83	4.0	66.1				ug/L	8	Standard
Br	81	2013.5	5.3				ug/L	427	Standard
P	31	12945.5	2.4				ug/L	10519	Standard
S	34	2133.5	5.2				ug/L	2003	Standard
Sr	88	333.3	6.9				ug/L	132	Standard
C	12	233.3	17.3				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	51.4	62.5				mg/L	13	Standard
Ho-1	165	25.0	60.0				mg/L	7	Standard
Er	166	40.0					mg/L	7	Standard
I	127	32139.1	2.2				mg/L	2225	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		101.738	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.019	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.005
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.173
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: L1508093801
Sample Date/Time: Sunday, August 23, 2015 18:51:56
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56465.1	2.2				ug/L	53498	Standard
	Be	9	28.3	56.7	**0.0256**	0.026	102.2	ug/L	12	Standard
	Al	27	7483688.1	1.2	**102.4124**	1.925	1.9	ug/L	487	Standard
	Sc	45	26581.6	0.4				ug/L	24506	Standard
	Ti	47	1712.1	35.0	**8.7309**	3.066	35.1	ug/L	21	Standard
	V	51	2746.6	15.6	**0.3249**	0.102	31.3	ug/L	1268	Standard
	Cr	52	11664.5	2.9	**0.6409**	0.055	8.5	ug/L	7921	Standard
	Cr	53	9978.3	5.5	**14.1732**	0.911	6.4	ug/L	442	Standard
	Mn	55	511484.8	1.8	**144.8309**	1.853	1.3	ug/L	545	Standard
	Co	59	899.7	4.4	**0.1840**	0.012	6.5	ug/L	183	Standard
	Ni	60	2477.2	1.9	**1.6426**	0.024	1.5	ug/L	131	Standard
	Cu	65	45399.6	1.0	**32.6057**	0.530	1.6	ug/L	231	Standard
	Zn	66	25032.7	0.9	**31.2912**	0.432	1.4	ug/L	306	Standard
>	**Ge**	72	346510.9	0.6				ug/L	330478	Standard
	As	75	3621.0	1.0	**4.5796**	0.070	1.5	ug/L	-23	Standard
	Se	82	503.7	4.6	**7.2771**	0.345	4.7	ug/L	27	Standard
	Se-1	77	477.0	8.0	**8.3414**	0.889	10.7	ug/L	92	Standard
>	**Ga**	71	120.0	16.7				mg/L	37	Standard
	Rb	85	30001.4	2.5				ug/L	25	Standard
	Y	89	327605.6	3.9				ug/L	312467	Standard
>	**Rh**	103	231.7	13.2				ug/L	20	Standard
	Mo	98	4442.4	1.3	**3.2043**	0.014	0.4	ug/L	13	Standard
	Ag	107	444.7	4.5	**0.0688**	0.003	4.7	ug/L	72	Standard
	Cd	111	79.4	6.1	**0.0439**	0.003	7.2	mg/L	5	Standard
	Cd	114	209.7	9.8	**0.0494**	0.005	10.7	ug/L	7	Standard
>	**In**	115	487195.2	0.9				ug/L	477820	Standard
	Sn	118	3243.7	2.9	**0.6303**	0.018	2.8	ug/L	343	Standard
	Sb	123	2674.9	1.6	**0.7022**	0.017	2.4	ug/L	56	Standard
	Ba	135	159314.5	0.6	**82.0370**	0.439	0.5	ug/L	36	Standard
	Ce	140	2555.2	8.7				ug/L	65	Standard
>	**Tb**	159	961996.6	1.4				ug/L	939481	Standard
	Ho	165	70.0	43.4				ug/L	7	Standard
	Tl	203	80.7	34.2	**0.0083**	0.004	50.6	ug/L	5	Standard
	Tl	205	50.0	20.0	**0.0044**	0.002	51.4	ug/L	2	Standard
	Pb	206	2368.9	1.2	**0.5080**	0.010	1.9	ug/L	222	Standard
	Pb	207	1932.5	3.4	**0.4541**	0.014	3.1	ug/L	186	Standard
	Pb	208	7431.4	1.0	**0.4938**	0.007	1.5	ug/L	717	Standard
	U	238	3778.5	1.1	**0.8135**	0.006	0.8	ug/L	2	Standard
>	**Bi**	209	460168.2	0.6				ug/L	440279	Standard

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Na	23	1.7	**-439942282002**76200238482692.078			173.2	mg/L	2	Standard
Mg	24	23560.0	2.0	**61.1474**	1.443	2.4	mg/L	45	Standard
K	39	161.7	17.6	**5.1604**	0.995	19.3	mg/L	10	Standard
Ca	43	188.3	5.5	**31.0905**	2.110	6.8	mg/L	47	Standard
Fe	54	157.5	3.7	**0.2017**	0.015	7.5	mg/L	46	Standard
Fe	57	943.4	12.1	**2.5182**	1.047	41.6	mg/L	627	Standard
Sc-1	45	26581.6	0.4				mg/L	24506	Standard
Cl	35	59829.9	1.3				ug/L	47100	Standard
Kr	83	3.0	57.7				ug/L	8	Standard
Br	81	37031.9	1.0				ug/L	427	Standard
P	31	14001.5	4.0				ug/L	10519	Standard
S	34	2230.2	3.2				ug/L	2003	Standard
Sr	88	326.7	9.7				ug/L	132	Standard
C	12	630.0	8.2				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	10.0	100.0				mg/L	10	Standard
Dy	164	91.1	51.0				mg/L	13	Standard
Ho-1	165	70.0	43.4				mg/L	7	Standard
Er	166	116.7	17.8				mg/L	7	Standard
I	127	59595.3	2.3				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		105.547	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		104.852	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	101.962
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	104.517
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508093901
Sample Date/Time: Sunday, August 23, 2015 18:55:08
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	54173.4	1.7				ug/L	53498	Standard
	Be	9	13.3	43.3	**0.0022**	0.009	423.2	ug/L	12	Standard
	Al	27	6966623.1	0.4	**99.3658**	1.740	1.8	ug/L	487	Standard
	Sc	45	25019.0	0.9				ug/L	24506	Standard
	Ti	47	139.0	5.2	**0.6204**	0.038	6.1	ug/L	21	Standard
	V	51	2081.4	5.2	**0.1858**	0.026	14.0	ug/L	1268	Standard
	Cr	52	8536.1	2.1	**0.1247**	0.017	13.8	ug/L	7921	Standard
	Cr	53	10438.6	2.4	**15.5328**	0.522	3.4	ug/L	442	Standard
	Mn	55	60657.2	0.5	**17.7613**	0.141	0.8	ug/L	545	Standard
	Co	59	680.0	3.4	**0.1334**	0.008	6.2	ug/L	183	Standard
	Ni	60	1881.5	1.6	**1.2835**	0.039	3.0	ug/L	131	Standard
	Cu	65	3753.5	1.6	**2.6528**	0.012	0.5	ug/L	231	Standard
	Zn	66	6597.4	1.5	**8.2714**	0.058	0.7	ug/L	306	Standard
>	Ge	72	332184.6	1.2				ug/L	330478	Standard
	As	75	791.5	8.1	**1.0839**	0.074	6.8	ug/L	-23	Standard
	Se	82	52.3	15.9	**0.4113**	0.125	30.4	ug/L	27	Standard
	Se-1	77	531.3	5.8	**10.0023**	0.646	6.5	ug/L	92	Standard
>	Ga	71	110.0	12.0				mg/L	37	Standard
	Rb	85	27703.6	1.1				ug/L	25	Standard
	Y	89	311240.9	0.3				ug/L	312467	Standard
>	Rh	103	220.0	25.6				ug/L	20	Standard
	Mo	98	3770.3	2.8	**2.8467**	0.118	4.2	ug/L	13	Standard
	Ag	107	85.3	12.5	**-0.0032**	0.002	73.9	ug/L	72	Standard
	Cd	111	25.6	5.4	**0.0061**	0.001	14.0	mg/L	5	Standard
	Cd	114	101.1	35.4	**0.0208**	0.010	47.0	ug/L	7	Standard
>	In	115	465597.7	1.6				ug/L	477820	Standard
	Sn	118	518.3	2.4	**0.0397**	0.001	2.4	ug/L	343	Standard
	Sb	123	2411.4	3.1	**0.6620**	0.012	1.7	ug/L	56	Standard
	Ba	135	67088.5	0.6	**36.1371**	0.372	1.0	ug/L	36	Standard
	Ce	140	520.0	5.4				ug/L	65	Standard
>	Tb	159	932082.2	0.9				ug/L	939481	Standard
	Ho	165	40.0	45.1				ug/L	7	Standard
	Tl	203	41.7	11.1	**0.0028**	0.001	29.1	ug/L	5	Standard
	Tl	205	25.0	34.6	**-0.0008**	0.002	253.3	ug/L	2	Standard
	Pb	206	468.0	7.7	**0.0573**	0.011	18.4	ug/L	222	Standard
	Pb	207	387.0	4.5	**0.0492**	0.006	12.6	ug/L	186	Standard
	Pb	208	1488.4	1.1	**0.0568**	0.002	3.8	ug/L	717	Standard
	U	238	326.3	5.8	**0.0689**	0.004	5.8	ug/L	2	Standard
>	Bi	209	433595.3	1.2				ug/L	440279	Standard

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Na	23	1.7	**-4660761122188**0726750655672.109			173.2	mg/L	2	Standard
Mg	24	22485.0	0.3	**62.0027**	0.386	0.6	mg/L	45	Standard
K	39	141.7	15.9	**4.7733**	0.817	17.1	mg/L	10	Standard
Ca	43	198.3	8.1	**35.8185**	3.826	10.7	mg/L	47	Standard
Fe	54	84.2	17.7	**0.0428**	0.037	86.2	mg/L	46	Standard
Fe	57	955.0	5.0	**3.1673**	0.549	17.3	mg/L	627	Standard
Sc-1	45	25019.0	0.9				mg/L	24506	Standard
Cl	35	58568.3	1.6				ug/L	47100	Standard
Kr	83	5.0	52.9				ug/L	8	Standard
Br	81	2513.5	2.7				ug/L	427	Standard
P	31	13165.7	0.8				ug/L	10519	Standard
S	34	2043.5	4.2				ug/L	2003	Standard
Sr	88	338.3	5.2				ug/L	132	Standard
C	12	180.0	48.1				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	44.1	91.6				mg/L	13	Standard
Ho-1	165	40.0	45.1				mg/L	7	Standard
Er	166	53.3	60.3				mg/L	7	Standard
I	127	40713.0	3.0				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		101.263	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.517	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.442
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.482
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508094001
Sample Date/Time: Sunday, August 23, 2015 18:58:19
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58440.8	1.8				ug/L	53498	Standard
	Be	9	28.3	66.8	**0.0244**	0.031	125.5	ug/L	12	Standard
	Al	27	9251401.1	2.4	**122.3474**	4.717	3.9	ug/L	487	Standard
	Sc	45	26765.3	0.3				ug/L	24506	Standard
	Ti	47	1046.4	5.8	**5.3614**	0.388	7.2	ug/L	21	Standard
	V	51	2800.5	5.7	**0.3468**	0.042	12.2	ug/L	1268	Standard
	Cr	52	13672.8	1.5	**1.0489**	0.064	6.1	ug/L	7921	Standard
	Cr	53	12036.5	4.3	**17.4709**	0.853	4.9	ug/L	442	Standard
	Mn	55	160633.1	1.0	**45.9356**	0.695	1.5	ug/L	545	Standard
	Co	59	988.0	3.8	**0.2106**	0.008	3.6	ug/L	183	Standard
	Ni	60	2822.3	1.1	**1.9086**	0.039	2.0	ug/L	131	Standard
	Cu	65	88427.0	0.3	**64.4739**	1.126	1.7	ug/L	231	Standard
	Zn	66	43540.1	0.6	**55.4534**	0.657	1.2	ug/L	306	Standard
>	**Ge**	72	342250.1	1.4				ug/L	330478	Standard
	As	75	871.6	4.4	**1.1558**	0.062	5.4	ug/L	-23	Standard
	Se	82	64.5	2.6	**0.5760**	0.033	5.7	ug/L	27	Standard
	Se-1	77	589.7	2.4	**10.9281**	0.401	3.7	ug/L	92	Standard
>	**Ga**	71	116.7	13.1				mg/L	37	Standard
	Rb	85	28154.5	4.1				ug/L	25	Standard
	Y	89	325693.2	2.6				ug/L	312467	Standard
>	**Rh**	103	283.3	11.5				ug/L	20	Standard
	Mo	98	3246.7	3.5	**2.3565**	0.072	3.1	ug/L	13	Standard
	Ag	107	353.3	12.8	**0.0508**	0.009	17.5	ug/L	72	Standard
	Cd	111	90.3	8.8	**0.0522**	0.006	11.6	mg/L	5	Standard
	Cd	114	232.0	8.4	**0.0560**	0.006	10.1	ug/L	7	Standard
>	**In**	115	484032.8	1.0				ug/L	477820	Standard
	Sn	118	3405.4	5.1	**0.6703**	0.031	4.6	ug/L	343	Standard
	Sb	123	1207.0	1.3	**0.3168**	0.006	1.8	ug/L	56	Standard
	Ba	135	221343.1	0.7	**114.7356**	1.140	1.0	ug/L	36	Standard
	Ce	140	3180.3	3.3				ug/L	65	Standard
>	**Tb**	159	960038.0	2.3				ug/L	939481	Standard
	Ho	165	90.0	25.5				ug/L	7	Standard
	Tl	203	87.0	9.8	**0.0092**	0.001	13.4	ug/L	5	Standard
	Tl	205	71.7	22.4	**0.0091**	0.003	37.2	ug/L	2	Standard
	Pb	206	2582.2	1.7	**0.5600**	0.009	1.7	ug/L	222	Standard
	Pb	207	2151.8	2.9	**0.5132**	0.019	3.7	ug/L	186	Standard
	Pb	208	8043.2	1.1	**0.5401**	0.012	2.2	ug/L	717	Standard
	U	238	5231.6	1.4	**1.1300**	0.014	1.2	ug/L	2	Standard
>	**Bi**	209	459677.5	0.9				ug/L	440279	Standard

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Na	23	1.7	**-436492588539**7560273404781	4.797	173.2	mg/L	2	Standard
Mg	24	23848.8	2.6	**61.4659**	1.381	2.2	mg/L	45	Standard
K	39	131.7	35.3	**4.0921**	1.593	38.9	mg/L	10	Standard
Ca	43	211.7	11.9	**35.6982**	5.253	14.7	mg/L	47	Standard
Fe	54	202.1	1.6	**0.3025**	0.006	2.0	mg/L	46	Standard
Fe	57	1003.4	4.2	**2.9982**	0.355	11.8	mg/L	627	Standard
> **Sc-1**	45	26765.3	0.3				mg/L	24506	Standard
Cl	35	60744.2	0.8				ug/L	47100	Standard
Kr	83	4.3	74.2				ug/L	8	Standard
Br	81	1730.1	5.9				ug/L	427	Standard
P	31	14066.5	3.7				ug/L	10519	Standard
S	34	2273.5	3.2				ug/L	2003	Standard
Sr	88	371.7	15.6				ug/L	132	Standard
C	12	720.0	10.5				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	30.0	88.2				mg/L	10	Standard
Dy	164	109.0	15.4				mg/L	13	Standard
Ho-1	165	90.0	25.5				mg/L	7	Standard
Er	166	90.0	48.4				mg/L	7	Standard
I	127	10093.4	4.1				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.240	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.562	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.300
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.406
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1508094001
Sample Date/Time: Sunday, August 23, 2015 19:01:30
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53691.8	5.6				ug/L	53498	Standard
	Be	9	10.0	100.0	**-0.0032**	0.017	551.8	ug/L	12	Standard
	Al	27	915748.1	2.9	**13.1794**	0.362	2.7	ug/L	487	Standard
	Sc	45	25416.3	2.3				ug/L	24506	Standard
	Ti	47	111.0	22.7	**0.4582**	0.123	26.9	ug/L	21	Standard
	V	51	1551.0	2.0	**0.0459**	0.015	31.8	ug/L	1268	Standard
	Cr	52	9164.4	3.0	**0.2185**	0.022	10.2	ug/L	7921	Standard
	Cr	53	2028.5	5.8	**2.3778**	0.214	9.0	ug/L	442	Standard
	Mn	55	16912.4	1.7	**4.7431**	0.068	1.4	ug/L	545	Standard
	Co	59	266.0	6.2	**0.0176**	0.005	29.0	ug/L	183	Standard
	Ni	60	418.7	3.6	**0.2123**	0.006	2.9	ug/L	131	Standard
	Cu	65	9325.5	1.6	**6.7377**	0.138	2.1	ug/L	231	Standard
	Zn	66	5567.4	1.6	**6.7920**	0.152	2.2	ug/L	306	Standard
>	**Ge**	72	337598.4	1.8				ug/L	330478	Standard
	As	75	51.8	59.1	**0.1181**	0.038	32.2	ug/L	-23	Standard
	Se	82	28.0	7.5	**0.0175**	0.041	232.5	ug/L	27	Standard
	Se-1	77	143.7	6.3	**1.2334**	0.233	18.9	ug/L	92	Standard
>	**Ga**	71	36.7	75.1				mg/L	37	Standard
	Rb	85	2823.6	2.7				ug/L	25	Standard
	Y	89	317107.6	1.1				ug/L	312467	Standard
>	**Rh**	103	61.7	28.5				ug/L	20	Standard
	Mo	98	326.9	3.8	**0.2395**	0.007	2.9	ug/L	13	Standard
	Ag	107	94.7	6.8	**-0.0016**	0.001	71.7	ug/L	72	Standard
	Cd	111	16.2	31.7	**-0.0013**	0.004	275.7	mg/L	5	Standard
	Cd	114	28.8	15.8	**0.0000**	0.001	65535.8	ug/L	7	Standard
>	**In**	115	475461.1	1.7				ug/L	477820	Standard
	Sn	118	665.0	13.9	**0.0704**	0.023	33.0	ug/L	343	Standard
	Sb	123	176.9	8.5	**0.0440**	0.005	10.3	ug/L	56	Standard
	Ba	135	22373.8	1.6	**11.7827**	0.037	0.3	ug/L	36	Standard
	Ce	140	340.0	5.1				ug/L	65	Standard
>	**Tb**	159	934480.5	2.6				ug/L	939481	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	21.7	18.7	**-0.0005**	0.001	135.7	ug/L	5	Standard
	Tl	205	18.3	41.7	**-0.0025**	0.002	71.9	ug/L	2	Standard
	Pb	206	463.7	7.7	**0.0531**	0.006	12.1	ug/L	222	Standard
	Pb	207	396.0	0.8	**0.0490**	0.002	4.7	ug/L	186	Standard
	Pb	208	1456.4	0.8	**0.0514**	0.002	3.4	ug/L	717	Standard
	U	238	525.0	3.9	**0.1116**	0.002	2.2	ug/L	2	Standard
>	**Bi**	209	444458.4	2.2				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	2283.5	2.5	**6.0797**	0.300	4.9	mg/L	45	Standard
K	39	23.3	49.5	**0.4122**	0.404	98.1	mg/L	10	Standard
Ca	43	38.3	32.8	**-0.1440**	2.587	1796.3	mg/L	47	Standard
Fe	54	65.9	24.3	**-0.0056**	0.036	637.7	mg/L	46	Standard
Fe	57	788.4	8.6	**1.4357**	0.572	39.8	mg/L	627	Standard
Sc-1	45	25416.3	2.3				mg/L	24506	Standard
Cl	35	51252.5	0.6				ug/L	47100	Standard
Kr	83	2.7	57.3				ug/L	8	Standard
Br	81	563.3	16.5				ug/L	427	Standard
P	31	10507.0	2.0				ug/L	10519	Standard
S	34	2230.2	2.8				ug/L	2003	Standard
Sr	88	203.3	20.5				ug/L	132	Standard
C	12	196.7	32.7				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	6.7	173.2				mg/L	10	Standard
Dy	164	8.1	132.7				mg/L	13	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	40.0	43.3				mg/L	7	Standard
I	127	2476.9	0.8				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.363	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.155	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.506
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.949
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508094101
Sample Date/Time: Sunday, August 23, 2015 19:04:42
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57447.1	3.1				ug/L	53498	Standard
	Be	9	15.0	66.7	**0.0038**	0.016	431.4	ug/L	12	Standard
	Al	27	6902140.8	2.3	**92.8907**	4.155	4.5	ug/L	487	Standard
	Sc	45	26180.9	1.2				ug/L	24506	Standard
	Ti	47	1216.4	4.8	**6.2616**	0.281	4.5	ug/L	21	Standard
	V	51	4233.3	8.0	**0.7005**	0.097	13.8	ug/L	1268	Standard
	Cr	52	14418.5	1.8	**1.1947**	0.018	1.5	ug/L	7921	Standard
	Cr	53	9723.1	2.8	**13.9958**	0.227	1.6	ug/L	442	Standard
	Mn	55	614371.2	1.0	**176.5454**	3.798	2.2	ug/L	545	Standard
	Co	59	1072.7	1.9	**0.2340**	0.008	3.3	ug/L	183	Standard
	Ni	60	2854.3	2.2	**1.9351**	0.055	2.8	ug/L	131	Standard
	Cu	65	80813.3	1.6	**59.0099**	0.295	0.5	ug/L	231	Standard
	Zn	66	63086.1	1.7	**80.6974**	0.492	0.6	ug/L	306	Standard
>	**Ge**	72	341592.8	1.3				ug/L	330478	Standard
	As	75	3407.4	1.2	**4.3742**	0.084	1.9	ug/L	-23	Standard
	Se	82	61.1	14.9	**0.5264**	0.153	29.1	ug/L	27	Standard
	Se-1	77	476.7	7.6	**8.4803**	0.810	9.6	ug/L	92	Standard
>	**Ga**	71	160.0	8.3				mg/L	37	Standard
	Rb	85	27994.2	3.1				ug/L	25	Standard
	Y	89	318035.4	1.6				ug/L	312467	Standard
>	**Rh**	103	220.0	4.5				ug/L	20	Standard
	Mo	98	4995.1	2.1	**3.6644**	0.108	3.0	ug/L	13	Standard
	Ag	107	1486.7	6.1	**0.2851**	0.017	5.9	ug/L	72	Standard
	Cd	111	203.5	9.2	**0.1357**	0.013	9.4	mg/L	5	Standard
	Cd	114	616.7	6.7	**0.1640**	0.011	6.8	ug/L	7	Standard
>	**In**	115	479162.4	0.9				ug/L	477820	Standard
	Sn	118	5714.4	4.3	**1.1914**	0.055	4.6	ug/L	343	Standard
	Sb	123	2770.8	1.9	**0.7398**	0.019	2.5	ug/L	56	Standard
	Ba	135	181317.1	0.3	**94.9373**	0.593	0.6	ug/L	36	Standard
	Ce	140	6212.9	2.9				ug/L	65	Standard
>	**Tb**	159	946687.7	0.3				ug/L	939481	Standard
	Ho	165	173.3	9.3				ug/L	7	Standard
	Tl	203	61.7	2.5	**0.0051**	0.000	2.3	ug/L	5	Standard
	Tl	205	35.0	37.8	**0.0008**	0.003	364.2	ug/L	2	Standard
	Pb	206	5568.4	0.6	**1.2295**	0.024	1.9	ug/L	222	Standard
	Pb	207	4619.4	0.5	**1.1243**	0.012	1.0	ug/L	186	Standard
	Pb	208	17445.6	1.0	**1.1940**	0.010	0.8	ug/L	717	Standard
	U	238	4474.7	2.3	**0.9290**	0.010	1.1	ug/L	2	Standard
>	**Bi**	209	477641.6	1.3				ug/L	440279	Standard

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Na	23	3.3	**-896930783951**55352968867524.280			173.2	mg/L	2	Standard
Mg	24	20852.7	3.1	**54.9375**	1.864	3.4	mg/L	45	Standard
K	39	140.0	16.4	**4.4791**	0.751	16.8	mg/L	10	Standard
Ca	43	185.0	18.9	**30.9327**	6.975	22.5	mg/L	47	Standard
Fe	54	343.5	14.4	**0.6473**	0.109	16.8	mg/L	46	Standard
Fe	57	995.0	1.3	**3.1239**	0.020	0.7	mg/L	627	Standard
Sc-1	45	26180.9	1.2				mg/L	24506	Standard
Cl	35	59658.6	0.8				ug/L	47100	Standard
Kr	83	3.0	66.7				ug/L	8	Standard
Br	81	1483.4	5.1				ug/L	427	Standard
P	31	13624.5	3.2				ug/L	10519	Standard
S	34	2440.2	5.3				ug/L	2003	Standard
Sr	88	310.0	16.8				ug/L	132	Standard
C	12	703.3	3.6				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	226.7	13.5				mg/L	10	Standard
Dy	164	190.4	26.3				mg/L	13	Standard
Ho-1	165	173.3	9.3				mg/L	7	Standard
Er	166	130.0	7.7				mg/L	7	Standard
I	127	30951.6	1.9				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		107.383	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.363	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.281
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	108.486
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508094201
Sample Date/Time: Sunday, August 23, 2015 19:07:53
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	111577.4	7.1				ug/L	53498	Standard
	Be	9	95.0	13.9	**0.0581**	0.017	29.0	ug/L	12	Standard
	Al	27	S	S	**S**	S	S	ug/L	487	Standard
	Sc	45	23294.6	3.0				ug/L	24506	Standard
	Ti	47	460.0	21.0	**2.5526**	0.509	20.0	ug/L	21	Standard
	V	51	4224.9	41.0	**0.8140**	0.465	57.2	ug/L	1268	Standard
	Cr	52	21623.1	2.1	**3.0277**	0.202	6.7	ug/L	7921	Standard
	Cr	53	105699.2	2.4	**177.6250**	8.559	4.8	ug/L	442	Standard
	Mn	55	39804443.6	0.7	**12743.6069**	221.553	1.7	ug/L	545	Standard
	Co	59	207505.8	1.6	**62.1675**	2.189	3.5	ug/L	183	Standard
	Ni	60	943664.2	0.7	**744.3591**	14.210	1.9	ug/L	131	Standard
	Cu	65	16352.5	2.1	**13.1585**	0.377	2.9	ug/L	231	Standard
	Zn	66	481244.0	2.4	**688.5546**	7.680	1.1	ug/L	306	Standard
>	**Ge**	72	306936.5	2.3				ug/L	330478	Standard
	As	75	10033.3	5.9	**14.2190**	0.891	6.3	ug/L	-23	Standard
	Se	82	11080.6	2.1	**190.8167**	3.300	1.7	ug/L	27	Standard
	Se-1	77	14887.3	2.0	**360.6485**	13.458	3.7	ug/L	92	Standard
>	**Ga**	71	795.0	4.1				mg/L	37	Standard
	Rb	85	99994.1	2.8				ug/L	25	Standard
	Y	89	321714.7	2.8				ug/L	312467	Standard
>	**Rh**	103	1340.1	6.1				ug/L	20	Standard
	Mo	98	56780.4	2.6	**40.4910**	0.824	2.0	ug/L	13	Standard
	Ag	107	162.7	5.2	**0.0113**	0.002	21.7	ug/L	72	Standard
	Cd	111	57896.3	2.8	**41.1736**	0.490	1.2	mg/L	5	Standard
	Cd	114	150135.9	2.9	**40.7035**	0.313	0.8	ug/L	7	Standard
>	**In**	115	493270.1	3.5				ug/L	477820	Standard
	Sn	118	1306.7	5.6	**0.2033**	0.012	5.9	ug/L	343	Standard
	Sb	123	5272.6	0.7	**1.3714**	0.038	2.7	ug/L	56	Standard
	Ba	135	56391.4	0.2	**28.6848**	0.969	3.4	ug/L	36	Standard
	Ce	140	2546.9	3.8				ug/L	65	Standard
>	**Tb**	159	931489.3	1.7				ug/L	939481	Standard
	Ho	165	101.7	19.9				ug/L	7	Standard
	Tl	203	20765.9	1.0	**3.5173**	0.043	1.2	ug/L	5	Standard
	Tl	205	14760.5	3.6	**3.6710**	0.082	2.2	ug/L	2	Standard
	Pb	206	871.7	1.2	**0.1751**	0.006	3.5	ug/L	222	Standard
	Pb	207	649.0	6.8	**0.1354**	0.017	12.4	ug/L	186	Standard
	Pb	208	2344.7	5.0	**0.1370**	0.013	9.8	ug/L	717	Standard
	U	238	443833.5	2.0	**108.9168**	0.381	0.4	ug/L	2	Standard
>	**Bi**	209	406813.4	1.7				ug/L	440279	Standard

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Na	23	30.0	**-909548273115**317179506353569.120			34.9	mg/L	2	Standard
Mg	24	70512.2	4.0	**209.4287**	14.351	6.9	mg/L	45	Standard
K	39	733.4	8.1	**28.4778**	2.196	7.7	mg/L	10	Standard
Ca	43	1170.0	7.6	**272.2403**	15.230	5.6	mg/L	47	Standard
Fe	54	105.3	12.1	**0.1143**	0.032	28.3	mg/L	46	Standard
Fe	57	2225.2	1.4	**17.0102**	0.748	4.4	mg/L	627	Standard
> **Sc-1**	45	23294.6	3.0				mg/L	24506	Standard
Cl	35	1434617.9	9.1				ug/L	47100	Standard
Kr	83	5.7	27.0				ug/L	8	Standard
Br	81	274845.7	5.7				ug/L	427	Standard
P	31	23803.8	7.7				ug/L	10519	Standard
S	34	4547.3	3.1				ug/L	2003	Standard
Sr	88	1405.1	0.9				ug/L	132	Standard
C	12	1623.4	19.6				mg/L	177	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	96.7	21.5				mg/L	10	Standard
Dy	164	124.9	44.0				mg/L	13	Standard
Ho-1	165	101.7	19.9				mg/L	7	Standard
Er	166	106.7	28.6				mg/L	7	Standard
I	127	5654071.6	16.7				mg/L	2225	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		208.565	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		92.877	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.233	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	92.399	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Cr 53 Upper, S, EEE	Cr	53	

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Mn 55 Upper, S, EEE	Mn	55
Ni 60 Upper, S, EEE	Ni	60
Zn 66 Upper, S, EEE	Zn	66
Se 82 Upper, S, EEE	Se	82
Se-1 77 Upper, S, EEE	Se-1	77
U 238 Upper, S, EEE	U	238

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Method 6020 - Summary Report

Sample ID: L1508099202
Sample Date/Time: Sunday, August 23, 2015 19:11:05
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72225.3	4.1				ug/L	53498	Standard
	Be	9	13.3	21.7	**-0.0032**	0.004	129.9	ug/L	12	Standard
	Al	27	3637573.7	2.3	**38.9508**	2.030	5.2	ug/L	487	Standard
	Sc	45	24670.1	2.1				ug/L	24506	Standard
	Ti	47	30.7	24.9	**0.0390**	0.043	111.2	ug/L	21	Standard
	V	51	1444.9	29.5	**0.0342**	0.112	329.3	ug/L	1268	Standard
	Cr	52	11673.8	2.8	**0.7904**	0.084	10.6	ug/L	7921	Standard
	Cr	53	5514.3	12.9	**8.0624**	1.184	14.7	ug/L	442	Standard
	Mn	55	6311.8	38.7	**1.7301**	0.737	42.6	ug/L	545	Standard
	Co	59	395.0	4.8	**0.0570**	0.006	9.9	ug/L	183	Standard
	Ni	60	911.7	19.9	**0.5912**	0.128	21.7	ug/L	131	Standard
	Cu	65	433.0	2.2	**0.1597**	0.004	2.7	ug/L	231	Standard
	Zn	66	1469.1	4.5	**1.5322**	0.072	4.7	ug/L	306	Standard
>	**Ge**	72	324625.3	0.9				ug/L	330478	Standard
	As	75	156.6	8.7	**0.2610**	0.019	7.2	ug/L	-23	Standard
	Se	82	91.2	16.3	**1.0664**	0.255	23.9	ug/L	27	Standard
	Se-1	77	349.3	9.2	**6.0964**	0.791	13.0	ug/L	92	Standard
>	**Ga**	71	36.7	7.9				mg/L	37	Standard
	Rb	85	728.4	1.7				ug/L	25	Standard
	Y	89	336955.8	0.9				ug/L	312467	Standard
>	**Rh**	103	51.7	34.0				ug/L	20	Standard
	Mo	98	58.1	13.2	**0.0350**	0.004	12.6	ug/L	13	Standard
	Ag	107	80.7	3.6	**-0.0067**	0.000	4.2	ug/L	72	Standard
	Cd	111	21.2	30.7	**0.0004**	0.004	1140.1	mg/L	5	Standard
	Cd	114	38.0	43.9	**0.0011**	0.004	342.4	ug/L	7	Standard
>	**In**	115	547613.4	2.0				ug/L	477820	Standard
	Sn	118	321.7	12.6	**-0.0163**	0.007	42.7	ug/L	343	Standard
	Sb	123	75.8	5.9	**0.0139**	0.001	7.0	ug/L	56	Standard
	Ba	135	2882.3	2.6	**1.2947**	0.036	2.8	ug/L	36	Standard
	Ce	140	55.0	24.1				ug/L	65	Standard
>	**Tb**	159	1000087.0	3.0				ug/L	939481	Standard
	Ho	165	11.7	49.5				ug/L	7	Standard
	Tl	203	33.3	15.4	**0.0010**	0.001	77.6	ug/L	5	Standard
	Tl	205	28.3	27.0	**-0.0006**	0.002	263.2	ug/L	2	Standard
	Pb	206	289.3	5.3	**0.0046**	0.004	95.1	ug/L	222	Standard
	Pb	207	242.7	13.3	**0.0019**	0.009	465.0	ug/L	186	Standard
	Pb	208	909.0	2.5	**0.0040**	0.001	26.9	ug/L	717	Standard
	U	238	2459.9	5.0	**0.5065**	0.027	5.3	ug/L	2	Standard
>	**Bi**	209	479029.4	1.3				ug/L	440279	Standard

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Na	23	1.7	**-4704837801578**1490181136899.187			173.2	mg/L	2	Standard
Mg	24	8579.1	3.7	**23.9227**	1.305	5.5	mg/L	45	Standard
K	39	3.3	173.2	**-0.2979**	0.220	73.9	mg/L	10	Standard
Ca	43	91.7	3.1	**12.2472**	0.626	5.1	mg/L	47	Standard
Fe	54	84.0	27.2	**0.0445**	0.054	121.5	mg/L	46	Standard
Fe	57	963.4	4.5	**3.3836**	0.606	17.9	mg/L	627	Standard
Sc-1	45	24670.1	2.1				mg/L	24506	Standard
Cl	35	101363.2	5.1				ug/L	47100	Standard
Kr	83	6.0	88.2				ug/L	8	Standard
Br	81	6411.4	8.6				ug/L	427	Standard
P	31	13481.0	1.4				ug/L	10519	Standard
S	34	2465.2	3.0				ug/L	2003	Standard
Sr	88	208.3	6.0				ug/L	132	Standard
C	12	330.0	32.1				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	22.7	26.2				mg/L	13	Standard
Ho-1	165	11.7	49.5				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	7	Standard
I	127	226397.8	39.0				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		135.006	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.229	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.607
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.801
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: L1508099204
Sample Date/Time: Sunday, August 23, 2015 19:14:17
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69782.0	2.2				ug/L	53498	Standard
	Be	9	13.3	43.3	**-0.0027**	0.008	283.3	ug/L	12	Standard
	Al	27	285998.0	1.9	**3.1565**	0.085	2.7	ug/L	487	Standard
	Sc	45	24509.8	3.7				ug/L	24506	Standard
	Ti	47	34.7	13.0	**0.0595**	0.026	43.9	ug/L	21	Standard
	V	51	1556.0	10.5	**0.0591**	0.043	72.2	ug/L	1268	Standard
	Cr	52	10447.9	2.9	**0.5277**	0.030	5.6	ug/L	7921	Standard
	Cr	53	1816.8	3.1	**2.1386**	0.068	3.2	ug/L	442	Standard
	Mn	55	3874.8	3.5	**0.9839**	0.025	2.5	ug/L	545	Standard
	Co	59	248.3	6.0	**0.0148**	0.003	23.3	ug/L	183	Standard
	Ni	60	278.7	8.6	**0.1181**	0.014	12.2	ug/L	131	Standard
	Cu	65	330.0	1.4	**0.0784**	0.007	9.3	ug/L	231	Standard
	Zn	66	1916.5	2.5	**2.1165**	0.014	0.6	ug/L	306	Standard
>	**Ge**	72	327354.4	1.9				ug/L	330478	Standard
	As	75	126.8	16.8	**0.2197**	0.026	11.8	ug/L	-23	Standard
	Se	82	36.1	23.9	**0.1601**	0.132	82.5	ug/L	27	Standard
	Se-1	77	155.0	6.4	**1.5894**	0.204	12.8	ug/L	92	Standard
>	**Ga**	71	33.3	31.2				mg/L	37	Standard
	Rb	85	6816.5	3.6				ug/L	25	Standard
	Y	89	329069.5	3.5				ug/L	312467	Standard
>	**Rh**	103	50.0	52.9				ug/L	20	Standard
	Mo	98	189.9	6.2	**0.1225**	0.009	7.1	ug/L	13	Standard
	Ag	107	81.7	9.5	**-0.0062**	0.001	21.9	ug/L	72	Standard
	Cd	111	7.6	47.8	**-0.0083**	0.002	28.5	mg/L	5	Standard
	Cd	114	13.5	161.6	**-0.0048**	0.005	112.7	ug/L	7	Standard
>	**In**	115	535336.8	0.9				ug/L	477820	Standard
	Sn	118	430.0	2.3	**0.0067**	0.002	34.3	ug/L	343	Standard
	Sb	123	81.7	12.7	**0.0157**	0.002	14.7	ug/L	56	Standard
	Ba	135	7858.0	0.5	**3.6575**	0.045	1.2	ug/L	36	Standard
	Ce	140	171.7	13.1				ug/L	65	Standard
>	**Tb**	159	990538.9	1.4				ug/L	939481	Standard
	Ho	165	6.7	86.6				ug/L	7	Standard
	Tl	203	16.3	47.6	**-0.0015**	0.001	74.1	ug/L	5	Standard
	Tl	205	16.7	62.4	**-0.0031**	0.002	71.2	ug/L	2	Standard
	Pb	206	292.3	5.6	**0.0051**	0.003	59.1	ug/L	222	Standard
	Pb	207	249.7	4.8	**0.0036**	0.003	91.5	ug/L	186	Standard
	Pb	208	918.3	2.2	**0.0046**	0.001	28.4	ug/L	717	Standard
	U	238	254.0	2.4	**0.0466**	0.001	2.1	ug/L	2	Standard
>	**Bi**	209	479738.1	1.1				ug/L	440279	Standard

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Na	23	1.7	**-4987841647088**6391951528511.906			173.2	mg/L	2	Standard
Mg	24	1855.1	2.2	**5.1011**	0.222	4.4	mg/L	45	Standard
K	39	16.7	45.8	**0.2071**	0.314	151.6	mg/L	10	Standard
Ca	43	35.0	37.8	**-0.5325**	3.048	572.3	mg/L	47	Standard
Fe	54	84.1	22.0	**0.0465**	0.043	93.2	mg/L	46	Standard
Fe	57	856.7	10.9	**2.4000**	1.025	42.7	mg/L	627	Standard
Sc-1	45	24509.8	3.7				mg/L	24506	Standard
Cl	35	84397.8	1.7				ug/L	47100	Standard
Kr	83	3.0	57.7				ug/L	8	Standard
Br	81	1540.1	10.7				ug/L	427	Standard
P	31	13139.0	2.4				ug/L	10519	Standard
S	34	2440.2	1.2				ug/L	2003	Standard
Sr	88	233.3	16.1				ug/L	132	Standard
C	12	280.0	27.0				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	9.0	111.0				mg/L	13	Standard
Ho-1	165	6.7	86.6				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	7	Standard
I	127	100598.1	3.0				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		130.440	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.055	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.037
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.962
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Sunday, August 23, 2015 19:17:29
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63352.2	1.9				ug/L	53498	Standard
	Be	9	35889.1	2.9	**51.4789**	0.915	1.8	ug/L	12	Standard
	Al	27	3896862.3	3.7	**47.5026**	0.860	1.8	ug/L	487	Standard
	Sc	45	24009.1	6.0				ug/L	24506	Standard
	Ti	47	18817.0	1.9	**106.7112**	1.347	1.3	ug/L	21	Standard
	V	51	203424.8	2.2	**53.6114**	0.509	0.9	ug/L	1268	Standard
	Cr	52	266342.6	0.6	**53.0479**	0.852	1.6	ug/L	7921	Standard
	Cr	53	34369.0	2.3	**55.5167**	0.370	0.7	ug/L	442	Standard
	Mn	55	182014.3	4.7	**56.3530**	1.636	2.9	ug/L	545	Standard
	Co	59	188422.5	1.4	**54.7695**	0.944	1.7	ug/L	183	Standard
	Ni	60	67854.9	1.1	**51.8648**	0.626	1.2	ug/L	131	Standard
	Cu	65	65607.7	1.0	**51.7422**	0.811	1.6	ug/L	231	Standard
	Zn	66	36645.9	1.9	**50.4745**	0.692	1.4	ug/L	306	Standard
>	**Ge**	72	316212.6	2.1				ug/L	330478	Standard
	As	75	37502.7	0.4	**51.4471**	0.920	1.8	ug/L	-23	Standard
	Se	82	3257.6	0.5	**54.1622**	1.345	2.5	ug/L	27	Standard
	Se-1	77	2345.5	4.4	**53.4667**	1.807	3.4	ug/L	92	Standard
>	**Ga**	71	43.3	17.6				mg/L	37	Standard
	Rb	85	551.7	5.0				ug/L	25	Standard
	Y	89	316633.5	2.0				ug/L	312467	Standard
>	**Rh**	103	25.0	20.0				ug/L	20	Standard
	Mo	98	149012.8	1.2	**100.7238**	1.663	1.7	ug/L	13	Standard
	Ag	107	266384.1	1.8	**50.5493**	1.003	2.0	ug/L	72	Standard
	Cd	111	79081.5	1.1	**53.3179**	0.895	1.7	mg/L	5	Standard
	Cd	114	206899.2	1.5	**53.1785**	0.998	1.9	ug/L	7	Standard
>	**In**	115	520283.2	0.6				ug/L	477820	Standard
	Sn	118	240159.0	2.3	**49.0901**	1.357	2.8	ug/L	343	Standard
	Sb	123	206545.4	0.4	**51.0441**	0.485	1.0	ug/L	56	Standard
	Ba	135	100261.6	0.4	**48.3351**	0.508	1.1	ug/L	36	Standard
	Ce	140	93.3	43.6				ug/L	65	Standard
>	**Tb**	159	973627.2	1.0				ug/L	939481	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	345484.4	1.0	**51.0049**	0.354	0.7	ug/L	5	Standard
	Tl	205	239627.1	1.8	**51.9932**	0.758	1.5	ug/L	2	Standard
	Pb	206	218938.8	0.2	**51.8672**	0.304	0.6	ug/L	222	Standard
	Pb	207	197045.0	0.4	**51.5978**	0.349	0.7	ug/L	186	Standard
	Pb	208	686600.5	0.8	**50.4453**	0.317	0.6	ug/L	717	Standard
	U	238	239185.0	1.2	**51.1131**	0.524	1.0	ug/L	2	Standard
>	**Bi**	209	467150.3	0.4				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	2048.5	5.1	**5.7676**	0.244	4.2	mg/L	45	Standard
K	39	146.7	15.7	**5.1677**	0.663	12.8	mg/L	10	Standard
Ca	43	68.3	22.4	**7.4734**	3.942	52.8	mg/L	47	Standard
Fe	54	2079.0	5.3	**5.2154**	0.352	6.8	mg/L	46	Standard
Fe	57	1388.4	3.1	**7.9218**	0.436	5.5	mg/L	627	Standard
> **Sc-1**	45	24009.1	6.0				mg/L	24506	Standard
Cl	35	68425.9	6.4				ug/L	47100	Standard
Kr	83	5.3	21.7				ug/L	8	Standard
Br	81	796.7	11.7				ug/L	427	Standard
P	31	12390.1	3.9				ug/L	10519	Standard
S	34	2490.2	10.4				ug/L	2003	Standard
Sr	88	181.7	6.4				ug/L	132	Standard
C	12	256.7	44.8				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	15.2	75.8				mg/L	13	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	30.0	0.0				mg/L	7	Standard
I	127	34790.4	13.3				mg/L	2225	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	102.958		
	Al	27	95.005		
	Sc	45			
	Ti	47	106.711		
	V	51	107.223		
	Cr	52	106.096		
	Cr	53			
	Mn	55	112.706		
	Co	59	109.539		
	Ni	60	103.730		
	Cu	65	103.484		
	Zn	66	100.949		
>	Ge	72		95.683	
	As	75	102.894		
	Se	82	108.324		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	100.724		
Ag	107	101.099		
Cd	111	106.636		
Cd	114			
In	115			108.887
Sn	118	98.180		
Sb	123	102.088		
Ba	135	96.670		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.010		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.891		
U	238	102.226		
Bi	209			106.103
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Mn	55	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Sunday, August 23, 2015 19:20:41
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63245.2	3.7				ug/L	53498	Standard
	Be	9	20.0	66.1	**0.0090**	0.019	215.4	ug/L	12	Standard
	Al	27	10429.8	72.6	**0.1181**	0.097	82.3	ug/L	487	Standard
	Sc	45	23322.9	2.8				ug/L	24506	Standard
	Ti	47	24.3	4.7	**0.0075**	0.007	88.8	ug/L	21	Standard
	V	51	1045.8	14.8	**-0.0622**	0.037	59.3	ug/L	1268	Standard
	Cr	52	6926.3	3.4	**-0.1190**	0.028	23.2	ug/L	7921	Standard
	Cr	53	1166.7	9.9	**1.1770**	0.159	13.5	ug/L	442	Standard
	Mn	55	1140.4	48.1	**0.1742**	0.164	94.1	ug/L	545	Standard
	Co	59	240.3	16.1	**0.0150**	0.010	67.9	ug/L	183	Standard
	Ni	60	157.7	19.6	**0.0328**	0.022	66.1	ug/L	131	Standard
	Cu	65	284.3	3.5	**0.0513**	0.005	10.6	ug/L	231	Standard
	Zn	66	334.3	9.7	**0.0094**	0.045	477.7	ug/L	306	Standard
>	**Ge**	72	315741.8	1.6				ug/L	330478	Standard
	As	75	-23.7	97.3	**0.0197**	0.032	160.5	ug/L	-23	Standard
	Se	82	30.4	13.4	**0.0874**	0.074	85.1	ug/L	27	Standard
	Se-1	77	106.7	5.5	**0.5756**	0.116	20.2	ug/L	92	Standard
>	**Ga**	71	18.3	15.7				mg/L	37	Standard
	Rb	85	23.3	44.6				ug/L	25	Standard
	Y	89	321418.4	2.7				ug/L	312467	Standard
>	**Rh**	103	23.3	24.7				ug/L	20	Standard
	Mo	98	70.4	32.6	**0.0449**	0.016	34.7	ug/L	13	Standard
	Ag	107	115.3	29.8	**0.0004**	0.007	1648.7	ug/L	72	Standard
	Cd	111	11.8	60.7	**-0.0054**	0.005	89.6	mg/L	5	Standard
	Cd	114	34.3	74.1	**0.0006**	0.006	1075.5	ug/L	7	Standard
>	**In**	115	525852.4	0.6				ug/L	477820	Standard
	Sn	118	586.7	7.1	**0.0400**	0.009	22.4	ug/L	343	Standard
	Sb	123	753.2	7.5	**0.1803**	0.014	8.0	ug/L	56	Standard
	Ba	135	58.0	12.4	**0.0013**	0.003	261.6	ug/L	36	Standard
	Ce	140	28.3	20.4				ug/L	65	Standard
>	**Tb**	159	966433.3	2.0				ug/L	939481	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	55.0	76.0	**0.0043**	0.006	143.6	ug/L	5	Standard
	Tl	205	48.3	67.3	**0.0039**	0.007	183.5	ug/L	2	Standard
	Pb	206	260.0	11.4	**-0.0008**	0.007	904.6	ug/L	222	Standard
	Pb	207	212.7	9.7	**-0.0045**	0.005	117.4	ug/L	186	Standard
	Pb	208	820.3	14.6	**-0.0009**	0.009	1015.3	ug/L	717	Standard
	U	238	38.3	96.1	**0.0019**	0.008	406.6	ug/L	2	Standard
>	**Bi**	209	467479.5	1.2				ug/L	440279	Standard

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Na	23	1.7	**-5066732001538775837254986**7.828			173.2	mg/L	2	Standard
Mg	24	43.3	33.3	**-0.0076**	0.046	604.0	mg/L	45	Standard
K	39	8.3	91.7	**-0.1017**	0.293	288.3	mg/L	10	Standard
Ca	43	31.7	24.1	**-0.9222**	1.947	211.2	mg/L	47	Standard
Fe	54	67.6	4.4	**0.0140**	0.013	90.8	mg/L	46	Standard
Fe	57	813.4	9.0	**2.3849**	0.965	40.5	mg/L	627	Standard
> **Sc-1**	45	23322.9	2.8				mg/L	24506	Standard
Cl	35	64636.9	1.1				ug/L	47100	Standard
Kr	83	7.7	27.2				ug/L	8	Standard
Br	81	633.3	15.8				ug/L	427	Standard
P	31	12079.8	3.0				ug/L	10519	Standard
S	34	2415.2	4.0				ug/L	2003	Standard
Sr	88	170.0	13.5				ug/L	132	Standard
C	12	210.0	52.4				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	9.5	110.1				mg/L	13	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	25526.6	8.3				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.541	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.052
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.178
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508099206
Sample Date/Time: Sunday, August 23, 2015 19:23:53
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62041.9	4.0				ug/L	53498	Standard
	Be	9	6.7	86.6	**-0.0104**	0.008	80.2	ug/L	12	Standard
	Al	27	3685366.6	1.7	**45.9106**	1.038	2.3	ug/L	487	Standard
	Sc	45	23565.0	1.1				ug/L	24506	Standard
	Ti	47	36.3	23.1	**0.0779**	0.046	58.6	ug/L	21	Standard
	V	51	1247.6	18.9	**-0.0045**	0.062	1367.0	ug/L	1268	Standard
	Cr	52	8195.2	5.6	**0.1612**	0.077	48.0	ug/L	7921	Standard
	Cr	53	3902.2	7.2	**5.7361**	0.392	6.8	ug/L	442	Standard
	Mn	55	10340.5	3.0	**3.0767**	0.070	2.3	ug/L	545	Standard
	Co	59	396.3	0.9	**0.0619**	0.002	3.6	ug/L	183	Standard
	Ni	60	862.0	6.1	**0.5807**	0.034	5.8	ug/L	131	Standard
	Cu	65	392.3	4.8	**0.1406**	0.013	9.5	ug/L	231	Standard
	Zn	66	1420.4	2.0	**1.5444**	0.020	1.3	ug/L	306	Standard
>	**Ge**	72	312009.4	1.1				ug/L	330478	Standard
	As	75	142.1	22.5	**0.2495**	0.045	18.1	ug/L	-23	Standard
	Se	82	99.5	10.2	**1.2649**	0.153	12.1	ug/L	27	Standard
	Se-1	77	225.3	8.0	**3.4501**	0.464	13.5	ug/L	92	Standard
>	**Ga**	71	25.0	20.0				mg/L	37	Standard
	Rb	85	311.7	5.6				ug/L	25	Standard
	Y	89	317960.0	0.7				ug/L	312467	Standard
>	**Rh**	103	55.0	9.1				ug/L	20	Standard
	Mo	98	37.4	19.0	**0.0233**	0.005	19.9	ug/L	13	Standard
	Ag	107	75.0	14.0	**-0.0069**	0.002	27.5	ug/L	72	Standard
	Cd	111	29.9	38.5	**0.0072**	0.008	107.9	mg/L	5	Standard
	Cd	114	61.2	19.2	**0.0079**	0.003	41.2	ug/L	7	Standard
>	**In**	115	513113.6	1.0				ug/L	477820	Standard
	Sn	118	451.7	11.1	**0.0149**	0.009	63.7	ug/L	343	Standard
	Sb	123	250.0	7.6	**0.0588**	0.005	8.0	ug/L	56	Standard
	Ba	135	2568.6	0.5	**1.2300**	0.017	1.4	ug/L	36	Standard
	Ce	140	96.7	13.0				ug/L	65	Standard
>	**Tb**	159	951034.4	0.3				ug/L	939481	Standard
	Ho	165	16.7	124.9				ug/L	7	Standard
	Tl	203	40.7	22.8	**0.0023**	0.001	61.6	ug/L	5	Standard
	Tl	205	21.7	13.3	**-0.0018**	0.001	33.8	ug/L	2	Standard
	Pb	206	289.7	6.6	**0.0079**	0.004	51.8	ug/L	222	Standard
	Pb	207	253.7	4.9	**0.0079**	0.003	43.6	ug/L	186	Standard
	Pb	208	897.0	2.5	**0.0063**	0.002	25.9	ug/L	717	Standard
	U	238	2175.2	1.8	**0.4694**	0.004	0.9	ug/L	2	Standard
>	**Bi**	209	456587.6	1.0				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	8047.1	1.6	**23.4738**	0.290	1.2	mg/L	45	Standard
K	39	23.3	24.7	**0.4859**	0.236	48.6	mg/L	10	Standard
Ca	43	93.3	16.4	**13.5945**	3.423	25.2	mg/L	47	Standard
Fe	54	72.6	21.5	**0.0254**	0.043	170.4	mg/L	46	Standard
Fe	57	873.4	6.7	**2.8927**	0.504	17.4	mg/L	627	Standard
> **Sc-1**	45	23565.0	1.1				mg/L	24506	Standard
Cl	35	72384.0	3.5				ug/L	47100	Standard
Kr	83	7.0	37.8				ug/L	8	Standard
Br	81	6508.1	5.2				ug/L	427	Standard
P	31	12448.4	2.1				ug/L	10519	Standard
S	34	2195.2	8.7				ug/L	2003	Standard
Sr	88	268.3	4.3				ug/L	132	Standard
C	12	253.3	8.2				mg/L	177	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	8.6	11.2				mg/L	13	Standard
Ho-1	165	16.7	124.9				mg/L	7	Standard
Er	166	30.0	66.7				mg/L	7	Standard
I	127	63760.5	0.7				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.971	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.412	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.386
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.704
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508099208
Sample Date/Time: Sunday, August 23, 2015 19:27:05
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61687.0	2.5				ug/L	53498	Standard
	Be	9	15.0	33.3	**0.0019**	0.007	362.7	ug/L	12	Standard
	Al	27	281904.5	4.0	**3.5195**	0.095	2.7	ug/L	487	Standard
	Sc	45	23945.6	1.7				ug/L	24506	Standard
	Ti	47	29.0	21.5	**0.0301**	0.034	114.6	ug/L	21	Standard
	V	51	1895.1	3.1	**0.1518**	0.017	11.3	ug/L	1268	Standard
	Cr	52	8867.3	3.7	**0.2365**	0.079	33.3	ug/L	7921	Standard
	Cr	53	1335.1	4.8	**1.4033**	0.126	9.0	ug/L	442	Standard
	Mn	55	2976.3	15.5	**0.7257**	0.146	20.1	ug/L	545	Standard
	Co	59	274.7	6.8	**0.0232**	0.006	26.3	ug/L	183	Standard
	Ni	60	385.3	5.5	**0.2004**	0.014	6.8	ug/L	131	Standard
	Cu	65	310.7	2.4	**0.0664**	0.009	13.2	ug/L	231	Standard
	Zn	66	1270.7	2.4	**1.2708**	0.061	4.8	ug/L	306	Standard
>	**Ge**	72	323470.1	1.2				ug/L	330478	Standard
	As	75	-0.7	2771.8	**0.0510**	0.027	52.7	ug/L	-23	Standard
	Se	82	31.7	19.2	**0.0979**	0.105	107.6	ug/L	27	Standard
	Se-1	77	114.0	7.8	**0.6839**	0.173	25.3	ug/L	92	Standard
>	**Ga**	71	20.0	86.6				mg/L	37	Standard
	Rb	85	1001.7	3.8				ug/L	25	Standard
	Y	89	318098.9	2.2				ug/L	312467	Standard
>	**Rh**	103	60.0	33.3				ug/L	20	Standard
	Mo	98	446.4	4.8	**0.3001**	0.014	4.7	ug/L	13	Standard
	Ag	107	88.3	30.3	**-0.0044**	0.005	118.3	ug/L	72	Standard
	Cd	111	20.7	70.2	**0.0008**	0.010	1302.7	mg/L	5	Standard
	Cd	114	49.2	34.9	**0.0046**	0.004	96.5	ug/L	7	Standard
>	**In**	115	519162.4	1.0				ug/L	477820	Standard
	Sn	118	401.7	9.5	**0.0036**	0.009	237.5	ug/L	343	Standard
	Sb	123	163.3	8.8	**0.0366**	0.004	10.5	ug/L	56	Standard
	Ba	135	9338.5	1.0	**4.4881**	0.077	1.7	ug/L	36	Standard
	Ce	140	60.0	22.0				ug/L	65	Standard
>	**Tb**	159	965739.1	0.5				ug/L	939481	Standard
	Ho	165	10.0	100.0				ug/L	7	Standard
	Tl	203	39.3	85.2	**0.0019**	0.005	252.3	ug/L	5	Standard
	Tl	205	16.7	69.3	**-0.0031**	0.002	80.5	ug/L	2	Standard
	Pb	206	255.7	7.3	**-0.0021**	0.004	200.3	ug/L	222	Standard
	Pb	207	229.3	8.0	**-0.0004**	0.005	1103.6	ug/L	186	Standard
	Pb	208	845.0	0.7	**0.0006**	0.001	105.7	ug/L	717	Standard
	U	238	180.7	9.1	**0.0321**	0.003	10.7	ug/L	2	Standard
>	**Bi**	209	469890.3	0.7				ug/L	440279	Standard

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Na	23	1.7	**-4956128139298**5842657460728.656			173.2	mg/L	2	Standard
Mg	24	785.0	4.0	**2.1309**	0.114	5.4	mg/L	45	Standard
K	39	13.3	78.1	**0.0824**	0.388	470.5	mg/L	10	Standard
Ca	43	48.3	47.8	**2.7938**	5.562	199.1	mg/L	47	Standard
Fe	54	58.7	25.4	**-0.0135**	0.040	299.1	mg/L	46	Standard
Fe	57	876.7	5.5	**2.7839**	0.338	12.1	mg/L	627	Standard
> **Sc-1**	45	23945.6	1.7				mg/L	24506	Standard
Cl	35	69639.0	0.5				ug/L	47100	Standard
Kr	83	4.3	70.5				ug/L	8	Standard
Br	81	1443.4	1.1				ug/L	427	Standard
P	31	11802.9	3.9				ug/L	10519	Standard
S	34	2341.8	2.4				ug/L	2003	Standard
Sr	88	203.3	17.3				ug/L	132	Standard
C	12	223.3	23.0				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	31.9	48.9				mg/L	13	Standard
Ho-1	165	10.0	100.0				mg/L	7	Standard
Er	166	30.0	33.3				mg/L	7	Standard
I	127	36363.6	0.5				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.308	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.880	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	108.652	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	106.725	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: L1508099210
Sample Date/Time: Sunday, August 23, 2015 19:30:16
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62639.3	2.5				ug/L	53498	Standard
	Be	9	15.0	57.7	**0.0019**	0.013	693.9	ug/L	12	Standard
	Al	27	1764004.0	3.6	**21.7432**	0.295	1.4	ug/L	487	Standard
	Sc	45	24317.8	2.2				ug/L	24506	Standard
	Ti	47	51.3	7.9	**0.1518**	0.021	13.9	ug/L	21	Standard
	V	51	1294.6	6.1	**-0.0064**	0.023	358.5	ug/L	1268	Standard
	Cr	52	8537.4	3.1	**0.1571**	0.064	40.6	ug/L	7921	Standard
	Cr	53	2140.2	4.3	**2.6638**	0.135	5.1	ug/L	442	Standard
	Mn	55	17790.4	2.5	**5.1828**	0.145	2.8	ug/L	545	Standard
	Co	59	491.7	3.8	**0.0838**	0.004	4.9	ug/L	183	Standard
	Ni	60	538.3	5.7	**0.3120**	0.026	8.4	ug/L	131	Standard
	Cu	65	351.0	5.0	**0.0955**	0.015	15.5	ug/L	231	Standard
	Zn	66	1861.1	1.0	**2.0529**	0.030	1.5	ug/L	306	Standard
>	**Ge**	72	325989.0	0.8				ug/L	330478	Standard
	As	75	33.3	49.2	**0.0962**	0.022	22.5	ug/L	-23	Standard
	Se	82	51.9	14.8	**0.4211**	0.120	28.5	ug/L	27	Standard
	Se-1	77	144.0	8.7	**1.3511**	0.260	19.3	ug/L	92	Standard
>	**Ga**	71	25.0	52.9				mg/L	37	Standard
	Rb	85	236.7	8.0				ug/L	25	Standard
	Y	89	326654.8	2.2				ug/L	312467	Standard
>	**Rh**	103	38.3	19.9				ug/L	20	Standard
	Mo	98	30.8	12.6	**0.0185**	0.003	14.1	ug/L	13	Standard
	Ag	107	75.3	11.1	**-0.0070**	0.002	23.1	ug/L	72	Standard
	Cd	111	23.3	16.2	**0.0024**	0.002	104.6	mg/L	5	Standard
	Cd	114	46.6	33.7	**0.0038**	0.004	104.9	ug/L	7	Standard
>	**In**	115	522717.0	0.5				ug/L	477820	Standard
	Sn	118	436.7	9.7	**0.0101**	0.008	82.0	ug/L	343	Standard
	Sb	123	91.7	12.6	**0.0187**	0.003	14.7	ug/L	56	Standard
	Ba	135	2675.2	1.1	**1.2580**	0.019	1.5	ug/L	36	Standard
	Ce	140	188.3	4.1				ug/L	65	Standard
>	**Tb**	159	963435.4	2.3				ug/L	939481	Standard
	Ho	165	15.0	66.7				ug/L	7	Standard
	Tl	203	25.3	25.7	**-0.0001**	0.001	893.0	ug/L	5	Standard
	Tl	205	30.0	60.1	**-0.0002**	0.004	2109.5	ug/L	2	Standard
	Pb	206	288.3	2.2	**0.0056**	0.002	28.5	ug/L	222	Standard
	Pb	207	226.7	6.0	**-0.0011**	0.004	322.3	ug/L	186	Standard
	Pb	208	871.3	3.4	**0.0025**	0.002	89.1	ug/L	717	Standard
	U	238	873.4	4.8	**0.1792**	0.009	5.1	ug/L	2	Standard
>	**Bi**	209	470103.2	0.2				ug/L	440279	Standard

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Na	23	3.3	-988084566941711412672116	94.370	173.2	mg/L	2	Standard
Mg	24	4080.6	5.6	11.4701	0.727	6.3	mg/L	45	Standard
K	39	8.3	124.9	-0.1125	0.386	342.7	mg/L	10	Standard
Ca	43	68.3	15.2	7.2167	2.754	38.2	mg/L	47	Standard
Fe	54	70.9	28.4	0.0152	0.052	342.0	mg/L	46	Standard
Fe	57	863.4	7.9	2.5234	0.697	27.6	mg/L	627	Standard
> Sc-1	45	24317.8	2.2				mg/L	24506	Standard
Cl	35	73846.2	1.6				ug/L	47100	Standard
Kr	83	4.7	32.7				ug/L	8	Standard
Br	81	3270.4	2.6				ug/L	427	Standard
P	31	12675.3	2.1				ug/L	10519	Standard
S	34	2296.8	6.6				ug/L	2003	Standard
Sr	88	191.7	11.8				ug/L	132	Standard
C	12	230.0	4.3				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	10.0	100.0				mg/L	10	Standard
Dy	164	29.2	33.4				mg/L	13	Standard
Ho-1	165	15.0	66.7				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	7	Standard
I	127	65359.2	4.7				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.088	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.642	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.396
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.774
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508101913
Sample Date/Time: Sunday, August 23, 2015 19:33:28
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64612.5	1.6				ug/L	53498	Standard
	Be	9	46.7	12.4	**0.0457**	0.009	19.9	ug/L	12	Standard
	Al	27	3246324.0	0.8	**38.8115**	0.448	1.2	ug/L	487	Standard
	Sc	45	24698.5	1.4				ug/L	24506	Standard
	Ti	47	246.0	41.2	**1.2227**	0.560	45.8	ug/L	21	Standard
	V	51	1814.7	4.7	**0.1266**	0.021	16.2	ug/L	1268	Standard
	Cr	52	9327.2	1.4	**0.3113**	0.023	7.4	ug/L	7921	Standard
	Cr	53	1163.4	6.5	**1.1111**	0.126	11.4	ug/L	442	Standard
	Mn	55	433954.0	0.8	**130.4292**	1.526	1.2	ug/L	545	Standard
	Co	59	5348.3	1.0	**1.4523**	0.019	1.3	ug/L	183	Standard
	Ni	60	4327.6	2.1	**3.1214**	0.069	2.2	ug/L	131	Standard
	Cu	65	955.0	6.9	**0.5581**	0.051	9.2	ug/L	231	Standard
	Zn	66	3395.7	0.8	**4.1153**	0.025	0.6	ug/L	306	Standard
>	**Ge**	72	326424.8	0.3				ug/L	330478	Standard
	As	75	88.8	52.8	**0.1700**	0.062	36.7	ug/L	-23	Standard
	Se	82	28.9	29.3	**0.0470**	0.138	293.8	ug/L	27	Standard
	Se-1	77	111.3	3.2	**0.6003**	0.079	13.1	ug/L	92	Standard
>	**Ga**	71	86.7	3.3				mg/L	37	Standard
	Rb	85	10623.7	2.0				ug/L	25	Standard
	Y	89	332874.3	1.8				ug/L	312467	Standard
>	**Rh**	103	70.0	12.4				ug/L	20	Standard
	Mo	98	225.6	9.3	**0.1489**	0.016	10.7	ug/L	13	Standard
	Ag	107	90.0	16.4	**-0.0044**	0.003	61.3	ug/L	72	Standard
	Cd	111	53.1	16.8	**0.0223**	0.006	29.0	mg/L	5	Standard
	Cd	114	126.2	38.9	**0.0240**	0.012	50.6	ug/L	7	Standard
>	**In**	115	525459.4	1.4				ug/L	477820	Standard
	Sn	118	513.3	12.9	**0.0253**	0.015	57.5	ug/L	343	Standard
	Sb	123	189.7	8.5	**0.0425**	0.003	7.9	ug/L	56	Standard
	Ba	135	9826.5	1.4	**4.6670**	0.072	1.6	ug/L	36	Standard
	Ce	140	2711.9	22.9				ug/L	65	Standard
>	**Tb**	159	986270.6	0.6				ug/L	939481	Standard
	Ho	165	171.7	20.7				ug/L	7	Standard
	Tl	203	86.3	3.5	**0.0089**	0.000	3.5	ug/L	5	Standard
	Tl	205	61.7	36.6	**0.0066**	0.005	71.1	ug/L	2	Standard
	Pb	206	522.7	5.9	**0.0610**	0.008	13.3	ug/L	222	Standard
	Pb	207	464.7	8.5	**0.0610**	0.009	15.1	ug/L	186	Standard
	Pb	208	1731.7	2.0	**0.0656**	0.002	3.5	ug/L	717	Standard
	U	238	209.0	9.4	**0.0382**	0.004	10.1	ug/L	2	Standard
>	**Bi**	209	469433.8	1.1				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	1663.4	6.3	**4.5217**	0.332	7.3	mg/L	45	Standard
K	39	23.3	53.9	**0.4430**	0.473	106.7	mg/L	10	Standard
Ca	43	133.3	30.5	**21.7126**	9.541	43.9	mg/L	47	Standard
Fe	54	87.5	45.6	**0.0537**	0.101	187.5	mg/L	46	Standard
Fe	57	973.4	14.3	**3.4580**	1.302	37.6	mg/L	627	Standard
> **Sc-1**	45	24698.5	1.4				mg/L	24506	Standard
Cl	35	88123.6	2.2				ug/L	47100	Standard
Kr	83	5.0	52.9				ug/L	8	Standard
Br	81	1116.7	3.6				ug/L	427	Standard
P	31	13329.2	4.4				ug/L	10519	Standard
S	34	2311.8	3.7				ug/L	2003	Standard
Sr	88	223.3	13.7				ug/L	132	Standard
C	12	323.3	18.6				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	257.7	14.9				mg/L	13	Standard
Ho-1	165	171.7	20.7				mg/L	7	Standard
Er	166	186.7	15.5				mg/L	7	Standard
I	127	16433.9	2.2				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		120.776	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.774	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.970
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.622
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508102601
Sample Date/Time: Sunday, August 23, 2015 19:36:39
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	623570.1	4.8				ug/L	53498	Standard
	Be	9	18.3	31.5	**-0.0174**	0.001	4.0	ug/L	12	Standard
	Al	27	2806795.8	1.1	**3.4727**	0.188	5.4	ug/L	487	Standard
	Sc	45	23453.2	6.8				ug/L	24506	Standard
	Ti	47	580.7	6.5	**3.1864**	0.332	10.4	ug/L	21	Standard
	V	51	1711.0	8.4	**0.1155**	0.024	20.4	ug/L	1268	Standard
	Cr	52	90641.3	1.0	**17.1190**	0.572	3.3	ug/L	7921	Standard
	Cr	53	15494.6	1.7	**24.7468**	0.992	4.0	ug/L	442	Standard
	Mn	55	176210.7	2.2	**54.8053**	1.212	2.2	ug/L	545	Standard
	Co	59	47918.3	0.7	**13.9521**	0.529	3.8	ug/L	183	Standard
	Ni	60	87689.7	1.7	**67.3646**	2.823	4.2	ug/L	131	Standard
	Cu	65	150402.0	2.1	**119.3515**	3.517	2.9	ug/L	231	Standard
	Zn	66	21552.7	0.7	**29.6411**	1.211	4.1	ug/L	306	Standard
>	Ge	72	314995.3	3.8				ug/L	330478	Standard
	As	75	740.1	3.6	**1.0700**	0.007	0.6	ug/L	-23	Standard
	Se	82	58.6	13.8	**0.5634**	0.133	23.6	ug/L	27	Standard
	Se-1	77	299.7	4.7	**5.1590**	0.099	1.9	ug/L	92	Standard
>	Ga	71	465.0	6.7				mg/L	37	Standard
	Rb	85	18946.8	1.1				ug/L	25	Standard
	Y	89	328671.1	2.2				ug/L	312467	Standard
>	Rh	103	41.7	73.3				ug/L	20	Standard
	Mo	98	2717.6	1.3	**1.9144**	0.046	2.4	ug/L	13	Standard
	Ag	107	1396.4	3.9	**0.2553**	0.012	4.7	ug/L	72	Standard
	Cd	111	231.8	8.9	**0.1496**	0.011	7.3	mg/L	5	Standard
	Cd	114	615.7	9.4	**0.1567**	0.010	6.4	ug/L	7	Standard
>	In	115	498883.3	3.4				ug/L	477820	Standard
	Sn	118	4387.3	7.8	**0.8570**	0.045	5.2	ug/L	343	Standard
	Sb	123	825.6	2.2	**0.2092**	0.011	5.3	ug/L	56	Standard
	Ba	135	59123.5	1.6	**29.7307**	0.829	2.8	ug/L	36	Standard
	Ce	140	30265.2	1.4				ug/L	65	Standard
>	Tb	159	935336.9	2.7				ug/L	939481	Standard
	Ho	165	523.3	8.0				ug/L	7	Standard
	Tl	203	183.7	6.7	**0.0247**	0.002	7.8	ug/L	5	Standard
	Tl	205	153.3	24.5	**0.0283**	0.008	28.7	ug/L	2	Standard
	Pb	206	7298.8	2.2	**1.7595**	0.048	2.7	ug/L	222	Standard
	Pb	207	5942.5	1.0	**1.5795**	0.043	2.7	ug/L	186	Standard
	Pb	208	22339.1	1.1	**1.6680**	0.014	0.8	ug/L	717	Standard
	U	238	826.7	1.3	**0.1797**	0.004	2.0	ug/L	2	Standard
>	Bi	209	443968.1	1.6				ug/L	440279	Standard

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Na	23	1.7	-532274119386	92192581833	124.047	173.2	mg/L	2	Standard
Mg	24	6783.2	5.4	**19.9514**	2.158	10.8	mg/L	45	Standard
K	39	501.7	20.5	**19.4114**	5.243	27.0	mg/L	10	Standard
Ca	43	111.7	52.3	**18.7740**	15.822	84.3	mg/L	47	Standard
Fe	54	421.9	14.7	**0.9461**	0.088	9.3	mg/L	46	Standard
Fe	57	991.7	9.3	**4.2050**	1.428	34.0	mg/L	627	Standard
> Sc-1	45	23453.2	6.8				mg/L	24506	Standard
Cl	35	63613.3	3.0				ug/L	47100	Standard
Kr	83	4.0	25.0				ug/L	8	Standard
Br	81	1860.1	3.0				ug/L	427	Standard
P	31	13792.9	1.6				ug/L	10519	Standard
S	34	2438.5	5.6				ug/L	2003	Standard
Sr	88	245.0	3.5				ug/L	132	Standard
C	12	376.7	13.6				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	63.3	24.1				mg/L	10	Standard
Dy	164	830.0	10.5				mg/L	13	Standard
Ho-1	165	523.3	8.0				mg/L	7	Standard
Er	166	486.7	28.5				mg/L	7	Standard
I	127	23540.0	3.4				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		1165.603	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.315	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.408
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.838
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

Sample ID: L1508102601
Report Date/Time: Sunday, August 23, 2015 19:38:56
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Method 6020 - Summary Report

Sample ID: L1508102602
Sample Date/Time: Sunday, August 23, 2015 19:39:51
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67644.0	2.3				ug/L	53498	Standard
	Be	9	11.7	24.7	**-0.0044**	0.004	81.4	ug/L	12	Standard
	Al	27	2818365.9	4.1	**32.1791**	1.052	3.3	ug/L	487	Standard
	Sc	45	25524.8	1.1				ug/L	24506	Standard
	Ti	47	438.7	3.4	**2.2059**	0.082	3.7	ug/L	21	Standard
	V	51	1209.3	7.5	**-0.0386**	0.024	62.9	ug/L	1268	Standard
	Cr	52	46065.9	0.7	**7.3163**	0.122	1.7	ug/L	7921	Standard
	Cr	53	7530.2	2.5	**10.8308**	0.375	3.5	ug/L	442	Standard
	Mn	55	116724.7	2.3	**33.8415**	0.564	1.7	ug/L	545	Standard
	Co	59	1566.1	4.3	**0.3726**	0.021	5.7	ug/L	183	Standard
	Ni	60	5363.3	2.5	**3.7637**	0.068	1.8	ug/L	131	Standard
	Cu	65	43205.9	0.8	**31.8966**	0.342	1.1	ug/L	231	Standard
	Zn	66	7571.9	3.6	**9.4150**	0.294	3.1	ug/L	306	Standard
>	**Ge**	72	337047.4	0.7				ug/L	330478	Standard
	As	75	344.0	2.0	**0.4943**	0.012	2.5	ug/L	-23	Standard
	Se	82	36.5	1.0	**0.1513**	0.006	4.2	ug/L	27	Standard
	Se-1	77	165.0	8.9	**1.7083**	0.301	17.6	ug/L	92	Standard
>	**Ga**	71	96.7	24.4				mg/L	37	Standard
	Rb	85	1571.7	7.5				ug/L	25	Standard
	Y	89	329846.9	0.9				ug/L	312467	Standard
>	**Rh**	103	40.0	43.3				ug/L	20	Standard
	Mo	98	326.6	4.2	**0.2150**	0.011	5.0	ug/L	13	Standard
	Ag	107	32260.0	0.7	**6.0044**	0.102	1.7	ug/L	72	Standard
	Cd	111	2896.8	2.1	**1.9084**	0.018	1.0	mg/L	5	Standard
	Cd	114	7249.8	0.9	**1.8256**	0.038	2.1	ug/L	7	Standard
>	**In**	115	528845.9	1.2				ug/L	477820	Standard
	Sn	118	1130.0	1.9	**0.1488**	0.007	4.7	ug/L	343	Standard
	Sb	123	213.2	7.8	**0.0480**	0.004	9.0	ug/L	56	Standard
	Ba	135	51867.6	0.4	**24.5880**	0.277	1.1	ug/L	36	Standard
	Ce	140	1440.1	6.3				ug/L	65	Standard
>	**Tb**	159	983579.7	1.3				ug/L	939481	Standard
	Ho	165	46.7	12.4				ug/L	7	Standard
	Tl	203	77.7	11.0	**0.0075**	0.001	17.8	ug/L	5	Standard
	Tl	205	91.7	32.0	**0.0131**	0.006	49.7	ug/L	2	Standard
	Pb	206	1681.1	0.8	**0.3321**	0.004	1.1	ug/L	222	Standard
	Pb	207	1483.1	0.7	**0.3245**	0.006	1.9	ug/L	186	Standard
	Pb	208	5395.4	1.0	**0.3315**	0.007	2.2	ug/L	717	Standard
	U	238	643.7	11.8	**0.1299**	0.017	13.3	ug/L	2	Standard
>	**Bi**	209	472196.8	0.9				ug/L	440279	Standard

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Na	23	3.3	**-913263300425**79096464097324.734			86.6	mg/L	2	Standard
Mg	24	4040.5	1.5	**10.8097**	0.263	2.4	mg/L	45	Standard
K	39	30.0	33.3	**0.6533**	0.358	54.8	mg/L	10	Standard
Ca	43	113.3	9.2	**16.3137**	2.529	15.5	mg/L	47	Standard
Fe	54	154.1	18.5	**0.2084**	0.068	32.5	mg/L	46	Standard
Fe	57	896.7	14.3	**2.4394**	1.291	52.9	mg/L	627	Standard
Sc-1	45	25524.8	1.1				mg/L	24506	Standard
Cl	35	64572.0	1.6				ug/L	47100	Standard
Kr	83	3.7	31.5				ug/L	8	Standard
Br	81	1296.7	6.6				ug/L	427	Standard
P	31	13459.3	1.9				ug/L	10519	Standard
S	34	2301.8	3.9				ug/L	2003	Standard
Sr	88	195.0	4.4				ug/L	132	Standard
C	12	293.3	43.8				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	10.0	100.0				mg/L	10	Standard
Dy	164	51.1	40.5				mg/L	13	Standard
Ho-1	165	46.7	12.4				mg/L	7	Standard
Er	166	46.7	24.7				mg/L	7	Standard
I	127	25765.2	1.5				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		126.443	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.988	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.679
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.249
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: FBLANK R7 WG535816-04
Sample Date/Time: Sunday, August 23, 2015 19:43:02
Number of Replicates: 3
Autosampler Position: 346
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63303.8	4.7				ug/L	53498	Standard
	Be	9	10.0	50.0	**-0.0056**	0.007	131.7	ug/L	12	Standard
	Al	27	4740.8	29.7	**0.0468**	0.017	35.6	ug/L	487	Standard
	Sc	45	24327.8	0.6				ug/L	24506	Standard
	Ti	47	68.7	18.2	**0.2480**	0.075	30.2	ug/L	21	Standard
	V	51	1293.7	3.3	**-0.0068**	0.009	130.1	ug/L	1268	Standard
	Cr	52	8057.5	0.8	**0.0616**	0.041	66.1	ug/L	7921	Standard
	Cr	53	918.4	1.9	**0.7248**	0.058	8.0	ug/L	442	Standard
	Mn	55	1148.4	14.6	**0.1675**	0.054	32.4	ug/L	545	Standard
	Co	59	233.3	6.8	**0.0110**	0.006	52.9	ug/L	183	Standard
	Ni	60	155.3	3.5	**0.0275**	0.006	23.0	ug/L	131	Standard
	Cu	65	234.0	2.3	**0.0056**	0.004	75.5	ug/L	231	Standard
	Zn	66	1571.7	1.7	**1.6626**	0.021	1.3	ug/L	306	Standard
>	**Ge**	72	326048.5	2.1				ug/L	330478	Standard
	As	75	65.2	77.0	**0.1393**	0.067	48.4	ug/L	-23	Standard
	Se	82	56.7	15.1	**0.4988**	0.143	28.6	ug/L	27	Standard
	Se-1	77	105.0	5.8	**0.4574**	0.107	23.3	ug/L	92	Standard
>	**Ga**	71	30.0	60.1				mg/L	37	Standard
	Rb	85	63.3	31.9				ug/L	25	Standard
	Y	89	327700.8	2.7				ug/L	312467	Standard
>	**Rh**	103	26.7	28.6				ug/L	20	Standard
	Mo	98	18.3	54.5	**0.0100**	0.007	65.5	ug/L	13	Standard
	Ag	107	80.0	11.9	**-0.0061**	0.002	32.7	ug/L	72	Standard
	Cd	111	20.9	45.4	**0.0008**	0.006	750.9	mg/L	5	Standard
	Cd	114	47.7	79.7	**0.0041**	0.010	238.0	ug/L	7	Standard
>	**In**	115	520490.8	1.3				ug/L	477820	Standard
	Sn	118	460.0	17.9	**0.0154**	0.017	112.3	ug/L	343	Standard
	Sb	123	95.8	23.8	**0.0198**	0.006	29.2	ug/L	56	Standard
	Ba	135	255.7	11.3	**0.0968**	0.013	13.4	ug/L	36	Standard
	Ce	140	193.3	4.0				ug/L	65	Standard
>	**Tb**	159	970591.1	1.6				ug/L	939481	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	30.3	38.5	**0.0007**	0.002	272.6	ug/L	5	Standard
	Tl	205	11.7	49.5	**-0.0041**	0.001	29.6	ug/L	2	Standard
	Pb	206	297.7	2.3	**0.0079**	0.002	19.2	ug/L	222	Standard
	Pb	207	241.3	10.0	**0.0029**	0.007	226.5	ug/L	186	Standard
	Pb	208	912.0	5.4	**0.0057**	0.005	88.9	ug/L	717	Standard
	U	238	6.3	32.9	**-0.0049**	0.000	9.6	ug/L	2	Standard
>	**Bi**	209	468973.3	2.8				ug/L	440279	Standard

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Na	23	1.7	**-4830208822048**3661670909488.187			173.2	mg/L	2	Standard
Mg	24	53.3	5.4	**0.0149**	0.008	52.7	mg/L	45	Standard
K	39	13.3	21.7	**0.0781**	0.108	137.9	mg/L	10	Standard
Ca	43	25.0	40.0	**-2.7919**	2.308	82.7	mg/L	47	Standard
Fe	54	90.9	24.5	**0.0657**	0.055	84.5	mg/L	46	Standard
Fe	57	815.0	7.2	**2.0383**	0.599	29.4	mg/L	627	Standard
Sc-1	45	24327.8	0.6				mg/L	24506	Standard
Cl	35	65341.3	0.7				ug/L	47100	Standard
Kr	83	7.3	20.8				ug/L	8	Standard
Br	81	3423.7	2.1				ug/L	427	Standard
P	31	12326.7	3.7				ug/L	10519	Standard
S	34	2436.9	6.0				ug/L	2003	Standard
Sr	88	221.7	13.0				ug/L	132	Standard
C	12	203.3	33.5				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	6.0	100.4				mg/L	13	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	7	Standard
I	127	8574.1	0.7				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		118.330	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.660	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.930
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.517
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: FBLANK R7 WG535816-04
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Method 6020 - Summary Report

Sample ID: FBLANK R7 WG535761-01
Sample Date/Time: Sunday, August 23, 2015 19:46:14
Number of Replicates: 3
Autosampler Position: 347
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63690.3	2.0				ug/L	53498	Standard
	Be	9	15.0	66.7	**0.0012**	0.014	1168.4	ug/L	12	Standard
	Al	27	5967.8	4.8	**0.0614**	0.002	3.6	ug/L	487	Standard
	Sc	45	24434.7	2.9				ug/L	24506	Standard
	Ti	47	56.3	5.1	**0.1758**	0.016	9.2	ug/L	21	Standard
	V	51	1323.1	3.8	**-0.0032**	0.013	390.1	ug/L	1268	Standard
	Cr	52	8575.1	1.9	**0.1443**	0.035	24.0	ug/L	7921	Standard
	Cr	53	803.4	0.4	**0.5267**	0.002	0.4	ug/L	442	Standard
	Mn	55	1290.7	3.8	**0.2055**	0.014	6.7	ug/L	545	Standard
	Co	59	237.0	7.2	**0.0112**	0.005	42.4	ug/L	183	Standard
	Ni	60	198.0	3.5	**0.0574**	0.005	9.5	ug/L	131	Standard
	Cu	65	631.7	3.1	**0.3052**	0.016	5.2	ug/L	231	Standard
	Zn	66	1983.5	1.2	**2.1865**	0.032	1.5	ug/L	306	Standard
>	Ge	72	329852.8	0.2				ug/L	330478	Standard
	As	75	-21.1	149.5	**0.0243**	0.041	170.5	ug/L	-23	Standard
	Se	82	20.6	34.0	**-0.0915**	0.112	122.7	ug/L	27	Standard
	Se-1	77	96.0	16.3	**0.2268**	0.356	157.0	ug/L	92	Standard
>	Ga	71	30.0	16.7				mg/L	37	Standard
	Rb	85	55.0	32.8				ug/L	25	Standard
	Y	89	321518.7	2.6				ug/L	312467	Standard
>	Rh	103	20.0	90.1				ug/L	20	Standard
	Mo	98	16.8	23.5	**0.0092**	0.003	27.9	ug/L	13	Standard
	Ag	107	77.7	0.7	**-0.0063**	0.000	1.6	ug/L	72	Standard
	Cd	111	26.0	7.7	**0.0045**	0.001	32.0	mg/L	5	Standard
	Cd	114	68.9	26.7	**0.0099**	0.005	49.9	ug/L	7	Standard
>	In	115	512692.3	1.0				ug/L	477820	Standard
	Sn	118	598.3	5.4	**0.0454**	0.005	11.9	ug/L	343	Standard
	Sb	123	74.0	2.6	**0.0147**	0.001	4.5	ug/L	56	Standard
	Ba	135	316.0	12.1	**0.1283**	0.019	14.8	ug/L	36	Standard
	Ce	140	250.0	12.2				ug/L	65	Standard
>	Tb	159	969844.5	2.4				ug/L	939481	Standard
	Ho	165	13.3	94.4				ug/L	7	Standard
	Tl	203	32.0	13.6	**0.0009**	0.001	62.8	ug/L	5	Standard
	Tl	205	36.7	41.7	**0.0014**	0.003	249.9	ug/L	2	Standard
	Pb	206	625.0	4.0	**0.0864**	0.005	5.5	ug/L	222	Standard
	Pb	207	519.0	5.7	**0.0765**	0.010	12.5	ug/L	186	Standard
	Pb	208	1958.4	2.3	**0.0834**	0.004	5.2	ug/L	717	Standard
	U	238	25.0	24.3	**-0.0009**	0.001	142.1	ug/L	2	Standard
>	Bi	209	465363.5	1.5				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	31.7	9.1	**-0.0470**	0.009	19.5	mg/L	45	Standard
K	39	5.0	100.0	**-0.2404**	0.182	75.7	mg/L	10	Standard
Ca	43	35.0	37.8	**-0.4749**	3.244	683.1	mg/L	47	Standard
Fe	54	74.0	23.4	**0.0214**	0.041	190.4	mg/L	46	Standard
Fe	57	858.4	2.2	**2.4314**	0.104	4.3	mg/L	627	Standard
> **Sc-1**	45	24434.7	2.9				mg/L	24506	Standard
Cl	35	64403.3	2.0				ug/L	47100	Standard
Kr	83	5.0	52.9				ug/L	8	Standard
Br	81	563.3	6.7				ug/L	427	Standard
P	31	12366.7	1.6				ug/L	10519	Standard
S	34	2306.8	8.5				ug/L	2003	Standard
Sr	88	185.0	0.0				ug/L	132	Standard
C	12	240.0	32.5				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	18.7	89.6				mg/L	13	Standard
Ho-1	165	13.3	94.4				mg/L	7	Standard
Er	166	26.7	43.3				mg/L	7	Standard
I	127	7016.6	0.3				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.053	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.811	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.298
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.697
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: FBLANK R7 WG535761-01
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Sunday, August 23, 2015 19:49:27
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60842.2	5.5				ug/L	53498	Standard
	Be	9	34138.4	1.7	**51.0591**	1.872	3.7	ug/L	12	Standard
	Al	27	3771130.2	2.4	**47.9542**	2.353	4.9	ug/L	487	Standard
	Sc	45	24347.9	2.1				ug/L	24506	Standard
	Ti	47	19487.9	1.0	**105.6429**	2.110	2.0	ug/L	21	Standard
	V	51	209719.4	0.8	**52.8327**	0.994	1.9	ug/L	1268	Standard
	Cr	52	274612.6	0.2	**52.2551**	0.965	1.8	ug/L	7921	Standard
	Cr	53	33707.5	0.5	**52.0082**	1.002	1.9	ug/L	442	Standard
	Mn	55	187607.0	0.6	**55.5417**	0.906	1.6	ug/L	545	Standard
	Co	59	192902.9	0.8	**53.5892**	0.538	1.0	ug/L	183	Standard
	Ni	60	71574.0	1.5	**52.2862**	0.634	1.2	ug/L	131	Standard
	Cu	65	68961.6	0.7	**51.9815**	0.663	1.3	ug/L	231	Standard
	Zn	66	38781.9	1.5	**51.0590**	0.334	0.7	ug/L	306	Standard
>	Ge	72	330832.6	1.7				ug/L	330478	Standard
	As	75	38961.4	1.5	**51.0754**	0.144	0.3	ug/L	-23	Standard
	Se	82	3339.8	1.3	**53.0501**	0.273	0.5	ug/L	27	Standard
	Se-1	77	2385.2	1.1	**51.9258**	0.340	0.7	ug/L	92	Standard
>	Ga	71	35.0	24.7				mg/L	37	Standard
	Rb	85	578.3	10.6				ug/L	25	Standard
	Y	89	322751.4	0.6				ug/L	312467	Standard
>	Rh	103	28.3	10.2				ug/L	20	Standard
	Mo	98	147368.2	1.0	**101.2077**	1.506	1.5	ug/L	13	Standard
	Ag	107	268498.1	0.3	**51.7667**	0.325	0.6	ug/L	72	Standard
	Cd	111	78210.2	0.6	**53.5735**	0.525	1.0	mg/L	5	Standard
	Cd	114	206110.2	2.1	**53.8234**	1.199	2.2	ug/L	7	Standard
>	In	115	512086.1	0.9				ug/L	477820	Standard
	Sn	118	236816.6	1.4	**49.1846**	1.139	2.3	ug/L	343	Standard
	Sb	123	205503.9	1.1	**51.6037**	1.021	2.0	ug/L	56	Standard
	Ba	135	101342.8	0.9	**49.6381**	0.397	0.8	ug/L	36	Standard
	Ce	140	101.7	33.5				ug/L	65	Standard
>	Tb	159	980487.2	1.0				ug/L	939481	Standard
	Ho	165	8.3	124.9				ug/L	7	Standard
	Tl	203	346581.5	0.6	**50.9218**	0.227	0.4	ug/L	5	Standard
	Tl	205	238486.4	2.6	**51.4992**	1.352	2.6	ug/L	2	Standard
	Pb	206	216681.5	0.9	**51.0847**	0.541	1.1	ug/L	222	Standard
	Pb	207	197102.1	0.3	**51.3639**	0.115	0.2	ug/L	186	Standard
	Pb	208	697759.5	0.5	**51.0198**	0.165	0.3	ug/L	717	Standard
	U	238	239696.1	0.5	**50.9771**	0.295	0.6	ug/L	2	Standard
>	Bi	209	469403.6	0.2				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	2045.1	6.2	**5.6740**	0.418	7.4	mg/L	45	Standard
K	39	158.3	15.6	**5.5601**	1.044	18.8	mg/L	10	Standard
Ca	43	45.0	22.2	**1.7931**	2.280	127.1	mg/L	47	Standard
Fe	54	2227.3	4.0	**5.5116**	0.276	5.0	mg/L	46	Standard
Fe	57	1433.4	7.7	**8.1644**	1.192	14.6	mg/L	627	Standard
Sc-1	45	24347.9	2.1				mg/L	24506	Standard
Cl	35	59914.3	2.5				ug/L	47100	Standard
Kr	83	6.0	16.7				ug/L	8	Standard
Br	81	633.3	19.0				ug/L	427	Standard
P	31	12918.8	2.6				ug/L	10519	Standard
S	34	2651.9	6.1				ug/L	2003	Standard
Sr	88	196.7	15.5				ug/L	132	Standard
C	12	226.7	58.3				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	19.0	91.0				mg/L	13	Standard
Ho-1	165	8.3	124.9				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	5917.8	7.2				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.118		
Al	27	95.908		
Sc	45			
Ti	47	105.643		
V	51	105.665		
Cr	52	104.510		
Cr	53			
Mn	55	111.083		
Co	59	107.178		
Ni	60	104.572		
Cu	65	103.963		
Zn	66	102.118		
Ge	72		100.107	
As	75	102.151		
Se	82	106.100		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.208		
Ag	107	103.533		
Cd	111	107.147		
Cd	114			
In	115			107.171
Sn	118	98.369		
Sb	123	103.207		
Ba	135	99.276		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.844		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.040		
U	238	101.954		
Bi	209			106.615
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Sunday, August 23, 2015 19:52:39
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	61482.8	0.2				ug/L	53498	Standard
	Be	9	13.3	78.1	**-0.0004**	0.015	3877.2	ug/L	12	Standard
	Al	27	1288.4	33.5	**0.0052**	0.005	103.1	ug/L	487	Standard
	Sc	45	24002.3	2.4				ug/L	24506	Standard
	Ti	47	26.7	19.2	**0.0169**	0.029	168.4	ug/L	21	Standard
	V	51	998.7	6.8	**-0.0811**	0.017	21.5	ug/L	1268	Standard
	Cr	52	6477.4	2.3	**-0.2447**	0.031	12.6	ug/L	7921	Standard
	Cr	53	660.0	14.9	**0.3207**	0.158	49.3	ug/L	442	Standard
	Mn	55	654.7	9.3	**0.0197**	0.019	95.4	ug/L	545	Standard
	Co	59	224.3	10.8	**0.0088**	0.007	79.4	ug/L	183	Standard
	Ni	60	125.7	16.8	**0.0060**	0.016	263.3	ug/L	131	Standard
	Cu	65	244.3	14.9	**0.0147**	0.028	189.4	ug/L	231	Standard
	Zn	66	309.7	6.0	**-0.0359**	0.026	72.1	ug/L	306	Standard
>	Ge	72	323981.5	0.1				ug/L	330478	Standard
	As	75	-19.5	67.4	**0.0259**	0.018	68.0	ug/L	-23	Standard
	Se	82	21.4	26.1	**-0.0725**	0.091	126.2	ug/L	27	Standard
	Se-1	77	96.7	11.4	**0.2814**	0.257	91.2	ug/L	92	Standard
>	Ga	71	10.0	50.0				mg/L	37	Standard
	Rb	85	28.3	44.4				ug/L	25	Standard
	Y	89	325896.2	1.1				ug/L	312467	Standard
>	Rh	103	20.0	25.0				ug/L	20	Standard
	Mo	98	75.3	49.6	**0.0491**	0.026	52.1	ug/L	13	Standard
	Ag	107	115.3	54.2	**0.0008**	0.012	1453.8	ug/L	72	Standard
	Cd	111	13.8	93.3	**-0.0038**	0.009	231.1	mg/L	5	Standard
	Cd	114	30.3	88.8	**-0.0002**	0.007	3097.0	ug/L	7	Standard
>	In	115	515590.4	0.3				ug/L	477820	Standard
	Sn	118	546.7	6.9	**0.0341**	0.008	23.5	ug/L	343	Standard
	Sb	123	786.4	10.3	**0.1923**	0.021	10.7	ug/L	56	Standard
	Ba	135	47.3	41.5	**-0.0033**	0.010	290.4	ug/L	36	Standard
	Ce	140	26.7	28.6				ug/L	65	Standard
>	Tb	159	963008.8	1.2				ug/L	939481	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	56.0	115.1	**0.0044**	0.009	214.1	ug/L	5	Standard
	Tl	205	16.7	124.9	**-0.0030**	0.005	148.2	ug/L	2	Standard
	Pb	206	259.0	17.3	**-0.0009**	0.010	1160.5	ug/L	222	Standard
	Pb	207	231.0	16.7	**0.0005**	0.010	2154.7	ug/L	186	Standard
	Pb	208	776.3	8.6	**-0.0040**	0.005	119.5	ug/L	717	Standard
	U	238	25.3	96.2	**-0.0009**	0.005	604.2	ug/L	2	Standard
>	Bi	209	466347.3	0.6				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	73.3	33.6	**0.0736**	0.067	91.3	mg/L	45	Standard
K	39	3.3	173.2	**-0.2942**	0.226	77.0	mg/L	10	Standard
Ca	43	28.3	62.0	**-1.8993**	4.127	217.3	mg/L	47	Standard
Fe	54	57.9	17.6	**-0.0162**	0.027	167.4	mg/L	46	Standard
Fe	57	815.0	3.1	**2.1463**	0.053	2.5	mg/L	627	Standard
Sc-1	45	24002.3	2.4				mg/L	24506	Standard
Cl	35	59616.4	0.8				ug/L	47100	Standard
Kr	83	4.0	43.3				ug/L	8	Standard
Br	81	546.7	21.2				ug/L	427	Standard
P	31	12510.2	1.9				ug/L	10519	Standard
S	34	2445.2	3.0				ug/L	2003	Standard
Sr	88	141.7	16.7				ug/L	132	Standard
C	12	166.7	39.0				mg/L	177	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	12.5	48.4				mg/L	13	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	7	Standard
I	127	6501.4	2.2				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.034	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.905
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.921
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Sunday, August 23, 2015 19:55:52
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60013.6	1.0				ug/L	53498	Standard
	Be	9	130.0	27.7	**0.1771**	0.056	31.4	ug/L	12	Standard
	Al	27	1056.7	23.1	**0.0027**	0.003	118.7	ug/L	487	Standard
	Sc	45	23600.0	2.3				ug/L	24506	Standard
	Ti	47	32.7	21.7	**0.0503**	0.040	78.5	ug/L	21	Standard
	V	51	2529.4	1.0	**0.3155**	0.007	2.4	ug/L	1268	Standard
	Cr	52	11042.7	2.9	**0.6695**	0.062	9.3	ug/L	7921	Standard
	Cr	53	1150.0	1.6	**1.1045**	0.035	3.2	ug/L	442	Standard
	Mn	55	2476.5	1.0	**0.5725**	0.010	1.7	ug/L	545	Standard
	Co	59	1712.8	3.8	**0.4317**	0.020	4.7	ug/L	183	Standard
	Ni	60	2295.5	1.2	**1.6282**	0.018	1.1	ug/L	131	Standard
	Cu	65	1313.7	5.0	**0.8412**	0.054	6.4	ug/L	231	Standard
	Zn	66	4739.1	0.3	**5.9755**	0.024	0.4	ug/L	306	Standard
>	**Ge**	72	323805.8	0.4				ug/L	330478	Standard
	As	75	260.5	11.5	**0.4006**	0.041	10.3	ug/L	-23	Standard
	Se	82	37.8	11.3	**0.1957**	0.072	36.8	ug/L	27	Standard
	Se-1	77	111.3	6.4	**0.6214**	0.173	27.9	ug/L	92	Standard
>	**Ga**	71	16.7	17.3				mg/L	37	Standard
	Rb	85	21.7	74.2				ug/L	25	Standard
	Y	89	319369.7	1.6				ug/L	312467	Standard
>	**Rh**	103	16.7	62.4				ug/L	20	Standard
	Mo	98	31.0	48.8	**0.0190**	0.010	53.2	ug/L	13	Standard
	Ag	107	2138.2	3.2	**0.3918**	0.008	2.0	ug/L	72	Standard
	Cd	111	361.3	6.3	**0.2347**	0.015	6.2	mg/L	5	Standard
	Cd	114	967.5	13.7	**0.2449**	0.032	13.1	ug/L	7	Standard
>	**In**	115	511127.9	1.3				ug/L	477820	Standard
	Sn	118	590.0	9.4	**0.0440**	0.010	23.0	ug/L	343	Standard
	Sb	123	1786.9	3.5	**0.4456**	0.011	2.5	ug/L	56	Standard
	Ba	135	1473.4	5.3	**0.6970**	0.037	5.3	ug/L	36	Standard
	Ce	140	20.0	50.0				ug/L	65	Standard
>	**Tb**	159	962826.0	0.7				ug/L	939481	Standard
	Ho	165	6.7	86.6				ug/L	7	Standard
	Tl	203	578.7	20.1	**0.0824**	0.017	21.1	ug/L	5	Standard
	Tl	205	388.3	11.5	**0.0784**	0.009	12.0	ug/L	2	Standard
	Pb	206	1162.0	3.2	**0.2158**	0.010	4.8	ug/L	222	Standard
	Pb	207	938.7	2.4	**0.1882**	0.005	2.6	ug/L	186	Standard
	Pb	208	3496.8	4.2	**0.1984**	0.011	5.4	ug/L	717	Standard
	U	238	1905.5	2.5	**0.4047**	0.009	2.1	ug/L	2	Standard
>	**Bi**	209	462852.4	0.5				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	40.0	25.0	**-0.0198**	0.027	138.2	mg/L	45	Standard
K	39	6.7	114.6	**-0.1657**	0.293	177.0	mg/L	10	Standard
Ca	43	43.3	13.3	**1.7262**	1.286	74.5	mg/L	47	Standard
Fe	54	62.5	25.3	**-0.0012**	0.044	3692.0	mg/L	46	Standard
Fe	57	825.0	1.2	**2.3933**	0.288	12.0	mg/L	627	Standard
Sc-1	45	23600.0	2.3				mg/L	24506	Standard
Cl	35	59011.4	1.4				ug/L	47100	Standard
Kr	83	2.7	57.3				ug/L	8	Standard
Br	81	636.7	21.1				ug/L	427	Standard
P	31	11674.5	3.2				ug/L	10519	Standard
S	34	2393.5	0.5				ug/L	2003	Standard
Sr	88	215.0	21.3				ug/L	132	Standard
C	12	236.7	21.3				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	6.3	86.9				mg/L	13	Standard
Ho-1	165	6.7	86.6				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	7	Standard
I	127	5124.2	5.9				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	88.529		
Al	27			
Sc	45			
Ti	47			
V	51	78.875		
Cr	52	83.689		
Cr	53			
Mn	55	114.505		
Co	59	107.923		
Ni	60	101.761		
Cu	65	105.148		
Zn	66	95.607		
Ge	72		97.981	
As	75	100.154		
Se	82	48.923		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	97.953		
Cd	111	97.794		
Cd	114			
> In	115			106.971
Sn	118			
Sb	123	111.396		
Ba	135	92.935		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	103.019		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.204		
U	238	101.184		
> Bi	209			105.127
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 8	Se	82	

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Method 6020 - Summary Report

Sample ID: PBS M6 WG535777-02
Sample Date/Time: Sunday, August 23, 2015 19:59:04
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60776.7	2.0				ug/L	53498	Standard
	Be	9	13.3	21.7	**-0.0001**	0.005	5311.8	ug/L	12	Standard
	Al	27	3528.7	6.7	**0.0340**	0.004	11.3	ug/L	487	Standard
	Sc	45	24119.2	1.5				ug/L	24506	Standard
	Ti	47	32.3	17.0	**0.0490**	0.031	63.4	ug/L	21	Standard
	V	51	1077.9	2.3	**-0.0596**	0.006	9.6	ug/L	1268	Standard
	Cr	52	7170.0	1.6	**-0.1008**	0.032	32.3	ug/L	7921	Standard
	Cr	53	673.3	10.9	**0.3465**	0.126	36.3	ug/L	442	Standard
	Mn	55	1190.7	1.1	**0.1835**	0.004	2.1	ug/L	545	Standard
	Co	59	222.3	2.9	**0.0084**	0.002	26.7	ug/L	183	Standard
	Ni	60	624.0	1.7	**0.3801**	0.010	2.5	ug/L	131	Standard
	Cu	65	270.0	7.6	**0.0354**	0.017	48.9	ug/L	231	Standard
	Zn	66	1630.1	2.2	**1.7633**	0.054	3.1	ug/L	306	Standard
>	**Ge**	72	322793.0	0.8				ug/L	330478	Standard
	As	75	-44.4	44.5	**-0.0074**	0.026	350.8	ug/L	-23	Standard
	Se	82	18.8	51.1	**-0.1135**	0.159	140.3	ug/L	27	Standard
	Se-1	77	95.7	7.1	**0.2664**	0.156	58.7	ug/L	92	Standard
>	**Ga**	71	28.3	62.0				mg/L	37	Standard
	Rb	85	50.0	10.0				ug/L	25	Standard
	Y	89	331136.2	2.8				ug/L	312467	Standard
>	**Rh**	103	20.0	66.1				ug/L	20	Standard
	Mo	98	31.7	32.0	**0.0199**	0.007	35.5	ug/L	13	Standard
	Ag	107	88.3	11.6	**-0.0039**	0.002	50.6	ug/L	72	Standard
	Cd	111	29.6	31.3	**0.0074**	0.006	87.4	mg/L	5	Standard
	Cd	114	51.2	46.6	**0.0055**	0.006	116.5	ug/L	7	Standard
>	**In**	115	503332.1	0.6				ug/L	477820	Standard
	Sn	118	451.7	3.6	**0.0167**	0.003	20.4	ug/L	343	Standard
	Sb	123	208.8	3.4	**0.0495**	0.002	3.3	ug/L	56	Standard
	Ba	135	235.7	4.6	**0.0911**	0.005	5.9	ug/L	36	Standard
	Ce	140	228.3	15.5				ug/L	65	Standard
>	**Tb**	159	950914.0	1.1				ug/L	939481	Standard
	Ho	165	15.0	0.0				ug/L	7	Standard
	Tl	203	27.7	65.1	**0.0003**	0.003	807.7	ug/L	5	Standard
	Tl	205	13.3	43.3	**-0.0037**	0.001	35.1	ug/L	2	Standard
	Pb	206	404.3	6.3	**0.0350**	0.007	19.7	ug/L	222	Standard
	Pb	207	333.7	3.6	**0.0286**	0.004	14.8	ug/L	186	Standard
	Pb	208	1268.0	5.3	**0.0334**	0.005	14.5	ug/L	717	Standard
	U	238	10.7	53.3	**-0.0039**	0.001	31.6	ug/L	2	Standard
>	**Bi**	209	460384.1	1.2				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	63.3	12.1	**0.0447**	0.019	43.3	mg/L	45	Standard
K	39	5.0	173.2	**-0.2319**	0.334	144.2	mg/L	10	Standard
Ca	43	33.3	8.7	**-0.8140**	0.586	71.9	mg/L	47	Standard
Fe	54	61.1	29.1	**-0.0086**	0.047	549.6	mg/L	46	Standard
Fe	57	830.0	5.8	**2.2544**	0.379	16.8	mg/L	627	Standard
> **Sc-1**	45	24119.2	1.5				mg/L	24506	Standard
Cl	35	59659.9	1.1				ug/L	47100	Standard
Kr	83	4.0	25.0				ug/L	8	Standard
Br	81	640.0	6.8				ug/L	427	Standard
P	31	12011.4	4.1				ug/L	10519	Standard
S	34	2405.2	1.6				ug/L	2003	Standard
Sr	88	218.3	15.2				ug/L	132	Standard
C	12	200.0	20.0				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	5.5	124.0				mg/L	13	Standard
Ho-1	165	15.0	0.0				mg/L	7	Standard
Er	166	23.3	99.0				mg/L	7	Standard
I	127	6371.3	1.0				mg/L	2225	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		113.606	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.675	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.339
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.566
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: LCSS M6 WG535777-03
Sample Date/Time: Sunday, August 23, 2015 20:02:15
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62502.0	1.4				ug/L	53498	Standard
	Be	9	16495.6	1.9	**23.9742**	0.356	1.5	ug/L	12	Standard
	Al	27	2962.0	5.1	**0.0257**	0.002	7.3	ug/L	487	Standard
	Sc	45	24534.9	1.7				ug/L	24506	Standard
	Ti	47	36.7	4.2	**0.0694**	0.009	13.1	ug/L	21	Standard
	V	51	104281.4	0.5	**26.2556**	0.188	0.7	ug/L	1268	Standard
	Cr	52	139608.6	0.8	**25.9691**	0.224	0.9	ug/L	7921	Standard
	Cr	53	17121.3	4.1	**26.2159**	1.197	4.6	ug/L	442	Standard
	Mn	55	93060.6	0.6	**27.6238**	0.131	0.5	ug/L	545	Standard
	Co	59	93998.7	0.6	**26.2427**	0.397	1.5	ug/L	183	Standard
	Ni	60	34861.4	0.7	**25.5767**	0.392	1.5	ug/L	131	Standard
	Cu	65	34088.6	0.5	**25.7606**	0.179	0.7	ug/L	231	Standard
	Zn	66	20134.0	2.0	**26.4484**	0.394	1.5	ug/L	306	Standard
>	**Ge**	72	328845.2	1.0				ug/L	330478	Standard
	As	75	18728.9	1.0	**24.7277**	0.279	1.1	ug/L	-23	Standard
	Se	82	1586.8	3.1	**25.1323**	0.521	2.1	ug/L	27	Standard
	Se-1	77	1178.7	1.7	**24.8395**	0.744	3.0	ug/L	92	Standard
>	**Ga**	71	30.0	33.3				mg/L	37	Standard
	Rb	85	30.0	28.9				ug/L	25	Standard
	Y	89	327798.0	0.3				ug/L	312467	Standard
>	**Rh**	103	21.7	13.3				ug/L	20	Standard
	Mo	98	41.6	16.4	**0.0260**	0.004	16.0	ug/L	13	Standard
	Ag	107	130740.4	1.2	**25.0252**	0.469	1.9	ug/L	72	Standard
	Cd	111	38400.8	0.4	**26.1200**	0.469	1.8	mg/L	5	Standard
	Cd	114	100602.9	3.2	**26.0811**	0.471	1.8	ug/L	7	Standard
>	**In**	115	515644.1	1.7				ug/L	477820	Standard
	Sn	118	446.7	5.3	**0.0134**	0.003	25.1	ug/L	343	Standard
	Sb	123	104718.0	1.1	**26.1118**	0.307	1.2	ug/L	56	Standard
	Ba	135	49174.3	0.8	**23.9120**	0.592	2.5	ug/L	36	Standard
	Ce	140	200.0	9.0				ug/L	65	Standard
>	**Tb**	159	964715.8	2.2				ug/L	939481	Standard
	Ho	165	13.3	43.3				ug/L	7	Standard
	Tl	203	169314.1	0.4	**24.6542**	0.269	1.1	ug/L	5	Standard
	Tl	205	119247.4	0.8	**25.5196**	0.411	1.6	ug/L	2	Standard
	Pb	206	108799.9	0.3	**25.3910**	0.146	0.6	ug/L	222	Standard
	Pb	207	94615.2	0.5	**24.4053**	0.111	0.5	ug/L	186	Standard
	Pb	208	345349.8	0.3	**24.9963**	0.162	0.6	ug/L	717	Standard
	U	238	117174.3	0.5	**24.6948**	0.132	0.5	ug/L	2	Standard
>	**Bi**	209	473630.9	0.9				ug/L	440279	Standard

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Na	23	1.7	-486842284023	84323557120160.594		173.2	mg/L	2	Standard
Mg	24	58.3	27.6	**0.0280**	0.047	167.3	mg/L	45	Standard
K	39	8.3	34.6	**-0.1122**	0.111	98.7	mg/L	10	Standard
Ca	43	35.0	24.7	**-0.5729**	1.882	328.4	mg/L	47	Standard
Fe	54	80.2	25.1	**0.0375**	0.055	146.7	mg/L	46	Standard
Fe	57	863.4	5.9	**2.4476**	0.555	22.7	mg/L	627	Standard
Sc-1	45	24534.9	1.7				mg/L	24506	Standard
Cl	35	59434.4	1.9				ug/L	47100	Standard
Kr	83	3.0	33.3				ug/L	8	Standard
Br	81	576.7	16.1				ug/L	427	Standard
P	31	12109.8	1.0				ug/L	10519	Standard
S	34	2353.5	4.6				ug/L	2003	Standard
Sr	88	190.0	17.3				ug/L	132	Standard
C	12	196.7	51.9				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	5.5	101.6				mg/L	13	Standard
Ho-1	165	13.3	43.3				mg/L	7	Standard
Er	166	23.3	24.7				mg/L	7	Standard
I	127	5639.4	3.6				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		116.831	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.506	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.916
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.575
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508096502 WG535777-01
Sample Date/Time: Sunday, August 23, 2015 20:05:27
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54201.8	3.1				ug/L	53498	Standard
	Be	9	193.3	4.0	**0.3041**	0.004	1.3	ug/L	12	Standard
	Al	27	9008885.1	1.7	**128.4714**	3.855	3.0	ug/L	487	Standard
	Sc	45	24905.5	1.7				ug/L	24506	Standard
	Ti	47	1739.1	5.5	**9.7636**	0.589	6.0	ug/L	21	Standard
	V	51	36899.9	2.5	**9.4652**	0.242	2.6	ug/L	1268	Standard
	Cr	52	50387.3	0.8	**8.8043**	0.056	0.6	ug/L	7921	Standard
	Cr	53	5586.0	3.4	**8.4257**	0.287	3.4	ug/L	442	Standard
	Mn	55	2726028.2	2.2	**848.3009**	13.583	1.6	ug/L	545	Standard
	Co	59	18491.9	1.8	**5.3347**	0.079	1.5	ug/L	183	Standard
	Ni	60	29452.6	2.4	**22.5009**	0.482	2.1	ug/L	131	Standard
	Cu	65	7430.8	2.1	**5.7158**	0.091	1.6	ug/L	231	Standard
	Zn	66	22547.4	1.3	**30.9366**	0.296	1.0	ug/L	306	Standard
>	**Ge**	72	315618.6	0.8				ug/L	330478	Standard
	As	75	2268.5	0.9	**3.1662**	0.052	1.7	ug/L	-23	Standard
	Se	82	115.0	12.1	**1.5087**	0.249	16.5	ug/L	27	Standard
	Se-1	77	120.7	5.5	**0.9087**	0.161	17.7	ug/L	92	Standard
>	**Ga**	71	2471.9	3.2				mg/L	37	Standard
	Rb	85	44040.7	4.3				ug/L	25	Standard
	Y	89	412768.6	3.0				ug/L	312467	Standard
>	**Rh**	103	206.7	25.2				ug/L	20	Standard
	Mo	98	1269.1	2.9	**0.9984**	0.007	0.7	ug/L	13	Standard
	Ag	107	272.7	0.8	**0.0391**	0.002	4.9	ug/L	72	Standard
	Cd	111	610.1	9.3	**0.4661**	0.032	6.9	mg/L	5	Standard
	Cd	114	1633.2	4.7	**0.4815**	0.011	2.3	ug/L	7	Standard
>	**In**	115	446028.5	2.8				ug/L	477820	Standard
	Sn	118	320.0	1.6	**-0.0024**	0.001	43.0	ug/L	343	Standard
	Sb	123	139.4	7.0	**0.0363**	0.002	6.1	ug/L	56	Standard
	Ba	135	433658.8	1.0	**244.0508**	4.666	1.9	ug/L	36	Standard
	Ce	140	415504.6	1.7				ug/L	65	Standard
>	**Tb**	159	910644.7	0.5				ug/L	939481	Standard
	Ho	165	11149.1	3.1				ug/L	7	Standard
	Tl	203	292.3	9.7	**0.0467**	0.004	9.3	ug/L	5	Standard
	Tl	205	150.0	6.7	**0.0315**	0.002	6.6	ug/L	2	Standard
	Pb	206	29254.2	2.0	**8.0645**	0.075	0.9	ug/L	222	Standard
	Pb	207	23565.3	1.8	**7.1760**	0.075	1.0	ug/L	186	Standard
	Pb	208	85878.4	2.9	**7.3373**	0.125	1.7	ug/L	717	Standard
	U	238	4288.6	2.7	**1.0672**	0.017	1.6	ug/L	2	Standard
>	**Bi**	209	398823.0	1.2				ug/L	440279	Standard

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Na	23	38.3	**-108283561979022282681569725**1.660		20.6	mg/L	2	Standard
Mg	24	148.3	10.8	**0.2754**	0.048	17.3	mg/L	45	Standard
K	39	40.0	45.1	**1.0494**	0.659	62.8	mg/L	10	Standard
Ca	43	2425.2	1.6	**536.3438**	16.492	3.1	mg/L	47	Standard
Fe	54	3576.1	3.1	**8.7464**	0.409	4.7	mg/L	46	Standard
Fe	57	3245.3	7.0	**25.3962**	2.318	9.1	mg/L	627	Standard
Sc-1	45	24905.5	1.7				mg/L	24506	Standard
Cl	35	55751.2	4.9				ug/L	47100	Standard
Kr	83	3.7	41.7				ug/L	8	Standard
Br	81	3710.5	5.2				ug/L	427	Standard
P	31	13085.7	3.6				ug/L	10519	Standard
S	34	2428.5	0.8				ug/L	2003	Standard
Sr	88	333.3	5.7				ug/L	132	Standard
C	12	483.3	26.2				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	6.7	86.6				mg/L	10	Standard
Dy	164	17124.4	4.0				mg/L	13	Standard
Ho-1	165	11149.1	3.1				mg/L	7	Standard
Er	166	10420.3	4.1				mg/L	7	Standard
I	127	18269.3	1.3				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		101.316	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.504	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	93.346
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	90.584
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1508096502S WG535777-04
Sample Date/Time: Sunday, August 23, 2015 20:08:38
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	46949.3	3.3				ug/L	53498	Standard
	Be	9	12920.5	2.8	**25.0262**	1.349	5.4	ug/L	12	Standard
	Al	27	8733392.6	1.7	**143.7986**	4.784	3.3	ug/L	487	Standard
	Sc	45	24352.9	3.3				ug/L	24506	Standard
	Ti	47	1317.1	5.2	**7.5909**	0.478	6.3	ug/L	21	Standard
	V	51	124892.4	1.2	**33.8621**	1.117	3.3	ug/L	1268	Standard
	Cr	52	158260.3	0.9	**31.9434**	0.966	3.0	ug/L	7921	Standard
	Cr	53	19160.4	1.5	**31.6357**	0.257	0.8	ug/L	442	Standard
	Mn	55	3429472.2	1.3	**1099.9205**	32.039	2.9	ug/L	545	Standard
	Co	59	102662.0	1.8	**30.7868**	1.223	4.0	ug/L	183	Standard
	Ni	60	57270.7	2.1	**45.1788**	1.506	3.3	ug/L	131	Standard
	Cu	65	35105.0	0.3	**28.4994**	0.587	2.1	ug/L	231	Standard
	Zn	66	52654.7	1.0	**75.0952**	2.127	2.8	ug/L	306	Standard
>	Ge	72	306376.1	2.1				ug/L	330478	Standard
	As	75	19476.9	0.4	**27.6027**	0.631	2.3	ug/L	-23	Standard
	Se	82	1504.4	0.2	**25.5932**	0.557	2.2	ug/L	27	Standard
	Se-1	77	1131.7	1.3	**25.6553**	0.227	0.9	ug/L	92	Standard
>	Ga	71	1918.5	7.8				mg/L	37	Standard
	Rb	85	31699.8	2.5				ug/L	25	Standard
	Y	89	422631.6	2.9				ug/L	312467	Standard
>	Rh	103	200.0	21.4				ug/L	20	Standard
	Mo	98	1025.5	4.0	**0.8574**	0.046	5.4	ug/L	13	Standard
	Ag	107	101403.6	2.3	**23.8490**	0.830	3.5	ug/L	72	Standard
	Cd	111	30486.6	2.1	**25.4761**	0.698	2.7	mg/L	5	Standard
	Cd	114	79602.8	1.4	**25.3581**	0.205	0.8	ug/L	7	Standard
>	In	115	419701.9	1.4				ug/L	477820	Standard
	Sn	118	1153.4	1.8	**0.2139**	0.006	2.8	ug/L	343	Standard
	Sb	123	5825.1	1.7	**1.7810**	0.038	2.1	ug/L	56	Standard
	Ba	135	318335.8	1.4	**190.3462**	4.241	2.2	ug/L	36	Standard
	Ce	140	397529.8	1.4				ug/L	65	Standard
>	Tb	159	861385.7	1.9				ug/L	939481	Standard
	Ho	165	11886.3	1.6				ug/L	7	Standard
	Tl	203	135997.6	0.3	**24.9692**	0.285	1.1	ug/L	5	Standard
	Tl	205	92607.2	1.8	**24.9916**	0.754	3.0	ug/L	2	Standard
	Pb	206	113564.7	0.9	**33.4404**	0.714	2.1	ug/L	222	Standard
	Pb	207	98107.6	1.0	**31.9274**	0.440	1.4	ug/L	186	Standard
	Pb	208	347824.2	0.4	**31.7618**	0.524	1.6	ug/L	717	Standard
	U	238	97762.7	1.2	**25.9829**	0.633	2.4	ug/L	2	Standard
>	Bi	209	375645.4	1.2				ug/L	440279	Standard

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Na	23	28.3	**-8185615855221**	94354728771	541.984	11.5	mg/L	2	Standard
Mg	24	136.7	22.1	**0.2501**	0.077	30.9	mg/L	45	Standard
K	39	35.0	14.3	**0.8945**	0.180	20.1	mg/L	10	Standard
Ca	43	2465.2	2.9	**558.4927**	35.508	6.4	mg/L	47	Standard
Fe	54	3695.8	4.0	**9.2536**	0.406	4.4	mg/L	46	Standard
Fe	57	3408.7	4.6	**27.7352**	1.685	6.1	mg/L	627	Standard
> **Sc-1**	45	24352.9	3.3				mg/L	24506	Standard
Cl	35	49243.2	0.7				ug/L	47100	Standard
Kr	83	6.7	34.6				ug/L	8	Standard
Br	81	746.7	6.3				ug/L	427	Standard
P	31	12910.5	2.8				ug/L	10519	Standard
S	34	2405.2	8.7				ug/L	2003	Standard
Sr	88	323.3	18.4				ug/L	132	Standard
C	12	336.7	11.2				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	6.7	86.6				mg/L	10	Standard
Dy	164	18165.9	2.0				mg/L	13	Standard
Ho-1	165	11886.3	1.6				mg/L	7	Standard
Er	166	11391.0	4.1				mg/L	7	Standard
I	127	13349.2	2.3				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		87.760	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.707	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	87.837
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	85.320
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1508096502SD WG535777-05
Sample Date/Time: Sunday, August 23, 2015 20:11:50
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	46113.4	2.3				ug/L	53498	Standard
	Be	9	12717.0	1.0	**25.0566**	0.360	1.4	ug/L	12	Standard
	Al	27	10972694.6	1.5	**183.8542**	1.407	0.8	ug/L	487	Standard
	Sc	45	24431.4	1.5				ug/L	24506	Standard
	Ti	47	1020.7	11.8	**5.6733**	0.683	12.0	ug/L	21	Standard
	V	51	140006.0	0.6	**36.8532**	0.494	1.3	ug/L	1268	Standard
	Cr	52	158727.5	1.4	**31.0391**	0.622	2.0	ug/L	7921	Standard
	Cr	53	19090.4	1.8	**30.5616**	0.546	1.8	ug/L	442	Standard
	Mn	55	4975888.3	2.1	**1548.3987**	42.058	2.7	ug/L	545	Standard
	Co	59	103097.0	2.1	**29.9903**	0.880	2.9	ug/L	183	Standard
	Ni	60	56736.0	0.7	**43.4151**	0.311	0.7	ug/L	131	Standard
	Cu	65	34884.1	1.5	**27.4706**	0.528	1.9	ug/L	231	Standard
	Zn	66	36621.2	0.8	**50.5210**	0.784	1.6	ug/L	306	Standard
>	**Ge**	72	315711.2	0.9				ug/L	330478	Standard
	As	75	19518.9	2.1	**26.8391**	0.650	2.4	ug/L	-23	Standard
	Se	82	1540.9	2.5	**25.4309**	0.697	2.7	ug/L	27	Standard
	Se-1	77	1147.7	1.8	**25.2192**	0.731	2.9	ug/L	92	Standard
>	**Ga**	71	1943.5	1.5				mg/L	37	Standard
	Rb	85	28725.5	0.1				ug/L	25	Standard
	Y	89	418757.6	1.9				ug/L	312467	Standard
>	**Rh**	103	150.0	36.1				ug/L	20	Standard
	Mo	98	1410.9	2.7	**1.2007**	0.039	3.3	ug/L	13	Standard
	Ag	107	101957.0	1.6	**24.3905**	0.424	1.7	ug/L	72	Standard
	Cd	111	29349.8	1.4	**24.9478**	0.196	0.8	mg/L	5	Standard
	Cd	114	77594.0	3.1	**25.1457**	0.653	2.6	ug/L	7	Standard
>	**In**	115	412519.2	0.6				ug/L	477820	Standard
	Sn	118	286.7	6.1	**-0.0048**	0.004	87.0	ug/L	343	Standard
	Sb	123	8775.4	2.0	**2.7313**	0.040	1.5	ug/L	56	Standard
	Ba	135	501190.2	0.4	**304.8683**	1.147	0.4	ug/L	36	Standard
	Ce	140	406129.2	2.1				ug/L	65	Standard
>	**Tb**	159	872688.3	0.9				ug/L	939481	Standard
	Ho	165	12977.2	2.7				ug/L	7	Standard
	Tl	203	135420.3	1.7	**24.7731**	0.250	1.0	ug/L	5	Standard
	Tl	205	92508.2	1.3	**24.8720**	0.274	1.1	ug/L	2	Standard
	Pb	206	122265.7	1.4	**35.8744**	0.258	0.7	ug/L	222	Standard
	Pb	207	102912.7	0.7	**33.3753**	0.294	0.9	ug/L	186	Standard
	Pb	208	366773.9	0.8	**33.3740**	0.102	0.3	ug/L	717	Standard
	U	238	96112.2	1.3	**25.4511**	0.399	1.6	ug/L	2	Standard
>	**Bi**	209	376959.8	0.7				ug/L	440279	Standard

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Na	23	20.0	**-5752787484498**6	8803069960692.779		1.5	mg/L	2	Standard
Mg	24	145.0	3.4	**0.2738**	0.017	6.1	mg/L	45	Standard
K	39	33.3	70.9	**0.8235**	0.880	106.8	mg/L	10	Standard
Ca	43	2288.5	7.7	**515.9268**	48.170	9.3	mg/L	47	Standard
Fe	54	5595.3	2.2	**14.0423**	0.203	1.4	mg/L	46	Standard
Fe	57	3727.1	6.0	**30.7741**	2.601	8.5	mg/L	627	Standard
Sc-1	45	24431.4	1.5				mg/L	24506	Standard
Cl	35	46545.4	1.7				ug/L	47100	Standard
Kr	83	2.7	57.3				ug/L	8	Standard
Br	81	710.0	14.1				ug/L	427	Standard
P	31	13741.2	4.4				ug/L	10519	Standard
S	34	2408.5	3.0				ug/L	2003	Standard
Sr	88	305.0	11.5				ug/L	132	Standard
C	12	313.3	35.2				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	16.7	69.3				mg/L	10	Standard
Dy	164	20431.6	4.0				mg/L	13	Standard
Ho-1	165	12977.2	2.7				mg/L	7	Standard
Er	166	11891.3	4.6				mg/L	7	Standard
I	127	10125.1	3.3				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		86.197	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.532	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	86.334
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	85.618
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1508089601
Sample Date/Time: Sunday, August 23, 2015 20:15:01
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	45008.5	3.4				ug/L	53498	Standard
	Be	9	210.0	12.6	**0.4052**	0.064	15.9	ug/L	12	Standard
	Al	27	11420102.7	1.1	**196.1316**	4.632	2.4	ug/L	487	Standard
	Sc	45	26037.4	5.1				ug/L	24506	Standard
	Ti	47	2761.9	6.0	**15.8751**	0.806	5.1	ug/L	21	Standard
	V	51	57917.8	1.3	**15.3460**	0.280	1.8	ug/L	1268	Standard
	Cr	52	90658.1	0.5	**17.4300**	0.273	1.6	ug/L	7921	Standard
	Cr	53	10440.3	2.7	**16.7117**	0.259	1.6	ug/L	442	Standard
	Mn	55	3039821.0	1.0	**964.1784**	7.398	0.8	ug/L	545	Standard
	Co	59	24849.7	1.8	**7.3262**	0.059	0.8	ug/L	183	Standard
	Ni	60	34278.7	1.4	**26.7107**	0.634	2.4	ug/L	131	Standard
	Cu	65	14181.6	0.5	**11.2830**	0.079	0.7	ug/L	231	Standard
	Zn	66	31619.6	0.5	**44.4137**	0.342	0.8	ug/L	306	Standard
>	Ge	72	309687.9	1.2				ug/L	330478	Standard
	As	75	2753.8	2.5	**3.9056**	0.143	3.6	ug/L	-23	Standard
	Se	82	121.1	13.2	**1.6509**	0.298	18.1	ug/L	27	Standard
	Se-1	77	130.7	5.0	**1.2061**	0.195	16.2	ug/L	92	Standard
>	Ga	71	4374.0	3.1				mg/L	37	Standard
	Rb	85	79513.2	3.1				ug/L	25	Standard
	Y	89	418799.2	0.5				ug/L	312467	Standard
>	Rh	103	168.3	21.1				ug/L	20	Standard
	Mo	98	1355.4	3.6	**1.2046**	0.045	3.7	ug/L	13	Standard
	Ag	107	348.3	3.7	**0.0658**	0.003	4.8	ug/L	72	Standard
	Cd	111	615.0	1.5	**0.5330**	0.008	1.5	mg/L	5	Standard
	Cd	114	1564.0	3.7	**0.5214**	0.020	3.7	ug/L	7	Standard
>	In	115	394995.5	0.1				ug/L	477820	Standard
	Sn	118	413.3	4.2	**0.0326**	0.005	14.7	ug/L	343	Standard
	Sb	123	90.6	8.9	**0.0256**	0.003	10.2	ug/L	56	Standard
	Ba	135	516887.4	1.5	**328.3676**	5.266	1.6	ug/L	36	Standard
	Ce	140	506997.6	1.5				ug/L	65	Standard
>	Tb	159	864931.2	0.5				ug/L	939481	Standard
	Ho	165	13280.8	1.9				ug/L	7	Standard
	Tl	203	421.3	3.0	**0.0752**	0.002	2.8	ug/L	5	Standard
	Tl	205	303.3	26.4	**0.0768**	0.021	27.6	ug/L	2	Standard
	Pb	206	33054.7	1.0	**9.8936**	0.171	1.7	ug/L	222	Standard
	Pb	207	26677.1	0.6	**8.8205**	0.061	0.7	ug/L	186	Standard
	Pb	208	96788.7	1.4	**8.9794**	0.093	1.0	ug/L	717	Standard
	U	238	4517.0	1.6	**1.2196**	0.012	1.0	ug/L	2	Standard
>	Bi	209	367909.7	1.3				ug/L	440279	Standard

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Na	23	26.7	**-7186749786451**	49848378537740.375		6.9	mg/L	2	Standard
Mg	24	445.0	10.0	**1.0508**	0.175	16.6	mg/L	45	Standard
K	39	95.0	5.3	**2.9341**	0.314	10.7	mg/L	10	Standard
Ca	43	2346.8	5.8	**496.4705**	38.270	7.7	mg/L	47	Standard
Fe	54	4597.8	1.9	**10.8116**	0.691	6.4	mg/L	46	Standard
Fe	57	3592.1	3.6	**27.2644**	1.314	4.8	mg/L	627	Standard
> **Sc-1**	45	26037.4	5.1				mg/L	24506	Standard
Cl	35	44608.2	1.2				ug/L	47100	Standard
Kr	83	6.0	86.6				ug/L	8	Standard
Br	81	2820.3	6.2				ug/L	427	Standard
P	31	12788.7	1.9				ug/L	10519	Standard
S	34	2503.5	5.3				ug/L	2003	Standard
Sr	88	325.0	19.6				ug/L	132	Standard
C	12	333.3	29.1				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	20.0	50.0				mg/L	10	Standard
Dy	164	20845.8	0.7				mg/L	13	Standard
Ho-1	165	13280.8	1.9				mg/L	7	Standard
Er	166	12722.0	4.7				mg/L	7	Standard
I	127	21997.6	3.2				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		84.132	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.709	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	82.666
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	83.563
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1508089602
Sample Date/Time: Sunday, August 23, 2015 20:18:13
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	44032.3	4.6				ug/L	53498	Standard
	Be	9	165.0	13.2	**0.3201**	0.034	10.8	ug/L	12	Standard
	Al	27	10047177.1	2.1	**176.4310**	5.090	2.9	ug/L	487	Standard
	Sc	45	25227.7	1.8				ug/L	24506	Standard
	Ti	47	1465.1	2.7	**8.1780**	0.244	3.0	ug/L	21	Standard
	V	51	39569.4	0.6	**10.1428**	0.105	1.0	ug/L	1268	Standard
	Cr	52	67276.7	2.0	**12.2302**	0.315	2.6	ug/L	7921	Standard
	Cr	53	7788.7	1.4	**11.9989**	0.135	1.1	ug/L	442	Standard
	Mn	55	3974765.5	1.8	**1233.3325**	25.030	2.0	ug/L	545	Standard
	Co	59	23581.0	2.6	**6.7974**	0.188	2.8	ug/L	183	Standard
	Ni	60	31849.1	2.0	**24.2657**	0.495	2.0	ug/L	131	Standard
	Cu	65	10765.8	2.0	**8.3340**	0.187	2.2	ug/L	231	Standard
	Zn	66	29973.6	0.6	**41.1508**	0.386	0.9	ug/L	306	Standard
>	Ge	72	316577.1	0.4				ug/L	330478	Standard
	As	75	3315.4	1.4	**4.5894**	0.079	1.7	ug/L	-23	Standard
	Se	82	101.7	2.4	**1.2792**	0.040	3.1	ug/L	27	Standard
	Se-1	77	121.7	11.9	**0.9232**	0.337	36.5	ug/L	92	Standard
>	Ga	71	2528.5	4.8				mg/L	37	Standard
	Rb	85	45436.4	1.3				ug/L	25	Standard
	Y	89	426693.9	1.4				ug/L	312467	Standard
>	Rh	103	243.3	11.3				ug/L	20	Standard
	Mo	98	2029.4	0.7	**1.7647**	0.030	1.7	ug/L	13	Standard
	Ag	107	329.3	8.8	**0.0593**	0.008	12.7	ug/L	72	Standard
	Cd	111	560.1	0.6	**0.4732**	0.007	1.4	mg/L	5	Standard
	Cd	114	1472.4	6.7	**0.4791**	0.025	5.2	ug/L	7	Standard
>	In	115	403977.8	1.8				ug/L	477820	Standard
	Sn	118	286.7	14.6	**-0.0033**	0.011	332.9	ug/L	343	Standard
	Sb	123	135.0	8.6	**0.0391**	0.004	9.6	ug/L	56	Standard
	Ba	135	403404.7	1.3	**250.5809**	1.642	0.7	ug/L	36	Standard
	Ce	140	438604.4	0.1				ug/L	65	Standard
>	Tb	159	853460.5	2.4				ug/L	939481	Standard
	Ho	165	13087.3	5.0				ug/L	7	Standard
	Tl	203	311.7	10.1	**0.0549**	0.005	9.1	ug/L	5	Standard
	Tl	205	223.3	6.8	**0.0552**	0.003	5.8	ug/L	2	Standard
	Pb	206	41086.6	1.5	**12.3777**	0.051	0.4	ug/L	222	Standard
	Pb	207	33344.0	1.1	**11.0993**	0.093	0.8	ug/L	186	Standard
	Pb	208	121102.8	1.2	**11.3116**	0.139	1.2	ug/L	717	Standard
	U	238	4205.3	1.5	**1.1412**	0.023	2.0	ug/L	2	Standard
>	Bi	209	365962.8	1.8				ug/L	440279	Standard

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Na	23	28.3	**-7958415770796722690749773**34.370		84.5	mg/L	2	Standard
Mg	24	185.0	16.4	**0.3698**	0.079	21.3	mg/L	45	Standard
K	39	56.7	25.5	**1.6439**	0.556	33.8	mg/L	10	Standard
Ca	43	2506.9	2.3	**547.5107**	19.391	3.5	mg/L	47	Standard
Fe	54	4463.5	3.6	**10.8135**	0.461	4.3	mg/L	46	Standard
Fe	57	3590.4	2.0	**28.2913**	0.863	3.0	mg/L	627	Standard
Sc-1	45	25227.7	1.8				mg/L	24506	Standard
Cl	35	44818.2	2.4				ug/L	47100	Standard
Kr	83	7.3	7.9				ug/L	8	Standard
Br	81	860.0	18.1				ug/L	427	Standard
P	31	13410.9	2.5				ug/L	10519	Standard
S	34	2371.9	5.8				ug/L	2003	Standard
Sr	88	353.3	14.2				ug/L	132	Standard
C	12	380.0	16.0				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	36.7	41.7				mg/L	10	Standard
Dy	164	19977.8	4.8				mg/L	13	Standard
Ho-1	165	13087.3	5.0				mg/L	7	Standard
Er	166	12098.2	4.5				mg/L	7	Standard
I	127	19434.1	4.5				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		82.307	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.794	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		84.546
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		83.121
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1508089602PS WG536147-01
Sample Date/Time: Sunday, August 23, 2015 20:21:24
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	43168.1	1.8				ug/L	53498	Standard
	Be	9	24660.1	4.9	**51.8962**	1.723	3.3	ug/L	12	Standard
	Al	27	9810515.5	1.4	**175.5912**	2.021	1.2	ug/L	487	Standard
	Sc	45	26362.9	1.6				ug/L	24506	Standard
	Ti	47	1431.1	2.1	**8.0369**	0.133	1.7	ug/L	21	Standard
	V	51	238629.2	0.7	**63.2838**	0.225	0.4	ug/L	1268	Standard
	Cr	52	314667.9	1.3	**63.2801**	0.527	0.8	ug/L	7921	Standard
	Cr	53	37817.2	3.7	**61.4860**	2.060	3.4	ug/L	442	Standard
	Mn	55	4099868.0	1.4	**1280.3320**	13.337	1.0	ug/L	545	Standard
	Co	59	197775.4	0.2	**57.7874**	0.170	0.3	ug/L	183	Standard
	Ni	60	97433.3	0.3	**74.8979**	0.406	0.5	ug/L	131	Standard
	Cu	65	72654.1	0.5	**57.6133**	0.312	0.5	ug/L	231	Standard
	Zn	66	66481.5	1.2	**92.4221**	0.721	0.8	ug/L	306	Standard
>	**Ge**	72	314538.3	0.5				ug/L	330478	Standard
	As	75	42040.0	1.5	**57.9564**	0.698	1.2	ug/L	-23	Standard
	Se	82	3190.8	1.4	**53.3081**	0.592	1.1	ug/L	27	Standard
	Se-1	77	2331.8	1.6	**53.4451**	0.775	1.4	ug/L	92	Standard
>	**Ga**	71	2611.9	3.8				mg/L	37	Standard
	Rb	85	45951.3	4.1				ug/L	25	Standard
	Y	89	423952.8	0.4				ug/L	312467	Standard
>	**Rh**	103	265.0	6.8				ug/L	20	Standard
	Mo	98	2017.1	2.5	**1.7957**	0.057	3.2	ug/L	13	Standard
	Ag	107	207402.6	1.9	**51.8874**	0.502	1.0	ug/L	72	Standard
	Cd	111	58201.5	1.0	**51.7339**	0.084	0.2	mg/L	5	Standard
	Cd	114	151108.8	3.2	**51.1984**	1.116	2.2	ug/L	7	Standard
>	**In**	115	394603.9	1.0				ug/L	477820	Standard
	Sn	118	305.0	14.0	**0.0035**	0.012	338.6	ug/L	343	Standard
	Sb	123	160649.5	1.7	**52.3437**	0.605	1.2	ug/L	56	Standard
	Ba	135	481107.8	1.3	**305.9288**	1.158	0.4	ug/L	36	Standard
	Ce	140	426038.9	1.1				ug/L	65	Standard
>	**Tb**	159	860938.5	1.3				ug/L	939481	Standard
	Ho	165	12578.6	3.9				ug/L	7	Standard
	Tl	203	282448.6	1.2	**53.5409**	0.668	1.2	ug/L	5	Standard
	Tl	205	186490.7	0.3	**51.9562**	0.066	0.1	ug/L	2	Standard
	Pb	206	220011.0	1.2	**66.9390**	0.766	1.1	ug/L	222	Standard
	Pb	207	194936.0	0.3	**65.5561**	0.180	0.3	ug/L	186	Standard
	Pb	208	673396.1	1.4	**63.5403**	0.857	1.3	ug/L	717	Standard
	U	238	195054.3	1.1	**53.5191**	0.458	0.9	ug/L	2	Standard
>	**Bi**	209	363834.3	0.4				ug/L	440279	Standard

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Na	23	48.3	**-1290713924433**	293968036804984.620		22.8	mg/L	2	Standard
Mg	24	233.3	12.2	**0.4746**	0.065	13.7	mg/L	45	Standard
K	39	55.0	45.5	**1.4832**	0.841	56.7	mg/L	10	Standard
Ca	43	2530.2	3.7	**528.6349**	27.836	5.3	mg/L	47	Standard
Fe	54	4574.3	3.9	**10.6002**	0.443	4.2	mg/L	46	Standard
Fe	57	3618.8	3.9	**27.0856**	1.820	6.7	mg/L	627	Standard
Sc-1	45	26362.9	1.6				mg/L	24506	Standard
Cl	35	42449.4	1.7				ug/L	47100	Standard
Kr	83	5.0	60.0				ug/L	8	Standard
Br	81	900.0	12.6				ug/L	427	Standard
P	31	13155.7	1.8				ug/L	10519	Standard
S	34	2296.8	1.9				ug/L	2003	Standard
Sr	88	321.7	14.8				ug/L	132	Standard
C	12	276.7	18.2				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	10.0	100.0				mg/L	10	Standard
Dy	164	19739.2	3.6				mg/L	13	Standard
Ho-1	165	12578.6	3.9				mg/L	7	Standard
Er	166	11851.3	0.9				mg/L	7	Standard
I	127	18149.2	1.5				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		80.692	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.177	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	82.584
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	82.637
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1508089602SDL WG536147-02
Sample Date/Time: Sunday, August 23, 2015 20:24:35
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	43856.8	2.9				ug/L	53498	Standard
	Be	9	71.7	10.7	**0.1285**	0.016	12.5	ug/L	12	Standard
	Al	27	2173390.7	0.9	**38.3005**	1.247	3.3	ug/L	487	Standard
	Sc	45	25007.3	5.3				ug/L	24506	Standard
	Ti	47	306.7	4.3	**1.5923**	0.059	3.7	ug/L	21	Standard
	V	51	9727.0	3.8	**2.2136**	0.073	3.3	ug/L	1268	Standard
	Cr	52	21156.8	1.3	**2.7517**	0.090	3.3	ug/L	7921	Standard
	Cr	53	2040.1	9.3	**2.5732**	0.333	13.0	ug/L	442	Standard
	Mn	55	857943.4	0.4	**263.6895**	2.534	1.0	ug/L	545	Standard
	Co	59	5081.5	0.6	**1.4085**	0.014	1.0	ug/L	183	Standard
	Ni	60	7360.5	2.3	**5.4895**	0.091	1.7	ug/L	131	Standard
	Cu	65	2503.2	1.1	**1.7868**	0.042	2.4	ug/L	231	Standard
	Zn	66	7573.9	1.9	**9.9626**	0.132	1.3	ug/L	306	Standard
>	**Ge**	72	319447.0	1.1				ug/L	330478	Standard
	As	75	684.4	6.5	**0.9798**	0.050	5.1	ug/L	-23	Standard
	Se	82	45.2	26.6	**0.3252**	0.193	59.3	ug/L	27	Standard
	Se-1	77	96.3	22.4	**0.3080**	0.526	170.9	ug/L	92	Standard
>	**Ga**	71	510.0	12.0				mg/L	37	Standard
	Rb	85	9491.3	3.0				ug/L	25	Standard
	Y	89	320621.7	2.7				ug/L	312467	Standard
>	**Rh**	103	65.0	7.7				ug/L	20	Standard
	Mo	98	396.5	5.1	**0.3404**	0.013	3.9	ug/L	13	Standard
	Ag	107	317.7	53.9	**0.0555**	0.040	72.7	ug/L	72	Standard
	Cd	111	165.6	30.2	**0.1292**	0.041	31.7	mg/L	5	Standard
	Cd	114	474.6	24.3	**0.1477**	0.036	24.5	ug/L	7	Standard
>	**In**	115	406838.4	1.4				ug/L	477820	Standard
	Sn	118	265.0	18.0	**-0.0094**	0.013	138.7	ug/L	343	Standard
	Sb	123	802.7	12.9	**0.2496**	0.029	11.7	ug/L	56	Standard
	Ba	135	86209.0	2.1	**53.1488**	0.807	1.5	ug/L	36	Standard
	Ce	140	91029.3	1.1				ug/L	65	Standard
>	**Tb**	159	873572.9	1.5				ug/L	939481	Standard
	Ho	165	2798.6	4.5				ug/L	7	Standard
	Tl	203	325.7	68.3	**0.0546**	0.040	72.5	ug/L	5	Standard
	Tl	205	150.0	28.5	**0.0330**	0.011	33.9	ug/L	2	Standard
	Pb	206	9060.7	2.2	**2.5549**	0.050	2.0	ug/L	222	Standard
	Pb	207	7475.8	1.7	**2.3266**	0.020	0.9	ug/L	186	Standard
	Pb	208	27072.5	0.3	**2.3643**	0.023	1.0	ug/L	717	Standard
	U	238	1023.0	4.6	**0.2600**	0.012	4.5	ug/L	2	Standard
>	**Bi**	209	383571.8	0.9				ug/L	440279	Standard

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Na	23	8.3	**-2371306124336**	90342267987493.359		38.1	mg/L	2	Standard
Mg	24	86.7	18.5	**0.1048**	0.057	54.4	mg/L	45	Standard
K	39	20.0	43.3	**0.3200**	0.359	112.2	mg/L	10	Standard
Ca	43	553.3	6.7	**115.7351**	14.604	12.6	mg/L	47	Standard
Fe	54	1025.1	5.3	**2.3775**	0.052	2.2	mg/L	46	Standard
Fe	57	1336.7	5.8	**6.8613**	0.738	10.8	mg/L	627	Standard
Sc-1	45	25007.3	5.3				mg/L	24506	Standard
Cl	35	45872.0	1.6				ug/L	47100	Standard
Kr	83	5.7	27.0				ug/L	8	Standard
Br	81	656.7	8.8				ug/L	427	Standard
P	31	12598.6	0.6				ug/L	10519	Standard
S	34	2248.5	3.5				ug/L	2003	Standard
Sr	88	216.7	15.0				ug/L	132	Standard
C	12	143.3	28.2				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	3858.7	5.7				mg/L	13	Standard
Ho-1	165	2798.6	4.5				mg/L	7	Standard
Er	166	2613.6	8.5				mg/L	7	Standard
I	127	6558.1	4.8				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		81.979	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.662	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		85.145
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.120
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508089602SDL WG536147-02
Sample Date/Time: Sunday, August 23, 2015 20:27:46
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	45856.1	5.2				ug/L	53498	Standard
	Be	9	15.0	57.7	**0.0102**	0.019	185.8	ug/L	12	Standard
	Al	27	445084.7	2.2	**7.4960**	0.227	3.0	ug/L	487	Standard
	Sc	45	24317.9	4.1				ug/L	24506	Standard
	Ti	47	79.7	14.4	**0.3132**	0.062	19.7	ug/L	21	Standard
	V	51	3143.4	2.3	**0.4793**	0.010	2.0	ug/L	1268	Standard
	Cr	52	11229.5	3.7	**0.7206**	0.093	12.9	ug/L	7921	Standard
	Cr	53	686.7	5.5	**0.3706**	0.067	18.0	ug/L	442	Standard
	Mn	55	173776.3	1.0	**52.8585**	0.283	0.5	ug/L	545	Standard
	Co	59	1200.0	4.8	**0.2879**	0.012	4.3	ug/L	183	Standard
	Ni	60	1576.1	1.9	**1.0976**	0.035	3.2	ug/L	131	Standard
	Cu	65	742.0	5.4	**0.4026**	0.024	6.0	ug/L	231	Standard
	Zn	66	2538.5	4.7	**3.0102**	0.180	6.0	ug/L	306	Standard
>	**Ge**	72	321898.1	1.2				ug/L	330478	Standard
	As	75	88.5	34.5	**0.1713**	0.042	24.4	ug/L	-23	Standard
	Se	82	28.9	27.0	**0.0523**	0.124	237.1	ug/L	27	Standard
	Se-1	77	83.0	10.7	**-0.0229**	0.184	804.9	ug/L	92	Standard
>	**Ga**	71	143.3	15.7				mg/L	37	Standard
	Rb	85	1968.5	1.9				ug/L	25	Standard
	Y	89	297043.8	1.2				ug/L	312467	Standard
>	**Rh**	103	26.7	28.6				ug/L	20	Standard
	Mo	98	93.9	13.9	**0.0776**	0.010	13.0	ug/L	13	Standard
	Ag	107	96.3	26.5	**0.0017**	0.006	331.3	ug/L	72	Standard
	Cd	111	29.8	41.9	**0.0119**	0.010	83.9	mg/L	5	Standard
	Cd	114	96.2	34.1	**0.0230**	0.010	44.8	ug/L	7	Standard
>	**In**	115	412865.1	2.1				ug/L	477820	Standard
	Sn	118	391.7	6.3	**0.0222**	0.004	20.1	ug/L	343	Standard
	Sb	123	194.4	8.4	**0.0566**	0.004	7.7	ug/L	56	Standard
	Ba	135	17348.3	1.5	**10.5194**	0.107	1.0	ug/L	36	Standard
	Ce	140	19073.7	1.6				ug/L	65	Standard
>	**Tb**	159	863512.8	1.4				ug/L	939481	Standard
	Ho	165	556.7	4.2				ug/L	7	Standard
	Tl	203	54.0	95.4	**0.0055**	0.009	161.3	ug/L	5	Standard
	Tl	205	15.0	66.7	**-0.0028**	0.003	89.7	ug/L	2	Standard
	Pb	206	1991.5	1.0	**0.4918**	0.015	3.0	ug/L	222	Standard
	Pb	207	1661.4	2.6	**0.4507**	0.011	2.4	ug/L	186	Standard
	Pb	208	6043.5	0.0	**0.4604**	0.008	1.8	ug/L	717	Standard
	U	238	193.7	7.0	**0.0423**	0.004	9.5	ug/L	2	Standard
>	**Bi**	209	398250.9	1.6				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	33.3	31.2	**-0.0420**	0.028	67.5	mg/L	45	Standard
K	39	10.0	86.6	**-0.0420**	0.332	791.0	mg/L	10	Standard
Ca	43	118.3	21.7	**18.7405**	6.105	32.6	mg/L	47	Standard
Fe	54	271.2	10.0	**0.5252**	0.049	9.4	mg/L	46	Standard
Fe	57	955.0	9.1	**3.4286**	0.732	21.4	mg/L	627	Standard
Sc-1	45	24317.9	4.1				mg/L	24506	Standard
Cl	35	47319.8	1.1				ug/L	47100	Standard
Kr	83	3.3	45.8				ug/L	8	Standard
Br	81	580.0	6.0				ug/L	427	Standard
P	31	12441.8	0.8				ug/L	10519	Standard
S	34	2211.8	4.8				ug/L	2003	Standard
Sr	88	185.0	9.7				ug/L	132	Standard
C	12	170.0	42.4				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	790.5	8.3				mg/L	13	Standard
Ho-1	165	556.7	4.2				mg/L	7	Standard
Er	166	476.7	8.5				mg/L	7	Standard
I	127	3917.2	4.2				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		85.716	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.404	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		86.406
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.454
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Sunday, August 23, 2015 20:30:59
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	45299.3	2.9				ug/L	53498	Standard
	Be	9	26745.3	1.6	**53.6877**	1.865	3.5	ug/L	12	Standard
	Al	27	3098353.3	1.0	**52.8551**	1.119	2.1	ug/L	487	Standard
	Sc	45	25321.1	1.1				ug/L	24506	Standard
	Ti	47	19320.6	1.1	**103.8572**	2.108	2.0	ug/L	21	Standard
	V	51	200440.0	1.5	**50.0573**	1.326	2.6	ug/L	1268	Standard
	Cr	52	266991.0	1.2	**50.3220**	0.948	1.9	ug/L	7921	Standard
	Cr	53	33605.6	0.8	**51.4062**	0.865	1.7	ug/L	442	Standard
	Mn	55	184102.7	2.0	**54.0484**	1.658	3.1	ug/L	545	Standard
	Co	59	180458.8	1.4	**49.7120**	1.065	2.1	ug/L	183	Standard
	Ni	60	70854.3	0.3	**51.3280**	0.433	0.8	ug/L	131	Standard
	Cu	65	69160.5	0.9	**51.6971**	0.994	1.9	ug/L	231	Standard
	Zn	66	38677.0	1.8	**50.4902**	0.673	1.3	ug/L	306	Standard
>	Ge	72	333606.7	1.1				ug/L	330478	Standard
	As	75	38861.3	0.2	**50.5247**	0.685	1.4	ug/L	-23	Standard
	Se	82	3227.9	0.4	**50.8318**	0.809	1.6	ug/L	27	Standard
	Se-1	77	2399.5	0.4	**51.8006**	0.755	1.5	ug/L	92	Standard
>	Ga	71	43.3	53.3				mg/L	37	Standard
	Rb	85	486.7	3.6				ug/L	25	Standard
	Y	89	306521.5	3.2				ug/L	312467	Standard
>	Rh	103	25.0	0.0				ug/L	20	Standard
	Mo	98	121915.9	0.7	**100.4464**	1.346	1.3	ug/L	13	Standard
	Ag	107	233536.4	0.7	**54.0166**	0.316	0.6	ug/L	72	Standard
	Cd	111	63425.1	1.7	**52.1192**	0.877	1.7	mg/L	5	Standard
	Cd	114	167082.4	4.0	**52.3538**	2.491	4.8	ug/L	7	Standard
>	In	115	426854.8	0.9				ug/L	477820	Standard
	Sn	118	197769.8	3.0	**49.2736**	1.590	3.2	ug/L	343	Standard
	Sb	123	170901.9	1.4	**51.4805**	0.831	1.6	ug/L	56	Standard
	Ba	135	91146.4	1.2	**53.5591**	0.468	0.9	ug/L	36	Standard
	Ce	140	91.7	37.1				ug/L	65	Standard
>	Tb	159	895455.5	2.6				ug/L	939481	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	304785.4	0.8	**51.3234**	0.970	1.9	ug/L	5	Standard
	Tl	205	202936.8	1.1	**50.2225**	0.859	1.7	ug/L	2	Standard
	Pb	206	192274.6	0.3	**51.9545**	0.975	1.9	ug/L	222	Standard
	Pb	207	173888.8	0.5	**51.9394**	1.217	2.3	ug/L	186	Standard
	Pb	208	611891.6	1.0	**51.2755**	0.794	1.5	ug/L	717	Standard
	U	238	201211.9	0.5	**49.0422**	0.732	1.5	ug/L	2	Standard
>	Bi	209	409659.2	1.9				ug/L	440279	Standard

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Na	23	3.3	**-913577641181**58236289118397.120		173.2	mg/L	2	Standard
Mg	24	1826.8	3.7	**4.8530**	0.235	4.8	mg/L	45	Standard
K	39	186.7	10.8	**6.3402**	0.683	10.8	mg/L	10	Standard
Ca	43	51.7	27.9	**2.8972**	3.292	113.6	mg/L	47	Standard
Fe	54	2026.3	2.1	**4.7997**	0.149	3.1	mg/L	46	Standard
Fe	57	1288.4	9.5	**6.2237**	1.058	17.0	mg/L	627	Standard
Sc-1	45	25321.1	1.1				mg/L	24506	Standard
Cl	35	41460.7	1.8				ug/L	47100	Standard
Kr	83	4.0	25.0				ug/L	8	Standard
Br	81	520.0	8.4				ug/L	427	Standard
P	31	13109.0	3.5				ug/L	10519	Standard
S	34	2628.6	0.7				ug/L	2003	Standard
Sr	88	165.0	3.0				ug/L	132	Standard
C	12	136.7	84.8				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	6.7	173.2				mg/L	10	Standard
Dy	164	12.2	51.9				mg/L	13	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	23.3	65.5				mg/L	7	Standard
I	127	2641.9	7.9				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	107.375		
Al	27	105.710		
Sc	45			
Ti	47	103.857		
V	51	100.115		
Cr	52	100.644		
Cr	53			
Mn	55	108.097		
Co	59	99.424		
Ni	60	102.656		
Cu	65	103.394		
Zn	66	100.980		
Ge	72		100.947	
As	75	101.049		
Se	82	101.664		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	100.446		
Ag	107	108.033		
Cd	111	104.238		
Cd	114			
> In	115			89.334
Sn	118	98.547		
Sb	123	102.961		
Ba	135	107.118		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	102.647		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.551		
U	238	98.084		
> Bi	209			93.045
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Sunday, August 23, 2015 20:34:11
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	47827.1	2.1				ug/L	53498	Standard
	Be	9	16.7	45.8	**0.0117**	0.015	128.3	ug/L	12	Standard
	Al	27	955.0	69.6	**0.0043**	0.010	237.9	ug/L	487	Standard
	Sc	45	24584.9	3.0				ug/L	24506	Standard
	Ti	47	20.0	47.7	**-0.0220**	0.052	238.3	ug/L	21	Standard
	V	51	974.0	5.9	**-0.0930**	0.009	9.9	ug/L	1268	Standard
	Cr	52	6529.4	3.5	**-0.2625**	0.028	10.8	ug/L	7921	Standard
	Cr	53	451.7	18.4	**-0.0293**	0.115	392.2	ug/L	442	Standard
	Mn	55	646.0	12.9	**0.0128**	0.024	187.0	ug/L	545	Standard
	Co	59	204.3	8.2	**0.0019**	0.006	297.3	ug/L	183	Standard
	Ni	60	117.3	30.0	**-0.0021**	0.026	1223.8	ug/L	131	Standard
	Cu	65	224.3	10.4	**-0.0044**	0.018	414.1	ug/L	231	Standard
	Zn	66	316.7	7.2	**-0.0354**	0.033	92.8	ug/L	306	Standard
>	**Ge**	72	331102.8	2.2				ug/L	330478	Standard
	As	75	-10.3	338.7	**0.0392**	0.046	117.1	ug/L	-23	Standard
	Se	82	22.8	1.5	**-0.0576**	0.014	23.6	ug/L	27	Standard
	Se-1	77	87.7	18.3	**0.0256**	0.319	1249.1	ug/L	92	Standard
>	**Ga**	71	21.7	35.3				mg/L	37	Standard
	Rb	85	30.0	44.1				ug/L	25	Standard
	Y	89	308909.8	2.0				ug/L	312467	Standard
>	**Rh**	103	21.7	58.1				ug/L	20	Standard
	Mo	98	51.5	23.7	**0.0398**	0.010	24.7	ug/L	13	Standard
	Ag	107	97.7	24.3	**0.0011**	0.005	484.9	ug/L	72	Standard
	Cd	111	13.9	100.0	**-0.0020**	0.011	571.6	mg/L	5	Standard
	Cd	114	33.7	76.3	**0.0024**	0.008	338.0	ug/L	7	Standard
>	**In**	115	430561.9	0.3				ug/L	477820	Standard
	Sn	118	421.7	18.9	**0.0255**	0.020	77.2	ug/L	343	Standard
	Sb	123	668.0	8.1	**0.1956**	0.016	8.0	ug/L	56	Standard
	Ba	135	55.0	46.4	**0.0057**	0.015	260.7	ug/L	36	Standard
	Ce	140	28.3	10.2				ug/L	65	Standard
>	**Tb**	159	901590.3	1.6				ug/L	939481	Standard
	Ho	165	15.0	0.0				ug/L	7	Standard
	Tl	203	41.0	110.1	**0.0030**	0.007	254.0	ug/L	5	Standard
	Tl	205	16.7	96.4	**-0.0026**	0.004	150.5	ug/L	2	Standard
	Pb	206	221.7	4.1	**-0.0037**	0.002	62.6	ug/L	222	Standard
	Pb	207	205.7	2.4	**-0.0000**	0.002	9443.2	ug/L	186	Standard
	Pb	208	678.7	5.6	**-0.0055**	0.004	67.2	ug/L	717	Standard
	U	238	12.0	57.7	**-0.0034**	0.002	49.2	ug/L	2	Standard
>	**Bi**	209	418810.5	1.4				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	46.7	27.0	**-0.0060**	0.032	533.1	mg/L	45	Standard
K	39	13.3	43.3	**0.0777**	0.235	302.0	mg/L	10	Standard
Ca	43	31.7	36.5	**-1.3506**	2.537	187.8	mg/L	47	Standard
Fe	54	64.7	7.8	**-0.0023**	0.018	756.9	mg/L	46	Standard
Fe	57	836.7	13.8	**2.1480**	0.898	41.8	mg/L	627	Standard
Sc-1	45	24584.9	3.0				mg/L	24506	Standard
Cl	35	40870.4	0.7				ug/L	47100	Standard
Kr	83	5.0	72.1				ug/L	8	Standard
Br	81	536.7	10.8				ug/L	427	Standard
P	31	12983.9	2.9				ug/L	10519	Standard
S	34	2371.9	2.8				ug/L	2003	Standard
Sr	88	160.0	5.4				ug/L	132	Standard
C	12	116.7	52.4				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	16.5	92.2				mg/L	13	Standard
Ho-1	165	15.0	0.0				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	3438.7	2.2				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.189	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.110
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.124
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1508089603
Sample Date/Time: Sunday, August 23, 2015 20:37:24
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	42158.8	7.1				ug/L	53498	Standard
	Be	9	185.0	12.4	**0.3783**	0.030	8.0	ug/L	12	Standard
	Al	27	8887786.6	0.7	**163.3528**	10.331	6.3	ug/L	487	Standard
	Sc	45	24554.9	2.8				ug/L	24506	Standard
	Ti	47	2133.2	1.0	**12.2944**	0.331	2.7	ug/L	21	Standard
	V	51	47116.1	1.8	**12.4785**	0.286	2.3	ug/L	1268	Standard
	Cr	52	68887.3	0.9	**12.9395**	0.205	1.6	ug/L	7921	Standard
	Cr	53	7870.4	2.7	**12.4836**	0.552	4.4	ug/L	442	Standard
	Mn	55	3921104.2	0.7	**1249.6854**	33.434	2.7	ug/L	545	Standard
	Co	59	21379.7	1.1	**6.3265**	0.192	3.0	ug/L	183	Standard
	Ni	60	31265.9	0.9	**24.4661**	0.518	2.1	ug/L	131	Standard
	Cu	65	14741.5	1.5	**11.7918**	0.353	3.0	ug/L	231	Standard
	Zn	66	34951.3	0.6	**49.3761**	1.290	2.6	ug/L	306	Standard
>	Ge	72	308320.0	2.1				ug/L	330478	Standard
	As	75	2989.2	1.8	**4.2535**	0.117	2.8	ug/L	-23	Standard
	Se	82	101.5	7.7	**1.3221**	0.132	10.0	ug/L	27	Standard
	Se-1	77	120.3	10.2	**0.9717**	0.341	35.1	ug/L	92	Standard
>	Ga	71	3188.7	1.8				mg/L	37	Standard
	Rb	85	58706.9	0.8				ug/L	25	Standard
	Y	89	406068.2	1.1				ug/L	312467	Standard
>	Rh	103	245.0	15.9				ug/L	20	Standard
	Mo	98	1493.1	2.5	**1.4082**	0.010	0.7	ug/L	13	Standard
	Ag	107	326.0	11.9	**0.0652**	0.010	14.8	ug/L	72	Standard
	Cd	111	529.3	2.2	**0.4859**	0.017	3.5	mg/L	5	Standard
	Cd	114	1416.7	1.8	**0.5011**	0.018	3.6	ug/L	7	Standard
>	In	115	372312.5	3.2				ug/L	477820	Standard
	Sn	118	313.3	16.1	**0.0111**	0.016	147.7	ug/L	343	Standard
	Sb	123	279.3	13.9	**0.0926**	0.014	14.9	ug/L	56	Standard
	Ba	135	497358.9	0.8	**335.3814**	8.362	2.5	ug/L	36	Standard
	Ce	140	464196.0	2.3				ug/L	65	Standard
>	Tb	159	819053.3	2.4				ug/L	939481	Standard
	Ho	165	12141.5	2.9				ug/L	7	Standard
	Tl	203	391.7	12.7	**0.0734**	0.011	15.2	ug/L	5	Standard
	Tl	205	220.0	17.2	**0.0570**	0.011	20.0	ug/L	2	Standard
	Pb	206	35764.2	1.1	**11.2407**	0.170	1.5	ug/L	222	Standard
	Pb	207	29041.1	0.5	**10.0858**	0.218	2.2	ug/L	186	Standard
	Pb	208	105016.2	0.8	**10.2329**	0.184	1.8	ug/L	717	Standard
	U	238	5151.5	1.6	**1.4609**	0.035	2.4	ug/L	2	Standard
>	Bi	209	350650.7	2.2				ug/L	440279	Standard

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Na	23	40.0	**-114510621669014357032448**1503.690			12.5	mg/L	2	Standard
Mg	24	220.0	14.2	**0.4826**	0.083	17.2	mg/L	45	Standard
K	39	71.7	26.4	**2.2430**	0.645	28.8	mg/L	10	Standard
Ca	43	2545.2	4.8	**572.1074**	44.410	7.8	mg/L	47	Standard
Fe	54	4248.4	1.3	**10.5724**	0.264	2.5	mg/L	46	Standard
Fe	57	3375.4	3.1	**27.1406**	1.729	6.4	mg/L	627	Standard
Sc-1	45	24554.9	2.8				mg/L	24506	Standard
Cl	35	41964.8	4.0				ug/L	47100	Standard
Kr	83	4.7	61.9				ug/L	8	Standard
Br	81	1390.1	4.5				ug/L	427	Standard
P	31	12370.1	2.7				ug/L	10519	Standard
S	34	2336.8	5.4				ug/L	2003	Standard
Sr	88	338.3	10.4				ug/L	132	Standard
C	12	316.7	29.8				mg/L	177	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	13.3	86.6				mg/L	10	Standard
Dy	164	18896.4	2.2				mg/L	13	Standard
Ho-1	165	12141.5	2.9				mg/L	7	Standard
Er	166	11120.7	3.1				mg/L	7	Standard
I	127	31953.7	3.0				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		78.805	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		93.295	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		77.919
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		79.643
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1508089604
Sample Date/Time: Sunday, August 23, 2015 20:40:35
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	40691.2	1.3				ug/L	53498	Standard
	Be	9	146.7	25.1	**0.3080**	0.084	27.4	ug/L	12	Standard
	Al	27	8278173.9	1.5	**157.1944**	3.672	2.3	ug/L	487	Standard
	Sc	45	26104.1	1.3				ug/L	24506	Standard
	Ti	47	1524.7	2.2	**8.6122**	0.138	1.6	ug/L	21	Standard
	V	51	32028.2	2.0	**8.2394**	0.120	1.5	ug/L	1268	Standard
	Cr	52	48027.3	1.2	**8.4004**	0.162	1.9	ug/L	7921	Standard
	Cr	53	5209.2	3.0	**7.8774**	0.238	3.0	ug/L	442	Standard
	Mn	55	3137333.9	0.7	**984.3364**	6.747	0.7	ug/L	545	Standard
	Co	59	20014.5	0.4	**5.8261**	0.018	0.3	ug/L	183	Standard
	Ni	60	31810.7	1.3	**24.5078**	0.177	0.7	ug/L	131	Standard
	Cu	65	9540.7	2.2	**7.4500**	0.160	2.2	ug/L	231	Standard
	Zn	66	22508.0	0.9	**31.1388**	0.467	1.5	ug/L	306	Standard
>	**Ge**	72	313070.4	0.6				ug/L	330478	Standard
	As	75	4596.8	1.1	**6.4133**	0.061	1.0	ug/L	-23	Standard
	Se	82	117.3	7.3	**1.5627**	0.143	9.2	ug/L	27	Standard
	Se-1	77	102.3	7.2	**0.4937**	0.164	33.2	ug/L	92	Standard
>	**Ga**	71	2281.8	3.9				mg/L	37	Standard
	Rb	85	37003.5	4.1				ug/L	25	Standard
	Y	89	407577.1	1.9				ug/L	312467	Standard
>	**Rh**	103	240.0	9.5				ug/L	20	Standard
	Mo	98	1333.5	3.5	**1.2514**	0.042	3.3	ug/L	13	Standard
	Ag	107	442.3	3.4	**0.0955**	0.004	4.3	ug/L	72	Standard
	Cd	111	590.7	6.0	**0.5408**	0.034	6.3	mg/L	5	Standard
	Cd	114	1638.8	5.9	**0.5778**	0.033	5.8	ug/L	7	Standard
>	**In**	115	374057.3	0.2				ug/L	477820	Standard
	Sn	118	298.3	15.5	**0.0061**	0.013	213.1	ug/L	343	Standard
	Sb	123	203.3	9.2	**0.0660**	0.006	9.5	ug/L	56	Standard
	Ba	135	408227.6	1.3	**273.8525**	4.212	1.5	ug/L	36	Standard
	Ce	140	373695.7	0.6				ug/L	65	Standard
>	**Tb**	159	838568.8	1.8				ug/L	939481	Standard
	Ho	165	11496.0	2.0				ug/L	7	Standard
	Tl	203	239.0	11.7	**0.0431**	0.006	13.4	ug/L	5	Standard
	Tl	205	130.0	10.2	**0.0308**	0.003	11.3	ug/L	2	Standard
	Pb	206	29469.3	0.8	**9.2219**	0.059	0.6	ug/L	222	Standard
	Pb	207	23812.0	0.7	**8.2318**	0.053	0.6	ug/L	186	Standard
	Pb	208	85577.0	1.2	**8.3001**	0.023	0.3	ug/L	717	Standard
	U	238	4040.9	3.0	**1.1407**	0.024	2.1	ug/L	2	Standard
>	**Bi**	209	351701.6	1.0				ug/L	440279	Standard

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Na	23	33.3	**-894592613297**327803976341603.310		36.6	mg/L	2	Standard
Mg	24	505.0	6.0	**1.2005**	0.069	5.7	mg/L	45	Standard
K	39	46.7	34.4	**1.2120**	0.541	44.6	mg/L	10	Standard
Ca	43	2723.6	4.2	**574.9555**	16.569	2.9	mg/L	47	Standard
Fe	54	3992.6	6.2	**9.3189**	0.466	5.0	mg/L	46	Standard
Fe	57	3662.1	4.3	**27.8083**	1.816	6.5	mg/L	627	Standard
Sc-1	45	26104.1	1.3				mg/L	24506	Standard
Cl	35	40918.5	1.1				ug/L	47100	Standard
Kr	83	6.0	60.1				ug/L	8	Standard
Br	81	2043.5	2.0				ug/L	427	Standard
P	31	12902.2	1.4				ug/L	10519	Standard
S	34	2155.2	3.4				ug/L	2003	Standard
Sr	88	341.7	9.5				ug/L	132	Standard
C	12	223.3	10.3				mg/L	177	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	30.0	0.0				mg/L	10	Standard
Dy	164	17563.8	4.1				mg/L	13	Standard
Ho-1	165	11496.0	2.0				mg/L	7	Standard
Er	166	10583.7	3.4				mg/L	7	Standard
I	127	18029.1	3.2				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		76.062	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.733	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	78.284
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	79.881
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1508089605
Sample Date/Time: Sunday, August 23, 2015 20:43:46
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	40303.6	4.5				ug/L	53498	Standard
	Be	9	125.0	14.4	**0.2631**	0.049	18.8	ug/L	12	Standard
	Al	27	9721394.6	1.5	**186.6100**	9.254	5.0	ug/L	487	Standard
	Sc	45	26276.1	1.2				ug/L	24506	Standard
	Ti	47	1454.7	2.1	**7.8701**	0.153	1.9	ug/L	21	Standard
	V	51	42349.5	1.9	**10.5413**	0.231	2.2	ug/L	1268	Standard
	Cr	52	55774.1	1.3	**9.5310**	0.091	1.0	ug/L	7921	Standard
	Cr	53	6433.0	3.1	**9.4648**	0.251	2.7	ug/L	442	Standard
	Mn	55	3725109.6	1.0	**1121.0217**	15.388	1.4	ug/L	545	Standard
	Co	59	21380.4	0.6	**5.9705**	0.029	0.5	ug/L	183	Standard
	Ni	60	29890.5	1.5	**22.0805**	0.457	2.1	ug/L	131	Standard
	Cu	65	9718.8	0.6	**7.2748**	0.015	0.2	ug/L	231	Standard
	Zn	66	26671.8	0.2	**35.4515**	0.242	0.7	ug/L	306	Standard
>	**Ge**	72	326418.8	0.7				ug/L	330478	Standard
	As	75	2118.3	2.2	**2.8634**	0.042	1.5	ug/L	-23	Standard
	Se	82	91.5	6.1	**1.0617**	0.088	8.3	ug/L	27	Standard
	Se-1	77	123.0	20.2	**0.8687**	0.576	66.3	ug/L	92	Standard
>	**Ga**	71	2843.6	3.4				mg/L	37	Standard
	Rb	85	41575.3	1.2				ug/L	25	Standard
	Y	89	422513.9	3.8				ug/L	312467	Standard
>	**Rh**	103	141.7	36.1				ug/L	20	Standard
	Mo	98	1292.3	3.1	**1.2047**	0.032	2.6	ug/L	13	Standard
	Ag	107	291.0	3.6	**0.0551**	0.003	5.0	ug/L	72	Standard
	Cd	111	518.1	1.3	**0.4695**	0.004	0.8	mg/L	5	Standard
	Cd	114	1290.3	1.3	**0.4502**	0.008	1.9	ug/L	7	Standard
>	**In**	115	376510.3	0.6				ug/L	477820	Standard
	Sn	118	303.3	15.0	**0.0070**	0.013	188.2	ug/L	343	Standard
	Sb	123	133.8	13.1	**0.0418**	0.006	13.7	ug/L	56	Standard
	Ba	135	347781.9	0.7	**231.7809**	2.344	1.0	ug/L	36	Standard
	Ce	140	440899.9	0.8				ug/L	65	Standard
>	**Tb**	159	845680.1	0.3				ug/L	939481	Standard
	Ho	165	13159.0	1.6				ug/L	7	Standard
	Tl	203	232.3	3.6	**0.0410**	0.002	4.3	ug/L	5	Standard
	Tl	205	138.3	8.3	**0.0325**	0.003	9.3	ug/L	2	Standard
	Pb	206	29875.1	0.5	**9.1873**	0.112	1.2	ug/L	222	Standard
	Pb	207	24092.5	0.6	**8.1845**	0.100	1.2	ug/L	186	Standard
	Pb	208	87599.4	0.7	**8.3502**	0.086	1.0	ug/L	717	Standard
	U	238	3025.3	1.0	**0.8377**	0.005	0.6	ug/L	2	Standard
>	**Bi**	209	357889.9	0.7				ug/L	440279	Standard

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Na	23	40.0	**-1070847626639**	240599288423097.940		22.5	mg/L	2	Standard
Mg	24	146.7	14.2	**0.2495**	0.057	23.0	mg/L	45	Standard
K	39	35.0	37.8	**0.7963**	0.455	57.2	mg/L	10	Standard
Ca	43	2101.8	4.7	**438.9972**	22.940	5.2	mg/L	47	Standard
Fe	54	4529.9	1.9	**10.5319**	0.315	3.0	mg/L	46	Standard
Fe	57	3355.4	1.0	**24.7576**	0.037	0.1	mg/L	627	Standard
Sc-1	45	26276.1	1.2				mg/L	24506	Standard
Cl	35	41189.9	0.1				ug/L	47100	Standard
Kr	83	4.0	66.1				ug/L	8	Standard
Br	81	883.4	7.7				ug/L	427	Standard
P	31	13379.2	2.9				ug/L	10519	Standard
S	34	2398.5	2.2				ug/L	2003	Standard
Sr	88	303.3	11.2				ug/L	132	Standard
C	12	220.0	36.4				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	10.0					mg/L	10	Standard
Dy	164	19488.9	3.0				mg/L	13	Standard
Ho-1	165	13159.0	1.6				mg/L	7	Standard
Er	166	12338.4	1.4				mg/L	7	Standard
I	127	12905.5	1.6				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		75.337	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.772	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		78.797
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		81.287
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1508089606
Sample Date/Time: Sunday, August 23, 2015 20:46:57
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48735.0	4.0				ug/L	53498	Standard
	Be	9	2045.1	10.0	**3.7897**	0.242	6.4	ug/L	12	Standard
	Al	27	4530392.2	3.1	**71.8460**	2.039	2.8	ug/L	487	Standard
	Sc	45	34975.3	1.5				ug/L	24506	Standard
	Ti	47	4445.7	1.1	**23.7879**	0.519	2.2	ug/L	21	Standard
	V	51	116812.8	1.1	**29.0153**	0.366	1.3	ug/L	1268	Standard
	Cr	52	180958.9	0.8	**33.5993**	0.743	2.2	ug/L	7921	Standard
	Cr	53	22396.5	2.6	**34.0001**	0.960	2.8	ug/L	442	Standard
	Mn	55	3198362.8	1.4	**941.5364**	25.451	2.7	ug/L	545	Standard
	Co	59	114698.2	1.5	**31.5663**	0.796	2.5	ug/L	183	Standard
	Ni	60	96759.3	1.2	**70.1089**	1.750	2.5	ug/L	131	Standard
	Cu	65	114981.0	1.5	**86.0256**	1.679	2.0	ug/L	231	Standard
	Zn	66	96406.1	0.5	**126.5018**	2.306	1.8	ug/L	306	Standard
>	**Ge**	72	333739.3	1.3				ug/L	330478	Standard
	As	75	12277.6	0.8	**15.9930**	0.332	2.1	ug/L	-23	Standard
	Se	82	69.3	11.0	**0.6772**	0.124	18.3	ug/L	27	Standard
	Se-1	77	166.7	7.8	**1.7825**	0.268	15.0	ug/L	92	Standard
>	**Ga**	71	22755.4	1.8				mg/L	37	Standard
	Rb	85	392738.6	1.0				ug/L	25	Standard
	Y	89	733063.6	0.7				ug/L	312467	Standard
>	**Rh**	103	73.3	3.9				ug/L	20	Standard
	Mo	98	1216.7	6.3	**1.0101**	0.044	4.3	ug/L	13	Standard
	Ag	107	1042.0	15.5	**0.2219**	0.032	14.2	ug/L	72	Standard
	Cd	111	227.5	5.8	**0.1757**	0.008	4.6	mg/L	5	Standard
	Cd	114	660.8	3.1	**0.2012**	0.008	4.2	ug/L	7	Standard
>	**In**	115	422448.2	2.4				ug/L	477820	Standard
	Sn	118	280.0	5.4	**-0.0083**	0.003	31.3	ug/L	343	Standard
	Sb	123	167.2	60.7	**0.0465**	0.029	63.0	ug/L	56	Standard
	Ba	135	392508.8	1.1	**233.2162**	5.646	2.4	ug/L	36	Standard
	Ce	140	1605297.7	1.7				ug/L	65	Standard
>	**Tb**	159	939702.8	1.1				ug/L	939481	Standard
	Ho	165	46880.8	0.8				ug/L	7	Standard
	Tl	203	2281.2	6.3	**0.3786**	0.016	4.2	ug/L	5	Standard
	Tl	205	1476.7	9.0	**0.3573**	0.030	8.5	ug/L	2	Standard
	Pb	206	146156.6	2.7	**39.3166**	0.334	0.9	ug/L	222	Standard
	Pb	207	119017.4	1.6	**35.3888**	0.302	0.9	ug/L	186	Standard
	Pb	208	439423.1	1.3	**36.6662**	0.541	1.5	ug/L	717	Standard
	U	238	7909.7	2.9	**1.9140**	0.016	0.8	ug/L	2	Standard
>	**Bi**	209	411230.3	2.4				ug/L	440279	Standard

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Na	23	1.7	**-340085788521**58904586465205.273			173.2	mg/L	2	Standard
Mg	24	136.7	7.6	**0.1337**	0.024	18.2	mg/L	45	Standard
K	39	215.0	10.7	**5.2155**	0.550	10.5	mg/L	10	Standard
Ca	43	140.0	21.4	**13.8810**	5.030	36.2	mg/L	47	Standard
Fe	54	17996.2	1.3	**31.7606**	0.594	1.9	mg/L	46	Standard
Fe	57	5337.6	2.8	**30.7797**	1.481	4.8	mg/L	627	Standard
Sc-1	45	34975.3	1.5				mg/L	24506	Standard
Cl	35	38556.4	3.6				ug/L	47100	Standard
Kr	83	3.3	17.3				ug/L	8	Standard
Br	81	726.7	10.0				ug/L	427	Standard
P	31	13249.1	3.7				ug/L	10519	Standard
S	34	2378.5	1.6				ug/L	2003	Standard
Sr	88	208.3	17.7				ug/L	132	Standard
C	12	126.7	16.4				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	236.7	10.6				mg/L	10	Standard
Dy	164	79170.4	1.3				mg/L	13	Standard
Ho-1	165	46880.8	0.8				mg/L	7	Standard
Er	166	41119.1	1.2				mg/L	7	Standard
I	127	5077.5	2.2				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		91.098	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.987	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	88.411
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.402
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1508096501
Sample Date/Time: Sunday, August 23, 2015 20:50:09
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	41607.1	4.9				ug/L	53498	Standard
	Be	9	135.0	9.8	**0.2745**	0.015	5.6	ug/L	12	Standard
	Al	27	8244573.3	4.3	**153.1139**	0.918	0.6	ug/L	487	Standard
	Sc	45	25600.0	2.6				ug/L	24506	Standard
	Ti	47	1182.7	3.0	**6.7384**	0.113	1.7	ug/L	21	Standard
	V	51	40512.2	3.3	**10.6519**	0.255	2.4	ug/L	1268	Standard
	Cr	52	49183.1	2.6	**8.7711**	0.229	2.6	ug/L	7921	Standard
	Cr	53	5556.0	4.0	**8.5680**	0.253	3.0	ug/L	442	Standard
	Mn	55	3462968.3	1.1	**1100.7387**	18.783	1.7	ug/L	545	Standard
	Co	59	18274.7	1.7	**5.3851**	0.117	2.2	ug/L	183	Standard
	Ni	60	30602.5	0.8	**23.8836**	0.305	1.3	ug/L	131	Standard
	Cu	65	7471.8	0.6	**5.8751**	0.101	1.7	ug/L	231	Standard
	Zn	66	24946.5	0.7	**35.0175**	0.440	1.3	ug/L	306	Standard
>	**Ge**	72	309077.0	1.9				ug/L	330478	Standard
	As	75	2002.6	1.2	**2.8601**	0.083	2.9	ug/L	-23	Standard
	Se	82	97.6	12.2	**1.2533**	0.234	18.7	ug/L	27	Standard
	Se-1	77	110.0	6.9	**0.7140**	0.231	32.4	ug/L	92	Standard
>	**Ga**	71	2266.8	4.7				mg/L	37	Standard
	Rb	85	30420.5	2.2				ug/L	25	Standard
	Y	89	407812.0	2.2				ug/L	312467	Standard
>	**Rh**	103	198.3	14.8				ug/L	20	Standard
	Mo	98	855.6	2.3	**0.8077**	0.014	1.8	ug/L	13	Standard
	Ag	107	235.0	8.9	**0.0411**	0.004	9.9	ug/L	72	Standard
	Cd	111	474.3	0.3	**0.4348**	0.010	2.4	mg/L	5	Standard
	Cd	114	1256.7	12.3	**0.4453**	0.068	15.2	ug/L	7	Standard
>	**In**	115	371554.8	2.6				ug/L	477820	Standard
	Sn	118	250.0	3.5	**-0.0071**	0.004	59.9	ug/L	343	Standard
	Sb	123	180.5	8.1	**0.0585**	0.003	5.9	ug/L	56	Standard
	Ba	135	289762.2	2.3	**195.7223**	4.498	2.3	ug/L	36	Standard
	Ce	140	372927.0	2.4				ug/L	65	Standard
>	**Tb**	159	813405.2	2.0				ug/L	939481	Standard
	Ho	165	11821.3	1.5				ug/L	7	Standard
	Tl	203	172.0	12.1	**0.0303**	0.004	11.6	ug/L	5	Standard
	Tl	205	125.0	0.0	**0.0299**	0.001	2.1	ug/L	2	Standard
	Pb	206	30190.0	0.4	**9.5759**	0.141	1.5	ug/L	222	Standard
	Pb	207	24539.2	1.4	**8.5979**	0.039	0.5	ug/L	186	Standard
	Pb	208	88183.0	1.6	**8.6697**	0.149	1.7	ug/L	717	Standard
	U	238	3145.7	2.8	**0.8985**	0.016	1.7	ug/L	2	Standard
>	**Bi**	209	347121.0	1.8				ug/L	440279	Standard

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Na	23	16.7	**-4650301380964**59377841166430.870			98.8	mg/L	2	Standard
Mg	24	220.0	33.5	**0.4549**	0.186	40.9	mg/L	45	Standard
K	39	38.3	7.5	**0.9512**	0.122	12.8	mg/L	10	Standard
Ca	43	2360.2	2.2	**507.5403**	22.227	4.4	mg/L	47	Standard
Fe	54	4085.8	1.8	**9.7398**	0.289	3.0	mg/L	46	Standard
Fe	57	3367.0	7.0	**25.7082**	2.615	10.2	mg/L	627	Standard
> **Sc-1**	45	25600.0	2.6				mg/L	24506	Standard
Cl	35	43967.8	4.8				ug/L	47100	Standard
Kr	83	3.0	88.2				ug/L	8	Standard
Br	81	1063.4	12.0				ug/L	427	Standard
P	31	12917.2	2.0				ug/L	10519	Standard
S	34	2398.5	7.8				ug/L	2003	Standard
Sr	88	291.7	11.4				ug/L	132	Standard
C	12	253.3	2.3				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	13.3	43.3				mg/L	10	Standard
Dy	164	18060.8	4.2				mg/L	13	Standard
Ho-1	165	11821.3	1.5				mg/L	7	Standard
Er	166	10937.3	1.7				mg/L	7	Standard
I	127	11777.9	2.0				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		77.774	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.524	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	77.760
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	78.841
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Sunday, August 23, 2015 20:53:23
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	43928.6	2.9				ug/L	53498	Standard
	Be	9	24868.7	0.5	**51.4739**	1.423	2.8	ug/L	12	Standard
	Al	27	3005902.8	1.5	**52.8707**	0.724	1.4	ug/L	487	Standard
	Sc	45	25222.6	0.9				ug/L	24506	Standard
	Ti	47	19484.5	1.9	**104.8215**	1.442	1.4	ug/L	21	Standard
	V	51	204790.1	0.8	**51.1912**	0.288	0.6	ug/L	1268	Standard
	Cr	52	269365.7	0.7	**50.8285**	0.131	0.3	ug/L	7921	Standard
	Cr	53	33127.9	2.0	**50.7114**	1.114	2.2	ug/L	442	Standard
	Mn	55	186971.0	2.3	**54.9360**	1.307	2.4	ug/L	545	Standard
	Co	59	178989.1	0.9	**49.3496**	0.538	1.1	ug/L	183	Standard
	Ni	60	70956.8	1.8	**51.4471**	0.669	1.3	ug/L	131	Standard
	Cu	65	68861.2	1.7	**51.5137**	0.589	1.1	ug/L	231	Standard
	Zn	66	38920.3	1.0	**50.8599**	0.292	0.6	ug/L	306	Standard
>	Ge	72	333281.4	0.5				ug/L	330478	Standard
	As	75	38958.1	1.0	**50.6974**	0.754	1.5	ug/L	-23	Standard
	Se	82	3243.8	1.6	**51.1279**	0.691	1.4	ug/L	27	Standard
	Se-1	77	2396.5	2.2	**51.7849**	1.438	2.8	ug/L	92	Standard
>	Ga	71	30.0	72.6				mg/L	37	Standard
	Rb	85	601.7	9.0				ug/L	25	Standard
	Y	89	302332.5	2.2				ug/L	312467	Standard
>	Rh	103	25.0	0.0				ug/L	20	Standard
	Mo	98	115592.2	1.1	**101.3025**	2.000	2.0	ug/L	13	Standard
	Ag	107	223475.0	0.2	**54.9826**	0.664	1.2	ug/L	72	Standard
	Cd	111	59316.9	1.6	**51.8415**	0.094	0.2	mg/L	5	Standard
	Cd	114	157079.8	2.4	**52.3322**	0.544	1.0	ug/L	7	Standard
>	In	115	401328.9	1.4				ug/L	477820	Standard
	Sn	118	188566.3	1.4	**49.9740**	1.095	2.2	ug/L	343	Standard
	Sb	123	162976.6	0.5	**52.2218**	0.930	1.8	ug/L	56	Standard
	Ba	135	87784.3	1.4	**54.8659**	0.436	0.8	ug/L	36	Standard
	Ce	140	205.0	24.0				ug/L	65	Standard
>	Tb	159	873273.5	2.4				ug/L	939481	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	294531.2	0.3	**51.7246**	0.445	0.9	ug/L	5	Standard
	Tl	205	195537.0	0.6	**50.4718**	0.772	1.5	ug/L	2	Standard
	Pb	206	187092.4	0.4	**52.7243**	0.606	1.1	ug/L	222	Standard
	Pb	207	169229.2	0.8	**52.7175**	1.003	1.9	ug/L	186	Standard
	Pb	208	591213.4	0.1	**51.6721**	0.526	1.0	ug/L	717	Standard
	U	238	191923.6	0.5	**48.7888**	0.695	1.4	ug/L	2	Standard
>	Bi	209	392743.5	1.1				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	1728.4	8.2	**4.6002**	0.367	8.0	mg/L	45	Standard
K	39	205.0	22.0	**7.0286**	1.573	22.4	mg/L	10	Standard
Ca	43	51.7	39.1	**2.8962**	4.392	151.7	mg/L	47	Standard
Fe	54	1942.9	4.9	**4.6146**	0.277	6.0	mg/L	46	Standard
Fe	57	1186.7	7.0	**5.3058**	0.800	15.1	mg/L	627	Standard
Sc-1	45	25222.6	0.9				mg/L	24506	Standard
Cl	35	39492.1	2.1				ug/L	47100	Standard
Kr	83	4.7	32.7				ug/L	8	Standard
Br	81	560.0	18.9				ug/L	427	Standard
P	31	13587.8	2.2				ug/L	10519	Standard
S	34	2321.8	1.4				ug/L	2003	Standard
Sr	88	191.7	5.4				ug/L	132	Standard
C	12	126.7	24.1				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	10.0	100.0				mg/L	10	Standard
Dy	164	16.3	126.9				mg/L	13	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	1901.8	0.2				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.948		
Al	27	105.741		
Sc	45			
Ti	47	104.822		
V	51	102.382		
Cr	52	101.657		
Cr	53			
Mn	55	109.872		
Co	59	98.699		
Ni	60	102.894		
Cu	65	103.027		
Zn	66	101.720		
Ge	72		100.848	
As	75	101.395		
Se	82	102.256		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	101.303		
Ag	107	109.965		
Cd	111	103.683		
Cd	114			
> In	115			83.992
Sn	118	99.948		
Sb	123	104.444		
Ba	135	109.732		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	103.449		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.344		
U	238	97.578		
> Bi	209			89.203
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Sunday, August 23, 2015 20:56:34
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	43893.5	2.5				ug/L	53498	Standard
	Be	9	16.7	45.8	**0.0144**	0.016	110.4	ug/L	12	Standard
	Al	27	1103.4	41.9	**0.0084**	0.008	96.2	ug/L	487	Standard
	Sc	45	25274.4	2.1				ug/L	24506	Standard
	Ti	47	18.3	54.9	**-0.0314**	0.055	176.5	ug/L	21	Standard
	V	51	1080.5	2.5	**-0.0664**	0.005	7.4	ug/L	1268	Standard
	Cr	52	6606.4	3.4	**-0.2495**	0.038	15.3	ug/L	7921	Standard
	Cr	53	386.7	5.2	**-0.1304**	0.028	21.6	ug/L	442	Standard
	Mn	55	797.4	24.7	**0.0572**	0.057	100.4	ug/L	545	Standard
	Co	59	232.3	9.6	**0.0095**	0.006	61.8	ug/L	183	Standard
	Ni	60	100.7	17.5	**-0.0144**	0.012	85.8	ug/L	131	Standard
	Cu	65	199.7	9.3	**-0.0233**	0.014	61.0	ug/L	231	Standard
	Zn	66	294.3	7.7	**-0.0660**	0.029	44.4	ug/L	306	Standard
>	**Ge**	72	331639.4	0.8				ug/L	330478	Standard
	As	75	-37.2	72.2	**0.0034**	0.035	1014.0	ug/L	-23	Standard
	Se	82	20.1	19.4	**-0.1019**	0.060	58.7	ug/L	27	Standard
	Se-1	77	95.3	17.1	**0.2015**	0.382	189.7	ug/L	92	Standard
>	**Ga**	71	25.0	34.6				mg/L	37	Standard
	Rb	85	45.0	11.1				ug/L	25	Standard
	Y	89	307948.3	1.2				ug/L	312467	Standard
>	**Rh**	103	18.3	15.7				ug/L	20	Standard
	Mo	98	53.7	40.9	**0.0430**	0.019	43.3	ug/L	13	Standard
	Ag	107	101.7	40.4	**0.0028**	0.010	349.1	ug/L	72	Standard
	Cd	111	14.5	77.3	**-0.0011**	0.009	885.2	mg/L	5	Standard
	Cd	114	62.9	68.7	**0.0121**	0.014	115.0	ug/L	7	Standard
>	**In**	115	417293.4	0.3				ug/L	477820	Standard
	Sn	118	390.0	11.2	**0.0207**	0.011	54.9	ug/L	343	Standard
	Sb	123	672.0	10.7	**0.2032**	0.023	11.2	ug/L	56	Standard
	Ba	135	90.3	63.3	**0.0280**	0.034	123.0	ug/L	36	Standard
	Ce	140	70.0	68.1				ug/L	65	Standard
>	**Tb**	159	869877.2	0.1				ug/L	939481	Standard
	Ho	165	15.0	88.2				ug/L	7	Standard
	Tl	203	69.3	64.4	**0.0081**	0.008	94.1	ug/L	5	Standard
	Tl	205	36.7	114.4	**0.0026**	0.010	408.4	ug/L	2	Standard
	Pb	206	234.7	23.7	**0.0024**	0.015	604.9	ug/L	222	Standard
	Pb	207	195.7	16.9	**-0.0004**	0.009	2378.6	ug/L	186	Standard
	Pb	208	716.7	5.9	**0.0003**	0.003	1164.9	ug/L	717	Standard
	U	238	33.3	60.6	**0.0020**	0.005	247.7	ug/L	2	Standard
>	**Bi**	209	400482.4	1.0				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	35.3	**-0.0182**	0.042	228.1	mg/L	45	Standard
K	39	10.0	100.0	**-0.0594**	0.371	623.8	mg/L	10	Standard
Ca	43	25.0	34.6	**-3.0305**	1.790	59.1	mg/L	47	Standard
Fe	54	54.3	10.4	**-0.0324**	0.016	48.0	mg/L	46	Standard
Fe	57	770.0	8.6	**1.3149**	0.756	57.5	mg/L	627	Standard
Sc-1	45	25274.4	2.1				mg/L	24506	Standard
Cl	35	39864.4	1.2				ug/L	47100	Standard
Kr	83	3.0	33.3				ug/L	8	Standard
Br	81	570.0	4.6				ug/L	427	Standard
P	31	12912.2	2.5				ug/L	10519	Standard
S	34	2576.9	6.4				ug/L	2003	Standard
Sr	88	203.3	3.8				ug/L	132	Standard
C	12	156.7	44.8				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	19.4	55.4				mg/L	13	Standard
Ho-1	165	15.0	88.2				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	7	Standard
I	127	2818.6	3.7				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.352	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		87.333
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.961
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW A4 WG536019-02
Sample Date/Time: Sunday, August 23, 2015 20:59:48
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	43290.1	0.8				ug/L	53498	Standard
	Be	9	8.3	34.6	**-0.0026**	0.006	239.5	ug/L	12	Standard
	Al	27	793.4	17.4	**0.0032**	0.002	74.9	ug/L	487	Standard
	Sc	45	25456.4	5.0				ug/L	24506	Standard
	Ti	47	16.0	41.0	**-0.0444**	0.035	79.2	ug/L	21	Standard
	V	51	800.5	40.4	**-0.1377**	0.081	58.9	ug/L	1268	Standard
	Cr	52	7122.3	2.5	**-0.1503**	0.042	27.9	ug/L	7921	Standard
	Cr	53	6808.2	15.4	**9.8828**	1.695	17.1	ug/L	442	Standard
	Mn	55	820.4	7.7	**0.0638**	0.018	28.7	ug/L	545	Standard
	Co	59	192.7	7.1	**-0.0016**	0.004	223.5	ug/L	183	Standard
	Ni	60	125.3	6.2	**0.0035**	0.006	162.7	ug/L	131	Standard
	Cu	65	254.0	8.1	**0.0174**	0.015	87.3	ug/L	231	Standard
	Zn	66	1455.4	2.3	**1.4701**	0.047	3.2	ug/L	306	Standard
>	**Ge**	72	332072.3	0.5				ug/L	330478	Standard
	As	75	16.8	81.8	**0.0740**	0.018	24.3	ug/L	-23	Standard
	Se	82	18.1	15.8	**-0.1334**	0.045	33.5	ug/L	27	Standard
	Se-1	77	447.7	11.4	**8.1289**	1.197	14.7	ug/L	92	Standard
>	**Ga**	71	33.3	48.2				mg/L	37	Standard
	Rb	85	23.3	53.9				ug/L	25	Standard
	Y	89	313329.2	2.0				ug/L	312467	Standard
>	**Rh**	103	18.3	41.7				ug/L	20	Standard
	Mo	98	16.2	29.7	**0.0116**	0.004	36.4	ug/L	13	Standard
	Ag	107	72.0	14.6	**-0.0040**	0.003	67.6	ug/L	72	Standard
	Cd	111	8.3	78.6	**-0.0062**	0.006	90.2	mg/L	5	Standard
	Cd	114	12.9	75.3	**-0.0039**	0.003	79.8	ug/L	7	Standard
>	**In**	115	413068.5	1.4				ug/L	477820	Standard
	Sn	118	326.7	8.4	**0.0054**	0.006	119.0	ug/L	343	Standard
	Sb	123	191.6	12.8	**0.0558**	0.008	14.9	ug/L	56	Standard
	Ba	135	54.0	21.4	**0.0064**	0.007	109.1	ug/L	36	Standard
	Ce	140	31.7	32.9				ug/L	65	Standard
>	**Tb**	159	871709.6	2.1				ug/L	939481	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	21.7	9.6	**-0.0000**	0.000	845.6	ug/L	5	Standard
	Tl	205	18.3	83.3	**-0.0020**	0.004	195.4	ug/L	2	Standard
	Pb	206	241.7	3.5	**0.0052**	0.003	56.0	ug/L	222	Standard
	Pb	207	202.7	9.6	**0.0025**	0.006	222.7	ug/L	186	Standard
	Pb	208	762.7	6.7	**0.0050**	0.005	101.4	ug/L	717	Standard
	U	238	5.0	20.0	**-0.0050**	0.000	5.0	ug/L	2	Standard
>	**Bi**	209	395946.5	1.0				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	46.7	16.4	**-0.0091**	0.027	290.7	mg/L	45	Standard
K	39	8.3	34.6	**-0.1247**	0.103	82.5	mg/L	10	Standard
Ca	43	28.3	20.4	**-2.3441**	0.948	40.5	mg/L	47	Standard
Fe	54	62.7	51.1	**-0.0127**	0.080	633.9	mg/L	46	Standard
Fe	57	788.4	9.0	**1.4179**	0.326	23.0	mg/L	627	Standard
Sc-1	45	25456.4	5.0				mg/L	24506	Standard
Cl	35	40403.8	0.8				ug/L	47100	Standard
Kr	83	5.7	20.4				ug/L	8	Standard
Br	81	556.7	9.9				ug/L	427	Standard
P	31	12098.2	1.9				ug/L	10519	Standard
S	34	2385.2	1.3				ug/L	2003	Standard
Sr	88	180.0	14.7				ug/L	132	Standard
C	12	96.7	39.2				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	29.7	32.9				mg/L	13	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	3640.4	3.9				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		80.920	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.483	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: PBW A4 WG536019-02
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		86.448
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		89.931
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: LCSW A4 WG536019-03
Sample Date/Time: Sunday, August 23, 2015 21:03:00
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	47089.8	4.9				ug/L	53498	Standard
	Be	9	263.3	17.1	**0.4900**	0.100	20.5	ug/L	12	Standard
	Al	27	64666.0	1.2	**1.0517**	0.054	5.2	ug/L	487	Standard
	Sc	45	25476.4	1.2				ug/L	24506	Standard
	Ti	47	2046.1	2.4	**10.8742**	0.332	3.0	ug/L	21	Standard
	V	51	40673.9	0.7	**9.8780**	0.031	0.3	ug/L	1268	Standard
	Cr	52	34641.6	1.2	**5.1835**	0.075	1.4	ug/L	7921	Standard
	Cr	53	24403.1	10.3	**37.0808**	3.632	9.8	ug/L	442	Standard
	Mn	55	19742.9	1.3	**5.6315**	0.113	2.0	ug/L	545	Standard
	Co	59	7509.9	1.7	**2.0144**	0.026	1.3	ug/L	183	Standard
	Ni	60	7301.8	2.1	**5.2073**	0.145	2.8	ug/L	131	Standard
	Cu	65	7384.1	1.2	**5.3601**	0.105	2.0	ug/L	231	Standard
	Zn	66	9687.1	0.3	**12.2957**	0.121	1.0	ug/L	306	Standard
>	Ge	72	333841.2	0.7				ug/L	330478	Standard
	As	75	3105.3	2.4	**4.0818**	0.082	2.0	ug/L	-23	Standard
	Se	82	276.4	3.9	**3.9644**	0.201	5.1	ug/L	27	Standard
	Se-1	77	1101.4	5.4	**22.7002**	1.263	5.6	ug/L	92	Standard
>	Ga	71	48.3	43.1				mg/L	37	Standard
	Rb	85	78.3	45.3				ug/L	25	Standard
	Y	89	308122.3	2.0				ug/L	312467	Standard
>	Rh	103	15.0	66.7				ug/L	20	Standard
	Mo	98	12057.6	0.7	**10.1383**	0.052	0.5	ug/L	13	Standard
	Ag	107	18542.0	1.7	**4.3583**	0.067	1.5	ug/L	72	Standard
	Cd	111	592.2	3.7	**0.4837**	0.019	4.0	mg/L	5	Standard
	Cd	114	1674.9	12.6	**0.5277**	0.069	13.0	ug/L	7	Standard
>	In	115	418146.7	0.2				ug/L	477820	Standard
	Sn	118	38221.5	2.2	**9.6567**	0.191	2.0	ug/L	343	Standard
	Sb	123	41853.9	1.5	**12.8664**	0.172	1.3	ug/L	56	Standard
	Ba	135	17996.3	0.7	**10.7741**	0.078	0.7	ug/L	36	Standard
	Ce	140	48.3	58.8				ug/L	65	Standard
>	Tb	159	864200.3	0.9				ug/L	939481	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	30312.0	1.3	**5.1939**	0.056	1.1	ug/L	5	Standard
	Tl	205	20151.7	1.2	**5.0725**	0.072	1.4	ug/L	2	Standard
	Pb	206	19964.5	0.6	**5.4372**	0.046	0.9	ug/L	222	Standard
	Pb	207	17588.2	0.8	**5.2950**	0.054	1.0	ug/L	186	Standard
	Pb	208	62337.5	0.6	**5.2645**	0.034	0.6	ug/L	717	Standard
	U	238	2.7	94.4	**-0.0056**	0.001	11.1	ug/L	2	Standard
>	Bi	209	402230.5	0.4				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	256.7	21.5	**0.5592**	0.145	26.0	mg/L	45	Standard
K	39	25.0	52.9	**0.4751**	0.475	99.9	mg/L	10	Standard
Ca	43	15.0	100.0	**-5.2315**	3.336	63.8	mg/L	47	Standard
Fe	54	74.7	30.2	**0.0162**	0.057	350.3	mg/L	46	Standard
Fe	57	838.4	7.5	**1.8995**	0.687	36.2	mg/L	627	Standard
Sc-1	45	25476.4	1.2				mg/L	24506	Standard
Cl	35	41760.1	0.3				ug/L	47100	Standard
Kr	83	3.0	88.2				ug/L	8	Standard
Br	81	466.7	8.7				ug/L	427	Standard
P	31	12468.5	7.9				ug/L	10519	Standard
S	34	2401.9	2.0				ug/L	2003	Standard
Sr	88	173.3	28.9				ug/L	132	Standard
C	12	116.7	38.7				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	9.2	106.1				mg/L	13	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	7	Standard
I	127	3840.5	3.8				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.022	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.018	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		87.511
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.358
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW A4 WG536019-03
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Method 6020 - Summary Report

Sample ID: L1508099901 WG536019-01
Sample Date/Time: Sunday, August 23, 2015 21:06:11
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	45891.1	1.9				ug/L	53498	Standard
	Be	9	11.7	24.7	**0.0030**	0.005	177.0	ug/L	12	Standard
	Al	27	573.3	2.8	**-0.0013**	0.000	23.9	ug/L	487	Standard
	Sc	45	25319.5	2.1				ug/L	24506	Standard
	Ti	47	16.7	6.9	**-0.0419**	0.007	15.5	ug/L	21	Standard
	V	51	1193.0	25.7	**-0.0426**	0.075	176.8	ug/L	1268	Standard
	Cr	52	7522.5	3.3	**-0.0923**	0.053	57.4	ug/L	7921	Standard
	Cr	53	6484.7	16.3	**9.2391**	1.663	18.0	ug/L	442	Standard
	Mn	55	693.3	1.6	**0.0234**	0.003	11.6	ug/L	545	Standard
	Co	59	221.3	7.5	**0.0055**	0.004	78.9	ug/L	183	Standard
	Ni	60	215.7	12.4	**0.0671**	0.019	27.9	ug/L	131	Standard
	Cu	65	286.3	5.5	**0.0389**	0.013	32.3	ug/L	231	Standard
	Zn	66	1675.1	3.3	**1.7303**	0.066	3.8	ug/L	306	Standard
>	**Ge**	72	336679.9	0.4				ug/L	330478	Standard
	As	75	-58.2	34.3	**-0.0228**	0.025	111.4	ug/L	-23	Standard
	Se	82	18.6	23.9	**-0.1292**	0.070	54.5	ug/L	27	Standard
	Se-1	77	502.7	3.5	**9.2077**	0.384	4.2	ug/L	92	Standard
>	**Ga**	71	23.3	86.6				mg/L	37	Standard
	Rb	85	3472.1	5.7				ug/L	25	Standard
	Y	89	305652.9	3.4				ug/L	312467	Standard
>	**Rh**	103	13.3	21.7				ug/L	20	Standard
	Mo	98	174.7	9.9	**0.1433**	0.015	10.3	ug/L	13	Standard
	Ag	107	73.7	14.6	**-0.0041**	0.002	56.9	ug/L	72	Standard
	Cd	111	5.5	54.8	**-0.0086**	0.003	30.0	mg/L	5	Standard
	Cd	114	22.8	49.7	**-0.0009**	0.004	380.8	ug/L	7	Standard
>	**In**	115	422234.5	1.2				ug/L	477820	Standard
	Sn	118	331.7	13.5	**0.0049**	0.012	247.3	ug/L	343	Standard
	Sb	123	90.6	12.9	**0.0237**	0.003	14.0	ug/L	56	Standard
	Ba	135	759.7	1.3	**0.4252**	0.011	2.5	ug/L	36	Standard
	Ce	140	23.3	61.9				ug/L	65	Standard
>	**Tb**	159	884369.6	1.1				ug/L	939481	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	33.0	40.1	**0.0018**	0.002	124.3	ug/L	5	Standard
	Tl	205	25.0	72.1	**-0.0004**	0.005	1170.1	ug/L	2	Standard
	Pb	206	240.3	3.2	**0.0035**	0.002	56.1	ug/L	222	Standard
	Pb	207	203.0	15.2	**0.0014**	0.009	677.5	ug/L	186	Standard
	Pb	208	801.3	2.8	**0.0070**	0.002	32.2	ug/L	717	Standard
	U	238	1.0	100.0	**-0.0060**	0.000	4.1	ug/L	2	Standard
>	**Bi**	209	403974.7	0.5				ug/L	440279	Standard

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Na	23	1.7	**-4626638712688**0135733186383.656			173.2	mg/L	2	Standard
Mg	24	800.0	11.3	**2.0506**	0.274	13.3	mg/L	45	Standard
K	39	33.3	22.9	**0.7829**	0.268	34.2	mg/L	10	Standard
Ca	43	53.3	30.1	**3.2538**	3.616	111.1	mg/L	47	Standard
Fe	54	47.8	16.2	**-0.0490**	0.018	37.2	mg/L	46	Standard
Fe	57	846.7	4.1	**2.0232**	0.302	14.9	mg/L	627	Standard
Sc-1	45	25319.5	2.1				mg/L	24506	Standard
Cl	35	40057.6	1.4				ug/L	47100	Standard
Kr	83	5.0	52.9				ug/L	8	Standard
Br	81	486.7	11.3				ug/L	427	Standard
P	31	11704.5	0.8				ug/L	10519	Standard
S	34	2160.2	13.7				ug/L	2003	Standard
Sr	88	205.0	20.0				ug/L	132	Standard
C	12	183.3	8.3				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	6.2	186.8				mg/L	13	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	3382.0	3.0				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		85.782	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.877	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1508099901 WG536019-01
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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	88.367
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	91.754
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: L1508099901S WG536019-04
Sample Date/Time: Sunday, August 23, 2015 21:09:23
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	47124.9	3.1				ug/L	53498	Standard
	Be	9	240.0	2.1	**0.4434**	0.024	5.4	ug/L	12	Standard
	Al	27	64353.2	3.9	**1.0439**	0.009	0.8	ug/L	487	Standard
	Sc	45	25948.9	3.7				ug/L	24506	Standard
	Ti	47	1960.1	1.6	**10.3627**	0.228	2.2	ug/L	21	Standard
	V	51	41697.5	1.3	**10.0869**	0.093	0.9	ug/L	1268	Standard
	Cr	52	34291.1	1.3	**5.0850**	0.092	1.8	ug/L	7921	Standard
	Cr	53	16472.4	12.6	**24.6455**	2.665	10.8	ug/L	442	Standard
	Mn	55	19648.1	2.9	**5.5755**	0.076	1.4	ug/L	545	Standard
	Co	59	7409.1	0.7	**1.9774**	0.029	1.4	ug/L	183	Standard
	Ni	60	7280.7	1.1	**5.1674**	0.075	1.5	ug/L	131	Standard
	Cu	65	7365.5	1.2	**5.3203**	0.051	1.0	ug/L	231	Standard
	Zn	66	9154.8	2.4	**11.5391**	0.269	2.3	ug/L	306	Standard
>	**Ge**	72	335422.8	2.1				ug/L	330478	Standard
	As	75	3157.2	1.1	**4.1310**	0.086	2.1	ug/L	-23	Standard
	Se	82	278.3	3.5	**3.9744**	0.238	6.0	ug/L	27	Standard
	Se-1	77	1071.4	4.9	**21.9101**	0.754	3.4	ug/L	92	Standard
>	**Ga**	71	41.7	18.3				mg/L	37	Standard
	Rb	85	3600.4	8.3				ug/L	25	Standard
	Y	89	311424.8	3.0				ug/L	312467	Standard
>	**Rh**	103	33.3	17.3				ug/L	20	Standard
	Mo	98	12122.0	2.9	**10.0444**	0.129	1.3	ug/L	13	Standard
	Ag	107	18283.7	1.8	**4.2352**	0.034	0.8	ug/L	72	Standard
	Cd	111	599.0	4.1	**0.4822**	0.023	4.7	mg/L	5	Standard
	Cd	114	1653.4	8.8	**0.5129**	0.042	8.1	ug/L	7	Standard
>	**In**	115	424262.8	1.8				ug/L	477820	Standard
	Sn	118	37594.9	1.5	**9.3624**	0.281	3.0	ug/L	343	Standard
	Sb	123	41269.9	1.6	**12.5042**	0.023	0.2	ug/L	56	Standard
	Ba	135	18465.2	0.7	**10.8984**	0.237	2.2	ug/L	36	Standard
	Ce	140	91.7	131.4				ug/L	65	Standard
>	**Tb**	159	884159.5	2.3				ug/L	939481	Standard
	Ho	165	11.7	89.2				ug/L	7	Standard
	Tl	203	29590.5	0.4	**5.0127**	0.063	1.3	ug/L	5	Standard
	Tl	205	19814.6	1.4	**4.9304**	0.064	1.3	ug/L	2	Standard
	Pb	206	19799.6	0.9	**5.3294**	0.018	0.3	ug/L	222	Standard
	Pb	207	17490.1	1.4	**5.2041**	0.036	0.7	ug/L	186	Standard
	Pb	208	61732.0	0.2	**5.1528**	0.055	1.1	ug/L	717	Standard
	U	238	8.7	124.5	**-0.0041**	0.003	63.3	ug/L	2	Standard
>	**Bi**	209	406879.8	1.0				ug/L	440279	Standard

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Na	23	1.7	**-4565211826807**9071788313376.812			173.2	mg/L	2	Standard
Mg	24	1133.4	4.0	**2.8831**	0.037	1.3	mg/L	45	Standard
K	39	56.7	10.2	**1.5866**	0.271	17.1	mg/L	10	Standard
Ca	43	46.7	16.4	**1.4886**	1.264	84.9	mg/L	47	Standard
Fe	54	59.6	26.1	**-0.0236**	0.036	153.0	mg/L	46	Standard
Fe	57	865.0	10.1	**1.9893**	0.622	31.3	mg/L	627	Standard
> **Sc-1**	45	25948.9	3.7				mg/L	24506	Standard
Cl	35	42113.8	2.9				ug/L	47100	Standard
Kr	83	2.3	89.2				ug/L	8	Standard
Br	81	610.0	10.2				ug/L	427	Standard
P	31	11657.8	2.9				ug/L	10519	Standard
S	34	2138.5	4.2				ug/L	2003	Standard
Sr	88	191.7	5.4				ug/L	132	Standard
C	12	166.7	40.8				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	28.9	121.2				mg/L	13	Standard
Ho-1	165	11.7	89.2				mg/L	7	Standard
Er	166	23.3	99.0				mg/L	7	Standard
I	127	3312.0	2.6				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.088	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.496	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		88.791
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.414
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1508099901S WG536019-04
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Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: L1508099901SD WG536019-05
Sample Date/Time: Sunday, August 23, 2015 21:12:34
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48355.4	2.6				ug/L	53498	Standard
	Be	9	286.7	4.4	**0.5194**	0.034	6.6	ug/L	12	Standard
	Al	27	64957.3	1.1	**1.0273**	0.021	2.1	ug/L	487	Standard
	Sc	45	26404.7	0.2				ug/L	24506	Standard
	Ti	47	2044.1	2.1	**10.6250**	0.269	2.5	ug/L	21	Standard
	V	51	41502.1	1.4	**9.8613**	0.201	2.0	ug/L	1268	Standard
	Cr	52	34977.7	0.8	**5.1018**	0.011	0.2	ug/L	7921	Standard
	Cr	53	22037.7	6.8	**32.6839**	2.075	6.3	ug/L	442	Standard
	Mn	55	19308.6	1.7	**5.3806**	0.103	1.9	ug/L	545	Standard
	Co	59	7425.2	0.5	**1.9469**	0.018	0.9	ug/L	183	Standard
	Ni	60	7393.1	0.2	**5.1572**	0.042	0.8	ug/L	131	Standard
	Cu	65	7323.4	2.3	**5.1955**	0.127	2.5	ug/L	231	Standard
	Zn	66	9043.7	1.6	**11.1919**	0.253	2.3	ug/L	306	Standard
>	**Ge**	72	341219.5	0.6				ug/L	330478	Standard
	As	75	3120.2	4.4	**4.0140**	0.184	4.6	ug/L	-23	Standard
	Se	82	269.5	4.1	**3.7619**	0.196	5.2	ug/L	27	Standard
	Se-1	77	1147.0	2.0	**23.1698**	0.489	2.1	ug/L	92	Standard
>	**Ga**	71	43.3	29.0				mg/L	37	Standard
	Rb	85	3603.8	3.2				ug/L	25	Standard
	Y	89	314745.6	0.3				ug/L	312467	Standard
>	**Rh**	103	21.7	13.3				ug/L	20	Standard
	Mo	98	12272.8	1.1	**10.0207**	0.099	1.0	ug/L	13	Standard
	Ag	107	18595.7	1.2	**4.2441**	0.056	1.3	ug/L	72	Standard
	Cd	111	616.1	4.8	**0.4887**	0.023	4.8	mg/L	5	Standard
	Cd	114	1644.9	8.9	**0.5028**	0.046	9.2	ug/L	7	Standard
>	**In**	115	430605.1	0.2				ug/L	477820	Standard
	Sn	118	37912.4	2.1	**9.2987**	0.182	2.0	ug/L	343	Standard
	Sb	123	42447.7	0.9	**12.6716**	0.128	1.0	ug/L	56	Standard
	Ba	135	18625.8	1.1	**10.8284**	0.117	1.1	ug/L	36	Standard
	Ce	140	38.3	19.9				ug/L	65	Standard
>	**Tb**	159	883354.3	1.0				ug/L	939481	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	30284.6	1.1	**5.0981**	0.018	0.4	ug/L	5	Standard
	Tl	205	20208.5	0.5	**4.9976**	0.069	1.4	ug/L	2	Standard
	Pb	206	19830.0	1.6	**5.3047**	0.115	2.2	ug/L	222	Standard
	Pb	207	17495.1	0.2	**5.1736**	0.080	1.6	ug/L	186	Standard
	Pb	208	62078.4	0.3	**5.1496**	0.058	1.1	ug/L	717	Standard
	U	238	0.7	86.6	**-0.0061**	0.000	2.3	ug/L	2	Standard
>	**Bi**	209	409433.6	1.4				ug/L	440279	Standard

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Na	23	1.7	**-4440364200987**6909364002225.266			173.2	mg/L	2	Standard
Mg	24	1118.4	3.8	**2.7916**	0.105	3.8	mg/L	45	Standard
K	39	70.0	18.9	**2.0095**	0.464	23.1	mg/L	10	Standard
Ca	43	55.0	31.5	**3.1054**	3.636	117.1	mg/L	47	Standard
Fe	54	99.9	12.6	**0.0687**	0.030	43.3	mg/L	46	Standard
Fe	57	775.0	15.6	**1.0356**	1.099	106.1	mg/L	627	Standard
> **Sc-1**	45	26404.7	0.2				mg/L	24506	Standard
Cl	35	43459.6	0.1				ug/L	47100	Standard
Kr	83	3.7	31.5				ug/L	8	Standard
Br	81	590.0	10.3				ug/L	427	Standard
P	31	11482.7	3.8				ug/L	10519	Standard
S	34	2358.5	3.0				ug/L	2003	Standard
Sr	88	185.0	15.0				ug/L	132	Standard
C	12	183.3	57.3				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	9.5	177.6				mg/L	13	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	3123.7	7.1				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.388	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.250	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.119
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.994
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1508099901SD WG536019-05
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Method 6020 - Summary Report

Sample ID: L1508085201
Sample Date/Time: Sunday, August 23, 2015 21:15:45
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	46270.5	0.7				ug/L	53498	Standard
	Be	9	10.0	50.0	**-0.0004**	0.010	2382.9	ug/L	12	Standard
	Al	27	1095.0	7.2	**0.0073**	0.001	18.7	ug/L	487	Standard
	Sc	45	26378.0	4.5				ug/L	24506	Standard
	Ti	47	18.7	38.0	**-0.0320**	0.037	115.6	ug/L	21	Standard
	V	51	1262.4	5.5	**-0.0268**	0.016	61.6	ug/L	1268	Standard
	Cr	52	8497.7	3.5	**0.0869**	0.059	67.7	ug/L	7921	Standard
	Cr	53	7977.1	1.4	**11.4666**	0.272	2.4	ug/L	442	Standard
	Mn	55	843.0	4.2	**0.0659**	0.012	18.2	ug/L	545	Standard
	Co	59	297.7	9.5	**0.0260**	0.007	28.3	ug/L	183	Standard
	Ni	60	440.3	5.2	**0.2270**	0.014	6.1	ug/L	131	Standard
	Cu	65	1327.4	2.9	**0.8073**	0.026	3.2	ug/L	231	Standard
	Zn	66	1807.8	3.3	**1.8919**	0.097	5.1	ug/L	306	Standard
>	**Ge**	72	338429.0	0.8				ug/L	330478	Standard
	As	75	-29.9	179.4	**0.0135**	0.069	510.8	ug/L	-23	Standard
	Se	82	36.6	3.2	**0.1497**	0.023	15.2	ug/L	27	Standard
	Se-1	77	598.0	0.6	**11.2553**	0.088	0.8	ug/L	92	Standard
>	**Ga**	71	288.3	17.1				mg/L	37	Standard
	Rb	85	10640.4	2.5				ug/L	25	Standard
	Y	89	314222.4	2.1				ug/L	312467	Standard
>	**Rh**	103	30.0	44.1				ug/L	20	Standard
	Mo	98	280.8	4.0	**0.2275**	0.008	3.6	ug/L	13	Standard
	Ag	107	74.0	13.7	**-0.0043**	0.003	58.9	ug/L	72	Standard
	Cd	111	6.9	22.5	**-0.0076**	0.001	16.9	mg/L	5	Standard
	Cd	114	21.1	16.1	**-0.0015**	0.001	67.7	ug/L	7	Standard
>	**In**	115	429819.3	1.1				ug/L	477820	Standard
	Sn	118	331.7	18.1	**0.0033**	0.015	442.0	ug/L	343	Standard
	Sb	123	115.5	4.6	**0.0307**	0.001	4.8	ug/L	56	Standard
	Ba	135	13920.1	0.7	**8.1018**	0.140	1.7	ug/L	36	Standard
	Ce	140	20.0	66.1				ug/L	65	Standard
>	**Tb**	159	898573.2	0.4				ug/L	939481	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	50.7	8.9	**0.0048**	0.001	15.3	ug/L	5	Standard
	Tl	205	33.3	48.2	**0.0017**	0.004	234.5	ug/L	2	Standard
	Pb	206	275.3	8.3	**0.0132**	0.007	50.0	ug/L	222	Standard
	Pb	207	238.0	1.5	**0.0120**	0.001	7.3	ug/L	186	Standard
	Pb	208	859.7	3.1	**0.0120**	0.003	21.7	ug/L	717	Standard
	U	238	1.0	100.0	**-0.0060**	0.000	4.1	ug/L	2	Standard
>	**Bi**	209	403733.7	0.5				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	2305.2	5.0	**5.9178**	0.486	8.2	mg/L	45	Standard
K	39	215.0	25.9	**7.0422**	1.791	25.4	mg/L	10	Standard
Ca	43	68.3	27.7	**5.9667**	4.076	68.3	mg/L	47	Standard
Fe	54	59.2	8.7	**-0.0268**	0.010	35.5	mg/L	46	Standard
Fe	57	901.7	3.9	**2.2186**	0.620	28.0	mg/L	627	Standard
> **Sc-1**	45	26378.0	4.5				mg/L	24506	Standard
Cl	35	44031.2	1.2				ug/L	47100	Standard
Kr	83	4.3	35.3				ug/L	8	Standard
Br	81	743.4	8.1				ug/L	427	Standard
P	31	11260.9	3.2				ug/L	10519	Standard
S	34	2240.2	4.3				ug/L	2003	Standard
Sr	88	210.0	2.4				ug/L	132	Standard
C	12	163.3	47.6				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	2.5	255.2				mg/L	13	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	16.7	91.7				mg/L	7	Standard
I	127	9297.9	6.3				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		86.491	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.406	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.954
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.699
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: L1508085201PS WG536148-01
Sample Date/Time: Sunday, August 23, 2015 21:18:57
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	45887.7	2.1				ug/L	53498	Standard
	Be	9	27538.3	1.1	**54.5495**	0.883	1.6	ug/L	12	Standard
	Al	27	1156.7	10.6	**0.0085**	0.002	19.5	ug/L	487	Standard
	Sc	45	24795.3	4.6				ug/L	24506	Standard
	Ti	47	16.0	12.5	**-0.0440**	0.009	20.3	ug/L	21	Standard
	V	51	209974.4	1.2	**53.0106**	1.403	2.6	ug/L	1268	Standard
	Cr	52	283692.4	1.0	**54.1475**	1.178	2.2	ug/L	7921	Standard
	Cr	53	42071.7	2.4	**65.2613**	3.222	4.9	ug/L	442	Standard
	Mn	55	190349.9	0.5	**56.4839**	1.707	3.0	ug/L	545	Standard
	Co	59	184838.7	0.8	**51.4762**	2.034	4.0	ug/L	183	Standard
	Ni	60	72997.4	0.8	**53.4549**	1.686	3.2	ug/L	131	Standard
	Cu	65	73372.6	0.7	**55.4391**	1.385	2.5	ug/L	231	Standard
	Zn	66	41633.1	0.6	**54.9761**	1.551	2.8	ug/L	306	Standard
>	**Ge**	72	330234.6	3.1				ug/L	330478	Standard
	As	75	39684.9	0.6	**52.1449**	1.433	2.7	ug/L	-23	Standard
	Se	82	3268.6	0.9	**52.0460**	2.134	4.1	ug/L	27	Standard
	Se-1	77	2900.6	0.7	**63.7213**	1.955	3.1	ug/L	92	Standard
>	**Ga**	71	296.7	5.4				mg/L	37	Standard
	Rb	85	10723.8	1.9				ug/L	25	Standard
	Y	89	301120.9	5.0				ug/L	312467	Standard
>	**Rh**	103	33.3	31.2				ug/L	20	Standard
	Mo	98	312.8	2.2	**0.2646**	0.004	1.5	ug/L	13	Standard
	Ag	107	223417.6	0.8	**53.5275**	1.524	2.8	ug/L	72	Standard
	Cd	111	62998.9	0.3	**53.6340**	1.935	3.6	mg/L	5	Standard
	Cd	114	167197.5	1.6	**54.2805**	2.654	4.9	ug/L	7	Standard
>	**In**	115	412367.9	3.7				ug/L	477820	Standard
	Sn	118	381.7	4.6	**0.0198**	0.004	21.5	ug/L	343	Standard
	Sb	123	172402.5	0.7	**53.7941**	1.622	3.0	ug/L	56	Standard
	Ba	135	105855.5	0.7	**64.4528**	2.484	3.9	ug/L	36	Standard
	Ce	140	26.7	60.3				ug/L	65	Standard
>	**Tb**	159	855379.4	4.5				ug/L	939481	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	306365.1	1.4	**53.0553**	1.513	2.9	ug/L	5	Standard
	Tl	205	206323.9	1.6	**52.5089**	1.259	2.4	ug/L	2	Standard
	Pb	206	195426.2	0.2	**54.3255**	2.147	4.0	ug/L	222	Standard
	Pb	207	176107.9	0.3	**54.1140**	2.207	4.1	ug/L	186	Standard
	Pb	208	619016.2	0.6	**53.3736**	2.320	4.3	ug/L	717	Standard
	U	238	204328.6	0.6	**51.2431**	2.335	4.6	ug/L	2	Standard
>	**Bi**	209	398540.0	3.9				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	2378.5	2.9	**6.5061**	0.395	6.1	mg/L	45	Standard
K	39	196.7	16.5	**6.8899**	1.466	21.3	mg/L	10	Standard
Ca	43	65.0	26.6	**6.0354**	3.411	56.5	mg/L	47	Standard
Fe	54	64.6	12.7	**-0.0043**	0.019	445.8	mg/L	46	Standard
Fe	57	843.4	2.2	**2.1673**	0.230	10.6	mg/L	627	Standard
> **Sc-1**	45	24795.3	4.6				mg/L	24506	Standard
Cl	35	45424.7	1.0				ug/L	47100	Standard
Kr	83	5.3	10.8				ug/L	8	Standard
Br	81	860.0	5.8				ug/L	427	Standard
P	31	11125.8	4.5				ug/L	10519	Standard
S	34	2205.2	3.4				ug/L	2003	Standard
Sr	88	153.3	18.0				ug/L	132	Standard
C	12	160.0	34.8				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	6.7	86.6				mg/L	10	Standard
Dy	164	2.9	203.0				mg/L	13	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	11467.7	3.8				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		85.775	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.926	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		86.302
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.520
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: L1508085201SDL WG536148-02
Sample Date/Time: Sunday, August 23, 2015 21:22:08
Number of Replicates: 3
Autosampler Position: 227
Sample Description: 250
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	43783.2	0.9				ug/L	53498	Standard
	Be	9	15.0	88.2	**0.0112**	0.028	248.1	ug/L	12	Standard
	Al	27	726.7	31.6	**0.0019**	0.004	212.4	ug/L	487	Standard
	Sc	45	25162.5	1.4				ug/L	24506	Standard
	Ti	47	16.3	18.7	**-0.0426**	0.017	39.9	ug/L	21	Standard
	V	51	1292.6	11.5	**-0.0138**	0.036	263.3	ug/L	1268	Standard
	Cr	52	8695.5	1.5	**0.1538**	0.023	15.0	ug/L	7921	Standard
	Cr	53	4507.3	4.4	**6.2806**	0.338	5.4	ug/L	442	Standard
	Mn	55	870.7	27.0	**0.0785**	0.071	89.9	ug/L	545	Standard
	Co	59	259.3	6.9	**0.0168**	0.005	29.3	ug/L	183	Standard
	Ni	60	197.0	12.0	**0.0554**	0.016	29.6	ug/L	131	Standard
	Cu	65	444.0	2.4	**0.1600**	0.008	4.9	ug/L	231	Standard
	Zn	66	1516.4	2.8	**1.5474**	0.053	3.4	ug/L	306	Standard
>	**Ge**	72	332611.9	0.6				ug/L	330478	Standard
	As	75	-21.1	311.2	**0.0242**	0.086	352.9	ug/L	-23	Standard
	Se	82	20.7	20.8	**-0.0933**	0.067	71.9	ug/L	27	Standard
	Se-1	77	228.3	6.1	**3.1810**	0.303	9.5	ug/L	92	Standard
>	**Ga**	71	66.7	11.5				mg/L	37	Standard
	Rb	85	2293.5	6.0				ug/L	25	Standard
	Y	89	313156.7	1.1				ug/L	312467	Standard
>	**Rh**	103	15.0	88.2				ug/L	20	Standard
	Mo	98	73.6	13.2	**0.0587**	0.008	13.2	ug/L	13	Standard
	Ag	107	138.0	32.6	**0.0108**	0.010	95.6	ug/L	72	Standard
	Cd	111	13.1	81.1	**-0.0024**	0.009	364.4	mg/L	5	Standard
	Cd	114	43.2	65.7	**0.0055**	0.009	162.7	ug/L	7	Standard
>	**In**	115	424308.0	0.6				ug/L	477820	Standard
	Sn	118	315.0	8.4	**0.0002**	0.006	2881.4	ug/L	343	Standard
	Sb	123	693.3	7.9	**0.2063**	0.017	8.3	ug/L	56	Standard
	Ba	135	2869.3	4.1	**1.6704**	0.061	3.7	ug/L	36	Standard
	Ce	140	130.0	146.8				ug/L	65	Standard
>	**Tb**	159	895795.6	1.4				ug/L	939481	Standard
	Ho	165	11.7	107.9				ug/L	7	Standard
	Tl	203	97.7	60.5	**0.0126**	0.010	78.1	ug/L	5	Standard
	Tl	205	46.7	117.5	**0.0049**	0.014	277.1	ug/L	2	Standard
	Pb	206	273.3	10.9	**0.0115**	0.007	64.7	ug/L	222	Standard
	Pb	207	237.3	10.0	**0.0108**	0.006	60.2	ug/L	186	Standard
	Pb	208	837.0	8.4	**0.0090**	0.006	64.4	ug/L	717	Standard
	U	238	30.3	95.3	**0.0011**	0.007	632.2	ug/L	2	Standard
>	**Bi**	209	409550.6	0.9				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	496.7	7.4	**1.2292**	0.120	9.7	mg/L	45	Standard
K	39	43.3	40.5	**1.1622**	0.660	56.8	mg/L	10	Standard
Ca	43	23.3	44.6	**-3.3507**	2.335	69.7	mg/L	47	Standard
Fe	54	52.5	60.8	**-0.0362**	0.080	219.8	mg/L	46	Standard
Fe	57	845.0	5.3	**2.0589**	0.470	22.8	mg/L	627	Standard
Sc-1	45	25162.5	1.4				mg/L	24506	Standard
Cl	35	43900.2	1.5				ug/L	47100	Standard
Kr	83	4.7	81.1				ug/L	8	Standard
Br	81	620.0	9.7				ug/L	427	Standard
P	31	10987.3	4.3				ug/L	10519	Standard
S	34	2166.8	1.2				ug/L	2003	Standard
Sr	88	171.7	1.7				ug/L	132	Standard
C	12	96.7	26.0				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	35.7	103.7				mg/L	13	Standard
Ho-1	165	11.7	107.9				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	7	Standard
I	127	4238.9	2.5				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		81.841	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.646	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1508085201SDL WG536148-02
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		88.801
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.021
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Sunday, August 23, 2015 21:25:21
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	46633.3	1.9				ug/L	53498	Standard
	Be	9	25967.2	1.0	**50.6211**	1.407	2.8	ug/L	12	Standard
	Al	27	2996552.3	1.1	**49.6502**	1.248	2.5	ug/L	487	Standard
	Sc	45	25239.3	2.6				ug/L	24506	Standard
	Ti	47	19581.6	0.7	**102.1628**	1.127	1.1	ug/L	21	Standard
	V	51	203387.5	2.2	**49.2952**	1.353	2.7	ug/L	1268	Standard
	Cr	52	269108.5	0.5	**49.2021**	0.951	1.9	ug/L	7921	Standard
	Cr	53	33585.5	2.4	**49.8365**	0.732	1.5	ug/L	442	Standard
	Mn	55	187564.5	0.5	**53.4391**	0.472	0.9	ug/L	545	Standard
	Co	59	179409.0	1.0	**47.9660**	0.267	0.6	ug/L	183	Standard
	Ni	60	70920.9	0.9	**49.8689**	0.820	1.6	ug/L	131	Standard
	Cu	65	69842.9	0.9	**50.6732**	1.060	2.1	ug/L	231	Standard
	Zn	66	39342.0	0.9	**49.8485**	0.494	1.0	ug/L	306	Standard
>	Ge	72	343694.2	1.3				ug/L	330478	Standard
	As	75	39043.4	0.7	**49.2761**	0.954	1.9	ug/L	-23	Standard
	Se	82	3224.9	0.8	**49.2818**	0.773	1.6	ug/L	27	Standard
	Se-1	77	2418.2	3.6	**50.6383**	2.307	4.6	ug/L	92	Standard
>	Ga	71	43.3	13.3				mg/L	37	Standard
	Rb	85	493.3	13.2				ug/L	25	Standard
	Y	89	310417.2	2.4				ug/L	312467	Standard
>	Rh	103	20.0	66.1				ug/L	20	Standard
	Mo	98	117223.7	0.7	**97.4612**	1.286	1.3	ug/L	13	Standard
	Ag	107	228258.5	0.5	**53.2811**	0.819	1.5	ug/L	72	Standard
	Cd	111	61120.6	0.8	**50.6835**	0.423	0.8	mg/L	5	Standard
	Cd	114	161025.9	1.4	**50.9044**	0.666	1.3	ug/L	7	Standard
>	In	115	423000.2	1.0				ug/L	477820	Standard
	Sn	118	194508.9	0.3	**48.9027**	0.649	1.3	ug/L	343	Standard
	Sb	123	167778.0	0.9	**50.9978**	0.095	0.2	ug/L	56	Standard
	Ba	135	89806.4	1.1	**53.2519**	0.038	0.1	ug/L	36	Standard
	Ce	140	133.3	75.8				ug/L	65	Standard
>	Tb	159	891923.9	2.5				ug/L	939481	Standard
	Ho	165	21.7	48.0				ug/L	7	Standard
	Tl	203	302124.9	0.6	**50.3717**	0.710	1.4	ug/L	5	Standard
	Tl	205	201663.2	0.6	**49.4148**	0.646	1.3	ug/L	2	Standard
	Pb	206	189142.9	0.3	**50.5993**	0.574	1.1	ug/L	222	Standard
	Pb	207	171074.1	1.1	**50.5851**	0.580	1.1	ug/L	186	Standard
	Pb	208	604587.5	0.7	**50.1597**	0.130	0.3	ug/L	717	Standard
	U	238	201182.9	0.2	**48.5494**	0.338	0.7	ug/L	2	Standard
>	Bi	209	413694.2	0.8				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	1740.1	5.0	**4.6361**	0.354	7.6	mg/L	45	Standard
K	39	180.0	21.7	**6.1496**	1.567	25.5	mg/L	10	Standard
Ca	43	46.7	24.7	**1.8357**	2.765	150.7	mg/L	47	Standard
Fe	54	1911.7	10.9	**4.5419**	0.600	13.2	mg/L	46	Standard
Fe	57	1270.1	5.4	**6.0885**	0.348	5.7	mg/L	627	Standard
Sc-1	45	25239.3	2.6				mg/L	24506	Standard
Cl	35	39653.8	1.0				ug/L	47100	Standard
Kr	83	4.7	89.2				ug/L	8	Standard
Br	81	476.7	20.7				ug/L	427	Standard
P	31	12239.9	2.0				ug/L	10519	Standard
S	34	2448.5	1.5				ug/L	2003	Standard
Sr	88	188.3	24.7				ug/L	132	Standard
C	12	160.0	54.1				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	6.0	87.0				mg/L	13	Standard
Ho-1	165	21.7	48.0				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	7	Standard
I	127	1621.8	10.2				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	101.242		
Al	27	99.300		
Sc	45			
Ti	47	102.163		
V	51	98.590		
Cr	52	98.404		
Cr	53			
Mn	55	106.878		
Co	59	95.932		
Ni	60	99.738		
Cu	65	101.346		
Zn	66	99.697		
Ge	72		103.999	
As	75	98.552		
Se	82	98.564		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
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Rb	85			
Y	89			
> Rh	103			
Mo	98	97.461		
Ag	107	106.562		
Cd	111	101.367		
Cd	114			
> In	115			88.527
Sn	118	97.805		
Sb	123	101.996		
Ba	135	106.504		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.743		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.319		
U	238	97.099		
> Bi	209			93.962
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Sunday, August 23, 2015 21:27:38
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Sunday, August 23, 2015 21:28:33
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	45474.8	2.8				ug/L	53498	Standard
	Be	9	15.0	88.2	**0.0095**	0.025	267.2	ug/L	12	Standard
	Al	27	1035.0	75.7	**0.0064**	0.013	197.4	ug/L	487	Standard
	Sc	45	25928.8	3.3				ug/L	24506	Standard
	Ti	47	20.3	7.5	**-0.0220**	0.008	36.6	ug/L	21	Standard
	V	51	1036.5	5.5	**-0.0805**	0.015	18.4	ug/L	1268	Standard
	Cr	52	6675.8	2.1	**-0.2507**	0.026	10.5	ug/L	7921	Standard
	Cr	53	721.7	2.8	**0.3797**	0.033	8.8	ug/L	442	Standard
	Mn	55	861.0	51.4	**0.0735**	0.131	177.5	ug/L	545	Standard
	Co	59	210.7	7.8	**0.0028**	0.005	163.7	ug/L	183	Standard
	Ni	60	123.0	13.1	**0.0009**	0.012	1308.9	ug/L	131	Standard
	Cu	65	192.0	1.8	**-0.0307**	0.002	7.1	ug/L	231	Standard
	Zn	66	297.7	2.2	**-0.0660**	0.009	13.6	ug/L	306	Standard
>	**Ge**	72	335460.3	0.3				ug/L	330478	Standard
	As	75	-53.7	19.2	**-0.0174**	0.014	77.8	ug/L	-23	Standard
	Se	82	16.4	37.7	**-0.1636**	0.097	59.3	ug/L	27	Standard
	Se-1	77	106.0	0.9	**0.4130**	0.027	6.6	ug/L	92	Standard
>	**Ga**	71	15.0	57.7				mg/L	37	Standard
	Rb	85	15.0	66.7				ug/L	25	Standard
	Y	89	321977.0	1.1				ug/L	312467	Standard
>	**Rh**	103	10.0	50.0				ug/L	20	Standard
	Mo	98	56.2	30.6	**0.0432**	0.013	30.5	ug/L	13	Standard
	Ag	107	108.0	40.6	**0.0033**	0.010	301.8	ug/L	72	Standard
	Cd	111	19.8	99.9	**0.0028**	0.016	569.9	mg/L	5	Standard
	Cd	114	49.7	66.5	**0.0073**	0.010	141.6	ug/L	7	Standard
>	**In**	115	433458.7	1.6				ug/L	477820	Standard
	Sn	118	445.0	14.1	**0.0307**	0.017	55.5	ug/L	343	Standard
	Sb	123	692.2	13.8	**0.2016**	0.029	14.5	ug/L	56	Standard
	Ba	135	50.3	29.0	**0.0028**	0.009	305.2	ug/L	36	Standard
	Ce	140	30.0	104.1				ug/L	65	Standard
>	**Tb**	159	901513.9	2.7				ug/L	939481	Standard
	Ho	165	11.7	49.5				ug/L	7	Standard
	Tl	203	60.7	96.1	**0.0062**	0.010	153.7	ug/L	5	Standard
	Tl	205	33.3	60.6	**0.0015**	0.005	328.7	ug/L	2	Standard
	Pb	206	228.7	18.7	**-0.0012**	0.011	868.7	ug/L	222	Standard
	Pb	207	185.3	10.3	**-0.0054**	0.005	95.4	ug/L	186	Standard
	Pb	208	766.3	16.6	**0.0024**	0.011	438.1	ug/L	717	Standard
	U	238	32.0	65.6	**0.0014**	0.005	351.5	ug/L	2	Standard
>	**Bi**	209	413876.6	1.1				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	60.0	22.0	**0.0226**	0.031	135.3	mg/L	45	Standard
K	39	3.3	173.2	**-0.3090**	0.201	65.0	mg/L	10	Standard
Ca	43	18.3	15.7	**-4.5964**	0.503	10.9	mg/L	47	Standard
Fe	54	80.6	24.7	**0.0261**	0.043	163.1	mg/L	46	Standard
Fe	57	808.4	4.6	**1.4822**	0.428	28.9	mg/L	627	Standard
Sc-1	45	25928.8	3.3				mg/L	24506	Standard
Cl	35	39743.4	1.0				ug/L	47100	Standard
Kr	83	3.0	66.7				ug/L	8	Standard
Br	81	590.0	7.8				ug/L	427	Standard
P	31	11853.0	4.5				ug/L	10519	Standard
S	34	2388.5	3.6				ug/L	2003	Standard
Sr	88	188.3	12.3				ug/L	132	Standard
C	12	96.7	36.3				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	16.2	38.3				mg/L	13	Standard
Ho-1	165	11.7	49.5				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	2496.9	0.8				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.508	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.716
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.003
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

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Method 6020 - Summary Report

Sample ID: PBS M8 WG535953-02
Sample Date/Time: Sunday, August 23, 2015 21:31:46
Number of Replicates: 3
Autosampler Position: 228
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	46128.5	4.0				ug/L	53498	Standard
	Be	9	13.3	78.1	**0.0057**	0.019	339.4	ug/L	12	Standard
	Al	27	1660.1	15.9	**0.0168**	0.003	20.5	ug/L	487	Standard
	Sc	45	25563.2	4.7				ug/L	24506	Standard
	Ti	47	25.0	20.8	**0.0011**	0.028	2596.5	ug/L	21	Standard
	V	51	1123.2	8.9	**-0.0629**	0.025	39.7	ug/L	1268	Standard
	Cr	52	7052.3	1.6	**-0.1979**	0.022	11.3	ug/L	7921	Standard
	Cr	53	790.0	11.6	**0.4670**	0.135	28.9	ug/L	442	Standard
	Mn	55	862.7	1.6	**0.0701**	0.004	5.2	ug/L	545	Standard
	Co	59	209.7	3.9	**0.0017**	0.002	123.5	ug/L	183	Standard
	Ni	60	152.0	7.0	**0.0202**	0.008	37.5	ug/L	131	Standard
	Cu	65	205.7	9.7	**-0.0228**	0.015	63.8	ug/L	231	Standard
	Zn	66	1296.1	2.6	**1.2171**	0.047	3.8	ug/L	306	Standard
>	**Ge**	72	340429.3	0.4				ug/L	330478	Standard
	As	75	-35.8	71.8	**0.0064**	0.033	515.7	ug/L	-23	Standard
	Se	82	24.7	39.6	**-0.0392**	0.151	385.3	ug/L	27	Standard
	Se-1	77	103.7	21.4	**0.3260**	0.480	147.4	ug/L	92	Standard
>	**Ga**	71	33.3	17.3				mg/L	37	Standard
	Rb	85	36.7	7.9				ug/L	25	Standard
	Y	89	311609.9	2.7				ug/L	312467	Standard
>	**Rh**	103	20.0	43.3				ug/L	20	Standard
	Mo	98	28.3	3.4	**0.0208**	0.001	3.3	ug/L	13	Standard
	Ag	107	92.7	24.0	**-0.0000**	0.005	12302.6	ug/L	72	Standard
	Cd	111	16.9	46.8	**0.0005**	0.006	1230.9	mg/L	5	Standard
	Cd	114	52.3	56.6	**0.0082**	0.009	114.2	ug/L	7	Standard
>	**In**	115	431688.1	1.4				ug/L	477820	Standard
	Sn	118	411.7	7.7	**0.0228**	0.008	36.6	ug/L	343	Standard
	Sb	123	287.4	5.3	**0.0818**	0.006	6.9	ug/L	56	Standard
	Ba	135	188.7	12.8	**0.0834**	0.015	18.4	ug/L	36	Standard
	Ce	140	180.0	9.6				ug/L	65	Standard
>	**Tb**	159	893731.5	1.9				ug/L	939481	Standard
	Ho	165	15.0	88.2				ug/L	7	Standard
	Tl	203	59.3	58.9	**0.0060**	0.006	96.4	ug/L	5	Standard
	Tl	205	15.0	57.7	**-0.0030**	0.002	70.2	ug/L	2	Standard
	Pb	206	264.0	10.6	**0.0081**	0.008	93.4	ug/L	222	Standard
	Pb	207	225.7	8.4	**0.0065**	0.006	88.9	ug/L	186	Standard
	Pb	208	825.0	2.1	**0.0071**	0.001	18.0	ug/L	717	Standard
	U	238	12.7	31.9	**-0.0032**	0.001	30.3	ug/L	2	Standard
>	**Bi**	209	414861.8	0.7				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	50.0	36.1	**-0.0025**	0.043	1694.6	mg/L	45	Standard
K	39	5.0	100.0	**-0.2413**	0.182	75.4	mg/L	10	Standard
Ca	43	28.3	81.5	**-2.2969**	5.157	224.5	mg/L	47	Standard
Fe	54	56.1	22.7	**-0.0297**	0.031	104.5	mg/L	46	Standard
Fe	57	860.0	12.8	**2.1146**	1.385	65.5	mg/L	627	Standard
Sc-1	45	25563.2	4.7				mg/L	24506	Standard
Cl	35	39663.2	1.1				ug/L	47100	Standard
Kr	83	2.3	65.5				ug/L	8	Standard
Br	81	606.7	13.3				ug/L	427	Standard
P	31	11986.4	2.1				ug/L	10519	Standard
S	34	2331.8	6.9				ug/L	2003	Standard
Sr	88	186.7	9.4				ug/L	132	Standard
C	12	120.0	76.4				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	9.5	100.0				mg/L	13	Standard
Ho-1	165	15.0	88.2				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	1683.4	1.6				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		86.225	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.011	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	90.345
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	94.227
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBS M8 WG535953-02
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Method 6020 - Summary Report

Sample ID: LCSS M8 WG535953-03
Sample Date/Time: Sunday, August 23, 2015 21:34:58
Number of Replicates: 3
Autosampler Position: 229
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	46282.3	2.8				ug/L	53498	Standard
	Be	9	12648.6	2.3	**24.8402**	0.970	3.9	ug/L	12	Standard
	Al	27	1938.5	5.3	**0.0214**	0.002	7.3	ug/L	487	Standard
	Sc	45	24493.1	4.0				ug/L	24506	Standard
	Ti	47	24.7	6.2	**0.0018**	0.008	407.2	ug/L	21	Standard
	V	51	100652.4	0.9	**24.9562**	0.280	1.1	ug/L	1268	Standard
	Cr	52	138220.3	1.2	**25.2997**	0.438	1.7	ug/L	7921	Standard
	Cr	53	16924.4	0.6	**25.5148**	0.017	0.1	ug/L	442	Standard
	Mn	55	94877.1	0.1	**27.7540**	0.172	0.6	ug/L	545	Standard
	Co	59	88841.1	1.4	**24.4377**	0.493	2.0	ug/L	183	Standard
	Ni	60	35251.3	0.8	**25.4851**	0.340	1.3	ug/L	131	Standard
	Cu	65	35160.1	1.6	**26.1874**	0.555	2.1	ug/L	231	Standard
	Zn	66	20682.8	0.3	**26.7813**	0.232	0.9	ug/L	306	Standard
>	**Ge**	72	333698.4	0.6				ug/L	330478	Standard
	As	75	18929.1	0.7	**24.6285**	0.269	1.1	ug/L	-23	Standard
	Se	82	1564.5	1.7	**24.4112**	0.559	2.3	ug/L	27	Standard
	Se-1	77	1206.4	1.1	**25.0661**	0.450	1.8	ug/L	92	Standard
>	**Ga**	71	23.3	68.9				mg/L	37	Standard
	Rb	85	101.7	19.9				ug/L	25	Standard
	Y	89	317231.5	2.7				ug/L	312467	Standard
>	**Rh**	103	30.0	33.3				ug/L	20	Standard
	Mo	98	22.3	14.2	**0.0157**	0.003	16.5	ug/L	13	Standard
	Ag	107	112224.1	0.6	**25.3583**	0.183	0.7	ug/L	72	Standard
	Cd	111	30934.8	1.5	**24.8389**	0.471	1.9	mg/L	5	Standard
	Cd	114	81524.7	2.9	**24.9557**	0.672	2.7	ug/L	7	Standard
>	**In**	115	436739.8	0.6				ug/L	477820	Standard
	Sn	118	345.0	2.5	**0.0053**	0.002	45.9	ug/L	343	Standard
	Sb	123	86332.3	0.4	**25.4146**	0.214	0.8	ug/L	56	Standard
	Ba	135	44550.4	0.3	**25.5724**	0.076	0.3	ug/L	36	Standard
	Ce	140	168.3	11.2				ug/L	65	Standard
>	**Tb**	159	897295.7	1.5				ug/L	939481	Standard
	Ho	165	16.7	75.5				ug/L	7	Standard
	Tl	203	149559.2	0.2	**25.2689**	0.207	0.8	ug/L	5	Standard
	Tl	205	100072.7	1.0	**24.8477**	0.213	0.9	ug/L	2	Standard
	Pb	206	96421.2	0.4	**26.1130**	0.368	1.4	ug/L	222	Standard
	Pb	207	83455.2	0.5	**24.9803**	0.295	1.2	ug/L	186	Standard
	Pb	208	305067.1	0.4	**25.6236**	0.368	1.4	ug/L	717	Standard
	U	238	98929.9	1.0	**24.1937**	0.396	1.6	ug/L	2	Standard
>	**Bi**	209	408192.5	1.1				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	53.3	21.7	**0.0144**	0.036	246.6	mg/L	45	Standard
K	39	10.0	86.6	**-0.0408**	0.348	853.2	mg/L	10	Standard
Ca	43	35.0	62.3	**-0.6264**	4.732	755.4	mg/L	47	Standard
Fe	54	63.5	39.9	**-0.0049**	0.063	1308.8	mg/L	46	Standard
Fe	57	868.4	7.8	**2.5022**	0.415	16.6	mg/L	627	Standard
Sc-1	45	24493.1	4.0				mg/L	24506	Standard
Cl	35	40365.0	1.3				ug/L	47100	Standard
Kr	83	4.3	35.3				ug/L	8	Standard
Br	81	620.0	1.6				ug/L	427	Standard
P	31	11741.2	3.0				ug/L	10519	Standard
S	34	2253.5	3.0				ug/L	2003	Standard
Sr	88	190.0	13.9				ug/L	132	Standard
C	12	140.0	50.0				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	19.4	137.1				mg/L	13	Standard
Ho-1	165	16.7	75.5				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	7	Standard
I	127	1926.8	10.9				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		86.513	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.975	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.402
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.712
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSS M8 WG535953-03
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Method 6020 - Summary Report

Sample ID: L1508100026 WG535953-01
Sample Date/Time: Sunday, August 23, 2015 21:38:09
Number of Replicates: 3
Autosampler Position: 230
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48300.2	2.6				ug/L	53498	Standard
	Be	9	441.7	16.5	**0.8111**	0.134	16.6	ug/L	12	Standard
	Al	27	907001.8	2.6	**14.4981**	0.167	1.2	ug/L	487	Standard
	Sc	45	31021.7	1.8				ug/L	24506	Standard
	Ti	47	4510.3	2.7	**24.1002**	0.483	2.0	ug/L	21	Standard
	V	51	121730.6	1.0	**30.2143**	0.476	1.6	ug/L	1268	Standard
	Cr	52	266490.6	0.9	**50.1362**	0.228	0.5	ug/L	7921	Standard
	Cr	53	33527.1	3.5	**51.1908**	1.595	3.1	ug/L	442	Standard
	Mn	55	1718926.0	1.1	**505.2257**	6.806	1.3	ug/L	545	Standard
	Co	59	50529.1	0.2	**13.8565**	0.125	0.9	ug/L	183	Standard
	Ni	60	214806.4	1.0	**155.5260**	0.606	0.4	ug/L	131	Standard
	Cu	65	46803.9	1.5	**34.8668**	0.294	0.8	ug/L	231	Standard
	Zn	66	304139.4	1.0	**399.5146**	1.077	0.3	ug/L	306	Standard
>	**Ge**	72	334143.8	0.8				ug/L	330478	Standard
	As	75	9985.8	1.3	**12.9990**	0.074	0.6	ug/L	-23	Standard
	Se	82	415.4	4.0	**6.1632**	0.314	5.1	ug/L	27	Standard
	Se-1	77	399.3	4.1	**6.9837**	0.430	6.2	ug/L	92	Standard
>	**Ga**	71	5060.8	2.7				mg/L	37	Standard
	Rb	85	77228.0	0.6				ug/L	25	Standard
	Y	89	1211579.4	1.9				ug/L	312467	Standard
>	**Rh**	103	70.0	24.7				ug/L	20	Standard
	Mo	98	6555.5	1.2	**5.2530**	0.091	1.7	ug/L	13	Standard
	Ag	107	1131.0	1.7	**0.2334**	0.005	2.0	ug/L	72	Standard
	Cd	111	3664.8	3.7	**2.9170**	0.078	2.7	mg/L	5	Standard
	Cd	114	9563.5	2.4	**2.9070**	0.039	1.3	ug/L	7	Standard
>	**In**	115	438725.2	1.3				ug/L	477820	Standard
	Sn	118	540.0	3.7	**0.0522**	0.004	7.1	ug/L	343	Standard
	Sb	123	224.5	11.1	**0.0619**	0.007	11.6	ug/L	56	Standard
	Ba	135	61265.6	1.3	**35.0174**	0.056	0.2	ug/L	36	Standard
	Ce	140	762419.9	0.1				ug/L	65	Standard
>	**Tb**	159	951688.1	0.9				ug/L	939481	Standard
	Ho	165	59879.8	0.3				ug/L	7	Standard
	Tl	203	2056.1	3.8	**0.3383**	0.010	2.8	ug/L	5	Standard
	Tl	205	1358.4	3.9	**0.3258**	0.016	5.0	ug/L	2	Standard
	Pb	206	32489.1	1.1	**8.6252**	0.174	2.0	ug/L	222	Standard
	Pb	207	23628.4	1.3	**6.9232**	0.136	2.0	ug/L	186	Standard
	Pb	208	90842.8	0.7	**7.4720**	0.078	1.0	ug/L	717	Standard
	U	238	29114.3	1.4	**7.0082**	0.089	1.3	ug/L	2	Standard
>	**Bi**	209	414422.4	1.3				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	111.7	9.3	**0.1121**	0.022	19.6	mg/L	45	Standard
K	39	55.0	15.7	**1.2013**	0.241	20.1	mg/L	10	Standard
Ca	43	145.0	12.4	**17.6083**	3.273	18.6	mg/L	47	Standard
Fe	54	8808.3	1.5	**17.4509**	0.198	1.1	mg/L	46	Standard
Fe	57	2943.6	2.3	**16.8537**	0.873	5.2	mg/L	627	Standard
Sc-1	45	31021.7	1.8				mg/L	24506	Standard
Cl	35	40030.1	0.5				ug/L	47100	Standard
Kr	83	3.3	45.8				ug/L	8	Standard
Br	81	586.7	7.7				ug/L	427	Standard
P	31	13529.4	6.4				ug/L	10519	Standard
S	34	2435.2	0.9				ug/L	2003	Standard
Sr	88	238.3	13.5				ug/L	132	Standard
C	12	163.3	30.2				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	210.0	23.8				mg/L	10	Standard
Dy	164	85314.5	0.7				mg/L	13	Standard
Ho-1	165	59879.8	0.3				mg/L	7	Standard
Er	166	57562.5	2.0				mg/L	7	Standard
I	127	10135.1	6.7				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.285	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.109	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	91.818
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.127
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	
Zn 66 Upper, S, EEE	Zn	66	

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: L1508100026S WG535953-04
Sample Date/Time: Sunday, August 23, 2015 21:41:21
Number of Replicates: 3
Autosampler Position: 231
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50365.3	1.5				ug/L	53498	Standard
	Be	9	14737.2	2.3	**26.5872**	0.824	3.1	ug/L	12	Standard
	Al	27	1205118.4	0.3	**18.4792**	0.330	1.8	ug/L	487	Standard
	Sc	45	32994.2	0.6				ug/L	24506	Standard
	Ti	47	5323.9	2.2	**28.6093**	0.023	0.1	ug/L	21	Standard
	V	51	240083.0	2.2	**60.2018**	0.141	0.2	ug/L	1268	Standard
	Cr	52	417839.5	0.4	**79.8996**	2.104	2.6	ug/L	7921	Standard
	Cr	53	52622.9	1.9	**81.1960**	2.899	3.6	ug/L	442	Standard
	Mn	55	2267434.8	1.3	**669.7789**	12.536	1.9	ug/L	545	Standard
	Co	59	151054.7	1.3	**41.7385**	0.885	2.1	ug/L	183	Standard
	Ni	60	271602.2	1.1	**197.6408**	2.602	1.3	ug/L	131	Standard
	Cu	65	85183.8	1.0	**63.9187**	0.998	1.6	ug/L	231	Standard
	Zn	66	329406.0	1.3	**434.8622**	4.471	1.0	ug/L	306	Standard
>	**Ge**	72	332570.1	2.3				ug/L	330478	Standard
	As	75	26994.8	1.1	**35.2250**	0.482	1.4	ug/L	-23	Standard
	Se	82	1536.5	2.1	**24.0532**	0.603	2.5	ug/L	27	Standard
	Se-1	77	1202.7	1.8	**25.0769**	0.361	1.4	ug/L	92	Standard
>	**Ga**	71	5417.6	2.8				mg/L	37	Standard
	Rb	85	88633.6	2.5				ug/L	25	Standard
	Y	89	1490448.3	0.8				ug/L	312467	Standard
>	**Rh**	103	58.3	9.9				ug/L	20	Standard
	Mo	98	5014.7	0.1	**3.8622**	0.065	1.7	ug/L	13	Standard
	Ag	107	114438.9	0.9	**24.7479**	0.518	2.1	ug/L	72	Standard
	Cd	111	37962.7	0.9	**29.1705**	0.225	0.8	mg/L	5	Standard
	Cd	114	100830.4	0.5	**29.5427**	0.569	1.9	ug/L	7	Standard
>	**In**	115	456418.4	1.5				ug/L	477820	Standard
	Sn	118	961.7	7.0	**0.1455**	0.012	8.6	ug/L	343	Standard
	Sb	123	4964.8	1.0	**1.3949**	0.011	0.8	ug/L	56	Standard
	Ba	135	132356.3	0.5	**72.7541**	0.790	1.1	ug/L	36	Standard
	Ce	140	1014346.7	1.7				ug/L	65	Standard
>	**Tb**	159	979601.1	1.9				ug/L	939481	Standard
	Ho	165	79677.3	1.6				ug/L	7	Standard
	Tl	203	152386.2	0.6	**24.5007**	0.131	0.5	ug/L	5	Standard
	Tl	205	101896.6	1.9	**24.0798**	0.646	2.7	ug/L	2	Standard
	Pb	206	136694.5	0.2	**35.2505**	0.390	1.1	ug/L	222	Standard
	Pb	207	113265.8	0.8	**32.2807**	0.347	1.1	ug/L	186	Standard
	Pb	208	412705.7	0.2	**33.0045**	0.322	1.0	ug/L	717	Standard
	U	238	143182.7	0.5	**33.3255**	0.526	1.6	ug/L	2	Standard
>	**Bi**	209	428937.6	1.1				ug/L	440279	Standard

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Na	23	1.7	**-3526065459736**1073245270662.656			173.2	mg/L	2	Standard
Mg	24	161.7	3.6	**0.2021**	0.012	5.8	mg/L	45	Standard
K	39	56.7	18.4	**1.1529**	0.297	25.7	mg/L	10	Standard
Ca	43	148.3	7.0	**16.6027**	1.631	9.8	mg/L	47	Standard
Fe	54	8201.1	2.3	**15.2539**	0.259	1.7	mg/L	46	Standard
Fe	57	3015.3	0.9	**16.0000**	0.162	1.0	mg/L	627	Standard
Sc-1	45	32994.2	0.6				mg/L	24506	Standard
Cl	35	41442.6	1.0				ug/L	47100	Standard
Kr	83	5.7	10.2				ug/L	8	Standard
Br	81	1046.7	17.8				ug/L	427	Standard
P	31	13130.7	0.8				ug/L	10519	Standard
S	34	2418.5	4.7				ug/L	2003	Standard
Sr	88	230.0	12.1				ug/L	132	Standard
C	12	170.0	25.6				mg/L	177	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	353.3	16.1				mg/L	10	Standard
Dy	164	111912.9	1.7				mg/L	13	Standard
Ho-1	165	79677.3	1.6				mg/L	7	Standard
Er	166	73313.7	2.3				mg/L	7	Standard
I	127	11132.4	1.6				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.145	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.633	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.521
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.424
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1508100026SD WG535953-05
Sample Date/Time: Sunday, August 23, 2015 21:44:32
Number of Replicates: 3
Autosampler Position: 232
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52358.8	4.4				ug/L	53498	Standard
	Be	9	15299.4	1.1	**26.5774**	1.158	4.4	ug/L	12	Standard
	Al	27	1459535.7	1.2	**21.5461**	0.686	3.2	ug/L	487	Standard
	Sc	45	34265.4	1.4				ug/L	24506	Standard
	Ti	47	6575.8	0.7	**34.8758**	0.307	0.9	ug/L	21	Standard
	V	51	301294.8	1.1	**74.5872**	1.043	1.4	ug/L	1268	Standard
	Cr	52	575163.3	0.9	**108.9712**	1.210	1.1	ug/L	7921	Standard
	Cr	53	71349.3	1.4	**108.7729**	2.387	2.2	ug/L	442	Standard
	Mn	55	2681902.1	1.3	**781.1199**	11.657	1.5	ug/L	545	Standard
	Co	59	163722.6	1.3	**44.6029**	0.257	0.6	ug/L	183	Standard
	Ni	60	360263.8	1.2	**258.5118**	3.287	1.3	ug/L	131	Standard
	Cu	65	108854.0	1.6	**80.5777**	1.292	1.6	ug/L	231	Standard
	Zn	66	494732.0	0.9	**644.1973**	4.183	0.6	ug/L	306	Standard
>	**Ge**	72	337241.6	0.7				ug/L	330478	Standard
	As	75	33981.8	0.7	**43.7078**	0.301	0.7	ug/L	-23	Standard
	Se	82	2040.0	1.4	**31.6174**	0.474	1.5	ug/L	27	Standard
	Se-1	77	1589.8	0.5	**33.2766**	0.429	1.3	ug/L	92	Standard
>	**Ga**	71	7858.7	3.3				mg/L	37	Standard
	Rb	85	119561.6	1.5				ug/L	25	Standard
	Y	89	1696403.5	2.1				ug/L	312467	Standard
>	**Rh**	103	101.7	19.9				ug/L	20	Standard
	Mo	98	11638.1	0.9	**8.8387**	0.073	0.8	ug/L	13	Standard
	Ag	107	117460.0	2.0	**25.0362**	0.146	0.6	ug/L	72	Standard
	Cd	111	39404.5	2.3	**29.8456**	0.185	0.6	mg/L	5	Standard
	Cd	114	103396.8	3.0	**29.8579**	0.608	2.0	ug/L	7	Standard
>	**In**	115	462976.1	1.7				ug/L	477820	Standard
	Sn	118	1000.0	4.9	**0.1514**	0.015	9.9	ug/L	343	Standard
	Sb	123	1949.6	4.9	**0.5375**	0.023	4.2	ug/L	56	Standard
	Ba	135	157629.6	2.1	**85.4124**	0.808	0.9	ug/L	36	Standard
	Ce	140	1160761.4	1.8				ug/L	65	Standard
>	**Tb**	159	980847.0	3.4				ug/L	939481	Standard
	Ho	165	89803.7	1.4				ug/L	7	Standard
	Tl	203	149506.1	1.5	**23.9743**	0.112	0.5	ug/L	5	Standard
	Tl	205	101336.1	1.1	**23.8842**	0.404	1.7	ug/L	2	Standard
	Pb	206	151832.7	0.8	**39.0581**	0.104	0.3	ug/L	222	Standard
	Pb	207	123007.0	0.9	**34.9719**	0.422	1.2	ug/L	186	Standard
	Pb	208	454651.1	0.5	**36.2710**	0.303	0.8	ug/L	717	Standard
	U	238	150108.3	0.6	**34.8453**	0.200	0.6	ug/L	2	Standard
>	**Bi**	209	430040.2	1.0				ug/L	440279	Standard

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Na	23	1.7	**-3363653154855826018163247**5.008			173.2	mg/L	2	Standard
Mg	24	193.3	8.3	**0.2533**	0.030	12.0	mg/L	45	Standard
K	39	73.3	28.4	**1.5454**	0.581	37.6	mg/L	10	Standard
Ca	43	171.7	11.8	**19.4669**	3.034	15.6	mg/L	47	Standard
Fe	54	13944.4	2.8	**25.0861**	0.856	3.4	mg/L	46	Standard
Fe	57	4212.3	2.1	**23.6147**	0.907	3.8	mg/L	627	Standard
Sc-1	45	34265.4	1.4				mg/L	24506	Standard
Cl	35	42827.1	2.1				ug/L	47100	Standard
Kr	83	4.3	58.1				ug/L	8	Standard
Br	81	866.7	8.7				ug/L	427	Standard
P	31	13599.4	1.9				ug/L	10519	Standard
S	34	2648.6	1.6				ug/L	2003	Standard
Sr	88	258.3	5.9				ug/L	132	Standard
C	12	190.0	32.0				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	343.3	8.9				mg/L	10	Standard
Dy	164	126337.2	0.8				mg/L	13	Standard
Ho-1	165	89803.7	1.4				mg/L	7	Standard
Er	166	83315.4	4.2				mg/L	7	Standard
I	127	12917.2	2.4				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		97.871	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.047	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.893
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.674
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

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Ni 60 Upper, S, EEE	Ni	60
Zn 66 Upper, S, EEE	Zn	66

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Method 6020 - Summary Report

Sample ID: L1508100002
Sample Date/Time: Sunday, August 23, 2015 21:47:43
Number of Replicates: 3
Autosampler Position: 233
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53882.3	1.8				ug/L	53498	Standard
	Be	9	493.3	6.1	**0.8126**	0.055	6.7	ug/L	12	Standard
	Al	27	647341.4	0.6	**9.2731**	0.165	1.8	ug/L	487	Standard
	Sc	45	32484.8	1.3				ug/L	24506	Standard
	Ti	47	3731.1	4.7	**19.7327**	0.755	3.8	ug/L	21	Standard
	V	51	67812.9	1.2	**16.5282**	0.084	0.5	ug/L	1268	Standard
	Cr	52	394516.4	0.7	**74.2859**	1.037	1.4	ug/L	7921	Standard
	Cr	53	48261.7	0.9	**73.3567**	1.146	1.6	ug/L	442	Standard
	Mn	55	1778002.7	0.8	**518.0124**	11.931	2.3	ug/L	545	Standard
	Co	59	39251.4	1.0	**10.6554**	0.155	1.5	ug/L	183	Standard
	Ni	60	240404.5	1.6	**172.5465**	4.311	2.5	ug/L	131	Standard
	Cu	65	60652.5	0.5	**44.8351**	0.559	1.2	ug/L	231	Standard
	Zn	66	309729.7	1.2	**403.2930**	8.523	2.1	ug/L	306	Standard
>	**Ge**	72	337167.5	1.6				ug/L	330478	Standard
	As	75	7668.9	0.5	**9.9074**	0.121	1.2	ug/L	-23	Standard
	Se	82	574.7	2.4	**8.6076**	0.285	3.3	ug/L	27	Standard
	Se-1	77	541.0	4.1	**10.0384**	0.313	3.1	ug/L	92	Standard
>	**Ga**	71	4504.0	5.9				mg/L	37	Standard
	Rb	85	84535.3	3.2				ug/L	25	Standard
	Y	89	1292371.0	1.9				ug/L	312467	Standard
>	**Rh**	103	61.7	26.1				ug/L	20	Standard
	Mo	98	4913.4	1.6	**3.6467**	0.079	2.2	ug/L	13	Standard
	Ag	107	466.7	5.3	**0.0761**	0.006	7.5	ug/L	72	Standard
	Cd	111	1628.4	1.6	**1.1933**	0.027	2.2	mg/L	5	Standard
	Cd	114	4150.1	2.4	**1.1638**	0.021	1.8	ug/L	7	Standard
>	**In**	115	473563.7	0.7				ug/L	477820	Standard
	Sn	118	1196.7	7.4	**0.1904**	0.022	11.3	ug/L	343	Standard
	Sb	123	137.2	5.6	**0.0334**	0.002	6.6	ug/L	56	Standard
	Ba	135	170016.2	0.4	**90.0719**	0.909	1.0	ug/L	36	Standard
	Ce	140	955983.2	0.1				ug/L	65	Standard
>	**Tb**	159	1008766.5	1.9				ug/L	939481	Standard
	Ho	165	65079.5	0.4				ug/L	7	Standard
	Tl	203	2162.8	1.6	**0.3377**	0.005	1.5	ug/L	5	Standard
	Tl	205	1380.1	4.1	**0.3137**	0.013	4.1	ug/L	2	Standard
	Pb	206	30584.2	1.2	**7.6968**	0.107	1.4	ug/L	222	Standard
	Pb	207	22427.3	1.0	**6.2289**	0.090	1.4	ug/L	186	Standard
	Pb	208	85843.4	0.3	**6.6931**	0.017	0.3	ug/L	717	Standard
	U	238	29838.7	0.7	**6.8149**	0.019	0.3	ug/L	2	Standard
>	**Bi**	209	436750.8	0.5				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	135.0	19.6	**0.1508**	0.057	37.7	mg/L	45	Standard
K	39	56.7	10.2	**1.1780**	0.180	15.3	mg/L	10	Standard
Ca	43	121.7	12.6	**12.4212**	2.755	22.2	mg/L	47	Standard
Fe	54	9193.2	4.0	**17.3896**	0.582	3.3	mg/L	46	Standard
Fe	57	3253.7	3.7	**18.1170**	0.890	4.9	mg/L	627	Standard
> **Sc-1**	45	32484.8	1.3				mg/L	24506	Standard
Cl	35	43415.4	0.6				ug/L	47100	Standard
Kr	83	3.7	68.6				ug/L	8	Standard
Br	81	1170.0	6.7				ug/L	427	Standard
P	31	13432.6	2.5				ug/L	10519	Standard
S	34	2543.5	3.0				ug/L	2003	Standard
Sr	88	188.3	10.7				ug/L	132	Standard
C	12	153.3	44.4				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	320.0	17.4				mg/L	10	Standard
Dy	164	95097.0	1.8				mg/L	13	Standard
Ho-1	165	65079.5	0.4				mg/L	7	Standard
Er	166	61497.9	1.7				mg/L	7	Standard
I	127	27508.3	1.6				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.719	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.024	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.109
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.199
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1508100004
Sample Date/Time: Sunday, August 23, 2015 21:50:55
Number of Replicates: 3
Autosampler Position: 234
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53179.9	3.1				ug/L	53498	Standard
	Be	9	388.3	16.2	**0.6431**	0.098	15.2	ug/L	12	Standard
	Al	27	451550.3	1.0	**6.5523**	0.154	2.4	ug/L	487	Standard
	Sc	45	29293.3	2.7				ug/L	24506	Standard
	Ti	47	2695.9	1.3	**14.2128**	0.360	2.5	ug/L	21	Standard
	V	51	57585.0	1.5	**13.9721**	0.367	2.6	ug/L	1268	Standard
	Cr	52	313197.1	0.8	**58.5922**	0.375	0.6	ug/L	7921	Standard
	Cr	53	39342.7	1.5	**59.5955**	0.130	0.2	ug/L	442	Standard
	Mn	55	1014726.8	1.5	**295.2248**	5.470	1.9	ug/L	545	Standard
	Co	59	19758.9	1.8	**5.3318**	0.155	2.9	ug/L	183	Standard
	Ni	60	137456.4	0.9	**98.5112**	1.431	1.5	ug/L	131	Standard
	Cu	65	47471.3	1.0	**35.0157**	0.226	0.6	ug/L	231	Standard
	Zn	66	228908.1	2.2	**297.6085**	6.619	2.2	ug/L	306	Standard
>	**Ge**	72	337499.9	1.3				ug/L	330478	Standard
	As	75	4886.4	0.7	**6.3255**	0.109	1.7	ug/L	-23	Standard
	Se	82	420.5	3.6	**6.1755**	0.161	2.6	ug/L	27	Standard
	Se-1	77	425.7	3.6	**7.4794**	0.446	6.0	ug/L	92	Standard
>	**Ga**	71	3488.7	10.4				mg/L	37	Standard
	Rb	85	67225.5	0.9				ug/L	25	Standard
	Y	89	877041.0	2.0				ug/L	312467	Standard
>	**Rh**	103	40.0	33.1				ug/L	20	Standard
	Mo	98	2196.5	2.6	**1.6581**	0.035	2.1	ug/L	13	Standard
	Ag	107	299.0	3.3	**0.0422**	0.002	4.7	ug/L	72	Standard
	Cd	111	1061.4	1.6	**0.7872**	0.011	1.5	mg/L	5	Standard
	Cd	114	2671.6	2.4	**0.7600**	0.022	3.0	ug/L	7	Standard
>	**In**	115	465182.6	0.6				ug/L	477820	Standard
	Sn	118	510.0	11.9	**0.0380**	0.014	37.1	ug/L	343	Standard
	Sb	123	136.5	6.8	**0.0339**	0.003	7.9	ug/L	56	Standard
	Ba	135	119374.1	1.5	**64.3706**	0.739	1.1	ug/L	36	Standard
	Ce	140	584161.5	0.3				ug/L	65	Standard
>	**Tb**	159	962686.1	1.8				ug/L	939481	Standard
	Ho	165	40021.2	3.2				ug/L	7	Standard
	Tl	203	1260.4	6.4	**0.1983**	0.014	6.9	ug/L	5	Standard
	Tl	205	853.4	3.4	**0.1945**	0.007	3.4	ug/L	2	Standard
	Pb	206	23383.4	1.1	**5.9618**	0.098	1.6	ug/L	222	Standard
	Pb	207	17551.2	0.3	**4.9375**	0.055	1.1	ug/L	186	Standard
	Pb	208	66367.5	1.1	**5.2413**	0.054	1.0	ug/L	717	Standard
	U	238	19345.7	1.1	**4.4848**	0.079	1.8	ug/L	2	Standard
>	**Bi**	209	430112.8	0.9				ug/L	440279	Standard

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Na	23	3.3	**-806499788621**69898765303280.297			86.7	mg/L	2	Standard
Mg	24	120.0	18.2	**0.1470**	0.054	36.9	mg/L	45	Standard
K	39	33.3	8.7	**0.6187**	0.064	10.3	mg/L	10	Standard
Ca	43	68.3	8.4	**4.5053**	0.975	21.6	mg/L	47	Standard
Fe	54	6623.8	5.0	**13.8795**	1.040	7.5	mg/L	46	Standard
Fe	57	2415.2	1.6	**13.8497**	0.431	3.1	mg/L	627	Standard
Sc-1	45	29293.3	2.7				mg/L	24506	Standard
Cl	35	42699.4	2.7				ug/L	47100	Standard
Kr	83	4.0	43.3				ug/L	8	Standard
Br	81	856.7	11.9				ug/L	427	Standard
P	31	12763.7	3.6				ug/L	10519	Standard
S	34	2363.5	3.2				ug/L	2003	Standard
Sr	88	178.3	14.1				ug/L	132	Standard
C	12	153.3	49.4				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	316.7	25.5				mg/L	10	Standard
Dy	164	58155.5	4.0				mg/L	13	Standard
Ho-1	165	40021.2	3.2				mg/L	7	Standard
Er	166	36941.7	3.0				mg/L	7	Standard
I	127	19906.4	4.8				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.406	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.125	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.355
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.691
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1508100004PS WG536149-01
Sample Date/Time: Sunday, August 23, 2015 21:54:06
Number of Replicates: 3
Autosampler Position: 235
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52375.4	0.2				ug/L	53498	Standard
	Be	9	30163.3	1.0	**52.3374**	0.618	1.2	ug/L	12	Standard
	Al	27	445533.2	2.5	**6.5612**	0.155	2.4	ug/L	487	Standard
	Sc	45	29510.4	3.2				ug/L	24506	Standard
	Ti	47	2682.9	1.1	**14.1545**	0.412	2.9	ug/L	21	Standard
	V	51	262021.4	1.2	**64.8214**	1.287	2.0	ug/L	1268	Standard
	Cr	52	582493.5	0.5	**110.3932**	2.638	2.4	ug/L	7921	Standard
	Cr	53	72928.4	0.8	**111.2150**	3.444	3.1	ug/L	442	Standard
	Mn	55	1195175.1	1.4	**347.9765**	4.531	1.3	ug/L	545	Standard
	Co	59	206340.5	0.3	**56.2354**	1.135	2.0	ug/L	183	Standard
	Ni	60	208342.1	1.3	**149.4509**	1.477	1.0	ug/L	131	Standard
	Cu	65	117749.5	0.6	**87.1834**	1.725	2.0	ug/L	231	Standard
	Zn	66	267341.6	0.5	**347.9276**	6.558	1.9	ug/L	306	Standard
>	**Ge**	72	337307.5	2.3				ug/L	330478	Standard
	As	75	44509.5	1.1	**57.2314**	0.793	1.4	ug/L	-23	Standard
	Se	82	3661.0	2.6	**57.0626**	0.321	0.6	ug/L	27	Standard
	Se-1	77	2674.9	2.4	**57.3044**	0.085	0.1	ug/L	92	Standard
>	**Ga**	71	3513.7	2.2				mg/L	37	Standard
	Rb	85	67798.1	3.1				ug/L	25	Standard
	Y	89	868528.8	0.7				ug/L	312467	Standard
>	**Rh**	103	61.7	26.1				ug/L	20	Standard
	Mo	98	2186.5	1.3	**1.6455**	0.023	1.4	ug/L	13	Standard
	Ag	107	246241.6	1.9	**52.1057**	1.508	2.9	ug/L	72	Standard
	Cd	111	70379.5	0.8	**52.9059**	0.915	1.7	mg/L	5	Standard
	Cd	114	185539.8	1.1	**53.1725**	1.076	2.0	ug/L	7	Standard
>	**In**	115	466656.8	1.0				ug/L	477820	Standard
	Sn	118	541.7	15.4	**0.0447**	0.018	39.6	ug/L	343	Standard
	Sb	123	184248.8	0.6	**50.7695**	0.767	1.5	ug/L	56	Standard
	Ba	135	214429.7	0.1	**115.2938**	1.290	1.1	ug/L	36	Standard
	Ce	140	567345.4	0.5				ug/L	65	Standard
>	**Tb**	159	971253.5	0.3				ug/L	939481	Standard
	Ho	165	39148.9	1.4				ug/L	7	Standard
	Tl	203	323211.2	1.1	**51.1989**	0.903	1.8	ug/L	5	Standard
	Tl	205	215311.0	1.6	**50.1234**	0.716	1.4	ug/L	2	Standard
	Pb	206	225197.6	0.8	**57.2433**	0.142	0.2	ug/L	222	Standard
	Pb	207	198977.4	0.5	**55.9069**	0.514	0.9	ug/L	186	Standard
	Pb	208	709012.3	0.8	**55.8958**	0.436	0.8	ug/L	717	Standard
	U	238	233781.8	0.4	**53.6027**	0.602	1.1	ug/L	2	Standard
>	**Bi**	209	435426.1	1.0				ug/L	440279	Standard

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Na	23	5.0	**-119130777732583821232383511.341**			3.2	mg/L	2	Standard
Mg	24	105.0	8.2	**0.1099**	0.028	25.0	mg/L	45	Standard
K	39	51.7	31.1	**1.1731**	0.443	37.7	mg/L	10	Standard
Ca	43	80.0	6.3	**6.6215**	0.734	11.1	mg/L	47	Standard
Fe	54	6385.2	0.7	**13.2672**	0.447	3.4	mg/L	46	Standard
Fe	57	2401.9	5.0	**13.6216**	1.584	11.6	mg/L	627	Standard
Sc-1	45	29510.4	3.2				mg/L	24506	Standard
Cl	35	41322.3	0.5				ug/L	47100	Standard
Kr	83	4.3	53.3				ug/L	8	Standard
Br	81	763.4	4.0				ug/L	427	Standard
P	31	12611.9	4.8				ug/L	10519	Standard
S	34	2331.8	4.8				ug/L	2003	Standard
Sr	88	193.3	23.3				ug/L	132	Standard
C	12	200.0	39.1				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	373.3	9.4				mg/L	10	Standard
Dy	164	57726.0	2.3				mg/L	13	Standard
Ho-1	165	39148.9	1.4				mg/L	7	Standard
Er	166	37312.6	3.3				mg/L	7	Standard
I	127	20255.2	3.7				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.902	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.067	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.664
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.898
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

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Ni 60 Upper, S, EEE	Ni	60
Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1508100004SDL WG536149-02
Sample Date/Time: Sunday, August 23, 2015 21:57:18
Number of Replicates: 3
Autosampler Position: 236
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52992.5	1.7				ug/L	53498	Standard
	Be	9	65.0	30.8	**0.0912**	0.033	35.9	ug/L	12	Standard
	Al	27	91448.5	0.6	**1.3227**	0.030	2.2	ug/L	487	Standard
	Sc	45	25481.4	3.3				ug/L	24506	Standard
	Ti	47	520.3	6.7	**2.6507**	0.197	7.4	ug/L	21	Standard
	V	51	12382.3	3.7	**2.7517**	0.109	4.0	ug/L	1268	Standard
	Cr	52	68478.8	1.5	**11.6698**	0.242	2.1	ug/L	7921	Standard
	Cr	53	8349.0	1.6	**12.1301**	0.225	1.9	ug/L	442	Standard
	Mn	55	208791.9	2.4	**60.8839**	1.214	2.0	ug/L	545	Standard
	Co	59	4225.6	0.8	**1.1023**	0.005	0.4	ug/L	183	Standard
	Ni	60	28390.9	1.4	**20.3726**	0.333	1.6	ug/L	131	Standard
	Cu	65	9878.6	0.6	**7.1834**	0.044	0.6	ug/L	231	Standard
	Zn	66	47401.0	0.6	**61.5559**	0.512	0.8	ug/L	306	Standard
>	**Ge**	72	335903.7	0.4				ug/L	330478	Standard
	As	75	931.3	4.5	**1.2530**	0.050	4.0	ug/L	-23	Standard
	Se	82	107.1	16.9	**1.2650**	0.278	22.0	ug/L	27	Standard
	Se-1	77	143.0	6.9	**1.2331**	0.225	18.2	ug/L	92	Standard
>	**Ga**	71	816.7	6.3				mg/L	37	Standard
	Rb	85	13951.4	0.9				ug/L	25	Standard
	Y	89	440686.5	1.7				ug/L	312467	Standard
>	**Rh**	103	16.7	34.6				ug/L	20	Standard
	Mo	98	442.7	7.2	**0.3326**	0.026	7.7	ug/L	13	Standard
	Ag	107	135.3	12.2	**0.0075**	0.004	47.1	ug/L	72	Standard
	Cd	111	209.6	2.9	**0.1448**	0.005	3.2	mg/L	5	Standard
	Cd	114	529.9	3.6	**0.1443**	0.004	3.0	ug/L	7	Standard
>	**In**	115	465067.6	0.8				ug/L	477820	Standard
	Sn	118	315.0	5.7	**-0.0067**	0.004	65.4	ug/L	343	Standard
	Sb	123	741.8	5.4	**0.2012**	0.010	4.7	ug/L	56	Standard
	Ba	135	24126.9	0.7	**12.9929**	0.128	1.0	ug/L	36	Standard
	Ce	140	119136.7	2.1				ug/L	65	Standard
>	**Tb**	159	928152.2	0.4				ug/L	939481	Standard
	Ho	165	8120.5	2.1				ug/L	7	Standard
	Tl	203	299.3	3.5	**0.0443**	0.001	2.7	ug/L	5	Standard
	Tl	205	198.3	9.5	**0.0402**	0.004	9.6	ug/L	2	Standard
	Pb	206	4935.8	1.6	**1.2141**	0.034	2.8	ug/L	222	Standard
	Pb	207	3646.1	1.3	**0.9821**	0.026	2.7	ug/L	186	Standard
	Pb	208	14255.6	1.1	**1.0821**	0.019	1.7	ug/L	717	Standard
	U	238	3987.5	2.5	**0.9229**	0.028	3.1	ug/L	2	Standard
>	**Bi**	209	428517.1	1.3				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	56.7	27.0	**0.0170**	0.042	244.7	mg/L	45	Standard
K	39	26.7	39.0	**0.5311**	0.356	67.0	mg/L	10	Standard
Ca	43	30.0	44.1	**-1.9086**	3.058	160.2	mg/L	47	Standard
Fe	54	1365.9	8.3	**3.1628**	0.315	10.0	mg/L	46	Standard
Fe	57	1193.4	10.8	**5.2489**	1.113	21.2	mg/L	627	Standard
Sc-1	45	25481.4	3.3				mg/L	24506	Standard
Cl	35	41058.9	1.3				ug/L	47100	Standard
Kr	83	5.7	44.4				ug/L	8	Standard
Br	81	603.3	7.5				ug/L	427	Standard
P	31	11756.2	2.8				ug/L	10519	Standard
S	34	2231.8	4.0				ug/L	2003	Standard
Sr	88	235.0	16.9				ug/L	132	Standard
C	12	126.7	29.9				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	66.7	22.9				mg/L	10	Standard
Dy	164	11610.6	4.9				mg/L	13	Standard
Ho-1	165	8120.5	2.1				mg/L	7	Standard
Er	166	7531.9	3.1				mg/L	7	Standard
I	127	5946.2	2.4				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.056	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.642	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	97.331
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	97.328
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508100004SDL WG536149-02
Sample Date/Time: Sunday, August 23, 2015 22:00:29
Number of Replicates: 3
Autosampler Position: 237
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51658.0	2.9				ug/L	53498	Standard
	Be	9	20.0	90.1	**0.0151**	0.031	207.3	ug/L	12	Standard
	Al	27	18825.0	2.5	**0.2708**	0.012	4.6	ug/L	487	Standard
	Sc	45	25668.4	1.2				ug/L	24506	Standard
	Ti	47	116.7	3.6	**0.4982**	0.032	6.4	ug/L	21	Standard
	V	51	3299.5	3.3	**0.4913**	0.038	7.8	ug/L	1268	Standard
	Cr	52	18447.2	1.5	**2.0478**	0.029	1.4	ug/L	7921	Standard
	Cr	53	2096.8	8.0	**2.5263**	0.304	12.0	ug/L	442	Standard
	Mn	55	42126.2	1.0	**12.2461**	0.245	2.0	ug/L	545	Standard
	Co	59	1024.7	3.7	**0.2280**	0.008	3.5	ug/L	183	Standard
	Ni	60	5831.1	0.2	**4.1503**	0.106	2.6	ug/L	131	Standard
	Cu	65	2182.8	0.8	**1.4658**	0.048	3.3	ug/L	231	Standard
	Zn	66	10682.1	0.6	**13.6391**	0.407	3.0	ug/L	306	Standard
>	**Ge**	72	333177.0	2.3				ug/L	330478	Standard
	As	75	137.6	14.8	**0.2307**	0.023	9.8	ug/L	-23	Standard
	Se	82	38.5	20.6	**0.1906**	0.133	69.7	ug/L	27	Standard
	Se-1	77	98.7	10.2	**0.2641**	0.208	78.7	ug/L	92	Standard
>	**Ga**	71	161.7	9.4				mg/L	37	Standard
	Rb	85	2785.3	3.2				ug/L	25	Standard
	Y	89	350334.0	0.4				ug/L	312467	Standard
>	**Rh**	103	21.7	53.3				ug/L	20	Standard
	Mo	98	101.8	14.4	**0.0762**	0.012	15.2	ug/L	13	Standard
	Ag	107	79.7	14.1	**-0.0040**	0.002	57.9	ug/L	72	Standard
	Cd	111	52.1	8.7	**0.0268**	0.004	13.5	mg/L	5	Standard
	Cd	114	158.1	23.9	**0.0382**	0.011	29.1	ug/L	7	Standard
>	**In**	115	456349.9	0.5				ug/L	477820	Standard
	Sn	118	320.0	15.4	**-0.0041**	0.012	288.3	ug/L	343	Standard
	Sb	123	204.8	11.7	**0.0539**	0.007	12.9	ug/L	56	Standard
	Ba	135	4869.4	0.9	**2.6514**	0.024	0.9	ug/L	36	Standard
	Ce	140	24137.5	1.1				ug/L	65	Standard
>	**Tb**	159	921845.3	1.0				ug/L	939481	Standard
	Ho	165	1620.1	5.1				ug/L	7	Standard
	Tl	203	62.7	3.3	**0.0063**	0.000	5.5	ug/L	5	Standard
	Tl	205	35.0	75.6	**0.0017**	0.006	372.7	ug/L	2	Standard
	Pb	206	1197.4	2.0	**0.2495**	0.007	2.7	ug/L	222	Standard
	Pb	207	904.7	3.5	**0.2003**	0.009	4.3	ug/L	186	Standard
	Pb	208	3302.8	1.7	**0.2056**	0.005	2.2	ug/L	717	Standard
	U	238	776.4	2.5	**0.1759**	0.004	2.4	ug/L	2	Standard
>	**Bi**	209	425406.4	0.2				ug/L	440279	Standard

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Na	23	1.7	**-4523698858247835276260614**0.094			173.2	mg/L	2	Standard
Mg	24	50.0	43.6	**-0.0025**	0.057	2317.9	mg/L	45	Standard
K	39	16.7	86.6	**0.1730**	0.518	299.4	mg/L	10	Standard
Ca	43	36.7	7.9	**-0.5512**	0.595	107.9	mg/L	47	Standard
Fe	54	330.3	10.9	**0.6316**	0.078	12.3	mg/L	46	Standard
Fe	57	888.4	2.9	**2.3068**	0.319	13.8	mg/L	627	Standard
> **Sc-1**	45	25668.4	1.2				mg/L	24506	Standard
Cl	35	39901.1	0.6				ug/L	47100	Standard
Kr	83	4.3	13.3				ug/L	8	Standard
Br	81	646.7	7.8				ug/L	427	Standard
P	31	11474.3	2.2				ug/L	10519	Standard
S	34	2081.8	2.6				ug/L	2003	Standard
Sr	88	188.3	12.3				ug/L	132	Standard
C	12	176.7	14.2				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	10.0	100.0				mg/L	10	Standard
Dy	164	2524.4	7.5				mg/L	13	Standard
Ho-1	165	1620.1	5.1				mg/L	7	Standard
Er	166	1443.4	11.1				mg/L	7	Standard
I	127	2703.6	3.8				mg/L	2225	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		96.561	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.817	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.507
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.622
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 24, 2015

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Sunday, August 23, 2015 22:03:42
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	52295.1	2.4				ug/L	53498	Standard
	Be	9	27728.7	2.9	**48.2251**	2.525	5.2	ug/L	12	Standard
	Al	27	3291897.2	1.4	**48.6385**	1.107	2.3	ug/L	487	Standard
	Sc	45	24473.1	1.0				ug/L	24506	Standard
	Ti	47	19385.1	0.3	**104.2170**	0.848	0.8	ug/L	21	Standard
	V	51	207042.3	0.3	**51.7205**	0.341	0.7	ug/L	1268	Standard
	Cr	52	269874.8	1.1	**50.8883**	0.372	0.7	ug/L	7921	Standard
	Cr	53	33218.0	1.6	**50.8090**	0.464	0.9	ug/L	442	Standard
	Mn	55	188080.7	1.6	**55.2283**	1.357	2.5	ug/L	545	Standard
	Co	59	184346.7	0.7	**50.7919**	0.593	1.2	ug/L	183	Standard
	Ni	60	70417.6	0.2	**51.0229**	0.610	1.2	ug/L	131	Standard
	Cu	65	68221.2	0.3	**51.0006**	0.632	1.2	ug/L	231	Standard
	Zn	66	38396.6	0.8	**50.1325**	0.123	0.2	ug/L	306	Standard
>	Ge	72	333534.7	1.0				ug/L	330478	Standard
	As	75	38031.7	1.3	**49.4573**	0.911	1.8	ug/L	-23	Standard
	Se	82	3229.0	0.7	**50.8602**	0.864	1.7	ug/L	27	Standard
	Se-1	77	2371.5	2.4	**51.1779**	1.055	2.1	ug/L	92	Standard
>	Ga	71	45.0	29.4				mg/L	37	Standard
	Rb	85	586.7	4.3				ug/L	25	Standard
	Y	89	317757.5	0.5				ug/L	312467	Standard
>	Rh	103	28.3	10.2				ug/L	20	Standard
	Mo	98	128305.9	1.0	**98.3495**	1.985	2.0	ug/L	13	Standard
	Ag	107	240547.8	0.3	**51.7642**	0.805	1.6	ug/L	72	Standard
	Cd	111	66676.0	1.4	**50.9766**	1.112	2.2	mg/L	5	Standard
	Cd	114	176131.5	0.9	**51.3304**	0.236	0.5	ug/L	7	Standard
>	In	115	458844.1	1.3				ug/L	477820	Standard
	Sn	118	205303.6	1.9	**47.5771**	0.604	1.3	ug/L	343	Standard
	Sb	123	178334.0	0.8	**49.9754**	0.600	1.2	ug/L	56	Standard
	Ba	135	93060.9	0.1	**50.8756**	0.644	1.3	ug/L	36	Standard
	Ce	140	96.7	14.9				ug/L	65	Standard
>	Tb	159	911752.9	1.4				ug/L	939481	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	311119.8	0.5	**50.5475**	0.496	1.0	ug/L	5	Standard
	Tl	205	206499.3	0.2	**49.3088**	0.413	0.8	ug/L	2	Standard
	Pb	206	195726.8	0.8	**51.0257**	0.601	1.2	ug/L	222	Standard
	Pb	207	177510.4	0.1	**51.1512**	0.299	0.6	ug/L	186	Standard
	Pb	208	621842.0	0.6	**50.2783**	0.524	1.0	ug/L	717	Standard
	U	238	207882.4	0.4	**48.8877**	0.435	0.9	ug/L	2	Standard
>	Bi	209	424512.3	0.7				ug/L	440279	Standard

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Na	23	1.7	**-4808357658578**3283197656087.469			173.2	mg/L	2	Standard
Mg	24	1785.1	8.3	**4.9072**	0.430	8.8	mg/L	45	Standard
K	39	160.0	14.3	**5.5739**	0.818	14.7	mg/L	10	Standard
Ca	43	45.0	48.4	**1.7794**	5.056	284.2	mg/L	47	Standard
Fe	54	1899.0	11.3	**4.6519**	0.590	12.7	mg/L	46	Standard
Fe	57	1328.4	13.7	**7.0557**	1.862	26.4	mg/L	627	Standard
Sc-1	45	24473.1	1.0				mg/L	24506	Standard
Cl	35	41604.4	0.8				ug/L	47100	Standard
Kr	83	5.3	78.1				ug/L	8	Standard
Br	81	573.3	5.6				ug/L	427	Standard
P	31	11571.1	2.8				ug/L	10519	Standard
S	34	2331.8	2.9				ug/L	2003	Standard
Sr	88	201.7	14.9				ug/L	132	Standard
C	12	163.3	100.7				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	15.9	186.3				mg/L	13	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	16.7	124.9				mg/L	7	Standard
I	127	1276.7	5.9				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	96.450		
Al	27	97.277		
Sc	45			
Ti	47	104.217		
V	51	103.441		
Cr	52	101.777		
Cr	53			
Mn	55	110.457		
Co	59	101.584		
Ni	60	102.046		
Cu	65	102.001		
Zn	66	100.265		
Ge	72		100.925	
As	75	98.915		
Se	82	101.720		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.349		
Ag	107	103.528		
Cd	111	101.953		
Cd	114			
> In	115			96.029
Sn	118	95.154		
Sb	123	99.951		
Ba	135	101.751		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.095		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.557		
U	238	97.775		
> Bi	209			96.419
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Mn	55	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Sunday, August 23, 2015 22:06:54
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	50932.1	1.6				ug/L	53498	Standard
	Be	9	16.7	124.9	**0.0097**	0.037	386.3	ug/L	12	Standard
	Al	27	1328.4	97.3	**0.0093**	0.020	213.2	ug/L	487	Standard
	Sc	45	25337.8	1.7				ug/L	24506	Standard
	Ti	47	30.7	55.5	**0.0343**	0.092	267.6	ug/L	21	Standard
	V	51	1093.4	5.4	**-0.0642**	0.020	30.5	ug/L	1268	Standard
	Cr	52	6872.9	6.1	**-0.2037**	0.077	37.8	ug/L	7921	Standard
	Cr	53	445.0	8.8	**-0.0416**	0.073	175.8	ug/L	442	Standard
	Mn	55	952.7	54.8	**0.1021**	0.154	151.2	ug/L	545	Standard
	Co	59	248.3	28.9	**0.0137**	0.020	146.7	ug/L	183	Standard
	Ni	60	173.3	53.4	**0.0381**	0.067	177.1	ug/L	131	Standard
	Cu	65	218.3	11.0	**-0.0099**	0.019	187.4	ug/L	231	Standard
	Zn	66	371.0	24.1	**0.0337**	0.120	355.4	ug/L	306	Standard
>	Ge	72	333212.2	2.1				ug/L	330478	Standard
	As	75	-38.4	26.7	**0.0019**	0.014	758.5	ug/L	-23	Standard
	Se	82	19.0	31.7	**-0.1212**	0.089	73.6	ug/L	27	Standard
	Se-1	77	92.3	16.9	**0.1257**	0.381	302.9	ug/L	92	Standard
>	Ga	71	21.7	26.6				mg/L	37	Standard
	Rb	85	51.7	36.6				ug/L	25	Standard
	Y	89	322363.6	1.3				ug/L	312467	Standard
>	Rh	103	23.3	81.1				ug/L	20	Standard
	Mo	98	52.5	37.9	**0.0377**	0.015	41.1	ug/L	13	Standard
	Ag	107	107.0	22.0	**0.0015**	0.005	346.0	ug/L	72	Standard
	Cd	111	22.2	88.3	**0.0036**	0.015	417.0	mg/L	5	Standard
	Cd	114	33.1	141.0	**0.0015**	0.014	910.8	ug/L	7	Standard
>	In	115	464344.9	1.2				ug/L	477820	Standard
	Sn	118	443.3	13.6	**0.0230**	0.015	65.5	ug/L	343	Standard
	Sb	123	699.8	6.5	**0.1900**	0.015	7.8	ug/L	56	Standard
	Ba	135	64.3	46.1	**0.0085**	0.016	192.6	ug/L	36	Standard
	Ce	140	116.7	118.5				ug/L	65	Standard
>	Tb	159	929396.8	2.2				ug/L	939481	Standard
	Ho	165	16.7	75.5				ug/L	7	Standard
	Tl	203	50.0	75.0	**0.0043**	0.006	142.1	ug/L	5	Standard
	Tl	205	51.7	132.1	**0.0058**	0.016	284.8	ug/L	2	Standard
	Pb	206	229.0	6.3	**-0.0025**	0.004	163.9	ug/L	222	Standard
	Pb	207	196.0	19.5	**-0.0034**	0.011	326.7	ug/L	186	Standard
	Pb	208	855.3	31.8	**0.0083**	0.022	270.4	ug/L	717	Standard
	U	238	84.0	117.6	**0.0136**	0.023	172.2	ug/L	2	Standard
>	Bi	209	423378.8	0.5				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	40.0	62.5	**-0.0283**	0.066	234.4	mg/L	45	Standard
K	39	3.3	86.6	**-0.3029**	0.106	34.9	mg/L	10	Standard
Ca	43	21.7	48.0	**-3.7575**	2.313	61.5	mg/L	47	Standard
Fe	54	57.6	26.9	**-0.0253**	0.035	139.6	mg/L	46	Standard
Fe	57	870.0	9.2	**2.2323**	0.625	28.0	mg/L	627	Standard
> **Sc-1**	45	25337.8	1.7				mg/L	24506	Standard
Cl	35	43192.1	1.3				ug/L	47100	Standard
Kr	83	2.3	65.5				ug/L	8	Standard
Br	81	573.3	14.8				ug/L	427	Standard
P	31	10875.6	0.8				ug/L	10519	Standard
S	34	2196.8	7.2				ug/L	2003	Standard
Sr	88	190.0	24.1				ug/L	132	Standard
C	12	136.7	47.6				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	10	Standard
Dy	164	19.2	54.6				mg/L	13	Standard
Ho-1	165	16.7	75.5				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	7	Standard
I	127	2168.5	4.7				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.827	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	97.180
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	96.161
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508100006
Sample Date/Time: Sunday, August 23, 2015 22:10:06
Number of Replicates: 3
Autosampler Position: 238
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52858.8	3.8				ug/L	53498	Standard
	Be	9	110.0	40.4	**0.1676**	0.070	41.7	ug/L	12	Standard
	Al	27	1455857.5	1.4	**21.2888**	0.837	3.9	ug/L	487	Standard
	Sc	45	28326.5	1.3				ug/L	24506	Standard
	Ti	47	1865.8	2.2	**9.6282**	0.258	2.7	ug/L	21	Standard
	V	51	29309.0	2.1	**6.8208**	0.135	2.0	ug/L	1268	Standard
	Cr	52	151934.0	0.8	**27.1393**	0.118	0.4	ug/L	7921	Standard
	Cr	53	18945.2	5.0	**27.8269**	1.296	4.7	ug/L	442	Standard
	Mn	55	678613.3	1.4	**194.0456**	2.727	1.4	ug/L	545	Standard
	Co	59	15464.9	2.0	**4.0897**	0.095	2.3	ug/L	183	Standard
	Ni	60	81565.0	1.4	**57.4339**	0.891	1.6	ug/L	131	Standard
	Cu	65	20351.0	0.4	**14.6586**	0.115	0.8	ug/L	231	Standard
	Zn	66	134106.2	0.7	**171.2278**	1.533	0.9	ug/L	306	Standard
>	**Ge**	72	343257.8	0.4				ug/L	330478	Standard
	As	75	3015.5	1.7	**3.8579**	0.051	1.3	ug/L	-23	Standard
	Se	82	327.5	2.5	**4.6312**	0.132	2.9	ug/L	27	Standard
	Se-1	77	183.0	5.2	**2.0361**	0.225	11.1	ug/L	92	Standard
>	**Ga**	71	1563.4	5.4				mg/L	37	Standard
	Rb	85	23691.9	3.0				ug/L	25	Standard
	Y	89	686386.8	2.7				ug/L	312467	Standard
>	**Rh**	103	36.7	64.4				ug/L	20	Standard
	Mo	98	1952.4	1.9	**1.4544**	0.031	2.1	ug/L	13	Standard
	Ag	107	216.0	13.3	**0.0240**	0.006	26.1	ug/L	72	Standard
	Cd	111	555.5	7.1	**0.4004**	0.032	8.0	mg/L	5	Standard
	Cd	114	1387.4	7.2	**0.3857**	0.031	8.0	ug/L	7	Standard
>	**In**	115	471368.1	0.8				ug/L	477820	Standard
	Sn	118	473.3	8.9	**0.0281**	0.009	33.1	ug/L	343	Standard
	Sb	123	354.8	4.7	**0.0929**	0.005	5.6	ug/L	56	Standard
	Ba	135	44785.4	0.8	**23.8171**	0.180	0.8	ug/L	36	Standard
	Ce	140	292776.9	1.3				ug/L	65	Standard
>	**Tb**	159	954492.4	2.8				ug/L	939481	Standard
	Ho	165	24865.4	4.0				ug/L	7	Standard
	Tl	203	810.0	2.8	**0.1247**	0.004	3.0	ug/L	5	Standard
	Tl	205	540.0	20.3	**0.1192**	0.025	21.0	ug/L	2	Standard
	Pb	206	11427.6	1.4	**2.8499**	0.069	2.4	ug/L	222	Standard
	Pb	207	8448.4	0.9	**2.3192**	0.010	0.4	ug/L	186	Standard
	Pb	208	32284.1	0.3	**2.4902**	0.018	0.7	ug/L	717	Standard
	U	238	8590.8	1.6	**1.9665**	0.048	2.5	ug/L	2	Standard
>	**Bi**	209	434841.0	1.0				ug/L	440279	Standard

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Na	23	1.7	-4145132003467	1795792340834.859		173.2	mg/L	2	Standard
Mg	24	88.3	27.9	**0.0794**	0.062	78.4	mg/L	45	Standard
K	39	15.0	66.7	**0.0596**	0.318	534.6	mg/L	10	Standard
Ca	43	73.3	7.9	**5.9501**	1.292	21.7	mg/L	47	Standard
Fe	54	2647.9	5.7	**5.6335**	0.322	5.7	mg/L	46	Standard
Fe	57	1531.7	4.5	**7.0035**	0.680	9.7	mg/L	627	Standard
> Sc-1	45	28326.5	1.3				mg/L	24506	Standard
Cl	35	42795.0	0.6				ug/L	47100	Standard
Kr	83	6.0	33.3				ug/L	8	Standard
Br	81	14270.1	4.2				ug/L	427	Standard
P	31	11662.8	1.8				ug/L	10519	Standard
S	34	2363.5	8.3				ug/L	2003	Standard
Sr	88	203.3	29.1				ug/L	132	Standard
C	12	193.3	28.5				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	93.3	16.4				mg/L	10	Standard
Dy	164	35136.4	6.3				mg/L	13	Standard
Ho-1	165	24865.4	4.0				mg/L	7	Standard
Er	166	22690.3	1.6				mg/L	7	Standard
I	127	9639.7	3.2				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.806	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.867	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.650
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.765
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1508100008
Sample Date/Time: Sunday, August 23, 2015 22:13:18
Number of Replicates: 3
Autosampler Position: 239
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52223.3	4.0				ug/L	53498	Standard
	Be	9	78.3	22.4	**0.1164**	0.032	27.4	ug/L	12	Standard
	Al	27	879876.4	0.8	**13.0192**	0.496	3.8	ug/L	487	Standard
	Sc	45	25922.2	1.1				ug/L	24506	Standard
	Ti	47	1086.7	3.8	**5.7649**	0.252	4.4	ug/L	21	Standard
	V	51	18398.1	2.6	**4.3230**	0.151	3.5	ug/L	1268	Standard
	Cr	52	84084.7	1.5	**14.9227**	0.269	1.8	ug/L	7921	Standard
	Cr	53	10248.5	2.1	**15.2919**	0.242	1.6	ug/L	442	Standard
	Mn	55	440035.4	0.4	**130.4551**	1.958	1.5	ug/L	545	Standard
	Co	59	9248.8	2.0	**2.5156**	0.025	1.0	ug/L	183	Standard
	Ni	60	45579.1	1.3	**33.2491**	0.224	0.7	ug/L	131	Standard
	Cu	65	11717.5	1.0	**8.6835**	0.071	0.8	ug/L	231	Standard
	Zn	66	68653.5	1.2	**90.6989**	0.378	0.4	ug/L	306	Standard
>	**Ge**	72	330966.1	1.3				ug/L	330478	Standard
	As	75	1559.5	2.8	**2.0938**	0.073	3.5	ug/L	-23	Standard
	Se	82	122.4	1.8	**1.5372**	0.061	3.9	ug/L	27	Standard
	Se-1	77	155.7	6.2	**1.5654**	0.189	12.1	ug/L	92	Standard
>	**Ga**	71	791.7	9.7				mg/L	37	Standard
	Rb	85	11861.3	5.4				ug/L	25	Standard
	Y	89	546184.2	2.0				ug/L	312467	Standard
>	**Rh**	103	26.7	47.2				ug/L	20	Standard
	Mo	98	1260.9	4.4	**0.9507**	0.043	4.6	ug/L	13	Standard
	Ag	107	168.7	6.4	**0.0145**	0.002	14.8	ug/L	72	Standard
	Cd	111	390.9	7.6	**0.2814**	0.022	7.9	mg/L	5	Standard
	Cd	114	1015.0	5.4	**0.2836**	0.017	5.9	ug/L	7	Standard
>	**In**	115	465374.4	0.6				ug/L	477820	Standard
	Sn	118	435.0	16.0	**0.0207**	0.015	74.1	ug/L	343	Standard
	Sb	123	237.2	8.9	**0.0617**	0.006	9.9	ug/L	56	Standard
	Ba	135	19080.0	0.5	**10.2628**	0.116	1.1	ug/L	36	Standard
	Ce	140	164688.8	1.9				ug/L	65	Standard
>	**Tb**	159	924225.0	1.6				ug/L	939481	Standard
	Ho	165	15693.1	2.5				ug/L	7	Standard
	Tl	203	521.3	2.2	**0.0812**	0.002	3.0	ug/L	5	Standard
	Tl	205	348.3	15.3	**0.0768**	0.012	16.2	ug/L	2	Standard
	Pb	206	6833.9	0.9	**1.7281**	0.025	1.5	ug/L	222	Standard
	Pb	207	4907.1	1.5	**1.3608**	0.013	1.0	ug/L	186	Standard
	Pb	208	18630.1	0.9	**1.4526**	0.008	0.5	ug/L	717	Standard
	U	238	5604.4	0.9	**1.3168**	0.011	0.8	ug/L	2	Standard
>	**Bi**	209	422911.4	0.7				ug/L	440279	Standard

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Na	23	1.7	**-4507999351387**8080839170917.437			173.2	mg/L	2	Standard
Mg	24	91.7	31.5	**0.1077**	0.076	71.0	mg/L	45	Standard
K	39	16.7	17.3	**0.1649**	0.097	58.6	mg/L	10	Standard
Ca	43	48.3	15.8	**1.8808**	1.569	83.4	mg/L	47	Standard
Fe	54	1461.0	5.8	**3.3319**	0.227	6.8	mg/L	46	Standard
Fe	57	1113.4	1.4	**4.3177**	0.197	4.6	mg/L	627	Standard
Sc-1	45	25922.2	1.1				mg/L	24506	Standard
Cl	35	42181.3	0.7				ug/L	47100	Standard
Kr	83	5.0	20.0				ug/L	8	Standard
Br	81	866.7	18.8				ug/L	427	Standard
P	31	11929.7	1.9				ug/L	10519	Standard
S	34	2343.5	1.7				ug/L	2003	Standard
Sr	88	180.0	9.6				ug/L	132	Standard
C	12	153.3	22.9				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	60.0	16.7				mg/L	10	Standard
Dy	164	21962.1	4.9				mg/L	13	Standard
Ho-1	165	15693.1	2.5				mg/L	7	Standard
Er	166	14296.7	3.1				mg/L	7	Standard
I	127	4652.4	3.6				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		97.618	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.148	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.395
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.055
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1508100008
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Method 6020 - Summary Report

Sample ID: L1508100010
Sample Date/Time: Sunday, August 23, 2015 22:16:29
Number of Replicates: 3
Autosampler Position: 240
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	51842.1	6.2				ug/L	53498	Standard
	Be	9	290.0	15.3	**0.4881**	0.065	13.3	ug/L	12	Standard
	Al	27	573725.9	0.8	**8.5602**	0.506	5.9	ug/L	487	Standard
	Sc	45	28947.6	2.5				ug/L	24506	Standard
	Ti	47	2285.2	2.0	**12.0803**	0.003	0.0	ug/L	21	Standard
	V	51	54194.0	1.3	**13.1906**	0.244	1.9	ug/L	1268	Standard
	Cr	52	285216.9	0.5	**53.4788**	0.883	1.7	ug/L	7921	Standard
	Cr	53	35583.4	1.6	**54.0845**	0.399	0.7	ug/L	442	Standard
	Mn	55	1282785.8	1.6	**375.0587**	11.333	3.0	ug/L	545	Standard
	Co	59	32425.7	1.3	**8.8245**	0.101	1.1	ug/L	183	Standard
	Ni	60	153057.9	0.9	**110.2095**	1.304	1.2	ug/L	131	Standard
	Cu	65	37153.2	1.6	**27.4950**	0.394	1.4	ug/L	231	Standard
	Zn	66	255817.1	1.4	**334.2152**	7.014	2.1	ug/L	306	Standard
>	Ge	72	335967.0	2.0				ug/L	330478	Standard
	As	75	5466.8	0.3	**7.1034**	0.134	1.9	ug/L	-23	Standard
	Se	82	420.3	4.4	**6.2016**	0.163	2.6	ug/L	27	Standard
	Se-1	77	371.7	6.9	**6.3159**	0.504	8.0	ug/L	92	Standard
>	Ga	71	2456.9	5.0				mg/L	37	Standard
	Rb	85	43972.1	3.9				ug/L	25	Standard
	Y	89	894492.4	4.7				ug/L	312467	Standard
>	Rh	103	38.3	94.4				ug/L	20	Standard
	Mo	98	4346.5	0.3	**3.3091**	0.075	2.3	ug/L	13	Standard
	Ag	107	327.0	10.8	**0.0486**	0.006	12.7	ug/L	72	Standard
	Cd	111	939.2	3.4	**0.7003**	0.016	2.3	mg/L	5	Standard
	Cd	114	2377.2	6.9	**0.6801**	0.036	5.4	ug/L	7	Standard
>	In	115	461740.0	2.0				ug/L	477820	Standard
	Sn	118	483.3	6.1	**0.0327**	0.006	19.4	ug/L	343	Standard
	Sb	123	171.8	18.5	**0.0439**	0.008	17.9	ug/L	56	Standard
	Ba	135	52711.5	0.7	**28.6264**	0.363	1.3	ug/L	36	Standard
	Ce	140	432468.7	0.8				ug/L	65	Standard
>	Tb	159	939204.5	1.0				ug/L	939481	Standard
	Ho	165	39534.8	1.2				ug/L	7	Standard
	Tl	203	1832.1	2.5	**0.2923**	0.011	3.9	ug/L	5	Standard
	Tl	205	1220.0	15.3	**0.2825**	0.037	13.3	ug/L	2	Standard
	Pb	206	21407.1	0.8	**5.4947**	0.105	1.9	ug/L	222	Standard
	Pb	207	15901.3	0.3	**4.5024**	0.091	2.0	ug/L	186	Standard
	Pb	208	61266.3	0.3	**4.8714**	0.097	2.0	ug/L	717	Standard
	U	238	15910.0	0.2	**3.7157**	0.090	2.4	ug/L	2	Standard
>	Bi	209	426947.2	2.3				ug/L	440279	Standard

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Na	23	1.7	**-409359618291**	70903165744827.172		173.2	mg/L	2	Standard
Mg	24	95.0	5.3	**0.0905**	0.017	18.5	mg/L	45	Standard
K	39	38.3	52.7	**0.7851**	0.629	80.2	mg/L	10	Standard
Ca	43	83.3	15.1	**7.5402**	2.148	28.5	mg/L	47	Standard
Fe	54	6546.6	0.7	**13.8696**	0.299	2.2	mg/L	46	Standard
Fe	57	2476.9	3.3	**14.6096**	1.049	7.2	mg/L	627	Standard
> **Sc-1**	45	28947.6	2.5				mg/L	24506	Standard
Cl	35	41846.4	2.4				ug/L	47100	Standard
Kr	83	3.0	57.7				ug/L	8	Standard
Br	81	753.4	16.8				ug/L	427	Standard
P	31	12343.4	5.0				ug/L	10519	Standard
S	34	2238.5	5.0				ug/L	2003	Standard
Sr	88	223.3	12.3				ug/L	132	Standard
C	12	166.7	50.0				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	183.3	11.4				mg/L	10	Standard
Dy	164	56892.6	2.2				mg/L	13	Standard
Ho-1	165	39534.8	1.2				mg/L	7	Standard
Er	166	37386.1	1.0				mg/L	7	Standard
I	127	9239.5	5.1				mg/L	2225	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		96.905	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.661	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.635
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.972
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1508100012
Sample Date/Time: Sunday, August 23, 2015 22:19:41
Number of Replicates: 3
Autosampler Position: 241
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	53833.8	1.8				ug/L	53498	Standard
	Be	9	270.0	21.0	**0.4349**	0.087	20.1	ug/L	12	Standard
	Al	27	415246.6	0.1	**5.9497**	0.097	1.6	ug/L	487	Standard
	Sc	45	29482.0	2.3				ug/L	24506	Standard
	Ti	47	2504.2	1.3	**13.0471**	0.099	0.8	ug/L	21	Standard
	V	51	56795.4	1.5	**13.6215**	0.136	1.0	ug/L	1268	Standard
	Cr	52	248871.1	1.0	**45.7345**	1.030	2.3	ug/L	7921	Standard
	Cr	53	30313.6	2.1	**45.2625**	1.451	3.2	ug/L	442	Standard
	Mn	55	1900417.3	0.9	**547.1652**	11.872	2.2	ug/L	545	Standard
	Co	59	29257.9	0.3	**7.8353**	0.143	1.8	ug/L	183	Standard
	Ni	60	114157.5	1.8	**80.9101**	1.073	1.3	ug/L	131	Standard
	Cu	65	28813.0	1.5	**20.9539**	0.067	0.3	ug/L	231	Standard
	Zn	66	117576.6	2.2	**151.0032**	3.951	2.6	ug/L	306	Standard
>	Ge	72	341183.4	1.7				ug/L	330478	Standard
	As	75	5182.5	0.6	**6.6339**	0.091	1.4	ug/L	-23	Standard
	Se	82	574.9	2.6	**8.5060**	0.349	4.1	ug/L	27	Standard
	Se-1	77	261.0	9.0	**3.7745**	0.602	15.9	ug/L	92	Standard
>	Ga	71	2170.2	3.5				mg/L	37	Standard
	Rb	85	42837.2	1.9				ug/L	25	Standard
	Y	89	931731.2	1.9				ug/L	312467	Standard
>	Rh	103	31.7	45.6				ug/L	20	Standard
	Mo	98	2031.2	1.8	**1.4887**	0.031	2.1	ug/L	13	Standard
	Ag	107	332.7	10.7	**0.0473**	0.007	14.6	ug/L	72	Standard
	Cd	111	1117.3	5.9	**0.8048**	0.044	5.4	mg/L	5	Standard
	Cd	114	2949.4	5.3	**0.8150**	0.038	4.7	ug/L	7	Standard
>	In	115	479103.4	0.6				ug/L	477820	Standard
	Sn	118	593.3	6.3	**0.0531**	0.008	15.2	ug/L	343	Standard
	Sb	123	167.1	13.7	**0.0409**	0.006	14.4	ug/L	56	Standard
	Ba	135	132759.1	0.3	**69.5124**	0.279	0.4	ug/L	36	Standard
	Ce	140	498448.5	1.1				ug/L	65	Standard
>	Tb	159	989683.3	1.2				ug/L	939481	Standard
	Ho	165	42522.9	1.3				ug/L	7	Standard
	Tl	203	2233.5	4.3	**0.3489**	0.015	4.2	ug/L	5	Standard
	Tl	205	1543.4	17.3	**0.3517**	0.063	17.8	ug/L	2	Standard
	Pb	206	22551.1	0.7	**5.6596**	0.024	0.4	ug/L	222	Standard
	Pb	207	16788.3	0.9	**4.6481**	0.021	0.4	ug/L	186	Standard
	Pb	208	65173.3	0.5	**5.0676**	0.042	0.8	ug/L	717	Standard
	U	238	19751.2	0.6	**4.5096**	0.017	0.4	ug/L	2	Standard
>	Bi	209	436683.4	0.8				ug/L	440279	Standard

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Na	23	1.7	-401623252469	69563187877783.961		173.2	mg/L	2	Standard
Mg	24	138.3	41.6	**0.1880**	0.137	73.1	mg/L	45	Standard
K	39	33.3	8.7	**0.6129**	0.084	13.7	mg/L	10	Standard
Ca	43	71.7	14.5	**5.0917**	2.260	44.4	mg/L	47	Standard
Fe	54	5683.0	2.4	**11.8005**	0.529	4.5	mg/L	46	Standard
Fe	57	2273.5	0.3	**12.5628**	0.376	3.0	mg/L	627	Standard
> Sc-1	45	29482.0	2.3				mg/L	24506	Standard
Cl	35	42660.6	0.8				ug/L	47100	Standard
Kr	83	7.0	51.5				ug/L	8	Standard
Br	81	31175.4	4.0				ug/L	427	Standard
P	31	12688.6	2.8				ug/L	10519	Standard
S	34	2391.9	2.6				ug/L	2003	Standard
Sr	88	223.3	9.3				ug/L	132	Standard
C	12	163.3	24.7				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	223.3	13.7				mg/L	10	Standard
Dy	164	61704.6	2.9				mg/L	13	Standard
Ho-1	165	42522.9	1.3				mg/L	7	Standard
Er	166	39986.0	1.7				mg/L	7	Standard
I	127	14798.9	4.4				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.628	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.239	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.268
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.183
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1508100014
Sample Date/Time: Sunday, August 23, 2015 22:22:52
Number of Replicates: 3
Autosampler Position: 242
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53601.4	3.4				ug/L	53498	Standard
	Be	9	288.3	8.2	**0.4703**	0.058	12.3	ug/L	12	Standard
	Al	27	310982.4	0.3	**4.4754**	0.170	3.8	ug/L	487	Standard
	Sc	45	29730.8	0.2				ug/L	24506	Standard
	Ti	47	2208.8	1.1	**11.4273**	0.094	0.8	ug/L	21	Standard
	V	51	48849.8	2.8	**11.6017**	0.364	3.1	ug/L	1268	Standard
	Cr	52	259990.1	0.7	**47.5614**	0.190	0.4	ug/L	7921	Standard
	Cr	53	32089.0	3.9	**47.6655**	1.582	3.3	ug/L	442	Standard
	Mn	55	970484.8	2.0	**277.7039**	4.295	1.5	ug/L	545	Standard
	Co	59	28430.3	1.7	**7.5676**	0.085	1.1	ug/L	183	Standard
	Ni	60	186169.5	0.7	**131.2681**	1.024	0.8	ug/L	131	Standard
	Cu	65	36501.6	1.4	**26.4441**	0.511	1.9	ug/L	231	Standard
	Zn	66	282637.0	1.0	**361.5650**	4.811	1.3	ug/L	306	Standard
>	**Ge**	72	343087.3	0.6				ug/L	330478	Standard
	As	75	5158.0	1.1	**6.5654**	0.062	0.9	ug/L	-23	Standard
	Se	82	326.4	4.0	**4.6151**	0.168	3.7	ug/L	27	Standard
	Se-1	77	319.3	1.1	**5.0069**	0.105	2.1	ug/L	92	Standard
>	**Ga**	71	3090.3	1.6				mg/L	37	Standard
	Rb	85	48748.3	1.1				ug/L	25	Standard
	Y	89	993569.5	1.9				ug/L	312467	Standard
>	**Rh**	103	40.0	21.7				ug/L	20	Standard
	Mo	98	3688.4	0.9	**2.7082**	0.062	2.3	ug/L	13	Standard
	Ag	107	316.7	7.1	**0.0441**	0.005	11.1	ug/L	72	Standard
	Cd	111	1056.3	2.6	**0.7613**	0.032	4.2	mg/L	5	Standard
	Cd	114	2769.4	2.9	**0.7658**	0.027	3.5	ug/L	7	Standard
>	**In**	115	478659.5	1.4				ug/L	477820	Standard
	Sn	118	466.7	12.6	**0.0251**	0.014	54.1	ug/L	343	Standard
	Sb	123	115.6	7.3	**0.0272**	0.002	7.9	ug/L	56	Standard
	Ba	135	32423.0	1.2	**16.9749**	0.344	2.0	ug/L	36	Standard
	Ce	140	518023.5	0.5				ug/L	65	Standard
>	**Tb**	159	983487.8	0.4				ug/L	939481	Standard
	Ho	165	46867.4	1.0				ug/L	7	Standard
	Tl	203	868.7	1.1	**0.1321**	0.002	1.3	ug/L	5	Standard
	Tl	205	550.0	12.0	**0.1199**	0.016	13.1	ug/L	2	Standard
	Pb	206	20678.1	0.5	**5.1341**	0.043	0.8	ug/L	222	Standard
	Pb	207	14994.1	1.2	**4.1046**	0.045	1.1	ug/L	186	Standard
	Pb	208	57608.7	0.4	**4.4288**	0.014	0.3	ug/L	717	Standard
	U	238	21834.1	1.6	**4.9381**	0.093	1.9	ug/L	2	Standard
>	**Bi**	209	440908.6	0.4				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	101.7	7.5	**0.0997**	0.018	17.6	mg/L	45	Standard
K	39	43.3	46.6	**0.9140**	0.627	68.6	mg/L	10	Standard
Ca	43	76.7	26.4	**5.8871**	3.820	64.9	mg/L	47	Standard
Fe	54	5662.1	3.2	**11.6496**	0.388	3.3	mg/L	46	Standard
Fe	57	2266.8	0.3	**12.3474**	0.092	0.7	mg/L	627	Standard
> **Sc-1**	45	29730.8	0.2				mg/L	24506	Standard
Cl	35	42168.6	1.3				ug/L	47100	Standard
Kr	83	4.0	66.1				ug/L	8	Standard
Br	81	1583.4	3.2				ug/L	427	Standard
P	31	12555.2	3.5				ug/L	10519	Standard
S	34	2188.5	3.4				ug/L	2003	Standard
Sr	88	200.0	6.6				ug/L	132	Standard
C	12	190.0	43.1				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	130.0	33.5				mg/L	10	Standard
Dy	164	67066.8	1.3				mg/L	13	Standard
Ho-1	165	46867.4	1.0				mg/L	7	Standard
Er	166	43295.1	1.1				mg/L	7	Standard
I	127	10406.9	0.5				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.194	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.816	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.176
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.143
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1508100014
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Method 6020 - Summary Report

Sample ID: L1508100016
Sample Date/Time: Sunday, August 23, 2015 22:26:04
Number of Replicates: 3
Autosampler Position: 243
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	53539.4	1.6				ug/L	53498	Standard
	Be	9	328.3	4.4	**0.5373**	0.016	2.9	ug/L	12	Standard
	Al	27	417518.0	0.8	**6.0153**	0.119	2.0	ug/L	487	Standard
	Sc	45	30088.2	1.6				ug/L	24506	Standard
	Ti	47	2604.9	1.7	**13.8545**	0.178	1.3	ug/L	21	Standard
	V	51	50961.3	1.5	**12.4409**	0.095	0.8	ug/L	1268	Standard
	Cr	52	291787.3	1.6	**55.0061**	1.196	2.2	ug/L	7921	Standard
	Cr	53	35503.2	1.1	**54.2212**	0.983	1.8	ug/L	442	Standard
	Mn	55	914214.2	0.4	**268.4260**	1.475	0.5	ug/L	545	Standard
	Co	59	28344.5	1.1	**7.7427**	0.031	0.4	ug/L	183	Standard
	Ni	60	168696.3	0.6	**122.0450**	1.697	1.4	ug/L	131	Standard
	Cu	65	40289.5	0.4	**29.9699**	0.122	0.4	ug/L	231	Standard
	Zn	66	241002.4	1.0	**316.2707**	3.452	1.1	ug/L	306	Standard
>	Ge	72	334382.3	0.8				ug/L	330478	Standard
	As	75	4826.4	1.0	**6.3054**	0.049	0.8	ug/L	-23	Standard
	Se	82	276.3	2.0	**3.9541**	0.074	1.9	ug/L	27	Standard
	Se-1	77	294.7	4.9	**4.6379**	0.355	7.7	ug/L	92	Standard
>	Ga	71	3080.3	4.0				mg/L	37	Standard
	Rb	85	55782.5	1.8				ug/L	25	Standard
	Y	89	1126932.5	1.7				ug/L	312467	Standard
>	Rh	103	46.7	44.6				ug/L	20	Standard
	Mo	98	3050.2	1.9	**2.2396**	0.038	1.7	ug/L	13	Standard
	Ag	107	331.0	5.0	**0.0470**	0.003	7.3	ug/L	72	Standard
	Cd	111	813.9	1.0	**0.5836**	0.011	1.8	mg/L	5	Standard
	Cd	114	2232.7	4.0	**0.6160**	0.024	3.9	ug/L	7	Standard
>	In	115	478467.8	0.7				ug/L	477820	Standard
	Sn	118	525.0	7.6	**0.0380**	0.008	21.1	ug/L	343	Standard
	Sb	123	131.4	10.7	**0.0314**	0.004	12.3	ug/L	56	Standard
	Ba	135	42350.8	1.5	**22.1884**	0.487	2.2	ug/L	36	Standard
	Ce	140	623876.3	1.2				ug/L	65	Standard
>	Tb	159	981836.3	1.5				ug/L	939481	Standard
	Ho	165	58286.9	0.5				ug/L	7	Standard
	Tl	203	682.3	5.5	**0.1045**	0.006	5.3	ug/L	5	Standard
	Tl	205	471.7	9.1	**0.1034**	0.010	9.4	ug/L	2	Standard
	Pb	206	25843.0	0.7	**6.5320**	0.070	1.1	ug/L	222	Standard
	Pb	207	19154.8	1.1	**5.3421**	0.052	1.0	ug/L	186	Standard
	Pb	208	73504.3	0.7	**5.7558**	0.048	0.8	ug/L	717	Standard
	U	238	23338.6	1.1	**5.3601**	0.073	1.4	ug/L	2	Standard
>	Bi	209	434231.2	0.5				ug/L	440279	Standard

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Na	23	1.7	-3863553807576691871492497	3.211	173.2	mg/L	2	Standard
Mg	24	131.7	11.6	**0.1660**	0.037	22.0	mg/L	45	Standard
K	39	40.0	50.0	**0.7966**	0.607	76.2	mg/L	10	Standard
Ca	43	68.3	46.5	**4.1403**	5.802	140.1	mg/L	47	Standard
Fe	54	5917.1	2.9	**12.0335**	0.201	1.7	mg/L	46	Standard
Fe	57	2415.2	5.9	**13.3330**	1.445	10.8	mg/L	627	Standard
> Sc-1	45	30088.2	1.6				mg/L	24506	Standard
Cl	35	42390.6	1.6				ug/L	47100	Standard
Kr	83	5.3	39.0				ug/L	8	Standard
Br	81	1240.1	5.6				ug/L	427	Standard
P	31	12029.8	2.9				ug/L	10519	Standard
S	34	2371.9	3.0				ug/L	2003	Standard
Sr	88	238.3	24.3				ug/L	132	Standard
C	12	146.7	3.9				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	200.0	13.2				mg/L	10	Standard
Dy	164	84620.1	1.6				mg/L	13	Standard
Ho-1	165	58286.9	0.5				mg/L	7	Standard
Er	166	53163.1	1.1				mg/L	7	Standard
I	127	12238.3	1.7				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.078	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.182	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.135
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.626
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1508100018
Sample Date/Time: Sunday, August 23, 2015 22:29:15
Number of Replicates: 3
Autosampler Position: 244
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55916.4	3.2				ug/L	53498	Standard
	Be	9	515.0	2.6	**0.8174**	0.008	1.0	ug/L	12	Standard
	Al	27	807386.2	0.9	**11.1512**	0.300	2.7	ug/L	487	Standard
	Sc	45	32646.8	1.2				ug/L	24506	Standard
	Ti	47	3348.7	2.3	**17.6360**	0.471	2.7	ug/L	21	Standard
	V	51	92878.1	0.5	**22.6791**	0.328	1.4	ug/L	1268	Standard
	Cr	52	244622.3	0.6	**45.3010**	0.570	1.3	ug/L	7921	Standard
	Cr	53	30367.1	1.9	**45.7161**	1.302	2.8	ug/L	442	Standard
	Mn	55	1374727.9	2.3	**398.8842**	5.696	1.4	ug/L	545	Standard
	Co	59	42985.2	0.9	**11.6301**	0.087	0.7	ug/L	183	Standard
	Ni	60	215919.3	0.6	**154.3730**	1.794	1.2	ug/L	131	Standard
	Cu	65	39269.8	1.1	**28.8590**	0.454	1.6	ug/L	231	Standard
	Zn	66	308300.5	0.8	**399.9226**	6.583	1.6	ug/L	306	Standard
>	**Ge**	72	338407.6	1.0				ug/L	330478	Standard
	As	75	5830.3	2.2	**7.5162**	0.157	2.1	ug/L	-23	Standard
	Se	82	185.6	6.4	**2.4821**	0.177	7.1	ug/L	27	Standard
	Se-1	77	249.0	4.9	**3.5485**	0.216	6.1	ug/L	92	Standard
>	**Ga**	71	5709.4	2.9				mg/L	37	Standard
	Rb	85	95619.1	0.6				ug/L	25	Standard
	Y	89	1335320.9	1.3				ug/L	312467	Standard
>	**Rh**	103	61.7	33.8				ug/L	20	Standard
	Mo	98	2157.6	0.9	**1.5744**	0.018	1.1	ug/L	13	Standard
	Ag	107	1141.4	4.4	**0.2129**	0.008	3.8	ug/L	72	Standard
	Cd	111	3734.9	2.0	**2.7094**	0.029	1.1	mg/L	5	Standard
	Cd	114	9385.9	2.1	**2.6004**	0.065	2.5	ug/L	7	Standard
>	**In**	115	481258.0	0.9				ug/L	477820	Standard
	Sn	118	883.4	0.9	**0.1167**	0.002	1.9	ug/L	343	Standard
	Sb	123	141.5	21.2	**0.0339**	0.008	23.9	ug/L	56	Standard
	Ba	135	91386.1	1.3	**47.6318**	0.972	2.0	ug/L	36	Standard
	Ce	140	945434.7	0.4				ug/L	65	Standard
>	**Tb**	159	1002651.7	1.9				ug/L	939481	Standard
	Ho	165	69485.6	0.7				ug/L	7	Standard
	Tl	203	1929.1	1.5	**0.3001**	0.004	1.3	ug/L	5	Standard
	Tl	205	1286.7	10.0	**0.2914**	0.030	10.3	ug/L	2	Standard
	Pb	206	33131.9	0.6	**8.3239**	0.057	0.7	ug/L	222	Standard
	Pb	207	24073.1	0.5	**6.6749**	0.041	0.6	ug/L	186	Standard
	Pb	208	92850.9	1.0	**7.2279**	0.083	1.2	ug/L	717	Standard
	U	238	37736.6	1.3	**8.6010**	0.125	1.5	ug/L	2	Standard
>	**Bi**	209	437741.0	0.2				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	150.0	13.3	**0.1807**	0.039	21.5	mg/L	45	Standard
K	39	56.7	56.0	**1.1660**	0.888	76.2	mg/L	10	Standard
Ca	43	88.3	32.2	**6.5605**	4.675	71.3	mg/L	47	Standard
Fe	54	7007.1	2.8	**13.1537**	0.508	3.9	mg/L	46	Standard
Fe	57	2761.9	7.2	**14.3544**	1.257	8.8	mg/L	627	Standard
Sc-1	45	32646.8	1.2				mg/L	24506	Standard
Cl	35	44138.9	1.5				ug/L	47100	Standard
Kr	83	4.0	43.3				ug/L	8	Standard
Br	81	750.0	16.2				ug/L	427	Standard
P	31	12463.5	1.6				ug/L	10519	Standard
S	34	2463.5	4.8				ug/L	2003	Standard
Sr	88	221.7	16.3				ug/L	132	Standard
C	12	160.0	51.2				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	180.0	33.8				mg/L	10	Standard
Dy	164	101797.9	1.5				mg/L	13	Standard
Ho-1	165	69485.6	0.7				mg/L	7	Standard
Er	166	64098.7	3.6				mg/L	7	Standard
I	127	6773.2	2.9				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.521	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.400	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.719	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.423	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1508100020
Sample Date/Time: Sunday, August 23, 2015 22:32:27
Number of Replicates: 3
Autosampler Position: 245
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56324.5	2.2				ug/L	53498	Standard
	Be	9	615.0	16.2	**0.9710**	0.146	15.0	ug/L	12	Standard
	Al	27	961952.0	1.6	**13.1855**	0.106	0.8	ug/L	487	Standard
	Sc	45	32753.7	0.8				ug/L	24506	Standard
	Ti	47	3758.5	3.7	**19.6033**	0.408	2.1	ug/L	21	Standard
	V	51	115475.5	1.9	**28.0045**	1.181	4.2	ug/L	1268	Standard
	Cr	52	302883.1	1.9	**55.8677**	0.180	0.3	ug/L	7921	Standard
	Cr	53	37234.0	1.6	**55.6648**	2.177	3.9	ug/L	442	Standard
	Mn	55	1133320.7	0.9	**325.5621**	4.403	1.4	ug/L	545	Standard
	Co	59	46766.7	0.6	**12.5322**	0.223	1.8	ug/L	183	Standard
	Ni	60	267387.1	0.6	**189.2896**	3.456	1.8	ug/L	131	Standard
	Cu	65	55775.8	1.8	**40.6474**	0.696	1.7	ug/L	231	Standard
	Zn	66	446611.9	1.2	**573.7635**	12.440	2.2	ug/L	306	Standard
>	**Ge**	72	341873.8	2.2				ug/L	330478	Standard
	As	75	8299.0	1.0	**10.5739**	0.333	3.2	ug/L	-23	Standard
	Se	82	464.4	3.8	**6.7787**	0.417	6.1	ug/L	27	Standard
	Se-1	77	455.7	2.9	**8.0169**	0.461	5.7	ug/L	92	Standard
>	**Ga**	71	5716.1	3.9				mg/L	37	Standard
	Rb	85	102453.8	3.0				ug/L	25	Standard
	Y	89	1370099.1	2.5				ug/L	312467	Standard
>	**Rh**	103	43.3	13.3				ug/L	20	Standard
	Mo	98	4349.0	2.2	**3.2052**	0.068	2.1	ug/L	13	Standard
	Ag	107	1223.7	2.2	**0.2322**	0.004	1.7	ug/L	72	Standard
	Cd	111	3504.0	1.3	**2.5651**	0.045	1.7	mg/L	5	Standard
	Cd	114	9298.4	1.8	**2.5999**	0.046	1.8	ug/L	7	Standard
>	**In**	115	476822.5	0.7				ug/L	477820	Standard
	Sn	118	786.7	4.6	**0.0969**	0.007	7.2	ug/L	343	Standard
	Sb	123	108.2	19.8	**0.0253**	0.006	22.1	ug/L	56	Standard
	Ba	135	88903.1	1.0	**46.7647**	0.617	1.3	ug/L	36	Standard
	Ce	140	916198.6	1.2				ug/L	65	Standard
>	**Tb**	159	1002720.3	0.9				ug/L	939481	Standard
	Ho	165	73407.4	2.0				ug/L	7	Standard
	Tl	203	1634.4	0.2	**0.2525**	0.001	0.5	ug/L	5	Standard
	Tl	205	1116.7	5.3	**0.2508**	0.015	6.1	ug/L	2	Standard
	Pb	206	56945.1	0.1	**14.2828**	0.083	0.6	ug/L	222	Standard
	Pb	207	42971.5	0.8	**11.9051**	0.161	1.4	ug/L	186	Standard
	Pb	208	162477.3	0.5	**12.6331**	0.130	1.0	ug/L	717	Standard
	U	238	42518.9	0.5	**9.6455**	0.091	0.9	ug/L	2	Standard
>	**Bi**	209	439848.2	0.6				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	136.7	11.8	**0.1520**	0.036	23.9	mg/L	45	Standard
K	39	55.0	15.7	**1.1180**	0.255	22.8	mg/L	10	Standard
Ca	43	113.3	10.2	**10.8063**	1.838	17.0	mg/L	47	Standard
Fe	54	9925.1	3.1	**18.6323**	0.487	2.6	mg/L	46	Standard
Fe	57	3343.7	3.8	**18.5766**	0.773	4.2	mg/L	627	Standard
Sc-1	45	32753.7	0.8				mg/L	24506	Standard
Cl	35	44306.0	1.8				ug/L	47100	Standard
Kr	83	4.3	70.5				ug/L	8	Standard
Br	81	646.7	13.9				ug/L	427	Standard
P	31	12668.6	2.2				ug/L	10519	Standard
S	34	2421.9	3.1				ug/L	2003	Standard
Sr	88	215.0	9.3				ug/L	132	Standard
C	12	193.3	34.4				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	253.3	30.7				mg/L	10	Standard
Dy	164	106428.2	2.2				mg/L	13	Standard
Ho-1	165	73407.4	2.0				mg/L	7	Standard
Er	166	67654.2	3.4				mg/L	7	Standard
I	127	8564.1	2.8				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		105.284	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.448	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.791
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.902
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1508100020
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Method 6020 - Summary Report

Sample ID: L1508100022
Sample Date/Time: Sunday, August 23, 2015 22:35:38
Number of Replicates: 3
Autosampler Position: 246
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54912.7	2.1				ug/L	53498	Standard
	Be	9	183.3	17.5	**0.2839**	0.058	20.3	ug/L	12	Standard
	Al	27	228530.6	0.7	**3.2054**	0.073	2.3	ug/L	487	Standard
	Sc	45	27827.2	2.7				ug/L	24506	Standard
	Ti	47	1905.1	0.3	**10.0325**	0.156	1.6	ug/L	21	Standard
	V	51	29628.0	2.6	**7.0419**	0.104	1.5	ug/L	1268	Standard
	Cr	52	128398.1	0.2	**23.1815**	0.364	1.6	ug/L	7921	Standard
	Cr	53	15694.8	4.0	**23.4108**	1.282	5.5	ug/L	442	Standard
	Mn	55	775480.1	0.2	**226.2063**	3.412	1.5	ug/L	545	Standard
	Co	59	18540.0	0.6	**5.0131**	0.090	1.8	ug/L	183	Standard
	Ni	60	71392.8	0.5	**51.2668**	0.886	1.7	ug/L	131	Standard
	Cu	65	14111.9	0.9	**10.3160**	0.092	0.9	ug/L	231	Standard
	Zn	66	79297.0	1.8	**103.0712**	0.501	0.5	ug/L	306	Standard
>	**Ge**	72	336571.9	1.3				ug/L	330478	Standard
	As	75	2840.4	1.5	**3.7086**	0.067	1.8	ug/L	-23	Standard
	Se	82	130.0	5.0	**1.6240**	0.122	7.5	ug/L	27	Standard
	Se-1	77	198.3	6.8	**2.4562**	0.321	13.1	ug/L	92	Standard
>	**Ga**	71	1425.1	9.6				mg/L	37	Standard
	Rb	85	26267.8	2.2				ug/L	25	Standard
	Y	89	648275.7	2.6				ug/L	312467	Standard
>	**Rh**	103	35.0	14.3				ug/L	20	Standard
	Mo	98	1424.9	2.2	**1.0284**	0.014	1.3	ug/L	13	Standard
	Ag	107	267.7	4.9	**0.0331**	0.003	8.6	ug/L	72	Standard
	Cd	111	730.5	1.9	**0.5139**	0.010	1.9	mg/L	5	Standard
	Cd	114	1793.3	1.6	**0.4853**	0.012	2.4	ug/L	7	Standard
>	**In**	115	486173.3	0.9				ug/L	477820	Standard
	Sn	118	441.7	12.1	**0.0179**	0.011	61.4	ug/L	343	Standard
	Sb	123	141.9	3.1	**0.0337**	0.001	4.3	ug/L	56	Standard
	Ba	135	35857.0	0.7	**18.4827**	0.159	0.9	ug/L	36	Standard
	Ce	140	285948.2	0.9				ug/L	65	Standard
>	**Tb**	159	967716.7	2.2				ug/L	939481	Standard
	Ho	165	23010.8	2.6				ug/L	7	Standard
	Tl	203	1523.4	3.6	**0.2336**	0.009	3.7	ug/L	5	Standard
	Tl	205	1080.0	5.1	**0.2407**	0.012	5.0	ug/L	2	Standard
	Pb	206	12247.9	0.5	**3.0040**	0.020	0.7	ug/L	222	Standard
	Pb	207	9075.7	1.0	**2.4513**	0.032	1.3	ug/L	186	Standard
	Pb	208	34949.7	0.2	**2.6525**	0.008	0.3	ug/L	717	Standard
	U	238	9709.4	0.9	**2.1841**	0.015	0.7	ug/L	2	Standard
>	**Bi**	209	442565.9	0.3				ug/L	440279	Standard

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Na	23	1.7	**-411087289688**	71202407208574.484		173.2	mg/L	2	Standard
Mg	24	85.0	36.7	**0.0759**	0.082	108.5	mg/L	45	Standard
K	39	15.0	57.7	**0.0741**	0.293	395.0	mg/L	10	Standard
Ca	43	50.0	17.3	**1.5390**	1.936	125.8	mg/L	47	Standard
Fe	54	3208.1	3.2	**6.9931**	0.396	5.7	mg/L	46	Standard
Fe	57	1665.1	0.3	**8.3972**	0.431	5.1	mg/L	627	Standard
Sc-1	45	27827.2	2.7				mg/L	24506	Standard
Cl	35	43161.4	0.3				ug/L	47100	Standard
Kr	83	5.0	60.0				ug/L	8	Standard
Br	81	640.0	4.7				ug/L	427	Standard
P	31	12064.8	2.2				ug/L	10519	Standard
S	34	2286.8	9.4				ug/L	2003	Standard
Sr	88	206.7	12.4				ug/L	132	Standard
C	12	173.3	53.3				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	90.0	29.4				mg/L	10	Standard
Dy	164	34455.4	0.9				mg/L	13	Standard
Ho-1	165	23010.8	2.6				mg/L	7	Standard
Er	166	21698.9	2.9				mg/L	7	Standard
I	127	5992.9	2.2				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.645	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.844	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	101.748
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.519
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1508100024
Sample Date/Time: Sunday, August 23, 2015 22:38:49
Number of Replicates: 3
Autosampler Position: 247
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55824.3	2.1				ug/L	53498	Standard
	Be	9	536.7	9.6	**0.8552**	0.100	11.7	ug/L	12	Standard
	Al	27	1181888.7	1.0	**16.3530**	0.481	2.9	ug/L	487	Standard
	Sc	45	32728.6	1.0				ug/L	24506	Standard
	Ti	47	5089.5	2.3	**26.6815**	0.486	1.8	ug/L	21	Standard
	V	51	97582.1	2.2	**23.6761**	0.545	2.3	ug/L	1268	Standard
	Cr	52	391172.3	0.6	**72.8429**	0.784	1.1	ug/L	7921	Standard
	Cr	53	49723.1	1.7	**74.7919**	1.787	2.4	ug/L	442	Standard
	Mn	55	1881000.3	1.3	**542.1067**	4.770	0.9	ug/L	545	Standard
	Co	59	47490.3	1.1	**12.7650**	0.057	0.5	ug/L	183	Standard
	Ni	60	259190.6	0.9	**184.0430**	2.580	1.4	ug/L	131	Standard
	Cu	65	51864.3	0.4	**37.9029**	0.129	0.3	ug/L	231	Standard
	Zn	66	376668.2	1.1	**485.2997**	6.951	1.4	ug/L	306	Standard
>	**Ge**	72	340764.8	0.7				ug/L	330478	Standard
	As	75	10261.5	1.6	**13.0977**	0.129	1.0	ug/L	-23	Standard
	Se	82	381.2	3.3	**5.5032**	0.233	4.2	ug/L	27	Standard
	Se-1	77	354.3	5.9	**5.8206**	0.431	7.4	ug/L	92	Standard
>	**Ga**	71	6343.0	3.2				mg/L	37	Standard
	Rb	85	97746.0	2.2				ug/L	25	Standard
	Y	89	1281392.6	0.6				ug/L	312467	Standard
>	**Rh**	103	85.0	47.1				ug/L	20	Standard
	Mo	98	18146.3	0.4	**13.1366**	0.183	1.4	ug/L	13	Standard
	Ag	107	830.4	3.7	**0.1476**	0.007	4.7	ug/L	72	Standard
	Cd	111	2375.6	0.7	**1.7027**	0.019	1.1	mg/L	5	Standard
	Cd	114	6572.5	3.6	**1.8021**	0.087	4.8	ug/L	7	Standard
>	**In**	115	485775.8	1.7				ug/L	477820	Standard
	Sn	118	645.0	13.2	**0.0625**	0.018	28.6	ug/L	343	Standard
	Sb	123	148.0	8.4	**0.0353**	0.003	7.9	ug/L	56	Standard
	Ba	135	112280.5	0.3	**57.9907**	1.175	2.0	ug/L	36	Standard
	Ce	140	939589.5	1.1				ug/L	65	Standard
>	**Tb**	159	1004866.5	1.7				ug/L	939481	Standard
	Ho	165	64572.3	1.6				ug/L	7	Standard
	Tl	203	3162.7	2.5	**0.4895**	0.011	2.3	ug/L	5	Standard
	Tl	205	2110.1	3.2	**0.4772**	0.014	3.0	ug/L	2	Standard
	Pb	206	46487.2	0.2	**11.5875**	0.044	0.4	ug/L	222	Standard
	Pb	207	35679.6	0.5	**9.8229**	0.073	0.7	ug/L	186	Standard
	Pb	208	134449.3	0.7	**10.3887**	0.101	1.0	ug/L	717	Standard
	U	238	28920.9	1.7	**6.5248**	0.127	1.9	ug/L	2	Standard
>	**Bi**	209	442136.6	0.3				ug/L	440279	Standard

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Na	23	1.7	-3564790883406174398928419	4.406	173.2	mg/L	2	Standard
Mg	24	173.3	38.4	**0.2291**	0.139	60.7	mg/L	45	Standard
K	39	51.7	45.7	**1.0251**	0.662	64.6	mg/L	10	Standard
Ca	43	101.7	32.7	**8.8274**	5.632	63.8	mg/L	47	Standard
Fe	54	9940.5	3.9	**18.6741**	0.579	3.1	mg/L	46	Standard
Fe	57	3348.7	3.2	**18.6337**	0.646	3.5	mg/L	627	Standard
> Sc-1	45	32728.6	1.0				mg/L	24506	Standard
Cl	35	43809.3	1.3				ug/L	47100	Standard
Kr	83	4.7	32.7				ug/L	8	Standard
Br	81	1230.1	10.2				ug/L	427	Standard
P	31	12376.7	1.6				ug/L	10519	Standard
S	34	2366.9	6.7				ug/L	2003	Standard
Sr	88	221.7	13.6				ug/L	132	Standard
C	12	156.7	30.2				mg/L	177	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	243.3	16.6				mg/L	10	Standard
Dy	164	90431.4	1.0				mg/L	13	Standard
Ho-1	165	64572.3	1.6				mg/L	7	Standard
Er	166	60928.9	1.3				mg/L	7	Standard
I	127	10025.0	1.5				mg/L	2225	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		104.349	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		103.113	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	101.665
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.422
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Sunday, August 23, 2015 22:42:03
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	54482.8	1.2				ug/L	53498	Standard
	Be	9	29316.7	1.7	**48.8985**	0.574	1.2	ug/L	12	Standard
	Al	27	3374317.4	1.5	**47.8390**	0.226	0.5	ug/L	487	Standard
	Sc	45	25431.3	4.0				ug/L	24506	Standard
	Ti	47	19172.1	0.6	**102.5127**	0.580	0.6	ug/L	21	Standard
	V	51	206345.9	1.0	**51.2678**	0.792	1.5	ug/L	1268	Standard
	Cr	52	272003.7	1.1	**51.0185**	0.591	1.2	ug/L	7921	Standard
	Cr	53	33583.8	1.3	**51.1021**	0.992	1.9	ug/L	442	Standard
	Mn	55	189673.9	0.7	**55.3902**	0.397	0.7	ug/L	545	Standard
	Co	59	184250.9	0.9	**50.4903**	0.450	0.9	ug/L	183	Standard
	Ni	60	70717.0	1.5	**50.9589**	0.419	0.8	ug/L	131	Standard
	Cu	65	68671.3	0.9	**51.0581**	0.423	0.8	ug/L	231	Standard
	Zn	66	38863.1	1.7	**50.4696**	0.570	1.1	ug/L	306	Standard
>	Ge	72	335335.0	0.6				ug/L	330478	Standard
	As	75	38236.3	0.3	**49.4526**	0.157	0.3	ug/L	-23	Standard
	Se	82	3222.7	1.3	**50.4801**	0.637	1.3	ug/L	27	Standard
	Se-1	77	2283.5	1.6	**48.9377**	1.117	2.3	ug/L	92	Standard
>	Ga	71	40.0	21.7				mg/L	37	Standard
	Rb	85	595.0	11.8				ug/L	25	Standard
	Y	89	323946.6	0.8				ug/L	312467	Standard
>	Rh	103	16.7	62.4				ug/L	20	Standard
	Mo	98	130513.2	0.1	**94.9648**	1.434	1.5	ug/L	13	Standard
	Ag	107	245556.8	1.4	**50.1540**	0.089	0.2	ug/L	72	Standard
	Cd	111	68982.2	0.8	**50.0593**	0.296	0.6	mg/L	5	Standard
	Cd	114	176890.0	4.2	**48.9394**	2.150	4.4	ug/L	7	Standard
>	In	115	483365.9	1.4				ug/L	477820	Standard
	Sn	118	214927.1	1.0	**47.2912**	1.120	2.4	ug/L	343	Standard
	Sb	123	181867.5	1.1	**48.3775**	0.172	0.4	ug/L	56	Standard
	Ba	135	94463.6	0.3	**49.0214**	0.557	1.1	ug/L	36	Standard
	Ce	140	358.3	28.6				ug/L	65	Standard
>	Tb	159	934060.6	0.1				ug/L	939481	Standard
	Ho	165	45.0	44.4				ug/L	7	Standard
	Tl	203	316300.4	0.3	**50.3159**	0.427	0.8	ug/L	5	Standard
	Tl	205	211482.4	0.1	**49.4448**	0.510	1.0	ug/L	2	Standard
	Pb	206	197963.7	1.5	**50.5326**	1.041	2.1	ug/L	222	Standard
	Pb	207	179458.2	0.6	**50.6350**	0.802	1.6	ug/L	186	Standard
	Pb	208	633423.4	0.6	**50.1435**	0.248	0.5	ug/L	717	Standard
	U	238	213218.8	0.4	**49.0948**	0.289	0.6	ug/L	2	Standard
>	Bi	209	433574.1	1.0				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	1876.8	6.3	**4.9625**	0.121	2.4	mg/L	45	Standard
K	39	151.7	21.4	**5.0563**	1.168	23.1	mg/L	10	Standard
Ca	43	56.7	13.5	**3.9272**	1.605	40.9	mg/L	47	Standard
Fe	54	1987.2	3.5	**4.6886**	0.298	6.4	mg/L	46	Standard
Fe	57	1338.4	12.6	**6.7079**	2.151	32.1	mg/L	627	Standard
Sc-1	45	25431.3	4.0				mg/L	24506	Standard
Cl	35	43901.5	2.4				ug/L	47100	Standard
Kr	83	3.3	17.3				ug/L	8	Standard
Br	81	676.7	12.4				ug/L	427	Standard
P	31	11879.7	3.4				ug/L	10519	Standard
S	34	2291.8	3.8				ug/L	2003	Standard
Sr	88	175.0	17.8				ug/L	132	Standard
C	12	190.0	60.7				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	10.0	100.0				mg/L	10	Standard
Dy	164	38.6	55.6				mg/L	13	Standard
Ho-1	165	45.0	44.4				mg/L	7	Standard
Er	166	30.0	115.5				mg/L	7	Standard
I	127	1230.1	12.9				mg/L	2225	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	97.797		
Al	27	95.678		
Sc	45			
Ti	47	102.513		
V	51	102.536		
Cr	52	102.037		
Cr	53			
Mn	55	110.780		
Co	59	100.981		
Ni	60	101.918		
Cu	65	102.116		
Zn	66	100.939		
> Ge	72		101.470	
As	75	98.905		
Se	82	100.960		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	94.965		
Ag	107	100.308		
Cd	111	100.119		
Cd	114			
> In	115		101.161	
Sn	118	94.582		
Sb	123	96.755		
Ba	135	98.043		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.632		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.287		
U	238	98.190		
> Bi	209		98.477	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Mn	55	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Sunday, August 23, 2015 22:45:14
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49614.5	2.9				ug/L	53498	Standard
	Be	9	18.3	56.8	**0.0133**	0.019	139.9	ug/L	12	Standard
	Al	27	621.7	5.4	**-0.0013**	0.001	41.8	ug/L	487	Standard
	Sc	45	24029.0	1.9				ug/L	24506	Standard
	Ti	47	15.3	19.9	**-0.0445**	0.018	40.1	ug/L	21	Standard
	V	51	1000.7	3.2	**-0.0768**	0.007	9.6	ug/L	1268	Standard
	Cr	52	6494.1	2.9	**-0.2226**	0.023	10.2	ug/L	7921	Standard
	Cr	53	416.7	4.5	**-0.0583**	0.033	57.4	ug/L	442	Standard
	Mn	55	698.7	3.1	**0.0360**	0.004	10.4	ug/L	545	Standard
	Co	59	222.3	4.0	**0.0091**	0.002	17.0	ug/L	183	Standard
	Ni	60	127.3	6.6	**0.0086**	0.005	60.1	ug/L	131	Standard
	Cu	65	180.7	7.9	**-0.0324**	0.011	34.6	ug/L	231	Standard
	Zn	66	290.3	4.2	**-0.0563**	0.021	38.0	ug/L	306	Standard
>	**Ge**	72	319348.7	1.8				ug/L	330478	Standard
	As	75	-38.1	49.3	**0.0002**	0.026	11855.9	ug/L	-23	Standard
	Se	82	16.8	51.2	**-0.1450**	0.140	96.8	ug/L	27	Standard
	Se-1	77	91.0	13.0	**0.1831**	0.297	162.2	ug/L	92	Standard
>	**Ga**	71	18.3	41.7				mg/L	37	Standard
	Rb	85	28.3	71.3				ug/L	25	Standard
	Y	89	307123.4	1.1				ug/L	312467	Standard
>	**Rh**	103	13.3	21.7				ug/L	20	Standard
	Mo	98	56.9	13.6	**0.0427**	0.006	13.9	ug/L	13	Standard
	Ag	107	78.7	17.4	**-0.0038**	0.003	76.3	ug/L	72	Standard
	Cd	111	6.5	49.1	**-0.0081**	0.003	31.0	mg/L	5	Standard
	Cd	114	17.4	71.5	**-0.0029**	0.004	131.5	ug/L	7	Standard
>	**In**	115	444848.9	0.7				ug/L	477820	Standard
	Sn	118	408.3	7.5	**0.0190**	0.008	41.5	ug/L	343	Standard
	Sb	123	700.5	4.6	**0.1986**	0.010	4.9	ug/L	56	Standard
	Ba	135	47.0	11.3	**0.0001**	0.003	1964.8	ug/L	36	Standard
	Ce	140	58.3	54.4				ug/L	65	Standard
>	**Tb**	159	882998.6	0.7				ug/L	939481	Standard
	Ho	165	21.7	26.6				ug/L	7	Standard
	Tl	203	27.7	39.8	**0.0008**	0.002	227.3	ug/L	5	Standard
	Tl	205	18.3	78.7	**-0.0021**	0.004	168.3	ug/L	2	Standard
	Pb	206	215.7	13.4	**-0.0046**	0.007	147.1	ug/L	222	Standard
	Pb	207	195.7	2.8	**-0.0022**	0.002	112.2	ug/L	186	Standard
	Pb	208	681.3	5.9	**-0.0046**	0.003	61.0	ug/L	717	Standard
	U	238	15.0	46.7	**-0.0027**	0.002	61.1	ug/L	2	Standard
>	**Bi**	209	413202.3	1.5				ug/L	440279	Standard

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Na	23	0.0		**0.0190**	0.000	0.0	mg/L	2	Standard
Mg	24	61.7	59.8	**0.0414**	0.107	257.5	mg/L	45	Standard
K	39	8.3	69.3	**-0.1082**	0.215	198.9	mg/L	10	Standard
Ca	43	21.7	58.1	**-3.4934**	2.907	83.2	mg/L	47	Standard
Fe	54	61.1	12.9	**-0.0078**	0.024	300.8	mg/L	46	Standard
Fe	57	835.0	7.5	**2.3486**	0.791	33.7	mg/L	627	Standard
> **Sc-1**	45	24029.0	1.9				mg/L	24506	Standard
Cl	35	42054.3	1.7				ug/L	47100	Standard
Kr	83	4.3	48.0				ug/L	8	Standard
Br	81	526.7	6.7				ug/L	427	Standard
P	31	10945.6	2.5				ug/L	10519	Standard
S	34	2215.2	4.7				ug/L	2003	Standard
Sr	88	176.7	14.5				ug/L	132	Standard
C	12	116.7	24.7				mg/L	177	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	10	Standard
Dy	164	8.7	120.3				mg/L	13	Standard
Ho-1	165	21.7	26.6				mg/L	7	Standard
Er	166	26.7	57.3				mg/L	7	Standard
I	127	1831.8	4.1				mg/L	2225	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.632	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.100
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.850
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexION Data\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Monday, August 24, 2015 11:40:53

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1345	2025	0.677	
Mg	23.985	24.025	4501	2019	0.704	
Co	58.933	58.925	11692	2022	0.695	
In	114.904	114.875	22859	2027	0.695	
U	238.050	238.025	47454	2042	0.686	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	3.011
5.575	3.342
5.625	3.908
5.675	1.881
5.725	2.656
5.775	2.070
5.825	2.309
5.875	1.789
5.925	2.700
5.975	2.567
6.025	1.613
6.075	2.431
6.125	5.510
6.175	26.307
6.225	94.786
6.275	71.261
6.325	81.441
6.375	59.266
6.425	10.814
6.475	8.569
6.525	5.400
6.575	2.695
6.625	0.768
6.675	1.435
6.725	1.924
6.775	1.912
6.825	2.348

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6.875	2.290
6.925	2.034
6.975	1.759
7.025	2.410
7.075	1.456
7.125	1.261
7.175	1.561
7.225	5.048
7.275	21.812
7.325	108.653
7.375	21.066
7.425	74.975
7.475	70.711
7.525	38.030
7.575	59.266
7.625	79.057
7.675	100.000
7.725	49.793
7.775	39.123
7.825	82.402
7.875	72.436
7.925	38.030
7.975	52.705
8.025	91.287
8.075	74.689
8.125	47.507
8.175	86.402
8.225	79.057
8.275	85.267
8.325	38.030
8.375	81.441
8.425	61.237
8.475	108.653
22.525	136.931
22.575	63.888
22.625	46.771
22.675	43.853
22.725	18.887
22.775	23.458
22.825	24.744
22.875	29.323
22.925	32.165
22.975	13.608
23.025	37.378
23.075	30.292
23.125	44.377
23.175	48.244

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23.225	24.362
23.275	10.687
23.325	50.187
23.375	24.686
23.425	42.950
23.475	25.979
23.525	8.524
23.575	4.826
23.625	1.647
23.675	2.195
23.725	2.023
23.775	0.574
23.825	1.562
23.875	0.969
23.925	2.008
23.975	1.194
24.025	1.239
24.075	1.611
24.125	0.641
24.175	1.162
24.225	0.780
24.275	1.113
24.325	2.006
24.375	19.174
24.425	26.146
24.475	24.594
24.525	3.096
24.575	5.023
24.625	3.887
24.675	2.600
24.725	1.010
24.775	2.089
24.825	1.419
24.875	0.753
24.925	1.247
24.975	1.733
25.025	1.899
25.075	1.649
25.125	1.442
25.175	1.933
25.225	2.565
25.275	2.262
25.325	19.088
25.375	20.328
25.425	55.902
25.475	32.478
57.525	7.065

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57.575	4.939
57.625	4.533
57.675	2.195
57.725	2.542
57.775	1.636
57.825	1.643
57.875	0.973
57.925	1.600
57.975	1.818
58.025	2.682
58.075	2.484
58.125	1.466
58.175	4.308
58.225	9.722
58.275	4.443
58.325	48.627
58.375	46.904
58.425	10.726
58.475	6.655
58.525	6.121
58.575	3.218
58.625	2.521
58.675	1.688
58.725	2.504
58.775	2.683
58.825	1.672
58.875	0.829
58.925	2.363
58.975	1.261
59.025	1.802
59.075	1.858
59.125	1.108
59.175	4.059
59.225	5.533
59.275	28.295
59.325	67.748
59.375	44.605
59.425	63.738
59.475	15.972
59.525	12.448
59.575	10.546
59.625	4.902
59.675	5.584
59.725	2.309
59.775	2.604
59.825	2.890
59.875	5.208

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59.925	3.471
59.975	6.011
60.025	3.884
60.075	2.865
60.125	8.124
60.175	6.706
60.225	16.831
60.275	42.426
60.325	52.705
60.375	58.330
60.425	89.694
60.475	41.286
113.525	8.958
113.575	4.806
113.625	3.651
113.675	2.572
113.725	3.226
113.775	2.102
113.825	1.801
113.875	3.802
113.925	0.883
113.975	1.081
114.025	2.509
114.075	4.905
114.125	3.330
114.175	8.367
114.225	12.608
114.275	18.349
114.325	28.085
114.375	29.211
114.425	13.284
114.475	7.215
114.525	3.742
114.575	1.716
114.625	1.602
114.675	1.853
114.725	1.009
114.775	2.528
114.825	1.568
114.875	1.516
114.925	1.325
114.975	1.547
115.025	2.236
115.075	2.093
115.125	1.610
115.175	2.380
115.225	2.570

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115.275	5.279
115.325	32.394
115.375	39.491
115.425	32.439
115.475	19.543
115.525	19.759
115.575	21.512
115.625	7.908
115.675	6.182
115.725	3.188
115.775	8.444
115.825	7.459
115.875	4.141
115.925	10.968
115.975	5.910
116.025	5.257
116.075	8.080
116.125	38.485
116.175	4.580
116.225	15.060
116.275	23.458
116.325	51.349
116.375	44.605
116.425	77.812
116.475	50.146
236.525	
236.575	42.390
236.625	30.609
236.675	26.146
236.725	48.445
236.775	26.503
236.825	23.903
236.875	31.923
236.925	40.019
236.975	44.032
237.025	26.307
237.075	33.503
237.125	38.360
237.175	30.859
237.225	50.620
237.275	13.305
237.325	45.018
237.375	40.126
237.425	29.881
237.475	20.410
237.525	14.286
237.575	8.137

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237.625	8.479
237.675	5.416
237.725	4.124
237.775	2.582
237.825	1.664
237.875	1.600
237.925	2.218
237.975	2.145
238.025	1.689
238.075	2.394
238.125	1.894
238.175	2.402
238.225	1.796
238.275	2.736
238.325	2.090
238.375	3.259
238.425	3.123
238.475	5.170
238.525	14.735
238.575	27.407
238.625	28.284
238.675	20.328
238.725	27.809
238.775	26.146
238.825	39.692
238.875	9.781
238.925	45.026
238.975	25.650
239.025	53.420
239.075	35.392
239.125	24.661
239.175	41.612
239.225	23.570
239.275	19.457
239.325	29.186
239.375	32.165
239.425	28.838
239.475	25.913

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SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 8/24/2015 11:45:36 AM
End Time: 8/24/2015 11:48:10 AM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 2676.50
        Obtained Intensity (Mg 23.985): 91997.06
        Obtained Intensity (In 114.904): 74901.82
        Obtained Intensity (U 238.05): 41848.32
        Obtained Intensity (Bkgd 220): 0.60
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.022 (=5912.89 / 268024.69)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.003 (=911.29 / 268024.69)
```

Report Date/Time: Monday, August 24, 2015 11:48:10
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SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 8/24/2015 11:45:36 AM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 2676.50
                Obtained Intensity (Mg 23.985): 91997.06
                Obtained Intensity (In 114.904): 74901.82
                Obtained Intensity (U 238.05): 41848.32
                Obtained Intensity (Bkgd 220): 0.60
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.022 (=5912.89 / 268024.69)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.003 (=911.29 / 268024.69)
[Passed]  Optimum value(s): N/A

End Time: 8/24/2015 11:48:10 AM
```


Approved: August 25, 2015

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Monday, August 24, 2015 12:04:41
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	43933.6	3.2				ug/L		Standard
	Be	9	0.0					ug/L		Standard
	Al	27	410.0	8.8				ug/L		Standard
	Sc	45	30378.8	2.2				ug/L		Standard
	Ti	47	21.3	47.9				ug/L		Standard
	V	51	1362.2	4.5				ug/L		Standard
	Cr	52	8310.6	0.3				ug/L		Standard
	Cr	53	325.0	4.6				ug/L		Standard
	Mn	55	694.3	2.2				ug/L		Standard
	Co	59	199.3	9.0				ug/L		Standard
	Ni	60	211.7	10.3				ug/L		Standard
	Cu	65	149.0	10.8				ug/L		Standard
	Zn	66	205.7	1.2				ug/L		Standard
>	Ge	72	319179.3	0.9				ug/L		Standard
	As	75	-50.8	76.1				ug/L		Standard
	Se	82	19.3	9.4				ug/L		Standard
	Se-1	77	89.3	14.0				ug/L		Standard
>	Ga	71	25.0	40.0				mg/L		Standard
	Rb	85	26.7	10.8				ug/L		Standard
	Y	89	295131.7	0.4				ug/L		Standard
>	Rh	103	20.0	0.0				ug/L		Standard
	Mo	98	10.7	28.8				ug/L		Standard
	Ag	107	63.7	17.2				ug/L		Standard
	Cd	111	7.3	15.8				mg/L		Standard
	Cd	114	9.7	37.3				ug/L		Standard
>	In	115	418014.1	1.2				ug/L		Standard
	Sn	118	385.0	14.0				ug/L		Standard
	Sb	123	53.5	24.5				ug/L		Standard
	Ba	135	44.0	11.4				ug/L		Standard
	Ce	140	33.3	37.7				ug/L		Standard
>	Tb	159	854905.1	1.1				ug/L		Standard
	Ho	165	13.3	78.1				ug/L		Standard
	Tl	203	4.0	50.0				ug/L		Standard
	Tl	205	5.0	100.0				ug/L		Standard
	Pb	206	182.0	8.8				ug/L		Standard
	Pb	207	160.3	14.4				ug/L		Standard
	Pb	208	604.0	4.1				ug/L		Standard
	U	238	2.7	21.7				ug/L		Standard
>	Bi	209	395375.1	0.9				ug/L		Standard

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	Na	23	0.0		mg/L	Standard
	Mg	24	46.7	43.3	mg/L	Standard
	K	39	21.7	35.3	mg/L	Standard
	Ca	43	28.3	56.7	mg/L	Standard
	Fe	54	72.5	17.1	mg/L	Standard
	Fe	57	703.3	6.5	mg/L	Standard
>	**Sc-1**	45	30378.8	2.2	mg/L	Standard
	Cl	35	14530.3	0.6	ug/L	Standard
	Kr	83	4.7	89.2	ug/L	Standard
	Br	81	496.7	15.1	ug/L	Standard
	P	31	10346.9	4.2	ug/L	Standard
	S	34	1535.1	3.4	ug/L	Standard
	Sr	88	176.7	11.8	ug/L	Standard
	C	12	153.3	38.2	mg/L	Standard
	N	14	0.0		mg/L	Standard
	Hg	202	3.3	173.2	mg/L	Standard
	Dy	164	6.5	93.0	mg/L	Standard
	Ho-1	165	13.3	78.1	mg/L	Standard
	Er	166	3.3	173.2	mg/L	Standard
	I	127	1945.1	0.9	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Monday, August 24, 2015 12:07:53
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	41993.1	2.6				ug/L	43934	Standard
	Be	9	6.7	86.6				ug/L	0	Standard
	Al	27	473.3	8.5				ug/L	410	Standard
	Sc	45	30200.1	1.0				ug/L	30379	Standard
	Ti	47	20.7	32.9				ug/L	21	Standard
	V	51	1372.7	6.2				ug/L	1362	Standard
	Cr	52	8232.6	1.2				ug/L	8311	Standard
	Cr	53	365.0	11.9				ug/L	325	Standard
	Mn	55	722.0	2.1				ug/L	694	Standard
	Co	59	210.7	4.3				ug/L	199	Standard
	Ni	60	234.3	6.2				ug/L	212	Standard
	Cu	65	129.3	12.6				ug/L	149	Standard
	Zn	66	225.0	6.5				ug/L	206	Standard
>	**Ge**	72	319894.7	0.3				ug/L	319179	Standard
	As	75	-7.7	318.9				ug/L	-51	Standard
	Se	82	30.7	9.6				ug/L	19	Standard
	Se-1	77	90.0	18.3				ug/L	89	Standard
>	**Ga**	71	26.7	21.7				mg/L	25	Standard
	Rb	85	28.3	44.4				ug/L	27	Standard
	Y	89	296868.0	3.9				ug/L	295132	Standard
>	**Rh**	103	11.7	137.8				ug/L	20	Standard
	Mo	98	8.9	12.8				ug/L	11	Standard
	Ag	107	58.3	9.7				ug/L	64	Standard
	Cd	111	4.6	12.4				mg/L	7	Standard
	Cd	114	22.4	113.8				ug/L	10	Standard
>	**In**	115	414895.6	0.6				ug/L	418014	Standard
	Sn	118	345.0	15.3				ug/L	385	Standard
	Sb	123	27.6	53.0				ug/L	54	Standard
	Ba	135	49.0	12.4				ug/L	44	Standard
	Ce	140	16.7	17.3				ug/L	33	Standard
>	**Tb**	159	849288.2	2.3				ug/L	854905	Standard
	Ho	165	13.3	21.7				ug/L	13	Standard
	Tl	203	1.3	114.6				ug/L	4	Standard
	Tl	205	5.0	100.0				ug/L	5	Standard
	Pb	206	184.0	17.0				ug/L	182	Standard
	Pb	207	152.3	17.3				ug/L	160	Standard
	Pb	208	616.0	4.9				ug/L	604	Standard
	U	238	1.0	100.0				ug/L	3	Standard
>	**Bi**	209	394246.5	0.7				ug/L	395375	Standard

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Na	23	1.7	173.2	mg/L	0	Standard
Mg	24	50.0	26.5	mg/L	47	Standard
K	39	20.0	43.3	mg/L	22	Standard
Ca	43	40.0	37.5	mg/L	28	Standard
Fe	54	62.1	52.7	mg/L	72	Standard
Fe	57	781.7	3.2	mg/L	703	Standard
> **Sc-1**	45	30200.1	1.0	mg/L	30379	Standard
Cl	35	14976.1	2.2	ug/L	14530	Standard
Kr	83	4.3	26.6	ug/L	5	Standard
Br	81	520.0	6.9	ug/L	497	Standard
P	31	10783.8	1.9	ug/L	10347	Standard
S	34	1635.1	3.2	ug/L	1535	Standard
Sr	88	203.3	18.8	ug/L	177	Standard
C	12	123.3	12.4	mg/L	153	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	0.0		mg/L	3	Standard
Dy	164	19.7	89.4	mg/L	7	Standard
Ho-1	165	13.3	21.7	mg/L	13	Standard
Er	166	6.7	173.2	mg/L	3	Standard
I	127	1855.1	3.6	mg/L	1945	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 1
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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Monday, August 24, 2015 12:11:04
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	43118.0	2.3				ug/L	43934	Standard
	Be	9	30.0	28.9				ug/L	0	Standard
	Al	27	4007.2	2.4				ug/L	410	Standard
	Sc	45	29612.2	0.8				ug/L	30379	Standard
	Ti	47	44.7	15.2				ug/L	21	Standard
	V	51	1544.7	6.3				ug/L	1362	Standard
	Cr	52	8456.7	0.5				ug/L	8311	Standard
	Cr	53	426.7	12.5				ug/L	325	Standard
	Mn	55	1004.7	3.8				ug/L	694	Standard
	Co	59	417.7	2.6				ug/L	199	Standard
	Ni	60	369.3	2.4				ug/L	212	Standard
	Cu	65	241.0	4.3				ug/L	149	Standard
	Zn	66	507.7	2.6				ug/L	206	Standard
>	**Ge**	72	321632.0	0.6				ug/L	319179	Standard
	As	75	-47.0	17.6				ug/L	-51	Standard
	Se	82	20.6	4.5				ug/L	19	Standard
	Se-1	77	97.0	7.4				ug/L	89	Standard
>	**Ga**	71	16.7	96.4				mg/L	25	Standard
	Rb	85	31.7	79.5				ug/L	27	Standard
	Y	89	286471.6	1.6				ug/L	295132	Standard
>	**Rh**	103	6.7	114.6				ug/L	20	Standard
	Mo	98	163.1	5.9				ug/L	11	Standard
	Ag	107	339.7	6.1				ug/L	64	Standard
	Cd	111	84.9	7.9				mg/L	7	Standard
	Cd	114	214.2	3.2				ug/L	10	Standard
>	**In**	115	410588.8	1.3				ug/L	418014	Standard
	Sn	118	588.3	13.0				ug/L	385	Standard
	Sb	123	249.6	6.2				ug/L	54	Standard
	Ba	135	149.0	2.9				ug/L	44	Standard
	Ce	140	15.0	57.7				ug/L	33	Standard
>	**Tb**	159	837267.1	1.2				ug/L	854905	Standard
	Ho	165	13.3	21.7				ug/L	13	Standard
	Tl	203	345.0	12.3				ug/L	4	Standard
	Tl	205	231.7	8.2				ug/L	5	Standard
	Pb	206	464.3	3.5				ug/L	182	Standard
	Pb	207	402.0	7.2				ug/L	160	Standard
	Pb	208	1443.0	3.1				ug/L	604	Standard
	U	238	246.7	9.7				ug/L	3	Standard
>	**Bi**	209	394842.6	0.3				ug/L	395375	Standard

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Na	23	1.7	173.2	mg/L	0	Standard
Mg	24	46.7	40.6	mg/L	47	Standard
K	39	18.3	15.7	mg/L	22	Standard
Ca	43	23.3	89.2	mg/L	28	Standard
Fe	54	84.3	44.7	mg/L	72	Standard
Fe	57	760.0	3.4	mg/L	703	Standard
Sc-1	45	29612.2	0.8	mg/L	30379	Standard
Cl	35	14619.7	0.9	ug/L	14530	Standard
Kr	83	4.7	24.7	ug/L	5	Standard
Br	81	516.7	12.6	ug/L	497	Standard
P	31	10073.3	2.1	ug/L	10347	Standard
S	34	1495.1	6.9	ug/L	1535	Standard
Sr	88	176.7	15.6	ug/L	177	Standard
C	12	163.3	27.6	mg/L	153	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	3.3	173.2	mg/L	3	Standard
Dy	164	3.0	187.1	mg/L	7	Standard
Ho-1	165	13.3	21.7	mg/L	13	Standard
Er	166	6.7	86.6	mg/L	3	Standard
I	127	1768.4	5.9	mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 2
Report Date/Time: Monday, August 24, 2015 12:13:21
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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Monday, August 24, 2015 12:14:15
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	42965.9	4.1				ug/L	43934	Standard
	Be	9	28942.7	5.7	**50.0000**	1.538	3.1	ug/L	0	Standard
	Al	27	3285626.5	1.3	**50.0000**	1.678	3.4	ug/L	410	Standard
	Sc	45	30260.2	2.1				ug/L	30379	Standard
	Ti	47	21936.9	1.6	**100.0000**	2.321	2.3	ug/L	21	Standard
	V	51	224232.1	0.6	**50.0000**	0.510	1.0	ug/L	1362	Standard
	Cr	52	299699.3	1.8	**50.0000**	0.770	1.5	ug/L	8311	Standard
	Cr	53	37050.3	2.7	**50.0000**	1.431	2.9	ug/L	325	Standard
	Mn	55	208210.6	0.8	**50.0000**	0.873	1.7	ug/L	694	Standard
	Co	59	200049.7	0.5	**50.0000**	0.673	1.3	ug/L	199	Standard
	Ni	60	79974.9	0.8	**50.0000**	0.761	1.5	ug/L	212	Standard
	Cu	65	77884.0	1.2	**50.0000**	0.411	0.8	ug/L	149	Standard
	Zn	66	44165.6	0.6	**50.0000**	0.561	1.1	ug/L	206	Standard
>	**Ge**	72	326540.1	0.9				ug/L	319179	Standard
	As	75	43896.9	1.7	**50.0000**	0.967	1.9	ug/L	-51	Standard
	Se	82	3685.7	0.7	**50.0000**	0.763	1.5	ug/L	19	Standard
	Se-1	77	2663.6	1.3	**50.0000**	0.663	1.3	ug/L	89	Standard
>	**Ga**	71	43.3	17.6				mg/L	25	Standard
	Rb	85	578.3	8.7				ug/L	27	Standard
	Y	89	294491.5	1.5				ug/L	295132	Standard
>	**Rh**	103	33.3	37.7				ug/L	20	Standard
	Mo	98	143122.2	1.2	**100.0000**	1.680	1.7	ug/L	11	Standard
	Ag	107	264761.8	1.3	**50.0000**	0.914	1.8	ug/L	64	Standard
	Cd	111	71621.7	0.2	**50.0000**	0.583	1.2	mg/L	7	Standard
	Cd	114	188038.4	0.3	**50.0000**	0.665	1.3	ug/L	10	Standard
>	**In**	115	414428.2	1.1				ug/L	418014	Standard
	Sn	118	231071.7	3.5	**50.0000**	1.956	3.9	ug/L	385	Standard
	Sb	123	193440.6	1.1	**50.0000**	0.758	1.5	ug/L	54	Standard
	Ba	135	100227.1	0.6	**50.0000**	0.714	1.4	ug/L	44	Standard
	Ce	140	80.0	6.3				ug/L	33	Standard
>	**Tb**	159	840176.0	1.0				ug/L	854905	Standard
	Ho	165	10.0	50.0				ug/L	13	Standard
	Tl	203	342899.6	0.9	**50.0000**	0.912	1.8	ug/L	4	Standard
	Tl	205	238196.4	1.6	**50.0000**	1.276	2.6	ug/L	5	Standard
	Pb	206	215499.5	1.0	**50.0000**	1.046	2.1	ug/L	182	Standard
	Pb	207	194052.4	0.5	**50.0000**	0.792	1.6	ug/L	160	Standard
	Pb	208	712991.9	0.5	**50.0000**	0.731	1.5	ug/L	604	Standard
	U	238	241769.1	1.8	**50.0000**	1.303	2.6	ug/L	3	Standard
>	**Bi**	209	393183.3	1.1				ug/L	395375	Standard

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Na	23	0.0		**5.0000**	0.000	0.0	mg/L	0	Standard
Mg	24	2088.5	1.7	**5.0000**	0.180	3.6	mg/L	47	Standard
K	39	360.0	14.7	**5.0000**	0.889	17.8	mg/L	22	Standard
Ca	43	66.7	30.3	**5.0000**	2.297	45.9	mg/L	28	Standard
Fe	54	2224.5	7.4	**5.0000**	0.441	8.8	mg/L	72	Standard
Fe	57	1235.1	6.9	**5.0000**	0.710	14.2	mg/L	703	Standard
Sc-1	45	30260.2	2.1				mg/L	30379	Standard
Cl	35	13808.3	2.2				ug/L	14530	Standard
Kr	83	5.3	39.0				ug/L	5	Standard
Br	81	596.7	6.3				ug/L	497	Standard
P	31	11150.8	3.6				ug/L	10347	Standard
S	34	1820.1	4.4				ug/L	1535	Standard
Sr	88	175.0	17.1				ug/L	177	Standard
C	12	146.7	27.6				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	124.9				mg/L	3	Standard
Dy	164	16.0	98.9				mg/L	7	Standard
Ho-1	165	10.0	50.0				mg/L	13	Standard
Er	166	13.3	114.6				mg/L	3	Standard
I	127	1228.4	6.9				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 3
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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Monday, August 24, 2015 12:17:27
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	42561.4	0.8				ug/L	43934	Standard
	Be	9	56180.6	0.8	**98.9942**	1.022	1.0	ug/L	0	Standard
	Al	27	6368233.8	1.4	**98.8661**	1.109	1.1	ug/L	410	Standard
	Sc	45	29831.0	1.8				ug/L	30379	Standard
	Ti	47	42898.7	1.3	**200.7491**	4.648	2.3	ug/L	21	Standard
	V	51	437343.1	0.7	**100.3668**	1.383	1.4	ug/L	1362	Standard
	Cr	52	582790.0	0.5	**100.7780**	1.708	1.7	ug/L	8311	Standard
	Cr	53	72089.5	3.0	**100.3573**	2.329	2.3	ug/L	325	Standard
	Mn	55	403173.2	1.2	**99.9545**	2.443	2.4	ug/L	694	Standard
	Co	59	393618.3	1.0	**100.6857**	2.277	2.3	ug/L	199	Standard
	Ni	60	154747.6	1.1	**99.9045**	0.222	0.2	ug/L	212	Standard
	Cu	65	149445.7	0.5	**99.4542**	0.994	1.0	ug/L	149	Standard
	Zn	66	86213.6	0.5	**100.5299**	1.666	1.7	ug/L	206	Standard
>	Ge	72	317086.9	1.3				ug/L	319179	Standard
	As	75	86539.6	1.6	**100.6941**	1.301	1.3	ug/L	-51	Standard
	Se	82	7163.1	0.5	**100.1535**	1.162	1.2	ug/L	19	Standard
	Se-1	77	5210.6	1.4	**101.2978**	1.932	1.9	ug/L	89	Standard
>	Ga	71	66.7	56.3				mg/L	25	Standard
	Rb	85	1130.0	8.1				ug/L	27	Standard
	Y	89	290007.8	1.4				ug/L	295132	Standard
>	Rh	103	53.3	56.5				ug/L	20	Standard
	Mo	98	279827.1	1.0	**200.7027**	3.973	2.0	ug/L	11	Standard
	Ag	107	510193.7	0.9	**99.6255**	1.313	1.3	ug/L	64	Standard
	Cd	111	140913.7	0.7	**100.6607**	0.362	0.4	mg/L	7	Standard
	Cd	114	371344.0	2.9	**100.8380**	1.921	1.9	ug/L	10	Standard
>	In	115	402349.5	1.0				ug/L	418014	Standard
	Sn	118	477294.8	2.0	**103.1293**	2.557	2.5	ug/L	385	Standard
	Sb	123	382416.9	0.8	**100.9037**	0.698	0.7	ug/L	54	Standard
	Ba	135	196225.1	0.4	**100.4253**	1.412	1.4	ug/L	44	Standard
	Ce	140	120.0	20.8				ug/L	33	Standard
>	Tb	159	834649.5	1.1				ug/L	854905	Standard
	Ho	165	13.3	43.3				ug/L	13	Standard
	Tl	203	674109.2	0.5	**100.4362**	0.890	0.9	ug/L	4	Standard
	Tl	205	462904.2	1.5	**99.8607**	2.275	2.3	ug/L	5	Standard
	Pb	206	423593.7	0.4	**100.4571**	1.022	1.0	ug/L	182	Standard
	Pb	207	381129.7	0.4	**100.4168**	1.037	1.0	ug/L	160	Standard
	Pb	208	1388424.2	0.7	**99.9865**	0.500	0.5	ug/L	604	Standard
	U	238	480713.3	0.6	**101.0048**	1.827	1.8	ug/L	3	Standard
>	Bi	209	383099.9	1.2				ug/L	395375	Standard

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Na	23	1.7	173.2	**-0.1440**	17.699	12287.9	mg/L	0	Standard
Mg	24	3915.5	3.0	**9.8013**	0.461	4.7	mg/L	47	Standard
K	39	745.0	8.1	**10.3731**	0.998	9.6	mg/L	22	Standard
Ca	43	108.3	13.3	**10.0384**	1.865	18.6	mg/L	28	Standard
Fe	54	4300.1	4.1	**9.9927**	0.379	3.8	mg/L	72	Standard
Fe	57	1856.8	5.6	**10.9422**	1.011	9.2	mg/L	703	Standard
Sc-1	45	29831.0	1.8				mg/L	30379	Standard
Cl	35	12865.5	0.4				ug/L	14530	Standard
Kr	83	5.0	20.0				ug/L	5	Standard
Br	81	563.3	25.9				ug/L	497	Standard
P	31	11080.7	0.2				ug/L	10347	Standard
S	34	1733.4	8.8				ug/L	1535	Standard
Sr	88	208.3	1.4				ug/L	177	Standard
C	12	113.3	25.5				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	2.7	235.5				mg/L	7	Standard
Ho-1	165	13.3	43.3				mg/L	13	Standard
Er	166	13.3	114.6				mg/L	3	Standard
I	127	595.0	8.5				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998
Corr. Coef.	Fe	57	Correlation coefficient < 0.998

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Monday, August 24, 2015 12:20:40
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	43382.0	1.2				ug/L	43934	Standard
	Be	9	30063.2	3.5	**51.9709**	1.774	3.4	ug/L	0	Standard
	Al	27	3500659.9	0.7	**53.3224**	1.001	1.9	ug/L	410	Standard
	Sc	45	30767.9	2.3				ug/L	30379	Standard
	Ti	47	23752.9	0.8	**107.9758**	0.685	0.6	ug/L	21	Standard
	V	51	235532.9	0.9	**52.3934**	0.610	1.2	ug/L	1362	Standard
	Cr	52	314344.0	0.2	**52.1588**	0.382	0.7	ug/L	8311	Standard
	Cr	53	39110.4	0.4	**52.6725**	0.310	0.6	ug/L	325	Standard
	Mn	55	218120.4	1.7	**52.4604**	0.909	1.7	ug/L	694	Standard
	Co	59	212536.0	0.4	**52.8089**	0.322	0.6	ug/L	199	Standard
	Ni	60	83204.2	1.2	**52.1265**	0.850	1.6	ug/L	212	Standard
	Cu	65	81581.7	1.5	**52.7207**	1.041	2.0	ug/L	149	Standard
	Zn	66	46656.7	0.6	**52.6202**	0.128	0.2	ug/L	206	Standard
>	**Ge**	72	326215.7	0.5				ug/L	319179	Standard
	As	75	46219.6	1.1	**52.3247**	0.678	1.3	ug/L	-51	Standard
	Se	82	3836.8	0.5	**52.0292**	0.531	1.0	ug/L	19	Standard
	Se-1	77	2842.9	1.9	**52.8524**	1.118	2.1	ug/L	89	Standard
>	**Ga**	71	68.3	29.6				mg/L	25	Standard
	Rb	85	565.0	20.4				ug/L	27	Standard
	Y	89	291229.6	4.7				ug/L	295132	Standard
>	**Rh**	103	43.3	24.0				ug/L	20	Standard
	Mo	98	153187.2	0.3	**105.7666**	0.988	0.9	ug/L	11	Standard
	Ag	107	275422.2	1.0	**51.7701**	0.413	0.8	ug/L	64	Standard
	Cd	111	76033.8	1.0	**52.2873**	0.313	0.6	mg/L	7	Standard
	Cd	114	202006.5	1.7	**52.8161**	0.759	1.4	ug/L	10	Standard
>	**In**	115	417904.5	0.9				ug/L	418014	Standard
	Sn	118	243950.0	1.0	**50.7062**	0.497	1.0	ug/L	385	Standard
	Sb	123	206653.3	1.0	**52.4890**	0.261	0.5	ug/L	54	Standard
	Ba	135	106301.3	1.7	**52.3595**	0.439	0.8	ug/L	44	Standard
	Ce	140	236.7	16.1				ug/L	33	Standard
>	**Tb**	159	853009.2	1.8				ug/L	854905	Standard
	Ho	165	10.0	50.0				ug/L	13	Standard
	Tl	203	363448.2	0.6	**52.2330**	0.583	1.1	ug/L	4	Standard
	Tl	205	249031.7	1.0	**51.8163**	0.631	1.2	ug/L	5	Standard
	Pb	206	226498.8	0.9	**51.7833**	0.430	0.8	ug/L	182	Standard
	Pb	207	204748.1	0.3	**52.0076**	0.244	0.5	ug/L	160	Standard
	Pb	208	741921.1	0.4	**51.5130**	0.426	0.8	ug/L	604	Standard
	U	238	256618.4	1.1	**52.0028**	0.282	0.5	ug/L	3	Standard
>	**Bi**	209	397154.2	0.6				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	2188.5	1.1	**5.2574**	0.065	1.2	mg/L	47	Standard
K	39	340.0	3.9	**4.4442**	0.238	5.4	mg/L	22	Standard
Ca	43	71.7	14.5	**5.4331**	1.175	21.6	mg/L	28	Standard
Fe	54	2249.4	1.3	**4.9723**	0.065	1.3	mg/L	72	Standard
Fe	57	1338.4	6.6	**5.3546**	1.134	21.2	mg/L	703	Standard
> **Sc-1**	45	30767.9	2.3				mg/L	30379	Standard
Cl	35	13061.0	2.0				ug/L	14530	Standard
Kr	83	6.7	17.3				ug/L	5	Standard
Br	81	523.3	14.5				ug/L	497	Standard
P	31	11554.4	2.5				ug/L	10347	Standard
S	34	1611.8	3.6				ug/L	1535	Standard
Sr	88	176.7	11.4				ug/L	177	Standard
C	12	210.0	20.8				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	9.4	112.0				mg/L	7	Standard
Ho-1	165	10.0	50.0				mg/L	13	Standard
Er	166	13.3	86.6				mg/L	3	Standard
I	127	836.7	5.1				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	103.942		
Al	27	106.645		
Sc	45			
Ti	47	107.976		
V	51	104.787		
Cr	52	104.318		
Cr	53			
Mn	55	104.921		
Co	59	105.618		
Ni	60	104.253		
Cu	65	105.441		
Zn	66	105.240		
> Ge	72		102.205	
As	75	104.649		
Se	82	104.058		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	105.767		
Ag	107	103.540		
Cd	111	104.575		
Cd	114			
In	115		99.974	
Sn	118	101.412		
Sb	123	104.978		
Ba	135	104.719		
Ce	140			
Tb	159			
Ho	165			
Tl	203	104.466		
Tl	205			
Pb	206	103.567		
Pb	207	104.015		
Pb	208	103.026		
U	238	104.006		
Bi	209		100.450	
Na	23	201.491		
Mg	24	105.148		
K	39	88.885		
Ca	43	108.662		
Fe	54	99.447		
Fe	57	107.093		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	K	39	
QC Std 1	Ca	43	

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QC Std 1	Fe	57

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Monday, August 24, 2015 12:23:53
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	43679.6	2.0				ug/L	43934	Standard
	Be	9	10.0	50.0	**0.0151**	0.008	55.0	ug/L	0	Standard
	Al	27	573.3	7.8	**-0.0028**	0.001	19.2	ug/L	410	Standard
	Sc	45	30362.1	1.1				ug/L	30379	Standard
	Ti	47	22.3	23.0	**-0.0036**	0.024	661.0	ug/L	21	Standard
	V	51	1015.9	5.0	**-0.0712**	0.011	15.4	ug/L	1362	Standard
	Cr	52	6750.8	1.1	**-0.2514**	0.012	4.6	ug/L	8311	Standard
	Cr	53	341.7	21.2	**-0.0698**	0.100	143.3	ug/L	325	Standard
	Mn	55	717.0	5.1	**-0.0214**	0.009	42.8	ug/L	694	Standard
	Co	59	199.3	8.5	**-0.0054**	0.004	80.4	ug/L	199	Standard
	Ni	60	184.3	8.8	**-0.0687**	0.010	14.6	ug/L	212	Standard
	Cu	65	159.0	8.5	**-0.0044**	0.009	203.6	ug/L	149	Standard
	Zn	66	223.0	2.3	**-0.2804**	0.007	2.3	ug/L	206	Standard
>	**Ge**	72	323431.6	0.2				ug/L	319179	Standard
	As	75	-47.4	27.3	**0.0498**	0.015	29.4	ug/L	-51	Standard
	Se	82	25.0	13.6	**0.1089**	0.047	43.4	ug/L	19	Standard
	Se-1	77	92.3	11.7	**-0.0505**	0.213	421.0	ug/L	89	Standard
>	**Ga**	71	23.3	65.5				mg/L	25	Standard
	Rb	85	31.7	32.9				ug/L	27	Standard
	Y	89	294645.5	2.8				ug/L	295132	Standard
>	**Rh**	103	25.0	60.0				ug/L	20	Standard
	Mo	98	84.9	16.3	**0.0435**	0.009	20.6	ug/L	11	Standard
	Ag	107	86.7	26.0	**0.0012**	0.004	342.0	ug/L	64	Standard
	Cd	111	12.2	38.8	**-0.0012**	0.003	266.1	mg/L	7	Standard
	Cd	114	18.1	75.2	**-0.0023**	0.004	151.9	ug/L	10	Standard
>	**In**	115	420753.0	1.0				ug/L	418014	Standard
	Sn	118	566.7	21.1	**0.0423**	0.024	57.7	ug/L	385	Standard
	Sb	123	903.3	3.8	**0.2134**	0.009	4.1	ug/L	54	Standard
	Ba	135	51.0	27.8	**0.0002**	0.007	3271.9	ug/L	44	Standard
	Ce	140	18.3	41.7				ug/L	33	Standard
>	**Tb**	159	851892.7	0.5				ug/L	854905	Standard
	Ho	165	8.3	34.6				ug/L	13	Standard
	Tl	203	32.7	39.5	**0.0048**	0.002	38.0	ug/L	4	Standard
	Tl	205	11.7	24.7	**0.0039**	0.001	15.6	ug/L	5	Standard
	Pb	206	209.3	9.1	**-0.0092**	0.004	44.7	ug/L	182	Standard
	Pb	207	160.7	19.1	**-0.0121**	0.008	62.2	ug/L	160	Standard
	Pb	208	662.3	4.6	**-0.0050**	0.002	37.9	ug/L	604	Standard
	U	238	18.7	35.7	**0.0035**	0.001	38.1	ug/L	3	Standard
>	**Bi**	209	398539.9	0.6				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	48.3	21.5	**0.0066**	0.027	415.8	mg/L	47	Standard
K	39	11.7	49.5	**-0.0950**	0.081	85.6	mg/L	22	Standard
Ca	43	28.3	73.5	**0.4980**	2.390	480.0	mg/L	28	Standard
Fe	54	67.9	28.0	**-0.0380**	0.044	115.3	mg/L	72	Standard
Fe	57	776.7	7.1	**-0.0216**	0.489	2264.5	mg/L	703	Standard
> **Sc-1**	45	30362.1	1.1				mg/L	30379	Standard
Cl	35	13368.6	1.5				ug/L	14530	Standard
Kr	83	1.7	91.7				ug/L	5	Standard
Br	81	443.3	12.8				ug/L	497	Standard
P	31	11387.6	3.6				ug/L	10347	Standard
S	34	1763.4	4.4				ug/L	1535	Standard
Sr	88	166.7	30.3				ug/L	177	Standard
C	12	206.7	7.4				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	2.4	225.8				mg/L	7	Standard
Ho-1	165	8.3	34.6				mg/L	13	Standard
Er	166	20.0	50.0				mg/L	3	Standard
I	127	1778.4	6.1				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.332	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.655
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.800
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Na	23	
QC Std 2	Ca	43	

Sample ID: QC Std 2
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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Monday, August 24, 2015 12:27:05
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	42156.9	2.0				ug/L	43934	Standard
	Be	9	131.7	9.6	**0.2323**	0.022	9.6	ug/L	0	Standard
	Al	27	850.0	91.4	**0.0021**	0.013	607.0	ug/L	410	Standard
	Sc	45	30906.5	2.8				ug/L	30379	Standard
	Ti	47	23.0	11.5	**-0.0005**	0.011	2454.5	ug/L	21	Standard
	V	51	2837.6	0.5	**0.3407**	0.009	2.8	ug/L	1362	Standard
	Cr	52	11765.6	1.7	**0.6134**	0.051	8.4	ug/L	8311	Standard
	Cr	53	985.0	5.3	**0.8152**	0.086	10.5	ug/L	325	Standard
	Mn	55	2739.6	2.3	**0.4719**	0.017	3.7	ug/L	694	Standard
	Co	59	1752.4	2.4	**0.3849**	0.015	3.9	ug/L	199	Standard
	Ni	60	2623.2	2.2	**1.4801**	0.045	3.1	ug/L	212	Standard
	Cu	65	1449.1	2.9	**0.8395**	0.036	4.3	ug/L	149	Standard
	Zn	66	5532.3	0.5	**5.8291**	0.067	1.2	ug/L	206	Standard
>	**Ge**	72	323025.0	1.0				ug/L	319179	Standard
	As	75	302.8	10.0	**0.4495**	0.038	8.4	ug/L	-51	Standard
	Se	82	48.2	4.1	**0.4278**	0.034	7.9	ug/L	19	Standard
	Se-1	77	100.7	10.6	**0.1129**	0.200	177.1	ug/L	89	Standard
>	**Ga**	71	11.7	65.5				mg/L	25	Standard
	Rb	85	26.7	21.7				ug/L	27	Standard
	Y	89	290350.1	4.0				ug/L	295132	Standard
>	**Rh**	103	8.3	69.3				ug/L	20	Standard
	Mo	98	32.8	19.5	**0.0080**	0.005	56.2	ug/L	11	Standard
	Ag	107	2075.5	1.7	**0.3763**	0.010	2.6	ug/L	64	Standard
	Cd	111	350.2	5.4	**0.2321**	0.015	6.4	mg/L	7	Standard
	Cd	114	875.4	13.0	**0.2227**	0.032	14.4	ug/L	10	Standard
>	**In**	115	416837.8	1.1				ug/L	418014	Standard
	Sn	118	608.3	2.9	**0.0522**	0.005	9.2	ug/L	385	Standard
	Sb	123	1808.5	1.9	**0.4462**	0.011	2.4	ug/L	54	Standard
	Ba	135	1521.1	2.8	**0.7268**	0.016	2.3	ug/L	44	Standard
	Ce	140	20.0	43.3				ug/L	33	Standard
>	**Tb**	159	835732.5	1.3				ug/L	854905	Standard
	Ho	165	10.0	50.0				ug/L	13	Standard
	Tl	203	532.7	4.5	**0.0777**	0.004	5.5	ug/L	4	Standard
	Tl	205	396.7	14.2	**0.0851**	0.012	14.4	ug/L	5	Standard
	Pb	206	1088.4	4.2	**0.1954**	0.011	5.6	ug/L	182	Standard
	Pb	207	911.0	2.1	**0.1818**	0.006	3.6	ug/L	160	Standard
	Pb	208	3623.5	4.1	**0.2042**	0.012	6.0	ug/L	604	Standard
	U	238	1990.1	2.6	**0.4082**	0.015	3.6	ug/L	3	Standard
>	**Bi**	209	392219.7	1.0				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	50.0	36.1	**0.0078**	0.042	543.4	mg/L	47	Standard
K	39	13.3	57.3	**-0.0742**	0.108	146.1	mg/L	22	Standard
Ca	43	35.0	37.8	**1.1927**	1.418	118.9	mg/L	28	Standard
Fe	54	67.7	18.4	**-0.0405**	0.033	80.7	mg/L	72	Standard
Fe	57	645.0	14.5	**-1.4157**	0.995	70.3	mg/L	703	Standard
Sc-1	45	30906.5	2.8				mg/L	30379	Standard
Cl	35	13434.6	1.2				ug/L	14530	Standard
Kr	83	7.0	42.9				ug/L	5	Standard
Br	81	486.7	30.1				ug/L	497	Standard
P	31	10979.0	3.7				ug/L	10347	Standard
S	34	1651.8	1.2				ug/L	1535	Standard
Sr	88	201.7	10.0				ug/L	177	Standard
C	12	203.3	32.0				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	3	Standard
Dy	164	6.0	86.6				mg/L	7	Standard
Ho-1	165	10.0	50.0				mg/L	13	Standard
Er	166	13.3	86.6				mg/L	3	Standard
I	127	566.7	3.6				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	116.148		
Al	27	0.208		
Sc	45			
Ti	47			
V	51	85.178		
Cr	52	76.678		
Cr	53			
Mn	55	94.389		
Co	59	96.226		
Ni	60	92.509		
Cu	65	104.937		
Zn	66	93.265		
Ge	72		101.205	
As	75	112.387		
Se	82	106.945		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	94.077		
Cd	111	96.709		
Cd	114			
> In	115			99.719
Sn	118			
Sb	123	111.542		
Ba	135	96.900		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	97.075		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.087		
U	238	102.046		
> Bi	209			99.202
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Monday, August 24, 2015 12:30:17
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	41276.2	3.1				ug/L	43934	Standard
	Be	9	16.7	62.4	**0.0280**	0.018	65.2	ug/L	0	Standard
	Al	27	3379519.8	1.1	**54.1181**	1.108	2.0	ug/L	410	Standard
	Sc	45	29856.1	1.9				ug/L	30379	Standard
	Ti	47	23977.3	1.1	**112.9080**	0.637	0.6	ug/L	21	Standard
	V	51	950.5	9.8	**-0.0801**	0.022	28.0	ug/L	1362	Standard
	Cr	52	7276.7	1.0	**-0.1270**	0.026	20.9	ug/L	8311	Standard
	Cr	53	2970.3	14.3	**3.6537**	0.656	18.0	ug/L	325	Standard
	Mn	55	988.0	1.6	**0.0511**	0.004	8.5	ug/L	694	Standard
	Co	59	330.3	2.8	**0.0297**	0.002	8.2	ug/L	199	Standard
	Ni	60	723.4	5.1	**0.2858**	0.030	10.6	ug/L	212	Standard
	Cu	65	540.0	2.8	**0.2539**	0.005	1.9	ug/L	149	Standard
	Zn	66	773.4	2.1	**0.3762**	0.031	8.3	ug/L	206	Standard
>	Ge	72	314941.4	1.5				ug/L	319179	Standard
	As	75	13.0	184.6	**0.1188**	0.028	23.4	ug/L	-51	Standard
	Se	82	28.0	31.8	**0.1586**	0.120	75.7	ug/L	19	Standard
	Se-1	77	256.3	0.6	**3.2666**	0.103	3.1	ug/L	89	Standard
>	Ga	71	108.3	25.4				mg/L	25	Standard
	Rb	85	608.3	14.0				ug/L	27	Standard
	Y	89	288062.9	1.3				ug/L	295132	Standard
>	Rh	103	31.7	48.2				ug/L	20	Standard
	Mo	98	145115.2	2.1	**101.7855**	1.780	1.7	ug/L	11	Standard
	Ag	107	89.3	15.4	**0.0021**	0.003	122.1	ug/L	64	Standard
	Cd	111	-19.2	70.5	**-0.0228**	0.009	41.1	mg/L	7	Standard
	Cd	114	689.1	14.6	**0.1762**	0.028	15.7	ug/L	10	Standard
>	In	115	411331.4	0.7				ug/L	418014	Standard
	Sn	118	468.3	9.9	**0.0242**	0.009	39.2	ug/L	385	Standard
	Sb	123	188.0	10.1	**0.0340**	0.005	14.0	ug/L	54	Standard
	Ba	135	231.7	11.5	**0.0912**	0.013	13.8	ug/L	44	Standard
	Ce	140	136.7	11.2				ug/L	33	Standard
>	Tb	159	844736.4	2.2				ug/L	854905	Standard
	Ho	165	10.0	50.0				ug/L	13	Standard
	Tl	203	20.3	10.2	**0.0031**	0.000	10.3	ug/L	4	Standard
	Tl	205	10.0	100.0	**0.0036**	0.002	58.4	ug/L	5	Standard
	Pb	206	379.3	5.1	**0.0323**	0.004	11.8	ug/L	182	Standard
	Pb	207	284.0	3.6	**0.0214**	0.002	9.0	ug/L	160	Standard
	Pb	208	1157.4	3.8	**0.0317**	0.002	7.3	ug/L	604	Standard
	U	238	8.0	97.6	**0.0014**	0.002	117.2	ug/L	3	Standard
>	Bi	209	386570.4	1.2				ug/L	395375	Standard

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Na	23	3.3	173.2	**-10.4886**	35.616	339.6	mg/L	0	Standard
Mg	24	5309.3	3.7	**13.3179**	0.633	4.8	mg/L	47	Standard
K	39	341.7	22.4	**4.6020**	1.023	22.2	mg/L	22	Standard
Ca	43	185.0	14.0	**19.0297**	2.729	14.3	mg/L	28	Standard
Fe	54	5580.2	4.1	**13.0205**	0.682	5.2	mg/L	72	Standard
Fe	57	2116.8	6.5	**13.5207**	1.053	7.8	mg/L	703	Standard
Sc-1	45	29856.1	1.9				mg/L	30379	Standard
Cl	35	12683.3	2.0				ug/L	14530	Standard
Kr	83	5.0	40.0				ug/L	5	Standard
Br	81	533.3	12.8				ug/L	497	Standard
P	31	9427.9	4.3				ug/L	10347	Standard
S	34	1685.1	5.9				ug/L	1535	Standard
Sr	88	168.3	9.1				ug/L	177	Standard
C	12	276.7	11.0				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	3	Standard
Dy	164	25.9	62.9				mg/L	7	Standard
Ho-1	165	10.0	50.0				mg/L	13	Standard
Er	166	16.7	124.9				mg/L	3	Standard
I	127	550.0	15.9				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27	1.082		
Sc	45			
Ti	47	112.908		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.672	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	101.785		
Ag	107			
Cd	111			
Cd	114			
> In	115			98.401
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209			97.773
Na	23	-83.909		
Mg	24	266.358		
K	39	92.039		
Ca	43	126.865		
Fe	54	104.164		
Fe	57	108.166		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	

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QC Std 4	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Monday, August 24, 2015 12:33:28
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	44784.4	2.3				ug/L	43934	Standard
	Be	9	61200.0	1.6	**102.4967**	1.326	1.3	ug/L	0	Standard
	Al	27	3593554.3	0.9	**53.0413**	1.725	3.3	ug/L	410	Standard
	Sc	45	30350.4	1.2				ug/L	30379	Standard
	Ti	47	23981.0	1.2	**112.4933**	0.565	0.5	ug/L	21	Standard
	V	51	457736.2	0.3	**105.3750**	1.023	1.0	ug/L	1362	Standard
	Cr	52	598013.6	0.9	**103.7550**	1.195	1.2	ug/L	8311	Standard
	Cr	53	77623.3	0.8	**108.4482**	1.752	1.6	ug/L	325	Standard
	Mn	55	423562.0	0.8	**105.3175**	0.343	0.3	ug/L	694	Standard
	Co	59	408321.6	1.8	**104.7415**	1.150	1.1	ug/L	199	Standard
	Ni	60	157463.5	1.5	**101.9641**	0.762	0.7	ug/L	212	Standard
	Cu	65	152620.5	0.8	**101.8701**	0.509	0.5	ug/L	149	Standard
	Zn	66	88407.2	0.7	**103.4024**	0.434	0.4	ug/L	206	Standard
>	**Ge**	72	316129.0	0.8				ug/L	319179	Standard
	As	75	88626.4	1.4	**103.4268**	0.819	0.8	ug/L	-51	Standard
	Se	82	7333.0	0.6	**102.8400**	0.810	0.8	ug/L	19	Standard
	Se-1	77	5484.0	1.4	**107.0400**	2.377	2.2	ug/L	89	Standard
>	**Ga**	71	120.0	4.2				mg/L	25	Standard
	Rb	85	663.3	3.5				ug/L	27	Standard
	Y	89	295857.9	1.8				ug/L	295132	Standard
>	**Rh**	103	40.0	43.3				ug/L	20	Standard
	Mo	98	153856.8	0.4	**105.0320**	1.011	1.0	ug/L	11	Standard
	Ag	107	494742.1	3.1	**91.9752**	3.485	3.8	ug/L	64	Standard
	Cd	111	151957.1	1.2	**103.3408**	2.061	2.0	mg/L	7	Standard
	Cd	114	400041.7	1.2	**103.4339**	2.059	2.0	ug/L	10	Standard
>	**In**	115	422664.0	0.8				ug/L	418014	Standard
	Sn	118	615.0	7.2	**0.0518**	0.010	19.2	ug/L	385	Standard
	Sb	123	408874.1	1.1	**102.6957**	0.550	0.5	ug/L	54	Standard
	Ba	135	206619.7	0.8	**100.6534**	0.316	0.3	ug/L	44	Standard
	Ce	140	76.7	7.5				ug/L	33	Standard
>	**Tb**	159	857898.7	1.8				ug/L	854905	Standard
	Ho	165	11.7	65.5				ug/L	13	Standard
	Tl	203	697252.8	1.0	**100.9586**	0.700	0.7	ug/L	4	Standard
	Tl	205	484816.5	0.9	**101.6379**	1.223	1.2	ug/L	5	Standard
	Pb	206	444832.6	0.6	**102.5248**	0.624	0.6	ug/L	182	Standard
	Pb	207	403635.4	0.1	**103.3537**	0.298	0.3	ug/L	160	Standard
	Pb	208	1454645.8	0.2	**101.8109**	0.431	0.4	ug/L	604	Standard
	U	238	502721.7	0.3	**102.6490**	0.611	0.6	ug/L	3	Standard
>	**Bi**	209	394171.1	0.3				ug/L	395375	Standard

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Na	23	1.7	173.2	**0.0470**	17.368	36935.3	mg/L	0	Standard
Mg	24	5287.6	3.1	**13.0376**	0.257	2.0	mg/L	47	Standard
K	39	431.7	11.0	**5.7944**	0.702	12.1	mg/L	22	Standard
Ca	43	178.3	19.9	**17.9007**	3.891	21.7	mg/L	28	Standard
Fe	54	5588.1	3.3	**12.8161**	0.314	2.4	mg/L	72	Standard
Fe	57	2161.8	3.5	**13.6356**	0.992	7.3	mg/L	703	Standard
> **Sc-1**	45	30350.4	1.2				mg/L	30379	Standard
Cl	35	13637.5	0.6				ug/L	14530	Standard
Kr	83	6.0	28.9				ug/L	5	Standard
Br	81	556.7	1.0				ug/L	497	Standard
P	31	10628.7	5.3				ug/L	10347	Standard
S	34	1608.4	3.9				ug/L	1535	Standard
Sr	88	176.7	15.6				ug/L	177	Standard
C	12	326.7	28.9				mg/L	153	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	19.7	49.6				mg/L	7	Standard
Ho-1	165	11.7	65.5				mg/L	13	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	1818.4	1.8				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	102.497		
Al	27	1.061		
Sc	45			
Ti	47	112.493		
V	51	105.375		
Cr	52	103.755		
Cr	53			
Mn	55	105.317		
Co	59	104.741		
Ni	60	101.964		
Cu	65	101.870		
Zn	66	103.402		
> Ge	72		99.044	
As	75	103.427		
Se	82	102.840		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	105.032		
Ag	107	91.975		
Cd	111	103.341		
Cd	114			
> In	115		101.112	
Sn	118			
Sb	123	102.696		
Ba	135	100.653		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.959		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.811		
U	238	102.649		
> Bi	209		99.695	
Na	23	0.376		
Mg	24	260.752		
K	39	115.889		
Ca	43	119.338		
Fe	54	102.529		
Fe	57	109.085		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

Sample ID: QC Std 5
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QC Std 5	Ca	43

Sample ID: QC Std 5
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, August 24, 2015 12:36:42
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	43828.3	1.1				ug/L	43934	Standard
	Be	9	29722.5	1.5	**50.8567**	0.577	1.1	ug/L	0	Standard
	Al	27	3346737.6	2.0	**50.4559**	1.239	2.5	ug/L	410	Standard
	Sc	45	29806.0	4.4				ug/L	30379	Standard
	Ti	47	21880.1	1.0	**101.9887**	0.821	0.8	ug/L	21	Standard
	V	51	224141.6	0.8	**51.1216**	0.510	1.0	ug/L	1362	Standard
	Cr	52	296404.9	2.0	**50.3846**	0.833	1.7	ug/L	8311	Standard
	Cr	53	36542.3	0.8	**50.4450**	0.549	1.1	ug/L	325	Standard
	Mn	55	209845.4	1.6	**51.7503**	0.618	1.2	ug/L	694	Standard
	Co	59	201918.3	0.9	**51.4458**	0.325	0.6	ug/L	199	Standard
	Ni	60	78244.5	1.0	**50.2606**	0.736	1.5	ug/L	212	Standard
	Cu	65	76506.0	1.3	**50.6917**	0.528	1.0	ug/L	149	Standard
	Zn	66	43654.8	0.8	**50.4662**	0.192	0.4	ug/L	206	Standard
>	Ge	72	318114.9	0.5				ug/L	319179	Standard
	As	75	43125.0	0.3	**50.0679**	0.133	0.3	ug/L	-51	Standard
	Se	82	3686.1	1.0	**51.2522**	0.480	0.9	ug/L	19	Standard
	Se-1	77	2686.2	1.2	**51.1537**	0.707	1.4	ug/L	89	Standard
>	Ga	71	60.0	36.3				mg/L	25	Standard
	Rb	85	573.3	9.8				ug/L	27	Standard
	Y	89	292228.2	1.3				ug/L	295132	Standard
>	Rh	103	23.3	44.6				ug/L	20	Standard
	Mo	98	147552.4	0.7	**100.6384**	0.596	0.6	ug/L	11	Standard
	Ag	107	265372.5	0.8	**49.2761**	0.214	0.4	ug/L	64	Standard
	Cd	111	74605.5	1.2	**50.6832**	0.422	0.8	mg/L	7	Standard
	Cd	114	197998.6	1.3	**51.1439**	0.796	1.6	ug/L	10	Standard
>	In	115	423018.3	0.4				ug/L	418014	Standard
	Sn	118	227592.0	1.8	**46.7257**	0.705	1.5	ug/L	385	Standard
	Sb	123	199258.5	1.8	**49.9966**	0.754	1.5	ug/L	54	Standard
	Ba	135	102093.8	1.2	**49.6792**	0.448	0.9	ug/L	44	Standard
	Ce	140	116.7	25.8				ug/L	33	Standard
>	Tb	159	846699.8	1.1				ug/L	854905	Standard
	Ho	165	8.3	34.6				ug/L	13	Standard
	Tl	203	348241.8	1.1	**50.0348**	0.185	0.4	ug/L	4	Standard
	Tl	205	240735.8	0.5	**50.0794**	0.134	0.3	ug/L	5	Standard
	Pb	206	220772.6	0.9	**50.4617**	0.117	0.2	ug/L	182	Standard
	Pb	207	199845.1	0.9	**50.7496**	0.118	0.2	ug/L	160	Standard
	Pb	208	717897.8	0.9	**49.8324**	0.380	0.8	ug/L	604	Standard
	U	238	245318.5	1.1	**49.7030**	0.213	0.4	ug/L	3	Standard
>	Bi	209	397233.7	0.7				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	2056.8	8.3	**5.1080**	0.564	11.0	mg/L	47	Standard
K	39	385.0	11.1	**5.2593**	0.851	16.2	mg/L	22	Standard
Ca	43	58.3	21.6	**4.1672**	1.759	42.2	mg/L	28	Standard
Fe	54	2282.5	6.7	**5.2227**	0.410	7.8	mg/L	72	Standard
Fe	57	1356.7	9.2	**5.9393**	1.029	17.3	mg/L	703	Standard
> **Sc-1**	45	29806.0	4.4				mg/L	30379	Standard
Cl	35	13710.9	1.6				ug/L	14530	Standard
Kr	83	4.0	66.1				ug/L	5	Standard
Br	81	563.3	3.7				ug/L	497	Standard
P	31	10742.1	2.1				ug/L	10347	Standard
S	34	1641.8	2.2				ug/L	1535	Standard
Sr	88	195.0	11.2				ug/L	177	Standard
C	12	150.0	23.1				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	9.0	108.0				mg/L	7	Standard
Ho-1	165	8.3	34.6				mg/L	13	Standard
Er	166	20.0	50.0				mg/L	3	Standard
I	127	541.7	12.0				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	101.713		
Al	27	100.912		
Sc	45			
Ti	47	101.989		
V	51	102.243		
Cr	52	100.769		
Cr	53			
Mn	55	103.501		
Co	59	102.892		
Ni	60	100.521		
Cu	65	101.383		
Zn	66	100.932		
> Ge	72		99.666	
As	75	100.136		
Se	82	102.504		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	100.638		
Ag	107	98.552		
Cd	111	101.366		
Cd	114			
> In	115			101.197
Sn	118	93.451		
Sb	123	99.993		
Ba	135	99.358		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.070		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.665		
U	238	99.406		
> Bi	209			100.470
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, August 24, 2015 12:39:54
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	44512.0	2.2				ug/L	43934	Standard
	Be	9	25.0	40.0	**0.0400**	0.016	40.2	ug/L	0	Standard
	Al	27	1336.7	30.6	**0.0085**	0.006	75.3	ug/L	410	Standard
	Sc	45	30208.4	3.2				ug/L	30379	Standard
	Ti	47	26.0	15.4	**0.0153**	0.018	116.6	ug/L	21	Standard
	V	51	1223.6	16.3	**-0.0192**	0.048	250.3	ug/L	1362	Standard
	Cr	52	7027.3	1.5	**-0.1821**	0.026	14.2	ug/L	8311	Standard
	Cr	53	498.3	15.2	**0.1568**	0.099	63.3	ug/L	325	Standard
	Mn	55	796.0	11.8	**0.0014**	0.025	1743.5	ug/L	694	Standard
	Co	59	288.7	33.4	**0.0185**	0.025	136.7	ug/L	199	Standard
	Ni	60	215.0	5.7	**-0.0468**	0.007	14.0	ug/L	212	Standard
	Cu	65	161.3	1.9	**-0.0010**	0.002	175.0	ug/L	149	Standard
	Zn	66	236.7	8.7	**-0.2597**	0.027	10.2	ug/L	206	Standard
>	**Ge**	72	317731.8	0.9				ug/L	319179	Standard
	As	75	-11.2	404.2	**0.0907**	0.053	58.0	ug/L	-51	Standard
	Se	82	25.8	18.7	**0.1264**	0.070	55.0	ug/L	19	Standard
	Se-1	77	101.3	6.4	**0.1595**	0.137	85.7	ug/L	89	Standard
>	**Ga**	71	21.7	26.6				mg/L	25	Standard
	Rb	85	26.7	28.6				ug/L	27	Standard
	Y	89	292631.1	1.8				ug/L	295132	Standard
>	**Rh**	103	20.0	25.0				ug/L	20	Standard
	Mo	98	144.2	44.3	**0.0834**	0.042	50.7	ug/L	11	Standard
	Ag	107	310.0	94.3	**0.0422**	0.053	126.3	ug/L	64	Standard
	Cd	111	69.2	110.1	**0.0372**	0.051	137.0	mg/L	7	Standard
	Cd	114	205.1	106.3	**0.0456**	0.055	121.5	ug/L	10	Standard
>	**In**	115	422761.7	1.1				ug/L	418014	Standard
	Sn	118	556.7	21.1	**0.0396**	0.023	57.8	ug/L	385	Standard
	Sb	123	1159.0	16.0	**0.2762**	0.043	15.6	ug/L	54	Standard
	Ba	135	163.7	87.0	**0.0545**	0.068	124.8	ug/L	44	Standard
	Ce	140	20.0	43.3				ug/L	33	Standard
>	**Tb**	159	866730.0	2.4				ug/L	854905	Standard
	Ho	165	8.3	91.7				ug/L	13	Standard
	Tl	203	352.7	118.5	**0.0503**	0.060	118.3	ug/L	4	Standard
	Tl	205	95.0	32.9	**0.0211**	0.006	30.6	ug/L	5	Standard
	Pb	206	360.7	52.5	**0.0249**	0.043	172.9	ug/L	182	Standard
	Pb	207	303.3	43.8	**0.0236**	0.034	142.4	ug/L	160	Standard
	Pb	208	906.7	25.0	**0.0115**	0.016	136.4	ug/L	604	Standard
	U	238	91.0	69.5	**0.0180**	0.013	70.8	ug/L	3	Standard
>	**Bi**	209	401173.1	0.6				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	46.7	93.6	**0.0028**	0.111	3927.3	mg/L	47	Standard
K	39	8.3	34.6	**-0.1403**	0.044	31.0	mg/L	22	Standard
Ca	43	35.0	37.8	**1.2945**	1.501	116.0	mg/L	28	Standard
Fe	54	76.0	20.5	**-0.0174**	0.041	233.6	mg/L	72	Standard
Fe	57	765.0	9.1	**-0.1048**	0.457	436.3	mg/L	703	Standard
> **Sc-1**	45	30208.4	3.2				mg/L	30379	Standard
Cl	35	13789.6	1.7				ug/L	14530	Standard
Kr	83	4.0	50.0				ug/L	5	Standard
Br	81	480.0	6.3				ug/L	497	Standard
P	31	10900.6	2.6				ug/L	10347	Standard
S	34	1608.4	8.9				ug/L	1535	Standard
Sr	88	190.0	14.7				ug/L	177	Standard
C	12	146.7	21.9				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	3.2	186.4				mg/L	7	Standard
Ho-1	165	8.3	91.7				mg/L	13	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	1825.1	6.8				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.546	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.136
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.466
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	
QC Std 7	Tl	203	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW B7 WG536161-03
Sample Date/Time: Monday, August 24, 2015 12:43:06
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	46120.1	1.3				ug/L	43934	Standard
	Be	9	10.0	50.0	**0.0144**	0.008	57.8	ug/L	0	Standard
	Al	27	9049.4	2.0	**0.1183**	0.004	3.5	ug/L	410	Standard
	Sc	45	31265.6	1.8				ug/L	30379	Standard
	Ti	47	23.7	28.8	**0.0011**	0.032	2876.5	ug/L	21	Standard
	V	51	1173.6	3.2	**-0.0400**	0.008	20.4	ug/L	1362	Standard
	Cr	52	7516.5	1.3	**-0.1409**	0.040	28.3	ug/L	8311	Standard
	Cr	53	431.7	18.8	**0.0425**	0.098	231.6	ug/L	325	Standard
	Mn	55	64132.5	1.5	**15.1589**	0.142	0.9	ug/L	694	Standard
	Co	59	225.0	5.0	**0.0002**	0.004	2220.1	ug/L	199	Standard
	Ni	60	644.3	1.1	**0.2164**	0.012	5.4	ug/L	212	Standard
	Cu	65	536.7	5.2	**0.2364**	0.019	8.2	ug/L	149	Standard
	Zn	66	1440.1	1.8	**1.0909**	0.051	4.6	ug/L	206	Standard
>	**Ge**	72	328938.7	1.9				ug/L	319179	Standard
	As	75	-18.9	82.3	**0.0829**	0.017	20.6	ug/L	-51	Standard
	Se	82	25.5	18.3	**0.1095**	0.058	52.7	ug/L	19	Standard
	Se-1	77	88.0	15.4	**-0.1662**	0.227	136.7	ug/L	89	Standard
>	**Ga**	71	46.7	12.4				mg/L	25	Standard
	Rb	85	136.7	8.4				ug/L	27	Standard
	Y	89	300575.8	1.4				ug/L	295132	Standard
>	**Rh**	103	23.3	75.3				ug/L	20	Standard
	Mo	98	37.1	24.1	**0.0102**	0.006	59.2	ug/L	11	Standard
	Ag	107	82.3	46.1	**0.0001**	0.007	11276.1	ug/L	64	Standard
	Cd	111	11.6	92.9	**-0.0018**	0.007	409.9	mg/L	7	Standard
	Cd	114	34.5	61.8	**0.0018**	0.005	309.6	ug/L	10	Standard
>	**In**	115	430388.7	0.5				ug/L	418014	Standard
	Sn	118	455.0	4.0	**0.0172**	0.003	19.6	ug/L	385	Standard
	Sb	123	135.2	9.3	**0.0188**	0.003	16.8	ug/L	54	Standard
	Ba	135	344.0	8.9	**0.1399**	0.015	10.4	ug/L	44	Standard
	Ce	140	338.3	9.0				ug/L	33	Standard
>	**Tb**	159	881771.3	0.4				ug/L	854905	Standard
	Ho	165	13.3	21.7				ug/L	13	Standard
	Tl	203	26.3	74.9	**0.0038**	0.003	71.9	ug/L	4	Standard
	Tl	205	15.0	0.0	**0.0046**	0.000	0.6	ug/L	5	Standard
	Pb	206	273.0	4.5	**0.0047**	0.002	47.5	ug/L	182	Standard
	Pb	207	237.3	2.3	**0.0067**	0.002	23.7	ug/L	160	Standard
	Pb	208	888.7	3.6	**0.0100**	0.002	16.2	ug/L	604	Standard
	U	238	12.3	73.6	**0.0022**	0.002	83.6	ug/L	3	Standard
>	**Bi**	209	402986.4	0.9				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	46.7	27.0	**-0.0009**	0.032	3774.5	mg/L	47	Standard
K	39	40.0	37.5	**0.2872**	0.212	73.7	mg/L	22	Standard
Ca	43	40.0	33.1	**1.7484**	1.531	87.6	mg/L	28	Standard
Fe	54	81.2	44.3	**-0.0133**	0.079	593.9	mg/L	72	Standard
Fe	57	773.4	4.1	**-0.2739**	0.211	77.1	mg/L	703	Standard
> **Sc-1**	45	31265.6	1.8				mg/L	30379	Standard
Cl	35	14043.8	2.5				ug/L	14530	Standard
Kr	83	5.7	44.4				ug/L	5	Standard
Br	81	520.0	6.9				ug/L	497	Standard
P	31	11107.4	3.7				ug/L	10347	Standard
S	34	1653.4	6.8				ug/L	1535	Standard
Sr	88	198.3	28.1				ug/L	177	Standard
C	12	140.0	28.6				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	13.0	46.6				mg/L	7	Standard
Ho-1	165	13.3	21.7				mg/L	13	Standard
Er	166	6.7	173.2				mg/L	3	Standard
I	127	8804.3	16.2				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.977	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.058	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.960
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.925
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW B7 WG536161-04
Sample Date/Time: Monday, August 24, 2015 12:46:17
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	46504.6	1.8				ug/L	43934	Standard
	Be	9	32013.8	2.9	**51.6268**	1.336	2.6	ug/L	0	Standard
	Al	27	8572.4	5.3	**0.1105**	0.009	7.9	ug/L	410	Standard
	Sc	45	31481.0	1.2				ug/L	30379	Standard
	Ti	47	29.7	10.8	**0.0300**	0.014	46.2	ug/L	21	Standard
	V	51	236802.4	1.0	**53.1220**	0.890	1.7	ug/L	1362	Standard
	Cr	52	313288.7	1.1	**52.4294**	1.118	2.1	ug/L	8311	Standard
	Cr	53	38813.1	5.0	**52.7217**	3.027	5.7	ug/L	325	Standard
	Mn	55	219400.8	0.8	**53.2108**	0.286	0.5	ug/L	694	Standard
	Co	59	209822.3	0.9	**52.5732**	0.930	1.8	ug/L	199	Standard
	Ni	60	81896.4	1.7	**51.7401**	1.440	2.8	ug/L	212	Standard
	Cu	65	80032.5	0.9	**52.1498**	0.779	1.5	ug/L	149	Standard
	Zn	66	45557.7	0.2	**51.8033**	0.462	0.9	ug/L	206	Standard
>	**Ge**	72	323524.1	1.1				ug/L	319179	Standard
	As	75	43966.3	1.3	**50.1933**	0.731	1.5	ug/L	-51	Standard
	Se	82	3688.0	1.5	**50.4258**	1.248	2.5	ug/L	19	Standard
	Se-1	77	2739.9	1.4	**51.3169**	1.278	2.5	ug/L	89	Standard
>	**Ga**	71	31.7	32.9				mg/L	25	Standard
	Rb	85	50.0	17.3				ug/L	27	Standard
	Y	89	296950.6	1.8				ug/L	295132	Standard
>	**Rh**	103	40.0	12.5				ug/L	20	Standard
	Mo	98	47.5	34.3	**0.0168**	0.011	63.6	ug/L	11	Standard
	Ag	107	277855.6	0.1	**50.2137**	0.234	0.5	ug/L	64	Standard
	Cd	111	77396.7	0.8	**51.1719**	0.274	0.5	mg/L	7	Standard
	Cd	114	200634.8	1.7	**50.4350**	0.848	1.7	ug/L	10	Standard
>	**In**	115	434659.1	0.4				ug/L	418014	Standard
	Sn	118	445.0	1.1	**0.0143**	0.001	6.4	ug/L	385	Standard
	Sb	123	212994.5	1.0	**52.0142**	0.531	1.0	ug/L	54	Standard
	Ba	135	105255.4	1.6	**49.8457**	0.672	1.3	ug/L	44	Standard
	Ce	140	243.3	19.7				ug/L	33	Standard
>	**Tb**	159	879975.5	0.9				ug/L	854905	Standard
	Ho	165	16.7	45.8				ug/L	13	Standard
	Tl	203	355169.6	0.3	**49.7994**	0.485	1.0	ug/L	4	Standard
	Tl	205	248457.8	2.0	**50.4336**	0.800	1.6	ug/L	5	Standard
	Pb	206	232964.7	0.9	**51.9658**	0.688	1.3	ug/L	182	Standard
	Pb	207	199274.6	1.0	**49.3847**	0.874	1.8	ug/L	160	Standard
	Pb	208	744263.5	0.5	**50.4144**	0.245	0.5	ug/L	604	Standard
	U	238	252318.8	1.3	**49.8857**	0.510	1.0	ug/L	3	Standard
>	**Bi**	209	407079.0	0.8				ug/L	395375	Standard

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Na	23	3.3	86.6	**-9.0905**	16.601	182.6	mg/L	0	Standard
Mg	24	50.0	20.0	**0.0062**	0.024	392.4	mg/L	47	Standard
K	39	18.3	15.7	**-0.0106**	0.041	384.8	mg/L	22	Standard
Ca	43	43.3	46.6	**2.0791**	2.250	108.2	mg/L	28	Standard
Fe	54	74.0	44.5	**-0.0301**	0.073	241.1	mg/L	72	Standard
Fe	57	718.4	10.3	**-0.8402**	0.768	91.4	mg/L	703	Standard
Sc-1	45	31481.0	1.2				mg/L	30379	Standard
Cl	35	14021.8	1.1				ug/L	14530	Standard
Kr	83	5.3	10.8				ug/L	5	Standard
Br	81	730.0	9.0				ug/L	497	Standard
P	31	11287.5	5.8				ug/L	10347	Standard
S	34	1573.4	6.3				ug/L	1535	Standard
Sr	88	175.0	14.8				ug/L	177	Standard
C	12	236.7	17.1				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	18.7	57.4				mg/L	7	Standard
Ho-1	165	16.7	45.8				mg/L	13	Standard
Er	166	26.7	78.1				mg/L	3	Standard
I	127	2765.3	4.9				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		105.852	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.361	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.982
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.960
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 25, 2015

Method 6020 - Summary Report

Sample ID: L1508122021 WG536161-02
Sample Date/Time: Monday, August 24, 2015 12:49:29
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	46498.0	3.1				ug/L	43934	Standard
	Be	9	26.7	10.8	**0.0411**	0.006	14.4	ug/L	0	Standard
	Al	27	5120027.5	1.0	**72.8139**	2.840	3.9	ug/L	410	Standard
	Sc	45	31329.0	1.8				ug/L	30379	Standard
	Ti	47	194.0	48.1	**0.7769**	0.421	54.2	ug/L	21	Standard
	V	51	2012.6	7.4	**0.1503**	0.032	21.1	ug/L	1362	Standard
	Cr	52	11593.1	1.2	**0.5665**	0.017	2.9	ug/L	8311	Standard
	Cr	53	1393.4	15.3	**1.3590**	0.285	21.0	ug/L	325	Standard
	Mn	55	3319666.3	0.7	**802.2317**	1.388	0.2	ug/L	694	Standard
	Co	59	2509.2	4.7	**0.5695**	0.027	4.7	ug/L	199	Standard
	Ni	60	3214.3	1.6	**1.8379**	0.027	1.5	ug/L	212	Standard
	Cu	65	805.4	3.9	**0.4138**	0.018	4.4	ug/L	149	Standard
	Zn	66	3731.5	1.5	**3.7204**	0.078	2.1	ug/L	206	Standard
>	**Ge**	72	325791.8	0.5				ug/L	319179	Standard
	As	75	326.0	16.5	**0.4725**	0.059	12.5	ug/L	-51	Standard
	Se	82	161.3	5.4	**1.9647**	0.109	5.5	ug/L	19	Standard
	Se-1	77	164.3	2.9	**1.3235**	0.106	8.0	ug/L	89	Standard
>	**Ga**	71	95.0	39.7				mg/L	25	Standard
	Rb	85	2977.0	2.4				ug/L	27	Standard
	Y	89	302722.7	0.7				ug/L	295132	Standard
>	**Rh**	103	75.0	20.0				ug/L	20	Standard
	Mo	98	231.5	11.9	**0.1411**	0.019	13.4	ug/L	11	Standard
	Ag	107	195.3	106.9	**0.0209**	0.038	183.9	ug/L	64	Standard
	Cd	111	142.0	58.6	**0.0858**	0.056	65.3	mg/L	7	Standard
	Cd	114	273.2	65.0	**0.0627**	0.045	72.6	ug/L	10	Standard
>	**In**	115	428939.3	0.5				ug/L	418014	Standard
	Sn	118	565.0	10.7	**0.0398**	0.013	31.6	ug/L	385	Standard
	Sb	123	600.0	22.6	**0.1341**	0.034	25.3	ug/L	54	Standard
	Ba	135	115802.9	0.7	**55.5759**	0.198	0.4	ug/L	44	Standard
	Ce	140	3317.0	0.8				ug/L	33	Standard
>	**Tb**	159	878718.6	0.7				ug/L	854905	Standard
	Ho	165	126.7	13.9				ug/L	13	Standard
	Tl	203	294.7	95.6	**0.0423**	0.041	96.3	ug/L	4	Standard
	Tl	205	133.3	70.9	**0.0292**	0.020	68.1	ug/L	5	Standard
	Pb	206	436.0	25.6	**0.0422**	0.026	62.6	ug/L	182	Standard
	Pb	207	374.3	28.9	**0.0417**	0.028	67.7	ug/L	160	Standard
	Pb	208	1256.0	16.8	**0.0358**	0.015	43.3	ug/L	604	Standard
	U	238	1631.4	3.9	**0.3276**	0.017	5.1	ug/L	3	Standard
>	**Bi**	209	400625.6	1.2				ug/L	395375	Standard

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Na	23	3.3	173.2	**-8.7516**	32.608	372.6	mg/L	0	Standard
Mg	24	3670.4	1.1	**8.7339**	0.212	2.4	mg/L	47	Standard
K	39	216.7	13.5	**2.6792**	0.344	12.8	mg/L	22	Standard
Ca	43	378.3	23.0	**39.7113**	9.335	23.5	mg/L	28	Standard
Fe	54	123.8	30.4	**0.0833**	0.086	102.7	mg/L	72	Standard
Fe	57	891.7	13.2	**0.8433**	1.140	135.1	mg/L	703	Standard
Sc-1	45	31329.0	1.8				mg/L	30379	Standard
Cl	35	16335.5	2.6				ug/L	14530	Standard
Kr	83	5.7	50.9				ug/L	5	Standard
Br	81	9963.3	6.5				ug/L	497	Standard
P	31	12423.4	0.9				ug/L	10347	Standard
S	34	1675.1	1.5				ug/L	1535	Standard
Sr	88	216.7	17.5				ug/L	177	Standard
C	12	570.0	14.0				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	140.0	22.8				mg/L	7	Standard
Ho-1	165	126.7	13.9				mg/L	13	Standard
Er	166	140.0	21.4				mg/L	3	Standard
I	127	46384.2	0.8				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		105.837	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.072	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.614
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.328
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508122021DP WG536161-07
Sample Date/Time: Monday, August 24, 2015 12:52:41
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	46457.8	0.8				ug/L	43934	Standard
	Be	9	25.0	91.7	**0.0386**	0.037	97.0	ug/L	0	Standard
	Al	27	5048969.4	1.9	**71.8112**	1.490	2.1	ug/L	410	Standard
	Sc	45	32045.5	0.6				ug/L	30379	Standard
	Ti	47	88.7	15.3	**0.3026**	0.059	19.5	ug/L	21	Standard
	V	51	1778.3	5.0	**0.1029**	0.020	19.5	ug/L	1362	Standard
	Cr	52	10951.3	0.7	**0.4805**	0.021	4.3	ug/L	8311	Standard
	Cr	53	1636.8	11.7	**1.7175**	0.242	14.1	ug/L	325	Standard
	Mn	55	3334918.8	0.9	**816.0662**	11.136	1.4	ug/L	694	Standard
	Co	59	2465.5	2.0	**0.5664**	0.017	3.1	ug/L	199	Standard
	Ni	60	3031.3	1.9	**1.7465**	0.024	1.4	ug/L	212	Standard
	Cu	65	846.4	5.5	**0.4474**	0.031	7.0	ug/L	149	Standard
	Zn	66	2909.6	2.9	**2.8250**	0.131	4.6	ug/L	206	Standard
>	**Ge**	72	321767.0	1.1				ug/L	319179	Standard
	As	75	309.4	13.3	**0.4580**	0.043	9.5	ug/L	-51	Standard
	Se	82	161.7	6.8	**1.9976**	0.135	6.7	ug/L	19	Standard
	Se-1	77	151.0	9.9	**1.1029**	0.292	26.5	ug/L	89	Standard
>	**Ga**	71	48.3	6.0				mg/L	25	Standard
	Rb	85	2720.2	4.8				ug/L	27	Standard
	Y	89	300127.0	1.2				ug/L	295132	Standard
>	**Rh**	103	78.3	19.5				ug/L	20	Standard
	Mo	98	206.6	7.1	**0.1238**	0.011	8.8	ug/L	11	Standard
	Ag	107	116.0	27.1	**0.0062**	0.006	93.4	ug/L	64	Standard
	Cd	111	128.2	22.0	**0.0760**	0.019	24.8	mg/L	7	Standard
	Cd	114	305.6	22.1	**0.0705**	0.017	23.9	ug/L	10	Standard
>	**In**	115	430841.2	0.9				ug/L	418014	Standard
	Sn	118	475.0	10.0	**0.0212**	0.010	48.7	ug/L	385	Standard
	Sb	123	392.5	8.3	**0.0822**	0.008	9.3	ug/L	54	Standard
	Ba	135	115477.7	0.3	**55.1781**	0.527	1.0	ug/L	44	Standard
	Ce	140	2438.5	4.3				ug/L	33	Standard
>	**Tb**	159	868381.1	0.9				ug/L	854905	Standard
	Ho	165	58.3	26.2				ug/L	13	Standard
	Tl	203	160.7	18.1	**0.0232**	0.004	18.7	ug/L	4	Standard
	Tl	205	131.7	25.8	**0.0288**	0.007	23.3	ug/L	5	Standard
	Pb	206	432.3	4.2	**0.0419**	0.005	12.3	ug/L	182	Standard
	Pb	207	345.3	7.0	**0.0348**	0.006	17.5	ug/L	160	Standard
	Pb	208	1362.7	6.7	**0.0437**	0.007	15.6	ug/L	604	Standard
	U	238	1708.8	0.6	**0.3454**	0.006	1.6	ug/L	3	Standard
>	**Bi**	209	397865.2	1.2				ug/L	395375	Standard

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Na	23	5.0	100.0	**-18.1434**	28.329	156.1	mg/L	0	Standard
Mg	24	3713.8	0.6	**8.6359**	0.034	0.4	mg/L	47	Standard
K	39	136.7	21.1	**1.5541**	0.372	24.0	mg/L	22	Standard
Ca	43	333.3	11.3	**33.8686**	4.001	11.8	mg/L	28	Standard
Fe	54	75.5	37.0	**-0.0296**	0.061	205.4	mg/L	72	Standard
Fe	57	958.4	8.0	**1.2763**	0.759	59.5	mg/L	703	Standard
Sc-1	45	32045.5	0.6				mg/L	30379	Standard
Cl	35	17358.6	2.2				ug/L	14530	Standard
Kr	83	5.0	34.6				ug/L	5	Standard
Br	81	9182.8	5.4				ug/L	497	Standard
P	31	12431.8	1.9				ug/L	10347	Standard
S	34	1701.8	3.0				ug/L	1535	Standard
Sr	88	200.0	10.9				ug/L	177	Standard
C	12	463.3	12.5				mg/L	153	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	3	Standard
Dy	164	87.6	51.3				mg/L	7	Standard
Ho-1	165	58.3	26.2				mg/L	13	Standard
Er	166	120.0	36.3				mg/L	3	Standard
I	127	46671.8	3.9				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.745	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.811	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.069
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.630
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1508122021DP WG536161-07
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Method 6020 - Summary Report

Sample ID: L1508107304 WG536161-01
Sample Date/Time: Monday, August 24, 2015 12:55:52
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49278.4	3.2				ug/L	43934	Standard
	Be	9	11.7	24.7	**0.0157**	0.004	24.1	ug/L	0	Standard
	Al	27	3278939.7	2.1	**43.9729**	0.717	1.6	ug/L	410	Standard
	Sc	45	31604.6	4.2				ug/L	30379	Standard
	Ti	47	69.3	14.2	**0.2175**	0.046	21.4	ug/L	21	Standard
	V	51	1708.4	3.7	**0.0914**	0.013	14.3	ug/L	1362	Standard
	Cr	52	9957.6	2.4	**0.3281**	0.038	11.5	ug/L	8311	Standard
	Cr	53	2937.0	1.0	**3.5580**	0.025	0.7	ug/L	325	Standard
	Mn	55	41127.7	0.4	**9.9836**	0.062	0.6	ug/L	694	Standard
	Co	59	884.7	2.5	**0.1702**	0.006	3.5	ug/L	199	Standard
	Ni	60	1238.4	0.6	**0.6127**	0.007	1.1	ug/L	212	Standard
	Cu	65	2411.9	2.9	**1.4930**	0.050	3.4	ug/L	149	Standard
	Zn	66	1478.7	2.8	**1.1906**	0.043	3.6	ug/L	206	Standard
>	**Ge**	72	318170.7	0.4				ug/L	319179	Standard
	As	75	195.5	15.0	**0.3303**	0.034	10.3	ug/L	-51	Standard
	Se	82	101.5	3.5	**1.1826**	0.048	4.1	ug/L	19	Standard
	Se-1	77	174.3	13.6	**1.5966**	0.470	29.4	ug/L	89	Standard
>	**Ga**	71	36.7	20.8				mg/L	25	Standard
	Rb	85	856.7	5.9				ug/L	27	Standard
	Y	89	294315.0	1.9				ug/L	295132	Standard
>	**Rh**	103	63.3	32.9				ug/L	20	Standard
	Mo	98	58.8	27.1	**0.0247**	0.010	42.2	ug/L	11	Standard
	Ag	107	79.3	36.6	**-0.0005**	0.005	1009.3	ug/L	64	Standard
	Cd	111	49.2	28.4	**0.0233**	0.009	39.1	mg/L	7	Standard
	Cd	114	150.6	38.2	**0.0312**	0.014	46.1	ug/L	10	Standard
>	**In**	115	430611.6	0.6				ug/L	418014	Standard
	Sn	118	848.4	1.4	**0.0966**	0.002	2.5	ug/L	385	Standard
	Sb	123	120.5	20.8	**0.0152**	0.006	39.9	ug/L	54	Standard
	Ba	135	5999.2	1.4	**2.8447**	0.058	2.0	ug/L	44	Standard
	Ce	140	143.3	23.2				ug/L	33	Standard
>	**Tb**	159	867390.8	0.4				ug/L	854905	Standard
	Ho	165	8.3	91.7				ug/L	13	Standard
	Tl	203	85.3	81.8	**0.0124**	0.010	81.1	ug/L	4	Standard
	Tl	205	38.3	30.1	**0.0094**	0.002	25.1	ug/L	5	Standard
	Pb	206	234.0	12.5	**-0.0035**	0.007	188.5	ug/L	182	Standard
	Pb	207	210.0	7.0	**0.0004**	0.004	1028.4	ug/L	160	Standard
	Pb	208	775.0	2.8	**0.0028**	0.002	58.9	ug/L	604	Standard
	U	238	2583.6	1.0	**0.5213**	0.007	1.4	ug/L	3	Standard
>	**Bi**	209	398703.8	0.5				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	9264.5	0.8	**22.0430**	0.917	4.2	mg/L	47	Standard
K	39	21.7	66.6	**0.0326**	0.194	596.1	mg/L	22	Standard
Ca	43	106.7	17.7	**9.1317**	2.191	24.0	mg/L	28	Standard
Fe	54	65.9	45.0	**-0.0502**	0.059	117.9	mg/L	72	Standard
Fe	57	856.7	7.1	**0.4384**	0.518	118.1	mg/L	703	Standard
> **Sc-1**	45	31604.6	4.2				mg/L	30379	Standard
Cl	35	18104.1	1.6				ug/L	14530	Standard
Kr	83	2.7	57.3				ug/L	5	Standard
Br	81	5290.9	12.1				ug/L	497	Standard
P	31	12149.9	0.6				ug/L	10347	Standard
S	34	1675.1	3.4				ug/L	1535	Standard
Sr	88	256.7	22.7				ug/L	177	Standard
C	12	286.7	13.2				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	23.0	68.2				mg/L	7	Standard
Ho-1	165	8.3	91.7				mg/L	13	Standard
Er	166	6.7	173.2				mg/L	3	Standard
I	127	250274.8	3.2				mg/L	1945	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		112.165	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.684	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.014
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.842
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 25, 2015

Method 6020 - Summary Report

Sample ID: L1508107304S WG536161-05
Sample Date/Time: Monday, August 24, 2015 12:59:03
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	47778.6	1.6				ug/L	43934	Standard
	Be	9	6363.0	3.2	**9.9879**	0.372	3.7	ug/L	0	Standard
	Al	27	3122034.7	0.7	**43.1786**	0.816	1.9	ug/L	410	Standard
	Sc	45	30757.9	2.6				ug/L	30379	Standard
	Ti	47	55.3	12.0	**0.1547**	0.032	21.0	ug/L	21	Standard
	V	51	48625.8	2.1	**10.9624**	0.136	1.2	ug/L	1362	Standard
	Cr	52	69563.0	0.9	**10.8654**	0.316	2.9	ug/L	8311	Standard
	Cr	53	10315.2	3.5	**13.9995**	0.753	5.4	ug/L	325	Standard
	Mn	55	82529.8	1.3	**20.4365**	0.516	2.5	ug/L	694	Standard
	Co	59	41233.4	0.7	**10.5642**	0.114	1.1	ug/L	199	Standard
	Ni	60	16863.0	1.8	**10.7945**	0.360	3.3	ug/L	212	Standard
	Cu	65	15747.5	0.8	**10.4518**	0.264	2.5	ug/L	149	Standard
	Zn	66	10585.7	1.3	**11.9508**	0.092	0.8	ug/L	206	Standard
>	**Ge**	72	315081.0	1.7				ug/L	319179	Standard
	As	75	8913.5	1.6	**10.5340**	0.332	3.2	ug/L	-51	Standard
	Se	82	823.2	1.8	**11.3785**	0.396	3.5	ug/L	19	Standard
	Se-1	77	670.7	4.3	**11.5226**	0.730	6.3	ug/L	89	Standard
>	**Ga**	71	23.3	53.9				mg/L	25	Standard
	Rb	85	843.4	7.4				ug/L	27	Standard
	Y	89	294851.9	1.8				ug/L	295132	Standard
>	**Rh**	103	80.0	28.6				ug/L	20	Standard
	Mo	98	49.8	17.4	**0.0190**	0.006	29.3	ug/L	11	Standard
	Ag	107	49561.3	0.7	**9.1113**	0.185	2.0	ug/L	64	Standard
	Cd	111	15426.1	1.7	**10.3801**	0.126	1.2	mg/L	7	Standard
	Cd	114	40824.3	3.2	**10.4454**	0.251	2.4	ug/L	10	Standard
>	**In**	115	426839.6	2.4				ug/L	418014	Standard
	Sn	118	400.0	13.2	**0.0066**	0.010	145.1	ug/L	385	Standard
	Sb	123	42678.2	0.5	**10.6049**	0.210	2.0	ug/L	54	Standard
	Ba	135	26130.8	0.4	**12.5880**	0.300	2.4	ug/L	44	Standard
	Ce	140	98.3	11.7				ug/L	33	Standard
>	**Tb**	159	858210.4	2.7				ug/L	854905	Standard
	Ho	165	13.3	57.3				ug/L	13	Standard
	Tl	203	69839.9	0.8	**10.0970**	0.182	1.8	ug/L	4	Standard
	Tl	205	48671.4	1.6	**10.1906**	0.332	3.3	ug/L	5	Standard
	Pb	206	45351.4	1.3	**10.3839**	0.069	0.7	ug/L	182	Standard
	Pb	207	39084.0	1.0	**9.9439**	0.139	1.4	ug/L	160	Standard
	Pb	208	145826.6	0.1	**10.1450**	0.194	1.9	ug/L	604	Standard
	U	238	52487.1	2.1	**10.7030**	0.415	3.9	ug/L	3	Standard
>	**Bi**	209	394861.4	1.8				ug/L	395375	Standard

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Na	23	5.0	100.0	**-19.6376**	29.561	150.5	mg/L	0	Standard
Mg	24	9041.0	3.4	**22.0917**	1.037	4.7	mg/L	47	Standard
K	39	21.7	53.3	**0.0385**	0.150	389.2	mg/L	22	Standard
Ca	43	71.7	24.5	**5.4747**	2.216	40.5	mg/L	28	Standard
Fe	54	82.1	10.8	**-0.0074**	0.020	269.4	mg/L	72	Standard
Fe	57	861.7	5.8	**0.7205**	0.702	97.4	mg/L	703	Standard
> **Sc-1**	45	30757.9	2.6				mg/L	30379	Standard
Cl	35	18245.6	1.7				ug/L	14530	Standard
Kr	83	4.7	32.7				ug/L	5	Standard
Br	81	5174.2	4.7				ug/L	497	Standard
P	31	11817.9	0.7				ug/L	10347	Standard
S	34	1671.8	7.4				ug/L	1535	Standard
Sr	88	221.7	12.4				ug/L	177	Standard
C	12	340.0	15.3				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	-0.6	86.6				mg/L	7	Standard
Ho-1	165	13.3	57.3				mg/L	13	Standard
Er	166	13.3	86.6				mg/L	3	Standard
I	127	198076.0	6.0				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.752	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.716	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.111
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.870
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1508107304S WG536161-05
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Method 6020 - Summary Report

Sample ID: L1508107304SD WG536161-06
Sample Date/Time: Monday, August 24, 2015 13:02:15
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49219.9	2.7				ug/L	43934	Standard
	Be	9	6399.7	1.3	**9.7561**	0.394	4.0	ug/L	0	Standard
	Al	27	3271573.0	0.4	**43.9370**	1.303	3.0	ug/L	410	Standard
	Sc	45	31435.9	1.9				ug/L	30379	Standard
	Ti	47	78.7	15.4	**0.2594**	0.058	22.3	ug/L	21	Standard
	V	51	47975.8	0.9	**10.6517**	0.151	1.4	ug/L	1362	Standard
	Cr	52	68942.5	0.6	**10.5768**	0.101	1.0	ug/L	8311	Standard
	Cr	53	10311.8	3.7	**13.7786**	0.604	4.4	ug/L	325	Standard
	Mn	55	82880.1	0.9	**20.2192**	0.089	0.4	ug/L	694	Standard
	Co	59	41081.0	0.4	**10.3708**	0.026	0.2	ug/L	199	Standard
	Ni	60	16568.7	0.8	**10.4436**	0.125	1.2	ug/L	212	Standard
	Cu	65	15588.7	1.3	**10.1911**	0.086	0.8	ug/L	149	Standard
	Zn	66	10402.6	1.5	**11.5563**	0.132	1.1	ug/L	206	Standard
>	**Ge**	72	319701.4	0.5				ug/L	319179	Standard
	As	75	8869.3	1.6	**10.3293**	0.207	2.0	ug/L	-51	Standard
	Se	82	828.6	3.0	**11.2833**	0.403	3.6	ug/L	19	Standard
	Se-1	77	710.0	5.5	**12.0983**	0.836	6.9	ug/L	89	Standard
>	**Ga**	71	38.3	27.2				mg/L	25	Standard
	Rb	85	793.4	6.2				ug/L	27	Standard
	Y	89	298313.1	0.3				ug/L	295132	Standard
>	**Rh**	103	71.7	8.1				ug/L	20	Standard
	Mo	98	56.9	16.1	**0.0239**	0.006	24.7	ug/L	11	Standard
	Ag	107	52331.6	0.3	**9.6423**	0.089	0.9	ug/L	64	Standard
	Cd	111	15261.6	1.2	**10.2939**	0.205	2.0	mg/L	7	Standard
	Cd	114	39498.3	1.6	**10.1313**	0.243	2.4	ug/L	10	Standard
>	**In**	115	425803.0	0.8				ug/L	418014	Standard
	Sn	118	426.7	5.8	**0.0124**	0.006	45.4	ug/L	385	Standard
	Sb	123	42779.0	0.3	**10.6529**	0.063	0.6	ug/L	54	Standard
	Ba	135	25939.5	1.4	**12.5229**	0.275	2.2	ug/L	44	Standard
	Ce	140	125.0	14.4				ug/L	33	Standard
>	**Tb**	159	861620.4	0.6				ug/L	854905	Standard
	Ho	165	13.3	43.3				ug/L	13	Standard
	Tl	203	69635.7	1.0	**9.8964**	0.192	1.9	ug/L	4	Standard
	Tl	205	48303.6	2.6	**9.9407**	0.337	3.4	ug/L	5	Standard
	Pb	206	45493.9	0.9	**10.2389**	0.052	0.5	ug/L	182	Standard
	Pb	207	38840.7	0.6	**9.7130**	0.134	1.4	ug/L	160	Standard
	Pb	208	144050.9	0.8	**9.8489**	0.136	1.4	ug/L	604	Standard
	U	238	52237.2	0.9	**10.4673**	0.102	1.0	ug/L	3	Standard
>	**Bi**	209	401656.8	1.0				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	9181.1	5.3	**21.9557**	1.547	7.0	mg/L	47	Standard
K	39	20.0	25.0	**0.0113**	0.063	554.4	mg/L	22	Standard
Ca	43	121.7	2.4	**10.8635**	0.095	0.9	mg/L	28	Standard
Fe	54	66.0	42.4	**-0.0467**	0.066	140.3	mg/L	72	Standard
Fe	57	815.0	13.9	**0.0880**	1.115	1266.5	mg/L	703	Standard
> **Sc-1**	45	31435.9	1.9				mg/L	30379	Standard
Cl	35	18375.1	1.2				ug/L	14530	Standard
Kr	83	2.7	78.1				ug/L	5	Standard
Br	81	7982.1	3.3				ug/L	497	Standard
P	31	12365.0	1.9				ug/L	10347	Standard
S	34	1563.4	5.8				ug/L	1535	Standard
Sr	88	233.3	10.1				ug/L	177	Standard
C	12	246.7	16.9				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	22.2	69.0				mg/L	7	Standard
Ho-1	165	13.3	43.3				mg/L	13	Standard
Er	166	23.3	24.7				mg/L	3	Standard
I	127	121103.8	1.6				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.032	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.164	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.863
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.589
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 25, 2015

Method 6020 - Summary Report

Sample ID: L1508077605
Sample Date/Time: Monday, August 24, 2015 13:05:27
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	47255.3	4.6				ug/L	43934	Standard
	Be	9	101.7	15.0	**0.1592**	0.022	14.0	ug/L	0	Standard
	Al	27	1796421.1	1.1	**25.1378**	0.892	3.5	ug/L	410	Standard
	Sc	45	30853.1	1.7				ug/L	30379	Standard
	Ti	47	280.0	35.7	**1.1913**	0.459	38.5	ug/L	21	Standard
	V	51	1884.9	10.7	**0.1292**	0.045	35.0	ug/L	1362	Standard
	Cr	52	10457.6	10.0	**0.4045**	0.184	45.4	ug/L	8311	Standard
	Cr	53	4930.8	4.2	**6.2976**	0.292	4.6	ug/L	325	Standard
	Mn	55	223200.2	1.4	**54.7119**	0.759	1.4	ug/L	694	Standard
	Co	59	16230.4	2.0	**4.0583**	0.068	1.7	ug/L	199	Standard
	Ni	60	2586.9	2.2	**1.4719**	0.041	2.8	ug/L	212	Standard
	Cu	65	652.0	8.0	**0.3219**	0.033	10.3	ug/L	149	Standard
	Zn	66	3487.4	3.6	**3.5120**	0.134	3.8	ug/L	206	Standard
>	**Ge**	72	320121.8	0.3				ug/L	319179	Standard
	As	75	95.0	57.2	**0.2132**	0.062	29.2	ug/L	-51	Standard
	Se	82	63.8	9.0	**0.6500**	0.079	12.2	ug/L	19	Standard
	Se-1	77	242.0	7.3	**2.9012**	0.334	11.5	ug/L	89	Standard
>	**Ga**	71	95.0	5.3				mg/L	25	Standard
	Rb	85	19914.7	2.1				ug/L	27	Standard
	Y	89	312879.4	1.2				ug/L	295132	Standard
>	**Rh**	103	23.3	49.5				ug/L	20	Standard
	Mo	98	25.1	20.6	**0.0023**	0.004	156.3	ug/L	11	Standard
	Ag	107	78.0	17.3	**-0.0007**	0.002	365.0	ug/L	64	Standard
	Cd	111	36.9	2.7	**0.0153**	0.000	3.2	mg/L	7	Standard
	Cd	114	115.6	18.5	**0.0225**	0.006	24.7	ug/L	10	Standard
>	**In**	115	427581.9	0.8				ug/L	418014	Standard
	Sn	118	413.3	8.9	**0.0093**	0.008	84.7	ug/L	385	Standard
	Sb	123	99.1	5.7	**0.0101**	0.002	15.7	ug/L	54	Standard
	Ba	135	124200.0	0.6	**59.7978**	0.204	0.3	ug/L	44	Standard
	Ce	140	27097.5	1.6				ug/L	33	Standard
>	**Tb**	159	850406.0	1.6				ug/L	854905	Standard
	Ho	165	1680.1	6.9				ug/L	13	Standard
	Tl	203	224.3	6.8	**0.0324**	0.002	7.7	ug/L	4	Standard
	Tl	205	141.7	8.9	**0.0310**	0.003	8.9	ug/L	5	Standard
	Pb	206	378.7	6.6	**0.0298**	0.006	21.6	ug/L	182	Standard
	Pb	207	310.3	5.2	**0.0261**	0.005	19.3	ug/L	160	Standard
	Pb	208	1259.7	4.6	**0.0366**	0.003	8.2	ug/L	604	Standard
	U	238	104.7	15.9	**0.0209**	0.003	15.0	ug/L	3	Standard
>	**Bi**	209	397282.3	1.2				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	8305.6	2.7	**20.2102**	0.411	2.0	mg/L	47	Standard
K	39	165.0	16.0	**2.0188**	0.389	19.3	mg/L	22	Standard
Ca	43	66.7	58.3	**4.7980**	4.281	89.2	mg/L	28	Standard
Fe	54	175.8	14.0	**0.2070**	0.059	28.3	mg/L	72	Standard
Fe	57	803.4	9.2	**0.1259**	0.830	658.8	mg/L	703	Standard
> **Sc-1**	45	30853.1	1.7				mg/L	30379	Standard
Cl	35	17406.0	1.8				ug/L	14530	Standard
Kr	83	4.7	44.6				ug/L	5	Standard
Br	81	2790.3	3.4				ug/L	497	Standard
P	31	11831.3	1.9				ug/L	10347	Standard
S	34	1646.8	5.5				ug/L	1535	Standard
Sr	88	175.0	7.6				ug/L	177	Standard
C	12	280.0	12.4				mg/L	153	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	3	Standard
Dy	164	2544.7	7.9				mg/L	7	Standard
Ho-1	165	1680.1	6.9				mg/L	13	Standard
Er	166	1646.8	6.7				mg/L	3	Standard
I	127	98898.4	0.8				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.561	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.295	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.289
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.482
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508077605PS WG536244-01
Sample Date/Time: Monday, August 24, 2015 13:08:38
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	47693.3	2.4				ug/L	43934	Standard
	Be	9	32882.3	1.5	**51.7350**	1.976	3.8	ug/L	0	Standard
	Al	27	1776782.9	1.2	**24.6188**	0.742	3.0	ug/L	410	Standard
	Sc	45	31816.7	0.4				ug/L	30379	Standard
	Ti	47	236.7	30.6	**0.9768**	0.323	33.1	ug/L	21	Standard
	V	51	235468.6	0.3	**52.7340**	0.366	0.7	ug/L	1362	Standard
	Cr	52	312649.4	1.7	**52.2260**	0.673	1.3	ug/L	8311	Standard
	Cr	53	43011.0	1.8	**58.3689**	0.607	1.0	ug/L	325	Standard
	Mn	55	441063.3	1.3	**106.9949**	0.880	0.8	ug/L	694	Standard
	Co	59	225676.7	0.9	**56.4541**	0.176	0.3	ug/L	199	Standard
	Ni	60	83902.4	1.3	**52.9166**	0.273	0.5	ug/L	212	Standard
	Cu	65	80331.1	0.9	**52.2593**	0.569	1.1	ug/L	149	Standard
	Zn	66	48581.1	1.0	**55.1845**	0.082	0.1	ug/L	206	Standard
>	**Ge**	72	324038.3	1.0				ug/L	319179	Standard
	As	75	45215.2	0.5	**51.5334**	0.261	0.5	ug/L	-51	Standard
	Se	82	3812.9	1.0	**52.0567**	1.047	2.0	ug/L	19	Standard
	Se-1	77	2941.6	0.8	**55.1343**	0.783	1.4	ug/L	89	Standard
>	**Ga**	71	110.0	25.3				mg/L	25	Standard
	Rb	85	19986.5	0.8				ug/L	27	Standard
	Y	89	310378.8	1.3				ug/L	295132	Standard
>	**Rh**	103	43.3	33.3				ug/L	20	Standard
	Mo	98	33.3	14.6	**0.0077**	0.003	40.8	ug/L	11	Standard
	Ag	107	275015.6	0.8	**50.2673**	0.650	1.3	ug/L	64	Standard
	Cd	111	77166.3	0.8	**51.6029**	0.708	1.4	mg/L	7	Standard
	Cd	114	202562.3	2.8	**51.5059**	1.752	3.4	ug/L	10	Standard
>	**In**	115	429773.2	0.6				ug/L	418014	Standard
	Sn	118	508.3	7.5	**0.0281**	0.008	28.6	ug/L	385	Standard
	Sb	123	209164.2	1.2	**51.6584**	0.331	0.6	ug/L	54	Standard
	Ba	135	229436.5	0.7	**109.9259**	1.273	1.2	ug/L	44	Standard
	Ce	140	28176.2	1.8				ug/L	33	Standard
>	**Tb**	159	866982.4	1.7				ug/L	854905	Standard
	Ho	165	1751.8	3.4				ug/L	13	Standard
	Tl	203	360634.1	0.5	**51.1958**	0.447	0.9	ug/L	4	Standard
	Tl	205	247476.7	1.5	**50.8656**	0.909	1.8	ug/L	5	Standard
	Pb	206	224651.6	1.0	**50.7325**	0.348	0.7	ug/L	182	Standard
	Pb	207	202889.1	1.0	**50.9045**	0.287	0.6	ug/L	160	Standard
	Pb	208	743279.9	0.8	**50.9758**	0.229	0.4	ug/L	604	Standard
	U	238	255626.6	1.3	**51.1700**	0.441	0.9	ug/L	3	Standard
>	**Bi**	209	402056.0	0.4				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	8514.1	0.7	**20.0899**	0.164	0.8	mg/L	47	Standard
K	39	150.0	23.3	**1.7458**	0.462	26.5	mg/L	22	Standard
Ca	43	73.3	15.7	**5.3503**	1.292	24.2	mg/L	28	Standard
Fe	54	183.0	13.1	**0.2107**	0.054	25.7	mg/L	72	Standard
Fe	57	916.7	7.1	**0.9452**	0.590	62.4	mg/L	703	Standard
> **Sc-1**	45	31816.7	0.4				mg/L	30379	Standard
Cl	35	17034.9	0.8				ug/L	14530	Standard
Kr	83	4.0	25.0				ug/L	5	Standard
Br	81	2853.6	3.8				ug/L	497	Standard
P	31	12021.4	3.0				ug/L	10347	Standard
S	34	1675.1	8.2				ug/L	1535	Standard
Sr	88	201.7	15.7				ug/L	177	Standard
C	12	333.3	37.7				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	99.0				mg/L	3	Standard
Dy	164	2529.1	4.3				mg/L	7	Standard
Ho-1	165	1751.8	3.4				mg/L	13	Standard
Er	166	1623.4	2.9				mg/L	3	Standard
I	127	101115.1	4.5				mg/L	1945	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		108.558	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.522	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	102.813
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.690
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1508077605SDL WG536244-02
Sample Date/Time: Monday, August 24, 2015 13:11:50
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48071.2	4.7				ug/L	43934	Standard
	Be	9	21.7	35.3	**0.0316**	0.011	33.6	ug/L	0	Standard
	Al	27	357966.1	2.6	**4.9131**	0.119	2.4	ug/L	410	Standard
	Sc	45	31521.1	0.6				ug/L	30379	Standard
	Ti	47	68.3	66.7	**0.2058**	0.206	100.1	ug/L	21	Standard
	V	51	1366.7	8.7	**0.0074**	0.030	401.8	ug/L	1362	Standard
	Cr	52	9103.1	1.3	**0.1493**	0.014	9.4	ug/L	8311	Standard
	Cr	53	1536.7	8.0	**1.5663**	0.189	12.0	ug/L	325	Standard
	Mn	55	47527.4	2.1	**11.3517**	0.352	3.1	ug/L	694	Standard
	Co	59	3549.4	0.7	**0.8331**	0.011	1.3	ug/L	199	Standard
	Ni	60	732.0	2.6	**0.2777**	0.017	6.0	ug/L	212	Standard
	Cu	65	270.3	5.2	**0.0678**	0.008	11.1	ug/L	149	Standard
	Zn	66	2019.8	1.3	**1.7790**	0.023	1.3	ug/L	206	Standard
>	**Ge**	72	324181.6	1.0				ug/L	319179	Standard
	As	75	-6.5	243.4	**0.0966**	0.018	18.6	ug/L	-51	Standard
	Se	82	31.3	2.4	**0.1939**	0.015	7.5	ug/L	19	Standard
	Se-1	77	120.3	11.3	**0.4872**	0.262	53.8	ug/L	89	Standard
>	**Ga**	71	35.0	28.6				mg/L	25	Standard
	Rb	85	3960.5	3.4				ug/L	27	Standard
	Y	89	301711.6	1.7				ug/L	295132	Standard
>	**Rh**	103	20.0	43.3				ug/L	20	Standard
	Mo	98	25.5	18.1	**0.0023**	0.003	128.7	ug/L	11	Standard
	Ag	107	79.7	15.6	**-0.0006**	0.002	385.5	ug/L	64	Standard
	Cd	111	16.3	30.4	**0.0013**	0.003	248.0	mg/L	7	Standard
	Cd	114	51.7	46.9	**0.0060**	0.006	101.2	ug/L	10	Standard
>	**In**	115	433886.0	0.6				ug/L	418014	Standard
	Sn	118	435.0	12.4	**0.0124**	0.010	83.2	ug/L	385	Standard
	Sb	123	750.1	12.6	**0.1690**	0.023	13.8	ug/L	54	Standard
	Ba	135	25135.8	0.9	**11.9063**	0.081	0.7	ug/L	44	Standard
	Ce	140	5461.0	1.6				ug/L	33	Standard
>	**Tb**	159	868714.4	1.4				ug/L	854905	Standard
	Ho	165	358.3	14.0				ug/L	13	Standard
	Tl	203	86.3	15.7	**0.0123**	0.002	15.6	ug/L	4	Standard
	Tl	205	38.3	45.8	**0.0093**	0.004	38.9	ug/L	5	Standard
	Pb	206	249.0	6.0	**-0.0010**	0.003	302.7	ug/L	182	Standard
	Pb	207	218.7	9.9	**0.0018**	0.006	325.6	ug/L	160	Standard
	Pb	208	843.7	6.7	**0.0066**	0.003	52.1	ug/L	604	Standard
	U	238	37.7	12.3	**0.0072**	0.001	12.3	ug/L	3	Standard
>	**Bi**	209	404800.8	0.8				ug/L	395375	Standard

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Na	23	1.7	173.2	**0.5931**	16.422	2768.7	mg/L	0	Standard
Mg	24	1643.4	6.8	**3.8218**	0.250	6.5	mg/L	47	Standard
K	39	46.7	52.9	**0.3721**	0.337	90.4	mg/L	22	Standard
Ca	43	46.7	43.3	**2.4514**	2.289	93.4	mg/L	28	Standard
Fe	54	79.4	6.6	**-0.0178**	0.013	70.1	mg/L	72	Standard
Fe	57	796.7	2.6	**-0.1106**	0.222	200.7	mg/L	703	Standard
> **Sc-1**	45	31521.1	0.6				mg/L	30379	Standard
Cl	35	16996.2	0.3				ug/L	14530	Standard
Kr	83	5.0	72.1				ug/L	5	Standard
Br	81	1070.0	9.8				ug/L	497	Standard
P	31	11164.1	3.8				ug/L	10347	Standard
S	34	1611.8	9.2				ug/L	1535	Standard
Sr	88	200.0	13.9				ug/L	177	Standard
C	12	213.3	10.8				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	523.9	20.3				mg/L	7	Standard
Ho-1	165	358.3	14.0				mg/L	13	Standard
Er	166	406.7	19.7				mg/L	3	Standard
I	127	24287.8	0.9				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.418	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.567	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.797
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.384
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 25, 2015

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, August 24, 2015 13:15:03
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	46352.5	1.7				ug/L	43934	Standard
	Be	9	30295.3	0.4	**49.0220**	0.795	1.6	ug/L	0	Standard
	Al	27	3446471.5	0.6	**49.1330**	0.819	1.7	ug/L	410	Standard
	Sc	45	30959.9	2.2				ug/L	30379	Standard
	Ti	47	22672.3	0.5	**104.0680**	1.859	1.8	ug/L	21	Standard
	V	51	230946.6	0.3	**51.8694**	0.700	1.4	ug/L	1362	Standard
	Cr	52	305501.2	0.3	**51.1577**	0.707	1.4	ug/L	8311	Standard
	Cr	53	37424.5	2.0	**50.8668**	0.637	1.3	ug/L	325	Standard
	Mn	55	212597.5	0.5	**51.6302**	1.051	2.0	ug/L	694	Standard
	Co	59	206041.8	0.5	**51.6958**	1.042	2.0	ug/L	199	Standard
	Ni	60	80377.0	0.9	**50.8436**	1.194	2.3	ug/L	212	Standard
	Cu	65	77390.8	0.3	**50.4944**	0.925	1.8	ug/L	149	Standard
	Zn	66	43943.6	0.4	**50.0162**	0.597	1.2	ug/L	206	Standard
>	Ge	72	323113.5	1.6				ug/L	319179	Standard
	As	75	43646.9	1.4	**49.8964**	0.924	1.9	ug/L	-51	Standard
	Se	82	3667.8	2.2	**50.2076**	0.984	2.0	ug/L	19	Standard
	Se-1	77	2730.9	1.7	**51.2123**	1.415	2.8	ug/L	89	Standard
>	Ga	71	50.0	10.0				mg/L	25	Standard
	Rb	85	595.0	8.5				ug/L	27	Standard
	Y	89	292117.6	0.9				ug/L	295132	Standard
>	Rh	103	25.0	34.6				ug/L	20	Standard
	Mo	98	146371.0	0.1	**98.3145**	0.863	0.9	ug/L	11	Standard
	Ag	107	270674.6	1.2	**49.4936**	0.205	0.4	ug/L	64	Standard
	Cd	111	75768.3	1.1	**50.6893**	0.393	0.8	mg/L	7	Standard
	Cd	114	198455.2	1.5	**50.4792**	0.743	1.5	ug/L	10	Standard
>	In	115	429570.3	0.9				ug/L	418014	Standard
	Sn	118	228015.2	2.4	**46.0953**	0.760	1.6	ug/L	385	Standard
	Sb	123	201641.1	1.6	**49.8230**	0.479	1.0	ug/L	54	Standard
	Ba	135	101921.3	0.2	**48.8411**	0.336	0.7	ug/L	44	Standard
	Ce	140	71.7	21.3				ug/L	33	Standard
>	Tb	159	861181.0	1.1				ug/L	854905	Standard
	Ho	165	16.7	17.3				ug/L	13	Standard
	Tl	203	351638.4	0.6	**50.0167**	0.482	1.0	ug/L	4	Standard
	Tl	205	242378.4	1.0	**49.9123**	0.182	0.4	ug/L	5	Standard
	Pb	206	219845.5	0.6	**49.7439**	0.128	0.3	ug/L	182	Standard
	Pb	207	198518.1	0.5	**49.9062**	0.421	0.8	ug/L	160	Standard
	Pb	208	717363.0	0.4	**49.2950**	0.477	1.0	ug/L	604	Standard
	U	238	248843.5	0.6	**49.9110**	0.205	0.4	ug/L	3	Standard
>	Bi	209	401272.3	0.6				ug/L	395375	Standard

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Na	23	1.7	173.2	**0.3553**	16.834	4737.8	mg/L	0	Standard
Mg	24	2101.8	8.2	**5.0189**	0.527	10.5	mg/L	47	Standard
K	39	378.3	5.3	**4.9374**	0.189	3.8	mg/L	22	Standard
Ca	43	78.3	9.8	**6.1537**	0.997	16.2	mg/L	28	Standard
Fe	54	2406.9	5.1	**5.2966**	0.159	3.0	mg/L	72	Standard
Fe	57	1433.4	5.6	**6.1895**	1.067	17.2	mg/L	703	Standard
> **Sc-1**	45	30959.9	2.2				mg/L	30379	Standard
Cl	35	15706.8	0.6				ug/L	14530	Standard
Kr	83	4.7	49.5				ug/L	5	Standard
Br	81	590.0	17.9				ug/L	497	Standard
P	31	11132.4	4.0				ug/L	10347	Standard
S	34	1841.8	7.8				ug/L	1535	Standard
Sr	88	213.3	21.8				ug/L	177	Standard
C	12	210.0	23.8				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	10.0	100.0				mg/L	7	Standard
Ho-1	165	16.7	17.3				mg/L	13	Standard
Er	166	0.0					mg/L	3	Standard
I	127	3525.4	10.7				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	98.044		
Al	27	98.266		
Sc	45			
Ti	47	104.068		
V	51	103.739		
Cr	52	102.315		
Cr	53			
Mn	55	103.260		
Co	59	103.392		
Ni	60	101.687		
Cu	65	100.989		
Zn	66	100.032		
> Ge	72		101.233	
As	75	99.793		
Se	82	100.415		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.315		
Ag	107	98.987		
Cd	111	101.379		
Cd	114			
> In	115			102.765
Sn	118	92.191		
Sb	123	99.646		
Ba	135	97.682		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.033		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.590		
U	238	99.822		
> Bi	209			101.492
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, August 24, 2015 13:18:15
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	46263.9	0.6				ug/L	43934	Standard
	Be	9	26.7	43.3	**0.0412**	0.018	44.6	ug/L	0	Standard
	Al	27	758.4	57.0	**-0.0006**	0.006	1099.8	ug/L	410	Standard
	Sc	45	30732.8	2.2				ug/L	30379	Standard
	Ti	47	22.0	31.5	**-0.0031**	0.032	1033.0	ug/L	21	Standard
	V	51	1180.8	10.2	**-0.0287**	0.026	91.1	ug/L	1362	Standard
	Cr	52	7244.7	2.0	**-0.1413**	0.021	14.5	ug/L	8311	Standard
	Cr	53	440.0	16.4	**0.0765**	0.093	121.9	ug/L	325	Standard
	Mn	55	798.4	16.1	**0.0024**	0.032	1373.0	ug/L	694	Standard
	Co	59	219.7	11.6	**0.0008**	0.006	760.7	ug/L	199	Standard
	Ni	60	196.3	4.3	**-0.0585**	0.006	10.1	ug/L	212	Standard
	Cu	65	158.7	13.3	**-0.0025**	0.014	572.1	ug/L	149	Standard
	Zn	66	226.3	9.5	**-0.2712**	0.027	10.1	ug/L	206	Standard
>	**Ge**	72	317019.2	1.2				ug/L	319179	Standard
	As	75	-53.8	4.4	**0.0413**	0.003	6.5	ug/L	-51	Standard
	Se	82	29.6	13.5	**0.1803**	0.056	31.1	ug/L	19	Standard
	Se-1	77	90.7	4.2	**-0.0471**	0.090	190.4	ug/L	89	Standard
>	**Ga**	71	21.7	58.1				mg/L	25	Standard
	Rb	85	38.3	49.4				ug/L	27	Standard
	Y	89	297442.3	2.4				ug/L	295132	Standard
>	**Rh**	103	15.0	33.3				ug/L	20	Standard
	Mo	98	76.3	9.5	**0.0369**	0.004	11.3	ug/L	11	Standard
	Ag	107	156.7	70.2	**0.0141**	0.021	148.6	ug/L	64	Standard
	Cd	111	41.1	144.8	**0.0187**	0.041	219.7	mg/L	7	Standard
	Cd	114	78.2	135.5	**0.0134**	0.028	207.8	ug/L	10	Standard
>	**In**	115	426551.6	2.0				ug/L	418014	Standard
	Sn	118	501.7	7.7	**0.0276**	0.010	34.8	ug/L	385	Standard
	Sb	123	808.2	1.8	**0.1867**	0.005	2.5	ug/L	54	Standard
	Ba	135	106.0	92.3	**0.0270**	0.049	180.0	ug/L	44	Standard
	Ce	140	23.3	44.6				ug/L	33	Standard
>	**Tb**	159	863758.4	1.5				ug/L	854905	Standard
	Ho	165	15.0	33.3				ug/L	13	Standard
	Tl	203	125.7	139.2	**0.0181**	0.025	138.6	ug/L	4	Standard
	Tl	205	28.3	113.5	**0.0074**	0.007	90.7	ug/L	5	Standard
	Pb	206	250.0	30.6	**0.0000**	0.01	132647.0	ug/L	182	Standard
	Pb	207	196.7	32.1	**-0.0031**	0.016	518.6	ug/L	160	Standard
	Pb	208	677.0	7.5	**-0.0041**	0.004	88.1	ug/L	604	Standard
	U	238	28.3	95.5	**0.0054**	0.005	101.1	ug/L	3	Standard
>	**Bi**	209	399720.5	0.7				ug/L	395375	Standard

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Na	23	1.7	173.2	**0.1857**	17.128	9223.5	mg/L	0	Standard
Mg	24	46.7	22.3	**0.0007**	0.025	3463.9	mg/L	47	Standard
K	39	8.3	91.7	**-0.1433**	0.107	74.5	mg/L	22	Standard
Ca	43	26.7	21.7	**0.2956**	0.719	243.4	mg/L	28	Standard
Fe	54	74.2	34.6	**-0.0261**	0.055	209.4	mg/L	72	Standard
Fe	57	776.7	2.3	**-0.1073**	0.324	301.6	mg/L	703	Standard
Sc-1	45	30732.8	2.2				mg/L	30379	Standard
Cl	35	15803.6	1.2				ug/L	14530	Standard
Kr	83	5.3	10.8				ug/L	5	Standard
Br	81	583.3	2.6				ug/L	497	Standard
P	31	11422.6	2.0				ug/L	10347	Standard
S	34	1821.8	1.7				ug/L	1535	Standard
Sr	88	196.7	16.9				ug/L	177	Standard
C	12	146.7	27.6				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	12.5	119.0				mg/L	7	Standard
Ho-1	165	15.0	33.3				mg/L	13	Standard
Er	166	16.7	91.7				mg/L	3	Standard
I	127	3505.4	2.5				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.323	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.042
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.099
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, August 24, 2015 14:11:28
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	45068.6	1.7				ug/L	43934	Standard
	Be	9	30547.4	1.2	**50.8374**	0.943	1.9	ug/L	0	Standard
	Al	27	3274084.1	0.3	**48.0050**	0.788	1.6	ug/L	410	Standard
	Sc	45	30537.4	1.9				ug/L	30379	Standard
	Ti	47	22380.2	0.9	**102.1284**	1.289	1.3	ug/L	21	Standard
	V	51	225652.1	0.8	**50.3797**	0.675	1.3	ug/L	1362	Standard
	Cr	52	301510.4	2.6	**50.1694**	1.266	2.5	ug/L	8311	Standard
	Cr	53	36717.8	0.9	**49.6102**	0.381	0.8	ug/L	325	Standard
	Mn	55	210562.1	2.1	**50.8301**	0.885	1.7	ug/L	694	Standard
	Co	59	201723.0	0.6	**50.3133**	0.099	0.2	ug/L	199	Standard
	Ni	60	79987.9	0.4	**50.2979**	0.327	0.7	ug/L	212	Standard
	Cu	65	78462.3	0.6	**50.8950**	0.301	0.6	ug/L	149	Standard
	Zn	66	44333.4	1.0	**50.1685**	0.285	0.6	ug/L	206	Standard
>	Ge	72	324954.1	0.5				ug/L	319179	Standard
	As	75	43613.5	0.7	**49.5719**	0.578	1.2	ug/L	-51	Standard
	Se	82	3650.7	1.0	**49.6850**	0.511	1.0	ug/L	19	Standard
	Se-1	77	2760.3	1.9	**51.4706**	1.265	2.5	ug/L	89	Standard
>	Ga	71	38.3	19.9				mg/L	25	Standard
	Rb	85	558.3	5.8				ug/L	27	Standard
	Y	89	291175.0	1.5				ug/L	295132	Standard
>	Rh	103	28.3	27.0				ug/L	20	Standard
	Mo	98	143691.3	0.5	**100.3238**	0.620	0.6	ug/L	11	Standard
	Ag	107	262569.7	0.7	**49.9121**	0.710	1.4	ug/L	64	Standard
	Cd	111	73174.2	1.1	**50.8880**	0.596	1.2	mg/L	7	Standard
	Cd	114	192197.3	1.5	**50.8152**	0.366	0.7	ug/L	10	Standard
>	In	115	413253.8	0.9				ug/L	418014	Standard
	Sn	118	224700.7	0.9	**47.2247**	0.190	0.4	ug/L	385	Standard
	Sb	123	194435.5	1.9	**49.9381**	0.600	1.2	ug/L	54	Standard
	Ba	135	100282.1	1.4	**49.9501**	0.329	0.7	ug/L	44	Standard
	Ce	140	65.0	40.0				ug/L	33	Standard
>	Tb	159	851166.1	1.8				ug/L	854905	Standard
	Ho	165	1.7	173.2				ug/L	13	Standard
	Tl	203	343433.0	0.3	**50.3257**	0.162	0.3	ug/L	4	Standard
	Tl	205	232319.5	1.7	**49.2901**	0.931	1.9	ug/L	5	Standard
	Pb	206	216279.4	0.3	**50.4182**	0.208	0.4	ug/L	182	Standard
	Pb	207	193698.0	1.0	**50.1657**	0.364	0.7	ug/L	160	Standard
	Pb	208	711943.1	1.6	**50.4024**	0.879	1.7	ug/L	604	Standard
	U	238	244171.8	0.9	**50.4565**	0.641	1.3	ug/L	3	Standard
>	Bi	209	389491.7	0.4				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	2165.2	2.2	**5.2395**	0.086	1.6	mg/L	47	Standard
K	39	355.0	1.4	**4.6881**	0.154	3.3	mg/L	22	Standard
Ca	43	65.0	7.7	**4.7220**	0.436	9.2	mg/L	28	Standard
Fe	54	2233.7	3.6	**4.9743**	0.166	3.3	mg/L	72	Standard
Fe	57	1310.1	8.1	**5.1724**	1.261	24.4	mg/L	703	Standard
> **Sc-1**	45	30537.4	1.9				mg/L	30379	Standard
Cl	35	14226.7	1.0				ug/L	14530	Standard
Kr	83	6.7	22.9				ug/L	5	Standard
Br	81	563.3	5.7				ug/L	497	Standard
P	31	11841.3	1.6				ug/L	10347	Standard
S	34	1818.4	8.7				ug/L	1535	Standard
Sr	88	175.0	18.7				ug/L	177	Standard
C	12	183.3	55.7				mg/L	153	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	9.7	181.8				mg/L	7	Standard
Ho-1	165	1.7	173.2				mg/L	13	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	1190.0	8.5				mg/L	1945	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	101.675		
	Al	27	96.010		
	Sc	45			
	Ti	47	102.128		
	V	51	100.759		
	Cr	52	100.339		
	Cr	53			
	Mn	55	101.660		
	Co	59	100.627		
	Ni	60	100.596		
	Cu	65	101.790		
	Zn	66	100.337		
>	Ge	72		101.809	
	As	75	99.144		
	Se	82	99.370		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	100.324		
Ag	107	99.824		
Cd	111	101.776		
Cd	114			
> In	115			98.861
Sn	118	94.449		
Sb	123	99.876		
Ba	135	99.900		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.651		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.805		
U	238	100.913		
> Bi	209			98.512
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, August 24, 2015 14:14:48
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	44221.1	0.8				ug/L	43934	Standard
	Be	9	6.7	43.3	**0.0093**	0.005	52.7	ug/L	0	Standard
	Al	27	428.3	11.5	**-0.0050**	0.001	15.0	ug/L	410	Standard
	Sc	45	30079.8	2.3				ug/L	30379	Standard
	Ti	47	15.7	22.4	**-0.0333**	0.016	49.2	ug/L	21	Standard
	V	51	992.1	5.7	**-0.0738**	0.016	21.3	ug/L	1362	Standard
	Cr	52	6948.9	1.1	**-0.2030**	0.017	8.4	ug/L	8311	Standard
	Cr	53	368.3	6.4	**-0.0275**	0.026	94.5	ug/L	325	Standard
	Mn	55	712.7	2.7	**-0.0204**	0.003	14.1	ug/L	694	Standard
	Co	59	190.0	10.5	**-0.0071**	0.006	78.2	ug/L	199	Standard
	Ni	60	162.3	7.7	**-0.0813**	0.009	11.4	ug/L	212	Standard
	Cu	65	141.7	6.9	**-0.0147**	0.006	43.1	ug/L	149	Standard
	Zn	66	238.0	8.7	**-0.2599**	0.025	9.8	ug/L	206	Standard
>	**Ge**	72	319625.2	1.3				ug/L	319179	Standard
	As	75	-37.9	47.9	**0.0604**	0.020	33.7	ug/L	-51	Standard
	Se	82	25.3	36.0	**0.1166**	0.124	106.3	ug/L	19	Standard
	Se-1	77	90.7	15.8	**-0.0645**	0.257	398.3	ug/L	89	Standard
>	**Ga**	71	21.7	13.3				mg/L	25	Standard
	Rb	85	40.0	37.5				ug/L	27	Standard
	Y	89	294777.1	1.8				ug/L	295132	Standard
>	**Rh**	103	6.7	43.3				ug/L	20	Standard
	Mo	98	46.6	29.1	**0.0170**	0.009	54.8	ug/L	11	Standard
	Ag	107	71.0	12.5	**-0.0019**	0.002	89.4	ug/L	64	Standard
	Cd	111	12.2	77.9	**-0.0012**	0.006	516.1	mg/L	7	Standard
	Cd	114	24.3	112.3	**-0.0008**	0.007	935.4	ug/L	10	Standard
>	**In**	115	425749.5	0.6				ug/L	418014	Standard
	Sn	118	521.7	2.0	**0.0318**	0.003	8.3	ug/L	385	Standard
	Sb	123	688.7	3.2	**0.1572**	0.006	3.9	ug/L	54	Standard
	Ba	135	48.7	25.7	**-0.0012**	0.006	512.9	ug/L	44	Standard
	Ce	140	18.3	41.7				ug/L	33	Standard
>	**Tb**	159	847054.6	0.8				ug/L	854905	Standard
	Ho	165	5.0	0.0				ug/L	13	Standard
	Tl	203	20.7	74.1	**0.0031**	0.002	71.1	ug/L	4	Standard
	Tl	205	11.7	65.5	**0.0039**	0.002	40.3	ug/L	5	Standard
	Pb	206	197.0	4.6	**-0.0120**	0.002	17.0	ug/L	182	Standard
	Pb	207	160.3	8.6	**-0.0122**	0.003	28.4	ug/L	160	Standard
	Pb	208	629.3	5.1	**-0.0073**	0.002	29.9	ug/L	604	Standard
	U	238	8.7	17.6	**0.0015**	0.000	20.9	ug/L	3	Standard
>	**Bi**	209	398439.2	0.2				ug/L	395375	Standard

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Na	23	1.7	173.2	**0.2632**	16.994	6455.7	mg/L	0	Standard
Mg	24	36.7	43.8	**-0.0218**	0.040	183.1	mg/L	47	Standard
K	39	15.0	100.0	**-0.0431**	0.218	504.7	mg/L	22	Standard
Ca	43	33.3	43.3	**1.1147**	1.609	144.3	mg/L	28	Standard
Fe	54	67.7	17.3	**-0.0373**	0.024	65.1	mg/L	72	Standard
Fe	57	726.7	5.6	**-0.4407**	0.473	107.3	mg/L	703	Standard
Sc-1	45	30079.8	2.3				mg/L	30379	Standard
Cl	35	14312.1	1.1				ug/L	14530	Standard
Kr	83	4.7	81.1				ug/L	5	Standard
Br	81	553.3	16.8				ug/L	497	Standard
P	31	11214.1	0.4				ug/L	10347	Standard
S	34	1741.8	4.0				ug/L	1535	Standard
Sr	88	198.3	19.6				ug/L	177	Standard
C	12	93.3	27.0				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	16.0	125.3				mg/L	7	Standard
Ho-1	165	5.0	0.0				mg/L	13	Standard
Er	166	13.3	114.6				mg/L	3	Standard
I	127	1915.1	5.0				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.140	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.851
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.775
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508107302
Sample Date/Time: Monday, August 24, 2015 14:28:51
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	45596.9	2.9				ug/L	43934	Standard
	Be	9	1.7	173.2	**0.0008**	0.005	599.1	ug/L	0	Standard
	Al	27	3251248.9	1.4	**47.1462**	1.918	4.1	ug/L	410	Standard
	Sc	45	30327.0	3.4				ug/L	30379	Standard
	Ti	47	83.3	14.0	**0.2775**	0.054	19.3	ug/L	21	Standard
	V	51	1266.5	12.9	**-0.0136**	0.039	286.2	ug/L	1362	Standard
	Cr	52	8386.7	5.4	**0.0346**	0.090	260.4	ug/L	8311	Standard
	Cr	53	1860.1	13.5	**2.0232**	0.365	18.0	ug/L	325	Standard
	Mn	55	184440.3	1.4	**44.8482**	0.612	1.4	ug/L	694	Standard
	Co	59	1650.8	1.9	**0.3600**	0.005	1.4	ug/L	199	Standard
	Ni	60	1031.0	1.4	**0.4703**	0.015	3.1	ug/L	212	Standard
	Cu	65	354.3	2.3	**0.1238**	0.005	4.4	ug/L	149	Standard
	Zn	66	1740.4	4.2	**1.4697**	0.097	6.6	ug/L	206	Standard
>	**Ge**	72	322463.1	0.8				ug/L	319179	Standard
	As	75	371.8	12.4	**0.5289**	0.054	10.3	ug/L	-51	Standard
	Se	82	129.1	0.9	**1.5440**	0.024	1.5	ug/L	19	Standard
	Se-1	77	152.0	4.6	**1.1162**	0.145	13.0	ug/L	89	Standard
>	**Ga**	71	30.0	16.7				mg/L	25	Standard
	Rb	85	2335.2	3.4				ug/L	27	Standard
	Y	89	290874.4	1.8				ug/L	295132	Standard
>	**Rh**	103	73.3	17.2				ug/L	20	Standard
	Mo	98	184.0	11.5	**0.1112**	0.016	14.7	ug/L	11	Standard
	Ag	107	67.0	7.8	**-0.0025**	0.001	46.7	ug/L	64	Standard
	Cd	111	9.9	32.7	**-0.0028**	0.002	78.0	mg/L	7	Standard
	Cd	114	21.6	102.5	**-0.0014**	0.006	400.4	ug/L	10	Standard
>	**In**	115	422488.5	1.5				ug/L	418014	Standard
	Sn	118	500.0	18.2	**0.0281**	0.018	63.6	ug/L	385	Standard
	Sb	123	232.9	20.6	**0.0440**	0.012	27.0	ug/L	54	Standard
	Ba	135	8956.0	1.9	**4.3412**	0.068	1.6	ug/L	44	Standard
	Ce	140	761.7	7.5				ug/L	33	Standard
>	**Tb**	159	847321.5	2.4				ug/L	854905	Standard
	Ho	165	13.3	21.7				ug/L	13	Standard
	Tl	203	29.3	10.4	**0.0044**	0.000	11.1	ug/L	4	Standard
	Tl	205	13.3	86.6	**0.0043**	0.002	56.5	ug/L	5	Standard
	Pb	206	267.3	4.0	**0.0050**	0.003	53.9	ug/L	182	Standard
	Pb	207	232.3	7.8	**0.0070**	0.006	79.1	ug/L	160	Standard
	Pb	208	843.3	0.4	**0.0085**	0.001	13.3	ug/L	604	Standard
	U	238	216.7	8.5	**0.0441**	0.003	7.2	ug/L	3	Standard
>	**Bi**	209	392434.1	1.7				ug/L	395375	Standard

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Na	23	1.7	173.2	**-0.1180**	17.654	14957.6	mg/L	0	Standard
Mg	24	8359.0	2.7	**20.7232**	1.227	5.9	mg/L	47	Standard
K	39	30.0	50.0	**0.1659**	0.218	131.4	mg/L	22	Standard
Ca	43	101.7	10.2	**9.0716**	1.544	17.0	mg/L	28	Standard
Fe	54	290.7	15.0	**0.4832**	0.115	23.8	mg/L	72	Standard
Fe	57	755.0	9.2	**-0.2221**	0.687	309.6	mg/L	703	Standard
> **Sc-1**	45	30327.0	3.4				mg/L	30379	Standard
Cl	35	15901.7	2.6				ug/L	14530	Standard
Kr	83	5.0	20.0				ug/L	5	Standard
Br	81	7885.4	2.4				ug/L	497	Standard
P	31	11511.0	1.7				ug/L	10347	Standard
S	34	1680.1	2.6				ug/L	1535	Standard
Sr	88	235.0	19.5				ug/L	177	Standard
C	12	230.0	4.3				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	3	Standard
Dy	164	26.3	56.4				mg/L	7	Standard
Ho-1	165	13.3	21.7				mg/L	13	Standard
Er	166	6.7	173.2				mg/L	3	Standard
I	127	127042.1	1.3				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.786	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.029	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.070	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.256	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508090404
Sample Date/Time: Monday, August 24, 2015 14:32:03
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	46777.2	4.8				ug/L	43934	Standard
	Be	9	15.0	66.7	**0.0218**	0.016	71.8	ug/L	0	Standard
	Al	27	4537065.2	1.3	**64.1621**	2.420	3.8	ug/L	410	Standard
	Sc	45	30674.4	3.8				ug/L	30379	Standard
	Ti	47	122.0	7.5	**0.4646**	0.037	8.0	ug/L	21	Standard
	V	51	1924.2	0.1	**0.1424**	0.005	3.3	ug/L	1362	Standard
	Cr	52	11775.6	2.4	**0.6525**	0.058	8.8	ug/L	8311	Standard
	Cr	53	6044.5	9.4	**7.9212**	0.821	10.4	ug/L	325	Standard
	Mn	55	29080.2	2.4	**7.0254**	0.220	3.1	ug/L	694	Standard
	Co	59	395.3	3.0	**0.0458**	0.003	5.8	ug/L	199	Standard
	Ni	60	1535.1	2.3	**0.8070**	0.013	1.6	ug/L	212	Standard
	Cu	65	509.7	7.6	**0.2311**	0.025	10.8	ug/L	149	Standard
	Zn	66	1931.8	2.8	**1.7275**	0.085	4.9	ug/L	206	Standard
>	Ge	72	317168.8	1.0				ug/L	319179	Standard
	As	75	1223.7	7.5	**1.5257**	0.102	6.7	ug/L	-51	Standard
	Se	82	514.8	4.7	**6.9759**	0.299	4.3	ug/L	19	Standard
	Se-1	77	303.7	3.8	**4.1662**	0.214	5.1	ug/L	89	Standard
>	Ga	71	25.0	34.6				mg/L	25	Standard
	Rb	85	648.3	7.7				ug/L	27	Standard
	Y	89	292466.2	1.7				ug/L	295132	Standard
>	Rh	103	73.3	3.9				ug/L	20	Standard
	Mo	98	67.0	14.3	**0.0319**	0.006	20.3	ug/L	11	Standard
	Ag	107	70.7	20.6	**-0.0016**	0.003	166.8	ug/L	64	Standard
	Cd	111	52.5	1.1	**0.0268**	0.001	2.0	mg/L	7	Standard
	Cd	114	110.0	22.6	**0.0220**	0.007	30.0	ug/L	10	Standard
>	In	115	415376.3	0.6				ug/L	418014	Standard
	Sn	118	433.3	11.6	**0.0160**	0.011	66.0	ug/L	385	Standard
	Sb	123	113.7	7.5	**0.0145**	0.002	13.9	ug/L	54	Standard
	Ba	135	20829.0	1.3	**10.3024**	0.102	1.0	ug/L	44	Standard
	Ce	140	171.7	17.1				ug/L	33	Standard
>	Tb	159	840576.3	2.0				ug/L	854905	Standard
	Ho	165	15.0	33.3				ug/L	13	Standard
	Tl	203	29.7	17.0	**0.0045**	0.001	17.2	ug/L	4	Standard
	Tl	205	21.7	13.3	**0.0061**	0.001	10.7	ug/L	5	Standard
	Pb	206	293.7	10.6	**0.0121**	0.007	57.6	ug/L	182	Standard
	Pb	207	257.3	3.7	**0.0143**	0.002	13.4	ug/L	160	Standard
	Pb	208	948.3	0.7	**0.0168**	0.001	5.7	ug/L	604	Standard
	U	238	2977.3	2.6	**0.6191**	0.012	2.0	ug/L	3	Standard
>	Bi	209	386861.8	0.9				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	17722.0	3.5	**43.5718**	2.856	6.6	mg/L	47	Standard
K	39	33.3	69.3	**0.1961**	0.296	151.1	mg/L	22	Standard
Ca	43	198.3	10.2	**20.0766**	3.029	15.1	mg/L	28	Standard
Fe	54	79.1	0.4	**-0.0135**	0.007	51.9	mg/L	72	Standard
Fe	57	873.4	7.6	**0.8497**	0.679	79.9	mg/L	703	Standard
Sc-1	45	30674.4	3.8				mg/L	30379	Standard
Cl	35	15702.8	1.2				ug/L	14530	Standard
Kr	83	5.3	78.1				ug/L	5	Standard
Br	81	36647.6	4.0				ug/L	497	Standard
P	31	12780.4	3.7				ug/L	10347	Standard
S	34	1555.1	4.7				ug/L	1535	Standard
Sr	88	203.3	15.8				ug/L	177	Standard
C	12	500.0					mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	9.4	7.8				mg/L	7	Standard
Ho-1	165	15.0	33.3				mg/L	13	Standard
Er	166	13.3	114.6				mg/L	3	Standard
I	127	38057.8	4.2				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		106.472	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.370	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.369
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.847
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508094201
Sample Date/Time: Monday, August 24, 2015 14:35:14
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	47009.6	3.9				ug/L	43934	Standard
	Be	9	8.3	69.3	**0.0111**	0.009	77.1	ug/L	0	Standard
	Al	27	7953626.2	1.4	**111.8742**	2.989	2.7	ug/L	410	Standard
	Sc	45	30661.0	0.5				ug/L	30379	Standard
	Ti	47	27.0	17.0	**0.0193**	0.021	109.0	ug/L	21	Standard
	V	51	1863.0	22.5	**0.1252**	0.098	78.1	ug/L	1362	Standard
	Cr	52	11130.1	8.2	**0.5240**	0.159	30.3	ug/L	8311	Standard
	Cr	53	2348.5	10.1	**2.7228**	0.341	12.5	ug/L	325	Standard
	Mn	55	502964.0	1.5	**123.7219**	2.467	2.0	ug/L	694	Standard
	Co	59	2412.9	2.7	**0.5570**	0.012	2.2	ug/L	199	Standard
	Ni	60	13323.2	1.5	**8.3626**	0.136	1.6	ug/L	212	Standard
	Cu	65	408.3	5.3	**0.1616**	0.017	10.2	ug/L	149	Standard
	Zn	66	7577.9	1.1	**8.2744**	0.123	1.5	ug/L	206	Standard
>	**Ge**	72	319661.3	0.8				ug/L	319179	Standard
	As	75	22.3	147.9	**0.1298**	0.038	29.5	ug/L	-51	Standard
	Se	82	133.2	4.6	**1.6177**	0.098	6.1	ug/L	19	Standard
	Se-1	77	238.0	2.9	**2.8301**	0.128	4.5	ug/L	89	Standard
>	**Ga**	71	36.7	7.9				mg/L	25	Standard
	Rb	85	1103.4	6.9				ug/L	27	Standard
	Y	89	294290.6	0.2				ug/L	295132	Standard
>	**Rh**	103	30.0	16.7				ug/L	20	Standard
	Mo	98	541.7	2.9	**0.3542**	0.011	3.2	ug/L	11	Standard
	Ag	107	64.0	6.8	**-0.0031**	0.001	19.3	ug/L	64	Standard
	Cd	111	637.0	4.1	**0.4225**	0.017	4.0	mg/L	7	Standard
	Cd	114	1716.3	9.1	**0.4360**	0.047	10.7	ug/L	10	Standard
>	**In**	115	423867.2	1.7				ug/L	418014	Standard
	Sn	118	391.7	21.1	**0.0055**	0.016	292.9	ug/L	385	Standard
	Sb	123	108.4	8.2	**0.0126**	0.002	19.4	ug/L	54	Standard
	Ba	135	646.0	6.0	**0.2892**	0.020	6.8	ug/L	44	Standard
	Ce	140	43.3	24.0				ug/L	33	Standard
>	**Tb**	159	854421.2	1.2				ug/L	854905	Standard
	Ho	165	11.7	49.5				ug/L	13	Standard
	Tl	203	268.7	8.7	**0.0389**	0.003	8.6	ug/L	4	Standard
	Tl	205	186.7	10.8	**0.0406**	0.004	11.1	ug/L	5	Standard
	Pb	206	234.0	5.9	**-0.0031**	0.003	100.9	ug/L	182	Standard
	Pb	207	195.3	9.0	**-0.0029**	0.004	148.4	ug/L	160	Standard
	Pb	208	720.0	7.0	**-0.0006**	0.003	577.7	ug/L	604	Standard
	U	238	4804.8	1.0	**0.9781**	0.006	0.6	ug/L	3	Standard
>	**Bi**	209	395264.8	0.7				ug/L	395375	Standard

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Na	23	1.7	173.2	**0.2020**	17.100	8467.2	mg/L	0	Standard
Mg	24	600.0	2.2	**1.3637**	0.036	2.6	mg/L	47	Standard
K	39	13.3	21.7	**-0.0735**	0.040	55.0	mg/L	22	Standard
Ca	43	75.0	35.3	**5.8428**	3.018	51.6	mg/L	28	Standard
Fe	54	77.5	23.0	**-0.0174**	0.040	232.2	mg/L	72	Standard
Fe	57	781.7	11.3	**-0.0457**	0.852	1861.8	mg/L	703	Standard
> **Sc-1**	45	30661.0	0.5				mg/L	30379	Standard
Cl	35	19267.0	7.8				ug/L	14530	Standard
Kr	83	4.3	13.3				ug/L	5	Standard
Br	81	3273.7	4.0				ug/L	497	Standard
P	31	10980.6	3.6				ug/L	10347	Standard
S	34	1551.7	1.3				ug/L	1535	Standard
Sr	88	198.3	14.3				ug/L	177	Standard
C	12	140.0	7.1				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	5.5	101.6				mg/L	7	Standard
Ho-1	165	11.7	49.5				mg/L	13	Standard
Er	166	23.3	24.7				mg/L	3	Standard
I	127	64132.2	3.4				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.001	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.151	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	101.400
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.972
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Approved: August 25, 2015

Method 6020 - Summary Report

Sample ID: L1508099202
Sample Date/Time: Monday, August 24, 2015 14:38:25
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	47641.5	3.4				ug/L	43934	Standard
	Be	9	5.0	100.0	**0.0061**	0.008	135.1	ug/L	0	Standard
	Al	27	5559514.1	1.3	**77.1489**	2.051	2.7	ug/L	410	Standard
	Sc	45	30524.1	2.7				ug/L	30379	Standard
	Ti	47	56.3	16.1	**0.1553**	0.043	27.6	ug/L	21	Standard
	V	51	1744.8	8.4	**0.0973**	0.028	28.5	ug/L	1362	Standard
	Cr	52	13724.9	2.7	**0.9726**	0.022	2.2	ug/L	8311	Standard
	Cr	53	5697.7	3.9	**7.3676**	0.385	5.2	ug/L	325	Standard
	Mn	55	2485.5	12.5	**0.4150**	0.065	15.7	ug/L	694	Standard
	Co	59	486.7	3.0	**0.0681**	0.006	8.7	ug/L	199	Standard
	Ni	60	1377.4	6.8	**0.6969**	0.048	7.0	ug/L	212	Standard
	Cu	65	605.3	2.2	**0.2915**	0.014	4.9	ug/L	149	Standard
	Zn	66	1660.1	1.6	**1.3919**	0.040	2.9	ug/L	206	Standard
>	**Ge**	72	319974.1	1.9				ug/L	319179	Standard
	As	75	323.9	9.8	**0.4772**	0.040	8.3	ug/L	-51	Standard
	Se	82	152.1	2.8	**1.8779**	0.087	4.6	ug/L	19	Standard
	Se-1	77	304.0	3.1	**4.1196**	0.109	2.6	ug/L	89	Standard
>	**Ga**	71	26.7	39.0				mg/L	25	Standard
	Rb	85	1243.4	12.7				ug/L	27	Standard
	Y	89	291635.1	3.2				ug/L	295132	Standard
>	**Rh**	103	105.0	12.6				ug/L	20	Standard
	Mo	98	60.9	4.7	**0.0268**	0.002	7.7	ug/L	11	Standard
	Ag	107	70.3	9.5	**-0.0019**	0.001	56.7	ug/L	64	Standard
	Cd	111	21.9	21.0	**0.0054**	0.003	61.1	mg/L	7	Standard
	Cd	114	43.1	46.4	**0.0041**	0.005	128.2	ug/L	10	Standard
>	**In**	115	423855.7	1.1				ug/L	418014	Standard
	Sn	118	383.3	2.7	**0.0039**	0.003	78.0	ug/L	385	Standard
	Sb	123	102.6	14.1	**0.0112**	0.004	32.3	ug/L	54	Standard
	Ba	135	5377.3	1.0	**2.5884**	0.048	1.8	ug/L	44	Standard
	Ce	140	90.0	38.9				ug/L	33	Standard
>	**Tb**	159	866647.3	1.7				ug/L	854905	Standard
	Ho	165	21.7	48.0				ug/L	13	Standard
	Tl	203	35.0	12.5	**0.0053**	0.001	11.1	ug/L	4	Standard
	Tl	205	21.7	53.3	**0.0062**	0.003	41.4	ug/L	5	Standard
	Pb	206	253.3	12.2	**0.0027**	0.008	296.3	ug/L	182	Standard
	Pb	207	224.7	6.9	**0.0058**	0.003	55.9	ug/L	160	Standard
	Pb	208	861.0	1.6	**0.0106**	0.002	17.8	ug/L	604	Standard
	U	238	4748.1	1.4	**0.9877**	0.008	0.9	ug/L	3	Standard
>	**Bi**	209	386788.8	1.5				ug/L	395375	Standard

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Na	23	3.3	173.2	**-10.2485**	35.201	343.5	mg/L	0	Standard
Mg	24	16408.9	1.1	**40.4849**	0.671	1.7	mg/L	47	Standard
K	39	36.7	51.6	**0.2567**	0.274	106.6	mg/L	22	Standard
Ca	43	215.0	8.1	**22.0503**	1.975	9.0	mg/L	28	Standard
Fe	54	80.9	12.8	**-0.0091**	0.019	210.9	mg/L	72	Standard
Fe	57	836.7	8.0	**0.5437**	0.886	162.9	mg/L	703	Standard
> **Sc-1**	45	30524.1	2.7				mg/L	30379	Standard
Cl	35	19268.2	0.8				ug/L	14530	Standard
Kr	83	6.0	60.1				ug/L	5	Standard
Br	81	10380.2	2.1				ug/L	497	Standard
P	31	11934.7	1.9				ug/L	10347	Standard
S	34	1551.7	5.9				ug/L	1535	Standard
Sr	88	255.0	10.9				ug/L	177	Standard
C	12	143.3	34.4				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	29.0	105.8				mg/L	7	Standard
Ho-1	165	21.7	48.0				mg/L	13	Standard
Er	166	20.0	86.6				mg/L	3	Standard
I	127	74007.3	5.0				mg/L	1945	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		108.440	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.249	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.397
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.828
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 25, 2015

Method 6020 - Summary Report

Sample ID: L1508099204
Sample Date/Time: Monday, August 24, 2015 14:41:37
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52505.9	2.4				ug/L	43934	Standard
	Be	9	15.0	33.3	**0.0195**	0.007	38.3	ug/L	0	Standard
	Al	27	2289647.5	2.1	**28.8080**	0.225	0.8	ug/L	410	Standard
	Sc	45	31509.4	3.4				ug/L	30379	Standard
	Ti	47	272.7	3.8	**1.1622**	0.049	4.2	ug/L	21	Standard
	V	51	1850.5	11.0	**0.1226**	0.045	36.8	ug/L	1362	Standard
	Cr	52	16105.9	3.1	**1.3936**	0.072	5.2	ug/L	8311	Standard
	Cr	53	2290.2	7.6	**2.6454**	0.224	8.5	ug/L	325	Standard
	Mn	55	29891.8	3.2	**7.1795**	0.202	2.8	ug/L	694	Standard
	Co	59	491.0	0.8	**0.0695**	0.001	1.7	ug/L	199	Standard
	Ni	60	1171.0	3.2	**0.5671**	0.028	4.9	ug/L	212	Standard
	Cu	65	600.3	2.0	**0.2891**	0.010	3.5	ug/L	149	Standard
	Zn	66	6986.3	0.6	**7.5996**	0.071	0.9	ug/L	206	Standard
>	**Ge**	72	319140.5	0.6				ug/L	319179	Standard
	As	75	1852.0	1.0	**2.2427**	0.021	0.9	ug/L	-51	Standard
	Se	82	100.8	15.4	**1.1687**	0.224	19.1	ug/L	19	Standard
	Se-1	77	145.3	2.6	**1.0159**	0.091	8.9	ug/L	89	Standard
>	**Ga**	71	55.0	59.6				mg/L	25	Standard
	Rb	85	68886.3	2.5				ug/L	27	Standard
	Y	89	297118.3	0.6				ug/L	295132	Standard
>	**Rh**	103	221.7	23.0				ug/L	20	Standard
	Mo	98	1622.2	1.7	**1.0772**	0.046	4.3	ug/L	11	Standard
	Ag	107	79.3	9.5	**-0.0005**	0.001	266.8	ug/L	64	Standard
	Cd	111	38.4	18.8	**0.0161**	0.004	25.9	mg/L	7	Standard
	Cd	114	115.5	27.7	**0.0226**	0.009	39.6	ug/L	10	Standard
>	**In**	115	429026.0	2.8				ug/L	418014	Standard
	Sn	118	480.0	4.8	**0.0227**	0.007	32.6	ug/L	385	Standard
	Sb	123	277.9	2.5	**0.0543**	0.003	5.1	ug/L	54	Standard
	Ba	135	76947.2	0.6	**36.9361**	1.270	3.4	ug/L	44	Standard
	Ce	140	1606.8	8.3				ug/L	33	Standard
>	**Tb**	159	857181.5	1.4				ug/L	854905	Standard
	Ho	165	31.7	24.1				ug/L	13	Standard
	Tl	203	48.3	40.5	**0.0071**	0.003	40.4	ug/L	4	Standard
	Tl	205	30.0	33.3	**0.0077**	0.002	27.0	ug/L	5	Standard
	Pb	206	386.7	4.2	**0.0313**	0.004	12.5	ug/L	182	Standard
	Pb	207	340.3	4.5	**0.0334**	0.003	9.3	ug/L	160	Standard
	Pb	208	1257.0	1.4	**0.0362**	0.002	5.6	ug/L	604	Standard
	U	238	2608.9	3.0	**0.5266**	0.021	4.0	ug/L	3	Standard
>	**Bi**	209	398660.0	1.1				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	17710.3	2.2	**42.3436**	1.255	3.0	mg/L	47	Standard
K	39	248.3	22.2	**3.1082**	0.819	26.4	mg/L	22	Standard
Ca	43	101.7	19.9	**8.6468**	2.550	29.5	mg/L	28	Standard
Fe	54	112.0	13.9	**0.0562**	0.043	75.9	mg/L	72	Standard
Fe	57	758.4	7.6	**-0.4647**	0.641	138.0	mg/L	703	Standard
> **Sc-1**	45	31509.4	3.4				mg/L	30379	Standard
Cl	35	17195.8	1.4				ug/L	14530	Standard
Kr	83	4.7	96.6				ug/L	5	Standard
Br	81	5404.3	4.0				ug/L	497	Standard
P	31	14800.6	1.3				ug/L	10347	Standard
S	34	1560.1	2.0				ug/L	1535	Standard
Sr	88	320.0	14.3				ug/L	177	Standard
C	12	623.3	6.5				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	41.6	77.8				mg/L	7	Standard
Ho-1	165	31.7	24.1				mg/L	13	Standard
Er	166	36.7	31.5				mg/L	3	Standard
I	127	448656.5	9.2				mg/L	1945	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		119.512	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.988	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.634
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.831
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 25, 2015

Method 6020 - Summary Report

Sample ID: L1508099202
Sample Date/Time: Monday, August 24, 2015 14:49:24
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54528.0	2.6				ug/L	43934	Standard
	Be	9	15.0	66.7	**0.0189**	0.014	75.1	ug/L	0	Standard
	Al	27	27599656.6	2.5	**334.4801**	0.721	0.2	ug/L	410	Standard
	Sc	45	31345.7	1.3				ug/L	30379	Standard
	Ti	47	199.7	4.5	**0.8804**	0.054	6.1	ug/L	21	Standard
	V	51	1846.0	22.0	**0.1479**	0.100	67.4	ug/L	1362	Standard
	Cr	52	26730.9	1.3	**3.5334**	0.112	3.2	ug/L	8311	Standard
	Cr	53	20944.5	3.0	**30.3976**	1.212	4.0	ug/L	325	Standard
	Mn	55	7431.8	2.1	**1.7514**	0.046	2.6	ug/L	694	Standard
	Co	59	1542.7	3.1	**0.3612**	0.017	4.7	ug/L	199	Standard
	Ni	60	5046.5	2.9	**3.2589**	0.128	3.9	ug/L	212	Standard
	Cu	65	1438.1	0.3	**0.9025**	0.012	1.3	ug/L	149	Standard
	Zn	66	2640.9	1.4	**2.7293**	0.060	2.2	ug/L	206	Standard
>	**Ge**	72	300549.8	1.0				ug/L	319179	Standard
	As	75	1797.2	6.4	**2.3083**	0.152	6.6	ug/L	-51	Standard
	Se	82	708.5	0.8	**10.2406**	0.162	1.6	ug/L	19	Standard
	Se-1	77	1210.7	5.8	**23.4486**	1.683	7.2	ug/L	89	Standard
>	**Ga**	71	50.0	30.0				mg/L	25	Standard
	Rb	85	5907.8	4.4				ug/L	27	Standard
	Y	89	282070.5	2.1				ug/L	295132	Standard
>	**Rh**	103	423.3	8.9				ug/L	20	Standard
	Mo	98	193.2	9.0	**0.1209**	0.010	8.5	ug/L	11	Standard
	Ag	107	73.3	10.2	**-0.0009**	0.002	174.6	ug/L	64	Standard
	Cd	111	89.5	13.6	**0.0532**	0.009	17.1	mg/L	7	Standard
	Cd	114	217.0	3.8	**0.0507**	0.003	5.0	ug/L	10	Standard
>	**In**	115	411151.8	1.7				ug/L	418014	Standard
	Sn	118	421.7	11.4	**0.0145**	0.011	78.3	ug/L	385	Standard
	Sb	123	240.4	12.5	**0.0475**	0.007	14.8	ug/L	54	Standard
	Ba	135	25562.9	1.5	**12.7843**	0.407	3.2	ug/L	44	Standard
	Ce	140	301.7	11.0				ug/L	33	Standard
>	**Tb**	159	835184.3	1.0				ug/L	854905	Standard
	Ho	165	13.3	86.6				ug/L	13	Standard
	Tl	203	30.7	10.5	**0.0049**	0.001	11.7	ug/L	4	Standard
	Tl	205	23.3	32.7	**0.0067**	0.002	24.1	ug/L	5	Standard
	Pb	206	313.3	7.1	**0.0204**	0.004	19.6	ug/L	182	Standard
	Pb	207	285.7	5.6	**0.0254**	0.003	11.0	ug/L	160	Standard
	Pb	208	1053.3	5.5	**0.0281**	0.005	18.7	ug/L	604	Standard
	U	238	23551.3	2.0	**5.1447**	0.053	1.0	ug/L	3	Standard
>	**Bi**	209	368438.2	2.2				ug/L	395375	Standard

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Na	23	8.3	124.9	**-37.7351**	59.331	157.2	mg/L	0	Standard
Mg	24	81676.3	1.8	**196.6073**	1.953	1.0	mg/L	47	Standard
K	39	115.0	15.7	**1.3028**	0.251	19.2	mg/L	22	Standard
Ca	43	780.0	5.5	**84.8809**	4.069	4.8	mg/L	28	Standard
Fe	54	88.3	24.4	**0.0035**	0.051	1454.5	mg/L	72	Standard
Fe	57	1245.1	5.5	**4.2039**	0.529	12.6	mg/L	703	Standard
> **Sc-1**	45	31345.7	1.3				mg/L	30379	Standard
Cl	35	24928.5	5.5				ug/L	14530	Standard
Kr	83	3.0	66.7				ug/L	5	Standard
Br	81	52313.5	0.3				ug/L	497	Standard
P	31	15531.3	3.9				ug/L	10347	Standard
S	34	1748.4	3.2				ug/L	1535	Standard
Sr	88	493.3	7.1				ug/L	177	Standard
C	12	413.3	13.8				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	28.6	34.2				mg/L	7	Standard
Ho-1	165	13.3	86.6				mg/L	13	Standard
Er	166	30.0	33.3				mg/L	3	Standard
I	127	340664.2	6.5				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.114	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.163	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.358
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.187
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1508099202
Report Date/Time: Monday, August 24, 2015 14:51:41
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Method 6020 - Summary Report

Sample ID: L1508099206
Sample Date/Time: Monday, August 24, 2015 14:54:14
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50358.6	2.6				ug/L	43934	Standard
	Be	9	5.0	0.0	**0.0055**	0.000	3.5	ug/L	0	Standard
	Al	27	3421194.6	1.4	**44.9151**	1.780	4.0	ug/L	410	Standard
	Sc	45	31542.8	0.5				ug/L	30379	Standard
	Ti	47	58.0	40.4	**0.1590**	0.106	66.9	ug/L	21	Standard
	V	51	1735.2	15.2	**0.0900**	0.062	68.8	ug/L	1362	Standard
	Cr	52	10183.1	2.0	**0.3325**	0.024	7.3	ug/L	8311	Standard
	Cr	53	4243.9	4.3	**5.2649**	0.238	4.5	ug/L	325	Standard
	Mn	55	12005.8	0.8	**2.7173**	0.018	0.6	ug/L	694	Standard
	Co	59	408.7	2.1	**0.0468**	0.001	3.1	ug/L	199	Standard
	Ni	60	1131.7	2.5	**0.5297**	0.022	4.1	ug/L	212	Standard
	Cu	65	373.3	3.6	**0.1347**	0.010	7.1	ug/L	149	Standard
	Zn	66	1638.1	1.5	**1.3393**	0.034	2.6	ug/L	206	Standard
>	**Ge**	72	324539.4	0.7				ug/L	319179	Standard
	As	75	265.3	8.8	**0.4052**	0.027	6.6	ug/L	-51	Standard
	Se	82	124.0	7.4	**1.4629**	0.115	7.9	ug/L	19	Standard
	Se-1	77	260.7	8.9	**3.1965**	0.416	13.0	ug/L	89	Standard
>	**Ga**	71	33.3	62.5				mg/L	25	Standard
	Rb	85	388.3	2.0				ug/L	27	Standard
	Y	89	295753.9	1.2				ug/L	295132	Standard
>	**Rh**	103	66.7	8.7				ug/L	20	Standard
	Mo	98	25.3	10.6	**0.0021**	0.002	79.7	ug/L	11	Standard
	Ag	107	70.7	11.4	**-0.0022**	0.001	63.6	ug/L	64	Standard
	Cd	111	28.3	7.3	**0.0091**	0.001	12.4	mg/L	7	Standard
	Cd	114	59.0	17.2	**0.0078**	0.003	35.3	ug/L	10	Standard
>	**In**	115	436106.2	1.4				ug/L	418014	Standard
	Sn	118	348.3	3.0	**-0.0053**	0.003	57.3	ug/L	385	Standard
	Sb	123	88.5	7.5	**0.0070**	0.001	19.2	ug/L	54	Standard
	Ba	135	2666.6	1.8	**1.2348**	0.036	2.9	ug/L	44	Standard
	Ce	140	80.0	50.0				ug/L	33	Standard
>	**Tb**	159	863738.7	1.0				ug/L	854905	Standard
	Ho	165	11.7	65.5				ug/L	13	Standard
	Tl	203	35.0	20.6	**0.0051**	0.001	19.9	ug/L	4	Standard
	Tl	205	21.7	35.3	**0.0059**	0.002	25.9	ug/L	5	Standard
	Pb	206	248.0	11.4	**-0.0010**	0.007	665.9	ug/L	182	Standard
	Pb	207	231.0	2.4	**0.0050**	0.001	21.5	ug/L	160	Standard
	Pb	208	828.7	2.1	**0.0058**	0.001	16.4	ug/L	604	Standard
	U	238	2326.5	1.3	**0.4639**	0.004	0.8	ug/L	3	Standard
>	**Bi**	209	403349.4	0.5				ug/L	395375	Standard

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Na	23	1.7	173.2	**0.5192**	16.550	3187.5	mg/L	0	Standard
Mg	24	8974.3	4.1	**21.3669**	0.877	4.1	mg/L	47	Standard
K	39	25.0	60.0	**0.0787**	0.203	258.2	mg/L	22	Standard
Ca	43	135.0	7.4	**12.3082**	1.138	9.2	mg/L	28	Standard
Fe	54	54.2	46.2	**-0.0748**	0.055	74.1	mg/L	72	Standard
Fe	57	818.4	9.2	**0.0907**	0.736	811.6	mg/L	703	Standard
> **Sc-1**	45	31542.8	0.5				mg/L	30379	Standard
Cl	35	19893.7	1.7				ug/L	14530	Standard
Kr	83	6.3	55.5				ug/L	5	Standard
Br	81	7628.6	7.2				ug/L	497	Standard
P	31	11501.0	2.7				ug/L	10347	Standard
S	34	1756.8	10.1				ug/L	1535	Standard
Sr	88	228.3	13.4				ug/L	177	Standard
C	12	183.3	11.4				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	13.3	86.6				mg/L	7	Standard
Ho-1	165	11.7	65.5				mg/L	13	Standard
Er	166	0.0					mg/L	3	Standard
I	127	47407.4	3.4				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.624	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.679	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.328
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.017
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508099208
Sample Date/Time: Monday, August 24, 2015 14:57:26
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49380.4	3.4				ug/L	43934	Standard
	Be	9	8.3	34.6	**0.0108**	0.005	43.5	ug/L	0	Standard
	Al	27	2496121.1	0.6	**33.4196**	1.187	3.6	ug/L	410	Standard
	Sc	45	33393.5	5.2				ug/L	30379	Standard
	Ti	47	165.0	7.0	**0.6513**	0.054	8.3	ug/L	21	Standard
	V	51	6888.6	1.9	**1.2543**	0.041	3.2	ug/L	1362	Standard
	Cr	52	14182.6	3.0	**1.0266**	0.083	8.1	ug/L	8311	Standard
	Cr	53	4432.3	2.4	**5.5442**	0.135	2.4	ug/L	325	Standard
	Mn	55	22725.7	1.9	**5.3379**	0.071	1.3	ug/L	694	Standard
	Co	59	730.0	1.6	**0.1278**	0.003	2.0	ug/L	199	Standard
	Ni	60	2881.6	3.5	**1.6421**	0.067	4.1	ug/L	212	Standard
	Cu	65	888.7	2.2	**0.4721**	0.008	1.7	ug/L	149	Standard
	Zn	66	2281.8	1.7	**2.0858**	0.040	1.9	ug/L	206	Standard
>	**Ge**	72	323385.8	0.8				ug/L	319179	Standard
	As	75	568.0	3.4	**0.7513**	0.027	3.5	ug/L	-51	Standard
	Se	82	164.0	11.9	**2.0170**	0.255	12.7	ug/L	19	Standard
	Se-1	77	243.0	5.0	**2.8742**	0.257	8.9	ug/L	89	Standard
>	**Ga**	71	45.0	11.1				mg/L	25	Standard
	Rb	85	10331.9	1.6				ug/L	27	Standard
	Y	89	298720.3	2.3				ug/L	295132	Standard
>	**Rh**	103	450.0	7.7				ug/L	20	Standard
	Mo	98	4115.4	1.2	**2.6698**	0.045	1.7	ug/L	11	Standard
	Ag	107	85.0	23.6	**0.0001**	0.003	4030.7	ug/L	64	Standard
	Cd	111	75.6	10.6	**0.0397**	0.005	12.8	mg/L	7	Standard
	Cd	114	204.2	30.6	**0.0433**	0.015	34.2	ug/L	10	Standard
>	**In**	115	442470.7	2.2				ug/L	418014	Standard
	Sn	118	401.7	2.6	**0.0042**	0.003	78.1	ug/L	385	Standard
	Sb	123	298.5	2.2	**0.0571**	0.003	5.4	ug/L	54	Standard
	Ba	135	93809.2	0.7	**43.6497**	0.751	1.7	ug/L	44	Standard
	Ce	140	370.0	8.4				ug/L	33	Standard
>	**Tb**	159	876017.1	0.8				ug/L	854905	Standard
	Ho	165	25.0	52.9				ug/L	13	Standard
	Tl	203	85.7	23.6	**0.0123**	0.003	23.3	ug/L	4	Standard
	Tl	205	51.7	20.1	**0.0122**	0.002	17.1	ug/L	5	Standard
	Pb	206	299.7	2.9	**0.0112**	0.002	18.0	ug/L	182	Standard
	Pb	207	260.3	8.4	**0.0129**	0.005	40.8	ug/L	160	Standard
	Pb	208	970.7	4.5	**0.0161**	0.003	17.1	ug/L	604	Standard
	U	238	1739.8	3.9	**0.3495**	0.011	3.2	ug/L	3	Standard
>	**Bi**	209	400244.1	0.8				ug/L	395375	Standard

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Na	23	3.3	86.6	**-8.4995**	16.089	189.3	mg/L	0	Standard
Mg	24	7663.6	1.5	**17.2499**	1.082	6.3	mg/L	47	Standard
K	39	85.0	31.1	**0.8145**	0.274	33.6	mg/L	22	Standard
Ca	43	388.3	14.2	**38.1230**	4.357	11.4	mg/L	28	Standard
Fe	54	82.1	21.7	**-0.0224**	0.037	164.3	mg/L	72	Standard
Fe	57	950.0	6.4	**0.8684**	0.919	105.8	mg/L	703	Standard
> **Sc-1**	45	33393.5	5.2				mg/L	30379	Standard
Cl	35	17943.3	0.6				ug/L	14530	Standard
Kr	83	7.0	75.6				ug/L	5	Standard
Br	81	9826.5	3.7				ug/L	497	Standard
P	31	14995.8	2.2				ug/L	10347	Standard
S	34	1795.1	5.1				ug/L	1535	Standard
Sr	88	445.0	4.9				ug/L	177	Standard
C	12	413.3	9.8				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	3	Standard
Dy	164	47.4	108.9				mg/L	7	Standard
Ho-1	165	25.0	52.9				mg/L	13	Standard
Er	166	53.3	10.8				mg/L	3	Standard
I	127	210372.1	4.2				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.398	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.318	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	105.851
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	101.231
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508099210
Sample Date/Time: Monday, August 24, 2015 15:00:37
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50047.5	1.7				ug/L	43934	Standard
	Be	9	10.0	50.0	**0.0131**	0.008	59.2	ug/L	0	Standard
	Al	27	1650557.5	1.4	**21.7898**	0.632	2.9	ug/L	410	Standard
	Sc	45	31915.3	3.5				ug/L	30379	Standard
	Ti	47	45.3	20.0	**0.0979**	0.040	41.2	ug/L	21	Standard
	V	51	1621.9	2.6	**0.0586**	0.011	18.9	ug/L	1362	Standard
	Cr	52	8918.6	1.2	**0.0920**	0.028	30.4	ug/L	8311	Standard
	Cr	53	1995.1	4.0	**2.1471**	0.125	5.8	ug/L	325	Standard
	Mn	55	20507.5	1.6	**4.7014**	0.062	1.3	ug/L	694	Standard
	Co	59	468.0	1.3	**0.0598**	0.001	1.6	ug/L	199	Standard
	Ni	60	683.0	2.4	**0.2393**	0.012	5.1	ug/L	212	Standard
	Cu	65	285.3	6.2	**0.0744**	0.010	13.4	ug/L	149	Standard
	Zn	66	2036.8	0.1	**1.7590**	0.015	0.9	ug/L	206	Standard
>	**Ge**	72	329757.2	0.7				ug/L	319179	Standard
	As	75	45.6	81.9	**0.1547**	0.041	26.8	ug/L	-51	Standard
	Se	82	66.8	8.4	**0.6650**	0.070	10.5	ug/L	19	Standard
	Se-1	77	156.3	5.8	**1.1322**	0.153	13.5	ug/L	89	Standard
>	**Ga**	71	31.7	32.9				mg/L	25	Standard
	Rb	85	271.7	18.6				ug/L	27	Standard
	Y	89	306196.4	0.7				ug/L	295132	Standard
>	**Rh**	103	43.3	29.0				ug/L	20	Standard
	Mo	98	28.3	12.6	**0.0039**	0.003	65.8	ug/L	11	Standard
	Ag	107	78.7	16.1	**-0.0009**	0.002	243.1	ug/L	64	Standard
	Cd	111	21.6	28.3	**0.0046**	0.004	83.0	mg/L	7	Standard
	Cd	114	65.7	24.3	**0.0093**	0.004	42.8	ug/L	10	Standard
>	**In**	115	440478.2	1.5				ug/L	418014	Standard
	Sn	118	410.0	13.9	**0.0062**	0.011	183.2	ug/L	385	Standard
	Sb	123	51.1	12.9	**-0.0022**	0.002	70.0	ug/L	54	Standard
	Ba	135	2629.9	1.5	**1.2050**	0.016	1.3	ug/L	44	Standard
	Ce	140	225.0	9.7				ug/L	33	Standard
>	**Tb**	159	871620.5	0.7				ug/L	854905	Standard
	Ho	165	6.7	43.3				ug/L	13	Standard
	Tl	203	29.3	5.2	**0.0042**	0.000	5.3	ug/L	4	Standard
	Tl	205	16.7	45.8	**0.0049**	0.002	32.0	ug/L	5	Standard
	Pb	206	232.7	5.9	**-0.0049**	0.003	66.7	ug/L	182	Standard
	Pb	207	207.3	5.0	**-0.0013**	0.003	204.4	ug/L	160	Standard
	Pb	208	800.3	0.6	**0.0034**	0.001	16.1	ug/L	604	Standard
	U	238	902.7	5.5	**0.1783**	0.009	5.1	ug/L	3	Standard
>	**Bi**	209	406788.8	0.5				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	4469.0	4.6	**10.4563**	0.199	1.9	mg/L	47	Standard
K	39	8.3	34.6	**-0.1483**	0.036	23.9	mg/L	22	Standard
Ca	43	61.7	18.7	**4.0197**	1.095	27.2	mg/L	28	Standard
Fe	54	67.6	15.1	**-0.0467**	0.018	38.6	mg/L	72	Standard
Fe	57	778.4	13.2	**-0.3832**	0.826	215.7	mg/L	703	Standard
Sc-1	45	31915.3	3.5				mg/L	30379	Standard
Cl	35	18592.1	2.0				ug/L	14530	Standard
Kr	83	5.0	20.0				ug/L	5	Standard
Br	81	3557.1	4.9				ug/L	497	Standard
P	31	11757.9	3.4				ug/L	10347	Standard
S	34	1705.1	4.6				ug/L	1535	Standard
Sr	88	215.0	10.7				ug/L	177	Standard
C	12	163.3	17.7				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	9.7	98.4				mg/L	7	Standard
Ho-1	165	6.7	43.3				mg/L	13	Standard
Er	166	6.7	173.2				mg/L	3	Standard
I	127	60020.3	1.3				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.916	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.314	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	105.374
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	102.887
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 25, 2015

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, August 24, 2015 15:03:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48450.7	0.9				ug/L	43934	Standard
	Be	9	30732.8	2.9	**47.5624**	0.958	2.0	ug/L	0	Standard
	Al	27	3421638.6	1.3	**46.6571**	0.281	0.6	ug/L	410	Standard
	Sc	45	30587.5	1.0				ug/L	30379	Standard
	Ti	47	22427.3	1.1	**102.7554**	0.955	0.9	ug/L	21	Standard
	V	51	233220.3	0.6	**52.2900**	0.224	0.4	ug/L	1362	Standard
	Cr	52	302452.3	1.4	**50.5408**	0.660	1.3	ug/L	8311	Standard
	Cr	53	38211.5	1.0	**51.8632**	0.570	1.1	ug/L	325	Standard
	Mn	55	215807.8	2.0	**52.3151**	0.950	1.8	ug/L	694	Standard
	Co	59	205884.7	1.9	**51.5609**	0.943	1.8	ug/L	199	Standard
	Ni	60	78952.9	1.4	**49.8463**	0.668	1.3	ug/L	212	Standard
	Cu	65	77059.1	0.4	**50.1867**	0.327	0.7	ug/L	149	Standard
	Zn	66	43346.2	0.5	**49.2423**	0.316	0.6	ug/L	206	Standard
>	**Ge**	72	323638.0	0.2				ug/L	319179	Standard
	As	75	43563.3	0.5	**49.7140**	0.167	0.3	ug/L	-51	Standard
	Se	82	3701.3	0.9	**50.5818**	0.354	0.7	ug/L	19	Standard
	Se-1	77	2744.9	4.1	**51.3854**	2.142	4.2	ug/L	89	Standard
>	**Ga**	71	48.3	46.6				mg/L	25	Standard
	Rb	85	626.7	8.1				ug/L	27	Standard
	Y	89	300368.6	3.3				ug/L	295132	Standard
>	**Rh**	103	28.3	73.5				ug/L	20	Standard
	Mo	98	148635.2	0.9	**98.9575**	1.313	1.3	ug/L	11	Standard
	Ag	107	270240.4	0.7	**48.9825**	0.540	1.1	ug/L	64	Standard
	Cd	111	76545.8	0.3	**50.7606**	0.420	0.8	mg/L	7	Standard
	Cd	114	201854.1	1.2	**50.8943**	0.821	1.6	ug/L	10	Standard
>	**In**	115	433378.2	0.5				ug/L	418014	Standard
	Sn	118	230037.1	2.4	**46.1038**	1.326	2.9	ug/L	385	Standard
	Sb	123	202446.6	1.4	**49.5869**	0.945	1.9	ug/L	54	Standard
	Ba	135	102521.0	0.7	**48.6968**	0.566	1.2	ug/L	44	Standard
	Ce	140	76.7	3.8				ug/L	33	Standard
>	**Tb**	159	866017.9	0.8				ug/L	854905	Standard
	Ho	165	6.7	43.3				ug/L	13	Standard
	Tl	203	351755.7	0.6	**49.9141**	0.540	1.1	ug/L	4	Standard
	Tl	205	244783.2	0.8	**50.2887**	0.471	0.9	ug/L	5	Standard
	Pb	206	220291.2	0.5	**49.7262**	0.311	0.6	ug/L	182	Standard
	Pb	207	198553.8	0.2	**49.7964**	0.488	1.0	ug/L	160	Standard
	Pb	208	736852.2	0.4	**50.5141**	0.446	0.9	ug/L	604	Standard
	U	238	251465.8	1.1	**50.3156**	0.438	0.9	ug/L	3	Standard
>	**Bi**	209	402244.5	1.0				ug/L	395375	Standard

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Na	23	3.3	86.6	**-9.5054**	16.957	178.4	mg/L	0	Standard
Mg	24	2185.2	0.6	**5.2802**	0.057	1.1	mg/L	47	Standard
K	39	406.7	17.7	**5.4020**	1.037	19.2	mg/L	22	Standard
Ca	43	81.7	19.7	**6.6470**	1.946	29.3	mg/L	28	Standard
Fe	54	2245.9	2.8	**4.9941**	0.150	3.0	mg/L	72	Standard
Fe	57	1423.4	8.8	**6.2413**	1.160	18.6	mg/L	703	Standard
Sc-1	45	30587.5	1.0				mg/L	30379	Standard
Cl	35	16461.6	2.5				ug/L	14530	Standard
Kr	83	3.7	41.7				ug/L	5	Standard
Br	81	723.4	5.6				ug/L	497	Standard
P	31	11486.0	2.9				ug/L	10347	Standard
S	34	1911.8	6.3				ug/L	1535	Standard
Sr	88	198.3	14.3				ug/L	177	Standard
C	12	176.7	29.0				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	16.5	34.2				mg/L	7	Standard
Ho-1	165	6.7	43.3				mg/L	13	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	3393.7	24.8				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	95.125		
Al	27	93.314		
Sc	45			
Ti	47	102.755		
V	51	104.580		
Cr	52	101.082		
Cr	53			
Mn	55	104.630		
Co	59	103.122		
Ni	60	99.693		
Cu	65	100.373		
Zn	66	98.485		
Ge	72		101.397	
As	75	99.428		
Se	82	101.164		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.957		
Ag	107	97.965		
Cd	111	101.521		
Cd	114			
> In	115			103.675
Sn	118	92.208		
Sb	123	99.174		
Ba	135	97.394		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.828		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.028		
U	238	100.631		
> Bi	209			101.737
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, August 24, 2015 15:07:02
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	46721.9	2.1				ug/L	43934	Standard
	Be	9	10.0	50.0	**0.0142**	0.008	59.0	ug/L	0	Standard
	Al	27	880.0	54.2	**0.0011**	0.007	631.9	ug/L	410	Standard
	Sc	45	30261.9	3.8				ug/L	30379	Standard
	Ti	47	20.3	22.2	**-0.0108**	0.022	204.4	ug/L	21	Standard
	V	51	1164.5	7.4	**-0.0328**	0.018	54.4	ug/L	1362	Standard
	Cr	52	7099.7	2.6	**-0.1681**	0.040	23.5	ug/L	8311	Standard
	Cr	53	616.7	13.8	**0.3220**	0.101	31.5	ug/L	325	Standard
	Mn	55	797.0	9.8	**0.0020**	0.023	1159.1	ug/L	694	Standard
	Co	59	212.3	13.5	**-0.0010**	0.009	885.2	ug/L	199	Standard
	Ni	60	185.7	4.4	**-0.0655**	0.006	9.7	ug/L	212	Standard
	Cu	65	167.3	4.2	**0.0031**	0.004	132.1	ug/L	149	Standard
	Zn	66	224.0	5.1	**-0.2742**	0.019	6.8	ug/L	206	Standard
>	**Ge**	72	317470.4	2.4				ug/L	319179	Standard
	As	75	-74.6	21.0	**0.0175**	0.016	91.5	ug/L	-51	Standard
	Se	82	14.8	18.7	**-0.0269**	0.042	157.2	ug/L	19	Standard
	Se-1	77	101.7	2.8	**0.1689**	0.101	60.1	ug/L	89	Standard
>	**Ga**	71	20.0	25.0				mg/L	25	Standard
	Rb	85	21.7	13.3				ug/L	27	Standard
	Y	89	299345.7	2.1				ug/L	295132	Standard
>	**Rh**	103	23.3	44.6				ug/L	20	Standard
	Mo	98	76.1	18.4	**0.0360**	0.010	27.7	ug/L	11	Standard
	Ag	107	104.7	49.5	**0.0040**	0.010	239.5	ug/L	64	Standard
	Cd	111	6.5	49.1	**-0.0051**	0.002	42.3	mg/L	7	Standard
	Cd	114	22.5	61.2	**-0.0014**	0.003	257.0	ug/L	10	Standard
>	**In**	115	434280.9	1.5				ug/L	418014	Standard
	Sn	118	528.3	9.7	**0.0310**	0.010	31.8	ug/L	385	Standard
	Sb	123	735.1	6.9	**0.1653**	0.015	9.0	ug/L	54	Standard
	Ba	135	70.7	49.7	**0.0089**	0.017	192.2	ug/L	44	Standard
	Ce	140	23.3	65.5				ug/L	33	Standard
>	**Tb**	159	865030.1	0.6				ug/L	854905	Standard
	Ho	165	13.3	43.3				ug/L	13	Standard
	Tl	203	64.7	137.2	**0.0093**	0.013	136.1	ug/L	4	Standard
	Tl	205	20.0	25.0	**0.0056**	0.001	19.1	ug/L	5	Standard
	Pb	206	237.7	23.6	**-0.0035**	0.013	371.6	ug/L	182	Standard
	Pb	207	208.0	25.0	**-0.0009**	0.014	1471.2	ug/L	160	Standard
	Pb	208	669.0	9.8	**-0.0053**	0.005	95.0	ug/L	604	Standard
	U	238	22.3	80.3	**0.0042**	0.004	87.1	ug/L	3	Standard
>	**Bi**	209	405620.9	1.3				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	43.3	76.8	**-0.0035**	0.088	2538.5	mg/L	47	Standard
K	39	10.0		**-0.1179**	0.005	4.6	mg/L	22	Standard
Ca	43	40.0	12.5	**1.9045**	0.763	40.1	mg/L	28	Standard
Fe	54	75.9	19.1	**-0.0193**	0.029	147.8	mg/L	72	Standard
Fe	57	766.7	8.8	**-0.0955**	0.562	588.4	mg/L	703	Standard
Sc-1	45	30261.9	3.8				mg/L	30379	Standard
Cl	35	15685.5	2.0				ug/L	14530	Standard
Kr	83	4.7	99.0				ug/L	5	Standard
Br	81	610.0	4.3				ug/L	497	Standard
P	31	11534.4	2.5				ug/L	10347	Standard
S	34	1828.4	1.8				ug/L	1535	Standard
Sr	88	191.7	12.9				ug/L	177	Standard
C	12	156.7	9.8				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	12.4	93.4				mg/L	7	Standard
Ho-1	165	13.3	43.3				mg/L	13	Standard
Er	166	20.0	50.0				mg/L	3	Standard
I	127	3078.6	2.2				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.465	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.891
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.591
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Monday, August 24, 2015 15:10:14
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	46977.8	3.1				ug/L	43934	Standard
	Be	9	148.3	13.6	**0.2349**	0.032	13.8	ug/L	0	Standard
	Al	27	380.0	13.4	**-0.0061**	0.001	10.4	ug/L	410	Standard
	Sc	45	30009.7	1.2				ug/L	30379	Standard
	Ti	47	17.3	16.7	**-0.0241**	0.013	54.8	ug/L	21	Standard
	V	51	2930.4	1.6	**0.3814**	0.018	4.7	ug/L	1362	Standard
	Cr	52	12156.5	1.1	**0.7428**	0.035	4.7	ug/L	8311	Standard
	Cr	53	1063.4	1.5	**0.9658**	0.025	2.5	ug/L	325	Standard
	Mn	55	2795.6	4.3	**0.5057**	0.024	4.8	ug/L	694	Standard
	Co	59	1734.8	2.9	**0.3933**	0.010	2.4	ug/L	199	Standard
	Ni	60	2637.6	0.9	**1.5390**	0.023	1.5	ug/L	212	Standard
	Cu	65	1525.4	3.8	**0.9189**	0.038	4.2	ug/L	149	Standard
	Zn	66	5407.6	2.9	**5.8696**	0.130	2.2	ug/L	206	Standard
>	**Ge**	72	313695.0	1.0				ug/L	319179	Standard
	As	75	275.1	12.7	**0.4273**	0.044	10.3	ug/L	-51	Standard
	Se	82	48.8	9.2	**0.4562**	0.069	15.2	ug/L	19	Standard
	Se-1	77	115.0	3.1	**0.4579**	0.049	10.7	ug/L	89	Standard
>	**Ga**	71	13.3	78.1				mg/L	25	Standard
	Rb	85	41.7	59.2				ug/L	27	Standard
	Y	89	292663.7	2.2				ug/L	295132	Standard
>	**Rh**	103	16.7	34.6				ug/L	20	Standard
	Mo	98	19.5	3.9	**-0.0014**	0.001	41.8	ug/L	11	Standard
	Ag	107	2118.1	2.5	**0.3765**	0.011	2.9	ug/L	64	Standard
	Cd	111	360.3	4.6	**0.2341**	0.013	5.3	mg/L	7	Standard
	Cd	114	957.4	8.2	**0.2390**	0.018	7.6	ug/L	10	Standard
>	**In**	115	425151.8	0.8				ug/L	418014	Standard
	Sn	118	595.0	8.0	**0.0470**	0.011	22.6	ug/L	385	Standard
	Sb	123	1756.1	3.3	**0.4240**	0.011	2.6	ug/L	54	Standard
	Ba	135	1498.4	1.3	**0.7011**	0.007	1.1	ug/L	44	Standard
	Ce	140	16.7	96.4				ug/L	33	Standard
>	**Tb**	159	849632.6	1.9				ug/L	854905	Standard
	Ho	165	10.0	100.0				ug/L	13	Standard
	Tl	203	557.7	6.2	**0.0794**	0.004	5.3	ug/L	4	Standard
	Tl	205	401.7	14.9	**0.0842**	0.012	13.7	ug/L	5	Standard
	Pb	206	1103.4	2.8	**0.1931**	0.004	2.3	ug/L	182	Standard
	Pb	207	929.4	3.1	**0.1812**	0.009	4.9	ug/L	160	Standard
	Pb	208	3497.5	1.8	**0.1898**	0.007	3.5	ug/L	604	Standard
	U	238	1981.5	0.5	**0.3973**	0.004	0.9	ug/L	3	Standard
>	**Bi**	209	401145.2	1.0				ug/L	395375	Standard

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Na	23	3.3	173.2	**-10.1937**	35.106	344.4	mg/L	0	Standard
Mg	24	36.7	7.9	**-0.0215**	0.008	38.0	mg/L	47	Standard
K	39	18.3	31.5	**0.0018**	0.085	4690.6	mg/L	22	Standard
Ca	43	25.0	69.3	**0.1759**	2.071	1177.7	mg/L	28	Standard
Fe	54	80.5	25.2	**-0.0068**	0.045	665.7	mg/L	72	Standard
Fe	57	796.7	11.6	**0.2775**	1.008	363.4	mg/L	703	Standard
> **Sc-1**	45	30009.7	1.2				mg/L	30379	Standard
Cl	35	15655.4	1.2				ug/L	14530	Standard
Kr	83	5.0	40.0				ug/L	5	Standard
Br	81	580.0	17.0				ug/L	497	Standard
P	31	10668.8	1.6				ug/L	10347	Standard
S	34	1726.8	9.7				ug/L	1535	Standard
Sr	88	178.3	18.0				ug/L	177	Standard
C	12	183.3	24.6				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	6.0	193.9				mg/L	7	Standard
Ho-1	165	10.0	100.0				mg/L	13	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	1551.7	2.2				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	117.440		
Al	27			
Sc	45			
Ti	47			
V	51	95.357		
Cr	52	92.852		
Cr	53			
Mn	55	101.135		
Co	59	98.322		
Ni	60	96.185		
Cu	65	114.859		
Zn	66	93.913		
> Ge	72		98.282	
As	75	106.833		
Se	82	114.059		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	94.128		
Cd	111	97.560		
Cd	114			
> In	115			101.708
Sn	118			
Sb	123	105.990		
Ba	135	93.482		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.303		
Tl	205			
Pb	206			
Pb	207			
Pb	208	94.909		
U	238	99.321		
> Bi	209			101.459
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508122010
Sample Date/Time: Monday, August 24, 2015 15:13:27
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49067.7	3.3				ug/L	43934	Standard
	Be	9	11.7	49.5	**0.0158**	0.009	55.0	ug/L	0	Standard
	Al	27	4370407.4	0.7	**58.8854**	1.683	2.9	ug/L	410	Standard
	Sc	45	33680.8	3.1				ug/L	30379	Standard
	Ti	47	1032.7	2.4	**4.4047**	0.070	1.6	ug/L	21	Standard
	V	51	6549.1	1.3	**1.1062**	0.021	1.9	ug/L	1362	Standard
	Cr	52	14502.9	3.4	**0.9616**	0.103	10.7	ug/L	8311	Standard
	Cr	53	1181.7	10.6	**1.0055**	0.172	17.2	ug/L	325	Standard
	Mn	55	539550.5	1.6	**124.8422**	1.031	0.8	ug/L	694	Standard
	Co	59	1225.0	3.9	**0.2371**	0.009	3.7	ug/L	199	Standard
	Ni	60	1862.8	3.0	**0.9387**	0.028	2.9	ug/L	212	Standard
	Cu	65	2503.9	0.7	**1.4483**	0.019	1.3	ug/L	149	Standard
	Zn	66	8427.3	2.3	**8.6800**	0.128	1.5	ug/L	206	Standard
>	**Ge**	72	339805.0	0.9				ug/L	319179	Standard
	As	75	5277.9	2.6	**5.8286**	0.148	2.5	ug/L	-51	Standard
	Se	82	56.7	19.1	**0.5066**	0.143	28.2	ug/L	19	Standard
	Se-1	77	108.3	6.9	**0.1589**	0.148	93.3	ug/L	89	Standard
>	**Ga**	71	338.3	20.8				mg/L	25	Standard
	Rb	85	7908.7	1.7				ug/L	27	Standard
	Y	89	334637.7	2.1				ug/L	295132	Standard
>	**Rh**	103	53.3	30.1				ug/L	20	Standard
	Mo	98	575.1	3.6	**0.3525**	0.009	2.6	ug/L	11	Standard
	Ag	107	107.3	17.7	**0.0037**	0.003	92.1	ug/L	64	Standard
	Cd	111	57.2	36.2	**0.0269**	0.013	48.6	mg/L	7	Standard
	Cd	114	167.4	9.6	**0.0335**	0.004	13.2	ug/L	10	Standard
>	**In**	115	451963.3	1.4				ug/L	418014	Standard
	Sn	118	718.4	13.2	**0.0633**	0.016	26.0	ug/L	385	Standard
	Sb	123	543.5	6.2	**0.1131**	0.007	5.8	ug/L	54	Standard
	Ba	135	102353.3	2.0	**46.6292**	1.550	3.3	ug/L	44	Standard
	Ce	140	98935.4	1.9				ug/L	33	Standard
>	**Tb**	159	912908.1	0.3				ug/L	854905	Standard
	Ho	165	1873.4	5.4				ug/L	13	Standard
	Tl	203	43.7	50.5	**0.0061**	0.003	49.9	ug/L	4	Standard
	Tl	205	18.3	41.7	**0.0051**	0.001	29.0	ug/L	5	Standard
	Pb	206	603331.6	0.3	**131.7379**	1.585	1.2	ug/L	182	Standard
	Pb	207	501727.8	1.1	**121.7115**	2.527	2.1	ug/L	160	Standard
	Pb	208	1923258.0	0.8	**127.5177**	1.205	0.9	ug/L	604	Standard
	U	238	395.3	5.1	**0.0762**	0.003	4.6	ug/L	3	Standard
>	**Bi**	209	416148.2	1.0				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	1498.4	7.5	**3.2471**	0.274	8.4	mg/L	47	Standard
K	39	118.3	32.0	**1.2301**	0.452	36.7	mg/L	22	Standard
Ca	43	121.7	16.6	**9.9890**	2.385	23.9	mg/L	28	Standard
Fe	54	842.7	8.1	**1.5765**	0.195	12.4	mg/L	72	Standard
Fe	57	1025.0	5.4	**1.4445**	0.718	49.7	mg/L	703	Standard
Sc-1	45	33680.8	3.1				mg/L	30379	Standard
Cl	35	16808.0	1.7				ug/L	14530	Standard
Kr	83	5.0	40.0				ug/L	5	Standard
Br	81	2516.9	9.9				ug/L	497	Standard
P	31	12153.2	4.1				ug/L	10347	Standard
S	34	1808.4	4.9				ug/L	1535	Standard
Sr	88	210.0	6.3				ug/L	177	Standard
C	12	1580.1	11.6				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	3	Standard
Dy	164	2522.1	4.9				mg/L	7	Standard
Ho-1	165	1873.4	5.4				mg/L	13	Standard
Er	166	1700.1	6.1				mg/L	3	Standard
I	127	118606.2	3.7				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.686	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.462	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	108.122	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	105.254	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Pb 206 Upper, S, EEE	Pb	206	
Pb 207 Upper, S, EEE	Pb	207	

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Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1508122001
Sample Date/Time: Monday, August 24, 2015 15:16:39
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54441.0	1.9				ug/L	43934	Standard
	Be	9	2848.6	7.2	**3.9251**	0.330	8.4	ug/L	0	Standard
	Al	27	13985214.8	2.2	**169.8396**	6.993	4.1	ug/L	410	Standard
	Sc	45	65893.0	2.2				ug/L	30379	Standard
	Ti	47	119514.6	1.8	**546.1320**	15.568	2.9	ug/L	21	Standard
	V	51	348389.8	0.4	**77.9909**	2.058	2.6	ug/L	1362	Standard
	Cr	52	248122.8	0.5	**41.0602**	0.973	2.4	ug/L	8311	Standard
	Cr	53	33490.3	2.5	**45.2397**	2.010	4.4	ug/L	325	Standard
	Mn	55	23015254.0	1.8	**5579.0889**	30.732	0.6	ug/L	694	Standard
	Co	59	59367.1	0.7	**14.7751**	0.244	1.7	ug/L	199	Standard
	Ni	60	74914.4	0.8	**47.1201**	1.048	2.2	ug/L	212	Standard
	Cu	65	51178.3	0.8	**33.1752**	0.595	1.8	ug/L	149	Standard
	Zn	66	600799.4	0.9	**686.9200**	9.579	1.4	ug/L	206	Standard
>	**Ge**	72	324883.4	2.3				ug/L	319179	Standard
	As	75	18472.4	0.2	**21.0672**	0.490	2.3	ug/L	-51	Standard
	Se	82	628.0	1.9	**8.3558**	0.124	1.5	ug/L	19	Standard
	Se-1	77	599.3	5.7	**9.7429**	0.785	8.1	ug/L	89	Standard
>	**Ga**	71	40475.7	3.6				mg/L	25	Standard
	Rb	85	512542.8	1.5				ug/L	27	Standard
	Y	89	2512762.1	0.6				ug/L	295132	Standard
>	**Rh**	103	71.7	4.0				ug/L	20	Standard
	Mo	98	3138.7	1.9	**2.0752**	0.064	3.1	ug/L	11	Standard
	Ag	107	1669.8	2.3	**0.2878**	0.011	3.7	ug/L	64	Standard
	Cd	111	3759.9	1.3	**2.4837**	0.030	1.2	mg/L	7	Standard
	Cd	114	9994.5	3.7	**2.5121**	0.067	2.7	ug/L	10	Standard
>	**In**	115	433493.2	1.4				ug/L	418014	Standard
	Sn	118	3252.0	5.3	**0.5776**	0.027	4.6	ug/L	385	Standard
	Sb	123	2220.9	0.3	**0.5295**	0.008	1.5	ug/L	54	Standard
	Ba	135	295800.3	0.6	**140.5310**	2.628	1.9	ug/L	44	Standard
	Ce	140	3470996.3	0.4				ug/L	33	Standard
>	**Tb**	159	1029276.0	1.9				ug/L	854905	Standard
	Ho	165	194482.3	2.3				ug/L	13	Standard
	Tl	203	4024.9	2.1	**0.5819**	0.017	2.9	ug/L	4	Standard
	Tl	205	2823.6	4.2	**0.5925**	0.030	5.1	ug/L	5	Standard
	Pb	206	241737.2	0.6	**55.5879**	0.798	1.4	ug/L	182	Standard
	Pb	207	188783.5	0.6	**48.2212**	0.440	0.9	ug/L	160	Standard
	Pb	208	725818.8	0.6	**50.6792**	0.357	0.7	ug/L	604	Standard
	U	238	11572.1	0.4	**2.3582**	0.021	0.9	ug/L	3	Standard
>	**Bi**	209	394921.8	0.9				ug/L	395375	Standard

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Na	23	6.7	114.6	**-8.3379**	20.986	251.7	mg/L	0	Standard
Mg	24	9716.4	1.8	**11.0216**	0.251	2.3	mg/L	47	Standard
K	39	476.7	4.0	**2.8179**	0.074	2.6	mg/L	22	Standard
Ca	43	476.7	13.4	**22.6791**	2.878	12.7	mg/L	28	Standard
Fe	54	52618.8	1.9	**56.2518**	0.793	1.4	mg/L	72	Standard
Fe	57	13803.0	1.4	**54.9745**	1.270	2.3	mg/L	703	Standard
> **Sc-1**	45	65893.0	2.2				mg/L	30379	Standard
Cl	35	16666.5	2.5				ug/L	14530	Standard
Kr	83	4.0	86.6				ug/L	5	Standard
Br	81	33036.0	3.5				ug/L	497	Standard
P	31	39693.6	2.3				ug/L	10347	Standard
S	34	1498.4	5.7				ug/L	1535	Standard
Sr	88	218.3	16.6				ug/L	177	Standard
C	12	563.3	5.4				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	433.3	16.2				mg/L	3	Standard
Dy	164	280370.6	3.0				mg/L	7	Standard
Ho-1	165	194482.3	2.3				mg/L	13	Standard
Er	166	185712.0	3.2				mg/L	3	Standard
I	127	88553.1	2.3				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.916	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.787	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.703	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.885	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ti 47 Upper, S, EEE	Ti	47	

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Mn 55 Upper, S, EEE	Mn	55
Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1508122002
Sample Date/Time: Monday, August 24, 2015 15:19:50
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50395.4	2.4				ug/L	43934	Standard
	Be	9	13.3	78.1	**0.0177**	0.015	85.1	ug/L	0	Standard
	Al	27	7257944.7	0.9	**95.1904**	1.893	2.0	ug/L	410	Standard
	Sc	45	31290.6	1.2				ug/L	30379	Standard
	Ti	47	76.0	35.8	**0.2519**	0.127	50.5	ug/L	21	Standard
	V	51	1633.7	9.7	**0.0781**	0.037	47.0	ug/L	1362	Standard
	Cr	52	9686.1	1.2	**0.2983**	0.034	11.5	ug/L	8311	Standard
	Cr	53	3473.7	24.0	**4.3511**	1.136	26.1	ug/L	325	Standard
	Mn	55	2356905.1	0.6	**589.1748**	3.855	0.7	ug/L	694	Standard
	Co	59	680.0	5.3	**0.1199**	0.010	8.5	ug/L	199	Standard
	Ni	60	2639.6	3.9	**1.5336**	0.074	4.8	ug/L	212	Standard
	Cu	65	1237.4	3.0	**0.7216**	0.021	2.9	ug/L	149	Standard
	Zn	66	2773.9	4.6	**2.7370**	0.151	5.5	ug/L	206	Standard
>	**Ge**	72	314933.9	0.9				ug/L	319179	Standard
	As	75	568.4	10.8	**0.7692**	0.073	9.4	ug/L	-51	Standard
	Se	82	259.6	11.1	**3.4297**	0.424	12.4	ug/L	19	Standard
	Se-1	77	228.0	6.5	**2.6997**	0.264	9.8	ug/L	89	Standard
>	**Ga**	71	60.0	8.3				mg/L	25	Standard
	Rb	85	10582.0	1.8				ug/L	27	Standard
	Y	89	303124.2	1.3				ug/L	295132	Standard
>	**Rh**	103	70.0	18.9				ug/L	20	Standard
	Mo	98	95.4	3.0	**0.0486**	0.001	2.4	ug/L	11	Standard
	Ag	107	76.0	18.6	**-0.0013**	0.002	187.8	ug/L	64	Standard
	Cd	111	357.1	3.8	**0.2263**	0.008	3.5	mg/L	7	Standard
	Cd	114	895.5	6.9	**0.2178**	0.014	6.4	ug/L	10	Standard
>	**In**	115	435217.4	1.2				ug/L	418014	Standard
	Sn	118	416.7	2.5	**0.0085**	0.003	29.8	ug/L	385	Standard
	Sb	123	110.0	8.1	**0.0123**	0.002	15.2	ug/L	54	Standard
	Ba	135	38110.5	1.8	**18.0087**	0.143	0.8	ug/L	44	Standard
	Ce	140	2503.6	29.5				ug/L	33	Standard
>	**Tb**	159	869844.6	0.7				ug/L	854905	Standard
	Ho	165	291.7	19.9				ug/L	13	Standard
	Tl	203	226.7	4.4	**0.0326**	0.002	4.6	ug/L	4	Standard
	Tl	205	161.7	17.0	**0.0350**	0.005	15.7	ug/L	5	Standard
	Pb	206	519.0	16.4	**0.0616**	0.020	32.2	ug/L	182	Standard
	Pb	207	431.0	14.9	**0.0565**	0.017	29.4	ug/L	160	Standard
	Pb	208	1657.0	13.4	**0.0640**	0.016	24.5	ug/L	604	Standard
	U	238	628.3	5.6	**0.1267**	0.006	5.0	ug/L	3	Standard
>	**Bi**	209	398218.4	0.8				ug/L	395375	Standard

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Na	23	3.3	86.6	**-9.1996**	16.695	181.5	mg/L	0	Standard
Mg	24	9282.8	1.4	**22.2864**	0.403	1.8	mg/L	47	Standard
K	39	240.0	11.6	**3.0044**	0.381	12.7	mg/L	22	Standard
Ca	43	400.0	9.0	**42.2434**	3.625	8.6	mg/L	28	Standard
Fe	54	78.9	6.8	**-0.0177**	0.012	65.9	mg/L	72	Standard
Fe	57	953.4	9.1	**1.4430**	0.844	58.5	mg/L	703	Standard
Sc-1	45	31290.6	1.2				mg/L	30379	Standard
Cl	35	18257.7	2.5				ug/L	14530	Standard
Kr	83	4.7	32.7				ug/L	5	Standard
Br	81	18628.1	4.5				ug/L	497	Standard
P	31	12920.5	2.2				ug/L	10347	Standard
S	34	1698.4	8.2				ug/L	1535	Standard
Sr	88	243.3	24.5				ug/L	177	Standard
C	12	556.7	9.9				mg/L	153	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	376.0	8.9				mg/L	7	Standard
Ho-1	165	291.7	19.9				mg/L	13	Standard
Er	166	293.3	24.2				mg/L	3	Standard
I	127	96823.5	2.7				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		114.708	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.670	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.115
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.719
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508122004
Sample Date/Time: Monday, August 24, 2015 15:23:01
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	51475.7	2.6				ug/L	43934	Standard
	Be	9	356.7	7.2	**0.5185**	0.051	9.8	ug/L	0	Standard
	Al	27	6998517.4	0.9	**89.8644**	1.764	2.0	ug/L	410	Standard
	Sc	45	37867.3	2.9				ug/L	30379	Standard
	Ti	47	15260.3	1.3	**69.9267**	0.652	0.9	ug/L	21	Standard
	V	51	52197.1	0.7	**11.4772**	0.111	1.0	ug/L	1362	Standard
	Cr	52	30533.1	1.8	**3.8360**	0.076	2.0	ug/L	8311	Standard
	Cr	53	4415.6	2.5	**5.5206**	0.161	2.9	ug/L	325	Standard
	Mn	55	3576976.9	0.9	**870.7073**	6.021	0.7	ug/L	694	Standard
	Co	59	46984.1	1.2	**11.7309**	0.116	1.0	ug/L	199	Standard
	Ni	60	18802.0	0.2	**11.7365**	0.049	0.4	ug/L	212	Standard
	Cu	65	17774.4	0.7	**11.4996**	0.040	0.3	ug/L	149	Standard
	Zn	66	149259.3	0.5	**170.9756**	0.385	0.2	ug/L	206	Standard
>	Ge	72	323441.5	0.4				ug/L	319179	Standard
	As	75	2848.8	1.2	**3.3500**	0.029	0.9	ug/L	-51	Standard
	Se	82	80.6	20.7	**0.8718**	0.225	25.9	ug/L	19	Standard
	Se-1	77	238.7	5.7	**2.7880**	0.248	8.9	ug/L	89	Standard
>	Ga	71	3770.5	6.4				mg/L	25	Standard
	Rb	85	38936.8	6.0				ug/L	27	Standard
	Y	89	677591.4	3.2				ug/L	295132	Standard
>	Rh	103	111.7	23.0				ug/L	20	Standard
	Mo	98	903.0	6.6	**0.5662**	0.034	6.0	ug/L	11	Standard
	Ag	107	561.0	2.7	**0.0833**	0.002	2.6	ug/L	64	Standard
	Cd	111	932.8	1.8	**0.5884**	0.011	1.8	mg/L	7	Standard
	Cd	114	2630.1	6.9	**0.6339**	0.044	7.0	ug/L	10	Standard
>	In	115	448465.5	0.7				ug/L	418014	Standard
	Sn	118	873.4	7.2	**0.0946**	0.012	12.7	ug/L	385	Standard
	Sb	123	1455.0	2.4	**0.3299**	0.006	2.0	ug/L	54	Standard
	Ba	135	147532.2	0.9	**67.7269**	0.549	0.8	ug/L	44	Standard
	Ce	140	576396.0	0.7				ug/L	33	Standard
>	Tb	159	899607.2	0.6				ug/L	854905	Standard
	Ho	165	29839.4	1.5				ug/L	13	Standard
	Tl	203	488.7	3.8	**0.0700**	0.002	3.1	ug/L	4	Standard
	Tl	205	348.3	6.5	**0.0736**	0.005	7.2	ug/L	5	Standard
	Pb	206	247714.4	1.1	**56.3449**	0.325	0.6	ug/L	182	Standard
	Pb	207	203588.4	0.9	**51.4442**	0.076	0.1	ug/L	160	Standard
	Pb	208	776392.3	0.4	**53.6299**	0.312	0.6	ug/L	604	Standard
	U	238	2374.9	0.8	**0.4785**	0.006	1.2	ug/L	3	Standard
>	Bi	209	399218.9	0.8				ug/L	395375	Standard

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Na	23	5.0	100.0	**-13.4202**	23.579	175.7	mg/L	0	Standard
Mg	24	9141.1	2.2	**18.1167**	0.392	2.2	mg/L	47	Standard
K	39	333.3	3.1	**3.4902**	0.229	6.6	mg/L	22	Standard
Ca	43	295.0	5.1	**24.6703**	0.940	3.8	mg/L	28	Standard
Fe	54	14568.1	3.6	**27.0072**	1.106	4.1	mg/L	72	Standard
Fe	57	4539.0	4.8	**28.2144**	2.575	9.1	mg/L	703	Standard
Sc-1	45	37867.3	2.9				mg/L	30379	Standard
Cl	35	16336.8	2.2				ug/L	14530	Standard
Kr	83	4.3	13.3				ug/L	5	Standard
Br	81	2703.6	0.9				ug/L	497	Standard
P	31	16717.6	2.1				ug/L	10347	Standard
S	34	1988.5	5.7				ug/L	1535	Standard
Sr	88	205.0	4.9				ug/L	177	Standard
C	12	930.0	8.4				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	53.9				mg/L	3	Standard
Dy	164	39146.4	2.4				mg/L	7	Standard
Ho-1	165	29839.4	1.5				mg/L	13	Standard
Er	166	30086.5	2.4				mg/L	3	Standard
I	127	63074.6	5.3				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		117.167	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.335	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.285
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.972
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1508122005
Sample Date/Time: Monday, August 24, 2015 15:26:12
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	46979.4	1.5				ug/L	43934	Standard
	Be	9	20.0	86.6	**0.0300**	0.028	92.5	ug/L	0	Standard
	Al	27	4655819.1	0.9	**65.4843**	0.418	0.6	ug/L	410	Standard
	Sc	45	31347.4	1.8				ug/L	30379	Standard
	Ti	47	62.0	25.1	**0.1866**	0.073	39.1	ug/L	21	Standard
	V	51	1264.0	5.9	**-0.0070**	0.017	248.9	ug/L	1362	Standard
	Cr	52	8121.5	1.5	**0.0246**	0.017	69.7	ug/L	8311	Standard
	Cr	53	1190.0	4.1	**1.1419**	0.080	7.0	ug/L	325	Standard
	Mn	55	1705914.5	1.7	**427.1863**	5.553	1.3	ug/L	694	Standard
	Co	59	968.0	2.2	**0.1945**	0.005	2.6	ug/L	199	Standard
	Ni	60	1615.4	1.2	**0.8684**	0.005	0.5	ug/L	212	Standard
	Cu	65	436.3	3.9	**0.1850**	0.013	7.0	ug/L	149	Standard
	Zn	66	1867.1	2.2	**1.6711**	0.051	3.1	ug/L	206	Standard
>	**Ge**	72	314330.5	0.7				ug/L	319179	Standard
	As	75	672.5	1.7	**0.8924**	0.015	1.7	ug/L	-51	Standard
	Se	82	109.5	12.2	**1.3144**	0.198	15.0	ug/L	19	Standard
	Se-1	77	183.0	4.3	**1.8113**	0.157	8.6	ug/L	89	Standard
>	**Ga**	71	50.0	40.0				mg/L	25	Standard
	Rb	85	8445.7	4.8				ug/L	27	Standard
	Y	89	305530.3	5.3				ug/L	295132	Standard
>	**Rh**	103	90.0	22.2				ug/L	20	Standard
	Mo	98	209.1	4.8	**0.1256**	0.006	4.9	ug/L	11	Standard
	Ag	107	83.7	21.1	**0.0003**	0.003	1047.1	ug/L	64	Standard
	Cd	111	11.2	10.5	**-0.0020**	0.001	40.4	mg/L	7	Standard
	Cd	114	16.9	72.0	**-0.0027**	0.003	112.3	ug/L	10	Standard
>	**In**	115	430202.5	0.9				ug/L	418014	Standard
	Sn	118	426.7	20.1	**0.0114**	0.017	146.5	ug/L	385	Standard
	Sb	123	149.0	14.0	**0.0223**	0.005	24.3	ug/L	54	Standard
	Ba	135	117240.2	0.9	**56.1021**	0.469	0.8	ug/L	44	Standard
	Ce	140	4534.0	2.1				ug/L	33	Standard
>	**Tb**	159	858264.2	1.2				ug/L	854905	Standard
	Ho	165	316.7	12.3				ug/L	13	Standard
	Tl	203	17.7	34.1	**0.0027**	0.001	32.3	ug/L	4	Standard
	Tl	205	11.7	137.8	**0.0040**	0.003	85.4	ug/L	5	Standard
	Pb	206	3893.8	0.9	**0.8510**	0.009	1.1	ug/L	182	Standard
	Pb	207	3283.4	0.3	**0.7976**	0.001	0.2	ug/L	160	Standard
	Pb	208	12715.1	2.7	**0.8493**	0.021	2.5	ug/L	604	Standard
	U	238	61.0	12.4	**0.0123**	0.002	12.3	ug/L	3	Standard
>	**Bi**	209	389869.6	0.3				ug/L	395375	Standard

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Na	23	3.3	86.6	**-9.0021**	16.526	183.6	mg/L	0	Standard
Mg	24	8665.8	2.2	**20.7643**	0.695	3.3	mg/L	47	Standard
K	39	285.0	24.9	**3.6030**	0.925	25.7	mg/L	22	Standard
Ca	43	270.0	3.2	**27.5856**	1.284	4.7	mg/L	28	Standard
Fe	54	3113.1	2.9	**6.8246**	0.228	3.3	mg/L	72	Standard
Fe	57	1560.1	5.4	**7.2244**	1.059	14.7	mg/L	703	Standard
> **Sc-1**	45	31347.4	1.8				mg/L	30379	Standard
Cl	35	15667.4	2.5				ug/L	14530	Standard
Kr	83	3.3	34.6				ug/L	5	Standard
Br	81	6458.0	5.5				ug/L	497	Standard
P	31	13761.3	4.9				ug/L	10347	Standard
S	34	1898.5	5.6				ug/L	1535	Standard
Sr	88	235.0	7.7				ug/L	177	Standard
C	12	373.3	9.4				mg/L	153	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	237.5	20.4				mg/L	7	Standard
Ho-1	165	316.7	12.3				mg/L	13	Standard
Er	166	330.0	13.2				mg/L	3	Standard
I	127	109421.1	5.2				mg/L	1945	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		106.933	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.481	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.916
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.608
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508122007
Sample Date/Time: Monday, August 24, 2015 15:29:24
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	46265.6	2.8				ug/L	43934	Standard
	Be	9	55.0	24.1	**0.0876**	0.024	27.5	ug/L	0	Standard
	Al	27	10346253.8	1.8	**147.7986**	1.517	1.0	ug/L	410	Standard
	Sc	45	32565.0	1.8				ug/L	30379	Standard
	Ti	47	2090.5	1.4	**9.7357**	0.099	1.0	ug/L	21	Standard
	V	51	7064.4	1.1	**1.3347**	0.009	0.7	ug/L	1362	Standard
	Cr	52	12402.4	3.7	**0.7749**	0.069	8.9	ug/L	8311	Standard
	Cr	53	2396.9	1.9	**2.8355**	0.077	2.7	ug/L	325	Standard
	Mn	55	2383734.2	0.9	**595.1985**	2.220	0.4	ug/L	694	Standard
	Co	59	4051.5	0.8	**0.9873**	0.009	0.9	ug/L	199	Standard
	Ni	60	5284.6	3.0	**3.2521**	0.108	3.3	ug/L	212	Standard
	Cu	65	3508.7	2.5	**2.2423**	0.045	2.0	ug/L	149	Standard
	Zn	66	17339.2	0.9	**19.9029**	0.067	0.3	ug/L	206	Standard
>	**Ge**	72	315284.6	0.6				ug/L	319179	Standard
	As	75	5252.0	2.3	**6.2432**	0.123	2.0	ug/L	-51	Standard
	Se	82	621.1	0.7	**8.5189**	0.066	0.8	ug/L	19	Standard
	Se-1	77	289.3	6.8	**3.9179**	0.409	10.4	ug/L	89	Standard
>	**Ga**	71	506.7	8.6				mg/L	25	Standard
	Rb	85	21301.6	3.0				ug/L	27	Standard
	Y	89	346389.2	2.1				ug/L	295132	Standard
>	**Rh**	103	156.7	22.4				ug/L	20	Standard
	Mo	98	633.4	4.0	**0.4228**	0.020	4.8	ug/L	11	Standard
	Ag	107	183.3	9.4	**0.0195**	0.003	15.5	ug/L	64	Standard
	Cd	111	111.1	7.3	**0.0669**	0.005	7.0	mg/L	7	Standard
	Cd	114	311.0	5.0	**0.0744**	0.005	7.1	ug/L	10	Standard
>	**In**	115	417916.3	1.4				ug/L	418014	Standard
	Sn	118	583.3	5.8	**0.0467**	0.008	17.4	ug/L	385	Standard
	Sb	123	441.5	6.2	**0.0977**	0.008	8.2	ug/L	54	Standard
	Ba	135	834304.9	0.6	**411.1487**	3.362	0.8	ug/L	44	Standard
	Ce	140	129274.2	0.4				ug/L	33	Standard
>	**Tb**	159	837651.8	1.0				ug/L	854905	Standard
	Ho	165	4165.6	2.0				ug/L	13	Standard
	Tl	203	69.0	11.3	**0.0106**	0.001	11.1	ug/L	4	Standard
	Tl	205	51.7	44.7	**0.0129**	0.005	39.5	ug/L	5	Standard
	Pb	206	20803.9	0.4	**4.9978**	0.053	1.1	ug/L	182	Standard
	Pb	207	16963.2	0.4	**4.5258**	0.042	0.9	ug/L	160	Standard
	Pb	208	64893.6	1.8	**4.7363**	0.056	1.2	ug/L	604	Standard
	U	238	539.3	3.2	**0.1157**	0.004	3.6	ug/L	3	Standard
>	**Bi**	209	374136.7	0.7				ug/L	395375	Standard

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Na	23	1.7	173.2	**0.9379**	15.825	1687.3	mg/L	0	Standard
Mg	24	23059.2	2.2	**53.3690**	1.985	3.7	mg/L	47	Standard
K	39	523.3	8.1	**6.5792**	0.574	8.7	mg/L	22	Standard
Ca	43	335.0	2.6	**33.4916**	1.606	4.8	mg/L	28	Standard
Fe	54	3886.0	4.7	**8.2446**	0.540	6.6	mg/L	72	Standard
Fe	57	1951.8	4.5	**10.2648**	1.125	11.0	mg/L	703	Standard
> **Sc-1**	45	32565.0	1.8				mg/L	30379	Standard
Cl	35	15334.4	2.4				ug/L	14530	Standard
Kr	83	3.3	45.8				ug/L	5	Standard
Br	81	44211.1	3.0				ug/L	497	Standard
P	31	13070.6	1.7				ug/L	10347	Standard
S	34	1756.8	4.4				ug/L	1535	Standard
Sr	88	355.0	7.5				ug/L	177	Standard
C	12	603.3	1.0				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	3	Standard
Dy	164	5976.6	5.4				mg/L	7	Standard
Ho-1	165	4165.6	2.0				mg/L	13	Standard
Er	166	4133.9	4.2				mg/L	3	Standard
I	127	306900.9	3.3				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.308	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.780	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.977
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.628
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1508122008
Sample Date/Time: Monday, August 24, 2015 15:32:35
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	45429.7	3.0				ug/L	43934	Standard
	Be	9	11.7	65.5	**0.0172**	0.012	71.1	ug/L	0	Standard
	Al	27	8418361.8	0.8	**122.5385**	4.661	3.8	ug/L	410	Standard
	Sc	45	30281.9	2.4				ug/L	30379	Standard
	Ti	47	80.3	10.4	**0.2702**	0.041	15.3	ug/L	21	Standard
	V	51	1630.3	5.9	**0.0748**	0.022	29.5	ug/L	1362	Standard
	Cr	52	9348.9	1.7	**0.2274**	0.018	7.9	ug/L	8311	Standard
	Cr	53	1881.8	3.7	**2.0959**	0.111	5.3	ug/L	325	Standard
	Mn	55	1684384.9	1.3	**418.1780**	4.862	1.2	ug/L	694	Standard
	Co	59	1040.0	3.7	**0.2108**	0.011	5.3	ug/L	199	Standard
	Ni	60	3438.4	0.7	**2.0386**	0.012	0.6	ug/L	212	Standard
	Cu	65	946.4	2.0	**0.5222**	0.014	2.7	ug/L	149	Standard
	Zn	66	1978.1	3.0	**1.7821**	0.065	3.6	ug/L	206	Standard
>	**Ge**	72	317052.3	0.7				ug/L	319179	Standard
	As	75	6887.5	0.9	**8.1103**	0.038	0.5	ug/L	-51	Standard
	Se	82	1065.6	2.3	**14.7001**	0.388	2.6	ug/L	19	Standard
	Se-1	77	261.3	1.2	**3.3309**	0.097	2.9	ug/L	89	Standard
>	**Ga**	71	70.0	14.3				mg/L	25	Standard
	Rb	85	18020.7	2.9				ug/L	27	Standard
	Y	89	294479.8	1.9				ug/L	295132	Standard
>	**Rh**	103	150.0	8.8				ug/L	20	Standard
	Mo	98	656.0	5.4	**0.4490**	0.028	6.2	ug/L	11	Standard
	Ag	107	74.0	6.2	**-0.0007**	0.001	130.5	ug/L	64	Standard
	Cd	111	11.1	18.8	**-0.0017**	0.001	85.8	mg/L	7	Standard
	Cd	114	32.2	25.5	**0.0016**	0.002	137.8	ug/L	10	Standard
>	**In**	115	408320.9	0.6				ug/L	418014	Standard
	Sn	118	538.3	6.0	**0.0399**	0.007	17.3	ug/L	385	Standard
	Sb	123	300.4	10.0	**0.0636**	0.007	11.7	ug/L	54	Standard
	Ba	135	841289.2	0.2	**424.3088**	1.838	0.4	ug/L	44	Standard
	Ce	140	4577.4	4.5				ug/L	33	Standard
>	**Tb**	159	838139.0	1.4				ug/L	854905	Standard
	Ho	165	338.3	12.9				ug/L	13	Standard
	Tl	203	18.3	16.7	**0.0029**	0.000	16.0	ug/L	4	Standard
	Tl	205	10.0	132.3	**0.0037**	0.003	78.3	ug/L	5	Standard
	Pb	206	3458.4	0.3	**0.7786**	0.001	0.2	ug/L	182	Standard
	Pb	207	2934.3	1.6	**0.7347**	0.015	2.0	ug/L	160	Standard
	Pb	208	10923.9	2.3	**0.7504**	0.017	2.2	ug/L	604	Standard
	U	238	389.7	4.9	**0.0831**	0.004	5.1	ug/L	3	Standard
>	**Bi**	209	376262.0	0.3				ug/L	395375	Standard

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Na	23	5.0	100.0	**-19.5812**	29.188	149.1	mg/L	0	Standard
Mg	24	22894.0	0.3	**56.9888**	1.418	2.5	mg/L	47	Standard
K	39	593.3	6.1	**8.0771**	0.498	6.2	mg/L	22	Standard
Ca	43	371.7	13.5	**40.3938**	4.802	11.9	mg/L	28	Standard
Fe	54	3106.1	4.5	**7.0572**	0.386	5.5	mg/L	72	Standard
Fe	57	1590.1	2.7	**8.0345**	0.425	5.3	mg/L	703	Standard
Sc-1	45	30281.9	2.4				mg/L	30379	Standard
Cl	35	14560.3	3.4				ug/L	14530	Standard
Kr	83	3.0	33.3				ug/L	5	Standard
Br	81	78228.1	0.9				ug/L	497	Standard
P	31	12962.2	6.4				ug/L	10347	Standard
S	34	1783.4	7.5				ug/L	1535	Standard
Sr	88	293.3	14.5				ug/L	177	Standard
C	12	863.4	10.5				mg/L	153	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	312.1	9.2				mg/L	7	Standard
Ho-1	165	338.3	12.9				mg/L	13	Standard
Er	166	443.3	8.5				mg/L	3	Standard
I	127	369623.3	4.5				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		103.405	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.334	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.681
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.166
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1508122011
Sample Date/Time: Monday, August 24, 2015 15:35:46
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	46123.5	3.8				ug/L	43934	Standard
	Be	9	13.3	57.3	**0.0200**	0.013	65.7	ug/L	0	Standard
	Al	27	5908534.1	0.6	**84.7169**	2.940	3.5	ug/L	410	Standard
	Sc	45	32469.8	1.0				ug/L	30379	Standard
	Ti	47	59.0	5.9	**0.1611**	0.017	10.6	ug/L	21	Standard
	V	51	1595.6	9.2	**0.0552**	0.039	70.3	ug/L	1362	Standard
	Cr	52	8921.6	0.6	**0.1014**	0.034	33.3	ug/L	8311	Standard
	Cr	53	1073.4	6.7	**0.9157**	0.122	13.4	ug/L	325	Standard
	Mn	55	473075.5	1.2	**113.4519**	1.933	1.7	ug/L	694	Standard
	Co	59	1457.7	2.5	**0.3055**	0.013	4.3	ug/L	199	Standard
	Ni	60	3259.0	1.6	**1.8539**	0.068	3.7	ug/L	212	Standard
	Cu	65	590.7	0.8	**0.2723**	0.007	2.7	ug/L	149	Standard
	Zn	66	1786.8	1.0	**1.4891**	0.036	2.4	ug/L	206	Standard
>	**Ge**	72	327862.7	1.8				ug/L	319179	Standard
	As	75	6620.6	0.5	**7.5479**	0.142	1.9	ug/L	-51	Standard
	Se	82	323.8	0.7	**4.1547**	0.107	2.6	ug/L	19	Standard
	Se-1	77	148.0	9.1	**0.9899**	0.242	24.4	ug/L	89	Standard
>	**Ga**	71	48.3	15.8				mg/L	25	Standard
	Rb	85	25005.6	2.7				ug/L	27	Standard
	Y	89	301978.2	1.1				ug/L	295132	Standard
>	**Rh**	103	78.3	14.7				ug/L	20	Standard
	Mo	98	1270.8	3.0	**0.8567**	0.028	3.3	ug/L	11	Standard
	Ag	107	75.3	34.3	**-0.0009**	0.005	557.9	ug/L	64	Standard
	Cd	111	5.3	37.8	**-0.0059**	0.001	22.7	mg/L	7	Standard
	Cd	114	17.1	25.3	**-0.0026**	0.001	44.0	ug/L	10	Standard
>	**In**	115	420862.5	0.9				ug/L	418014	Standard
	Sn	118	355.0	16.2	**-0.0014**	0.012	808.9	ug/L	385	Standard
	Sb	123	644.8	2.1	**0.1481**	0.003	2.0	ug/L	54	Standard
	Ba	135	444029.6	0.7	**217.2747**	2.849	1.3	ug/L	44	Standard
	Ce	140	1170.0	7.9				ug/L	33	Standard
>	**Tb**	159	862240.5	0.3				ug/L	854905	Standard
	Ho	165	291.7	16.2				ug/L	13	Standard
	Tl	203	26.3	88.0	**0.0040**	0.003	85.7	ug/L	4	Standard
	Tl	205	15.0	33.3	**0.0047**	0.001	22.3	ug/L	5	Standard
	Pb	206	4417.0	0.1	**0.9761**	0.005	0.5	ug/L	182	Standard
	Pb	207	3685.8	1.6	**0.9048**	0.020	2.2	ug/L	160	Standard
	Pb	208	13703.4	0.1	**0.9223**	0.004	0.5	ug/L	604	Standard
	U	238	431.0	3.2	**0.0890**	0.003	3.0	ug/L	3	Standard
>	**Bi**	209	388684.8	0.5				ug/L	395375	Standard

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Na	23	1.7	173.2	**0.8693**	15.944	1834.2	mg/L	0	Standard
Mg	24	6884.9	2.0	**15.8946**	0.216	1.4	mg/L	47	Standard
K	39	590.0	3.4	**7.4709**	0.266	3.6	mg/L	22	Standard
Ca	43	155.0	23.3	**14.0661**	4.034	28.7	mg/L	28	Standard
Fe	54	1325.5	12.0	**2.6882**	0.328	12.2	mg/L	72	Standard
Fe	57	1168.4	6.4	**3.0868**	0.590	19.1	mg/L	703	Standard
> **Sc-1**	45	32469.8	1.0				mg/L	30379	Standard
Cl	35	15047.5	1.6				ug/L	14530	Standard
Kr	83	5.7	10.2				ug/L	5	Standard
Br	81	22890.6	1.3				ug/L	497	Standard
P	31	12745.4	1.1				ug/L	10347	Standard
S	34	1770.1	3.1				ug/L	1535	Standard
Sr	88	203.3	30.7				ug/L	177	Standard
C	12	550.0	14.4				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	163.1	6.7				mg/L	7	Standard
Ho-1	165	291.7	16.2				mg/L	13	Standard
Er	166	423.3	27.7				mg/L	3	Standard
I	127	824852.8	3.1				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.984	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.721	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.681
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.308
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1508122013
Sample Date/Time: Monday, August 24, 2015 15:38:58
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49429.2	8.3				ug/L	43934	Standard
	Be	9	491.7	6.8	**0.7480**	0.086	11.6	ug/L	0	Standard
	Al	27	15004389.7	5.4	**200.9043**	5.721	2.8	ug/L	410	Standard
	Sc	45	32092.3	2.1				ug/L	30379	Standard
	Ti	47	407.0	7.7	**1.8873**	0.134	7.1	ug/L	21	Standard
	V	51	1622.1	1.8	**0.0903**	0.007	7.4	ug/L	1362	Standard
	Cr	52	8834.2	0.7	**0.2095**	0.016	7.8	ug/L	8311	Standard
	Cr	53	1925.1	1.6	**2.2821**	0.068	3.0	ug/L	325	Standard
	Mn	55	28602765.3	0.2	**7435.8274**	78.427	1.1	ug/L	694	Standard
	Co	59	14947.7	0.9	**3.9485**	0.050	1.3	ug/L	199	Standard
	Ni	60	11871.3	1.3	**7.8512**	0.020	0.3	ug/L	212	Standard
	Cu	65	87716.5	0.9	**61.0547**	0.117	0.2	ug/L	149	Standard
	Zn	66	29467.3	0.7	**35.6168**	0.142	0.4	ug/L	206	Standard
>	**Ge**	72	302937.7	1.1				ug/L	319179	Standard
	As	75	5093.1	0.9	**6.3009**	0.103	1.6	ug/L	-51	Standard
	Se	82	136.4	12.3	**1.7655**	0.238	13.5	ug/L	19	Standard
	Se-1	77	190.7	6.4	**2.1097**	0.297	14.1	ug/L	89	Standard
>	**Ga**	71	678.3	9.6				mg/L	25	Standard
	Rb	85	16041.8	3.3				ug/L	27	Standard
	Y	89	407111.7	2.0				ug/L	295132	Standard
>	**Rh**	103	141.7	25.5				ug/L	20	Standard
	Mo	98	1423.8	4.0	**0.9333**	0.017	1.8	ug/L	11	Standard
	Ag	107	95.7	6.1	**0.0024**	0.001	59.0	ug/L	64	Standard
	Cd	111	565.1	10.6	**0.3649**	0.031	8.6	mg/L	7	Standard
	Cd	114	1521.1	3.9	**0.3768**	0.017	4.6	ug/L	10	Standard
>	**In**	115	433281.7	2.3				ug/L	418014	Standard
	Sn	118	708.4	11.8	**0.0677**	0.020	29.9	ug/L	385	Standard
	Sb	123	592.8	3.5	**0.1307**	0.004	3.4	ug/L	54	Standard
	Ba	135	20804.9	0.9	**9.8665**	0.145	1.5	ug/L	44	Standard
	Ce	140	1035324.1	0.9				ug/L	33	Standard
>	**Tb**	159	870171.8	2.8				ug/L	854905	Standard
	Ho	165	15321.1	1.7				ug/L	13	Standard
	Tl	203	126.7	11.4	**0.0189**	0.002	11.0	ug/L	4	Standard
	Tl	205	111.7	22.1	**0.0254**	0.005	19.3	ug/L	5	Standard
	Pb	206	16238.4	1.7	**3.7791**	0.026	0.7	ug/L	182	Standard
	Pb	207	13181.1	1.8	**3.4063**	0.019	0.6	ug/L	160	Standard
	Pb	208	50231.2	2.0	**3.5521**	0.014	0.4	ug/L	604	Standard
	U	238	2301.2	3.7	**0.4810**	0.013	2.7	ug/L	3	Standard
>	**Bi**	209	384811.3	2.0				ug/L	395375	Standard

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Na	23	5.0	0.0	**-18.0641**	0.585	3.2	mg/L	0	Standard
Mg	24	50631.3	5.3	**119.0206**	6.494	5.5	mg/L	47	Standard
K	39	303.3	7.4	**3.7669**	0.375	10.0	mg/L	22	Standard
Ca	43	395.0	19.7	**40.6724**	9.145	22.5	mg/L	28	Standard
Fe	54	11086.3	3.5	**24.2287**	1.041	4.3	mg/L	72	Standard
Fe	57	3772.1	3.6	**27.4674**	0.622	2.3	mg/L	703	Standard
> **Sc-1**	45	32092.3	2.1				mg/L	30379	Standard
Cl	35	27366.1	7.6				ug/L	14530	Standard
Kr	83	7.0	57.1				ug/L	5	Standard
Br	81	6984.9	6.1				ug/L	497	Standard
P	31	13824.7	6.9				ug/L	10347	Standard
S	34	1578.4	6.1				ug/L	1535	Standard
Sr	88	228.3	13.4				ug/L	177	Standard
C	12	556.7	23.4				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	22936.6	0.9				mg/L	7	Standard
Ho-1	165	15321.1	1.7				mg/L	13	Standard
Er	166	15487.9	0.4				mg/L	3	Standard
I	127	328559.5	7.7				mg/L	1945	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		112.509	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		94.911	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.652	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.328	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508122014
Sample Date/Time: Monday, August 24, 2015 15:42:10
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53449.1	1.9				ug/L	43934	Standard
	Be	9	20.0	25.0	**0.0262**	0.008	28.7	ug/L	0	Standard
	Al	27	14590651.7	0.8	**180.4212**	3.060	1.7	ug/L	410	Standard
	Sc	45	29957.9	2.6				ug/L	30379	Standard
	Ti	47	77.3	13.5	**0.2789**	0.055	19.7	ug/L	21	Standard
	V	51	1255.6	7.3	**0.0067**	0.023	344.2	ug/L	1362	Standard
	Cr	52	8164.2	2.0	**0.1093**	0.040	36.2	ug/L	8311	Standard
	Cr	53	1490.1	5.9	**1.6774**	0.132	7.9	ug/L	325	Standard
	Mn	55	25674861.1	0.6	**6775.5136**	76.582	1.1	ug/L	694	Standard
	Co	59	12931.2	1.2	**3.4607**	0.052	1.5	ug/L	199	Standard
	Ni	60	10493.3	1.2	**7.0259**	0.075	1.1	ug/L	212	Standard
	Cu	65	1295.1	3.8	**0.8084**	0.035	4.3	ug/L	149	Standard
	Zn	66	4602.7	4.2	**5.1959**	0.248	4.8	ug/L	206	Standard
>	**Ge**	72	298422.3	0.9				ug/L	319179	Standard
	As	75	339.5	1.6	**0.5232**	0.010	1.8	ug/L	-51	Standard
	Se	82	122.3	4.6	**1.5858**	0.088	5.6	ug/L	19	Standard
	Se-1	77	156.3	9.0	**1.4472**	0.323	22.3	ug/L	89	Standard
>	**Ga**	71	226.7	6.7				mg/L	25	Standard
	Rb	85	14703.8	3.2				ug/L	27	Standard
	Y	89	298719.3	0.3				ug/L	295132	Standard
>	**Rh**	103	135.0	0.0				ug/L	20	Standard
	Mo	98	465.1	4.1	**0.2841**	0.010	3.5	ug/L	11	Standard
	Ag	107	64.0	11.3	**-0.0038**	0.001	33.0	ug/L	64	Standard
	Cd	111	102.9	10.3	**0.0564**	0.007	12.1	mg/L	7	Standard
	Cd	114	246.2	11.4	**0.0529**	0.007	12.8	ug/L	10	Standard
>	**In**	115	449140.4	0.9				ug/L	418014	Standard
	Sn	118	513.3	16.2	**0.0247**	0.016	66.9	ug/L	385	Standard
	Sb	123	116.7	3.0	**0.0131**	0.001	7.6	ug/L	54	Standard
	Ba	135	17298.2	1.1	**7.9071**	0.026	0.3	ug/L	44	Standard
	Ce	140	10650.4	2.4				ug/L	33	Standard
>	**Tb**	159	872879.6	1.1				ug/L	854905	Standard
	Ho	165	458.3	17.9				ug/L	13	Standard
	Tl	203	58.3	6.9	**0.0084**	0.001	7.2	ug/L	4	Standard
	Tl	205	48.3	15.8	**0.0115**	0.002	14.5	ug/L	5	Standard
	Pb	206	520.0	2.4	**0.0612**	0.004	5.9	ug/L	182	Standard
	Pb	207	442.0	4.1	**0.0586**	0.004	7.4	ug/L	160	Standard
	Pb	208	1665.7	0.7	**0.0639**	0.002	2.9	ug/L	604	Standard
	U	238	614.7	3.9	**0.1232**	0.004	3.0	ug/L	3	Standard
>	**Bi**	209	400438.9	0.9				ug/L	395375	Standard

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Na	23	6.7	43.3	**-30.3283**	18.306	60.4	mg/L	0	Standard
Mg	24	47930.7	2.6	**120.7601**	5.363	4.4	mg/L	47	Standard
K	39	308.3	16.4	**4.1330**	0.818	19.8	mg/L	22	Standard
Ca	43	353.3	10.8	**38.8435**	5.128	13.2	mg/L	28	Standard
Fe	54	1749.2	2.7	**3.9315**	0.092	2.3	mg/L	72	Standard
Fe	57	1380.1	5.1	**6.1205**	0.994	16.2	mg/L	703	Standard
Sc-1	45	29957.9	2.6				mg/L	30379	Standard
Cl	35	29894.2	4.5				ug/L	14530	Standard
Kr	83	3.0	66.7				ug/L	5	Standard
Br	81	5784.4	6.1				ug/L	497	Standard
P	31	13457.6	3.5				ug/L	10347	Standard
S	34	1571.7	7.4				ug/L	1535	Standard
Sr	88	180.0	12.1				ug/L	177	Standard
C	12	593.3	20.0				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	318.8	17.7				mg/L	7	Standard
Ho-1	165	458.3	17.9				mg/L	13	Standard
Er	166	790.0	4.6				mg/L	3	Standard
I	127	276793.9	5.6				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		121.659	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		93.497	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.446
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.281
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, August 24, 2015 15:45:22
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	53143.1	3.5				ug/L	43934	Standard
	Be	9	35757.2	2.5	**50.4751**	1.074	2.1	ug/L	0	Standard
	Al	27	3816342.7	2.7	**47.4536**	0.368	0.8	ug/L	410	Standard
	Sc	45	30524.1	1.4				ug/L	30379	Standard
	Ti	47	22205.6	0.5	**106.5624**	2.037	1.9	ug/L	21	Standard
	V	51	227403.9	2.2	**53.3988**	1.023	1.9	ug/L	1362	Standard
	Cr	52	301583.3	2.0	**52.8466**	1.561	3.0	ug/L	8311	Standard
	Cr	53	36799.7	3.0	**52.3288**	2.333	4.5	ug/L	325	Standard
	Mn	55	208790.7	1.7	**53.0128**	1.218	2.3	ug/L	694	Standard
	Co	59	202750.3	0.9	**53.1764**	0.398	0.7	ug/L	199	Standard
	Ni	60	77837.1	1.1	**51.4686**	0.476	0.9	ug/L	212	Standard
	Cu	65	74837.0	0.7	**51.0438**	0.485	1.0	ug/L	149	Standard
	Zn	66	42091.1	0.3	**50.0895**	0.964	1.9	ug/L	206	Standard
>	Ge	72	309066.9	1.6				ug/L	319179	Standard
	As	75	42414.3	0.9	**50.6886**	0.649	1.3	ug/L	-51	Standard
	Se	82	3706.3	0.4	**53.0587**	0.737	1.4	ug/L	19	Standard
	Se-1	77	2642.6	2.3	**51.8144**	0.599	1.2	ug/L	89	Standard
>	Ga	71	50.0	17.3				mg/L	25	Standard
	Rb	85	658.3	5.4				ug/L	27	Standard
	Y	89	301626.3	1.2				ug/L	295132	Standard
>	Rh	103	63.3	12.1				ug/L	20	Standard
	Mo	98	157448.8	1.2	**99.4858**	0.762	0.8	ug/L	11	Standard
	Ag	107	280898.4	1.7	**48.3210**	0.676	1.4	ug/L	64	Standard
	Cd	111	81585.2	1.6	**51.3474**	0.680	1.3	mg/L	7	Standard
	Cd	114	213819.0	2.2	**51.1614**	0.736	1.4	ug/L	10	Standard
>	In	115	456616.2	0.7				ug/L	418014	Standard
	Sn	118	241926.4	1.4	**46.0137**	0.437	0.9	ug/L	385	Standard
	Sb	123	212385.4	0.9	**49.3701**	0.106	0.2	ug/L	54	Standard
	Ba	135	104383.3	0.4	**47.0561**	0.193	0.4	ug/L	44	Standard
	Ce	140	106.7	36.4				ug/L	33	Standard
>	Tb	159	882028.6	1.0				ug/L	854905	Standard
	Ho	165	10.0	50.0				ug/L	13	Standard
	Tl	203	361421.2	0.5	**49.2473**	0.356	0.7	ug/L	4	Standard
	Tl	205	250679.0	2.2	**49.4593**	1.420	2.9	ug/L	5	Standard
	Pb	206	227114.7	1.3	**49.2287**	0.582	1.2	ug/L	182	Standard
	Pb	207	206409.5	0.8	**49.7079**	0.267	0.5	ug/L	160	Standard
	Pb	208	748932.2	0.8	**49.2994**	0.101	0.2	ug/L	604	Standard
	U	238	259906.7	0.7	**49.9403**	0.500	1.0	ug/L	3	Standard
>	Bi	209	418875.6	0.7				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	2260.2	4.8	**5.4752**	0.207	3.8	mg/L	47	Standard
K	39	398.3	18.0	**5.2968**	1.042	19.7	mg/L	22	Standard
Ca	43	83.3	51.0	**6.8422**	4.932	72.1	mg/L	28	Standard
Fe	54	2258.9	1.7	**5.0357**	0.138	2.7	mg/L	72	Standard
Fe	57	1348.4	9.6	**5.5495**	1.405	25.3	mg/L	703	Standard
> **Sc-1**	45	30524.1	1.4				mg/L	30379	Standard
Cl	35	17996.7	3.1				ug/L	14530	Standard
Kr	83	6.0	16.7				ug/L	5	Standard
Br	81	856.7	8.2				ug/L	497	Standard
P	31	12398.4	2.4				ug/L	10347	Standard
S	34	1715.1	4.9				ug/L	1535	Standard
Sr	88	233.3	14.3				ug/L	177	Standard
C	12	216.7	34.6				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	9.7	103.3				mg/L	7	Standard
Ho-1	165	10.0	50.0				mg/L	13	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	9341.3	25.3				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	100.950		
Al	27	94.907		
Sc	45			
Ti	47	106.562		
V	51	106.798		
Cr	52	105.693		
Cr	53			
Mn	55	106.026		
Co	59	106.353		
Ni	60	102.937		
Cu	65	102.088		
Zn	66	100.179		
> Ge	72		96.832	
As	75	101.377		
Se	82	106.117		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	99.486		
Ag	107	96.642		
Cd	111	102.695		
Cd	114			
In	115			109.235
Sn	118	92.027		
Sb	123	98.740		
Ba	135	94.112		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.495		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.599		
U	238	99.881		
Bi	209			105.944
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, August 24, 2015 15:48:34
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51025.8	1.9				ug/L	43934	Standard
	Be	9	16.7	34.6	**0.0226**	0.009	38.8	ug/L	0	Standard
	Al	27	645.0	32.9	**-0.0031**	0.003	88.2	ug/L	410	Standard
	Sc	45	30806.4	6.0				ug/L	30379	Standard
	Ti	47	20.3	14.2	**-0.0083**	0.014	162.7	ug/L	21	Standard
	V	51	1087.4	1.3	**-0.0434**	0.004	9.4	ug/L	1362	Standard
	Cr	52	7229.7	1.5	**-0.1098**	0.025	23.0	ug/L	8311	Standard
	Cr	53	468.3	11.9	**0.1348**	0.083	61.5	ug/L	325	Standard
	Mn	55	902.0	6.1	**0.0341**	0.015	43.0	ug/L	694	Standard
	Co	59	202.0	8.6	**-0.0023**	0.005	205.0	ug/L	199	Standard
	Ni	60	188.0	14.5	**-0.0606**	0.019	30.7	ug/L	212	Standard
	Cu	65	194.7	12.3	**0.0250**	0.017	68.0	ug/L	149	Standard
	Zn	66	247.7	1.6	**-0.2385**	0.006	2.4	ug/L	206	Standard
>	**Ge**	72	308724.2	0.5				ug/L	319179	Standard
	As	75	-39.0	26.2	**0.0573**	0.012	21.5	ug/L	-51	Standard
	Se	82	21.8	36.9	**0.0785**	0.115	146.0	ug/L	19	Standard
	Se-1	77	99.3	8.6	**0.1765**	0.166	93.9	ug/L	89	Standard
>	**Ga**	71	13.3	21.7				mg/L	25	Standard
	Rb	85	30.0	28.9				ug/L	27	Standard
	Y	89	300505.3	2.5				ug/L	295132	Standard
>	**Rh**	103	38.3	58.8				ug/L	20	Standard
	Mo	98	52.8	44.1	**0.0188**	0.014	76.8	ug/L	11	Standard
	Ag	107	79.3	9.5	**-0.0012**	0.001	111.2	ug/L	64	Standard
	Cd	111	8.9	78.8	**-0.0039**	0.004	114.9	mg/L	7	Standard
	Cd	114	21.6	65.8	**-0.0018**	0.003	187.6	ug/L	10	Standard
>	**In**	115	454112.6	0.9				ug/L	418014	Standard
	Sn	118	498.3	11.0	**0.0207**	0.011	54.3	ug/L	385	Standard
	Sb	123	746.0	8.0	**0.1598**	0.013	7.9	ug/L	54	Standard
	Ba	135	48.0	18.2	**-0.0030**	0.004	132.7	ug/L	44	Standard
	Ce	140	35.0	28.6				ug/L	33	Standard
>	**Tb**	159	865182.7	1.0				ug/L	854905	Standard
	Ho	165	11.7	65.5				ug/L	13	Standard
	Tl	203	18.3	67.3	**0.0026**	0.002	64.4	ug/L	4	Standard
	Tl	205	8.3	91.7	**0.0032**	0.002	48.1	ug/L	5	Standard
	Pb	206	205.3	8.8	**-0.0119**	0.003	28.8	ug/L	182	Standard
	Pb	207	174.3	1.8	**-0.0104**	0.001	8.7	ug/L	160	Standard
	Pb	208	667.7	1.5	**-0.0065**	0.001	18.4	ug/L	604	Standard
	U	238	13.7	62.2	**0.0024**	0.002	69.8	ug/L	3	Standard
>	**Bi**	209	415012.5	1.2				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	48.3	57.0	**0.0042**	0.066	1579.9	mg/L	47	Standard
K	39	11.7	65.5	**-0.1011**	0.096	94.8	mg/L	22	Standard
Ca	43	38.3	30.1	**1.6637**	1.506	90.5	mg/L	28	Standard
Fe	54	76.1	10.3	**-0.0216**	0.009	40.6	mg/L	72	Standard
Fe	57	838.4	13.2	**0.4633**	0.896	193.4	mg/L	703	Standard
> **Sc-1**	45	30806.4	6.0				mg/L	30379	Standard
Cl	35	18024.1	2.1				ug/L	14530	Standard
Kr	83	5.0	0.0				ug/L	5	Standard
Br	81	726.7	6.4				ug/L	497	Standard
P	31	12228.3	0.2				ug/L	10347	Standard
S	34	1745.1	2.9				ug/L	1535	Standard
Sr	88	186.7	13.7				ug/L	177	Standard
C	12	193.3	43.4				mg/L	153	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	12.5	126.5				mg/L	7	Standard
Ho-1	165	11.7	65.5				mg/L	13	Standard
Er	166	16.7	91.7				mg/L	3	Standard
I	127	5592.7	9.7				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.724	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.636
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.967
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1508122010
Sample Date/Time: Monday, August 24, 2015 15:57:33
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50594.3	0.8				ug/L	43934	Standard
	Be	9	13.3	78.1	**0.0179**	0.016	87.4	ug/L	0	Standard
	Al	27	458591.0	2.5	**5.9780**	0.102	1.7	ug/L	410	Standard
	Sc	45	31472.7	2.6				ug/L	30379	Standard
	Ti	47	110.0	14.5	**0.4005**	0.074	18.5	ug/L	21	Standard
	V	51	1719.9	6.0	**0.0887**	0.019	21.5	ug/L	1362	Standard
	Cr	52	8270.6	1.2	**0.0146**	0.033	227.9	ug/L	8311	Standard
	Cr	53	545.0	9.3	**0.2111**	0.063	29.7	ug/L	325	Standard
	Mn	55	52362.0	0.8	**12.5946**	0.106	0.8	ug/L	694	Standard
	Co	59	293.3	4.6	**0.0185**	0.003	18.5	ug/L	199	Standard
	Ni	60	360.0	4.9	**0.0435**	0.011	26.2	ug/L	212	Standard
	Cu	65	443.0	4.8	**0.1819**	0.010	5.5	ug/L	149	Standard
	Zn	66	2069.5	1.4	**1.8489**	0.005	0.2	ug/L	206	Standard
>	**Ge**	72	322410.6	1.4				ug/L	319179	Standard
	As	75	454.5	5.5	**0.6233**	0.025	4.1	ug/L	-51	Standard
	Se	82	29.0	26.9	**0.1651**	0.106	64.4	ug/L	19	Standard
	Se-1	77	97.3	1.6	**0.0524**	0.038	72.8	ug/L	89	Standard
>	**Ga**	71	55.0	48.1				mg/L	25	Standard
	Rb	85	775.0	2.2				ug/L	27	Standard
	Y	89	302621.3	1.9				ug/L	295132	Standard
>	**Rh**	103	25.0	34.6				ug/L	20	Standard
	Mo	98	63.2	9.1	**0.0260**	0.004	14.7	ug/L	11	Standard
	Ag	107	71.0	20.3	**-0.0026**	0.002	94.6	ug/L	64	Standard
	Cd	111	11.5	13.3	**-0.0021**	0.001	47.5	mg/L	7	Standard
	Cd	114	17.4	97.7	**-0.0028**	0.004	148.5	ug/L	10	Standard
>	**In**	115	448492.3	0.9				ug/L	418014	Standard
	Sn	118	468.3	8.0	**0.0160**	0.007	40.6	ug/L	385	Standard
	Sb	123	236.5	7.4	**0.0414**	0.004	9.0	ug/L	54	Standard
	Ba	135	10025.6	0.7	**4.5795**	0.072	1.6	ug/L	44	Standard
	Ce	140	9921.6	2.0				ug/L	33	Standard
>	**Tb**	159	889601.1	1.5				ug/L	854905	Standard
	Ho	165	198.3	21.1				ug/L	13	Standard
	Tl	203	7.3	7.9	**0.0011**	0.000	7.1	ug/L	4	Standard
	Tl	205	0.0		**0.0015**	0.000	0.0	ug/L	5	Standard
	Pb	206	60106.3	0.6	**13.1330**	0.075	0.6	ug/L	182	Standard
	Pb	207	50293.3	0.3	**12.2080**	0.036	0.3	ug/L	160	Standard
	Pb	208	189873.6	0.5	**12.6013**	0.067	0.5	ug/L	604	Standard
	U	238	35.3	27.9	**0.0066**	0.002	29.1	ug/L	3	Standard
>	**Bi**	209	414222.1	0.1				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	211.7	7.2	**0.3936**	0.026	6.7	mg/L	47	Standard
K	39	38.3	19.9	**0.2582**	0.092	35.7	mg/L	22	Standard
Ca	43	45.0	29.4	**2.2909**	1.578	68.9	mg/L	28	Standard
Fe	54	156.0	17.7	**0.1555**	0.070	45.2	mg/L	72	Standard
Fe	57	768.4	12.6	**-0.3543**	1.069	301.8	mg/L	703	Standard
> **Sc-1**	45	31472.7	2.6				mg/L	30379	Standard
Cl	35	17390.0	1.0				ug/L	14530	Standard
Kr	83	4.7	12.4				ug/L	5	Standard
Br	81	873.4	13.2				ug/L	497	Standard
P	31	11664.5	2.0				ug/L	10347	Standard
S	34	1626.8	3.6				ug/L	1535	Standard
Sr	88	185.0	21.1				ug/L	177	Standard
C	12	326.7	12.4				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	357.0	23.8				mg/L	7	Standard
Ho-1	165	198.3	21.1				mg/L	13	Standard
Er	166	133.3	70.9				mg/L	3	Standard
I	127	13707.9	5.1				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.161	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.012	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.291
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.767
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508122016
Sample Date/Time: Monday, August 24, 2015 16:00:44
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	46952.7	4.2				ug/L	43934	Standard
	Be	9	23.3	99.0	**0.0351**	0.036	103.5	ug/L	0	Standard
	Al	27	9529820.7	1.2	**134.2589**	5.282	3.9	ug/L	410	Standard
	Sc	45	30833.0	2.2				ug/L	30379	Standard
	Ti	47	319.3	84.4	**1.4552**	1.342	92.3	ug/L	21	Standard
	V	51	1553.3	28.7	**0.0706**	0.111	156.6	ug/L	1362	Standard
	Cr	52	10066.7	4.0	**0.4148**	0.049	11.9	ug/L	8311	Standard
	Cr	53	7640.4	29.6	**10.5255**	3.220	30.6	ug/L	325	Standard
	Mn	55	3071215.7	0.3	**789.4836**	13.868	1.8	ug/L	694	Standard
	Co	59	2124.5	2.6	**0.5073**	0.010	2.0	ug/L	199	Standard
	Ni	60	3207.0	3.4	**1.9611**	0.038	1.9	ug/L	212	Standard
	Cu	65	919.0	3.0	**0.5254**	0.013	2.5	ug/L	149	Standard
	Zn	66	1966.5	4.0	**1.8485**	0.055	3.0	ug/L	206	Standard
>	**Ge**	72	306335.0	1.7				ug/L	319179	Standard
	As	75	331.8	29.0	**0.5019**	0.110	21.9	ug/L	-51	Standard
	Se	82	116.3	4.6	**1.4516**	0.054	3.8	ug/L	19	Standard
	Se-1	77	653.7	16.5	**11.5503**	2.185	18.9	ug/L	89	Standard
>	**Ga**	71	80.0	22.5				mg/L	25	Standard
	Rb	85	5290.9	1.4				ug/L	27	Standard
	Y	89	288511.0	0.3				ug/L	295132	Standard
>	**Rh**	103	131.7	37.5				ug/L	20	Standard
	Mo	98	372.8	5.1	**0.2438**	0.018	7.3	ug/L	11	Standard
	Ag	107	88.0	18.0	**0.0016**	0.003	185.5	ug/L	64	Standard
	Cd	111	132.5	10.0	**0.0821**	0.010	12.7	mg/L	7	Standard
	Cd	114	262.0	19.2	**0.0618**	0.014	22.2	ug/L	10	Standard
>	**In**	115	416523.7	1.8				ug/L	418014	Standard
	Sn	118	546.7	2.6	**0.0394**	0.004	9.7	ug/L	385	Standard
	Sb	123	219.8	5.9	**0.0415**	0.004	9.0	ug/L	54	Standard
	Ba	135	178236.6	0.9	**88.1152**	1.096	1.2	ug/L	44	Standard
	Ce	140	1286.7	14.6				ug/L	33	Standard
>	**Tb**	159	846136.0	1.1				ug/L	854905	Standard
	Ho	165	45.0	40.1				ug/L	13	Standard
	Tl	203	245.7	3.8	**0.0373**	0.001	3.9	ug/L	4	Standard
	Tl	205	166.7	36.7	**0.0380**	0.013	35.4	ug/L	5	Standard
	Pb	206	452.7	5.6	**0.0521**	0.006	12.2	ug/L	182	Standard
	Pb	207	387.0	8.3	**0.0507**	0.009	17.1	ug/L	160	Standard
	Pb	208	1377.0	4.1	**0.0498**	0.004	8.8	ug/L	604	Standard
	U	238	2861.6	2.3	**0.6098**	0.015	2.4	ug/L	3	Standard
>	**Bi**	209	377487.6	0.2				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	56500.2	1.1	**138.2601**	1.773	1.3	mg/L	47	Standard
K	39	165.0	9.1	**2.0166**	0.183	9.1	mg/L	22	Standard
Ca	43	465.0	2.2	**50.3902**	2.075	4.1	mg/L	28	Standard
Fe	54	147.5	6.8	**0.1422**	0.025	17.4	mg/L	72	Standard
Fe	57	1038.4	3.4	**2.4057**	0.454	18.9	mg/L	703	Standard
> **Sc-1**	45	30833.0	2.2				mg/L	30379	Standard
Cl	35	17363.3	1.7				ug/L	14530	Standard
Kr	83	4.0	25.0				ug/L	5	Standard
Br	81	7608.6	3.1				ug/L	497	Standard
P	31	12798.7	1.3				ug/L	10347	Standard
S	34	1640.1	10.7				ug/L	1535	Standard
Sr	88	230.0	13.6				ug/L	177	Standard
C	12	396.7	13.9				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	83.3	12.0				mg/L	7	Standard
Ho-1	165	45.0	40.1				mg/L	13	Standard
Er	166	70.0	65.5				mg/L	3	Standard
I	127	466804.5	4.9				mg/L	1945	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		106.872	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.976	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.643
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.476
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508122017
Sample Date/Time: Monday, August 24, 2015 16:03:56
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51196.4	2.6				ug/L	43934	Standard
	Be	9	13.3	94.4	**0.0174**	0.018	106.1	ug/L	0	Standard
	Al	27	8494178.4	1.9	**109.6741**	3.286	3.0	ug/L	410	Standard
	Sc	45	32571.6	1.9				ug/L	30379	Standard
	Ti	47	156.3	5.5	**0.6233**	0.048	7.7	ug/L	21	Standard
	V	51	4946.3	2.7	**0.8339**	0.043	5.1	ug/L	1362	Standard
	Cr	52	11807.3	2.9	**0.6502**	0.043	6.6	ug/L	8311	Standard
	Cr	53	1318.4	12.4	**1.2990**	0.221	17.0	ug/L	325	Standard
	Mn	55	12829.8	6.6	**2.9765**	0.169	5.7	ug/L	694	Standard
	Co	59	790.4	0.9	**0.1461**	0.002	1.1	ug/L	199	Standard
	Ni	60	2866.9	1.3	**1.6616**	0.008	0.5	ug/L	212	Standard
	Cu	65	1096.4	5.6	**0.6194**	0.044	7.1	ug/L	149	Standard
	Zn	66	2915.9	3.3	**2.8673**	0.067	2.3	ug/L	206	Standard
>	**Ge**	72	318330.1	1.5				ug/L	319179	Standard
	As	75	2306.0	0.6	**2.7740**	0.029	1.0	ug/L	-51	Standard
	Se	82	128.2	11.6	**1.5567**	0.227	14.6	ug/L	19	Standard
	Se-1	77	180.0	3.9	**1.7081**	0.187	11.0	ug/L	89	Standard
>	**Ga**	71	63.3	29.9				mg/L	25	Standard
	Rb	85	20402.1	2.3				ug/L	27	Standard
	Y	89	297443.5	1.9				ug/L	295132	Standard
>	**Rh**	103	86.7	21.8				ug/L	20	Standard
	Mo	98	1226.4	0.9	**0.7819**	0.005	0.7	ug/L	11	Standard
	Ag	107	76.0	16.0	**-0.0015**	0.002	132.0	ug/L	64	Standard
	Cd	111	22.4	2.6	**0.0050**	0.000	5.4	mg/L	7	Standard
	Cd	114	58.2	33.1	**0.0073**	0.005	63.5	ug/L	10	Standard
>	**In**	115	444325.4	0.9				ug/L	418014	Standard
	Sn	118	376.7	15.4	**-0.0011**	0.011	960.2	ug/L	385	Standard
	Sb	123	2895.6	2.4	**0.6775**	0.019	2.9	ug/L	54	Standard
	Ba	135	49932.5	1.5	**23.1203**	0.375	1.6	ug/L	44	Standard
	Ce	140	1706.8	9.9				ug/L	33	Standard
>	**Tb**	159	867865.7	1.3				ug/L	854905	Standard
	Ho	165	175.0	12.5				ug/L	13	Standard
	Tl	203	122.0	8.6	**0.0174**	0.002	8.9	ug/L	4	Standard
	Tl	205	91.7	27.5	**0.0203**	0.005	25.7	ug/L	5	Standard
	Pb	206	368.0	1.9	**0.0259**	0.002	7.4	ug/L	182	Standard
	Pb	207	312.3	5.4	**0.0253**	0.004	16.9	ug/L	160	Standard
	Pb	208	1159.0	1.1	**0.0283**	0.001	4.2	ug/L	604	Standard
	U	238	4813.4	1.6	**0.9587**	0.019	2.0	ug/L	3	Standard
>	**Bi**	209	404004.8	0.4				ug/L	395375	Standard

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Na	23	5.0	100.0	**-17.9509**	28.046	156.2	mg/L	0	Standard
Mg	24	1788.4	1.6	**4.0329**	0.115	2.9	mg/L	47	Standard
K	39	325.0	12.6	**3.9917**	0.597	14.9	mg/L	22	Standard
Ca	43	336.7	20.2	**33.5965**	6.969	20.7	mg/L	28	Standard
Fe	54	105.9	7.5	**0.0337**	0.013	39.0	mg/L	72	Standard
Fe	57	1078.4	6.4	**2.2343**	0.696	31.1	mg/L	703	Standard
> **Sc-1**	45	32571.6	1.9				mg/L	30379	Standard
Cl	35	19306.3	2.0				ug/L	14530	Standard
Kr	83	3.7	31.5				ug/L	5	Standard
Br	81	1720.1	20.4				ug/L	497	Standard
P	31	13792.9	3.0				ug/L	10347	Standard
S	34	1700.1	1.6				ug/L	1535	Standard
Sr	88	241.7	13.5				ug/L	177	Standard
C	12	513.3	4.1				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	225.7	30.3				mg/L	7	Standard
Ho-1	165	175.0	12.5				mg/L	13	Standard
Er	166	230.0	19.0				mg/L	3	Standard
I	127	23071.0	8.5				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.531	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.734	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	106.294
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.183
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1508122018
Sample Date/Time: Monday, August 24, 2015 16:07:07
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49798.4	1.2				ug/L	43934	Standard
	Be	9	25.0	52.9	**0.0356**	0.020	55.3	ug/L	0	Standard
	Al	27	9317881.1	0.9	**123.6446**	0.846	0.7	ug/L	410	Standard
	Sc	45	32185.8	1.2				ug/L	30379	Standard
	Ti	47	83.7	7.3	**0.2828**	0.026	9.3	ug/L	21	Standard
	V	51	1634.6	13.2	**0.0732**	0.049	67.4	ug/L	1362	Standard
	Cr	52	11064.7	4.7	**0.5155**	0.110	21.3	ug/L	8311	Standard
	Cr	53	2300.2	20.4	**2.6631**	0.686	25.8	ug/L	325	Standard
	Mn	55	1021713.8	1.0	**251.8299**	4.616	1.8	ug/L	694	Standard
	Co	59	2959.0	1.0	**0.6966**	0.001	0.2	ug/L	199	Standard
	Ni	60	2552.5	1.8	**1.4543**	0.046	3.1	ug/L	212	Standard
	Cu	65	782.7	3.7	**0.4096**	0.022	5.4	ug/L	149	Standard
	Zn	66	1971.5	4.2	**1.7581**	0.092	5.2	ug/L	206	Standard
>	**Ge**	72	319293.1	1.1				ug/L	319179	Standard
	As	75	5087.6	2.3	**5.9760**	0.072	1.2	ug/L	-51	Standard
	Se	82	780.3	3.5	**10.6217**	0.264	2.5	ug/L	19	Standard
	Se-1	77	177.3	11.6	**1.6462**	0.441	26.8	ug/L	89	Standard
>	**Ga**	71	56.7	45.3				mg/L	25	Standard
	Rb	85	14460.2	1.3				ug/L	27	Standard
	Y	89	303883.9	0.8				ug/L	295132	Standard
>	**Rh**	103	66.7	18.9				ug/L	20	Standard
	Mo	98	1676.3	1.1	**1.0826**	0.009	0.8	ug/L	11	Standard
	Ag	107	93.7	4.3	**0.0017**	0.001	38.3	ug/L	64	Standard
	Cd	111	44.4	18.5	**0.0194**	0.005	27.1	mg/L	7	Standard
	Cd	114	114.4	18.1	**0.0213**	0.005	23.9	ug/L	10	Standard
>	**In**	115	440826.8	0.7				ug/L	418014	Standard
	Sn	118	583.3	7.3	**0.0403**	0.008	20.0	ug/L	385	Standard
	Sb	123	363.6	3.1	**0.0731**	0.003	4.5	ug/L	54	Standard
	Ba	135	708503.9	0.6	**330.9821**	1.904	0.6	ug/L	44	Standard
	Ce	140	570.0	14.7				ug/L	33	Standard
>	**Tb**	159	858909.5	0.6				ug/L	854905	Standard
	Ho	165	146.7	25.6				ug/L	13	Standard
	Tl	203	48.7	8.3	**0.0070**	0.001	7.3	ug/L	4	Standard
	Tl	205	33.3	22.9	**0.0084**	0.002	19.1	ug/L	5	Standard
	Pb	206	1272.1	2.6	**0.2306**	0.007	3.0	ug/L	182	Standard
	Pb	207	1067.7	2.6	**0.2152**	0.005	2.4	ug/L	160	Standard
	Pb	208	4050.5	0.8	**0.2271**	0.002	1.1	ug/L	604	Standard
	U	238	249.7	10.2	**0.0497**	0.005	10.2	ug/L	3	Standard
>	**Bi**	209	402212.6	0.9				ug/L	395375	Standard

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Na	23	3.3	173.2	**-8.5559**	32.269	377.2	mg/L	0	Standard
Mg	24	8352.3	1.0	**19.4788**	0.048	0.2	mg/L	47	Standard
K	39	158.3	17.4	**1.8368**	0.390	21.2	mg/L	22	Standard
Ca	43	265.0	23.6	**26.2125**	6.680	25.5	mg/L	28	Standard
Fe	54	2172.3	3.6	**4.5745**	0.165	3.6	mg/L	72	Standard
Fe	57	1460.1	2.7	**5.8972**	0.444	7.5	mg/L	703	Standard
Sc-1	45	32185.8	1.2				mg/L	30379	Standard
Cl	35	17582.9	2.0				ug/L	14530	Standard
Kr	83	3.7	103.3				ug/L	5	Standard
Br	81	59021.4	2.4				ug/L	497	Standard
P	31	13642.8	0.6				ug/L	10347	Standard
S	34	1808.4	6.6				ug/L	1535	Standard
Sr	88	213.3	7.2				ug/L	177	Standard
C	12	533.3	1.1				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	3	Standard
Dy	164	118.0	19.3				mg/L	7	Standard
Ho-1	165	146.7	25.6				mg/L	13	Standard
Er	166	180.0	33.8				mg/L	3	Standard
I	127	426995.9	3.4				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		113.349	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.036	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.457
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.729
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1508122019
Sample Date/Time: Monday, August 24, 2015 16:10:18
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50119.5	3.6				ug/L	43934	Standard
	Be	9	3.3	86.6	**0.0029**	0.004	144.8	ug/L	0	Standard
	Al	27	7659529.9	2.5	**101.0324**	2.973	2.9	ug/L	410	Standard
	Sc	45	32887.3	2.3				ug/L	30379	Standard
	Ti	47	78.7	7.2	**0.2557**	0.024	9.3	ug/L	21	Standard
	V	51	1724.9	4.7	**0.0897**	0.017	18.4	ug/L	1362	Standard
	Cr	52	10090.4	2.8	**0.3271**	0.060	18.5	ug/L	8311	Standard
	Cr	53	2036.8	4.8	**2.2623**	0.115	5.1	ug/L	325	Standard
	Mn	55	1051155.8	1.8	**256.3832**	6.099	2.4	ug/L	694	Standard
	Co	59	1367.4	2.4	**0.2885**	0.006	2.1	ug/L	199	Standard
	Ni	60	2993.0	2.4	**1.7172**	0.062	3.6	ug/L	212	Standard
	Cu	65	2893.6	1.5	**1.7861**	0.027	1.5	ug/L	149	Standard
	Zn	66	3241.3	0.6	**3.1970**	0.028	0.9	ug/L	206	Standard
>	**Ge**	72	322660.2	0.8				ug/L	319179	Standard
	As	75	1597.1	4.1	**1.9286**	0.089	4.6	ug/L	-51	Standard
	Se	82	151.5	6.1	**1.8518**	0.135	7.3	ug/L	19	Standard
	Se-1	77	163.3	4.4	**1.3349**	0.153	11.5	ug/L	89	Standard
>	**Ga**	71	40.0	25.0				mg/L	25	Standard
	Rb	85	9177.8	1.6				ug/L	27	Standard
	Y	89	307713.2	2.8				ug/L	295132	Standard
>	**Rh**	103	71.7	16.1				ug/L	20	Standard
	Mo	98	1937.4	1.7	**1.2607**	0.029	2.3	ug/L	11	Standard
	Ag	107	117.7	8.7	**0.0061**	0.002	32.4	ug/L	64	Standard
	Cd	111	10.0	14.8	**-0.0029**	0.001	32.6	mg/L	7	Standard
	Cd	114	30.0	90.8	**0.0005**	0.007	1474.7	ug/L	10	Standard
>	**In**	115	438417.2	0.9				ug/L	418014	Standard
	Sn	118	2361.9	6.5	**0.3938**	0.029	7.4	ug/L	385	Standard
	Sb	123	1555.8	3.1	**0.3623**	0.015	4.1	ug/L	54	Standard
	Ba	135	819616.6	1.0	**385.0010**	3.354	0.9	ug/L	44	Standard
	Ce	140	848.4	1.4				ug/L	33	Standard
>	**Tb**	159	860337.2	1.6				ug/L	854905	Standard
	Ho	165	115.0	15.7				ug/L	13	Standard
	Tl	203	28.0	14.3	**0.0041**	0.001	13.7	ug/L	4	Standard
	Tl	205	16.7	105.4	**0.0050**	0.004	73.8	ug/L	5	Standard
	Pb	206	777.0	3.9	**0.1204**	0.006	4.8	ug/L	182	Standard
	Pb	207	665.0	3.3	**0.1158**	0.007	5.9	ug/L	160	Standard
	Pb	208	2592.1	0.5	**0.1288**	0.002	1.7	ug/L	604	Standard
	U	238	153.0	3.0	**0.0306**	0.001	2.1	ug/L	3	Standard
>	**Bi**	209	398293.4	0.9				ug/L	395375	Standard

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Na	23	3.3	86.6	**-7.9978**	15.653	195.7	mg/L	0	Standard
Mg	24	7843.7	3.9	**17.8891**	0.350	2.0	mg/L	47	Standard
K	39	130.0	17.6	**1.4198**	0.270	19.0	mg/L	22	Standard
Ca	43	198.3	3.9	**18.4900**	1.144	6.2	mg/L	28	Standard
Fe	54	571.3	13.6	**1.0303**	0.149	14.4	mg/L	72	Standard
Fe	57	1026.7	7.6	**1.6803**	0.925	55.0	mg/L	703	Standard
> **Sc-1**	45	32887.3	2.3				mg/L	30379	Standard
Cl	35	17985.3	1.7				ug/L	14530	Standard
Kr	83	6.0	28.9				ug/L	5	Standard
Br	81	9506.3	4.4				ug/L	497	Standard
P	31	13122.3	2.4				ug/L	10347	Standard
S	34	1913.5	5.1				ug/L	1535	Standard
Sr	88	253.3	7.5				ug/L	177	Standard
C	12	436.7	27.3				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	102.2	1.1				mg/L	7	Standard
Ho-1	165	115.0	15.7				mg/L	13	Standard
Er	166	163.3	14.1				mg/L	3	Standard
I	127	554066.3	4.7				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.080	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.091	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.881
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.738
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1508122020
Sample Date/Time: Monday, August 24, 2015 16:13:30
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49517.5	3.1				ug/L	43934	Standard
	Be	9	11.7	49.5	**0.0157**	0.009	55.4	ug/L	0	Standard
	Al	27	6712994.7	1.4	**89.6424**	3.405	3.8	ug/L	410	Standard
	Sc	45	32084.0	4.9				ug/L	30379	Standard
	Ti	47	95.7	22.5	**0.3383**	0.103	30.5	ug/L	21	Standard
	V	51	1694.9	11.6	**0.0861**	0.043	50.2	ug/L	1362	Standard
	Cr	52	10291.2	0.3	**0.3767**	0.017	4.5	ug/L	8311	Standard
	Cr	53	950.0	11.4	**0.7798**	0.158	20.3	ug/L	325	Standard
	Mn	55	3178459.5	1.1	**782.2539**	9.192	1.2	ug/L	694	Standard
	Co	59	4855.4	2.0	**1.1760**	0.009	0.8	ug/L	199	Standard
	Ni	60	6321.0	3.3	**3.8671**	0.147	3.8	ug/L	212	Standard
	Cu	65	641.7	4.8	**0.3156**	0.025	7.9	ug/L	149	Standard
	Zn	66	3263.7	2.5	**3.2547**	0.068	2.1	ug/L	206	Standard
>	**Ge**	72	319919.2	1.3				ug/L	319179	Standard
	As	75	1531.9	1.2	**1.8691**	0.042	2.2	ug/L	-51	Standard
	Se	82	384.4	4.3	**5.1063**	0.294	5.8	ug/L	19	Standard
	Se-1	77	106.0	4.3	**0.2374**	0.102	42.9	ug/L	89	Standard
>	**Ga**	71	80.0	28.6				mg/L	25	Standard
	Rb	85	5464.3	2.6				ug/L	27	Standard
	Y	89	299287.0	0.2				ug/L	295132	Standard
>	**Rh**	103	70.0	12.4				ug/L	20	Standard
	Mo	98	299.6	2.0	**0.1816**	0.007	3.7	ug/L	11	Standard
	Ag	107	69.0	8.1	**-0.0027**	0.001	29.5	ug/L	64	Standard
	Cd	111	21.6	10.4	**0.0046**	0.002	34.8	mg/L	7	Standard
	Cd	114	43.6	28.3	**0.0038**	0.003	79.8	ug/L	10	Standard
>	**In**	115	440703.3	1.7				ug/L	418014	Standard
	Sn	118	488.3	15.5	**0.0217**	0.016	73.9	ug/L	385	Standard
	Sb	123	185.0	1.4	**0.0300**	0.000	1.0	ug/L	54	Standard
	Ba	135	123223.4	0.3	**57.5698**	0.885	1.5	ug/L	44	Standard
	Ce	140	1645.1	5.1				ug/L	33	Standard
>	**Tb**	159	873467.4	0.6				ug/L	854905	Standard
	Ho	165	206.7	7.8				ug/L	13	Standard
	Tl	203	42.7	21.7	**0.0061**	0.001	21.8	ug/L	4	Standard
	Tl	205	21.7	26.6	**0.0059**	0.001	19.4	ug/L	5	Standard
	Pb	206	319.7	5.8	**0.0148**	0.005	30.9	ug/L	182	Standard
	Pb	207	252.0	2.4	**0.0099**	0.002	20.4	ug/L	160	Standard
	Pb	208	947.7	3.3	**0.0136**	0.002	12.6	ug/L	604	Standard
	U	238	408.3	5.0	**0.0807**	0.004	5.3	ug/L	3	Standard
>	**Bi**	209	405655.9	0.9				ug/L	395375	Standard

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Na	23	5.0	0.0	**-18.1094**	1.418	7.8	mg/L	0	Standard
Mg	24	2328.5	2.7	**5.3706**	0.174	3.2	mg/L	47	Standard
K	39	138.3	9.1	**1.5833**	0.253	16.0	mg/L	22	Standard
Ca	43	318.3	17.2	**32.4329**	7.880	24.3	mg/L	28	Standard
Fe	54	937.1	7.4	**1.8677**	0.089	4.8	mg/L	72	Standard
Fe	57	1175.0	9.8	**3.3332**	1.612	48.4	mg/L	703	Standard
> **Sc-1**	45	32084.0	4.9				mg/L	30379	Standard
Cl	35	19204.8	1.1				ug/L	14530	Standard
Kr	83	4.3	81.0				ug/L	5	Standard
Br	81	27074.2	1.6				ug/L	497	Standard
P	31	13190.7	3.2				ug/L	10347	Standard
S	34	1688.4	4.2				ug/L	1535	Standard
Sr	88	246.7	11.2				ug/L	177	Standard
C	12	620.0	9.8				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	3	Standard
Dy	164	167.8	27.2				mg/L	7	Standard
Ho-1	165	206.7	7.8				mg/L	13	Standard
Er	166	323.3	7.8				mg/L	3	Standard
I	127	94220.8	4.6				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.710	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.232	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.428
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.600
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, August 24, 2015 16:16:43
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	47661.5	1.5				ug/L	43934	Standard
	Be	9	32050.6	3.0	**50.4411**	1.882	3.7	ug/L	0	Standard
	Al	27	3479725.3	2.0	**48.2400**	0.971	2.0	ug/L	410	Standard
	Sc	45	30263.5	1.4				ug/L	30379	Standard
	Ti	47	22554.1	0.9	**108.9661**	1.989	1.8	ug/L	21	Standard
	V	51	228200.9	1.0	**53.9592**	1.102	2.0	ug/L	1362	Standard
	Cr	52	303192.3	1.5	**53.5057**	1.443	2.7	ug/L	8311	Standard
	Cr	53	37516.4	1.9	**53.7169**	1.772	3.3	ug/L	325	Standard
	Mn	55	208464.2	2.5	**53.2763**	0.697	1.3	ug/L	694	Standard
	Co	59	200761.5	1.2	**53.0089**	0.290	0.5	ug/L	199	Standard
	Ni	60	78619.6	3.4	**52.3488**	2.083	4.0	ug/L	212	Standard
	Cu	65	76402.8	1.5	**52.4737**	1.336	2.5	ug/L	149	Standard
	Zn	66	42788.0	1.7	**51.2735**	1.164	2.3	ug/L	206	Standard
>	**Ge**	72	306984.8	1.4				ug/L	319179	Standard
	As	75	42777.5	1.6	**51.4640**	0.685	1.3	ug/L	-51	Standard
	Se	82	3609.4	1.3	**52.0106**	0.175	0.3	ug/L	19	Standard
	Se-1	77	2623.9	6.4	**51.7807**	2.842	5.5	ug/L	89	Standard
>	**Ga**	71	41.7	27.7				mg/L	25	Standard
	Rb	85	601.7	11.8				ug/L	27	Standard
	Y	89	295807.2	2.2				ug/L	295132	Standard
>	**Rh**	103	41.7	18.3				ug/L	20	Standard
	Mo	98	148413.6	1.2	**99.5928**	2.451	2.5	ug/L	11	Standard
	Ag	107	267021.3	1.3	**48.7995**	1.986	4.1	ug/L	64	Standard
	Cd	111	76514.4	2.0	**51.1372**	1.209	2.4	mg/L	7	Standard
	Cd	114	201092.9	2.0	**51.1355**	2.664	5.2	ug/L	10	Standard
>	**In**	115	430177.5	3.3				ug/L	418014	Standard
	Sn	118	230709.9	0.3	**46.6149**	1.644	3.5	ug/L	385	Standard
	Sb	123	202982.9	1.3	**50.1345**	2.252	4.5	ug/L	54	Standard
	Ba	135	102712.0	1.0	**49.1832**	1.632	3.3	ug/L	44	Standard
	Ce	140	176.7	119.3				ug/L	33	Standard
>	**Tb**	159	860128.4	3.0				ug/L	854905	Standard
	Ho	165	18.3	126.0				ug/L	13	Standard
	Tl	203	351951.6	1.4	**51.0147**	1.118	2.2	ug/L	4	Standard
	Tl	205	240859.7	1.8	**50.5406**	0.811	1.6	ug/L	5	Standard
	Pb	206	220784.7	0.6	**50.9233**	1.676	3.3	ug/L	182	Standard
	Pb	207	198935.5	0.7	**50.9786**	1.729	3.4	ug/L	160	Standard
	Pb	208	722071.1	1.3	**50.5696**	1.397	2.8	ug/L	604	Standard
	U	238	248044.1	1.4	**50.7167**	1.969	3.9	ug/L	3	Standard
>	**Bi**	209	393943.2	3.3				ug/L	395375	Standard

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Na	23	1.7	173.2	**0.2920**	16.944	5802.7	mg/L	0	Standard
Mg	24	2148.5	3.3	**5.2483**	0.247	4.7	mg/L	47	Standard
K	39	391.7	11.5	**5.2519**	0.695	13.2	mg/L	22	Standard
Ca	43	85.0	23.5	**7.1462**	2.457	34.4	mg/L	28	Standard
Fe	54	2374.2	2.3	**5.3509**	0.200	3.7	mg/L	72	Standard
Fe	57	1413.4	5.2	**6.2951**	0.692	11.0	mg/L	703	Standard
Sc-1	45	30263.5	1.4				mg/L	30379	Standard
Cl	35	16910.1	2.3				ug/L	14530	Standard
Kr	83	3.3	45.8				ug/L	5	Standard
Br	81	936.7	12.9				ug/L	497	Standard
P	31	12171.6	2.7				ug/L	10347	Standard
S	34	1875.1	6.6				ug/L	1535	Standard
Sr	88	205.0	13.6				ug/L	177	Standard
C	12	256.7	13.7				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	9.2	173.2				mg/L	7	Standard
Ho-1	165	18.3	126.0				mg/L	13	Standard
Er	166	16.7	173.2				mg/L	3	Standard
I	127	7013.3	18.0				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	100.882		
Al	27	96.480		
Sc	45			
Ti	47	108.966		
V	51	107.918		
Cr	52	107.011		
Cr	53			
Mn	55	106.553		
Co	59	106.018		
Ni	60	104.698		
Cu	65	104.947		
Zn	66	102.547		
> Ge	72		96.179	
As	75	102.928		
Se	82	104.021		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	99.593		
Ag	107	97.599		
Cd	111	102.274		
Cd	114			
> In	115		102.910	
Sn	118	93.230		
Sb	123	100.269		
Ba	135	98.366		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	102.029		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.139		
U	238	101.433		
> Bi	209		99.638	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, August 24, 2015 16:19:55
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	47775.2	2.3				ug/L	43934	Standard
	Be	9	8.3	34.6	**0.0110**	0.004	38.9	ug/L	0	Standard
	Al	27	901.7	35.6	**0.0010**	0.004	419.2	ug/L	410	Standard
	Sc	45	30119.9	1.1				ug/L	30379	Standard
	Ti	47	19.0	29.3	**-0.0167**	0.026	153.1	ug/L	21	Standard
	V	51	1081.7	5.3	**-0.0501**	0.012	24.0	ug/L	1362	Standard
	Cr	52	7087.3	2.6	**-0.1617**	0.042	25.8	ug/L	8311	Standard
	Cr	53	443.3	3.3	**0.0856**	0.025	29.7	ug/L	325	Standard
	Mn	55	764.7	16.0	**-0.0050**	0.030	591.2	ug/L	694	Standard
	Co	59	195.7	4.6	**-0.0050**	0.002	39.6	ug/L	199	Standard
	Ni	60	212.7	8.3	**-0.0472**	0.010	22.2	ug/L	212	Standard
	Cu	65	162.7	8.6	**0.0007**	0.009	1321.6	ug/L	149	Standard
	Zn	66	247.3	9.2	**-0.2452**	0.025	10.1	ug/L	206	Standard
>	**Ge**	72	315246.2	0.8				ug/L	319179	Standard
	As	75	-84.1	8.7	**0.0056**	0.008	139.9	ug/L	-51	Standard
	Se	82	14.7	62.2	**-0.0272**	0.130	480.4	ug/L	19	Standard
	Se-1	77	88.3	9.2	**-0.0846**	0.150	177.1	ug/L	89	Standard
>	**Ga**	71	26.7	10.8				mg/L	25	Standard
	Rb	85	25.0	20.0				ug/L	27	Standard
	Y	89	295019.6	0.8				ug/L	295132	Standard
>	**Rh**	103	36.7	43.8				ug/L	20	Standard
	Mo	98	63.3	30.5	**0.0275**	0.013	46.4	ug/L	11	Standard
	Ag	107	72.7	6.2	**-0.0018**	0.001	42.7	ug/L	64	Standard
	Cd	111	8.5	18.0	**-0.0038**	0.001	26.3	mg/L	7	Standard
	Cd	114	21.4	104.6	**-0.0016**	0.006	347.8	ug/L	10	Standard
>	**In**	115	433392.3	0.6				ug/L	418014	Standard
	Sn	118	445.0	13.7	**0.0146**	0.013	86.7	ug/L	385	Standard
	Sb	123	705.9	12.6	**0.1584**	0.022	13.9	ug/L	54	Standard
	Ba	135	59.3	16.4	**0.0035**	0.005	135.1	ug/L	44	Standard
	Ce	140	16.7	62.4				ug/L	33	Standard
>	**Tb**	159	847607.0	1.6				ug/L	854905	Standard
	Ho	165	16.7	17.3				ug/L	13	Standard
	Tl	203	16.0	16.5	**0.0024**	0.000	15.6	ug/L	4	Standard
	Tl	205	13.3	78.1	**0.0042**	0.002	50.2	ug/L	5	Standard
	Pb	206	198.0	12.6	**-0.0125**	0.006	45.3	ug/L	182	Standard
	Pb	207	166.3	9.6	**-0.0114**	0.004	34.4	ug/L	160	Standard
	Pb	208	621.3	1.9	**-0.0086**	0.001	9.1	ug/L	604	Standard
	U	238	14.0	68.1	**0.0025**	0.002	76.0	ug/L	3	Standard
>	**Bi**	209	405524.9	0.2				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	33.3	31.2	**-0.0302**	0.026	86.3	mg/L	47	Standard
K	39	10.0	132.3	**-0.1160**	0.189	163.2	mg/L	22	Standard
Ca	43	35.0	37.8	**1.3229**	1.544	116.7	mg/L	28	Standard
Fe	54	70.7	33.8	**-0.0299**	0.057	190.7	mg/L	72	Standard
Fe	57	815.0	12.8	**0.4292**	1.102	256.8	mg/L	703	Standard
> **Sc-1**	45	30119.9	1.1				mg/L	30379	Standard
Cl	35	16354.2	2.0				ug/L	14530	Standard
Kr	83	4.3	26.6				ug/L	5	Standard
Br	81	666.7	13.9				ug/L	497	Standard
P	31	11617.8	0.3				ug/L	10347	Standard
S	34	1831.8	6.7				ug/L	1535	Standard
Sr	88	170.0	20.6				ug/L	177	Standard
C	12	170.0	27.0				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	13.0	86.6				mg/L	7	Standard
Ho-1	165	16.7	17.3				mg/L	13	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	5049.2	7.7				mg/L	1945	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.768	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.679
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.567
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW M4 WG535951-01
Sample Date/Time: Monday, August 24, 2015 16:23:07
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	45386.2	0.5				ug/L	43934	Standard
	Be	9	10.0	86.6	**0.0145**	0.014	98.4	ug/L	0	Standard
	Al	27	1511.7	20.7	**0.0106**	0.005	44.0	ug/L	410	Standard
	Sc	45	28884.2	3.3				ug/L	30379	Standard
	Ti	47	20.3	17.3	**-0.0074**	0.018	239.3	ug/L	21	Standard
	V	51	1054.6	5.9	**-0.0491**	0.016	31.9	ug/L	1362	Standard
	Cr	52	6314.6	0.3	**-0.2653**	0.008	3.1	ug/L	8311	Standard
	Cr	53	353.3	11.4	**-0.0263**	0.063	240.2	ug/L	325	Standard
	Mn	55	853.7	3.8	**0.0235**	0.009	36.4	ug/L	694	Standard
	Co	59	197.0	4.0	**-0.0032**	0.002	77.9	ug/L	199	Standard
	Ni	60	255.7	10.4	**-0.0144**	0.016	112.8	ug/L	212	Standard
	Cu	65	171.7	2.4	**0.0101**	0.003	29.9	ug/L	149	Standard
	Zn	66	1142.4	3.0	**0.8496**	0.030	3.5	ug/L	206	Standard
>	**Ge**	72	306229.2	0.9				ug/L	319179	Standard
	As	75	-36.0	29.0	**0.0606**	0.012	20.6	ug/L	-51	Standard
	Se	82	33.1	12.1	**0.2460**	0.063	25.5	ug/L	19	Standard
	Se-1	77	82.7	6.7	**-0.1475**	0.128	87.0	ug/L	89	Standard
>	**Ga**	71	26.7	10.8				mg/L	25	Standard
	Rb	85	33.3	31.2				ug/L	27	Standard
	Y	89	279677.7	0.7				ug/L	295132	Standard
>	**Rh**	103	18.3	56.8				ug/L	20	Standard
	Mo	98	25.2	14.1	**0.0030**	0.002	73.1	ug/L	11	Standard
	Ag	107	75.0	32.0	**-0.0006**	0.005	761.8	ug/L	64	Standard
	Cd	111	8.6	46.9	**-0.0035**	0.003	84.4	mg/L	7	Standard
	Cd	114	29.0	26.9	**0.0007**	0.002	310.8	ug/L	10	Standard
>	**In**	115	412553.6	1.9				ug/L	418014	Standard
	Sn	118	285.0	27.6	**-0.0147**	0.016	110.7	ug/L	385	Standard
	Sb	123	144.4	9.0	**0.0227**	0.004	16.3	ug/L	54	Standard
	Ba	135	91.0	11.2	**0.0208**	0.006	28.4	ug/L	44	Standard
	Ce	140	38.3	27.2				ug/L	33	Standard
>	**Tb**	159	826546.7	1.6				ug/L	854905	Standard
	Ho	165	5.0	173.2				ug/L	13	Standard
	Tl	203	21.3	61.2	**0.0033**	0.002	59.3	ug/L	4	Standard
	Tl	205	5.0	100.0	**0.0026**	0.001	41.1	ug/L	5	Standard
	Pb	206	218.7	11.1	**-0.0059**	0.005	93.3	ug/L	182	Standard
	Pb	207	196.3	4.7	**-0.0019**	0.002	125.9	ug/L	160	Standard
	Pb	208	768.3	1.7	**0.0036**	0.001	35.3	ug/L	604	Standard
	U	238	13.7	40.3	**0.0025**	0.001	44.2	ug/L	3	Standard
>	**Bi**	209	389617.3	0.6				ug/L	395375	Standard

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Na	23	3.3	86.6	**-10.7345**	18.049	168.1	mg/L	0	Standard
Mg	24	51.7	34.0	**0.0223**	0.050	225.4	mg/L	47	Standard
K	39	13.3	57.3	**-0.0631**	0.109	172.6	mg/L	22	Standard
Ca	43	33.3	37.7	**1.2801**	1.501	117.3	mg/L	28	Standard
Fe	54	52.8	33.4	**-0.0661**	0.045	68.5	mg/L	72	Standard
Fe	57	750.0	10.7	**0.0835**	0.593	709.9	mg/L	703	Standard
> **Sc-1**	45	28884.2	3.3				mg/L	30379	Standard
Cl	35	14946.7	0.9				ug/L	14530	Standard
Kr	83	6.7	45.8				ug/L	5	Standard
Br	81	693.3	4.4				ug/L	497	Standard
P	31	7416.8	2.2				ug/L	10347	Standard
S	34	1671.8	5.7				ug/L	1535	Standard
Sr	88	206.7	16.5				ug/L	177	Standard
C	12	140.0	18.9				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	6.2	100.1				mg/L	7	Standard
Ho-1	165	5.0	173.2				mg/L	13	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	4795.8	3.4				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.306	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.943	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.694
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.544
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW M4 WG535951-01
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Method 6020 - Summary Report

Sample ID: LCSS M4 WG535951-02
Sample Date/Time: Monday, August 24, 2015 16:26:19
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	44181.0	0.8				ug/L	43934	Standard
	Be	9	7505.2	2.9	**12.7363**	0.264	2.1	ug/L	0	Standard
	Al	27	2705.2	2.8	**0.0291**	0.001	5.0	ug/L	410	Standard
	Sc	45	29133.0	1.3				ug/L	30379	Standard
	Ti	47	18.0	47.5	**-0.0187**	0.042	223.2	ug/L	21	Standard
	V	51	56130.1	1.3	**13.0785**	0.194	1.5	ug/L	1362	Standard
	Cr	52	77202.5	1.3	**12.6062**	0.233	1.8	ug/L	8311	Standard
	Cr	53	9214.5	4.0	**12.8193**	0.585	4.6	ug/L	325	Standard
	Mn	55	51892.7	1.0	**13.1511**	0.163	1.2	ug/L	694	Standard
	Co	59	49975.0	0.6	**13.1880**	0.051	0.4	ug/L	199	Standard
	Ni	60	19294.9	0.9	**12.7391**	0.173	1.4	ug/L	212	Standard
	Cu	65	19436.5	1.6	**13.3013**	0.272	2.0	ug/L	149	Standard
	Zn	66	12267.0	1.0	**14.3544**	0.225	1.6	ug/L	206	Standard
>	**Ge**	72	306184.5	0.5				ug/L	319179	Standard
	As	75	10370.6	0.7	**12.5871**	0.040	0.3	ug/L	-51	Standard
	Se	82	926.2	1.6	**13.2076**	0.274	2.1	ug/L	19	Standard
	Se-1	77	740.4	2.4	**13.3322**	0.326	2.4	ug/L	89	Standard
>	**Ga**	71	18.3	83.3				mg/L	25	Standard
	Rb	85	36.7	56.8				ug/L	27	Standard
	Y	89	282771.0	0.4				ug/L	295132	Standard
>	**Rh**	103	18.3	31.5				ug/L	20	Standard
	Mo	98	32.2	4.4	**0.0078**	0.001	13.0	ug/L	11	Standard
	Ag	107	65736.0	1.3	**12.4912**	0.133	1.1	ug/L	64	Standard
	Cd	111	18811.3	0.8	**13.0829**	0.136	1.0	mg/L	7	Standard
	Cd	114	48647.2	2.9	**12.8655**	0.392	3.0	ug/L	10	Standard
>	**In**	115	412997.6	0.2				ug/L	418014	Standard
	Sn	118	280.0	6.4	**-0.0158**	0.004	24.8	ug/L	385	Standard
	Sb	123	50481.0	0.4	**12.9633**	0.048	0.4	ug/L	54	Standard
	Ba	135	25365.2	1.0	**12.6239**	0.106	0.8	ug/L	44	Standard
	Ce	140	35.0	37.8				ug/L	33	Standard
>	**Tb**	159	835533.0	0.2				ug/L	854905	Standard
	Ho	165	11.7	65.5				ug/L	13	Standard
	Tl	203	85340.0	1.5	**12.6396**	0.159	1.3	ug/L	4	Standard
	Tl	205	59911.6	2.7	**12.8514**	0.491	3.8	ug/L	5	Standard
	Pb	206	55538.9	1.0	**13.0457**	0.299	2.3	ug/L	182	Standard
	Pb	207	48158.1	1.0	**12.5681**	0.245	2.0	ug/L	160	Standard
	Pb	208	179719.9	0.3	**12.8229**	0.193	1.5	ug/L	604	Standard
	U	238	59123.5	0.3	**12.3490**	0.186	1.5	ug/L	3	Standard
>	**Bi**	209	385372.5	1.3				ug/L	395375	Standard

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Na	23	1.7	173.2	**-0.1371**	17.687	12902.0	mg/L	0	Standard
Mg	24	50.0	52.9	**0.0162**	0.069	428.1	mg/L	47	Standard
K	39	26.7	21.7	**0.1314**	0.088	66.8	mg/L	22	Standard
Ca	43	16.7	91.7	**-0.7724**	1.829	236.7	mg/L	28	Standard
Fe	54	54.7	23.7	**-0.0632**	0.032	50.7	mg/L	72	Standard
Fe	57	798.4	1.3	**0.5258**	0.100	18.9	mg/L	703	Standard
Sc-1	45	29133.0	1.3				mg/L	30379	Standard
Cl	35	15307.1	1.2				ug/L	14530	Standard
Kr	83	3.0	100.0				ug/L	5	Standard
Br	81	790.0	14.4				ug/L	497	Standard
P	31	7216.7	1.2				ug/L	10347	Standard
S	34	1740.1	9.2				ug/L	1535	Standard
Sr	88	206.7	12.2				ug/L	177	Standard
C	12	190.0	32.9				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	9.2	108.8				mg/L	7	Standard
Ho-1	165	11.7	65.5				mg/L	13	Standard
Er	166	16.7	69.3				mg/L	3	Standard
I	127	3770.5	4.6				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		100.563	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.929	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.800
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.470
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSS M4 WG535951-02
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Method 6020 - Summary Report

Sample ID: LCSS M4 WG535951-03
Sample Date/Time: Monday, August 24, 2015 16:29:31
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	45010.1	3.6				ug/L	43934	Standard
	Be	9	7563.6	1.0	**12.6124**	0.519	4.1	ug/L	0	Standard
	Al	27	2405.2	5.8	**0.0239**	0.003	12.2	ug/L	410	Standard
	Sc	45	28593.6	2.1				ug/L	30379	Standard
	Ti	47	18.7	11.2	**-0.0144**	0.011	74.4	ug/L	21	Standard
	V	51	56007.2	0.4	**13.2149**	0.020	0.2	ug/L	1362	Standard
	Cr	52	76299.6	1.1	**12.6139**	0.154	1.2	ug/L	8311	Standard
	Cr	53	9146.1	4.3	**12.8818**	0.507	3.9	ug/L	325	Standard
	Mn	55	51235.1	0.1	**13.1456**	0.063	0.5	ug/L	694	Standard
	Co	59	48932.6	0.9	**13.0728**	0.083	0.6	ug/L	199	Standard
	Ni	60	19139.4	1.1	**12.7935**	0.109	0.9	ug/L	212	Standard
	Cu	65	18827.0	1.4	**13.0413**	0.146	1.1	ug/L	149	Standard
	Zn	66	12058.5	0.2	**14.2827**	0.088	0.6	ug/L	206	Standard
>	**Ge**	72	302426.1	0.5				ug/L	319179	Standard
	As	75	10281.0	1.3	**12.6328**	0.105	0.8	ug/L	-51	Standard
	Se	82	891.8	1.3	**12.8685**	0.238	1.9	ug/L	19	Standard
	Se-1	77	694.0	3.6	**12.5580**	0.448	3.6	ug/L	89	Standard
>	**Ga**	71	21.7	13.3				mg/L	25	Standard
	Rb	85	31.7	24.1				ug/L	27	Standard
	Y	89	277094.6	1.7				ug/L	295132	Standard
>	**Rh**	103	20.0	66.1				ug/L	20	Standard
	Mo	98	31.3	21.9	**0.0075**	0.005	65.1	ug/L	11	Standard
	Ag	107	65224.8	0.9	**12.5157**	0.162	1.3	ug/L	64	Standard
	Cd	111	18255.3	0.2	**12.8199**	0.024	0.2	mg/L	7	Standard
	Cd	114	48703.0	1.6	**13.0057**	0.208	1.6	ug/L	10	Standard
>	**In**	115	409003.2	0.4				ug/L	418014	Standard
	Sn	118	318.3	13.2	**-0.0071**	0.009	128.1	ug/L	385	Standard
	Sb	123	50706.3	0.2	**13.1486**	0.046	0.4	ug/L	54	Standard
	Ba	135	24655.0	0.8	**12.3899**	0.059	0.5	ug/L	44	Standard
	Ce	140	50.0	34.6				ug/L	33	Standard
>	**Tb**	159	830754.0	1.9				ug/L	854905	Standard
	Ho	165	6.7	43.3				ug/L	13	Standard
	Tl	203	84781.2	1.5	**12.3944**	0.290	2.3	ug/L	4	Standard
	Tl	205	57294.8	1.1	**12.1275**	0.199	1.6	ug/L	5	Standard
	Pb	206	55006.7	0.3	**12.7495**	0.162	1.3	ug/L	182	Standard
	Pb	207	47229.8	0.2	**12.1624**	0.104	0.9	ug/L	160	Standard
	Pb	208	174771.6	0.4	**12.3047**	0.162	1.3	ug/L	604	Standard
	U	238	58471.3	1.1	**12.0523**	0.121	1.0	ug/L	3	Standard
>	**Bi**	209	390463.2	1.0				ug/L	395375	Standard

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Na	23	1.7	173.2	**-0.6494**	18.574	2860.4	mg/L	0	Standard
Mg	24	50.0	17.3	**0.0185**	0.025	135.7	mg/L	47	Standard
K	39	15.0	88.2	**-0.0376**	0.191	506.6	mg/L	22	Standard
Ca	43	30.0	92.8	**0.9015**	3.433	380.8	mg/L	28	Standard
Fe	54	51.5	16.8	**-0.0688**	0.021	30.8	mg/L	72	Standard
Fe	57	781.7	9.9	**0.5010**	0.710	141.8	mg/L	703	Standard
> **Sc-1**	45	28593.6	2.1				mg/L	30379	Standard
Cl	35	14940.7	1.5				ug/L	14530	Standard
Kr	83	5.3	10.8				ug/L	5	Standard
Br	81	730.0	23.7				ug/L	497	Standard
P	31	7260.1	2.1				ug/L	10347	Standard
S	34	1613.4	4.2				ug/L	1535	Standard
Sr	88	166.7	26.2				ug/L	177	Standard
C	12	173.3	43.3				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	15.9	72.0				mg/L	7	Standard
Ho-1	165	6.7	43.3				mg/L	13	Standard
Er	166	16.7	91.7				mg/L	3	Standard
I	127	2993.6	7.6				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.450	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.751	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	97.844
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	98.758
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSS M4 WG535951-03
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Method 6020 - Summary Report

Sample ID: L1508100001
Sample Date/Time: Monday, August 24, 2015 16:32:42
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	45578.5	3.5				ug/L	43934	Standard
	Be	9	1.7	173.2	**0.0007**	0.005	660.0	ug/L	0	Standard
	Al	27	192551.1	1.9	**2.7814**	0.047	1.7	ug/L	410	Standard
	Sc	45	30438.9	3.3				ug/L	30379	Standard
	Ti	47	88.7	4.6	**0.3241**	0.018	5.5	ug/L	21	Standard
	V	51	9202.5	2.9	**1.8952**	0.085	4.5	ug/L	1362	Standard
	Cr	52	7640.3	4.6	**-0.0230**	0.075	327.3	ug/L	8311	Standard
	Cr	53	378.3	29.6	**0.0110**	0.166	1508.5	ug/L	325	Standard
	Mn	55	11050.4	2.5	**2.6481**	0.051	1.9	ug/L	694	Standard
	Co	59	270.0	8.6	**0.0162**	0.006	35.4	ug/L	199	Standard
	Ni	60	742.0	1.7	**0.3119**	0.011	3.4	ug/L	212	Standard
	Cu	65	174.7	3.8	**0.0123**	0.004	28.6	ug/L	149	Standard
	Zn	66	2135.8	2.9	**2.0575**	0.053	2.6	ug/L	206	Standard
>	**Ge**	72	305952.7	1.0				ug/L	319179	Standard
	As	75	198.7	11.2	**0.3431**	0.025	7.1	ug/L	-51	Standard
	Se	82	37.2	8.6	**0.3050**	0.046	15.0	ug/L	19	Standard
	Se-1	77	97.7	7.4	**0.1620**	0.167	103.3	ug/L	89	Standard
>	**Ga**	71	26.7	65.8				mg/L	25	Standard
	Rb	85	2593.6	3.6				ug/L	27	Standard
	Y	89	281710.4	1.9				ug/L	295132	Standard
>	**Rh**	103	13.3	78.1				ug/L	20	Standard
	Mo	98	50.0	18.6	**0.0196**	0.006	32.7	ug/L	11	Standard
	Ag	107	65.3	11.3	**-0.0028**	0.002	54.4	ug/L	64	Standard
	Cd	111	12.6	32.3	**-0.0009**	0.003	282.5	mg/L	7	Standard
	Cd	114	38.5	35.1	**0.0030**	0.003	114.2	ug/L	10	Standard
>	**In**	115	421299.9	1.2				ug/L	418014	Standard
	Sn	118	241.7	10.6	**-0.0249**	0.005	21.4	ug/L	385	Standard
	Sb	123	1417.8	4.4	**0.3429**	0.019	5.5	ug/L	54	Standard
	Ba	135	2760.9	2.7	**1.3251**	0.041	3.1	ug/L	44	Standard
	Ce	140	13.3	57.3				ug/L	33	Standard
>	**Tb**	159	830888.1	0.5				ug/L	854905	Standard
	Ho	165	8.3	91.7				ug/L	13	Standard
	Tl	203	125.0	20.3	**0.0183**	0.004	20.0	ug/L	4	Standard
	Tl	205	76.7	18.8	**0.0176**	0.003	17.0	ug/L	5	Standard
	Pb	206	188.7	5.0	**-0.0132**	0.003	19.5	ug/L	182	Standard
	Pb	207	170.7	6.7	**-0.0090**	0.003	30.0	ug/L	160	Standard
	Pb	208	671.3	5.9	**-0.0037**	0.003	84.1	ug/L	604	Standard
	U	238	5.3	39.0	**0.0008**	0.000	52.3	ug/L	3	Standard
>	**Bi**	209	393052.5	0.9				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	198.3	5.8	**0.3780**	0.019	5.1	mg/L	47	Standard
K	39	51.7	5.6	**0.4641**	0.049	10.6	mg/L	22	Standard
Ca	43	48.3	15.8	**2.8459**	1.059	37.2	mg/L	28	Standard
Fe	54	54.4	51.1	**-0.0681**	0.068	100.2	mg/L	72	Standard
Fe	57	820.0	5.6	**0.3850**	0.299	77.6	mg/L	703	Standard
> **Sc-1**	45	30438.9	3.3				mg/L	30379	Standard
Cl	35	15725.5	3.0				ug/L	14530	Standard
Kr	83	5.7	10.2				ug/L	5	Standard
Br	81	576.7	12.3				ug/L	497	Standard
P	31	8359.0	2.7				ug/L	10347	Standard
S	34	1533.4	1.8				ug/L	1535	Standard
Sr	88	191.7	10.5				ug/L	177	Standard
C	12	296.7	27.2				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	9.2	108.8				mg/L	7	Standard
Ho-1	165	8.3	91.7				mg/L	13	Standard
Er	166	16.7	69.3				mg/L	3	Standard
I	127	6303.0	4.4				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.744	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.856	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.786
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.413
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508100003
Sample Date/Time: Monday, August 24, 2015 16:35:54
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	47437.5	2.9				ug/L	43934	Standard
	Be	9	10.0	50.0	**0.0138**	0.008	56.0	ug/L	0	Standard
	Al	27	112076.3	0.8	**1.5505**	0.035	2.3	ug/L	410	Standard
	Sc	45	29462.0	0.7				ug/L	30379	Standard
	Ti	47	70.0	11.3	**0.2279**	0.039	17.2	ug/L	21	Standard
	V	51	8195.0	1.1	**1.6215**	0.020	1.2	ug/L	1362	Standard
	Cr	52	7592.2	1.0	**-0.0554**	0.009	16.7	ug/L	8311	Standard
	Cr	53	365.0	7.6	**-0.0181**	0.041	227.6	ug/L	325	Standard
	Mn	55	20243.8	0.2	**4.9272**	0.025	0.5	ug/L	694	Standard
	Co	59	317.3	7.8	**0.0274**	0.007	24.9	ug/L	199	Standard
	Ni	60	614.3	7.6	**0.2194**	0.032	14.6	ug/L	212	Standard
	Cu	65	155.3	10.5	**-0.0028**	0.011	387.9	ug/L	149	Standard
	Zn	66	2040.5	0.7	**1.9004**	0.023	1.2	ug/L	206	Standard
>	**Ge**	72	311181.4	0.4				ug/L	319179	Standard
	As	75	152.8	26.7	**0.2850**	0.049	17.3	ug/L	-51	Standard
	Se	82	30.0	39.2	**0.1938**	0.170	87.5	ug/L	19	Standard
	Se-1	77	99.7	9.3	**0.1681**	0.196	116.5	ug/L	89	Standard
>	**Ga**	71	33.3	52.7				mg/L	25	Standard
	Rb	85	1523.4	6.4				ug/L	27	Standard
	Y	89	281883.0	0.5				ug/L	295132	Standard
>	**Rh**	103	23.3	12.4				ug/L	20	Standard
	Mo	98	14.6	27.7	**-0.0046**	0.003	62.8	ug/L	11	Standard
	Ag	107	52.7	12.9	**-0.0051**	0.001	23.5	ug/L	64	Standard
	Cd	111	19.6	2.9	**0.0040**	0.000	8.0	mg/L	7	Standard
	Cd	114	38.2	38.1	**0.0030**	0.004	131.4	ug/L	10	Standard
>	**In**	115	419161.5	1.4				ug/L	418014	Standard
	Sn	118	255.0	13.7	**-0.0219**	0.007	34.1	ug/L	385	Standard
	Sb	123	1491.5	2.6	**0.3633**	0.012	3.2	ug/L	54	Standard
	Ba	135	2161.2	2.1	**1.0375**	0.037	3.6	ug/L	44	Standard
	Ce	140	18.3	56.8				ug/L	33	Standard
>	**Tb**	159	843932.2	1.3				ug/L	854905	Standard
	Ho	165	6.7	43.3				ug/L	13	Standard
	Tl	203	45.0	25.2	**0.0065**	0.002	24.8	ug/L	4	Standard
	Tl	205	38.3	45.8	**0.0094**	0.004	38.7	ug/L	5	Standard
	Pb	206	203.7	3.7	**-0.0107**	0.002	15.9	ug/L	182	Standard
	Pb	207	164.3	3.5	**-0.0114**	0.001	11.6	ug/L	160	Standard
	Pb	208	649.7	6.5	**-0.0061**	0.003	47.3	ug/L	604	Standard
	U	238	3.3	96.4	**0.0004**	0.001	168.8	ug/L	3	Standard
>	**Bi**	209	400878.0	0.3				ug/L	395375	Standard

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Na	23	1.7	173.2	**-0.2158**	17.823	8258.9	mg/L	0	Standard
Mg	24	198.3	21.4	**0.3940**	0.106	26.9	mg/L	47	Standard
K	39	25.0	105.8	**0.1013**	0.379	374.1	mg/L	22	Standard
Ca	43	38.3	7.5	**1.8109**	0.317	17.5	mg/L	28	Standard
Fe	54	55.5	18.4	**-0.0628**	0.025	39.6	mg/L	72	Standard
Fe	57	803.4	7.6	**0.4823**	0.569	118.0	mg/L	703	Standard
> **Sc-1**	45	29462.0	0.7				mg/L	30379	Standard
Cl	35	16141.3	1.5				ug/L	14530	Standard
Kr	83	5.3	28.6				ug/L	5	Standard
Br	81	636.7	8.9				ug/L	497	Standard
P	31	7997.1	2.8				ug/L	10347	Standard
S	34	1568.4	5.4				ug/L	1535	Standard
Sr	88	180.0	34.8				ug/L	177	Standard
C	12	220.0	4.5				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	22.5	68.3				mg/L	7	Standard
Ho-1	165	6.7	43.3				mg/L	13	Standard
Er	166	16.7	69.3				mg/L	3	Standard
I	127	3778.8	2.2				mg/L	1945	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		107.975	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.494	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.274
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.392
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 25, 2015

Method 6020 - Summary Report

Sample ID: L1508100005
Sample Date/Time: Monday, August 24, 2015 16:39:05
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	47190.0	1.2				ug/L	43934	Standard
	Be	9	15.0	100.0	**0.0219**	0.024	108.2	ug/L	0	Standard
	Al	27	281888.0	0.1	**3.9365**	0.055	1.4	ug/L	410	Standard
	Sc	45	29787.6	1.2				ug/L	30379	Standard
	Ti	47	59.7	8.4	**0.1787**	0.023	12.6	ug/L	21	Standard
	V	51	9116.6	1.3	**1.8391**	0.017	0.9	ug/L	1362	Standard
	Cr	52	7903.4	1.9	**0.0014**	0.039	2715.6	ug/L	8311	Standard
	Cr	53	460.0	5.0	**0.1180**	0.038	32.0	ug/L	325	Standard
	Mn	55	5463.3	2.9	**1.1878**	0.048	4.0	ug/L	694	Standard
	Co	59	268.7	4.3	**0.0147**	0.002	16.7	ug/L	199	Standard
	Ni	60	465.0	6.4	**0.1212**	0.020	16.7	ug/L	212	Standard
	Cu	65	195.0	7.6	**0.0242**	0.011	43.6	ug/L	149	Standard
	Zn	66	2428.2	2.8	**2.3652**	0.055	2.3	ug/L	206	Standard
>	**Ge**	72	310960.7	0.9				ug/L	319179	Standard
	As	75	156.0	15.2	**0.2888**	0.028	9.7	ug/L	-51	Standard
	Se	82	32.2	16.4	**0.2252**	0.073	32.6	ug/L	19	Standard
	Se-1	77	93.3	7.6	**0.0421**	0.160	379.2	ug/L	89	Standard
>	**Ga**	71	38.3	15.1				mg/L	25	Standard
	Rb	85	1366.7	8.7				ug/L	27	Standard
	Y	89	280003.6	0.1				ug/L	295132	Standard
>	**Rh**	103	20.0	66.1				ug/L	20	Standard
	Mo	98	62.5	5.7	**0.0279**	0.002	6.7	ug/L	11	Standard
	Ag	107	62.3	13.0	**-0.0034**	0.001	39.3	ug/L	64	Standard
	Cd	111	8.9	11.2	**-0.0035**	0.001	17.2	mg/L	7	Standard
	Cd	114	23.3	27.6	**-0.0010**	0.002	174.9	ug/L	10	Standard
>	**In**	115	423376.8	1.4				ug/L	418014	Standard
	Sn	118	313.3	9.8	**-0.0105**	0.006	53.4	ug/L	385	Standard
	Sb	123	3450.2	1.0	**0.8508**	0.008	0.9	ug/L	54	Standard
	Ba	135	1388.4	0.8	**0.6507**	0.011	1.7	ug/L	44	Standard
	Ce	140	20.0	25.0				ug/L	33	Standard
>	**Tb**	159	844227.5	1.2				ug/L	854905	Standard
	Ho	165	10.0	50.0				ug/L	13	Standard
	Tl	203	43.7	17.5	**0.0063**	0.001	16.5	ug/L	4	Standard
	Tl	205	28.3	10.2	**0.0073**	0.001	7.3	ug/L	5	Standard
	Pb	206	229.7	2.1	**-0.0048**	0.001	30.0	ug/L	182	Standard
	Pb	207	173.0	10.4	**-0.0092**	0.004	44.9	ug/L	160	Standard
	Pb	208	678.3	6.3	**-0.0041**	0.003	75.9	ug/L	604	Standard
	U	238	4.3	13.3	**0.0006**	0.000	19.1	ug/L	3	Standard
>	**Bi**	209	400564.9	1.0				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	130.0	3.8	**0.2156**	0.010	4.7	mg/L	47	Standard
K	39	26.7	54.1	**0.1212**	0.204	168.5	mg/L	22	Standard
Ca	43	63.3	19.9	**4.7123**	1.429	30.3	mg/L	28	Standard
Fe	54	46.1	22.4	**-0.0868**	0.024	27.1	mg/L	72	Standard
Fe	57	820.0	7.6	**0.5602**	0.566	101.0	mg/L	703	Standard
> **Sc-1**	45	29787.6	1.2				mg/L	30379	Standard
Cl	35	16058.5	2.1				ug/L	14530	Standard
Kr	83	7.3	15.7				ug/L	5	Standard
Br	81	753.4	16.9				ug/L	497	Standard
P	31	8320.6	7.0				ug/L	10347	Standard
S	34	1611.8	8.1				ug/L	1535	Standard
Sr	88	171.7	30.6				ug/L	177	Standard
C	12	320.0	16.2				mg/L	153	Standard
N	14	6.7	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	5.9	100.8				mg/L	7	Standard
Ho-1	165	10.0	50.0				mg/L	13	Standard
Er	166	16.7	34.6				mg/L	3	Standard
I	127	4148.9	2.6				mg/L	1945	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		107.412	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.425	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.283
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.313
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 25, 2015

Method 6020 - Summary Report

Sample ID: L1508100007
Sample Date/Time: Monday, August 24, 2015 16:42:16
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	45611.9	0.7				ug/L	43934	Standard
	Be	9	5.0	0.0	**0.0062**	0.000	0.9	ug/L	0	Standard
	Al	27	175313.6	1.7	**2.5286**	0.040	1.6	ug/L	410	Standard
	Sc	45	30104.9	1.8				ug/L	30379	Standard
	Ti	47	62.3	21.8	**0.1936**	0.070	36.0	ug/L	21	Standard
	V	51	13831.4	0.5	**2.9615**	0.045	1.5	ug/L	1362	Standard
	Cr	52	7385.5	1.4	**-0.0851**	0.014	16.8	ug/L	8311	Standard
	Cr	53	346.7	16.8	**-0.0423**	0.076	180.3	ug/L	325	Standard
	Mn	55	3176.0	19.8	**0.6105**	0.146	23.9	ug/L	694	Standard
	Co	59	250.3	6.6	**0.0103**	0.005	52.2	ug/L	199	Standard
	Ni	60	503.7	3.3	**0.1483**	0.014	9.3	ug/L	212	Standard
	Cu	65	152.3	4.5	**-0.0044**	0.003	66.3	ug/L	149	Standard
	Zn	66	1311.7	3.3	**1.0385**	0.049	4.7	ug/L	206	Standard
>	**Ge**	72	309500.7	1.7				ug/L	319179	Standard
	As	75	384.9	6.3	**0.5623**	0.029	5.2	ug/L	-51	Standard
	Se	82	29.5	31.2	**0.1902**	0.136	71.4	ug/L	19	Standard
	Se-1	77	94.7	11.4	**0.0779**	0.227	291.3	ug/L	89	Standard
>	**Ga**	71	103.3	60.9				mg/L	25	Standard
	Rb	85	1063.4	1.5				ug/L	27	Standard
	Y	89	291229.2	1.2				ug/L	295132	Standard
>	**Rh**	103	8.3	91.7				ug/L	20	Standard
	Mo	98	21.7	35.9	**0.0000**	0.005	11382.9	ug/L	11	Standard
	Ag	107	85.7	34.9	**0.0008**	0.006	692.8	ug/L	64	Standard
	Cd	111	8.3	101.1	**-0.0039**	0.006	146.7	mg/L	7	Standard
	Cd	114	24.9	66.7	**-0.0006**	0.004	720.8	ug/L	10	Standard
>	**In**	115	427102.4	1.2				ug/L	418014	Standard
	Sn	118	313.3	27.5	**-0.0109**	0.018	167.8	ug/L	385	Standard
	Sb	123	2180.5	2.2	**0.5277**	0.018	3.5	ug/L	54	Standard
	Ba	135	673.7	15.3	**0.3005**	0.053	17.7	ug/L	44	Standard
	Ce	140	36.7	90.8				ug/L	33	Standard
>	**Tb**	159	850390.9	1.4				ug/L	854905	Standard
	Ho	165	6.7	114.6				ug/L	13	Standard
	Tl	203	64.0	72.7	**0.0092**	0.007	72.5	ug/L	4	Standard
	Tl	205	33.3	22.9	**0.0084**	0.002	18.7	ug/L	5	Standard
	Pb	206	214.0	17.4	**-0.0084**	0.009	105.2	ug/L	182	Standard
	Pb	207	176.3	14.7	**-0.0084**	0.007	81.4	ug/L	160	Standard
	Pb	208	607.3	5.1	**-0.0091**	0.002	26.8	ug/L	604	Standard
	U	238	5.3	109.9	**0.0008**	0.001	150.5	ug/L	3	Standard
>	**Bi**	209	401512.6	0.8				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	146.7	30.6	**0.2553**	0.117	46.0	mg/L	47	Standard
K	39	25.0	80.0	**0.0914**	0.276	301.8	mg/L	22	Standard
Ca	43	35.0	14.3	**1.3229**	0.572	43.2	mg/L	28	Standard
Fe	54	55.6	18.6	**-0.0655**	0.023	35.6	mg/L	72	Standard
Fe	57	853.4	6.8	**0.8026**	0.434	54.1	mg/L	703	Standard
> **Sc-1**	45	30104.9	1.8				mg/L	30379	Standard
Cl	35	15896.3	2.7				ug/L	14530	Standard
Kr	83	7.7	27.2				ug/L	5	Standard
Br	81	583.3	18.8				ug/L	497	Standard
P	31	8525.7	1.6				ug/L	10347	Standard
S	34	1606.8	1.3				ug/L	1535	Standard
Sr	88	203.3	5.1				ug/L	177	Standard
C	12	296.7	1.9				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	6.7	173.2				mg/L	7	Standard
Ho-1	165	6.7	114.6				mg/L	13	Standard
Er	166	0.0					mg/L	3	Standard
I	127	3428.7	4.3				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.820	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.968	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.174
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.552
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 25, 2015

Method 6020 - Summary Report

Sample ID: L1508100007PS WG536272-01
Sample Date/Time: Monday, August 24, 2015 16:45:28
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	46554.8	3.9				ug/L	43934	Standard
	Be	9	32626.8	2.9	**52.6291**	3.139	6.0	ug/L	0	Standard
	Al	27	184856.0	1.7	**2.6144**	0.080	3.1	ug/L	410	Standard
	Sc	45	29475.3	1.4				ug/L	30379	Standard
	Ti	47	51.3	2.2	**0.1421**	0.011	7.5	ug/L	21	Standard
	V	51	234640.9	1.9	**55.4698**	2.301	4.1	ug/L	1362	Standard
	Cr	52	297011.0	0.8	**52.3517**	1.472	2.8	ug/L	8311	Standard
	Cr	53	36582.5	2.2	**52.3312**	1.949	3.7	ug/L	325	Standard
	Mn	55	212155.2	1.4	**54.1972**	1.166	2.2	ug/L	694	Standard
	Co	59	205042.8	0.7	**54.1153**	1.410	2.6	ug/L	199	Standard
	Ni	60	79238.7	0.8	**52.7300**	1.496	2.8	ug/L	212	Standard
	Cu	65	78685.8	0.7	**54.0079**	1.288	2.4	ug/L	149	Standard
	Zn	66	46384.6	0.8	**55.5934**	1.323	2.4	ug/L	206	Standard
>	**Ge**	72	307236.1	2.3				ug/L	319179	Standard
	As	75	44413.3	0.5	**53.4031**	1.406	2.6	ug/L	-51	Standard
	Se	82	3736.1	1.7	**53.8186**	1.595	3.0	ug/L	19	Standard
	Se-1	77	2719.2	2.5	**53.7429**	2.663	5.0	ug/L	89	Standard
>	**Ga**	71	161.7	31.0				mg/L	25	Standard
	Rb	85	1081.7	4.4				ug/L	27	Standard
	Y	89	284165.1	0.7				ug/L	295132	Standard
>	**Rh**	103	26.7	28.6				ug/L	20	Standard
	Mo	98	25.7	31.8	**0.0027**	0.006	201.6	ug/L	11	Standard
	Ag	107	267348.2	1.7	**49.1754**	1.441	2.9	ug/L	64	Standard
	Cd	111	77594.8	1.3	**52.2056**	0.257	0.5	mg/L	7	Standard
	Cd	114	204421.8	0.5	**52.2946**	0.460	0.9	ug/L	10	Standard
>	**In**	115	427149.0	1.3				ug/L	418014	Standard
	Sn	118	363.3	11.5	**-0.0008**	0.008	982.4	ug/L	385	Standard
	Sb	123	203418.4	0.9	**50.5572**	1.044	2.1	ug/L	54	Standard
	Ba	135	104168.5	1.0	**50.2086**	1.078	2.1	ug/L	44	Standard
	Ce	140	23.3	81.1				ug/L	33	Standard
>	**Tb**	159	831073.0	0.6				ug/L	854905	Standard
	Ho	165	5.0	0.0				ug/L	13	Standard
	Tl	203	357424.1	0.4	**51.0814**	0.813	1.6	ug/L	4	Standard
	Tl	205	246336.4	0.8	**50.9797**	1.464	2.9	ug/L	5	Standard
	Pb	206	224423.6	0.6	**51.0237**	0.787	1.5	ug/L	182	Standard
	Pb	207	203012.4	0.3	**51.2821**	0.956	1.9	ug/L	160	Standard
	Pb	208	735819.3	0.8	**50.8125**	1.387	2.7	ug/L	604	Standard
	U	238	249166.7	0.2	**50.2162**	0.912	1.8	ug/L	3	Standard
>	**Bi**	209	399445.2	2.0				ug/L	395375	Standard

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Na	23	1.7	173.2	**-0.1371**	17.687	12902.0	mg/L	0	Standard
Mg	24	140.0	6.2	**0.2450**	0.027	10.8	mg/L	47	Standard
K	39	25.0	20.0	**0.1026**	0.074	72.5	mg/L	22	Standard
Ca	43	50.0	52.0	**3.1801**	3.011	94.7	mg/L	28	Standard
Fe	54	44.5	51.3	**-0.0891**	0.055	61.6	mg/L	72	Standard
Fe	57	861.7	6.8	**1.0748**	0.629	58.5	mg/L	703	Standard
> **Sc-1**	45	29475.3	1.4				mg/L	30379	Standard
Cl	35	15499.9	0.6				ug/L	14530	Standard
Kr	83	8.3	30.2				ug/L	5	Standard
Br	81	590.0	6.1				ug/L	497	Standard
P	31	8060.5	1.6				ug/L	10347	Standard
S	34	1618.4	4.9				ug/L	1535	Standard
Sr	88	183.3	16.4				ug/L	177	Standard
C	12	266.7	18.5				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	9.4	7.8				mg/L	7	Standard
Ho-1	165	5.0	0.0				mg/L	13	Standard
Er	166	13.3	114.6				mg/L	3	Standard
I	127	3110.3	9.2				mg/L	1945	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		105.966	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.258	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.185
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.029
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 25, 2015

Method 6020 - Summary Report

Sample ID: L1508100007SDL WG536272-02
Sample Date/Time: Monday, August 24, 2015 16:48:39
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48766.7	3.0				ug/L	43934	Standard
	Be	9	8.3	91.7	**0.0111**	0.012	109.1	ug/L	0	Standard
	Al	27	38513.9	2.0	**0.5106**	0.006	1.1	ug/L	410	Standard
	Sc	45	30627.6	1.7				ug/L	30379	Standard
	Ti	47	24.0	12.5	**0.0066**	0.014	219.2	ug/L	21	Standard
	V	51	4072.3	0.5	**0.6391**	0.006	1.0	ug/L	1362	Standard
	Cr	52	7717.0	0.9	**-0.0555**	0.017	30.8	ug/L	8311	Standard
	Cr	53	413.3	19.3	**0.0411**	0.111	269.6	ug/L	325	Standard
	Mn	55	1765.4	7.4	**0.2435**	0.032	13.2	ug/L	694	Standard
	Co	59	231.7	17.6	**0.0040**	0.010	255.2	ug/L	199	Standard
	Ni	60	301.3	3.7	**0.0099**	0.008	79.7	ug/L	212	Standard
	Cu	65	199.3	9.3	**0.0248**	0.012	48.4	ug/L	149	Standard
	Zn	66	1546.4	1.7	**1.2802**	0.027	2.1	ug/L	206	Standard
>	**Ge**	72	316320.5	0.3				ug/L	319179	Standard
	As	75	73.0	9.9	**0.1890**	0.009	4.6	ug/L	-51	Standard
	Se	82	24.9	11.5	**0.1153**	0.040	34.6	ug/L	19	Standard
	Se-1	77	86.0	7.6	**-0.1365**	0.125	91.5	ug/L	89	Standard
>	**Ga**	71	38.3	19.9				mg/L	25	Standard
	Rb	85	283.3	16.4				ug/L	27	Standard
	Y	89	295600.8	0.8				ug/L	295132	Standard
>	**Rh**	103	21.7	26.6				ug/L	20	Standard
	Mo	98	17.4	2.8	**-0.0032**	0.000	12.1	ug/L	11	Standard
	Ag	107	124.3	49.7	**0.0072**	0.011	150.9	ug/L	64	Standard
	Cd	111	10.6	39.1	**-0.0025**	0.003	109.7	mg/L	7	Standard
	Cd	114	40.5	36.7	**0.0031**	0.004	121.2	ug/L	10	Standard
>	**In**	115	439231.5	0.6				ug/L	418014	Standard
	Sn	118	353.3	20.6	**-0.0048**	0.015	301.9	ug/L	385	Standard
	Sb	123	1519.7	4.2	**0.3528**	0.013	3.8	ug/L	54	Standard
	Ba	135	207.7	9.2	**0.0727**	0.009	13.1	ug/L	44	Standard
	Ce	140	11.7	65.5				ug/L	33	Standard
>	**Tb**	159	874082.0	1.7				ug/L	854905	Standard
	Ho	165	8.3	91.7				ug/L	13	Standard
	Tl	203	79.0	57.6	**0.0112**	0.006	56.6	ug/L	4	Standard
	Tl	205	55.0	63.6	**0.0126**	0.007	55.7	ug/L	5	Standard
	Pb	206	515.3	15.4	**0.0581**	0.017	29.6	ug/L	182	Standard
	Pb	207	451.3	20.5	**0.0590**	0.023	38.1	ug/L	160	Standard
	Pb	208	1511.4	5.0	**0.0515**	0.004	8.7	ug/L	604	Standard
	U	238	37.7	80.8	**0.0071**	0.006	83.7	ug/L	3	Standard
>	**Bi**	209	407307.3	0.8				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	61.7	24.8	**0.0379**	0.036	95.7	mg/L	47	Standard
K	39	15.0	33.3	**-0.0506**	0.067	132.8	mg/L	22	Standard
Ca	43	25.0	40.0	**0.1115**	1.188	1064.8	mg/L	28	Standard
Fe	54	64.4	28.2	**-0.0470**	0.044	94.0	mg/L	72	Standard
Fe	57	838.4	15.1	**0.5039**	1.097	217.7	mg/L	703	Standard
Sc-1	45	30627.6	1.7				mg/L	30379	Standard
Cl	35	16335.5	2.0				ug/L	14530	Standard
Kr	83	3.0	57.7				ug/L	5	Standard
Br	81	693.3	13.7				ug/L	497	Standard
P	31	10653.7	1.1				ug/L	10347	Standard
S	34	1636.8	6.1				ug/L	1535	Standard
Sr	88	205.0	21.7				ug/L	177	Standard
C	12	163.3	46.0				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	3	Standard
Dy	164	9.2	111.3				mg/L	7	Standard
Ho-1	165	8.3	91.7				mg/L	13	Standard
Er	166	16.7	34.6				mg/L	3	Standard
I	127	2215.2	5.9				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.001	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.104	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.076
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.018
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 25, 2015

Method 6020 - Summary Report

Sample ID: L1508100007SDL WG536272-02
Sample Date/Time: Monday, August 24, 2015 16:51:51
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49751.6	1.6				ug/L	43934	Standard
	Be	9	5.0	100.0	**0.0056**	0.008	134.3	ug/L	0	Standard
	Al	27	8355.6	6.4	**0.0996**	0.007	7.1	ug/L	410	Standard
	Sc	45	31400.8	0.2				ug/L	30379	Standard
	Ti	47	22.7	20.8	**-0.0004**	0.022	5845.0	ug/L	21	Standard
	V	51	1721.2	4.5	**0.0945**	0.019	19.7	ug/L	1362	Standard
	Cr	52	7662.9	1.2	**-0.0725**	0.023	32.2	ug/L	8311	Standard
	Cr	53	438.3	10.4	**0.0731**	0.067	91.7	ug/L	325	Standard
	Mn	55	988.0	2.3	**0.0486**	0.004	9.1	ug/L	694	Standard
	Co	59	217.3	3.7	**0.0001**	0.002	3483.3	ug/L	199	Standard
	Ni	60	212.0	3.3	**-0.0488**	0.005	9.8	ug/L	212	Standard
	Cu	65	158.0	5.6	**-0.0034**	0.006	165.6	ug/L	149	Standard
	Zn	66	1479.4	1.7	**1.1918**	0.032	2.7	ug/L	206	Standard
>	**Ge**	72	318107.1	0.6				ug/L	319179	Standard
	As	75	-38.7	57.2	**0.0591**	0.025	43.1	ug/L	-51	Standard
	Se	82	25.1	23.5	**0.1163**	0.083	71.1	ug/L	19	Standard
	Se-1	77	92.3	5.6	**-0.0210**	0.095	454.1	ug/L	89	Standard
>	**Ga**	71	28.3	20.4				mg/L	25	Standard
	Rb	85	76.7	21.0				ug/L	27	Standard
	Y	89	298257.1	0.8				ug/L	295132	Standard
>	**Rh**	103	10.0	100.0				ug/L	20	Standard
	Mo	98	11.4	31.3	**-0.0072**	0.002	32.5	ug/L	11	Standard
	Ag	107	71.0	7.0	**-0.0024**	0.001	34.8	ug/L	64	Standard
	Cd	111	5.6	36.9	**-0.0058**	0.001	23.5	mg/L	7	Standard
	Cd	114	12.5	29.5	**-0.0039**	0.001	23.7	ug/L	10	Standard
>	**In**	115	443299.9	0.4				ug/L	418014	Standard
	Sn	118	340.0	9.2	**-0.0081**	0.006	72.3	ug/L	385	Standard
	Sb	123	368.7	8.3	**0.0738**	0.007	9.6	ug/L	54	Standard
	Ba	135	80.7	2.6	**0.0127**	0.001	6.4	ug/L	44	Standard
	Ce	140	21.7	13.3				ug/L	33	Standard
>	**Tb**	159	879485.6	0.4				ug/L	854905	Standard
	Ho	165	8.3	69.3				ug/L	13	Standard
	Tl	203	12.3	30.7	**0.0018**	0.001	27.9	ug/L	4	Standard
	Tl	205	15.0	33.3	**0.0045**	0.001	23.0	ug/L	5	Standard
	Pb	206	205.0	3.5	**-0.0115**	0.002	15.8	ug/L	182	Standard
	Pb	207	197.3	8.5	**-0.0043**	0.004	84.7	ug/L	160	Standard
	Pb	208	722.0	2.0	**-0.0023**	0.002	66.5	ug/L	604	Standard
	U	238	3.0	33.3	**0.0003**	0.000	64.6	ug/L	3	Standard
>	**Bi**	209	410287.3	1.2				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	38.3	7.5	**-0.0216**	0.007	32.7	mg/L	47	Standard
K	39	11.7	49.5	**-0.1005**	0.078	78.0	mg/L	22	Standard
Ca	43	36.7	15.7	**1.3422**	0.648	48.2	mg/L	28	Standard
Fe	54	72.6	27.8	**-0.0325**	0.046	140.7	mg/L	72	Standard
Fe	57	821.7	4.6	**0.1559**	0.363	232.9	mg/L	703	Standard
Sc-1	45	31400.8	0.2				mg/L	30379	Standard
Cl	35	16428.9	1.6				ug/L	14530	Standard
Kr	83	3.0	66.7				ug/L	5	Standard
Br	81	513.3	6.0				ug/L	497	Standard
P	31	11045.7	1.5				ug/L	10347	Standard
S	34	1625.1	5.5				ug/L	1535	Standard
Sr	88	208.3	7.7				ug/L	177	Standard
C	12	163.3	18.7				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	2.5	222.5				mg/L	7	Standard
Ho-1	165	8.3	69.3				mg/L	13	Standard
Er	166	16.7	34.6				mg/L	3	Standard
I	127	2076.8	5.2				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		113.243	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.664	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.049
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.772
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 25, 2015

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, August 24, 2015 16:55:04
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	47883.9	3.5				ug/L	43934	Standard
	Be	9	31454.3	4.2	**49.2595**	1.046	2.1	ug/L	0	Standard
	Al	27	3433569.5	1.7	**47.3966**	0.995	2.1	ug/L	410	Standard
	Sc	45	30866.5	5.2				ug/L	30379	Standard
	Ti	47	22426.9	0.9	**103.7459**	2.471	2.4	ug/L	21	Standard
	V	51	230713.2	0.8	**52.2221**	0.937	1.8	ug/L	1362	Standard
	Cr	52	299366.8	1.8	**50.5098**	1.602	3.2	ug/L	8311	Standard
	Cr	53	37407.8	1.0	**51.2482**	0.731	1.4	ug/L	325	Standard
	Mn	55	215645.7	1.6	**52.7847**	1.572	3.0	ug/L	694	Standard
	Co	59	206652.5	1.0	**52.2542**	1.320	2.5	ug/L	199	Standard
	Ni	60	78419.8	0.4	**49.9838**	0.851	1.7	ug/L	212	Standard
	Cu	65	77690.3	0.3	**51.0840**	0.928	1.8	ug/L	149	Standard
	Zn	66	44060.3	0.5	**50.5448**	0.782	1.5	ug/L	206	Standard
>	**Ge**	72	320628.5	1.6				ug/L	319179	Standard
	As	75	43534.7	1.1	**50.1502**	0.435	0.9	ug/L	-51	Standard
	Se	82	3693.6	1.8	**50.9552**	0.689	1.4	ug/L	19	Standard
	Se-1	77	2649.6	1.1	**50.0237**	0.592	1.2	ug/L	89	Standard
>	**Ga**	71	46.7	53.9				mg/L	25	Standard
	Rb	85	625.0	5.2				ug/L	27	Standard
	Y	89	295287.0	1.9				ug/L	295132	Standard
>	**Rh**	103	23.3	61.9				ug/L	20	Standard
	Mo	98	148478.4	0.8	**97.9965**	0.841	0.9	ug/L	11	Standard
	Ag	107	266587.4	1.3	**47.9032**	0.804	1.7	ug/L	64	Standard
	Cd	111	76594.5	0.8	**50.3522**	0.167	0.3	mg/L	7	Standard
	Cd	114	200192.3	2.2	**50.0344**	0.890	1.8	ug/L	10	Standard
>	**In**	115	437154.0	0.5				ug/L	418014	Standard
	Sn	118	236006.0	2.0	**46.8925**	1.184	2.5	ug/L	385	Standard
	Sb	123	201608.1	1.9	**48.9548**	1.141	2.3	ug/L	54	Standard
	Ba	135	104173.6	0.6	**49.0545**	0.543	1.1	ug/L	44	Standard
	Ce	140	85.0	23.5				ug/L	33	Standard
>	**Tb**	159	871249.4	1.5				ug/L	854905	Standard
	Ho	165	10.0					ug/L	13	Standard
	Tl	203	350961.2	0.4	**49.6042**	0.554	1.1	ug/L	4	Standard
	Tl	205	240687.1	1.8	**49.2635**	1.656	3.4	ug/L	5	Standard
	Pb	206	217880.5	0.9	**48.9852**	0.327	0.7	ug/L	182	Standard
	Pb	207	197597.8	0.7	**49.3581**	0.388	0.8	ug/L	160	Standard
	Pb	208	719893.8	0.7	**49.1606**	1.092	2.2	ug/L	604	Standard
	U	238	246954.9	1.5	**49.2288**	1.465	3.0	ug/L	3	Standard
>	**Bi**	209	403863.1	1.5				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	2188.5	7.8	**5.2552**	0.589	11.2	mg/L	47	Standard
K	39	381.7	12.9	**5.0329**	0.928	18.4	mg/L	22	Standard
Ca	43	70.0	7.1	**5.2191**	0.418	8.0	mg/L	28	Standard
Fe	54	2460.3	3.9	**5.4550**	0.502	9.2	mg/L	72	Standard
Fe	57	1391.7	11.3	**5.8798**	2.145	36.5	mg/L	703	Standard
> **Sc-1**	45	30866.5	5.2				mg/L	30379	Standard
Cl	35	15901.7	1.1				ug/L	14530	Standard
Kr	83	5.3	71.0				ug/L	5	Standard
Br	81	670.0	17.2				ug/L	497	Standard
P	31	12021.4	2.9				ug/L	10347	Standard
S	34	1880.1	4.7				ug/L	1535	Standard
Sr	88	203.3	9.3				ug/L	177	Standard
C	12	150.0	20.0				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	6.5	173.2				mg/L	7	Standard
Ho-1	165	10.0					mg/L	13	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	1111.7	11.1				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	98.519		
Al	27	94.793		
Sc	45			
Ti	47	103.746		
V	51	104.444		
Cr	52	101.020		
Cr	53			
Mn	55	105.569		
Co	59	104.508		
Ni	60	99.968		
Cu	65	102.168		
Zn	66	101.090		
> Ge	72		100.454	
As	75	100.300		
Se	82	101.910		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	97.997		
Ag	107	95.806		
Cd	111	100.704		
Cd	114			
> In	115			104.579
Sn	118	93.785		
Sb	123	97.910		
Ba	135	98.109		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.208		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.321		
U	238	98.458		
> Bi	209			102.147
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, August 24, 2015 16:58:16
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48248.4	3.5				ug/L	43934	Standard
	Be	9	6.7	43.3	**0.0083**	0.004	50.1	ug/L	0	Standard
	Al	27	598.3	17.4	**-0.0032**	0.002	52.1	ug/L	410	Standard
	Sc	45	31365.8	1.5				ug/L	30379	Standard
	Ti	47	19.0	18.2	**-0.0177**	0.015	85.2	ug/L	21	Standard
	V	51	1111.2	4.7	**-0.0460**	0.010	22.4	ug/L	1362	Standard
	Cr	52	7164.7	2.2	**-0.1617**	0.037	23.0	ug/L	8311	Standard
	Cr	53	421.7	14.9	**0.0496**	0.099	198.8	ug/L	325	Standard
	Mn	55	703.7	6.6	**-0.0220**	0.014	61.5	ug/L	694	Standard
	Co	59	220.7	4.8	**0.0008**	0.002	226.2	ug/L	199	Standard
	Ni	60	199.0	11.4	**-0.0573**	0.016	28.8	ug/L	212	Standard
	Cu	65	152.3	7.7	**-0.0073**	0.009	118.5	ug/L	149	Standard
	Zn	66	247.0	9.6	**-0.2482**	0.034	13.8	ug/L	206	Standard
>	**Ge**	72	318737.0	2.1				ug/L	319179	Standard
	As	75	-51.1	34.1	**0.0445**	0.022	48.5	ug/L	-51	Standard
	Se	82	17.8	25.9	**0.0137**	0.070	510.3	ug/L	19	Standard
	Se-1	77	97.3	22.6	**0.0746**	0.430	577.0	ug/L	89	Standard
>	**Ga**	71	13.3	21.7				mg/L	25	Standard
	Rb	85	33.3	70.9				ug/L	27	Standard
	Y	89	294172.4	2.1				ug/L	295132	Standard
>	**Rh**	103	21.7	13.3				ug/L	20	Standard
	Mo	98	67.6	31.5	**0.0297**	0.014	47.5	ug/L	11	Standard
	Ag	107	92.3	16.0	**0.0015**	0.003	181.3	ug/L	64	Standard
	Cd	111	7.5	53.1	**-0.0046**	0.003	57.7	mg/L	7	Standard
	Cd	114	45.3	13.8	**0.0042**	0.002	38.5	ug/L	10	Standard
>	**In**	115	440412.8	0.7				ug/L	418014	Standard
	Sn	118	2846.9	5.7	**0.4874**	0.029	5.9	ug/L	385	Standard
	Sb	123	815.3	7.4	**0.1820**	0.015	8.1	ug/L	54	Standard
	Ba	135	49.7	14.3	**-0.0015**	0.003	229.5	ug/L	44	Standard
	Ce	140	13.3	78.1				ug/L	33	Standard
>	**Tb**	159	871076.2	2.0				ug/L	854905	Standard
	Ho	165	5.0	100.0				ug/L	13	Standard
	Tl	203	40.0	69.7	**0.0057**	0.004	67.4	ug/L	4	Standard
	Tl	205	21.7	35.3	**0.0059**	0.002	25.8	ug/L	5	Standard
	Pb	206	207.3	2.9	**-0.0102**	0.001	8.9	ug/L	182	Standard
	Pb	207	177.3	9.3	**-0.0085**	0.004	43.3	ug/L	160	Standard
	Pb	208	667.0	3.7	**-0.0053**	0.001	26.6	ug/L	604	Standard
	U	238	23.3	19.8	**0.0044**	0.001	20.1	ug/L	3	Standard
>	**Bi**	209	403970.6	1.1				ug/L	395375	Standard

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Na	23	1.7	173.2	**0.5495**	16.498	3002.2	mg/L	0	Standard
Mg	24	43.3	48.0	**-0.0100**	0.049	490.3	mg/L	47	Standard
K	39	8.3	124.9	**-0.1442**	0.144	99.8	mg/L	22	Standard
Ca	43	25.0	52.9	**0.0473**	1.514	3199.4	mg/L	28	Standard
Fe	54	84.5	30.6	**-0.0059**	0.056	949.2	mg/L	72	Standard
Fe	57	768.4	0.4	**-0.3426**	0.124	36.1	mg/L	703	Standard
> **Sc-1**	45	31365.8	1.5				mg/L	30379	Standard
Cl	35	16504.3	2.3				ug/L	14530	Standard
Kr	83	5.3	39.0				ug/L	5	Standard
Br	81	596.7	10.2				ug/L	497	Standard
P	31	11831.3	1.5				ug/L	10347	Standard
S	34	1935.1	4.7				ug/L	1535	Standard
Sr	88	190.0	27.5				ug/L	177	Standard
C	12	113.3	35.7				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	9.4	107.0				mg/L	7	Standard
Ho-1	165	5.0	100.0				mg/L	13	Standard
Er	166	13.3	86.6				mg/L	3	Standard
I	127	1858.4	2.4				mg/L	1945	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.861	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.358
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.174
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sn	118	

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Method 6020 - Summary Report

Sample ID: L1508100009
Sample Date/Time: Monday, August 24, 2015 17:01:31
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	44914.8	1.3				ug/L	43934	Standard
	Be	9	10.0	50.0	**0.0147**	0.008	56.2	ug/L	0	Standard
	Al	27	218339.1	2.2	**3.2013**	0.073	2.3	ug/L	410	Standard
	Sc	45	29562.1	0.4				ug/L	30379	Standard
	Ti	47	110.7	6.7	**0.4251**	0.038	8.9	ug/L	21	Standard
	V	51	6511.5	4.0	**1.2359**	0.059	4.7	ug/L	1362	Standard
	Cr	52	7277.1	3.9	**-0.1037**	0.053	50.7	ug/L	8311	Standard
	Cr	53	385.0	4.7	**0.0137**	0.025	183.4	ug/L	325	Standard
	Mn	55	22594.2	2.6	**5.5567**	0.144	2.6	ug/L	694	Standard
	Co	59	329.0	2.9	**0.0309**	0.003	8.9	ug/L	199	Standard
	Ni	60	1135.4	3.1	**0.5673**	0.022	3.9	ug/L	212	Standard
	Cu	65	163.0	9.7	**0.0030**	0.011	359.8	ug/L	149	Standard
	Zn	66	1972.8	4.5	**1.8339**	0.105	5.7	ug/L	206	Standard
>	**Ge**	72	309297.4	0.5				ug/L	319179	Standard
	As	75	885.1	13.6	**1.1589**	0.146	12.6	ug/L	-51	Standard
	Se	82	261.0	16.0	**3.5151**	0.608	17.3	ug/L	19	Standard
	Se-1	77	88.0	9.1	**-0.0563**	0.172	305.5	ug/L	89	Standard
>	**Ga**	71	30.0	44.1				mg/L	25	Standard
	Rb	85	2540.2	2.7				ug/L	27	Standard
	Y	89	285548.1	2.1				ug/L	295132	Standard
>	**Rh**	103	13.3	57.3				ug/L	20	Standard
	Mo	98	43.7	15.8	**0.0154**	0.005	30.5	ug/L	11	Standard
	Ag	107	65.0	14.1	**-0.0028**	0.002	60.8	ug/L	64	Standard
	Cd	111	11.5	21.8	**-0.0016**	0.002	117.2	mg/L	7	Standard
	Cd	114	45.5	17.5	**0.0049**	0.002	43.5	ug/L	10	Standard
>	**In**	115	419447.7	1.4				ug/L	418014	Standard
	Sn	118	291.7	6.5	**-0.0143**	0.004	30.8	ug/L	385	Standard
	Sb	123	756.6	7.7	**0.1772**	0.017	9.8	ug/L	54	Standard
	Ba	135	1078.0	2.1	**0.5047**	0.016	3.3	ug/L	44	Standard
	Ce	140	36.7	43.8				ug/L	33	Standard
>	**Tb**	159	828526.5	1.5				ug/L	854905	Standard
	Ho	165	3.3	86.6				ug/L	13	Standard
	Tl	203	113.7	4.0	**0.0165**	0.001	3.8	ug/L	4	Standard
	Tl	205	75.0	17.6	**0.0172**	0.003	16.1	ug/L	5	Standard
	Pb	206	209.3	8.0	**-0.0088**	0.004	42.4	ug/L	182	Standard
	Pb	207	164.0	7.6	**-0.0110**	0.003	28.1	ug/L	160	Standard
	Pb	208	664.0	1.1	**-0.0045**	0.000	8.7	ug/L	604	Standard
	U	238	8.0	25.0	**0.0013**	0.000	30.5	ug/L	3	Standard
>	**Bi**	209	395572.9	0.3				ug/L	395375	Standard

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Na	23	1.7	173.2	**-0.1458**	17.702	12143.5	mg/L	0	Standard
Mg	24	158.3	4.8	**0.2906**	0.019	6.6	mg/L	47	Standard
K	39	45.0	40.1	**0.3883**	0.257	66.2	mg/L	22	Standard
Ca	43	43.3	24.0	**2.3898**	1.222	51.1	mg/L	28	Standard
Fe	54	62.7	19.8	**-0.0461**	0.029	63.6	mg/L	72	Standard
Fe	57	785.0	5.1	**0.2727**	0.434	159.3	mg/L	703	Standard
Sc-1	45	29562.1	0.4				mg/L	30379	Standard
Cl	35	15453.9	2.1				ug/L	14530	Standard
Kr	83	4.7	53.9				ug/L	5	Standard
Br	81	18711.6	3.4				ug/L	497	Standard
P	31	8020.5	1.6				ug/L	10347	Standard
S	34	1626.8	10.2				ug/L	1535	Standard
Sr	88	185.0	13.5				ug/L	177	Standard
C	12	220.0	9.1				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	3	Standard
Dy	164	16.0	37.7				mg/L	7	Standard
Ho-1	165	3.3	86.6				mg/L	13	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	5022.5	3.4				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		102.233	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.904	
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	100.343
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	100.050
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508100011
Sample Date/Time: Monday, August 24, 2015 17:04:42
Number of Replicates: 3
Autosampler Position: 346
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	46752.0	2.0				ug/L	43934	Standard
	Be	9	121.7	6.3	**0.1933**	0.013	6.8	ug/L	0	Standard
	Al	27	1048660.2	1.1	**14.8134**	0.170	1.1	ug/L	410	Standard
	Sc	45	30754.5	2.3				ug/L	30379	Standard
	Ti	47	1146.4	4.4	**5.3876**	0.230	4.3	ug/L	21	Standard
	V	51	4707.6	1.2	**0.8088**	0.011	1.4	ug/L	1362	Standard
	Cr	52	10814.5	3.3	**0.5295**	0.068	12.8	ug/L	8311	Standard
	Cr	53	750.0	12.2	**0.5358**	0.129	24.1	ug/L	325	Standard
	Mn	55	720171.7	2.7	**182.9067**	4.387	2.4	ug/L	694	Standard
	Co	59	5029.2	3.5	**1.2621**	0.044	3.5	ug/L	199	Standard
	Ni	60	19793.6	0.6	**12.9209**	0.045	0.3	ug/L	212	Standard
	Cu	65	358.7	7.1	**0.1363**	0.017	12.3	ug/L	149	Standard
	Zn	66	19651.1	0.7	**23.0441**	0.112	0.5	ug/L	206	Standard
>	**Ge**	72	309724.7	0.3				ug/L	319179	Standard
	As	75	1977.3	4.2	**2.4567**	0.095	3.8	ug/L	-51	Standard
	Se	82	34.0	15.1	**0.2534**	0.073	28.7	ug/L	19	Standard
	Se-1	77	102.3	9.3	**0.2312**	0.194	83.9	ug/L	89	Standard
>	**Ga**	71	63.3	50.1				mg/L	25	Standard
	Rb	85	8354.0	4.4				ug/L	27	Standard
	Y	89	288784.7	1.2				ug/L	295132	Standard
>	**Rh**	103	26.7	10.8				ug/L	20	Standard
	Mo	98	239.9	3.3	**0.1485**	0.005	3.5	ug/L	11	Standard
	Ag	107	65.3	9.2	**-0.0029**	0.001	36.5	ug/L	64	Standard
	Cd	111	842.1	4.5	**0.5612**	0.025	4.4	mg/L	7	Standard
	Cd	114	2145.1	3.2	**0.5458**	0.021	3.8	ug/L	10	Standard
>	**In**	115	424132.3	0.7				ug/L	418014	Standard
	Sn	118	313.3	9.2	**-0.0105**	0.006	58.0	ug/L	385	Standard
	Sb	123	933.2	2.5	**0.2191**	0.007	3.2	ug/L	54	Standard
	Ba	135	110203.4	1.2	**53.4861**	0.350	0.7	ug/L	44	Standard
	Ce	140	1140.0	6.9				ug/L	33	Standard
>	**Tb**	159	839458.0	0.2				ug/L	854905	Standard
	Ho	165	153.3	5.0				ug/L	13	Standard
	Tl	203	686.7	3.2	**0.0985**	0.003	3.4	ug/L	4	Standard
	Tl	205	468.3	4.0	**0.0986**	0.004	3.7	ug/L	5	Standard
	Pb	206	287.3	3.8	**0.0086**	0.002	25.4	ug/L	182	Standard
	Pb	207	236.0	7.2	**0.0070**	0.005	65.5	ug/L	160	Standard
	Pb	208	856.7	6.6	**0.0085**	0.004	46.6	ug/L	604	Standard
	U	238	275.7	3.4	**0.0554**	0.002	3.3	ug/L	3	Standard
>	**Bi**	209	398496.4	0.4				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	290.0	10.3	**0.5984**	0.075	12.5	mg/L	47	Standard
K	39	76.7	10.0	**0.8037**	0.131	16.3	mg/L	22	Standard
Ca	43	123.3	10.2	**11.3415**	1.155	10.2	mg/L	28	Standard
Fe	54	64.2	21.0	**-0.0485**	0.030	61.4	mg/L	72	Standard
Fe	57	868.4	6.0	**0.7700**	0.352	45.7	mg/L	703	Standard
> **Sc-1**	45	30754.5	2.3				mg/L	30379	Standard
Cl	35	15542.6	1.9				ug/L	14530	Standard
Kr	83	2.7	86.6				ug/L	5	Standard
Br	81	970.0	10.5				ug/L	497	Standard
P	31	8380.7	4.0				ug/L	10347	Standard
S	34	1648.4	1.8				ug/L	1535	Standard
Sr	88	221.7	12.4				ug/L	177	Standard
C	12	243.3	26.4				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	169.2	32.6				mg/L	7	Standard
Ho-1	165	153.3	5.0				mg/L	13	Standard
Er	166	156.7	25.8				mg/L	3	Standard
I	127	20695.8	1.3				mg/L	1945	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		106.415	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.038	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.464
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.789
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508100013
Sample Date/Time: Monday, August 24, 2015 17:07:54
Number of Replicates: 3
Autosampler Position: 347
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	46698.5	2.3				ug/L	43934	Standard
	Be	9	10.0	50.0	**0.0140**	0.008	55.3	ug/L	0	Standard
	Al	27	171640.3	1.9	**2.4177**	0.019	0.8	ug/L	410	Standard
	Sc	45	29971.3	2.6				ug/L	30379	Standard
	Ti	47	111.7	8.1	**0.4261**	0.044	10.4	ug/L	21	Standard
	V	51	7011.6	2.2	**1.3423**	0.035	2.6	ug/L	1362	Standard
	Cr	52	7166.0	1.4	**-0.1328**	0.006	4.4	ug/L	8311	Standard
	Cr	53	418.3	10.8	**0.0575**	0.067	117.0	ug/L	325	Standard
	Mn	55	22544.8	0.6	**5.5041**	0.085	1.5	ug/L	694	Standard
	Co	59	378.3	5.2	**0.0432**	0.005	11.5	ug/L	199	Standard
	Ni	60	2141.8	3.8	**1.2244**	0.043	3.5	ug/L	212	Standard
	Cu	65	173.7	4.7	**0.0094**	0.004	44.1	ug/L	149	Standard
	Zn	66	2864.6	1.1	**2.8812**	0.004	0.1	ug/L	206	Standard
>	**Ge**	72	311501.1	1.2				ug/L	319179	Standard
	As	75	436.0	11.2	**0.6198**	0.058	9.4	ug/L	-51	Standard
	Se	82	28.0	42.4	**0.1637**	0.165	100.9	ug/L	19	Standard
	Se-1	77	87.7	4.3	**-0.0758**	0.087	115.1	ug/L	89	Standard
>	**Ga**	71	21.7	48.0				mg/L	25	Standard
	Rb	85	2555.2	7.9				ug/L	27	Standard
	Y	89	280442.1	1.8				ug/L	295132	Standard
>	**Rh**	103	28.3	73.5				ug/L	20	Standard
	Mo	98	15.4	31.6	**-0.0043**	0.003	75.3	ug/L	11	Standard
	Ag	107	54.3	6.5	**-0.0050**	0.001	14.1	ug/L	64	Standard
	Cd	111	35.3	9.9	**0.0142**	0.003	17.6	mg/L	7	Standard
	Cd	114	88.5	43.5	**0.0156**	0.010	63.8	ug/L	10	Standard
>	**In**	115	428511.7	0.7				ug/L	418014	Standard
	Sn	118	305.0	15.6	**-0.0129**	0.010	76.3	ug/L	385	Standard
	Sb	123	912.2	2.3	**0.2115**	0.004	1.7	ug/L	54	Standard
	Ba	135	1143.4	3.6	**0.5247**	0.017	3.3	ug/L	44	Standard
	Ce	140	43.3	13.3				ug/L	33	Standard
>	**Tb**	159	849021.7	0.7				ug/L	854905	Standard
	Ho	165	5.0	0.0				ug/L	13	Standard
	Tl	203	39.3	8.9	**0.0057**	0.001	9.0	ug/L	4	Standard
	Tl	205	28.3	27.0	**0.0074**	0.002	21.6	ug/L	5	Standard
	Pb	206	209.0	5.3	**-0.0094**	0.002	25.8	ug/L	182	Standard
	Pb	207	162.0	1.6	**-0.0119**	0.001	5.0	ug/L	160	Standard
	Pb	208	696.3	3.2	**-0.0028**	0.001	50.0	ug/L	604	Standard
	U	238	2.0	50.0	**0.0001**	0.000	173.3	ug/L	3	Standard
>	**Bi**	209	399646.8	0.3				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	155.0	14.1	**0.2776**	0.064	23.2	mg/L	47	Standard
K	39	41.7	27.7	**0.3353**	0.178	53.2	mg/L	22	Standard
Ca	43	53.3	23.6	**3.5255**	1.633	46.3	mg/L	28	Standard
Fe	54	50.8	37.7	**-0.0763**	0.045	58.5	mg/L	72	Standard
Fe	57	795.0	7.1	**0.2589**	0.430	166.1	mg/L	703	Standard
> **Sc-1**	45	29971.3	2.6				mg/L	30379	Standard
Cl	35	16134.6	1.8				ug/L	14530	Standard
Kr	83	4.7	44.6				ug/L	5	Standard
Br	81	756.7	3.3				ug/L	497	Standard
P	31	8198.9	1.3				ug/L	10347	Standard
S	34	1651.8	3.4				ug/L	1535	Standard
Sr	88	216.7	17.3				ug/L	177	Standard
C	12	240.0	7.2				mg/L	153	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	6.0	100.4				mg/L	7	Standard
Ho-1	165	5.0	0.0				mg/L	13	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	3117.0	5.5				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.293	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.594	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.511
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.080
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508100015
Sample Date/Time: Monday, August 24, 2015 17:11:05
Number of Replicates: 3
Autosampler Position: 348
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	46765.4	1.4				ug/L	43934	Standard
	Be	9	5.0	100.0	**0.0061**	0.008	133.8	ug/L	0	Standard
	Al	27	280178.5	3.2	**3.9489**	0.163	4.1	ug/L	410	Standard
	Sc	45	30519.1	2.6				ug/L	30379	Standard
	Ti	47	167.7	5.9	**0.6978**	0.049	7.0	ug/L	21	Standard
	V	51	6417.8	2.3	**1.2122**	0.036	3.0	ug/L	1362	Standard
	Cr	52	7507.2	2.5	**-0.0639**	0.033	51.6	ug/L	8311	Standard
	Cr	53	428.3	8.8	**0.0752**	0.054	71.7	ug/L	325	Standard
	Mn	55	126354.8	2.1	**31.9389**	0.577	1.8	ug/L	694	Standard
	Co	59	900.4	1.6	**0.1805**	0.003	1.6	ug/L	199	Standard
	Ni	60	4175.6	1.7	**2.5801**	0.042	1.6	ug/L	212	Standard
	Cu	65	182.7	6.3	**0.0163**	0.008	50.7	ug/L	149	Standard
	Zn	66	5944.2	1.0	**6.5985**	0.096	1.5	ug/L	206	Standard
>	**Ge**	72	309636.6	0.4				ug/L	319179	Standard
	As	75	760.9	1.5	**1.0096**	0.014	1.4	ug/L	-51	Standard
	Se	82	33.2	5.2	**0.2417**	0.026	10.8	ug/L	19	Standard
	Se-1	77	95.0	17.3	**0.0822**	0.325	395.6	ug/L	89	Standard
>	**Ga**	71	18.3	41.7				mg/L	25	Standard
	Rb	85	2942.0	2.0				ug/L	27	Standard
	Y	89	289797.4	1.7				ug/L	295132	Standard
>	**Rh**	103	20.0	25.0				ug/L	20	Standard
	Mo	98	180.3	7.7	**0.1067**	0.009	8.6	ug/L	11	Standard
	Ag	107	68.7	12.6	**-0.0024**	0.001	61.7	ug/L	64	Standard
	Cd	111	75.6	4.8	**0.0412**	0.003	6.8	mg/L	7	Standard
	Cd	114	211.1	22.0	**0.0468**	0.012	25.1	ug/L	10	Standard
>	**In**	115	428867.7	0.9				ug/L	418014	Standard
	Sn	118	331.7	16.6	**-0.0076**	0.011	142.5	ug/L	385	Standard
	Sb	123	1229.5	1.8	**0.2899**	0.008	2.6	ug/L	54	Standard
	Ba	135	4106.2	1.9	**1.9471**	0.034	1.7	ug/L	44	Standard
	Ce	140	65.0	40.7				ug/L	33	Standard
>	**Tb**	159	844487.9	1.1				ug/L	854905	Standard
	Ho	165	16.7	45.8				ug/L	13	Standard
	Tl	203	82.7	4.6	**0.0119**	0.001	4.4	ug/L	4	Standard
	Tl	205	36.7	20.8	**0.0091**	0.002	18.1	ug/L	5	Standard
	Pb	206	221.7	11.5	**-0.0068**	0.006	81.8	ug/L	182	Standard
	Pb	207	165.3	7.8	**-0.0113**	0.003	28.2	ug/L	160	Standard
	Pb	208	706.0	5.7	**-0.0024**	0.003	105.1	ug/L	604	Standard
	U	238	11.0	65.6	**0.0019**	0.001	75.3	ug/L	3	Standard
>	**Bi**	209	401973.0	0.8				ug/L	395375	Standard

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Na	23	1.7	173.2	**0.4287**	16.707	3897.3	mg/L	0	Standard
Mg	24	218.3	11.3	**0.4255**	0.048	11.3	mg/L	47	Standard
K	39	43.3	17.6	**0.3441**	0.095	27.7	mg/L	22	Standard
Ca	43	46.7	27.0	**2.6027**	1.384	53.2	mg/L	28	Standard
Fe	54	42.7	35.8	**-0.0965**	0.038	39.7	mg/L	72	Standard
Fe	57	776.7	15.5	**-0.0382**	1.342	3507.6	mg/L	703	Standard
> **Sc-1**	45	30519.1	2.6				mg/L	30379	Standard
Cl	35	16066.5	1.6				ug/L	14530	Standard
Kr	83	5.7	10.2				ug/L	5	Standard
Br	81	683.3	17.7				ug/L	497	Standard
P	31	8469.0	2.7				ug/L	10347	Standard
S	34	1678.4	6.7				ug/L	1535	Standard
Sr	88	203.3	19.9				ug/L	177	Standard
C	12	213.3	17.7				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	16.0	75.6				mg/L	7	Standard
Ho-1	165	16.7	45.8				mg/L	13	Standard
Er	166	13.3	114.6				mg/L	3	Standard
I	127	5902.8	1.6				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.446	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.010	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.596
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.669
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508100017
Sample Date/Time: Monday, August 24, 2015 17:14:17
Number of Replicates: 3
Autosampler Position: 349
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48627.9	1.8				ug/L	43934	Standard
	Be	9	5.0	100.0	**0.0058**	0.008	133.1	ug/L	0	Standard
	Al	27	181951.2	1.7	**2.4613**	0.007	0.3	ug/L	410	Standard
	Sc	45	30764.5	1.1				ug/L	30379	Standard
	Ti	47	99.3	11.9	**0.3694**	0.054	14.7	ug/L	21	Standard
	V	51	14983.7	1.6	**3.2276**	0.105	3.3	ug/L	1362	Standard
	Cr	52	7030.6	0.6	**-0.1509**	0.017	11.3	ug/L	8311	Standard
	Cr	53	351.7	3.6	**-0.0354**	0.013	35.9	ug/L	325	Standard
	Mn	55	14259.0	2.0	**3.4269**	0.120	3.5	ug/L	694	Standard
	Co	59	321.0	7.2	**0.0287**	0.007	22.8	ug/L	199	Standard
	Ni	60	936.4	3.3	**0.4341**	0.028	6.5	ug/L	212	Standard
	Cu	65	194.0	3.6	**0.0239**	0.005	21.8	ug/L	149	Standard
	Zn	66	2198.8	2.5	**2.0998**	0.086	4.1	ug/L	206	Standard
>	**Ge**	72	310032.2	1.3				ug/L	319179	Standard
	As	75	515.4	2.1	**0.7166**	0.010	1.4	ug/L	-51	Standard
	Se	82	28.6	14.0	**0.1748**	0.063	35.8	ug/L	19	Standard
	Se-1	77	89.7	8.4	**-0.0272**	0.151	554.7	ug/L	89	Standard
>	**Ga**	71	33.3	77.0				mg/L	25	Standard
	Rb	85	3177.0	4.5				ug/L	27	Standard
	Y	89	287592.1	0.6				ug/L	295132	Standard
>	**Rh**	103	8.3	91.7				ug/L	20	Standard
	Mo	98	40.2	10.2	**0.0126**	0.003	23.8	ug/L	11	Standard
	Ag	107	64.3	3.2	**-0.0031**	0.000	13.6	ug/L	64	Standard
	Cd	111	64.9	6.2	**0.0344**	0.003	8.8	mg/L	7	Standard
	Cd	114	137.8	25.8	**0.0285**	0.009	32.7	ug/L	10	Standard
>	**In**	115	424949.4	0.9				ug/L	418014	Standard
	Sn	118	270.0	6.7	**-0.0195**	0.003	17.1	ug/L	385	Standard
	Sb	123	850.1	3.2	**0.1979**	0.006	3.2	ug/L	54	Standard
	Ba	135	2833.9	3.3	**1.3486**	0.039	2.9	ug/L	44	Standard
	Ce	140	46.7	49.5				ug/L	33	Standard
>	**Tb**	159	838804.9	1.1				ug/L	854905	Standard
	Ho	165	13.3	78.1				ug/L	13	Standard
	Tl	203	66.3	13.7	**0.0094**	0.001	14.5	ug/L	4	Standard
	Tl	205	46.7	22.3	**0.0110**	0.002	19.1	ug/L	5	Standard
	Pb	206	207.3	7.0	**-0.0106**	0.003	32.9	ug/L	182	Standard
	Pb	207	193.7	9.8	**-0.0048**	0.005	109.6	ug/L	160	Standard
	Pb	208	659.3	8.0	**-0.0062**	0.003	48.8	ug/L	604	Standard
	U	238	2.0	132.3	**0.0001**	0.001	472.3	ug/L	3	Standard
>	**Bi**	209	407318.5	1.2				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	181.7	16.6	**0.3326**	0.079	23.6	mg/L	47	Standard
K	39	43.3	17.6	**0.3413**	0.111	32.6	mg/L	22	Standard
Ca	43	51.7	22.3	**3.1387**	1.271	40.5	mg/L	28	Standard
Fe	54	31.1	52.0	**-0.1246**	0.037	29.7	mg/L	72	Standard
Fe	57	805.0	5.0	**0.1571**	0.418	266.2	mg/L	703	Standard
> **Sc-1**	45	30764.5	1.1				mg/L	30379	Standard
Cl	35	15923.7	0.8				ug/L	14530	Standard
Kr	83	4.7	44.6				ug/L	5	Standard
Br	81	676.7	20.7				ug/L	497	Standard
P	31	8847.6	1.4				ug/L	10347	Standard
S	34	1673.4	7.8				ug/L	1535	Standard
Sr	88	195.0	9.2				ug/L	177	Standard
C	12	206.7	7.4				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	13.0	89.8				mg/L	7	Standard
Ho-1	165	13.3	78.1				mg/L	13	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	5037.5	3.9				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.685	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.134	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.659
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.021
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508100019
Sample Date/Time: Monday, August 24, 2015 17:17:29
Number of Replicates: 3
Autosampler Position: 350
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48419.0	4.7				ug/L	43934	Standard
	Be	9	8.3	91.7	**0.0112**	0.012	110.1	ug/L	0	Standard
	Al	27	114514.5	1.1	**1.5534**	0.062	4.0	ug/L	410	Standard
	Sc	45	29388.5	0.8				ug/L	30379	Standard
	Ti	47	85.0	16.7	**0.3026**	0.072	23.7	ug/L	21	Standard
	V	51	12013.6	1.8	**2.5370**	0.069	2.7	ug/L	1362	Standard
	Cr	52	8122.8	1.0	**0.0496**	0.017	35.1	ug/L	8311	Standard
	Cr	53	420.0	22.7	**0.0652**	0.142	218.0	ug/L	325	Standard
	Mn	55	3918.8	0.9	**0.8028**	0.017	2.1	ug/L	694	Standard
	Co	59	228.7	4.2	**0.0047**	0.003	64.6	ug/L	199	Standard
	Ni	60	437.0	3.9	**0.1045**	0.011	10.8	ug/L	212	Standard
	Cu	65	163.0	8.0	**0.0031**	0.009	287.7	ug/L	149	Standard
	Zn	66	1654.4	4.6	**1.4527**	0.076	5.3	ug/L	206	Standard
>	**Ge**	72	309023.7	0.8				ug/L	319179	Standard
	As	75	159.7	22.9	**0.2943**	0.043	14.6	ug/L	-51	Standard
	Se	82	42.6	12.2	**0.3777**	0.071	18.8	ug/L	19	Standard
	Se-1	77	93.7	12.5	**0.0596**	0.235	393.6	ug/L	89	Standard
>	**Ga**	71	56.7	22.2				mg/L	25	Standard
	Rb	85	1745.1	3.6				ug/L	27	Standard
	Y	89	286107.9	1.1				ug/L	295132	Standard
>	**Rh**	103	16.7	96.4				ug/L	20	Standard
	Mo	98	29.9	12.6	**0.0055**	0.002	42.1	ug/L	11	Standard
	Ag	107	70.3	7.2	**-0.0021**	0.001	51.7	ug/L	64	Standard
	Cd	111	16.9	11.8	**0.0019**	0.001	75.3	mg/L	7	Standard
	Cd	114	49.4	50.2	**0.0057**	0.007	115.2	ug/L	10	Standard
>	**In**	115	427795.0	1.5				ug/L	418014	Standard
	Sn	118	271.7	22.1	**-0.0196**	0.012	59.6	ug/L	385	Standard
	Sb	123	1295.6	1.2	**0.3071**	0.005	1.7	ug/L	54	Standard
	Ba	135	1104.4	1.5	**0.5070**	0.007	1.4	ug/L	44	Standard
	Ce	140	96.7	92.7				ug/L	33	Standard
>	**Tb**	159	844634.8	1.3				ug/L	854905	Standard
	Ho	165	18.3	15.7				ug/L	13	Standard
	Tl	203	18.7	27.5	**0.0028**	0.001	26.3	ug/L	4	Standard
	Tl	205	11.7	89.2	**0.0039**	0.002	54.8	ug/L	5	Standard
	Pb	206	206.3	11.3	**-0.0100**	0.005	53.3	ug/L	182	Standard
	Pb	207	166.7	12.7	**-0.0107**	0.005	48.4	ug/L	160	Standard
	Pb	208	664.3	3.2	**-0.0050**	0.002	31.8	ug/L	604	Standard
	U	238	4.0	66.1	**0.0005**	0.001	102.5	ug/L	3	Standard
>	**Bi**	209	399807.6	0.4				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	173.3	20.3	**0.3316**	0.091	27.4	mg/L	47	Standard
K	39	36.7	15.7	**0.2725**	0.087	31.8	mg/L	22	Standard
Ca	43	56.7	22.2	**4.0172**	1.481	36.9	mg/L	28	Standard
Fe	54	47.7	6.0	**-0.0813**	0.007	8.5	mg/L	72	Standard
Fe	57	796.7	13.3	**0.4394**	1.103	250.9	mg/L	703	Standard
> **Sc-1**	45	29388.5	0.8				mg/L	30379	Standard
Cl	35	15970.4	2.5				ug/L	14530	Standard
Kr	83	3.7	68.6				ug/L	5	Standard
Br	81	1806.8	7.2				ug/L	497	Standard
P	31	8277.3	1.0				ug/L	10347	Standard
S	34	1645.1	4.2				ug/L	1535	Standard
Sr	88	206.7	24.2				ug/L	177	Standard
C	12	320.0	8.3				mg/L	153	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	5.5	116.6				mg/L	7	Standard
Ho-1	165	18.3	15.7				mg/L	13	Standard
Er	166	23.3	65.5				mg/L	3	Standard
I	127	2845.3	0.3				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.209	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.818	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.340
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.121
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 25, 2015

Method 6020 - Summary Report

Sample ID: L1508100021
Sample Date/Time: Monday, August 24, 2015 17:20:40
Number of Replicates: 3
Autosampler Position: 351
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	47317.1	2.4				ug/L	43934	Standard
	Be	9	11.7	137.8	**0.0164**	0.025	153.0	ug/L	0	Standard
	Al	27	78407.4	0.4	**1.0841**	0.032	2.9	ug/L	410	Standard
	Sc	45	29548.8	2.6				ug/L	30379	Standard
	Ti	47	71.3	18.5	**0.2368**	0.062	26.3	ug/L	21	Standard
	V	51	5724.7	1.6	**1.0528**	0.022	2.1	ug/L	1362	Standard
	Cr	52	7484.8	3.6	**-0.0638**	0.051	80.0	ug/L	8311	Standard
	Cr	53	446.7	13.4	**0.1036**	0.088	84.6	ug/L	325	Standard
	Mn	55	5807.1	0.9	**1.2853**	0.018	1.4	ug/L	694	Standard
	Co	59	271.0	3.9	**0.0158**	0.003	16.0	ug/L	199	Standard
	Ni	60	462.7	4.2	**0.1218**	0.014	11.3	ug/L	212	Standard
	Cu	65	174.7	12.1	**0.0113**	0.015	132.3	ug/L	149	Standard
	Zn	66	1633.1	3.7	**1.4293**	0.071	5.0	ug/L	206	Standard
>	**Ge**	72	308722.9	0.4				ug/L	319179	Standard
	As	75	13.2	244.8	**0.1196**	0.038	32.1	ug/L	-51	Standard
	Se	82	25.1	17.3	**0.1263**	0.062	49.3	ug/L	19	Standard
	Se-1	77	86.0	35.2	**-0.0957**	0.610	637.6	ug/L	89	Standard
>	**Ga**	71	33.3	22.9				mg/L	25	Standard
	Rb	85	1251.7	5.2				ug/L	27	Standard
	Y	89	281862.1	2.6				ug/L	295132	Standard
>	**Rh**	103	21.7	87.4				ug/L	20	Standard
	Mo	98	12.0	39.8	**-0.0065**	0.003	49.2	ug/L	11	Standard
	Ag	107	62.7	2.4	**-0.0034**	0.000	11.5	ug/L	64	Standard
	Cd	111	12.0	25.1	**-0.0014**	0.002	151.6	mg/L	7	Standard
	Cd	114	26.0	37.8	**-0.0004**	0.002	694.0	ug/L	10	Standard
>	**In**	115	425715.3	1.0				ug/L	418014	Standard
	Sn	118	336.7	18.0	**-0.0059**	0.013	220.7	ug/L	385	Standard
	Sb	123	2367.0	0.8	**0.5758**	0.005	0.8	ug/L	54	Standard
	Ba	135	584.7	5.3	**0.2581**	0.015	5.7	ug/L	44	Standard
	Ce	140	121.7	134.2				ug/L	33	Standard
>	**Tb**	159	847607.0	1.2				ug/L	854905	Standard
	Ho	165	13.3	114.6				ug/L	13	Standard
	Tl	203	21.7	13.3	**0.0032**	0.000	11.9	ug/L	4	Standard
	Tl	205	16.7	34.6	**0.0050**	0.001	24.5	ug/L	5	Standard
	Pb	206	229.0	4.3	**-0.0048**	0.002	46.4	ug/L	182	Standard
	Pb	207	171.0	2.7	**-0.0096**	0.001	12.0	ug/L	160	Standard
	Pb	208	649.3	7.3	**-0.0061**	0.003	47.7	ug/L	604	Standard
	U	238	2.3	24.7	**0.0002**	0.000	61.2	ug/L	3	Standard
>	**Bi**	209	399916.0	0.9				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	145.0	26.0	**0.2569**	0.098	38.3	mg/L	47	Standard
K	39	18.3	41.7	**0.0072**	0.115	1602.7	mg/L	22	Standard
Ca	43	26.7	60.3	**0.4324**	1.984	458.9	mg/L	28	Standard
Fe	54	39.1	23.2	**-0.1028**	0.019	18.5	mg/L	72	Standard
Fe	57	773.4	5.9	**0.1530**	0.264	172.7	mg/L	703	Standard
> **Sc-1**	45	29548.8	2.6				mg/L	30379	Standard
Cl	35	15812.9	0.7				ug/L	14530	Standard
Kr	83	4.3	35.3				ug/L	5	Standard
Br	81	523.3	31.4				ug/L	497	Standard
P	31	8422.3	2.4				ug/L	10347	Standard
S	34	1548.4	6.0				ug/L	1535	Standard
Sr	88	170.0	16.4				ug/L	177	Standard
C	12	210.0	4.8				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	13.0	46.6				mg/L	7	Standard
Ho-1	165	13.3	114.6				mg/L	13	Standard
Er	166	6.7	173.2				mg/L	3	Standard
I	127	2270.2	0.8				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.701	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.724	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.842
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.148
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 25, 2015

Method 6020 - Summary Report

Sample ID: L1508100023
Sample Date/Time: Monday, August 24, 2015 17:23:52
Number of Replicates: 3
Autosampler Position: 352
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	47561.3	4.6				ug/L	43934	Standard
	Be	9	5.0	173.2	**0.0061**	0.014	228.9	ug/L	0	Standard
	Al	27	171707.9	2.7	**2.3774**	0.120	5.1	ug/L	410	Standard
	Sc	45	29991.3	1.8				ug/L	30379	Standard
	Ti	47	87.0	6.4	**0.3181**	0.019	6.0	ug/L	21	Standard
	V	51	10800.2	1.9	**2.2910**	0.100	4.4	ug/L	1362	Standard
	Cr	52	7701.3	2.7	**-0.0041**	0.061	1503.4	ug/L	8311	Standard
	Cr	53	476.7	6.1	**0.1562**	0.031	20.2	ug/L	325	Standard
	Mn	55	6768.2	0.4	**1.5561**	0.041	2.6	ug/L	694	Standard
	Co	59	265.7	7.8	**0.0154**	0.005	30.3	ug/L	199	Standard
	Ni	60	500.3	5.7	**0.1516**	0.015	10.0	ug/L	212	Standard
	Cu	65	174.3	6.6	**0.0127**	0.006	45.6	ug/L	149	Standard
	Zn	66	1785.1	5.7	**1.6432**	0.107	6.5	ug/L	206	Standard
>	**Ge**	72	304300.8	1.9				ug/L	319179	Standard
	As	75	153.4	5.6	**0.2898**	0.013	4.5	ug/L	-51	Standard
	Se	82	26.4	6.9	**0.1501**	0.019	12.8	ug/L	19	Standard
	Se-1	77	103.7	8.2	**0.2942**	0.144	49.0	ug/L	89	Standard
>	**Ga**	71	43.3	37.1				mg/L	25	Standard
	Rb	85	1511.7	7.2				ug/L	27	Standard
	Y	89	280510.2	2.1				ug/L	295132	Standard
>	**Rh**	103	11.7	89.2				ug/L	20	Standard
	Mo	98	42.5	9.6	**0.0142**	0.003	19.0	ug/L	11	Standard
	Ag	107	68.0	4.4	**-0.0024**	0.001	20.9	ug/L	64	Standard
	Cd	111	21.2	28.4	**0.0049**	0.004	82.9	mg/L	7	Standard
	Cd	114	49.3	29.6	**0.0057**	0.004	66.6	ug/L	10	Standard
>	**In**	115	424584.8	0.4				ug/L	418014	Standard
	Sn	118	275.0	16.2	**-0.0185**	0.009	48.9	ug/L	385	Standard
	Sb	123	1627.1	2.3	**0.3923**	0.008	2.0	ug/L	54	Standard
	Ba	135	1266.4	0.9	**0.5895**	0.004	0.7	ug/L	44	Standard
	Ce	140	75.0	6.7				ug/L	33	Standard
>	**Tb**	159	833089.1	0.5				ug/L	854905	Standard
	Ho	165	10.0	100.0				ug/L	13	Standard
	Tl	203	43.3	5.8	**0.0063**	0.000	6.0	ug/L	4	Standard
	Tl	205	40.0	21.7	**0.0098**	0.002	18.7	ug/L	5	Standard
	Pb	206	181.3	3.6	**-0.0154**	0.001	9.1	ug/L	182	Standard
	Pb	207	170.3	9.4	**-0.0096**	0.004	42.5	ug/L	160	Standard
	Pb	208	628.3	1.9	**-0.0073**	0.001	12.3	ug/L	604	Standard
	U	238	18.3	130.7	**0.0034**	0.005	141.5	ug/L	3	Standard
>	**Bi**	209	397569.5	0.4				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	160.0	30.1	**0.2903**	0.129	44.3	mg/L	47	Standard
K	39	28.3	56.7	**0.1460**	0.233	159.7	mg/L	22	Standard
Ca	43	55.0	41.7	**3.7233**	2.796	75.1	mg/L	28	Standard
Fe	54	54.3	47.0	**-0.0686**	0.059	85.6	mg/L	72	Standard
Fe	57	745.0	15.8	**-0.2281**	1.271	557.3	mg/L	703	Standard
> **Sc-1**	45	29991.3	1.8				mg/L	30379	Standard
Cl	35	15607.4	1.9				ug/L	14530	Standard
Kr	83	3.3	45.8				ug/L	5	Standard
Br	81	513.3	28.1				ug/L	497	Standard
P	31	8255.6	5.6				ug/L	10347	Standard
S	34	1575.1	6.2				ug/L	1535	Standard
Sr	88	195.0	16.0				ug/L	177	Standard
C	12	273.3	18.0				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	15.9	37.3				mg/L	7	Standard
Ho-1	165	10.0	100.0				mg/L	13	Standard
Er	166	16.7	34.6				mg/L	3	Standard
I	127	3430.4	7.0				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.257	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.338	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.572
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.555
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 25, 2015

Method 6020 - Summary Report

Sample ID: L1508100025
Sample Date/Time: Monday, August 24, 2015 17:27:03
Number of Replicates: 3
Autosampler Position: 353
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	47579.7	3.8				ug/L	43934	Standard
	Be	9	8.3	69.3	**0.0112**	0.009	81.5	ug/L	0	Standard
	Al	27	126943.2	3.1	**1.7520**	0.017	1.0	ug/L	410	Standard
	Sc	45	29532.1	1.4				ug/L	30379	Standard
	Ti	47	53.7	12.4	**0.1499**	0.031	20.7	ug/L	21	Standard
	V	51	15738.3	1.1	**3.3903**	0.023	0.7	ug/L	1362	Standard
	Cr	52	6939.6	1.8	**-0.1720**	0.024	14.1	ug/L	8311	Standard
	Cr	53	383.3	12.1	**0.0082**	0.069	842.9	ug/L	325	Standard
	Mn	55	4422.3	0.7	**0.9231**	0.013	1.4	ug/L	694	Standard
	Co	59	237.3	6.0	**0.0065**	0.004	58.5	ug/L	199	Standard
	Ni	60	392.7	2.7	**0.0733**	0.008	10.4	ug/L	212	Standard
	Cu	65	168.7	11.2	**0.0062**	0.013	213.6	ug/L	149	Standard
	Zn	66	1786.1	1.0	**1.5965**	0.018	1.1	ug/L	206	Standard
>	**Ge**	72	311196.1	0.5				ug/L	319179	Standard
	As	75	237.5	13.8	**0.3852**	0.040	10.4	ug/L	-51	Standard
	Se	82	26.4	43.7	**0.1420**	0.167	117.4	ug/L	19	Standard
	Se-1	77	99.0	13.2	**0.1548**	0.272	175.5	ug/L	89	Standard
>	**Ga**	71	45.0	55.6				mg/L	25	Standard
	Rb	85	1155.0	7.9				ug/L	27	Standard
	Y	89	286597.2	3.4				ug/L	295132	Standard
>	**Rh**	103	20.0	50.0				ug/L	20	Standard
	Mo	98	22.9	16.0	**0.0009**	0.003	299.9	ug/L	11	Standard
	Ag	107	68.7	21.9	**-0.0023**	0.003	120.9	ug/L	64	Standard
	Cd	111	25.6	11.9	**0.0078**	0.002	26.7	mg/L	7	Standard
	Cd	114	53.0	68.0	**0.0066**	0.009	139.1	ug/L	10	Standard
>	**In**	115	425570.9	0.7				ug/L	418014	Standard
	Sn	118	260.0	15.3	**-0.0216**	0.008	38.7	ug/L	385	Standard
	Sb	123	1809.1	1.6	**0.4369**	0.009	2.2	ug/L	54	Standard
	Ba	135	510.0	5.6	**0.2221**	0.013	6.0	ug/L	44	Standard
	Ce	140	18.3	78.7				ug/L	33	Standard
>	**Tb**	159	833214.7	0.8				ug/L	854905	Standard
	Ho	165	5.0	100.0				ug/L	13	Standard
	Tl	203	39.3	32.3	**0.0057**	0.002	32.3	ug/L	4	Standard
	Tl	205	11.7	24.7	**0.0039**	0.001	14.6	ug/L	5	Standard
	Pb	206	200.7	6.3	**-0.0116**	0.003	23.5	ug/L	182	Standard
	Pb	207	174.7	6.7	**-0.0090**	0.003	35.0	ug/L	160	Standard
	Pb	208	650.0	5.3	**-0.0064**	0.002	31.5	ug/L	604	Standard
	U	238	5.7	44.4	**0.0008**	0.001	59.9	ug/L	3	Standard
>	**Bi**	209	403095.9	0.8				ug/L	395375	Standard

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Na	23	3.3	86.6	**-10.1995**	17.561	172.2	mg/L	0	Standard
Mg	24	161.7	7.1	**0.2993**	0.024	7.9	mg/L	47	Standard
K	39	40.0	43.3	**0.3161**	0.246	77.7	mg/L	22	Standard
Ca	43	38.3	39.8	**1.8083**	1.862	103.0	mg/L	28	Standard
Fe	54	67.6	23.0	**-0.0340**	0.039	113.5	mg/L	72	Standard
Fe	57	808.4	2.3	**0.5183**	0.289	55.7	mg/L	703	Standard
> **Sc-1**	45	29532.1	1.4				mg/L	30379	Standard
Cl	35	15489.2	1.3				ug/L	14530	Standard
Kr	83	3.0	33.3				ug/L	5	Standard
Br	81	783.4	21.3				ug/L	497	Standard
P	31	8354.0	2.6				ug/L	10347	Standard
S	34	1561.7	4.7				ug/L	1535	Standard
Sr	88	206.7	10.1				ug/L	177	Standard
C	12	250.0	16.0				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	6.2	93.3				mg/L	7	Standard
Ho-1	165	5.0	100.0				mg/L	13	Standard
Er	166	10.0					mg/L	3	Standard
I	127	2666.9	9.3				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.299	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.499	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.808
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.953
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, August 24, 2015 17:30:16
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	48612.9	3.1				ug/L	43934	Standard
	Be	9	31945.3	1.8	**49.3005**	1.253	2.5	ug/L	0	Standard
	Al	27	3460871.8	1.4	**47.0541**	0.989	2.1	ug/L	410	Standard
	Sc	45	31215.5	2.2				ug/L	30379	Standard
	Ti	47	22932.3	1.2	**106.5626**	0.630	0.6	ug/L	21	Standard
	V	51	232283.9	0.6	**52.8226**	0.295	0.6	ug/L	1362	Standard
	Cr	52	303305.3	1.2	**51.4276**	0.634	1.2	ug/L	8311	Standard
	Cr	53	38097.8	1.9	**52.4520**	1.257	2.4	ug/L	325	Standard
	Mn	55	218387.4	2.8	**53.6996**	1.545	2.9	ug/L	694	Standard
	Co	59	207317.4	0.2	**52.6593**	0.354	0.7	ug/L	199	Standard
	Ni	60	80285.5	1.0	**51.4156**	0.811	1.6	ug/L	212	Standard
	Cu	65	77134.5	0.9	**50.9537**	0.867	1.7	ug/L	149	Standard
	Zn	66	43931.3	0.7	**50.6332**	0.801	1.6	ug/L	206	Standard
>	Ge	72	319115.3	0.8				ug/L	319179	Standard
	As	75	43346.5	0.5	**50.1702**	0.634	1.3	ug/L	-51	Standard
	Se	82	3660.3	0.7	**50.7364**	0.754	1.5	ug/L	19	Standard
	Se-1	77	2725.9	3.1	**51.7698**	1.765	3.4	ug/L	89	Standard
>	Ga	71	50.0	17.3				mg/L	25	Standard
	Rb	85	626.7	2.0				ug/L	27	Standard
	Y	89	305351.3	0.5				ug/L	295132	Standard
>	Rh	103	36.7	41.7				ug/L	20	Standard
	Mo	98	148545.7	1.1	**96.9823**	1.600	1.6	ug/L	11	Standard
	Ag	107	272793.5	0.3	**48.4859**	0.208	0.4	ug/L	64	Standard
	Cd	111	77625.0	1.4	**50.4803**	0.949	1.9	mg/L	7	Standard
	Cd	114	202584.2	0.5	**50.0858**	0.061	0.1	ug/L	10	Standard
>	In	115	441945.2	0.6				ug/L	418014	Standard
	Sn	118	234877.3	2.6	**46.1539**	0.954	2.1	ug/L	385	Standard
	Sb	123	208605.1	0.3	**50.1026**	0.223	0.4	ug/L	54	Standard
	Ba	135	103575.2	0.8	**48.2444**	0.671	1.4	ug/L	44	Standard
	Ce	140	85.0	10.2				ug/L	33	Standard
>	Tb	159	863963.6	2.0				ug/L	854905	Standard
	Ho	165	16.7	45.8				ug/L	13	Standard
	Tl	203	352788.0	1.3	**49.1924**	0.675	1.4	ug/L	4	Standard
	Tl	205	242038.2	1.6	**48.8606**	0.497	1.0	ug/L	5	Standard
	Pb	206	221023.1	0.5	**49.0279**	0.593	1.2	ug/L	182	Standard
	Pb	207	198537.3	0.7	**48.9269**	0.305	0.6	ug/L	160	Standard
	Pb	208	729039.1	1.4	**49.1136**	0.990	2.0	ug/L	604	Standard
	U	238	248904.1	0.2	**48.9425**	0.483	1.0	ug/L	3	Standard
>	Bi	209	409331.1	0.8				ug/L	395375	Standard

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Na	23	1.7	173.2	**0.4734**	16.630	3512.8	mg/L	0	Standard
Mg	24	2138.5	4.2	**5.0631**	0.325	6.4	mg/L	47	Standard
K	39	398.3	10.1	**5.1677**	0.503	9.7	mg/L	22	Standard
Ca	43	48.3	11.9	**2.6835**	0.639	23.8	mg/L	28	Standard
Fe	54	2338.6	2.0	**5.1022**	0.213	4.2	mg/L	72	Standard
Fe	57	1328.4	4.9	**5.0544**	0.507	10.0	mg/L	703	Standard
> **Sc-1**	45	31215.5	2.2				mg/L	30379	Standard
Cl	35	16021.1	2.0				ug/L	14530	Standard
Kr	83	5.0	40.0				ug/L	5	Standard
Br	81	573.3	15.7				ug/L	497	Standard
P	31	12556.9	5.1				ug/L	10347	Standard
S	34	1936.8	7.2				ug/L	1535	Standard
Sr	88	205.0	9.8				ug/L	177	Standard
C	12	156.7	42.5				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	3	Standard
Dy	164	3.0	201.4				mg/L	7	Standard
Ho-1	165	16.7	45.8				mg/L	13	Standard
Er	166	6.7	173.2				mg/L	3	Standard
I	127	856.7	9.7				mg/L	1945	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	98.601		
	Al	27	94.108		
	Sc	45			
	Ti	47	106.563		
	V	51	105.645		
	Cr	52	102.855		
	Cr	53			
	Mn	55	107.399		
	Co	59	105.319		
	Ni	60	102.831		
	Cu	65	101.907		
	Zn	66	101.266		
>	Ge	72		99.980	
	As	75	100.340		
	Se	82	101.473		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	96.982		
Ag	107	96.972		
Cd	111	100.961		
Cd	114			
> In	115			105.725
Sn	118	92.308		
Sb	123	100.205		
Ba	135	96.489		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.385		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.227		
U	238	97.885		
> Bi	209			103.530
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, August 24, 2015 17:33:27
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48230.0	3.5				ug/L	43934	Standard
	Be	9	8.3	34.6	**0.0110**	0.005	42.3	ug/L	0	Standard
	Al	27	773.4	52.9	**-0.0007**	0.006	894.4	ug/L	410	Standard
	Sc	45	31015.1	2.9				ug/L	30379	Standard
	Ti	47	21.7	16.2	**-0.0059**	0.016	265.5	ug/L	21	Standard
	V	51	1126.7	4.1	**-0.0443**	0.010	22.8	ug/L	1362	Standard
	Cr	52	7006.0	2.0	**-0.1986**	0.018	9.2	ug/L	8311	Standard
	Cr	53	380.0	6.6	**-0.0135**	0.032	237.9	ug/L	325	Standard
	Mn	55	734.0	1.7	**-0.0159**	0.004	24.6	ug/L	694	Standard
	Co	59	215.3	20.5	**-0.0010**	0.011	1135.8	ug/L	199	Standard
	Ni	60	210.7	8.9	**-0.0510**	0.012	22.9	ug/L	212	Standard
	Cu	65	154.3	3.8	**-0.0068**	0.004	52.0	ug/L	149	Standard
	Zn	66	238.0	5.1	**-0.2611**	0.015	5.9	ug/L	206	Standard
>	**Ge**	72	321038.2	0.5				ug/L	319179	Standard
	As	75	-30.6	170.0	**0.0688**	0.060	86.6	ug/L	-51	Standard
	Se	82	19.9	25.8	**0.0402**	0.071	175.9	ug/L	19	Standard
	Se-1	77	81.3	22.0	**-0.2530**	0.346	136.8	ug/L	89	Standard
>	**Ga**	71	13.3	21.7				mg/L	25	Standard
	Rb	85	21.7	35.3				ug/L	27	Standard
	Y	89	292938.8	2.1				ug/L	295132	Standard
>	**Rh**	103	25.0	52.9				ug/L	20	Standard
	Mo	98	64.5	38.0	**0.0275**	0.015	55.8	ug/L	11	Standard
	Ag	107	96.0	29.0	**0.0021**	0.005	219.0	ug/L	64	Standard
	Cd	111	9.2	45.0	**-0.0035**	0.003	73.6	mg/L	7	Standard
	Cd	114	30.5	101.9	**0.0006**	0.008	1285.6	ug/L	10	Standard
>	**In**	115	439489.4	1.6				ug/L	418014	Standard
	Sn	118	2776.9	1.4	**0.4750**	0.014	3.1	ug/L	385	Standard
	Sb	123	776.2	9.4	**0.1729**	0.016	9.4	ug/L	54	Standard
	Ba	135	55.3	29.7	**0.0011**	0.007	643.2	ug/L	44	Standard
	Ce	140	11.7	24.7				ug/L	33	Standard
>	**Tb**	159	868237.2	1.5				ug/L	854905	Standard
	Ho	165	6.7	86.6				ug/L	13	Standard
	Tl	203	38.0	94.2	**0.0054**	0.005	91.9	ug/L	4	Standard
	Tl	205	31.7	105.1	**0.0079**	0.007	85.0	ug/L	5	Standard
	Pb	206	236.0	20.3	**-0.0042**	0.011	253.6	ug/L	182	Standard
	Pb	207	172.3	10.8	**-0.0100**	0.005	44.9	ug/L	160	Standard
	Pb	208	692.3	19.0	**-0.0039**	0.009	225.1	ug/L	604	Standard
	U	238	34.3	127.8	**0.0065**	0.009	133.3	ug/L	3	Standard
>	**Bi**	209	406631.3	0.3				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	53.3	37.9	**0.0165**	0.052	313.6	mg/L	47	Standard
K	39	13.3	43.3	**-0.0771**	0.073	94.8	mg/L	22	Standard
Ca	43	28.3	27.0	**0.4397**	0.818	186.1	mg/L	28	Standard
Fe	54	67.6	18.9	**-0.0421**	0.028	66.6	mg/L	72	Standard
Fe	57	720.0	6.9	**-0.7321**	0.293	40.1	mg/L	703	Standard
Sc-1	45	31015.1	2.9				mg/L	30379	Standard
Cl	35	16134.6	1.2				ug/L	14530	Standard
Kr	83	6.0	44.1				ug/L	5	Standard
Br	81	606.7	10.1				ug/L	497	Standard
P	31	12360.0	1.6				ug/L	10347	Standard
S	34	1935.1	7.7				ug/L	1535	Standard
Sr	88	226.7	14.2				ug/L	177	Standard
C	12	153.3	26.4				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	5.2	212.9				mg/L	7	Standard
Ho-1	165	6.7	86.6				mg/L	13	Standard
Er	166	30.0	33.3				mg/L	3	Standard
I	127	1578.4	6.7				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.582	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.137
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.847
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sn	118	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBS M5 WG535367-02
Sample Date/Time: Monday, August 24, 2015 17:58:37
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49549.2	2.0				ug/L	43934	Standard
	Be	9	6.7	114.6	**0.0080**	0.011	141.2	ug/L	0	Standard
	Al	27	2036.8	2.0	**0.0158**	0.001	6.7	ug/L	410	Standard
	Sc	45	31524.4	0.8				ug/L	30379	Standard
	Ti	47	21.0	33.0	**-0.0110**	0.030	275.6	ug/L	21	Standard
	V	51	1326.1	5.3	**-0.0044**	0.018	411.3	ug/L	1362	Standard
	Cr	52	8276.3	2.9	**-0.0042**	0.061	1447.3	ug/L	8311	Standard
	Cr	53	363.3	6.5	**-0.0452**	0.040	88.5	ug/L	325	Standard
	Mn	55	978.7	3.6	**0.0396**	0.005	13.6	ug/L	694	Standard
	Co	59	183.7	9.2	**-0.0098**	0.005	48.4	ug/L	199	Standard
	Ni	60	325.3	5.1	**0.0186**	0.014	73.2	ug/L	212	Standard
	Cu	65	216.7	5.5	**0.0316**	0.005	17.2	ug/L	149	Standard
	Zn	66	1304.1	3.4	**0.9451**	0.027	2.9	ug/L	206	Standard
>	**Ge**	72	327025.8	1.7				ug/L	319179	Standard
	As	75	-70.3	23.3	**0.0245**	0.020	80.7	ug/L	-51	Standard
	Se	82	21.6	25.1	**0.0585**	0.075	128.1	ug/L	19	Standard
	Se-1	77	87.3	3.3	**-0.1656**	0.081	48.7	ug/L	89	Standard
>	**Ga**	71	38.3	32.8				mg/L	25	Standard
	Rb	85	43.3	6.7				ug/L	27	Standard
	Y	89	301497.9	3.7				ug/L	295132	Standard
>	**Rh**	103	15.0	115.5				ug/L	20	Standard
	Mo	98	19.5	20.5	**-0.0018**	0.003	140.4	ug/L	11	Standard
	Ag	107	64.3	8.0	**-0.0034**	0.001	28.4	ug/L	64	Standard
	Cd	111	5.6	36.9	**-0.0058**	0.001	24.0	mg/L	7	Standard
	Cd	114	21.1	81.3	**-0.0017**	0.004	249.5	ug/L	10	Standard
>	**In**	115	437959.7	1.0				ug/L	418014	Standard
	Sn	118	333.3	17.5	**-0.0086**	0.011	129.3	ug/L	385	Standard
	Sb	123	268.4	10.8	**0.0505**	0.007	13.1	ug/L	54	Standard
	Ba	135	128.0	3.4	**0.0355**	0.002	5.3	ug/L	44	Standard
	Ce	140	181.7	16.1				ug/L	33	Standard
>	**Tb**	159	862527.6	1.8				ug/L	854905	Standard
	Ho	165	10.0	86.6				ug/L	13	Standard
	Tl	203	6.3	32.9	**0.0010**	0.000	28.8	ug/L	4	Standard
	Tl	205	0.0		**0.0015**	0.000	0.0	ug/L	5	Standard
	Pb	206	290.3	6.7	**0.0081**	0.004	43.6	ug/L	182	Standard
	Pb	207	244.3	3.7	**0.0080**	0.002	24.8	ug/L	160	Standard
	Pb	208	944.7	3.6	**0.0134**	0.002	13.5	ug/L	604	Standard
	U	238	4.3	48.0	**0.0006**	0.000	71.6	ug/L	3	Standard
>	**Bi**	209	405914.8	1.4				ug/L	395375	Standard

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Na	23	1.7	173.2	**0.6111**	16.391	2682.4	mg/L	0	Standard
Mg	24	46.7	71.3	**-0.0023**	0.080	3455.3	mg/L	47	Standard
K	39	18.3	68.6	**-0.0106**	0.170	1612.9	mg/L	22	Standard
Ca	43	33.3	37.7	**0.9560**	1.421	148.7	mg/L	28	Standard
Fe	54	99.3	40.2	**0.0263**	0.088	333.9	mg/L	72	Standard
Fe	57	850.0	9.5	**0.3963**	0.795	200.7	mg/L	703	Standard
Sc-1	45	31524.4	0.8				mg/L	30379	Standard
Cl	35	16515.7	0.9				ug/L	14530	Standard
Kr	83	4.3	13.3				ug/L	5	Standard
Br	81	640.0	11.8				ug/L	497	Standard
P	31	11494.4	2.8				ug/L	10347	Standard
S	34	1736.8	3.6				ug/L	1535	Standard
Sr	88	170.0	23.3				ug/L	177	Standard
C	12	190.0	19.0				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	26.3	56.4				mg/L	7	Standard
Ho-1	165	10.0	86.6				mg/L	13	Standard
Er	166	6.7	173.2				mg/L	3	Standard
I	127	2338.5	1.8				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		112.782	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.458	
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	104.772
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	102.666
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSS M5 WG535367-03
Sample Date/Time: Monday, August 24, 2015 18:01:48
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48848.6	1.0				ug/L	43934	Standard
	Be	9	15988.4	2.7	**24.5501**	0.901	3.7	ug/L	0	Standard
	Al	27	1353.4	1.5	**0.0069**	0.000	3.8	ug/L	410	Standard
	Sc	45	31395.8	1.6				ug/L	30379	Standard
	Ti	47	26.7	20.7	**0.0165**	0.025	154.9	ug/L	21	Standard
	V	51	115451.4	1.1	**25.7754**	0.433	1.7	ug/L	1362	Standard
	Cr	52	160051.3	1.4	**26.1238**	0.410	1.6	ug/L	8311	Standard
	Cr	53	19362.4	2.4	**26.0541**	0.567	2.2	ug/L	325	Standard
	Mn	55	109577.5	1.2	**26.5095**	0.386	1.5	ug/L	694	Standard
	Co	59	103164.1	1.2	**25.8496**	0.384	1.5	ug/L	199	Standard
	Ni	60	40194.6	1.4	**25.3258**	0.423	1.7	ug/L	212	Standard
	Cu	65	39851.7	0.9	**25.9436**	0.401	1.5	ug/L	149	Standard
	Zn	66	22973.1	0.2	**25.8870**	0.210	0.8	ug/L	206	Standard
>	**Ge**	72	323139.9	0.6				ug/L	319179	Standard
	As	75	21228.3	1.1	**24.3177**	0.407	1.7	ug/L	-51	Standard
	Se	82	1826.2	1.8	**24.8790**	0.601	2.4	ug/L	19	Standard
	Se-1	77	1366.1	2.7	**24.6867**	0.568	2.3	ug/L	89	Standard
>	**Ga**	71	25.0	20.0				mg/L	25	Standard
	Rb	85	50.0	36.1				ug/L	27	Standard
	Y	89	300463.6	1.2				ug/L	295132	Standard
>	**Rh**	103	28.3	10.2				ug/L	20	Standard
	Mo	98	25.6	12.7	**0.0022**	0.002	95.4	ug/L	11	Standard
	Ag	107	134827.3	1.6	**24.1378**	0.334	1.4	ug/L	64	Standard
	Cd	111	38270.9	1.1	**25.0707**	0.273	1.1	mg/L	7	Standard
	Cd	114	100855.1	1.5	**25.1202**	0.304	1.2	ug/L	10	Standard
>	**In**	115	438611.5	0.3				ug/L	418014	Standard
	Sn	118	356.7	4.3	**-0.0041**	0.003	76.4	ug/L	385	Standard
	Sb	123	104544.0	1.2	**25.2921**	0.236	0.9	ug/L	54	Standard
	Ba	135	51518.4	0.7	**24.1654**	0.148	0.6	ug/L	44	Standard
	Ce	140	243.3	7.8				ug/L	33	Standard
>	**Tb**	159	866017.0	1.1				ug/L	854905	Standard
	Ho	165	11.7	24.7				ug/L	13	Standard
	Tl	203	175772.7	0.4	**24.8655**	0.095	0.4	ug/L	4	Standard
	Tl	205	122115.2	1.3	**25.0116**	0.330	1.3	ug/L	5	Standard
	Pb	206	112585.1	0.7	**25.3083**	0.176	0.7	ug/L	182	Standard
	Pb	207	96658.3	0.8	**24.1397**	0.191	0.8	ug/L	160	Standard
	Pb	208	367700.1	0.8	**25.1044**	0.192	0.8	ug/L	604	Standard
	U	238	123396.8	0.5	**24.6154**	0.108	0.4	ug/L	3	Standard
>	**Bi**	209	403459.1	0.0				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	31.7	9.1	**-0.0376**	0.007	18.7	mg/L	47	Standard
K	39	18.3	68.6	**-0.0091**	0.171	1892.9	mg/L	22	Standard
Ca	43	25.0	52.9	**0.0191**	1.434	7514.8	mg/L	28	Standard
Fe	54	86.5	29.2	**-0.0007**	0.060	9041.5	mg/L	72	Standard
Fe	57	815.0	4.9	**0.0942**	0.376	399.0	mg/L	703	Standard
> **Sc-1**	45	31395.8	1.6				mg/L	30379	Standard
Cl	35	16104.6	0.6				ug/L	14530	Standard
Kr	83	4.0	25.0				ug/L	5	Standard
Br	81	646.7	12.5				ug/L	497	Standard
P	31	11516.0	4.8				ug/L	10347	Standard
S	34	1705.1	5.3				ug/L	1535	Standard
Sr	88	210.0	10.4				ug/L	177	Standard
C	12	190.0	60.7				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	2.1	294.3				mg/L	7	Standard
Ho-1	165	11.7	24.7				mg/L	13	Standard
Er	166	26.7	21.7				mg/L	3	Standard
I	127	2106.8	2.5				mg/L	1945	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		111.187	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.241	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.927
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.045
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508067914 WG535367-01
Sample Date/Time: Monday, August 24, 2015 18:05:00
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50380.4	3.5				ug/L	43934	Standard
	Be	9	375.0	5.8	**0.5562**	0.024	4.3	ug/L	0	Standard
	Al	27	135749.0	2.4	**1.7697**	0.021	1.2	ug/L	410	Standard
	Sc	45	34616.2	2.5				ug/L	30379	Standard
	Ti	47	3601.1	1.8	**15.6407**	0.469	3.0	ug/L	21	Standard
	V	51	83123.8	0.6	**17.5693**	0.384	2.2	ug/L	1362	Standard
	Cr	52	85951.5	1.1	**12.6644**	0.372	2.9	ug/L	8311	Standard
	Cr	53	9621.4	6.7	**12.0479**	1.028	8.5	ug/L	325	Standard
	Mn	55	1381936.1	1.5	**320.3280**	4.050	1.3	ug/L	694	Standard
	Co	59	13571.4	2.5	**3.1879**	0.081	2.5	ug/L	199	Standard
	Ni	60	5873.8	1.4	**3.3628**	0.072	2.1	ug/L	212	Standard
	Cu	65	9753.5	1.4	**5.9609**	0.169	2.8	ug/L	149	Standard
	Zn	66	11211.1	0.9	**11.7377**	0.289	2.5	ug/L	206	Standard
>	**Ge**	72	339551.5	1.6				ug/L	319179	Standard
	As	75	2545.0	0.6	**2.8666**	0.029	1.0	ug/L	-51	Standard
	Se	82	89.3	4.9	**0.9343**	0.058	6.2	ug/L	19	Standard
	Se-1	77	134.3	9.6	**0.6412**	0.249	38.9	ug/L	89	Standard
>	**Ga**	71	8739.2	1.1				mg/L	25	Standard
	Rb	85	95818.7	1.5				ug/L	27	Standard
	Y	89	338458.2	3.5				ug/L	295132	Standard
>	**Rh**	103	26.7	75.8				ug/L	20	Standard
	Mo	98	539.3	4.2	**0.3247**	0.016	5.1	ug/L	11	Standard
	Ag	107	503.0	3.6	**0.0712**	0.004	5.1	ug/L	64	Standard
	Cd	111	107.3	15.6	**0.0578**	0.011	19.0	mg/L	7	Standard
	Cd	114	321.1	7.9	**0.0695**	0.007	9.4	ug/L	10	Standard
>	**In**	115	458729.8	0.7				ug/L	418014	Standard
	Sn	118	765.0	10.8	**0.0703**	0.016	22.5	ug/L	385	Standard
	Sb	123	387.8	2.1	**0.0752**	0.002	2.4	ug/L	54	Standard
	Ba	135	160857.1	0.6	**72.1944**	0.616	0.9	ug/L	44	Standard
	Ce	140	525192.5	1.8				ug/L	33	Standard
>	**Tb**	159	905284.4	0.7				ug/L	854905	Standard
	Ho	165	2528.5	7.0				ug/L	13	Standard
	Tl	203	589.7	5.9	**0.0798**	0.005	6.4	ug/L	4	Standard
	Tl	205	416.7	1.4	**0.0830**	0.001	1.3	ug/L	5	Standard
	Pb	206	185714.0	1.1	**39.9120**	0.373	0.9	ug/L	182	Standard
	Pb	207	153421.9	0.5	**36.6293**	0.166	0.5	ug/L	160	Standard
	Pb	208	590472.4	0.5	**38.5390**	0.413	1.1	ug/L	604	Standard
	U	238	3837.5	0.2	**0.7310**	0.003	0.4	ug/L	3	Standard
>	**Bi**	209	422355.9	0.6				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	60.0	25.0	**0.0168**	0.031	186.9	mg/L	47	Standard
K	39	38.3	32.8	**0.2138**	0.162	75.8	mg/L	22	Standard
Ca	43	36.7	41.7	**0.9717**	1.608	165.5	mg/L	28	Standard
Fe	54	6551.0	4.7	**13.1826**	0.609	4.6	mg/L	72	Standard
Fe	57	2371.9	2.7	**12.8313**	0.924	7.2	mg/L	703	Standard
> **Sc-1**	45	34616.2	2.5				mg/L	30379	Standard
Cl	35	15284.4	1.5				ug/L	14530	Standard
Kr	83	3.7	31.5				ug/L	5	Standard
Br	81	1076.7	12.1				ug/L	497	Standard
P	31	12134.9	1.3				ug/L	10347	Standard
S	34	1685.1	7.0				ug/L	1535	Standard
Sr	88	196.7	12.8				ug/L	177	Standard
C	12	920.0	6.1				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	206.7	14.0				mg/L	3	Standard
Dy	164	4318.7	5.1				mg/L	7	Standard
Ho-1	165	2528.5	7.0				mg/L	13	Standard
Er	166	2336.8	6.8				mg/L	3	Standard
I	127	36886.5	3.4				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.674	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.383	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.740
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.824
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508067914S WG535367-04
Sample Date/Time: Monday, August 24, 2015 18:08:11
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52801.9	3.6				ug/L	43934	Standard
	Be	9	17263.2	2.2	**24.5417**	1.154	4.7	ug/L	0	Standard
	Al	27	239235.6	0.5	**2.9850**	0.094	3.1	ug/L	410	Standard
	Sc	45	36883.2	1.0				ug/L	30379	Standard
	Ti	47	6749.5	0.7	**29.2083**	0.444	1.5	ug/L	21	Standard
	V	51	257272.0	0.6	**54.6338**	0.508	0.9	ug/L	1362	Standard
	Cr	52	303634.6	0.2	**47.9764**	0.517	1.1	ug/L	8311	Standard
	Cr	53	37198.9	1.0	**47.7696**	0.959	2.0	ug/L	325	Standard
	Mn	55	1552208.9	1.2	**357.4845**	7.956	2.2	ug/L	694	Standard
	Co	59	122470.7	1.3	**29.0214**	0.639	2.2	ug/L	199	Standard
	Ni	60	52326.2	1.5	**31.2115**	0.381	1.2	ug/L	212	Standard
	Cu	65	55705.6	1.1	**34.3176**	0.237	0.7	ug/L	149	Standard
	Zn	66	39999.7	1.9	**42.9575**	0.682	1.6	ug/L	206	Standard
>	**Ge**	72	341801.6	1.0				ug/L	319179	Standard
	As	75	19230.0	1.7	**20.8392**	0.250	1.2	ug/L	-51	Standard
	Se	82	1123.3	0.9	**14.3680**	0.074	0.5	ug/L	19	Standard
	Se-1	77	832.4	2.6	**13.4436**	0.521	3.9	ug/L	89	Standard
>	**Ga**	71	17478.4	1.8				mg/L	25	Standard
	Rb	85	150056.1	0.9				ug/L	27	Standard
	Y	89	342062.2	1.8				ug/L	295132	Standard
>	**Rh**	103	31.7	39.7				ug/L	20	Standard
	Mo	98	944.2	5.2	**0.5837**	0.036	6.1	ug/L	11	Standard
	Ag	107	139654.7	0.7	**24.0788**	0.403	1.7	ug/L	64	Standard
	Cd	111	40171.6	0.2	**25.3431**	0.313	1.2	mg/L	7	Standard
	Cd	114	105500.5	2.0	**25.3032**	0.335	1.3	ug/L	10	Standard
>	**In**	115	455487.7	1.1				ug/L	418014	Standard
	Sn	118	650.0	2.3	**0.0494**	0.004	7.1	ug/L	385	Standard
	Sb	123	3562.9	2.0	**0.8162**	0.026	3.2	ug/L	54	Standard
	Ba	135	231746.5	1.7	**104.7643**	1.841	1.8	ug/L	44	Standard
	Ce	140	578501.3	2.5				ug/L	33	Standard
>	**Tb**	159	898220.2	2.1				ug/L	854905	Standard
	Ho	165	2838.6	4.6				ug/L	13	Standard
	Tl	203	179517.9	0.4	**24.1591**	0.288	1.2	ug/L	4	Standard
	Tl	205	123701.4	2.4	**24.1014**	0.517	2.1	ug/L	5	Standard
	Pb	206	302530.1	0.1	**64.7838**	0.617	1.0	ug/L	182	Standard
	Pb	207	253117.8	0.3	**60.2158**	0.701	1.2	ug/L	160	Standard
	Pb	208	974441.9	0.5	**63.3685**	0.814	1.3	ug/L	604	Standard
	U	238	130817.7	0.6	**24.8244**	0.153	0.6	ug/L	3	Standard
>	**Bi**	209	424130.9	0.8				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	50.0	26.5	**-0.0113**	0.028	244.1	mg/L	47	Standard
K	39	33.3	37.7	**0.1268**	0.149	117.2	mg/L	22	Standard
Ca	43	26.7	28.6	**-0.2261**	0.723	319.8	mg/L	28	Standard
Fe	54	13408.7	3.7	**25.4980**	0.840	3.3	mg/L	72	Standard
Fe	57	3948.8	1.4	**24.3466**	0.764	3.1	mg/L	703	Standard
Sc-1	45	36883.2	1.0				mg/L	30379	Standard
Cl	35	14470.9	0.4				ug/L	14530	Standard
Kr	83	4.7	49.5				ug/L	5	Standard
Br	81	1183.4	1.3				ug/L	497	Standard
P	31	12521.8	1.0				ug/L	10347	Standard
S	34	1731.8	8.3				ug/L	1535	Standard
Sr	88	191.7	10.5				ug/L	177	Standard
C	12	910.0	20.9				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	190.0	15.8				mg/L	3	Standard
Dy	164	5124.3	2.9				mg/L	7	Standard
Ho-1	165	2838.6	4.6				mg/L	13	Standard
Er	166	2503.5	12.5				mg/L	3	Standard
I	127	40245.1	2.9				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		120.186	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		107.088	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	108.965
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	107.273
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1508067914SD WG535367-05
Sample Date/Time: Monday, August 24, 2015 18:11:23
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54083.0	0.9				ug/L	43934	Standard
	Be	9	16837.7	0.8	**23.3478**	0.335	1.4	ug/L	0	Standard
	Al	27	316287.2	0.3	**3.8534**	0.022	0.6	ug/L	410	Standard
	Sc	45	35817.3	0.7				ug/L	30379	Standard
	Ti	47	9393.9	1.1	**40.7651**	0.115	0.3	ug/L	21	Standard
	V	51	278036.4	1.3	**59.1800**	1.116	1.9	ug/L	1362	Standard
	Cr	52	291409.0	0.4	**46.0761**	0.576	1.3	ug/L	8311	Standard
	Cr	53	35850.7	1.2	**46.1042**	0.914	2.0	ug/L	325	Standard
	Mn	55	1488733.8	0.6	**343.4513**	1.046	0.3	ug/L	694	Standard
	Co	59	121714.6	0.8	**28.8921**	0.165	0.6	ug/L	199	Standard
	Ni	60	51919.1	0.8	**31.0275**	0.481	1.5	ug/L	212	Standard
	Cu	65	60785.4	1.7	**37.5293**	0.783	2.1	ug/L	149	Standard
	Zn	66	44998.1	1.2	**48.4842**	0.408	0.8	ug/L	206	Standard
>	**Ge**	72	341164.0	0.8				ug/L	319179	Standard
	As	75	19802.9	1.0	**21.4969**	0.037	0.2	ug/L	-51	Standard
	Se	82	1475.8	1.1	**18.9880**	0.367	1.9	ug/L	19	Standard
	Se-1	77	1126.4	1.6	**18.8803**	0.487	2.6	ug/L	89	Standard
>	**Ga**	71	21585.4	2.7				mg/L	25	Standard
	Rb	85	171235.6	1.4				ug/L	27	Standard
	Y	89	349459.6	1.5				ug/L	295132	Standard
>	**Rh**	103	33.3	43.3				ug/L	20	Standard
	Mo	98	1195.8	2.4	**0.7322**	0.022	3.0	ug/L	11	Standard
	Ag	107	136383.4	1.0	**23.1779**	0.411	1.8	ug/L	64	Standard
	Cd	111	39635.0	0.5	**24.6459**	0.174	0.7	mg/L	7	Standard
	Cd	114	103797.2	1.5	**24.5396**	0.241	1.0	ug/L	10	Standard
>	**In**	115	462084.2	0.7				ug/L	418014	Standard
	Sn	118	520.0	11.7	**0.0231**	0.011	47.6	ug/L	385	Standard
	Sb	123	2301.3	2.3	**0.5143**	0.014	2.7	ug/L	54	Standard
	Ba	135	247569.6	0.6	**110.3170**	0.577	0.5	ug/L	44	Standard
	Ce	140	983904.1	2.2				ug/L	33	Standard
>	**Tb**	159	909415.7	0.5				ug/L	854905	Standard
	Ho	165	3998.9	4.0				ug/L	13	Standard
	Tl	203	174476.3	1.3	**23.6062**	0.417	1.8	ug/L	4	Standard
	Tl	205	123676.1	1.1	**24.2271**	0.377	1.6	ug/L	5	Standard
	Pb	206	287499.5	1.1	**61.8920**	0.914	1.5	ug/L	182	Standard
	Pb	207	240869.3	0.9	**57.6057**	0.784	1.4	ug/L	160	Standard
	Pb	208	932333.1	0.9	**60.9508**	0.769	1.3	ug/L	604	Standard
	U	238	128608.2	0.5	**24.5361**	0.240	1.0	ug/L	3	Standard
>	**Bi**	209	421869.9	0.5				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	46.7	52.9	**-0.0156**	0.051	327.7	mg/L	47	Standard
K	39	38.3	27.2	**0.1963**	0.121	61.7	mg/L	22	Standard
Ca	43	21.7	58.1	**-0.6434**	1.226	190.5	mg/L	28	Standard
Fe	54	13334.3	3.8	**26.1147**	0.867	3.3	mg/L	72	Standard
Fe	57	3997.2	1.1	**25.6997**	0.513	2.0	mg/L	703	Standard
Sc-1	45	35817.3	0.7				mg/L	30379	Standard
Cl	35	14492.9	2.4				ug/L	14530	Standard
Kr	83	5.3	78.1				ug/L	5	Standard
Br	81	1200.0	12.9				ug/L	497	Standard
P	31	12258.3	0.2				ug/L	10347	Standard
S	34	1495.1	4.7				ug/L	1535	Standard
Sr	88	223.3	12.9				ug/L	177	Standard
C	12	996.7	15.7				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	173.3	28.5				mg/L	3	Standard
Dy	164	8017.8	6.2				mg/L	7	Standard
Ho-1	165	3998.9	4.0				mg/L	13	Standard
Er	166	3640.4	8.7				mg/L	3	Standard
I	127	40982.1	3.6				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		123.102	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.888	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	110.543
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	106.701
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1508067901
Sample Date/Time: Monday, August 24, 2015 18:14:34
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	52551.0	1.4				ug/L	43934	Standard
	Be	9	505.0	23.3	**0.7185**	0.167	23.2	ug/L	0	Standard
	Al	27	714050.5	0.7	**8.9693**	0.162	1.8	ug/L	410	Standard
	Sc	45	36856.4	1.0				ug/L	30379	Standard
	Ti	47	12570.9	2.0	**54.8228**	1.583	2.9	ug/L	21	Standard
	V	51	173060.2	1.5	**36.8754**	0.767	2.1	ug/L	1362	Standard
	Cr	52	151238.4	0.9	**23.3363**	0.425	1.8	ug/L	8311	Standard
	Cr	53	18222.6	2.4	**23.2628**	0.382	1.6	ug/L	325	Standard
	Mn	55	2254176.5	0.4	**522.3036**	4.803	0.9	ug/L	694	Standard
	Co	59	17459.1	1.4	**4.1145**	0.090	2.2	ug/L	199	Standard
	Ni	60	12006.1	1.8	**7.0612**	0.070	1.0	ug/L	212	Standard
	Cu	65	17071.6	0.2	**10.5056**	0.080	0.8	ug/L	149	Standard
	Zn	66	31931.6	0.6	**34.3935**	0.094	0.3	ug/L	206	Standard
>	Ge	72	339762.7	0.8				ug/L	319179	Standard
	As	75	4424.9	2.4	**4.9040**	0.120	2.5	ug/L	-51	Standard
	Se	82	86.3	9.4	**0.8936**	0.098	10.9	ug/L	19	Standard
	Se-1	77	147.7	1.7	**0.8853**	0.052	5.9	ug/L	89	Standard
>	Ga	71	22243.0	3.5				mg/L	25	Standard
	Rb	85	250734.7	1.7				ug/L	27	Standard
	Y	89	387221.1	1.3				ug/L	295132	Standard
>	Rh	103	40.0	25.0				ug/L	20	Standard
	Mo	98	1077.2	4.6	**0.6547**	0.031	4.7	ug/L	11	Standard
	Ag	107	514.7	6.3	**0.0721**	0.005	7.5	ug/L	64	Standard
	Cd	111	316.7	5.0	**0.1865**	0.009	5.0	mg/L	7	Standard
	Cd	114	857.3	5.8	**0.1947**	0.011	5.7	ug/L	10	Standard
>	In	115	464400.5	0.3				ug/L	418014	Standard
	Sn	118	846.7	0.9	**0.0838**	0.002	2.3	ug/L	385	Standard
	Sb	123	227.6	4.3	**0.0375**	0.002	5.6	ug/L	54	Standard
	Ba	135	367905.6	0.7	**163.1309**	1.149	0.7	ug/L	44	Standard
	Ce	140	1166281.5	1.5				ug/L	33	Standard
>	Tb	159	922248.2	0.7				ug/L	854905	Standard
	Ho	165	6899.9	1.4				ug/L	13	Standard
	Tl	203	1489.7	3.0	**0.1995**	0.006	3.1	ug/L	4	Standard
	Tl	205	995.0	15.6	**0.1945**	0.032	16.2	ug/L	5	Standard
	Pb	206	141330.8	1.1	**30.0671**	0.737	2.5	ug/L	182	Standard
	Pb	207	116055.4	0.1	**27.4258**	0.443	1.6	ug/L	160	Standard
	Pb	208	447814.1	0.9	**28.9328**	0.684	2.4	ug/L	604	Standard
	U	238	5826.1	1.1	**1.0993**	0.027	2.5	ug/L	3	Standard
>	Bi	209	426563.1	1.5				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	41.7	6.9	**-0.0285**	0.006	20.0	mg/L	47	Standard
K	39	98.3	17.9	**0.8775**	0.213	24.3	mg/L	22	Standard
Ca	43	56.7	71.9	**2.6565**	3.915	147.4	mg/L	28	Standard
Fe	54	12809.4	1.9	**24.3676**	0.239	1.0	mg/L	72	Standard
Fe	57	3975.5	2.3	**24.5799**	0.562	2.3	mg/L	703	Standard
> **Sc-1**	45	36856.4	1.0				mg/L	30379	Standard
Cl	35	14637.7	2.4				ug/L	14530	Standard
Kr	83	3.3	124.9				ug/L	5	Standard
Br	81	1150.0	9.1				ug/L	497	Standard
P	31	13235.8	1.9				ug/L	10347	Standard
S	34	1583.4	8.9				ug/L	1535	Standard
Sr	88	223.3	11.0				ug/L	177	Standard
C	12	1586.8	13.6				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	160.0	39.0				mg/L	3	Standard
Dy	164	11569.1	1.1				mg/L	7	Standard
Ho-1	165	6899.9	1.4				mg/L	13	Standard
Er	166	6031.2	4.5				mg/L	3	Standard
I	127	37899.1	4.3				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.614	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.449	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	111.097	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	107.888	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1508067902
Sample Date/Time: Monday, August 24, 2015 18:17:45
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52405.5	1.0				ug/L	43934	Standard
	Be	9	483.3	10.4	**0.6902**	0.079	11.4	ug/L	0	Standard
	Al	27	1052370.6	0.3	**13.2597**	0.097	0.7	ug/L	410	Standard
	Sc	45	38936.6	0.8				ug/L	30379	Standard
	Ti	47	22073.1	2.6	**97.8701**	1.670	1.7	ug/L	21	Standard
	V	51	217452.4	2.0	**47.1684**	1.399	3.0	ug/L	1362	Standard
	Cr	52	459882.3	1.3	**75.0490**	1.004	1.3	ug/L	8311	Standard
	Cr	53	56358.0	0.8	**74.2686**	0.666	0.9	ug/L	325	Standard
	Mn	55	3537596.3	2.0	**832.8824**	5.784	0.7	ug/L	694	Standard
	Co	59	25330.2	1.3	**6.0917**	0.120	2.0	ug/L	199	Standard
	Ni	60	10966.3	0.9	**6.5412**	0.116	1.8	ug/L	212	Standard
	Cu	65	17016.6	0.8	**10.6416**	0.080	0.8	ug/L	149	Standard
	Zn	66	29096.2	0.7	**31.8092**	0.661	2.1	ug/L	206	Standard
>	**Ge**	72	334387.7	1.4				ug/L	319179	Standard
	As	75	6149.7	1.1	**6.8831**	0.130	1.9	ug/L	-51	Standard
	Se	82	71.0	13.6	**0.7091**	0.135	19.0	ug/L	19	Standard
	Se-1	77	131.0	7.3	**0.6181**	0.213	34.5	ug/L	89	Standard
>	**Ga**	71	26580.0	1.7				mg/L	25	Standard
	Rb	85	208065.8	1.6				ug/L	27	Standard
	Y	89	357765.3	3.0				ug/L	295132	Standard
>	**Rh**	103	30.0	16.7				ug/L	20	Standard
	Mo	98	1022.8	1.1	**0.6371**	0.008	1.3	ug/L	11	Standard
	Ag	107	765.7	4.0	**0.1179**	0.005	4.4	ug/L	64	Standard
	Cd	111	336.1	4.9	**0.2038**	0.010	4.9	mg/L	7	Standard
	Cd	114	871.7	6.5	**0.2033**	0.014	6.8	ug/L	10	Standard
>	**In**	115	452882.7	0.2				ug/L	418014	Standard
	Sn	118	808.4	5.4	**0.0805**	0.008	10.4	ug/L	385	Standard
	Sb	123	248.9	3.7	**0.0438**	0.002	5.0	ug/L	54	Standard
	Ba	135	229361.3	0.3	**104.2777**	0.478	0.5	ug/L	44	Standard
	Ce	140	1148136.3	0.8				ug/L	33	Standard
>	**Tb**	159	902999.6	0.9				ug/L	854905	Standard
	Ho	165	5309.3	1.7				ug/L	13	Standard
	Tl	203	1346.4	3.9	**0.1827**	0.007	4.0	ug/L	4	Standard
	Tl	205	976.7	5.6	**0.1933**	0.010	5.3	ug/L	5	Standard
	Pb	206	162920.6	0.9	**35.1356**	0.176	0.5	ug/L	182	Standard
	Pb	207	132794.1	0.2	**31.8147**	0.113	0.4	ug/L	160	Standard
	Pb	208	517989.5	0.9	**33.9257**	0.248	0.7	ug/L	604	Standard
	U	238	9822.9	1.1	**1.8784**	0.013	0.7	ug/L	3	Standard
>	**Bi**	209	420799.8	0.4				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	55.0	9.1	**-0.0071**	0.010	143.3	mg/L	47	Standard
K	39	91.7	35.1	**0.7417**	0.348	46.9	mg/L	22	Standard
Ca	43	58.3	9.9	**2.5088**	0.556	22.2	mg/L	28	Standard
Fe	54	24938.5	3.6	**45.0846**	1.972	4.4	mg/L	72	Standard
Fe	57	6934.9	2.7	**45.5869**	1.633	3.6	mg/L	703	Standard
> **Sc-1**	45	38936.6	0.8				mg/L	30379	Standard
Cl	35	14124.6	1.7				ug/L	14530	Standard
Kr	83	6.3	77.9				ug/L	5	Standard
Br	81	1180.0	12.5				ug/L	497	Standard
P	31	13075.6	2.3				ug/L	10347	Standard
S	34	1541.7	7.3				ug/L	1535	Standard
Sr	88	195.0	14.3				ug/L	177	Standard
C	12	1123.4	16.2				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	176.7	23.6				mg/L	3	Standard
Dy	164	9215.5	6.1				mg/L	7	Standard
Ho-1	165	5309.3	1.7				mg/L	13	Standard
Er	166	4817.4	3.5				mg/L	3	Standard
I	127	101291.1	3.5				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.283	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.765	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	108.341
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	106.431
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1508067902PS WG535626-01
Sample Date/Time: Monday, August 24, 2015 18:20:57
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52154.6	0.3				ug/L	43934	Standard
	Be	9	35073.9	1.9	**50.4334**	1.039	2.1	ug/L	0	Standard
	Al	27	1041557.5	1.4	**13.1862**	0.203	1.5	ug/L	410	Standard
	Sc	45	38178.0	1.7				ug/L	30379	Standard
	Ti	47	21826.7	2.3	**95.3918**	2.934	3.1	ug/L	21	Standard
	V	51	461012.4	1.1	**98.8620**	1.806	1.8	ug/L	1362	Standard
	Cr	52	773568.0	1.1	**125.3339**	1.956	1.6	ug/L	8311	Standard
	Cr	53	95637.7	2.4	**124.5591**	3.111	2.5	ug/L	325	Standard
	Mn	55	3764837.3	0.3	**873.6016**	6.661	0.8	ug/L	694	Standard
	Co	59	247594.7	0.9	**59.1553**	0.987	1.7	ug/L	199	Standard
	Ni	60	96014.3	1.2	**57.8497**	0.884	1.5	ug/L	212	Standard
	Cu	65	101104.9	1.0	**62.8372**	1.146	1.8	ug/L	149	Standard
	Zn	66	74091.1	1.7	**80.6141**	0.815	1.0	ug/L	206	Standard
>	**Ge**	72	339317.2	0.8				ug/L	319179	Standard
	As	75	53135.3	0.6	**57.8213**	0.602	1.0	ug/L	-51	Standard
	Se	82	4057.3	0.8	**52.9012**	0.826	1.6	ug/L	19	Standard
	Se-1	77	2914.3	1.7	**52.0583**	0.733	1.4	ug/L	89	Standard
>	**Ga**	71	27528.3	1.1				mg/L	25	Standard
	Rb	85	208481.3	1.0				ug/L	27	Standard
	Y	89	360412.0	1.7				ug/L	295132	Standard
>	**Rh**	103	28.3	71.3				ug/L	20	Standard
	Mo	98	1015.8	5.6	**0.6337**	0.029	4.5	ug/L	11	Standard
	Ag	107	288175.5	0.9	**50.0955**	1.025	2.0	ug/L	64	Standard
	Cd	111	82135.2	0.5	**52.2374**	0.928	1.8	mg/L	7	Standard
	Cd	114	215619.5	2.1	**52.1413**	1.570	3.0	ug/L	10	Standard
>	**In**	115	451942.2	1.4				ug/L	418014	Standard
	Sn	118	855.0	11.7	**0.0899**	0.021	23.0	ug/L	385	Standard
	Sb	123	217543.1	0.2	**51.1012**	0.854	1.7	ug/L	54	Standard
	Ba	135	334963.9	0.7	**152.6313**	1.728	1.1	ug/L	44	Standard
	Ce	140	1122421.3	0.9				ug/L	33	Standard
>	**Tb**	159	897233.4	0.9				ug/L	854905	Standard
	Ho	165	5389.3	3.8				ug/L	13	Standard
	Tl	203	373214.3	0.4	**49.6989**	0.083	0.2	ug/L	4	Standard
	Tl	205	260071.6	1.2	**50.1406**	0.465	0.9	ug/L	5	Standard
	Pb	206	392089.3	0.7	**83.0969**	0.363	0.4	ug/L	182	Standard
	Pb	207	342634.6	0.7	**80.6742**	0.564	0.7	ug/L	160	Standard
	Pb	208	1284117.2	0.3	**82.6465**	0.582	0.7	ug/L	604	Standard
	U	238	274856.2	1.4	**51.6124**	0.667	1.3	ug/L	3	Standard
>	**Bi**	209	428606.1	0.5				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	53.3	23.6	**-0.0081**	0.026	326.7	mg/L	47	Standard
K	39	85.0	15.6	**0.6875**	0.138	20.0	mg/L	22	Standard
Ca	43	63.3	9.1	**3.0770**	0.592	19.2	mg/L	28	Standard
Fe	54	25718.2	1.9	**47.4168**	0.385	0.8	mg/L	72	Standard
Fe	57	6858.2	5.9	**46.0616**	3.591	7.8	mg/L	703	Standard
> **Sc-1**	45	38178.0	1.7				mg/L	30379	Standard
Cl	35	14215.3	0.8				ug/L	14530	Standard
Kr	83	6.0	72.6				ug/L	5	Standard
Br	81	1190.0	5.0				ug/L	497	Standard
P	31	13222.4	1.7				ug/L	10347	Standard
S	34	1596.8	4.6				ug/L	1535	Standard
Sr	88	188.3	8.5				ug/L	177	Standard
C	12	1146.7	6.5				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	180.0	25.5				mg/L	3	Standard
Dy	164	8805.1	2.2				mg/L	7	Standard
Ho-1	165	5389.3	3.8				mg/L	13	Standard
Er	166	4890.8	4.2				mg/L	3	Standard
I	127	101534.8	5.7				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.712	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.309	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	108.116
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	108.405
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1508067902SDL WG535626-02
Sample Date/Time: Monday, August 24, 2015 18:24:08
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51074.3	1.5				ug/L	43934	Standard
	Be	9	123.3	13.0	**0.1790**	0.022	12.5	ug/L	0	Standard
	Al	27	210330.2	2.0	**2.7107**	0.082	3.0	ug/L	410	Standard
	Sc	45	32225.9	2.3				ug/L	30379	Standard
	Ti	47	4271.3	1.4	**19.3091**	0.071	0.4	ug/L	21	Standard
	V	51	44117.9	1.5	**9.5591**	0.050	0.5	ug/L	1362	Standard
	Cr	52	95876.1	0.4	**14.9112**	0.115	0.8	ug/L	8311	Standard
	Cr	53	11607.8	3.2	**15.2423**	0.659	4.3	ug/L	325	Standard
	Mn	55	716090.5	3.0	**172.4772**	3.689	2.1	ug/L	694	Standard
	Co	59	5167.5	1.5	**1.2287**	0.023	1.9	ug/L	199	Standard
	Ni	60	2341.2	1.1	**1.2850**	0.025	2.0	ug/L	212	Standard
	Cu	65	3605.1	1.5	**2.2239**	0.047	2.1	ug/L	149	Standard
	Zn	66	7543.5	2.2	**8.0489**	0.148	1.8	ug/L	206	Standard
>	**Ge**	72	326548.3	1.0				ug/L	319179	Standard
	As	75	1175.8	0.4	**1.4310**	0.014	1.0	ug/L	-51	Standard
	Se	82	31.5	22.7	**0.1927**	0.093	48.1	ug/L	19	Standard
	Se-1	77	92.3	6.2	**-0.0671**	0.127	189.0	ug/L	89	Standard
>	**Ga**	71	5290.9	5.9				mg/L	25	Standard
	Rb	85	41809.3	1.3				ug/L	27	Standard
	Y	89	317152.4	3.4				ug/L	295132	Standard
>	**Rh**	103	30.0	28.9				ug/L	20	Standard
	Mo	98	221.0	3.4	**0.1272**	0.007	5.4	ug/L	11	Standard
	Ag	107	229.0	9.3	**0.0250**	0.003	13.9	ug/L	64	Standard
	Cd	111	83.5	5.5	**0.0439**	0.003	5.8	mg/L	7	Standard
	Cd	114	223.5	12.9	**0.0473**	0.006	13.3	ug/L	10	Standard
>	**In**	115	449774.3	1.5				ug/L	418014	Standard
	Sn	118	551.7	8.4	**0.0319**	0.009	26.9	ug/L	385	Standard
	Sb	123	840.8	3.2	**0.1840**	0.006	3.4	ug/L	54	Standard
	Ba	135	46806.2	0.2	**21.4112**	0.370	1.7	ug/L	44	Standard
	Ce	140	230041.9	1.9				ug/L	33	Standard
>	**Tb**	159	880202.9	0.8				ug/L	854905	Standard
	Ho	165	1141.7	3.7				ug/L	13	Standard
	Tl	203	304.0	10.7	**0.0421**	0.005	10.8	ug/L	4	Standard
	Tl	205	225.0	11.8	**0.0465**	0.005	10.6	ug/L	5	Standard
	Pb	206	32879.3	0.6	**7.1749**	0.049	0.7	ug/L	182	Standard
	Pb	207	26796.7	0.9	**6.4948**	0.042	0.6	ug/L	160	Standard
	Pb	208	104755.3	1.1	**6.9454**	0.023	0.3	ug/L	604	Standard
	U	238	1996.5	1.2	**0.3885**	0.007	1.8	ug/L	3	Standard
>	**Bi**	209	413289.4	1.2				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	51.7	34.0	**0.0070**	0.039	564.7	mg/L	47	Standard
K	39	31.7	24.1	**0.1607**	0.109	68.0	mg/L	22	Standard
Ca	43	26.7	28.6	**0.1475**	0.845	572.8	mg/L	28	Standard
Fe	54	5295.1	2.4	**11.4245**	0.492	4.3	mg/L	72	Standard
Fe	57	1993.5	4.8	**10.8223**	0.630	5.8	mg/L	703	Standard
> **Sc-1**	45	32225.9	2.3				mg/L	30379	Standard
Cl	35	13682.2	3.6				ug/L	14530	Standard
Kr	83	3.7	83.3				ug/L	5	Standard
Br	81	723.4	8.4				ug/L	497	Standard
P	31	12640.3	4.7				ug/L	10347	Standard
S	34	1535.1	5.9				ug/L	1535	Standard
Sr	88	218.3	9.3				ug/L	177	Standard
C	12	313.3	43.4				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	20.0				mg/L	3	Standard
Dy	164	1822.8	1.8				mg/L	7	Standard
Ho-1	165	1141.7	3.7				mg/L	13	Standard
Er	166	1056.7	2.7				mg/L	3	Standard
I	127	23139.3	2.7				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.253	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.309	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.598
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.531
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508067902SDL WG535626-02
Sample Date/Time: Monday, August 24, 2015 18:27:25
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49163.0	2.1				ug/L	43934	Standard
	Be	9	31.7	24.1	**0.0464**	0.012	25.9	ug/L	0	Standard
	Al	27	41005.4	1.8	**0.5399**	0.012	2.3	ug/L	410	Standard
	Sc	45	31312.3	2.9				ug/L	30379	Standard
	Ti	47	852.4	3.0	**3.8341**	0.094	2.5	ug/L	21	Standard
	V	51	9229.4	2.6	**1.7980**	0.079	4.4	ug/L	1362	Standard
	Cr	52	24093.5	0.4	**2.7602**	0.043	1.5	ug/L	8311	Standard
	Cr	53	2521.9	2.4	**2.9469**	0.052	1.8	ug/L	325	Standard
	Mn	55	137104.6	0.8	**33.4324**	0.168	0.5	ug/L	694	Standard
	Co	59	1157.0	2.1	**0.2370**	0.004	1.5	ug/L	199	Standard
	Ni	60	599.7	2.3	**0.1975**	0.005	2.6	ug/L	212	Standard
	Cu	65	820.0	5.9	**0.4312**	0.031	7.2	ug/L	149	Standard
	Zn	66	2469.2	2.1	**2.3217**	0.064	2.8	ug/L	206	Standard
>	**Ge**	72	321081.4	1.2				ug/L	319179	Standard
	As	75	199.4	18.6	**0.3329**	0.043	12.9	ug/L	-51	Standard
	Se	82	22.9	28.1	**0.0816**	0.088	108.4	ug/L	19	Standard
	Se-1	77	85.0	5.1	**-0.1802**	0.105	58.5	ug/L	89	Standard
>	**Ga**	71	1078.4	10.7				mg/L	25	Standard
	Rb	85	7797.0	0.6				ug/L	27	Standard
	Y	89	306292.3	3.4				ug/L	295132	Standard
>	**Rh**	103	10.0	86.6				ug/L	20	Standard
	Mo	98	50.1	5.9	**0.0177**	0.001	8.2	ug/L	11	Standard
	Ag	107	110.7	9.3	**0.0045**	0.002	35.1	ug/L	64	Standard
	Cd	111	20.9	12.8	**0.0039**	0.002	42.0	mg/L	7	Standard
	Cd	114	55.4	60.7	**0.0066**	0.008	126.1	ug/L	10	Standard
>	**In**	115	447039.2	1.5				ug/L	418014	Standard
	Sn	118	418.3	6.6	**0.0067**	0.006	96.8	ug/L	385	Standard
	Sb	123	217.7	13.4	**0.0372**	0.007	19.9	ug/L	54	Standard
	Ba	135	9072.4	1.2	**4.1551**	0.037	0.9	ug/L	44	Standard
	Ce	140	44919.8	1.9				ug/L	33	Standard
>	**Tb**	159	872738.8	1.2				ug/L	854905	Standard
	Ho	165	216.7	21.4				ug/L	13	Standard
	Tl	203	63.0	8.4	**0.0090**	0.001	7.1	ug/L	4	Standard
	Tl	205	46.7	27.0	**0.0111**	0.003	22.9	ug/L	5	Standard
	Pb	206	6559.4	1.0	**1.4199**	0.038	2.7	ug/L	182	Standard
	Pb	207	5413.6	2.1	**1.3012**	0.039	3.0	ug/L	160	Standard
	Pb	208	20905.3	0.6	**1.3784**	0.039	2.8	ug/L	604	Standard
	U	238	396.7	0.6	**0.0788**	0.001	1.5	ug/L	3	Standard
>	**Bi**	209	403873.4	2.1				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	38.3	19.9	**-0.0215**	0.017	79.0	mg/L	47	Standard
K	39	6.7	43.3	**-0.1687**	0.036	21.4	mg/L	22	Standard
Ca	43	30.0	33.3	**0.6110**	1.172	191.9	mg/L	28	Standard
Fe	54	1132.1	5.1	**2.3589**	0.085	3.6	mg/L	72	Standard
Fe	57	1076.7	3.4	**2.6149**	0.317	12.1	mg/L	703	Standard
> **Sc-1**	45	31312.3	2.9				mg/L	30379	Standard
Cl	35	13612.1	1.5				ug/L	14530	Standard
Kr	83	3.0	33.3				ug/L	5	Standard
Br	81	606.7	6.7				ug/L	497	Standard
P	31	12218.3	2.3				ug/L	10347	Standard
S	34	1495.1	5.8				ug/L	1535	Standard
Sr	88	161.7	12.9				ug/L	177	Standard
C	12	200.0	13.2				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	347.7	11.3				mg/L	7	Standard
Ho-1	165	216.7	21.4				mg/L	13	Standard
Er	166	186.7	15.5				mg/L	3	Standard
I	127	5932.8	4.3				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.903	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.596	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.944
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.149
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, August 24, 2015 18:30:38
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	46808.9	2.8				ug/L	43934	Standard
	Be	9	30672.7	4.6	**49.1414**	1.822	3.7	ug/L	0	Standard
	Al	27	3408195.5	0.9	**48.1339**	1.589	3.3	ug/L	410	Standard
	Sc	45	30502.4	3.4				ug/L	30379	Standard
	Ti	47	22421.6	2.1	**104.7183**	2.578	2.5	ug/L	21	Standard
	V	51	231477.7	0.6	**52.9050**	0.618	1.2	ug/L	1362	Standard
	Cr	52	301326.5	0.4	**51.3463**	0.382	0.7	ug/L	8311	Standard
	Cr	53	37593.3	3.1	**52.0189**	2.084	4.0	ug/L	325	Standard
	Mn	55	216788.6	0.9	**53.5725**	0.592	1.1	ug/L	694	Standard
	Co	59	204858.7	0.8	**52.2981**	0.889	1.7	ug/L	199	Standard
	Ni	60	79956.8	2.0	**51.4556**	0.720	1.4	ug/L	212	Standard
	Cu	65	77096.0	1.5	**51.1769**	0.343	0.7	ug/L	149	Standard
	Zn	66	43300.8	1.3	**50.1456**	0.165	0.3	ug/L	206	Standard
>	**Ge**	72	317528.9	1.0				ug/L	319179	Standard
	As	75	42703.6	2.0	**49.6679**	0.578	1.2	ug/L	-51	Standard
	Se	82	3600.4	1.1	**50.1485**	0.035	0.1	ug/L	19	Standard
	Se-1	77	2648.9	3.4	**50.5042**	1.258	2.5	ug/L	89	Standard
>	**Ga**	71	56.7	28.4				mg/L	25	Standard
	Rb	85	648.3	11.7				ug/L	27	Standard
	Y	89	297732.2	1.4				ug/L	295132	Standard
>	**Rh**	103	28.3	53.9				ug/L	20	Standard
	Mo	98	146910.8	1.1	**96.9583**	1.456	1.5	ug/L	11	Standard
	Ag	107	269279.7	1.3	**48.3841**	0.799	1.7	ug/L	64	Standard
	Cd	111	76512.1	0.3	**50.2968**	0.437	0.9	mg/L	7	Standard
	Cd	114	203187.1	0.7	**50.7843**	0.642	1.3	ug/L	10	Standard
>	**In**	115	437190.2	0.9				ug/L	418014	Standard
	Sn	118	233759.5	0.7	**46.4391**	0.438	0.9	ug/L	385	Standard
	Sb	123	203436.5	0.4	**49.3930**	0.237	0.5	ug/L	54	Standard
	Ba	135	104531.7	0.7	**49.2217**	0.784	1.6	ug/L	44	Standard
	Ce	140	215.0	36.9				ug/L	33	Standard
>	**Tb**	159	864646.7	2.3				ug/L	854905	Standard
	Ho	165	8.3	69.3				ug/L	13	Standard
	Tl	203	351455.8	0.2	**49.9619**	0.543	1.1	ug/L	4	Standard
	Tl	205	242786.4	0.5	**49.9701**	0.620	1.2	ug/L	5	Standard
	Pb	206	217109.8	0.6	**49.0986**	0.749	1.5	ug/L	182	Standard
	Pb	207	197776.1	0.1	**49.6902**	0.410	0.8	ug/L	160	Standard
	Pb	208	723987.4	0.7	**49.7232**	0.778	1.6	ug/L	604	Standard
	U	238	246917.8	0.7	**49.4985**	0.763	1.5	ug/L	3	Standard
>	**Bi**	209	401518.6	1.0				ug/L	395375	Standard

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Na	23	1.7	173.2	**0.4780**	16.622	3477.3	mg/L	0	Standard
Mg	24	1910.1	1.4	**4.6171**	0.145	3.1	mg/L	47	Standard
K	39	325.0	16.1	**4.2828**	0.798	18.6	mg/L	22	Standard
Ca	43	55.0	31.5	**3.5535**	1.824	51.3	mg/L	28	Standard
Fe	54	2340.8	5.3	**5.2267**	0.158	3.0	mg/L	72	Standard
Fe	57	1315.1	6.0	**5.2481**	1.189	22.6	mg/L	703	Standard
> **Sc-1**	45	30502.4	3.4				mg/L	30379	Standard
Cl	35	14246.0	0.2				ug/L	14530	Standard
Kr	83	4.0	66.1				ug/L	5	Standard
Br	81	596.7	12.4				ug/L	497	Standard
P	31	12843.8	3.2				ug/L	10347	Standard
S	34	1686.8	1.0				ug/L	1535	Standard
Sr	88	165.0	26.4				ug/L	177	Standard
C	12	120.0	52.0				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	15.9	37.5				mg/L	7	Standard
Ho-1	165	8.3	69.3				mg/L	13	Standard
Er	166	16.7	91.7				mg/L	3	Standard
I	127	1148.4	10.6				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	98.283		
Al	27	96.268		
Sc	45			
Ti	47	104.718		
V	51	105.810		
Cr	52	102.693		
Cr	53			
Mn	55	107.145		
Co	59	104.596		
Ni	60	102.911		
Cu	65	102.354		
Zn	66	100.291		
> Ge	72		99.483	
As	75	99.336		
Se	82	100.297		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	96.958		
Ag	107	96.768		
Cd	111	100.594		
Cd	114			
In	115			104.587
Sn	118	92.878		
Sb	123	98.786		
Ba	135	98.443		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.924		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.446		
U	238	98.997		
Bi	209			101.554
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, August 24, 2015 18:33:50
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48081.2	1.2				ug/L	43934	Standard
	Be	9	16.7	69.3	**0.0240**	0.018	74.4	ug/L	0	Standard
	Al	27	668.3	39.7	**-0.0023**	0.004	158.0	ug/L	410	Standard
	Sc	45	30841.4	0.0				ug/L	30379	Standard
	Ti	47	21.3	30.5	**-0.0062**	0.029	471.4	ug/L	21	Standard
	V	51	1029.1	7.7	**-0.0631**	0.016	24.6	ug/L	1362	Standard
	Cr	52	6578.4	0.9	**-0.2556**	0.010	4.1	ug/L	8311	Standard
	Cr	53	338.3	22.1	**-0.0642**	0.104	162.7	ug/L	325	Standard
	Mn	55	864.7	15.0	**0.0190**	0.030	155.9	ug/L	694	Standard
	Co	59	221.0	3.2	**0.0013**	0.001	111.6	ug/L	199	Standard
	Ni	60	170.7	11.3	**-0.0749**	0.012	15.5	ug/L	212	Standard
	Cu	65	149.0	5.7	**-0.0088**	0.005	51.0	ug/L	149	Standard
	Zn	66	207.7	12.4	**-0.2929**	0.027	9.2	ug/L	206	Standard
>	**Ge**	72	316347.4	1.3				ug/L	319179	Standard
	As	75	-43.4	64.0	**0.0530**	0.033	61.9	ug/L	-51	Standard
	Se	82	19.0	27.8	**0.0322**	0.072	223.0	ug/L	19	Standard
	Se-1	77	87.7	8.3	**-0.1043**	0.120	114.5	ug/L	89	Standard
>	**Ga**	71	36.7	34.3				mg/L	25	Standard
	Rb	85	58.3	13.1				ug/L	27	Standard
	Y	89	299973.8	0.7				ug/L	295132	Standard
>	**Rh**	103	16.7	34.6				ug/L	20	Standard
	Mo	98	67.5	29.3	**0.0299**	0.013	43.0	ug/L	11	Standard
	Ag	107	93.7	15.1	**0.0019**	0.002	134.4	ug/L	64	Standard
	Cd	111	12.5	48.6	**-0.0013**	0.004	307.0	mg/L	7	Standard
	Cd	114	44.8	25.7	**0.0042**	0.003	67.8	ug/L	10	Standard
>	**In**	115	437153.6	0.6				ug/L	418014	Standard
	Sn	118	2926.9	4.9	**0.5076**	0.026	5.1	ug/L	385	Standard
	Sb	123	761.4	9.8	**0.1703**	0.017	10.2	ug/L	54	Standard
	Ba	135	67.7	36.5	**0.0071**	0.011	161.0	ug/L	44	Standard
	Ce	140	58.3	76.8				ug/L	33	Standard
>	**Tb**	159	847878.4	1.9				ug/L	854905	Standard
	Ho	165	6.7	114.6				ug/L	13	Standard
	Tl	203	45.3	68.0	**0.0066**	0.004	65.9	ug/L	4	Standard
	Tl	205	28.3	66.8	**0.0074**	0.004	52.4	ug/L	5	Standard
	Pb	206	248.3	12.5	**-0.0003**	0.007	2458.2	ug/L	182	Standard
	Pb	207	195.3	14.5	**-0.0033**	0.007	202.2	ug/L	160	Standard
	Pb	208	728.0	7.9	**-0.0005**	0.004	792.1	ug/L	604	Standard
	U	238	31.3	84.8	**0.0060**	0.005	88.0	ug/L	3	Standard
>	**Bi**	209	398421.3	1.2				ug/L	395375	Standard

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Na	23	1.7	173.2	**0.3174**	16.900	5324.0	mg/L	0	Standard
Mg	24	45.0	48.4	**-0.0036**	0.053	1462.2	mg/L	47	Standard
K	39	21.7	70.5	**0.0402**	0.211	524.0	mg/L	22	Standard
Ca	43	30.0	44.1	**0.6553**	1.512	230.7	mg/L	28	Standard
Fe	54	80.7	25.7	**-0.0111**	0.047	426.2	mg/L	72	Standard
Fe	57	780.0	5.2	**-0.1061**	0.398	374.9	mg/L	703	Standard
> **Sc-1**	45	30841.4	0.0				mg/L	30379	Standard
Cl	35	14139.9	0.5				ug/L	14530	Standard
Kr	83	6.0	16.7				ug/L	5	Standard
Br	81	580.0	20.3				ug/L	497	Standard
P	31	12395.1	0.6				ug/L	10347	Standard
S	34	1591.8	3.7				ug/L	1535	Standard
Sr	88	201.7	2.9				ug/L	177	Standard
C	12	153.3	35.9				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	25.9	59.3				mg/L	7	Standard
Ho-1	165	6.7	114.6				mg/L	13	Standard
Er	166	16.7	34.6				mg/L	3	Standard
I	127	1633.4	6.5				mg/L	1945	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.113	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.579
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.770
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sn	118	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1508067903
Sample Date/Time: Monday, August 24, 2015 18:37:03
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51602.9	5.1				ug/L	43934	Standard
	Be	9	345.0	5.0	**0.4996**	0.016	3.3	ug/L	0	Standard
	Al	27	510108.2	0.3	**6.5315**	0.306	4.7	ug/L	410	Standard
	Sc	45	35790.6	3.2				ug/L	30379	Standard
	Ti	47	2736.2	2.3	**12.1154**	0.294	2.4	ug/L	21	Standard
	V	51	68989.6	1.1	**14.8494**	0.170	1.1	ug/L	1362	Standard
	Cr	52	63002.4	1.7	**9.1269**	0.161	1.8	ug/L	8311	Standard
	Cr	53	7195.0	0.6	**9.0699**	0.042	0.5	ug/L	325	Standard
	Mn	55	4979273.9	1.6	**1179.7063**	19.871	1.7	ug/L	694	Standard
	Co	59	74315.2	1.2	**18.0884**	0.204	1.1	ug/L	199	Standard
	Ni	60	7964.1	1.2	**4.7292**	0.062	1.3	ug/L	212	Standard
	Cu	65	17723.0	0.7	**11.1564**	0.096	0.9	ug/L	149	Standard
	Zn	66	16790.3	1.0	**18.2408**	0.222	1.2	ug/L	206	Standard
>	**Ge**	72	332336.6	0.2				ug/L	319179	Standard
	As	75	1547.9	2.7	**1.8205**	0.049	2.7	ug/L	-51	Standard
	Se	82	82.6	12.5	**0.8689**	0.137	15.7	ug/L	19	Standard
	Se-1	77	187.7	12.7	**1.7009**	0.443	26.0	ug/L	89	Standard
>	**Ga**	71	6794.9	2.4				mg/L	25	Standard
	Rb	85	111300.7	1.7				ug/L	27	Standard
	Y	89	408947.3	0.9				ug/L	295132	Standard
>	**Rh**	103	25.0	60.0				ug/L	20	Standard
	Mo	98	503.2	3.8	**0.3072**	0.013	4.3	ug/L	11	Standard
	Ag	107	370.0	5.9	**0.0495**	0.005	9.3	ug/L	64	Standard
	Cd	111	184.1	10.4	**0.1078**	0.011	10.3	mg/L	7	Standard
	Cd	114	440.8	9.0	**0.0998**	0.010	10.3	ug/L	10	Standard
>	**In**	115	451217.2	1.2				ug/L	418014	Standard
	Sn	118	655.0	7.5	**0.0515**	0.010	20.1	ug/L	385	Standard
	Sb	123	426.1	6.0	**0.0858**	0.007	7.8	ug/L	54	Standard
	Ba	135	197384.8	1.1	**90.0691**	0.408	0.5	ug/L	44	Standard
	Ce	140	2627912.5	0.6				ug/L	33	Standard
>	**Tb**	159	903348.1	2.3				ug/L	854905	Standard
	Ho	165	10902.3	3.2				ug/L	13	Standard
	Tl	203	815.4	1.8	**0.1126**	0.002	2.1	ug/L	4	Standard
	Tl	205	598.3	12.8	**0.1209**	0.014	11.7	ug/L	5	Standard
	Pb	206	96784.5	0.4	**21.2066**	0.295	1.4	ug/L	182	Standard
	Pb	207	79710.5	0.9	**19.4015**	0.256	1.3	ug/L	160	Standard
	Pb	208	310876.8	0.8	**20.6875**	0.192	0.9	ug/L	604	Standard
	U	238	7909.1	1.4	**1.5381**	0.012	0.8	ug/L	3	Standard
>	**Bi**	209	413778.3	1.0				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	56.7	60.1	**0.0072**	0.076	1057.5	mg/L	47	Standard
K	39	78.3	29.5	**0.6740**	0.282	41.8	mg/L	22	Standard
Ca	43	48.3	21.5	**1.9712**	0.885	44.9	mg/L	28	Standard
Fe	54	7504.9	4.2	**14.6226**	0.235	1.6	mg/L	72	Standard
Fe	57	2678.6	4.9	**14.7300**	1.489	10.1	mg/L	703	Standard
Sc-1	45	35790.6	3.2				mg/L	30379	Standard
Cl	35	13779.6	2.0				ug/L	14530	Standard
Kr	83	4.3	53.3				ug/L	5	Standard
Br	81	1003.4	1.2				ug/L	497	Standard
P	31	12229.9	0.3				ug/L	10347	Standard
S	34	1483.4	4.5				ug/L	1535	Standard
Sr	88	166.7	12.1				ug/L	177	Standard
C	12	933.4	4.5				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	130.0	13.3				mg/L	3	Standard
Dy	164	20916.9	4.9				mg/L	7	Standard
Ho-1	165	10902.3	3.2				mg/L	13	Standard
Er	166	10820.5	3.3				mg/L	3	Standard
I	127	129146.0	5.8				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		117.456	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		104.122	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.943
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.655
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508067904
Sample Date/Time: Monday, August 24, 2015 18:40:15
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51709.8	0.4				ug/L	43934	Standard
	Be	9	453.3	1.7	**0.6555**	0.012	1.8	ug/L	0	Standard
	Al	27	590923.0	0.5	**7.5406**	0.062	0.8	ug/L	410	Standard
	Sc	45	35533.3	0.7				ug/L	30379	Standard
	Ti	47	2593.6	1.9	**11.6817**	0.293	2.5	ug/L	21	Standard
	V	51	61507.3	0.4	**13.4427**	0.046	0.3	ug/L	1362	Standard
	Cr	52	85698.0	1.0	**13.1752**	0.225	1.7	ug/L	8311	Standard
	Cr	53	10101.7	2.7	**13.1866**	0.290	2.2	ug/L	325	Standard
	Mn	55	577492.2	0.9	**139.0480**	1.984	1.4	ug/L	694	Standard
	Co	59	34843.0	1.2	**8.6000**	0.056	0.6	ug/L	199	Standard
	Ni	60	7353.8	0.7	**4.4321**	0.050	1.1	ug/L	212	Standard
	Cu	65	12502.8	0.8	**7.9776**	0.070	0.9	ug/L	149	Standard
	Zn	66	12870.8	1.3	**14.1086**	0.109	0.8	ug/L	206	Standard
>	**Ge**	72	326622.0	0.6				ug/L	319179	Standard
	As	75	1326.7	4.6	**1.6012**	0.077	4.8	ug/L	-51	Standard
	Se	82	53.8	19.6	**0.4979**	0.145	29.2	ug/L	19	Standard
	Se-1	77	132.3	5.7	**0.7008**	0.157	22.4	ug/L	89	Standard
>	**Ga**	71	7713.6	2.2				mg/L	25	Standard
	Rb	85	189535.0	1.7				ug/L	27	Standard
	Y	89	354114.1	1.3				ug/L	295132	Standard
>	**Rh**	103	15.0	33.3				ug/L	20	Standard
	Mo	98	371.6	6.8	**0.2212**	0.017	7.6	ug/L	11	Standard
	Ag	107	318.3	3.9	**0.0400**	0.002	5.0	ug/L	64	Standard
	Cd	111	135.1	14.1	**0.0759**	0.012	15.7	mg/L	7	Standard
	Cd	114	344.0	21.5	**0.0757**	0.018	23.8	ug/L	10	Standard
>	**In**	115	454739.7	0.3				ug/L	418014	Standard
	Sn	118	471.7	1.6	**0.0154**	0.001	8.0	ug/L	385	Standard
	Sb	123	300.5	9.7	**0.0556**	0.007	12.4	ug/L	54	Standard
	Ba	135	206565.3	0.7	**93.5263**	0.474	0.5	ug/L	44	Standard
	Ce	140	2329119.8	1.6				ug/L	33	Standard
>	**Tb**	159	903623.5	0.9				ug/L	854905	Standard
	Ho	165	3810.5	3.9				ug/L	13	Standard
	Tl	203	1062.7	3.2	**0.1472**	0.005	3.3	ug/L	4	Standard
	Tl	205	735.0	3.4	**0.1487**	0.005	3.5	ug/L	5	Standard
	Pb	206	78040.8	0.3	**17.1395**	0.140	0.8	ug/L	182	Standard
	Pb	207	63707.3	0.1	**15.5422**	0.082	0.5	ug/L	160	Standard
	Pb	208	249221.9	0.7	**16.6247**	0.171	1.0	ug/L	604	Standard
	U	238	7202.7	2.8	**1.4051**	0.045	3.2	ug/L	3	Standard
>	**Bi**	209	412525.9	0.5				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	41.7	25.0	**-0.0252**	0.022	88.7	mg/L	47	Standard
K	39	103.3	22.3	**0.9782**	0.275	28.1	mg/L	22	Standard
Ca	43	46.7	34.4	**1.8622**	1.628	87.4	mg/L	28	Standard
Fe	54	6099.8	4.9	**11.9381**	0.609	5.1	mg/L	72	Standard
Fe	57	2406.9	5.2	**12.5797**	0.933	7.4	mg/L	703	Standard
Sc-1	45	35533.3	0.7				mg/L	30379	Standard
Cl	35	14145.9	0.4				ug/L	14530	Standard
Kr	83	3.0	33.3				ug/L	5	Standard
Br	81	940.0	7.0				ug/L	497	Standard
P	31	11979.7	1.9				ug/L	10347	Standard
S	34	1311.7	4.7				ug/L	1535	Standard
Sr	88	203.3	10.2				ug/L	177	Standard
C	12	1060.0	10.9				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	110.0	45.5				mg/L	3	Standard
Dy	164	6332.7	4.4				mg/L	7	Standard
Ho-1	165	3810.5	3.9				mg/L	13	Standard
Er	166	3730.5	7.7				mg/L	3	Standard
I	127	45182.3	3.2				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.700	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.332	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.786
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.338
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508067905
Sample Date/Time: Monday, August 24, 2015 18:43:26
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53465.8	1.1				ug/L	43934	Standard
	Be	9	508.3	11.7	**0.7109**	0.080	11.3	ug/L	0	Standard
	Al	27	560181.7	1.1	**6.9136**	0.152	2.2	ug/L	410	Standard
	Sc	45	41144.1	2.1				ug/L	30379	Standard
	Ti	47	6889.2	1.1	**30.5916**	0.473	1.5	ug/L	21	Standard
	V	51	171153.2	0.4	**37.1989**	0.775	2.1	ug/L	1362	Standard
	Cr	52	284752.9	0.5	**46.1109**	0.831	1.8	ug/L	8311	Standard
	Cr	53	34619.5	2.2	**45.5758**	0.029	0.1	ug/L	325	Standard
	Mn	55	708677.0	1.6	**167.3204**	1.680	1.0	ug/L	694	Standard
	Co	59	22857.9	1.6	**5.5135**	0.185	3.4	ug/L	199	Standard
	Ni	60	6135.2	2.2	**3.5909**	0.024	0.7	ug/L	212	Standard
	Cu	65	22134.2	2.0	**13.9257**	0.241	1.7	ug/L	149	Standard
	Zn	66	11457.3	2.3	**12.2450**	0.245	2.0	ug/L	206	Standard
>	**Ge**	72	333188.4	2.2				ug/L	319179	Standard
	As	75	2659.8	1.1	**3.0470**	0.076	2.5	ug/L	-51	Standard
	Se	82	64.7	8.5	**0.6295**	0.092	14.5	ug/L	19	Standard
	Se-1	77	138.0	1.3	**0.7581**	0.084	11.1	ug/L	89	Standard
>	**Ga**	71	24181.0	1.9				mg/L	25	Standard
	Rb	85	168239.1	1.8				ug/L	27	Standard
	Y	89	365592.4	3.1				ug/L	295132	Standard
>	**Rh**	103	21.7	53.3				ug/L	20	Standard
	Mo	98	692.2	7.8	**0.4306**	0.036	8.3	ug/L	11	Standard
	Ag	107	694.7	7.9	**0.1067**	0.010	9.0	ug/L	64	Standard
	Cd	111	110.0	15.2	**0.0610**	0.011	17.8	mg/L	7	Standard
	Cd	114	226.5	28.9	**0.0482**	0.016	33.3	ug/L	10	Standard
>	**In**	115	448620.5	0.2				ug/L	418014	Standard
	Sn	118	501.7	1.5	**0.0225**	0.002	6.7	ug/L	385	Standard
	Sb	123	216.3	3.9	**0.0367**	0.002	5.7	ug/L	54	Standard
	Ba	135	139046.8	1.0	**63.8071**	0.550	0.9	ug/L	44	Standard
	Ce	140	2367760.1	0.7				ug/L	33	Standard
>	**Tb**	159	895898.4	0.5				ug/L	854905	Standard
	Ho	165	5972.8	1.0				ug/L	13	Standard
	Tl	203	1275.4	6.9	**0.1757**	0.013	7.2	ug/L	4	Standard
	Tl	205	855.0	5.1	**0.1719**	0.009	5.4	ug/L	5	Standard
	Pb	206	112449.4	0.1	**24.5918**	0.130	0.5	ug/L	182	Standard
	Pb	207	91693.6	1.1	**22.2751**	0.176	0.8	ug/L	160	Standard
	Pb	208	355915.7	0.4	**23.6389**	0.132	0.6	ug/L	604	Standard
	U	238	14643.1	0.9	**2.8416**	0.022	0.8	ug/L	3	Standard
>	**Bi**	209	414692.1	0.4				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	50.0	26.5	**-0.0222**	0.024	106.0	mg/L	47	Standard
K	39	71.7	26.4	**0.4822**	0.196	40.6	mg/L	22	Standard
Ca	43	45.0	38.5	**1.0625**	1.388	130.6	mg/L	28	Standard
Fe	54	19877.8	2.4	**33.9577**	0.874	2.6	mg/L	72	Standard
Fe	57	5767.8	4.2	**34.2760**	2.506	7.3	mg/L	703	Standard
> **Sc-1**	45	41144.1	2.1				mg/L	30379	Standard
Cl	35	13792.9	2.3				ug/L	14530	Standard
Kr	83	3.7	87.7				ug/L	5	Standard
Br	81	990.0	7.0				ug/L	497	Standard
P	31	12558.5	3.9				ug/L	10347	Standard
S	34	1406.7	4.1				ug/L	1535	Standard
Sr	88	220.0	6.0				ug/L	177	Standard
C	12	713.4	4.5				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	340.0	23.5				mg/L	3	Standard
Dy	164	10181.7	3.2				mg/L	7	Standard
Ho-1	165	5972.8	1.0				mg/L	13	Standard
Er	166	5884.5	5.1				mg/L	3	Standard
I	127	87805.5	2.7				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		121.697	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.389	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.322
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.886
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508067906
Sample Date/Time: Monday, August 24, 2015 18:46:38
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52582.8	2.6				ug/L	43934	Standard
	Be	9	283.3	14.3	**0.4013**	0.047	11.6	ug/L	0	Standard
	Al	27	522060.1	0.2	**6.5528**	0.182	2.8	ug/L	410	Standard
	Sc	45	35271.0	2.0				ug/L	30379	Standard
	Ti	47	4692.7	1.1	**20.4667**	0.130	0.6	ug/L	21	Standard
	V	51	90234.7	0.5	**19.1502**	0.243	1.3	ug/L	1362	Standard
	Cr	52	104334.0	0.6	**15.7199**	0.224	1.4	ug/L	8311	Standard
	Cr	53	12039.8	2.5	**15.2422**	0.308	2.0	ug/L	325	Standard
	Mn	55	1069177.0	1.3	**248.4703**	0.197	0.1	ug/L	694	Standard
	Co	59	12393.1	1.2	**2.9147**	0.050	1.7	ug/L	199	Standard
	Ni	60	6066.2	2.2	**3.4892**	0.097	2.8	ug/L	212	Standard
	Cu	65	8462.4	2.3	**5.1709**	0.105	2.0	ug/L	149	Standard
	Zn	66	17945.6	2.0	**19.1656**	0.577	3.0	ug/L	206	Standard
>	**Ge**	72	338599.4	1.3				ug/L	319179	Standard
	As	75	2665.8	1.2	**3.0058**	0.045	1.5	ug/L	-51	Standard
	Se	82	69.2	6.4	**0.6735**	0.069	10.3	ug/L	19	Standard
	Se-1	77	137.3	9.6	**0.7054**	0.276	39.2	ug/L	89	Standard
>	**Ga**	71	9723.1	3.1				mg/L	25	Standard
	Rb	85	137074.0	1.0				ug/L	27	Standard
	Y	89	367510.6	2.6				ug/L	295132	Standard
>	**Rh**	103	20.0	66.1				ug/L	20	Standard
	Mo	98	488.8	4.4	**0.2824**	0.010	3.5	ug/L	11	Standard
	Ag	107	339.3	7.9	**0.0412**	0.005	11.3	ug/L	64	Standard
	Cd	111	172.2	5.8	**0.0948**	0.006	5.9	mg/L	7	Standard
	Cd	114	485.0	11.0	**0.1046**	0.012	11.6	ug/L	10	Standard
>	**In**	115	474769.8	1.1				ug/L	418014	Standard
	Sn	118	620.0	5.0	**0.0388**	0.005	11.7	ug/L	385	Standard
	Sb	123	222.0	4.0	**0.0351**	0.002	4.5	ug/L	54	Standard
	Ba	135	156619.1	1.5	**67.9191**	1.247	1.8	ug/L	44	Standard
	Ce	140	1550989.4	0.4				ug/L	33	Standard
>	**Tb**	159	911404.7	0.1				ug/L	854905	Standard
	Ho	165	3945.5	3.2				ug/L	13	Standard
	Tl	203	729.7	4.9	**0.0986**	0.004	3.8	ug/L	4	Standard
	Tl	205	548.3	12.3	**0.1087**	0.013	12.0	ug/L	5	Standard
	Pb	206	84934.1	0.8	**18.2123**	0.214	1.2	ug/L	182	Standard
	Pb	207	69517.1	0.6	**16.5600**	0.300	1.8	ug/L	160	Standard
	Pb	208	272111.7	0.6	**17.7221**	0.172	1.0	ug/L	604	Standard
	U	238	6550.1	1.4	**1.2471**	0.012	1.0	ug/L	3	Standard
>	**Bi**	209	422620.2	1.2				ug/L	395375	Standard

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Na	23	1.7	173.2	**1.3443**	15.121	1124.8	mg/L	0	Standard
Mg	24	45.0	33.3	**-0.0178**	0.031	171.5	mg/L	47	Standard
K	39	35.0	49.5	**0.1622**	0.203	125.4	mg/L	22	Standard
Ca	43	61.7	26.1	**3.3827**	1.556	46.0	mg/L	28	Standard
Fe	54	7921.0	4.0	**15.6855**	0.830	5.3	mg/L	72	Standard
Fe	57	2698.6	5.4	**15.2203**	1.498	9.8	mg/L	703	Standard
Sc-1	45	35271.0	2.0				mg/L	30379	Standard
Cl	35	14448.9	0.9				ug/L	14530	Standard
Kr	83	6.0	60.1				ug/L	5	Standard
Br	81	1013.4	8.9				ug/L	497	Standard
P	31	12495.2	3.0				ug/L	10347	Standard
S	34	1428.4	7.3				ug/L	1535	Standard
Sr	88	150.0	21.9				ug/L	177	Standard
C	12	1343.4	6.3				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	110.0	50.6				mg/L	3	Standard
Dy	164	6360.8	6.1				mg/L	7	Standard
Ho-1	165	3945.5	3.2				mg/L	13	Standard
Er	166	3630.4	6.0				mg/L	3	Standard
I	127	40575.9	2.3				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.687	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.084	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	113.577
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	106.891
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508067907
Sample Date/Time: Monday, August 24, 2015 18:49:49
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54352.4	3.5				ug/L	43934	Standard
	Be	9	341.7	18.6	**0.4688**	0.080	17.1	ug/L	0	Standard
	Al	27	440905.7	2.5	**5.3506**	0.057	1.1	ug/L	410	Standard
	Sc	45	35623.5	2.3				ug/L	30379	Standard
	Ti	47	5691.1	0.4	**24.2618**	0.307	1.3	ug/L	21	Standard
	V	51	93958.0	1.6	**19.4792**	0.384	2.0	ug/L	1362	Standard
	Cr	52	91230.9	1.3	**13.2190**	0.325	2.5	ug/L	8311	Standard
	Cr	53	10370.2	2.8	**12.7402**	0.512	4.0	ug/L	325	Standard
	Mn	55	1168863.2	1.0	**265.3066**	1.368	0.5	ug/L	694	Standard
	Co	59	10492.0	1.0	**2.4002**	0.029	1.2	ug/L	199	Standard
	Ni	60	7152.7	1.8	**4.0465**	0.123	3.0	ug/L	212	Standard
	Cu	65	10349.2	1.3	**6.1970**	0.017	0.3	ug/L	149	Standard
	Zn	66	22734.4	1.9	**23.8342**	0.346	1.4	ug/L	206	Standard
>	**Ge**	72	346700.7	1.1				ug/L	319179	Standard
	As	75	2213.6	1.5	**2.4573**	0.051	2.1	ug/L	-51	Standard
	Se	82	61.6	17.6	**0.5551**	0.148	26.6	ug/L	19	Standard
	Se-1	77	124.0	2.9	**0.4025**	0.079	19.6	ug/L	89	Standard
>	**Ga**	71	9911.6	1.9				mg/L	25	Standard
	Rb	85	174954.4	1.3				ug/L	27	Standard
	Y	89	360009.2	1.6				ug/L	295132	Standard
>	**Rh**	103	28.3	40.8				ug/L	20	Standard
	Mo	98	553.1	7.6	**0.3261**	0.026	7.8	ug/L	11	Standard
	Ag	107	360.7	1.0	**0.0455**	0.000	0.7	ug/L	64	Standard
	Cd	111	233.0	1.8	**0.1335**	0.003	1.9	mg/L	7	Standard
	Cd	114	540.0	4.9	**0.1189**	0.005	4.2	ug/L	10	Standard
>	**In**	115	468381.1	1.1				ug/L	418014	Standard
	Sn	118	746.7	0.4	**0.0639**	0.002	2.4	ug/L	385	Standard
	Sb	123	296.3	7.9	**0.0527**	0.006	11.2	ug/L	54	Standard
	Ba	135	224041.4	0.9	**98.5007**	1.962	2.0	ug/L	44	Standard
	Ce	140	868488.8	0.9				ug/L	33	Standard
>	**Tb**	159	910301.6	0.5				ug/L	854905	Standard
	Ho	165	3547.1	4.7				ug/L	13	Standard
	Tl	203	939.7	4.5	**0.1268**	0.007	5.7	ug/L	4	Standard
	Tl	205	630.0	5.2	**0.1244**	0.006	4.6	ug/L	5	Standard
	Pb	206	104093.7	0.5	**22.2789**	0.308	1.4	ug/L	182	Standard
	Pb	207	85175.1	0.1	**20.2509**	0.270	1.3	ug/L	160	Standard
	Pb	208	331733.9	0.9	**21.5643**	0.402	1.9	ug/L	604	Standard
	U	238	4693.4	0.4	**0.8914**	0.010	1.2	ug/L	3	Standard
>	**Bi**	209	423675.6	1.4				ug/L	395375	Standard

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Na	23	1.7	173.2	**1.4583**	14.924	1023.3	mg/L	0	Standard
Mg	24	45.0	22.2	**-0.0185**	0.021	113.1	mg/L	47	Standard
K	39	60.0	30.0	**0.4551**	0.201	44.3	mg/L	22	Standard
Ca	43	60.0	25.0	**3.1868**	1.614	50.6	mg/L	28	Standard
Fe	54	6900.7	1.7	**13.5030**	0.503	3.7	mg/L	72	Standard
Fe	57	2493.5	1.9	**13.2717**	0.813	6.1	mg/L	703	Standard
Sc-1	45	35623.5	2.3				mg/L	30379	Standard
Cl	35	14793.9	0.6				ug/L	14530	Standard
Kr	83	3.0	33.3				ug/L	5	Standard
Br	81	956.7	10.5				ug/L	497	Standard
P	31	12288.3	6.8				ug/L	10347	Standard
S	34	1326.7	1.4				ug/L	1535	Standard
Sr	88	201.7	26.5				ug/L	177	Standard
C	12	1533.4	7.2				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	173.3	8.8				mg/L	3	Standard
Dy	164	5953.5	2.3				mg/L	7	Standard
Ho-1	165	3547.1	4.7				mg/L	13	Standard
Er	166	3293.7	3.2				mg/L	3	Standard
I	127	36393.7	3.6				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		123.715	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		108.623	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	112.049
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	107.158
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508067908
Sample Date/Time: Monday, August 24, 2015 18:53:01
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54332.3	2.5				ug/L	43934	Standard
	Be	9	521.7	10.7	**0.7172**	0.060	8.4	ug/L	0	Standard
	Al	27	536081.4	1.3	**6.5108**	0.135	2.1	ug/L	410	Standard
	Sc	45	45312.8	4.9				ug/L	30379	Standard
	Ti	47	17654.6	1.4	**77.3358**	1.361	1.8	ug/L	21	Standard
	V	51	309386.9	0.7	**66.4205**	0.359	0.5	ug/L	1362	Standard
	Cr	52	314927.6	0.1	**50.3238**	0.189	0.4	ug/L	8311	Standard
	Cr	53	38483.8	0.8	**49.9335**	0.476	1.0	ug/L	325	Standard
	Mn	55	1248705.1	0.5	**290.3968**	2.747	0.9	ug/L	694	Standard
	Co	59	38950.7	0.9	**9.2839**	0.109	1.2	ug/L	199	Standard
	Ni	60	10889.2	1.6	**6.4137**	0.092	1.4	ug/L	212	Standard
	Cu	65	53068.8	0.8	**33.0176**	0.387	1.2	ug/L	149	Standard
	Zn	66	31615.6	1.2	**34.1870**	0.515	1.5	ug/L	206	Standard
>	**Ge**	72	338408.1	0.5				ug/L	319179	Standard
	As	75	7122.4	1.4	**7.8607**	0.072	0.9	ug/L	-51	Standard
	Se	82	73.4	14.8	**0.7281**	0.140	19.3	ug/L	19	Standard
	Se-1	77	161.7	9.2	**1.1549**	0.261	22.6	ug/L	89	Standard
>	**Ga**	71	53785.3	0.3				mg/L	25	Standard
	Rb	85	163317.3	1.7				ug/L	27	Standard
	Y	89	387112.6	2.1				ug/L	295132	Standard
>	**Rh**	103	31.7	9.1				ug/L	20	Standard
	Mo	98	1508.9	3.0	**0.9321**	0.029	3.2	ug/L	11	Standard
	Ag	107	664.3	5.9	**0.0986**	0.008	8.1	ug/L	64	Standard
	Cd	111	135.5	7.3	**0.0752**	0.007	9.0	mg/L	7	Standard
	Cd	114	309.1	1.2	**0.0664**	0.000	0.2	ug/L	10	Standard
>	**In**	115	459919.6	1.1				ug/L	418014	Standard
	Sn	118	530.0	6.8	**0.0255**	0.008	31.1	ug/L	385	Standard
	Sb	123	169.7	8.6	**0.0246**	0.003	12.1	ug/L	54	Standard
	Ba	135	140885.1	1.5	**63.0616**	0.578	0.9	ug/L	44	Standard
	Ce	140	4014049.2	0.4				ug/L	33	Standard
>	**Tb**	159	902672.9	1.8				ug/L	854905	Standard
	Ho	165	7440.2	3.6				ug/L	13	Standard
	Tl	203	1264.1	1.5	**0.1735**	0.002	1.4	ug/L	4	Standard
	Tl	205	903.4	6.6	**0.1810**	0.013	7.4	ug/L	5	Standard
	Pb	206	118744.5	0.7	**25.8903**	0.273	1.1	ug/L	182	Standard
	Pb	207	96702.0	0.8	**23.4227**	0.375	1.6	ug/L	160	Standard
	Pb	208	377261.6	0.2	**24.9822**	0.337	1.3	ug/L	604	Standard
	U	238	11934.7	1.3	**2.3091**	0.058	2.5	ug/L	3	Standard
>	**Bi**	209	416020.4	1.3				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	36.7	31.5	**-0.0523**	0.021	41.0	mg/L	47	Standard
K	39	80.0	25.0	**0.4888**	0.158	32.4	mg/L	22	Standard
Ca	43	25.0	20.0	**-0.8150**	0.460	56.4	mg/L	28	Standard
Fe	54	39846.8	0.4	**62.0538**	2.906	4.7	mg/L	72	Standard
Fe	57	10350.2	0.9	**60.7134**	2.760	4.5	mg/L	703	Standard
> **Sc-1**	45	45312.8	4.9				mg/L	30379	Standard
Cl	35	13863.0	1.6				ug/L	14530	Standard
Kr	83	4.3	66.6				ug/L	5	Standard
Br	81	956.7	7.9				ug/L	497	Standard
P	31	13085.7	2.5				ug/L	10347	Standard
S	34	1581.7	3.6				ug/L	1535	Standard
Sr	88	175.0	2.9				ug/L	177	Standard
C	12	1260.1	7.1				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	130.0	35.3				mg/L	3	Standard
Dy	164	12954.7	1.0				mg/L	7	Standard
Ho-1	165	7440.2	3.6				mg/L	13	Standard
Er	166	7051.6	6.2				mg/L	3	Standard
I	127	51253.4	5.2				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.669	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.024	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.025
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.222
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508067909
Sample Date/Time: Monday, August 24, 2015 18:56:13
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55687.2	2.3				ug/L	43934	Standard
	Be	9	263.3	2.2	**0.3527**	0.006	1.8	ug/L	0	Standard
	Al	27	194466.8	1.2	**2.2975**	0.076	3.3	ug/L	410	Standard
	Sc	45	35326.1	0.8				ug/L	30379	Standard
	Ti	47	2953.3	3.3	**12.7615**	0.569	4.5	ug/L	21	Standard
	V	51	70324.2	1.7	**14.7642**	0.510	3.5	ug/L	1362	Standard
	Cr	52	82954.5	0.3	**12.1230**	0.288	2.4	ug/L	8311	Standard
	Cr	53	9889.9	4.9	**12.3409**	0.608	4.9	ug/L	325	Standard
	Mn	55	1175818.4	0.4	**271.5645**	5.693	2.1	ug/L	694	Standard
	Co	59	17837.2	0.4	**4.1920**	0.070	1.7	ug/L	199	Standard
	Ni	60	5398.6	1.1	**3.0640**	0.078	2.6	ug/L	212	Standard
	Cu	65	16787.6	1.1	**10.2998**	0.288	2.8	ug/L	149	Standard
	Zn	66	18683.8	0.6	**19.8418**	0.288	1.5	ug/L	206	Standard
>	**Ge**	72	340814.7	1.9				ug/L	319179	Standard
	As	75	1316.8	4.9	**1.5284**	0.080	5.2	ug/L	-51	Standard
	Se	82	64.2	10.6	**0.6011**	0.080	13.3	ug/L	19	Standard
	Se-1	77	128.7	1.2	**0.5272**	0.039	7.3	ug/L	89	Standard
>	**Ga**	71	9092.7	3.7				mg/L	25	Standard
	Rb	85	148477.5	1.9				ug/L	27	Standard
	Y	89	355637.6	1.5				ug/L	295132	Standard
>	**Rh**	103	26.7	21.7				ug/L	20	Standard
	Mo	98	352.1	5.9	**0.2003**	0.011	5.6	ug/L	11	Standard
	Ag	107	341.0	10.0	**0.0418**	0.006	14.4	ug/L	64	Standard
	Cd	111	134.5	11.2	**0.0723**	0.009	12.9	mg/L	7	Standard
	Cd	114	332.7	16.4	**0.0699**	0.012	17.4	ug/L	10	Standard
>	**In**	115	472508.1	0.8				ug/L	418014	Standard
	Sn	118	398.3	11.7	**-0.0014**	0.009	621.2	ug/L	385	Standard
	Sb	123	115.4	12.8	**0.0114**	0.003	27.4	ug/L	54	Standard
	Ba	135	134640.6	0.8	**58.6646**	0.903	1.5	ug/L	44	Standard
	Ce	140	832873.9	1.5				ug/L	33	Standard
>	**Tb**	159	916003.3	2.0				ug/L	854905	Standard
	Ho	165	4213.9	2.3				ug/L	13	Standard
	Tl	203	847.7	6.2	**0.1142**	0.007	6.0	ug/L	4	Standard
	Tl	205	568.3	4.1	**0.1123**	0.004	3.7	ug/L	5	Standard
	Pb	206	72971.3	0.9	**15.5899**	0.034	0.2	ug/L	182	Standard
	Pb	207	60042.1	0.6	**14.2500**	0.058	0.4	ug/L	160	Standard
	Pb	208	234597.8	0.9	**15.2248**	0.204	1.3	ug/L	604	Standard
	U	238	4465.7	0.2	**0.8476**	0.008	0.9	ug/L	3	Standard
>	**Bi**	209	423917.4	0.8				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	70.0	32.7	**0.0356**	0.048	134.2	mg/L	47	Standard
K	39	35.0	37.8	**0.1621**	0.155	95.9	mg/L	22	Standard
Ca	43	30.0	44.1	**0.2141**	1.301	607.8	mg/L	28	Standard
Fe	54	6328.2	4.3	**12.4686**	0.632	5.1	mg/L	72	Standard
Fe	57	2336.8	4.9	**12.1131**	1.055	8.7	mg/L	703	Standard
> **Sc-1**	45	35326.1	0.8				mg/L	30379	Standard
Cl	35	14320.1	1.2				ug/L	14530	Standard
Kr	83	4.7	44.6				ug/L	5	Standard
Br	81	963.4	9.4				ug/L	497	Standard
P	31	12992.2	3.1				ug/L	10347	Standard
S	34	1413.4	8.4				ug/L	1535	Standard
Sr	88	225.0	8.0				ug/L	177	Standard
C	12	873.4	14.9				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	100.0	0.0				mg/L	3	Standard
Dy	164	7242.6	5.5				mg/L	7	Standard
Ho-1	165	4213.9	2.3				mg/L	13	Standard
Er	166	3740.5	4.7				mg/L	3	Standard
I	127	55864.6	4.5				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		126.753	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.778	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.036
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.219
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508067910
Sample Date/Time: Monday, August 24, 2015 18:59:24
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58323.9	5.7				ug/L	43934	Standard
	Be	9	588.3	9.6	**0.7581**	0.107	14.1	ug/L	0	Standard
	Al	27	811360.6	1.5	**9.1959**	0.375	4.1	ug/L	410	Standard
	Sc	45	39422.9	0.9				ug/L	30379	Standard
	Ti	47	15112.5	1.8	**63.8531**	1.261	2.0	ug/L	21	Standard
	V	51	258055.4	2.2	**53.3952**	1.263	2.4	ug/L	1362	Standard
	Cr	52	225693.3	0.9	**34.3623**	0.547	1.6	ug/L	8311	Standard
	Cr	53	26930.6	1.5	**33.5433**	0.841	2.5	ug/L	325	Standard
	Mn	55	1738236.5	1.8	**390.0889**	7.295	1.9	ug/L	694	Standard
	Co	59	27695.6	0.9	**6.3518**	0.086	1.4	ug/L	199	Standard
	Ni	60	15627.1	1.6	**8.9515**	0.077	0.9	ug/L	212	Standard
	Cu	65	34133.1	1.7	**20.4466**	0.191	0.9	ug/L	149	Standard
	Zn	66	45933.5	0.8	**48.1362**	0.121	0.3	ug/L	206	Standard
>	**Ge**	72	350751.7	1.0				ug/L	319179	Standard
	As	75	6725.0	2.0	**7.1705**	0.137	1.9	ug/L	-51	Standard
	Se	82	89.5	10.0	**0.8986**	0.103	11.4	ug/L	19	Standard
	Se-1	77	177.3	15.8	**1.3339**	0.528	39.6	ug/L	89	Standard
>	**Ga**	71	37541.5	2.6				mg/L	25	Standard
	Rb	85	315715.5	2.9				ug/L	27	Standard
	Y	89	389763.7	1.6				ug/L	295132	Standard
>	**Rh**	103	23.3	75.3				ug/L	20	Standard
	Mo	98	1384.1	5.8	**0.8226**	0.046	5.6	ug/L	11	Standard
	Ag	107	625.0	5.5	**0.0880**	0.005	5.7	ug/L	64	Standard
	Cd	111	323.9	3.7	**0.1857**	0.006	3.1	mg/L	7	Standard
	Cd	114	844.1	10.1	**0.1863**	0.018	9.8	ug/L	10	Standard
>	**In**	115	477019.9	0.9				ug/L	418014	Standard
	Sn	118	530.0	20.9	**0.0220**	0.021	94.8	ug/L	385	Standard
	Sb	123	140.2	8.6	**0.0167**	0.003	16.2	ug/L	54	Standard
	Ba	135	302839.0	0.8	**130.7306**	1.732	1.3	ug/L	44	Standard
	Ce	140	1803276.5	1.0				ug/L	33	Standard
>	**Tb**	159	928896.7	1.6				ug/L	854905	Standard
	Ho	165	6969.9	5.0				ug/L	13	Standard
	Tl	203	1932.8	2.1	**0.2596**	0.007	2.7	ug/L	4	Standard
	Tl	205	1436.7	9.4	**0.2808**	0.027	9.6	ug/L	5	Standard
	Pb	206	140172.1	1.0	**29.9129**	0.194	0.6	ug/L	182	Standard
	Pb	207	113878.0	0.5	**26.9964**	0.125	0.5	ug/L	160	Standard
	Pb	208	449279.1	0.3	**29.1184**	0.122	0.4	ug/L	604	Standard
	U	238	8294.9	1.4	**1.5702**	0.031	2.0	ug/L	3	Standard
>	**Bi**	209	425140.5	0.7				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	103.3	12.2	**0.0841**	0.024	28.2	mg/L	47	Standard
K	39	75.0	13.3	**0.5513**	0.115	20.8	mg/L	22	Standard
Ca	43	40.0	45.1	**0.7988**	1.600	200.3	mg/L	28	Standard
Fe	54	20763.3	2.0	**37.0352**	1.000	2.7	mg/L	72	Standard
Fe	57	5956.2	3.7	**37.5018**	1.603	4.3	mg/L	703	Standard
Sc-1	45	39422.9	0.9				mg/L	30379	Standard
Cl	35	14552.3	1.1				ug/L	14530	Standard
Kr	83	3.0	33.3				ug/L	5	Standard
Br	81	1266.7	12.0				ug/L	497	Standard
P	31	13229.1	3.0				ug/L	10347	Standard
S	34	1320.1	2.1				ug/L	1535	Standard
Sr	88	191.7	17.0				ug/L	177	Standard
C	12	1383.4	15.7				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	150.0	20.0				mg/L	3	Standard
Dy	164	13282.8	5.9				mg/L	7	Standard
Ho-1	165	6969.9	5.0				mg/L	13	Standard
Er	166	6471.4	8.6				mg/L	3	Standard
I	127	50905.4	1.8				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.755	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.892	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.116
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.528
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1508067911
Sample Date/Time: Monday, August 24, 2015 19:02:36
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54290.5	3.2				ug/L	43934	Standard
	Be	9	295.0	11.9	**0.4052**	0.043	10.5	ug/L	0	Standard
	Al	27	115051.9	1.0	**1.3897**	0.032	2.3	ug/L	410	Standard
	Sc	45	34073.3	1.1				ug/L	30379	Standard
	Ti	47	1533.4	4.7	**6.6544**	0.278	4.2	ug/L	21	Standard
	V	51	44009.3	1.8	**9.2400**	0.096	1.0	ug/L	1362	Standard
	Cr	52	58128.7	2.0	**8.1874**	0.139	1.7	ug/L	8311	Standard
	Cr	53	6766.5	5.0	**8.3804**	0.379	4.5	ug/L	325	Standard
	Mn	55	1245804.1	2.0	**291.2497**	5.972	2.1	ug/L	694	Standard
	Co	59	8841.9	1.6	**2.0757**	0.015	0.7	ug/L	199	Standard
	Ni	60	5739.4	0.5	**3.3112**	0.029	0.9	ug/L	212	Standard
	Cu	65	8828.2	2.6	**5.4319**	0.172	3.2	ug/L	149	Standard
	Zn	66	21285.9	1.4	**22.9636**	0.131	0.6	ug/L	206	Standard
>	**Ge**	72	336633.4	0.9				ug/L	319179	Standard
	As	75	759.4	4.6	**0.9353**	0.036	3.8	ug/L	-51	Standard
	Se	82	73.4	11.7	**0.7346**	0.122	16.6	ug/L	19	Standard
	Se-1	77	122.0	11.3	**0.4307**	0.237	54.9	ug/L	89	Standard
>	**Ga**	71	5054.2	3.0				mg/L	25	Standard
	Rb	85	125025.5	1.5				ug/L	27	Standard
	Y	89	334255.7	1.6				ug/L	295132	Standard
>	**Rh**	103	20.0	66.1				ug/L	20	Standard
	Mo	98	251.6	7.2	**0.1396**	0.011	7.8	ug/L	11	Standard
	Ag	107	337.7	5.1	**0.0414**	0.003	7.2	ug/L	64	Standard
	Cd	111	125.4	2.1	**0.0671**	0.002	2.6	mg/L	7	Standard
	Cd	114	302.1	7.0	**0.0632**	0.005	8.1	ug/L	10	Standard
>	**In**	115	470492.8	0.3				ug/L	418014	Standard
	Sn	118	480.0	5.8	**0.0139**	0.005	36.9	ug/L	385	Standard
	Sb	123	206.6	9.0	**0.0321**	0.004	12.8	ug/L	54	Standard
	Ba	135	120436.4	0.2	**52.6938**	0.056	0.1	ug/L	44	Standard
	Ce	140	284294.4	1.4				ug/L	33	Standard
>	**Tb**	159	906139.3	0.3				ug/L	854905	Standard
	Ho	165	2020.1	8.7				ug/L	13	Standard
	Tl	203	667.7	0.9	**0.0916**	0.000	0.2	ug/L	4	Standard
	Tl	205	440.0	10.8	**0.0889**	0.010	11.5	ug/L	5	Standard
	Pb	206	73917.9	0.1	**16.0763**	0.130	0.8	ug/L	182	Standard
	Pb	207	60916.9	1.3	**14.7166**	0.067	0.5	ug/L	160	Standard
	Pb	208	237363.7	0.6	**15.6802**	0.127	0.8	ug/L	604	Standard
	U	238	3302.7	1.4	**0.6380**	0.013	2.1	ug/L	3	Standard
>	**Bi**	209	416491.0	0.9				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	60.0	30.0	**0.0190**	0.039	206.0	mg/L	47	Standard
K	39	35.0	14.3	**0.1780**	0.059	33.1	mg/L	22	Standard
Ca	43	26.7	28.6	**-0.0087**	0.822	9426.9	mg/L	28	Standard
Fe	54	3372.7	3.0	**6.7995**	0.148	2.2	mg/L	72	Standard
Fe	57	1631.8	5.0	**6.6492**	0.659	9.9	mg/L	703	Standard
Sc-1	45	34073.3	1.1				mg/L	30379	Standard
Cl	35	14445.6	1.4				ug/L	14530	Standard
Kr	83	4.3	53.3				ug/L	5	Standard
Br	81	920.0	9.7				ug/L	497	Standard
P	31	12275.0	5.2				ug/L	10347	Standard
S	34	1271.7	2.9				ug/L	1535	Standard
Sr	88	180.0	7.3				ug/L	177	Standard
C	12	686.7	6.1				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	170.0	46.7				mg/L	3	Standard
Dy	164	3369.6	4.3				mg/L	7	Standard
Ho-1	165	2020.1	8.7				mg/L	13	Standard
Er	166	1756.8	5.8				mg/L	3	Standard
I	127	35745.5	3.1				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		123.574	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		105.468	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.554
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.341
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508067912
Sample Date/Time: Monday, August 24, 2015 19:05:47
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53710.0	1.7				ug/L	43934	Standard
	Be	9	711.7	11.2	**0.9914**	0.105	10.6	ug/L	0	Standard
	Al	27	1411883.7	2.3	**17.3613**	0.358	2.1	ug/L	410	Standard
	Sc	45	45926.2	3.8				ug/L	30379	Standard
	Ti	47	18223.3	0.3	**79.6747**	0.366	0.5	ug/L	21	Standard
	V	51	286876.0	1.8	**61.4454**	0.895	1.5	ug/L	1362	Standard
	Cr	52	223221.2	1.5	**35.1861**	0.245	0.7	ug/L	8311	Standard
	Cr	53	27321.3	1.0	**35.2239**	0.177	0.5	ug/L	325	Standard
	Mn	55	2013288.9	0.8	**467.4131**	2.049	0.4	ug/L	694	Standard
	Co	59	58008.5	0.4	**13.8270**	0.155	1.1	ug/L	199	Standard
	Ni	60	24755.5	1.4	**14.7880**	0.147	1.0	ug/L	212	Standard
	Cu	65	59010.7	2.3	**36.6516**	0.557	1.5	ug/L	149	Standard
	Zn	66	51252.9	1.4	**55.6429**	0.400	0.7	ug/L	206	Standard
>	**Ge**	72	339062.3	0.8				ug/L	319179	Standard
	As	75	4294.2	1.9	**4.7719**	0.099	2.1	ug/L	-51	Standard
	Se	82	87.3	9.9	**0.9092**	0.110	12.1	ug/L	19	Standard
	Se-1	77	213.3	2.2	**2.1064**	0.093	4.4	ug/L	89	Standard
>	**Ga**	71	45797.5	2.8				mg/L	25	Standard
	Rb	85	184076.7	1.8				ug/L	27	Standard
	Y	89	673061.3	0.3				ug/L	295132	Standard
>	**Rh**	103	18.3	31.5				ug/L	20	Standard
	Mo	98	606.2	1.5	**0.3741**	0.006	1.7	ug/L	11	Standard
	Ag	107	399.0	11.9	**0.0547**	0.008	14.7	ug/L	64	Standard
	Cd	111	99.6	2.7	**0.0541**	0.002	3.1	mg/L	7	Standard
	Cd	114	234.5	6.8	**0.0500**	0.004	8.0	ug/L	10	Standard
>	**In**	115	449899.8	0.3				ug/L	418014	Standard
	Sn	118	515.0	4.9	**0.0248**	0.005	19.1	ug/L	385	Standard
	Sb	123	67.7	4.3	**0.0014**	0.001	46.9	ug/L	54	Standard
	Ba	135	204955.7	1.4	**93.7948**	1.001	1.1	ug/L	44	Standard
	Ce	140	5975762.4	1.1				ug/L	33	Standard
>	**Tb**	159	902673.0	1.8				ug/L	854905	Standard
	Ho	165	37065.3	1.7				ug/L	13	Standard
	Tl	203	1703.4	0.5	**0.2384**	0.003	1.4	ug/L	4	Standard
	Tl	205	1178.4	3.1	**0.2402**	0.009	3.5	ug/L	5	Standard
	Pb	206	149025.6	0.3	**33.1488**	0.554	1.7	ug/L	182	Standard
	Pb	207	122071.8	0.2	**30.1631**	0.380	1.3	ug/L	160	Standard
	Pb	208	477447.9	0.5	**32.2509**	0.283	0.9	ug/L	604	Standard
	U	238	9478.0	0.8	**1.8695**	0.026	1.4	ug/L	3	Standard
>	**Bi**	209	408007.8	1.3				ug/L	395375	Standard

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Na	23	3.3	86.6	**-2.9913**	11.339	379.1	mg/L	0	Standard
Mg	24	45.0	29.4	**-0.0398**	0.022	55.6	mg/L	47	Standard
K	39	110.0	22.7	**0.7554**	0.193	25.6	mg/L	22	Standard
Ca	43	25.0	40.0	**-0.8647**	0.711	82.2	mg/L	28	Standard
Fe	54	31546.0	0.6	**48.3943**	1.592	3.3	mg/L	72	Standard
Fe	57	8532.4	0.2	**47.9326**	2.151	4.5	mg/L	703	Standard
> **Sc-1**	45	45926.2	3.8				mg/L	30379	Standard
Cl	35	13480.7	2.9				ug/L	14530	Standard
Kr	83	4.0	25.0				ug/L	5	Standard
Br	81	843.4	14.1				ug/L	497	Standard
P	31	13220.8	5.5				ug/L	10347	Standard
S	34	1455.1	13.6				ug/L	1535	Standard
Sr	88	206.7	9.8				ug/L	177	Standard
C	12	383.3	33.0				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	113.3	22.2				mg/L	3	Standard
Dy	164	56368.4	4.3				mg/L	7	Standard
Ho-1	165	37065.3	1.7				mg/L	13	Standard
Er	166	36176.6	5.7				mg/L	3	Standard
I	127	46650.2	5.7				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		122.253	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.229	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.628
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.195
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, August 24, 2015 19:09:00
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48862.0	2.3				ug/L	43934	Standard
	Be	9	31582.9	2.0	**48.4917**	1.581	3.3	ug/L	0	Standard
	Al	27	3406530.7	0.5	**46.0740**	0.875	1.9	ug/L	410	Standard
	Sc	45	30697.7	1.6				ug/L	30379	Standard
	Ti	47	22756.7	1.2	**104.9493**	0.834	0.8	ug/L	21	Standard
	V	51	233706.8	0.3	**52.7475**	0.606	1.1	ug/L	1362	Standard
	Cr	52	302379.0	1.0	**50.8677**	0.073	0.1	ug/L	8311	Standard
	Cr	53	37673.5	2.4	**51.4576**	0.777	1.5	ug/L	325	Standard
	Mn	55	220960.9	0.9	**53.9226**	0.450	0.8	ug/L	694	Standard
	Co	59	208657.4	1.1	**52.5995**	0.550	1.0	ug/L	199	Standard
	Ni	60	79574.4	1.3	**50.5685**	0.209	0.4	ug/L	212	Standard
	Cu	65	77313.1	1.6	**50.6794**	0.341	0.7	ug/L	149	Standard
	Zn	66	43903.5	1.0	**50.2144**	0.748	1.5	ug/L	206	Standard
>	**Ge**	72	321538.8	0.9				ug/L	319179	Standard
	As	75	42988.0	0.4	**49.3800**	0.236	0.5	ug/L	-51	Standard
	Se	82	3647.4	0.6	**50.1715**	0.300	0.6	ug/L	19	Standard
	Se-1	77	2688.9	2.3	**50.6498**	1.653	3.3	ug/L	89	Standard
>	**Ga**	71	46.7	27.0				mg/L	25	Standard
	Rb	85	793.4	5.4				ug/L	27	Standard
	Y	89	301878.0	1.3				ug/L	295132	Standard
>	**Rh**	103	36.7	15.7				ug/L	20	Standard
	Mo	98	147805.7	0.9	**95.6911**	1.112	1.2	ug/L	11	Standard
	Ag	107	269969.6	0.5	**47.5931**	1.212	2.5	ug/L	64	Standard
	Cd	111	78101.7	0.5	**50.3675**	0.779	1.5	mg/L	7	Standard
	Cd	114	204087.4	0.8	**50.0485**	1.386	2.8	ug/L	10	Standard
>	**In**	115	445720.9	2.1				ug/L	418014	Standard
	Sn	118	240449.8	1.2	**46.8683**	1.256	2.7	ug/L	385	Standard
	Sb	123	204812.3	0.6	**48.7916**	1.292	2.6	ug/L	54	Standard
	Ba	135	104066.5	0.6	**48.0768**	1.236	2.6	ug/L	44	Standard
	Ce	140	1910.1	44.9				ug/L	33	Standard
>	**Tb**	159	868397.7	0.3				ug/L	854905	Standard
	Ho	165	8.3	34.6				ug/L	13	Standard
	Tl	203	351165.3	0.6	**50.0145**	0.372	0.7	ug/L	4	Standard
	Tl	205	243293.2	1.9	**50.1688**	0.993	2.0	ug/L	5	Standard
	Pb	206	216573.9	0.6	**49.0685**	0.402	0.8	ug/L	182	Standard
	Pb	207	195019.7	0.3	**49.0914**	0.522	1.1	ug/L	160	Standard
	Pb	208	728597.8	1.6	**50.1328**	0.807	1.6	ug/L	604	Standard
	U	238	247739.8	1.1	**49.7542**	0.350	0.7	ug/L	3	Standard
>	**Bi**	209	400746.4	0.7				ug/L	395375	Standard

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Na	23	1.7	173.2	**0.4209**	16.721	3972.3	mg/L	0	Standard
Mg	24	1996.8	7.0	**4.7959**	0.300	6.3	mg/L	47	Standard
K	39	318.3	21.3	**4.1629**	1.012	24.3	mg/L	22	Standard
Ca	43	68.3	33.8	**5.0712**	2.648	52.2	mg/L	28	Standard
Fe	54	2392.4	4.1	**5.3131**	0.230	4.3	mg/L	72	Standard
Fe	57	1356.7	5.9	**5.5409**	0.602	10.9	mg/L	703	Standard
> **Sc-1**	45	30697.7	1.6				mg/L	30379	Standard
Cl	35	14502.3	1.8				ug/L	14530	Standard
Kr	83	2.3	24.7				ug/L	5	Standard
Br	81	606.7	6.7				ug/L	497	Standard
P	31	12648.6	1.4				ug/L	10347	Standard
S	34	1705.1	4.4				ug/L	1535	Standard
Sr	88	198.3	6.3				ug/L	177	Standard
C	12	166.7	18.3				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	15.7	36.8				mg/L	7	Standard
Ho-1	165	8.3	34.6				mg/L	13	Standard
Er	166	20.0	0.0				mg/L	3	Standard
I	127	1630.1	29.3				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	96.983		
Al	27	92.148		
Sc	45			
Ti	47	104.949		
V	51	105.495		
Cr	52	101.735		
Cr	53			
Mn	55	107.845		
Co	59	105.199		
Ni	60	101.137		
Cu	65	101.359		
Zn	66	100.429		
> Ge	72		100.739	
As	75	98.760		
Se	82	100.343		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	95.691		
Ag	107	95.186		
Cd	111	100.735		
Cd	114			
> In	115			106.628
Sn	118	93.737		
Sb	123	97.583		
Ba	135	96.154		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.029		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.266		
U	238	99.508		
> Bi	209			101.359
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, August 24, 2015 19:12:12
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49836.9	2.8				ug/L	43934	Standard
	Be	9	11.7	65.5	**0.0155**	0.011	73.0	ug/L	0	Standard
	Al	27	865.0	12.1	**0.0000**	0.001	3442.2	ug/L	410	Standard
	Sc	45	31998.8	1.5				ug/L	30379	Standard
	Ti	47	22.3	18.6	**-0.0043**	0.020	469.1	ug/L	21	Standard
	V	51	1165.0	6.8	**-0.0399**	0.020	49.6	ug/L	1362	Standard
	Cr	52	6894.9	1.4	**-0.2373**	0.026	11.0	ug/L	8311	Standard
	Cr	53	300.0	7.3	**-0.1305**	0.035	26.8	ug/L	325	Standard
	Mn	55	1069.7	9.2	**0.0622**	0.026	41.9	ug/L	694	Standard
	Co	59	238.7	11.0	**0.0040**	0.007	182.5	ug/L	199	Standard
	Ni	60	167.3	14.1	**-0.0805**	0.013	16.7	ug/L	212	Standard
	Cu	65	165.3	7.3	**-0.0012**	0.009	753.5	ug/L	149	Standard
	Zn	66	259.7	3.1	**-0.2411**	0.007	2.8	ug/L	206	Standard
>	**Ge**	72	326424.8	1.3				ug/L	319179	Standard
	As	75	-33.4	126.3	**0.0658**	0.048	72.7	ug/L	-51	Standard
	Se	82	30.2	26.5	**0.1750**	0.104	59.7	ug/L	19	Standard
	Se-1	77	101.3	21.4	**0.1080**	0.434	402.0	ug/L	89	Standard
>	**Ga**	71	33.3	31.2				mg/L	25	Standard
	Rb	85	103.3	7.4				ug/L	27	Standard
	Y	89	303489.9	1.6				ug/L	295132	Standard
>	**Rh**	103	20.0	25.0				ug/L	20	Standard
	Mo	98	65.9	33.2	**0.0274**	0.014	51.1	ug/L	11	Standard
	Ag	107	97.7	5.8	**0.0020**	0.001	49.0	ug/L	64	Standard
	Cd	111	11.5	26.3	**-0.0022**	0.002	87.5	mg/L	7	Standard
	Cd	114	41.5	28.1	**0.0030**	0.003	94.2	ug/L	10	Standard
>	**In**	115	452172.2	0.4				ug/L	418014	Standard
	Sn	118	2803.6	3.4	**0.4645**	0.017	3.6	ug/L	385	Standard
	Sb	123	783.4	13.0	**0.1694**	0.024	14.0	ug/L	54	Standard
	Ba	135	101.7	22.3	**0.0216**	0.010	48.1	ug/L	44	Standard
	Ce	140	653.3	26.0				ug/L	33	Standard
>	**Tb**	159	869792.5	1.0				ug/L	854905	Standard
	Ho	165	10.0					ug/L	13	Standard
	Tl	203	45.3	28.4	**0.0064**	0.002	27.9	ug/L	4	Standard
	Tl	205	21.7	13.3	**0.0059**	0.001	9.5	ug/L	5	Standard
	Pb	206	244.0	8.9	**-0.0028**	0.005	189.6	ug/L	182	Standard
	Pb	207	210.3	10.2	**-0.0010**	0.005	499.2	ug/L	160	Standard
	Pb	208	790.7	6.6	**0.0024**	0.004	165.6	ug/L	604	Standard
	U	238	29.7	24.4	**0.0055**	0.001	26.5	ug/L	3	Standard
>	**Bi**	209	410078.5	0.8				ug/L	395375	Standard

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Na	23	1.7	173.2	**0.5070**	16.571	3268.2	mg/L	0	Standard
Mg	24	46.7	32.7	**-0.0040**	0.035	867.3	mg/L	47	Standard
K	39	6.7	86.6	**-0.1696**	0.077	45.4	mg/L	22	Standard
Ca	43	23.3	61.9	**-0.2116**	1.559	736.8	mg/L	28	Standard
Fe	54	64.0	38.9	**-0.0546**	0.054	99.6	mg/L	72	Standard
Fe	57	853.4	4.7	**0.3068**	0.393	128.1	mg/L	703	Standard
Sc-1	45	31998.8	1.5				mg/L	30379	Standard
Cl	35	14896.0	0.5				ug/L	14530	Standard
Kr	83	5.7	44.4				ug/L	5	Standard
Br	81	640.0	23.0				ug/L	497	Standard
P	31	12877.1	4.5				ug/L	10347	Standard
S	34	1720.1	3.4				ug/L	1535	Standard
Sr	88	176.7	23.1				ug/L	177	Standard
C	12	176.7	27.9				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	39.2	0.7				mg/L	7	Standard
Ho-1	165	10.0					mg/L	13	Standard
Er	166	16.7	34.6				mg/L	3	Standard
I	127	1578.4	12.0				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.270	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.172
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.719
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sn	118	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1508067913
Sample Date/Time: Monday, August 24, 2015 19:15:24
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53740.2	2.7				ug/L	43934	Standard
	Be	9	333.3	8.3	**0.4628**	0.027	5.9	ug/L	0	Standard
	Al	27	183199.3	1.1	**2.2429**	0.088	3.9	ug/L	410	Standard
	Sc	45	35661.9	0.8				ug/L	30379	Standard
	Ti	47	3528.4	3.0	**15.1397**	0.293	1.9	ug/L	21	Standard
	V	51	80085.3	0.9	**16.7163**	0.244	1.5	ug/L	1362	Standard
	Cr	52	77251.5	1.5	**11.0910**	0.126	1.1	ug/L	8311	Standard
	Cr	53	8869.3	1.5	**10.9237**	0.313	2.9	ug/L	325	Standard
	Mn	55	747586.3	2.2	**171.1839**	1.391	0.8	ug/L	694	Standard
	Co	59	8704.5	4.4	**2.0001**	0.059	2.9	ug/L	199	Standard
	Ni	60	6012.2	1.6	**3.4040**	0.003	0.1	ug/L	212	Standard
	Cu	65	9139.1	1.4	**5.5118**	0.049	0.9	ug/L	149	Standard
	Zn	66	13455.0	2.1	**14.0237**	0.386	2.8	ug/L	206	Standard
>	**Ge**	72	343501.4	1.5				ug/L	319179	Standard
	As	75	1579.6	2.7	**1.7986**	0.025	1.4	ug/L	-51	Standard
	Se	82	74.0	3.9	**0.7227**	0.045	6.2	ug/L	19	Standard
	Se-1	77	146.3	5.3	**0.8320**	0.161	19.3	ug/L	89	Standard
>	**Ga**	71	6032.9	4.8				mg/L	25	Standard
	Rb	85	117557.7	1.3				ug/L	27	Standard
	Y	89	386357.6	1.0				ug/L	295132	Standard
>	**Rh**	103	36.7	34.3				ug/L	20	Standard
	Mo	98	389.6	4.7	**0.2253**	0.010	4.4	ug/L	11	Standard
	Ag	107	390.0	8.1	**0.0504**	0.005	9.3	ug/L	64	Standard
	Cd	111	160.3	9.0	**0.0889**	0.008	9.0	mg/L	7	Standard
	Cd	114	399.0	3.2	**0.0861**	0.004	5.0	ug/L	10	Standard
>	**In**	115	468405.3	1.3				ug/L	418014	Standard
	Sn	118	533.3	14.3	**0.0243**	0.015	62.0	ug/L	385	Standard
	Sb	123	459.7	6.1	**0.0896**	0.005	5.9	ug/L	54	Standard
	Ba	135	163832.0	0.2	**72.0182**	1.084	1.5	ug/L	44	Standard
	Ce	140	1178632.0	1.4				ug/L	33	Standard
>	**Tb**	159	913688.4	2.3				ug/L	854905	Standard
	Ho	165	6641.5	5.4				ug/L	13	Standard
	Tl	203	745.0	2.0	**0.1008**	0.002	1.5	ug/L	4	Standard
	Tl	205	510.0	6.4	**0.1013**	0.006	6.0	ug/L	5	Standard
	Pb	206	89607.6	1.3	**19.2369**	0.231	1.2	ug/L	182	Standard
	Pb	207	73699.5	0.9	**17.5763**	0.196	1.1	ug/L	160	Standard
	Pb	208	288031.8	0.5	**18.7812**	0.131	0.7	ug/L	604	Standard
	U	238	5793.4	1.9	**1.1041**	0.015	1.4	ug/L	3	Standard
>	**Bi**	209	422167.8	0.6				ug/L	395375	Standard

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Na	23	1.7	173.2	**1.6623**	14.570	876.5	mg/L	0	Standard
Mg	24	53.3	14.3	**-0.0010**	0.015	1596.3	mg/L	47	Standard
K	39	36.7	43.8	**0.1780**	0.189	106.1	mg/L	22	Standard
Ca	43	16.7	17.3	**-1.1257**	0.281	24.9	mg/L	28	Standard
Fe	54	5111.8	0.5	**9.9360**	0.119	1.2	mg/L	72	Standard
Fe	57	1995.1	4.3	**9.0616**	0.810	8.9	mg/L	703	Standard
> **Sc-1**	45	35661.9	0.8				mg/L	30379	Standard
Cl	35	14428.2	0.8				ug/L	14530	Standard
Kr	83	5.3	39.0				ug/L	5	Standard
Br	81	970.0	16.6				ug/L	497	Standard
P	31	12775.4	2.8				ug/L	10347	Standard
S	34	1366.7	3.4				ug/L	1535	Standard
Sr	88	208.3	13.6				ug/L	177	Standard
C	12	810.0	18.3				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	123.3	23.4				mg/L	3	Standard
Dy	164	10269.8	3.3				mg/L	7	Standard
Ho-1	165	6641.5	5.4				mg/L	13	Standard
Er	166	5717.7	8.0				mg/L	3	Standard
I	127	64291.3	4.2				mg/L	1945	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		122.321	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		107.620	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	112.055
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	106.777
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, August 24, 2015 19:18:37
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48721.6	2.1				ug/L	43934	Standard
	Be	9	32700.3	3.2	**50.3364**	1.423	2.8	ug/L	0	Standard
	Al	27	3448746.6	2.3	**46.7679**	0.640	1.4	ug/L	410	Standard
	Sc	45	32095.6	2.3				ug/L	30379	Standard
	Ti	47	22912.0	0.7	**105.0820**	0.553	0.5	ug/L	21	Standard
	V	51	233408.8	1.1	**52.3848**	0.639	1.2	ug/L	1362	Standard
	Cr	52	305496.2	0.9	**51.1149**	0.242	0.5	ug/L	8311	Standard
	Cr	53	38331.8	1.3	**52.0779**	0.497	1.0	ug/L	325	Standard
	Mn	55	222236.4	0.8	**53.9328**	0.245	0.5	ug/L	694	Standard
	Co	59	209002.7	0.7	**52.3958**	0.534	1.0	ug/L	199	Standard
	Ni	60	81569.3	0.7	**51.5608**	1.004	1.9	ug/L	212	Standard
	Cu	65	78123.3	1.7	**50.9285**	0.608	1.2	ug/L	149	Standard
	Zn	66	43892.5	1.5	**49.9160**	0.432	0.9	ug/L	206	Standard
>	**Ge**	72	323336.6	1.2				ug/L	319179	Standard
	As	75	43362.5	0.9	**49.5349**	0.603	1.2	ug/L	-51	Standard
	Se	82	3653.9	0.3	**49.9832**	0.616	1.2	ug/L	19	Standard
	Se-1	77	2617.9	1.2	**48.9711**	0.345	0.7	ug/L	89	Standard
>	**Ga**	71	53.3	10.8				mg/L	25	Standard
	Rb	85	701.7	11.3				ug/L	27	Standard
	Y	89	305132.3	1.5				ug/L	295132	Standard
>	**Rh**	103	28.3	10.2				ug/L	20	Standard
	Mo	98	147467.2	1.5	**96.5514**	0.641	0.7	ug/L	11	Standard
	Ag	107	268675.6	0.2	**47.8964**	0.567	1.2	ug/L	64	Standard
	Cd	111	77415.3	1.4	**50.4922**	0.956	1.9	mg/L	7	Standard
	Cd	114	204317.1	2.3	**50.6590**	0.787	1.6	ug/L	10	Standard
>	**In**	115	440654.5	1.0				ug/L	418014	Standard
	Sn	118	235306.5	0.5	**46.3786**	0.245	0.5	ug/L	385	Standard
	Sb	123	204494.0	0.8	**49.2617**	0.686	1.4	ug/L	54	Standard
	Ba	135	104156.1	1.3	**48.6567**	0.685	1.4	ug/L	44	Standard
	Ce	140	676.7	43.7				ug/L	33	Standard
>	**Tb**	159	866485.0	0.7				ug/L	854905	Standard
	Ho	165	10.0	50.0				ug/L	13	Standard
	Tl	203	348437.6	1.0	**49.5918**	0.265	0.5	ug/L	4	Standard
	Tl	205	242678.3	1.5	**50.0118**	1.032	2.1	ug/L	5	Standard
	Pb	206	216779.8	0.3	**49.0823**	0.176	0.4	ug/L	182	Standard
	Pb	207	194336.7	0.8	**48.8845**	0.092	0.2	ug/L	160	Standard
	Pb	208	724396.2	1.2	**49.8092**	0.419	0.8	ug/L	604	Standard
	U	238	245544.3	0.2	**49.2824**	0.286	0.6	ug/L	3	Standard
>	**Bi**	209	401008.5	0.6				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	2146.8	5.7	**4.9340**	0.188	3.8	mg/L	47	Standard
K	39	330.0	18.9	**4.1041**	0.722	17.6	mg/L	22	Standard
Ca	43	61.7	16.9	**4.0157**	1.272	31.7	mg/L	28	Standard
Fe	54	2316.5	2.7	**4.9053**	0.081	1.6	mg/L	72	Standard
Fe	57	1378.4	3.8	**5.1702**	0.276	5.3	mg/L	703	Standard
> **Sc-1**	45	32095.6	2.3				mg/L	30379	Standard
Cl	35	14455.6	1.5				ug/L	14530	Standard
Kr	83	4.3	74.2				ug/L	5	Standard
Br	81	593.3	21.1				ug/L	497	Standard
P	31	12129.9	1.6				ug/L	10347	Standard
S	34	1580.1	6.7				ug/L	1535	Standard
Sr	88	176.7	27.9				ug/L	177	Standard
C	12	140.0	32.7				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	9.2	119.1				mg/L	7	Standard
Ho-1	165	10.0	50.0				mg/L	13	Standard
Er	166	16.7	124.9				mg/L	3	Standard
I	127	1421.7	24.2				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	100.673		
Al	27	93.536		
Sc	45			
Ti	47	105.082		
V	51	104.770		
Cr	52	102.230		
Cr	53			
Mn	55	107.866		
Co	59	104.792		
Ni	60	103.122		
Cu	65	101.857		
Zn	66	99.832		
> Ge	72		101.302	
As	75	99.070		
Se	82	99.966		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	96.551		
Ag	107	95.793		
Cd	111	100.984		
Cd	114			
In	115			105.416
Sn	118	92.757		
Sb	123	98.523		
Ba	135	97.313		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.184		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.618		
U	238	98.565		
Bi	209			101.425
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, August 24, 2015 19:21:49
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49689.7	3.1				ug/L	43934	Standard
	Be	9	15.0	57.7	**0.0204**	0.012	59.7	ug/L	0	Standard
	Al	27	773.4	14.2	**-0.0011**	0.002	155.2	ug/L	410	Standard
	Sc	45	31883.5	3.7				ug/L	30379	Standard
	Ti	47	23.7	6.5	**0.0019**	0.007	377.3	ug/L	21	Standard
	V	51	1182.1	3.5	**-0.0353**	0.010	27.7	ug/L	1362	Standard
	Cr	52	7197.7	3.8	**-0.1821**	0.044	24.1	ug/L	8311	Standard
	Cr	53	366.7	19.6	**-0.0387**	0.097	252.0	ug/L	325	Standard
	Mn	55	914.7	5.7	**0.0254**	0.013	52.0	ug/L	694	Standard
	Co	59	230.0	7.9	**0.0020**	0.005	235.1	ug/L	199	Standard
	Ni	60	179.0	7.9	**-0.0727**	0.009	11.9	ug/L	212	Standard
	Cu	65	147.3	2.0	**-0.0126**	0.002	14.5	ug/L	149	Standard
	Zn	66	246.3	2.6	**-0.2553**	0.008	3.1	ug/L	206	Standard
>	**Ge**	72	325398.4	0.2				ug/L	319179	Standard
	As	75	-50.2	23.0	**0.0470**	0.013	27.8	ug/L	-51	Standard
	Se	82	25.6	35.3	**0.1143**	0.124	108.4	ug/L	19	Standard
	Se-1	77	88.3	10.7	**-0.1386**	0.186	133.9	ug/L	89	Standard
>	**Ga**	71	25.0	20.0				mg/L	25	Standard
	Rb	85	50.0	34.6				ug/L	27	Standard
	Y	89	302967.7	1.2				ug/L	295132	Standard
>	**Rh**	103	16.7	105.4				ug/L	20	Standard
	Mo	98	72.1	19.2	**0.0317**	0.010	31.5	ug/L	11	Standard
	Ag	107	107.0	16.2	**0.0038**	0.004	93.5	ug/L	64	Standard
	Cd	111	13.8	40.2	**-0.0007**	0.004	548.9	mg/L	7	Standard
	Cd	114	43.1	44.8	**0.0035**	0.005	138.7	ug/L	10	Standard
>	**In**	115	450494.1	2.9				ug/L	418014	Standard
	Sn	118	2926.9	1.3	**0.4907**	0.018	3.6	ug/L	385	Standard
	Sb	123	761.4	8.2	**0.1652**	0.019	11.5	ug/L	54	Standard
	Ba	135	82.7	5.5	**0.0131**	0.002	17.2	ug/L	44	Standard
	Ce	140	278.3	7.3				ug/L	33	Standard
>	**Tb**	159	868538.7	0.2				ug/L	854905	Standard
	Ho	165	6.7	86.6				ug/L	13	Standard
	Tl	203	35.7	18.7	**0.0051**	0.001	19.1	ug/L	4	Standard
	Tl	205	26.7	28.6	**0.0069**	0.002	22.7	ug/L	5	Standard
	Pb	206	236.0	6.5	**-0.0045**	0.004	87.3	ug/L	182	Standard
	Pb	207	190.7	8.4	**-0.0058**	0.004	75.3	ug/L	160	Standard
	Pb	208	760.0	4.1	**0.0004**	0.002	572.0	ug/L	604	Standard
	U	238	32.0	24.4	**0.0060**	0.002	26.2	ug/L	3	Standard
>	**Bi**	209	409463.7	1.0				ug/L	395375	Standard

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Na	23	0.0		**10.0746**	0.000	0.0	mg/L	0	Standard
Mg	24	60.0	28.9	**0.0288**	0.044	152.4	mg/L	47	Standard
K	39	11.7	107.9	**-0.1021**	0.172	168.8	mg/L	22	Standard
Ca	43	23.3	81.1	**-0.1587**	2.167	1365.1	mg/L	28	Standard
Fe	54	76.1	16.8	**-0.0270**	0.030	112.5	mg/L	72	Standard
Fe	57	808.4	11.7	**-0.0842**	0.904	1073.6	mg/L	703	Standard
Sc-1	45	31883.5	3.7				mg/L	30379	Standard
Cl	35	14416.2	1.0				ug/L	14530	Standard
Kr	83	5.0	34.6				ug/L	5	Standard
Br	81	593.3	7.6				ug/L	497	Standard
P	31	12345.0	2.6				ug/L	10347	Standard
S	34	1646.8	3.4				ug/L	1535	Standard
Sr	88	185.0	16.2				ug/L	177	Standard
C	12	156.7	37.4				mg/L	153	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	2.5	239.4				mg/L	7	Standard
Ho-1	165	6.7	86.6				mg/L	13	Standard
Er	166	16.7	69.3				mg/L	3	Standard
I	127	1546.7	1.8				mg/L	1945	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.948	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	107.770
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.563
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sn	118	

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2.4 General Chemistry Data

2.4.1 Method 9056

2.4.1.1 Summary Data

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-01	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW22-081815	**Prep Method:**	9056	**Prep Date:**	08/19/2015 12:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG535677	**Analyst:**	ALS	**Run Date:**	08/19/2015 15:43
Collect Date:	08/18/2015 08:05	**Dilution:**	5	**File ID:**	I2_081915-09
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1310	J	2.00	1.00	0.500
Nitrate	14797-55-8	1.00	U	2.00	1.00	0.500
Nitrite	14797-65-0	1.00	U	2.00	1.00	0.500
Sulfate	14808-79-8	644	J	10.0	5.00	2.50

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-01	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW22-081815	**Prep Method:**	9056	**Prep Date:**	08/19/2015 12:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG535677	**Analyst:**	ALS	**Run Date:**	08/19/2015 16:01
Collect Date:	08/18/2015 08:05	**Dilution:**	50	**File ID:**	I2_081915-10
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	963		20.0	10.0	5.00
Nitrate	14797-55-8	10.0	U	20.0	10.0	5.00
Nitrite	14797-65-0	10.0	U	20.0	10.0	5.00
Sulfate	14808-79-8	521		100	50.0	25.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-03	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW25-081815	**Prep Method:**	9056	**Prep Date:**	08/19/2015 12:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG535677	**Analyst:**	ALS	**Run Date:**	08/19/2015 16:20
Collect Date:	08/18/2015 09:40	**Dilution:**	1	**File ID:**	I2_081915-11
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	32.3	J	0.400	0.200	0.100
Nitrate	14797-55-8	0.200	U	0.400	0.200	0.100
Nitrite	14797-65-0	0.200	U	0.400	0.200	0.100
Sulfate	14808-79-8	66.4		2.00	1.00	0.500

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-03	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW25-081815	**Prep Method:**	9056	**Prep Date:**	08/19/2015 12:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG535677	**Analyst:**	ALS	**Run Date:**	08/19/2015 16:38
Collect Date:	08/18/2015 09:40	**Dilution:**	2	**File ID:**	I2_081915-12
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	28.3		0.800	0.400	0.200
Nitrate	14797-55-8	0.400	U	0.800	0.400	0.200
Nitrite	14797-65-0	0.400	U	0.800	0.400	0.200
Sulfate	14808-79-8	60.3		4.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-05	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW12-081815	**Prep Method:**	9056	**Prep Date:**	08/19/2015 12:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG535677	**Analyst:**	ALS	**Run Date:**	08/19/2015 16:56
Collect Date:	08/18/2015 11:05	**Dilution:**	5	**File ID:**	I2_081915-13
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1700	J	2.00	1.00	0.500
Nitrate	14797-55-8	1.00	U	2.00	1.00	0.500
Nitrite	14797-65-0	1.00	U	2.00	1.00	0.500
Sulfate	14808-79-8	576		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-05	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW12-081815	**Prep Method:**	9056	**Prep Date:**	08/20/2015 13:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG535887	**Analyst:**	ALS	**Run Date:**	08/20/2015 21:10
Collect Date:	08/18/2015 11:05	**Dilution:**	100	**File ID:**	I2_082015-25
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1250		40.0	20.0	10.0
Nitrate	14797-55-8	20.0	U	40.0	20.0	10.0
Nitrite	14797-65-0	20.0	U	40.0	20.0	10.0
Sulfate	14808-79-8	464		200	100	50.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-07	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW06-081815	**Prep Method:**	9056	**Prep Date:**	08/19/2015 12:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG535677	**Analyst:**	ALS	**Run Date:**	08/19/2015 18:09
Collect Date:	08/18/2015 13:40	**Dilution:**	1	**File ID:**	I2_081915-17
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	131	J	0.400	0.200	0.100
Nitrate	14797-55-8	0.200	U	0.400	0.200	0.100
Nitrite	14797-65-0	0.200	U	0.400	0.200	0.100
Sulfate	14808-79-8	55.2		2.00	1.00	0.500

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-07	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW06-081815	**Prep Method:**	9056	**Prep Date:**	08/19/2015 12:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG535677	**Analyst:**	ALS	**Run Date:**	08/19/2015 18:27
Collect Date:	08/18/2015 13:40	**Dilution:**	10	**File ID:**	I2_081915-18
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	98.6		4.00	2.00	1.00
Nitrate	14797-55-8	2.00	U	4.00	2.00	1.00
Nitrite	14797-65-0	2.00	U	4.00	2.00	1.00
Sulfate	14808-79-8	50.5		20.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-09	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW11-081815	**Prep Method:**	9056	**Prep Date:**	08/19/2015 12:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG535677	**Analyst:**	ALS	**Run Date:**	08/19/2015 18:45
Collect Date:	08/18/2015 14:50	**Dilution:**	5	**File ID:**	I2_081915-19
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	458	J	2.00	1.00	0.500
Nitrate	14797-55-8	1.00	U	2.00	1.00	0.500
Nitrite	14797-65-0	1.00	U	2.00	1.00	0.500
Sulfate	14808-79-8	408		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-09	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW11-081815	**Prep Method:**	9056	**Prep Date:**	08/19/2015 12:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG535677	**Analyst:**	ALS	**Run Date:**	08/19/2015 19:03
Collect Date:	08/18/2015 14:50	**Dilution:**	20	**File ID:**	I2_081915-20
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	392		8.00	4.00	2.00
Nitrate	14797-55-8	4.00	U	8.00	4.00	2.00
Nitrite	14797-65-0	4.00	U	8.00	4.00	2.00
Sulfate	14808-79-8	372		40.0	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.4.1.2 QC Summary Data

Example Calculations - Ion Chromatography

A. Methods 9056/300.0 (Quadratic with Offset)

1. Retrieve Curve Data from the ICAL Curve

c2 = the value of curve constant
c1= the curve slope
c0 = the curve offset

2. Obtain the area, y , from the instrument raw data

3. Calculate the concentration of the analyte, f(y), where:

$$f(y) = \frac{1}{2 * c_2} * \left(-c_1 \pm \sqrt{c_1^2 - 4 * c_2 * (c_0 - y)}\right)$$

Example Calculation:

Value of constant, c2, (curve):	0.0003
Value of curve constant, c1, (slope):	0.0869
Value of curve constant, c0, (offset):	-0.0103
Area of target analyte, y, (uS*min):	2.993
Calculated concentration, f(y), (mg/L):	31.1998864
or:	-40.1161215 *
Dilution factor (D):	1.00
Concentration of analyte in sample (mg/L):	31.200

* There are two possible solutions, but only one is valid.

B. Method 314.0 - Perchlorate (Linear)

Retrieve Curve Data from Linear Plot

c1 = the curve slope

Obtain the area, y , from the quantitation report

Calculate the concentration of the analyte, f(y), where:

f (y) = y / c1

Example Calculation:

Value of c1, slope:	0.0034
Area of target analyte, y:	0.083
Calculated concentration:	24.4117647
Dilution Factor:	1
Concentration in sample:	24.4117647

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC2 Dataset: 080315 ICAL IC2.SEQ
Analyst1: AED Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 17

Maintenance Log ID: 53330 Syringe Filter Lot#: 00195722
Eluent ID#: RGT34279
Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
Workgroups:
Internal STD: NA Surrogate STD: NA Calibration STD STD69215 (02/17/15)
CCV STD: STD69215 LCS STD: STD69216 MS/MSD STD: STD69216

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I2_080315-01	ELUENT	1	1		08/03/15 14:06
2	I2_080315-02	DI WATER	1	1		08/03/15 14:25
3	I2_080315-03	WG533569-01 STD \#6	1	1		08/03/15 14:43
4	I2_080315-04	WG533569-02 STD \#5	1	1		08/03/15 15:01
5	I2_080315-05	WG533569-03 STD \#4	1	1		08/03/15 15:19
6	I2_080315-06	WG533569-04 STD \#3	1	1		08/03/15 15:37
7	I2_080315-07	WG533569-05 STD \#2	1	1		08/03/15 15:56
8	I2_080315-08	WG533569-06 STD \#1	1	1		08/03/15 16:14
9	I2_080315-09	WG533569-07 SSCV	1	1		08/03/15 16:32
10	I2_080315-10	LCRV Level \#6	1	1		08/03/15 16:50
11	I2_080315-11	LCRV Level \#2	1	1		08/03/15 17:08
12	I2_080315-12	LCRV Eluent Blank	1	1		08/03/15 17:27
13	I2_080315-13	END	1	1		08/03/15 17:45

Comments

Seq.	Rerun	Dil.	Reason	Analytes

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC2 Dataset: 081915 IC2.SEQ
Analyst1: ALS Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 17

Maintenance Log ID: 53364 Syringe Filter Lot#: 00198584
Eluent ID#: RGT34503
Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
Workgroups: WG535677
Internal STD: NA Surrogate STD: NA Calibration STD STD71545 (08/03/15)
CCV STD: STD71545 LCS STD: STD71546 MS/MSD STD: STD71546

Comments: Fractions L15080992-01,05, and 09 were analyzed at dilutions due to CL and/or SO4 concentrations exceeding 200ppm.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I2_081915-01	ELUENT	1	1		08/19/15 13:18
2	I2_081915-02	DI WATER	1	1		08/19/15 13:36
3	I2_081915-03	WG535679-01 ANION CCV	1	1		08/19/15 13:54
4	I2_081915-04	WG535679-02 ANION CCB	1	1		08/19/15 14:12
5	I2_081915-05	WG535677-01 ANION BLANK	1	1		08/19/15 14:30
6	I2_081915-06	WG535677-02 ANION LCS	1	1		08/19/15 14:48
7	I2_081915-07	L15080921-01 (F)	2	1		08/19/15 15:07
8	I2_081915-08	L15080922-01 (F)	2	1		08/19/15 15:25
9	I2_081915-09	L15080992-01 1/5 (CL,NO2,NO3,SO4)	1	5		08/19/15 15:43
10	I2_081915-10	L15080992-01 1/50 (CL,NO2,NO3,SO4)	1	50		08/19/15 16:01
11	I2_081915-11	L15080992-03 (CL,NO2,NO3,SO4)	1	1		08/19/15 16:20
12	I2_081915-12	L15080992-03 1/2 (CL,NO2,NO3,SO4)	1	2		08/19/15 16:38
13	I2_081915-13	L15080992-05 1/5 (CL,NO2,NO3,SO4)	1	5		08/19/15 16:56
14	I2_081915-14	L15080992-05 1/10 (CL,NO2,NO3,SO4) RR CL	1	10		08/19/15 17:14
15	I2_081915-15	WG535679-03 ANION CCV	1	1		08/19/15 17:32
16	I2_081915-16	WG535679-04 ANION CCB	1	1		08/19/15 17:51
17	I2_081915-17	L15080992-07 (CL,NO2,NO3,SO4)	1	1		08/19/15 18:09
18	I2_081915-18	L15080992-07 1/10 (CL,NO2,NO3,SO4)	1	10		08/19/15 18:27
19	I2_081915-19	L15080992-09 1/5 (CL,NO2,NO3,SO4)	1	5		08/19/15 18:45
20	I2_081915-20	L15080992-09 1/20 (CL,NO2,NO3,SO4)	1	20		08/19/15 19:03
21	I2_081915-21	L15080995-01 (CL,NO3,SO4)	1	1		08/19/15 19:22
22	I2_081915-22	L15080995-02 (CL,NO3,SO4)	1	1		08/19/15 19:40
23	I2_081915-23	L15080995-04 (CL,NO3,SO4) REF	1	1		08/19/15 19:58
24	I2_081915-24	WG535677-04 DUP 0995-04	1	1		08/19/15 20:16
25	I2_081915-25	WG535677-05 MS	1	1		08/19/15 20:34
26	I2_081915-26	WG535677-06 MSD	1	1		08/19/15 20:53
27	I2_081915-27	WG535679-05 ANION CCV	1	1		08/19/15 21:11
28	I2_081915-28	WG535679-06 ANION CCB	1	1		08/19/15 21:29
29	I2_081915-29	L15081012-01 (CL,SO4)	1	1		08/19/15 21:47
30	I2_081915-30	L15081012-02 (CL,SO4)	1	1		08/19/15 22:05
31	I2_081915-31	L15080912-01 1/10,000 (CL,BR,SO4)	1	10000		08/19/15 22:24
32	I2_081915-32	L15080914-01 1/10,000 (CL,BR,SO4)	1	10000		08/19/15 22:42
33	I2_081915-33	WG535679-07 ANION CCV	1	1		08/19/15 23:00

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC2 Dataset: 081915 IC2.SEQ

Analyst1: ALS Analyst2: NA

Method: 300/9056 SOP: IC01 Rev: 17

Maintenance Log ID: 53364 Syringe Filter Lot#: 00198584

Eluent ID#: RGT34503

Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM

Workgroups: WG535677

Internal STD: NA Surrogate STD: NA STD71545 (08/03/15)

CCV STD: STD71545 LCS STD: STD71546 STD71546

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	I2_081915-34	WG535679-08 ANION CCB	1	1		08/19/15 23:18
35	I2_081915-35	END	1	1		08/19/15 23:37

Comments

Seq.	Rerun	Dil.	Reason	Analytes
14	X	100	Over Calibration Range	CL
	L15080992-05 1/10 (CL,NO2,NO3,SO4) RR CL			
31				
	L15080912-01 1/10,000 (CL,BR,SO4) was analyzed at a dilution due to high CL and heavy precipitant reactions.			
32				
	L15080914-01 1/10,000 (CL,BR,SO4) was analyzed at a dilution due to high CL and heavy precipitant reactions.			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC2 Dataset: 082015 IC2.SEQ
Analyst1: ALS Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 17

Maintenance Log ID: 53367 Syringe Filter Lot#: 00198584
Eluent ID#: RGT34523
Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
Workgroups: WG535886 WG535887
Internal STD: NA Surrogate STD: NA Calibration STD STD71545 (08/03/15)
CCV STD: STD71545 LCS STD: STD71546 MS/MSD STD: STD71546

Comments: Fractions L15081073-01 and -03 were analyzed at dilutions only due to CL and/or SO4 concentrations exceeding 200ppm.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I2_082015-01	ELUENT	1	1		08/20/15 13:53
2	I2_082015-02	DI WATER	1	1		08/20/15 14:11
3	I2_082015-03	WG535960-01 ANION CCV	1	1		08/20/15 14:29
4	I2_082015-04	WG535960-02 ANION CCB	1	1		08/20/15 14:47
5	I2_082015-05	WG535886-01 SOIL BLANK	18	1		08/20/15 15:06
6	I2_082015-06	WG535886-02 SOIL LCS	18	1		08/20/15 15:24
7	I2_082015-07	WG535886-03 SOIL LCS DUP	18	1		08/20/15 15:42
8	I2_082015-08	L15080896-01 1/3 (CL) RR CL	7	3		08/20/15 16:00
9	I2_082015-09	L15080896-02 1/2 (CL)	7	2		08/20/15 16:18
10	I2_082015-10	L15080896-03 1/2 (CL)	7	2		08/20/15 16:37
11	I2_082015-11	L15080896-04 1/3 (CL) RR CL	7	3		08/20/15 16:55
12	I2_082015-12	L15080896-05 (CL)	7	1		08/20/15 17:13
13	I2_082015-13	L15080896-06 (CL)	7	1		08/20/15 17:31
14	I2_082015-14	L15080965-01 1/2 (CL)	7	2		08/20/15 17:50
15	I2_082015-15	WG535960-03 ANION CCV	1	1		08/20/15 18:08
16	I2_082015-16	WG535960-04 ANION CCB	1	1		08/20/15 18:26
17	I2_082015-17	L15080965-02 (CL)	7	1		08/20/15 18:44
18	I2_082015-18	RINSE	1	1		08/20/15 19:02
19	I2_082015-19	WG535887-01 ANION BLANK	1	1		08/20/15 19:21
20	I2_082015-20	WG535887-02 ANION LCS	1	1		08/20/15 19:39
21	I2_082015-21	L15081073-01 1/5 (CL,NO2,NO3,SO4)	1	5		08/20/15 19:57
22	I2_082015-22	L15081073-01 1/20 (CL,NO2,NO3,SO4) RR CL	1	20		08/20/15 20:15
23	I2_082015-23	L15081073-03 1/5 (CL,NO2,NO3,SO4)	1	5		08/20/15 20:33
24	I2_082015-24	L15081073-03 1/20 (CL,NO2,NO3,SO4)	1	20		08/20/15 20:52
25	I2_082015-25	L15080992-05 1/100 CL	1	100		08/20/15 21:10
26	I2_082015-26	WG535759 FLUID BLANK	1	1		08/20/15 21:28
27	I2_082015-27	WG535960-05 ANION CCV	1	1		08/20/15 21:46
28	I2_082015-28	WG535960-06 ANION CCB	1	1		08/20/15 22:04
29	I2_082015-29	L15080896-01 1/2 (CL)	18	2		08/20/15 22:23
30	I2_082015-30	L15080896-02 (CL)	18	1		08/20/15 22:41
31	I2_082015-31	L15080896-03 (CL)	18	1		08/20/15 22:59
32	I2_082015-32	L15080896-04 1/2 (CL)	18	2		08/20/15 23:17
33	I2_082015-33	L15080896-05 (CL)	18	1		08/20/15 23:36

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC2 Dataset: 082015 IC2.SEQ
Analyst1: ALS Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 17

Maintenance Log ID: 53367 Syringe Filter Lot#: 00198584
Eluent ID#: RGT34523
Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
Workgroups: WG535886 WG535887
Internal STD: NA Surrogate STD: NA STD71545 (08/03/15)
CCV STD: STD71545 LCS STD: STD71546 STD71546

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	I2_082015-34	L15080896-06 (CL) REF	18	1		08/20/15 23:54
35	I2_082015-35	WG535887-04 DUP 0896-06	18	1		08/21/15 00:12
36	I2_082015-36	WG535887-05 MS	18	1		08/21/15 00:30
37	I2_082015-37	WG535887-06 MSD	18	1		08/21/15 00:48
38	I2_082015-38	WG535960-07 ANION CCV	1	1		08/21/15 01:07
39	I2_082015-39	WG535960-08 ANION CCB	1	1		08/21/15 01:25
40	I2_082015-40	END	1	1		08/21/15 01:43

Comments

Seq.	Rerun	Dil.	Reason	Analytes
8	X	5	Over Calibration Range	CL
	L15080896-01 1/3 (CL) RR CL			
11	X	5	Over Calibration Range	CL
	L15080896-04 1/3 (CL) RR CL			
22	X	50	Over Calibration Range	CL
	L15081073-01 1/20 (CL,NO2,NO3,SO4) RR CL			

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Microbac Laboratories Inc.

Data Checklist

Date: 03-AUG-2015
Analyst: AED
Analyst: NA
Method: 9056/300
Instrument: IC2
Curve Workgroup: NA
Runlog ID: 69606
Analytical Workgroups: WG533569 IC2 ICAL

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	NA
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	NA
Recoveries	NA
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	NA
TCL hits	NA
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	NA
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	AED
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
04-AUG-2015

Secondary Reviewer:
19-AUG-2015

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-19-2015 11:38:56

Microbac Laboratories Inc.

Data Checklist

Date: 19-AUG-2015
Analyst: ALS
Analyst: NA
Method: 9056/300
Instrument: IC2
Curve Workgroup: NA
Runlog ID: 69926
Analytical Workgroups: 08-0912,0914,0921,0922,0992,0995,1012

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	X
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	X
Check for completeness	X
Primary Reviewer	ALS
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 20-AUG-2015

Secondary Reviewer: 20-AUG-2015

CHECKLIST1 - Modified 03/05/2008

Generated: AUG-20-2015 11:18:36

Microbac Laboratories Inc.

Data Checklist

Date: 20-AUG-2015
Analyst: ALS
Analyst: NA
Method: 9056/300
Instrument: IC2
Curve Workgroup: NA
Runlog ID: 69957
Analytical Workgroups: 08-0896 (300/9056),0965,0992,1073

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	X
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	X
Check for completeness	X
Primary Reviewer	ALS
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 21-AUG-2015

Secondary Reviewer: 21-AUG-2015

CHECKLIST1 - Modified 03/05/2008

Generated: AUG-21-2015 11:46:52

Microbac Laboratories Inc.

00647160

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 9056 AAB#: WG535677

Login Number: L15080992

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW22-081815	01	08/18/15					08/19/2015	1.2	2		08/19/15	1.3	2	
50WW22-081815	01	08/18/15					08/19/2015	1.2	2		08/19/15	1.3	2	
50WW25-081815	03	08/18/15					08/19/2015	1.1	2		08/19/15	1.3	2	
50WW25-081815	03	08/18/15					08/19/2015	1.1	2		08/19/15	1.3	2	
50WW12-081815	05	08/18/15					08/19/2015	1	2		08/19/15	1.2	2	
50WW06-081815	07	08/18/15					08/19/2015	.9	2		08/19/15	1.2	2	
50WW06-081815	07	08/18/15					08/19/2015	.9	2		08/19/15	1.2	2	
50WW11-081815	09	08/18/15					08/19/2015	.9	2		08/19/15	1.2	2	
50WW11-081815	09	08/18/15					08/19/2015	.9	2		08/19/15	1.2	2	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4343321
Report generated 08/21/2015 13:15

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 9056 AAB#: WG535887

Login Number: L15080992

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW12-081815	05	08/18/15					08/20/2015	2.1	2	*	08/20/15	2.4	2	*

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4343321
Report generated 08/21/2015 13:15

METHOD BLANK SUMMARY

Login Number: L15080992
Blank File ID: I2_081915-05
Prep Date: 08/19/15 12:00
Analyzed Date: 08/19/15 14:30
Analyst: ALS

Work Group: WG535677
Blank Sample ID: WG535677-01
Instrument ID: IC2
Method: 9056

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG535677-02	I2_081915-06	08/19/15 14:48	01
50WW22-081815	L15080992-01	I2_081915-09	08/19/15 15:43	DL01
50WW22-081815	L15080992-01	I2_081915-10	08/19/15 16:01	DL02
50WW25-081815	L15080992-03	I2_081915-11	08/19/15 16:20	01
50WW25-081815	L15080992-03	I2_081915-12	08/19/15 16:38	DL01
50WW12-081815	L15080992-05	I2_081915-13	08/19/15 16:56	DL01
50WW06-081815	L15080992-07	I2_081915-17	08/19/15 18:09	01
50WW06-081815	L15080992-07	I2_081915-18	08/19/15 18:27	DL01
50WW11-081815	L15080992-09	I2_081915-19	08/19/15 18:45	DL01
50WW11-081815	L15080992-09	I2_081915-20	08/19/15 19:03	DL02
DUP	WG535677-04	I2_081915-24	08/19/15 20:16	01

Report Name: BLANK_SUMMARY
PDF File ID: 4343322
Report generated 08/21/2015 13:15

METHOD BLANK SUMMARY

Login Number: L15080992
Blank File ID: I2_082015-19
Prep Date: 08/20/15 13:00
Analyzed Date: 08/20/15 19:21
Analyst: ALS

Work Group: WG535887
Blank Sample ID: WG535887-01
Instrument ID: IC2
Method: 9056

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG535887-02	I2_082015-20	08/20/15 19:39	01
50WW12-081815	L15080992-05	I2_082015-25	08/20/15 21:10	DL02
DUP	WG535887-04	I2_082015-35	08/21/15 00:12	01

Report Name: BLANK_SUMMARY
PDF File ID: 4343322
Report generated 08/21/2015 13:15

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15080992 Prep Date: 08/19/15 12:00 Sample ID: WG535677-01
Instrument ID: IC2 Run Date: 08/19/15 14:30 Prep Method: 9056
File ID: I2 081915-05 Analyst: ALS Method: 9056
Workgroup (AAB#): WG535677 Matrix: Water Units: mg/L
Contract #: Cal ID: IC2-03-AUG-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Chloride	0.100	0.400	0.100	1	U
Nitrate	0.100	0.400	0.100	1	U
Nitrite	0.100	0.400	0.100	1	U
Sulfate	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4343323
21-AUG-2015 13:15

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15080992 Prep Date: 08/20/15 13:00 Sample ID: WG535887-01
Instrument ID: IC2 Run Date: 08/20/15 19:21 Prep Method: 9056
File ID: I2 082015-19 Analyst: ALS Method: 9056
Workgroup (AAB#): WG535887 Matrix: Water Units: mg/L
Contract #: Cal ID: IC2 - 03-AUG-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Chloride	0.100	0.400	0.100	1	U
Nitrate	0.100	0.400	0.100	1	U
Nitrite	0.100	0.400	0.100	1	U
Sulfate	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4343323
21-AUG-2015 13:15

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15080992 Run Date: 08/19/2015 Sample ID: WG535677-02
Instrument ID: IC2 Run Time: 14:48 Prep Method: 9056
File ID: I2 081915-06 Analyst: ALS Method: 9056
Workgroup (AAB#): WG535677 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD71546 Cal ID: IC2 - 03-AUG-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Chloride	8.00	8.15	102	90 - 110	
Nitrate	5.42	5.25	97.0	90 - 110	
Nitrite	4.87	4.92	101	90 - 110	
Sulfate	40.0	38.9	97.3	90 - 110	

LCS - Modified 03/06/2008
PDF File ID: 4343324
Report generated: 08/21/2015 13:15

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15080992 Run Date: 08/20/2015 Sample ID: WG535887-02
Instrument ID: IC2 Run Time: 19:39 Prep Method: 9056
File ID: I2 082015-20 Analyst: ALS Method: 9056
Workgroup (AAB#): WG535887 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD71546 Cal ID: IC2 - 03-AUG-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Chloride	8.00	8.28	103	90 - 110	
Nitrate	5.42	5.33	98.4	90 - 110	
Nitrite	4.87	5.07	104	90 - 110	
Sulfate	40.0	39.5	98.7	90 - 110	

LCS - Modified 03/06/2008
PDF File ID: 4343324
Report generated: 08/21/2015 13:15

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L15080992
Analytical Method: 9056
ICAL Workgroup: WG533569

Instrument ID: IC2
Initial Calibration Date: 03-AUG-15 16:14
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Chloride		5.425	8.21	0.99800	
Nitrate		2.145	11.5	0.99700	
Nitrite		2.773	7.31	1.00000	
Sulfate		7.062	16.0	0.99600	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4343325
Report generated 08/21/2015 13:15

Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number: L15080992
Analytical Method: 9056
Instrument ID: IC2
Initial Calibration Date: 03-AUG-15 16:14
Column ID: F

Analyte	WG533569-01			WG533569-02			WG533569-03		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	24.0	5.09400000	4.711	12.0	2.31500000	5.184	8.00	1.45300000	5.506
Nitrate	16.3	9.09800000	1.788	8.13	4.10300000	1.982	5.42	2.52000000	2.151
Nitrite	14.6	5.74700000	2.543	7.31	2.80200000	2.608	4.87	1.78800000	2.724
Sulfate	120	21.5820000	5.560	60.0	9.61600000	6.240	40.0	5.87200000	6.812

INT_CAL - Modified 03/06/2008
PDF File ID: 4343325
Report generated 08/21/2015 13:15

Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number: L15080992
Analytical Method: 9056
Instrument ID: IC2
Initial Calibration Date: 03-AUG-15 16:14
Column ID: F

Analyte	WG533569-04			WG533569-05			WG533569-06		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	4.00	0.716000000	5.587	1.00	0.176000000	5.682	0.200	0.0340000000	5.882
Nitrate	2.71	1.22300000	2.217	0.678	0.300000000	2.258	0.134	0.0540000000	2.473
Nitrite	2.44	0.889000000	2.740	0.609	0.210000000	2.900	0.122	0.0390000000	3.123
Sulfate	20.0	2.74900000	7.275	5.00	0.636000000	7.862	1.00	0.116000000	8.621

INT_CAL - Modified 03/06/2008
PDF File ID: 4343325
Report generated 08/21/2015 13:15

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15080992 Run Date: 08/03/2015 Sample ID: WG533569-07
Instrument ID: IC2 Run Time: 16:32 Method: 9056
File ID: I2 080315-09 Analyst: AED QC Key: DOD4
ICal Workgroup: WG533569 Cal ID: IC2 - 03-AUG-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloride		8.00	7.48	mg/L	5.38	6.60	10	
Nitrate		5.42	5.03	mg/L	2.08	7.20	10	
Nitrite		4.87	4.72	mg/L	2.70	3.10	10	
Sulfate		40.0	36.7	mg/L	6.63	8.40	10	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4343326
Report generated 08/21/2015 13:15

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15080992
Run Date: 08/19/2015
Sample ID: WG535679-02
Instrument ID: IC2
Run Time: 14:12
Method: 9056
File ID: I2 081915-04
Analyst: ALS
Units: mg/L
Workgroup (AAB#): WG535677
Cal ID: IC2 - 03-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4343328
Report generated 08/21/2015 13:16

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15080992
Run Date: 08/19/2015
Sample ID: WG535679-04
Instrument ID: IC2
Run Time: 17:51
Method: 9056
File ID: I2 081915-16
Analyst: ALS
Units: mg/L
Workgroup (AAB#): WG535677
Cal ID: IC2 - 03-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4343328
Report generated 08/21/2015 13:16

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15080992
Run Date: 08/19/2015
Sample ID: WG535679-06
Instrument ID: IC2
Run Time: 21:29
Method: 9056
File ID: I2 081915-28
Analyst: ALS
Units: mg/L
Workgroup (AAB#): WG535677
Cal ID: IC2 - 03-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4343328
Report generated 08/21/2015 13:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15080992
Run Date: 08/20/2015
Sample ID: WG535960-04
Instrument ID: IC2
Run Time: 18:26
Method: 9056
File ID: I2 082015-16
Analyst: ALS
Units: mg/L
Workgroup (AAB#): WG535887
Cal ID: IC2 - 03-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4343328
Report generated 08/21/2015 13:16

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15080992
Run Date: 08/20/2015
Sample ID: WG535960-06
Instrument ID: IC2
Run Time: 22:04
Method: 9056
File ID: I2 082015-28
Analyst: ALS
Units: mg/L
Workgroup (AAB#): WG535887
Cal ID: IC2 - 03-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4343328
Report generated 08/21/2015 13:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080992
Run Date: 08/19/2015
Sample ID: WG535679-01
Instrument ID: IC2
Run Time: 13:54
Method: 9056
File ID: I2 081915-03
Analyst: ALS
QC Key: DOD4
Workgroup (AAB#): WG535677
Cal ID: IC2 - 03-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.12	mg/L	4.95	1.54	10	
Nitrate		5.42	5.24	mg/L	2.00	3.35	10	
Nitrite		4.87	4.81	mg/L	2.64	1.22	10	
Sulfate		40.0	38.7	mg/L	6.27	3.20	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4343327
Report generated 08/21/2015 13:15

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080992
Run Date: 08/19/2015
Sample ID: WG535679-03
Instrument ID: IC2
Run Time: 17:32
Method: 9056
File ID: I2 081915-15
Analyst: ALS
QC Key: DOD4
Workgroup (AAB#): WG535677
Cal ID: IC2 - 03-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.14	mg/L	4.94	1.76	10	
Nitrate		5.42	5.26	mg/L	1.99	3.04	10	
Nitrite		4.87	4.88	mg/L	2.61	0.259	10	
Sulfate		40.0	39.0	mg/L	6.23	2.58	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4343327
Report generated 08/21/2015 13:15

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080992
Run Date: 08/19/2015
Sample ID: WG535679-05
Instrument ID: IC2
Run Time: 21:11
Method: 9056
File ID: I2 081915-27
Analyst: ALS
QC Key: DOD4
Workgroup (AAB#): WG535677
Cal ID: IC2 - 03-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.13	mg/L	4.94	1.66	10	
Nitrate		5.42	5.28	mg/L	1.98	2.65	10	
Nitrite		4.87	5.04	mg/L	2.52	3.46	10	
Sulfate		40.0	39.2	mg/L	6.20	2.11	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4343327
Report generated 08/21/2015 13:15

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080992
Run Date: 08/20/2015
Sample ID: WG535960-03
Instrument ID: IC2
Run Time: 18:08
Method: 9056
File ID: I2 082015-15
Analyst: ALS
QC Key: DOD4
Workgroup (AAB#): WG535887
Cal ID: IC2 - 03-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.34	mg/L	4.82	4.21	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4343327
Report generated 08/21/2015 13:15

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15080992
Run Date: 08/20/2015
Sample ID: WG535960-05
Instrument ID: IC2
Run Time: 21:46
Method: 9056
File ID: I2 082015-27
Analyst: ALS
QC Key: DOD4
Workgroup (AAB#): WG535887
Cal ID: IC2 - 03-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.30	mg/L	4.85	3.74	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4343327
Report generated 08/21/2015 13:15

2.4.1.3 Sample Data

9 L15080992-01 1/5 (CL,NO2,NO3,SO4)

1,5 ALS (CL,SO4>200PPM)

Sample Name:	**L15080992-01 1/5 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**25.0**
Vial Number:	**9**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/19/2015 15:43**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

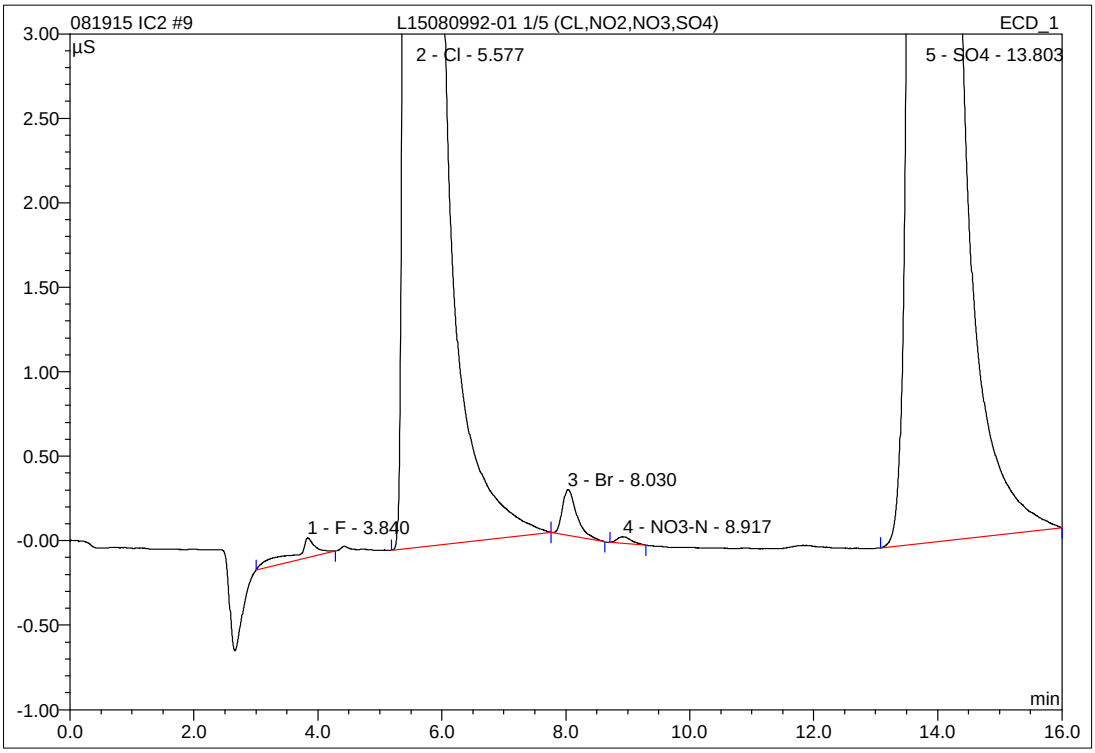

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.84	F	0.117	0.053	0.07	0.156	BMB
2	5.58	Cl	216.316	52.438	70.82	261.410	BMB
3	8.03	Br	0.271	0.073	0.10	1.017	bMB
4	8.92	NO3-N	0.040	0.011	0.01	0.085	BMB
5	13.80	SO4	48.606	21.464	28.99	128.771	BMB
Total:			265.350	74.039	100.00	391.440	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

10 L15080992-01 1/50 (CL,NO2,NO3,SO4)

1,50 ALS (CL,SO4>ICAL)

Sample Name:	**L15080992-01 1/50 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**25.0**
Vial Number:	**10**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/19/2015 16:01**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

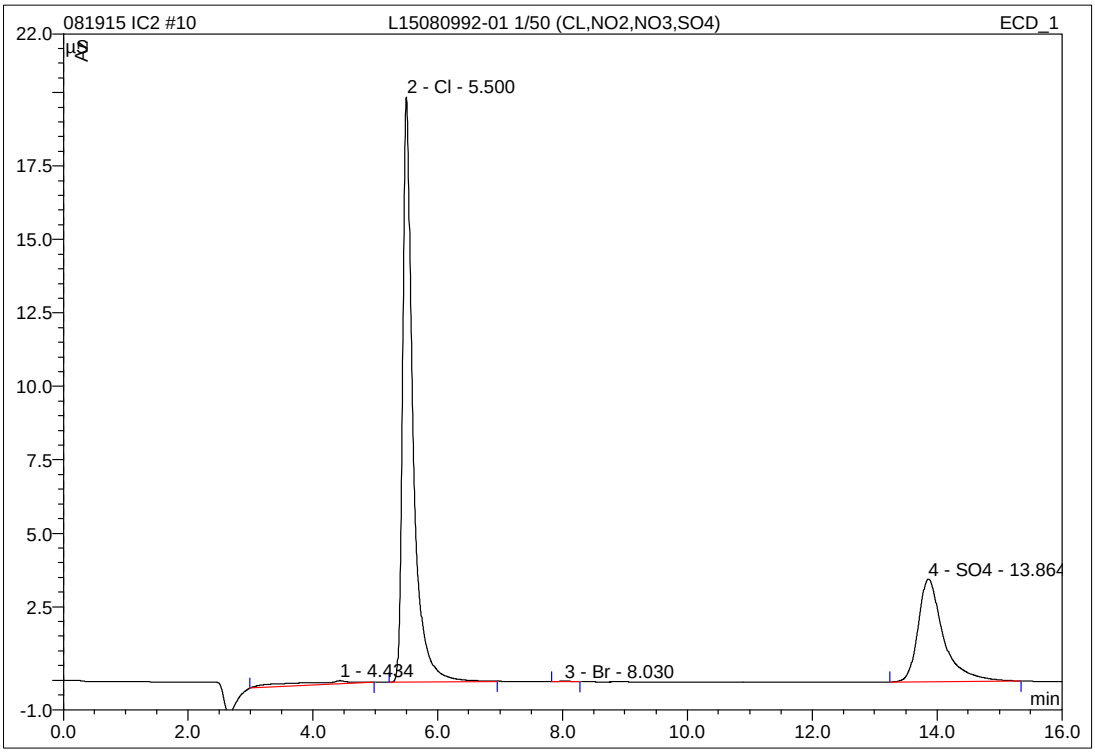

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	4.43	n.a.	0.110	0.140	2.49	n.a.	BMB
2	5.50	Cl	19.904	3.849	68.32	19.250	BMB
3	8.03	Br	0.025	0.006	0.10	0.111	BMB
4	13.86	SO4	3.498	1.639	29.09	10.417	BMB
Total:			23.537	5.633	100.00	29.777	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

11 L15080992-03 (CL,NO2,NO3,SO4)

1,1 ALS

Sample Name:	**L15080992-03 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**25.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/19/2015 16:20**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

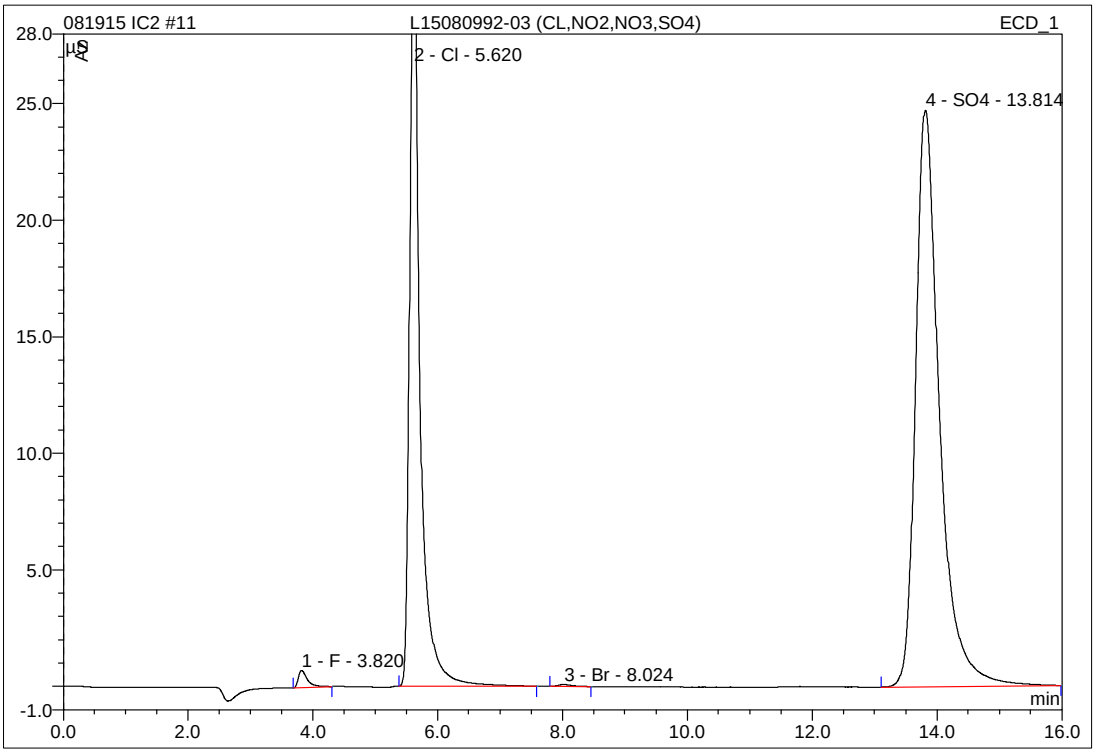

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.82	F	0.738	0.127	0.72	0.393	BMB
2	5.62	Cl	36.101	6.462	36.65	32.276	BMB
3	8.02	Br	0.079	0.021	0.12	0.312	BMB
4	13.81	SO4	24.722	11.025	62.52	66.447	BMB
Total:			61.640	17.634	100.00	99.429	

12 L15080992-03 1/2 (CL,NO2,NO3,SO4)

1,2 ALS (CL>ICAL)

Sample Name:	**L15080992-03 1/2 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**25.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/19/2015 16:38**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

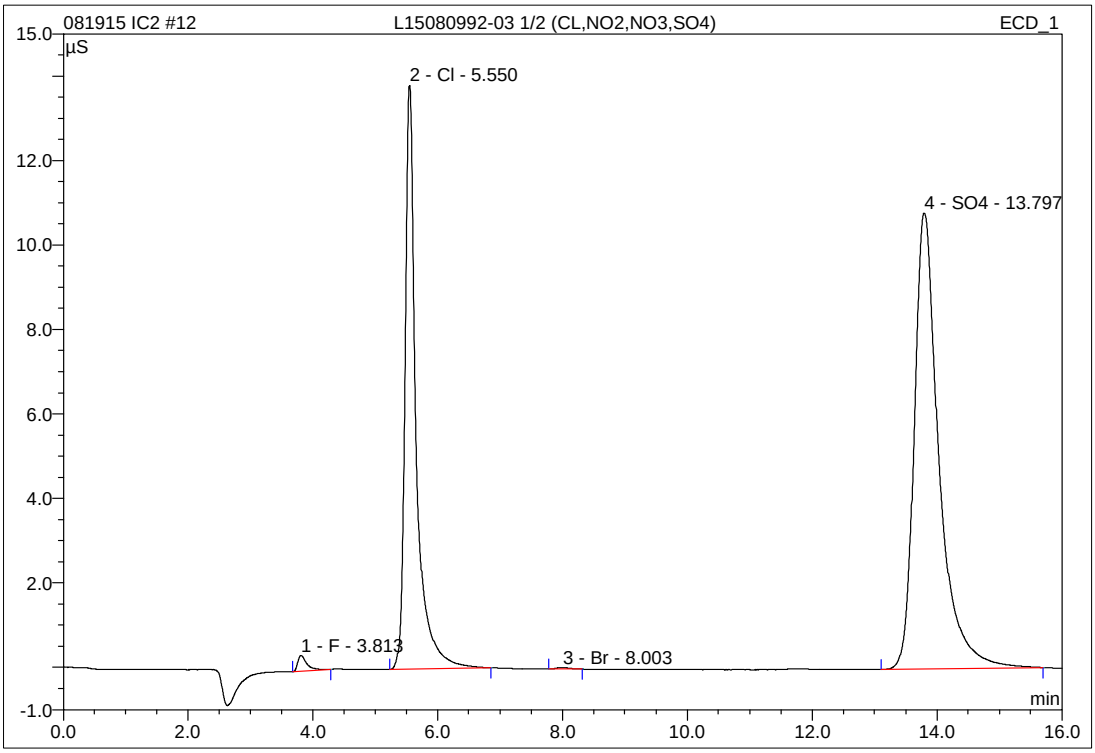

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.81	F	0.370	0.062	0.79	0.186	BMB
2	5.55	Cl	13.825	2.825	36.02	14.149	BMB
3	8.00	Br	0.037	0.009	0.12	0.159	BMB
4	13.80	SO4	10.795	4.947	63.07	30.164	BMB
Total:			25.026	7.843	100.00	44.658	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

13 L15080992-05 1/5 (CL,NO2,NO3,SO4)

1,5 ALS (SO4>200PPM)

Sample Name:	**L15080992-05 1/5 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**25.0**
Vial Number:	**13**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/19/2015 16:56**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

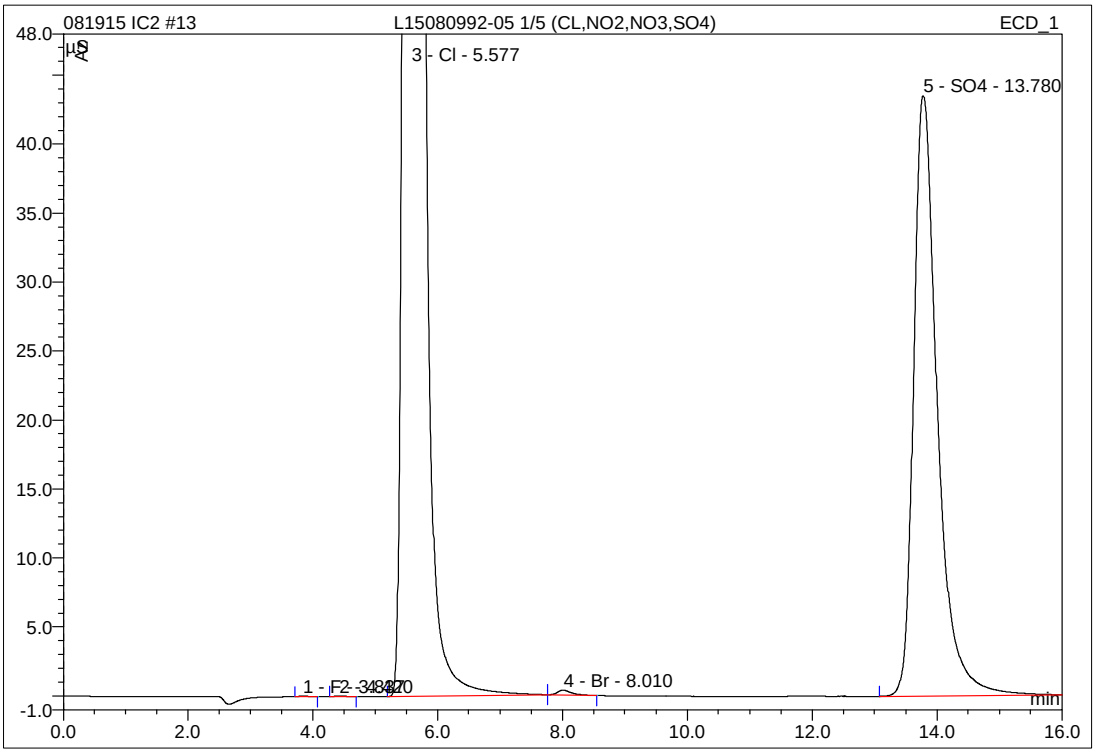

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.84	F	0.068	0.010	0.01	0.018	BMB
2	4.42	n.a.	0.051	0.009	0.01	n.a.	BMB
3	5.58	Cl	232.480	68.077	77.91	339.355	BMb
4	8.01	Br	0.343	0.090	0.10	1.250	bMB
5	13.78	SO4	43.516	19.188	21.96	115.182	BMB
Total:			276.458	87.375	100.00	455.805	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

25 L15080992-05 1/100 CL

1,100 ALS (CL>ICAL)

Sample Name:	**L15080992-05 1/100 CL**	*Injection Volume:*	**25.0**
Vial Number:	**25**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/20/2015 21:10**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

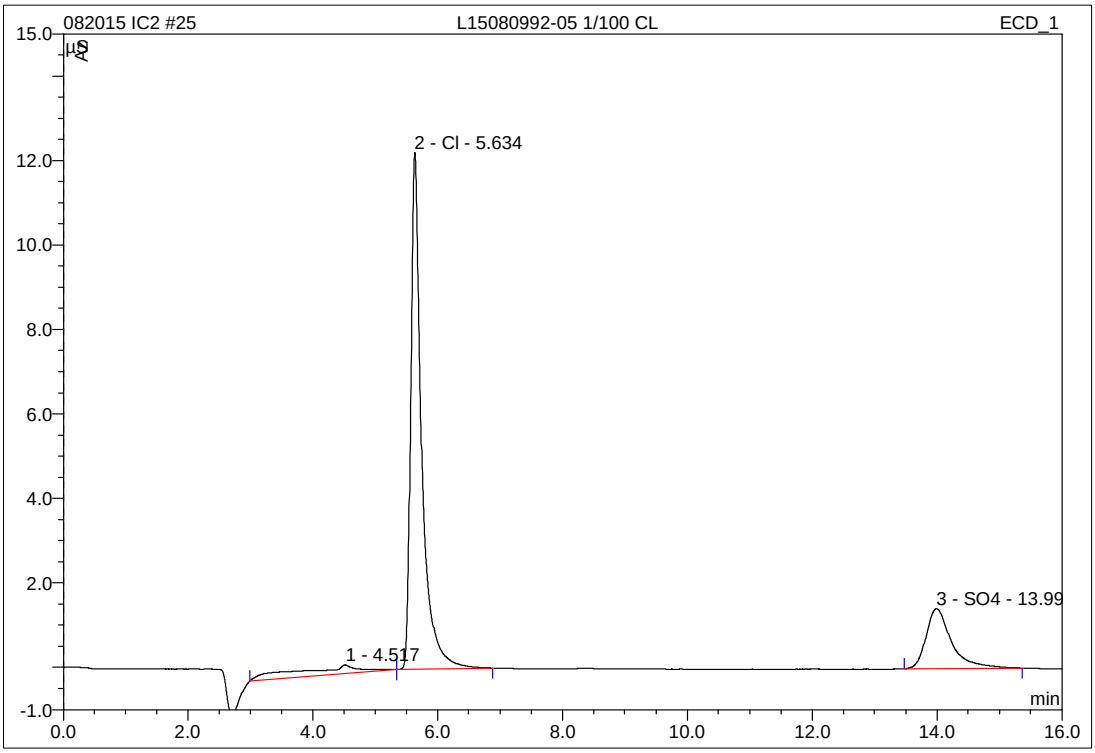

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	4.52	n.a.	0.202	0.250	7.32	n.a.	BMB
2	5.63	Cl	12.234	2.493	73.03	12.496	bMB
3	13.99	SO4	1.417	0.671	19.65	4.638	BMB
Total:			13.854	3.414	100.00	17.133	

17 L15080992-07 (CL,NO2,NO3,SO4)

1,1 ALS

Sample Name:	**L15080992-07 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**25.0**
Vial Number:	**17**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/19/2015 18:09**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

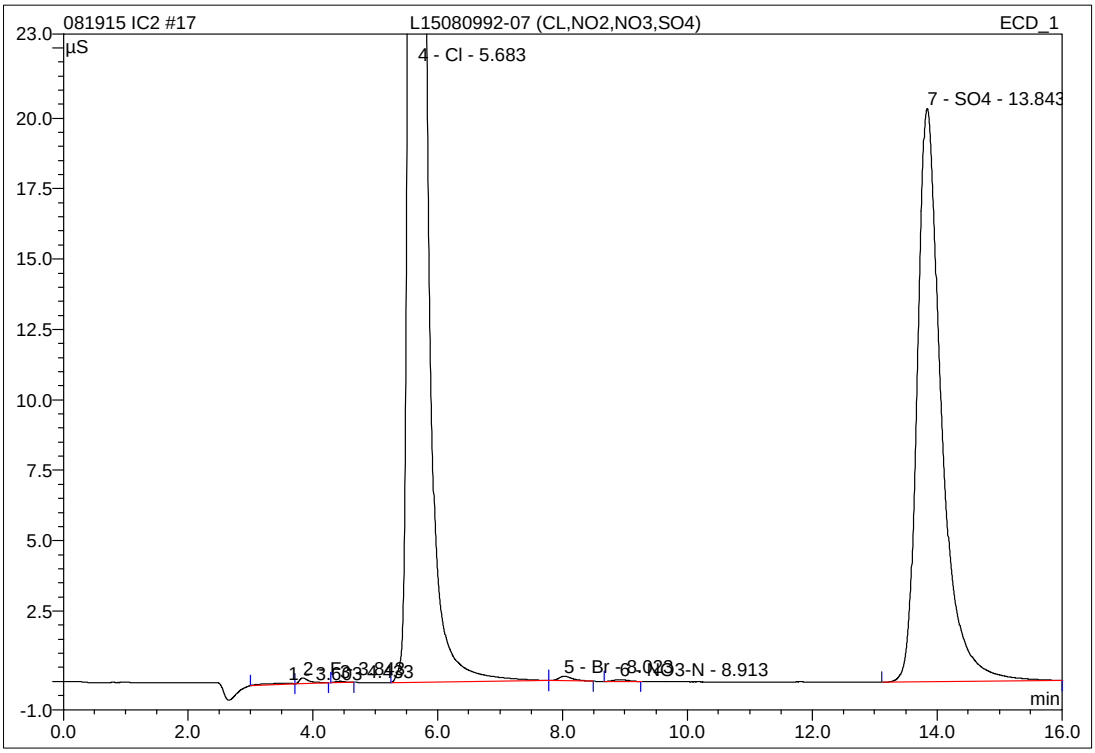

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.60	n.a.	0.025	0.021	0.06	n.a.	BMB
2	3.84	F	0.191	0.033	0.09	0.091	BMB
3	4.43	n.a.	0.042	0.007	0.02	n.a.	BMB
4	5.68	Cl	128.858	26.334	73.99	131.312	BMB
5	8.02	Br	0.155	0.039	0.11	0.566	BMB
6	8.91	NO3-N	0.065	0.017	0.05	0.098	BMB
7	13.84	SO4	20.361	9.142	25.68	55.208	BMB
Total:			149.697	35.593	100.00	187.275	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

18 L15080992-07 1/10 (CL,NO2,NO3,SO4)

1,10 ALS (CL>ICAL)

Sample Name:	**L15080992-07 1/10 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**25.0**
Vial Number:	**18**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/19/2015 18:27**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

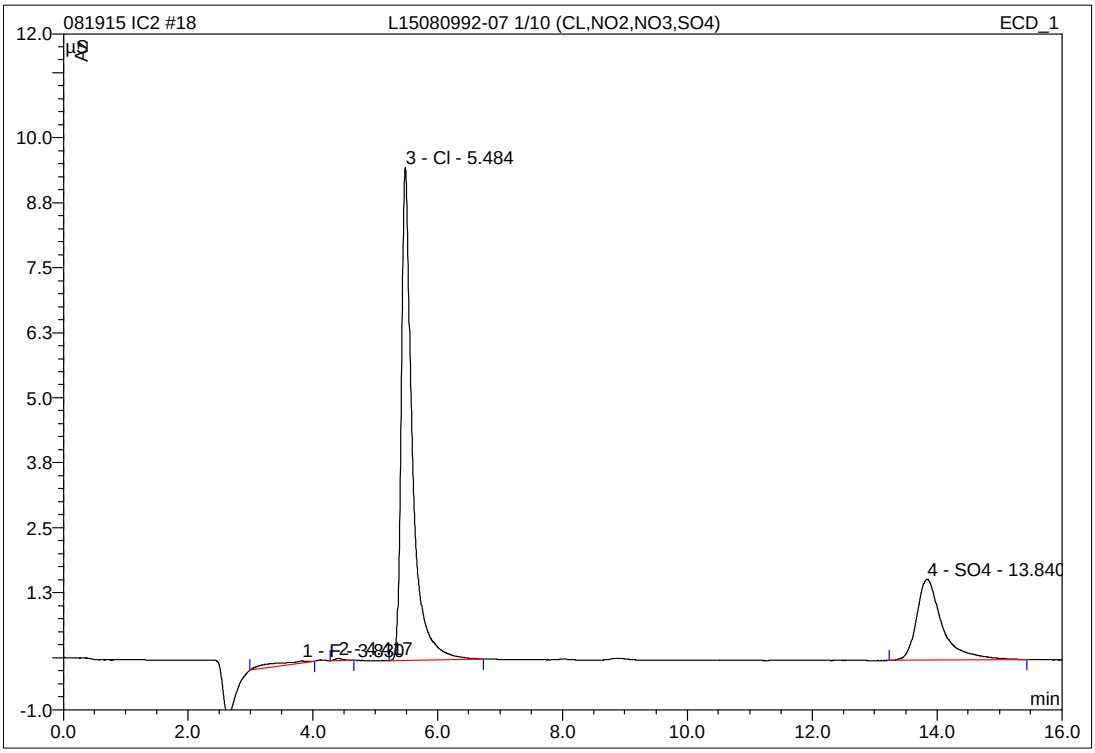

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.83	F	0.036	0.043	1.58	0.125	BMB
2	4.42	n.a.	0.037	0.006	0.21	n.a.	BMB
3	5.48	Cl	9.475	1.964	71.33	9.858	BMB
4	13.84	SO4	1.555	0.740	26.88	5.051	BMB
Total:			11.103	2.754	100.00	15.035	

19 L15080992-09 1/5 (CL,NO2,NO3,SO4)

1,5 ALS (CL,SO4>200PPM)

Sample Name:	**L15080992-09 1/5 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**25.0**
Vial Number:	**19**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/19/2015 18:45**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

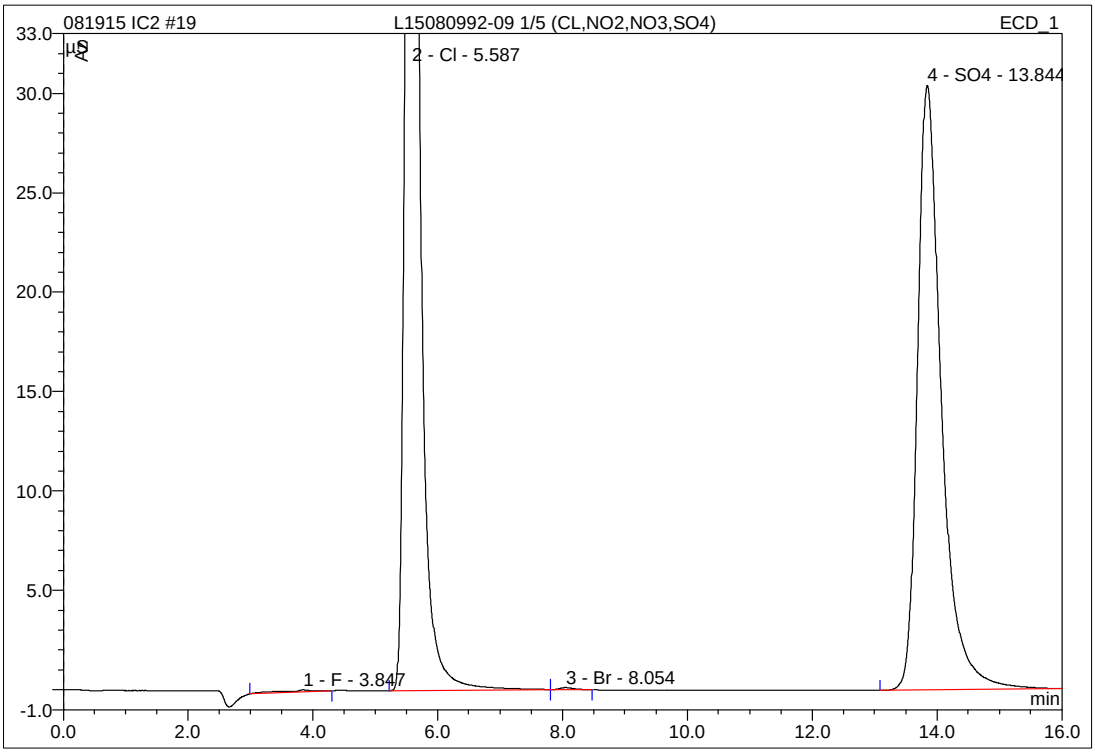

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.85	F	0.097	0.061	0.19	0.182	BMB
2	5.59	Cl	75.209	18.360	57.36	91.571	BMB
3	8.05	Br	0.103	0.027	0.08	0.396	BMB
4	13.84	SO4	30.411	13.559	42.36	81.575	BMB
Total:			105.820	32.006	100.00	173.724	

20 L15080992-09 1/20 (CL,NO2,NO3,SO4)

1,20 ALS (CL>ICAL)

Sample Name:	**L15080992-09 1/20 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**25.0**
Vial Number:	**20**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/19/2015 19:03**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

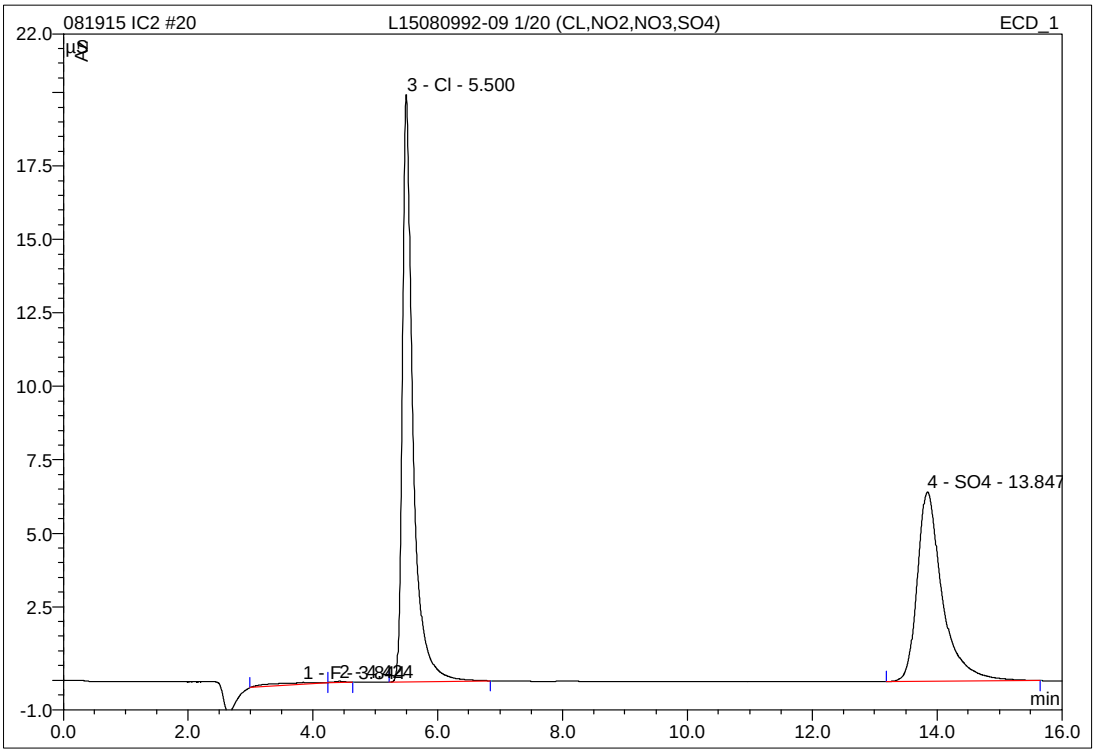

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.84	F	0.058	0.062	0.89	0.186	BMB
2	4.42	n.a.	0.036	0.006	0.08	n.a.	bMB
3	5.50	Cl	19.982	3.923	56.06	19.623	BMB
4	13.85	SO4	6.447	3.007	42.97	18.584	BMB
Total:			26.522	6.998	100.00	38.393	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

2.4.1.4 Standards Data

3 WG533569-01 STD #6

1,1 AED STD71715

Sample Name:	**WG533569-01 STD #6**	*Injection Volume:*	**25.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/03/2015 14:43**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

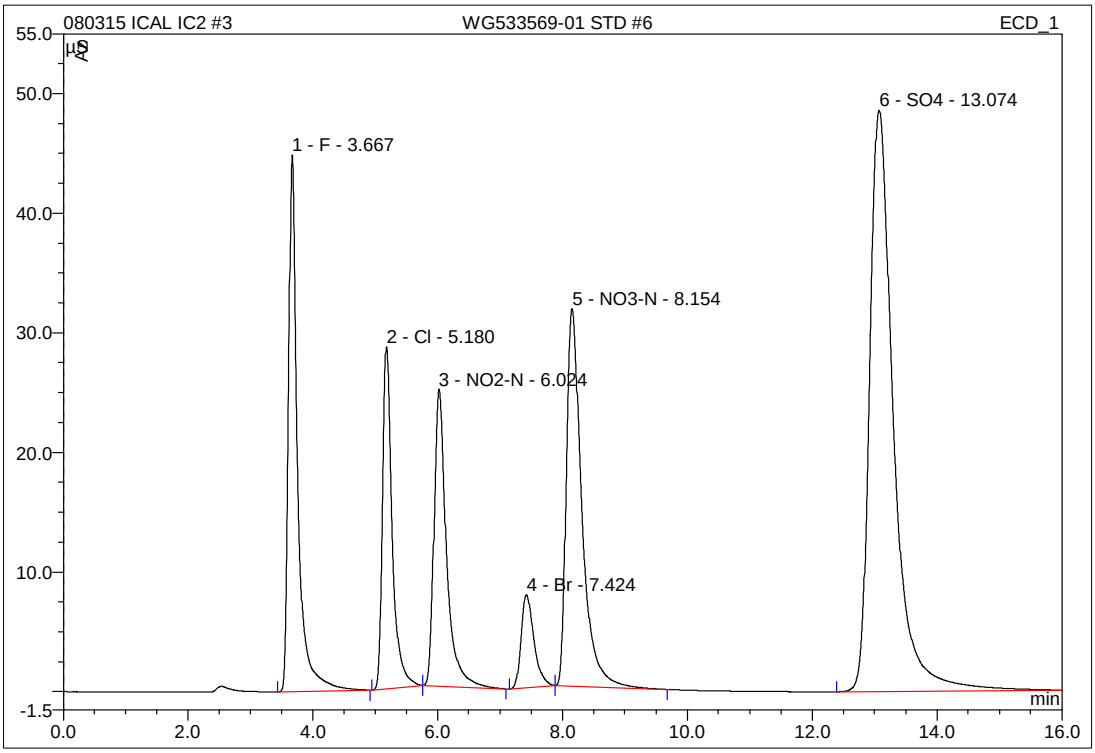

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.67	F	44.847	7.653	15.00	24.644	BMB
2	5.18	Cl	28.577	5.094	9.99	25.455	BMb
3	6.02	NO2-N	24.807	5.747	11.27	14.934	bMB
4	7.42	Br	7.771	1.837	3.60	24.664	BMb
5	8.15	NO3-N	31.557	9.098	17.84	17.397	bMB
6	13.07	SO4	48.562	21.582	42.31	129.474	BMB
Total:			186.121	51.010	100.00	236.568	

4 WG533569-02 STD #5

1,1 AED STD71715

Sample Name:	**WG533569-02 STD #5**	*Injection Volume:*	**25.0**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/03/2015 15:01**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

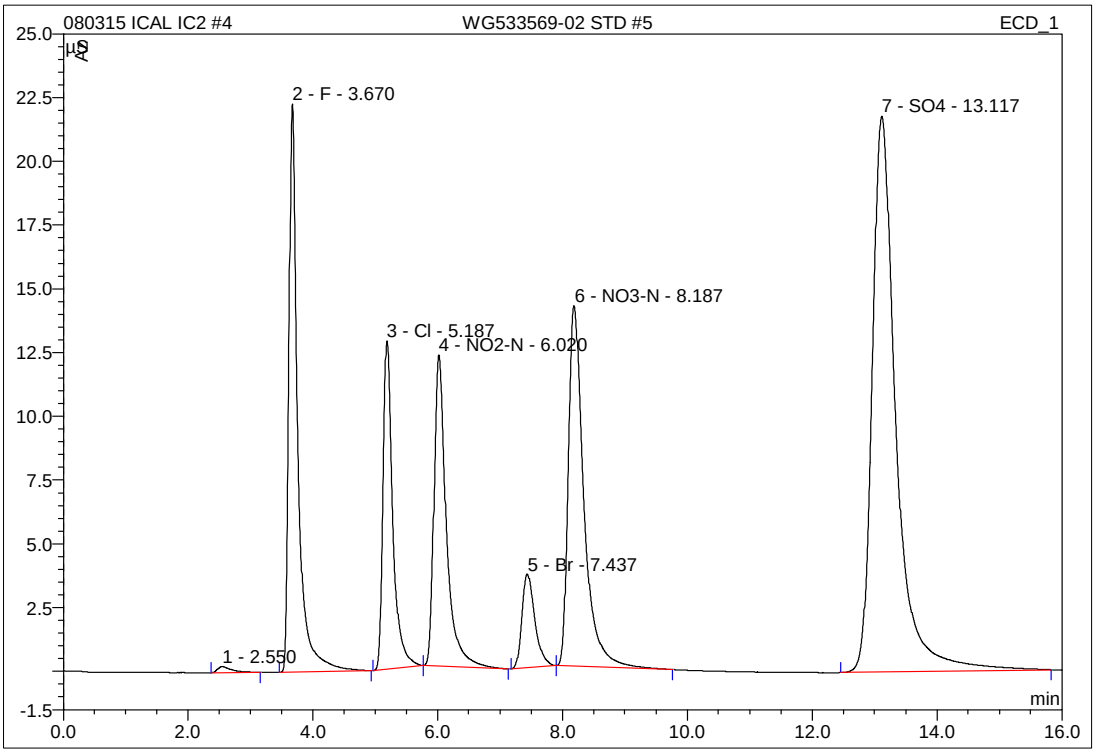

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.55	n.a.	0.232	0.060	0.25	n.a.	BMB
2	3.67	F	22.283	3.709	15.79	11.936	BMB
3	5.19	Cl	12.875	2.315	9.86	11.605	BMb
4	6.02	NO2-N	12.209	2.802	11.93	7.301	bMB
5	7.44	Br	3.673	0.879	3.74	11.828	BMb
6	8.19	NO3-N	14.133	4.103	17.47	7.881	bMB
7	13.12	SO4	21.786	9.616	40.95	58.039	BMB
Total:			87.191	23.484	100.00	108.591	

5 WG533569-03 STD #4

1,1 AED STD71715

Sample Name:	**WG533569-03 STD #4**	*Injection Volume:*	**25.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/03/2015 15:19**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

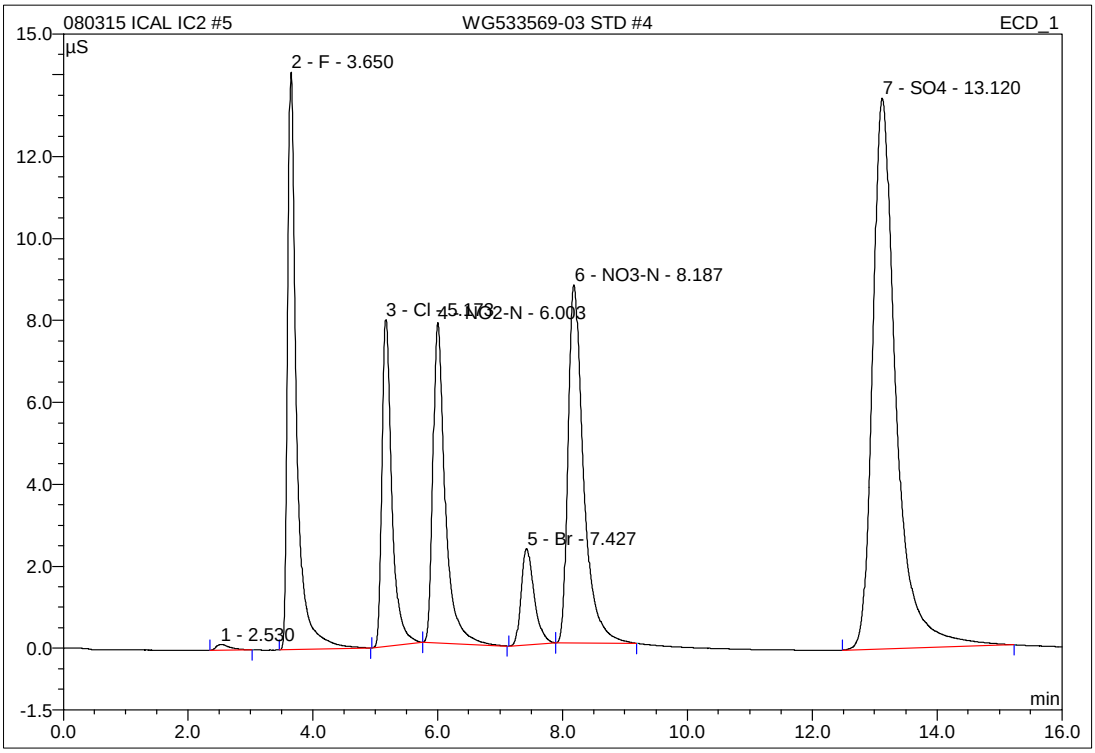

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.53	n.a.	0.143	0.036	0.25	n.a.	BMB
2	3.65	F	14.095	2.348	16.10	7.551	BMB
3	5.17	Cl	7.978	1.453	9.96	7.312	BMb
4	6.00	NO2-N	7.818	1.788	12.26	4.670	bMB
5	7.43	Br	2.352	0.566	3.88	7.625	BMB
6	8.19	NO3-N	8.740	2.520	17.28	4.866	bMB
7	13.12	SO4	13.444	5.872	40.27	35.687	BMB
Total:			54.570	14.583	100.00	67.710	

00647197

5 WG533569-03 STD #4

1,1 AED STD71715

Sample Name:	**WG533569-03 STD #4**	*Injection Volume:*	**25.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**8/3/2015 15:19**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

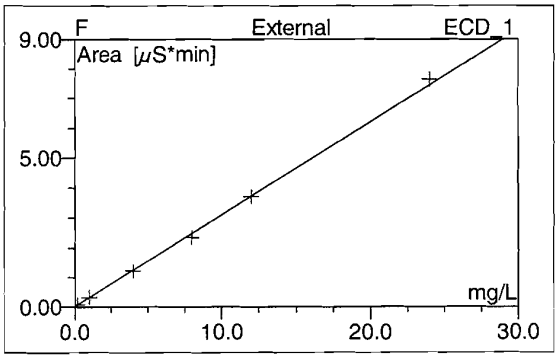

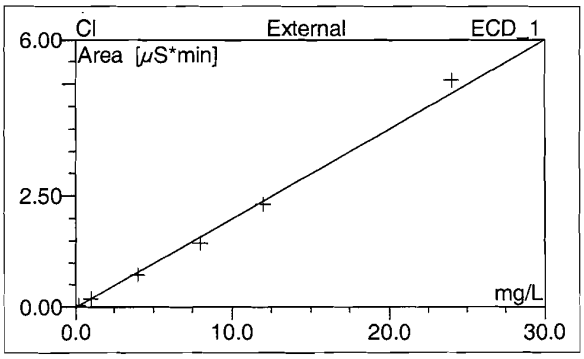

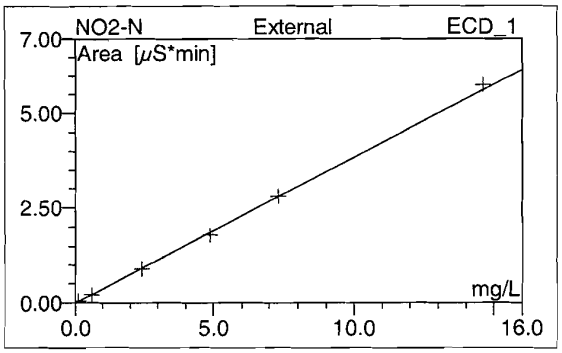

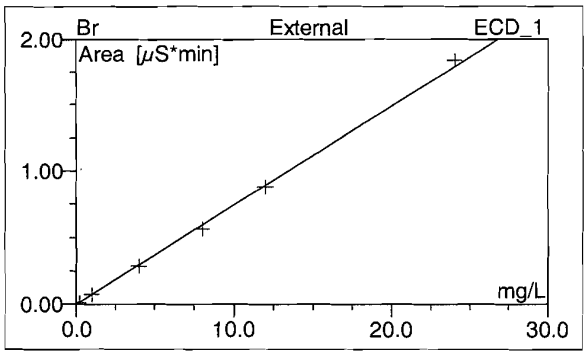

No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	2.53	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	3.65	F	XLOff	6	99.9442	0.0045	0.3104	0.0000
3	5.17	Cl	XLOff	6	99.7675	-0.0139	0.2006	0.0000
4	6.00	NO2-N	XLOff	6	99.9587	-0.0135	0.3857	0.0000
5	7.43	Br	XLOff	6	99.9503	-0.0028	0.0746	0.0000
6	8.19	NO3-N	XLOff	6	99.6785	-0.0340	0.5249	0.0000
7	13.12	SO4	XLOff	6	99.5716	-0.1060	0.1675	0.0000
Average:					99.8118	-0.0276	0.2773	0.0000

5 WG533569-03 STD #4

1,1 AED STD71715

Sample Name:	**WG533569-03 STD #4**	*Injection Volume:*	**25.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**8/3/2015 15:19**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

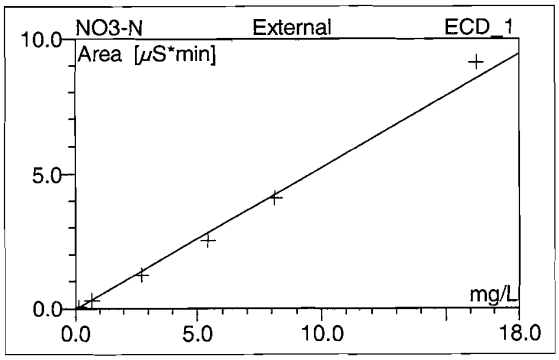

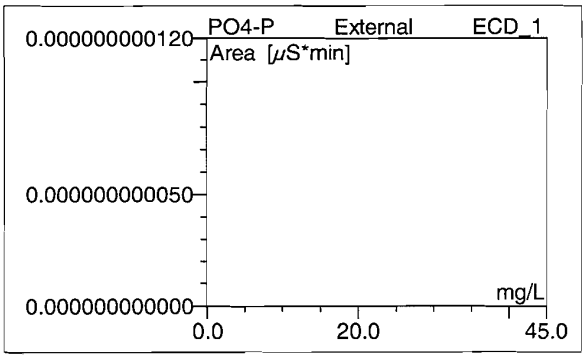

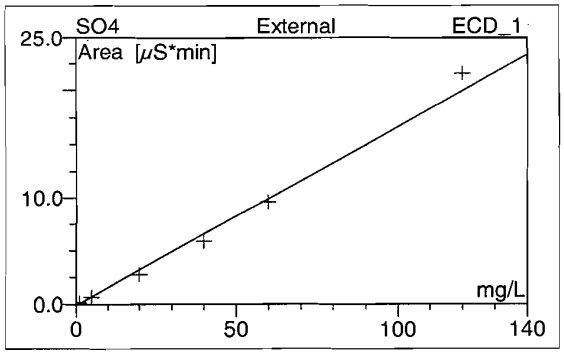

No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	2.53	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	3.65	F	XLOff	6	99.9442	0.0045	0.3104	0.0000
3	5.17	Cl	XLOff	6	99.7675	-0.0139	0.2006	0.0000
4	6.00	NO2-N	XLOff	6	99.9587	-0.0135	0.3857	0.0000
5	7.43	Br	XLOff	6	99.9503	-0.0028	0.0746	0.0000
6	8.19	NO3-N	XLOff	6	99.6785	-0.0340	0.5249	0.0000
7	13.12	SO4	XLOff	6	99.5716	-0.1060	0.1675	0.0000
Average:					99.8118	-0.0276	0.2773	0.0000

6 WG533569-04 STD #3

1,1 AED STD71715

Sample Name:	**WG533569-04 STD #3**	*Injection Volume:*	**25.0**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/03/2015 15:37**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

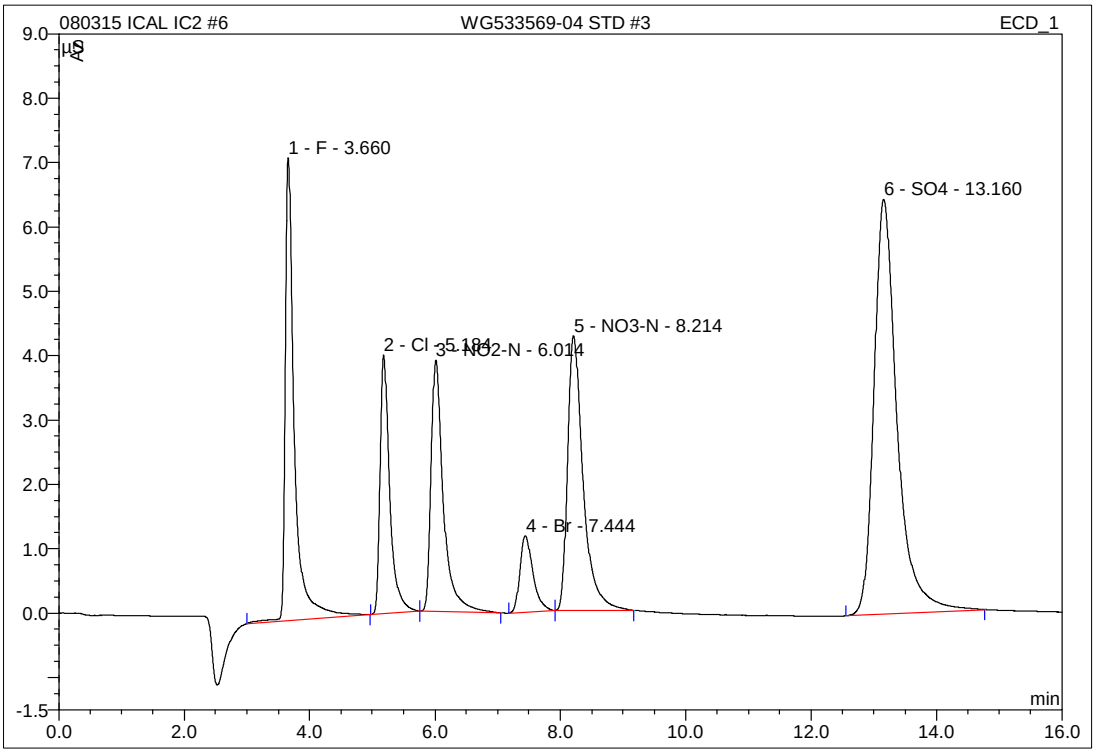

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.66	F	7.188	1.206	17.06	3.871	BMB
2	5.18	Cl	4.017	0.716	10.13	3.639	BMb
3	6.01	NO2-N	3.908	0.889	12.57	2.339	bMB
4	7.44	Br	1.187	0.286	4.05	3.872	BMB
5	8.21	NO3-N	4.268	1.223	17.30	2.394	BMB
6	13.16	SO4	6.444	2.749	38.89	17.045	BMB
Total:			27.012	7.069	100.00	33.160	

IC/Integration

Chromeleon (c) Dionex 1996-2001
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7 WG533569-05 STD #2

1,1 AED STD71715

Sample Name:	**WG533569-05 STD #2**	*Injection Volume:*	**25.0**
Vial Number:	**7**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/03/2015 15:56**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

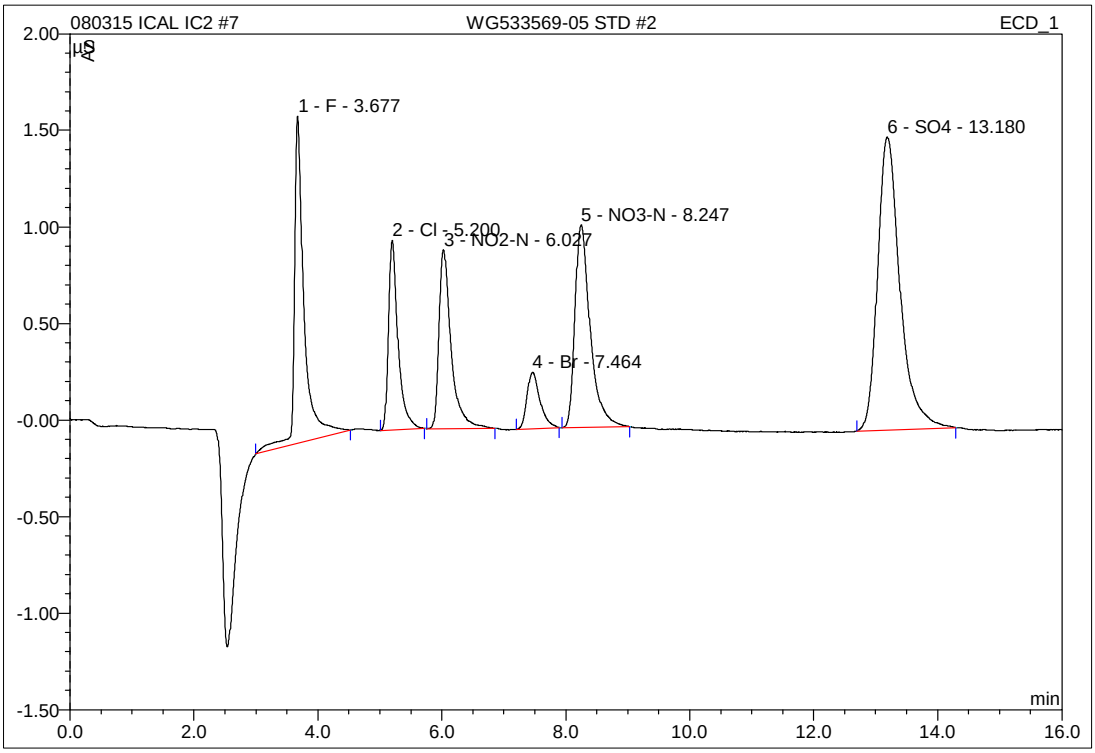

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.68	F	1.694	0.309	18.15	0.981	BMB
2	5.20	Cl	0.982	0.176	10.36	0.949	BMB
3	6.03	NO2-N	0.926	0.210	12.33	0.579	BMB
4	7.46	Br	0.293	0.072	4.20	0.997	BMB
5	8.25	NO3-N	1.048	0.300	17.59	0.635	BMB
6	13.18	SO4	1.519	0.636	37.37	4.432	BMB
Total:			6.462	1.703	100.00	8.574	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

8 WG533569-06 STD #1

1,1 AED STD71715

Sample Name:	**WG533569-06 STD #1**	*Injection Volume:*	**25.0**
Vial Number:	**8**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/03/2015 16:14**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

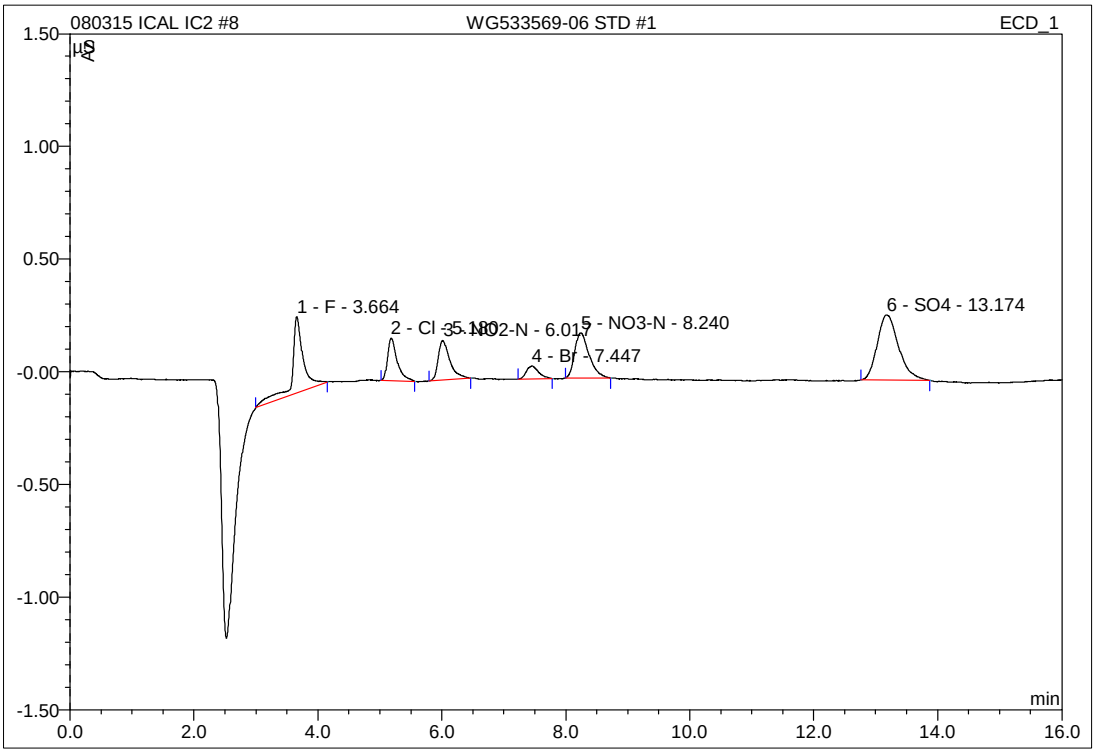

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.66	F	0.339	0.072	21.92	0.217	BMB
2	5.18	Cl	0.188	0.034	10.44	0.240	BMB
3	6.02	NO2-N	0.175	0.039	11.76	0.135	BMB
4	7.45	Br	0.057	0.013	4.02	0.214	BMB
5	8.24	NO3-N	0.201	0.054	16.59	0.168	BMB
6	13.17	SO4	0.290	0.116	35.26	1.323	BMB
Total:			1.251	0.328	100.00	2.297	

9 WG533569-07 SSCV

1,1 AED STD71716

Sample Name:	**WG533569-07 SSCV**	*Injection Volume:*	**25.0**
Vial Number:	**9**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/03/2015 16:32**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

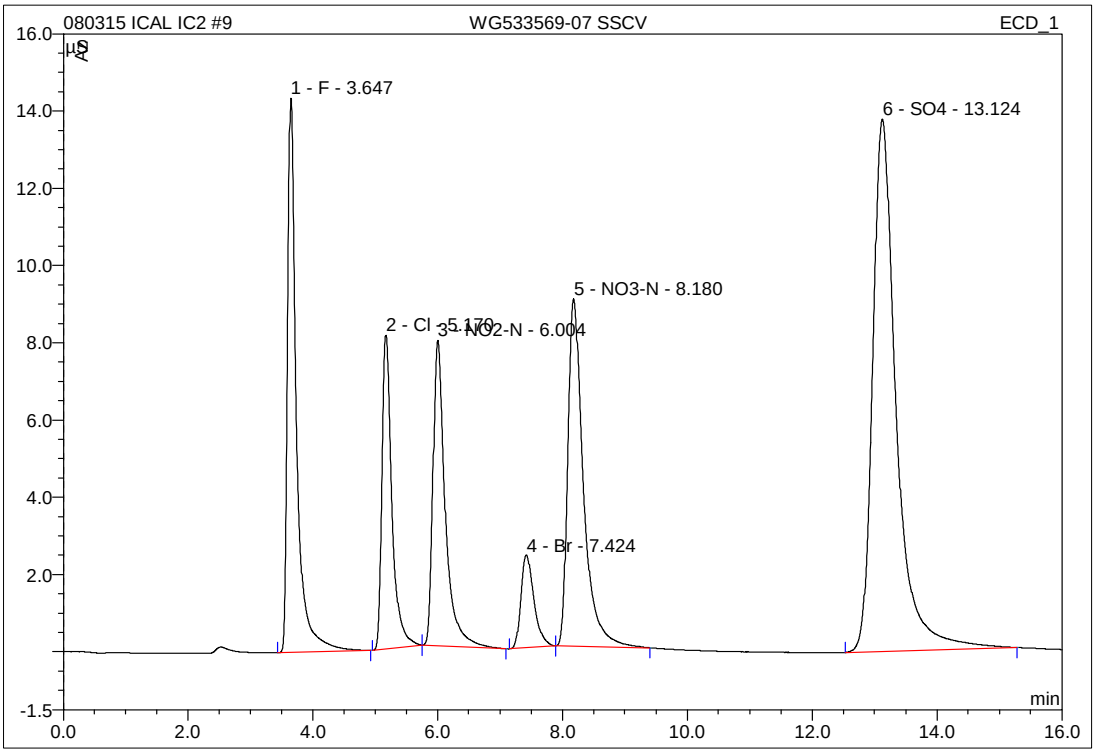

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.65	F	14.345	2.395	16.06	7.703	BMB
2	5.17	Cl	8.120	1.486	9.97	7.476	BMb
3	6.00	NO2-N	7.914	1.807	12.12	4.719	bMB
4	7.42	Br	2.406	0.580	3.89	7.809	BMB
5	8.18	NO3-N	8.988	2.608	17.49	5.033	BMB
6	13.12	SO4	13.783	6.034	40.47	36.657	BMB
Total:			55.556	14.910	100.00	69.397	

9 WG533569-07 SSCV

1,1 AED STD71716

Sample Name:	**WG533569-07 SSCV**	*Injection Volume:*	**25.0**
Vial Number:	**9**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**8/3/2015 16:32**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

WG533569-07 SSC	Actual mg/L	Recovered mg/L	%Difference	
F	8.00	7.7027	-3.72	PASS
Cl	8	7.4765	-6.54	PASS
NO2-N	4.8714	4.7193	-3.12	PASS
NO3-N	5.4216	5.0331	-7.17	PASS
Br	8	7.8092	-2.38	PASS
SO4	40	36.6566	-8.36	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!

3 WG535679-01 ANION CCV

1,1 ALS STD71545 (_____ psi)

Sample Name:	**WG535679-01 ANION CCV**	*Injection Volume:*	**25.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/19/2015 13:54**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

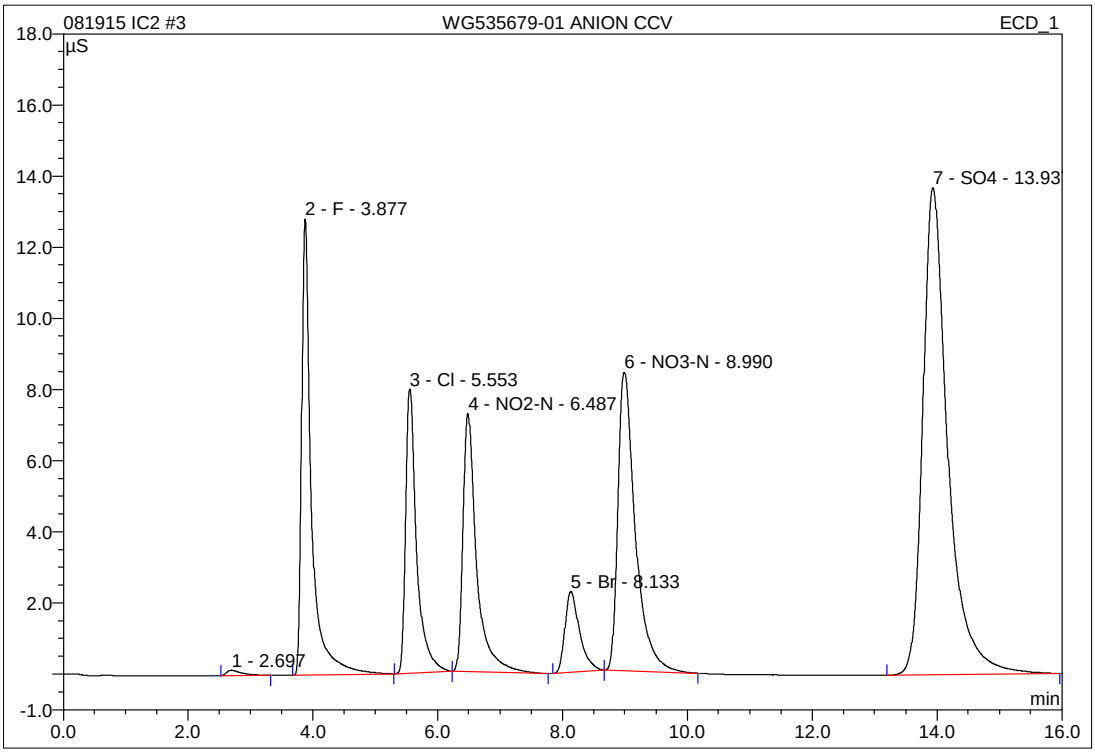

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.70	n.a.	0.151	0.043	0.27	n.a.	BMB
2	3.88	F	12.816	2.341	15.04	7.527	BMB
3	5.55	Cl	7.984	1.616	10.38	8.123	BMb
4	6.49	NO2-N	7.262	1.842	11.84	4.812	bMB
5	8.13	Br	2.278	0.622	4.00	8.376	BMb
6	8.99	NO3-N	8.402	2.716	17.46	5.240	bMB
7	13.94	SO4	13.692	6.380	41.00	38.721	BMB
Total:			52.585	15.560	100.00	72.799	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

3 WG535679-01 ANION CCV

1,1 ALS STD71545 (_____ psi)

Sample Name:	**WG535679-01 ANION CCV**	*Injection Volume:*	**25.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**8/19/2015 13:54**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

WG535679-01 ANI(	Actual mg/L	Recovered mg/L	%Difference	
F	8.00	7.5273	-5.91	PASS
Cl	8	8.1226	1.53	PASS
NO2-N	4.8714	4.8119	-1.22	PASS
NO3-N	5.4216	5.2396	-3.36	PASS
Br	8	8.3758	4.70	PASS
SO4	40	38.7214	-3.20	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!

15 WG535679-03 ANION CCV

1,1 ALS STD71545

Sample Name:	**WG535679-03 ANION CCV**	*Injection Volume:*	**25.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/19/2015 17:32**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

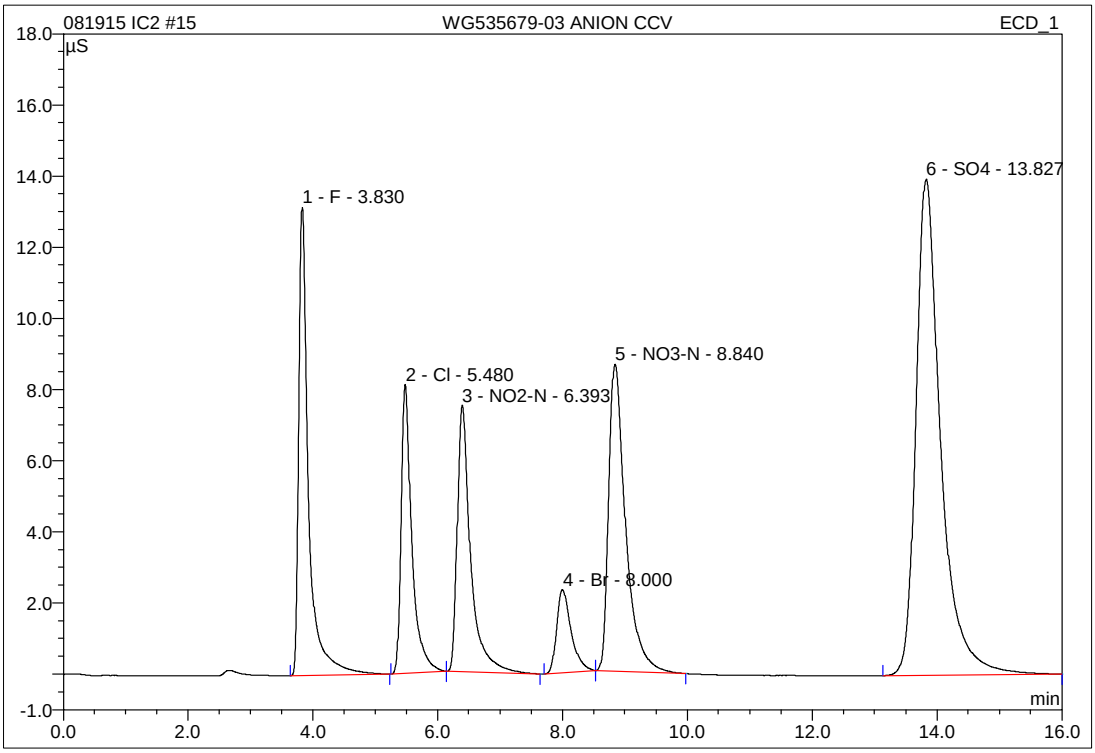

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.83	F	13.152	2.367	15.14	7.611	BMB
2	5.48	Cl	8.131	1.619	10.36	8.141	BMb
3	6.39	NO2-N	7.499	1.870	11.97	4.884	bMB
4	8.00	Br	2.334	0.626	4.01	8.432	BMB
5	8.84	NO3-N	8.629	2.725	17.44	5.257	BMB
6	13.83	SO4	13.953	6.422	41.09	38.969	BMB
Total:			53.697	15.630	100.00	73.293	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

15 WG535679-03 ANION CCV

1,1 ALS STD71545

Sample Name:	**WG535679-03 ANION CCV**	*Injection Volume:*	**25.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**8/19/2015 17:32**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

WG535679-03 ANI(	Actual mg/L	Recovered mg/L	%Difference	
F	8.00	7.6111	-4.86	PASS
Cl	8	8.1405	1.76	PASS
NO2-N	4.8714	4.8841	0.26	PASS
NO3-N	5.4216	5.2570	-3.04	PASS
Br	8	8.4317	5.40	PASS
SO4	40	38.9689	-2.58	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!

27 WG535679-05 ANION CCV

1,1 ALS STD71545

Sample Name:	**WG535679-05 ANION CCV**	*Injection Volume:*	**25.0**
Vial Number:	**27**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/19/2015 21:11**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

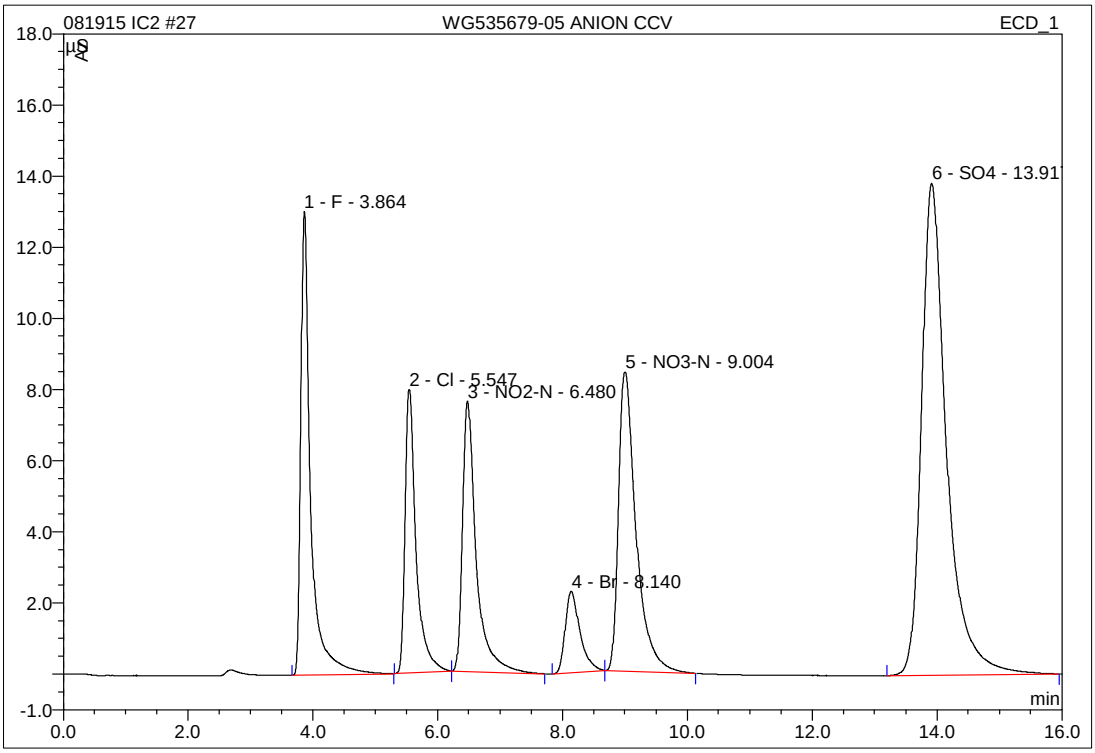

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.86	F	13.028	2.376	15.09	7.640	BMB
2	5.55	Cl	7.976	1.618	10.28	8.133	BMB
3	6.48	NO2-N	7.604	1.930	12.26	5.040	BMB
4	8.14	Br	2.287	0.629	3.99	8.469	BMb
5	9.00	NO3-N	8.409	2.736	17.38	5.278	bMB
6	13.92	SO4	13.829	6.453	40.99	39.158	BMB
Total:			53.133	15.743	100.00	73.718	

IC/Integration

Chromeleon (c) Dionex 1996-2001
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27 WG535679-05 ANION CCV

1,1 ALS STD71545

Sample Name:	**WG535679-05 ANION CCV**	*Injection Volume:*	**25.0**
Vial Number:	**27**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**8/19/2015 21:11**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

WG535679-05 ANI(	Actual mg/L	Recovered mg/L	%Difference	
F	8.00	7.6401	-4.50	PASS
Cl	8	8.1335	1.67	PASS
NO2-N	4.8714	5.0397	3.45	PASS
NO3-N	5.4216	5.2776	-2.66	PASS
Br	8	8.4693	5.87	PASS
SO4	40	39.1578	-2.11	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!

15 WG535960-03 ANION CCV

1,1 ALS STD71545

Sample Name:	**WG535960-03 ANION CCV**	*Injection Volume:*	**25.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/20/2015 18:08**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

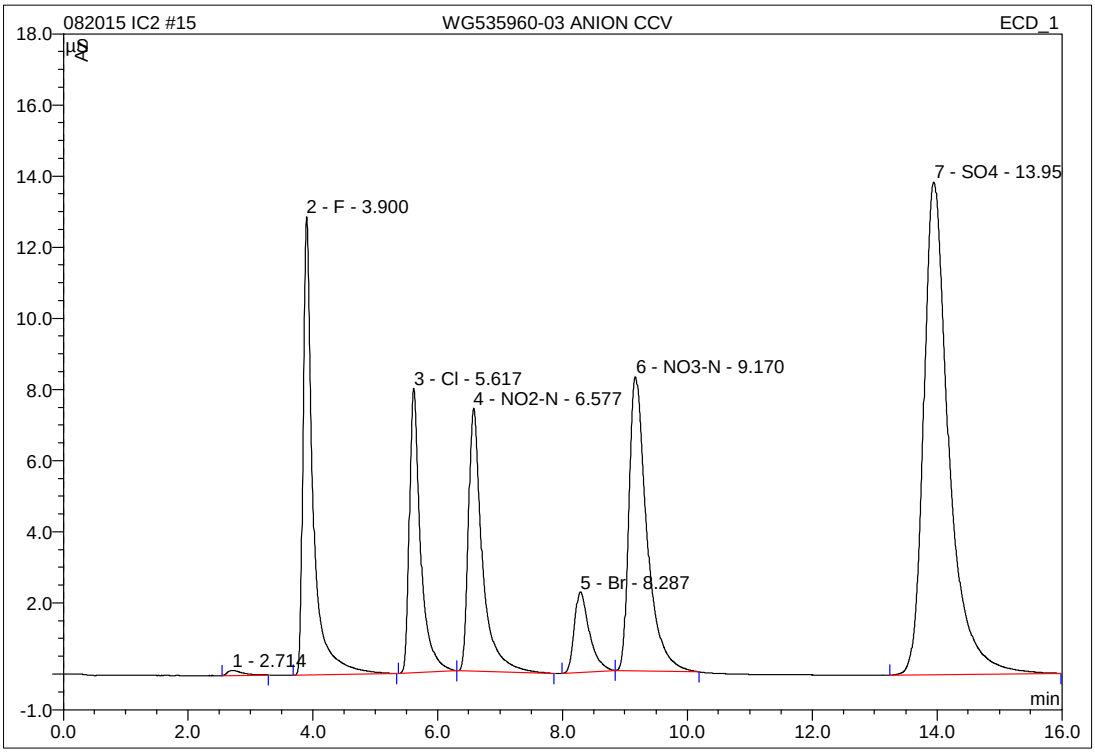

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.71	n.a.	0.142	0.038	0.24	n.a.	BMB
2	3.90	F	12.888	2.396	15.09	7.706	BMB
3	5.62	Cl	7.997	1.659	10.45	8.337	BMB
4	6.58	NO2-N	7.391	1.918	12.08	5.009	bMB
5	8.29	Br	2.265	0.637	4.01	8.574	BMB
6	9.17	NO3-N	8.267	2.740	17.26	5.285	bMB
7	13.95	SO4	13.850	6.486	40.86	39.355	BMB
Total:			52.801	15.875	100.00	74.265	

IC/Integration

Chromeleon (c) Dionex 1996-2001
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15 WG535960-03 ANION CCV

1,1 ALS STD71545

Sample Name:	**WG535960-03 ANION CCV**	*Injection Volume:*	**25.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**8/20/2015 18:08**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

WG535960-03 ANI(	Actual mg/L	Recovered mg/L	%Difference	
F	8.00	7.7060	-3.68	PASS
Cl	8	8.3371	4.21	PASS
NO2-N	4.8714	5.0086	2.82	PASS
NO3-N	5.4216	5.2848	-2.52	PASS
Br	8	8.5737	7.17	PASS
SO4	40	39.3552	-1.61	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!

27 WG535960-05 ANION CCV

1,1 ALS STD71545

Sample Name:	**WG535960-05 ANION CCV**	*Injection Volume:*	**25.0**
Vial Number:	**27**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/20/2015 21:46**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

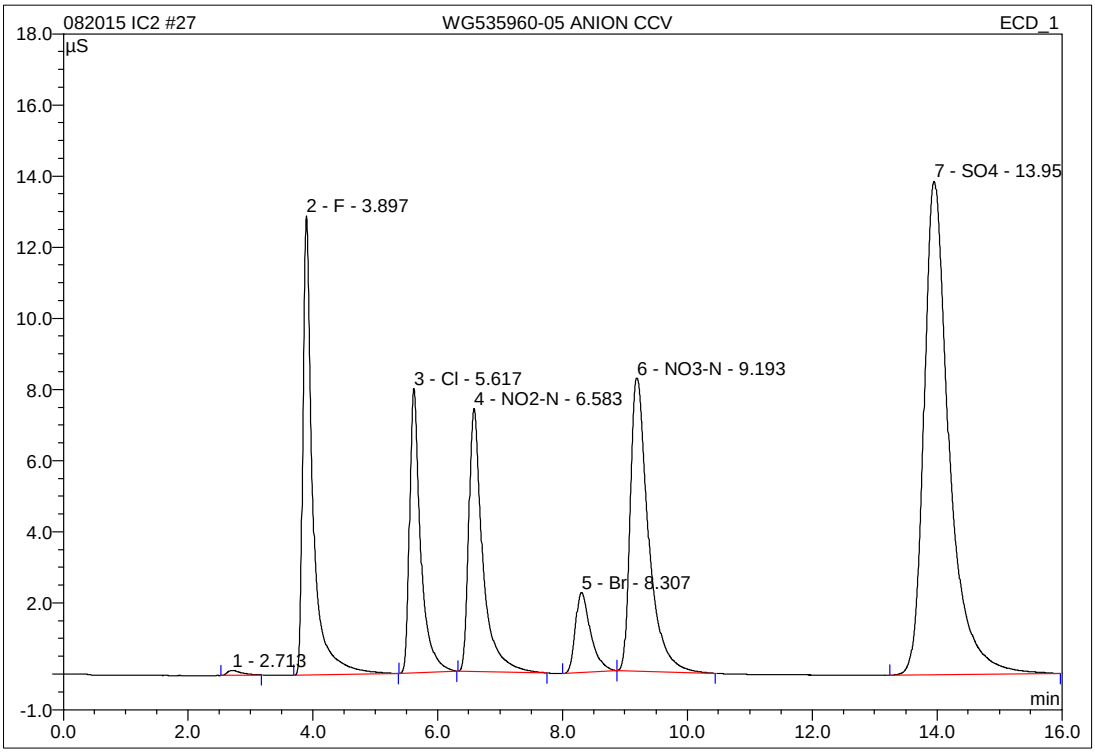

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.71	n.a.	0.138	0.036	0.23	n.a.	BMB
2	3.90	F	12.897	2.408	15.12	7.745	BMB
3	5.62	Cl	7.999	1.651	10.37	8.299	BMB
4	6.58	NO2-N	7.383	1.920	12.06	5.014	BMB
5	8.31	Br	2.257	0.639	4.01	8.606	BMb
6	9.19	NO3-N	8.244	2.765	17.36	5.333	bMB
7	13.95	SO4	13.864	6.507	40.85	39.478	BMB
Total:			52.782	15.928	100.00	74.476	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

27 WG535960-05 ANION CCV

1,1 ALS STD71545

Sample Name:	**WG535960-05 ANION CCV**	*Injection Volume:*	**25.0**
Vial Number:	**27**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**8/20/2015 21:46**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

WG535960-05 ANI(	Actual mg/L	Recovered mg/L	%Difference	
F	8.00	7.7450	-3.19	PASS
Cl	8	8.2992	3.74	PASS
NO2-N	4.8714	5.0142	2.93	PASS
NO3-N	5.4216	5.3332	-1.63	PASS
Br	8	8.6061	7.58	PASS
SO4	40	39.4778	-1.31	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!

4 WG535679-02 ANION CCB

1,1 ALS

Sample Name:	**WG535679-02 ANION CCB**	*Injection Volume:*	**25.0**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/19/2015 14:12**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

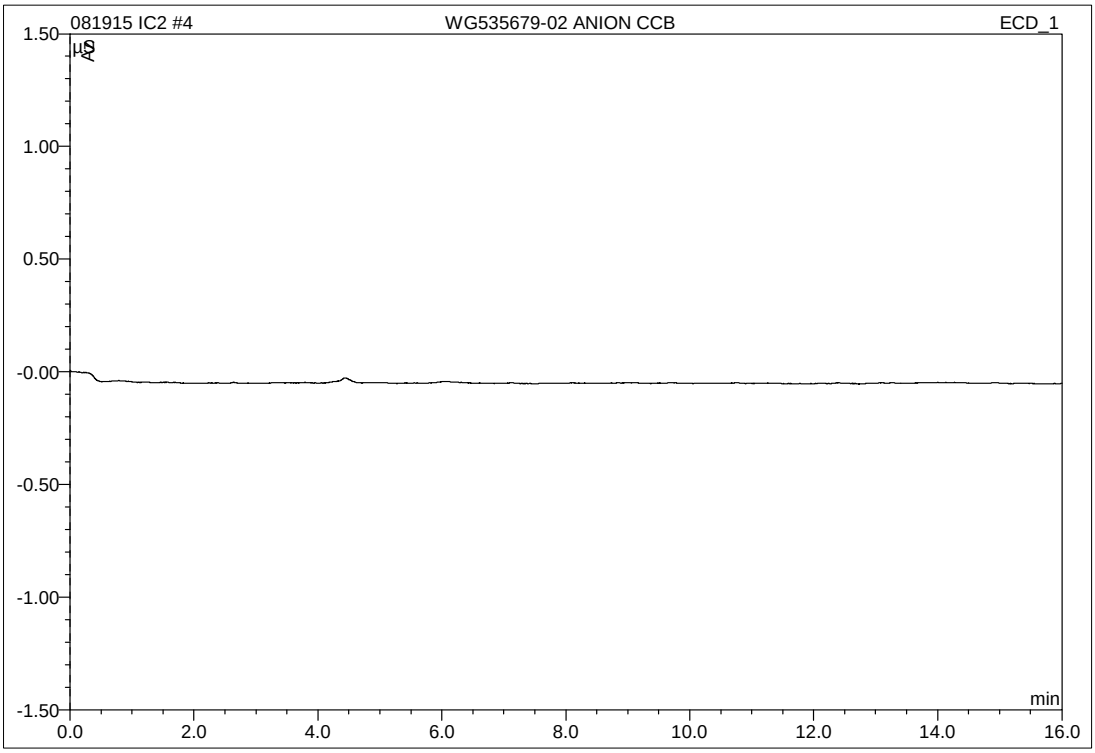

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

16 WG535679-04 ANION CCB

1,1 ALS

Sample Name:	**WG535679-04 ANION CCB**	*Injection Volume:*	**25.0**
Vial Number:	**16**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/19/2015 17:51**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

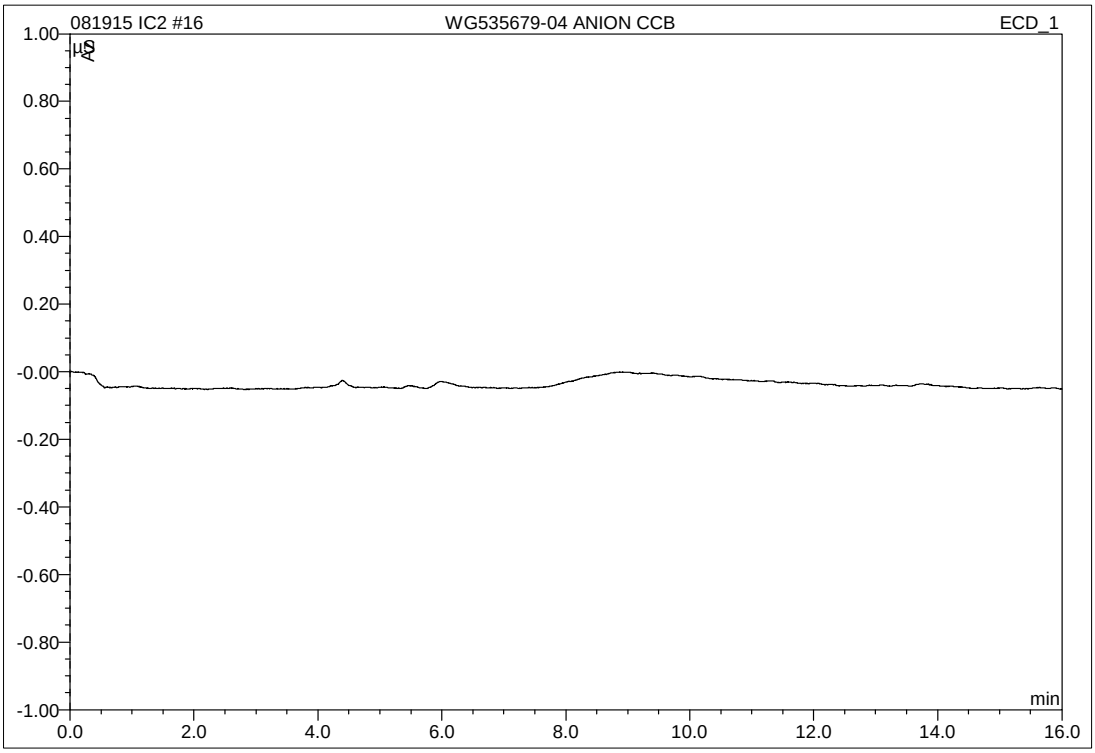

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

28 WG535679-06 ANION CCB

1,1 ALS

Sample Name:	**WG535679-06 ANION CCB**	*Injection Volume:*	**25.0**
Vial Number:	**28**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/19/2015 21:29**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

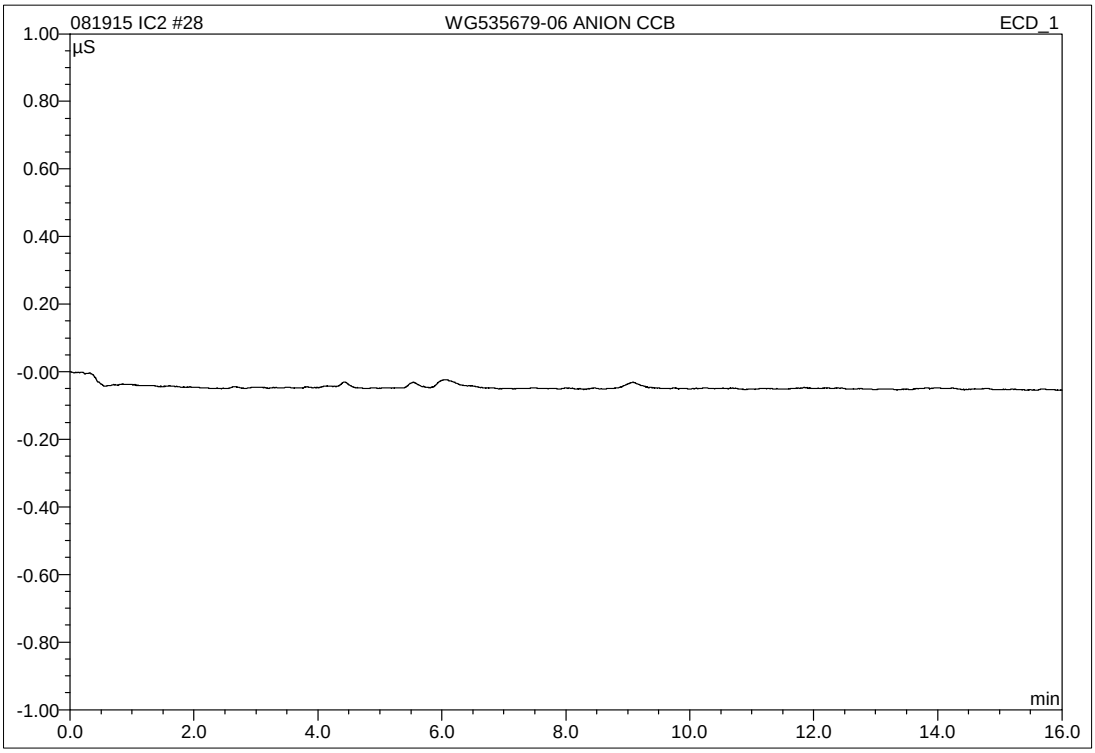

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

16 WG535960-04 ANION CCB

1,1 ALS

Sample Name:	**WG535960-04 ANION CCB**	*Injection Volume:*	**25.0**
Vial Number:	**16**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/20/2015 18:26**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

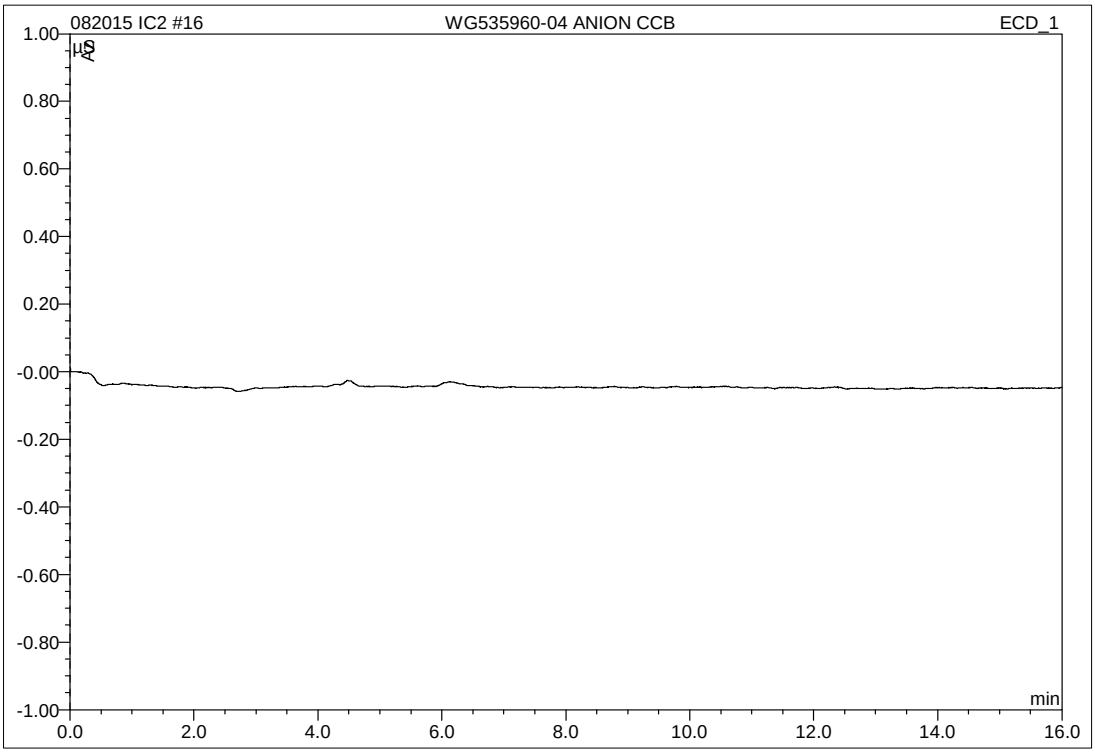

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

28 WG535960-06 ANION CCB

1,1 ALS

Sample Name:	**WG535960-06 ANION CCB**	*Injection Volume:*	**25.0**
Vial Number:	**28**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/20/2015 22:04**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

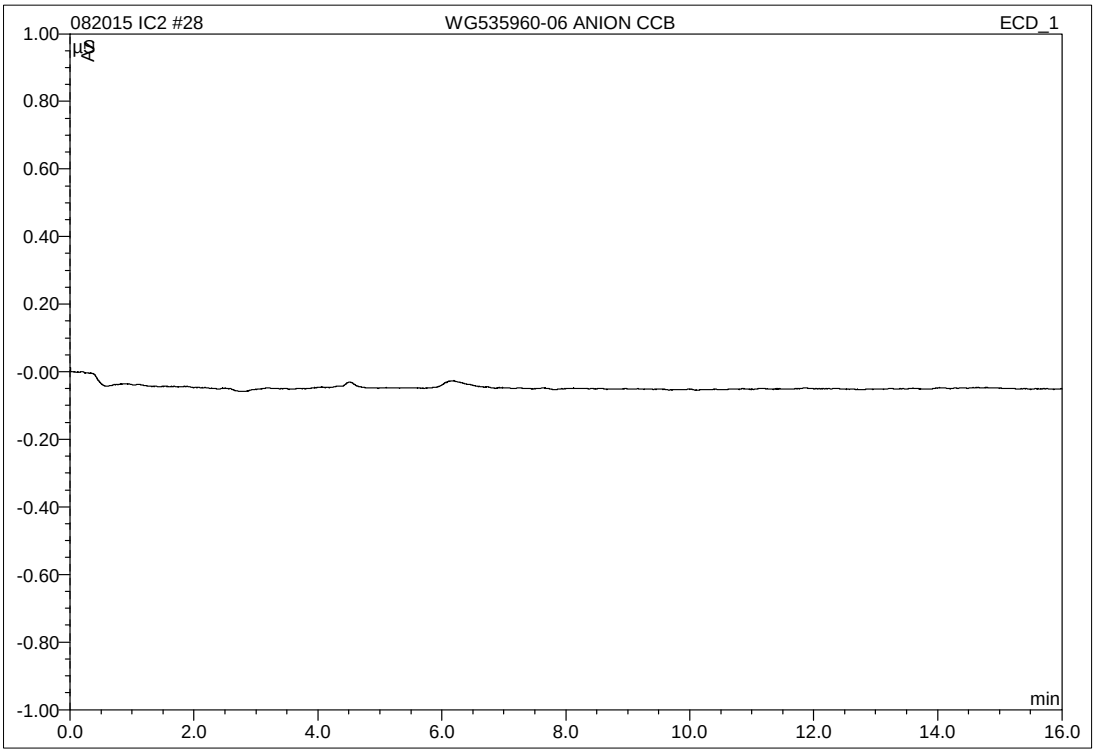

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

RETENTION TIME WINDOWS

Lab Name: MICROBAC Laboratories, Inc.

Instrument ID: IC1

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	6/5/2013	6/5/2013	6/6/2013
File #	WG432976-05	WG432976-07	WG433275-01
Time	16:16	18:25	16:50

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.41	3.40	3.41	0.017
Cl	4.87	4.87	4.88	0.017
NO2-N	5.67	5.66	5.67	0.017
Br	7.01	6.99	7.02	0.046
NO3-N	7.76	7.74	7.77	0.046
SO4	13.35	13.35	13.35	0.000

Instrument ID: IC2

IC Column: AS14A-4mm

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	3/2/2015	3/4/2015	3/5/2015
File #	WG514023-02	WG514341-02	WG514431-02
Time	23:15	18:47	17:41

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.33	3.33	3.32	0.017
Cl	4.75	4.78	4.76	0.043
NO2-N	5.54	5.59	5.56	0.082
Br	6.86	6.98	6.93	0.180
NO3-N	7.59	7.73	7.67	0.222
SO4	12.42	12.38	12.34	0.116

Instrument ID: IC3

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	5/20/2014	5/21/2014	5/21/2014
File #	WG476910-05	WG476934-01	WG476934-03
Time	12:41	9:54	13:59

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.41	3.41	3.41	0.000
Cl	5.11	5.09	5.07	0.050
NO2-N	6.14	6.11	6.07	0.101
Br	7.90	7.84	7.75	0.220
NO3-N	8.94	8.86	8.76	0.271
SO4	13.35	13.39	13.42	0.101

2.4.1.5 Raw QC Data

5 WG535677-01 ANION BLANK

1,1 ALS

Sample Name:	**WG535677-01 ANION BLANK**	*Injection Volume:*	**25.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/19/2015 14:30**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

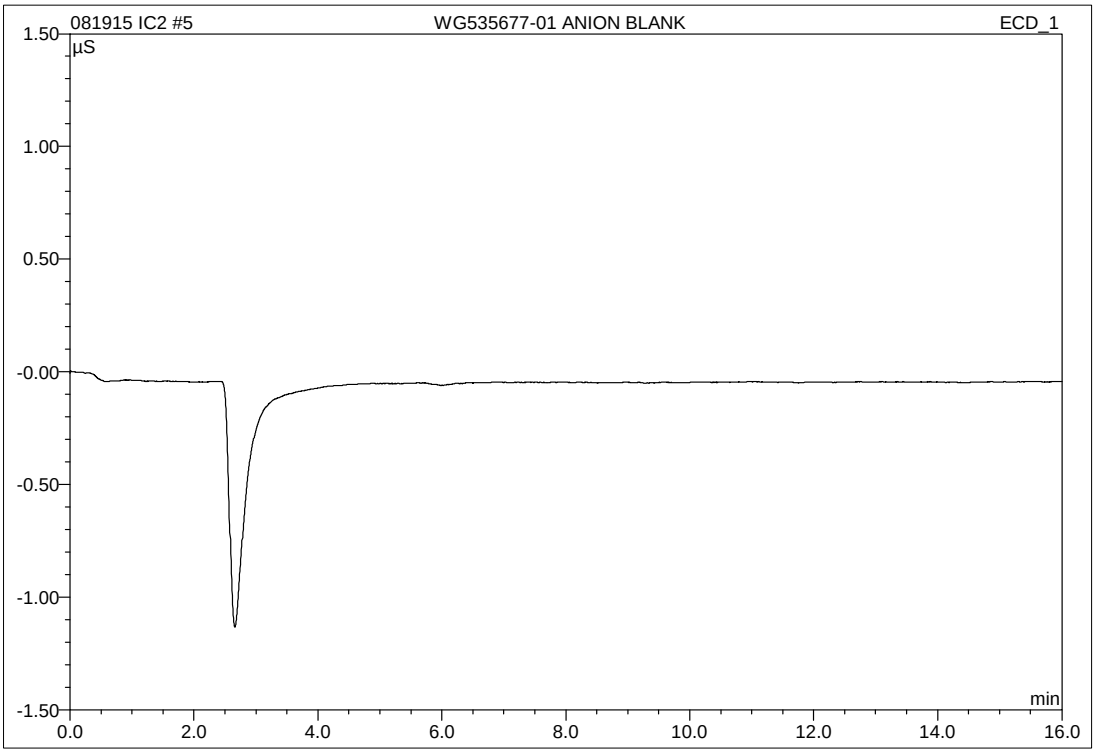

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

19 WG535887-01 ANION BLANK

1,1 ALS

Sample Name:	**WG535887-01 ANION BLANK**	*Injection Volume:*	**25.0**
Vial Number:	**19**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/20/2015 19:21**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

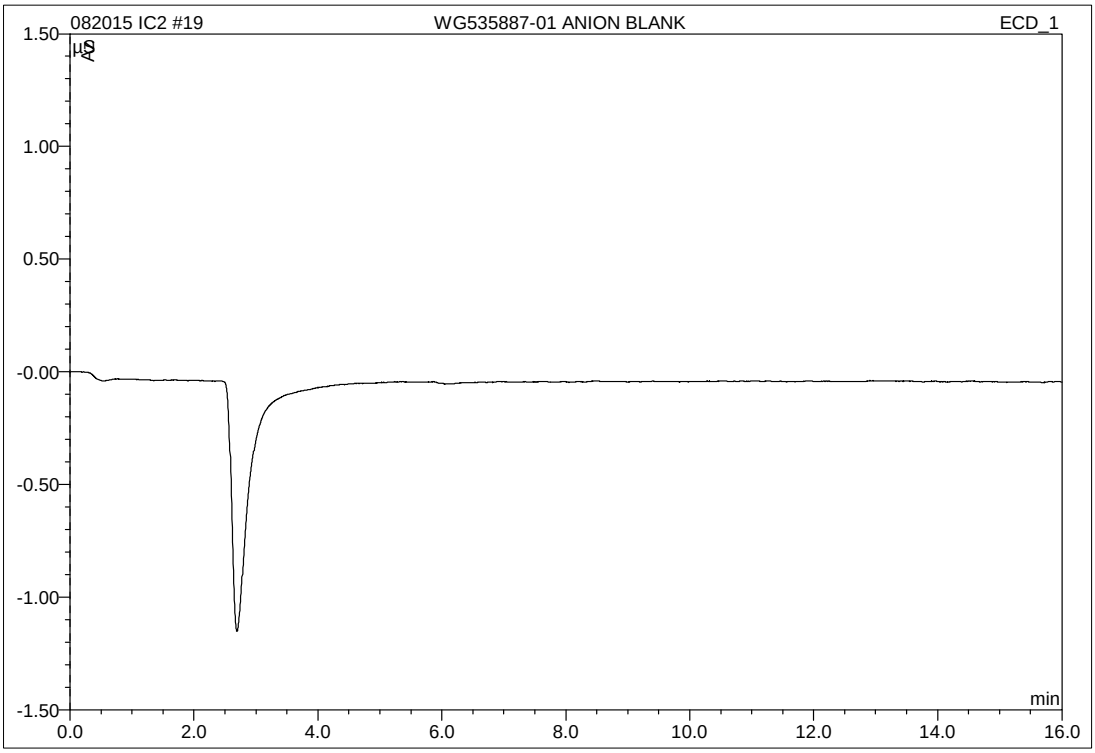

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

6 WG535677-02 ANION LCS

1,1 ALS STD71546

Sample Name:	**WG535677-02 ANION LCS**	*Injection Volume:*	**25.0**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/19/2015 14:48**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

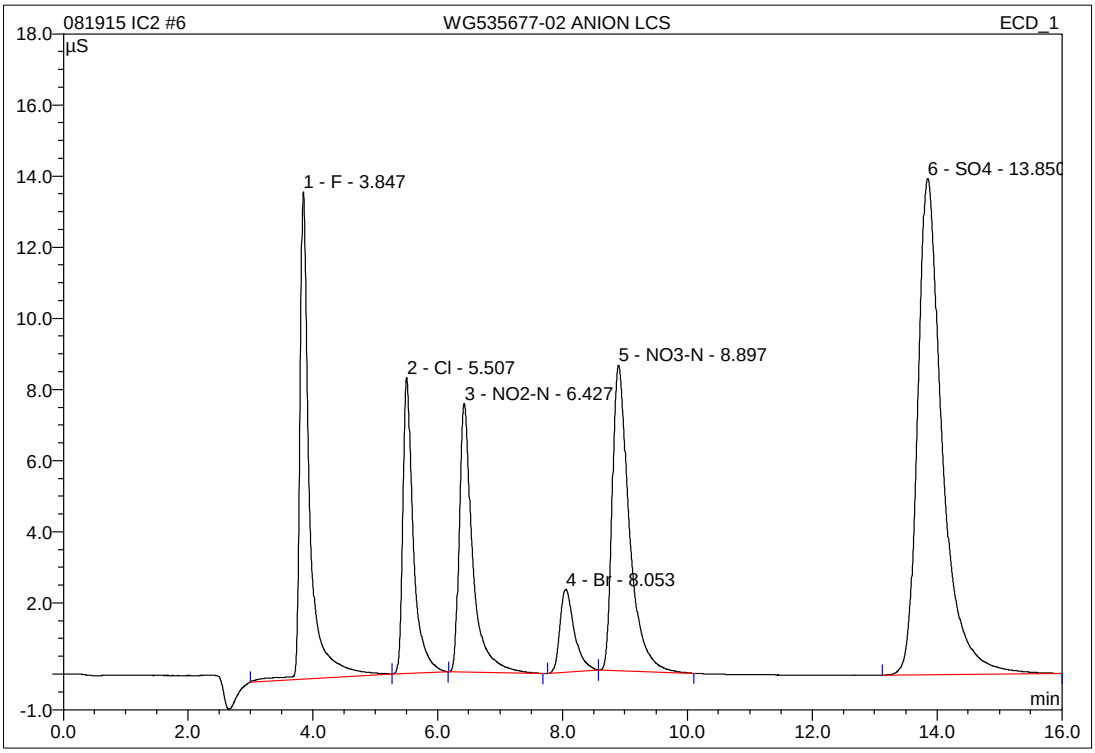

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.85	F	13.699	2.484	15.77	7.990	BMB
2	5.51	Cl	8.325	1.622	10.30	8.153	bMB
3	6.43	NO2-N	7.551	1.884	11.96	4.919	BMB
4	8.05	Br	2.333	0.625	3.97	8.420	BMb
5	8.90	NO3-N	8.589	2.723	17.28	5.251	bMB
6	13.85	SO4	13.955	6.413	40.72	38.918	BMB
Total:			54.452	15.751	100.00	73.652	

6 WG535677-02 ANION LCS

1,1 ALS STD71546

Sample Name:	**WG535677-02 ANION LCS**	*Injection Volume:*	**25.0**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/19/2015 14:48**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

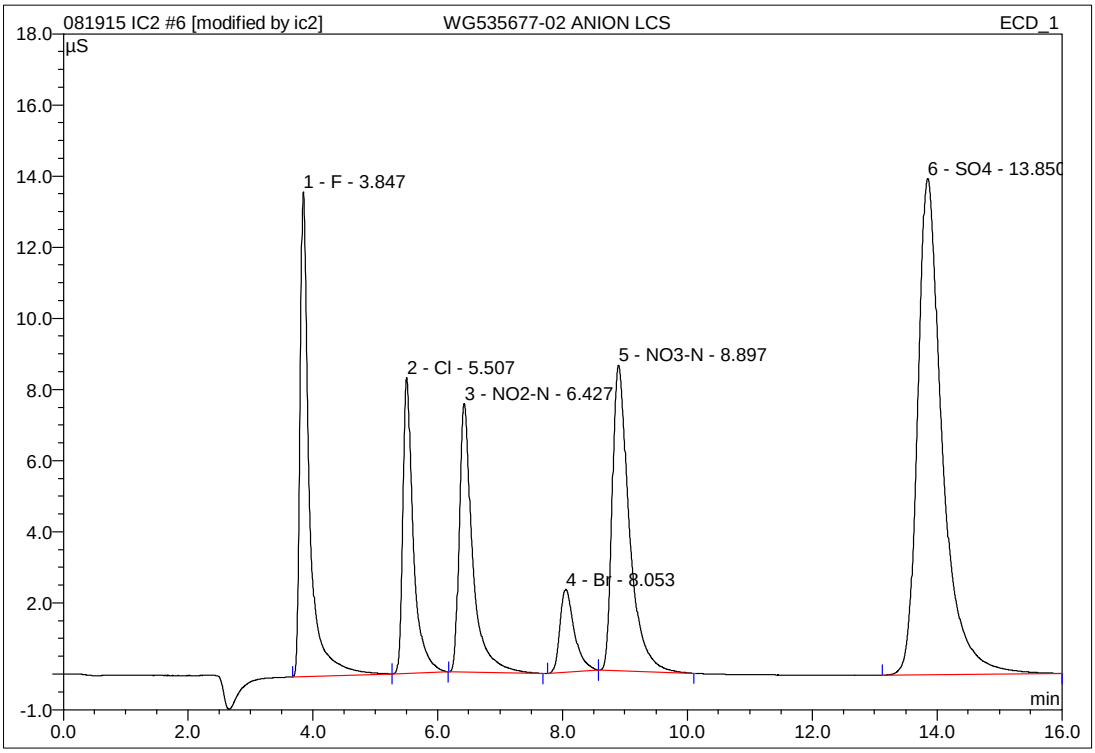

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.85	F	13.630	2.376	15.19	7.639	BMb*
2	5.51	Cl	8.325	1.622	10.37	8.153	bMB
3	6.43	NO2-N	7.551	1.884	12.04	4.919	BMB
4	8.05	Br	2.333	0.625	4.00	8.420	BMb
5	8.90	NO3-N	8.589	2.723	17.40	5.251	bMB
6	13.85	SO4	13.955	6.413	41.00	38.918	BMB
Total:			54.383	15.642	100.00	73.301	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

Analyst: 08/20/2015 08:21 Supervisor: 08/20/2015 11:08

#4 - System establishes incorrect baseline

20 WG535887-02 ANION LCS

1,1 ALS

Sample Name:	**WG535887-02 ANION LCS**	*Injection Volume:*	**25.0**
Vial Number:	**20**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/20/2015 19:39**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

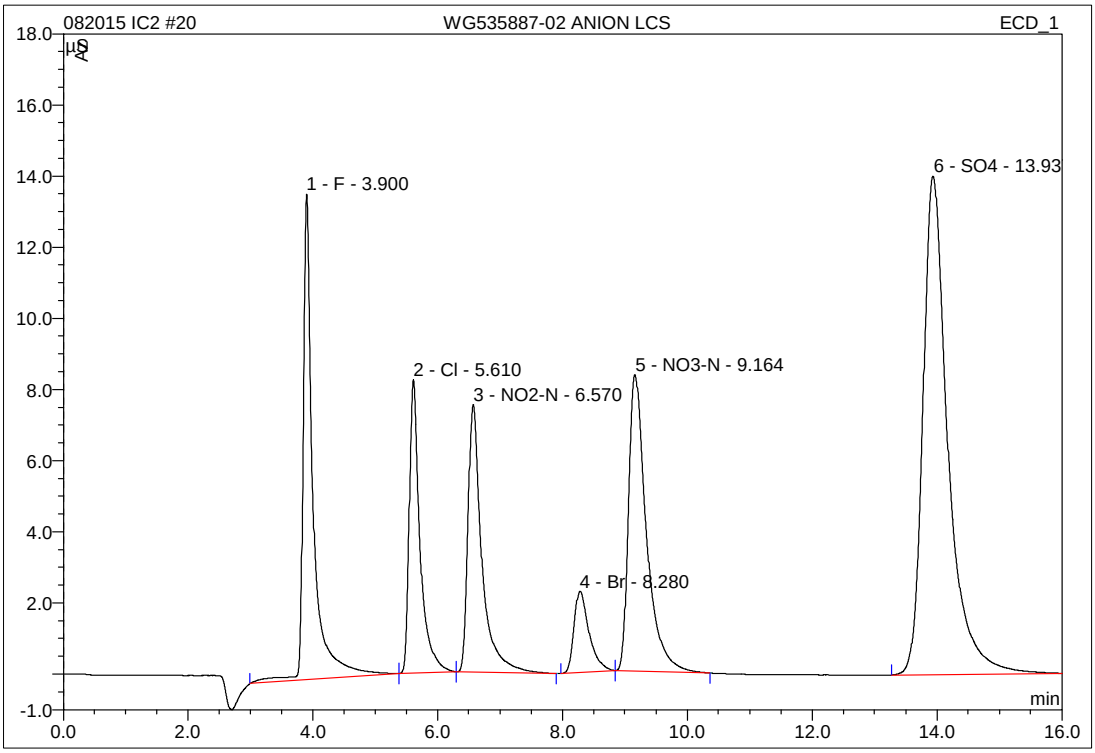

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.90	F	13.645	2.579	16.04	8.295	BMB
2	5.61	Cl	8.243	1.646	10.24	8.275	bMB
3	6.57	NO2-N	7.521	1.943	12.08	5.072	bMB
4	8.28	Br	2.290	0.641	3.99	8.635	BMB
5	9.16	NO3-N	8.337	2.763	17.18	5.328	bMB
6	13.94	SO4	14.009	6.505	40.46	39.467	BMB
Total:			54.045	16.077	100.00	75.071	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

2.4.2 Alkalinity Data

2.4.2.1 Summary Data

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW22-081815	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	08/19/2015 13:19
Workgroup #:	WG535657	**Analyst:**	DCM	**Run Date:**	08/19/2015 13:30
Collect Date:	08/18/2015 08:05	**Dilution:**	2	**File ID:**	SC150819004.026
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	373		80.0	40.0	20.0

Certificate of Analysis

Sample #:	L15080992-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW25-081815	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	08/19/2015 13:19
Workgroup #:	WG535657	**Analyst:**	DCM	**Run Date:**	08/19/2015 13:31
Collect Date:	08/18/2015 09:40	**Dilution:**	1	**File ID:**	SC150819004.027
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	273		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L15080992-05	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW12-081815	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	08/19/2015 13:19
Workgroup #:	WG535657	**Analyst:**	DCM	**Run Date:**	08/19/2015 13:31
Collect Date:	08/18/2015 11:05	**Dilution:**	1	**File ID:**	SC150819004.028
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	293		40.0	20.0	10.0

Certificate of Analysis

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15080992-07	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW06-081815	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	08/19/2015 13:19
Workgroup #:	WG535657	**Analyst:**	DCM	**Run Date:**	08/19/2015 13:32
Collect Date:	08/18/2015 13:40	**Dilution:**	1	**File ID:**	SC150819004.029
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	284		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L15080992-09	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW11-081815	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	08/19/2015 13:19
Workgroup #:	WG535657	**Analyst:**	DCM	**Run Date:**	08/19/2015 13:33
Collect Date:	08/18/2015 14:50	**Dilution:**	2	**File ID:**	SC150819004.030
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	305		80.0	40.0	20.0

2.4.2.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809
Value of b from plot:	0.0004135
Absorbance of unknown from quantitation report (y):	0.31
Calculated concentration (x):	0.03964483
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	0.0396 mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796
Value of B from plot:	318.9056
Value of C from plot:	-2.2712
Absorbance of unknown from quantitation report (x):	0.1583
Calculated concentration (y):	50.7495108
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	50.75 mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 19-AUG-2015
Analyst: DCM
Analyst: NA
Method: ALK
Instrument: SC
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG535608 WG535641 WG535657

Calibration/Linearity	08-19-2015
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DCM
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
20-AUG-2015

Secondary Reviewer:
25-AUG-2015

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-25-2015 11:39:38

Microbac Laboratories Inc.

00647233

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 310.2 AAB#: WG535657

Login Number: L15080992

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW22-081815	01	08/18/15					08/19/2015	1.2	14		08/19/15	1.2	14	
50WW25-081815	03	08/18/15					08/19/2015	1.2	14		08/19/15	1.2	14	
50WW12-081815	05	08/18/15					08/19/2015	1.1	14		08/19/15	1.1	14	
50WW06-081815	07	08/18/15					08/19/2015	1	14		08/19/15	1	14	
50WW11-081815	09	08/18/15					08/19/2015	.9	14		08/19/15	.9	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4345901
Report generated 08/21/2015 10:40

METHOD BLANK SUMMARY

Login Number: L15080992
Blank File ID: SC150819004.012
Prep Date: 08/19/15 13:22
Analyzed Date: 08/19/15 13:22
Analyst: DCM

Work Group: WG535657
Blank Sample ID: WG535657-01
Instrument ID: SMARTCHEM
Method: 310.2

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG535657-02	SC150819004.013	08/19/15 13:22	01
LCS2	WG535657-03	SC150819004.014	08/19/15 13:23	01
50WW22-081815	L15080992-01	SC150819004.026	08/19/15 13:30	DL01
50WW25-081815	L15080992-03	SC150819004.027	08/19/15 13:31	01
50WW12-081815	L15080992-05	SC150819004.028	08/19/15 13:31	01
50WW06-081815	L15080992-07	SC150819004.029	08/19/15 13:32	01
50WW11-081815	L15080992-09	SC150819004.030	08/19/15 13:33	DL01
DUP	WG535657-08	SC150819004.036	08/19/15 13:36	01

Report Name: BLANK_SUMMARY
PDF File ID: 4345902
Report generated 08/21/2015 10:40

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15080992 Prep Date: 08/19/15 13:22 Sample ID: WG535657-01
Instrument ID: SMARTCHEM Run Date: 08/19/15 13:22 Prep Method: 310.2
File ID: SC150819004.012 Analyst: DCM Method: 310.2
Workgroup (AAB#): WG535657 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-19-AUG-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Alkalinity, Total (as CaCO3)	10.0	40.0	10.3	1	J

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4345903
21-AUG-2015 10:40

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15080992 Analyst: DCM Prep Method: 310.2
Instrument ID: SMARTCHEM Matrix: Water Method: 310.2
Workgroup (AAB#): WG535657 Units: mg/L
QC Key: DOD4 Lot #: STD71900

Sample ID: WG535657-02 LCS File ID: SC150819004.013 Run Date: 08/19/2015 13:22
Sample ID: WG535657-03 LCS2 File ID: SC150819004.014 Run Date: 08/19/2015 13:23

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Alkalinity, Total (as CaCO3)	200	200	100	200	200	99.8	0.456	85 - 115	20	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4345904
Report generated: 08/21/2015 10:40

2.4.2.3 Raw Data

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

WORKGROUP: WG535608
535641
535657

Daily Check

- [x] Lamp On
- [x] Probe Rinse Full
- [x] DI Water > ½ Full
- [x] Wash Solution > ½ Full
- [ ] NO3 Reagent bottle connected / purged
- [ ] NO3 pH adj to pH 5-9

Syringe filter lot # _____

- [x] WBL Run
- [x] Reagents Full
- [x] Dilution H_2O Full
- [x] Waste Container Check

1) **Workgroup** _____
Plan # 20150819002
2) **Workgroup** _____
Plan # 20150819003
3) **Workgroup** _____
Plan # 20150819004

Instrument: SC1 [x] SC2 [ ]

	Analyte	1	2	3
		Alk		
		Dilution		
SC Prepared Curve				
Position				
1-1	ICV			
1-2	Blk			
1-3	LCS			
1-4	LCSDup			
1-5	~~WG 535324~~ -01	1/10		
1-6	02			
1-7	08-677-01	1/25		
1-8	02	1/50		
1-9	03	1/50		
1-10	04	1/25		
1-11	08-908-02	1/4		color
1-12	03	1/4		color
1-13	05	1/4		color
1-14	06	1/4		color
1-15	08-901-01			
1-16	MS 02			
1-17	MSD 03			
1-18	04			
1-19	05			
1-20	08-904-01	1/2		
1-21	03			
1-22	05			
2-1	07	1/2		
2-2	Dup 08-904-05			
2-3				

Position		Analyte	1	2	3
2-4	1	ICV			
2-5	2	Blk			
2-6	3	LCS			
2-7	4	LCSDup			
2-8	5	08-908-02	1/4		color
2-9	6	03	1/4		color
2-10	7	05	1/4		color
2-11	8	06	1/4		color
2-12	9	08-901-01			
2-13	10	MS 02			
2-14	11	MSD 03			
2-15	12	04			
2-16	13	05			
2-17	14	08-904-01	1/2		
2-18	15	03			
2-19	16	05			
2-20	17	07	1/2		
2-21	18	Dup 08-904-05			
2-22	19				
2-23					
2-24					
2-25					
2-26					
3-1		ICV			
3-2		Blk			

NOTES:
* Run NO2 std on NO3 runs
* LCSD must be run if no MS or Duplicate
*MS(10% sample): NO3, TKN, NH3, PHOS

DCN#112634

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

WORKGROUP: WG535608

Position	Analyte	1	2	3
	L			
3-3	LCS			
3-4	LCSDUP			
3-5	08-901-01			
3-6	MS 02			
3-7	MSD 03			
3-8	04			
3-9	05			
3-10	08-904-01	1/2		
3-11	03			
3-12	05			
3-13	07	1/2		
3-14	08-992-01	1/2		
3-15	03			

Position	Analyte	1	2	3
3-16	08-992-05			
3-17	07			
3-18	09	1/2		
3-19	08-995-01			
3-20	02			
3-21	04			
3-22	DUP 08-995-04			
3-23	Blk 0			
3-24				
3-25				
3-26				
3-27				
3-28				

	Chloride	EPA 325.2/SM 4500-CI E-2000
	Nitrate-Nitrite	EPA 353.2/SM 4500-NO3 F-2000
✓	Alkalinity	EPA 310.2
	Sulfate	EPA 375.4/SM 426C (15th)/ SM4500-504 E-1997

	Ammonia	EPA 350.1/SM 4500-NH3 B-1997
	TKN	EPA 351.2
	Phos	EPA 365.4

Analyte	Alk		Reagents
SOP & Revision	K3102R17		RGT 34505
Curve Stock (SC made)	Std 70552		
NO2 STD			
ICV	Std 71610		
CCV	Std 71896		
LCS	Std 71900		
MS	Std 70284 Dilution 0.4(2500) 10=100		

Comments: _____

Analyst: David Merfield Date: 8/19/15

DCN#112634

MICROBAC (OVD)

SMARTCHEM200 INST1 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.0	0.7777	0.00		11:04:37 AM
DIL-1	RBL	0.0	0.8003	0.00	R	11:04:55 AM
DIL-1	RBL	0.0	0.7878	0.00		11:05:48 AM
DIL-1	Std-1	0.0	0.0017	0.00	INV	11:06:06 AM
SR5-1	Std-2	10.0	-0.0060	0.00		11:07:00 AM
SR5-2	Std-3	20.0	-0.0365	0.00		11:07:18 AM
SR5-3	Std-4	50.0	-0.0732	0.00		11:08:12 AM
SR5-4	Std-5	100.0	-0.1601	0.00		11:08:31 AM
SR5-5	Std-6	200.0	-0.3412	0.00		11:09:25 AM
SR5-6	Std-7	250.0	-0.4538	0.00		11:09:42 AM
SR5-7	Std-8	300.0	-0.5264	0.00		11:10:37 AM
ST-3	1CCV (150 mg/L)	153.7	-0.2594	102.45		11:10:54 AM
ST-2	2CCB (0 mg/L)	11.2	-0.0134	0.00		11:11:49 AM
1	ICV	255.7	-0.4494	0.00		11:12:07 AM
2	WG535608-01 BLK	13.8	-0.0175	0.00		11:13:01 AM
3	WG535608-02 LCS	199.0	-0.3423	0.00		11:13:19 AM
4	WG535608-03 LCSDUP	197.8	-0.3401	0.00		11:14:13 AM
5	WG535324-01 (10) FB1	206.7	-0.3566	0.00		11:14:31 AM
6	WG535324-02 FB2	-75.0	0.1266	0.00	INV,><,LL	11:15:25 AM
7	L15080677-01 (25)	145.8	-0.2452	0.00		11:15:43 AM
8	L15080677-02 (50)	103.1	-0.1698	0.00		11:16:37 AM
9	L15080677-03 (50)	90.4	-0.1476	0.00		11:16:55 AM
10	L15080677-04 (25)	83.0	-0.1349	0.00		11:17:49 AM
ST-3	1CCV (150 mg/L)	153.8	-0.2596	102.52		11:18:07 AM
ST-2	2CCB (0 mg/L)	18.3	-0.0250	0.00		11:19:01 AM
11	L15080908-02 (4)	259.0	-0.4559	0.00		11:19:19 AM
12	L15080908-03 (4)	149.2	-0.2513	0.00		11:20:13 AM
13	L15080908-05 (4)	254.0	-0.4462	0.00		11:20:31 AM
14	L15080908-06 (4)	138.4	-0.2321	0.00		11:21:25 AM
15	L15080901-01	92.6	-0.1515	0.00		11:21:43 AM
16	L15080901-02 MS	175.3	-0.2987	0.00		11:22:37 AM
17	L15080901-03 MSD	175.5	-0.2990	0.00		11:22:55 AM

Report Date :08/19/2015 **Run Date :8/19/2015** **Operator : WESTCO** **Plan # :20150819002**

Plan Description : ALK-A1-DCM/08/19/2015

MICROBAC (OVD)
SMARTCHEM200 INST1 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
18	L15080901-04	X 74.7	-0.1206	0.00		11:23:49 AM
19	L15080901-05	X 74.7	-0.1206	0.00		11:24:07 AM
20	L15080904-01 (2)	X 173.8	-0.2959	0.00		11:25:01 AM
ST-3	1CCV (150 mg/L)	157.1	-0.2656	104.74		11:25:19 AM
ST-2	2CCB (0 mg/L)	30.5	-0.0455	0.00		11:26:13 AM
21	L15080904-03	X277.6	-0.4920	0.00		11:26:31 AM
22	L15080904-05 WG-07 REF	255.5	-0.4491	0.00		11:27:25 AM
23	L15080904-07 (2)	X 214.9	-0.3719	0.00		11:27:43 AM
24	WG535608-08 DUP	255.0	-0.4481	0.00		11:28:37 AM
25	ID 25	27.9	-0.0411	0.00		11:28:55 AM
ST-3	1CCV (150 mg/L)	161.0	-0.2727	107.36		11:29:49 AM
ST-2	2CCB (0 mg/L)	29.3	-0.0435	0.00		11:30:07 AM

Report Date :08/19/2015 **Run Date :8/19/2015** **Operator : WESTCO** **Plan # :20150819002**

Plan Description : ALK-A1-DCM/08/19/2015

Calibrant Report - WALK -

Calib Lot #:010104 Exp Date:6/21/2020 User:MICROBAC

Plan # : 20150819002 Description : [ALK-A1-DCM/08/19/2015] Unit

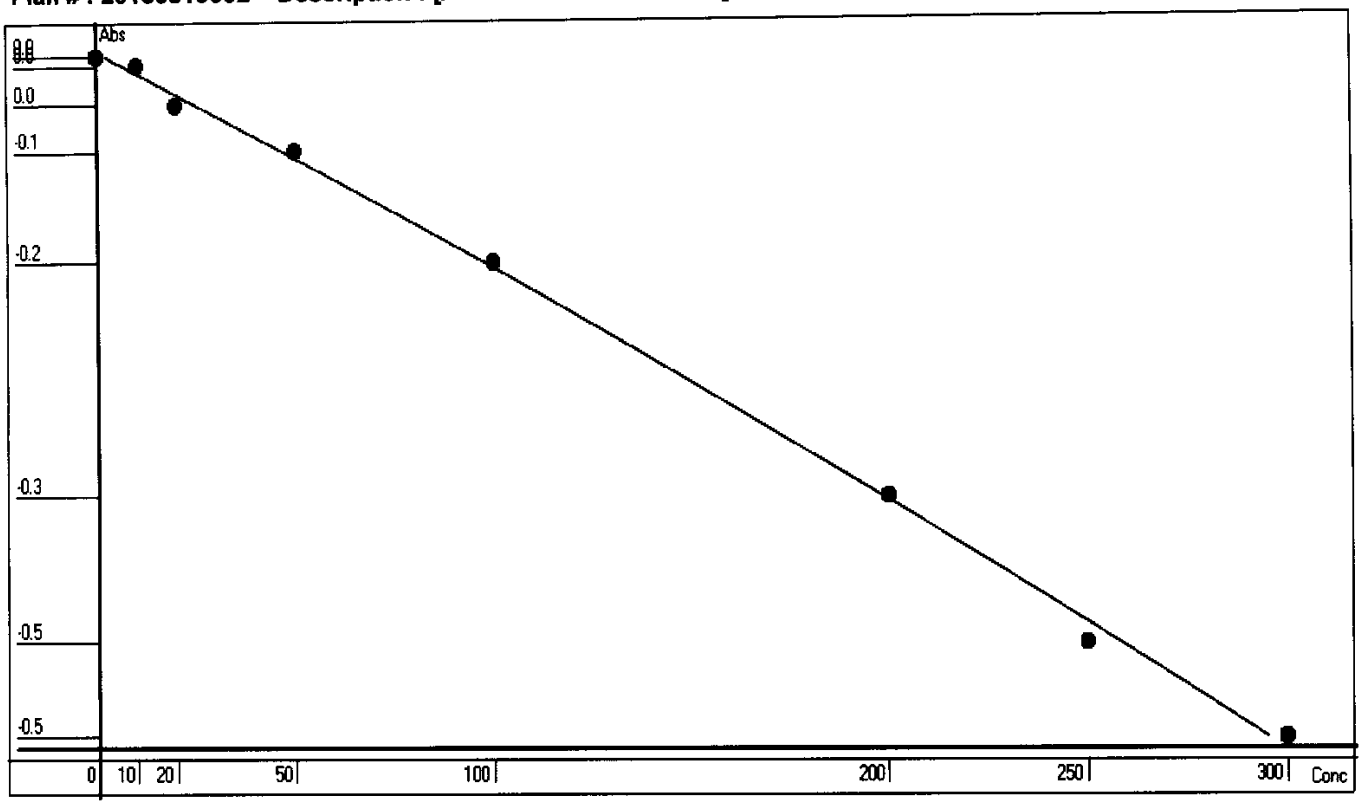

Point	OD	Conc	Recalc Conc	% Error
1	0.0017	0	2.1356	213.56
2	-0.0060	10	6.7941	-32.06
3	-0.0365	20	25.1336	25.67
4	-0.0732	50	46.9624	-6.08
5	-0.1601	100	97.6104	-2.39
6	-0.3411	200	198.4102	-0.79
7	-0.4538	250	257.9702	3.19
8	-0.5264	300	295.0362	-1.65

Conc= -96.7741*Abso^2 -605.4082*Abso +3.1651 R^2=0.9985

RBL
0.7828
0

Report Date 8/19/2015 Run Date 8/19/2015

MICROBAC (OVD)

SMARTCHEM200 INST1 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.0	0.7429	0.00		12:06:09 PM
DIL-1	RBL	0.0	0.7441	0.00		12:06:27 PM
DIL-1	RBL	0.0	0.7495	0.00		12:07:21 PM
DIL-1	Std-1	0.0	0.0083	0.00	INV	12:07:39 PM
SR5-1	Std-2	10.0	-0.0092	0.00		12:08:34 PM
SR5-2	Std-3	20.0	-0.0367	0.00		12:08:51 PM
SR5-3	Std-4	50.0	-0.0776	0.00		12:09:46 PM
SR5-4	Std-5	100.0	-0.1636	0.00		12:10:04 PM
SR5-5	Std-6	200.0	-0.3388	0.00		12:10:57 PM
SR5-6	Std-7	250.0	-0.4535	0.00		12:11:15 PM
SR5-7	Std-8	300.0	-0.5283	0.00		12:12:09 PM
ST-3	1CCV (150 mg/L)	147.3	-0.2497	98.19		12:12:27 PM
ST-2	2CCB (0 mg/L)	5.9	-0.0044	0.00		12:13:22 PM
1	ICV	257.0	-0.4526	0.00		12:13:40 PM
2	WG535641-01 BLK	19.0	-0.0264	0.00		12:14:34 PM
3	WG535641-02 LCS	196.8	-0.3398	0.00		12:14:52 PM
4	WG535641-03 LCSDUP	199.1	-0.3440	0.00		12:15:46 PM
5	L15080908-02 (4)	259.7	-0.4579	0.00		12:16:04 PM
6	L15080908-03 (4)	142.2	-0.2406	0.00		12:16:58 PM
7	L15080908-05 (4)	252.8	-0.4447	0.00		12:17:16 PM
8	L15080908-06 (4)	134.7	-0.2272	0.00		12:18:10 PM
9	L15080901-01	X 87.2	-0.1434	0.00		12:18:28 PM
10	L15080901-02 MS	X 161.2	-0.2748	0.00		12:19:22 PM
ST-3	1CCV (150 mg/L)	152.0	-0.2582	101.34		12:19:40 PM
ST-2	2CCB (0 mg/L)	18.4	-0.0253	0.00		12:20:34 PM
11	L15080901-03 MSD	X 160.5	-0.2736	0.00		12:20:52 PM
12	L15080901-04	72.8	-0.1184	0.00		12:21:46 PM
13	L15080901-05	76.5	-0.1248	0.00		12:22:04 PM
14	L15080904-01 (2)	177.5	-0.3044	0.00		12:22:58 PM
15	L15080904-03	274.3	-0.4858	0.00		12:23:16 PM
16	L15080904-05 WG-07 REF	248.8	-0.4370	0.00		12:24:10 PM
17	L15080904-07 (2)	X 214.2	-0.3720	0.00		12:24:28 PM

Report Date :08/19/2015 **Run Date :8/19/2015** **Operator : WESTCO** **Plan # :20150819003**

Plan Description : ALK-B1-DCM/08/19/2015

MICROBAC (OVD)
SMARTCHEM200 INST1 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
18	**WG535641-08 DUP**	**251.4**	**-0.4421**	**0.00**		**12:25:22 PM**
19	**ID 19**	**35.3**	**-0.0540**	**0.00**		**12:25:40 PM**
ST-3	**1CCV (150 mg/L)**	**167.7**	**-0.2865**	**111.77**		**12:26:34 PM**
ST-2	**2CCB (0 mg/L)**	**31.4**	**-0.0473**	**0.00**		**12:26:52 PM**

Report Date :08/19/2015 **Run Date :8/19/2015** **Operator : WESTCO** **Plan # :20150819003**

Plan Description : ALK-B1-DCM/08/19/2015

Calibrant Report - WALK -

Calib Lot #:010104 Exp Date:6/21/2020 User:MICROBAC

Plan # : 20150819003 Description : [ALK-B1-DCM/08/19/2015] Unit

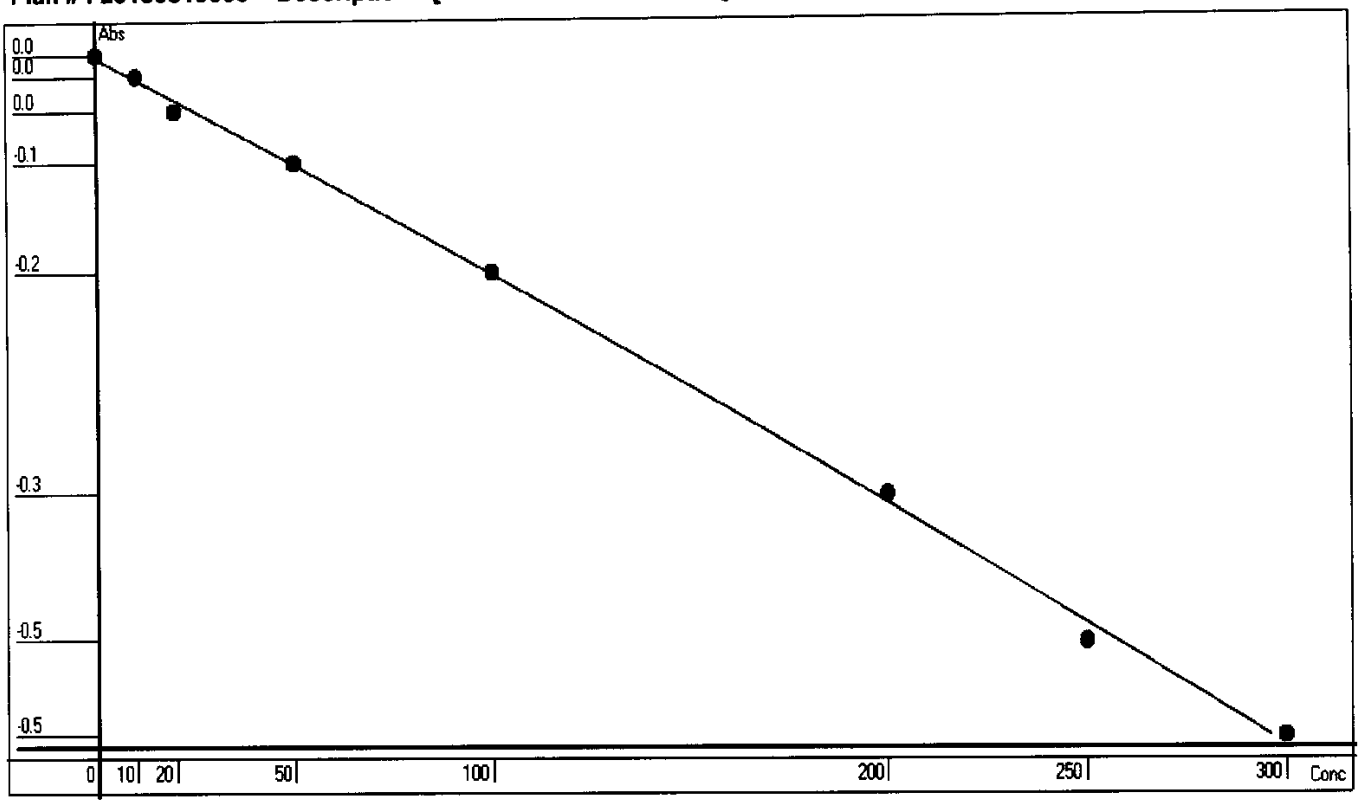

Point	OD	Conc	Recalc Conc	% Error
1	0.0083	0	-1.6394	-163.94
2	-0.0092	10	8.7972	-12.03
3	-0.0367	20	25.0989	25.49
4	-0.0776	50	49.1211	-1.76
5	-0.1636	100	98.7632	-1.24
6	-0.3388	200	196.2491	-1.88
7	-0.4535	250	257.4225	2.97
8	-0.5283	300	296.1867	-1.27

Conc= -79.6568*Abso^2 -596.446*Abso +3.3166 R^2=0.9988

RBL
0.7435
0

Report Date 8/19/2015 Run Date 8/19/2015

MICROBAC (OVD)

SMARTCHEM200 INST1 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.0	0.6118	0.00		1:13:57 PM
DIL-1	RBL	0.0	0.6154	0.00		1:14:15 PM
DIL-1	RBL	0.0	0.6151	0.00		1:15:09 PM
DIL-1	Std-1	0.0	-0.0029	0.00		1:15:27 PM
SR5-1	Std-2	10.0	-0.0196	0.00		1:16:21 PM
SR5-2	Std-3	20.0	-0.0309	0.00		1:16:39 PM
SR5-3	Std-4	50.0	-0.0654	0.00		1:17:33 PM
SR5-4	Std-5	100.0	-0.1359	0.00		1:17:51 PM
SR5-5	Std-6	200.0	-0.2940	0.00		1:18:45 PM
SR5-6	Std-7	250.0	-0.3855	0.00		1:19:03 PM
SR5-7	Std-8	300.0	-0.4382	0.00		1:19:58 PM
ST-3	1CCV (150 mg/L)	150.3	-0.2167	100.17		1:20:17 PM
ST-2	2CCB (0 mg/L)	12.3	-0.0185	0.00		1:21:10 PM
1	ICV	252.3	-0.3736	0.00		1:21:27 PM
2	WG535657-01 BLK	10.3	-0.0157	0.00		1:22:22 PM
3	WG535657-02 LCS	200.5	-0.2927	0.00		1:22:40 PM
4	WG535657-03 LCSDUP	199.5	-0.2913	0.00		1:23:34 PM
5	L15080901-01	74.4	-0.1059	0.00		1:23:52 PM
6	L15080901-02 MS	149.0	-0.2148	0.00		1:24:46 PM
7	L15080901-03 MSD	150.3	-0.2168	0.00		1:25:04 PM
8	L15080901-04	52.7	-0.0750	0.00		1:25:58 PM
9	L15080901-05	60.4	-0.0860	0.00		1:26:16 PM
10	L15080904-01 (2)	165.1	-0.2390	0.00		1:27:10 PM
ST-3	1CCV (150 mg/L)	148.2	-0.2137	98.83		1:27:28 PM
ST-2	2CCB (0 mg/L)	10.5	-0.0160	0.00		1:28:22 PM
11	L15080904-03	271.8	-0.4048	0.00		1:28:40 PM
12	L15080904-05	243.1	-0.3591	0.00		1:29:34 PM
13	L15080904-07 (2)	207.1	-0.3030	0.00		1:29:52 PM
14	L15080992-01 (2)	186.7	-0.2717	0.00		1:30:46 PM
15	L15080992-03	272.6	-0.4061	0.00		1:31:04 PM
16	L15080992-05	293.3	-0.4397	0.00	><	1:31:58 PM
17	L15080992-07	283.6	-0.4238	0.00		1:32:16 PM
18	L15080992-09 (2)	152.7	-0.2203	0.00		1:33:10 PM
19	L15080995-01	236.7	-0.3490	0.00		1:33:28 PM
20	L15080995-02	31.7	-0.0455	0.00		1:34:22 PM
ST-3	1CCV (150 mg/L)	151.4	-0.2184	100.93		1:34:40 PM

Report Date :08/20/2015 **Run Date :08/19/2015** **Operator : WESTCO** **Plan # :20150819004**

Plan Description : ALK-C1-DCM/08/19/2015

MICROBAC (OVD)

SMARTCHEM200 INST1 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
ST-2	2CCB (0 mg/L)	15.4	-0.0227	0.00		1:35:34 PM
21	L15080995-04	38.3	-0.0547	0.00		1:35:52 PM
22	WG535608-08 DUP	38.2	-0.0546	0.00		1:36:46 PM
23	ID 23	14.9	-0.0221	0.00		1:37:04 PM
ST-3	1CCV (150 mg/L)	154.1	-0.2224	102.71		1:37:58 PM

dlm 8/20/15

57

Report Date :08/20/2015 **Run Date :08/19/2015** **Operator : WESTCO** **Plan # :20150819004**

Plan Description : ALK-C1-DCM/08/19/2015

Calibrant Report - WALK -

Calib Lot #:010104 Exp Date:6/21/2020 User:MICROBAC

Plan # : 20150819004 Description : [ALK-C1-DCM/08/19/2015] Unit [mg/L]

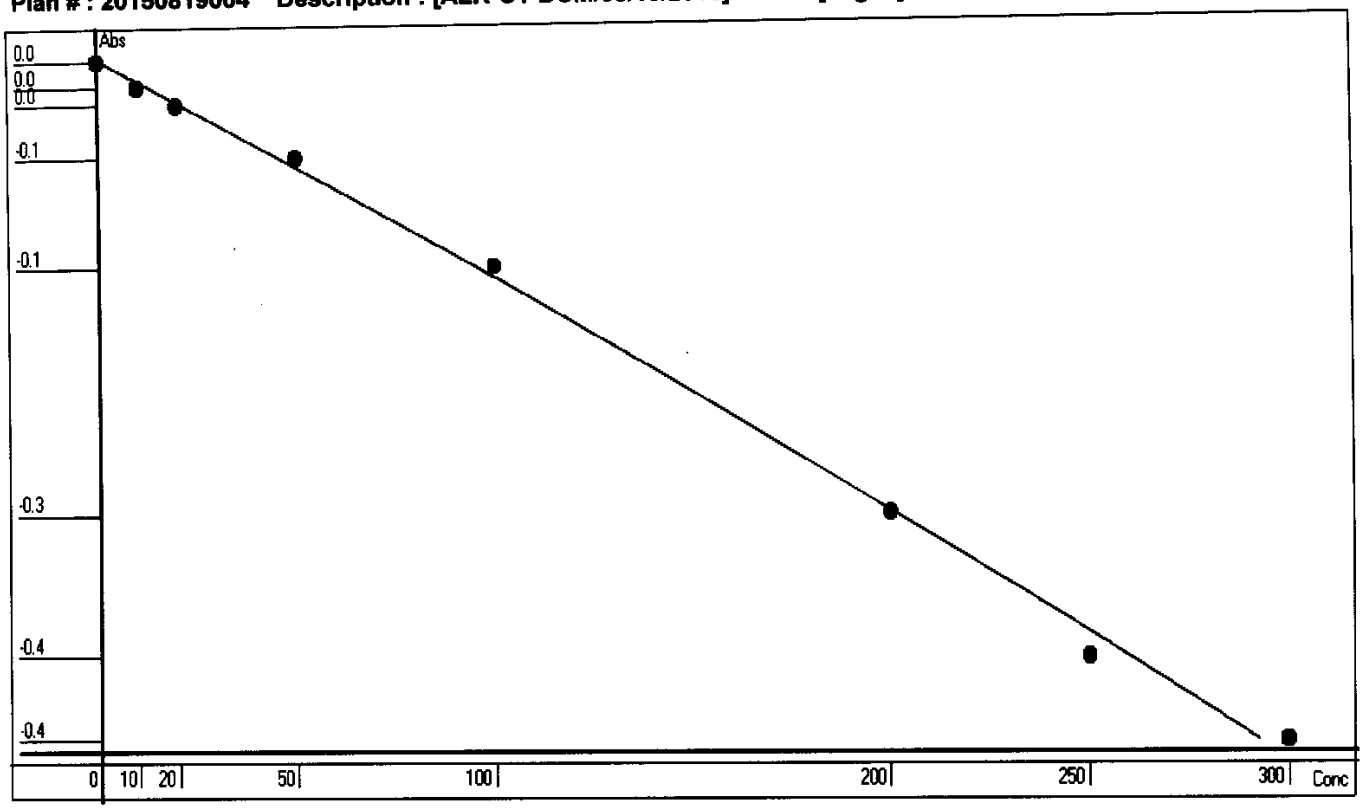

Point	OD	Conc	Recalc Conc	% Error
1	-0.0029	0	1.0794	107.94
2	-0.0196	10	13.1581	31.58
3	-0.0309	20	21.2903	6.45
4	-0.0654	50	45.9152	-8.17
5	-0.1359	100	95.2820	-4.72
6	-0.2940	200	201.3336	0.67
7	-0.3855	250	259.7685	3.91
8	-0.4382	300	292.4454	-2.52

Conc= -128.8296*Abso^2 -726.1719*Abso -1.0254 R^2=0.9979

RBL
0.6153
0

Report Date 8/20/2015 Run Date 8/19/2015

2.4.3 Phosphorus Data

2.4.3.1 Summary Data

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW22-081815	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	08/21/2015 09:45
Workgroup #:	WG535957	**Analyst:**	DCM	**Run Date:**	08/21/2015 09:54
Collect Date:	08/18/2015 08:05	**Dilution:**	1	**File ID:**	S2150821002.022
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	1.19		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15080992-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW25-081815	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	08/21/2015 09:45
Workgroup #:	WG535957	**Analyst:**	DCM	**Run Date:**	08/21/2015 09:54
Collect Date:	08/18/2015 09:40	**Dilution:**	1	**File ID:**	S2150821002.023
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	1.84		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15080992-05	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW12-081815	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	08/21/2015 09:45
Workgroup #:	WG535957	**Analyst:**	DCM	**Run Date:**	08/21/2015 09:55
Collect Date:	08/18/2015 11:05	**Dilution:**	1	**File ID:**	S2150821002.024
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	1.96		0.400	0.200	0.100

Certificate of Analysis

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15080992-07	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW06-081815	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	08/21/2015 09:45
Workgroup #:	WG535957	**Analyst:**	DCM	**Run Date:**	08/21/2015 09:56
Collect Date:	08/18/2015 13:40	**Dilution:**	1	**File ID:**	S2150821002.025
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-09	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW11-081815	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	08/21/2015 09:45
Workgroup #:	WG535957	**Analyst:**	DCM	**Run Date:**	08/21/2015 09:57
Collect Date:	08/18/2015 14:50	**Dilution:**	1	**File ID:**	S2150821002.026
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.359	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.4.3.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809
Value of b from plot:	0.0004135
Absorbance of unknown from quantitation report (y):	0.31
Calculated concentration (x):	0.03964483
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	0.0396 mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796
Value of B from plot:	318.9056
Value of C from plot:	-2.2712
Absorbance of unknown from quantitation report (x):	0.1583
Calculated concentration (y):	50.7495108
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	50.75 mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 21-AUG-2015
Analyst: DCM
Analyst: NA
Method: PHOS
Instrument: SC
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG535957

Calibration/Linearity	08-21-2015
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DCM
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
24-AUG-2015

Secondary Reviewer:
25-AUG-2015

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-25-2015 11:31:19

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 365.4 AAB#: WG535957

Login Number: L15080992

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW22-081815	01	08/18/15					08/21/2015	3.1	28		08/21/15	3.1	28	
50WW25-081815	03	08/18/15					08/21/2015	3	28		08/21/15	3	28	
50WW12-081815	05	08/18/15					08/21/2015	3	28		08/21/15	3	28	
50WW06-081815	07	08/18/15					08/21/2015	2.8	28		08/21/15	2.8	28	
50WW11-081815	09	08/18/15					08/21/2015	2.8	28		08/21/15	2.8	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4351444
Report generated 08/25/2015 08:22

METHOD BLANK SUMMARY

Login Number: L15080992
Blank File ID: S2150821002.010
Prep Date: 08/21/15 09:47
Analyzed Date: 08/21/15 09:47
Analyst: DCM

Work Group: WG535957
Blank Sample ID: WG535957-01
Instrument ID: SMARTCHEM2
Method: 365.4

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG535957-02	S2150821002.011	08/21/15 09:47	01
50WW22-081815	L15080992-01	S2150821002.022	08/21/15 09:54	01
50WW25-081815	L15080992-03	S2150821002.023	08/21/15 09:54	01
50WW12-081815	L15080992-05	S2150821002.024	08/21/15 09:55	01
50WW06-081815	L15080992-07	S2150821002.025	08/21/15 09:56	01
50WW11-081815	L15080992-09	S2150821002.026	08/21/15 09:57	01
DUP	WG535957-04	S2150821002.028	08/21/15 09:58	01

Report Name: BLANK_SUMMARY
PDF File ID: 4351445
Report generated 08/25/2015 08:22

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15080992 Prep Date: 08/21/15 09:47 Sample ID: WG535957-01
Instrument ID: SMARTCHEM2 Run Date: 08/21/15 09:47 Prep Method: 365.4
File ID: S2150821002.010 Analyst: DCM Method: 365.4
Workgroup (AAB#): WG535957 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-21-AUG-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Phosphorus, Total	0.100	0.400	-0.125	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4351446
25-AUG-2015 08:22

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15080992 Run Date: 08/21/2015 Sample ID: WG535957-02
Instrument ID: SMARTCHEM2 Run Time: 09:47 Prep Method: 365.4
File ID: S2150821002.011 Analyst: DCM Method: 365.4
Workgroup (AAB#): WG535957 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD71788 Cal ID: SMARTC-21-AUG-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Phosphorus, Total	1.00	0.982	98.2	70 - 130	

LCS - Modified 03/06/2008
PDF File ID: 4351448
Report generated: 08/25/2015 08:22

2.4.3.3 Raw Data

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

WORKGROUP: WG535957

Daily Check

- [x] Lamp On
- [x] Probe Rinse Full
- [x] DI Water > ½ Full
- [x] Wash Solution > ½ Full
- [ ] NO3 Reagent bottle connected / purged
- [ ] NO3 pH adj to pH 5-9

Syringe filter lot # _____

- [x] WBL Run
- [x] Reagents Full
- [x] Dilution H_2O Full
- [x] Waste Container Check

1) **Workgroup** _____
Plan # _____
2) **Workgroup** _____
Plan # _____
3) **Workgroup** _____
Plan # _____

Instrument: SC1 [ ] SC2 [x]

	Analyte	1	2	3
		PHOS		
		Dilution		
SC Prepared Curve				
Position				
1-1	ICV			
1-2	Blk			
1-3	LCS			
1-4	08-622-01			
1-5	02			
1-6	03			
1-7	04			
1-8	08-904-01			
1-9	03			
1-10	05			
1-11	07			
1-12	08-992-01			
1-13	03			
1-14	05			
1-15	07			
1-16	09			
1-17	08-1001-02	1mL/250		
1-18	DUP 08-622-03			
1-19	MS08-622-03			
1-20	MS 08-622-04			
1-21	08-1001-02	1mL/250		
1-22				
2-1				
2-2				
2-3				

Position	Analyte	1	2	3
2-4				
2-5				
2-6				
2-7				
2-8				
2-9				
2-10				
2-11				
2-12				
2-13				
2-14				
2-15				
2-16				
2-17				
2-18				
2-19				
2-20				
2-21				
2-22				
2-23				
2-24				
2-25				
2-26				
3-1				
3-2				

NOTES:
* Run NO2 std on NO3 runs
* LCSD must be run if no MS or Duplicate
*MS(10% sample): NO3, TKN, NH3, PHOS

DCN#112689

SMARTCHEM RUN LOG
(smartchem2, smartchem3)

WORKGROUP: WG535957

Position	Analyte	1	2	3
3-3				
3-4				
3-5				
3-6				
3-7				
3-8				
3-9				
3-10				
3-11				
3-12				
3-13				
3-14				
3-15				

Position	Analyte	1	2	3
3-16				
3-17				
3-18				
3-19				
3-20				
3-21				
3-22				
3-23				
3-24				
3-25				
3-26				
3-27				
3-28				

	Chloride	EPA 325.2/SM 4500-CI E-2000
	Nitrate-Nitrite	EPA 353.2/SM 4500-NO3 F-2000
	Alkalinity	EPA 310.2
	Sulfate	EPA 375.4/SM 426C (15th)/ SM4500-504 E-1997

	Ammonia	EPA 350.1/SM 4500-NH3 B-1997
	TKN	EPA 351.2
✓	Phos	EPA 365.4

Analyte	PHOS		Reagents
SOP & Revision	K 3654 R18		RGT 34471
Curve Stock (SC made)			RGT 34313
NO2 STD			RGT 34527
ICV	Digest		
CCV	see Log		
LCS			
MS	Dilution		

Comments: _____

Analyst: David Mayfield Date: 8/21/15

DCN#112689

TKN/Phosphorus Digestion Log

TKN WG: _____ Phos WG: _____

TKN Std: Std 71953 Phos Std: Std 71833

TKN CCV: 1/2 (Std 71953) Phos CCV: 1/2 (Std 71953)

TKN ICV: Std 71708 Phos ICV: Std 71787

TKN LCS: Std 71707 Phos LCS: Std 71788

MS/MSD: Std 72041

Daily Dilution: 1(25)/25 = 1

Block Digester Temperature: 380 °C Digest Reagent: RGT 34441

	Sample	Volume	TKN Dilution	Phos Dilution		Sample	Volume	TKN Dilution	Phos Dilution
1	Std		5	2	26	08-904-07			✓
2	Std		5	2	27	08-992-01			✓
3	ICVT		2		28	03			✓
4	ICVP			1.5	29	05			✓
5	LCST		1		30	07			✓
6	LCSP			1	31	09			✓
7	08-622-01		✓	✓	32	08-1001-02	1/250		✓
8	02		✓	✓	33	08-841-02	1/10	✓	*
9	03		✓	✓	34	DUP 08-622-03		✓	✓
10	04		✓	✓	35	MS 08-622-03		✓	✓
11	08-908-02	1/50	✓		36	MS 08-622-04		✓	✓
12	05	1/50	✓		37				
13	08-1034-01		✓		38				
14	02		✓		39				
15	03		✓		40				
16	04		✓		41				
17	05		✓		42				
18	06		✓		43				
19	07		✓		44				
20	08		✓		45				
21	09		✓		46				
22	10		✓		47				
23	08-904-01			✓	48				
24	03			✓	49				
25	05			✓	50				

Analyst: David Merkle Date: 8/20/15

* Diluted due to matrix interference

MICROBAC (OVD)
SMARTCHEM200 INST2 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WTPH -Unit [mg/L] - EPA 365.4 TOTAL PHOSPHORUS

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.000	0.0268	0.00		9:40:13 AM
DIL-1	RBL	0.000	0.0275	0.00		9:40:30 AM
DIL-1	RBL	0.000	0.0291	0.00		9:41:25 AM
SR5-1	Std-1	0.010	0.0183	0.00		9:41:42 AM
SR5-2	Std-2	0.200	0.0378	0.00		9:42:37 AM
SR5-3	Std-3	0.500	0.0771	0.00		9:42:54 AM
SR5-4	Std-4	1.000	0.1478	0.00		9:43:49 AM
SR5-5	Std-5	1.500	0.2144	0.00		9:44:07 AM
ST-1	Std-6	2.000	0.2886	0.00		9:45:01 AM
ST-3	1CCV (1 mg/L)	1.012	0.1503	101.19		9:45:19 AM
ST-2	2CCB (0 mg/L)	0.070	0.0215	0.00		9:46:13 AM
1	ICV	1.496	0.2165	0.00		9:46:31 AM
2	WG535957-01 BLK	-0.125	-0.0052	0.00	INV,><,LL	9:47:25 AM
3	WG535957-02 LCS	0.982	0.1462	0.00		9:47:43 AM
4	L15080622-01	-0.099	-0.0018	0.00	INV,><,LL	9:48:37 AM
5	L15080622-02	-0.110	-0.0032	0.00	INV,><,LL	9:48:55 AM
6	L15080622-03	0.036	0.0168	0.00	><	9:49:49 AM
7	L15080622-04	-0.020	0.0092	0.00	><,LL	9:50:07 AM
8	L15080904-01	0.045	0.0181	0.00	><	9:51:01 AM
9	L15080904-03	-0.001	0.0118	0.00	><,LL	9:51:19 AM
10	L15080904-05	0.347	0.0593	0.00	EPL	9:52:13 AM
ST-3	1CCV (1 mg/L)	0.992	0.1476	99.21		9:52:31 AM
ST-2	2CCB (0 mg/L)	0.037	0.0170	0.00	><	9:53:25 AM
11	L15080904-07	0.256	0.0469	0.00	EPL	9:53:43 AM
12	L15080992-01	1.191	0.1748	0.00	EPL	9:54:37 AM
13	L15080992-03	1.840	0.2635	0.00	EPL	9:54:55 AM
14	L15080992-05	1.963	0.2804	0.00	EPL	9:55:49 AM
15	L15080992-07	-0.124	-0.0051	0.00	INV,><,LL	9:56:07 AM
16	L15080992-09	0.359	0.0610	0.00	EPL	9:57:01 AM
17	L15081001-02 (250)	X0.149	0.0323	0.00		9:57:19 AM
18	WG535957-04 DUP	0.002	0.0121	0.00	><	9:58:13 AM
19	WG535957-05 MS	0.918	0.1374	0.00		9:58:31 AM

Report Date :08/21/2015 Run Date :8/21/2015 Operator : WESTCO Plan # :20150821002

Plan Description : PHOS-A2-DCM/08/21/2015

MICROBAC (OVD)
SMARTCHEM200 INST2 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WTPH -Unit [mg/L] - EPA 365.4 TOTAL PHOSPHORUS

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
20	WG535957-07 MS	0.980	0.1460	0.00		9:59:25 AM
ST-3	1CCV (1 mg/L)	1.009	0.1499	100.90		9:59:43 AM
ST-2	2CCB (0 mg/L)	0.042	0.0176	0.00	><	10:00:37 AM
21	ID 21 08-1001-02 (250)	1.492	0.2160	0.00	EPL	10:00:55 AM
22	ID 22	0.997	0.1483	0.00		10:01:49 AM
23	ID 23	-0.114	-0.0038	0.00	INV,><,LL	10:02:07 AM
ST-3	1CCV (1 mg/L)	1.048	0.1553	104.84		10:03:01 AM
ST-2	2CCB (0 mg/L)	0.045	0.0181	0.00	><	10:03:19 AM

Report Date :08/21/2015 Run Date :8/21/2015 Operator : WESTCO Plan # :20150821002

Plan Description : PHOS-A2-DCM/08/21/2015

Calibrant Report - WTPH -

Calib Lot #:010104 Exp Date:6/18/2020 User:MICROBAC

Plan # : 20150821002 Description : [PHOS-A2-DCM/08/21/2015] Unit

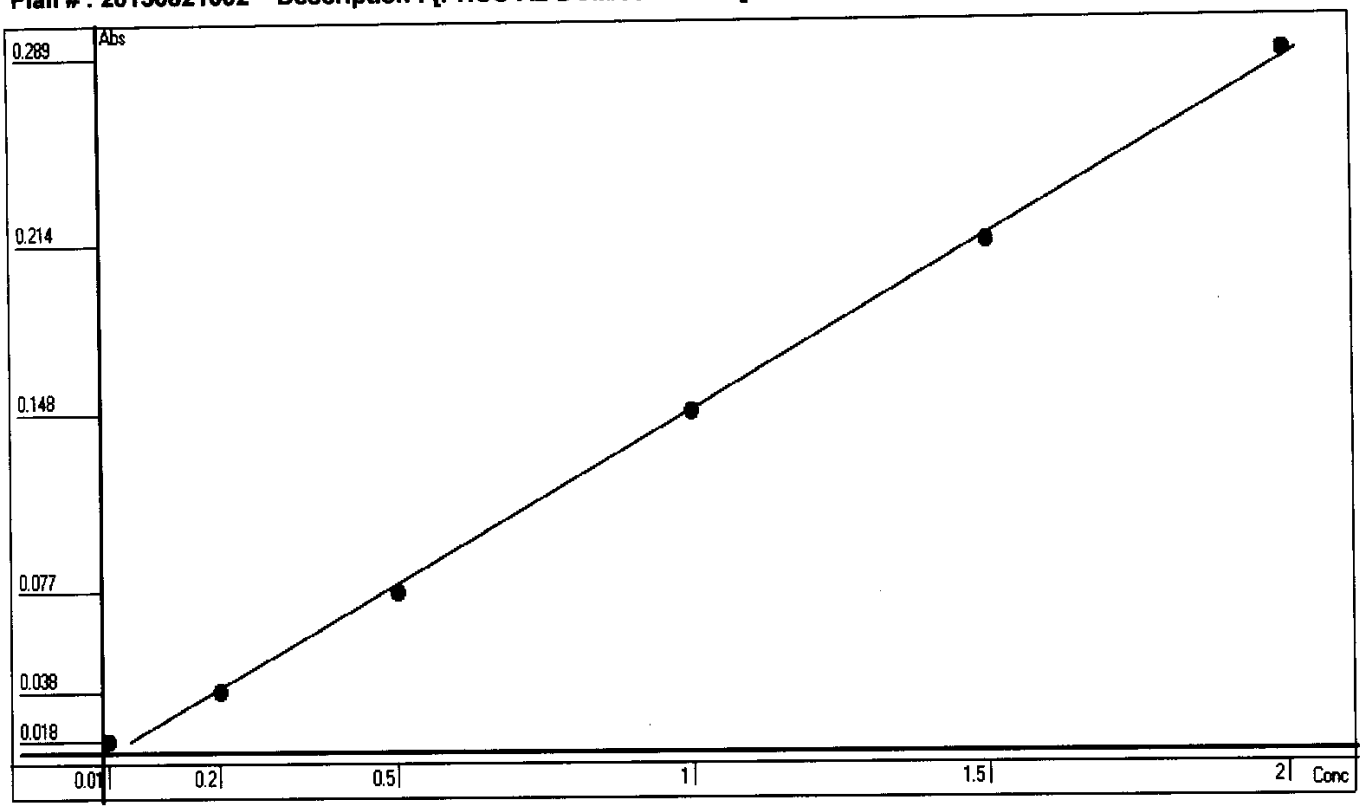

Point	OD	Conc	Recalc Conc	% Error
1	0.0182	0.01	0.0465	365.00
2	0.0378	0.2	0.1898	-5.10
3	0.0771	0.5	0.4771	-4.58
4	0.1478	1	0.9940	-0.60
5	0.2144	1.5	1.4809	-1.27
6	0.2885	2	2.0227	1.14

Conc= +7.3113*Abso -0.0866 R^2=0.9990

RBL
0.0271
0

Report Date 8/21/2015 Run Date 8/21/2015

2.4.4 Sulfide Data

2.4.4.1 Summary Data

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-01	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW22-081815	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG535595	**Analyst:**	TB	**Run Date:**	08/19/2015 15:01
Collect Date:	08/18/2015 08:05	**Dilution:**	1	**File ID:**	ET.1508191501-08
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-03	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW25-081815	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG535595	**Analyst:**	TB	**Run Date:**	08/19/2015 15:01
Collect Date:	08/18/2015 09:40	**Dilution:**	1	**File ID:**	ET.1508191501-09
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-05	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW12-081815	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG535595	**Analyst:**	TB	**Run Date:**	08/19/2015 15:01
Collect Date:	08/18/2015 11:05	**Dilution:**	1	**File ID:**	ET.1508191501-10
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-07	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW06-081815	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG535595	**Analyst:**	TB	**Run Date:**	08/19/2015 15:01
Collect Date:	08/18/2015 13:40	**Dilution:**	1	**File ID:**	ET.1508191501-11
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-09	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW11-081815	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG535595	**Analyst:**	TB	**Run Date:**	08/19/2015 15:01
Collect Date:	08/18/2015 14:50	**Dilution:**	1	**File ID:**	ET.1508191501-12
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.4.4.2 QC Summary Data

Example Total Sulfide(Liquid) Calculations

[mL Iodine * N Iodide) - (mL titrant * N titrant)] * 16000/(volume * dilution) = mg/L Sulfide

where:

mL Iodine = mL of Iodine used
N Iodine = normality of Iodine
mL titrant = mL of titrant used
N titrant = normality of titrant
16000 = factor: 1mL of 0.025 N iodine reacts with 0.4mg sulfide
volume = mL filtered of mL titrated(if not filtered)
dilution = dilution in decimal form (1/5 = 0.2)

Example Total Sulfide(Soil) Calculations

[(mL Iodine * N Iodine) - (mL titrant * N titrant)] * 16.03/weight = mg/kg sulfide

where:

mL Iodine = mL of Iodine used
N Iodine = normality of Iodine
mL titrant = normality of titrant
16.03 = 32.06 grams per 2 equivalents
weight = kg of sample used

Microbac Laboratories Inc.

Data Checklist

Date: 18-AUG-2015
Analyst: TB
Analyst: NA
Method: S
Instrument: BURET
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG535595

Calibration/Linearity	08/18/2015
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	TB
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
21-AUG-2015

Secondary Reviewer:
27-AUG-2015

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-27-2015 07:49:40

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: SM4500-S-(-2)-F-

AAB#: WG535595

Login Number: L15080992

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW22-081815	01	08/18/15					08/19/2015	1.3	7		08/19/15	1.3	7	
50WW25-081815	03	08/18/15					08/19/2015	1.2	7		08/19/15	1.2	7	
50WW12-081815	05	08/18/15					08/19/2015	1.2	7		08/19/15	1.2	7	
50WW06-081815	07	08/18/15					08/19/2015	1.1	7		08/19/15	1.1	7	
50WW11-081815	09	08/18/15					08/19/2015	1	7		08/19/15	1	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4353571
Report generated 08/26/2015 09:18

METHOD BLANK SUMMARY

Login Number: L15080992
Blank File ID: ET.1508191501-01
Prep Date: 08/19/15 15:01
Analyzed Date: 08/19/15 15:01
Analyst: TB

Work Group: WG535595
Blank Sample ID: WG535595-01
Instrument ID: BURET
Method: SM4500-S-(-2)-F-

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG535595-02	ET.1508191501-02	08/19/15 15:01	
LCS2	WG535595-03	ET.1508191501-03	08/19/15 15:01	
50WW22-081815	L15080992-01	ET.1508191501-08	08/19/15 15:01	
50WW25-081815	L15080992-03	ET.1508191501-09	08/19/15 15:01	
50WW12-081815	L15080992-05	ET.1508191501-10	08/19/15 15:01	
50WW06-081815	L15080992-07	ET.1508191501-11	08/19/15 15:01	
50WW11-081815	L15080992-09	ET.1508191501-12	08/19/15 15:01	

Report Name: BLANK_SUMMARY
PDF File ID: 4353572
Report generated 08/26/2015 09:18

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15080992 Prep Date: 08/19/15 15:01 Sample ID: WG535595-01
Instrument ID: BURET Run Date: 08/19/15 15:01 Prep Method: SM4500-S-(-2)-F
File ID: ET.1508191501-01 Analyst: TB Method: SM4500-S-(-2)-F
Workgroup (AAB#): WG535595 Matrix: Water Units: mg/L
Contract #: Cal ID: BURET-

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Sulfide	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4353573
26-AUG-2015 09:18

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15080992 Analyst: TB Prep Method: SM4500-S-(-2)-F
Instrument ID: BURET Matrix: Water Method: SM4500-S-(-2)-F
Workgroup (AAB#): WG535595 Units: mg/L
QC Key: DOD4 Lot #: STD72077

Sample ID: WG535595-02 LCS File ID: ET.1508191501-02 Run Date: 08/19/2015 15:01
Sample ID: WG535595-03 LCS2 File ID: ET.1508191501-03 Run Date: 08/19/2015 15:01

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Sulfide	21.0	20.0	95.2	21.0	20.0	95.2	0.00	85 - 115	10	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4353574
Report generated: 08/26/2015 09:18

2.4.4.3 Raw Data

SULFIDE
(sulfide1)

WORKGROUP: WG535595

Water:
EPA 376.1 / SM4500-S(-2)-F
SOP K3761 Revision #: 16

Soil:
SM846 9030B/9034
SOP K9030 Revision #: _____

Instrument: Buret

LCS: SH 72077

Iodine standardization (0.025N) COA: 18311
mL 0.025N titrant: 10.0
Volume I: 10.0 mL
Normality I: 0.025

(0.1 N I) COA: 18088
mL 0.025 N titrant: 8.0
Volume I: ~~0.10~~ 2.0 mL
Normality I: 0.10

TB 8/19/15

Stock standardization (in duplicate) 5.0 mL stock
mL I 1) 10.0 2) 10.0
N I 1) 0.10 2) 0.10
mL 0.025 titrant 1) 22.5 2) 22.5
LCS daily dilution: 3(1400)/200 = 21.0 mg/L

1400 = stock conc (mg/L)

Titrant: T- 1606-05-06

SAMPLE	Volume Filtered mL	mL Iodine	N Iodine	0.025 N Sodium Thiosulfate (mL)
BLANK	200	15.0	0.025	15.0
LCS (mL)	200	15.0	0.025	5.0
LCSDUP (mL)	200	15.0	0.025	5.0
8-904-01	480	15.0	0.025	15.0
03	480	15.0	0.025	15.0
05	500	15.0	0.025	14.6
07	480	15.0	0.025	15.0
992-01	490	15.0	0.025	14.5
03	480	15.0	0.025	14.8
05	510	15.0	0.025	14.9
07	470	15.0	0.025	15.0
09	480	15.0	0.025	15.0
1025-01	175	15.0	0.025	15.0
8-0001-01	200	15.0	0.025	14.6
02	200	15.0	0.025	14.5
03	200	15.0	0.025	14.5

7(1400)/200 = 49.0

20(49)/1000 = 0.98

Analyst: Tom Boyle Date/Time: 1500 8/19/15

DCN#112630

Microbac Laboratories Inc.
TITRAMETRIC REPORT

Workgroup (AAB#): WG535595
Product: EPA 376.1\9034
Analyte: Sulfide

Analyst: TB
Run Date: 08/19/2015 15:01

SAMPLE NUMBER	Volume	Vol I	Nor I	Vol T	Nor T	Dil	Analytical	Reported	Units
WG535595-01	200.0	15	.025	15	.025	1	0	0	mg/L
WG535595-02	200.0	15	.025	5	.025	1	20.0	20.00	mg/L
WG535595-03	200.0	15	.025	5	.025	1	20.0	20.00	mg/L
L15080904-01	480.0	15	.025	15	.025	1	0	ND	mg/L
L15080904-03	480.0	15	.025	15	.025	1	0	ND	mg/L
L15080904-05	500.0	15	.025	14.6	.025	1	0.320	ND	mg/L
L15080904-07	480.0	15	.025	15	.025	1	0	ND	mg/L
L15080992-01	490.0	15	.025	14.5	.025	1	0.408	ND	mg/L
L15080992-03	480.0	15	.025	14.8	.025	1	0.167	ND	mg/L
L15080992-05	510.0	15	.025	14.9	.025	1	0.0784	ND	mg/L
L15080992-07	470.0	15	.025	15	.025	1	0	ND	mg/L
L15080992-09	480.0	15	.025	15	.025	1	0	ND	mg/L
L15080001-01	200.0	15	.025	14.6	.025	1	0.800	0.8000	mg/L
L15080001-02	200.0	15	.025	14.5	.025	1	1.00	1.000	mg/L
L15080001-03	200.0	15	.025	14.5	.025	1	1.00	1.000	mg/L

SULFIDE_REPORT - Modified 03/06/2008

Report generated 08/21/2015 11:01

[redacted]

Microbac Laboratories Inc.
TITRAMETRIC REPORT

Workgroup (AAB#): WG535595
Product: 9030
Analyte: Sulfide, Dissolved

Analyst: TB
Run Date: 08/19/2015 15:01

SAMPLE NUMBER	Volume	Vol I	Nor I	Vol T	Nor T	Dil	Analytical	Reported	Units
L15081025-01	175.0	15	.025	15	.025	1	0	ND	mg/L

SULFIDE_REPORT - Modified 03/06/2008

Report generated 08/21/2015 11:01

[redacted]

2.4.5 Total Organic Carbon Data

2.4.5.1 Summary Data

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-01	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW22-081815	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	05/27/2015 15:47
Workgroup #:	WG535967	**Analyst:**	DIH	**Run Date:**	08/21/2015 14:48
Collect Date:	08/18/2015 08:05	**Dilution:**	2	**File ID:**	TC08212015.020
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	2.35	J	4.00	2.00	1.00

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-03	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW25-081815	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	05/27/2015 15:47
Workgroup #:	WG535967	**Analyst:**	DIH	**Run Date:**	08/21/2015 15:02
Collect Date:	08/18/2015 09:40	**Dilution:**	3	**File ID:**	TC08212015.021
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	3.00	U	6.00	3.00	1.50

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-05	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW12-081815	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	05/27/2015 15:47
Workgroup #:	WG536390	**Analyst:**	DIH	**Run Date:**	08/26/2015 16:32
Collect Date:	08/18/2015 11:05	**Dilution:**	4	**File ID:**	TC08262015.006
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	26.3		8.00	4.00	2.00

Certificate of Analysis

Sample #:	L15080992-07	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW06-081815	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	05/27/2015 15:47
Workgroup #:	WG535967	**Analyst:**	DIH	**Run Date:**	08/21/2015 15:33
Collect Date:	08/18/2015 13:40	**Dilution:**	3	**File ID:**	TC08212015.023
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	3.00	U	6.00	3.00	1.50

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15080992
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15080992-09	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW11-081815	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	05/27/2015 15:47
Workgroup #:	WG536390	**Analyst:**	DIH	**Run Date:**	08/26/2015 16:45
Collect Date:	08/18/2015 14:50	**Dilution:**	5	**File ID:**	TC08262015.007
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	14.7		10.0	5.00	2.50

2.4.5.2 QC Summary Data

Total Organic Carbon Example Calculations
(Direct Readout Parameter)

(Readout)/(dilution) = mg/L

where:

Readout = direct readout from the instrument
dilution = dilution in decimal form (ex. 1/5 dilution = 0.2)

Microbac Laboratories Inc.

Data Checklist

Date: 21-AUG-2015
Analyst: DIH
Analyst: NA
Method: TOC
Instrument: TOC
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG535967

Calibration/Linearity	5/27/2015
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DIH
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
25-AUG-2015

Secondary Reviewer:
25-AUG-2015

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-25-2015 11:16:56

Microbac Laboratories Inc.

Data Checklist

Date: 26-AUG-2015
Analyst: DIH
Analyst: NA
Method: TOC
Instrument: TOC
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG536603 WG536390

Calibration/Linearity	8/26/2015
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DIH
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
27-AUG-2015

Secondary Reviewer:
27-AUG-2015

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-27-2015 14:20:26

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 415.1 AAB#: WG535967

Login Number: L15080992

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW22-081815	01	08/18/15					08/21/2015	3.3	28		08/21/15	3.3	28	
50WW25-081815	03	08/18/15					08/21/2015	3.2	28		08/21/15	3.2	28	
50WW06-081815	07	08/18/15					08/21/2015	3.1	28		08/21/15	3.1	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4351935
Report generated 08/28/2015 12:29

Microbac Laboratories Inc.

00647299

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 415.1 AAB#: WG536390

Login Number: L15080992

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW12-081815	05	08/18/15					08/26/2015	8.2	28		08/26/15	8.2	28	
50WW11-081815	09	08/18/15					08/26/2015	8.1	28		08/26/15	8.1	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4351935
Report generated 08/28/2015 12:29

METHOD BLANK SUMMARY

Login Number: L15080992
Blank File ID: TC08212015.003
Prep Date: 08/21/15 10:35
Analyzed Date: 08/21/15 10:35
Analyst: DIH

Work Group: WG535967
Blank Sample ID: WG535967-01
Instrument ID: TOC-VWP
Method: 415.1

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG535967-02	TC08212015.004	08/21/15 10:49	01
LCS2	WG535967-03	TC08212015.005	08/21/15 11:02	01
DUP	WG535967-05	TC08212015.009	08/21/15 12:00	01
50WW22-081815	L15080992-01	TC08212015.020	08/21/15 14:48	DL01
50WW25-081815	L15080992-03	TC08212015.021	08/21/15 15:02	DL01
50WW06-081815	L15080992-07	TC08212015.023	08/21/15 15:33	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4351936
Report generated 08/28/2015 12:29

METHOD BLANK SUMMARY

Login Number: L15080992
Blank File ID: TC08262015.003
Prep Date: 08/26/15 15:51
Analyzed Date: 08/26/15 15:51
Analyst: DIH

Work Group: WG536390
Blank Sample ID: WG536390-01
Instrument ID: TOC-VWP
Method: 415.1

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG536390-02	TC08262015.004	08/26/15 16:04	01
LCS2	WG536390-03	TC08262015.005	08/26/15 16:18	01
50WW12-081815	L15080992-05	TC08262015.006	08/26/15 16:32	DL01
50WW11-081815	L15080992-09	TC08262015.007	08/26/15 16:45	DL01
DUP	WG536390-05	TC08262015.017	08/26/15 18:55	01

Report Name: BLANK_SUMMARY
PDF File ID: 4351936
Report generated 08/28/2015 12:29

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15080992 Prep Date: 08/21/15 10:35 Sample ID: WG535967-01
Instrument ID: TOC-VWP Run Date: 08/21/15 10:35 Prep Method: 415.1
File ID: TC08212015.003 Analyst: DIH Method: 415.1
Workgroup (AAB#): WG535967 Matrix: Water Units: mg/L
Contract #: Cal ID: TOC-VW-27-MAY-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Total Organic Carbon	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4351937
28-AUG-2015 12:29

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15080992 Prep Date: 08/26/15 15:51 Sample ID: WG536390-01
Instrument ID: TOC-VWP Run Date: 08/26/15 15:51 Prep Method: 415.1
File ID: TC08262015.003 Analyst: DIH Method: 415.1
Workgroup (AAB#): WG536390 Matrix: Water Units: mg/L
Contract #: Cal ID: TOC-VW-27-MAY-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Total Organic Carbon	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4351937
28-AUG-2015 12:29

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15080992 Analyst: DIH Prep Method: 415.1
Instrument ID: TOC-VWP Matrix: Water Method: 415.1
Workgroup (AAB#): WG536390 Units: mg/L
QC Key: DOD4 Lot #: STD69935

Sample ID: WG536390-02 LCS File ID: TC08262015.004 Run Date: 08/26/2015 16:04
Sample ID: WG536390-03 LCS2 File ID: TC08262015.005 Run Date: 08/26/2015 16:18

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Total Organic Carbon	25.0	27.4	110	25.0	28.0	112	2.31	85 - 115	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4351938
Report generated: 08/28/2015 12:29

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15080992 Analyst: DIH Prep Method: 415.1
Instrument ID: TOC-VWP Matrix: Water Method: 415.1
Workgroup (AAB#): WG535967 Units: mg/L
QC Key: DOD4 Lot #: STD69935

Sample ID: WG535967-02 LCS File ID: TC08212015.004 Run Date: 08/21/2015 10:49
Sample ID: WG535967-03 LCS2 File ID: TC08212015.005 Run Date: 08/21/2015 11:02

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Total Organic Carbon	25.0	23.6	94.3	25.0	21.5	86.2	9.00	85 - 115	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4351938
Report generated: 08/28/2015 12:29

2.4.5.3 Raw Data

Curve wg525298

Total Organic Carbon

MAKE DAILY

CCV (TOC): _____ (5/200)(1000) = 25mg/L

LCS (TOC): _____ (5/200)(1000) = 25mg/L

CCV (TIC): _____ (5/200)(1000) = 25mg/L see below

MS (TOC): _____

Calibration Curve Date: _____

Reagent: ~~RGT 33399~~ 33691 ~~RGT 32721~~

☑ SM5310-C : Matrix 2 WG_____

☐ EPA 415.1/9060A(mod): Matrix 1 WG_____ SOP: K 4151 Rev. 18

WG_____ Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

- ☑ drain reservoir filled
- ☑ ASI water bottle full
- ☑ dilution water bottle full
- ☑ 3rd bottle full
- ☑ sufficient gas
- ☑ sufficient persulfate
- ☑ sufficient acid
- ☑ waste container

Position	Sample ID	Dilution	Position	Sample ID	Dilution	Position	Sample ID	Dilution
1	TC curve		26	TC curve		51		
2	TC curve		27	std 65368		52	see SOP for	
3	TC ICV		28			53	curve points	
4	~~TOC~~ TIC ICV		29	TIC curve		54		
5	on		30	std 68972		55		
6			31			56		
7			32			57		
8			33	TOC(TC)		58		
9			34	ICV		59	5/200(1000) = 25	
10			35	std 69935		60		
11			36			61		
12			37	TIC ICV		62		
13	all points		38	std 68222		63		
14	analyzed		39			64		
15	in duplicate		40			65		
16			41			66		
17			42			67		
18			43			68		
19			44			69		
20			45			70		
21			46			71		
22			47			72		
23			48			73		
24			49			74		
25			50			75		

Analyst: [signature] Date/Time: 5/27/15

DCN#110878

C:\TOC3201\Data\05-27-2015-DIH-CURVE.t32

	Analysis	Sample Name	Result	Status	Date / Time	Vial
1	TC	TCCURVE		Complete	5/27/2015 3:55:16 PM	0, 1, 2,
2	IC	TICCURVE		Complete	5/27/2015 5:11:46 PM	0, 6, 7,
3	TC	TC ICV	TC:24.70mg/L	Complete	5/27/2015 5:28:06 PM	11
4	IC	TIC ICV	IC:24.92mg/L	Complete	5/27/2015 5:40:34 PM	12

98.8%
99.7%

5/28/2015 7:38:55 AM

1/1

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Cal. Curve

Sample Name: TCCURVE
Sample ID: Untitled
Cal. Curve: TCCURVE-05-27-2015.2015_05_27_14_45_03.cal
Status Completed

Type	Anal.
Standard	TC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	14.21	500uL	1	*******		5/27/2015 2:48:37 PM
2	14.13	500uL	1	*******		5/27/2015 2:52:11 PM

Acid Add. 0.000%
Mean Area 14.17

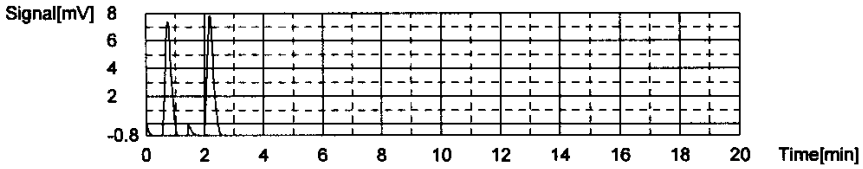

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	72.68	500uL	1	*******		5/27/2015 2:57:41 PM
2	73.82	500uL	1	*******		5/27/2015 3:01:49 PM

Acid Add. 0.000%
Mean Area 73.25

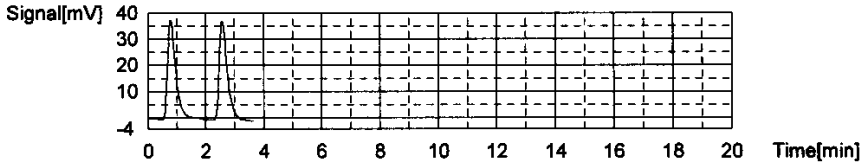

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	231.5	500uL	1	*******		5/27/2015 3:07:44 PM
2	231.3	500uL	1	*******		5/27/2015 3:12:05 PM

Acid Add. 0.000%
Mean Area 231.4

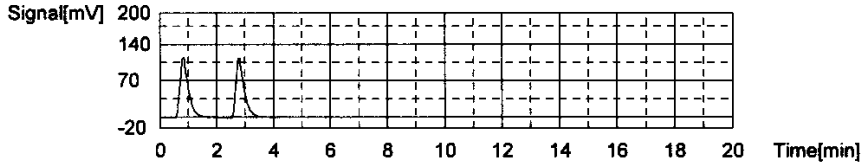

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	440.2	500uL	1	*******		5/27/2015 3:18:32 PM
2	435.3	500uL	1	*******		5/27/2015 3:23:03 PM

Acid Add. 0.000%
Mean Area 437.8

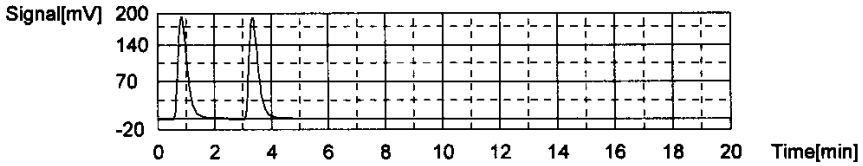

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1094	500uL	1	*******		5/27/2015 3:31:04 PM
2	1079	500uL	1	*******		5/27/2015 3:38:10 PM

Acid Add. 0.000%
Mean Area 1087

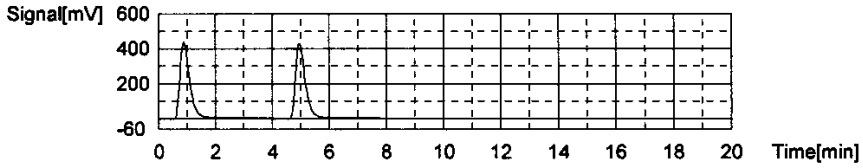

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	2210	500uL	1	T******		5/27/2015 3:47:01 PM
2	2208	500uL	1	T******		5/27/2015 3:55:16 PM

Acid Add. 0.000%
Mean Area 2209

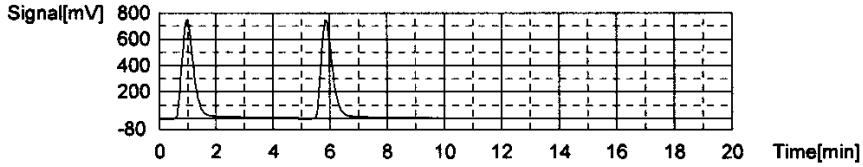

Slope: 43.70
Intercept 12.49
r^2 0.999746 ✓
Zero Shift No

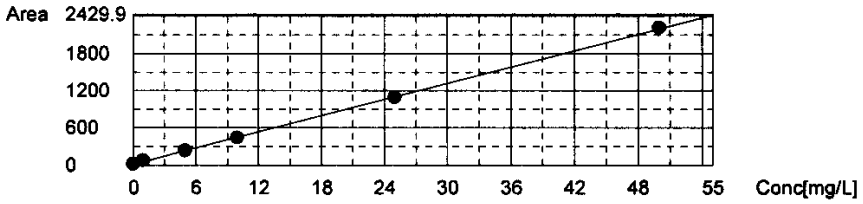

Cal. Curve

Sample Name: TICCURVE
Sample ID: Untitled
Cal. Curve: TICCURVE-05-27-2015.2015_05_27_15_55_16.cal
Status Completed

Type	Anal.
Standard	IC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	12.69	500uL	1	*******		5/27/2015 3:59:17 PM
2	12.56	500uL	1	*******		5/27/2015 4:03:21 PM

Acid Add. 10.00%
Mean Area 12.63

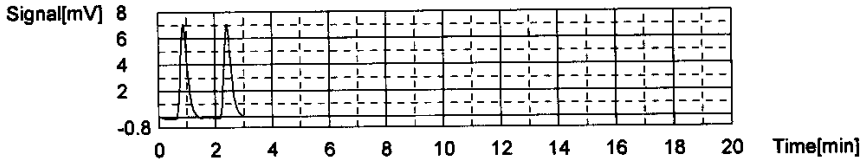

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	56.24	500uL	1	*******		5/27/2015 4:11:08 PM
2	56.43	500uL	1	*******		5/27/2015 4:15:44 PM

Acid Add. 10.00%
Mean Area 56.34

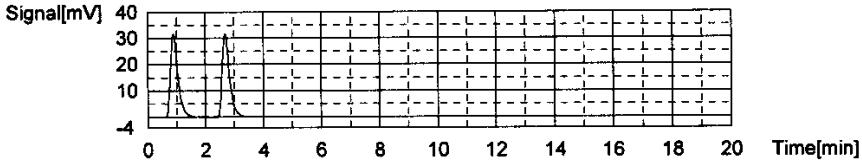

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	178.6	500uL	1	*******		5/27/2015 4:23:48 PM
2	185.6	500uL	1	*******		5/27/2015 4:28:40 PM

Acid Add. 10.00%
Mean Area 182.1

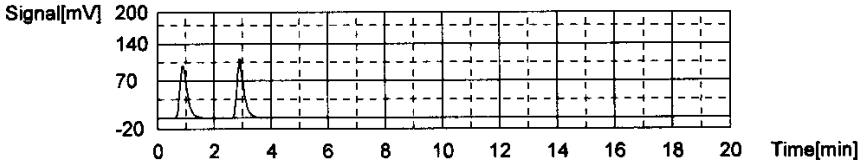

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	339.3	500uL	1	*******		5/27/2015 4:37:04 PM
2	343.0	500uL	1	*******		5/27/2015 4:42:04 PM

Acid Add. 10.00%
Mean Area 341.1

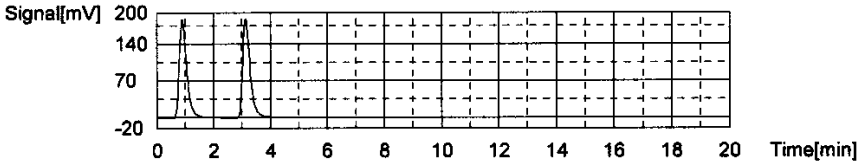

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	802.7	500uL	1	*******		5/27/2015 4:50:52 PM
2	804.1	500uL	1	*******		5/27/2015 4:56:25 PM

Acid Add. 10.00%
Mean Area 803.4

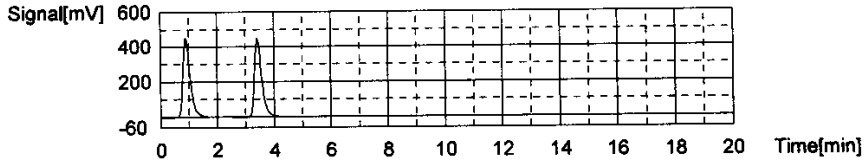

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1592	500uL	1	*******		5/27/2015 5:05:46 PM
2	1578	500uL	1	*******		5/27/2015 5:11:46 PM

Acid Add. 10.00%
Mean Area 1585

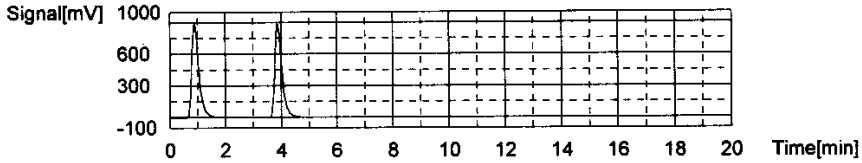

Slope: 31.27
Intercept 22.45
r^2 0.999917
Zero Shift No

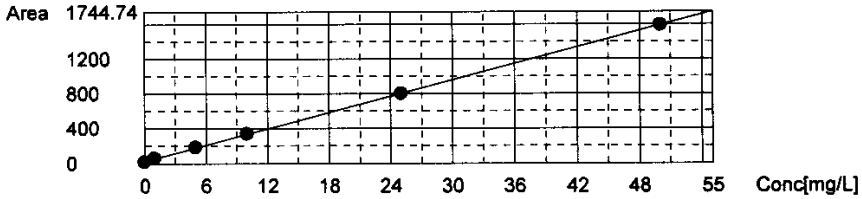

Sample

Sample Name: TC ICV
Sample ID: Untitled
Origin: TCCURVE-05-27-2015.cal
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TC	1.000	TC:24.70mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1111	25.13mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_05	5/27/2015 5:21:56 PM
2	1073	24.27mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_05	5/27/2015 5:28:06 PM

Mean Area 1092
Mean Conc. 24.70mg/L

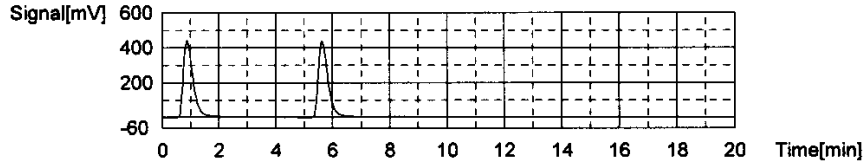

Sample

Sample Name:	TIC ICV
Sample ID:	Untitled
Origin:	TICCURVE-05-27-2015.cal
Status	Completed
Chk. Result	

Type	Anal.	Dil.	Result
Unknown	IC	1.000	IC:24.92mg/L

1. Det

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	800.1	24.87mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/27/2015 5:35:10 PM
2	803.2	24.97mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/27/2015 5:40:34 PM

Mean Area	801.7
Mean Conc.	24.92mg/L

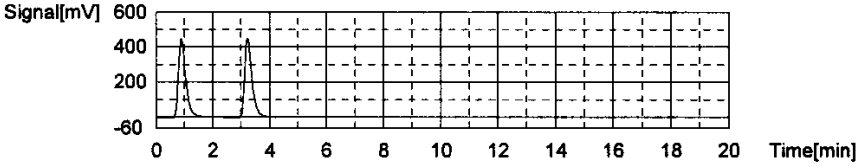

WORKGROUP: WG536390

536603

Total Organic Carbon

MAKE DAILY

CCV (TOC): STD 72133
(5/200)(1000) = 25mg/L

LCS (TOC): std 69935/72133
(5/200)(1000) = 25mg/L

CCV (TIC): STD 71349
(5/200)(1000) = 25mg/L

MS (TOC): 0.4/40(100) = 10

Calibration Curve Date: 8/26/15

Reagent: ROT 34171
ROT 34459

☑ SM5310-C : Matrix 2 WG 536603

☑ EPA 415.1/9060A(mod): Matrix 1 WG 536390 SOP: K 4151 Rev. 18

WG _____ Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

- ☒ drain reservoir filled
- ☒ ASI water bottle full
- ☒ dilution water bottle full
- ☒ 3rd bottle full
- ☒ sufficient gas
- ☒ sufficient persulfate
- ☒ sufficient acid
- ☒ waste container

Position	Sample ID	Dilution	Position	Sample ID	Dilution	Position	Sample ID	Dilution
1	TIC		26	CCV		51		
2	CCV		27	CCB		52		
3	BLK		28	BLK		53		
4	LCS		29	LCS 25		54		
5	LCSDUP		30	LCSDUP		55		
6	08-0992-05	1/4	31	08-1425-01		56		
7	-09	1/5	32	02		57		
8	08-0995-01	1/4	33	DUP		58		
9	-02		34	MS		59		
10	-04	1/5	35	CCV		60		
11	08-1073-01	1/5	36	CCB		61		
12	-03	1/5	37			62		
13	08-1166-01		38	CCV		63		
14	CCV		39	CCB		64		
15	CCB		40			65		
16	08-1166-08		41			66		
17	DUP		42			67		
18	MS		43			68		
19	08-1428-01		44			69		
20	02		45			70		
21	03		46			71		
22	04		47			72		
23	08-1429-01	1/5	48			73		
24	08-1287-01		49			74		
25			50			75		

1428

Alg AS

Analyst: ~~Ethan Tuck~~ Deanne Hessar

Date/Time: ~~08/25/15~~ 8/26 8/26/15

DCN#112763

C:\TOC3201\Data\08-26-2015-EPT-TOC.t32

	Analysis	Sample Name	Result	Status	Date / Time	Vial
1	TOC	TIC 25	TOC:3.224mg/L TC:28.34mg/L IC:25.12mg/L	Complete	8/26/2015 3:33:55 PM	1
2	TOC	CCV 25	TOC:24.67mg/L TC:24.71mg/L IC:0.03212mg/L	Complete	8/26/2015 3:46:31 PM	2
3	TOC	WG536390-01 BLK	!!Error!! TOC:0.03763mg/L TC:0.02484mg/L IC:-0.01279mg	Complete	8/26/2015 3:55:39 PM	0
4	TOC	WG536390-02 LCS	TOC:27.39mg/L TC:47.00mg/L IC:19.61mg/L	Complete	8/26/2015 4:09:44 PM	4
5	TOC	WG536390-03 LCSDUP	TOC:28.03mg/L TC:47.05mg/L IC:19.02mg/L	Complete	8/26/2015 4:23:55 PM	5
6	TOC	L15080992-05 (4)	TOC:6.587mg/L TC:28.90mg/L IC:22.31mg/L	Complete	8/26/2015 4:37:54 PM	6
7	TOC	L15080992-09 (5)	TOC:2.931mg/L TC:22.66mg/L IC:19.73mg/L	Complete	8/26/2015 4:51:39 PM	7
8	TOC	L15080995-01 (4)	TOC:6.888mg/L TC:40.77mg/L IC:33.88mg/L	Complete	8/26/2015 5:05:25 PM	8
9	TOC	L15080992-02	TOC:2.909mg/L TC:23.80mg/L IC:20.90mg/L	Complete	8/26/2015 5:19:00 PM	9
10	TOC	L15080992-04 (5)	TOC:5.841mg/L TC:26.40mg/L IC:20.56mg/L	Complete	8/26/2015 5:32:58 PM	10
11	TOC	L15081073-01 (5)	TOC:2.739mg/L TC:13.65mg/L IC:10.91mg/L	Complete	8/26/2015 5:46:00 PM	11
12	TOC	L15081073-03 (5)	TOC:2.076mg/L TC:23.62mg/L IC:21.55mg/L	Complete	8/26/2015 5:59:26 PM	12
13	TOC	L15081166-01	TOC:1.666mg/L TC:5.197mg/L IC:3.531mg/L	Complete	8/26/2015 6:11:49 PM	13
14	TOC	CCV	TOC:24.71mg/L TC:24.73mg/L IC:0.02155mg/L	Complete	8/26/2015 6:24:26 PM	14
15	TOC	CCB	!!Error!! TOC:0.05323mg/L TC:0.03102mg/L IC:-0.02221mg	Complete	8/26/2015 6:33:32 PM	0
16	TOC	L15081166-08	TOC:4.421mg/L TC:23.43mg/L IC:19.01mg/L	Complete	8/26/2015 6:47:08 PM	16
17	TOC	WG536390-05 DUP	TOC:4.349mg/L TC:23.62mg/L IC:19.27mg/L	Complete	8/26/2015 7:00:22 PM	17
18	TOC	WG536390-06 MS	TOC:15.02mg/L TC:36.15mg/L IC:21.13mg/L	Complete	8/26/2015 7:14:12 PM	18
19	TOC	L15081428-01	TOC:7.278mg/L TC:10.59mg/L IC:3.311mg/L	Complete	8/26/2015 7:27:09 PM	19
20	TOC	L15081428-02	TOC:18.81mg/L TC:46.50mg/L IC:27.69mg/L	Complete	8/26/2015 7:41:13 PM	20
21	TOC	L15081428-03	TOC:20.91mg/L TC:49.97mg/L IC:29.06mg/L	Complete	8/26/2015 7:56:28 PM	21
22	TOC	L15081428-04	TOC:7.144mg/L TC:22.51mg/L IC:15.37mg/L	Complete	8/26/2015 8:09:31 PM	22
23	TOC	L15081429-01 (5)	TOC:10.48mg/L TC:11.72mg/L IC:1.243mg/L	Complete	8/26/2015 8:22:43 PM	23
24	TOC	L15081287-01	TOC:15.60mg/L TC:37.52mg/L IC:21.91mg/L	Complete	8/26/2015 8:38:24 PM	24
25	TOC		TOC:0.1907mg/L TC:0.2954mg/L IC:0.1048mg/L	Complete	8/26/2015 8:50:01 PM	25
26	TOC	CCV	TOC:28.63mg/L TC:28.65mg/L IC:0.01118mg/L	Complete	8/26/2015 9:03:34 PM	26
27	TOC	CCB	!!Error!! TOC:0.04429mg/L TC:0.03274mg/L IC:-0.01155mg	Complete	8/26/2015 9:12:44 PM	0
28	TOC	WG536603-01 BLK	!!Error!! TOC:0.04289mg/L TC:0.02468mg/L IC:-0.01822mg	Complete	8/26/2015 9:29:20 PM	0
29	TOC		TOC:32.13mg/L TC:44.26mg/L IC:12.13mg/L	Complete	8/26/2015 9:56:58 PM	29
30	TOC		TOC:29.44mg/L TC:40.63mg/L IC:11.19mg/L	Complete	8/26/2015 10:21:39 P	30
31	TOC	L15081425-01	TOC:4.939mg/L TC:15.56mg/L IC:10.62mg/L	Complete	8/26/2015 10:46:17 P	31
32	TOC	L15081425-02	TOC:2.117mg/L TC:11.69mg/L IC:9.573mg/L	Complete	8/26/2015 11:08:41 P	32
33	TOC	WG536603-05 DUP	TOC:2.217mg/L TC:12.01mg/L IC:9.790mg/L	Complete	8/26/2015 11:31:45 P	33
34	TOC	WG536603-06 MS	TOC:13.39mg/L TC:23.80mg/L IC:10.40mg/L	Complete	8/26/2015 11:55:49 P	34
35	TOC	CCV	TOC:27.30mg/L TC:27.35mg/L IC:0.04577mg/L	Complete	8/27/2015 12:08:29 A	35
36	TOC	CCB	!!Error!! TOC:0.03816mg/L TC:0.03263mg/L IC:-0.00553mg	Complete	8/27/2015 12:17:31 A	0
37	TOC	WG536603-02 LCS	TOC:22.90mg/L TC:33.12mg/L IC:10.22mg/L	Complete	8/27/2015 8:21:42 AM	52
38	TOC	WG536603-03 LCSDUP	TOC:23.89mg/L TC:33.55mg/L IC:9.664mg/L	Complete	8/27/2015 8:45:08 AM	53
39	TOC	CCV	TOC:25.12mg/L TC:25.18mg/L IC:0.06130mg/L	Complete	8/27/2015 8:57:53 AM	2
40	TOC	CCB	TOC:0.09335mg/L TC:0.1117mg/L IC:0.01831mg/L	Complete	8/27/2015 9:07:04 AM	0

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Sample

Sample Name: TIC 25
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.224mg/L TC:28.34mg/L IC:25.12mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1026	28.34mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 3:28:14 PM

Mean Area 1026
Mean Conc. 28.34mg/L

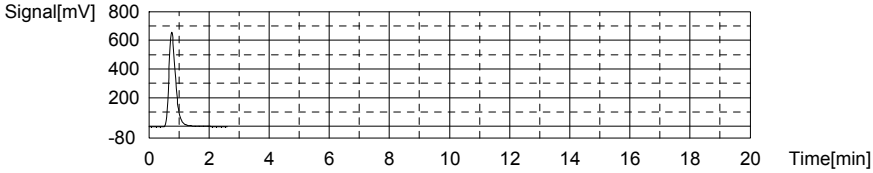

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	796.6	25.12mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 3:33:55 PM

Mean Area 796.6
Mean Conc. 25.12mg/L

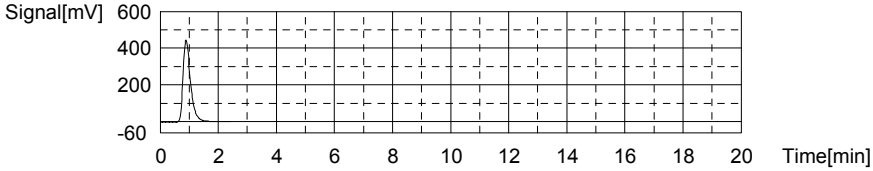

Sample

Sample Name: CCV 25
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:24.67mg/L TC:24.71mg/L IC:0.03212mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	895.3	24.71mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_2	8/26/2015 3:42:02 PM

Mean Area 895.3
Mean Conc. 24.71mg/L

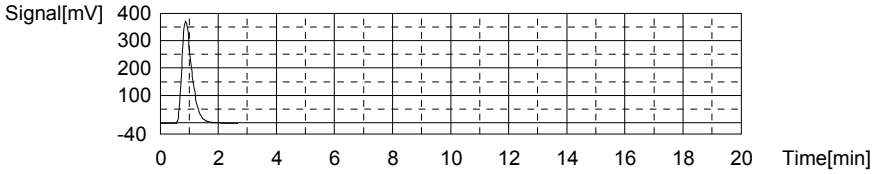

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.477	0.03212mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_5	8/26/2015 3:46:31 PM

Mean Area 8.477
Mean Conc. 0.03212mg/L

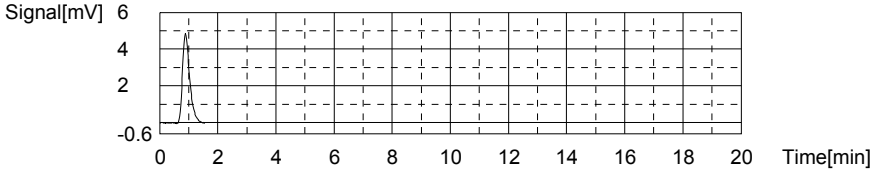

Sample

Sample Name: WG536390-01 BLK
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.03763mg/L TC:0.02484mg/L IC:-0.01279mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.688	0.02484mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_2	8/26/2015 3:51:42 PM

Mean Area 7.688
Mean Conc. 0.02484mg/L

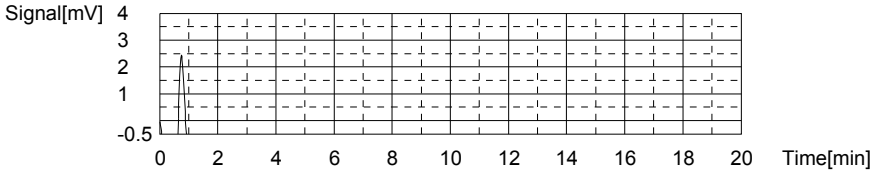

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.066	-0.01279mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_5	8/26/2015 3:55:39 PM

Mean Area 7.066
Mean Conc. -0.01279mg/L

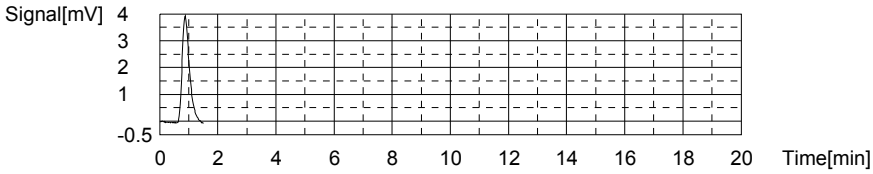

Sample

Sample Name: WG536390-02 LCS
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:27.39mg/L TC:47.00mg/L IC:19.61mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1697	47.00mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 4:04:05 PM

Mean Area 1697
Mean Conc. 47.00mg/L

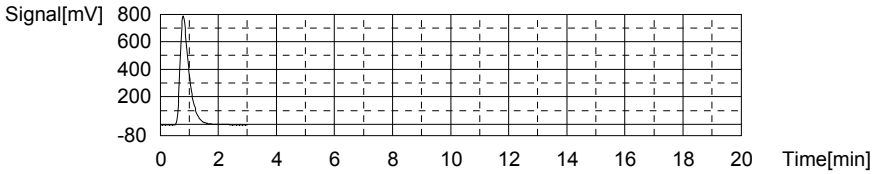

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	623.5	19.61mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 4:09:44 PM

Mean Area 623.5
Mean Conc. 19.61mg/L

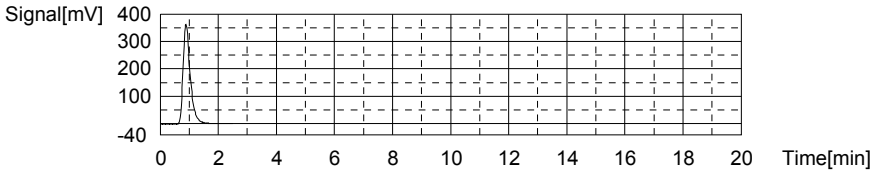

Sample

Sample Name: WG536390-03 LCSDUP
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:28.03mg/L TC:47.05mg/L IC:19.02mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1699	47.05mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 4:18:18 PM

Mean Area 1699
Mean Conc. 47.05mg/L

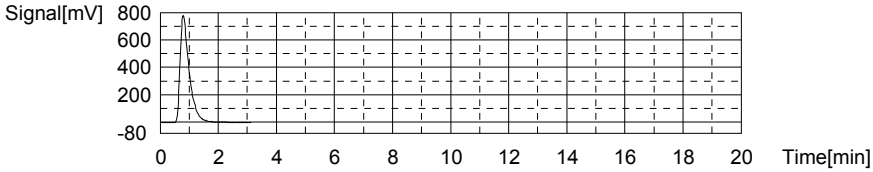

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	605.1	19.02mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 4:23:55 PM

Mean Area 605.1
Mean Conc. 19.02mg/L

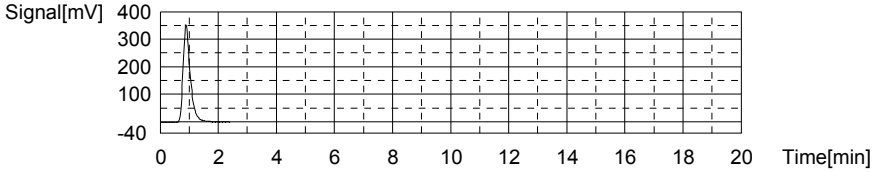

Sample

Sample Name: L15080992-05 (4)
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.587mg/L TC:28.90mg/L IC:22.31mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1046	28.90mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 4:32:06 PM

Mean Area 1046
Mean Conc. 28.90mg/L

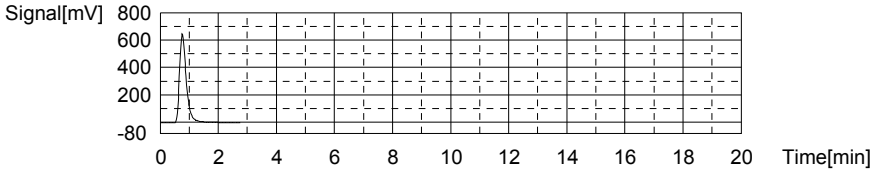

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	708.4	22.31mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 4:37:54 PM

Mean Area 708.4
Mean Conc. 22.31mg/L

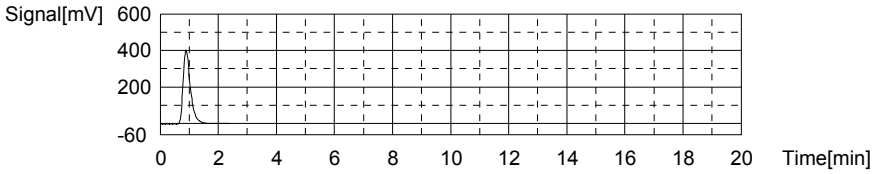

Sample

Sample Name: L15080992-09 (5)
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.931mg/L TC:22.66mg/L IC:19.73mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	821.8	22.66mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_29	8/26/2015 4:45:58 PM

Mean Area 821.8
Mean Conc. 22.66mg/L

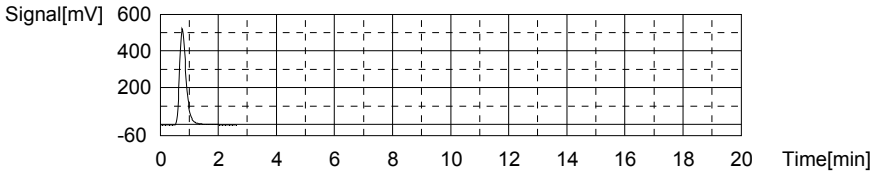

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	627.4	19.73mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 4:51:39 PM

Mean Area 627.4
Mean Conc. 19.73mg/L

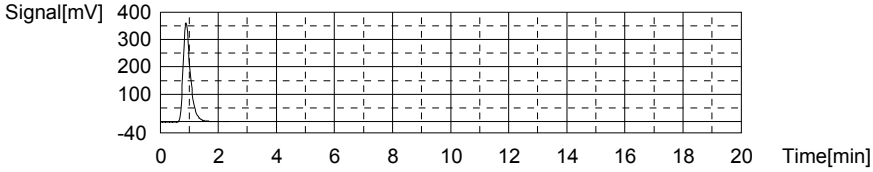

Sample

Sample Name: L15080995-01 (4)
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.888mg/L TC:40.77mg/L IC:33.88mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1473	40.77mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 4:59:36 PM

Mean Area 1473
Mean Conc. 40.77mg/L

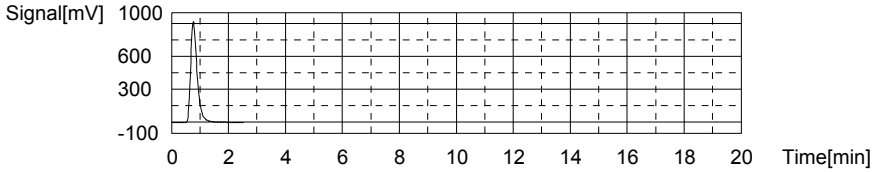

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1072	33.88mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 5:05:25 PM

Mean Area 1072
Mean Conc. 33.88mg/L

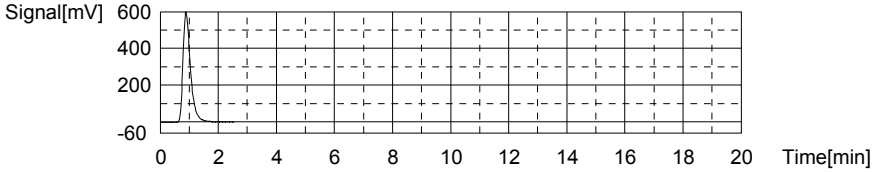

Sample

Sample Name: L15080992-02
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.909mg/L TC:23.80mg/L IC:20.90mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	862.9	23.80mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 5:13:27 PM

Mean Area 862.9
Mean Conc. 23.80mg/L

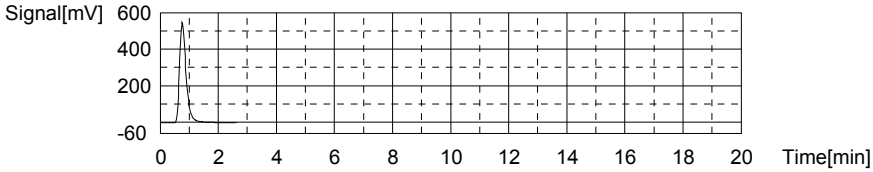

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	664.0	20.90mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 5:19:00 PM

Mean Area 664.0
Mean Conc. 20.90mg/L

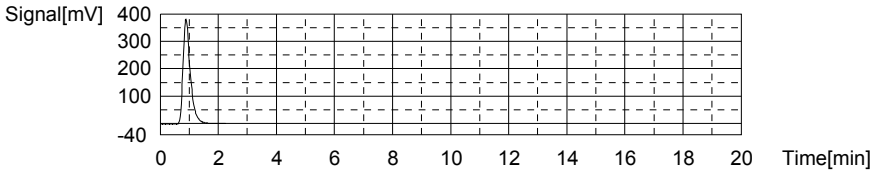

Sample

Sample Name: L15080992-04 (5)
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.841mg/L TC:26.40mg/L IC:20.56mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	956.2	26.40mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_29	8/26/2015 5:27:11 PM

Mean Area 956.2
Mean Conc. 26.40mg/L

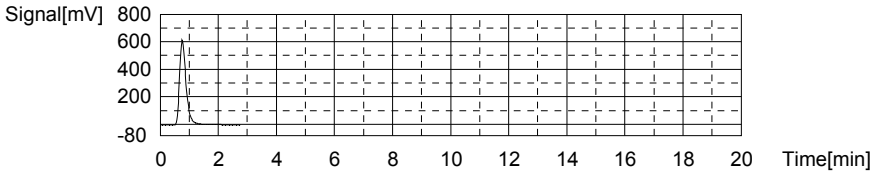

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	653.4	20.56mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 5:32:58 PM

Mean Area 653.4
Mean Conc. 20.56mg/L

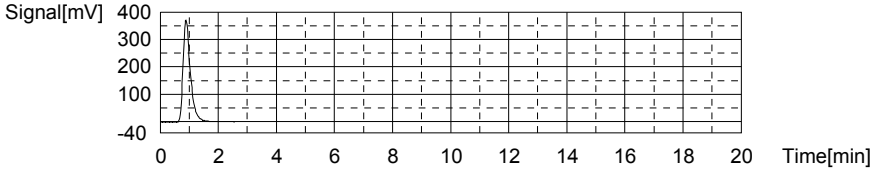

Sample

Sample Name: L15081073-01 (5)
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.739mg/L TC:13.65mg/L IC:10.91mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	497.7	13.65mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 5:40:47 PM

Mean Area 497.7
Mean Conc. 13.65mg/L

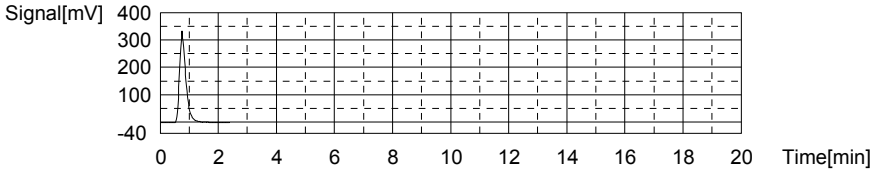

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	350.3	10.91mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 5:46:00 PM

Mean Area 350.3
Mean Conc. 10.91mg/L

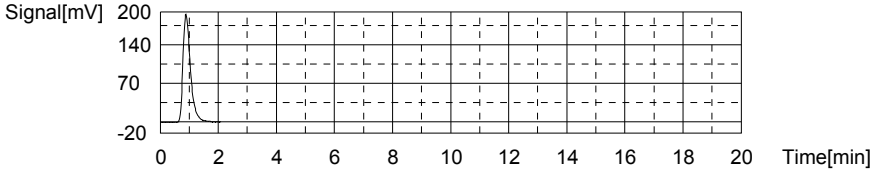

Sample

Sample Name: L15081073-03 (5)
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.076mg/L TC:23.62mg/L IC:21.55mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	856.4	23.62mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 5:53:49 PM

Mean Area 856.4
Mean Conc. 23.62mg/L

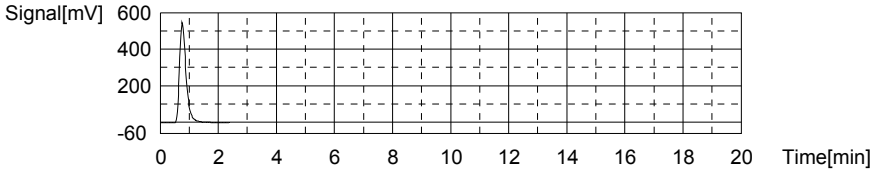

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	684.5	21.55mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 5:59:26 PM

Mean Area 684.5
Mean Conc. 21.55mg/L

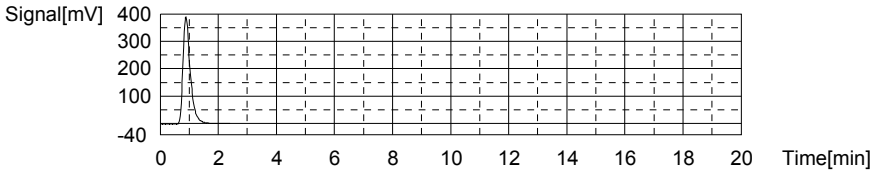

Sample

Sample Name: L15081166-01
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.666mg/L TC:5.197mg/L IC:3.531mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	193.7	5.197mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 6:06:54 PM

Mean Area 193.7
Mean Conc. 5.197mg/L

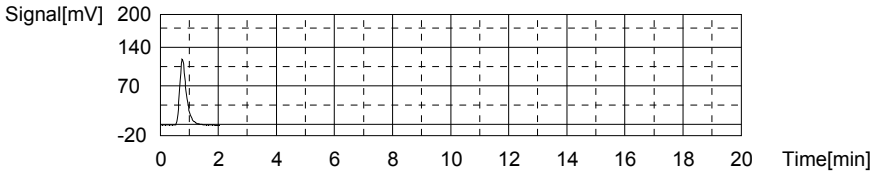

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	118.4	3.531mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 6:11:49 PM

Mean Area 118.4
Mean Conc. 3.531mg/L

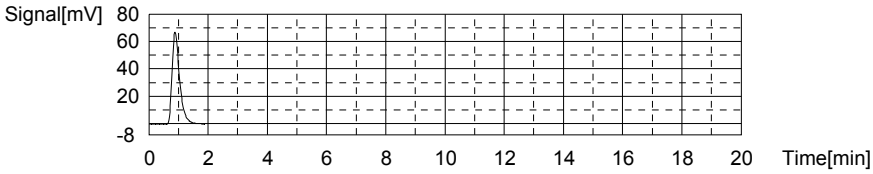

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:24.71mg/L TC:24.73mg/L IC:0.02155mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	896.2	24.73mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 6:19:54 PM

Mean Area 896.2
Mean Conc. 24.73mg/L

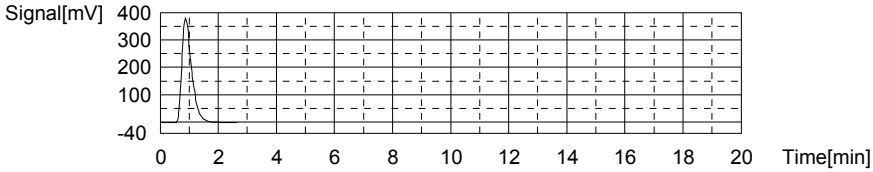

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.145	0.02155mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 6:24:26 PM

Mean Area 8.145
Mean Conc. 0.02155mg/L

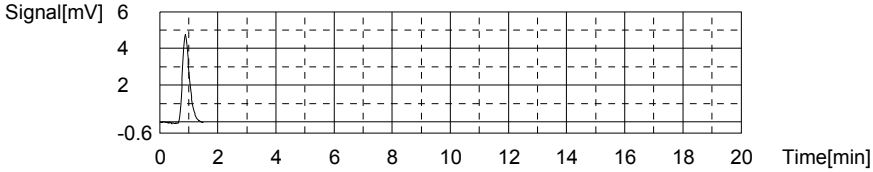

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.05323mg/L TC:0.03102mg/L IC:-0.02221mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.910	0.03102mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 6:29:36 PM

Mean Area 7.910
Mean Conc. 0.03102mg/L

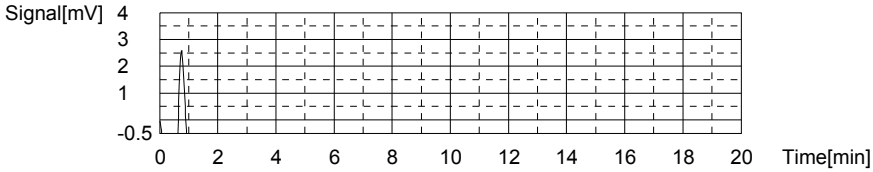

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.770	-0.02221mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 6:33:32 PM

Mean Area 6.770
Mean Conc. -0.02221mg/L

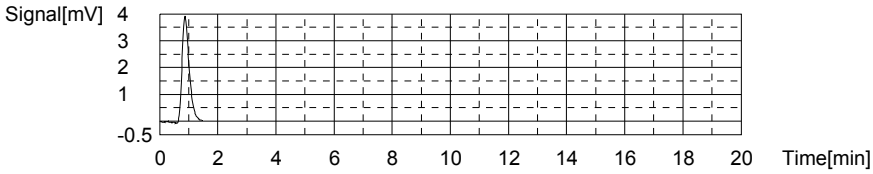

Sample

Sample Name: L15081166-08
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.421mg/L TC:23.43mg/L IC:19.01mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	849.5	23.43mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_29	8/26/2015 6:41:42 PM

Mean Area 849.5
Mean Conc. 23.43mg/L

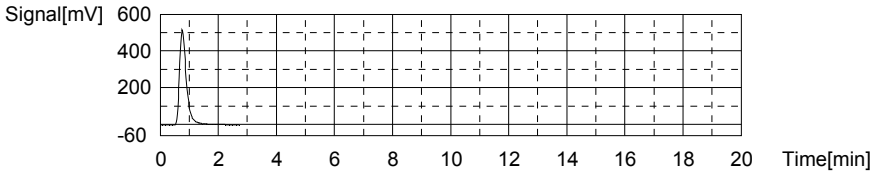

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	604.8	19.01mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 6:47:08 PM

Mean Area 604.8
Mean Conc. 19.01mg/L

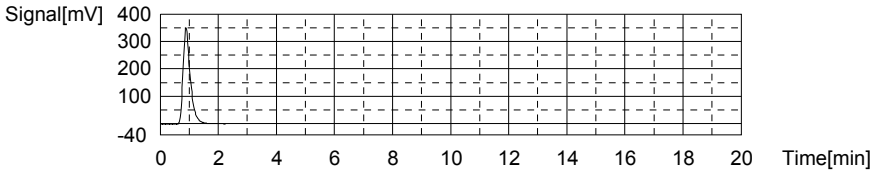

Sample

Sample Name: WG536390-05 DUP
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.349mg/L TC:23.62mg/L IC:19.27mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	856.2	23.62mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 6:55:05 PM

Mean Area 856.2
Mean Conc. 23.62mg/L

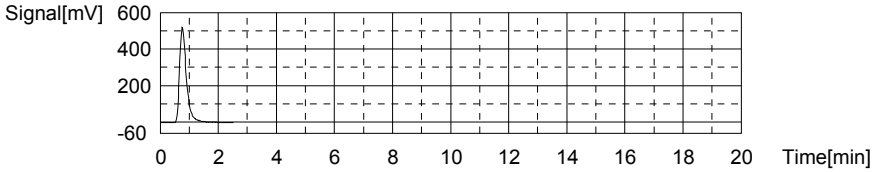

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	612.9	19.27mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 7:00:22 PM

Mean Area 612.9
Mean Conc. 19.27mg/L

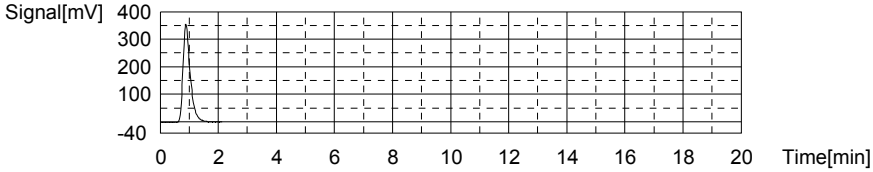

Sample

Sample Name: WG536390-06 MS
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:15.02mg/L TC:36.15mg/L IC:21.13mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1307	36.15mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 7:08:37 PM

Mean Area 1307
Mean Conc. 36.15mg/L

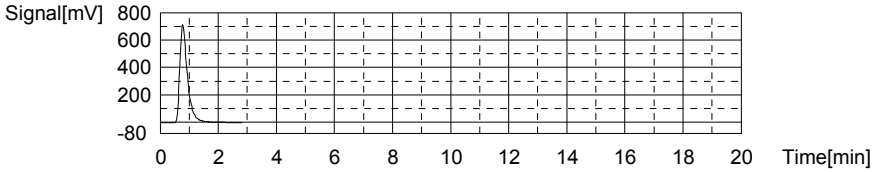

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	671.4	21.13mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 7:14:12 PM

Mean Area 671.4
Mean Conc. 21.13mg/L

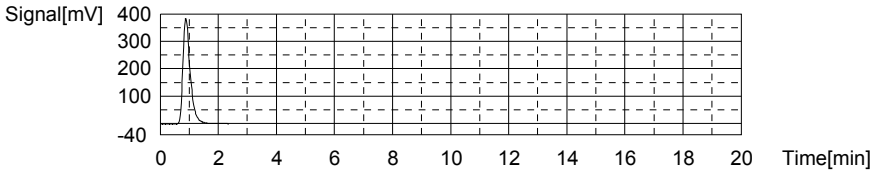

Sample

Sample Name: L15081428-01
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.278mg/L TC:10.59mg/L IC:3.311mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	387.6	10.59mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 7:22:22 PM

Mean Area 387.6
Mean Conc. 10.59mg/L

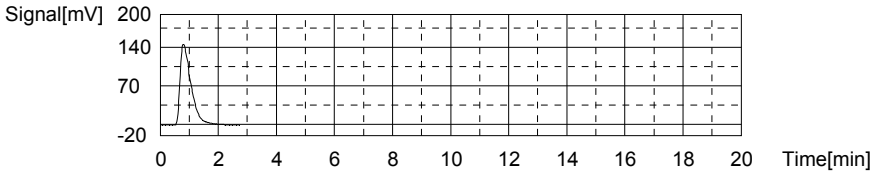

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	111.5	3.311mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 7:27:09 PM

Mean Area 111.5
Mean Conc. 3.311mg/L

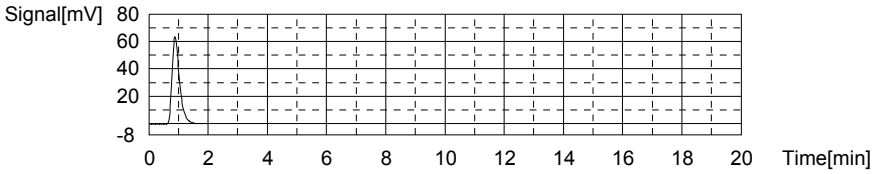

Sample

Sample Name: L15081428-02
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:18.81mg/L TC:46.50mg/L IC:27.69mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1679	46.50mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 7:35:45 PM

Mean Area 1679
Mean Conc. 46.50mg/L

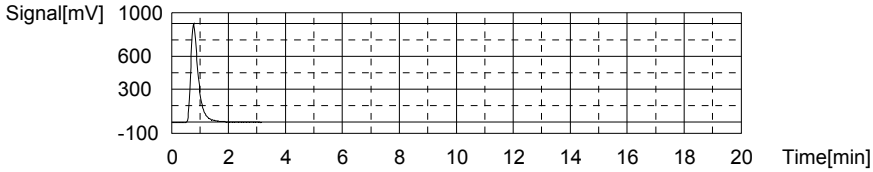

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	877.4	27.69mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 7:41:13 PM

Mean Area 877.4
Mean Conc. 27.69mg/L

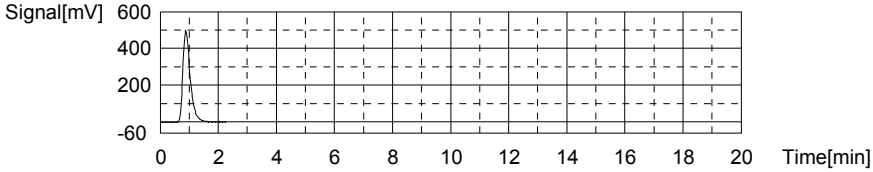

Sample

Sample Name: L15081428-03
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:20.91mg/L TC:49.97mg/L IC:29.06mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1804	49.97mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 7:50:44 PM

Mean Area 1804
Mean Conc. 49.97mg/L

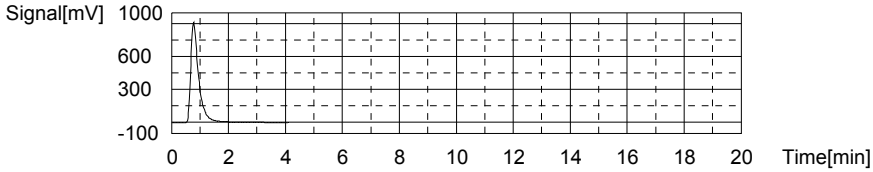

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	920.5	29.06mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 7:56:28 PM

Mean Area 920.5
Mean Conc. 29.06mg/L

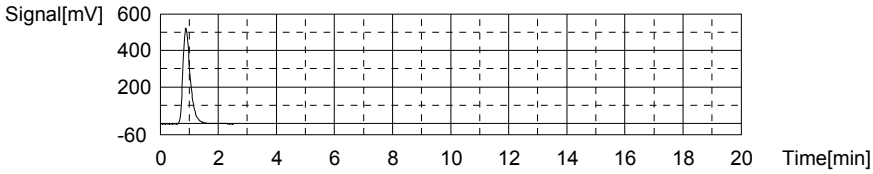

Sample

Sample Name: L15081428-04
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.144mg/L TC:22.51mg/L IC:15.37mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	816.5	22.51mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_29	8/26/2015 8:04:17 PM

Mean Area 816.5
Mean Conc. 22.51mg/L

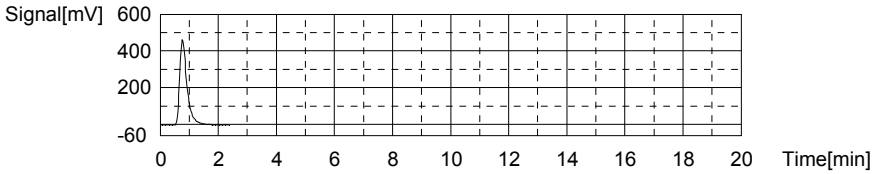

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	490.4	15.37mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 8:09:31 PM

Mean Area 490.4
Mean Conc. 15.37mg/L

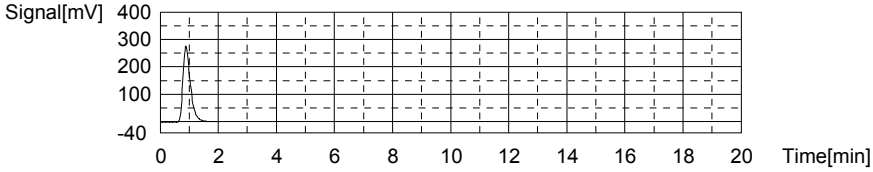

Sample

Sample Name: L15081429-01 (5)
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:10.48mg/L TC:11.72mg/L IC:1.243mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	428.3	11.72mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 8:18:06 PM

Mean Area 428.3
Mean Conc. 11.72mg/L

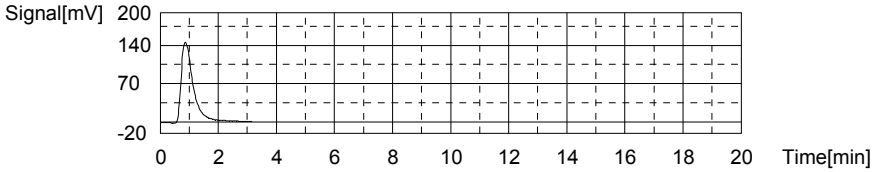

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	46.51	1.243mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 8:22:43 PM

Mean Area 46.51
Mean Conc. 1.243mg/L

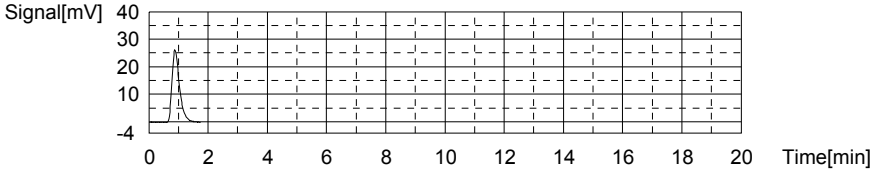

Sample

Sample Name: L15081287-01
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:15.60mg/L TC:37.52mg/L IC:21.91mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1356	37.52mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 8:33:03 PM

Mean Area 1356
Mean Conc. 37.52mg/L

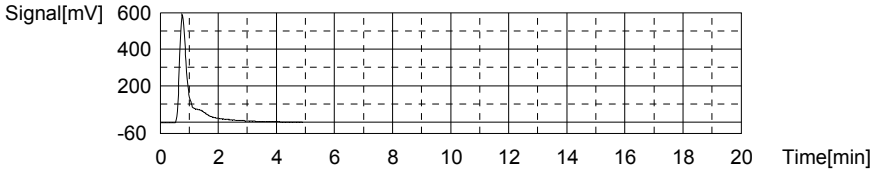

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	696.0	21.91mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 8:38:24 PM

Mean Area 696.0
Mean Conc. 21.91mg/L

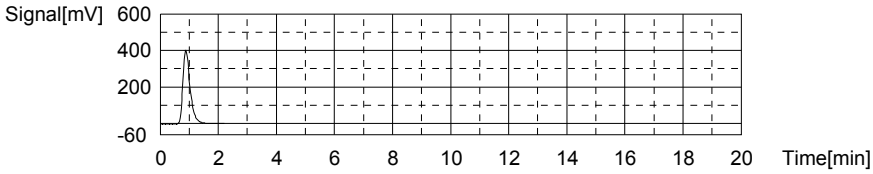

Sample

Sample Name:
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1907mg/L TC:0.2954mg/L IC:0.1048mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	17.42	0.2954mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_29	8/26/2015 8:45:29 PM

Mean Area 17.42
Mean Conc. 0.2954mg/L

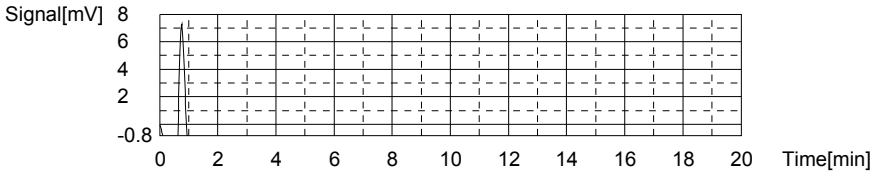

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.76	0.1048mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 8:50:01 PM

Mean Area 10.76
Mean Conc. 0.1048mg/L

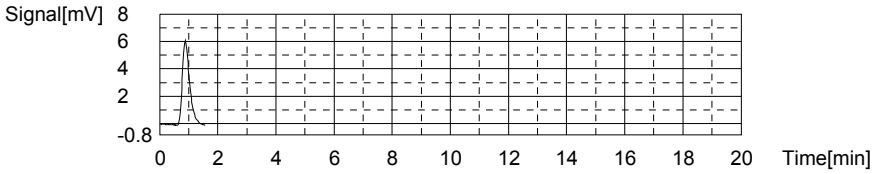

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:28.63mg/L TC:28.65mg/L IC:0.01118mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1037	28.65mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 8:59:12 PM

Mean Area 1037
Mean Conc. 28.65mg/L

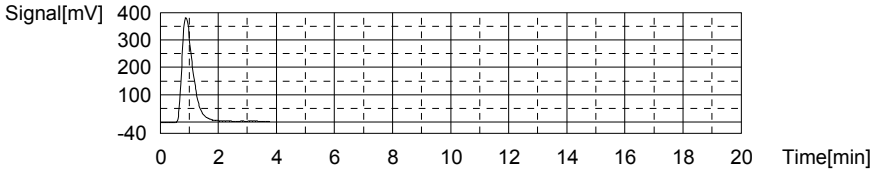

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.819	0.01118mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 9:03:34 PM

Mean Area 7.819
Mean Conc. 0.01118mg/L

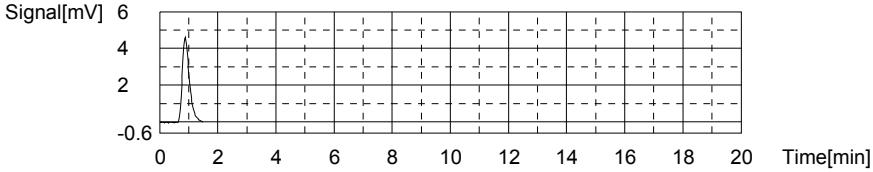

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.04429mg/L TC:0.03274mg/L IC:-0.01155mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.972	0.03274mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 9:08:45 PM

Mean Area 7.972
Mean Conc. 0.03274mg/L

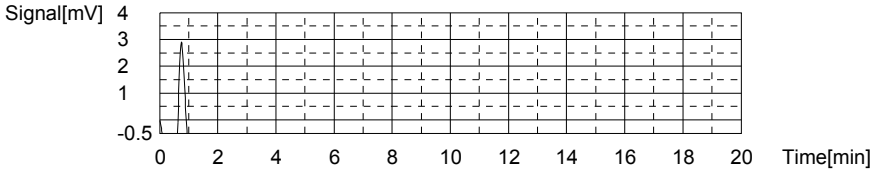

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.105	-0.01155mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 9:12:44 PM

Mean Area 7.105
Mean Conc. -0.01155mg/L

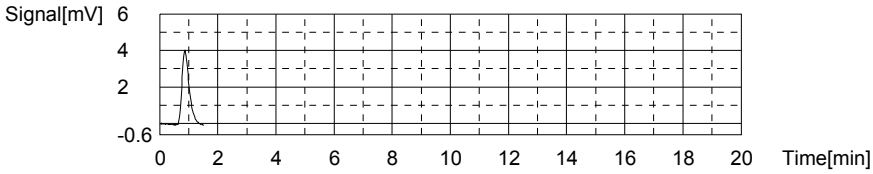

Sample

Sample Name: WG536603-01 BLK
Sample ID: <Untitled>
Origin: TOC-08-26-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.04289mg/L TC:0.02468mg/L IC:-0.01822mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.778	0.02735mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 9:17:50 PM
2	7.586	0.02201mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 9:21:27 PM

Mean Area 7.682
Mean Conc. 0.02468mg/L

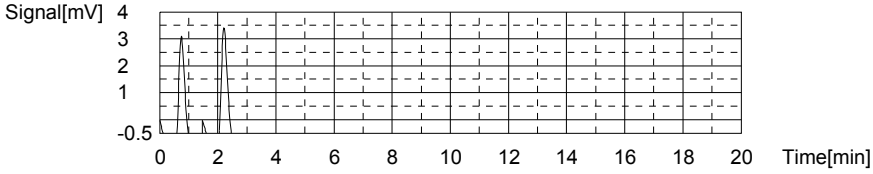

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.919	-0.01747mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 9:25:21 PM
2	6.872	-0.01897mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 9:29:20 PM

Mean Area 6.896
Mean Conc. -0.01822mg/L

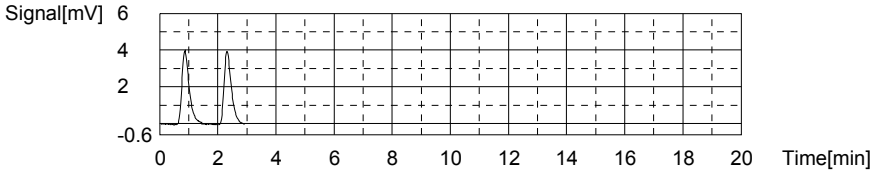

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-08-26-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:32.13mg/L TC:44.26mg/L IC:12.13mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1618	44.80mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 9:39:41 PM
2	1579	43.72mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 9:46:37 PM

Mean Area 1599
Mean Conc. 44.26mg/L

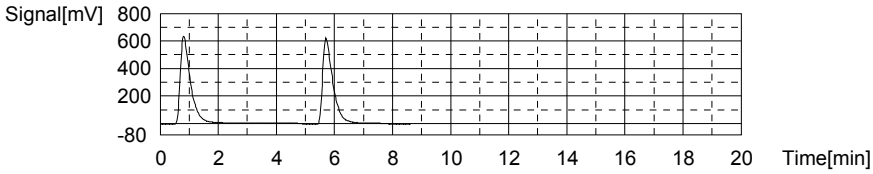

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	388.5	12.13mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 9:51:56 PM
2	388.4	12.12mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 9:56:58 PM

Mean Area 388.5
Mean Conc. 12.13mg/L

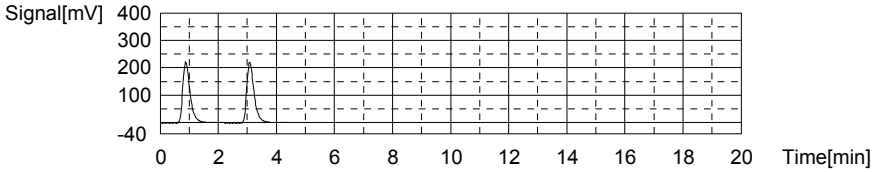

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-08-26-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:29.44mg/L TC:40.63mg/L IC:11.19mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1502	41.58mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 10:05:13 PM
2	1434	39.68mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 10:11:28 PM

Mean Area 1468
Mean Conc. 40.63mg/L

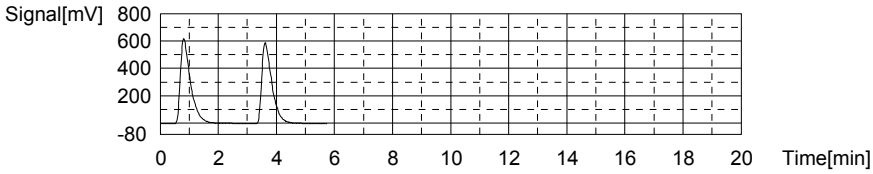

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	360.8	11.25mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 10:16:41 PM
2	357.3	11.13mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 10:21:39 PM

Mean Area 359.1
Mean Conc. 11.19mg/L

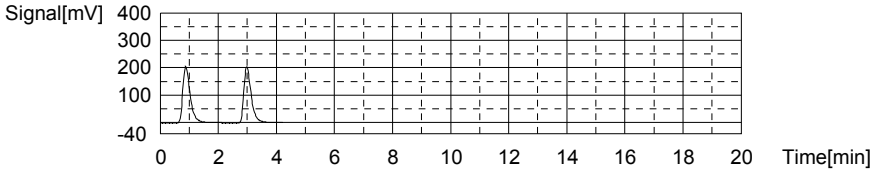

Sample

Sample Name: L15081425-01
Sample ID: <Untitled>
Origin: TOC-08-26-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.939mg/L TC:15.56mg/L IC:10.62mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	555.0	15.24mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 10:30:12 PM
2	577.5	15.87mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 10:36:14 PM

Mean Area 566.3
Mean Conc. 15.56mg/L

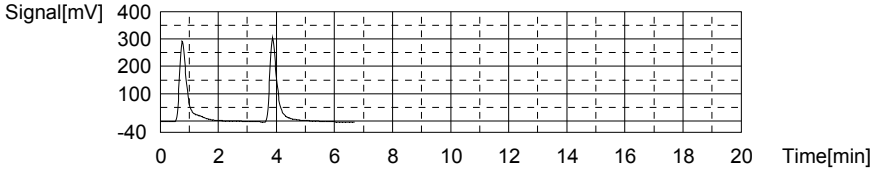

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	344.2	10.72mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 10:41:22 PM
2	337.9	10.52mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 10:46:17 PM

Mean Area 341.1
Mean Conc. 10.62mg/L

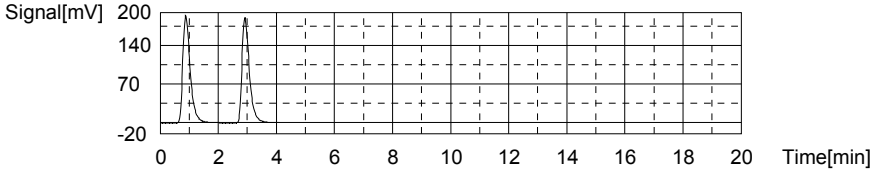

Sample

Sample Name: L15081425-02
Sample ID: <Untitled>
Origin: TOC-08-26-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.117mg/L TC:11.69mg/L IC:9.573mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	420.5	11.50mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 10:53:56 PM
2	433.9	11.88mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 10:58:40 PM

Mean Area 427.2
Mean Conc. 11.69mg/L

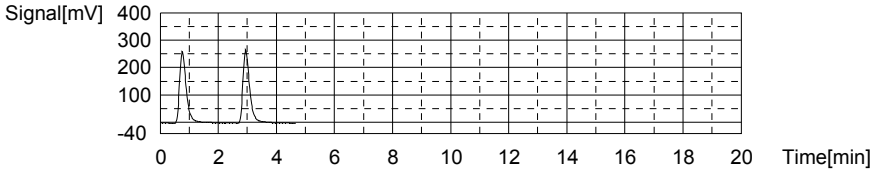

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	308.2	9.572mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 11:03:51 PM
2	308.3	9.575mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 11:08:41 PM

Mean Area 308.3
Mean Conc. 9.573mg/L

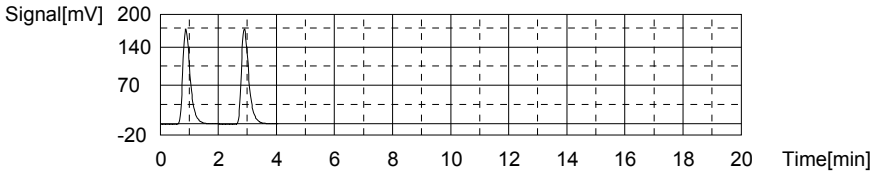

Sample

Sample Name: WG536603-05 DUP
Sample ID: <Untitled>
Origin: TOC-08-26-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.217mg/L TC:12.01mg/L IC:9.790mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	443.8	12.15mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 11:16:46 PM
2	433.4	11.86mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 11:21:44 PM

Mean Area 438.6
Mean Conc. 12.01mg/L

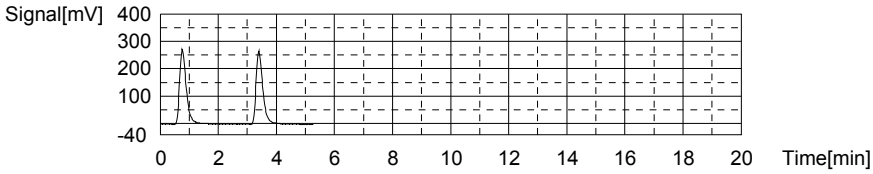

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	315.3	9.798mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_5	8/26/2015 11:26:51 PM
2	314.8	9.782mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_5	8/26/2015 11:31:45 PM

Mean Area 315.1
Mean Conc. 9.790mg/L

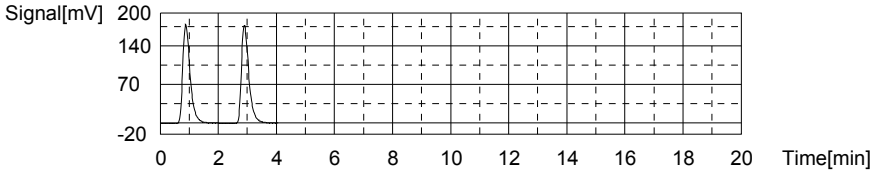

Sample

Sample Name: WG536603-06 MS
Sample ID: <Untitled>
Origin: TOC-08-26-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:13.39mg/L TC:23.80mg/L IC:10.40mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	862.6	23.80mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_2	8/26/2015 11:40:18 PM
2	862.5	23.79mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_2	8/26/2015 11:45:47 PM

Mean Area 862.5
Mean Conc. 23.80mg/L

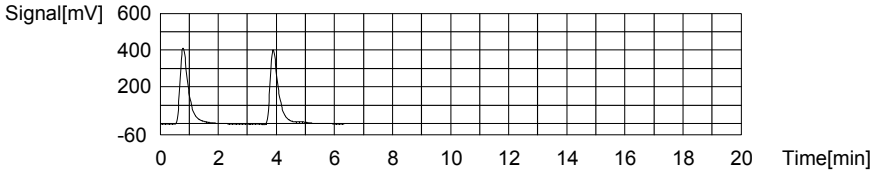

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	333.7	10.38mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_5	8/26/2015 11:50:52 PM
2	334.8	10.42mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_5	8/26/2015 11:55:49 PM

Mean Area 334.3
Mean Conc. 10.40mg/L

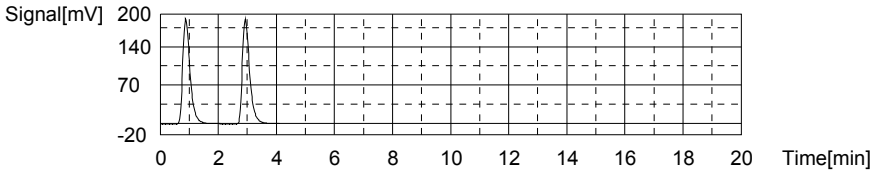

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:27.30mg/L TC:27.35mg/L IC:0.04577mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	990.3	27.35mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_2	8/27/2015 12:04:07 AM

Mean Area 990.3
Mean Conc. 27.35mg/L

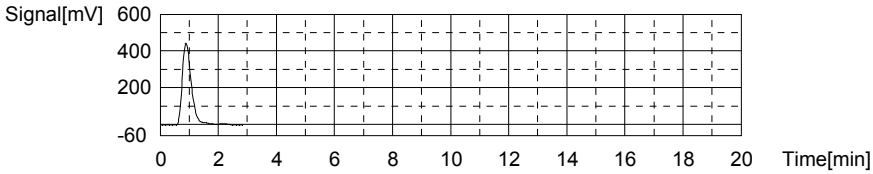

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.906	0.04577mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_5	8/27/2015 12:08:29 AM

Mean Area 8.906
Mean Conc. 0.04577mg/L

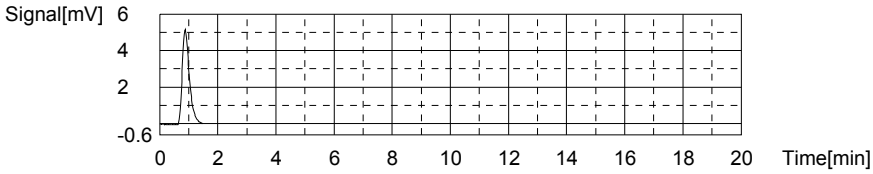

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.03816mg/L TC:0.03263mg/L IC:-0.00553mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.968	0.03263mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/27/2015 12:13:35 AM

Mean Area 7.968
Mean Conc. 0.03263mg/L

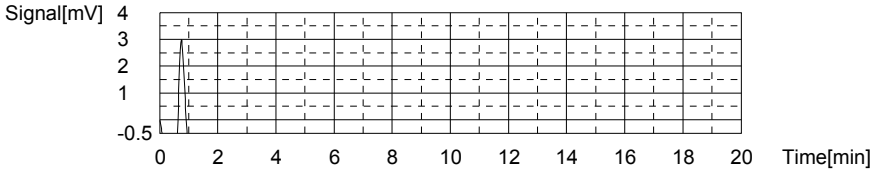

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.294	-0.00553mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/27/2015 12:17:31 AM

Mean Area 7.294
Mean Conc. -0.00553mg/L

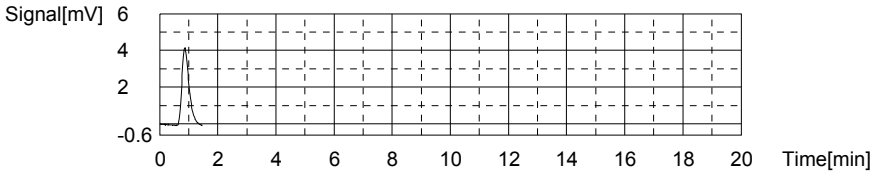

Sample

Sample Name: WG536603-02 LCS
Sample ID: <Untitled>
Origin: TOC-08-26-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:22.90mg/L TC:33.12mg/L IC:10.22mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1203	33.26mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/27/2015 8:06:26 AM
2	1193	32.98mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/27/2015 8:11:37 AM

Mean Area 1198
Mean Conc. 33.12mg/L

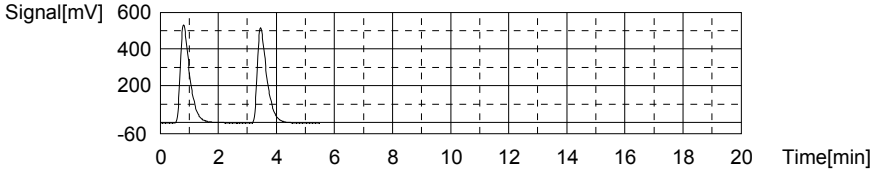

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	325.8	10.13mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/27/2015 8:16:44 AM
2	331.2	10.30mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/27/2015 8:21:42 AM

Mean Area 328.5
Mean Conc. 10.22mg/L

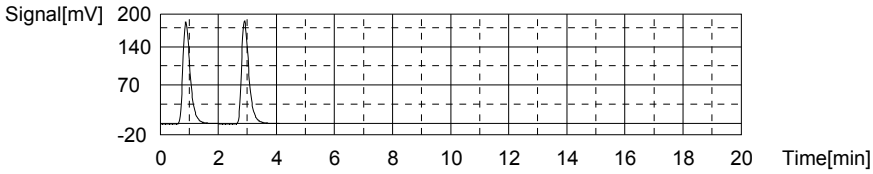

Sample

Sample Name: WG536603-03 LCSDUP
Sample ID: <Untitled>
Origin: TOC-08-26-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:23.89mg/L TC:33.55mg/L IC:9.664mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1227	33.93mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/27/2015 8:30:01 AM
2	1200	33.18mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/27/2015 8:35:05 AM

Mean Area 1214
Mean Conc. 33.55mg/L

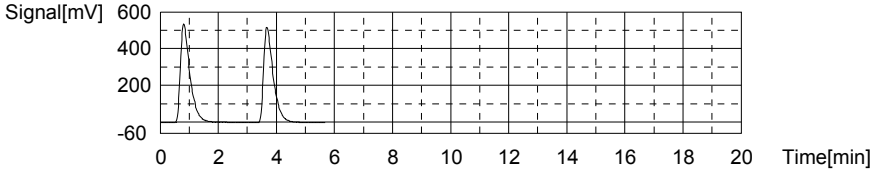

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	311.3	9.670mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/27/2015 8:40:11 AM
2	310.9	9.658mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/27/2015 8:45:08 AM

Mean Area 311.1
Mean Conc. 9.664mg/L

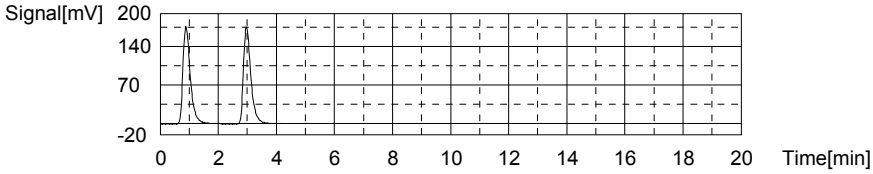

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:25.12mg/L TC:25.18mg/L IC:0.06130mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	912.4	25.18mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/27/2015 8:53:27 AM

Mean Area 912.4
Mean Conc. 25.18mg/L

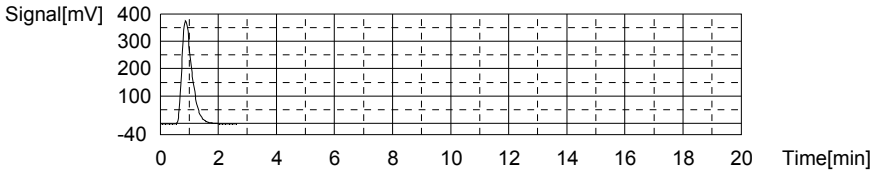

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.394	0.06130mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/27/2015 8:57:53 AM

Mean Area 9.394
Mean Conc. 0.06130mg/L

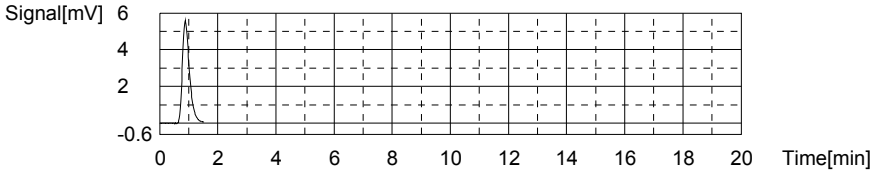

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.09335mg/L TC:0.1117mg/L IC:0.01831mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.81	0.1117mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/27/2015 9:03:07 AM

Mean Area 10.81
Mean Conc. 0.1117mg/L

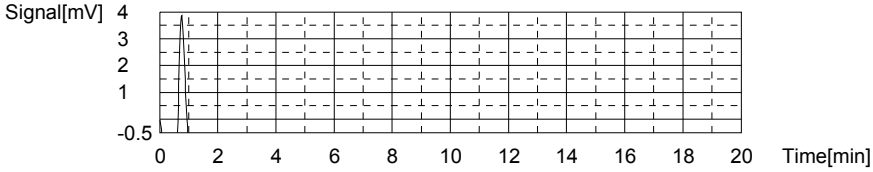

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.043	0.01831mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_5	8/27/2015 9:07:04 AM

Mean Area 8.043
Mean Conc. 0.01831mg/L

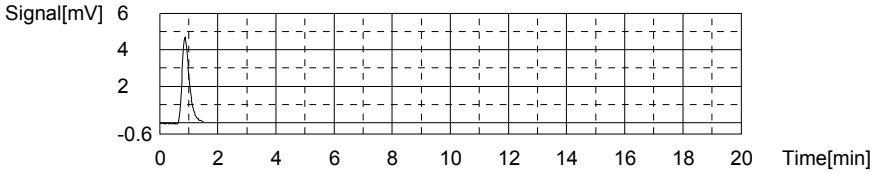

WORKGROUP: WG535967 ~~535971~~

Total Organic Carbon

MAKE DAILY

CCV (TOC): std 65368 (5/200)(1000) = 25mg/L

LCS (TOC): std 69935/71349 (5/200)(1000) = 25mg/L

CCV (TIC): std 71349 (5/200)(1000) = 25mg/L

MS (TOC): 0.4/40(1000) = 40

Calibration Curve Date: 5/27/15

Reagent: RGT 34171, RGT 34459

☑ SM5310-C: Matrix 2 WG 535967

☑ EPA 415.1/9060A(mod): Matrix 1 WG 535971 SOP: K 4151 Rev. _____

WG _____ Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

☑ drain reservoir filled
☑ ASI water bottle full
☑ dilution water bottle full
☑ 3rd bottle full
☑ sufficient gas
☑ sufficient persulfate
☑ sufficient acid
☑ waste container

Position	Sample ID	Dilution
1	TIC 25	
2	CCV 25	
3	BLK	
4	LCS 25	
5	LCSDUP	
6	08-776-09	1/10
7	08-899-01	
8	08-901-01	
9	DUP 01	
10	MS 02	
11	MSD 03	
12	04	
13	05	
14	CCV	
15	CCB	
16	08-904-01	1/3
17	03	
18	05	1/5
19	07	
20	08-992-01	1/2
21	08-992-03	1/3
22	05	1/2
23	07	1/3
24	09	1/3
25	08-995-01	1/3

Position	Sample ID	Dilution
26	CCV	
27	CCB	
28	08-995-02	1/5
29	04	1/3
30	08-1073-01	1/5
31	03	1/3
32	~~DUP~~ BLK	
33	LCS 25	
34	LCSDUP	
35	08-935-01	
36	08-936-01	
37	02	
38	CCV	
39	CCB	
40	08-936-03	
41	04	
42	05	
43	06	
44	07	
45	08-1075-01	
46	02	
47	08-1076-01	1/50
48	08-1077-01	1/50
49	08-1095-01	
50	CCV	

Position	Sample ID	Dilution
51	CCB	
52	08-1010-01	
53	02	
54	03	
55	DUP	
56	MS	
57	08-901-04	1/3
58	-05	1/3
59	08-904-01	1/5
60	03	1/4
61	07	1/4
62	CCV	
63	CCB	
64	08-992-05	1/4
65	09	1/5
66	08-995-01	1/5
67		
68		
69	CCV	
70	CCB	
71		
72		
73		
74		
75		

Analyst: Deanna Dession Date/Time: 8/21/15

DCN#112693

C:\TOC3201\Data\08-21-2015-dih-toc.t32

	Analysis	Sample Name	Result	Status	Date / Time	Vial
1	TOC	TIC 25	!!Error!! TOC:-1.152mg/L TC:22.89mg/L IC:24.04mg/L	Complete	8/21/2015 10:17:44 A	1
2	TOC	CCV 25	!!Error!! TOC:22.67mg/L TC:22.21mg/L IC:-0.4624mg/L	Complete	8/21/2015 10:30:15 A	2
3	TOC	WG535967-01 BLK	!!Error!! TOC:0.3575mg/L TC:-0.03691mg/L IC:-0.3944mg	Complete	8/21/2015 10:39:34 A	0
4	TOC	WG535967-02 LCS	TOC:23.57mg/L TC:43.94mg/L IC:20.37mg/L	Complete	8/21/2015 10:55:05 A	4
5	TOC	WG535967-03 LCSDUP	TOC:21.54mg/L TC:41.63mg/L IC:20.09mg/L	Complete	8/21/2015 11:08:40 A	5
6	TOC	L15080776-09 (10)	TOC:17.61mg/L TC:23.85mg/L IC:6.240mg/L	Complete	8/21/2015 11:22:09 A	6
7	TOC	L15080899-01	TOC:12.04mg/L TC:38.45mg/L IC:26.41mg/L	Complete	8/21/2015 11:38:15 A	7
8	TOC	L15080901-01	!!Error!! TOC:-0.8513mg/L TC:40.67mg/L IC:41.52mg/L	Complete	8/21/2015 11:51:54 A	8
9	TOC	WG535967-05 DUP	TOC:0.03409mg/L TC:40.21mg/L IC:40.18mg/L	Complete	8/21/2015 12:06:27 P	9
10	TOC	L15080901-02 MS	TOC:9.701mg/L TC:40.37mg/L IC:30.67mg/L	Complete	8/21/2015 12:21:21 P	10
11	TOC	L15080901-03 MSD	TOC:8.403mg/L TC:38.47mg/L IC:30.07mg/L	Complete	8/21/2015 12:35:33 P	11
12	TOC		!!Error!! TOC:-22.88mg/L TC:80.23mg/L IC:103.1mg/L	Complete	8/21/2015 12:53:46 P	12
13	TOC		!!Error!! TOC:-23.34mg/L TC:80.51mg/L IC:103.8mg/L	Complete	8/21/2015 1:11:46 PM	13
14	TOC	CCV	TOC:23.36mg/L TC:23.69mg/L IC:0.3337mg/L	Complete	8/21/2015 1:25:43 PM	14
15	TOC	CCB	!!Error!! TOC:0.2675mg/L TC:0.01091mg/L IC:-0.2566mg/L	Complete	8/21/2015 1:35:13 PM	0
16	TOC		!!Error!! TOC:-8.590mg/L TC:53.30mg/L IC:61.89mg/L	Complete	8/21/2015 1:51:45 PM	16
17	TOC		!!Error!! TOC:-21.84mg/L TC:86.23mg/L IC:108.1mg/L	Complete	8/21/2015 2:09:40 PM	17
18	TOC	L15080904-05 (5)	TOC:0.1746mg/L TC:12.54mg/L IC:12.37mg/L	Complete	8/21/2015 2:22:40 PM	18
19	TOC		!!Error!! TOC:-21.26mg/L TC:85.33mg/L IC:106.6mg/L	Complete	8/21/2015 2:40:41 PM	19
20	TOC	L15080992-01 (2)	TOC:1.173mg/L TC:19.14mg/L IC:17.96mg/L	Complete	8/21/2015 2:54:18 PM	20
21	TOC	L15080992-03 (3)	!!Error!! TOC:-1.192mg/L TC:34.13mg/L IC:35.32mg/L	Complete	8/21/2015 3:08:39 PM	21
22	TOC		!!Error!! TOC:-4.279mg/L TC:52.43mg/L IC:56.71mg/L	Complete	8/21/2015 3:24:47 PM	22
23	TOC	L15080992-07 (3)	!!Error!! TOC:-0.8804mg/L TC:34.63mg/L IC:35.51mg/L	Complete	8/21/2015 3:38:59 PM	23
24	TOC		!!Error!! TOC:-10.01mg/L TC:51.81mg/L IC:61.83mg/L	Complete	8/21/2015 3:54:48 PM	24
25	TOC		!!Error!! TOC:-8.167mg/L TC:56.99mg/L IC:65.15mg/L	Complete	8/21/2015 4:12:02 PM	25
26	TOC	CCV	!!Error!! TOC:23.33mg/L TC:23.08mg/L IC:-0.2518mg/L	Complete	8/21/2015 4:39:50 PM	26
27	TOC	CCB	!!Error!! TOC:0.3152mg/L TC:-0.03028mg/L IC:-0.3455mg	Complete	8/21/2015 4:49:11 PM	0
28	TOC	L15080995-02 X	TOC:0.4095mg/L TC:4.139mg/L IC:3.730mg/L	Complete	8/21/2015 5:01:38 PM	28
29	TOC	L15080995-04 (3) X	!!Error!! TOC:-0.5999mg/L TC:30.03mg/L IC:30.63mg/L	Complete	8/21/2015 5:16:45 PM	29
30	TOC	L15081073-01 (5) X	TOC:7.115mg/L TC:28.36mg/L IC:21.25mg/L	Complete	8/21/2015 5:30:48 PM	30
31	TOC	~~L15081073-03 (3)~~	!!Error!! TOC:-13.72mg/L TC:55.34mg/L IC:69.05mg/L	Complete	8/21/2015 5:47:05 PM	31
32	TOC	WG535971-01 BLK X	!!Error!! TOC:0.3144mg/L TC:0.06067mg/L IC:-0.2537mg/L	Complete	8/21/2015 6:04:58 PM	0
33	TOC	CCV WG535971-02 LCS	96% TOC:23.88mg/L TC:35.11mg/L IC:11.23mg/L	Complete	8/21/2015 6:31:40 PM	33
34	TOC	WG535971-03 LCSDUP	95% TOC:23.63mg/L TC:34.52mg/L IC:10.88mg/L	Complete	8/21/2015 6:58:37 PM	34
35	TOC	L15080935-01	TOC:1.234mg/L TC:4.290mg/L IC:3.057mg/L	Complete	8/21/2015 7:23:07 PM	35
36	TOC	L15080936-01	!!Error!! TOC:0.4910mg/L TC:0.07646mg/L IC:-0.4145mg/L	Complete	8/21/2015 7:43:30 PM	36
37	TOC	L15080936-02	!!Error!! TOC:0.5834mg/L TC:0.1547mg/L IC:-0.4287mg/L	Complete	8/21/2015 8:03:36 PM	37
38	TOC	CCV	!!Error!! TOC:20.37mg/L TC:19.93mg/L IC:-0.4340mg/L	Complete	8/21/2015 8:16:01 PM	38
39	TOC	CCB	!!Error!! TOC:0.3536mg/L TC:-0.03829mg/L IC:-0.3918mg	Complete	8/21/2015 8:25:30 PM	0
40	TOC	L15080936-03 X	!!Error!! TOC:1.034mg/L TC:0.6067mg/L IC:-0.4274mg/L	Complete	8/21/2015 8:45:43 PM	40
41	TOC	L15080936-04	!!Error!! TOC:0.7416mg/L TC:0.3014mg/L IC:-0.4402mg/L	Complete	8/21/2015 9:05:45 PM	41
42	TOC	L15080936-05	!!Error!! TOC:0.5907mg/L TC:0.1552mg/L IC:-0.4356mg/L	Complete	8/21/2015 9:25:38 PM	42
43	TOC	L15080936-06	!!Error!! TOC:0.5897mg/L TC:0.1466mg/L IC:-0.4431mg/L	Complete	8/21/2015 9:45:22 PM	43
44	TOC	L15080936-07	!!Error!! TOC:0.5331mg/L TC:0.08481mg/L IC:-0.4483mg/L	Complete	8/21/2015 10:05:00 P	44
45	TOC	L15081075-01	!!Error!! TOC:4.280mg/L TC:3.962mg/L IC:-0.3185mg/L	Complete	8/21/2015 10:29:41 P	45
46	TOC	L15081075-02	!!Error!! TOC:0.6338mg/L TC:0.4183mg/L IC:-0.2155mg/L	Complete	8/21/2015 10:49:55 P	46
47	TOC	L15081076-01 (50)	!!Error!! TOC:31.08mg/L TC:30.73mg/L IC:-0.3508mg/L	Complete	8/21/2015 11:15:50 P	47
48	TOC	L15081077-01 (50)	!!Error!! TOC:24.12mg/L TC:23.76mg/L IC:-0.3559mg/L	Complete	8/21/2015 11:38:52 P	48
49	TOC	L15081095-01	TOC:40.89mg/L TC:41.00mg/L IC:0.1132mg/L	Complete	8/22/2015 12:04:32 A	49
50	TOC	CCV	!!Error!! TOC:23.70mg/L TC:23.26mg/L IC:-0.4449mg/L	Complete	8/22/2015 12:17:31 A	50
51	TOC	CCB	!!Error!! TOC:0.3522mg/L TC:-0.05064mg/L IC:-0.4028mg	Complete	8/22/2015 12:26:51 A	0
52	TOC	L15081010-01 X	TOC:5.712mg/L TC:16.63mg/L IC:10.92mg/L	Complete	8/22/2015 12:50:11 A	52
53	TOC	L15081010-02	TOC:6.358mg/L TC:9.008mg/L IC:2.651mg/L	Complete	8/22/2015 1:12:22 AM	53
54	TOC	L15081010-03	TOC:3.842mg/L TC:6.757mg/L IC:2.914mg/L	Complete	8/22/2015 1:34:52 AM	54
55	TOC	WG535971-05 DUP	TOC:3.996mg/L TC:6.644mg/L IC:2.647mg/L	Complete	8/22/2015 1:58:08 AM	55
56	TOC	WG535971-06 MS	TOC:13.36mg/L TC:15.11mg/L IC:1.747mg/L	Complete	8/22/2015 2:20:29 AM	56
57	TOC	L15080901-04 (3)	TOC:0.5880mg/L TC:16.36mg/L IC:15.77mg/L	Complete	8/22/2015 2:33:58 AM	57
58	TOC	L15080901-05 (3)	TOC:15.29mg/L TC:39.82mg/L IC:24.53mg/L	Complete	8/22/2015 2:48:02 AM	58
59	TOC	L15080904-01 (5)	TOC:0.1844mg/L TC:7.787mg/L IC:7.602mg/L	Complete	8/22/2015 3:00:55 AM	59
60	TOC	L15080904-03 (4)	TOC:0.08639mg/L TC:8.677mg/L IC:8.590mg/L	Complete	8/22/2015 3:13:40 AM	60
61	TOC	L15080904-07 (4)	!!Error!! TOC:-0.1174mg/L TC:7.597mg/L IC:7.714mg/L	Complete	8/22/2015 3:26:20 AM	61
62	TOC	CCV	!!Error!! TOC:21.31mg/L TC:20.90mg/L IC:-0.4098mg/L	Complete	8/22/2015 3:38:50 AM	62
63	TOC	CCB	!!Error!! TOC:0.3553mg/L TC:-0.04355mg/L IC:-0.3989mg	Complete	8/22/2015 3:48:04 AM	0
64	TOC		TOC:6.956mg/L TC:38.41mg/L IC:31.45mg/L	Complete	8/22/2015 4:01:57 AM	64
65	TOC		!!Error!! TOC:-0.2709mg/L TC:8.127mg/L IC:8.398mg/L	Complete	8/22/2015 4:14:30 AM	65
66	TOC		TOC:0.8085mg/L TC:13.24mg/L IC:12.43mg/L	Complete	8/22/2015 4:27:53 AM	66
67	TOC		!!Error!! TOC:0.4793mg/L TC:0.1265mg/L IC:-0.3528mg/L	Complete	8/22/2015 4:39:27 AM	67

8/24/2015 9:06:06 AM

1/2

C:\TOC3201\Data\08-21-2015-dih-toc.t32

	Analysis	Sample Name	Result	Status	Date / Time	Vial
68	TOC		!!Error!! TOC:0.4455mg/L TC:0.04820mg/L IC:-0.3973mg/L	Complete	8/22/2015 4:50:58 AM	68
69	TOC		!!Error!! TOC:20.69mg/L TC:20.26mg/L IC:-0.4281mg/L	Complete	8/22/2015 5:03:30 AM	2
70	TOC		!!Error!! TOC:0.3502mg/L TC:-0.05179mg/L IC:-0.4019mg/	Complete	8/22/2015 5:12:49 AM	0

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Sample

Sample Name: TIC 25
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-1.152mg/L TC:22.89mg/L IC:24.04mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1013	22.89mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 10:12:01 AM

Mean Area 1013
Mean Conc. 22.89mg/L

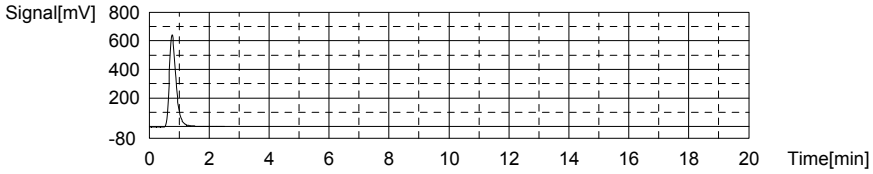

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	774.4	24.04mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 10:17:44 AM

Mean Area 774.4
Mean Conc. 24.04mg/L

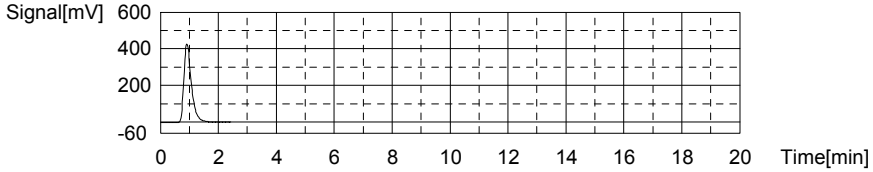

Sample

Sample Name: CCV 25
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:22.67mg/L TC:22.21mg/L IC:-0.4624mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	983.1	22.21mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 10:25:41 AM

Mean Area 983.1
Mean Conc. 22.21mg/L

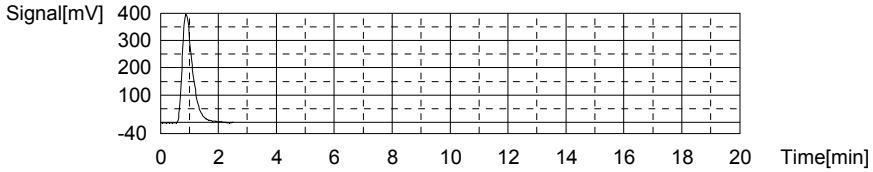

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.993	-0.4624mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_18	8/21/2015 10:30:15 AM

Mean Area 7.993
Mean Conc. -0.4624mg/L

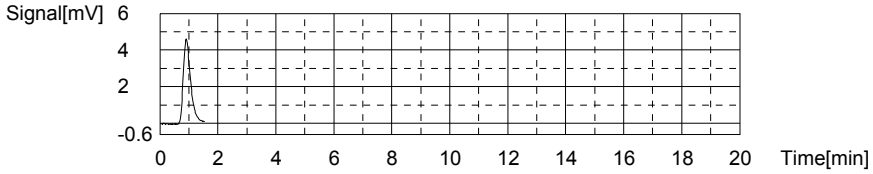

Sample

Sample Name: WG535967-01 BLK
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.3575mg/L TC:-0.03691mg/L IC:-0.3944mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.88	-0.03691mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 10:35:27 AM

Mean Area 10.88
Mean Conc. -0.03691mg/L

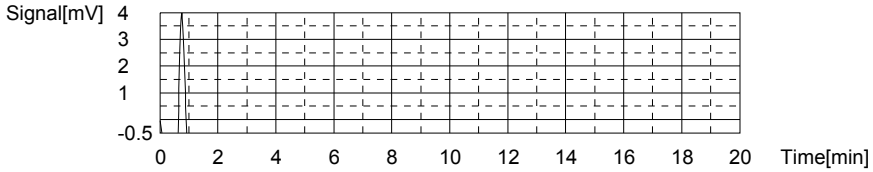

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.12	-0.3944mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_18	8/21/2015 10:39:34 AM

Mean Area 10.12
Mean Conc. -0.3944mg/L

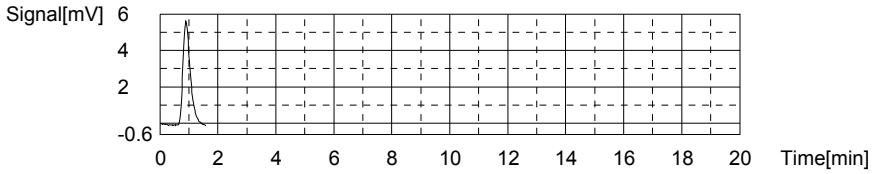

Sample

Sample Name: WG535967-02 LCS
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:23.57mg/L TC:43.94mg/L IC:20.37mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1933	43.94mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 10:49:37 AM

Mean Area 1933
Mean Conc. 43.94mg/L

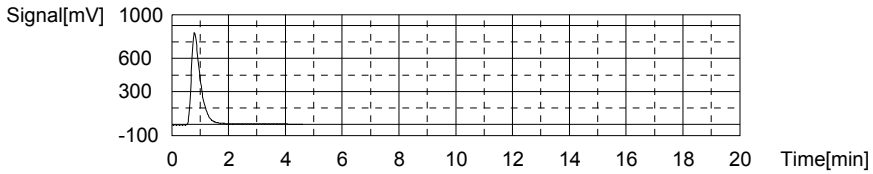

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	659.6	20.37mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 10:55:05 AM

Mean Area 659.6
Mean Conc. 20.37mg/L

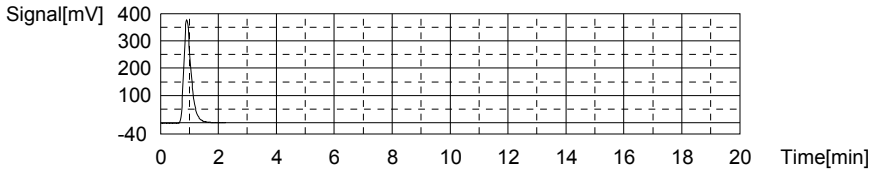

Sample

Sample Name: WG535967-03 LCSDUP
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:21.54mg/L TC:41.63mg/L IC:20.09mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1832	41.63mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 11:02:56 AM

Mean Area 1832
Mean Conc. 41.63mg/L

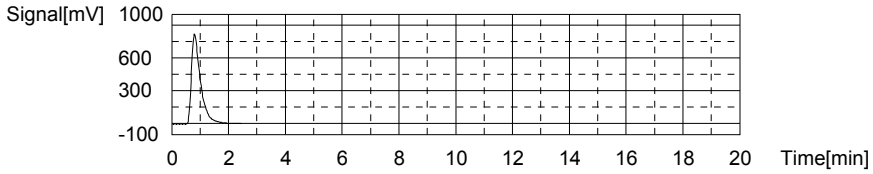

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	650.7	20.09mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 11:08:40 AM

Mean Area 650.7
Mean Conc. 20.09mg/L

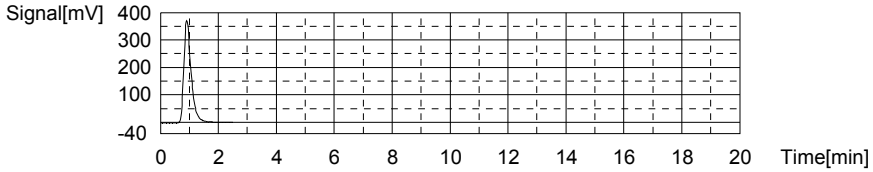

Sample

Sample Name: L15080776-09 (10)
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:17.61mg/L TC:23.85mg/L IC:6.240mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1055	23.85mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 11:17:00 AM

Mean Area 1055
Mean Conc. 23.85mg/L

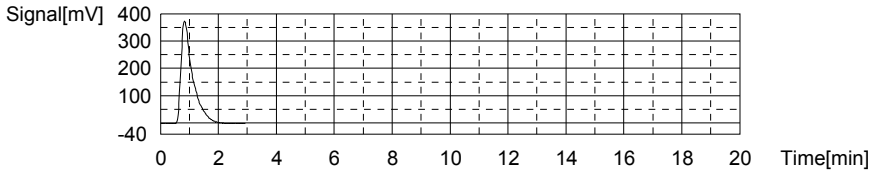

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	217.6	6.240mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 11:22:09 AM

Mean Area 217.6
Mean Conc. 6.240mg/L

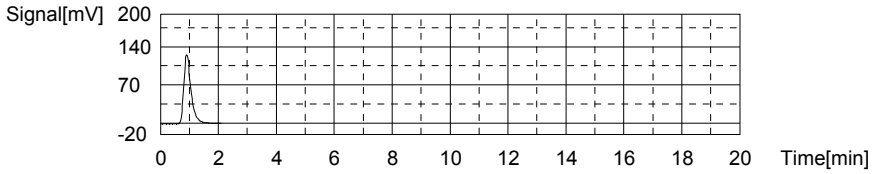

Sample

Sample Name: L15080899-01
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:12.04mg/L TC:38.45mg/L IC:26.41mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1693	38.45mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 11:32:29 AM

Mean Area 1693
Mean Conc. 38.45mg/L

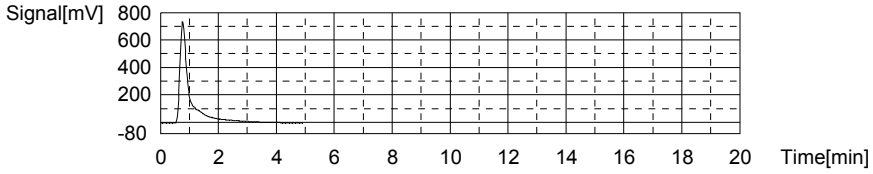

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	848.5	26.41mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 11:38:15 AM

Mean Area 848.5
Mean Conc. 26.41mg/L

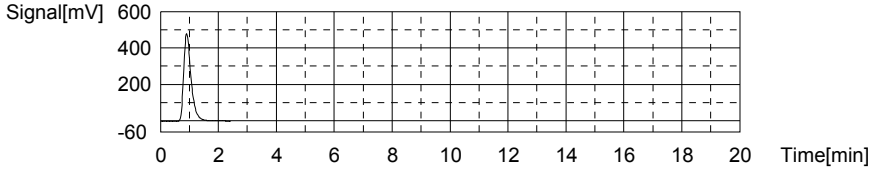

Sample

Sample Name: L15080901-01
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-0.8513mg/L TC:40.67mg/L IC:41.52mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1790	40.67mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 11:45:42 AM

Mean Area 1790
Mean Conc. 40.67mg/L

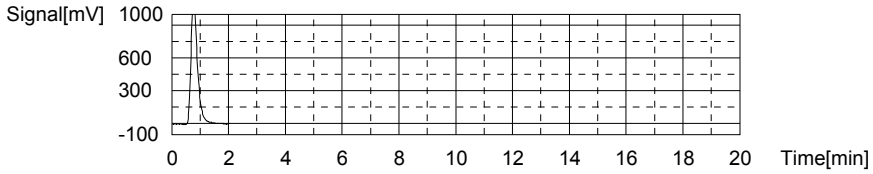

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1321	41.52mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 11:51:54 AM

Mean Area 1321
Mean Conc. 41.52mg/L

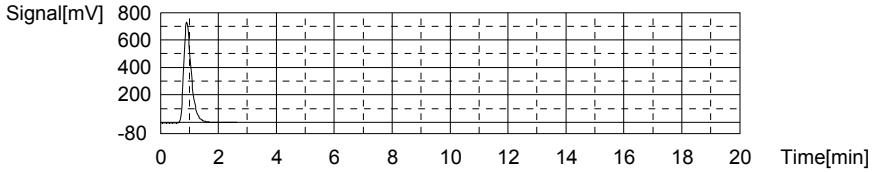

Sample

Sample Name: WG535967-05 DUP
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.03409mg/L TC:40.21mg/L IC:40.18mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1770	40.21mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 12:00:30 PM

Mean Area 1770
Mean Conc. 40.21mg/L

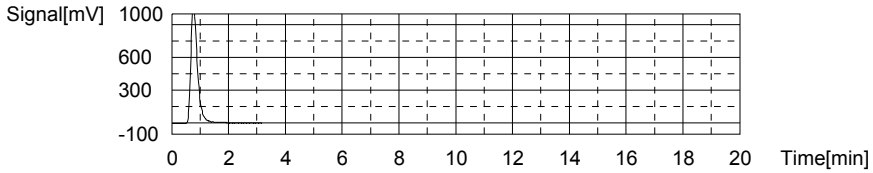

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1279	40.18mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 12:06:27 PM

Mean Area 1279
Mean Conc. 40.18mg/L

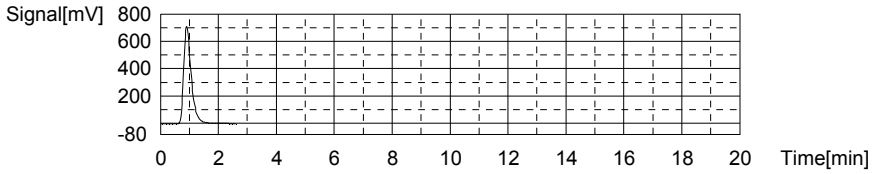

Sample

Sample Name: L15080901-02 MS
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:9.701mg/L TC:40.37mg/L IC:30.67mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1777	40.37mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 12:15:27 PM

Mean Area 1777
Mean Conc. 40.37mg/L

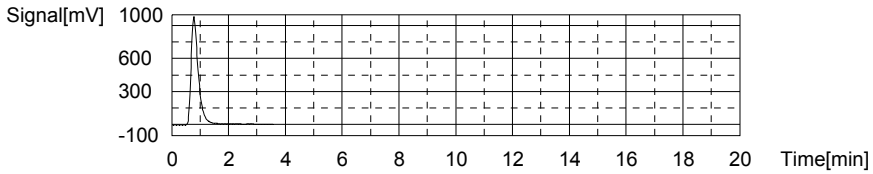

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	981.7	30.67mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 12:21:21 PM

Mean Area 981.7
Mean Conc. 30.67mg/L

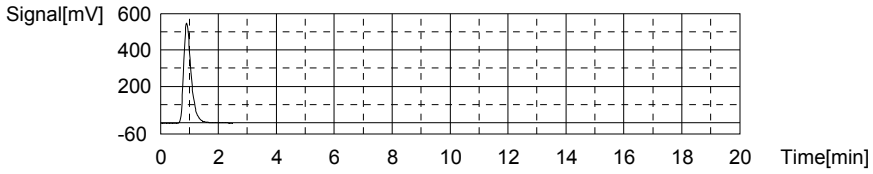

Sample

Sample Name: L15080901-03 MSD
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:8.403mg/L TC:38.47mg/L IC:30.07mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1694	38.47mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 12:29:34 PM

Mean Area 1694
Mean Conc. 38.47mg/L

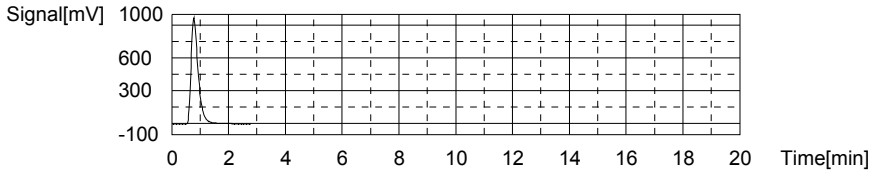

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	962.9	30.07mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_18	8/21/2015 12:35:33 PM

Mean Area 962.9
Mean Conc. 30.07mg/L

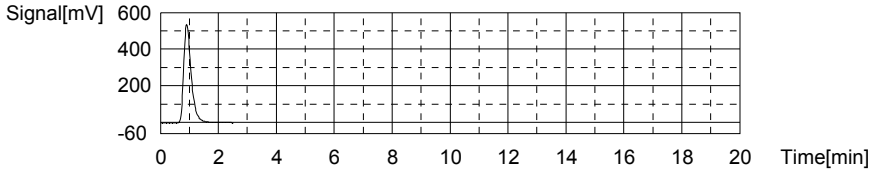

Sample

Sample Name:
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-22.88mg/L TC:80.23mg/L IC:103.1mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3519	80.23mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 12:45:57 PM

Mean Area 3519
Mean Conc. 80.23mg/L

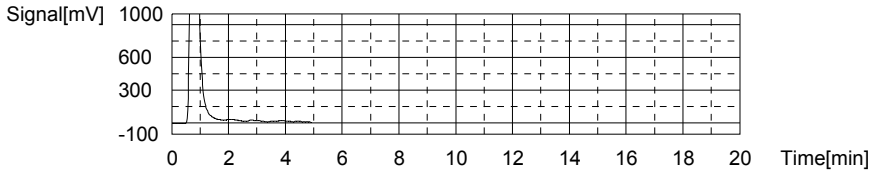

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3247	103.1mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_18	8/21/2015 12:53:46 PM

Mean Area 3247
Mean Conc. 103.1mg/L

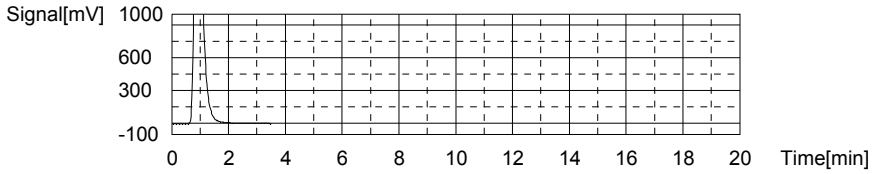

Sample

Sample Name:
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-23.34mg/L TC:80.51mg/L IC:103.8mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3531	80.51mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 1:04:06 PM

Mean Area 3531
Mean Conc. 80.51mg/L

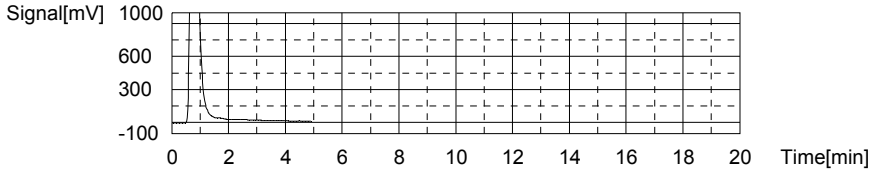

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3270	103.8mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 1:11:46 PM

Mean Area 3270
Mean Conc. 103.8mg/L

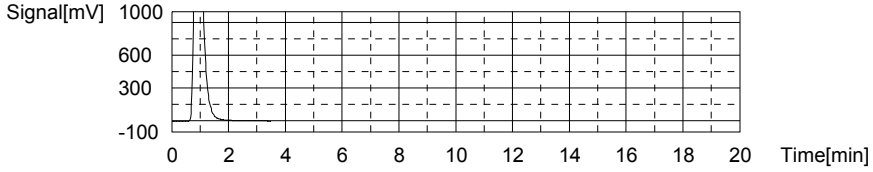

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:23.36mg/L TC:23.69mg/L IC:0.3337mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1048	23.69mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 1:20:28 PM

Mean Area 1048
Mean Conc. 23.69mg/L

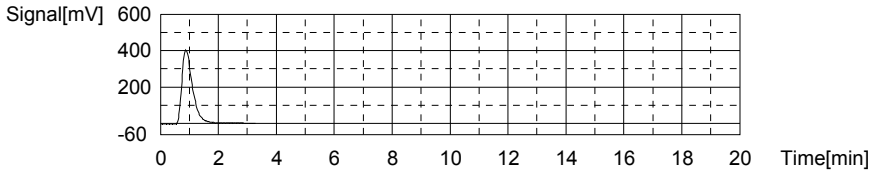

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	32.89	0.3337mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 1:25:43 PM

Mean Area 32.89
Mean Conc. 0.3337mg/L

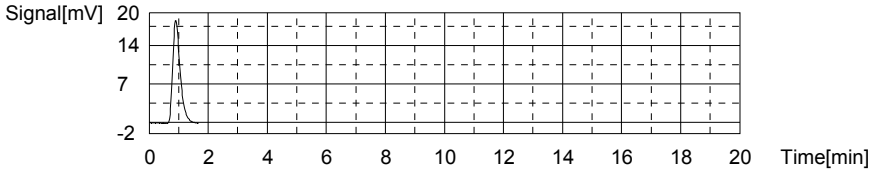

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.2675mg/L TC:0.01091mg/L IC:-0.2566mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	12.97	0.01091mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 1:31:05 PM

Mean Area 12.97
Mean Conc. 0.01091mg/L

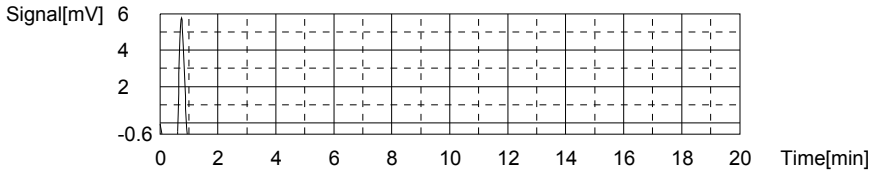

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	14.43	-0.2566mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 1:35:13 PM

Mean Area 14.43
Mean Conc. -0.2566mg/L

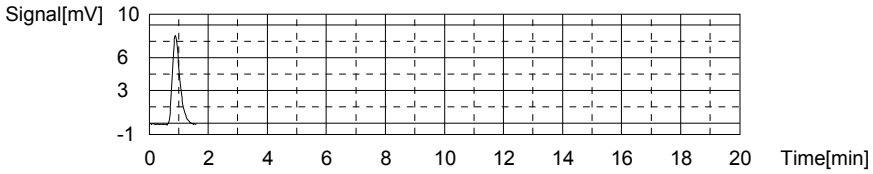

Sample

Sample Name:
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-8.590mg/L TC:53.30mg/L IC:61.89mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2342	53.30mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 1:45:19 PM

Mean Area 2342
Mean Conc. 53.30mg/L

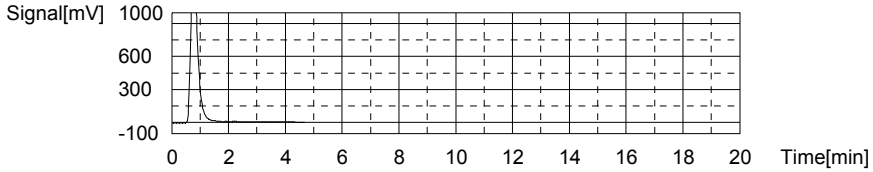

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1958	61.89mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 1:51:45 PM

Mean Area 1958
Mean Conc. 61.89mg/L

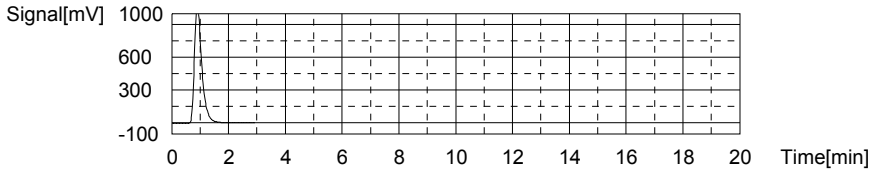

Sample

Sample Name:
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-21.84mg/L TC:86.23mg/L IC:108.1mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3781	86.23mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 2:02:04 PM

Mean Area 3781
Mean Conc. 86.23mg/L

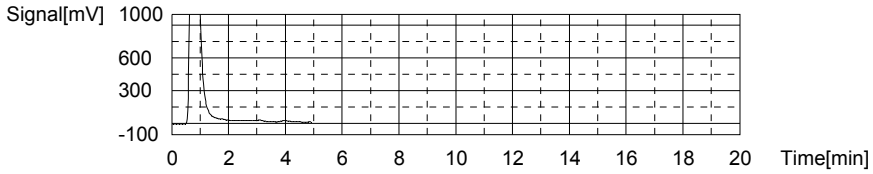

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3402	108.1mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_18	8/21/2015 2:09:40 PM

Mean Area 3402
Mean Conc. 108.1mg/L

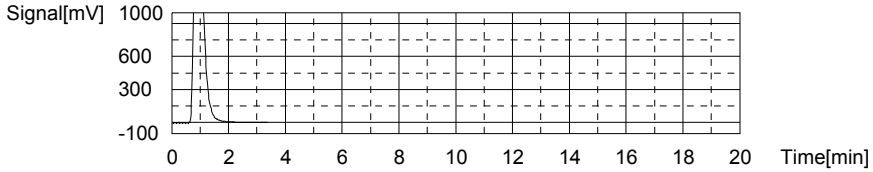

Sample

Sample Name: L15080904-05 (5)
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1746mg/L TC:12.54mg/L IC:12.37mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	560.6	12.54mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 2:17:10 PM

Mean Area 560.6
Mean Conc. 12.54mg/L

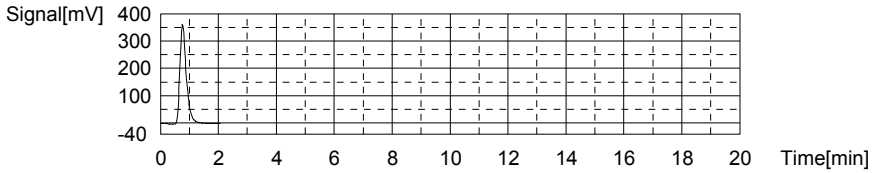

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	409.2	12.37mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_18	8/21/2015 2:22:40 PM

Mean Area 409.2
Mean Conc. 12.37mg/L

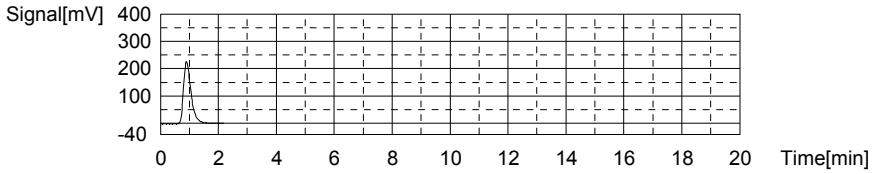

Sample

Sample Name:
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-21.26mg/L TC:85.33mg/L IC:106.6mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3742	85.33mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 2:33:00 PM

Mean Area 3742
Mean Conc. 85.33mg/L

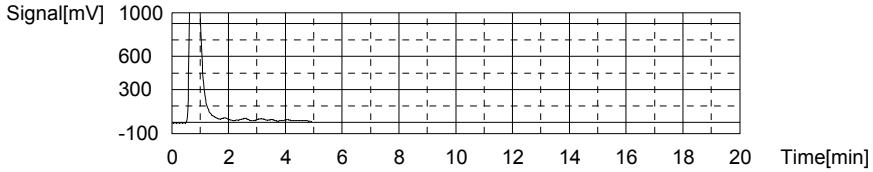

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3356	106.6mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 2:40:41 PM

Mean Area 3356
Mean Conc. 106.6mg/L

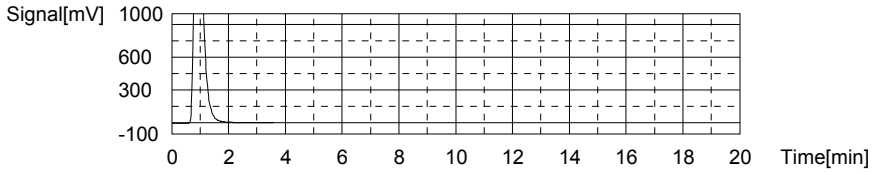

Sample

Sample Name: L15080992-01 (2)
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.173mg/L TC:19.14mg/L IC:17.96mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	848.8	19.14mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 2:48:37 PM

Mean Area 848.8
Mean Conc. 19.14mg/L

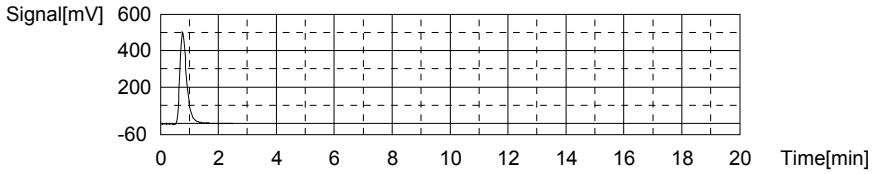

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	584.2	17.96mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_18	8/21/2015 2:54:18 PM

Mean Area 584.2
Mean Conc. 17.96mg/L

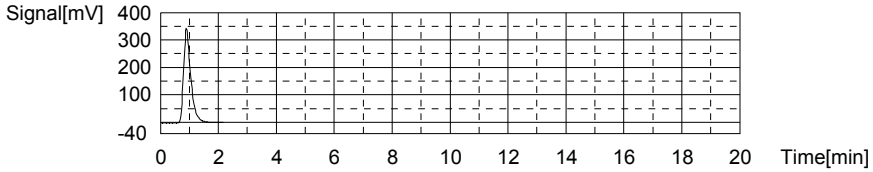

Sample

Sample Name: L15080992-03 (3)
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-1.192mg/L TC:34.13mg/L IC:35.32mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1504	34.13mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 3:02:51 PM

Mean Area 1504
Mean Conc. 34.13mg/L

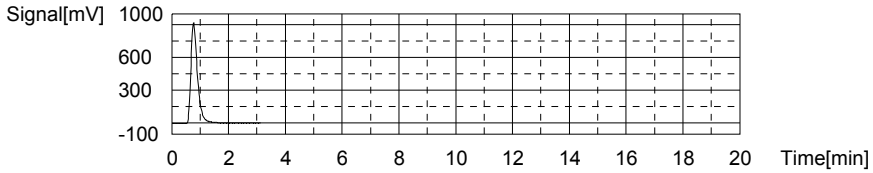

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1127	35.32mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_18	8/21/2015 3:08:39 PM

Mean Area 1127
Mean Conc. 35.32mg/L

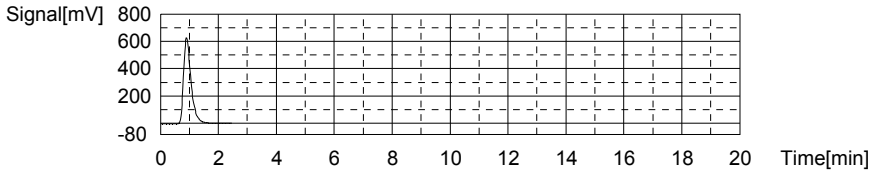

Sample

Sample Name:
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-4.279mg/L TC:52.43mg/L IC:56.71mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2304	52.43mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 3:18:27 PM

Mean Area 2304
Mean Conc. 52.43mg/L

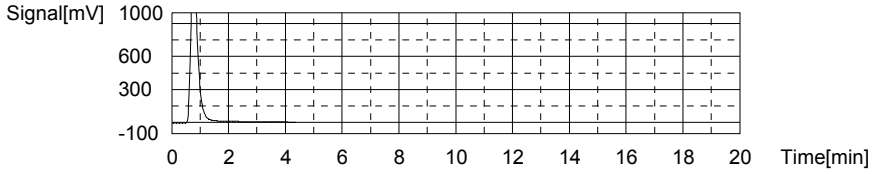

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1796	56.71mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 3:24:47 PM

Mean Area 1796
Mean Conc. 56.71mg/L

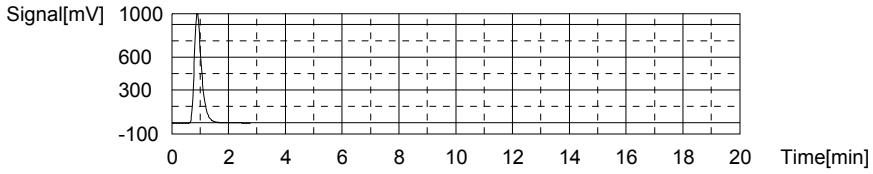

Sample

Sample Name: L15080992-07 (3)
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-0.8804mg/L TC:34.63mg/L IC:35.51mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1526	34.63mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 3:33:24 PM

Mean Area 1526
Mean Conc. 34.63mg/L

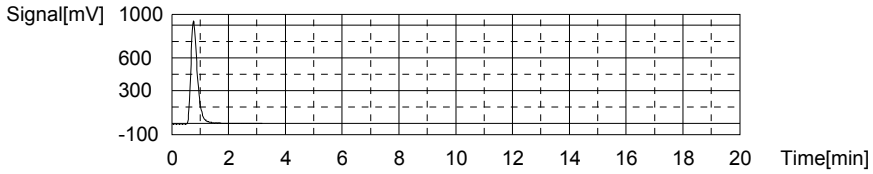

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1133	35.51mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 3:38:59 PM

Mean Area 1133
Mean Conc. 35.51mg/L

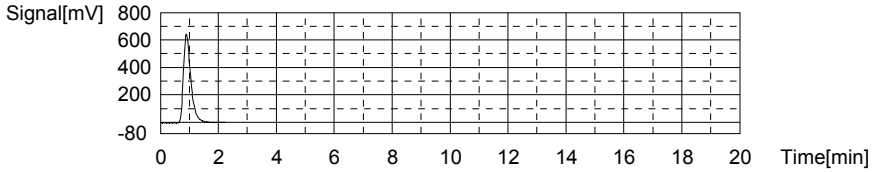

Sample

Sample Name:
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-10.01mg/L TC:51.81mg/L IC:61.83mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2277	51.81mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 3:48:33 PM

Mean Area 2277
Mean Conc. 51.81mg/L

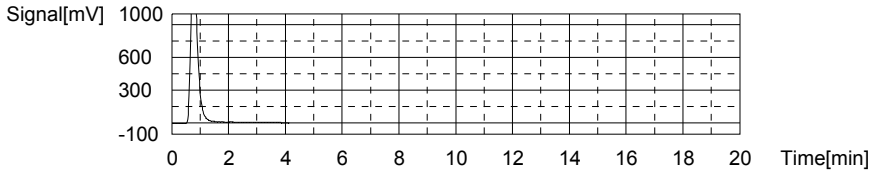

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1956	61.83mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 3:54:48 PM

Mean Area 1956
Mean Conc. 61.83mg/L

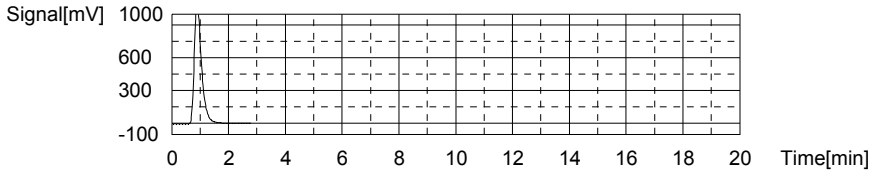

Sample

Sample Name:
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-8.167mg/L TC:56.99mg/L IC:65.15mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2503	56.99mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 4:05:07 PM

Mean Area 2503
Mean Conc. 56.99mg/L

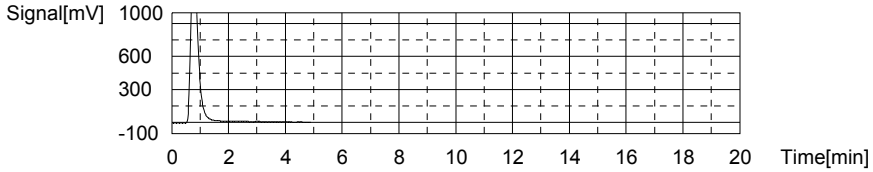

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2060	65.15mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 4:12:02 PM

Mean Area 2060
Mean Conc. 65.15mg/L

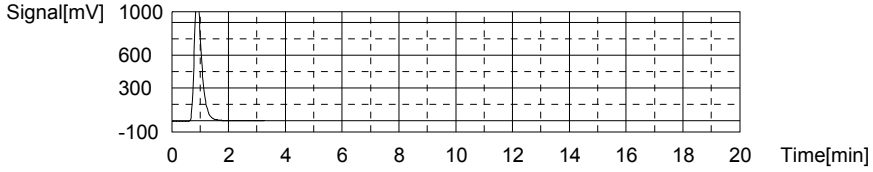

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:23.33mg/L TC:23.08mg/L IC:-0.2518mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1021	23.08mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 4:35:05 PM

Mean Area 1021
Mean Conc. 23.08mg/L

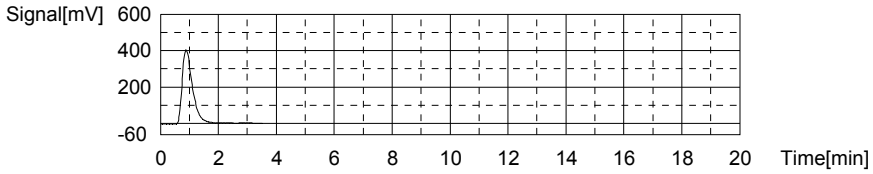

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	14.58	-0.2518mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 4:39:50 PM

Mean Area 14.58
Mean Conc. -0.2518mg/L

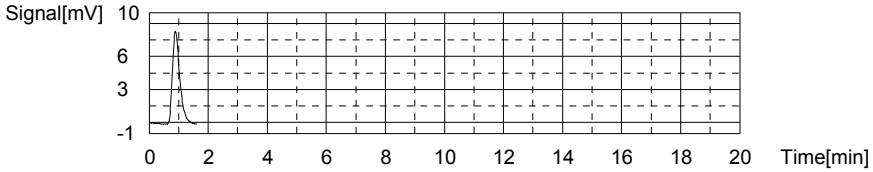

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.3152mg/L TC:-0.03028mg/L IC:-0.3455mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.17	-0.03028mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 4:45:09 PM

Mean Area 11.17
Mean Conc. -0.03028mg/L

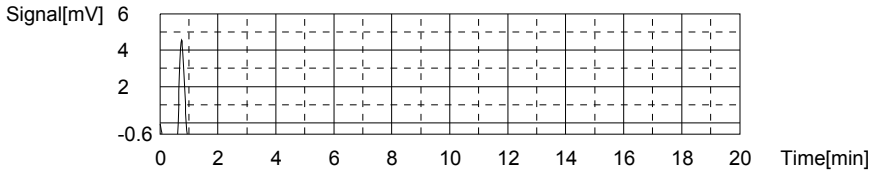

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.65	-0.3455mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 4:49:11 PM

Mean Area 11.65
Mean Conc. -0.3455mg/L

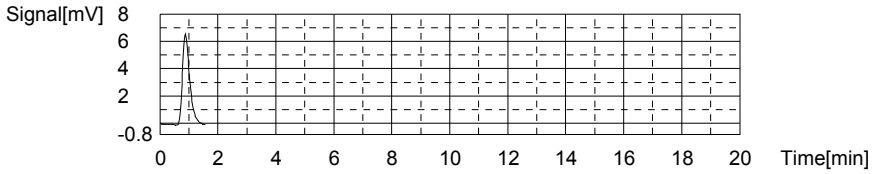

Sample

Sample Name: L15080995-02
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.4095mg/L TC:4.139mg/L IC:3.730mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	193.4	4.139mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 4:56:37 PM

Mean Area 193.4
Mean Conc. 4.139mg/L

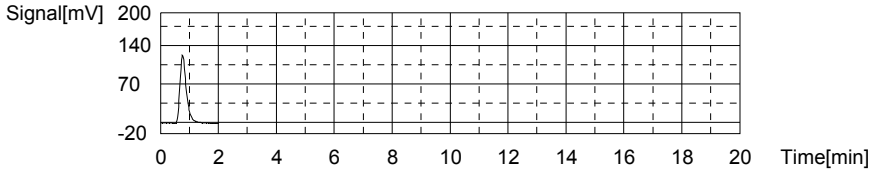

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	139.1	3.730mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 5:01:38 PM

Mean Area 139.1
Mean Conc. 3.730mg/L

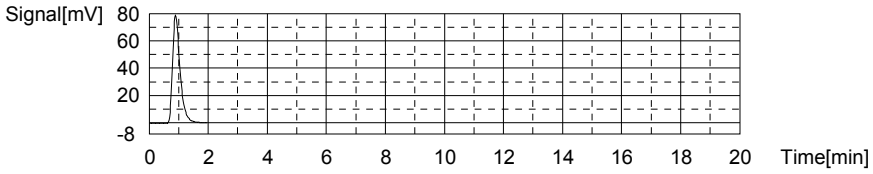

Sample

Sample Name: L15080995-04 (3)
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-0.5999mg/L TC:30.03mg/L IC:30.63mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1325	30.03mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 5:10:48 PM

Mean Area 1325
Mean Conc. 30.03mg/L

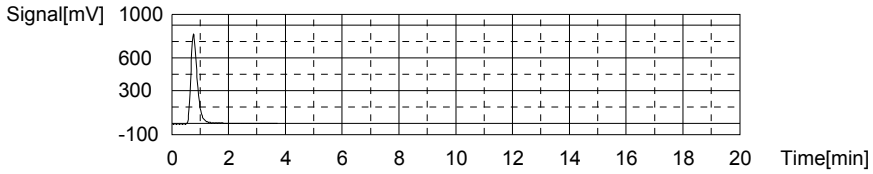

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	980.4	30.63mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 5:16:45 PM

Mean Area 980.4
Mean Conc. 30.63mg/L

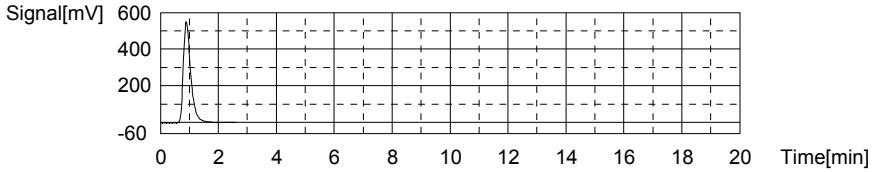

Sample

Sample Name: L15081073-01 (5)
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.115mg/L TC:28.36mg/L IC:21.25mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1252	28.36mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 5:24:56 PM

Mean Area 1252
Mean Conc. 28.36mg/L

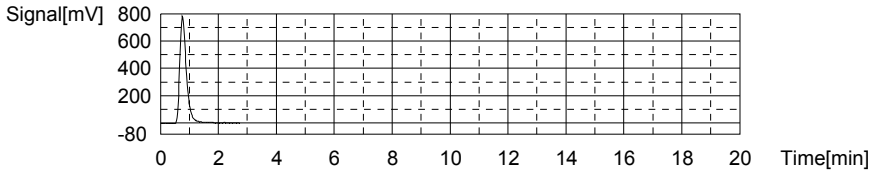

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	686.9	21.25mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 5:30:48 PM

Mean Area 686.9
Mean Conc. 21.25mg/L

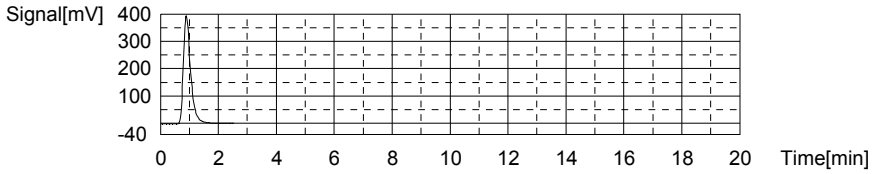

Sample

Sample Name: L15081073-03 (3)
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-13.72mg/L TC:55.34mg/L IC:69.05mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2431	55.34mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 5:40:20 PM

Mean Area 2431
Mean Conc. 55.34mg/L

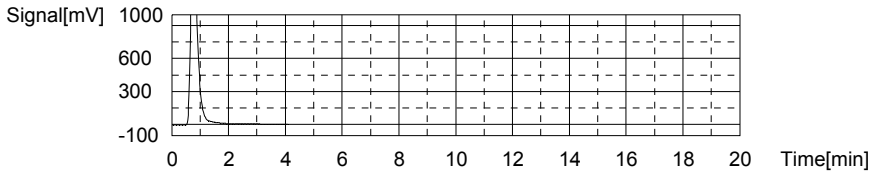

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2182	69.05mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 5:47:05 PM

Mean Area 2182
Mean Conc. 69.05mg/L

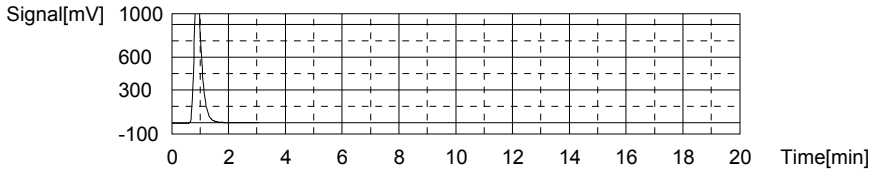

Sample

Sample Name: WG535971-01 BLK
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.3144mg/L TC:0.06067mg/L IC:-0.2537mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	17.38	0.1118mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 5:52:55 PM
2	12.91	0.00954mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 5:56:41 PM

Mean Area 15.15
Mean Conc. 0.06067mg/L

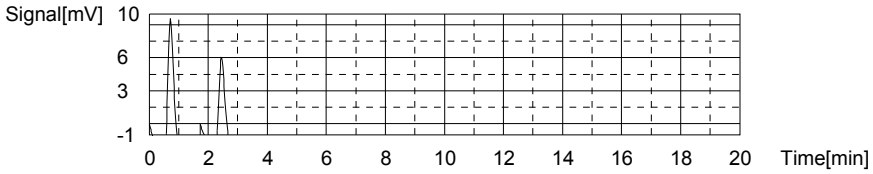

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	16.43	-0.1926mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 6:00:51 PM
2	12.61	-0.3148mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 6:04:58 PM

Mean Area 14.52
Mean Conc. -0.2537mg/L

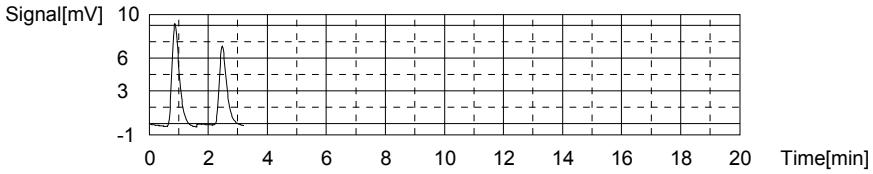

Sample

Sample Name: WG535971-02 LCS
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:23.88mg/L TC:35.11mg/L IC:11.23mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1568	35.59mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 6:14:32 PM
2	1526	34.63mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 6:21:25 PM

Mean Area 1547
Mean Conc. 35.11mg/L

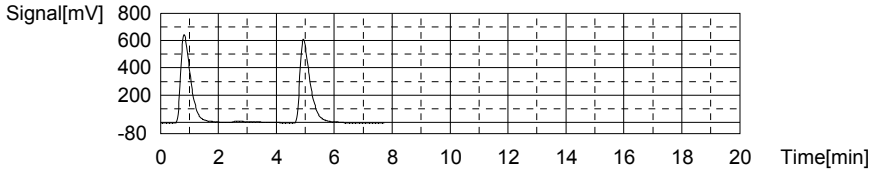

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	374.5	11.26mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 6:26:48 PM
2	372.6	11.20mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 6:31:40 PM

Mean Area 373.6
Mean Conc. 11.23mg/L

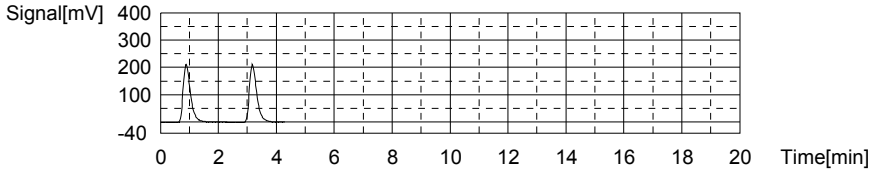

Sample

Sample Name: WG535971-03 LCSDUP
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:23.63mg/L TC:34.52mg/L IC:10.88mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1514	34.36mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 6:41:27 PM
2	1528	34.68mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 6:48:23 PM

Mean Area 1521
Mean Conc. 34.52mg/L

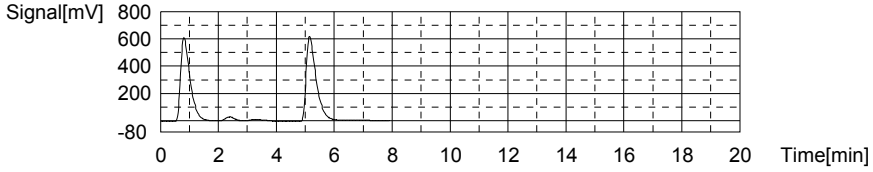

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	362.9	10.89mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 6:53:38 PM
2	362.7	10.88mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 6:58:37 PM

Mean Area 362.8
Mean Conc. 10.88mg/L

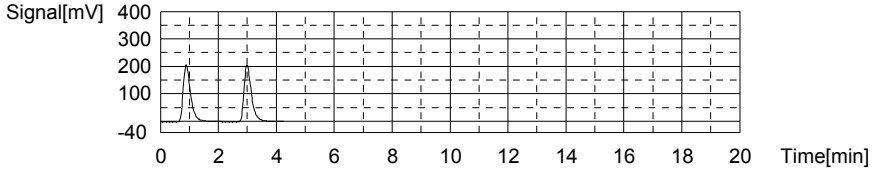

Sample

Sample Name: L15080935-01
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.234mg/L TC:4.290mg/L IC:3.057mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	248.3	5.395mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 7:08:53 PM
2	151.7	3.185mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 7:13:43 PM

Mean Area 200.0
Mean Conc. 4.290mg/L

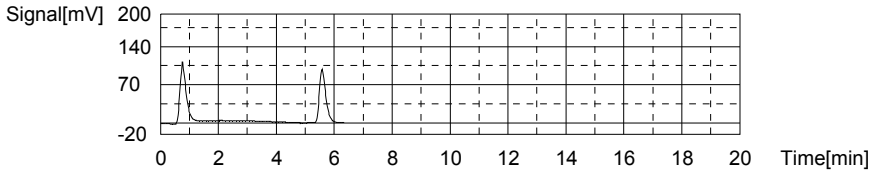

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	118.9	3.084mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 7:18:34 PM
2	117.2	3.030mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 7:23:07 PM

Mean Area 118.1
Mean Conc. 3.057mg/L

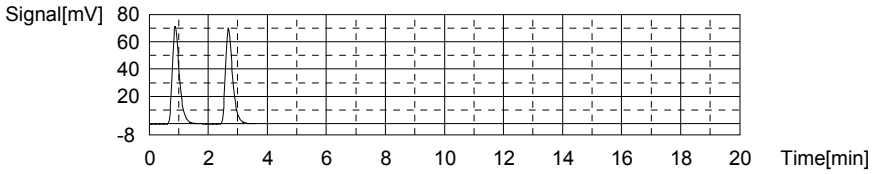

Sample

Sample Name: L15080936-01
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.4910mg/L TC:0.07646mg/L IC:-0.4145mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.21	-0.05224mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 7:30:36 PM
2	21.46	0.2052mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 7:34:42 PM

Mean Area 15.84
Mean Conc. 0.07646mg/L

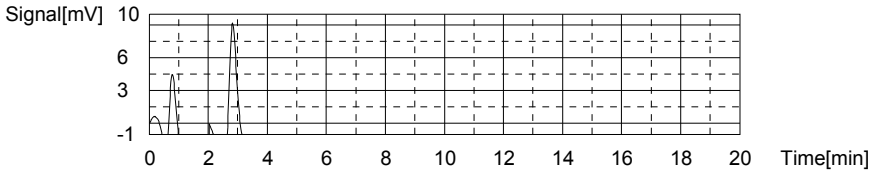

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.764	-0.4058mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 7:39:15 PM
2	9.218	-0.4232mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 7:43:30 PM

Mean Area 9.491
Mean Conc. -0.4145mg/L

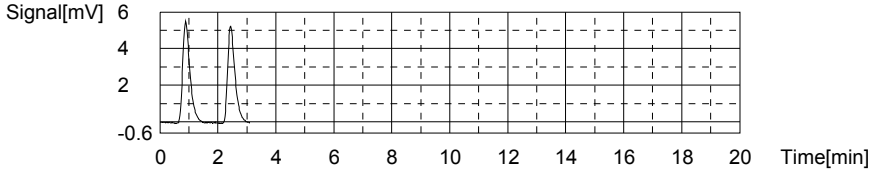

Sample

Sample Name: L15080936-02
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.5834mg/L TC:0.1547mg/L IC:-0.4287mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	20.07	0.1734mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 7:50:45 PM
2	18.44	0.1361mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 7:54:46 PM

Mean Area 19.26
Mean Conc. 0.1547mg/L

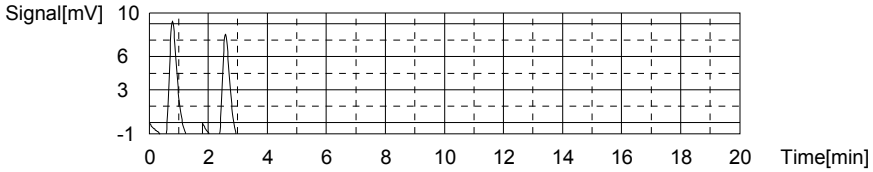

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.142	-0.4257mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 7:59:18 PM
2	8.954	-0.4317mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 8:03:36 PM

Mean Area 9.048
Mean Conc. -0.4287mg/L

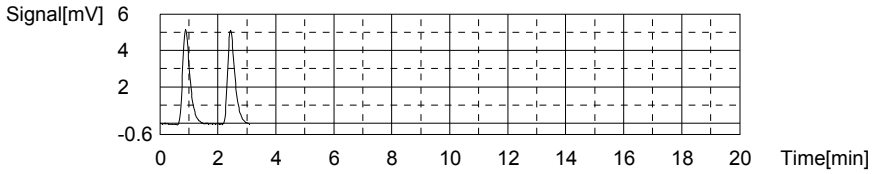

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:20.37mg/L TC:19.93mg/L IC:-0.4340mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	883.7	19.93mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 8:11:33 PM

Mean Area 883.7
Mean Conc. 19.93mg/L

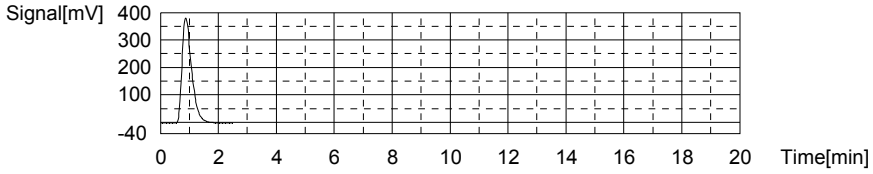

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.881	-0.4340mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 8:16:01 PM

Mean Area 8.881
Mean Conc. -0.4340mg/L

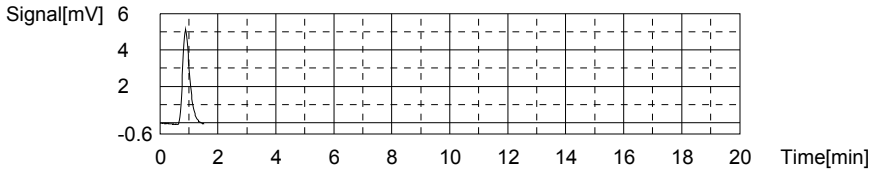

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.3536mg/L TC:-0.03829mg/L IC:-0.3918mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.82	-0.03829mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 8:21:25 PM

Mean Area 10.82
Mean Conc. -0.03829mg/L

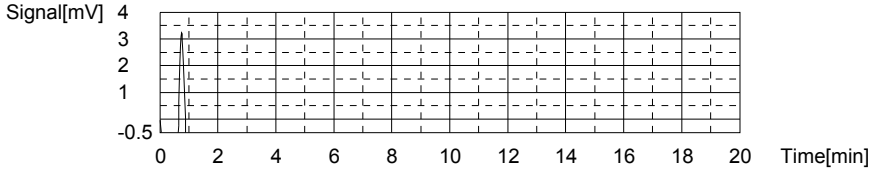

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.20	-0.3918mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 8:25:30 PM

Mean Area 10.20
Mean Conc. -0.3918mg/L

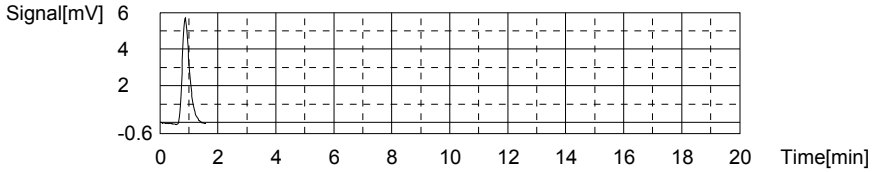

Sample

Sample Name: L15080936-03
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:1.034mg/L TC:0.6067mg/L IC:-0.4274mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	39.25	0.6122mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 8:32:37 PM
2	38.77	0.6012mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 8:37:00 PM

Mean Area 39.01
Mean Conc. 0.6067mg/L

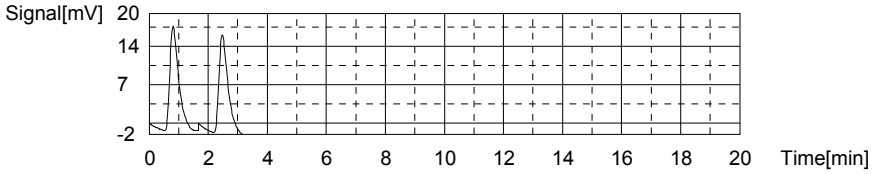

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.205	-0.4237mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 8:41:29 PM
2	8.971	-0.4311mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 8:45:43 PM

Mean Area 9.088
Mean Conc. -0.4274mg/L

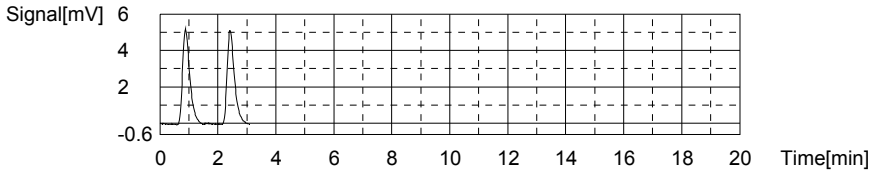

Sample

Sample Name: L15080936-04
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.7416mg/L TC:0.3014mg/L IC:-0.4402mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	25.66	0.3013mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 8:52:54 PM
2	25.67	0.3015mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 8:57:01 PM

Mean Area 25.66
Mean Conc. 0.3014mg/L

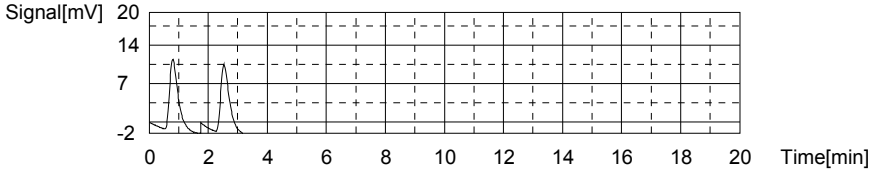

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.734	-0.4387mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_18	8/21/2015 9:01:29 PM
2	8.641	-0.4417mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_18	8/21/2015 9:05:45 PM

Mean Area 8.688
Mean Conc. -0.4402mg/L

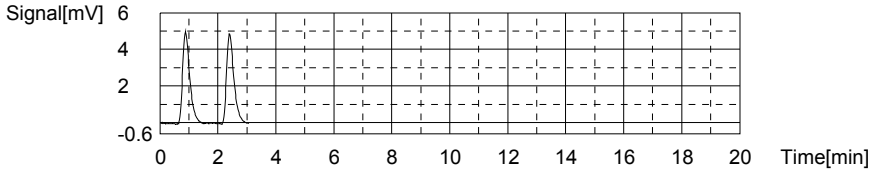

Sample

Sample Name: L15080936-05
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.5907mg/L TC:0.1552mg/L IC:-0.4356mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	19.55	0.1615mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 9:12:54 PM
2	19.00	0.1489mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 9:16:55 PM

Mean Area 19.27
Mean Conc. 0.1552mg/L

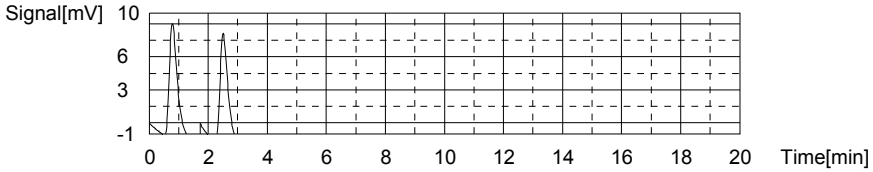

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.904	-0.4333mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_18	8/21/2015 9:21:25 PM
2	8.761	-0.4379mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_18	8/21/2015 9:25:38 PM

Mean Area 8.832
Mean Conc. -0.4356mg/L

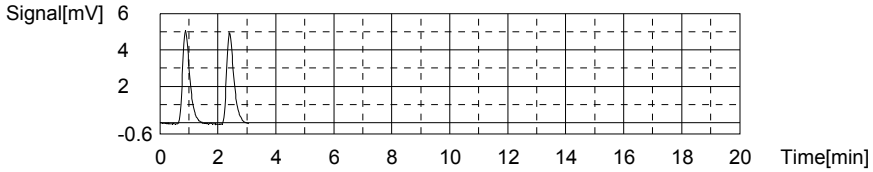

Sample

Sample Name: L15080936-06
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.5897mg/L TC:0.1466mg/L IC:-0.4431mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	19.29	0.1555mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 9:32:43 PM
2	18.51	0.1377mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 9:36:43 PM

Mean Area 18.90
Mean Conc. 0.1466mg/L

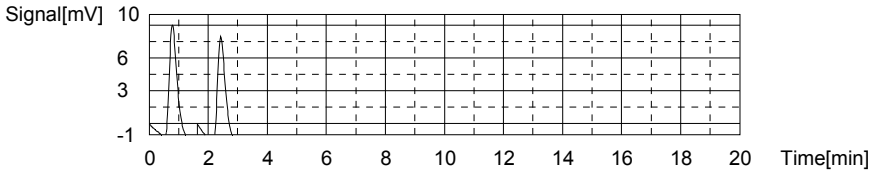

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.670	-0.4408mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 9:41:09 PM
2	8.524	-0.4454mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 9:45:22 PM

Mean Area 8.597
Mean Conc. -0.4431mg/L

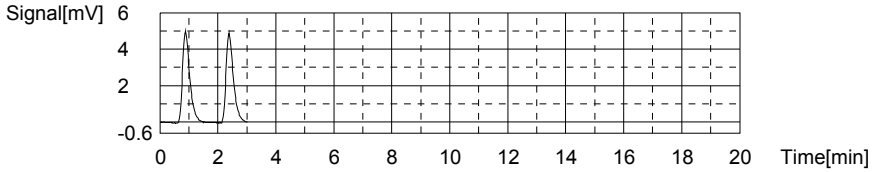

Sample

Sample Name: L15080936-07
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.5331mg/L TC:0.08481mg/L IC:-0.4483mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	16.71	0.09648mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 9:52:24 PM
2	15.69	0.07314mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 9:56:20 PM

Mean Area 16.20
Mean Conc. 0.08481mg/L

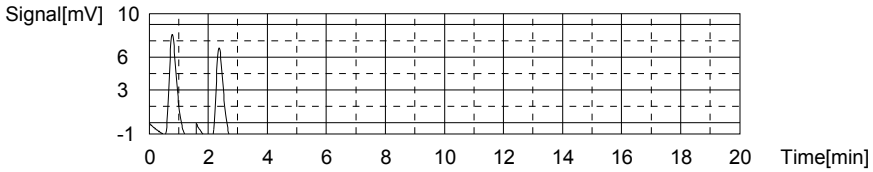

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.410	-0.4491mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 10:00:47 PM
2	8.457	-0.4476mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 10:05:00 PM

Mean Area 8.434
Mean Conc. -0.4483mg/L

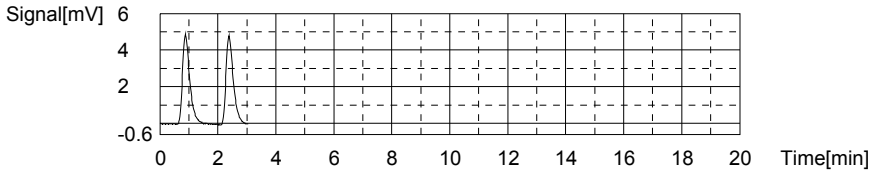

Sample

Sample Name: L15081075-01
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:4.280mg/L TC:3.962mg/L IC:-0.3185mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	185.4	3.956mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 10:13:27 PM
2	185.9	3.968mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 10:20:09 PM

Mean Area 185.7
Mean Conc. 3.962mg/L

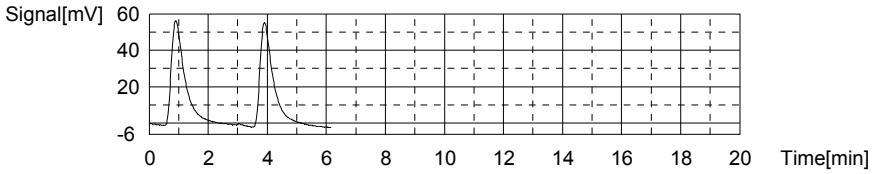

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	12.60	-0.3151mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_18	8/21/2015 10:25:02 PM
2	12.39	-0.3218mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_18	8/21/2015 10:29:41 PM

Mean Area 12.50
Mean Conc. -0.3185mg/L

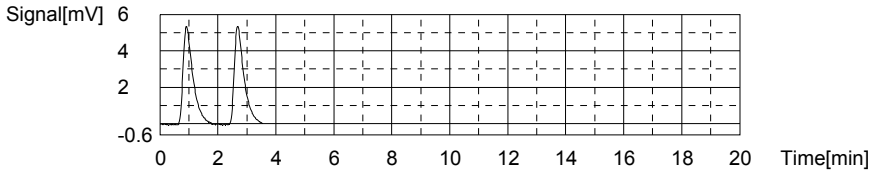

Sample

Sample Name: L15081075-02
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.6338mg/L TC:0.4183mg/L IC:-0.2155mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	30.87	0.4205mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 10:36:57 PM
2	30.68	0.4161mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 10:41:01 PM

Mean Area 30.77
Mean Conc. 0.4183mg/L

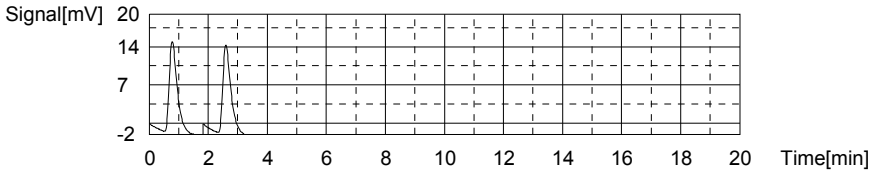

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	15.69	-0.2163mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 10:45:34 PM
2	15.74	-0.2147mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 10:49:55 PM

Mean Area 15.72
Mean Conc. -0.2155mg/L

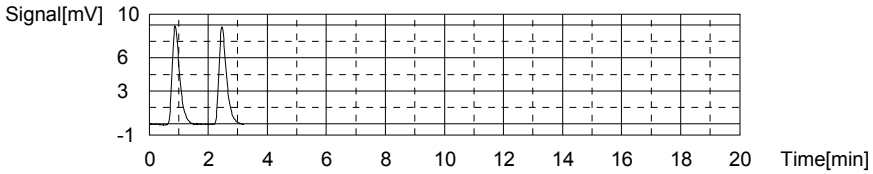

Sample

Sample Name: L15081076-01 (50)
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:31.08mg/L TC:30.73mg/L IC:-0.3508mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1376	31.20mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 10:59:56 PM
2	1335	30.26mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 11:07:00 PM

Mean Area 1356
Mean Conc. 30.73mg/L

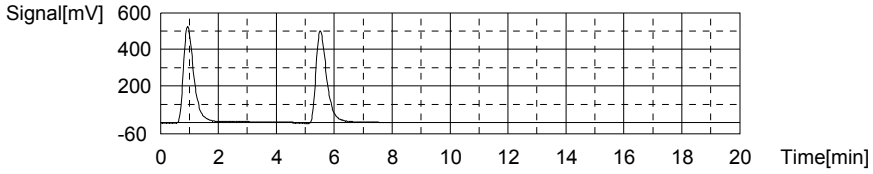

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.60	-0.3471mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 11:11:32 PM
2	11.37	-0.3544mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 11:15:50 PM

Mean Area 11.49
Mean Conc. -0.3508mg/L

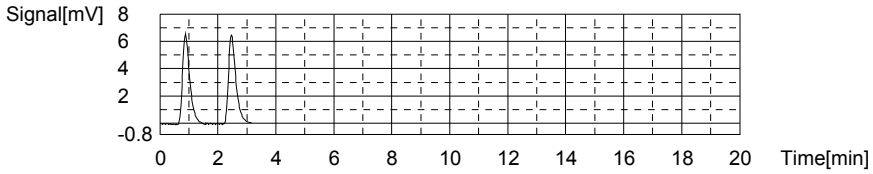

Sample

Sample Name: L15081077-01 (50)
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:24.12mg/L TC:23.76mg/L IC:-0.3559mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1075	24.31mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 11:25:16 PM
2	1027	23.21mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 11:30:06 PM

Mean Area 1051
Mean Conc. 23.76mg/L

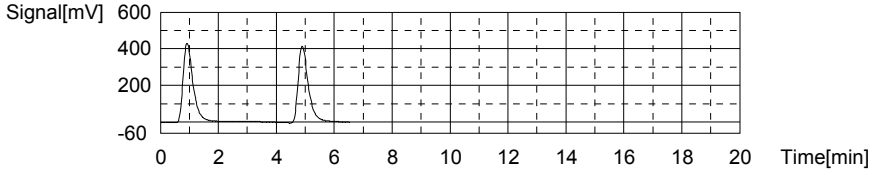

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.40	-0.3535mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 11:34:37 PM
2	11.25	-0.3583mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/21/2015 11:38:52 PM

Mean Area 11.32
Mean Conc. -0.3559mg/L

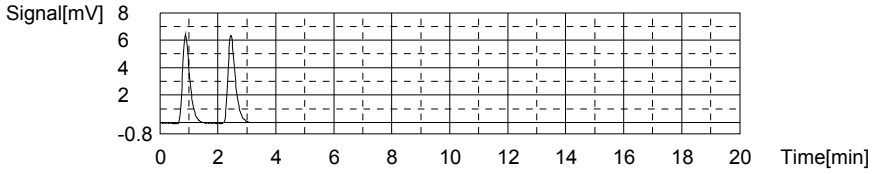

Sample

Sample Name: L15081095-01
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:40.89mg/L TC:41.00mg/L IC:0.1132mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1827	41.52mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 11:48:48 PM
2	1782	40.49mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/21/2015 11:55:34 PM

Mean Area 1805
Mean Conc. 41.00mg/L

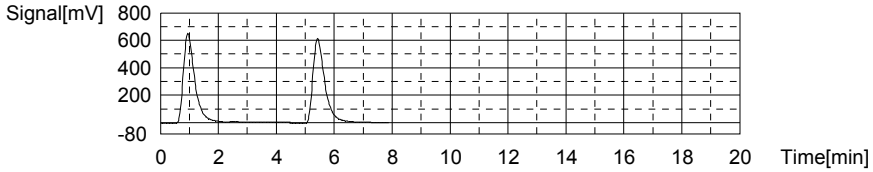

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	25.85	0.1086mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_18	8/22/2015 12:00:10 AM
2	26.14	0.1179mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_18	8/22/2015 12:04:32 AM

Mean Area 26.00
Mean Conc. 0.1132mg/L

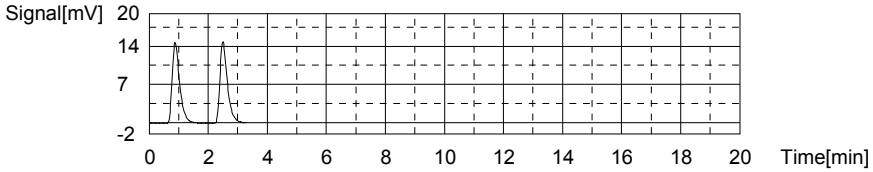

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:23.70mg/L TC:23.26mg/L IC:-0.4449mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1029	23.26mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/22/2015 12:13:04 AM

Mean Area 1029
Mean Conc. 23.26mg/L

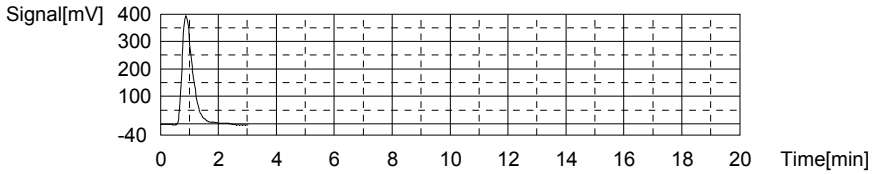

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.541	-0.4449mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/22/2015 12:17:31 AM

Mean Area 8.541
Mean Conc. -0.4449mg/L

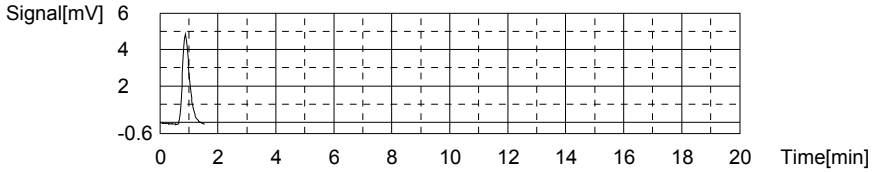

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.3522mg/L TC:-0.05064mg/L IC:-0.4028mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.28	-0.05064mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	8/22/2015 12:22:48 AM

Mean Area 10.28
Mean Conc. -0.05064mg/L

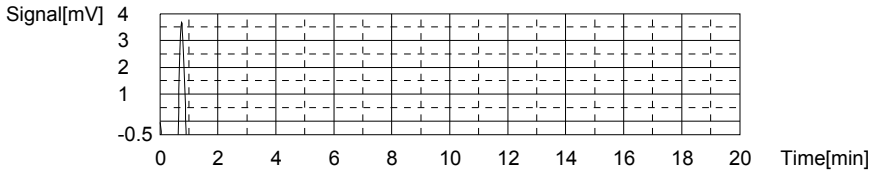

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.857	-0.4028mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/22/2015 12:26:51 AM

Mean Area 9.857
Mean Conc. -0.4028mg/L

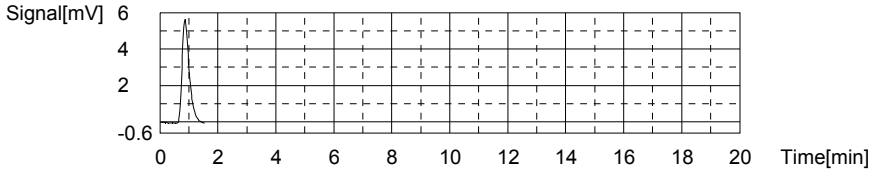

Sample

Sample Name: L15081010-01
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.712mg/L TC:16.63mg/L IC:10.92mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	736.5	16.57mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/22/2015 12:34:36 AM
2	742.1	16.69mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/22/2015 12:40:09 AM

Mean Area 739.3
Mean Conc. 16.63mg/L

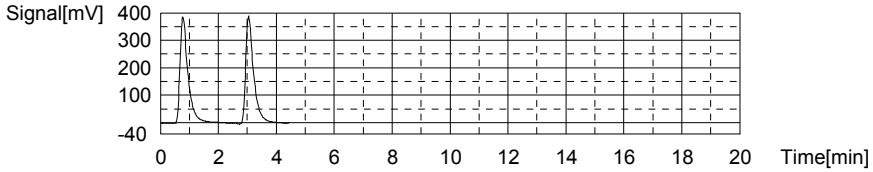

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	362.1	10.86mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_18	8/22/2015 12:45:17 AM
2	365.7	10.98mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_18	8/22/2015 12:50:11 AM

Mean Area 363.9
Mean Conc. 10.92mg/L

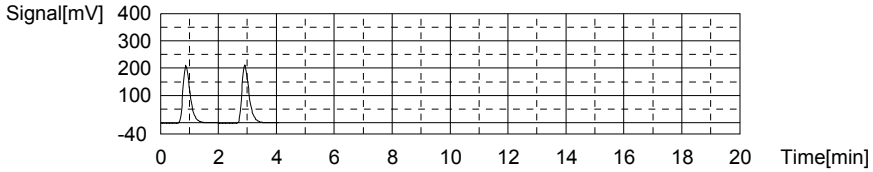

Sample

Sample Name: L15081010-02
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.358mg/L TC:9.008mg/L IC:2.651mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	410.3	9.102mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/22/2015 12:58:22 AM
2	402.1	8.915mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/22/2015 1:03:02 AM

Mean Area 406.2
Mean Conc. 9.008mg/L

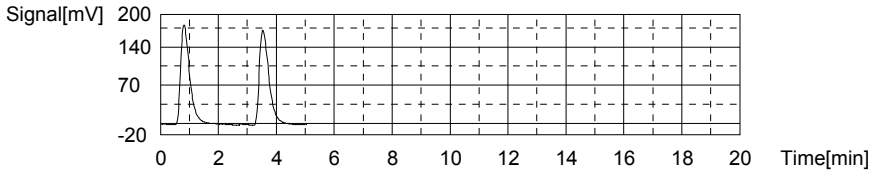

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	105.9	2.668mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/22/2015 1:07:51 AM
2	104.8	2.633mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/22/2015 1:12:22 AM

Mean Area 105.4
Mean Conc. 2.651mg/L

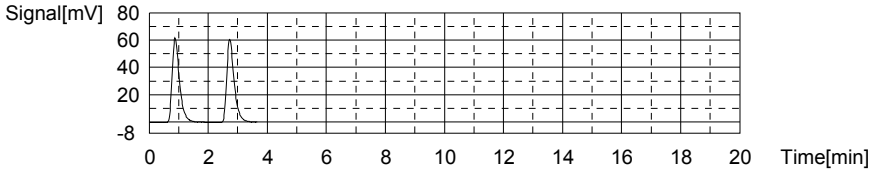

Sample

Sample Name: L15081010-03
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.842mg/L TC:6.757mg/L IC:2.914mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	306.1	6.718mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/22/2015 1:19:48 AM
2	309.5	6.796mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/22/2015 1:25:31 AM

Mean Area 307.8
Mean Conc. 6.757mg/L

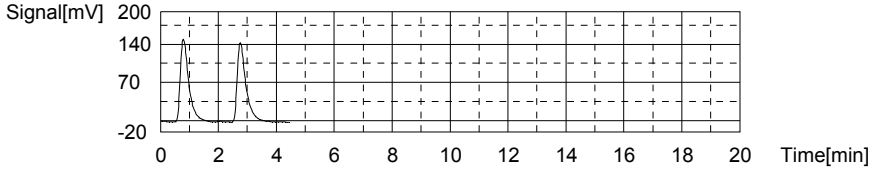

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	114.7	2.950mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/22/2015 1:30:18 AM
2	112.5	2.879mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/22/2015 1:34:52 AM

Mean Area 113.6
Mean Conc. 2.914mg/L

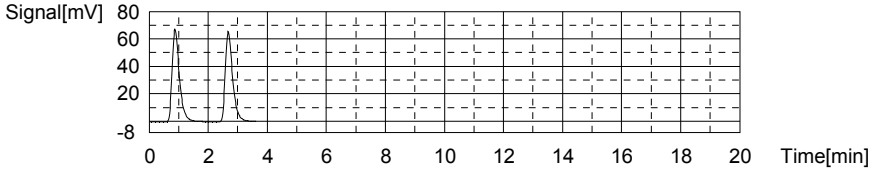

Sample

Sample Name: WG535971-05 DUP
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.996mg/L TC:6.644mg/L IC:2.647mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	303.6	6.661mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/22/2015 1:42:59 AM
2	302.1	6.626mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/22/2015 1:48:44 AM

Mean Area 302.9
Mean Conc. 6.644mg/L

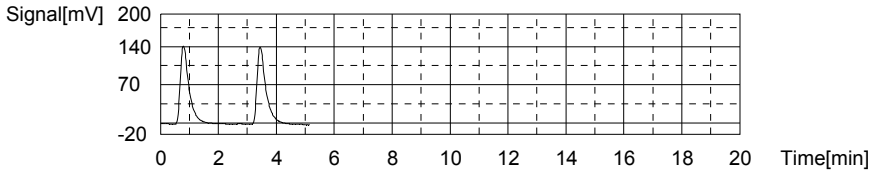

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	106.9	2.700mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/22/2015 1:53:32 AM
2	103.6	2.595mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/22/2015 1:58:08 AM

Mean Area 105.3
Mean Conc. 2.647mg/L

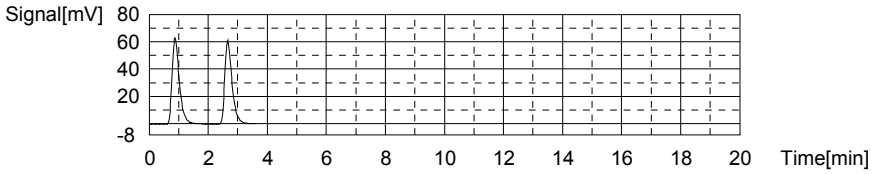

Sample

Sample Name: WG535971-06 MS
Sample ID: <Untitled>
Origin: TOC-05-27-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:13.36mg/L TC:15.11mg/L IC:1.747mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	676.0	15.18mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/22/2015 2:05:50 AM
2	669.3	15.03mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/22/2015 2:11:19 AM

Mean Area 672.7
Mean Conc. 15.11mg/L

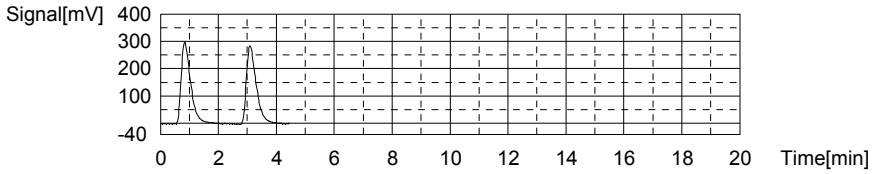

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	76.48	1.728mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/22/2015 2:16:01 AM
2	77.72	1.767mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/22/2015 2:20:29 AM

Mean Area 77.10
Mean Conc. 1.747mg/L

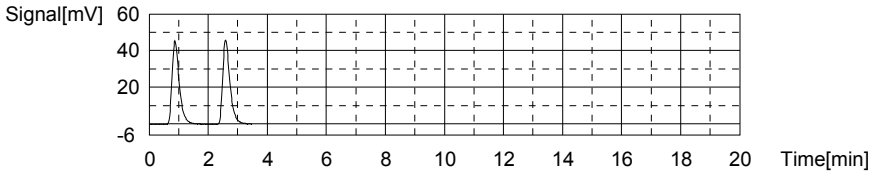

Sample

Sample Name: L15080901-04 (3)
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.5880mg/L TC:16.36mg/L IC:15.77mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	727.5	16.36mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/22/2015 2:28:24 AM

Mean Area 727.5
Mean Conc. 16.36mg/L

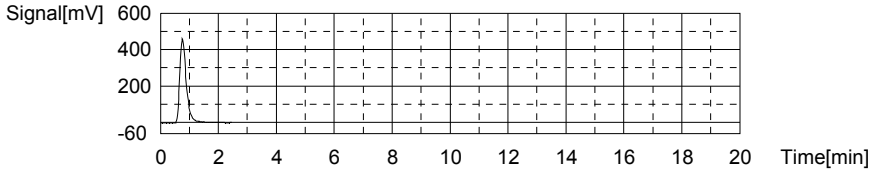

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	515.7	15.77mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/22/2015 2:33:58 AM

Mean Area 515.7
Mean Conc. 15.77mg/L

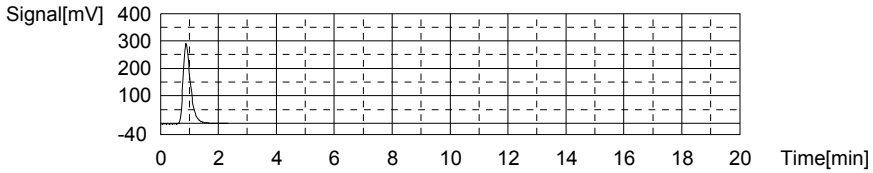

Sample

Sample Name: L15080901-05 (3)
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:15.29mg/L TC:39.82mg/L IC:24.53mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1753	39.82mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/22/2015 2:42:10 AM

Mean Area 1753
Mean Conc. 39.82mg/L

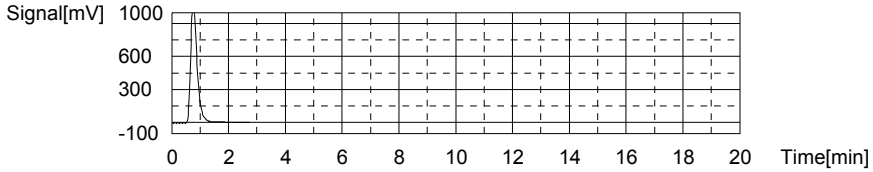

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	789.7	24.53mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/22/2015 2:48:02 AM

Mean Area 789.7
Mean Conc. 24.53mg/L

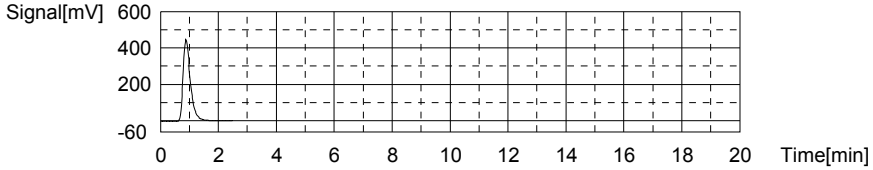

Sample

Sample Name: L15080904-01 (5)
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1844mg/L TC:7.787mg/L IC:7.602mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	352.8	7.787mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/22/2015 2:55:47 AM

Mean Area 352.8
Mean Conc. 7.787mg/L

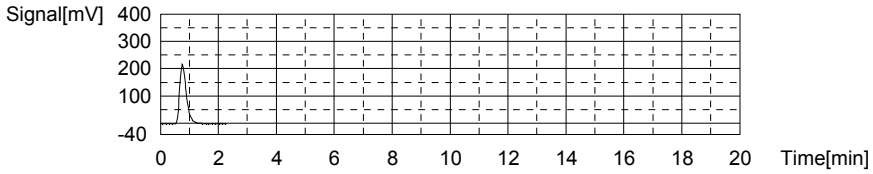

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	260.2	7.602mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/22/2015 3:00:55 AM

Mean Area 260.2
Mean Conc. 7.602mg/L

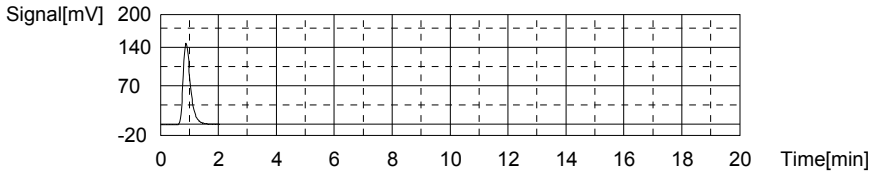

Sample

Sample Name: L15080904-03 (4)
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.08639mg/L TC:8.677mg/L IC:8.590mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	391.7	8.677mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/22/2015 3:08:26 AM

Mean Area 391.7
Mean Conc. 8.677mg/L

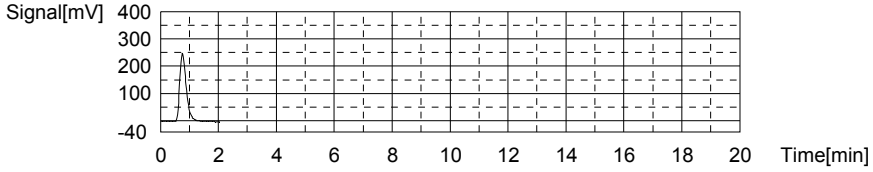

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	291.1	8.590mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/22/2015 3:13:40 AM

Mean Area 291.1
Mean Conc. 8.590mg/L

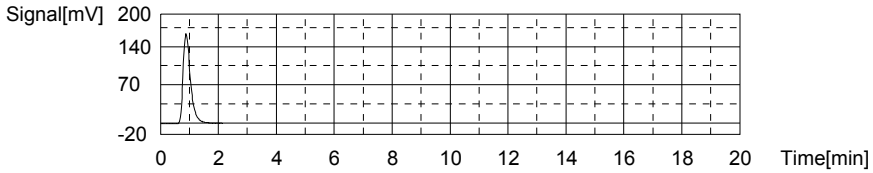

Sample

Sample Name: L15080904-07 (4)
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-0.1174mg/L TC:7.597mg/L IC:7.714mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	344.5	7.597mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/22/2015 3:21:07 AM

Mean Area 344.5
Mean Conc. 7.597mg/L

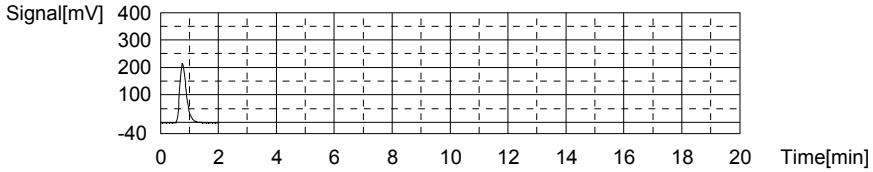

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	263.7	7.714mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/22/2015 3:26:20 AM

Mean Area 263.7
Mean Conc. 7.714mg/L

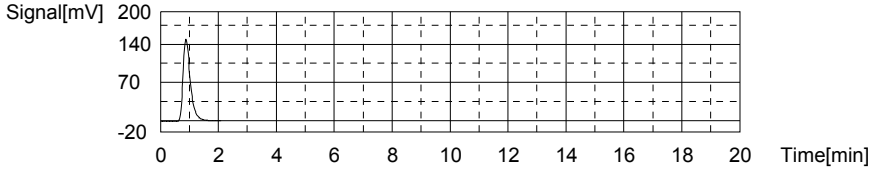

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:21.31mg/L TC:20.90mg/L IC:-0.4098mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	925.8	20.90mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/22/2015 3:34:23 AM

Mean Area 925.8
Mean Conc. 20.90mg/L

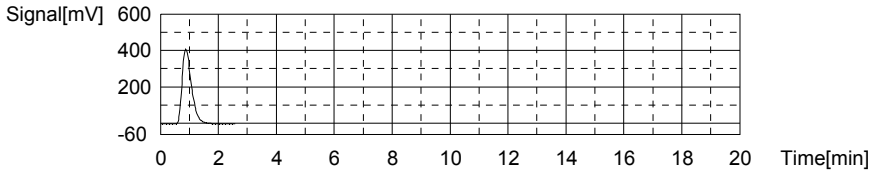

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.639	-0.4098mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/22/2015 3:38:50 AM

Mean Area 9.639
Mean Conc. -0.4098mg/L

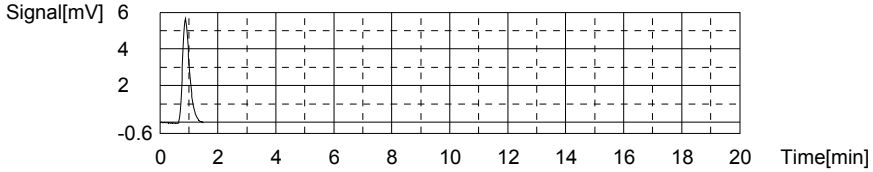

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.3553mg/L TC:-0.04355mg/L IC:-0.3989mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.59	-0.04355mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	8/22/2015 3:44:05 AM

Mean Area 10.59
Mean Conc. -0.04355mg/L

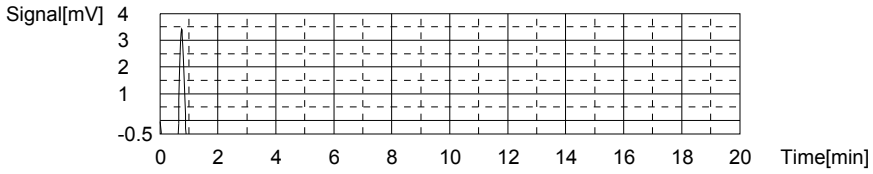

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.980	-0.3989mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/22/2015 3:48:04 AM

Mean Area 9.980
Mean Conc. -0.3989mg/L

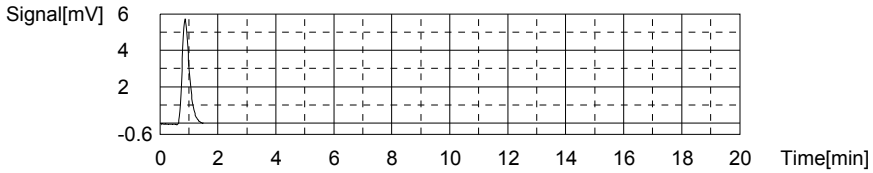

Sample

Sample Name:
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.956mg/L TC:38.41mg/L IC:31.45mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1691	38.41mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/22/2015 3:56:12 AM

Mean Area 1691
Mean Conc. 38.41mg/L

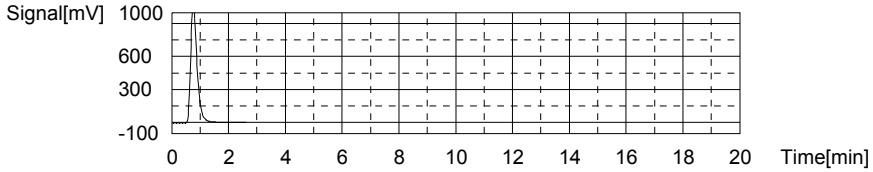

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1006	31.45mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/22/2015 4:01:57 AM

Mean Area 1006
Mean Conc. 31.45mg/L

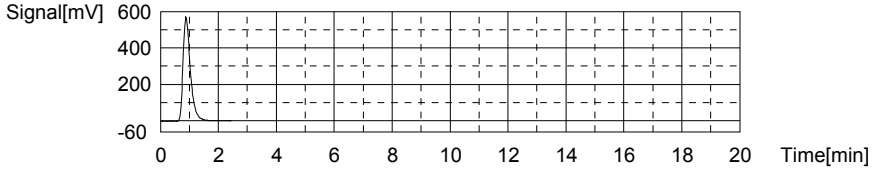

Sample

Sample Name:
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-0.2709mg/L TC:8.127mg/L IC:8.398mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	367.7	8.127mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/22/2015 4:09:30 AM

Mean Area 367.7
Mean Conc. 8.127mg/L

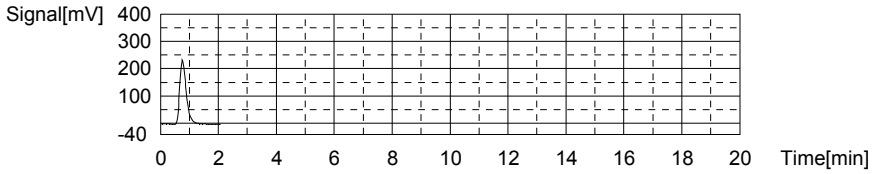

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	285.1	8.398mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/22/2015 4:14:30 AM

Mean Area 285.1
Mean Conc. 8.398mg/L

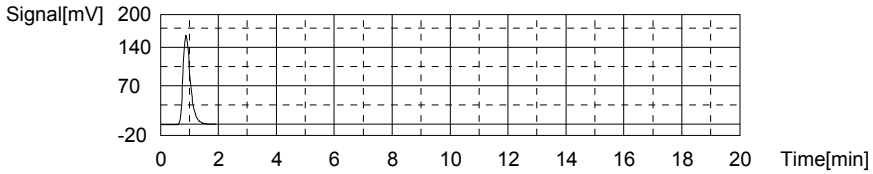

Sample

Sample Name:
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.8085mg/L TC:13.24mg/L IC:12.43mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	591.1	13.24mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/22/2015 4:22:16 AM

Mean Area 591.1
Mean Conc. 13.24mg/L

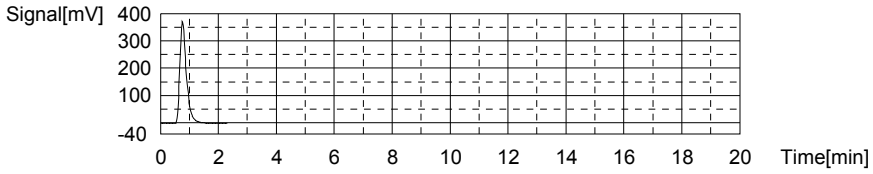

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	411.2	12.43mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/22/2015 4:27:53 AM

Mean Area 411.2
Mean Conc. 12.43mg/L

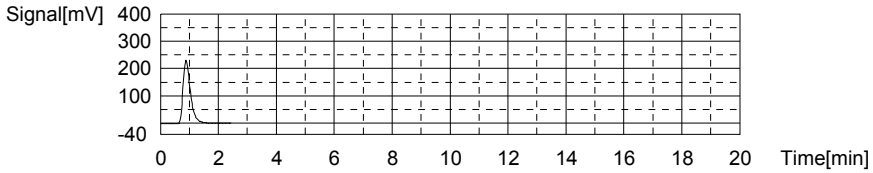

Sample

Sample Name:
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.4793mg/L TC:0.1265mg/L IC:-0.3528mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	18.02	0.1265mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/22/2015 4:34:55 AM

Mean Area 18.02
Mean Conc. 0.1265mg/L

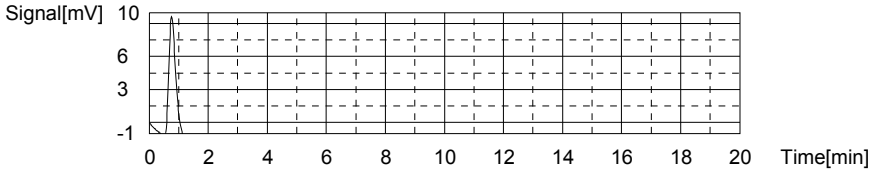

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.42	-0.3528mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/22/2015 4:39:27 AM

Mean Area 11.42
Mean Conc. -0.3528mg/L

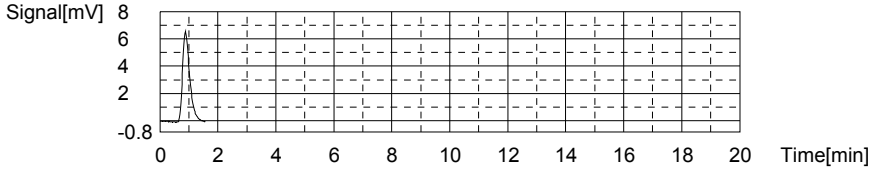

Sample

Sample Name:
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.4455mg/L TC:0.04820mg/L IC:-0.3973mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	14.60	0.04820mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/22/2015 4:46:29 AM

Mean Area 14.60
Mean Conc. 0.04820mg/L

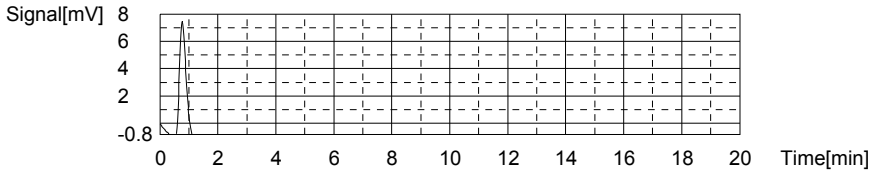

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.03	-0.3973mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/22/2015 4:50:58 AM

Mean Area 10.03
Mean Conc. -0.3973mg/L

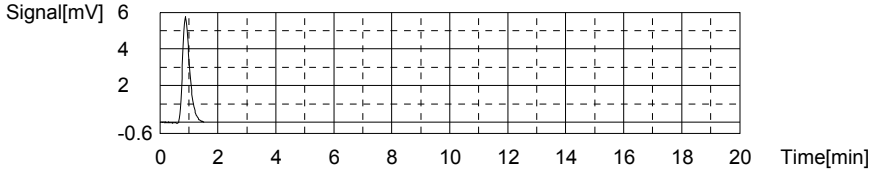

Sample

Sample Name:
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:20.69mg/L TC:20.26mg/L IC:-0.4281mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	898.0	20.26mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_0	8/22/2015 4:59:04 AM

Mean Area 898.0
Mean Conc. 20.26mg/L

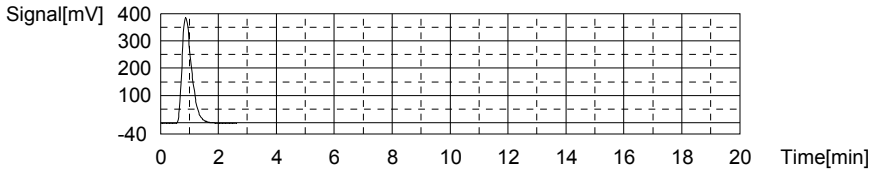

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.066	-0.4281mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/22/2015 5:03:30 AM

Mean Area 9.066
Mean Conc. -0.4281mg/L

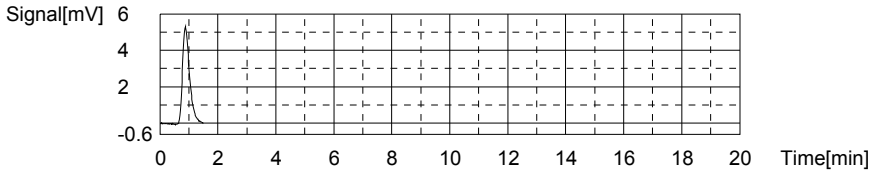

Sample

Sample Name:
Sample ID:
Origin: TOC-05-27-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.3502mg/L TC:-0.05179mg/L IC:-0.4019mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.23	-0.05179mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_03	8/22/2015 5:08:47 AM

Mean Area 10.23
Mean Conc. -0.05179mg/L

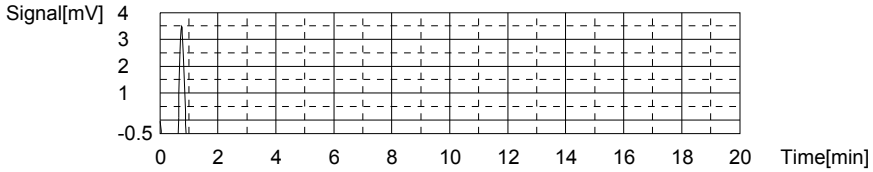

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.884	-0.4019mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	8/22/2015 5:12:49 AM

Mean Area 9.884
Mean Conc. -0.4019mg/L

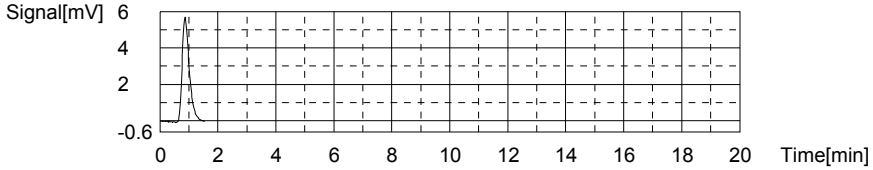

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
August 28, 2015

---

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK
EPT - ETHAN P. TIDD
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
August 28, 2015

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count
TNTC, B	Too numerous to count. Analyte present in method blank.

Microbac Laboratories Inc.
List of Valid Qualifiers
August 28, 2015

Qualkey: DOD

TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Mark Heaston
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD	pH:	
Project Name/Location:	Longhorn		
Project Number:	60256135.0002GA		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Dissolved Gases / Carbon Dioxide	Alkalinity	Sulfide	Chloride / Sulfate Nitrate / Nitrite	TOC / Total Phosphorous	Dissolved Iron / Dissolved Manganese	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 50	50WW22-081815			8/18/15	0805		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW22FF-081815			8/18/15	0805		✓	W	1								✓					
	50WW25-081815			8/18/15	0940		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW25FF-081815			8/18/15	0940		✓	W	1								✓					
	50WW12-081815			8/18/15	1105		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW12FF-081815			8/18/15	1105		✓	W	1								✓					
	50WW06-081815			8/18/15	1340		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW06FF-081815			8/18/15	1340		✓	W	1								✓					
	50WW11-081815			8/18/15	1450		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW11FF-081815			8/18/15	1450		✓	W	1								✓					
	TRIP BLANK			8/18/15			✓	W	2	✓												

Comments: **STANDARD TAT**

Microbac OVD
Received: 08/19/2015 09:53
By: CARA STRICKLER 221000074153
Cara Strickler

Relinquished by: (Signature) Scott Beesinger	Date 8/18/15	Time 1600	Received:	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Received: (Signature)		Time	Remarks:

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15080992
Account: 2551
Project: 2551.096
Samples: 11
Due Date: 28-AUG-2015

Samplenum	Container ID	Products
L15080992-01	618872	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-AUG-2015 11:16	CLS		
2	ANALYZ	V1	ORG4	19-AUG-2015 14:04	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-AUG-2015 11:16	CLS		
2	ANALYZ	V1	ORG4	19-AUG-2015 14:05	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-AUG-2015 11:16	CLS		
2	ANALYZ	V1	ORG4	19-AUG-2015 14:05	TMB	BRG	

Samplenum	Container ID	Products
L15080992-01	618873	RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-AUG-2015 11:16	CLS		
2	ANALYZ	V1	ORG1	19-AUG-2015 16:44	JDS	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-AUG-2015 11:16	CLS		
2	ANALYZ	V1	ORG1	19-AUG-2015 16:44	JDS	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-AUG-2015 11:16	CLS		
2	ANALYZ	V1	ORG1	19-AUG-2015 16:44	JDS	CLS	

Samplenum	Container ID	Products
L15080992-01	618874	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	19-AUG-2015 11:16	CLS		
2	PREP	L1	SEM	19-AUG-2015 11:30	ALS	CLS	
3	STORE	SEM	A1	25-AUG-2015 13:10	CLS	ALS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15080992
Account: 2551
Project: 2551.096
Samples: 11
Due Date: 28-AUG-2015

Samplenum	Container ID	Products
L15080992-01	618875	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-AUG-2015 11:16	CLS		
2	ANALYZ	W1	WET	19-AUG-2015 13:03	DCM	CLS	
3	STORE	WET	A1	24-AUG-2015 15:57	CLS	DCM	

Samplenum	Container ID	Products
L15080992-01	618876	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-AUG-2015 11:16	CLS		
2	ANALYZ	W1	SEM	24-AUG-2015 12:04	JWR	CLS	
3	STORE	SEM	A1	27-AUG-2015 12:48	CLS	JWR	

Samplenum	Container ID	Products
L15080992-01	618877	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-AUG-2015 11:16	CLS		<2
2	ANALYZ	W1	WET	20-AUG-2015 08:17	DCM	CLS	
3	STORE	WET	A1	24-AUG-2015 15:55	CLS	DCM	

Samplenum	Container ID	Products
L15080992-01	618878	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-AUG-2015 11:16	CLS		
2	ANALYZ	W1	WET	19-AUG-2015 12:44	TB	AZH	
3	STORE	WET	A1	21-AUG-2015 17:35	CLS	TB	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15080992
Account: 2551
Project: 2551.096
Samples: 11
Due Date: 28-AUG-2015

Samplenum	Container ID	Products
L15080992-02	618879	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-AUG-2015 11:16	CLS		
2	PREP	W1	DIG	19-AUG-2015 14:45	ERP	CLS	
3	PREP	DIG	A1	21-AUG-2015 12:36	BRG	AC	

Samplenum	Container ID	Products
L15080992-03	618880	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-AUG-2015 11:16	CLS		
2	ANALYZ	V1	ORG4	19-AUG-2015 14:05	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-AUG-2015 11:16	CLS		
2	ANALYZ	V1	ORG4	19-AUG-2015 14:05	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-AUG-2015 11:16	CLS		
2	ANALYZ	V1	ORG4	19-AUG-2015 14:05	TMB	BRG	

Samplenum	Container ID	Products
L15080992-03	618881	RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-AUG-2015 11:16	CLS		
2	ANALYZ	V1	ORG1	19-AUG-2015 16:44	JDS	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-AUG-2015 11:16	CLS		
2	ANALYZ	V1	ORG1	19-AUG-2015 16:44	JDS	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-AUG-2015 11:16	CLS		
2	ANALYZ	V1	ORG1	19-AUG-2015 16:44	JDS	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15080992
Account: 2551
Project: 2551.096
Samples: 11
Due Date: 28-AUG-2015

Samplenum	Container ID	Products
L15080992-03	618882	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	19-AUG-2015 11:16	CLS		
2	PREP	L1	SEM	19-AUG-2015 11:30	ALS	CLS	
3	STORE	SEM	A1	25-AUG-2015 13:10	CLS	ALS	

Samplenum	Container ID	Products
L15080992-03	618883	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-AUG-2015 11:16	CLS		
2	ANALYZ	W1	WET	19-AUG-2015 13:03	DCM	CLS	
3	STORE	WET	A1	24-AUG-2015 15:57	CLS	DCM	

Samplenum	Container ID	Products
L15080992-03	618884	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-AUG-2015 11:16	CLS		
2	ANALYZ	W1	SEM	24-AUG-2015 12:04	JWR	CLS	
3	STORE	SEM	A1	27-AUG-2015 12:48	CLS	JWR	

Samplenum	Container ID	Products
L15080992-03	618885	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-AUG-2015 11:16	CLS		<2
2	ANALYZ	W1	WET	20-AUG-2015 08:17	DCM	CLS	
3	STORE	WET	A1	24-AUG-2015 15:55	CLS	DCM	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15080992
Account: 2551
Project: 2551.096
Samples: 11
Due Date: 28-AUG-2015

Samplenum	Container ID	Products
L15080992-03	618886	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-AUG-2015 11:16	CLS		
2	ANALYZ	W1	WET	19-AUG-2015 12:44	TB	AZH	
3	STORE	WET	A1	21-AUG-2015 17:35	CLS	TB	

Samplenum	Container ID	Products
L15080992-04	618887	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-AUG-2015 11:16	CLS		
2	PREP	W1	DIG	19-AUG-2015 14:45	ERP	CLS	
3	PREP	DIG	A1	21-AUG-2015 12:36	BRG	AC	

Samplenum	Container ID	Products
L15080992-05	618888	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-AUG-2015 11:16	CLS		
2	ANALYZ	V1	ORG4	19-AUG-2015 14:05	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-AUG-2015 11:16	CLS		
2	ANALYZ	V1	ORG4	19-AUG-2015 14:05	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-AUG-2015 11:16	CLS		
2	ANALYZ	V1	ORG4	19-AUG-2015 14:05	TMB	BRG	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15080992
Account: 2551
Project: 2551.096
Samples: 11
Due Date: 28-AUG-2015

Samplenum	Container ID	Products
L15080992-05	618889	RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-AUG-2015 11:16	CLS		
2	ANALYZ	V1	ORG1	19-AUG-2015 16:44	JDS	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-AUG-2015 11:16	CLS		
2	ANALYZ	V1	ORG1	19-AUG-2015 16:44	JDS	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-AUG-2015 11:16	CLS		
2	ANALYZ	V1	ORG1	19-AUG-2015 16:44	JDS	CLS	

Samplenum	Container ID	Products
L15080992-05	618890	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	19-AUG-2015 11:16	CLS		
2	PREP	L1	SEM	19-AUG-2015 11:30	ALS	CLS	
3	STORE	SEM	A1	25-AUG-2015 13:10	CLS	ALS	

Samplenum	Container ID	Products
L15080992-05	618891	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-AUG-2015 11:16	CLS		
2	ANALYZ	W1	WET	19-AUG-2015 13:03	DCM	CLS	
3	STORE	WET	A1	24-AUG-2015 15:57	CLS	DCM	

Samplenum	Container ID	Products
L15080992-05	618892	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-AUG-2015 11:16	CLS		
2	ANALYZ	W1	SEM	24-AUG-2015 12:05	JWR	CLS	
3	STORE	SEM	A1	27-AUG-2015 12:48	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15080992
Account: 2551
Project: 2551.096
Samples: 11
Due Date: 28-AUG-2015

Samplenum	Container ID	Products
L15080992-05	618893	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-AUG-2015 11:16	CLS		<2
2	ANALYZ	W1	WET	20-AUG-2015 08:17	DCM	CLS	

Samplenum	Container ID	Products
L15080992-05	618894	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-AUG-2015 11:16	CLS		
2	ANALYZ	W1	WET	19-AUG-2015 12:44	TB	AZH	
3	STORE	WET	A1	21-AUG-2015 17:35	CLS	TB	

Samplenum	Container ID	Products
L15080992-06	618895	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-AUG-2015 11:16	CLS		
2	PREP	W1	DIG	19-AUG-2015 14:45	ERP	CLS	
3	PREP	DIG	A1	21-AUG-2015 12:36	BRG	AC	

Samplenum	Container ID	Products
L15080992-07	618896	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-AUG-2015 11:16	CLS		
2	ANALYZ	V1	ORG4	19-AUG-2015 14:05	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-AUG-2015 11:16	CLS		
2	ANALYZ	V1	ORG4	19-AUG-2015 14:05	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-AUG-2015 11:16	CLS		
2	ANALYZ	V1	ORG4	19-AUG-2015 14:05	TMB	BRG	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15080992
Account: 2551
Project: 2551.096
Samples: 11
Due Date: 28-AUG-2015

Samplenum	Container ID	Products
L15080992-07	618897	RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-AUG-2015 11:16	CLS		
2	ANALYZ	V1	ORG1	19-AUG-2015 16:44	JDS	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-AUG-2015 11:16	CLS		
2	ANALYZ	V1	ORG1	19-AUG-2015 16:44	JDS	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-AUG-2015 11:16	CLS		
2	ANALYZ	V1	ORG1	19-AUG-2015 16:44	JDS	CLS	

Samplenum	Container ID	Products
L15080992-07	618898	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	19-AUG-2015 11:16	CLS		
2	PREP	L1	SEM	19-AUG-2015 11:30	ALS	CLS	
3	STORE	SEM	A1	25-AUG-2015 13:10	CLS	ALS	

Samplenum	Container ID	Products
L15080992-07	618899	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-AUG-2015 11:16	CLS		
2	ANALYZ	W1	WET	19-AUG-2015 13:03	DCM	CLS	
3	STORE	WET	A1	24-AUG-2015 15:57	CLS	DCM	

Samplenum	Container ID	Products
L15080992-07	618900	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-AUG-2015 11:16	CLS		
2	ANALYZ	W1	SEM	24-AUG-2015 12:05	JWR	CLS	
3	STORE	SEM	A1	27-AUG-2015 12:48	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15080992
Account: 2551
Project: 2551.096
Samples: 11
Due Date: 28-AUG-2015

Samplenum	Container ID	Products
L15080992-07	618901	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-AUG-2015 11:16	CLS		<2
2	ANALYZ	W1	WET	20-AUG-2015 08:17	DCM	CLS	
3	STORE	WET	A1	24-AUG-2015 15:55	CLS	DCM	

Samplenum	Container ID	Products
L15080992-07	618902	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-AUG-2015 11:16	CLS		
2	ANALYZ	W1	WET	19-AUG-2015 12:44	TB	AZH	
3	STORE	WET	A1	21-AUG-2015 17:35	CLS	TB	

Samplenum	Container ID	Products
L15080992-08	618903	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-AUG-2015 11:16	CLS		
2	PREP	W1	DIG	19-AUG-2015 14:45	ERP	CLS	
3	PREP	DIG	A1	21-AUG-2015 12:36	BRG	AC	

Samplenum	Container ID	Products
L15080992-09	618904	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-AUG-2015 11:16	CLS		
2	ANALYZ	V1	ORG4	19-AUG-2015 14:05	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-AUG-2015 11:16	CLS		
2	ANALYZ	V1	ORG4	19-AUG-2015 14:05	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-AUG-2015 11:16	CLS		
2	ANALYZ	V1	ORG4	19-AUG-2015 14:05	TMB	BRG	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15080992
Account: 2551
Project: 2551.096
Samples: 11
Due Date: 28-AUG-2015

Samplenum	Container ID	Products
L15080992-09	618905	RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-AUG-2015 11:16	CLS		
2	ANALYZ	V1	ORG1	19-AUG-2015 16:44	JDS	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-AUG-2015 11:16	CLS		
2	ANALYZ	V1	ORG1	19-AUG-2015 16:44	JDS	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-AUG-2015 11:16	CLS		
2	ANALYZ	V1	ORG1	19-AUG-2015 16:44	JDS	CLS	

Samplenum	Container ID	Products
L15080992-09	618906	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	19-AUG-2015 11:16	CLS		
2	PREP	L1	SEM	19-AUG-2015 11:30	ALS	CLS	
3	STORE	SEM	A1	25-AUG-2015 13:10	CLS	ALS	

Samplenum	Container ID	Products
L15080992-09	618907	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-AUG-2015 11:16	CLS		
2	ANALYZ	W1	WET	19-AUG-2015 13:03	DCM	CLS	
3	STORE	WET	A1	24-AUG-2015 15:57	CLS	DCM	

Samplenum	Container ID	Products
L15080992-09	618908	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-AUG-2015 11:16	CLS		
2	ANALYZ	W1	SEM	24-AUG-2015 12:05	JWR	CLS	
3	STORE	SEM	A1	27-AUG-2015 12:48	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15080992
Account: 2551
Project: 2551.096
Samples: 11
Due Date: 28-AUG-2015

Samplenum	Container ID	Products
L15080992-09	618909	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-AUG-2015 11:16	CLS		<2
2	ANALYZ	W1	WET	20-AUG-2015 08:17	DCM	CLS	

Samplenum	Container ID	Products
L15080992-09	618910	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-AUG-2015 11:16	CLS		
2	ANALYZ	W1	WET	19-AUG-2015 12:44	TB	AZH	
3	STORE	WET	A1	21-AUG-2015 17:35	CLS	TB	

Samplenum	Container ID	Products
L15080992-10	618911	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	19-AUG-2015 11:16	CLS		
2	PREP	W1	DIG	19-AUG-2015 14:45	ERP	CLS	
3	PREP	DIG	A1	21-AUG-2015 12:36	BRG	AC	

Samplenum	Container ID	Products
L15080992-11	618912	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-AUG-2015 11:16	CLS		
2	ANALYZ	V1	ORG4	19-AUG-2015 14:05	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	19-AUG-2015 11:16	CLS		
2	ANALYZ	V1	ORG4	19-AUG-2015 14:05	TMB	BRG	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - July 27, 2015

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVL NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVL MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVL HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVL HPLC12/HPLC/UV

Acetate
Formate

OVL RSK01/GC-FID

Acetylene
Propane

OVL K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVL MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVL MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L15081073

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on August 31 2015

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

The following discrepancies were noted:

Discrepancy	Resolution
Sample ID: Trip Blank. (1 of 2) voa vials received w/headspace >6mm. BRG	Please log the vial with no headspace as the A vial. SLM

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
0019770	H	4.0		J2317162002	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	No

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
50WW14-081915	L15081073-01	08/19/2015 08:20	08/20/2015 09:33
50WW14FF-081915	L15081073-02	08/19/2015 08:20	08/20/2015 09:33
50WW13-081915	L15081073-03	08/19/2015 09:35	08/20/2015 09:33
50WW13FF-081915	L15081073-04	08/19/2015 09:35	08/20/2015 09:33
50WW05-081915	L15081073-05	08/19/2015 10:50	08/20/2015 09:33
50WW05FD-081915	L15081073-06	08/19/2015 10:50	08/20/2015 09:33
50WW17-081915	L15081073-07	08/19/2015 14:00	08/20/2015 09:33
TRIP BLANK	L15081073-08	08/19/2015 00:01	08/20/2015 09:33

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
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Microbac REPORT L15081073
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	8260
Prep Batch Number(s):	536091, 536185	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-08-27 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden	Franci Bolden	Analyst I	2015-08-27 20:23:31

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	8260
Prep Batch Number(s):	536091, 536185	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-08-27 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	8260
Prep Batch Number(s):	536091, 536185	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-08-27 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	8260
Prep Batch Number(s):	536091, 536185	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-08-27 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			2
Was the ICAL curve verified for each analyte?		X			1
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	8260
Prep Batch Number(s):	536091, 536185	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-08-27 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	8260
Prep Batch Number(s):	536091, 536185	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-08-27 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) Carbon disulfide was below the LCL in the ICV.
2) Bromomethane was below the LCL in CCV WG536090-02.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	535908, 536040	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-08-27 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden	Franci Bolden	Analyst I	2015-08-27 20:19:28

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	535908, 536040	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-08-27 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	535908, 536040	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-08-27 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	535908, 536040	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-08-27 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	535908, 536040	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-08-27 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	535908, 536040	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-08-27 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There were no exceptions.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG536249, WG536759	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-08-28 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2015-08-28 19:31:00

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG536249, WG536759	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-08-28 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG536249, WG536759	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-08-28 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG536249, WG536759	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-08-28 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG536249, WG536759	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-08-28 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG536249, WG536759	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-08-28 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG536309	**Reviewer Name:**	Maren Beery
LRC Date:	2015-08-31 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Maren Beery	Maren Beery	Metals Supervisor	2015-08-31 15:40:02

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG536309	**Reviewer Name:**	Maren Beery
LRC Date:	2015-08-31 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?			X		
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG536309	**Reviewer Name:**	Maren Beery
LRC Date:	2015-08-31 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG536309	**Reviewer Name:**	Maren Beery
LRC Date:	2015-08-31 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG536309	**Reviewer Name:**	Maren Beery
LRC Date:	2015-08-31 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG536309	**Reviewer Name:**	Maren Beery
LRC Date:	2015-08-31 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG536496	**Reviewer Name:**	Maren Beery
LRC Date:	2015-08-31 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Maren Beery	Maren Beery	Metals Supervisor	2015-08-31 15:33:55

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG536496	**Reviewer Name:**	Maren Beery
LRC Date:	2015-08-31 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG536496	**Reviewer Name:**	Maren Beery
LRC Date:	2015-08-31 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				ER#1
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG536496	**Reviewer Name:**	Maren Beery
LRC Date:	2015-08-31 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG536496	**Reviewer Name:**	Maren Beery
LRC Date:	2015-08-31 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG536496	**Reviewer Name:**	Maren Beery
LRC Date:	2015-08-31 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - Due to high levels of nontarget analytes, all client samples were analyzed at dilutions for manganese.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG535887	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-08-20 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Adriane Steed	Adriane Steed		2015-08-21 13:47:15

RG-366/TRRP-13 May 2010 **ID:** 6622

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG535887	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-08-20 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?	X				
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG535887	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-08-20 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG535887	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-08-20 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG535887	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-08-20 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG535887	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-08-20 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. Fractions -01 and -03 were analyzed at dilutions only due to their high analyte concentrations (Cl and/or SO4) which were over 200 ppm. Any sample that has a single anion load greater than 200 ppm (or a total anion load greater than 400 ppm) will be diluted in order to prevent damage to the IC from repeated overloading of the analytical column and oversaturation of the suppressor membranes.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG536377	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-27 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-08-27 12:08:03

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG536377	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-27 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG536377	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-27 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG536377	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-27 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG536377	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-27 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG536377	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-27 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG536310	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-27 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-08-27 12:09:17

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG536310	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-27 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG536310	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-27 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG536310	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-27 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG536310	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-27 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

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Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG536310	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-27 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

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Exceptions Report

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	S
Prep Batch Number(s):	WG536448	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-27 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-08-27 12:07:15

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	S
Prep Batch Number(s):	WG536448	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-27 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	S
Prep Batch Number(s):	WG536448	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-27 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	S
Prep Batch Number(s):	WG536448	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-27 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	S
Prep Batch Number(s):	WG536448	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-27 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

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Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	S
Prep Batch Number(s):	WG536448	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-27 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG536390	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-27 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-08-27 12:09:55

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG536390	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-27 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG536390	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-27 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG536390	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-27 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG536390	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-27 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081073
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG536390	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-08-27 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081073-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW14-081915	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536091	**Analyst:**	TMB	**Run Date:**	08/21/2015 22:47
Collect Date:	08/19/2015 08:20	**Dilution:**	1	**File ID:**	8M406950
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	7.56		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	12.0		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	85	115	
1,2-Dichloroethane-d4	91.8	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	97.3	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081073-01	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW14-081915	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG535908	**Analyst:**	JDS	**Run Date:**	08/20/2015 18:36
Collect Date:	08/19/2015 08:20	**Dilution:**	1	**File ID:**	16G48290
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	10.8		5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081073-01	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW14-081915	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG536040	**Analyst:**	JDS	**Run Date:**	08/21/2015 16:20
Collect Date:	08/19/2015 08:20	**Dilution:**	5	**File ID:**	16G48302
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	208000		50000	25000	12500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081073-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW14-081915	**Prep Method:**	6850	**Prep Date:**	08/24/2015 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG536249	**Analyst:**	JWR	**Run Date:**	08/25/2015 01:00
Collect Date:	08/19/2015 08:20	**Dilution:**	1	**File ID:**	1LM.LM31459
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.19		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15081073-01	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW14-081915	**Prep Method:**	9056	**Prep Date:**	08/20/2015 13:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG535887	**Analyst:**	ALS	**Run Date:**	08/20/2015 19:57
Collect Date:	08/19/2015 08:20	**Dilution:**	5	**File ID:**	I2_082015-21
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	1.00	U	2.00	1.00	0.500
Nitrite	14797-65-0	1.00	U	2.00	1.00	0.500
Sulfate	14808-79-8	379		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081073-01	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW14-081915	**Prep Method:**	9056	**Prep Date:**	08/21/2015 10:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG536070	**Analyst:**	ALS	**Run Date:**	08/21/2015 14:09
Collect Date:	08/19/2015 08:20	**Dilution:**	50	**File ID:**	I2_082115-11
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	495		20.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081073-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW14-081915	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	08/25/2015 11:59
Workgroup #:	WG536377	**Analyst:**	DCM	**Run Date:**	08/25/2015 12:04
Collect Date:	08/19/2015 08:20	**Dilution:**	1	**File ID:**	S2150825004.016
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	265		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L15081073-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW14-081915	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	08/25/2015 09:30
Workgroup #:	WG536310	**Analyst:**	DCM	**Run Date:**	08/25/2015 09:40
Collect Date:	08/19/2015 08:20	**Dilution:**	1	**File ID:**	SC150825002.022
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.114	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081073-01	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW14-081915	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG536448	**Analyst:**	TB	**Run Date:**	08/25/2015 16:00
Collect Date:	08/19/2015 08:20	**Dilution:**	1	**File ID:**	ET.1508251600-06
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081073-01	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW14-081915	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	05/27/2015 15:47
Workgroup #:	WG536390	**Analyst:**	DIH	**Run Date:**	08/26/2015 17:40
Collect Date:	08/19/2015 08:20	**Dilution:**	5	**File ID:**	TC08262015.011
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	13.7		10.0	5.00	2.50

Certificate of Analysis

Sample #:	L15081073-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO2
Client ID:	50WW14FF-081915	**Prep Method:**	3015	**Prep Date:**	08/25/2015 08:11
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	08/26/2015 10:48
Workgroup #:	WG536547	**Analyst:**	KKB	**Run Date:**	08/26/2015 16:16
Collect Date:	08/19/2015 08:20	**Dilution:**	1	**File ID:**	T2.082615.161647
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	7.69		0.200	0.100	0.0500

Certificate of Analysis

Sample #:	L15081073-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW14FF-081915	**Prep Method:**	3015	**Prep Date:**	08/26/2015 10:45
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	08/27/2015 11:46
Workgroup #:	WG536592	**Analyst:**	BKT	**Run Date:**	08/27/2015 12:50
Collect Date:	08/19/2015 08:20	**Dilution:**	5	**File ID:**	NI.082715.125053
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.535		0.0200	0.0100	0.00500

Certificate of Analysis

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15081073-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW13-081915	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536091	**Analyst:**	TMB	**Run Date:**	08/21/2015 23:45
Collect Date:	08/19/2015 09:35	**Dilution:**	5	**File ID:**	8M406952
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	25.0	U	50.0	25.0	12.5
Benzene	71-43-2	0.714	J	5.00	1.25	0.625
Bromobenzene	108-86-1	1.25	U	5.00	1.25	0.625
Bromochloromethane	74-97-5	2.00	U	5.00	2.00	1.00
Bromodichloromethane	75-27-4	2.50	U	5.00	2.50	1.25
Bromoform	75-25-2	5.00	U	10.0	5.00	2.50
Bromomethane	74-83-9	5.00	Q	10.0	5.00	2.50
2-Butanone	78-93-3	25.0	U	50.0	25.0	12.5
n-Butylbenzene	104-51-8	2.50	U	5.00	2.50	1.25
sec-Butylbenzene	135-98-8	2.50	U	5.00	2.50	1.25
tert-Butylbenzene	98-06-6	2.50	U	5.00	2.50	1.25
Carbon disulfide	75-15-0	5.00	U	10.0	5.00	2.50
Carbon tetrachloride	56-23-5	2.50	U	5.00	2.50	1.25
Chlorobenzene	108-90-7	1.25	U	5.00	1.25	0.625
Chlorodibromomethane	124-48-1	2.50	U	5.00	2.50	1.25
Chloroethane	75-00-3	5.00	U	10.0	5.00	2.50
Chloroform	67-66-3	2.78	J	5.00	1.25	0.625
Chloromethane	74-87-3	5.00	U	10.0	5.00	2.50
2-Chlorotoluene	95-49-8	1.25	U	5.00	1.25	0.625
4-Chlorotoluene	106-43-4	2.50	U	5.00	2.50	1.25
1,2-Dibromo-3-chloropropane	96-12-8	10.0	U	25.0	10.0	5.00
1,2-Dibromoethane	106-93-4	2.50	U	5.00	2.50	1.25
Dibromomethane	74-95-3	2.50	U	5.00	2.50	1.25
1,2-Dichlorobenzene	95-50-1	1.25	U	5.00	1.25	0.625
1,3-Dichlorobenzene	541-73-1	2.50	U	5.00	2.50	1.25
1,4-Dichlorobenzene	106-46-7	1.25	U	5.00	1.25	0.625
Dichlorodifluoromethane	75-71-8	2.50	U	5.00	2.50	1.25
1,1-Dichloroethane	75-34-3	7.03		5.00	1.25	0.625
1,2-Dichloroethane	107-06-2	31.5		5.00	2.50	1.25
1,1-Dichloroethene	75-35-4	13.5		10.0	5.00	2.50
cis-1,2-Dichloroethene	156-59-2	184		5.00	2.50	1.25
trans-1,2-Dichloroethene	156-60-5	2.34	J	5.00	2.50	1.25

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	2.00	U	5.00	2.00	1.00
1,3-Dichloropropane	142-28-9	2.00	U	5.00	2.00	1.00
2,2-Dichloropropane	594-20-7	2.50	U	5.00	2.50	1.25
cis-1,3-Dichloropropene	10061-01-5	2.50	U	5.00	2.50	1.25
trans-1,3-Dichloropropene	10061-02-6	5.00	U	10.0	5.00	2.50
1,1-Dichloropropene	563-58-6	2.50	U	5.00	2.50	1.25
Ethylbenzene	100-41-4	2.50	U	5.00	2.50	1.25
2-Hexanone	591-78-6	25.0	U	50.0	25.0	12.5
Hexachlorobutadiene	87-68-3	2.50	U	5.00	2.50	1.25
Isopropylbenzene	98-82-8	2.50	U	5.00	2.50	1.25
p-Isopropyltoluene	99-87-6	2.50	U	5.00	2.50	1.25
4-Methyl-2-pentanone	108-10-1	25.0	U	50.0	25.0	12.5
Methylene chloride	75-09-2	2.50	U	5.00	2.50	1.25
Naphthalene	91-20-3	2.00	U	5.00	2.00	1.00
n-Propylbenzene	103-65-1	1.25	U	5.00	1.25	0.625
Styrene	100-42-5	1.25	U	5.00	1.25	0.625
1,1,1,2-Tetrachloroethane	630-20-6	2.50	U	5.00	2.50	1.25
1,1,2,2-Tetrachloroethane	79-34-5	2.00	U	5.00	2.00	1.00
Tetrachloroethene	127-18-4	6.19		5.00	2.50	1.25
Toluene	108-88-3	2.50	U	5.00	2.50	1.25
1,2,3-Trichlorobenzene	87-61-6	1.50	U	5.00	1.50	0.750
1,2,4-Trichlorobenzene	120-82-1	2.00	U	5.00	2.00	1.00
1,1,1-Trichloroethane	71-55-6	2.50	U	5.00	2.50	1.25
1,1,2-Trichloroethane	79-00-5	2.50	U	5.00	2.50	1.25
Trichlorofluoromethane	75-69-4	2.50	U	5.00	2.50	1.25
1,2,3-Trichloropropane	96-18-4	5.00	U	10.0	5.00	2.50
1,2,4-Trimethylbenzene	95-63-6	2.50	U	5.00	2.50	1.25
1,3,5-Trimethylbenzene	108-67-8	2.50	U	5.00	2.50	1.25
Vinyl chloride	75-01-4	2.31	J	5.00	2.50	1.25
o-Xylene	95-47-6	2.50	U	5.00	2.50	1.25
m-,p-Xylene	179601-23-1	5.00	U	10.0	5.00	2.50

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.8	85	115	
1,2-Dichloroethane-d4	90.1	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	98.2	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081073-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW13-081915	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536185	**Analyst:**	TMB	**Run Date:**	08/24/2015 17:11
Collect Date:	08/19/2015 09:35	**Dilution:**	100	**File ID:**	8M406974
Sample Tag:	DL02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Trichloroethene	79-01-6	5700		100	50.0	25.0

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	94.8	70	120	
Toluene-d8	96.6	85	120	
4-Bromofluorobenzene	97.9	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081073-03	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW13-081915	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG535908	**Analyst:**	JDS	**Run Date:**	08/20/2015 18:47
Collect Date:	08/19/2015 09:35	**Dilution:**	1	**File ID:**	16G48291
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	18.5		5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081073-03	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW13-081915	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG536040	**Analyst:**	JDS	**Run Date:**	08/21/2015 16:32
Collect Date:	08/19/2015 09:35	**Dilution:**	5	**File ID:**	16G48303
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	328000		50000	25000	12500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081073-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW13-081915	**Prep Method:**	6850	**Prep Date:**	08/27/2015 13:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG536759	**Analyst:**	JWR	**Run Date:**	08/27/2015 15:21
Collect Date:	08/19/2015 09:35	**Dilution:**	5000	**File ID:**	1LM.LM31474
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	9300		2000	1000	500

Certificate of Analysis

Sample #:	L15081073-03	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW13-081915	**Prep Method:**	9056	**Prep Date:**	08/20/2015 13:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG535887	**Analyst:**	ALS	**Run Date:**	08/20/2015 20:33
Collect Date:	08/19/2015 09:35	**Dilution:**	5	**File ID:**	I2_082015-23
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	1.00	U	2.00	1.00	0.500
Nitrite	14797-65-0	1.00	U	2.00	1.00	0.500
Sulfate	14808-79-8	369		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081073-03	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW13-081915	**Prep Method:**	9056	**Prep Date:**	08/20/2015 13:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG535887	**Analyst:**	ALS	**Run Date:**	08/20/2015 20:52
Collect Date:	08/19/2015 09:35	**Dilution:**	20	**File ID:**	I2_082015-24
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	387		8.00	4.00	2.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081073-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW13-081915	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	08/25/2015 11:59
Workgroup #:	WG536377	**Analyst:**	DCM	**Run Date:**	08/25/2015 12:04
Collect Date:	08/19/2015 09:35	**Dilution:**	2	**File ID:**	S2150825004.017
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	348		80.0	40.0	20.0

Certificate of Analysis

Sample #:	L15081073-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW13-081915	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	08/25/2015 09:30
Workgroup #:	WG536310	**Analyst:**	DCM	**Run Date:**	08/25/2015 09:40
Collect Date:	08/19/2015 09:35	**Dilution:**	1	**File ID:**	SC150825002.023
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.160	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081073-03	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW13-081915	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG536448	**Analyst:**	TB	**Run Date:**	08/25/2015 16:00
Collect Date:	08/19/2015 09:35	**Dilution:**	1	**File ID:**	ET.1508251600-07
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081073-03	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW13-081915	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	05/27/2015 15:47
Workgroup #:	WG536390	**Analyst:**	DIH	**Run Date:**	08/26/2015 17:53
Collect Date:	08/19/2015 09:35	**Dilution:**	5	**File ID:**	TC08262015.012
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	10.4		10.0	5.00	2.50

Certificate of Analysis

Sample #:	L15081073-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO2
Client ID:	50WW13FF-081915	**Prep Method:**	3015	**Prep Date:**	08/25/2015 08:11
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	08/26/2015 10:48
Workgroup #:	WG536547	**Analyst:**	KKB	**Run Date:**	08/26/2015 16:20
Collect Date:	08/19/2015 09:35	**Dilution:**	1	**File ID:**	T2.082615.162019
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.0542	J	0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.

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Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081073-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW13FF-081915	**Prep Method:**	3015	**Prep Date:**	08/26/2015 10:45
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	08/27/2015 11:46
Workgroup #:	WG536592	**Analyst:**	BKT	**Run Date:**	08/27/2015 12:54
Collect Date:	08/19/2015 09:35	**Dilution:**	5	**File ID:**	NI.082715.125405
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.123		0.0200	0.0100	0.00500

Certificate of Analysis

Sample #:	L15081073-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW05-081915	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536091	**Analyst:**	TMB	**Run Date:**	08/22/2015 00:13
Collect Date:	08/19/2015 10:50	**Dilution:**	1	**File ID:**	8M406953
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

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Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.183	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.60		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	2.02		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	29.1		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.787	J	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	200		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

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Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	95.2	70	120	
Toluene-d8	98.8	85	120	
4-Bromofluorobenzene	98.6	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081073-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW05-081915	**Prep Method:**	6850	**Prep Date:**	08/24/2015 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG536249	**Analyst:**	JWR	**Run Date:**	08/25/2015 01:37
Collect Date:	08/19/2015 10:50	**Dilution:**	1	**File ID:**	1LM.LM31461
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1.69		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15081073-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW05FD-081915	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536091	**Analyst:**	TMB	**Run Date:**	08/22/2015 00:42
Collect Date:	08/19/2015 10:50	**Dilution:**	1	**File ID:**	8M406954
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

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Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.170	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.66		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	2.08		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	28.1		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.651	J	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	200		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

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Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	92.1	70	120	
Toluene-d8	98.6	85	120	
4-Bromofluorobenzene	95.7	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081073-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW05FD-081915	**Prep Method:**	6850	**Prep Date:**	08/24/2015 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG536249	**Analyst:**	JWR	**Run Date:**	08/25/2015 01:56
Collect Date:	08/19/2015 10:50	**Dilution:**	1	**File ID:**	1LM.LM31462
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1.64		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15081073-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW17-081915	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536091	**Analyst:**	TMB	**Run Date:**	08/21/2015 23:16
Collect Date:	08/19/2015 14:00	**Dilution:**	1	**File ID:**	8M406951
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

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Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

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Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.6	85	115	
1,2-Dichloroethane-d4	94.7	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	96.2	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081073-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW17-081915	**Prep Method:**	6850	**Prep Date:**	08/24/2015 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG536249	**Analyst:**	JWR	**Run Date:**	08/25/2015 02:15
Collect Date:	08/19/2015 14:00	**Dilution:**	1	**File ID:**	1LM.LM31463
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.193	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081073-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536091	**Analyst:**	TMB	**Run Date:**	08/21/2015 18:28
Collect Date:	08/19/2015 00:01	**Dilution:**	1	**File ID:**	8M406941
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.320	J	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.9	85	115	
1,2-Dichloroethane-d4	86.5	70	120	
Toluene-d8	99.9	85	120	
4-Bromofluorobenzene	96.2	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081073-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW14-081915	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536091	**Analyst:**	TMB	**Run Date:**	08/21/2015 22:47
Collect Date:	08/19/2015 08:20	**Dilution:**	1	**File ID:**	8M406950
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	7.56		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	12.0		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	85	115	
1,2-Dichloroethane-d4	91.8	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	97.3	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081073-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW13-081915	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536091	**Analyst:**	TMB	**Run Date:**	08/21/2015 23:45
Collect Date:	08/19/2015 09:35	**Dilution:**	5	**File ID:**	8M406952
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	25.0	U	50.0	25.0	12.5
Benzene	71-43-2	0.714	J	5.00	1.25	0.625
Bromobenzene	108-86-1	1.25	U	5.00	1.25	0.625
Bromochloromethane	74-97-5	2.00	U	5.00	2.00	1.00
Bromodichloromethane	75-27-4	2.50	U	5.00	2.50	1.25
Bromoform	75-25-2	5.00	U	10.0	5.00	2.50
Bromomethane	74-83-9	5.00	Q	10.0	5.00	2.50
2-Butanone	78-93-3	25.0	U	50.0	25.0	12.5
n-Butylbenzene	104-51-8	2.50	U	5.00	2.50	1.25
sec-Butylbenzene	135-98-8	2.50	U	5.00	2.50	1.25
tert-Butylbenzene	98-06-6	2.50	U	5.00	2.50	1.25
Carbon disulfide	75-15-0	5.00	U	10.0	5.00	2.50
Carbon tetrachloride	56-23-5	2.50	U	5.00	2.50	1.25
Chlorobenzene	108-90-7	1.25	U	5.00	1.25	0.625
Chlorodibromomethane	124-48-1	2.50	U	5.00	2.50	1.25
Chloroethane	75-00-3	5.00	U	10.0	5.00	2.50
Chloroform	67-66-3	2.78	J	5.00	1.25	0.625
Chloromethane	74-87-3	5.00	U	10.0	5.00	2.50
2-Chlorotoluene	95-49-8	1.25	U	5.00	1.25	0.625
4-Chlorotoluene	106-43-4	2.50	U	5.00	2.50	1.25
1,2-Dibromo-3-chloropropane	96-12-8	10.0	U	25.0	10.0	5.00
1,2-Dibromoethane	106-93-4	2.50	U	5.00	2.50	1.25
Dibromomethane	74-95-3	2.50	U	5.00	2.50	1.25
1,2-Dichlorobenzene	95-50-1	1.25	U	5.00	1.25	0.625
1,3-Dichlorobenzene	541-73-1	2.50	U	5.00	2.50	1.25
1,4-Dichlorobenzene	106-46-7	1.25	U	5.00	1.25	0.625
Dichlorodifluoromethane	75-71-8	2.50	U	5.00	2.50	1.25
1,1-Dichloroethane	75-34-3	7.03		5.00	1.25	0.625
1,2-Dichloroethane	107-06-2	31.5		5.00	2.50	1.25
1,1-Dichloroethene	75-35-4	13.5		10.0	5.00	2.50
cis-1,2-Dichloroethene	156-59-2	184		5.00	2.50	1.25

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	2.34	J	5.00	2.50	1.25
1,2-Dichloropropane	78-87-5	2.00	U	5.00	2.00	1.00
1,3-Dichloropropane	142-28-9	2.00	U	5.00	2.00	1.00
2,2-Dichloropropane	594-20-7	2.50	U	5.00	2.50	1.25
cis-1,3-Dichloropropene	10061-01-5	2.50	U	5.00	2.50	1.25
trans-1,3-Dichloropropene	10061-02-6	5.00	U	10.0	5.00	2.50
1,1-Dichloropropene	563-58-6	2.50	U	5.00	2.50	1.25
Ethylbenzene	100-41-4	2.50	U	5.00	2.50	1.25
2-Hexanone	591-78-6	25.0	U	50.0	25.0	12.5
Hexachlorobutadiene	87-68-3	2.50	U	5.00	2.50	1.25
Isopropylbenzene	98-82-8	2.50	U	5.00	2.50	1.25
p-Isopropyltoluene	99-87-6	2.50	U	5.00	2.50	1.25
4-Methyl-2-pentanone	108-10-1	25.0	U	50.0	25.0	12.5
Methylene chloride	75-09-2	2.50	U	5.00	2.50	1.25
Naphthalene	91-20-3	2.00	U	5.00	2.00	1.00
n-Propylbenzene	103-65-1	1.25	U	5.00	1.25	0.625
Styrene	100-42-5	1.25	U	5.00	1.25	0.625
1,1,1,2-Tetrachloroethane	630-20-6	2.50	U	5.00	2.50	1.25
1,1,2,2-Tetrachloroethane	79-34-5	2.00	U	5.00	2.00	1.00
Tetrachloroethene	127-18-4	6.19		5.00	2.50	1.25
Toluene	108-88-3	2.50	U	5.00	2.50	1.25
1,2,3-Trichlorobenzene	87-61-6	1.50	U	5.00	1.50	0.750
1,2,4-Trichlorobenzene	120-82-1	2.00	U	5.00	2.00	1.00
1,1,1-Trichloroethane	71-55-6	2.50	U	5.00	2.50	1.25
1,1,2-Trichloroethane	79-00-5	2.50	U	5.00	2.50	1.25
Trichloroethene	79-01-6	4660	J	5.00	2.50	1.25
Trichlorofluoromethane	75-69-4	2.50	U	5.00	2.50	1.25
1,2,3-Trichloropropane	96-18-4	5.00	U	10.0	5.00	2.50
1,2,4-Trimethylbenzene	95-63-6	2.50	U	5.00	2.50	1.25
1,3,5-Trimethylbenzene	108-67-8	2.50	U	5.00	2.50	1.25
Vinyl chloride	75-01-4	2.31	J	5.00	2.50	1.25
o-Xylene	95-47-6	2.50	U	5.00	2.50	1.25
m-,p-Xylene	179601-23-1	5.00	U	10.0	5.00	2.50

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.8	85	115	
1,2-Dichloroethane-d4	90.1	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	98.2	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

J	Estimated value ; the analyte concentration was greater than the highest standard
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081073-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW13-081915	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536185	**Analyst:**	TMB	**Run Date:**	08/24/2015 17:11
Collect Date:	08/19/2015 09:35	**Dilution:**	100	**File ID:**	8M406974
Sample Tag:	DL02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	500	U	1000	500	250
Benzene	71-43-2	25.0	U	100	25.0	12.5
Bromobenzene	108-86-1	25.0	U	100	25.0	12.5
Bromochloromethane	74-97-5	40.0	U	100	40.0	20.0
Bromodichloromethane	75-27-4	50.0	U	100	50.0	25.0
Bromoform	75-25-2	100	U	200	100	50.0
Bromomethane	74-83-9	100	Q	200	100	50.0
2-Butanone	78-93-3	500	U	1000	500	250
n-Butylbenzene	104-51-8	50.0	U	100	50.0	25.0
sec-Butylbenzene	135-98-8	50.0	U	100	50.0	25.0
tert-Butylbenzene	98-06-6	50.0	U	100	50.0	25.0
Carbon disulfide	75-15-0	100	U	200	100	50.0
Carbon tetrachloride	56-23-5	50.0	U	100	50.0	25.0
Chlorobenzene	108-90-7	25.0	U	100	25.0	12.5
Chlorodibromomethane	124-48-1	50.0	U	100	50.0	25.0
Chloroethane	75-00-3	100	U	200	100	50.0
Chloroform	67-66-3	25.0	U	100	25.0	12.5
Chloromethane	74-87-3	100	U	200	100	50.0
2-Chlorotoluene	95-49-8	25.0	U	100	25.0	12.5
4-Chlorotoluene	106-43-4	50.0	U	100	50.0	25.0
1,2-Dibromo-3-chloropropane	96-12-8	200	U	500	200	100
1,2-Dibromoethane	106-93-4	50.0	U	100	50.0	25.0
Dibromomethane	74-95-3	50.0	U	100	50.0	25.0
1,2-Dichlorobenzene	95-50-1	25.0	U	100	25.0	12.5
1,3-Dichlorobenzene	541-73-1	50.0	U	100	50.0	25.0
1,4-Dichlorobenzene	106-46-7	25.0	U	100	25.0	12.5
Dichlorodifluoromethane	75-71-8	50.0	U	100	50.0	25.0
1,1-Dichloroethane	75-34-3	25.0	U	100	25.0	12.5
1,2-Dichloroethane	107-06-2	36.5	J	100	50.0	25.0
1,1-Dichloroethene	75-35-4	100	U	200	100	50.0
cis-1,2-Dichloroethene	156-59-2	183		100	50.0	25.0

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	50.0	U	100	50.0	25.0
1,2-Dichloropropane	78-87-5	40.0	U	100	40.0	20.0
1,3-Dichloropropane	142-28-9	40.0	U	100	40.0	20.0
2,2-Dichloropropane	594-20-7	50.0	U	100	50.0	25.0
cis-1,3-Dichloropropene	10061-01-5	50.0	U	100	50.0	25.0
trans-1,3-Dichloropropene	10061-02-6	100	U	200	100	50.0
1,1-Dichloropropene	563-58-6	50.0	U	100	50.0	25.0
Ethylbenzene	100-41-4	50.0	U	100	50.0	25.0
2-Hexanone	591-78-6	500	U	1000	500	250
Hexachlorobutadiene	87-68-3	50.0	U	100	50.0	25.0
Isopropylbenzene	98-82-8	50.0	U	100	50.0	25.0
p-Isopropyltoluene	99-87-6	50.0	U	100	50.0	25.0
4-Methyl-2-pentanone	108-10-1	500	U	1000	500	250
Methylene chloride	75-09-2	50.0	U	100	50.0	25.0
Naphthalene	91-20-3	40.0	U	100	40.0	20.0
n-Propylbenzene	103-65-1	25.0	U	100	25.0	12.5
Styrene	100-42-5	25.0	U	100	25.0	12.5
1,1,1,2-Tetrachloroethane	630-20-6	50.0	U	100	50.0	25.0
1,1,2,2-Tetrachloroethane	79-34-5	40.0	U	100	40.0	20.0
Tetrachloroethene	127-18-4	50.0	U	100	50.0	25.0
Toluene	108-88-3	50.0	U	100	50.0	25.0
1,2,3-Trichlorobenzene	87-61-6	30.0	U	100	30.0	15.0
1,2,4-Trichlorobenzene	120-82-1	40.0	U	100	40.0	20.0
1,1,1-Trichloroethane	71-55-6	50.0	U	100	50.0	25.0
1,1,2-Trichloroethane	79-00-5	50.0	U	100	50.0	25.0
Trichloroethene	79-01-6	5700		100	50.0	25.0
Trichlorofluoromethane	75-69-4	50.0	U	100	50.0	25.0
1,2,3-Trichloropropane	96-18-4	100	U	200	100	50.0
1,2,4-Trimethylbenzene	95-63-6	50.0	U	100	50.0	25.0
1,3,5-Trimethylbenzene	108-67-8	50.0	U	100	50.0	25.0
Vinyl chloride	75-01-4	50.0	U	100	50.0	25.0
o-Xylene	95-47-6	50.0	U	100	50.0	25.0
m-,p-Xylene	179601-23-1	100	U	200	100	50.0

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	94.8	70	120	
Toluene-d8	96.6	85	120	
4-Bromofluorobenzene	97.9	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081073-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW05-081915	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536091	**Analyst:**	TMB	**Run Date:**	08/22/2015 00:13
Collect Date:	08/19/2015 10:50	**Dilution:**	1	**File ID:**	8M406953
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.183	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.60		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	2.02		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	29.1		1.00	0.500	0.250

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Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.787	J	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	200		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	95.2	70	120	
Toluene-d8	98.8	85	120	
4-Bromofluorobenzene	98.6	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081073-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW05FD-081915	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536091	**Analyst:**	TMB	**Run Date:**	08/22/2015 00:42
Collect Date:	08/19/2015 10:50	**Dilution:**	1	**File ID:**	8M406954
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.170	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.66		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	2.08		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	28.1		1.00	0.500	0.250

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.651	J	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	200		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	92.1	70	120	
Toluene-d8	98.6	85	120	
4-Bromofluorobenzene	95.7	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081073-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW17-081915	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536091	**Analyst:**	TMB	**Run Date:**	08/21/2015 23:16
Collect Date:	08/19/2015 14:00	**Dilution:**	1	**File ID:**	8M406951
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.6	85	115	
1,2-Dichloroethane-d4	94.7	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	96.2	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081073-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536091	**Analyst:**	TMB	**Run Date:**	08/21/2015 18:28
Collect Date:	08/19/2015 00:01	**Dilution:**	1	**File ID:**	8M406941
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.320	J	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.9	85	115	
1,2-Dichloroethane-d4	86.5	70	120	
Toluene-d8	99.9	85	120	
4-Bromofluorobenzene	96.2	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

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Instrument Run Log

Instrument: HPMS8 Dataset: 100214
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 19
Method: 624 SOP: MSV10 Rev: 12
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 16
Maintenance Log ID: 51878

Internal Standard: STD66600 Surrogate Standard: STD66600
CCV: STD66818; STD66687 LCS: STD66693; STD66677 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG494714; WG494980

Comments: File # 8m400369 and 70 were skipped and not used.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M400354	RINSE	NA	1	1		10/02/14 10:24
8M400355	WG494714-01 50ng BFB STD 8260	NA	1	1	STD66476	10/02/14 11:16
8M400356	WG494714-01 50ng BFB STD 8260	NA	1	1	STD66476	10/02/14 11:33
8M400357	WG494714-01 50ng BFB STD 8260	NA	1	1	STD66476	10/02/14 11:58
8M400358	WG494714-02 5ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 12:24
8M400359	WG494714-03 20ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 12:53
8M400360	WG494714-04 50ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 13:22
8M400361	WG494714-05 100ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 13:51
8M400362	WG494714-06 200ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 14:19
8M400363	WG494714-07 300ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 14:48
8M400364	WG494714-08 400ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 15:16
8M400365	WG494714-09 500ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 15:45
8M400366	RINSE	NA	1	1		10/02/14 16:14
8M400367	WG494714-10 100ug/L ALT SRC STD A9/F	NA	1	1	STD66677	10/02/14 16:47
8M400368	WG494979-01 50ug/L CCV STD 8260	NA	1	1	STD66687	10/02/14 17:22
8M400371	WG494980-02 20ug/L LCS STD 624	NA	2	1	STD66693	10/02/14 17:51
8M400372	WG494980-03 20ug/L LCSDUP STD 624	NA	2	1	STD66693	10/02/14 18:20
8M400373	RINSE	NA	2	1		10/02/14 18:49
8M400374	WG494980-01 VBLK1002 BLANK STD 624	NA	2	1		10/02/14 19:18
8M400375	L14100004-01 LOD 826-SPE A9/FOO	NA	1	1		10/02/14 19:47
8M400376	L14100006-01 LOQ 826-SPE A9/FOO	NA	1	1		10/02/14 20:16
8M400377	L14100004-01 LOD 826-SPE	NA	1	1		10/02/14 20:45
8M400378	L14100006-01 LOQ 826-SPE	NA	1	1		10/02/14 21:14
8M400379	L14100004-01 LOD 826-SPE	NA	1	1		10/02/14 21:42
8M400380	L14100006-01 LOQ 826-SPE	NA	1	1		10/02/14 22:12
8M400381	L14100098-10 A 624-SPE	5	2	1		10/02/14 22:40
8M400382	L14100089-02 A 624-SPE	5	2	1		10/02/14 23:09
8M400383	L14100098-04 A 624-SPE	<2	2	1		10/02/14 23:38
8M400384	L14100098-05 A 624-SPE	<2	2	1		10/03/14 00:06
8M400385	L14100098-06 A 624-SPE	<2	2	1		10/03/14 00:36
8M400386	L14100098-07 A 624-SPE	<2	2	1		10/03/14 01:06
8M400387	L14100098-08 A 624-SPE	<2	2	1		10/03/14 01:34
8M400388	L14100098-09 A 624-SPE	<2	2	1		10/03/14 02:04
8M400389	L14100110-01 A 624-SPE2	<2	2	1		10/03/14 02:32

Approved: October 03, 2014

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 100214
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 19
Method: 624 SOP: MSV10 Rev: 12
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 16
Maintenance Log ID: 51878

Internal Standard: STD66600 Surrogate Standard: STD66600
CCV: STD66818; STD66687 LCS: STD66693; STD66677 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG494714; WG494980

Comments: File # 8m400369 and 70 were skipped and not used.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M400390	L14100110-02 A 624-SPE1	<2	2	1		10/03/14 03:02
8M400391	RINSE	NA	1	1		10/03/14 03:30
8M400392	RINSE	NA	1	1		10/03/14 03:59

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 8M400355				
	Tune failed, DNR.			
3	X			
File ID: 8M400356				
	Tune failed, DNR.			
4				
File ID: 8M400357				
	Purged BFB.			
30	X	100	Over Calibration Range	TCE
File ID: 8M400385				
31	X	1	Carry-over contamination	
File ID: 8M400386				
	DNR.			
32	X	1	Carry-over contamination	
File ID: 8M400387				
	DNR.			
33	X	50	Over Calibration Range	TCE
File ID: 8M400388				
34	X	1	Carry-over contamination	
File ID: 8M400389				
	DNR.			

Approved: October 03, 2014

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 073015
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 22
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD71712 Surrogate Standard: STD71712
CCV: STD71744 LCS: STD71618 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG533051

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M406467	RINSE	NA	1	1		07/30/15 08:51
8M406468	RINSE	NA	1	1		07/30/15 09:26
8M406469	RINSE	NA	1	1		07/30/15 09:55
8M406470	RINSE	NA	1	1		07/30/15 10:39
8M406471	RINSE	NA	1	1		07/30/15 11:08
8M406472	RINSE	NA	1	1		07/30/15 11:36
8M406473	RINSE	NA	1	1		07/30/15 12:05
8M406474	RINSE	NA	1	1		07/30/15 12:50
8M406475	RINSE	NA	1	1		07/30/15 13:18
8M406476	RINSE	NA	1	1		07/30/15 13:47
8M406477	WG533051-01 50ng BFB STD 8260	NA	1	1	STD71644	07/30/15 14:17
8M406478	RINSE	NA	1	1		07/30/15 14:41
8M406479	WG533051-04 1ug/L STD 8260	NA	1	1	STD71744	07/30/15 15:09
8M406480	WG533051-05 2ug/L STD 8260	NA	1	1	STD71744	07/30/15 15:37
8M406481	WG533051-06 5ug/L STD 8260	NA	1	1	STD71744	07/30/15 16:06
8M406482	WG533051-07 20ug/L STD 8260	NA	1	1	STD71744	07/30/15 16:35
8M406483	WG533051-08 50ug/L STD 8260	NA	1	1	STD71744	07/30/15 17:04
8M406484	WG533051-09 100ug/L STD 8260	NA	1	1	STD71744	07/30/15 17:33
8M406485	WG533051-10 200ug/L STD 8260	NA	1	1	STD71744	07/30/15 18:01
8M406486	WG533051-11 300ug/L STD 8260	NA	1	1	STD71744	07/30/15 18:29
8M406487	RINSE W/MEOH	NA	1	1		07/30/15 18:58
8M406488	RINSE	NA	1	1		07/30/15 19:26
8M406489	RINSE	NA	1	1		07/30/15 19:54
8M406490	WG533051-02 0.3ug/L STD 8260	NA	1	1	STD71744	07/30/15 20:22
8M406491	WG533051-03 0.4ug/L STD 8260	NA	1	1	STD71744	07/30/15 20:51
8M406492	WG533051-12 50ug/L ALT SRC STD 8260	NA	1	1	STD71618	07/30/15 21:20
8M406493	WG533051-13 50ug/L CCV STD 8260 DOD	NA	1	1	STD71744	07/30/15 21:49
8M406494	RINSE	NA	1	1		07/30/15 22:18
8M406495	RINSE	NA	1	1		07/30/15 22:46
8M406496	RINSE	NA	1	1		07/30/15 23:16
8M406497	RINSE	NA	1	1		07/30/15 23:44
8M406498	RINSE	NA	1	1		07/31/15 00:13
8M406499	RINSE	NA	1	1		07/31/15 00:42
8M406500	RINSE	NA	1	1		07/31/15 01:11

Approved: July 31, 2015

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Instrument Run Log

Instrument: HPMS8 Dataset: 073015
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 22
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD71712 Surrogate Standard: STD71712
CCV: STD71744 LCS: STD71618 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG533051

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M406501	RINSE	NA	1	1		07/31/15 01:39

Approved: July 31, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 082115
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 22
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD71712 Surrogate Standard: STD71712
CCV: STD71981 LCS: STD72078 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG536091

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M406932	WG536090-01 50ng BFB STD 8260	NA	1	1	STD71644	08/21/15 14:30
8M406933	WG536090-01 50ng BFB STD 8260	NA	1	1	STD71644	08/21/15 14:44
8M406934	WG536090-02 50ug/L CCV STD 8260	NA	1	1	STD71981	08/21/15 15:07
8M406935	RINSE	NA	1	1		08/21/15 15:36
8M406936	WG536091-01 VBLK0821 BLANK STD 826	NA	1	1		08/21/15 16:04
8M406937	WG536091-02 20ug/L LCS STD 8260	NA	1	1	STD72078	08/21/15 16:33
8M406938	WG536091-03 20ug/L LCSDUP STD 8260	NA	1	1	STD72078	08/21/15 17:01
8M406939	L15080992-09 B 50X 826-LOW D1	<2	1	50		08/21/15 17:29
8M406940	L15081106-04 TB A 826-SPE	<2	1	1		08/21/15 17:58
8M406941	L15081073-08 TB A 826-LOW	<2	1	1		08/21/15 18:28
8M406942	L15081166-02 TB A 826-SPE	<2	1	1		08/21/15 18:57
8M406943	L15081166-01 RB A 826-SPE	<2	1	1		08/21/15 19:26
8M406944	L15081166-03 A 826-SPE	<2	1	1		08/21/15 19:55
8M406945	L15081166-04 A 826-SPE	<2	1	1		08/21/15 20:24
8M406946	L15081166-05 A 826-SPE	<2	1	1		08/21/15 20:53
8M406947	L15081166-06 A 826-SPE	<2	1	1		08/21/15 21:21
8M406948	L15081166-07 A 826-SPE	<2	1	1		08/21/15 21:50
8M406949	L15081166-08 A 826-SPE	<2	1	1		08/21/15 22:18
8M406950	L15081073-01 A 826-LOW	<2	1	1		08/21/15 22:47
8M406951	L15081073-07 A 826-LOW	<2	1	1		08/21/15 23:16
8M406952	L15081073-03 A 5X 826-LOW	<2	1	5		08/21/15 23:45
8M406953	L15081073-05 A 826-LOW	<2	1	1		08/22/15 00:13
8M406954	L15081073-06 A 826-LOW	<2	1	1		08/22/15 00:42
8M406955	L15081107-03 20X A 826-SPE	<2	1	20		08/22/15 01:10
8M406956	L15081107-02 A 826-SPE	<2	1	1		08/22/15 01:38
8M406957	L15081107-01 A 2X 826-SPE	<2	1	2		08/22/15 02:06
8M406958	CCV	NA	1	1		08/22/15 02:35
8M406959	RINSE	NA	1	1		08/22/15 03:03
8M406960	RINSE	NA	1	1		08/22/15 03:31

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1	X			

Approved: August 25, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 082115
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 22
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD71712 Surrogate Standard: STD71712
CCV: STD71981 LCS: STD72078 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG536091

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
File ID: 8M406932				
	Tune failed, DNR.			
21	X	100	Over Calibration Range	TCE
File ID: 8M406952				
24	X	2.5	Analyzed too dilute	
File ID: 8M406955				
26	X	100	Over Calibration Range	BENZENE, EB
File ID: 8M406957				

Approved: August 25, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 082415
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 22
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID: 53372

Internal Standard: STD71712 Surrogate Standard: STD71712
CCV: STD72111 LCS: STD72078 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG536185

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M406961	WG536184-01 50ng BFB STD 8260	NA	1	1	STD71644	08/24/15 11:04
8M406962	WG536184-01 50ng BFB STD 8260	NA	1	1	STD71644	08/24/15 11:28
8M406963	WG536184-02 50ug/L CCV STD 8260	NA	1	1	STD71981	08/24/15 11:52
8M406964	WG536184-02 50ug/L CCV STD 8260	NA	1	1	STD72111	08/24/15 12:24
8M406965	RINSE	NA	1	1		08/24/15 12:53
8M406966	WG536185-01 VBLK0824 BLANK STD 826	NA	1	1		08/24/15 13:22
8M406967	WG536185-02 20ug/L LCS STD 8260	NA	1	1	STD72078	08/24/15 13:51
8M406968	WG536185-03 20ug/L LCSDUP STD 8260	NA	1	1	STD72078	08/24/15 14:20
8M406969	L15081114-01 A 10X 826-TC	NA	17	10		08/24/15 14:49
8M406970	L15081144-01 A 10X 826-TC	NA	17	10		08/24/15 15:18
8M406971	L15081155-01 A 10X 826-TC	NA	17	10		08/24/15 15:46
8M406972	L15081107-03 B 2.5X 826-SPE	<2	1	2.5		08/24/15 16:15
8M406973	L15081107-01 B 100X 826-SPE D1	<2	1	100		08/24/15 16:43
8M406974	L15081073-03 B 100X 826-LOW D1	<2	1	100		08/24/15 17:11
8M406975	L15081185-04 A TB 826-SPE1	<2	1	1		08/24/15 17:39
8M406976	L15081187-04 A TB 826-SPE	<2	1	1		08/24/15 18:08
8M406977	L15081187-03 A ER 826-SPE	<2	1	1		08/24/15 18:36
8M406978	L15081185-03 A ER 826-SPE1	<2	1	1		08/24/15 19:05
8M406979	L15081185-02 A 826-SPE1	<2	1	1		08/24/15 19:34
8M406980	L15081185-01 A 826-SPE1	<2	1	1		08/24/15 20:04
8M406981	L15081187-01 A 826-SPE	<2	1	1		08/24/15 20:32
8M406982	L15081187-02 A 826-SPE	<2	1	1		08/24/15 21:01
8M406983	L15081170-01 A 826-SPE	<2	1	1		08/24/15 21:30
8M406984	RINSE	NA	1	1		08/24/15 21:59
8M406985	WG536079-01 A FBLK 10X 826-TC	NA	17	10		08/24/15 22:27
8M406986	CCV	NA	1	1		08/24/15 22:56
8M406987	RINSE	NA	1	1		08/24/15 23:25

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1	X			
File ID: 8M406961				
Tune failed, DNR.				

Approved: August 25, 2015

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 082415
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 22
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID: 53372

Internal Standard: STD71712 Surrogate Standard: STD71712
CCV: STD72111 LCS: STD72078 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG536185

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
3	X			
File ID: 8M406963				
VC was high, DNR.				

Approved: August 25, 2015

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 02-OCT-2014
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 63840
Analytical Workgroups: WG494714; WG494980

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
03-OCT-2014
Tiffany Bailey

Secondary Reviewer:
03-OCT-2014

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-03-2014 13:21:54

Microbac Laboratories Inc.

Data Checklist

Date: 30-JUL-2015
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 69569
Analytical Workgroups: WG533051

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
31-JUL-2015
Tiffany Bailey

Secondary Reviewer:
31-JUL-2015

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-31-2015 18:12:12

Microbac Laboratories Inc.

Data Checklist

Date: 21-AUG-2015
Analyst: TMB
Analyst: NA
Method: 8260B
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 69996
Analytical Workgroups: WG536091

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
24-AUG-2015
Tiffany Bailey

Secondary Reviewer:
25-AUG-2015
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-25-2015 08:55:14

Microbac Laboratories Inc.

Data Checklist

Date: 24-AUG-2015
Analyst: TMB
Analyst: NA
Method: 8260B
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 70020
Analytical Workgroups: WG536185

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
25-AUG-2015
Tiffany Bailey

Secondary Reviewer:
25-AUG-2015
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-25-2015 15:49:27

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG536091

Login Number: L15081073

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW14-081915	01	08/19/15					08/21/2015	2.6	14		08/21/15	2.6	14	
50WW13-081915	03	08/19/15					08/21/2015	2.6	14		08/21/15	2.6	14	
50WW05-081915	05	08/19/15					08/22/2015	2.6	14		08/22/15	2.6	14	
50WW05FD-081915	06	08/19/15					08/22/2015	2.6	14		08/22/15	2.6	14	
50WW17-081915	07	08/19/15					08/21/2015	2.4	14		08/21/15	2.4	14	
TRIP BLANK	08	08/19/15					08/21/2015	2.8	14		08/21/15	2.8	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4349740
Report generated 08/27/2015 16:26

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG536185

Login Number: L15081073

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW13-081915	03	08/19/15					08/24/2015	5.3	14		08/24/15	5.3	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4349740
Report generated 08/27/2015 16:26

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L15081073
Instrument Id: HPMS8
Workgroup (AAB#): WG536185

Method: 8260
CAL ID: HPMS8-30-JUL-15
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L15081073-03	100	DL02	94.8	101	97.9	96.6
WG536185-01	1.00	01	95.0	101	102	98.3
WG536185-02	1.00	01	92.7	100	99.6	97.8
WG536185-03	1.00	01	93.6	97.8	99.4	97.3

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4349745
Report generated: 08/27/2015 16:27

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L15081073
Instrument Id: HPMS8
Workgroup (AAB#): WG536091

Method: 8260
CAL ID: HPMS8-30-JUL-15
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L15081073-01	1.00	01	91.8	100	97.3	100
L15081073-03	5.00	DL01	90.1	98.8	98.2	100
L15081073-05	1.00	01	95.2	103	98.6	98.8
L15081073-06	1.00	01	92.1	102	95.7	98.6
L15081073-07	1.00	01	94.7	99.6	96.2	101
L15081073-08	1.00	01	86.5	99.9	96.2	99.9
WG536091-01	1.00	01	91.0	101	94.1	99.9
WG536091-02	1.00	01	91.9	99.1	90.9	98.7
WG536091-03	1.00	01	88.8	99.6	92.4	97.7

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4349745
Report generated: 08/27/2015 16:27

METHOD BLANK SUMMARY

Login Number: L15081073
Blank File ID: 8M406936
Prep Date: 08/21/15 16:04
Analyzed Date: 08/21/15 16:04
Analyst: TMB

Work Group: WG536091
Blank Sample ID: WG536091-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG536091-02	8M406937	08/21/15 16:33	01
LCS2	WG536091-03	8M406938	08/21/15 17:01	01
TRIP BLANK	L15081073-08	8M406941	08/21/15 18:28	01
50WW14-081915	L15081073-01	8M406950	08/21/15 22:47	01
50WW17-081915	L15081073-07	8M406951	08/21/15 23:16	01
50WW13-081915	L15081073-03	8M406952	08/21/15 23:45	DL01
50WW05-081915	L15081073-05	8M406953	08/22/15 00:13	01
50WW05FD-081915	L15081073-06	8M406954	08/22/15 00:42	01

Report Name: BLANK_SUMMARY
PDF File ID: 4358530
Report generated 08/27/2015 16:26

METHOD BLANK SUMMARY

Login Number: L15081073
Blank File ID: 8M406966
Prep Date: 08/24/15 13:22
Analyzed Date: 08/24/15 13:22
Analyst: TMB

Work Group: WG536185
Blank Sample ID: WG536185-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG536185-02	8M406967	08/24/15 13:51	01
LCS2	WG536185-03	8M406968	08/24/15 14:20	01
50WW13-081915	L15081073-03	8M406974	08/24/15 17:11	DL02

Report Name: BLANK_SUMMARY
PDF File ID: 4358530
Report generated 08/27/2015 16:26

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15081073 Prep Date: 08/21/15 16:04 Sample ID: WG536091-01
Instrument ID: HPMS8 Run Date: 08/21/15 16:04 Prep Method: 5030B/5030C/503
File ID: 8M406936 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG536091 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-30-JUL-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4358531
27-AUG-2015 16:26

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15081073 Prep Date: 08/21/15 16:04 Sample ID: WG536091-01
Instrument ID: HPMS8 Run Date: 08/21/15 16:04 Prep Method: 5030B/5030C/503
File ID: 8M406936 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG536091 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-30-JUL-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	101	85 - 115	PASS
1,2-Dichloroethane-d4	91.0	70 - 120	PASS
Toluene-d8	99.9	85 - 120	PASS
4-Bromofluorobenzene	94.1	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4358531
27-AUG-2015 16:26

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L15081073 Prep Date: 08/24/15 13:22 Sample ID: WG536185-01
Instrument ID: HPMS8 Run Date: 08/24/15 13:22 Prep Method: 5030B/5030C/503
File ID: 8M406966 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG536185 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-30-JUL-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 4358531
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Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15081073 Prep Date: 08/24/15 13:22 Sample ID: WG536185-01
Instrument ID: HPMS8 Run Date: 08/24/15 13:22 Prep Method: 5030B/5030C/503
File ID: 8M406966 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG536185 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-30-JUL-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	101	85 - 115	PASS
1,2-Dichloroethane-d4	95.0	70 - 120	PASS
Toluene-d8	98.3	85 - 120	PASS
4-Bromofluorobenzene	102	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4358531
27-AUG-2015 16:26

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15081073 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG536185 Units: ug/L
QC Key: DOD4 Lot #: STD72078

Sample ID: WG536185-02 LCS File ID: 8M406967 Run Date: 08/24/2015 13:51
Sample ID: WG536185-03 LCS2 File ID: 8M406968 Run Date: 08/24/2015 14:20

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	20.1	100	20.0	20.0	100	0.324	80 - 130	30	
1,1,1-Trichloroethane	20.0	20.8	104	20.0	20.9	104	0.527	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	21.2	106	20.0	21.6	108	1.89	65 - 130	30	
1,1,2-Trichloroethane	20.0	19.8	99.2	20.0	19.9	99.6	0.393	75 - 125	30	
1,1-Dichloroethane	20.0	19.4	96.9	20.0	19.7	98.4	1.48	70 - 135	30	
1,1-Dichloroethene	20.0	17.7	88.7	20.0	17.7	88.4	0.380	70 - 130	30	
1,1-Dichloropropene	20.0	20.5	102	20.0	20.0	100	2.01	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	18.3	91.4	20.0	18.6	93.1	1.80	55 - 140	30	
1,2,3-Trichloropropane	20.0	18.7	93.6	20.0	20.2	101	7.52	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	18.0	89.8	20.0	18.6	93.1	3.65	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	20.2	101	20.0	20.1	100	0.531	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	19.4	96.9	20.0	18.4	92.2	5.01	50 - 130	30	
1,2-Dibromoethane	20.0	19.0	95.0	20.0	20.2	101	6.14	80 - 120	30	
1,2-Dichlorobenzene	20.0	20.3	101	20.0	20.2	101	0.216	70 - 120	30	
1,2-Dichloroethane	20.0	19.4	97.1	20.0	19.7	98.5	1.41	70 - 130	30	
1,2-Dichloropropane	20.0	21.4	107	20.0	21.5	108	0.593	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	20.6	103	20.0	20.8	104	1.25	75 - 130	30	
1,3-Dichlorobenzene	20.0	20.2	101	20.0	20.4	102	0.717	75 - 125	30	
1,3-Dichloropropane	20.0	19.8	98.9	20.0	20.8	104	5.06	75 - 125	30	
1,4-Dichlorobenzene	20.0	18.7	93.6	20.0	18.8	93.8	0.228	75 - 125	30	
2,2-Dichloropropane	20.0	20.3	101	20.0	21.4	107	5.21	70 - 135	30	
2-Butanone	20.0	22.8	114	20.0	23.8	119	4.63	30 - 150	30	
2-Chlorotoluene	20.0	21.8	109	20.0	20.8	104	4.59	75 - 125	30	
2-Hexanone	20.0	20.3	101	20.0	21.7	108	6.69	55 - 130	30	
4-Chlorotoluene	20.0	20.3	102	20.0	21.0	105	3.58	75 - 130	30	
4-Methyl-2-pentanone	20.0	21.5	108	20.0	23.0	115	6.52	60 - 135	30	
Acetone	20.0	23.8	119	20.0	20.8	104	13.2	40 - 140	30	
Benzene	20.0	21.5	108	20.0	21.7	108	0.582	80 - 120	30	
Bromobenzene	20.0	19.6	97.8	20.0	19.6	98.1	0.320	75 - 125	30	
Bromochloromethane	20.0	20.0	100	20.0	20.2	101	1.20	65 - 130	30	
Bromodichloromethane	20.0	20.2	101	20.0	20.4	102	0.726	75 - 120	30	
Bromoform	20.0	19.5	97.3	20.0	21.2	106	8.67	70 - 130	30	
Bromomethane	20.0	11.8	58.9	20.0	11.8	59.2	0.481	30 - 145	30	
Carbon disulfide	20.0	16.7	83.6	20.0	16.9	84.7	1.32	35 - 160	30	
Carbon tetrachloride	20.0	20.6	103	20.0	20.6	103	0.141	65 - 140	30	
Chlorobenzene	20.0	20.8	104	20.0	21.8	109	4.52	80 - 120	30	
Chloroethane	20.0	23.2	116	20.0	22.5	112	2.87	60 - 135	30	
Chloroform	20.0	20.6	103	20.0	20.2	101	2.16	65 - 135	30	
Chloromethane	20.0	22.3	112	20.0	23.1	115	3.37	40 - 125	30	
cis-1,2-Dichloroethene	20.0	20.3	102	20.0	19.5	97.3	4.41	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4349741
Report generated: 08/27/2015 16:26

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15081073 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG536185 Units: ug/L
QC Key: DOD4 Lot #: STD72078

Sample ID: WG536185-02 LCS File ID: 8M406967 Run Date: 08/24/2015 13:51
Sample ID: WG536185-03 LCS2 File ID: 8M406968 Run Date: 08/24/2015 14:20

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	21.9	110	20.0	22.3	111	1.65	70 - 130	30	
Chlorodibromomethane	20.0	19.5	97.5	20.0	20.8	104	6.28	60 - 135	30	
Dibromomethane	20.0	21.1	105	20.0	21.5	108	1.95	75 - 125	30	
Dichlorodifluoromethane	20.0	21.7	108	20.0	21.9	109	0.790	30 - 155	30	
Ethylbenzene	20.0	19.9	99.4	20.0	20.6	103	3.45	75 - 125	30	
Hexachlorobutadiene	20.0	17.1	85.7	20.0	17.4	86.8	1.26	50 - 140	30	
Isopropylbenzene	20.0	21.1	106	20.0	21.6	108	2.35	75 - 125	30	
m-,p-Xylene	40.0	41.4	104	40.0	42.3	106	2.02	75 - 130	30	
Methylene chloride	20.0	20.1	100	20.0	20.2	101	0.858	55 - 140	30	
n-Butylbenzene	20.0	19.6	98.0	20.0	19.5	97.6	0.463	70 - 135	30	
n-Propylbenzene	20.0	20.9	105	20.0	20.8	104	0.600	70 - 130	30	
Naphthalene	20.0	19.2	96.1	20.0	20.1	100	4.33	55 - 140	30	
o-Xylene	20.0	21.1	106	20.0	21.4	107	1.42	80 - 120	30	
p-Isopropyltoluene	20.0	19.5	97.5	20.0	19.6	98.0	0.469	75 - 130	30	
sec-Butylbenzene	20.0	21.0	105	20.0	21.2	106	0.915	70 - 125	30	
Styrene	20.0	20.3	102	20.0	20.9	104	2.61	65 - 135	30	
tert-Butylbenzene	20.0	19.7	98.5	20.0	20.2	101	2.43	70 - 130	30	
Tetrachloroethene	20.0	19.3	96.4	20.0	20.4	102	5.74	45 - 150	30	
Toluene	20.0	20.3	101	20.0	20.5	102	0.834	75 - 120	30	
trans-1,2-Dichloroethene	20.0	19.6	98.2	20.0	19.3	96.4	1.92	60 - 140	30	
trans-1,3-Dichloropropene	20.0	18.8	93.8	20.0	20.0	99.8	6.21	55 - 140	30	
Trichloroethene	20.0	18.8	93.8	20.0	19.0	95.0	1.21	70 - 125	30	
Trichlorofluoromethane	20.0	18.0	89.9	20.0	18.1	90.6	0.780	60 - 145	30	
Vinyl chloride	20.0	25.2	126	20.0	25.9	130	2.95	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	92.7	93.6	70 - 120	PASS
Dibromofluoromethane	100	97.8	85 - 115	PASS
4-Bromofluorobenzene	99.6	99.4	75 - 120	PASS
Toluene-d8	97.8	97.3	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4349741
Report generated: 08/27/2015 16:26

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15081073 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG536091 Units: ug/L
QC Key: DOD4 Lot #: STD72078

Sample ID: WG536091-02 LCS File ID: 8M406937 Run Date: 08/21/2015 16:33
Sample ID: WG536091-03 LCS2 File ID: 8M406938 Run Date: 08/21/2015 17:01

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	19.7	98.4	20.0	19.9	99.6	1.18	80 - 130	30	
1,1,1-Trichloroethane	20.0	20.2	101	20.0	20.2	101	0.237	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	18.7	93.5	20.0	19.1	95.3	1.90	65 - 130	30	
1,1,2-Trichloroethane	20.0	19.6	98.2	20.0	18.9	94.5	3.86	75 - 125	30	
1,1-Dichloroethane	20.0	19.5	97.4	20.0	19.5	97.3	0.123	70 - 135	30	
1,1-Dichloroethene	20.0	17.5	87.4	20.0	17.5	87.5	0.125	70 - 130	30	
1,1-Dichloropropene	20.0	19.2	95.9	20.0	19.3	96.7	0.859	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	17.1	85.4	20.0	17.4	86.8	1.62	55 - 140	30	
1,2,3-Trichloropropane	20.0	16.9	84.6	20.0	17.8	88.8	4.76	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	17.6	87.8	20.0	18.1	90.3	2.84	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	18.9	94.5	20.0	19.4	96.9	2.52	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	15.2	76.2	20.0	15.1	75.7	0.677	50 - 130	30	
1,2-Dibromoethane	20.0	17.7	88.5	20.0	18.9	94.7	6.81	80 - 120	30	
1,2-Dichlorobenzene	20.0	20.3	101	20.0	20.4	102	0.452	70 - 120	30	
1,2-Dichloroethane	20.0	18.7	93.7	20.0	18.4	92.1	1.66	70 - 130	30	
1,2-Dichloropropane	20.0	20.7	104	20.0	20.9	105	0.788	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	19.4	96.9	20.0	19.4	97.1	0.258	75 - 130	30	
1,3-Dichlorobenzene	20.0	19.5	97.3	20.0	20.2	101	3.60	75 - 125	30	
1,3-Dichloropropane	20.0	19.9	99.5	20.0	19.4	97.1	2.45	75 - 125	30	
1,4-Dichlorobenzene	20.0	18.4	92.0	20.0	18.2	91.0	1.07	75 - 125	30	
2,2-Dichloropropane	20.0	20.0	99.9	20.0	18.3	91.6	8.74	70 - 135	30	
2-Butanone	20.0	18.1	90.7	20.0	18.1	90.3	0.513	30 - 150	30	
2-Chlorotoluene	20.0	19.8	99.2	20.0	20.4	102	2.90	75 - 125	30	
2-Hexanone	20.0	19.3	96.5	20.0	18.4	92.0	4.80	55 - 130	30	
4-Chlorotoluene	20.0	19.8	98.9	20.0	19.9	99.3	0.392	75 - 130	30	
4-Methyl-2-pentanone	20.0	20.0	100	20.0	19.8	98.9	1.09	60 - 135	30	
Acetone	20.0	16.2	81.0	20.0	15.8	78.9	2.62	40 - 140	30	
Benzene	20.0	21.1	105	20.0	21.0	105	0.203	80 - 120	30	
Bromobenzene	20.0	18.6	93.1	20.0	18.6	92.8	0.335	75 - 125	30	
Bromochloromethane	20.0	19.8	99.2	20.0	19.5	97.6	1.58	65 - 130	30	
Bromodichloromethane	20.0	20.0	100	20.0	19.2	95.9	4.45	75 - 120	30	
Bromoform	20.0	19.8	98.9	20.0	19.4	97.2	1.74	70 - 130	30	
Bromomethane	20.0	12.6	62.9	20.0	12.4	62.1	1.40	30 - 145	30	
Carbon disulfide	20.0	17.3	86.4	20.0	16.6	83.0	4.03	35 - 160	30	
Carbon tetrachloride	20.0	20.3	101	20.0	20.3	102	0.226	65 - 140	30	
Chlorobenzene	20.0	21.1	106	20.0	20.9	104	1.28	80 - 120	30	
Chloroethane	20.0	21.5	107	20.0	21.3	106	0.882	60 - 135	30	
Chloroform	20.0	19.9	99.3	20.0	19.9	99.5	0.195	65 - 135	30	
Chloromethane	20.0	20.3	102	20.0	21.6	108	6.19	40 - 125	30	
cis-1,2-Dichloroethene	20.0	20.1	101	20.0	19.2	95.8	4.95	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4349741
Report generated: 08/27/2015 16:26

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15081073 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG536091 Units: ug/L
QC Key: DOD4 Lot #: STD72078

Sample ID: WG536091-02 LCS File ID: 8M406937 Run Date: 08/21/2015 16:33
Sample ID: WG536091-03 LCS2 File ID: 8M406938 Run Date: 08/21/2015 17:01

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	21.8	109	20.0	21.2	106	2.91	70 - 130	30	
Chlorodibromomethane	20.0	19.2	96.1	20.0	19.9	99.5	3.46	60 - 135	30	
Dibromomethane	20.0	20.2	101	20.0	19.5	97.5	3.61	75 - 125	30	
Dichlorodifluoromethane	20.0	20.5	102	20.0	22.4	112	9.13	30 - 155	30	
Ethylbenzene	20.0	20.0	100	20.0	19.8	99.0	0.987	75 - 125	30	
Hexachlorobutadiene	20.0	15.9	79.3	20.0	16.0	80.2	1.03	50 - 140	30	
Isopropylbenzene	20.0	21.4	107	20.0	21.0	105	1.60	75 - 125	30	
m-,p-Xylene	40.0	40.6	102	40.0	41.4	103	1.78	75 - 130	30	
Methylene chloride	20.0	18.7	93.5	20.0	19.5	97.4	4.12	55 - 140	30	
n-Butylbenzene	20.0	18.5	92.3	20.0	18.8	94.0	1.86	70 - 135	30	
n-Propylbenzene	20.0	19.3	96.4	20.0	19.8	98.8	2.46	70 - 130	30	
Naphthalene	20.0	18.1	90.6	20.0	18.5	92.3	1.89	55 - 140	30	
o-Xylene	20.0	21.6	108	20.0	20.9	105	3.09	80 - 120	30	
p-Isopropyltoluene	20.0	18.5	92.6	20.0	19.1	95.4	3.05	75 - 130	30	
sec-Butylbenzene	20.0	19.9	99.4	20.0	20.4	102	2.58	70 - 125	30	
Styrene	20.0	20.5	103	20.0	20.4	102	0.526	65 - 135	30	
tert-Butylbenzene	20.0	19.1	95.3	20.0	20.0	99.9	4.77	70 - 130	30	
Tetrachloroethene	20.0	19.8	98.8	20.0	19.7	98.6	0.238	45 - 150	30	
Toluene	20.0	20.0	99.8	20.0	20.1	101	0.713	75 - 120	30	
trans-1,2-Dichloroethene	20.0	19.0	95.0	20.0	18.8	94.1	0.924	60 - 140	30	
trans-1,3-Dichloropropene	20.0	18.8	94.2	20.0	18.2	91.1	3.34	55 - 140	30	
Trichloroethene	20.0	18.5	92.3	20.0	18.5	92.3	0.0259	70 - 125	30	
Trichlorofluoromethane	20.0	17.4	87.0	20.0	17.4	86.8	0.313	60 - 145	30	
Vinyl chloride	20.0	22.8	114	20.0	24.2	121	5.84	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	91.9	88.8	70 - 120	PASS
Dibromofluoromethane	99.1	99.6	85 - 115	PASS
4-Bromofluorobenzene	90.9	92.4	75 - 120	PASS
Toluene-d8	98.7	97.7	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4349741
Report generated: 08/27/2015 16:26

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15081073
Instrument: HPMS8
Analyst: TMB
Workgroup: WG494714

Tune ID: WG494714-01
Run Date: 10/02/2014
Run Time: 11:58
File ID: 8M400357
Cal ID: HPMS8 - 02-OCT-14

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.7	5158	PASS
75.0	95.0	30.0	60.0	51.7	12312	PASS
95.0	95.0	100	100	100	23818	PASS
96.0	95.0	5.00	9.00	7.56	1800	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	69.7	16590	PASS
175	174	5.00	9.00	7.78	1290	PASS
176	174	95.0	101	97.3	16145	PASS
177	176	5.00	9.00	6.34	1023	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG494714-02	STD	01	10/02/2014 12:24	
WG494714-03	STD	01	10/02/2014 12:53	
WG494714-04	STD	01	10/02/2014 13:22	
WG494714-05	STD	01	10/02/2014 13:51	
WG494714-06	STD	01	10/02/2014 14:19	
WG494714-07	STD	01	10/02/2014 14:48	
WG494714-08	STD	01	10/02/2014 15:16	
WG494714-09	STD	01	10/02/2014 15:45	
WG494714-10	SSCV	01	10/02/2014 16:47	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4349743
Report generated 08/27/2015 16:26

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15081073
Instrument: HPMS8
Analyst: TMB
Workgroup: WG533051

Tune ID: WG533051-01
Run Date: 07/30/2015
Run Time: 14:17
File ID: 8M406477
Cal ID: HPMS8 - 30-JUL-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.2	6881	PASS
75.0	95.0	30.0	60.0	50.6	15643	PASS
95.0	95.0	100	100	100	30939	PASS
96.0	95.0	5.00	9.00	6.97	2155	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	76.8	23758	PASS
175	174	5.00	9.00	7.90	1877	PASS
176	174	95.0	101	95.4	22662	PASS
177	176	5.00	9.00	6.56	1487	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG533051-04	STD	01	07/30/2015 15:09	
WG533051-05	STD	01	07/30/2015 15:37	
WG533051-06	STD	01	07/30/2015 16:06	
WG533051-07	STD	01	07/30/2015 16:35	
WG533051-08	STD-CCV	01	07/30/2015 17:04	
WG533051-09	STD	01	07/30/2015 17:33	
WG533051-10	STD	01	07/30/2015 18:01	
WG533051-11	STD	01	07/30/2015 18:29	
WG533051-02	STD	01	07/30/2015 20:22	
WG533051-03	STD	01	07/30/2015 20:51	
WG533051-12	SSCV	01	07/30/2015 21:20	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4349743
Report generated 08/27/2015 16:26

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15081073
Instrument: HPMS8
Analyst: TMB
Workgroup: WG536090

Tune ID: WG536090-01
Run Date: 08/21/2015
Run Time: 14:44
File ID: 8M406933
Cal ID: HPMS8 - 30-JUL-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	23.0	7489	PASS
75.0	95.0	30.0	60.0	48.7	15849	PASS
95.0	95.0	100	100	100	32530	PASS
96.0	95.0	5.00	9.00	6.84	2226	PASS
173	174	0	2.00	0.839	249	PASS
174	95.0	50.0	100	91.3	29688	PASS
175	174	5.00	9.00	6.26	1858	PASS
176	174	95.0	101	95.3	28306	PASS
177	176	5.00	9.00	7.84	2220	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG536090-02	CCV	01	08/21/2015 15:07	
WG536091-01	BLANK	01	08/21/2015 16:04	
WG536091-02	LCS	01	08/21/2015 16:33	
WG536091-03	LCS2	01	08/21/2015 17:01	
L15081073-08	TRIP BLANK	01	08/21/2015 18:28	
L15081073-01	50WW14-081915	01	08/21/2015 22:47	
L15081073-07	50WW17-081915	01	08/21/2015 23:16	
L15081073-03	50WW13-081915	DL01	08/21/2015 23:45	
L15081073-05	50WW05-081915	01	08/22/2015 00:13	
L15081073-06	50WW05FD-081915	01	08/22/2015 00:42	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4349743
Report generated 08/27/2015 16:26

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15081073
Instrument: HPMS8
Analyst: TMB
Workgroup: WG536184

Tune ID: WG536184-01
Run Date: 08/24/2015
Run Time: 11:28
File ID: 8M406962
Cal ID: HPMS8 - 30-JUL-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.3	9481	PASS
75.0	95.0	30.0	60.0	49.5	23174	PASS
95.0	95.0	100	100	100	46776	PASS
96.0	95.0	5.00	9.00	6.82	3191	PASS
173	174	0	2.00	0.331	122	PASS
174	95.0	50.0	100	78.9	36890	PASS
175	174	5.00	9.00	7.28	2684	PASS
176	174	95.0	101	98.3	36271	PASS
177	176	5.00	9.00	6.21	2254	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG536184-02	CCV	01	08/24/2015 12:24	
WG536185-01	BLANK	01	08/24/2015 13:22	
WG536185-02	LCS	01	08/24/2015 13:51	
WG536185-03	LCS2	01	08/24/2015 14:20	
L15081073-03	50WW13-081915	DL02	08/24/2015 17:11	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4349743
Report generated 08/27/2015 16:26

Calibration Table Report
Method: A9FOOWTR.M
Title: A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Calibration: Fri Oct 03 12:32:07 2014
Curve: WG494714
Calibration Files

	Compound	5 8M400358.D	20 8M400359.D	50 8M400360.D	100 8M400361.D	200 8M400362.D	300 8M400363.D	400 8M400364.D	500 8M400365.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD											
T	Acetonitrile	0.015	0.015	0.015	0.016	0.017	0.016	0.015	0.016	0.016	4.015		
T	3-Chloro-1-propene	0.416	0.403	0.416	0.438	0.434	0.423	0.407	0.394	0.416	3.619		
T	2-Chloro-1,3-butadiene	0.467	0.479	0.496	0.520	0.522	0.508	0.485	0.462	0.493	4.640		
T	Ethyl Acetate	0.104	0.115	0.123	0.133	0.135	0.133	0.126	0.130	0.125	8.569		
T	Methacrylonitrile	0.062	0.065	0.072	0.077	0.080	0.080	0.077	0.081	0.074	9.397		
T	Isobutyl Alcohol			0.004	0.005	0.005	0.005	0.005	0.005	0.005	9.693		
T	1-Butanol			0.002	0.002	0.003	0.003	0.003	0.003	0.003	21.690	0.995	
T	Methyl methacrylate	0.115	0.123	0.137	0.147	0.154	0.151	0.145	0.150	0.140	10.193		
T	2-Nitropropane	0.032	0.035	0.039	0.043	0.047	0.046	0.046	0.048	0.042	14.057		
I	Chlorobenzene-d5	ISTD											
I	1,4-Dichlorobenzene-d4	ISTD											
T	Cyclohexanone			0.039	0.043	0.037	0.043	0.036	0.038	0.039	7.787		

Fri Oct 03 12:35:36 2014

Calibration Table Report
Method: 8260WT.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Calibration: Fri Jul 31 13:26:17 2015
Curve: WG533051
Calibration Files

	Compound	0.3 8M406490.D	0.4 8M406491.D	1 8M406479.D	2 8M406480.D	5 8M406481.D	20 8M406482.D	50 8M406483.D	100 8M406484.D	200 8M406485.D	300 8M406486.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane		0.369	0.335	0.337	0.352	0.419	0.438	0.375	0.398	0.415	0.382	9.830		
P	Chloromethane			0.496	0.461	0.454	0.420	0.428	0.381	0.387	0.383	0.426	9.858		
C	Vinyl Chloride	0.386	0.326	0.285	0.312	0.300	0.304	0.327	0.289	0.300	0.307	0.313	9.241		
T	1,3-Butadiene		0.275	0.268	0.278	0.264	0.279	0.290	0.287	0.264	0.269	0.275	3.453		
T	Bromomethane		0.210	0.220	0.207	0.204	0.191	0.206	0.196	0.212	0.233	0.209	6.087		
T	Chloroethane		0.197	0.190	0.189	0.195	0.192	0.201	0.186	0.195	0.212	0.195	3.891		
T	Trichlorofluoromethane		0.389	0.385	0.380	0.392	0.406	0.425	0.383	0.420	0.467	0.405	7.002		
T	Diethyl ether			0.159	0.150	0.147	0.148	0.150	0.152		0.167	0.153	4.796		
T	Isoprene		0.264	0.302	0.317	0.312	0.317	0.332	0.329	0.330	0.351	0.317	7.664		
T	Acrolein				0.008	0.007	0.008	0.008	0.009		0.012	0.009	18.571		0.999
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.209	0.208	0.239	0.230	0.249	0.218	0.240	0.259	0.231	8.057		
T	Acetone					0.038	0.031	0.030	0.028	0.030	0.032	0.032	11.525		
C	1,1-Dichloroethene		0.388	0.368	0.396	0.388	0.383	0.407	0.370	0.402	0.431	0.393	4.947		
T	Tert-Butyl Alcohol				0.009	0.008	0.008	0.008	0.008		0.009	0.008	7.482		
T	Dimethyl Sulfide		0.223	0.246	0.244	0.248	0.234	0.251	0.252	0.252	0.270	0.247	5.309		
T	Iodomethane			0.109	0.131	0.161	0.201	0.242	0.246	0.242	0.249	0.198	28.680	0.999	
T	Methyl acetate					0.123	0.114	0.117	0.120	0.119	0.140	0.122	7.548		
T	Methylene Chloride			0.265	0.259	0.247	0.241	0.255	0.237	0.241	0.256	0.250	3.986		
T	Carbon Disulfide			0.815	0.851	0.801	0.796	0.827	0.808	0.758	0.759	0.802	3.956		
T	Acrylonitrile			0.052	0.045	0.047	0.048	0.053	0.054		0.068	0.052	14.572		
T	Methyl Tert Butyl Ether			0.411	0.463	0.411	0.427	0.448	0.437	0.448	0.489	0.442	5.983		
T	trans-1,2-Dichloroethene		0.362	0.331	0.360	0.376	0.358	0.384	0.363	0.381	0.399	0.368	5.284		
T	n-Hexane					0.385	0.389	0.411	0.399	0.390	0.414	0.398	3.043		
T	Diisopropyl ether			0.955	0.899	0.890	0.887	0.892	0.870		0.866	0.894	3.291		
T	Vinyl Acetate		0.191	0.230	0.228	0.244	0.229	0.226	0.253	0.236	0.221	0.229	7.579		
P	1,1-Dichloroethane		0.493	0.494	0.508	0.486	0.488	0.509	0.473	0.490	0.506	0.494	2.419		
T	Ethyl-Tert-Butyl ether			0.691	0.657	0.649	0.655	0.657	0.666		0.695	0.667	2.747		
T	2-Butanone					0.048	0.049	0.054	0.054	0.054	0.061	0.053	8.650		
T	Propionitrile			0.015	0.017	0.016	0.017	0.017	0.017		0.020	0.017	9.548		
T	2,2-Dichloropropane		0.332	0.389	0.401	0.379	0.371	0.395	0.361	0.385	0.412	0.381	6.207		
T	cis-1,2-Dichloroethene		0.227	0.254	0.277	0.267	0.267	0.276	0.264	0.270	0.282	0.265	6.143		
C	Chloroform	0.429	0.474	0.436	0.452	0.454	0.433	0.455	0.432	0.439	0.452	0.446	3.208		
T	1-Bromopropane			0.037	0.051	0.047	0.046	0.048	0.047	0.048	0.052	0.047	9.309		
T	Bromochloromethane		0.131	0.140	0.136	0.134	0.136	0.138	0.134	0.135	0.143	0.137	2.506		
T	Tetrahydrofuran			0.037	0.037	0.035	0.035	0.035	0.037		0.042	0.037	6.632		
S	Dibromofluoromethane			0.192	0.213	0.221	0.222	0.228	0.211	0.230	0.247	0.220	7.264		
T	1,1,1-Trichloroethane		0.353	0.418	0.404	0.409	0.405	0.430	0.398	0.428	0.455	0.411	6.772		
T	Cyclohexane			0.444	0.457	0.479	0.481	0.503	0.486	0.482	0.505	0.480	4.363		
T	1,1-Dichloropropene			0.339	0.353	0.351	0.352	0.368	0.330	0.353	0.370	0.352	3.752		
T	Tert-Amyl-Methyl ether			0.526	0.487	0.486	0.485	0.488	0.496		0.529	0.499	3.912		
T	Carbon Tetrachloride		0.318	0.335	0.357	0.362	0.363	0.389	0.357	0.385	0.41	0.364	7.63917		
S	1,2-Dichloroethane-d4			0.209	0.22	0.215	0.223	0.214	0.206	0.222	0.243	0.2191	5.20847		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.307	0.297	0.281	0.286	0.286	0.306	0.296	0.305	0.324	0.2985	4.50732		
T	Benzene	1.133	1.057	1.046	1.001	1.012	0.994	1.017	0.923	0.857	0.8	0.984	10.0188		
T	Trichloroethene		0.368	0.314	0.267	0.272	0.262	0.272	0.249	0.255	0.27	0.2809	13.2826		
T	Methylcyclohexane					0.394	0.404	0.414	0.409	0.401	0.422	0.4073	2.41832		
C	1,2-Dichloropropane		0.234	0.258	0.268	0.28	0.278	0.291	0.276	0.279	0.291	0.2726	6.49559		
T	Bromodichloromethane		0.302	0.357	0.323	0.33	0.335	0.355	0.339	0.344	0.359	0.3383	5.45197		
T	1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.001	12.4415		
T	Dibromomethane		0.119	0.121	0.127	0.117	0.12	0.129	0.125	0.127	0.138	0.1247	5.15203		
T	2-Chloroethyl Vinyl Ether					0.104	0.103	0.117	0.116	0.117	0.126	0.1139	7.6344		
T	4-Methyl-2-Pentanone					0.043	0.048	0.051	0.052	0.052	0.057	0.0505	9.18805		
T	cis-1,3-Dichloropropene		0.371	0.358	0.365	0.359	0.368	0.392	0.378	0.375	0.386	0.3724	3.14004		

T	Dimethyl Disulfide					0.172	0.186	0.204	0.209	0.213	0.227	0.2017	9.86408	
I	Chlorobenzene-d5	ISTD												
S	Toluene-d8			1.285	1.243	1.202	1.261	1.223	1.083	1.173	1.179	1.206	5.24163	
C	Toluene		1.727	1.565	1.526	1.549	1.523	1.521	1.342	1.267	1.128	1.461	12.4282	
T	Ethyl Methacrylate			0.251	0.251	0.262	0.28	0.288	0.285	0.299	0.315	0.2788	8.25598	
T	Paraldehyde											0	0	
T	trans-1,3-Dichloropropene			0.375	0.408	0.425	0.439	0.451	0.436	0.455	0.468	0.4322	6.8352	
T	1,1,2-Trichloroethane		0.22	0.209	0.222	0.234	0.227	0.238	0.225	0.237	0.248	0.229	5.13936	
T	2-Hexanone					0.055	0.062	0.065	0.065	0.068	0.074	0.0647	10.2519	
T	1,3-Dichloropropane		0.361	0.393	0.415	0.394	0.395	0.414	0.391	0.408	0.416	0.3985	4.38549	
T	Tetrachloroethene		0.303	0.322	0.287	0.307	0.317	0.321	0.284	0.309	0.324	0.308	4.80669	
T	Dibromochloromethane		0.272	0.256	0.306	0.283	0.305	0.317	0.309	0.327	0.34	0.3016	8.85969	
T	1,2-Dibromoethane		0.194	0.213	0.224	0.228	0.221	0.226	0.221	0.233	0.243	0.2226	6.09499	
T	1-Chlorohexane		0.588	0.484	0.496	0.509	0.522	0.527	0.504	0.505	0.512	0.5163	5.78352	
P	Chlorobenzene		0.973	0.951	0.968	1.001	0.985	0.971	0.888	0.863	0.818	0.9354	6.74964	
T	1,1,1,2-Tetrachloroethane		0.276	0.283	0.325	0.341	0.341	0.36	0.335	0.357	0.372	0.3323	9.95609	
C	Ethylbenzene		0.52	0.558	0.509	0.543	0.535	0.541	0.498	0.519	0.528	0.528	3.49701	
T	m-,p-Xylene		0.66	0.665	0.664	0.68	0.652	0.655	0.58	0.552	0.506	0.624	9.8816	
T	o-Xylene			0.549	0.641	0.623	0.635	0.649	0.597	0.61	0.607	0.6141	5.19856	
T	Styrene		1.005	1.009	1.045	1.033	1.042	1.068	0.976	0.953	0.894	1.0029	5.40326	
P	Bromoform			0.154	0.17	0.176	0.175	0.186	0.183	0.199	0.21	0.1813	9.52014	
T	Isopropylbenzene		1.642	1.585	1.646	1.672	1.651	1.651	1.448	1.35	1.192	1.5372	11.0657	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.387	0.462	0.444	0.465	0.443	0.455	0.458	0.485	0.488	0.4542	6.48844	
S	p-Bromofluorobenzene			0.983	0.868	0.836	0.835	0.837	0.78	0.868	0.911	0.8647	7.01404	
T	1,2,3-Trichloropropane			0.099	0.133	0.137	0.121	0.128	0.126	0.133	0.143	0.1275	10.3847	
T	trans-1,4-Dichloro-2-Butene			0.092	0.112	0.14	0.147	0.16	0.165	0.176	0.191	0.148	22.1797	0.996
T	n-Propylbenzene		4.089	3.784	3.926	3.944	3.771	3.81	3.286	2.837		3.6808	11.2499	
T	Bromobenzene	0.855	0.749	0.738	0.784	0.729	0.711	0.739	0.707	0.718	0.725	0.7456	5.96592	
T	1,3,5-Trimethylbenzene		2.6	2.463	2.606	2.578	2.54	2.571	2.328	2.207	1.978	2.4301	8.96614	
T	2-Chlorotoluene		2.315	2.476	2.401	2.377	2.265	2.394	2.104	2.081	1.822	2.2483	9.27831	
T	4-Chlorotoluene		2.503	2.148	2.29	2.282	2.192	2.19	2.08	1.876	1.722	2.1425	10.7892	
T	a-Methylstyrene					1.329	1.324	1.364	1.339	1.296	1.266	1.3197	2.6258	
T	tert-Butylbenzene			0.522	0.535	0.533	0.52	0.538	0.498	0.526	0.54	0.5265	2.57613	
T	1,2,4-Trimethylbenzene		2.578	2.481	2.72	2.608	2.588	2.633	2.38	2.208	1.964	2.4621	9.79915	
T	sec-Butylbenzene			3.249	3.275	3.286	3.228	3.272	2.843	2.591	2.243	2.9984	13.2796	
T	p-Isopropyltoluene			2.713	2.812	2.791	2.738	2.805	2.468	2.285	2.015	2.5785	11.4555	
T	1,3-Dichlorobenzene		1.659	1.472	1.547	1.485	1.459	1.488	1.388	1.358	1.302	1.462	7.21195	
T	1,4-Dichlorobenzene	1.816	1.821	1.439	1.577	1.509	1.434	1.478	1.375	1.345	1.276	1.5071	12.2459	
T	n-Butylbenzene			2.506	2.674	2.705	2.642	2.745	2.433	2.235	1.951	2.4864	11.0376	
T	1,2-Dichlorobenzene	1.389	1.322	1.317	1.311	1.314	1.285	1.318	1.249	1.223	1.182	1.2908	4.55521	
T	1,2-Dibromo-3-Chloropropane				0.077	0.067	0.073	0.082	0.08	0.087	0.091	0.0795	10.0106	
T	1,2,4-Trichlorobenzene		1.183	0.94	0.996	0.951	0.974	1.023	0.967	0.966	0.94	0.9933	7.63182	
T	Hexachlorobutadiene		0.59	0.517	0.49	0.495	0.488	0.506	0.471	0.488	0.505	0.5055	6.81586	
T	Naphthalene		1.141	1.257	1.216	1.207	1.264	1.417	1.392	1.384	1.321	1.2888	7.39825	
T	1,2,3-Trichlorobenzene	0.945	1.047	0.737	0.843	0.819	0.821	0.866	0.841	0.831	0.821	0.8572	9.80847	

Fri Jul 31 14:00:52 2015

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15081073 Run Date: 07/30/2015 Sample ID: WG533051-12
Instrument ID: HPMS8 Run Time: 21:20 Method: 8260B
File ID: 8M406492 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG533051 Cal ID: HPMS8 - 30-JUL-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	48.3	ug/L	0.430	3.50	20	
1,1-Dichloroethene	CCC	50.0	44.0	ug/L	0.345	12.0	20	
1,2-Dichloropropane	CCC	50.0	49.2	ug/L	0.268	1.60	20	
Ethylbenzene	CCC	50.0	49.1	ug/L	0.519	1.80	20	
Toluene	CCC	50.0	48.3	ug/L	1.41	3.40	20	
Vinyl Chloride	CCC	50.0	47.8	ug/L	0.300	4.30	20	
Bromoform	SPCC	50.0	49.0	ug/L	0.178	2.00	20	
Chlorobenzene	SPCC	50.0	50.7	ug/L	0.948	1.40	20	
Chloromethane	SPCC	50.0	46.9	ug/L	0.400	6.20	20	
1,1-Dichloroethane	SPCC	50.0	46.9	ug/L	0.463	6.30	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.3	ug/L	0.448	1.50	20	
Acetone		50.0	50.1	ug/L	0.0316	0.100	20	
Benzene		50.0	48.0	ug/L	0.945	3.90	20	
Bromobenzene		50.0	47.7	ug/L	0.711	4.60	20	
Bromochloromethane		50.0	48.3	ug/L	0.132	3.40	20	
Bromodichloromethane		50.0	47.5	ug/L	0.321	5.10	20	
Bromomethane		50.0	45.7	ug/L	0.191	8.70	20	
2-Butanone		50.0	52.9	ug/L	0.0565	5.80	20	
n-Butylbenzene		50.0	51.6	ug/L	2.57	3.20	20	
sec-Butylbenzene		50.0	53.3	ug/L	3.20	6.60	20	
tert-Butylbenzene		50.0	52.0	ug/L	0.548	4.00	20	
Carbon Disulfide		50.0	34.2	ug/L	0.549	31.6	20	*
Carbon Tetrachloride		50.0	49.6	ug/L	0.361	0.700	20	
Dibromochloromethane		50.0	47.9	ug/L	0.289	4.10	20	
Chloroethane		50.0	50.6	ug/L	0.198	1.20	20	
2-Chlorotoluene		50.0	54.0	ug/L	2.43	8.10	20	
4-Chlorotoluene		50.0	52.5	ug/L	2.25	5.00	20	
1,2-Dibromo-3-Chloropropane		50.0	46.3	ug/L	0.0736	7.50	20	
1,2-Dibromoethane		50.0	47.5	ug/L	0.211	5.10	20	
Dibromomethane		50.0	47.1	ug/L	0.118	5.80	20	
1,2-Dichlorobenzene		50.0	50.4	ug/L	1.30	0.800	20	
1,3-Dichlorobenzene		50.0	50.0	ug/L	1.46	0	20	
1,4-Dichlorobenzene		50.0	46.7	ug/L	1.41	6.70	20	
Dichlorodifluoromethane		50.0	49.9	ug/L	0.381	0.300	20	
1,2-Dichloroethane		50.0	46.4	ug/L	0.277	7.20	20	
cis-1,2-Dichloroethene		50.0	47.6	ug/L	0.253	4.70	20	
trans-1,2-Dichloroethene		50.0	46.6	ug/L	0.344	6.70	20	
1,3-Dichloropropane		50.0	48.7	ug/L	0.388	2.60	20	
2,2-Dichloropropane		50.0	46.0	ug/L	0.350	8.00	20	
cis-1,3-Dichloropropene		50.0	50.3	ug/L	0.375	0.600	20	
trans-1,3-Dichloropropene		50.0	47.1	ug/L	0.407	5.80	20	
1,1-Dichloropropene		50.0	46.6	ug/L	0.328	6.90	20	

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Version 1.5 PDF File ID: 4349742
Report generated 08/27/2015 16:26

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15081073 Run Date: 07/30/2015 Sample ID: WG533051-12
Instrument ID: HPMS8 Run Time: 21:20 Method: 8260B
File ID: 8M406492 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG533051 Cal ID: HPMS8 - 30-JUL-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	52.8	ug/L	0.0683	5.60	20	
Hexachlorobutadiene		50.0	46.1	ug/L	0.466	7.80	20	
Isopropylbenzene		50.0	51.4	ug/L	1.58	2.80	20	
p-Isopropyltoluene		50.0	50.7	ug/L	2.62	1.40	20	
4-Methyl-2-Pentanone		50.0	50.6	ug/L	0.0511	1.20	20	
Methylene Chloride		50.0	46.2	ug/L	0.231	7.50	20	
Naphthalene		50.0	50.7	ug/L	1.31	1.30	20	
n-Propylbenzene		50.0	51.1	ug/L	3.76	2.20	20	
Styrene		50.0	50.0	ug/L	1.00	0	20	
1,1,1,2-Tetrachloroethane		50.0	49.1	ug/L	0.326	1.80	20	
Tetrachloroethene		50.0	47.9	ug/L	0.295	4.20	20	
1,2,3-Trichlorobenzene		50.0	47.3	ug/L	0.811	5.40	20	
1,2,4-Trichlorobenzene		50.0	47.7	ug/L	0.947	4.60	20	
1,1,1-Trichloroethane		50.0	48.9	ug/L	0.402	2.20	20	
1,1,2-Trichloroethane		50.0	47.4	ug/L	0.217	5.20	20	
Trichloroethene		50.0	43.8	ug/L	0.246	12.5	20	
Trichlorofluoromethane		50.0	45.9	ug/L	0.372	8.20	20	
1,2,3-Trichloropropane		50.0	48.2	ug/L	0.123	3.60	20	
1,2,4-Trimethylbenzene		50.0	51.3	ug/L	2.53	2.60	20	
1,3,5-Trimethylbenzene		50.0	52.2	ug/L	2.54	4.40	20	
o-Xylene		50.0	51.3	ug/L	0.631	2.70	20	
m-,p-Xylene		100	100	ug/L	0.626	0.200	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4349742
Report generated 08/27/2015 16:26

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15081073 Run Date: 08/21/2015 Sample ID: WG536090-02
Instrument ID: HPMS8 Run Time: 15:07 Method: 8260B
File ID: 8M406934 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG536091 Cal ID: HPMS8 - 30-JUL-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	51.0	ug/L	0.455	1.96	20	
1,1-Dichloroethene	CCC	50.0	51.4	ug/L	0.404	2.80	20	
1,2-Dichloropropane	CCC	50.0	52.9	ug/L	0.288	5.74	20	
Ethylbenzene	CCC	50.0	51.9	ug/L	0.548	3.70	20	
Toluene	CCC	50.0	51.1	ug/L	1.49	2.13	20	
Vinyl Chloride	CCC	50.0	57.3	ug/L	0.359	14.6	20	
Bromoform	SPCC	50.0	51.3	ug/L	0.186	2.52	20	
Chlorobenzene	SPCC	50.0	52.0	ug/L	0.973	3.99	20	
Chloromethane	SPCC	50.0	49.3	ug/L	0.420	1.42	20	
1,1-Dichloroethane	SPCC	50.0	52.1	ug/L	0.515	4.24	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.2	ug/L	0.447	1.66	20	
Xylenes		150	157	ug/L	0.647	4.47	20	
Acetone		50.0	50.0	ug/L	0.0315	0.0606	20	
Benzene		50.0	52.4	ug/L	1.03	4.80	20	
Bromobenzene		50.0	47.5	ug/L	0.708	5.06	20	
Bromochloromethane		50.0	50.6	ug/L	0.138	1.11	20	
Bromodichloromethane		50.0	50.4	ug/L	0.341	0.772	20	
Bromomethane		50.0	34.4	ug/L	0.144	31.2	20	*
2-Butanone		50.0	52.9	ug/L	0.0564	5.73	20	
n-Butylbenzene		50.0	51.6	ug/L	2.57	3.16	20	
sec-Butylbenzene		50.0	51.8	ug/L	3.11	3.67	20	
tert-Butylbenzene		50.0	49.8	ug/L	0.524	0.460	20	
Carbon Disulfide		50.0	50.5	ug/L	0.810	1.04	20	
Carbon Tetrachloride		50.0	51.9	ug/L	0.378	3.78	20	
Dibromochloromethane		50.0	50.0	ug/L	0.302	0.0514	20	
Chloroethane		50.0	52.4	ug/L	0.205	4.86	20	
2-Chlorotoluene		50.0	50.4	ug/L	2.27	0.803	20	
4-Chlorotoluene		50.0	50.1	ug/L	2.15	0.286	20	
1,2-Dibromo-3-Chloropropane		50.0	44.8	ug/L	0.0712	10.4	20	
1,2-Dibromoethane		50.0	47.8	ug/L	0.213	4.46	20	
Dibromomethane		50.0	50.3	ug/L	0.126	0.667	20	
1,2-Dichlorobenzene		50.0	49.9	ug/L	1.29	0.296	20	
1,3-Dichlorobenzene		50.0	51.1	ug/L	1.49	2.17	20	
1,4-Dichlorobenzene		50.0	48.3	ug/L	1.46	3.45	20	
Dichlorodifluoromethane		50.0	54.9	ug/L	0.419	9.81	20	
1,2-Dichloroethane		50.0	48.1	ug/L	0.287	3.86	20	
cis-1,2-Dichloroethene		50.0	52.8	ug/L	0.280	5.59	20	
trans-1,2-Dichloroethene		50.0	53.1	ug/L	0.391	6.30	20	
1,3-Dichloropropane		50.0	49.4	ug/L	0.394	1.17	20	
2,2-Dichloropropane		50.0	52.9	ug/L	0.403	5.89	20	
cis-1,3-Dichloropropene		50.0	51.5	ug/L	0.384	3.07	20	
trans-1,3-Dichloropropene		50.0	49.5	ug/L	0.428	1.01	20	

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15081073 Run Date: 08/21/2015 Sample ID: WG536090-02
Instrument ID: HPMS8 Run Time: 15:07 Method: 8260B
File ID: 8M406934 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG536091 Cal ID: HPMS8 - 30-JUL-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	51.8	ug/L	0.365	3.64	20	
2-Hexanone		50.0	47.2	ug/L	0.0611	5.53	20	
Hexachlorobutadiene		50.0	45.9	ug/L	0.464	8.23	20	
Isopropylbenzene		50.0	52.7	ug/L	1.62	5.44	20	
p-Isopropyltoluene		50.0	51.3	ug/L	2.64	2.54	20	
4-Methyl-2-Pentanone		50.0	47.6	ug/L	0.0481	4.85	20	
Methylene Chloride		50.0	50.1	ug/L	0.251	0.168	20	
Naphthalene		50.0	46.5	ug/L	1.20	6.90	20	
n-Propylbenzene		50.0	49.5	ug/L	3.65	0.908	20	
Styrene		50.0	52.4	ug/L	1.05	4.76	20	
1,1,1,2-Tetrachloroethane		50.0	50.9	ug/L	0.338	1.75	20	
Tetrachloroethene		50.0	52.4	ug/L	0.323	4.84	20	
1,2,3-Trichlorobenzene		50.0	46.5	ug/L	0.797	7.01	20	
1,2,4-Trichlorobenzene		50.0	47.6	ug/L	0.945	4.84	20	
1,1,1-Trichloroethane		50.0	50.4	ug/L	0.415	0.830	20	
1,1,2-Trichloroethane		50.0	49.3	ug/L	0.226	1.41	20	
Trichloroethene		50.0	47.9	ug/L	0.269	4.19	20	
Trichlorofluoromethane		50.0	50.8	ug/L	0.412	1.53	20	
1,2,3-Trichloropropane		50.0	46.4	ug/L	0.118	7.12	20	
1,2,4-Trimethylbenzene		50.0	51.3	ug/L	2.53	2.65	20	
1,3,5-Trimethylbenzene		50.0	50.9	ug/L	2.47	1.70	20	
o-Xylene		50.0	52.3	ug/L	0.643	4.67	20	
m-,p-Xylene		100	104	ug/L	0.651	4.37	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
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Report generated 08/27/2015 16:26

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15081073
Run Date: 08/24/2015
Sample ID: WG536184-02
Instrument ID: HPMS8
Run Time: 12:24
Method: 8260B
File ID: 8M406964
Analyst: TMB
QC Key: DOD4
Workgroup (AAB#): WG536185
Cal ID: HPMS8 - 30-JUL-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.5	ug/L	0.450	0.949	20	
1,1-Dichloroethene	CCC	50.0	48.4	ug/L	0.380	3.15	20	
1,2-Dichloropropane	CCC	50.0	54.0	ug/L	0.295	8.09	20	
Ethylbenzene	CCC	50.0	50.7	ug/L	0.535	1.36	20	
Toluene	CCC	50.0	51.3	ug/L	1.50	2.66	20	
Vinyl Chloride	CCC	50.0	56.9	ug/L	0.357	13.9	20	
Bromoform	SPCC	50.0	53.6	ug/L	0.195	7.28	20	
Chlorobenzene	SPCC	50.0	52.6	ug/L	0.984	5.16	20	
Chloromethane	SPCC	50.0	51.7	ug/L	0.440	3.30	20	
1,1-Dichloroethane	SPCC	50.0	50.3	ug/L	0.497	0.534	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	56.7	ug/L	0.515	13.3	20	
Trichloroethene		50.0	48.0	ug/L	0.269	4.07	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4349744
Report generated 08/27/2015 16:26

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15081073
Instrument ID: HPMS8
Workgroup (AAB#): WG536091

ICAL CCV Number: WG533051-08
CAL ID: HPMS8-30-JUL-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG533051-08	NA	NA	356726	645629	905123
Upper Limit	NA	NA	713452	1291258	1810246
Lower Limit	NA	NA	178363	322815	452562
L15081073-01	1.00	01	368526	668953	878709
L15081073-03	5.00	DL01	319622	607422	819762
L15081073-05	1.00	01	306900	580044	757163
L15081073-06	1.00	01	300138	559772	736928
L15081073-07	1.00	01	344544	630068	829734
L15081073-08	1.00	01	324939	611503	791388
WG536091-01	1.00	01	345303	634702	819252
WG536091-02	1.00	01	372422	636539	845633
WG536091-03	1.00	01	379376	665879	880255

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4358532
Report generated 08/27/2015 16:27

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15081073
Instrument ID: HPMS8
Workgroup (AAB#): WG536185

ICAL CCV Number: WG533051-08
CAL ID: HPMS8-30-JUL-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG533051-08	NA	NA	356726	645629	905123
Upper Limit	NA	NA	713452	1291258	1810246
Lower Limit	NA	NA	178363	322815	452562
L15081073-03	100	DL02	356833	675353	853778
WG536185-01	1.00	01	430985	793027	1038494
WG536185-02	1.00	01	441559	820848	1063055
WG536185-03	1.00	01	452665	821420	1085349

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4358532
Report generated 08/27/2015 16:27

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15081073
Instrument ID: HPMS8
Workgroup (AAB#): WG536091

ICAL CCV Number: WG533051-08
CAL ID: HPMS8-30-JUL-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG533051-08	NA	NA	17.6	14.58	10.71
Upper Limit	NA	NA	18.1	15.08	11.21
Lower Limit	NA	NA	17.1	14.08	10.21
L15081073-01	1.00	01	17.6	14.58	10.71
L15081073-03	5.00	DL01	17.6	14.58	10.71
L15081073-05	1.00	01	17.6	14.58	10.71
L15081073-06	1.00	01	17.6	14.58	10.71
L15081073-07	1.00	01	17.6	14.58	10.71
L15081073-08	1.00	01	17.6	14.58	10.71
WG536091-01	1.00	01	17.6	14.58	10.71
WG536091-02	1.00	01	17.6	14.58	10.71
WG536091-03	1.00	01	17.6	14.58	10.71

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4358533
Report generated: 08/27/2015 16:27

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15081073
Instrument ID: HPMS8
Workgroup (AAB#): WG536185

ICAL CCV Number: WG533051-08
CAL ID: HPMS8-30-JUL-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG533051-08	NA	NA	17.6	14.58	10.71
Upper Limit	NA	NA	18.1	15.08	11.21
Lower Limit	NA	NA	17.1	14.08	10.21
L15081073-03	100	DL02	17.6	14.58	10.71
WG536185-01	1.00	01	17.6	14.58	10.71
WG536185-02	1.00	01	17.6	14.58	10.71
WG536185-03	1.00	01	17.6	14.58	10.71

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4358533
Report generated: 08/27/2015 16:27

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082115\8M406950.D Vial: 18
Acq On : 21 Aug 2015 22:47 Operator: TMB
Sample : L15081073-01 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 24 08:26:15 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	878709	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	668953	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	368526	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	193761	25.0246 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.08%		
43) 1,2-Dichloroethane-d4	10.31	65	176757	22.9568 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 91.84%		
58) Toluene-d8	12.69	98	807363	25.0185 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.08%		
80) p-Bromofluorobenzene	16.08	95	309944	24.3151 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.28%		

Target Compounds					Qvalue
3) Chloromethane	3.62	50	3336	0.2227 ug/L #	12
13) Acetone	6.25	43	1547	1.3961 ug/L #	73
32) cis-1,2-Dichloroethene	9.17	96	70446	7.5629 ug/L	78
47) Trichloroethene	11.22	130	118209	11.9747 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M406950.D 8260WT.M Mon Aug 24 08:26:15 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082115\8M406950.D Vial: 18
Acq On : 21 Aug 2015 22:47 Operator: TMB
Sample : L15081073-01 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 24 8:26 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

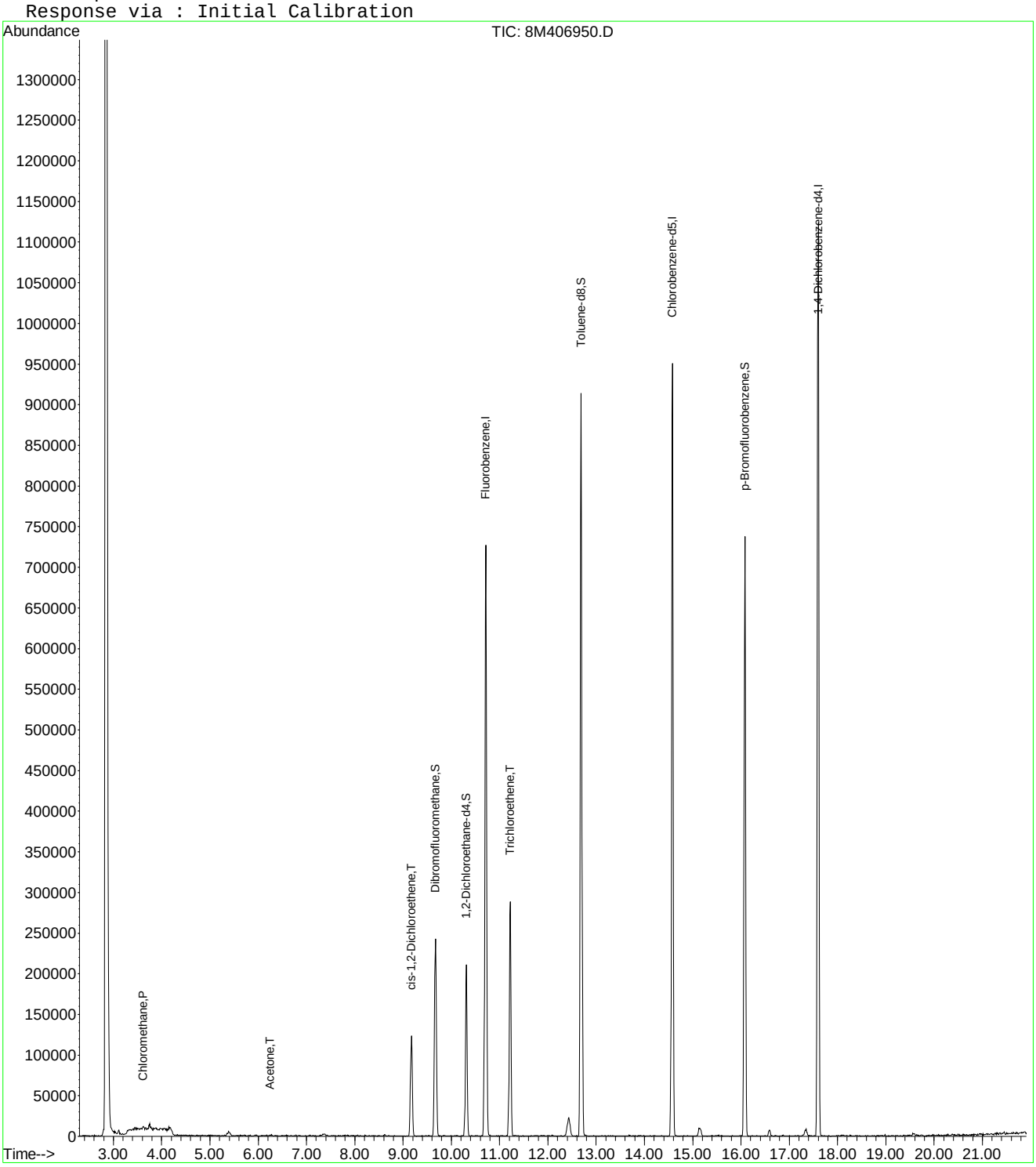

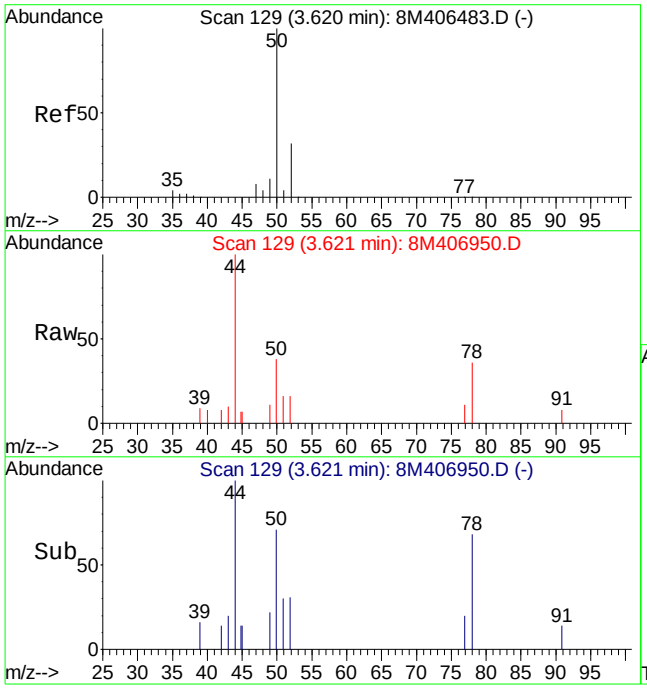

#3
Chloromethane
Concen: 0.22 ug/L
RT: 3.62 min Scan# 129
Delta R.T. 0.00 min
Lab File: 8M406950.D
Acq: 21 Aug 2015 22:47

Tgt Ion: 50 Resp: 3336

Ion	Ratio	Lower	Upper
50	100		
52	80.9	19.2	44.8#

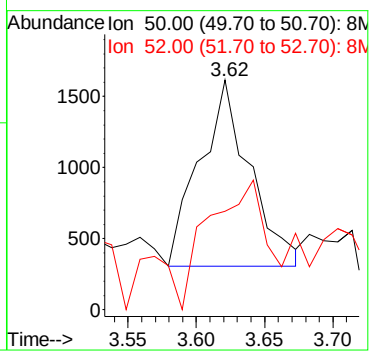

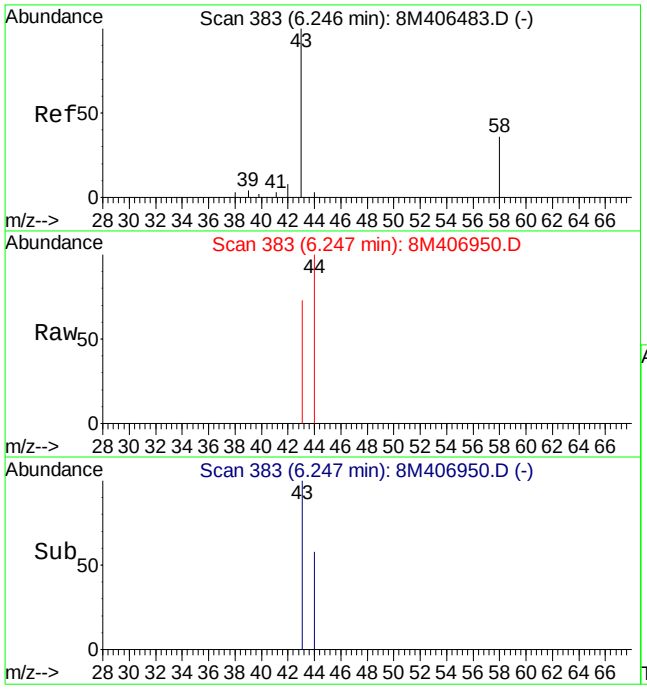

#13
Acetone
Concen: 1.40 ug/L
RT: 6.25 min Scan# 383
Delta R.T. 0.00 min
Lab File: 8M406950.D
Acq: 21 Aug 2015 22:47

Tgt Ion: 43 Resp: 1547

Ion	Ratio	Lower	Upper
43	100		
58	13.1	16.4	38.2#

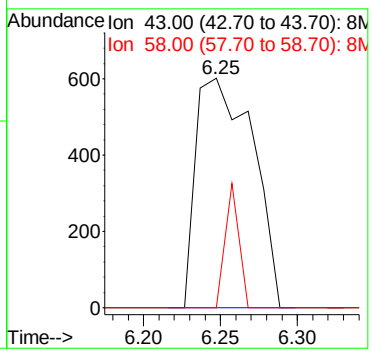

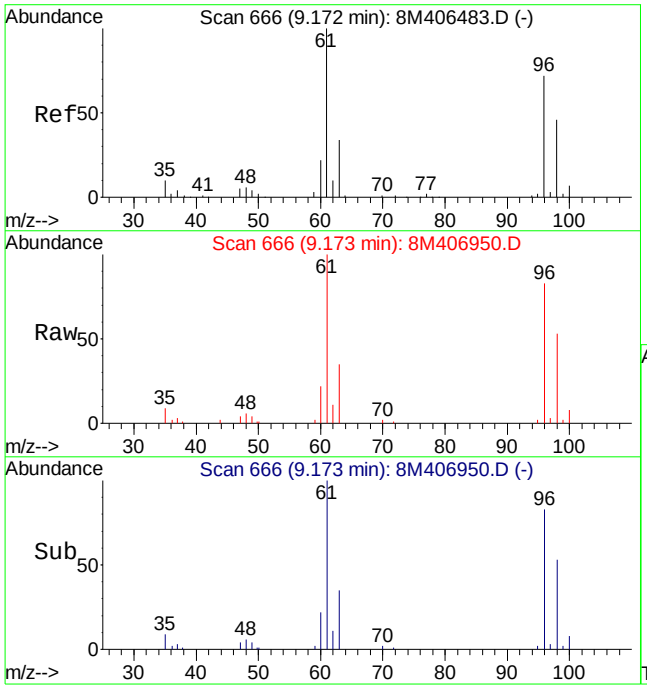

#32
cis-1,2-Dichloroethene
Concen: 7.56 ug/L
RT: 9.17 min Scan# 666
Delta R.T. 0.00 min
Lab File: 8M406950.D
Acq: 21 Aug 2015 22:47

Tgt Ion: 96 Resp: 70446

Ion	Ratio	Lower	Upper
96	100		
61	136.7	99.8	233.0

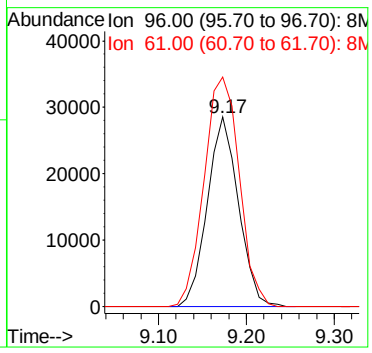

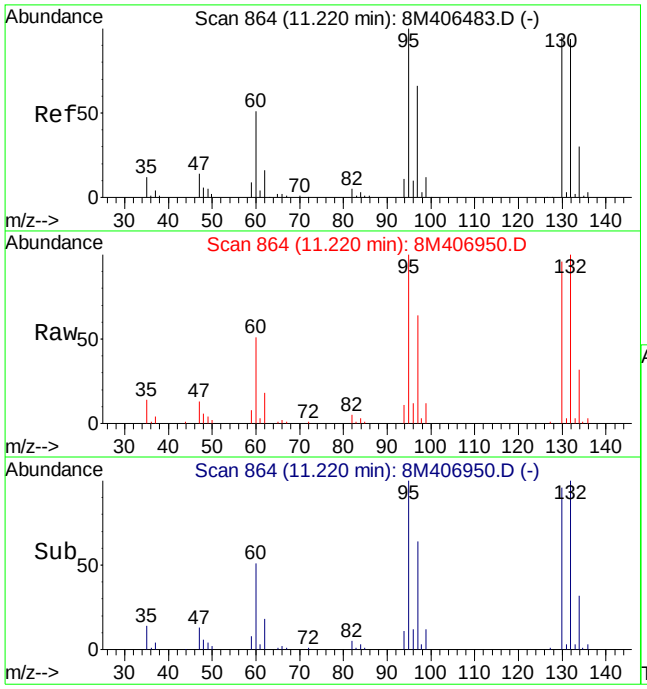

#47
Trichloroethene
Concen: 11.97 ug/L
RT: 11.22 min Scan# 864
Delta R.T. 0.00 min
Lab File: 8M406950.D
Acq: 21 Aug 2015 22:47

Tgt Ion:130 Resp: 118209

Ion	Ratio	Lower	Upper
130	100		
132	98.6	59.0	137.6
95	106.9	65.0	151.8

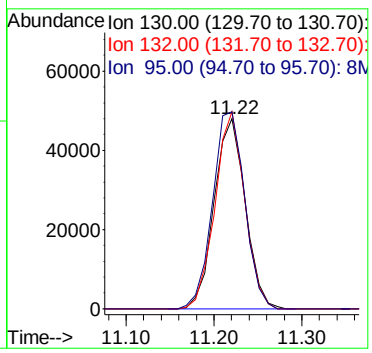

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082115\8M406952.D Vial: 20
Acq On : 21 Aug 2015 23:45 Operator: TMB
Sample : L15081073-03 A 5X 826-LOW Inst : HPMS8
Misc : 1,5 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 24 08:26:17 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	819762	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	607422	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	319622	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	178485	24.7093 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.84%		
43) 1,2-Dichloroethane-d4	10.31	65	161715	22.5134 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 90.04%		
58) Toluene-d8	12.69	98	732417	24.9952 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.00%		
80) p-Bromofluorobenzene	16.08	95	271548	24.5625 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.24%		

Target Compounds

					Qvalue
3) Chloromethane	3.61	50	2107	0.1507 ug/L #	72
4) Vinyl Chloride	3.85	62	4750	0.4621 ug/L	82
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	15603	2.0560 ug/L	60
13) Acetone	6.26	43	213	0.2061 ug/L #	48
14) 1,1-Dichloroethene	6.47	61	34671	2.6929 ug/L	99
19) Methylene Chloride	7.27	84	1003	0.1223 ug/L	93
20) Carbon Disulfide	7.29	76	8225	0.3128 ug/L	96
23) trans-1,2-Dichloroethene	7.71	61	5645	0.4675 ug/L	95
27) 1,1-Dichloroethane	8.34	63	22759	1.4053 ug/L	96
32) cis-1,2-Dichloroethene	9.17	96	319531	36.7706 ug/L	81
33) Chloroform	9.38	83	8117	0.5554 ug/L	87
39) Cyclohexane	9.94	56	8151	0.5184 ug/L	97
45) 1,2-Dichloroethane	10.43	62	61692	6.3021 ug/L	94
46) Benzene	10.48	78	4607	0.1428 ug/L #	1
47) Trichloroethene	11.22	130	8586416	932.3563 ug/L	99
48) Methylcyclohexane	11.22	83	176470	13.2141 ug/L #	1
66) Tetrachloroethene	13.61	164	9267	1.2382 ug/L	94

(#) = qualifier out of range (m) = manual integration
8M406952.D 8260WT.M Mon Aug 24 08:26:17 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082115\8M406952.D Vial: 20
Acq On : 21 Aug 2015 23:45 Operator: TMB
Sample : L15081073-03 A 5X 826-LOW Inst : HPMS8
Misc : 1,5 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 24 8:26 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

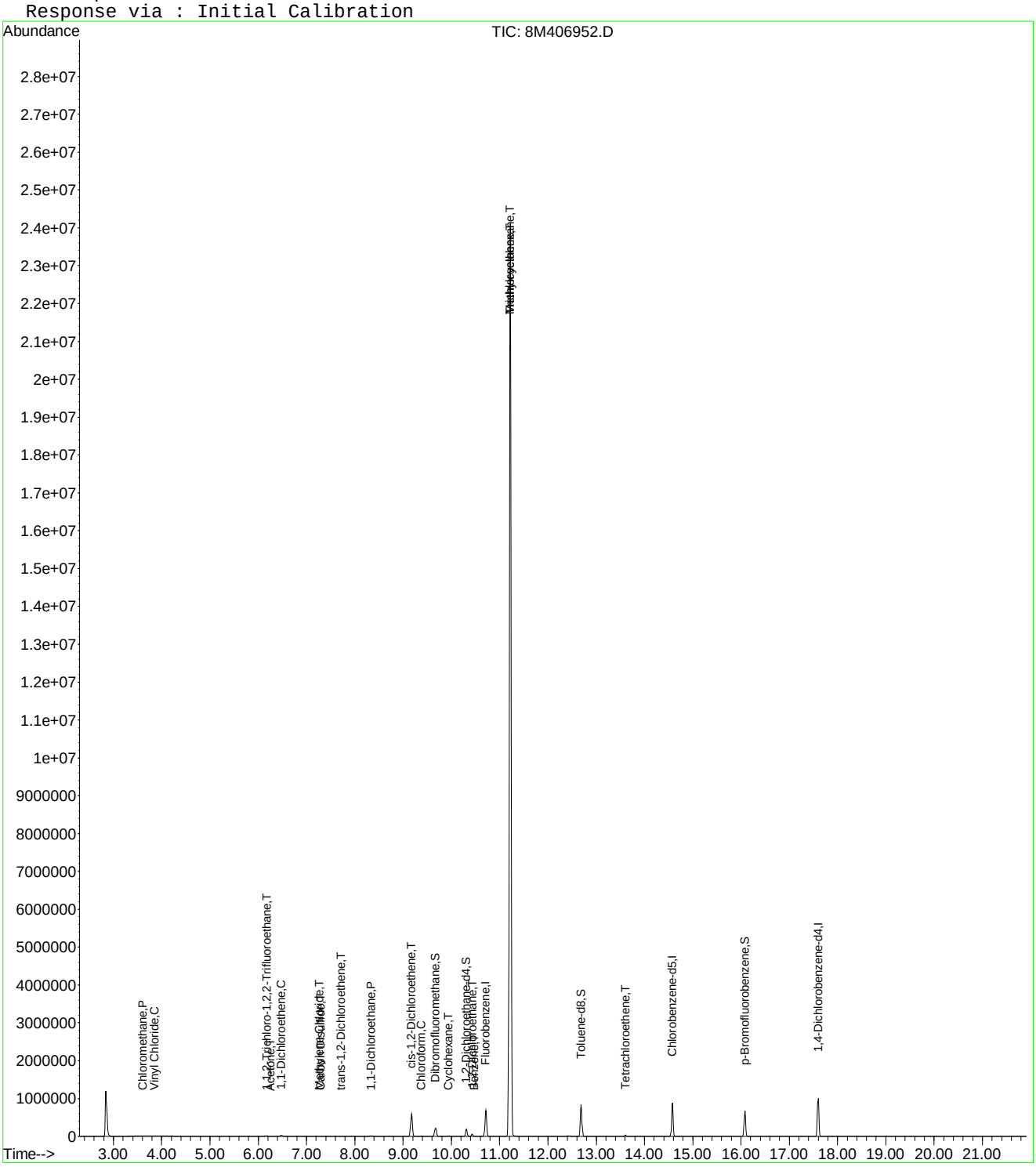

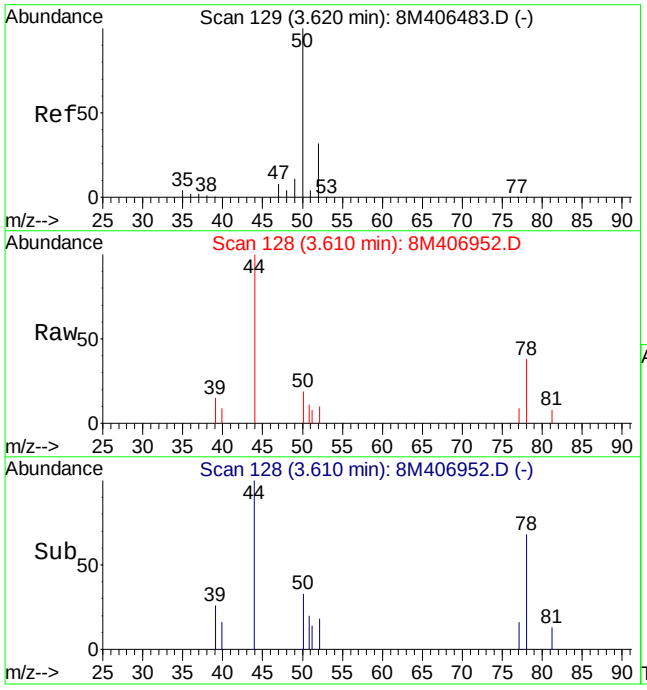

#3
Chloromethane
Concen: 0.15 ug/L
RT: 3.61 min Scan# 128
Delta R.T. -0.01 min
Lab File: 8M406952.D
Acq: 21 Aug 2015 23:45

Tgt Ion: 50 Resp: 2107

Ion	Ratio	Lower	Upper
50	100		
52	16.5	19.2	44.8#

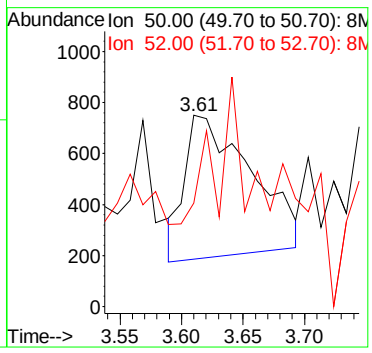

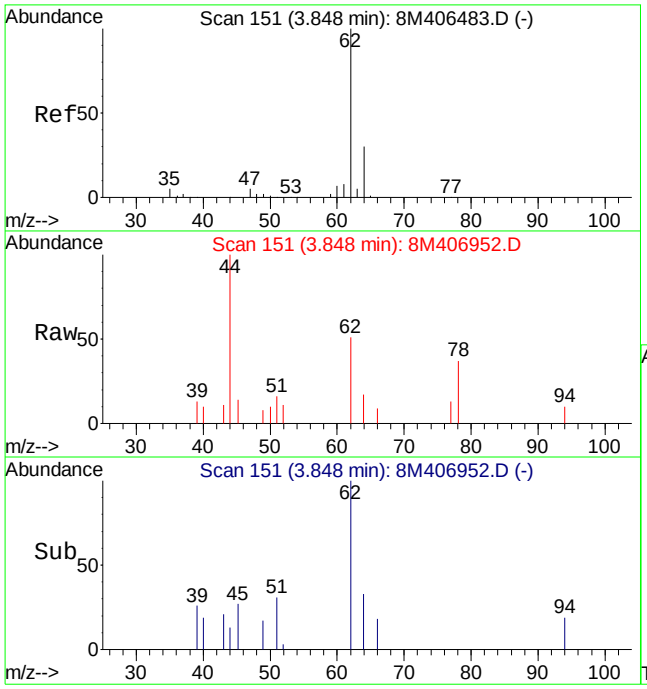

#4
Vinyl Chloride
Concen: 0.46 ug/L
RT: 3.85 min Scan# 151
Delta R.T. 0.00 min
Lab File: 8M406952.D
Acq: 21 Aug 2015 23:45

Tgt Ion: 62 Resp: 4750

Ion	Ratio	Lower	Upper
62	100		
64	40.1	18.2	42.6

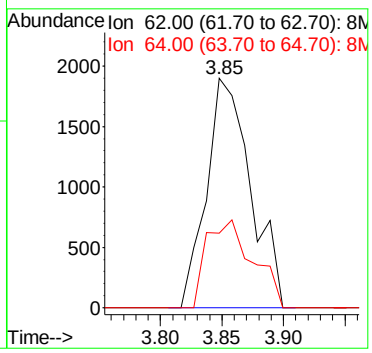

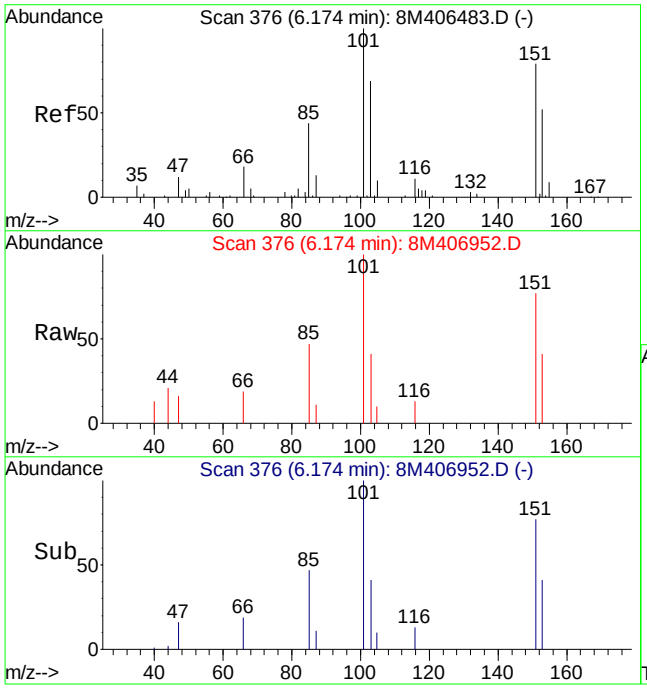

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 2.06 ug/L
RT: 6.17 min Scan# 376
Delta R.T. 0.01 min
Lab File: 8M406952.D
Acq: 21 Aug 2015 23:45

Tgt Ion:101 Resp: 15603

Ion	Ratio	Lower	Upper
101	100		
151	43.7	38.1	118.1

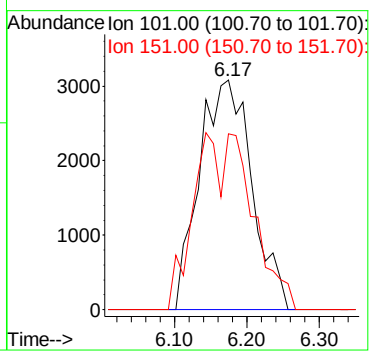

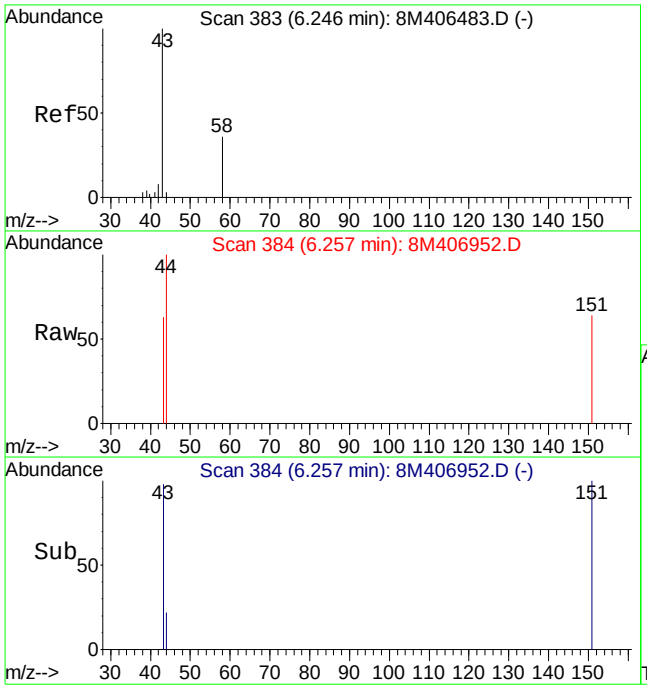

#13
Acetone
Concen: 0.21 ug/L
RT: 6.26 min Scan# 384
Delta R.T. 0.01 min
Lab File: 8M406952.D
Acq: 21 Aug 2015 23:45

Tgt Ion: 43 Resp: 213

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

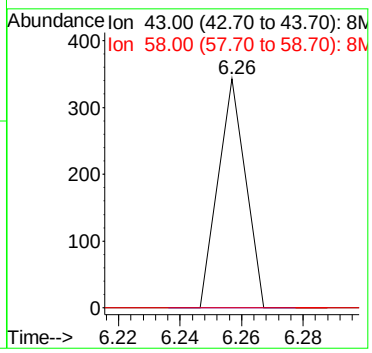

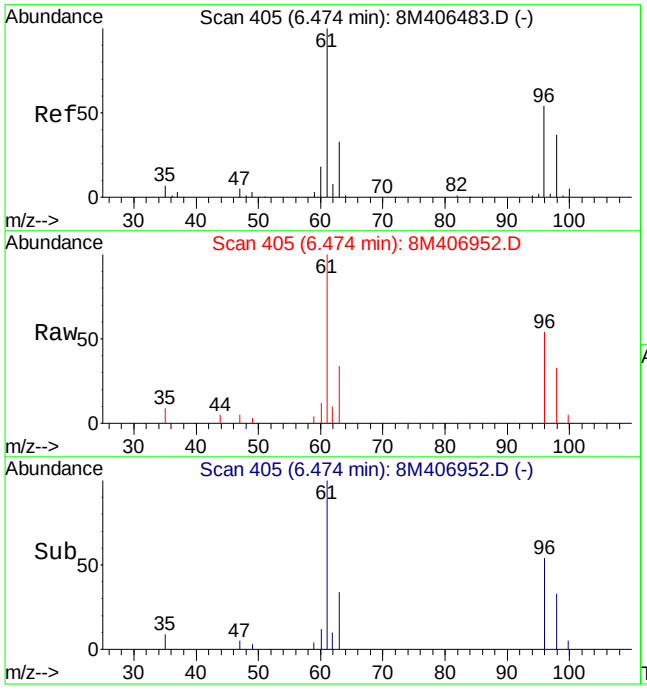

#14
1,1-Dichloroethene
Concen: 2.69 ug/L
RT: 6.47 min Scan# 405
Delta R.T. 0.00 min
Lab File: 8M406952.D
Acq: 21 Aug 2015 23:45

Tgt Ion: 61 Resp: 34671

Ion	Ratio	Lower	Upper
61	100		
96	54.8	32.3	75.3

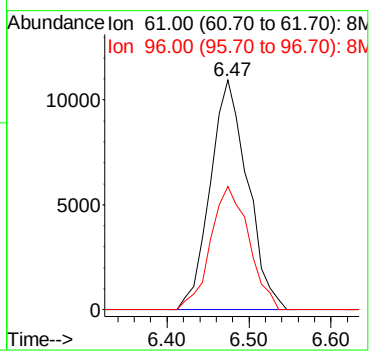

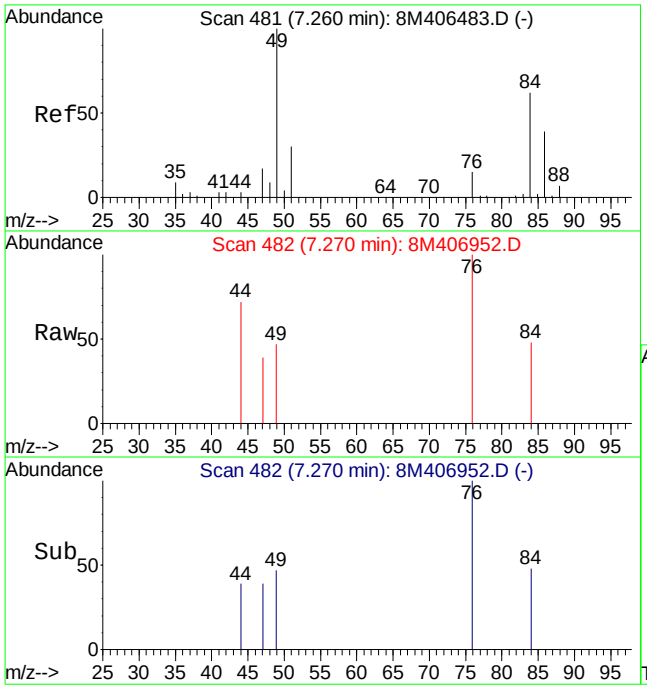

#19
Methylene Chloride
Concen: 0.12 ug/L
RT: 7.27 min Scan# 482
Delta R.T. 0.01 min
Lab File: 8M406952.D
Acq: 21 Aug 2015 23:45

Tgt Ion: 84 Resp: 1003

Ion	Ratio	Lower	Upper
84	100		
49	173.6	98.6	230.2

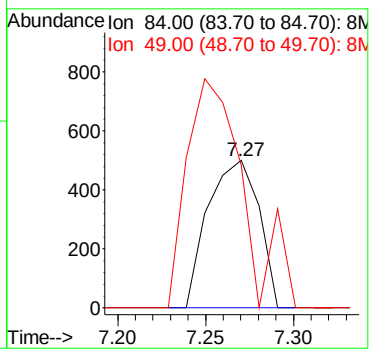

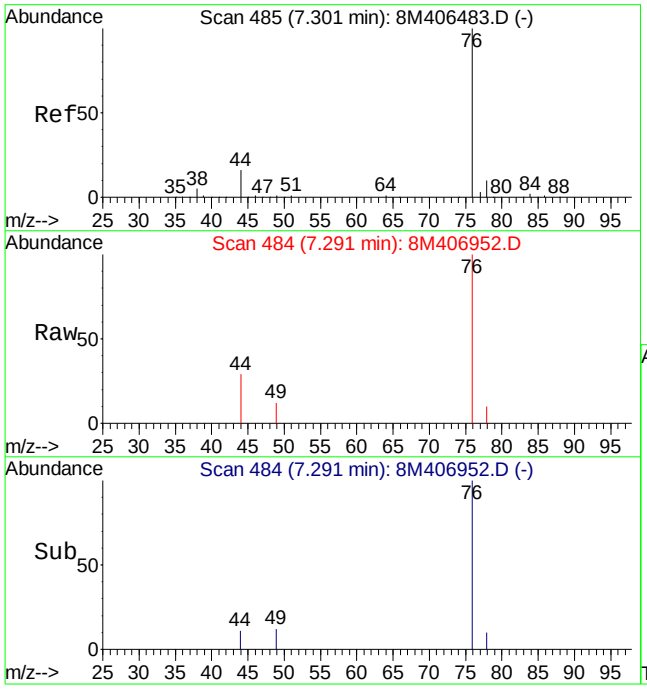

#20
Carbon Disulfide
Concen: 0.31 ug/L
RT: 7.29 min Scan# 484
Delta R.T. -0.01 min
Lab File: 8M406952.D
Acq: 21 Aug 2015 23:45

Tgt Ion: 76 Resp: 8225

Ion	Ratio	Lower	Upper
76	100		
78	8.0	5.7	13.3

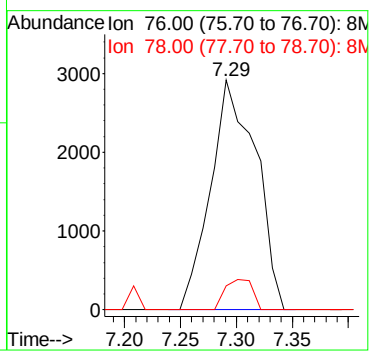

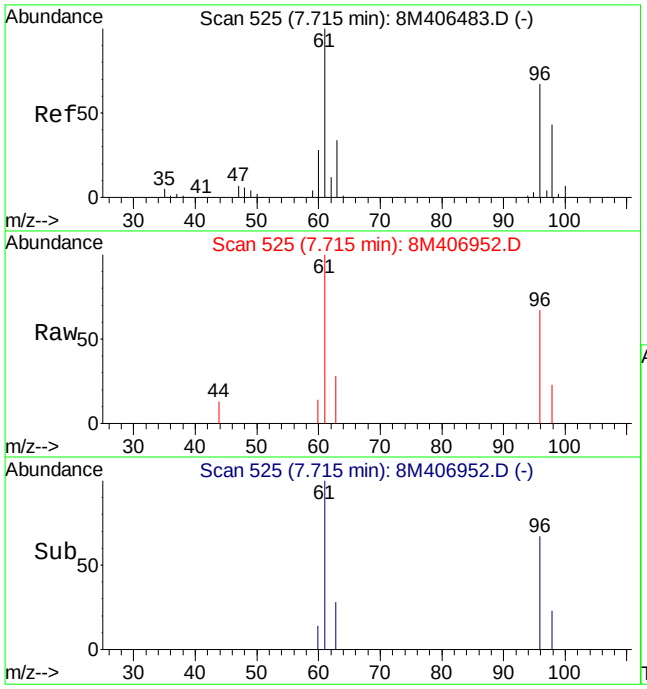

#23
trans-1,2-Dichloroethene
Concen: 0.47 ug/L
RT: 7.71 min Scan# 525
Delta R.T. 0.00 min
Lab File: 8M406952.D
Acq: 21 Aug 2015 23:45

Tgt Ion: 61 Resp: 5645

Ion	Ratio	Lower	Upper
61	100		
96	66.4	37.4	87.4

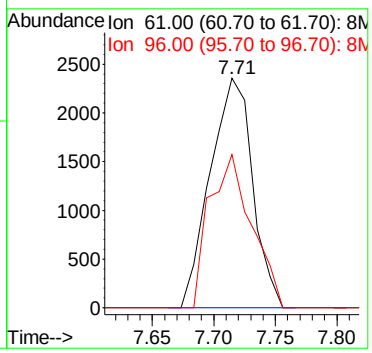

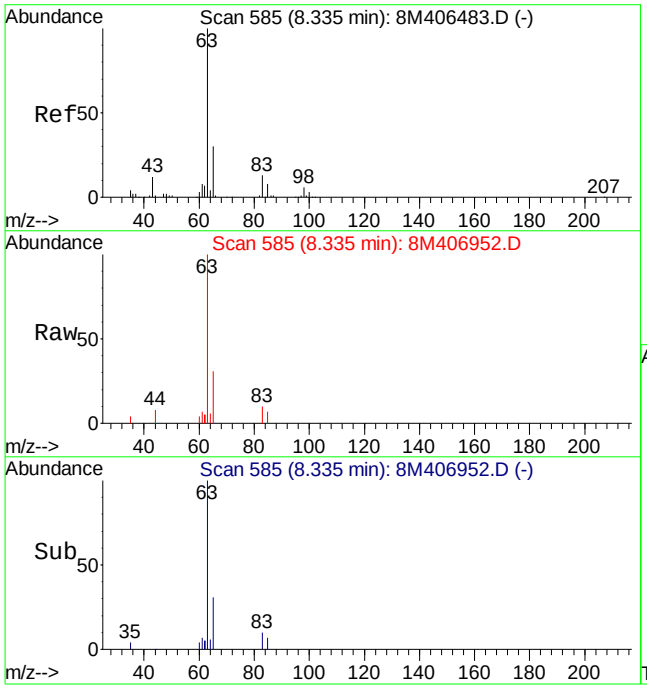

#27
1,1-Dichloroethane
Concen: 1.41 ug/L
RT: 8.34 min Scan# 585
Delta R.T. 0.00 min
Lab File: 8M406952.D
Acq: 21 Aug 2015 23:45

Tgt Ion: 63 Resp: 22759

Ion	Ratio	Lower	Upper
63	100		
65	33.5	18.4	43.0
83	11.7	7.7	18.1

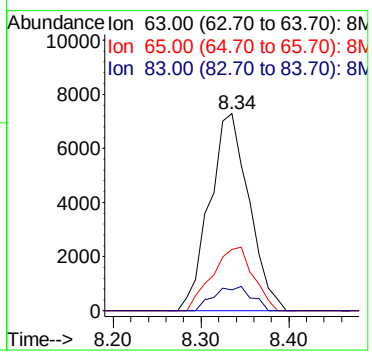

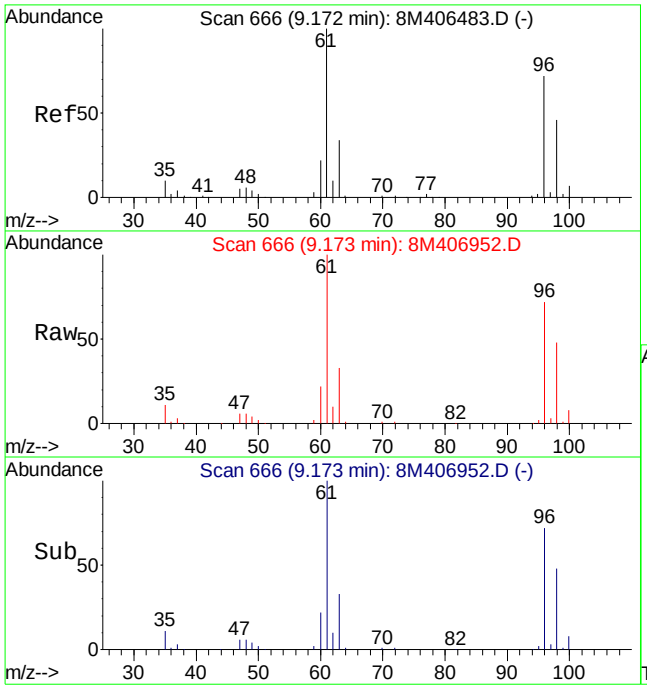

#32
cis-1,2-Dichloroethene
Concen: 36.77 ug/L
RT: 9.17 min Scan# 666
Delta R.T. 0.00 min
Lab File: 8M406952.D
Acq: 21 Aug 2015 23:45

Tgt Ion: 96 Resp: 319531

Ion	Ratio	Lower	Upper
96	100		
61	140.9	99.8	233.0

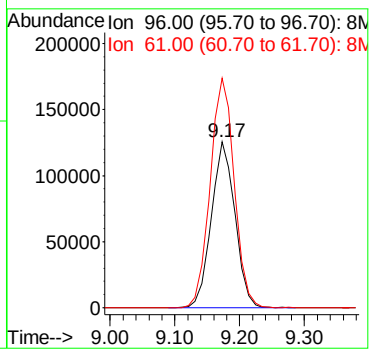

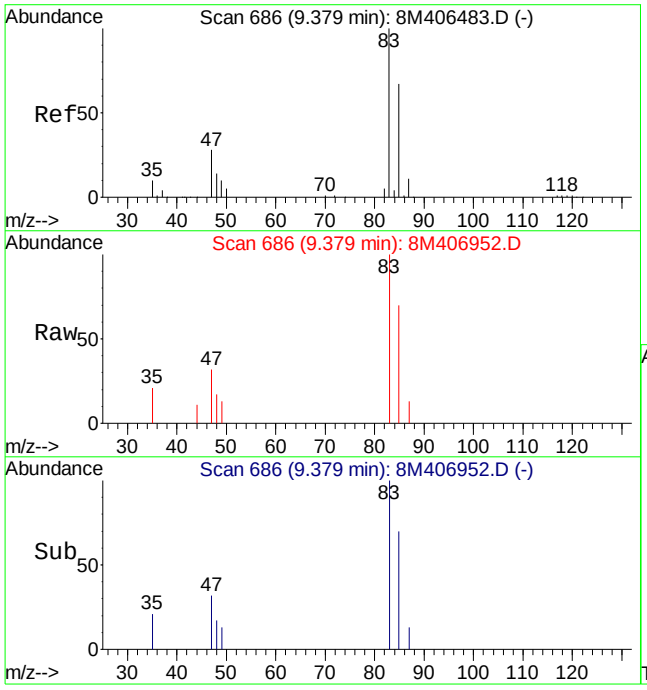

#33
Chloroform
Concen: 0.56 ug/L
RT: 9.38 min Scan# 686
Delta R.T. 0.00 min
Lab File: 8M406952.D
Acq: 21 Aug 2015 23:45

Tgt Ion: 83 Resp: 8117

Ion	Ratio	Lower	Upper
83	100		
85	74.7	38.8	90.4

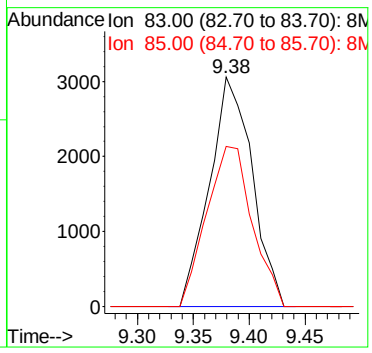

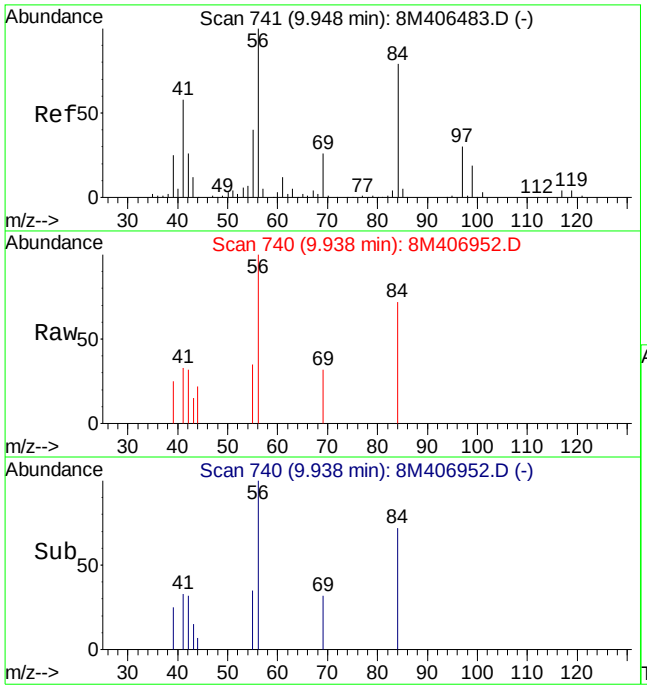

#39
Cyclohexane
Concen: 0.52 ug/L
RT: 9.94 min Scan# 740
Delta R.T. -0.01 min
Lab File: 8M406952.D
Acq: 21 Aug 2015 23:45

Tgt Ion: 56 Resp: 8151

Ion	Ratio	Lower	Upper
56	100		
84	74.0	45.4	105.8
69	23.4	15.8	37.0

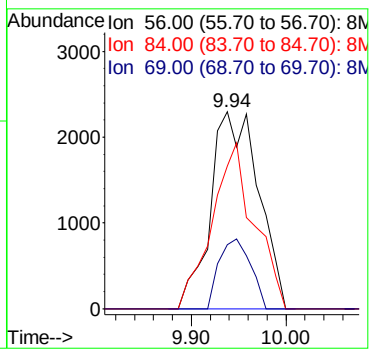

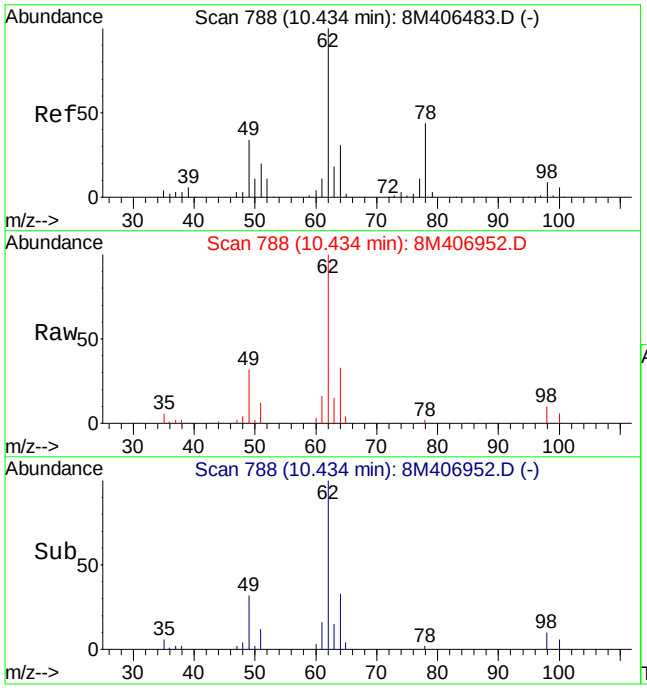

#45
1,2-Dichloroethane
Concen: 6.30 ug/L
RT: 10.43 min Scan# 788
Delta R.T. 0.00 min
Lab File: 8M406952.D
Acq: 21 Aug 2015 23:45

Tgt Ion: 62 Resp: 61692

Ion	Ratio	Lower	Upper
62	100		
64	32.1	18.8	44.0
49	36.3	25.3	58.9

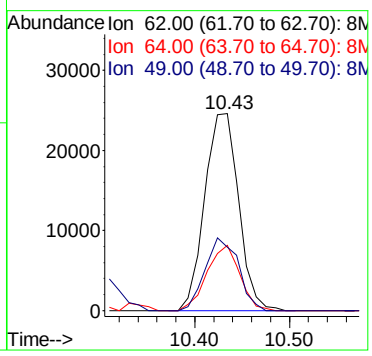

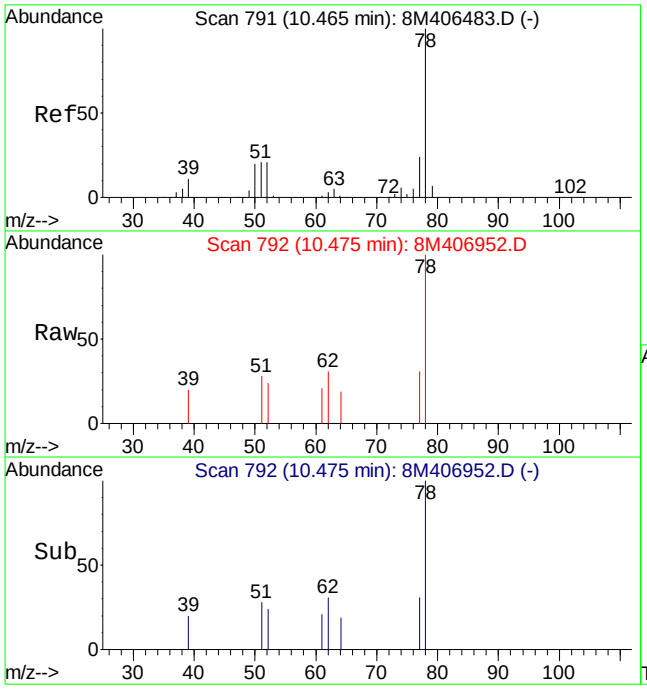

#46
Benzene
Concen: 0.14 ug/L
RT: 10.48 min Scan# 792
Delta R.T. 0.00 min
Lab File: 8M406952.D
Acq: 21 Aug 2015 23:45

Tgt Ion: 78 Resp: 4607

Ion	Ratio	Lower	Upper
78	100		
52	11.9	12.1	28.1#
51	175.8	14.6	34.2#

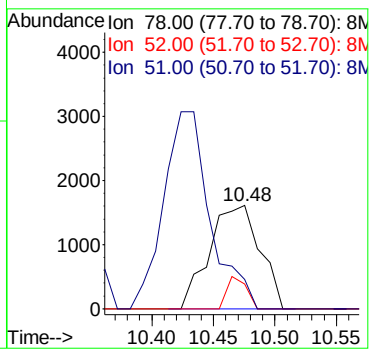

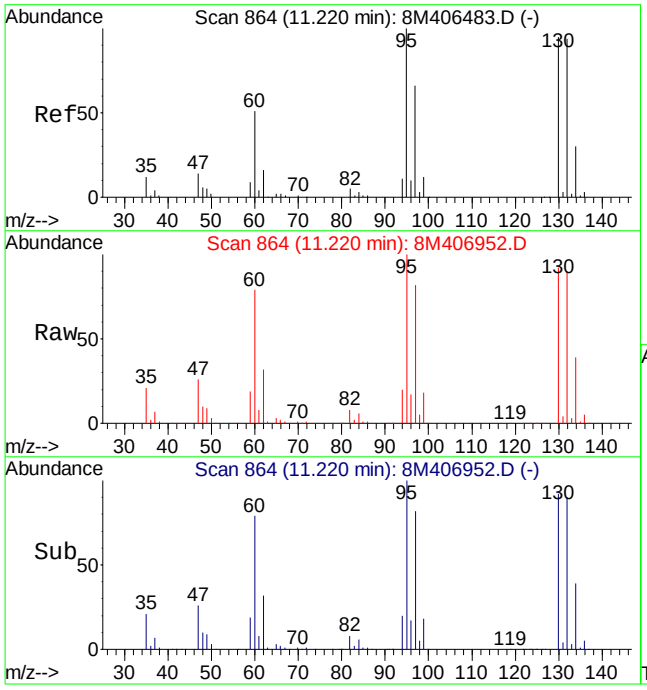

#47
Trichloroethene
Concen: 932.36 ug/L
RT: 11.22 min Scan# 864
Delta R.T. 0.00 min
Lab File: 8M406952.D
Acq: 21 Aug 2015 23:45

Tgt Ion:130 Resp: 8586416

Ion	Ratio	Lower	Upper
130	100		
132	97.3	59.0	137.6
95	108.8	65.0	151.8

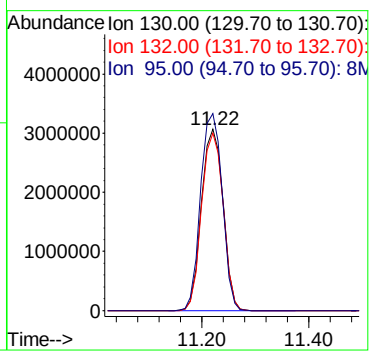

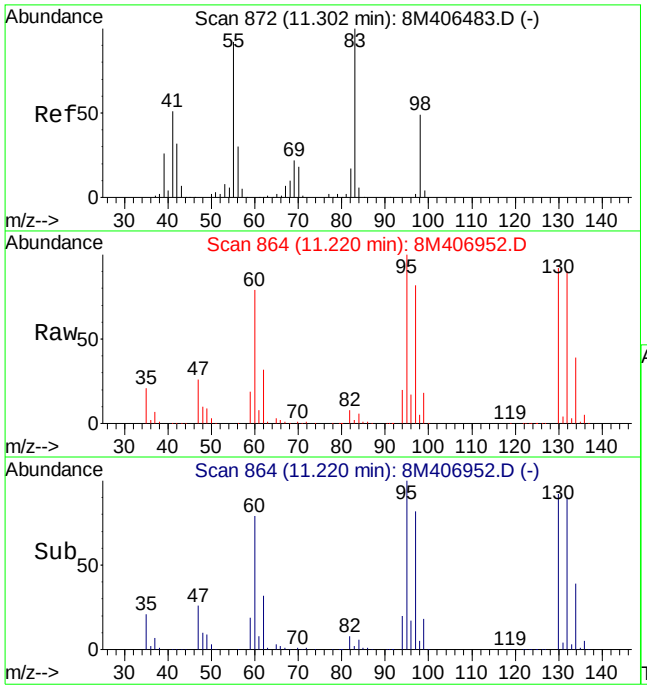

#48
Methylcyclohexane
Concen: 13.21 ug/L
RT: 11.22 min Scan# 864
Delta R.T. -0.08 min
Lab File: 8M406952.D
Acq: 21 Aug 2015 23:45

Tgt Ion: 83 Resp: 176470

Ion	Ratio	Lower	Upper
83	100		
55	0.0	54.8	128.0#
98	201.9	29.0	67.8#

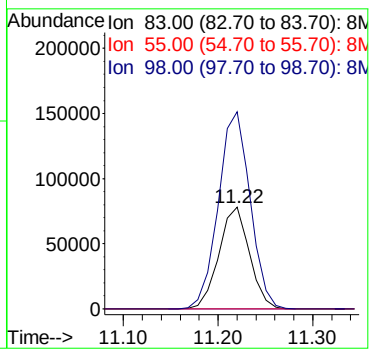

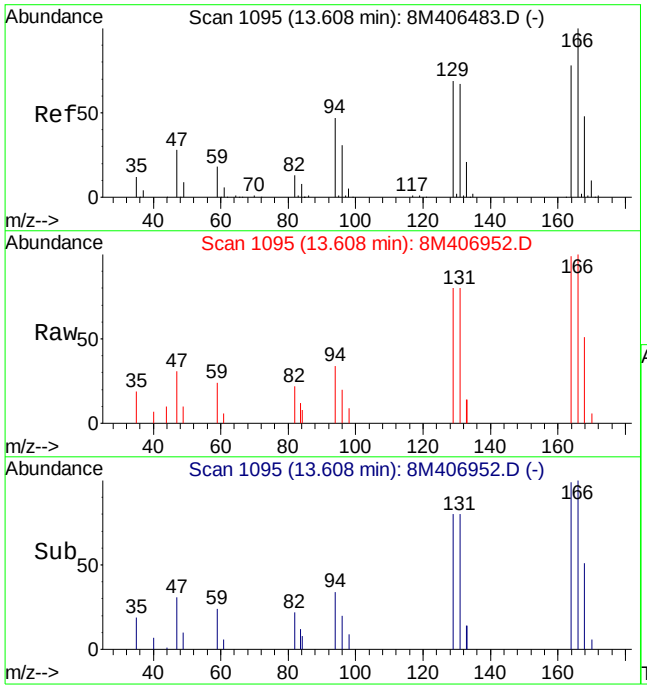

#66
Tetrachloroethene
Concen: 1.24 ug/L
RT: 13.61 min Scan# 1095
Delta R.T. 0.00 min
Lab File: 8M406952.D
Acq: 21 Aug 2015 23:45

Tgt Ion:164 Resp: 9267

Ion	Ratio	Lower	Upper
164	100		
129	95.0	54.3	126.7
94	58.6	38.3	89.5

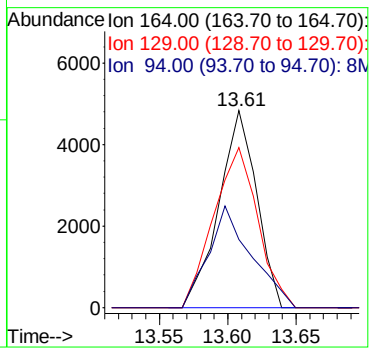

8M406952.D 8260WT.M Mon Aug 24 08:26:19 2015 Page 11

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082415\8M406974.D Vial: 13
Acq On : 24 Aug 2015 17:11 Operator: TMB
Sample : L15081073-03 B 100X 826-LOW D1 Inst : HPMS8
Misc : 1,100 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 25 08:30:20 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	853778	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	675353	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	356833	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	190668	25.3442 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.36%		
43) 1,2-Dichloroethane-d4	10.31	65	177393	23.7121 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.84%		
58) Toluene-d8	12.68	98	787016	24.1569 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.64%		
80) p-Bromofluorobenzene	16.08	95	302192	24.4839 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.92%		

Target Compounds

					Qvalue
13) Acetone	6.26	43	1273	1.1824 ug/L #	48
32) cis-1,2-Dichloroethene	9.18	96	16603	1.8345 ug/L	77
45) 1,2-Dichloroethane	10.43	62	3719	0.3648 ug/L	88
47) Trichloroethene	11.22	130	547140	57.0442 ug/L	96
48) Methylcyclohexane	11.22	83	6956	0.5001 ug/L #	1

(#) = qualifier out of range (m) = manual integration
8M406974.D 8260WT.M Tue Aug 25 08:30:21 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082415\8M406974.D Vial: 13
Acq On : 24 Aug 2015 17:11 Operator: TMB
Sample : L15081073-03 B 100X 826-LOW D1 Inst : HPMS8
Misc : 1,100 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 25 8:30 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

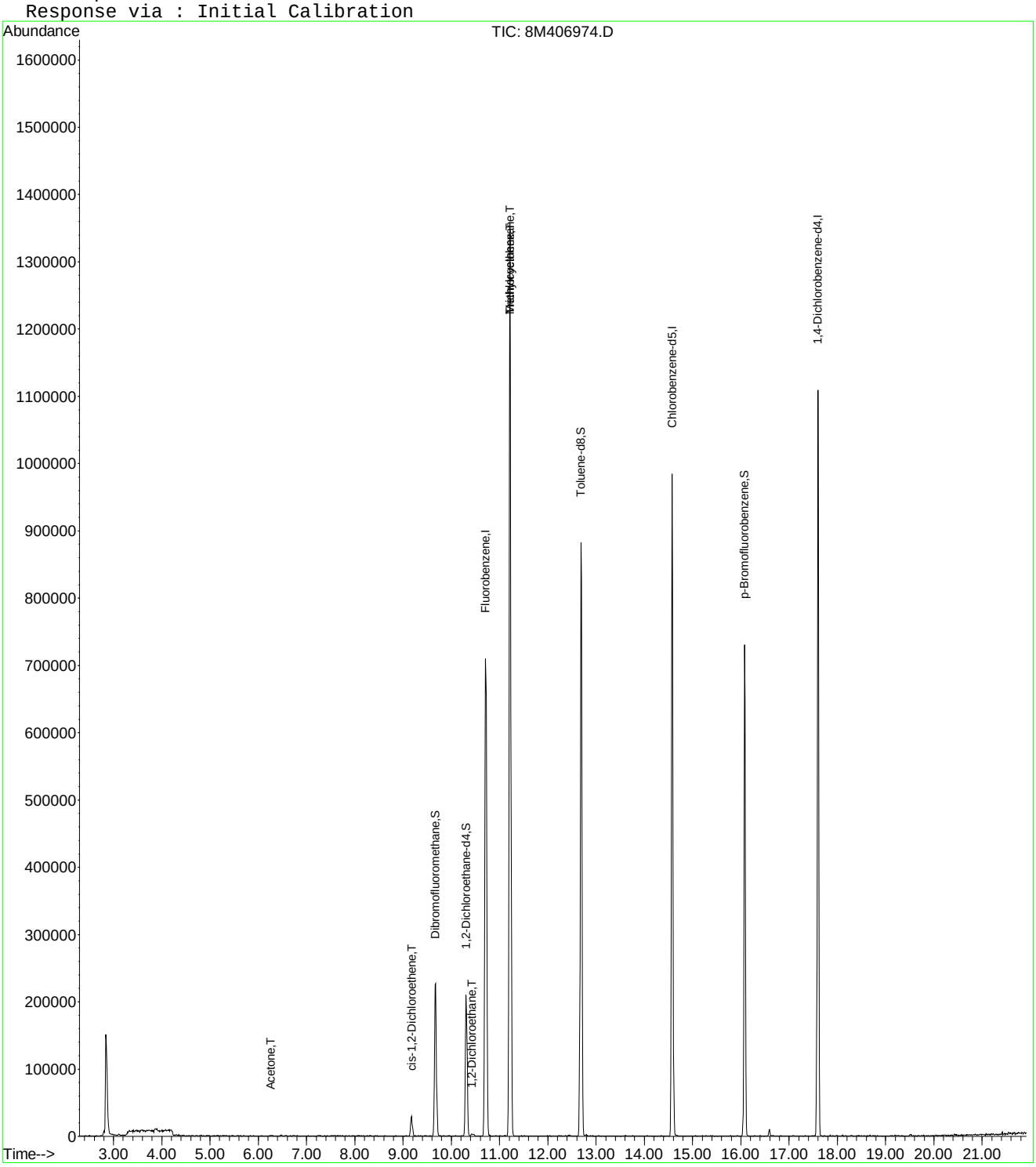

8M406974.D 8260WT.M Tue Aug 25 08:30:21 2015 Page 2

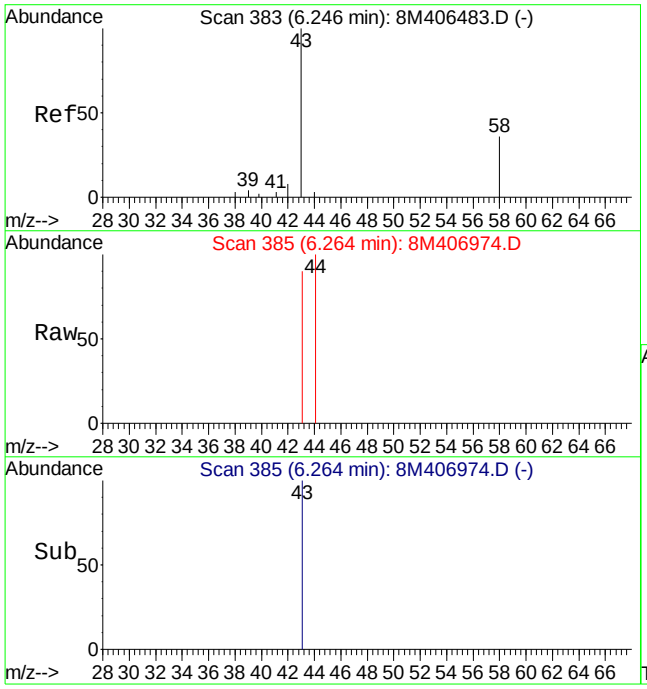

#13
Acetone
Concen: 1.18 ug/L
RT: 6.26 min Scan# 385
Delta R.T. 0.02 min
Lab File: 8M406974.D
Acq: 24 Aug 2015 17:11

Tgt Ion: 43 Resp: 1273

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

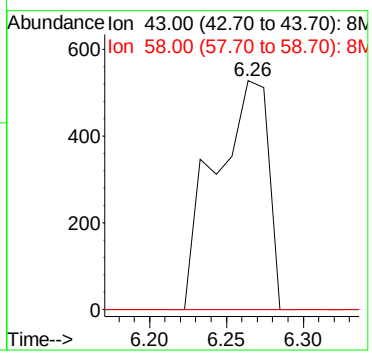

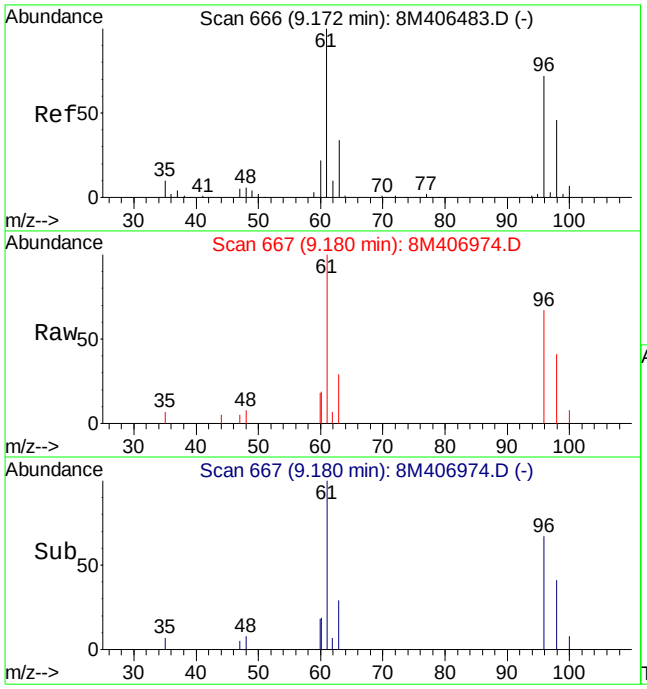

#32
cis-1,2-Dichloroethene
Concen: 1.83 ug/L
RT: 9.18 min Scan# 667
Delta R.T. 0.01 min
Lab File: 8M406974.D
Acq: 24 Aug 2015 17:11

Tgt Ion: 96 Resp: 16603

Ion	Ratio	Lower	Upper
96	100		
61	135.8	99.8	233.0

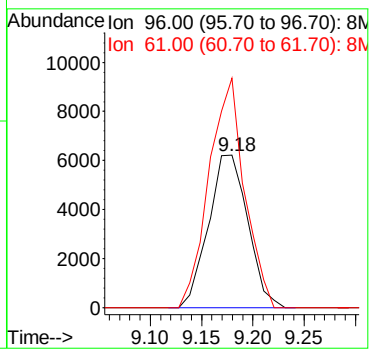

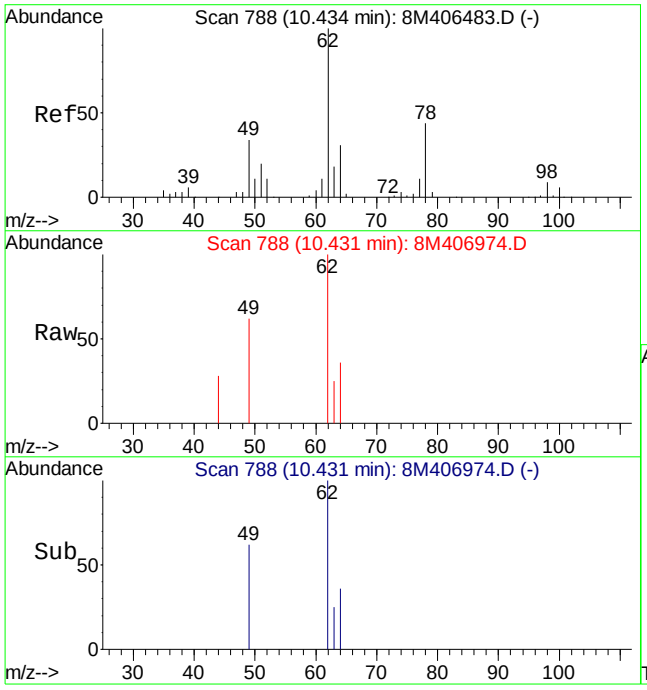

#45
1,2-Dichloroethane
Concen: 0.36 ug/L
RT: 10.43 min Scan# 788
Delta R.T. -0.00 min
Lab File: 8M406974.D
Acq: 24 Aug 2015 17:11

Tgt Ion: 62 Resp: 3719

Ion	Ratio	Lower	Upper
62	100		
64	22.1	18.8	44.0
49	48.0	25.3	58.9

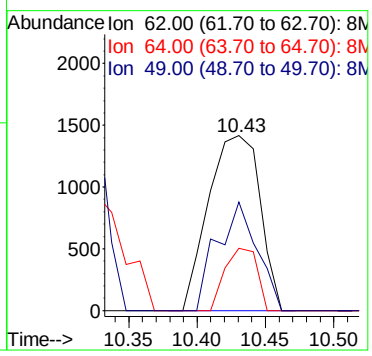

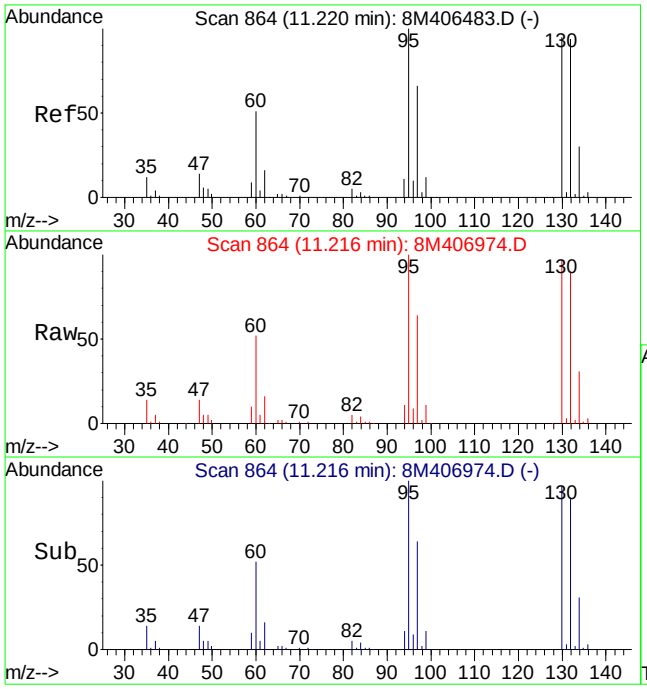

#47
Trichloroethene
Concen: 57.04 ug/L
RT: 11.22 min Scan# 864
Delta R.T. -0.00 min
Lab File: 8M406974.D
Acq: 24 Aug 2015 17:11

Tgt Ion:130 Resp: 547140

Ion	Ratio	Lower	Upper
130	100		
132	94.9	59.0	137.6
95	103.7	65.0	151.8

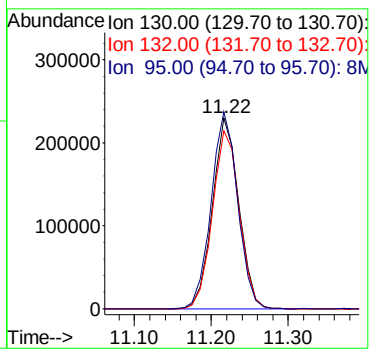

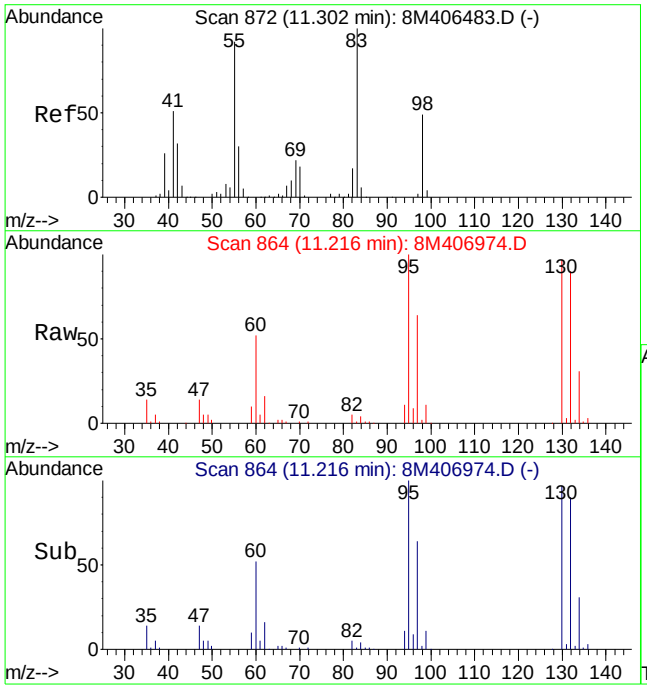

#48
Methylcyclohexane
Concen: 0.50 ug/L
RT: 11.22 min Scan# 864
Delta R.T. -0.08 min
Lab File: 8M406974.D
Acq: 24 Aug 2015 17:11

Tgt Ion: 83 Resp: 6956

Ion	Ratio	Lower	Upper
83	100		
55	0.0	54.8	128.0#
98	211.3	29.0	67.8#

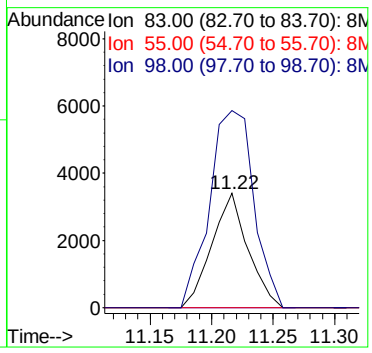

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082115\8M406953.D Vial: 21
Acq On : 22 Aug 2015 00:13 Operator: TMB
Sample : L15081073-05 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 24 08:26:19 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	757163	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	580044	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	306900	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	172077	25.7917 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.16%		
43) 1,2-Dichloroethane-d4	10.31	65	157880	23.7967 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 95.20%		
58) Toluene-d8	12.68	98	691034	24.6960 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.80%		
80) p-Bromofluorobenzene	16.08	95	261698	24.6527 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.60%		

Target Compounds

					Qvalue
4) Vinyl Chloride	3.86	62	1999	0.2105 ug/L #	63
14) 1,1-Dichloroethene	6.47	61	24047	2.0221 ug/L	99
23) trans-1,2-Dichloroethene	7.72	61	2103	0.1886 ug/L	91
27) 1,1-Dichloroethane	8.34	63	2739	0.1831 ug/L #	63
32) cis-1,2-Dichloroethene	9.17	96	233204	29.0551 ug/L	78
45) 1,2-Dichloroethane	10.43	62	14490	1.6026 ug/L	94
47) Trichloroethene	11.22	130	1702843	200.1903 ug/L	97
48) Methylcyclohexane	11.22	83	22712	1.8413 ug/L #	1
66) Tetrachloroethene	13.60	164	5625	0.7871 ug/L	83

(#) = qualifier out of range (m) = manual integration
8M406953.D 8260WT.M Mon Aug 24 08:26:20 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082115\8M406953.D Vial: 21
Acq On : 22 Aug 2015 00:13 Operator: TMB
Sample : L15081073-05 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 24 8:26 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

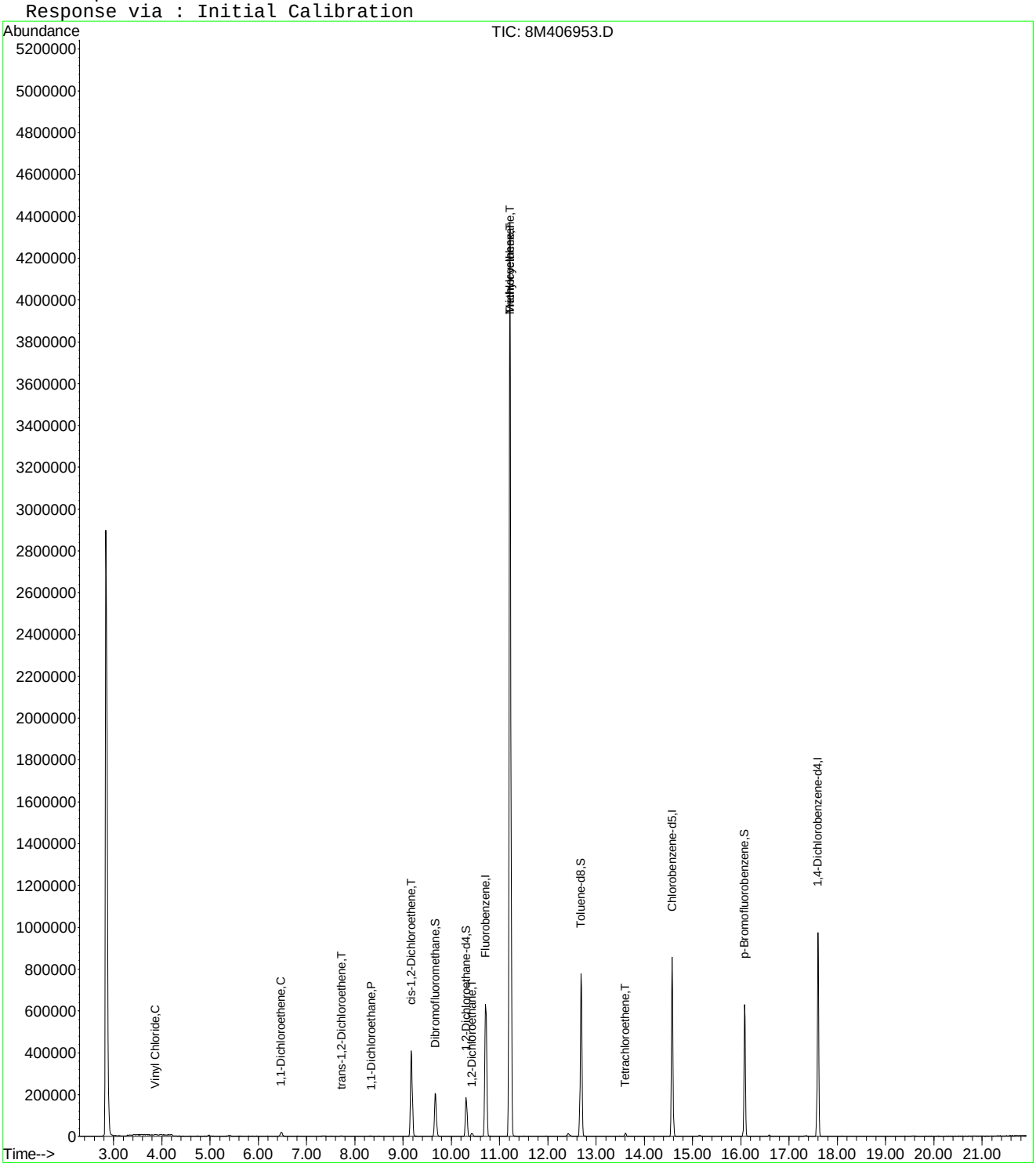

8M406953.D 8260WT.M Mon Aug 24 08:26:20 2015 Page 2

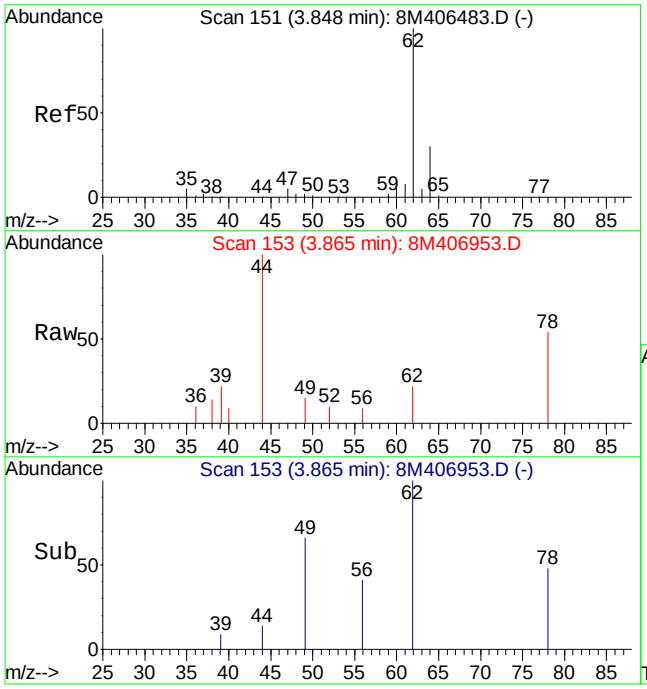

#4
Vinyl Chloride
Concen: 0.21 ug/L
RT: 3.86 min Scan# 153
Delta R.T. 0.02 min
Lab File: 8M406953.D
Acq: 22 Aug 2015 00:13

Tgt Ion: 62 Resp: 1999

Ion	Ratio	Lower	Upper
62	100		
64	50.8	18.2	42.6#

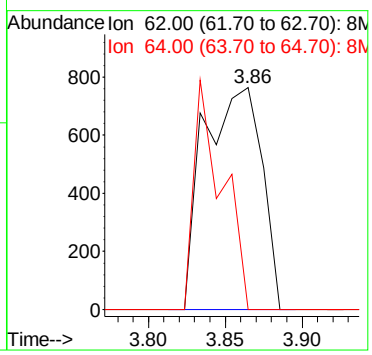

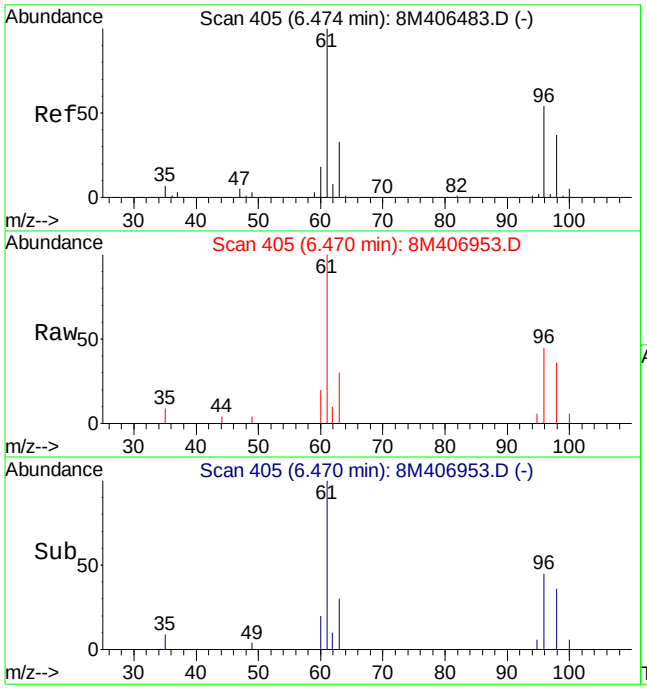

#14
1,1-Dichloroethene
Concen: 2.02 ug/L
RT: 6.47 min Scan# 405
Delta R.T. -0.00 min
Lab File: 8M406953.D
Acq: 22 Aug 2015 00:13

Tgt Ion: 61 Resp: 24047

Ion	Ratio	Lower	Upper
61	100		
96	53.4	32.3	75.3

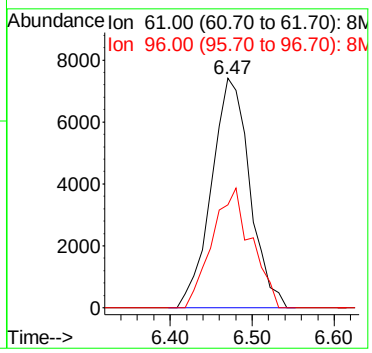

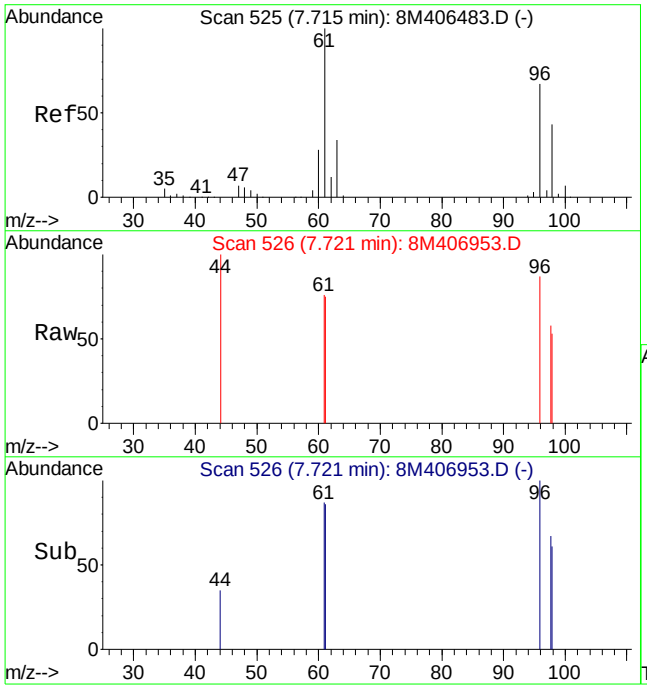

#23
trans-1,2-Dichloroethene
Concen: 0.19 ug/L
RT: 7.72 min Scan# 526
Delta R.T. 0.01 min
Lab File: 8M406953.D
Acq: 22 Aug 2015 00:13

Tgt Ion: 61 Resp: 2103

Ion	Ratio	Lower	Upper
61	100		
96	55.2	37.4	87.4

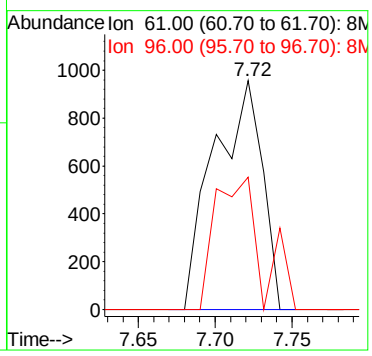

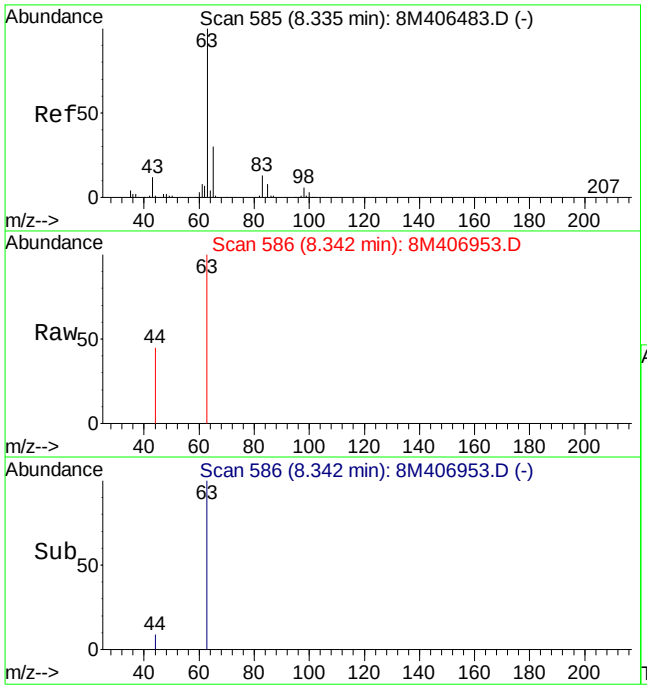

#27
1,1-Dichloroethane
Concen: 0.18 ug/L
RT: 8.34 min Scan# 586
Delta R.T. 0.01 min
Lab File: 8M406953.D
Acq: 22 Aug 2015 00:13

Tgt Ion: 63 Resp: 2739

Ion	Ratio	Lower	Upper
63	100		
65	9.1	18.4	43.0#
83	0.0	7.7	18.1#

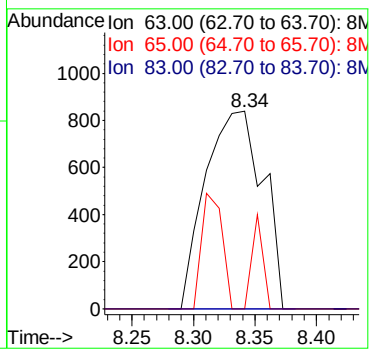

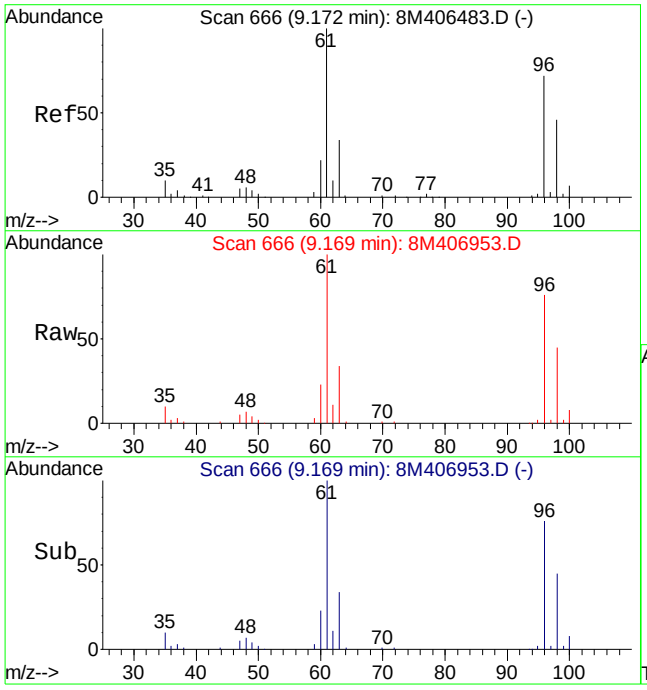

#32
cis-1,2-Dichloroethene
Concen: 29.06 ug/L
RT: 9.17 min Scan# 666
Delta R.T. -0.00 min
Lab File: 8M406953.D
Acq: 22 Aug 2015 00:13

Tgt Ion: 96 Resp: 233204

Ion	Ratio	Lower	Upper
96	100		
61	136.1	99.8	233.0

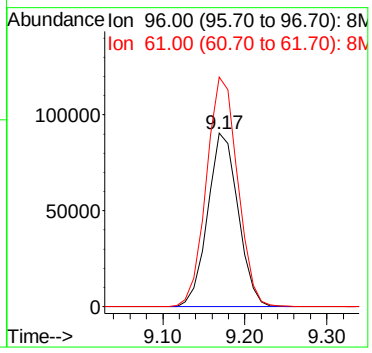

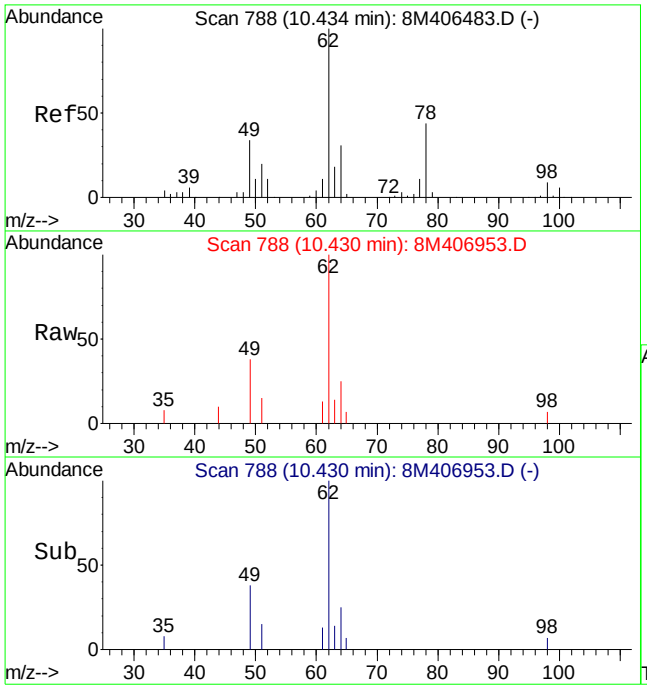

#45
1,2-Dichloroethane
Concen: 1.60 ug/L
RT: 10.43 min Scan# 788
Delta R.T. -0.00 min
Lab File: 8M406953.D
Acq: 22 Aug 2015 00:13

Tgt Ion: 62 Resp: 14490

Ion	Ratio	Lower	Upper
62	100		
64	30.9	18.8	44.0
49	35.5	25.3	58.9

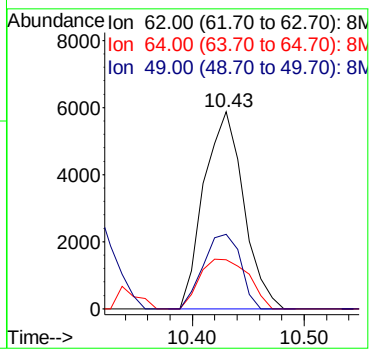

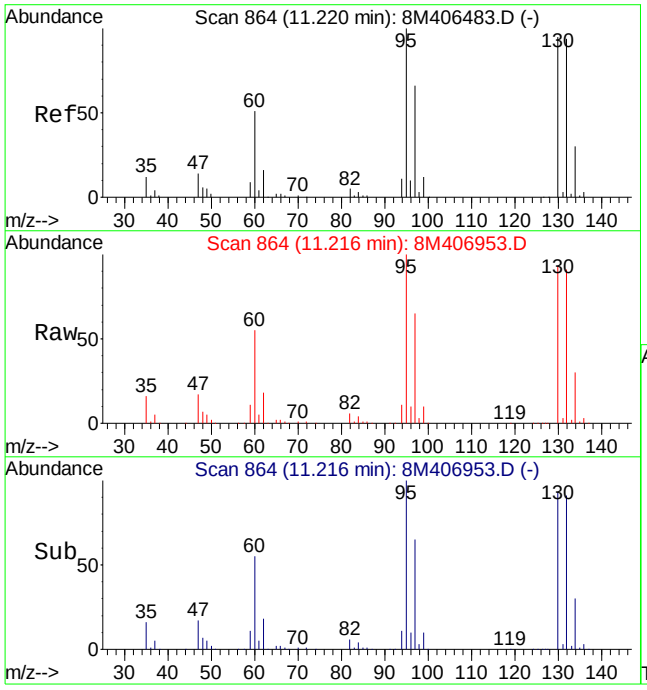

#47
Trichloroethene
Concen: 200.19 ug/L
RT: 11.22 min Scan# 864
Delta R.T. -0.00 min
Lab File: 8M406953.D
Acq: 22 Aug 2015 00:13

Tgt Ion:130 Resp: 1702843

Ion	Ratio	Lower	Upper
130	100		
132	96.9	59.0	137.6
95	104.7	65.0	151.8

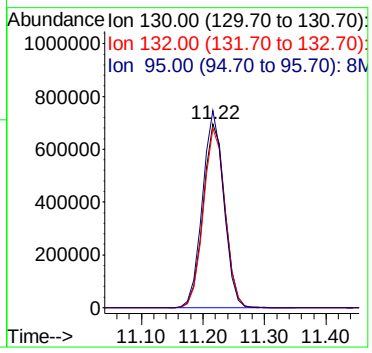

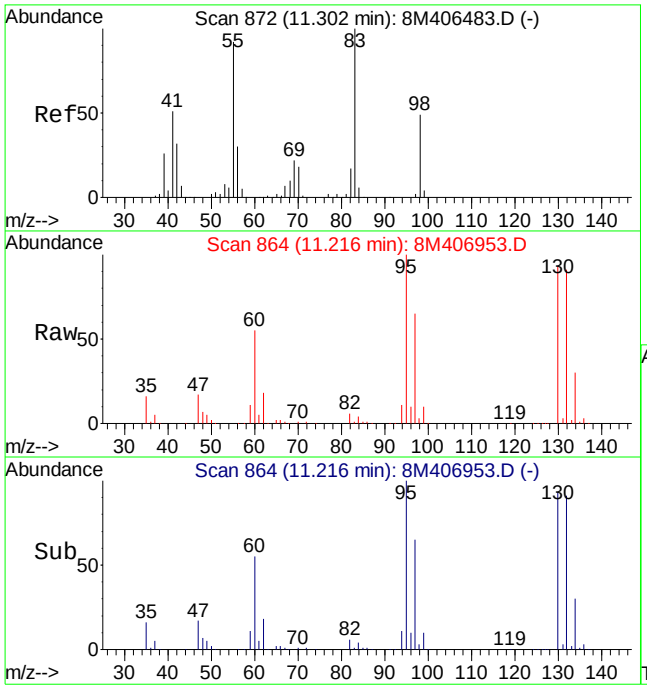

#48
Methylcyclohexane
Concen: 1.84 ug/L
RT: 11.22 min Scan# 864
Delta R.T. -0.08 min
Lab File: 8M406953.D
Acq: 22 Aug 2015 00:13

Tgt Ion: 83 Resp: 22712

Ion	Ratio	Lower	Upper
83	100		
55	0.0	54.8	128.0#
98	200.8	29.0	67.8#

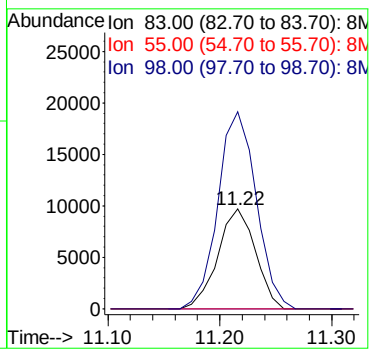

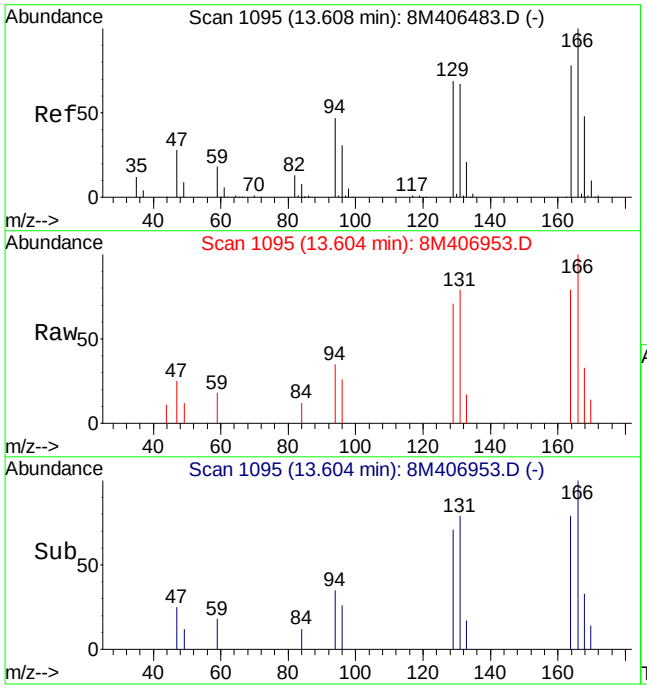

#66
Tetrachloroethene
Concen: 0.79 ug/L
RT: 13.60 min Scan# 1095
Delta R.T. -0.00 min
Lab File: 8M406953.D
Acq: 22 Aug 2015 00:13

Tgt Ion:164 Resp: 5625

Ion	Ratio	Lower	Upper
164	100		
129	73.0	54.3	126.7
94	53.0	38.3	89.5

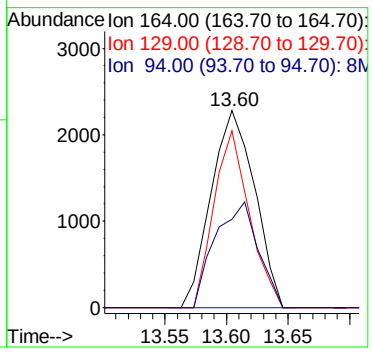

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082115\8M406954.D Vial: 22
Acq On : 22 Aug 2015 00:42 Operator: TMB
Sample : L15081073-06 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 24 08:26:21 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	736928	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	559772	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	300138	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	164926	25.3986 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.60%		
43) 1,2-Dichloroethane-d4	10.31	65	148690	23.0269 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 92.12%		
58) Toluene-d8	12.68	98	665416	24.6417 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.56%		
80) p-Bromofluorobenzene	16.08	95	248432	23.9303 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.72%		

Target Compounds					Qvalue
4) Vinyl Chloride	3.85	62	2178	0.2357 ug/L	90
13) Acetone	6.26	43	382	0.4111 ug/L #	48
14) 1,1-Dichloroethene	6.47	61	24109	2.0830 ug/L	94
23) trans-1,2-Dichloroethene	7.70	61	1845	0.1700 ug/L	97
27) 1,1-Dichloroethane	8.33	63	2471	0.1697 ug/L #	62
32) cis-1,2-Dichloroethene	9.17	96	219323	28.0759 ug/L	81
45) 1,2-Dichloroethane	10.43	62	14604	1.6596 ug/L	90
47) Trichloroethene	11.22	130	1655973	200.0258 ug/L	97
48) Methylcyclohexane	11.22	83	22298	1.8574 ug/L #	1
66) Tetrachloroethene	13.62	164	4487	0.6506 ug/L	92

(#) = qualifier out of range (m) = manual integration
8M406954.D 8260WT.M Mon Aug 24 08:26:21 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082115\8M406954.D Vial: 22
Acq On : 22 Aug 2015 00:42 Operator: TMB
Sample : L15081073-06 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 24 8:26 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

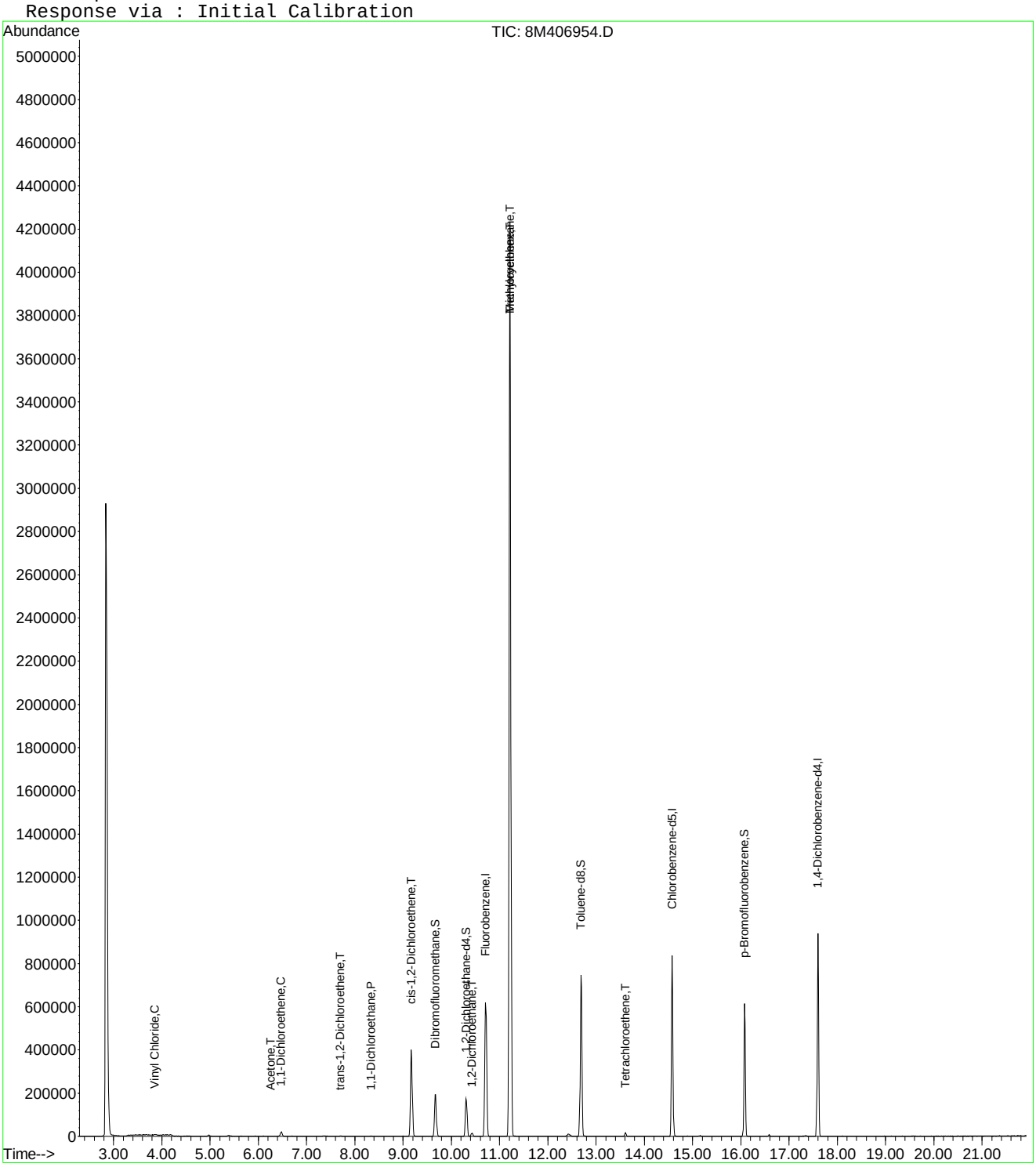

8M406954.D 8260WT.M Mon Aug 24 08:26:21 2015 Page 2

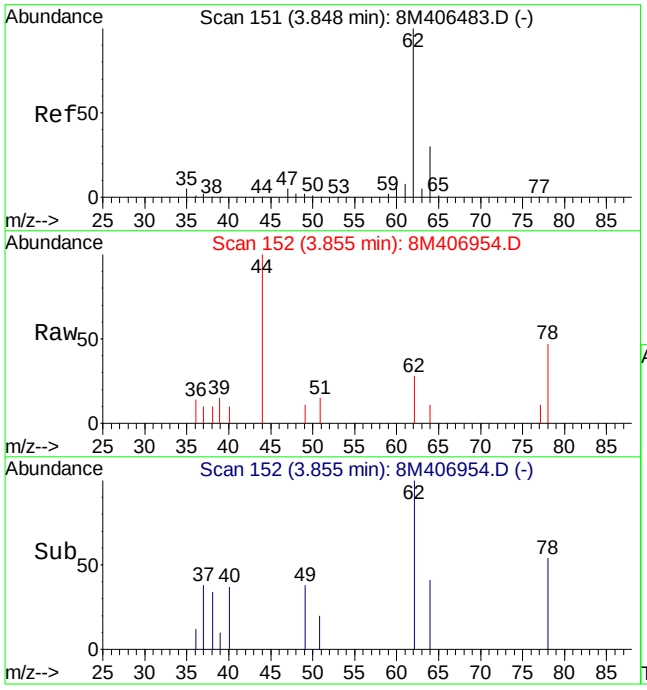

#4
Vinyl Chloride
Concen: 0.24 ug/L
RT: 3.85 min Scan# 152
Delta R.T. 0.01 min
Lab File: 8M406954.D
Acq: 22 Aug 2015 00:42

Tgt Ion: 62 Resp: 2178

Ion	Ratio	Lower	Upper
62	100		
64	24.7	18.2	42.6

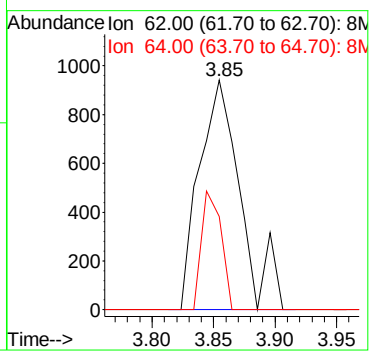

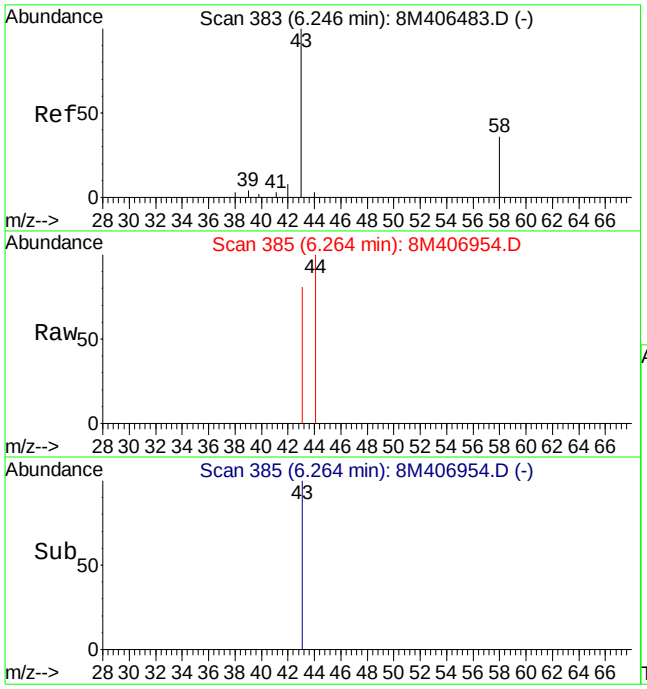

#13
Acetone
Concen: 0.41 ug/L
RT: 6.26 min Scan# 385
Delta R.T. 0.02 min
Lab File: 8M406954.D
Acq: 22 Aug 2015 00:42

Tgt Ion: 43 Resp: 382

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

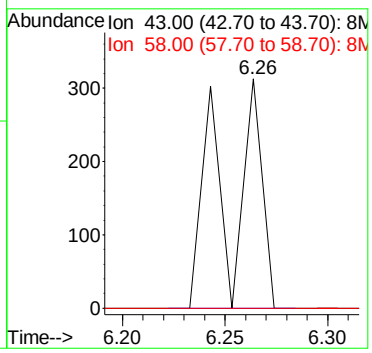

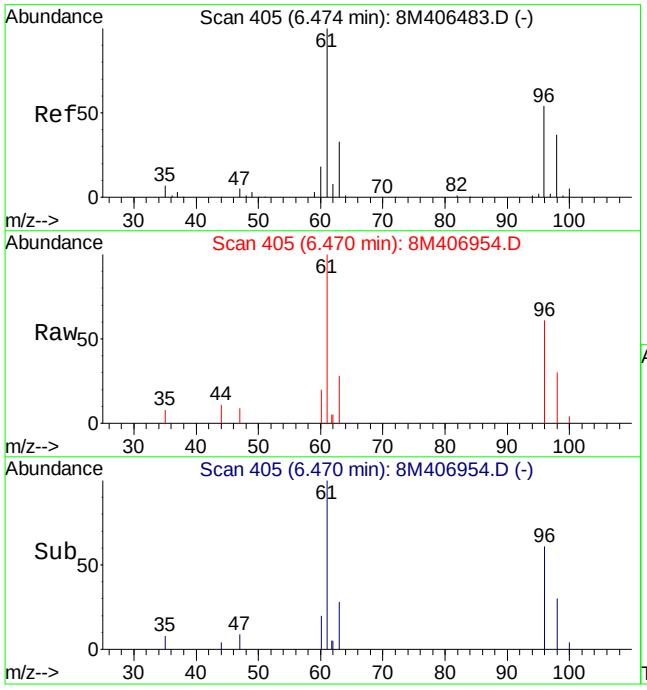

#14
1,1-Dichloroethene
Concen: 2.08 ug/L
RT: 6.47 min Scan# 405
Delta R.T. -0.00 min
Lab File: 8M406954.D
Acq: 22 Aug 2015 00:42

Tgt Ion: 61 Resp: 24109

Ion	Ratio	Lower	Upper
61	100		
96	58.4	32.3	75.3

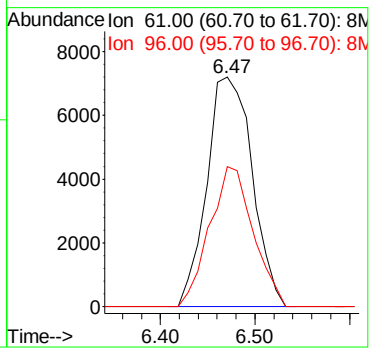

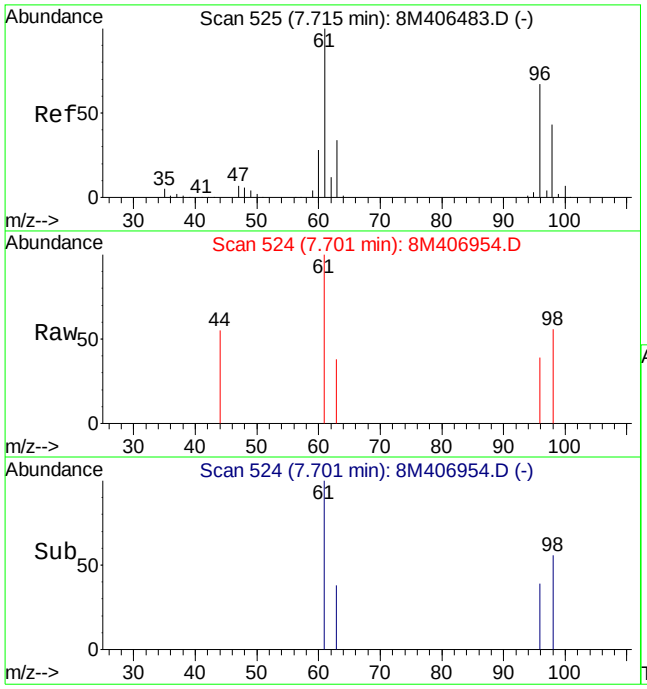

#23
trans-1,2-Dichloroethene
Concen: 0.17 ug/L
RT: 7.70 min Scan# 524
Delta R.T. -0.01 min
Lab File: 8M406954.D
Acq: 22 Aug 2015 00:42

Tgt Ion: 61 Resp: 1845

Ion	Ratio	Lower	Upper
61	100		
96	64.9	37.4	87.4

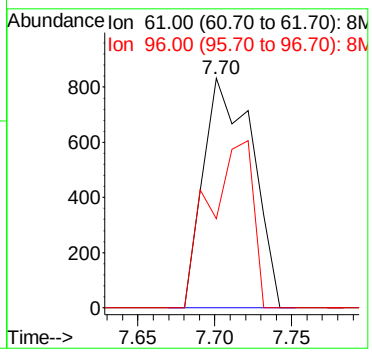

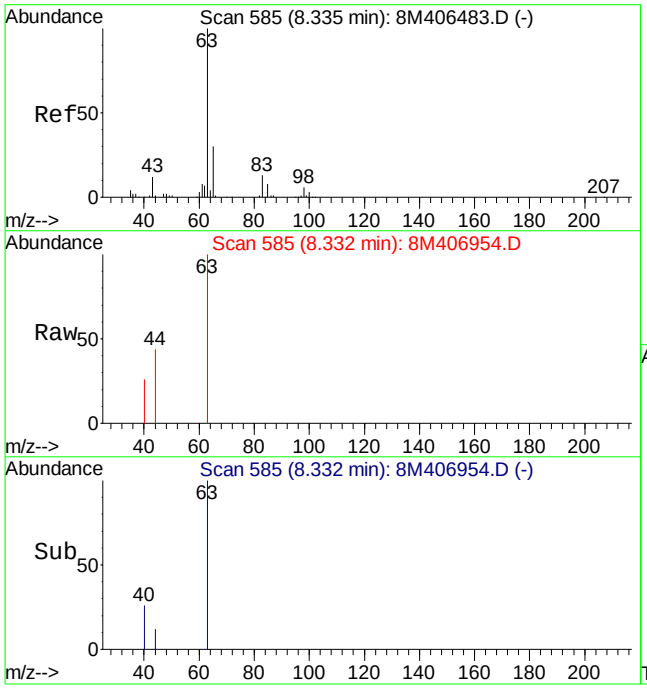

#27
1,1-Dichloroethane
Concen: 0.17 ug/L
RT: 8.33 min Scan# 585
Delta R.T. -0.00 min
Lab File: 8M406954.D
Acq: 22 Aug 2015 00:42

Tgt Ion: 63 Resp: 2471

Ion	Ratio	Lower	Upper
63	100		
65	8.4	18.4	43.0#
83	0.0	7.7	18.1#

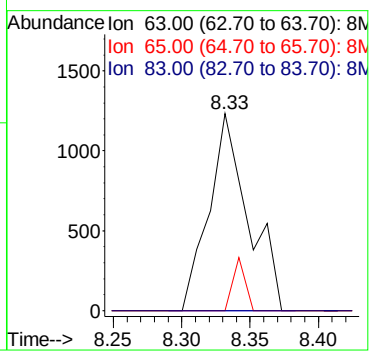

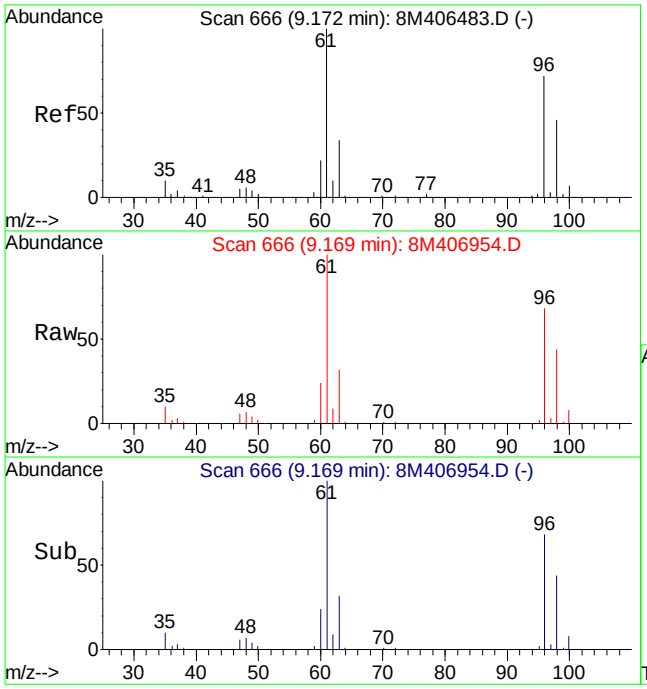

#32
cis-1,2-Dichloroethene
Concen: 28.08 ug/L
RT: 9.17 min Scan# 666
Delta R.T. -0.00 min
Lab File: 8M406954.D
Acq: 22 Aug 2015 00:42

Tgt Ion: 96 Resp: 219323

Ion	Ratio	Lower	Upper
96	100		
61	140.7	99.8	233.0

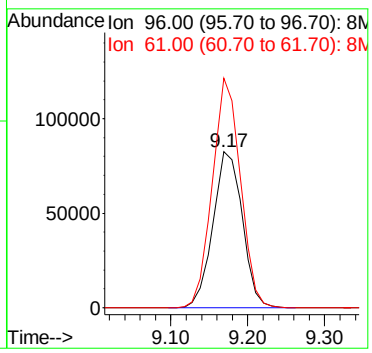

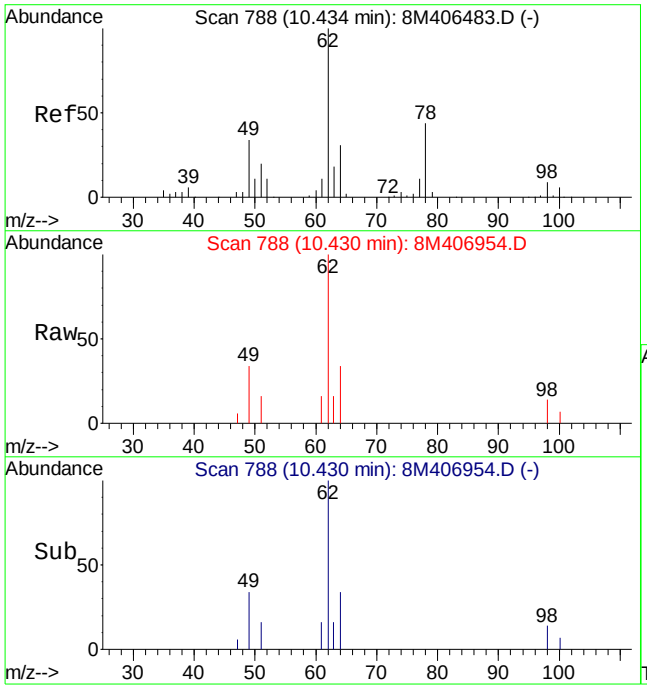

#45
1,2-Dichloroethane
Concen: 1.66 ug/L
RT: 10.43 min Scan# 788
Delta R.T. -0.00 min
Lab File: 8M406954.D
Acq: 22 Aug 2015 00:42

Tgt Ion: 62 Resp: 14604

Ion	Ratio	Lower	Upper
62	100		
64	33.7	18.8	44.0
49	32.8	25.3	58.9

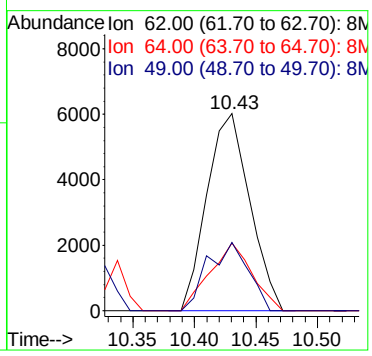

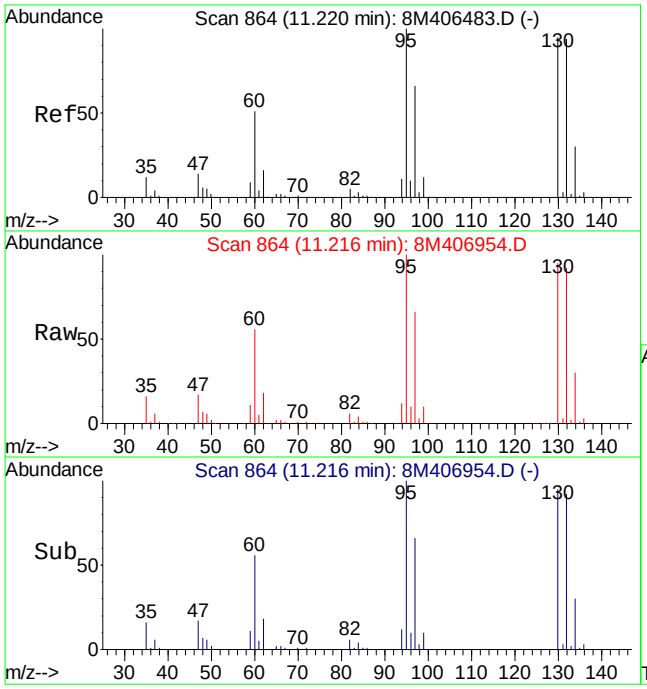

#47
Trichloroethene
Concen: 200.03 ug/L
RT: 11.22 min Scan# 864
Delta R.T. -0.00 min
Lab File: 8M406954.D
Acq: 22 Aug 2015 00:42

Tgt Ion:130 Resp: 1655973

Ion	Ratio	Lower	Upper
130	100		
132	96.5	59.0	137.6
95	103.7	65.0	151.8

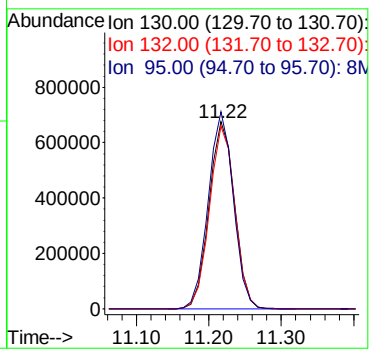

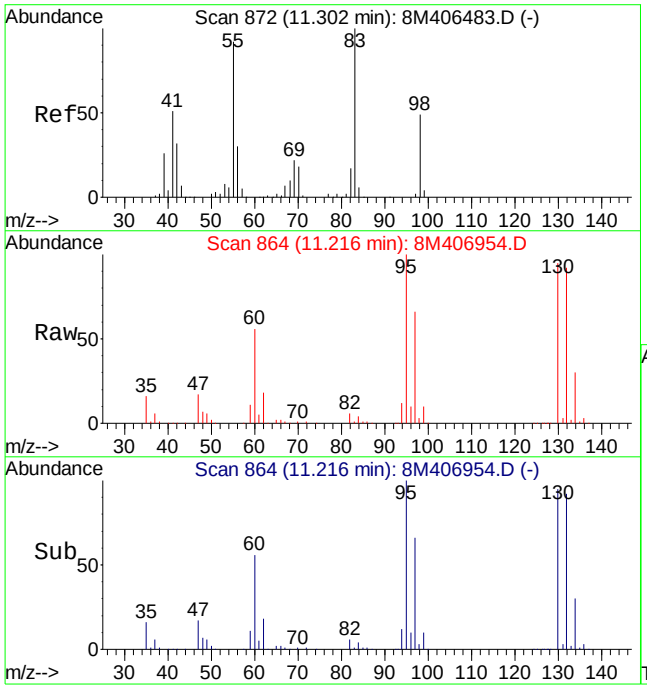

#48
Methylcyclohexane
Concen: 1.86 ug/L
RT: 11.22 min Scan# 864
Delta R.T. -0.08 min
Lab File: 8M406954.D
Acq: 22 Aug 2015 00:42

Tgt Ion: 83 Resp: 22298

Ion	Ratio	Lower	Upper
83	100		
55	0.0	54.8	128.0#
98	212.4	29.0	67.8#

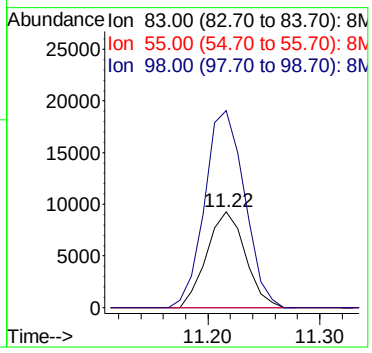

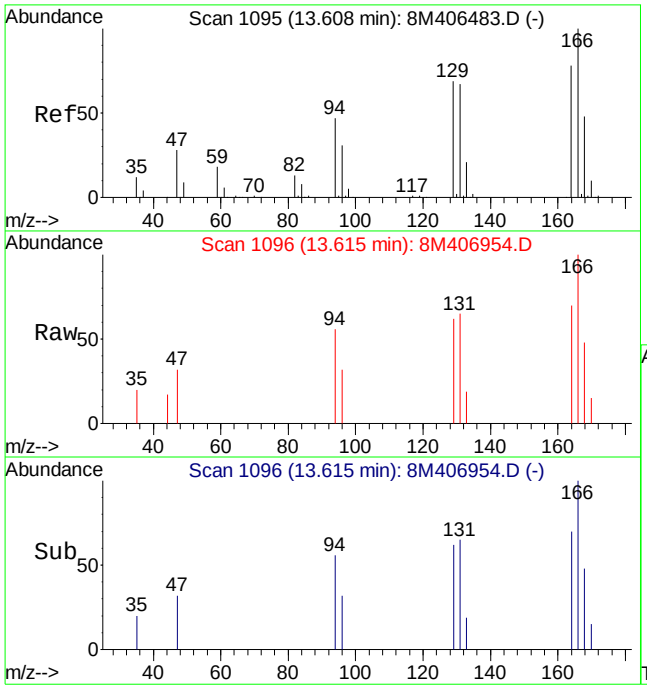

#66
Tetrachloroethene
Concen: 0.65 ug/L
RT: 13.62 min Scan# 1096
Delta R.T. 0.01 min
Lab File: 8M406954.D
Acq: 22 Aug 2015 00:42

Tgt Ion:164 Resp: 4487

Ion	Ratio	Lower	Upper
164	100		
129	97.3	54.3	126.7
94	57.3	38.3	89.5

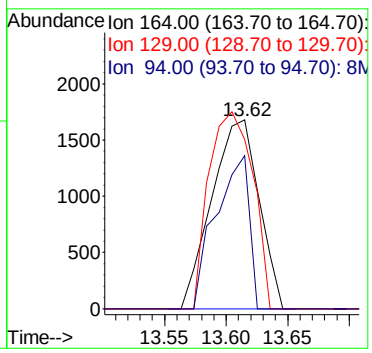

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082115\8M406951.D Vial: 19
Acq On : 21 Aug 2015 23:16 Operator: TMB
Sample : L15081073-07 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 24 08:26:16 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	829734	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	630068	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	344544	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	181961	24.8878 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.56%		
43) 1,2-Dichloroethane-d4	10.31	65	172080	23.6685 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.68%		
58) Toluene-d8	12.69	98	763841	25.1306 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.52%		
80) p-Bromofluorobenzene	16.08	95	286595	24.0484 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.20%		

Target Compounds					Qvalue
3) Chloromethane	3.60	50	4141	0.2927 ug/L	80

(#) = qualifier out of range (m) = manual integration
8M406951.D 8260WT.M Mon Aug 24 08:26:16 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082115\8M406951.D Vial: 19
Acq On : 21 Aug 2015 23:16 Operator: TMB
Sample : L15081073-07 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 24 8:26 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

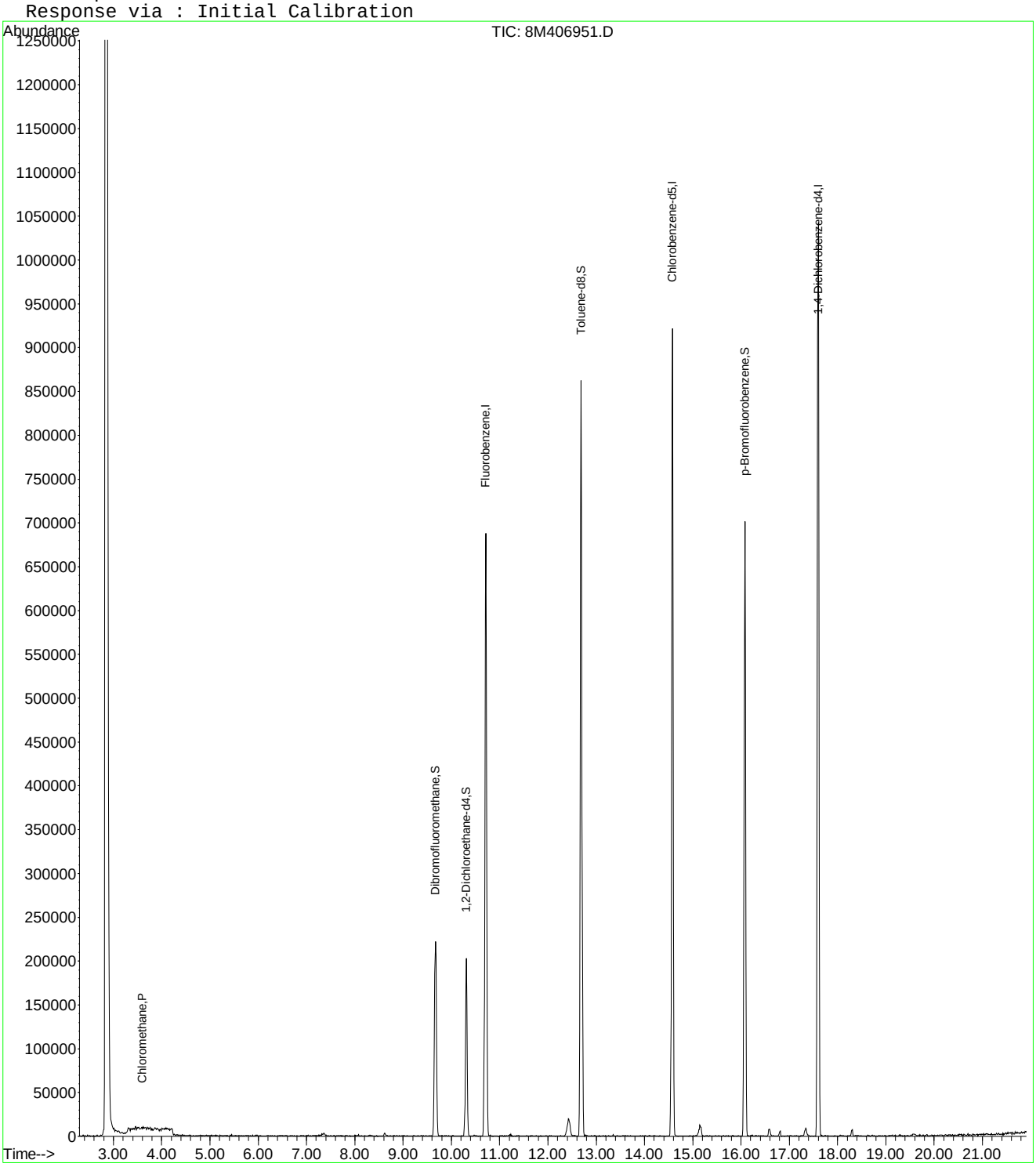

8M406951.D 8260WT.M Mon Aug 24 08:26:17 2015 Page 2

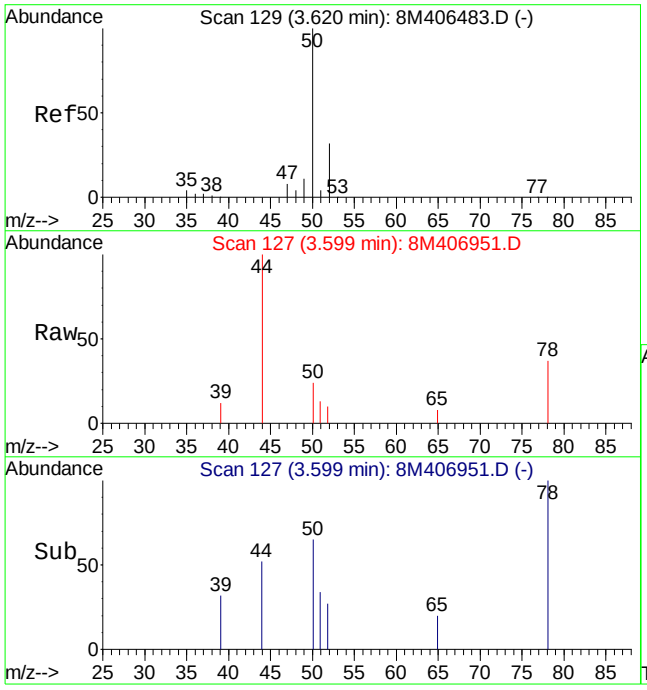

#3
Chloromethane
Concen: 0.29 ug/L
RT: 3.60 min Scan# 127
Delta R.T. -0.02 min
Lab File: 8M406951.D
Acq: 21 Aug 2015 23:16

Tgt Ion: 50 Resp: 4141

Ion	Ratio	Lower	Upper
50	100		
52	43.1	19.2	44.8

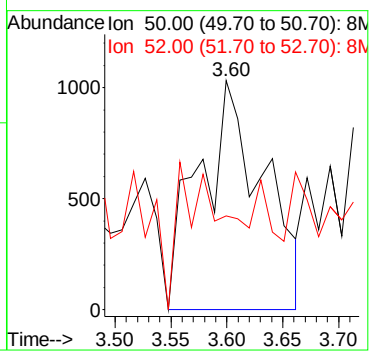

8M406951.D 8260WT.M Mon Aug 24 08:26:17 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082115\8M406941.D Vial: 9
Acq On : 21 Aug 2015 18:28 Operator: TMB
Sample : L15081073-08 TB A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 24 08:25:55 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	791388	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	611503	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	324939	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	174223	24.9840 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.92%		
43) 1,2-Dichloroethane-d4	10.31	65	149889	21.6152 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 86.48%		
58) Toluene-d8	12.69	98	736429	24.9644 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.84%		
80) p-Bromofluorobenzene	16.08	95	270306	24.0500 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.20%		

Target Compounds					Qvalue
13) Acetone	6.25	43	401	0.4018 ug/L #	48
19) Methylene Chloride	7.26	84	2534	0.3201 ug/L	94
55) cis-1,3-Dichloropropene	12.43	75	3166	0.2686 ug/L #	55

(#) = qualifier out of range (m) = manual integration
8M406941.D 8260WT.M Mon Aug 24 08:25:56 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082115\8M406941.D Vial: 9
Acq On : 21 Aug 2015 18:28 Operator: TMB
Sample : L15081073-08 TB A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 24 8:25 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

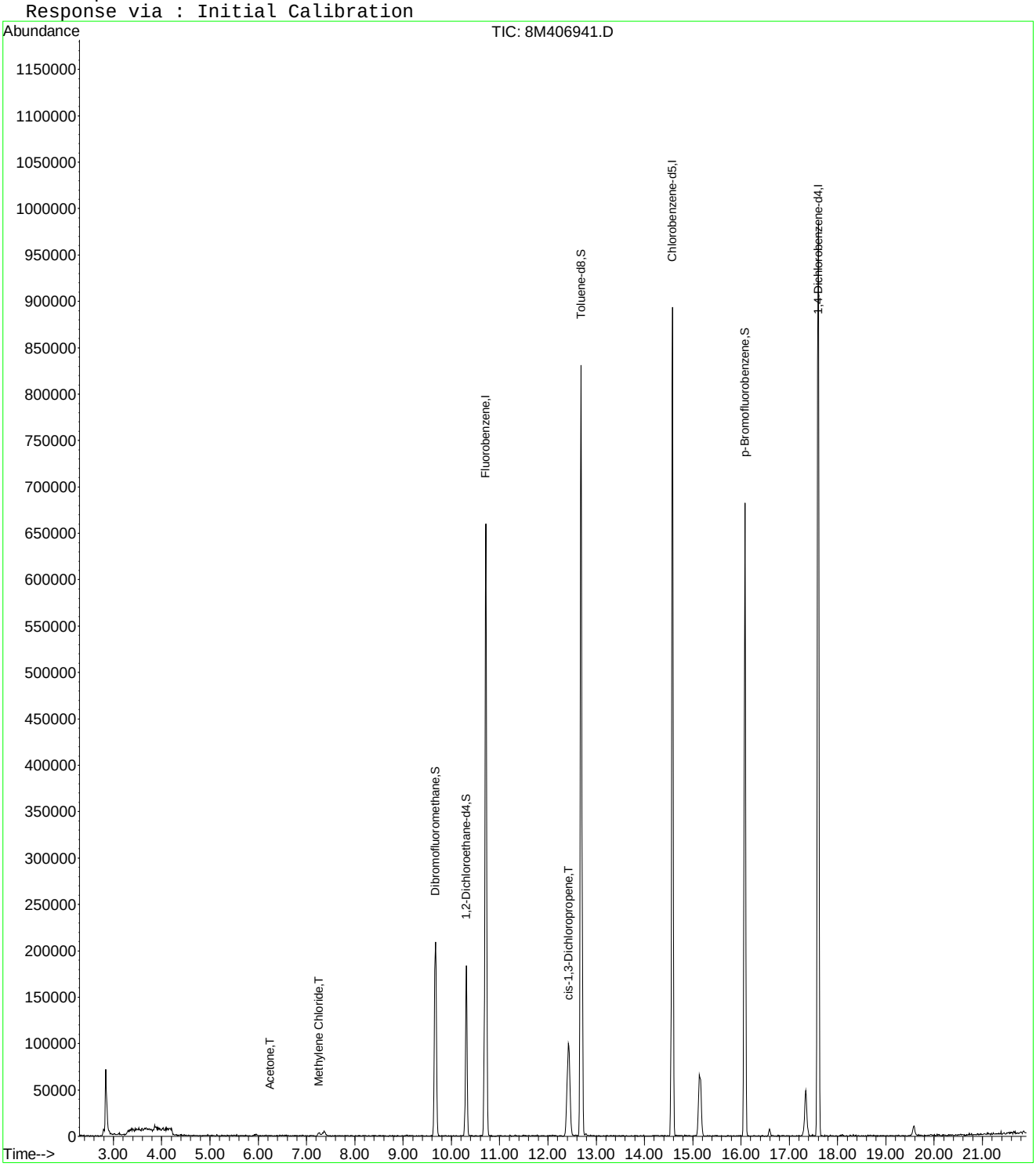

8M406941.D 8260WT.M Mon Aug 24 08:25:56 2015 Page 2

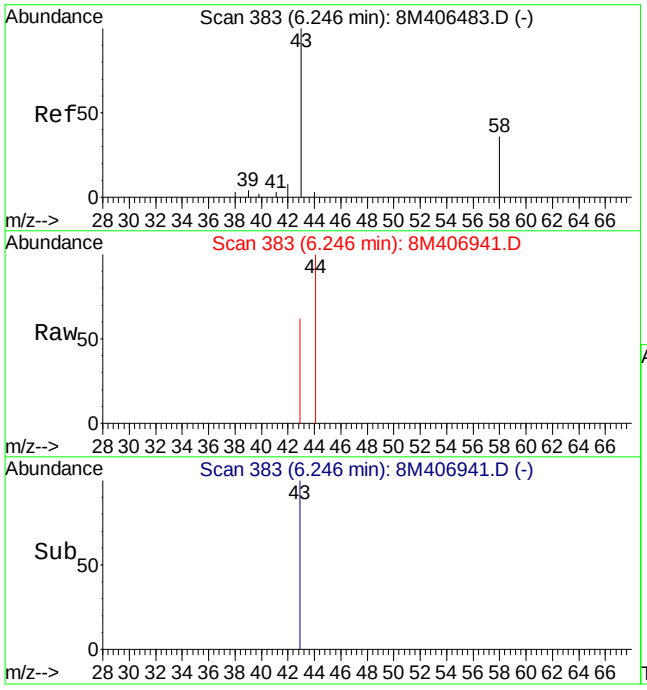

#13
Acetone
Concen: 0.40 ug/L
RT: 6.25 min Scan# 383
Delta R.T. 0.00 min
Lab File: 8M406941.D
Acq: 21 Aug 2015 18:28

Tgt Ion: 43 Resp: 401

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

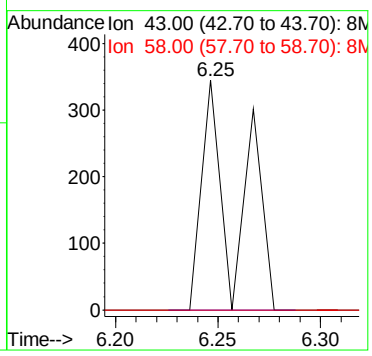

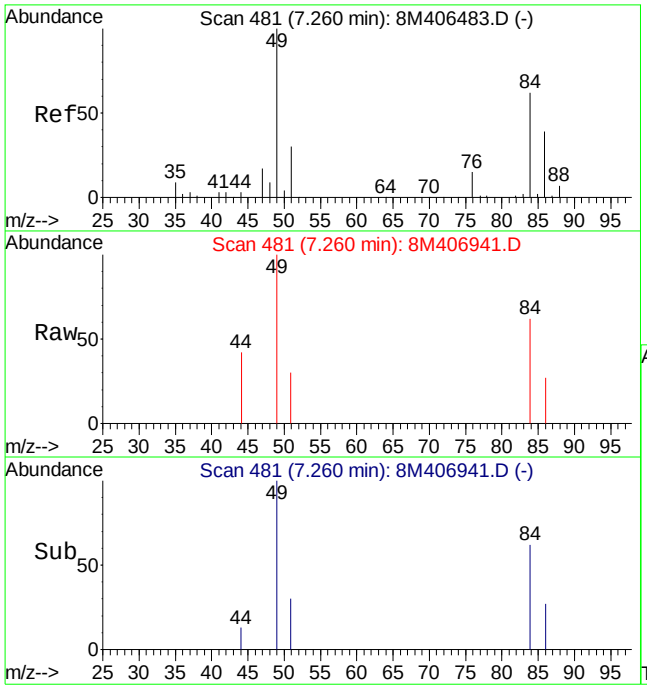

#19
Methylene Chloride
Concen: 0.32 ug/L
RT: 7.26 min Scan# 481
Delta R.T. 0.00 min
Lab File: 8M406941.D
Acq: 21 Aug 2015 18:28

Tgt Ion: 84 Resp: 2534

Ion	Ratio	Lower	Upper
84	100		
49	156.7	98.6	230.2

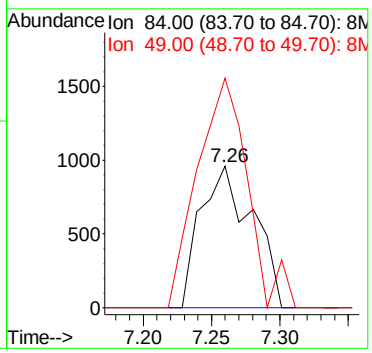

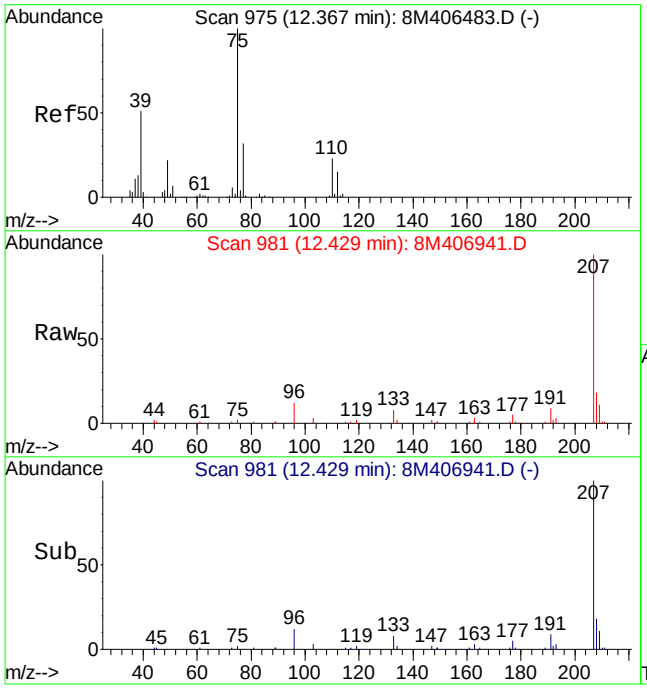

#55
cis-1,3-Dichloropropene
Concen: 0.27 ug/L
RT: 12.43 min Scan# 981
Delta R.T. 0.06 min
Lab File: 8M406941.D
Acq: 21 Aug 2015 18:28

Tgt Ion: 75 Resp: 3166

Ion	Ratio	Lower	Upper
75	100		
77	6.7	18.9	44.1#

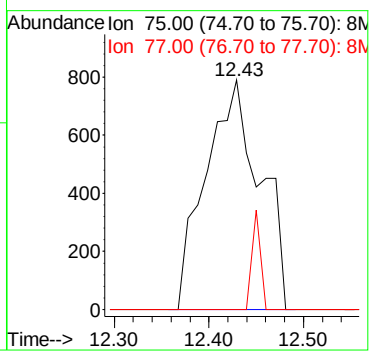

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400358.D Vial: 2
Acq On : 2 Oct 2014 12:24 Operator: TMB
Sample : WG494714-02 5ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:40 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	619208	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	544510	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	254129	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	1884	4.8234 ug/L #	23
3) 3-Chloro-1-propene	7.26	41	51461	4.9911 ug/L	88
4) 2-Chloro-1,3-butadiene	8.64	53	57885	4.7445 ug/L	89
5) Ethyl Acetate	9.28	43	12831	4.1474 ug/L	98
6) Methacrylonitrile	9.44	67	7738	4.2085 ug/L #	61
7) Isobutyl Alcohol	9.28	43	12831	104.0280 ug/L #	12
9) Methyl methacrylate	11.60	41	14247	4.0960 ug/L	83
10) 2-Nitropropane	11.94	43	3986	3.8294 ug/L	98
13) Cyclohexanone	16.03	55	1559	3.8882 ug/L #	43

(#) = qualifier out of range (m) = manual integration
8M400358.D A9FOOWTR.M Fri Oct 03 12:32:40 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400358.D Vial: 2
Acq On : 2 Oct 2014 12:24 Operator: TMB
Sample : WG494714-02 5ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

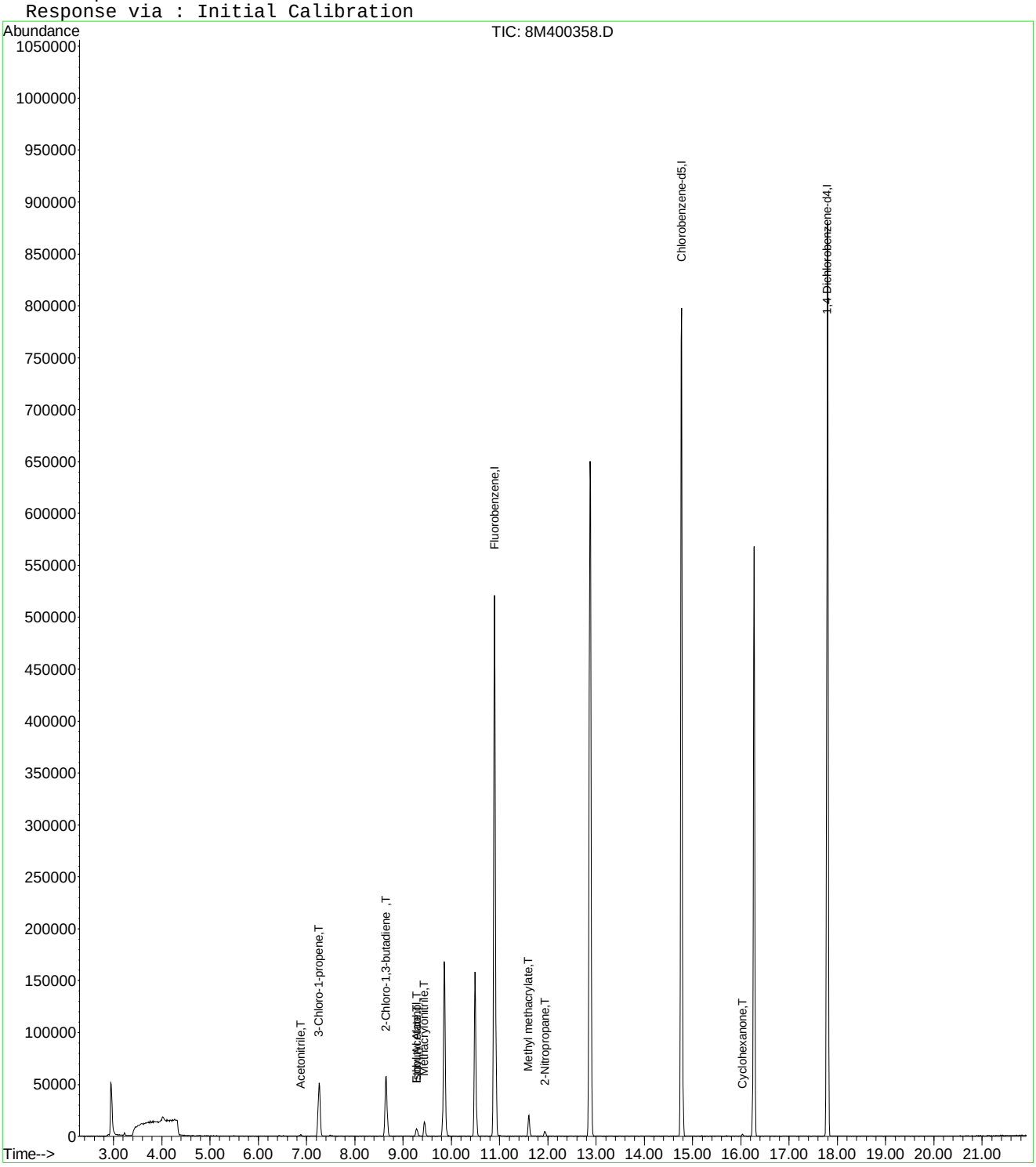

8M400358.D A9FOOWTR.M Fri Oct 03 12:32:41 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400359.D Vial: 3
Acq On : 2 Oct 2014 12:53 Operator: TMB
Sample : WG494714-03 20ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:41 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	590707	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	530005	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	246254	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	7263	19.4920 ug/L	97
3) 3-Chloro-1-propene	7.26	41	190581	19.3757 ug/L	90
4) 2-Chloro-1,3-butadiene	8.65	53	226534	19.4636 ug/L	90
5) Ethyl Acetate	9.28	43	54503	18.4670 ug/L	94
6) Methacrylonitrile	9.44	67	30898	17.6155 ug/L #	65
7) Isobutyl Alcohol	9.45	43	3143	26.7115 ug/L #	95
9) Methyl methacrylate	11.61	41	58234	17.5500 ug/L	72
10) 2-Nitropropane	11.94	43	16687	16.8050 ug/L	98
13) Cyclohexanone	16.03	55	7124	18.3357 ug/L	88

(#) = qualifier out of range (m) = manual integration
8M400359.D A9FOOWTR.M Fri Oct 03 12:32:41 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400359.D Vial: 3
Acq On : 2 Oct 2014 12:53 Operator: TMB
Sample : WG494714-03 20ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

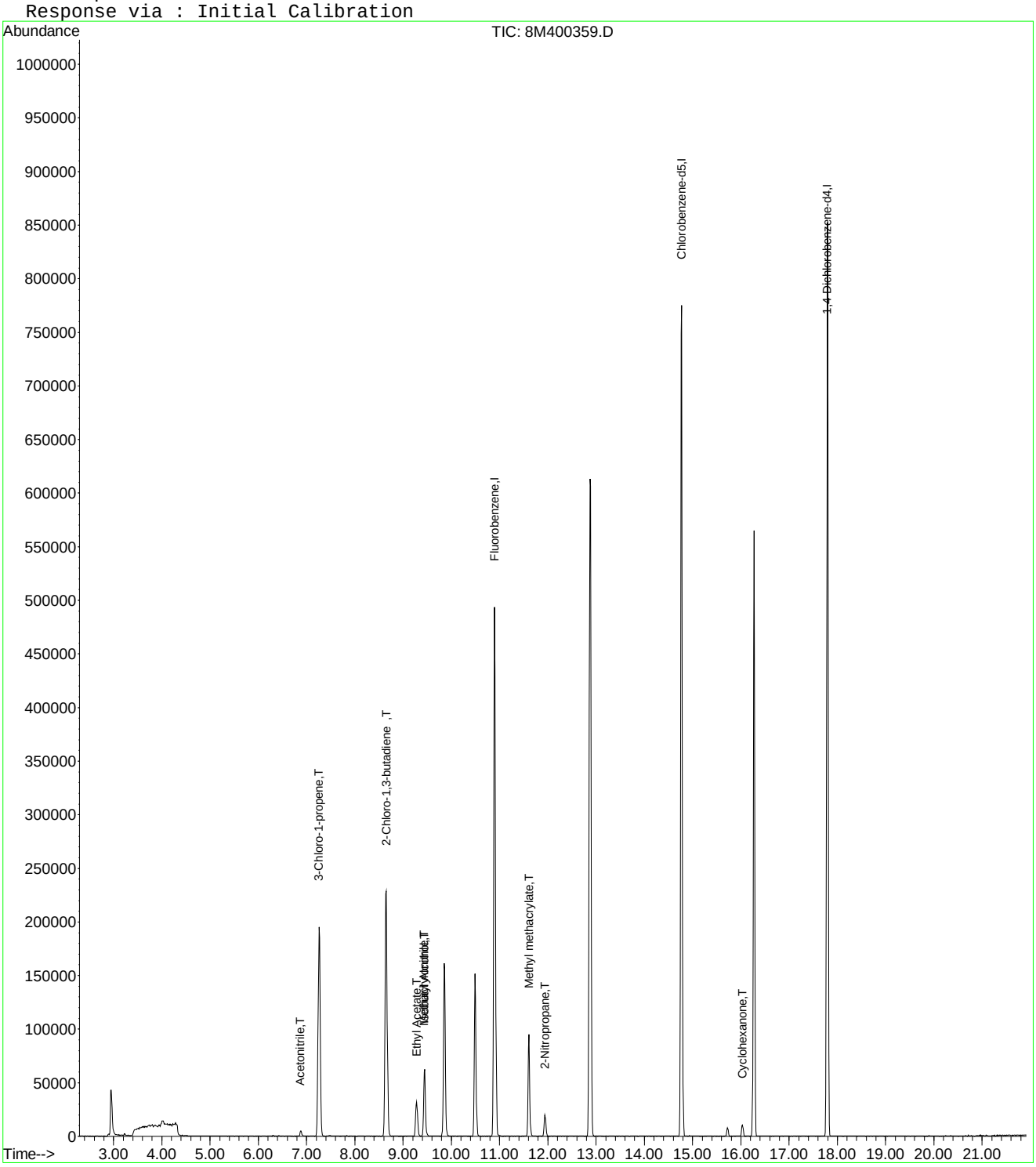

8M400359.D A9FOOWTR.M Fri Oct 03 12:32:42 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400360.D Vial: 4
Acq On : 2 Oct 2014 13:22 Operator: TMB
Sample : WG494714-04 50ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:42 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	590667	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	524443	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	249595	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	17698	47.5001 ug/L	100
3) 3-Chloro-1-propene	7.26	41	491365	49.9588 ug/L	90
4) 2-Chloro-1,3-butadiene	8.65	53	586258	50.3743 ug/L	90
5) Ethyl Acetate	9.27	43	145862	49.4250 ug/L	93
6) Methacrylonitrile	9.44	67	84924	48.4200 ug/L #	62
7) Isobutyl Alcohol	9.46	43	9563	81.2789 ug/L #	95
8) 1-Butanol	10.38	56	1895	48.4971 ug/L	87
9) Methyl methacrylate	11.61	41	161451	48.6599 ug/L	75
10) 2-Nitropropane	11.94	43	45766	46.0929 ug/L	98
13) Cyclohexanone	16.04	55	19698	50.0200 ug/L	89

(#) = qualifier out of range (m) = manual integration
8M400360.D A9FOOWTR.M Fri Oct 03 12:32:42 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400360.D Vial: 4
Acq On : 2 Oct 2014 13:22 Operator: TMB
Sample : WG494714-04 50ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

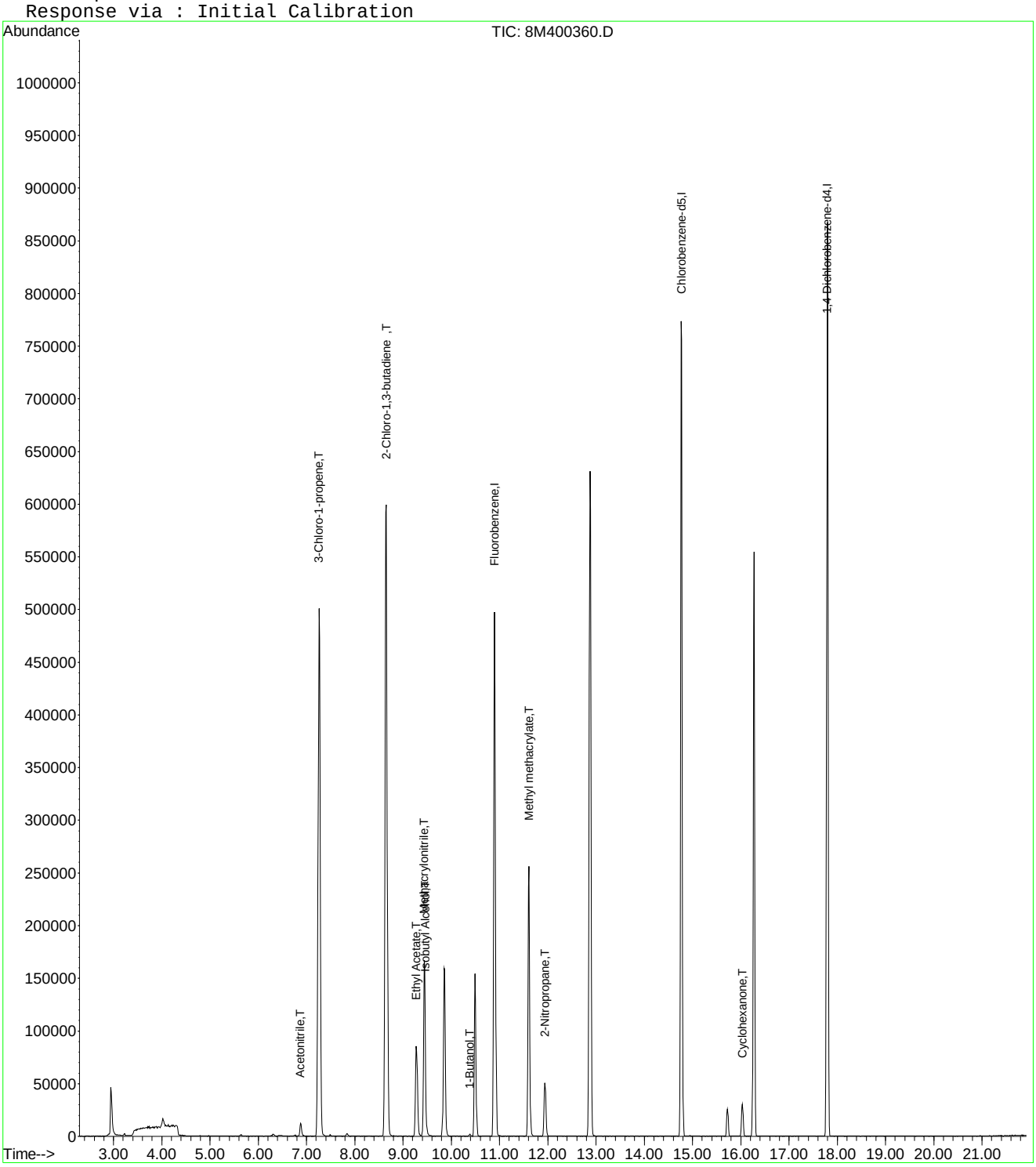

8M400360.D A9FOOWTR.M Fri Oct 03 12:32:42 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400361.D Vial: 5
Acq On : 2 Oct 2014 13:51 Operator: TMB
Sample : WG494714-05 100ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:43 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	595542	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	525736	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	251203	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	38265	101.8596 ug/L	98
3) 3-Chloro-1-propene	7.26	41	1042545	105.1315 ug/L	90
4) 2-Chloro-1,3-butadiene	8.65	53	1239135	105.6013 ug/L	88
5) Ethyl Acetate	9.27	43	315872	106.1564 ug/L	93
6) Methacrylonitrile	9.44	67	182857	103.4038 ug/L #	63
7) Isobutyl Alcohol	9.45	43	23247	195.9661 ug/L #	92
8) 1-Butanol	10.38	56	5482	96.3312 ug/L	88
9) Methyl methacrylate	11.61	41	351287	105.0082 ug/L	73
10) 2-Nitropropane	11.94	43	103249	103.1352 ug/L	99
13) Cyclohexanone	16.04	55	43523	109.8125 ug/L	88

(#) = qualifier out of range (m) = manual integration
8M400361.D A9FOOWTR.M Fri Oct 03 12:32:43 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400361.D Vial: 5
Acq On : 2 Oct 2014 13:51 Operator: TMB
Sample : WG494714-05 100ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

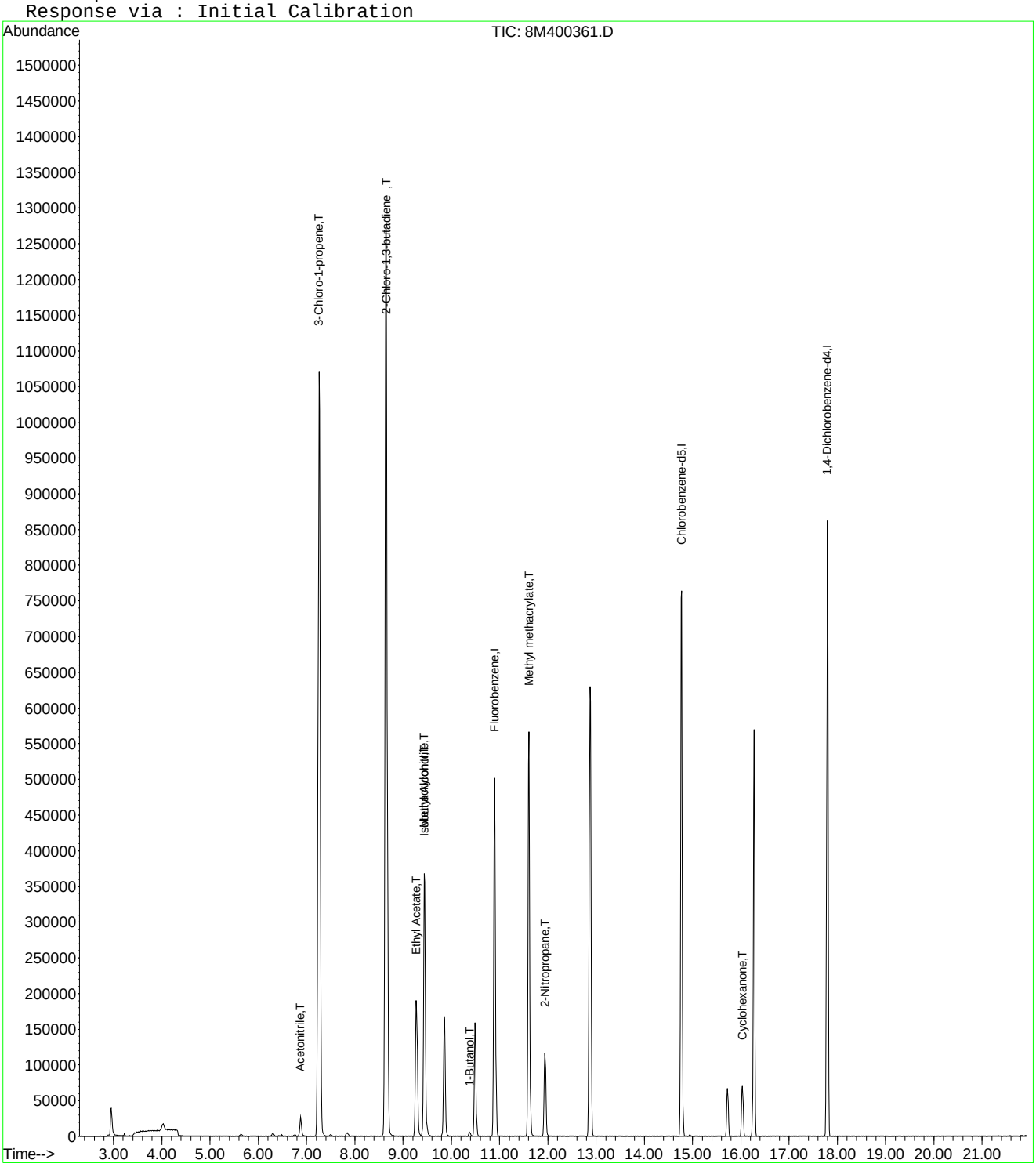

8M400361.D A9FOOWTR.M Fri Oct 03 12:32:43 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400362.D Vial: 6
Acq On : 2 Oct 2014 14:19 Operator: TMB
Sample : WG494714-06 200ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:43 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	605985	25.00 ug/L	-0.02
11) Chlorobenzene-d5	14.77	117	543073	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.80	152	256990	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	81322	212.7447 ug/L	93
3) 3-Chloro-1-propene	7.26	41	2105378	208.6501 ug/L	89
4) 2-Chloro-1,3-butadiene	8.65	53	2530154	211.9083 ug/L	84
5) Ethyl Acetate	9.28	43	654842	216.2828 ug/L	92
6) Methacrylonitrile	9.44	67	386897	215.0159 ug/L #	62
7) Isobutyl Alcohol	9.44	43	51188	424.0654 ug/L	97
8) 1-Butanol	10.37	56	13189	196.5131 ug/L	88
9) Methyl methacrylate	11.60	41	747593	219.6225 ug/L	71
10) 2-Nitropropane	11.94	43	227212	223.0503 ug/L	99
13) Cyclohexanone	16.03	55	76140	187.7821 ug/L	85

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400362.D Vial: 6
Acq On : 2 Oct 2014 14:19 Operator: TMB
Sample : WG494714-06 200ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

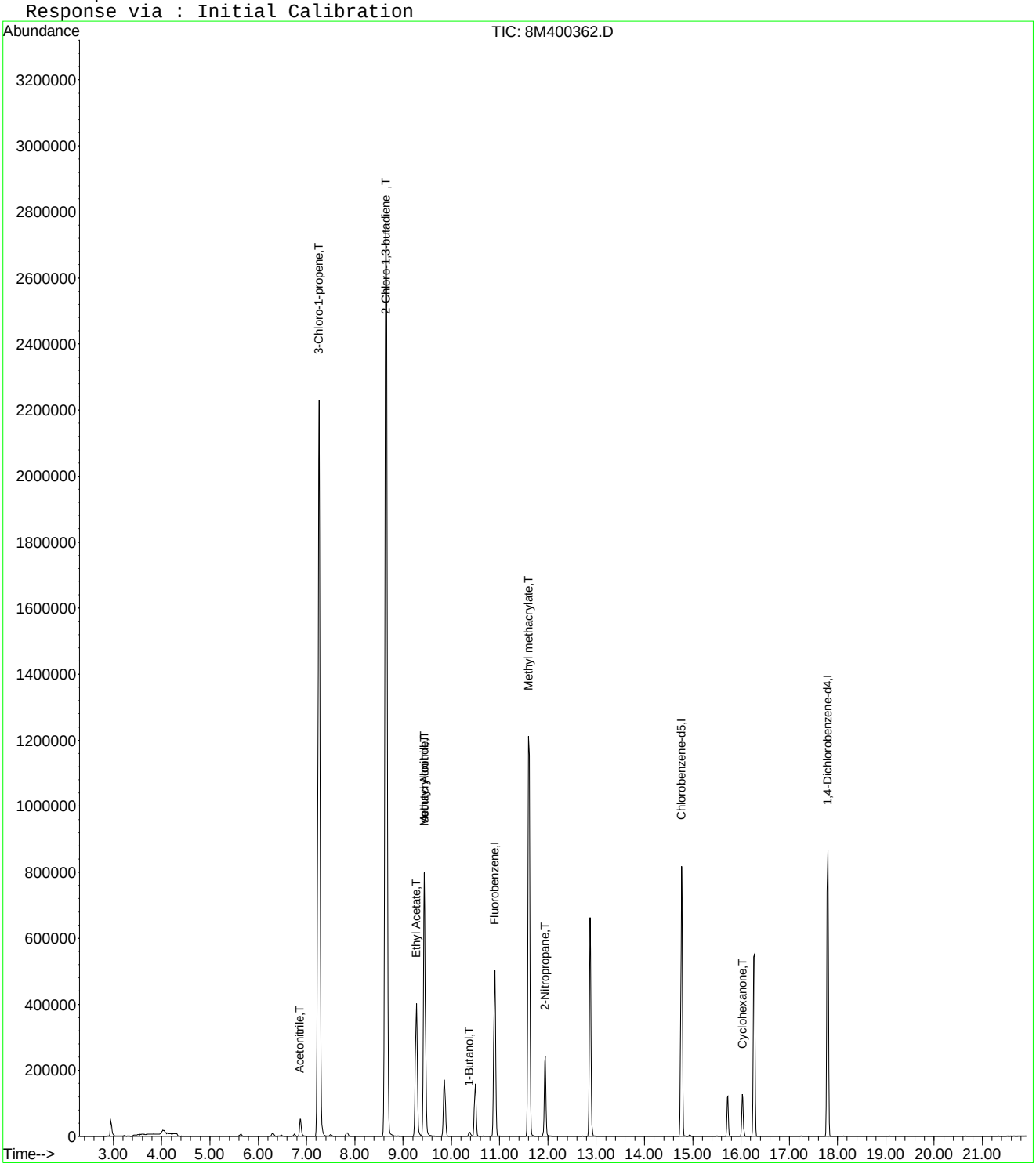

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400363.D Vial: 7
Acq On : 2 Oct 2014 14:48 Operator: TMB
Sample : WG494714-07 300ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:45 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	617316	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	555877	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	259867	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	120718	310.0110 ug/L	94
3) 3-Chloro-1-propene	7.26	41	3133181	304.8093 ug/L	86
4) 2-Chloro-1,3-butadiene	8.64	53	3764580	309.5080 ug/L	79
5) Ethyl Acetate	9.27	43	984728	319.2685 ug/L	92
6) Methacrylonitrile	9.44	67	589378	321.5315 ug/L #	62
7) Isobutyl Alcohol	9.45	43	76604	622.9747 ug/L	98
8) 1-Butanol	10.37	56	23186	322.5015 ug/L	89
9) Methyl methacrylate	11.61	41	1120843	323.2293 ug/L	70
10) 2-Nitropropane	11.94	43	340074	327.7172 ug/L	99
13) Cyclohexanone	16.03	55	133635	325.9318 ug/L	85

(#) = qualifier out of range (m) = manual integration
8M400363.D A9FOOWTR.M Fri Oct 03 12:32:45 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400363.D Vial: 7
Acq On : 2 Oct 2014 14:48 Operator: TMB
Sample : WG494714-07 300ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

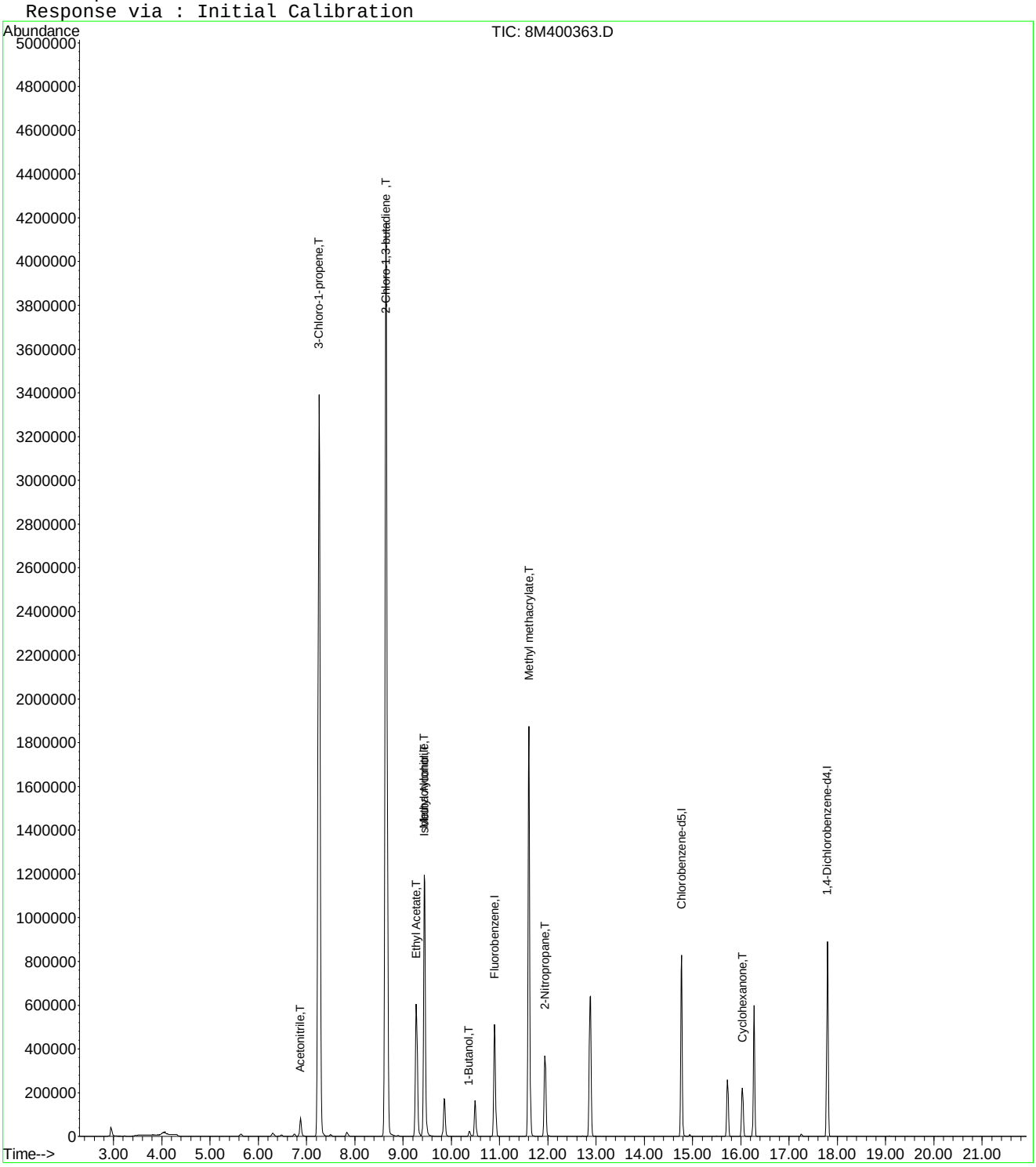

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400364.D Vial: 8
Acq On : 2 Oct 2014 15:16 Operator: TMB
Sample : WG494714-08 400ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:46 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	618926	25.00 ug/L	-0.02
11) Chlorobenzene-d5	14.77	117	559909	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.80	152	262346	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	151708	388.5818 ug/L	95
3) 3-Chloro-1-propene	7.26	41	4028272	390.8682 ug/L	83
4) 2-Chloro-1,3-butadiene	8.65	53	4802050	393.7774 ug/L	74
5) Ethyl Acetate	9.28	43	1250397	404.3491 ug/L	91
6) Methacrylonitrile	9.44	67	762998	415.1660 ug/L #	61
7) Isobutyl Alcohol	9.45	43	102436	830.8840 ug/L #	97
8) 1-Butanol	10.37	56	28243	386.8957 ug/L	89
9) Methyl methacrylate	11.60	41	1436773	413.2595 ug/L	68
10) 2-Nitropropane	11.94	43	451706	434.1607 ug/L	98
13) Cyclohexanone	16.03	55	150327	363.1785 ug/L	84

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400364.D Vial: 8
Acq On : 2 Oct 2014 15:16 Operator: TMB
Sample : WG494714-08 400ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

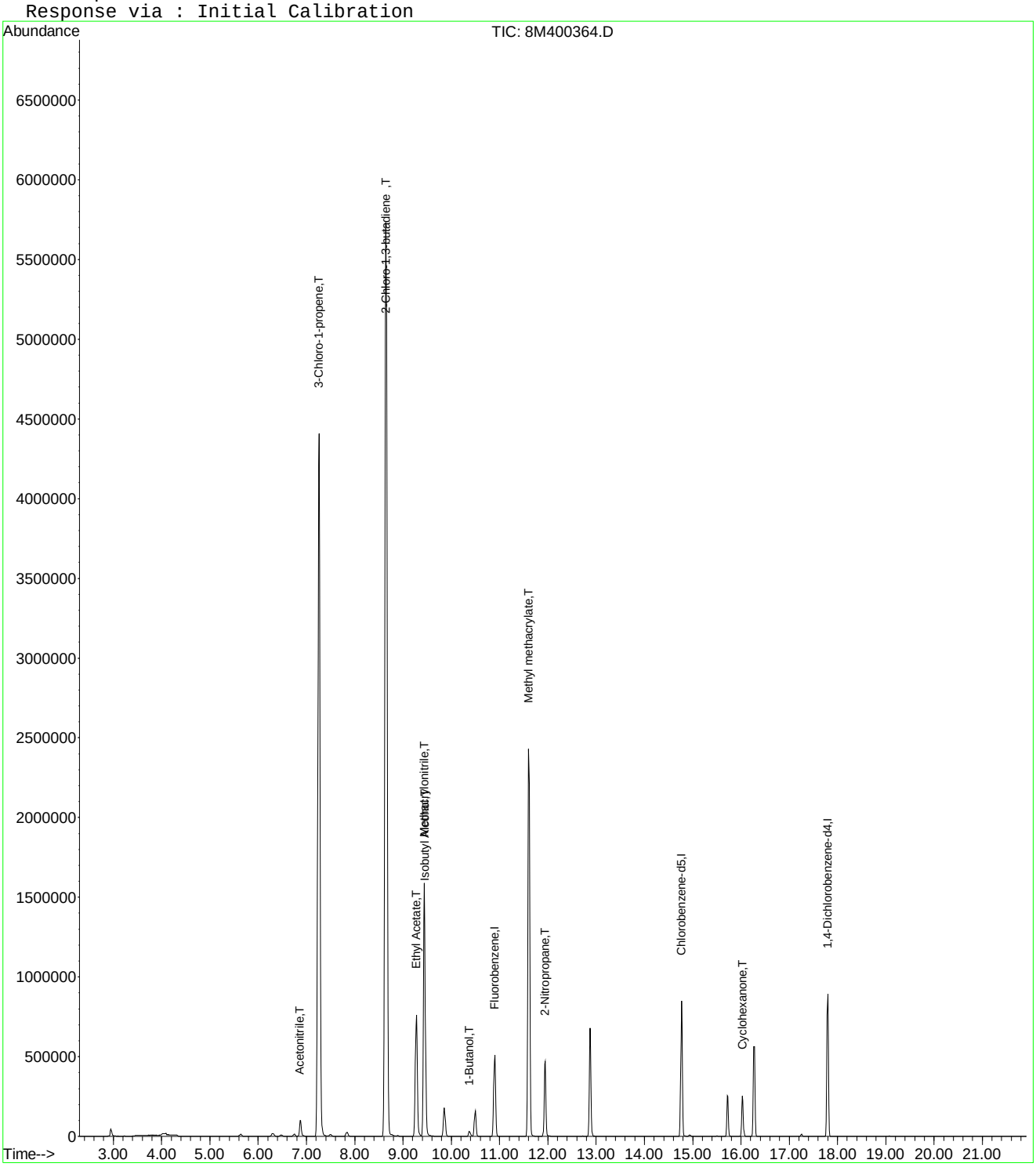

8M400364.D A9FOOWTR.M Fri Oct 03 12:32:47 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400365.D Vial: 9
Acq On : 2 Oct 2014 15:45 Operator: TMB
Sample : WG494714-09 500ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:47 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	611679	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	574048	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	266141	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	197468	511.7830 ug/L	95
3) 3-Chloro-1-propene	7.26	41	4817953	473.0307 ug/L	79
4) 2-Chloro-1,3-butadiene	8.64	53	5656851	469.3686 ug/L	68
5) Ethyl Acetate	9.27	43	1590123	520.3008 ug/L	90
6) Methacrylonitrile	9.44	67	990168	545.1581 ug/L #	61
7) Isobutyl Alcohol	9.45	43	130410	1070.3205 ug/L	98
8) 1-Butanol	10.38	56	36529	499.2614 ug/L	87
9) Methyl methacrylate	11.61	41	1840524	535.6626 ug/L	68
10) 2-Nitropropane	11.94	43	590003	573.8046 ug/L	98
13) Cyclohexanone	16.04	55	203273	484.0894 ug/L	84

(#) = qualifier out of range (m) = manual integration
8M400365.D A9FOOWTR.M Fri Oct 03 12:32:47 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400365.D Vial: 9
Acq On : 2 Oct 2014 15:45 Operator: TMB
Sample : WG494714-09 500ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

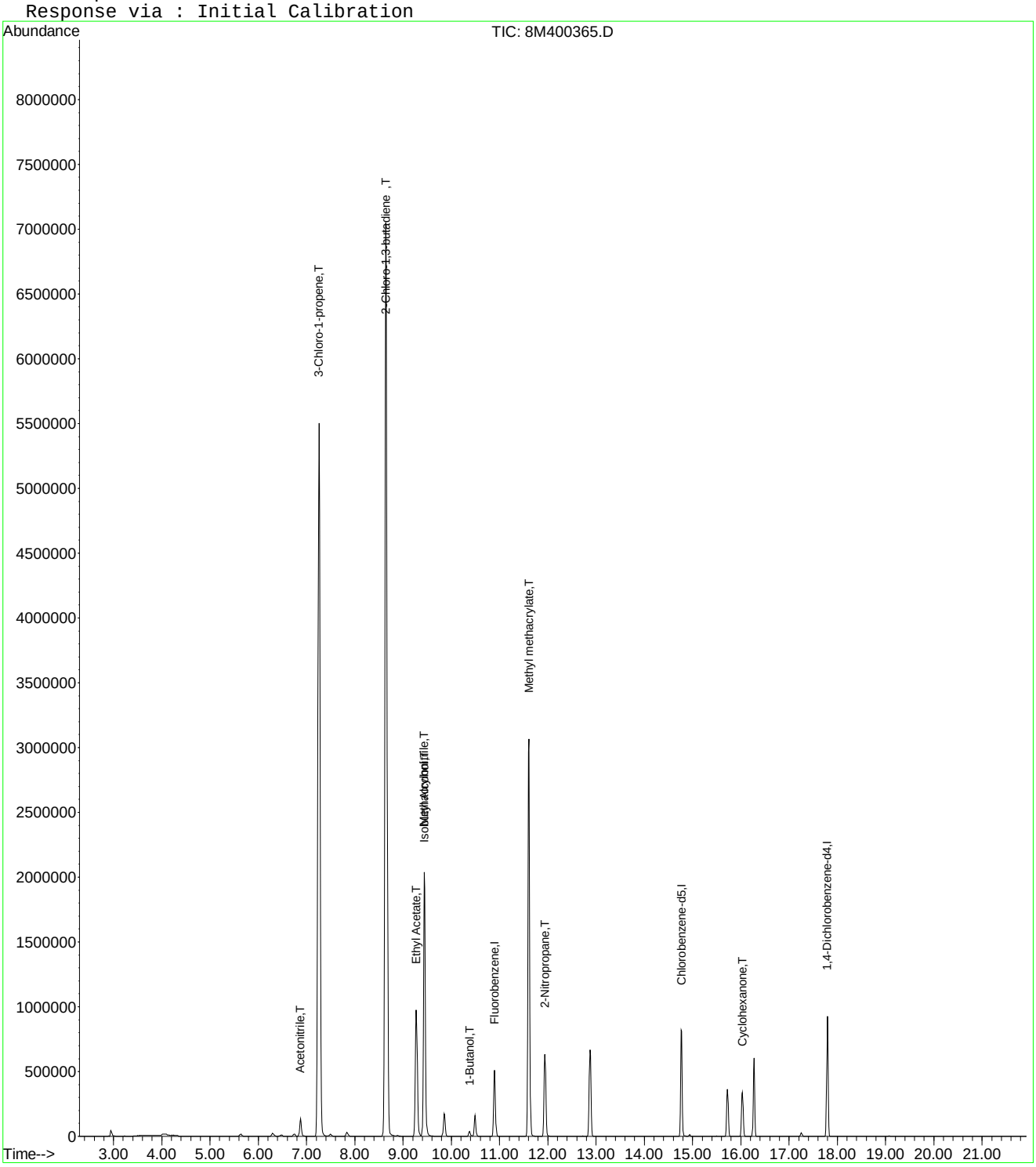

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400367.D Vial: 11
Acq On : 2 Oct 2014 16:47 Operator: TMB
Sample : WG494714-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66677 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:48 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	548066	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	508831	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	240116	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	36847	106.5815 ug/L	98
3) 3-Chloro-1-propene	7.26	41	1001386	109.7284 ug/L	90
4) 2-Chloro-1,3-butadiene	8.64	53	982184	90.9542 ug/L	89
5) Ethyl Acetate	9.27	43	328991	120.1430 ug/L	94
6) Methacrylonitrile	9.44	67	174278	107.0895 ug/L #	64
7) Isobutyl Alcohol	9.45	43	21185	194.0538 ug/L	99
8) 1-Butanol	10.39	56	5303	100.0865 ug/L	77
9) Methyl methacrylate	11.61	41	317777	103.2198 ug/L	73
10) 2-Nitropropane	11.94	43	95761	103.9416 ug/L	99
13) Cyclohexanone	16.03	55	11614	30.6562 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M400367.D A9FOOWTR.M Fri Oct 03 12:32:49 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400367.D Vial: 11
Acq On : 2 Oct 2014 16:47 Operator: TMB
Sample : WG494714-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66677 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

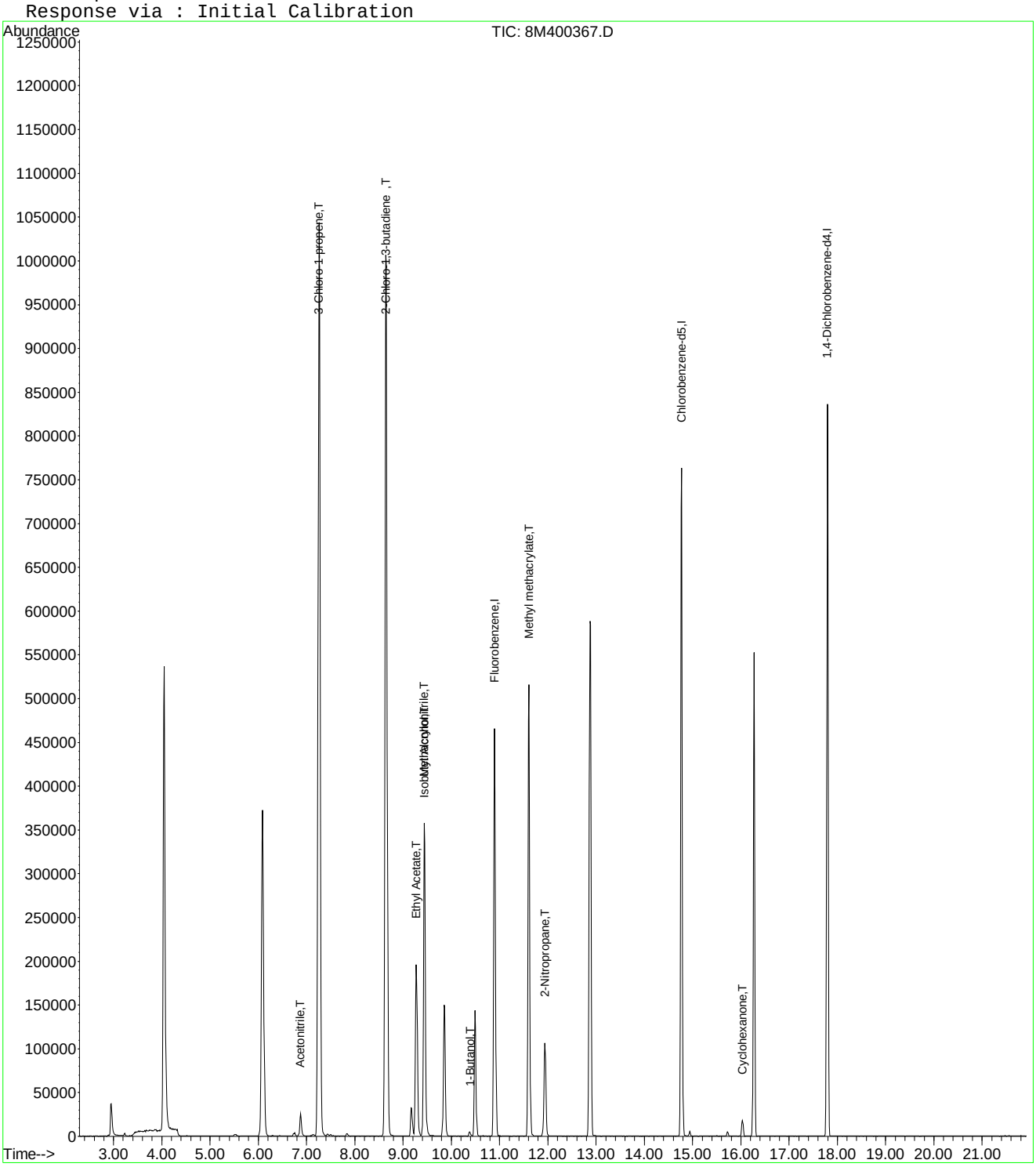

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\100214\8M400367.D Vial: 11
Acq On : 2 Oct 2014 16:47 Operator: TMB
Sample : WG494714-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66677 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	92	-0.03
2	T	Acetonitrile	100.0000	106.5815	-6.6	96	-0.02
3	T	3-Chloro-1-propene	100.0000	109.7284	-9.7	96	-0.03
4	T	2-Chloro-1,3-butadiene	100.0000	90.9542	9.0	79	-0.03
5	T	Ethyl Acetate	100.0000	120.1430	-20.1	104	-0.02
6	T	Methacrylonitrile	100.0000	107.0895	-7.1	95	-0.03
7	T	Isobutyl Alcohol	200.0000	194.0538	3.0	91	-0.02
8	T	1-Butanol	100.0000	100.0865	-0.1	97	0.00
9	T	Methyl methacrylate	100.0000	103.2198	-3.2	90	-0.02
10	T	2-Nitropropane	100.0000	103.9416	-3.9	93	-0.03
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	97	-0.03
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	96	-0.04
13	T	Cyclohexanone	100.0000	30.6562	69.3	27	-0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M400367.D A9FOOWTR.M Fri Oct 03 12:33:23 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406479.D Vial: 3
Acq On : 30 Jul 2015 15:09 Operator: TMB
Sample : WG533051-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:04 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	855570	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	610993	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	330138	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	3287	0.4360 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.76%#	
43) 1,2-Dichloroethane-d4	10.32	65	3577	0.4771 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	1.92%#	
58) Toluene-d8	12.69	98	15700	0.5327 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.12%#	
80) p-Bromofluorobenzene	16.08	95	6489	0.5683 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	11451	0.8764 ug/L	94
3) Chloromethane	3.62	50	16976	1.1637 ug/L	91
4) Vinyl Chloride	3.86	62	9759	0.9097 ug/L	85
5) 1,3-Butadiene	3.91	54	9164	0.9744 ug/L #	73
6) Bromomethane	4.74	94	7543	1.0556 ug/L	92
7) Chloroethane	4.90	64	6509	0.9744 ug/L	95
8) Trichlorofluoromethane	5.40	101	13188	0.9507 ug/L	98
9) Diethyl ether	5.91	59	27288	5.1969 ug/L	93
10) Isoprene	5.95	67	10349	0.9532 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	7136	0.9010 ug/L	81
13) Acetone	6.24	43	1885	1.7472 ug/L #	48
14) 1,1-Dichloroethene	6.47	61	12577	0.9360 ug/L	90
15) Tert-Butyl Alcohol	6.61	59	3097	10.9286 ug/L #	58
16) Dimethyl Sulfide	6.73	62	8416	0.9976 ug/L	99
17) Iodomethane	6.98	142	3742	1.3194 ug/L	77
18) Methyl acetate	6.99	43	4174	0.9970 ug/L #	80
19) Methylene Chloride	7.27	84	9077	1.0605 ug/L	93
20) Carbon Disulfide	7.31	76	27875	1.0157 ug/L	100
21) Acrylonitrile	7.44	53	4457	2.4861 ug/L	100
22) Methyl Tert Butyl Ether	7.47	73	14050	0.9295 ug/L	94
23) trans-1,2-Dichloroethene	7.70	61	11341	0.8999 ug/L	93
24) n-Hexane	7.79	57	12352	0.9067 ug/L	90
25) Diisopropyl ether	8.14	45	163476	5.3419 ug/L	96
26) Vinyl Acetate	8.30	43	7858	1.0046 ug/L #	87
27) 1,1-Dichloroethane	8.33	63	16892	0.9994 ug/L	97
28) Ethyl-Tert-Butyl ether	8.72	59	118161	5.1752 ug/L	99
29) 2-Butanone	8.90	43	1905	1.0428 ug/L #	57
30) Propionitrile	9.00	54	2543	4.3767 ug/L #	56
31) 2,2-Dichloropropane	9.12	77	13296	1.0208 ug/L	94
32) cis-1,2-Dichloroethene	9.18	96	8705	0.9598 ug/L	91
33) Chloroform	9.39	83	14935	0.9791 ug/L	95
34) 1-Bromopropane	9.51	122	1278	0.7928 ug/L	88
35) Bromochloromethane	9.61	130	4797	1.0268 ug/L	98
36) Tetrahydrofuran	9.65	42	6338	5.0444 ug/L	96
38) 1,1,1-Trichloroethane	9.90	97	14299	1.0163 ug/L	92
39) Cyclohexane	9.95	56	15187	0.9254 ug/L	97
40) 1,1-Dichloropropene	10.11	75	11610	0.9638 ug/L	99
41) Tert-Amyl-Methyl ether	10.22	73	90014	5.2666 ug/L	98
42) Carbon Tetrachloride	10.26	117	11478	0.9213 ug/L	92
45) 1,2-Dichloroethane	10.44	62	10157	0.9942 ug/L	91

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406479.D Vial: 3
Acq On : 30 Jul 2015 15:09 Operator: TMB
Sample : WG533051-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:04 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	10.46	78	35799	1.0631 ug/L		95
47)	Trichloroethene	11.23	130	10735	1.1169 ug/L		94
48)	Methylcyclohexane	11.29	83	12274	0.8806 ug/L		93
49)	1,2-Dichloropropane	11.42	63	8833	0.9468 ug/L		98
50)	Bromodichloromethane	11.73	83	12231	1.0564 ug/L		91
52)	Dibromomethane	11.82	93	4139	0.9699 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.02	63	3341	0.8574 ug/L	#	81
54)	4-Methyl-2-Pentanone	12.04	58	1468	0.8486 ug/L	#	64
55)	cis-1,3-Dichloropropene	12.36	75	12247	0.9610 ug/L		98
56)	Dimethyl Disulfide	12.62	79	4052	0.5869 ug/L		66
59)	Toluene	12.79	91	38254	1.0714 ug/L		97
60)	Ethyl Methacrylate	12.88	69	6131	0.8997 ug/L		95
62)	trans-1,3-Dichloropropene	12.96	75	9175	0.8687 ug/L		92
63)	1,1,2-Trichloroethane	13.17	97	5099	0.9113 ug/L		94
64)	2-Hexanone	13.12	58	1248	0.7895 ug/L	#	83
65)	1,3-Dichloropropane	13.48	76	9612	0.9870 ug/L		98
66)	Tetrachloroethene	13.61	164	7876	1.0462 ug/L		87
67)	Dibromochloromethane	13.87	129	6256	0.8487 ug/L		93
68)	1,2-Dibromoethane	14.12	107	5204	0.9565 ug/L		90
69)	1-Chlorohexane	14.22	91	11819	0.9366 ug/L		96
70)	Chlorobenzene	14.63	112	23245	1.0168 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.65	131	6924	0.8525 ug/L		95
72)	Ethylbenzene	14.66	106	13644	1.0573 ug/L		99
73)	m-,p-Xylene	14.74	106	32527	2.1330 ug/L		100
74)	o-Xylene	15.31	106	13412	0.8937 ug/L		80
75)	Styrene	15.34	104	24649	1.0056 ug/L		98
76)	Bromoform	15.83	173	3759	0.8482 ug/L		93
77)	Isopropylbenzene	15.74	105	38730	1.0309 ug/L		96
79)	1,1,2,2-Tetrachloroethane	15.95	83	6103	1.0174 ug/L	#	96
81)	1,2,3-Trichloropropane	16.14	110	1310	0.7780 ug/L	#	17
82)	trans-1,4-Dichloro-2-Buten	16.19	53	1214	1.3077 ug/L	#	1
83)	n-Propylbenzene	16.24	91	49968	1.0280 ug/L		96
84)	Bromobenzene	16.36	156	9745	0.9898 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	32520	1.0134 ug/L		98
86)	2-Chlorotoluene	16.51	91	32697	1.1013 ug/L		96
87)	4-Chlorotoluene	16.56	91	28365	1.0025 ug/L		99
88)	a-Methylstyrene	16.83	118	15462	0.8872 ug/L		100
89)	tert-Butylbenzene	16.89	134	6892	0.9913 ug/L		98
90)	1,2,4-Trimethylbenzene	16.95	105	32767	1.0078 ug/L		95
91)	sec-Butylbenzene	17.16	105	42903	1.0835 ug/L		100
92)	p-Isopropyltoluene	17.32	119	35830	1.0523 ug/L		100
93)	1,3-Dichlorobenzene	17.51	146	19432	1.0065 ug/L		95
94)	1,4-Dichlorobenzene	17.64	146	19007	0.9550 ug/L		85
95)	n-Butylbenzene	17.84	91	33094	1.0079 ug/L		98
96)	1,2-Dichlorobenzene	18.13	146	17388	1.0201 ug/L		93
97)	1,2-Dibromo-3-Chloropropan	19.12	75	277	0.2638 ug/L	#	1
98)	1,2,4-Trichlorobenzene	20.27	180	12417	0.9466 ug/L		95
99)	Hexachlorobutadiene	20.41	225	6827	1.0228 ug/L		89
100)	Naphthalene	20.64	128	16604	0.9756 ug/L		97
101)	1,2,3-Trichlorobenzene	20.95	180	9728	0.8594 ug/L		97

(#) = qualifier out of range (m) = manual integration
8M406479.D 8260WT.M Fri Jul 31 14:02:04 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406479.D Vial: 3
Acq On : 30 Jul 2015 15:09 Operator: TMB
Sample : WG533051-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

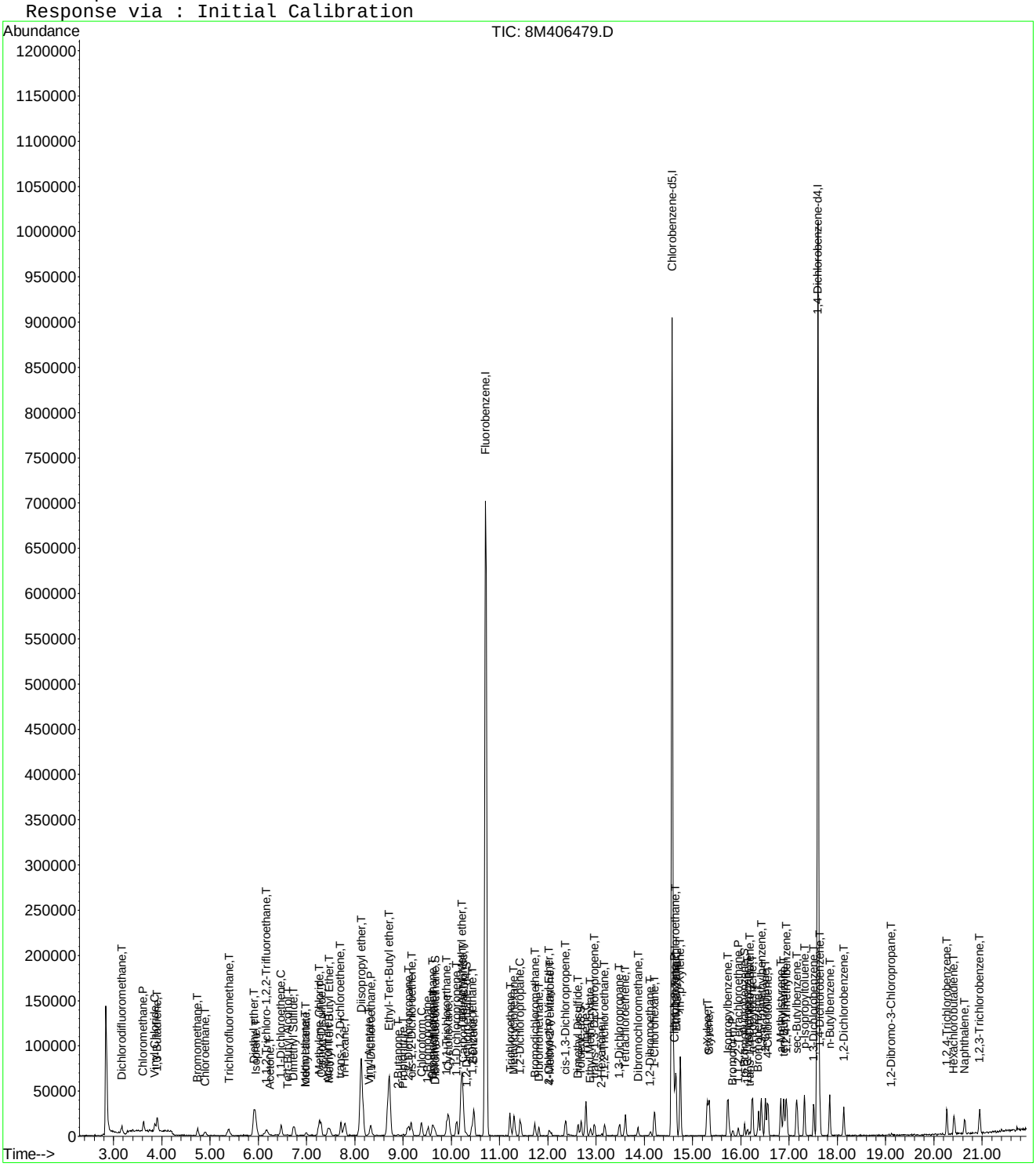

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\073015\8M406479.D Vial: 3
Acq On : 30 Jul 2015 15:09 Operator: TMB
Sample : WG533051-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.8764	12.4	100	0.00
3	P	Chloromethane	1.0000	1.1637	-16.4	100	0.00
4	C	Vinyl Chloride	1.0000	0.9097	9.0	100	0.01
5	T	1,3-Butadiene	1.0000	0.9744	2.6	100	0.02
6	T	Bromomethane	1.0000	1.0556	-5.6	100	0.00
7	T	Chloroethane	1.0000	0.9744	2.6	100	0.00
8	T	Trichlorofluoromethane	1.0000	0.9507	4.9	100	0.00
9	T	Diethyl ether	5.0000	5.1970	-3.9	100	0.00
10	T	Isoprene	1.0000	0.9532	4.7	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.15#
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	0.9010	9.9	100	0.00
13	T	Acetone	-1.0000	1.7472	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	0.9360	6.4	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	10.9286	0.0	100	0.02
16	T	Dimethyl Sulfide	1.0000	0.9976	0.2	100	-0.01
17	T	Iodomethane	1.0000	1.3194	-31.9#	100	-0.01
18	T	Methyl acetate	-1.0000	0.9970	0.0	100	-0.02
19	T	Methylene Chloride	1.0000	1.0605	-6.0	100	0.00
20	T	Carbon Disulfide	1.0000	1.0157	-1.6	100	0.00
21	T	Acrylonitrile	2.5000	2.4861	0.6	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9295	7.0	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	0.8999	10.0	100	-0.01
24	T	n-Hexane	-1.0000	0.9067	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	5.3419	-6.8	100	0.00
26	T	Vinyl Acetate	1.0000	1.0046	-0.5	100	0.00
27	P	1,1-Dichloroethane	1.0000	0.9994	0.1	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	5.1752	-3.5	100	0.00
29	T	2-Butanone	-1.0000	1.0428	0.0	100	0.00
30	T	Propionitrile	5.0000	4.3767	12.5	100	0.00
31	T	2,2-Dichloropropane	1.0000	1.0208	-2.1	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	0.9598	4.0	100	0.00
33	C	Chloroform	1.0000	0.9791	2.1	100	0.00
34		1-Bromopropane	1.0000	0.7928	20.7	100	-0.01
35	T	Bromochloromethane	1.0000	1.0268	-2.7	100	0.00
36	T	Tetrahydrofuran	5.0000	5.0444	-0.9	100	0.00
37	S	Dibromofluoromethane	0.5000	0.4360	12.8	100	0.00
38	T	1,1,1-Trichloroethane	1.0000	1.0163	-1.6	100	-0.01
39	T	Cyclohexane	1.0000	0.9254	7.5	100	0.00
40	T	1,1-Dichloropropene	1.0000	0.9638	3.6	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	5.2666	-5.3	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.9213	7.9	100	0.00
43	S	1,2-Dichloroethane-d4	0.5000	0.4771	4.6	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	1.0000	0.9942	0.6	100	0.00
46	T	Benzene	1.0000	1.0631	-6.3	100	-0.01
47	T	Trichloroethene	1.0000	1.1169	-11.7	100	0.00
48	T	Methylcyclohexane	-1.0000	0.8806	0.0	100	-0.01
49	C	1,2-Dichloropropane	1.0000	0.9468	5.3	100	-0.01
50	T	Bromodichloromethane	1.0000	1.0564	-5.6	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	1.0000	0.9699	3.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.8574	0.0	100	-0.01
54	T	4-Methyl-2-Pentanone	-1.0000	0.8486	0.0	100	-0.02

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\073015\8M406479.D Vial: 3
Acq On : 30 Jul 2015 15:09 Operator: TMB
Sample : WG533051-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9610	3.9	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.5869	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	0.5000	0.5327	-6.5	100	0.00
59	C	Toluene	1.0000	1.0714	-7.1	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.8996	10.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	1.0000	0.8687	13.1	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.9113	8.9	100	-0.01
64	T	2-Hexanone	-1.0000	0.7895	0.0	100	0.00
65	T	1,3-Dichloropropane	1.0000	0.9870	1.3	100	0.00
66	T	Tetrachloroethene	1.0000	1.0462	-4.6	100	0.00
67	T	Dibromochloromethane	1.0000	0.8487	15.1	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.9565	4.3	100	0.00
69	T	1-Chlorohexane	1.0000	0.9366	6.3	100	0.00
70	P	Chlorobenzene	1.0000	1.0168	-1.7	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.8526	14.7	100	-0.01
72	C	Ethylbenzene	1.0000	1.0573	-5.7	100	0.00
73	T	m-,p-Xylene	2.0000	2.1330	-6.7	100	0.00
74	T	o-Xylene	1.0000	0.8937	10.6	100	0.00
75	T	Styrene	1.0000	1.0056	-0.6	100	0.00
76	P	Bromoform	1.0000	0.8482	15.2	100	-0.01
77	T	Isopropylbenzene	1.0000	1.0309	-3.1	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	1.0174	-1.7	100	0.00
80	S	p-Bromofluorobenzene	0.5000	0.5683	-13.7	100	0.00
81	T	1,2,3-Trichloropropane	1.0000	0.7780	22.2	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	1.0000	1.3077	-30.8#	100	0.00
83	T	n-Propylbenzene	1.0000	1.0280	-2.8	100	0.00
84	T	Bromobenzene	1.0000	0.9898	1.0	100	-0.01
85	T	1,3,5-Trimethylbenzene	1.0000	1.0134	-1.3	100	0.00
86	T	2-Chlorotoluene	1.0000	1.1013	-10.1	100	0.00
87	T	4-Chlorotoluene	1.0000	1.0025	-0.3	100	0.00
88	T	a-Methylstyrene	-1.0000	0.8872	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	0.9913	0.9	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	1.0078	-0.8	100	0.00
91	T	sec-Butylbenzene	1.0000	1.0836	-8.4	100	0.00
92	T	p-Isopropyltoluene	1.0000	1.0523	-5.2	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0065	-0.6	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	0.9550	4.5	100	0.00
95	T	n-Butylbenzene	1.0000	1.0079	-0.8	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0201	-2.0	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.2638	0.0	100	-0.01
98	T	1,2,4-Trichlorobenzene	1.0000	0.9466	5.3	100	0.00
99	T	Hexachlorobutadiene	1.0000	1.0228	-2.3	100	-0.02
100	T	Naphthalene	1.0000	0.9756	2.4	100	-0.01
101	T	1,2,3-Trichlorobenzene	1.0000	0.8594	14.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M406479.D 8260WT.M Fri Jul 31 14:02:50 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406480.D Vial: 4
Acq On : 30 Jul 2015 15:37 Operator: TMB
Sample : WG533051-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:05 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	842185	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	601155	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	323926	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	7165	0.9655 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.88%#	
43) 1,2-Dichloroethane-d4	10.31	65	7402	1.0030 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	4.00%#	
58) Toluene-d8	12.69	98	29887	1.0306 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.12%#	
80) p-Bromofluorobenzene	16.08	95	11241	1.0033 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	22708	1.7655 ug/L	98
3) Chloromethane	3.62	50	31078	2.1643 ug/L	88
4) Vinyl Chloride	3.85	62	21014	1.9899 ug/L	94
5) 1,3-Butadiene	3.90	54	18707	2.0207 ug/L	81
6) Bromomethane	4.73	94	13961	1.9848 ug/L	98
7) Chloroethane	4.91	64	12745	1.9383 ug/L	96
8) Trichlorofluoromethane	5.39	101	25572	1.8727 ug/L	98
9) Diethyl ether	5.91	59	126603	24.4945 ug/L	97
10) Isoprene	5.94	67	21343	1.9970 ug/L	97
11) Acrolein	6.15	56	3415	11.0191 ug/L	84
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	14034	1.8000 ug/L	89
13) Acetone	6.24	43	2345	2.2081 ug/L	82
14) 1,1-Dichloroethene	6.48	61	26690	2.0178 ug/L	99
15) Tert-Butyl Alcohol	6.56	59	14997	53.7622 ug/L #	75
16) Dimethyl Sulfide	6.75	62	16424	1.9777 ug/L	98
17) Iodomethane	7.00	142	8811	1.9392 ug/L	99
18) Methyl acetate	7.00	43	7612	1.8471 ug/L #	79
19) Methylene Chloride	7.27	84	17419	2.0674 ug/L	97
20) Carbon Disulfide	7.30	76	57347	2.1228 ug/L	99
21) Acrylonitrile	7.44	53	19063	10.8024 ug/L	96
22) Methyl Tert Butyl Ether	7.47	73	31185	2.0960 ug/L	98
23) trans-1,2-Dichloroethene	7.71	61	24260	1.9556 ug/L	92
24) n-Hexane	7.79	57	27012	2.0143 ug/L	98
25) Diisopropyl ether	8.14	45	757167	25.1353 ug/L	97
26) Vinyl Acetate	8.31	43	15328	1.9907 ug/L #	86
27) 1,1-Dichloroethane	8.32	63	34218	2.0566 ug/L	97
28) Ethyl-Tert-Butyl ether	8.72	59	553606	24.6321 ug/L	99
29) 2-Butanone	8.90	43	3250	1.8074 ug/L #	57
30) Propionitrile	8.99	54	14005	24.4866 ug/L	91
31) 2,2-Dichloropropane	9.11	77	26994	2.1053 ug/L	90
32) cis-1,2-Dichloroethene	9.17	96	18634	2.0872 ug/L	85
33) Chloroform	9.38	83	30476	2.0297 ug/L	98
34) 1-Bromopropane	9.51	122	3425	2.1584 ug/L	99
35) Bromochloromethane	9.63	130	9189	1.9982 ug/L	94
36) Tetrahydrofuran	9.65	42	30961	25.0332 ug/L	96
38) 1,1,1-Trichloroethane	9.91	97	27246	1.9672 ug/L	98
39) Cyclohexane	9.95	56	30760	1.9042 ug/L	97
40) 1,1-Dichloropropene	10.10	75	23767	2.0043 ug/L	95
41) Tert-Amyl-Methyl ether	10.21	73	409936	24.3659 ug/L	99
42) Carbon Tetrachloride	10.26	117	24059	1.9619 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M406480.D 8260WT.M Fri Jul 31 14:02:05 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406480.D Vial: 4
Acq On : 30 Jul 2015 15:37 Operator: TMB
Sample : WG533051-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:05 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	18911	1.8804 ug/L		96
46)	Benzene	10.47	78	67444	2.0346 ug/L		96
47)	Trichloroethene	11.22	130	18008	1.9033 ug/L		95
48)	Methylcyclohexane	11.30	83	26755	1.9501 ug/L		96
49)	1,2-Dichloropropane	11.43	63	18045	1.9650 ug/L		100
50)	Bromodichloromethane	11.73	83	21770	1.9102 ug/L		95
51)	1,4-Dioxane	11.71	88	1562	48.3679 ug/L	#	29
52)	Dibromomethane	11.82	93	8550	2.0353 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.02	63	6526	1.7013 ug/L		99
54)	4-Methyl-2-Pentanone	12.07	58	2541	1.4923 ug/L		94
55)	cis-1,3-Dichloropropene	12.37	75	24560	1.9578 ug/L		98
56)	Dimethyl Disulfide	12.63	79	11521	1.6952 ug/L		95
59)	Toluene	12.79	91	73403	2.0894 ug/L		95
60)	Ethyl Methacrylate	12.88	69	12053	1.7976 ug/L		99
62)	trans-1,3-Dichloropropene	12.97	75	19611	1.8872 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	10698	1.9432 ug/L		90
64)	2-Hexanone	13.12	58	2502	1.6087 ug/L	#	87
65)	1,3-Dichloropropane	13.48	76	19951	2.0822 ug/L		95
66)	Tetrachloroethene	13.61	164	13782	1.8607 ug/L		95
67)	Dibromochloromethane	13.86	129	14706	2.0278 ug/L		95
68)	1,2-Dibromoethane	14.12	107	10788	2.0153 ug/L		90
69)	1-Chlorohexane	14.22	91	23854	1.9213 ug/L		95
70)	Chlorobenzene	14.63	112	46564	2.0701 ug/L		86
71)	1,1,1,2-Tetrachloroethane	14.66	131	15629	1.9559 ug/L		91
72)	Ethylbenzene	14.66	106	24492	1.9290 ug/L		89
73)	m-,p-Xylene	14.74	106	63849	4.2555 ug/L		98
74)	o-Xylene	15.31	106	30844	2.0889 ug/L		94
75)	Styrene	15.34	104	50259	2.0841 ug/L		95
76)	Bromoform	15.84	173	8154	1.8700 ug/L		90
77)	Isopropylbenzene	15.74	105	79139	2.1409 ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.94	83	11517	1.9568 ug/L		89
81)	1,2,3-Trichloropropane	16.14	110	3439	2.0817 ug/L		56
82)	trans-1,4-Dichloro-2-Buten	16.19	53	2913	2.0454 ug/L	#	7
83)	n-Propylbenzene	16.24	91	101745	2.1333 ug/L		99
84)	Bromobenzene	16.37	156	20327	2.1042 ug/L		88
85)	1,3,5-Trimethylbenzene	16.43	105	67532	2.1448 ug/L		99
86)	2-Chlorotoluene	16.51	91	62208	2.1354 ug/L		99
87)	4-Chlorotoluene	16.55	91	59334	2.1373 ug/L		98
88)	a-Methylstyrene	16.83	118	34116	1.9952 ug/L		98
89)	tert-Butylbenzene	16.89	134	13854	2.0309 ug/L		94
90)	1,2,4-Trimethylbenzene	16.95	105	70483	2.2094 ug/L		98
91)	sec-Butylbenzene	17.16	105	84869	2.1845 ug/L		100
92)	p-Isopropyltoluene	17.32	119	72879	2.1814 ug/L		98
93)	1,3-Dichlorobenzene	17.51	146	40091	2.1164 ug/L		100
94)	1,4-Dichlorobenzene	17.64	146	40876	2.0933 ug/L		93
95)	n-Butylbenzene	17.85	91	69304	2.1512 ug/L		99
96)	1,2-Dichlorobenzene	18.13	146	33974	2.0313 ug/L		95
97)	1,2-Dibromo-3-Chloropropan	19.14	75	1986	1.9274 ug/L		90
98)	1,2,4-Trichlorobenzene	20.28	180	25822	2.0063 ug/L		95
99)	Hexachlorobutadiene	20.42	225	12690	1.9376 ug/L		97
100)	Naphthalene	20.64	128	31513	1.8871 ug/L		98
101)	1,2,3-Trichlorobenzene	20.95	180	21856	1.9678 ug/L		93

(#) = qualifier out of range (m) = manual integration
8M406480.D 8260WT.M Fri Jul 31 14:02:05 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406480.D Vial: 4
Acq On : 30 Jul 2015 15:37 Operator: TMB
Sample : WG533051-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

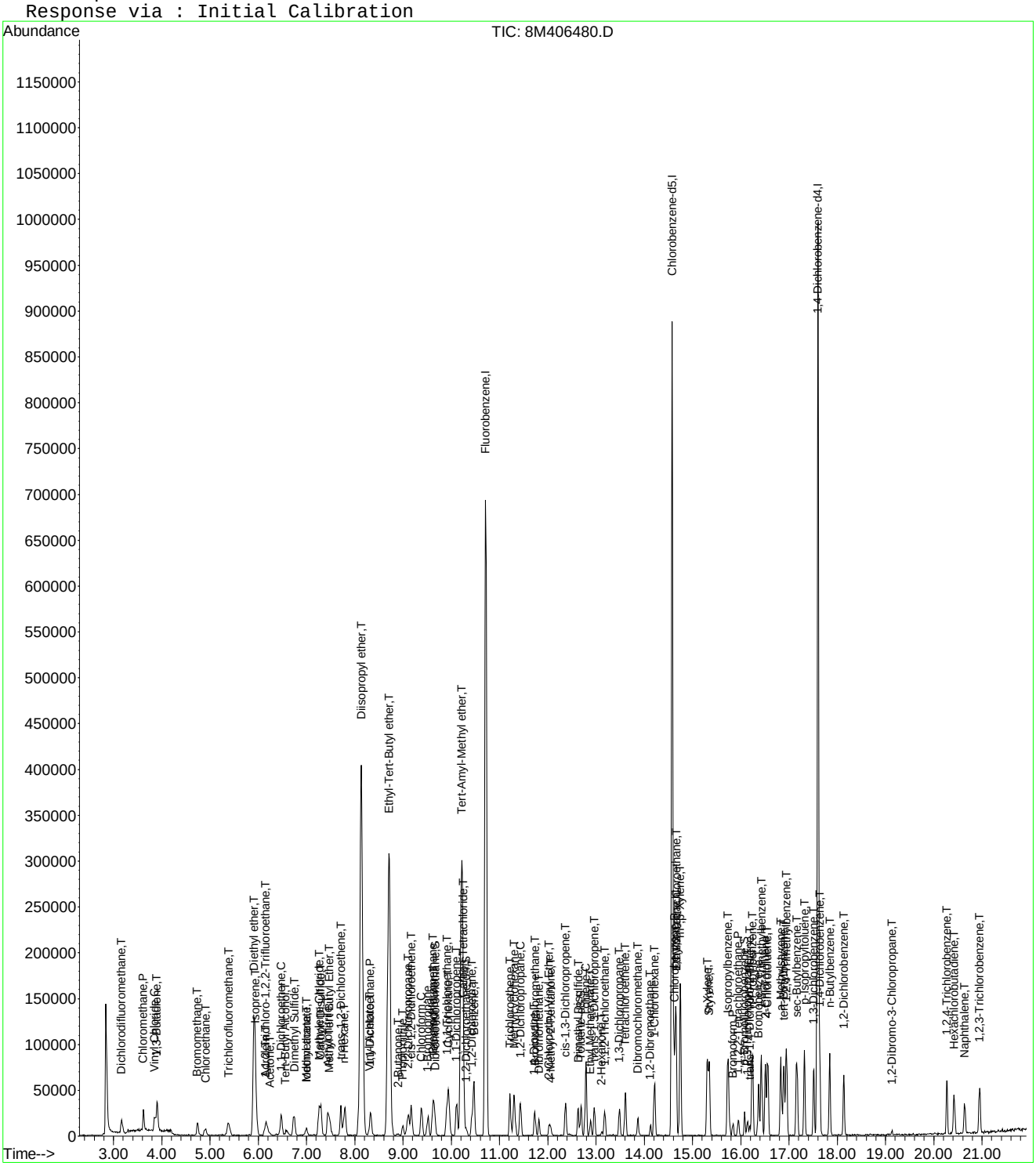

8M406480.D 8260WT.M Fri Jul 31 14:02:06 2015 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\073015\8M406480.D Vial: 4
Acq On : 30 Jul 2015 15:37 Operator: TMB
Sample : WG533051-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.7655	11.7	100	0.00
3	P	Chloromethane	2.0000	2.1643	-8.2	100	0.00
4	C	Vinyl Chloride	2.0000	1.9899	0.5	100	0.00
5	T	1,3-Butadiene	2.0000	2.0207	-1.0	100	0.01
6	T	Bromomethane	2.0000	1.9848	0.8	100	0.00
7	T	Chloroethane	2.0000	1.9383	3.1	100	0.01
8	T	Trichlorofluoromethane	2.0000	1.8727	6.4	100	0.00
9	T	Diethyl ether	25.0000	24.4945	2.0	100	0.00
10	T	Isoprene	2.0000	1.9970	0.1	100	-0.01
11	T	Acrolein	12.5000	11.0191	11.8	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.8000	10.0	100	-0.01
13	T	Acetone	-1.0000	2.2081	0.0	100	0.00
14	C	1,1-Dichloroethene	2.0000	2.0178	-0.9	100	0.01
15	T	Tert-Butyl Alcohol	50.0000	53.7622	-7.5	100	-0.02
16	T	Dimethyl Sulfide	2.0000	1.9777	1.1	100	0.01
17	T	Iodomethane	2.0000	1.9392	3.0	100	0.01
18	T	Methyl acetate	-1.0000	1.8471	0.0	100	0.00
19	T	Methylene Chloride	2.0000	2.0674	-3.4	100	0.01
20	T	Carbon Disulfide	2.0000	2.1228	-6.1	100	0.00
21	T	Acrylonitrile	12.5000	10.8024	13.6	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	2.0960	-4.8	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.9556	2.2	100	0.00
24	T	n-Hexane	-1.0000	2.0143	0.0	100	-0.01
25	T	Diisopropyl ether	25.0000	25.1353	-0.5	100	0.00
26	T	Vinyl Acetate	2.0000	1.9907	0.5	100	0.01
27	P	1,1-Dichloroethane	2.0000	2.0566	-2.8	100	-0.01
28	T	Ethyl-Tert-Butyl ether	25.0000	24.6321	1.5	100	0.01
29	T	2-Butanone	-1.0000	1.8074	0.0	100	0.01
30	T	Propionitrile	25.0000	24.4866	2.1	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1053	-5.3	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0873	-4.4	100	0.00
33	C	Chloroform	2.0000	2.0297	-1.5	100	0.00
34		1-Bromopropane	2.0000	2.1584	-7.9	100	-0.01
35	T	Bromochloromethane	2.0000	1.9982	0.1	100	0.01
36	T	Tetrahydrofuran	25.0000	25.0332	-0.1	100	0.01
37	S	Dibromofluoromethane	1.0000	0.9655	3.4	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.9672	1.6	100	0.00
39	T	Cyclohexane	2.0000	1.9042	4.8	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0043	-0.2	100	-0.01
41	T	Tert-Amyl-Methyl ether	25.0000	24.3659	2.5	100	0.00
42	T	Carbon Tetrachloride	2.0000	1.9619	1.9	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0031	-0.3	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	2.0000	1.8804	6.0	100	0.00
46	T	Benzene	2.0000	2.0346	-1.7	100	0.00
47	T	Trichloroethene	2.0000	1.9033	4.8	100	0.00
48	T	Methylcyclohexane	-1.0000	1.9501	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	1.9650	1.7	100	0.00
50	T	Bromodichloromethane	2.0000	1.9102	4.5	100	0.00
51	T	1,4-Dioxane	-1.0000	48.3679	0.0	100	0.00
52	T	Dibromomethane	2.0000	2.0353	-1.8	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	1.7013	0.0	100	-0.01
54	T	4-Methyl-2-Pentanone	-1.0000	1.4923	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\073015\8M406480.D Vial: 4
Acq On : 30 Jul 2015 15:37 Operator: TMB
Sample : WG533051-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.9578	2.1	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.6952	0.0	100	0.01
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	1.0306	-3.1	100	0.00
59	C	Toluene	2.0000	2.0894	-4.5	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.7976	10.1	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	2.0000	1.8872	5.6	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.9432	2.8	100	0.00
64	T	2-Hexanone	-1.0000	1.6087	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.0822	-4.1	100	0.00
66	T	Tetrachloroethene	2.0000	1.8607	7.0	100	0.00
67	T	Dibromochloromethane	2.0000	2.0278	-1.4	100	-0.01
68	T	1,2-Dibromoethane	2.0000	2.0153	-0.8	100	0.00
69	T	1-Chlorohexane	2.0000	1.9213	3.9	100	0.00
70	P	Chlorobenzene	2.0000	2.0701	-3.5	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.9559	2.2	100	0.00
72	C	Ethylbenzene	2.0000	1.9290	3.6	100	0.00
73	T	m-,p-Xylene	4.0000	4.2555	-6.4	100	0.00
74	T	o-Xylene	2.0000	2.0889	-4.4	100	0.00
75	T	Styrene	2.0000	2.0841	-4.2	100	0.00
76	P	Bromoform	2.0000	1.8700	6.5	100	0.00
77	T	Isopropylbenzene	2.0000	2.1409	-7.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	1.9568	2.2	100	0.00
80	S	p-Bromofluorobenzene	1.0000	1.0033	-0.3	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	2.0817	-4.1	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	2.0454	-2.3	100	0.00
83	T	n-Propylbenzene	2.0000	2.1334	-6.7	100	0.00
84	T	Bromobenzene	2.0000	2.1042	-5.2	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.1448	-7.2	100	0.00
86	T	2-Chlorotoluene	2.0000	2.1354	-6.8	100	0.00
87	T	4-Chlorotoluene	2.0000	2.1373	-6.9	100	-0.01
88	T	a-Methylstyrene	-1.0000	1.9952	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	2.0309	-1.5	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.2094	-10.5	100	0.00
91	T	sec-Butylbenzene	2.0000	2.1845	-9.2	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.1814	-9.1	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.1164	-5.8	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.0933	-4.7	100	0.00
95	T	n-Butylbenzene	2.0000	2.1512	-7.6	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0313	-1.6	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.9274	3.6	100	0.01
98	T	1,2,4-Trichlorobenzene	2.0000	2.0063	-0.3	100	0.00
99	T	Hexachlorobutadiene	2.0000	1.9376	3.1	100	-0.01
100	T	Naphthalene	2.0000	1.8871	5.6	100	-0.01
101	T	1,2,3-Trichlorobenzene	2.0000	1.9678	1.6	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M406480.D 8260WT.M Fri Jul 31 14:03:02 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406481.D Vial: 5
Acq On : 30 Jul 2015 16:06 Operator: TMB
Sample : WG533051-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:06 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	855387	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	612677	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	332830	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.68	111	18863	2.5026 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 10.00%#		
43) 1,2-Dichloroethane-d4	10.31	65	18410	2.4562 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 9.84%#		
58) Toluene-d8	12.68	98	73674	2.4927 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 9.96%#		
80) p-Bromofluorobenzene	16.08	95	27813	2.4159 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 9.68%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	60134	4.6031 ug/L	99
3) Chloromethane	3.62	50	77643	5.3236 ug/L	99
4) Vinyl Chloride	3.84	62	51255	4.7786 ug/L	94
5) 1,3-Butadiene	3.90	54	45203	4.8073 ug/L	83
6) Bromomethane	4.74	94	34945	4.8913 ug/L	99
7) Chloroethane	4.90	64	33390	4.9998 ug/L	98
8) Trichlorofluoromethane	5.39	101	67008	4.8314 ug/L	98
9) Diethyl ether	5.91	59	251096	47.8310 ug/L	99
10) Isoprene	5.95	67	53450	4.9240 ug/L	99
11) Acrolein	6.15	56	6016	23.2099 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	40879	5.1623 ug/L	94
13) Acetone	6.24	43	6548	6.0706 ug/L	97
14) 1,1-Dichloroethene	6.48	61	66355	4.9391 ug/L	96
15) Tert-Butyl Alcohol	6.58	59	27930	98.5799 ug/L	92
16) Dimethyl Sulfide	6.74	62	42375	5.0239 ug/L	91
17) Iodomethane	6.99	142	27526	4.1499 ug/L	98
18) Methyl acetate	7.00	43	21128	5.0477 ug/L #	89
19) Methylene Chloride	7.26	84	42199	4.9312 ug/L	97
20) Carbon Disulfide	7.30	76	137010	4.9935 ug/L	100
21) Acrylonitrile	7.44	53	40009	22.3219 ug/L	96
22) Methyl Tert Butyl Ether	7.47	73	70276	4.6504 ug/L	98
23) trans-1,2-Dichloroethene	7.71	61	64291	5.1026 ug/L	99
24) n-Hexane	7.79	57	65836	4.8337 ug/L	97
25) Diisopropyl ether	8.14	45	1522211	49.7523 ug/L	98
26) Vinyl Acetate	8.30	43	41769	5.3409 ug/L	96
27) 1,1-Dichloroethane	8.33	63	83162	4.9212 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1110375	48.6424 ug/L	99
29) 2-Butanone	8.90	43	8186	4.4822 ug/L	98
30) Propionitrile	8.99	54	27074	46.6060 ug/L	98
31) 2,2-Dichloropropane	9.11	77	64849	4.9797 ug/L	99
32) cis-1,2-Dichloroethene	9.18	96	45762	5.0468 ug/L	93
33) Chloroform	9.38	83	77721	5.0962 ug/L	100
34) 1-Bromopropane	9.52	122	8030	4.9822 ug/L	96
35) Bromochloromethane	9.61	130	22966	4.9171 ug/L	95
36) Tetrahydrofuran	9.63	42	59578	47.4278 ug/L	96
38) 1,1,1-Trichloroethane	9.91	97	70007	4.9767 ug/L	97
39) Cyclohexane	9.95	56	81916	4.9927 ug/L	97
40) 1,1-Dichloropropene	10.11	75	60071	4.9876 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	830703	48.6134 ug/L	100
42) Carbon Tetrachloride	10.26	117	61930	4.9721 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M406481.D 8260WT.M Fri Jul 31 14:02:06 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406481.D Vial: 5
Acq On : 30 Jul 2015 16:06 Operator: TMB
Sample : WG533051-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:06 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	48928	4.7901 ug/L		98
46)	Benzene	10.47	78	173193	5.1442 ug/L		98
47)	Trichloroethene	11.22	130	46467	4.8355 ug/L		97
48)	Methylcyclohexane	11.30	83	67444	4.8399 ug/L		97
49)	1,2-Dichloropropane	11.43	63	47873	5.1327 ug/L		97
50)	Bromodichloromethane	11.73	83	56499	4.8809 ug/L		98
51)	1,4-Dioxane	11.73	88	3529	107.5902 ug/L	#	63
52)	Dibromomethane	11.82	93	19997	4.6868 ug/L		93
53)	2-Chloroethyl Vinyl Ether	12.03	63	17790	4.5663 ug/L		96
54)	4-Methyl-2-Pentanone	12.05	58	7369	4.2609 ug/L		92
55)	cis-1,3-Dichloropropene	12.36	75	61410	4.8198 ug/L		99
56)	Dimethyl Disulfide	12.63	79	29344	4.2511 ug/L		98
59)	Toluene	12.79	91	189851	5.3024 ug/L		99
60)	Ethyl Methacrylate	12.88	69	32117	4.6998 ug/L		99
62)	trans-1,3-Dichloropropene	12.96	75	52110	4.9202 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	28717	5.1180 ug/L		98
64)	2-Hexanone	13.12	58	6680	4.2143 ug/L	#	91
65)	1,3-Dichloropropane	13.49	76	48239	4.9397 ug/L		96
66)	Tetrachloroethene	13.61	164	37579	4.9780 ug/L		98
67)	Dibromochloromethane	13.87	129	34634	4.6858 ug/L		98
68)	1,2-Dibromoethane	14.12	107	27979	5.1285 ug/L		93
69)	1-Chlorohexane	14.22	91	62398	4.9313 ug/L		98
70)	Chlorobenzene	14.63	112	122630	5.3493 ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.66	131	41727	5.1237 ug/L		99
72)	Ethylbenzene	14.66	106	66582	5.1453 ug/L		100
73)	m-,p-Xylene	14.74	106	166752	10.9050 ug/L		96
74)	o-Xylene	15.31	106	76340	5.0729 ug/L		98
75)	Styrene	15.34	104	126606	5.1512 ug/L		98
76)	Bromoform	15.83	173	21576	4.8551 ug/L		96
77)	Isopropylbenzene	15.74	105	204868	5.4380 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.94	83	30972	5.1216 ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	9098	5.3598 ug/L		52
82)	trans-1,4-Dichloro-2-Buten	16.19	53	9344	4.6938 ug/L	#	51
83)	n-Propylbenzene	16.24	91	262533	5.3574 ug/L		99
84)	Bromobenzene	16.37	156	48547	4.8909 ug/L		97
85)	1,3,5-Trimethylbenzene	16.43	105	171622	5.3048 ug/L		97
86)	2-Chlorotoluene	16.51	91	158232	5.2863 ug/L		100
87)	4-Chlorotoluene	16.55	91	151910	5.3257 ug/L		97
88)	a-Methylstyrene	16.83	118	88491	5.0367 ug/L		98
89)	tert-Butylbenzene	16.89	134	35466	5.0600 ug/L		96
90)	1,2,4-Trimethylbenzene	16.94	105	173574	5.2953 ug/L		98
91)	sec-Butylbenzene	17.16	105	218704	5.4789 ug/L		99
92)	p-Isopropyltoluene	17.32	119	185799	5.4124 ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	98863	5.0792 ug/L		98
94)	1,4-Dichlorobenzene	17.64	146	100465	5.0072 ug/L		99
95)	n-Butylbenzene	17.84	91	180077	5.4401 ug/L		99
96)	1,2-Dichlorobenzene	18.13	146	87449	5.0887 ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.13	75	4483	4.2343 ug/L		71
98)	1,2,4-Trichlorobenzene	20.27	180	63290	4.7858 ug/L		98
99)	Hexachlorobutadiene	20.42	225	32926	4.8928 ug/L		97
100)	Naphthalene	20.65	128	80359	4.6834 ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	54533	4.7786 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M406481.D 8260WT.M Fri Jul 31 14:02:06 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406481.D Vial: 5
Acq On : 30 Jul 2015 16:06 Operator: TMB
Sample : WG533051-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

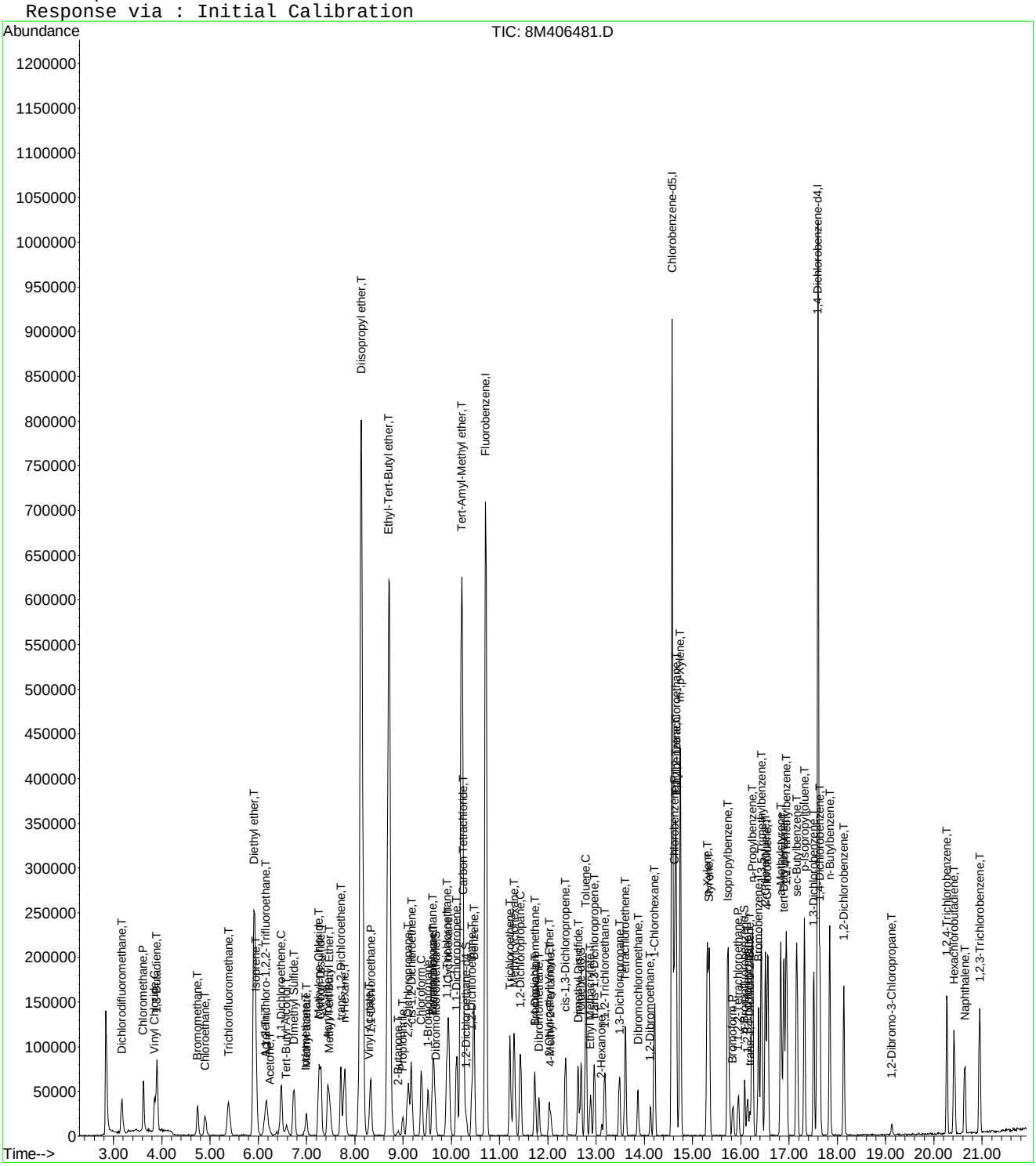

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\073015\8M406481.D Vial: 5
Acq On : 30 Jul 2015 16:06 Operator: TMB
Sample : WG533051-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.6031	7.9	100	0.00
3	P	Chloromethane	5.0000	5.3236	-6.5	100	0.00
4	C	Vinyl Chloride	5.0000	4.7786	4.4	100	0.00
5	T	1,3-Butadiene	5.0000	4.8073	3.9	100	0.00
6	T	Bromomethane	5.0000	4.8913	2.2	100	0.00
7	T	Chloroethane	5.0000	4.9998	0.0	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.8315	3.4	100	0.00
9	T	Diethyl ether	50.0000	47.8310	4.3	100	0.00
10	T	Isoprene	5.0000	4.9240	1.5	100	0.00
11	T	Acrolein	25.0000	23.2099	7.2	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	5.1623	-3.2	100	0.00
13	T	Acetone	5.0000	6.0705	-21.4	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.9391	1.2	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	98.5799	1.4	100	0.00
16	T	Dimethyl Sulfide	5.0000	5.0239	-0.5	100	0.00
17	T	Iodomethane	5.0000	4.1499	17.0	100	0.00
18	T	Methyl acetate	5.0000	5.0477	-1.0	100	-0.01
19	T	Methylene Chloride	5.0000	4.9312	1.4	100	0.00
20	T	Carbon Disulfide	5.0000	4.9935	0.1	100	0.00
21	T	Acrylonitrile	25.0000	22.3219	10.7	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.6504	7.0	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	5.1026	-2.1	100	0.00
24	T	n-Hexane	5.0000	4.8337	3.3	100	0.00
25	T	Diisopropyl ether	50.0000	49.7523	0.5	100	0.00
26	T	Vinyl Acetate	5.0000	5.3409	-6.8	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.9212	1.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	48.6424	2.7	100	0.00
29	T	2-Butanone	5.0000	4.4822	10.4	100	0.00
30	T	Propionitrile	50.0000	46.6060	6.8	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.9797	0.4	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	5.0468	-0.9	100	0.00
33	C	Chloroform	5.0000	5.0962	-1.9	100	0.00
34		1-Bromopropane	5.0000	4.9822	0.4	100	0.00
35	T	Bromochloromethane	5.0000	4.9171	1.7	100	0.00
36	T	Tetrahydrofuran	50.0000	47.4278	5.1	100	0.00
37	S	Dibromofluoromethane	2.5000	2.5026	-0.1	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.9767	0.5	100	0.00
39	T	Cyclohexane	5.0000	4.9927	0.1	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.9876	0.2	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	48.6134	2.8	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.9721	0.6	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.4562	1.8	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	5.0000	4.7901	4.2	100	0.00
46	T	Benzene	5.0000	5.1442	-2.9	100	0.00
47	T	Trichloroethene	5.0000	4.8355	3.3	100	0.00
48	T	Methylcyclohexane	5.0000	4.8399	3.2	100	0.00
49	C	1,2-Dichloropropane	5.0000	5.1327	-2.7	100	0.00
50	T	Bromodichloromethane	5.0000	4.8809	2.4	100	0.00
51	T	1,4-Dioxane	100.0000	107.5902	-7.6	100	0.02
52	T	Dibromomethane	5.0000	4.6868	6.3	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.5663	8.7	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.2609	14.8	100	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\073015\8M406481.D Vial: 5
Acq On : 30 Jul 2015 16:06 Operator: TMB
Sample : WG533051-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.8198	3.6	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.2511	15.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.4927	0.3	100	0.00
59	C	Toluene	5.0000	5.3024	-6.0	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.6998	6.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	5.0000	4.9202	1.6	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	5.1180	-2.4	100	0.00
64	T	2-Hexanone	5.0000	4.2143	15.7	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.9397	1.2	100	0.00
66	T	Tetrachloroethene	5.0000	4.9780	0.4	100	0.00
67	T	Dibromochloromethane	5.0000	4.6857	6.3	100	0.00
68	T	1,2-Dibromoethane	5.0000	5.1285	-2.6	100	0.00
69	T	1-Chlorohexane	5.0000	4.9313	1.4	100	0.00
70	P	Chlorobenzene	5.0000	5.3492	-7.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	5.1237	-2.5	100	0.00
72	C	Ethylbenzene	5.0000	5.1453	-2.9	100	0.00
73	T	m-,p-Xylene	10.0000	10.9050	-9.0	100	0.00
74	T	o-Xylene	5.0000	5.0729	-1.5	100	0.00
75	T	Styrene	5.0000	5.1512	-3.0	100	0.00
76	P	Bromoform	5.0000	4.8551	2.9	100	-0.01
77	T	Isopropylbenzene	5.0000	5.4380	-8.8	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	5.1216	-2.4	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.4160	3.4	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.3598	-7.2	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.6938	6.1	100	0.00
83	T	n-Propylbenzene	5.0000	5.3574	-7.1	100	0.00
84	T	Bromobenzene	5.0000	4.8909	2.2	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	5.3048	-6.1	100	0.00
86	T	2-Chlorotoluene	5.0000	5.2863	-5.7	100	0.00
87	T	4-Chlorotoluene	5.0000	5.3257	-6.5	100	-0.01
88	T	a-Methylstyrene	5.0000	5.0367	-0.7	100	0.00
89	T	tert-Butylbenzene	5.0000	5.0600	-1.2	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.2953	-5.9	100	0.00
91	T	sec-Butylbenzene	5.0000	5.4789	-9.6	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.4124	-8.2	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	5.0792	-1.6	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	5.0072	-0.1	100	0.00
95	T	n-Butylbenzene	5.0000	5.4401	-8.8	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	5.0887	-1.8	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	4.2343	15.3	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.7858	4.3	100	0.00
99	T	Hexachlorobutadiene	5.0000	4.8928	2.1	100	-0.01
100	T	Naphthalene	5.0000	4.6834	6.3	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.7786	4.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M406481.D 8260WT.M Fri Jul 31 14:03:30 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406482.D Vial: 6
Acq On : 30 Jul 2015 16:35 Operator: TMB
Sample : WG533051-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:07 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	878579	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	612458	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	341682	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.68	111	77858	10.0570 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 40.24%#		
43) 1,2-Dichloroethane-d4	10.31	65	78334	10.1753 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 40.72%#		
58) Toluene-d8	12.69	98	308881	10.4545 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 41.80%#		
80) p-Bromofluorobenzene	16.08	95	114109	9.6552 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 38.64%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	294392	21.9402 ug/L	99
3) Chloromethane	3.62	50	295235	19.7083 ug/L	99
4) Vinyl Chloride	3.85	62	213802	19.4071 ug/L	100
5) 1,3-Butadiene	3.90	54	195992	20.2936 ug/L	92
6) Bromomethane	4.74	94	134045	18.2671 ug/L	99
7) Chloroethane	4.90	64	135011	19.6828 ug/L	99
8) Trichlorofluoromethane	5.38	101	285503	20.0421 ug/L	99
9) Diethyl ether	5.91	59	416800	77.2999 ug/L	99
10) Isoprene	5.94	67	222724	19.9765 ug/L	99
11) Acrolein	6.15	56	10886	41.1889 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	161968	19.9137 ug/L	97
13) Acetone	6.25	43	21749	19.6309 ug/L	90
14) 1,1-Dichloroethene	6.47	61	269452	19.5273 ug/L	96
15) Tert-Butyl Alcohol	6.60	59	46659	160.3374 ug/L	96
16) Dimethyl Sulfide	6.74	62	164675	19.0082 ug/L	99
17) Iodomethane	6.99	142	141587	17.2789 ug/L	97
18) Methyl acetate	7.01	43	80285	18.6746 ug/L	97
19) Methylene Chloride	7.26	84	169710	19.3082 ug/L	97
20) Carbon Disulfide	7.30	76	559773	19.8629 ug/L	99
21) Acrylonitrile	7.44	53	67398	36.6102 ug/L	96
22) Methyl Tert Butyl Ether	7.47	73	300217	19.3418 ug/L	99
23) trans-1,2-Dichloroethene	7.71	61	251692	19.4487 ug/L	95
24) n-Hexane	7.79	57	273707	19.5653 ug/L	98
25) Diisopropyl ether	8.14	45	2493814	79.3568 ug/L	98
26) Vinyl Acetate	8.30	43	160888	20.0291 ug/L	100
27) 1,1-Dichloroethane	8.33	63	342819	19.7511 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	1842255	78.5736 ug/L	100
29) 2-Butanone	8.89	43	34580	18.4342 ug/L	100
30) Propionitrile	8.99	54	47189	79.0883 ug/L	100
31) 2,2-Dichloropropane	9.11	77	260916	19.5065 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	187379	20.1194 ug/L	94
33) Chloroform	9.38	83	304643	19.4484 ug/L	99
34) 1-Bromopropane	9.51	122	32572	19.6758 ug/L	95
35) Bromochloromethane	9.61	130	95370	19.8800 ug/L	97
36) Tetrahydrofuran	9.64	42	98153	76.0733 ug/L	95
38) 1,1,1-Trichloroethane	9.91	97	284730	19.7066 ug/L	99
39) Cyclohexane	9.95	56	338069	20.0611 ug/L	98
40) 1,1-Dichloropropene	10.11	75	247480	20.0055 ug/L	100
41) Tert-Amyl-Methyl ether	10.21	73	1363363	77.6791 ug/L	100
42) Carbon Tetrachloride	10.26	117	254833	19.9195 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M406482.D 8260WT.M Fri Jul 31 14:02:08 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406482.D Vial: 6
Acq On : 30 Jul 2015 16:35 Operator: TMB
Sample : WG533051-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:07 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	201171	19.1748	ug/L		100
46)	Benzene	10.47	78	698528	20.2002	ug/L		98
47)	Trichloroethene	11.22	130	183971	18.6392	ug/L		96
48)	Methylcyclohexane	11.30	83	284091	19.8487	ug/L		97
49)	1,2-Dichloropropane	11.43	63	195318	20.3883	ug/L		96
50)	Bromodichloromethane	11.73	83	235526	19.8099	ug/L		99
51)	1,4-Dioxane	11.72	88	4585	136.0950	ug/L		87
52)	Dibromomethane	11.82	93	84217	19.2172	ug/L		95
53)	2-Chloroethyl Vinyl Ether	12.02	63	72635	18.1515	ug/L		99
54)	4-Methyl-2-Pentanone	12.07	58	34061	19.1750	ug/L		95
55)	cis-1,3-Dichloropropene	12.37	75	258884	19.7823	ug/L		98
56)	Dimethyl Disulfide	12.62	79	130981	18.4744	ug/L		99
59)	Toluene	12.79	91	746088	20.8453	ug/L		99
60)	Ethyl Methacrylate	12.88	69	137128	20.0738	ug/L		97
62)	trans-1,3-Dichloropropene	12.96	75	215089	20.3159	ug/L		98
63)	1,1,2-Trichloroethane	13.18	97	111425	19.8655	ug/L		98
64)	2-Hexanone	13.12	58	30148	19.0266	ug/L	#	98
65)	1,3-Dichloropropane	13.48	76	193594	19.8313	ug/L		97
66)	Tetrachloroethene	13.61	164	155127	20.5567	ug/L		95
67)	Dibromochloromethane	13.86	129	149584	20.2450	ug/L		99
68)	1,2-Dibromoethane	14.12	107	108175	19.8353	ug/L		100
69)	1-Chlorohexane	14.22	91	255638	20.2104	ug/L		98
70)	Chlorobenzene	14.63	112	482376	21.0493	ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	167264	20.5459	ug/L		98
72)	Ethylbenzene	14.65	106	262135	20.2644	ug/L		100
73)	m-,p-Xylene	14.74	106	638747	41.7867	ug/L		99
74)	o-Xylene	15.31	106	311292	20.6930	ug/L		97
75)	Styrene	15.34	104	510559	20.7804	ug/L		97
76)	Bromoform	15.84	173	85509	19.2484	ug/L		98
77)	Isopropylbenzene	15.74	105	808892	21.4789	ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.94	83	121205	19.5234	ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	33046	18.9636	ug/L		70
82)	trans-1,4-Dichloro-2-Buten	16.18	53	40201	17.1268	ug/L	#	46
83)	n-Propylbenzene	16.24	91	1030697	20.4882	ug/L		99
84)	Bromobenzene	16.37	156	194478	19.0853	ug/L		97
85)	1,3,5-Trimethylbenzene	16.43	105	694288	20.9042	ug/L		97
86)	2-Chlorotoluene	16.51	91	619140	20.1488	ug/L		98
87)	4-Chlorotoluene	16.55	91	599261	20.4646	ug/L		97
88)	a-Methylstyrene	16.83	118	361855	20.0624	ug/L		98
89)	tert-Butylbenzene	16.89	134	142107	19.7494	ug/L		95
90)	1,2,4-Trimethylbenzene	16.95	105	707460	21.0236	ug/L		99
91)	sec-Butylbenzene	17.16	105	882383	21.5323	ug/L		100
92)	p-Isopropyltoluene	17.32	119	748439	21.2376	ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	398721	19.9542	ug/L		99
94)	1,4-Dichlorobenzene	17.64	146	392008	19.0315	ug/L		97
95)	n-Butylbenzene	17.84	91	722188	21.2520	ug/L		99
96)	1,2-Dichlorobenzene	18.13	146	351296	19.9127	ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	20012	18.4123	ug/L		88
98)	1,2,4-Trichlorobenzene	20.27	180	266319	19.6166	ug/L		99
99)	Hexachlorobutadiene	20.43	225	133344	19.3015	ug/L		99
100)	Naphthalene	20.64	128	345480	19.6133	ug/L		98
101)	1,2,3-Trichlorobenzene	20.95	180	224501	19.1628	ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406482.D Vial: 6
Acq On : 30 Jul 2015 16:35 Operator: TMB
Sample : WG533051-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

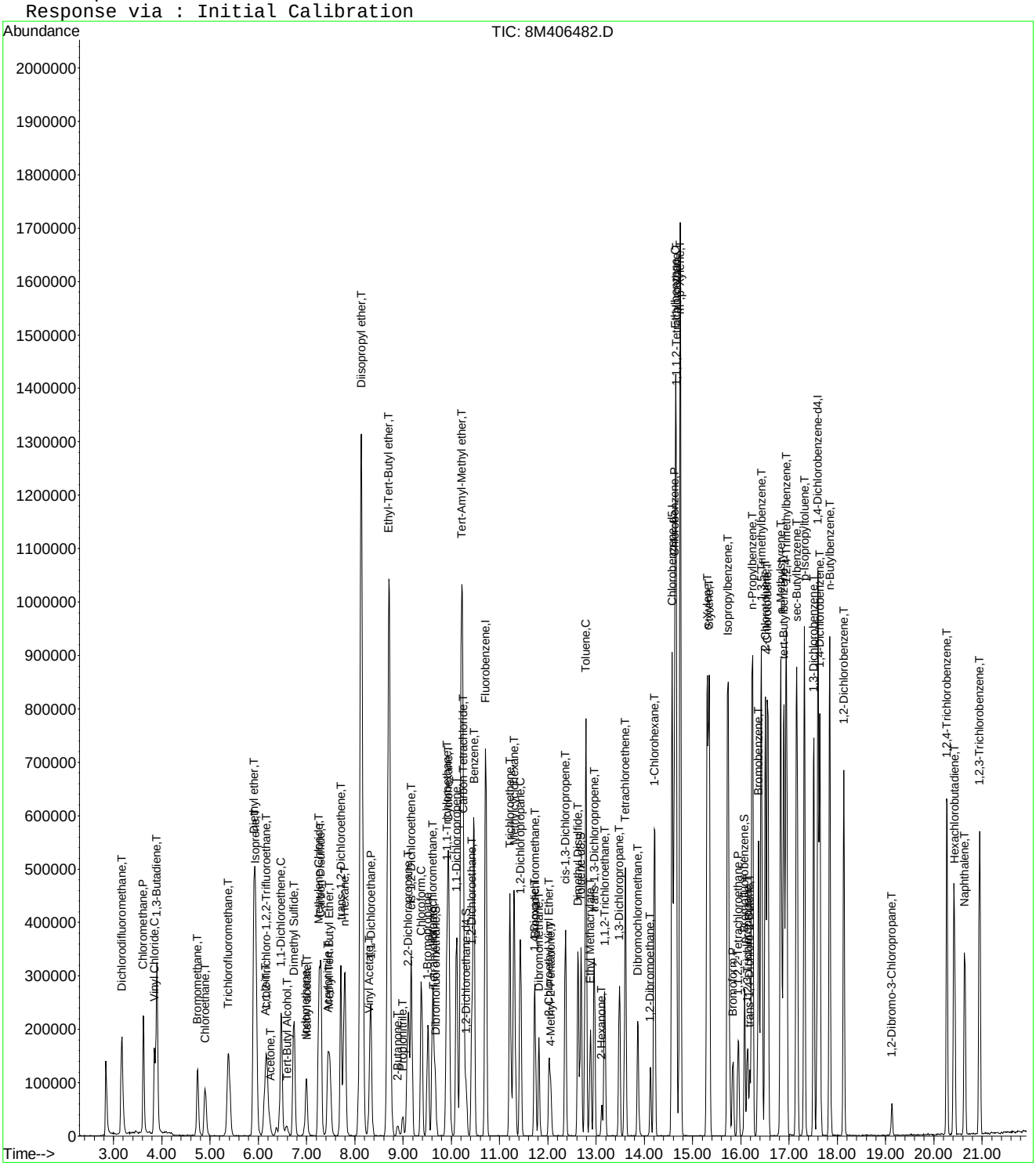

8M406482.D 8260WT.M Fri Jul 31 14:02:08 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406483.D Vial: 7
Acq On : 30 Jul 2015 17:04 Operator: TMB
Sample : WG533051-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:08 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	905123	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	645629	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	356726	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	206363	25.8744 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.48%		
43) 1,2-Dichloroethane-d4	10.31	65	193407	24.3862 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.56%		
58) Toluene-d8	12.69	98	789617	25.3525 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.40%		
80) p-Bromofluorobenzene	16.08	95	298735	24.2110 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.84%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	793389	57.3949 ug/L	98
3) Chloromethane	3.62	50	774629	50.1936 ug/L	100
4) Vinyl Chloride	3.85	62	591558	52.1218 ug/L	100
5) 1,3-Butadiene	3.89	54	525687	52.8348 ug/L	96
6) Bromomethane	4.75	94	372151	49.2279 ug/L	98
7) Chloroethane	4.90	64	363278	51.4079 ug/L	99
8) Trichlorofluoromethane	5.39	101	770145	52.4781 ug/L	99
9) Diethyl ether	5.92	59	543358	97.8162 ug/L	99
10) Isoprene	5.95	67	601625	52.3784 ug/L	100
11) Acrolein	6.15	56	15050	53.2458 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	450283	53.7379 ug/L	100
13) Acetone	6.25	43	54001	47.3125 ug/L	89
14) 1,1-Dichloroethene	6.47	61	737038	51.8469 ug/L	97
15) Tert-Butyl Alcohol	6.59	59	54494	181.7696 ug/L	98
16) Dimethyl Sulfide	6.74	62	453799	50.8451 ug/L	96
17) Iodomethane	6.99	142	438030	50.1373 ug/L	96
18) Methyl acetate	7.01	43	211513	47.7558 ug/L	98
19) Methylene Chloride	7.26	84	462069	51.0288 ug/L	99
20) Carbon Disulfide	7.30	76	1497961	51.5946 ug/L	100
21) Acrylonitrile	7.45	53	95327	50.2625 ug/L	99
22) Methyl Tert Butyl Ether	7.48	73	810723	50.7000 ug/L	98
23) trans-1,2-Dichloroethene	7.71	61	695571	52.1719 ug/L	96
24) n-Hexane	7.80	57	743489	51.5880 ug/L	100
25) Diisopropyl ether	8.14	45	3228603	99.7258 ug/L	98
26) Vinyl Acetate	8.30	43	409257	49.4548 ug/L	100
27) 1,1-Dichloroethane	8.33	63	920738	51.4914 ug/L	100
28) Ethyl-Tert-Butyl ether	8.71	59	2377982	98.4484 ug/L	99
29) 2-Butanone	8.88	43	97575	50.4906 ug/L	100
30) Propionitrile	9.00	54	62717	102.0304 ug/L	99
31) 2,2-Dichloropropane	9.11	77	715194	51.9009 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	500332	52.1466 ug/L	96
33) Chloroform	9.38	83	823551	51.0337 ug/L	98
34) 1-Bromopropane	9.52	122	86861	50.9315 ug/L	97
35) Bromochloromethane	9.62	130	249925	50.5694 ug/L	97
36) Tetrahydrofuran	9.64	42	127091	95.6129 ug/L	97
38) 1,1,1-Trichloroethane	9.92	97	778847	52.3243 ug/L	98
39) Cyclohexane	9.95	56	911186	52.4843 ug/L	99
40) 1,1-Dichloropropene	10.11	75	665469	52.2167 ug/L	99
41) Tert-Amyl-Methyl ether	10.22	73	1766552	97.6994 ug/L	99
42) Carbon Tetrachloride	10.26	117	704730	53.4711 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M406483.D 8260WT.M Fri Jul 31 14:02:09 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406483.D Vial: 7
Acq On : 30 Jul 2015 17:04 Operator: TMB
Sample : WG533051-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:08 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	553108	51.1739 ug/L		99
46)	Benzene	10.46	78	1840314	51.6579 ug/L		99
47)	Trichloroethene	11.22	130	492891	48.4731 ug/L		98
48)	Methylcyclohexane	11.30	83	748840	50.7851 ug/L		100
49)	1,2-Dichloropropane	11.44	63	526138	53.3105 ug/L		95
50)	Bromodichloromethane	11.74	83	642036	52.4176 ug/L		100
51)	1,4-Dioxane	11.72	88	6404	184.5131 ug/L		87
52)	Dibromomethane	11.82	93	233147	51.6407 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.03	63	212458	51.5361 ug/L		99
54)	4-Methyl-2-Pentanone	12.06	58	91945	50.2433 ug/L		97
55)	cis-1,3-Dichloropropene	12.37	75	710508	52.7003 ug/L		99
56)	Dimethyl Disulfide	12.63	79	368941	50.5116 ug/L		99
59)	Toluene	12.79	91	1964017	52.0543 ug/L		99
60)	Ethyl Methacrylate	12.88	69	372212	51.6878 ug/L		97
62)	trans-1,3-Dichloropropene	12.97	75	582148	52.1608 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	307585	52.0206 ug/L		100
64)	2-Hexanone	13.12	58	83346	49.8978 ug/L	#	98
65)	1,3-Dichloropropane	13.48	76	534141	51.9049 ug/L		97
66)	Tetrachloroethene	13.61	164	414054	52.0494 ug/L		97
67)	Dibromochloromethane	13.87	129	408742	52.4777 ug/L		99
68)	1,2-Dibromoethane	14.13	107	291774	50.7519 ug/L		98
69)	1-Chlorohexane	14.21	91	679889	50.9895 ug/L		100
70)	Chlorobenzene	14.63	112	1254057	51.9113 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.66	131	464369	54.1101 ug/L		100
72)	Ethylbenzene	14.65	106	698254	51.2055 ug/L		99
73)	m-,p-Xylene	14.75	106	1692501	105.0343 ug/L		94
74)	o-Xylene	15.30	106	838582	52.8805 ug/L		95
75)	Styrene	15.35	104	1379102	53.2472 ug/L		97
76)	Bromoform	15.84	173	239694	51.1839 ug/L		99
77)	Isopropylbenzene	15.73	105	2131296	53.6857 ug/L		98
79)	1,1,2,2-Tetrachloroethane	15.94	83	324676	50.0926 ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	91482	50.2834 ug/L		99
82)	trans-1,4-Dichloro-2-Buten	16.18	53	114476	45.3360 ug/L		95
83)	n-Propylbenzene	16.23	91	2718432	51.7580 ug/L		99
84)	Bromobenzene	16.37	156	526890	49.5262 ug/L		99
85)	1,3,5-Trimethylbenzene	16.43	105	1834447	52.9036 ug/L		97
86)	2-Chlorotoluene	16.51	91	1707990	53.2393 ug/L		98
87)	4-Chlorotoluene	16.55	91	1562668	51.1143 ug/L		97
88)	a-Methylstyrene	16.83	118	973493	51.6973 ug/L		97
89)	tert-Butylbenzene	16.90	134	383962	51.1110 ug/L		95
90)	1,2,4-Trimethylbenzene	16.95	105	1878267	53.4626 ug/L		98
91)	sec-Butylbenzene	17.16	105	2334618	54.5678 ug/L		98
92)	p-Isopropyltoluene	17.32	119	2001322	54.3943 ug/L		98
93)	1,3-Dichlorobenzene	17.52	146	1061972	50.9057 ug/L		99
94)	1,4-Dichlorobenzene	17.64	146	1054477	49.0347 ug/L		96
95)	n-Butylbenzene	17.85	91	1958128	55.1921 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	939992	51.0349 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	58169	51.2620 ug/L		98
98)	1,2,4-Trichlorobenzene	20.27	180	729904	51.4962 ug/L		99
99)	Hexachlorobutadiene	20.42	225	360991	50.0496 ug/L		99
100)	Naphthalene	20.64	128	1011034	54.9769 ug/L		98
101)	1,2,3-Trichlorobenzene	20.95	180	617964	50.5233 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M406483.D 8260WT.M Fri Jul 31 14:02:09 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406483.D Vial: 7
Acq On : 30 Jul 2015 17:04 Operator: TMB
Sample : WG533051-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

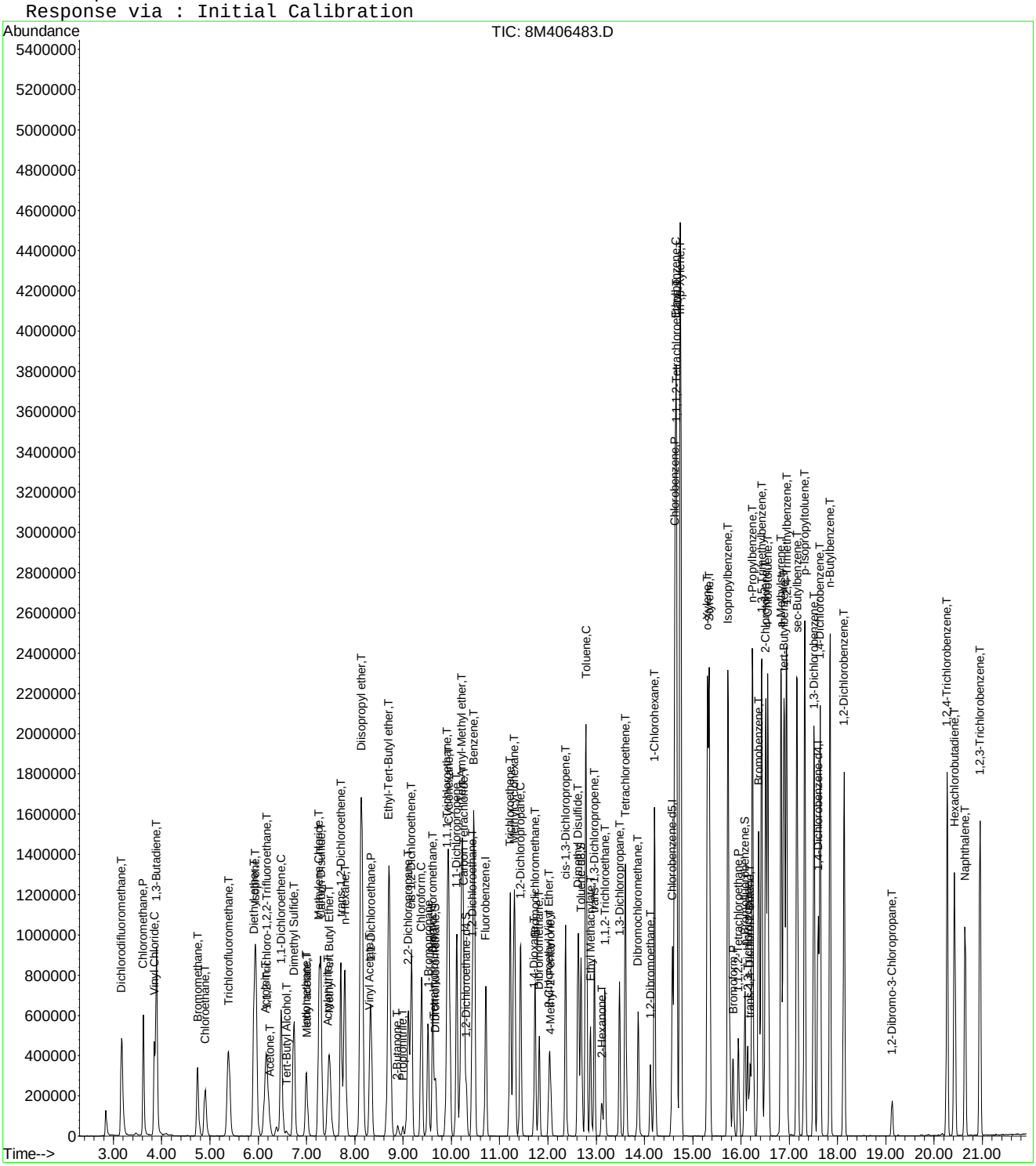

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406484.D Vial: 8
Acq On : 30 Jul 2015 17:33 Operator: TMB
Sample : WG533051-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:09 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	965047	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	693992	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	377100	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.68	111	407361	47.9046 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 191.60%#		
43) 1,2-Dichloroethane-d4	10.31	65	398417	47.1160 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 188.48%#		
58) Toluene-d8	12.69	98	1502516	44.8800 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 179.52%#		
80) p-Bromofluorobenzene	16.08	95	588300	45.1029 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 180.40%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	1447067	98.1828 ug/L	99
3) Chloromethane	3.62	50	1469585	89.3117 ug/L	100
4) Vinyl Chloride	3.85	62	1113972	92.0567 ug/L	99
5) 1,3-Butadiene	3.89	54	1106871	104.3396 ug/L	93
6) Bromomethane	4.74	94	754878	93.6544 ug/L	99
7) Chloroethane	4.90	64	716703	95.1238 ug/L	99
8) Trichlorofluoromethane	5.39	101	1479847	94.5761 ug/L	99
9) Diethyl ether	5.91	59	1171644	197.8242 ug/L	99
10) Isoprene	5.95	67	1270504	103.7437 ug/L	100
11) Acrolein	6.15	56	35545	97.9111 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	839906	94.0124 ug/L	99
13) Acetone	6.25	43	106698	87.6778 ug/L	88
14) 1,1-Dichloroethene	6.47	61	1429955	94.3441 ug/L	98
15) Tert-Butyl Alcohol	6.60	59	119175	372.8351 ug/L	97
16) Dimethyl Sulfide	6.74	62	972688	102.2159 ug/L	97
17) Iodomethane	6.99	142	950888	101.1755 ug/L	97
18) Methyl acetate	7.01	43	462726	97.9879 ug/L	98
19) Methylene Chloride	7.26	84	914681	94.7409 ug/L	100
20) Carbon Disulfide	7.30	76	3117324	100.7035 ug/L	100
21) Acrylonitrile	7.44	53	208069	102.8952 ug/L	99
22) Methyl Tert Butyl Ether	7.47	73	1688263	99.0227 ug/L	98
23) trans-1,2-Dichloroethene	7.71	61	1400434	98.5184 ug/L	97
24) n-Hexane	7.79	57	1539123	100.1628 ug/L	100
25) Diisopropyl ether	8.14	45	6719736	194.6724 ug/L	99
26) Vinyl Acetate	8.30	43	978547	110.9054 ug/L	100
27) 1,1-Dichloroethane	8.33	63	1824047	95.6740 ug/L	99
28) Ethyl-Tert-Butyl ether	8.71	59	5140284	199.5934 ug/L	98
29) 2-Butanone	8.89	43	209399	101.6262 ug/L	99
30) Propionitrile	8.99	54	133996	204.4539 ug/L	100
31) 2,2-Dichloropropane	9.11	77	1395201	94.9614 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	1020076	99.7147 ug/L	96
33) Chloroform	9.39	83	1666101	96.8338 ug/L	99
34) 1-Bromopropane	9.52	122	183147	100.7212 ug/L	100
35) Bromochloromethane	9.61	130	518828	98.4601 ug/L	99
36) Tetrahydrofuran	9.64	42	282096	199.0480 ug/L	97
38) 1,1,1-Trichloroethane	9.91	97	1537931	96.9053 ug/L	98
39) Cyclohexane	9.95	56	1874220	101.2517 ug/L	100
40) 1,1-Dichloropropene	10.11	75	1274818	93.8186 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	3827307	198.5263 ug/L	98
42) Carbon Tetrachloride	10.26	117	1376730	97.9725 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M406484.D 8260WT.M Fri Jul 31 14:02:10 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406484.D Vial: 8
Acq On : 30 Jul 2015 17:33 Operator: TMB
Sample : WG533051-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:09 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	1142285	99.1225	ug/L		99
46)	Benzene	10.47	78	3562491	93.7903	ug/L		99
47)	Trichloroethene	11.22	130	960301	88.5761	ug/L		98
48)	Methylcyclohexane	11.30	83	1578829	100.4249	ug/L		99
49)	1,2-Dichloropropane	11.43	63	1064186	101.1322	ug/L		97
50)	Bromodichloromethane	11.73	83	1308458	100.1928	ug/L		99
51)	1,4-Dioxane	11.72	88	14577	393.9157	ug/L		85
52)	Dibromomethane	11.82	93	483518	100.4464	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.02	63	447158	101.7323	ug/L		98
54)	4-Methyl-2-Pentanone	12.05	58	198955	101.9681	ug/L		99
55)	cis-1,3-Dichloropropene	12.36	75	1459255	101.5160	ug/L		99
56)	Dimethyl Disulfide	12.62	79	805354	103.4142	ug/L		97
59)	Toluene	12.79	91	3726198	91.8768	ug/L		96
60)	Ethyl Methacrylate	12.88	69	790872	102.1721	ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	1209023	100.7799	ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	623496	98.1008	ug/L		97
64)	2-Hexanone	13.12	58	179741	100.1089	ug/L	#	97
65)	1,3-Dichloropropane	13.48	76	1084202	98.0148	ug/L		97
66)	Tetrachloroethene	13.61	164	788124	92.1684	ug/L		98
67)	Dibromochloromethane	13.86	129	858396	102.5278	ug/L		99
68)	1,2-Dibromoethane	14.12	107	613039	99.2024	ug/L		100
69)	1-Chlorohexane	14.22	91	1399721	97.6592	ug/L		99
70)	Chlorobenzene	14.63	112	2464965	94.9258	ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.66	131	930502	100.8698	ug/L		98
72)	Ethylbenzene	14.66	106	1383565	94.3911	ug/L		91
73)	m-,p-Xylene	14.74	106	3220173	185.9131	ug/L		89
74)	o-Xylene	15.31	106	1658540	97.2981	ug/L		92
75)	Styrene	15.34	104	2709684	97.3302	ug/L		100
76)	Bromoform	15.84	173	507847	100.8877	ug/L		99
77)	Isopropylbenzene	15.74	105	4019718	94.1975	ug/L		96
79)	1,1,2,2-Tetrachloroethane	15.94	83	690755	100.8151	ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	190295	98.9452	ug/L		99
82)	trans-1,4-Dichloro-2-Buten	16.19	53	248869	92.3924	ug/L		95
83)	n-Propylbenzene	16.24	91	4956532	89.2720	ug/L		96
84)	Bromobenzene	16.37	156	1065712	94.7617	ug/L		97
85)	1,3,5-Trimethylbenzene	16.43	105	3512095	95.8131	ug/L		95
86)	2-Chlorotoluene	16.51	91	3173720	93.5823	ug/L		96
87)	4-Chlorotoluene	16.56	91	3137655	97.0865	ug/L		96
88)	a-Methylstyrene	16.83	118	2020165	101.4846	ug/L		99
89)	tert-Butylbenzene	16.89	134	751885	94.6795	ug/L		94
90)	1,2,4-Trimethylbenzene	16.95	105	3589344	96.6464	ug/L		96
91)	sec-Butylbenzene	17.16	105	4288380	94.8183	ug/L		96
92)	p-Isopropyltoluene	17.32	119	3722574	95.7102	ug/L		97
93)	1,3-Dichlorobenzene	17.51	146	2093524	94.9313	ug/L		100
94)	1,4-Dichlorobenzene	17.64	146	2074493	91.2550	ug/L		98
95)	n-Butylbenzene	17.84	91	3669233	97.8339	ug/L		97
96)	1,2-Dichlorobenzene	18.13	146	1883412	96.7313	ug/L		100
97)	1,2-Dibromo-3-Chloropropan	19.13	75	121212	101.0480	ug/L		93
98)	1,2,4-Trichlorobenzene	20.27	180	1458227	97.3224	ug/L		99
99)	Hexachlorobutadiene	20.43	225	710996	93.2502	ug/L		99
100)	Naphthalene	20.65	128	2100408	108.0429	ug/L		100
101)	1,2,3-Trichlorobenzene	20.95	180	1268320	98.0924	ug/L		98

(#) = qualifier out of range (m) = manual integration
8M406484.D 8260WT.M Fri Jul 31 14:02:10 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406484.D Vial: 8
Acq On : 30 Jul 2015 17:33 Operator: TMB
Sample : WG533051-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

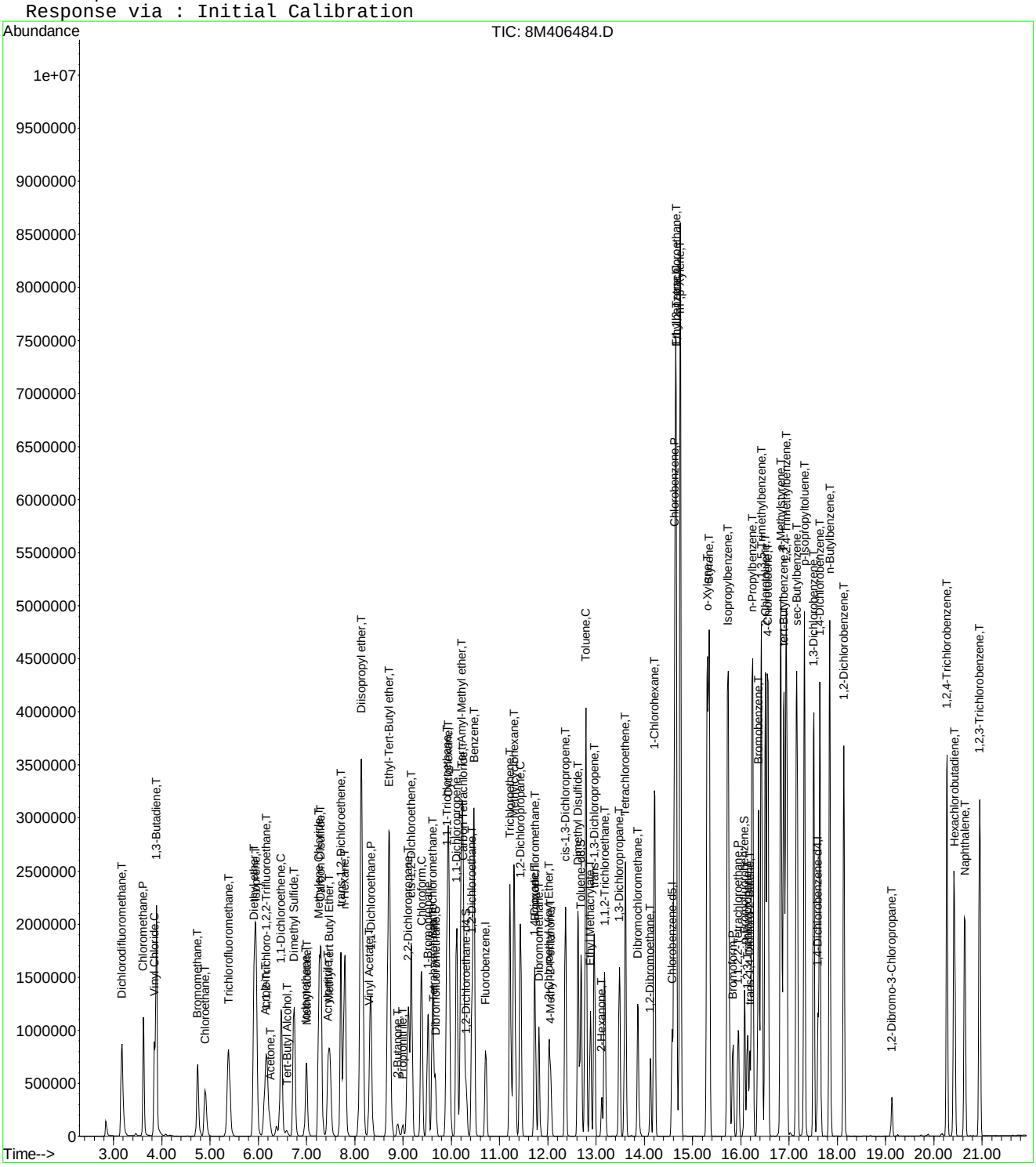

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406485.D Vial: 9
Acq On : 30 Jul 2015 18:01 Operator: TMB
Sample : WG533051-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:10 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	1040394	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	724738	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	397471	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	955134	104.1868 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 416.76%#		
43) 1,2-Dichloroethane-d4	10.31	65	925081	101.4755 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 405.92%#		
58) Toluene-d8	12.69	98	3399366	97.2311 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 388.92%#		
80) p-Bromofluorobenzene	16.08	95	1380717	100.4294 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 401.72%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	3311592	208.4174 ug/L	97
3) Chloromethane	3.62	50	3220138	181.5261 ug/L	97
4) Vinyl Chloride	3.85	62	2492880	191.0878 ug/L	98
5) 1,3-Butadiene	3.89	54	2199328	192.3060 ug/L	90
6) Bromomethane	4.74	94	1766615	203.3032 ug/L	98
7) Chloroethane	4.89	64	1624026	199.9372 ug/L	99
8) Trichlorofluoromethane	5.38	101	3499539	207.4561 ug/L	100
9) Diethyl ether	5.92	59	1482	0.2321 ug/L #	52
10) Isoprene	5.95	67	2748255	208.1580 ug/L	99
11) Acrolein	6.14	56	230	Below Cal #	12
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	1999365	207.5855 ug/L	99
13) Acetone	6.25	43	251669	191.8288 ug/L	89
14) 1,1-Dichloroethene	6.47	61	3348532	204.9261 ug/L	98
15) Tert-Butyl Alcohol	6.47	59	115167	334.2030 ug/L #	58
16) Dimethyl Sulfide	6.74	62	2093852	204.0993 ug/L	97
17) Iodomethane	6.99	142	2010247	197.5620 ug/L	100
18) Methyl acetate	7.00	43	994464	195.3386 ug/L	99
19) Methylene Chloride	7.26	84	2007363	192.8610 ug/L	99
20) Carbon Disulfide	7.30	76	6310743	189.1010 ug/L	97
21) Acrylonitrile	7.46	53	40607	18.6268 ug/L #	26
22) Methyl Tert Butyl Ether	7.48	73	3730350	202.9528 ug/L	97
23) trans-1,2-Dichloroethene	7.70	61	3169136	206.7979 ug/L	97
24) n-Hexane	7.79	57	3249384	196.1483 ug/L	99
26) Vinyl Acetate	8.30	43	1962793	206.3461 ug/L	99
27) 1,1-Dichloroethane	8.34	63	4074812	198.2512 ug/L	98
29) 2-Butanone	8.88	43	450663	202.8775 ug/L	99
30) Propionitrile	8.93	54	1013	1.4337 ug/L #	56
31) 2,2-Dichloropropane	9.11	77	3202826	202.2061 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	2245305	203.5882 ug/L	97
33) Chloroform	9.38	83	3657299	197.1681 ug/L	97
34) 1-Bromopropane	9.51	122	399971	204.0328 ug/L	98
35) Bromochloromethane	9.62	130	1126272	198.2581 ug/L	99
36) Tetrahydrofuran	9.65	42	781	0.5112 ug/L #	40
38) 1,1,1-Trichloroethane	9.92	97	3558174	207.9642 ug/L	100
39) Cyclohexane	9.95	56	4014231	201.1568 ug/L	99
40) 1,1-Dichloropropene	10.11	75	2934077	200.2917 ug/L	98
42) Carbon Tetrachloride	10.26	117	3202446	211.3916 ug/L	100
45) 1,2-Dichloroethane	10.42	62	2535974	204.1237 ug/L	99
46) Benzene	10.47	78	7129962	174.1172 ug/L	92
47) Trichloroethene	11.22	130	2119855	181.3703 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M406485.D 8260WT.M Fri Jul 31 14:02:11 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406485.D Vial: 9
Acq On : 30 Jul 2015 18:01 Operator: TMB
Sample : WG533051-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:10 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
48)	Methylcyclohexane	11.30	83	3333904	196.7026 ug/L		98
49)	1,2-Dichloropropane	11.44	63	2321617	204.6506 ug/L		100
50)	Bromodichloromethane	11.73	83	2863290	203.3727 ug/L		98
51)	1,4-Dioxane	11.73	88	7313	183.3079 ug/L	#	42
52)	Dibromomethane	11.82	93	1057674	203.8094 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	971763	205.0732 ug/L		99
54)	4-Methyl-2-Pentanone	12.06	58	434877	206.7410 ug/L		98
55)	cis-1,3-Dichloropropene	12.37	75	3117841	201.1908 ug/L		96
56)	Dimethyl Disulfide	12.63	79	1770920	210.9322 ug/L		97
59)	Toluene	12.79	91	7346526	173.4585 ug/L		90
60)	Ethyl Methacrylate	12.88	69	1733386	214.4346 ug/L		98
62)	trans-1,3-Dichloropropene	12.97	75	2638443	210.6011 ug/L		98
63)	1,1,2-Trichloroethane	13.18	97	1375417	207.2273 ug/L		99
64)	2-Hexanone	13.12	58	396773	211.6123 ug/L	#	94
65)	1,3-Dichloropropane	13.48	76	2364848	204.7189 ug/L		98
66)	Tetrachloroethene	13.61	164	1792548	200.7390 ug/L		99
67)	Dibromochloromethane	13.87	129	1893932	216.6166 ug/L		99
68)	1,2-Dibromoethane	14.13	107	1353003	209.6556 ug/L		100
69)	1-Chlorohexane	14.21	91	2929109	195.6954 ug/L		97
70)	Chlorobenzene	14.63	112	5005557	184.5862 ug/L		93
71)	1,1,1,2-Tetrachloroethane	14.66	131	2071416	215.0229 ug/L		99
72)	Ethylbenzene	14.65	106	3010230	196.6548 ug/L		72
73)	m-,p-Xylene	14.75	106	6405975	354.1518 ug/L		70
74)	o-Xylene	15.30	106	3538965	198.8053 ug/L		84
75)	Styrene	15.35	104	5528100	190.1421 ug/L		91
76)	Bromoform	15.84	173	1151383	219.0274 ug/L		99
77)	Isopropylbenzene	15.73	105	7826297	175.6197 ug/L		89
79)	1,1,2,2-Tetrachloroethane	15.95	83	1541509	213.4512 ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	423906	209.1164 ug/L		94
82)	trans-1,4-Dichloro-2-Buten	16.18	53	559393	196.1276 ug/L		97
83)	n-Propylbenzene	16.23	91	9019678	154.1273 ug/L		86
84)	Bromobenzene	16.37	156	2284366	192.7125 ug/L		98
85)	1,3,5-Trimethylbenzene	16.43	105	7016916	181.6167 ug/L		90
86)	2-Chlorotoluene	16.51	91	6618013	185.1414 ug/L		93
87)	4-Chlorotoluene	16.56	91	5964330	175.0921 ug/L		89
88)	a-Methylstyrene	16.83	118	4119431	196.3367 ug/L		95
89)	tert-Butylbenzene	16.90	134	1671119	199.6472 ug/L		87
90)	1,2,4-Trimethylbenzene	16.95	105	7021954	179.3824 ug/L		88
91)	sec-Butylbenzene	17.17	105	8237897	172.8090 ug/L		89
92)	p-Isopropyltoluene	17.32	119	7266674	177.2563 ug/L		90
93)	1,3-Dichlorobenzene	17.52	146	4318785	185.7993 ug/L		95
94)	1,4-Dichlorobenzene	17.64	146	4277939	178.5379 ug/L		97
95)	n-Butylbenzene	17.85	91	7108277	179.8165 ug/L		91
96)	1,2-Dichlorobenzene	18.14	146	3887769	189.4407 ug/L		95
97)	1,2-Dibromo-3-Chloropropan	19.13	75	276298	218.5299 ug/L		95
98)	1,2,4-Trichlorobenzene	20.28	180	3070768	194.4400 ug/L		99
99)	Hexachlorobutadiene	20.42	225	1550628	192.9484 ug/L		98
100)	Naphthalene	20.64	128	4400286	214.7458 ug/L		98
101)	1,2,3-Trichlorobenzene	20.95	180	2641708	193.8396 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M406485.D 8260WT.M Fri Jul 31 14:02:11 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406485.D Vial: 9
Acq On : 30 Jul 2015 18:01 Operator: TMB
Sample : WG533051-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

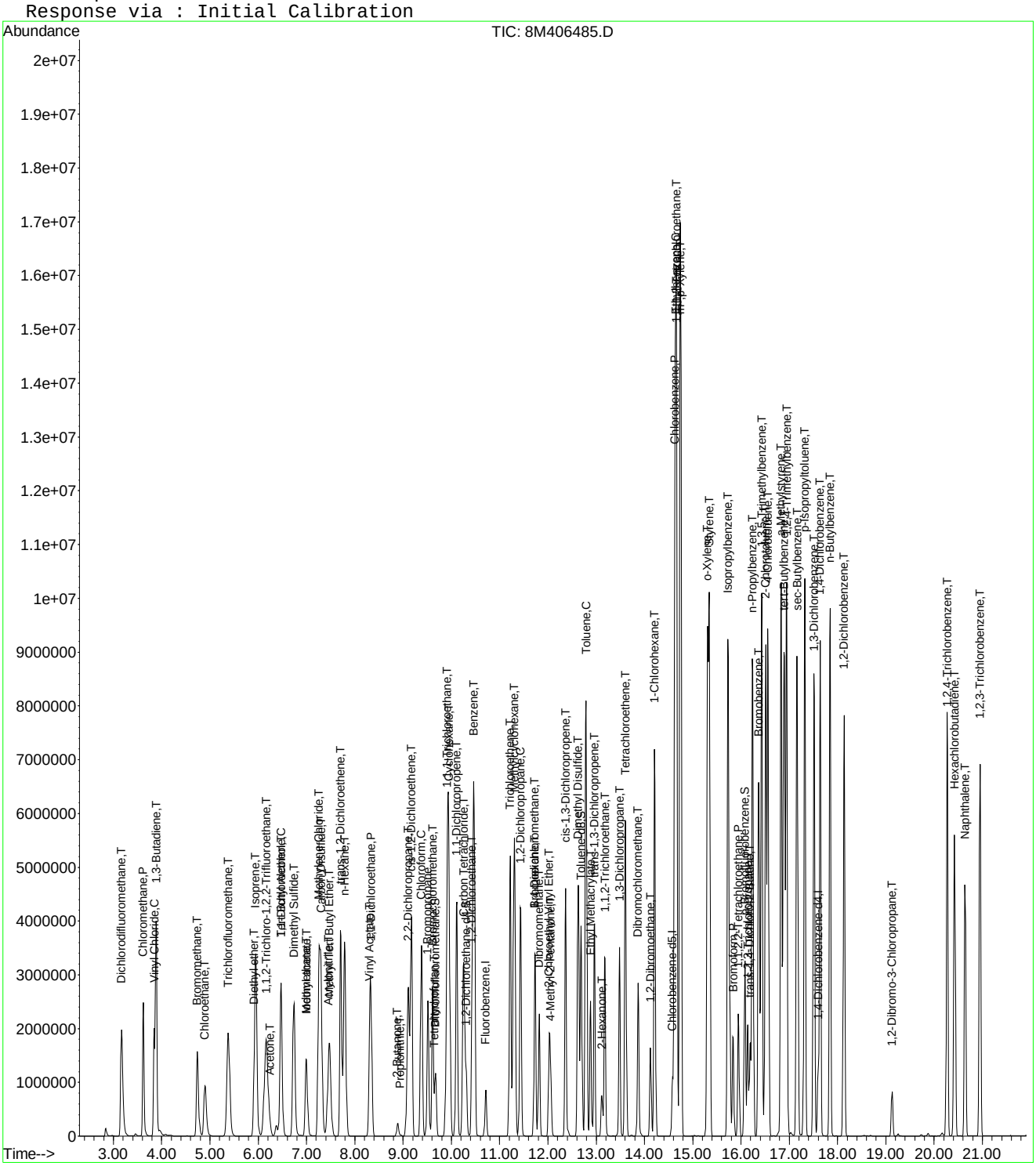

8M406485.D 8260WT.M Fri Jul 31 14:02:11 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406486.D Vial: 10
Acq On : 30 Jul 2015 18:29 Operator: TMB
Sample : WG533051-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:12 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	1028584	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	729846	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	400318	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	1523750	168.1203 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 672.48%#		
43) 1,2-Dichloroethane-d4	10.31	65	1500807	166.5192 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 666.08%#		
58) Toluene-d8	12.69	98	5162645	146.6321 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 586.52%#		
80) p-Bromofluorobenzene	16.08	95	2188157	158.0284 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 632.12%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	5117633	325.7800 ug/L	96
3) Chloromethane	3.62	50	4732198	269.8271 ug/L	94
4) Vinyl Chloride	3.85	62	3785878	293.5325 ug/L	95
5) 1,3-Butadiene	3.89	54	3316393	293.3100 ug/L	89
6) Bromomethane	4.74	94	2881777	335.4445 ug/L	98
7) Chloroethane	4.89	64	2610645	325.0921 ug/L	99
8) Trichlorofluoromethane	5.38	101	5765049	345.6818 ug/L	100
9) Diethyl ether	5.92	59	2065500	327.2033 ug/L	98
10) Isoprene	5.95	67	4331415	331.8364 ug/L	97
11) Acrolein	6.14	56	71709	150.4913 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	3194012	335.4281 ug/L	99
13) Acetone	6.25	43	397743	306.6513 ug/L	86
14) 1,1-Dichloroethene	6.47	61	5316346	329.0897 ug/L	96
15) Tert-Butyl Alcohol	6.60	59	224020	657.5476 ug/L	99
16) Dimethyl Sulfide	6.74	62	3335527	328.8653 ug/L	98
17) Iodomethane	6.99	142	3067351	304.4378 ug/L	99
18) Methyl acetate	7.00	43	1728968	343.5137 ug/L	100
19) Methylene Chloride	7.26	84	3154514	306.5554 ug/L	97
20) Carbon Disulfide	7.30	76	9369568	283.9822 ug/L	95
21) Acrylonitrile	7.45	53	419964	194.8536 ug/L	97
22) Methyl Tert Butyl Ether	7.48	73	6031202	331.9001 ug/L	96
23) trans-1,2-Dichloroethene	7.70	61	4927650	325.2394 ug/L	97
24) n-Hexane	7.79	57	5114139	312.2584 ug/L	99
25) Diisopropyl ether	8.14	45	10690367	290.5718 ug/L	96
26) Vinyl Acetate	8.30	43	2722389	289.4876 ug/L	99
27) 1,1-Dichloroethane	8.33	63	6249418	307.5431 ug/L	96
28) Ethyl-Tert-Butyl ether	8.71	59	8582411	312.6635 ug/L	96
29) 2-Butanone	8.89	43	751998	342.4181 ug/L	99
30) Propionitrile	9.00	54	247681	354.5725 ug/L	99
31) 2,2-Dichloropropane	9.11	77	5088250	324.9282 ug/L	97
32) cis-1,2-Dichloroethene	9.17	96	3483978	319.5294 ug/L	98
33) Chloroform	9.38	83	5576785	304.1012 ug/L	95
34) 1-Bromopropane	9.51	122	640622	330.5456 ug/L	99
35) Bromochloromethane	9.62	130	1763334	313.9643 ug/L	100
36) Tetrahydrofuran	9.64	42	516131	341.6878 ug/L	98
38) 1,1,1-Trichloroethane	9.92	97	5610901	331.7050 ug/L	99
39) Cyclohexane	9.95	56	6231793	315.8664 ug/L	99
40) 1,1-Dichloropropene	10.11	75	4572229	315.7021 ug/L	97
41) Tert-Amyl-Methyl ether	10.22	73	6529096	317.7507 ug/L	97
42) Carbon Tetrachloride	10.26	117	5060847	337.8992 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M406486.D 8260WT.M Fri Jul 31 14:02:12 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406486.D Vial: 10
Acq On : 30 Jul 2015 18:29 Operator: TMB
Sample : WG533051-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:12 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	4000729	325.7210 ug/L		98
46)	Benzene	10.46	78	9875498	243.9336 ug/L		85
47)	Trichloroethene	11.22	130	3333538	288.4851 ug/L		98
48)	Methylcyclohexane	11.30	83	5208570	310.8376 ug/L		97
49)	1,2-Dichloropropane	11.44	63	3586239	319.7568 ug/L		98
50)	Bromodichloromethane	11.74	83	4433850	318.5417 ug/L		97
51)	1,4-Dioxane	11.73	88	27597	699.6900 ug/L		83
52)	Dibromomethane	11.82	93	1700087	331.3612 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.03	63	1554095	331.7296 ug/L		98
54)	4-Methyl-2-Pentanone	12.06	58	705495	339.2440 ug/L		99
55)	cis-1,3-Dichloropropene	12.37	75	4762357	310.8380 ug/L		94
56)	Dimethyl Disulfide	12.63	79	2806438	338.1096 ug/L		95
59)	Toluene	12.79	91	9877956	231.5957 ug/L		83
60)	Ethyl Methacrylate	12.88	69	2760219	339.0727 ug/L		99
62)	trans-1,3-Dichloropropene	12.97	75	4102405	325.1631 ug/L		95
63)	1,1,2-Trichloroethane	13.18	97	2171921	324.9424 ug/L		99
64)	2-Hexanone	13.12	58	650699	344.6107 ug/L	#	92
65)	1,3-Dichloropropane	13.48	76	3646600	313.4676 ug/L		99
66)	Tetrachloroethene	13.61	164	2834870	315.2419 ug/L		99
67)	Dibromochloromethane	13.87	129	2977513	338.1666 ug/L		98
68)	1,2-Dibromoethane	14.12	107	2126044	327.1370 ug/L		100
69)	1-Chlorohexane	14.22	91	4484324	297.5033 ug/L		94
70)	Chlorobenzene	14.63	112	7166893	262.4386 ug/L		86
71)	1,1,1,2-Tetrachloroethane	14.66	131	3261834	336.2243 ug/L		99
72)	Ethylbenzene	14.66	106	4621120	299.7795 ug/L		53
73)	m-,p-Xylene	14.74	106	8870609	486.9759 ug/L		59
74)	o-Xylene	15.31	106	5313519	296.4038 ug/L		73
75)	Styrene	15.34	104	7831227	267.4742 ug/L		82
76)	Bromoform	15.84	173	1835375	346.6995 ug/L		99
77)	Isopropylbenzene	15.74	105	10435377	232.5278 ug/L		79
79)	1,1,2,2-Tetrachloroethane	15.94	83	2343040	322.1310 ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	686174	336.0880 ug/L		96
82)	trans-1,4-Dichloro-2-Buten	16.19	53	917720	318.9702 ug/L		94
83)	n-Propylbenzene	16.24	91	11456032	194.3672 ug/L	#	73
84)	Bromobenzene	16.37	156	3483406	291.7753 ug/L		97
85)	1,3,5-Trimethylbenzene	16.43	105	9500295	244.1445 ug/L		82
86)	2-Chlorotoluene	16.51	91	8751876	243.0958 ug/L		85
87)	4-Chlorotoluene	16.56	91	8272493	241.1246 ug/L		80
88)	a-Methylstyrene	16.83	118	6080021	287.7198 ug/L		91
89)	tert-Butylbenzene	16.90	134	2596133	307.9520 ug/L		79
90)	1,2,4-Trimethylbenzene	16.95	105	9434588	239.3014 ug/L		78
91)	sec-Butylbenzene	17.16	105	10777038	224.4655 ug/L	#	79
92)	p-Isopropyltoluene	17.32	119	9679217	234.4264 ug/L		81
93)	1,3-Dichlorobenzene	17.52	146	6256898	267.2648 ug/L		89
94)	1,4-Dichlorobenzene	17.64	146	6127643	253.9157 ug/L		91
95)	n-Butylbenzene	17.85	91	9371345	235.3789 ug/L	#	82
96)	1,2-Dichlorobenzene	18.14	146	5678643	274.7373 ug/L		90
97)	1,2-Dibromo-3-Chloropropan	19.13	75	435677	342.1355 ug/L		95
98)	1,2,4-Trichlorobenzene	20.28	180	4516301	283.9369 ug/L		98
99)	Hexachlorobutadiene	20.42	225	2425051	299.6089 ug/L		97
100)	Naphthalene	20.64	128	6344214	307.4127 ug/L		95
101)	1,2,3-Trichlorobenzene	20.95	180	3945194	287.4262 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M406486.D 8260WT.M Fri Jul 31 14:02:12 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406486.D Vial: 10
Acq On : 30 Jul 2015 18:29 Operator: TMB
Sample : WG533051-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

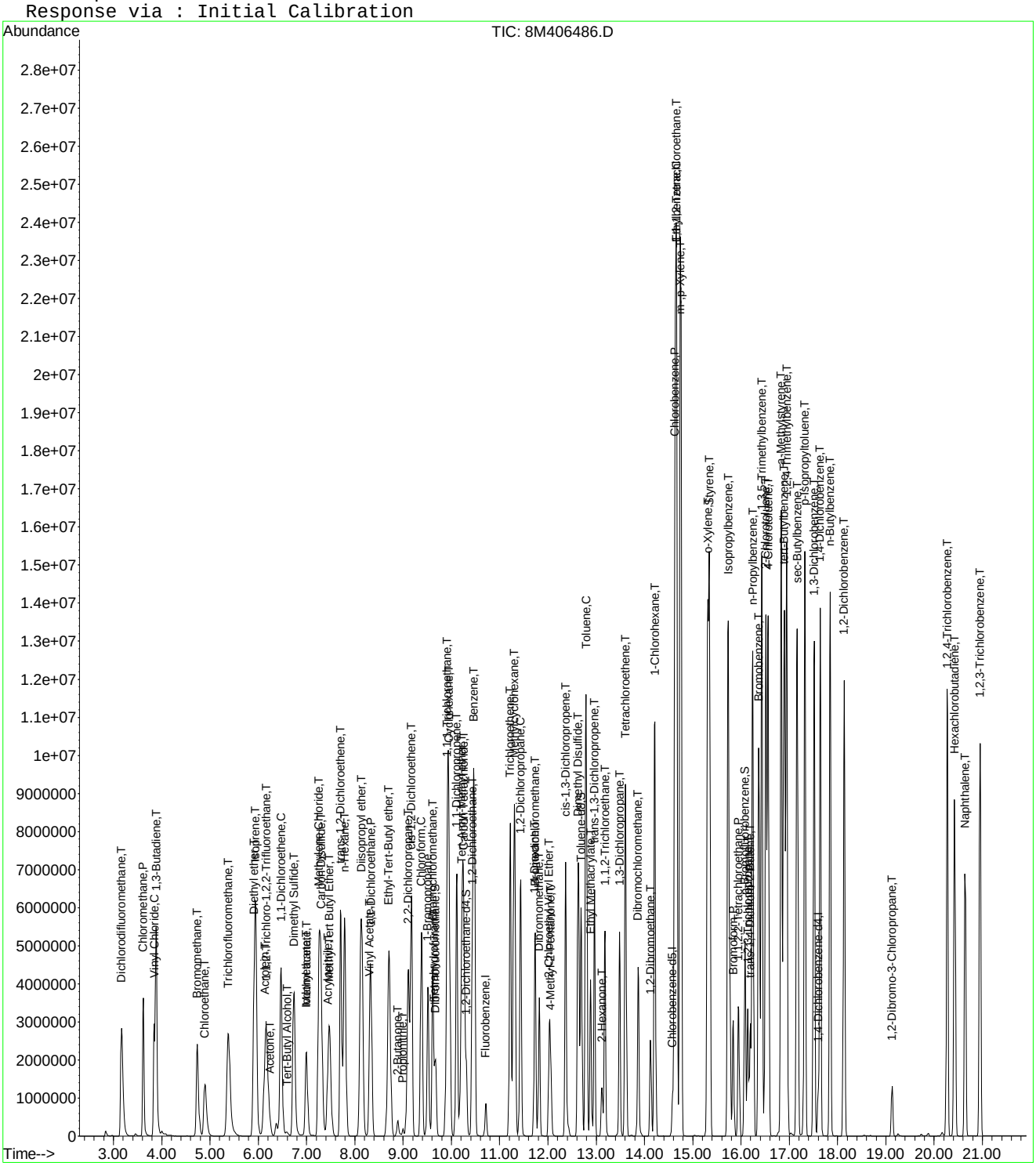

8M406486.D 8260WT.M Fri Jul 31 14:02:12 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406490.D Vial: 14
Acq On : 30 Jul 2015 20:22 Operator: TMB
Sample : WG533051-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:13 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	1008944	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	720402	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	380793	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	12.69	98	983	0.0283 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.12%#	
80) p-Bromofluorobenzene	16.08	95	326	0.0248 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.08%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	4543	0.2948 ug/L	95
3) Chloromethane	3.62	50	6070	0.3528 ug/L #	35
4) Vinyl Chloride	3.85	62	4674	0.3694 ug/L	98
5) 1,3-Butadiene	3.90	54	4380	0.3949 ug/L #	39
6) Bromomethane	4.74	94	2512	0.2981 ug/L	87
7) Chloroethane	4.90	64	2354	0.2988 ug/L #	43
8) Trichlorofluoromethane	5.37	101	4252	0.2599 ug/L #	92
10) Isoprene	5.96	67	3719	0.2905 ug/L	83
12) 1,1,2-Trichloro-1,2,2-Trif	6.19	101	2539	0.2718 ug/L #	46
13) Acetone	6.26	43	1060	0.8331 ug/L #	48
14) 1,1-Dichloroethene	6.47	61	5948	0.3754 ug/L	85
16) Dimethyl Sulfide	6.74	62	2808	0.2822 ug/L	100
17) Iodomethane	7.00	142	2256	1.1018 ug/L #	70
18) Methyl acetate	7.01	43	910	0.1843 ug/L #	64
19) Methylene Chloride	7.27	84	4210	0.4171 ug/L	96
20) Carbon Disulfide	7.30	76	14225	0.4395 ug/L	96
22) Methyl Tert Butyl Ether	7.49	73	4586	0.2573 ug/L #	67
23) trans-1,2-Dichloroethene	7.72	61	4895	0.3294 ug/L	73
24) n-Hexane	7.79	57	6977	0.4343 ug/L	90
26) Vinyl Acetate	8.30	43	2618	0.2838 ug/L #	77
27) 1,1-Dichloroethane	8.34	63	5973	0.2997 ug/L #	89
31) 2,2-Dichloropropane	9.12	77	4517	0.2941 ug/L #	70
32) cis-1,2-Dichloroethene	9.17	96	3851	0.3601 ug/L	65
33) Chloroform	9.38	83	5188	0.2884 ug/L	95
35) Bromochloromethane	9.62	130	1196	0.2171 ug/L	79
36) Tetrahydrofuran	9.65	42	429	0.2895 ug/L #	40
38) 1,1,1-Trichloroethane	9.92	97	4248	0.2560 ug/L	95
39) Cyclohexane	9.95	56	5790	0.2992 ug/L #	93
40) 1,1-Dichloropropene	10.10	75	4587	0.3229 ug/L	95
42) Carbon Tetrachloride	10.26	117	3801	0.2587 ug/L	80
45) 1,2-Dichloroethane	10.42	62	3893	0.3231 ug/L #	83
46) Benzene	10.48	78	13718	0.3454 ug/L	96
47) Trichloroethene	11.22	130	5579	0.4922 ug/L	88
48) Methylcyclohexane	11.31	83	6507	0.3959 ug/L	91
49) 1,2-Dichloropropane	11.44	63	2823	0.2566 ug/L	96
50) Bromodichloromethane	11.73	83	3594	0.2632 ug/L #	96
52) Dibromomethane	11.82	93	1790	0.3557 ug/L	91
53) 2-Chloroethyl Vinyl Ether	12.03	63	851	0.1852 ug/L #	53
55) cis-1,3-Dichloropropene	12.37	75	4421	0.2942 ug/L	98
56) Dimethyl Disulfide	12.62	79	1705	0.2094 ug/L	90

(#) = qualifier out of range (m) = manual integration
8M406490.D 8260WT.M Fri Jul 31 14:02:13 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406490.D Vial: 14
Acq On : 30 Jul 2015 20:22 Operator: TMB
Sample : WG533051-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:13 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
59)	Toluene	12.79	91	14603	0.3469 ug/L		96
60)	Ethyl Methacrylate	12.89	69	1978	0.2462 ug/L		93
62)	trans-1,3-Dichloropropene	12.97	75	3988	0.3202 ug/L		92
63)	1,1,2-Trichloroethane	13.18	97	2047	0.3103 ug/L		84
65)	1,3-Dichloropropane	13.47	76	3431	0.2988 ug/L		98
66)	Tetrachloroethene	13.62	164	3148	0.3547 ug/L		92
67)	Dibromochloromethane	13.87	129	2780	0.3199 ug/L		79
68)	1,2-Dibromoethane	14.13	107	1842	0.2871 ug/L		94
69)	1-Chlorohexane	14.22	91	4991	0.3355 ug/L		87
70)	Chlorobenzene	14.63	112	9008	0.3342 ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.65	131	2729	0.2850 ug/L		98
72)	Ethylbenzene	14.65	106	5606	0.3684 ug/L		87
73)	m-,p-Xylene	14.75	106	12100	0.6730 ug/L		97
74)	o-Xylene	15.30	106	5696	0.3219 ug/L		97
75)	Styrene	15.35	104	8917	0.3086 ug/L		92
76)	Bromoform	15.84	173	1357	0.2597 ug/L	#	39
77)	Isopropylbenzene	15.73	105	14415	0.3254 ug/L		98
79)	1,1,2,2-Tetrachloroethane	15.96	83	1905	0.2753 ug/L	#	86
81)	1,2,3-Trichloropropane	16.14	110	272	0.1401 ug/L	#	1
82)	trans-1,4-Dichloro-2-Buten	16.18	53	534	0.9919 ug/L	#	1
83)	n-Propylbenzene	16.24	91	20221	0.3607 ug/L		99
84)	Bromobenzene	16.36	156	3909	0.3442 ug/L		94
85)	1,3,5-Trimethylbenzene	16.42	105	13127	0.3546 ug/L		100
86)	2-Chlorotoluene	16.51	91	13411	0.3916 ug/L		94
87)	4-Chlorotoluene	16.56	91	13020	0.3990 ug/L		84
88)	a-Methylstyrene	16.83	118	5920	0.2945 ug/L		94
89)	tert-Butylbenzene	16.90	134	2558	0.3190 ug/L		90
90)	1,2,4-Trimethylbenzene	16.94	105	13142	0.3504 ug/L		83
91)	sec-Butylbenzene	17.16	105	16120	0.3530 ug/L		94
92)	p-Isopropyltoluene	17.32	119	15239	0.3880 ug/L		94
93)	1,3-Dichlorobenzene	17.52	146	8224	0.3693 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	8297	0.3614 ug/L	#	66
95)	n-Butylbenzene	17.85	91	14908	0.3936 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	6345	0.3227 ug/L		89
97)	1,2-Dibromo-3-Chloropropan	19.12	75	468	0.3864 ug/L	#	1
98)	1,2,4-Trichlorobenzene	20.27	180	6486	0.4287 ug/L		95
99)	Hexachlorobutadiene	20.42	225	3955	0.5137 ug/L		85
100)	Naphthalene	20.64	128	6840	0.3484 ug/L		97
101)	1,2,3-Trichlorobenzene	20.95	180	4318	0.3307 ug/L		80

(#) = qualifier out of range (m) = manual integration
8M406490.D 8260WT.M Fri Jul 31 14:02:13 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406490.D Vial: 14
Acq On : 30 Jul 2015 20:22 Operator: TMB
Sample : WG533051-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

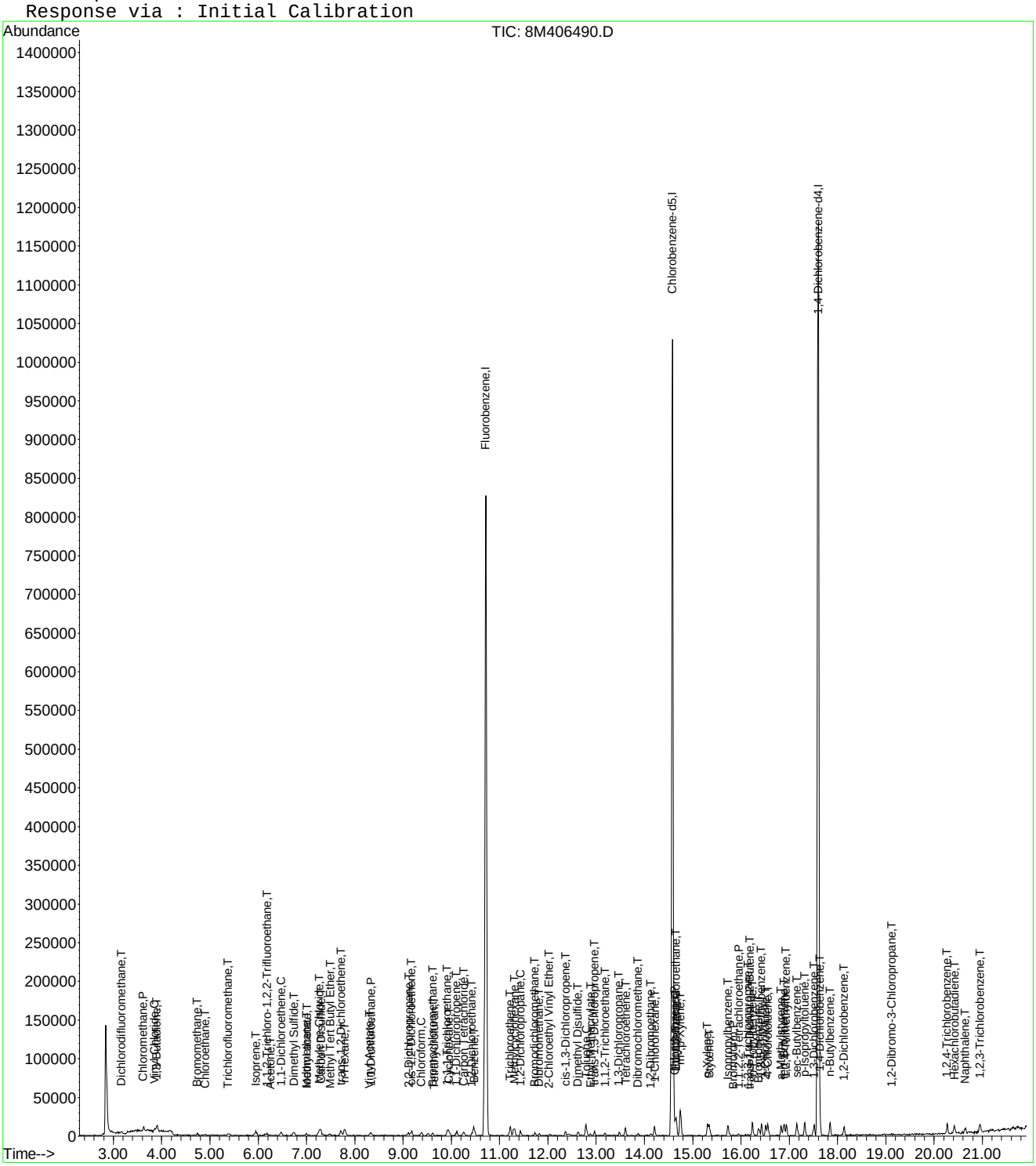

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\073015\8M406490.D Vial: 14
Acq On : 30 Jul 2015 20:22 Operator: TMB
Sample : WG533051-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2948	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.3528	0.0	100	0.00
4	C	Vinyl Chloride	0.3000	0.3695	-23.2#	100	0.00
5	T	1,3-Butadiene	-1.0000	0.3949	0.0	100	0.01
6	T	Bromomethane	-1.0000	0.2981	0.0	100	0.00
7	T	Chloroethane	-1.0000	0.2988	0.0	100	0.00
8	T	Trichlorofluoromethane	-1.0000	0.2599	0.0	100	-0.02
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.91#
10	T	Isoprene	-1.0000	0.2905	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.15#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2718	0.0	100	0.02
13	T	Acetone	-1.0000	0.8331	0.0	100	0.01
14	C	1,1-Dichloroethene	-1.0000	0.3754	0.0	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.59#
16	T	Dimethyl Sulfide	-1.0000	0.2822	0.0	100	0.00
17	T	Iodomethane	-1.0000	1.1018	0.0	0	0.01
18	T	Methyl acetate	-1.0000	0.1843	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4171	0.0	100	0.01
20	T	Carbon Disulfide	-1.0000	0.4395	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.44#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2573	0.0	100	0.01
23	T	trans-1,2-Dichloroethene	-1.0000	0.3294	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.4343	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.14#
26	T	Vinyl Acetate	-1.0000	0.2838	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.2997	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.89#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.00#
31	T	2,2-Dichloropropane	-1.0000	0.2941	0.0	100	0.01
32	T	cis-1,2-Dichloroethene	-1.0000	0.3601	0.0	100	0.00
33	C	Chloroform	0.3000	0.2884	3.9	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.52#
35	T	Bromochloromethane	-1.0000	0.2171	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.2895	0.0	100	0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	-1.0000	0.2560	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.2992	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.3229	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.22#
42	T	Carbon Tetrachloride	-1.0000	0.2587	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	-1.0000	0.3231	0.0	100	0.00
46	T	Benzene	0.3000	0.3454	-15.1	100	0.00
47	T	Trichloroethene	-1.0000	0.4922	0.0	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3959	0.0	100	0.01
49	C	1,2-Dichloropropane	-1.0000	0.2566	0.0	100	0.00
50	T	Bromodichloromethane	-1.0000	0.2632	0.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	-1.0000	0.3557	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1852	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.07#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\073015\8M406490.D Vial: 14
Acq On : 30 Jul 2015 20:22 Operator: TMB
Sample : WG533051-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.2942	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2094	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0283	0.0	100	0.00
59	C	Toluene	-1.0000	0.3469	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2462	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3202	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.3103	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	-1.0000	0.2988	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.3547	0.0	100	0.01
67	T	Dibromochloromethane	-1.0000	0.3199	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.2871	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.3355	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.3342	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.2850	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.3684	0.0	100	0.00
73	T	m-,p-Xylene	-1.0000	0.6730	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.3219	0.0	100	0.00
75	T	Styrene	-1.0000	0.3086	0.0	100	0.00
76	P	Bromoform	-1.0000	0.2597	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.3254	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2753	0.0	100	0.01
80	S	p-Bromofluorobenzene	-1.0000	0.0248	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.1401	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.9919	0.0	0	0.00
83	T	n-Propylbenzene	-1.0000	0.3607	0.0	0	0.00
84	T	Bromobenzene	0.3000	0.3442	-14.7	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.3546	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.3916	0.0	100	0.00
87	T	4-Chlorotoluene	-1.0000	0.3990	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2945	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3190	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.3504	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3530	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.3880	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.3693	0.0	100	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.3614	-20.5	100	0.00
95	T	n-Butylbenzene	-1.0000	0.3936	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.3227	-7.6	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.3864	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	-1.0000	0.4287	0.0	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.5137	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.3484	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.3307	-10.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1
8M406490.D 8260WT.M Fri Jul 31 14:02:28 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406491.D Vial: 15
Acq On : 30 Jul 2015 20:51 Operator: TMB
Sample : WG533051-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:14 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	981988	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	699821	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	372451	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	12.68	98	213	0.0063 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.04%#	
80) p-Bromofluorobenzene	16.08	95	483	0.0375 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.16%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	5792	0.3862 ug/L	92
3) Chloromethane	3.63	50	9042	0.5400 ug/L #	53
4) Vinyl Chloride	3.85	62	5127	0.4164 ug/L	98
5) 1,3-Butadiene	3.91	54	4317	0.3999 ug/L #	60
6) Bromomethane	4.74	94	3296	0.4019 ug/L	92
7) Chloroethane	4.91	64	3096	0.4038 ug/L #	61
8) Trichlorofluoromethane	5.37	101	6112	0.3839 ug/L #	92
10) Isoprene	5.94	67	4151	0.3331 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.18	101	3248	0.3573 ug/L	97
13) Acetone	6.24	43	1636	1.3212 ug/L #	48
14) 1,1-Dichloroethene	6.47	61	6101	0.3956 ug/L	88
16) Dimethyl Sulfide	6.75	62	3496	0.3610 ug/L	97
17) Iodomethane	6.99	142	2328	1.1155 ug/L	87
18) Methyl acetate	7.01	43	1699	0.3536 ug/L #	64
19) Methylene Chloride	7.26	84	4441	0.4521 ug/L	90
20) Carbon Disulfide	7.30	76	16637	0.5282 ug/L	98
22) Methyl Tert Butyl Ether	7.48	73	5955	0.3433 ug/L #	73
23) trans-1,2-Dichloroethene	7.70	61	5685	0.3930 ug/L	82
24) n-Hexane	7.79	57	7224	0.4620 ug/L	92
26) Vinyl Acetate	8.32	43	3001	0.3343 ug/L #	77
27) 1,1-Dichloroethane	8.34	63	7741	0.3990 ug/L	90
29) 2-Butanone	8.91	43	463	0.2208 ug/L #	57
31) 2,2-Dichloropropane	9.11	77	5224	0.3494 ug/L #	67
32) cis-1,2-Dichloroethene	9.18	96	3573	0.3432 ug/L	91
33) Chloroform	9.38	83	7455	0.4258 ug/L	89
35) Bromochloromethane	9.61	130	2065	0.3851 ug/L	94
36) Tetrahydrofuran	9.63	42	202	0.1401 ug/L #	40
38) 1,1,1-Trichloroethane	9.92	97	5545	0.3434 ug/L	94
39) Cyclohexane	9.94	56	7293	0.3872 ug/L	92
40) 1,1-Dichloropropene	10.10	75	6059	0.4382 ug/L	89
42) Carbon Tetrachloride	10.24	117	5004	0.3500 ug/L	97
45) 1,2-Dichloroethane	10.42	62	4821	0.4111 ug/L	91
46) Benzene	10.46	78	16612	0.4298 ug/L	92
47) Trichloroethene	11.22	130	5775	0.5235 ug/L	95
48) Methylcyclohexane	11.31	83	7747	0.4843 ug/L	94
49) 1,2-Dichloropropane	11.44	63	3675	0.3432 ug/L	98
50) Bromodichloromethane	11.72	83	4746	0.3571 ug/L #	95
52) Dibromomethane	11.82	93	1868	0.3814 ug/L	87
53) 2-Chloroethyl Vinyl Ether	12.03	63	1396	0.3121 ug/L #	53
55) cis-1,3-Dichloropropene	12.37	75	5826	0.3983 ug/L	92

(#) = qualifier out of range (m) = manual integration
8M406491.D 8260WT.M Fri Jul 31 14:02:14 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406491.D Vial: 15
Acq On : 30 Jul 2015 20:51 Operator: TMB
Sample : WG533051-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:14 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
56)	Dimethyl Disulfide	12.62	79	1737	0.2192	ug/L		78
59)	Toluene	12.79	91	19337	0.4728	ug/L		99
60)	Ethyl Methacrylate	12.89	69	2609	0.3342	ug/L		94
62)	trans-1,3-Dichloropropene	12.96	75	3967	0.3279	ug/L		85
63)	1,1,2-Trichloroethane	13.19	97	2460	0.3838	ug/L		87
65)	1,3-Dichloropropane	13.49	76	4041	0.3623	ug/L		97
66)	Tetrachloroethene	13.60	164	3390	0.3931	ug/L		99
67)	Dibromochloromethane	13.86	129	3049	0.3611	ug/L		100
68)	1,2-Dibromoethane	14.13	107	2175	0.3490	ug/L		80
69)	1-Chlorohexane	14.21	91	6587	0.4558	ug/L		78
70)	Chlorobenzene	14.63	112	10900	0.4163	ug/L		86
71)	1,1,1,2-Tetrachloroethane	14.66	131	3091	0.3323	ug/L		92
72)	Ethylbenzene	14.66	106	5826	0.3942	ug/L		94
73)	m-,p-Xylene	14.74	106	14777	0.8460	ug/L		92
74)	o-Xylene	15.31	106	7575	0.4407	ug/L		91
75)	Styrene	15.34	104	11258	0.4010	ug/L		99
76)	Bromoform	15.84	173	1447	0.2851	ug/L		95
77)	Isopropylbenzene	15.73	105	18387	0.4273	ug/L		92
79)	1,1,2,2-Tetrachloroethane	15.94	83	2308	0.3411	ug/L	#	90
81)	1,2,3-Trichloropropane	16.15	110	486	0.2559	ug/L	#	1
82)	trans-1,4-Dichloro-2-Buten	16.19	53	794	1.0932	ug/L	#	1
83)	n-Propylbenzene	16.24	91	24368	0.4444	ug/L		97
84)	Bromobenzene	16.37	156	4461	0.4016	ug/L		92
85)	1,3,5-Trimethylbenzene	16.43	105	15495	0.4280	ug/L		95
86)	2-Chlorotoluene	16.51	91	13796	0.4119	ug/L		97
87)	4-Chlorotoluene	16.55	91	14914	0.4672	ug/L		99
88)	a-Methylstyrene	16.83	118	7575	0.3853	ug/L		88
89)	tert-Butylbenzene	16.90	134	3120	0.3978	ug/L		97
90)	1,2,4-Trimethylbenzene	16.94	105	15362	0.4188	ug/L		99
91)	sec-Butylbenzene	17.16	105	20922	0.4684	ug/L		94
92)	p-Isopropyltoluene	17.32	119	16439	0.4279	ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	9884	0.4538	ug/L		98
94)	1,4-Dichlorobenzene	17.64	146	10851	0.4833	ug/L		80
95)	n-Butylbenzene	17.84	91	19783	0.5341	ug/L		98
96)	1,2-Dichlorobenzene	18.13	146	7878	0.4097	ug/L		94
97)	1,2-Dibromo-3-Chloropropan	19.13	75	335	0.2828	ug/L	#	1
98)	1,2,4-Trichlorobenzene	20.27	180	7047	0.4762	ug/L		93
99)	Hexachlorobutadiene	20.43	225	3518	0.4672	ug/L		98
100)	Naphthalene	20.65	128	6798	0.3540	ug/L		95
101)	1,2,3-Trichlorobenzene	20.96	180	6241	0.4887	ug/L		92

(#) = qualifier out of range (m) = manual integration
8M406491.D 8260WT.M Fri Jul 31 14:02:14 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406491.D Vial: 15
Acq On : 30 Jul 2015 20:51 Operator: TMB
Sample : WG533051-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

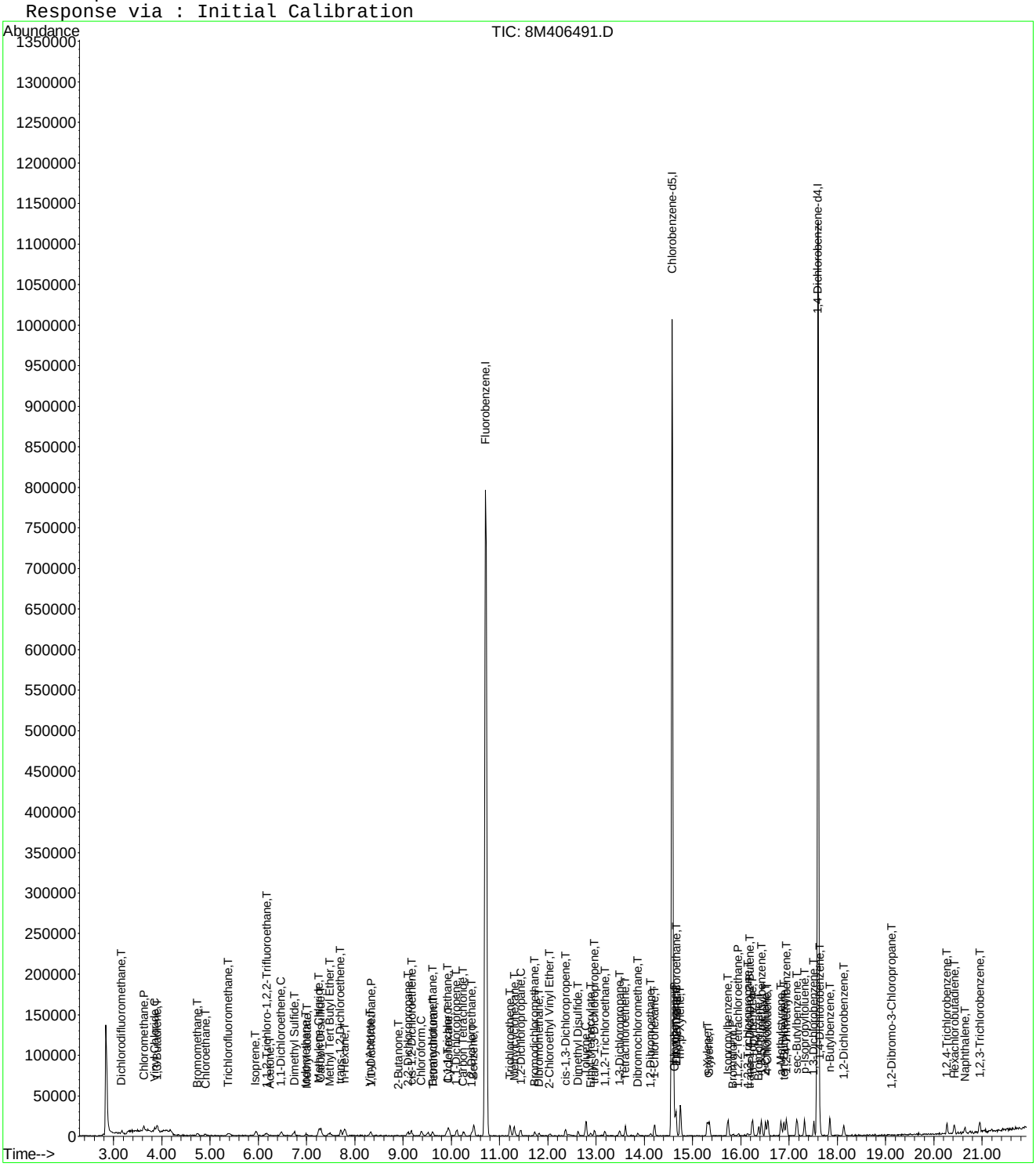

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\073015\8M406491.D Vial: 15
Acq On : 30 Jul 2015 20:51 Operator: TMB
Sample : WG533051-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	0.4000	0.3862	3.5	100	-0.01
3	P	Chloromethane	-1.0000	0.5400	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.4164	-4.1	100	0.00
5	T	1,3-Butadiene	0.4000	0.3999	0.0	100	0.02
6	T	Bromomethane	0.4000	0.4019	-0.5	100	0.00
7	T	Chloroethane	0.4000	0.4038	-1.0	100	0.00
8	T	Trichlorofluoromethane	0.4000	0.3839	4.0	100	-0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.91#
10	T	Isoprene	0.4000	0.3331	16.7	100	-0.01
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.15#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3573	0.0	100	0.02
13	T	Acetone	-1.0000	1.3212	0.0	100	0.00
14	C	1,1-Dichloroethene	0.4000	0.3956	1.1	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.59#
16	T	Dimethyl Sulfide	0.4000	0.3610	9.7	100	0.00
17	T	Iodomethane	-1.0000	1.1155	0.0	0	0.00
18	T	Methyl acetate	-1.0000	0.3536	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4521	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.5282	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.44#
22	T	Methyl Tert Butyl Ether	-1.0000	0.3433	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.3930	1.7	100	-0.01
24	T	n-Hexane	-1.0000	0.4620	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.14#
26	T	Vinyl Acetate	0.4000	0.3343	16.4	100	0.02
27	P	1,1-Dichloroethane	0.4000	0.3990	0.2	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.2208	0.0	100	0.02
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.00#
31	T	2,2-Dichloropropane	0.4000	0.3494	12.6	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.3432	14.2	100	0.00
33	C	Chloroform	0.4000	0.4258	-6.5	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.52#
35	T	Bromochloromethane	0.4000	0.3851	3.7	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.1401	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	0.4000	0.3434	14.2	100	0.00
39	T	Cyclohexane	-1.0000	0.3872	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4382	0.0	100	-0.01
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.22#
42	T	Carbon Tetrachloride	0.4000	0.3500	12.5	100	-0.01
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	0.4000	0.4111	-2.8	100	-0.01
46	T	Benzene	0.4000	0.4298	-7.4	100	-0.01
47	T	Trichloroethene	0.4000	0.5235	-30.9#	100	0.00
48	T	Methylcyclohexane	-1.0000	0.4843	0.0	100	0.00
49	C	1,2-Dichloropropane	0.4000	0.3432	14.2	100	0.00
50	T	Bromodichloromethane	0.4000	0.3572	10.7	100	-0.01
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	0.4000	0.3814	4.7	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.3121	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.07#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\073015\8M406491.D Vial: 15
Acq On : 30 Jul 2015 20:51 Operator: TMB
Sample : WG533051-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3983	0.4	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2192	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0063	0.0	100	0.00
59	C	Toluene	0.4000	0.4728	-18.2	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3342	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3279	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.3838	4.0	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	0.4000	0.3623	9.4	100	0.00
66	T	Tetrachloroethene	0.4000	0.3932	1.7	100	0.00
67	T	Dibromochloromethane	0.4000	0.3611	9.7	100	-0.01
68	T	1,2-Dibromoethane	0.4000	0.3490	12.7	100	0.00
69	T	1-Chlorohexane	0.4000	0.4557	-13.9	100	0.00
70	P	Chlorobenzene	0.4000	0.4163	-4.1	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3323	16.9	100	0.00
72	C	Ethylbenzene	0.4000	0.3942	1.5	100	0.00
73	T	m-,p-Xylene	0.8000	0.8460	-5.8	100	0.00
74	T	o-Xylene	-1.0000	0.4407	0.0	100	0.00
75	T	Styrene	0.4000	0.4010	-0.3	100	0.00
76	P	Bromoform	-1.0000	0.2851	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.4273	-6.8	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.3411	14.7	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0375	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.2559	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	1.0932	0.0	0	0.00
83	T	n-Propylbenzene	0.4000	0.4444	-11.1	100	0.00
84	T	Bromobenzene	0.4000	0.4016	-0.4	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.4280	-7.0	100	0.00
86	T	2-Chlorotoluene	0.4000	0.4119	-3.0	100	0.00
87	T	4-Chlorotoluene	0.4000	0.4672	-16.8	100	-0.01
88	T	a-Methylstyrene	-1.0000	0.3853	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3978	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	0.4000	0.4188	-4.7	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.4684	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4279	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.4538	-13.4	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.4833	-20.8	100	0.00
95	T	n-Butylbenzene	-1.0000	0.5341	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.4097	-2.4	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.2828	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	0.4000	0.4762	-19.0	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.4672	-16.8	100	0.00
100	T	Naphthalene	0.4000	0.3540	11.5	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.4887	-22.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M406491.D 8260WT.M Fri Jul 31 14:02:37 2015 Page 2

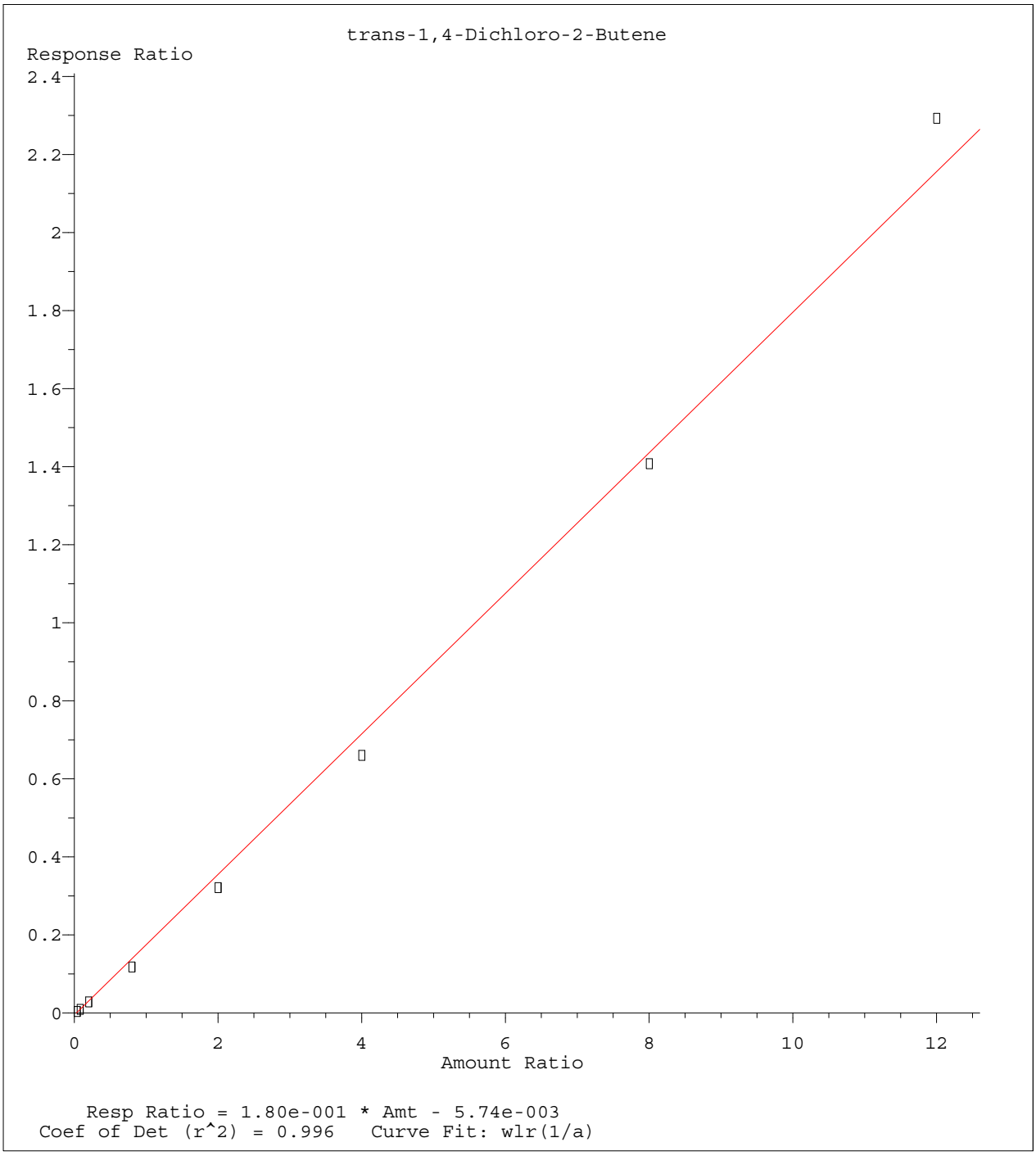

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Fri Jul 31 13:26:17 2015

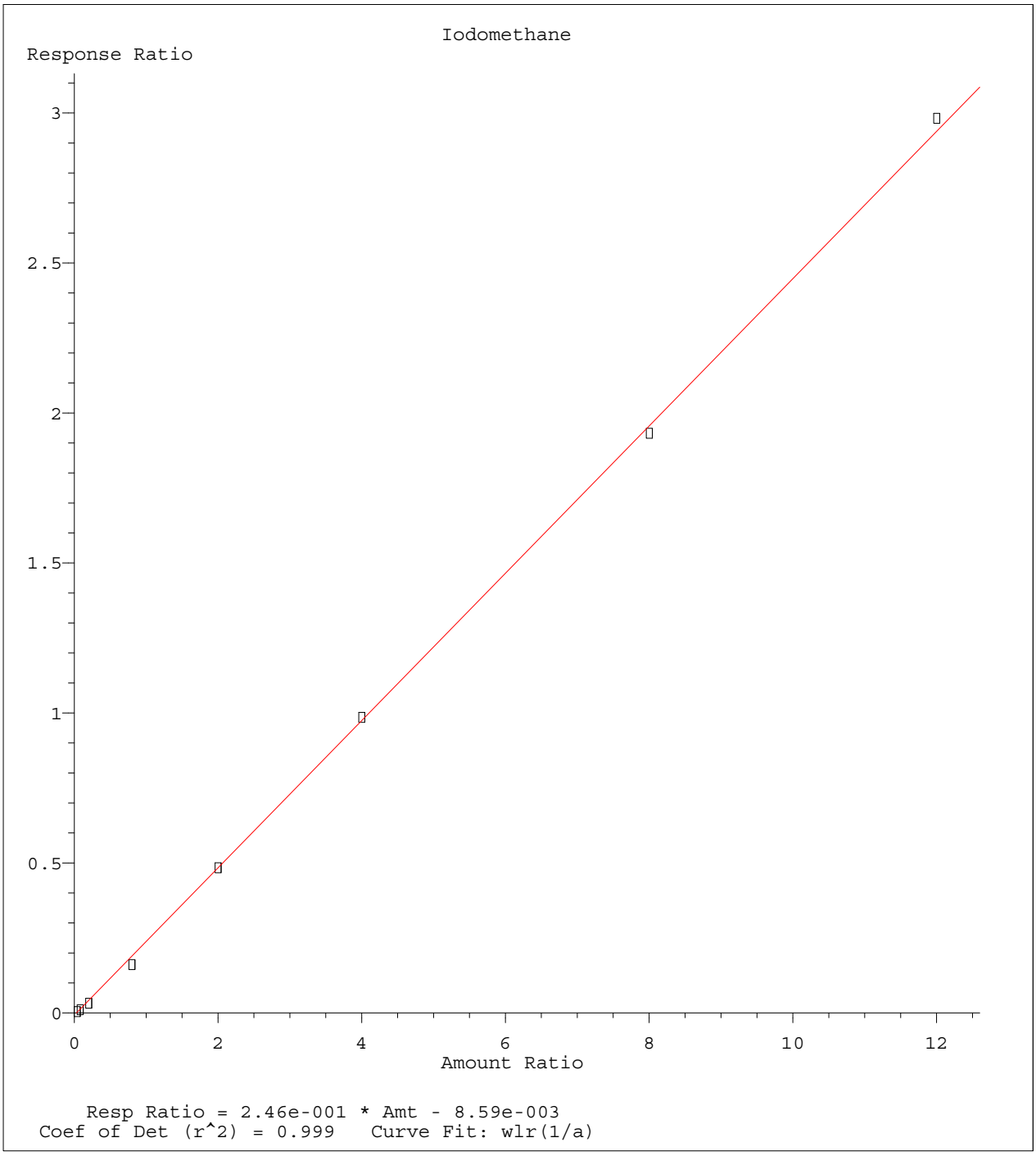

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Fri Jul 31 13:26:17 2015

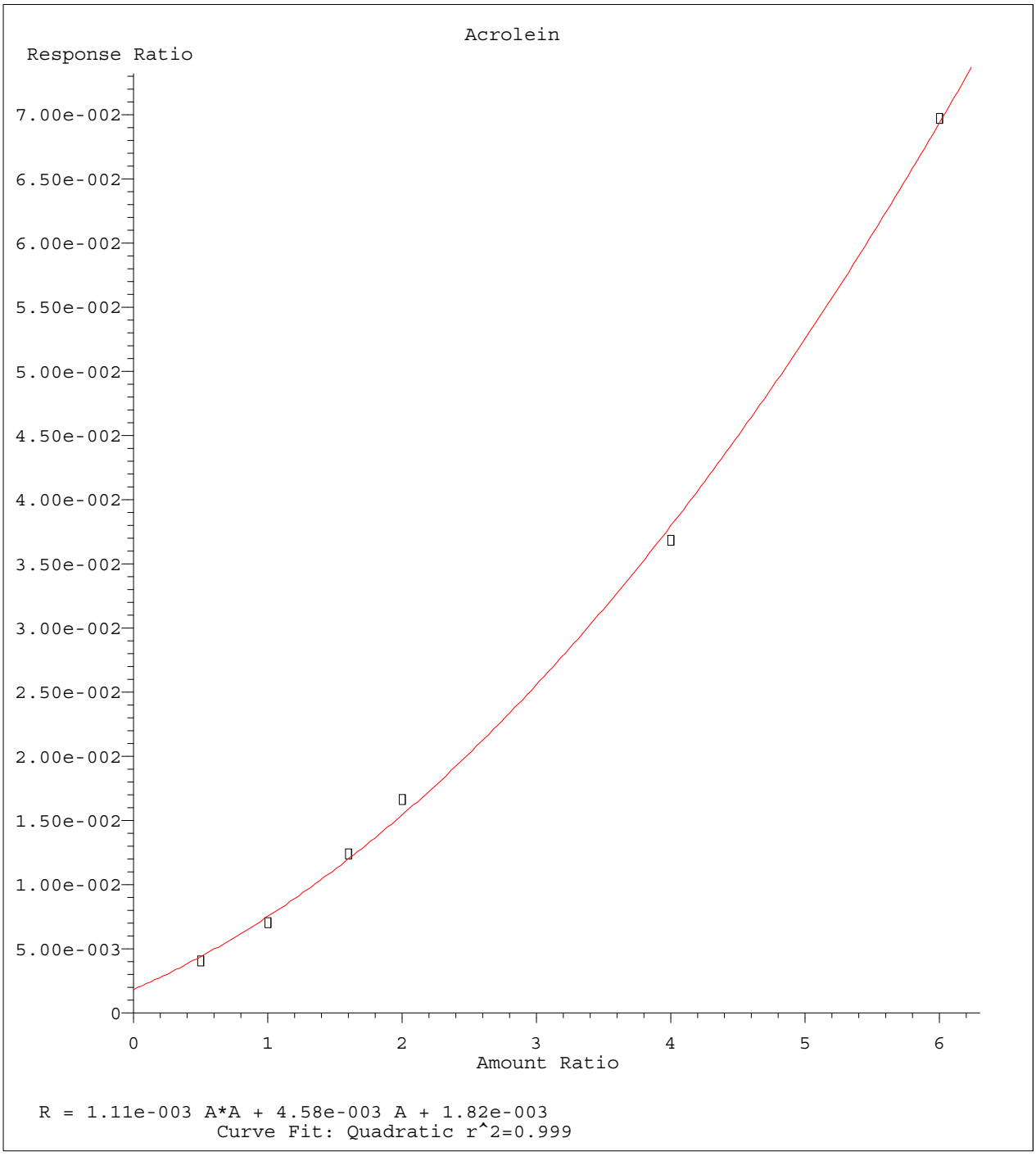

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Fri Jul 31 13:26:17 2015

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406492.D Vial: 16
Acq On : 30 Jul 2015 21:20 Operator: TMB
Sample : WG533051-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD71618 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:15 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	998188	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	705097	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	372507	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	221952	25.2344 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.92%		
43) 1,2-Dichloroethane-d4	10.31	65	213180	24.3733 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.48%		
58) Toluene-d8	12.69	98	842131	24.7582 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.04%		
80) p-Bromofluorobenzene	16.08	95	319261	24.7784 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.12%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	760257	49.8704 ug/L	99
3) Chloromethane	3.62	50	798332	46.9066 ug/L	99
4) Vinyl Chloride	3.85	62	598895	47.8484 ug/L	99
5) 1,3-Butadiene	3.89	54	390174	35.5588 ug/L	91
6) Bromomethane	4.74	94	380637	45.6561 ug/L	98
7) Chloroethane	4.89	64	394516	50.6233 ug/L	99
8) Trichlorofluoromethane	5.38	101	742918	45.9031 ug/L	100
9) Diethyl ether	5.91	59	508023	82.9284 ug/L	99
10) Isoprene	5.94	67	554917	43.8076 ug/L	100
11) Acrolein	6.15	56	25077	73.9767 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	427942	46.3101 ug/L	98
13) Acetone	6.24	43	63026	50.0714 ug/L	85
14) 1,1-Dichloroethene	6.47	61	689436	43.9767 ug/L	96
15) Tert-Butyl Alcohol	6.60	59	62923	190.3168 ug/L	99
16) Dimethyl Sulfide	6.74	62	510518	51.8671 ug/L	96
17) Iodomethane	6.99	142	379173	39.5421 ug/L	97
18) Methyl acetate	7.01	43	192753	39.4626 ug/L	98
19) Methylene Chloride	7.26	84	461816	46.2459 ug/L	98
20) Carbon Disulfide	7.30	76	1095623	34.2184 ug/L	100
21) Acrylonitrile	7.44	53	103087	49.2865 ug/L	97
22) Methyl Tert Butyl Ether	7.48	73	847872	48.0796 ug/L	98
23) trans-1,2-Dichloroethene	7.71	61	685784	46.6421 ug/L	97
24) n-Hexane	7.80	57	587027	36.9341 ug/L	100
25) Diisopropyl ether	8.14	45	3319277	92.9676 ug/L	98
26) Vinyl Acetate	8.30	43	639904	70.1168 ug/L	100
27) 1,1-Dichloroethane	8.33	63	924236	46.8680 ug/L	99
28) Ethyl-Tert-Butyl ether	8.71	59	2407237	90.3679 ug/L	100
29) 2-Butanone	8.89	43	112752	52.9044 ug/L	99
30) Propionitrile	9.00	54	68332	100.8008 ug/L	94
31) 2,2-Dichloropropane	9.11	77	699305	46.0164 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	504121	47.6428 ug/L	95
33) Chloroform	9.38	83	858972	48.2659 ug/L	98
34) 1-Bromopropane	9.52	122	102385	54.4369 ug/L	96
35) Bromochloromethane	9.62	130	263358	48.3192 ug/L	99
36) Tetrahydrofuran	9.64	42	141291	96.3854 ug/L	96
38) 1,1,1-Trichloroethane	9.92	97	802864	48.9090 ug/L	99
39) Cyclohexane	9.95	56	843061	44.0328 ug/L	100
40) 1,1-Dichloropropene	10.11	75	654340	46.5565 ug/L	98
41) Tert-Amyl-Methyl ether	10.22	73	1909722	95.7703 ug/L	100
42) Carbon Tetrachloride	10.26	117	721323	49.6274 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M406492.D 8260WT.M Fri Jul 31 14:02:15 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406492.D Vial: 16
Acq On : 30 Jul 2015 21:20 Operator: TMB
Sample : WG533051-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD71618 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:15 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	552896	46.3850 ug/L		99
46)	Benzene	10.46	78	1887464	48.0417 ug/L		99
47)	Trichloroethene	11.22	130	490661	43.7549 ug/L		97
48)	Methylcyclohexane	11.30	83	742729	45.6744 ug/L		99
49)	1,2-Dichloropropane	11.44	63	535572	49.2069 ug/L		97
50)	Bromodichloromethane	11.73	83	641047	47.4573 ug/L		99
51)	1,4-Dioxane	11.72	88	6953	181.6534 ug/L		83
52)	Dibromomethane	11.82	93	234491	47.0960 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	230887	50.7848 ug/L		100
54)	4-Methyl-2-Pentanone	12.06	58	102085	50.5834 ug/L		98
55)	cis-1,3-Dichloropropene	12.37	75	747778	50.2935 ug/L		99
56)	Dimethyl Disulfide	12.62	79	403465	50.0882 ug/L		95
59)	Toluene	12.79	91	1989406	48.2802 ug/L		98
60)	Ethyl Methacrylate	12.88	69	422204	53.6851 ug/L		94
62)	trans-1,3-Dichloropropene	12.97	75	574201	47.1096 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	306195	47.4179 ug/L		98
64)	2-Hexanone	13.12	58	96303	52.7923 ug/L	#	94
65)	1,3-Dichloropropane	13.48	76	547512	48.7170 ug/L		95
66)	Tetrachloroethene	13.61	164	415959	47.8788 ug/L		99
67)	Dibromochloromethane	13.86	129	407864	47.9485 ug/L		98
68)	1,2-Dibromoethane	14.12	107	297966	47.4577 ug/L		99
69)	1-Chlorohexane	14.22	91	720733	49.4939 ug/L		99
70)	Chlorobenzene	14.63	112	1337432	50.6933 ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.66	131	460306	49.1130 ug/L		100
72)	Ethylbenzene	14.66	106	731345	49.1088 ug/L		95
73)	m-,p-Xylene	14.74	106	1764113	100.2450 ug/L		95
74)	o-Xylene	15.31	106	889253	51.3463 ug/L		96
75)	Styrene	15.34	104	1414087	49.9932 ug/L		100
76)	Bromoform	15.84	173	250708	49.0206 ug/L		98
77)	Isopropylbenzene	15.74	105	2227657	51.3804 ug/L		98
79)	1,1,2,2-Tetrachloroethane	15.94	83	333440	49.2653 ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	91572	48.2006 ug/L		61
82)	trans-1,4-Dichloro-2-Buten	16.18	53	105948	40.2718 ug/L	#	51
83)	n-Propylbenzene	16.24	91	2803567	51.1176 ug/L		99
84)	Bromobenzene	16.37	156	530000	47.7080 ug/L		98
85)	1,3,5-Trimethylbenzene	16.43	105	1890061	52.1983 ug/L		97
86)	2-Chlorotoluene	16.51	91	1810366	54.0398 ug/L		100
87)	4-Chlorotoluene	16.55	91	1675878	52.4950 ug/L		98
88)	a-Methylstyrene	16.83	118	1101871	56.0359 ug/L		99
89)	tert-Butylbenzene	16.89	134	407869	51.9933 ug/L		93
90)	1,2,4-Trimethylbenzene	16.95	105	1882712	51.3188 ug/L		97
91)	sec-Butylbenzene	17.16	105	2381458	53.3045 ug/L		98
92)	p-Isopropyltoluene	17.32	119	1948217	50.7078 ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	1088924	49.9863 ug/L		99
94)	1,4-Dichlorobenzene	17.64	146	1047998	46.6689 ug/L		98
95)	n-Butylbenzene	17.85	91	1912025	51.6095 ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	969811	50.4233 ug/L		100
97)	1,2-Dibromo-3-Chloropropan	19.13	75	54805	46.2513 ug/L		88
98)	1,2,4-Trichlorobenzene	20.28	180	705673	47.6775 ug/L		99
99)	Hexachlorobutadiene	20.43	225	347054	46.0788 ug/L		99
100)	Naphthalene	20.64	128	972942	50.6643 ug/L		99
101)	1,2,3-Trichlorobenzene	20.95	180	603944	47.2852 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M406492.D 8260WT.M Fri Jul 31 14:02:16 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406492.D Vial: 16
Acq On : 30 Jul 2015 21:20 Operator: TMB
Sample : WG533051-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD71618 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

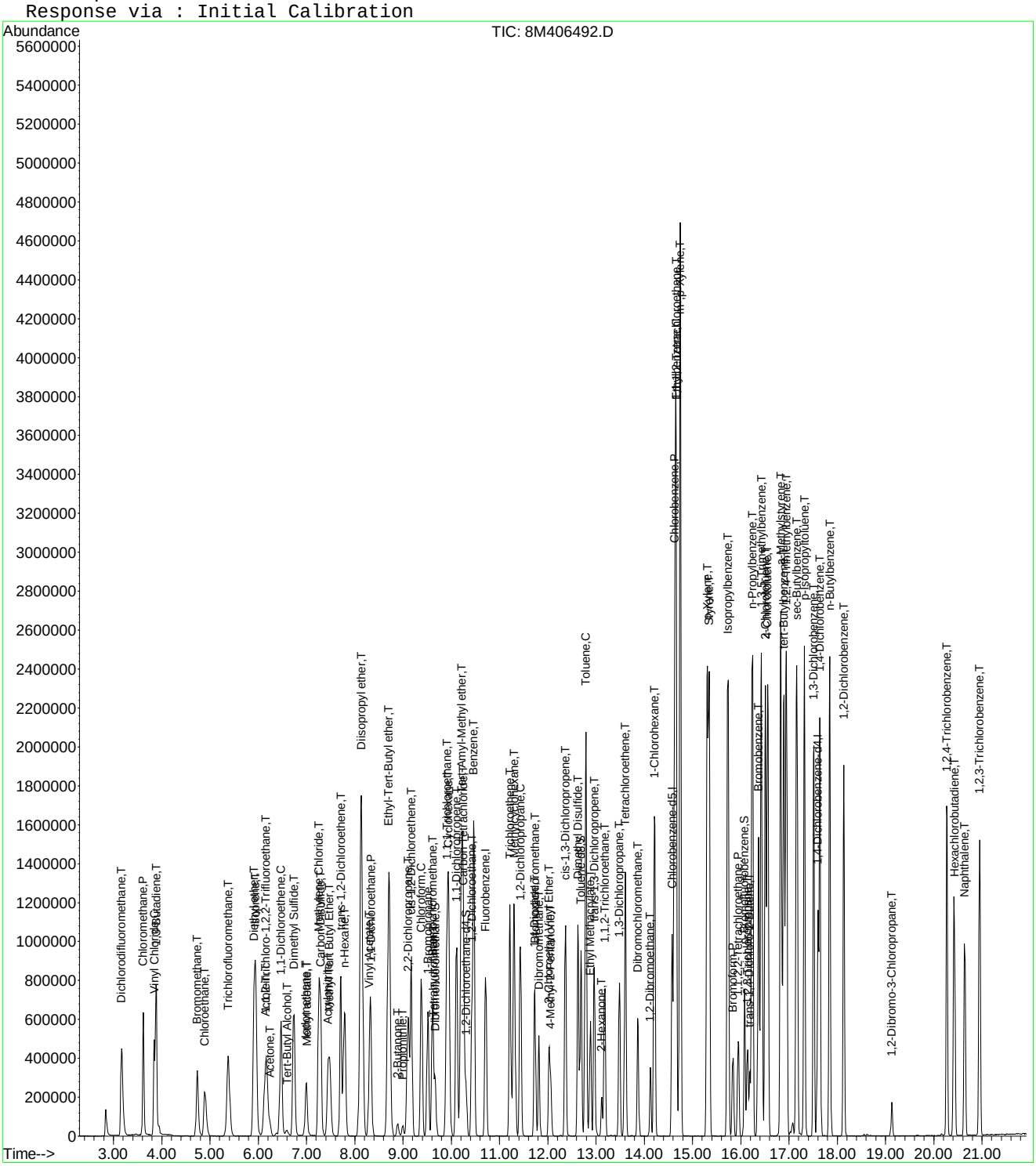

8M406492.D 8260WT.M Fri Jul 31 14:02:16 2015 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\073015\8M406492.D Vial: 16
Acq On : 30 Jul 2015 21:20 Operator: TMB
Sample : WG533051-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD71618 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	110	0.00
2	T	Dichlorodifluoromethane	50.0000	49.8704	0.3	96	0.00
3	P	Chloromethane	50.0000	46.9066	6.2	103	0.00
4	C	Vinyl Chloride	50.0000	47.8484	4.3	101	0.00
5	T	1,3-Butadiene	50.0000	35.5588	28.9#	74	0.00
6	T	Bromomethane	50.0000	45.6561	8.7	102	0.00
7	T	Chloroethane	50.0000	50.6233	-1.2	109	-0.01
8	T	Trichlorofluoromethane	50.0000	45.9031	8.2	96	-0.01
9	T	Diethyl ether	100.0000	82.9284	17.1	93	0.00
10	T	Isoprene	50.0000	43.8076	12.4	92	-0.01
11	T	Acrolein	50.0000	73.9767	-48.0#	167	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	46.3100	7.4	95	0.00
13	T	Acetone	50.0000	50.0714	-0.1	117	0.00
14	C	1,1-Dichloroethene	50.0000	43.9767	12.0	94	0.00
15	T	Tert-Butyl Alcohol	200.0000	190.3168	4.8	115	0.01
16	T	Dimethyl Sulfide	50.0000	51.8671	-3.7	112	0.00
17	T	Iodomethane	50.0000	39.5421	20.9	87	0.00
18	T	Methyl acetate	50.0000	39.4626	21.1	91	0.00
19	T	Methylene Chloride	50.0000	46.2459	7.5	100	0.00
20	T	Carbon Disulfide	50.0000	34.2184	31.6#	73	0.00
21	T	Acrylonitrile	50.0000	49.2865	1.4	108	0.00
22	T	Methyl Tert Butyl Ether	50.0000	48.0796	3.8	105	0.00
23	T	trans-1,2-Dichloroethene	50.0000	46.6421	6.7	99	0.00
24	T	n-Hexane	50.0000	36.9341	26.1#	79	0.00
25	T	Diisopropyl ether	100.0000	92.9676	7.0	103	0.00
26	T	Vinyl Acetate	50.0000	70.1168	-40.2#	156	0.00
27	P	1,1-Dichloroethane	50.0000	46.8680	6.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	90.3679	9.6	101	0.00
29	T	2-Butanone	50.0000	52.9044	-5.8	116	0.00
30	T	Propionitrile	100.0000	100.8008	-0.8	109	0.00
31	T	2,2-Dichloropropane	50.0000	46.0164	8.0	98	0.00
32	T	cis-1,2-Dichloroethene	50.0000	47.6428	4.7	101	0.00
33	C	Chloroform	50.0000	48.2659	3.5	104	0.00
34		1-Bromopropane	50.0000	54.4369	-8.9	118	0.00
35	T	Bromochloromethane	50.0000	48.3192	3.4	105	0.00
36	T	Tetrahydrofuran	100.0000	96.3855	3.6	111	0.00
37	S	Dibromofluoromethane	25.0000	25.2344	-0.9	108	0.00
38	T	1,1,1-Trichloroethane	50.0000	48.9090	2.2	103	0.00
39	T	Cyclohexane	50.0000	44.0329	11.9	93	0.00
40	T	1,1-Dichloropropene	50.0000	46.5565	6.9	98	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	95.7703	4.2	108	0.00
42	T	Carbon Tetrachloride	50.0000	49.6274	0.7	102	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.3732	2.5	110	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	46.3850	7.2	100	0.00
46	T	Benzene	50.0000	48.0417	3.9	103	-0.01
47	T	Trichloroethene	50.0000	43.7549	12.5	100	0.00
48	T	Methylcyclohexane	50.0000	45.6744	8.7	99	0.00
49	C	1,2-Dichloropropane	50.0000	49.2069	1.6	102	0.00
50	T	Bromodichloromethane	50.0000	47.4573	5.1	100	0.00
51	T	1,4-Dioxane	200.0000	181.6534	9.2	109	0.01
52	T	Dibromomethane	50.0000	47.0960	5.8	101	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	50.7848	-1.6	109	-0.01
54	T	4-Methyl-2-Pentanone	50.0000	50.5834	-1.2	111	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\073015\8M406492.D Vial: 16
Acq On : 30 Jul 2015 21:20 Operator: TMB
Sample : WG533051-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD71618 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	50.2936	-0.6	105	0.00
56	T	Dimethyl Disulfide	50.0000	50.0882	-0.2	109	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	109	0.00
58	S	Toluene-d8	25.0000	24.7582	1.0	107	0.00
59	C	Toluene	50.0000	48.2802	3.4	101	0.00
60	T	Ethyl Methacrylate	50.0000	53.6851	-7.4	113	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	47.1096	5.8	99	0.00
63	T	1,1,2-Trichloroethane	50.0000	47.4179	5.2	100	0.00
64	T	2-Hexanone	50.0000	52.7923	-5.6	116	0.00
65	T	1,3-Dichloropropane	50.0000	48.7170	2.6	103	0.00
66	T	Tetrachloroethene	50.0000	47.8788	4.2	100	0.00
67	T	Dibromochloromethane	50.0000	47.9485	4.1	100	-0.01
68	T	1,2-Dibromoethane	50.0000	47.4577	5.1	102	0.00
69	T	1-Chlorohexane	50.0000	49.4939	1.0	106	0.00
70	P	Chlorobenzene	50.0000	50.6933	-1.4	107	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	49.1130	1.8	99	0.00
72	C	Ethylbenzene	50.0000	49.1088	1.8	105	0.00
73	T	m-,p-Xylene	100.0000	100.2450	-0.2	104	0.00
74	T	o-Xylene	50.0000	51.3463	-2.7	106	0.00
75	T	Styrene	50.0000	49.9932	0.0	103	0.00
76	P	Bromoform	50.0000	49.0206	2.0	105	0.00
77	T	Isopropylbenzene	50.0000	51.3804	-2.8	105	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	104	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	49.2653	1.5	103	0.00
80	S	p-Bromofluorobenzene	25.0000	24.7784	0.9	107	0.00
81	T	1,2,3-Trichloropropane	50.0000	48.2006	3.6	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	40.2718	19.5	93	-0.01
83	T	n-Propylbenzene	50.0000	51.1176	-2.2	103	0.00
84	T	Bromobenzene	50.0000	47.7080	4.6	101	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	52.1983	-4.4	103	0.00
86	T	2-Chlorotoluene	50.0000	54.0398	-8.1	106	0.00
87	T	4-Chlorotoluene	50.0000	52.4950	-5.0	107	-0.01
88	T	a-Methylstyrene	50.0000	56.0359	-12.1	113	0.00
89	T	tert-Butylbenzene	50.0000	51.9933	-4.0	106	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	51.3188	-2.6	100	0.00
91	T	sec-Butylbenzene	50.0000	53.3045	-6.6	102	0.00
92	T	p-Isopropyltoluene	50.0000	50.7077	-1.4	97	0.00
93	T	1,3-Dichlorobenzene	50.0000	49.9863	0.0	103	0.00
94	T	1,4-Dichlorobenzene	50.0000	46.6689	6.7	99	0.00
95	T	n-Butylbenzene	50.0000	51.6095	-3.2	98	0.00
96	T	1,2-Dichlorobenzene	50.0000	50.4233	-0.8	103	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	46.2513	7.5	94	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	47.6775	4.6	97	0.00
99	T	Hexachlorobutadiene	50.0000	46.0789	7.8	96	0.00
100	T	Naphthalene	50.0000	50.6643	-1.3	96	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	47.2852	5.4	98	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M406492.D 8260WT.M Fri Jul 31 14:04:07 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\082115\8M406934.D Vial: 2
Acq On : 21 Aug 2015 15:07 Operator: TMB
Sample : WG536090-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD71981 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 21 15:29:28 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	950085	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	693663	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	393400	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	207733	24.8136 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.24%		
43) 1,2-Dichloroethane-d4	10.31	65	186388	22.3890 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 89.56%		
58) Toluene-d8	12.69	98	830315	24.8132 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.24%		
80) p-Bromofluorobenzene	16.08	95	314361	23.1023 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.40%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	796646	54.9032 ug/L	98
3) Chloromethane	3.62	50	798441	49.2882 ug/L	99
4) Vinyl Chloride	3.85	62	682720	57.3073 ug/L	99
5) 1,3-Butadiene	3.89	54	666770	63.8431 ug/L	98
6) Bromomethane	4.74	94	272856	34.3852 ug/L	100
7) Chloroethane	4.90	64	388910	52.4306 ug/L	99
8) Trichlorofluoromethane	5.39	101	782031	50.7662 ug/L	99
9) Diethyl ether	5.91	59	541643	92.8930 ug/L	98
10) Isoprene	5.94	67	612787	50.8254 ug/L	100
11) Acrolein	6.14	56	9559	33.8386 ug/L	91
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	464986	52.8664 ug/L	99
13) Acetone	6.24	43	59867	49.9697 ug/L	94
14) 1,1-Dichloroethene	6.47	61	766980	51.3999 ug/L	97
15) Tert-Butyl Alcohol	6.59	59	73217	232.6642 ug/L	98
16) Dimethyl Sulfide	6.74	62	445458	47.5486 ug/L	99
17) Iodomethane	6.99	142	190456	21.2802 ug/L	93
18) Methyl acetate	7.01	43	222841	47.9324 ug/L	97
19) Methylene Chloride	7.26	84	476044	50.0842 ug/L	100
20) Carbon Disulfide	7.30	76	1539605	50.5194 ug/L	100
21) Acrylonitrile	7.44	53	96596	48.5213 ug/L	97
22) Methyl Tert Butyl Ether	7.48	73	816331	48.6348 ug/L	97
23) trans-1,2-Dichloroethene	7.71	61	743797	53.1490 ug/L	96
24) n-Hexane	7.80	57	746537	49.3481 ug/L	97
25) Diisopropyl ether	8.14	45	3519037	103.5528 ug/L	98
26) Vinyl Acetate	8.30	43	517246	59.5462 ug/L	98
27) 1,1-Dichloroethane	8.33	63	978306	52.1217 ug/L	100
28) Ethyl-Tert-Butyl ether	8.71	59	2498708	98.5509 ug/L	99
29) 2-Butanone	8.88	43	107239	52.8652 ug/L	97
30) Propionitrile	9.00	54	69321	107.4371 ug/L	97
31) 2,2-Dichloropropane	9.11	77	765791	52.9428 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	531714	52.7948 ug/L	97
33) Chloroform	9.38	83	863535	50.9790 ug/L	100
34) 1-Bromopropane	9.51	122	90896	50.7752 ug/L	95
35) Bromochloromethane	9.61	130	262260	50.5539 ug/L	99
36) Tetrahydrofuran	9.64	42	142379	102.0452 ug/L	95
38) 1,1,1-Trichloroethane	9.92	97	787703	50.4149 ug/L	99
39) Cyclohexane	9.95	56	908861	49.8730 ug/L	99
40) 1,1-Dichloropropene	10.11	75	693232	51.8210 ug/L	98
41) Tert-Amyl-Methyl ether	10.22	73	1861244	98.0650 ug/L	99
42) Carbon Tetrachloride	10.26	117	717870	51.8904 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M406934.D 8260WT.M Fri Aug 21 15:29:29 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\082115\8M406934.D Vial: 2
Acq On : 21 Aug 2015 15:07 Operator: TMB
Sample : WG536090-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD71981 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 21 15:29:28 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	545344	48.0678	ug/L		97
46)	Benzene	10.46	78	1959439	52.3988	ug/L		99
47)	Trichloroethene	11.22	130	511338	47.9075	ug/L		96
48)	Methylcyclohexane	11.30	83	759973	49.1010	ug/L		99
49)	1,2-Dichloropropane	11.44	63	547723	52.8712	ug/L		93
50)	Bromodichloromethane	11.73	83	647807	50.3858	ug/L		100
51)	1,4-Dioxane	11.71	88	8640	237.1564	ug/L		91
52)	Dibromomethane	11.82	93	238533	50.3334	ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	205071	47.3902	ug/L		99
54)	4-Methyl-2-Pentanone	12.06	58	91385	47.5741	ug/L		98
55)	cis-1,3-Dichloropropene	12.37	75	729334	51.5366	ug/L		99
56)	Dimethyl Disulfide	12.62	79	364486	47.5401	ug/L		96
59)	Toluene	12.79	91	2069952	51.0630	ug/L		99
60)	Ethyl Methacrylate	12.88	69	369945	47.8156	ug/L		100
62)	trans-1,3-Dichloropropene	12.97	75	593481	49.4940	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	313146	49.2938	ug/L		97
64)	2-Hexanone	13.12	58	84768	47.2349	ug/L	#	98
65)	1,3-Dichloropropane	13.48	76	546364	49.4162	ug/L		96
66)	Tetrachloroethene	13.61	164	448041	52.4217	ug/L		94
67)	Dibromochloromethane	13.86	129	418633	50.0257	ug/L		100
68)	1,2-Dibromoethane	14.12	107	295061	47.7696	ug/L		100
69)	1-Chlorohexane	14.21	91	698082	48.7286	ug/L		100
70)	Chlorobenzene	14.63	112	1349558	51.9961	ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	469102	50.8765	ug/L		95
72)	Ethylbenzene	14.65	106	759677	51.8521	ug/L		93
73)	m-,p-Xylene	14.74	106	1806992	104.3742	ug/L		93
74)	o-Xylene	15.30	106	891669	52.3345	ug/L		94
75)	Styrene	15.34	104	1457561	52.3795	ug/L		97
76)	Bromoform	15.84	173	257897	51.2575	ug/L		99
77)	Isopropylbenzene	15.74	105	2248581	52.7179	ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.94	83	351470	49.1713	ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	93173	46.4387	ug/L		63
82)	trans-1,4-Dichloro-2-Buten	16.18	53	99307	35.8324	ug/L	#	33
83)	n-Propylbenzene	16.24	91	2869778	49.5459	ug/L		98
84)	Bromobenzene	16.37	156	556934	47.4700	ug/L		96
85)	1,3,5-Trimethylbenzene	16.43	105	1944594	50.8522	ug/L		95
86)	2-Chlorotoluene	16.51	91	1783192	50.4017	ug/L		96
87)	4-Chlorotoluene	16.55	91	1690575	50.1430	ug/L		95
88)	a-Methylstyrene	16.83	118	1045291	50.3353	ug/L		97
89)	tert-Butylbenzene	16.89	134	412328	49.7702	ug/L		92
90)	1,2,4-Trimethylbenzene	16.95	105	1988505	51.3239	ug/L		97
91)	sec-Butylbenzene	17.16	105	2445590	51.8328	ug/L		99
92)	p-Isopropyltoluene	17.32	119	2080367	51.2716	ug/L		97
93)	1,3-Dichlorobenzene	17.51	146	1175323	51.0870	ug/L		97
94)	1,4-Dichlorobenzene	17.64	146	1144891	48.2760	ug/L		96
95)	n-Butylbenzene	17.85	91	2018187	51.5820	ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	1012600	49.8519	ug/L		97
97)	1,2-Dibromo-3-Chloropropan	19.13	75	56037	44.7795	ug/L		92
98)	1,2,4-Trichlorobenzene	20.28	180	743724	47.5797	ug/L		99
99)	Hexachlorobutadiene	20.42	225	364979	45.8852	ug/L		99
100)	Naphthalene	20.64	128	944064	46.5496	ug/L		99
101)	1,2,3-Trichlorobenzene	20.95	180	627139	46.4935	ug/L		96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\082115\8M406934.D Vial: 2
Acq On : 21 Aug 2015 15:07 Operator: TMB
Sample : WG536090-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD71981 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 21 15:29 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

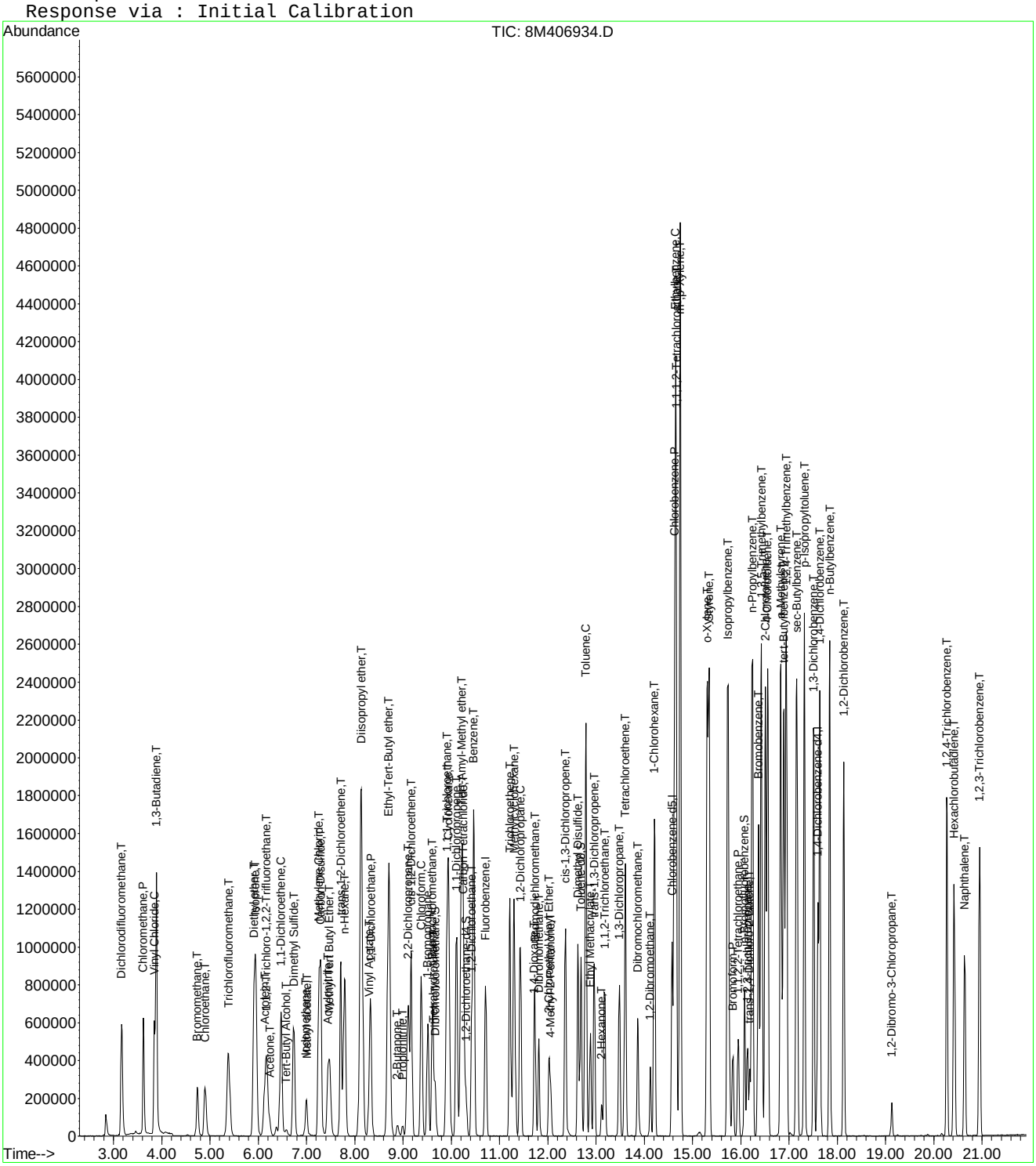

Continuing Calibration Area and RT check

Instrument: HPMS8
Initial cal date: 30 Jul 2015 17:04
CCV date: 21 Aug 2015 15:07
CCV Filename: 8M406934.D

	Fluorobenzene		**Chlorobenzene-d5**		**1,4-Dichlorobenzene-d4**	
	Amount	RT	Amount	RT	Amount	RT
InitCal	905123	10.71	645629	14.58	356726	17.60
CCV	950085	10.71	693663	14.58	393400	17.60

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\082115\8M406934.D Vial: 2
Acq On : 21 Aug 2015 15:07 Operator: TMB
Sample : WG536090-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD71981 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	105	0.00
2	T	Dichlorodifluoromethane	0.3818	0.4193	-9.8	100	0.00
3	P	Chloromethane	0.4263	0.4202	1.4	103	0.00
4	C	Vinyl Chloride	0.3135	0.3593	-14.6	115	0.00
5	T	1,3-Butadiene	0.2748	0.3509	-27.7#	127	0.00
6	T	Bromomethane	0.2088	0.1436	31.2#	73	0.00
7	T	Chloroethane	0.1952	0.2047	-4.9	107	0.00
8	T	Trichlorofluoromethane	0.4053	0.4116	-1.5	102	0.00
9	T	Diethyl ether	0.1534	0.1425	7.1	100	0.00
10	T	Isoprene	0.3172	0.3225	-1.7	102	-0.01
11	T	Acrolein	0.0087	0.0050	42.0#	64	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2314	0.2447	-5.7	103	0.01
13	T	Acetone	0.0315	0.0315	0.1	111	0.00
14	C	1,1-Dichloroethene	0.3926	0.4036	-2.8	104	0.00
15	T	Tert-Butyl Alcohol	0.0083	0.0096	-16.3	134	0.00
16	T	Dimethyl Sulfide	0.2465	0.2344	4.9	98	0.00
17	T	Iodomethane	0.1976	0.1002	49.3#	43#	0.00
18	T	Methyl acetate	0.1223	0.1173	4.1	105	0.00
19	T	Methylene Chloride	0.2501	0.2505	-0.2	103	0.00
20	T	Carbon Disulfide	0.8019	0.8103	-1.0	103	0.00
21	T	Acrylonitrile	0.0524	0.0508	2.9	101	0.00
22	T	Methyl Tert Butyl Ether	0.4417	0.4296	2.7	101	0.00
23	T	trans-1,2-Dichloroethene	0.3683	0.3914	-6.3	107	0.00
24	T	n-Hexane	0.3981	0.3929	1.3	100	0.00
25	T	Diisopropyl ether	0.8942	0.9260	-3.6	109	0.00
26	T	Vinyl Acetate	0.2286	0.2722	-19.1	126	0.00
27	P	1,1-Dichloroethane	0.4939	0.5149	-4.2	106	0.00
28	T	Ethyl-Tert-Butyl ether	0.6672	0.6575	1.4	105	0.00
29	T	2-Butanone	0.0534	0.0564	-5.7	110	-0.01
30	T	Propionitrile	0.0170	0.0182	-7.4	111	0.00
31	T	2,2-Dichloropropane	0.3806	0.4030	-5.9	107	0.00
32	T	cis-1,2-Dichloroethene	0.2650	0.2798	-5.6	106	0.00
33	C	Chloroform	0.4457	0.4545	-2.0	105	0.00
34		1-Bromopropane	0.0471	0.0478	-1.5	105	0.00
35	T	Bromochloromethane	0.1365	0.1380	-1.1	105	-0.01
36	T	Tetrahydrofuran	0.0367	0.0375	-2.0	112	0.00
37	S	Dibromofluoromethane	0.2203	0.2187	0.7	101	0.00
38	T	1,1,1-Trichloroethane	0.4111	0.4145	-0.8	101	0.00
39	T	Cyclohexane	0.4795	0.4783	0.3	100	0.00
40	T	1,1-Dichloropropene	0.3520	0.3648	-3.6	104	0.00
41	T	Tert-Amyl-Methyl ether	0.4994	0.4898	1.9	105	0.00
42	T	Carbon Tetrachloride	0.3640	0.3778	-3.8	102	0.00
43	S	1,2-Dichloroethane-d4	0.2191	0.1962	10.4	96	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.2985	0.2870	3.9	99	-0.01
46	T	Benzene	0.9840	1.0312	-4.8	106	-0.01
47	T	Trichloroethene	0.2809	0.2691	4.2	104	0.00
48	T	Methylcyclohexane	0.4073	0.4000	1.8	101	0.00
49	C	1,2-Dichloropropane	0.2726	0.2883	-5.7	104	0.00
50	T	Bromodichloromethane	0.3383	0.3409	-0.8	101	0.00
51	T	1,4-Dioxane	0.0010	0.0011	-18.7	135	0.00
52	T	Dibromomethane	0.1247	0.1255	-0.7	102	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1139	0.1079	5.2	97	-0.01
54	T	4-Methyl-2-Pentanone	0.0505	0.0481	4.9	99	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\082115\8M406934.D Vial: 2
Acq On : 21 Aug 2015 15:07 Operator: TMB
Sample : WG536090-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD71981 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.3724	0.3838	-3.1	103	0.00
56	T	Dimethyl Disulfide	0.2017	0.1918	4.9	99	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	107	0.00
58	S	Toluene-d8	1.2060	1.1970	0.7	105	0.00
59	C	Toluene	1.4610	1.4920	-2.1	105	0.00
60	T	Ethyl Methacrylate	0.2788	0.2667	4.4	99	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.4322	0.4278	1.0	102	0.00
63	T	1,1,2-Trichloroethane	0.2289	0.2257	1.4	102	0.00
64	T	2-Hexanone	0.0647	0.0611	5.5	102	0.00
65	T	1,3-Dichloropropane	0.3985	0.3938	1.2	102	0.00
66	T	Tetrachloroethene	0.3080	0.3230	-4.8	108	0.00
67	T	Dibromochloromethane	0.3016	0.3018	-0.1	102	-0.01
68	T	1,2-Dibromoethane	0.2226	0.2127	4.5	101	0.00
69	T	1-Chlorohexane	0.5163	0.5032	2.5	103	0.00
70	P	Chlorobenzene	0.9354	0.9728	-4.0	108	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3323	0.3381	-1.8	101	0.00
72	C	Ethylbenzene	0.5280	0.5476	-3.7	109	-0.01
73	T	m-,p-Xylene	0.6240	0.6513	-4.4	107	0.00
74	T	o-Xylene	0.6140	0.6427	-4.7	106	-0.01
75	T	Styrene	1.0029	1.0506	-4.8	106	0.00
76	P	Bromoform	0.1813	0.1859	-2.5	108	0.00
77	T	Isopropylbenzene	1.5372	1.6208	-5.4	106	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	110	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4542	0.4467	1.7	108	0.00
80	S	p-Bromofluorobenzene	0.8647	0.7991	7.6	105	0.00
81	T	1,2,3-Trichloropropane	0.1275	0.1184	7.1	102	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1480	0.1262	14.7	87	-0.01
83	T	n-Propylbenzene	3.6808	3.6474	0.9	106	0.00
84	T	Bromobenzene	0.7456	0.7078	5.1	106	0.00
85	T	1,3,5-Trimethylbenzene	2.4301	2.4715	-1.7	106	0.00
86	T	2-Chlorotoluene	2.2483	2.2664	-0.8	104	0.00
87	T	4-Chlorotoluene	2.1425	2.1487	-0.3	108	-0.01
88	T	a-Methylstyrene	1.3197	1.3285	-0.7	107	0.00
89	T	tert-Butylbenzene	0.5265	0.5241	0.5	107	0.00
90	T	1,2,4-Trimethylbenzene	2.4621	2.5273	-2.6	106	0.00
91	T	sec-Butylbenzene	2.9984	3.1083	-3.7	105	0.00
92	T	p-Isopropyltoluene	2.5785	2.6441	-2.5	104	0.00
93	T	1,3-Dichlorobenzene	1.4620	1.4938	-2.2	111	0.00
94	T	1,4-Dichlorobenzene	1.5071	1.4551	3.4	109	0.00
95	T	n-Butylbenzene	2.4864	2.5651	-3.2	103	0.00
96	T	1,2-Dichlorobenzene	1.2908	1.2870	0.3	108	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.0795	0.0712	10.4	96	0.00
98	T	1,2,4-Trichlorobenzene	0.9933	0.9453	4.8	102	0.00
99	T	Hexachlorobutadiene	0.5055	0.4639	8.2	101	0.00
100	T	Naphthalene	1.2888	1.1999	6.9	93	0.00
101	T	1,2,3-Trichlorobenzene	0.8572	0.7971	7.0	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M406934.D 8260WT.M Fri Aug 21 15:47:40 2015 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\082115\8M406934.D Vial: 2
Acq On : 21 Aug 2015 15:07 Operator: TMB
Sample : WG536090-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD71981 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	105	0.00
2	T	Dichlorodifluoromethane	50.0000	54.9032	-9.8	100	0.00
3	P	Chloromethane	50.0000	49.2882	1.4	103	0.00
4	C	Vinyl Chloride	50.0000	57.3073	-14.6	115	0.00
5	T	1,3-Butadiene	50.0000	63.8431	-27.7#	127	0.00
6	T	Bromomethane	50.0000	34.3852	31.2#	73	0.00
7	T	Chloroethane	50.0000	52.4306	-4.9	107	0.00
8	T	Trichlorofluoromethane	50.0000	50.7662	-1.5	102	0.00
9	T	Diethyl ether	100.0000	92.8930	7.1	100	0.00
10	T	Isoprene	50.0000	50.8254	-1.7	102	-0.01
11	T	Acrolein	50.0000	33.8386	32.3#	64	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	52.8665	-5.7	103	0.01
13	T	Acetone	50.0000	49.9697	0.1	111	0.00
14	C	1,1-Dichloroethene	50.0000	51.3999	-2.8	104	0.00
15	T	Tert-Butyl Alcohol	200.0000	232.6642	-16.3	134	0.00
16	T	Dimethyl Sulfide	50.0000	47.5486	4.9	98	0.00
17	T	Iodomethane	50.0000	21.2802	57.4#	43	0.00
18	T	Methyl acetate	50.0000	47.9324	4.1	105	0.00
19	T	Methylene Chloride	50.0000	50.0842	-0.2	103	0.00
20	T	Carbon Disulfide	50.0000	50.5194	-1.0	103	0.00
21	T	Acrylonitrile	50.0000	48.5213	3.0	101	0.00
22	T	Methyl Tert Butyl Ether	50.0000	48.6348	2.7	101	0.00
23	T	trans-1,2-Dichloroethene	50.0000	53.1490	-6.3	107	0.00
24	T	n-Hexane	50.0000	49.3481	1.3	100	0.00
25	T	Diisopropyl ether	100.0000	103.5528	-3.6	109	0.00
26	T	Vinyl Acetate	50.0000	59.5462	-19.1	126	0.00
27	P	1,1-Dichloroethane	50.0000	52.1217	-4.2	106	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.5509	1.4	105	0.00
29	T	2-Butanone	50.0000	52.8652	-5.7	110	-0.01
30	T	Propionitrile	100.0000	107.4371	-7.4	111	0.00
31	T	2,2-Dichloropropane	50.0000	52.9428	-5.9	107	0.00
32	T	cis-1,2-Dichloroethene	50.0000	52.7948	-5.6	106	0.00
33	C	Chloroform	50.0000	50.9790	-2.0	105	0.00
34		1-Bromopropane	50.0000	50.7752	-1.6	105	0.00
35	T	Bromochloromethane	50.0000	50.5539	-1.1	105	-0.01
36	T	Tetrahydrofuran	100.0000	102.0453	-2.0	112	0.00
37	S	Dibromofluoromethane	25.0000	24.8136	0.7	101	0.00
38	T	1,1,1-Trichloroethane	50.0000	50.4149	-0.8	101	0.00
39	T	Cyclohexane	50.0000	49.8730	0.3	100	0.00
40	T	1,1-Dichloropropene	50.0000	51.8210	-3.6	104	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	98.0650	1.9	105	0.00
42	T	Carbon Tetrachloride	50.0000	51.8904	-3.8	102	0.00
43	S	1,2-Dichloroethane-d4	25.0000	22.3890	10.4	96	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	48.0678	3.9	99	-0.01
46	T	Benzene	50.0000	52.3988	-4.8	106	-0.01
47	T	Trichloroethene	50.0000	47.9075	4.2	104	0.00
48	T	Methylcyclohexane	50.0000	49.1010	1.8	101	0.00
49	C	1,2-Dichloropropane	50.0000	52.8712	-5.7	104	0.00
50	T	Bromodichloromethane	50.0000	50.3858	-0.8	101	0.00
51	T	1,4-Dioxane	200.0000	237.1564	-18.6	135	0.00
52	T	Dibromomethane	50.0000	50.3334	-0.7	102	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	47.3902	5.2	97	-0.01
54	T	4-Methyl-2-Pentanone	50.0000	47.5741	4.9	99	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\082115\8M406934.D Vial: 2
Acq On : 21 Aug 2015 15:07 Operator: TMB
Sample : WG536090-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD71981 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	51.5366	-3.1	103	0.00
56	T	Dimethyl Disulfide	50.0000	47.5401	4.9	99	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	107	0.00
58	S	Toluene-d8	25.0000	24.8132	0.7	105	0.00
59	C	Toluene	50.0000	51.0630	-2.1	105	0.00
60	T	Ethyl Methacrylate	50.0000	47.8156	4.4	99	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	49.4940	1.0	102	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.2938	1.4	102	0.00
64	T	2-Hexanone	50.0000	47.2349	5.5	102	0.00
65	T	1,3-Dichloropropane	50.0000	49.4162	1.2	102	0.00
66	T	Tetrachloroethene	50.0000	52.4217	-4.8	108	0.00
67	T	Dibromochloromethane	50.0000	50.0257	-0.1	102	-0.01
68	T	1,2-Dibromoethane	50.0000	47.7696	4.5	101	0.00
69	T	1-Chlorohexane	50.0000	48.7286	2.5	103	0.00
70	P	Chlorobenzene	50.0000	51.9961	-4.0	108	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	50.8765	-1.8	101	0.00
72	C	Ethylbenzene	50.0000	51.8521	-3.7	109	-0.01
73	T	m-,p-Xylene	100.0000	104.3742	-4.4	107	0.00
74	T	o-Xylene	50.0000	52.3345	-4.7	106	-0.01
75	T	Styrene	50.0000	52.3795	-4.8	106	0.00
76	P	Bromoform	50.0000	51.2575	-2.5	108	0.00
77	T	Isopropylbenzene	50.0000	52.7179	-5.4	106	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	110	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	49.1713	1.7	108	0.00
80	S	p-Bromofluorobenzene	25.0000	23.1024	7.6	105	0.00
81	T	1,2,3-Trichloropropane	50.0000	46.4387	7.1	102	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	35.8324	28.3#	87	-0.01
83	T	n-Propylbenzene	50.0000	49.5459	0.9	106	0.00
84	T	Bromobenzene	50.0000	47.4700	5.1	106	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	50.8522	-1.7	106	0.00
86	T	2-Chlorotoluene	50.0000	50.4017	-0.8	104	0.00
87	T	4-Chlorotoluene	50.0000	50.1430	-0.3	108	-0.01
88	T	a-Methylstyrene	50.0000	50.3353	-0.7	107	0.00
89	T	tert-Butylbenzene	50.0000	49.7702	0.5	107	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	51.3239	-2.6	106	0.00
91	T	sec-Butylbenzene	50.0000	51.8328	-3.7	105	0.00
92	T	p-Isopropyltoluene	50.0000	51.2716	-2.5	104	0.00
93	T	1,3-Dichlorobenzene	50.0000	51.0870	-2.2	111	0.00
94	T	1,4-Dichlorobenzene	50.0000	48.2760	3.4	109	0.00
95	T	n-Butylbenzene	50.0000	51.5819	-3.2	103	0.00
96	T	1,2-Dichlorobenzene	50.0000	49.8519	0.3	108	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	44.7795	10.4	96	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	47.5797	4.8	102	0.00
99	T	Hexachlorobutadiene	50.0000	45.8852	8.2	101	0.00
100	T	Naphthalene	50.0000	46.5496	6.9	93	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	46.4935	7.0	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M406934.D 8260WT.M Fri Aug 21 15:47:45 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082415\8M406964.D Vial: 3
Acq On : 24 Aug 2015 12:24 Operator: TMB
Sample : WG536184-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD72111 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 24 12:47:33 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	1195813	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	878713	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	488111	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	259927	24.6680 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.68%		
43) 1,2-Dichloroethane-d4	10.31	65	252467	24.0947 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.36%		
58) Toluene-d8	12.68	98	1058224	24.9643 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.84%		
80) p-Bromofluorobenzene	16.08	95	421411	24.9603 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.84%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	862032	47.2014 ug/L	99
3) Chloromethane	3.62	50	1053121	51.6508 ug/L	100
4) Vinyl Chloride	3.84	62	853683	56.9328 ug/L	99
5) 1,3-Butadiene	3.89	54	677047	51.5058 ug/L	95
6) Bromomethane	4.73	94	363658	36.4108 ug/L	98
7) Chloroethane	4.90	64	497841	53.3244 ug/L	99
8) Trichlorofluoromethane	5.39	101	945629	48.7720 ug/L	100
9) Diethyl ether	5.91	59	695494	94.7681 ug/L	98
10) Isoprene	5.95	67	755653	49.7958 ug/L	98
11) Acrolein	6.15	56	17078	46.7528 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	582395	52.6086 ug/L	100
13) Acetone	6.24	43	81506	54.0516 ug/L	91
14) 1,1-Dichloroethene	6.47	61	909480	48.4251 ug/L	96
15) Tert-Butyl Alcohol	6.58	59	93956	237.2146 ug/L	98
16) Dimethyl Sulfide	6.74	62	557855	47.3098 ug/L	97
17) Iodomethane	6.99	142	264649	23.4027 ug/L	94
18) Methyl acetate	7.01	43	290207	49.5954 ug/L	99
19) Methylene Chloride	7.26	84	615076	51.4140 ug/L	99
20) Carbon Disulfide	7.30	76	1836069	47.8671 ug/L	100
21) Acrylonitrile	7.44	53	130979	52.2727 ug/L	100
22) Methyl Tert Butyl Ether	7.47	73	1118112	52.9255 ug/L	97
23) trans-1,2-Dichloroethene	7.71	61	892814	50.6875 ug/L	96
24) n-Hexane	7.79	57	931094	48.9003 ug/L	99
25) Diisopropyl ether	8.14	45	4284891	100.1791 ug/L	98
26) Vinyl Acetate	8.30	43	679646	62.1640 ug/L	100
27) 1,1-Dichloroethane	8.33	63	1187519	50.2671 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	3284716	102.9300 ug/L	99
29) 2-Butanone	8.89	43	142020	55.6245 ug/L	97
30) Propionitrile	8.99	54	92623	114.0532 ug/L	100
31) 2,2-Dichloropropane	9.11	77	1005387	55.2241 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	664710	52.4378 ug/L	96
33) Chloroform	9.38	83	1076121	50.4745 ug/L	100
34) 1-Bromopropane	9.51	122	114764	50.9345 ug/L	96
35) Bromochloromethane	9.61	130	329488	50.4617 ug/L	98
36) Tetrahydrofuran	9.63	42	186872	106.4119 ug/L	96
38) 1,1,1-Trichloroethane	9.91	97	1024430	52.0929 ug/L	98
39) Cyclohexane	9.94	56	1154623	50.3393 ug/L	99
40) 1,1-Dichloropropene	10.11	75	890602	52.8944 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	2462807	103.0956 ug/L	99
42) Carbon Tetrachloride	10.26	117	916319	52.6244 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M406964.D 8260WT.M Mon Aug 24 12:47:33 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082415\8M406964.D Vial: 3
Acq On : 24 Aug 2015 12:24 Operator: TMB
Sample : WG536184-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD72111 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 24 12:47:33 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	732577	51.3023 ug/L		99
46)	Benzene	10.47	78	2458623	52.2373 ug/L		99
47)	Trichloroethene	11.22	130	644340	47.9634 ug/L		99
48)	Methylcyclohexane	11.30	83	948262	48.6766 ug/L		99
49)	1,2-Dichloropropane	11.43	63	704670	54.0434 ug/L		96
50)	Bromodichloromethane	11.73	83	862688	53.3108 ug/L		100
51)	1,4-Dioxane	11.71	88	12090	263.6614 ug/L		94
52)	Dibromomethane	11.82	93	321964	53.9777 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.02	63	290602	53.3558 ug/L		99
54)	4-Methyl-2-Pentanone	12.06	58	134698	55.7129 ug/L		96
55)	cis-1,3-Dichloropropene	12.36	75	975056	54.7417 ug/L		98
56)	Dimethyl Disulfide	12.62	79	493952	51.1874 ug/L		98
59)	Toluene	12.79	91	2635925	51.3311 ug/L		99
60)	Ethyl Methacrylate	12.88	69	511643	52.2036 ug/L		96
62)	trans-1,3-Dichloropropene	12.96	75	819241	53.9335 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	437059	54.3108 ug/L		100
64)	2-Hexanone	13.12	58	122164	53.7373 ug/L	#	95
65)	1,3-Dichloropropane	13.48	76	742584	53.0193 ug/L		94
66)	Tetrachloroethene	13.61	164	545380	50.3726 ug/L		97
67)	Dibromochloromethane	13.86	129	578232	54.5461 ug/L		98
68)	1,2-Dibromoethane	14.12	107	415369	53.0855 ug/L		100
69)	1-Chlorohexane	14.22	91	884708	48.7505 ug/L		99
70)	Chlorobenzene	14.63	112	1728815	52.5811 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.66	131	629398	53.8861 ug/L		99
72)	Ethylbenzene	14.66	106	940589	50.6803 ug/L		98
73)	m-,p-Xylene	14.74	106	2255821	102.8591 ug/L		94
74)	o-Xylene	15.31	106	1120493	51.9152 ug/L		95
75)	Styrene	15.34	104	1861988	52.8218 ug/L		98
76)	Bromoform	15.84	173	341883	53.6402 ug/L		98
77)	Isopropylbenzene	15.74	105	2785063	51.5449 ug/L		98
79)	1,1,2,2-Tetrachloroethane	15.94	83	502518	56.6619 ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	131748	52.9236 ug/L		99
82)	trans-1,4-Dichloro-2-Buten	16.18	53	153565	44.4621 ug/L		91
83)	n-Propylbenzene	16.24	91	3550418	49.4032 ug/L		97
84)	Bromobenzene	16.37	156	719994	49.4607 ug/L		98
85)	1,3,5-Trimethylbenzene	16.43	105	2409038	50.7738 ug/L		96
86)	2-Chlorotoluene	16.51	91	2184340	49.7603 ug/L		97
87)	4-Chlorotoluene	16.55	91	2179415	52.0993 ug/L		97
88)	a-Methylstyrene	16.83	118	1230094	47.7408 ug/L		99
89)	tert-Butylbenzene	16.89	134	501902	48.8272 ug/L		93
90)	1,2,4-Trimethylbenzene	16.94	105	2432135	50.5937 ug/L		98
91)	sec-Butylbenzene	17.16	105	2938358	50.1928 ug/L		98
92)	p-Isopropyltoluene	17.32	119	2528775	50.2300 ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	1426000	49.9561 ug/L		98
94)	1,4-Dichlorobenzene	17.64	146	1422573	48.3456 ug/L		97
95)	n-Butylbenzene	17.84	91	2436997	50.2004 ug/L		98
96)	1,2-Dichlorobenzene	18.13	146	1269037	50.3540 ug/L		100
97)	1,2-Dibromo-3-Chloropropan	19.13	75	82231	52.9609 ug/L		98
98)	1,2,4-Trichlorobenzene	20.27	180	951890	49.0809 ug/L		98
99)	Hexachlorobutadiene	20.43	225	445046	45.0947 ug/L		99
100)	Naphthalene	20.65	128	1353647	53.7943 ug/L		99
101)	1,2,3-Trichlorobenzene	20.95	180	823642	49.2134 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M406964.D 8260WT.M Mon Aug 24 12:47:33 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082415\8M406964.D Vial: 3
Acq On : 24 Aug 2015 12:24 Operator: TMB
Sample : WG536184-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD72111 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 24 12:47 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

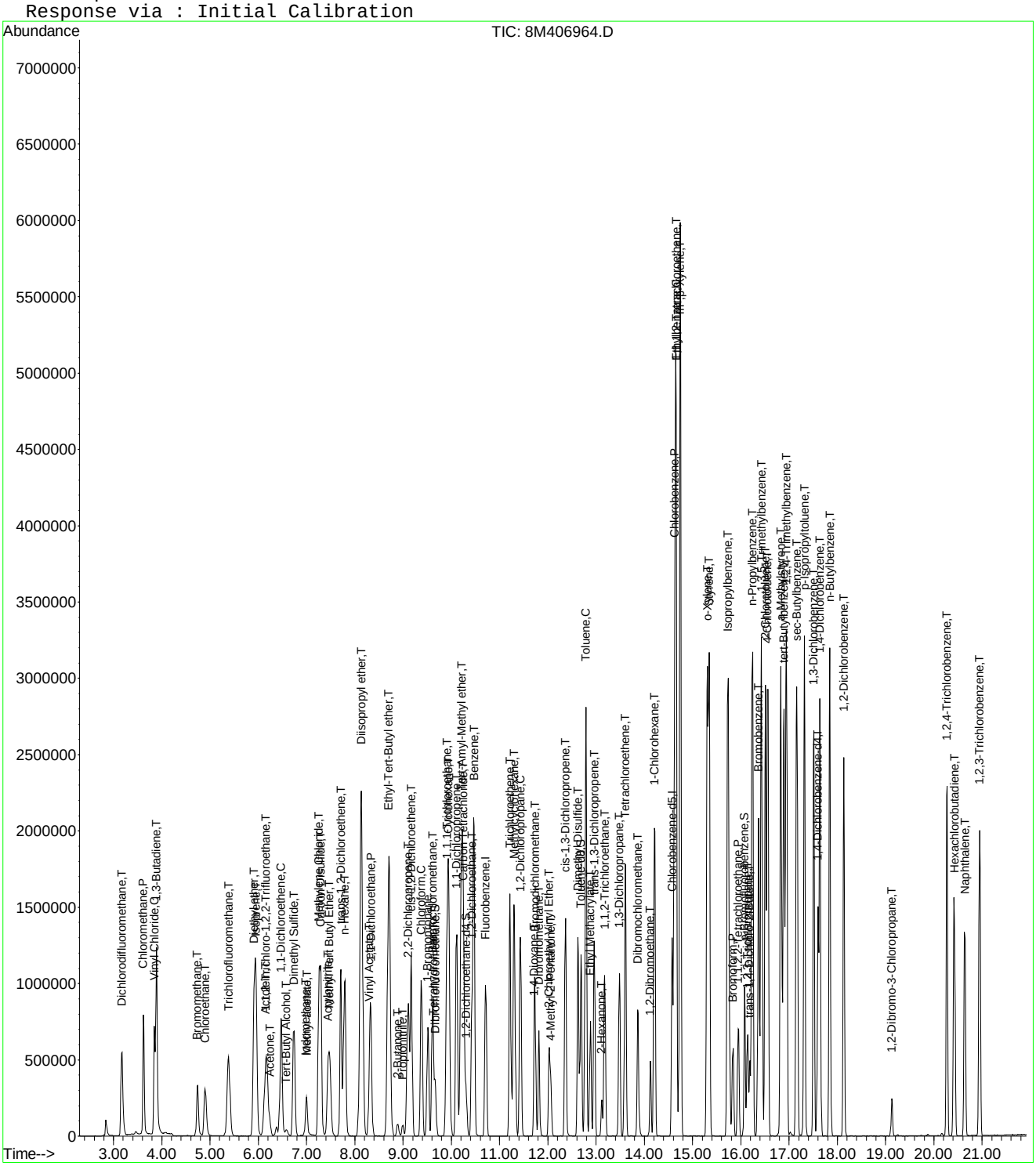

8M406964.D 8260WT.M Mon Aug 24 12:47:34 2015 Page 3

Continuing Calibration Area and RT check

Instrument: HPMS8
Initial cal date: 30 Jul 2015 17:04
CCV date: 24 Aug 2015 12:24
CCV Filename: 8M406964.D

	Fluorobenzene		**Chlorobenzene-d5**		**1,4-Dichlorobenzene-d4**	
	Amount	RT	Amount	RT	Amount	RT
InitCal	905123	10.71	645629	14.58	356726	17.60
CCV	1195813	10.71	878713	14.58	488111	17.60

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\082415\8M406964.D Vial: 3
Acq On : 24 Aug 2015 12:24 Operator: TMB
Sample : WG536184-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD72111 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	132	0.00
2	T	Dichlorodifluoromethane	0.3818	0.3604	5.6	109	0.00
3	P	Chloromethane	0.4263	0.4403	-3.3	136	0.00
4	C	Vinyl Chloride	0.3135	0.3569	-13.9	144	0.00
5	T	1,3-Butadiene	0.2748	0.2831	-3.0	129	0.00
6	T	Bromomethane	0.2088	0.1520	27.2#	98	0.00
7	T	Chloroethane	0.1952	0.2082	-6.7	137	0.00
8	T	Trichlorofluoromethane	0.4053	0.3954	2.5	123	0.00
9	T	Diethyl ether	0.1534	0.1454	5.2	128	0.00
10	T	Isoprene	0.3172	0.3160	0.4	126	0.00
11	T	Acrolein	0.0087	0.0071	17.6	113	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2314	0.2435	-5.2	129	0.00
13	T	Acetone	0.0315	0.0341	-8.1	151#	0.00
14	C	1,1-Dichloroethene	0.3926	0.3803	3.1	123	0.00
15	T	Tert-Butyl Alcohol	0.0083	0.0098	-18.6	172#	0.00
16	T	Dimethyl Sulfide	0.2465	0.2333	5.4	123	0.00
17	T	Iodomethane	0.1976	0.1107	44.0#	60	0.00
18	T	Methyl acetate	0.1223	0.1213	0.8	137	0.00
19	T	Methylene Chloride	0.2501	0.2572	-2.8	133	0.00
20	T	Carbon Disulfide	0.8019	0.7677	4.3	123	0.00
21	T	Acrylonitrile	0.0524	0.0548	-4.6	137	0.00
22	T	Methyl Tert Butyl Ether	0.4417	0.4675	-5.9	138	0.00
23	T	trans-1,2-Dichloroethene	0.3683	0.3733	-1.4	128	0.00
24	T	n-Hexane	0.3981	0.3893	2.2	125	0.00
25	T	Diisopropyl ether	0.8942	0.8958	-0.2	133	0.00
26	T	Vinyl Acetate	0.2286	0.2842	-24.3	166#	0.00
27	P	1,1-Dichloroethane	0.4939	0.4965	-0.5	129	0.00
28	T	Ethyl-Tert-Butyl ether	0.6672	0.6867	-2.9	138	0.00
29	T	2-Butanone	0.0534	0.0594	-11.2	146	0.00
30	T	Propionitrile	0.0170	0.0194	-14.0	148	0.00
31	T	2,2-Dichloropropane	0.3806	0.4204	-10.4	141	0.00
32	T	cis-1,2-Dichloroethene	0.2650	0.2779	-4.9	133	0.00
33	C	Chloroform	0.4457	0.4500	-0.9	131	0.00
34		1-Bromopropane	0.0471	0.0480	-1.9	132	-0.01
35	T	Bromochloromethane	0.1365	0.1378	-0.9	132	0.00
36	T	Tetrahydrofuran	0.0367	0.0391	-6.4	147	0.00
37	S	Dibromofluoromethane	0.2203	0.2174	1.3	126	0.00
38	T	1,1,1-Trichloroethane	0.4111	0.4283	-4.2	132	0.00
39	T	Cyclohexane	0.4795	0.4828	-0.7	127	0.00
40	T	1,1-Dichloropropene	0.3520	0.3724	-5.8	134	0.00
41	T	Tert-Amyl-Methyl ether	0.4994	0.5149	-3.1	139	0.00
42	T	Carbon Tetrachloride	0.3640	0.3831	-5.2	130	0.00
43	S	1,2-Dichloroethane-d4	0.2191	0.2111	3.6	131	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.2985	0.3063	-2.6	132	0.00
46	T	Benzene	0.9840	1.0280	-4.5	134	0.00
47	T	Trichloroethene	0.2809	0.2694	4.1	131	0.00
48	T	Methylcyclohexane	0.4073	0.3965	2.6	127	0.00
49	C	1,2-Dichloropropane	0.2726	0.2946	-8.1	134	0.00
50	T	Bromodichloromethane	0.3383	0.3607	-6.6	134	0.00
51	T	1,4-Dioxane	0.0010	0.0013	-31.3#	189#	0.00
52	T	Dibromomethane	0.1247	0.1346	-8.0	138	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1139	0.1215	-6.7	137	-0.01
54	T	4-Methyl-2-Pentanone	0.0505	0.0563	-11.4	146	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\082415\8M406964.D Vial: 3
Acq On : 24 Aug 2015 12:24 Operator: TMB
Sample : WG536184-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD72111 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.3724	0.4077	-9.5	137	0.00
56	T	Dimethyl Disulfide	0.2017	0.2065	-2.4	134	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	136	0.00
58	S	Toluene-d8	1.2060	1.2043	0.1	134	0.00
59	C	Toluene	1.4610	1.4999	-2.7	134	0.00
60	T	Ethyl Methacrylate	0.2788	0.2911	-4.4	137	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.4322	0.4662	-7.9	141	0.00
63	T	1,1,2-Trichloroethane	0.2289	0.2487	-8.6	142	0.00
64	T	2-Hexanone	0.0647	0.0695	-7.5	147	0.00
65	T	1,3-Dichloropropane	0.3985	0.4225	-6.0	139	0.00
66	T	Tetrachloroethene	0.3080	0.3103	-0.7	132	0.00
67	T	Dibromochloromethane	0.3016	0.3290	-9.1	141	-0.01
68	T	1,2-Dibromoethane	0.2226	0.2364	-6.2	142	0.00
69	T	1-Chlorohexane	0.5163	0.5034	2.5	130	0.00
70	P	Chlorobenzene	0.9354	0.9837	-5.2	138	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3323	0.3581	-7.8	136	0.00
72	C	Ethylbenzene	0.5280	0.5352	-1.4	135	0.00
73	T	m-,p-Xylene	0.6240	0.6418	-2.9	133	0.00
74	T	o-Xylene	0.6140	0.6376	-3.8	134	0.00
75	T	Styrene	1.0029	1.0595	-5.6	135	0.00
76	P	Bromoform	0.1813	0.1945	-7.3	143	0.00
77	T	Isopropylbenzene	1.5372	1.5847	-3.1	131	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	137	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4542	0.5148	-13.3	155#	0.00
80	S	p-Bromofluorobenzene	0.8647	0.8633	0.2	141	0.00
81	T	1,2,3-Trichloropropane	0.1275	0.1350	-5.9	144	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1480	0.1573	-6.3	134	-0.01
83	T	n-Propylbenzene	3.6808	3.6369	1.2	131	0.00
84	T	Bromobenzene	0.7456	0.7375	1.1	137	0.00
85	T	1,3,5-Trimethylbenzene	2.4301	2.4677	-1.5	131	0.00
86	T	2-Chlorotoluene	2.2483	2.2375	0.5	128	0.00
87	T	4-Chlorotoluene	2.1425	2.2325	-4.2	139	-0.01
88	T	a-Methylstyrene	1.3197	1.2601	4.5	126	0.00
89	T	tert-Butylbenzene	0.5265	0.5141	2.3	131	0.00
90	T	1,2,4-Trimethylbenzene	2.4621	2.4914	-1.2	129	0.00
91	T	sec-Butylbenzene	2.9984	3.0099	-0.4	126	0.00
92	T	p-Isopropyltoluene	2.5785	2.5904	-0.5	126	0.00
93	T	1,3-Dichlorobenzene	1.4620	1.4607	0.1	134	0.00
94	T	1,4-Dichlorobenzene	1.5071	1.4572	3.3	135	0.00
95	T	n-Butylbenzene	2.4864	2.4964	-0.4	124	0.00
96	T	1,2-Dichlorobenzene	1.2908	1.2999	-0.7	135	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.0795	0.0842	-5.9	141	0.00
98	T	1,2,4-Trichlorobenzene	0.9933	0.9751	1.8	130	0.00
99	T	Hexachlorobutadiene	0.5055	0.4559	9.8	123	0.00
100	T	Naphthalene	1.2888	1.3866	-7.6	134	0.00
101	T	1,2,3-Trichlorobenzene	0.8572	0.8437	1.6	133	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M406964.D 8260WT.M Mon Aug 24 12:47:45 2015 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\082415\8M406964.D Vial: 3
Acq On : 24 Aug 2015 12:24 Operator: TMB
Sample : WG536184-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD72111 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	132	0.00
2	T	Dichlorodifluoromethane	50.0000	47.2014	5.6	109	0.00
3	P	Chloromethane	50.0000	51.6508	-3.3	136	0.00
4	C	Vinyl Chloride	50.0000	56.9328	-13.9	144	0.00
5	T	1,3-Butadiene	50.0000	51.5058	-3.0	129	0.00
6	T	Bromomethane	50.0000	36.4108	27.2#	98	0.00
7	T	Chloroethane	50.0000	53.3244	-6.6	137	0.00
8	T	Trichlorofluoromethane	50.0000	48.7720	2.5	123	0.00
9	T	Diethyl ether	100.0000	94.7682	5.2	128	0.00
10	T	Isoprene	50.0000	49.7959	0.4	126	0.00
11	T	Acrolein	50.0000	46.7528	6.5	113	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	52.6086	-5.2	129	0.00
13	T	Acetone	50.0000	54.0516	-8.1	151	0.00
14	C	1,1-Dichloroethene	50.0000	48.4251	3.1	123	0.00
15	T	Tert-Butyl Alcohol	200.0000	237.2146	-18.6	172	0.00
16	T	Dimethyl Sulfide	50.0000	47.3098	5.4	123	0.00
17	T	Iodomethane	50.0000	23.4027	53.2#	60	0.00
18	T	Methyl acetate	50.0000	49.5954	0.8	137	0.00
19	T	Methylene Chloride	50.0000	51.4140	-2.8	133	0.00
20	T	Carbon Disulfide	50.0000	47.8671	4.3	123	0.00
21	T	Acrylonitrile	50.0000	52.2726	-4.5	137	0.00
22	T	Methyl Tert Butyl Ether	50.0000	52.9256	-5.9	138	0.00
23	T	trans-1,2-Dichloroethene	50.0000	50.6875	-1.4	128	0.00
24	T	n-Hexane	50.0000	48.9003	2.2	125	0.00
25	T	Diisopropyl ether	100.0000	100.1791	-0.2	133	0.00
26	T	Vinyl Acetate	50.0000	62.1640	-24.3	166	0.00
27	P	1,1-Dichloroethane	50.0000	50.2671	-0.5	129	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	102.9300	-2.9	138	0.00
29	T	2-Butanone	50.0000	55.6245	-11.2	146	0.00
30	T	Propionitrile	100.0000	114.0533	-14.1	148	0.00
31	T	2,2-Dichloropropane	50.0000	55.2241	-10.4	141	0.00
32	T	cis-1,2-Dichloroethene	50.0000	52.4378	-4.9	133	0.00
33	C	Chloroform	50.0000	50.4745	-0.9	131	0.00
34		1-Bromopropane	50.0000	50.9345	-1.9	132	-0.01
35	T	Bromochloromethane	50.0000	50.4617	-0.9	132	0.00
36	T	Tetrahydrofuran	100.0000	106.4119	-6.4	147	0.00
37	S	Dibromofluoromethane	25.0000	24.6680	1.3	126	0.00
38	T	1,1,1-Trichloroethane	50.0000	52.0929	-4.2	132	0.00
39	T	Cyclohexane	50.0000	50.3393	-0.7	127	0.00
40	T	1,1-Dichloropropene	50.0000	52.8944	-5.8	134	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	103.0957	-3.1	139	0.00
42	T	Carbon Tetrachloride	50.0000	52.6244	-5.2	130	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.0947	3.6	131	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	51.3023	-2.6	132	0.00
46	T	Benzene	50.0000	52.2373	-4.5	134	0.00
47	T	Trichloroethene	50.0000	47.9634	4.1	131	0.00
48	T	Methylcyclohexane	50.0000	48.6765	2.6	127	0.00
49	C	1,2-Dichloropropane	50.0000	54.0434	-8.1	134	0.00
50	T	Bromodichloromethane	50.0000	53.3108	-6.6	134	0.00
51	T	1,4-Dioxane	200.0000	263.6614	-31.8#	189	0.00
52	T	Dibromomethane	50.0000	53.9777	-8.0	138	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	53.3558	-6.7	137	-0.01
54	T	4-Methyl-2-Pentanone	50.0000	55.7129	-11.4	146	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\082415\8M406964.D Vial: 3
Acq On : 24 Aug 2015 12:24 Operator: TMB
Sample : WG536184-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD72111 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	54.7417	-9.5	137	0.00
56	T	Dimethyl Disulfide	50.0000	51.1874	-2.4	134	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	136	0.00
58	S	Toluene-d8	25.0000	24.9643	0.1	134	0.00
59	C	Toluene	50.0000	51.3311	-2.7	134	0.00
60	T	Ethyl Methacrylate	50.0000	52.2036	-4.4	137	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	53.9335	-7.9	141	0.00
63	T	1,1,2-Trichloroethane	50.0000	54.3109	-8.6	142	0.00
64	T	2-Hexanone	50.0000	53.7373	-7.5	147	0.00
65	T	1,3-Dichloropropane	50.0000	53.0193	-6.0	139	0.00
66	T	Tetrachloroethene	50.0000	50.3726	-0.7	132	0.00
67	T	Dibromochloromethane	50.0000	54.5461	-9.1	141	-0.01
68	T	1,2-Dibromoethane	50.0000	53.0855	-6.2	142	0.00
69	T	1-Chlorohexane	50.0000	48.7505	2.5	130	0.00
70	P	Chlorobenzene	50.0000	52.5811	-5.2	138	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	53.8861	-7.8	136	0.00
72	C	Ethylbenzene	50.0000	50.6803	-1.4	135	0.00
73	T	m-,p-Xylene	100.0000	102.8591	-2.9	133	0.00
74	T	o-Xylene	50.0000	51.9152	-3.8	134	0.00
75	T	Styrene	50.0000	52.8218	-5.6	135	0.00
76	P	Bromoform	50.0000	53.6402	-7.3	143	0.00
77	T	Isopropylbenzene	50.0000	51.5449	-3.1	131	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	137	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	56.6619	-13.3	155	0.00
80	S	p-Bromofluorobenzene	25.0000	24.9603	0.2	141	0.00
81	T	1,2,3-Trichloropropane	50.0000	52.9236	-5.8	144	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	44.4621	11.1	134	-0.01
83	T	n-Propylbenzene	50.0000	49.4032	1.2	131	0.00
84	T	Bromobenzene	50.0000	49.4607	1.1	137	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	50.7739	-1.5	131	0.00
86	T	2-Chlorotoluene	50.0000	49.7603	0.5	128	0.00
87	T	4-Chlorotoluene	50.0000	52.0993	-4.2	139	-0.01
88	T	a-Methylstyrene	50.0000	47.7408	4.5	126	0.00
89	T	tert-Butylbenzene	50.0000	48.8272	2.3	131	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	50.5937	-1.2	129	0.00
91	T	sec-Butylbenzene	50.0000	50.1928	-0.4	126	0.00
92	T	p-Isopropyltoluene	50.0000	50.2300	-0.5	126	0.00
93	T	1,3-Dichlorobenzene	50.0000	49.9561	0.1	134	0.00
94	T	1,4-Dichlorobenzene	50.0000	48.3456	3.3	135	0.00
95	T	n-Butylbenzene	50.0000	50.2004	-0.4	124	0.00
96	T	1,2-Dichlorobenzene	50.0000	50.3540	-0.7	135	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	52.9609	-5.9	141	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	49.0809	1.8	130	0.00
99	T	Hexachlorobutadiene	50.0000	45.0947	9.8	123	0.00
100	T	Naphthalene	50.0000	53.7943	-7.6	134	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	49.2134	1.6	133	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M406964.D 8260WT.M Mon Aug 24 12:47:47 2015 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\2\DATA\100214\8M400357.D          Vial: 3
Acq On    :  2 Oct 2014  11:58                       Operator: TMB
Sample    : WG494714-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD66476                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

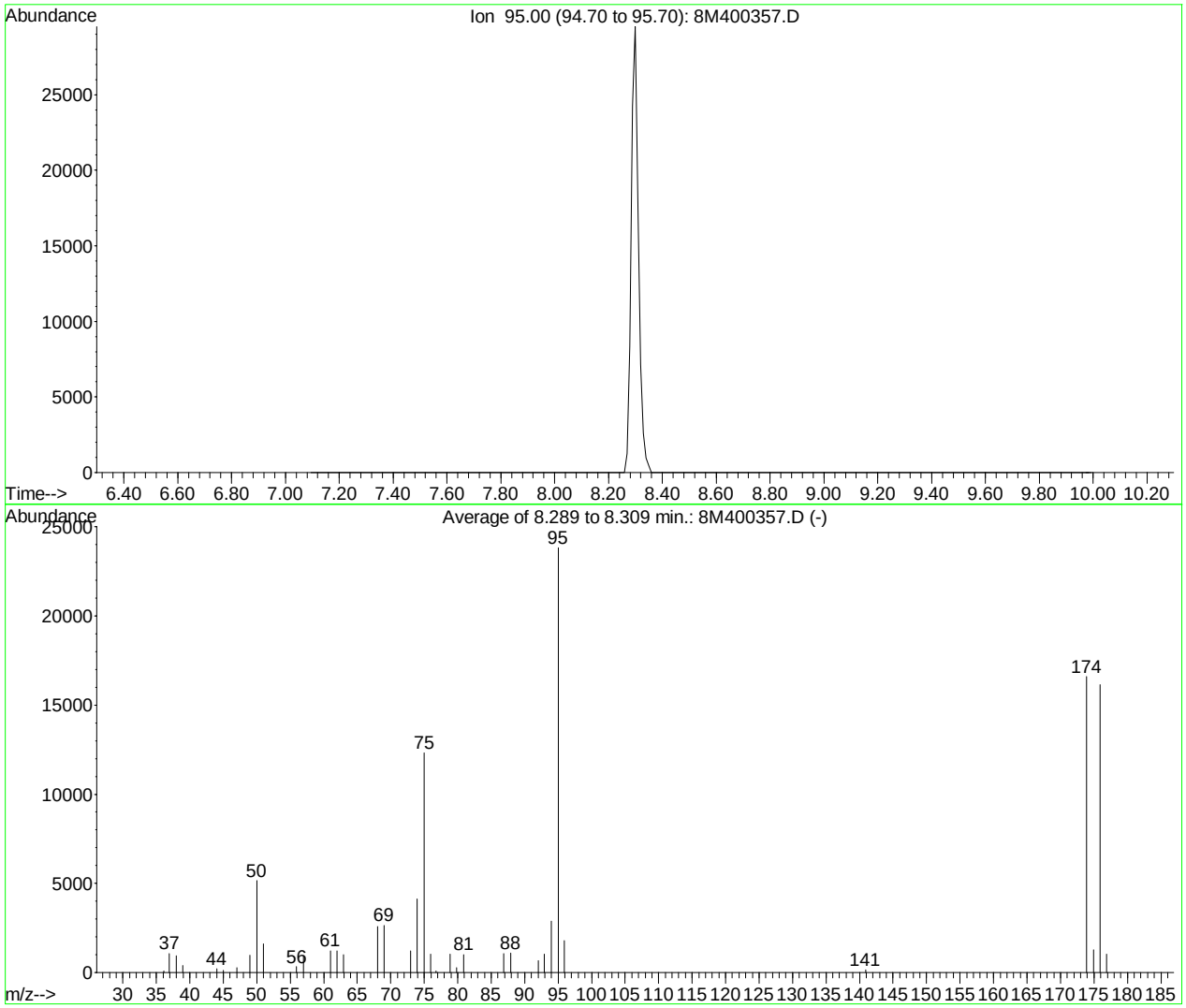

AutoFind: Scans 118, 119, 120; Background Corrected with Scan 113

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.7	5158	PASS
75	95	30	60	51.7	12312	PASS
95	95	100	100	100.0	23818	PASS
96	95	5	9	7.6	1800	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	69.7	16590	PASS
175	174	5	9	7.8	1290	PASS
176	174	95	101	97.3	16145	PASS
177	176	5	9	6.3	1023	PASS

8M400357.D BFB.M Thu Oct 02 12:09:27 2014

BFB

```
Data File : C:\MSDCHEM\2\DATA\073015\8M406477.D          Vial: 1
Acq On    : 30 Jul 2015  14:17                       Operator: TMB
Sample    : WG533051-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD71644                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

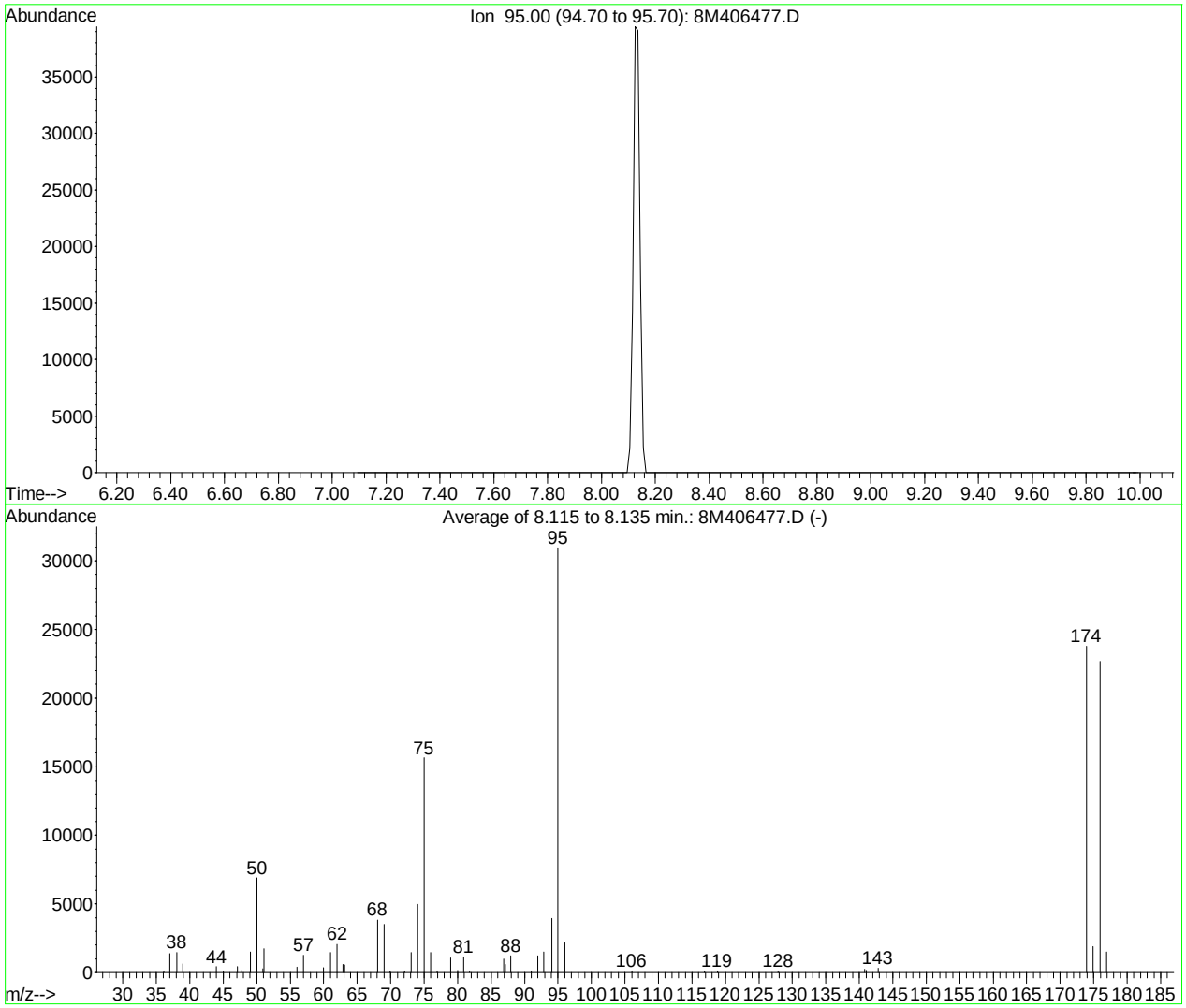

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.2	6881	PASS
75	95	30	60	50.6	15643	PASS
95	95	100	100	100.0	30939	PASS
96	95	5	9	7.0	2155	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	76.8	23758	PASS
175	174	5	9	7.9	1877	PASS
176	174	95	101	95.4	22662	PASS
177	176	5	9	6.6	1487	PASS

8M406477.D BFB.M Thu Jul 30 14:28:24 2015

BFB

```
Data File : C:\MSDCHEM\2\DATA\082115\8M406933.D          Vial: 2
Acq On    : 21 Aug 2015  14:44                       Operator: TMB
Sample    : WG536090-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD71644                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

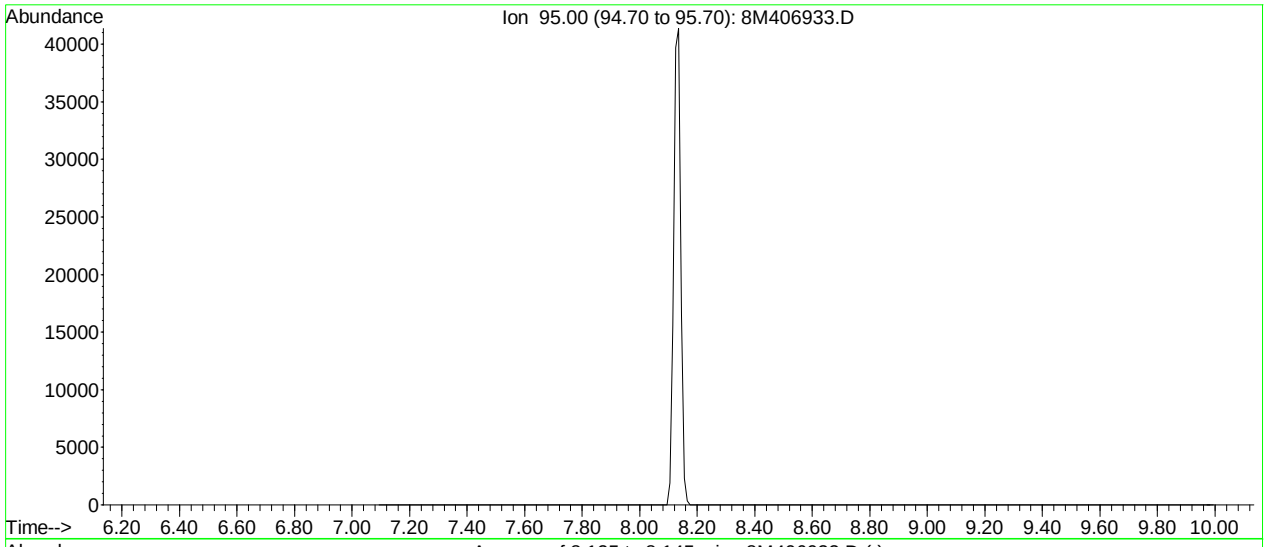

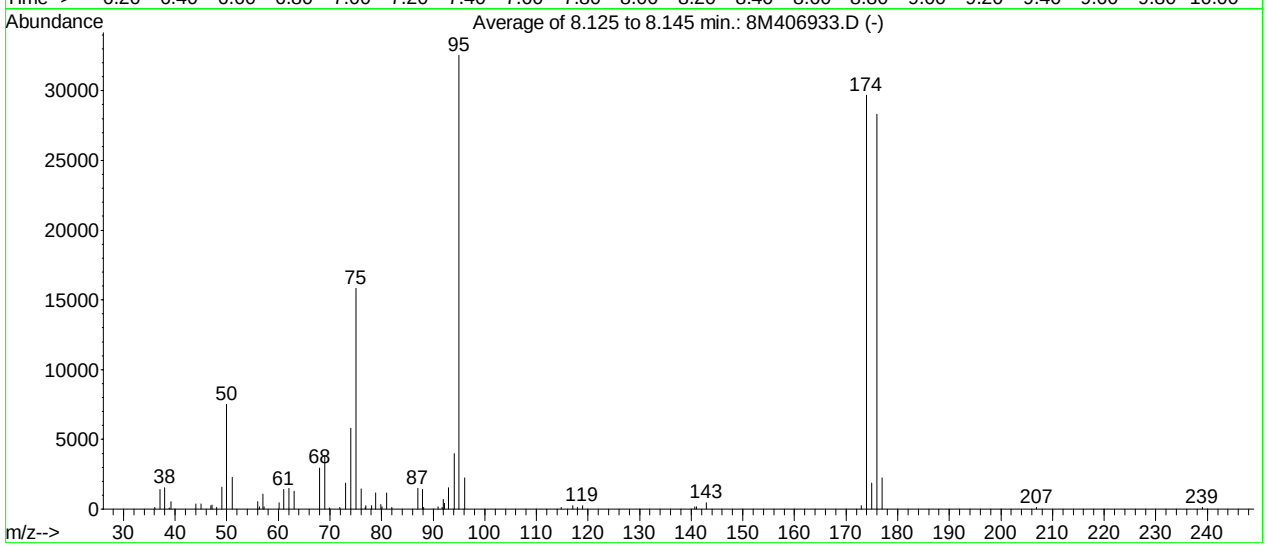

AutoFind: Scans 102, 103, 104; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	23.0	7489	PASS
75	95	30	60	48.7	15849	PASS
95	95	100	100	100.0	32530	PASS
96	95	5	9	6.8	2226	PASS
173	174	0.00	2	0.8	249	PASS
174	95	50	100	91.3	29688	PASS
175	174	5	9	6.3	1858	PASS
176	174	95	101	95.3	28306	PASS
177	176	5	9	7.8	2220	PASS

8M406933.D BFB.M Fri Aug 21 14:54:39 2015

BFB

```
Data File : C:\MSDCHEM\2\DATA\082415\8M406962.D          Vial: 2
Acq On    : 24 Aug 2015  11:28                       Operator: TMB
Sample    : WG536184-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD71644                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

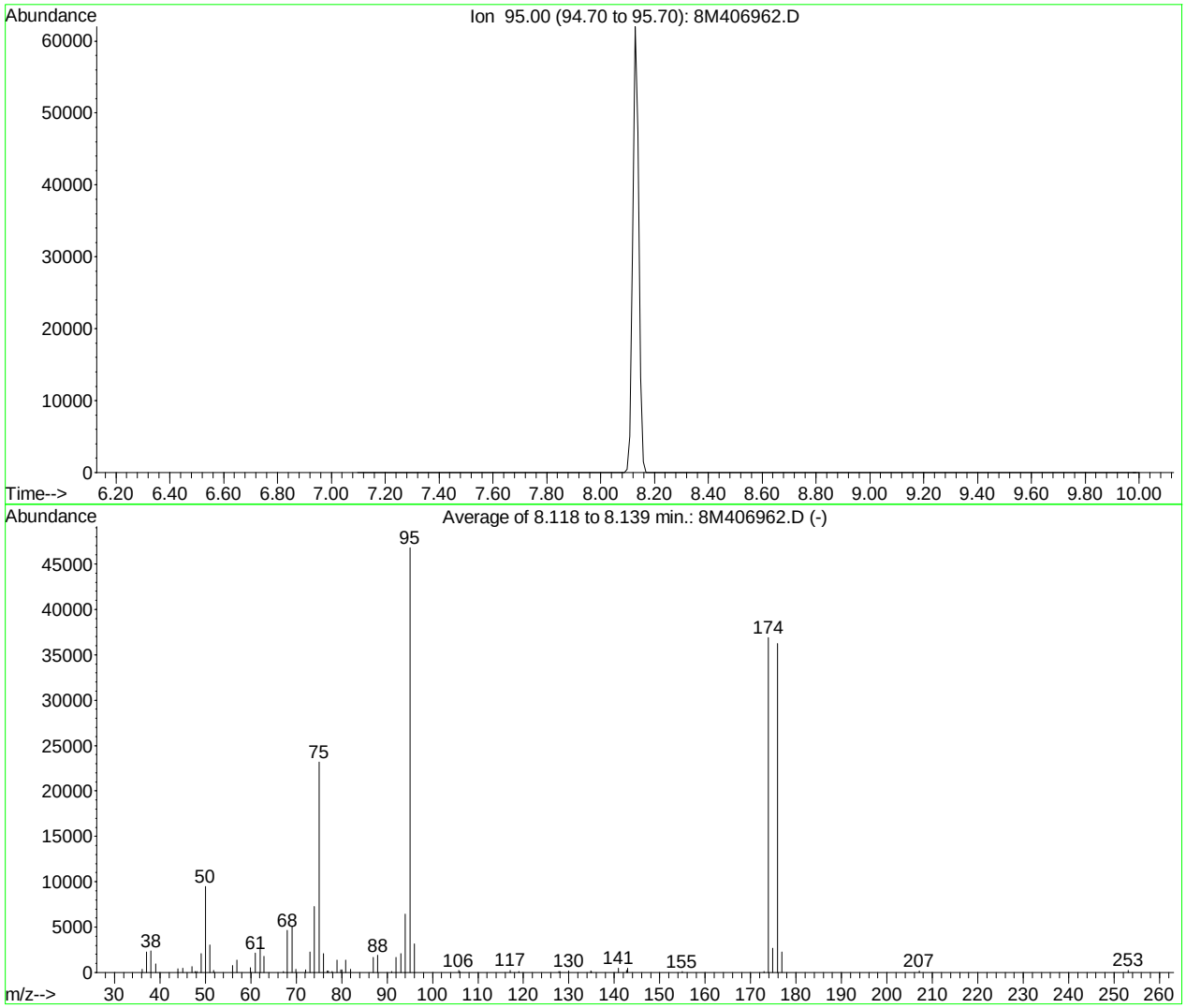

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 96

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.3	9481	PASS
75	95	30	60	49.5	23174	PASS
95	95	100	100	100.0	46776	PASS
96	95	5	9	6.8	3191	PASS
173	174	0.00	2	0.3	122	PASS
174	95	50	100	78.9	36890	PASS
175	174	5	9	7.3	2684	PASS
176	174	95	101	98.3	36271	PASS
177	176	5	9	6.2	2254	PASS

8M406962.D BFB.M Mon Aug 24 11:39:27 2015

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082115\8M406936.D Vial: 4
Acq On : 21 Aug 2015 16:04 Operator: TMB
Sample : WG536091-01 VBLK0821 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 24 08:25:51 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	819252	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	634702	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	345303	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.68	111	182347	25.2597 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.04%		
43) 1,2-Dichloroethane-d4	10.31	65	163372	22.7583 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 91.04%		
58) Toluene-d8	12.69	98	764364	24.9642 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.84%		
80) p-Bromofluorobenzene	16.08	95	281085	23.5342 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.12%		

Target Compounds

					Qvalue
13) Acetone	6.23	43	215	0.2081 ug/L #	48
36) Tetrahydrofuran	9.66	42	249	0.2070 ug/L #	40

(#) = qualifier out of range (m) = manual integration
8M406936.D 8260WT.M Mon Aug 24 08:25:52 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082115\8M406936.D Vial: 4
Acq On : 21 Aug 2015 16:04 Operator: TMB
Sample : WG536091-01 VBLK0821 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 24 8:25 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

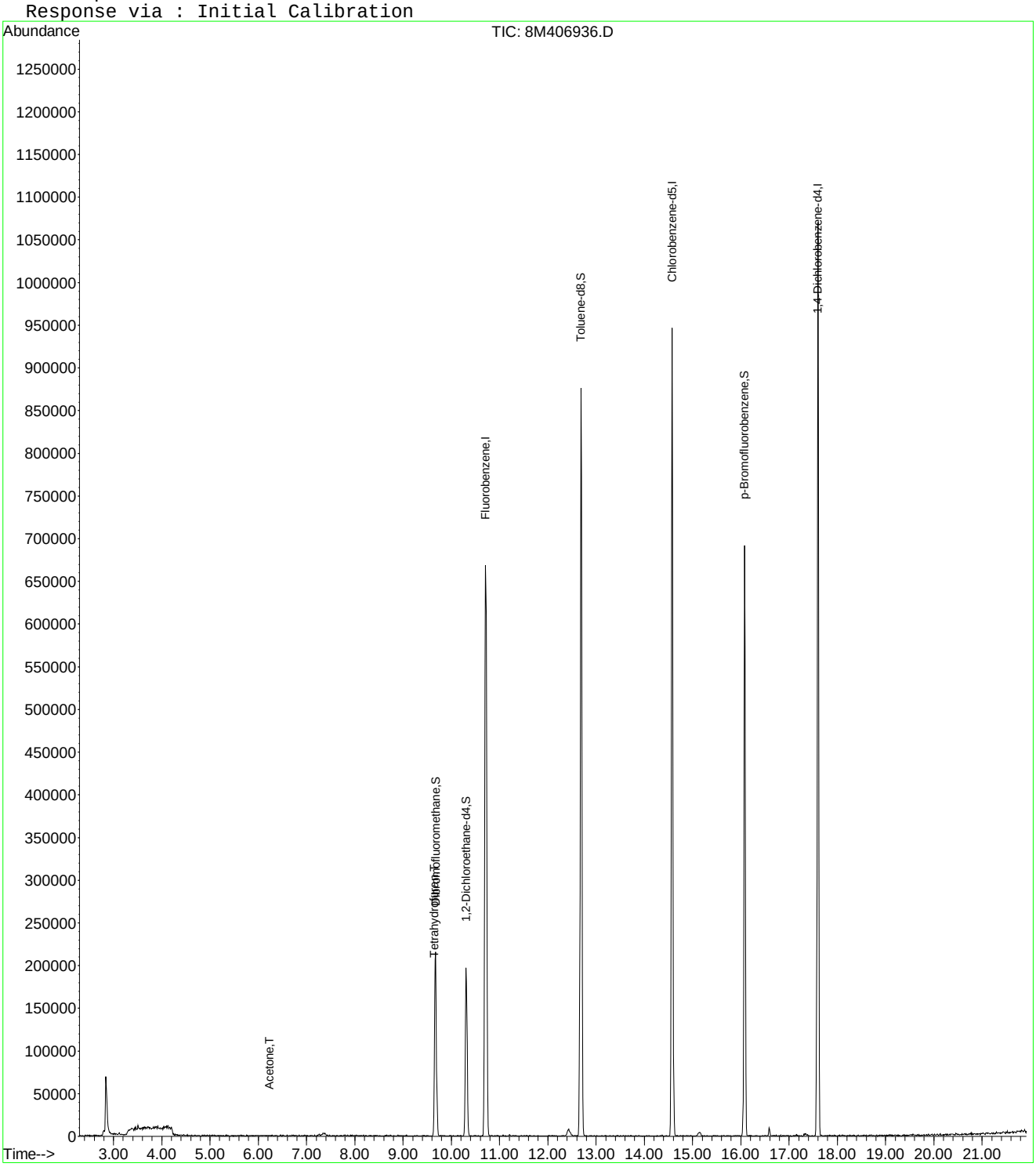

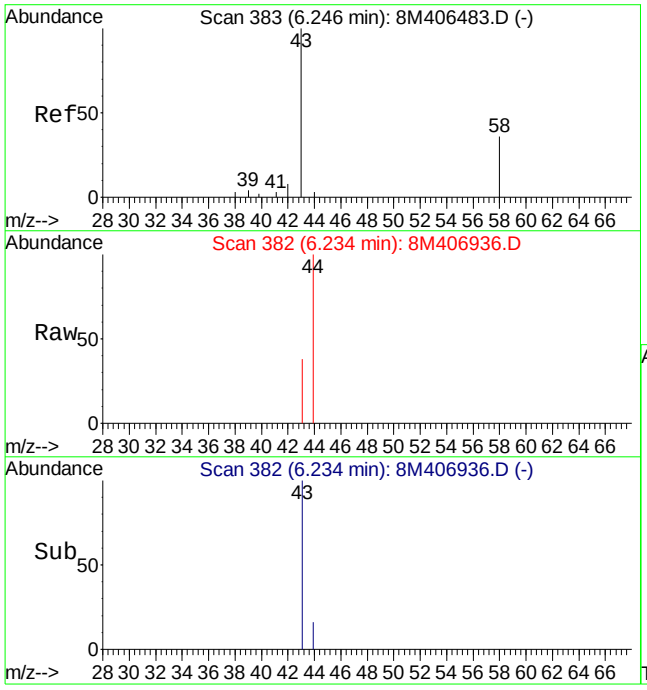

#13
Acetone
Concen: 0.21 ug/L
RT: 6.23 min Scan# 382
Delta R.T. -0.01 min
Lab File: 8M406936.D
Acq: 21 Aug 2015 16:04

Tgt Ion: 43 Resp: 215

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

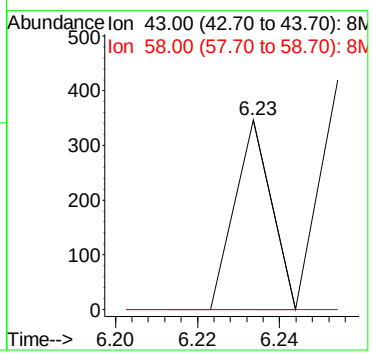

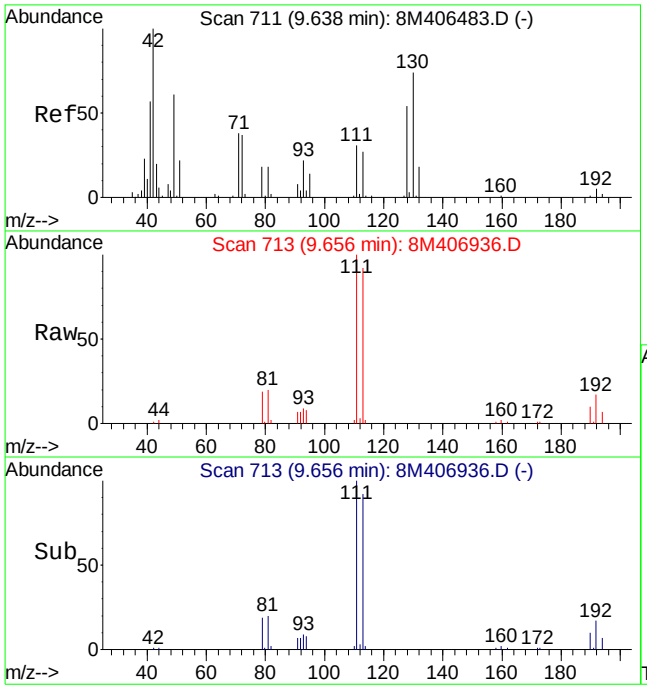

#36
Tetrahydrofuran
Concen: 0.21 ug/L
RT: 9.66 min Scan# 713
Delta R.T. 0.02 min
Lab File: 8M406936.D
Acq: 21 Aug 2015 16:04

Tgt Ion: 42 Resp: 249

Ion	Ratio	Lower	Upper
42	100		
72	0.0	22.4	52.4#
71	0.0	19.5	45.5#

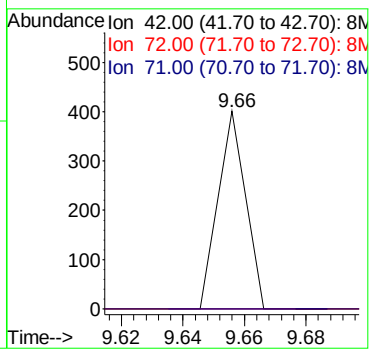

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082415\8M406966.D Vial: 5
Acq On : 24 Aug 2015 13:22 Operator: TMB
Sample : WG536185-01 VBLK0824 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 25 08:30:10 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	1038494	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	793027	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	430985	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	230500	25.1891 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.76%		
43) 1,2-Dichloroethane-d4	10.31	65	216095	23.7476 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 95.00%		
58) Toluene-d8	12.68	98	940608	24.5872 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.36%		
80) p-Bromofluorobenzene	16.08	95	380324	25.5125 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.04%		

Target Compounds					Qvalue
13) Acetone	6.25	43	206	0.1573 ug/L #	48
36) Tetrahydrofuran	9.63	42	794	0.5206 ug/L #	40

(#) = qualifier out of range (m) = manual integration
8M406966.D 8260WT.M Tue Aug 25 08:30:10 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082415\8M406966.D Vial: 5
Acq On : 24 Aug 2015 13:22 Operator: TMB
Sample : WG536185-01 VBLK0824 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 25 8:30 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

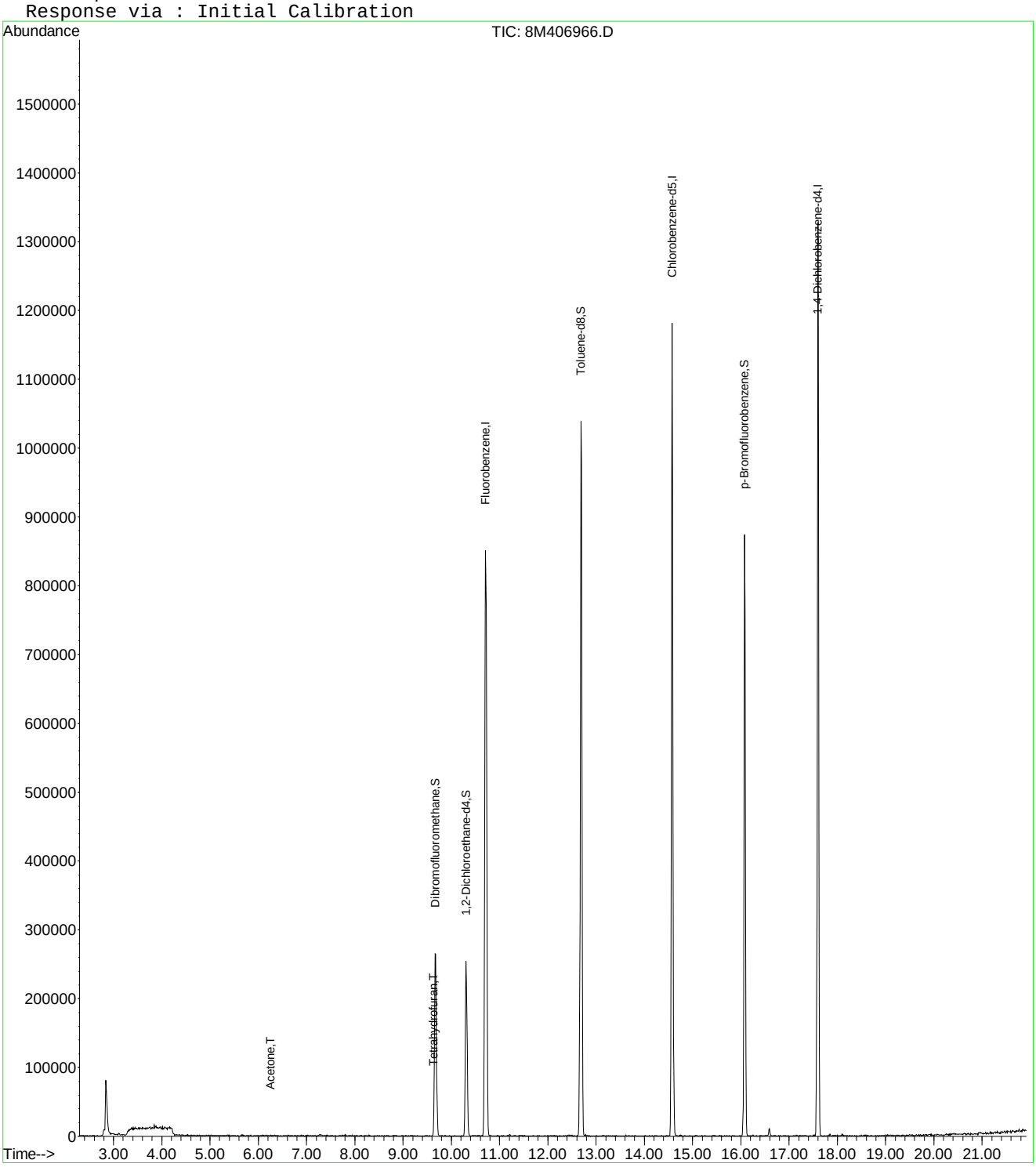

8M406966.D 8260WT.M Tue Aug 25 08:30:11 2015 Page 2

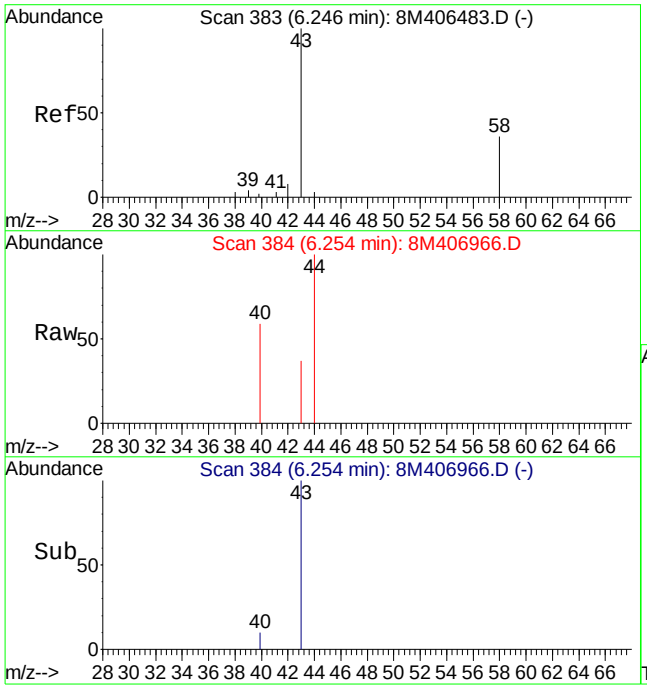

#13
Acetone
Concen: 0.16 ug/L
RT: 6.25 min Scan# 384
Delta R.T. 0.01 min
Lab File: 8M406966.D
Acq: 24 Aug 2015 13:22

Tgt Ion: 43 Resp: 206

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

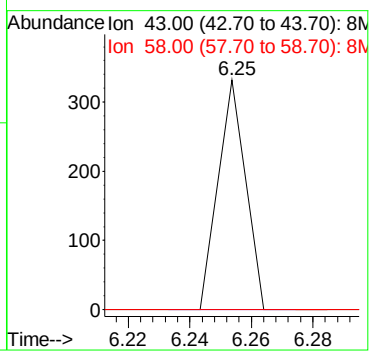

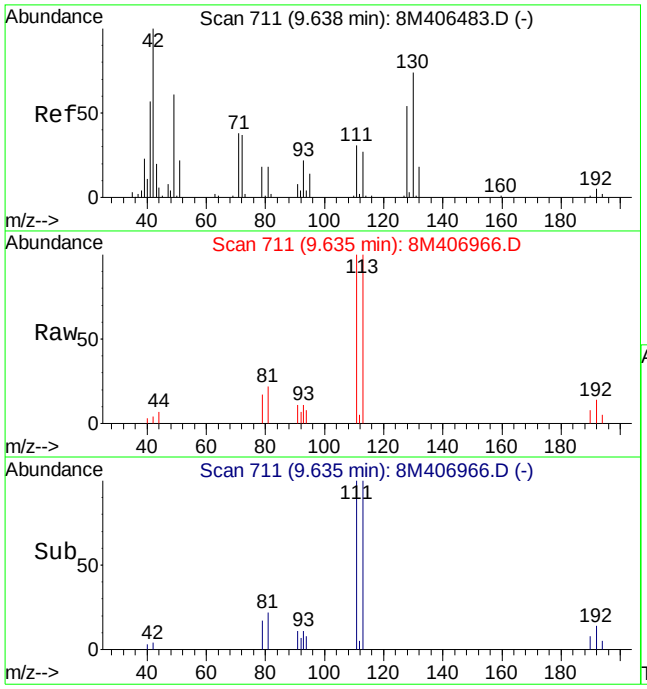

#36
Tetrahydrofuran
Concen: 0.52 ug/L
RT: 9.63 min Scan# 711
Delta R.T. -0.00 min
Lab File: 8M406966.D
Acq: 24 Aug 2015 13:22

Tgt Ion: 42 Resp: 794

Ion	Ratio	Lower	Upper
42	100		
72	0.0	22.4	52.4#
71	0.0	19.5	45.5#

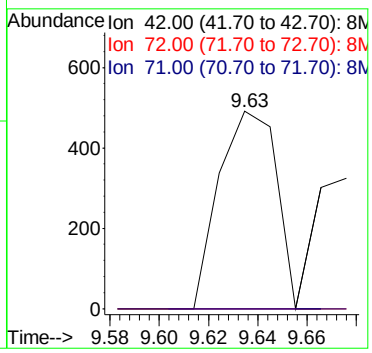

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\082115\8M406937.D Vial: 5
Acq On : 21 Aug 2015 16:33 Operator: TMB
Sample : WG536091-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD72078 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 21 16:55:00 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	845633	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	636539	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	372422	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	184523	24.7637 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.04%		
43) 1,2-Dichloroethane-d4	10.31	65	170179	22.9670 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 91.88%		
58) Toluene-d8	12.69	98	757338	24.6634 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.64%		
80) p-Bromofluorobenzene	16.08	95	292787	22.7289 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 90.92%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	264462	20.4775 ug/L	99
3) Chloromethane	3.62	50	293349	20.3453 ug/L	99
4) Vinyl Chloride	3.84	62	241883	22.8114 ug/L	99
5) 1,3-Butadiene	3.89	54	176591	18.9971 ug/L	90
6) Bromomethane	4.73	94	88919	12.5896 ug/L	96
7) Chloroethane	4.90	64	141625	21.4514 ug/L	100
8) Trichlorofluoromethane	5.39	101	238644	17.4053 ug/L	97
9) Diethyl ether	5.91	59	507090	97.7092 ug/L	99
10) Isoprene	5.94	67	237185	22.1024 ug/L	96
11) Acrolein	6.15	56	24493	82.3013 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	151803	19.3910 ug/L	95
13) Acetone	6.25	43	17279	16.2039 ug/L	98
14) 1,1-Dichloroethene	6.47	61	232202	17.4834 ug/L	98
15) Tert-Butyl Alcohol	6.58	59	23901	85.3325 ug/L	98
16) Dimethyl Sulfide	6.74	62	185444	22.2395 ug/L	96
17) Iodomethane	6.99	142	42854	6.0328 ug/L	88
18) Methyl acetate	7.01	43	58652	14.1742 ug/L	97
19) Methylene Chloride	7.26	84	158203	18.7003 ug/L	95
20) Carbon Disulfide	7.30	76	468534	17.2731 ug/L	99
21) Acrylonitrile	7.44	53	31151	17.5803 ug/L	100
22) Methyl Tert Butyl Ether	7.47	73	290480	19.4436 ug/L	99
23) trans-1,2-Dichloroethene	7.71	61	236706	19.0034 ug/L	94
24) n-Hexane	7.79	57	232334	17.2549 ug/L	96
25) Diisopropyl ether	8.14	45	3107301	102.7311 ug/L	99
26) Vinyl Acetate	8.30	43	256099	33.1242 ug/L	99
27) 1,1-Dichloroethane	8.33	63	325485	19.4830 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	2158288	95.6390 ug/L	99
29) 2-Butanone	8.89	43	32763	18.1460 ug/L	96
30) Propionitrile	8.99	54	44925	78.2273 ug/L	95
31) 2,2-Dichloropropane	9.11	77	257291	19.9849 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	180408	20.1256 ug/L	93
33) Chloroform	9.38	83	299370	19.8564 ug/L	99
34) 1-Bromopropane	9.52	122	35184	22.0817 ug/L	99
35) Bromochloromethane	9.61	130	91577	19.8331 ug/L	99
36) Tetrahydrofuran	9.64	42	108854	87.6540 ug/L	96
38) 1,1,1-Trichloroethane	9.91	97	281158	20.2175 ug/L	98
39) Cyclohexane	9.95	56	312711	19.2793 ug/L	99
40) 1,1-Dichloropropene	10.11	75	228371	19.1800 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1687717	99.9059 ug/L	100
42) Carbon Tetrachloride	10.26	117	249504	20.2628 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M406937.D 8260WT.M Fri Aug 21 16:55:01 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\082115\8M406937.D Vial: 5
Acq On : 21 Aug 2015 16:33 Operator: TMB
Sample : WG536091-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD72078 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 21 16:55:00 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	189142	18.7306 ug/L		95
46)	Benzene	10.47	78	701469	21.0756 ug/L		97
47)	Trichloroethene	11.22	130	175410	18.4642 ug/L		95
48)	Methylcyclohexane	11.30	83	257472	18.6897 ug/L		98
49)	1,2-Dichloropropane	11.43	63	191290	20.7458 ug/L		94
50)	Bromodichloromethane	11.73	83	229422	20.0483 ug/L		99
51)	1,4-Dioxane	11.71	88	1699	52.3956 ug/L	#	41
52)	Dibromomethane	11.82	93	85275	20.2167 ug/L		96
53)	2-Chloroethyl Vinyl Ether	12.02	63	78136	20.2869 ug/L		99
54)	4-Methyl-2-Pentanone	12.05	58	34186	19.9951 ug/L		92
55)	cis-1,3-Dichloropropene	12.36	75	274858	21.8212 ug/L		99
56)	Dimethyl Disulfide	12.62	79	135462	19.8508 ug/L		88
59)	Toluene	12.79	91	742769	19.9675 ug/L		100
60)	Ethyl Methacrylate	12.88	69	147200	20.7331 ug/L		96
62)	trans-1,3-Dichloropropene	12.96	75	207261	18.8359 ug/L		98
63)	1,1,2-Trichloroethane	13.18	97	114491	19.6399 ug/L		99
64)	2-Hexanone	13.12	58	31791	19.3045 ug/L	#	95
65)	1,3-Dichloropropane	13.48	76	201951	19.9048 ug/L		96
66)	Tetrachloroethene	13.61	164	155012	19.7643 ug/L		93
67)	Dibromochloromethane	13.86	129	147591	19.2195 ug/L		99
68)	1,2-Dibromoethane	14.12	107	100330	17.7009 ug/L		93
69)	1-Chlorohexane	14.22	91	248592	18.9099 ug/L		97
70)	Chlorobenzene	14.63	112	503539	21.1415 ug/L		94
71)	1,1,1,2-Tetrachloroethane	14.66	131	166523	19.6810 ug/L		100
72)	Ethylbenzene	14.66	106	268948	20.0046 ug/L		96
73)	m-,p-Xylene	14.74	106	645366	40.6225 ug/L		99
74)	o-Xylene	15.31	106	337089	21.5602 ug/L		93
75)	Styrene	15.34	104	523850	20.5147 ug/L		96
76)	Bromoform	15.84	173	91322	19.7793 ug/L		98
77)	Isopropylbenzene	15.74	105	836524	21.3723 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.94	83	126555	18.7026 ug/L		96
81)	1,2,3-Trichloropropane	16.14	110	32155	16.9292 ug/L		62
82)	trans-1,4-Dichloro-2-Buten	16.18	53	37335	14.7109 ug/L	#	50
83)	n-Propylbenzene	16.24	91	1056928	19.2754 ug/L		100
84)	Bromobenzene	16.37	156	206846	18.6235 ug/L		92
85)	1,3,5-Trimethylbenzene	16.43	105	701419	19.3757 ug/L		98
86)	2-Chlorotoluene	16.51	91	664703	19.8460 ug/L		99
87)	4-Chlorotoluene	16.55	91	631146	19.7745 ug/L		97
88)	a-Methylstyrene	16.83	118	403659	20.5328 ug/L		95
89)	tert-Butylbenzene	16.89	134	149417	19.0514 ug/L		91
90)	1,2,4-Trimethylbenzene	16.95	105	693499	18.9077 ug/L		96
91)	sec-Butylbenzene	17.16	105	887856	19.8775 ug/L		100
92)	p-Isopropyltoluene	17.32	119	711222	18.5158 ug/L		98
93)	1,3-Dichlorobenzene	17.51	146	423704	19.4543 ug/L		97
94)	1,4-Dichlorobenzene	17.64	146	412916	18.3919 ug/L		96
95)	n-Butylbenzene	17.84	91	683481	18.4528 ug/L		99
96)	1,2-Dichlorobenzene	18.13	146	389895	20.2764 ug/L		96
97)	1,2-Dibromo-3-Chloropropan	19.13	75	18059	15.2439 ug/L		88
98)	1,2,4-Trichlorobenzene	20.27	180	259793	17.5564 ug/L		97
99)	Hexachlorobutadiene	20.43	225	119495	15.8691 ug/L		98
100)	Naphthalene	20.64	128	347726	18.1114 ug/L		97
101)	1,2,3-Trichlorobenzene	20.95	180	218126	17.0819 ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\082115\8M406937.D Vial: 5
Acq On : 21 Aug 2015 16:33 Operator: TMB
Sample : WG536091-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD72078 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 21 16:55 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

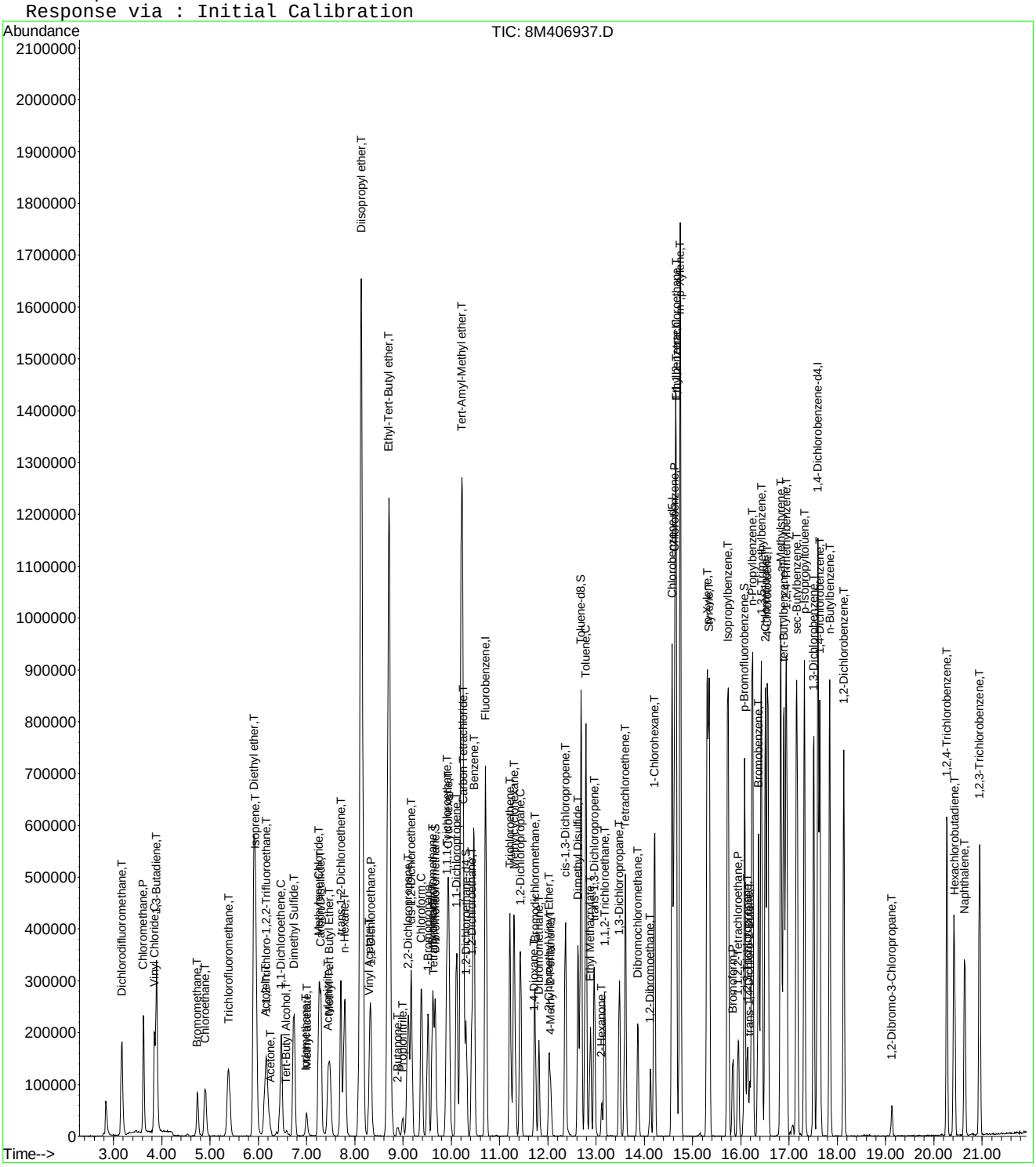

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\082415\8M406967.D Vial: 6
Acq On : 24 Aug 2015 13:51 Operator: TMB
Sample : WG536185-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD72078 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 24 14:13:16 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	1063055	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	820848	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	441559	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	235336	25.1234 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.48%		
43) 1,2-Dichloroethane-d4	10.31	65	215875	23.1753 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 92.72%		
58) Toluene-d8	12.69	98	968060	24.4471 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.80%		
80) p-Bromofluorobenzene	16.08	95	380277	24.8985 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.60%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	352144	21.6900 ug/L	100
3) Chloromethane	3.62	50	404246	22.3024 ug/L	99
4) Vinyl Chloride	3.85	62	335622	25.1782 ug/L	100
5) 1,3-Butadiene	3.89	54	74140	6.3445 ug/L	95
6) Bromomethane	4.74	94	104576	11.7781 ug/L	99
7) Chloroethane	4.89	64	192157	23.1526 ug/L	98
8) Trichlorofluoromethane	5.38	101	310023	17.9867 ug/L	98
9) Diethyl ether	5.92	59	613629	94.0551 ug/L	97
10) Isoprene	5.95	67	284608	21.0972 ug/L	99
11) Acrolein	6.14	56	36901	93.8699 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	196913	20.0088 ug/L	100
13) Acetone	6.25	43	31848	23.7579 ug/L	97
14) 1,1-Dichloroethene	6.47	61	296355	17.7500 ug/L	95
15) Tert-Butyl Alcohol	6.59	59	80752	229.3389 ug/L	98
16) Dimethyl Sulfide	6.74	62	236519	22.5634 ug/L	93
17) Iodomethane	6.99	142	45444	5.2258 ug/L	97
18) Methyl acetate	7.01	43	83441	16.0406 ug/L	96
19) Methylene Chloride	7.26	84	213485	20.0737 ug/L	99
20) Carbon Disulfide	7.30	76	570354	16.7263 ug/L	100
21) Acrylonitrile	7.45	53	44569	20.0084 ug/L	100
22) Methyl Tert Butyl Ether	7.48	73	366302	19.5041 ug/L	100
23) trans-1,2-Dichloroethene	7.70	61	307656	19.6477 ug/L	96
24) n-Hexane	7.79	57	297106	17.5524 ug/L	99
25) Diisopropyl ether	8.14	45	3726366	98.0010 ug/L	99
26) Vinyl Acetate	8.30	43	292449	30.0894 ug/L	99
27) 1,1-Dichloroethane	8.33	63	407199	19.3891 ug/L	99
28) Ethyl-Tert-Butyl ether	8.71	59	2675476	94.3090 ug/L	99
29) 2-Butanone	8.89	43	51639	22.7511 ug/L	100
30) Propionitrile	9.00	54	78797	109.1455 ug/L	98
31) 2,2-Dichloropropane	9.11	77	328458	20.2947 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	229248	20.3435 ug/L	94
33) Chloroform	9.38	83	391285	20.6448 ug/L	100
34) 1-Bromopropane	9.52	122	43289	21.6118 ug/L	100
35) Bromochloromethane	9.62	130	116093	20.0003 ug/L	100
36) Tetrahydrofuran	9.64	42	162472	104.0716 ug/L	95
38) 1,1,1-Trichloroethane	9.92	97	362805	20.7528 ug/L	98
39) Cyclohexane	9.95	56	386737	18.9666 ug/L	99
40) 1,1-Dichloropropene	10.11	75	306101	20.4502 ug/L	98
41) Tert-Amyl-Methyl ether	10.22	73	2102501	99.0042 ug/L	99
42) Carbon Tetrachloride	10.26	117	319473	20.6387 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\082415\8M406967.D Vial: 6
Acq On : 24 Aug 2015 13:51 Operator: TMB
Sample : WG536185-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD72078 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 24 14:13:16 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	246623	19.4278 ug/L		99
46)	Benzene	10.46	78	901093	21.5361 ug/L		97
47)	Trichloroethene	11.22	130	224111	18.7657 ug/L		97
48)	Methylcyclohexane	11.30	83	328374	18.9613 ug/L		99
49)	1,2-Dichloropropane	11.43	63	247972	21.3928 ug/L		94
50)	Bromodichloromethane	11.73	83	290719	20.2089 ug/L		99
51)	1,4-Dioxane	11.72	88	9601	235.5289 ug/L		82
52)	Dibromomethane	11.82	93	111878	21.0989 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	96949	20.0232 ug/L		99
54)	4-Methyl-2-Pentanone	12.06	58	46278	21.5316 ug/L		96
55)	cis-1,3-Dichloropropene	12.37	75	347317	21.9342 ug/L		99
56)	Dimethyl Disulfide	12.63	79	171638	20.0078 ug/L		91
59)	Toluene	12.79	91	972992	20.2834 ug/L		100
60)	Ethyl Methacrylate	12.88	69	185651	20.2775 ug/L		95
62)	trans-1,3-Dichloropropene	12.97	75	266142	18.7562 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	149212	19.8488 ug/L		99
64)	2-Hexanone	13.12	58	43014	20.2548 ug/L	#	97
65)	1,3-Dichloropropane	13.48	76	258757	19.7772 ug/L		94
66)	Tetrachloroethene	13.61	164	195097	19.2899 ug/L		98
67)	Dibromochloromethane	13.87	129	193015	19.4911 ug/L		99
68)	1,2-Dibromoethane	14.12	107	138923	19.0064 ug/L		100
69)	1-Chlorohexane	14.21	91	321336	18.9550 ug/L		97
70)	Chlorobenzene	14.63	112	639891	20.8339 ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.66	131	218854	20.0581 ug/L		98
72)	Ethylbenzene	14.65	106	344709	19.8827 ug/L		97
73)	m-,p-Xylene	14.75	106	848904	41.4363 ug/L		98
74)	o-Xylene	15.30	106	426156	21.1368 ug/L		94
75)	Styrene	15.34	104	669629	20.3355 ug/L		96
76)	Bromoform	15.84	173	115859	19.4593 ug/L		97
77)	Isopropylbenzene	15.73	105	1065907	21.1181 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.94	83	169787	21.1628 ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	42155	18.7191 ug/L		58
82)	trans-1,4-Dichloro-2-Buten	16.18	53	41069	13.7060 ug/L	#	32
83)	n-Propylbenzene	16.23	91	1361174	20.9372 ug/L		100
84)	Bromobenzene	16.37	156	257520	19.5556 ug/L		96
85)	1,3,5-Trimethylbenzene	16.43	105	883284	20.5791 ug/L		97
86)	2-Chlorotoluene	16.51	91	864580	21.7720 ug/L		99
87)	4-Chlorotoluene	16.55	91	768259	20.3015 ug/L		96
88)	a-Methylstyrene	16.83	118	483413	20.7395 ug/L		96
89)	tert-Butylbenzene	16.90	134	183131	19.6940 ug/L		95
90)	1,2,4-Trimethylbenzene	16.94	105	876600	20.1577 ug/L		97
91)	sec-Butylbenzene	17.16	105	1113236	21.0210 ug/L		100
92)	p-Isopropyltoluene	17.32	119	888191	19.5024 ug/L		98
93)	1,3-Dichlorobenzene	17.52	146	522100	20.2187 ug/L		97
94)	1,4-Dichlorobenzene	17.64	146	498357	18.7220 ug/L		99
95)	n-Butylbenzene	17.85	91	860798	19.6012 ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	462267	20.2760 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	27232	19.3878 ug/L		96
98)	1,2,4-Trichlorobenzene	20.28	180	315137	17.9620 ug/L		100
99)	Hexachlorobutadiene	20.42	225	153104	17.1489 ug/L		98
100)	Naphthalene	20.64	128	437558	19.2219 ug/L		98
101)	1,2,3-Trichlorobenzene	20.95	180	276844	18.2856 ug/L		97

(#) = qualifier out of range (m) = manual integration
8M406967.D 8260WT.M Mon Aug 24 14:13:17 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\082415\8M406967.D Vial: 6
Acq On : 24 Aug 2015 13:51 Operator: TMB
Sample : WG536185-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD72078 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 24 14:13 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

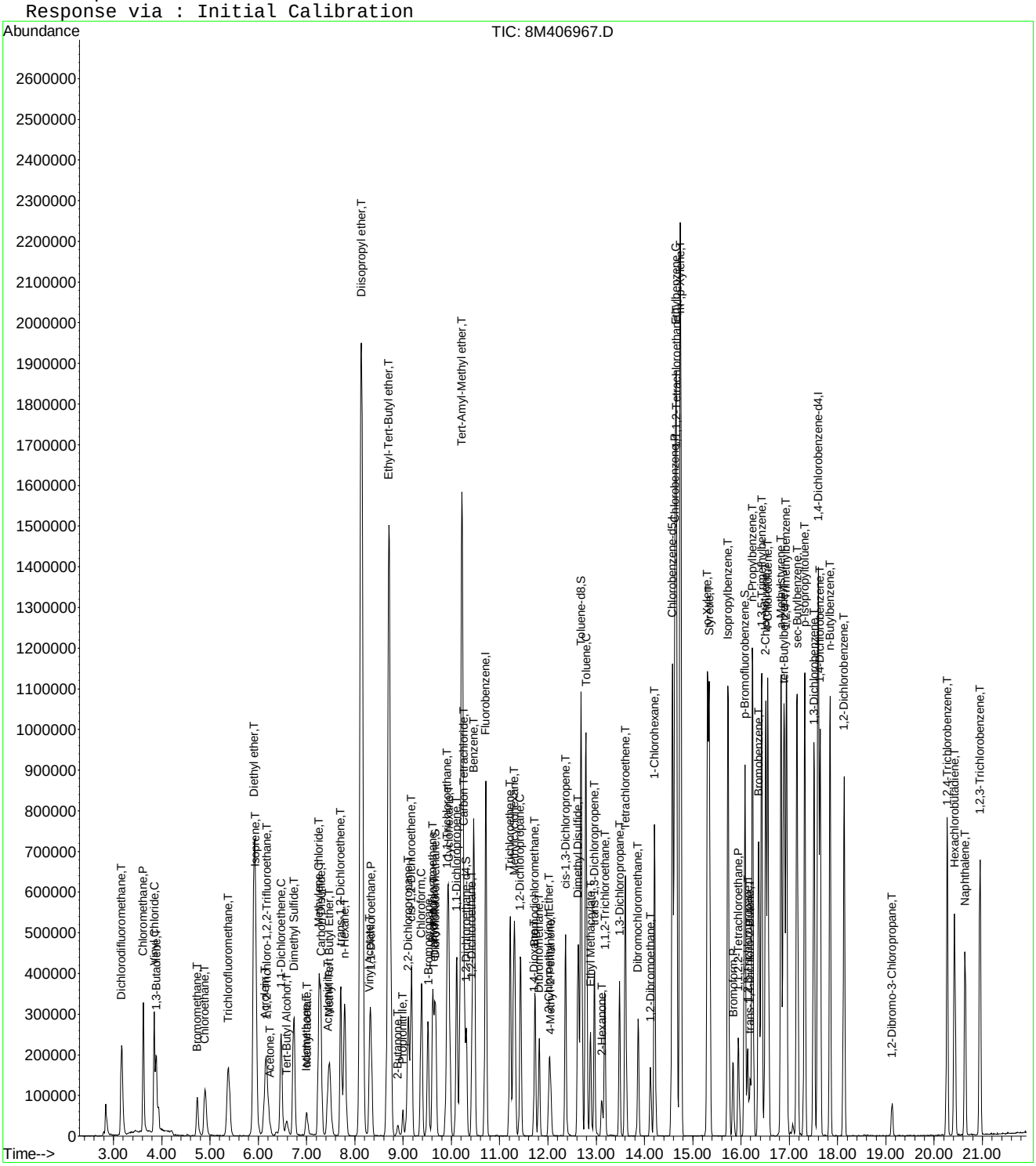

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\082115\8M406938.D Vial: 6
Acq On : 21 Aug 2015 17:01 Operator: TMB
Sample : WG536091-03 20ug/L LCSDUP STD 8260 Inst : HPMS8
Misc : 1,1 STD72078 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 21 17:23:14 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	880255	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	665879	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	379376	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	193058	24.8900 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.56%		
43) 1,2-Dichloroethane-d4	10.31	65	171246	22.2020 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 88.80%		
58) Toluene-d8	12.69	98	784476	24.4215 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.68%		
80) p-Bromofluorobenzene	16.08	95	303255	23.1100 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.44%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	301626	22.4365 ug/L	98
3) Chloromethane	3.62	50	324857	21.6444 ug/L	100
4) Vinyl Chloride	3.85	62	266943	24.1846 ug/L	98
5) 1,3-Butadiene	3.89	54	168297	17.3928 ug/L	95
6) Bromomethane	4.74	94	91275	12.4149 ug/L	98
7) Chloroethane	4.90	64	146129	21.2631 ug/L	99
8) Trichlorofluoromethane	5.38	101	247638	17.3509 ug/L	99
9) Diethyl ether	5.91	59	502930	93.0961 ug/L	97
10) Isoprene	5.95	67	245044	21.9366 ug/L	95
11) Acrolein	6.15	56	22397	74.6939 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	161654	19.8372 ug/L	98
13) Acetone	6.24	43	17522	15.7855 ug/L	88
14) 1,1-Dichloroethene	6.47	61	242011	17.5052 ug/L	95
15) Tert-Butyl Alcohol	6.60	59	43611	149.5780 ug/L	98
16) Dimethyl Sulfide	6.73	62	184170	21.2180 ug/L	98
17) Iodomethane	7.00	142	47597	6.3784 ug/L	87
18) Methyl acetate	7.01	43	59388	13.7875 ug/L	99
19) Methylene Chloride	7.26	84	171616	19.4879 ug/L	100
20) Carbon Disulfide	7.30	76	468462	16.5912 ug/L	100
21) Acrylonitrile	7.43	53	32614	17.6820 ug/L	98
22) Methyl Tert Butyl Ether	7.47	73	294896	18.9629 ug/L	97
23) trans-1,2-Dichloroethene	7.71	61	244130	18.8285 ug/L	95
24) n-Hexane	7.78	57	224317	16.0042 ug/L	98
25) Diisopropyl ether	8.14	45	3188346	101.2646 ug/L	98
26) Vinyl Acetate	8.30	43	221955	27.5788 ug/L	99
27) 1,1-Dichloroethane	8.33	63	338394	19.4590 ug/L	100
28) Ethyl-Tert-Butyl ether	8.70	59	2214360	94.2643 ug/L	99
29) 2-Butanone	8.89	43	33930	18.0532 ug/L	96
30) Propionitrile	8.99	54	44310	74.1217 ug/L	100
31) 2,2-Dichloropropane	9.11	77	245401	18.3116 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	178720	19.1531 ug/L	96
33) Chloroform	9.38	83	312234	19.8951 ug/L	100
34) 1-Bromopropane	9.52	122	35642	21.4893 ug/L	95
35) Bromochloromethane	9.61	130	93830	19.5217 ug/L	98
36) Tetrahydrofuran	9.64	42	107691	83.3068 ug/L	96
38) 1,1,1-Trichloroethane	9.91	97	291977	20.1697 ug/L	98
39) Cyclohexane	9.95	56	314377	18.6197 ug/L	99
40) 1,1-Dichloropropene	10.11	75	239772	19.3455 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1753115	99.6954 ug/L	100
42) Carbon Tetrachloride	10.26	117	260307	20.3087 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M406938.D 8260WT.M Fri Aug 21 17:23:15 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\082115\8M406938.D Vial: 6
Acq On : 21 Aug 2015 17:01 Operator: TMB
Sample : WG536091-03 20ug/L LCSDUP STD 8260 Inst : HPMS8
Misc : 1,1 STD72078 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 21 17:23:14 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	193646	18.4224 ug/L		97
46)	Benzene	10.47	78	728708	21.0328 ug/L		98
47)	Trichloroethene	11.22	130	182639	18.4690 ug/L		98
48)	Methylcyclohexane	11.30	83	267951	18.6854 ug/L		97
49)	1,2-Dichloropropane	11.43	63	200698	20.9100 ug/L		96
50)	Bromodichloromethane	11.73	83	228429	19.1764 ug/L		99
51)	1,4-Dioxane	11.72	88	5893	174.5868 ug/L		86
52)	Dibromomethane	11.82	93	85619	19.4999 ug/L		96
53)	2-Chloroethyl Vinyl Ether	12.02	63	78027	19.4618 ug/L		99
54)	4-Methyl-2-Pentanone	12.07	58	35200	19.7784 ug/L		95
55)	cis-1,3-Dichloropropene	12.36	75	277904	21.1952 ug/L		99
56)	Dimethyl Disulfide	12.62	79	133178	18.7485 ug/L		88
59)	Toluene	12.79	91	782568	20.1104 ug/L		99
60)	Ethyl Methacrylate	12.88	69	151445	20.3911 ug/L		95
62)	trans-1,3-Dichloropropene	12.96	75	209683	18.2164 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	115236	18.8967 ug/L		99
64)	2-Hexanone	13.12	58	31697	18.3994 ug/L	#	94
65)	1,3-Dichloropropane	13.48	76	206143	19.4227 ug/L		96
66)	Tetrachloroethene	13.61	164	161771	19.7173 ug/L		95
67)	Dibromochloromethane	13.86	129	159832	19.8965 ug/L		98
68)	1,2-Dibromoethane	14.12	107	112354	18.9488 ug/L		98
69)	1-Chlorohexane	14.22	91	257316	18.7110 ug/L		95
70)	Chlorobenzene	14.63	112	520062	20.8731 ug/L		95
71)	1,1,1,2-Tetrachloroethane	14.66	131	176260	19.9139 ug/L		99
72)	Ethylbenzene	14.65	106	278580	19.8080 ug/L		98
73)	m-,p-Xylene	14.74	106	687242	41.3523 ug/L		96
74)	o-Xylene	15.31	106	341879	20.9031 ug/L		97
75)	Styrene	15.34	104	545120	20.4070 ug/L		96
76)	Bromoform	15.84	173	93883	19.4380 ug/L		98
77)	Isopropylbenzene	15.74	105	861199	21.0332 ug/L		98
79)	1,1,2,2-Tetrachloroethane	15.94	83	131386	19.0606 ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	34351	17.7539 ug/L		51
82)	trans-1,4-Dichloro-2-Buten	16.18	53	32678	12.7522 ug/L	#	39
83)	n-Propylbenzene	16.24	91	1103497	19.7558 ug/L		100
84)	Bromobenzene	16.37	156	210004	18.5613 ug/L		98
85)	1,3,5-Trimethylbenzene	16.43	105	716364	19.4258 ug/L		97
86)	2-Chlorotoluene	16.51	91	697036	20.4299 ug/L		98
87)	4-Chlorotoluene	16.55	91	645457	19.8522 ug/L		96
88)	a-Methylstyrene	16.83	118	401636	20.0555 ug/L		97
89)	tert-Butylbenzene	16.89	134	159640	19.9817 ug/L		87
90)	1,2,4-Trimethylbenzene	16.95	105	724458	19.3897 ug/L		96
91)	sec-Butylbenzene	17.16	105	928102	20.3977 ug/L		99
92)	p-Isopropyltoluene	17.32	119	746967	19.0899 ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	447460	20.1684 ug/L		94
94)	1,4-Dichlorobenzene	17.64	146	416130	18.1953 ug/L		97
95)	n-Butylbenzene	17.84	91	709347	18.8001 ug/L		99
96)	1,2-Dichlorobenzene	18.13	146	398974	20.3682 ug/L		96
97)	1,2-Dibromo-3-Chloropropan	19.13	75	18272	15.1410 ug/L		82
98)	1,2,4-Trichlorobenzene	20.27	180	272256	18.0614 ug/L		97
99)	Hexachlorobutadiene	20.42	225	122981	16.0327 ug/L		98
100)	Naphthalene	20.64	128	360979	18.4570 ug/L		99
101)	1,2,3-Trichlorobenzene	20.95	180	225818	17.3601 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M406938.D 8260WT.M Fri Aug 21 17:23:15 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\082115\8M406938.D Vial: 6
Acq On : 21 Aug 2015 17:01 Operator: TMB
Sample : WG536091-03 20ug/L LCSDUP STD 8260 Inst : HPMS8
Misc : 1,1 STD72078 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 21 17:23 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

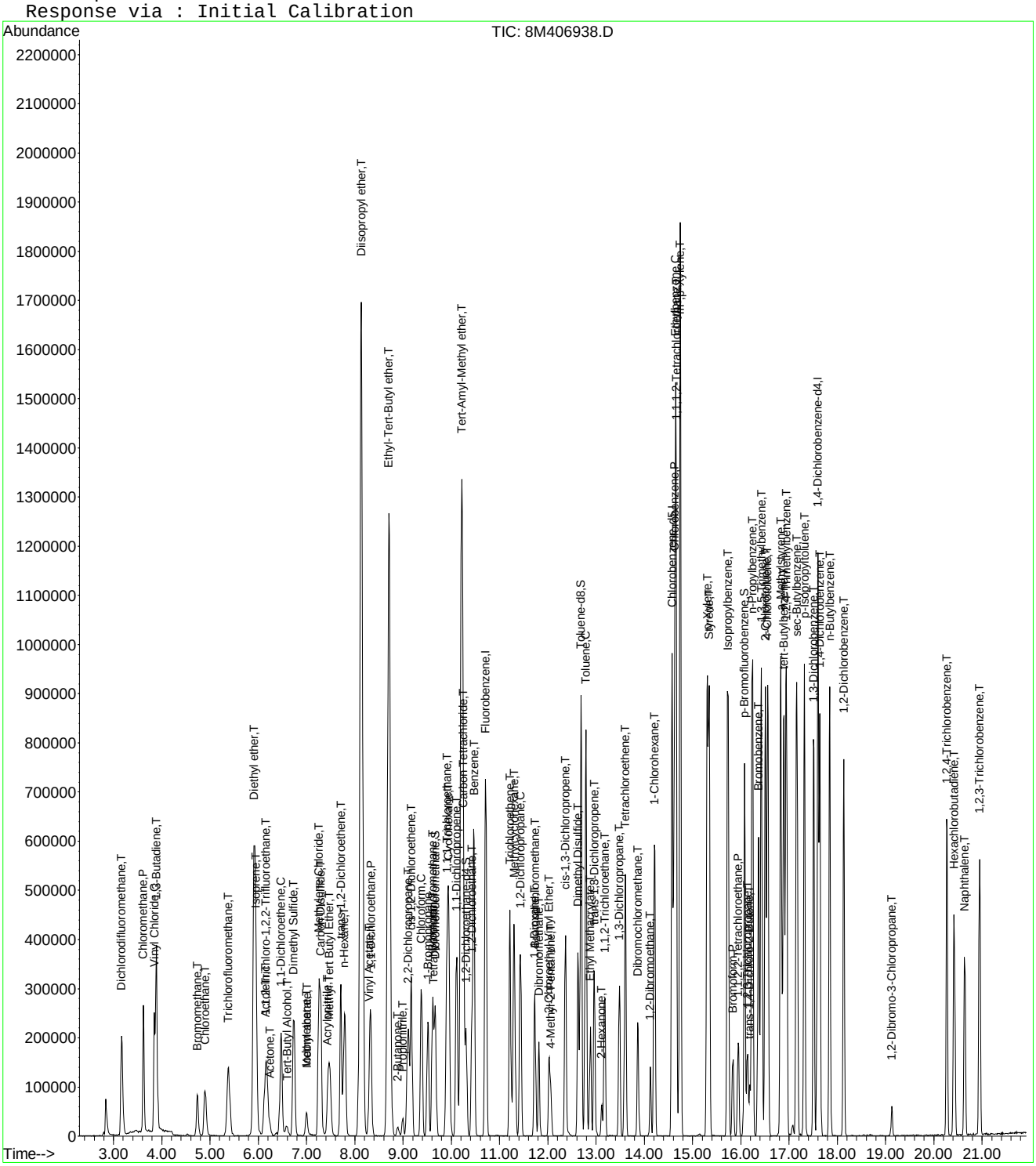

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\082415\8M406968.D Vial: 7
Acq On : 24 Aug 2015 14:20 Operator: TMB
Sample : WG536185-03 20ug/L LCSDUP STD 8260 Inst : HPMS8
Misc : 1,1 STD72078 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 24 14:42:07 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	1085349	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	821420	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	452665	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.68	111	233824	24.4493 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.80%		
43) 1,2-Dichloroethane-d4	10.31	65	222428	23.3883 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 93.56%		
58) Toluene-d8	12.68	98	964389	24.3375 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.36%		
80) p-Bromofluorobenzene	16.08	95	389161	24.8550 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.44%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	362379	21.8619 ug/L	100
3) Chloromethane	3.62	50	426872	23.0670 ug/L	99
4) Vinyl Chloride	3.84	62	352920	25.9320 ug/L	99
5) 1,3-Butadiene	3.89	54	72783	6.1004 ug/L	91
6) Bromomethane	4.73	94	107284	11.8349 ug/L	95
7) Chloroethane	4.90	64	190636	22.4975 ug/L	99
8) Trichlorofluoromethane	5.39	101	319003	18.1275 ug/L	98
9) Diethyl ether	5.91	59	651167	97.7587 ug/L	98
10) Isoprene	5.94	67	293806	21.3317 ug/L	96
11) Acrolein	6.14	56	42257	101.8118 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	202096	20.1137 ug/L	99
13) Acetone	6.25	43	28481	20.8098 ug/L	88
14) 1,1-Dichloroethene	6.47	61	301423	17.6827 ug/L	96
15) Tert-Butyl Alcohol	6.59	59	88630	246.5423 ug/L	98
16) Dimethyl Sulfide	6.74	62	245748	22.9622 ug/L	95
17) Iodomethane	7.00	142	58807	6.3897 ug/L	81
18) Methyl acetate	7.00	43	85977	16.1886 ug/L	98
19) Methylene Chloride	7.26	84	219841	20.2468 ug/L	99
20) Carbon Disulfide	7.30	76	590060	16.9488 ug/L	99
21) Acrylonitrile	7.44	53	45766	20.1238 ug/L	93
22) Methyl Tert Butyl Ether	7.47	73	382542	19.9505 ug/L	98
23) trans-1,2-Dichloroethene	7.71	61	308136	19.2742 ug/L	97
24) n-Hexane	7.79	57	310551	17.9699 ug/L	99
25) Diisopropyl ether	8.14	45	3865312	99.5671 ug/L	98
26) Vinyl Acetate	8.30	43	307656	31.0038 ug/L	99
27) 1,1-Dichloroethane	8.33	63	421918	19.6773 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	2813351	97.1320 ug/L	99
29) 2-Butanone	8.89	43	55222	23.8299 ug/L	100
30) Propionitrile	8.99	54	87271	118.4003 ug/L	98
31) 2,2-Dichloropropane	9.11	77	353285	21.3803 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	223965	19.4664 ug/L	99
33) Chloroform	9.39	83	390944	20.2032 ug/L	98
34) 1-Bromopropane	9.52	122	45907	22.4481 ug/L	97
35) Bromochloromethane	9.61	130	119958	20.2416 ug/L	99
36) Tetrahydrofuran	9.63	42	173570	108.8967 ug/L	96
38) 1,1,1-Trichloroethane	9.91	97	372372	20.8625 ug/L	96
39) Cyclohexane	9.94	56	403857	19.3994 ug/L	99
40) 1,1-Dichloropropene	10.11	75	306289	20.0425 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	2240488	103.3348 ug/L	100
42) Carbon Tetrachloride	10.26	117	325712	20.6095 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M406968.D 8260WT.M Mon Aug 24 14:42:08 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\082415\8M406968.D Vial: 7
Acq On : 24 Aug 2015 14:20 Operator: TMB
Sample : WG536185-03 20ug/L LCSDUP STD 8260 Inst : HPMS8
Misc : 1,1 STD72078 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 24 14:42:07 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	255361	19.7030 ug/L		100
46)	Benzene	10.47	78	925360	21.6618 ug/L		97
47)	Trichloroethene	11.22	130	231590	18.9936 ug/L		96
48)	Methylcyclohexane	11.30	83	346325	19.5871 ug/L		98
49)	1,2-Dichloropropane	11.43	63	254677	21.5199 ug/L		94
50)	Bromodichloromethane	11.73	83	298979	20.3562 ug/L		100
51)	1,4-Dioxane	11.72	88	11611	278.9869 ug/L		87
52)	Dibromomethane	11.82	93	116472	21.5141 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.02	63	107044	21.6541 ug/L		100
54)	4-Methyl-2-Pentanone	12.06	58	50433	22.9828 ug/L		99
55)	cis-1,3-Dichloropropene	12.36	75	360485	22.2982 ug/L		100
56)	Dimethyl Disulfide	12.62	79	180769	20.6394 ug/L		92
59)	Toluene	12.79	91	981821	20.4532 ug/L		99
60)	Ethyl Methacrylate	12.88	69	205418	22.4209 ug/L		91
62)	trans-1,3-Dichloropropene	12.96	75	283408	19.9591 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	149904	19.9270 ug/L		96
64)	2-Hexanone	13.12	58	46021	21.6556 ug/L	#	99
65)	1,3-Dichloropropane	13.48	76	272376	20.8036 ug/L		94
66)	Tetrachloroethene	13.61	164	206770	20.4298 ug/L		95
67)	Dibromochloromethane	13.87	129	205666	20.7542 ug/L		99
68)	1,2-Dibromoethane	14.12	107	147832	20.2112 ug/L		99
69)	1-Chlorohexane	14.22	91	335378	19.7695 ug/L		98
70)	Chlorobenzene	14.63	112	669951	21.7975 ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	218299	19.9933 ug/L		99
72)	Ethylbenzene	14.66	106	357050	20.5802 ug/L		99
73)	m-,p-Xylene	14.74	106	866807	42.2807 ug/L		98
74)	o-Xylene	15.31	106	432538	21.4384 ug/L		96
75)	Styrene	15.34	104	687850	20.8743 ug/L		96
76)	Bromoform	15.84	173	126446	21.2226 ug/L		98
77)	Isopropylbenzene	15.74	105	1092047	21.6209 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.94	83	177371	21.5657 ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	46593	20.1822 ug/L		55
82)	trans-1,4-Dichloro-2-Buten	16.19	53	44181	14.3435 ug/L	#	34
83)	n-Propylbenzene	16.24	91	1387059	20.8119 ug/L		100
84)	Bromobenzene	16.37	156	264844	19.6184 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	916875	20.8376 ug/L		98
86)	2-Chlorotoluene	16.51	91	846572	20.7955 ug/L		98
87)	4-Chlorotoluene	16.55	91	816307	21.0420 ug/L		98
88)	a-Methylstyrene	16.83	118	488575	20.4467 ug/L		97
89)	tert-Butylbenzene	16.89	134	192349	20.1778 ug/L		94
90)	1,2,4-Trimethylbenzene	16.94	105	893890	20.0509 ug/L		96
91)	sec-Butylbenzene	17.16	105	1151731	21.2143 ug/L		100
92)	p-Isopropyltoluene	17.32	119	914815	19.5942 ug/L		98
93)	1,3-Dichlorobenzene	17.51	146	539081	20.3641 ug/L		96
94)	1,4-Dichlorobenzene	17.64	146	512056	18.7647 ug/L		98
95)	n-Butylbenzene	17.84	91	878376	19.5108 ug/L		99
96)	1,2-Dichlorobenzene	18.13	146	472871	20.2322 ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.13	75	26553	18.4406 ug/L		78
98)	1,2,4-Trichlorobenzene	20.27	180	335072	18.6297 ug/L		98
99)	Hexachlorobutadiene	20.42	225	158941	17.3659 ug/L		98
100)	Naphthalene	20.65	128	468436	20.0735 ug/L		97
101)	1,2,3-Trichlorobenzene	20.95	180	288948	18.6168 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M406968.D 8260WT.M Mon Aug 24 14:42:08 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\082415\8M406968.D Vial: 7
Acq On : 24 Aug 2015 14:20 Operator: TMB
Sample : WG536185-03 20ug/L LCSDUP STD 8260 Inst : HPMS8
Misc : 1,1 STD72078 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 24 14:42 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

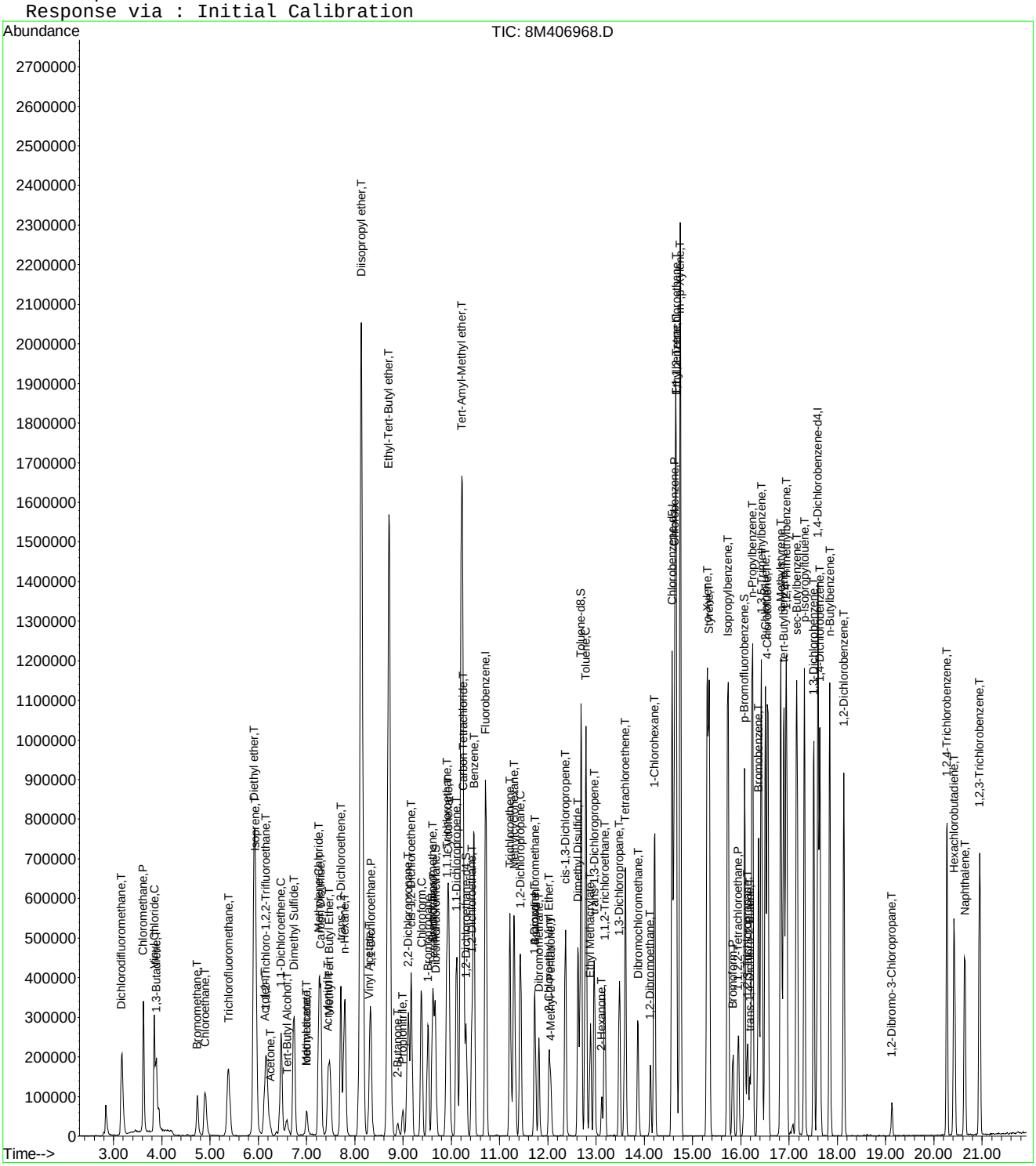

2.1.2 RSK 175

2.1.2.1 Summary Data

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081073-01	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW14-081915	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG535908	**Analyst:**	JDS	**Run Date:**	08/20/2015 18:36
Collect Date:	08/19/2015 08:20	**Dilution:**	1	**File ID:**	16G48290
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	324000	J	10000	5000	2500
Methane	74-82-8	10.8		5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081073-01	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW14-081915	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG536040	**Analyst:**	JDS	**Run Date:**	08/21/2015 16:20
Collect Date:	08/19/2015 08:20	**Dilution:**	5	**File ID:**	16G48302
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	208000		50000	25000	12500
Methane	74-82-8	10.0	U	25.0	10.0	5.00
ethene	74-85-1	10.0	U	25.0	10.0	5.00
ethane	74-84-0	10.0	U	25.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081073-03	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW13-081915	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG535908	**Analyst:**	JDS	**Run Date:**	08/20/2015 18:47
Collect Date:	08/19/2015 09:35	**Dilution:**	1	**File ID:**	16G48291
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	542000	J	10000	5000	2500
Methane	74-82-8	18.5		5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081073-03	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW13-081915	**Prep Method:**	5021	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG536040	**Analyst:**	JDS	**Run Date:**	08/21/2015 16:32
Collect Date:	08/19/2015 09:35	**Dilution:**	5	**File ID:**	16G48303
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	328000		50000	25000	12500
Methane	74-82-8	10.0	U	25.0	10.0	5.00
ethene	74-85-1	10.0	U	25.0	10.0	5.00
ethane	74-84-0	10.0	U	25.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.2.2 QC Summary Data

RSK-175 - Example Calculation for Methane

1.0 Linear Calibration Models

Option A - Average RF Method

ICAL_x	ICAL_r		RF
1.67	19901		11917
6.67	69174		10371
16.7	176923		10594
66.7	685135		10272
133	1324853		9961
300	2845104		9484
		Average RF:	**10433**

Where:
ICAL_x = the ICAL concentration
ICAL_r = the ICAL response (area)
RF = calibration factor = ICAL_r / ICAL_x

Option B - Agilent Linear Regression Constant

ICAL_x	ICAL_r	[ICAL_r}^2	[ICAL-x][ICAL-r]
1.67	19901	396049801	33235
6.67	69174	4785042276	461391
16.7	176923	31301747929	2954614
66.7	685135	4.6941E+11	45698505
133	1324853	1.75524E+12	176205449
300	2845104	8.09462E+12	853531200
Summation:		**1.03557E+13**	**1078884393**

Agilent Linear Regression Constant : **9598.567853**
(1.03557E+13)/1078884393)

2.0 Calculate the concentration in extract, Cx

Where:	
y = area response of methane from quant report	**1157414**
a = average RF (or Agilent regression constant)	**10433.00**
Cx = y/a	**110.9377935**

3.0 Calculate the concentration in sample

Cs = Cx (MW/Tf) (HS/S) (DF)

Where:		
Cx = Concentration in extract	**110.9377935**	umol/mol
MW = molecular weight of analyte	**16.04**	ug/umol
TF = temperature factor = (22.4)(313/273)	**25.68**	L/mol
HS = headspace volume	**0.015**	L
S = sample volume remaining after headspace removal	**0.00547**	L
DF = dilution factor	**2**	
Cs = calculated sample concentration	**380.034301**	ug/L

RSK-175 - Example Calculation for Carbon Dioxide

ICAL Plot - Quadratic Regression (y = Ax^2 + Bx +C)

Ax^2 + Bx + (C - y) = 0

Step 1 - Calculate the concentration in extract, Cx

Data from quadratic regression plot:		
Value of A from plot:	**0.916**	
Value of B from plot:	**1540**	
Value of C from plot:	**0**	
Response for methane from quantitation report (y):	**8763828**	
Value of C - y	**-8763828**	
Solving for Cx using the quadratic formula:		
Root 1 - Computed Cx1:	**2364.716284**	umol/mol
Root 2 - Computed Cx2:	**-4045.938991**	

Step 2 - Calculate the concentration in sample

Cs = Cx (MW/Tf) (HS/S) (DF)

Where:

Cx = Concentration in extract :	**2364.716284**	umol/mol
MW = molecular weight of analyte:	**44.0**	ug/umol
TF = temperature factor = (22.4)(313/273):	**25.68**	L/mol
HS = initial headspace volume (extraction log):	**0.015**	L
S = final volume (extraction log):	**0.00547**	L
DF = dilution factor:	**10**	
Cs = calculated sample concentration:	**111106.798**	ug/L

Other Notes:

Temperature of headspace = 40 C = 313 K

Analyte	**MW (g/mol)**
Methane	16.04
Ethane	30.07
Ethene	28.05
Propane	44.1
Carbon Dioxide	44.0

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 030315
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG514119

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G46874	RINSE	NA	1	1		03/03/15 14:05
16G46875	WG514119-01 0.67umol/mol STD RSK175	NA	1	1	STD67276	03/03/15 14:17
16G46876	WG514119-02 1.67umol/mol STD RSK175	NA	1	1	STD67276	03/03/15 14:30
16G46877	WG514119-03 33.3umol/mol STD RSK175	NA	1	1	STD67276	03/03/15 14:42
16G46878	WG514119-04 66.7umol/mol STD RSK175	NA	1	1	STD67274	03/03/15 14:53
16G46879	WG514119-05 133umol/mol STD RSK175	NA	1	1	STD67274	03/03/15 15:05
16G46880	WG514119-06 333umol/mol STD RSK175	NA	1	1	STD67274	03/03/15 15:17
16G46881	WG514119-07 533umol/mol STD RSK175	NA	1	1	STD67274	03/03/15 15:29
16G46882	RINSE	NA	1	1		03/03/15 15:41
16G46883	WG514119-08 133umol/mol ALT SRC STD	NA	1	1	STD68250	03/03/15 16:14
16G46884	WG514119-08 133umol/mol ALT SRC STD	NA	1	1	STD68250	03/03/15 17:10

Comments

Seq.	Rerun	Dil.	Reason	Analytes
10	X			
File ID: 16G46883				
	Wrong vial taken up by HT3 autosampler			

Approved: March 11, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 082015
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG535908

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G48276	WG535907-01 133umol/mol CCV RSK175	NA	1	1	STD67274	08/20/15 15:30
16G48277	WG535908-01 BLANK RSK175	NA	1	1		08/20/15 16:05
16G48278	WG535908-02 67umol/mol LCS RSK175	NA	1	1	STD68250	08/20/15 16:17
16G48279	WG535908-03 67umol/mol LCS2 RSK175	NA	1	1	STD68250	08/20/15 16:29
16G48280	L15080932-01 B D1 20X RSK175	<2	1	20		08/20/15 16:40
16G48281	L15080992-01 A RSK175	6	1	1		08/20/15 16:52
16G48282	L15080992-03 A RSK175	5	1	1		08/20/15 17:03
16G48283	L15080992-05 A RSK175	5	1	1		08/20/15 17:15
16G48284	L15080992-07 A RSK175	6	1	1		08/20/15 17:27
16G48285	L15080992-09 A RSK175	6	1	1		08/20/15 17:38
16G48286	L15080995-01 A RSK175	<2	1	1		08/20/15 17:50
16G48287	WG535907-02 133umol/mol CCV RSK175	NA	1	1	STD67274	08/20/15 18:01
16G48288	L15080995-02 A RSK175	<2	1	1		08/20/15 18:13
16G48289	L15080995-04 A RSK175	<2	1	1		08/20/15 18:24
16G48290	L15081073-01 A RSK175	6	1	1		08/20/15 18:36
16G48291	L15081073-03 A RSK175	6	1	1		08/20/15 18:47
16G48292	WG535907-03 133umol/mol CCV RSK175	NA	1	1	STD67274	08/20/15 18:58

Comments

Seq.	Rerun	Dil.	Reason	Analytes
7	X	5	Over Calibration Range	CO2
File ID: 16G48282				
	L15080992-03			
8	X	5	Over Calibration Range	CO2
File ID: 16G48283				
	L15080992-05			
10	X	5	Over Calibration Range	CO2
File ID: 16G48285				
	L15080992-09			
11	X	20	Over Calibration Range	m
File ID: 16G48286				
	L15080995-01			
14	X	5	Over Calibration Range	m
File ID: 16G48289				

Approved: August 27, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 082015
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG535908

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
	L15080995-04			
15	X	5	Over Calibration Range	CO2
File ID: 16G48290				
	L15081073-01			
16	X	5	Over Calibration Range	CO2
File ID: 16G48291				
	L15081073-03			

Approved: August 27, 2015

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 082115
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG536040

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G48293	WG536037-01 133umol/mol CCV RSK175	NA	1	1	STD67274	08/21/15 12:03
16G48294	WG536040-01 BLANK RSK175	NA	1	1		08/21/15 14:48
16G48295	WG536040-02 67umol/mol LCS RSK175	NA	1	1	STD6820	08/21/15 15:00
16G48296	WG536040-03 67umol/mol LCS2 RSK175	NA	1	1	STD6820	08/21/15 15:11
16G48297	L15080992-03 B D1 5X RSK175	6	1	5		08/21/15 15:23
16G48298	L15080992-05 B D1 5X RSK175	6	1	5		08/21/15 15:34
16G48299	L15080992-09 B D1 5X RSK175	6	1	5		08/21/15 15:45
16G48300	L15080995-01 B D1 20X RSK175	<2	1	20		08/21/15 15:57
16G48301	L15080995-04 B D1 5X RSK175	<2	1	5		08/21/15 16:09
16G48302	L15081073-01 B D1 5X RSK175	6	1	5		08/21/15 16:20
16G48303	L15081073-03 B D1 5X RSK175	6	1	1		08/21/15 16:32
16G48304	WG536037-02 133umol/mol CCV RSK175	NA	1	1	STD67274	08/21/15 16:43

Approved: August 25, 2015

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Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B202656

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG514119-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-04	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-05	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-06	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-07	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-08	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B211172

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG535907-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG535907-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG535907-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L15081073-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080995-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080995-04	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080992-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG535908-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080932-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080992-07	15	mL	15	mL					5.47	mL	5.47	mL	40
L15081073-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080992-05	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080995-02	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080992-09	15	mL	15	mL					5.47	mL	5.47	mL	40
WG535908-03	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
WG535908-02	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L15080992-03	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B211213

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG536037-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG536037-02	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080995-04	15	mL	15	mL					5.47	mL	5.47	mL	40
WG536040-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080992-05	15	mL	15	mL					5.47	mL	5.47	mL	40
L15081073-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15080992-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG536040-02	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L15080995-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG536040-03	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L15080992-09	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B211216

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
L15081073-03	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAR-2015
Analyst: JDS
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 66688
Analytical Workgroups: WG514119

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	NA
Project/Client Specific Requirements	NA
Special Standards	NA
Blanks	NA
TCL's	NA
Surrogates	NA
LCS (Laboratory Control Sample)	NA
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	NA
Surrogates	NA
Calculations & Correct Factors	NA
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
06-MAR-2015

Secondary Reviewer:
11-MAR-2015

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-11-2015 12:34:12

Microbac Laboratories Inc.

Data Checklist

Date: 20-AUG-2015
Analyst: JDS
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 70003
Analytical Workgroups: WG535908

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	NA
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	X
Surrogates	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
25-AUG-2015

Secondary Reviewer:
27-AUG-2015

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-27-2015 15:08:44

Microbac Laboratories Inc.

Data Checklist

Date: 21-AUG-2015
Analyst: JDS
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 70022
Analytical Workgroups: WG536040

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	NA
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	X
Surrogates	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
25-AUG-2015

Secondary Reviewer:
25-AUG-2015

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-25-2015 16:53:41

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: RSK175 AAB#: WG535908

Login Number: L15081073

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW14-081915	01	08/19/15					08/20/2015	1.4	7		08/20/15	1.4	7	
50WW13-081915	03	08/19/15					08/20/2015	1.4	7		08/20/15	1.4	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4351631
Report generated 08/25/2015 11:06

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: RSK175 AAB#: WG536040

Login Number: L15081073

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW14-081915	01	08/19/15					08/21/2015	2.3	7		08/21/15	2.3	7	
50WW13-081915	03	08/19/15					08/21/2015	2.3	7		08/21/15	2.3	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4351631
Report generated 08/25/2015 11:06

METHOD BLANK SUMMARY

Login Number: L15081073
Blank File ID: 16G48277
Prep Date: 08/20/15 16:05
Analyzed Date: 08/20/15 16:05
Analyst: JDS

Work Group: WG535908
Blank Sample ID: WG535908-01
Instrument ID: HP16
Method: RSK175

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG535908-02	16G48278	08/20/15 16:17	01
LCS2	WG535908-03	16G48279	08/20/15 16:29	01
50WW14-081915	L15081073-01	16G48290	08/20/15 18:36	01
50WW13-081915	L15081073-03	16G48291	08/20/15 18:47	01

Report Name: BLANK_SUMMARY
PDF File ID: 4351632
Report generated 08/25/2015 11:06

METHOD BLANK SUMMARY

Login Number: L15081073
Blank File ID: 16G48294
Prep Date: 08/21/15 14:48
Analyzed Date: 08/21/15 14:48
Analyst: JDS

Work Group: WG536040
Blank Sample ID: WG536040-01
Instrument ID: HP16
Method: RSK175

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG536040-02	16G48295	08/21/15 15:00	01
LCS2	WG536040-03	16G48296	08/21/15 15:11	01
50WW14-081915	L15081073-01	16G48302	08/21/15 16:20	DL01
50WW13-081915	L15081073-03	16G48303	08/21/15 16:32	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4351632
Report generated 08/25/2015 11:06

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15081073 Prep Date: 08/20/15 16:05 Sample ID: WG535908-01
Instrument ID: HP16 Run Date: 08/20/15 16:05 Prep Method: 5021
File ID: 16G48277 Analyst: JDS Method: RSK175
Workgroup (AAB#): WG535908 Matrix: Water Units: ug/L
Contract #: Cal ID: HP16 - 03-MAR-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Carbon Dioxide	2500	10000	2500	1	U
Methane	1.00	5.00	1.00	1	U
ethene	1.00	5.00	1.00	1	U
ethane	1.00	5.00	1.00	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4351633
25-AUG-2015 11:06

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15081073 Prep Date: 08/21/15 14:48 Sample ID: WG536040-01
Instrument ID: HP16 Run Date: 08/21/15 14:48 Prep Method: 5021
File ID: 16G48294 Analyst: JDS Method: RSK175
Workgroup (AAB#): WG536040 Matrix: Water Units: ug/L
Contract #: Cal ID: HP16 - 03-MAR-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Carbon Dioxide	2500	10000	2500	1	U
Methane	1.00	5.00	1.00	1	U
ethene	1.00	5.00	1.00	1	U
ethane	1.00	5.00	1.00	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4351633
25-AUG-2015 11:06

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15081073 Analyst: JDS Prep Method: 5021
Instrument ID: HP16 Matrix: Water Method: RSK175
Workgroup (AAB#): WG536040 Units: ug/L
QC Key: DOD4 Lot #: STD68250

Sample ID: WG536040-02 LCS File ID: 16G48295 Run Date: 08/21/2015 15:00
Sample ID: WG536040-03 LCS2 File ID: 16G48296 Run Date: 08/21/2015 15:11

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Methane	114	115	101	114	116	102	0.874	85 - 115	20	
ethene	200	204	102	200	208	104	1.76	85 - 115	20	
ethane	214	212	99.1	214	216	101	1.86	85 - 115	20	
Carbon Dioxide	31300	30300	96.9	31300	33100	106	8.78	10 - 200	40	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4351634
Report generated: 08/25/2015 11:06

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15081073 Analyst: JDS Prep Method: 5021
Instrument ID: HP16 Matrix: Water Method: RSK175
Workgroup (AAB#): WG535908 Units: ug/L
QC Key: DOD4 Lot #: STD68250

Sample ID: WG535908-02 LCS File ID: 16G48278 Run Date: 08/20/2015 16:17
Sample ID: WG535908-03 LCS2 File ID: 16G48279 Run Date: 08/20/2015 16:29

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Methane	114	109	95.6	114	111	97.1	1.54	85 - 115	20	
ethene	200	190	95.2	200	192	96.4	1.28	85 - 115	20	
ethane	214	198	92.4	214	200	93.6	1.24	85 - 115	20	
Carbon Dioxide	31300	30700	98.1	31300	28900	92.2	6.21	10 - 200	40	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4351634
Report generated: 08/25/2015 11:06

Calibration Table Report
Method: RSKEXT1.M
Title: RSK175 HP16 (SOP: OVL RSK01) 030315
Last Calibration: Fri Mar 06 11:52:33 2015
Curve:WG514119
Calibration Files

		0.67	1.67	33.3	66.7	133	333	533			
		16G46875.	16G46876.	16G46877.	16G46878.	16G46879.	16G46880.	16G46881.D			
	Compound								Avg	%RSD	Linear
T	methane		442542.3	201716.7	175611.6	187516.9	186065.3	188702.9	230359.0	45.3	0.999
T	ethene		322209.5	334124.6	295911.1	313430.8	319356.4	318282.1	317219.0	3.9	
T	acetylene		316851.9	343603.6	313507.6	354933.8	357109.5	344601.6	338435.0	5.6	
T	ethane	381661.4	339569.9	346403.4	312338.4	328333.4	335709.7	335266.3	339897.0	6.3	
T	propane	528069.3	481580.8	518227.1	469331.7	483950.9	500133.6	493547.4	496406.0	4.2	
T	n-butane	686564.3	616037.4	680754.9	613926.5	634552.4	659898.4	646188.9	648275.0	4.5	
	Signal #2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
T	carbon dioxide		3977.4	5604.2	5581.8	6054.5	6060.7	5810.7	5514.9	14.2	

Fri Mar 06 11:59:12 2015

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15081073 Run Date: 03/03/2015 Sample ID: WG514119-08
Instrument ID: HP16 Run Time: 17:10 Method: RSK175
File ID: 16G46884 Analyst: JDS QC Key: DOD4
ICal Workgroup: WG514119 Cal ID: HP16 - 03-MAR-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
carbon dioxide		62500	65100	ug/L	5740	4.10	15	
methane		228	236	ug/L	195000	3.50	15	
ethene		398	407	ug/L	324000	2.20	15	
ethane		427	423	ug/L	337000	0.900	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4351635
Report generated 08/25/2015 11:06

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15081073
Run Date: 08/20/2015
Sample ID: WG535907-01
Instrument ID: HP16
Run Time: 15:30
Method: RSK175
File ID: 16G48276
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG535908
Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
methane		228	210	ug/L	174000	7.62	15	
ethene		398	382	ug/L	304000	4.09	15	
ethane		427	403	ug/L	321000	5.71	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4351636
Report generated 08/25/2015 11:06

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15081073 Run Date: 08/20/2015 Sample ID: WG535907-02
Instrument ID: HP16 Run Time: 18:01 Method: RSK175
File ID: 16G48287 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG535908 Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
methane		228	221	ug/L	183000	3.04	15	
ethene		398	388	ug/L	309000	2.56	15	
ethane		427	408	ug/L	325000	4.32	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4351636
Report generated 08/25/2015 11:06

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15081073
Run Date: 08/20/2015
Sample ID: WG535907-03
Instrument ID: HP16
Run Time: 18:58
Method: RSK175
File ID: 16G48292
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG535908
Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
methane		228	221	ug/L	183000	2.91	15	
ethene		398	393	ug/L	313000	1.23	15	
ethane		427	416	ug/L	331000	2.55	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4351636
Report generated 08/25/2015 11:06

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15081073
Run Date: 08/21/2015
Sample ID: WG536037-01
Instrument ID: HP16
Run Time: 12:03
Method: RSK175
File ID: 16G48293
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG536040
Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62500	66100	ug/L	5830	5.78	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4351636
Report generated 08/25/2015 11:06

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15081073
Run Date: 08/21/2015
Sample ID: WG536037-02
Instrument ID: HP16
Run Time: 16:43
Method: RSK175
File ID: 16G48304
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG536040
Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62500	62500	ug/L	5520	0.0635	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4351636
Report generated 08/25/2015 11:06

2.1.2.3 Sample Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\082015\16G48290.D\FID1A.CH Vial: 15
Signal #2 : C:\MSDchem\1\DATA\082015\16G48290.D\TCD2B.CH
Acq On : 20 Aug 2015 18:36 Operator: JDS
Sample : L15081073-01 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 20 18:42:20 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	1584945	6.333	umol/
2) T	ethene	1.06	45173	0.142	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.39	10776	0.032	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	5.34	8338	0.013	umol/
8) T	carbon dioxide	0.20	380179999	68937.180	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G48290.D RSKEXT1.M Thu Aug 20 18:42:21 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\082015\16G48290.D\FID1A.CH Vial: 15
Signal #2 : C:\MSDchem\1\DATA\082015\16G48290.D\TCD2B.CH
Acq On : 20 Aug 2015 18:36 Operator: JDS
Sample : L15081073-01 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 20 18:42 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

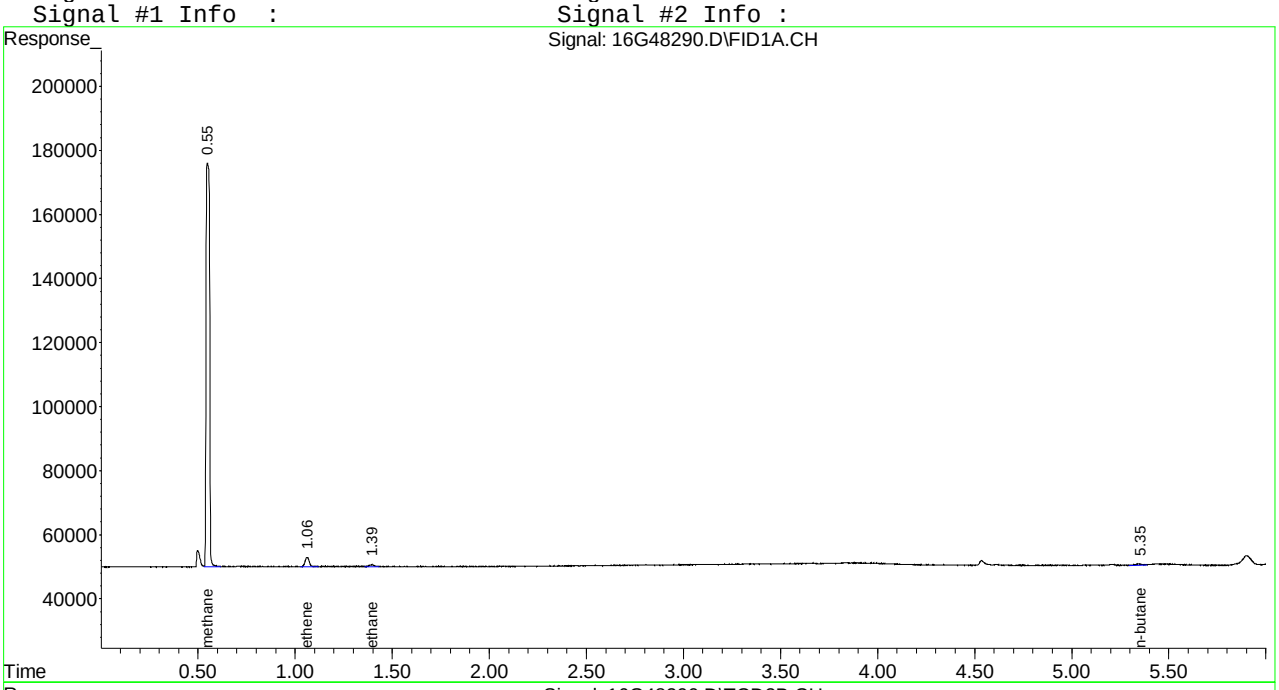

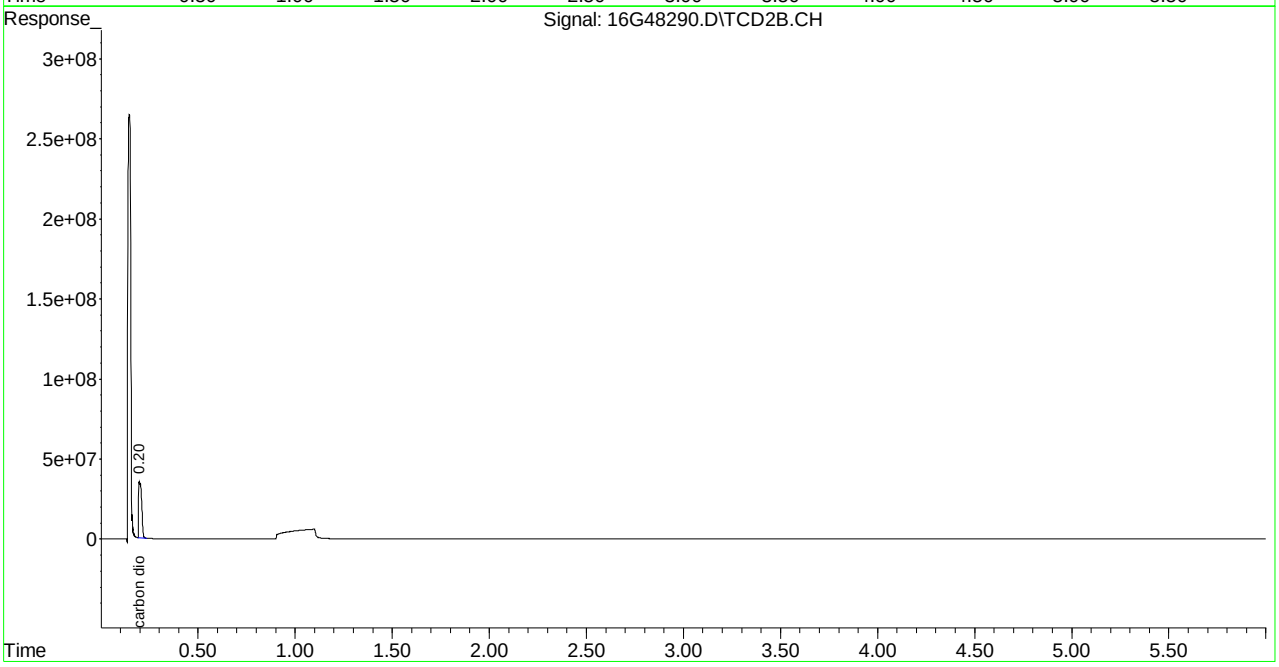

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\082115\16G48302.D\FID1A.CH Vial: 10
Signal #2 : C:\MSDCHEM\1\DATA\082115\16G48302.D\TCD2B.CH
Acq On    : 21 Aug 2015  16:20                        Operator: JDS
Sample    : L15081073-01 B D1 5X RSK175               Inst    : HP16
Misc      : 1,5                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Aug 25 10:01:53 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	363820	N.D.	umol/
2) T	ethene	1.06	8234	0.026	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	48798561	8848.533	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

16G48302.D RSKEXT1.M Tue Aug 25 10:01:53 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\082115\16G48302.D\FID1A.CH Vial: 10
Signal #2 : C:\MSDCHEM\1\DATA\082115\16G48302.D\TCD2B.CH
Acq On : 21 Aug 2015 16:20 Operator: JDS
Sample : L15081073-01 B D1 5X RSK175 Inst : HP16
Misc : 1,5 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 25 10:01 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

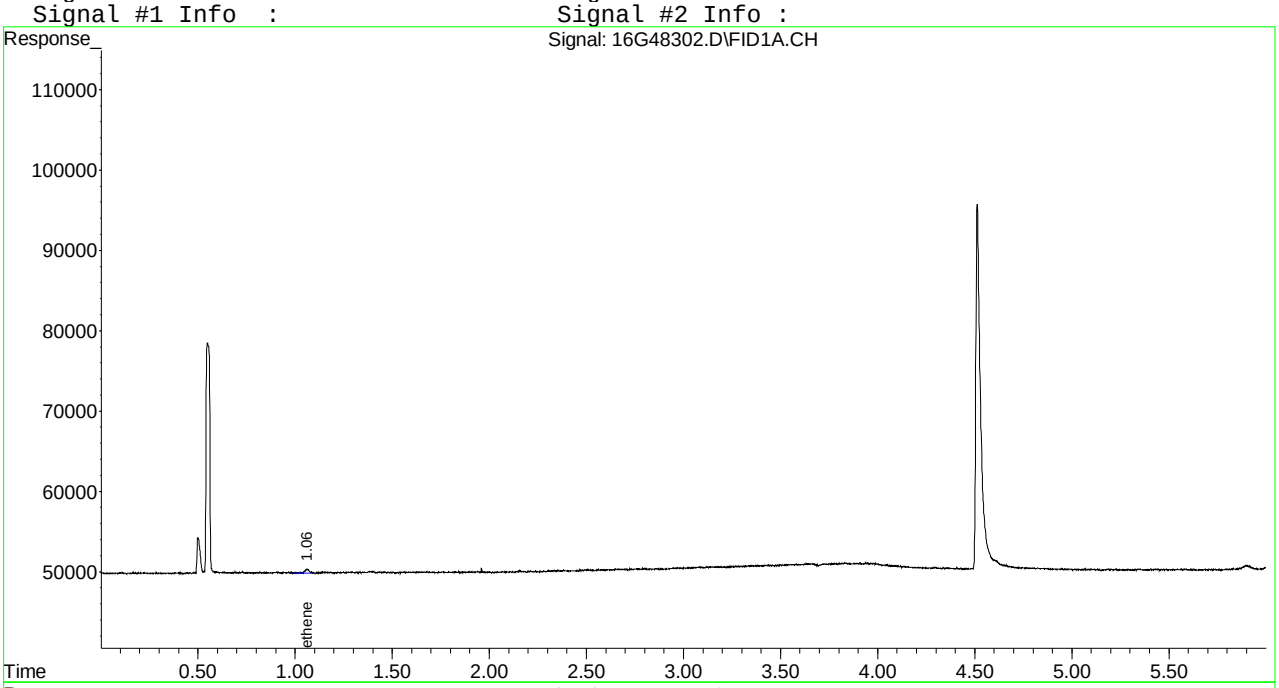

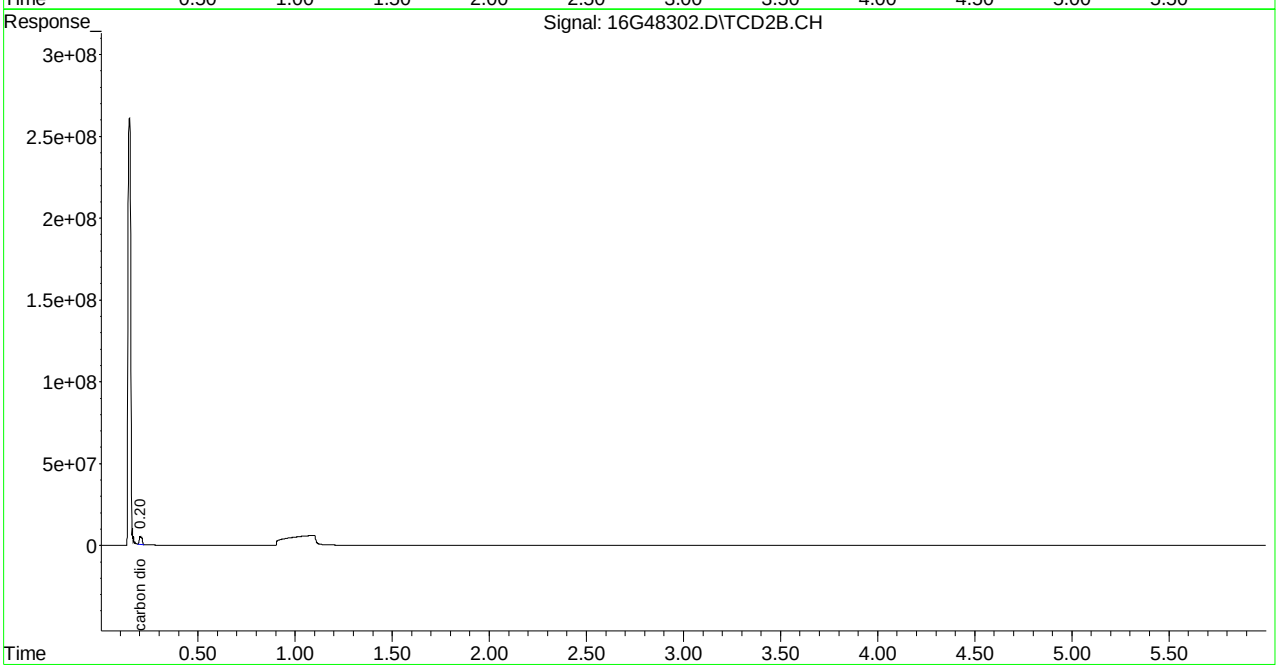

16G48302.D RSKEXT1.M Tue Aug 25 10:01:53 2015 Page 2

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDchem\1\DATA\082015\16G48291.D\FID1A.CH Vial: 16
Signal #2 : C:\MSDchem\1\DATA\082015\16G48291.D\TCD2B.CH
Acq On    : 20 Aug 2015  18:47                        Operator: JDS
Sample    : L15081073-03 A RSK175                     Inst    : HP16
Misc      : 1,1                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Aug 20 18:53:39 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	2413660	10.800	umol/
2) T	ethene	1.06	21719	0.068	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.40	19740	0.058	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	635521481	115237.673	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

16G48291.D RSKEXT1.M Thu Aug 20 18:53:40 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\082015\16G48291.D\FID1A.CH Vial: 16
Signal #2 : C:\MSDchem\1\DATA\082015\16G48291.D\TCD2B.CH
Acq On : 20 Aug 2015 18:47 Operator: JDS
Sample : L15081073-03 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 20 18:53 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

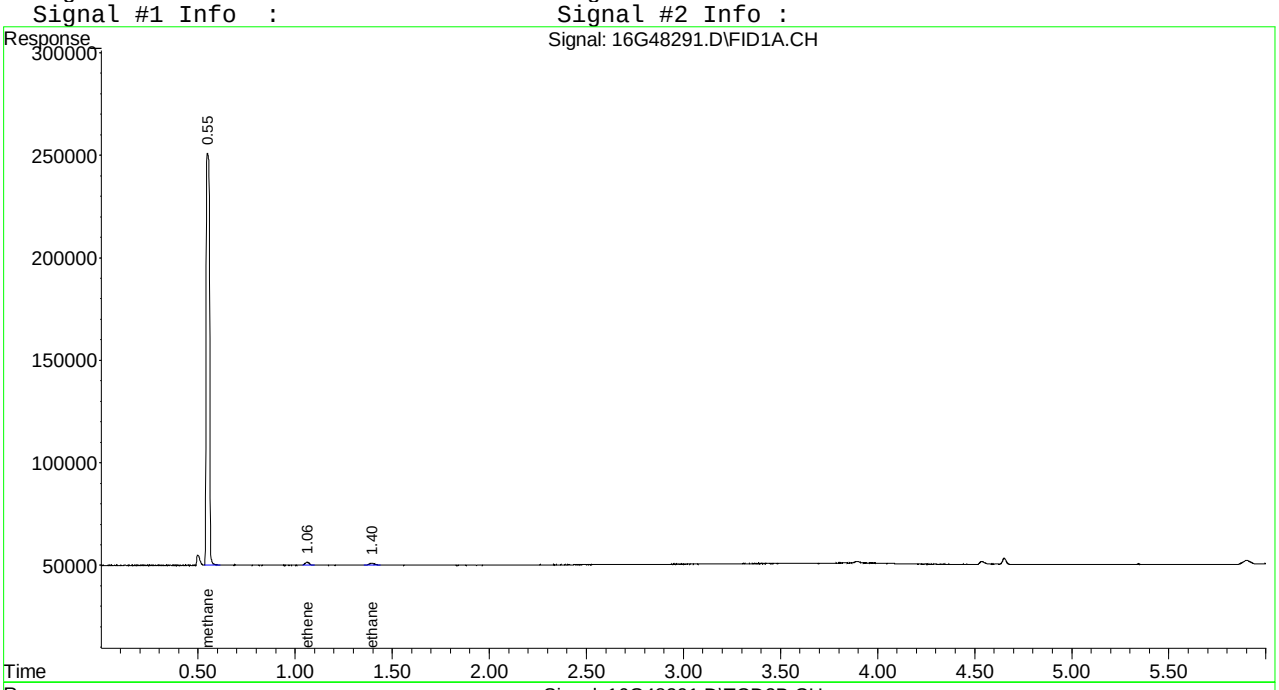

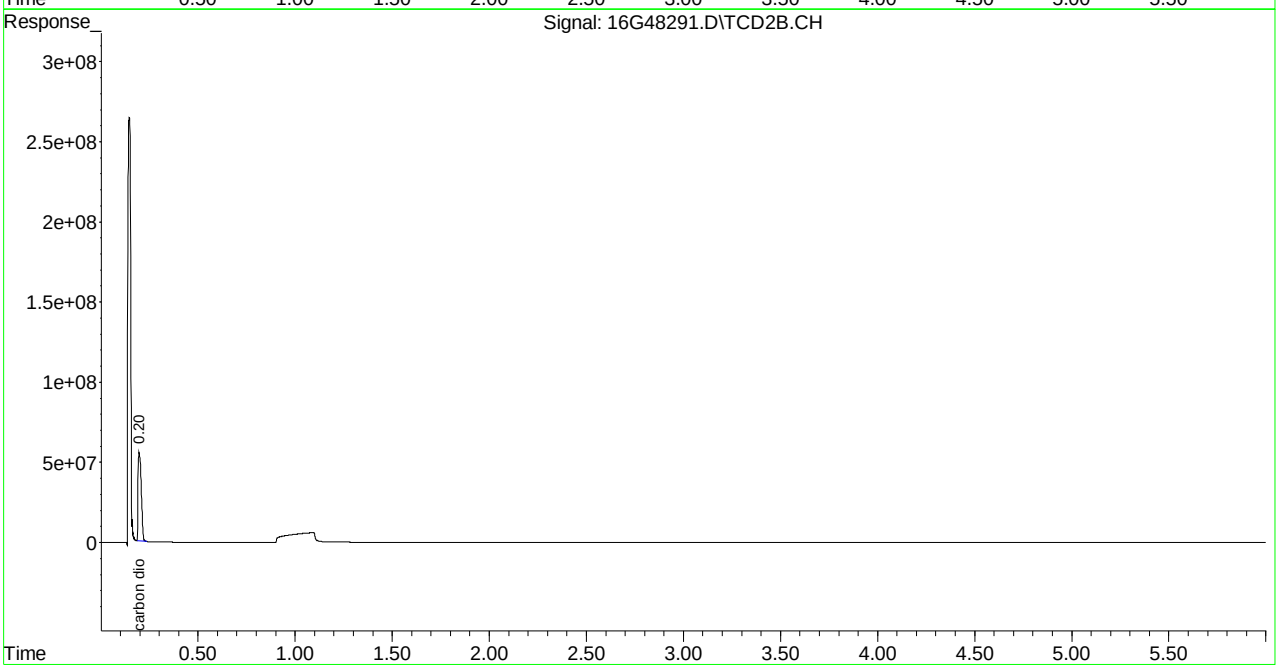

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\082115\16G48303.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\082115\16G48303.D\TCD2B.CH
Acq On    : 21 Aug 2015  16:32                        Operator: JDS
Sample    : L15081073-03 B D1 5X RSK175               Inst    : HP16
Misc      : 1,5                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Aug 25 10:02:02 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	450253	0.217	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	3.81	1309	0.003	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	77058794	13972.897	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

16G48303.D RSKEXT1.M Tue Aug 25 10:02:03 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\082115\16G48303.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\082115\16G48303.D\TCD2B.CH
Acq On : 21 Aug 2015 16:32 Operator: JDS
Sample : L15081073-03 B D1 5X RSK175 Inst : HP16
Misc : 1,5 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 25 10:02 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

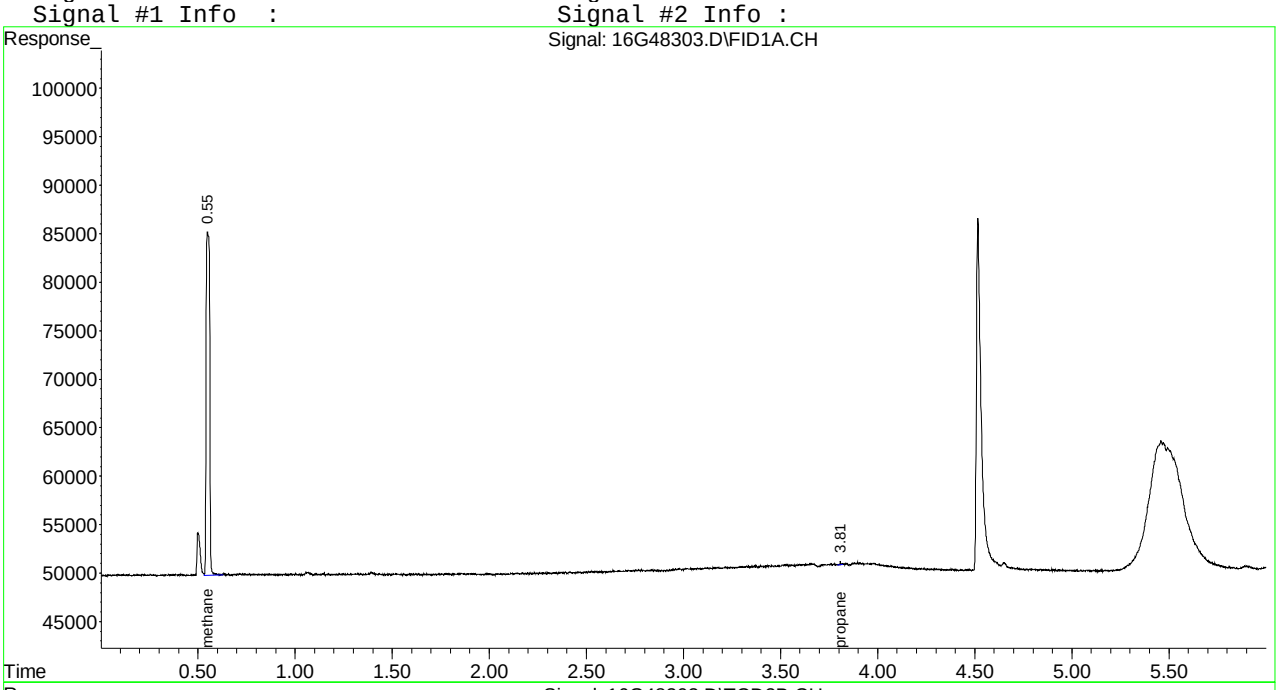

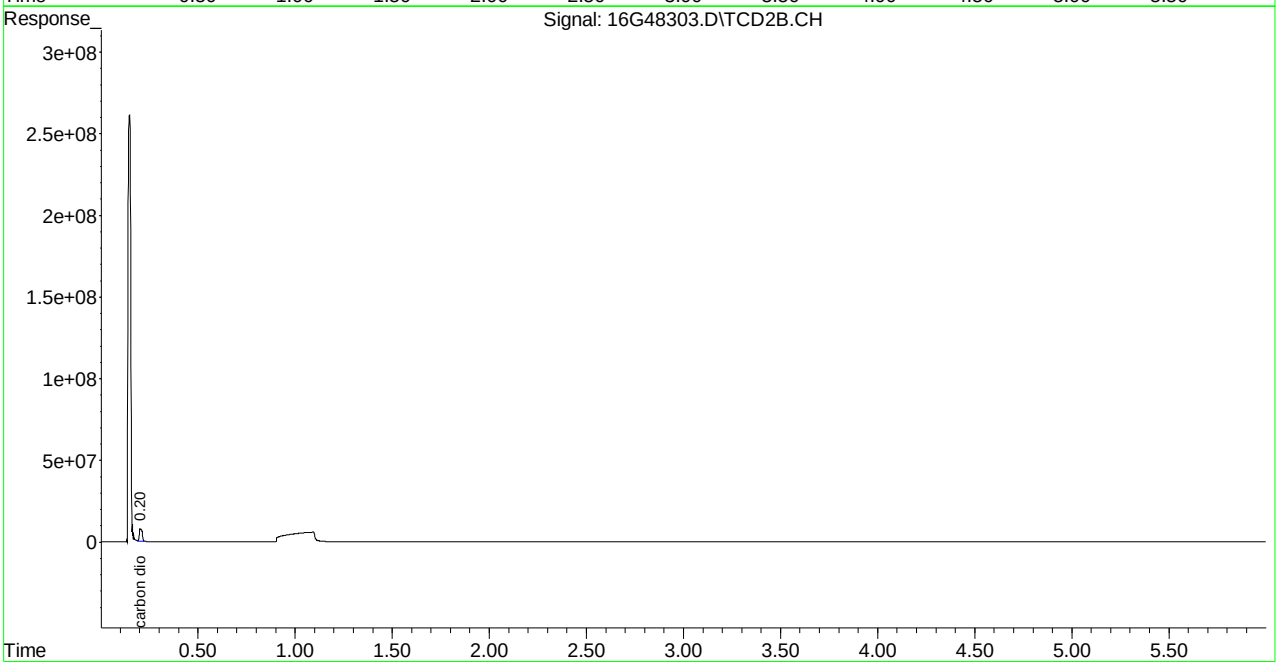

Evaluate Continuing Calibration Report

```
Signal #1 : C:\MSDCHEM\1\DATA\082115\16G48303.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\082115\16G48303.D\TCD2B.CH
Acq On    : 21 Aug 2015  16:43                      Operator: JDS
Sample    : WG536037-02 133umol/mol CCV RSK175      Inst    : HP16
Misc      : 1,1 STD67274                            Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%
```

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	127.402	4.2	96	0.00
2	T	ethene	133.000	128.788	3.2	98	0.00
3	T	acetylene	133.000	126.100	5.2	90	0.00
4	T	ethane	133.000	126.639	4.8	99	0.00
5	T	propane	133.000	129.023	3.0	100	0.00
6	T	n-butane	133.000	129.790	2.4	100	0.00
		Signal #2					
8	T	carbon dioxide	13300.000	13308.446	-0.1	91	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

16G48303.D RSKEXT1.M Mon Aug 24 15:33:08 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\082115\16G48303.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\082115\16G48303.D\TCD2B.CH
Acq On    : 21 Aug 2015  16:43                      Operator: JDS
Sample    : WG536037-02 133umol/mol CCV RSK175      Inst    : HP16
Misc      : 1,1 STD67274                            Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

```
---------------------------------------------------------------------------
 (#) = Out of Range            SPCC's out = 0  CCC's out = 0
 16G48303.D  RSKEXT1.M      Mon Aug 24 15:33:08 2015                    Page 2
```

2.1.2.4 Standards Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46875.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46875.D\TCD2B.CH
Acq On : 03 Mar 2015 14:17 Operator: JDS
Sample : WG514119-01 0.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:54:08 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	566979	0.846	umol/
2) T	ethene	1.06	233416	0.736	umol/
3) T	acetylene	1.14	213812	0.632	umol/
4) T	ethane	1.39	254568	0.749	umol/
5) T	propane	3.83	352222	0.710	umol/
6) T	n-butane	5.34	457938	0.706	umol/
8) T	carbon dioxide	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46875.D RSKEXT1.M Fri Mar 06 11:56:43 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46875.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46875.D\TCD2B.CH
Acq On : 03 Mar 2015 14:17 Operator: JDS
Sample : WG514119-01 0.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:54 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

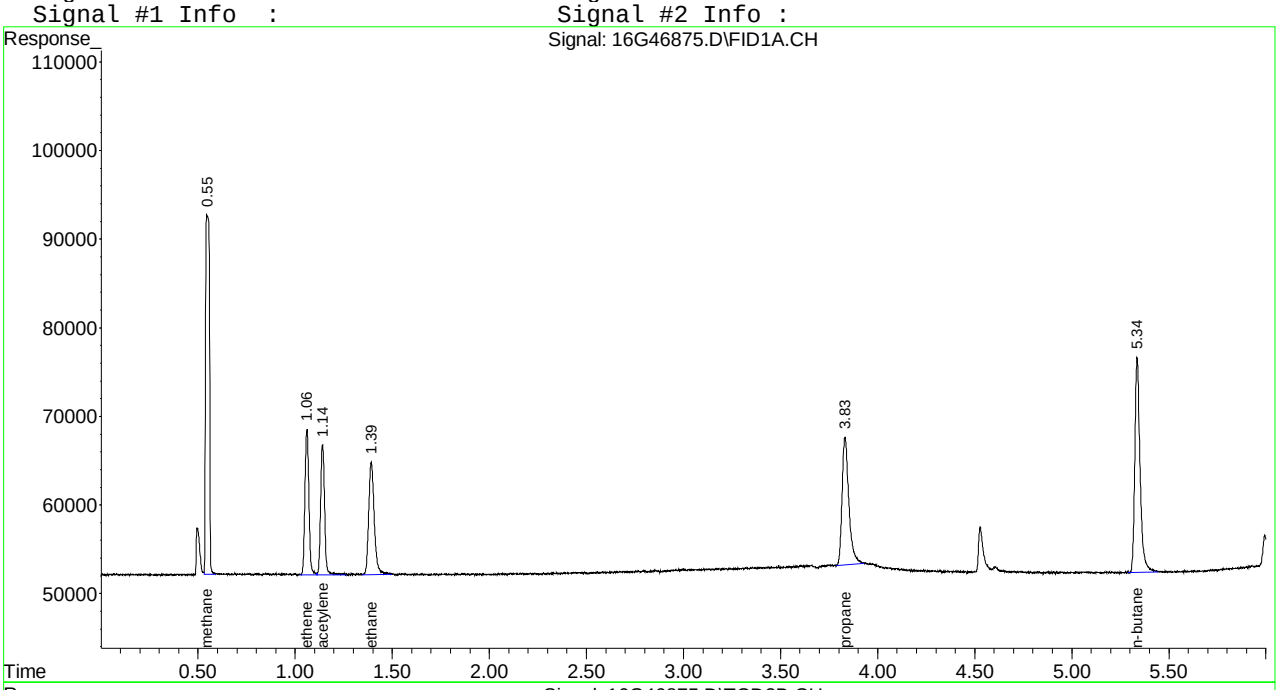

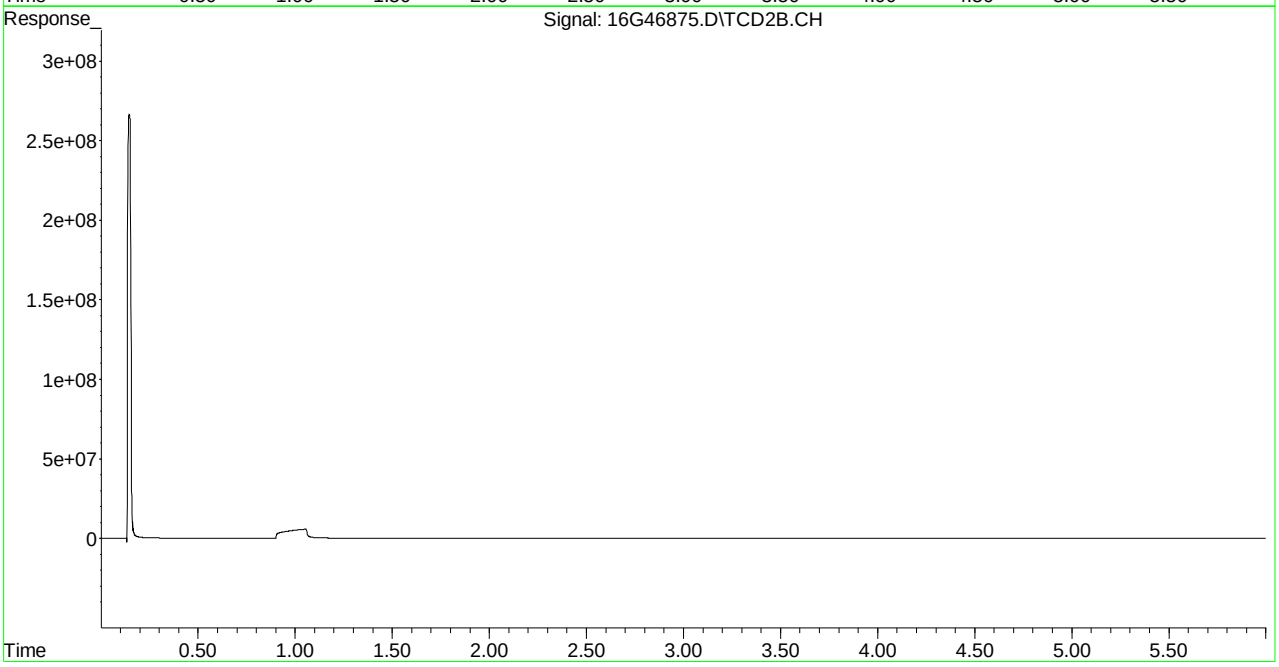

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46875.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46875.D\TCD2B.CH
Acq On : 03 Mar 2015 14:17 Operator: JDS
Sample : WG514119-01 0.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	-1.000	0.846	0.0	0	0.00
2	T	ethene	-1.000	0.736	0.0	100	0.00
3	T	acetylene	-1.000	0.632	0.0	100	0.00
4	T	ethane	0.667	0.749	-12.3	100	0.00
5	T	propane	0.667	0.710	-6.4	100	0.00
6	T	n-butane	0.667	0.706	-5.8	100	0.00

Signal #2

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46875.D RSKEXT1.M Fri Mar 06 11:55:53 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46875.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46875.D\TCD2B.CH
Acq On    : 03 Mar 2015  14:17                        Operator: JDS
Sample    : WG514119-01 0.67umol/mol STD RSK175       Inst    : HP16
Misc      : 1,1 STD67276                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%
```

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
	Signal #2					
8 T	carbon dioxide	-1.000	0.000	0.0	0	-0.21

```
---------------------------------------------------------------------------
(#) = Out of Range            SPCC's out = 0  CCC's out = 0
16G46875.D  RSKEXT1.M      Fri Mar 06 11:55:53 2015                    Page 2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46876.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46876.D\TCD2B.CH
Acq On : 03 Mar 2015 14:30 Operator: JDS
Sample : WG514119-02 1.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:08 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	739046	1.773	umol/
2) T	ethene	1.06	538090	1.696	umol/
3) T	acetylene	1.14	529143	1.564	umol/
4) T	ethane	1.39	567082	1.668	umol/
5) T	propane	3.83	804240	1.620	umol/
6) T	n-butane	5.34	1028782	1.587	umol/
8) T	carbon dioxide	0.20	7954783	1442.423	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46876.D RSKEXT1.M Fri Mar 06 11:57:08 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46876.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46876.D\TCD2B.CH
Acq On : 03 Mar 2015 14:30 Operator: JDS
Sample : WG514119-02 1.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

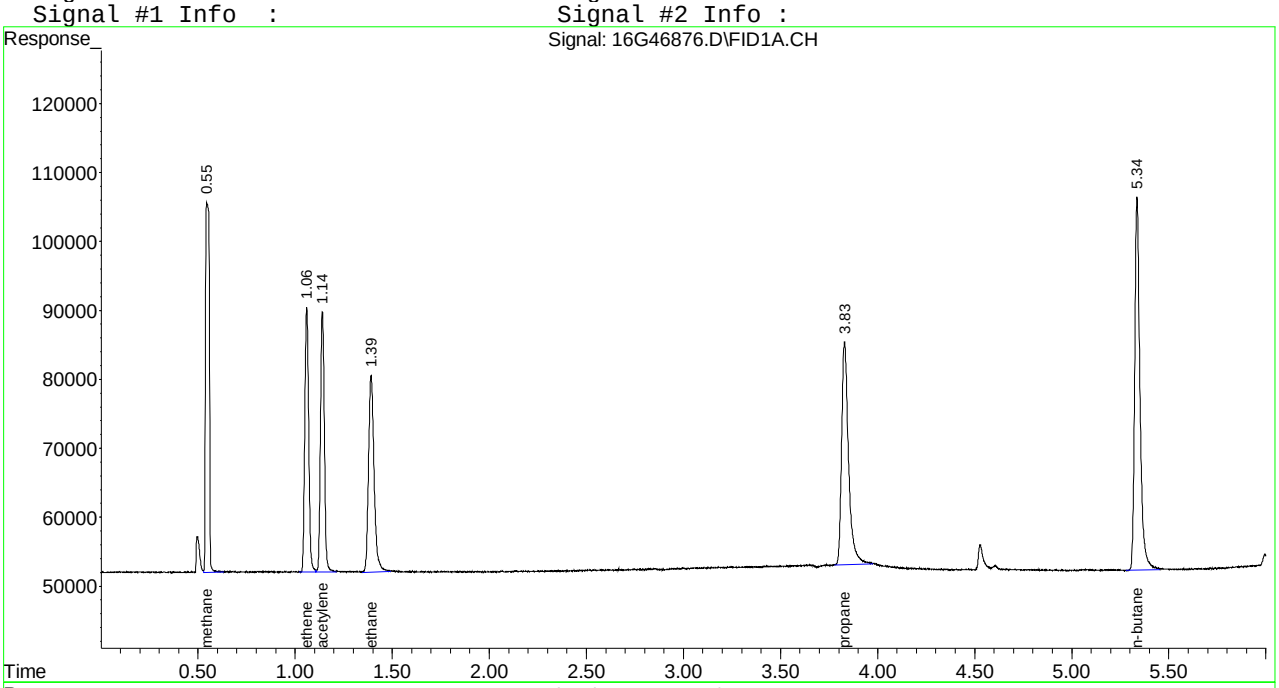

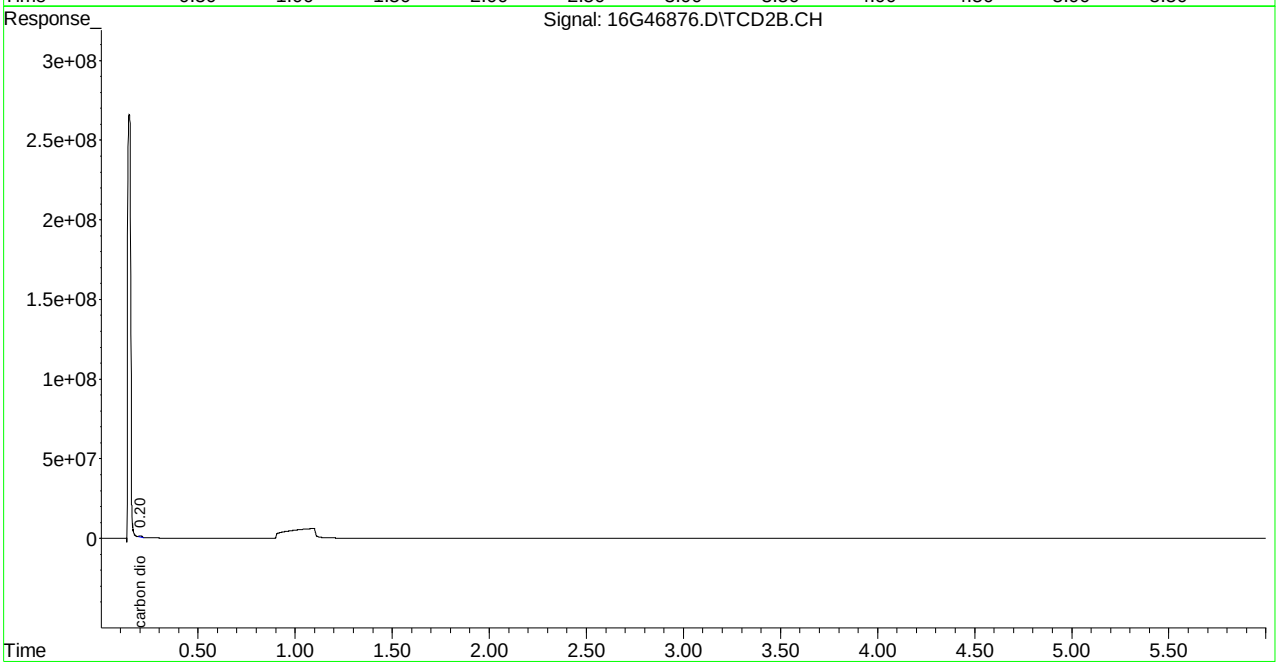

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46876.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46876.D\TCD2B.CH
Acq On : 03 Mar 2015 14:30 Operator: JDS
Sample : WG514119-02 1.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	1.670	1.773	-6.2	100	0.00
2	T	ethene	1.670	1.696	-1.6	100	0.00
3	T	acetylene	1.670	1.564	6.3	100	0.00
4	T	ethane	1.670	1.668	0.1	100	0.00
5	T	propane	1.670	1.620	3.0	100	0.00
6	T	n-butane	1.670	1.587	5.0	100	0.00

Signal #2

8	T	carbon dioxide	2000.000	1442.423	27.9#	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46876.D RSKEXT1.M Fri Mar 06 11:52:49 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46876.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46876.D\TCD2B.CH
Acq On    : 03 Mar 2015  14:30                        Operator: JDS
Sample    : WG514119-02 1.67umol/mol STD RSK175       Inst    : HP16
Misc      : 1,1 STD67276                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46877.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46877.D\TCD2B.CH
Acq On : 03 Mar 2015 14:42 Operator: JDS
Sample : WG514119-03 33.3umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:10 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	6717167	33.998	umol/
2) T	ethene	1.06	11126351	35.075	umol/
3) T	acetylene	1.14	11442001	33.809	umol/
4) T	ethane	1.39	11535235	33.937	umol/
5) T	propane	3.83	17256964	34.764	umol/
6) T	n-butane	5.34	22669140	34.968	umol/
8) T	carbon dioxide	0.20	18661832	3383.908	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46877.D RSKEXT1.M Fri Mar 06 11:57:10 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46877.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46877.D\TCD2B.CH
Acq On : 03 Mar 2015 14:42 Operator: JDS
Sample : WG514119-03 33.3umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

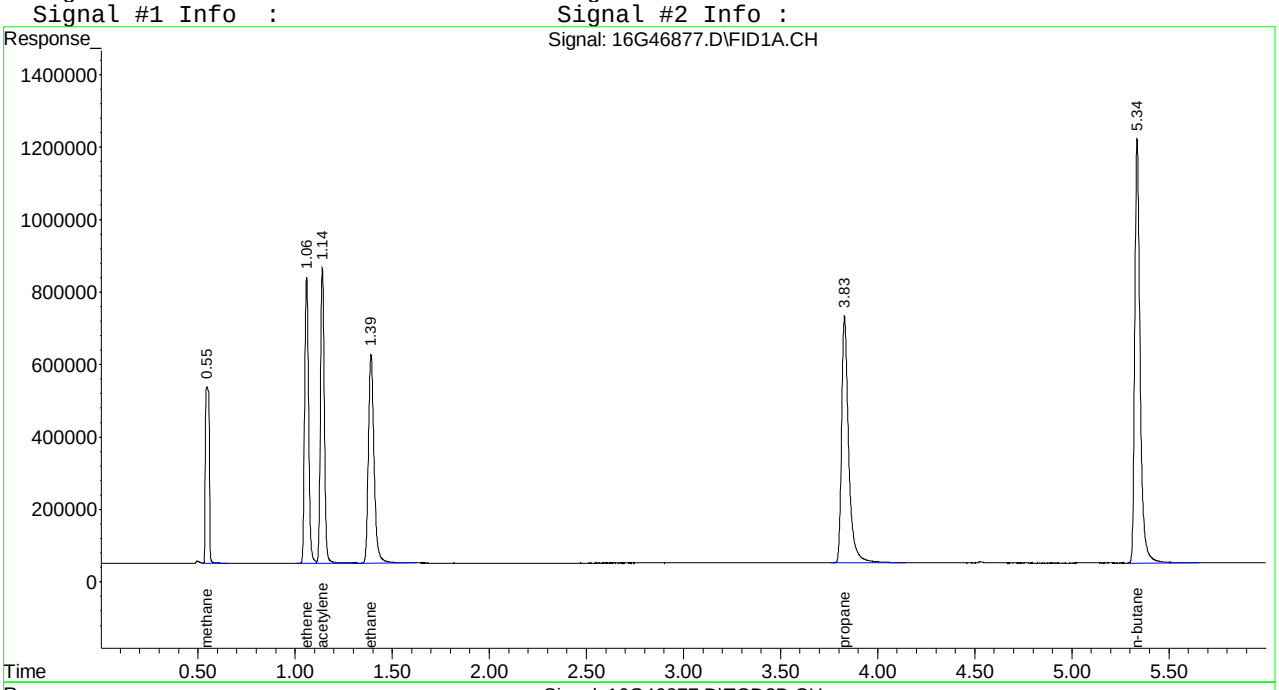

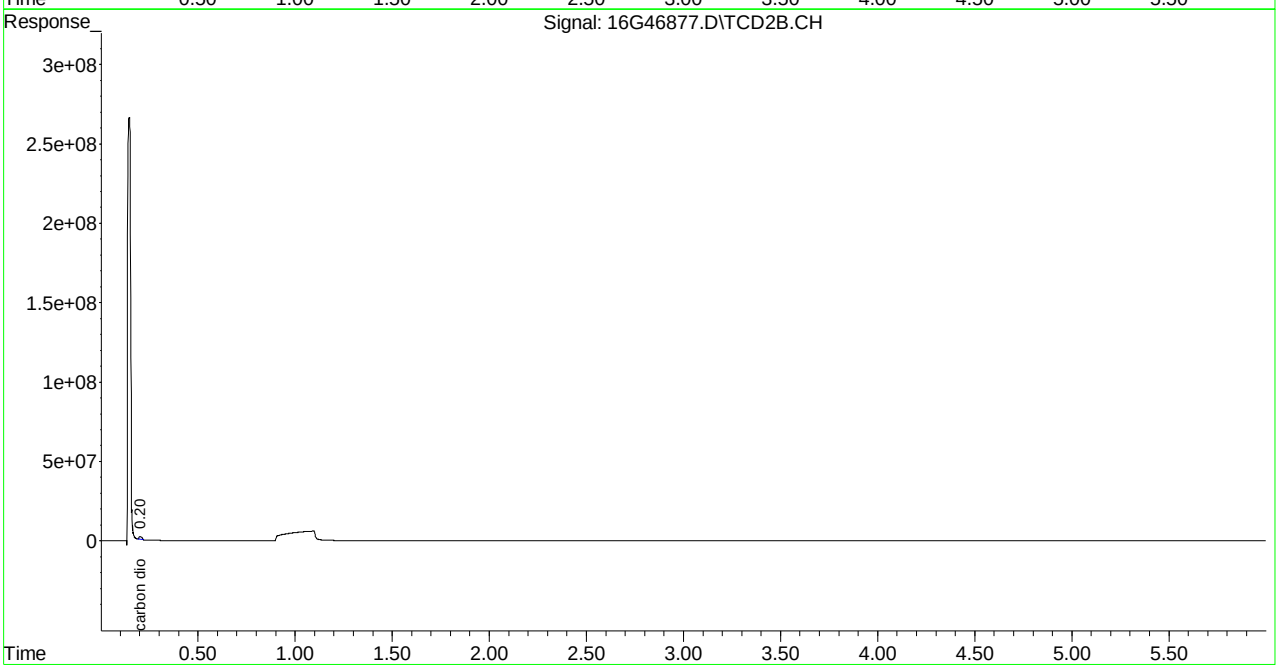

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46878.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46878.D\TCD2B.CH
Acq On : 03 Mar 2015 14:53 Operator: JDS
Sample : WG514119-04 66.7umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:11 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	11713293	60.930	umol/
2) T	ethene	1.06	19737271	62.220	umol/
3) T	acetylene	1.14	20910957	61.787	umol/
4) T	ethane	1.39	20832969	61.292	umol/
5) T	propane	3.83	31304425	63.062	umol/
6) T	n-butane	5.33	40948894	63.166	umol/
8) T	carbon dioxide	0.20	37230879	6750.991	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46878.D RSKEXT1.M Fri Mar 06 11:57:11 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46878.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46878.D\TCD2B.CH
Acq On : 03 Mar 2015 14:53 Operator: JDS
Sample : WG514119-04 66.7umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

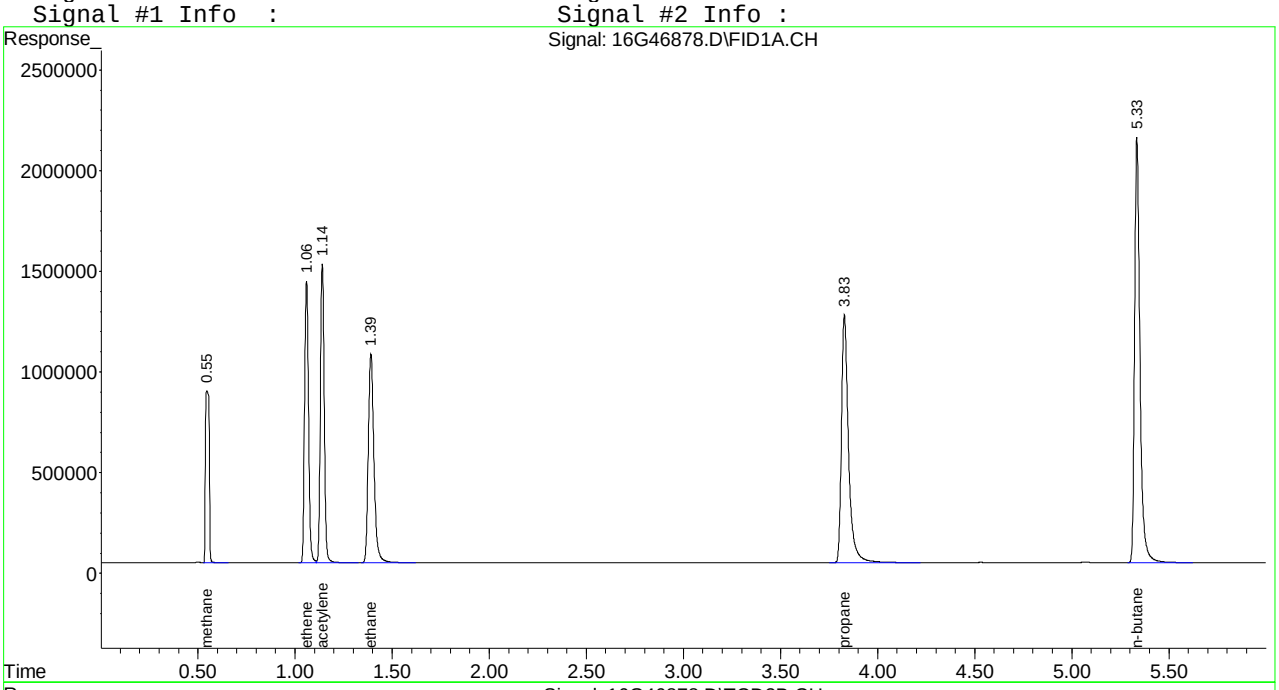

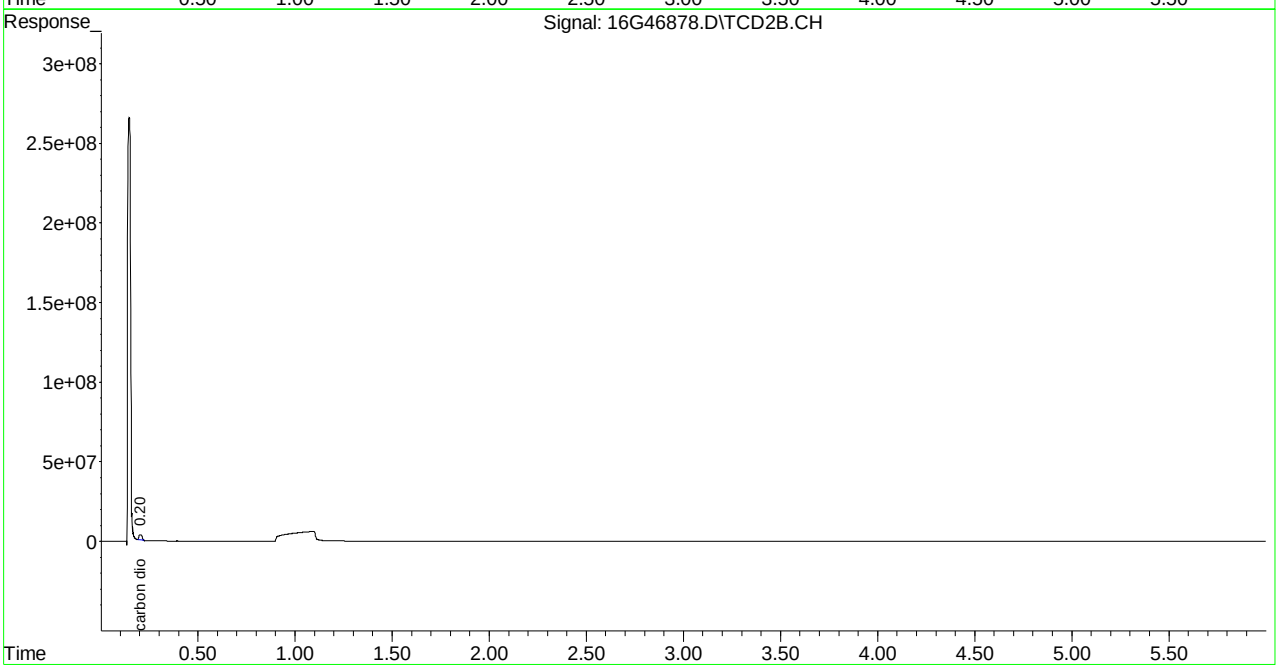

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46879.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46879.D\TCD2B.CH
Acq On : 03 Mar 2015 15:05 Operator: JDS
Sample : WG514119-05 133umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:11 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc Units
	Target Compounds			
1) T	methane	0.55	24939741	132.227 umol/
2) T	ethene	1.06	41686300	131.412 umol/
3) T	acetylene	1.14	47206199	139.484 umol/
4) T	ethane	1.39	43668346	128.475 umol/
5) T	propane	3.83	64365472	129.663 umol/
6) T	n-butane	5.33	84395468	130.185 umol/
8) T	carbon dioxide	0.20	80524699	14601.362 umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46879.D RSKEXT1.M Fri Mar 06 11:57:12 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46879.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46879.D\TCD2B.CH
Acq On : 03 Mar 2015 15:05 Operator: JDS
Sample : WG514119-05 133umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

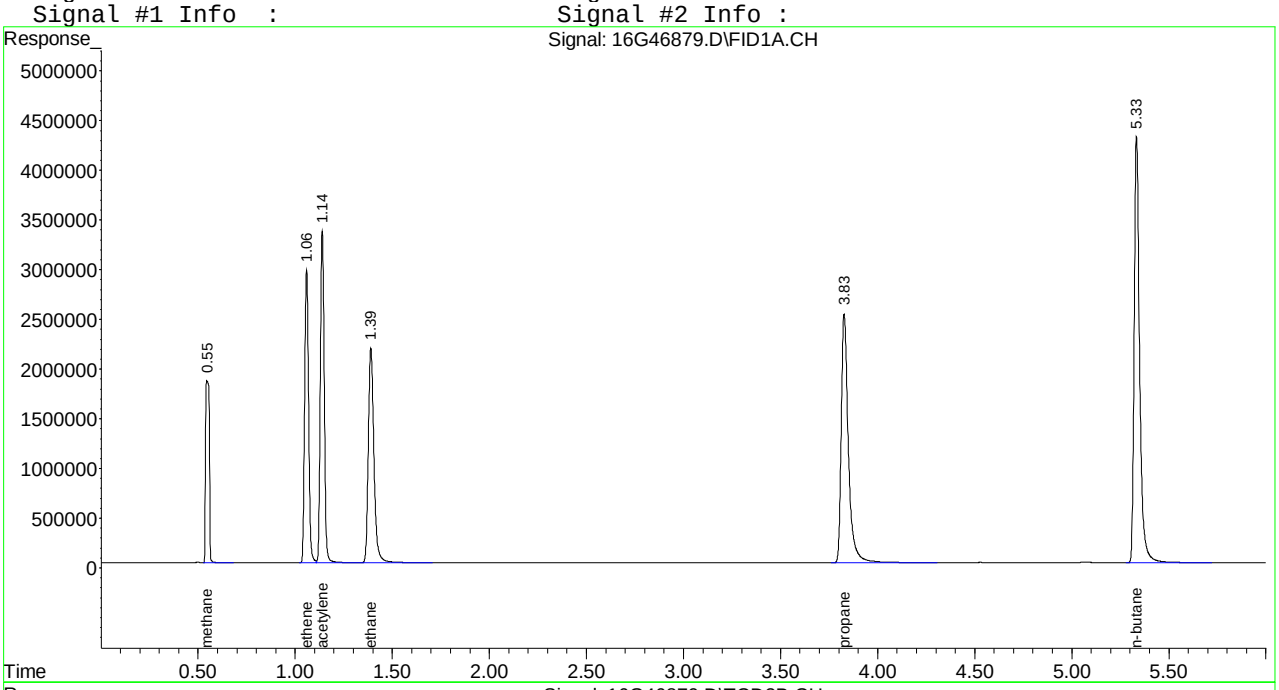

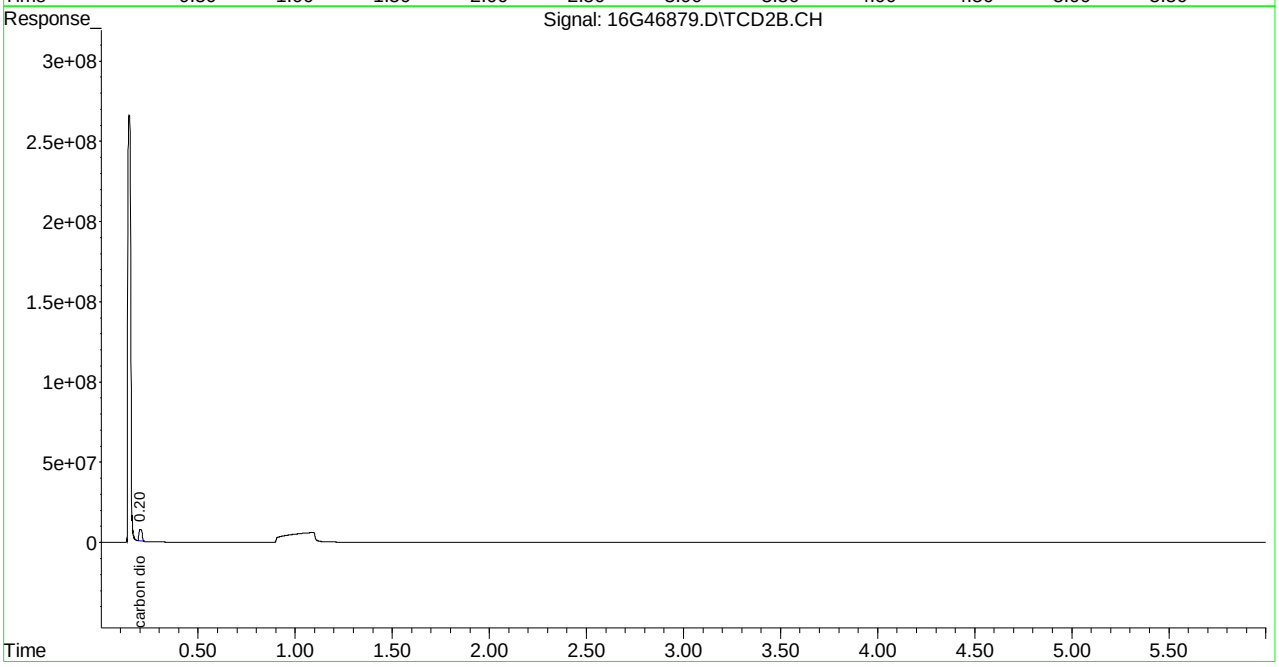

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46880.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46880.D\TCD2B.CH
Acq On : 03 Mar 2015 15:17 Operator: JDS
Sample : WG514119-06 333umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:12 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	61959752	331.783	umol/
2) T	ethene	1.06	106345688	335.244	umol/
3) T	acetylene	1.14	118917475	351.375	umol/
4) T	ethane	1.39	111791323	328.897	umol/
5) T	propane	3.83	166544491	335.501	umol/
6) T	n-butane	5.33	219746160	338.971	umol/
8) T	carbon dioxide	0.20	201820251	36595.610	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46880.D RSKEXT1.M Fri Mar 06 11:57:12 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46880.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46880.D\TCD2B.CH
Acq On : 03 Mar 2015 15:17 Operator: JDS
Sample : WG514119-06 333umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

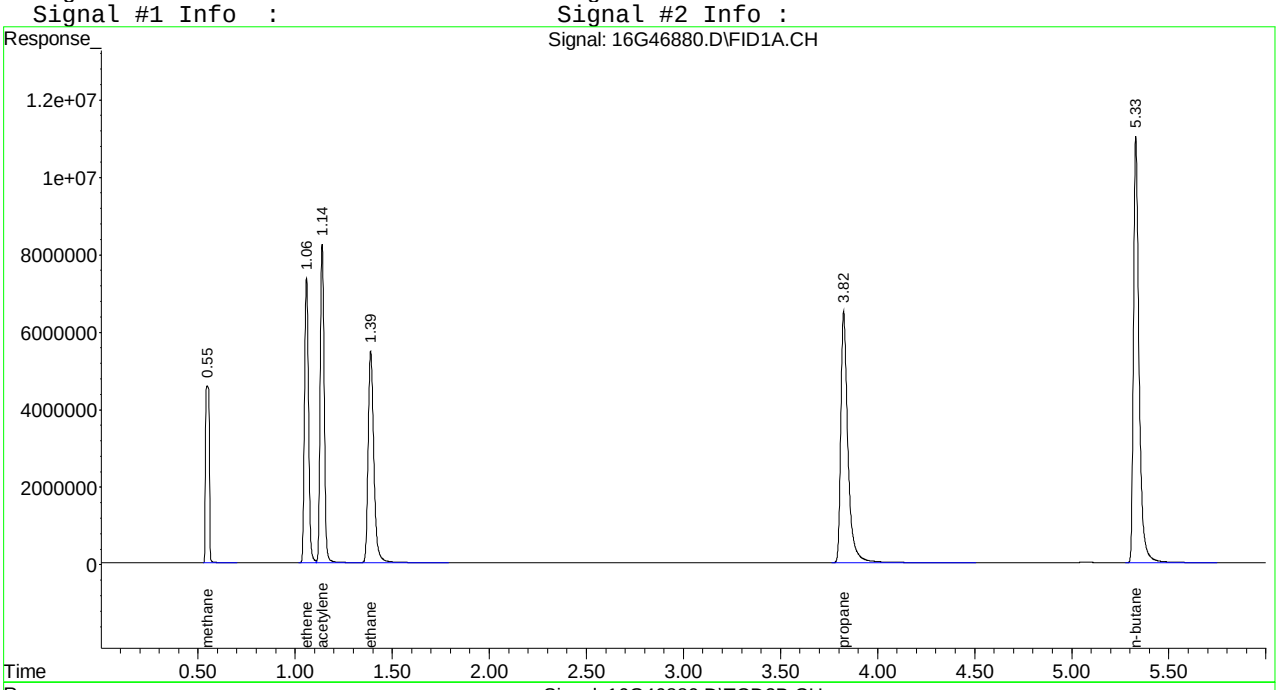

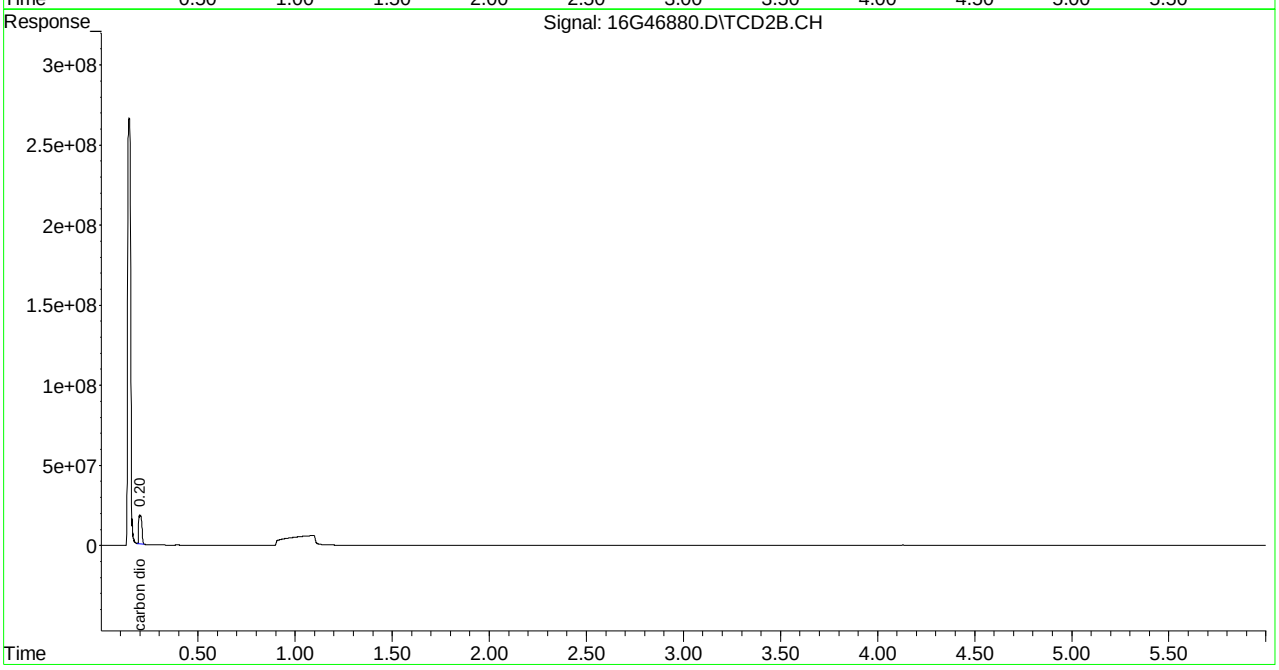

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46881.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46881.D\TCD2B.CH
Acq On    : 03 Mar 2015  15:29                        Operator: JDS
Sample    : WG514119-07 533umol/mol STD RSK175        Inst    : HP16
Misc      : 1,1 STD67274                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:13 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc Units
	Target Compounds			
1) T	methane	0.55	100578633	539.958 umol/
2) T	ethene	1.06	169644372	534.786 umol/
3) T	acetylene	1.14	183672662	542.712 umol/
4) T	ethane	1.39	178696917	525.738 umol/
5) T	propane	3.82	263060772	529.931 umol/
6) T	n-butane	5.33	344418707	531.285 umol/
8) T	carbon dioxide	0.20	309711021	56159.199 umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

16G46881.D RSKEXT1.M Fri Mar 06 11:57:13 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46881.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46881.D\TCD2B.CH
Acq On : 03 Mar 2015 15:29 Operator: JDS
Sample : WG514119-07 533umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

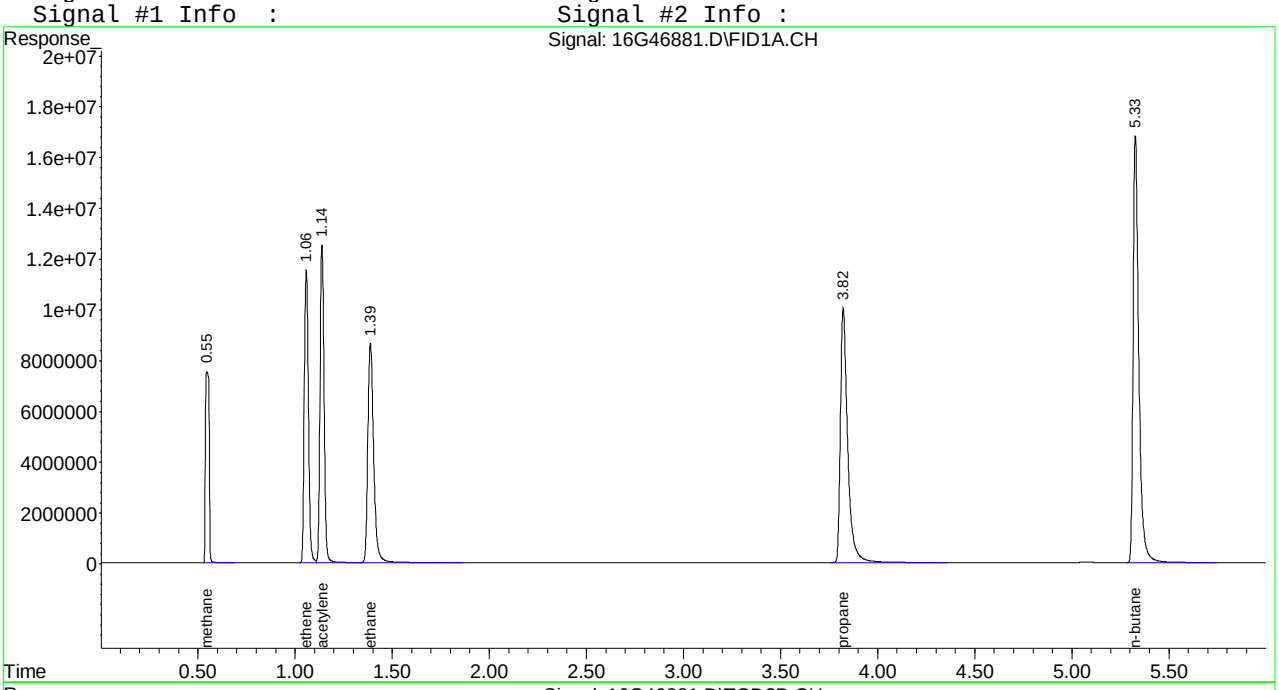

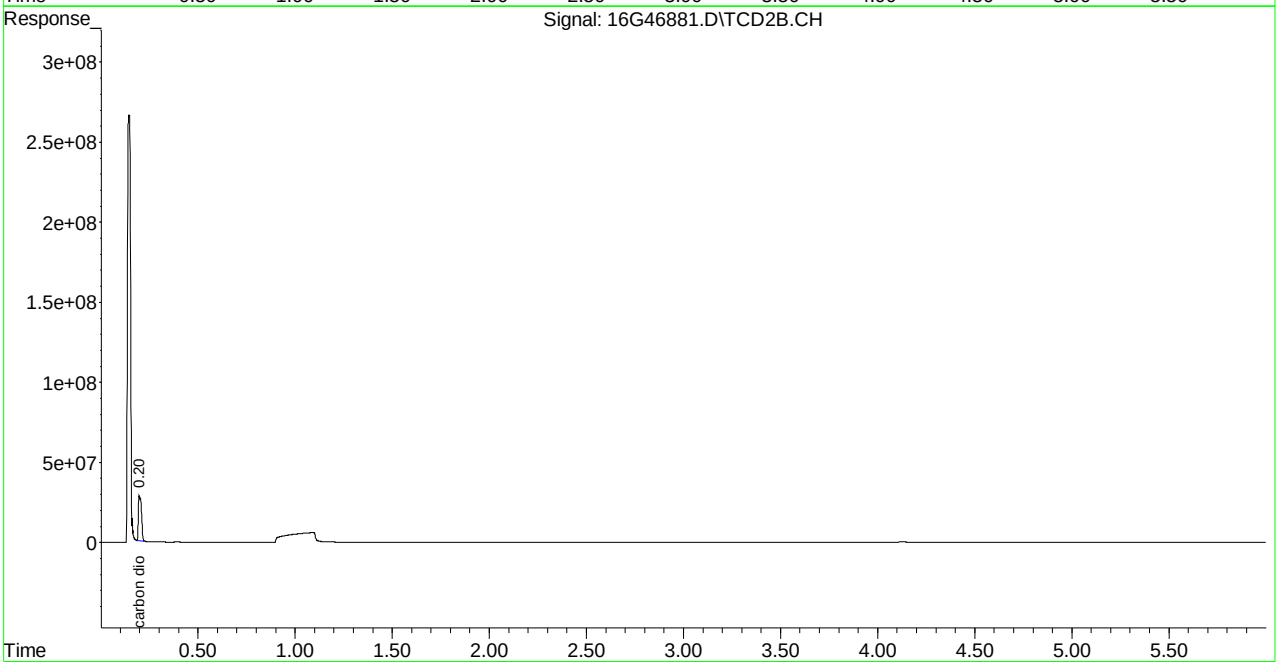

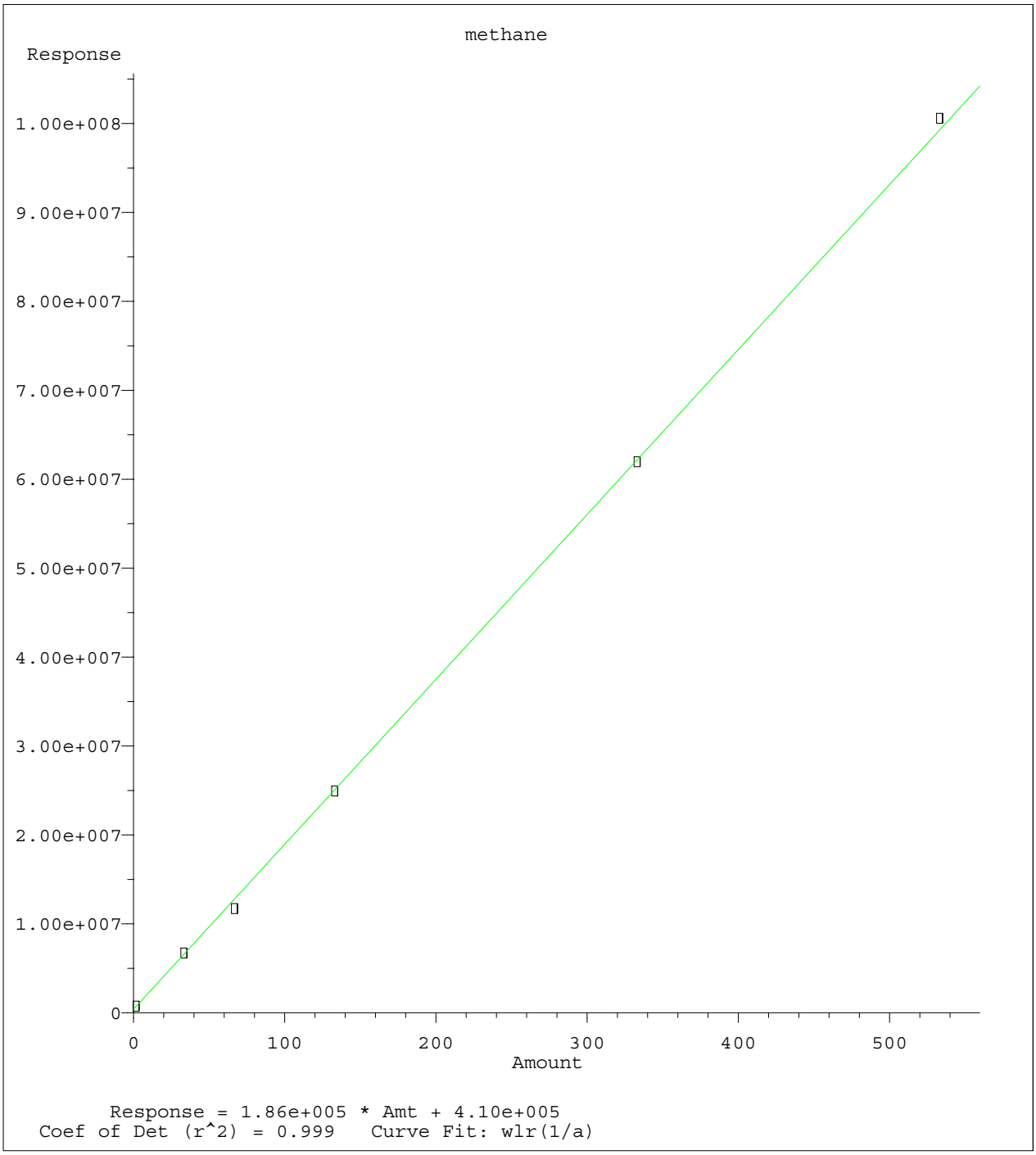

Method Name: C:\MSDCHEM\1\METHODS\RSKEXT1.M
Calibration Table Last Updated: Fri Mar 06 11:52:33 2015

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46884.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46884.D\TCD2B.CH
Acq On : 03 Mar 2015 17:10 Operator: JDS
Sample : WG514119-08 133umol/mol ALT SRC STD RSK1 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:58:49 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	25936090	137.598	umol/
2) T	ethene	1.06	43111404	135.904	umol/
3) T	acetylene	1.14	47098795	139.167	umol/
4) T	ethane	1.39	44778091	131.740	umol/
5) T	propane	3.83	64822008	130.583	umol/
6) T	n-butane	5.33	82856392	127.811	umol/
8) T	carbon dioxide	0.20	76359751	13846.141	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46884.D RSKEXT1.M Fri Mar 06 11:58:49 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46884.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46884.D\TCD2B.CH
Acq On : 03 Mar 2015 17:10 Operator: JDS
Sample : WG514119-08 133umol/mol ALT SRC STD RSK1 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:58 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

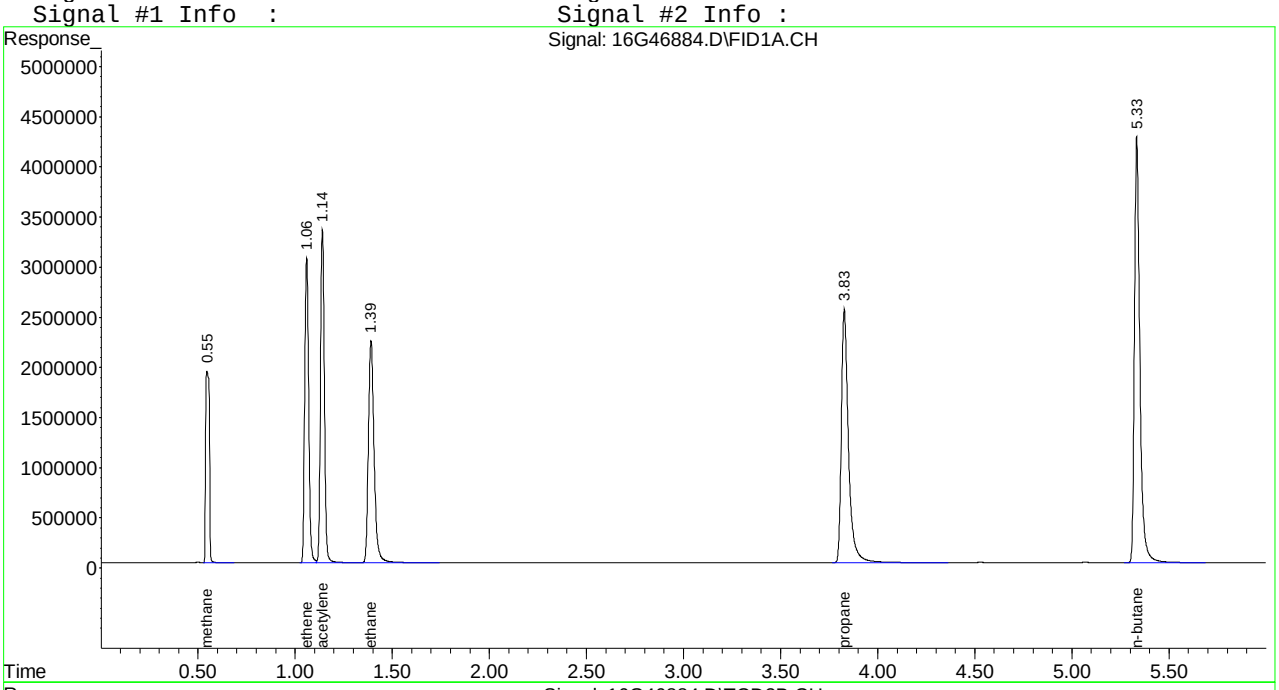

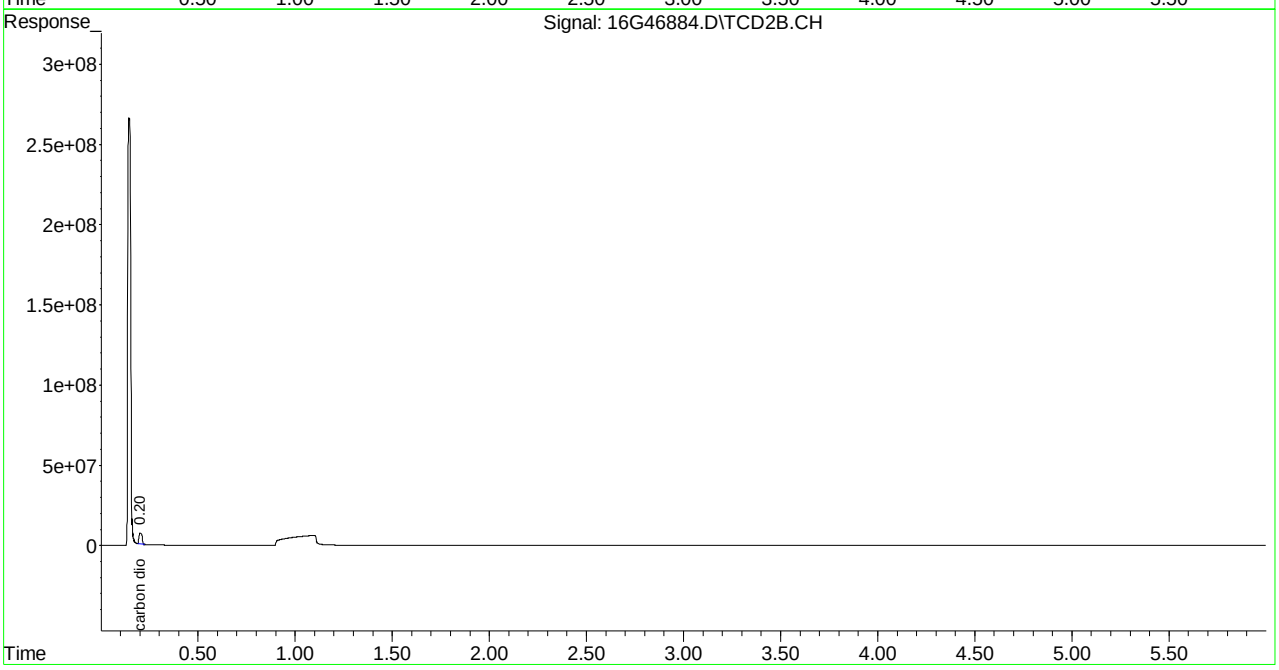

Evaluate Continuing Calibration Report

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46884.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46884.D\TCD2B.CH
Acq On    : 03 Mar 2015  17:10                        Operator: JDS
Sample    : WG514119-08 133umol/mol ALT SRC STD RSK1 Inst    : HP16
Misc      : 1,1 STD68250                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%
```

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	137.598	-3.5	104	0.00
2	T	ethene	133.000	135.904	-2.2	103	0.00
3	T	acetylene	133.000	139.167	-4.6	100	0.00
4	T	ethane	133.000	131.740	0.9	103	0.00
5	T	propane	133.000	130.583	1.8	101	0.00
6	T	n-butane	133.000	127.811	3.9	98	0.00
		Signal #2					
8	T	carbon dioxide	13300.000	13846.141	-4.1	95	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

16G46884.D RSKEXT1.M Fri Mar 06 11:59:02 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46884.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46884.D\TCD2B.CH
Acq On    : 03 Mar 2015  17:10                        Operator: JDS
Sample    : WG514119-08 133umol/mol ALT SRC STD RSK1 Inst    : HP16
Misc      : 1,1 STD68250                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\082015\16G48276.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDchem\1\DATA\082015\16G48276.D\TCD2B.CH
Acq On : 20 Aug 2015 15:30 Operator: JDS
Sample : WG535907-01 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 20 15:36:46 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	23204220	122.872	umol/
2) T	ethene	1.06	40466387	127.566	umol/
3) T	acetylene	1.14	44984832	132.920	umol/
4) T	ethane	1.40	42626890	125.411	umol/
5) T	propane	3.83	64295970	129.523	umol/
6) T	n-butane	5.34	85298719	131.578	umol/
8) T	carbon dioxide	0.20	82173682	14900.368	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G48276.D RSKEXT1.M Thu Aug 20 15:36:46 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\082015\16G48276.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDchem\1\DATA\082015\16G48276.D\TCD2B.CH
Acq On : 20 Aug 2015 15:30 Operator: JDS
Sample : WG535907-01 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 20 15:36 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

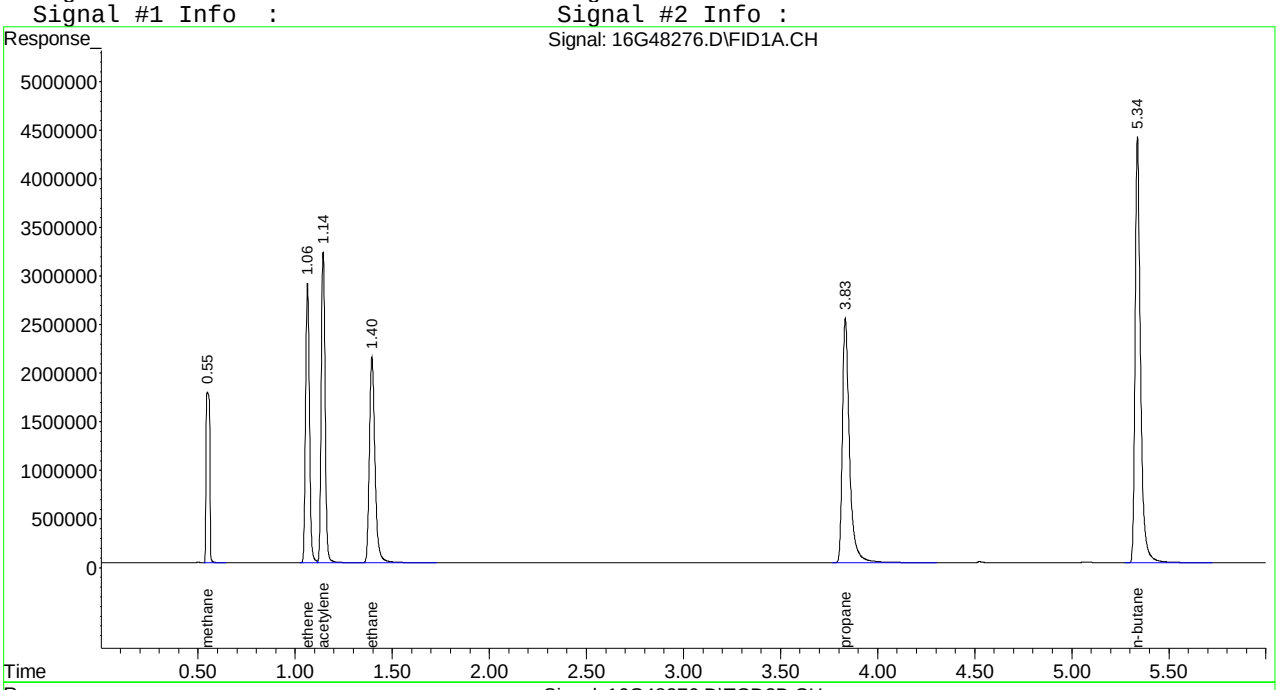

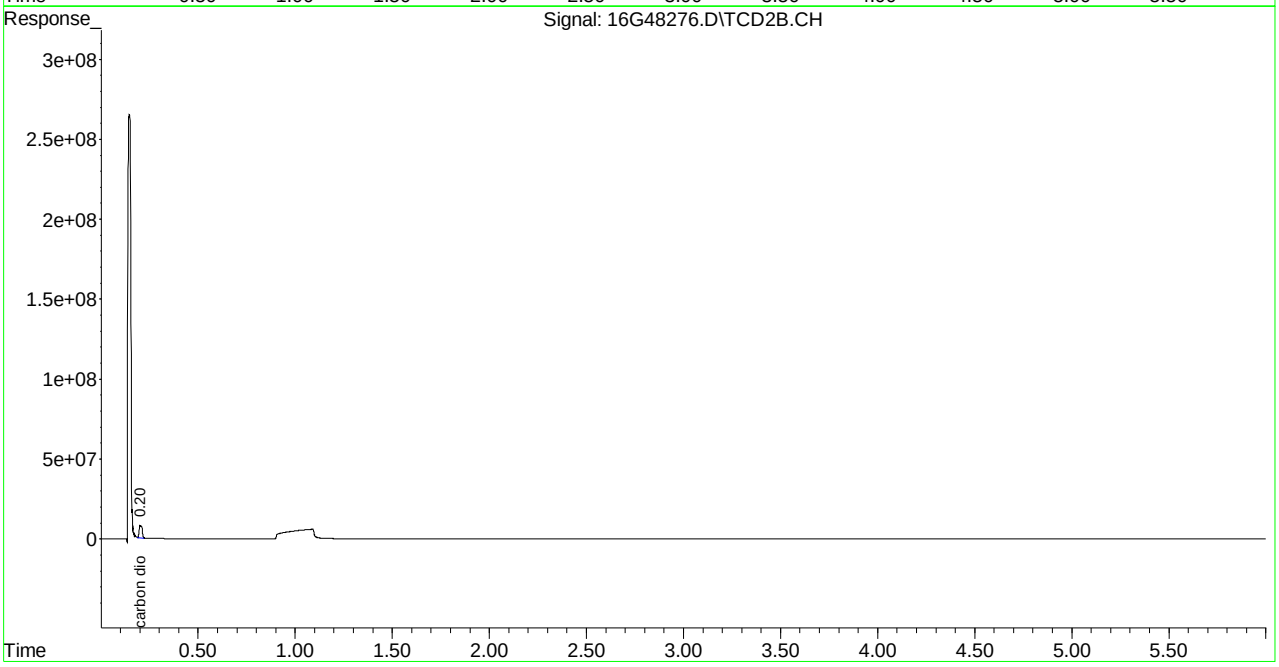

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\082015\16G48276.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\082015\16G48276.D\TCD2B.CH
Acq On : 20 Aug 2015 15:30 Operator: JDS
Sample : WG535907-01 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	122.872	7.6	93	0.00
2	T	ethene	133.000	127.566	4.1	97	0.00
3	T	acetylene	133.000	132.920	0.1	95	0.00
4	T	ethane	133.000	125.411	5.7	98	0.00
5	T	propane	133.000	129.523	2.6	100	0.00
6	T	n-butane	133.000	131.578	1.1	101	0.00

Signal #2

8	T	carbon dioxide	13300.000	14900.368	-12.0	102	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G48276.D RSKEXT1.M Fri Aug 21 08:58:10 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\082015\16G48276.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\082015\16G48276.D\TCD2B.CH
Acq On    : 20 Aug 2015  15:30                      Operator: JDS
Sample    : WG535907-01 133umol/mol CCV RSK175      Inst    : HP16
Misc      : 1,1 STD67274                            Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\082015\16G48287.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\082015\16G48287.D\TCD2B.CH
Acq On : 20 Aug 2015 18:01 Operator: JDS
Sample : WG535907-02 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 20 18:07:37 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	24332061	128.951	umol/
2) T	ethene	1.06	41111910	129.601	umol/
3) T	acetylene	1.14	43675111	129.050	umol/
4) T	ethane	1.39	43255674	127.261	umol/
5) T	propane	3.83	64006213	128.939	umol/
6) T	n-butane	5.34	83326024	128.535	umol/
8) T	carbon dioxide	0.21	74673700	13540.413	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G48287.D RSKEXT1.M Thu Aug 20 18:07:37 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\082015\16G48287.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\082015\16G48287.D\TCD2B.CH
Acq On : 20 Aug 2015 18:01 Operator: JDS
Sample : WG535907-02 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 20 18:07 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

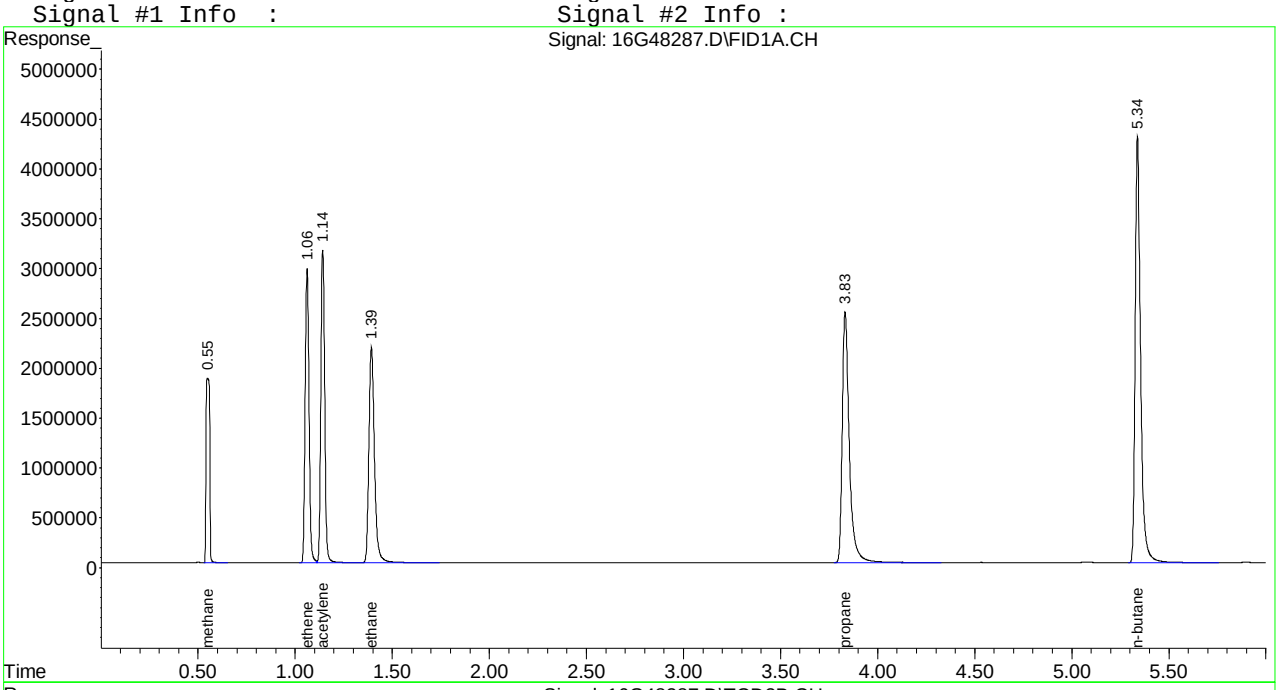

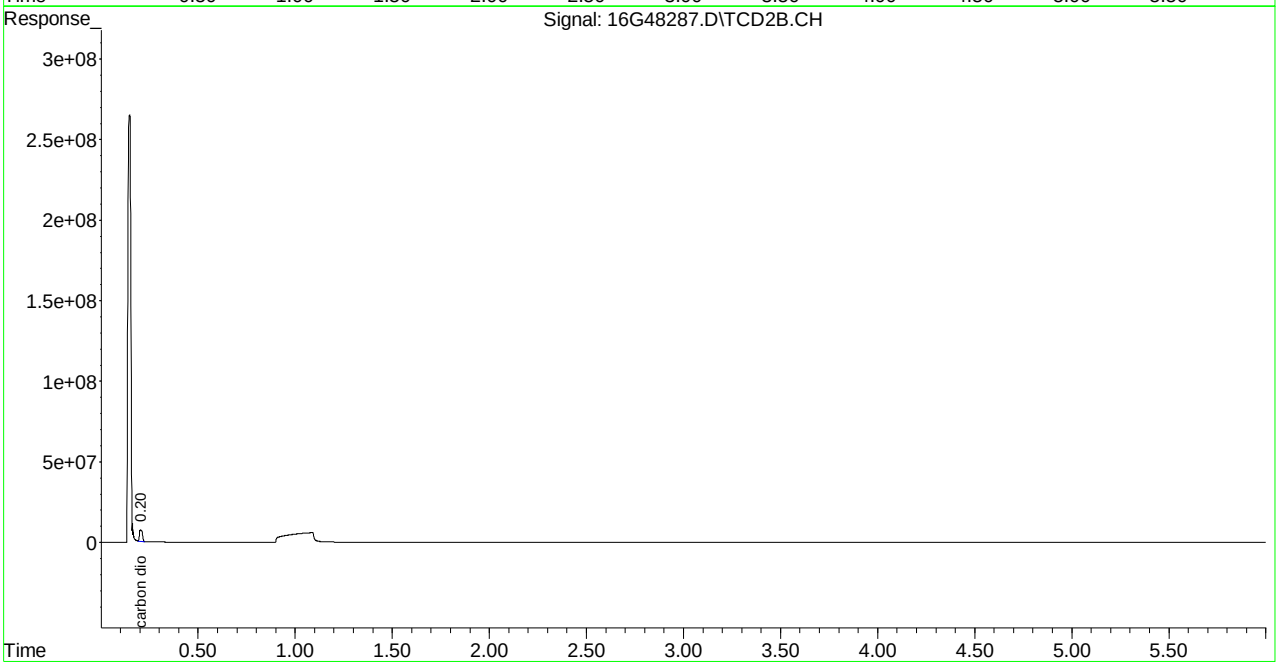

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\082015\16G48287.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\082015\16G48287.D\TCD2B.CH
Acq On : 20 Aug 2015 18:01 Operator: JDS
Sample : WG535907-02 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	128.951	3.0	98	0.00
2	T	ethene	133.000	129.601	2.6	99	0.00
3	T	acetylene	133.000	129.050	3.0	93	0.00
4	T	ethane	133.000	127.261	4.3	99	0.00
5	T	propane	133.000	128.939	3.1	99	0.00
6	T	n-butane	133.000	128.535	3.4	99	0.00

Signal #2

8	T	carbon dioxide	13300.000	13540.413	-1.8	93	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G48287.D RSKEXT1.M Fri Aug 21 08:58:17 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\082015\16G48287.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\082015\16G48287.D\TCD2B.CH
Acq On    : 20 Aug 2015  18:01                      Operator: JDS
Sample    : WG535907-02 133umol/mol CCV RSK175      Inst    : HP16
Misc      : 1,1 STD67274                            Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\082115\16G48292.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDchem\1\DATA\082115\16G48292.D\TCD2B.CH
Acq On : 21 Aug 2015 12:03 Operator: JDS
Sample : WG536037-01 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 21 12:09:30 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	23652786	125.290	umol/
2) T	ethene	1.06	40052661	126.262	umol/
3) T	acetylene	1.15	44375721	131.120	umol/
4) T	ethane	1.40	42030260	123.656	umol/
5) T	propane	3.83	61923186	124.743	umol/
6) T	n-butane	5.34	81202974	125.260	umol/
8) T	carbon dioxide	0.20	77588571	14068.960	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G48292.D RSKEXT1.M Fri Aug 21 12:09:31 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\082115\16G48292.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDchem\1\DATA\082115\16G48292.D\TCD2B.CH
Acq On : 21 Aug 2015 12:03 Operator: JDS
Sample : WG536037-01 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 21 12:09 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

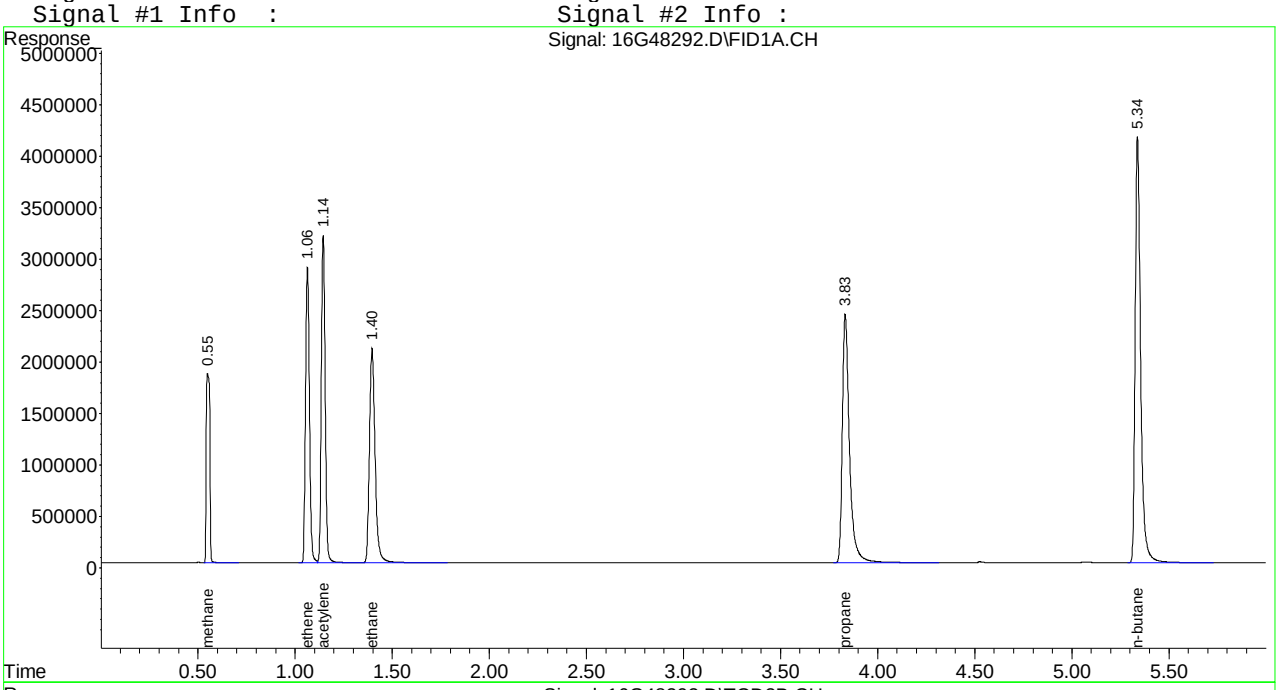

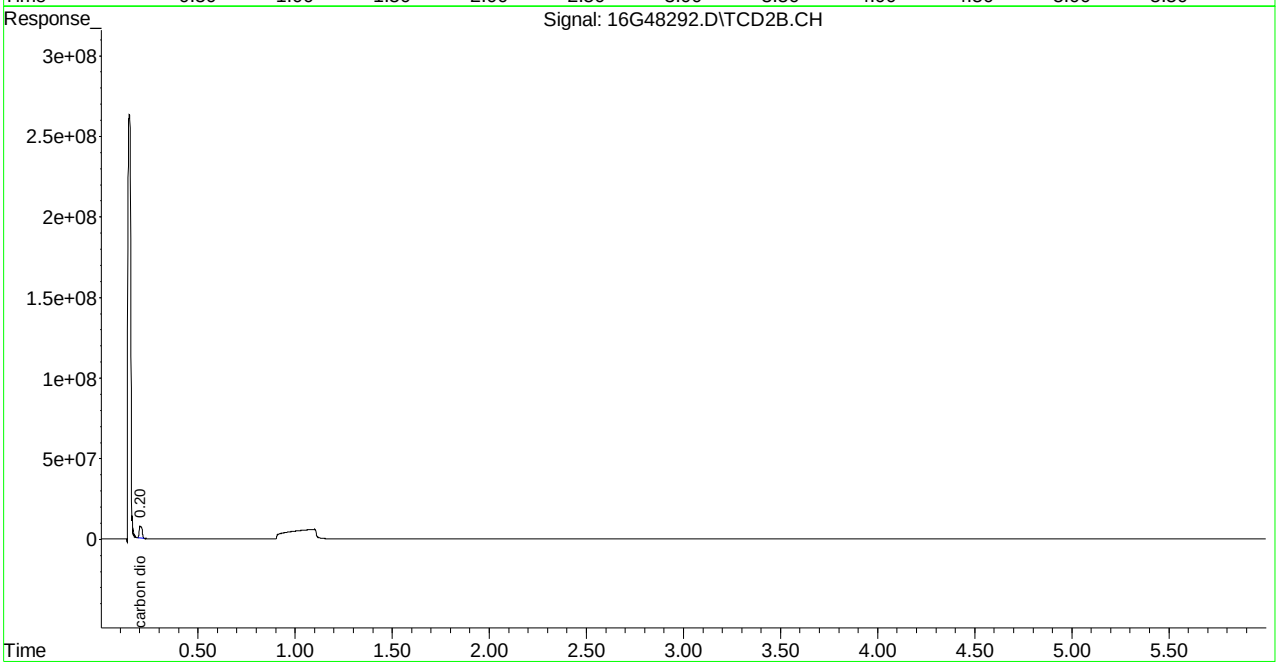

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\082115\16G48292.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\082115\16G48292.D\TCD2B.CH
Acq On : 21 Aug 2015 12:03 Operator: JDS
Sample : WG536037-01 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	125.290	5.8	95	0.00
2	T	ethene	133.000	126.262	5.1	96	0.00
3	T	acetylene	133.000	131.120	1.4	94	0.00
4	T	ethane	133.000	123.656	7.0	96	0.00
5	T	propane	133.000	124.743	6.2	96	0.00
6	T	n-butane	133.000	125.260	5.8	96	0.00

Signal #2

8	T	carbon dioxide	13300.000	14068.960	-5.8	96	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G48292.D RSKEXT1.M Mon Aug 24 15:33:00 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\082115\16G48292.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\082115\16G48292.D\TCD2B.CH
Acq On    : 21 Aug 2015  12:03                        Operator: JDS
Sample    : WG536037-01 133umol/mol CCV RSK175        Inst    : HP16
Misc      : 1,1 STD67274                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

```
---------------------------------------------------------------------------
 (#) = Out of Range            SPCC's out = 0  CCC's out = 0
 16G48292.D  RSKEXT1.M      Mon Aug 24 15:33:00 2015                          Page 2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\082115\16G48293.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\082115\16G48293.D\TCD2B.CH
Acq On : 21 Aug 2015 12:03 Operator: JDS
Sample : WG536037-01 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 25 10:00:43 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	23652786	125.290	umol/
2) T	ethene	1.06	40052661	126.262	umol/
3) T	acetylene	1.15	44375721	131.120	umol/
4) T	ethane	1.40	42030260	123.656	umol/
5) T	propane	3.83	61923186	124.743	umol/
6) T	n-butane	5.34	81202974	125.260	umol/
8) T	carbon dioxide	0.20	77588571	14068.960	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G48293.D RSKEXT1.M Tue Aug 25 10:00:44 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\082115\16G48293.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\082115\16G48293.D\TCD2B.CH
Acq On : 21 Aug 2015 12:03 Operator: JDS
Sample : WG536037-01 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 25 10:00 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

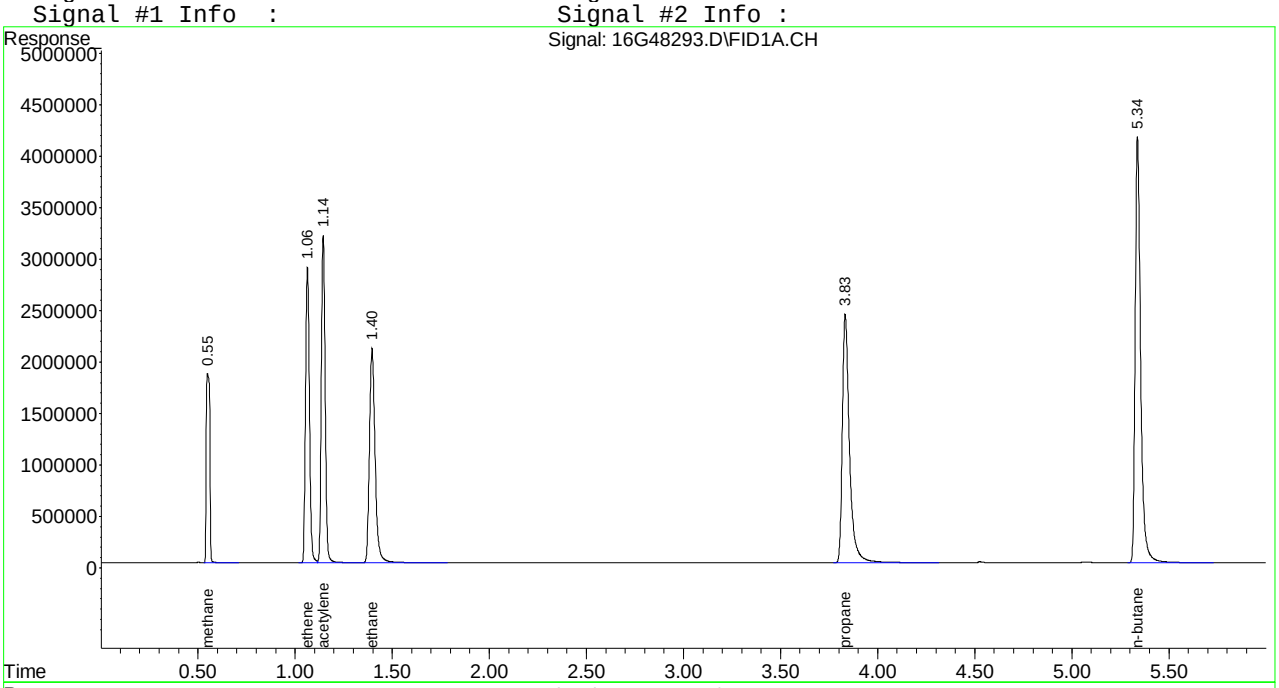

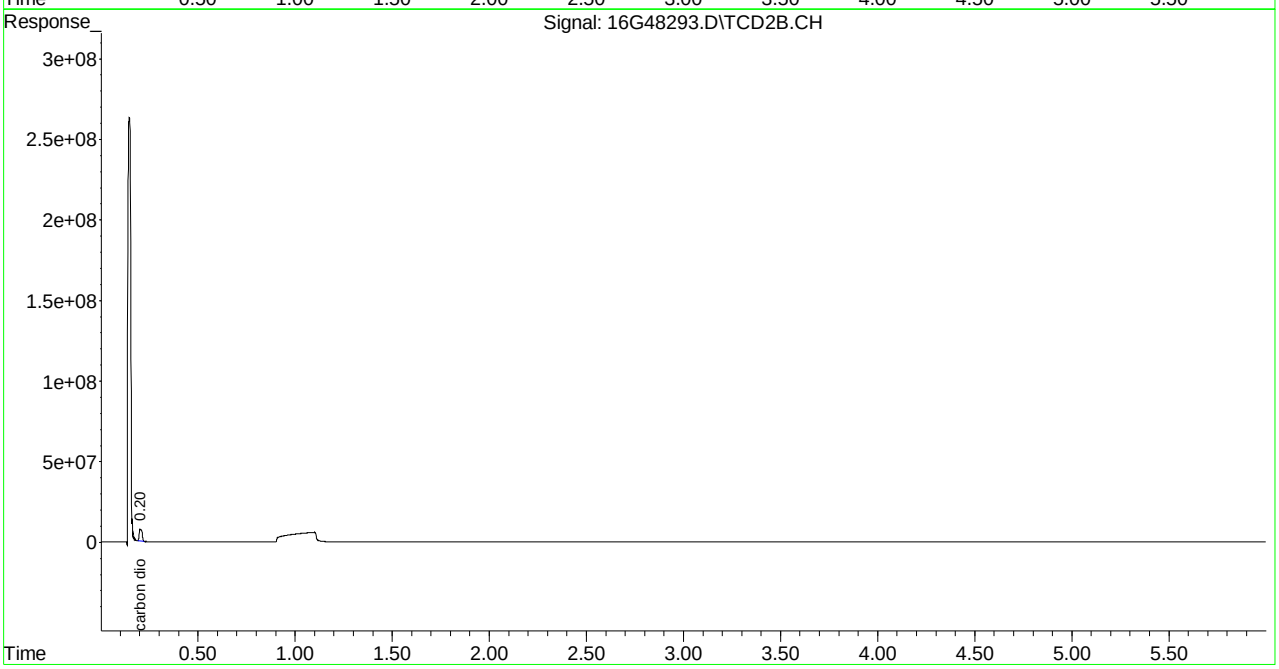

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\082115\16G48293.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\082115\16G48293.D\TCD2B.CH
Acq On : 21 Aug 2015 12:03 Operator: JDS
Sample : WG536037-01 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	125.290	5.8	95	0.00
2	T	ethene	133.000	126.262	5.1	96	0.00
3	T	acetylene	133.000	131.120	1.4	94	0.00
4	T	ethane	133.000	123.656	7.0	96	0.00
5	T	propane	133.000	124.743	6.2	96	0.00
6	T	n-butane	133.000	125.260	5.8	96	0.00

Signal #2

8	T	carbon dioxide	13300.000	14068.960	-5.8	96	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G48293.D RSKEXT1.M Tue Aug 25 10:02:16 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\082115\16G48293.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\082115\16G48293.D\TCD2B.CH
Acq On    : 21 Aug 2015  12:03                        Operator: JDS
Sample    : WG536037-01 133umol/mol CCV RSK175        Inst    : HP16
Misc      : 1,1 STD67274                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\082115\16G48304.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\082115\16G48304.D\TCD2B.CH
Acq On : 21 Aug 2015 16:43 Operator: JDS
Sample : WG536037-02 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 25 10:02:07 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	24044685	127.402	umol/
2) T	ethene	1.06	40854069	128.788	umol/
3) T	acetylene	1.14	42676544	126.100	umol/
4) T	ethane	1.39	43044152	126.639	umol/
5) T	propane	3.83	64047831	129.023	umol/
6) T	n-butane	5.34	84139257	129.790	umol/
8) T	carbon dioxide	0.21	73394427	13308.446	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G48304.D RSKEXT1.M Tue Aug 25 10:02:08 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\082115\16G48304.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\082115\16G48304.D\TCD2B.CH
Acq On : 21 Aug 2015 16:43 Operator: JDS
Sample : WG536037-02 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 25 10:02 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

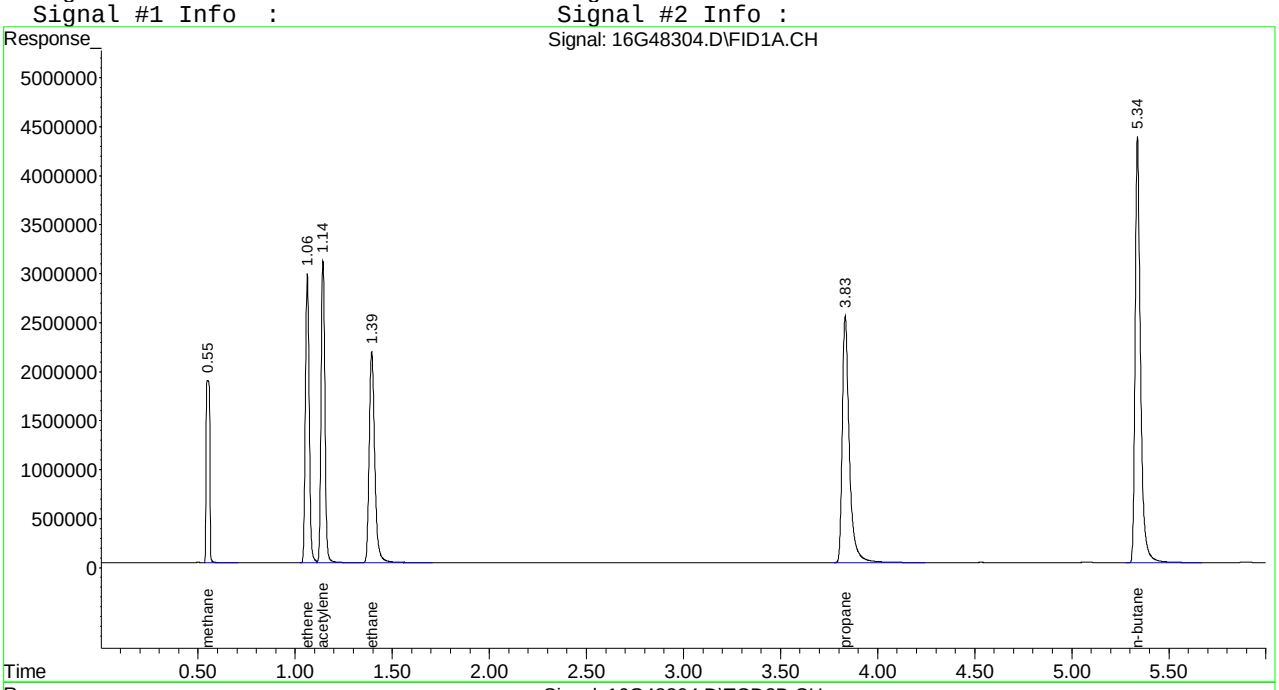

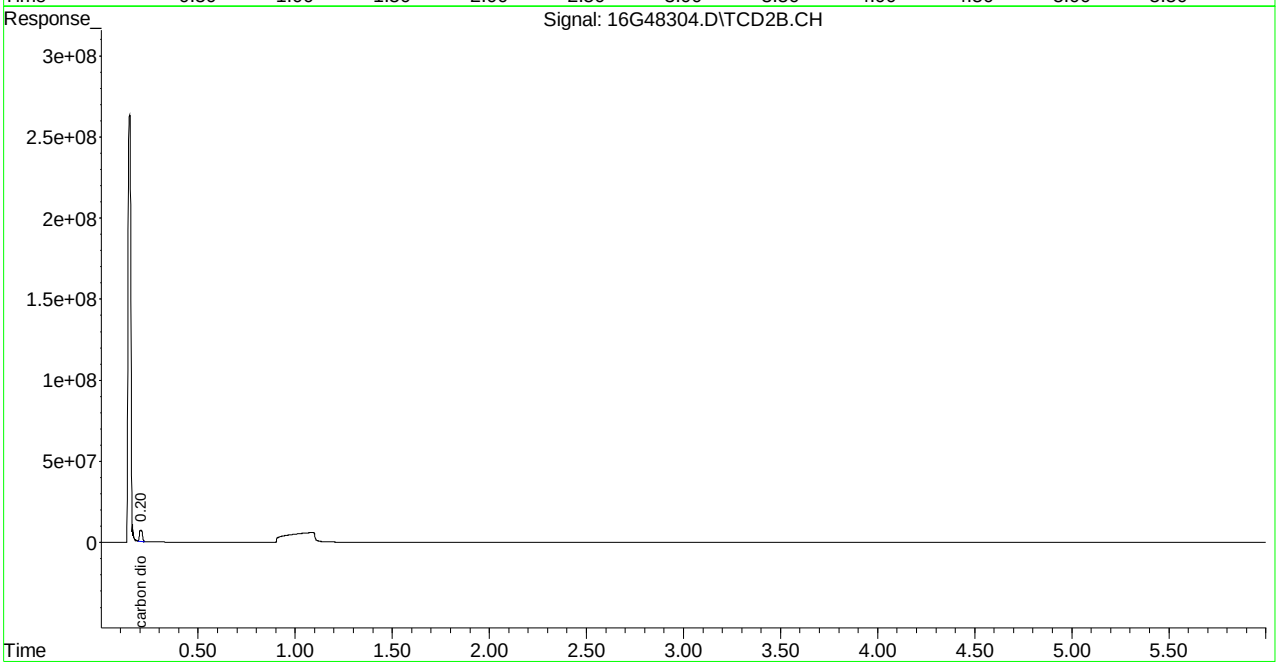

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\082115\16G48304.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\082115\16G48304.D\TCD2B.CH
Acq On : 21 Aug 2015 16:43 Operator: JDS
Sample : WG536037-02 133umol/mol CCV RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	127.402	4.2	96	0.00
2	T	ethene	133.000	128.788	3.2	98	0.00
3	T	acetylene	133.000	126.100	5.2	90	0.00
4	T	ethane	133.000	126.639	4.8	99	0.00
5	T	propane	133.000	129.023	3.0	100	0.00
6	T	n-butane	133.000	129.790	2.4	100	0.00

Signal #2

8	T	carbon dioxide	13300.000	13308.446	-0.1	91	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G48304.D RSKEXT1.M Tue Aug 25 10:02:22 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\082115\16G48304.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\082115\16G48304.D\TCD2B.CH
Acq On    : 21 Aug 2015  16:43                      Operator: JDS
Sample    : WG536037-02 133umol/mol CCV RSK175      Inst    : HP16
Misc      : 1,1 STD67274                            Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Microbac Laboratories Inc.
Daily Retention Time Window Determination

Login #: L15081073 **Run Date:** 08/20/2015 **Sample ID:** WG535907-01
Instrument: HP16 **Run Time:** 15:30 **Method:** RSK175
Workgroup (AAB#): WG535908 **File ID:** 16G48276

RT Standard	Analysis Date	File ID	Analyst
WG507817-01	01/13/2015	16G46159	JDS
WG507448-01	01/09/2015	16G46148	JDS
WG507013-01	01/06/2015	16G46125	JDS

Analyte	RT #1	RT #2	RT #3	STD	Lower	Upper
METHANE	.54	.55	.55	.55	0.520	0.580
ETHENE	1.06	1.06	1.06	1.06	1.030	1.090
ETHANE	1.39	1.39	1.39	1.4	1.370	1.430
PROPANE	3.82	3.83	3.83	3.83	3.800	3.860
N-BUTANE	5.33	5.34	5.34	5.34	5.310	5.370
CARBON DIOXIDE	.2	.2	.2	.2	0.170	0.230
ACETYLENE	1.14	1.14	1.14	1.14	1.110	1.170

RT_WIN - Modified 01/06/2010
PDF File ID: 4353295
Report generated 08/25/2015 16:52

Microbac Laboratories Inc.
Daily Retention Time Window Determination

Login #: L15081073 **Run Date:** 08/21/2015 **Sample ID:** WG536037-01
Instrument: HP16 **Run Time:** 12:03 **Method:** RSK175
Workgroup (AAB#): WG536040 **File ID:** 16G48293

RT Standard	Analysis Date	File ID	Analyst
WG507817-01	01/13/2015	16G46159	JDS
WG507448-01	01/09/2015	16G46148	JDS
WG507013-01	01/06/2015	16G46125	JDS

Analyte	RT #1	RT #2	RT #3	STD	Lower	Upper
METHANE	.54	.55	.55	.55	0.520	0.580
ETHENE	1.06	1.06	1.06	1.06	1.030	1.090
ETHANE	1.39	1.39	1.39	1.4	1.370	1.430
PROPANE	3.82	3.83	3.83	3.83	3.800	3.860
N-BUTANE	5.33	5.34	5.34	5.34	5.310	5.370
CARBON DIOXIDE	.2	.2	.2	.2	0.170	0.230
ACETYLENE	1.14	1.14	1.14	1.15	1.120	1.180

RT_WIN - Modified 01/06/2010
PDF File ID: 4353295
Report generated 08/25/2015 16:52

2.1.2.5 Raw QC Data

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\082015\16G48277.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\082015\16G48277.D\TCD2B.CH
Acq On    : 20 Aug 2015  16:05                        Operator: JDS
Sample    : WG535908-01 BLANK  RSK175                 Inst    : HP16
Misc      : 1,1                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Aug 20 16:12:05 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	320376	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.00	0	N.D.	umol/

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\082015\16G48277.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\082015\16G48277.D\TCD2B.CH
Acq On : 20 Aug 2015 16:05 Operator: JDS
Sample : WG535908-01 BLANK RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 20 16:12 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

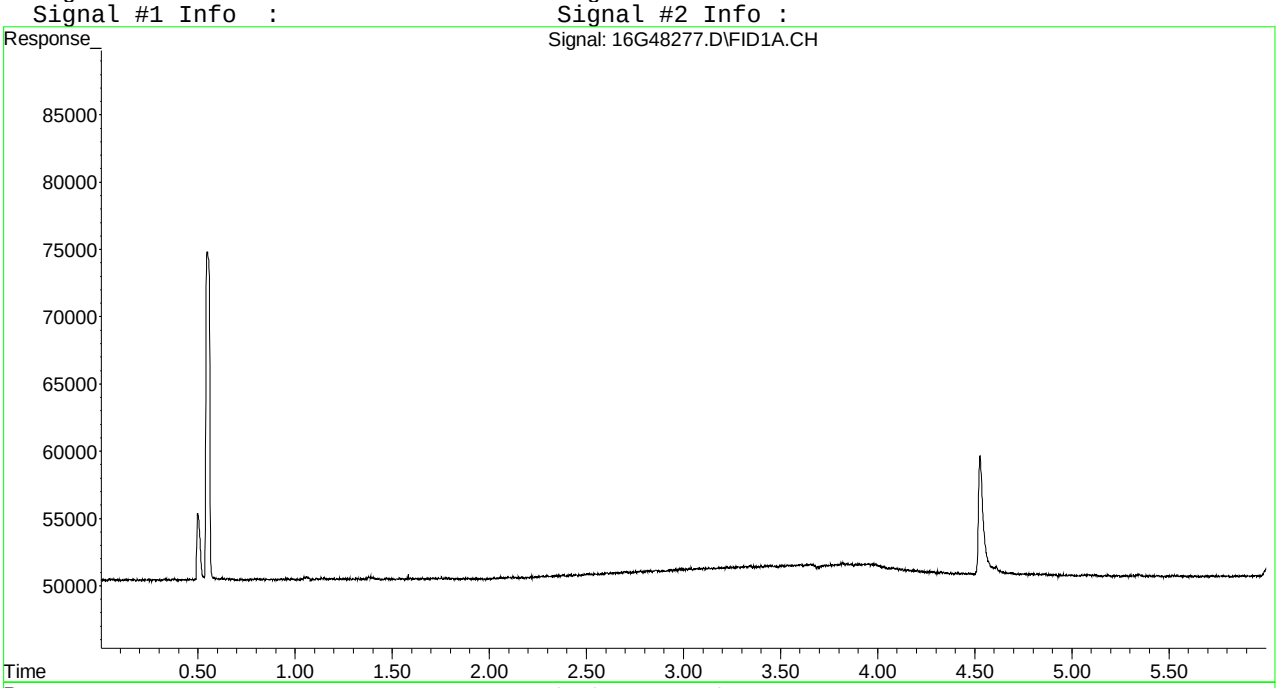

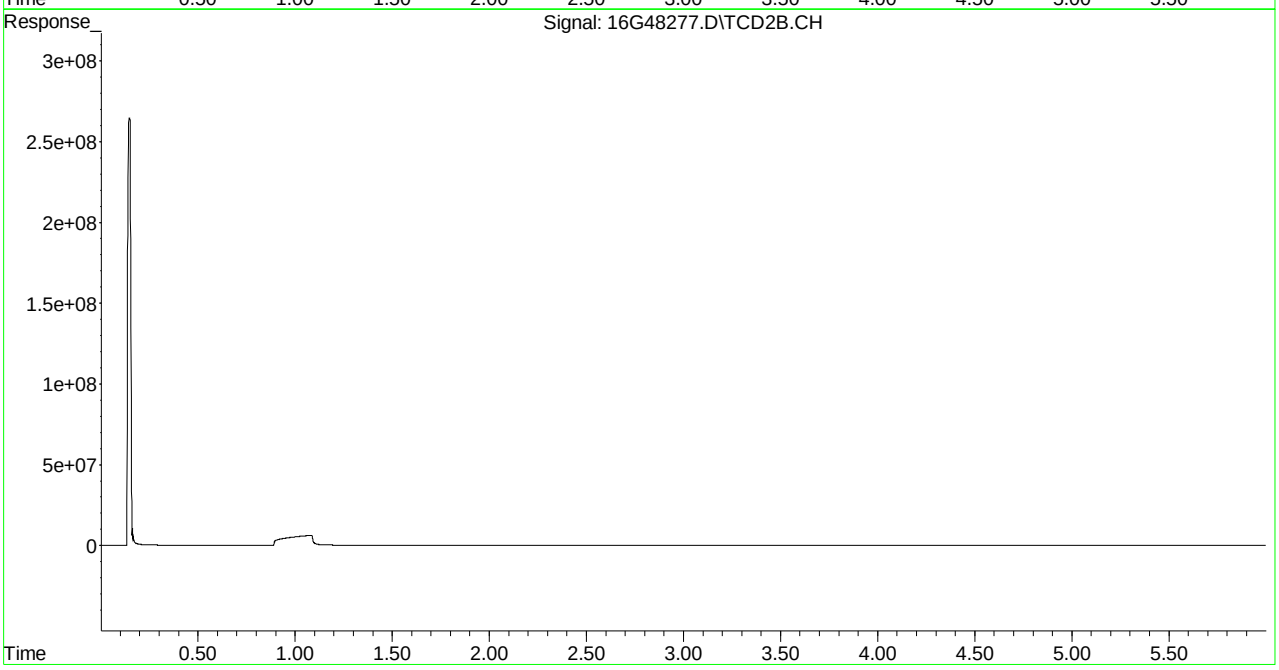

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\082115\16G48294.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\082115\16G48294.D\TCD2B.CH
Acq On    : 21 Aug 2015  14:48                      Operator: JDS
Sample    : WG536040-01 BLANK RSK175                Inst    : HP16
Misc      : 1,1                                     Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Aug 25 10:00:45 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                   Signal #2 Phase:
Signal #1 Info  :                   Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	299056	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.00	0	N.D.	umol/

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\082115\16G48294.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\082115\16G48294.D\TCD2B.CH
Acq On : 21 Aug 2015 14:48 Operator: JDS
Sample : WG536040-01 BLANK RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 25 10:00 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

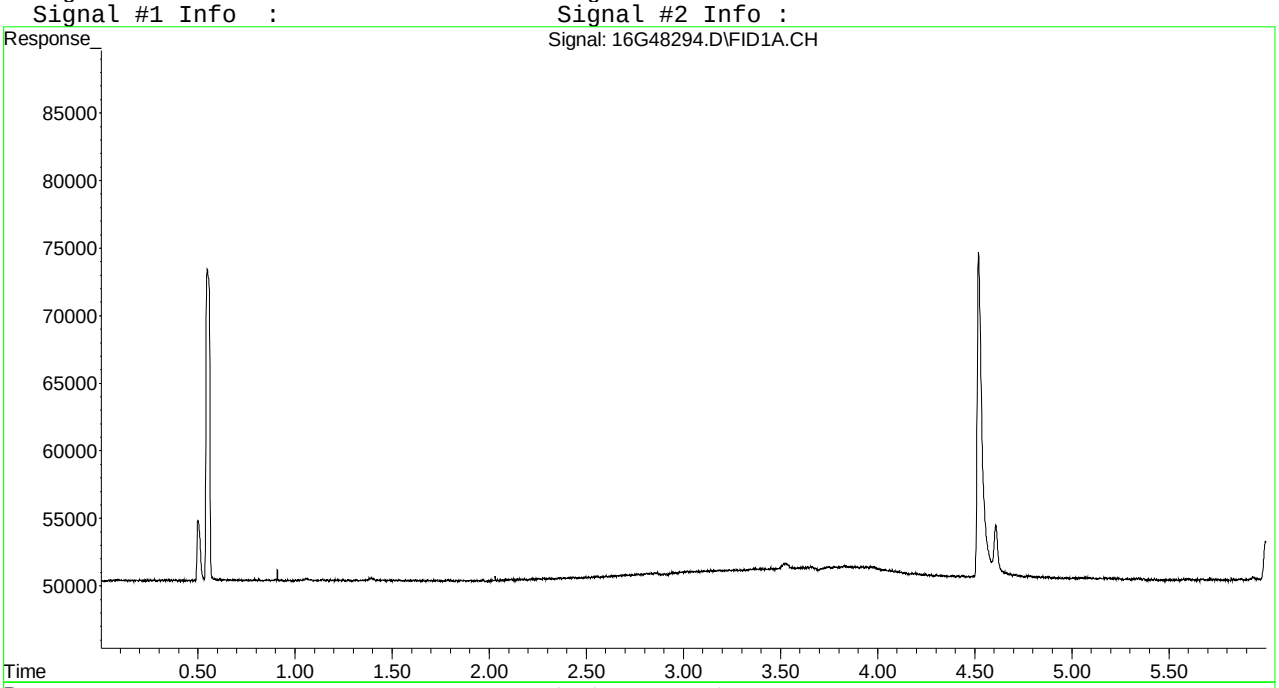

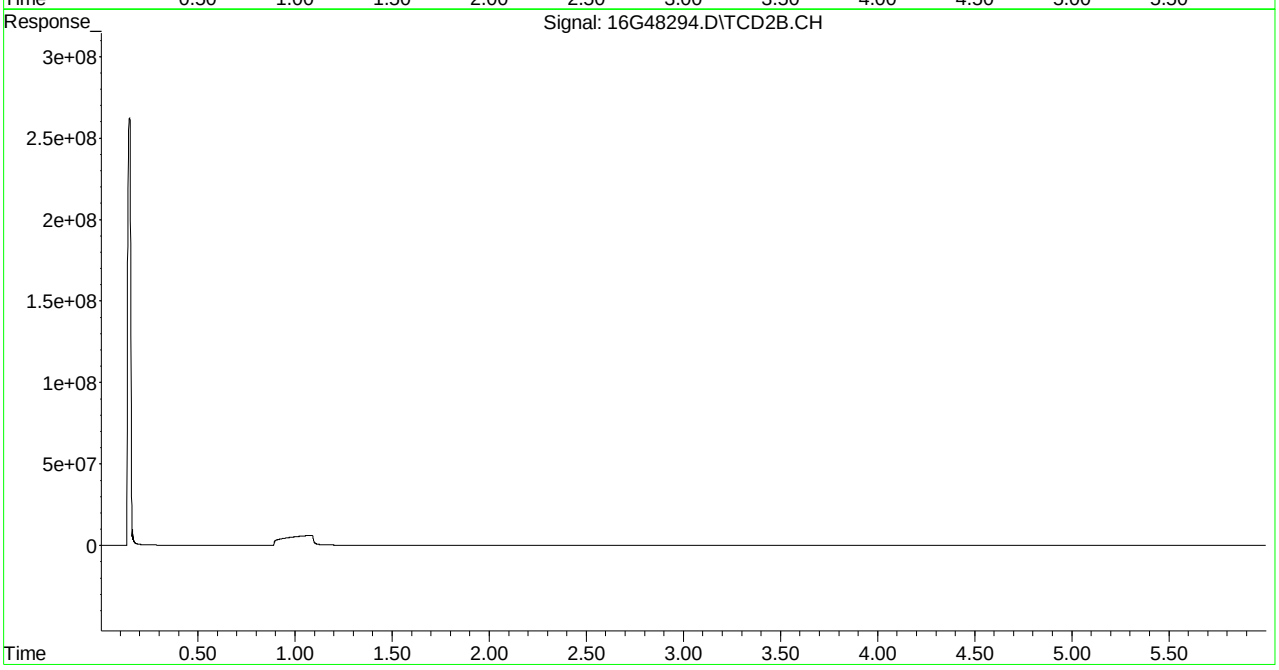

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\082015\16G48278.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDchem\1\DATA\082015\16G48278.D\TCD2B.CH
Acq On : 20 Aug 2015 16:17 Operator: JDS
Sample : WG535908-02 67umol/mol LCS RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 20 16:23:45 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	12232970	63.731	umol/
2) T	ethene	1.06	20123842	63.438	umol/
3) T	acetylene	1.14	20561957	60.756	umol/
4) T	ethane	1.40	20936043	61.595	umol/
5) T	propane	3.83	30263631	60.966	umol/
6) T	n-butane	5.34	38385958	59.212	umol/
8) T	carbon dioxide	0.20	36060875	6538.837	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G48278.D RSKEXT1.M Thu Aug 20 16:23:45 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\082015\16G48278.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDchem\1\DATA\082015\16G48278.D\TCD2B.CH
Acq On : 20 Aug 2015 16:17 Operator: JDS
Sample : WG535908-02 67umol/mol LCS RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 20 16:23 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

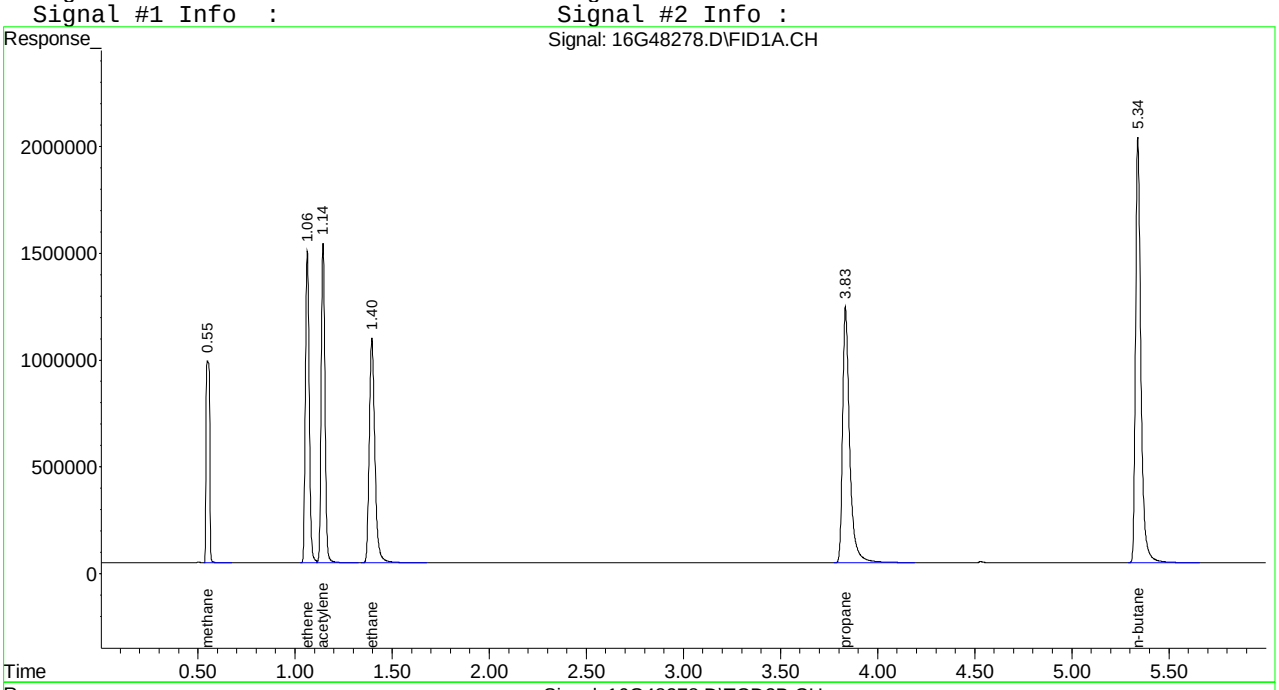

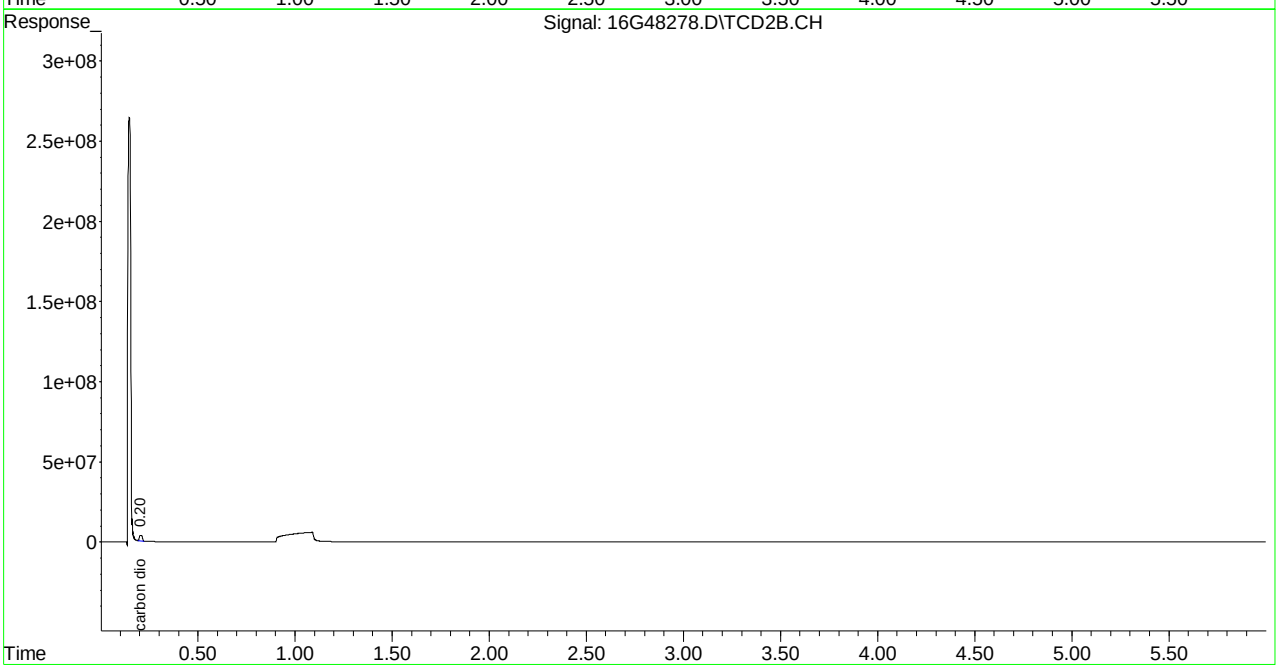

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\082115\16G48295.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\082115\16G48295.D\TCD2B.CH
Acq On : 21 Aug 2015 15:00 Operator: JDS
Sample : WG536040-02 67umol/mol LCS RSK175 Inst : HP16
Misc : 1,1 STD6820 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 25 10:01:10 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	12873183	67.182	umol/
2) T	ethene	1.06	21608776	68.119	umol/
3) T	acetylene	1.15	22730148	67.163	umol/
4) T	ethane	1.40	22456010	66.067	umol/
5) T	propane	3.83	32725191	65.924	umol/
6) T	n-butane	5.34	41413515	63.883	umol/
8) T	carbon dioxide	0.20	35610443	6457.161	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G48295.D RSKEXT1.M Tue Aug 25 10:01:11 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\082115\16G48295.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\082115\16G48295.D\TCD2B.CH
Acq On : 21 Aug 2015 15:00 Operator: JDS
Sample : WG536040-02 67umol/mol LCS RSK175 Inst : HP16
Misc : 1,1 STD6820 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 25 10:01 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

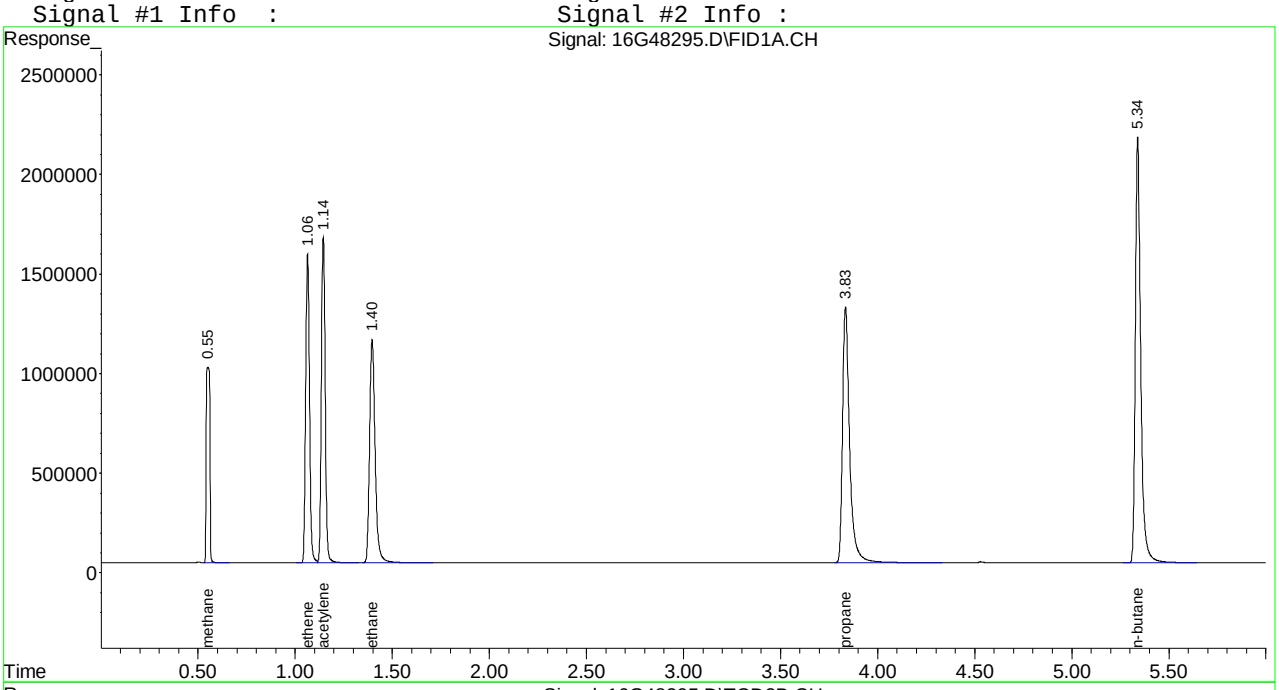

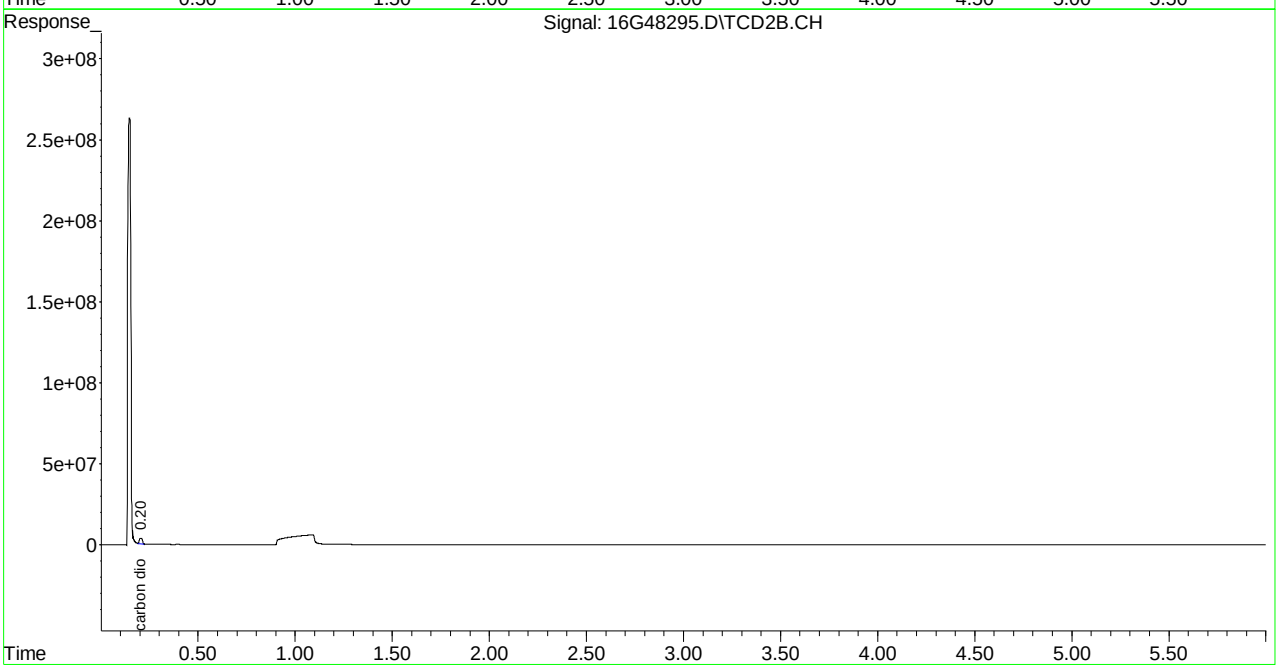

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\082015\16G48279.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDchem\1\DATA\082015\16G48279.D\TCD2B.CH
Acq On : 20 Aug 2015 16:29 Operator: JDS
Sample : WG535908-03 67umol/mol LCS2 RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 20 16:35:22 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	12416118	64.719	umol/
2) T	ethene	1.06	20385854	64.264	umol/
3) T	acetylene	1.14	20931853	61.849	umol/
4) T	ethane	1.39	21199738	62.371	umol/
5) T	propane	3.83	30489813	61.421	umol/
6) T	n-butane	5.34	38601421	59.545	umol/
8) T	carbon dioxide	0.20	33889263	6145.063	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G48279.D RSKEXT1.M Thu Aug 20 16:35:22 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\082015\16G48279.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDchem\1\DATA\082015\16G48279.D\TCD2B.CH
Acq On : 20 Aug 2015 16:29 Operator: JDS
Sample : WG535908-03 67umol/mol LCS2 RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 20 16:35 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

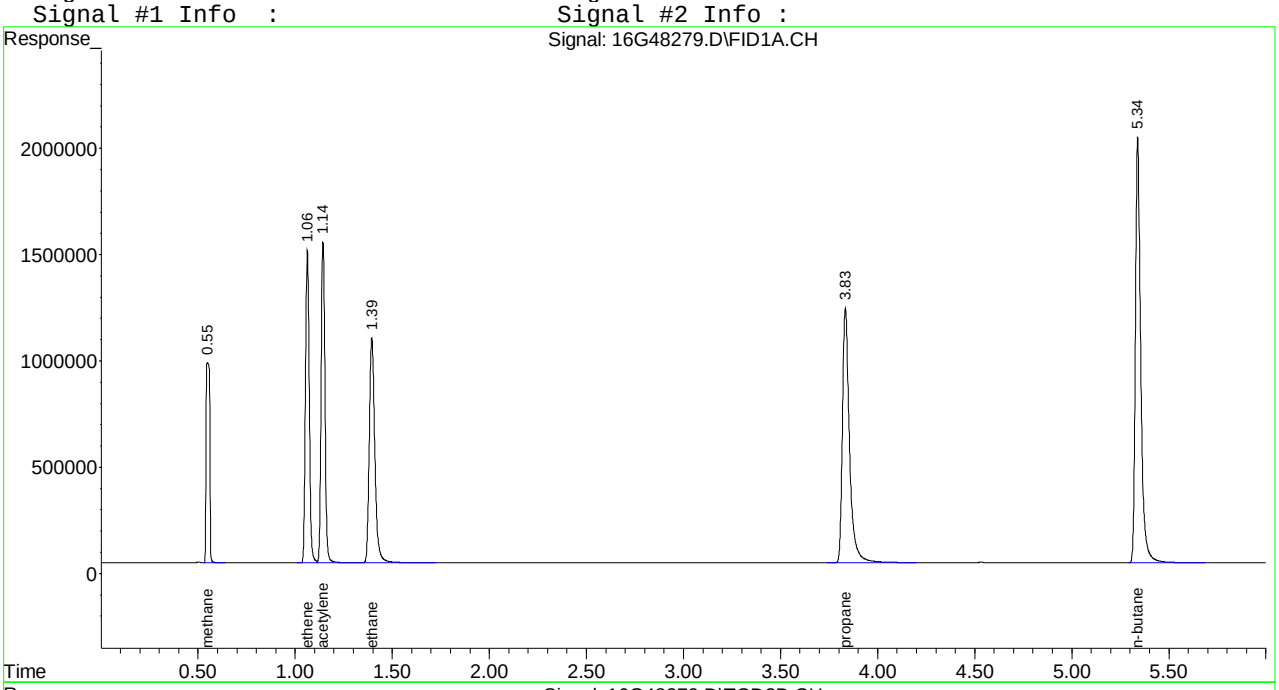

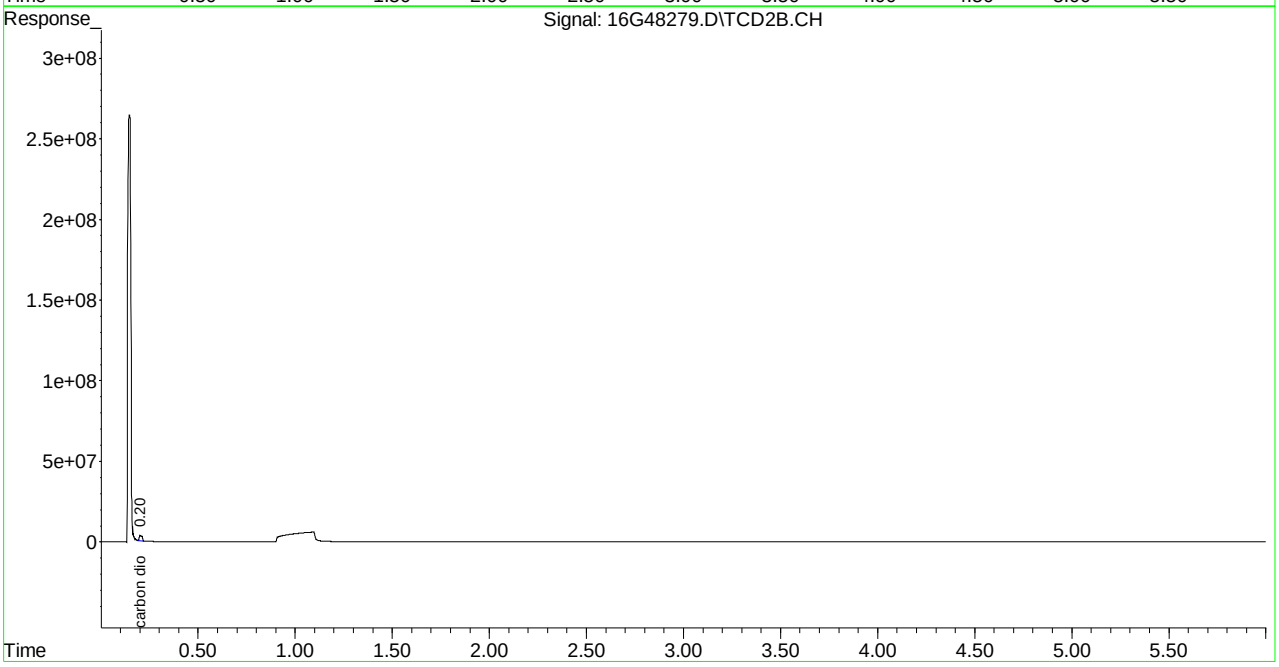

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\082115\16G48296.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\082115\16G48296.D\TCD2B.CH
Acq On : 21 Aug 2015 15:11 Operator: JDS
Sample : WG536040-03 67umol/mol LCS2 RSK175 Inst : HP16
Misc : 1,1 STD6820 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 25 10:01:13 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	12982521	67.772	umol/
2) T	ethene	1.06	21991413	69.326	umol/
3) T	acetylene	1.14	22807062	67.390	umol/
4) T	ethane	1.40	22877992	67.309	umol/
5) T	propane	3.84	33796069	68.082	umol/
6) T	n-butane	5.34	43780163	67.533	umol/
8) T	carbon dioxide	0.20	38880467	7050.107	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G48296.D RSKEXT1.M Tue Aug 25 10:01:13 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\082115\16G48296.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\082115\16G48296.D\TCD2B.CH
Acq On : 21 Aug 2015 15:11 Operator: JDS
Sample : WG536040-03 67umol/mol LCS2 RSK175 Inst : HP16
Misc : 1,1 STD6820 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Aug 25 10:01 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

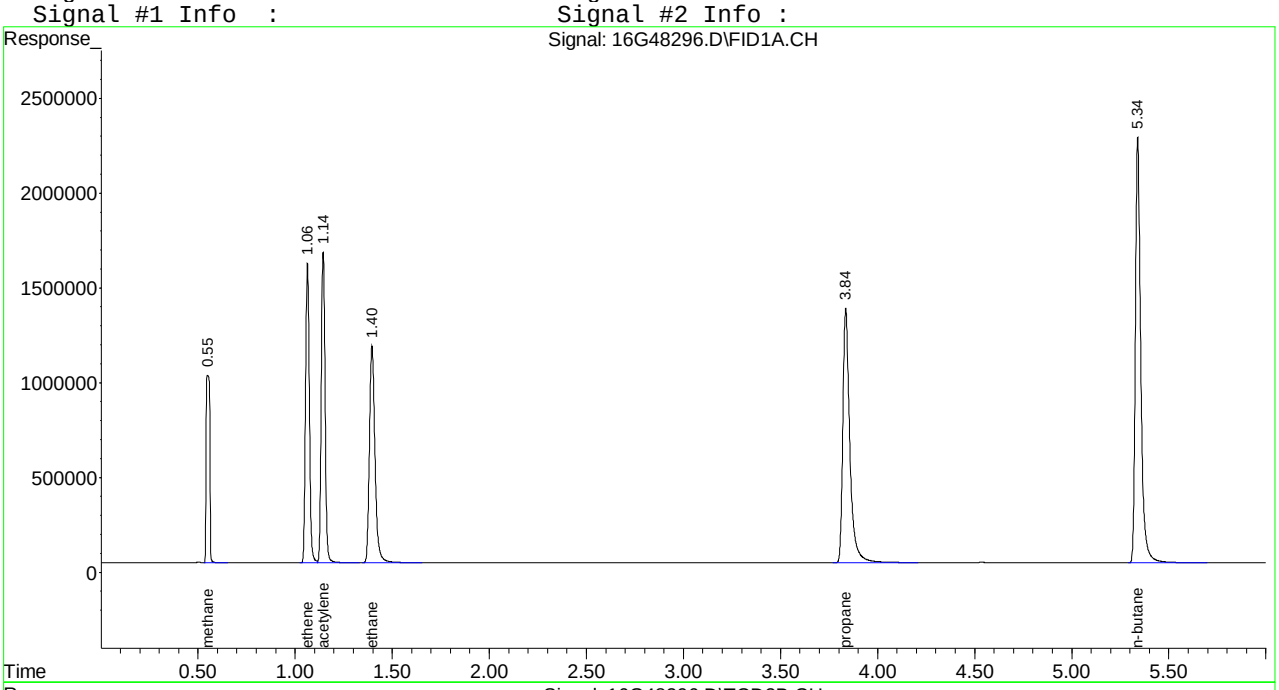

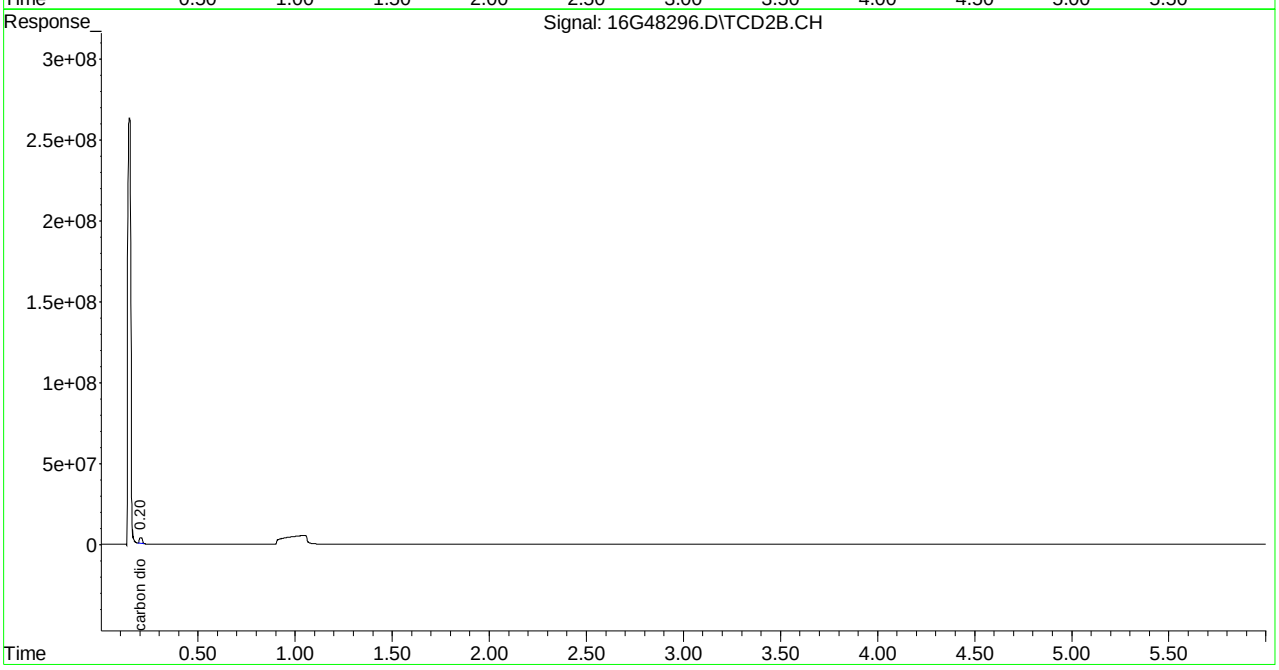

2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081073-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW14-081915	**Prep Method:**	6850	**Prep Date:**	08/24/2015 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG536249	**Analyst:**	JWR	**Run Date:**	08/25/2015 01:00
Collect Date:	08/19/2015 08:20	**Dilution:**	1	**File ID:**	1LM.LM31459
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.19		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15081073-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW13-081915	**Prep Method:**	6850	**Prep Date:**	08/27/2015 13:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG536759	**Analyst:**	JWR	**Run Date:**	08/27/2015 15:21
Collect Date:	08/19/2015 09:35	**Dilution:**	5000	**File ID:**	1LM.LM31474
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	9300		2000	1000	500

Certificate of Analysis

Sample #:	L15081073-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW05-081915	**Prep Method:**	6850	**Prep Date:**	08/24/2015 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG536249	**Analyst:**	JWR	**Run Date:**	08/25/2015 01:37
Collect Date:	08/19/2015 10:50	**Dilution:**	1	**File ID:**	1LM.LM31461
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1.69		0.400	0.200	0.100

Certificate of Analysis

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15081073-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW05FD-081915	**Prep Method:**	6850	**Prep Date:**	08/24/2015 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG536249	**Analyst:**	JWR	**Run Date:**	08/25/2015 01:56
Collect Date:	08/19/2015 10:50	**Dilution:**	1	**File ID:**	1LM.LM31462
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1.64		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15081073-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW17-081915	**Prep Method:**	6850	**Prep Date:**	08/24/2015 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG536249	**Analyst:**	JWR	**Run Date:**	08/25/2015 02:15
Collect Date:	08/19/2015 14:00	**Dilution:**	1	**File ID:**	1LM.LM31463
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.193	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1405 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG536759-01 MCT	9,960.	
WG536759-02 Blank	0.35	
WG536759-03 LCS	0.41	
WG536759-04 LCS2	0.39	
L15081073-03	2,470.	
L15081287-01	2,720.	
L15081288-01	2,680.	
-02	2,680.	

Analyst: John Richards

Date/Time: 08/27/15 / 15:00

DCN#112840

Analytical WG536790 (soils)

Perchlorate Conductivity Check

(perchlorate1)

Conductivity Probe Calibration Check: 1403 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG536785-01 MCT	9,640.	
WG536785-02 Blank	2.92	
WG536785-03 LCS	3.27	
L15081064-01 Ref	87.8	
-01 MS	109.7	
-01 MSD	88.9	
-02	594.	
-03	296.	
-04	123.9	
-05	90.7	
-06	132.5	
-07	541.	
-08	326.	
-09	117.8	
-10	191.2	
-11	90.2	

Analyst: John Richards

Date/Time: 08/28/15 / 12:00

DCN#112843

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 080515_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 140701254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: ICAL-Only

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD69537 (08/05/2015)

CCV STD: NA LCS STD: NA MS/MSD STD: NA

Comments: ICAL WG533952 : Alternate Source STD69913

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM31292	WG533952-01 CCB	1	1		08/05/15 22:09
2	1LM.LM31293	WG533952-02 STD (0.1 ug/L)	1	1	STD69537	08/05/15 22:28
3	1LM.LM31294	WG533952-03 STD (0.2 ug/L)	1	1	STD69537	08/05/15 22:47
4	1LM.LM31295	WG533952-04 STD (0.5 ug/L)	1	1	STD69537	08/05/15 23:06
5	1LM.LM31296	WG533952-05 STD (1.0 ug/L)	1	1	STD69537	08/05/15 23:25
6	1LM.LM31297	WG533952-06 STD (2.0 ug/L)	1	1	STD69537	08/05/15 23:44
7	1LM.LM31298	WG533952-07 STD (5.0 ug/L)	1	1	STD69537	08/06/15 00:03
8	1LM.LM31299	WG533952-08 STD (10 ug/L)	1	1	STD69537	08/06/15 00:22
9	1LM.LM31300	WG533952-09 SSCV (1.0 ug/L)	1	1	STD69913	08/06/15 00:41

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 10-AUG-15

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 082415_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 140701254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG536249 (waters)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD69537 (08/05/2015)

CCV STD: STD69537 LCS STD: STD69913 MS/MSD STD: NA

Comments: Samples were analyzed neat and/or at dilutions based on their historical results. The result for sample L15081073-03 at a 100x dilution was over the calibration range. The result for this sample at this dilution will not be reported. This sample will be prepared and reanalyzed at a further dilution in a separate workgroup.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM31431	WG536250-01 CCB	1	1		08/24/15 16:09
2	1LM.LM31432	WG536250-02 CCV (1.0ug/L)	1	1	STD69537	08/24/15 16:28
3	1LM.LM31433	WG536249-05 MRL (0.2ug/L)	1	1	STD69537	08/24/15 16:47
4	1LM.LM31434	WG536249-01 MCT (0.2ug/L)	1	1	STD69913	08/24/15 17:06
5	1LM.LM31435	WG536249-02 BLANK	1	1		08/24/15 17:25
6	1LM.LM31436	WG536249-03 LCS (0.2ug/L)	1	1	STD69913	08/24/15 17:44
7	1LM.LM31437	WG536249-04 LCS2 (0.2ug/L)	1	1	STD69913	08/24/15 18:03
8	1LM.LM31438	L15080772-01	1	1		08/24/15 18:22
9	1LM.LM31439	L15080899-01	1	1		08/24/15 18:41
10	1LM.LM31440	L15080899-01 (RR 5x)(NR)	1	5		08/24/15 19:00
11	1LM.LM31441	L15080943-01	1	1		08/24/15 19:19
12	1LM.LM31442	L15080904-01	1	1		08/24/15 19:38
13	1LM.LM31443	L15080904-03	1	1		08/24/15 19:57
14	1LM.LM31444	WG536250-03 CCV (1.0ug/L)	1	1	STD69537	08/24/15 20:16
15	1LM.LM31445	WG536249-06 MRL (0.2ug/L)	1	1	STD69537	08/24/15 20:34
16	1LM.LM31446	WG536250-04 CCB	1	1		08/24/15 20:53
17	1LM.LM31447	L15080904-05	1	1		08/24/15 21:12
18	1LM.LM31448	L15080904-05 (RR 5x)(NR)	1	5		08/24/15 21:31
19	1LM.LM31449	L15080904-07 (50x)	1	50		08/24/15 21:50
20	1LM.LM31450	L15080992-01	1	1		08/24/15 22:09
21	1LM.LM31451	L15080992-03 (5x)	1	5		08/24/15 22:28
22	1LM.LM31452	L15080992-05 (10,000x)	1	10000		08/24/15 22:47
23	1LM.LM31453	L15080992-07 (1,000x)	1	1000		08/24/15 23:06
24	1LM.LM31454	L15080992-09 (1,000x)(NR)	1	1000		08/24/15 23:25
25	1LM.LM31455	L15080992-09 (RR 10,000x)	1	10000		08/24/15 23:44
26	1LM.LM31456	WG536250-05 CCV (1.0ug/L)	1	1	STD69537	08/25/15 00:03
27	1LM.LM31457	WG536249-07 MRL (0.2ug/L)	1	1	STD69537	08/25/15 00:22
28	1LM.LM31458	WG536250-06 CCB	1	1		08/25/15 00:41
29	1LM.LM31459	L15081073-01	1	1		08/25/15 01:00
30	1LM.LM31460	L15081073-03 (100x)(NR)	1	100		08/25/15 01:18
31	1LM.LM31461	L15081073-05	1	1		08/25/15 01:37
32	1LM.LM31462	L15081073-06	1	1		08/25/15 01:56

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 082415_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 140701254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG536249 (waters)

Internal STD: COA18071 Surrogate STD: NA STD69537 (08/05/2015)

CCV STD: STD69537 LCS STD: STD69913 NA

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
33	1LM.LM31463	L15081073-07	1	1		08/25/15 02:15
34	1LM.LM31464	WG536250-07 CCV (1.0ug/L)	1	1	STD69537	08/25/15 02:34
35	1LM.LM31465	WG536249-08 MRL (0.2ug/L)	1	1	STD69537	08/25/15 02:53
36	1LM.LM31466	WG536250-08 CCB	1	1		08/25/15 03:12

Comments

Seq.	Rerun	Dil.	Reason	Analytes
10				
	L15080899-01 (RR 5x)(NR) : The result for this sample will be reported from its analysis as neat.			
18				
	L15080904-05 (RR 5x)(NR) : The result for this sample will be reported from its analysis as neat.			
24	X	10000	Over Calibration Range	
	L15080992-09 (1,000x)(NR) : The result for this sample will be reported from its analysis at a 10,000x dilution.			
30	X	5000	Over Calibration Range	
	L15081073-03 (100x)(NR) : The result for this sample at this dilution will not be reported. This sample will be prepared and reanalyzed at a further dilution in a separate workgroup.			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 082715_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 140701254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG536759 (waters) Analytical WG536790 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD69537 (08/05/2015)

CCV STD: STD69537 LCS STD: STD69913 MS/MSD STD: STD69537

Comments: Sample L15081073-03 was analyzed at a 5,000x dilution based on the over-range result from its original analysis on 08/24/2015.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM31467	WG536760-01 CCB	1	1		08/27/15 13:09
2	1LM.LM31468	WG536760-02 CCV (1.0ug/L)	1	1	STD69537	08/27/15 13:27
3	1LM.LM31469	WG536759-05 MRL (0.2ug/L)	1	1	STD69537	08/27/15 13:46
4	1LM.LM31470	WG536759-01 MCT (0.2ug/L)	1	1	STD69913	08/27/15 14:05
5	1LM.LM31471	WG536759-02 BLANK	1	1		08/27/15 14:24
6	1LM.LM31472	WG536759-03 LCS (0.2ug/L)	1	1	STD69913	08/27/15 14:43
7	1LM.LM31473	WG536759-04 LCS2 (0.2ug/L)	1	1	STD69913	08/27/15 15:02
8	1LM.LM31474	L15081073-03 Rerun 5,000x	1	5000		08/27/15 15:21
9	1LM.LM31475	L15081287-01	1	1		08/27/15 15:40
10	1LM.LM31476	L15081288-01	1	1		08/27/15 17:09
11	1LM.LM31477	L15081288-02	1	1		08/27/15 17:28
12	1LM.LM31478	WG536760-03 CCV (1.0ug/L)	1	1	STD69537	08/27/15 17:47
13	1LM.LM31479	WG536759-06 MRL (0.2ug/L)	1	1	STD69537	08/27/15 18:06
14	1LM.LM31480	WG536760-04 CCB	1	1		08/27/15 18:25
15	1LM.LM31481	WG536790-07 MRL (2.0ug/kg)	7	1	STD69537	08/27/15 18:43
16	1LM.LM31482	WG536790-01 MCT (2.0ug/kg)	7	1	STD69537	08/27/15 19:02
17	1LM.LM31483	WG536790-02 BLANK	7	1		08/27/15 19:21
18	1LM.LM31484	WG536790-03 LCS (2.0ug/kg)	7	1	STD69537	08/27/15 19:40
19	1LM.LM31485	L15081064-01 REF	7	1		08/27/15 19:59
20	1LM.LM31486	L15081064-01 MS	7	1	STD69537	08/27/15 20:18
21	1LM.LM31487	L15081064-01 MSD	7	1	STD69537	08/27/15 20:37
22	1LM.LM31488	L15081064-02	7	1		08/27/15 20:56
23	1LM.LM31489	L15081064-03	7	1		08/27/15 21:15
24	1LM.LM31490	L15081064-04	7	1		08/27/15 21:34
25	1LM.LM31491	L15081064-05	7	1		08/27/15 21:53
26	1LM.LM31492	WG536760-05 CCV (1.0ug/L)	1	1	STD69537	08/27/15 22:12
27	1LM.LM31493	WG536790-08 MRL (2.0ug/kg)	7	1	STD69537	08/27/15 22:31
28	1LM.LM31494	WG536760-06 CCB	1	1		08/27/15 22:50
29	1LM.LM31495	L15081064-06	7	1		08/27/15 23:09
30	1LM.LM31496	L15081064-07	7	1		08/27/15 23:27
31	1LM.LM31497	L15081064-08	7	1		08/27/15 23:46
32	1LM.LM31498	L15081064-09	7	1		08/28/15 00:05
33	1LM.LM31499	L15081064-10	7	1		08/28/15 00:24

Page: 1 Approved: 28-AUG-15

Wadei D

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 082715_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 140701254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG536759 (waters) Analytical WG536790 (soils)

Internal STD: COA18071 Surrogate STD: NA STD69537 (08/05/2015)

CCV STD: STD69537 LCS STD: STD69913 STD69537

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM31500	L15081064-11	7	1		08/28/15 00:43
35	1LM.LM31501	WG536760-07 CCV (1.0ug/L)	1	1	STD69537	08/28/15 01:02
36	1LM.LM31502	WG536790-09 MRL (2.0ug/kg)	7	1	STD69537	08/28/15 01:21
37	1LM.LM31503	WG536760-08 CCB	1	1		08/28/15 01:40

Comments

Seq.	Rerun	Dil.	Reason	Analytes
19				
	L15081064-01 REF : This sample was selected for MS/MSD analysis. This sample, like every other sample in its delivery group, is composed of a nonhomogeneous mixture of finely ground dirt, root stems, and clumps of dry soil.			
20				
	L15081064-01 MS : The MS %Rec is above the advisory limit.			
21				
	L15081064-01 MSD : The MSD %Rec is above the advisory limit.			

Page: 2 Approved: 28-AUG-15

Microbac Laboratories Inc.

Data Checklist

Date: 05-AUG-2015
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG533952
Runlog ID: 69666
Analytical Workgroups: ICAL ONLY

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	NA
Limit of quantitation verification (LOQV) (LCMS)	NA
Special standards	NA
Blanks	NA
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	NA
Recoveries	NA
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	NA
Samples	NA
TCL hits	NA
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 06-AUG-2015 John Richards

Secondary Reviewer: 10-AUG-2015 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-10-2015 15:44:17

Microbac Laboratories Inc.

Data Checklist

Date: 24-AUG-2015
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 70121
Analytical Workgroups: L15080772, 0899, 0904, 0943, 0992, 1073

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	LSB

Primary Reviewer:
28-AUG-2015
John Richards

Secondary Reviewer:
28-AUG-2015
Leslie Bucisa

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-28-2015 13:45:21

Microbac Laboratories Inc.

Data Checklist

Date: 27-AUG-2015
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 70125
Analytical Workgroups: L15081073,1287,1288 (WATERS) L15081064 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	>ADV. LIM. FOR SOIL
%RPD	>ADV. LIM. FOR SOIL
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 28-AUG-2015 John Richards

Secondary Reviewer: 28-AUG-2015 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-28-2015 15:22:28

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG536249

Login Number: L15081073

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW14-081915	01	08/19/15					08/24/2015	5.3	28		08/25/15	.4	28	
50WW05-081915	05	08/19/15					08/24/2015	5.2	28		08/25/15	.4	28	
50WW05FD-081915	06	08/19/15					08/24/2015	5.2	28		08/25/15	.5	28	
50WW17-081915	07	08/19/15					08/24/2015	5	28		08/25/15	.5	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4360094
Report generated 08/28/2015 16:02

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG536759

Login Number: L15081073

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW13-081915	03	08/19/15					08/27/2015	8.2	28		08/27/15	.1	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4360094
Report generated 08/28/2015 16:02

METHOD BLANK SUMMARY

Login Number: L15081073
Blank File ID: 1LM.LM31435
Prep Date: 08/24/15 15:00
Analyzed Date: 08/24/15 17:25
Analyst: JWR

Work Group: WG536249
Blank Sample ID: WG536249-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG536249-05	1LM.LM31433	08/24/15 16:47	01
MCT	WG536249-01	1LM.LM31434	08/24/15 17:06	01
LCS	WG536249-03	1LM.LM31436	08/24/15 17:44	01
LCS2	WG536249-04	1LM.LM31437	08/24/15 18:03	01
QCMRL	WG536249-06	1LM.LM31445	08/24/15 20:34	01
QCMRL	WG536249-07	1LM.LM31457	08/25/15 00:22	01
50WW14-081915	L15081073-01	1LM.LM31459	08/25/15 01:00	01
50WW05-081915	L15081073-05	1LM.LM31461	08/25/15 01:37	01
50WW05FD-081915	L15081073-06	1LM.LM31462	08/25/15 01:56	01
50WW17-081915	L15081073-07	1LM.LM31463	08/25/15 02:15	01
QCMRL	WG536249-08	1LM.LM31465	08/25/15 02:53	01

Report Name: BLANK_SUMMARY
PDF File ID: 4360095
Report generated 08/28/2015 16:02

METHOD BLANK SUMMARY

Login Number: L15081073
Blank File ID: 1LM.LM31471
Prep Date: 08/27/15 13:30
Analyzed Date: 08/27/15 14:24
Analyst: JWR

Work Group: WG536759
Blank Sample ID: WG536759-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG536759-05	1LM.LM31469	08/27/15 13:46	01
MCT	WG536759-01	1LM.LM31470	08/27/15 14:05	01
LCS	WG536759-03	1LM.LM31472	08/27/15 14:43	01
LCS2	WG536759-04	1LM.LM31473	08/27/15 15:02	01
50WW13-081915	L15081073-03	1LM.LM31474	08/27/15 15:21	DL01
QCMRL	WG536759-06	1LM.LM31479	08/27/15 18:06	01

Report Name: BLANK_SUMMARY
PDF File ID: 4360095
Report generated 08/28/2015 16:02

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15081073 Prep Date: 08/24/15 15:00 Sample ID: WG536249-02
Instrument ID: LCMS1 Run Date: 08/24/15 17:25 Prep Method: 6850
File ID: 1LM.LM31435 Analyst: JWR Method: 6850
Workgroup (AAB#): WG536249 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-06-AUG-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4360096
28-AUG-2015 16:04

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15081073 Prep Date: 08/27/15 13:30 Sample ID: WG536759-02
Instrument ID: LCMS1 Run Date: 08/27/15 14:24 Prep Method: 6850
File ID: 1LM.LM31471 Analyst: JWR Method: 6850
Workgroup (AAB#): WG536759 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-06-AUG-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4360096
28-AUG-2015 16:04

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15081073 Analyst: JWR Prep Method: 6850
Instrument ID: LCMS1 Matrix: Water Method: 6850
Workgroup (AAB#): WG536249 Units: ug/L
QC Key: DOD4 Lot #: STD69913

Sample ID: WG536249-03 LCS File ID: 1LM.LM31436 Run Date: 08/24/2015 17:44
Sample ID: WG536249-04 LCS2 File ID: 1LM.LM31437 Run Date: 08/24/2015 18:03

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Perchlorate	0.200	0.206	103	0.200	0.210	105	1.92	80 - 120	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4360097
Report generated: 08/28/2015 16:02

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15081073 Analyst: JWR Prep Method: 6850
Instrument ID: LCMS1 Matrix: Water Method: 6850
Workgroup (AAB#): WG536759 Units: ug/L
QC Key: DOD4 Lot #: STD69913

Sample ID: WG536759-03 LCS File ID: 1LM.LM31472 Run Date: 08/27/2015 14:43
Sample ID: WG536759-04 LCS2 File ID: 1LM.LM31473 Run Date: 08/27/2015 15:02

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Perchlorate	0.200	0.212	106	0.200	0.214	107	0.939	80 - 120	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4360097
Report generated: 08/28/2015 16:02

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L15081073
Analytical Method: 6850
ICAL Workgroup: WG533952

Instrument ID: LCMS1
Initial Calibration Date: 06-AUG-15 00:22
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.372	8.13	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4360694
Report generated 08/28/2015 16:02

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15081073

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 06-AUG-15 00:22

Column ID: F

Analyte	WG533952-02			WG533952-03			WG533952-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	11400.0000	1.406	0.200	25600.0000	1.446	0.500	59400.0000	1.351

INT_CAL - Modified 03/06/2008
PDF File ID: 4360694
Report generated 08/28/2015 16:02

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15081073

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 06-AUG-15 00:22

Column ID: F

Analyte	WG533952-05			WG533952-06			WG533952-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	112000.000	1.326	2.00	231000.000	1.381	5.00	550000.000	1.342

INT_CAL - Modified 03/06/2008
PDF File ID: 4360694
Report generated 08/28/2015 16:02

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15081073

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 06-AUG-15 00:22

Column ID: F

Analyte	WG533952-08		
	CONC	RESP	RF
Perchlorate	10.0	975000.000	1.354

INT_CAL - Modified 03/06/2008
PDF File ID: 4360694
Report generated 08/28/2015 16:02

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15081073 Run Date: 08/06/2015 Sample ID: WG533952-09
Instrument ID: LCMS1 Run Time: 00:41 Method: 6850
File ID: 1LM.LM31300 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG533952 Cal ID: LCMS1 - 06-AUG-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.956	ug/L	1.30	4.40	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4360695
Report generated 08/28/2015 16:02

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15081073
Run Date: 08/24/2015
Sample ID: WG536250-01
Instrument ID: LCMS1
Run Time: 16:09
Method: 6850
File ID: 1LM.LM31431
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG536249
Cal ID: LCMS1 - 06-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4360100
Report generated 08/28/2015 16:02

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15081073
Run Date: 08/24/2015
Sample ID: WG536250-04
Instrument ID: LCMS1
Run Time: 20:53
Method: 6850
File ID: 1LM.LM31446
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG536249
Cal ID: LCMS1 - 06-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4360100
Report generated 08/28/2015 16:02

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15081073
Run Date: 08/25/2015
Sample ID: WG536250-06
Instrument ID: LCMS1
Run Time: 00:41
Method: 6850
File ID: 1LM.LM31458
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG536249
Cal ID: LCMS1 - 06-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4360100
Report generated 08/28/2015 16:02

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15081073
Run Date: 08/25/2015
Sample ID: WG536250-08
Instrument ID: LCMS1
Run Time: 03:12
Method: 6850
File ID: 1LM.LM31466
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG536249
Cal ID: LCMS1 - 06-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4360100
Report generated 08/28/2015 16:02

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15081073
Run Date: 08/27/2015
Sample ID: WG536760-01
Instrument ID: LCMS1
Run Time: 13:09
Method: 6850
File ID: 1LM.LM31467
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG536759
Cal ID: LCMS1 - 06-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4360100
Report generated 08/28/2015 16:02

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15081073
Run Date: 08/27/2015
Sample ID: WG536760-04
Instrument ID: LCMS1
Run Time: 18:25
Method: 6850
File ID: 1LM.LM31480
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG536759
Cal ID: LCMS1 - 06-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4360100
Report generated 08/28/2015 16:02

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15081073 Run Date: 08/24/2015 Sample ID: WG536250-02
Instrument ID: LCMS1 Run Time: 16:28 Method: 6850
File ID: 1LM.LM31432 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG536249 Cal ID: LCMS1 - 06-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.05	ug/L	1.43	5.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4360099
Report generated 08/28/2015 16:02

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15081073
Run Date: 08/24/2015
Sample ID: WG536250-03
Instrument ID: LCMS1
Run Time: 20:16
Method: 6850
File ID: 1LM.LM31444
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG536249
Cal ID: LCMS1 - 06-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.37	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4360099
Report generated 08/28/2015 16:02

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15081073
Run Date: 08/25/2015
Sample ID: WG536250-05
Instrument ID: LCMS1
Run Time: 00:03
Method: 6850
File ID: 1LM.LM31456
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG536249
Cal ID: LCMS1 - 06-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.991	ug/L	1.35	0.900	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4360099
Report generated 08/28/2015 16:02

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15081073
Run Date: 08/25/2015
Sample ID: WG536250-07
Instrument ID: LCMS1
Run Time: 02:34
Method: 6850
File ID: 1LM.LM31464
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG536249
Cal ID: LCMS1 - 06-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.979	ug/L	1.33	2.10	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4360099
Report generated 08/28/2015 16:02

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15081073
Run Date: 08/27/2015
Sample ID: WG536760-02
Instrument ID: LCMS1
Run Time: 13:27
Method: 6850
File ID: 1LM.LM31468
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG536759
Cal ID: LCMS1 - 06-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.41	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4360099
Report generated 08/28/2015 16:02

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15081073
Run Date: 08/27/2015
Sample ID: WG536760-03
Instrument ID: LCMS1
Run Time: 17:47
Method: 6850
File ID: 1LM.LM31478
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG536759
Cal ID: LCMS1 - 06-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.983	ug/L	1.34	1.70	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4360099
Report generated 08/28/2015 16:02

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15081073
Run Date: 08/27/2015
Sample ID: WG536760-05
Instrument ID: LCMS1
Run Time: 22:12
Method: 6850
File ID: 1LM.LM31492
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG536759
Cal ID: LCMS1 - 06-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.990	ug/L	1.34	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4360099
Report generated 08/28/2015 16:02

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15081073 Run Date: 08/24/2015 Sample ID: WG536249-05
Instrument ID: LCMS1 Run Time: 16:47 Prep Method: 6850
File ID: 1LM.LM31433 Analyst: JWR Method: 6850
Workgroup (AAB#): WG536249 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-06-AUG-15

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.213	107	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4360098
Report generated 08/28/2015 16:02

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15081073 Run Date: 08/24/2015 Sample ID: WG536249-06
Instrument ID: LCMS1 Run Time: 20:34 Prep Method: 6850
File ID: 1LM.LM31445 Analyst: JWR Method: 6850
Workgroup (AAB#): WG536249 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-06-AUG-15

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.196	98.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4360098
Report generated 08/28/2015 16:02

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15081073 Run Date: 08/25/2015 Sample ID: WG536249-07
Instrument ID: LCMS1 Run Time: 00:22 Prep Method: 6850
File ID: 1LM.LM31457 Analyst: JWR Method: 6850
Workgroup (AAB#): WG536249 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-06-AUG-15

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.210	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4360098
Report generated 08/28/2015 16:02

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15081073 Run Date: 08/25/2015 Sample ID: WG536249-08
Instrument ID: LCMS1 Run Time: 02:53 Prep Method: 6850
File ID: 1LM.LM31465 Analyst: JWR Method: 6850
Workgroup (AAB#): WG536249 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-06-AUG-15

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4360098
Report generated 08/28/2015 16:02

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15081073 Run Date: 08/27/2015 Sample ID: WG536759-05
Instrument ID: LCMS1 Run Time: 13:46 Prep Method: 6850
File ID: 1LM.LM31469 Analyst: JWR Method: 6850
Workgroup (AAB#): WG536759 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-06-AUG-15

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.218	109	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4360098
Report generated 08/28/2015 16:02

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15081073 Run Date: 08/27/2015 Sample ID: WG536759-06
Instrument ID: LCMS1 Run Time: 18:06 Prep Method: 6850
File ID: 1LM.LM31479 Analyst: JWR Method: 6850
Workgroup (AAB#): WG536759 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-06-AUG-15

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.198	99.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4360098
Report generated 08/28/2015 16:02

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L15081073
Instrument ID: LCMS1
Workgroup (AAB#): WG536249

ICAL CCV Number: WG533952-05
CAL ID: LCMS1-06-AUG-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG533952	NA	NA	414000
Upper Limit	NA	NA	621000
Lower Limit	NA	NA	207000
L15081073-01	1.00	01	413000
L15081073-05	1.00	01	417000
L15081073-06	1.00	01	428000
L15081073-07	1.00	01	425000
WG536249-02	1.00	01	397000
WG536249-03	1.00	01	399000
WG536249-04	1.00	01	367000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4360101
Report generated 08/28/2015 16:02

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L15081073
Instrument ID: LCMS1
Workgroup (AAB#): WG536759

ICAL CCV Number: WG533952-05
CAL ID: LCMS1-06-AUG-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG533952	NA	NA	414000
Upper Limit	NA	NA	621000
Lower Limit	NA	NA	207000
L15081073-03	5000	DL01	400000
WG536759-02	1.00	01	430000
WG536759-03	1.00	01	442000
WG536759-04	1.00	01	450000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4360101
Report generated 08/28/2015 16:02

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081073	**Prep Method:**	6850	**Samplenum:**	L15081073-01
Instrument:	LCMS1	**Prep Date:**	08/24/2015 15:00	**File ID:**	1LM.LM31459
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/25/2015 01:00	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	245000	73200	3.35	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081073	**Prep Method:**	6850	**Samplenum:**	L15081073-03
Instrument:	LCMS1	**Prep Date:**	08/27/2015 13:30	**File ID:**	1LM.LM31474
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536759	**Analysis Date:**	08/27/2015 15:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	202000	62900	3.21	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081073	**Prep Method:**	6850	**Samplenum:**	L15081073-05
Instrument:	LCMS1	**Prep Date:**	08/24/2015 15:00	**File ID:**	1LM.LM31461
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/25/2015 01:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	190000	59400	3.20	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081073	**Prep Method:**	6850	**Samplenum:**	L15081073-06
Instrument:	LCMS1	**Prep Date:**	08/24/2015 15:00	**File ID:**	1LM.LM31462
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/25/2015 01:56	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	190000	60400	3.15	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081073	**Prep Method:**	6850	**Samplenum:**	L15081073-07
Instrument:	LCMS1	**Prep Date:**	08/24/2015 15:00	**File ID:**	1LM.LM31463
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/25/2015 02:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	22800	7080	3.22	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081073	**Prep Method:**		**Samplenum:**	WG533952-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31293
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/05/2015 22:28	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	11400	3660	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081073	**Prep Method:**		**Samplenum:**	WG533952-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31293
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536759	**Analysis Date:**	08/05/2015 22:28	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	11400	3660	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081073	**Prep Method:**		**Samplenum:**	WG533952-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31294
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/05/2015 22:47	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	25600	7580	3.38	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081073	**Prep Method:**		**Samplenum:**	WG533952-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31294
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536759	**Analysis Date:**	08/05/2015 22:47	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	25600	7580	3.38	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081073	**Prep Method:**		**Samplenum:**	WG533952-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31295
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/05/2015 23:06	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	59400	19000	3.13	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081073	**Prep Method:**		**Samplenum:**	WG533952-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31295
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536759	**Analysis Date:**	08/05/2015 23:06	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	59400	19000	3.13	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081073	**Prep Method:**		**Samplenum:**	WG533952-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31296
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/05/2015 23:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	112000	35600	3.15	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081073	**Prep Method:**		**Samplenum:**	WG533952-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31296
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536759	**Analysis Date:**	08/05/2015 23:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	112000	35600	3.15	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081073	**Prep Method:**		**Samplenum:**	WG533952-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31297
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/05/2015 23:44	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	231000	70300	3.29	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081073	**Prep Method:**		**Samplenum:**	WG533952-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31297
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536759	**Analysis Date:**	08/05/2015 23:44	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	231000	70300	3.29	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081073	**Prep Method:**		**Samplenum:**	WG533952-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31298
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/06/2015 00:03	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	550000	170000	3.24	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081073	**Prep Method:**		**Samplenum:**	WG533952-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31298
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536759	**Analysis Date:**	08/06/2015 00:03	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	550000	170000	3.24	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081073	**Prep Method:**		**Samplenum:**	WG533952-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31299
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/06/2015 00:22	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	975000	304000	3.21	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081073	**Prep Method:**		**Samplenum:**	WG533952-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31299
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536759	**Analysis Date:**	08/06/2015 00:22	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	975000	304000	3.21	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081073	**Prep Method:**		**Samplenum:**	WG533952-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31300
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/06/2015 00:41	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	109000	34100	3.20	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081073	**Prep Method:**		**Samplenum:**	WG533952-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31300
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536759	**Analysis Date:**	08/06/2015 00:41	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	109000	34100	3.20	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081073	**Prep Method:**	6850	**Samplenum:**	WG536249-01
Instrument:	LCMS1	**Prep Date:**	08/24/2015 15:00	**File ID:**	1LM.LM31434
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/24/2015 17:06	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	20900	6270	3.33	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081073	**Prep Method:**	6850	**Samplenum:**	WG536249-02
Instrument:	LCMS1	**Prep Date:**	08/24/2015 15:00	**File ID:**	1LM.LM31435
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/24/2015 17:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081073	**Prep Method:**	6850	**Samplenum:**	WG536249-03
Instrument:	LCMS1	**Prep Date:**	08/24/2015 15:00	**File ID:**	1LM.LM31436
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/24/2015 17:44	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	22900	7710	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081073	**Prep Method:**	6850	**Samplenum:**	WG536249-04
Instrument:	LCMS1	**Prep Date:**	08/24/2015 15:00	**File ID:**	1LM.LM31437
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/24/2015 18:03	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	21400	6620	3.23	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081073	**Prep Method:**	6850	**Samplenum:**	WG536249-05
Instrument:	LCMS1	**Prep Date:**	08/24/2015 15:00	**File ID:**	1LM.LM31433
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/24/2015 16:47	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	21500	6560	3.28	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081073	**Prep Method:**	6850	**Samplenum:**	WG536249-06
Instrument:	LCMS1	**Prep Date:**	08/24/2015 15:00	**File ID:**	1LM.LM31445
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/24/2015 20:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	22800	7970	2.86	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081073	**Prep Method:**	6850	**Samplenum:**	WG536249-07
Instrument:	LCMS1	**Prep Date:**	08/24/2015 15:00	**File ID:**	1LM.LM31457
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/25/2015 00:22	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	24100	8120	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081073	**Prep Method:**	6850	**Samplenum:**	WG536249-08
Instrument:	LCMS1	**Prep Date:**	08/24/2015 15:00	**File ID:**	1LM.LM31465
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/25/2015 02:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	24100	7860	3.07	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081073	**Prep Method:**		**Samplenum:**	WG536250-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31431
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/24/2015 16:09	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081073	**Prep Method:**		**Samplenum:**	WG536250-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31432
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/24/2015 16:28	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	105000	32100	3.27	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081073	**Prep Method:**		**Samplenum:**	WG536250-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31444
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/24/2015 20:16	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	124000	39200	3.16	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081073	**Prep Method:**		**Samplenum:**	WG536250-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31446
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/24/2015 20:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	203	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081073	**Prep Method:**		**Samplenum:**	WG536250-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31456
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/25/2015 00:03	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	110000	33700	3.26	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081073	**Prep Method:**		**Samplenum:**	WG536250-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31458
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/25/2015 00:41	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	173	340	0.509	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081073	**Prep Method:**		**Samplenum:**	WG536250-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31464
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/25/2015 02:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	123000	37800	3.25	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081073	**Prep Method:**		**Samplenum:**	WG536250-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31466
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536249	**Analysis Date:**	08/25/2015 03:12	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	85.8	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081073	**Prep Method:**	6850	**Samplenum:**	WG536759-01
Instrument:	LCMS1	**Prep Date:**	08/27/2015 13:30	**File ID:**	1LM.LM31470
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536759	**Analysis Date:**	08/27/2015 14:05	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	21800	7020	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081073	**Prep Method:**	6850	**Samplenum:**	WG536759-02
Instrument:	LCMS1	**Prep Date:**	08/27/2015 13:30	**File ID:**	1LM.LM31471
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536759	**Analysis Date:**	08/27/2015 14:24	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	358	307	1.17	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081073	**Prep Method:**	6850	**Samplenum:**	WG536759-03
Instrument:	LCMS1	**Prep Date:**	08/27/2015 13:30	**File ID:**	1LM.LM31472
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536759	**Analysis Date:**	08/27/2015 14:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	26000	8280	3.14	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081073	**Prep Method:**	6850	**Samplenum:**	WG536759-04
Instrument:	LCMS1	**Prep Date:**	08/27/2015 13:30	**File ID:**	1LM.LM31473
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536759	**Analysis Date:**	08/27/2015 15:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	26800	8120	3.30	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081073	**Prep Method:**	6850	**Samplenum:**	WG536759-05
Instrument:	LCMS1	**Prep Date:**	08/27/2015 13:30	**File ID:**	1LM.LM31469
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536759	**Analysis Date:**	08/27/2015 13:46	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	23600	7600	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081073	**Prep Method:**	6850	**Samplenum:**	WG536759-06
Instrument:	LCMS1	**Prep Date:**	08/27/2015 13:30	**File ID:**	1LM.LM31479
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536759	**Analysis Date:**	08/27/2015 18:06	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	21800	6930	3.15	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081073	**Prep Method:**		**Samplenum:**	WG536760-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31467
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536759	**Analysis Date:**	08/27/2015 13:09	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081073	**Prep Method:**		**Samplenum:**	WG536760-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31468
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536759	**Analysis Date:**	08/27/2015 13:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	111000	34600	3.21	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081073	**Prep Method:**		**Samplenum:**	WG536760-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31478
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536759	**Analysis Date:**	08/27/2015 17:47	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	119000	38400	3.10	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081073	**Prep Method:**		**Samplenum:**	WG536760-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31480
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536759	**Analysis Date:**	08/27/2015 18:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	537	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081073	**Prep Method:**		**Samplenum:**	WG536760-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31492
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG536759	**Analysis Date:**	08/27/2015 22:12	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	123000	39800	3.09	2.3	3.8	

2.2.1.3 Sample Data

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Data File	LM31459.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/25/2015 1:00:01 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15081073-01	**Injection Vial**	23.00
Data File	LM31459.wiff	**Injection Volume**	10.00
Acquisition Date	8/25/2015 1:00:01 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	L15081073-01	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.130e+05	9.33	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.450e+05	9.34	N/A	2.19
Perchlorate conf	7.320e+04	9.33	N/A	2.11

O18LP (Internal Standard)

RT (Exp. RT): 9.33(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

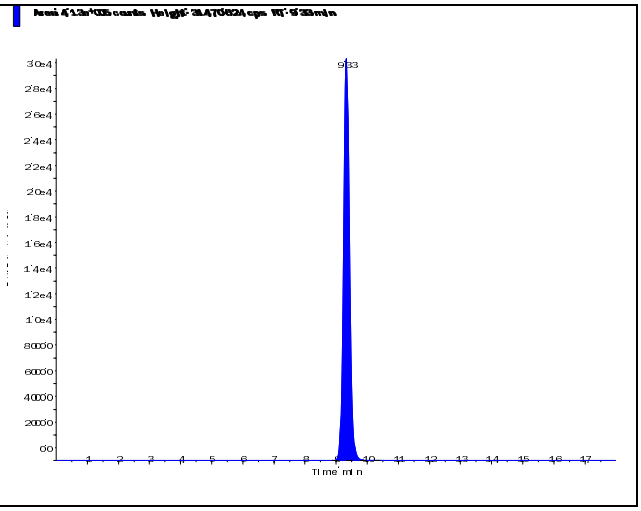

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.34 (9.52) min
Calculated conc:	2.19 ng/ml
Area Ratio:	0.593
Sample Type:	(Unknown)

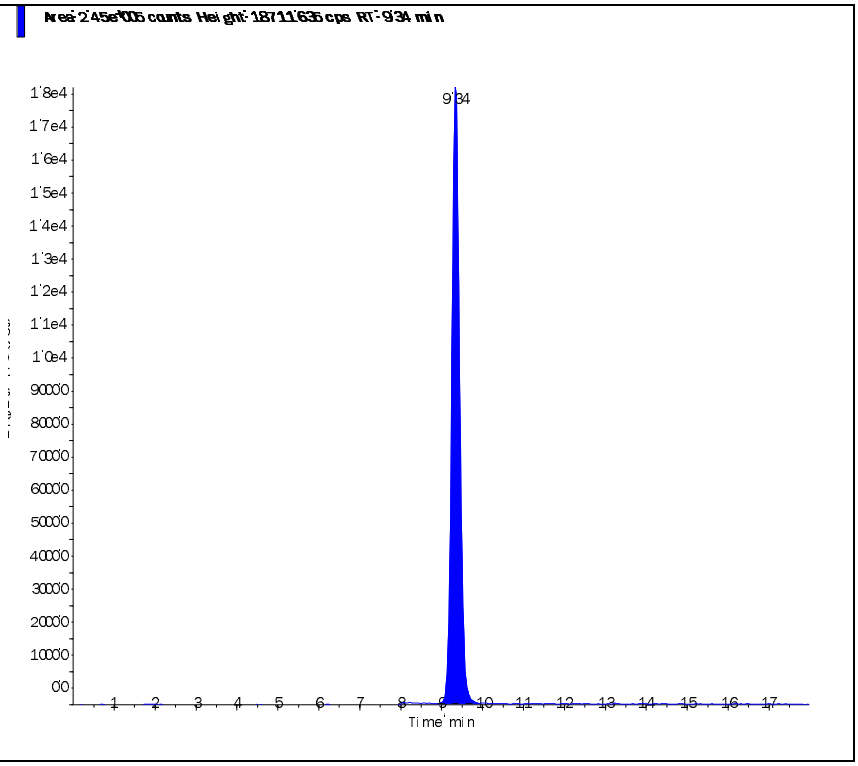

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.33 (9.48) min
Calculated conc:	2.11 ng/ml
Area Ratio:	0.177
Sample Type:	(Unknown)

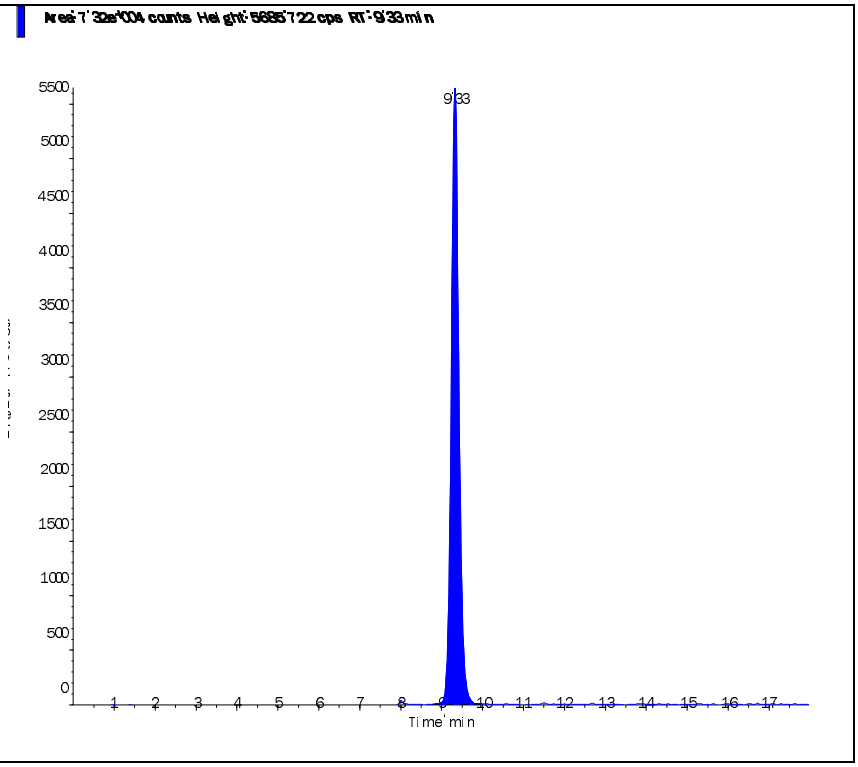

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Data File	LM31474.wiff	**Result Table**	082715_JWR.rdb
Acquisition Date	8/27/2015 3:21:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15081073-03 Rerun 5,000x	**Injection Vial**	8.00
Data File	LM31474.wiff	**Injection Volume**	10.00
Acquisition Date	8/27/2015 3:21:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082715_JWR.rdb
Sample ID	L15081073-03	**Dilution Factor**	1.00
Sample Comment	15,000.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.000e+05	9.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.020e+05	9.72	N/A	1.86
Perchlorate conf	6.290e+04	9.70	N/A	1.87

O18LP (Internal Standard)

RT (Exp. RT): 9.70(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

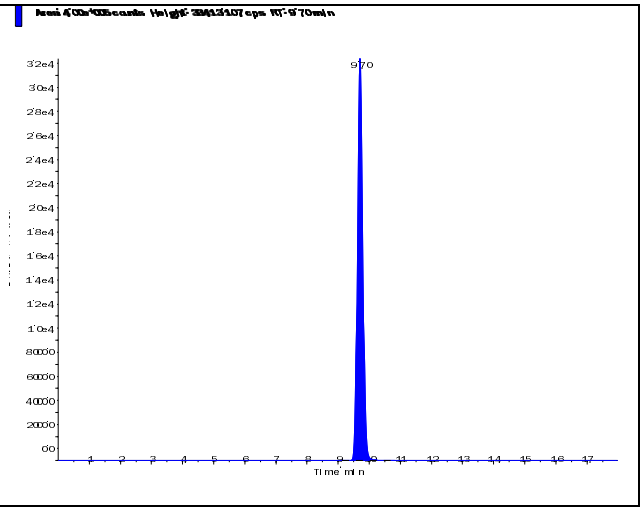

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.72 (9.52) min Calculated conc: 1.86 ng/ml Area Ratio: 0.505 Sample Type: (Unknown)	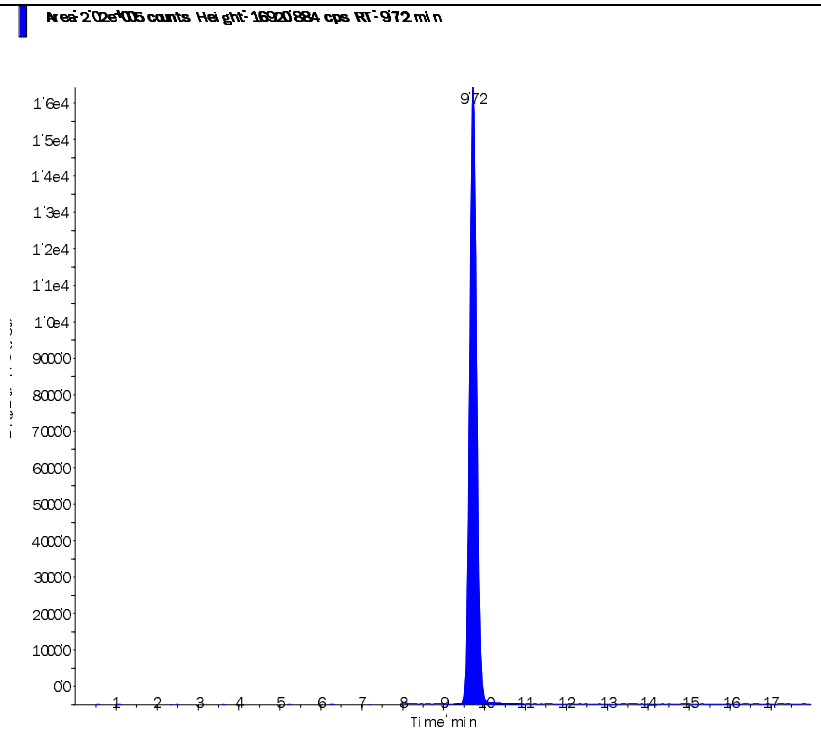
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.70 (9.48) min Calculated conc: 1.87 ng/ml Area Ratio: 0.157 Sample Type: (Unknown)	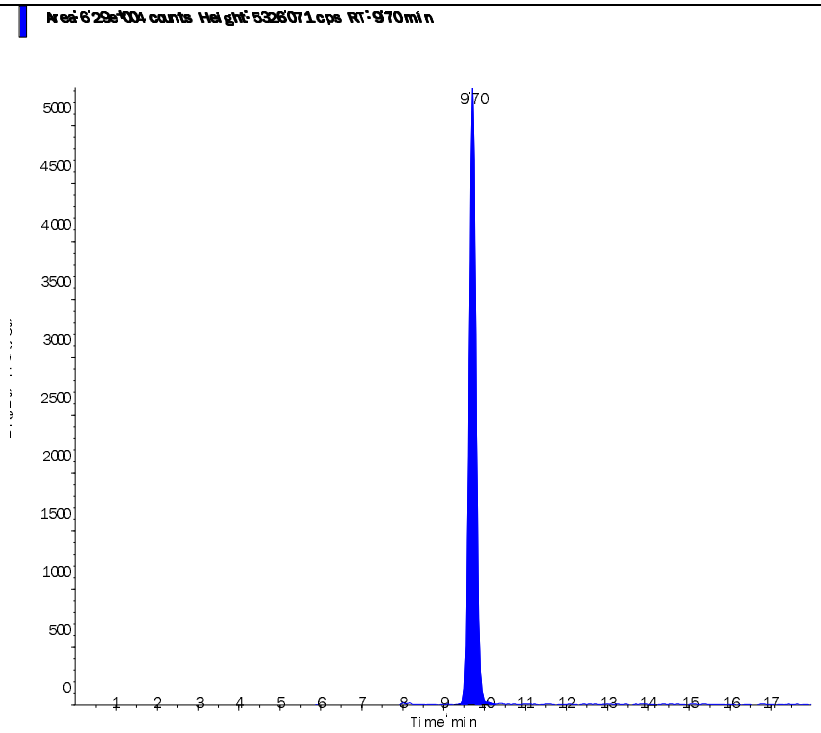

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Data File	LM31461.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/25/2015 1:37:53 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15081073-05	**Injection Vial**	25.00
Data File	LM31461.wiff	**Injection Volume**	10.00
Acquisition Date	8/25/2015 1:37:53 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	L15081073-05	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.170e+05	9.35	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.900e+05	9.36	N/A	1.69
Perchlorate conf	5.940e+04	9.35	N/A	1.69

O18LP (Internal Standard)

RT (Exp. RT): 9.35(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

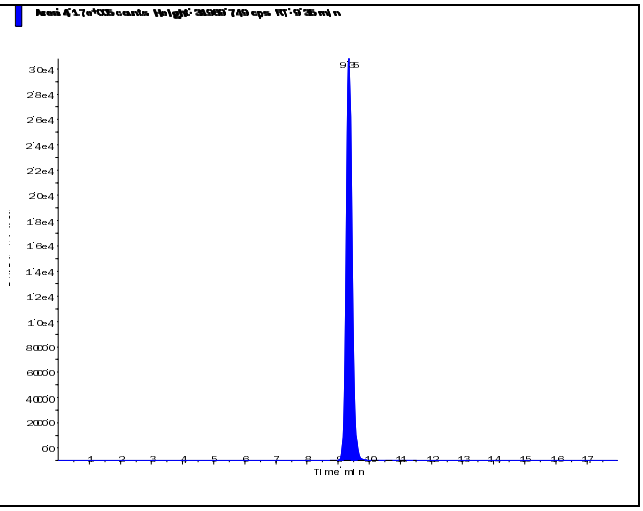

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.36 (9.52) min
Calculated conc:	1.69 ng/ml
Area Ratio:	0.457
Sample Type:	(Unknown)

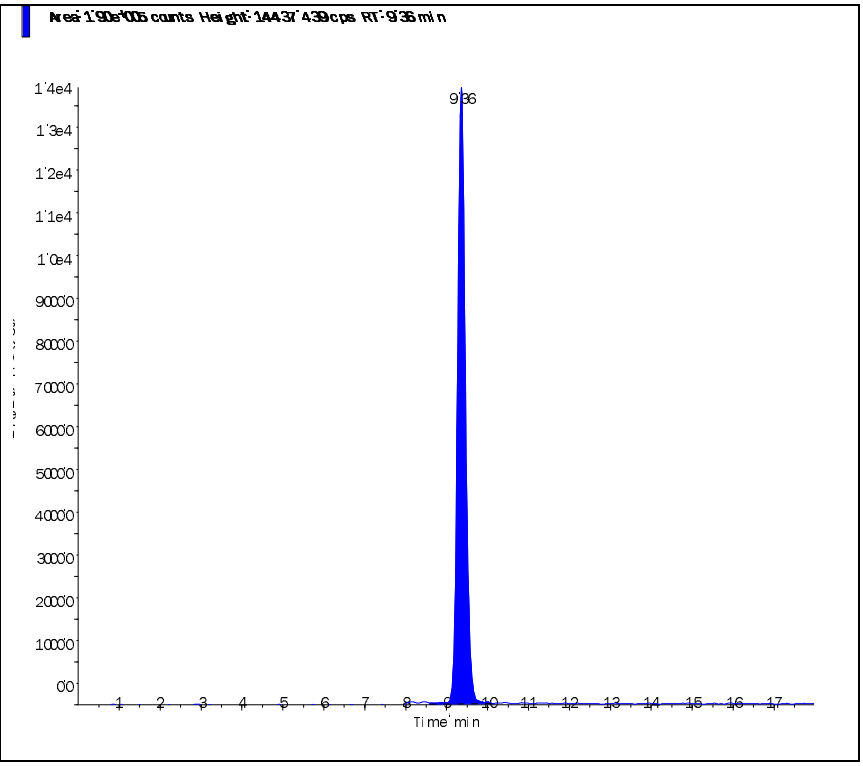

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.35 (9.48) min
Calculated conc:	1.69 ng/ml
Area Ratio:	0.142
Sample Type:	(Unknown)

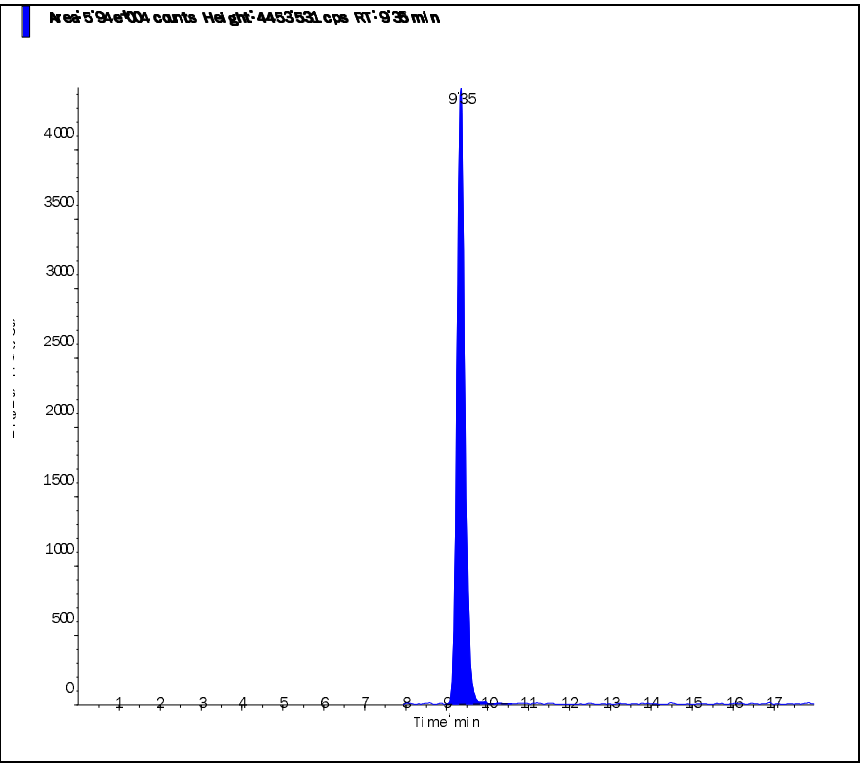

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Data File	LM31462.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/25/2015 1:56:48 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15081073-06	**Injection Vial**	26.00
Data File	LM31462.wiff	**Injection Volume**	10.00
Acquisition Date	8/25/2015 1:56:48 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	L15081073-06	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.280e+05	9.35	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.900e+05	9.36	N/A	1.64
Perchlorate conf	6.040e+04	9.35	N/A	1.68

O18LP (Internal Standard)

RT (Exp. RT): 9.35(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

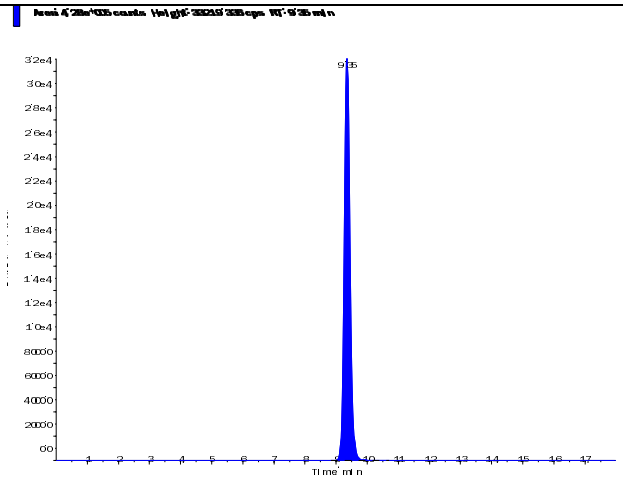

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.36 (9.52) min Calculated conc: 1.64 ng/ml Area Ratio: 0.443 Sample Type: (Unknown)	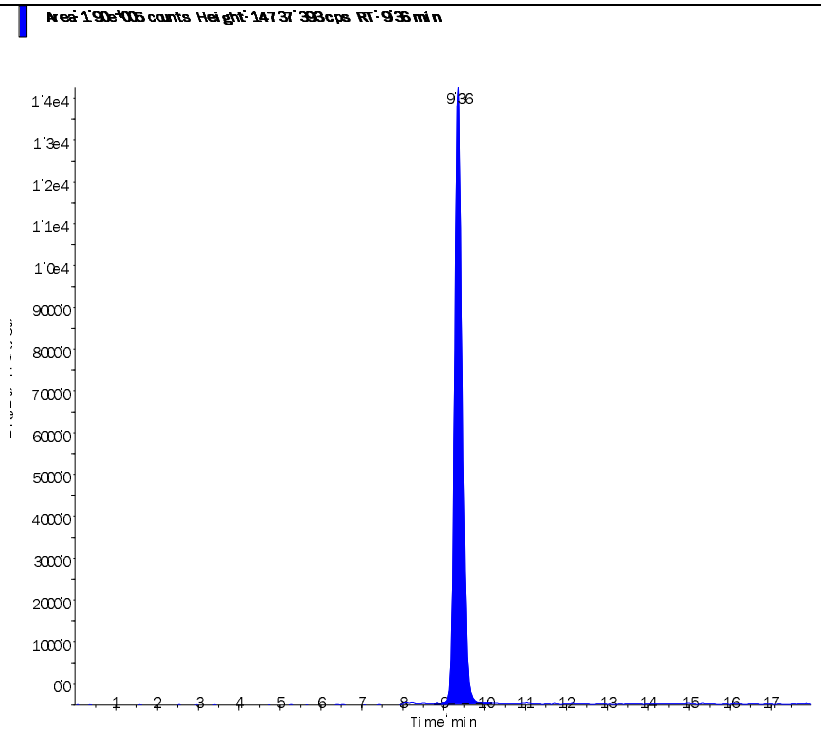
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.35 (9.48) min Calculated conc: 1.68 ng/ml Area Ratio: 0.141 Sample Type: (Unknown)	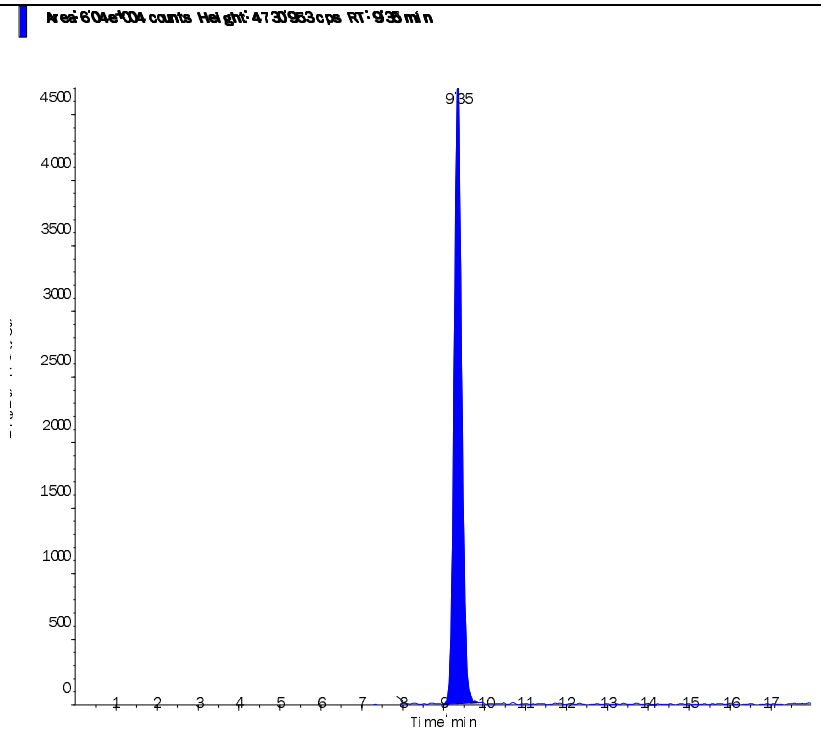

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Data File	LM31463.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/25/2015 2:15:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15081073-07	**Injection Vial**	27.00
Data File	LM31463.wiff	**Injection Volume**	10.00
Acquisition Date	8/25/2015 2:15:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	L15081073-07	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.250e+05	9.36	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.280e+04	9.37	N/A	0.193
Perchlorate conf	7.080e+03	9.36	N/A	0.192

O18LP (Internal Standard)

RT (Exp. RT): 9.36(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

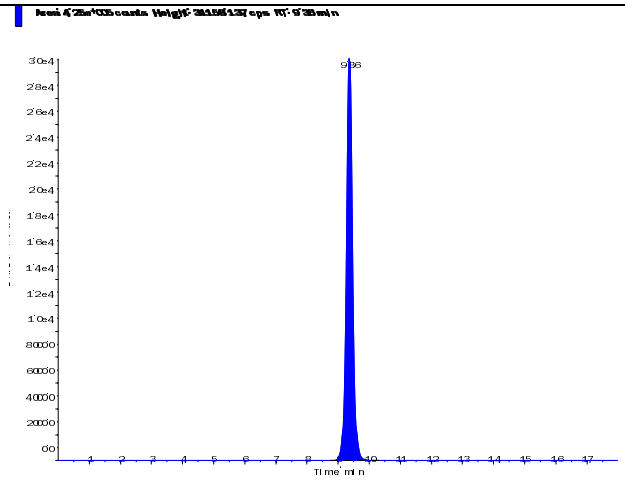

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.37 (9.52) min Calculated conc: 0.193 ng/ml Area Ratio: 0.054 Sample Type: (Unknown)	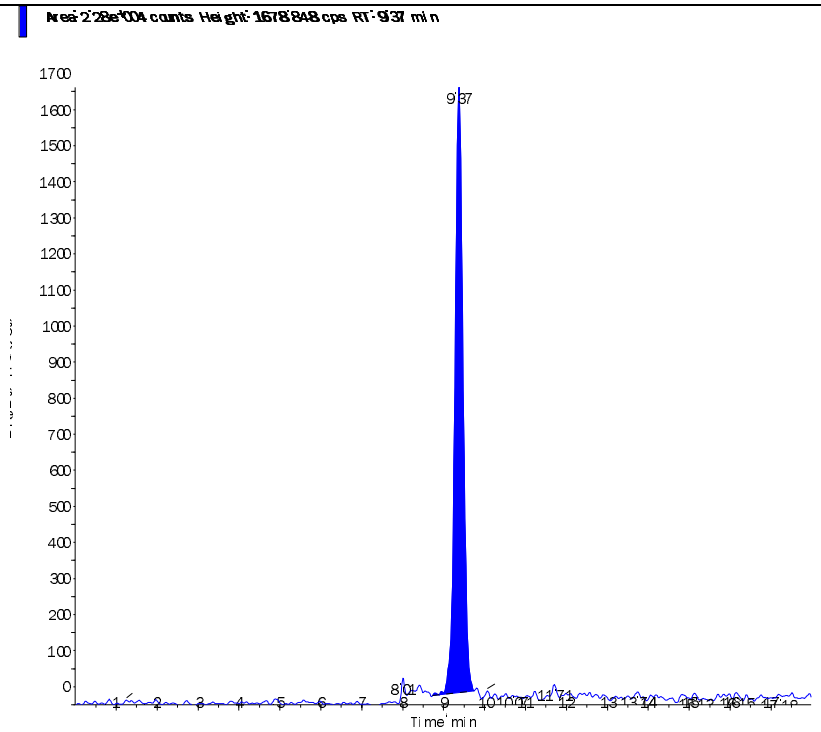
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.36 (9.48) min Calculated conc: 0.192 ng/ml Area Ratio: 0.017 Sample Type: (Unknown)	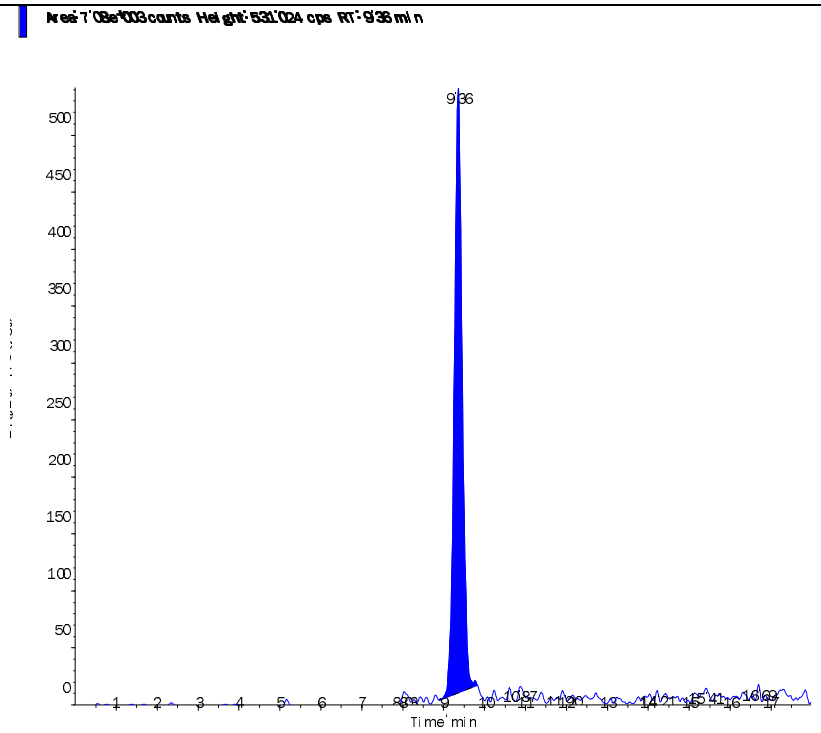

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2.2.1.4 Standards Data

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Data File	LM31292.wiff	**Result Table**	082715_JWR.rdb
Acquisition Date	8/5/2015 10:09:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG533952-01 CCB	**Injection Vial**	1.00
Data File	LM31292.wiff	**Injection Volume**	10.00
Acquisition Date	8/5/2015 10:09:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082715_JWR.rdb
Sample ID	WG533952-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.160e+05	9.71	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.040e+03	9.73	N/A	0.0122
Perchlorate conf	6.020e+02	9.74	N/A	0.0108

O18LP (Internal Standard)

RT (Exp. RT): 9.71(9.50) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

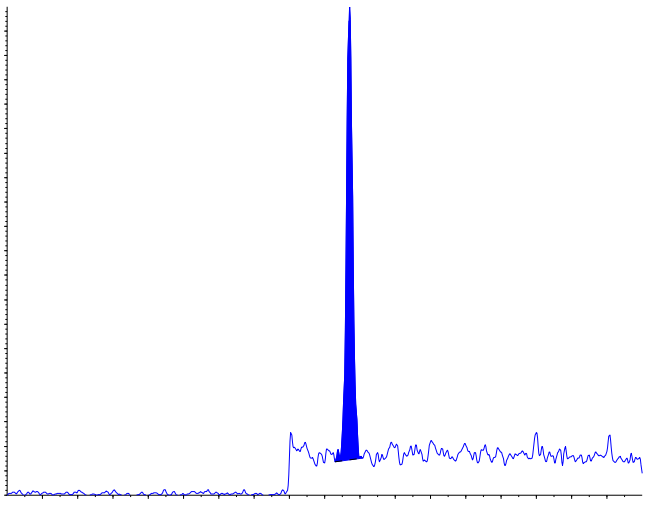

Created with Analyst Reporter
Printed: 8/28/2015 10:58 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.73 (9.52) min Calculated conc: 0.0122 ng/ml Area Ratio: 0.005 Sample Type: (Unknown)	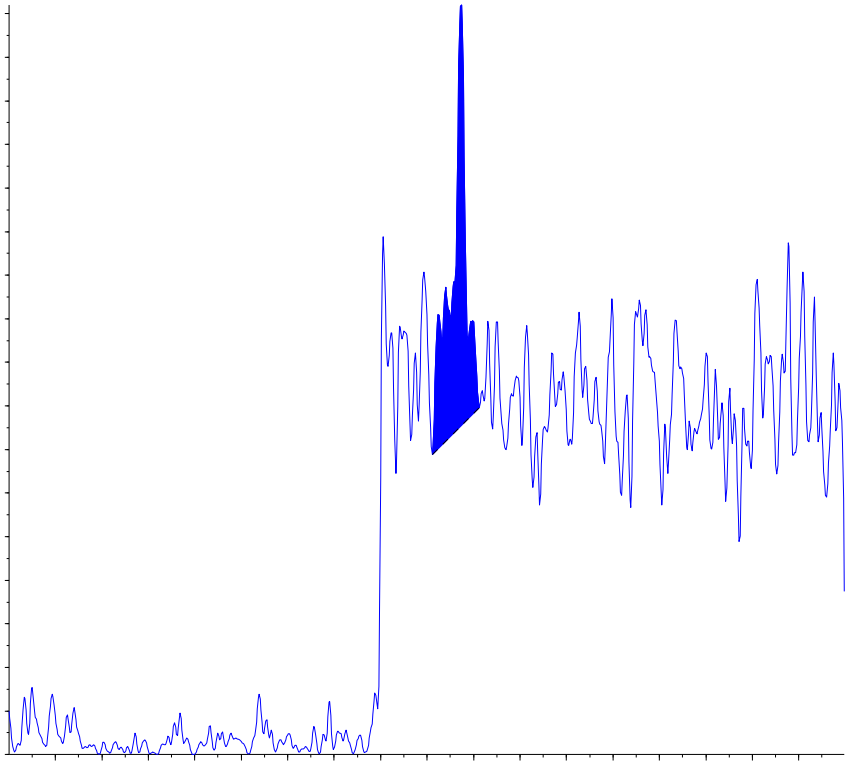
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.74 (9.48) min Calculated conc: 0.0108 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	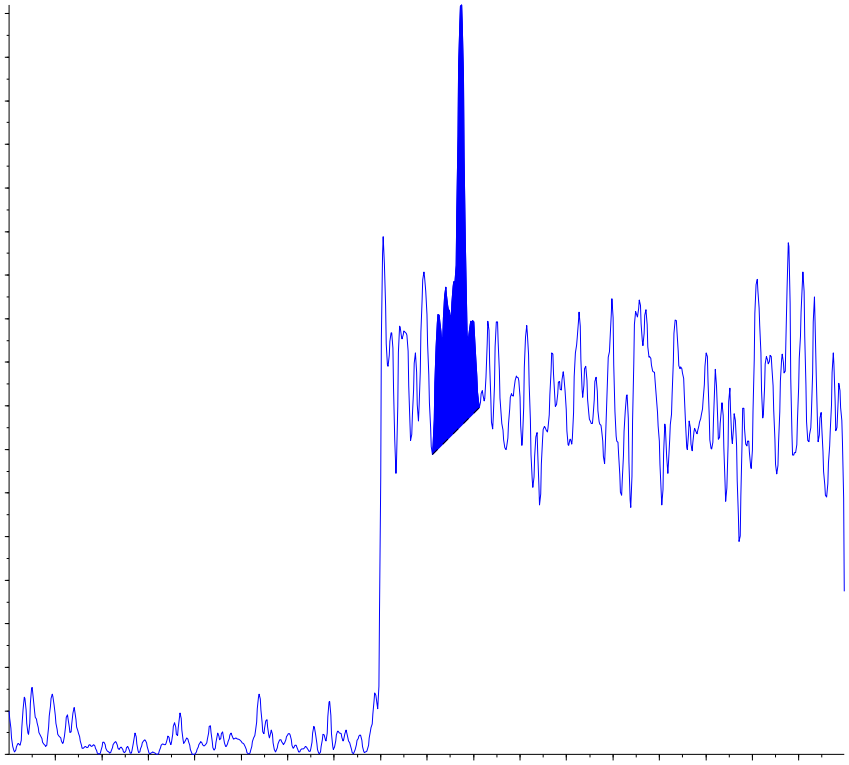

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Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM31292.wiff	**Result Table**	080515_JWR.rdb
Acquisition Date	8/5/2015 10:09:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.35 x + 0.00162 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	98.1	N/A	N/A
0.20	1	0.21	104.1	N/A	N/A
0.50	1	0.49	98.8	N/A	N/A
1.00	1	0.98	97.6	N/A	N/A
2.00	1	2.04	101.9	N/A	N/A
5.00	1	4.96	99.3	N/A	N/A
10.00	1	10.02	100.2	N/A	N/A

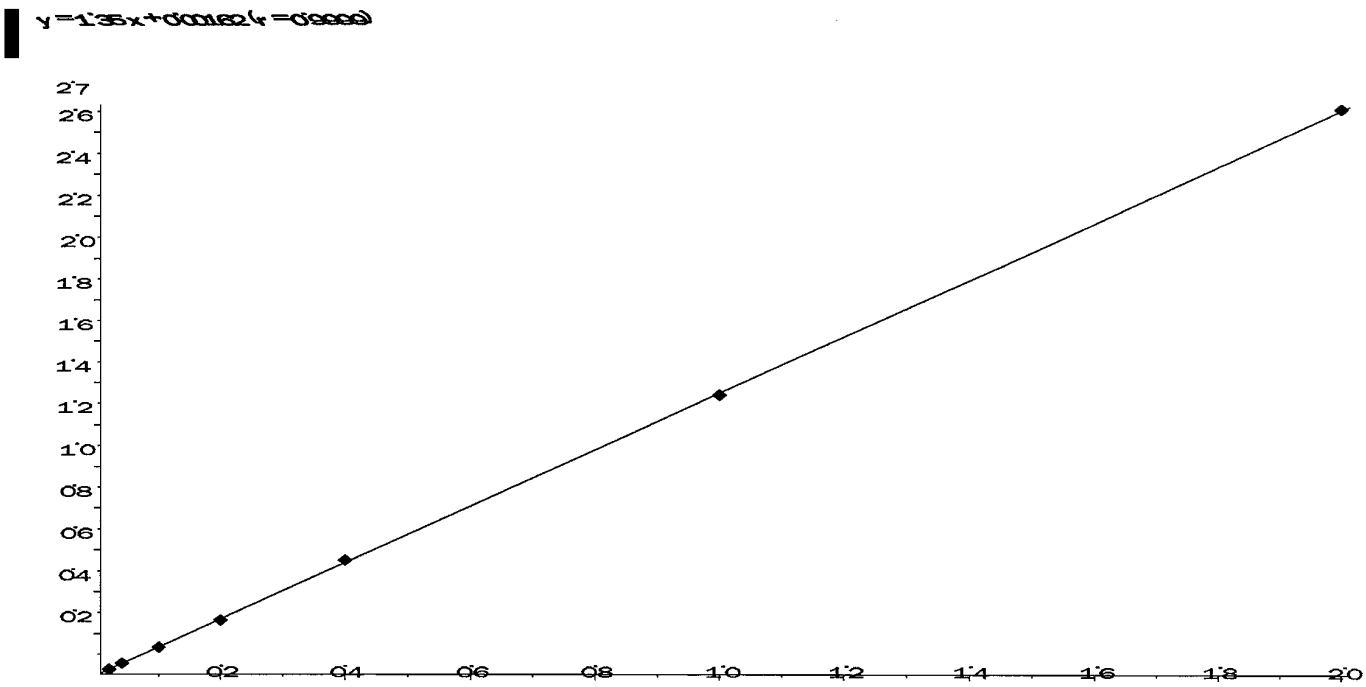

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Created with Analyst Reporter
Printed: 8/6/2015 1:49 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM31292.wiff	**Result Table**	080515_JWR.rdb
Acquisition Date	8/5/2015 10:09:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.42 x + 0.000545 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	100.9	N/A	N/A
0.20	1	0.20	98.7	N/A	N/A
0.50	1	0.51	101.5	N/A	N/A
1.00	1	1.00	99.5	N/A	N/A
2.00	1	2.00	99.9	N/A	N/A
5.00	1	4.94	98.8	N/A	N/A
10.00	1	10.06	100.6	N/A	N/A

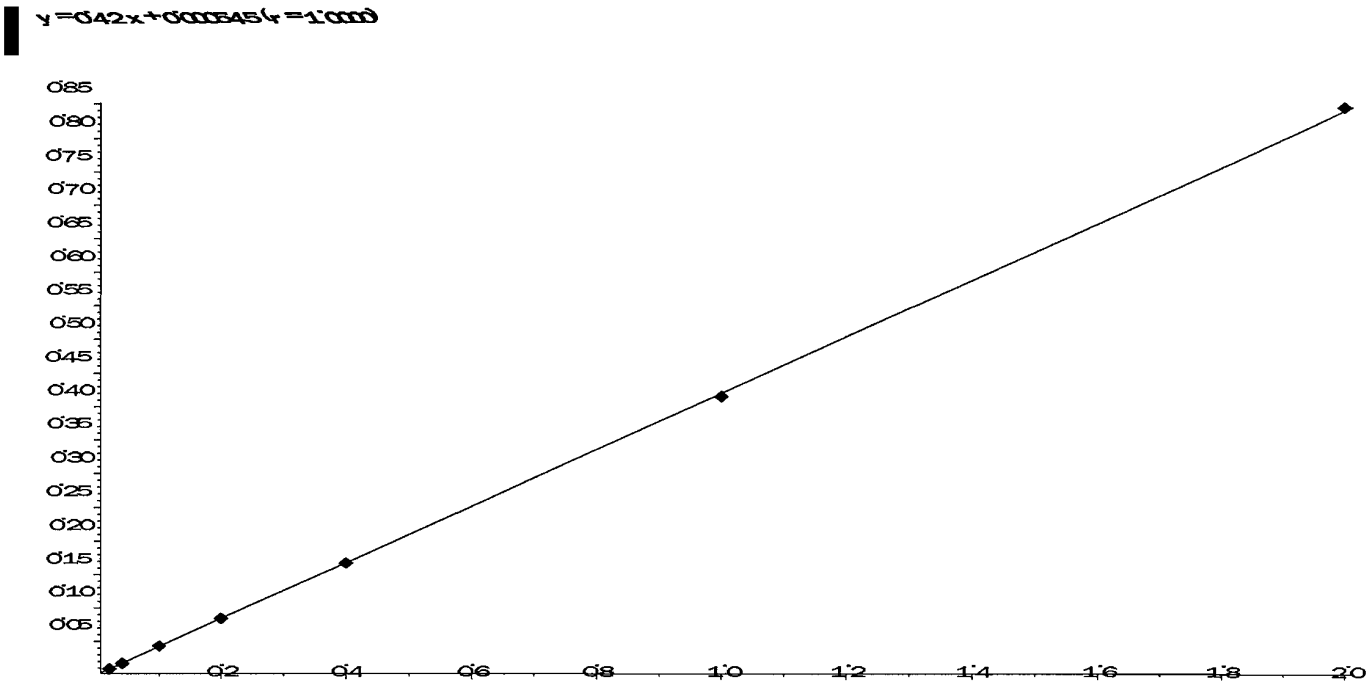

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Printed: 8/28/2015 10:58 AM

Data File	LM31293.wiff	**Result Table**	082715_JWR.rdb
Acquisition Date	8/5/2015 10:28:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG533952-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM31293.wiff	**Injection Volume**	10.00
Acquisition Date	8/5/2015 10:28:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	082715_JWR.rdb
Sample ID	WG533952-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.060e+05	9.69	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.140e+04	9.70	0.10	0.0981
Perchlorate conf	3.660e+03	9.69	0.10	0.101

O18LP (Internal Standard)

RT (Exp. RT): 9.69(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

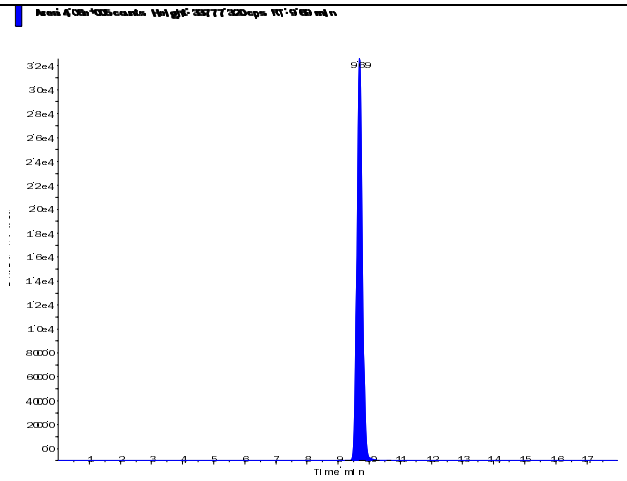

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.70 (9.52) min Calculated conc: 0.0981 ng/ml Area Ratio: 0.028 Sample Type: (Standard)	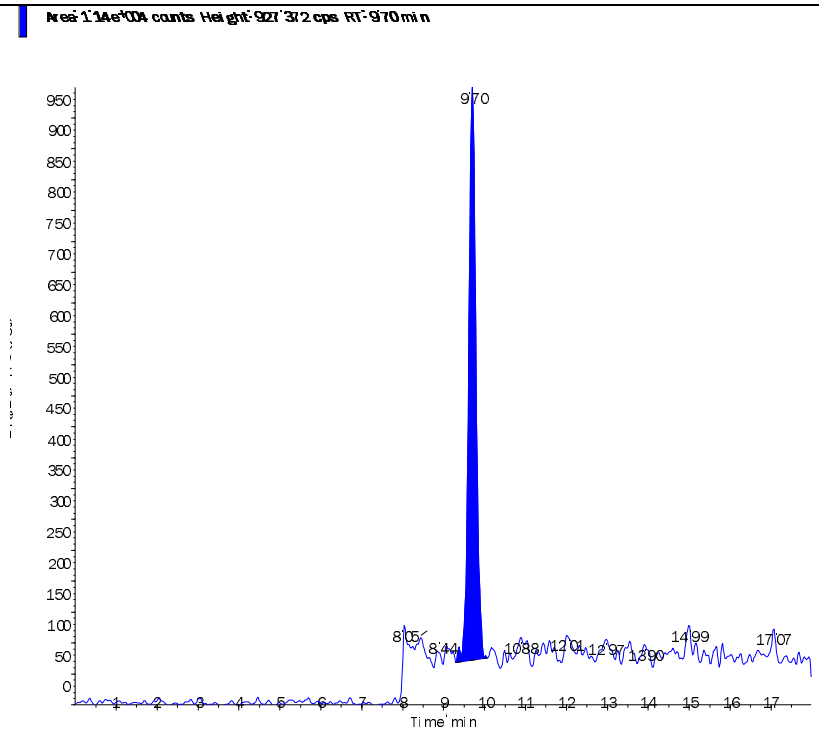
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.69 (9.48) min Calculated conc: 0.101 ng/ml Area Ratio: 0.009 Sample Type: (Standard)	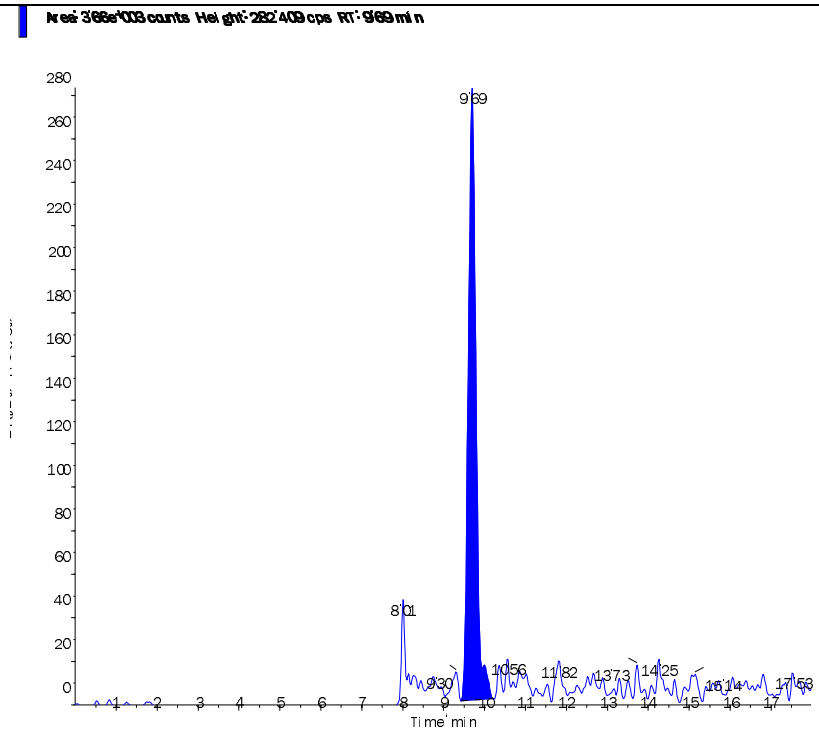

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Printed: 8/28/2015 10:58 AM

Data File	LM31294.wiff	**Result Table**	082715_JWR.rdb
Acquisition Date	8/5/2015 10:47:26 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG533952-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM31294.wiff	**Injection Volume**	10.00
Acquisition Date	8/5/2015 10:47:26 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	082715_JWR.rdb
Sample ID	WG533952-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.430e+05	9.50	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.560e+04	9.51	0.20	0.208
Perchlorate conf	7.580e+03	9.48	0.20	0.197

O18LP (Internal Standard)

RT (Exp. RT): 9.50(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

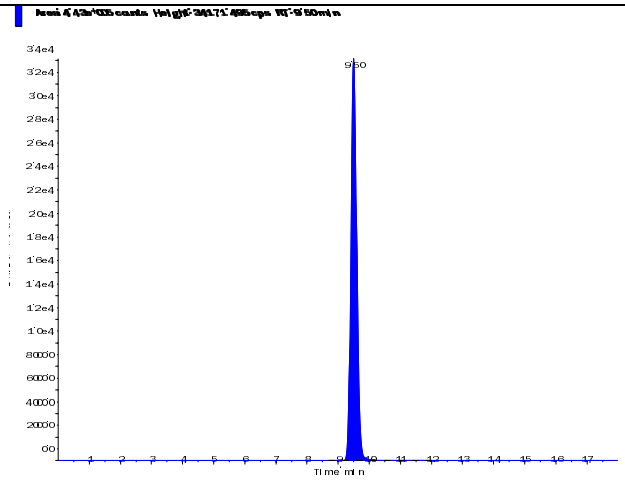

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.51 (9.52) min Calculated conc: 0.208 ng/ml Area Ratio: 0.058 Sample Type: (Standard)	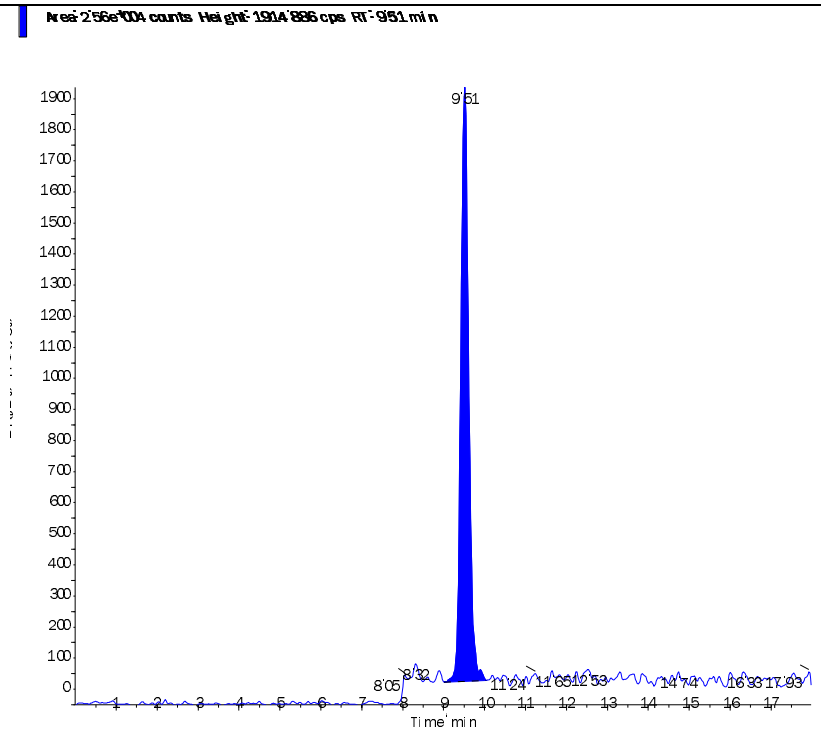
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.48 (9.48) min Calculated conc: 0.197 ng/ml Area Ratio: 0.017 Sample Type: (Standard)	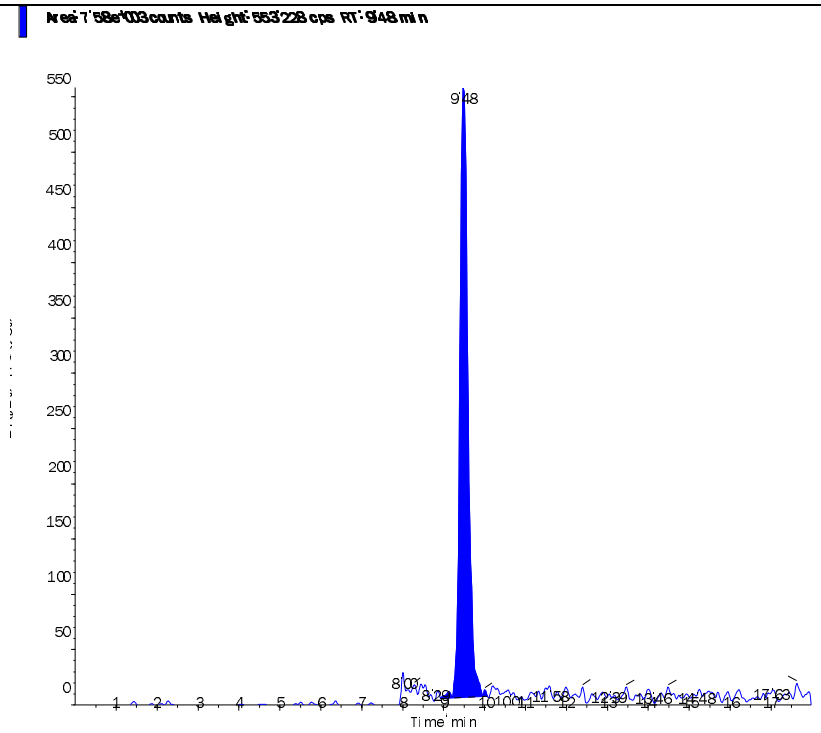

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Data File	LM31295.wiff	**Result Table**	082715_JWR.rdb
Acquisition Date	8/5/2015 11:06:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG533952-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM31295.wiff	**Injection Volume**	10.00
Acquisition Date	8/5/2015 11:06:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	082715_JWR.rdb
Sample ID	WG533952-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.400e+05	9.52	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.940e+04	9.52	0.50	0.494
Perchlorate conf	1.900e+04	9.51	0.50	0.508

O18LP (Internal Standard)

RT (Exp. RT): 9.52(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

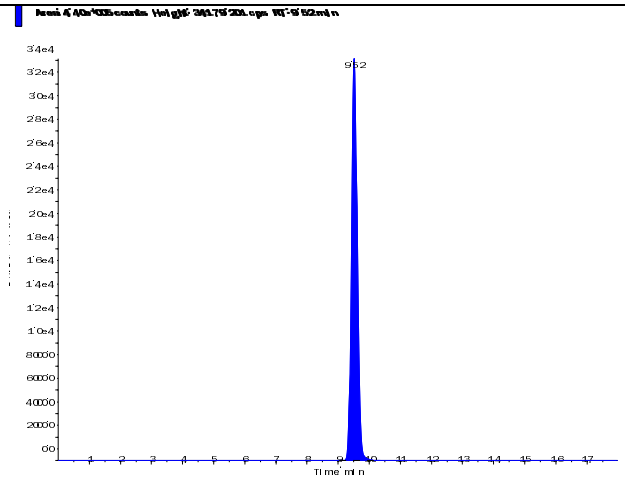

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.52 (9.52) min
Calculated conc:	0.494 ng/ml
Area Ratio:	0.135
Sample Type:	(Standard)

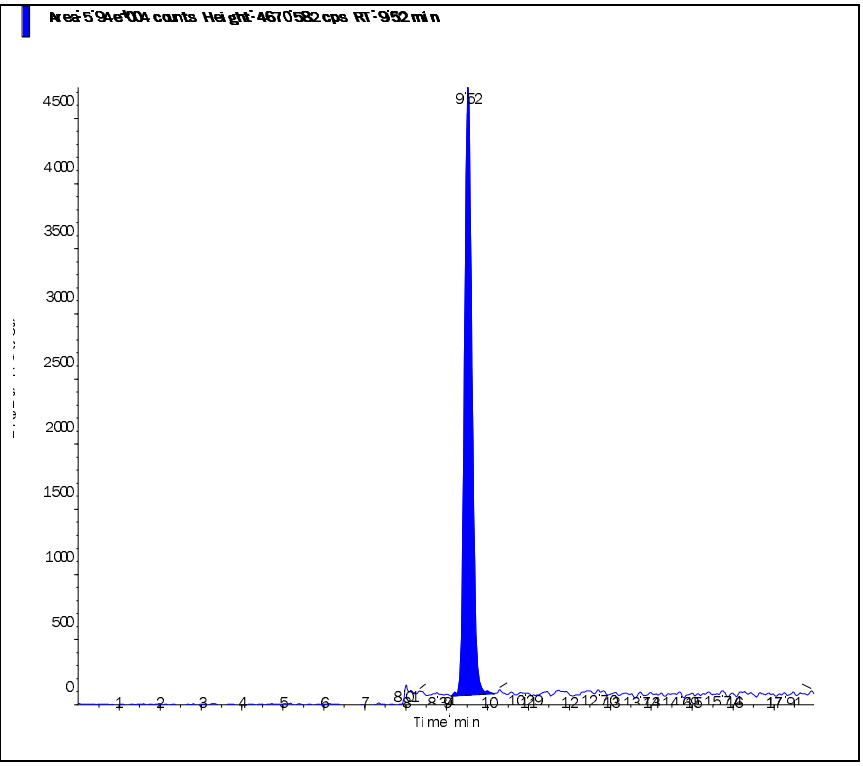

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.51 (9.48) min
Calculated conc:	0.508 ng/ml
Area Ratio:	0.043
Sample Type:	(Standard)

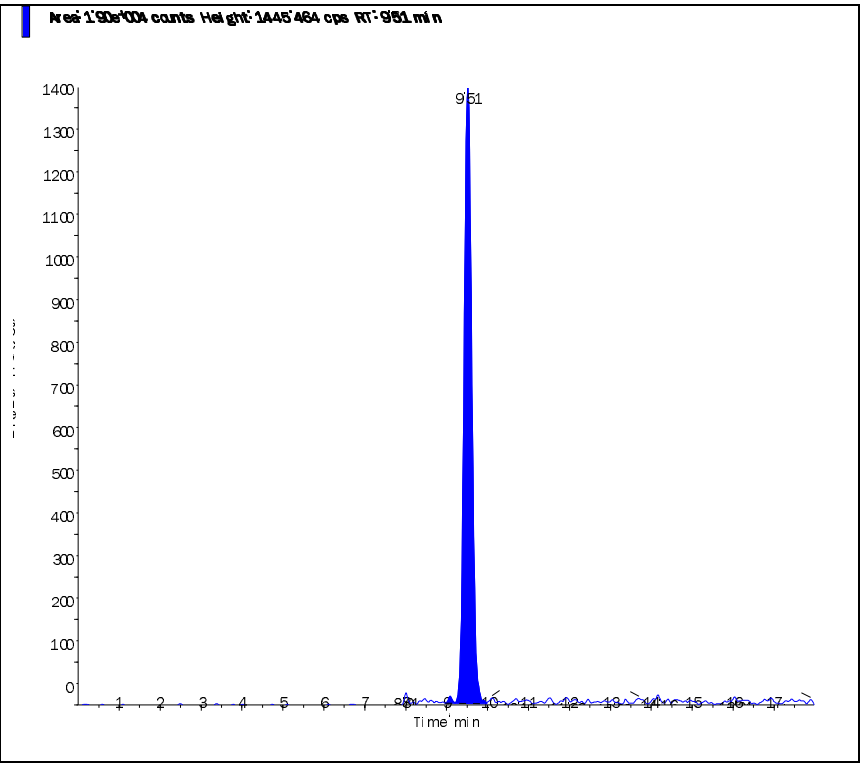

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Data File	LM31296.wiff	**Result Table**	082715_JWR.rdb
Acquisition Date	8/5/2015 11:25:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG533952-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM31296.wiff	**Injection Volume**	10.00
Acquisition Date	8/5/2015 11:25:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	082715_JWR.rdb
Sample ID	WG533952-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.230e+05	9.61	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.120e+05	9.63	1.00	0.976
Perchlorate conf	3.560e+04	9.60	1.00	0.995

O18LP (Internal Standard)

RT (Exp. RT): 9.61(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

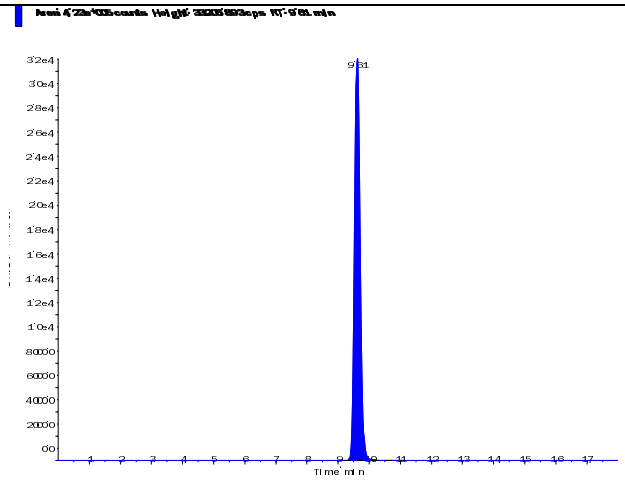

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.63 (9.52) min
Calculated conc:	0.976 ng/ml
Area Ratio:	0.265
Sample Type:	(Standard)

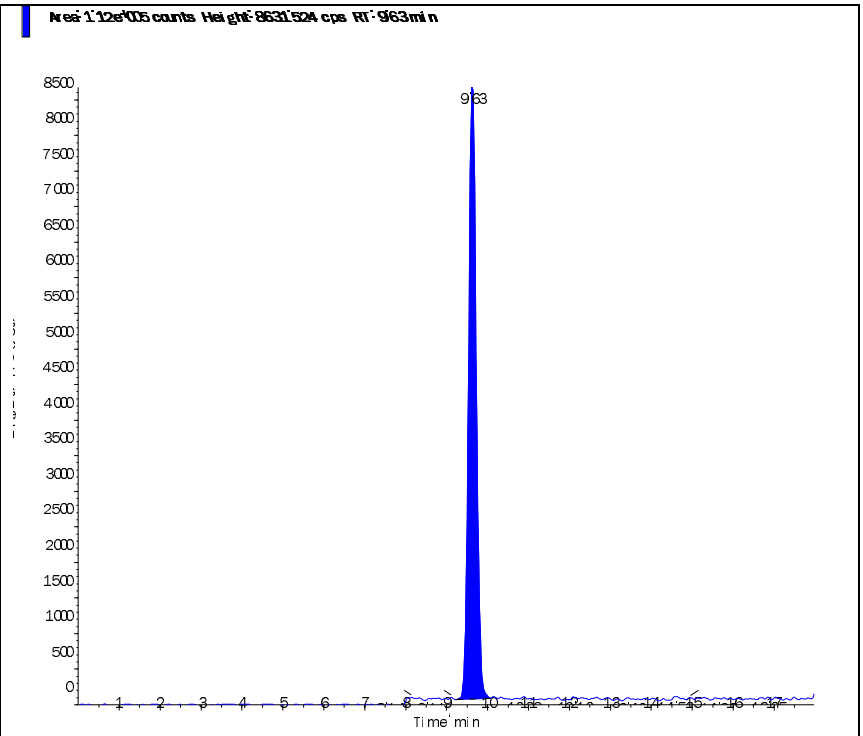

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.60 (9.48) min
Calculated conc:	0.995 ng/ml
Area Ratio:	0.084
Sample Type:	(Standard)

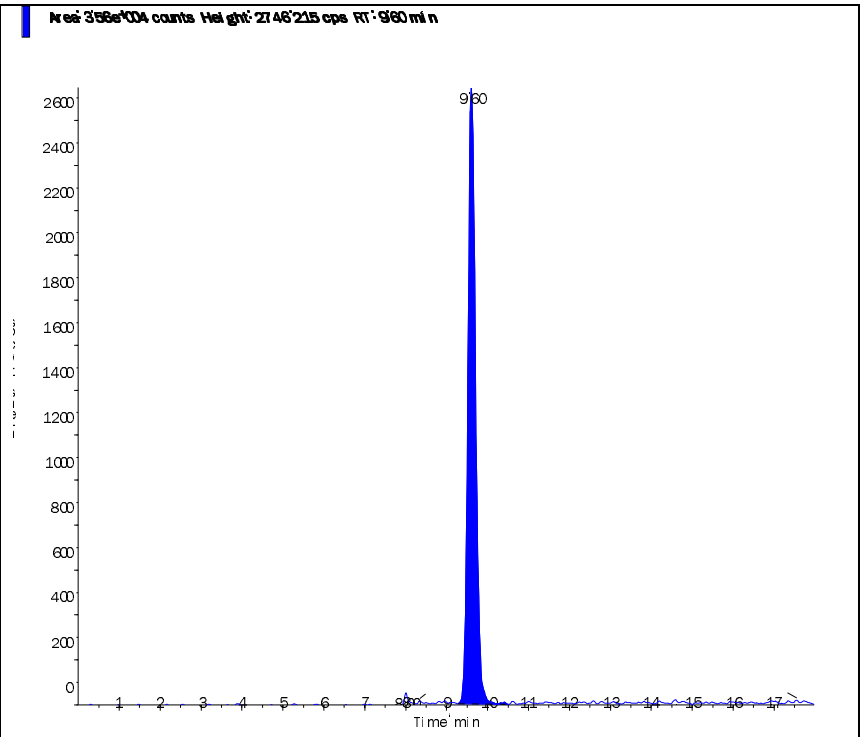

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Data File	LM31297.wiff	**Result Table**	082715_JWR.rdb
Acquisition Date	8/5/2015 11:44:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG533952-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM31297.wiff	**Injection Volume**	10.00
Acquisition Date	8/5/2015 11:44:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	082715_JWR.rdb
Sample ID	WG533952-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.180e+05	9.46	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.310e+05	9.47	2.00	2.04
Perchlorate conf	7.030e+04	9.46	2.00	2.00

O18LP (Internal Standard)

RT (Exp. RT): 9.46(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

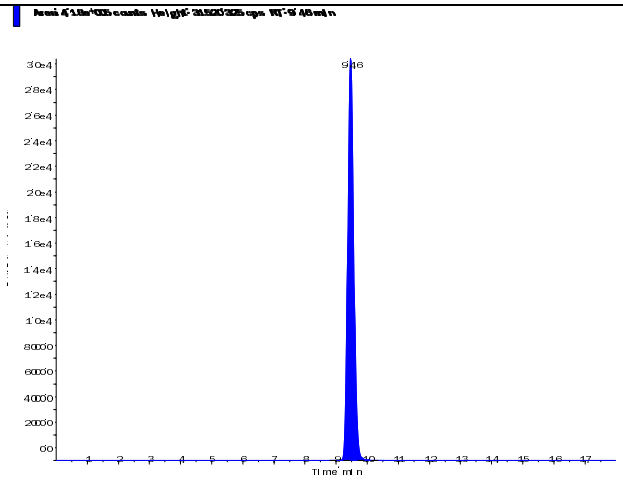

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.47 (9.52) min Calculated conc: 2.04 ng/ml Area Ratio: 0.552 Sample Type: (Standard)	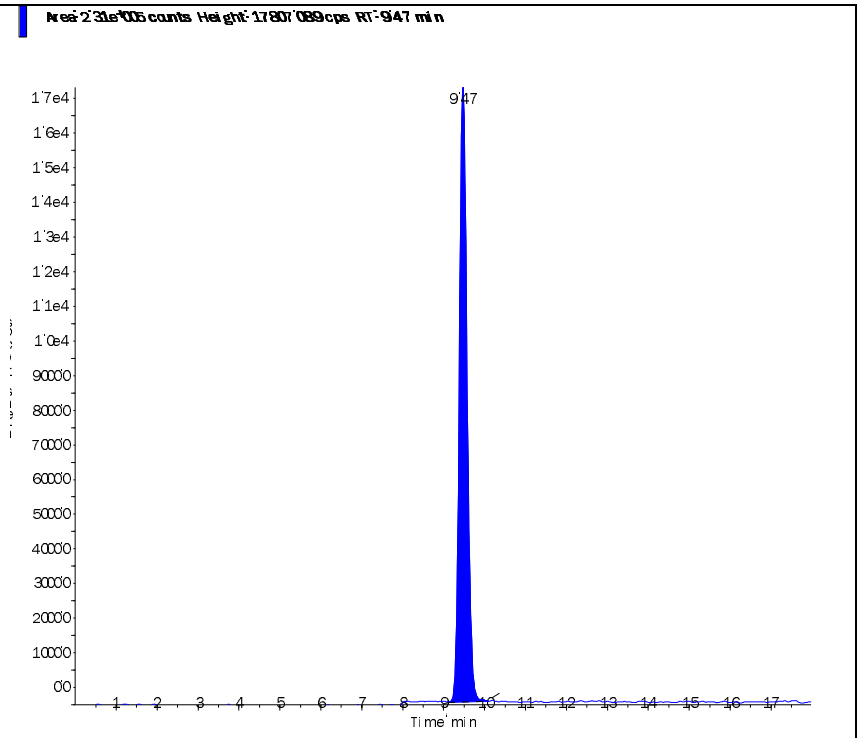
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.46 (9.48) min Calculated conc: 2.00 ng/ml Area Ratio: 0.168 Sample Type: (Standard)	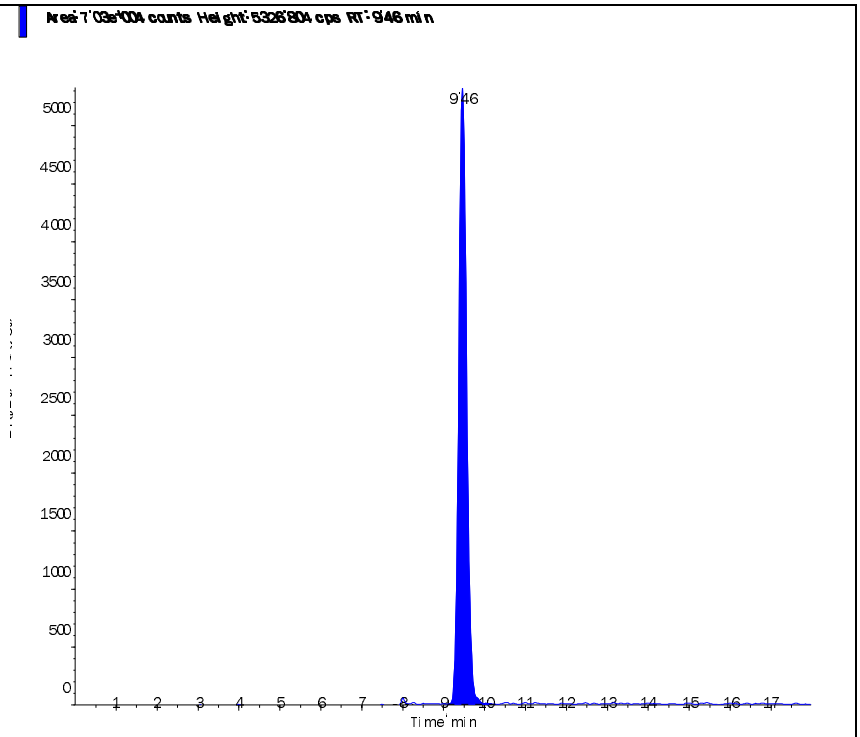

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Data File	LM31298.wiff	**Result Table**	082715_JWR.rdb
Acquisition Date	8/6/2015 12:03:11 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG533952-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM31298.wiff	**Injection Volume**	10.00
Acquisition Date	8/6/2015 12:03:11 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	082715_JWR.rdb
Sample ID	WG533952-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.100e+05	9.57	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.500e+05	9.58	5.00	4.96
Perchlorate conf	1.700e+05	9.56	5.00	4.94

O18LP (Internal Standard)

RT (Exp. RT): 9.57(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

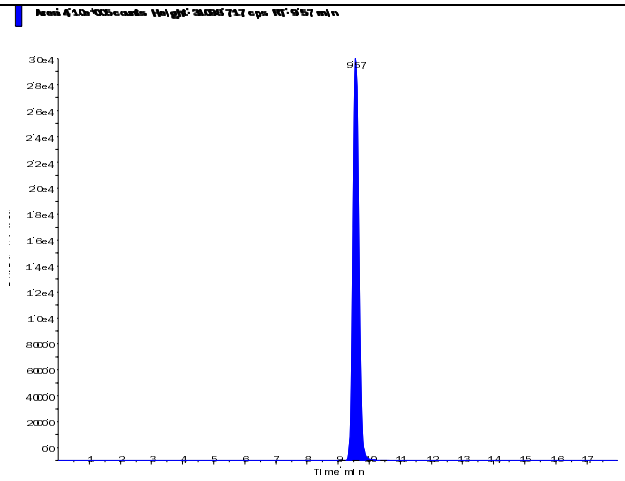

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.58 (9.52) min Calculated conc: 4.96 ng/ml Area Ratio: 1.342 Sample Type: (Standard)	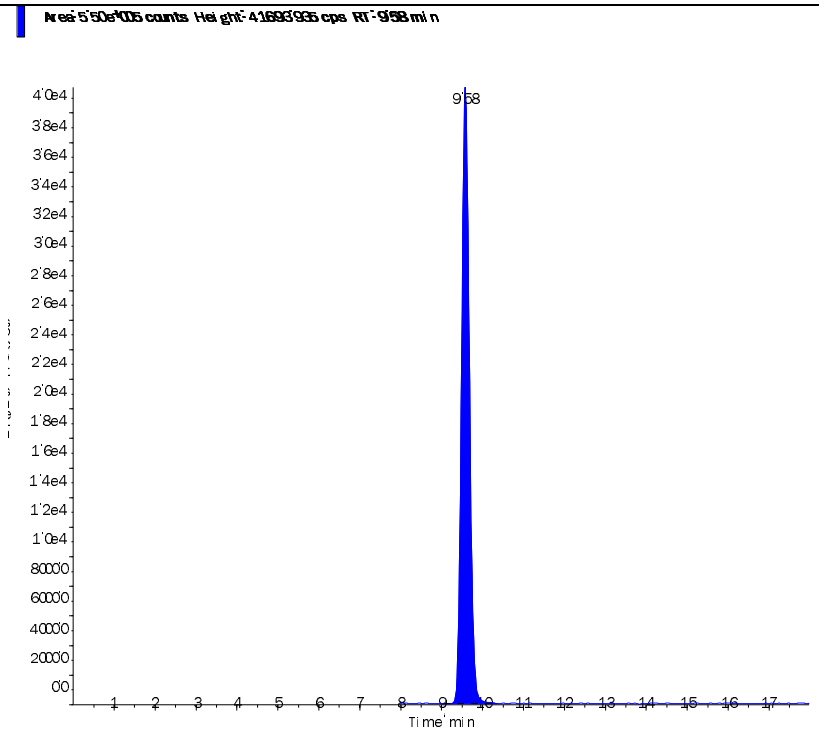
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.56 (9.48) min Calculated conc: 4.94 ng/ml Area Ratio: 0.415 Sample Type: (Standard)	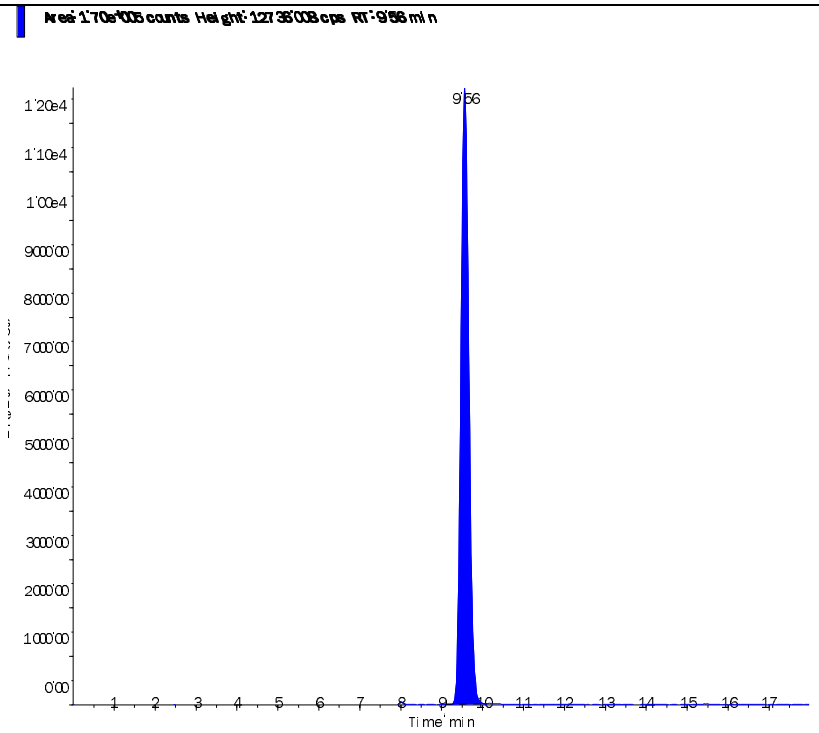

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Data File	LM31299.wiff	**Result Table**	082715_JWR.rdb
Acquisition Date	8/6/2015 12:22:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG533952-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM31299.wiff	**Injection Volume**	10.00
Acquisition Date	8/6/2015 12:22:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	082715_JWR.rdb
Sample ID	WG533952-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.600e+05	9.65	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	9.750e+05	9.66	10.00	10.00
Perchlorate conf	3.040e+05	9.64	10.00	10.10

O18LP (Internal Standard)

RT (Exp. RT): 9.65(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

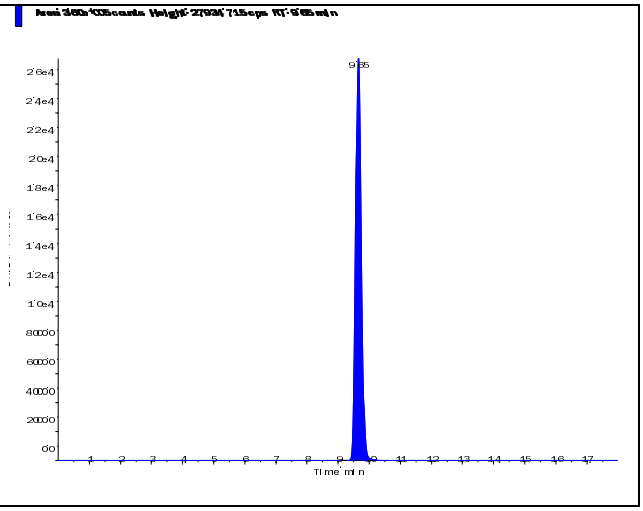

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.66 (9.52) min
Calculated conc:	10.00 ng/ml
Area Ratio:	2.709
Sample Type:	(Standard)

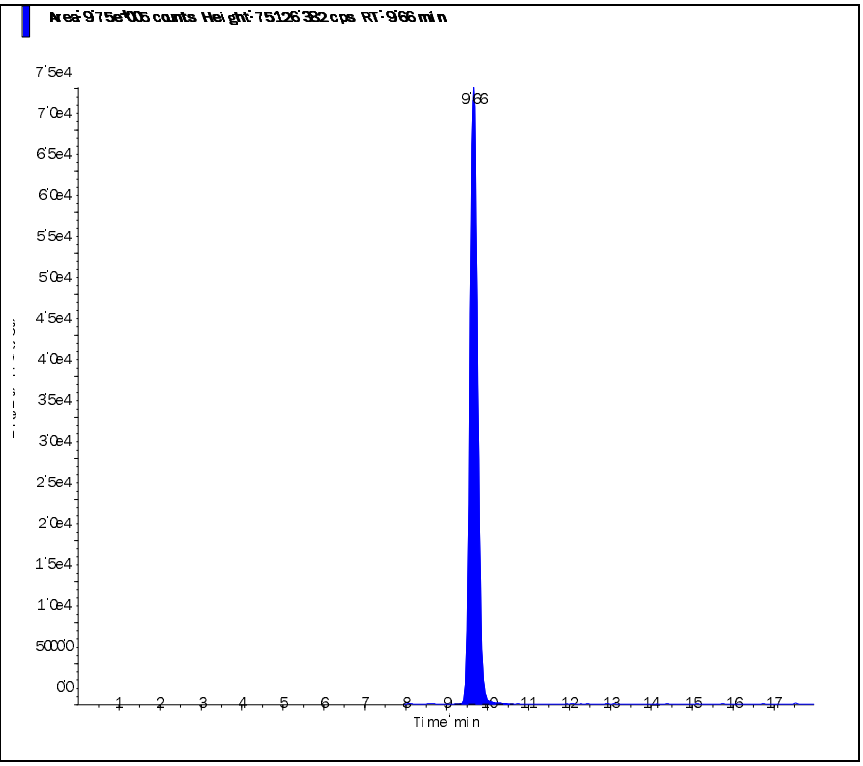

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.64 (9.48) min
Calculated conc:	10.10 ng/ml
Area Ratio:	0.845
Sample Type:	(Standard)

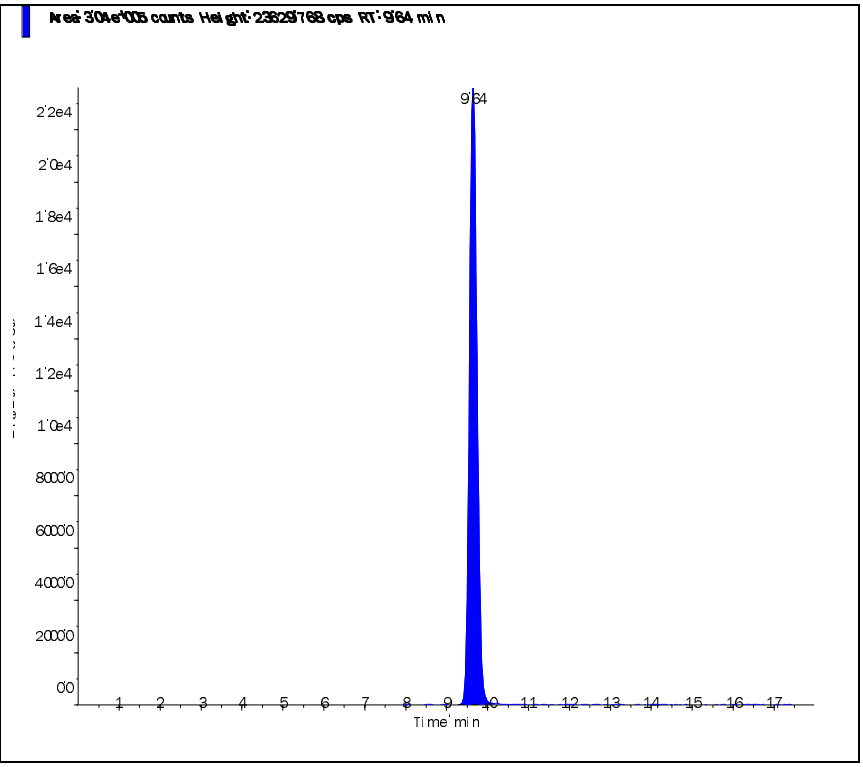

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Data File	LM31300.wiff	**Result Table**	080515_JWR.rdb
Acquisition Date	8/6/2015 12:41:03 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG533952-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM31300.wiff	**Injection Volume**	10.00
Acquisition Date	8/6/2015 12:41:03 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	080515_JWR.rdb
Sample ID	WG533952-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD69913	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.180e+05	9.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.090e+05	9.71	1.00	0.956
Perchlorate conf	3.410e+04	9.70	1.00	0.964

O18LP (Internal Standard)

RT (Exp. RT): 9.70(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

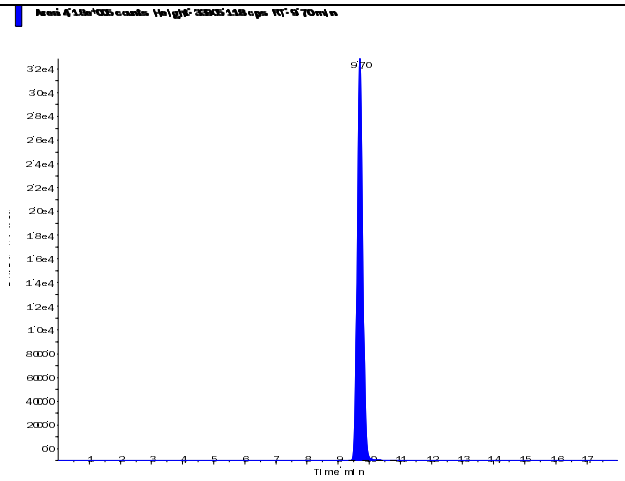

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.71 (9.52) min
Calculated conc:	0.956 ng/ml
Area Ratio:	0.26
Sample Type:	(Quality Control)

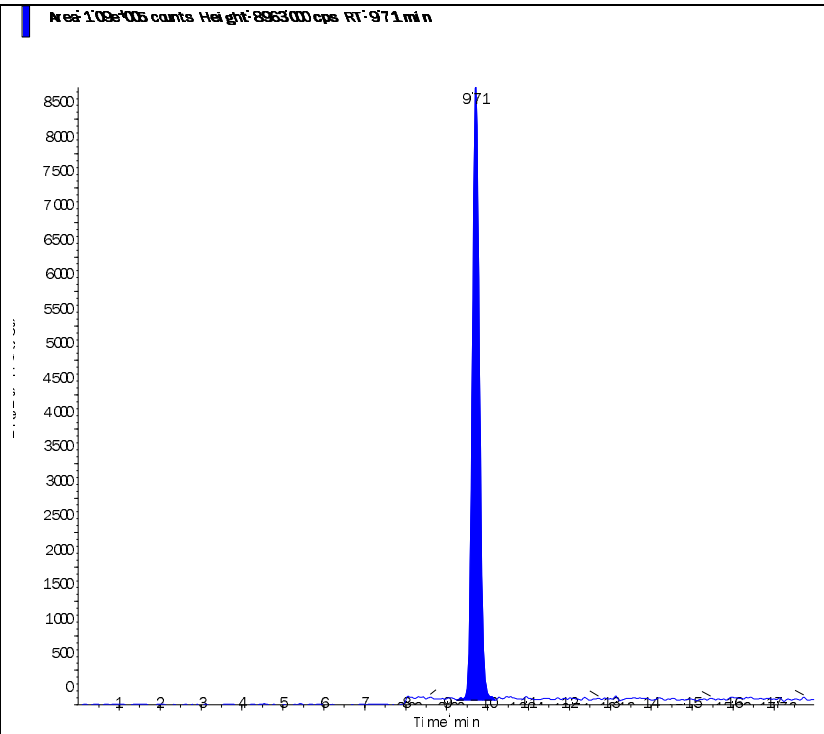

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.70 (9.48) min
Calculated conc:	0.964 ng/ml
Area Ratio:	0.081
Sample Type:	(Quality Control)

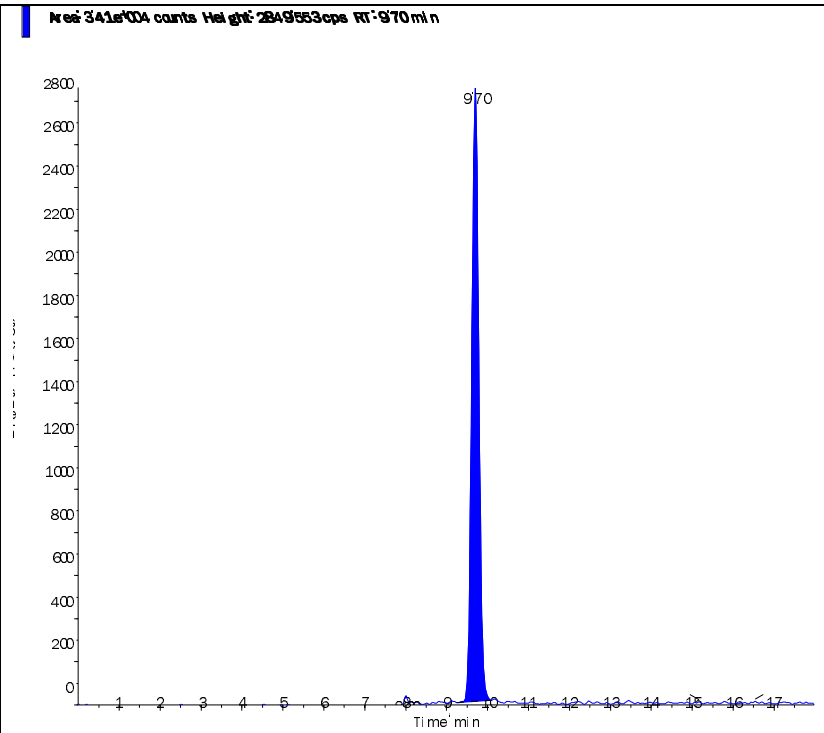

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Created with Analyst Reporter
Printed: 8/27/2015 11:31 AM

Data File	LM31432.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/24/2015 4:28:47 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536250-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM31432.wiff	**Injection Volume**	10.00
Acquisition Date	8/24/2015 4:28:47 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	WG536250-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.660e+05	9.62	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.050e+05	9.62	1.00	1.05
Perchlorate conf	3.210e+04	9.61	1.00	1.04

O18LP (Internal Standard)

RT (Exp. RT): 9.62(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

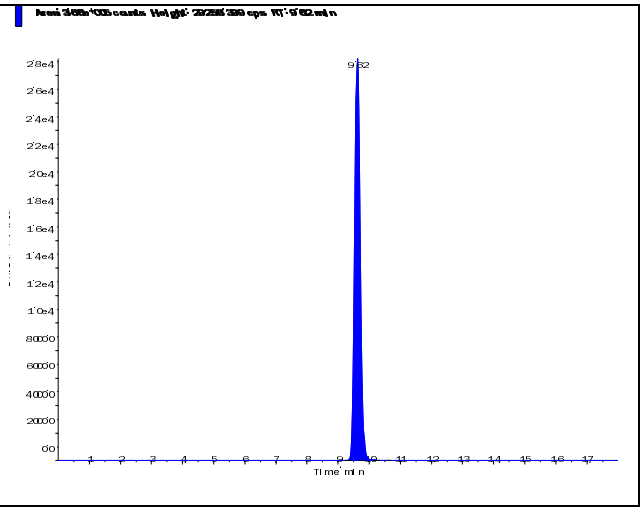

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Printed: 8/27/2015 11:31 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.62 (9.52) min Calculated conc: 1.05 ng/ml Area Ratio: 0.286 Sample Type: (Quality Control)	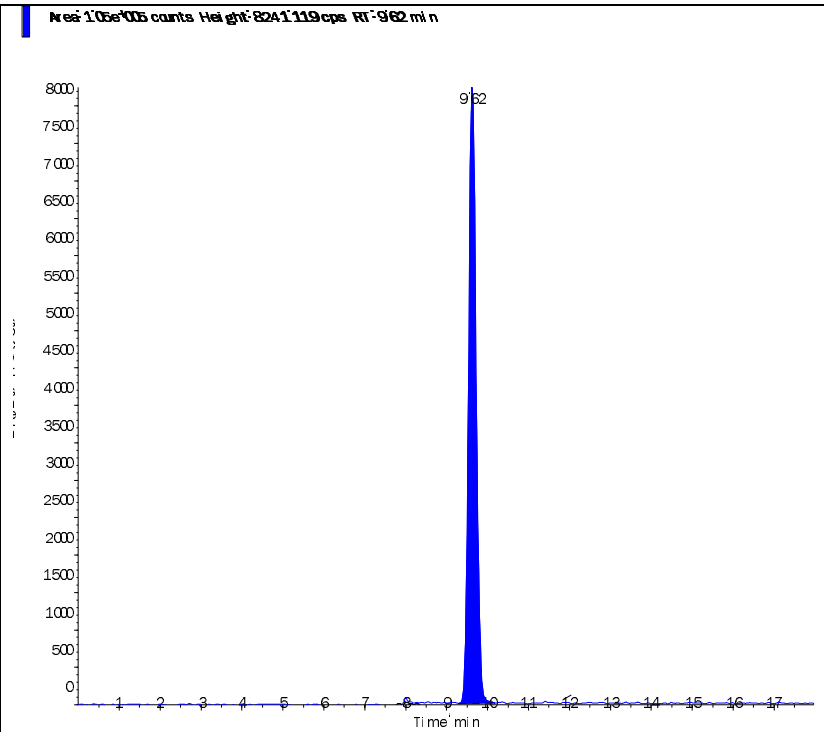
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.61 (9.48) min Calculated conc: 1.04 ng/ml Area Ratio: 0.088 Sample Type: (Quality Control)	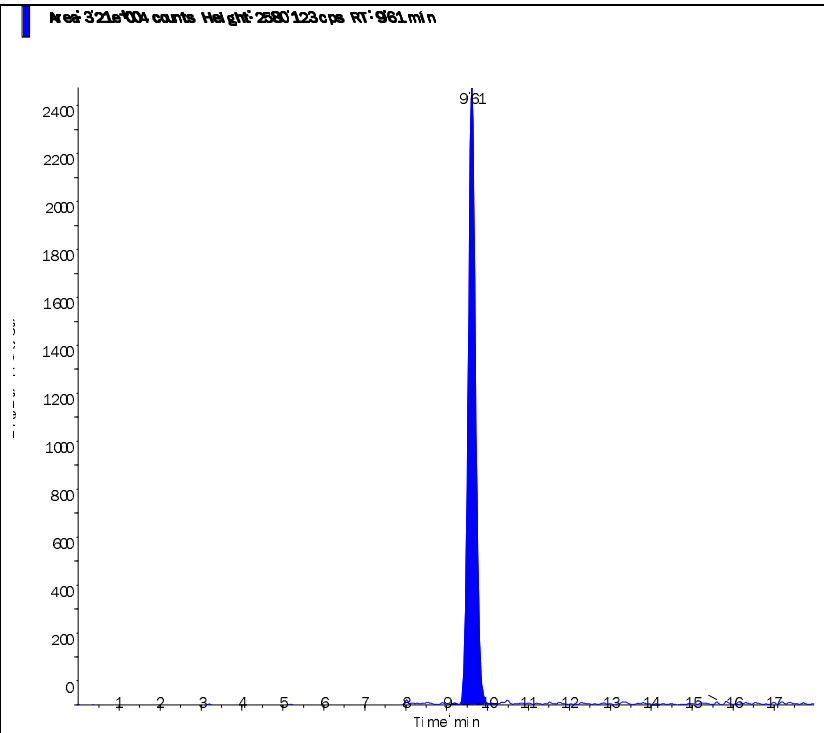

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Created with Analyst Reporter
Printed: 8/27/2015 11:35 AM

Data File	LM31444.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/24/2015 8:16:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536250-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM31444.wiff	**Injection Volume**	10.00
Acquisition Date	8/24/2015 8:16:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	WG536250-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.530e+05	9.60	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.240e+05	9.61	1.00	1.01
Perchlorate conf	3.920e+04	9.60	1.00	1.03

O18LP (Internal Standard)

RT (Exp. RT): 9.60(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

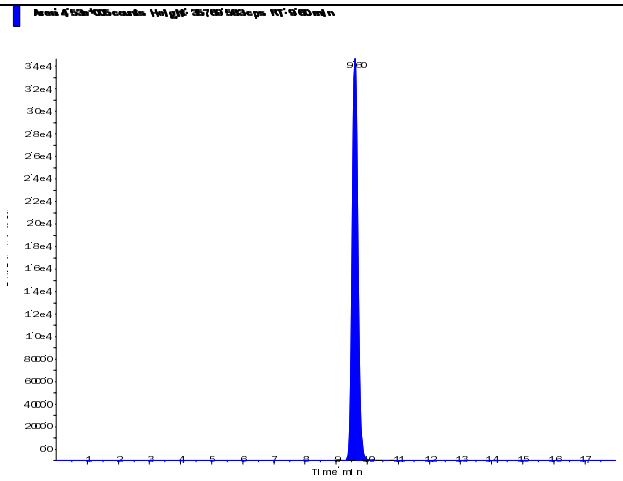

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.61 (9.52) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.274
Sample Type:	(Quality Control)

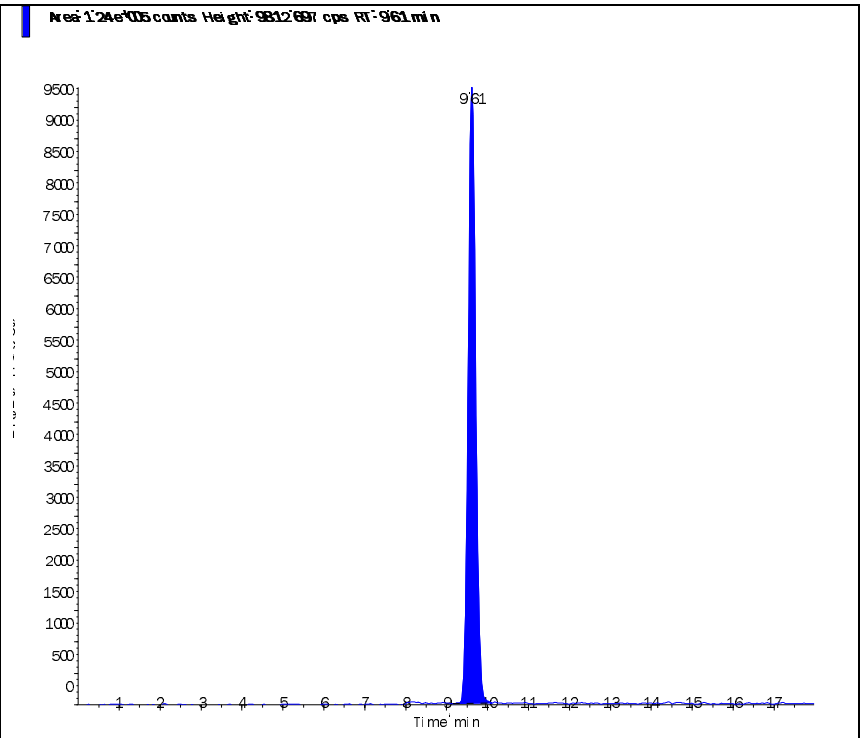

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.60 (9.48) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.087
Sample Type:	(Quality Control)

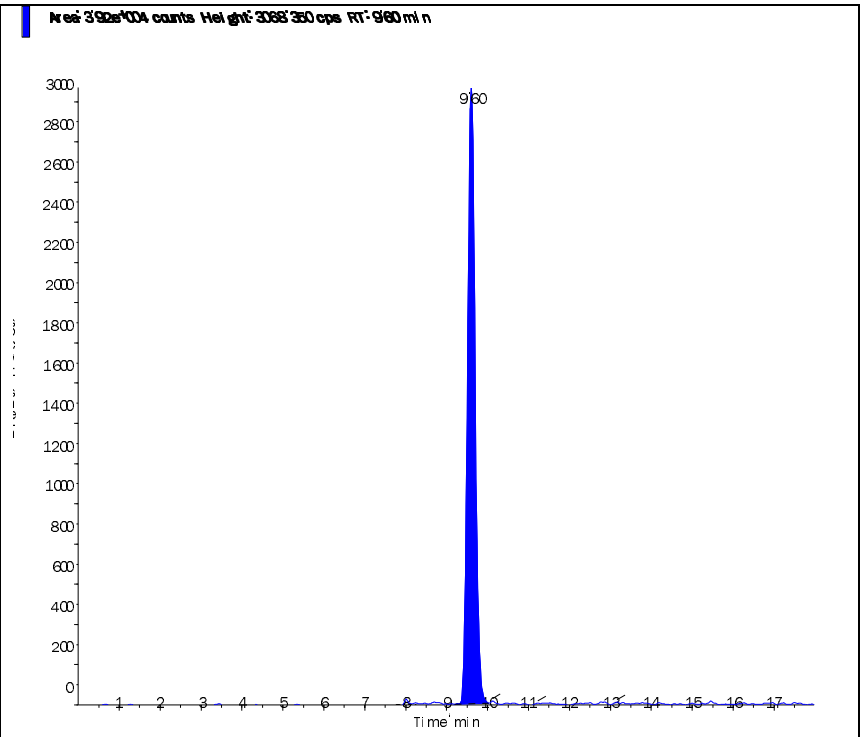

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Created with Analyst Reporter
Printed: 8/27/2015 11:39 AM

Data File	LM31456.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/25/2015 12:03:13 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536250-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM31456.wiff	**Injection Volume**	10.00
Acquisition Date	8/25/2015 12:03:13 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	WG536250-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.070e+05	9.60	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.100e+05	9.61	1.00	0.991
Perchlorate conf	3.370e+04	9.60	1.00	0.98

O18LP (Internal Standard)

RT (Exp. RT): 9.60(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

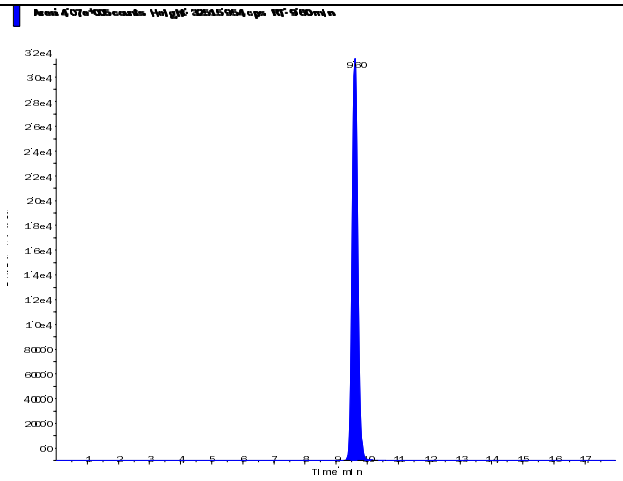

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.61 (9.52) min
Calculated conc:	0.991 ng/ml
Area Ratio:	0.269
Sample Type:	(Quality Control)

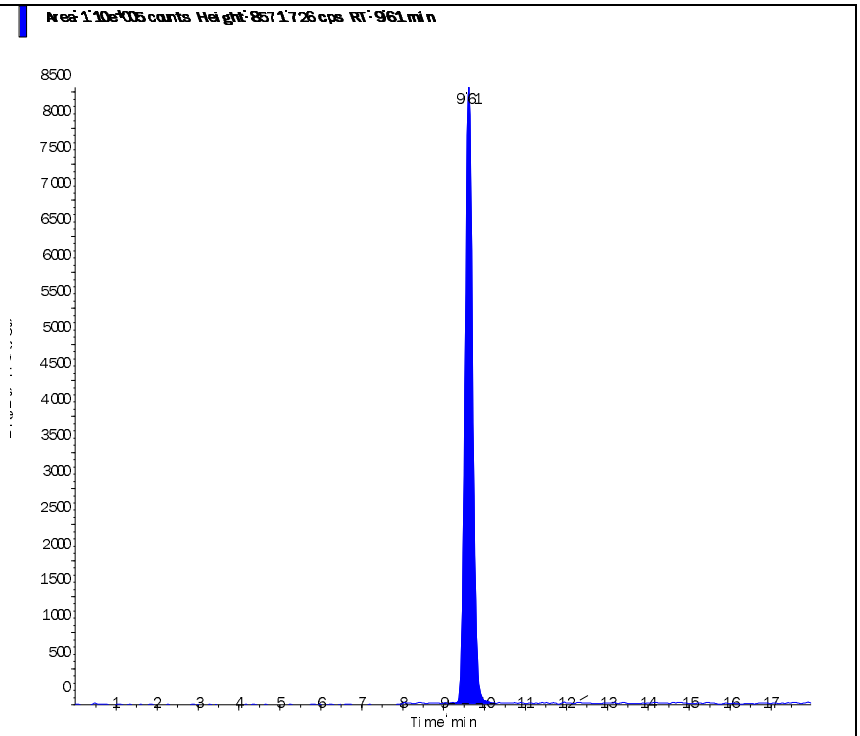

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.60 (9.48) min
Calculated conc:	0.98 ng/ml
Area Ratio:	0.083
Sample Type:	(Quality Control)

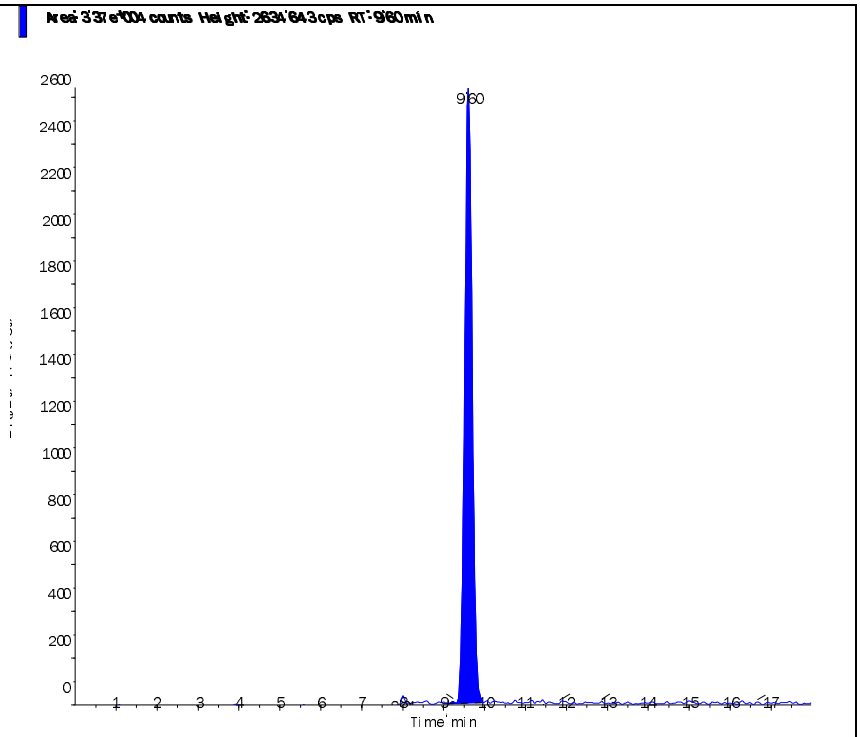

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Created with Analyst Reporter
Printed: 8/27/2015 11:41 AM

Data File	LM31464.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/25/2015 2:34:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536250-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM31464.wiff	**Injection Volume**	10.00
Acquisition Date	8/25/2015 2:34:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	WG536250-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.640e+05	9.59	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.230e+05	9.60	1.00	0.979
Perchlorate conf	3.780e+04	9.59	1.00	0.965

O18LP (Internal Standard)

RT (Exp. RT): 9.59(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

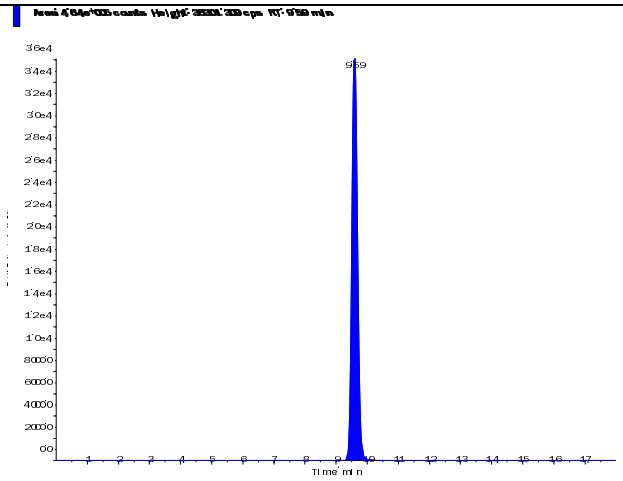

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.60 (9.52) min
Calculated conc:	0.979 ng/ml
Area Ratio:	0.266
Sample Type:	(Quality Control)

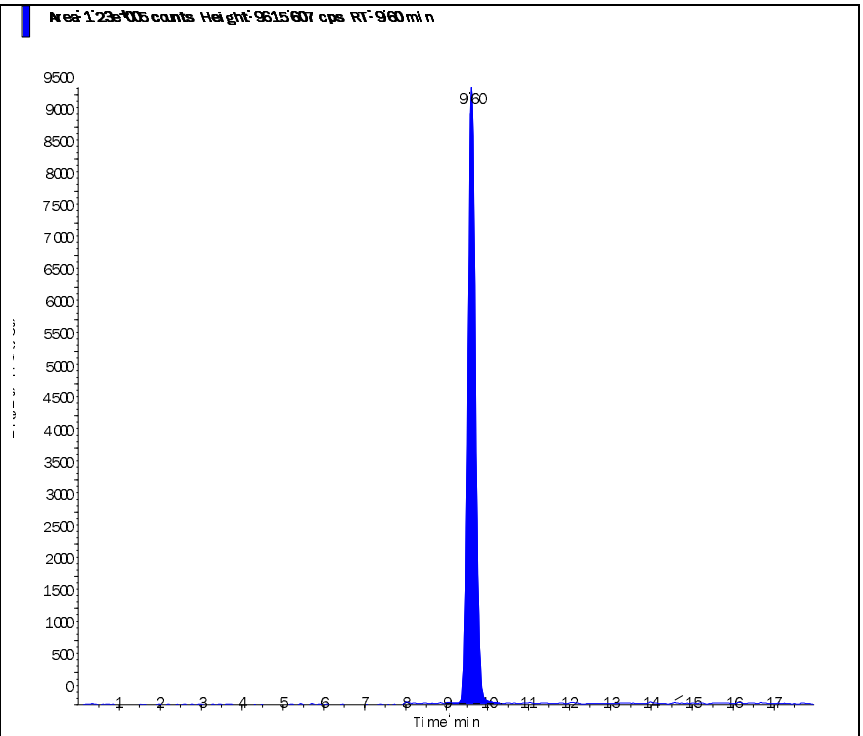

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.59 (9.48) min
Calculated conc:	0.965 ng/ml
Area Ratio:	0.082
Sample Type:	(Quality Control)

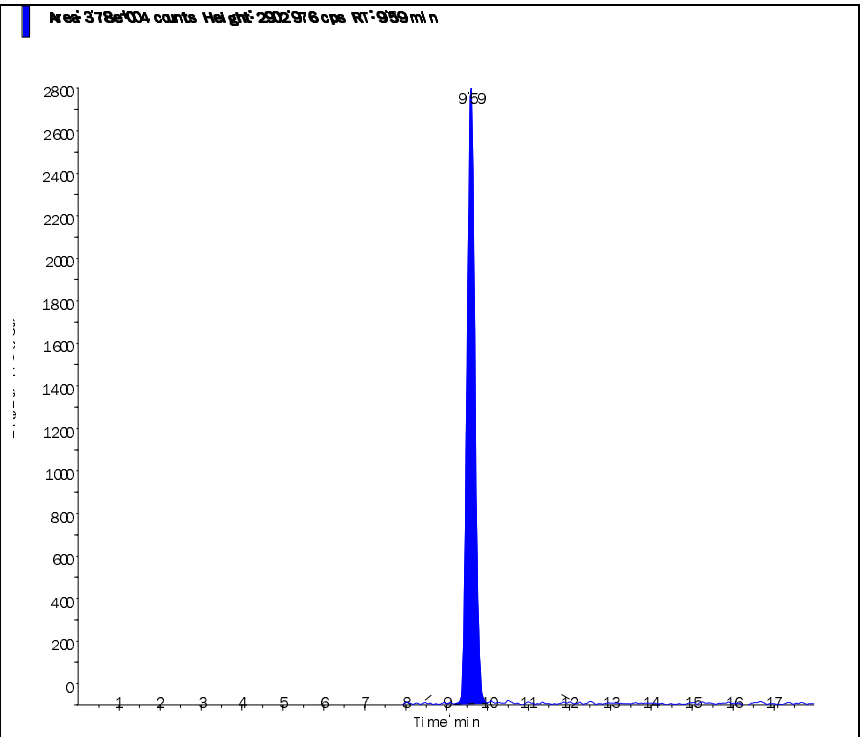

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Created with Analyst Reporter
Printed: 8/28/2015 11:00 AM

Data File	LM31468.wiff	**Result Table**	082715_JWR.rdb
Acquisition Date	8/27/2015 1:27:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536760-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM31468.wiff	**Injection Volume**	10.00
Acquisition Date	8/27/2015 1:27:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	082715_JWR.rdb
Sample ID	WG536760-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.910e+05	9.59	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.110e+05	9.59	1.00	1.04
Perchlorate conf	3.460e+04	9.58	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.59(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

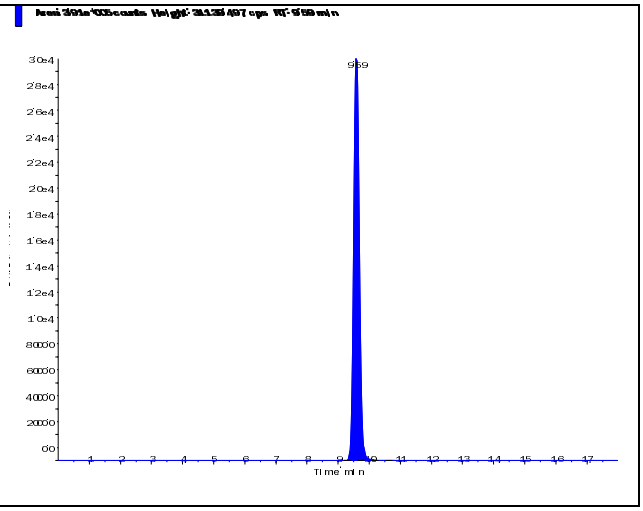

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.59 (9.52) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.283
Sample Type:	(Quality Control)

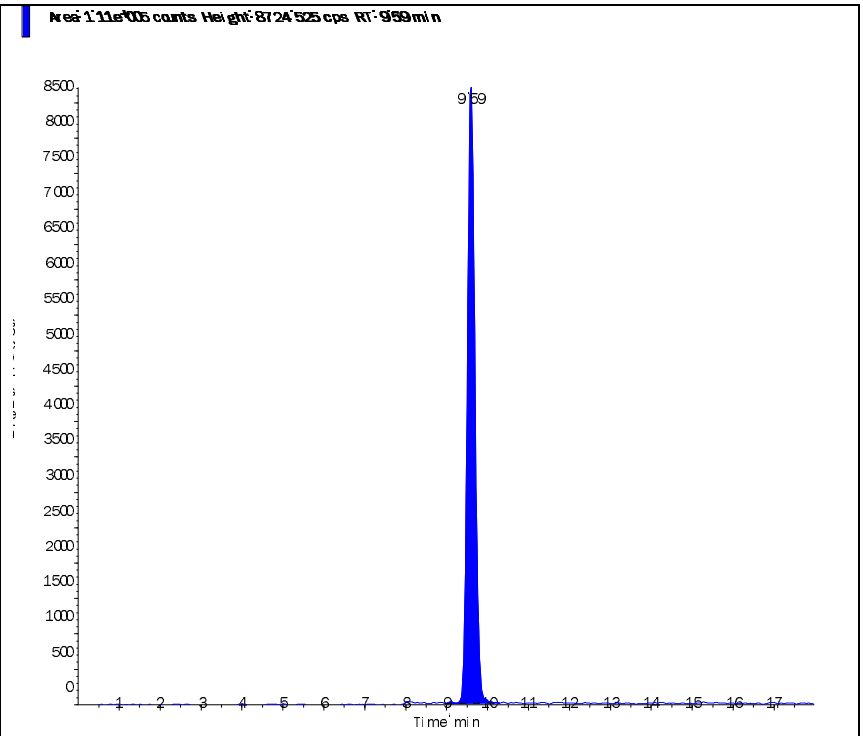

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.58 (9.48) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.088
Sample Type:	(Quality Control)

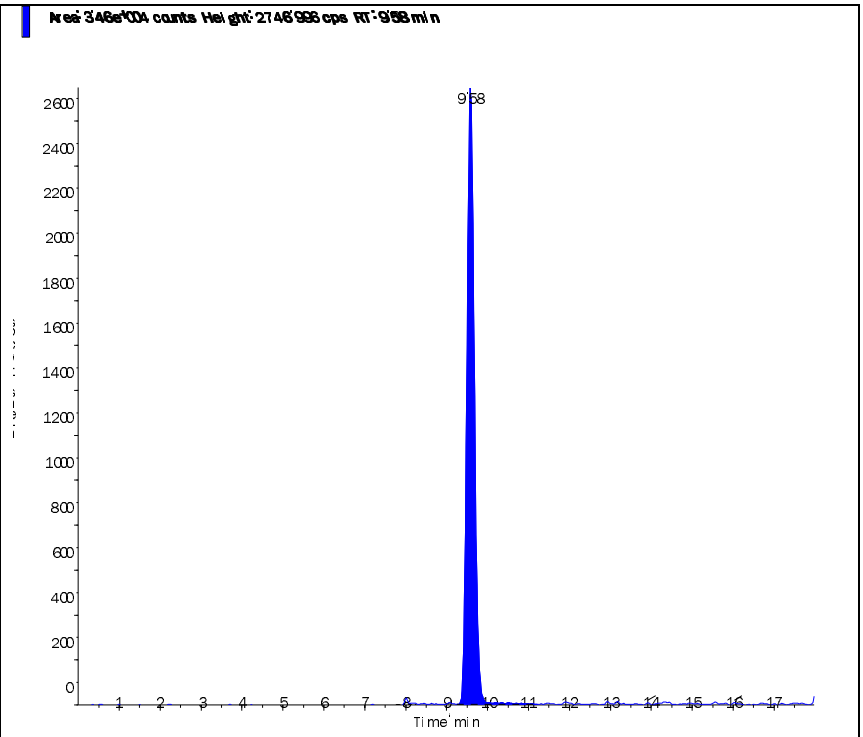

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Created with Analyst Reporter
Printed: 8/28/2015 11:02 AM

Data File	LM31478.wiff	**Result Table**	082715_JWR.rdb
Acquisition Date	8/27/2015 5:47:10 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536760-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM31478.wiff	**Injection Volume**	10.00
Acquisition Date	8/27/2015 5:47:10 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	082715_JWR.rdb
Sample ID	WG536760-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.450e+05	9.59	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.190e+05	9.60	1.00	0.983
Perchlorate conf	3.840e+04	9.58	1.00	1.02

O18LP (Internal Standard)

RT (Exp. RT): 9.59(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

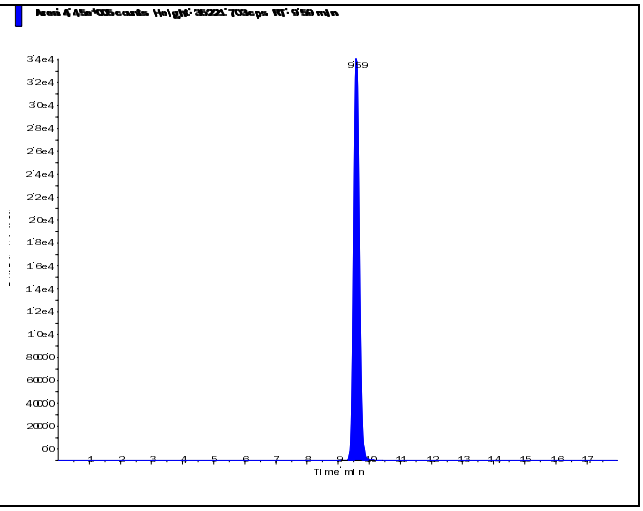

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Printed: 8/28/2015 11:02 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.60 (9.52) min Calculated conc: 0.983 ng/ml Area Ratio: 0.267 Sample Type: (Quality Control)	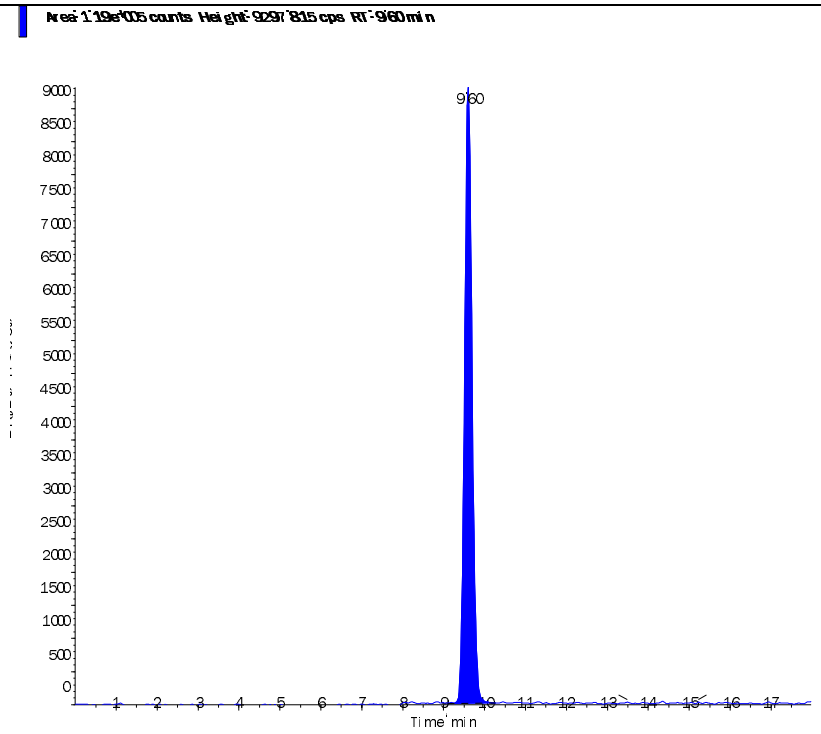
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.58 (9.48) min Calculated conc: 1.02 ng/ml Area Ratio: 0.086 Sample Type: (Quality Control)	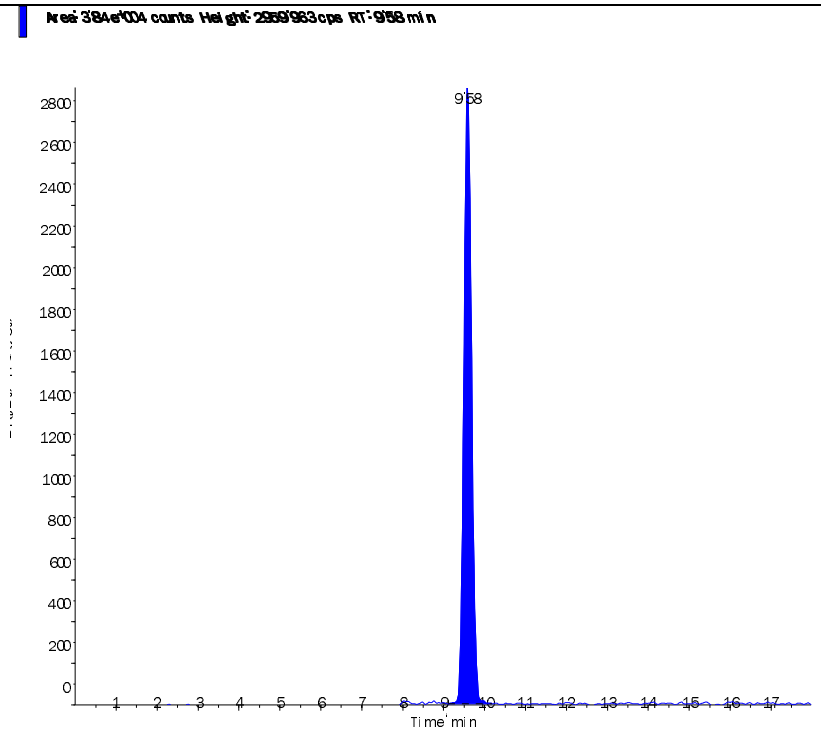

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Created with Analyst Reporter
Printed: 8/28/2015 11:05 AM

Data File	LM31492.wiff	**Result Table**	082715_JWR.rdb
Acquisition Date	8/27/2015 10:12:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536760-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM31492.wiff	**Injection Volume**	10.00
Acquisition Date	8/27/2015 10:12:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	082715_JWR.rdb
Sample ID	WG536760-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.59	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.230e+05	9.60	1.00	0.99
Perchlorate conf	3.980e+04	9.59	1.00	1.03

O18LP (Internal Standard)

RT (Exp. RT): 9.59(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

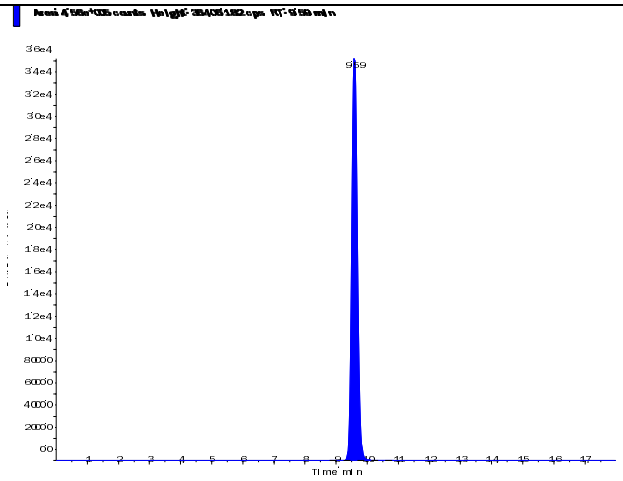

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.60 (9.52) min
Calculated conc:	0.99 ng/ml
Area Ratio:	0.269
Sample Type:	(Quality Control)

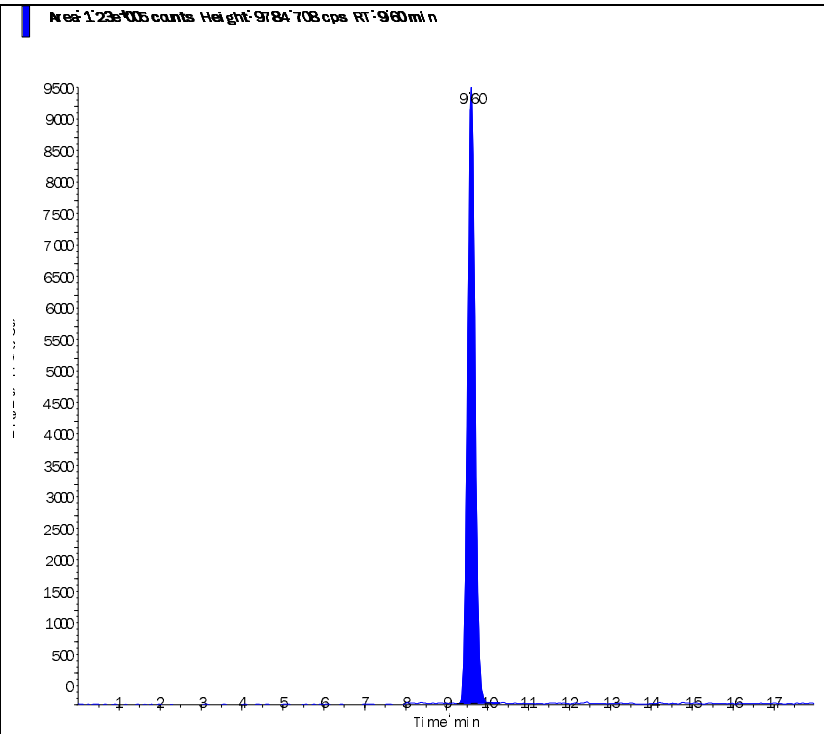

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.59 (9.48) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.087
Sample Type:	(Quality Control)

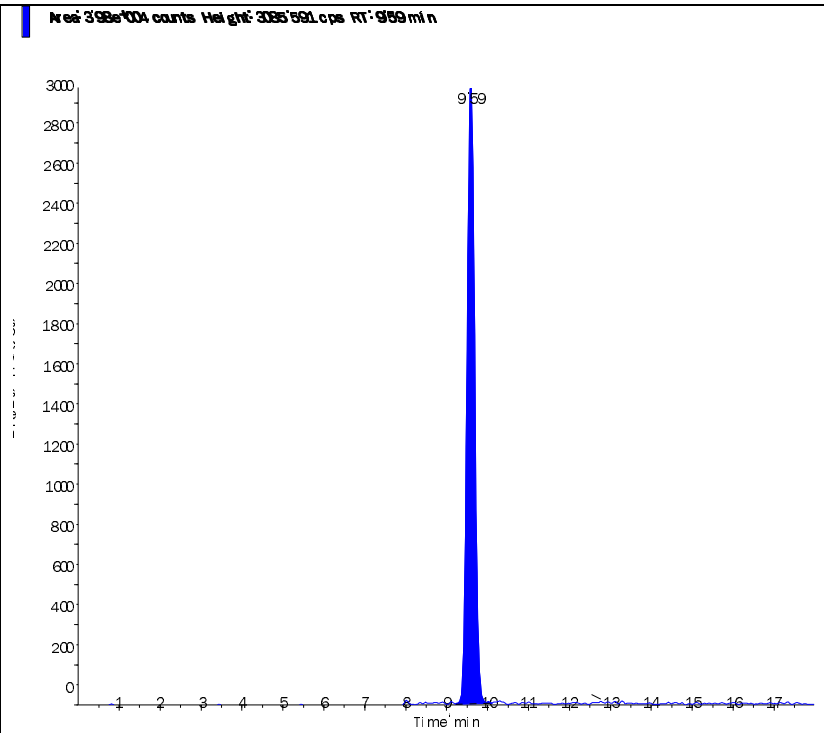

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Created with Analyst Reporter
Printed: 8/27/2015 11:31 AM

Data File	LM31433.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/24/2015 4:47:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536249-05 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM31433.wiff	**Injection Volume**	10.00
Acquisition Date	8/24/2015 4:47:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	WG536249-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.650e+05	9.73	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.150e+04	9.73	N/A	0.213
Perchlorate conf	6.560e+03	9.73	N/A	0.208

O18LP (Internal Standard)

RT (Exp. RT): 9.73(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

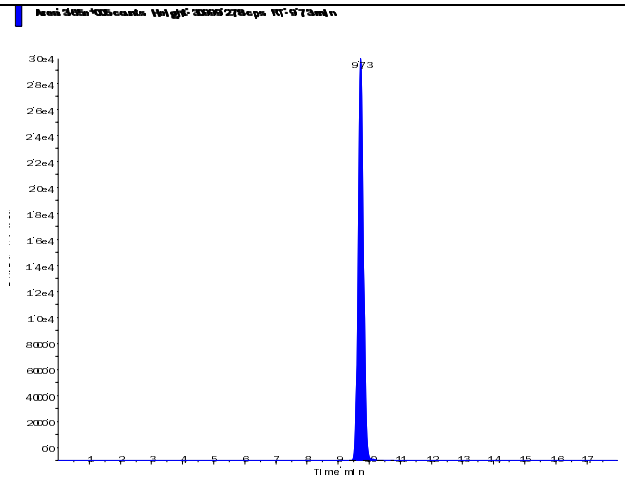

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.73 (9.52) min Calculated conc: 0.213 ng/ml Area Ratio: 0.059 Sample Type: (Unknown)	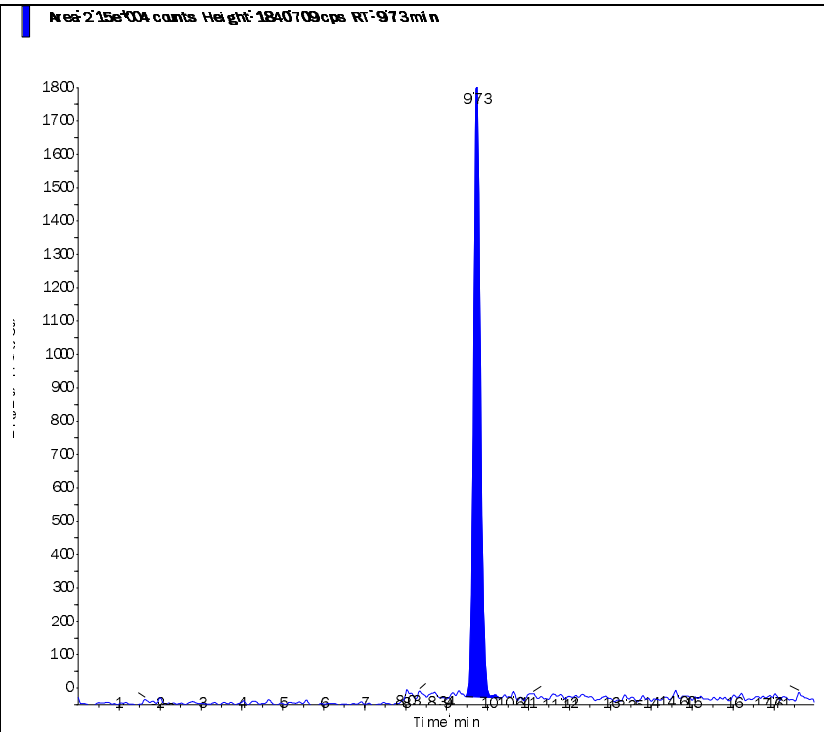
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.73 (9.48) min Calculated conc: 0.208 ng/ml Area Ratio: 0.018 Sample Type: (Unknown)	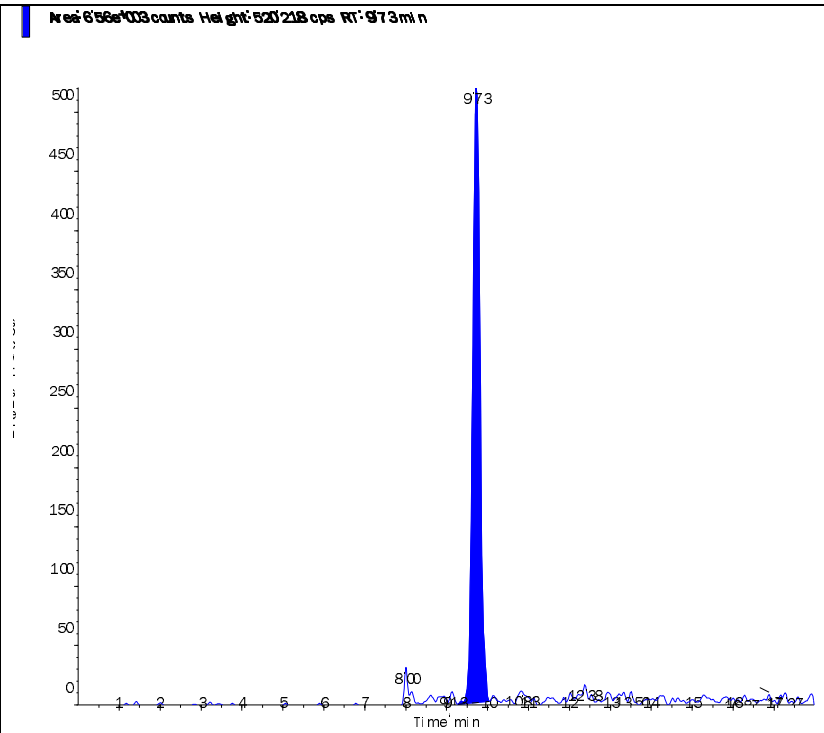

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Data File	LM31445.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/24/2015 8:34:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536249-06 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM31445.wiff	**Injection Volume**	10.00
Acquisition Date	8/24/2015 8:34:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	WG536249-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.180e+05	9.71	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.280e+04	9.72	N/A	0.196
Perchlorate conf	7.970e+03	9.71	N/A	0.221

O18LP (Internal Standard)

RT (Exp. RT): 9.71(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

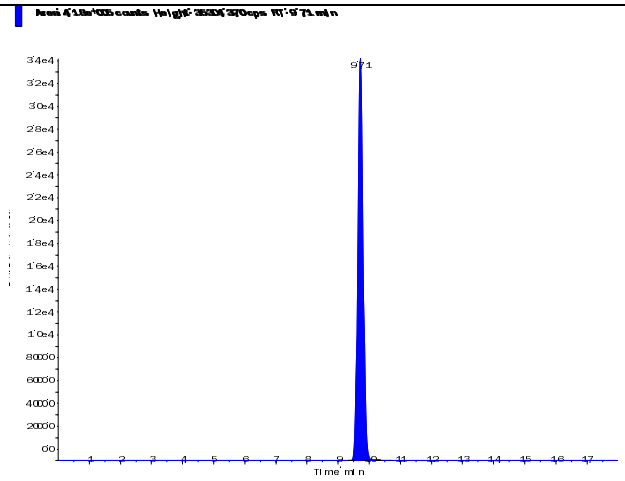

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.72 (9.52) min Calculated conc: 0.196 ng/ml Area Ratio: 0.054 Sample Type: (Unknown)	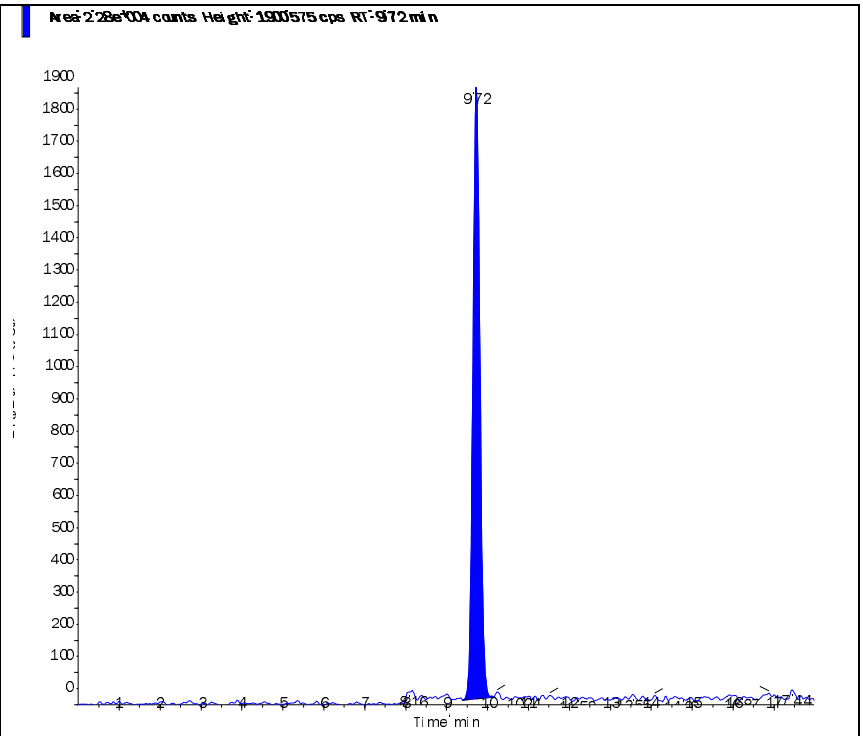
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.71 (9.48) min Calculated conc: 0.221 ng/ml Area Ratio: 0.019 Sample Type: (Unknown)	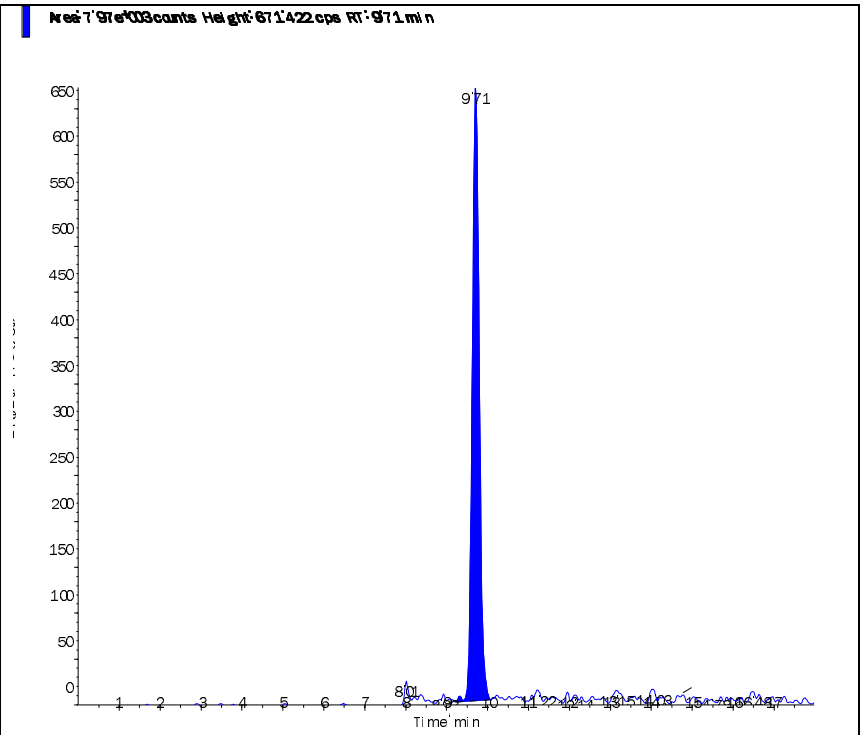

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Data File	LM31457.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/25/2015 12:22:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536249-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM31457.wiff	**Injection Volume**	10.00
Acquisition Date	8/25/2015 12:22:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	WG536249-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.140e+05	9.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.410e+04	9.72	N/A	0.21
Perchlorate conf	8.120e+03	9.71	N/A	0.228

O18LP (Internal Standard)

RT (Exp. RT): 9.70(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

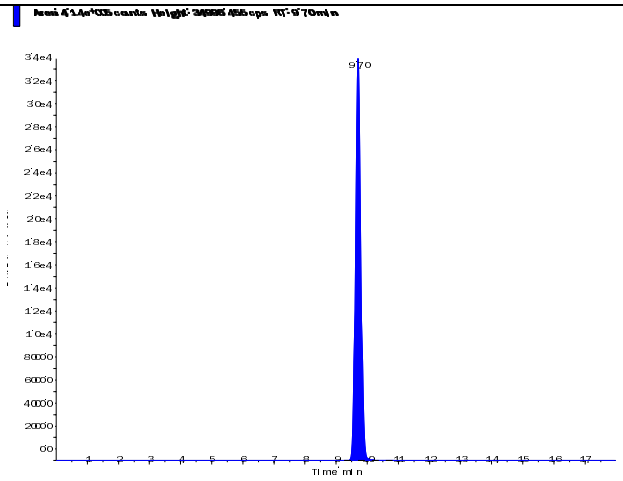

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.72 (9.52) min Calculated conc: 0.21 ng/ml Area Ratio: 0.058 Sample Type: (Unknown)	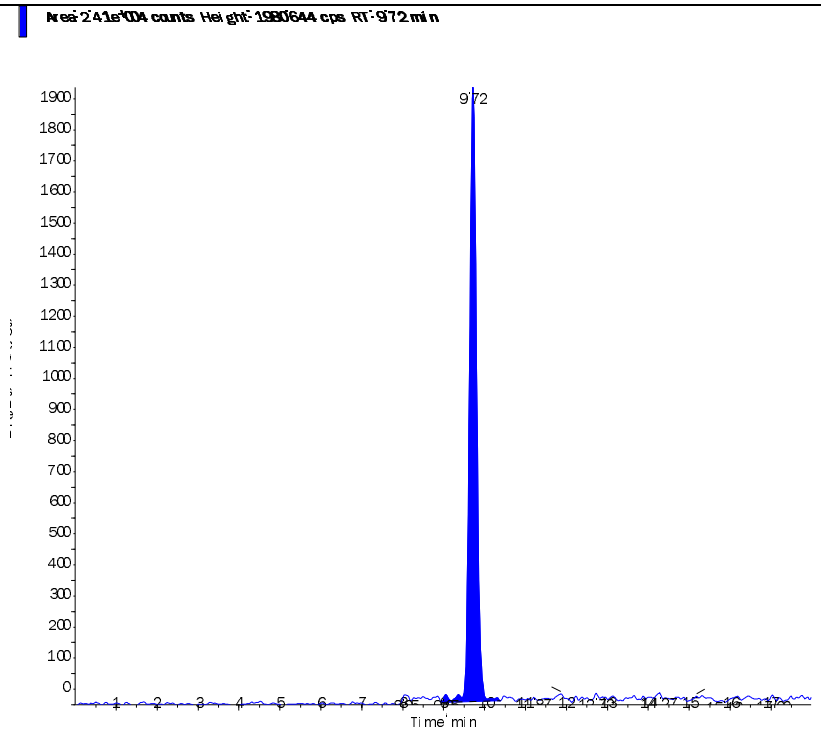
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.71 (9.48) min Calculated conc: 0.228 ng/ml Area Ratio: 0.02 Sample Type: (Unknown)	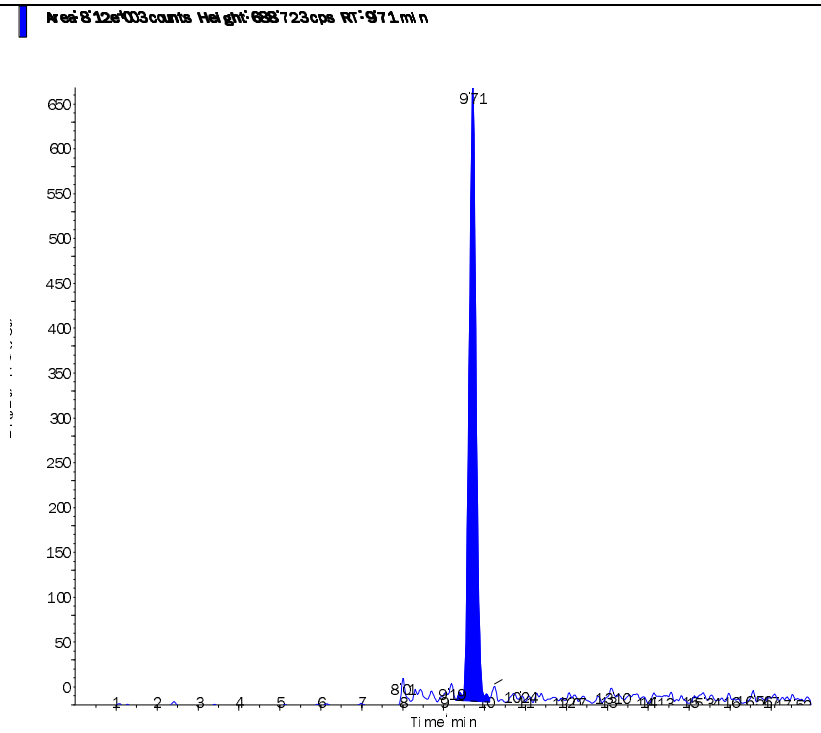

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Printed: 8/27/2015 11:42 AM

Data File	LM31465.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/25/2015 2:53:38 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536249-08 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM31465.wiff	**Injection Volume**	10.00
Acquisition Date	8/25/2015 2:53:38 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	WG536249-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.220e+05	9.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.410e+04	9.72	N/A	0.206
Perchlorate conf	7.860e+03	9.69	N/A	0.216

O18LP (Internal Standard)

RT (Exp. RT): 9.70(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

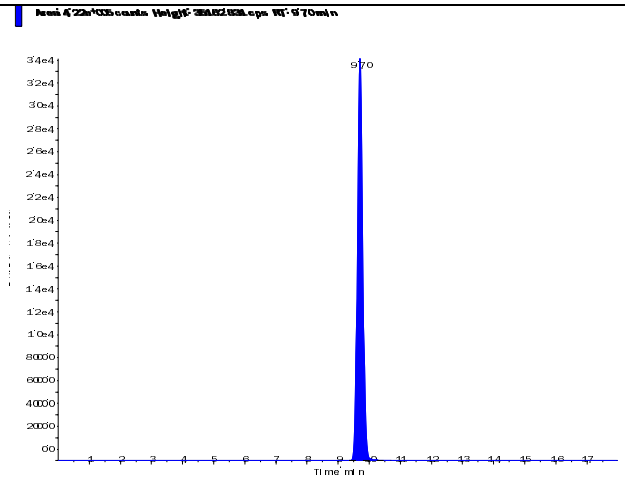

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.72 (9.52) min Calculated conc: 0.206 ng/ml Area Ratio: 0.057 Sample Type: (Unknown)	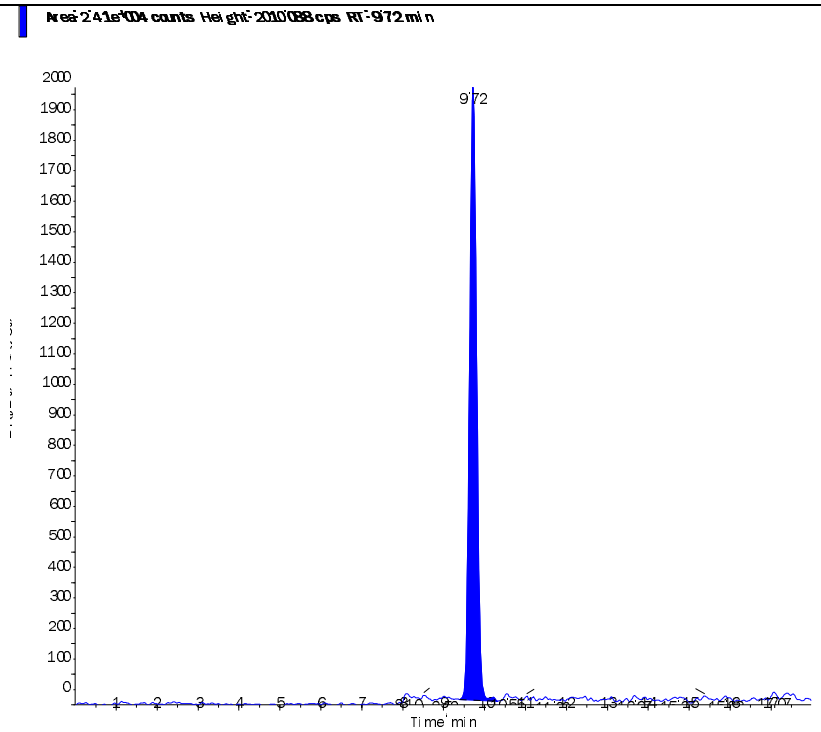
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.69 (9.48) min Calculated conc: 0.216 ng/ml Area Ratio: 0.019 Sample Type: (Unknown)	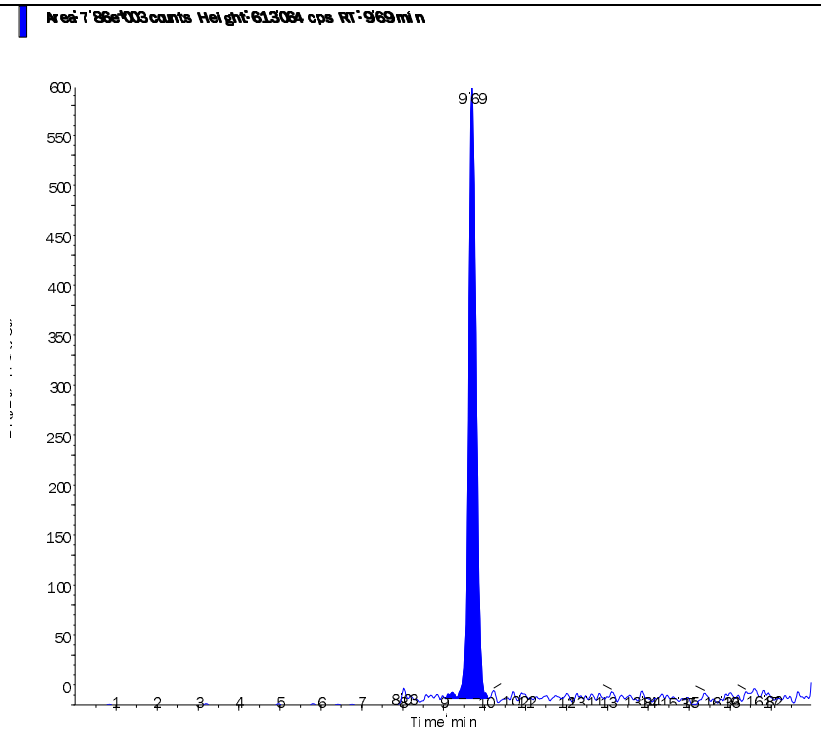

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Printed: 8/28/2015 11:00 AM

Data File	LM31469.wiff	**Result Table**	082715_JWR.rdb
Acquisition Date	8/27/2015 1:46:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536759-05 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM31469.wiff	**Injection Volume**	10.00
Acquisition Date	8/27/2015 1:46:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082715_JWR.rdb
Sample ID	WG536759-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.910e+05	9.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.360e+04	9.72	N/A	0.218
Perchlorate conf	7.600e+03	9.69	N/A	0.225

O18LP (Internal Standard)

RT (Exp. RT): 9.70(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

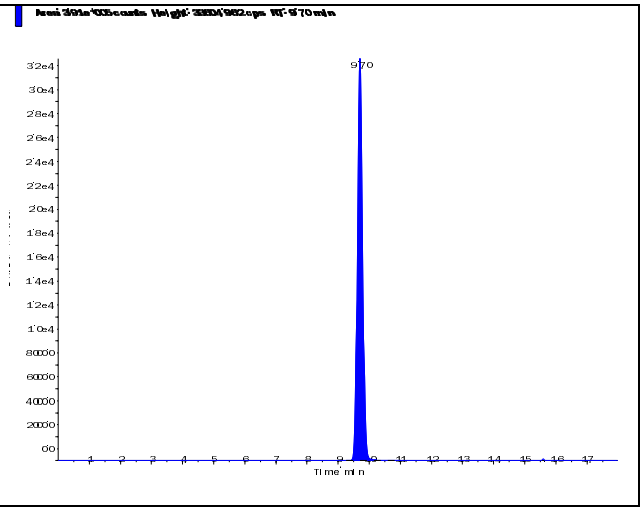

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.72 (9.52) min Calculated conc: 0.218 ng/ml Area Ratio: 0.06 Sample Type: (Unknown)	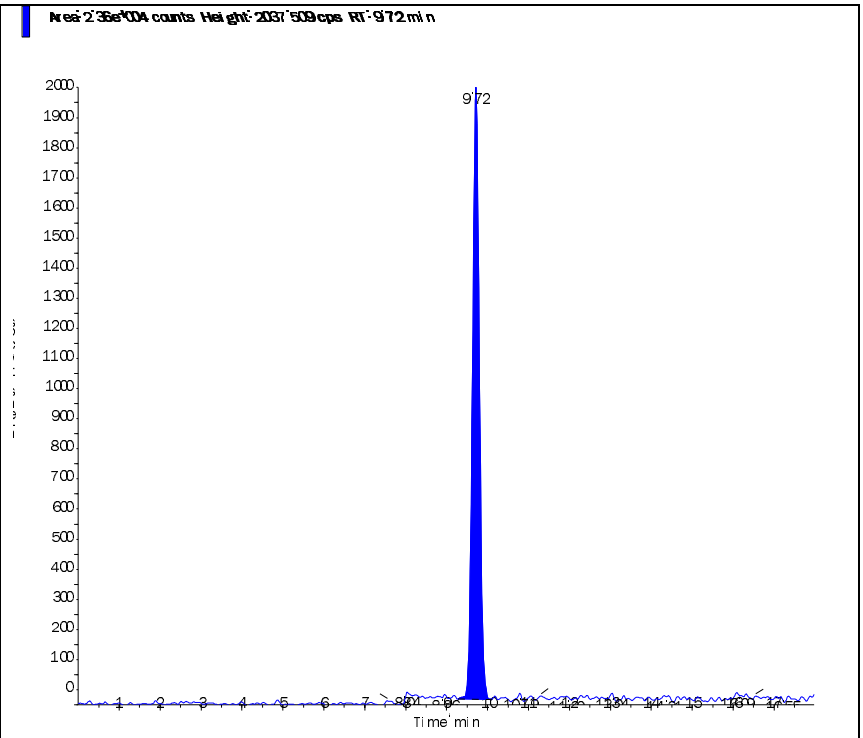
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.69 (9.48) min Calculated conc: 0.225 ng/ml Area Ratio: 0.019 Sample Type: (Unknown)	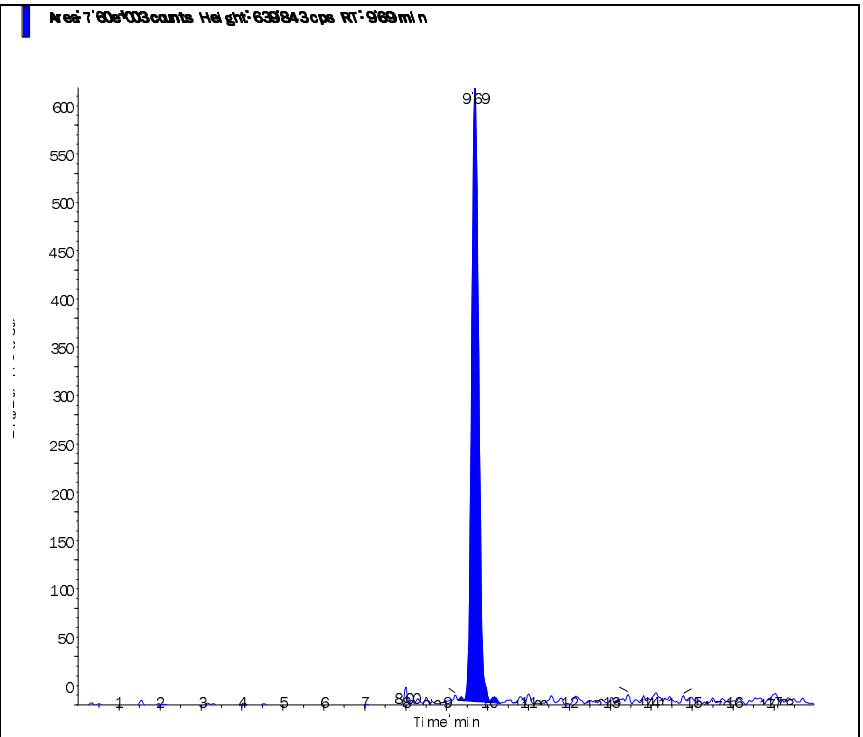

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Data File	LM31479.wiff	**Result Table**	082715_JWR.rdb
Acquisition Date	8/27/2015 6:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536759-06 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM31479.wiff	**Injection Volume**	10.00
Acquisition Date	8/27/2015 6:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082715_JWR.rdb
Sample ID	WG536759-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.960e+05	9.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.180e+04	9.72	N/A	0.198
Perchlorate conf	6.930e+03	9.70	N/A	0.202

O18LP (Internal Standard)

RT (Exp. RT): 9.70(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

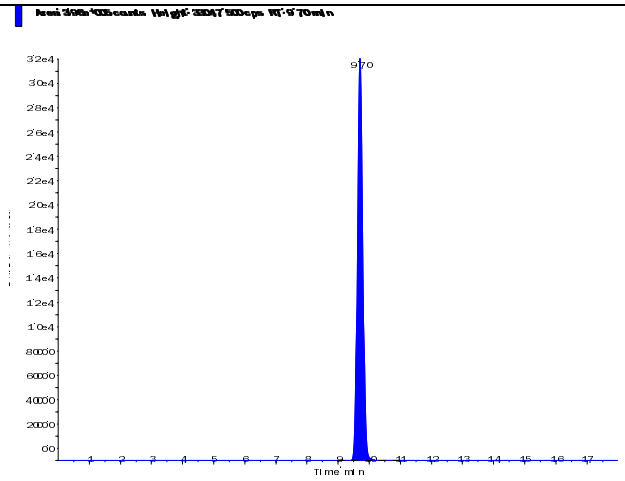

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.72 (9.52) min Calculated conc: 0.198 ng/ml Area Ratio: 0.055 Sample Type: (Unknown)	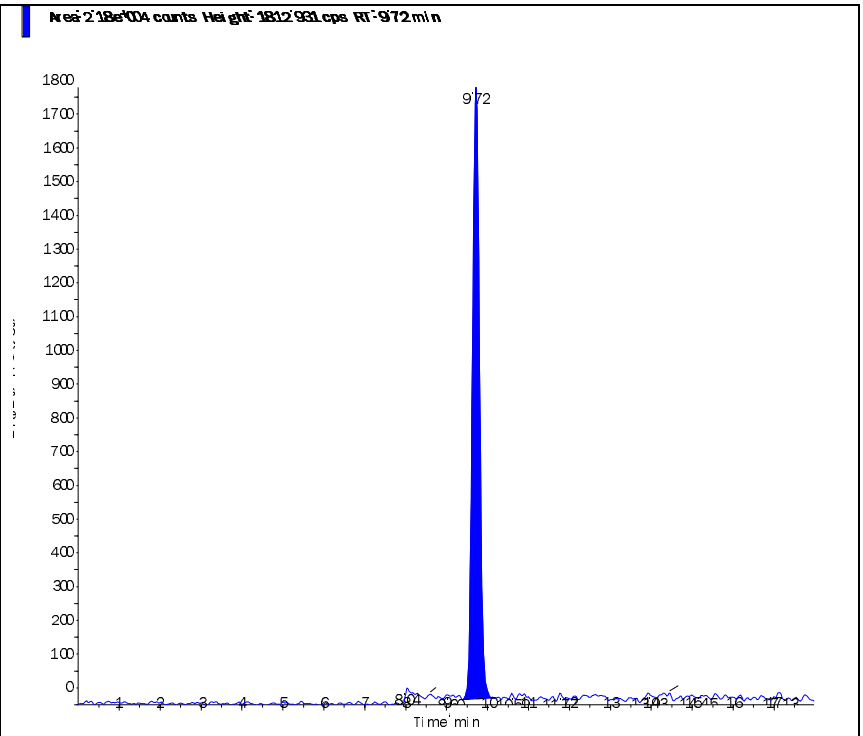
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.70 (9.48) min Calculated conc: 0.202 ng/ml Area Ratio: 0.018 Sample Type: (Unknown)	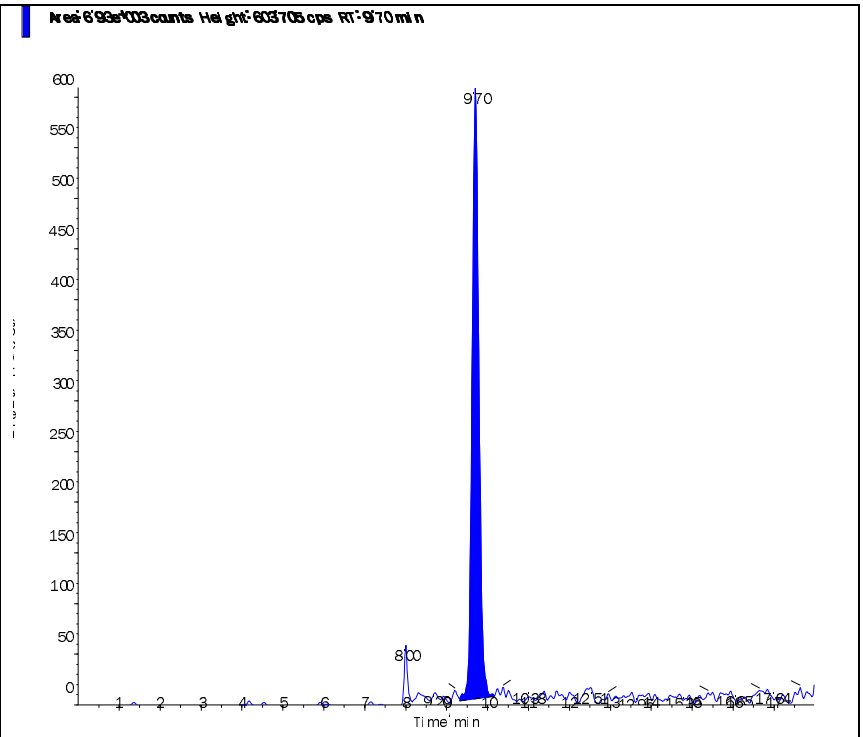

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Data File	LM31431.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/24/2015 4:09:55 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536250-01 CCB	**Injection Vial**	1.00
Data File	LM31431.wiff	**Injection Volume**	10.00
Acquisition Date	8/24/2015 4:09:55 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	WG536250-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.470e+05	9.74	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.74(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

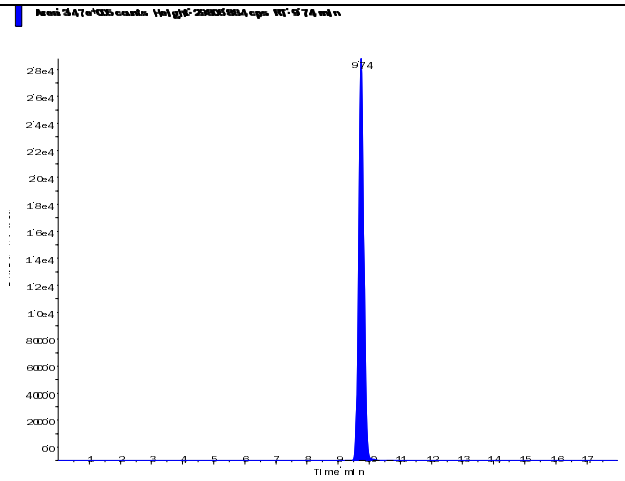

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.52) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

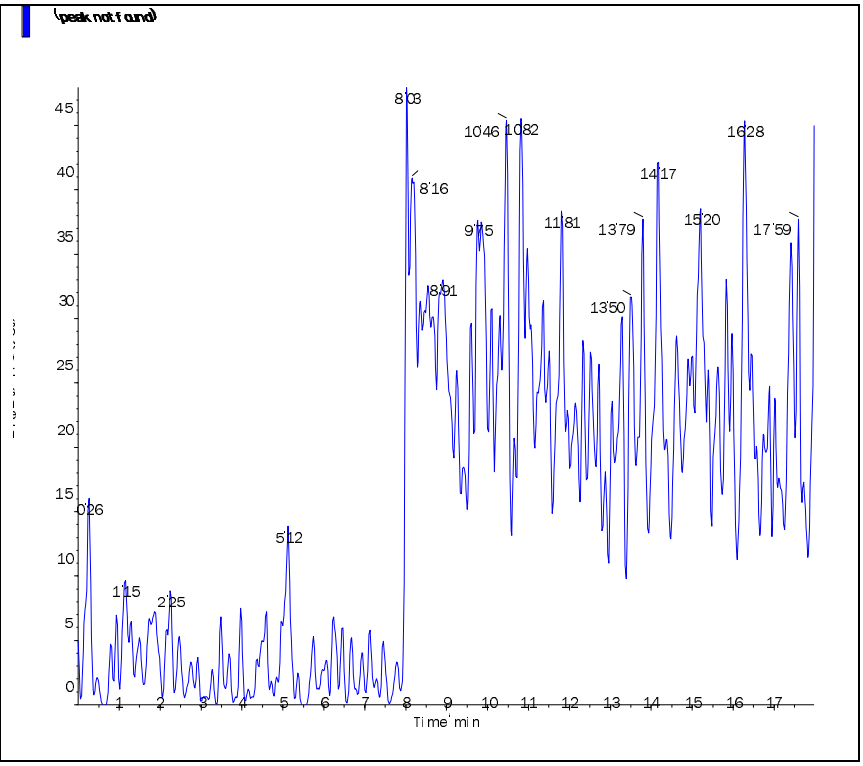

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.48) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

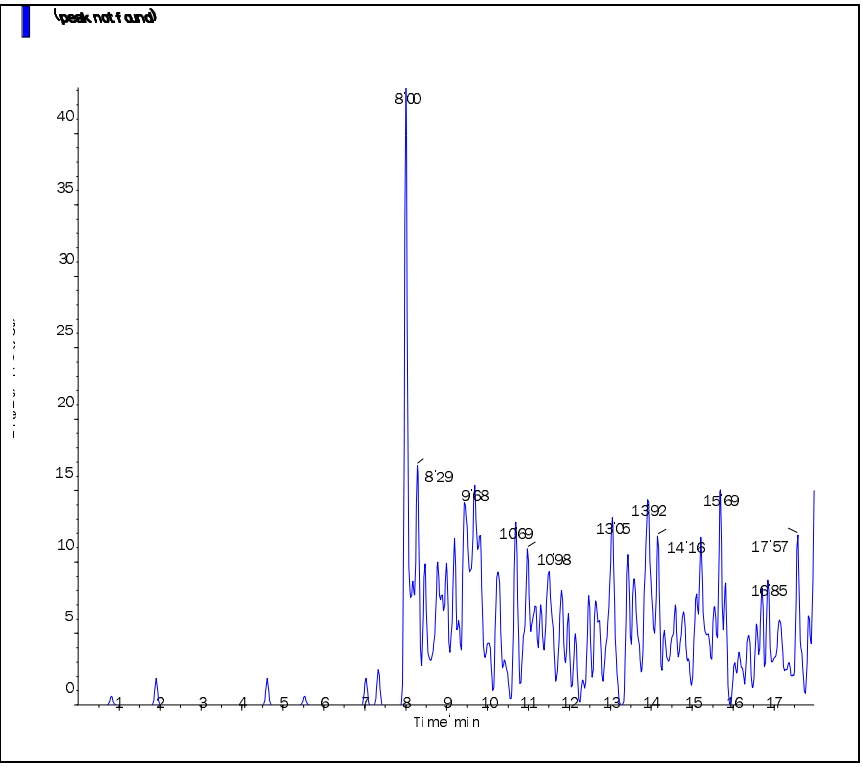

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Data File	LM31446.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/24/2015 8:53:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536250-04 CCB	**Injection Vial**	1.00
Data File	LM31446.wiff	**Injection Volume**	10.00
Acquisition Date	8/24/2015 8:53:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	WG536250-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.030e+05	9.72	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	2.030e+02	9.69	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.72(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

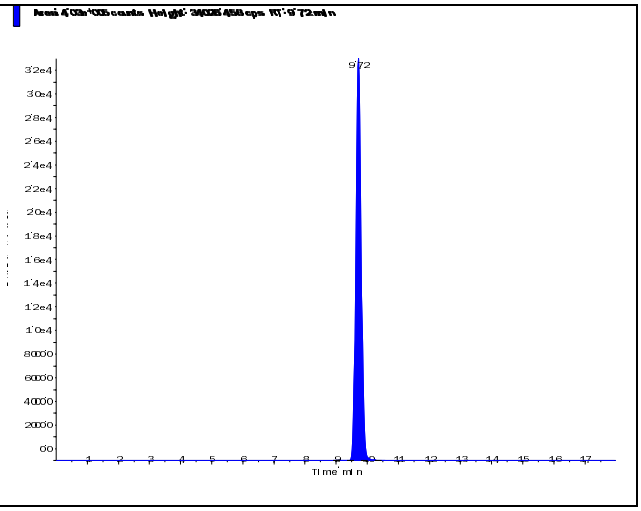

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.52) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	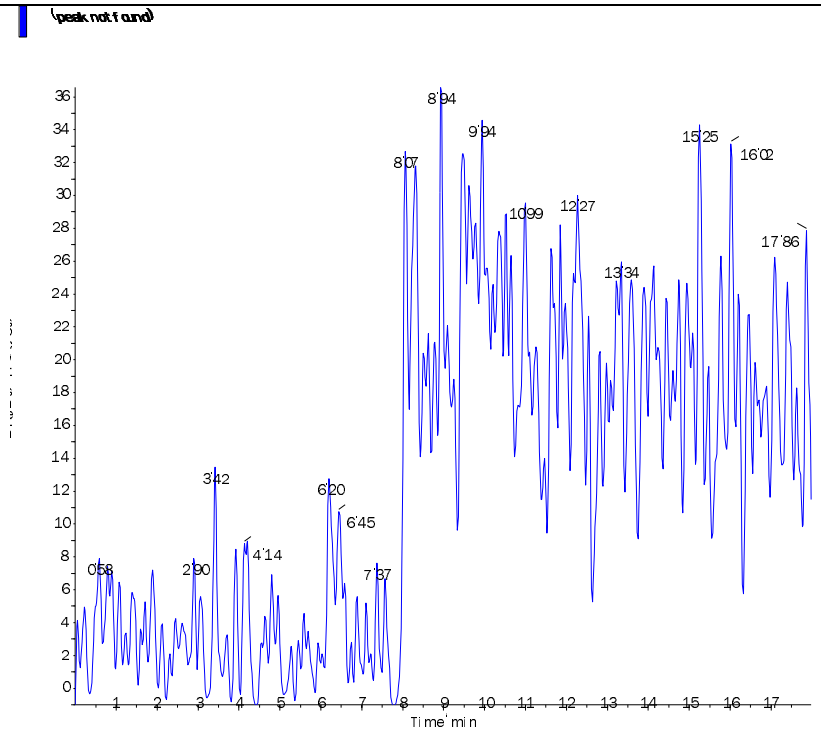
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.69 (9.48) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	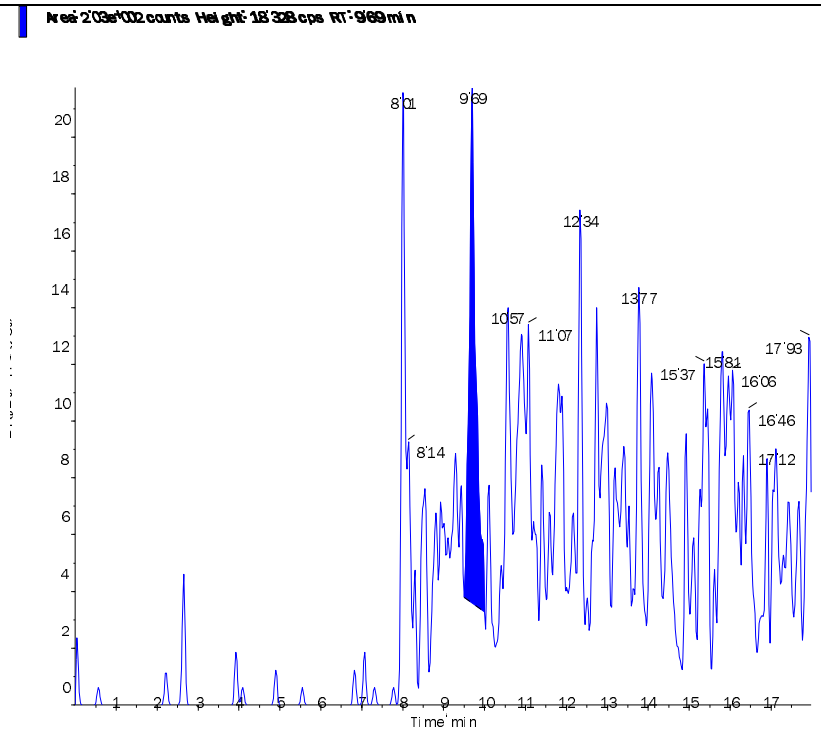

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Data File	LM31458.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/25/2015 12:41:05 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536250-06 CCB	**Injection Vial**	1.00
Data File	LM31458.wiff	**Injection Volume**	10.00
Acquisition Date	8/25/2015 12:41:05 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	WG536250-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.180e+05	9.71	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.730e+02	9.63	N/A	< 0
Perchlorate conf	3.400e+02	9.75	N/A	0.0032

O18LP (Internal Standard)

RT (Exp. RT): 9.71(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

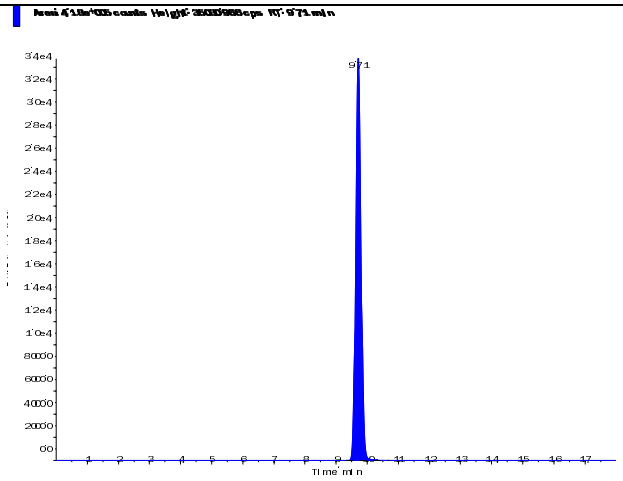

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Applied Biosystems | MDS SCIEX

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.63 (9.52) min Calculated conc: < 0 ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	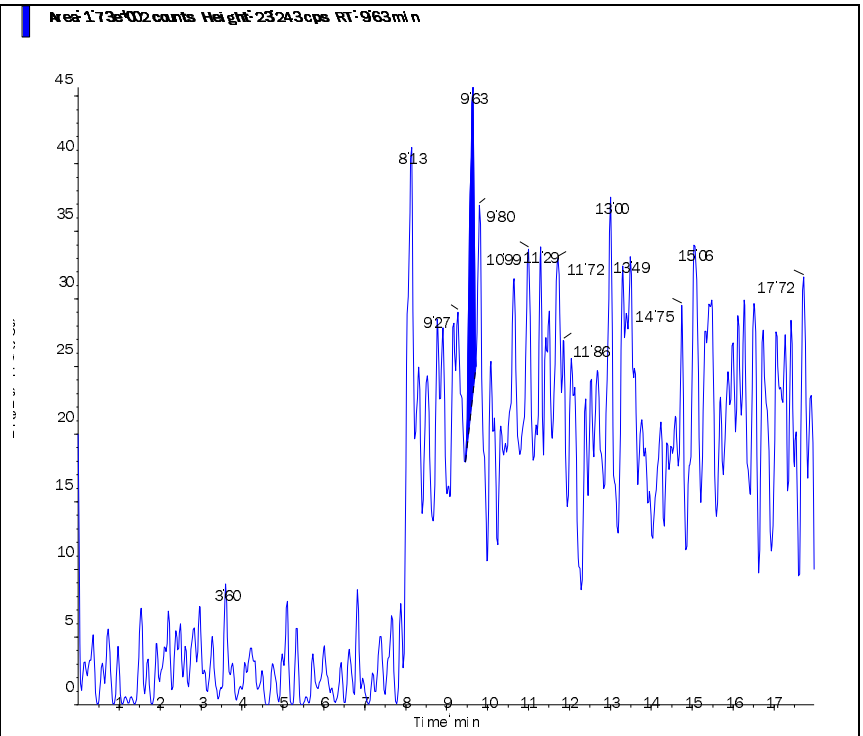
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.75 (9.48) min Calculated conc: 0.0032 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	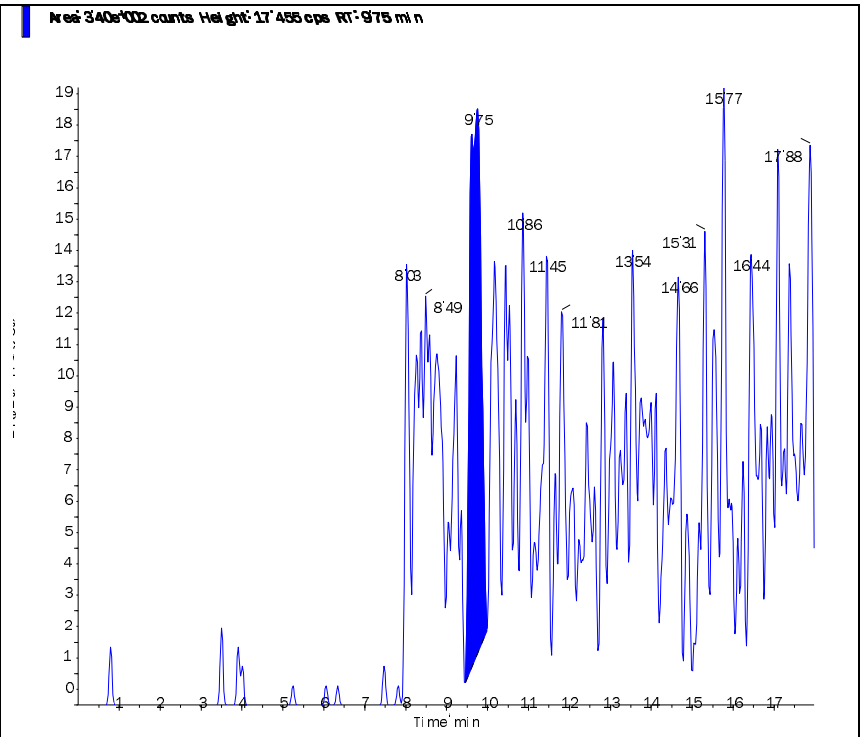

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Created with Analyst Reporter
Printed: 8/27/2015 11:42 AM

Data File	LM31466.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/25/2015 3:12:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536250-08 CCB	**Injection Vial**	1.00
Data File	LM31466.wiff	**Injection Volume**	10.00
Acquisition Date	8/25/2015 3:12:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	WG536250-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.150e+05	9.71	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	8.580e+01	9.62	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.71(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

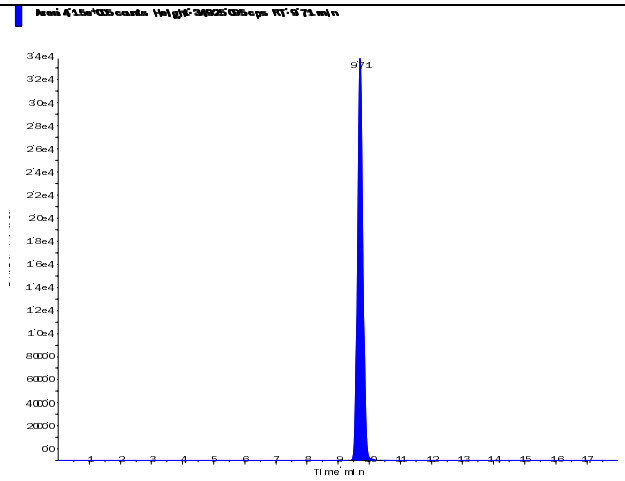

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 8/27/2015 11:42 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.52) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	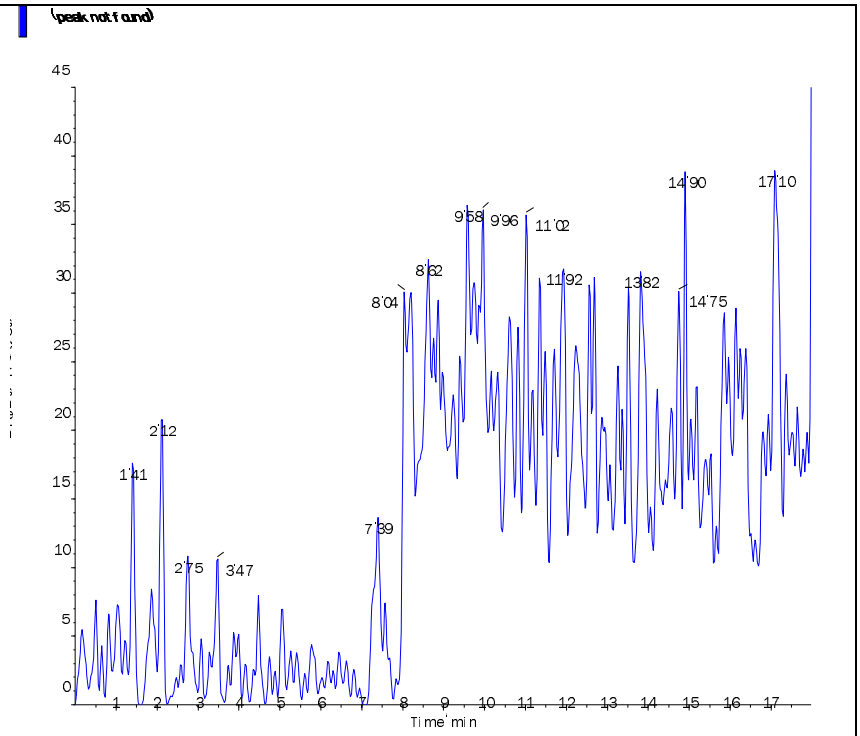
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.62 (9.48) min Calculated conc: < 0 ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	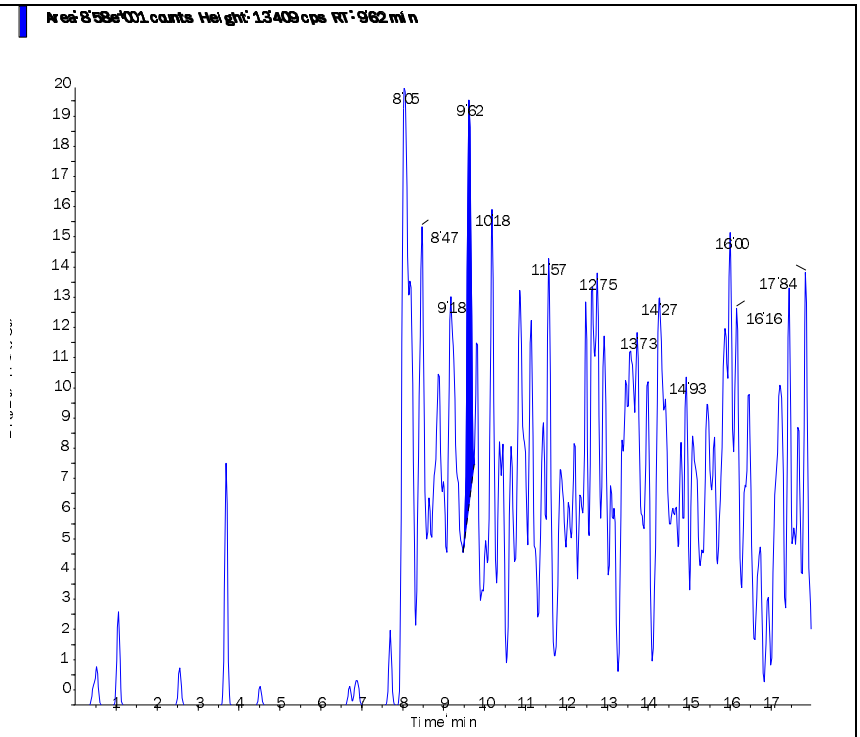

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Created with Analyst Reporter
Printed: 8/28/2015 11:00 AM

Data File	LM31467.wiff	**Result Table**	082715_JWR.rdb
Acquisition Date	8/27/2015 1:09:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536760-01 CCB	**Injection Vial**	1.00
Data File	LM31467.wiff	**Injection Volume**	10.00
Acquisition Date	8/27/2015 1:09:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082715_JWR.rdb
Sample ID	WG536760-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.730e+05	9.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.70(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

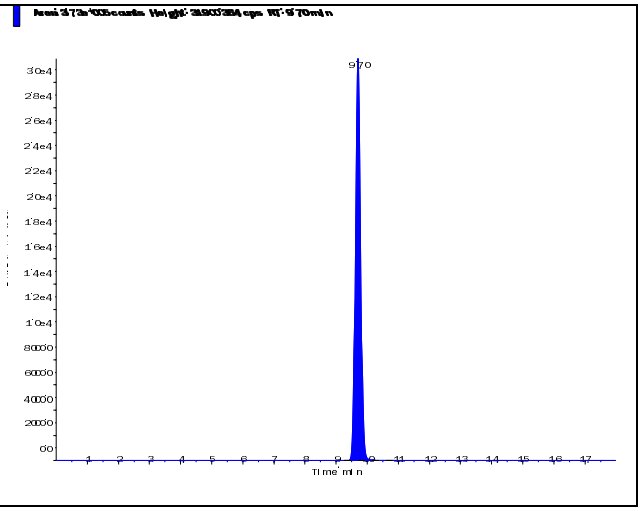

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Created with Analyst Reporter
Printed: 8/28/2015 11:00 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.52) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	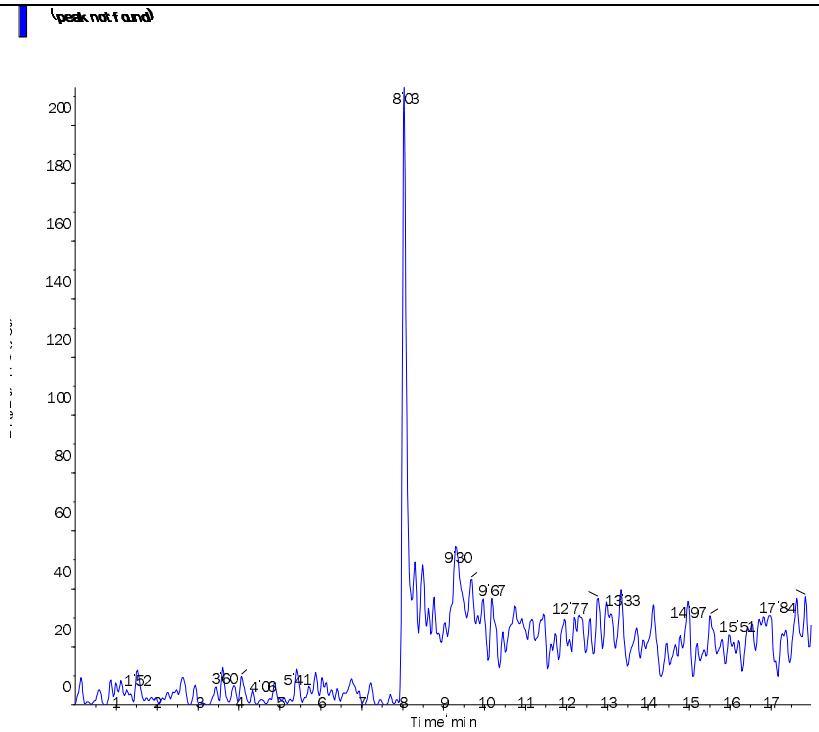
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.48) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	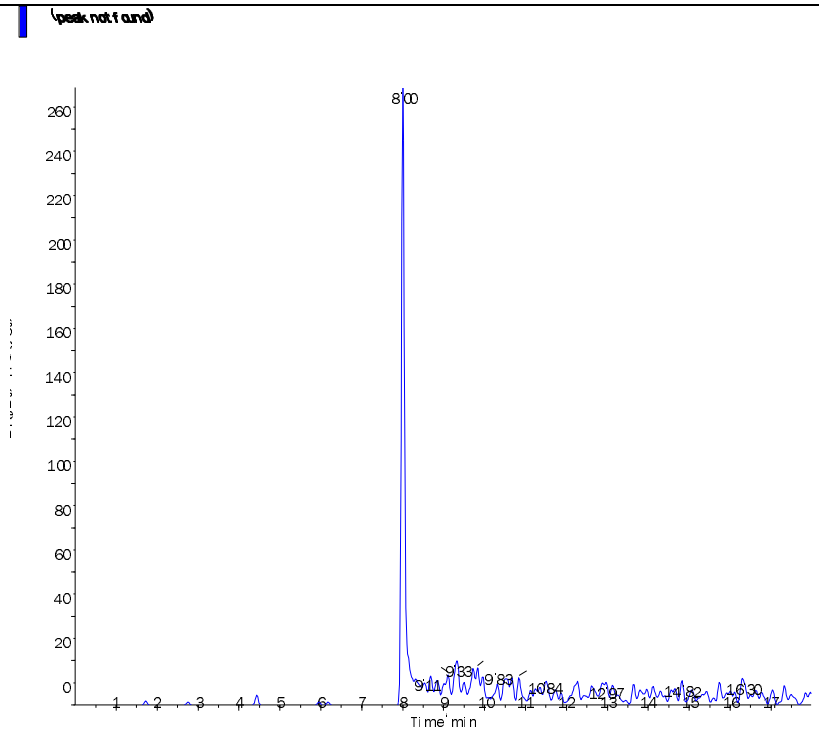

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Created with Analyst Reporter
Printed: 8/28/2015 11:02 AM

Data File	LM31480.wiff	**Result Table**	082715_JWR.rdb
Acquisition Date	8/27/2015 6:25:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536760-04 CCB	**Injection Vial**	1.00
Data File	LM31480.wiff	**Injection Volume**	10.00
Acquisition Date	8/27/2015 6:25:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082715_JWR.rdb
Sample ID	WG536760-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.850e+05	9.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.370e+02	9.78	N/A	< 0
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.70(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

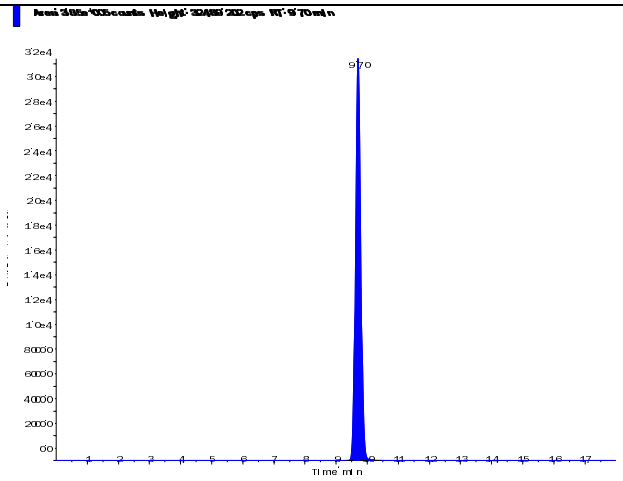

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Created with Analyst Reporter
Printed: 8/28/2015 11:02 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.78 (9.52) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	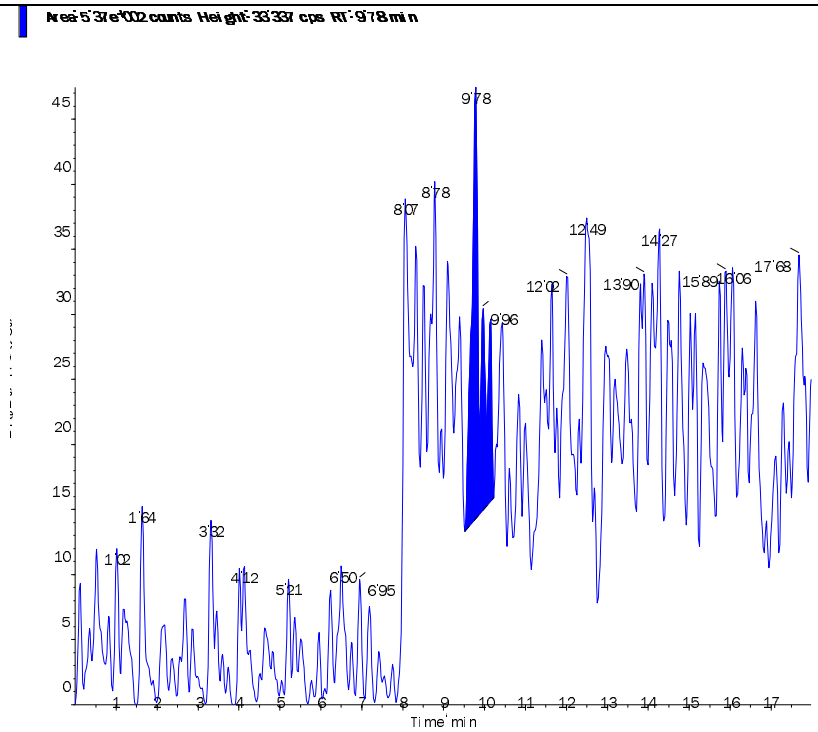
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.48) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	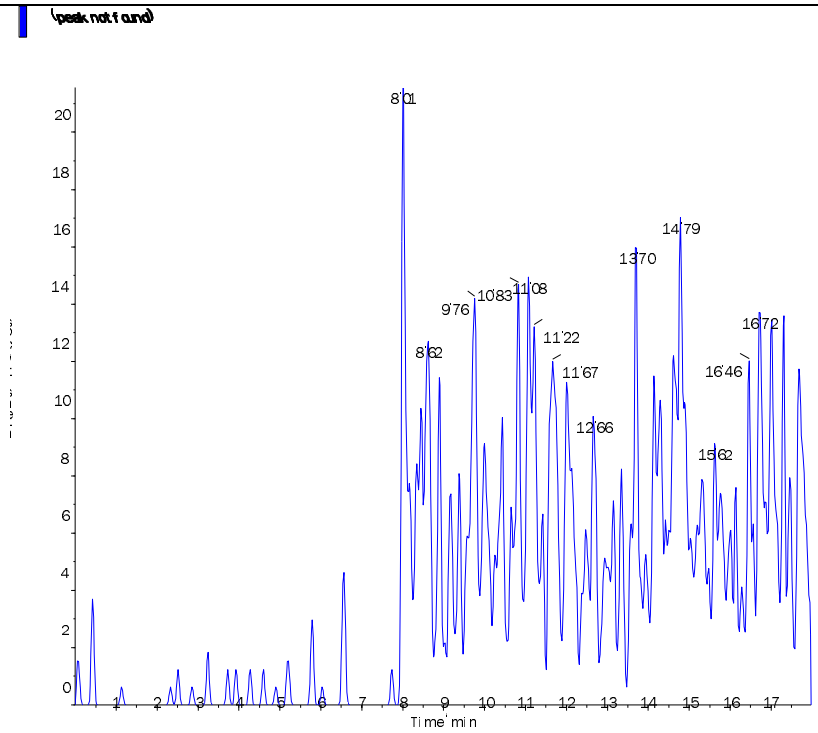

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Created with Analyst Reporter
Printed: 8/27/2015 11:31 AM

Data File	LM31434.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/24/2015 5:06:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536249-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM31434.wiff	**Injection Volume**	10.00
Acquisition Date	8/24/2015 5:06:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	WG536249-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD69913	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.560e+05	9.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.090e+04	9.31	N/A	0.212
Perchlorate conf	6.270e+03	9.29	N/A	0.203

O18LP (Internal Standard)

RT (Exp. RT): 9.30(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

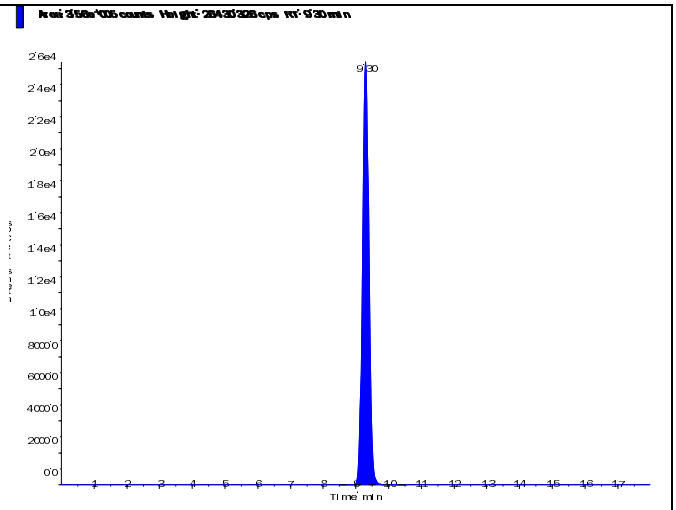

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Created with Analyst Reporter
Printed: 8/27/2015 11:31 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.31 (9.52) min Calculated conc: 0.212 ng/ml Area Ratio: 0.059 Sample Type: (Unknown)	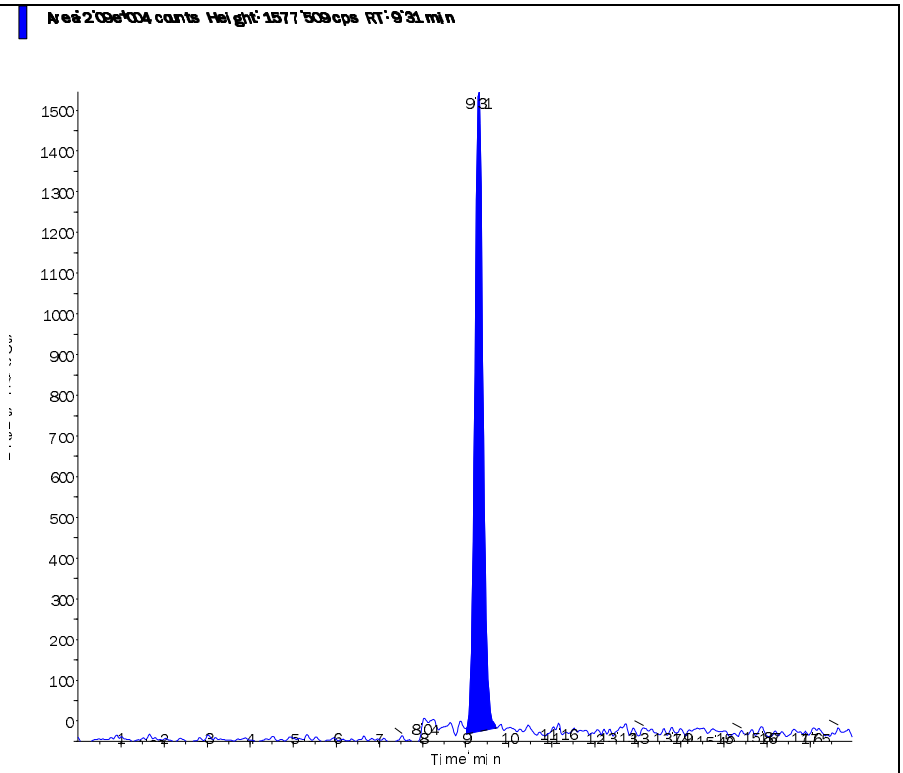
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.29 (9.48) min Calculated conc: 0.203 ng/ml Area Ratio: 0.018 Sample Type: (Unknown)	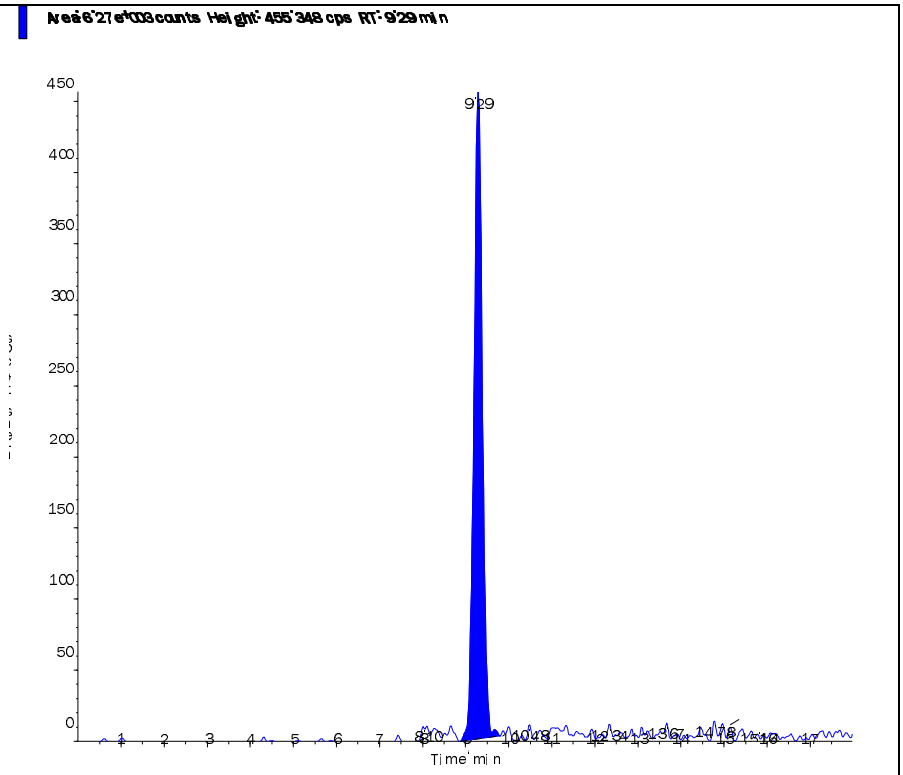

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Created with Analyst Reporter
Printed: 8/28/2015 11:00 AM

Data File	LM31470.wiff	**Result Table**	082715_JWR.rdb
Acquisition Date	8/27/2015 2:05:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536759-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM31470.wiff	**Injection Volume**	10.00
Acquisition Date	8/27/2015 2:05:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082715_JWR.rdb
Sample ID	WG536759-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD69913	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.800e+05	9.27	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.180e+04	9.28	N/A	0.206
Perchlorate conf	7.020e+03	9.26	N/A	0.214

O18LP (Internal Standard)

RT (Exp. RT): 9.27(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

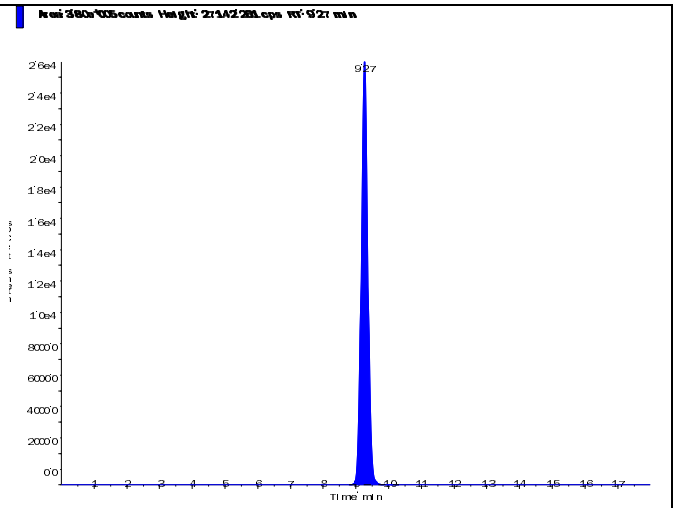

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Created with Analyst Reporter
Printed: 8/28/2015 11:00 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.28 (9.52) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.057
Sample Type:	(Unknown)

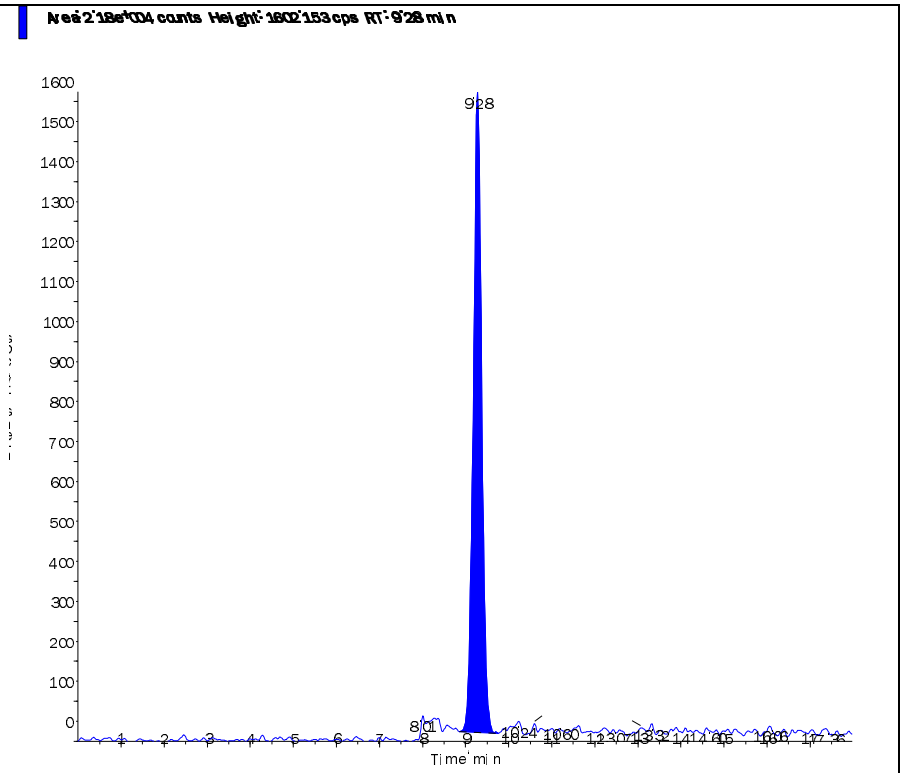

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.26 (9.48) min
Calculated conc:	0.214 ng/ml
Area Ratio:	0.018
Sample Type:	(Unknown)

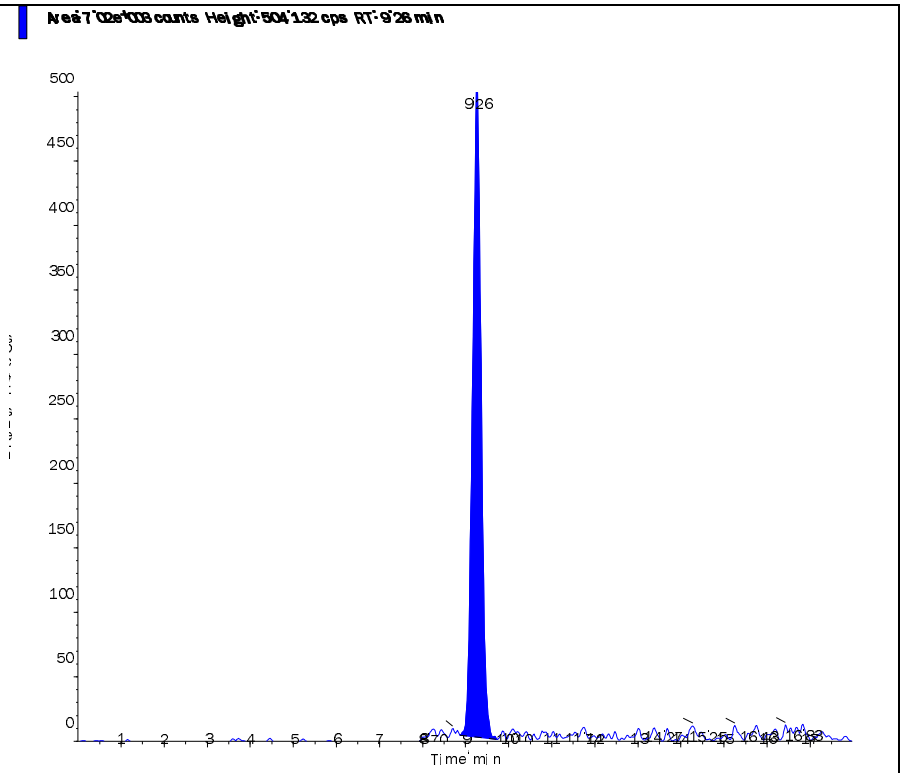

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2.2.1.5 Raw QC Data

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Created with Analyst Reporter
Printed: 8/27/2015 11:31 AM

Data File	LM31435.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/24/2015 5:25:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536249-02 BLANK	**Injection Vial**	5.00
Data File	LM31435.wiff	**Injection Volume**	10.00
Acquisition Date	8/24/2015 5:25:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	WG536249-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.970e+05	9.73	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.73(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

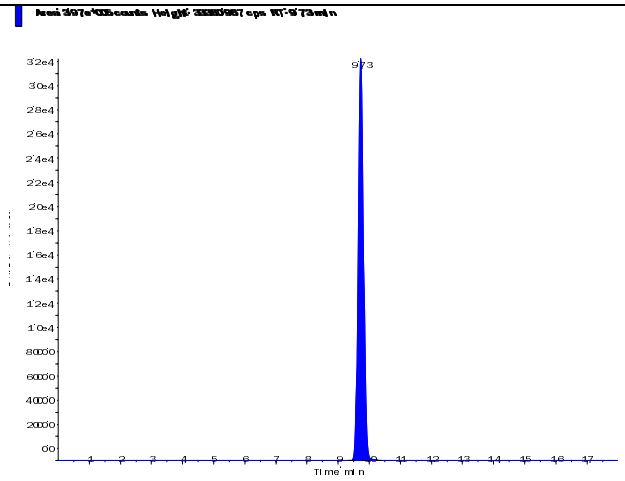

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Created with Analyst Reporter
Printed: 8/27/2015 11:31 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.52) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	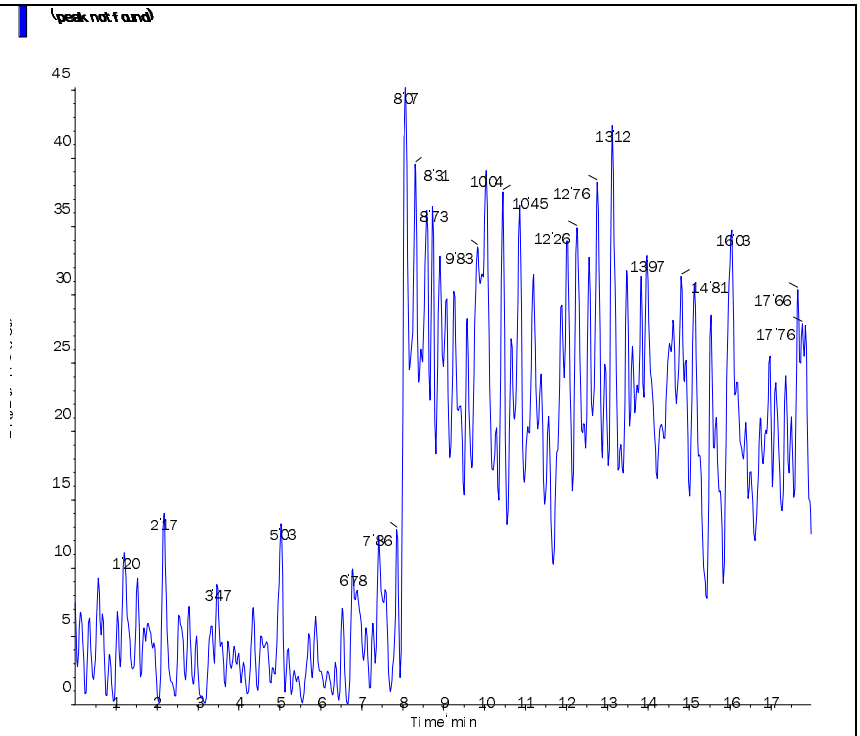
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.48) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	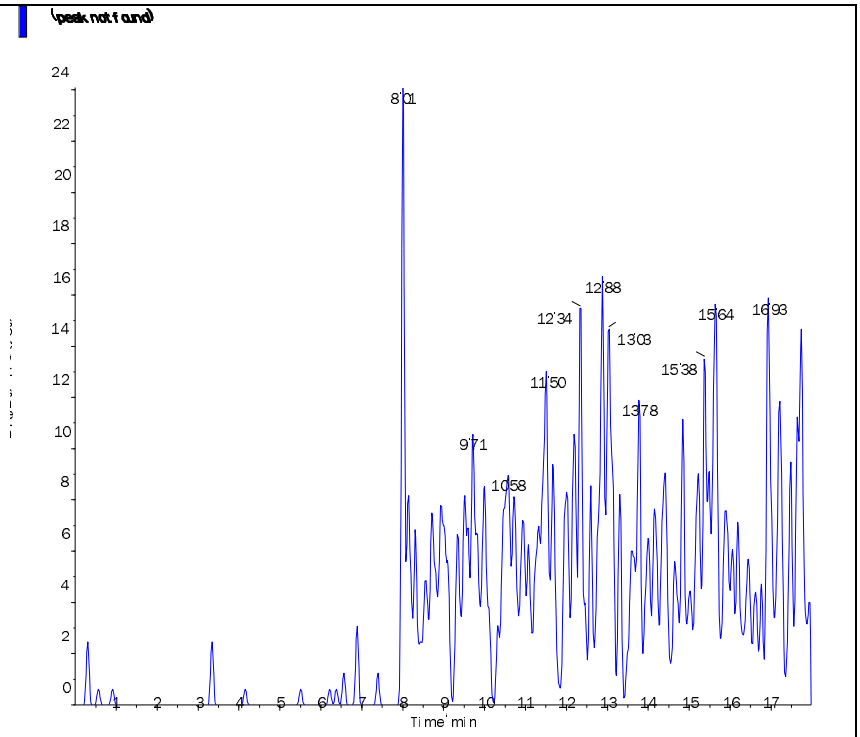

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Created with Analyst Reporter
Printed: 8/28/2015 11:00 AM

Data File	LM31471.wiff	**Result Table**	082715_JWR.rdb
Acquisition Date	8/27/2015 2:24:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536759-02 BLANK	**Injection Vial**	5.00
Data File	LM31471.wiff	**Injection Volume**	10.00
Acquisition Date	8/27/2015 2:24:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082715_JWR.rdb
Sample ID	WG536759-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.300e+05	9.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.580e+02	9.73	N/A	< 0
Perchlorate conf	3.070e+02	9.72	N/A	0.002

O18LP (Internal Standard)

RT (Exp. RT): 9.70(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

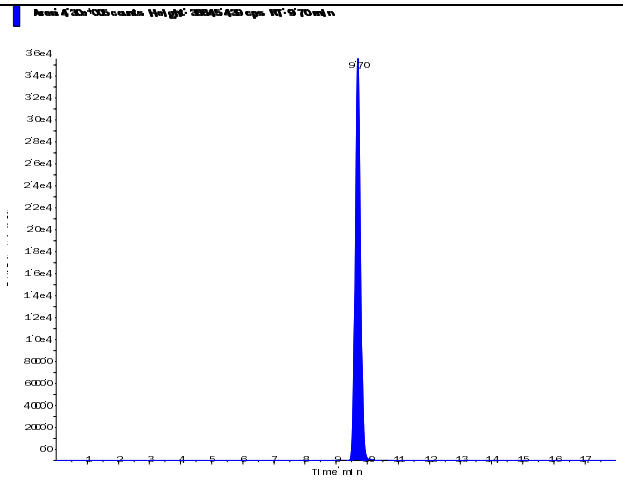

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Created with Analyst Reporter
Printed: 8/28/2015 11:00 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.73 (9.52) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	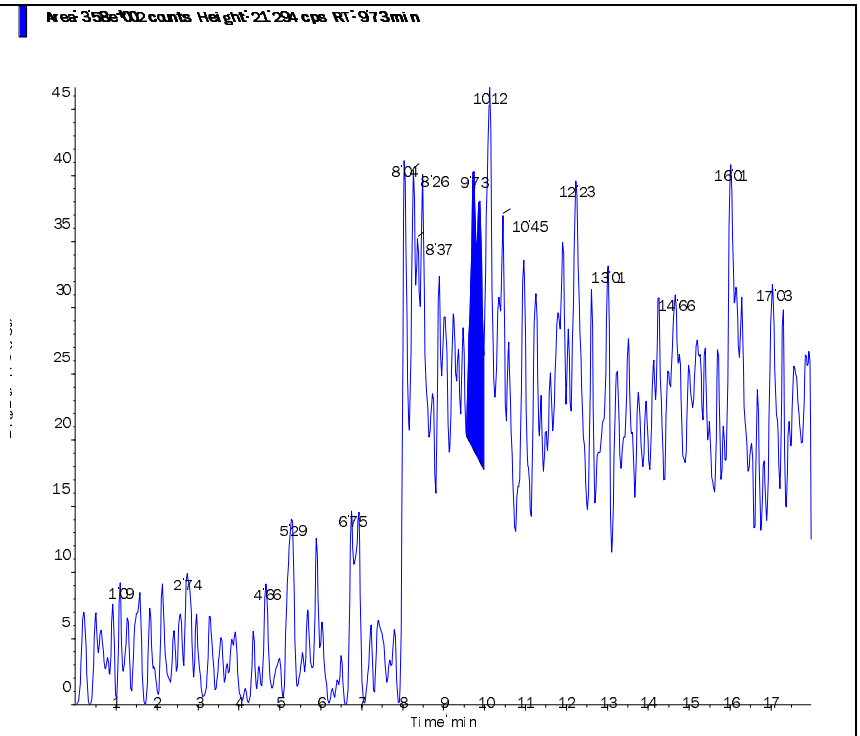
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.72 (9.48) min Calculated conc: 0.002 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	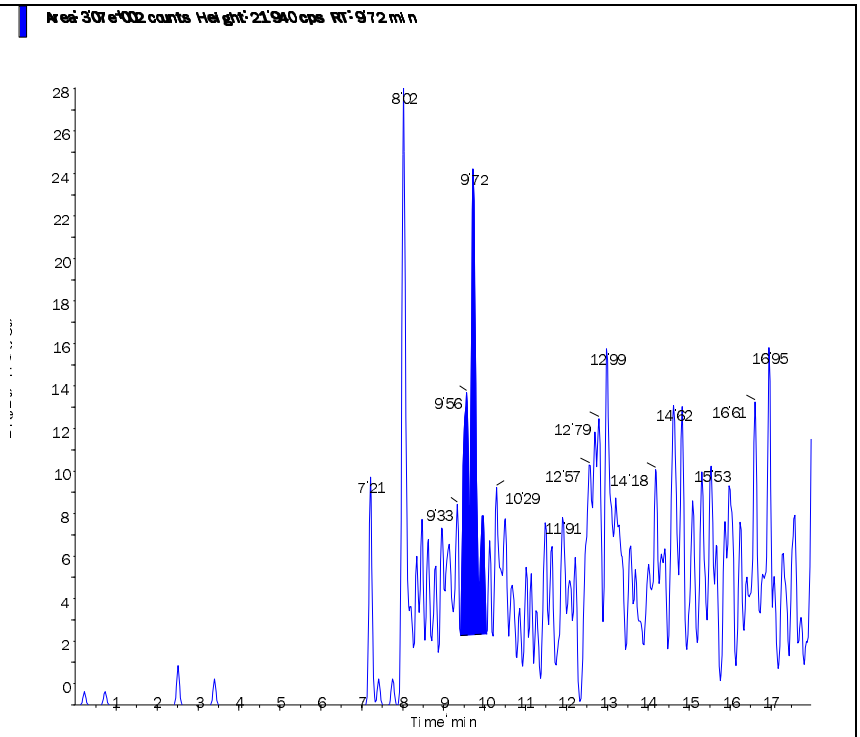

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Created with Analyst Reporter
Printed: 8/27/2015 11:32 AM

Data File	LM31436.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/24/2015 5:44:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536249-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM31436.wiff	**Injection Volume**	10.00
Acquisition Date	8/24/2015 5:44:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	WG536249-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD69913	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.990e+05	9.71	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.290e+04	9.72	N/A	0.206
Perchlorate conf	7.710e+03	9.70	N/A	0.224

O18LP (Internal Standard)

RT (Exp. RT): 9.71(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

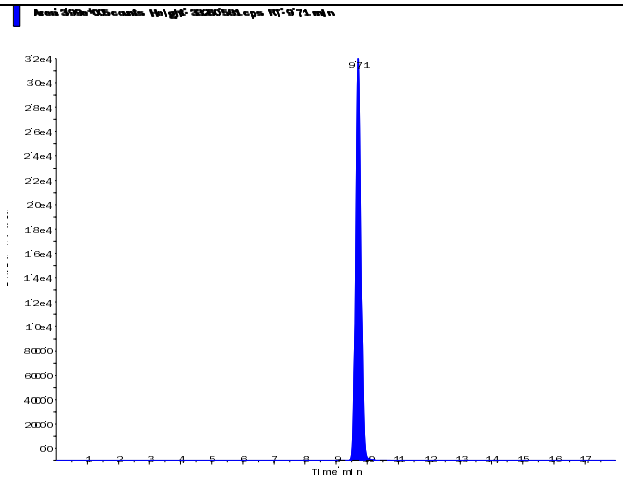

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 8/27/2015 11:32 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.72 (9.52) min Calculated conc: 0.206 ng/ml Area Ratio: 0.057 Sample Type: (Unknown)	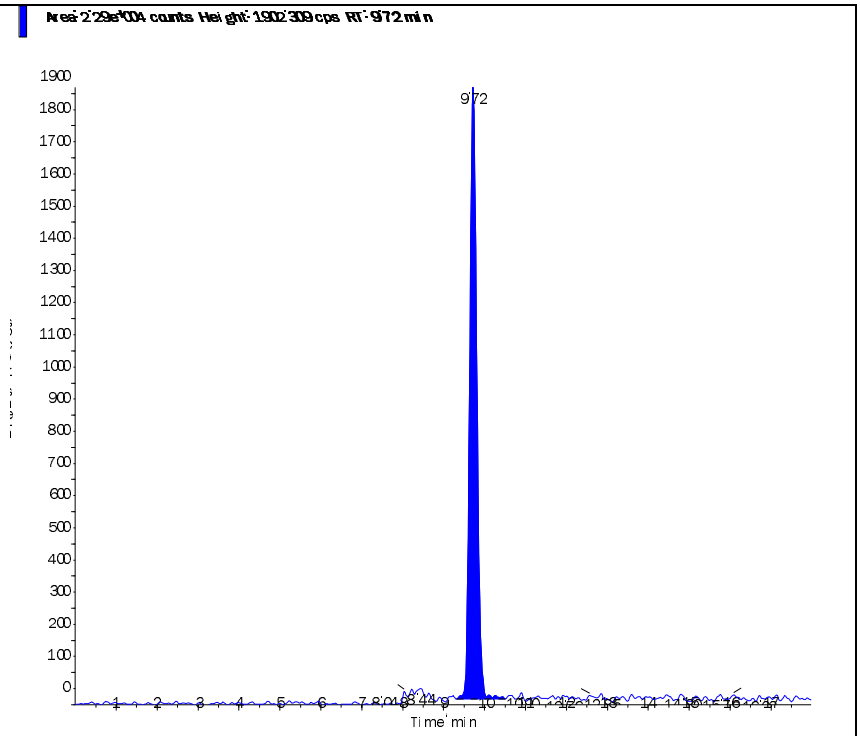
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.70 (9.48) min Calculated conc: 0.224 ng/ml Area Ratio: 0.019 Sample Type: (Unknown)	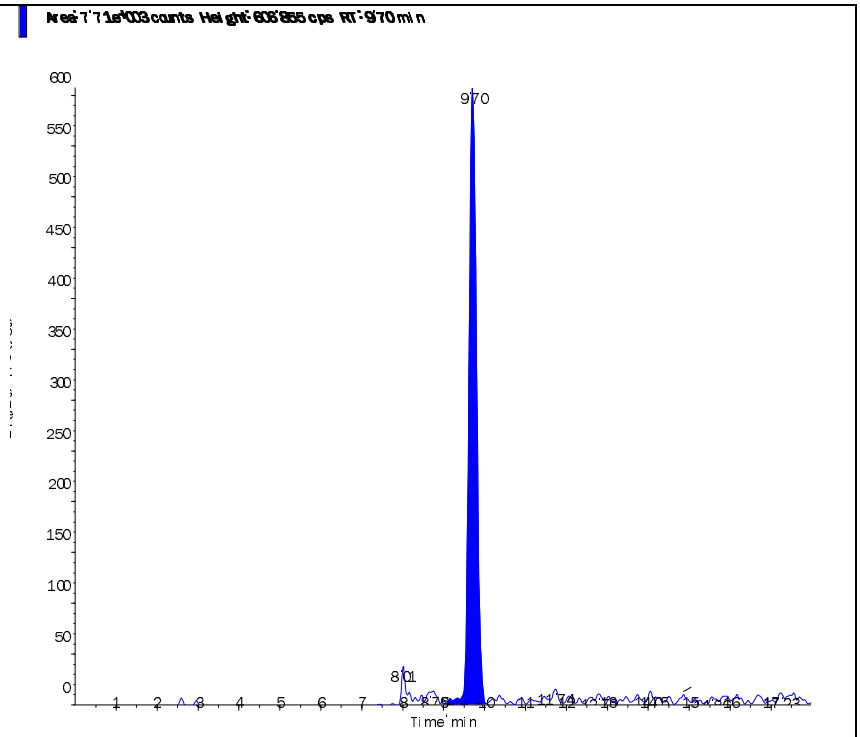

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 8/28/2015 11:01 AM

Data File	LM31472.wiff	**Result Table**	082715_JWR.rdb
Acquisition Date	8/27/2015 2:43:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536759-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM31472.wiff	**Injection Volume**	10.00
Acquisition Date	8/27/2015 2:43:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082715_JWR.rdb
Sample ID	WG536759-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD69913	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.420e+05	9.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.600e+04	9.72	N/A	0.212
Perchlorate conf	8.280e+03	9.71	N/A	0.217

O18LP (Internal Standard)

RT (Exp. RT): 9.70(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

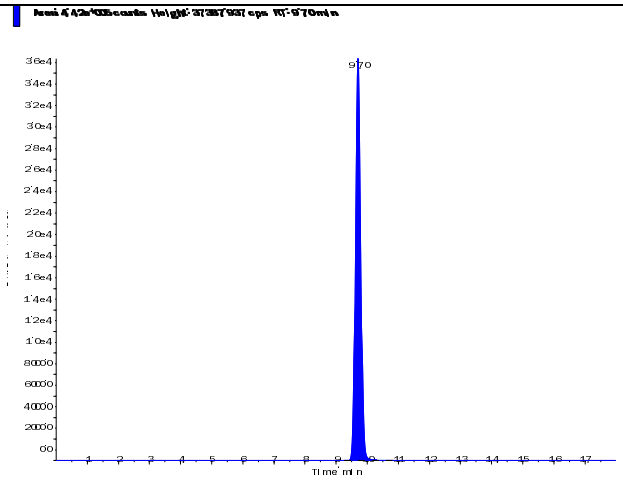

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 8/28/2015 11:01 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.72 (9.52) min
Calculated conc:	0.212 ng/ml
Area Ratio:	0.059
Sample Type:	(Unknown)

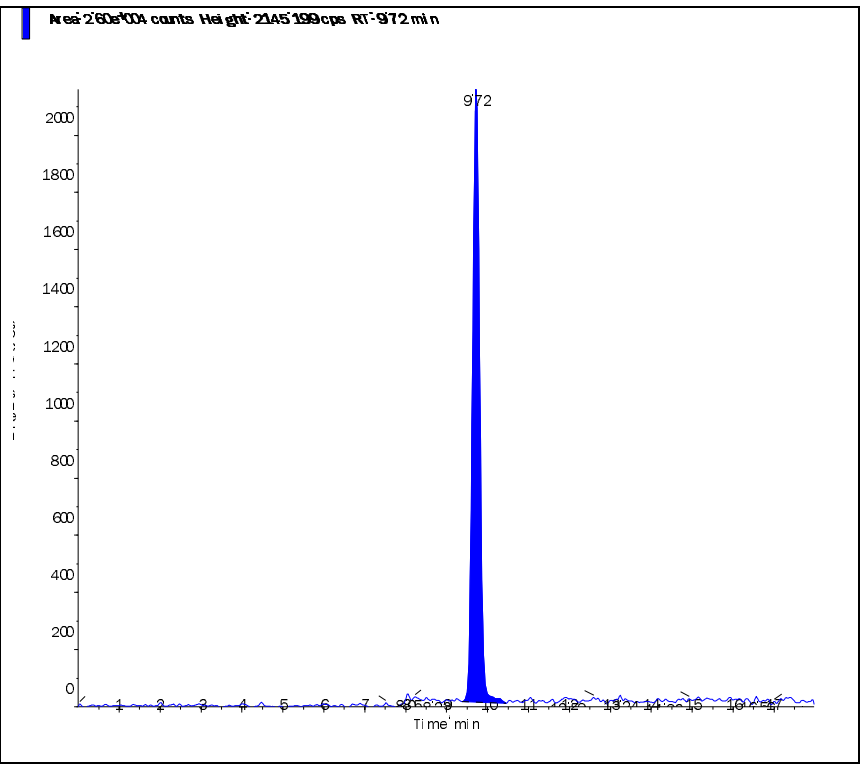

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.71 (9.48) min
Calculated conc:	0.217 ng/ml
Area Ratio:	0.019
Sample Type:	(Unknown)

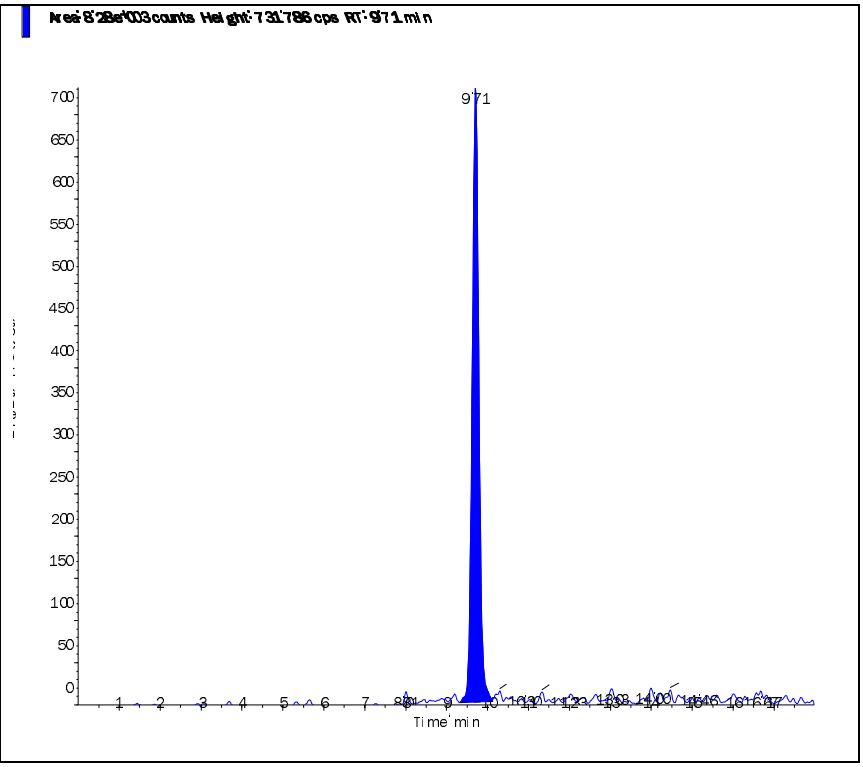

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 8/27/2015 11:32 AM

Data File	LM31437.wiff	**Result Table**	082415_JWR.rdb
Acquisition Date	8/24/2015 6:03:26 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536249-04 LCS2 (0.2ug/L)	**Injection Vial**	7.00
Data File	LM31437.wiff	**Injection Volume**	10.00
Acquisition Date	8/24/2015 6:03:26 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082415_JWR.rdb
Sample ID	WG536249-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD69913	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.670e+05	9.72	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.140e+04	9.73	N/A	0.21
Perchlorate conf	6.620e+03	9.72	N/A	0.209

O18LP (Internal Standard)

RT (Exp. RT): 9.72(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

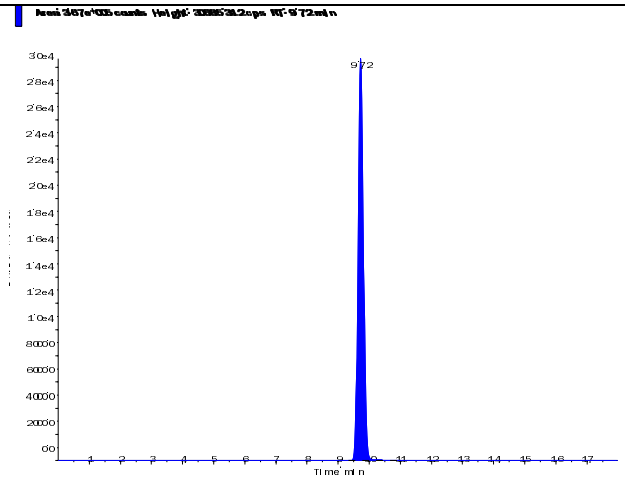

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 8/27/2015 11:32 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.73 (9.52) min Calculated conc: 0.21 ng/ml Area Ratio: 0.058 Sample Type: (Unknown)	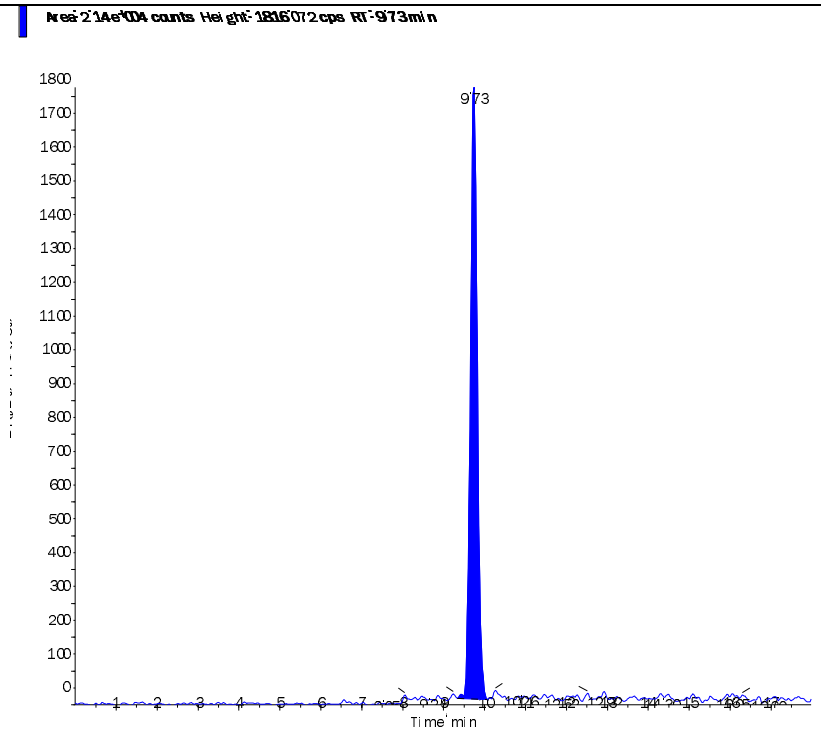
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.72 (9.48) min Calculated conc: 0.209 ng/ml Area Ratio: 0.018 Sample Type: (Unknown)	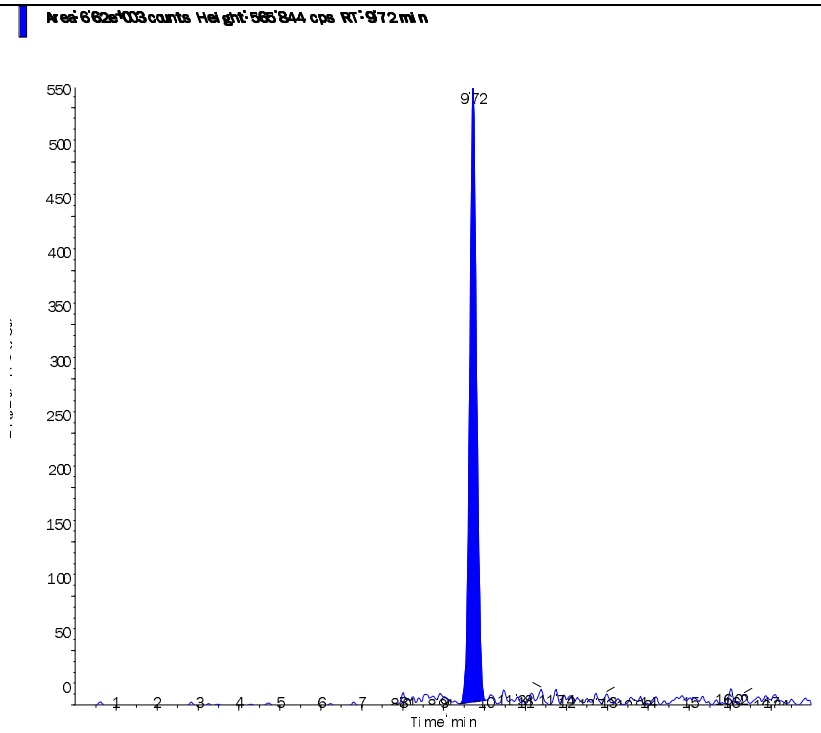

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 8/28/2015 11:01 AM

Data File	LM31473.wiff	**Result Table**	082715_JWR.rdb
Acquisition Date	8/27/2015 3:02:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG536759-04 LCS2 (0.2ug/L)	**Injection Vial**	7.00
Data File	LM31473.wiff	**Injection Volume**	10.00
Acquisition Date	8/27/2015 3:02:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	082715_JWR.rdb
Sample ID	WG536759-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD69913	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.500e+05	9.71	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.680e+04	9.72	N/A	0.214
Perchlorate conf	8.120e+03	9.71	N/A	0.209

O18LP (Internal Standard)

RT (Exp. RT): 9.71(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

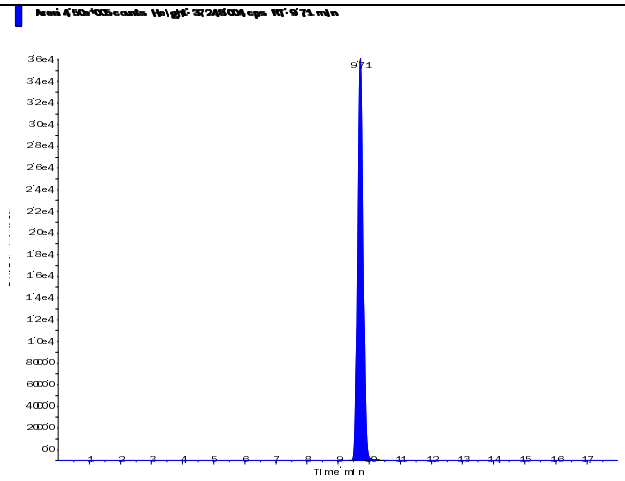

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 8/28/2015 11:01 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.72 (9.52) min Calculated conc: 0.214 ng/ml Area Ratio: 0.059 Sample Type: (Unknown)	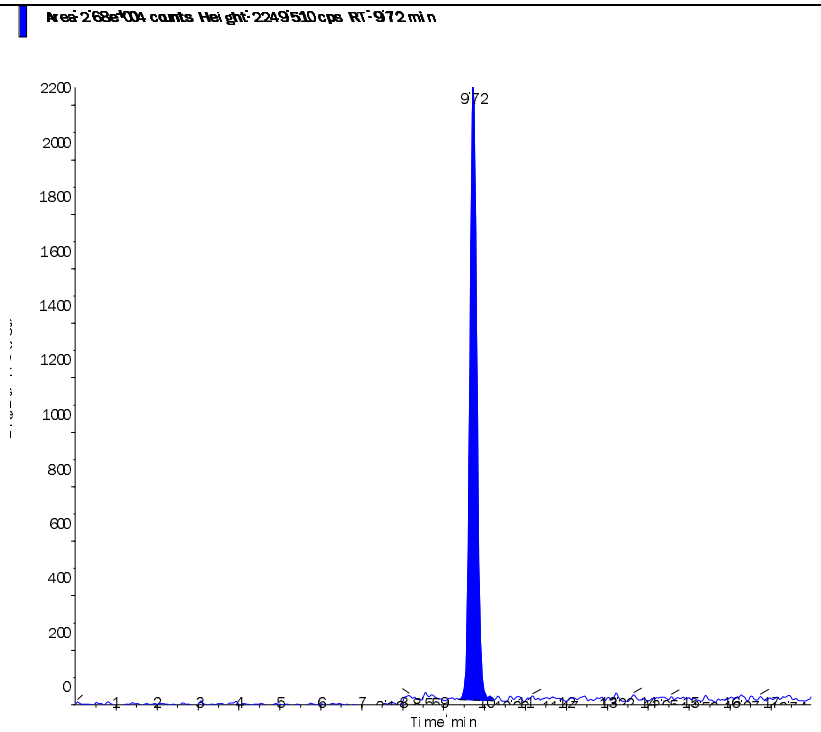
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.71 (9.48) min Calculated conc: 0.209 ng/ml Area Ratio: 0.018 Sample Type: (Unknown)	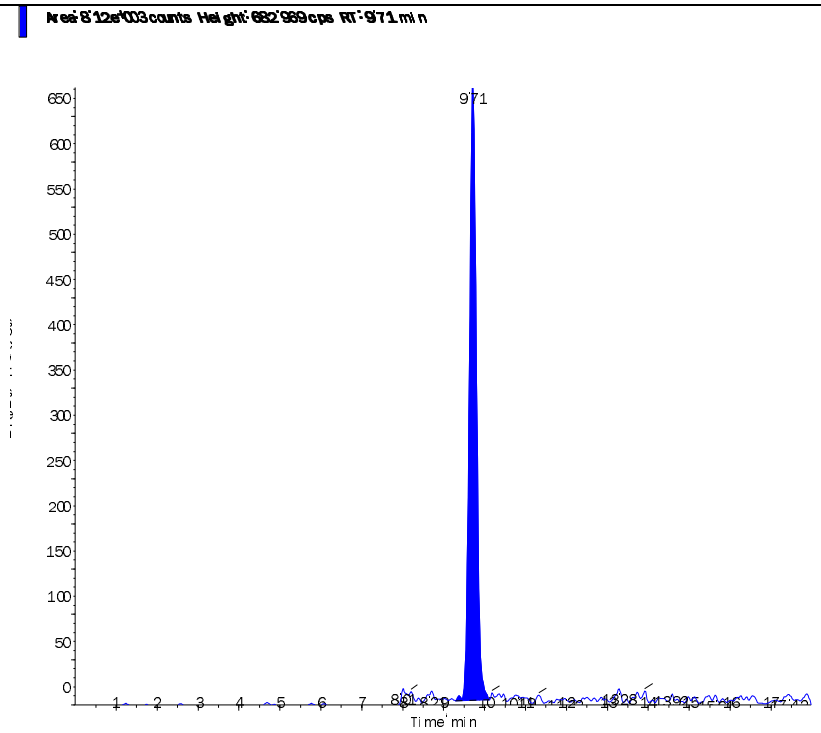

s.dataFile Page 2 of 2

2.3 Metals Data

2.3.1 Metals I C P Data

2.3.1.1 Summary Data

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081073-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO2
Client ID:	50WW14FF-081915	**Prep Method:**	3015	**Prep Date:**	08/25/2015 08:11
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	08/26/2015 10:48
Workgroup #:	WG536547	**Analyst:**	KKB	**Run Date:**	08/26/2015 16:16
Collect Date:	08/19/2015 08:20	**Dilution:**	1	**File ID:**	T2.082615.161647
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	7.69		0.200	0.100	0.0500

Certificate of Analysis

Sample #:	L15081073-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO2
Client ID:	50WW13FF-081915	**Prep Method:**	3015	**Prep Date:**	08/25/2015 08:11
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	08/26/2015 10:48
Workgroup #:	WG536547	**Analyst:**	KKB	**Run Date:**	08/26/2015 16:20
Collect Date:	08/19/2015 09:35	**Dilution:**	1	**File ID:**	T2.082615.162019
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.0542	J	0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.3.1.2 QC Summary Data

Example 6010 Calculations
Thermo Scientific iCAP

1.0 Initial Calibration (ICAL) Parameters
For a multi-point calibration, the system performs linear regression from data consisting of a blank and four standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG536309
Analyst: ERP
Spike Analyst: ERP
Run Date: 08/25/2015 08:11
Method: 3015
Balance: BAL019
Instrument: MW-1
Instrument Start: 08/25/2015 08:18

SOP: ME407 Revison 17
Spike Solution: STD72067
Spike Witness: VC
HNO3 Lot #: COA18384
HCL Lot #: COA18326
40 & 50 ML. DIGESTION TU COA18222
ICP Filters- fisher-Lot# RGT32945

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG536309-02	BLANK	1	40 mL	50 mL	205.343 g	205.334 g		
2	WG536080-01	FBLK	17	5 mL	50 mL	207.017 g	207.01 g		
3	WG536309-03	LCS	1	40 mL	50 mL	210.836 g	210.846 g	5 mL	
4	L15081073-02	SAMP	1	40 mL	50 mL	205.679 g	205.685 g		08/31/15
5	L15081073-04	SAMP	1	40 mL	50 mL	204.615 g	204.61 g		08/31/15
6	WG536309-01	REF	17	5 mL	50 mL	205.413 g	205.411 g		
7	L15081114-01	SAMP	17	5 mL	50 mL	205.413 g	205.411 g		08/27/15
8	L15081130-01	SAMP	1	40 mL	50 mL	205.279 g	205.281 g		08/28/15
9	L15081144-03	SAMP	17	5 mL	50 mL	209.434 g	209.427 g		08/27/15
10	L15081203-01	SAMP	1	40 mL	50 mL	204.689 g	204.679 g		08/28/15
11	L15081203-02	SAMP	1	40 mL	50 mL	203.977 g	203.95 g		08/28/15
12	L15081221-01	SAMP	1	40 mL	50 mL	206.831 g	206.825 g		08/31/15
13	L15081221-02	SAMP	1	40 mL	50 mL	206.629 g	206.622 g		08/31/15
14	L15081222-01	SAMP	1	40 mL	50 mL	206.247 g	206.241 g		08/31/15
15	L15081222-02	SAMP	1	40 mL	50 mL	206.219 g	206.221 g		08/31/15
16	L15081230-01	SAMP	1	40 mL	50 mL	203.33 g	203.333 g		08/28/15
17	L15081230-02	SAMP	1	40 mL	50 mL	206.867 g	206.866 g		08/28/15
18	L15081230-03	SAMP	1	40 mL	50 mL	205.62 g	205.62 g		08/28/15
19	L15081230-04	SAMP	1	40 mL	50 mL	205.265 g	205.274 g		08/28/15
20	L15081272-01	SAMP	1	40 mL	50 mL	206.204 g	206.195 g		09/01/15
21	WG536309-04	MS	1	5 mL	50 mL	208.371 g	208.369 g	5 mL	
22	WG536309-05	MSD	1	5 mL	50 mL	210.657 g	210.656 g	5 mL	

Analyst: Erin Potter

Reviewer: Vicki Collins

MW_DIG - Modified 09/30/2009
PDF ID: 4351543
Report generated: 08/25/2015 08:57

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO2 Dataset: 082615T2.1R.TXT
Analyst1: KKB Analyst2: N/A
Method: 200.7 SOP: ME600G Rev: 7
Maintenance Log ID:

Calibration Std: STD71998 ICV Std: STD71999 Post Spike: STD70570
ICSA: STD72072 ICSAB: STD72095 Int. Std: RGT31668
CCV: STD72085 LLCCV: STD70988 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 535640,535615,536556,536547,536604,536567

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T2.082615.103432	WG536682-01	Calibration Point		1		08/26/15 10:34
2	T2.082615.103802	WG536682-02	Calibration Point		1		08/26/15 10:38
3	T2.082615.104131	WG536682-03	Calibration Point		1		08/26/15 10:41
4	T2.082615.104501	WG536682-04	Calibration Point		1		08/26/15 10:45
5	T2.082615.104809	WG536682-05	Calibration Point		1		08/26/15 10:48
6	T2.082615.105323	WG536682-06	ICV		1		08/26/15 10:53
7	T2.082615.110220	WG536682-07	ICB		1		08/26/15 11:02
8	T2.082615.111217	WG536682-08	Initial Calibration Verification		1		08/26/15 11:12
9	T2.082615.112747	WG536682-09	Initial Calib Blank		1		08/26/15 11:27
10	T2.082615.113334	WG536682-10	LLICV		1		08/26/15 11:33
11	T2.082615.113918	WG536682-11	LLICV		1		08/26/15 11:39
12	T2.082615.115712	WG536682-12	Low Level Initial Calibration V		1		08/26/15 11:57
13	T2.082615.120247	WG536682-13	Interference Check		1		08/26/15 12:02
14	T2.082615.120614	WG536682-14	Interference Check		1		08/26/15 12:06
15	T2.082615.121117	WG536682-15	CCV		1		08/26/15 12:11
16	T2.082615.121431	WG536682-16	CCB		1		08/26/15 12:14
17	T2.082615.123920	WG535478-01	Method/Prep Blank	40/50	1		08/26/15 12:39
18	T2.082615.124251	L15080843-01	LCS 1	40/50	1		08/26/15 12:42
19	T2.082615.124602	L15080843-02	LCS 2	40/50	1		08/26/15 12:46
20	T2.082615.124913	L15080843-03	LCS 3	40/50	1		08/26/15 12:49
21	T2.082615.125225	L15080843-04	LCS 4	40/50	1		08/26/15 12:52
22	T2.082615.125536	L15080843-05	LCS 5	40/50	1		08/26/15 12:55
23	T2.082615.125848	L15080843-06	LCS 6	40/50	1		08/26/15 12:58
24	T2.082615.130158	L15080843-07	LCS 7	40/50	1		08/26/15 13:01
25	T2.082615.130512	WG536682-17	CCV		1		08/26/15 13:05
26	T2.082615.130821	WG536682-18	CCB		1		08/26/15 13:08
27	T2.082615.131155	WG535469-02	Method/Prep Blank	40/50	1		08/26/15 13:11
28	T2.082615.131526	WG535469-03	Laboratory Control S	40/50	1		08/26/15 13:15
29	T2.082615.132103	WG535469-01	Reference Sample		1	L15080621-01	08/26/15 13:21
30	T2.082615.132432	WG535469-04	Matrix Spike	40/50	1	L15080621-01	08/26/15 13:24
31	T2.082615.132742	WG535469-05	Matrix Spike Duplica	40/50	1	L15080621-01	08/26/15 13:27
32	T2.082615.133053	L15080841-02	NM-17	40/50	10		08/26/15 13:30
33	T2.082615.133447	L15080842-01	DC-17	40/50	20		08/26/15 13:34
34	T2.082615.133848	L15080842-01	DC-17	40/50	200		08/26/15 13:38

Page: 1 Approved: August 27, 2015

Maren Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO2 Dataset: 082615T2.1R.TXT
Analyst1: KKB Analyst2: N/A
Method: 200.7 SOP: ME600G Rev: 7
Maintenance Log ID:

Calibration Std: STD71998 ICV Std: STD71999 Post Spike: STD70570
ICSA: STD72072 ICSAB: STD72095 Int. Std: RGT31668
CCV: STD72085 LLCCV: STD70988 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 535640,535615,536556,536547,536604,536567

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T2.082615.134231	WG535615-03	Post Digestion Spike		10	L15080841-02	08/26/15 13:42
36	T2.082615.134603	WG535615-04	Serial Dilution		50	L15080841-02	08/26/15 13:46
37	T2.082615.134943	WG536682-19	CCV		1		08/26/15 13:49
38	T2.082615.135251	WG536682-20	CCB		1		08/26/15 13:52
39	T2.082615.135626	WG536682-21	Low Level Continuing Calibra		1		08/26/15 13:56
40	T2.082615.135956	WG536352-02	Method/Prep Blank	40/50	1		08/26/15 13:59
41	T2.082615.140327	WG536352-03	Laboratory Control S	40/50	1		08/26/15 14:03
42	T2.082615.140637	WG536169-01	Fluid Blank 1		1		08/26/15 14:06
43	T2.082615.141008	WG536169-02	Fluid Blank 2		1		08/26/15 14:10
44	T2.082615.141339	WG536352-01	Reference Sample		1	L15081008-01	08/26/15 14:13
45	T2.082615.141709	WG536352-04	Matrix Spike	5/50	1	L15081008-01	08/26/15 14:17
46	T2.082615.142020	WG536352-05	Matrix Spike Duplica	5/50	1	L15081008-01	08/26/15 14:20
47	T2.082615.142330	L15081037-01	ALAN 8 BAGS	5/50	1		08/26/15 14:23
48	T2.082615.142709	WG536556-01	Post Digestion Spike		1	L15081037-01	08/26/15 14:27
49	T2.082615.143029	WG536556-02	Serial Dilution		5	L15081037-01	08/26/15 14:30
50	T2.082615.143402	WG536682-22	CCV		1		08/26/15 14:34
51	T2.082615.143710	WG536682-23	CCB		1		08/26/15 14:37
52	T2.082615.144058	L15081081-01	S5H1283-01	5/50	1		08/26/15 14:40
53	T2.082615.144426	L15081081-02	S5H1283-02	5/50	1		08/26/15 14:44
54	T2.082615.144748	L15081108-01	A46598	5/50	1		08/26/15 14:47
55	T2.082615.145111	L15081183-01	BAG FILTER SAND BLAST	5/50	1		08/26/15 14:51
56	T2.082615.145432	L15081183-02	SAND BLAST DRUM	5/50	1		08/26/15 14:54
57	T2.082615.145756	L15081190-01	K5H0695-01	5/50	1		08/26/15 14:57
58	T2.082615.150123	L15081214-01	J5H0753-01	5/50	1		08/26/15 15:01
59	T2.082615.150448	L15081274-01	59-10-34 S1	40/50	1		08/26/15 15:04
60	T2.082615.150813	L15081274-02	59-10-34 S2	40/50	1		08/26/15 15:08
61	T2.082615.151138	L15081275-01	59-11-18 W1	40/50	1		08/26/15 15:11
62	T2.082615.151501	WG536682-24	CCV		1		08/26/15 15:15
63	T2.082615.151806	WG536682-25	CCB		1		08/26/15 15:18
64	T2.082615.152133	L15081275-02	59-11-16.08 W1	40/50	1		08/26/15 15:21
65	T2.082615.152454	L15081275-03	15-11-16.09 W1	40/50	1		08/26/15 15:24
66	T2.082615.152818	L15081275-04	59-11-19 W1	40/50	1		08/26/15 15:28
67	T2.082615.153142	L15081276-01	59-10-1.25 W1	40/50	1		08/26/15 15:31
68	T2.082615.153504	L15081277-01	2212-113 W1	40/50	1		08/26/15 15:35

Page: 2 Approved: August 27, 2015

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Instrument Run Log

Instrument: ICP-THERMO2 Dataset: 082615T2.1R.TXT
Analyst1: KKB Analyst2: N/A
Method: 200.7 SOP: ME600G Rev: 7
Maintenance Log ID:

Calibration Std: STD71998 ICV Std: STD71999 Post Spike: STD70570
ICSA: STD72072 ICSAB: STD72095 Int. Std: RGT31668
CCV: STD72085 LLCCV: STD70988 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 535640,535615,536556,536547,536604,536567

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T2.082615.153828	L15081278-01	2208-137 D S1	40/50	1		08/26/15 15:38
70	T2.082615.154153	WG536682-26	CCV		1		08/26/15 15:41
71	T2.082615.154458	WG536682-27	CCB		1		08/26/15 15:44
72	T2.082615.154826	WG536682-28	Low Level Continuing Calibra		1		08/26/15 15:48
73	T2.082615.160647	WG536309-02	Method/Prep Blank	40/50	1		08/26/15 16:06
74	T2.082615.161014	WG536309-03	Laboratory Control S	40/50	1		08/26/15 16:10
75	T2.082615.161320	WG536080-01	Fluid Blank		1		08/26/15 16:13
76	T2.082615.161647	L15081073-02	50WW14FF-081915	40/50	1		08/26/15 16:16
77	T2.082615.162019	L15081073-04	50WW13FF-081915	40/50	1		08/26/15 16:20
78	T2.082615.162351	WG536309-01	Reference Sample		1	L15081114-01	08/26/15 16:23
79	T2.082615.162715	WG536309-04	Matrix Spike	5/50	1	L15081114-01	08/26/15 16:27
80	T2.082615.163024	WG536309-05	Matrix Spike Duplica	5/50	1	L15081114-01	08/26/15 16:30
81	T2.082615.163330	WG536547-01	Post Digestion Spike		1	L15081073-04	08/26/15 16:33
82	T2.082615.163646	WG536547-02	Serial Dilution		5	L15081073-04	08/26/15 16:36
83	T2.082615.164010	WG536682-29	CCV		1		08/26/15 16:40
84	T2.082615.164315	WG536682-30	CCB		1		08/26/15 16:43
85	T2.082615.164643	L15081130-01	2204-107-B RS(T)	40/50	1		08/26/15 16:46
86	T2.082615.165008	L15081144-03	WB002	5/50	1		08/26/15 16:50
87	T2.082615.165333	L15081203-01	H5H1428-01	40/50	1		08/26/15 16:53
88	T2.082615.165658	L15081203-02	H5H1428-02	40/50	1		08/26/15 16:56
89	T2.082615.170022	L15081221-01	1801-148 S2	40/50	1		08/26/15 17:00
90	T2.082615.170347	L15081221-02	1801-148 S1	40/50	1		08/26/15 17:03
91	T2.082615.170711	L15081222-01	1801-145-W4	40/50	1		08/26/15 17:07
92	T2.082615.171033	L15081222-02	1801-145-W2	40/50	1		08/26/15 17:10
93	T2.082615.171357	L15081230-01	17729-G374-WQ-W1120	40/50	1		08/26/15 17:13
94	T2.082615.171723	L15081230-02	17729-G376-WQ-W1124	40/50	1		08/26/15 17:17
95	T2.082615.172050	WG536682-31	CCV		1		08/26/15 17:20
96	T2.082615.172354	WG536682-32	CCB		1		08/26/15 17:23
97	T2.082615.172721	L15081230-03	17729-G618-WQ-W1215	40/50	1		08/26/15 17:27
98	T2.082615.173049	L15081230-04	17729-G634-WQ-W1219	40/50	1		08/26/15 17:30
99	T2.082615.173416	L15081272-01	MILLER PL-12" DEWATER 2	40/50	1		08/26/15 17:34
100	T2.082615.173739	WG536682-33	CCV		1		08/26/15 17:37
101	T2.082615.174044	WG536682-34	CCB		1		08/26/15 17:40
102	T2.082615.174411	WG536682-35	Low Level Continuing Calibra		1		08/26/15 17:44

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Instrument Run Log

Instrument: ICP-THERMO2 Dataset: 082615T2.1R.TXT
Analyst1: KKB Analyst2: N/A
Method: 200.7 SOP: ME600G Rev: 7
Maintenance Log ID:

Calibration Std: STD71998 ICV Std: STD71999 Post Spike: STD70570
ICSA: STD72072 ICSAB: STD72095 Int. Std: RGT31668
CCV: STD72085 LLCCV: STD70988 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 535640,535615,536556,536547,536604,536567

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T2.082615.174747	WG536565-02	Method/Prep Blank	40/50	1		08/26/15 17:47
104	T2.082615.175114	WG536565-03	Laboratory Control S	40/50	1		08/26/15 17:51
105	T2.082615.175421	WG536361-01	Fluid Blank		1		08/26/15 17:54
106	T2.082615.175749	WG536565-01	Reference Sample		1	L15081265-01	08/26/15 17:57
107	T2.082615.180124	WG536565-04	Matrix Spike	5/50	1	L15081265-01	08/26/15 18:01
108	T2.082615.180440	WG536565-05	Matrix Spike Duplica	5/50	1	L15081265-01	08/26/15 18:04
109	T2.082615.180757	L15081266-01	ALAN 29 BAGS	5/50	1		08/26/15 18:07
110	T2.082615.181141	L15081267-01	KAISER 11 BAGS 8/23/14	5/50	1		08/26/15 18:11
111	T2.082615.181514	WG536604-01	Post Digestion Spike		1	L15081267-01	08/26/15 18:15
112	T2.082615.181831	WG536604-02	Serial Dilution		5	L15081267-01	08/26/15 18:18
113	T2.082615.182156	WG536682-36	CCV		1		08/26/15 18:21
114	T2.082615.182502	WG536682-37	CCB		1		08/26/15 18:25
115	T2.082615.182829	L15081280-05	MJ005	5/50	1		08/26/15 18:28
116	T2.082615.183223	L15081282-01	POND OUTFALL	40/50	1		08/26/15 18:32
117	T2.082615.183547	L15081283-01	SP-1A-7	40/50	1		08/26/15 18:35
118	T2.082615.183911	L15081284-01	60500-SSP0009-SSP0009	5/50	1		08/26/15 18:39
119	T2.082615.184232	L15081284-03	60500-SSP0006-SPLP004	5/50	1		08/26/15 18:42
120	T2.082615.184554	L15081288-01	LH18/24-SP650-6300-GRAB	40/50	1		08/26/15 18:45
121	T2.082615.184926	L15081288-02	LH18/24-SP650-6300-COMP	40/50	1		08/26/15 18:49
122	T2.082615.185258	L15081372-01	2212-112 W1	40/50	1		08/26/15 18:52
123	T2.082615.185620	L15081372-02	2212-112 P1	40/50	1		08/26/15 18:56
124	T2.082615.185944	L15081373-01	1302-116 W1	40/50	1		08/26/15 18:59
125	T2.082615.190310	WG536682-38	CCV		1		08/26/15 19:03
126	T2.082615.190615	WG536682-39	CCB		1		08/26/15 19:06
127	T2.082615.190942	L15081373-02	1302-116 S1	40/50	1		08/26/15 19:09
128	T2.082615.191306	L15081374-01	2208-122 W1	40/50	1		08/26/15 19:13
129	T2.082615.191630	L15081374-02	2208-122 S3	40/50	1		08/26/15 19:16
130	T2.082615.191955	L15081382-01	POLYOL 25014	1/50	1		08/26/15 19:19
131	T2.082615.192321	L15081393-07	1556-TS0641-ER	40/50	1		08/26/15 19:23
132	T2.082615.192648	WG536682-40	CCV		1		08/26/15 19:26
133	T2.082615.192954	WG536682-41	CCB		1		08/26/15 19:29
134	T2.082615.193321	WG536682-42	Low Level Continuing Calibra		1		08/26/15 19:33
135	T2.082615.193647	WG536181-02	Method/Prep Blank	40/50	1		08/26/15 19:36
136	T2.082615.194014	WG536181-03	Laboratory Control S	40/50	1		08/26/15 19:40

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Instrument Run Log

Instrument: ICP-THERMO2 Dataset: 082615T2.1R.TXT

Analyst1: KKB Analyst2: N/A

Method: 200.7 SOP: ME600G Rev: 7

Maintenance Log ID:

Calibration Std: STD71998 ICV Std: STD71999 Post Spike: STD70570

ICSA: STD72072 ICSAB: STD72095 Int. Std: RGT31668

CCV: STD72085 LLCCV: STD70988 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 535640,535615,536556,536547,536604,536567

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	T2.082615.194320	L15080862-01	P247-4992 LITHIUM PT	40/50	1		08/26/15 19:43
138	T2.082615.194647	WG536567-03	Serial Dilution		5	L15080862-01	08/26/15 19:46
139	T2.082615.195015	WG536682-43	CCV		1		08/26/15 19:50
140	T2.082615.195320	WG536682-44	CCB		1		08/26/15 19:53
141	T2.082615.195648	L15081130-01	2204-107-B RS(T)		1		08/26/15 19:56
142	T2.082615.200013	L15081203-01	H5H1428-01		1		08/26/15 20:00
143	T2.082615.200338	L15081203-02	H5H1428-02		1		08/26/15 20:03
144	T2.082615.200704	L15081221-01	1801-148 S2		1		08/26/15 20:07
145	T2.082615.201028	L15081221-02	1801-148 S1		1		08/26/15 20:10
146	T2.082615.201353	L15081222-01	1801-145-W4		1		08/26/15 20:13
147	T2.082615.201719	L15081222-02	1801-145-W2		1		08/26/15 20:17
148	T2.082615.202044	WG536682-45	CCV		1		08/26/15 20:20
149	T2.082615.202349	WG536682-46	CCB		1		08/26/15 20:23

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Data Checklist

Date: 26-AUG-2015
Analyst: KKB
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO2
Curve Workgroup: 536682
Runlog ID: 70073
Analytical Workgroups: 535640,535615,536556,536547,536604,536567

Add'l Workgroups	
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	X
Level 3	X
Level 4	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	KKB
Secondary Reviewer	MMB
Comments	

Primary Reviewer:
27-AUG-2015

Secondary Reviewer:
27-AUG-2015

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-27-2015 14:29:37

Microbac Laboratories Inc.

00648042

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010C

AAB#: WG536547

Login Number: L15081073

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW14FF-081915	02	08/19/15					08/25/2015	6	180		08/26/15	7.3	180	
50WW13FF-081915	04	08/19/15					08/25/2015	5.9	180		08/26/15	7.3	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4357062
Report generated 08/27/2015 10:15

METHOD BLANK SUMMARY

Login Number: L15081073
Blank File ID: T2.082615.160647
Prep Date: 08/25/15 08:11
Analyzed Date: 08/26/15 16:06
Analyst: KKB

Work Group: WG536547
Blank Sample ID: WG536309-02
Instrument ID: ICP-THERMO2
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG536309-03	T2.082615.161014	08/26/15 16:10	01
50WW14FF-081915	L15081073-02	T2.082615.161647	08/26/15 16:16	01
50WW13FF-081915	L15081073-04	T2.082615.162019	08/26/15 16:20	01

Report Name: BLANK_SUMMARY
PDF File ID: 4357063
Report generated 08/27/2015 10:22

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15081073 Prep Date: 08/25/15 08:11 Sample ID: WG536309-02
Instrument ID: ICP-THERMO2 Run Date: 08/26/15 16:06 Prep Method: 3015
File ID: T2.082615.160647 Analyst: KKB Method: 6010C
Workgroup (AAB#): WG536547 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-26-AUG-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Iron, Dissolved	0.0500	0.200	0.0500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4357064
27-AUG-2015 10:21

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15081073 Run Date: 08/26/2015 Sample ID: WG536309-03
Instrument ID: ICP-THERMO2 Run Time: 16:10 Prep Method: 3015
File ID: T2.082615.161014 Analyst: KKB Method: 6010C
Workgroup (AAB#): WG536547 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD72067 Cal ID: ICP-TH-26-AUG-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Iron, Dissolved	2.50	2.50	100	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4357065
Report generated: 08/27/2015 10:21

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L15081073 Cal ID: ICP-THERMO2 - Worknum: WG536547
Instrument ID: ICP-THERMO2 Contract #: Method: 6010C
Parent ID: WG536309-01 File ID: T2.082615.162351 Dil: 1 Matrix: WATER
Sample ID: WG536309-04 MS File ID: T2.082615.162715 Dil: 1 Units: mg/L
Sample ID: WG536309-05 MSD File ID: T2.082615.163024 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Iron	0.833	20.0	20.4	97.7	20.0	20.9	100	2.59	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4357066
Report generated 08/27/2015 10:21

Microbac Laboratories Inc.
Serial Dilution Report

Login: L15081073 **Worknum:** WG536547
Instrument: ICP-THERMO2 **Method:** 6010C
Serial Dil: WG536547-02 **File ID:** T2.082615.163646 **Dil:** 5 **Units:** mg/L
Sample: L15081073-04 **File ID:** T2.082615.162019 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Iron	0.0434	F	ND	U		

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 50 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 50 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4357060
08/27/2015 10:21

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L15081073 **Worknum:** WG536547
Instrument ID: ICP-THERMO2 **Method:** 6010C
Post Spike ID: WG536547-01 **File ID:** T2.082615.163330 **Dil:** 1 **Units:** mg/L
Sample ID: L15081073-04 **File ID:** T2.082615.162019 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
IRON	2.03		0.0434	F	2	99.5	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4357061
Report generated: 08/27/2015 10:21

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L15081073	Workgroup (AAB#):	WG536547
Analytical Method:	6010C	Instrument ID:	ICP-THERMO2
ICAL Worknum:	WG536682	Initial Calibration Date:	26-AUG-2015 10:48

	WG536682-01		WG536682-02		WG536682-03		WG536682-04		WG536682-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
IRON	0	-0.0000100	.04	0.000890	.08	0.00176	4	0.102	8	0.205	.999969	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4357069
Report generated: 27-AUG-2015 10:21

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L15081073
Instrument ID: ICP-THERMO2
File ID: T2.082615.112747
Workgroup (AAB#): WG536547
Matrix: WATER

Run Date: 08/26/2015
Run Time: 11:27
Analyst: KKB
Cal ID: ICP-THERI - 26-AUG-15

Sample ID: WG536682-09
Method: 6010C
Units: mg/L

Analytes	MDL	RDL	Concentration	Qualifier
IRON	.04	.16	.04	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4357071
Report generated 08/27/2015 10:21

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15081073
Run Date: 08/26/2015
Sample ID: WG536682-16
Instrument ID: ICP-THERMO2
Run Time: 12:14
Method: 6010C
File ID: T2.082615.121431
Analyst: KKB
Units: mg/L
Workgroup (AAB#): WG536547
Cal ID: ICP-TH - 26-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4357074
Report generated 08/27/2015 10:21

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15081073
Run Date: 08/26/2015
Sample ID: WG536682-27
Instrument ID: ICP-THERMO2
Run Time: 15:44
Method: 6010C
File ID: T2.082615.154458
Analyst: KKB
Units: mg/L
Workgroup (AAB#): WG536547
Cal ID: ICP-TH - 26-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4357074
Report generated 08/27/2015 10:21

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15081073
Run Date: 08/26/2015
Sample ID: WG536682-30
Instrument ID: ICP-THERMO2
Run Time: 16:43
Method: 6010C
File ID: T2.082615.164315
Analyst: KKB
Units: mg/L
Workgroup (AAB#): WG536547
Cal ID: ICP-TH - 26-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4357074
Report generated 08/27/2015 10:21

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L15081073 Run Date: 08/26/2015 Sample ID: WG536682-08
Instrument ID: ICP-THERMO2 Run Time: 11:12 Method: 6010C
File ID: T2.082615.111217 Analyst: KKB Units: mg/L
Workgroup (AAB#): WG536547 Cal ID: ICP-TH - 26-AUG-15
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Iron		4	4.07	102	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4357070
Report generated 08/27/2015 10:21

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15081073
Run Date: 08/26/2015
Sample ID: WG536682-15
Instrument ID: ICP-THERMO2
Run Time: 12:11
Method: 6010C
File ID: T2.082615.121117
Analyst: KKB
QC Key: DOD4
Workgroup (AAB#): WG536547
Cal ID: ICP-TH - 26-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.10	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4357073
Report generated 08/27/2015 10:21

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15081073
Run Date: 08/26/2015
Sample ID: WG536682-26
Instrument ID: ICP-THERMO2
Run Time: 15:41
Method: 6010C
File ID: T2.082615.154153
Analyst: KKB
QC Key: DOD4
Workgroup (AAB#): WG536547
Cal ID: ICP-TH - 26-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.12	mg/L	103	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4357073
Report generated 08/27/2015 10:21

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15081073
Run Date: 08/26/2015
Sample ID: WG536682-29
Instrument ID: ICP-THERMO2
Run Time: 16:40
Method: 6010C
File ID: T2.082615.164010
Analyst: KKB
QC Key: DOD4
Workgroup (AAB#): WG536547
Cal ID: ICP-TH - 26-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.20	mg/L	105	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4357073
Report generated 08/27/2015 10:21

Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15081073
Run Date: 08/26/2015
Sample ID: WG536682-12
Instrument ID: ICP-THERMO2
Run Time: 11:57
Method: 6010C
File ID: T2.082615.115712
Analyst: KKB
QC Key: DOD4
Workgroup (AAB#): WG536547
Cal ID: ICP-TH - 26-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		0.0600	0.0625	mg/L	104	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4357075
Report generated 08/27/2015 10:21

Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15081073
Run Date: 08/26/2015
Sample ID: WG536682-21
Instrument ID: ICP-THERMO2
Run Time: 13:56
Method: 6010C
File ID: T2.082615.135626
Analyst: KKB
QC Key: DOD4
Workgroup (AAB#): WG536547
Cal ID: ICP-TH - 26-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		0.0600	0.0639	mg/L	107	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4357075
Report generated 08/27/2015 10:21

Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15081073
Run Date: 08/26/2015
Sample ID: WG536682-28
Instrument ID: ICP-THERMO2
Run Time: 15:48
Method: 6010C
File ID: T2.082615.154826
Analyst: KKB
QC Key: DOD4
Workgroup (AAB#): WG536547
Cal ID: ICP-TH - 26-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		0.0600	0.0643	mg/L	107	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4357075
Report generated 08/27/2015 10:21

Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15081073
Run Date: 08/26/2015
Sample ID: WG536682-35
Instrument ID: ICP-THERMO2
Run Time: 17:44
Method: 6010C
File ID: T2.082615.174411
Analyst: KKB
QC Key: DOD4
Workgroup (AAB#): WG536547
Cal ID: ICP-TH - 26-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		0.0600	0.0667	mg/L	111	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4357075
Report generated 08/27/2015 10:21

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L15081073
Instrument ID: ICP-THERMO2
Sol. A : WG536682-13 **File ID:** T2.082615.120247
Sol. AB : WG536682-14 **File ID:** T2.082615.120614

Workgroup (AAB#): WG536547
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Iron	100	94.2	94.2	100	94.1	94.1	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4357072
Report generated 08/27/2015 10:21

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15081073 **Date:** 01/02/2015
Insturment ID: ICP-THERMO2 **Method:** 6010C

Analyte	Wave Length	AL	AS	B	BA	BE
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	-0.0000160	0	0	0	0
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0.00000100	0	0	0	0
BERYLLIUM	313.00	0	0	0	0	0
BORON	249.70	0	0	0	0	0
CADMIUM	228.80	0	0.00756	0	-0.0000140	0
CALCIUM	422.70	0	0	0	0	0
CHROMIUM	267.70	0	-0.000660	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0	0	0	0
IRON	261.20	0	0	0	0	0
LEAD	220.30	0.000240	0	0	0	0
LITHIUM	670.80	0	0	0	0	0
MAGNESIUM	279.10	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.03	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	-0.000522	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	-0.0000220	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.80	0	0	0	0	0
THALLIUM	190.80	-0.0000120	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.30	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0.00000200	0	0	0	0
ZIRCONIUM	339.20	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4357068
Report generated: 08/27/2015 10:15

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15081073 **Date:** 01/02/2015
Insturment ID: ICP-THERMO2 **Method:** 6010C

Analyte	Wave Length	CA	CD	CO	CR	CU
ALUMINUM	308.20	0	0	-0.000820	0	0
ANTIMONY	206.80	0	0	0	0.00950	0
ARSENIC	189.00	0	0	0	-0.00220	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.00	0	0	0	0	0
BORON	249.70	0	0	0.00343	0	0
CADMIUM	228.80	0	0	-0.00247	0	0
CALCIUM	422.70	0	0	0	0	0
CHROMIUM	267.70	0	0	-0.000160	0	0
COBALT	228.60	0	0	0	-0.000108	0
COPPER	224.70	0	0	0.0000770	0	0
IRON	261.20	-0.000120	-0.00000600	0	-0.0000460	-0.0000290
LEAD	220.30	0	0	-0.0000930	-0.000172	0.000809
LITHIUM	670.80	0	0	0	0	0
MAGNESIUM	279.10	0	0	0	0	0
MANGANESE	257.60	0	0	0	-0.0000150	0
MOLYBDENUM	202.03	0	0	0	0	0
NICKEL	231.60	0	0	0.000100	0	0
PHOSPHORUS	214.90	0	0	0	0	0.00200
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.80	0.00000600	0	0	0	0
THALLIUM	190.80	0	0	0.00194	0.000276	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.30	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.20	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4357068
Report generated: 08/27/2015 10:15

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15081073 **Date:** 01/02/2015
Insturment ID: ICP-THERMO2 **Method:** 6010C

Analyte	Wave Length	FE	LI	MG	MN	MO
ALUMINUM	308.20	0	0	0	0	0.0153
ANTIMONY	206.80	0.000140	0	0	0	0.000670
ARSENIC	189.00	-0.0000190	0	0	0	0.0000100
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.00	0	0	0	0	0
BORON	249.70	-0.000259	0	0	0	-0.00169
CADMIUM	228.80	0.00000100	0	0	0	0.0000220
CALCIUM	422.70	0	0	0	0	0
CHROMIUM	267.70	0.0000220	0	0	0.000160	0
COBALT	228.60	0	0	0	0	-0.00105
COPPER	224.70	0.000110	0	0	0	0.00160
IRON	261.20	0	0	0	0	0
LEAD	220.30	0	0	0	0	-0.00110
LITHIUM	670.80	0	0	0	0	0
MAGNESIUM	279.10	0	0	0	-0.00190	-0.0110
MANGANESE	257.60	0	0	-0.00000500	0	-0.0000720
MOLYBDENUM	202.03	0	0	0	0	0
NICKEL	231.60	0.00000300	0	0	0	0
PHOSPHORUS	214.90	0.00120	0	0	0	0.00800
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0.000156
SILICON	212.40	0	0	0	0	0.0187
SILVER	328.00	0	0	0	0	-0.0000440
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.80	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.30	0	0	0	0	-0.000153
VANADIUM	292.40	0.0000110	0	0	0	-0.00960
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.20	-0.0000300	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4357068
Report generated: 08/27/2015 10:15

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15081073 **Date:** 01/02/2015
Insturment ID: ICP-THERMO2 **Method:** 6010C

Analyte	Wave Length	NA	NI	PB	SB	SN
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0	0	0	-0.00840
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.00	0	0	0	0	0
BORON	249.70	0	0	0	0	0
CADMIUM	228.80	0	-0.000180	0	0	0
CALCIUM	422.70	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0.000420	0	0	0
COPPER	224.70	0	-0.00402	0.00173	0	0
IRON	261.20	0	0	0	0	0
LEAD	220.30	0	0.000110	0	0	0
LITHIUM	670.80	0	0	0	0	0
MAGNESIUM	279.10	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.03	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.80	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.30	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.20	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4357068
Report generated: 08/27/2015 10:15

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15081073 **Date:** 01/02/2015
Insturment ID: ICP-THERMO2 **Method:** 6010C

Analyte	Wave Length	SR	TI	TL	V	ZN
ALUMINUM	308.20	0	0	0	0.00300	0
ANTIMONY	206.80	0	-0.000990	0	-0.00312	0
ARSENIC	189.00	0	0	0	0.000107	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.00	0	-0.00160	0	0.000170	0
BORON	249.70	0	0	0	0	0
CADMIUM	228.80	0	0	0	0.0000820	0
CALCIUM	422.70	0	0	0	0	0
CHROMIUM	267.70	0	0.0000550	0	-0.000120	-0.000740
COBALT	228.60	0	0.00200	-0.00120	0.0000200	0
COPPER	224.70	0	0.000460	0	0	0
IRON	261.20	0	0	0	0	0
LEAD	220.30	0	0	0	-0.000126	0
LITHIUM	670.80	0	0	0	0	0
MAGNESIUM	279.10	0	-0.00290	0	0	0
MANGANESE	257.60	0	0	0	-0.00000600	0
MOLYBDENUM	202.03	0	0	0	-0.000110	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	-0.00500	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	-0.0000400	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.00620	0	-0.00617	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.80	0	0	0	0	0
THALLIUM	190.80	0	-0.00120	0	-0.00540	0
TIN	189.90	0	-0.00220	0	0	0
TITANIUM	337.30	0	0	0	0.000200	0
VANADIUM	292.40	0	0.00104	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.20	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4357068
Report generated: 08/27/2015 10:15

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15081073 **Date:** 01/02/2015
Insturment ID: ICP-THERMO2 **Method:** 6010C

Analyte	Wave Length	ZR
ALUMINUM	308.20	0
ANTIMONY	206.80	0
ARSENIC	189.00	0
BARIUM	455.40	0
BERYLLIUM	313.00	0
BORON	249.70	0
CADMIUM	228.80	0
CALCIUM	422.70	0
CHROMIUM	267.70	0
COBALT	228.60	0
COPPER	224.70	0
IRON	261.20	0
LEAD	220.30	0
LITHIUM	670.80	0
MAGNESIUM	279.10	0
MANGANESE	257.60	0
MOLYBDENUM	202.03	0
NICKEL	231.60	0
PHOSPHORUS	214.90	0.00200
POTASSIUM	766.40	0
SELENIUM	196.00	0
SILICON	212.40	0
SILVER	328.00	0
SODIUM	589.50	0
STRONTIUM	407.80	0
THALLIUM	190.80	0
TIN	189.90	0
TITANIUM	337.30	0
VANADIUM	292.40	
ZINC	206.20	0
ZIRCONIUM	339.20	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4357068
Report generated: 08/27/2015 10:15

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L15081073 **Date:** 07/30/2015
Insturment ID: ICP-THERMO2 **Method:** 6010C

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	450.0
Antimony	10.00	90.0
Arsenic	10.00	90.0
Barium	10.00	81.0
Beryllium	15.00	4.5
Boron	10.00	90.0
Cadmium	10.00	4.5
Calcium	10.00	900.0
Chromium	10.00	45.0
Cobalt	10.00	9.0
Copper	10.00	180.0
Iron	5.00	630.0
Lead	10.00	225.0
Lithium	10.00	90.0
Magnesium	15.00	900.0
Manganese	15.00	27.0
Molybdenum	10.00	9.0
Nickel	10.00	90.0
Phosphorus	10.00	900.0
Potassium	10.00	360.0
Selenium	10.00	90.0
Silicon	10.00	81.0
Silver	5.00	4.5
Sodium	10.00	360.0
Strontium	10.00	4.5
Thallium	10.00	9.0
Tin	10.00	90.0
Titanium	15.00	90.0
Vanadium	10.00	18.0
Zinc	10.00	45.0
Zirconium	10.00	18.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4357067
Report generated: 08/27/2015 10:15

2.3.1.3 Raw Data

Sample Name: S0 Acquired: 8/26/2015 10:34:32 Type: Cal
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00231**	**.00139**	**-.00008**	**.00149**	**.00477**	**-.00117**	**-.00118**
Stddev	.00023	.00011	.00009	.00035	.00026	.00024	.00017
%RSD	9.7314	7.9901	114.07	23.557	5.3852	20.264	14.151
#1	-.00216	.00137	-.00017	.00179	.00462	-.00112	-.00108
#2	-.00257	.00151	.00002	.00157	.00462	-.00096	-.00110
#3	-.00221	.00129	-.00010	.00111	.00506	-.00142	-.00138

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00007**	**-.00010**	**.00145**	**-.00068**	**-.00001**	**.00071**	**.00082**
Stddev	.00003	.00003	.00020	.00011	.00004	.00054	.00029
%RSD	39.823	30.471	13.922	16.939	293.10	76.636	35.581
#1	.00005	-.00008	.00166	-.00071	.00000	.00011	.00112
#2	.00010	-.00013	.00143	-.00077	.00001	.00084	.00054
#3	.00006	-.00008	.00126	-.00055	-.00005	.00117	.00080

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00007**	**.00026**	**.00000**	**-.00058**	**-.00051**	**.00017**	**-.00073**
Stddev	.00010	.00016	.0001	.00071	.00005	.00001	.00013
%RSD	145.85	60.342	1654.8	122.73	9.9158	4.7054	17.600
#1	-.00001	.00011	-.00004	.00024	-.00048	.00018	-.00085
#2	.00018	.00024	-.00003	-.00102	-.00056	.00018	-.00060
#3	.00003	.00043	.00006	-.00095	-.00047	.00016	-.00073

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00003**	**.00001**	**.00062**	**.00010**	**.00088**	**-.00127**	**-.00016**
Stddev	.00002	.00002	.00004	.00002	.00010	.00016	.00004
%RSD	68.090	155.91	6.3839	17.562	11.298	12.928	22.827
#1	.00001	.00002	.00064	.00011	.00089	-.00115	-.00020
#2	.00003	-.00001	.00058	.00008	.00077	-.00146	-.00017
#3	.00006	.00002	.00065	.00011	.00097	-.00121	-.00012

Approved: August 27, 2015

Kim K Buck

Sample Name: S0 Acquired: 8/26/2015 10:34:32 Type: Cal
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00016	.00018	-.00252
Stddev	.00035	.00001	.00051
%RSD	217.14	6.7386	20.068
#1	-.00020	.00018	-.00268
#2	.00018	.00019	-.00293
#3	.00049	.00016	-.00196

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8939.2	13618.
Stddev	24.8	155.
%RSD	.27775	1.1351
#1	8960.3	13447.
#2	8945.6	13658.
#3	8911.8	13748.

Approved: August 27, 2015

Kim K Buck

Sample Name: S1 Acquired: 8/26/2015 10:38:02 Type: Cal
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00060**	**.00217**	**.02007**	**.00292**	**.00142**	**.00046**	**.00090**
Stddev	.00048	.00007	.00030	.00010	.00017	.00009	.00010
%RSD	80.119	3.3630	1.4788	3.4836	12.143	18.883	10.833
#1	.00005	.00210	.02024	.00291	.00136	.00038	.00100
#2	.00095	.00218	.01973	.00282	.00162	.00056	.00088
#3	.00079	.00225	.02025	.00302	.00129	.00045	.00081

Elem	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00409**	**.00029**	**.00089**	**.00853**	**.00649**	**.00061**	**.00999**
Stddev	.00010	.00018	.00003	.00044	.00062	.00006	.00014
%RSD	2.3798	61.828	3.4822	5.2165	9.5931	9.9408	1.4144
#1	.00405	.00033	.00089	.00803	.00623	.00066	.00988
#2	.00403	.00045	.00091	.00868	.00604	.00054	.00993
#3	.00420	.00009	.00085	.00887	.00720	.00062	.01015

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00207**	**.02525**	**-.00002**	**.00149**	**-.00054**	**.00044**	**.00235**
Stddev	.00006	.00048	.00004	.00004	.00006	.00006	.00004
%RSD	2.9770	1.8978	180.04	2.5204	11.860	13.688	1.5283
#1	.00201	.02525	-.00004	.00145	-.00054	.00037	.00239
#2	.00206	.02573	.00003	.00150	-.00048	.00049	.00232
#3	.00213	.02477	-.00005	.00153	-.00060	.00045	.00234

Elem	Sn1899	Sr4077	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00098**	**.02782**	**.00050**	**.01203**	**.00431**	**-.00242**
Stddev	.00003	.00039	.00011	.00008	.00000	.00014
%RSD	2.8158	1.3935	22.786	.68449	.09629	5.8970
#1	.00095	.02744	.00061	.01199	.00431	-.00258
#2	.00098	.02821	.00050	.01198	.00431	-.00234
#3	.00101	.02780	.00038	.01213	.00431	-.00233

Approved: August 27, 2015

Kim K Buck

Sample Name: S1 Acquired: 8/26/2015 10:38:02 Type: Cal
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8916.1	13384.
Stddev	18.6	161.
%RSD	.20823	1.2018
#1	8930.5	13493.
#2	8922.6	13461.
#3	8895.1	13200.

Approved: August 27, 2015

Kim K Buck

Sample Name: S2 Acquired: 8/26/2015 10:41:31 Type: Cal
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00413**	**.00305**	**.00011**	**.00444**	**.03572**	**.00735**	**.00386**
Stddev	.00055	.00028	.00005	.00010	.00022	.00026	.00012
%RSD	13.430	9.3071	45.982	2.3272	.62903	3.5548	3.1831
#1	.00410	.00278	.00011	.00432	.03582	.00717	.00400
#2	.00359	.00335	.00015	.00448	.03546	.00765	.00377
#3	.00470	.00301	.00006	.00451	.03588	.00723	.00380

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00085**	**.00197**	**.00692**	**.00100**	**.00176**	**.01853**	**.01236**
Stddev	.00010	.00009	.00010	.00009	.00001	.00090	.00034
%RSD	11.752	4.6141	1.4779	8.5640	.66127	4.8619	2.7475
#1	.00097	.00188	.00681	.00103	.00177	.01942	.01254
#2	.00080	.00206	.00701	.00107	.00175	.01762	.01258
#3	.00079	.00197	.00694	.00091	.00175	.01854	.01197

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00108**	**.02074**	**.00421**	**.05232**	**.00055**	**.00284**	**-.00014**
Stddev	.00006	.00017	.00005	.00083	.00006	.00005	.00012
%RSD	5.6799	.82375	1.0780	1.5786	10.804	1.7963	81.597
#1	.00107	.02054	.00416	.05142	.00049	.00281	-.00009
#2	.00115	.02081	.00424	.05249	.00055	.00289	-.00006
#3	.00103	.02086	.00424	.05304	.00061	.00280	-.00027

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00088**	**.00013**	**.00430**	**.00183**	**.05704**	**.00245**	**.00017**
Stddev	.00006	.00002	.00004	.00004	.00026	.00007	.00001
%RSD	6.8350	12.390	.87519	2.1432	.44932	2.9286	8.3667
#1	.00094	.00012	.00431	.00185	.05675	.00237	.00015
#2	.00089	.00014	.00433	.00184	.05717	.00251	.00018
#3	.00082	.00015	.00426	.00178	.05721	.00247	.00017

Approved: August 27, 2015

Kim K Buck

Sample Name: S2 Acquired: 8/26/2015 10:41:31 Type: Cal
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.02427	.00834	-.00215
Stddev	.00019	.00001	.00074
%RSD	.79856	.16717	34.273
#1	.02421	.00834	-.00258
#2	.02412	.00832	-.00130
#3	.02449	.00835	-.00256

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8863.4	12697.
Stddev	19.7	54.
%RSD	.22251	.42336
#1	8882.3	12754.
#2	8865.1	12688.
#3	8842.9	12648.

Approved: August 27, 2015

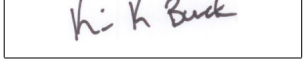

Sample Name: S3 Acquired: 8/26/2015 10:45:01 Type: Cal
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.35863**	**.09700**	**.01510**	**.17887**	**1.8692**	**.50690**	**.31321**
Stddev	.00196	.00071	.00008	.00093	.0207	.00226	.00240
%RSD	.54739	.73281	.50605	.51848	1.1086	.44676	.76670
#1	.35659	.09759	.01508	.17796	1.8883	.50437	.31503
#2	.36050	.09720	.01504	.17885	1.8720	.50760	.31412
#3	.35881	.09621	.01518	.17981	1.8472	.50874	.31049

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.05044**	**.12410**	**.31431**	**.10250**	**.10223**	**1.0566**	**.56951**
Stddev	.00014	.00011	.00170	.00039	.00120	.0111	.00728
%RSD	.26946	.09152	.53937	.37576	1.1733	1.0516	1.2790
#1	.05033	.12401	.31275	.10211	.10335	1.0674	.57637
#2	.05038	.12406	.31612	.10250	.10239	1.0571	.57029
#3	.05059	.12423	.31406	.10288	.10096	1.0452	.56186

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.06203**	**1.1339**	**.25368**	**3.2592**	**.06255**	**.16744**	**.04006**
Stddev	.00045	.0069	.00022	.0426	.00008	.00043	.00018
%RSD	.73251	.60686	.08684	1.3073	.13125	.25786	.44276
#1	.06251	1.1418	.25348	3.3017	.06258	.16705	.03986
#2	.06195	1.1294	.25366	3.2596	.06260	.16736	.04012
#3	.06161	1.1305	.25391	3.2165	.06245	.16791	.04020

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.05115**	**.00903**	**.22738**	**.10579**	**3.3780**	**.21302**	**.01724**
Stddev	.00022	.00004	.00079	.00048	.0335	.00201	.00012
%RSD	.43947	.41788	.34672	.45810	.99157	.94531	.68326
#1	.05090	.00899	.22662	.10591	3.4104	.21464	.01717
#2	.05120	.00904	.22733	.10620	3.3801	.21365	.01738
#3	.05134	.00907	.22819	.10526	3.3435	.21076	.01718

Approved: August 27, 2015

Kim K Buck

Sample Name: S3 Acquired: 8/26/2015 10:45:01 Type: Cal
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	1.4395	.49253	-.00199
Stddev	.0066	.00144	.00021
%RSD	.45678	.29238	10.667
#1	1.4320	.49378	-.00221
#2	1.4430	.49284	-.00198
#3	1.4437	.49095	-.00179

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8699.7	13091.
Stddev	19.9	108.
%RSD	.22901	.82696
#1	8722.3	12966.
#2	8692.4	13148.
#3	8684.5	13159.

Approved: August 27, 2015

Sample Name: S4 Acquired: 8/26/2015 10:48:09 Type: Cal
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.71960**	**.19555**	**.02998**	**.35939**	**3.8154**	**1.0160**	**.64022**
Stddev	.00298	.00058	.00001	.00304	.0094	.0062	.00073
%RSD	.41359	.29592	.03093	.84674	.24745	.61194	.11365
#1	.72300	.19488	.02999	.36102	3.8262	1.0201	.63974
#2	.71831	.19584	.02997	.36127	3.8087	1.0190	.63985
#3	.71749	.19593	.02999	.35588	3.8112	1.0089	.64105

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.09974**	**.24256**	**.62519**	**.20114**	**.20539**	**2.1533**	**1.1623**
Stddev	.00040	.00142	.00364	.00116	.00003	.0033	.0029
%RSD	.40446	.58412	.58153	.57600	.01371	.15468	.25163
#1	.09964	.24230	.62896	.20117	.20538	2.1572	1.1652
#2	.09939	.24129	.62490	.19997	.20542	2.1513	1.1625
#3	.10018	.24409	.62171	.20228	.20537	2.1515	1.1593

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.12450**	**2.2323**	**.49903**	**6.6691**	**.12214**	**.32992**	**.07821**
Stddev	.00036	.0109	.00203	.0205	.00063	.00141	.00032
%RSD	.28906	.48826	.40617	.30784	.51408	.42637	.40840
#1	.12470	2.2432	.50121	6.6927	.12184	.33154	.07825
#2	.12408	2.2322	.49869	6.6598	.12172	.32911	.07788
#3	.12472	2.2214	.49720	6.6549	.12286	.32911	.07852

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.10113**	**.01784**	**.44938**	**.20617**	**6.8412**	**.42992**	**.03335**
Stddev	.00051	.00018	.00199	.00210	.0039	.00113	.00009
%RSD	.50489	.99753	.44186	1.0196	.05706	.26175	.28256
#1	.10117	.01780	.45167	.20400	6.8441	.43066	.03329
#2	.10060	.01769	.44835	.20632	6.8428	.42863	.03330
#3	.10162	.01804	.44812	.20820	6.8368	.43048	.03346

Approved: August 27, 2015

Kim K Buck

Sample Name: S4 Acquired: 8/26/2015 10:48:09 Type: Cal
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: IR Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	2.8655	.97184	-.00261
Stddev	.0209	.00262	.00061
%RSD	.73076	.26932	23.335
#1	2.8828	.97412	-.00290
#2	2.8715	.97240	-.00301
#3	2.8422	.96898	-.00191

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8716.2	13242.
Stddev	38.8	52.
%RSD	.44567	.39146
#1	8673.0	13188.
#2	8727.4	13291.
#3	8748.2	13246.

Approved: August 27, 2015

Kim K Buck

Sample Name: ICV Acquired: 8/26/2015 10:53:23 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40939**	**10.166**	**.41510**	**.51022**	**1.0110**	**.05038**	**9.9771**
Stddev	.00159	.087	.00276	.00366	.0050	.00014	.0631
%RSD	.38749	.85450	.66506	.71671	.49753	.28561	.63249
#1	.40770	10.066	.41191	.50648	1.0089	.05040	9.9135
#2	.40961	10.225	.41663	.51039	1.0073	.05022	9.9782
#3	.41085	10.206	.41676	.51379	1.0167	.05051	10.040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05142**	**.20595**	**.51472**	**.51861**	**4.0033**	**49.257**	**.98980**
Stddev	.00034	.00113	.00324	.00099	.0211	.270	.00547
%RSD	.66645	.54931	.62918	.18998	.52620	.54888	.55294
#1	.05105	.20496	.51627	.51748	3.9908	49.057	.98628
#2	.05150	.20571	.51100	.51925	3.9915	49.149	.98701
#3	.05172	.20718	.51690	.51911	4.0276	49.565	.99610
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.157**	**.50667**	**.96792**	**49.297**	**.51716**	**10.192**	**.52272**
Stddev	.110	.00271	.00287	.345	.00131	.045	.00174
%RSD	1.0835	.53563	.29647	.69971	.25352	.44527	.33209
#1	10.054	.50393	.96494	49.256	.51566	10.162	.52079
#2	10.143	.50674	.96817	48.974	.51768	10.170	.52321
#3	10.273	.50935	.97066	49.661	.51812	10.245	.52416
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: August 27, 2015

Kim K Buck

Sample Name: ICV Acquired: 8/26/2015 10:53:23 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2380	.41077	5.1855	F 1.0574	.98262	.99284	F .52543
Stddev	.0056	.00353	.0219	.0021	.00676	.00648	.00448
%RSD	.45034	.85886	.42318	.20228	.68801	.65292	.85266
#1	1.2376	.40787	5.1661	1.0557	.97530	.98615	.52079
#2	1.2326	.40973	5.1811	1.0598	.98392	.99328	.52973
#3	1.2437	.41469	5.2093	1.0567	.98863	.99909	.52577
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail
Value				1.0000			.50000
Range				5.0000%			5.0000%

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0145	1.0327	F 1.9329
Stddev	.0022	.0037	.8613
%RSD	.21801	.35453	44.562
#1	1.0123	1.0287	.95538
#2	1.0145	1.0337	2.5805
#3	1.0167	1.0358	2.2629
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			5.0000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8686.8	13309.
Stddev	23.0	73.
%RSD	.26515	.54714
#1	8711.3	13381.
#2	8683.3	13311.
#3	8665.6	13235.

Approved: August 27, 2015

Sample Name: ICB Acquired: 8/26/2015 11:02:20 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00053**	**.00042**	**-.00138**	**.00102**	**.00025**	**-.00001**	**-.00087**
Stddev	.00023	.01472	.00160	.00009	.00019	.00003	.00419
%RSD	42.848	3507.7	115.91	9.0047	78.918	209.54	480.95
#1	.00062	.01264	-.00184	.00104	.00016	.00001	-.00095
#2	.00027	-.01592	.00040	.00092	.00047	.00000	-.00502
#3	.00069	.00454	-.00271	.00110	.00011	-.00005	.00336
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**.00000**	**.00042**	**.00031**	**-.00010**	**.04191**	**.00482**
Stddev	.00012	.00005	.00030	.00027	.00231	.01596	.00132
%RSD	158.53	1356.9	71.890	89.924	2236.8	38.072	27.365
#1	.00020	-.00002	.00011	.00009	.00008	.06030	.00338
#2	.00007	.00006	.00043	.00021	-.00250	.03362	.00597
#3	-.00004	-.00003	.00071	.00062	.00211	.03181	.00511
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00368**	**-.00001**	**.00030**	**.00366**	**.00013**	**-.00141**	**-.00041**
Stddev	.02524	.00007	.00009	.00200	.00042	.00337	.00112
%RSD	685.62	994.84	30.251	54.754	327.45	240.06	270.49
#1	.02892	-.00007	.00020	.00244	.00058	-.00413	-.00012
#2	-.02156	.00006	.00037	.00256	.00004	.00237	.00053
#3	.00368	-.00001	.00032	.00596	-.00024	-.00245	-.00165
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: ICB Acquired: 8/26/2015 11:02:20 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00153	-.00106	-.00102	.00018	.00007	.00032	.00086
Stddev	.00090	.00240	.00076	.00056	.00010	.00086	.00106
%RSD	58.747	226.44	75.043	304.81	145.03	271.36	122.20
#1	-.00256	-.00381	-.00178	.00011	.00017	.00085	-.00017
#2	-.00095	.00067	-.00026	.00078	.00008	-.00068	.00081
#3	-.00108	-.00005	-.00100	-.00034	-.00004	.00078	.00194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00014	.00350	F 2.3399
Stddev	.00014	.00022	.4349
%RSD	100.30	6.3040	18.584
#1	.00002	.00326	1.9328
#2	-.00019	.00368	2.2889
#3	-.00026	.00357	2.7980
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8944.1	13171.
Stddev	9.4	34.
%RSD	.10544	.25567
#1	8935.6	13147.
#2	8954.3	13156.
#3	8942.4	13209.

Approved: August 27, 2015

Kim K Buck

Sample Name: ICV Acquired: 8/26/2015 11:12:17 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40389**	**10.309**	**.40527**	**.49952**	**1.0219**	**.05038**	**10.075**
Stddev	.00141	.005	.00094	.00138	.0012	.00018	.032
%RSD	.34969	.04921	.23143	.27706	.12157	.36432	.32155
#1	.40479	10.304	.40592	.49834	1.0223	.05029	10.073
#2	.40226	10.311	.40569	.49919	1.0205	.05027	10.043
#3	.40462	10.314	.40419	.50104	1.0229	.05060	10.108
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05090**	**.20321**	**.51267**	**.51146**	**4.0722**	**49.770**	**.99486**
Stddev	.00023	.00039	.00246	.00094	.0229	.158	.00245
%RSD	.45064	.19343	.47940	.18399	.56292	.31837	.24624
#1	.05090	.20366	.51007	.51217	4.0500	49.651	.99511
#2	.05067	.20293	.51299	.51039	4.0709	49.709	.99230
#3	.05113	.20304	.51496	.51181	4.0958	49.950	.99718
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.429**	**.52295**	**.95040**	**50.019**	**.51258**	**10.014**	**.51581**
Stddev	.019	.00312	.00221	.067	.00187	.020	.00152
%RSD	.18051	.59698	.23220	.13444	.36392	.19981	.29386
#1	10.415	.52116	.95212	50.044	.51470	10.026	.51728
#2	10.451	.52112	.94792	49.942	.51120	9.9912	.51425
#3	10.422	.52655	.95118	50.069	.51185	10.026	.51590
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: August 27, 2015

Kim K Buck

Sample Name: ICV Acquired: 8/26/2015 11:12:17 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2092**	**.40181**	**5.0797**	**1.0464**	**.98732**	**1.0049**	**.51885**
Stddev	.0012	.00252	.0031	.0036	.00310	.0038	.00510
%RSD	.09908	.62728	.06046	.34551	.31408	.37889	.98358
#1	1.2105	.39911	5.0816	1.0473	.98487	1.0009	.52010
#2	1.2088	.40225	5.0762	1.0424	.98630	1.0055	.51324
#3	1.2083	.40409	5.0814	1.0495	.99081	1.0084	.52321
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0031**	**1.0277**	F **2.9703**
Stddev	.0028	.0028	1.2132
%RSD	.28122	.26909	40.846
#1	1.0031	1.0300	1.8299
#2	1.0003	1.0246	4.2452
#3	1.0060	1.0285	2.8357
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			5.0000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**8797.6**	**12970.**
Stddev	12.5	52.
%RSD	.14178	.39994
#1	8785.8	12985.
#2	8810.7	13012.
#3	8796.4	12912.

Approved: August 27, 2015

Kim K Buck

Sample Name: ICB Acquired: 8/26/2015 11:27:47 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	-.01588	-.00080	.00004	.00036	.00000	-.00937
Stddev	.00047	.01858	.00102	.00090	.00010	.00002	.00733
%RSD	162.38	117.01	127.62	2329.7	28.483	459.27	78.245
#1	-.00006	-.01912	-.00085	.00060	.00029	-.00001	-.01217
#2	.00010	.00411	.00025	.00051	.00048	.00002	-.00105
#3	.00082	-.03262	-.00179	-.00099	.00032	.00000	-.01489
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	-.00013	-.00005	-.00020	.00301	-.00648	.00307
Stddev	.00005	.00010	.00037	.00064	.00424	.02717	.00055
%RSD	158.78	80.628	801.04	321.45	140.81	419.24	17.749
#1	.00007	-.00003	-.00043	-.00045	.00095	-.03742	.00296
#2	.00004	-.00012	.00031	.00053	.00019	.00447	.00259
#3	-.00002	-.00023	-.00002	-.00067	.00789	.01350	.00367
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00862	.00001	-.00003	-.00228	.00033	.00123	-.00036
Stddev	.00589	.00005	.00019	.00881	.00024	.00089	.00108
%RSD	68.334	893.70	556.33	386.08	75.245	72.609	302.63
#1	-.00948	.00000	-.00021	-.00134	.00004	.00207	-.00064
#2	-.01402	.00006	-.00007	-.01153	.00045	.00133	-.00127
#3	-.00234	-.00004	.00017	.00602	.00048	.00029	.00084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: ICB Acquired: 8/26/2015 11:27:47 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00135**	**.00034**	**-.00001**	**-.00017**	**.00006**	**.00100**	**.00149**
Stddev	.00055	.00067	.00076	.00014	.00006	.00092	.00097
%RSD	40.660	196.31	7160.1	85.238	104.39	91.678	64.970
#1	-.00109	-.00031	-.00059	-.00003	.00001	.00088	.00056
#2	-.00198	.00030	.00086	-.00016	.00004	.00197	.00249
#3	-.00098	.00104	-.00030	-.00031	.00013	.00015	.00142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00015**	**.00129**	F **-.54102**
Stddev	.00007	.00009	.73930
%RSD	49.153	6.9828	136.65
#1	-.00022	.00132	.28747
#2	-.00015	.00118	-.77702
#3	-.00007	.00135	-1.1335
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**8826.3**	**13090.**
Stddev	27.1	140.
%RSD	.30724	1.0692
#1	8822.7	13133.
#2	8801.2	13203.
#3	8855.0	12933.

Approved: August 27, 2015

Sample Name: LLICV Acquired: 8/26/2015 11:33:34 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .00706	F .16966	F .00499	F .00781	F .01636	F .00083	F .17530
Stddev	.00081	.01819	.00189	.00070	.00029	.00002	.00275
%RSD	11.417	10.723	37.949	8.9577	1.7895	2.2858	1.5711
#1	.00615	.16030	.00461	.00756	.01649	.00083	.17696
#2	.00734	.19062	.00704	.00728	.01655	.00082	.17681
#3	.00769	.15805	.00331	.00861	.01602	.00085	.17212
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.40000	10.000	.40000	.50000	1.0000	.05000	10.000
Range	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .00084	F .00333	F .00909	F .00860	F .06741	F .82109	F .01454
Stddev	.00007	.00014	.00045	.00070	.00199	.02128	.00124
%RSD	7.9866	4.2679	4.9623	8.1168	2.9550	2.5921	8.5278
#1	.00079	.00322	.00932	.00836	.06710	.84495	.01543
#2	.00091	.00328	.00939	.00938	.06954	.80404	.01506
#3	.00081	.00349	.00857	.00805	.06559	.81428	.01312
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.05000	.20000	.50000	.50000	4.0000	50.000	1.0000
Range	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .15504	F .00899	F .01714	F .79713	F .00823	F .16250	F .00894
Stddev	.00733	.00012	.00018	.01572	.00030	.00186	.00201
%RSD	4.7287	1.2799	1.0380	1.9724	3.5994	1.1457	22.461
#1	.15313	.00899	.01697	.78530	.00809	.16226	.00663
#2	.16314	.00911	.01732	.81497	.00857	.16077	.00993
#3	.14886	.00888	.01713	.79111	.00803	.16447	.01026
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	10.000	.50000	1.0000	50.000	.50000	10.000	.50000
Range	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%

Approved: August 27, 2015

Kim K Buck

Sample Name: LLICV Acquired: 8/26/2015 11:33:34 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .01936	F .00943	F .08346	F .01723	F .01652	F .01708	F .00861
Stddev	.00114	.00136	.00046	.00039	.00035	.00058	.00042
%RSD	5.8824	14.376	.54812	2.2825	2.1077	3.4123	4.8361
#1	.02002	.01058	.08396	.01697	.01626	.01709	.00832
#2	.01804	.00793	.08306	.01704	.01692	.01766	.00842
#3	.02000	.00978	.08336	.01768	.01638	.01649	.00909
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	1.2000	.40000	5.0000	1.0000	1.0000	1.0000	.50000
Range	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	F .01716	F .01879	F .16994
Stddev	.00033	.00004	1.4170
%RSD	1.9071	.23750	833.83
#1	.01753	.01878	-1.4285
#2	.01690	.01875	1.2718
#3	.01705	.01883	.66643
Check ?	Chk Fail	Chk Fail	Chk Fail
Value	1.0000	1.0000	1.0000
Range	-5.0000%	-5.0000%	-5.0000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8843.9	13189.
Stddev	15.5	165.
%RSD	.17478	1.2504
#1	8835.0	13170.
#2	8861.7	13034.
#3	8835.0	13362.

Approved: August 27, 2015

Sample Name: LLICV Acquired: 8/26/2015 11:39:18 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .00398	F .10901	F .00490	F .00447	F .01033	F .00054	F .08118
Stddev	.00066	.00561	.00081	.00024	.00016	.00001	.00269
%RSD	16.517	5.1495	16.640	5.3252	1.5372	2.4337	3.3110
#1	.00460	.10770	.00567	.00420	.01036	.00055	.07971
#2	.00403	.10417	.00405	.00455	.01015	.00053	.08428
#3	.00329	.11517	.00496	.00466	.01046	.00053	.07955
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.40000	10.000	.40000	.50000	1.0000	.05000	10.000
Range	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .00055	F .00214	F .00534	F .00530	F .04223	F .48201	F .00951
Stddev	.00011	.00017	.00031	.00039	.00158	.02325	.00096
%RSD	20.062	7.9682	5.8051	7.2712	3.7325	4.8241	10.049
#1	.00067	.00234	.00566	.00528	.04237	.46630	.00845
#2	.00054	.00204	.00504	.00492	.04059	.50872	.00978
#3	.00045	.00205	.00533	.00569	.04373	.47101	.01031
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.05000	.20000	.50000	.50000	4.0000	50.000	1.0000
Range	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .10684	F .00549	F .00890	F .47298	F .00464	F .10789	F .00470
Stddev	.00935	.00007	.00006	.00618	.00085	.00715	.00263
%RSD	8.7472	1.2545	.69200	1.3066	18.238	6.6250	55.896
#1	.11722	.00544	.00888	.47218	.00560	.10118	.00771
#2	.09910	.00546	.00896	.47951	.00436	.10708	.00357
#3	.10419	.00557	.00885	.46723	.00397	.11541	.00283
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	10.000	.50000	1.0000	50.000	.50000	10.000	.50000
Range	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%

Approved: August 27, 2015

Kim K Buck

Sample Name: LLICV Acquired: 8/26/2015 11:39:18 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .01012	F .00158	F .04833	F .00743	F .01043	F .01033	F .00690
Stddev	.00072	.00216	.00081	.00030	.00015	.00141	.00179
%RSD	7.1570	136.89	1.6691	4.0259	1.3912	13.660	25.951
#1	.00931	.00307	.04895	.00744	.01027	.00974	.00848
#2	.01038	.00257	.04742	.00713	.01054	.01195	.00496
#3	.01069	-.00090	.04863	.00773	.01049	.00932	.00726
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	1.2000	.40000	5.0000	1.0000	1.0000	1.0000	.50000
Range	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	F .01045	F .01153	F -.74387
Stddev	.00017	.00023	1.1632
%RSD	1.6520	1.9799	156.37
#1	.01035	.01140	.49097
#2	.01065	.01179	-.90367
#3	.01035	.01138	-1.8189
Check ?	Chk Fail	Chk Fail	Chk Fail
Value	1.0000	1.0000	1.0000
Range	-5.0000%	-5.0000%	-5.0000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8841.2	13102.
Stddev	39.4	133.
%RSD	.44522	1.0159
#1	8818.3	13169.
#2	8818.6	13188.
#3	8886.6	12949.

Approved: August 27, 2015

Kim K Buck

Sample Name: LLICV Acquired: 8/26/2015 11:57:12 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .00883	F .18382	F .01513	F .08103	F .00880	F .00882	F .15975
Stddev	.00039	.01926	.00154	.00080	.00032	.00002	.00452
%RSD	4.3653	10.475	10.161	.99320	3.6263	.22889	2.8302
#1	.00850	.17958	.01400	.08025	.00844	.00884	.15520
#2	.00925	.16704	.01452	.08098	.00905	.00882	.15980
#3	.00873	.20484	.01688	.08186	.00892	.00880	.16424
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.40000	10.000	.40000	.50000	1.0000	.05000	10.000
Range	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .00898	F .00915	F .01780	F .01827	F .06248	F .80903	F .08178
Stddev	.00004	.00024	.00048	.00021	.00201	.03728	.00113
%RSD	.43978	2.6625	2.6932	1.1405	3.2228	4.6076	1.3810
#1	.00900	.00943	.01725	.01804	.06425	.77215	.08048
#2	.00893	.00903	.01800	.01832	.06290	.84669	.08232
#3	.00901	.00900	.01815	.01845	.06029	.80826	.08254
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.05000	.20000	.50000	.50000	4.0000	50.000	1.0000
Range	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .39981	F .00976	F .05070	F .39186	F .03375	F .00065	F .01727
Stddev	.01481	.00001	.00007	.01132	.00055	.00104	.00207
%RSD	3.7034	.10546	.14452	2.8897	1.6334	160.79	11.989
#1	.38316	.00978	.05062	.38408	.03433	.00010	.01696
#2	.40473	.00976	.05077	.40485	.03323	.00000	.01538
#3	.41152	.00976	.05070	.38665	.03367	.00185	.01948
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	10.000	.50000	1.0000	50.000	.50000	10.000	.50000
Range	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%

Approved: August 27, 2015

Kim K Buck

Sample Name: LLICV Acquired: 8/26/2015 11:57:12 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .01460	F .01669	F .00111	F .08398	F .00884	F .02486	F .08551
Stddev	.00131	.00093	.00102	.00028	.00013	.00078	.00131
%RSD	8.9812	5.5987	91.154	.33855	1.4989	3.1268	1.5377
#1	.01476	.01746	-.00005	.08402	.00871	.02451	.08409
#2	.01582	.01565	.00155	.08367	.00883	.02575	.08574
#3	.01321	.01696	.00184	.08424	.00898	.02432	.08669
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	1.2000	.40000	5.0000	1.0000	1.0000	1.0000	.50000
Range	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%	-5.0000%

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	F .00886	F .01929	F -.71806
Stddev	.00015	.00010	1.9658
%RSD	1.7027	.50028	273.77
#1	.00869	.01921	.68229
#2	.00898	.01928	-2.9654
#3	.00891	.01940	.12893
Check ?	Chk Fail	Chk Fail	Chk Fail
Value	1.0000	1.0000	1.0000
Range	-5.0000%	-5.0000%	-5.0000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8886.4	13486.
Stddev	23.0	68.
%RSD	.25914	.50123
#1	8860.0	13491.
#2	8897.3	13416.
#3	8902.0	13551.

Approved: August 27, 2015

Sample Name: ICSA Acquired: 8/26/2015 12:02:47 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00065	245.14	-.00131	.00371	-.00007	.00002	242.99
Stddev	.00063	.98	.00075	.00090	.00024	.00003	.36
%RSD	96.838	.39902	57.694	24.254	348.66	136.07	.14675
#1	.00002	244.09	-.00044	.00319	.00006	.00001	242.67
#2	-.00123	246.02	-.00165	.00475	-.00035	.00005	243.37
#3	-.00075	245.32	-.00182	.00319	.00008	.00000	242.92
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00000	.00006	.00087	.00053	94.203	-.01365	.01081
Stddev	.0000	.00009	.00021	.00053	.292	.00842	.00040
%RSD	1054.6	167.24	23.779	100.55	.30975	61.682	3.6882
#1	-.00001	.00012	.00086	.00087	93.876	-.02039	.01037
#2	.00004	-.00005	.00066	-.00008	94.437	-.00421	.01089
#3	-.00003	.00010	.00107	.00081	94.296	-.01634	.01116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	249.90	.00029	-.00104	.01889	-.00034	-.08860	.00308
Stddev	1.31	.00006	.00045	.00630	.00054	.00529	.00180
%RSD	.52221	19.716	42.875	33.366	156.93	5.9680	58.488
#1	248.39	.00022	-.00091	.01906	.00020	-.08960	.00124
#2	250.56	.00030	-.00154	.01250	-.00035	-.09331	.00317
#3	250.74	.00034	-.00068	.02511	-.00088	-.08288	.00484
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: ICSA Acquired: 8/26/2015 12:02:47 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00182	.00013	.10770	.00077	.00057	-.01291	.00057
Stddev	.00291	.00190	.00247	.00098	.00007	.00086	.00173
%RSD	160.01	1430.9	2.2967	126.41	12.357	6.6765	303.66
#1	-.00428	-.00049	.10917	.00178	.00054	-.01325	.00148
#2	-.00256	.00227	.10484	-.00017	.00052	-.01355	-.00143
#3	.00139	-.00138	.10908	.00071	.00065	-.01193	.00166
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00093	-.00100	F -53.181
Stddev	.00014	.00030	.635
%RSD	15.378	29.532	1.1949
#1	-.00083	-.00112	-52.748
#2	-.00088	-.00066	-52.885
#3	-.00110	-.00122	-53.911
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.08000
Low Limit			-.08000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8490.9	13411.
Stddev	1.3	23.
%RSD	.01501	.17339
#1	8491.4	13437.
#2	8491.8	13392.
#3	8489.5	13405.

Approved: August 27, 2015

Kim K Buck

Sample Name: ICSAB Acquired: 8/26/2015 12:06:14 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.47690	245.01	.23225	-.00571	.23485	.24094	242.60
Stddev	.00356	2.26	.00147	.00148	.00232	.00161	2.27
%RSD	.74638	.92369	.63416	25.844	.98623	.66956	.93506
#1	.48095	245.41	.23055	-.00527	.23516	.24261	243.07
#2	.47547	242.57	.23315	-.00450	.23240	.24083	240.14
#3	.47428	247.04	.23305	-.00736	.23700	.23939	244.60
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.47305	.22723	.24075	.23192	94.108	4.8186	.01012
Stddev	.00199	.00048	.00103	.00235	1.312	.0702	.00099
%RSD	.42170	.20996	.42847	1.0133	1.3937	1.4577	9.8027
#1	.47533	.22772	.24193	.23362	93.913	4.8460	.00984
#2	.47218	.22721	.24023	.23291	92.904	4.7388	.00929
#3	.47163	.22677	.24007	.22924	95.506	4.8710	.01122
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	249.91	.22830	-.00095	4.7678	.45842	-.08868	.47041
Stddev	4.85	.00415	.00006	.0386	.00338	.00345	.00452
%RSD	1.9390	1.8167	6.2065	.81006	.73812	3.8942	.96071
#1	248.82	.22804	-.00088	4.7652	.46222	-.08512	.47440
#2	245.70	.22428	-.00097	4.7306	.45731	-.09202	.46550
#3	255.20	.23257	-.00099	4.8077	.45573	-.08889	.47134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: ICSAB Acquired: 8/26/2015 12:06:14 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49621	.23391	.00251	.00134	.00053	-.01375	.44082
Stddev	.00703	.00173	.00141	.00020	.00006	.00042	.00606
%RSD	1.4160	.73980	56.243	14.850	11.780	3.0879	1.3757
#1	.50340	.23236	.00330	.00149	.00060	-.01423	.44346
#2	.48937	.23578	.00334	.00112	.00047	-.01358	.43388
#3	.49586	.23360	.00088	.00142	.00051	-.01343	.44511
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.23738	.45020	F -54.040
Stddev	.00155	.00088	.680
%RSD	.65188	.19622	1.2589
#1	.23917	.45114	-54.212
#2	.23654	.44939	-54.617
#3	.23644	.45007	-53.290
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8612.2	13411.
Stddev	32.9	250.
%RSD	.38167	1.8638
#1	8576.5	13423.
#2	8618.8	13654.
#3	8641.3	13155.

Approved: August 27, 2015

Sample Name: CCV Acquired: 8/26/2015 12:11:17 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40544**	**10.117**	**.40304**	**.50576**	**1.0115**	**.05005**	**10.093**
Stddev	.00032	.037	.00114	.00174	.0031	.00015	.048
%RSD	.08009	.36187	.28344	.34480	.30644	.30720	.47664
#1	.40508	10.119	.40328	.50660	1.0092	.04988	10.078
#2	.40551	10.080	.40179	.50375	1.0103	.05011	10.055
#3	.40571	10.153	.40404	.50692	1.0150	.05017	10.147
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05069**	**.20529**	**.51092**	**.51380**	**4.0959**	**50.139**	**1.0017**
Stddev	.00019	.00054	.00138	.00060	.0049	.185	.0038
%RSD	.36544	.26404	.27105	.11582	.12068	.36940	.37921
#1	.05063	.20484	.50962	.51311	4.1016	50.109	.99981
#2	.05055	.20514	.51075	.51417	4.0937	49.971	.99931
#3	.05090	.20589	.51238	.51411	4.0925	50.338	1.0061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.226**	**.51367**	**1.0245**	**50.359**	**.51390**	**10.184**	**.51589**
Stddev	.024	.00231	.0022	.163	.00193	.019	.00190
%RSD	.22980	.45031	.21665	.32299	.37492	.18536	.36744
#1	10.207	.51499	1.0247	50.235	.51174	10.177	.51594
#2	10.219	.51100	1.0223	50.300	.51543	10.170	.51776
#3	10.252	.51503	1.0267	50.543	.51454	10.205	.51397
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: August 27, 2015

Kim K Buck

Sample Name: CCV Acquired: 8/26/2015 12:11:17 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2244**	**.40819**	**5.0946**	**1.0199**	**1.0088**	**1.0167**	**.51330**
Stddev	.0049	.00252	.0098	.0081	.0044	.0049	.00694
%RSD	.39622	.61760	.19175	.79835	.43364	.47710	1.3528
#1	1.2189	.40536	5.0833	1.0137	1.0105	1.0175	.50720
#2	1.2280	.40902	5.1004	1.0167	1.0038	1.0115	.51185
#3	1.2263	.41020	5.1000	1.0291	1.0120	1.0211	.52086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0117**	**1.0237**	F **.30388**
Stddev	.0014	.0039	1.3759
%RSD	.13927	.37716	452.78
#1	1.0102	1.0240	1.2797
#2	1.0118	1.0198	-1.2698
#3	1.0130	1.0275	.90169
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**8764.6**	**13101.**
Stddev	3.2	62.
%RSD	.03673	.47177
#1	8768.2	13049.
#2	8762.1	13169.
#3	8763.4	13084.

Approved: August 27, 2015

Kim K Buck

Sample Name: CCB Acquired: 8/26/2015 12:14:31 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00012**	**.00788**	**.00080**	**.00086**	**.00030**	**.00003**	**-.00564**
Stddev	.00077	.01020	.00144	.00088	.00012	.00003	.00666
%RSD	645.60	129.53	180.76	102.28	38.317	73.608	118.24
#1	.00074	.00812	.00242	.00066	.00043	.00006	-.00748
#2	-.00036	.01795	.00033	.00182	.00020	.00001	.00176
#3	-.00075	-.00245	-.00035	.00009	.00027	.00003	-.01118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**.00007**	**.00059**	**.00050**	**.00220**	**-.00293**	**-.00064**
Stddev	.00006	.00006	.00050	.00035	.00477	.04140	.00114
%RSD	981.32	94.867	85.975	69.988	216.95	1412.5	177.69
#1	-.00006	.00005	.00001	.00085	-.00270	.00260	-.00132
#2	.00003	.00014	.00079	.00015	.00682	.03543	-.00129
#3	.00005	.00001	.00095	.00050	.00247	-.04682	.00068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00299**	**.00006**	**.00049**	**.00011**	**-.00012**	**-.00153**	**-.00136**
Stddev	.01546	.00001	.00006	.00840	.00069	.00574	.00071
%RSD	516.49	22.123	11.319	7323.4	596.16	374.06	52.543
#1	.00458	.00007	.00047	.00964	-.00052	.00488	-.00118
#2	-.02078	.00005	.00046	-.00622	-.00052	-.00329	-.00215
#3	.00722	.00007	.00056	-.00308	.00069	-.00619	-.00075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: CCB Acquired: 8/26/2015 12:14:31 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00155	-.00123	-.00157	.00007	.00010	.00031	.00067
Stddev	.00154	.00185	.00132	.00041	.00003	.00113	.00058
%RSD	99.355	150.70	84.201	558.54	29.111	370.27	87.317
#1	-.00333	-.00117	-.00017	.00019	.00008	.00161	.00021
#2	-.00078	-.00310	-.00174	-.00038	.00008	-.00031	.00047
#3	-.00054	.00059	-.00279	.00040	.00013	-.00039	.00132
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00020	-.00027	F .68475
Stddev	.00017	.00012	1.2773
%RSD	84.361	44.327	186.53
#1	.00030	-.00040	.33546
#2	.00030	-.00018	-.38157
#3	.00001	-.00022	2.1004
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8776.6	13122.
Stddev	42.5	72.
%RSD	.48467	.55032
#1	8750.3	13148.
#2	8753.9	13041.
#3	8825.7	13178.

Approved: August 27, 2015

Kim K Buck

Sample Name: PBW R2 Acquired: 8/26/2015 12:39:20 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG535478-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	.00107	-.00190	.00039	.00021	.00004	-.00750
Stddev	.00065	.02757	.00160	.00040	.00020	.00002	.00598
%RSD	243.79	2573.6	84.197	102.09	94.569	44.748	79.705
#1	-.00065	-.01833	-.00371	.00053	.00022	.00004	-.00790
#2	-.00064	.03263	-.00073	.00070	.00001	.00002	-.01327
#3	.00048	-.01109	-.00125	-.00006	.00042	.00006	-.00133
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	-.00025	.00024	.00011	.00385	.00506	-.00111
Stddev	.00002	.00018	.00024	.00030	.00178	.02539	.00040
%RSD	9.6006	72.994	97.974	267.14	46.268	502.15	35.943
#1	.00024	-.00028	-.00001	.00007	.00287	-.00698	-.00076
#2	.00025	-.00005	.00029	.00044	.00591	-.01208	-.00155
#3	.00021	-.00041	.00045	-.00016	.00278	.03423	-.00102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00983	.00005	.00013	.00295	.00056	F -.00965	-.00164
Stddev	.00401	.00004	.00011	.00239	.00045	.00139	.00127
%RSD	40.823	67.282	87.917	81.042	80.265	14.374	77.359
#1	-.01004	.00007	.00005	.00559	.00101	-.01091	-.00282
#2	-.01374	.00001	.00025	.00237	.00011	-.00987	-.00180
#3	-.00572	.00008	.00007	.00091	.00055	-.00816	-.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: August 27, 2015

Kim K Buck

Sample Name: PBW R2 Acquired: 8/26/2015 12:39:20 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG535478-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00050**	**.00097**	**.00276**	**.00000**	**.00006**	**.00080**	**-.00072**
Stddev	.00132	.00347	.00117	.0001	.00010	.00048	.00115
%RSD	264.50	356.12	42.281	63594.	183.48	60.488	160.30
#1	.00101	.00301	.00267	-.00008	.00009	.00065	-.00165
#2	-.00141	.00295	.00396	-.00004	-.00006	.00134	.00057
#3	-.00109	-.00303	.00164	.00012	.00013	.00041	-.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00008**	**.00103**	**.32240**
Stddev	.00019	.00013	1.9975
%RSD	235.73	12.376	619.58
#1	.00030	.00116	-1.6861
#2	-.00008	.00102	.34445
#3	.00003	.00090	2.3088
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**9007.9**	**13670.**
Stddev	13.7	163.
%RSD	.15263	1.1945
#1	9023.6	13836.
#2	9002.1	13665.
#3	8998.0	13509.

Approved: August 27, 2015

Sample Name: L1508084301 Acquired: 8/26/2015 12:42:51 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19395	4.8995	.18824	.91434	.47891	.02417	4.8032
Stddev	.00179	.0364	.00319	.00561	.00382	.00018	.0310
%RSD	.92471	.74320	1.6955	.61346	.79732	.74739	.64497
#1	.19428	4.8620	.18466	.91334	.47482	.02402	4.7676
#2	.19201	4.9017	.19080	.90930	.47955	.02414	4.8175
#3	.19554	4.9347	.18925	.92038	.48237	.02437	4.8244
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02413	.10036	.25413	.24926	1.9965	23.880	.46745
Stddev	.00004	.00058	.00219	.00018	.0109	.193	.00432
%RSD	.15885	.58123	.86113	.07214	.54399	.80743	.92432
#1	.02411	.09968	.25246	.24939	1.9846	23.665	.46250
#2	.02411	.10070	.25333	.24934	1.9994	23.937	.46942
#3	.02418	.10069	.25661	.24905	2.0057	24.038	.47044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.0074	.26230	.49903	23.646	.25318	4.7188	.25415
Stddev	.0589	.00087	.00207	.162	.00029	.0133	.00188
%RSD	1.1756	.33335	.41437	.68576	.11356	.28172	.73870
#1	4.9457	.26129	.49804	23.474	.25294	4.7080	.25267
#2	5.0630	.26284	.49764	23.668	.25350	4.7336	.25626
#3	5.0136	.26277	.50140	23.796	.25309	4.7148	.25352
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508084301 Acquired: 8/26/2015 12:42:51 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.58897	.18499	2.4989	.50488	.48247	.49230	.24902
Stddev	.00700	.00574	.0281	.00494	.00386	.00605	.00277
%RSD	1.1892	3.1045	1.1246	.97788	.80076	1.2296	1.1115
#1	.59372	.18669	2.5152	.50273	.47801	.48634	.24852
#2	.59226	.18969	2.5150	.51052	.48468	.49844	.25200
#3	.58092	.17859	2.4664	.50138	.48473	.49212	.24653
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.49768	.49967	F 8351.1
Stddev	.00232	.00888	33.6
%RSD	.46670	1.7763	.40244
#1	.49685	.48991	8335.4
#2	.49589	.50183	8328.3
#3	.50031	.50727	8389.7
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8853.1	12854.
Stddev	45.7	58.
%RSD	.51613	.45222
#1	8893.5	12912.
#2	8862.2	12796.
#3	8803.5	12855.

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508084302 Acquired: 8/26/2015 12:46:02 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19655	4.9338	.19154	.93275	.49155	.02464	4.8705
Stddev	.00158	.0573	.00133	.00621	.00324	.00015	.0397
%RSD	.80631	1.1610	.69230	.66559	.65883	.59872	.81458
#1	.19811	4.8792	.19118	.93953	.48856	.02481	4.8376
#2	.19494	4.9287	.19301	.93137	.49110	.02461	4.8592
#3	.19659	4.9935	.19044	.92734	.49499	.02452	4.9145
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02455	.10176	.25707	.25313	2.0184	24.471	.48310
Stddev	.00034	.00101	.00148	.00343	.0240	.175	.00362
%RSD	1.3960	.99497	.57535	1.3546	1.1903	.71558	.74893
#1	.02472	.10257	.25876	.25619	1.9907	24.279	.48295
#2	.02478	.10209	.25648	.25377	2.0326	24.510	.47955
#3	.02416	.10063	.25598	.24942	2.0320	24.623	.48678
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.0706	.26459	.50602	24.297	.25640	4.7845	.25484
Stddev	.0881	.00677	.00570	.177	.00287	.0554	.00438
%RSD	1.7367	2.5579	1.1260	.72799	1.1175	1.1587	1.7189
#1	4.9692	.25683	.51064	24.102	.25885	4.8287	.25953
#2	5.1145	.26768	.50778	24.340	.25711	4.8025	.25414
#3	5.1280	.26927	.49966	24.448	.25325	4.7223	.25085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508084302 Acquired: 8/26/2015 12:46:02 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.59536**	**.18725**	**2.5074**	**.51203**	**.49507**	**.50585**	**.25089**
Stddev	.00896	.00237	.0397	.01181	.00305	.00411	.00556
%RSD	1.5053	1.2681	1.5841	2.3073	.61518	.81214	2.2160
#1	.60492	.18878	2.5523	.52420	.49283	.50200	.25716
#2	.59403	.18451	2.4930	.51129	.49385	.50538	.24896
#3	.58714	.18846	2.4769	.50061	.49854	.51017	.24655
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.50698**	**.50712**	F **8451.2**
Stddev	.00351	.00902	61.4
%RSD	.69326	1.7780	.72628
#1	.51039	.51389	8516.4
#2	.50718	.51058	8442.6
#3	.50337	.49689	8394.5
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**8847.4**	**12956.**
Stddev	67.8	310.
%RSD	.76625	2.3955
#1	8782.1	13313.
#2	8842.7	12804.
#3	8917.5	12751.

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508084303 Acquired: 8/26/2015 12:49:13 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19316	4.8822	.18921	.91413	.48321	.02425	4.7986
Stddev	.00128	.0323	.00134	.00605	.00195	.00014	.0157
%RSD	.66348	.66155	.71080	.66235	.40393	.59284	.32731
#1	.19205	4.8782	.18786	.91040	.48442	.02434	4.8145
#2	.19288	4.9163	.18921	.91088	.48096	.02409	4.7983
#3	.19456	4.8521	.19055	.92112	.48424	.02434	4.7831
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02395	.10000	.25396	.24895	2.0061	24.248	.47453
Stddev	.00014	.00043	.00115	.00175	.0040	.108	.00247
%RSD	.60464	.43263	.45410	.70215	.19755	.44576	.52006
#1	.02379	.09966	.25454	.24741	2.0106	24.298	.47510
#2	.02398	.09985	.25263	.25085	2.0049	24.124	.47183
#3	.02407	.10048	.25471	.24858	2.0030	24.322	.47666
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.1018	.26774	.49819	23.936	.25303	4.7089	.25289
Stddev	.0296	.00270	.00295	.104	.00186	.0265	.00265
%RSD	.57956	1.0093	.59206	.43304	.73656	.56300	1.0474
#1	5.1087	.27008	.49481	24.013	.25096	4.6784	.24986
#2	5.0694	.26479	.49952	23.818	.25457	4.7219	.25474
#3	5.1273	.26837	.50024	23.977	.25357	4.7264	.25407
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508084303 Acquired: 8/26/2015 12:49:13 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.59093	.18795	2.5124	.51138	.48888	.49893	.25124
Stddev	.00387	.00294	.0066	.00261	.00196	.00062	.00286
%RSD	.65564	1.5651	.26186	.50943	.40147	.12349	1.1369
#1	.58721	.19122	2.5198	.50888	.49014	.49946	.25229
#2	.59495	.18713	2.5099	.51117	.48662	.49826	.25341
#3	.59063	.18551	2.5074	.51408	.48988	.49907	.24800
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.49753	.50008	F 7676.3
Stddev	.00298	.00487	36.3
%RSD	.59966	.97389	.47255
#1	.49478	.49520	7640.4
#2	.49711	.50009	7675.6
#3	.50070	.50494	7712.9
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8853.2	12600.
Stddev	31.2	114.
%RSD	.35186	.90536
#1	8886.5	12482.
#2	8848.6	12710.
#3	8824.7	12606.

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508084304 Acquired: 8/26/2015 12:52:25 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19200	4.7876	.18781	.91053	.47609	.02399	4.7266
Stddev	.00150	.0244	.00205	.00722	.00345	.00019	.0127
%RSD	.78107	.50885	1.0923	.79343	.72469	.79047	.26965
#1	.19355	4.7595	.18937	.91746	.47217	.02418	4.7151
#2	.19056	4.8004	.18549	.90305	.47741	.02380	4.7403
#3	.19187	4.8029	.18857	.91110	.47868	.02399	4.7245
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02394	.09952	.25149	.24760	1.9531	23.723	.47038
Stddev	.00008	.00117	.00292	.00320	.0206	.148	.00239
%RSD	.35144	1.1784	1.1618	1.2938	1.0561	.62294	.50895
#1	.02404	.10061	.25428	.25082	1.9496	23.572	.46779
#2	.02388	.09828	.24845	.24441	1.9344	23.728	.47250
#3	.02390	.09966	.25175	.24757	1.9752	23.868	.47086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.9199	.25475	.49595	23.530	.25205	4.6898	.25130
Stddev	.1057	.00575	.00595	.167	.00271	.0514	.00253
%RSD	2.1483	2.2567	1.2006	.70811	1.0734	1.0960	1.0059
#1	4.9027	.25675	.50132	23.374	.25478	4.7423	.25368
#2	4.8240	.24827	.48955	23.510	.24937	4.6395	.24865
#3	5.0332	.25923	.49699	23.705	.25199	4.6876	.25156
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508084304 Acquired: 8/26/2015 12:52:25 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.57605	.18090	2.4331	.50113	.48155	.49000	.24727
Stddev	.00791	.00209	.0341	.00778	.00326	.00134	.00231
%RSD	1.3723	1.1542	1.4002	1.5516	.67635	.27415	.93424
#1	.58023	.17944	2.4585	.50777	.47813	.48846	.24749
#2	.56693	.17996	2.3944	.49258	.48461	.49057	.24486
#3	.58098	.18329	2.4463	.50304	.48190	.49096	.24946
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.49402	.50350	F 8561.9
Stddev	.00305	.00367	68.0
%RSD	.61818	.72825	.79465
#1	.49697	.50741	8636.3
#2	.49087	.50015	8502.8
#3	.49423	.50293	8546.5
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8806.9	13067.
Stddev	56.4	285.
%RSD	.64004	2.1800
#1	8749.4	12956.
#2	8862.1	13390.
#3	8809.3	12854.

Approved: August 27, 2015

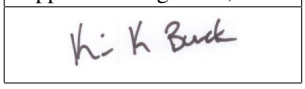

Sample Name: L1508084305 Acquired: 8/26/2015 12:55:36 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19356	4.8474	.18984	.92225	.47999	.02415	4.7840
Stddev	.00092	.0069	.00051	.00151	.00144	.00002	.0238
%RSD	.47401	.14174	.26701	.16382	.29988	.09285	.49660
#1	.19462	4.8456	.18926	.92399	.47844	.02418	4.7573
#2	.19301	4.8550	.19005	.92151	.48128	.02414	4.8026
#3	.19305	4.8416	.19021	.92125	.48024	.02413	4.7923
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02412	.09986	.25293	.24851	1.9776	24.022	.47367
Stddev	.00012	.00045	.00104	.00109	.0005	.048	.00257
%RSD	.50358	.45244	.41225	.43981	.02563	.20097	.54345
#1	.02419	.10024	.25412	.24970	1.9773	24.059	.47131
#2	.02419	.09996	.25220	.24828	1.9773	24.039	.47642
#3	.02398	.09936	.25246	.24755	1.9782	23.967	.47327
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.0087	.26248	.49873	23.760	.25258	4.7271	.25279
Stddev	.0291	.00254	.00276	.030	.00090	.0272	.00032
%RSD	.58158	.96908	.55437	.12451	.35464	.57613	.12753
#1	5.0423	.26479	.50188	23.731	.25362	4.7559	.25269
#2	4.9916	.26290	.49759	23.790	.25209	4.7238	.25315
#3	4.9921	.25976	.49672	23.758	.25204	4.7017	.25253
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508084305 Acquired: 8/26/2015 12:55:36 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.58680	.18611	2.5145	.51076	.48576	.49521	.25347
Stddev	.00972	.00469	.0423	.00606	.00134	.00279	.00379
%RSD	1.6572	2.5219	1.6835	1.1857	.27483	.56334	1.4955
#1	.59639	.19092	2.5633	.51670	.48520	.49263	.25729
#2	.58708	.18588	2.4878	.50460	.48728	.49817	.24971
#3	.57695	.18154	2.4923	.51099	.48479	.49483	.25339
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.49773	.49704	F 7824.9
Stddev	.00149	.00028	32.2
%RSD	.29950	.05699	.41124
#1	.49943	.49696	7862.1
#2	.49664	.49681	7807.1
#3	.49712	.49736	7805.5
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8830.4	12791.
Stddev	50.1	155.
%RSD	.56690	1.2135
#1	8774.5	12642.
#2	8845.7	12779.
#3	8871.1	12951.

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508084306 Acquired: 8/26/2015 12:58:48 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19057	4.8407	.18900	.90864	.48152	.02409	4.7480
Stddev	.00053	.0239	.00217	.00266	.00404	.00002	.0397
%RSD	.27770	.49337	1.1488	.29325	.83861	.08632	.83601
#1	.19032	4.8682	.18778	.90692	.48606	.02408	4.7865
#2	.19118	4.8289	.19150	.91171	.47832	.02411	4.7072
#3	.19021	4.8250	.18770	.90729	.48018	.02407	4.7501
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02378	.09940	.25232	.24703	1.9986	24.040	.47159
Stddev	.00012	.00070	.00030	.00084	.0137	.226	.00456
%RSD	.52549	.70764	.12041	.33862	.68473	.93823	.96632
#1	.02387	.09897	.25248	.24616	2.0141	24.278	.47674
#2	.02384	.10022	.25251	.24782	1.9884	23.829	.46808
#3	.02364	.09903	.25197	.24711	1.9932	24.012	.46995
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.0709	.26557	.49464	23.881	.25112	4.6797	.24913
Stddev	.0395	.00403	.00284	.178	.00172	.0173	.00085
%RSD	.77908	1.5186	.57427	.74506	.68377	.36975	.34169
#1	5.1138	.27022	.49137	24.069	.24928	4.6612	.24828
#2	5.0628	.26336	.49611	23.715	.25268	4.6955	.24998
#3	5.0360	.26312	.49645	23.860	.25140	4.6823	.24913
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508084306 Acquired: 8/26/2015 12:58:48 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.57786**	**.18235**	**2.4548**	**.50463**	**.48328**	**.49563**	**.24843**
Stddev	.00291	.00062	.0378	.00467	.00400	.00497	.00395
%RSD	.50426	.34052	1.5405	.92555	.82794	1.0023	1.5892
#1	.57707	.18234	2.4452	.50673	.48756	.50136	.24860
#2	.57542	.18173	2.4226	.49927	.47963	.49287	.24440
#3	.58108	.18297	2.4964	.50787	.48267	.49264	.25229
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.49296**	**.50002**	F **8844.4**
Stddev	.00219	.00590	40.5
%RSD	.44526	1.1800	.45827
#1	.49226	.50108	8837.8
#2	.49542	.50532	8887.8
#3	.49120	.49366	8807.6
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**8875.9**	**12623.**
Stddev	26.6	194.
%RSD	.29951	1.5359
#1	8889.6	12399.
#2	8845.2	12741.
#3	8892.8	12728.

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508084307 Acquired: 8/26/2015 13:01:58 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19143	4.7917	.18813	.91187	.47908	.02406	4.7370
Stddev	.00163	.0331	.00281	.00391	.00211	.00022	.0207
%RSD	.85145	.69004	1.4922	.42865	.44082	.90576	.43783
#1	.19172	4.7816	.18532	.91063	.47680	.02402	4.7184
#2	.19290	4.7648	.19093	.91625	.47945	.02430	4.7333
#3	.18968	4.8286	.18813	.90873	.48098	.02387	4.7594
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02402	.09988	.25273	.24783	1.9857	23.946	.47307
Stddev	.00004	.00024	.00180	.00082	.0177	.104	.00275
%RSD	.18685	.24306	.71104	.33081	.89081	.43620	.58028
#1	.02404	.10008	.25186	.24713	1.9655	23.830	.46990
#2	.02406	.09995	.25479	.24873	1.9933	23.976	.47479
#3	.02397	.09961	.25152	.24764	1.9984	24.032	.47452
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.0560	.26441	.49730	23.750	.25191	4.7008	.25222
Stddev	.0610	.00280	.00182	.135	.00028	.0164	.00084
%RSD	1.2062	1.0584	.36622	.56648	.10973	.34872	.33147
#1	4.9860	.26118	.49656	23.595	.25202	4.6941	.25280
#2	5.0846	.26615	.49937	23.829	.25213	4.7194	.25259
#3	5.0975	.26589	.49596	23.828	.25160	4.6887	.25126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508084307 Acquired: 8/26/2015 13:01:58 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.57752**	**.18125**	**2.4541**	**.50475**	**.48274**	**.49570**	**.24900**
Stddev	.00087	.00238	.0164	.00320	.00307	.00481	.00324
%RSD	.15096	1.3116	.66822	.63327	.63529	.97122	1.3027
#1	.57717	.17984	2.4645	.50792	.48000	.49056	.25130
#2	.57851	.17991	2.4352	.50153	.48217	.49644	.24529
#3	.57688	.18400	2.4627	.50480	.48605	.50011	.25041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.49478**	**.50200**	F **7722.1**
Stddev	.00357	.00343	66.1
%RSD	.72053	.68367	.85570
#1	.49333	.50183	7705.6
#2	.49884	.50551	7794.8
#3	.49217	.49865	7665.7
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**8852.4**	**12700.**
Stddev	34.5	115.
%RSD	.39000	.90164
#1	8850.7	12832.
#2	8818.7	12648.
#3	8887.7	12622.

Approved: August 27, 2015

Kim K Buck

Sample Name: CCV Acquired: 8/26/2015 13:05:12 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39636**	**10.214**	**.40816**	**.50519**	**1.0156**	**.05096**	**10.128**
Stddev	.00094	.023	.00341	.00394	.0025	.00050	.024
%RSD	.23601	.22670	.83449	.77895	.24680	.98072	.23971
#1	.39714	10.206	.40979	.50919	1.0156	.05111	10.100
#2	.39533	10.240	.40424	.50132	1.0131	.05040	10.142
#3	.39662	10.196	.41044	.50506	1.0181	.05136	10.141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05091**	**.20791**	**.51663**	**.51888**	**4.2244**	**51.050**	**1.0009**
Stddev	.00016	.00126	.00267	.00283	.0156	.169	.0053
%RSD	.30690	.60792	.51733	.54553	.37034	.33138	.52574
#1	.05090	.20901	.51709	.52138	4.2150	50.918	.99641
#2	.05077	.20653	.51376	.51580	4.2157	50.992	.99958
#3	.05108	.20818	.51904	.51944	4.2424	51.241	1.0067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.846**	F **.55146**	**1.0411**	**50.910**	**.52250**	**10.305**	**.52473**
Stddev	.017	.00166	.0146	.153	.00320	.058	.00607
%RSD	.15505	.30075	1.4040	.30036	.61218	.55809	1.1561
#1	10.832	.55316	1.0442	50.869	.52503	10.349	.52334
#2	10.865	.55135	1.0252	50.782	.51891	10.240	.51948
#3	10.841	.54985	1.0540	51.079	.52357	10.327	.53137
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.50000					
Range		10.000%					

Approved: August 27, 2015

Kim K Buck

Sample Name: CCV Acquired: 8/26/2015 13:05:12 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2195	.40556	5.1262	1.0536	1.0187	1.0379	.52325
Stddev	.0034	.00090	.0968	.0088	.0039	.0034	.00489
%RSD	.28023	.22111	1.8892	.83793	.38680	.33140	.93388
#1	1.2171	.40563	5.0984	1.0506	1.0162	1.0352	.51989
#2	1.2179	.40463	5.0463	1.0466	1.0166	1.0368	.52100
#3	1.2234	.40642	5.2339	1.0635	1.0232	1.0418	.52886
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0180	1.0693	F 14.314
Stddev	.0088	.0110	.858
%RSD	.86884	1.0258	5.9958
#1	1.0258	1.0784	14.368
#2	1.0084	1.0571	13.430
#3	1.0198	1.0724	15.143
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8735.2	12292.
Stddev	48.3	30.
%RSD	.55285	.24497
#1	8709.1	12276.
#2	8790.9	12273.
#3	8705.5	12327.

Approved: August 27, 2015

Sample Name: CCB Acquired: 8/26/2015 13:08:21 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00004**	**.00230**	**-.00226**	**.00521**	**.00044**	**.00004**	**-.00981**
Stddev	.00067	.02391	.00199	.00165	.00005	.00001	.00737
%RSD	1907.8	1037.5	87.982	31.780	11.536	33.040	75.147
#1	.00044	.00869	-.00061	.00626	.00040	.00003	-.01468
#2	-.00074	-.02415	-.00170	.00606	.00049	.00005	-.01342
#3	.00041	.02237	-.00447	.00330	.00042	.00003	-.00133
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**.00008**	**.00085**	**.00022**	**-.00062**	**.03686**	**-.00023**
Stddev	.00003	.00025	.00055	.00026	.00587	.02298	.00065
%RSD	32.621	304.50	64.536	117.65	950.71	62.329	287.31
#1	.00011	.00030	.00147	.00028	.00616	.01590	.00015
#2	.00006	-.00019	.00060	-.00007	-.00374	.06143	.00015
#3	.00008	.00013	.00046	.00043	-.00427	.03327	-.00098
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00160**	**.00002**	**.00060**	**-.00466**	**-.00085**	**-.00151**	**-.00138**
Stddev	.01463	.00005	.00006	.00788	.00079	.00135	.00203
%RSD	916.21	270.07	10.542	169.23	93.165	89.649	147.51
#1	.00661	.00003	.00053	-.01329	-.00146	-.00230	.00027
#2	.00709	.00007	.00064	-.00283	.00004	.00005	-.00075
#3	-.01849	-.00004	.00062	.00215	-.00113	-.00228	-.00365
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: CCB Acquired: 8/26/2015 13:08:21 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	-.00018	-.00162	.00015	.00011	-.00088	.00107
Stddev	.00052	.00382	.00059	.00020	.00010	.00090	.00077
%RSD	93.031	2174.3	36.203	135.94	95.724	103.06	71.694
#1	.00003	.00123	-.00210	.00035	.00010	-.00011	.00196
#2	-.00096	-.00450	-.00179	.00016	.00001	-.00188	.00058
#3	-.00075	.00275	-.00097	-.00006	.00022	-.00065	.00068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00002	-.00034	F 2.6282
Stddev	.00003	.00015	1.3315
%RSD	127.61	44.286	50.662
#1	-.00002	-.00017	2.0723
#2	.00001	-.00042	4.1476
#3	-.00006	-.00043	1.6648
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8767.8	12628.
Stddev	21.6	131.
%RSD	.24596	1.0339
#1	8756.4	12490.
#2	8754.3	12749.
#3	8792.7	12644.

Approved: August 27, 2015

Kim K Buck

Sample Name: PBW 8B Acquired: 8/26/2015 13:11:55 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG535469-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00006	.00057	-.00302	.00250	.00074	.00002	.03743
Stddev	.00058	.02560	.00232	.00047	.00024	.00003	.00836
%RSD	1006.2	4497.7	76.814	18.610	32.635	159.98	22.327
#1	-.00015	.00324	-.00539	.00287	.00072	.00000	.03769
#2	.00056	-.02626	-.00291	.00265	.00051	.00004	.04566
#3	-.00059	.02472	-.00075	.00198	.00099	.00000	.02895
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	-.00034	.00042	.00022	.01093	.04504	-.00085
Stddev	.00007	.00015	.00046	.00041	.00308	.03871	.00097
%RSD	30.450	44.766	109.44	186.60	28.202	85.950	114.14
#1	.00030	-.00023	.00081	.00064	.00737	.01213	.00025
#2	.00027	-.00051	-.00008	-.00016	.01279	.03530	-.00120
#3	.00016	-.00028	.00052	.00017	.01264	.08770	-.00158
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04852	.00011	.00019	.02896	.00013	F -.00825	-.00167
Stddev	.00836	.00005	.00007	.00530	.00053	.00212	.00051
%RSD	17.224	41.522	35.172	18.308	411.73	25.644	30.645
#1	.04260	.00010	.00023	.02659	-.00048	-.00689	-.00191
#2	.04489	.00017	.00023	.03504	.00043	-.01069	-.00202
#3	.05808	.00007	.00011	.02526	.00043	-.00718	-.00108
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: August 27, 2015

Kim K Buck

Sample Name: PBW 8B Acquired: 8/26/2015 13:11:55 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG535469-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	.00008	.00519	.00029	.00084	.00019	-.00037
Stddev	.00185	.00230	.00043	.00018	.00006	.00028	.00194
%RSD	395.72	2873.0	8.3090	60.282	7.4928	144.34	517.88
#1	.00011	-.00253	.00568	.00013	.00091	-.00009	-.00051
#2	-.00118	.00180	.00484	.00048	.00079	.00021	-.00224
#3	.00247	.00097	.00506	.00027	.00082	.00047	.00162
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00005	.00106	.24905
Stddev	.00013	.00012	2.4314
%RSD	263.92	11.297	976.28
#1	-.00019	.00119	2.4155
#2	-.00004	.00095	.71220
#3	.00008	.00104	-2.3806
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8915.6	12684.
Stddev	50.6	234.
%RSD	.56810	1.8478
#1	8857.3	12494.
#2	8940.7	12946.
#3	8948.8	12612.

Approved: August 27, 2015

Kim K Buck

Sample Name: LCSW 8B Acquired: 8/26/2015 13:15:26 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG535469-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20214	5.0343	.19481	.95629	.50150	.02510	4.9805	.02513
Stddev	.00094	.0607	.00118	.00262	.00451	.00014	.0345	.00014
%RSD	.46576	1.2057	.60364	.27389	.89971	.55810	.69339	.55696
#1	.20311	5.0856	.19609	.95931	.50236	.02517	5.0106	.02506
#2	.20123	4.9673	.19458	.95467	.49661	.02494	4.9428	.02529
#3	.20208	5.0499	.19377	.95489	.50551	.02519	4.9879	.02504
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10364	.26251	.25947	2.0578	24.994	.49302	5.2024	.27306
Stddev	.00037	.00142	.00128	.0069	.189	.00447	.1187	.00694
%RSD	.36071	.54218	.49250	.33730	.75582	.90713	2.2813	2.5417
#1	.10381	.26368	.26079	2.0606	25.156	.49512	5.3282	.28042
#2	.10321	.26093	.25824	2.0499	24.787	.48788	5.1865	.27211
#3	.10389	.26292	.25938	2.0630	25.039	.49605	5.0924	.26664
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51837	24.836	.26296	4.8925	.26360	.61145	.19097	2.6074
Stddev	.00088	.183	.00127	.0170	.00052	.00515	.00685	.0408
%RSD	.16955	.73553	.48210	.34840	.19680	.84209	3.5887	1.5628
#1	.51934	24.895	.26399	4.9117	.26410	.61738	.19880	2.6544
#2	.51761	24.631	.26336	4.8792	.26364	.60879	.18602	2.5821
#3	.51817	24.982	.26155	4.8866	.26306	.60817	.18810	2.5857
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 27, 2015

Kim K Buck

Sample Name: LCSW 8B Acquired: 8/26/2015 13:15:26 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG535469-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52580	.50672	.51340	.26156	.51965	.51400	5.0439
Stddev	.00810	.00388	.00659	.00491	.00202	.00112	.2991
%RSD	1.5398	.76520	1.2842	1.8770	.38946	.21816	5.9292
#1	.53510	.50904	.51962	.26716	.52197	.51429	5.2904
#2	.52032	.50225	.50649	.25800	.51830	.51276	5.1301
#3	.52199	.50888	.51409	.25951	.51867	.51495	4.7112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8905.1	12912.
Stddev	27.9	320.
%RSD	.31286	2.4756
#1	8873.0	12586.
#2	8923.4	12926.
#3	8918.9	13225.

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508062101 Acquired: 8/26/2015 13:21:03 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG535469-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	.01191	-.00193	.04043	.01045	.00006	.72862	.00020
Stddev	.00032	.01925	.00132	.00045	.00008	.00002	.00816	.00008
%RSD	146.21	161.72	68.496	1.1085	.73341	37.684	1.1194	39.645
#1	-.00059	.01261	-.00259	.03991	.01051	.00009	.72054	.00028
#2	-.00001	.03080	-.00041	.04067	.01049	.00004	.72845	.00014
#3	-.00006	-.00769	-.00278	.04070	.01037	.00006	.73685	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.00060	.00060	.82935	1.5529	.00051	.43006	.01432
Stddev	.00003	.00029	.00027	.00254	.0410	.00102	.00362	.00032
%RSD	9.9917	47.657	44.545	.30653	2.6408	201.03	.84280	2.2431
#1	.00031	.00092	.00091	.82642	1.5802	.00169	.42601	.01409
#2	.00035	.00051	.00044	.83067	1.5726	-.00006	.43120	.01469
#3	.00029	.00037	.00046	.83097	1.5057	-.00010	.43298	.01418
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	44.740	.00151	.00730	-.00117	-.00019	.00019	4.2786
Stddev	.00015	.358	.00071	.00384	.00093	.00091	.00049	.0964
%RSD	35.875	.79922	47.008	52.648	79.984	484.73	254.29	2.2520
#1	.00031	44.342	.00176	.01071	-.00114	-.00116	-.00034	4.2723
#2	.00038	44.842	.00205	.00313	-.00025	.00065	.00031	4.1856
#3	.00060	45.035	.00071	.00806	-.00212	-.00005	.00061	4.3780
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508062101 Acquired: 8/26/2015 13:21:03 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG535469-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	.00568	.00096	-.00042	.00022	.00325	.69779
Stddev	.00006	.00007	.00059	.00146	.00007	.00018	1.3263
%RSD	825.25	1.2400	60.842	348.50	32.881	5.4372	190.08
#1	-.00002	.00566	.00139	-.00117	.00018	.00305	-.47972
#2	.00006	.00562	.00120	-.00136	.00017	.00338	.43843
#3	-.00006	.00576	.00030	.00127	.00030	.00331	2.1347
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8865.3	13209.
Stddev	52.5	61.
%RSD	.59234	.46192
#1	8868.9	13276.
#2	8915.9	13156.
#3	8811.0	13196.

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508062101MS Acquired: 8/26/2015 13:24:32 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG535469-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19791	5.0166	.19534	.98152	.49892	.02486	5.6086	.02464
Stddev	.00102	.0250	.00231	.00584	.00222	.00020	.0206	.00035
%RSD	.51499	.49799	1.1819	.59483	.44540	.79408	.36745	1.4379
#1	.19683	5.0007	.19359	.97479	.49655	.02463	5.5894	.02446
#2	.19886	5.0038	.19446	.98527	.50096	.02499	5.6062	.02442
#3	.19805	5.0454	.19796	.98450	.49925	.02496	5.6304	.02505
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10290	.25828	.25500	2.8339	26.251	.48310	5.6113	.28356
Stddev	.00160	.00318	.00305	.0181	.040	.00324	.0192	.00216
%RSD	1.5537	1.2295	1.1956	.63950	.15364	.67006	.34260	.76226
#1	.10167	.25468	.25268	2.8131	26.207	.48051	5.6001	.28478
#2	.10232	.25949	.25387	2.8467	26.286	.48673	5.6003	.28483
#3	.10471	.26068	.25846	2.8418	26.260	.48207	5.6335	.28106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51070	68.182	.25898	4.8730	.25719	.59192	.18623	6.5916
Stddev	.00777	.218	.00394	.0769	.00440	.00883	.00122	.0989
%RSD	1.5214	.31907	1.5216	1.5785	1.7122	1.4915	.65638	1.5001
#1	.50577	67.933	.25662	4.8238	.25391	.58510	.18493	6.4942
#2	.50666	68.333	.25678	4.8335	.25548	.58875	.18735	6.5885
#3	.51965	68.281	.26353	4.9616	.26220	.60189	.18641	6.6919
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508062101MS Acquired: 8/26/2015 13:24:32 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG535469-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51662	.49999	.50659	.25132	.51072	.52713	4.8551
Stddev	.00975	.00111	.00443	.00683	.00369	.00764	1.2362
%RSD	1.8878	.22252	.87474	2.7163	.72201	1.4495	25.462
#1	.51323	.49874	.50150	.24789	.50647	.52017	3.9682
#2	.50901	.50038	.50961	.24688	.51283	.52592	4.3300
#3	.52761	.50086	.50865	.25918	.51287	.53530	6.2672
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8778.3	12609.
Stddev	76.9	72.
%RSD	.87634	.57284
#1	8849.6	12540.
#2	8788.5	12603.
#3	8696.7	12685.

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508062101MSD Acquired: 8/26/2015 13:27:42 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG535469-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19947	5.0191	.19869	.99575	.50621	.02511	5.7065	.02488
Stddev	.00170	.0243	.00156	.00584	.00205	.00008	.0221	.00027
%RSD	.85143	.48447	.78532	.58616	.40552	.30695	.38690	1.0662
#1	.19812	4.9939	.19736	.98920	.50665	.02502	5.6866	.02458
#2	.20138	5.0209	.20041	1.0004	.50801	.02514	5.7302	.02509
#3	.19891	5.0424	.19830	.99765	.50398	.02517	5.7027	.02498
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10366	.26091	.25603	2.8855	26.571	.49523	5.7211	.28552
Stddev	.00067	.00097	.00149	.0167	.092	.00191	.0304	.00272
%RSD	.65058	.37143	.58240	.57836	.34724	.38639	.53129	.95220
#1	.10289	.25983	.25432	2.8712	26.502	.49619	5.6861	.28238
#2	.10412	.26172	.25708	2.9038	26.676	.49647	5.7402	.28721
#3	.10397	.26117	.25668	2.8815	26.534	.49302	5.7372	.28696
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51513	68.969	.26107	4.9064	.25811	.60128	.19091	6.6276
Stddev	.00396	.288	.00158	.0397	.00180	.00929	.00747	.0379
%RSD	.76879	.41767	.60681	.80855	.69921	1.5448	3.9123	.57157
#1	.51056	68.956	.25925	4.8609	.25603	.59056	.18376	6.5849
#2	.51762	69.263	.26215	4.9248	.25932	.60699	.19866	6.6408
#3	.51720	68.687	.26180	4.9336	.25897	.60630	.19032	6.6571
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508062101MSD Acquired: 8/26/2015 13:27:42 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG535469-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52228	.50652	.51249	.25399	.51656	.52637	2.6596
Stddev	.01095	.00111	.00419	.00643	.00397	.00193	1.0126
%RSD	2.0967	.21885	.81664	2.5315	.76866	.36688	38.072
#1	.50971	.50650	.51400	.24681	.51197	.52527	1.7352
#2	.52975	.50764	.51572	.25595	.51889	.52860	3.7418
#3	.52738	.50542	.50776	.25922	.51881	.52525	2.5017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8793.7	12701.
Stddev	27.7	112.
%RSD	.31528	.88102
#1	8825.4	12830.
#2	8773.8	12624.
#3	8782.0	12651.

Approved: August 27, 2015

Sample Name: L1508084102 Acquired: 8/26/2015 13:30:53 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00129	.01480	-.00007	.06217	.17379	.00010	536.52
Stddev	.00034	.00871	.00401	.00079	.00180	.00001	19.81
%RSD	26.489	58.828	5548.9	1.2726	1.0334	13.395	3.6933
#1	-.00093	.02259	-.00135	.06127	.17171	.00009	535.94
#2	-.00161	.00540	.00442	.06277	.17484	.00011	517.00
#3	-.00132	.01641	-.00329	.06245	.17481	.00009	556.62
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	.00097	.00142	-.00108	12.517	13.148	.29439
Stddev	.00006	.00011	.00012	.00054	.105	.061	.00313
%RSD	7.4234	11.880	8.3591	49.987	.84116	.46077	1.0623
#1	.00071	.00099	.00154	-.00047	12.433	13.079	.29084
#2	.00082	.00084	.00141	-.00125	12.484	13.176	.29671
#3	.00075	.00107	.00130	-.00151	12.635	13.190	.29562
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	122.12	1.0695	-.00028	F 2032.8	-.00056	.01668	-.00272
Stddev	1.59	.0181	.00027	63.1	.00060	.00665	.00385
%RSD	1.3013	1.6961	94.939	3.1060	107.33	39.872	141.56
#1	122.33	1.0801	-.00020	2071.2	-.00046	.02387	-.00042
#2	120.44	1.0486	-.00058	1959.9	-.00120	.01540	-.00716
#3	123.60	1.0798	-.00006	2067.3	-.00002	.01076	-.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				360.00			
Low Limit				-.40000			

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508084102 Acquired: 8/26/2015 13:30:53 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00236	-.00467	.48296	-.00070	F 13.277	-.02373	.00069
Stddev	.00131	.00151	.00216	.00012	.274	.00026	.00236
%RSD	55.554	32.360	.44640	16.770	2.0632	1.1160	341.27
#1	-.00216	-.00389	.48110	-.00060	13.072	-.02395	.00092
#2	-.00376	-.00370	.48532	-.00083	13.170	-.02344	.00292
#3	-.00116	-.00641	.48247	-.00068	13.588	-.02381	-.00177
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					4.5000		
Low Limit					-.00800		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00049	.00309	F -13.661
Stddev	.00019	.00033	1.079
%RSD	38.713	10.619	7.9007
#1	-.00057	.00286	-13.515
#2	-.00063	.00295	-14.806
#3	-.00027	.00347	-12.662
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	7460.6	11946.
Stddev	41.0	232.
%RSD	.54942	1.9454
#1	7496.6	11844.
#2	7416.0	12212.
#3	7469.3	11781.

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508084201 Acquired: 8/26/2015 13:34:47 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00124	-.00266	.00153	1.6640	11.234	.00005	642.96
Stddev	.00084	.05381	.00290	.0179	.166	.00005	5.53
%RSD	68.094	2025.3	188.86	1.0752	1.4782	99.192	.86053
#1	-.00041	.05442	.00153	1.6590	11.298	-.00001	648.48
#2	-.00121	-.05245	-.00136	1.6492	11.358	.00008	642.99
#3	-.00210	-.00994	.00443	1.6839	11.045	.00008	637.42
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	.00111	.00279	-.00085	4.6262	34.743	2.5728
Stddev	.00003	.00013	.00066	.00057	.0176	.284	.0327
%RSD	4.8207	11.612	23.688	66.738	.37983	.81870	1.2724
#1	.00074	.00098	.00261	-.00140	4.6431	34.965	2.6043
#2	.00068	.00124	.00353	-.00088	4.6273	34.843	2.5751
#3	.00070	.00110	.00225	-.00027	4.6080	34.423	2.5390
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	72.401	.43870	.00035	F 1547.0	-.00197	.05850	F -.00418
Stddev	.319	.00296	.00015	28.7	.00073	.00576	.00037
%RSD	.44028	.67439	43.261	1.8578	36.877	9.8512	8.8601
#1	72.234	.43536	.00018	1579.2	-.00171	.06473	-.00379
#2	72.769	.44101	.00047	1524.0	-.00279	.05741	-.00420
#3	72.201	.43972	.00041	1537.7	-.00141	.05336	-.00453
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail
High Limit				360.00			225.00
Low Limit				-.40000			-.00400

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508084201 Acquired: 8/26/2015 13:34:47 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00198**	**-.00310**	**.76163**	**-.00102**	F **88.306**	F **-.02926**	**.00134**
Stddev	.00105	.00213	.00890	.00033	1.036	.00067	.00327
%RSD	53.195	68.898	1.1687	32.031	1.1733	2.2807	243.42
#1	-.00076	-.00476	.75778	-.00136	89.465	-.02990	-.00117
#2	-.00262	-.00384	.75530	-.00099	87.983	-.02933	.00017
#3	-.00255	-.00069	.77181	-.00071	87.470	-.02857	.00503
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Pass
High Limit					4.5000	90.000	
Low Limit					-.00800	-.02400	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00031**	**.00539**	F **-16.877**
Stddev	.00012	.00026	1.818
%RSD	39.619	4.7656	10.770
#1	-.00017	.00568	-16.502
#2	-.00040	.00527	-15.276
#3	-.00036	.00521	-18.853
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**7429.6**	**11853.**
Stddev	68.6	97.
%RSD	.92388	.82195
#1	7466.1	11964.
#2	7472.2	11779.
#3	7350.4	11817.

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508084201 Acquired: 8/26/2015 13:38:48 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: 200 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00045	.02094	.00230	.20405	1.3039	.00005	73.222
Stddev	.00021	.02219	.00225	.00210	.0103	.00001	.398
%RSD	47.022	106.00	98.015	1.0277	.78775	16.984	.54295
#1	-.00061	.03055	.00351	.20645	1.2921	.00005	72.834
#2	-.00054	.03670	-.00030	.20255	1.3096	.00005	73.203
#3	-.00021	-.00444	.00369	.20317	1.3101	.00006	73.629
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00005	.00090	.00032	.53379	3.8513	.28250
Stddev	.00003	.00011	.00031	.00025	.00550	.0630	.00327
%RSD	38.279	213.43	34.203	79.468	1.0306	1.6351	1.1571
#1	.00007	.00012	.00082	.00039	.52814	3.8191	.27876
#2	.00006	.00012	.00063	.00052	.53913	3.8109	.28480
#3	.00013	-.00008	.00123	.00004	.53410	3.9238	.28394
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.4807	.05675	-.00004	185.08	-.00079	.01111	-.00092
Stddev	.0933	.00169	.00010	1.43	.00051	.00366	.00105
%RSD	1.1006	2.9839	240.24	.77258	64.347	32.970	114.58
#1	8.5873	.05858	-.00002	185.10	-.00138	.01407	-.00017
#2	8.4139	.05524	-.00015	186.50	-.00049	.00701	-.00211
#3	8.4408	.05642	.00005	183.64	-.00050	.01225	-.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508084201 Acquired: 8/26/2015 13:38:48 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: 200 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00137	-.00298	.07931	-.00061	F 11.966	-.00435	.00171
Stddev	.00176	.00260	.00094	.00046	.115	.00125	.00049
%RSD	128.48	87.525	1.1912	75.170	.96248	28.698	28.778
#1	-.00304	.00000	.07909	-.00008	11.841	-.00560	.00217
#2	.00047	-.00482	.07850	-.00093	12.067	-.00310	.00119
#3	-.00154	-.00411	.08035	-.00083	11.990	-.00434	.00179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					4.5000		
Low Limit					-.00800		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00024	.00178	F -2.2585
Stddev	.00002	.00012	1.3153
%RSD	8.8998	6.4912	58.238
#1	-.00027	.00186	-3.6127
#2	-.00023	.00165	-.98585
#3	-.00024	.00184	-2.1770
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8360.7	12714.
Stddev	45.9	280.
%RSD	.54852	2.2056
#1	8355.1	12391.
#2	8409.2	12896.
#3	8318.0	12855.

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508084102PS Acquired: 8/26/2015 13:42:31 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG535615-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.23056	5.2734	.22256	1.1071	.67791	.02522	550.40
Stddev	.00086	.0960	.00227	.0078	.00590	.00009	6.24
%RSD	.37139	1.8215	1.0191	.70125	.87019	.36809	1.1338
#1	.23105	5.1683	.22505	1.1073	.67110	.02520	544.84
#2	.22957	5.2951	.22062	1.0992	.68129	.02514	549.21
#3	.23106	5.3567	.22202	1.1147	.68135	.02532	557.15
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02826	.09751	.25295	.24488	14.362	41.052	.82051
Stddev	.00035	.00047	.00205	.00160	.095	.320	.01360
%RSD	1.2553	.48637	.81118	.65347	.66409	.77892	1.6578
#1	.02824	.09726	.25385	.24490	14.373	40.694	.81973
#2	.02792	.09721	.25060	.24326	14.452	41.310	.83449
#3	.02863	.09806	.25439	.24646	14.262	41.151	.80732
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	125.50	1.3074	.50850	^ *****	.24117	5.7977	.24237
Stddev	1.06	.0167	.00478	-----	.00139	.0822	.00319
%RSD	.84780	1.2805	.94054	-----	.57564	1.4183	1.3154
#1	125.99	1.3070	.50548	2025.7	.24073	5.7372	.23905
#2	126.23	1.2909	.50601	2061.8	.24005	5.7646	.24541
#3	124.28	1.3244	.51402	^ -----	.24272	5.8913	.24264
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508084102PS Acquired: 8/26/2015 13:42:31 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG535615-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.66471	.21654	3.4166	.50209	F 12.722	.49306	.21954
Stddev	.00880	.00255	.0765	.01198	1.570	.00273	.00746
%RSD	1.3238	1.1768	2.2379	2.3857	12.340	.55375	3.3970
#1	.65564	.21461	3.3320	.48830	13.387	.49032	.21093
#2	.66530	.21943	3.4370	.50809	13.851	.49578	.22376
#3	.67321	.21558	3.4808	.50988	10.930	.49308	.22392
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					4.5000		
Low Limit					-.00800		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.51502	.52304	F -12.670
Stddev	.00403	.01883	1.035
%RSD	.78262	3.5999	8.1705
#1	.51338	.50130	-12.416
#2	.51207	.53408	-11.785
#3	.51961	.53374	-13.808
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	7368.5	11736.
Stddev	45.5	141.
%RSD	.61706	1.2037
#1	7367.6	11721.
#2	7414.4	11884.
#3	7323.5	11603.

Approved: August 27, 2015

Sample Name: L1508084102SDL Acquired: 8/26/2015 13:46:03 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: 50 Custom ID2: Custom ID3:
Comment: WG535615-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00024	.01976	.00156	.01610	.03599	.00001	108.49
Stddev	.00032	.00418	.00130	.00052	.00032	.00001	.39
%RSD	132.64	21.154	83.746	3.2358	.89700	87.721	.36238
#1	-.00045	.01527	.00205	.01562	.03598	.00002	108.81
#2	.00013	.02046	.00008	.01665	.03631	.00002	108.61
#3	-.00040	.02355	.00254	.01604	.03567	.00000	108.05
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	.00017	.00075	-.00072	2.5787	2.5874	.05666
Stddev	.00011	.00003	.00033	.00041	.0202	.0117	.00066
%RSD	42.192	19.628	44.311	57.237	.78411	.45254	1.1578
#1	.00034	.00013	.00041	-.00034	2.5950	2.5805	.05592
#2	.00014	.00018	.00077	-.00116	2.5849	2.5807	.05687
#3	.00031	.00019	.00108	-.00067	2.5560	2.6009	.05718
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	24.497	.23011	.00037	F 429.50	-.00088	.01193	-.00158
Stddev	.289	.00160	.00016	15.58	.00039	.00506	.00084
%RSD	1.1798	.69610	42.766	3.6283	43.743	42.392	53.133
#1	24.745	.23139	.00019	413.10	-.00098	.00729	-.00172
#2	24.566	.23064	.00048	444.11	-.00121	.01732	-.00234
#3	24.180	.22831	.00044	431.28	-.00046	.01117	-.00068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				360.00			
Low Limit				-.40000			

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508084102SDL Acquired: 8/26/2015 13:46:03 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: 50 Custom ID2: Custom ID3:
Comment: WG535615-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00290**	**-.00309**	**.09250**	**-.00119**	**2.7323**	**-.00745**	**.00204**
Stddev	.00144	.00072	.00319	.00025	.0097	.00071	.00075
%RSD	49.636	23.163	3.4537	21.144	.35522	9.5675	36.938
#1	-.00162	-.00388	.09484	-.00092	2.7369	-.00746	.00211
#2	-.00261	-.00291	.08886	-.00142	2.7387	-.00816	.00275
#3	-.00446	-.00249	.09381	-.00123	2.7211	-.00673	.00125
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00011**	**.00087**	F **-2.8003**
Stddev	.00023	.00014	1.6240
%RSD	198.96	16.244	57.996
#1	-.00012	.00104	-3.4178
#2	.00012	.00080	-.95803
#3	-.00034	.00078	-4.0249
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**8182.3**	**12509.**
Stddev	29.8	124.
%RSD	.36363	.99022
#1	8189.1	12402.
#2	8149.7	12480.
#3	8208.1	12644.

Approved: August 27, 2015

Kim K Buck

Sample Name: CCV Acquired: 8/26/2015 13:49:43 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40729	10.114	.41572	.51564	1.0180	.05164	10.079
Stddev	.00099	.037	.00147	.00344	.0024	.00014	.035
%RSD	.24360	.36847	.35297	.66790	.23411	.27786	.35204
#1	.40843	10.076	.41404	.51929	1.0163	.05181	10.062
#2	.40670	10.150	.41638	.51518	1.0170	.05157	10.055
#3	.40673	10.116	.41675	.51245	1.0207	.05155	10.119
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05160	.20908	.52301	.52580	4.1360	50.599	1.0036
Stddev	.00022	.00088	.00102	.00263	.0151	.190	.0036
%RSD	.42631	.42098	.19467	.49983	.36536	.37571	.35459
#1	.05138	.20830	.52413	.52281	4.1210	50.471	1.0023
#2	.05182	.21003	.52277	.52775	4.1512	50.509	1.0008
#3	.05159	.20891	.52214	.52684	4.1358	50.818	1.0076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.329	.52262	1.0581	50.448	.52761	10.395	.53030
Stddev	.053	.00236	.0056	.092	.00229	.048	.00375
%RSD	.50850	.45186	.53416	.18261	.43376	.46231	.70659
#1	10.276	.52009	1.0518	50.376	.52505	10.349	.52829
#2	10.331	.52301	1.0629	50.417	.52945	10.444	.53462
#3	10.381	.52477	1.0596	50.552	.52833	10.391	.52798
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: August 27, 2015

Kim K Buck

Sample Name: CCV Acquired: 8/26/2015 13:49:43 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2466	.40514	5.2259	1.0547	1.0184	1.0281	.52611
Stddev	.0041	.00590	.0273	.0113	.0039	.0035	.00858
%RSD	.33209	1.4567	.52311	1.0716	.38383	.33826	1.6316
#1	1.2451	.39871	5.2218	1.0452	1.0156	1.0263	.52152
#2	1.2513	.41031	5.2008	1.0672	1.0168	1.0258	.53601
#3	1.2434	.40639	5.2550	1.0519	1.0229	1.0321	.52079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0340	1.0635	F .85701
Stddev	.0017	.0032	1.6609
%RSD	.16112	.30068	193.80
#1	1.0352	1.0628	.61782
#2	1.0321	1.0670	-.67135
#3	1.0348	1.0608	2.6245
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8618.2	12936.
Stddev	20.9	38.
%RSD	.24257	.29158
#1	8597.3	12980.
#2	8618.2	12917.
#3	8639.1	12912.

Approved: August 27, 2015

Kim K Buck

Sample Name: CCB Acquired: 8/26/2015 13:52:51 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	.00718	-.00029	.00436	.00038	.00006	-.01222
Stddev	.00084	.00422	.00229	.00084	.00040	.00001	.00742
%RSD	306.13	58.772	782.01	19.285	106.95	23.969	60.709
#1	-.00108	.01010	.00153	.00381	.00079	.00004	-.02062
#2	-.00032	.00911	-.00287	.00395	-.00001	.00005	-.00657
#3	.00059	.00234	.00045	.00533	.00035	.00007	-.00946
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	-.00011	.00057	.00001	-.00020	.01867	.00174
Stddev	.00002	.00010	.00028	.00113	.00572	.02500	.00082
%RSD	75.777	93.457	49.542	10316.	2850.9	133.94	46.930
#1	.00005	-.00009	.00082	.00025	-.00670	.02963	.00199
#2	.00000	-.00002	.00027	-.00122	.00407	-.00994	.00083
#3	.00004	-.00021	.00060	.00101	.00203	.03631	.00240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00000	.00007	.00059	.07974	.00024	.00395	-.00089
Stddev	.0037	.00005	.00015	.01210	.00013	.00120	.00246
%RSD	512290.	70.991	25.070	15.171	52.440	30.336	274.77
#1	.00289	.00012	.00070	.08635	.00025	.00532	-.00371
#2	-.00420	.00006	.00042	.08709	.00036	.00333	.00020
#3	.00131	.00002	.00065	.06578	.00011	.00318	.00083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: CCB Acquired: 8/26/2015 13:52:51 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	-.00237	-.00006	-.00002	.00022	-.00083	.00041
Stddev	.00145	.00238	.00033	.00027	.00008	.00060	.00142
%RSD	1266.5	100.46	523.12	1089.9	36.010	72.025	348.35
#1	.00024	-.00478	.00031	.00018	.00022	-.00152	.00050
#2	.00113	-.00002	-.00021	.00007	.00014	-.00040	.00178
#3	-.00171	-.00230	-.00029	-.00033	.00030	-.00058	-.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00028	-.00032	F -.53806
Stddev	.00035	.00008	.87711
%RSD	124.62	23.210	163.01
#1	.00002	-.00039	-.42961
#2	.00015	-.00035	-1.4644
#3	.00068	-.00024	.27978
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8825.3	12589.
Stddev	41.2	270.
%RSD	.46694	2.1458
#1	8869.3	12278.
#2	8819.1	12765.
#3	8787.6	12724.

Approved: August 27, 2015

Sample Name: LLCCV Acquired: 8/26/2015 13:56:26 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .00898	F .17871	F .01483	F .08251	F .00895	F .00895	F .16069
Stddev	.00027	.00442	.00019	.00059	.00036	.00005	.00401
%RSD	3.0146	2.4754	1.2925	.70996	4.0468	.57102	2.4924
#1	.00905	.17836	.01461	.08293	.00875	.00896	.16367
#2	.00868	.18329	.01496	.08184	.00872	.00890	.16226
#3	.00920	.17446	.01492	.08276	.00937	.00900	.15614
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.40000	10.000	.40000	.50000	1.0000	.05000	10.000
Range	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .00914	F .00929	F .01773	F .01787	F .06392	F .81427	F .08149
Stddev	.00012	.00013	.00063	.00035	.00173	.04815	.00226
%RSD	1.3529	1.4245	3.5547	1.9655	2.6990	5.9133	2.7742
#1	.00929	.00944	.01722	.01747	.06253	.76843	.07922
#2	.00909	.00923	.01754	.01812	.06338	.80995	.08150
#3	.00906	.00919	.01844	.01803	.06585	.86444	.08374
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.05000	.20000	.50000	.50000	4.0000	50.000	1.0000
Range	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .40951	F .01015	F .05250	F .45633	F .03547	F -.00451	F .01587
Stddev	.01123	.00026	.00087	.01473	.00124	.00390	.00066
%RSD	2.7433	2.5628	1.6503	3.2280	3.4876	86.432	4.1912
#1	.40943	.00990	.05151	.46852	.03615	-.00372	.01515
#2	.39831	.01014	.05312	.43996	.03404	-.00107	.01647
#3	.42078	.01042	.05288	.46051	.03622	-.00875	.01597
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	10.000	.50000	1.0000	50.000	.50000	10.000	.50000
Range	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%

Approved: August 27, 2015

Kim K Buck

Sample Name: LLCCV Acquired: 8/26/2015 13:56:26 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .01507	F .01755	F .00113	F .08722	F .00924	F .02629	F .08904
Stddev	.00173	.00028	.00212	.00128	.00006	.00074	.00247
%RSD	11.450	1.5964	187.72	1.4717	.65890	2.8322	2.7730
#1	.01497	.01781	.00337	.08598	.00931	.02589	.08715
#2	.01685	.01760	-.00085	.08713	.00920	.02584	.08813
#3	.01340	.01725	.00087	.08854	.00921	.02715	.09183
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	1.2000	.40000	5.0000	1.0000	1.0000	1.0000	.50000
Range	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	F .00874	F .02055	F .22972
Stddev	.00021	.00036	1.1125
%RSD	2.4383	1.7359	484.29
#1	.00850	.02018	-.44385
#2	.00885	.02058	1.5138
#3	.00888	.02089	-.38079
Check ?	Chk Fail	Chk Fail	Chk Fail
Value	1.0000	1.0000	1.0000
Range	-10.000%	-10.000%	-10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8830.0	12984.
Stddev	42.0	109.
%RSD	.47584	.83745
#1	8783.3	13038.
#2	8864.8	13056.
#3	8841.8	12859.

Approved: August 27, 2015

Sample Name: PBW 97 Acquired: 8/26/2015 13:59:56 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG536352-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.01428	-.00233	.00251	.00047	.00005	-.01091
Stddev	.00070	.02038	.00093	.00074	.00017	.00000	.00331
%RSD	3092.2	142.73	40.091	29.446	35.253	9.0861	30.340
#1	.00046	.03552	-.00281	.00287	.00066	.00006	-.01336
#2	.00040	.01242	-.00292	.00300	.00035	.00005	-.00714
#3	-.00079	-.00511	-.00125	.00166	.00041	.00006	-.01223
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	-.00031	.00074	-.00001	.00612	.00871	.00354
Stddev	.00007	.00015	.00028	.00070	.00572	.03108	.00094
%RSD	57.550	49.667	38.167	7748.3	93.480	356.81	26.440
#1	.00005	-.00022	.00060	-.00082	.00818	-.02696	.00318
#2	.00019	-.00048	.00107	.00035	.01053	.02317	.00461
#3	.00014	-.00022	.00056	.00044	-.00034	.02992	.00284
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.01919	.00011	.00008	.06215	-.00004	F -.00957	-.00045
Stddev	.00883	.00004	.00003	.00996	.00042	.00593	.00113
%RSD	46.003	38.709	38.382	16.032	1118.3	61.935	248.40
#1	-.01483	.00006	.00009	.05073	-.00047	-.01240	-.00065
#2	-.02934	.00014	.00004	.06910	.00038	-.00276	.00076
#3	-.01339	.00012	.00010	.06661	-.00002	-.01355	-.00147
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: August 27, 2015

Kim K Buck

Sample Name: PBW 97 Acquired: 8/26/2015 13:59:56 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG536352-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00230	-.00059	-.00129	.00012	.00028	.00116	-.00086
Stddev	.00101	.00230	.00105	.00050	.00007	.00088	.00075
%RSD	44.161	392.32	81.502	403.38	26.484	75.741	87.329
#1	-.00323	.00187	-.00108	-.00010	.00035	.00015	-.00171
#2	-.00244	-.00268	-.00244	-.00022	.00028	.00162	-.00059
#3	-.00122	-.00096	-.00036	.00070	.00020	.00171	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00004	.00250	.42048
Stddev	.00042	.00012	.96762
%RSD	1173.6	4.9002	230.12
#1	-.00042	.00248	-.68866
#2	.00042	.00239	.85827
#3	-.00011	.00263	1.0918
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8951.2	12989.
Stddev	4.5	278.
%RSD	.05077	2.1391
#1	8950.4	12671.
#2	8947.2	13105.
#3	8956.2	13190.

Approved: August 27, 2015

Sample Name: LCSW 97 Acquired: 8/26/2015 14:03:27 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG536352-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19524	4.9552	.19387	.92907	.49302	.02441	4.9121	.02443
Stddev	.00082	.0596	.00389	.00472	.00215	.00015	.0302	.00012
%RSD	.41767	1.2022	2.0070	.50780	.43560	.60936	.61498	.47506
#1	.19437	4.9705	.19577	.92374	.49054	.02451	4.8772	.02431
#2	.19538	4.8895	.18940	.93075	.49434	.02447	4.9289	.02454
#3	.19598	5.0056	.19645	.93272	.49417	.02424	4.9302	.02444
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10164	.25506	.25139	2.0262	24.788	.49291	5.1707	.26974
Stddev	.00031	.00268	.00179	.0273	.148	.00075	.0643	.00492
%RSD	.30501	1.0521	.71228	1.3449	.59623	.15293	1.2428	1.8254
#1	.10143	.25741	.24938	1.9972	24.641	.49205	5.1125	.26524
#2	.10149	.25564	.25195	2.0303	24.787	.49319	5.1601	.26898
#3	.10200	.25214	.25282	2.0512	24.937	.49348	5.2397	.27500
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50615	24.508	.25701	4.7628	.25606	.59458	.18584	2.5383
Stddev	.00274	.156	.00088	.0226	.00183	.00695	.00155	.0511
%RSD	.54178	.63718	.34119	.47385	.71622	1.1692	.83139	2.0135
#1	.50469	24.341	.25623	4.7403	.25465	.58674	.18414	2.4800
#2	.50444	24.532	.25684	4.7626	.25539	.60000	.18715	2.5592
#3	.50931	24.650	.25796	4.7854	.25813	.59701	.18624	2.5756
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 27, 2015

Kim K Buck

Sample Name: LCSW 97 Acquired: 8/26/2015 14:03:27 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG536352-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51501	.49833	.50784	.25559	.50519	.50687	1.4382
Stddev	.00906	.00208	.00297	.00581	.00086	.00233	1.5784
%RSD	1.7587	.41712	.58577	2.2742	.16985	.45952	109.75
#1	.50465	.49603	.50461	.24901	.50446	.50875	.03152
#2	.52140	.49890	.50845	.25775	.50497	.50760	3.1452
#3	.51899	.50007	.51047	.26002	.50614	.50427	1.1379
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8927.6	12818.
Stddev	18.7	255.
%RSD	.20957	1.9869
#1	8927.5	13039.
#2	8946.4	12876.
#3	8909.0	12540.

Approved: August 27, 2015

Kim K Buck

Sample Name: FBLK Acquired: 8/26/2015 14:06:37 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG536169-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.02067	-.00107	.00366	.00046	.00003	-.00610
Stddev	.00074	.01102	.00023	.00073	.00016	.00001	.00493
%RSD	1098.6	53.318	21.856	19.816	34.648	38.868	80.695
#1	.00030	.01148	-.00096	.00302	.00028	.00004	-.00092
#2	.00042	.03288	-.00134	.00445	.00052	.00003	-.00667
#3	-.00092	.01763	-.00092	.00351	.00058	.00002	-.01072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	-.00046	.00046	.00013	.00407	-.00012	.00249
Stddev	.00003	.00007	.00023	.00028	.00093	.04411	.00097
%RSD	17.792	16.039	49.310	211.80	22.933	37038.	39.104
#1	.00014	-.00046	.00052	.00030	.00308	-.05012	.00199
#2	.00019	-.00039	.00021	-.00019	.00420	.01644	.00361
#3	.00014	-.00054	.00065	.00030	.00494	.03332	.00187
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.01001	.00017	.00043	131.71	.00054	F -.00706	-.00193
Stddev	.01016	.00009	.00011	.43	.00014	.00415	.00061
%RSD	101.51	53.224	26.903	.32560	25.841	58.724	31.420
#1	-.02136	.00008	.00042	131.65	.00039	-.00604	-.00123
#2	-.00686	.00026	.00054	131.32	.00058	-.01162	-.00232
#3	-.00179	.00017	.00031	132.17	.00066	-.00352	-.00224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: August 27, 2015

Kim K Buck

Sample Name: FBLK Acquired: 8/26/2015 14:06:37 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG536169-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.00270	.00113	.00073	.00055	.00013	-.00260
Stddev	.00191	.00282	.00067	.00029	.00006	.00062	.00230
%RSD	2299.5	104.53	59.740	40.423	10.992	487.18	88.492
#1	-.00074	-.00036	.00063	.00040	.00050	.00083	-.00418
#2	.00226	.00326	.00189	.00097	.00062	-.00035	.00004
#3	-.00128	.00520	.00086	.00081	.00053	-.00009	-.00366
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00019	.00277	F -.38795
Stddev	.00009	.00010	.08787
%RSD	48.843	3.5347	22.649
#1	-.00010	.00284	-.45072
#2	-.00028	.00282	-.42560
#3	-.00019	.00266	-.28753
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8672.3	13037.
Stddev	30.2	100.
%RSD	.34810	.76771
#1	8706.9	12928.
#2	8651.1	13058.
#3	8659.0	13125.

Approved: August 27, 2015

Sample Name: FBLK2 Acquired: 8/26/2015 14:10:08 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG536169-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.01815	-.00279	.00186	.00056	.00005	-.00496
Stddev	.00016	.03295	.00310	.00028	.00014	.00000	.00196
%RSD	77.132	181.57	111.05	15.265	24.591	5.4260	39.408
#1	.00035	.05061	-.00043	.00205	.00048	.00005	-.00560
#2	.00004	.01911	-.00164	.00153	.00071	.00005	-.00652
#3	.00021	-.01528	-.00629	.00200	.00048	.00006	-.00277
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	-.00036	.00035	.00041	.00121	.01992	-.00071
Stddev	.00010	.00009	.00066	.00027	.00142	.02520	.00128
%RSD	45.766	24.496	186.42	66.252	118.10	126.50	181.02
#1	.00020	-.00045	.00106	.00072	.00027	.04735	.00004
#2	.00013	-.00036	.00024	.00029	.00285	.01460	-.00218
#3	.00033	-.00027	-.00024	.00022	.00050	-.00219	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00500	.00020	.00012	.06012	.00060	F -.00937	-.00077
Stddev	.02176	.00004	.00011	.00282	.00050	.00287	.00212
%RSD	434.93	22.708	87.926	4.6913	83.312	30.617	276.14
#1	-.00774	.00017	.00012	.05799	.00023	-.00975	.00022
#2	-.02526	.00025	.00023	.06332	.00117	-.00633	.00068
#3	.01800	.00017	.00002	.05905	.00040	-.01202	-.00321
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: August 27, 2015

Kim K Buck

Sample Name: FBLK2 Acquired: 8/26/2015 14:10:08 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG536169-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00065	.00171	.00185	.00083	.00035	.00091	-.00208
Stddev	.00074	.00147	.00114	.00014	.00001	.00027	.00062
%RSD	113.77	85.779	61.747	16.735	3.2778	29.504	29.827
#1	-.00149	.00213	.00282	.00093	.00033	.00061	-.00220
#2	-.00009	.00008	.00214	.00067	.00035	.00111	-.00264
#3	-.00038	.00293	.00059	.00090	.00035	.00101	-.00141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00008	.00507	1.1092
Stddev	.00020	.00009	.5456
%RSD	253.54	1.8501	49.192
#1	-.00015	.00504	.65501
#2	.00017	.00518	1.7145
#3	.00022	.00500	.95815
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8964.1	13032.
Stddev	17.8	84.
%RSD	.19913	.64641
#1	8953.0	13044.
#2	8954.6	13110.
#3	8984.6	12943.

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508100801 Acquired: 8/26/2015 14:13:39 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG536352-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	-.00078	-.00278	.02138	.04535	.00003	58.239	.00021
Stddev	.00042	.01307	.00115	.00115	.00029	.00001	.099	.00004
%RSD	281.52	1672.2	41.458	5.3764	.63364	41.765	.17026	18.692
#1	-.00028	-.01423	-.00370	.02159	.04564	.00001	58.293	.00025
#2	-.00048	.00002	-.00149	.02241	.04536	.00004	58.300	.00022
#3	.00032	.01187	-.00315	.02014	.04506	.00003	58.125	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00086	.00009	.01760	.31294	.00192	1.4970	.15832
Stddev	.00015	.00025	.00032	.00415	.01037	.00070	.0263	.00192
%RSD	161.89	28.437	355.78	23.604	3.3149	36.575	1.7549	1.2122
#1	.00024	.00102	-.00020	.01295	.31896	.00258	1.5273	.15612
#2	.00010	.00100	.00044	.02095	.30096	.00119	1.4801	.15920
#3	-.00006	.00058	.00003	.01890	.31890	.00198	1.4836	.15964
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	134.47	.00063	.00191	-.00023	.00056	.00103	.54246
Stddev	.00003	.50	.00053	.00081	.00213	.00250	.00090	.01184
%RSD	11.397	.37066	84.849	42.510	918.09	442.53	87.224	2.1832
#1	.00023	134.68	.00117	.00285	.00135	-.00043	.00206	.52880
#2	.00028	133.90	.00011	.00139	.00061	-.00128	.00059	.54876
#3	.00022	134.83	.00059	.00150	-.00266	.00341	.00043	.54982
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508100801 Acquired: 8/26/2015 14:13:39 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG536352-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00101	.07566	-.00327	-.00004	-.00006	.00552	.61577
Stddev	.00013	.00148	.00023	.00059	.00011	.00007	2.7146
%RSD	12.827	1.9597	7.0572	1643.0	184.46	1.2293	440.85
#1	.00106	.07737	-.00342	.00059	.00006	.00545	2.0914
#2	.00110	.07493	-.00338	-.00012	-.00011	.00553	2.2730
#3	.00086	.07468	-.00300	-.00058	-.00013	.00558	-2.5171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8562.3	12929.
Stddev	28.1	144.
%RSD	.32864	1.1149
#1	8555.8	13096.
#2	8538.0	12856.
#3	8593.2	12837.

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508100801MS Acquired: 8/26/2015 14:17:09 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG536352-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19726	4.8731	.19616	.96607	.53044	.02488	62.679	.02475
Stddev	.00136	.0283	.00014	.00638	.00325	.00011	.204	.00014
%RSD	.69109	.58159	.06950	.66025	.61340	.45345	.32595	.56068
#1	.19699	4.8509	.19627	.96698	.52736	.02486	62.444	.02488
#2	.19873	4.8632	.19601	.97194	.53011	.02500	62.782	.02460
#3	.19605	4.9050	.19621	.95928	.53385	.02478	62.812	.02476
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09857	.25225	.24712	2.0026	25.092	.48763	6.3997	.40501
Stddev	.00044	.00139	.00219	.0199	.065	.00246	.1020	.00444
%RSD	.44612	.54959	.88420	.99177	.25842	.50422	1.5939	1.0972
#1	.09899	.25375	.24938	1.9798	25.017	.48489	6.2931	.40085
#2	.09811	.25199	.24502	2.0115	25.125	.48838	6.4964	.40969
#3	.09862	.25101	.24696	2.0164	25.134	.48964	6.4096	.40449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50224	158.19	.24832	4.9533	.24870	.59684	.19185	3.1059
Stddev	.00271	1.07	.00087	.0337	.00317	.00540	.00952	.0405
%RSD	.53893	.67721	.35125	.68109	1.2749	.90558	4.9641	1.3031
#1	.50397	157.04	.24932	4.9785	.24959	.59438	.19329	3.1030
#2	.49912	158.40	.24787	4.9150	.24518	.59310	.18168	3.0670
#3	.50363	159.15	.24776	4.9664	.25133	.60303	.20056	3.1478
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508100801MS Acquired: 8/26/2015 14:17:09 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG536352-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49877	.56330	.49367	.23729	.50386	.50141	1.3718
Stddev	.00923	.00228	.00367	.00174	.00288	.00178	.9669
%RSD	1.8497	.40500	.74414	.73206	.57116	.35580	70.487
#1	.49769	.56068	.48943	.23802	.50447	.50272	2.4799
#2	.49014	.56486	.49588	.23531	.50638	.49938	.93605
#3	.50849	.56435	.49570	.23854	.50072	.50213	.69941
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8621.0	13010.
Stddev	13.8	140.
%RSD	.15969	1.0771
#1	8606.4	13156.
#2	8622.8	12877.
#3	8633.7	12997.

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508100801MSD Acquired: 8/26/2015 14:20:20 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG536352-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19766	4.8308	.19409	.96456	.52996	.02479	62.886	.02438
Stddev	.00162	.0819	.00159	.00434	.00088	.00004	.184	.00022
%RSD	.81945	1.6956	.81752	.44992	.16645	.16072	.29214	.91457
#1	.19662	4.7588	.19227	.96294	.53026	.02483	62.677	.02415
#2	.19952	4.9199	.19481	.96948	.52897	.02475	62.963	.02459
#3	.19682	4.8136	.19518	.96126	.53065	.02479	63.020	.02441
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09809	.25211	.24426	1.9836	24.936	.48759	6.3461	.40067
Stddev	.00014	.00152	.00036	.0081	.062	.00132	.0489	.00306
%RSD	.14300	.60435	.14602	.40756	.25061	.27153	.77059	.76309
#1	.09793	.25065	.24444	1.9774	24.868	.48683	6.3450	.40110
#2	.09820	.25369	.24448	1.9927	24.947	.48682	6.3956	.40350
#3	.09812	.25200	.24384	1.9805	24.992	.48912	6.2978	.39743
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49747	159.36	.24666	4.9033	.24441	.59165	.19081	3.0663
Stddev	.00146	.29	.00078	.0163	.00089	.00684	.00124	.0611
%RSD	.29327	.17951	.31528	.33138	.36398	1.1560	.64942	1.9918
#1	.49583	159.51	.24751	4.8864	.24379	.58480	.19188	3.0023
#2	.49797	159.03	.24650	4.9046	.24543	.59848	.18945	3.1239
#3	.49861	159.54	.24598	4.9188	.24402	.59167	.19109	3.0729
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508100801MSD Acquired: 8/26/2015 14:20:20 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG536352-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49957	.56024	.49159	.23964	.50246	.49790	3.4500
Stddev	.00799	.00212	.00152	.00659	.00089	.00356	1.3695
%RSD	1.5990	.37910	.30968	2.7492	.17705	.71593	39.697
#1	.49062	.55801	.49004	.23209	.50165	.49913	4.6319
#2	.50598	.56047	.49165	.24422	.50341	.49388	1.9491
#3	.50210	.56224	.49308	.24261	.50231	.50068	3.7689
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8691.6	13237.
Stddev	3.9	91.
%RSD	.04494	.68550
#1	8691.1	13194.
#2	8688.0	13176.
#3	8695.7	13341.

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508103701 Acquired: 8/26/2015 14:23:30 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.18041	-.00292	.01575	.17126	.00006	307.28
Stddev	.00056	.02659	.00116	.00060	.00015	.00001	.96
%RSD	2456.2	14.741	39.584	3.8095	.08490	22.624	.31382
#1	.00052	.17606	-.00159	.01626	.17129	.00007	307.90
#2	.00012	.15626	-.00369	.01509	.17110	.00007	306.17
#3	-.00058	.20891	-.00349	.01588	.17139	.00005	307.78
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	-.00046	.00097	.00653	.04389	223.35	.06385
Stddev	.00003	.00012	.00015	.00048	.00272	.21	.00080
%RSD	9.9412	26.811	15.178	7.3798	6.1869	.09358	1.2599
#1	.00031	-.00035	.00105	.00691	.04702	223.55	.06325
#2	.00026	-.00059	.00105	.00669	.04245	223.14	.06477
#3	.00027	-.00044	.00080	.00599	.04219	223.37	.06354
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00960	.00018	.00669	F 376.08	-.00003	.04125	-.00094
Stddev	.00515	.00001	.00002	2.00	.00089	.00221	.00186
%RSD	53.651	7.6399	.27486	.53106	3381.2	5.3513	197.09
#1	.01160	.00018	.00668	374.30	.00098	.03957	-.00109
#2	.00375	.00020	.00668	375.72	-.00070	.04042	.00098
#3	.01346	.00017	.00671	378.24	-.00036	.04375	-.00273
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				360.00			
Low Limit				-.40000			

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508103701 Acquired: 8/26/2015 14:23:30 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00161**	**.02836**	**.18832**	**.00066**	**.41390**	**-.01541**	**-.00402**
Stddev	.00262	.00269	.00675	.00024	.00127	.00072	.00094
%RSD	162.94	9.4770	3.5825	35.961	.30684	4.6556	23.364
#1	-.00040	.03086	.18631	.00039	.41535	-.01506	-.00475
#2	.00019	.02870	.19585	.00073	.41297	-.01493	-.00435
#3	-.00462	.02552	.18281	.00085	.41338	-.01623	-.00296
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00036**	**.00602**	F **-.37255**
Stddev	.00010	.00009	.76696
%RSD	27.248	1.5561	205.86
#1	.00046	.00597	.50649
#2	.00038	.00613	-.90525
#3	.00026	.00596	-.71890
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**8112.3**	**12939.**
Stddev	22.1	48.
%RSD	.27273	.36786
#1	8122.5	12948.
#2	8086.9	12981.
#3	8127.5	12887.

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508103701PS Acquired: 8/26/2015 14:27:09 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG536556-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20454	5.1045	.20191	.97671	.63669	.02444	284.81
Stddev	.00094	.0348	.00192	.00203	.00310	.00010	.32
%RSD	.46035	.68167	.94966	.20764	.48670	.40043	.11126
#1	.20538	5.0758	.20307	.97529	.64026	.02440	285.13
#2	.20471	5.1432	.20296	.97903	.63482	.02455	284.50
#3	.20352	5.0945	.19969	.97580	.63497	.02437	284.79
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02522	.09612	.24704	.24764	1.9669	228.20	.55861
Stddev	.00015	.00094	.00128	.00227	.0067	.43	.00406
%RSD	.59665	.97292	.51911	.91567	.33940	.18710	.72599
#1	.02505	.09548	.24839	.24554	1.9592	228.59	.56310
#2	.02530	.09719	.24689	.25005	1.9700	228.26	.55753
#3	.02532	.09568	.24584	.24733	1.9714	227.75	.55520
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.8832	.23743	.50479	F 364.73	.24098	5.1677	.24064
Stddev	.0454	.00328	.00378	7.17	.00170	.0485	.00221
%RSD	.93000	1.3818	.74791	1.9666	.70685	.93745	.91776
#1	4.8354	.23365	.50112	362.69	.23932	5.1322	.23886
#2	4.9258	.23947	.50866	372.71	.24273	5.2229	.24311
#3	4.8884	.23918	.50458	358.81	.24089	5.1480	.23995
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				360.00			
Low Limit				-.40000			

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508103701PS Acquired: 8/26/2015 14:27:09 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG536556-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.60622	.22306	2.7682	.48686	.86428	.48006	.22153
Stddev	.00880	.00218	.0365	.00814	.00261	.00206	.00670
%RSD	1.4513	.97947	1.3187	1.6720	.30218	.42991	3.0257
#1	.59974	.22358	2.7464	.48101	.86682	.48190	.21639
#2	.61623	.22495	2.8104	.49616	.86443	.48045	.22911
#3	.60267	.22067	2.7479	.48342	.86160	.47783	.21908
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.50383	.49882	F -1.5354
Stddev	.00169	.00481	2.5539
%RSD	.33507	.96480	166.34
#1	.50474	.49627	1.2391
#2	.50487	.50437	-2.0572
#3	.50188	.49582	-3.7880
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8127.7	12758.
Stddev	30.3	165.
%RSD	.37243	1.2913
#1	8123.6	12948.
#2	8099.7	12649.
#3	8159.8	12679.

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508103701SDL Acquired: 8/26/2015 14:30:29 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG536556-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00049	.04095	-.00059	.00685	.03655	.00004	64.522
Stddev	.00056	.00761	.00067	.00059	.00014	.00002	.087
%RSD	114.93	18.584	113.63	8.5505	.38067	56.653	.13513
#1	-.00102	.03358	-.00062	.00732	.03669	.00005	64.623
#2	-.00053	.04878	.00009	.00704	.03642	.00001	64.466
#3	.00009	.04049	-.00125	.00620	.03655	.00006	64.479
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	-.00012	.00065	.00165	.01079	46.307	.01615
Stddev	.00002	.00017	.00038	.00024	.00158	.162	.00089
%RSD	93.339	137.62	57.902	14.290	14.694	.34884	5.4863
#1	.00005	-.00011	.00037	.00150	.01261	46.488	.01591
#2	.00001	.00004	.00051	.00153	.00996	46.177	.01540
#3	.00001	-.00030	.00108	.00192	.00979	46.255	.01712
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00528	.00003	.00132	78.409	-.00072	.01338	-.00017
Stddev	.01093	.00007	.00015	.396	.00046	.00114	.00137
%RSD	206.93	262.71	11.034	.50523	64.513	8.5106	822.15
#1	.00716	.00009	.00123	78.865	-.00125	.01258	-.00082
#2	-.01330	-.00005	.00149	78.148	-.00050	.01468	-.00108
#3	-.00971	.00005	.00124	78.215	-.00040	.01287	.00141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508103701SDL Acquired: 8/26/2015 14:30:29 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG536556-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.00602	.03708	.00001	.08823	-.00412	.00001
Stddev	.00083	.00160	.00186	.00032	.00036	.00066	.00077
%RSD	2965.6	26.632	5.0070	3062.9	.40564	16.055	8622.3
#1	-.00098	.00606	.03516	-.00014	.08863	-.00437	-.00065
#2	.00034	.00440	.03719	.00038	.08793	-.00337	-.00018
#3	.00055	.00761	.03887	-.00021	.08813	-.00462	.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00026	.00194	F -.16829
Stddev	.00008	.00006	1.9718
%RSD	29.678	3.0532	1171.7
#1	.00019	.00194	.62062
#2	.00034	.00188	1.2869
#3	.00027	.00200	-2.4124
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8493.4	12878.
Stddev	15.4	153.
%RSD	.18168	1.1912
#1	8509.8	12995.
#2	8491.2	12934.
#3	8479.2	12704.

Approved: August 27, 2015

Sample Name: CCV Acquired: 8/26/2015 14:34:02 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40817**	**10.149**	**.41181**	**.51602**	**1.0266**	**.05148**	**10.130**
Stddev	.00577	.061	.00296	.00577	.0047	.00058	.038
%RSD	1.4138	.60407	.71766	1.1182	.46257	1.1210	.37217
#1	.41079	10.189	.41041	.51889	1.0265	.05184	10.124
#2	.41216	10.079	.41520	.51979	1.0219	.05178	10.095
#3	.40155	10.181	.40981	.50938	1.0314	.05081	10.170
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05163**	**.20867**	**.52348**	**.52161**	**4.1554**	**51.247**	**1.0239**
Stddev	.00047	.00160	.00465	.00415	.0304	.192	.0050
%RSD	.90854	.76584	.88829	.79507	.73209	.37549	.48931
#1	.05143	.20818	.52646	.52117	4.1860	51.368	1.0206
#2	.05217	.21046	.52586	.52596	4.1251	51.025	1.0215
#3	.05130	.20738	.51813	.51770	4.1551	51.348	1.0297
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.466**	**.53128**	**1.0446**	**51.284**	**.52726**	**10.320**	**.52884**
Stddev	.173	.01129	.0080	.236	.00434	.071	.00497
%RSD	1.6546	2.1258	.76687	.45992	.82221	.68738	.93946
#1	10.653	.54428	1.0502	51.340	.52687	10.296	.52437
#2	10.311	.52388	1.0483	51.025	.53177	10.399	.53419
#3	10.435	.52567	1.0354	51.487	.52313	10.264	.52797
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: August 27, 2015

Kim K Buck

Sample Name: CCV Acquired: 8/26/2015 14:34:02 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2374**	**.40363**	**5.1595**	**1.0495**	**1.0273**	**1.0363**	**.52580**
Stddev	.0031	.00343	.0251	.0138	.0039	.0067	.00634
%RSD	.24654	.85088	.48708	1.3201	.38333	.64985	1.2062
#1	1.2350	.40163	5.1801	1.0399	1.0280	1.0375	.51857
#2	1.2408	.40759	5.1669	1.0654	1.0230	1.0291	.53045
#3	1.2365	.40166	5.1315	1.0432	1.0308	1.0424	.52837
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0376**	**1.0621**	F **2.9672**
Stddev	.0096	.0164	.6136
%RSD	.92626	1.5426	20.680
#1	1.0416	1.0667	3.6647
#2	1.0446	1.0756	2.5105
#3	1.0267	1.0439	2.7264
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**8648.5**	**12808.**
Stddev	63.6	259.
%RSD	.73562	2.0249
#1	8617.1	12511.
#2	8606.7	12994.
#3	8721.7	12918.

Approved: August 27, 2015

Kim K Buck

Sample Name: CCB Acquired: 8/26/2015 14:37:10 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.00488	-.00128	.00304	.00032	.00004	.00549
Stddev	.00009	.01915	.00166	.00027	.00025	.00001	.00650
%RSD	28.954	392.33	129.92	8.8128	76.072	31.068	118.29
#1	.00043	.01823	-.00183	.00310	.00035	.00003	.00685
#2	.00027	-.01706	-.00259	.00274	.00055	.00005	.01121
#3	.00027	.01347	.00059	.00327	.00007	.00003	-.00158
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	-.00013	.00054	.00032	.00181	.06071	.00279
Stddev	.00005	.00006	.00038	.00059	.00376	.03654	.00080
%RSD	43.392	45.774	69.704	182.10	208.20	60.194	28.768
#1	.00007	-.00012	.00088	.00095	.00611	.05165	.00204
#2	.00010	-.00007	.00013	.00026	-.00089	.10093	.00269
#3	.00016	-.00019	.00061	-.00023	.00020	.02955	.00363
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00188	.00003	.00048	.04149	-.00074	.00149	-.00231
Stddev	.01050	.00003	.00007	.00602	.00050	.00181	.00089
%RSD	558.30	86.259	15.220	14.504	67.527	121.34	38.556
#1	-.01023	.00006	.00056	.04753	-.00023	.00035	-.00331
#2	.00839	.00002	.00043	.03549	-.00076	.00055	-.00205
#3	.00748	.00001	.00044	.04146	-.00122	.00358	-.00158
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: CCB Acquired: 8/26/2015 14:37:10 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00200	.00147	-.00065	-.00002	.00009	.00054	-.00029
Stddev	.00270	.00063	.00021	.00022	.00002	.00051	.00133
%RSD	135.28	42.962	32.665	1465.8	17.291	94.079	461.32
#1	.00009	.00141	-.00041	.00014	.00010	.00110	.00050
#2	-.00505	.00212	-.00082	-.00027	.00010	.00008	-.00182
#3	-.00104	.00086	-.00071	.00008	.00007	.00045	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00011	-.00033	F 1.0918
Stddev	.00022	.00013	1.3067
%RSD	205.25	38.935	119.69
#1	.00018	-.00030	2.4470
#2	.00029	-.00047	.98872
#3	-.00014	-.00022	-.16034
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8784.7	13167.
Stddev	16.0	35.
%RSD	.18251	.26505
#1	8770.1	13198.
#2	8801.9	13129.
#3	8782.2	13174.

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508108101 Acquired: 8/26/2015 14:40:58 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.00744	-.00171	.01877	.00799	.00004	56.643
Stddev	.00038	.01859	.00090	.00117	.00004	.00002	.736
%RSD	375.53	250.02	52.285	6.2266	.45268	47.582	1.3002
#1	-.00023	.01974	-.00071	.01781	.00796	.00003	55.794
#2	.00051	.01652	-.00242	.01843	.00803	.00003	57.021
#3	.00002	-.01395	-.00201	.02007	.00797	.00006	57.113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	.00299	.07491	.10311	.01553	3.7684	.00614
Stddev	.00010	.00014	.00013	.00098	.00235	.0239	.00110
%RSD	46.346	4.6101	.16920	.94848	15.161	.63370	17.857
#1	.00011	.00313	.07503	.10406	.01622	3.7725	.00516
#2	.00022	.00299	.07478	.10211	.01746	3.7899	.00593
#3	.00030	.00285	.07492	.10316	.01291	3.7427	.00732
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.90054	.37528	.00014	138.64	.02990	F -.00394	-.00023
Stddev	.00987	.00338	.00021	.94	.00025	.00217	.00035
%RSD	1.0960	.89960	145.65	.67689	.83580	55.151	151.43
#1	.88922	.37463	-.00008	137.57	.03016	-.00163	-.00047
#2	.90503	.37227	.00033	139.00	.02989	-.00425	.00017
#3	.90736	.37893	.00018	139.34	.02966	-.00594	-.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508108101 Acquired: 8/26/2015 14:40:58 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	.00046	.35459	.00048	2.5203	-.00332	-.00103
Stddev	.00143	.00211	.00375	.00025	.0316	.00083	.00171
%RSD	210.24	455.09	1.0580	50.962	1.2539	25.066	165.84
#1	.00120	-.00045	.35761	.00031	2.4840	-.00395	-.00088
#2	-.00094	.00288	.35039	.00038	2.5353	-.00363	.00060
#3	.00179	-.00103	.35577	.00076	2.5416	-.00238	-.00282
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00017	1.4005	F -.03082
Stddev	.00012	.0028	1.2616
%RSD	70.071	.19709	4093.5
#1	-.00028	1.4028	-1.3569
#2	-.00004	1.4012	1.1546
#3	-.00019	1.3974	.10983
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8586.1	13363.
Stddev	18.4	96.
%RSD	.21426	.71651
#1	8600.5	13383.
#2	8592.3	13446.
#3	8565.3	13258.

Approved: August 27, 2015

Sample Name: L1508108102 Acquired: 8/26/2015 14:44:26 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	.04378	-.00241	.02068	.00728	.00007	37.329
Stddev	.00059	.01537	.00040	.00055	.00013	.00003	.147
%RSD	79.162	35.110	16.430	2.6763	1.7718	41.713	.39474
#1	.00017	.02740	-.00196	.02131	.00713	.00009	37.202
#2	.00135	.04604	-.00257	.02045	.00734	.00007	37.490
#3	.00071	.05789	-.00270	.02028	.00736	.00004	37.293
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	.00562	.03132	.17739	.01377	4.9406	.00640
Stddev	.00004	.00027	.00063	.00257	.00484	.0263	.00112
%RSD	12.588	4.7982	2.0007	1.4495	35.147	.53280	17.520
#1	.00027	.00555	.03173	.17645	.01836	4.9607	.00662
#2	.00027	.00592	.03060	.18030	.00872	4.9108	.00740
#3	.00033	.00539	.03164	.17543	.01423	4.9504	.00519
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.97757	.36091	.00026	139.07	.05020	F -.00492	-.00088
Stddev	.03152	.00341	.00017	.60	.00150	.00541	.00129
%RSD	3.2240	.94453	65.672	.43121	2.9847	109.89	146.15
#1	1.0108	.36361	.00036	138.38	.04884	-.00390	-.00176
#2	.94813	.36203	.00035	139.42	.05181	-.01076	-.00149
#3	.97376	.35708	.00006	139.42	.04996	-.00010	.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508108102 Acquired: 8/26/2015 14:44:26 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00028	.00095	.50662	.00075	1.9262	-.00259	-.00237
Stddev	.00010	.00173	.00722	.00036	.0123	.00122	.00024
%RSD	35.689	181.94	1.4261	47.593	.63727	47.345	10.296
#1	-.00036	-.00040	.50380	.00035	1.9132	-.00395	-.00231
#2	-.00017	.00035	.51482	.00105	1.9376	-.00159	-.00264
#3	-.00030	.00290	.50122	.00084	1.9278	-.00221	-.00216
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00019	2.2353	.80188
Stddev	.00015	.0114	.82356
%RSD	79.522	.51078	102.70
#1	-.00024	2.2309	.57154
#2	-.00002	2.2267	.11802
#3	-.00030	2.2482	1.7161
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8656.6	13256.
Stddev	27.7	153.
%RSD	.32004	1.1546
#1	8658.2	13118.
#2	8683.5	13228.
#3	8628.2	13421.

Approved: August 27, 2015

Sample Name: L1508110801 Acquired: 8/26/2015 14:47:48 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.02178	-.00192	.01420	.01421	.00004	2.5711
Stddev	.00031	.00521	.00156	.00041	.00004	.00001	.0156
%RSD	380.40	23.924	81.381	2.8717	.27627	28.036	.60640
#1	-.00018	.02014	-.00178	.01374	.01417	.00005	2.5542
#2	.00042	.02761	-.00354	.01452	.01423	.00003	2.5850
#3	.00001	.01758	-.00043	.01434	.01424	.00003	2.5740
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	.00039	.00326	.00167	4.2295	.10396	.00470
Stddev	.00001	.00002	.00021	.00010	.0298	.01834	.00137
%RSD	2.3802	6.2986	6.5034	5.8779	.70385	17.641	29.180
#1	.00042	.00040	.00328	.00168	4.1952	.08966	.00414
#2	.00041	.00037	.00304	.00157	4.2452	.09759	.00369
#3	.00043	.00042	.00346	.00177	4.2482	.12463	.00626
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.32132	.13697	.00042	128.19	.00663	.00124	-.00057
Stddev	.00812	.00195	.00026	1.15	.00089	.00282	.00022
%RSD	2.5257	1.4209	63.326	.89478	13.413	226.89	38.605
#1	.33047	.13543	.00018	127.40	.00655	.00395	-.00041
#2	.31849	.13632	.00036	129.51	.00578	-.00168	-.00082
#3	.31499	.13916	.00070	127.67	.00755	.00146	-.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508110801 Acquired: 8/26/2015 14:47:48 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00189	.00235	.16621	.00100	.27096	-.00013	-.00198
Stddev	.00045	.00409	.00154	.00050	.00266	.00056	.00115
%RSD	23.819	174.11	.92520	50.015	.98211	435.23	58.051
#1	-.00146	.00707	.16662	.00094	.26837	.00047	-.00285
#2	-.00236	-.00030	.16451	.00053	.27368	-.00020	-.00068
#3	-.00185	.00029	.16749	.00153	.27084	-.00065	-.00242
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00009	2.5958	F -1.4951
Stddev	.00023	.0067	.6188
%RSD	243.82	.25937	41.384
#1	-.00035	2.5982	-1.4844
#2	.00007	2.5882	-.88183
#3	.00000	2.6009	-2.1192
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8695.7	12984.
Stddev	13.8	128.
%RSD	.15876	.98530
#1	8708.4	13070.
#2	8697.6	13045.
#3	8681.0	12837.

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508118301 Acquired: 8/26/2015 14:51:11 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00021	.26354	-.00172	.01986	.06199	.00002	8.5557
Stddev	.00013	.02549	.00142	.00012	.00055	.00003	.0586
%RSD	64.506	9.6733	82.635	.60756	.89496	139.06	.68512
#1	-.00028	.23410	-.00196	.02000	.06137	.00005	8.4917
#2	-.00029	.27799	-.00301	.01977	.06244	.00003	8.6068
#3	-.00005	.27853	-.00020	.01982	.06215	-.00001	8.5686
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.15054	.00296	.01417	.26393	.69567	.20116	.00595
Stddev	.00014	.00004	.00036	.00116	.00337	.01066	.00119
%RSD	.09537	1.2847	2.5278	.43955	.48500	5.3009	19.956
#1	.15039	.00294	.01431	.26266	.69498	.21195	.00698
#2	.15055	.00293	.01376	.26492	.69933	.19063	.00622
#3	.15068	.00300	.01443	.26422	.69269	.20089	.00465
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.85570	.25720	.01368	139.77	.06361	.02717	.00422
Stddev	.00669	.00275	.00008	1.68	.00055	.00041	.00225
%RSD	.78164	1.0704	.58743	1.2010	.86983	1.5135	53.410
#1	.85444	.26030	.01360	137.86	.06384	.02719	.00164
#2	.86293	.25503	.01376	140.99	.06402	.02674	.00522
#3	.84974	.25628	.01368	140.47	.06298	.02756	.00579
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508118301 Acquired: 8/26/2015 14:51:11 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01459	.00084	.49351	.00074	.02514	.00092	-.00243
Stddev	.00222	.00192	.00344	.00038	.00031	.00030	.00037
%RSD	15.187	226.88	.69643	51.734	1.2320	32.404	15.317
#1	.01676	.00002	.48979	.00085	.02479	.00064	-.00232
#2	.01469	-.00052	.49657	.00031	.02528	.00088	-.00213
#3	.01233	.00303	.49417	.00105	.02536	.00123	-.00285
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00002	5.4045	F -.98801
Stddev	.00007	.0158	1.0123
%RSD	381.42	.29232	102.46
#1	.00009	5.3864	-.93819
#2	-.00006	5.4122	-2.0243
#3	.00003	5.4151	-.00156
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8727.5	12726.
Stddev	8.7	133.
%RSD	.09918	1.0429
#1	8727.0	12573.
#2	8719.2	12801.
#3	8736.5	12805.

Approved: August 27, 2015

Sample Name: L1508118302 Acquired: 8/26/2015 14:54:32 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.01814	-.00300	.01757	.02764	.00003	5.5728	.00347
Stddev	.00012	.03320	.00111	.00086	.00004	.00001	.0140	.00006
%RSD	30.483	183.04	37.086	4.8870	.14566	31.336	.25069	1.8220
#1	.00050	.03053	-.00428	.01763	.02768	.00003	5.5595	.00353
#2	.00046	.04337	-.00228	.01668	.02760	.00002	5.5715	.00349
#3	.00027	-.01948	-.00244	.01839	.02763	.00002	5.5874	.00340
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	.00151	.01414	.02713	.05594	.00361	.26745	.32564
Stddev	.00019	.00026	.00006	.00155	.01494	.00019	.00630	.00111
%RSD	49.126	17.234	.44525	5.7285	26.714	5.3138	2.3550	.34102
#1	.00028	.00138	.01421	.02879	.04202	.00364	.26125	.32687
#2	.00060	.00181	.01412	.02571	.07173	.00379	.26727	.32470
#3	.00026	.00134	.01409	.02687	.05407	.00341	.27384	.32534
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00124	133.29	.00805	.87985	-.00068	-.00013	.00151	.08427
Stddev	.00017	.16	.00020	.02852	.00073	.00088	.00088	.00394
%RSD	13.841	.11804	2.4637	3.2411	107.08	665.82	58.088	4.6804
#1	.00133	133.22	.00799	.88747	-.00058	.00088	.00216	.08589
#2	.00105	133.17	.00828	.90379	.00000	-.00065	.00051	.08715
#3	.00136	133.47	.00790	.84830	-.00145	-.00062	.00187	.07978
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508118302 Acquired: 8/26/2015 14:54:32 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.00902	-.00072	-.00089	.00001	.46989	.63070
Stddev	.00023	.00012	.00194	.00062	.00009	.00567	1.5908
%RSD	42.152	1.3789	268.62	68.957	902.79	1.2057	252.22
#1	.00080	.00888	.00151	-.00109	.00004	.47452	1.2776
#2	.00054	.00910	-.00173	-.00139	.00008	.47158	-1.1816
#3	.00033	.00908	-.00195	-.00020	-.00009	.46357	1.7961
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8746.2	13024.
Stddev	4.2	37.
%RSD	.04826	.28553
#1	8748.1	12981.
#2	8741.4	13047.
#3	8749.3	13044.

Approved: August 27, 2015

Sample Name: L1508119001 Acquired: 8/26/2015 14:57:56 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00030	.07236	-.00203	.01739	.00298	.00005	.49817	.00012
Stddev	.00006	.00360	.00114	.00071	.00026	.00005	.00796	.00002
%RSD	21.241	4.9695	56.026	4.0841	8.7756	112.49	1.5987	18.790
#1	-.00035	.06834	-.00164	.01820	.00276	.00005	.50695	.00011
#2	-.00032	.07526	-.00330	.01709	.00292	.00009	.49613	.00010
#3	-.00023	.07349	-.00113	.01688	.00327	-.00001	.49142	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00029	.00049	.00038	.07265	.13344	.00372	.09172	.00414
Stddev	.00022	.00062	.00038	.00224	.01316	.00053	.01631	.00014
%RSD	75.253	126.10	98.205	3.0840	9.8608	14.339	17.781	3.3970
#1	-.00004	-.00007	.00082	.07318	.14413	.00401	.07477	.00399
#2	-.00047	.00116	.00018	.07020	.11874	.00404	.09309	.00426
#3	-.00037	.00040	.00016	.07459	.13744	.00310	.10730	.00417
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	130.22	.00007	-.00089	-.00078	-.00019	.00318	.16042
Stddev	.00026	.60	.00097	.00221	.00159	.00215	.00212	.00401
%RSD	2883.1	.46413	1386.6	248.93	203.49	1122.2	66.686	2.5015
#1	.00028	130.91	.00112	.00114	-.00256	-.00226	.00258	.15839
#2	-.00022	129.96	-.00080	-.00325	-.00027	.00203	.00143	.16504
#3	-.00009	129.79	-.00011	-.00056	.00049	-.00035	.00554	.15783
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508119001 Acquired: 8/26/2015 14:57:56 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00101	.00244	.00102	-.00081	-.00016	.02282	11.062
Stddev	.00030	.00011	.00048	.00231	.00021	.00068	.523
%RSD	29.956	4.3232	47.424	283.65	128.55	2.9622	4.7264
#1	.00076	.00232	.00157	.00088	.00008	.02236	11.132
#2	.00092	.00249	.00066	-.00344	-.00029	.02360	11.547
#3	.00135	.00252	.00083	.00012	-.00029	.02251	10.508
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8732.3	12940.
Stddev	16.3	230.
%RSD	.18629	1.7809
#1	8728.1	13179.
#2	8718.5	12923.
#3	8750.2	12719.

Approved: August 27, 2015

Sample Name: L1508121401 Acquired: 8/26/2015 15:01:23 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	.05064	-.00244	.02101	.00749	.00006	5.4345
Stddev	.00048	.00857	.00036	.00123	.00003	.00002	.0432
%RSD	91.061	16.924	14.765	5.8305	.44790	30.896	.79569
#1	.00061	.05878	-.00215	.02242	.00748	.00005	5.4576
#2	.00096	.05143	-.00284	.02021	.00753	.00008	5.3846
#3	.00001	.04170	-.00232	.02041	.00747	.00005	5.4613
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.00074	.00184	.00094	2.6549	.17897	.00429
Stddev	.00004	.00006	.00031	.00027	.0236	.02500	.00050
%RSD	55.853	7.9438	16.730	28.291	.88789	13.971	11.597
#1	.00009	.00080	.00150	.00124	2.6360	.19276	.00427
#2	.00002	.00075	.00210	.00073	2.6474	.15011	.00381
#3	.00008	.00068	.00192	.00086	2.6813	.19405	.00480
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.4174	.06296	.00008	128.31	.00696	F -.00710	-.00008
Stddev	.0201	.00155	.00005	.84	.00025	.00241	.00119
%RSD	1.4180	2.4555	64.771	.65504	3.6173	33.995	1541.9
#1	1.4132	.06169	.00013	128.13	.00670	-.00600	-.00100
#2	1.3998	.06468	.00008	127.57	.00720	-.00543	-.00050
#3	1.4393	.06252	.00003	129.22	.00699	-.00987	.00126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508121401 Acquired: 8/26/2015 15:01:23 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00126	.00089	.16798	.00075	.00676	.00066	-.00233
Stddev	.00235	.00533	.00206	.00030	.00005	.00078	.00153
%RSD	187.05	601.47	1.2290	40.744	.78822	117.15	65.629
#1	-.00272	-.00032	.16695	.00102	.00676	.00137	-.00386
#2	.00146	.00672	.17036	.00079	.00670	.00079	-.00080
#3	-.00251	-.00374	.16663	.00042	.00680	-.00017	-.00232
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00010	.04014	.25505
Stddev	.00005	.00086	1.2115
%RSD	53.663	2.1352	474.99
#1	-.00004	.03992	-1.1154
#2	-.00010	.04108	.69713
#3	-.00015	.03941	1.1834
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8668.6	13269.
Stddev	26.7	114.
%RSD	.30788	.86124
#1	8645.3	13400.
#2	8697.7	13188.
#3	8662.8	13219.

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508127401 Acquired: 8/26/2015 15:04:48 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.02515	-.00350	.01257	.06861	.00005	73.422	.00027
Stddev	.00059	.02007	.00125	.00054	.00045	.00002	.183	.00013
%RSD	173.60	79.799	35.885	4.2771	.65612	46.151	.24961	46.886
#1	.00097	.04724	-.00289	.01207	.06815	.00004	73.367	.00014
#2	.00028	.02022	-.00494	.01248	.06865	.00007	73.272	.00039
#3	-.00022	.00801	-.00266	.01314	.06904	.00003	73.626	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00044	.00078	-.00066	.02435	.61465	.01166	7.1356	.00203
Stddev	.00013	.00031	.00077	.00326	.02003	.00036	.1366	.00012
%RSD	29.069	39.562	115.75	13.405	3.2588	3.1081	1.9146	5.6642
#1	-.00043	.00096	-.00155	.02637	.61289	.01154	7.0534	.00201
#2	-.00057	.00042	-.00021	.02609	.63550	.01138	7.0602	.00193
#3	-.00031	.00096	-.00023	.02058	.59556	.01207	7.2933	.00216
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	6.6778	.00032	.00215	-.00179	-.00148	.00010	4.2974
Stddev	.00005	.0236	.00034	.00231	.00141	.00051	.00262	.1016
%RSD	13.119	.35401	107.62	107.14	78.758	34.576	2608.1	2.3637
#1	.00034	6.6602	.00053	.00451	-.00224	-.00173	.00292	4.3433
#2	.00041	6.6685	-.00008	.00205	-.00021	-.00089	-.00227	4.1810
#3	.00044	6.7046	.00049	-.00010	-.00291	-.00183	-.00034	4.3680
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508127401 Acquired: 8/26/2015 15:04:48 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.21325	-.00386	-.00109	.00003	.00255	.97321
Stddev	.00021	.00095	.00086	.00129	.00022	.00004	.85277
%RSD	105.37	.44465	22.381	118.37	739.88	1.7072	87.624
#1	.00044	.21307	-.00485	-.00170	.00024	.00257	.00190
#2	.00012	.21241	-.00353	.00039	-.00020	.00250	1.5990
#3	.00004	.21428	-.00322	-.00197	.00004	.00257	1.3188
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8706.7	13022.
Stddev	20.1	197.
%RSD	.23138	1.5109
#1	8687.5	13173.
#2	8727.7	13092.
#3	8704.8	12799.

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508127402 Acquired: 8/26/2015 15:08:13 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.27504	-.00047	.01031	.09008	.00013	67.460	.00022
Stddev	.00020	.01863	.00248	.00047	.00054	.00001	.157	.00012
%RSD	140.94	6.7751	526.10	4.5633	.60049	7.8811	.23204	53.099
#1	.00000	.27427	-.00277	.00981	.08979	.00014	67.344	.00025
#2	.00037	.25681	.00215	.01035	.09071	.00012	67.638	.00010
#3	.00005	.29405	-.00079	.01075	.08976	.00014	67.399	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.00130	.00118	.69389	.70367	.00728	4.3538	.05457
Stddev	.00027	.00023	.00003	.00481	.01144	.00093	.0430	.00073
%RSD	157.29	17.551	2.2779	.69308	1.6261	12.733	.98806	1.3437
#1	.00013	.00151	.00117	.69071	.69102	.00733	4.3058	.05483
#2	-.00007	.00132	.00116	.69942	.70669	.00633	4.3667	.05375
#3	.00047	.00106	.00121	.69152	.71330	.00818	4.3889	.05514
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	8.0605	.00157	.10945	-.00020	-.00107	-.00249	4.7038
Stddev	.00029	.0639	.00070	.00244	.00052	.00253	.00215	.0314
%RSD	68.547	.79245	44.823	2.2281	259.71	236.73	86.331	.66667
#1	.00016	8.0421	.00183	.11109	-.00074	.00009	-.00217	4.7378
#2	.00038	8.1315	.00077	.10665	-.00015	.00067	-.00052	4.6760
#3	.00073	8.0078	.00211	.11061	.00029	-.00397	-.00479	4.6977
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508127402 Acquired: 8/26/2015 15:08:13 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.16513	-.00142	-.00138	.00067	.00988	2.2022
Stddev	.00031	.00051	.00081	.00167	.00036	.00039	1.8931
%RSD	114.94	.31145	57.562	120.85	54.033	3.9325	85.965
#1	.00061	.16491	-.00130	.00017	.00062	.00958	4.2011
#2	.00016	.16571	-.00228	-.00314	.00033	.00975	1.9690
#3	.00003	.16476	-.00066	-.00117	.00105	.01032	.43649
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8742.0	13074.
Stddev	20.3	69.
%RSD	.23233	.52753
#1	8748.7	13088.
#2	8758.0	13134.
#3	8719.1	12999.

Approved: August 27, 2015

Sample Name: L1508127501 Acquired: 8/26/2015 15:11:38 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	.00097	-.00154	.07314	.28667	.00009	58.830	.00040
Stddev	.00048	.01402	.00066	.00053	.00032	.00003	.107	.00006
%RSD	334.52	1449.0	42.629	.72303	.11033	30.876	.18166	15.397
#1	.00037	.01377	-.00161	.07294	.28683	.00011	58.732	.00046
#2	-.00058	.00315	-.00217	.07274	.28687	.00008	58.813	.00041
#3	-.00023	-.01402	-.00085	.07374	.28630	.00006	58.944	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00035	.00092	.00274	1.8329	1.6085	.01280	18.020	.02722
Stddev	.00009	.00041	.00084	.0081	.0376	.00044	.052	.00030
%RSD	24.568	44.698	30.806	.44411	2.3359	3.4387	.29023	1.1007
#1	-.00045	.00090	.00210	1.8240	1.5659	.01294	18.061	.02743
#2	-.00031	.00133	.00369	1.8400	1.6230	.01315	17.961	.02688
#3	-.00029	.00051	.00242	1.8347	1.6367	.01231	18.038	.02735
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	38.525	.00059	.04575	-.00012	-.00147	.00039	6.3234
Stddev	.00010	.095	.00021	.00656	.00077	.00279	.00234	.0404
%RSD	42.793	.24533	34.790	14.334	661.79	190.51	595.79	.63938
#1	.00036	38.621	.00058	.03943	-.00083	.00152	.00296	6.3701
#2	.00016	38.521	.00039	.04531	-.00021	-.00189	-.00164	6.2984
#3	.00022	38.432	.00080	.05253	.00069	-.00402	-.00013	6.3018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508127501 Acquired: 8/26/2015 15:11:38 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	1.8864	-.00320	-.00213	.00005	.00136	3.4361
Stddev	.00037	.0031	.00115	.00090	.00025	.00003	1.2248
%RSD	122.92	.16539	35.857	42.083	497.93	2.4515	35.646
#1	.00047	1.8900	-.00440	-.00149	.00020	.00139	4.2780
#2	.00055	1.8852	-.00211	-.00174	.00019	.00136	2.0310
#3	-.00012	1.8841	-.00308	-.00315	-.00024	.00133	3.9994
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8761.3	13232.
Stddev	32.6	149.
%RSD	.37246	1.1269
#1	8724.8	13064.
#2	8787.6	13347.
#3	8771.6	13286.

Approved: August 27, 2015

Sample Name: CCV Acquired: 8/26/2015 15:15:01 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40959	10.077	.41280	.51657	1.0119	.05201	10.046	.05130
Stddev	.00074	.149	.00254	.00311	.0129	.00027	.130	.00043
%RSD	.18158	1.4748	.61479	.60131	1.2778	.52189	1.2913	.83193
#1	.40942	9.9111	.41230	.51824	.99712	.05198	9.8964	.05152
#2	.41040	10.198	.41055	.51299	1.0171	.05175	10.123	.05081
#3	.40895	10.121	.41555	.51849	1.0213	.05229	10.119	.05157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20903	.52796	.52361	4.1173	50.503	1.0011	10.424	.53193
Stddev	.00141	.00215	.00375	.0475	.589	.0164	.132	.00725
%RSD	.67514	.40639	.71596	1.1541	1.1670	1.6370	1.2645	1.3625
#1	.20970	.52641	.52548	4.0683	49.822	.98260	10.321	.53613
#2	.20740	.52706	.51929	4.1632	50.855	1.0069	10.572	.53611
#3	.20997	.53041	.52605	4.1204	50.831	1.0138	10.378	.52357
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0577	50.516	.52671	10.406	.52697	1.2406	.40839	5.1984
Stddev	.0091	.503	.00473	.072	.00470	.0071	.00743	.0127
%RSD	.86419	.99610	.89880	.69257	.89258	.57101	1.8185	.24481
#1	1.0530	49.941	.52973	10.431	.53190	1.2434	.41684	5.1923
#2	1.0518	50.736	.52126	10.325	.52253	1.2326	.40548	5.1898
#3	1.0682	50.872	.52915	10.463	.52647	1.2459	.40287	5.2130
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: August 27, 2015

Kim K Buck

Sample Name: CCV Acquired: 8/26/2015 15:15:01 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0494**	**1.0138**	**1.0257**	**.52252**	**1.0412**	**1.0622**	**.99844**
Stddev	.0117	.0154	.0120	.00571	.0052	.0072	1.8900
%RSD	1.1179	1.5203	1.1673	1.0921	.49975	.67526	189.29
#1	1.0570	.99604	1.0119	.52729	1.0419	1.0604	-1.1780
#2	1.0359	1.0226	1.0330	.51620	1.0357	1.0561	2.2256
#3	1.0554	1.0229	1.0322	.52407	1.0460	1.0701	1.9478
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**8668.2**	**12848.**
Stddev	28.6	183.
%RSD	.32966	1.4236
#1	8678.8	12765.
#2	8690.1	12721.
#3	8635.9	13057.

Approved: August 27, 2015

Kim K Buck

Sample Name: CCB Acquired: 8/26/2015 15:18:06 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.01114**	**-.00123**	**.00074**	**.00037**	**.00005**	**-.01272**
Stddev	.00065	.00501	.00038	.00079	.00029	.00000	.00452
%RSD	623.06	44.941	31.217	107.19	78.298	6.2473	35.560
#1	-.00053	.01072	-.00078	.00033	.00024	.00005	-.01580
#2	-.00042	.00636	-.00144	.00165	.00017	.00005	-.00753
#3	.00064	.01634	-.00145	.00024	.00070	.00005	-.01483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**-.00014**	**.00023**	**.00011**	**-.00169**	**-.00009**	**.00090**
Stddev	.00014	.00007	.00014	.00019	.00288	.00521	.00188
%RSD	2003.3	46.825	61.896	175.39	170.10	6078.7	208.93
#1	.00017	-.00009	.00008	-.00011	.00155	.00232	-.00123
#2	-.00008	-.00012	.00036	.00021	-.00267	-.00606	.00229
#3	-.00007	-.00022	.00025	.00023	-.00395	.00348	.00164
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01143**	**.00001**	**.00051**	**.02266**	**.00025**	**-.00075**	**-.00110**
Stddev	.00384	.00002	.00018	.01724	.00005	.00180	.00156
%RSD	33.547	124.37	36.232	76.086	18.280	240.17	141.59
#1	.01410	.00003	.00072	.03570	.00029	.00103	.00066
#2	.01316	.00000	.00044	.00311	.00027	-.00258	-.00166
#3	.00704	.00002	.00037	.02916	.00020	-.00070	-.00231
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: CCB Acquired: 8/26/2015 15:18:06 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00155	-.00117	-.00016	-.00022	.00008	.00049	.00049
Stddev	.00173	.00278	.00057	.00017	.00006	.00084	.00253
%RSD	111.44	238.11	358.69	80.378	73.526	171.27	519.07
#1	.00002	-.00412	.00037	-.00015	.00001	.00145	.00299
#2	-.00340	-.00080	-.00009	-.00041	.00013	-.00010	.00055
#3	-.00127	.00141	-.00076	-.00009	.00010	.00011	-.00207
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00010	-.00036	F .92678
Stddev	.00035	.00008	1.4903
%RSD	356.48	22.453	160.81
#1	-.00029	-.00045	2.4479
#2	.00019	-.00029	.86308
#3	.00039	-.00034	-.53066
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8719.2	12699.
Stddev	14.2	145.
%RSD	.16233	1.1441
#1	8718.0	12807.
#2	8734.0	12757.
#3	8705.7	12534.

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508127502 Acquired: 8/26/2015 15:21:33 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00048	.09769	.00079	.06489	2.7348	.00008	57.535
Stddev	.00041	.03999	.00115	.00172	.0505	.00003	.981
%RSD	86.795	40.938	145.48	2.6545	1.8473	39.133	1.7042
#1	-.00090	.14372	-.00050	.06605	2.6765	.00011	56.406
#2	-.00046	.07146	.00118	.06291	2.7628	.00005	58.174
#3	-.00007	.07789	.00169	.06570	2.7652	.00009	58.024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.00091	.00149	.08567	6.1921	1.6501	.00973
Stddev	.00004	.00017	.00016	.00091	.1313	.0233	.00112
%RSD	8.4752	19.124	10.579	1.0606	2.1200	1.4143	11.467
#1	.00056	.00091	.00149	.08512	6.0417	1.6250	.01085
#2	.00048	.00074	.00165	.08672	6.2511	1.6540	.00862
#3	.00048	.00108	.00134	.08517	6.2835	1.6712	.00973
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	19.754	.60492	.00062	17.780	.00138	.05462	.01311
Stddev	.412	.00550	.00005	.303	.00077	.00420	.00128
%RSD	2.0854	.90976	8.0520	1.7028	55.570	7.6837	9.7299
#1	19.292	.60085	.00065	17.433	.00191	.05346	.01324
#2	19.888	.60274	.00056	17.924	.00173	.05928	.01177
#3	20.082	.61118	.00064	17.985	.00050	.05113	.01431
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508127502 Acquired: 8/26/2015 15:21:33 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00150**	**-.00102**	**8.6311**	**.00290**	**2.5003**	**-.00265**	**-.00070**
Stddev	.00092	.00061	.0251	.00026	.0459	.00057	.00003
%RSD	61.237	59.647	.29093	9.1341	1.8368	21.443	4.3963
#1	-.00206	-.00032	8.6519	.00270	2.4475	-.00303	-.00067
#2	-.00201	-.00134	8.6383	.00320	2.5312	-.00293	-.00073
#3	-.00044	-.00140	8.6032	.00279	2.5222	-.00200	-.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00002**	**.06773**	F **-2.1154**
Stddev	.00022	.00131	1.2442
%RSD	946.74	1.9358	58.818
#1	.00017	.06658	-.76562
#2	.00013	.06916	-2.3640
#3	-.00023	.06745	-3.2165
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**8742.5**	**13290.**
Stddev	9.1	136.
%RSD	.10458	1.0221
#1	8743.7	13391.
#2	8732.9	13344.
#3	8751.0	13136.

Approved: August 27, 2015

Sample Name: L1508127503 Acquired: 8/26/2015 15:24:54 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.01239	-.00295	.04819	.27340	.00006	56.232
Stddev	.00064	.02009	.00033	.00032	.00090	.00003	.191
%RSD	185.31	162.16	11.206	.67188	.32850	42.504	.33972
#1	.00077	.02038	-.00315	.04784	.27238	.00008	56.034
#2	-.00039	.02726	-.00256	.04823	.27406	.00007	56.415
#3	.00066	-.01047	-.00312	.04848	.27376	.00003	56.247
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.00017	.00137	.07253	.96587	1.4888	.01276
Stddev	.00014	.00011	.00020	.00034	.01307	.0206	.00114
%RSD	27.138	66.760	14.914	.46959	1.3528	1.3841	8.9024
#1	.00044	.00017	.00135	.07271	.95990	1.4783	.01161
#2	.00067	.00005	.00118	.07275	.98085	1.5125	.01388
#3	.00042	.00028	.00159	.07214	.95685	1.4755	.01281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	18.624	.10514	.00041	20.701	.00066	.00255	-.00064
Stddev	.079	.00017	.00018	.067	.00013	.00368	.00103
%RSD	.42554	.15799	43.431	.32252	20.130	144.25	160.34
#1	18.580	.10520	.00062	20.636	.00077	-.00051	-.00022
#2	18.716	.10526	.00028	20.770	.00068	.00153	.00011
#3	18.577	.10495	.00034	20.698	.00051	.00663	-.00181
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508127503 Acquired: 8/26/2015 15:24:54 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00227	-.00065	5.6095	.00088	.94534	-.00363	-.00156
Stddev	.00115	.00169	.0289	.00038	.00092	.00201	.00193
%RSD	50.657	260.42	.51476	43.264	.09759	55.400	123.30
#1	-.00353	-.00223	5.5762	.00076	.94438	-.00535	.00061
#2	-.00127	.00113	5.6266	.00130	.94622	-.00142	-.00307
#3	-.00202	-.00084	5.6257	.00057	.94543	-.00410	-.00223
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00006	.03483	F -1.1677
Stddev	.00037	.00021	.5838
%RSD	633.11	.59600	49.999
#1	.00025	.03461	-.73431
#2	.00004	.03484	-.93719
#3	-.00046	.03503	-1.8316
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8703.7	13037.
Stddev	43.7	32.
%RSD	.50179	.24726
#1	8750.4	13065.
#2	8696.8	13002.
#3	8663.8	13045.

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508127504 Acquired: 8/26/2015 15:28:18 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	.01918	-.00172	.19369	.87328	.00002	12.201	.00022
Stddev	.00030	.01949	.00155	.00132	.00394	.00000	.038	.00002
%RSD	213.54	101.64	89.844	.68138	.45074	25.133	.31408	10.831
#1	-.00036	-.00268	-.00321	.19217	.86929	.00002	12.159	.00020
#2	.00020	.02545	-.00183	.19457	.87716	.00001	12.207	.00022
#3	-.00026	.03477	-.00012	.19434	.87338	.00002	12.235	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00028	.00046	.00208	.07020	1.1075	.01345	4.7999	.00394
Stddev	.00010	.00021	.00013	.00242	.0381	.00127	.0335	.00006
%RSD	37.469	44.822	6.3965	3.4531	3.4390	9.4243	.69876	1.4860
#1	-.00020	.00070	.00192	.07120	1.1436	.01487	4.8284	.00388
#2	-.00040	.00038	.00216	.07198	1.0677	.01244	4.7629	.00394
#3	-.00024	.00031	.00215	.06744	1.1111	.01302	4.8082	.00400
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	118.09	.00021	.01614	.00044	-.00092	.00236	3.5258
Stddev	.00031	.72	.00019	.00400	.00101	.00201	.00378	.0217
%RSD	185.14	.60817	89.901	24.761	231.36	218.11	159.95	.61588
#1	-.00014	117.29	.00018	.01791	.00153	.00101	.00110	3.5119
#2	.00048	118.69	.00041	.01894	-.00047	-.00078	.00661	3.5508
#3	.00016	118.28	.00004	.01156	.00025	-.00300	-.00062	3.5145
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508127504 Acquired: 8/26/2015 15:28:18 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	.72718	-.00027	-.00115	.00000	.01787	.15774
Stddev	.00048	.00080	.00179	.00083	.00018	.00025	1.0832
%RSD	75.970	.11020	663.96	71.749	3795.9	1.4139	686.66
#1	.00099	.72627	-.00111	-.00172	.00007	.01769	1.2420
#2	.00080	.72748	.00178	-.00153	-.00020	.01815	-.92431
#3	.00009	.72779	-.00149	-.00020	.00015	.01776	.15554
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8718.1	12515.
Stddev	13.3	91.
%RSD	.15208	.72510
#1	8714.3	12554.
#2	8732.8	12580.
#3	8707.1	12411.

Approved: August 27, 2015

Sample Name: L1508127601 Acquired: 8/26/2015 15:31:42 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	3.2187	.00199	.03900	.14359	.00022	67.128	.00042
Stddev	.00033	.0171	.00219	.00081	.00063	.00002	.234	.00004
%RSD	833.86	.53204	109.82	2.0728	.44047	8.4798	.34824	10.048
#1	.00030	3.2118	.00308	.03820	.14353	.00020	66.867	.00045
#2	-.00005	3.2062	-.00053	.03981	.14298	.00023	67.197	.00044
#3	-.00037	3.2383	.00343	.03899	.14424	.00022	67.319	.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00274	.00530	.02368	5.3495	1.9567	.01611	11.632	.32933
Stddev	.00014	.00037	.00073	.0408	.0226	.00078	.111	.00184
%RSD	5.2387	6.9332	3.0660	.76200	1.1525	4.8606	.95585	.56003
#1	.00290	.00548	.02437	5.3312	1.9433	.01597	11.588	.33003
#2	.00270	.00555	.02375	5.3211	1.9440	.01541	11.549	.32724
#3	.00262	.00488	.02293	5.3962	1.9827	.01696	11.758	.33073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	15.420	.00869	.18564	.00326	-.00128	-.00101	9.1453
Stddev	.00016	.085	.00021	.00566	.00207	.00117	.00272	.0360
%RSD	24.596	.55346	2.3621	3.0493	63.446	91.393	268.91	.39353
#1	.00074	15.396	.00853	.18970	.00287	-.00149	-.00028	9.1099
#2	.00046	15.350	.00892	.17917	.00549	-.00002	.00127	9.1818
#3	.00071	15.515	.00862	.18804	.00141	-.00232	-.00402	9.1443
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508127601 Acquired: 8/26/2015 15:31:42 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00219	.43940	.04259	-.00032	.00544	.02355	12.799
Stddev	.00026	.00199	.00086	.00103	.00026	.00044	.630
%RSD	11.839	.45389	2.0215	321.32	4.8052	1.8554	4.9251
#1	.00214	.43773	.04243	-.00124	.00560	.02396	12.187
#2	.00196	.43885	.04181	-.00050	.00558	.02309	13.446
#3	.00247	.44160	.04351	.00079	.00514	.02360	12.764
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8844.4	13374.
Stddev	14.6	86.
%RSD	.16485	.64452
#1	8858.5	13323.
#2	8829.4	13473.
#3	8845.3	13324.

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508127701 Acquired: 8/26/2015 15:35:04 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	.51748	-.00226	.05587	.05754	.00009	46.757	.00036
Stddev	.00036	.00839	.00272	.00129	.00028	.00002	.188	.00006
%RSD	127.36	1.6218	120.30	2.3065	.47896	22.466	.40233	16.380
#1	.00050	.52092	-.00174	.05541	.05729	.00007	46.665	.00036
#2	-.00013	.50792	-.00520	.05732	.05749	.00009	46.633	.00043
#3	.00046	.52361	.00016	.05487	.05783	.00012	46.974	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	.00135	.00508	.82639	2.2798	.00632	3.6426	.07702
Stddev	.00015	.00014	.00032	.00239	.0163	.00087	.0431	.00124
%RSD	310.71	10.035	6.2054	.28944	.71318	13.692	1.1824	1.6115
#1	-.00015	.00134	.00490	.82374	2.2610	.00633	3.6903	.07790
#2	.00012	.00149	.00544	.82708	2.2889	.00718	3.6309	.07755
#3	-.00011	.00122	.00489	.82837	2.2894	.00545	3.6066	.07560
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	2.3375	.00158	.14658	.00030	-.00017	-.00013	3.4038
Stddev	.00015	.0162	.00155	.00127	.00071	.00079	.00147	.0326
%RSD	50.646	.69166	98.031	.86607	233.99	470.20	1136.4	.95809
#1	.00046	2.3209	.00263	.14694	.00108	.00073	.00132	3.3696
#2	.00024	2.3386	.00231	.14762	-.00031	-.00075	-.00162	3.4073
#3	.00017	2.3531	-.00020	.14516	.00014	-.00048	-.00008	3.4346
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508127701 Acquired: 8/26/2015 15:35:04 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.13839	.00566	.00058	.00076	.02348	3.6465
Stddev	.00029	.00050	.00070	.00082	.00007	.00046	1.1435
%RSD	89.081	.35887	12.290	141.50	8.5726	1.9676	31.359
#1	.00002	.13833	.00647	-.00034	.00084	.02300	3.5464
#2	.00060	.13792	.00530	.00085	.00074	.02350	4.8367
#3	.00036	.13891	.00522	.00124	.00071	.02393	2.5563
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8784.0	13153.
Stddev	26.6	175.
%RSD	.30294	1.3291
#1	8753.6	13039.
#2	8803.3	13065.
#3	8795.0	13354.

Approved: August 27, 2015

Sample Name: L1508127801 Acquired: 8/26/2015 15:38:28 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.04201	-.00217	.00777	.06208	.00004	45.846	.00030
Stddev	.00056	.01183	.00095	.00058	.00017	.00000	.127	.00010
%RSD	601.21	28.159	43.937	7.5163	.27235	7.9200	.27776	33.097
#1	.00063	.05428	-.00143	.00841	.06194	.00004	45.783	.00037
#2	-.00048	.04106	-.00184	.00765	.06227	.00004	45.992	.00018
#3	.00013	.03068	-.00325	.00726	.06203	.00004	45.762	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00046	.00030	.00035	.01567	.46076	.00667	4.3633	.00091
Stddev	.00015	.00038	.00010	.00534	.01819	.00064	.0167	.00002
%RSD	32.974	126.56	27.512	34.099	3.9482	9.6197	.38271	2.5783
#1	-.00060	.00055	.00042	.01100	.46799	.00593	4.3471	.00089
#2	-.00030	-.00013	.00039	.01451	.47422	.00697	4.3625	.00093
#3	-.00049	.00047	.00024	.02150	.44006	.00710	4.3804	.00090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00095	2.5331	.00032	.01833	.00032	.00028	.00023	3.5614
Stddev	.00026	.0162	.00101	.00410	.00244	.00079	.00127	.0951
%RSD	27.992	.63999	317.01	22.367	767.36	285.74	553.49	2.6706
#1	.00097	2.5295	.00138	.02107	.00192	.00055	.00134	3.6680
#2	.00120	2.5509	-.00064	.02030	-.00249	-.00062	-.00115	3.5310
#3	.00067	2.5191	.00022	.01362	.00153	.00090	.00050	3.4852
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508127801 Acquired: 8/26/2015 15:38:28 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.11957	-.00330	-.00010	-.00001	.00216	.96071
Stddev	.00025	.00045	.00058	.00171	.00014	.00005	1.8249
%RSD	45.574	.37699	17.520	1742.5	1581.8	2.2692	189.95
#1	.00066	.11974	-.00396	.00170	.00000	.00217	-.52671
#2	.00027	.11991	-.00306	-.00170	.00013	.00220	2.9970
#3	.00074	.11906	-.00288	-.00030	-.00016	.00210	.41181
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8792.2	12976.
Stddev	43.2	56.
%RSD	.49084	.43332
#1	8763.7	12914.
#2	8771.1	13024.
#3	8841.8	12989.

Approved: August 27, 2015

Kim K Buck

Sample Name: CCV Acquired: 8/26/2015 15:41:53 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40859**	**10.024**	**.41973**	**.51701**	**1.0120**	**.05221**	**10.056**
Stddev	.00369	.109	.00310	.00173	.0085	.00040	.087
%RSD	.90280	1.0860	.73910	.33506	.83921	.76984	.86266
#1	.41034	9.8987	.41839	.51871	1.0022	.05208	9.9563
#2	.41108	10.074	.42328	.51706	1.0160	.05266	10.098
#3	.40435	10.098	.41753	.51525	1.0176	.05189	10.114
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05192**	**.21005**	**.52643**	**.52569**	**4.1180**	**50.738**	**1.0131**
Stddev	.00044	.00203	.00268	.00481	.0135	.350	.0100
%RSD	.84512	.96525	.50892	.91582	.32660	.69052	.98717
#1	.05202	.21016	.52734	.52446	4.1028	50.334	1.0018
#2	.05231	.21202	.52854	.53100	4.1229	50.946	1.0171
#3	.05144	.20797	.52342	.52161	4.1284	50.936	1.0205
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.401**	**.53172**	**1.0647**	**50.661**	**.53154**	**10.421**	**.53331**
Stddev	.071	.00521	.0091	.274	.00520	.090	.00728
%RSD	.68085	.97951	.85310	.54049	.97838	.86489	1.3648
#1	10.415	.53662	1.0714	50.353	.53297	10.418	.53162
#2	10.463	.53230	1.0682	50.875	.53587	10.513	.54128
#3	10.324	.52625	1.0543	50.756	.52577	10.333	.52702
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: August 27, 2015

Kim K Buck

Sample Name: CCV Acquired: 8/26/2015 15:41:53 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2507**	**.40689**	**5.2419**	**1.0540**	**1.0161**	**1.0248**	**.52478**
Stddev	.0064	.00281	.0319	.0116	.0109	.0080	.00459
%RSD	.50889	.69086	.60925	1.0968	1.0715	.77613	.87495
#1	1.2481	.40654	5.2626	1.0561	1.0036	1.0157	.52255
#2	1.2580	.40986	5.2580	1.0645	1.0213	1.0302	.53006
#3	1.2461	.40427	5.2051	1.0416	1.0234	1.0286	.52174
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0513**	**1.0737**	F **.10354**
Stddev	.0083	.0109	1.7967
%RSD	.79372	1.0159	1735.3
#1	1.0557	1.0795	-1.5608
#2	1.0565	1.0804	-.13686
#3	1.0417	1.0611	2.0083
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**8606.4**	**12866.**
Stddev	50.7	121.
%RSD	.58919	.93812
#1	8591.0	12749.
#2	8565.2	12859.
#3	8663.0	12990.

Approved: August 27, 2015

Kim K Buck

Sample Name: CCB Acquired: 8/26/2015 15:44:58 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.02301	.00006	.00005	.00027	.00003	-.00280
Stddev	.00055	.02082	.00162	.00110	.00026	.00001	.01534
%RSD	163.77	90.501	2804.9	2395.6	95.863	44.968	547.19
#1	.00096	.04181	-.00121	.00119	.00024	.00004	.01489
#2	-.00004	.02659	-.00050	-.00100	.00055	.00002	-.01091
#3	.00008	.00063	.00188	-.00006	.00003	.00002	-.01239
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	-.00008	-.00007	-.00022	.00159	-.01291	.00374
Stddev	.00013	.00010	.00062	.00024	.00459	.01419	.00156
%RSD	1342.8	130.35	941.61	106.84	289.33	109.89	41.595
#1	-.00004	-.00019	.00045	-.00047	.00276	-.02386	.00422
#2	.00016	-.00003	-.00076	.00000	-.00348	.00312	.00500
#3	-.00009	-.00001	.00011	-.00020	.00548	-.01800	.00200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00956	-.00001	.00063	.02916	.00027	-.00188	-.00165
Stddev	.01325	.00008	.00018	.01496	.00061	.00262	.00169
%RSD	138.64	1235.0	28.343	51.316	220.03	139.79	102.20
#1	-.00249	-.00001	.00078	.03582	-.00042	-.00477	-.00269
#2	-.00134	-.00008	.00068	.03964	.00061	-.00120	-.00256
#3	-.02484	.00007	.00043	.01202	.00064	.00034	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: CCB Acquired: 8/26/2015 15:44:58 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00129	-.00303	-.00106	-.00026	.00009	.00130	-.00004
Stddev	.00157	.00159	.00107	.00029	.00007	.00070	.00057
%RSD	122.44	52.521	101.54	115.18	78.671	53.426	1321.5
#1	-.00147	-.00451	.00014	-.00049	.00010	.00125	.00061
#2	.00037	-.00135	-.00137	.00007	.00016	.00203	-.00046
#3	-.00276	-.00323	-.00194	-.00035	.00002	.00063	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00028	-.00023	F .25659
Stddev	.00020	.00010	.27479
%RSD	72.675	43.672	107.09
#1	-.00035	-.00035	.57173
#2	-.00043	-.00016	.13104
#3	-.00005	-.00019	.06700
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8710.7	12979.
Stddev	13.0	54.
%RSD	.14900	.41254
#1	8696.1	12917.
#2	8721.1	13006.
#3	8714.7	13014.

Approved: August 27, 2015

Sample Name: LLCCV Acquired: 8/26/2015 15:48:26 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .00953	F .16197	F .01706	F .08212	F .00916	F .00903	F .15874
Stddev	.00078	.01596	.00246	.00069	.00028	.00007	.00286
%RSD	8.1751	9.8508	14.405	.84556	3.1007	.79463	1.8030
#1	.00929	.15324	.01823	.08256	.00886	.00904	.15935
#2	.01040	.15228	.01424	.08247	.00918	.00896	.16125
#3	.00889	.18038	.01872	.08132	.00943	.00910	.15562
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.40000	10.000	.40000	.50000	1.0000	.05000	10.000
Range	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .00922	F .00941	F .01752	F .01817	F .06434	F .83781	F .08606
Stddev	.00012	.00012	.00024	.00005	.00105	.00969	.00021
%RSD	1.3276	1.2742	1.3682	.28699	1.6254	1.1568	.24123
#1	.00936	.00940	.01775	.01812	.06394	.83614	.08608
#2	.00916	.00930	.01727	.01819	.06356	.84823	.08626
#3	.00913	.00954	.01753	.01822	.06553	.82906	.08584
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.05000	.20000	.50000	.50000	4.0000	50.000	1.0000
Range	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .41313	F .01014	F .05154	F .42821	F .03499	F -.00219	F .01758
Stddev	.01027	.00010	.00012	.00401	.00111	.00558	.00010
%RSD	2.4869	.98020	.24079	.93700	3.1808	254.71	.57149
#1	.40699	.01003	.05153	.42465	.03617	-.00803	.01761
#2	.42499	.01018	.05143	.42743	.03485	.00308	.01746
#3	.40741	.01022	.05167	.43256	.03395	-.00163	.01765
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	10.000	.50000	1.0000	50.000	.50000	10.000	.50000
Range	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%

Approved: August 27, 2015

Kim K Buck

Sample Name: LLCCV Acquired: 8/26/2015 15:48:26 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .01477	F .01803	F .00054	F .08569	F .00915	F .02566	F .08814
Stddev	.00096	.00132	.00051	.00026	.00010	.00060	.00165
%RSD	6.4742	7.3239	93.464	.30376	1.0962	2.3270	1.8723
#1	.01383	.01769	-.00003	.08539	.00910	.02523	.08738
#2	.01474	.01691	.00074	.08588	.00909	.02634	.09003
#3	.01574	.01949	.00092	.08580	.00927	.02542	.08701
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	1.2000	.40000	5.0000	1.0000	1.0000	1.0000	.50000
Range	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	F .00871	F .02062	F -.11330
Stddev	.00011	.00034	1.9162
%RSD	1.2718	1.6712	1691.2
#1	.00858	.02024	-1.8147
#2	.00879	.02091	-.48755
#3	.00874	.02072	1.9624
Check ?	Chk Fail	Chk Fail	Chk Fail
Value	1.0000	1.0000	1.0000
Range	-10.000%	-10.000%	-10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8735.3	12799.
Stddev	5.1	77.
%RSD	.05788	.60185
#1	8732.8	12878.
#2	8731.9	12794.
#3	8741.1	12725.

Approved: August 27, 2015

Kim K Buck

Sample Name: PBW 21 Acquired: 8/26/2015 16:06:47 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG536309-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00191	.02108	-.00151	.00230	.00053	.00001	-.00976
Stddev	.00023	.00502	.00174	.00024	.00017	.00001	.00216
%RSD	11.997	23.809	115.47	10.354	31.559	90.237	22.156
#1	.00173	.02231	-.00032	.00255	.00053	.00002	-.01079
#2	.00183	.02536	-.00351	.00209	.00070	.00000	-.01121
#3	.00217	.01556	-.00070	.00225	.00037	.00002	-.00727
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	-.00011	.00032	.00033	.00159	-.01548	-.00034
Stddev	.00008	.00009	.00007	.00045	.00173	.00435	.00132
%RSD	46.373	76.006	20.458	137.39	109.36	28.075	388.77
#1	.00008	-.00008	.00025	.00049	.00236	-.01356	-.00048
#2	.00022	-.00005	.00036	.00066	.00280	-.02046	.00104
#3	.00024	-.00021	.00036	-.00018	-.00040	-.01243	-.00158
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.01551	.00018	.00038	.01856	.00092	F -.00735	-.00069
Stddev	.01908	.00007	.00006	.00670	.00070	.00750	.00196
%RSD	123.03	39.950	15.715	36.103	76.304	102.10	281.61
#1	-.00328	.00011	.00031	.01112	.00061	-.00554	.00146
#2	-.03749	.00019	.00043	.02412	.00172	-.00091	-.00236
#3	-.00575	.00025	.00041	.02044	.00043	-.01559	-.00118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: August 27, 2015

Kim K Buck

Sample Name: PBW 21 Acquired: 8/26/2015 16:06:47 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG536309-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00193	-.00013	.00141	.00063	.00017	-.00072	-.00115
Stddev	.00060	.00038	.00090	.00047	.00005	.00027	.00066
%RSD	31.061	279.69	64.303	75.598	30.864	36.777	56.911
#1	-.00144	-.00055	.00140	.00108	.00012	-.00047	-.00176
#2	-.00259	-.00005	.00231	.00014	.00015	-.00071	-.00046
#3	-.00175	.00019	.00050	.00066	.00022	-.00100	-.00124
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00005	.00084	1.7347
Stddev	.00014	.00009	1.3553
%RSD	283.97	10.488	78.127
#1	-.00016	.00086	1.9028
#2	-.00011	.00074	2.9981
#3	.00011	.00091	.30322
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8963.4	13028.
Stddev	25.4	42.
%RSD	.28354	.32432
#1	8983.5	12981.
#2	8972.0	13040.
#3	8934.9	13062.

Approved: August 27, 2015

Sample Name: LCSW 21 Acquired: 8/26/2015 16:10:14 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG536309-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19785	4.8680	.18994	.95855	.49001	.02466	4.8269	.02434
Stddev	.00134	.0411	.00183	.00543	.00181	.00012	.0098	.00027
%RSD	.67865	.84362	.96604	.56629	.36843	.50215	.20226	1.1223
#1	.19861	4.8407	.19096	.95637	.48814	.02466	4.8164	.02442
#2	.19630	4.8481	.19104	.95454	.49175	.02454	4.8283	.02457
#3	.19863	4.9152	.18782	.96473	.49015	.02478	4.8358	.02404
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10061	.25747	.25141	2.0035	24.471	.48365	5.0629	.26635
Stddev	.00048	.00134	.00046	.0230	.073	.00164	.0697	.00148
%RSD	.47719	.51939	.18436	1.1487	.29807	.33986	1.3763	.55578
#1	.10083	.25606	.25137	1.9770	24.391	.48193	4.9824	.26471
#2	.10094	.25761	.25097	2.0185	24.535	.48381	5.1044	.26760
#3	.10006	.25873	.25189	2.0151	24.487	.48521	5.1018	.26673
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50624	24.385	.25503	4.7773	.25596	.59216	.18917	2.5326
Stddev	.00071	.126	.00173	.0118	.00164	.00132	.00566	.0313
%RSD	.14009	.51578	.67766	.24724	.64051	.22289	2.9895	1.2345
#1	.50567	24.243	.25400	4.7871	.25773	.59196	.18937	2.5146
#2	.50703	24.482	.25703	4.7805	.25565	.59357	.19473	2.5687
#3	.50600	24.430	.25407	4.7641	.25449	.59095	.18342	2.5145
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 27, 2015

Kim K Buck

Sample Name: LCSW 21 Acquired: 8/26/2015 16:10:14 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG536309-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50505	.49105	.50182	.25264	.51028	.49625	2.5419
Stddev	.00734	.00056	.00506	.00425	.00283	.00219	1.5430
%RSD	1.4526	.11447	1.0076	1.6810	.55380	.44058	60.702
#1	.50242	.49101	.49603	.25082	.50819	.49413	2.6484
#2	.51334	.49050	.50413	.25750	.50915	.49612	4.0290
#3	.49940	.49163	.50532	.24962	.51349	.49850	.94846
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8838.8	12869.
Stddev	29.3	59.
%RSD	.33131	.45653
#1	8844.9	12921.
#2	8864.6	12805.
#3	8807.0	12879.

Approved: August 27, 2015

Kim K Buck

Sample Name: FBLK Acquired: 8/26/2015 16:13:20 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG536080-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	-.01737	-.00110	.00259	.00047	.00002	-.01140
Stddev	.00037	.02805	.00056	.00049	.00012	.00003	.01222
%RSD	5171.0	161.51	50.915	18.823	26.248	163.38	107.19
#1	-.00037	-.04790	-.00141	.00315	.00041	.00002	-.01295
#2	-.00001	-.01146	-.00143	.00227	.00039	-.00001	.00152
#3	.00036	.00726	-.00045	.00234	.00062	.00005	-.02278
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	-.00033	.00053	.00078	.00387	.00651	.00146
Stddev	.00005	.00013	.00052	.00061	.00063	.02424	.00075
%RSD	38.433	37.538	97.807	78.016	16.142	372.32	51.079
#1	.00016	-.00021	.00104	.00132	.00415	.03373	.00163
#2	.00013	-.00033	.00055	.00090	.00316	-.00146	.00211
#3	.00007	-.00046	.00000	.00012	.00431	-.01274	.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00378	.00011	.00053	121.18	.00048	F -.00754	-.00101
Stddev	.00250	.00007	.00022	.89	.00031	.00419	.00318
%RSD	66.115	65.380	41.014	.73488	64.852	55.543	314.24
#1	.00609	.00007	.00051	120.16	.00081	-.00381	.00219
#2	.00113	.00007	.00076	121.79	.00019	-.01207	-.00417
#3	.00412	.00019	.00032	121.60	.00046	-.00674	-.00105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: August 27, 2015

Kim K Buck

Sample Name: FBLK Acquired: 8/26/2015 16:13:20 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG536080-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00048**	**.00322**	**.00256**	**.00069**	**.00024**	**.00085**	**-.00034**
Stddev	.00157	.00071	.00112	.00006	.00007	.00056	.00208
%RSD	328.01	22.105	43.723	9.1692	29.629	65.620	613.91
#1	-.00109	.00261	.00158	.00076	.00027	.00022	-.00131
#2	.00131	.00400	.00378	.00068	.00028	.00128	.00205
#3	-.00166	.00305	.00232	.00063	.00015	.00106	-.00175
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00008**	**.00380**	**.72357**
Stddev	.00018	.00015	.56803
%RSD	228.01	4.0191	78.504
#1	.00020	.00378	.07822
#2	-.00013	.00366	1.1477
#3	.00017	.00396	.94478
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**8613.1**	**13001.**
Stddev	20.3	93.
%RSD	.23517	.71279
#1	8634.7	12962.
#2	8610.1	13107.
#3	8594.5	12935.

Approved: August 27, 2015

Sample Name: L1508107302 Acquired: 8/26/2015 16:16:47 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00033	.05738	-.00092	.02966	.04635	.00008	99.541
Stddev	.00004	.02245	.00183	.00036	.00039	.00003	.099
%RSD	12.666	39.122	197.76	1.1984	.84222	37.652	.09899
#1	-.00030	.05252	-.00300	.03005	.04666	.00008	99.430
#2	-.00031	.03776	.00046	.02936	.04591	.00012	99.576
#3	-.00037	.08186	-.00024	.02957	.04649	.00005	99.618
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00083	.00315	.00134	.00030	6.1513	2.5795	.07165
Stddev	.00005	.00003	.00032	.00064	.0409	.0322	.00069
%RSD	6.2770	1.0993	23.967	217.21	.66525	1.2469	.95852
#1	.00077	.00315	.00153	-.00021	6.1346	2.6071	.07137
#2	.00085	.00311	.00097	.00102	6.1214	2.5442	.07114
#3	.00088	.00318	.00153	.00008	6.1979	2.5872	.07243
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	51.588	.44836	.00128	215.06	.00178	.03628	-.00022
Stddev	.311	.00239	.00023	1.40	.00048	.00371	.00171
%RSD	.60207	.53270	17.664	.65145	27.010	10.228	779.05
#1	51.271	.44584	.00110	213.47	.00203	.03446	-.00018
#2	51.602	.44865	.00154	216.10	.00207	.04055	.00147
#3	51.891	.45059	.00121	215.62	.00122	.03383	-.00195
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508107302 Acquired: 8/26/2015 16:16:47 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00263**	**.00133**	**14.100**	**.00021**	**1.8449**	**-.00451**	**-.00058**
Stddev	.00069	.00142	.026	.00054	.0014	.00050	.00071
%RSD	26.257	106.04	.18103	256.25	.07686	11.156	122.93
#1	-.00194	-.00027	14.113	.00081	1.8447	-.00480	.00018
#2	-.00332	.00187	14.117	-.00025	1.8437	-.00480	-.00122
#3	-.00263	.00240	14.071	.00008	1.8465	-.00393	-.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00015**	**.00364**	F **-3.9048**
Stddev	.00020	.00007	.8518
%RSD	134.02	1.8160	21.815
#1	.00010	.00365	-3.1094
#2	-.00002	.00369	-3.8014
#3	.00038	.00356	-4.8037
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**8276.3**	**12989.**
Stddev	11.0	50.
%RSD	.13257	.38757
#1	8269.2	13046.
#2	8270.8	12974.
#3	8288.9	12948.

Approved: August 27, 2015

Sample Name: L1508107304 Acquired: 8/26/2015 16:20:19 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.00587	-.00407	.02986	.03142	.00010	96.476	.00109
Stddev	.00015	.01489	.00039	.00070	.00016	.00002	.467	.00008
%RSD	103.62	253.84	9.5404	2.3554	.49579	16.551	.48428	7.7528
#1	.00005	.01378	-.00451	.03054	.03130	.00009	95.942	.00116
#2	.00032	.01513	-.00387	.02914	.03138	.00009	96.672	.00100
#3	.00007	-.01131	-.00382	.02991	.03160	.00012	96.813	.00113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	.00118	-.00039	.04335	1.4760	.06816	50.623	.10781
Stddev	.00017	.00029	.00012	.00515	.0357	.00103	.824	.00190
%RSD	18.381	24.696	30.232	11.869	2.4180	1.5058	1.6271	1.7643
#1	.00076	.00104	-.00038	.04917	1.4751	.06924	49.702	.10574
#2	.00087	.00152	-.00028	.03940	1.5121	.06807	50.877	.10821
#3	.00109	.00099	-.00051	.04149	1.4408	.06719	51.290	.10948
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	235.41	.00300	.06440	-.00133	.00115	-.00124	18.691
Stddev	.00007	1.71	.00043	.00187	.00271	.00085	.00226	.066
%RSD	35.472	.72693	14.211	2.9075	203.76	73.648	182.61	.35293
#1	.00020	233.45	.00298	.06327	.00178	.00212	.00113	18.676
#2	.00014	236.18	.00258	.06336	-.00319	.00061	-.00147	18.764
#3	.00028	236.60	.00343	.06656	-.00259	.00072	-.00337	18.634
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508107304 Acquired: 8/26/2015 16:20:19 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	1.3354	-.00649	-.00184	.00053	.00467	.10440
Stddev	.00023	.0087	.00007	.00056	.00013	.00006	1.6611
%RSD	43.984	.65392	1.0136	30.313	24.946	1.3526	1591.1
#1	.00026	1.3256	-.00644	-.00247	.00038	.00474	-.06861
#2	.00060	1.3386	-.00647	-.00168	.00060	.00465	1.8453
#3	.00070	1.3421	-.00656	-.00139	.00061	.00461	-1.4634
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8272.9	12520.
Stddev	7.5	189.
%RSD	.09106	1.5072
#1	8264.3	12722.
#2	8278.5	12491.
#3	8275.8	12348.

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508111401 Acquired: 8/26/2015 16:23:51 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG536309-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	.03408	-.00219	.02654	.08987	.00008	61.080	.00023
Stddev	.00021	.01915	.00249	.00043	.00054	.00002	.284	.00005
%RSD	110.00	56.207	113.97	1.6195	.60165	19.496	.46439	20.440
#1	.00005	.05561	-.00256	.02607	.08966	.00007	60.897	.00018
#2	-.00028	.01894	.00047	.02664	.08946	.00009	60.936	.00024
#3	-.00036	.02768	-.00447	.02691	.09048	.00007	61.407	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02391	.00118	.00005	.08327	.51984	.00275	1.8703	.70139
Stddev	.00020	.00047	.00019	.00226	.00430	.00104	.0148	.00804
%RSD	.83071	39.659	374.83	2.7166	.82631	37.809	.79155	1.1459
#1	.02406	.00127	-.00010	.08067	.52273	.00169	1.8592	.70805
#2	.02369	.00159	.00027	.08480	.52187	.00279	1.8871	.70366
#3	.02398	.00067	-.00001	.08434	.51490	.00377	1.8646	.69246
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	122.76	.00315	-.00129	.00298	.00023	.00369	1.6909
Stddev	.00002	1.20	.00017	.00145	.00064	.00055	.00337	.0056
%RSD	4.5896	.97453	5.2864	112.79	21.614	237.80	91.222	.33193
#1	.00041	122.01	.00302	.00009	.00233	.00082	.00394	1.6937
#2	.00039	122.12	.00309	-.00116	.00361	-.00027	.00021	1.6844
#3	.00043	124.14	.00333	-.00281	.00299	.00014	.00693	1.6945
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508111401 Acquired: 8/26/2015 16:23:51 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG536309-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00111	.08984	-.00260	-.00169	-.00020	.01187	1.7517
Stddev	.00031	.00044	.00091	.00064	.00026	.00007	2.7624
%RSD	28.344	.49080	35.126	38.197	129.47	.59893	157.69
#1	.00100	.08956	-.00361	-.00134	-.00031	.01180	-1.4108
#2	.00147	.08961	-.00183	-.00129	.00009	.01188	2.9730
#3	.00087	.09035	-.00236	-.00243	-.00038	.01194	3.6929
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8508.3	12911.
Stddev	19.8	149.
%RSD	.23254	1.1542
#1	8485.7	12785.
#2	8522.7	12874.
#3	8516.4	13076.

Approved: August 27, 2015

Sample Name: L1508111401MS Acquired: 8/26/2015 16:27:15 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG536309-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19580	4.8868	.19883	.97365	.57697	.02495	65.319	.02478
Stddev	.00009	.0593	.00023	.00098	.00392	.00010	.459	.00003
%RSD	.04805	1.2128	.11593	.10065	.68015	.38146	.70321	.13017
#1	.19578	4.8196	.19892	.97470	.57272	.02490	64.804	.02477
#2	.19571	4.9091	.19900	.97276	.57775	.02488	65.467	.02482
#3	.19590	4.9317	.19857	.97350	.58046	.02506	65.687	.02476
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.12336	.25402	.24803	2.0375	25.240	.49680	6.6443	.92400
Stddev	.00035	.00065	.00059	.0273	.151	.00175	.1366	.01216
%RSD	.28517	.25536	.23840	1.3422	.59998	.35246	2.0565	1.3160
#1	.12308	.25337	.24738	2.0089	25.072	.49478	6.5018	.91595
#2	.12324	.25403	.24853	2.0401	25.281	.49785	6.6567	.91806
#3	.12375	.25467	.24818	2.0634	25.367	.49776	6.7743	.93799
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51163	145.39	.25404	5.0239	.25529	.60503	.19447	4.2854
Stddev	.00195	.63	.00076	.0232	.00133	.00601	.00198	.0189
%RSD	.38045	.43084	.30012	.46130	.52292	.99409	1.0197	.44032
#1	.51076	144.92	.25351	5.0057	.25572	.59913	.19229	4.2646
#2	.51027	146.10	.25370	5.0161	.25379	.61115	.19496	4.2902
#3	.51386	145.16	.25491	5.0500	.25635	.60482	.19617	4.3014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508111401MS Acquired: 8/26/2015 16:27:15 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG536309-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50664	.57980	.49478	.24001	.50740	.51251	1.3841
Stddev	.00226	.00396	.00388	.00133	.00084	.00205	1.6234
%RSD	.44703	.68349	.78459	.55308	.16494	.40069	117.29
#1	.50470	.57537	.49084	.23857	.50834	.51259	2.1932
#2	.50609	.58102	.49490	.24118	.50712	.51042	2.4439
#3	.50913	.58301	.49860	.24030	.50674	.51453	-.48480
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8504.3	13071.
Stddev	14.9	158.
%RSD	.17475	1.2074
#1	8511.1	13173.
#2	8514.5	13151.
#3	8487.2	12890.

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508111401MSD Acquired: 8/26/2015 16:30:24 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG536309-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20385	4.9614	.20411	1.0145	.59116	.02574	67.592	.02550
Stddev	.00141	.0233	.00314	.0088	.00589	.00006	.369	.00028
%RSD	.69202	.46935	1.5403	.86446	.99619	.22439	.54561	1.0830
#1	.20232	4.9360	.20634	1.0046	.58451	.02579	67.167	.02520
#2	.20510	4.9666	.20547	1.0173	.59323	.02576	67.779	.02573
#3	.20412	4.9817	.20052	1.0214	.59573	.02568	67.830	.02558
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.12579	.26036	.25382	2.0909	25.968	.50729	6.8851	.96377
Stddev	.00041	.00100	.00085	.0187	.196	.00324	.0842	.00761
%RSD	.32659	.38322	.33648	.89366	.75656	.63964	1.2228	.78954
#1	.12539	.25937	.25351	2.0697	25.741	.50370	6.7879	.95550
#2	.12621	.26034	.25479	2.1050	26.074	.50815	6.9321	.97048
#3	.12576	.26136	.25318	2.0979	26.089	.51002	6.9353	.96534
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52651	150.91	.25926	5.1523	.25787	.62563	.20089	4.3919
Stddev	.00166	1.56	.00212	.0350	.00234	.00719	.00391	.0257
%RSD	.31507	1.0311	.81695	.67913	.90580	1.1488	1.9478	.58485
#1	.52539	149.14	.25834	5.1318	.25519	.62124	.20533	4.4073
#2	.52842	151.50	.26169	5.1927	.25951	.63392	.19940	4.3622
#3	.52572	152.08	.25776	5.1324	.25890	.62172	.19794	4.4061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508111401MSD Acquired: 8/26/2015 16:30:24 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG536309-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51207	.59634	.50721	.24576	.52549	.51432	1.6215
Stddev	.00779	.00310	.00385	.00448	.00304	.00128	1.9845
%RSD	1.5217	.51977	.75943	1.8213	.57804	.24979	122.39
#1	.50877	.59277	.50302	.24320	.52201	.51286	2.4195
#2	.52096	.59792	.50801	.25093	.52764	.51485	-.63779
#3	.50646	.59833	.51060	.24315	.52681	.51526	3.0828
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8443.7	12890.
Stddev	29.4	111.
%RSD	.34795	.86449
#1	8469.4	13002.
#2	8411.7	12779.
#3	8449.9	12890.

Approved: August 27, 2015

Sample Name: L1508107304PS Acquired: 8/26/2015 16:33:30 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG536547-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19958	4.9262	.20332	1.0004	.51863	.02521	91.193
Stddev	.00022	.0215	.00194	.0006	.00482	.00002	.170
%RSD	.10832	.43685	.95566	.06104	.93028	.07067	.18587
#1	.19948	4.9015	.20555	1.0009	.52106	.02522	91.173
#2	.19983	4.9404	.20196	1.0006	.52175	.02521	91.371
#3	.19943	4.9368	.20246	.99973	.51307	.02519	91.034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02573	.10029	.25483	.24849	2.0298	26.629	.55917
Stddev	.00003	.00021	.00082	.00115	.0116	.089	.00438
%RSD	.11136	.21337	.32187	.46156	.57068	.33268	.78397
#1	.02572	.10005	.25438	.24755	2.0167	26.634	.56077
#2	.02572	.10037	.25434	.24815	2.0385	26.715	.56253
#3	.02577	.10045	.25578	.24977	2.0342	26.538	.55421
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	50.236	.34949	.51367	237.71	.25290	5.1930	.25012
Stddev	.349	.00223	.00095	4.15	.00070	.0223	.00298
%RSD	.69521	.63707	.18479	1.7463	.27740	.43019	1.1912
#1	49.838	.34770	.51274	233.72	.25218	5.1771	.24680
#2	50.492	.34880	.51363	237.40	.25293	5.1833	.25257
#3	50.377	.35198	.51464	242.00	.25358	5.2185	.25098
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508107304PS Acquired: 8/26/2015 16:33:30 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG536547-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.61455**	**.19506**	**19.343**	**.50570**	**1.7000**	**.50080**	**.23715**
Stddev	.00291	.00299	.099	.00779	.0043	.00277	.00604
%RSD	.47356	1.5327	.51030	1.5395	.25173	.55381	2.5456
#1	.61677	.19279	19.452	.50057	1.7020	.49840	.23150
#2	.61125	.19844	19.317	.50187	1.7029	.50384	.23645
#3	.61561	.19394	19.259	.51466	1.6951	.50016	.24351
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.51359**	**.50722**	F **-1.0287**
Stddev	.00077	.00382	1.7065
%RSD	.14963	.75339	165.88
#1	.51445	.50355	.86299
#2	.51299	.50693	-2.4521
#3	.51332	.51117	-1.4970
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**8317.7**	**12544.**
Stddev	11.6	93.
%RSD	.13962	.74133
#1	8311.1	12607.
#2	8331.1	12587.
#3	8310.9	12437.

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508107304SDL Acquired: 8/26/2015 16:36:46 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG536547-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00033	.03171	-.00008	.01020	.00724	.00006	20.001
Stddev	.00037	.01577	.00082	.00054	.00017	.00004	.010
%RSD	111.92	49.722	1008.7	5.2515	2.3256	68.280	.05112
#1	-.00065	.03055	-.00089	.00960	.00741	.00001	19.995
#2	-.00040	.04803	-.00011	.01065	.00724	.00006	19.996
#3	.00007	.01656	.00075	.01034	.00707	.00009	20.013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	.00015	.00108	.00003	.01039	.31798	.01411
Stddev	.00004	.00010	.00057	.00071	.00127	.01668	.00038
%RSD	16.660	65.412	52.662	2642.2	12.271	5.2468	2.6881
#1	.00023	.00011	.00046	-.00069	.01132	.32215	.01455
#2	.00017	.00027	.00122	.00073	.00894	.29960	.01389
#3	.00024	.00008	.00157	.00004	.01092	.33218	.01389
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.814	.02418	.00026	49.382	-.00003	.01509	-.00058
Stddev	.120	.00034	.00004	.088	.00043	.00271	.00139
%RSD	1.1050	1.3954	14.484	.17723	1369.6	17.974	241.30
#1	10.950	.02449	.00023	49.350	-.00042	.01394	.00087
#2	10.725	.02425	.00030	49.481	-.00010	.01819	-.00190
#3	10.769	.02382	.00024	49.315	.00043	.01314	-.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508107304SDL Acquired: 8/26/2015 16:36:46 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG536547-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00238	-.00119	4.0671	-.00059	.28157	-.00131	.00126
Stddev	.00209	.00094	.0623	.00026	.00051	.00090	.00155
%RSD	87.927	79.212	1.5329	43.861	.18001	69.203	123.57
#1	-.00233	-.00154	4.0035	-.00084	.28168	-.00130	-.00052
#2	-.00450	-.00012	4.0698	-.00033	.28101	-.00222	.00237
#3	-.00031	-.00190	4.1281	-.00059	.28201	-.00041	.00193
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00009	.00137	F -.02652
Stddev	.00013	.00002	.14812
%RSD	145.60	1.8130	558.42
#1	-.00001	.00138	-.01833
#2	-.00002	.00134	-.17857
#3	-.00024	.00139	.11732
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8503.5	12630.
Stddev	24.5	51.
%RSD	.28861	.40299
#1	8529.9	12648.
#2	8499.5	12669.
#3	8481.3	12572.

Approved: August 27, 2015

Kim K Buck

Sample Name: CCV Acquired: 8/26/2015 16:40:10 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40791	10.093	.41988	.52263	1.0322	.05254	10.091
Stddev	.00035	.121	.00176	.00213	.0107	.00027	.128
%RSD	.08596	1.1965	.41852	.40791	1.0397	.51341	1.2714
#1	.40756	9.9598	.41787	.52025	1.0198	.05224	9.9465
#2	.40791	10.123	.42116	.52437	1.0382	.05264	10.137
#3	.40826	10.196	.42060	.52327	1.0385	.05275	10.191
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05208	.21223	.52866	.53081	4.1981	51.748	1.0299
Stddev	.00041	.00136	.00215	.00382	.0414	.504	.0110
%RSD	.78827	.64247	.40575	.71914	.98712	.97463	1.0629
#1	.05161	.21074	.52645	.52649	4.1535	51.172	1.0172
#2	.05225	.21253	.52878	.53221	4.2054	51.965	1.0361
#3	.05237	.21341	.53074	.53373	4.2354	52.109	1.0362
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.623	.54770	1.0795	51.543	.53603	10.600	.53747
Stddev	.065	.00628	.0102	.383	.00306	.073	.00577
%RSD	.60748	1.1469	.94808	.74389	.57159	.68502	1.0742
#1	10.549	.55478	1.0696	51.102	.53251	10.516	.53111
#2	10.668	.54551	1.0900	51.731	.53751	10.640	.53891
#3	10.651	.54280	1.0789	51.797	.53808	10.644	.54239
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: August 27, 2015

Kim K Buck

Sample Name: CCV Acquired: 8/26/2015 16:40:10 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2663**	**.41497**	**5.2753**	**1.0751**	**1.0407**	**1.0512**	**.53685**
Stddev	.0088	.00377	.0292	.0150	.0141	.0142	.00932
%RSD	.69762	.90841	.55330	1.3947	1.3586	1.3522	1.7369
#1	1.2585	.41070	5.2439	1.0580	1.0245	1.0348	.52611
#2	1.2646	.41783	5.2803	1.0812	1.0472	1.0589	.54146
#3	1.2759	.41638	5.3017	1.0861	1.0504	1.0599	.54296
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0560**	**1.0825**	F **.26073**
Stddev	.0028	.0040	.54958
%RSD	.26241	.37201	210.78
#1	1.0529	1.0788	-.32155
#2	1.0583	1.0819	.77038
#3	1.0567	1.0868	.33337
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**8533.0**	**12396.**
Stddev	22.0	166.
%RSD	.25761	1.3406
#1	8555.7	12204.
#2	8531.5	12488.
#3	8511.9	12496.

Approved: August 27, 2015

Kim K Buck

Sample Name: CCB Acquired: 8/26/2015 16:43:15 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00053	.00631	-.00248	.00337	.00064	.00006	-.01304
Stddev	.00040	.02756	.00134	.00089	.00016	.00002	.00558
%RSD	75.560	436.59	54.001	26.279	24.992	30.330	42.813
#1	-.00040	.02631	-.00348	.00438	.00049	.00007	-.01480
#2	-.00098	.01775	-.00301	.00273	.00081	.00004	-.00679
#3	-.00021	-.02512	-.00096	.00300	.00063	.00008	-.01754
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	-.00009	.00084	-.00033	.00402	.03592	-.00068
Stddev	.00007	.00010	.00065	.00037	.00397	.02069	.00102
%RSD	279.25	104.96	77.606	110.25	98.587	57.610	149.81
#1	.00001	-.00018	.00144	.00004	.00454	.05957	-.00183
#2	-.00004	.00001	.00093	-.00034	.00771	.02705	.00012
#3	.00011	-.00010	.00015	-.00070	-.00018	.02114	-.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00726	-.00001	.00045	.03014	-.00002	-.00485	-.00282
Stddev	.01181	.00007	.00009	.00312	.00090	.00348	.00082
%RSD	162.68	569.20	20.328	10.367	4004.3	71.813	28.995
#1	.00575	.00005	.00055	.02724	-.00106	-.00166	-.00368
#2	-.01023	.00001	.00038	.02974	.00049	-.00856	-.00273
#3	-.01730	-.00010	.00043	.03345	.00050	-.00432	-.00205
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: CCB Acquired: 8/26/2015 16:43:15 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00222	-.00158	-.00066	.00011	.00009	.00039	.00028
Stddev	.00026	.00226	.00027	.00006	.00009	.00151	.00055
%RSD	11.573	142.84	41.214	56.821	97.643	387.83	197.64
#1	-.00248	-.00397	-.00069	.00007	.00018	-.00132	.00068
#2	-.00223	.00052	-.00092	.00007	.00008	.00153	-.00035
#3	-.00196	-.00129	-.00038	.00018	.00001	.00096	.00052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00004	-.00030	F -.69896
Stddev	.00025	.00010	2.2399
%RSD	655.06	32.918	320.46
#1	.00025	-.00030	1.6610
#2	-.00021	-.00020	-.96230
#3	-.00016	-.00040	-2.7956
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8677.8	12588.
Stddev	25.4	61.
%RSD	.29271	.48105
#1	8653.6	12577.
#2	8675.5	12534.
#3	8704.2	12654.

Approved: August 27, 2015

Sample Name: L1508113001 Acquired: 8/26/2015 16:46:43 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	.05029	-.00195	.11465	.04927	.00002	4.1701	.00022
Stddev	.00027	.02527	.00051	.00153	.00080	.00003	.0495	.00010
%RSD	105.66	50.243	26.020	1.3334	1.6153	132.78	1.1859	45.194
#1	-.00038	.04848	-.00253	.11310	.04838	-.00001	4.1133	.00011
#2	.00005	.02598	-.00169	.11615	.04992	.00003	4.1939	.00027
#3	-.00043	.07642	-.00162	.11472	.04951	.00006	4.2032	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00044	.00120	.04530	.00762	1.4219	.00874	1.3756	.00072
Stddev	.00010	.00021	.00017	.00203	.0429	.00150	.0223	.00004
%RSD	21.945	17.652	.37480	26.592	3.0165	17.215	1.6217	5.9109
#1	-.00053	.00139	.04519	.00851	1.3765	.00727	1.3589	.00076
#2	-.00034	.00097	.04522	.00530	1.4617	.01028	1.4009	.00067
#3	-.00044	.00122	.04550	.00906	1.4274	.00867	1.3669	.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00246	170.92	.00483	.02603	-.00158	-.00083	.00157	2.7836
Stddev	.00043	2.43	.00014	.00382	.00039	.00262	.00164	.0182
%RSD	17.654	1.4222	2.9237	14.685	24.438	315.80	104.34	.65473
#1	.00196	168.20	.00472	.02436	-.00130	-.00299	.00120	2.7889
#2	.00272	172.88	.00477	.02332	-.00202	.00209	.00015	2.7633
#3	.00271	171.68	.00499	.03040	-.00143	-.00160	.00336	2.7986
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508113001 Acquired: 8/26/2015 16:46:43 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	.15278	.00023	-.00054	.00035	.01747	1.8530
Stddev	.00046	.00154	.00071	.00062	.00043	.00021	1.6713
%RSD	69.110	1.0082	307.12	115.40	121.54	1.1854	90.194
#1	.00039	.15103	-.00044	-.00036	.00023	.01738	3.7825
#2	.00041	.15394	.00016	-.00003	.00083	.01731	.85471
#3	.00119	.15338	.00097	-.00124	.00000	.01770	.92184
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8534.8	12617.
Stddev	27.9	147.
%RSD	.32647	1.1690
#1	8502.8	12462.
#2	8547.2	12635.
#3	8554.2	12756.

Approved: August 27, 2015

Sample Name: L1508114403 Acquired: 8/26/2015 16:50:08 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.04796	-.00184	.01169	.16701	.00007	.68321
Stddev	.00010	.03389	.00014	.00042	.00037	.00002	.00356
%RSD	31.000	70.654	7.6992	3.6093	.22162	28.260	.52063
#1	.00021	.01263	-.00173	.01122	.16739	.00008	.68301
#2	.00040	.08019	-.00200	.01204	.16699	.00004	.67975
#3	.00033	.05105	-.00179	.01180	.16665	.00007	.68686
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	-.00015	.00409	.01340	1.5531	.03701	.00029
Stddev	.00004	.00028	.00033	.00096	.0103	.01391	.00030
%RSD	23.760	190.63	8.1121	7.1882	.66571	37.598	102.39
#1	.00024	-.00041	.00411	.01450	1.5649	.03455	.00034
#2	.00015	.00015	.00375	.01276	1.5490	.05199	-.00003
#3	.00017	-.00018	.00441	.01292	1.5454	.02449	.00056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.08433	.02917	.00036	124.23	.00124	F -.00537	.00692
Stddev	.01336	.00031	.00012	.56	.00021	.00148	.00156
%RSD	15.838	1.0659	31.916	.45436	16.610	27.529	22.493
#1	.08529	.02948	.00025	124.52	.00137	-.00388	.00704
#2	.09718	.02919	.00048	124.58	.00100	-.00683	.00530
#3	.07052	.02885	.00036	123.57	.00134	-.00540	.00841
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508114403 Acquired: 8/26/2015 16:50:08 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.00249	.07473	.00087	.05185	.00090	-.00053
Stddev	.00145	.00158	.00254	.00017	.00044	.00067	.00081
%RSD	1796.6	63.543	3.3977	19.092	.85141	74.274	153.71
#1	.00038	.00432	.07748	.00093	.05236	.00118	-.00059
#2	-.00149	.00163	.07424	.00100	.05163	.00014	-.00130
#3	.00136	.00152	.07248	.00068	.05156	.00138	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00012	.00915	F -1.1738
Stddev	.00016	.00021	2.3254
%RSD	130.85	2.2630	198.10
#1	-.00030	.00937	-.34907
#2	-.00009	.00912	.62679
#3	.00002	.00896	-3.7992
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8541.0	12832.
Stddev	39.4	175.
%RSD	.46169	1.3613
#1	8496.2	12634.
#2	8570.2	12899.
#3	8556.7	12964.

Approved: August 27, 2015

Sample Name: L1508120301 Acquired: 8/26/2015 16:53:33 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.27756	-.00261	.01989	.02397	.00006	25.365
Stddev	.00066	.00567	.00100	.00078	.00015	.00004	.101
%RSD	2080.3	2.0418	38.335	3.9064	.61100	62.686	.39875
#1	-.00070	.27452	-.00269	.01988	.02382	.00005	25.277
#2	.00059	.27406	-.00158	.01912	.02411	.00010	25.476
#3	.00021	.28409	-.00358	.02067	.02398	.00003	25.343
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	-.00013	.00083	.00241	.02235	1.9503	.00479
Stddev	.00004	.00014	.00058	.00014	.00307	.0203	.00099
%RSD	18.105	105.60	70.024	5.6056	13.746	1.0403	20.731
#1	.00027	-.00022	.00025	.00242	.02241	1.9466	.00495
#2	.00025	.00003	.00083	.00227	.02540	1.9722	.00373
#3	.00019	-.00020	.00141	.00254	.01925	1.9321	.00570
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.6472	.38453	.00048	24.395	.00145	.01192	-.00051
Stddev	.0567	.00206	.00022	.222	.00049	.00348	.00149
%RSD	.58820	.53509	46.248	.91092	33.655	29.208	291.76
#1	9.6699	.38494	.00024	24.150	.00193	.01016	-.00191
#2	9.6890	.38230	.00052	24.585	.00095	.00966	-.00068
#3	9.5826	.38636	.00069	24.449	.00147	.01592	.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508120301 Acquired: 8/26/2015 16:53:33 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00141	-.00048	.54895	.00035	.13576	-.00256	-.00071
Stddev	.00119	.00175	.00334	.00004	.00093	.00156	.00132
%RSD	84.538	363.72	.60841	12.821	.68770	61.032	185.54
#1	-.00277	-.00067	.55070	.00039	.13499	-.00322	-.00083
#2	-.00086	-.00213	.55105	.00030	.13680	-.00078	.00066
#3	-.00059	.00136	.54510	.00035	.13548	-.00369	-.00197
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00010	.01044	F -.09696
Stddev	.00019	.00029	1.6775
%RSD	182.34	2.7310	1730.1
#1	-.00011	.01047	1.1508
#2	.00024	.01071	-2.0040
#3	.00018	.01014	.56227
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8683.2	12452.
Stddev	33.5	34.
%RSD	.38585	.26974
#1	8691.0	12422.
#2	8646.5	12488.
#3	8712.2	12446.

Approved: August 27, 2015

Sample Name: L1508120302 Acquired: 8/26/2015 16:56:58 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	.05814	-.00275	.02232	.03996	.00007	35.656
Stddev	.00020	.00596	.00139	.00030	.00006	.00003	.028
%RSD	88.373	10.251	50.538	1.3540	.13982	42.584	.07766
#1	.00015	.06072	-.00223	.02229	.04001	.00008	35.625
#2	.00046	.06237	-.00432	.02263	.03998	.00004	35.671
#3	.00008	.05133	-.00169	.02203	.03990	.00009	35.674
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	-.00023	.00051	.00150	.03574	3.0816	.01040
Stddev	.00009	.00014	.00027	.00029	.00161	.0235	.00077
%RSD	24.271	62.551	52.194	19.224	4.4921	.76178	7.3649
#1	.00036	-.00025	.00022	.00168	.03401	3.0669	.01126
#2	.00046	-.00008	.00074	.00116	.03601	3.0692	.01015
#3	.00028	-.00036	.00059	.00165	.03719	3.1086	.00979
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	8.9299	.00927	.00107	20.711	.00197	.00698	-.00055
Stddev	.0873	.00004	.00012	.137	.00028	.00188	.00102
%RSD	.97739	.46232	11.411	.66175	14.464	26.939	186.67
#1	8.9259	.00924	.00107	20.752	.00168	.00905	.00031
#2	8.8447	.00926	.00095	20.558	.00225	.00655	-.00028
#3	9.0191	.00932	.00119	20.823	.00197	.00536	-.00167
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508120302 Acquired: 8/26/2015 16:56:58 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00060	.00120	1.9567	.00059	.14322	-.00209	-.00302
Stddev	.00231	.00103	.0113	.00022	.00040	.00023	.00075
%RSD	382.09	86.287	.57547	37.938	.28269	11.256	24.906
#1	.00070	.00014	1.9696	.00076	.14354	-.00206	-.00252
#2	-.00327	.00124	1.9519	.00067	.14276	-.00233	-.00266
#3	.00076	.00221	1.9486	.00034	.14336	-.00186	-.00389
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00046	.00489	F -.75522
Stddev	.00030	.00013	.74812
%RSD	65.913	2.5877	99.059
#1	.00063	.00492	-.11199
#2	.00011	.00475	-1.5762
#3	.00063	.00500	-.57747
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8655.0	12526.
Stddev	20.9	72.
%RSD	.24195	.57595
#1	8639.5	12583.
#2	8678.8	12551.
#3	8646.6	12445.

Approved: August 27, 2015

Sample Name: L1508122101 Acquired: 8/26/2015 17:00:22 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.07949	-.00208	.00737	.05259	.00008	55.880	.00036
Stddev	.00011	.01966	.00048	.00141	.00039	.00002	.247	.00009
%RSD	101.11	24.734	22.880	19.155	.74101	26.924	.44251	25.262
#1	.00019	.09128	-.00153	.00897	.05216	.00007	55.629	.00031
#2	.00013	.09040	-.00241	.00684	.05292	.00010	56.124	.00047
#3	-.00001	.05679	-.00229	.00630	.05268	.00006	55.887	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	.00100	.00003	.06515	.54572	.00471	11.245	.00603
Stddev	.00005	.00027	.00050	.00460	.01449	.00139	.088	.00023
%RSD	23.459	26.825	1605.7	7.0531	2.6547	29.579	.78082	3.8717
#1	-.00017	.00070	.00057	.06646	.53434	.00475	11.149	.00603
#2	-.00024	.00119	-.00008	.06895	.56203	.00608	11.266	.00580
#3	-.00028	.00113	-.00040	.06004	.54080	.00330	11.321	.00626
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00111	3.1758	.00040	.04241	-.00066	.00028	-.00008	4.3516
Stddev	.00013	.0283	.00015	.00455	.00322	.00310	.00184	.1112
%RSD	11.222	.89084	37.989	10.727	484.91	1125.4	2254.5	2.5554
#1	.00122	3.1481	.00055	.04374	-.00419	.00055	-.00150	4.4711
#2	.00097	3.2047	.00042	.03735	.00007	.00323	-.00074	4.2511
#3	.00116	3.1746	.00024	.04615	.00213	-.00295	.00200	4.3328
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508122101 Acquired: 8/26/2015 17:00:22 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.11450	-.00289	-.00192	.00003	.00292	.92625
Stddev	.00053	.00090	.00047	.00196	.00035	.00016	1.4509
%RSD	546.28	.78489	16.247	102.16	1379.2	5.3635	156.65
#1	.00070	.11378	-.00310	.00020	-.00005	.00310	.36242
#2	-.00022	.11550	-.00235	-.00230	.00041	.00280	2.5745
#3	-.00019	.11421	-.00320	-.00366	-.00028	.00287	-.15814
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8646.4	12482.
Stddev	11.0	59.
%RSD	.12777	.47640
#1	8641.4	12496.
#2	8659.0	12534.
#3	8638.7	12417.

Approved: August 27, 2015

Sample Name: L1508122102 Acquired: 8/26/2015 17:03:47 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.00072	-.00170	.00715	.04691	.00007	52.372	.00048
Stddev	.00057	.02118	.00140	.00073	.00028	.00002	.108	.00009
%RSD	163.41	2931.3	82.700	10.168	.59911	23.043	.20646	19.917
#1	-.00025	.02516	-.00020	.00741	.04705	.00006	52.297	.00040
#2	.00088	-.01235	-.00299	.00633	.04710	.00005	52.496	.00044
#3	.00042	-.01064	-.00190	.00772	.04659	.00008	52.323	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00045	.00099	.00017	.01148	.14315	.00400	11.044	.00067
Stddev	.00016	.00072	.00061	.00252	.02546	.00037	.183	.00009
%RSD	34.810	72.495	353.33	21.915	17.784	9.3293	1.6542	12.775
#1	-.00031	.00096	-.00041	.00972	.14185	.00384	11.255	.00074
#2	-.00062	.00029	.00080	.01036	.11837	.00373	10.955	.00057
#3	-.00042	.00172	.00013	.01437	.16924	.00442	10.923	.00068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	3.7493	.00043	.03904	-.00057	-.00066	.00026	5.2087
Stddev	.00017	.0196	.00056	.00240	.00177	.00165	.00305	.0984
%RSD	52.877	.52276	130.25	6.1359	310.45	251.73	1194.8	1.8888
#1	.00014	3.7445	-.00020	.04165	.00095	-.00228	-.00212	5.1088
#2	.00048	3.7709	.00060	.03853	-.00251	.00103	-.00082	5.3055
#3	.00034	3.7325	.00088	.03694	-.00015	-.00073	.00370	5.2120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508122102 Acquired: 8/26/2015 17:03:47 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	.14449	-.00325	-.00127	.00030	.00454	1.1461
Stddev	.00019	.00073	.00091	.00134	.00008	.00011	.9296
%RSD	21.027	.50632	28.133	105.71	27.433	2.4973	81.111
#1	.00076	.14454	-.00221	-.00265	.00035	.00441	1.5865
#2	.00085	.14519	-.00363	-.00117	.00035	.00460	.07814
#3	.00113	.14373	-.00391	.00002	.00020	.00460	1.7738
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8678.1	12749.
Stddev	15.8	236.
%RSD	.18261	1.8496
#1	8659.8	12490.
#2	8688.6	12806.
#3	8685.7	12951.

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508122201 Acquired: 8/26/2015 17:07:11 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	.18593	-.00163	.02089	.25082	.00009	143.44
Stddev	.00043	.00749	.00121	.00040	.00089	.00002	.39
%RSD	6209.3	4.0265	74.186	1.9064	.35558	26.387	.27216
#1	-.00050	.19319	-.00047	.02126	.24998	.00007	143.02
#2	.00024	.18636	-.00288	.02093	.25072	.00008	143.52
#3	.00024	.17823	-.00154	.02047	.25175	.00011	143.79
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00189	.00048	.00218	.00518	.39063	3.1327	.01490
Stddev	.00006	.00014	.00014	.00019	.00443	.0062	.00044
%RSD	3.0322	30.158	6.2050	3.7254	1.1343	.19827	2.9754
#1	.00184	.00059	.00233	.00498	.39528	3.1399	.01441
#2	.00189	.00052	.00212	.00536	.38646	3.1293	.01528
#3	.00195	.00031	.00208	.00519	.39015	3.1291	.01499
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	48.554	.12291	.00083	30.588	.00140	.02263	.00269
Stddev	.291	.00099	.00015	.079	.00087	.00424	.00089
%RSD	.59925	.80231	18.228	.25963	62.097	18.739	33.116
#1	48.326	.12336	.00092	30.575	.00104	.02707	.00195
#2	48.882	.12359	.00092	30.515	.00239	.02221	.00244
#3	48.454	.12178	.00066	30.673	.00077	.01862	.00368
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508122201 Acquired: 8/26/2015 17:07:11 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.00193**	**3.7948**	**.00036**	**.88087**	**-.00504**	**-.00207**
Stddev	.00080	.00320	.0788	.00039	.00211	.00036	.00217
%RSD	590.37	165.51	2.0768	107.58	.23960	7.1739	104.93
#1	-.00105	.00538	3.7474	.00028	.87917	-.00546	-.00450
#2	.00021	-.00094	3.8857	.00078	.88023	-.00487	-.00031
#3	.00043	.00135	3.7512	.00002	.88323	-.00481	-.00141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00030**	**.42183**	F **-1.0580**
Stddev	.00032	.00991	1.2439
%RSD	109.52	2.3492	117.57
#1	.00012	.41810	-2.1514
#2	.00009	.43306	.29531
#3	.00067	.41432	-1.3179
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**8447.0**	**12747.**
Stddev	6.8	103.
%RSD	.08059	.80774
#1	8439.5	12735.
#2	8448.4	12651.
#3	8452.9	12855.

Approved: August 27, 2015

Sample Name: L1508122202 Acquired: 8/26/2015 17:10:33 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	.03930	-.00314	.01324	.07943	.00009	52.035
Stddev	.00093	.02984	.00200	.00106	.00040	.00002	.159
%RSD	148.13	75.945	63.647	8.0020	.49874	16.901	.30567
#1	.00029	.00758	-.00532	.01208	.07980	.00008	51.851
#2	.00168	.04349	-.00139	.01415	.07901	.00010	52.116
#3	-.00008	.06682	-.00272	.01350	.07949	.00011	52.136
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	-.00026	.00110	.00080	.14832	.69901	.00756
Stddev	.00009	.00007	.00013	.00049	.00238	.02457	.00046
%RSD	35.858	28.392	11.609	61.844	1.6014	3.5144	6.0490
#1	.00016	-.00026	.00096	.00052	.14648	.72261	.00703
#2	.00026	-.00032	.00116	.00137	.14747	.70085	.00775
#3	.00034	-.00018	.00119	.00051	.15100	.67358	.00788
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.8360	.02298	.00060	3.3385	.00077	.01276	-.00072
Stddev	.0377	.00025	.00019	.0022	.00034	.00490	.00144
%RSD	.55188	1.0678	31.169	.06557	43.944	38.433	199.98
#1	6.8342	.02292	.00080	3.3402	.00101	.01817	.00091
#2	6.7992	.02325	.00054	3.3392	.00092	.00861	-.00183
#3	6.8746	.02277	.00044	3.3360	.00038	.01150	-.00124
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508122202 Acquired: 8/26/2015 17:10:33 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00085	-.00052	4.3055	.00033	.16523	-.00308	-.00156
Stddev	.00210	.00163	.0566	.00033	.00040	.00098	.00155
%RSD	247.76	312.30	1.3146	100.37	.23917	31.770	99.564
#1	-.00224	-.00181	4.3702	.00012	.16481	-.00411	-.00227
#2	.00157	-.00107	4.2650	.00016	.16531	-.00216	.00022
#3	-.00188	.00131	4.2814	.00070	.16558	-.00298	-.00262
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00007	.00275	F -2.1457
Stddev	.00014	.00008	.9280
%RSD	195.96	3.0843	43.251
#1	-.00001	.00283	-2.5063
#2	.00003	.00266	-1.0915
#3	-.00023	.00275	-2.8394
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8653.4	12954.
Stddev	20.5	11.
%RSD	.23742	.08322
#1	8677.1	12941.
#2	8641.2	12962.
#3	8641.8	12958.

Approved: August 27, 2015

Sample Name: L1508123001 Acquired: 8/26/2015 17:13:57 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.06444	-.00185	.00327	.00174	.00006	.15514
Stddev	.00024	.01731	.00114	.00010	.00010	.00001	.01121
%RSD	285.84	26.857	61.650	3.0341	5.5491	22.273	7.2276
#1	.00017	.06862	-.00263	.00327	.00175	.00008	.16809
#2	-.00032	.04543	-.00054	.00337	.00182	.00005	.14886
#3	-.00011	.07928	-.00238	.00317	.00163	.00006	.14848
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	-.00033	.00185	.02476	.15807	.18591	.00048
Stddev	.00013	.00016	.00031	.00031	.00177	.02895	.00110
%RSD	99.192	48.267	16.853	1.2349	1.1213	15.570	227.50
#1	.00029	-.00051	.00167	.02445	.15965	.21249	.00045
#2	.00008	-.00028	.00167	.02477	.15615	.15507	.00160
#3	.00004	-.00020	.00221	.02506	.15843	.19017	-.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03142	.00274	.00039	.16253	.00083	F -.00538	.00073
Stddev	.00361	.00007	.00004	.01126	.00016	.00163	.00137
%RSD	11.501	2.6517	10.599	6.9271	19.278	30.300	188.30
#1	.02797	.00276	.00036	.16822	.00065	-.00709	-.00082
#2	.03518	.00266	.00038	.14956	.00095	-.00520	.00125
#3	.03112	.00279	.00044	.16980	.00088	-.00384	.00176
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508123001 Acquired: 8/26/2015 17:13:57 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.00236**	**.11025**	**.00080**	**.00135**	**.00021**	**-.00143**
Stddev	.00096	.00132	.00246	.00046	.00007	.00098	.00155
%RSD	3269.8	55.633	2.2340	57.914	5.3078	473.48	108.63
#1	.00052	.00227	.10998	.00028	.00131	-.00079	-.00168
#2	.00053	.00110	.10794	.00096	.00131	.00116	.00023
#3	-.00114	.00373	.11284	.00115	.00144	.00025	-.00284
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00002**	**.00732**	F **-.34072**
Stddev	.00018	.00027	1.6088
%RSD	737.64	3.7170	472.18
#1	-.00005	.00736	-2.1708
#2	.00023	.00703	.85045
#3	-.00011	.00757	.29823
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**8829.4**	**12911.**
Stddev	6.7	26.
%RSD	.07631	.20153
#1	8821.6	12888.
#2	8833.9	12906.
#3	8832.6	12939.

Approved: August 27, 2015

Sample Name: L1508123002 Acquired: 8/26/2015 17:17:23 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	.23791	-.00197	.00340	.00505	.00007	.77600	.00023
Stddev	.00006	.00783	.00121	.00092	.00006	.00004	.00819	.00008
%RSD	13.509	3.2920	61.267	27.089	1.1369	54.126	1.0557	35.381
#1	.00041	.23042	-.00123	.00357	.00499	.00003	.76719	.00014
#2	.00044	.24604	-.00132	.00241	.00506	.00010	.77743	.00026
#3	.00053	.23728	-.00337	.00423	.00510	.00007	.78338	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00043	.00083	.03806	.20770	.23838	.00041	.21189	.00608
Stddev	.00010	.00008	.00076	.00179	.01557	.00043	.00499	.00002
%RSD	24.355	9.5211	1.9844	.86277	6.5317	103.09	2.3552	.34448
#1	-.00053	.00092	.03886	.20579	.23428	.00089	.20950	.00609
#2	-.00043	.00077	.03735	.20796	.22528	.00007	.21763	.00610
#3	-.00032	.00079	.03797	.20934	.25560	.00028	.20854	.00606
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.51731	.00082	.00034	.00177	.00003	.00103	.57558
Stddev	.00017	.00939	.00051	.00147	.00112	.00264	.00234	.01469
%RSD	1308.0	1.8155	61.651	433.58	62.977	9984.5	226.79	2.5528
#1	.00003	.52186	.00036	.00079	.00245	-.00033	-.00090	.59246
#2	.00017	.50651	.00137	.00153	.00239	-.00242	.00363	.56867
#3	-.00016	.52356	.00075	-.00130	.00048	.00282	.00037	.56563
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508123002 Acquired: 8/26/2015 17:17:23 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	.00530	.00535	-.00086	.00063	.01086	3.1182
Stddev	.00012	.00002	.00086	.00081	.00012	.00019	.4968
%RSD	13.486	.38660	16.016	93.418	18.795	1.7385	15.931
#1	.00077	.00530	.00498	-.00009	.00049	.01107	2.5936
#2	.00101	.00528	.00475	-.00170	.00071	.01072	3.1796
#3	.00091	.00532	.00634	-.00079	.00068	.01077	3.5814
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8757.8	12818.
Stddev	12.6	36.
%RSD	.14391	.28218
#1	8746.1	12786.
#2	8771.2	12811.
#3	8756.1	12858.

Approved: August 27, 2015

Sample Name: CCV Acquired: 8/26/2015 17:20:50 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41356**	**10.122**	**.42857**	**.53100**	**1.0534**	**.05385**	**10.176**
Stddev	.00252	.080	.00497	.00145	.0073	.00024	.052
%RSD	.60963	.79126	1.1591	.27382	.69740	.44548	.50975
#1	.41269	10.033	.43396	.53104	1.0449	.05372	10.117
#2	.41160	10.147	.42757	.52952	1.0577	.05369	10.209
#3	.41641	10.188	.42418	.53243	1.0575	.05412	10.204
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05284**	**.21489**	**.53990**	**.53894**	**4.3021**	**52.806**	**1.0538**
Stddev	.00013	.00102	.00191	.00188	.0454	.220	.0055
%RSD	.25059	.47574	.35318	.34919	1.0553	.41724	.51847
#1	.05284	.21478	.53897	.53941	4.2531	52.563	1.0483
#2	.05298	.21596	.53864	.54054	4.3428	52.993	1.0539
#3	.05271	.21392	.54209	.53686	4.3105	52.863	1.0593
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.910**	F **.55481**	**1.0999**	**52.809**	**.54533**	**10.774**	**.54486**
Stddev	.126	.00270	.0079	.305	.00204	.032	.00373
%RSD	1.1552	.48705	.71970	.57769	.37319	.29805	.68479
#1	10.791	.55458	1.1090	52.459	.54483	10.791	.54486
#2	11.042	.55762	1.0960	53.018	.54757	10.794	.54859
#3	10.896	.55223	1.0946	52.951	.54359	10.737	.54113
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.50000					
Range		10.000%					

Approved: August 27, 2015

Sample Name: CCV Acquired: 8/26/2015 17:20:50 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2874**	**.41756**	**5.3708**	**1.0788**	**1.0599**	**1.0744**	**.53839**
Stddev	.0084	.00694	.0020	.0059	.0067	.0091	.00310
%RSD	.64987	1.6625	.03653	.54341	.63525	.85034	.57580
#1	1.2924	.41276	5.3724	1.0785	1.0521	1.0638	.53946
#2	1.2920	.42552	5.3686	1.0848	1.0643	1.0802	.54082
#3	1.2777	.41439	5.3713	1.0731	1.0632	1.0791	.53490
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0815**	**1.0916**	F **.32067**
Stddev	.0010	.0029	1.3389
%RSD	.09173	.26198	417.52
#1	1.0819	1.0885	-1.1144
#2	1.0804	1.0923	.54020
#3	1.0823	1.0942	1.5362
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**8471.7**	**12377.**
Stddev	7.8	67.
%RSD	.09250	.54079
#1	8472.8	12363.
#2	8478.9	12319.
#3	8463.4	12450.

Approved: August 27, 2015

Sample Name: CCB Acquired: 8/26/2015 17:23:54 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	.01349	-.00102	.00047	.00040	.00006	-.01195
Stddev	.00050	.00414	.00128	.00093	.00034	.00003	.00902
%RSD	3435.4	30.723	125.93	197.03	83.084	47.803	75.472
#1	-.00057	.01699	-.00239	.00094	.00025	.00009	-.02081
#2	.00039	.01457	.00015	-.00060	.00017	.00004	-.00277
#3	.00014	.00891	-.00081	.00108	.00079	.00004	-.01229
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00006	-.00008	.00059	.00005	.00078	-.01663	.00009
Stddev	.00004	.00021	.00074	.00041	.00085	.01652	.00015
%RSD	72.919	262.95	125.72	773.93	109.28	99.302	168.64
#1	-.00002	-.00008	.00122	.00052	.00010	-.03187	.00006
#2	-.00005	.00013	-.00023	-.00014	.00050	.00092	-.00005
#3	-.00010	-.00029	.00077	-.00022	.00174	-.01895	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00032	-.00001	.00053	.01369	-.00054	-.00017	-.00173
Stddev	.00374	.00007	.00016	.00345	.00046	.00033	.00132
%RSD	1158.1	947.82	30.569	25.191	84.797	192.06	76.177
#1	-.00009	.00001	.00067	.01712	-.00102	-.00053	-.00035
#2	.00330	.00005	.00035	.01375	-.00049	.00012	-.00298
#3	-.00418	-.00009	.00058	.01022	-.00011	-.00011	-.00186
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: CCB Acquired: 8/26/2015 17:23:54 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00174	-.00105	-.00156	.00020	.00002	.00071	.00061
Stddev	.00092	.00083	.00127	.00070	.00008	.00038	.00093
%RSD	52.992	78.401	81.058	340.50	408.66	54.128	152.14
#1	-.00080	-.00024	-.00138	-.00060	.00005	.00058	.00001
#2	-.00264	-.00189	-.00040	.00055	.00007	.00114	.00168
#3	-.00178	-.00103	-.00291	.00066	-.00007	.00040	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00003	-.00035	F -.80550
Stddev	.00026	.00016	.51582
%RSD	782.16	46.542	64.037
#1	.00023	-.00051	-.67234
#2	-.00026	-.00019	-1.3748
#3	.00013	-.00035	-.36932
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8680.3	12673.
Stddev	60.7	59.
%RSD	.69910	.46605
#1	8613.2	12717.
#2	8731.4	12696.
#3	8696.2	12606.

Approved: August 27, 2015

Sample Name: L1508123003 Acquired: 8/26/2015 17:27:21 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.03367	-.00214	.00285	.00155	.00004	.13911
Stddev	.00023	.03474	.00227	.00068	.00001	.00002	.00257
%RSD	320.60	103.18	105.81	23.735	.57502	62.674	1.8508
#1	.00016	.07191	-.00421	.00346	.00154	.00005	.13979
#2	-.00019	.02502	-.00249	.00213	.00156	.00001	.14127
#3	.00025	.00407	.00028	.00297	.00155	.00005	.13626
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	-.00020	.00036	.00140	.02725	.01961	-.00043
Stddev	.00007	.00009	.00033	.00043	.00297	.02264	.00122
%RSD	43.119	44.770	90.341	30.825	10.885	115.44	283.28
#1	.00018	-.00028	.00003	.00092	.02440	-.00653	.00064
#2	.00023	-.00011	.00036	.00153	.03032	.03273	-.00176
#3	.00009	-.00021	.00069	.00175	.02702	.03262	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03815	.00092	.00033	.10537	.00080	F -.00795	-.00082
Stddev	.01297	.00006	.00019	.00444	.00046	.00218	.00147
%RSD	34.010	6.9577	58.234	4.2128	57.983	27.392	177.94
#1	.02332	.00092	.00011	.10417	.00046	-.00645	-.00252
#2	.04740	.00086	.00041	.10166	.00133	-.00696	-.00004
#3	.04374	.00099	.00048	.11029	.00060	-.01045	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508123003 Acquired: 8/26/2015 17:27:21 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00078	.00174	.07898	.00025	.00116	.00110	-.00231
Stddev	.00095	.00214	.00147	.00025	.00003	.00106	.00156
%RSD	122.86	123.14	1.8625	98.573	2.3633	96.348	67.703
#1	.00177	.00063	.07976	.00048	.00119	.00224	-.00382
#2	.00069	.00421	.07728	.00029	.00115	.00093	-.00241
#3	-.00013	.00038	.07989	-.00001	.00114	.00014	-.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00010	.00753	2.3643
Stddev	.00019	.00009	.7192
%RSD	200.58	1.2288	30.421
#1	-.00005	.00763	2.2352
#2	.00007	.00745	1.7184
#3	-.00030	.00752	3.1393
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8896.3	12839.
Stddev	19.0	111.
%RSD	.21325	.86399
#1	8876.9	12717.
#2	8914.8	12864.
#3	8897.1	12935.

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508123004 Acquired: 8/26/2015 17:30:49 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	.25127	-.00343	.00360	.00315	.00005	.38473	.00017
Stddev	.00010	.01139	.00171	.00116	.00014	.00003	.01182	.00011
%RSD	48.856	4.5343	49.710	32.208	4.3406	58.584	3.0735	67.816
#1	-.00026	.24062	-.00530	.00450	.00303	.00002	.37109	.00011
#2	-.00025	.24991	-.00303	.00400	.00330	.00006	.39196	.00030
#3	-.00009	.26328	-.00196	.00229	.00314	.00008	.39115	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00038	.00058	.02793	.19301	.19596	.00096	.09973	.00550
Stddev	.00004	.00044	.00032	.00500	.02471	.00063	.01627	.00016
%RSD	10.160	76.975	1.1318	2.5892	12.612	65.212	16.318	2.9807
#1	-.00033	.00088	.02765	.19608	.19141	.00124	.10081	.00550
#2	-.00040	.00078	.02827	.18724	.22264	.00140	.08295	.00567
#3	-.00040	.00007	.02786	.19570	.17385	.00024	.11544	.00534
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	.15775	.00068	-.00142	.00151	-.00189	.00115	.56926
Stddev	.00021	.00514	.00028	.00381	.00184	.00046	.00343	.00183
%RSD	50.212	3.2597	41.348	267.94	121.61	24.391	299.48	.32091
#1	.00038	.15392	.00099	.00273	.00280	-.00205	-.00062	.57069
#2	.00066	.16360	.00058	-.00222	-.00059	-.00225	-.00105	.56989
#3	.00024	.15573	.00046	-.00477	.00233	-.00137	.00510	.56721
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508123004 Acquired: 8/26/2015 17:30:49 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	.00287	.00697	-.00187	.00046	.01181	3.7498
Stddev	.00022	.00005	.00104	.00032	.00017	.00010	1.2842
%RSD	18.457	1.7075	14.887	17.210	36.093	.81274	34.246
#1	.00141	.00283	.00797	-.00152	.00044	.01176	2.4194
#2	.00110	.00286	.00704	-.00215	.00064	.01175	3.8480
#3	.00100	.00293	.00590	-.00193	.00031	.01192	4.9821
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8852.4	13053.
Stddev	10.3	159.
%RSD	.11655	1.2156
#1	8840.7	12996.
#2	8856.1	12930.
#3	8860.4	13232.

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508127201 Acquired: 8/26/2015 17:34:16 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	.12676	-.00288	.03286	.13106	.00006	24.033
Stddev	.00046	.00567	.00072	.00047	.00065	.00002	.085
%RSD	542.54	4.4734	24.959	1.4233	.49415	30.880	.35375
#1	.00006	.12874	-.00244	.03234	.13116	.00008	23.996
#2	-.00060	.13117	-.00249	.03300	.13037	.00006	23.973
#3	.00028	.12036	-.00371	.03325	.13166	.00004	24.130
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	-.00009	.00084	.00166	1.3580	1.3870	.01189
Stddev	.00006	.00005	.00051	.00022	.0054	.0192	.00017
%RSD	21.819	52.035	60.886	13.015	.39865	1.3829	1.3957
#1	.00021	-.00010	.00072	.00157	1.3518	1.3854	.01181
#2	.00026	-.00013	.00140	.00151	1.3618	1.3688	.01178
#3	.00032	-.00004	.00040	.00191	1.3604	1.4070	.01208
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.3266	.18494	.00122	16.790	.00329	.03848	-.00199
Stddev	.0805	.00194	.00011	.099	.00031	.00667	.00173
%RSD	1.2719	1.0496	8.9813	.58716	9.3913	17.327	86.873
#1	6.3282	.18369	.00135	16.801	.00297	.03084	-.00290
#2	6.2454	.18395	.00114	16.687	.00333	.04312	.00000
#3	6.4063	.18717	.00118	16.884	.00358	.04147	-.00308
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508127201 Acquired: 8/26/2015 17:34:16 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00202**	**-.00320**	**.73026**	**.00083**	**.38552**	**-.00050**	**-.00140**
Stddev	.00217	.00163	.00403	.00056	.00111	.00044	.00216
%RSD	107.80	50.880	.55205	68.296	.28827	88.294	153.94
#1	-.00443	-.00294	.73449	.00062	.38634	-.00087	.00095
#2	-.00142	-.00494	.72646	.00039	.38425	-.00001	-.00186
#3	-.00021	-.00172	.72984	.00147	.38597	-.00060	-.00329
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00009**	**.00325**	F **-.32679**
Stddev	.00046	.00009	.58663
%RSD	503.41	2.6643	179.51
#1	.00008	.00316	-.21823
#2	-.00036	.00334	.19798
#3	.00056	.00324	-.96012
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**8615.2**	**12820.**
Stddev	26.5	106.
%RSD	.30746	.82660
#1	8584.6	12868.
#2	8631.9	12894.
#3	8629.0	12699.

Approved: August 27, 2015

Kim K Buck

Sample Name: CCV Acquired: 8/26/2015 17:37:39 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40835	10.018	.42800	.52519	1.0478	.05396	10.069
Stddev	.00128	.167	.00112	.00127	.0185	.00010	.164
%RSD	.31411	1.6641	.26153	.24098	1.7662	.17652	1.6327
#1	.40941	9.8274	.42671	.52521	1.0265	.05406	9.8815
#2	.40870	10.139	.42870	.52644	1.0566	.05392	10.138
#3	.40692	10.087	.42860	.52391	1.0602	.05388	10.188
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05255	.21362	.54337	.53526	4.2552	52.253	1.0479
Stddev	.00012	.00058	.00237	.00209	.0706	.638	.0164
%RSD	.23216	.26979	.43597	.39010	1.6585	1.2209	1.5653
#1	.05250	.21348	.54441	.53430	4.1738	51.516	1.0290
#2	.05268	.21425	.54504	.53765	4.3003	52.603	1.0565
#3	.05245	.21313	.54066	.53382	4.2914	52.639	1.0582
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.741	.54792	1.0923	52.616	.54094	10.708	.54189
Stddev	.165	.00606	.0029	.822	.00090	.048	.00374
%RSD	1.5392	1.1055	.26536	1.5617	.16636	.44355	.68960
#1	10.570	.55109	1.0928	51.667	.54003	10.657	.54283
#2	10.900	.55173	1.0892	53.082	.54183	10.751	.54507
#3	10.752	.54093	1.0950	53.098	.54095	10.715	.53778
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: August 27, 2015

Kim K Buck

Sample Name: CCV Acquired: 8/26/2015 17:37:39 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2763**	**.41715**	**5.3499**	**1.0764**	**1.0471**	**1.0619**	**.53619**
Stddev	.0097	.00524	.0254	.0127	.0174	.0179	.00639
%RSD	.76261	1.2571	.47390	1.1805	1.6655	1.6888	1.1916
#1	1.2652	.41175	5.3230	1.0714	1.0272	1.0413	.53109
#2	1.2836	.42223	5.3534	1.0908	1.0549	1.0731	.54336
#3	1.2801	.41747	5.3734	1.0669	1.0593	1.0715	.53413
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0739**	**1.0887**	F **-.28073**
Stddev	.0031	.0125	2.5859
%RSD	.28566	1.1462	921.12
#1	1.0772	1.1027	-.25737
#2	1.0735	1.0843	2.2934
#3	1.0711	1.0789	-2.8782
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**8502.9**	**12574.**
Stddev	6.3	109.
%RSD	.07378	.86561
#1	8510.1	12526.
#2	8498.4	12497.
#3	8500.2	12699.

Approved: August 27, 2015

Kim K Buck

Sample Name: CCB Acquired: 8/26/2015 17:40:44 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.01974	-.00273	.00091	.00055	.00008	-.01268
Stddev	.00060	.01764	.00014	.00019	.00036	.00001	.00967
%RSD	301.93	89.343	5.2930	20.789	65.947	11.788	76.258
#1	-.00047	.00210	-.00286	.00110	.00091	.00008	-.01746
#2	.00039	.01975	-.00274	.00073	.00055	.00007	-.00155
#3	.00067	.03738	-.00258	.00089	.00019	.00007	-.01903
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	-.00004	.00005	-.00001	.00054	-.00057	.00021
Stddev	.00003	.00006	.00038	.00044	.00246	.04132	.00061
%RSD	304.46	154.12	698.94	5441.3	460.24	7214.7	293.88
#1	-.00002	-.00010	.00029	-.00044	-.00230	.04202	.00083
#2	.00000	-.00005	-.00038	-.00001	.00181	-.04050	-.00039
#3	.00005	.00002	.00026	.00043	.00210	-.00324	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	-.00002	.00072	.02031	-.00039	-.00166	.00005
Stddev	.00941	.00004	.00019	.01441	.00106	.00149	.00115
%RSD	1924.1	162.84	26.018	70.923	273.13	89.721	2259.7
#1	.00130	.00002	.00084	.03528	.00035	-.00075	.00122
#2	.00947	-.00004	.00051	.01911	-.00160	-.00338	-.00107
#3	-.00930	-.00005	.00082	.00654	.00009	-.00085	.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: CCB Acquired: 8/26/2015 17:40:44 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00145	-.00066	-.00087	-.00024	.00008	.00013	-.00006
Stddev	.00255	.00123	.00094	.00020	.00002	.00017	.00185
%RSD	175.36	187.30	108.08	84.495	26.386	128.49	2959.2
#1	-.00211	-.00030	.00020	-.00037	.00010	.00031	-.00196
#2	-.00360	.00036	-.00123	-.00035	.00007	-.00001	.00003
#3	.00136	-.00203	-.00158	-.00001	.00006	.00009	.00174
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00006	-.00040	F -1.0576
Stddev	.00028	.00019	1.8924
%RSD	459.06	48.090	178.93
#1	.00015	-.00047	-3.2259
#2	.00004	-.00018	.26111
#3	-.00037	-.00055	-.20802
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8713.9	12545.
Stddev	52.7	126.
%RSD	.60513	1.0045
#1	8659.7	12413.
#2	8765.0	12559.
#3	8717.2	12664.

Approved: August 27, 2015

Sample Name: LLCCV Acquired: 8/26/2015 17:44:11 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .00938	F .17200	F .01601	F .08410	F .00963	F .00924	F .15158
Stddev	.00103	.03341	.00198	.00171	.00028	.00005	.00737
%RSD	10.995	19.423	12.392	2.0275	2.8600	.54945	4.8627
#1	.00850	.20197	.01426	.08592	.00931	.00929	.14677
#2	.01051	.17803	.01817	.08254	.00975	.00918	.14789
#3	.00913	.13598	.01560	.08384	.00982	.00924	.16006
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.40000	10.000	.40000	.50000	1.0000	.05000	10.000
Range	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .00921	F .00936	F .01798	F .01790	F .06666	F .81555	F .08366
Stddev	.00002	.00012	.00016	.00052	.00669	.04054	.00057
%RSD	.26029	1.3328	.87126	2.8921	10.042	4.9706	.68055
#1	.00923	.00950	.01815	.01840	.07134	.77376	.08382
#2	.00918	.00925	.01795	.01794	.06964	.85471	.08413
#3	.00920	.00933	.01785	.01736	.05899	.81817	.08303
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.05000	.20000	.50000	.50000	4.0000	50.000	1.0000
Range	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .43309	F .01069	F .05262	F .42092	F .03518	F -.00014	F .01637
Stddev	.01951	.00008	.00036	.01276	.00065	.00306	.00116
%RSD	4.5054	.76668	.67882	3.0311	1.8534	2127.1	7.0925
#1	.41758	.01063	.05293	.41177	.03561	-.00367	.01751
#2	.45500	.01067	.05223	.43549	.03443	.00181	.01640
#3	.42670	.01078	.05270	.41549	.03550	.00143	.01519
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	10.000	.50000	1.0000	50.000	.50000	10.000	.50000
Range	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%

Approved: August 27, 2015

Kim K Buck

Sample Name: LLCCV Acquired: 8/26/2015 17:44:11 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .01668	F .01576	F -.00048	F .08648	F .00931	F .02565	F .08763
Stddev	.00156	.00324	.00164	.00088	.00017	.00040	.00194
%RSD	9.3523	20.581	344.52	1.0234	1.7933	1.5472	2.2139
#1	.01846	.01354	-.00109	.08720	.00920	.02552	.08973
#2	.01552	.01948	-.00172	.08549	.00950	.02610	.08590
#3	.01608	.01425	.00138	.08673	.00923	.02534	.08726
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	1.2000	.40000	5.0000	1.0000	1.0000	1.0000	.50000
Range	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	F .00915	F .02098	F -.87591
Stddev	.00012	.00001	.69928
%RSD	1.2814	.04921	79.835
#1	.00912	.02099	-.40121
#2	.00929	.02097	-.54758
#3	.00906	.02097	-1.6789
Check ?	Chk Fail	Chk Fail	Chk Fail
Value	1.0000	1.0000	1.0000
Range	-10.000%	-10.000%	-10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8677.6	12261.
Stddev	23.7	53.
%RSD	.27289	.43151
#1	8654.7	12305.
#2	8702.0	12276.
#3	8676.2	12202.

Approved: August 27, 2015

Sample Name: PBW 4A Acquired: 8/26/2015 17:47:47 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG536565-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	.01861	-.00462	.00040	.00064	.00010	-.01627
Stddev	.00052	.01482	.00044	.00059	.00012	.00002	.00564
%RSD	397.73	79.602	9.4417	146.67	19.324	18.269	34.662
#1	-.00039	.01101	-.00510	.00076	.00051	.00012	-.00987
#2	-.00047	.03569	-.00424	.00073	.00064	.00011	-.02050
#3	.00047	.00914	-.00453	-.00028	.00075	.00008	-.01844
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	-.00034	.00042	-.00004	.00148	-.01577	.00096
Stddev	.00011	.00010	.00053	.00014	.00450	.01754	.00057
%RSD	71.159	29.302	126.09	383.47	303.62	111.22	59.450
#1	.00024	-.00040	.00047	.00001	-.00288	-.01837	.00112
#2	.00020	-.00022	.00092	.00007	.00611	.00292	.00033
#3	.00003	-.00039	-.00013	-.00019	.00122	-.03187	.00143
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02261	.00002	.00007	.10620	.00063	F -.00463	-.00185
Stddev	.02490	.00003	.00009	.01114	.00049	.00098	.00105
%RSD	110.10	138.63	124.52	10.487	77.949	21.105	56.930
#1	-.00406	.00004	.00014	.11290	.00107	-.00359	-.00289
#2	.04524	-.00001	.00010	.11236	.00010	-.00553	-.00079
#3	.02665	.00003	-.00003	.09334	.00072	-.00477	-.00187
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: August 27, 2015

Kim K Buck

Sample Name: PBW 4A Acquired: 8/26/2015 17:47:47 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG536565-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.00037**	**-.00010**	**.00023**	**.00034**	**.00093**	**.00004**
Stddev	.00138	.00388	.00023	.00045	.00003	.00036	.00072
%RSD	2752.3	1045.2	221.83	194.15	8.6197	38.545	1639.5
#1	-.00164	-.00083	.00002	.00018	.00032	.00081	-.00001
#2	.00089	.00471	.00004	.00071	.00038	.00065	.00080
#3	.00060	-.00276	-.00036	-.00019	.00034	.00134	-.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00010**	**.00447**	F **-1.3063**
Stddev	.00024	.00005	1.1734
%RSD	249.46	1.0308	89.829
#1	-.00037	.00443	-2.3024
#2	.00007	.00453	-1.6038
#3	.00001	.00446	-.01275
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**8799.5**	**12766.**
Stddev	18.2	27.
%RSD	.20688	.20853
#1	8789.1	12790.
#2	8788.8	12771.
#3	8820.5	12738.

Approved: August 27, 2015

Kim K Buck

Sample Name: LCSW 4A Acquired: 8/26/2015 17:51:14 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG536565-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20297	5.0157	.20405	.98584	.51620	.02592	4.9994
Stddev	.00102	.0482	.00076	.00424	.00738	.00004	.0395
%RSD	.50314	.96145	.37003	.43010	1.4295	.14137	.78980
#1	.20291	4.9680	.20488	.98390	.50777	.02596	4.9580
#2	.20197	5.0147	.20341	.98292	.51936	.02593	5.0035
#3	.20401	5.0644	.20387	.99071	.52147	.02588	5.0366
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02544	.10598	.26900	.26448	2.1205	25.843	.51501
Stddev	.00018	.00061	.00109	.00224	.0304	.252	.00668
%RSD	.69808	.57812	.40574	.84641	1.4316	.97630	1.2974
#1	.02553	.10587	.27025	.26571	2.0902	25.554	.50752
#2	.02555	.10665	.26824	.26583	2.1203	25.957	.51716
#3	.02523	.10544	.26852	.26189	2.1509	26.018	.52035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.3346	.27892	.54063	25.635	.27047	5.0429	.26920
Stddev	.1058	.00172	.00314	.428	.00103	.0317	.00143
%RSD	1.9824	.61649	.58100	1.6695	.38183	.62866	.53239
#1	5.2127	.27727	.54156	25.144	.27077	5.0469	.26955
#2	5.4014	.28070	.54320	25.826	.27132	5.0725	.27042
#3	5.3898	.27879	.53713	25.933	.26932	5.0094	.26762
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: LCSW 4A Acquired: 8/26/2015 17:51:14 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG536565-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.62257	.19386	2.6601	.53185	.52294	.53335	.26335
Stddev	.00700	.00211	.0260	.00337	.00424	.00860	.00264
%RSD	1.1242	1.0872	.97811	.63359	.81102	1.6126	1.0012
#1	.62550	.19254	2.6769	.52982	.51810	.52398	.26476
#2	.62762	.19629	2.6734	.53574	.52473	.53516	.26498
#3	.61458	.19275	2.6301	.52998	.52600	.54090	.26031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.53844	.53362	F -1.0525
Stddev	.00040	.00417	1.4461
%RSD	.07520	.78149	137.39
#1	.53853	.52900	-1.2687
#2	.53800	.53477	-2.3783
#3	.53880	.53710	.48952
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8658.0	12618.
Stddev	13.6	78.
%RSD	.15688	.61603
#1	8643.2	12683.
#2	8670.0	12532.
#3	8660.8	12639.

Approved: August 27, 2015

Kim K Buck

Sample Name: FBLK Acquired: 8/26/2015 17:54:21 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG536361-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.00702	-.00330	.00145	.00041	.00005	-.01399
Stddev	.00024	.02121	.00124	.00086	.00018	.00001	.00227
%RSD	68.557	302.01	37.585	59.660	42.854	18.031	16.256
#1	.00063	.02677	-.00243	.00051	.00038	.00006	-.01228
#2	.00022	-.01540	-.00472	.00220	.00025	.00004	-.01311
#3	.00021	.00970	-.00275	.00164	.00060	.00005	-.01657
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	-.00042	.00045	.00049	.00373	.01831	-.00008
Stddev	.00004	.00016	.00007	.00079	.00730	.01765	.00167
%RSD	19.926	39.009	15.911	159.40	196.05	96.366	1972.2
#1	.00024	-.00060	.00052	.00112	.00784	.02491	-.00201
#2	.00020	-.00029	.00037	.00075	.00805	.03171	.00072
#3	.00016	-.00035	.00047	-.00039	-.00471	-.00168	.00104
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00116	.00010	.00036	.05344	.00060	F -.00589	-.00077
Stddev	.01846	.00002	.00008	.00458	.00037	.00216	.00119
%RSD	1597.9	17.634	21.303	8.5765	60.720	36.638	154.06
#1	.01900	.00012	.00028	.04829	.00065	-.00826	.00038
#2	.00231	.00009	.00043	.05705	.00021	-.00541	-.00070
#3	-.01785	.00008	.00038	.05498	.00094	-.00402	-.00200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: August 27, 2015

Kim K Buck

Sample Name: FBLK Acquired: 8/26/2015 17:54:21 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG536361-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	.00154	.00213	.00096	.00019	.00095	-.00315
Stddev	.00249	.00332	.00109	.00027	.00007	.00063	.00146
%RSD	1760.8	215.15	51.299	28.183	36.268	66.015	46.255
#1	-.00275	.00524	.00324	.00105	.00026	.00049	-.00473
#2	.00012	-.00119	.00106	.00066	.00012	.00070	-.00186
#3	.00220	.00058	.00208	.00118	.00019	.00167	-.00286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00005	.00462	2.8503
Stddev	.00023	.00006	1.4766
%RSD	438.44	1.3627	51.804
#1	.00001	.00456	3.6949
#2	.00014	.00463	1.1453
#3	-.00031	.00468	3.7107
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8800.7	13140.
Stddev	10.1	44.
%RSD	.11458	.33831
#1	8809.5	13189.
#2	8802.8	13103.
#3	8789.7	13127.

Approved: August 27, 2015

Sample Name: L1508126501 Acquired: 8/26/2015 17:57:49 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG536565-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	.04442	-.00351	.03543	.69536	.00012	259.49
Stddev	.00041	.00518	.00182	.00083	.00193	.00001	.85
%RSD	154.84	11.667	52.021	2.3503	.27690	8.1624	.32908
#1	.00015	.03974	-.00149	.03639	.69442	.00013	258.60
#2	-.00066	.04352	-.00504	.03506	.69409	.00012	259.58
#3	-.00028	.04999	-.00399	.03486	.69758	.00011	260.30
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	-.00028	.00185	.00031	.03552	229.88	.02858
Stddev	.00006	.00017	.00035	.00016	.00164	.78	.00069
%RSD	23.708	61.659	18.668	52.827	4.6214	.33977	2.4158
#1	.00029	-.00040	.00223	.00049	.03383	228.99	.02797
#2	.00019	-.00036	.00156	.00029	.03711	230.25	.02844
#3	.00031	-.00008	.00177	.00016	.03560	230.41	.02933
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00551	-.00003	.00510	F 392.82	.00006	.08541	.00243
Stddev	.00754	.00011	.00010	8.26	.00100	.00518	.00126
%RSD	136.76	349.64	2.0292	2.1015	1758.5	6.0672	51.834
#1	.00220	-.00008	.00504	400.05	.00092	.08309	.00098
#2	.00019	.00009	.00522	394.59	-.00104	.09135	.00320
#3	.01414	-.00011	.00503	383.82	.00030	.08180	.00312
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				360.00			
Low Limit				-.40000			

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508126501 Acquired: 8/26/2015 17:57:49 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG536565-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.02601	.17670	.00069	.35980	-.01426	-.00278
Stddev	.00058	.00039	.00402	.00066	.00050	.00106	.00065
%RSD	121.78	1.4921	2.2742	96.611	.13809	7.4267	23.351
#1	.00113	.02581	.17546	-.00002	.35923	-.01310	-.00297
#2	.00031	.02577	.18119	.00079	.36014	-.01449	-.00206
#3	.00000	.02646	.17344	.00129	.36003	-.01518	-.00332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00023	.00627	F -2.7797
Stddev	.00013	.00012	1.0661
%RSD	55.007	1.9255	38.355
#1	.00009	.00619	-1.5617
#2	.00028	.00640	-3.5436
#3	.00033	.00620	-3.2338
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8054.6	12226.
Stddev	5.3	135.
%RSD	.06565	1.1065
#1	8048.7	12377.
#2	8056.3	12117.
#3	8058.8	12182.

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508126501MS Acquired: 8/26/2015 18:01:24 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG536565-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20615	5.0922	.20966	1.0252	1.1987	.02591	266.10
Stddev	.00274	.0020	.00203	.0128	.0043	.00016	.09
%RSD	1.3268	.03945	.96741	1.2472	.35714	.60595	.03245
#1	.20540	5.0899	.21075	1.0122	1.2023	.02574	266.20
#2	.20387	5.0931	.20732	1.0255	1.2000	.02592	266.04
#3	.20918	5.0936	.21090	1.0378	1.1940	.02606	266.06
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02596	.10039	.26138	.25217	2.0788	256.62	.54772
Stddev	.00007	.00028	.00053	.00103	.0124	.07	.00320
%RSD	.28819	.27570	.20292	.40704	.59623	.02585	.58473
#1	.02588	.10014	.26079	.25103	2.0648	256.62	.54985
#2	.02603	.10034	.26181	.25302	2.0834	256.69	.54928
#3	.02598	.10069	.26156	.25246	2.0883	256.55	.54404
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.2069	.26000	.53189	F 411.64	.25353	5.4324	.25610
Stddev	.0319	.00334	.00171	7.32	.00072	.0118	.00113
%RSD	.61328	1.2842	.32102	1.7792	.28246	.21725	.43966
#1	5.1838	.25642	.53071	405.50	.25318	5.4234	.25739
#2	5.1936	.26056	.53112	419.75	.25306	5.4279	.25559
#3	5.2433	.26303	.53385	409.67	.25435	5.4457	.25533
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				360.00			
Low Limit				-.40000			

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508126501MS Acquired: 8/26/2015 18:01:24 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG536565-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.62669	.22906	2.9065	.51930	.86700	.50606	.23126
Stddev	.00710	.00124	.0111	.00325	.00097	.00262	.00227
%RSD	1.1327	.54048	.38250	.62599	.11163	.51834	.98014
#1	.62978	.23043	2.9127	.51839	.86812	.50537	.22869
#2	.61857	.22871	2.8937	.51660	.86644	.50896	.23298
#3	.63171	.22803	2.9132	.52291	.86645	.50385	.23210
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.52670	.53441	F -2.1932
Stddev	.00418	.00434	.5481
%RSD	.79379	.81260	24.989
#1	.52286	.53027	-1.7230
#2	.52610	.53404	-2.0615
#3	.53115	.53893	-2.7951
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	7981.3	11944.
Stddev	22.7	118.
%RSD	.28456	.98996
#1	8000.5	12074.
#2	7987.1	11914.
#3	7956.2	11844.

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508126501MSD Acquired: 8/26/2015 18:04:40 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG536565-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20995	5.1784	.21674	1.0464	1.2220	.02651	267.78
Stddev	.00099	.0488	.00076	.0027	.0058	.00004	1.13
%RSD	.47276	.94196	.34894	.26174	.47238	.13309	.42279
#1	.20884	5.1238	.21586	1.0433	1.2157	.02653	266.58
#2	.21074	5.2178	.21717	1.0479	1.2269	.02647	267.95
#3	.21027	5.1935	.21718	1.0482	1.2234	.02653	268.82
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02663	.10199	.26641	.25608	2.1341	259.82	.56466
Stddev	.00014	.00052	.00024	.00109	.0058	.85	.00199
%RSD	.53766	.50907	.09072	.42502	.27018	.32545	.35237
#1	.02661	.10157	.26614	.25616	2.1281	258.86	.56352
#2	.02650	.10182	.26662	.25496	2.1348	260.44	.56696
#3	.02678	.10257	.26646	.25713	2.1395	260.16	.56350
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.3568	.26431	.54283	F 415.28	.25809	5.5513	.25908
Stddev	.0698	.00185	.00379	3.44	.00011	.0195	.00298
%RSD	1.3036	.70079	.69868	.82799	.04281	.35115	1.1515
#1	5.2775	.26222	.54184	411.42	.25812	5.5427	.26218
#2	5.3839	.26573	.53963	418.02	.25818	5.5376	.25623
#3	5.4090	.26499	.54702	416.39	.25796	5.5736	.25883
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				360.00			
Low Limit				-.40000			

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508126501MSD Acquired: 8/26/2015 18:04:40 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG536565-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.64379	.22997	2.9384	.51937	.88778	.52421	.23332
Stddev	.00633	.00571	.0253	.00697	.00078	.00268	.00218
%RSD	.98334	2.4815	.86173	1.3415	.08730	.51159	.93528
#1	.64662	.22621	2.9448	.52724	.88689	.52156	.23505
#2	.63654	.22716	2.9106	.51399	.88827	.52692	.23087
#3	.64821	.23653	2.9600	.51688	.88818	.52415	.23404
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.53798	.53614	F -3.6295
Stddev	.00099	.00587	2.0016
%RSD	.18386	1.0956	55.148
#1	.53687	.54130	-5.4365
#2	.53876	.53736	-3.9739
#3	.53832	.52975	-1.4780
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	7940.5	11918.
Stddev	19.1	68.
%RSD	.24018	.57027
#1	7962.2	11996.
#2	7932.9	11873.
#3	7926.4	11885.

Approved: August 27, 2015

Sample Name: L1508126601 Acquired: 8/26/2015 18:07:57 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	2.0605	-.00221	.01032	.21123	.00011	407.24
Stddev	.00008	.0228	.00105	.00079	.00070	.00004	1.37
%RSD	31.446	1.1054	47.471	7.6759	.33131	33.243	.33557
#1	-.00021	2.0753	-.00111	.01121	.21056	.00007	408.07
#2	-.00037	2.0720	-.00232	.01006	.21117	.00013	405.66
#3	-.00023	2.0343	-.00320	.00969	.21196	.00014	407.99
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	-.00055	.00136	.02397	.05438	263.99	.06897
Stddev	.00007	.00015	.00029	.00072	.00149	.74	.00109
%RSD	26.894	27.339	21.532	2.9959	2.7328	.27928	1.5791
#1	.00027	-.00052	.00153	.02338	.05543	263.21	.06836
#2	.00019	-.00041	.00102	.02477	.05268	264.11	.07023
#3	.00033	-.00071	.00153	.02375	.05502	264.67	.06833
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03381	.00136	.00995	F 388.47	.00056	.04371	.00003
Stddev	.00815	.00010	.00022	2.90	.00060	.00461	.00170
%RSD	24.106	7.2975	2.2464	.74709	107.88	10.553	4875.7
#1	.02589	.00146	.00972	389.06	.00123	.04829	-.00190
#2	.03336	.00126	.01017	391.03	.00035	.04379	.00071
#3	.04217	.00136	.00996	385.32	.00009	.03906	.00129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				360.00			
Low Limit				-.40000			

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508126601 Acquired: 8/26/2015 18:07:57 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00129	.02128	.09844	.00048	.41404	-.01839	-.00228
Stddev	.00219	.00151	.00112	.00025	.00136	.00115	.00223
%RSD	169.79	7.1146	1.1373	52.103	.32873	6.2708	97.631
#1	-.00112	.02048	.09718	.00077	.41298	-.01967	.00028
#2	.00316	.02034	.09880	.00037	.41356	-.01807	-.00339
#3	.00182	.02303	.09933	.00031	.41557	-.01743	-.00374
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00032	.01854	F -3.5565
Stddev	.00009	.00004	1.7267
%RSD	27.929	.23531	48.551
#1	.00028	.01859	-4.6446
#2	.00026	.01854	-1.5655
#3	.00042	.01850	-4.4594
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	7865.0	12075.
Stddev	29.1	41.
%RSD	.37010	.34323
#1	7877.6	12119.
#2	7885.7	12036.
#3	7831.7	12070.

Approved: August 27, 2015

Sample Name: L1508126701 Acquired: 8/26/2015 18:11:41 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00062	.03280	-.00513	.01548	.18949	.00009	309.68
Stddev	.00068	.00652	.00302	.00153	.00058	.00002	.50
%RSD	109.59	19.889	58.890	9.8658	.30352	26.202	.16093
#1	.00006	.02584	-.00308	.01507	.18951	.00007	310.06
#2	-.00129	.03379	-.00859	.01717	.18890	.00008	309.11
#3	-.00062	.03877	-.00370	.01420	.19005	.00011	309.86
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	-.00052	.00209	.02066	.03577	231.71	.15693
Stddev	.00008	.00020	.00067	.00041	.00293	.65	.00115
%RSD	33.641	37.931	32.213	2.0078	8.1957	.28129	.73443
#1	.00017	-.00034	.00132	.02108	.03893	231.99	.15713
#2	.00033	-.00048	.00254	.02025	.03526	230.96	.15570
#3	.00025	-.00073	.00242	.02066	.03313	232.17	.15798
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00037	.00005	.00395	333.86	-.00010	.05458	.26368
Stddev	.01556	.00002	.00014	3.71	.00025	.00251	.00046
%RSD	4254.0	43.099	3.6172	1.1105	261.29	4.5967	.17453
#1	-.01833	.00004	.00388	330.08	-.00037	.05279	.26344
#2	.00830	.00008	.00386	337.49	.00013	.05745	.26338
#3	.00894	.00004	.00411	334.00	-.00005	.05350	.26421
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508126701 Acquired: 8/26/2015 18:11:41 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00151	.01368	.06080	.00071	.30706	-.01611	-.00349
Stddev	.00192	.00305	.00253	.00078	.00095	.00033	.00217
%RSD	126.80	22.255	4.1550	109.90	.30959	2.0420	62.071
#1	-.00004	.01409	.05845	.00018	.30751	-.01634	-.00522
#2	-.00082	.01651	.06347	.00160	.30596	-.01626	-.00419
#3	-.00368	.01046	.06049	.00034	.30770	-.01573	-.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00054	1.0637	F -2.1532
Stddev	.00003	.0027	1.1485
%RSD	5.1886	.25874	53.340
#1	.00055	1.0635	-.86675
#2	.00056	1.0665	-3.0755
#3	.00050	1.0610	-2.5173
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	7867.9	12173.
Stddev	22.7	133.
%RSD	.28888	1.0958
#1	7854.0	12115.
#2	7855.5	12078.
#3	7894.1	12325.

Approved: August 27, 2015

Sample Name: L1508126701PS Acquired: 8/26/2015 18:15:14 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG536604-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20229	4.9328	.20510	.99066	.67059	.02528	282.86
Stddev	.00063	.0037	.00327	.00169	.00095	.00006	.54
%RSD	.31257	.07526	1.5935	.17034	.14201	.23822	.19132
#1	.20156	4.9355	.20134	.99240	.67105	.02535	282.23
#2	.20271	4.9344	.20717	.99054	.66949	.02523	283.16
#3	.20261	4.9286	.20681	.98903	.67121	.02525	283.18
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02559	.09765	.25529	.26417	2.0478	234.19	.65797
Stddev	.00015	.00025	.00049	.00147	.0118	.34	.00150
%RSD	.58860	.25358	.18998	.55704	.57361	.14641	.22769
#1	.02562	.09781	.25553	.26511	2.0345	233.82	.65915
#2	.02542	.09776	.25561	.26493	2.0527	234.26	.65628
#3	.02572	.09736	.25473	.26248	2.0564	234.50	.65847
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.1240	.25245	.51784	331.23	.24720	5.2704	.48253
Stddev	.0755	.00231	.00183	2.41	.00144	.0084	.00148
%RSD	1.4737	.91629	.35346	.72626	.58121	.15956	.30697
#1	5.0389	.24994	.51826	328.85	.24669	5.2704	.48273
#2	5.1500	.25292	.51942	333.66	.24882	5.2788	.48391
#3	5.1830	.25449	.51584	331.19	.24608	5.2620	.48097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508126701PS Acquired: 8/26/2015 18:15:14 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG536604-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.61104	.20766	2.6639	.49330	.77667	.50311	.22384
Stddev	.00321	.00063	.0176	.00235	.00115	.00147	.00307
%RSD	.52579	.30501	.66216	.47663	.14796	.29128	1.3726
#1	.60894	.20733	2.6491	.49598	.77535	.50145	.22031
#2	.61474	.20839	2.6834	.49234	.77735	.50424	.22589
#3	.60944	.20725	2.6591	.49158	.77733	.50364	.22533
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.51541	1.4501	F -1.7812
Stddev	.00087	.0154	.7407
%RSD	.16866	1.0599	41.585
#1	.51557	1.4673	-2.5480
#2	.51619	1.4377	-1.0697
#3	.51447	1.4453	-1.7259
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	7986.2	12029.
Stddev	6.5	102.
%RSD	.08167	.84592
#1	7979.8	12127.
#2	7992.9	12035.
#3	7985.9	11924.

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508126701SDL Acquired: 8/26/2015 18:18:31 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG536604-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00053	.01684	.00076	.00567	.03996	.00008	63.972
Stddev	.00050	.00154	.00120	.00077	.00027	.00003	.112
%RSD	95.055	9.1310	156.54	13.631	.67060	34.571	.17550
#1	-.00093	.01523	.00044	.00606	.03965	.00009	63.851
#2	.00003	.01829	-.00024	.00617	.04012	.00005	63.994
#3	-.00069	.01701	.00209	.00478	.04011	.00010	64.073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00012	-.00015	.00125	.00411	.00712	47.165	.03232
Stddev	.00007	.00007	.00014	.00017	.00253	.087	.00049
%RSD	61.894	45.398	11.499	4.1127	35.509	.18411	1.5053
#1	-.00015	-.00018	.00141	.00396	.00979	47.069	.03288
#2	-.00016	-.00007	.00123	.00430	.00680	47.190	.03209
#3	-.00003	-.00019	.00112	.00409	.00476	47.237	.03199
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00321	-.00001	.00089	70.480	-.00044	.01826	.05700
Stddev	.01615	.00001	.00030	.179	.00041	.00580	.00089
%RSD	503.72	93.158	33.298	.25380	94.287	31.784	1.5702
#1	-.00102	.00000	.00113	70.279	-.00004	.02495	.05802
#2	.01174	-.00003	.00098	70.540	-.00040	.01505	.05637
#3	-.02033	-.00001	.00056	70.622	-.00087	.01476	.05660
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508126701SDL Acquired: 8/26/2015 18:18:31 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG536604-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00265**	**.00146**	**.00926**	**-.00015**	**.06536**	**-.00477**	**.00055**
Stddev	.00379	.00241	.00059	.00029	.00014	.00159	.00103
%RSD	142.84	165.24	6.4084	197.28	.21332	33.289	186.25
#1	-.00333	-.00071	.00896	.00019	.06527	-.00398	-.00029
#2	.00143	.00405	.00994	-.00033	.06552	-.00660	.00025
#3	-.00605	.00103	.00887	-.00029	.06528	-.00373	.00170
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00015**	**.23315**	F **-1.4267**
Stddev	.00009	.00177	1.7885
%RSD	59.134	.75790	125.36
#1	.00005	.23397	-1.0877
#2	.00020	.23437	.16801
#3	.00020	.23113	-3.3605
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**8413.5**	**12270.**
Stddev	28.5	135.
%RSD	.33907	1.1012
#1	8439.9	12413.
#2	8417.2	12252.
#3	8383.2	12144.

Approved: August 27, 2015

Kim K Buck

Sample Name: CCV Acquired: 8/26/2015 18:21:56 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40657	10.250	.42118	.52298	1.0386	.05290	10.187
Stddev	.00173	.059	.00475	.00149	.0076	.00007	.063
%RSD	.42508	.57887	1.1276	.28459	.73029	.13700	.62085
#1	.40850	10.185	.41596	.52318	1.0301	.05282	10.114
#2	.40603	10.302	.42231	.52139	1.0415	.05296	10.214
#3	.40517	10.263	.42525	.52435	1.0444	.05293	10.232
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05213	.21317	.53270	.53195	4.2706	52.607	1.0404
Stddev	.00033	.00136	.00213	.00369	.0249	.225	.0080
%RSD	.62909	.63653	.39949	.69292	.58197	.42806	.76413
#1	.05189	.21179	.53026	.52811	4.2509	52.349	1.0323
#2	.05199	.21321	.53413	.53227	4.2985	52.766	1.0408
#3	.05250	.21450	.53372	.53546	4.2624	52.704	1.0482
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.955	F .56514	1.0926	52.147	.53883	10.653	.54163
Stddev	.095	.01044	.0081	.226	.00174	.090	.00529
%RSD	.86333	1.8469	.74288	.43426	.32287	.84609	.97716
#1	10.923	.57344	1.0840	51.886	.53722	10.555	.53568
#2	11.062	.56857	1.0935	52.267	.53860	10.669	.54581
#3	10.881	.55342	1.1002	52.289	.54068	10.734	.54341
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.50000					
Range		10.000%					

Approved: August 27, 2015

Kim K Buck

Sample Name: CCV Acquired: 8/26/2015 18:21:56 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2685	.41487	5.3404	1.0837	1.0519	1.0661	.53877
Stddev	.0123	.00410	.0085	.0046	.0085	.0058	.00543
%RSD	.96689	.98844	.15980	.42281	.81054	.54418	1.0085
#1	1.2584	.41376	5.3490	1.0806	1.0424	1.0594	.53956
#2	1.2650	.41144	5.3402	1.0815	1.0545	1.0689	.53298
#3	1.2822	.41941	5.3319	1.0889	1.0588	1.0699	.54376
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0600	1.0927	F -.48039
Stddev	.0020	.0079	1.2318
%RSD	.18941	.72216	256.42
#1	1.0617	1.0925	.87765
#2	1.0605	1.1006	-.79308
#3	1.0578	1.0848	-1.5257
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8537.2	12076.
Stddev	26.9	206.
%RSD	.31484	1.7035
#1	8568.2	11923.
#2	8520.7	11995.
#3	8522.7	12310.

Approved: August 27, 2015

Kim K Buck

Sample Name: CCB Acquired: 8/26/2015 18:25:02 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00033	.02684	-.00034	.00251	.00070	.00008	-.02026
Stddev	.00050	.02204	.00187	.00093	.00010	.00001	.01964
%RSD	153.15	82.112	556.20	37.241	14.664	16.753	96.978
#1	-.00051	.02219	-.00247	.00177	.00065	.00007	.00127
#2	.00024	.05083	.00105	.00356	.00064	.00009	-.02481
#3	-.00071	.00749	.00041	.00219	.00082	.00007	-.03722
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	-.00010	.00071	-.00049	-.00066	.10500	.00186
Stddev	.00008	.00008	.00073	.00067	.00185	.01425	.00069
%RSD	217.39	79.817	103.60	135.04	279.11	13.573	36.872
#1	.00013	-.00017	.00003	-.00125	.00125	.08864	.00246
#2	-.00003	-.00012	.00061	-.00022	-.00245	.11169	.00202
#3	.00001	-.00001	.00148	-.00001	-.00079	.11469	.00111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00275	-.00004	.00060	.03309	-.00072	-.00547	.00016
Stddev	.01775	.00008	.00011	.00503	.00073	.00256	.00169
%RSD	645.12	197.07	18.700	15.188	100.03	46.863	1063.7
#1	-.01149	.00002	.00070	.03064	-.00155	-.00252	.00117
#2	.02265	-.00013	.00061	.03888	-.00042	-.00719	.00109
#3	-.00290	-.00002	.00048	.02977	-.00020	-.00670	-.00179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: CCB Acquired: 8/26/2015 18:25:02 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00081	-.00056	-.00040	.00004	.00014	.00024	-.00089
Stddev	.00064	.00157	.00166	.00051	.00005	.00157	.00102
%RSD	79.328	277.82	420.03	1249.8	35.144	662.90	114.40
#1	-.00080	-.00016	.00004	-.00003	.00012	.00192	.00017
#2	-.00145	.00076	.00101	.00059	.00020	-.00002	-.00186
#3	-.00017	-.00229	-.00223	-.00043	.00010	-.00119	-.00098
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00029	-.00037	F -1.1634
Stddev	.00030	.00006	.2688
%RSD	105.22	16.573	23.102
#1	-.00006	-.00044	-1.2529
#2	.00050	-.00031	-.86135
#3	.00042	-.00037	-1.3761
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8552.4	12166.
Stddev	23.9	218.
%RSD	.27926	1.7954
#1	8535.7	12416.
#2	8579.8	12067.
#3	8541.8	12015.

Approved: August 27, 2015

Sample Name: L1508128005 Acquired: 8/26/2015 18:28:29 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00239	.05707	-.00204	3.6064	F 89.381	.00014	F 1410.4
Stddev	.00075	.00823	.00123	.0029	.730	.00003	6.4
%RSD	31.287	14.414	60.508	.08054	.81644	20.009	.45500
#1	-.00284	.06500	-.00064	3.6097	89.407	.00015	1405.2
#2	-.00153	.04858	-.00296	3.6044	90.098	.00011	1408.5
#3	-.00281	.05763	-.00253	3.6050	88.639	.00017	1417.6
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Fail
High Limit					81.000		810.00
Low Limit					-.00500		-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00217	.01264	.00190	-.00319	6.6911	66.770	6.5613
Stddev	.00019	.00027	.00092	.00038	.0784	.072	.0417
%RSD	8.9708	2.1000	48.261	11.931	1.1718	.10735	.63517
#1	.00238	.01238	.00185	-.00292	6.6228	66.832	6.6085
#2	.00199	.01264	.00285	-.00363	6.6738	66.692	6.5458
#3	.00213	.01291	.00101	-.00303	6.7767	66.787	6.5297
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	145.85	.65975	.00209	F 3055.8	-.00077	.04940	F -.00447
Stddev	1.97	.00773	.00005	36.4	.00076	.00756	.00138
%RSD	1.3536	1.1709	2.4431	1.1901	99.670	15.311	30.779
#1	143.74	.65106	.00214	3082.5	-.00005	.04310	-.00606
#2	146.17	.66237	.00205	3070.4	-.00157	.04731	-.00372
#3	147.65	.66583	.00206	3014.3	-.00069	.05779	-.00364
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail
High Limit				360.00			225.00
Low Limit				-.40000			-.00400

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508128005 Acquired: 8/26/2015 18:28:29 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	-.00004	.35592	.00024	^ *****	F -.04297	-.00732
Stddev	.00150	.00432	.00106	.00041	-----	.00038	.00175
%RSD	210.46	9911.6	.29787	170.26	-----	.87953	23.949
#1	.00050	-.00245	.35690	-.00014	^ -----	-.04257	-.00934
#2	-.00067	.00494	.35480	.00068	^ -----	-.04303	-.00634
#3	.00231	-.00263	.35605	.00018	^ -----	-.04332	-.00628
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						90.000	
Low Limit						-.02400	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00060	.00549	F -27.227
Stddev	.00018	.00013	1.697
%RSD	29.583	2.3721	6.2334
#1	-.00076	.00558	-26.558
#2	-.00062	.00554	-25.965
#3	-.00041	.00534	-29.156
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	6648.2	11200.
Stddev	5.6	134.
%RSD	.08464	1.1996
#1	6654.3	11347.
#2	6643.2	11167.
#3	6647.2	11085.

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508128201 Acquired: 8/26/2015 18:32:23 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	.01172	-.00233	.02753	.02658	.00010	36.957
Stddev	.00107	.02469	.00110	.00080	.00330	.00003	.118
%RSD	833.03	210.59	47.123	2.9039	12.401	31.635	.31848
#1	.00095	.02493	-.00333	.02730	.03037	.00011	36.821
#2	-.00118	-.01676	-.00251	.02687	.02505	.00014	37.018
#3	-.00016	.02700	-.00115	.02842	.02433	.00007	37.032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	-.00030	.00073	.00065	.34258	2.4863	.00457
Stddev	.00013	.00015	.00012	.00066	.00311	.0412	.00097
%RSD	54.218	48.781	16.159	101.75	.90729	1.6569	21.285
#1	.00009	-.00038	.00068	-.00009	.34378	2.4844	.00426
#2	.00029	-.00040	.00086	.00118	.33905	2.5284	.00379
#3	.00034	-.00013	.00063	.00086	.34490	2.4461	.00566
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.5608	.01799	.00059	5.8476	.00037	.00463	-.00139
Stddev	.0542	.00003	.00007	.1465	.00058	.00202	.00203
%RSD	.82616	.16818	12.455	2.5050	158.32	43.553	145.49
#1	6.6232	.01798	.00061	6.0156	.00077	.00415	-.00186
#2	6.5340	.01797	.00051	5.7803	-.00030	.00290	.00083
#3	6.5252	.01802	.00065	5.7469	.00063	.00684	-.00315
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508128201 Acquired: 8/26/2015 18:32:23 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00157**	**-.00178**	**2.1467**	**.00037**	**.14787**	**-.00131**	**-.00133**
Stddev	.00159	.00187	.0069	.00021	.00786	.00102	.00087
%RSD	101.26	105.14	.32324	58.228	5.3158	78.314	65.739
#1	-.00142	-.00007	2.1457	.00060	.15686	-.00108	-.00046
#2	-.00006	-.00149	2.1403	.00017	.14452	-.00041	-.00131
#3	-.00324	-.00377	2.1541	.00034	.14225	-.00243	-.00221
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00009**	**.00351**	F **-1.4436**
Stddev	.00010	.00017	.5333
%RSD	108.00	4.9429	36.944
#1	.00013	.00331	-.87075
#2	.00017	.00359	-1.9258
#3	-.00002	.00362	-1.5343
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**8641.4**	**12663.**
Stddev	20.8	50.
%RSD	.24059	.39110
#1	8653.3	12606.
#2	8653.6	12690.
#3	8617.4	12694.

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508128301 Acquired: 8/26/2015 18:35:47 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00033**	**.01233**	**-.00087**	**.02882**	**.00829**	**.00008**	**50.590**	**.00042**
Stddev	.00007	.02355	.00149	.00010	.00038	.00003	.279	.00010
%RSD	22.543	190.97	169.89	.36142	4.6018	46.037	.55074	22.999
#1	-.00024	.03738	.00084	.02872	.00785	.00010	50.279	.00038
#2	-.00037	.00896	-.00182	.02893	.00856	.00004	50.675	.00053
#3	-.00037	-.00935	-.00164	.02881	.00846	.00009	50.816	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00030**	**.00092**	**.00012**	**.17008**	**1.4018**	**.00404**	**15.503**	**.11391**
Stddev	.00005	.00051	.00067	.00098	.0360	.00066	.250	.00212
%RSD	18.064	55.469	547.29	.57570	2.5679	16.436	1.6147	1.8622
#1	-.00034	.00143	.00000	.16895	1.3603	.00417	15.220	.11164
#2	-.00033	.00041	-.00048	.17069	1.4246	.00463	15.592	.11423
#3	-.00024	.00092	.00084	.17060	1.4205	.00332	15.696	.11585
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00017**	**14.111**	**.00098**	**.00054**	**-.00097**	**-.00071**	**-.00161**	**5.1348**
Stddev	.00014	.068	.00007	.00158	.00063	.00106	.00277	.0644
%RSD	86.054	.48329	7.6576	294.05	65.094	149.59	171.66	1.2551
#1	.00032	14.046	.00106	.00104	-.00066	-.00102	-.00439	5.1337
#2	.00003	14.182	.00092	.00181	-.00055	.00047	.00115	5.1997
#3	.00016	14.105	.00096	-.00123	-.00170	-.00157	-.00159	5.0708
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508128301 Acquired: 8/26/2015 18:35:47 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.16953	-.00201	-.00128	.00013	.00993	.07440
Stddev	.00021	.00071	.00060	.00080	.00004	.00019	.44431
%RSD	41.130	.41922	29.738	62.321	29.035	1.9237	597.17
#1	.00045	.16871	-.00254	-.00104	.00014	.00974	.03931
#2	.00074	.16985	-.00136	-.00218	.00008	.01012	-.35132
#3	.00033	.17002	-.00213	-.00063	.00015	.00992	.53522
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8566.2	12359.
Stddev	10.6	243.
%RSD	.12413	1.9641
#1	8564.4	12621.
#2	8577.7	12313.
#3	8556.6	12142.

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508128401 Acquired: 8/26/2015 18:39:11 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	.03481	.00895	.07304	.09917	.00011	163.42	.00817
Stddev	.00030	.02540	.00114	.00096	.00082	.00004	.79	.00007
%RSD	267.86	72.980	12.743	1.3097	.82686	38.990	.48240	.86790
#1	.00045	.00933	.01019	.07222	.09848	.00009	162.69	.00825
#2	.00001	.06014	.00794	.07409	.10008	.00016	164.26	.00815
#3	-.00013	.03496	.00873	.07281	.09895	.00009	163.32	.00811
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00000	.00124	.26754	.02559	2.3705	.01077	3.0147	.14121
Stddev	.00011	.00038	.00082	.00346	.0035	.00077	.0267	.00147
%RSD	5447.7	30.319	.30467	13.517	.14709	7.1373	.88513	1.0380
#1	.00007	.00081	.26662	.02161	2.3665	.01147	2.9857	.14189
#2	-.00012	.00147	.26818	.02731	2.3719	.00995	3.0382	.14222
#3	.00006	.00145	.26782	.02786	2.3730	.01088	3.0202	.13953
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	5.0956	.00253	.23235	.04344	.00035	.00042	1.0862
Stddev	.00010	.0382	.00073	.00512	.00141	.00194	.00088	.0047
%RSD	91.490	.74999	28.725	2.2029	3.2568	548.19	211.78	.42992
#1	.00017	5.0706	.00257	.22696	.04193	.00030	-.00005	1.0833
#2	-.00001	5.1396	.00324	.23715	.04367	-.00156	-.00013	1.0916
#3	.00016	5.0765	.00179	.23293	.04473	.00232	.00144	1.0838
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508128401 Acquired: 8/26/2015 18:39:11 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	.42550	-.00983	-.00361	.00060	.23979	.71983
Stddev	.00049	.00320	.00073	.00118	.00015	.00161	1.0222
%RSD	197.95	.75202	7.4545	32.648	24.771	.67084	142.00
#1	.00033	.42382	-.00954	-.00494	.00077	.23793	1.8898
#2	-.00028	.42919	-.01066	-.00317	.00053	.24064	.26974
#3	.00068	.42350	-.00928	-.00271	.00049	.24079	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8315.3	12679.
Stddev	19.5	123.
%RSD	.23478	.97122
#1	8292.9	12628.
#2	8329.2	12590.
#3	8323.7	12820.

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508128403 Acquired: 8/26/2015 18:42:32 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00000	.14916	.00068	.11613	.07494	.00020	170.62	.01007
Stddev	.0004	.02310	.00246	.00035	.00017	.00002	.79	.00011
%RSD	75998.	15.487	362.36	.30264	.23265	11.074	.46287	1.0816
#1	.00033	.12865	.00348	.11622	.07509	.00023	169.83	.01010
#2	-.00038	.17418	-.00114	.11643	.07499	.00018	171.41	.01016
#3	.00005	.14463	-.00030	.11574	.07475	.00020	170.60	.00994
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00177	.00232	1.1036	.03151	2.5386	.00853	3.3913	.44506
Stddev	.00019	.00074	.0048	.00037	.0186	.00019	.0726	.00864
%RSD	10.731	31.950	.43691	1.1585	.73253	2.2154	2.1407	1.9415
#1	.00199	.00213	1.1058	.03128	2.5597	.00831	3.4305	.44179
#2	.00164	.00168	1.0981	.03132	2.5312	.00861	3.3075	.43852
#3	.00168	.00313	1.1069	.03193	2.5248	.00867	3.4358	.45485
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	5.4218	.00498	.03100	.03429	-.00105	.00334	3.9046
Stddev	.00023	.0177	.00122	.00685	.00135	.00130	.00252	.0102
%RSD	87.104	.32705	24.446	22.098	3.9488	123.06	75.480	.26086
#1	.00048	5.4218	.00617	.02358	.03574	-.00230	.00046	3.9052
#2	.00029	5.4396	.00374	.03708	.03306	-.00115	.00439	3.8942
#3	.00002	5.4041	.00503	.03235	.03407	.00029	.00516	3.9145
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508128403 Acquired: 8/26/2015 18:42:32 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00132	.35102	-.00909	-.00321	.00037	.24376	2.6834
Stddev	.00011	.00086	.00064	.00152	.00017	.00231	.6532
%RSD	8.5519	.24558	7.0232	47.191	45.607	.94925	24.343
#1	.00146	.35032	-.00922	-.00425	.00028	.24536	3.2441
#2	.00125	.35198	-.00839	-.00147	.00057	.24111	1.9661
#3	.00127	.35077	-.00964	-.00392	.00027	.24483	2.8400
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8359.3	12677.
Stddev	20.8	206.
%RSD	.24891	1.6228
#1	8353.2	12761.
#2	8342.2	12827.
#3	8382.5	12442.

Approved: August 27, 2015

Sample Name: L1508128801 Acquired: 8/26/2015 18:45:54 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	.02137	-.00293	.03559	.31320	.00010	28.867
Stddev	.00028	.00895	.00030	.00124	.00117	.00001	.072
%RSD	1833.2	41.903	10.295	3.4943	.37439	12.228	.25067
#1	.00024	.01126	-.00258	.03691	.31296	.00011	28.815
#2	-.00031	.02452	-.00312	.03444	.31447	.00009	28.950
#3	.00003	.02832	-.00309	.03541	.31217	.00010	28.838
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.00039	.00174	.00206	.14077	1.4268	.02510
Stddev	.00015	.00015	.00030	.00051	.00383	.0230	.00103
%RSD	18.586	38.814	17.404	24.577	2.7190	1.6107	4.0865
#1	.00065	.00046	.00139	.00261	.13668	1.4533	.02391
#2	.00083	.00022	.00191	.00162	.14426	1.4129	.02569
#3	.00095	.00049	.00192	.00195	.14139	1.4142	.02568
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	38.663	.05998	.00034	313.76	.00441	1.2757	-.00245
Stddev	.248	.00028	.00019	3.72	.00026	.0300	.00119
%RSD	.64173	.47137	55.794	1.1867	5.8321	2.3486	48.762
#1	38.782	.05994	.00050	310.90	.00469	1.2603	-.00108
#2	38.829	.06028	.00013	312.42	.00435	1.3103	-.00330
#3	38.378	.05971	.00038	317.97	.00418	1.2566	-.00297
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508128801 Acquired: 8/26/2015 18:45:54 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00042**	**.00023**	**15.492**	**.00001**	**.56907**	**-.00172**	**-.00194**
Stddev	.00143	.00151	.042	.00032	.00235	.00159	.00129
%RSD	337.83	649.40	.27390	2784.9	.41349	92.784	66.346
#1	-.00205	.00076	15.538	-.00001	.56698	-.00059	-.00200
#2	.00018	.00140	15.483	-.00030	.57162	-.00102	-.00319
#3	.00060	-.00147	15.454	.00035	.56861	-.00354	-.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00025**	**.03445**	F **-.67983**
Stddev	.00003	.00061	.41209
%RSD	12.667	1.7683	60.616
#1	.00028	.03390	-.21401
#2	.00022	.03511	-.82860
#3	.00025	.03433	-.99687
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**8307.7**	**12518.**
Stddev	7.7	25.
%RSD	.09213	.19739
#1	8307.4	12490.
#2	8315.5	12536.
#3	8300.2	12528.

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508128802 Acquired: 8/26/2015 18:49:26 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00000	.01522	-.00351	.03766	.29581	.00010	27.630
Stddev	.00031	.02957	.00049	.00049	.00103	.00001	.055
%RSD	24456.	194.36	13.874	1.3005	.34854	10.470	.19730
#1	.00020	.04586	-.00381	.03814	.29470	.00010	27.598
#2	.00017	.01294	-.00295	.03716	.29674	.00009	27.598
#3	-.00036	-.01315	-.00378	.03768	.29597	.00010	27.693
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00062	.00033	.00241	-.00004	.15112	1.5358	.02373
Stddev	.00009	.00010	.00069	.00096	.00035	.0246	.00082
%RSD	15.306	29.105	28.875	2346.0	.22950	1.6028	3.4742
#1	.00067	.00034	.00255	.00035	.15134	1.5374	.02308
#2	.00051	.00043	.00165	-.00114	.15130	1.5104	.02346
#3	.00068	.00024	.00302	.00066	.15072	1.5595	.02466
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	38.170	.05546	.00040	323.09	.00179	.90165	-.00182
Stddev	.415	.00088	.00003	1.32	.00028	.00478	.00154
%RSD	1.0869	1.5872	6.4138	.40838	15.831	.52976	84.687
#1	37.711	.05454	.00038	324.39	.00147	.90689	-.00004
#2	38.280	.05553	.00040	321.75	.00190	.90051	-.00279
#3	38.518	.05630	.00043	323.15	.00201	.89754	-.00263
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508128802 Acquired: 8/26/2015 18:49:26 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	-.00085	14.585	.00049	.54453	-.00201	-.00185
Stddev	.00155	.00117	.025	.00035	.00053	.00111	.00130
%RSD	714.83	138.27	.17287	71.307	.09686	55.307	70.398
#1	.00100	-.00061	14.582	.00056	.54485	-.00302	-.00285
#2	.00123	-.00211	14.561	.00079	.54392	-.00082	-.00233
#3	-.00157	.00019	14.611	.00011	.54481	-.00220	-.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00030	.03408	F -1.1368
Stddev	.00017	.00024	1.5616
%RSD	54.428	.71205	137.36
#1	-.00018	.03403	.66462
#2	-.00049	.03434	-2.1056
#3	-.00024	.03386	-1.9694
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8257.6	12397.
Stddev	6.1	120.
%RSD	.07430	.96571
#1	8251.0	12532.
#2	8258.6	12354.
#3	8263.2	12305.

Approved: August 27, 2015

Sample Name: L1508137201 Acquired: 8/26/2015 18:52:58 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	.03155	-.00311	.02354	.05083	.00009	36.732
Stddev	.00032	.01511	.00213	.00061	.00018	.00002	.069
%RSD	204.54	47.882	68.413	2.6125	.35669	20.131	.18904
#1	.00003	.04826	-.00231	.02289	.05080	.00007	36.805
#2	-.00053	.02753	-.00150	.02411	.05067	.00011	36.667
#3	.00003	.01886	-.00552	.02361	.05102	.00009	36.723
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	-.00051	.00106	.02850	.81698	.91930	.00333
Stddev	.00010	.00002	.00026	.00009	.01097	.04029	.00059
%RSD	36.736	3.8315	24.290	.32066	1.3433	4.3823	17.599
#1	.00018	-.00052	.00090	.02842	.82737	.92009	.00266
#2	.00024	-.00052	.00092	.02847	.80550	.87862	.00373
#3	.00037	-.00049	.00135	.02860	.81808	.95918	.00359
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.8026	.00953	.00004	9.1173	.00114	.01341	.00174
Stddev	.1254	.00031	.00008	.0240	.00030	.00348	.00193
%RSD	2.1612	3.2255	180.20	.26319	26.497	25.971	111.32
#1	5.9473	.00988	.00003	9.1147	.00080	.01019	.00138
#2	5.7259	.00930	.00013	9.0947	.00123	.01294	.00383
#3	5.7345	.00941	-.00003	9.1425	.00139	.01711	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508137201 Acquired: 8/26/2015 18:52:58 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	-.00021	3.3751	.00011	.10080	-.00251	-.00103
Stddev	.00196	.00143	.0159	.00059	.00048	.00114	.00274
%RSD	912.87	697.19	.47068	517.72	.48065	45.264	264.85
#1	.00174	.00017	3.3812	.00067	.10024	-.00381	.00113
#2	.00090	.00100	3.3870	-.00051	.10108	-.00204	-.00012
#3	-.00199	-.00179	3.3571	.00019	.10108	-.00169	-.00411
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00019	.07046	F -.87876
Stddev	.00030	.00036	.34274
%RSD	157.29	.51513	39.003
#1	-.00005	.07087	-.52810
#2	.00001	.07032	-.89517
#3	-.00054	.07018	-1.2130
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8691.0	12570.
Stddev	35.0	320.
%RSD	.40240	2.5453
#1	8726.9	12200.
#2	8657.0	12754.
#3	8689.1	12755.

Approved: August 27, 2015

Sample Name: L1508137202 Acquired: 8/26/2015 18:56:20 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00035	.47348	-.00164	.01279	.06430	.00013	30.182	.00029
Stddev	.00030	.01016	.00204	.00031	.00005	.00002	.075	.00007
%RSD	85.752	2.1462	124.07	2.4087	.07529	16.964	.24717	25.161
#1	.00000	.46591	-.00397	.01290	.06435	.00014	30.099	.00037
#2	-.00052	.48503	-.00014	.01244	.06427	.00010	30.203	.00024
#3	-.00052	.46951	-.00083	.01302	.06427	.00014	30.244	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.00215	.00259	2.6593	1.9860	.00376	4.6047	.54463
Stddev	.00016	.00060	.00014	.0097	.0151	.00101	.0273	.00218
%RSD	39.855	27.838	5.5312	.36341	.76069	26.794	.59228	.40025
#1	.00048	.00283	.00273	2.6494	1.9992	.00466	4.6185	.54262
#2	.00054	.00177	.00259	2.6598	1.9695	.00267	4.5733	.54431
#3	.00023	.00183	.00245	2.6687	1.9892	.00395	4.6223	.54695
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	4.7192	.00185	.43571	.00056	.00046	.00211	2.2118
Stddev	.00018	.0165	.00025	.00509	.00171	.00113	.00083	.0277
%RSD	50.761	.34915	13.499	1.1683	303.12	243.71	39.234	1.2521
#1	.00042	4.7072	.00214	.44157	-.00045	.00170	.00219	2.2377
#2	.00050	4.7380	.00173	.43322	.00254	.00023	.00288	2.2152
#3	.00015	4.7124	.00169	.43235	-.00039	-.00053	.00124	2.1826
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508137202 Acquired: 8/26/2015 18:56:20 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.08733	.00928	-.00109	.00144	.03211	1.8933
Stddev	.00042	.00003	.00177	.00086	.00023	.00023	2.6879
%RSD	253.15	.03763	19.067	79.401	15.786	.71852	141.97
#1	.00056	.08730	.00953	-.00209	.00125	.03225	2.9668
#2	-.00028	.08737	.00740	-.00057	.00138	.03224	-1.1654
#3	.00021	.08732	.01091	-.00061	.00169	.03185	3.8784
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8733.0	12404.
Stddev	27.3	26.
%RSD	.31213	.20991
#1	8736.3	12415.
#2	8704.3	12423.
#3	8758.5	12374.

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508137301 Acquired: 8/26/2015 18:59:44 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	.01061	-.00222	.03832	.14766	.00012	22.539
Stddev	.00022	.02944	.00078	.00127	.00104	.00003	.134
%RSD	205.37	277.61	34.928	3.3248	.70547	22.960	.59444
#1	.00032	-.02174	-.00306	.03712	.14653	.00011	22.388
#2	.00013	.01771	-.00205	.03966	.14858	.00015	22.644
#3	-.00013	.03585	-.00154	.03818	.14786	.00010	22.584
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	-.00038	.00149	.00411	.02198	.92811	.00814
Stddev	.00007	.00023	.00035	.00055	.00137	.03335	.00045
%RSD	53.296	59.923	23.583	13.364	6.2304	3.5932	5.4673
#1	.00006	-.00015	.00127	.00391	.02251	.96510	.00842
#2	.00020	-.00061	.00189	.00369	.02043	.91886	.00763
#3	.00013	-.00038	.00130	.00473	.02301	.90036	.00838
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.7284	.00524	.00130	38.803	-.00028	.00171	-.00208
Stddev	.1058	.00012	.00022	.178	.00039	.00249	.00089
%RSD	2.2378	2.3766	16.712	.45947	136.50	145.56	42.755
#1	4.7994	.00533	.00147	38.606	-.00042	.00182	-.00132
#2	4.6067	.00510	.00136	38.953	-.00059	.00415	-.00305
#3	4.7789	.00529	.00105	38.850	.00015	-.00083	-.00186
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508137301 Acquired: 8/26/2015 18:59:44 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00079	-.00126	3.5374	.00040	.48349	-.00184	-.00017
Stddev	.00157	.00048	.0124	.00028	.00385	.00073	.00112
%RSD	197.43	37.897	.34908	70.702	.79593	39.777	643.14
#1	.00013	-.00114	3.5262	.00071	.48006	-.00144	.00029
#2	.00258	-.00086	3.5353	.00016	.48766	-.00269	.00064
#3	-.00034	-.00179	3.5507	.00033	.48276	-.00140	-.00145
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00003	.01037	F -1.1665
Stddev	.00006	.00003	1.5807
%RSD	194.08	.28649	135.50
#1	.00002	.01036	.64908
#2	-.00002	.01034	-2.2365
#3	.00009	.01040	-1.9123
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8678.9	12557.
Stddev	24.4	296.
%RSD	.28097	2.3536
#1	8703.0	12448.
#2	8654.2	12892.
#3	8679.5	12331.

Approved: August 27, 2015

Kim K Buck

Sample Name: CCV Acquired: 8/26/2015 19:03:10 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40685**	**10.102**	**.42517**	**.52432**	**1.0372**	**.05306**	**10.138**
Stddev	.00246	.111	.00103	.00294	.0089	.00035	.080
%RSD	.60544	1.1025	.24330	.56149	.85341	.66366	.79033
#1	.40464	9.9809	.42600	.52104	1.0271	.05267	10.049
#2	.40641	10.124	.42550	.52673	1.0404	.05317	10.159
#3	.40951	10.200	.42401	.52520	1.0439	.05334	10.206
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05245**	**.21425**	**.53391**	**.53289**	**4.2595**	**52.518**	**1.0401**
Stddev	.00008	.00072	.00265	.00261	.0307	.282	.0089
%RSD	.14548	.33559	.49708	.48950	.71968	.53689	.85267
#1	.05252	.21365	.53113	.53082	4.2322	52.215	1.0303
#2	.05247	.21505	.53642	.53582	4.2927	52.565	1.0423
#3	.05237	.21406	.53417	.53204	4.2536	52.773	1.0476
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.957**	F **.56237**	F **1.1005**	**52.134**	**.54193**	**10.711**	**.54297**
Stddev	.075	.00575	.0064	.262	.00078	.034	.00402
%RSD	.68418	1.0218	.58435	.50190	.14462	.31823	.74027
#1	10.944	.56746	1.1011	51.844	.54192	10.705	.54425
#2	11.037	.56352	1.1066	52.204	.54272	10.748	.54620
#3	10.889	.55614	1.0938	52.353	.54115	10.681	.53847
Check ?	Chk Pass	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.50000	1.0000				
Range		10.000%	10.000%				

Approved: August 27, 2015

Kim K Buck

Sample Name: CCV Acquired: 8/26/2015 19:03:10 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2826**	**.41992**	**5.4018**	**1.0829**	**1.0482**	**1.0634**	**.54089**
Stddev	.0072	.00135	.0816	.0100	.0112	.0088	.01023
%RSD	.55914	.32082	1.5114	.92503	1.0644	.82911	1.8909
#1	1.2836	.42003	5.4947	1.0856	1.0362	1.0538	.54804
#2	1.2892	.42121	5.3695	1.0912	1.0500	1.0652	.54545
#3	1.2750	.41852	5.3413	1.0718	1.0583	1.0712	.52918
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0667**	**1.0861**	F **.32069**
Stddev	.0056	.0067	1.2173
%RSD	.52366	.62114	379.60
#1	1.0605	1.0787	-.72295
#2	1.0681	1.0879	.02702
#3	1.0714	1.0918	1.6580
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**8540.4**	**12211.**
Stddev	23.1	143.
%RSD	.27038	1.1686
#1	8566.0	12072.
#2	8534.2	12203.
#3	8521.1	12357.

Approved: August 27, 2015

Kim K Buck

Sample Name: CCB Acquired: 8/26/2015 19:06:15 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	.00378	.00111	.00189	.00036	.00010	-.01251
Stddev	.00066	.02122	.00204	.00075	.00001	.00000	.00611
%RSD	7746.7	561.96	183.30	39.704	3.2122	3.1542	48.850
#1	.00032	.01209	.00347	.00167	.00036	.00010	-.01943
#2	-.00077	-.02034	-.00012	.00128	.00035	.00010	-.01026
#3	.00042	.01958	-.00001	.00273	.00037	.00010	-.00785
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.00001	.00031	-.00011	.00180	.02708	.00203
Stddev	.00002	.00027	.00039	.00037	.00178	.01655	.00043
%RSD	55.714	3408.2	125.48	345.79	98.855	61.115	21.271
#1	-.00002	.00032	-.00013	.00026	.00333	.02799	.00162
#2	-.00002	-.00016	.00045	-.00010	-.00015	.04315	.00198
#3	-.00005	-.00014	.00062	-.00049	.00222	.01009	.00248
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	-.00002	.00064	.05842	-.00064	-.00501	-.00136
Stddev	.01390	.00004	.00017	.01640	.00048	.00085	.00224
%RSD	3639.1	164.85	25.945	28.068	75.074	16.942	164.35
#1	.00874	-.00003	.00049	.05425	-.00047	-.00425	-.00282
#2	.00808	.00002	.00060	.07650	-.00026	-.00593	.00122
#3	-.01567	-.00006	.00082	.04451	-.00117	-.00485	-.00248
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: CCB Acquired: 8/26/2015 19:06:15 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	-.00175	-.00132	.00036	.00010	-.00005	.00026
Stddev	.00159	.00338	.00098	.00020	.00003	.00139	.00190
%RSD	185.17	192.69	74.198	56.258	27.975	2739.3	730.49
#1	-.00090	-.00463	-.00219	.00018	.00013	.00116	.00103
#2	.00129	-.00261	-.00025	.00058	.00007	-.00157	.00166
#3	.00218	.00197	-.00153	.00031	.00011	.00026	-.00190
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00024	-.00040	F -.52276
Stddev	.00031	.00005	1.2444
%RSD	132.12	11.919	238.05
#1	.00005	-.00040	-.22410
#2	-.00057	-.00045	-1.8894
#3	-.00019	-.00035	.54517
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8680.5	12456.
Stddev	9.1	147.
%RSD	.10453	1.1791
#1	8683.3	12511.
#2	8687.9	12567.
#3	8670.4	12289.

Approved: August 27, 2015

Sample Name: L1508137302 Acquired: 8/26/2015 19:09:42 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00000	.67475	-.00196	.01702	.04421	.00013	29.098	.00032
Stddev	.0003	.02021	.00085	.00016	.00019	.00003	.164	.00009
%RSD	11549.	2.9954	43.353	.93199	.43463	21.721	.56469	27.136
#1	-.00027	.65831	-.00188	.01720	.04409	.00012	28.937	.00027
#2	.00000	.66863	-.00284	.01697	.04443	.00017	29.093	.00042
#3	.00026	.69732	-.00115	.01690	.04411	.00012	29.265	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	.00195	.00038	.63429	1.0310	.00483	7.9327	.08386
Stddev	.00012	.00043	.00032	.00296	.0234	.00067	.0529	.00061
%RSD	110.19	22.077	84.906	.46697	2.2731	13.772	.66728	.72580
#1	-.00022	.00146	.00008	.63194	1.0051	.00557	7.9618	.08426
#2	-.00010	.00221	.00072	.63762	1.0508	.00465	7.9647	.08416
#3	.00001	.00220	.00034	.63331	1.0372	.00428	7.8716	.08316
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	6.5576	.00053	.02388	-.00089	-.00200	.00205	4.8082
Stddev	.00013	.0397	.00030	.00180	.00108	.00200	.00239	.1310
%RSD	41.030	.60558	56.904	7.5515	121.17	100.10	116.44	2.7242
#1	.00023	6.5181	.00073	.02263	-.00007	-.00430	.00261	4.9550
#2	.00046	6.5976	.00069	.02306	-.00211	-.00072	-.00057	4.7664
#3	.00025	6.5571	.00018	.02595	-.00048	-.00097	.00412	4.7033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508137302 Acquired: 8/26/2015 19:09:42 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.23476	.00740	-.00116	.00124	.02286	2.6484
Stddev	.00047	.00209	.00089	.00258	.00015	.00053	.8471
%RSD	237.28	.88985	12.068	221.74	12.255	2.3299	31.984
#1	.00024	.23259	.00832	.00061	.00123	.02348	2.1086
#2	-.00029	.23494	.00653	.00002	.00140	.02259	2.2119
#3	.00064	.23675	.00736	-.00413	.00110	.02252	3.6246
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8731.9	12344.
Stddev	7.0	116.
%RSD	.08041	.94316
#1	8739.0	12274.
#2	8731.6	12280.
#3	8725.0	12479.

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508137401 Acquired: 8/26/2015 19:13:06 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	.07842	-.00345	.01456	.04512	.00012	45.473
Stddev	.00004	.02172	.00022	.00052	.00046	.00002	.197
%RSD	210.17	27.702	6.3138	3.5806	1.0159	14.297	.43262
#1	.00002	.06422	-.00332	.01398	.04477	.00013	45.247
#2	-.00006	.06760	-.00333	.01498	.04564	.00010	45.601
#3	-.00002	.10343	-.00370	.01473	.04496	.00012	45.571
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	-.00040	.00124	.00276	.03617	.95813	.00529
Stddev	.00010	.00006	.00026	.00040	.00364	.01129	.00078
%RSD	26.063	16.128	21.325	14.380	10.070	1.1788	14.716
#1	.00029	-.00035	.00154	.00267	.03300	.96208	.00442
#2	.00050	-.00037	.00104	.00242	.04015	.96691	.00591
#3	.00040	-.00047	.00114	.00320	.03534	.94539	.00553
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.7066	.00053	.00090	2.5299	.00023	.00719	-.00045
Stddev	.0305	.00003	.00006	.0134	.00084	.00168	.00233
%RSD	.39515	6.4414	6.5922	.52943	371.54	23.320	522.79
#1	7.6837	.00056	.00084	2.5445	.00118	.00733	-.00120
#2	7.7411	.00049	.00092	2.5183	-.00008	.00545	-.00230
#3	7.6948	.00054	.00095	2.5268	-.00042	.00879	.00217
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508137401 Acquired: 8/26/2015 19:13:06 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.00147	3.7476	.00014	.17836	-.00111	-.00255
Stddev	.00026	.00245	.0500	.00061	.00038	.00038	.00091
%RSD	110.74	166.88	1.3336	453.65	.21368	34.521	35.859
#1	.00007	-.00097	3.7488	.00053	.17815	-.00135	-.00346
#2	.00010	.00144	3.6970	-.00057	.17880	-.00067	-.00255
#3	.00054	.00394	3.7970	.00045	.17813	-.00132	-.00163
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00039	.00369	F -.68384
Stddev	.00041	.00006	2.6422
%RSD	103.24	1.6657	386.38
#1	.00080	.00367	-3.5877
#2	-.00002	.00363	-.04265
#3	.00040	.00375	1.5788
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8655.8	12339.
Stddev	13.9	136.
%RSD	.16080	1.0988
#1	8648.9	12482.
#2	8646.7	12322.
#3	8671.9	12213.

Approved: August 27, 2015

Sample Name: L1508137402 Acquired: 8/26/2015 19:16:30 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.08160	-.00279	.01569	.04382	.00011	44.793	.00031
Stddev	.00021	.00366	.00206	.00083	.00013	.00002	.184	.00000
%RSD	904.15	4.4879	73.656	5.2626	.29993	16.632	.41024	1.0831
#1	-.00022	.08038	-.00501	.01490	.04391	.00013	44.584	.00030
#2	.00016	.08572	-.00243	.01561	.04389	.00011	44.927	.00031
#3	.00012	.07871	-.00094	.01655	.04367	.00010	44.868	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00051	.00125	-.00058	.04030	.93243	.00535	7.7591	.00047
Stddev	.00008	.00042	.00081	.00130	.04498	.00095	.0081	.00002
%RSD	15.226	33.922	139.79	3.2194	4.8242	17.710	.10443	5.1976
#1	-.00058	.00092	-.00040	.03919	.95224	.00643	7.7499	.00044
#2	-.00043	.00173	-.00145	.04173	.88094	.00465	7.7654	.00049
#3	-.00054	.00110	.00013	.03999	.96411	.00498	7.7619	.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00078	2.5025	.00064	.00789	-.00247	-.00097	-.00343	3.6826
Stddev	.00018	.0082	.00045	.00191	.00166	.00247	.00151	.0271
%RSD	22.744	.32928	70.894	24.199	67.431	254.14	43.988	.73525
#1	.00063	2.4943	.00051	.00738	-.00432	.00187	-.00400	3.7005
#2	.00072	2.5026	.00114	.01000	-.00198	-.00222	-.00172	3.6957
#3	.00097	2.5108	.00026	.00629	-.00110	-.00257	-.00458	3.6514
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508137402 Acquired: 8/26/2015 19:16:30 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	.16549	-.00251	.00017	.00021	.00083	.23538
Stddev	.00012	.00104	.00170	.00212	.00028	.00006	.20590
%RSD	21.697	.62721	67.554	1238.5	136.14	7.7527	87.474
#1	.00067	.16429	-.00426	-.00116	.00009	.00080	.21878
#2	.00045	.16607	-.00087	-.00094	.00053	.00091	.44907
#3	.00050	.16611	-.00241	.00262	.00000	.00079	.03829
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8609.9	12353.
Stddev	38.7	130.
%RSD	.44946	1.0541
#1	8584.4	12271.
#2	8590.7	12286.
#3	8654.4	12504.

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508138201 Acquired: 8/26/2015 19:19:55 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.00628	.00111	.00149	.00343	.00012	.04566	.00039
Stddev	.00025	.01250	.00106	.00027	.00016	.00001	.00420	.00011
%RSD	978.18	199.18	96.005	18.266	4.6535	11.223	9.1921	27.023
#1	-.00006	-.00776	.00222	.00161	.00325	.00013	.04871	.00036
#2	-.00016	.01622	.00010	.00118	.00355	.00011	.04740	.00051
#3	.00030	.01036	.00100	.00168	.00349	.00011	.04088	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00064	.00096	.00053	.02254	8.9077	.00367	.01396	.00133
Stddev	.00010	.00051	.00054	.00192	.0448	.00050	.00949	.00009
%RSD	15.890	53.754	103.00	8.5072	.50342	13.607	68.009	6.4902
#1	-.00067	.00135	-.00009	.02375	8.8758	.00403	.00414	.00127
#2	-.00072	.00115	.00076	.02354	8.8882	.00388	.02309	.00143
#3	-.00053	.00037	.00091	.02033	8.9590	.00310	.01465	.00130
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	.31641	-.00243	.27231	-.00084	.00534	.03407	29.429
Stddev	.00007	.00872	.00075	.00081	.00244	.00184	.00081	.104
%RSD	33.941	2.7562	31.006	.29585	291.63	34.534	2.3788	.35220
#1	.00016	.32647	-.00157	.27174	.00195	.00614	.03383	29.319
#2	.00018	.31109	-.00296	.27323	-.00186	.00665	.03498	29.443
#3	.00030	.31166	-.00277	.27197	-.00259	.00323	.03341	29.525
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508138201 Acquired: 8/26/2015 19:19:55 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00978	.00054	-.00006	-.02377	-.00004	.02866	2.2604
Stddev	.00077	.00001	.00059	.00094	.00017	.00009	1.4783
%RSD	7.8929	2.7405	1035.4	3.9729	452.07	.31630	65.397
#1	.00892	.00053	-.00058	-.02436	-.00021	.02859	1.1589
#2	.01041	.00054	-.00017	-.02427	.00014	.02862	3.9405
#3	.01000	.00056	.00059	-.02268	-.00004	.02876	1.6820
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8376.2	12518.
Stddev	16.3	173.
%RSD	.19423	1.3841
#1	8388.5	12706.
#2	8382.3	12483.
#3	8357.7	12365.

Approved: August 27, 2015

Sample Name: L1508139307 Acquired: 8/26/2015 19:23:21 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.02370	-.00184	.00706	.00062	.00008	.19293	.00016
Stddev	.00009	.01974	.00113	.00068	.00004	.00001	.00818	.00008
%RSD	128.40	83.292	61.562	9.6926	6.5856	12.830	4.2389	52.600
#1	-.00003	.03804	-.00217	.00656	.00062	.00009	.18433	.00021
#2	-.00017	.00119	-.00058	.00784	.00066	.00007	.20061	.00006
#3	-.00001	.03187	-.00276	.00678	.00057	.00008	.19386	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00047	.00056	.00066	.00550	.04700	.00492	-.01082	.00022
Stddev	.00023	.00058	.00012	.00040	.02902	.00181	.01037	.00003
%RSD	48.021	103.26	18.595	7.2048	61.737	36.923	95.816	11.588
#1	-.00045	.00122	.00066	.00539	.02463	.00384	-.01304	.00023
#2	-.00025	.00013	.00053	.00594	.07979	.00701	.00048	.00023
#3	-.00071	.00034	.00077	.00518	.03659	.00390	-.01991	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.08056	.00018	-.00298	-.00294	-.00018	-.00163	.23478
Stddev	.00025	.00776	.00011	.00221	.00262	.00134	.00263	.04099
%RSD	337.41	9.6261	62.355	74.097	89.111	725.65	160.96	17.459
#1	.00036	.07440	.00024	-.00348	-.00334	.00128	-.00402	.27792
#2	-.00004	.07802	.00025	-.00057	-.00533	-.00134	.00118	.23009
#3	-.00009	.08927	.00005	-.00490	-.00014	-.00050	-.00207	.19634
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508139307 Acquired: 8/26/2015 19:23:21 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.00024	.00078	-.00128	-.00008	.00279	1.6125
Stddev	.00030	.00005	.00135	.00091	.00012	.00017	.6116
%RSD	148.75	21.993	172.14	70.708	144.74	5.9936	37.929
#1	.00054	.00019	-.00073	-.00034	.00000	.00267	1.4103
#2	-.00006	.00022	.00186	-.00215	-.00003	.00298	1.1276
#3	.00013	.00029	.00122	-.00136	-.00023	.00272	2.2996
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8746.6	12589.
Stddev	29.6	111.
%RSD	.33871	.88283
#1	8730.5	12583.
#2	8780.8	12481.
#3	8728.5	12703.

Approved: August 27, 2015

Kim K Buck

Sample Name: CCV Acquired: 8/26/2015 19:26:48 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40437	10.202	.42458	.51839	1.0380	.05261	10.179
Stddev	.00129	.078	.00215	.00113	.0049	.00046	.031
%RSD	.31830	.76832	.50631	.21785	.47633	.87884	.30540
#1	.40293	10.113	.42342	.51782	1.0326	.05219	10.155
#2	.40479	10.263	.42327	.51767	1.0392	.05311	10.214
#3	.40540	10.230	.42706	.51970	1.0423	.05253	10.168
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05231	.21352	.52889	.53242	4.2831	52.816	1.0474
Stddev	.00009	.00068	.00399	.00285	.0039	.214	.0045
%RSD	.16488	.31868	.75422	.53462	.08992	.40480	.42711
#1	.05229	.21274	.52526	.52930	4.2795	52.586	1.0433
#2	.05240	.21389	.53316	.53488	4.2825	53.008	1.0468
#3	.05223	.21394	.52824	.53307	4.2872	52.854	1.0522
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 11.022	F .56676	1.0824	52.245	.53963	10.637	.54269
Stddev	.068	.00599	.0027	.160	.00325	.039	.00177
%RSD	.62030	1.0563	.25300	.30628	.60210	.36224	.32620
#1	11.060	.56957	1.0818	52.078	.53599	10.596	.54066
#2	11.063	.57082	1.0854	52.261	.54225	10.673	.54348
#3	10.943	.55988	1.0801	52.397	.54063	10.644	.54392
Check ?	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	10.000	.50000					
Range	10.000%	10.000%					

Approved: August 27, 2015

Kim K Buck

Sample Name: CCV Acquired: 8/26/2015 19:26:48 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2733**	**.41833**	F **5.5405**	**1.0803**	**1.0554**	**1.0681**	**.53697**
Stddev	.0036	.00242	.0575	.0133	.0059	.0044	.00619
%RSD	.27996	.57785	1.0373	1.2290	.55587	.41093	1.1519
#1	1.2715	.41655	5.5931	1.0653	1.0488	1.0638	.53076
#2	1.2774	.42108	5.5491	1.0849	1.0600	1.0678	.53702
#3	1.2710	.41736	5.4792	1.0906	1.0573	1.0725	.54313
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value			5.0000				
Range			10.000%				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0591**	**1.0890**	F **.35093**
Stddev	.0049	.0092	1.2943
%RSD	.46256	.84733	368.82
#1	1.0544	1.0794	.76351
#2	1.0641	1.0900	-1.0994
#3	1.0587	1.0977	1.3887
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**8564.6**	**12076.**
Stddev	22.3	117.
%RSD	.25982	.96643
#1	8584.0	12012.
#2	8540.3	12006.
#3	8569.5	12211.

Approved: August 27, 2015

Kim K Buck

Sample Name: CCB Acquired: 8/26/2015 19:29:54 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	.00265	-.00041	.00093	.00074	.00010	-.01344
Stddev	.00027	.00497	.00084	.00023	.00026	.00004	.01003
%RSD	98.368	187.72	208.04	24.797	35.734	36.927	74.632
#1	-.00048	.00839	-.00034	.00119	.00088	.00009	-.00259
#2	.00003	-.00046	-.00128	.00074	.00090	.00013	-.02239
#3	-.00035	.00002	.00040	.00087	.00043	.00006	-.01535
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	-.00002	.00032	-.00016	.00294	.00119	.00359
Stddev	.00010	.00023	.00040	.00016	.00079	.02006	.00065
%RSD	82.535	1194.4	127.78	97.263	26.862	1681.6	18.011
#1	.00014	.00025	-.00006	-.00033	.00203	-.00336	.00359
#2	.00021	-.00011	.00074	-.00013	.00337	-.01620	.00424
#3	.00001	-.00019	.00026	-.00002	.00341	.02314	.00295
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00000	.00037	.03511	-.00053	-.00201	-.00076
Stddev	.01277	.0001	.00006	.00774	.00074	.00054	.00166
%RSD	10320.	1609.8	15.770	22.044	138.91	26.721	218.83
#1	.01211	.00001	.00032	.04386	.00001	-.00150	.00112
#2	.00157	-.00008	.00043	.02915	-.00137	-.00194	-.00202
#3	-.01331	.00006	.00037	.03232	-.00023	-.00257	-.00138
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: CCB Acquired: 8/26/2015 19:29:54 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	-.00160	.05985	-.00041	.00014	.00012	-.00017
Stddev	.00135	.00221	.00508	.00010	.00011	.00126	.00282
%RSD	4108.0	138.61	8.4873	25.216	82.647	1087.1	1684.1
#1	-.00145	-.00415	.06504	-.00046	.00023	-.00129	-.00006
#2	.00123	-.00042	.05961	-.00047	.00017	.00115	.00260
#3	.00013	-.00022	.05489	-.00029	.00001	.00048	-.00305
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00025	-.00034	F -.85321
Stddev	.00010	.00011	.90167
%RSD	39.867	33.692	105.68
#1	-.00014	-.00034	-.87938
#2	-.00026	-.00022	-1.7415
#3	-.00034	-.00045	.06126
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8659.8	12139.
Stddev	16.5	343.
%RSD	.19002	2.8238
#1	8675.6	11937.
#2	8661.1	11944.
#3	8642.8	12534.

Approved: August 27, 2015

Sample Name: LLCCV Acquired: 8/26/2015 19:33:21 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .00964	F .16936	F .01751	F .08897	F .00968	F .00943	F .14115
Stddev	.00037	.02383	.00104	.00089	.00013	.00005	.00588
%RSD	3.8196	14.069	5.9205	.99917	1.3138	.51216	4.1635
#1	.00961	.19680	.01759	.08859	.00978	.00942	.14545
#2	.01002	.15389	.01643	.08998	.00973	.00949	.13445
#3	.00928	.15738	.01850	.08833	.00954	.00939	.14354
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.40000	10.000	.40000	.50000	1.0000	.05000	10.000
Range	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .00978	F .00985	F .01898	F .01871	F .06670	F .86208	F .08676
Stddev	.00006	.00013	.00036	.00046	.00225	.03496	.00114
%RSD	.65517	1.2857	1.8978	2.4595	3.3806	4.0555	1.3165
#1	.00973	.00971	.01861	.01853	.06505	.82191	.08664
#2	.00986	.00996	.01932	.01923	.06578	.87868	.08568
#3	.00976	.00987	.01901	.01836	.06927	.88565	.08796
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.05000	.20000	.50000	.50000	4.0000	50.000	1.0000
Range	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .45864	F .01085	F .05321	F .47361	F .03573	F .00221	F .01880
Stddev	.00530	.00010	.00035	.01237	.00035	.00182	.00064
%RSD	1.1546	.96365	.66380	2.6110	.98765	82.628	3.3931
#1	.46018	.01076	.05286	.48686	.03533	.00353	.01902
#2	.46299	.01084	.05357	.47160	.03587	.00013	.01808
#3	.45275	.01097	.05320	.46238	.03599	.00297	.01929
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	10.000	.50000	1.0000	50.000	.50000	10.000	.50000
Range	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%

Approved: August 27, 2015

Kim K Buck

Sample Name: LLCCV Acquired: 8/26/2015 19:33:21 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .01654	F .01767	F .03772	F .08747	F .00965	F .02682	F .09517
Stddev	.00072	.00208	.00200	.00092	.00017	.00104	.00083
%RSD	4.3650	11.758	5.3024	1.0511	1.7620	3.8718	.87009
#1	.01571	.01585	.03912	.08671	.00983	.02785	.09444
#2	.01703	.01723	.03860	.08849	.00950	.02684	.09607
#3	.01687	.01994	.03543	.08720	.00962	.02578	.09499
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	1.2000	.40000	5.0000	1.0000	1.0000	1.0000	.50000
Range	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%	-10.000%

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	F .00950	F .02158	F -1.9579
Stddev	.00018	.00027	1.3286
%RSD	1.9028	1.2427	67.855
#1	.00944	.02170	-1.2647
#2	.00970	.02176	-3.4897
#3	.00935	.02127	-1.1193
Check ?	Chk Fail	Chk Fail	Chk Fail
Value	1.0000	1.0000	1.0000
Range	-10.000%	-10.000%	-10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8579.7	12535.
Stddev	17.0	48.
%RSD	.19775	.38556
#1	8598.9	12582.
#2	8566.6	12538.
#3	8573.7	12485.

Approved: August 27, 2015

Kim K Buck

Sample Name: PBW 45 Acquired: 8/26/2015 19:36:47 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG536181-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00035	.00897	-.00253	.00070	.00058	.00011	.00294
Stddev	.00041	.00557	.00168	.00033	.00020	.00003	.00249
%RSD	114.93	62.107	66.334	46.559	34.203	23.293	84.672
#1	-.00081	.00956	-.00243	.00098	.00037	.00014	.00203
#2	-.00002	.01423	-.00425	.00034	.00061	.00010	.00576
#3	-.00023	.00313	-.00090	.00079	.00076	.00010	.00104
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	-.00036	.00016	.00006	.00033	.00453	.00185
Stddev	.00006	.00012	.00016	.00043	.00430	.03977	.00028
%RSD	37.180	32.327	100.09	700.88	1322.3	878.01	15.230
#1	.00024	-.00023	.00031	-.00026	.00015	.02728	.00174
#2	.00013	-.00043	.00017	.00056	.00472	.02770	.00164
#3	.00013	-.00043	-.00001	-.00011	-.00389	-.04139	.00217
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01964	.00010	.00042	.05509	.00069	F -.01077	-.00128
Stddev	.01500	.00005	.00017	.00577	.00058	.00282	.00173
%RSD	76.340	46.562	41.095	10.481	83.618	26.150	135.16
#1	.00743	.00015	.00038	.04893	.00075	-.01163	-.00052
#2	.03638	.00005	.00061	.06038	.00008	-.00762	-.00006
#3	.01511	.00011	.00027	.05597	.00123	-.01305	-.00325
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: August 27, 2015

Kim K Buck

Sample Name: PBW 45 Acquired: 8/26/2015 19:36:47 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG536181-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00134	.00241	.02801	.00171	.00046	.00128	-.00167
Stddev	.00153	.00273	.00078	.00051	.00005	.00129	.00345
%RSD	114.49	113.23	2.7675	29.770	10.615	100.41	206.43
#1	-.00305	.00408	.02830	.00219	.00041	.00276	.00223
#2	-.00084	-.00074	.02860	.00177	.00050	.00046	-.00432
#3	-.00012	.00388	.02713	.00118	.00049	.00063	-.00293
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00005	.00176	1.1475
Stddev	.00013	.00005	2.1414
%RSD	265.83	3.0171	186.60
#1	.00019	.00174	2.0105
#2	-.00003	.00182	2.7227
#3	-.00002	.00172	-1.2907
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8764.6	12480.
Stddev	23.2	71.
%RSD	.26471	.56623
#1	8790.3	12410.
#2	8758.4	12551.
#3	8745.1	12479.

Approved: August 27, 2015

Kim K Buck

Sample Name: LCSW 45 Acquired: 8/26/2015 19:40:14 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG536181-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20062	5.0392	.20260	.97428	.51276	.02554	5.0634	.02516
Stddev	.00081	.0112	.00217	.00232	.00274	.00013	.0094	.00011
%RSD	.40618	.22305	1.0734	.23782	.53375	.49039	.18518	.42570
#1	.20083	5.0456	.20424	.97458	.51295	.02557	5.0567	.02510
#2	.20131	5.0459	.20013	.97644	.51540	.02565	5.0741	.02510
#3	.19972	5.0263	.20342	.97183	.50994	.02540	5.0594	.02528
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10556	.26372	.26219	2.1115	25.961	.51646	5.3692	.28288
Stddev	.00029	.00216	.00062	.0150	.165	.00412	.0962	.00814
%RSD	.27612	.81833	.23612	.71131	.63552	.79722	1.7924	2.8780
#1	.10532	.26195	.26164	2.1235	26.102	.51510	5.4801	.29227
#2	.10547	.26613	.26207	2.1163	26.002	.52108	5.3199	.27841
#3	.10589	.26310	.26286	2.0946	25.780	.51319	5.3076	.27795
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53690	25.555	.26864	5.0015	.26848	.62085	.19200	2.6853
Stddev	.00272	.169	.00200	.0216	.00191	.00394	.00144	.0284
%RSD	.50671	.65997	.74305	.43255	.71061	.63383	.75245	1.0589
#1	.53471	25.633	.26671	4.9787	.26887	.62168	.19176	2.6537
#2	.53606	25.670	.26852	5.0040	.26641	.61656	.19069	2.6932
#3	.53995	25.361	.27070	5.0218	.27016	.62430	.19355	2.7089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 27, 2015

Kim K Buck

Sample Name: LCSW 45 Acquired: 8/26/2015 19:40:14 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment: WG536181-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53547**	**.52438**	**.53071**	**.26269**	**.53530**	**.52929**	**.18814**
Stddev	.00639	.00180	.00308	.00279	.00124	.00082	.33793
%RSD	1.1926	.34260	.58123	1.0630	.23181	.15485	179.62
#1	.52821	.52485	.53410	.26057	.53477	.52896	-.08346
#2	.53795	.52590	.52997	.26163	.53672	.52870	.08131
#3	.54024	.52240	.52807	.26585	.53442	.53023	.56657
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**8665.8**	**12359.**
Stddev	3.0	365.
%RSD	.03507	2.9552
#1	8669.1	11938.
#2	8663.2	12588.
#3	8665.0	12550.

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508086201 Acquired: 8/26/2015 19:43:20 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.00849	-.00312	.01185	.00071	.00011	.00555
Stddev	.00062	.00511	.00068	.00114	.00008	.00002	.00826
%RSD	712.02	60.247	21.905	9.5924	11.639	20.950	148.64
#1	-.00044	.01118	-.00278	.01087	.00068	.00010	.00473
#2	-.00045	.00259	-.00391	.01157	.00081	.00014	.01419
#3	.00063	.01169	-.00267	.01310	.00065	.00010	-.00226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	-.00037	.00099	.00059	.00416	-.00562	.32978
Stddev	.00007	.00003	.00005	.00077	.00394	.01907	.00237
%RSD	47.877	8.5425	5.4651	128.81	94.859	339.26	.71826
#1	.00021	-.00037	.00103	.00135	-.00019	.00779	.33035
#2	.00008	-.00040	.00101	-.00018	.00750	-.02745	.32717
#3	.00013	-.00034	.00093	.00062	.00516	.00279	.33181
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00920	.00025	.00034	.07242	.00082	F -.00757	-.00095
Stddev	.00914	.00003	.00019	.00722	.00074	.00224	.00077
%RSD	99.361	10.900	54.516	9.9712	90.876	29.624	81.277
#1	.01711	.00025	.00042	.07820	.00017	-.00523	-.00174
#2	.01130	.00028	.00048	.06433	.00066	-.00779	-.00090
#3	-.00081	.00023	.00013	.07474	.00163	-.00970	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						450.00	
Low Limit						-.00320	

Approved: August 27, 2015

Sample Name: L1508086201 Acquired: 8/26/2015 19:43:20 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	.00159	.06004	.00092	.00044	.00052	-.00170
Stddev	.00165	.00178	.00158	.00042	.00002	.00056	.00136
%RSD	1515.9	112.06	2.6307	46.269	4.2319	106.53	80.014
#1	.00095	.00171	.06137	.00073	.00045	.00000	-.00321
#2	.00074	-.00025	.06046	.00062	.00045	.00046	-.00129
#3	-.00201	.00332	.05830	.00140	.00042	.00111	-.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00004	.00204	1.7860
Stddev	.00043	.00016	.7859
%RSD	1033.6	7.8607	44.004
#1	-.00045	.00211	2.1293
#2	.00024	.00185	.88686
#3	.00034	.00214	2.3419
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8744.5	12692.
Stddev	26.8	55.
%RSD	.30595	.43559
#1	8723.3	12639.
#2	8735.5	12687.
#3	8774.5	12749.

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508086201 Acquired: 8/26/2015 19:46:47 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG536567-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	.01977	-.00013	.00282	.00080	.00010	-.02749
Stddev	.00020	.02630	.00121	.00068	.00012	.00003	.00666
%RSD	91.700	133.02	906.09	24.042	14.775	32.631	24.215
#1	-.00041	.01533	-.00111	.00360	.00077	.00009	-.02170
#2	.00000	.04801	-.00051	.00240	.00069	.00013	-.03476
#3	-.00026	-.00403	.00122	.00245	.00092	.00007	-.02602
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	-.00008	.00035	.00009	-.00039	-.01482	.07193
Stddev	.00007	.00005	.00021	.00022	.00596	.01435	.00108
%RSD	122.50	57.494	60.571	235.67	1520.0	96.846	1.4984
#1	-.00001	-.00005	.00014	.00034	-.00728	-.03131	.07256
#2	.00013	-.00014	.00057	-.00001	.00303	-.00519	.07254
#3	.00005	-.00006	.00034	-.00006	.00307	-.00795	.07069
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.00003	.00005	.03446	-.00096	.00269	-.00099
Stddev	.02228	.00006	.00023	.00205	.00021	.00268	.00103
%RSD	11061.	216.46	442.50	5.9633	21.571	99.563	104.20
#1	.00367	.00010	.00032	.03210	-.00085	.00259	-.00181
#2	.02054	-.00002	-.00010	.03586	-.00083	.00541	.00017
#3	-.02361	.00000	-.00006	.03542	-.00120	.00006	-.00132
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508086201 Acquired: 8/26/2015 19:46:47 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG536567-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	-.00078	.02396	.00015	.00010	-.00013	-.00003
Stddev	.00210	.00245	.00142	.00005	.00001	.00103	.00205
%RSD	567.30	313.57	5.9435	34.988	5.9388	819.38	6048.2
#1	.00274	-.00053	.02425	.00009	.00011	.00063	-.00240
#2	-.00041	.00153	.02521	.00016	.00010	.00029	.00111
#3	-.00122	-.00335	.02241	.00019	.00010	-.00130	.00118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00026	.00140	F -.84880
Stddev	.00023	.00003	.60826
%RSD	86.674	2.3008	71.661
#1	-.00050	.00138	-.23101
#2	-.00006	.00139	-1.4470
#3	-.00022	.00144	-.86834
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.00320

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8596.3	12358.
Stddev	29.3	87.
%RSD	.34098	.70351
#1	8630.0	12416.
#2	8582.1	12400.
#3	8576.8	12258.

Approved: August 27, 2015

Sample Name: CCV Acquired: 8/26/2015 19:50:15 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40514	10.249	.42644	.52093	1.0449	.05280	10.218
Stddev	.00536	.064	.00229	.00689	.0010	.00039	.028
%RSD	1.3233	.62585	.53780	1.3220	.09794	.74245	.27598
#1	.41021	10.232	.42433	.52563	1.0446	.05311	10.199
#2	.40568	10.194	.42888	.52413	1.0460	.05293	10.204
#3	.39953	10.320	.42610	.51302	1.0440	.05236	10.250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05253	.21504	.53263	.53398	4.2867	53.072	1.0559
Stddev	.00038	.00194	.00427	.00331	.0265	.146	.0030
%RSD	.72949	.90208	.80103	.61980	.61755	.27419	.28421
#1	.05290	.21623	.53710	.53699	4.3026	53.202	1.0557
#2	.05255	.21608	.53217	.53451	4.2562	52.915	1.0590
#3	.05213	.21280	.52861	.53044	4.3014	53.099	1.0530
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.907	F .56473	1.0997	52.383	.54373	10.701	.54890
Stddev	.108	.01209	.0160	.188	.00346	.087	.00511
%RSD	.98666	2.1409	1.4595	.35830	.63637	.81627	.93035
#1	11.008	.57805	1.1096	52.598	.54608	10.768	.55477
#2	10.794	.55446	1.1084	52.302	.54535	10.733	.54650
#3	10.920	.56167	1.0812	52.249	.53976	10.602	.54544
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value		.50000					
Range		10.000%					

Approved: August 27, 2015

Kim K Buck

Sample Name: CCV Acquired: 8/26/2015 19:50:15 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2746	.41880	5.3900	1.0934	1.0652	1.0723	.54330
Stddev	.0056	.00084	.0988	.0108	.0037	.0028	.00490
%RSD	.43542	.20104	1.8331	.98812	.34384	.26197	.90253
#1	1.2803	.41783	5.4972	1.1057	1.0615	1.0750	.54828
#2	1.2743	.41927	5.3702	1.0853	1.0654	1.0694	.53848
#3	1.2692	.41931	5.3026	1.0893	1.0688	1.0726	.54315
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0656	F 1.1076	F -.87554
Stddev	.0109	.0152	.89962
%RSD	1.0181	1.3760	102.75
#1	1.0747	1.1176	-.03784
#2	1.0684	1.1152	-1.8264
#3	1.0536	1.0901	-.76239
Check ?	Chk Pass	Chk Fail	Chk Fail
Value		1.0000	1.0000
Range		10.000%	-10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8447.0	12023.
Stddev	59.3	225.
%RSD	.70159	1.8677
#1	8415.6	11781.
#2	8410.1	12224.
#3	8515.4	12064.

Approved: August 27, 2015

Sample Name: CCB Acquired: 8/26/2015 19:53:20 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00063	.02793	-.00194	.00190	.00083	.00012	-.01671
Stddev	.00062	.00761	.00188	.00032	.00003	.00001	.00623
%RSD	97.290	27.254	96.801	16.722	3.6005	7.8215	37.307
#1	-.00023	.02731	.00021	.00218	.00082	.00013	-.01088
#2	-.00135	.03583	-.00325	.00196	.00086	.00013	-.02328
#3	-.00033	.02064	-.00277	.00156	.00080	.00011	-.01596
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	-.00008	.00061	-.00023	.00007	.01565	.00339
Stddev	.00006	.00024	.00057	.00079	.00237	.03656	.00132
%RSD	609.29	309.05	94.111	343.59	3347.7	233.62	39.016
#1	-.00007	.00020	.00074	-.00105	-.00185	-.01409	.00424
#2	.00004	-.00024	.00110	.00052	.00271	.00456	.00187
#3	.00000	-.00019	-.00002	-.00017	-.00065	.05647	.00406
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.02054	.00003	.00045	.01914	-.00106	.00108	-.00249
Stddev	.01587	.00010	.00016	.00801	.00079	.00244	.00150
%RSD	77.269	281.93	36.921	41.870	74.396	225.99	60.117
#1	-.01646	.00008	.00063	.01021	-.00055	-.00039	-.00225
#2	-.03806	-.00008	.00031	.02150	-.00197	-.00026	-.00113
#3	-.00711	.00010	.00039	.02571	-.00067	.00390	-.00410
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: CCB Acquired: 8/26/2015 19:53:20 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00207	.00003	.02019	-.00002	.00015	-.00025	.00015
Stddev	.00009	.00216	.00212	.00018	.00006	.00171	.00161
%RSD	4.2751	8025.1	10.497	1017.8	40.866	692.08	1080.6
#1	.00198	.00185	.02162	-.00017	.00013	.00072	.00042
#2	.00206	-.00237	.02119	-.00005	.00009	.00076	.00160
#3	.00216	.00059	.01775	.00017	.00021	-.00222	-.00158
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00021	-.00042	F -.91471
Stddev	.00007	.00002	1.9304
%RSD	33.253	4.5585	211.04
#1	.00024	-.00042	1.0948
#2	.00013	-.00044	-2.7549
#3	.00026	-.00040	-1.0840
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	8517.1	11615.
Stddev	34.2	96.
%RSD	.40183	.82683
#1	8546.3	11639.
#2	8479.5	11698.
#3	8525.6	11510.

Approved: August 27, 2015

Sample Name: L1508113001 Acquired: 8/26/2015 19:56:48 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00105	-.07878	.00035	-.00143	-.00079	.00012	-.00242	-.00011
Stddev	.00014	.01331	.00106	.00041	.00025	.00001	.00469	.00007
%RSD	13.432	16.889	299.81	28.516	31.323	7.4353	193.56	67.266
#1	.00120	-.09369	-.00065	-.00151	-.00058	.00011	-.00757	-.00003
#2	.00102	-.06809	.00025	-.00179	-.00107	.00012	-.00132	-.00017
#3	.00092	-.07457	.00145	-.00099	-.00073	.00012	.00162	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	-.00063	.00114	-.00196	-.02331	-.00023	-.01391	-.00003
Stddev	.00012	.00008	.00038	.00180	.02634	.00067	.00740	.00002
%RSD	438.63	12.652	33.066	91.651	112.98	291.25	53.211	54.788
#1	-.00016	-.00063	.00094	-.00367	-.02934	-.00096	-.00917	-.00005
#2	.00003	-.00071	.00091	-.00008	.00552	-.00009	-.01013	-.00002
#3	.00005	-.00055	.00158	-.00214	-.04611	.00036	-.02244	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.00738	.00135	.00030	.00244	-.00060	-.00187	-.00090
Stddev	.00007	.00169	.00018	.00240	.00012	.00060	.00138	.00084
%RSD	100.43	22.947	13.640	789.08	4.7826	99.607	73.515	93.508
#1	.00006	.00548	.00141	.00277	.00233	.00008	-.00053	.00003
#2	.00001	.00793	.00150	-.00202	.00256	-.00086	-.00181	-.00112
#3	.00015	.00873	.00115	.00017	.00243	-.00104	-.00328	-.00161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508113001 Acquired: 8/26/2015 19:56:48 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00040**	**-.00009**	**.00245**	**.00179**	**-.00001**	**-.00010**	**3.7458**
Stddev	.00020	.00002	.00022	.00081	.00008	.00006	.2803
%RSD	50.667	22.939	8.9446	45.529	927.41	64.826	7.4820
#1	-.00029	-.00007	.00238	.00177	.00000	-.00012	3.9232
#2	-.00027	-.00011	.00269	.00098	-.00010	-.00003	3.4227
#3	-.00064	-.00008	.00227	.00261	.00007	-.00014	3.8915
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**21275.**	**25859.**
Stddev	190.	2754.
%RSD	.89170	10.651
#1	21085.	25088.
#2	21465.	28917.
#3	21274.	23572.

Approved: August 27, 2015

Sample Name: L1508120301 Acquired: 8/26/2015 20:00:13 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00104	-.08012	.00014	-.00143	-.00076	.00011	-.00555	-.00010
Stddev	.00036	.00861	.00052	.00026	.00028	.00001	.00926	.00001
%RSD	34.468	10.745	365.15	18.243	36.082	8.9693	166.82	10.248
#1	.00080	-.08942	-.00033	-.00148	-.00085	.00010	-.01022	-.00010
#2	.00088	-.07242	.00070	-.00167	-.00098	.00010	.00511	-.00009
#3	.00146	-.07853	.00006	-.00116	-.00046	.00012	-.01154	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00000	-.00068	.00096	.00195	-.01175	.00053	-.00952	-.00007
Stddev	.0000	.00039	.00062	.00150	.01165	.00014	.01130	.00006
%RSD	1097.5	57.199	64.939	76.995	99.147	27.227	118.74	79.260
#1	-.00001	-.00106	.00161	.00085	-.01532	.00047	-.00199	-.00008
#2	.00004	-.00028	.00037	.00134	-.02120	.00069	-.02252	-.00012
#3	-.00004	-.00071	.00090	.00366	.00127	.00042	-.00405	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	.01021	.00124	-.00077	.00243	.00036	-.00104	-.00268
Stddev	.00005	.00326	.00004	.00198	.00013	.00081	.00146	.00024
%RSD	48.249	31.924	3.5768	256.26	5.1669	225.70	140.50	9.1009
#1	-.00010	.01396	.00119	-.00186	.00229	-.00052	.00034	-.00276
#2	-.00007	.00807	.00127	.00152	.00253	.00109	-.00088	-.00240
#3	-.00017	.00860	.00126	-.00198	.00246	.00051	-.00257	-.00287
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508120301 Acquired: 8/26/2015 20:00:13 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00058**	**-.00003**	**.00226**	**.00116**	**-.00015**	**-.00006**	**3.3533**
Stddev	.00021	.00001	.00062	.00049	.00005	.00009	.3791
%RSD	36.077	16.977	27.540	42.118	37.365	149.89	11.306
#1	-.00059	-.00002	.00165	.00146	-.00012	-.00005	3.7859
#2	-.00037	-.00003	.00289	.00144	-.00011	.00003	3.0789
#3	-.00079	-.00003	.00222	.00060	-.00021	-.00015	3.1952
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**21114.**	**25956.**
Stddev	106.	2707.
%RSD	.49997	10.428
#1	21008.	26268.
#2	21115.	28493.
#3	21219.	23107.

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508120302 Acquired: 8/26/2015 20:03:38 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	-.07919	.00113	-.00163	-.00078	.00012	-.00052	-.00007
Stddev	.00016	.00987	.00104	.00013	.00016	.00001	.00606	.00005
%RSD	18.297	12.460	91.710	7.9976	19.990	6.3437	1170.7	70.303
#1	.00079	-.06831	.00032	-.00178	-.00087	.00012	-.00036	-.00003
#2	.00107	-.08756	.00077	-.00156	-.00086	.00013	.00547	-.00005
#3	.00080	-.08170	.00230	-.00155	-.00060	.00013	-.00665	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	-.00078	.00135	.00156	-.02415	.00095	-.01524	-.00006
Stddev	.00005	.00011	.00008	.00223	.00245	.00081	.00662	.00006
%RSD	934.68	14.440	5.7346	142.89	10.153	84.912	43.401	105.71
#1	.00005	-.00091	.00144	.00027	-.02206	.00020	-.01212	.00001
#2	-.00003	-.00070	.00130	.00028	-.02685	.00084	-.01076	-.00010
#3	-.00004	-.00074	.00131	.00414	-.02353	.00181	-.02284	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.01125	.00121	-.00043	.00392	.00041	-.00146	-.00374
Stddev	.00002	.00242	.00019	.00099	.00059	.00068	.00140	.00072
%RSD	42.959	21.480	15.988	230.05	15.008	167.60	96.111	19.322
#1	.00003	.01209	.00115	-.00157	.00363	.00081	-.00148	-.00371
#2	.00005	.00852	.00106	.00017	.00459	.00078	-.00285	-.00448
#3	.00008	.01312	.00143	.00011	.00352	-.00038	-.00005	-.00303
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508120302 Acquired: 8/26/2015 20:03:38 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00047**	**-.00008**	**.00241**	**.00200**	**-.00012**	**-.00007**	**3.4478**
Stddev	.00012	.00002	.00036	.00056	.00017	.00008	.4212
%RSD	25.467	29.036	14.870	27.946	137.63	114.29	12.216
#1	-.00060	-.00011	.00218	.00161	-.00020	-.00008	3.9104
#2	-.00036	-.00008	.00283	.00264	-.00024	-.00015	3.0867
#3	-.00046	-.00006	.00223	.00174	.00007	.00002	3.3462
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**21207.**	**25988.**
Stddev	26.	2692.
%RSD	.12055	10.360
#1	21178.	26208.
#2	21216.	28563.
#3	21227.	23192.

Approved: August 27, 2015

Sample Name: L1508122101 Acquired: 8/26/2015 20:07:04 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00112	-.07723	.00059	-.00157	-.00083	.00013	-.00825	-.00015
Stddev	.00004	.00802	.00067	.00011	.00015	.00001	.00955	.00007
%RSD	3.7189	10.383	113.16	7.1798	17.797	5.8884	115.74	48.108
#1	.00117	-.08234	.00018	-.00162	-.00067	.00013	-.01733	-.00013
#2	.00110	-.08136	.00136	-.00144	-.00096	.00012	.00171	-.00009
#3	.00109	-.06799	.00023	-.00164	-.00087	.00014	-.00913	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	-.00055	.00118	.00132	-.01963	.00049	-.00532	-.00008
Stddev	.00004	.00019	.00024	.00152	.00730	.00050	.00779	.00001
%RSD	107.41	34.728	20.485	114.70	37.172	102.04	146.57	14.582
#1	-.00001	-.00036	.00137	.00005	-.02445	.00104	.00123	-.00006
#2	.00007	-.00073	.00091	.00092	-.02320	.00005	-.01393	-.00009
#3	.00005	-.00055	.00126	.00300	-.01123	.00039	-.00324	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.01123	.00076	.00035	.00259	-.00027	-.00134	-.00425
Stddev	.00004	.00736	.00048	.00099	.00069	.00033	.00092	.00046
%RSD	148.82	65.537	63.579	285.05	26.586	118.62	68.878	10.903
#1	-.00007	.00371	.00042	.00002	.00181	-.00011	-.00213	-.00394
#2	-.00001	.01842	.00132	.00146	.00312	-.00006	-.00157	-.00402
#3	.00000	.01155	.00054	-.00044	.00284	-.00065	-.00033	-.00478
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508122101 Acquired: 8/26/2015 20:07:04 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00046	-.00011	.00214	.00176	.00004	.00000	1.9502
Stddev	.00008	.00001	.00055	.00045	.00006	.0000	.4876
%RSD	16.462	8.4538	25.529	25.617	172.04	25397.	25.001
#1	-.00052	-.00012	.00209	.00191	.00001	.00005	1.6637
#2	-.00048	-.00012	.00271	.00125	.00011	-.00002	1.6737
#3	-.00037	-.00010	.00162	.00212	-.00001	-.00003	2.5132
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	21167.	25760.
Stddev	93.	2816.
%RSD	.44137	10.931
#1	21268.	25171.
#2	21084.	28823.
#3	21148.	23285.

Approved: August 27, 2015

Sample Name: L1508122102 Acquired: 8/26/2015 20:10:28 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00087	-.07789	.00074	-.00182	-.00077	.00012	-.00484	-.00014
Stddev	.00015	.00403	.00060	.00023	.00014	.00001	.00575	.00005
%RSD	17.583	5.1696	81.371	12.443	18.129	7.9565	118.76	35.004
#1	.00087	-.08138	.00050	-.00188	-.00066	.00012	-.00558	-.00008
#2	.00102	-.07348	.00030	-.00157	-.00093	.00012	.00124	-.00016
#3	.00071	-.07879	.00143	-.00202	-.00073	.00011	-.01018	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	-.00060	.00097	-.00005	-.02789	.00005	-.00920	-.00008
Stddev	.00007	.00004	.00026	.00202	.01683	.00053	.00524	.00002
%RSD	280.10	6.2833	26.604	3768.1	60.354	1102.4	56.944	19.572
#1	.00000	-.00056	.00124	-.00227	-.00850	-.00010	-.00955	-.00009
#2	.00011	-.00061	.00096	.00168	-.03645	-.00040	-.00379	-.00008
#3	-.00003	-.00064	.00072	.00043	-.03873	.00064	-.01426	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00681	.00125	-.00082	.00340	.00067	-.00049	-.00661
Stddev	.00007	.00555	.00018	.00135	.00075	.00094	.00108	.00016
%RSD	74.476	81.555	14.513	165.46	22.048	139.22	219.58	2.3579
#1	.00012	.00134	.00146	-.00095	.00420	-.00025	-.00114	-.00643
#2	.00001	.00664	.00113	.00060	.00271	.00163	-.00108	-.00673
#3	.00014	.01244	.00117	-.00209	.00329	.00064	.00075	-.00666
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508122102 Acquired: 8/26/2015 20:10:28 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00063**	**-.00004**	**.00231**	**.00203**	**-.00007**	**-.00008**	**2.3315**
Stddev	.00024	.00004	.00053	.00040	.00004	.00004	.2884
%RSD	38.565	108.88	23.062	19.637	52.979	48.008	12.369
#1	-.00036	-.00003	.00177	.00235	-.00003	-.00011	2.5120
#2	-.00068	-.00009	.00284	.00158	-.00008	-.00007	2.4836
#3	-.00084	.00000	.00233	.00216	-.00010	-.00004	1.9989
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**21477.**	**26110.**
Stddev	169.	2792.
%RSD	.78619	10.693
#1	21611.	26798.
#2	21533.	28495.
#3	21288.	23039.

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508122201 Acquired: 8/26/2015 20:13:53 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	-.07567	.00037	-.00167	-.00074	.00014	-.00522	-.00010
Stddev	.00017	.00340	.00055	.00004	.00017	.00000	.01023	.00005
%RSD	18.331	4.4877	148.50	2.6104	22.851	2.4477	196.18	47.799
#1	.00076	-.07224	-.00016	-.00164	-.00060	.00014	-.01614	-.00015
#2	.00089	-.07903	.00033	-.00165	-.00093	.00014	.00414	-.00010
#3	.00109	-.07572	.00094	-.00172	-.00069	.00013	-.00365	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	-.00060	.00123	.00163	-.01259	.00009	-.01238	-.00008
Stddev	.00010	.00021	.00020	.00079	.00944	.00056	.00753	.00001
%RSD	288.20	35.587	16.491	48.530	74.968	592.19	60.768	17.677
#1	-.00007	-.00065	.00100	.00110	-.01575	-.00021	-.00381	-.00007
#2	.00005	-.00037	.00140	.00125	-.02003	-.00025	-.01791	-.00009
#3	.00012	-.00079	.00129	.00254	-.00198	.00074	-.01543	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	.00183	.00128	-.00211	.00323	-.00075	-.00127	-.00746
Stddev	.00006	.00697	.00060	.00223	.00070	.00050	.00079	.00076
%RSD	121.83	381.47	47.254	105.60	21.553	66.046	62.313	10.216
#1	-.00001	-.00446	.00058	.00011	.00279	-.00129	-.00187	-.00708
#2	-.00011	.00933	.00166	-.00210	.00288	-.00064	-.00155	-.00833
#3	-.00002	.00061	.00159	-.00435	.00404	-.00032	-.00037	-.00696
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508122201 Acquired: 8/26/2015 20:13:53 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00049**	**-.00005**	**.00221**	**.00232**	**.00005**	**-.00004**	**2.4621**
Stddev	.00019	.00003	.00041	.00037	.00009	.00001	.8228
%RSD	39.486	74.008	18.367	16.074	171.26	14.011	33.421
#1	-.00027	-.00001	.00184	.00222	-.00005	-.00004	2.7716
#2	-.00062	-.00007	.00264	.00273	.00013	-.00004	1.5293
#3	-.00057	-.00006	.00214	.00200	.00007	-.00003	3.0852
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**21218.**	**25929.**
Stddev	269.	2596.
%RSD	1.2658	10.013
#1	20908.	25511.
#2	21375.	28708.
#3	21372.	23567.

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508122202 Acquired: 8/26/2015 20:17:19 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00070	-.06665	.00045	-.00153	-.00060	.00010	-.00797	-.00011
Stddev	.00009	.01225	.00094	.00019	.00027	.00002	.00698	.00002
%RSD	13.097	18.380	211.54	12.344	45.272	16.675	87.539	16.033
#1	.00080	-.06630	.00035	-.00162	-.00076	.00011	-.01286	-.00011
#2	.00062	-.07907	-.00044	-.00166	-.00075	.00012	.00002	-.00009
#3	.00067	-.05458	.00144	-.00131	-.00029	.00008	-.01108	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	-.00060	.00112	.00040	-.00407	.00013	-.01127	-.00007
Stddev	.00006	.00018	.00037	.00041	.02185	.00052	.00316	.00004
%RSD	247.11	30.237	32.623	103.45	537.05	383.49	27.989	52.766
#1	.00002	-.00071	.00071	.00002	.00745	.00046	-.01470	-.00003
#2	.00009	-.00070	.00140	.00033	-.02927	-.00046	-.01063	-.00010
#3	-.00003	-.00039	.00126	.00084	.00961	.00041	-.00849	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00006	.00962	.00114	-.00108	.00284	.00084	-.00055	-.00771
Stddev	.00005	.00440	.00049	.00083	.00104	.00008	.00088	.00038
%RSD	94.261	45.722	42.674	76.940	36.635	9.8085	160.25	4.9855
#1	.00000	.01237	.00077	-.00190	.00355	.00082	-.00014	-.00814
#2	-.00006	.00455	.00169	-.00025	.00165	.00077	.00005	-.00758
#3	-.00011	.01195	.00096	-.00108	.00333	.00093	-.00156	-.00740
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: August 27, 2015

Kim K Buck

Sample Name: L1508122202 Acquired: 8/26/2015 20:17:19 Type: Unk
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00030**	**-.00009**	**.00241**	**.00191**	**-.00012**	**-.00008**	**2.6984**
Stddev	.00003	.00007	.00076	.00078	.00012	.00003	.6983
%RSD	9.0362	78.567	31.566	40.552	100.82	42.896	25.879
#1	-.00029	-.00001	.00296	.00115	-.00021	-.00004	2.3089
#2	-.00033	-.00015	.00272	.00189	.00002	-.00009	3.5046
#3	-.00028	-.00010	.00154	.00270	-.00017	-.00011	2.2818
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**21150.**	**25664.**
Stddev	194.	2795.
%RSD	.91712	10.891
#1	20927.	26422.
#2	21278.	28002.
#3	21245.	22568.

Approved: August 27, 2015

Sample Name: CCV Acquired: 8/26/2015 20:20:44 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39831	10.039	.41733	.51221	1.0320	.05222	10.053
Stddev	.00464	.133	.00347	.00440	.0147	.00041	.131
%RSD	1.1650	1.3291	.83259	.85958	1.4201	.78240	1.3055
#1	.39315	9.9178	.41673	.50872	1.0156	.05188	9.9314
#2	.39963	10.016	.41420	.51074	1.0365	.05211	10.034
#3	.40214	10.182	.42107	.51716	1.0439	.05267	10.192
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05139	.21004	.52390	.52193	4.2776	52.424	1.0375
Stddev	.00042	.00199	.00449	.00420	.0488	.560	.0163
%RSD	.81492	.94978	.85642	.80447	1.1402	1.0676	1.5675
#1	.05113	.20843	.51989	.51822	4.2382	51.848	1.0199
#2	.05116	.20943	.52305	.52108	4.2624	52.457	1.0405
#3	.05187	.21227	.52874	.52649	4.3322	52.966	1.0521
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 11.007	F .57052	1.0671	52.065	.53104	10.462	.53590
Stddev	.114	.01049	.0073	.655	.00410	.087	.00463
%RSD	1.0313	1.8392	.68419	1.2580	.77242	.83035	.86349
#1	10.969	.58038	1.0641	51.402	.52690	10.390	.53092
#2	10.918	.55949	1.0618	52.080	.53111	10.436	.53671
#3	11.135	.57168	1.0754	52.711	.53511	10.558	.54006
Check ?	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	10.000	.50000					
Range	10.000%	10.000%					

Approved: August 27, 2015

Kim K Buck

Sample Name: CCV Acquired: 8/26/2015 20:20:44 Type: QC
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2444**	**.40877**	**5.1882**	**1.0663**	**1.0437**	**1.0633**	**.53102**
Stddev	.0026	.00525	.0244	.0164	.0171	.0156	.01033
%RSD	.20468	1.2845	.46978	1.5391	1.6408	1.4690	1.9462
#1	1.2439	.40414	5.1900	1.0492	1.0249	1.0466	.51954
#2	1.2422	.40770	5.1630	1.0676	1.0478	1.0657	.53393
#3	1.2472	.41447	5.2116	1.0819	1.0584	1.0775	.53959
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0465**	**1.0813**	F **1.6058**
Stddev	.0058	.0092	.8918
%RSD	.55728	.85153	55.536
#1	1.0428	1.0741	2.2306
#2	1.0435	1.0781	2.0023
#3	1.0533	1.0917	.58450
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**8609.4**	**11896.**
Stddev	46.6	226.
%RSD	.54120	1.9035
#1	8636.3	11677.
#2	8636.4	12130.
#3	8555.6	11882.

Approved: August 27, 2015

Kim K Buck

Sample Name: CCB Acquired: 8/26/2015 20:23:49 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00044	-.00092	-.00090	.00125	.00077	.00012	-.01982
Stddev	.00060	.02110	.00118	.00070	.00024	.00001	.00218
%RSD	135.50	2284.7	130.57	55.496	31.658	7.3593	10.987
#1	-.00111	-.01737	-.00056	.00180	.00056	.00012	-.02185
#2	.00003	-.00827	.00006	.00047	.00104	.00013	-.02008
#3	-.00024	.02287	-.00221	.00149	.00072	.00012	-.01752
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	-.00004	.00068	.00025	.00233	.00949	.00149
Stddev	.00011	.00020	.00054	.00056	.00144	.00858	.00069
%RSD	476.32	485.23	79.743	223.20	61.823	90.428	46.617
#1	.00015	-.00021	.00007	-.00009	.00300	.01338	.00179
#2	-.00005	-.00009	.00088	.00090	.00333	.01544	.00197
#3	-.00003	.00018	.00111	-.00005	.00068	-.00035	.00069
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.01056	-.00002	.00047	.02374	-.00049	.00107	-.00310
Stddev	.02654	.00006	.00014	.00351	.00071	.00401	.00134
%RSD	251.25	302.62	30.395	14.779	145.07	374.89	43.165
#1	.02005	-.00009	.00059	.02583	-.00131	-.00116	-.00297
#2	-.02700	.00001	.00031	.02571	-.00001	-.00133	-.00183
#3	-.02474	.00002	.00050	.01969	-.00015	.00570	-.00449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: August 27, 2015

Kim K Buck

Sample Name: CCB Acquired: 8/26/2015 20:23:49 Type: Blank
Method: ICP-THERMO2_6010_200.7-WATER(v540) Mode: CONC Corr. Factor: 1.000000
User: KKB Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00124**	**-.00368**	**.00123**	**-.00016**	**.00015**	**.00006**	**.00043**
Stddev	.00164	.00121	.00141	.00016	.00005	.00028	.00166
%RSD	132.37	32.941	114.53	98.031	35.974	507.92	389.55
#1	.00010	-.00382	.00073	.00002	.00018	-.00020	.00202
#2	-.00076	-.00241	.00014	-.00026	.00009	.00036	.00055
#3	-.00307	-.00482	.00283	-.00024	.00018	.00001	-.00129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00003**	**-.00030**	F **-.12911**
Stddev	.00032	.00008	.55518
%RSD	1073.4	24.667	430.01
#1	-.00016	-.00029	.07591
#2	-.00015	-.00024	.29440
#3	.00040	-.00038	-.75764
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.10000
Low Limit			-.10000

Int. Std.	Y_2243	Y_3774
Units	Cts/S	Cts/S
Avg	**8720.9**	**11987.**
Stddev	18.9	133.
%RSD	.21673	1.1107
#1	8702.2	12141.
#2	8740.0	11904.
#3	8720.3	11917.

Approved: August 27, 2015

2.3.2 Metals ICP-MS Data

2.3.2.1 Summary Data

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081073-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW14FF-081915	**Prep Method:**	3015	**Prep Date:**	08/26/2015 10:45
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	08/27/2015 11:46
Workgroup #:	WG536592	**Analyst:**	BKT	**Run Date:**	08/27/2015 12:50
Collect Date:	08/19/2015 08:20	**Dilution:**	5	**File ID:**	NI.082715.125053
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.535		0.0200	0.0100	0.00500

Certificate of Analysis

Sample #:	L15081073-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW13FF-081915	**Prep Method:**	3015	**Prep Date:**	08/26/2015 10:45
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	08/27/2015 11:46
Workgroup #:	WG536592	**Analyst:**	BKT	**Run Date:**	08/27/2015 12:54
Collect Date:	08/19/2015 09:35	**Dilution:**	5	**File ID:**	NI.082715.125405
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.123		0.0200	0.0100	0.00500

2.3.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer NexION 300X

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	100
Vi = Initial volume	40
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/L)	0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	200
Vi = Initial volume	0.5
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/kg)	40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	40
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	50

50 ug/kg = 0.050 mg/kg

Perkin Elmer NexION ICP/MS

STANDARDS KEY

QC Std 1 - ICV
QC Std 2 - ICB
QC Std 3 - LLICV
QC Std 4 - ICSA
QC Std 5 - ICSAB
QC Std 6 - CCV
QC Std 7 - CCB
QC Std 8 - LLCCV

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.00005	0.05	0.1
Sb	10	0	0.00005	0.05	0.1
As	10	0	0.00005	0.05	0.1
Ba	10	0	0.00005	0.05	0.1
Be	10	0	0.00005	0.05	0.1
Ca	1000	0	0.005	5	10
Cd	10	0	0.0005	0.05	0.1
Cr	10	0	0.0005	0.05	0.1
Co	10	0	0.0005	0.05	0.1
Cu	10	0	0.0005	0.05	0.1
Fe	1000	0	0.005	5	10
Pb	10	0	0.00005	0.05	0.1
Mg	1000	0	0.005	5	10
Mn	10	0	0.00005	0.05	0.1
Ni	10	0	0.00005	0.05	0.1
K	1000	0	0.005	5	10
Se	10	0	0.00005	0.05	0.1
Ag	10	0	0.00005	0.05	0.1
Na	1000	0	0.005	5	10
Tl	10	0	0.00005	0.05	0.1
V	10	0	0.00005	0.05	0.1
U	1000	0	0.00005	0.05	0.1
Zn	10	0	0.00005	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG536496
Analyst: VC
Spike Analyst: VC
Run Date: 08/26/2015 10:45
Method: 3015
Balance: BAL016
Instrument: MW-3
Instrument Start: 08/26/2015 10:49

SOP: ME407 Revison 17
Spike Solution: STD68313
Spike Witness: ERP
40 & 50 ML. DIGESTION TU COA18222
MS Filters- fisher-Lot#r RGT32947
HNO3 Lot #: COA18384

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG536496-02	BLANK	1	20 mL	50 mL	181.051 g	181.017 g		
2	WG536398-01	FBLK	18	20 mL	50 mL	182.194 g	182.174 g		
3	WG536496-03	LCS	1	20 mL	50 mL	182.471 g	182.464 g	.25 mL	
4	L15081073-02	SAMP	1	20 mL	50 mL	184.25 g	184.229 g		08/31/15
5	L15081073-04	SAMP	1	20 mL	50 mL	181.918 g	181.928 g		08/31/15
6	L15081281-06	SAMP	2	20 mL	50 mL	186.259 g	186.237 g		09/04/15
7	L15081284-02	SAMP	18	20 mL	50 mL	181.484 g	181.473 g		08/28/15
8	L15081284-04	SAMP	18	20 mL	50 mL	183.146 g	183.13 g		08/28/15
9	L15081288-01	SAMP	1	20 mL	50 mL	181.943 g	181.936 g		09/04/15
10	L15081288-02	SAMP	1	20 mL	50 mL	182.55 g	182.54 g		09/04/15
11	L15081305-01	SAMP	2	20 mL	50 mL	184.379 g	184.376 g		09/01/15
12	L15081309-01	SAMP	2	20 mL	50 mL	181.866 g	181.87 g		08/27/15
13	L15081318-01	SAMP	2	20 mL	50 mL	181.18 g	181.163 g		09/01/15
14	L15081324-01	SAMP	2	20 mL	50 mL	179.258 g	179.24 g		09/01/15
15	L15081331-01	SAMP	2	20 mL	50 mL	182.805 g	182.797 g		09/01/15
16	WG536496-01	REF	2	20 mL	50 mL	181.884 g	181.859 g		
17	L15081336-01	SAMP	2	20 mL	50 mL	181.884 g	181.859 g		09/01/15
18	WG536496-04	DUP	1	20 mL	50 mL	180.176 g	180.173 g		
19	WG536496-05	MS	1	20 mL	50 mL	182.939 g	182.908 g	.25 mL	
20	WG536496-06	MSD	1	20 mL	50 mL	181.038 g	181.04 g	.25 mL	

L15081318-01	filtered digestate

Analyst: Vicki Collins

Reviewer: Erin Potter

MW_DIG - Modified 09/30/2009
PDF ID: 4354577
Report generated: 08/26/2015 12:29

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 082715A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD71328 ICV Std: STD72167 Post Spike: STD69341
ICSA: STD71856 ICSAB: STD71214 Int. Std: RGT31676
CCV: STD71729 LLCCV: STD72110 Tuning Sol : STD71213
Stannous : Hydroxylamine :

Workgroups: 536592,536718,536807

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.082715.113337	Blank	Blank		1		08/27/15 11:33
2	NI.082715.113648	WG536762-01	Calibration Point		1		08/27/15 11:36
3	NI.082715.114000	WG536762-02	Calibration Point		1		08/27/15 11:40
4	NI.082715.114312	WG536762-03	Calibration Point		1		08/27/15 11:43
5	NI.082715.114623	WG536762-04	Calibration Point		1		08/27/15 11:46
6	NI.082715.114937	WG536762-05	Initial Calibration Verification		1		08/27/15 11:49
7	NI.082715.115250	WG536762-06	Initial Calib Blank		1		08/27/15 11:52
8	NI.082715.115603	WG536762-07	Low Level Initial Calibration V		1		08/27/15 11:56
9	NI.082715.115915	WG536762-08	Interference Check		1		08/27/15 11:59
10	NI.082715.120226	WG536762-09	Interference Check		1		08/27/15 12:02
11	NI.082715.120539	WG536762-10	CCV		1		08/27/15 12:05
12	NI.082715.120851	WG536762-11	CCB		1		08/27/15 12:08
13	NI.082715.121204	WG536496-02	Method/Prep Blank	20/50	1		08/27/15 12:12
14	NI.082715.121515	WG536496-03	Laboratory Control S	20/50	1		08/27/15 12:15
15	NI.082715.121827	WG536496-01	Reference Sample		1	L15081336-01	08/27/15 12:18
16	NI.082715.122138	WG536496-05	Matrix Spike	20/50	1	L15081336-01	08/27/15 12:21
17	NI.082715.122450	WG536496-06	Matrix Spike Duplica	20/50	1	L15081336-01	08/27/15 12:24
18	NI.082715.122801	L15081288-01	LH18/24-SP650-6300-GRAB	20/50	1		08/27/15 12:28
19	NI.082715.123113	L15081288-02	LH18/24-SP650-6300-COMP	20/50	1		08/27/15 12:31
20	NI.082715.123424	WG536592-03	Post Digestion Spike		1	L15081288-02	08/27/15 12:34
21	NI.082715.123735	WG536592-04	Serial Dilution		5	L15081288-02	08/27/15 12:37
22	NI.082715.124047	WG536592-04	Serial Dilution		25	L15081288-02	08/27/15 12:40
23	NI.082715.124428	WG536762-12	CCV		1		08/27/15 12:44
24	NI.082715.124740	WG536762-13	CCB		1		08/27/15 12:47
25	NI.082715.125053	L15081073-02	50WW14FF-081915	20/50	5		08/27/15 12:50
26	NI.082715.125405	L15081073-04	50WW13FF-081915	20/50	5		08/27/15 12:54
27	NI.082715.125717	WG536762-14	CCV		1		08/27/15 12:57
28	NI.082715.130029	WG536762-15	CCB		1		08/27/15 13:00
29	NI.082715.130356	WG536762-16	Low Level Continuing Calibra		1		08/27/15 13:03
30	NI.082715.131055	WG536649-03	Method/Prep Blank	20/50	1		08/27/15 13:10
31	NI.082715.131406	WG536649-04	Laboratory Control S	20/50	1		08/27/15 13:14
32	NI.082715.131717	WG536649-01	Reference Sample		1	L15081184-06	08/27/15 13:17
33	NI.082715.132029	WG536649-06	Duplicate	20/50	1	L15081184-06	08/27/15 13:20
34	NI.082715.132340	WG536649-07	Matrix Spike	20/50	1	L15081184-06	08/27/15 13:23

Page: 1 Approved: August 28, 2015

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Instrument Run Log

Instrument: ICP-MS2 Dataset: 082715A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD71328 ICV Std: STD72167 Post Spike: STD69341
ICSA: STD71856 ICSAB: STD71214 Int. Std: RGT31676
CCV: STD71729 LLCCV: STD72110 Tuning Sol : STD71213
Stannous : Hydroxylamine :

Workgroups: 536592,536718,536807

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.082715.132651	L15081184-08	DDC2	20/50	1		08/27/15 13:26
36	NI.082715.133003	L15081184-01	0064599-001	20/50	1		08/27/15 13:30
37	NI.082715.133314	WG536718-01	Post Digestion Spike		1	L15081184-01	08/27/15 13:33
38	NI.082715.133625	WG536718-02	Serial Dilution		5	L15081184-01	08/27/15 13:36
39	NI.082715.133936	WG536718-02	Serial Dilution		25	L15081184-01	08/27/15 13:39
40	NI.082715.134250	WG536762-17	CCV		1		08/27/15 13:42
41	NI.082715.134601	WG536762-18	CCB		1		08/27/15 13:46
42	NI.082715.134914	L15081208-01	V5H0374-02	20/50	1		08/27/15 13:49
43	NI.082715.135225	L15081216-01	V5H0373-02	20/50	1		08/27/15 13:52
44	NI.082715.135536	L15081290-01	5081407-02	20/50	1		08/27/15 13:55
45	NI.082715.135847	L15081292-01	V5H0473-01	20/50	1		08/27/15 13:58
46	NI.082715.140159	L15081292-01	V5H0473-01	20/50	10		08/27/15 14:01
47	NI.082715.140511	L15081303-01	V5H0472-01	20/50	1		08/27/15 14:05
48	NI.082715.140822	L15081304-01	V5H0488-01	20/50	1		08/27/15 14:08
49	NI.082715.141133	L15081304-01	V5H0488-01	20/50	10		08/27/15 14:11
50	NI.082715.141445	L15081306-01	V5H0474-01	20/50	1		08/27/15 14:14
51	NI.082715.141756	L15081411-01	WMB09	20/50	1		08/27/15 14:17
52	NI.082715.142110	WG536762-19	CCV		1		08/27/15 14:21
53	NI.082715.142421	WG536762-20	CCB		1		08/27/15 14:24
54	NI.082715.142734	WG536649-02	Reference Sample		1	L15081411-02	08/27/15 14:27
55	NI.082715.143045	WG536649-08	Matrix Spike	20/50	1	L15081411-02	08/27/15 14:30
56	NI.082715.143356	L15081420-03	OUTFALL 203 GRAB	20/50	1000		08/27/15 14:33
57	NI.082715.143956	L15081290-01	5081407-02	20/50	50		08/27/15 14:39
58	NI.082715.144307	WG536649-05	Filter Blank		1		08/27/15 14:43
59	NI.082715.144620	WG536762-21	CCV		1		08/27/15 14:46
60	NI.082715.144931	WG536762-22	CCB		1		08/27/15 14:49
61	NI.082715.150921	WG536769-02	Method/Prep Blank	20/50	1		08/27/15 15:09
62	NI.082715.151233	WG536769-03	Laboratory Control S	20/50	1		08/27/15 15:12
63	NI.082715.151545	L15081358-10	082415-AXIALL-24A		1	WG536769-01	08/27/15 15:15
64	NI.082715.151856	WG536769-04	Duplicate	20/50	1	L15081358-10	08/27/15 15:18
65	NI.082715.152208	WG536769-05	Matrix Spike	20/50	1	L15081358-10	08/27/15 15:22
66	NI.082715.152905	WG536769-06	Matrix Spike Duplica	20/50	1	L15081358-10	08/27/15 15:29
67	NI.082715.153216	L15081454-01	T5H1383-01	20/50	1		08/27/15 15:32
68	NI.082715.153527	WG536807-01	Post Digestion Spike		1	L15081454-01	08/27/15 15:35

Page: 2 Approved: August 28, 2015

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Instrument Run Log

Instrument: ICP-MS2 Dataset: 082715A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD71328 ICV Std: STD72167 Post Spike: STD69341
ICSA: STD71856 ICSAB: STD71214 Int. Std: RGT31676
CCV: STD71729 LLCCV: STD72110 Tuning Sol : STD71213
Stannous : Hydroxylamine :

Workgroups: 536592,536718,536807

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.082715.153839	WG536807-02	Serial Dilution		5	L15081454-01	08/27/15 15:38
70	NI.082715.154149	WG536807-02	Serial Dilution		25	L15081454-01	08/27/15 15:41
71	NI.082715.154502	WG536762-23	CCV		1		08/27/15 15:45
72	NI.082715.154814	WG536762-24	CCB		1		08/27/15 15:48
73	NI.082715.155127	L15081471-01	CLAINF 17-150826-A	20/50	1		08/27/15 15:51
74	NI.082715.155439	L15081471-02	CLAINF 18-150826-B	20/50	1		08/27/15 15:54
75	NI.082715.155750	L15081471-03	CLAEFF 17-150826-A	20/50	1		08/27/15 15:57
76	NI.082715.160102	L15081471-04	CLAEFF 18-150826-B	20/50	1		08/27/15 16:01
77	NI.082715.160414	L15081480-01	ARC TANK WATER	20/50	1		08/27/15 16:04
78	NI.082715.160724	L15081471-01	CLAINF 17-150826-A	20/50	50		08/27/15 16:07
79	NI.082715.161036	L15081471-02	CLAINF 18-150826-B	20/50	50		08/27/15 16:10
80	NI.082715.161347	L15081471-03	CLAEFF 17-150826-A	20/50	50		08/27/15 16:13
81	NI.082715.161658	L15081471-04	CLAEFF 18-150826-B	20/50	50		08/27/15 16:16
82	NI.082715.162012	WG536762-25	CCV		1		08/27/15 16:20
83	NI.082715.162323	WG536762-26	CCB		1		08/27/15 16:23
84	NI.082715.162636	WG536762-27	Low Level Continuing Calibra		1		08/27/15 16:26
85	NI.082715.162948	L15081358-01	082415-AXIALL-23A	20/50	1		08/27/15 16:29
86	NI.082715.163300	L15081358-02	082415-AXIALL-21	20/50	1		08/27/15 16:33
87	NI.082715.163611	L15081358-03	082415-AXIALL-29S	20/50	1		08/27/15 16:36
88	NI.082715.163923	L15081358-04	082415-AXIALL-29A	20/50	1		08/27/15 16:39
89	NI.082715.164234	L15081358-05	082415-AXIALL-28B	20/50	1		08/27/15 16:42
90	NI.082715.164546	L15081358-06	082415-AXIALL-25A	20/50	1		08/27/15 16:45
91	NI.082715.165048	L15081358-07	082415-AXIALL-34S	20/50	1		08/27/15 16:50
92	NI.082715.165400	L15081358-08	082415-AXIALL-3A	20/50	1		08/27/15 16:54
93	NI.082715.165711	L15081358-09	082415-AXIALL-4A	20/50	1		08/27/15 16:57
94	NI.082715.170023	L15081358-01	082415-AXIALL-23A	20/50	10		08/27/15 17:00
95	NI.082715.170337	WG536762-28	CCV		1		08/27/15 17:03
96	NI.082715.170648	WG536762-29	CCB		1		08/27/15 17:06
97	NI.082715.171513	L15081358-10	082415-AXIALL-24A		10	WG536769-01	08/27/15 17:15
98	NI.082715.171824	WG536769-04	Duplicate	20/50	10	L15081358-10	08/27/15 17:18
99	NI.082715.172136	WG536769-05	Matrix Spike	20/50	10	L15081358-10	08/27/15 17:21
100	NI.082715.172448	WG536769-06	Matrix Spike Duplica	20/50	10	L15081358-10	08/27/15 17:24
101	NI.082715.172759	L15081358-03	082415-AXIALL-29S	20/50	100		08/27/15 17:27
102	NI.082715.173111	L15081358-04	082415-AXIALL-29A	20/50	50		08/27/15 17:31

Page: 3 Approved: August 28, 2015

Maren Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 082715A.REP

Analyst1: BKT Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD71328 ICV Std: STD72167 Post Spike: STD69341

ICSA: STD71856 ICSAB: STD71214 Int. Std: RGT31676

CCV: STD71729 LLCCV: STD72110 Tuning Sol : STD71213

Stannous : Hydroxylamine :

Workgroups: 536592,536718,536807

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.082715.173422	L15081358-05	082415-AXIALL-28B	20/50	50		08/27/15 17:34
104	NI.082715.173733	L15081358-06	082415-AXIALL-25A	20/50	1000		08/27/15 17:37
105	NI.082715.174045	L15081358-09	082415-AXIALL-4A	20/50	50		08/27/15 17:40
106	NI.082715.174358	WG536762-30	CCV		1		08/27/15 17:43
107	NI.082715.174710	WG536762-31	CCB		1		08/27/15 17:47
108	NI.082715.175023	WG536762-32	Low Level Continuing Calibra		1		08/27/15 17:50

Page: 4 Approved: August 28, 2015

Maren Berry

Microbac Laboratories Inc.

Data Checklist

Date: 27-AUG-2015
Analyst: BKT
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 536762
Runlog ID: 70089
Analytical Workgroups: 536592,536718,536807

Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	X
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	
Level 4	1073,1288,1471
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BKT
Secondary Reviewer	MMB
Comments	

Primary Reviewer:
28-AUG-2015

Secondary Reviewer:
28-AUG-2015

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-28-2015 14:49:42

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG536592

Login Number: L15081073

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW14FF-081915	02	08/19/15					08/26/2015	7.1	180		08/27/15	8.2	180	
50WW13FF-081915	04	08/19/15					08/26/2015	7	180		08/27/15	8.1	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4350765
Report generated 08/27/2015 13:12

METHOD BLANK SUMMARY

Login Number: L15081073
Blank File ID: NI.082715.121204
Prep Date: 08/26/15 10:45
Analyzed Date: 08/27/15 12:12
Analyst: BKT

Work Group: WG536592
Blank Sample ID: WG536496-02
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG536496-03	NI.082615.142025	08/26/15 14:20	01
DUP	WG536496-04	NI.082615.142648	08/26/15 14:26	01
LCS	WG536496-03	NI.082715.121515	08/27/15 12:15	02
50WW14FF-081915	L15081073-02	NI.082715.125053	08/27/15 12:50	DL02
50WW13FF-081915	L15081073-04	NI.082715.125405	08/27/15 12:54	DL02

Report Name: BLANK_SUMMARY
PDF File ID: 4350766
Report generated 08/27/2015 13:12

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15081073 Prep Date: 08/26/15 10:45 Sample ID: WG536496-02
Instrument ID: ICP-MS2 Run Date: 08/27/15 12:12 Prep Method: 3015
File ID: NI.082715.121204 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG536592 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-27-AUG-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Manganese, Dissolved	0.00100	0.00400	0.00100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4350767
27-AUG-2015 13:12

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15081073 Run Date: 08/27/2015 Sample ID: WG536496-03
Instrument ID: ICP-MS2 Run Time: 12:15 Prep Method: 3015
File ID: NI.082715.121515 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG536592 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD68313 Cal ID: ICP-MS-27-AUG-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Manganese, Dissolved	0.125	0.131	104	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4350768
Report generated: 08/27/2015 13:12

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L15081073 Cal ID: ICP-MS2 - Worknum: WG536592
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG536496-01 File ID: NI.082715.121827 Dil: 1 Matrix: WATER
Sample ID: WG536496-05 MS File ID: NI.082715.122138 Dil: 1 Units: mg/L
Sample ID: WG536496-06 MSD File ID: NI.082715.122450 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Manganese	0.00937	0.125	0.133	99.0	0.125	0.138	103	3.94	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4350769
Report generated 08/27/2015 13:12

Microbac Laboratories Inc.
Serial Dilution Report

Login: L15081073 **Worknum:** WG536592
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG536592-04 **File ID:** NI.082715.123735 **Dil:** 5 **Units:** ug/L
Sample: L15081288-02 **File ID:** NI.082715.123113 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Manganese	24.2	X	24.5	X	1.06	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4350763
08/27/2015 13:12

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L15081073 **Worknum:** WG536592
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG536592-03 **File ID:** NI.082715.123424 **Dil:** 1 **Units:** ug/L
Sample ID: L15081288-02 **File ID:** NI.082715.123113 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MANGANESE	72.5		24.2		50	96.6	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4350764
Report generated: 08/27/2015 13:12

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L15081073	Workgroup (AAB#):	WG536592
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG536762	Initial Calibration Date:	27-AUG-2015 11:46

	WG536762-01		WG536762-02		WG536762-03		WG536762-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
MANGANESE	0	603	.4	844	50	169000	100	330000	.999974	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4350772
Report generated: 27-AUG-2015 13:12

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L15081073
Run Date: 08/27/2015
Sample ID: WG536762-06
Instrument ID: ICP-MS2
Run Time: 11:52
Method: 6020A
File ID: NI.082715.115250
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG536592
Cal ID: ICP-MS2 - 27-AUG-15
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
MANGANESE	.4	1.6	.4	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4350774
Report generated 08/27/2015 13:12

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15081073
Run Date: 08/27/2015
Sample ID: WG536762-11
Instrument ID: ICP-MS2
Run Time: 12:08
Method: 6020A
File ID: NI.082715.120851
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG536592
Cal ID: ICP-MS - 27-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4350777
Report generated 08/27/2015 13:12

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15081073
Run Date: 08/27/2015
Sample ID: WG536762-13
Instrument ID: ICP-MS2
Run Time: 12:47
Method: 6020A
File ID: NI.082715.124740
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG536592
Cal ID: ICP-MS - 27-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4350777
Report generated 08/27/2015 13:12

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15081073
Run Date: 08/27/2015
Sample ID: WG536762-15
Instrument ID: ICP-MS2
Run Time: 13:00
Method: 6020A
File ID: NI.082715.130029
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG536592
Cal ID: ICP-MS - 27-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4350777
Report generated 08/27/2015 13:12

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L15081073 Run Date: 08/27/2015 Sample ID: WG536762-05
Instrument ID: ICP-MS2 Run Time: 11:49 Method: 6020A
File ID: NI.082715.114937 Analyst: BKT Units: ug/L
Workgroup (AAB#): WG536592 Cal ID: ICP-MS - 27-AUG-15
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Manganese		50	51.4	103	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4350773
Report generated 08/27/2015 13:12

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15081073
Run Date: 08/27/2015
Sample ID: WG536762-10
Instrument ID: ICP-MS2
Run Time: 12:05
Method: 6020A
File ID: NI.082715.120539
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG536592
Cal ID: ICP-MS - 27-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0504	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4350776
Report generated 08/27/2015 13:12

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15081073
Run Date: 08/27/2015
Sample ID: WG536762-12
Instrument ID: ICP-MS2
Run Time: 12:44
Method: 6020A
File ID: NI.082715.124428
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG536592
Cal ID: ICP-MS - 27-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0493	mg/L	98.7	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4350776
Report generated 08/27/2015 13:12

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15081073
Run Date: 08/27/2015
Sample ID: WG536762-14
Instrument ID: ICP-MS2
Run Time: 12:57
Method: 6020A
File ID: NI.082715.125717
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG536592
Cal ID: ICP-MS - 27-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0501	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4350776
Report generated 08/27/2015 13:12

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15081073
Run Date: 08/27/2015
Sample ID: WG536762-07
Instrument ID: ICP-MS2
Run Time: 11:56
Method: 6020A
File ID: NI.082715.115603
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG536592
Cal ID: ICP-MS - 27-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.500	0.482	ug/L	96.3	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4350778
Report generated 08/27/2015 13:12

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15081073
Run Date: 08/27/2015
Sample ID: WG536762-16
Instrument ID: ICP-MS2
Run Time: 13:03
Method: 6020A
File ID: NI.082715.130356
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG536592
Cal ID: ICP-MS - 27-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.500	0.473	ug/L	94.5	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4350778
Report generated 08/27/2015 13:12

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L15081073
Instrument ID: ICP-MS2
Sol. A : WG536762-08 **File ID:** NI.082715.115915
Sol. AB : WG536762-09 **File ID:** NI.082715.120226

Workgroup (AAB#): WG536592
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Manganese	NS	0.0705	NS	100	101	101	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4350775
Report generated 08/27/2015 13:12

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L15081073 **Analytical Method:** 6020
Analytical Workgroup: WG536592 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 27-AUG-2015 11:36

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L15081073-02	SAMP	27-AUG-2015 12:50	99.295	100.632	100.259
L15081073-04	SAMP	27-AUG-2015 12:54	97.851	99.176	99.614
L15081288-02	SAMP	27-AUG-2015 12:31	92.281	98.022	94.64
WG536496-02	BLANK	27-AUG-2015 12:12	102.449	102.333	102.947
WG536496-03	LCS	27-AUG-2015 12:15	101.988	101.333	104.951
WG536592-03	PSPK	27-AUG-2015 12:34	92.257	98.326	96.342
WG536592-04	SERIAL	27-AUG-2015 12:37	97.336	101.191	98.987
WG536762-05	ICV	27-AUG-2015 11:49	97.232	99.924	98.568
WG536762-06	ICB	27-AUG-2015 11:52	100.104	100.996	99.814
WG536762-07	LLICV	27-AUG-2015 11:56	98.579	99.093	99.037
WG536762-08	ICS	27-AUG-2015 11:59	97.069	98.426	97.651
WG536762-09	ICS	27-AUG-2015 12:02	97.737	98.605	99.089
WG536762-10	CCV	27-AUG-2015 12:05	101.566	101.336	103.383
WG536762-11	CCB	27-AUG-2015 12:08	101.829	101.804	103.213
WG536762-12	CCV	27-AUG-2015 12:44	96.791	99.655	96.359
WG536762-13	CCB	27-AUG-2015 12:47	99.673	100.257	99.054
WG536762-14	CCV	27-AUG-2015 12:57	99.894	100.72	101.267
WG536762-15	CCB	27-AUG-2015 13:00	99.754	100.149	100.905
WG536762-16	LLCCV	27-AUG-2015 13:03	101.465	101.464	101.855

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4350771
Report generated: 08/27/2015 13:12

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L15081073 **Date:** 07/08/2015
Insturment ID: ICP-MS2 **Method:** 6020A

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Uranium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4350770
Report generated: 08/27/2015 13:12

2.3.2.3 Raw Data

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Thursday, August 27, 2015 11:02:52

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1347	2025	0.681	
Mg	23.985	24.025	4506	2019	0.710	
Co	58.933	58.925	11688	2022	0.705	
In	114.904	114.875	22857	2027	0.689	
U	238.050	238.025	47453	2042	0.681	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	1.210
5.575	1.664
5.625	1.233
5.675	3.401
5.725	1.848
5.775	3.401
5.825	1.892
5.875	1.771
5.925	3.753
5.975	1.888
6.025	2.717
6.075	4.893
6.125	3.061
6.175	52.408
6.225	50.000
6.275	75.691
6.325	46.481
6.375	17.430
6.425	17.275
6.475	4.785
6.525	4.625
6.575	2.756
6.625	2.333
6.675	2.647
6.725	2.457
6.775	2.739
6.825	2.118

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6.875	4.317
6.925	2.386
6.975	2.935
7.025	2.132
7.075	1.883
7.125	1.585
7.175	2.166
7.225	4.531
7.275	40.825
7.325	63.191
7.375	38.030
7.425	83.853
7.475	104.583
7.525	74.975
7.575	117.260
7.625	58.330
7.675	83.853
7.725	113.537
7.775	22.822
7.825	136.931
7.875	69.722
7.925	108.653
7.975	38.030
8.025	55.902
8.075	71.261
8.125	91.287
8.175	55.902
8.225	129.603
8.275	50.000
8.325	108.653
8.375	55.902
8.425	103.652
8.475	93.541
22.525	223.607
22.575	52.705
22.625	14.286
22.675	63.246
22.725	18.254
22.775	37.680
22.825	15.471
22.875	59.365
22.925	8.600
22.975	22.032
23.025	40.229
23.075	24.781
23.125	40.357
23.175	42.371

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23.225	9.829
23.275	26.082
23.325	27.741
23.375	24.549
23.425	43.257
23.475	30.912
23.525	7.714
23.575	4.764
23.625	2.862
23.675	1.769
23.725	1.140
23.775	1.747
23.825	1.264
23.875	1.559
23.925	2.258
23.975	2.155
24.025	1.577
24.075	1.838
24.125	2.273
24.175	3.757
24.225	2.819
24.275	1.209
24.325	15.711
24.375	61.237
24.425	28.284
24.475	22.229
24.525	3.332
24.575	3.029
24.625	0.654
24.675	1.420
24.725	1.458
24.775	1.799
24.825	1.152
24.875	0.926
24.925	0.755
24.975	1.722
25.025	1.878
25.075	1.321
25.125	1.438
25.175	1.161
25.225	1.951
25.275	2.325
25.325	63.949
25.375	59.266
25.425	44.605
25.475	13.338
57.525	10.267

Report Date/Time: Thursday, August 27, 2015 11:06:03
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57.575	5.345
57.625	6.922
57.675	3.716
57.725	2.853
57.775	1.986
57.825	2.456
57.875	2.807
57.925	2.401
57.975	1.859
58.025	2.876
58.075	2.136
58.125	4.392
58.175	3.530
58.225	6.689
58.275	8.726
58.325	33.518
58.375	47.128
58.425	19.444
58.475	14.045
58.525	8.798
58.575	2.975
58.625	3.528
58.675	3.415
58.725	2.984
58.775	2.065
58.825	4.044
58.875	2.292
58.925	1.861
58.975	3.189
59.025	1.564
59.075	2.512
59.125	1.935
59.175	4.038
59.225	5.325
59.275	14.628
59.325	60.990
59.375	29.881
59.425	74.975
59.475	26.679
59.525	28.059
59.575	10.402
59.625	8.740
59.675	5.284
59.725	5.417
59.775	3.366
59.825	6.546
59.875	5.121

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59.925	3.293
59.975	3.889
60.025	3.385
60.075	3.725
60.125	7.478
60.175	7.044
60.225	3.405
60.275	18.055
60.325	46.566
60.375	35.355
60.425	93.541
60.475	63.888
113.525	4.465
113.575	6.804
113.625	0.915
113.675	4.958
113.725	5.215
113.775	2.926
113.825	4.230
113.875	2.685
113.925	2.282
113.975	4.580
114.025	3.459
114.075	2.094
114.125	1.851
114.175	3.785
114.225	6.165
114.275	26.693
114.325	34.641
114.375	27.407
114.425	16.824
114.475	6.513
114.525	3.709
114.575	0.890
114.625	1.521
114.675	1.701
114.725	1.724
114.775	0.913
114.825	1.507
114.875	2.001
114.925	1.019
114.975	1.788
115.025	2.353
115.075	1.998
115.125	2.542
115.175	2.271
115.225	3.875

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115.275	3.094
115.325	32.192
115.375	50.000
115.425	55.902
115.475	28.838
115.525	39.006
115.575	10.257
115.625	7.076
115.675	2.857
115.725	5.851
115.775	5.087
115.825	5.528
115.875	7.461
115.925	3.815
115.975	4.526
116.025	7.517
116.075	2.879
116.125	9.346
116.175	10.139
116.225	12.831
116.275	13.074
116.325	80.889
116.375	79.466
116.425	71.261
116.475	116.411
236.525	223.607
236.575	20.203
236.625	26.343
236.675	16.716
236.725	27.285
236.775	26.352
236.825	31.944
236.875	27.285
236.925	11.907
236.975	53.429
237.025	37.500
237.075	47.650
237.125	26.343
237.175	22.934
237.225	31.419
237.275	49.085
237.325	22.667
237.375	31.025
237.425	30.098
237.475	35.392
237.525	20.242
237.575	29.613

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237.625	9.871
237.675	7.679
237.725	5.417
237.775	2.512
237.825	3.982
237.875	1.399
237.925	2.649
237.975	0.938
238.025	1.760
238.075	0.848
238.125	1.492
238.175	1.872
238.225	2.563
238.275	4.074
238.325	1.268
238.375	5.539
238.425	6.103
238.475	9.967
238.525	11.621
238.575	27.741
238.625	41.191
238.675	24.491
238.725	25.353
238.775	18.109
238.825	75.603
238.875	54.728
238.925	22.588
238.975	40.406
239.025	19.174
239.075	25.650
239.125	39.529
239.175	57.045
239.225	24.661
239.275	22.822
239.325	56.177
239.375	56.758
239.425	37.029
239.475	0.000

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SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 8/27/2015 11:07:39 AM
End Time: 8/27/2015 11:10:14 AM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 2790.46
        Obtained Intensity (Mg 23.985): 88318.16
        Obtained Intensity (In 114.904): 74513.32
        Obtained Intensity (U 238.05): 42407.20
        Obtained Intensity (Bkgd 220): 1.20
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.020 (=5331.00 / 265806.05)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.003 (=829.89 / 265806.05)
```

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SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 8/27/2015 11:07:39 AM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 2790.46
                Obtained Intensity (Mg 23.985): 88318.16
                Obtained Intensity (In 114.904): 74513.32
                Obtained Intensity (U 238.05): 42407.20
                Obtained Intensity (Bkgd 220): 1.20
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.020 (=5331.00 / 265806.05)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.003 (=829.89 / 265806.05)
[Passed]  Optimum value(s): N/A

End Time: 8/27/2015 11:10:14 AM
```


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Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Thursday, August 27, 2015 11:33:37
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	44981.7	0.9				ug/L		Standard
	Be	9	8.3	34.6				ug/L		Standard
	Al	27	318.3	19.5				ug/L		Standard
	Sc	45	28997.8	4.3				ug/L		Standard
	Ti	47	21.3	51.6				ug/L		Standard
	V	51	1052.4	3.4				ug/L		Standard
	Cr	52	6637.5	2.2				ug/L		Standard
	Cr	53	328.3	6.2				ug/L		Standard
	Mn	55	636.3	2.3				ug/L		Standard
	Co	59	199.3	3.3				ug/L		Standard
	Ni	60	184.7	5.5				ug/L		Standard
	Cu	65	133.0	13.8				ug/L		Standard
	Zn	66	186.7	6.4				ug/L		Standard
>	Ge	72	311830.2	0.4				ug/L		Standard
	As	75	-58.1	40.5				ug/L		Standard
	Se	82	24.6	13.6				ug/L		Standard
	Se-1	77	90.0	11.6				ug/L		Standard
>	Ga	71	18.3	15.7				mg/L		Standard
	Rb	85	26.7	21.7				ug/L		Standard
	Y	89	295022.9	3.0				ug/L		Standard
>	Rh	103	6.7	43.3				ug/L		Standard
	Mo	98	10.3	42.0				ug/L		Standard
	Ag	107	58.3	6.9				ug/L		Standard
	Cd	111	3.6	41.8				mg/L		Standard
	Cd	114	-0.7	1251.7				ug/L		Standard
>	In	115	427691.3	2.1				ug/L		Standard
	Sn	118	273.3	10.7				ug/L		Standard
	Sb	123	55.1	19.0				ug/L		Standard
	Ba	135	39.3	14.0				ug/L		Standard
	Ce	140	28.3	20.4				ug/L		Standard
>	Tb	159	886832.6	0.4				ug/L		Standard
	Ho	165	10.0	50.0				ug/L		Standard
	Tl	203	1.7	91.7				ug/L		Standard
	Tl	205	0.0					ug/L		Standard
	Pb	206	198.7	8.9				ug/L		Standard
	Pb	207	178.0	1.9				ug/L		Standard
	Pb	208	654.3	3.1				ug/L		Standard
	U	238	1.3	86.6				ug/L		Standard
>	Bi	209	418387.4	0.6				ug/L		Standard

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Na	23	1.7	173.2	mg/L	Standard
Mg	24	26.7	47.2	mg/L	Standard
K	39	20.0	25.0	mg/L	Standard
Ca	43	40.0	21.7	mg/L	Standard
Fe	54	74.2	18.1	mg/L	Standard
Fe	57	696.7	4.1	mg/L	Standard
Sc-1	45	28997.8	4.3	mg/L	Standard
Cl	35	6091.2	2.4	ug/L	Standard
Kr	83	6.0	44.1	ug/L	Standard
Br	81	383.3	21.2	ug/L	Standard
P	31	8849.3	4.5	ug/L	Standard
S	34	936.7	8.5	ug/L	Standard
Sr	88	188.3	6.7	ug/L	Standard
C	12	166.7	18.3	mg/L	Standard
N	14	3.3	173.2	mg/L	Standard
Hg	202	0.0		mg/L	Standard
Dy	164	12.2	93.4	mg/L	Standard
Ho-1	165	10.0	50.0	mg/L	Standard
Er	166	23.3	24.7	mg/L	Standard
I	127	1436.7	1.9	mg/L	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Blank
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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Thursday, August 27, 2015 11:36:48
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	44588.9	4.1				ug/L	44982	Standard
	Be	9	6.7	43.3				ug/L	8	Standard
	Al	27	320.0	10.2				ug/L	318	Standard
	Sc	45	29528.8	1.9				ug/L	28998	Standard
	Ti	47	23.3	2.5				ug/L	21	Standard
	V	51	1070.2	5.9				ug/L	1052	Standard
	Cr	52	6749.5	2.7				ug/L	6637	Standard
	Cr	53	321.7	17.1				ug/L	328	Standard
	Mn	55	603.3	2.0				ug/L	636	Standard
	Co	59	207.3	7.3				ug/L	199	Standard
	Ni	60	183.7	10.5				ug/L	185	Standard
	Cu	65	117.7	13.2				ug/L	133	Standard
	Zn	66	189.3	4.6				ug/L	187	Standard
>	**Ge**	72	310990.3	1.4				ug/L	311830	Standard
	As	75	-46.8	20.2				ug/L	-58	Standard
	Se	82	23.7	14.4				ug/L	25	Standard
	Se-1	77	88.0	14.9				ug/L	90	Standard
>	**Ga**	71	20.0	43.3				mg/L	18	Standard
	Rb	85	16.7	62.4				ug/L	27	Standard
	Y	89	293850.5	0.4				ug/L	295023	Standard
>	**Rh**	103	15.0	33.3				ug/L	7	Standard
	Mo	98	7.2	30.4				ug/L	10	Standard
	Ag	107	66.0	13.5				ug/L	58	Standard
	Cd	111	7.0	24.7				mg/L	4	Standard
	Cd	114	0.9	681.4				ug/L	-1	Standard
>	**In**	115	433585.4	0.6				ug/L	427691	Standard
	Sn	118	278.3	10.8				ug/L	273	Standard
	Sb	123	33.4	3.6				ug/L	55	Standard
	Ba	135	35.7	22.5				ug/L	39	Standard
	Ce	140	90.0	121.1				ug/L	28	Standard
>	**Tb**	159	899182.7	0.3				ug/L	886833	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	6.7	95.3				ug/L	2	Standard
	Tl	205	0.0					ug/L	0	Standard
	Pb	206	204.3	3.8				ug/L	199	Standard
	Pb	207	186.3	1.9				ug/L	178	Standard
	Pb	208	630.0	1.3				ug/L	654	Standard
	U	238	3.0	57.7				ug/L	1	Standard
>	**Bi**	209	416539.1	0.5				ug/L	418387	Standard

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	Na	23	0.0		mg/L	2	Standard
	Mg	24	40.0	45.1	mg/L	27	Standard
	K	39	11.7	49.5	mg/L	20	Standard
	Ca	43	50.0	36.1	mg/L	40	Standard
	Fe	54	52.7	46.3	mg/L	74	Standard
	Fe	57	731.7	6.5	mg/L	697	Standard
>	**Sc-1**	45	29528.8	1.9	mg/L	28998	Standard
	Cl	35	6267.3	2.4	ug/L	6091	Standard
	Kr	83	3.3	75.5	ug/L	6	Standard
	Br	81	460.0	6.5	ug/L	383	Standard
	P	31	8977.7	2.5	ug/L	8849	Standard
	S	34	880.0	9.3	ug/L	937	Standard
	Sr	88	163.3	22.1	ug/L	188	Standard
	C	12	160.0	22.5	mg/L	167	Standard
	N	14	6.7	86.6	mg/L	3	Standard
	Hg	202	0.0		mg/L	0	Standard
	Dy	164	9.7	105.8	mg/L	12	Standard
	Ho-1	165	8.3	69.3	mg/L	10	Standard
	Er	166	6.7	86.6	mg/L	23	Standard
	I	127	1288.4	2.9	mg/L	1437	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 1
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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Thursday, August 27, 2015 11:40:00
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	47957.5	1.9				ug/L	44982	Standard
	Be	9	38.3	15.1				ug/L	8	Standard
	Al	27	3902.2	4.3				ug/L	318	Standard
	Sc	45	29400.2	4.7				ug/L	28998	Standard
	Ti	47	41.0	17.1				ug/L	21	Standard
	V	51	1232.2	5.2				ug/L	1052	Standard
	Cr	52	7063.0	2.0				ug/L	6637	Standard
	Cr	53	415.0	7.5				ug/L	328	Standard
	Mn	55	844.0	2.1				ug/L	636	Standard
	Co	59	404.7	1.4				ug/L	199	Standard
	Ni	60	275.7	8.6				ug/L	185	Standard
	Cu	65	235.7	8.6				ug/L	133	Standard
	Zn	66	627.3	5.8				ug/L	187	Standard
>	**Ge**	72	316663.4	1.6				ug/L	311830	Standard
	As	75	23.2	95.3				ug/L	-58	Standard
	Se	82	30.8	27.2				ug/L	25	Standard
	Se-1	77	92.3	13.8				ug/L	90	Standard
>	**Ga**	71	31.7	45.6				mg/L	18	Standard
	Rb	85	20.0	50.0				ug/L	27	Standard
	Y	89	289662.7	0.8				ug/L	295023	Standard
>	**Rh**	103	10.0	132.3				ug/L	7	Standard
	Mo	98	152.3	13.6				ug/L	10	Standard
	Ag	107	319.7	4.8				ug/L	58	Standard
	Cd	111	72.3	6.8				mg/L	4	Standard
	Cd	114	227.8	8.2				ug/L	-1	Standard
>	**In**	115	437069.1	0.7				ug/L	427691	Standard
	Sn	118	518.3	10.3				ug/L	273	Standard
	Sb	123	196.2	5.2				ug/L	55	Standard
	Ba	135	140.0	6.8				ug/L	39	Standard
	Ce	140	23.3	12.4				ug/L	28	Standard
>	**Tb**	159	889222.9	1.4				ug/L	886833	Standard
	Ho	165	25.0	34.6				ug/L	10	Standard
	Tl	203	356.7	7.2				ug/L	2	Standard
	Tl	205	226.7	14.4				ug/L	0	Standard
	Pb	206	477.0	2.4				ug/L	199	Standard
	Pb	207	412.0	5.5				ug/L	178	Standard
	Pb	208	1453.7	2.1				ug/L	654	Standard
	U	238	252.3	8.5				ug/L	1	Standard
>	**Bi**	209	420507.2	1.5				ug/L	418387	Standard

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	Na	23	0.0		mg/L	2	Standard
	Mg	24	25.0	20.0	mg/L	27	Standard
	K	39	10.0	132.3	mg/L	20	Standard
	Ca	43	33.3	48.2	mg/L	40	Standard
	Fe	54	76.8	26.0	mg/L	74	Standard
	Fe	57	771.7	13.5	mg/L	697	Standard
>	**Sc-1**	45	29400.2	4.7	mg/L	28998	Standard
	Cl	35	6138.6	2.2	ug/L	6091	Standard
	Kr	83	5.0	20.0	ug/L	6	Standard
	Br	81	393.3	19.3	ug/L	383	Standard
	P	31	9252.8	1.0	ug/L	8849	Standard
	S	34	880.0	3.7	ug/L	937	Standard
	Sr	88	183.3	3.1	ug/L	188	Standard
	C	12	146.7	31.5	mg/L	167	Standard
	N	14	0.0		mg/L	3	Standard
	Hg	202	3.3	173.2	mg/L	0	Standard
	Dy	164	9.0	5.3	mg/L	12	Standard
	Ho-1	165	25.0	34.6	mg/L	10	Standard
	Er	166	20.0	50.0	mg/L	23	Standard
	I	127	1280.1	5.5	mg/L	1437	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Thursday, August 27, 2015 11:43:12
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	43542.5	3.9				ug/L	44982	Standard
	Be	9	29074.5	1.9	**50.0000**	2.482	5.0	ug/L	8	Standard
	Al	27	3286778.0	2.8	**50.0000**	2.205	4.4	ug/L	318	Standard
	Sc	45	28700.5	2.5				ug/L	28998	Standard
	Ti	47	18628.4	2.0	**100.0000**	1.973	2.0	ug/L	21	Standard
	V	51	192039.6	0.5	**50.0000**	0.184	0.4	ug/L	1052	Standard
	Cr	52	258101.8	1.5	**50.0000**	0.793	1.6	ug/L	6637	Standard
	Cr	53	31729.9	5.1	**50.0000**	2.393	4.8	ug/L	328	Standard
	Mn	55	168718.2	0.9	**50.0000**	0.380	0.8	ug/L	636	Standard
	Co	59	180925.5	0.8	**50.0000**	0.577	1.2	ug/L	199	Standard
	Ni	60	70180.9	2.7	**50.0000**	1.214	2.4	ug/L	185	Standard
	Cu	65	68515.6	2.3	**50.0000**	1.084	2.2	ug/L	133	Standard
	Zn	66	39160.6	1.9	**50.0000**	0.913	1.8	ug/L	187	Standard
>	**Ge**	72	313611.4	0.6				ug/L	311830	Standard
	As	75	39773.6	2.1	**50.0000**	0.852	1.7	ug/L	-58	Standard
	Se	82	3212.8	1.0	**50.0000**	0.243	0.5	ug/L	25	Standard
	Se-1	77	2361.9	3.2	**50.0000**	1.379	2.8	ug/L	90	Standard
>	**Ga**	71	41.7	18.3				mg/L	18	Standard
	Rb	85	606.7	4.8				ug/L	27	Standard
	Y	89	287088.1	1.7				ug/L	295023	Standard
>	**Rh**	103	31.7	48.2				ug/L	7	Standard
	Mo	98	138417.2	1.3	**100.0000**	2.240	2.2	ug/L	10	Standard
	Ag	107	246749.4	0.9	**50.0000**	0.784	1.6	ug/L	58	Standard
	Cd	111	66858.6	0.3	**50.0000**	0.612	1.2	mg/L	4	Standard
	Cd	114	177902.6	3.4	**50.0000**	2.010	4.0	ug/L	-1	Standard
>	**In**	115	427465.9	1.0				ug/L	427691	Standard
	Sn	118	221998.5	6.1	**50.0000**	2.620	5.2	ug/L	273	Standard
	Sb	123	185526.2	0.7	**50.0000**	0.569	1.1	ug/L	55	Standard
	Ba	135	95640.6	0.7	**50.0000**	0.738	1.5	ug/L	39	Standard
	Ce	140	78.3	26.6				ug/L	28	Standard
>	**Tb**	159	892697.6	1.2				ug/L	886833	Standard
	Ho	165	11.7	107.9				ug/L	10	Standard
	Tl	203	330637.3	1.2	**50.0000**	0.161	0.3	ug/L	2	Standard
	Tl	205	232324.3	0.5	**50.0000**	0.232	0.5	ug/L	0	Standard
	Pb	206	209446.5	1.0	**50.0000**	0.040	0.1	ug/L	199	Standard
	Pb	207	189937.9	1.3	**50.0000**	0.224	0.4	ug/L	178	Standard
	Pb	208	685653.4	0.8	**50.0000**	0.196	0.4	ug/L	654	Standard
	U	238	237170.9	1.8	**50.0000**	0.543	1.1	ug/L	1	Standard
>	**Bi**	209	413096.6	0.9				ug/L	418387	Standard

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Na	23	5.0	100.0	**5.0000**	4.919	98.4	mg/L	2	Standard
Mg	24	2256.8	2.3	**5.0000**	0.033	0.7	mg/L	27	Standard
K	39	411.7	9.4	**5.0000**	0.415	8.3	mg/L	20	Standard
Ca	43	71.7	10.7	**5.0000**	0.794	15.9	mg/L	40	Standard
Fe	54	2219.6	4.9	**5.0000**	0.124	2.5	mg/L	74	Standard
Fe	57	1323.4	1.9	**5.0000**	0.469	9.4	mg/L	697	Standard
Sc-1	45	28700.5	2.5				mg/L	28998	Standard
Cl	35	5891.1	2.3				ug/L	6091	Standard
Kr	83	6.3	39.7				ug/L	6	Standard
Br	81	400.0	16.4				ug/L	383	Standard
P	31	9427.9	2.2				ug/L	8849	Standard
S	34	1070.0	7.7				ug/L	937	Standard
Sr	88	200.0	18.0				ug/L	188	Standard
C	12	210.0	19.0				mg/L	167	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	5.5	102.4				mg/L	12	Standard
Ho-1	165	11.7	107.9				mg/L	10	Standard
Er	166	23.3	65.5				mg/L	23	Standard
I	127	951.7	16.0				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Thursday, August 27, 2015 11:46:23
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	43256.7	0.8				ug/L	44982	Standard
	Be	9	57415.3	1.9	**99.6406**	1.827	1.8	ug/L	8	Standard
	Al	27	6449613.5	1.0	**99.3358**	0.461	0.5	ug/L	318	Standard
	Sc	45	28219.6	2.7				ug/L	28998	Standard
	Ti	47	37205.6	0.7	**200.4385**	5.059	2.5	ug/L	21	Standard
	V	51	380427.5	0.8	**99.9111**	2.027	2.0	ug/L	1052	Standard
	Cr	52	506132.2	0.6	**99.9243**	1.715	1.7	ug/L	6637	Standard
	Cr	53	60944.0	1.4	**98.5426**	3.613	3.7	ug/L	328	Standard
	Mn	55	330278.3	0.2	**99.2823**	2.075	2.1	ug/L	636	Standard
	Co	59	355208.3	0.8	**99.3541**	1.490	1.5	ug/L	199	Standard
	Ni	60	138068.6	0.3	**99.5103**	2.552	2.6	ug/L	185	Standard
	Cu	65	135587.3	0.6	**99.7874**	2.136	2.1	ug/L	133	Standard
	Zn	66	76906.0	0.6	**99.7180**	2.362	2.4	ug/L	187	Standard
>	**Ge**	72	312105.8	2.3				ug/L	311830	Standard
	As	75	79121.0	0.9	**99.9858**	3.020	3.0	ug/L	-58	Standard
	Se	82	6363.1	1.1	**99.9755**	1.407	1.4	ug/L	25	Standard
	Se-1	77	4533.0	1.3	**99.1403**	2.669	2.7	ug/L	90	Standard
>	**Ga**	71	63.3	43.5				mg/L	18	Standard
	Rb	85	1113.4	7.5				ug/L	27	Standard
	Y	89	277588.7	4.9				ug/L	295023	Standard
>	**Rh**	103	38.3	58.8				ug/L	7	Standard
	Mo	98	273760.3	0.4	**202.5008**	7.555	3.7	ug/L	10	Standard
	Ag	107	485780.0	1.5	**101.0344**	4.516	4.5	ug/L	58	Standard
	Cd	111	131161.5	0.5	**100.8414**	3.338	3.3	mg/L	4	Standard
	Cd	114	348053.4	0.5	**100.7020**	3.099	3.1	ug/L	-1	Standard
>	**In**	115	412587.5	3.5				ug/L	427691	Standard
	Sn	118	439167.7	1.2	**101.3063**	3.279	3.2	ug/L	273	Standard
	Sb	123	373791.5	1.0	**102.1876**	4.600	4.5	ug/L	55	Standard
	Ba	135	187244.0	1.0	**100.7538**	3.859	3.8	ug/L	39	Standard
	Ce	140	136.7	11.2				ug/L	28	Standard
>	**Tb**	159	862851.4	3.1				ug/L	886833	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	649215.4	0.6	**99.9640**	3.010	3.0	ug/L	2	Standard
	Tl	205	453007.7	2.1	**99.5922**	1.363	1.4	ug/L	0	Standard
	Pb	206	418198.5	1.0	**100.8405**	4.045	4.0	ug/L	199	Standard
	Pb	207	375619.4	1.9	**100.3645**	4.770	4.8	ug/L	178	Standard
	Pb	208	1352512.2	0.2	**100.2229**	3.405	3.4	ug/L	654	Standard
	U	238	473798.8	0.6	**100.8284**	3.136	3.1	ug/L	1	Standard
>	**Bi**	209	406144.3	3.3				ug/L	418387	Standard

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Na	23	1.7	173.2	**2.9430**	5.089	172.9	mg/L	2	Standard
Mg	24	4278.9	5.0	**9.8406**	0.392	4.0	mg/L	27	Standard
K	39	740.0	7.2	**9.6072**	0.576	6.0	mg/L	20	Standard
Ca	43	100.0	39.1	**9.3714**	5.261	56.1	mg/L	40	Standard
Fe	54	4494.3	2.8	**10.2362**	0.267	2.6	mg/L	74	Standard
Fe	57	1886.8	6.0	**10.1045**	1.095	10.8	mg/L	697	Standard
> **Sc-1**	45	28219.6	2.7				mg/L	28998	Standard
Cl	35	5715.1	2.4				ug/L	6091	Standard
Kr	83	6.7	56.8				ug/L	6	Standard
Br	81	486.7	18.4				ug/L	383	Standard
P	31	10300.2	4.4				ug/L	8849	Standard
S	34	1158.4	8.0				ug/L	937	Standard
Sr	88	195.0	14.3				ug/L	188	Standard
C	12	173.3	23.3				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	9.4	104.3				mg/L	12	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	521.7	6.5				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Thursday, August 27, 2015 11:49:37
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	43347.0	4.1				ug/L	44982	Standard
	Be	9	30039.8	2.9	**52.0339**	0.595	1.1	ug/L	8	Standard
	Al	27	3395362.9	2.8	**52.2063**	1.085	2.1	ug/L	318	Standard
	Sc	45	29497.0	2.0				ug/L	28998	Standard
	Ti	47	19704.1	2.0	**106.2265**	1.423	1.3	ug/L	21	Standard
	V	51	193238.2	1.0	**50.6869**	0.467	0.9	ug/L	1052	Standard
	Cr	52	258384.4	1.0	**50.4270**	0.438	0.9	ug/L	6637	Standard
	Cr	53	31227.2	1.4	**50.2523**	0.988	2.0	ug/L	328	Standard
	Mn	55	171244.2	1.9	**51.4459**	0.607	1.2	ug/L	636	Standard
	Co	59	183867.9	0.3	**51.4744**	0.417	0.8	ug/L	199	Standard
	Ni	60	70171.2	1.8	**50.5641**	0.612	1.2	ug/L	185	Standard
	Cu	65	70223.4	0.4	**51.6955**	0.599	1.2	ug/L	133	Standard
	Zn	66	40116.7	0.7	**51.7222**	0.126	0.2	ug/L	187	Standard
>	Ge	72	311594.2	0.9				ug/L	311830	Standard
	As	75	40191.5	0.4	**50.8626**	0.238	0.5	ug/L	-58	Standard
	Se	82	3280.8	0.6	**51.4161**	0.532	1.0	ug/L	25	Standard
	Se-1	77	2439.9	0.7	**52.5198**	0.625	1.2	ug/L	90	Standard
>	Ga	71	46.7	22.3				mg/L	18	Standard
	Rb	85	531.7	3.0				ug/L	27	Standard
	Y	89	284981.8	0.6				ug/L	295023	Standard
>	Rh	103	35.0	51.5				ug/L	7	Standard
	Mo	98	143686.7	0.7	**103.9298**	0.775	0.7	ug/L	10	Standard
	Ag	107	245815.5	1.3	**49.9791**	0.337	0.7	ug/L	58	Standard
	Cd	111	68079.2	0.7	**51.1864**	0.151	0.3	mg/L	4	Standard
	Cd	114	178628.4	2.0	**50.5459**	1.374	2.7	ug/L	-1	Standard
>	In	115	421568.8	0.7				ug/L	427691	Standard
	Sn	118	215612.4	2.7	**48.6139**	1.472	3.0	ug/L	273	Standard
	Sb	123	191005.5	1.3	**51.0512**	0.557	1.1	ug/L	55	Standard
	Ba	135	96159.9	1.3	**50.5847**	0.338	0.7	ug/L	39	Standard
	Ce	140	206.7	10.1				ug/L	28	Standard
>	Tb	159	880284.1	1.6				ug/L	886833	Standard
	Ho	165	5.0	100.0				ug/L	10	Standard
	Tl	203	333862.9	0.2	**51.2959**	0.840	1.6	ug/L	2	Standard
	Tl	205	233737.5	0.5	**51.2983**	0.986	1.9	ug/L	0	Standard
	Pb	206	215223.6	1.1	**51.7395**	0.239	0.5	ug/L	199	Standard
	Pb	207	192845.5	0.4	**51.3706**	0.549	1.1	ug/L	178	Standard
	Pb	208	696213.9	0.5	**51.4461**	0.511	1.0	ug/L	654	Standard
	U	238	239948.6	1.3	**50.9572**	1.374	2.7	ug/L	1	Standard
>	Bi	209	406805.5	1.4				ug/L	418387	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	2310.2	2.7	**5.0597**	0.139	2.7	mg/L	27	Standard
K	39	421.7	9.5	**5.1805**	0.471	9.1	mg/L	20	Standard
Ca	43	71.7	22.4	**5.0575**	2.099	41.5	mg/L	40	Standard
Fe	54	2330.4	10.3	**4.9924**	0.516	10.3	mg/L	74	Standard
Fe	57	1250.1	5.1	**4.0188**	0.656	16.3	mg/L	697	Standard
> **Sc-1**	45	29497.0	2.0				mg/L	28998	Standard
Cl	35	5654.4	0.2				ug/L	6091	Standard
Kr	83	6.0	16.7				ug/L	6	Standard
Br	81	420.0	21.2				ug/L	383	Standard
P	31	10355.2	4.0				ug/L	8849	Standard
S	34	1178.4	3.1				ug/L	937	Standard
Sr	88	146.7	19.7				ug/L	188	Standard
C	12	176.7	42.5				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	8.6	111.2				mg/L	12	Standard
Ho-1	165	5.0	100.0				mg/L	10	Standard
Er	166	30.0	33.3				mg/L	23	Standard
I	127	593.3	3.4				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	104.068		
Al	27	104.413		
Sc	45			
Ti	47	106.227		
V	51	101.374		
Cr	52	100.854		
Cr	53			
Mn	55	102.892		
Co	59	102.949		
Ni	60	101.128		
Cu	65	103.391		
Zn	66	103.444		
> Ge	72		99.924	
As	75	101.725		
Se	82	102.832		
Se-1	77			
> Ga	71			

Sample ID: QC Std 1
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Rb	85			
Y	89			
Rh	103			
Mo	98	103.930		
Ag	107	99.958		
Cd	111	102.373		
Cd	114			
In	115		98.568	
Sn	118	97.228		
Sb	123	102.102		
Ba	135	101.169		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.592		
Tl	205			
Pb	206	103.479		
Pb	207	102.741		
Pb	208	102.892		
U	238	101.914		
Bi	209		97.232	
Na	23	0.100		
Mg	24	101.194		
K	39	103.609		
Ca	43	101.150		
Fe	54	99.849		
Fe	57	80.376		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	
QC Std 1	Fe	57	

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Thursday, August 27, 2015 11:52:50
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	44097.4	2.7				ug/L	44982	Standard
	Be	9	21.7	81.0	**0.0263**	0.029	109.2	ug/L	8	Standard
	Al	27	1055.0	47.2	**0.0116**	0.007	60.4	ug/L	318	Standard
	Sc	45	30074.8	2.9				ug/L	28998	Standard
	Ti	47	25.3	13.9	**0.0173**	0.020	113.4	ug/L	21	Standard
	V	51	857.6	5.1	**-0.0460**	0.011	23.2	ug/L	1052	Standard
	Cr	52	5368.0	2.5	**-0.2787**	0.027	9.8	ug/L	6637	Standard
	Cr	53	400.0	12.1	**0.0297**	0.075	251.9	ug/L	328	Standard
	Mn	55	625.7	7.6	**-0.0138**	0.013	97.5	ug/L	636	Standard
	Co	59	233.3	8.4	**0.0031**	0.005	171.8	ug/L	199	Standard
	Ni	60	196.0	11.4	**-0.0060**	0.016	273.1	ug/L	185	Standard
	Cu	65	155.3	11.5	**-0.0075**	0.014	183.7	ug/L	133	Standard
	Zn	66	210.3	10.1	**-0.4858**	0.029	6.0	ug/L	187	Standard
>	**Ge**	72	314934.8	0.6				ug/L	311830	Standard
	As	75	-18.2	189.8	**-0.0017**	0.043	2548.5	ug/L	-58	Standard
	Se	82	24.1	23.1	**-0.0522**	0.088	169.2	ug/L	25	Standard
	Se-1	77	92.7	17.4	**0.0671**	0.366	545.7	ug/L	90	Standard
>	**Ga**	71	20.0	43.3				mg/L	18	Standard
	Rb	85	16.7	62.4				ug/L	27	Standard
	Y	89	288946.2	1.5				ug/L	295023	Standard
>	**Rh**	103	13.3	86.6				ug/L	7	Standard
	Mo	98	96.5	18.0	**0.0626**	0.013	20.1	ug/L	10	Standard
	Ag	107	108.7	36.2	**0.0091**	0.008	86.7	ug/L	58	Standard
	Cd	111	21.5	110.0	**0.0135**	0.018	129.8	mg/L	4	Standard
	Cd	114	52.9	89.8	**0.0026**	0.013	506.1	ug/L	-1	Standard
>	**In**	115	426895.6	0.4				ug/L	427691	Standard
	Sn	118	575.0	16.8	**0.0653**	0.021	32.8	ug/L	273	Standard
	Sb	123	912.4	7.9	**0.2402**	0.018	7.6	ug/L	55	Standard
	Ba	135	49.0	23.5	**0.0044**	0.006	136.3	ug/L	39	Standard
	Ce	140	28.3	40.8				ug/L	28	Standard
>	**Tb**	159	887705.4	1.6				ug/L	886833	Standard
	Ho	165	13.3	21.7				ug/L	10	Standard
	Tl	203	76.7	72.0	**0.0085**	0.008	98.1	ug/L	2	Standard
	Tl	205	56.7	28.4	**0.0140**	0.003	24.9	ug/L	0	Standard
	Pb	206	240.0	9.8	**-0.0050**	0.006	116.2	ug/L	199	Standard
	Pb	207	193.0	13.5	**-0.0062**	0.007	113.6	ug/L	178	Standard
	Pb	208	783.0	6.0	**0.0022**	0.004	166.4	ug/L	654	Standard
	U	238	50.7	38.6	**0.0087**	0.004	47.1	ug/L	1	Standard
>	**Bi**	209	418823.9	0.7				ug/L	418387	Standard

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Na	23	1.7	173.2	**2.6997**	4.667	172.9	mg/L	2	Standard
Mg	24	48.3	15.8	**0.0544**	0.014	26.4	mg/L	27	Standard
K	39	16.7	45.8	**0.0817**	0.101	124.1	mg/L	20	Standard
Ca	43	41.7	13.9	**0.9697**	0.612	63.1	mg/L	40	Standard
Fe	54	64.2	23.2	**-0.0269**	0.036	133.3	mg/L	74	Standard
Fe	57	750.0	2.9	**-0.3196**	0.154	48.1	mg/L	697	Standard
> **Sc-1**	45	30074.8	2.9				mg/L	28998	Standard
Cl	35	5827.1	2.1				ug/L	6091	Standard
Kr	83	5.0	34.6				ug/L	6	Standard
Br	81	396.7	11.9				ug/L	383	Standard
P	31	9327.9	3.3				ug/L	8849	Standard
S	34	1075.0	9.3				ug/L	937	Standard
Sr	88	205.0	19.4				ug/L	188	Standard
C	12	86.7	33.3				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	-1.0	86.6				mg/L	12	Standard
Ho-1	165	13.3	21.7				mg/L	10	Standard
Er	166	20.0	86.6				mg/L	23	Standard
I	127	1185.0	5.8				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.996	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.814
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.104
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Na	23	
QC Std 2	Ca	43	

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QC Std 2	Fe	57

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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Thursday, August 27, 2015 11:56:03
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	43178.1	1.1				ug/L	44982	Standard
	Be	9	138.3	30.1	**0.2303**	0.071	30.9	ug/L	8	Standard
	Al	27	625.0	36.2	**0.0054**	0.003	63.6	ug/L	318	Standard
	Sc	45	28448.4	2.0				ug/L	28998	Standard
	Ti	47	16.0	16.5	**-0.0309**	0.015	47.4	ug/L	21	Standard
	V	51	2294.7	2.3	**0.3404**	0.011	3.3	ug/L	1052	Standard
	Cr	52	9633.1	2.8	**0.6036**	0.063	10.5	ug/L	6637	Standard
	Cr	53	833.4	6.4	**0.7538**	0.080	10.6	ug/L	328	Standard
	Mn	55	2242.5	3.0	**0.4815**	0.017	3.5	ug/L	636	Standard
	Co	59	1603.1	0.7	**0.3915**	0.003	0.7	ug/L	199	Standard
	Ni	60	2256.5	1.2	**1.4983**	0.028	1.9	ug/L	185	Standard
	Cu	65	1178.4	3.4	**0.7557**	0.025	3.3	ug/L	133	Standard
	Zn	66	5300.3	0.5	**6.2338**	0.037	0.6	ug/L	187	Standard
>	**Ge**	72	309001.8	0.6				ug/L	311830	Standard
	As	75	287.0	4.6	**0.3871**	0.017	4.5	ug/L	-58	Standard
	Se	82	51.5	25.7	**0.3909**	0.214	54.9	ug/L	25	Standard
	Se-1	77	104.3	14.0	**0.3672**	0.318	86.6	ug/L	90	Standard
>	**Ga**	71	28.3	44.4				mg/L	18	Standard
	Rb	85	26.7	43.3				ug/L	27	Standard
	Y	89	287596.1	1.9				ug/L	295023	Standard
>	**Rh**	103	16.7	45.8				ug/L	7	Standard
	Mo	98	46.0	50.6	**0.0269**	0.017	63.9	ug/L	10	Standard
	Ag	107	1900.5	1.7	**0.3720**	0.011	2.9	ug/L	58	Standard
	Cd	111	317.6	5.7	**0.2354**	0.016	7.0	mg/L	4	Standard
	Cd	114	832.1	4.9	**0.2222**	0.009	4.0	ug/L	-1	Standard
>	**In**	115	423571.8	1.3				ug/L	427691	Standard
	Sn	118	356.7	6.6	**0.0172**	0.004	25.6	ug/L	273	Standard
	Sb	123	1782.1	2.1	**0.4736**	0.013	2.8	ug/L	55	Standard
	Ba	135	1350.4	1.3	**0.6862**	0.003	0.4	ug/L	39	Standard
	Ce	140	21.7	26.6				ug/L	28	Standard
>	**Tb**	159	880360.9	2.3				ug/L	886833	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	506.7	2.3	**0.0738**	0.002	2.5	ug/L	2	Standard
	Tl	205	403.3	8.7	**0.0892**	0.007	7.7	ug/L	0	Standard
	Pb	206	1120.4	3.9	**0.2048**	0.009	4.2	ug/L	199	Standard
	Pb	207	891.0	6.9	**0.1780**	0.014	8.1	ug/L	178	Standard
	Pb	208	3322.5	3.8	**0.1883**	0.008	4.2	ug/L	654	Standard
	U	238	1858.1	5.2	**0.3873**	0.018	4.7	ug/L	1	Standard
>	**Bi**	209	412440.1	0.9				ug/L	418387	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	40.0	45.1	**0.0411**	0.040	97.3	mg/L	27	Standard
K	39	13.3	114.6	**0.0487**	0.202	416.0	mg/L	20	Standard
Ca	43	45.0	55.6	**1.7099**	3.311	193.7	mg/L	40	Standard
Fe	54	75.7	8.0	**0.0071**	0.017	240.9	mg/L	74	Standard
Fe	57	723.4	2.6	**-0.1969**	0.246	125.1	mg/L	697	Standard
> **Sc-1**	45	28448.4	2.0				mg/L	28998	Standard
Cl	35	5745.1	1.6				ug/L	6091	Standard
Kr	83	6.3	39.7				ug/L	6	Standard
Br	81	380.0	9.1				ug/L	383	Standard
P	31	9551.3	4.1				ug/L	8849	Standard
S	34	1073.4	2.8				ug/L	937	Standard
Sr	88	176.7	12.8				ug/L	188	Standard
C	12	206.7	35.0				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	3.0	200.7				mg/L	12	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	23	Standard
I	127	1133.4	12.2				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	115.144		
Al	27	0.541		
Sc	45			
Ti	47			
V	51	85.102		
Cr	52	75.450		
Cr	53			
Mn	55	96.299		
Co	59	97.868		
Ni	60	93.646		
Cu	65	94.459		
Zn	66	99.740		
> Ge	72		99.093	
As	75	96.782		
Se	82	97.720		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	93.012		
Cd	111	98.076		
Cd	114			
> In	115			99.037
Sn	118			
Sb	123	118.390		
Ba	135	91.499		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	92.238		
Tl	205			
Pb	206			
Pb	207			
Pb	208	94.165		
U	238	96.818		
> Bi	209			98.579
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Thursday, August 27, 2015 11:59:15
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	42593.1	1.3				ug/L	44982	Standard
	Be	9	20.0	25.0	**0.0251**	0.008	33.8	ug/L	8	Standard
	Al	27	3327564.9	1.1	**52.0578**	1.245	2.4	ug/L	318	Standard
	Sc	45	28077.7	2.2				ug/L	28998	Standard
	Ti	47	20407.7	0.9	**111.7059**	0.231	0.2	ug/L	21	Standard
	V	51	786.0	22.1	**-0.0592**	0.047	79.9	ug/L	1052	Standard
	Cr	52	6131.9	1.0	**-0.0956**	0.004	4.1	ug/L	6637	Standard
	Cr	53	2803.6	9.2	**4.0198**	0.399	9.9	ug/L	328	Standard
	Mn	55	885.0	4.1	**0.0705**	0.010	13.7	ug/L	636	Standard
	Co	59	333.0	4.7	**0.0331**	0.004	11.9	ug/L	199	Standard
	Ni	60	586.3	3.5	**0.2840**	0.017	5.9	ug/L	185	Standard
	Cu	65	437.7	6.5	**0.2068**	0.019	9.2	ug/L	133	Standard
	Zn	66	904.4	2.5	**0.4428**	0.022	4.9	ug/L	187	Standard
>	Ge	72	306921.2	0.7				ug/L	311830	Standard
	As	75	-24.6	234.3	**-0.0109**	0.074	677.9	ug/L	-58	Standard
	Se	82	20.9	25.4	**-0.0954**	0.082	86.4	ug/L	25	Standard
	Se-1	77	253.3	3.4	**3.7638**	0.232	6.2	ug/L	90	Standard
>	Ga	71	91.7	15.7				mg/L	18	Standard
	Rb	85	585.0	1.5				ug/L	27	Standard
	Y	89	283163.5	1.5				ug/L	295023	Standard
>	Rh	103	13.3	57.3				ug/L	7	Standard
	Mo	98	140276.3	0.8	**102.4409**	1.868	1.8	ug/L	10	Standard
	Ag	107	109.0	33.5	**0.0096**	0.007	72.2	ug/L	58	Standard
	Cd	111	-59.3	47.5	**-0.0477**	0.022	46.5	mg/L	4	Standard
	Cd	114	491.2	14.3	**0.1279**	0.017	13.1	ug/L	-1	Standard
>	In	115	417645.1	2.3				ug/L	427691	Standard
	Sn	118	1196.7	7.1	**0.2102**	0.025	12.0	ug/L	273	Standard
	Sb	123	227.5	20.8	**0.0607**	0.012	19.1	ug/L	55	Standard
	Ba	135	229.0	12.1	**0.1004**	0.012	11.8	ug/L	39	Standard
	Ce	140	153.3	14.7				ug/L	28	Standard
>	Tb	159	872173.1	0.8				ug/L	886833	Standard
	Ho	165	16.7	34.6				ug/L	10	Standard
	Tl	203	66.7	82.9	**0.0073**	0.009	117.7	ug/L	2	Standard
	Tl	205	33.3	8.7	**0.0093**	0.001	7.0	ug/L	0	Standard
	Pb	206	447.7	3.7	**0.0468**	0.005	9.7	ug/L	199	Standard
	Pb	207	378.7	3.2	**0.0449**	0.003	6.3	ug/L	178	Standard
	Pb	208	1392.7	3.8	**0.0492**	0.004	8.5	ug/L	654	Standard
	U	238	17.0	92.4	**0.0018**	0.003	184.7	ug/L	1	Standard
>	Bi	209	406122.7	0.6				ug/L	418387	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	5219.2	2.0	**12.0836**	0.506	4.2	mg/L	27	Standard
K	39	350.0	11.7	**4.5003**	0.509	11.3	mg/L	20	Standard
Ca	43	173.3	16.9	**19.6492**	3.695	18.8	mg/L	40	Standard
Fe	54	5658.8	1.6	**12.9975**	0.231	1.8	mg/L	74	Standard
Fe	57	2025.1	1.1	**11.4084**	0.217	1.9	mg/L	697	Standard
Sc-1	45	28077.7	2.2				mg/L	28998	Standard
Cl	35	5393.0	0.6				ug/L	6091	Standard
Kr	83	5.3	28.6				ug/L	6	Standard
Br	81	430.0	10.1				ug/L	383	Standard
P	31	8454.0	5.1				ug/L	8849	Standard
S	34	926.7	8.3				ug/L	937	Standard
Sr	88	175.0	10.3				ug/L	188	Standard
C	12	316.7	10.2				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	1.9	305.5				mg/L	12	Standard
Ho-1	165	16.7	34.6				mg/L	10	Standard
Er	166	30.0	33.3				mg/L	23	Standard
I	127	421.7	6.5				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27	1.041		
Sc	45			
Ti	47	111.706		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.426	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	102.441		
Ag	107			
Cd	111			
Cd	114			
> In	115			97.651
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209			97.069
Na	23	0.040		
Mg	24	241.671		
K	39	90.006		
Ca	43	130.995		
Fe	54	103.980		
Fe	57	91.267		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	

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QC Std 4	Ca	43

Sample ID: QC Std 4
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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Thursday, August 27, 2015 12:02:26
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	44261.3	3.6				ug/L	44982	Standard
	Be	9	57942.2	0.5	**98.3681**	4.007	4.1	ug/L	8	Standard
	Al	27	3385513.0	2.8	**51.0102**	2.551	5.0	ug/L	318	Standard
	Sc	45	28304.7	0.7				ug/L	28998	Standard
	Ti	47	20005.2	1.3	**109.2997**	0.970	0.9	ug/L	21	Standard
	V	51	374209.5	0.3	**99.7303**	0.851	0.9	ug/L	1052	Standard
	Cr	52	490416.2	1.0	**98.2320**	1.102	1.1	ug/L	6637	Standard
	Cr	53	62118.8	1.8	**101.9254**	2.290	2.2	ug/L	328	Standard
	Mn	55	332398.0	0.8	**101.3950**	0.666	0.7	ug/L	636	Standard
	Co	59	352027.2	0.3	**99.9247**	0.455	0.5	ug/L	199	Standard
	Ni	60	134448.3	1.2	**98.3254**	1.767	1.8	ug/L	185	Standard
	Cu	65	131376.1	0.3	**98.1111**	0.458	0.5	ug/L	133	Standard
	Zn	66	76574.3	0.2	**100.7563**	0.390	0.4	ug/L	187	Standard
>	Ge	72	307480.3	0.6				ug/L	311830	Standard
	As	75	77972.9	0.7	**99.9746**	0.901	0.9	ug/L	-58	Standard
	Se	82	6325.5	2.1	**100.8679**	2.445	2.4	ug/L	25	Standard
	Se-1	77	4585.7	2.1	**101.8189**	2.116	2.1	ug/L	90	Standard
>	Ga	71	123.3	12.4				mg/L	18	Standard
	Rb	85	648.3	4.2				ug/L	27	Standard
	Y	89	288107.0	1.3				ug/L	295023	Standard
>	Rh	103	46.7	24.7				ug/L	7	Standard
	Mo	98	140983.3	0.3	**101.4468**	1.113	1.1	ug/L	10	Standard
	Ag	107	447590.1	0.6	**90.5513**	1.513	1.7	ug/L	58	Standard
	Cd	111	131665.0	1.0	**98.4821**	0.896	0.9	mg/L	4	Standard
	Cd	114	343005.5	1.4	**96.5549**	1.497	1.6	ug/L	-1	Standard
>	In	115	423793.5	1.3				ug/L	427691	Standard
	Sn	118	726.7	63.0	**0.1011**	0.106	104.4	ug/L	273	Standard
	Sb	123	377510.6	1.8	**100.3683**	0.850	0.8	ug/L	55	Standard
	Ba	135	186726.0	0.9	**97.7367**	0.443	0.5	ug/L	39	Standard
	Ce	140	56.7	53.9				ug/L	28	Standard
>	Tb	159	872738.6	0.5				ug/L	886833	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	645569.0	0.4	**98.6687**	0.772	0.8	ug/L	2	Standard
	Tl	205	452202.9	1.3	**98.7132**	0.705	0.7	ug/L	0	Standard
	Pb	206	416520.8	0.9	**99.6748**	1.329	1.3	ug/L	199	Standard
	Pb	207	373860.3	0.5	**99.1291**	1.523	1.5	ug/L	178	Standard
	Pb	208	1349957.0	1.0	**99.2819**	0.629	0.6	ug/L	654	Standard
	U	238	470077.0	1.1	**99.2902**	0.017	0.0	ug/L	1	Standard
>	Bi	209	408917.7	1.1				ug/L	418387	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	5347.6	2.6	**12.2767**	0.407	3.3	mg/L	27	Standard
K	39	345.0	10.5	**4.4003**	0.482	11.0	mg/L	20	Standard
Ca	43	175.0	4.9	**19.7234**	1.020	5.2	mg/L	40	Standard
Fe	54	5421.2	3.7	**12.3398**	0.381	3.1	mg/L	74	Standard
Fe	57	2041.8	2.4	**11.4101**	0.531	4.7	mg/L	697	Standard
Sc-1	45	28304.7	0.7				mg/L	28998	Standard
Cl	35	5425.6	1.9				ug/L	6091	Standard
Kr	83	3.7	56.8				ug/L	6	Standard
Br	81	400.0	39.3				ug/L	383	Standard
P	31	8579.1	1.3				ug/L	8849	Standard
S	34	1006.7	4.5				ug/L	937	Standard
Sr	88	181.7	19.9				ug/L	188	Standard
C	12	356.7	4.3				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	-1.1	24.7				mg/L	12	Standard
Ho-1	165	8.3	34.6				mg/L	10	Standard
Er	166	23.3	24.7				mg/L	23	Standard
I	127	1278.4	3.3				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	98.368		
Al	27	1.020		
Sc	45			
Ti	47	109.300		
V	51	99.730		
Cr	52	98.232		
Cr	53			
Mn	55	101.395		
Co	59	99.925		
Ni	60	98.325		
Cu	65	98.111		
Zn	66	100.756		
> Ge	72		98.605	
As	75	99.975		
Se	82	100.868		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	101.447		
Ag	107	90.551		
Cd	111	98.482		
Cd	114			
> In	115			99.089
Sn	118			
Sb	123	100.368		
Ba	135	97.737		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.669		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.282		
U	238	99.290		
> Bi	209			97.737
Na	23	0.040		
Mg	24	245.533		
K	39	88.006		
Ca	43	131.489		
Fe	54	98.719		
Fe	57	91.281		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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QC Std 5	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, August 27, 2015 12:05:39
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	46188.8	5.3				ug/L	44982	Standard
	Be	9	29821.0	3.5	**48.4978**	1.294	2.7	ug/L	8	Standard
	Al	27	3334335.0	1.8	**48.1507**	1.644	3.4	ug/L	318	Standard
	Sc	45	30101.5	0.5				ug/L	28998	Standard
	Ti	47	19403.8	1.7	**103.1483**	1.044	1.0	ug/L	21	Standard
	V	51	191006.1	0.4	**49.3970**	0.280	0.6	ug/L	1052	Standard
	Cr	52	258066.5	1.5	**49.6407**	0.408	0.8	ug/L	6637	Standard
	Cr	53	31471.0	2.4	**49.9274**	0.863	1.7	ug/L	328	Standard
	Mn	55	169991.7	0.8	**50.3579**	0.510	1.0	ug/L	636	Standard
	Co	59	179211.3	0.9	**49.4693**	0.585	1.2	ug/L	199	Standard
	Ni	60	69087.5	0.5	**49.0883**	0.153	0.3	ug/L	185	Standard
	Cu	65	68187.1	0.7	**49.4894**	0.136	0.3	ug/L	133	Standard
	Zn	66	38549.3	0.8	**48.9689**	0.199	0.4	ug/L	187	Standard
>	Ge	72	315995.6	0.8				ug/L	311830	Standard
	As	75	39169.6	0.4	**48.8795**	0.196	0.4	ug/L	-58	Standard
	Se	82	3266.0	0.3	**50.4630**	0.547	1.1	ug/L	25	Standard
	Se-1	77	2354.8	1.9	**49.8826**	0.585	1.2	ug/L	90	Standard
>	Ga	71	38.3	37.7				mg/L	18	Standard
	Rb	85	533.3	6.9				ug/L	27	Standard
	Y	89	296789.3	2.0				ug/L	295023	Standard
>	Rh	103	31.7	77.9				ug/L	7	Standard
	Mo	98	141536.4	1.5	**97.6155**	2.044	2.1	ug/L	10	Standard
	Ag	107	247326.6	1.6	**47.9523**	1.166	2.4	ug/L	58	Standard
	Cd	111	68963.9	0.1	**49.4398**	0.466	0.9	mg/L	4	Standard
	Cd	114	182321.1	0.3	**49.1854**	0.599	1.2	ug/L	-1	Standard
>	In	115	442158.1	1.0				ug/L	427691	Standard
	Sn	118	208770.4	1.7	**44.8706**	0.539	1.2	ug/L	273	Standard
	Sb	123	190492.1	0.9	**48.5481**	0.832	1.7	ug/L	55	Standard
	Ba	135	95562.5	2.2	**47.9332**	1.165	2.4	ug/L	39	Standard
	Ce	140	91.7	8.3				ug/L	28	Standard
>	Tb	159	899555.6	0.3				ug/L	886833	Standard
	Ho	165	11.7	49.5				ug/L	10	Standard
	Tl	203	330208.1	1.1	**48.5605**	0.251	0.5	ug/L	2	Standard
	Tl	205	233096.4	1.8	**48.9635**	0.579	1.2	ug/L	0	Standard
	Pb	206	213098.8	0.7	**49.0390**	0.485	1.0	ug/L	199	Standard
	Pb	207	190818.1	0.2	**48.6545**	0.261	0.5	ug/L	178	Standard
	Pb	208	687646.6	0.9	**48.6375**	0.409	0.8	ug/L	654	Standard
	U	238	240650.4	0.3	**48.9135**	0.174	0.4	ug/L	1	Standard
>	Bi	209	424941.0	0.6				ug/L	418387	Standard

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Na	23	3.3	173.2	**5.4339**	9.403	173.0	mg/L	2	Standard
Mg	24	2106.8	5.4	**4.5165**	0.267	5.9	mg/L	27	Standard
K	39	366.7	12.4	**4.3960**	0.553	12.6	mg/L	20	Standard
Ca	43	63.3	12.1	**3.7869**	0.968	25.6	mg/L	40	Standard
Fe	54	2251.3	3.3	**4.7176**	0.165	3.5	mg/L	74	Standard
Fe	57	1400.1	10.5	**5.0398**	1.214	24.1	mg/L	697	Standard
Sc-1	45	30101.5	0.5				mg/L	28998	Standard
Cl	35	5847.8	0.5				ug/L	6091	Standard
Kr	83	4.7	53.9				ug/L	6	Standard
Br	81	326.7	13.8				ug/L	383	Standard
P	31	9354.6	0.9				ug/L	8849	Standard
S	34	1046.7	3.5				ug/L	937	Standard
Sr	88	208.3	9.7				ug/L	188	Standard
C	12	223.3	11.3				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	0.0					mg/L	12	Standard
Ho-1	165	11.7	49.5				mg/L	10	Standard
Er	166	0.0					mg/L	23	Standard
I	127	431.7	11.9				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	96.996		
Al	27	96.301		
Sc	45			
Ti	47	103.148		
V	51	98.794		
Cr	52	99.281		
Cr	53			
Mn	55	100.716		
Co	59	98.939		
Ni	60	98.177		
Cu	65	98.979		
Zn	66	97.938		
Ge	72		101.336	
As	75	97.759		
Se	82	100.926		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	97.615		
Ag	107	95.905		
Cd	111	98.880		
Cd	114			
> In	115			103.383
Sn	118	89.741		
Sb	123	97.096		
Ba	135	95.866		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	97.121		
Tl	205			
Pb	206			
Pb	207			
Pb	208	97.275		
U	238	97.827		
> Bi	209			101.566
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, August 27, 2015 12:08:51
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	45331.0	0.8				ug/L	44982	Standard
	Be	9	25.0	52.9	**0.0314**	0.022	70.4	ug/L	8	Standard
	Al	27	720.0	47.0	**0.0064**	0.005	78.6	ug/L	318	Standard
	Sc	45	29882.8	0.7				ug/L	28998	Standard
	Ti	47	18.7	11.2	**-0.0191**	0.012	63.5	ug/L	21	Standard
	V	51	841.4	6.4	**-0.0518**	0.016	31.7	ug/L	1052	Standard
	Cr	52	5628.7	2.5	**-0.2359**	0.029	12.1	ug/L	6637	Standard
	Cr	53	406.7	10.5	**0.0360**	0.075	209.4	ug/L	328	Standard
	Mn	55	640.0	5.7	**-0.0111**	0.010	86.9	ug/L	636	Standard
	Co	59	227.7	2.2	**0.0010**	0.002	188.4	ug/L	199	Standard
	Ni	60	175.7	9.8	**-0.0215**	0.013	60.8	ug/L	185	Standard
	Cu	65	131.0	3.8	**-0.0261**	0.004	17.1	ug/L	133	Standard
	Zn	66	188.0	8.0	**-0.5169**	0.017	3.2	ug/L	187	Standard
>	**Ge**	72	317456.5	1.2				ug/L	311830	Standard
	As	75	5.6	923.1	**0.0284**	0.064	226.9	ug/L	-58	Standard
	Se	82	30.6	21.2	**0.0458**	0.106	230.7	ug/L	25	Standard
	Se-1	77	83.7	5.4	**-0.1477**	0.094	63.9	ug/L	90	Standard
>	**Ga**	71	25.0	40.0				mg/L	18	Standard
	Rb	85	23.3	99.0				ug/L	27	Standard
	Y	89	298510.6	1.4				ug/L	295023	Standard
>	**Rh**	103	21.7	35.3				ug/L	7	Standard
	Mo	98	76.5	12.2	**0.0464**	0.006	12.2	ug/L	10	Standard
	Ag	107	114.0	12.4	**0.0094**	0.002	24.8	ug/L	58	Standard
	Cd	111	9.5	68.4	**0.0044**	0.005	106.7	mg/L	4	Standard
	Cd	114	37.2	12.5	**-0.0021**	0.001	50.3	ug/L	-1	Standard
>	**In**	115	441433.0	1.9				ug/L	427691	Standard
	Sn	118	415.0	12.0	**0.0265**	0.010	36.9	ug/L	273	Standard
	Sb	123	1019.0	8.1	**0.2594**	0.018	7.1	ug/L	55	Standard
	Ba	135	46.3	36.7	**0.0021**	0.008	391.4	ug/L	39	Standard
	Ce	140	20.0	0.0				ug/L	28	Standard
>	**Tb**	159	913403.1	1.4				ug/L	886833	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	54.7	67.0	**0.0050**	0.005	106.4	ug/L	2	Standard
	Tl	205	40.0	12.5	**0.0103**	0.001	11.3	ug/L	0	Standard
	Pb	206	235.0	6.8	**-0.0071**	0.003	43.3	ug/L	199	Standard
	Pb	207	199.0	4.8	**-0.0056**	0.002	36.1	ug/L	178	Standard
	Pb	208	754.0	2.9	**-0.0008**	0.002	307.4	ug/L	654	Standard
	U	238	43.7	12.6	**0.0071**	0.001	17.8	ug/L	1	Standard
>	**Bi**	209	426039.6	1.5				ug/L	418387	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	60.0	25.0	**0.0806**	0.032	39.5	mg/L	27	Standard
K	39	28.3	36.7	**0.2260**	0.129	57.0	mg/L	20	Standard
Ca	43	63.3	18.2	**3.8422**	1.458	37.9	mg/L	40	Standard
Fe	54	61.0	38.9	**-0.0336**	0.052	154.0	mg/L	74	Standard
Fe	57	786.7	12.1	**0.0249**	0.799	3212.8	mg/L	697	Standard
Sc-1	45	29882.8	0.7				mg/L	28998	Standard
Cl	35	5828.5	2.9				ug/L	6091	Standard
Kr	83	3.3	45.8				ug/L	6	Standard
Br	81	430.0	4.7				ug/L	383	Standard
P	31	9214.5	3.0				ug/L	8849	Standard
S	34	1068.4	0.7				ug/L	937	Standard
Sr	88	176.7	9.9				ug/L	188	Standard
C	12	146.7	10.4				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	2.2	272.2				mg/L	12	Standard
Ho-1	165	8.3	69.3				mg/L	10	Standard
Er	166	23.3	107.9				mg/L	23	Standard
I	127	1215.0	3.6				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.804	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.213
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.829
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

Sample ID: QC Std 7
Report Date/Time: Thursday, August 27, 2015 12:11:08
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Method 6020 - Summary Report

Sample ID: PBW 54 WG536496-02
Sample Date/Time: Thursday, August 27, 2015 12:12:04
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	45911.1	1.2				ug/L	44982	Standard
	Be	9	28.3	44.4	**0.0362**	0.020	56.4	ug/L	8	Standard
	Al	27	2363.5	21.3	**0.0300**	0.007	23.6	ug/L	318	Standard
	Sc	45	29660.7	2.2				ug/L	28998	Standard
	Ti	47	27.7	25.6	**0.0278**	0.037	133.5	ug/L	21	Standard
	V	51	1046.3	13.4	**-0.0007**	0.032	4816.8	ug/L	1052	Standard
	Cr	52	6081.6	1.7	**-0.1528**	0.027	17.6	ug/L	6637	Standard
	Cr	53	463.3	0.6	**0.1224**	0.018	14.5	ug/L	328	Standard
	Mn	55	1046.7	4.1	**0.1077**	0.007	6.4	ug/L	636	Standard
	Co	59	301.0	26.5	**0.0205**	0.020	99.2	ug/L	199	Standard
	Ni	60	231.7	7.8	**0.0174**	0.014	83.1	ug/L	185	Standard
	Cu	65	245.7	5.2	**0.0560**	0.008	15.0	ug/L	133	Standard
	Zn	66	2003.5	1.1	**1.8018**	0.066	3.7	ug/L	187	Standard
>	**Ge**	72	319105.8	1.9				ug/L	311830	Standard
	As	75	-20.2	113.5	**-0.0042**	0.029	689.6	ug/L	-58	Standard
	Se	82	23.7	15.9	**-0.0638**	0.061	94.9	ug/L	25	Standard
	Se-1	77	82.0	7.4	**-0.1926**	0.146	75.6	ug/L	90	Standard
>	**Ga**	71	33.3	67.6				mg/L	18	Standard
	Rb	85	43.3	46.6				ug/L	27	Standard
	Y	89	291627.8	4.1				ug/L	295023	Standard
>	**Rh**	103	13.3	57.3				ug/L	7	Standard
	Mo	98	103.4	83.2	**0.0654**	0.060	91.8	ug/L	10	Standard
	Ag	107	178.7	80.7	**0.0222**	0.028	127.8	ug/L	58	Standard
	Cd	111	17.9	5.5	**0.0105**	0.001	7.8	mg/L	4	Standard
	Cd	114	53.6	51.2	**0.0023**	0.007	312.6	ug/L	-1	Standard
>	**In**	115	440295.6	0.9				ug/L	427691	Standard
	Sn	118	423.3	8.3	**0.0286**	0.007	24.2	ug/L	273	Standard
	Sb	123	490.8	21.0	**0.1250**	0.027	21.3	ug/L	55	Standard
	Ba	135	4170.6	1.0	**2.0807**	0.039	1.9	ug/L	39	Standard
	Ce	140	168.3	24.0				ug/L	28	Standard
>	**Tb**	159	893387.9	0.3				ug/L	886833	Standard
	Ho	165	15.0	33.3				ug/L	10	Standard
	Tl	203	62.3	29.1	**0.0061**	0.003	42.4	ug/L	2	Standard
	Tl	205	83.3	83.2	**0.0192**	0.014	74.4	ug/L	0	Standard
	Pb	206	357.0	43.1	**0.0203**	0.035	170.2	ug/L	199	Standard
	Pb	207	333.7	30.5	**0.0281**	0.025	89.6	ug/L	178	Standard
	Pb	208	1022.0	20.5	**0.0176**	0.014	80.0	ug/L	654	Standard
	U	238	73.3	67.1	**0.0129**	0.010	75.9	ug/L	1	Standard
>	**Bi**	209	428634.8	1.0				ug/L	418387	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	33.3	17.3	**0.0233**	0.014	59.8	mg/L	27	Standard
K	39	13.3	114.6	**0.0433**	0.195	449.3	mg/L	20	Standard
Ca	43	46.7	37.6	**1.7478**	2.432	139.2	mg/L	40	Standard
Fe	54	80.8	25.9	**0.0113**	0.049	428.6	mg/L	74	Standard
Fe	57	766.7	5.0	**-0.0887**	0.442	497.8	mg/L	697	Standard
> **Sc-1**	45	29660.7	2.2				mg/L	28998	Standard
Cl	35	6051.2	0.7				ug/L	6091	Standard
Kr	83	4.3	35.3				ug/L	6	Standard
Br	81	416.7	1.4				ug/L	383	Standard
P	31	10048.3	1.8				ug/L	8849	Standard
S	34	1030.0	3.5				ug/L	937	Standard
Sr	88	145.0	12.4				ug/L	188	Standard
C	12	206.7	7.4				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	29.0	61.1				mg/L	12	Standard
Ho-1	165	15.0	33.3				mg/L	10	Standard
Er	166	20.0	86.6				mg/L	23	Standard
I	127	548.3	6.1				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.066	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.333	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.947
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.449
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 54 WG536496-02
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Method 6020 - Summary Report

Sample ID: LCSW 54 WG536496-03
Sample Date/Time: Thursday, August 27, 2015 12:15:15
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	47380.7	4.2				ug/L	44982	Standard
	Be	9	29345.1	1.9	**46.5212**	1.293	2.8	ug/L	8	Standard
	Al	27	2051.8	3.8	**0.0246**	0.001	5.4	ug/L	318	Standard
	Sc	45	29356.8	5.3				ug/L	28998	Standard
	Ti	47	31.0	19.6	**0.0468**	0.031	66.3	ug/L	21	Standard
	V	51	193328.9	1.2	**50.0022**	0.526	1.1	ug/L	1052	Standard
	Cr	52	262605.5	0.1	**50.5437**	0.443	0.9	ug/L	6637	Standard
	Cr	53	31845.1	1.2	**50.5401**	1.073	2.1	ug/L	328	Standard
	Mn	55	176325.5	1.3	**52.2416**	0.427	0.8	ug/L	636	Standard
	Co	59	184136.2	0.7	**50.8312**	0.206	0.4	ug/L	199	Standard
	Ni	60	70219.0	0.7	**49.8967**	0.318	0.6	ug/L	185	Standard
	Cu	65	69848.3	0.2	**50.7020**	0.432	0.9	ug/L	133	Standard
	Zn	66	39365.4	0.7	**50.0245**	0.308	0.6	ug/L	187	Standard
>	Ge	72	315985.5	1.0				ug/L	311830	Standard
	As	75	38705.5	0.2	**48.3035**	0.356	0.7	ug/L	-58	Standard
	Se	82	3198.8	0.9	**49.4211**	0.898	1.8	ug/L	25	Standard
	Se-1	77	2304.2	1.1	**48.7704**	0.075	0.2	ug/L	90	Standard
>	Ga	71	43.3	17.6				mg/L	18	Standard
	Rb	85	75.0	24.0				ug/L	27	Standard
	Y	89	300752.9	1.9				ug/L	295023	Standard
>	Rh	103	36.7	43.8				ug/L	7	Standard
	Mo	98	47.1	6.6	**0.0256**	0.002	7.0	ug/L	10	Standard
	Ag	107	247804.7	1.6	**47.3205**	0.504	1.1	ug/L	58	Standard
	Cd	111	68501.4	0.4	**48.3776**	0.732	1.5	mg/L	4	Standard
	Cd	114	179881.2	0.8	**47.8062**	0.967	2.0	ug/L	-1	Standard
>	In	115	448864.3	1.3				ug/L	427691	Standard
	Sn	118	453.3	20.8	**0.0332**	0.020	59.6	ug/L	273	Standard
	Sb	123	196645.9	1.5	**49.3625**	0.350	0.7	ug/L	55	Standard
	Ba	135	95987.5	2.3	**47.4208**	0.676	1.4	ug/L	39	Standard
	Ce	140	216.7	7.1				ug/L	28	Standard
>	Tb	159	919098.0	1.8				ug/L	886833	Standard
	Ho	165	8.3	124.9				ug/L	10	Standard
	Tl	203	332552.9	2.0	**48.7074**	0.466	1.0	ug/L	2	Standard
	Tl	205	231345.2	2.6	**48.3953**	0.318	0.7	ug/L	0	Standard
	Pb	206	216634.8	0.8	**49.6576**	0.760	1.5	ug/L	199	Standard
	Pb	207	184362.9	0.7	**46.8232**	0.806	1.7	ug/L	178	Standard
	Pb	208	693586.7	0.8	**48.8658**	0.734	1.5	ug/L	654	Standard
	U	238	233895.0	1.1	**47.3531**	0.718	1.5	ug/L	1	Standard
>	Bi	209	426705.5	2.3				ug/L	418387	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	45.0	33.3	**0.0508**	0.038	75.1	mg/L	27	Standard
K	39	18.3	56.8	**0.1062**	0.129	121.8	mg/L	20	Standard
Ca	43	33.3	34.6	**0.0262**	1.612	6159.9	mg/L	40	Standard
Fe	54	82.2	12.9	**0.0163**	0.026	159.4	mg/L	74	Standard
Fe	57	821.7	6.1	**0.4356**	0.088	20.2	mg/L	697	Standard
> **Sc-1**	45	29356.8	5.3				mg/L	28998	Standard
Cl	35	5903.1	1.4				ug/L	6091	Standard
Kr	83	5.0	40.0				ug/L	6	Standard
Br	81	430.0	16.8				ug/L	383	Standard
P	31	9731.5	1.6				ug/L	8849	Standard
S	34	1020.0	20.9				ug/L	937	Standard
Sr	88	156.7	15.7				ug/L	188	Standard
C	12	180.0	22.2				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	8.9	110.2				mg/L	12	Standard
Ho-1	165	8.3	124.9				mg/L	10	Standard
Er	166	23.3	65.5				mg/L	23	Standard
I	127	1265.1	2.2				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.333	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.333	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	104.951
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	101.988
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 54 WG536496-03
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Method 6020 - Summary Report

Sample ID: L1508133601 WG536496-01
Sample Date/Time: Thursday, August 27, 2015 12:18:27
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	46095.0	2.7				ug/L	44982	Standard
	Be	9	15.0	33.3	**0.0143**	0.008	56.2	ug/L	8	Standard
	Al	27	319242.2	1.9	**4.6111**	0.077	1.7	ug/L	318	Standard
	Sc	45	29184.8	1.6				ug/L	28998	Standard
	Ti	47	101.7	12.0	**0.4098**	0.068	16.6	ug/L	21	Standard
	V	51	1079.5	3.0	**0.0039**	0.010	247.6	ug/L	1052	Standard
	Cr	52	7571.6	3.3	**0.1155**	0.055	47.4	ug/L	6637	Standard
	Cr	53	891.7	14.0	**0.7813**	0.195	24.9	ug/L	328	Standard
	Mn	55	13616.1	0.9	**3.7471**	0.041	1.1	ug/L	636	Standard
	Co	59	348.7	5.6	**0.0323**	0.005	16.4	ug/L	199	Standard
	Ni	60	1395.1	1.9	**0.8229**	0.020	2.4	ug/L	185	Standard
	Cu	65	2495.5	1.5	**1.6491**	0.041	2.5	ug/L	133	Standard
	Zn	66	15564.3	0.5	**18.8142**	0.232	1.2	ug/L	187	Standard
>	**Ge**	72	324167.6	0.9				ug/L	311830	Standard
	As	75	41.1	86.0	**0.0711**	0.043	60.6	ug/L	-58	Standard
	Se	82	34.3	11.9	**0.0910**	0.066	72.6	ug/L	25	Standard
	Se-1	77	111.0	12.4	**0.4010**	0.290	72.4	ug/L	90	Standard
>	**Ga**	71	73.3	30.7				mg/L	18	Standard
	Rb	85	2351.8	2.8				ug/L	27	Standard
	Y	89	290291.7	1.7				ug/L	295023	Standard
>	**Rh**	103	15.0	57.7				ug/L	7	Standard
	Mo	98	40.4	12.9	**0.0220**	0.003	14.8	ug/L	10	Standard
	Ag	107	326.0	22.3	**0.0514**	0.013	25.9	ug/L	58	Standard
	Cd	111	23.9	84.6	**0.0148**	0.014	96.9	mg/L	4	Standard
	Cd	114	69.7	66.8	**0.0068**	0.012	183.1	ug/L	-1	Standard
>	**In**	115	435200.4	1.7				ug/L	427691	Standard
	Sn	118	445.0	12.5	**0.0343**	0.011	30.9	ug/L	273	Standard
	Sb	123	332.0	11.8	**0.0853**	0.009	10.5	ug/L	55	Standard
	Ba	135	17309.9	0.8	**8.8043**	0.081	0.9	ug/L	39	Standard
	Ce	140	365.0	14.4				ug/L	28	Standard
>	**Tb**	159	906400.9	1.0				ug/L	886833	Standard
	Ho	165	11.7	49.5				ug/L	10	Standard
	Tl	203	118.3	77.2	**0.0145**	0.013	92.5	ug/L	2	Standard
	Tl	205	41.7	48.5	**0.0107**	0.004	39.3	ug/L	0	Standard
	Pb	206	476.7	8.3	**0.0493**	0.009	17.6	ug/L	199	Standard
	Pb	207	406.3	9.6	**0.0480**	0.010	19.9	ug/L	178	Standard
	Pb	208	1482.4	7.1	**0.0514**	0.007	13.9	ug/L	654	Standard
	U	238	43.3	61.2	**0.0070**	0.005	76.3	ug/L	1	Standard
>	**Bi**	209	422814.5	0.7				ug/L	418387	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	1518.4	8.9	**3.3472**	0.353	10.6	mg/L	27	Standard
K	39	35.0	28.6	**0.3180**	0.121	38.0	mg/L	20	Standard
Ca	43	73.3	25.8	**5.4147**	2.715	50.1	mg/L	40	Standard
Fe	54	84.4	21.5	**0.0224**	0.044	196.5	mg/L	74	Standard
Fe	57	808.4	6.3	**0.3614**	0.322	89.2	mg/L	697	Standard
> **Sc-1**	45	29184.8	1.6				mg/L	28998	Standard
Cl	35	5705.1	2.4				ug/L	6091	Standard
Kr	83	6.3	18.2				ug/L	6	Standard
Br	81	923.4	0.6				ug/L	383	Standard
P	31	9442.9	4.4				ug/L	8849	Standard
S	34	1003.4	5.5				ug/L	937	Standard
Sr	88	153.3	6.8				ug/L	188	Standard
C	12	253.3	2.3				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	8.4	116.2				mg/L	12	Standard
Ho-1	165	11.7	49.5				mg/L	10	Standard
Er	166	33.3	17.3				mg/L	23	Standard
I	127	4382.3	4.5				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.475	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.956	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1508133601 WG536496-01
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.756
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.058
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 28, 2015

Method 6020 - Summary Report

Sample ID: L1508133601S WG536496-05
Sample Date/Time: Thursday, August 27, 2015 12:21:38
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	45794.1	1.0				ug/L	44982	Standard
	Be	9	29271.6	2.9	**47.9733**	1.032	2.2	ug/L	8	Standard
	Al	27	311129.3	1.7	**4.5222**	0.043	1.0	ug/L	318	Standard
	Sc	45	29154.7	2.3				ug/L	28998	Standard
	Ti	47	103.3	9.4	**0.4294**	0.052	12.1	ug/L	21	Standard
	V	51	193234.7	1.4	**49.7429**	0.511	1.0	ug/L	1052	Standard
	Cr	52	258615.1	0.4	**49.5162**	0.157	0.3	ug/L	6637	Standard
	Cr	53	31407.5	2.5	**49.5971**	1.235	2.5	ug/L	328	Standard
	Mn	55	180557.9	1.2	**53.2556**	0.976	1.8	ug/L	636	Standard
	Co	59	177277.4	0.4	**48.7094**	0.502	1.0	ug/L	199	Standard
	Ni	60	69590.5	1.1	**49.2210**	0.835	1.7	ug/L	185	Standard
	Cu	65	70550.5	0.8	**50.9720**	0.135	0.3	ug/L	133	Standard
	Zn	66	53295.2	0.5	**67.6743**	0.142	0.2	ug/L	187	Standard
>	**Ge**	72	317457.0	0.6				ug/L	311830	Standard
	As	75	39144.4	1.3	**48.6227**	0.589	1.2	ug/L	-58	Standard
	Se	82	3121.2	0.3	**47.9814**	0.387	0.8	ug/L	25	Standard
	Se-1	77	2322.5	1.7	**48.9353**	0.552	1.1	ug/L	90	Standard
>	**Ga**	71	68.3	41.6				mg/L	18	Standard
	Rb	85	2223.5	4.8				ug/L	27	Standard
	Y	89	285050.0	1.2				ug/L	295023	Standard
>	**Rh**	103	30.0	44.1				ug/L	7	Standard
	Mo	98	73.3	12.3	**0.0440**	0.006	14.6	ug/L	10	Standard
	Ag	107	242848.2	1.0	**46.8909**	1.076	2.3	ug/L	58	Standard
	Cd	111	67353.5	0.5	**48.0890**	0.838	1.7	mg/L	4	Standard
	Cd	114	178066.2	0.7	**47.8381**	0.540	1.1	ug/L	-1	Standard
>	**In**	115	444004.0	1.4				ug/L	427691	Standard
	Sn	118	591.7	21.6	**0.0638**	0.027	41.6	ug/L	273	Standard
	Sb	123	194697.6	0.9	**49.4182**	1.091	2.2	ug/L	55	Standard
	Ba	135	109861.2	0.8	**54.8802**	0.681	1.2	ug/L	39	Standard
	Ce	140	335.0	9.8				ug/L	28	Standard
>	**Tb**	159	888886.1	1.1				ug/L	886833	Standard
	Ho	165	21.7	13.3				ug/L	10	Standard
	Tl	203	322965.5	0.1	**47.1994**	0.462	1.0	ug/L	2	Standard
	Tl	205	226089.5	1.1	**47.1935**	0.103	0.2	ug/L	0	Standard
	Pb	206	214267.8	0.8	**48.9965**	0.323	0.7	ug/L	199	Standard
	Pb	207	183602.7	0.5	**46.5182**	0.456	1.0	ug/L	178	Standard
	Pb	208	677125.5	0.5	**47.5940**	0.717	1.5	ug/L	654	Standard
	U	238	231902.6	0.7	**46.8386**	0.346	0.7	ug/L	1	Standard
>	**Bi**	209	427643.1	1.0				ug/L	418387	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	1573.4	6.5	**3.4685**	0.162	4.7	mg/L	27	Standard
K	39	38.3	30.1	**0.3613**	0.144	39.8	mg/L	20	Standard
Ca	43	90.0	16.7	**7.6591**	2.222	29.0	mg/L	40	Standard
Fe	54	67.0	46.6	**-0.0164**	0.072	436.4	mg/L	74	Standard
Fe	57	728.4	5.8	**-0.3029**	0.490	161.9	mg/L	697	Standard
> **Sc-1**	45	29154.7	2.3				mg/L	28998	Standard
Cl	35	5966.5	1.0				ug/L	6091	Standard
Kr	83	3.7	41.7				ug/L	6	Standard
Br	81	740.0	8.4				ug/L	383	Standard
P	31	9518.0	1.0				ug/L	8849	Standard
S	34	920.0	11.8				ug/L	937	Standard
Sr	88	206.7	10.9				ug/L	188	Standard
C	12	233.3	9.9				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	16.0	40.4				mg/L	12	Standard
Ho-1	165	21.7	13.3				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	4792.4	5.2				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.806	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.804	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.814
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.212
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508133601SD WG536496-06
Sample Date/Time: Thursday, August 27, 2015 12:24:50
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	45454.8	3.2				ug/L	44982	Standard
	Be	9	30388.8	5.1	**50.1635**	1.090	2.2	ug/L	8	Standard
	Al	27	333378.1	1.2	**4.8847**	0.122	2.5	ug/L	318	Standard
	Sc	45	29123.0	0.9				ug/L	28998	Standard
	Ti	47	141.0	7.9	**0.6334**	0.059	9.3	ug/L	21	Standard
	V	51	195782.9	0.2	**50.7096**	0.308	0.6	ug/L	1052	Standard
	Cr	52	261404.7	1.5	**50.3756**	0.907	1.8	ug/L	6637	Standard
	Cr	53	32197.6	5.1	**51.1719**	2.693	5.3	ug/L	328	Standard
	Mn	55	186678.7	1.1	**55.3963**	0.581	1.0	ug/L	636	Standard
	Co	59	182970.9	0.7	**50.5771**	0.375	0.7	ug/L	199	Standard
	Ni	60	70805.1	0.9	**50.3812**	0.272	0.5	ug/L	185	Standard
	Cu	65	71844.9	0.7	**52.2226**	0.037	0.1	ug/L	133	Standard
	Zn	66	53934.8	1.4	**68.9097**	0.603	0.9	ug/L	187	Standard
>	**Ge**	72	315558.6	0.6				ug/L	311830	Standard
	As	75	39859.3	0.8	**49.8077**	0.233	0.5	ug/L	-58	Standard
	Se	82	3230.2	0.7	**49.9723**	0.204	0.4	ug/L	25	Standard
	Se-1	77	2399.9	2.7	**50.9479**	1.251	2.5	ug/L	90	Standard
>	**Ga**	71	65.0	20.4				mg/L	18	Standard
	Rb	85	2508.5	3.3				ug/L	27	Standard
	Y	89	297257.3	2.7				ug/L	295023	Standard
>	**Rh**	103	33.3	22.9				ug/L	7	Standard
	Mo	98	71.9	28.9	**0.0433**	0.014	33.3	ug/L	10	Standard
	Ag	107	247059.0	0.6	**47.9287**	0.321	0.7	ug/L	58	Standard
	Cd	111	69028.0	1.2	**49.5207**	0.784	1.6	mg/L	4	Standard
	Cd	114	182155.0	1.7	**49.1759**	1.089	2.2	ug/L	-1	Standard
>	**In**	115	441838.7	0.5				ug/L	427691	Standard
	Sn	118	450.0	5.9	**0.0341**	0.006	17.4	ug/L	273	Standard
	Sb	123	198816.9	0.9	**50.7030**	0.656	1.3	ug/L	55	Standard
	Ba	135	112996.5	1.3	**56.7177**	0.590	1.0	ug/L	39	Standard
	Ce	140	1681.8	4.0				ug/L	28	Standard
>	**Tb**	159	899202.6	2.5				ug/L	886833	Standard
	Ho	165	33.3	45.8				ug/L	10	Standard
	Tl	203	331650.1	0.3	**48.9440**	0.595	1.2	ug/L	2	Standard
	Tl	205	234401.0	0.7	**49.4104**	0.533	1.1	ug/L	0	Standard
	Pb	206	217719.2	0.8	**50.2787**	0.854	1.7	ug/L	199	Standard
	Pb	207	188254.3	0.9	**48.1648**	0.450	0.9	ug/L	178	Standard
	Pb	208	697206.3	0.7	**49.4879**	0.831	1.7	ug/L	654	Standard
	U	238	237776.2	0.3	**48.4960**	0.381	0.8	ug/L	1	Standard
>	**Bi**	209	423496.3	1.0				ug/L	418387	Standard

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Na	23	1.7	173.2	**2.7942**	4.831	172.9	mg/L	2	Standard
Mg	24	1620.1	2.9	**3.5796**	0.139	3.9	mg/L	27	Standard
K	39	56.7	40.8	**0.5946**	0.289	48.6	mg/L	20	Standard
Ca	43	101.7	2.8	**9.2087**	0.344	3.7	mg/L	40	Standard
Fe	54	98.8	19.4	**0.0545**	0.041	75.5	mg/L	74	Standard
Fe	57	801.7	5.4	**0.3208**	0.310	96.7	mg/L	697	Standard
> **Sc-1**	45	29123.0	0.9				mg/L	28998	Standard
Cl	35	6134.6	1.2				ug/L	6091	Standard
Kr	83	2.7	57.3				ug/L	6	Standard
Br	81	823.4	7.0				ug/L	383	Standard
P	31	9884.9	0.9				ug/L	8849	Standard
S	34	920.0	4.3				ug/L	937	Standard
Sr	88	203.3	22.8				ug/L	188	Standard
C	12	170.0	25.6				mg/L	167	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	47.3	1.5				mg/L	12	Standard
Ho-1	165	33.3	45.8				mg/L	10	Standard
Er	166	56.7	27.0				mg/L	23	Standard
I	127	4243.9	4.7				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.052	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.196	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.308
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.221
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 28, 2015

Method 6020 - Summary Report

Sample ID: L1508128801
Sample Date/Time: Thursday, August 27, 2015 12:28:01
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	42026.6	4.6				ug/L	44982	Standard
	Be	9	28.3	44.4	**0.0401**	0.021	51.7	ug/L	8	Standard
	Al	27	10965494.4	2.7	**173.9769**	5.890	3.4	ug/L	318	Standard
	Sc	45	30210.1	1.4				ug/L	28998	Standard
	Ti	47	300.0	2.9	**1.5324**	0.029	1.9	ug/L	21	Standard
	V	51	954.9	24.8	**-0.0134**	0.062	460.5	ug/L	1052	Standard
	Cr	52	8654.1	3.9	**0.4253**	0.085	20.1	ug/L	6637	Standard
	Cr	53	6935.0	18.4	**10.9154**	2.236	20.5	ug/L	328	Standard
	Mn	55	86781.5	1.1	**26.4817**	0.115	0.4	ug/L	636	Standard
	Co	59	1683.4	3.8	**0.4195**	0.021	5.0	ug/L	199	Standard
	Ni	60	1805.4	2.5	**1.1841**	0.040	3.4	ug/L	185	Standard
	Cu	65	795.7	2.3	**0.4775**	0.015	3.1	ug/L	133	Standard
	Zn	66	4539.0	3.1	**5.2950**	0.181	3.4	ug/L	187	Standard
>	**Ge**	72	305663.4	1.2				ug/L	311830	Standard
	As	75	723.4	6.1	**0.9542**	0.063	6.6	ug/L	-58	Standard
	Se	82	273.4	4.8	**3.9750**	0.227	5.7	ug/L	25	Standard
	Se-1	77	615.3	8.2	**12.0380**	1.283	10.7	ug/L	90	Standard
>	**Ga**	71	60.0	8.3				mg/L	18	Standard
	Rb	85	5941.2	2.7				ug/L	27	Standard
	Y	89	279975.1	1.5				ug/L	295023	Standard
>	**Rh**	103	118.3	46.5				ug/L	7	Standard
	Mo	98	155.9	8.1	**0.1106**	0.010	8.8	ug/L	10	Standard
	Ag	107	94.0	24.7	**0.0071**	0.005	68.5	ug/L	58	Standard
	Cd	111	35.3	19.9	**0.0251**	0.005	21.4	mg/L	4	Standard
	Cd	114	72.0	21.4	**0.0090**	0.004	50.2	ug/L	-1	Standard
>	**In**	115	406644.4	0.5				ug/L	427691	Standard
	Sn	118	360.0	7.3	**0.0214**	0.006	28.1	ug/L	273	Standard
	Sb	123	517.6	5.2	**0.1428**	0.008	5.4	ug/L	55	Standard
	Ba	135	263679.3	0.6	**143.8421**	0.853	0.6	ug/L	39	Standard
	Ce	140	455.0	18.5				ug/L	28	Standard
>	**Tb**	159	861152.9	0.4				ug/L	886833	Standard
	Ho	165	20.0	0.0				ug/L	10	Standard
	Tl	203	71.3	42.6	**0.0086**	0.005	57.9	ug/L	2	Standard
	Tl	205	58.3	34.6	**0.0155**	0.005	30.7	ug/L	0	Standard
	Pb	206	351.3	1.5	**0.0284**	0.002	5.8	ug/L	199	Standard
	Pb	207	300.0	9.0	**0.0284**	0.008	28.1	ug/L	178	Standard
	Pb	208	1084.3	5.7	**0.0309**	0.005	16.9	ug/L	654	Standard
	U	238	763.4	4.8	**0.1697**	0.008	4.7	ug/L	1	Standard
>	**Bi**	209	384421.0	0.4				ug/L	418387	Standard

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Na	23	1.7	173.2	**2.7258**	4.713	172.9	mg/L	2	Standard
Mg	24	61812.5	2.2	**133.4183**	1.379	1.0	mg/L	27	Standard
K	39	68.3	34.6	**0.7114**	0.278	39.0	mg/L	20	Standard
Ca	43	131.7	26.7	**12.6399**	4.743	37.5	mg/L	40	Standard
Fe	54	100.4	40.1	**0.0509**	0.090	175.7	mg/L	74	Standard
Fe	57	870.0	5.5	**0.6364**	0.313	49.1	mg/L	697	Standard
> **Sc-1**	45	30210.1	1.4				mg/L	28998	Standard
Cl	35	5789.1	3.1				ug/L	6091	Standard
Kr	83	4.7	49.5				ug/L	6	Standard
Br	81	20767.6	5.0				ug/L	383	Standard
P	31	12408.4	2.5				ug/L	8849	Standard
S	34	906.7	6.9				ug/L	937	Standard
Sr	88	248.3	24.3				ug/L	188	Standard
C	12	316.7	19.3				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	29.2	59.8				mg/L	12	Standard
Ho-1	165	20.0	0.0				mg/L	10	Standard
Er	166	16.7	34.6				mg/L	23	Standard
I	127	412358.8	6.7				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.431	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.022	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.079
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	91.882
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1508128801
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Method 6020 - Summary Report

Sample ID: L1508128802
Sample Date/Time: Thursday, August 27, 2015 12:31:13
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	43420.5	1.4				ug/L	44982	Standard
	Be	9	25.0	60.0	**0.0332**	0.026	79.3	ug/L	8	Standard
	Al	27	10567100.0	3.3	**162.1367**	4.546	2.8	ug/L	318	Standard
	Sc	45	29780.9	1.3				ug/L	28998	Standard
	Ti	47	267.3	10.8	**1.3521**	0.148	11.0	ug/L	21	Standard
	V	51	1660.6	43.0	**0.1758**	0.188	107.1	ug/L	1052	Standard
	Cr	52	10399.9	0.8	**0.7814**	0.030	3.9	ug/L	6637	Standard
	Cr	53	10428.6	8.0	**16.7013**	1.377	8.2	ug/L	328	Standard
	Mn	55	79401.2	1.7	**24.2129**	0.414	1.7	ug/L	636	Standard
	Co	59	1889.1	2.9	**0.4781**	0.014	2.9	ug/L	199	Standard
	Ni	60	2241.5	0.9	**1.5053**	0.025	1.7	ug/L	185	Standard
	Cu	65	1019.0	3.2	**0.6456**	0.028	4.4	ug/L	133	Standard
	Zn	66	7008.3	0.4	**8.5884**	0.104	1.2	ug/L	187	Standard
>	**Ge**	72	305661.1	0.8				ug/L	311830	Standard
	As	75	885.0	14.4	**1.1629**	0.172	14.8	ug/L	-58	Standard
	Se	82	314.6	3.8	**4.6379**	0.176	3.8	ug/L	25	Standard
	Se-1	77	678.0	0.4	**13.4576**	0.174	1.3	ug/L	90	Standard
>	**Ga**	71	43.3	48.0				mg/L	18	Standard
	Rb	85	6246.3	3.2				ug/L	27	Standard
	Y	89	280885.1	1.7				ug/L	295023	Standard
>	**Rh**	103	88.3	14.2				ug/L	7	Standard
	Mo	98	239.7	15.5	**0.1742**	0.027	15.4	ug/L	10	Standard
	Ag	107	97.7	39.5	**0.0080**	0.008	103.1	ug/L	58	Standard
	Cd	111	54.5	38.2	**0.0403**	0.016	40.8	mg/L	4	Standard
	Cd	114	137.4	50.4	**0.0284**	0.021	72.4	ug/L	-1	Standard
>	**In**	115	404766.9	0.6				ug/L	427691	Standard
	Sn	118	406.7	16.7	**0.0328**	0.016	49.7	ug/L	273	Standard
	Sb	123	655.7	3.9	**0.1819**	0.007	4.1	ug/L	55	Standard
	Ba	135	247154.2	0.3	**135.4521**	0.424	0.3	ug/L	39	Standard
	Ce	140	476.7	4.7				ug/L	28	Standard
>	**Tb**	159	858837.0	0.5				ug/L	886833	Standard
	Ho	165	31.7	48.2				ug/L	10	Standard
	Tl	203	91.3	83.5	**0.0119**	0.012	105.2	ug/L	2	Standard
	Tl	205	73.3	47.9	**0.0190**	0.008	43.9	ug/L	0	Standard
	Pb	206	641.7	5.1	**0.1017**	0.011	10.4	ug/L	199	Standard
	Pb	207	539.7	6.1	**0.0955**	0.011	12.0	ug/L	178	Standard
	Pb	208	2045.4	6.9	**0.1055**	0.013	11.9	ug/L	654	Standard
	U	238	738.0	10.3	**0.1635**	0.019	11.8	ug/L	1	Standard
>	**Bi**	209	386091.7	1.5				ug/L	418387	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	63482.7	1.6	**139.0376**	3.642	2.6	mg/L	27	Standard
K	39	70.0	18.9	**0.7477**	0.174	23.2	mg/L	20	Standard
Ca	43	126.7	8.2	**12.1829**	1.256	10.3	mg/L	40	Standard
Fe	54	123.8	4.1	**0.1045**	0.009	8.4	mg/L	74	Standard
Fe	57	840.0	4.3	**0.4910**	0.275	56.0	mg/L	697	Standard
> **Sc-1**	45	29780.9	1.3				mg/L	28998	Standard
Cl	35	6486.7	2.1				ug/L	6091	Standard
Kr	83	5.3	28.6				ug/L	6	Standard
Br	81	22303.1	4.4				ug/L	383	Standard
P	31	12311.7	2.5				ug/L	8849	Standard
S	34	961.7	8.2				ug/L	937	Standard
Sr	88	220.0	12.0				ug/L	188	Standard
C	12	416.7	11.8				mg/L	167	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	19.4	135.2				mg/L	12	Standard
Ho-1	165	31.7	48.2				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	410842.0	5.7				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		96.529	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.022	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.640
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	92.281
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1508128802PS WG536592-03
Sample Date/Time: Thursday, August 27, 2015 12:34:24
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	44137.5	2.1				ug/L	44982	Standard
	Be	9	28710.5	2.6	**48.8491**	2.001	4.1	ug/L	8	Standard
	Al	27	10622828.3	1.6	**160.3740**	2.646	1.6	ug/L	318	Standard
	Sc	45	30417.2	3.6				ug/L	28998	Standard
	Ti	47	269.7	15.0	**1.3595**	0.203	14.9	ug/L	21	Standard
	V	51	187093.2	1.1	**49.8693**	0.398	0.8	ug/L	1052	Standard
	Cr	52	248149.2	0.2	**49.1883**	0.522	1.1	ug/L	6637	Standard
	Cr	53	40138.1	2.9	**65.8430**	2.555	3.9	ug/L	328	Standard
	Mn	55	237322.8	2.3	**72.5352**	0.791	1.1	ug/L	636	Standard
	Co	59	175973.9	2.0	**50.0586**	0.367	0.7	ug/L	199	Standard
	Ni	60	66801.6	2.1	**48.9133**	0.519	1.1	ug/L	185	Standard
	Cu	65	65271.3	1.3	**48.8232**	0.545	1.1	ug/L	133	Standard
	Zn	66	43624.4	1.1	**57.2391**	0.277	0.5	ug/L	187	Standard
>	**Ge**	72	306609.2	1.2				ug/L	311830	Standard
	As	75	40321.0	0.5	**51.8579**	0.455	0.9	ug/L	-58	Standard
	Se	82	3433.3	1.7	**54.7054**	0.638	1.2	ug/L	25	Standard
	Se-1	77	2925.9	0.3	**64.4455**	1.009	1.6	ug/L	90	Standard
>	**Ga**	71	41.7	48.5				mg/L	18	Standard
	Rb	85	5976.2	0.8				ug/L	27	Standard
	Y	89	280789.9	1.4				ug/L	295023	Standard
>	**Rh**	103	100.0	21.8				ug/L	7	Standard
	Mo	98	255.0	7.8	**0.1823**	0.012	6.4	ug/L	10	Standard
	Ag	107	218569.0	0.9	**45.4764**	0.864	1.9	ug/L	58	Standard
	Cd	111	63256.2	1.3	**48.6638**	0.388	0.8	mg/L	4	Standard
	Cd	114	165898.5	2.5	**48.0187**	0.278	0.6	ug/L	-1	Standard
>	**In**	115	412045.8	2.0				ug/L	427691	Standard
	Sn	118	383.3	7.4	**0.0257**	0.006	25.0	ug/L	273	Standard
	Sb	123	182354.4	1.7	**49.8675**	0.342	0.7	ug/L	55	Standard
	Ba	135	335890.1	0.7	**180.8746**	3.111	1.7	ug/L	39	Standard
	Ce	140	420.0	6.6				ug/L	28	Standard
>	**Tb**	159	872762.3	2.0				ug/L	886833	Standard
	Ho	165	21.7	48.0				ug/L	10	Standard
	Tl	203	305236.7	0.8	**49.4260**	0.667	1.3	ug/L	2	Standard
	Tl	205	216188.1	0.6	**50.0050**	0.777	1.6	ug/L	0	Standard
	Pb	206	199424.2	0.3	**50.5325**	0.775	1.5	ug/L	199	Standard
	Pb	207	179072.7	0.6	**50.2748**	0.590	1.2	ug/L	178	Standard
	Pb	208	633912.0	1.5	**49.3647**	0.483	1.0	ug/L	654	Standard
	U	238	227449.5	1.9	**50.8941**	0.083	0.2	ug/L	1	Standard
>	**Bi**	209	385989.7	1.7				ug/L	418387	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	62845.1	0.6	**134.8396**	4.439	3.3	mg/L	27	Standard
K	39	56.7	43.5	**0.5725**	0.329	57.5	mg/L	20	Standard
Ca	43	141.7	21.3	**13.6898**	3.236	23.6	mg/L	40	Standard
Fe	54	151.1	4.6	**0.1575**	0.009	6.0	mg/L	74	Standard
Fe	57	876.7	5.4	**0.6419**	0.167	26.1	mg/L	697	Standard
> **Sc-1**	45	30417.2	3.6				mg/L	28998	Standard
Cl	35	6378.7	2.8				ug/L	6091	Standard
Kr	83	4.7	53.9				ug/L	6	Standard
Br	81	21949.3	6.6				ug/L	383	Standard
P	31	12186.6	2.9				ug/L	8849	Standard
S	34	1008.4	1.1				ug/L	937	Standard
Sr	88	270.0	18.8				ug/L	188	Standard
C	12	306.7	13.6				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	35.4	16.7				mg/L	12	Standard
Ho-1	165	21.7	48.0				mg/L	10	Standard
Er	166	26.7	21.7				mg/L	23	Standard
I	127	408131.2	4.0				mg/L	1437	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		98.123	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.326	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.342
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	92.257
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1508128802SDL WG536592-04
Sample Date/Time: Thursday, August 27, 2015 12:37:35
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	44929.9	1.6				ug/L	44982	Standard
	Be	9	18.3	15.7	**0.0206**	0.005	24.7	ug/L	8	Standard
	Al	27	2251662.9	0.3	**33.3917**	0.600	1.8	ug/L	318	Standard
	Sc	45	29540.4	2.2				ug/L	28998	Standard
	Ti	47	69.3	9.6	**0.2513**	0.033	13.0	ug/L	21	Standard
	V	51	1115.4	8.1	**0.0210**	0.028	132.5	ug/L	1052	Standard
	Cr	52	8050.1	0.8	**0.2501**	0.023	9.2	ug/L	6637	Standard
	Cr	53	3560.4	6.0	**5.1149**	0.406	7.9	ug/L	328	Standard
	Mn	55	17103.0	0.6	**4.8939**	0.059	1.2	ug/L	636	Standard
	Co	59	554.3	2.1	**0.0918**	0.003	2.7	ug/L	199	Standard
	Ni	60	611.0	0.6	**0.2899**	0.006	2.1	ug/L	185	Standard
	Cu	65	316.7	10.5	**0.1099**	0.026	23.2	ug/L	133	Standard
	Zn	66	2416.9	1.3	**2.3649**	0.088	3.7	ug/L	187	Standard
>	**Ge**	72	315544.1	1.6				ug/L	311830	Standard
	As	75	126.9	14.2	**0.1798**	0.025	13.8	ug/L	-58	Standard
	Se	82	76.3	8.3	**0.7617**	0.102	13.3	ug/L	25	Standard
	Se-1	77	234.3	7.6	**3.1917**	0.470	14.7	ug/L	90	Standard
>	**Ga**	71	21.7	53.3				mg/L	18	Standard
	Rb	85	1328.4	7.2				ug/L	27	Standard
	Y	89	287558.5	1.5				ug/L	295023	Standard
>	**Rh**	103	35.0	24.7				ug/L	7	Standard
	Mo	98	58.2	7.8	**0.0357**	0.004	11.1	ug/L	10	Standard
	Ag	107	125.3	11.6	**0.0127**	0.003	26.6	ug/L	58	Standard
	Cd	111	15.2	16.4	**0.0090**	0.002	20.3	mg/L	4	Standard
	Cd	114	44.5	48.7	**0.0004**	0.006	1478.3	ug/L	-1	Standard
>	**In**	115	423357.6	1.6				ug/L	427691	Standard
	Sn	118	330.0	10.9	**0.0112**	0.007	63.1	ug/L	273	Standard
	Sb	123	799.4	4.9	**0.2123**	0.013	6.3	ug/L	55	Standard
	Ba	135	51351.5	0.3	**26.8938**	0.365	1.4	ug/L	39	Standard
	Ce	140	136.7	42.2				ug/L	28	Standard
>	**Tb**	159	887228.7	1.3				ug/L	886833	Standard
	Ho	165	13.3	57.3				ug/L	10	Standard
	Tl	203	46.7	10.1	**0.0042**	0.001	17.3	ug/L	2	Standard
	Tl	205	25.0	60.0	**0.0074**	0.003	43.8	ug/L	0	Standard
	Pb	206	307.0	2.3	**0.0127**	0.001	11.8	ug/L	199	Standard
	Pb	207	262.7	1.9	**0.0137**	0.002	12.9	ug/L	178	Standard
	Pb	208	956.7	1.4	**0.0166**	0.001	5.1	ug/L	654	Standard
	U	238	151.0	7.5	**0.0302**	0.002	7.1	ug/L	1	Standard
>	**Bi**	209	407241.9	0.9				ug/L	418387	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	12540.2	2.6	**27.6587**	1.220	4.4	mg/L	27	Standard
K	39	26.7	21.7	**0.2100**	0.077	36.9	mg/L	20	Standard
Ca	43	60.0	50.7	**3.4880**	3.968	113.8	mg/L	40	Standard
Fe	54	97.4	5.8	**0.0487**	0.017	35.1	mg/L	74	Standard
Fe	57	845.0	0.6	**0.5925**	0.149	25.2	mg/L	697	Standard
> **Sc-1**	45	29540.4	2.2				mg/L	28998	Standard
Cl	35	6439.4	2.0				ug/L	6091	Standard
Kr	83	4.7	44.6				ug/L	6	Standard
Br	81	5050.8	8.6				ug/L	383	Standard
P	31	9034.4	1.9				ug/L	8849	Standard
S	34	911.7	9.8				ug/L	937	Standard
Sr	88	188.3	14.6				ug/L	188	Standard
C	12	193.3	24.4				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.9	41.7				mg/L	12	Standard
Ho-1	165	13.3	57.3				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	91819.2	2.6				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.885	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.191	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.987
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.336
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1508128802SDL WG536592-04
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Method 6020 - Summary Report

Sample ID: L1508128802SDL WG536592-04
Sample Date/Time: Thursday, August 27, 2015 12:40:47
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	44154.3	1.5				ug/L	44982	Standard
	Be	9	18.3	41.7	**0.0211**	0.013	61.8	ug/L	8	Standard
	Al	27	442996.2	0.5	**6.6811**	0.079	1.2	ug/L	318	Standard
	Sc	45	29558.8	0.2				ug/L	28998	Standard
	Ti	47	29.7	25.3	**0.0416**	0.040	95.5	ug/L	21	Standard
	V	51	1163.1	6.9	**0.0363**	0.020	56.1	ug/L	1052	Standard
	Cr	52	7589.2	2.2	**0.1745**	0.032	18.6	ug/L	6637	Standard
	Cr	53	1260.1	10.1	**1.4325**	0.196	13.7	ug/L	328	Standard
	Mn	55	3995.2	1.7	**1.0020**	0.020	2.0	ug/L	636	Standard
	Co	59	280.0	10.4	**0.0167**	0.008	47.2	ug/L	199	Standard
	Ni	60	290.7	4.8	**0.0634**	0.009	14.0	ug/L	185	Standard
	Cu	65	174.7	9.8	**0.0076**	0.013	169.0	ug/L	133	Standard
	Zn	66	2154.2	1.9	**2.0541**	0.064	3.1	ug/L	187	Standard
>	**Ge**	72	312256.6	0.6				ug/L	311830	Standard
	As	75	2.4	514.9	**0.0240**	0.015	64.4	ug/L	-58	Standard
	Se	82	30.1	17.9	**0.0444**	0.082	185.7	ug/L	25	Standard
	Se-1	77	119.7	5.7	**0.6857**	0.160	23.3	ug/L	90	Standard
>	**Ga**	71	20.0	43.3				mg/L	18	Standard
	Rb	85	283.3	10.8				ug/L	27	Standard
	Y	89	292090.8	1.7				ug/L	295023	Standard
>	**Rh**	103	26.7	28.6				ug/L	7	Standard
	Mo	98	20.8	6.4	**0.0089**	0.001	13.5	ug/L	10	Standard
	Ag	107	82.7	21.3	**0.0042**	0.003	79.4	ug/L	58	Standard
	Cd	111	9.6	57.3	**0.0049**	0.004	87.5	mg/L	4	Standard
	Cd	114	5.7	98.0	**-0.0105**	0.002	15.1	ug/L	-1	Standard
>	**In**	115	417190.1	1.7				ug/L	427691	Standard
	Sn	118	283.3	2.7	**0.0018**	0.002	129.5	ug/L	273	Standard
	Sb	123	273.5	3.3	**0.0733**	0.003	4.6	ug/L	55	Standard
	Ba	135	10074.0	0.9	**5.3368**	0.049	0.9	ug/L	39	Standard
	Ce	140	35.0	74.2				ug/L	28	Standard
>	**Tb**	159	864426.9	1.2				ug/L	886833	Standard
	Ho	165	6.7	86.6				ug/L	10	Standard
	Tl	203	40.7	37.6	**0.0032**	0.002	70.7	ug/L	2	Standard
	Tl	205	26.7	84.5	**0.0078**	0.005	62.9	ug/L	0	Standard
	Pb	206	275.7	8.3	**0.0051**	0.005	94.6	ug/L	199	Standard
	Pb	207	243.7	5.2	**0.0086**	0.003	35.7	ug/L	178	Standard
	Pb	208	840.3	6.1	**0.0080**	0.003	40.5	ug/L	654	Standard
	U	238	46.0	26.4	**0.0079**	0.002	31.3	ug/L	1	Standard
>	**Bi**	209	407603.4	1.2				ug/L	418387	Standard

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Na	23	1.7	173.2	**2.7659**	4.782	172.9	mg/L	2	Standard
Mg	24	2631.9	2.2	**5.7583**	0.121	2.1	mg/L	27	Standard
K	39	10.0	50.0	**-0.0005**	0.063	11983.6	mg/L	20	Standard
Ca	43	60.0	36.3	**3.5021**	2.892	82.6	mg/L	40	Standard
Fe	54	73.0	4.0	**-0.0057**	0.007	117.7	mg/L	74	Standard
Fe	57	813.4	13.2	**0.3199**	0.906	283.1	mg/L	697	Standard
Sc-1	45	29558.8	0.2				mg/L	28998	Standard
Cl	35	6510.7	2.0				ug/L	6091	Standard
Kr	83	4.0	86.6				ug/L	6	Standard
Br	81	1240.1	11.7				ug/L	383	Standard
P	31	8692.5	1.9				ug/L	8849	Standard
S	34	998.4	6.8				ug/L	937	Standard
Sr	88	183.3	17.5				ug/L	188	Standard
C	12	196.7	12.8				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	13.0	46.5				mg/L	12	Standard
Ho-1	165	6.7	86.6				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	23	Standard
I	127	21310.0	1.7				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		98.161	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.137	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.545
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.422
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, August 27, 2015 12:44:28
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	41226.0	1.0				ug/L	44982	Standard
	Be	9	27207.8	3.4	**49.5513**	2.143	4.3	ug/L	8	Standard
	Al	27	3150072.2	1.0	**50.9085**	0.783	1.5	ug/L	318	Standard
	Sc	45	28897.5	1.6				ug/L	28998	Standard
	Ti	47	19016.6	1.3	**102.8217**	2.697	2.6	ug/L	21	Standard
	V	51	186216.7	0.3	**48.9722**	0.613	1.3	ug/L	1052	Standard
	Cr	52	250666.6	1.0	**49.0172**	0.243	0.5	ug/L	6637	Standard
	Cr	53	30625.9	1.2	**49.4081**	0.805	1.6	ug/L	328	Standard
	Mn	55	163780.1	3.4	**49.3323**	1.644	3.3	ug/L	636	Standard
	Co	59	176695.4	0.6	**49.6020**	0.796	1.6	ug/L	199	Standard
	Ni	60	68034.4	1.3	**49.1628**	1.095	2.2	ug/L	185	Standard
	Cu	65	67137.8	0.3	**49.5543**	0.586	1.2	ug/L	133	Standard
	Zn	66	38108.2	0.3	**49.2343**	0.657	1.3	ug/L	187	Standard
>	Ge	72	310754.4	1.3				ug/L	311830	Standard
	As	75	38566.9	1.1	**48.9476**	1.131	2.3	ug/L	-58	Standard
	Se	82	3150.4	2.5	**49.4947**	1.477	3.0	ug/L	25	Standard
	Se-1	77	2333.2	2.7	**50.2926**	2.080	4.1	ug/L	90	Standard
>	Ga	71	35.0	24.7				mg/L	18	Standard
	Rb	85	483.3	11.9				ug/L	27	Standard
	Y	89	283602.5	2.6				ug/L	295023	Standard
>	Rh	103	31.7	48.2				ug/L	7	Standard
	Mo	98	133953.1	0.7	**99.1097**	0.278	0.3	ug/L	10	Standard
	Ag	107	234147.0	0.3	**48.7014**	0.454	0.9	ug/L	58	Standard
	Cd	111	64413.0	0.9	**49.5401**	0.206	0.4	mg/L	4	Standard
	Cd	114	170901.7	1.2	**49.4606**	0.256	0.5	ug/L	-1	Standard
>	In	115	412116.9	0.7				ug/L	427691	Standard
	Sn	118	196261.5	1.7	**45.2566**	0.525	1.2	ug/L	273	Standard
	Sb	123	179811.0	0.3	**49.1625**	0.263	0.5	ug/L	55	Standard
	Ba	135	91213.1	0.7	**49.0842**	0.321	0.7	ug/L	39	Standard
	Ce	140	73.3	27.6				ug/L	28	Standard
>	Tb	159	853845.4	1.3				ug/L	886833	Standard
	Ho	165	6.7	114.6				ug/L	10	Standard
	Tl	203	318762.3	0.6	**49.1933**	0.539	1.1	ug/L	2	Standard
	Tl	205	223606.3	0.4	**49.2914**	0.457	0.9	ug/L	0	Standard
	Pb	206	205620.2	0.5	**49.6527**	0.243	0.5	ug/L	199	Standard
	Pb	207	184757.7	0.8	**49.4334**	0.226	0.5	ug/L	178	Standard
	Pb	208	657431.5	1.0	**48.7939**	0.280	0.6	ug/L	654	Standard
	U	238	228407.5	1.1	**48.7172**	0.727	1.5	ug/L	1	Standard
>	Bi	209	404960.2	0.6				ug/L	418387	Standard

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Na	23	3.3	173.2	**5.5550**	9.613	173.0	mg/L	2	Standard
Mg	24	2130.1	3.7	**4.7584**	0.153	3.2	mg/L	27	Standard
K	39	450.0	10.6	**5.6627**	0.697	12.3	mg/L	20	Standard
Ca	43	78.3	32.8	**6.1308**	3.333	54.4	mg/L	40	Standard
Fe	54	2120.5	6.2	**4.6294**	0.373	8.0	mg/L	74	Standard
Fe	57	1245.1	5.3	**4.1966**	0.738	17.6	mg/L	697	Standard
Sc-1	45	28897.5	1.6				mg/L	28998	Standard
Cl	35	6200.6	4.3				ug/L	6091	Standard
Kr	83	6.0	28.9				ug/L	6	Standard
Br	81	536.7	9.6				ug/L	383	Standard
P	31	9306.2	4.8				ug/L	8849	Standard
S	34	1025.0	11.6				ug/L	937	Standard
Sr	88	186.7	18.8				ug/L	188	Standard
C	12	143.3	24.5				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	16.2	68.8				mg/L	12	Standard
Ho-1	165	6.7	114.6				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	2735.2	12.2				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	99.103		
Al	27	101.817		
Sc	45			
Ti	47	102.822		
V	51	97.944		
Cr	52	98.034		
Cr	53			
Mn	55	98.665		
Co	59	99.204		
Ni	60	98.326		
Cu	65	99.109		
Zn	66	98.469		
Ge	72		99.655	
As	75	97.895		
Se	82	98.989		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
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Rb	85			
Y	89			
> Rh	103			
Mo	98	99.110		
Ag	107	97.403		
Cd	111	99.080		
Cd	114			
> In	115			96.359
Sn	118	90.513		
Sb	123	98.325		
Ba	135	98.168		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.387		
Tl	205			
Pb	206			
Pb	207			
Pb	208	97.588		
U	238	97.434		
> Bi	209			96.791
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, August 27, 2015 12:47:40
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	42543.0	3.6				ug/L	44982	Standard
	Be	9	20.0	43.3	**0.0249**	0.014	56.1	ug/L	8	Standard
	Al	27	751.7	46.3	**0.0075**	0.005	70.4	ug/L	318	Standard
	Sc	45	29610.6	1.2				ug/L	28998	Standard
	Ti	47	19.7	22.9	**-0.0121**	0.025	205.7	ug/L	21	Standard
	V	51	895.3	2.7	**-0.0344**	0.008	23.9	ug/L	1052	Standard
	Cr	52	5872.5	1.9	**-0.1700**	0.033	19.6	ug/L	6637	Standard
	Cr	53	468.3	10.1	**0.1453**	0.073	50.3	ug/L	328	Standard
	Mn	55	626.0	5.3	**-0.0123**	0.009	72.5	ug/L	636	Standard
	Co	59	245.7	9.2	**0.0070**	0.006	82.7	ug/L	199	Standard
	Ni	60	190.7	5.7	**-0.0088**	0.009	101.4	ug/L	185	Standard
	Cu	65	145.0	7.7	**-0.0143**	0.009	61.1	ug/L	133	Standard
	Zn	66	182.3	2.7	**-0.5204**	0.004	0.8	ug/L	187	Standard
>	**Ge**	72	312632.3	1.0				ug/L	311830	Standard
	As	75	-34.6	86.3	**-0.0225**	0.037	166.1	ug/L	-58	Standard
	Se	82	25.6	37.5	**-0.0258**	0.153	594.1	ug/L	25	Standard
	Se-1	77	89.3	22.4	**0.0079**	0.456	5742.4	ug/L	90	Standard
>	**Ga**	71	28.3	20.4				mg/L	18	Standard
	Rb	85	26.7	39.0				ug/L	27	Standard
	Y	89	293411.3	2.2				ug/L	295023	Standard
>	**Rh**	103	28.3	53.9				ug/L	7	Standard
	Mo	98	57.3	18.2	**0.0350**	0.008	21.5	ug/L	10	Standard
	Ag	107	110.7	68.5	**0.0096**	0.015	156.8	ug/L	58	Standard
	Cd	111	22.9	106.1	**0.0146**	0.018	122.9	mg/L	4	Standard
	Cd	114	38.4	136.7	**-0.0014**	0.015	1018.3	ug/L	-1	Standard
>	**In**	115	423643.4	1.4				ug/L	427691	Standard
	Sn	118	371.7	16.9	**0.0206**	0.014	67.8	ug/L	273	Standard
	Sb	123	738.6	9.1	**0.1957**	0.016	7.9	ug/L	55	Standard
	Ba	135	105.3	100.0	**0.0337**	0.054	161.2	ug/L	39	Standard
	Ce	140	25.0	72.1				ug/L	28	Standard
>	**Tb**	159	898294.7	0.7				ug/L	886833	Standard
	Ho	165	6.7	86.6				ug/L	10	Standard
	Tl	203	86.3	133.1	**0.0101**	0.017	173.5	ug/L	2	Standard
	Tl	205	21.7	13.3	**0.0066**	0.001	10.2	ug/L	0	Standard
	Pb	206	233.7	18.0	**-0.0062**	0.010	168.0	ug/L	199	Standard
	Pb	207	198.7	11.1	**-0.0045**	0.006	141.4	ug/L	178	Standard
	Pb	208	699.7	4.7	**-0.0035**	0.003	77.2	ug/L	654	Standard
	U	238	25.3	40.5	**0.0034**	0.002	62.3	ug/L	1	Standard
>	**Bi**	209	417019.3	1.3				ug/L	418387	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	46.7	44.6	**0.0529**	0.047	88.9	mg/L	27	Standard
K	39	10.0	86.6	**-0.0008**	0.108	13004.6	mg/L	20	Standard
Ca	43	33.3	34.6	**-0.0362**	1.517	4185.0	mg/L	40	Standard
Fe	54	74.3	47.1	**-0.0025**	0.079	3174.9	mg/L	74	Standard
Fe	57	760.0	4.1	**-0.1380**	0.314	227.3	mg/L	697	Standard
Sc-1	45	29610.6	1.2				mg/L	28998	Standard
Cl	35	6240.0	1.1				ug/L	6091	Standard
Kr	83	8.3	38.6				ug/L	6	Standard
Br	81	470.0	24.0				ug/L	383	Standard
P	31	9344.5	3.3				ug/L	8849	Standard
S	34	1100.0	6.7				ug/L	937	Standard
Sr	88	183.3	6.3				ug/L	188	Standard
C	12	136.7	11.2				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	-0.3	173.2				mg/L	12	Standard
Ho-1	165	6.7	86.6				mg/L	10	Standard
Er	166	6.7	173.2				mg/L	23	Standard
I	127	2386.9	17.3				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.257	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.054
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.673
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, August 27, 2015 12:49:57
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Method 6020 - Summary Report

Sample ID: L1508107302
Sample Date/Time: Thursday, August 27, 2015 12:50:53
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	45504.9	0.8				ug/L	44982	Standard
	Be	9	25.0	40.0	**0.0311**	0.016	52.1	ug/L	8	Standard
	Al	27	3198433.9	0.7	**46.8265**	0.292	0.6	ug/L	318	Standard
	Sc	45	30333.7	2.7				ug/L	28998	Standard
	Ti	47	66.0	10.9	**0.2354**	0.034	14.5	ug/L	21	Standard
	V	51	926.6	6.8	**-0.0272**	0.014	50.0	ug/L	1052	Standard
	Cr	52	6284.3	1.1	**-0.0926**	0.012	12.6	ug/L	6637	Standard
	Cr	53	1886.8	7.3	**2.4359**	0.196	8.1	ug/L	328	Standard
	Mn	55	143667.3	1.0	**42.8287**	0.477	1.1	ug/L	636	Standard
	Co	59	1473.7	2.1	**0.3486**	0.008	2.3	ug/L	199	Standard
	Ni	60	849.0	2.2	**0.4632**	0.021	4.5	ug/L	185	Standard
	Cu	65	358.7	8.9	**0.1416**	0.020	14.2	ug/L	133	Standard
	Zn	66	2180.5	2.9	**2.0748**	0.099	4.8	ug/L	187	Standard
>	**Ge**	72	313801.2	1.3				ug/L	311830	Standard
	As	75	266.5	26.5	**0.3551**	0.084	23.8	ug/L	-58	Standard
	Se	82	76.0	5.0	**0.7618**	0.045	6.0	ug/L	25	Standard
	Se-1	77	147.0	3.4	**1.2793**	0.137	10.7	ug/L	90	Standard
>	**Ga**	71	41.7	30.2				mg/L	18	Standard
	Rb	85	1983.5	7.3				ug/L	27	Standard
	Y	89	287772.5	1.4				ug/L	295023	Standard
>	**Rh**	103	58.3	17.8				ug/L	7	Standard
	Mo	98	174.8	5.5	**0.1180**	0.006	5.3	ug/L	10	Standard
	Ag	107	64.0	16.5	**0.0001**	0.002	2760.3	ug/L	58	Standard
	Cd	111	8.9	57.2	**0.0042**	0.004	89.3	mg/L	4	Standard
	Cd	114	19.2	9.3	**-0.0068**	0.000	6.9	ug/L	-1	Standard
>	**In**	115	428797.2	0.8				ug/L	427691	Standard
	Sn	118	341.7	14.7	**0.0130**	0.011	86.5	ug/L	273	Standard
	Sb	123	250.0	6.0	**0.0651**	0.004	5.7	ug/L	55	Standard
	Ba	135	8116.8	1.9	**4.1787**	0.080	1.9	ug/L	39	Standard
	Ce	140	923.4	40.2				ug/L	28	Standard
>	**Tb**	159	885909.4	0.6				ug/L	886833	Standard
	Ho	165	10.0					ug/L	10	Standard
	Tl	203	20.0	20.0	**0.0000**	0.001	3441.3	ug/L	2	Standard
	Tl	205	16.7	17.3	**0.0055**	0.001	11.5	ug/L	0	Standard
	Pb	206	322.7	2.1	**0.0150**	0.001	8.4	ug/L	199	Standard
	Pb	207	278.3	2.1	**0.0164**	0.001	5.5	ug/L	178	Standard
	Pb	208	997.7	3.5	**0.0182**	0.002	10.6	ug/L	654	Standard
	U	238	203.3	5.9	**0.0405**	0.002	5.4	ug/L	1	Standard
>	**Bi**	209	415438.0	0.9				ug/L	418387	Standard

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Na	23	1.7	173.2	**2.6443**	4.571	172.9	mg/L	2	Standard
Mg	24	8278.9	1.3	**17.7597**	0.325	1.8	mg/L	27	Standard
K	39	23.3	32.7	**0.1580**	0.087	54.9	mg/L	20	Standard
Ca	43	105.0	12.6	**9.0852**	1.530	16.8	mg/L	40	Standard
Fe	54	329.0	7.9	**0.5412**	0.046	8.4	mg/L	74	Standard
Fe	57	826.7	7.5	**0.2610**	0.602	230.6	mg/L	697	Standard
> **Sc-1**	45	30333.7	2.7				mg/L	28998	Standard
Cl	35	6224.6	3.1				ug/L	6091	Standard
Kr	83	3.7	15.7				ug/L	6	Standard
Br	81	5184.2	4.3				ug/L	383	Standard
P	31	9514.7	4.2				ug/L	8849	Standard
S	34	1016.7	6.9				ug/L	937	Standard
Sr	88	238.3	13.3				ug/L	188	Standard
C	12	120.0	22.0				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.5	51.2				mg/L	12	Standard
Ho-1	165	10.0					mg/L	10	Standard
Er	166	10.0					mg/L	23	Standard
I	127	89341.1	2.9				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.163	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.632	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	100.259
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	99.295
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 28, 2015

Method 6020 - Summary Report

Sample ID: L1508107304
Sample Date/Time: Thursday, August 27, 2015 12:54:05
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	46113.5	4.2				ug/L	44982	Standard
	Be	9	11.7	99.0	**0.0085**	0.018	209.6	ug/L	8	Standard
	Al	27	3018319.2	1.4	**43.6410**	1.306	3.0	ug/L	318	Standard
	Sc	45	29325.0	2.7				ug/L	28998	Standard
	Ti	47	52.7	11.1	**0.1683**	0.031	18.6	ug/L	21	Standard
	V	51	1259.5	4.9	**0.0649**	0.018	27.5	ug/L	1052	Standard
	Cr	52	6888.6	1.8	**0.0477**	0.022	45.2	ug/L	6637	Standard
	Cr	53	1910.1	2.6	**2.5200**	0.083	3.3	ug/L	328	Standard
	Mn	55	33077.4	0.5	**9.8513**	0.042	0.4	ug/L	636	Standard
	Co	59	775.7	2.9	**0.1574**	0.006	3.6	ug/L	199	Standard
	Ni	60	912.4	0.4	**0.5181**	0.006	1.1	ug/L	185	Standard
	Cu	65	313.7	3.8	**0.1122**	0.008	6.9	ug/L	133	Standard
	Zn	66	4870.8	0.6	**5.6620**	0.064	1.1	ug/L	187	Standard
>	**Ge**	72	309260.0	0.5				ug/L	311830	Standard
	As	75	74.2	41.9	**0.1155**	0.039	33.9	ug/L	-58	Standard
	Se	82	56.8	11.7	**0.4739**	0.104	21.9	ug/L	25	Standard
	Se-1	77	138.0	8.2	**1.1246**	0.267	23.8	ug/L	90	Standard
>	**Ga**	71	28.3	10.2				mg/L	18	Standard
	Rb	85	715.0	8.5				ug/L	27	Standard
	Y	89	288733.7	1.1				ug/L	295023	Standard
>	**Rh**	103	55.0	32.8				ug/L	7	Standard
	Mo	98	49.1	6.9	**0.0288**	0.002	7.7	ug/L	10	Standard
	Ag	107	75.0	11.6	**0.0024**	0.002	75.5	ug/L	58	Standard
	Cd	111	40.2	20.7	**0.0276**	0.007	23.6	mg/L	4	Standard
	Cd	114	87.2	12.7	**0.0123**	0.003	27.4	ug/L	-1	Standard
>	**In**	115	426039.2	1.2				ug/L	427691	Standard
	Sn	118	351.7	7.0	**0.0156**	0.005	29.2	ug/L	273	Standard
	Sb	123	185.8	8.4	**0.0486**	0.005	9.6	ug/L	55	Standard
	Ba	135	5317.9	0.8	**2.7485**	0.034	1.3	ug/L	39	Standard
	Ce	140	120.0	30.0				ug/L	28	Standard
>	**Tb**	159	887727.8	1.1				ug/L	886833	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	14.0	31.1	**-0.0008**	0.001	80.4	ug/L	2	Standard
	Tl	205	6.7	43.3	**0.0034**	0.001	18.8	ug/L	0	Standard
	Pb	206	312.0	4.7	**0.0135**	0.004	29.7	ug/L	199	Standard
	Pb	207	260.7	3.1	**0.0128**	0.002	11.8	ug/L	178	Standard
	Pb	208	928.7	4.7	**0.0142**	0.004	26.9	ug/L	654	Standard
	U	238	2410.5	2.6	**0.5068**	0.014	2.8	ug/L	1	Standard
>	**Bi**	209	409396.6	0.9				ug/L	418387	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	9084.4	6.3	**20.1550**	1.032	5.1	mg/L	27	Standard
K	39	35.0	49.5	**0.3134**	0.211	67.3	mg/L	20	Standard
Ca	43	93.3	3.1	**8.0039**	0.108	1.4	mg/L	40	Standard
Fe	54	92.6	16.6	**0.0400**	0.040	100.2	mg/L	74	Standard
Fe	57	876.7	14.2	**0.9337**	1.272	136.2	mg/L	697	Standard
> **Sc-1**	45	29325.0	2.7				mg/L	28998	Standard
Cl	35	6803.5	2.6				ug/L	6091	Standard
Kr	83	5.7	36.7				ug/L	6	Standard
Br	81	3440.4	3.6				ug/L	383	Standard
P	31	10075.0	2.8				ug/L	8849	Standard
S	34	986.7	6.3				ug/L	937	Standard
Sr	88	223.3	8.5				ug/L	188	Standard
C	12	166.7	24.2				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	9.4	99.2				mg/L	12	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	156789.6	4.1				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.516	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.176	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.614
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.851
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 28, 2015

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, August 27, 2015 12:57:17
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	46814.0	4.3				ug/L	44982	Standard
	Be	9	28902.5	1.8	**46.3741**	1.190	2.6	ug/L	8	Standard
	Al	27	3239692.6	1.4	**46.1452**	1.508	3.3	ug/L	318	Standard
	Sc	45	29219.8	1.6				ug/L	28998	Standard
	Ti	47	18887.4	0.6	**101.0237**	0.905	0.9	ug/L	21	Standard
	V	51	192049.4	1.2	**49.9759**	0.783	1.6	ug/L	1052	Standard
	Cr	52	249648.3	0.9	**48.2856**	0.779	1.6	ug/L	6637	Standard
	Cr	53	31015.1	2.4	**49.5099**	1.482	3.0	ug/L	328	Standard
	Mn	55	168000.8	1.9	**50.0716**	0.989	2.0	ug/L	636	Standard
	Co	59	179358.2	2.8	**49.8115**	1.295	2.6	ug/L	199	Standard
	Ni	60	67967.1	1.8	**48.5907**	1.122	2.3	ug/L	185	Standard
	Cu	65	67214.1	0.8	**49.0841**	0.690	1.4	ug/L	133	Standard
	Zn	66	38214.5	1.1	**48.8396**	0.480	1.0	ug/L	187	Standard
>	Ge	72	314075.4	1.0				ug/L	311830	Standard
	As	75	38813.7	1.3	**48.7328**	0.657	1.3	ug/L	-58	Standard
	Se	82	3211.7	1.0	**49.9223**	0.492	1.0	ug/L	25	Standard
	Se-1	77	2319.2	2.2	**49.4090**	0.701	1.4	ug/L	90	Standard
>	Ga	71	43.3	17.6				mg/L	18	Standard
	Rb	85	535.0	2.5				ug/L	27	Standard
	Y	89	288235.4	2.7				ug/L	295023	Standard
>	Rh	103	25.0	20.0				ug/L	7	Standard
	Mo	98	138191.6	1.4	**97.2964**	1.916	2.0	ug/L	10	Standard
	Ag	107	241075.3	1.5	**47.7105**	0.707	1.5	ug/L	58	Standard
	Cd	111	66552.8	1.0	**48.7070**	0.648	1.3	mg/L	4	Standard
	Cd	114	175715.4	1.7	**48.3932**	1.041	2.2	ug/L	-1	Standard
>	In	115	433108.8	0.5				ug/L	427691	Standard
	Sn	118	202334.4	2.8	**44.3932**	1.067	2.4	ug/L	273	Standard
	Sb	123	185069.3	0.5	**48.1469**	0.221	0.5	ug/L	55	Standard
	Ba	135	92774.5	0.8	**47.5034**	0.304	0.6	ug/L	39	Standard
	Ce	140	91.7	35.1				ug/L	28	Standard
>	Tb	159	890244.1	2.3				ug/L	886833	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	321980.4	1.0	**48.1515**	0.976	2.0	ug/L	2	Standard
	Tl	205	229451.3	1.5	**49.0137**	1.124	2.3	ug/L	0	Standard
	Pb	206	207728.0	0.7	**48.6068**	0.752	1.5	ug/L	199	Standard
	Pb	207	185743.5	1.8	**48.1555**	0.978	2.0	ug/L	178	Standard
	Pb	208	667364.8	1.0	**47.9974**	0.826	1.7	ug/L	654	Standard
	U	238	232861.2	0.8	**48.1233**	0.160	0.3	ug/L	1	Standard
>	Bi	209	417942.3	1.1				ug/L	418387	Standard

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Na	23	1.7	173.2	**2.7805**	4.807	172.9	mg/L	2	Standard
Mg	24	2106.8	3.2	**4.6538**	0.150	3.2	mg/L	27	Standard
K	39	361.7	4.2	**4.4709**	0.226	5.0	mg/L	20	Standard
Ca	43	103.3	14.0	**9.3808**	1.844	19.7	mg/L	40	Standard
Fe	54	2372.0	4.6	**5.1358**	0.259	5.1	mg/L	74	Standard
Fe	57	1251.7	2.7	**4.1319**	0.457	11.1	mg/L	697	Standard
Sc-1	45	29219.8	1.6				mg/L	28998	Standard
Cl	35	6690.1	1.5				ug/L	6091	Standard
Kr	83	4.0	50.0				ug/L	6	Standard
Br	81	476.7	7.4				ug/L	383	Standard
P	31	9973.3	6.8				ug/L	8849	Standard
S	34	1103.4	7.3				ug/L	937	Standard
Sr	88	180.0	16.9				ug/L	188	Standard
C	12	186.7	12.4				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	9.4	109.4				mg/L	12	Standard
Ho-1	165	8.3	91.7				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	3718.8	28.9				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	92.748		
Al	27	92.290		
Sc	45			
Ti	47	101.024		
V	51	99.952		
Cr	52	96.571		
Cr	53			
Mn	55	100.143		
Co	59	99.623		
Ni	60	97.181		
Cu	65	98.168		
Zn	66	97.679		
Ge	72		100.720	
As	75	97.466		
Se	82	99.845		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	97.296		
Ag	107	95.421		
Cd	111	97.414		
Cd	114			
> In	115			101.267
Sn	118	88.786		
Sb	123	96.294		
Ba	135	95.007		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	96.303		
Tl	205			
Pb	206			
Pb	207			
Pb	208	95.995		
U	238	96.247		
> Bi	209			99.894
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, August 27, 2015 13:00:29
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	44124.2	1.3				ug/L	44982	Standard
	Be	9	15.0	57.7	**0.0154**	0.015	94.6	ug/L	8	Standard
	Al	27	1913.5	89.6	**0.0245**	0.026	104.6	ug/L	318	Standard
	Sc	45	29602.2	2.5				ug/L	28998	Standard
	Ti	47	29.3	32.2	**0.0398**	0.050	126.1	ug/L	21	Standard
	V	51	949.4	10.4	**-0.0200**	0.025	125.1	ug/L	1052	Standard
	Cr	52	5840.1	6.5	**-0.1756**	0.071	40.5	ug/L	6637	Standard
	Cr	53	406.7	15.6	**0.0459**	0.100	217.7	ug/L	328	Standard
	Mn	55	637.7	4.2	**-0.0086**	0.008	88.0	ug/L	636	Standard
	Co	59	250.0	17.7	**0.0083**	0.012	146.1	ug/L	199	Standard
	Ni	60	239.3	46.6	**0.0262**	0.080	304.1	ug/L	185	Standard
	Cu	65	189.3	46.0	**0.0183**	0.063	347.4	ug/L	133	Standard
	Zn	66	243.7	35.7	**-0.4404**	0.112	25.4	ug/L	187	Standard
>	**Ge**	72	312295.7	0.4				ug/L	311830	Standard
	As	75	40.9	151.2	**0.0724**	0.078	107.3	ug/L	-58	Standard
	Se	82	31.7	10.2	**0.0694**	0.051	73.0	ug/L	25	Standard
	Se-1	77	95.0	13.7	**0.1350**	0.288	213.0	ug/L	90	Standard
>	**Ga**	71	16.7	45.8				mg/L	18	Standard
	Rb	85	36.7	55.1				ug/L	27	Standard
	Y	89	282764.9	2.1				ug/L	295023	Standard
>	**Rh**	103	16.7	34.6				ug/L	7	Standard
	Mo	98	80.5	37.1	**0.0506**	0.021	42.3	ug/L	10	Standard
	Ag	107	143.3	64.6	**0.0158**	0.018	117.0	ug/L	58	Standard
	Cd	111	40.1	106.6	**0.0271**	0.031	116.2	mg/L	4	Standard
	Cd	114	108.6	134.9	**0.0179**	0.041	226.3	ug/L	-1	Standard
>	**In**	115	431560.3	0.9				ug/L	427691	Standard
	Sn	118	426.7	14.5	**0.0312**	0.014	43.7	ug/L	273	Standard
	Sb	123	823.3	7.1	**0.2145**	0.017	8.0	ug/L	55	Standard
	Ba	135	110.0	91.5	**0.0356**	0.052	146.0	ug/L	39	Standard
	Ce	140	25.0	0.0				ug/L	28	Standard
>	**Tb**	159	884035.8	2.1				ug/L	886833	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	136.3	100.5	**0.0176**	0.021	118.5	ug/L	2	Standard
	Tl	205	55.0	32.8	**0.0137**	0.004	29.1	ug/L	0	Standard
	Pb	206	277.3	24.4	**0.0041**	0.017	405.4	ug/L	199	Standard
	Pb	207	213.7	26.5	**-0.0006**	0.015	2576.8	ug/L	178	Standard
	Pb	208	775.3	12.9	**0.0019**	0.008	407.2	ug/L	654	Standard
	U	238	60.3	52.3	**0.0107**	0.007	62.1	ug/L	1	Standard
>	**Bi**	209	417359.0	1.2				ug/L	418387	Standard

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Na	23	1.7	173.2	**2.7006**	4.669	172.9	mg/L	2	Standard
Mg	24	51.7	40.3	**0.0630**	0.043	68.2	mg/L	27	Standard
K	39	5.0	100.0	**-0.0627**	0.064	102.8	mg/L	20	Standard
Ca	43	50.0	36.1	**2.1455**	2.247	104.8	mg/L	40	Standard
Fe	54	81.0	9.1	**0.0117**	0.015	128.3	mg/L	74	Standard
Fe	57	906.7	15.3	**1.0977**	1.185	107.9	mg/L	697	Standard
> **Sc-1**	45	29602.2	2.5				mg/L	28998	Standard
Cl	35	6541.4	1.4				ug/L	6091	Standard
Kr	83	6.3	48.2				ug/L	6	Standard
Br	81	470.0	7.7				ug/L	383	Standard
P	31	9991.6	3.8				ug/L	8849	Standard
S	34	1186.7	9.3				ug/L	937	Standard
Sr	88	208.3	2.8				ug/L	188	Standard
C	12	106.7	54.9				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	22.2	69.0				mg/L	12	Standard
Ho-1	165	8.3	34.6				mg/L	10	Standard
Er	166	23.3	24.7				mg/L	23	Standard
I	127	2426.9	2.0				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.149	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.905	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.754	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, August 27, 2015 13:03:56
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	44359.9	1.3				ug/L	44982	Standard
	Be	9	125.0	14.4	**0.2014**	0.029	14.5	ug/L	8	Standard
	Al	27	353.3	6.7	**0.0011**	0.000	27.9	ug/L	318	Standard
	Sc	45	30208.4	2.6				ug/L	28998	Standard
	Ti	47	19.0	5.3	**-0.0170**	0.007	39.9	ug/L	21	Standard
	V	51	2346.3	2.5	**0.3398**	0.024	6.9	ug/L	1052	Standard
	Cr	52	10283.8	1.0	**0.6867**	0.044	6.5	ug/L	6637	Standard
	Cr	53	873.4	12.9	**0.7848**	0.160	20.4	ug/L	328	Standard
	Mn	55	2265.8	2.8	**0.4725**	0.009	2.0	ug/L	636	Standard
	Co	59	1583.7	2.7	**0.3755**	0.007	2.0	ug/L	199	Standard
	Ni	60	2357.9	1.4	**1.5320**	0.003	0.2	ug/L	185	Standard
	Cu	65	1235.4	2.1	**0.7768**	0.023	3.0	ug/L	133	Standard
	Zn	66	5490.0	1.9	**6.3160**	0.182	2.9	ug/L	187	Standard
>	**Ge**	72	316395.2	1.5				ug/L	311830	Standard
	As	75	266.3	17.2	**0.3524**	0.053	15.1	ug/L	-58	Standard
	Se	82	46.1	12.3	**0.2867**	0.084	29.2	ug/L	25	Standard
	Se-1	77	101.3	10.3	**0.2494**	0.258	103.5	ug/L	90	Standard
>	**Ga**	71	25.0	52.9				mg/L	18	Standard
	Rb	85	28.3	53.9				ug/L	27	Standard
	Y	89	292163.4	3.1				ug/L	295023	Standard
>	**Rh**	103	23.3	24.7				ug/L	7	Standard
	Mo	98	19.2	23.0	**0.0071**	0.003	44.4	ug/L	10	Standard
	Ag	107	1887.5	3.7	**0.3587**	0.011	3.1	ug/L	58	Standard
	Cd	111	311.6	1.6	**0.2243**	0.004	1.9	mg/L	4	Standard
	Cd	114	797.9	1.1	**0.2064**	0.004	1.7	ug/L	-1	Standard
>	**In**	115	435625.3	0.7				ug/L	427691	Standard
	Sn	118	328.3	12.3	**0.0088**	0.008	96.1	ug/L	273	Standard
	Sb	123	1653.7	3.8	**0.4272**	0.018	4.1	ug/L	55	Standard
	Ba	135	1412.7	2.1	**0.6984**	0.012	1.7	ug/L	39	Standard
	Ce	140	13.3	57.3				ug/L	28	Standard
>	**Tb**	159	891664.1	0.4				ug/L	886833	Standard
	Ho	165	11.7	49.5				ug/L	10	Standard
	Tl	203	490.0	3.3	**0.0691**	0.002	2.7	ug/L	2	Standard
	Tl	205	358.3	10.3	**0.0772**	0.007	9.0	ug/L	0	Standard
	Pb	206	1069.0	1.2	**0.1855**	0.003	1.7	ug/L	199	Standard
	Pb	207	865.0	7.3	**0.1649**	0.018	10.8	ug/L	178	Standard
	Pb	208	3328.8	2.9	**0.1819**	0.005	2.9	ug/L	654	Standard
	U	238	1818.1	1.5	**0.3682**	0.009	2.5	ug/L	1	Standard
>	**Bi**	209	424515.6	1.0				ug/L	418387	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	31.7	9.1	**0.0182**	0.006	34.2	mg/L	27	Standard
K	39	11.7	24.7	**0.0173**	0.035	202.6	mg/L	20	Standard
Ca	43	31.7	24.1	**-0.3177**	1.103	347.2	mg/L	40	Standard
Fe	54	87.3	37.2	**0.0232**	0.076	327.0	mg/L	74	Standard
Fe	57	745.0	5.1	**-0.3904**	0.233	59.8	mg/L	697	Standard
> **Sc-1**	45	30208.4	2.6				mg/L	28998	Standard
Cl	35	6764.2	2.2				ug/L	6091	Standard
Kr	83	5.3	10.8				ug/L	6	Standard
Br	81	456.7	14.6				ug/L	383	Standard
P	31	9663.1	3.7				ug/L	8849	Standard
S	34	1180.0	0.0				ug/L	937	Standard
Sr	88	185.0	15.0				ug/L	188	Standard
C	12	173.3	3.3				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	9.2	111.3				mg/L	12	Standard
Ho-1	165	11.7	49.5				mg/L	10	Standard
Er	166	16.7	34.6				mg/L	23	Standard
I	127	1750.1	8.7				mg/L	1437	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	100.683		
	Al	27			
	Sc	45			
	Ti	47			
	V	51	84.948		
	Cr	52	85.840		
	Cr	53			
	Mn	55	94.493		
	Co	59	93.879		
	Ni	60	95.748		
	Cu	65	97.104		
	Zn	66	101.056		
>	Ge	72		101.464	
	As	75	88.093		
	Se	82	71.686		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	89.678		
Cd	111	93.474		
Cd	114			
> In	115			101.855
Sn	118			
Sb	123	106.797		
Ba	135	93.118		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	86.427		
Tl	205			
Pb	206			
Pb	207			
Pb	208	90.943		
U	238	92.044		
> Bi	209			101.465
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW 46 WG536649-03
Sample Date/Time: Thursday, August 27, 2015 13:10:55
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	47457.6	4.0				ug/L	44982	Standard
	Be	9	18.3	87.7	**0.0196**	0.026	133.0	ug/L	8	Standard
	Al	27	3795.5	3.9	**0.0491**	0.004	7.8	ug/L	318	Standard
	Sc	45	30664.4	4.7				ug/L	28998	Standard
	Ti	47	25.3	12.1	**0.0155**	0.021	132.8	ug/L	21	Standard
	V	51	955.6	5.2	**-0.0244**	0.013	52.3	ug/L	1052	Standard
	Cr	52	7283.8	1.7	**0.0787**	0.060	76.0	ug/L	6637	Standard
	Cr	53	538.3	2.8	**0.2392**	0.031	13.1	ug/L	328	Standard
	Mn	55	1034.4	3.8	**0.1031**	0.003	2.7	ug/L	636	Standard
	Co	59	218.7	4.3	**-0.0019**	0.004	223.1	ug/L	199	Standard
	Ni	60	242.3	3.8	**0.0244**	0.010	42.3	ug/L	185	Standard
	Cu	65	249.7	5.4	**0.0583**	0.007	11.2	ug/L	133	Standard
	Zn	66	2318.8	4.1	**2.1955**	0.129	5.9	ug/L	187	Standard
>	**Ge**	72	320258.4	4.5				ug/L	311830	Standard
	As	75	-37.5	54.2	**-0.0255**	0.026	103.1	ug/L	-58	Standard
	Se	82	24.9	38.3	**-0.0486**	0.140	288.0	ug/L	25	Standard
	Se-1	77	99.7	9.3	**0.1841**	0.174	94.5	ug/L	90	Standard
>	**Ga**	71	51.7	24.4				mg/L	18	Standard
	Rb	85	76.7	26.4				ug/L	27	Standard
	Y	89	287890.8	4.2				ug/L	295023	Standard
>	**Rh**	103	10.0	86.6				ug/L	7	Standard
	Mo	98	20.2	16.4	**0.0078**	0.003	36.4	ug/L	10	Standard
	Ag	107	64.0	14.9	**-0.0001**	0.002	1372.1	ug/L	58	Standard
	Cd	111	11.6	10.0	**0.0060**	0.001	14.5	mg/L	4	Standard
	Cd	114	23.7	20.4	**-0.0057**	0.001	20.5	ug/L	-1	Standard
>	**In**	115	437609.6	4.4				ug/L	427691	Standard
	Sn	118	420.0	5.5	**0.0287**	0.009	29.8	ug/L	273	Standard
	Sb	123	196.2	18.6	**0.0502**	0.012	23.1	ug/L	55	Standard
	Ba	135	377.3	2.7	**0.1706**	0.013	7.7	ug/L	39	Standard
	Ce	140	386.7	4.0				ug/L	28	Standard
>	**Tb**	159	908254.1	4.4				ug/L	886833	Standard
	Ho	165	10.0	100.0				ug/L	10	Standard
	Tl	203	21.3	27.1	**0.0001**	0.001	647.8	ug/L	2	Standard
	Tl	205	8.3	34.6	**0.0037**	0.001	17.2	ug/L	0	Standard
	Pb	206	292.0	2.4	**0.0058**	0.004	60.4	ug/L	199	Standard
	Pb	207	233.3	6.7	**0.0030**	0.004	139.4	ug/L	178	Standard
	Pb	208	882.3	1.4	**0.0081**	0.003	40.9	ug/L	654	Standard
	U	238	15.3	27.2	**0.0013**	0.001	74.3	ug/L	1	Standard
>	**Bi**	209	427719.6	3.9				ug/L	418387	Standard

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Na	23	1.7	173.2	**2.5716**	4.446	172.9	mg/L	2	Standard
Mg	24	60.0	46.4	**0.0759**	0.054	70.8	mg/L	27	Standard
K	39	6.7	86.6	**-0.0446**	0.071	158.8	mg/L	20	Standard
Ca	43	35.0	37.8	**0.0394**	1.700	4319.7	mg/L	40	Standard
Fe	54	74.2	33.6	**-0.0075**	0.060	802.6	mg/L	74	Standard
Fe	57	755.0	1.8	**-0.3886**	0.360	92.6	mg/L	697	Standard
> **Sc-1**	45	30664.4	4.7				mg/L	28998	Standard
Cl	35	6919.6	1.4				ug/L	6091	Standard
Kr	83	3.3	45.8				ug/L	6	Standard
Br	81	533.3	6.0				ug/L	383	Standard
P	31	10568.7	1.0				ug/L	8849	Standard
S	34	1120.0	0.9				ug/L	937	Standard
Sr	88	203.3	3.8				ug/L	188	Standard
C	12	166.7	19.3				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	-1.0	50.0				mg/L	12	Standard
Ho-1	165	10.0	100.0				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	23	Standard
I	127	1368.4	11.1				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.504	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.703	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.319
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.231
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 46 WG536649-04
Sample Date/Time: Thursday, August 27, 2015 13:14:06
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49163.0	1.9				ug/L	44982	Standard
	Be	9	29794.3	1.6	**45.5056**	1.478	3.2	ug/L	8	Standard
	Al	27	4509.0	3.9	**0.0569**	0.002	3.7	ug/L	318	Standard
	Sc	45	31314.0	1.1				ug/L	28998	Standard
	Ti	47	30.7	6.8	**0.0372**	0.012	31.7	ug/L	21	Standard
	V	51	196763.9	1.9	**48.3897**	1.213	2.5	ug/L	1052	Standard
	Cr	52	268126.7	0.4	**49.0347**	0.368	0.7	ug/L	6637	Standard
	Cr	53	32915.7	1.7	**49.6645**	1.156	2.3	ug/L	328	Standard
	Mn	55	178093.6	0.2	**50.1718**	0.514	1.0	ug/L	636	Standard
	Co	59	184130.8	0.8	**48.3351**	0.652	1.3	ug/L	199	Standard
	Ni	60	71219.7	1.1	**48.1238**	0.930	1.9	ug/L	185	Standard
	Cu	65	70120.9	0.4	**48.3975**	0.527	1.1	ug/L	133	Standard
	Zn	66	41433.9	0.8	**50.0742**	0.843	1.7	ug/L	187	Standard
>	**Ge**	72	332288.0	0.9				ug/L	311830	Standard
	As	75	38572.3	0.6	**45.7785**	0.664	1.5	ug/L	-58	Standard
	Se	82	3235.1	0.9	**47.5134**	0.860	1.8	ug/L	25	Standard
	Se-1	77	2349.2	2.5	**47.2193**	0.812	1.7	ug/L	90	Standard
>	**Ga**	71	26.7	21.7				mg/L	18	Standard
	Rb	85	51.7	20.1				ug/L	27	Standard
	Y	89	306206.9	1.4				ug/L	295023	Standard
>	**Rh**	103	31.7	55.5				ug/L	7	Standard
	Mo	98	41.0	12.0	**0.0208**	0.003	13.9	ug/L	10	Standard
	Ag	107	233000.7	1.2	**43.3330**	0.584	1.3	ug/L	58	Standard
	Cd	111	68768.6	1.2	**47.2940**	0.530	1.1	mg/L	4	Standard
	Cd	114	183224.1	2.4	**47.4106**	0.624	1.3	ug/L	-1	Standard
>	**In**	115	460945.2	2.1				ug/L	427691	Standard
	Sn	118	535.0	9.7	**0.0476**	0.011	23.6	ug/L	273	Standard
	Sb	123	196097.7	1.2	**47.9420**	0.573	1.2	ug/L	55	Standard
	Ba	135	96865.7	1.3	**46.6142**	1.021	2.2	ug/L	39	Standard
	Ce	140	325.0	10.8				ug/L	28	Standard
>	**Tb**	159	951237.3	0.7				ug/L	886833	Standard
	Ho	165	20.0	50.0				ug/L	10	Standard
	Tl	203	333185.3	0.3	**46.6773**	0.179	0.4	ug/L	2	Standard
	Tl	205	236936.7	1.1	**47.4143**	0.603	1.3	ug/L	0	Standard
	Pb	206	220358.2	0.8	**48.3049**	0.492	1.0	ug/L	199	Standard
	Pb	207	190073.9	1.0	**46.1656**	0.645	1.4	ug/L	178	Standard
	Pb	208	698951.6	0.7	**47.0933**	0.503	1.1	ug/L	654	Standard
	U	238	236135.9	0.8	**45.7210**	0.421	0.9	ug/L	1	Standard
>	**Bi**	209	446087.0	0.6				ug/L	418387	Standard

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Na	23	1.7	173.2	**2.6469**	4.576	172.9	mg/L	2	Standard
Mg	24	63.3	19.9	**0.0819**	0.027	33.5	mg/L	27	Standard
K	39	20.0	43.3	**0.1107**	0.101	91.3	mg/L	20	Standard
Ca	43	58.3	26.2	**2.8367**	1.849	65.2	mg/L	40	Standard
Fe	54	72.8	32.3	**-0.0153**	0.048	313.4	mg/L	74	Standard
Fe	57	768.4	13.2	**-0.4236**	0.767	181.0	mg/L	697	Standard
> **Sc-1**	45	31314.0	1.1				mg/L	28998	Standard
Cl	35	6946.3	2.9				ug/L	6091	Standard
Kr	83	3.3	75.5				ug/L	6	Standard
Br	81	490.0	13.4				ug/L	383	Standard
P	31	10627.1	1.9				ug/L	8849	Standard
S	34	1116.7	10.0				ug/L	937	Standard
Sr	88	216.7	9.6				ug/L	188	Standard
C	12	193.3	19.6				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	15.2	100.3				mg/L	12	Standard
Ho-1	165	20.0	50.0				mg/L	10	Standard
Er	166	30.0	0.0				mg/L	23	Standard
I	127	7096.7	1.8				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.296	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.561	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.775
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.621
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508118406 WG536649-01
Sample Date/Time: Thursday, August 27, 2015 13:17:17
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	47930.7	3.0				ug/L	44982	Standard
	Be	9	23.3	32.7	**0.0265**	0.012	44.5	ug/L	8	Standard
	Al	27	2165011.4	0.9	**30.1072**	0.883	2.9	ug/L	318	Standard
	Sc	45	31472.7	2.7				ug/L	28998	Standard
	Ti	47	383.3	19.8	**1.8080**	0.369	20.4	ug/L	21	Standard
	V	51	2358.1	2.6	**0.3096**	0.011	3.6	ug/L	1052	Standard
	Cr	52	7938.4	3.5	**0.1394**	0.059	42.7	ug/L	6637	Standard
	Cr	53	1255.1	12.0	**1.2895**	0.222	17.2	ug/L	328	Standard
	Mn	55	115163.7	0.1	**32.1654**	0.272	0.8	ug/L	636	Standard
	Co	59	834.0	2.5	**0.1562**	0.004	2.3	ug/L	199	Standard
	Ni	60	1359.1	3.6	**0.7688**	0.024	3.2	ug/L	185	Standard
	Cu	65	1205.4	0.7	**0.7077**	0.008	1.2	ug/L	133	Standard
	Zn	66	2883.3	2.5	**2.7564**	0.085	3.1	ug/L	187	Standard
>	**Ge**	72	334412.0	0.9				ug/L	311830	Standard
	As	75	447.3	9.0	**0.5485**	0.051	9.3	ug/L	-58	Standard
	Se	82	100.0	6.9	**1.0436**	0.112	10.8	ug/L	25	Standard
	Se-1	77	125.7	8.0	**0.6335**	0.210	33.1	ug/L	90	Standard
>	**Ga**	71	173.3	8.8				mg/L	18	Standard
	Rb	85	12406.7	1.7				ug/L	27	Standard
	Y	89	309006.2	1.3				ug/L	295023	Standard
>	**Rh**	103	53.3	5.4				ug/L	7	Standard
	Mo	98	1068.4	2.8	**0.7046**	0.022	3.1	ug/L	10	Standard
	Ag	107	120.0	15.1	**0.0097**	0.003	34.3	ug/L	58	Standard
	Cd	111	19.3	37.8	**0.0109**	0.005	46.1	mg/L	4	Standard
	Cd	114	68.2	25.1	**0.0056**	0.004	80.0	ug/L	-1	Standard
>	**In**	115	458285.0	0.3				ug/L	427691	Standard
	Sn	118	438.3	7.6	**0.0282**	0.007	25.3	ug/L	273	Standard
	Sb	123	493.6	5.8	**0.1208**	0.007	5.6	ug/L	55	Standard
	Ba	135	42618.5	0.8	**20.6115**	0.205	1.0	ug/L	39	Standard
	Ce	140	4494.0	3.0				ug/L	28	Standard
>	**Tb**	159	942052.3	1.2				ug/L	886833	Standard
	Ho	165	146.7	16.1				ug/L	10	Standard
	Tl	203	81.3	20.8	**0.0087**	0.002	27.4	ug/L	2	Standard
	Tl	205	56.7	36.7	**0.0136**	0.004	31.1	ug/L	0	Standard
	Pb	206	981.4	6.2	**0.1600**	0.013	7.8	ug/L	199	Standard
	Pb	207	819.4	0.6	**0.1483**	0.002	1.4	ug/L	178	Standard
	Pb	208	3084.1	2.1	**0.1596**	0.006	3.5	ug/L	654	Standard
	U	238	1368.1	5.3	**0.2701**	0.014	5.1	ug/L	1	Standard
>	**Bi**	209	434477.1	0.5				ug/L	418387	Standard

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Na	23	3.3	86.6	**5.1506**	4.459	86.6	mg/L	2	Standard
Mg	24	8390.7	2.6	**17.3447**	0.395	2.3	mg/L	27	Standard
K	39	143.3	28.2	**1.5688**	0.498	31.7	mg/L	20	Standard
Ca	43	180.0	19.4	**17.9882**	4.784	26.6	mg/L	40	Standard
Fe	54	142.2	10.5	**0.1284**	0.033	25.5	mg/L	74	Standard
Fe	57	883.4	5.8	**0.4668**	0.576	123.4	mg/L	697	Standard
Sc-1	45	31472.7	2.7				mg/L	28998	Standard
Cl	35	7126.3	3.1				ug/L	6091	Standard
Kr	83	5.0	40.0				ug/L	6	Standard
Br	81	6094.6	4.2				ug/L	383	Standard
P	31	10683.8	2.8				ug/L	8849	Standard
S	34	1105.0	11.8				ug/L	937	Standard
Sr	88	203.3	5.1				ug/L	188	Standard
C	12	253.3	9.9				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	209.3	9.2				mg/L	12	Standard
Ho-1	165	146.7	16.1				mg/L	10	Standard
Er	166	153.3	21.0				mg/L	23	Standard
I	127	80004.6	6.5				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.556	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.242	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.153
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.846
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508118406DP WG536649-06
Sample Date/Time: Thursday, August 27, 2015 13:20:29
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48922.2	1.4				ug/L	44982	Standard
	Be	9	26.7	21.7	**0.0308**	0.009	28.1	ug/L	8	Standard
	Al	27	2297111.2	0.8	**31.2816**	0.225	0.7	ug/L	318	Standard
	Sc	45	31385.8	3.1				ug/L	28998	Standard
	Ti	47	673.4	55.7	**3.2987**	1.906	57.8	ug/L	21	Standard
	V	51	2730.7	5.2	**0.4070**	0.036	8.8	ug/L	1052	Standard
	Cr	52	8348.6	1.6	**0.2291**	0.025	11.1	ug/L	6637	Standard
	Cr	53	1366.7	6.9	**1.4774**	0.146	9.9	ug/L	328	Standard
	Mn	55	122237.8	0.9	**34.4461**	0.308	0.9	ug/L	636	Standard
	Co	59	888.4	5.0	**0.1724**	0.012	6.8	ug/L	199	Standard
	Ni	60	1421.1	2.5	**0.8189**	0.025	3.1	ug/L	185	Standard
	Cu	65	1166.4	3.6	**0.6878**	0.030	4.3	ug/L	133	Standard
	Zn	66	2643.9	1.3	**2.4921**	0.041	1.6	ug/L	187	Standard
>	**Ge**	72	331572.1	0.1				ug/L	311830	Standard
	As	75	497.0	2.3	**0.6118**	0.013	2.1	ug/L	-58	Standard
	Se	82	107.2	8.4	**1.1620**	0.132	11.4	ug/L	25	Standard
	Se-1	77	125.0	0.0	**0.6419**	0.003	0.5	ug/L	90	Standard
>	**Ga**	71	178.3	15.4				mg/L	18	Standard
	Rb	85	13117.3	3.0				ug/L	27	Standard
	Y	89	310094.1	2.6				ug/L	295023	Standard
>	**Rh**	103	60.0	25.0				ug/L	7	Standard
	Mo	98	1091.3	1.3	**0.7281**	0.020	2.8	ug/L	10	Standard
	Ag	107	117.7	15.0	**0.0096**	0.004	38.7	ug/L	58	Standard
	Cd	111	25.5	7.1	**0.0154**	0.001	6.5	mg/L	4	Standard
	Cd	114	82.7	32.3	**0.0096**	0.007	71.6	ug/L	-1	Standard
>	**In**	115	453218.3	1.5				ug/L	427691	Standard
	Sn	118	458.3	12.3	**0.0333**	0.011	31.7	ug/L	273	Standard
	Sb	123	407.1	8.4	**0.1007**	0.010	9.6	ug/L	55	Standard
	Ba	135	44863.7	1.7	**21.9415**	0.233	1.1	ug/L	39	Standard
	Ce	140	5414.3	18.6				ug/L	28	Standard
>	**Tb**	159	937173.2	1.1				ug/L	886833	Standard
	Ho	165	153.3	14.7				ug/L	10	Standard
	Tl	203	68.3	13.8	**0.0069**	0.001	19.4	ug/L	2	Standard
	Tl	205	38.3	60.2	**0.0099**	0.005	48.1	ug/L	0	Standard
	Pb	206	1060.0	3.6	**0.1792**	0.008	4.4	ug/L	199	Standard
	Pb	207	867.4	0.2	**0.1616**	0.001	0.9	ug/L	178	Standard
	Pb	208	3222.5	1.4	**0.1705**	0.004	2.3	ug/L	654	Standard
	U	238	1468.1	4.8	**0.2918**	0.015	5.2	ug/L	1	Standard
>	**Bi**	209	431892.8	0.5				ug/L	418387	Standard

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Na	23	3.3	86.6	**5.2947**	4.583	86.5	mg/L	2	Standard
Mg	24	9012.7	0.7	**18.6938**	0.553	3.0	mg/L	27	Standard
K	39	126.7	8.2	**1.3715**	0.098	7.2	mg/L	20	Standard
Ca	43	223.3	8.5	**23.3474**	1.559	6.7	mg/L	40	Standard
Fe	54	129.0	10.2	**0.1023**	0.035	34.2	mg/L	74	Standard
Fe	57	836.7	4.1	**0.1095**	0.301	274.9	mg/L	697	Standard
Sc-1	45	31385.8	3.1				mg/L	28998	Standard
Cl	35	7706.6	1.9				ug/L	6091	Standard
Kr	83	4.7	53.9				ug/L	6	Standard
Br	81	5957.8	5.4				ug/L	383	Standard
P	31	10500.3	3.0				ug/L	8849	Standard
S	34	1160.0	6.3				ug/L	937	Standard
Sr	88	235.0	5.6				ug/L	188	Standard
C	12	273.3	42.4				mg/L	167	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	211.2	22.1				mg/L	12	Standard
Ho-1	165	153.3	14.7				mg/L	10	Standard
Er	166	113.3	10.2				mg/L	23	Standard
I	127	86179.6	3.7				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.760	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.331	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.969
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.228
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1508118406DP WG536649-06
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Method 6020 - Summary Report

Sample ID: L1508118406S WG536649-07
Sample Date/Time: Thursday, August 27, 2015 13:23:40
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51025.8	2.4				ug/L	44982	Standard
	Be	9	30153.3	2.5	**44.3598**	0.786	1.8	ug/L	8	Standard
	Al	27	2325884.1	1.8	**30.3745**	0.750	2.5	ug/L	318	Standard
	Sc	45	31203.8	0.6				ug/L	28998	Standard
	Ti	47	487.0	16.1	**2.3463**	0.403	17.2	ug/L	21	Standard
	V	51	199549.1	0.7	**49.0501**	0.348	0.7	ug/L	1052	Standard
	Cr	52	265827.4	2.3	**48.5772**	1.102	2.3	ug/L	6637	Standard
	Cr	53	32200.9	2.6	**48.5427**	1.184	2.4	ug/L	328	Standard
	Mn	55	292863.9	1.7	**82.5885**	1.292	1.6	ug/L	636	Standard
	Co	59	182266.5	1.0	**47.8192**	0.395	0.8	ug/L	199	Standard
	Ni	60	70473.9	0.4	**47.5906**	0.105	0.2	ug/L	185	Standard
	Cu	65	69589.5	1.8	**48.0033**	0.772	1.6	ug/L	133	Standard
	Zn	66	40222.0	1.3	**48.5587**	0.516	1.1	ug/L	187	Standard
>	**Ge**	72	332442.9	0.2				ug/L	311830	Standard
	As	75	40366.7	1.6	**47.8799**	0.668	1.4	ug/L	-58	Standard
	Se	82	3356.3	1.6	**49.2812**	0.852	1.7	ug/L	25	Standard
	Se-1	77	2427.5	3.7	**48.8386**	1.761	3.6	ug/L	90	Standard
>	**Ga**	71	140.0	6.2				mg/L	18	Standard
	Rb	85	12940.5	3.9				ug/L	27	Standard
	Y	89	305051.6	2.6				ug/L	295023	Standard
>	**Rh**	103	100.0	26.0				ug/L	7	Standard
	Mo	98	1139.5	3.1	**0.7501**	0.031	4.1	ug/L	10	Standard
	Ag	107	223651.6	0.7	**41.7240**	0.516	1.2	ug/L	58	Standard
	Cd	111	68006.1	0.5	**46.9169**	0.511	1.1	mg/L	4	Standard
	Cd	114	179024.7	1.8	**46.4720**	0.609	1.3	ug/L	-1	Standard
>	**In**	115	459464.8	1.0				ug/L	427691	Standard
	Sn	118	576.7	6.6	**0.0566**	0.009	16.1	ug/L	273	Standard
	Sb	123	197163.2	0.3	**48.3538**	0.496	1.0	ug/L	55	Standard
	Ba	135	139580.1	1.6	**67.3770**	0.656	1.0	ug/L	39	Standard
	Ce	140	5209.2	5.0				ug/L	28	Standard
>	**Tb**	159	937303.9	1.7				ug/L	886833	Standard
	Ho	165	146.7	21.7				ug/L	10	Standard
	Tl	203	328342.3	0.7	**46.9461**	0.409	0.9	ug/L	2	Standard
	Tl	205	230473.2	1.3	**47.0713**	0.782	1.7	ug/L	0	Standard
	Pb	206	216773.3	0.0	**48.4974**	0.290	0.6	ug/L	199	Standard
	Pb	207	185404.8	0.5	**45.9567**	0.168	0.4	ug/L	178	Standard
	Pb	208	682021.7	0.3	**46.8973**	0.162	0.3	ug/L	654	Standard
	U	238	239672.8	0.5	**47.3621**	0.483	1.0	ug/L	1	Standard
>	**Bi**	209	437087.7	0.6				ug/L	418387	Standard

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Na	23	3.3	86.6	**5.2573**	4.549	86.5	mg/L	2	Standard
Mg	24	8737.5	2.0	**18.2172**	0.387	2.1	mg/L	27	Standard
K	39	171.7	12.1	**1.9173**	0.257	13.4	mg/L	20	Standard
Ca	43	196.7	10.6	**20.1876**	2.458	12.2	mg/L	40	Standard
Fe	54	138.2	40.9	**0.1220**	0.116	95.3	mg/L	74	Standard
Fe	57	990.0	3.5	**1.3655**	0.234	17.1	mg/L	697	Standard
> **Sc-1**	45	31203.8	0.6				mg/L	28998	Standard
Cl	35	7657.3	1.7				ug/L	6091	Standard
Kr	83	5.3	54.1				ug/L	6	Standard
Br	81	6137.9	3.2				ug/L	383	Standard
P	31	10582.0	5.2				ug/L	8849	Standard
S	34	1125.0	4.5				ug/L	937	Standard
Sr	88	203.3	18.5				ug/L	188	Standard
C	12	350.0	7.6				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	230.9	5.8				mg/L	12	Standard
Ho-1	165	146.7	21.7				mg/L	10	Standard
Er	166	120.0	44.1				mg/L	23	Standard
I	127	87352.0	7.5				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.437	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.610	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.429
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.470
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508118408
Sample Date/Time: Thursday, August 27, 2015 13:26:51
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48877.1	3.4				ug/L	44982	Standard
	Be	9	31.7	63.8	**0.0390**	0.033	83.4	ug/L	8	Standard
	Al	27	2304866.3	1.1	**31.4303**	0.708	2.3	ug/L	318	Standard
	Sc	45	31751.6	5.4				ug/L	28998	Standard
	Ti	47	696.4	39.7	**3.4496**	1.407	40.8	ug/L	21	Standard
	V	51	2574.3	5.9	**0.3753**	0.034	9.1	ug/L	1052	Standard
	Cr	52	8696.8	1.5	**0.3132**	0.014	4.6	ug/L	6637	Standard
	Cr	53	1476.7	3.6	**1.6713**	0.077	4.6	ug/L	328	Standard
	Mn	55	122482.5	1.9	**34.9082**	0.473	1.4	ug/L	636	Standard
	Co	59	890.0	0.0	**0.1755**	0.002	0.9	ug/L	199	Standard
	Ni	60	1453.4	2.8	**0.8520**	0.024	2.8	ug/L	185	Standard
	Cu	65	1118.7	0.8	**0.6635**	0.001	0.2	ug/L	133	Standard
	Zn	66	1992.1	1.3	**1.7187**	0.023	1.3	ug/L	187	Standard
>	**Ge**	72	327847.1	0.6				ug/L	311830	Standard
	As	75	507.7	7.8	**0.6313**	0.046	7.2	ug/L	-58	Standard
	Se	82	111.1	6.8	**1.2384**	0.119	9.6	ug/L	25	Standard
	Se-1	77	144.3	5.8	**1.0828**	0.191	17.7	ug/L	90	Standard
>	**Ga**	71	151.7	1.9				mg/L	18	Standard
	Rb	85	12800.4	0.4				ug/L	27	Standard
	Y	89	302250.1	0.9				ug/L	295023	Standard
>	**Rh**	103	36.7	20.8				ug/L	7	Standard
	Mo	98	1129.2	3.1	**0.7598**	0.020	2.7	ug/L	10	Standard
	Ag	107	126.3	8.7	**0.0114**	0.002	19.4	ug/L	58	Standard
	Cd	111	27.2	17.4	**0.0167**	0.003	19.2	mg/L	4	Standard
	Cd	114	61.4	9.2	**0.0041**	0.002	36.7	ug/L	-1	Standard
>	**In**	115	449424.2	0.6				ug/L	427691	Standard
	Sn	118	508.3	5.4	**0.0448**	0.006	13.7	ug/L	273	Standard
	Sb	123	432.8	4.5	**0.1079**	0.005	4.9	ug/L	55	Standard
	Ba	135	45206.3	0.3	**22.2961**	0.161	0.7	ug/L	39	Standard
	Ce	140	5274.3	6.1				ug/L	28	Standard
>	**Tb**	159	932947.9	1.3				ug/L	886833	Standard
	Ho	165	150.0	6.7				ug/L	10	Standard
	Tl	203	97.7	5.3	**0.0112**	0.001	6.6	ug/L	2	Standard
	Tl	205	50.0	30.0	**0.0124**	0.003	25.5	ug/L	0	Standard
	Pb	206	1062.4	1.5	**0.1814**	0.004	2.3	ug/L	199	Standard
	Pb	207	925.4	3.3	**0.1777**	0.007	4.0	ug/L	178	Standard
	Pb	208	3323.8	3.1	**0.1791**	0.007	4.0	ug/L	654	Standard
	U	238	1529.7	0.7	**0.3062**	0.003	0.9	ug/L	1	Standard
>	**Bi**	209	428963.6	0.3				ug/L	418387	Standard

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Na	23	1.7	173.2	**2.4293**	4.199	172.8	mg/L	2	Standard
Mg	24	8887.6	1.8	**18.2333**	0.663	3.6	mg/L	27	Standard
K	39	185.0	22.1	**2.0404**	0.500	24.5	mg/L	20	Standard
Ca	43	213.3	27.8	**21.7207**	6.754	31.1	mg/L	40	Standard
Fe	54	160.8	9.3	**0.1636**	0.019	11.4	mg/L	74	Standard
Fe	57	866.7	5.2	**0.2694**	0.296	109.8	mg/L	697	Standard
Sc-1	45	31751.6	5.4				mg/L	28998	Standard
Cl	35	7665.9	1.0				ug/L	6091	Standard
Kr	83	6.0	16.7				ug/L	6	Standard
Br	81	6708.2	3.9				ug/L	383	Standard
P	31	10750.5	3.4				ug/L	8849	Standard
S	34	1101.7	3.9				ug/L	937	Standard
Sr	88	210.0	20.3				ug/L	188	Standard
C	12	280.0	3.6				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	249.0	36.5				mg/L	12	Standard
Ho-1	165	150.0	6.7				mg/L	10	Standard
Er	166	160.0	50.0				mg/L	23	Standard
I	127	85980.5	5.8				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		108.660	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		105.136	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.081
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.528
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508118401
Sample Date/Time: Thursday, August 27, 2015 13:30:03
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	123166.0	4.9				ug/L	44982	Standard
	Be	9	23.3	44.6	**0.0042**	0.006	154.0	ug/L	8	Standard
	Al	27	14824136.3	3.2	**80.2417**	2.176	2.7	ug/L	318	Standard
	Sc	45	29249.9	3.6				ug/L	28998	Standard
	Ti	47	126.3	9.9	**0.5868**	0.078	13.4	ug/L	21	Standard
	V	51	1578.3	11.5	**0.1601**	0.050	31.3	ug/L	1052	Standard
	Cr	52	9049.0	1.8	**0.5299**	0.059	11.1	ug/L	6637	Standard
	Cr	53	15866.6	4.2	**26.0871**	1.507	5.8	ug/L	328	Standard
	Mn	55	910203.8	1.0	**283.2993**	1.145	0.4	ug/L	636	Standard
	Co	59	4781.8	0.9	**1.3227**	0.031	2.4	ug/L	199	Standard
	Ni	60	16912.4	0.7	**12.4780**	0.274	2.2	ug/L	185	Standard
	Cu	65	2475.9	2.1	**1.7654**	0.023	1.3	ug/L	133	Standard
	Zn	66	2207.5	1.4	**2.2245**	0.066	3.0	ug/L	187	Standard
>	**Ge**	72	301741.0	1.4				ug/L	311830	Standard
	As	75	7962.3	1.2	**10.4237**	0.223	2.1	ug/L	-58	Standard
	Se	82	3320.3	0.6	**53.7547**	0.450	0.8	ug/L	25	Standard
	Se-1	77	2588.9	4.1	**57.7648**	3.267	5.7	ug/L	90	Standard
>	**Ga**	71	115.0	30.1				mg/L	18	Standard
	Rb	85	787739.4	2.1				ug/L	27	Standard
	Y	89	281144.0	2.7				ug/L	295023	Standard
>	**Rh**	103	1403.4	5.4				ug/L	7	Standard
	Mo	98	7863.9	1.1	**6.1400**	0.117	1.9	ug/L	10	Standard
	Ag	107	112.3	12.7	**0.0120**	0.003	25.9	ug/L	58	Standard
	Cd	111	17.9	25.2	**0.0121**	0.004	30.0	mg/L	4	Standard
	Cd	114	75.8	37.7	**0.0110**	0.009	79.2	ug/L	-1	Standard
>	**In**	115	390196.0	1.0				ug/L	427691	Standard
	Sn	118	468.3	8.9	**0.0514**	0.011	21.8	ug/L	273	Standard
	Sb	123	348.2	13.1	**0.0999**	0.012	12.2	ug/L	55	Standard
	Ba	135	50278.6	0.8	**28.5694**	0.424	1.5	ug/L	39	Standard
	Ce	140	781.7	5.9				ug/L	28	Standard
>	**Tb**	159	840300.0	1.7				ug/L	886833	Standard
	Ho	165	35.0	28.6				ug/L	10	Standard
	Tl	203	228.0	6.5	**0.0367**	0.003	7.0	ug/L	2	Standard
	Tl	205	133.3	18.9	**0.0350**	0.006	17.0	ug/L	0	Standard
	Pb	206	433.7	15.1	**0.0569**	0.016	28.5	ug/L	199	Standard
	Pb	207	334.0	2.6	**0.0445**	0.001	3.3	ug/L	178	Standard
	Pb	208	1237.7	7.3	**0.0495**	0.006	12.4	ug/L	654	Standard
	U	238	534.3	5.6	**0.1265**	0.006	4.5	ug/L	1	Standard
>	**Bi**	209	359502.5	1.4				ug/L	418387	Standard

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Na	23	30.0	16.7	**50.3312**	8.505	16.9	mg/L	2	Standard
Mg	24	75708.7	2.1	**169.0255**	9.582	5.7	mg/L	27	Standard
K	39	7605.2	4.9	**96.6025**	8.246	8.5	mg/L	20	Standard
Ca	43	3237.0	0.4	**428.4601**	17.284	4.0	mg/L	40	Standard
Fe	54	117.2	6.3	**0.0945**	0.008	8.2	mg/L	74	Standard
Fe	57	2056.8	13.1	**10.9338**	1.909	17.5	mg/L	697	Standard
> **Sc-1**	45	29249.9	3.6				mg/L	28998	Standard
Cl	35	10081.4	5.5				ug/L	6091	Standard
Kr	83	5.7	10.2				ug/L	6	Standard
Br	81	263308.2	0.1				ug/L	383	Standard
P	31	9793.2	1.4				ug/L	8849	Standard
S	34	1171.7	6.0				ug/L	937	Standard
Sr	88	1263.4	5.6				ug/L	188	Standard
C	12	173.3	8.8				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	44.8	25.8				mg/L	12	Standard
Ho-1	165	35.0	28.6				mg/L	10	Standard
Er	166	40.0	25.0				mg/L	23	Standard
I	127	14203130.0	10.3				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		273.814	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.765	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.233
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		85.926
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1508118401
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Method 6020 - Summary Report

Sample ID: L1508118401PS WG536718-01
Sample Date/Time: Thursday, August 27, 2015 13:33:14
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	124432.3	2.1				ug/L	44982	Standard
	Be	9	27820.5	3.2	**16.7728**	0.201	1.2	ug/L	8	Standard
	Al	27	15490309.6	1.3	**82.9473**	0.762	0.9	ug/L	318	Standard
	Sc	45	29019.5	4.8				ug/L	28998	Standard
	Ti	47	130.0	15.6	**0.6057**	0.106	17.6	ug/L	21	Standard
	V	51	185270.3	1.6	**50.1666**	1.098	2.2	ug/L	1052	Standard
	Cr	52	236712.4	1.7	**47.6130**	0.446	0.9	ug/L	6637	Standard
	Cr	53	44911.5	1.7	**74.8957**	0.805	1.1	ug/L	328	Standard
	Mn	55	1050571.7	0.8	**326.8954**	2.335	0.7	ug/L	636	Standard
	Co	59	178091.6	0.6	**51.4667**	0.523	1.0	ug/L	199	Standard
	Ni	60	78503.9	1.2	**58.4186**	0.241	0.4	ug/L	185	Standard
	Cu	65	61498.6	1.9	**46.7175**	0.570	1.2	ug/L	133	Standard
	Zn	66	37196.6	1.0	**49.4735**	0.504	1.0	ug/L	187	Standard
>	**Ge**	72	301849.9	0.8				ug/L	311830	Standard
	As	75	46710.1	1.1	**61.0157**	0.634	1.0	ug/L	-58	Standard
	Se	82	6376.9	1.1	**103.5937**	1.235	1.2	ug/L	25	Standard
	Se-1	77	4824.4	1.2	**109.2671**	1.882	1.7	ug/L	90	Standard
>	**Ga**	71	156.7	16.1				mg/L	18	Standard
	Rb	85	783803.7	2.3				ug/L	27	Standard
	Y	89	280397.3	3.0				ug/L	295023	Standard
>	**Rh**	103	1428.4	4.3				ug/L	7	Standard
	Mo	98	7944.5	2.5	**6.1231**	0.186	3.0	ug/L	10	Standard
	Ag	107	205744.7	1.5	**44.6156**	0.821	1.8	ug/L	58	Standard
	Cd	111	58967.8	1.7	**47.2804**	0.387	0.8	mg/L	4	Standard
	Cd	114	154750.0	2.0	**46.6907**	0.586	1.3	ug/L	-1	Standard
>	**In**	115	395291.9	0.9				ug/L	427691	Standard
	Sn	118	495.0	8.1	**0.0563**	0.010	17.1	ug/L	273	Standard
	Sb	123	177286.4	1.0	**50.5345**	0.206	0.4	ug/L	55	Standard
	Ba	135	135414.5	1.0	**75.9833**	0.540	0.7	ug/L	39	Standard
	Ce	140	743.4	13.0				ug/L	28	Standard
>	**Tb**	159	851950.2	1.0				ug/L	886833	Standard
	Ho	165	40.0	25.0				ug/L	10	Standard
	Tl	203	284722.4	0.6	**49.4560**	0.444	0.9	ug/L	2	Standard
	Tl	205	204769.4	0.5	**50.8066**	0.559	1.1	ug/L	0	Standard
	Pb	206	190775.2	0.6	**51.8565**	0.650	1.3	ug/L	199	Standard
	Pb	207	171521.1	0.4	**51.6578**	0.484	0.9	ug/L	178	Standard
	Pb	208	586686.9	1.1	**49.0100**	0.205	0.4	ug/L	654	Standard
	U	238	212845.7	1.2	**51.0980**	0.816	1.6	ug/L	1	Standard
>	**Bi**	209	359789.8	0.6				ug/L	418387	Standard

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Na	23	43.3	37.1	**74.1542**	29.962	40.4	mg/L	2	Standard
Mg	24	75140.9	1.2	**169.1735**	9.690	5.7	mg/L	27	Standard
K	39	7962.1	6.3	**102.0800**	10.918	10.7	mg/L	20	Standard
Ca	43	3243.7	5.9	**432.2614**	8.229	1.9	mg/L	40	Standard
Fe	54	101.1	29.8	**0.0632**	0.077	122.1	mg/L	74	Standard
Fe	57	1991.8	10.4	**10.5221**	1.334	12.7	mg/L	697	Standard
> **Sc-1**	45	29019.5	4.8				mg/L	28998	Standard
Cl	35	10571.0	2.1				ug/L	6091	Standard
Kr	83	4.3	58.1				ug/L	6	Standard
Br	81	259903.7	1.0				ug/L	383	Standard
P	31	9743.1	5.1				ug/L	8849	Standard
S	34	1303.4	7.6				ug/L	937	Standard
Sr	88	1315.1	7.2				ug/L	188	Standard
C	12	253.3	9.1				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	38.6	2.2				mg/L	12	Standard
Ho-1	165	40.0	25.0				mg/L	10	Standard
Er	166	30.0	57.7				mg/L	23	Standard
I	127	15883949.3	3.2				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		276.629	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.799	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		92.425
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		85.994
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Se 82 Upper, S, EEE	Se	82	

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Se-1 77 Upper, S, EEE Se-1 77

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Method 6020 - Summary Report

Sample ID: L1508118401SDL WG536718-02
Sample Date/Time: Thursday, August 27, 2015 13:36:25
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63931.4	4.2				ug/L	44982	Standard
	Be	9	21.7	26.6	**0.0153**	0.006	42.3	ug/L	8	Standard
	Al	27	3297307.7	1.9	**34.3855**	1.049	3.1	ug/L	318	Standard
	Sc	45	30525.8	3.9				ug/L	28998	Standard
	Ti	47	62.0	7.0	**0.2011**	0.022	11.1	ug/L	21	Standard
	V	51	1496.3	18.6	**0.1065**	0.069	65.2	ug/L	1052	Standard
	Cr	52	9346.9	0.7	**0.4431**	0.009	2.1	ug/L	6637	Standard
	Cr	53	6194.6	6.1	**9.0079**	0.583	6.5	ug/L	328	Standard
	Mn	55	195356.0	0.5	**55.9932**	0.356	0.6	ug/L	636	Standard
	Co	59	1217.0	2.7	**0.2637**	0.009	3.6	ug/L	199	Standard
	Ni	60	4310.3	2.9	**2.8247**	0.091	3.2	ug/L	185	Standard
	Cu	65	775.4	1.8	**0.4246**	0.010	2.4	ug/L	133	Standard
	Zn	66	1727.4	0.5	**1.3970**	0.014	1.0	ug/L	187	Standard
>	**Ge**	72	326718.7	0.2				ug/L	311830	Standard
	As	75	1839.8	0.8	**2.2406**	0.021	0.9	ug/L	-58	Standard
	Se	82	762.6	1.5	**11.0635**	0.162	1.5	ug/L	25	Standard
	Se-1	77	586.7	5.9	**10.5152**	0.713	6.8	ug/L	90	Standard
>	**Ga**	71	26.7	54.1				mg/L	18	Standard
	Rb	85	170721.7	1.9				ug/L	27	Standard
	Y	89	296063.1	1.1				ug/L	295023	Standard
>	**Rh**	103	315.0	23.1				ug/L	7	Standard
	Mo	98	1587.9	1.6	**1.1175**	0.023	2.0	ug/L	10	Standard
	Ag	107	93.0	15.2	**0.0058**	0.003	49.9	ug/L	58	Standard
	Cd	111	11.7	34.1	**0.0062**	0.003	48.4	mg/L	4	Standard
	Cd	114	48.2	26.3	**0.0012**	0.004	295.2	ug/L	-1	Standard
>	**In**	115	430901.3	0.7				ug/L	427691	Standard
	Sn	118	315.0	5.7	**0.0067**	0.004	52.8	ug/L	273	Standard
	Sb	123	160.6	6.7	**0.0414**	0.003	7.3	ug/L	55	Standard
	Ba	135	11033.7	0.9	**5.6603**	0.079	1.4	ug/L	39	Standard
	Ce	140	171.7	12.1				ug/L	28	Standard
>	**Tb**	159	929198.5	1.1				ug/L	886833	Standard
	Ho	165	10.0	132.3				ug/L	10	Standard
	Tl	203	145.7	11.6	**0.0192**	0.003	14.0	ug/L	2	Standard
	Tl	205	110.0	4.5	**0.0259**	0.001	4.8	ug/L	0	Standard
	Pb	206	375.0	10.0	**0.0286**	0.009	32.8	ug/L	199	Standard
	Pb	207	313.7	7.6	**0.0268**	0.007	25.2	ug/L	178	Standard
	Pb	208	1106.0	8.4	**0.0272**	0.007	26.7	ug/L	654	Standard
	U	238	136.3	13.2	**0.0270**	0.004	14.8	ug/L	1	Standard
>	**Bi**	209	409644.7	0.8				ug/L	418387	Standard

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Na	23	6.7	43.3	**10.8419**	5.166	47.6	mg/L	2	Standard
Mg	24	16143.6	2.1	**34.4834**	1.486	4.3	mg/L	27	Standard
K	39	1720.1	10.4	**20.7589**	1.402	6.8	mg/L	20	Standard
Ca	43	728.4	6.5	**88.9778**	8.290	9.3	mg/L	40	Standard
Fe	54	93.9	52.5	**0.0364**	0.112	307.0	mg/L	74	Standard
Fe	57	1108.4	4.3	**2.5159**	0.565	22.4	mg/L	697	Standard
> **Sc-1**	45	30525.8	3.9				mg/L	28998	Standard
Cl	35	9191.5	1.8				ug/L	6091	Standard
Kr	83	6.0	44.1				ug/L	6	Standard
Br	81	55116.8	2.4				ug/L	383	Standard
P	31	9129.4	0.2				ug/L	8849	Standard
S	34	1213.4	1.9				ug/L	937	Standard
Sr	88	460.0	3.9				ug/L	188	Standard
C	12	143.3	22.4				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	19.0	53.8				mg/L	12	Standard
Ho-1	165	10.0	132.3				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	23	Standard
I	127	3807736.8	0.9				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		142.128	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.775	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.751
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.910
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1508118401SDL WG536718-02
Sample Date/Time: Thursday, August 27, 2015 13:39:36
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	47897.3	2.9				ug/L	44982	Standard
	Be	9	25.0	52.9	**0.0291**	0.021	72.2	ug/L	8	Standard
	Al	27	661561.3	1.5	**9.2038**	0.320	3.5	ug/L	318	Standard
	Sc	45	31586.2	0.2				ug/L	28998	Standard
	Ti	47	40.7	11.6	**0.0890**	0.024	26.8	ug/L	21	Standard
	V	51	1581.4	5.0	**0.1237**	0.020	16.5	ug/L	1052	Standard
	Cr	52	8925.0	1.3	**0.3440**	0.023	6.8	ug/L	6637	Standard
	Cr	53	2416.9	8.1	**3.0991**	0.309	10.0	ug/L	328	Standard
	Mn	55	40584.6	0.8	**11.3461**	0.071	0.6	ug/L	636	Standard
	Co	59	435.3	5.5	**0.0535**	0.006	12.0	ug/L	199	Standard
	Ni	60	1025.7	4.8	**0.5531**	0.036	6.5	ug/L	185	Standard
	Cu	65	321.7	11.3	**0.1029**	0.026	25.2	ug/L	133	Standard
	Zn	66	1918.5	2.9	**1.6091**	0.063	3.9	ug/L	187	Standard
>	**Ge**	72	330321.9	0.3				ug/L	311830	Standard
	As	75	325.5	2.8	**0.4094**	0.010	2.4	ug/L	-58	Standard
	Se	82	171.0	2.9	**2.1185**	0.080	3.8	ug/L	25	Standard
	Se-1	77	198.0	13.2	**2.1898**	0.547	25.0	ug/L	90	Standard
>	**Ga**	71	31.7	50.8				mg/L	18	Standard
	Rb	85	35468.1	2.4				ug/L	27	Standard
	Y	89	299627.0	0.4				ug/L	295023	Standard
>	**Rh**	103	108.3	20.8				ug/L	7	Standard
	Mo	98	310.5	7.6	**0.2151**	0.017	7.9	ug/L	10	Standard
	Ag	107	72.0	11.0	**0.0017**	0.002	93.3	ug/L	58	Standard
	Cd	111	13.2	60.3	**0.0074**	0.006	80.3	mg/L	4	Standard
	Cd	114	25.5	30.3	**-0.0050**	0.002	42.7	ug/L	-1	Standard
>	**In**	115	427771.3	0.3				ug/L	427691	Standard
	Sn	118	291.7	26.4	**0.0020**	0.017	844.2	ug/L	273	Standard
	Sb	123	94.6	15.1	**0.0243**	0.004	15.7	ug/L	55	Standard
	Ba	135	2267.2	2.1	**1.1548**	0.024	2.1	ug/L	39	Standard
	Ce	140	60.0	33.3				ug/L	28	Standard
>	**Tb**	159	922810.3	0.5				ug/L	886833	Standard
	Ho	165	5.0	100.0				ug/L	10	Standard
	Tl	203	44.3	48.2	**0.0037**	0.003	85.6	ug/L	2	Standard
	Tl	205	21.7	58.1	**0.0066**	0.003	40.4	ug/L	0	Standard
	Pb	206	336.0	10.4	**0.0181**	0.007	39.9	ug/L	199	Standard
	Pb	207	271.3	8.6	**0.0147**	0.006	39.0	ug/L	178	Standard
	Pb	208	972.7	4.4	**0.0165**	0.002	13.8	ug/L	654	Standard
	U	238	33.7	33.1	**0.0052**	0.002	43.2	ug/L	1	Standard
>	**Bi**	209	414976.0	1.4				ug/L	418387	Standard

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Na	23	1.7	173.2	**2.5863**	4.471	172.9	mg/L	2	Standard
Mg	24	3170.3	1.4	**6.4976**	0.098	1.5	mg/L	27	Standard
K	39	368.3	18.8	**4.2043**	0.821	19.5	mg/L	20	Standard
Ca	43	180.0	11.1	**17.8368**	2.475	13.9	mg/L	40	Standard
Fe	54	74.2	23.4	**-0.0135**	0.036	265.2	mg/L	74	Standard
Fe	57	850.0	0.0	**0.1694**	0.011	6.7	mg/L	697	Standard
> **Sc-1**	45	31586.2	0.2				mg/L	28998	Standard
Cl	35	8196.9	1.0				ug/L	6091	Standard
Kr	83	4.3	53.3				ug/L	6	Standard
Br	81	10870.6	3.8				ug/L	383	Standard
P	31	9062.7	4.6				ug/L	8849	Standard
S	34	1228.4	8.5				ug/L	937	Standard
Sr	88	245.0	21.2				ug/L	188	Standard
C	12	143.3	31.5				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.2	93.1				mg/L	12	Standard
Ho-1	165	5.0	100.0				mg/L	10	Standard
Er	166	16.7	69.3				mg/L	23	Standard
I	127	709941.1	4.3				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.482	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.930	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.019
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.185
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, August 27, 2015 13:42:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	43260.0	2.0				ug/L	44982	Standard
	Be	9	26863.8	1.0	**46.6194**	0.755	1.6	ug/L	8	Standard
	Al	27	3147824.8	0.9	**48.4859**	0.803	1.7	ug/L	318	Standard
	Sc	45	31609.6	2.7				ug/L	28998	Standard
	Ti	47	19120.4	3.3	**98.4930**	3.902	4.0	ug/L	21	Standard
	V	51	188739.2	1.6	**47.2838**	1.129	2.4	ug/L	1052	Standard
	Cr	52	250570.0	0.9	**46.6216**	0.543	1.2	ug/L	6637	Standard
	Cr	53	31790.0	3.4	**48.8620**	1.985	4.1	ug/L	328	Standard
	Mn	55	164103.0	1.2	**47.0879**	0.756	1.6	ug/L	636	Standard
	Co	59	179871.7	0.3	**48.1045**	0.507	1.1	ug/L	199	Standard
	Ni	60	68254.1	0.9	**46.9827**	0.767	1.6	ug/L	185	Standard
	Cu	65	67616.9	0.4	**47.5446**	0.500	1.1	ug/L	133	Standard
	Zn	66	38479.5	0.9	**47.3368**	0.777	1.6	ug/L	187	Standard
>	**Ge**	72	326151.8	0.8				ug/L	311830	Standard
	As	75	39179.9	0.9	**47.3735**	0.774	1.6	ug/L	-58	Standard
	Se	82	3263.0	1.1	**48.8332**	0.766	1.6	ug/L	25	Standard
	Se-1	77	2419.5	2.9	**49.6599**	1.879	3.8	ug/L	90	Standard
>	**Ga**	71	45.0	29.4				mg/L	18	Standard
	Rb	85	571.7	28.4				ug/L	27	Standard
	Y	89	295711.3	1.0				ug/L	295023	Standard
>	**Rh**	103	36.7	20.8				ug/L	7	Standard
	Mo	98	131277.2	0.5	**95.4741**	0.418	0.4	ug/L	10	Standard
	Ag	107	233093.6	0.3	**47.6546**	0.348	0.7	ug/L	58	Standard
	Cd	111	62441.9	1.8	**47.2035**	0.622	1.3	mg/L	4	Standard
	Cd	114	164029.2	1.5	**46.6631**	0.704	1.5	ug/L	-1	Standard
>	**In**	115	419270.7	0.8				ug/L	427691	Standard
	Sn	118	192174.4	0.5	**43.5580**	0.149	0.3	ug/L	273	Standard
	Sb	123	174785.8	1.4	**46.9777**	1.038	2.2	ug/L	55	Standard
	Ba	135	91955.9	1.2	**48.6423**	0.825	1.7	ug/L	39	Standard
	Ce	140	85.0	38.6				ug/L	28	Standard
>	**Tb**	159	906799.4	1.6				ug/L	886833	Standard
	Ho	165	13.3	57.3				ug/L	10	Standard
	Tl	203	315461.1	1.7	**47.3042**	0.164	0.3	ug/L	2	Standard
	Tl	205	217723.4	1.5	**46.6366**	0.381	0.8	ug/L	0	Standard
	Pb	206	203598.5	0.7	**47.7773**	0.693	1.5	ug/L	199	Standard
	Pb	207	183386.8	0.6	**47.6814**	0.434	0.9	ug/L	178	Standard
	Pb	208	643777.5	0.6	**46.4322**	0.534	1.1	ug/L	654	Standard
	U	238	220250.3	0.7	**45.6504**	0.382	0.8	ug/L	1	Standard
>	**Bi**	209	416740.8	1.4				ug/L	418387	Standard

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Na	23	1.7	173.2	**2.6060**	4.505	172.9	mg/L	2	Standard
Mg	24	2010.1	8.6	**4.1061**	0.457	11.1	mg/L	27	Standard
K	39	475.0	4.6	**5.4529**	0.195	3.6	mg/L	20	Standard
Ca	43	91.7	45.7	**6.8202**	4.833	70.9	mg/L	40	Standard
Fe	54	2138.0	1.3	**4.2533**	0.168	3.9	mg/L	74	Standard
Fe	57	1345.1	5.2	**4.0707**	0.820	20.2	mg/L	697	Standard
Sc-1	45	31609.6	2.7				mg/L	28998	Standard
Cl	35	6534.1	2.8				ug/L	6091	Standard
Kr	83	5.0	40.0				ug/L	6	Standard
Br	81	810.0	9.9				ug/L	383	Standard
P	31	10006.6	1.3				ug/L	8849	Standard
S	34	1226.7	11.0				ug/L	937	Standard
Sr	88	191.7	10.5				ug/L	188	Standard
C	12	136.7	29.6				mg/L	167	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	10.0	173.2				mg/L	0	Standard
Dy	164	15.9	130.0				mg/L	12	Standard
Ho-1	165	13.3	57.3				mg/L	10	Standard
Er	166	16.7	34.6				mg/L	23	Standard
I	127	78665.0	14.8				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	93.239		
Al	27	96.972		
Sc	45			
Ti	47	98.493		
V	51	94.568		
Cr	52	93.243		
Cr	53			
Mn	55	94.176		
Co	59	96.209		
Ni	60	93.965		
Cu	65	95.089		
Zn	66	94.674		
Ge	72		104.593	
As	75	94.747		
Se	82	97.666		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	95.474		
Ag	107	95.309		
Cd	111	94.407		
Cd	114			
> In	115			98.031
Sn	118	87.116		
Sb	123	93.955		
Ba	135	97.285		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	94.608		
Tl	205			
Pb	206			
Pb	207			
Pb	208	92.864		
U	238	91.301		
> Bi	209			99.606
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, August 27, 2015 13:46:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	43154.7	2.1				ug/L	44982	Standard
	Be	9	26.7	47.2	**0.0360**	0.021	57.8	ug/L	8	Standard
	Al	27	621.7	32.0	**0.0053**	0.003	54.0	ug/L	318	Standard
	Sc	45	30747.8	2.4				ug/L	28998	Standard
	Ti	47	19.0	22.9	**-0.0199**	0.023	117.0	ug/L	21	Standard
	V	51	913.7	5.9	**-0.0393**	0.015	37.6	ug/L	1052	Standard
	Cr	52	5799.1	2.7	**-0.2316**	0.037	16.1	ug/L	6637	Standard
	Cr	53	820.0	2.4	**0.6627**	0.036	5.4	ug/L	328	Standard
	Mn	55	617.7	2.4	**-0.0223**	0.004	19.1	ug/L	636	Standard
	Co	59	214.3	3.7	**-0.0042**	0.002	41.7	ug/L	199	Standard
	Ni	60	198.3	10.3	**-0.0091**	0.015	167.5	ug/L	185	Standard
	Cu	65	159.3	12.6	**-0.0085**	0.014	169.6	ug/L	133	Standard
	Zn	66	208.7	6.2	**-0.4971**	0.015	3.1	ug/L	187	Standard
>	**Ge**	72	325838.5	0.7				ug/L	311830	Standard
	As	75	-13.9	212.2	**0.0041**	0.036	859.4	ug/L	-58	Standard
	Se	82	26.0	15.4	**-0.0377**	0.058	153.4	ug/L	25	Standard
	Se-1	77	119.3	9.3	**0.5682**	0.257	45.2	ug/L	90	Standard
>	**Ga**	71	21.7	13.3				mg/L	18	Standard
	Rb	85	48.3	51.0				ug/L	27	Standard
	Y	89	293650.1	0.8				ug/L	295023	Standard
>	**Rh**	103	20.0	66.1				ug/L	7	Standard
	Mo	98	56.7	6.6	**0.0344**	0.003	7.6	ug/L	10	Standard
	Ag	107	76.3	4.6	**0.0027**	0.001	25.9	ug/L	58	Standard
	Cd	111	9.5	36.8	**0.0047**	0.003	55.6	mg/L	4	Standard
	Cd	114	33.5	67.7	**-0.0027**	0.006	231.9	ug/L	-1	Standard
>	**In**	115	424492.8	0.3				ug/L	427691	Standard
	Sn	118	428.3	15.7	**0.0331**	0.015	45.0	ug/L	273	Standard
	Sb	123	683.2	7.7	**0.1807**	0.014	7.5	ug/L	55	Standard
	Ba	135	30.3	1.9	**-0.0052**	0.000	5.3	ug/L	39	Standard
	Ce	140	18.3	15.7				ug/L	28	Standard
>	**Tb**	159	899646.3	0.7				ug/L	886833	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	26.0	29.0	**0.0009**	0.001	130.1	ug/L	2	Standard
	Tl	205	8.3	91.7	**0.0037**	0.002	43.7	ug/L	0	Standard
	Pb	206	224.7	6.7	**-0.0088**	0.004	41.6	ug/L	199	Standard
	Pb	207	180.3	8.5	**-0.0098**	0.004	37.6	ug/L	178	Standard
	Pb	208	658.3	2.7	**-0.0070**	0.001	15.3	ug/L	654	Standard
	U	238	16.0	54.5	**0.0015**	0.002	121.3	ug/L	1	Standard
>	**Bi**	209	420979.0	0.6				ug/L	418387	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	42.1	**0.0378**	0.036	95.6	mg/L	27	Standard
K	39	15.0	33.3	**0.0542**	0.056	104.0	mg/L	20	Standard
Ca	43	45.0	19.2	**1.3009**	1.194	91.8	mg/L	40	Standard
Fe	54	63.9	16.0	**-0.0312**	0.021	66.5	mg/L	74	Standard
Fe	57	726.7	6.9	**-0.6365**	0.545	85.7	mg/L	697	Standard
> **Sc-1**	45	30747.8	2.4				mg/L	28998	Standard
Cl	35	6347.3	0.5				ug/L	6091	Standard
Kr	83	2.7	94.4				ug/L	6	Standard
Br	81	620.0	9.0				ug/L	383	Standard
P	31	9568.0	1.3				ug/L	8849	Standard
S	34	1156.7	7.4				ug/L	937	Standard
Sr	88	150.0	17.6				ug/L	188	Standard
C	12	113.3	31.0				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.5	5.0				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	42648.6	8.5				mg/L	1437	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		104.492	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.252
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.619
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508120801
Sample Date/Time: Thursday, August 27, 2015 13:49:14
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	48238.3	1.0				ug/L	44982	Standard
	Be	9	33.3	90.4	**0.0421**	0.048	113.1	ug/L	8	Standard
	Al	27	6417760.8	1.7	**88.6330**	0.640	0.7	ug/L	318	Standard
	Sc	45	33278.2	2.7				ug/L	28998	Standard
	Ti	47	1239.1	5.2	**6.0192**	0.342	5.7	ug/L	21	Standard
	V	51	12564.0	3.1	**2.7702**	0.093	3.4	ug/L	1052	Standard
	Cr	52	17116.3	0.8	**1.8038**	0.009	0.5	ug/L	6637	Standard
	Cr	53	4030.5	11.0	**5.4081**	0.649	12.0	ug/L	328	Standard
	Mn	55	53482.2	0.9	**14.6015**	0.213	1.5	ug/L	636	Standard
	Co	59	2968.0	1.5	**0.7017**	0.012	1.7	ug/L	199	Standard
	Ni	60	5350.6	0.8	**3.4019**	0.010	0.3	ug/L	185	Standard
	Cu	65	321165.1	1.1	**217.3092**	0.949	0.4	ug/L	133	Standard
	Zn	66	77576.1	1.1	**92.3584**	0.447	0.5	ug/L	187	Standard
>	Ge	72	339584.8	0.7				ug/L	311830	Standard
	As	75	126.8	13.0	**0.1683**	0.020	11.9	ug/L	-58	Standard
	Se	82	73.3	1.7	**0.6334**	0.023	3.6	ug/L	25	Standard
	Se-1	77	248.7	4.7	**3.1138**	0.206	6.6	ug/L	90	Standard
>	Ga	71	160.0	10.8				mg/L	18	Standard
	Rb	85	45117.1	1.2				ug/L	27	Standard
	Y	89	308987.6	3.2				ug/L	295023	Standard
>	Rh	103	45.0	29.4				ug/L	7	Standard
	Mo	98	937.2	2.9	**0.6350**	0.043	6.8	ug/L	10	Standard
	Ag	107	404.0	3.9	**0.0649**	0.002	3.2	ug/L	58	Standard
	Cd	111	96.5	14.9	**0.0664**	0.013	19.7	mg/L	4	Standard
	Cd	114	258.1	9.7	**0.0570**	0.009	16.5	ug/L	-1	Standard
>	In	115	446394.6	3.8				ug/L	427691	Standard
	Sn	118	3365.4	7.1	**0.6540**	0.026	3.9	ug/L	273	Standard
	Sb	123	677.9	7.2	**0.1708**	0.015	8.8	ug/L	55	Standard
	Ba	135	39221.0	1.0	**19.4865**	0.562	2.9	ug/L	39	Standard
	Ce	140	3467.1	1.4				ug/L	28	Standard
>	Tb	159	943427.6	1.5				ug/L	886833	Standard
	Ho	165	110.0	4.5				ug/L	10	Standard
	Tl	203	76.7	8.7	**0.0073**	0.001	15.3	ug/L	2	Standard
	Tl	205	98.3	89.6	**0.0210**	0.018	83.3	ug/L	0	Standard
	Pb	206	9452.6	2.0	**1.9220**	0.024	1.2	ug/L	199	Standard
	Pb	207	7594.2	0.8	**1.7092**	0.030	1.7	ug/L	178	Standard
	Pb	208	28547.8	0.4	**1.7870**	0.041	2.3	ug/L	654	Standard
	U	238	1148.4	8.3	**0.2111**	0.023	10.8	ug/L	1	Standard
>	Bi	209	466736.6	2.3				ug/L	418387	Standard

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Na	23	1.7	173.2	**2.5205**	4.357	172.9	mg/L	2	Standard
Mg	24	14625.4	1.1	**28.6288**	0.481	1.7	mg/L	27	Standard
K	39	556.7	10.9	**6.0775**	0.531	8.7	mg/L	20	Standard
Ca	43	196.7	21.6	**18.5959**	4.393	23.6	mg/L	40	Standard
Fe	54	303.4	11.5	**0.4300**	0.084	19.5	mg/L	74	Standard
Fe	57	911.7	9.8	**0.3052**	0.846	277.2	mg/L	697	Standard
> **Sc-1**	45	33278.2	2.7				mg/L	28998	Standard
Cl	35	7467.8	3.9				ug/L	6091	Standard
Kr	83	2.7	78.1				ug/L	6	Standard
Br	81	1946.8	13.2				ug/L	383	Standard
P	31	11267.5	1.9				ug/L	8849	Standard
S	34	1123.4	7.4				ug/L	937	Standard
Sr	88	230.0	11.5				ug/L	188	Standard
C	12	1253.4	8.5				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	43.3	13.3				mg/L	0	Standard
Dy	164	202.7	25.7				mg/L	12	Standard
Ho-1	165	110.0	4.5				mg/L	10	Standard
Er	166	153.3	10.0				mg/L	23	Standard
I	127	59582.0	4.0				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.240	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.901	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	104.373
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	111.556
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: L1508121601
Sample Date/Time: Thursday, August 27, 2015 13:52:25
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	47726.7	2.0				ug/L	44982	Standard
	Be	9	36.7	43.8	**0.0475**	0.025	52.3	ug/L	8	Standard
	Al	27	6619989.3	1.7	**92.4148**	0.456	0.5	ug/L	318	Standard
	Sc	45	32897.4	1.9				ug/L	28998	Standard
	Ti	47	744.0	10.0	**3.6005**	0.296	8.2	ug/L	21	Standard
	V	51	4822.2	7.3	**0.9101**	0.103	11.3	ug/L	1052	Standard
	Cr	52	11621.1	1.3	**0.8160**	0.047	5.8	ug/L	6637	Standard
	Cr	53	4874.1	3.1	**6.7455**	0.236	3.5	ug/L	328	Standard
	Mn	55	46130.1	2.3	**12.7039**	0.552	4.3	ug/L	636	Standard
	Co	59	3886.5	0.8	**0.9484**	0.022	2.3	ug/L	199	Standard
	Ni	60	3727.5	2.1	**2.3511**	0.046	1.9	ug/L	185	Standard
	Cu	65	153394.9	0.7	**104.8142**	1.635	1.6	ug/L	133	Standard
	Zn	66	37182.9	1.1	**44.3369**	0.430	1.0	ug/L	187	Standard
>	**Ge**	72	336143.8	2.0				ug/L	311830	Standard
	As	75	142.1	22.4	**0.1880**	0.040	21.2	ug/L	-58	Standard
	Se	82	77.2	4.3	**0.7021**	0.068	9.8	ug/L	25	Standard
	Se-1	77	322.0	4.1	**4.6905**	0.402	8.6	ug/L	90	Standard
>	**Ga**	71	80.0	47.2				mg/L	18	Standard
	Rb	85	45876.0	1.3				ug/L	27	Standard
	Y	89	309276.7	1.3				ug/L	295023	Standard
>	**Rh**	103	63.3	25.4				ug/L	7	Standard
	Mo	98	640.7	1.0	**0.4283**	0.006	1.5	ug/L	10	Standard
	Ag	107	213.0	40.7	**0.0279**	0.017	59.8	ug/L	58	Standard
	Cd	111	72.8	43.5	**0.0490**	0.023	46.0	mg/L	4	Standard
	Cd	114	176.1	33.0	**0.0346**	0.016	45.1	ug/L	-1	Standard
>	**In**	115	449565.9	0.5				ug/L	427691	Standard
	Sn	118	1883.5	2.0	**0.3358**	0.008	2.3	ug/L	273	Standard
	Sb	123	383.2	10.3	**0.0955**	0.010	10.6	ug/L	55	Standard
	Ba	135	23583.3	1.5	**11.6180**	0.218	1.9	ug/L	39	Standard
	Ce	140	1923.5	6.0				ug/L	28	Standard
>	**Tb**	159	944905.4	1.8				ug/L	886833	Standard
	Ho	165	88.3	6.5				ug/L	10	Standard
	Tl	203	127.0	99.1	**0.0152**	0.018	118.9	ug/L	2	Standard
	Tl	205	33.3	60.6	**0.0088**	0.004	47.4	ug/L	0	Standard
	Pb	206	2605.2	2.5	**0.5228**	0.016	3.2	ug/L	199	Standard
	Pb	207	2177.2	4.7	**0.4844**	0.026	5.4	ug/L	178	Standard
	Pb	208	7948.5	0.8	**0.4934**	0.005	1.1	ug/L	654	Standard
	U	238	804.0	2.6	**0.1572**	0.005	3.1	ug/L	1	Standard
>	**Bi**	209	436881.5	0.6				ug/L	418387	Standard

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Na	23	3.3	86.6	**4.9900**	4.319	86.6	mg/L	2	Standard
Mg	24	19372.4	0.3	**38.3741**	0.699	1.8	mg/L	27	Standard
K	39	556.7	1.9	**6.1583**	0.175	2.8	mg/L	20	Standard
Ca	43	191.7	21.7	**18.3747**	5.207	28.3	mg/L	40	Standard
Fe	54	142.5	12.4	**0.1160**	0.034	29.6	mg/L	74	Standard
Fe	57	931.7	1.9	**0.5199**	0.052	10.1	mg/L	697	Standard
> **Sc-1**	45	32897.4	1.9				mg/L	28998	Standard
Cl	35	7868.7	0.6				ug/L	6091	Standard
Kr	83	6.0	16.7				ug/L	6	Standard
Br	81	2733.6	4.6				ug/L	383	Standard
P	31	11139.1	2.9				ug/L	8849	Standard
S	34	1148.4	8.2				ug/L	937	Standard
Sr	88	221.7	1.3				ug/L	188	Standard
C	12	690.0	10.9				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	40.0	75.0				mg/L	0	Standard
Dy	164	124.7	24.2				mg/L	12	Standard
Ho-1	165	88.3	6.5				mg/L	10	Standard
Er	166	110.0	9.1				mg/L	23	Standard
I	127	44647.4	3.3				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.103	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.797	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.115
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.420
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: L1508129001
Sample Date/Time: Thursday, August 27, 2015 13:55:36
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	95295.8	10.1				ug/L	44982	Standard
	Be	9	88.3	17.3	**0.0598**	0.013	20.9	ug/L	8	Standard
	Al	27	S	S	**S**	S	S	ug/L	318	Standard
	Sc	45	30011.4	4.9				ug/L	28998	Standard
	Ti	47	241.3	14.9	**1.1985**	0.180	15.0	ug/L	21	Standard
	V	51	5654.3	7.3	**1.2378**	0.088	7.1	ug/L	1052	Standard
	Cr	52	17229.8	1.1	**2.1502**	0.066	3.1	ug/L	6637	Standard
	Cr	53	77043.8	2.8	**126.3947**	5.343	4.2	ug/L	328	Standard
	Mn	55	36374091.1	1.7	**11101.6351**	315.798	2.8	ug/L	636	Standard
	Co	59	206086.2	2.2	**58.3959**	2.114	3.6	ug/L	199	Standard
	Ni	60	979311.9	1.2	**715.9059**	3.292	0.5	ug/L	185	Standard
	Cu	65	17703.7	1.5	**13.0947**	0.132	1.0	ug/L	133	Standard
	Zn	66	414617.2	2.5	**547.9314**	5.435	1.0	ug/L	187	Standard
>	**Ge**	72	307988.6	1.5				ug/L	311830	Standard
	As	75	9104.3	6.8	**11.6816**	0.965	8.3	ug/L	-58	Standard
	Se	82	10268.9	3.5	**163.8184**	8.105	4.9	ug/L	25	Standard
	Se-1	77	12790.1	2.5	**287.1600**	11.284	3.9	ug/L	90	Standard
>	**Ga**	71	671.7	5.0				mg/L	18	Standard
	Rb	85	92317.1	1.5				ug/L	27	Standard
	Y	89	316428.8	1.3				ug/L	295023	Standard
>	**Rh**	103	1395.1	3.7				ug/L	7	Standard
	Mo	98	57827.9	3.2	**37.7588**	0.697	1.8	ug/L	10	Standard
	Ag	107	120.3	17.6	**0.0093**	0.003	31.4	ug/L	58	Standard
	Cd	111	59745.5	4.7	**40.5348**	0.072	0.2	mg/L	4	Standard
	Cd	114	155072.4	3.7	**39.6057**	0.795	2.0	ug/L	-1	Standard
>	**In**	115	467149.5	4.5				ug/L	427691	Standard
	Sn	118	2241.8	7.7	**0.3953**	0.053	13.5	ug/L	273	Standard
	Sb	123	5851.5	3.9	**1.4112**	0.027	1.9	ug/L	55	Standard
	Ba	135	77114.1	1.3	**36.6443**	1.410	3.8	ug/L	39	Standard
	Ce	140	1216.7	4.8				ug/L	28	Standard
>	**Tb**	159	925762.8	2.3				ug/L	886833	Standard
	Ho	165	43.3	17.6				ug/L	10	Standard
	Tl	203	19013.3	2.8	**2.9884**	0.030	1.0	ug/L	2	Standard
	Tl	205	13971.4	4.7	**3.1410**	0.105	3.3	ug/L	0	Standard
	Pb	206	718.4	3.4	**0.1161**	0.009	7.8	ug/L	199	Standard
	Pb	207	628.0	4.3	**0.1154**	0.010	8.5	ug/L	178	Standard
	Pb	208	2127.7	1.8	**0.1072**	0.001	0.5	ug/L	654	Standard
	U	238	484753.0	1.4	**105.4239**	1.090	1.0	ug/L	1	Standard
>	**Bi**	209	397180.5	1.8				ug/L	418387	Standard

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Na	23	21.7	35.3	**35.3013**	12.153	34.4	mg/L	2	Standard
Mg	24	67908.5	1.7	**147.8701**	9.439	6.4	mg/L	27	Standard
K	39	1311.7	5.4	**16.1039**	0.517	3.2	mg/L	20	Standard
Ca	43	1645.1	9.0	**209.7827**	15.836	7.5	mg/L	40	Standard
Fe	54	87.6	60.9	**0.0269**	0.127	471.0	mg/L	74	Standard
Fe	57	2046.8	1.8	**10.4675**	1.148	11.0	mg/L	697	Standard
Sc-1	45	30011.4	4.9				mg/L	28998	Standard
Cl	35	53475.1	12.1				ug/L	6091	Standard
Kr	83	4.7	65.5				ug/L	6	Standard
Br	81	278410.1	3.6				ug/L	383	Standard
P	31	17593.6	6.1				ug/L	8849	Standard
S	34	1640.1	7.6				ug/L	937	Standard
Sr	88	1323.4	5.9				ug/L	188	Standard
C	12	1670.1	11.1				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	100.0	17.3				mg/L	0	Standard
Dy	164	47.9	36.4				mg/L	12	Standard
Ho-1	165	43.3	17.6				mg/L	10	Standard
Er	166	43.3	13.3				mg/L	23	Standard
I	127	5084931.9	15.0				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		211.855	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.768	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	109.226	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	94.931	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Cr 53 Upper, S, EEE	Cr	53	

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Mn 55 Upper, S, EEE	Mn	55
Ni 60 Upper, S, EEE	Ni	60
Zn 66 Upper, S, EEE	Zn	66
Se 82 Upper, S, EEE	Se	82
Se-1 77 Upper, S, EEE	Se-1	77
U 238 Upper, S, EEE	U	238

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Method 6020 - Summary Report

Sample ID: L1508129201
Sample Date/Time: Thursday, August 27, 2015 13:58:47
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70143.7	1.3				ug/L	44982	Standard
	Be	9	31.7	18.2	**0.0238**	0.007	27.4	ug/L	8	Standard
	Al	27	11176615.5	1.1	**106.1678**	1.707	1.6	ug/L	318	Standard
	Sc	45	31559.5	4.0				ug/L	28998	Standard
	Ti	47	1326.1	0.2	**6.7762**	0.084	1.2	ug/L	21	Standard
	V	51	4128.5	6.0	**0.7788**	0.062	8.0	ug/L	1052	Standard
	Cr	52	16742.3	4.7	**1.8871**	0.113	6.0	ug/L	6637	Standard
	Cr	53	10807.2	3.8	**16.3357**	0.400	2.4	ug/L	328	Standard
	Mn	55	373479.0	2.8	**108.2789**	1.542	1.4	ug/L	636	Standard
	Co	59	1229.7	6.2	**0.2702**	0.017	6.1	ug/L	199	Standard
	Ni	60	4049.5	5.4	**2.6727**	0.152	5.7	ug/L	185	Standard
	Cu	65	80747.3	2.5	**57.2605**	1.086	1.9	ug/L	133	Standard
	Zn	66	62161.6	1.5	**77.5635**	0.405	0.5	ug/L	187	Standard
>	**Ge**	72	323515.1	1.4				ug/L	311830	Standard
	As	75	3543.2	4.5	**4.3386**	0.211	4.9	ug/L	-58	Standard
	Se	82	98.0	15.1	**1.0609**	0.223	21.0	ug/L	25	Standard
	Se-1	77	692.3	2.0	**12.9126**	0.155	1.2	ug/L	90	Standard
>	**Ga**	71	201.7	13.7				mg/L	18	Standard
	Rb	85	40682.9	2.8				ug/L	27	Standard
	Y	89	339086.5	1.9				ug/L	295023	Standard
>	**Rh**	103	345.0	3.8				ug/L	7	Standard
	Mo	98	7291.9	1.4	**4.1944**	0.033	0.8	ug/L	10	Standard
	Ag	107	766.0	9.5	**0.1113**	0.011	9.9	ug/L	58	Standard
	Cd	111	151.5	9.7	**0.0883**	0.009	9.9	mg/L	4	Standard
	Cd	114	485.7	17.0	**0.0973**	0.018	18.5	ug/L	-1	Standard
>	**In**	115	529325.3	0.8				ug/L	427691	Standard
	Sn	118	9354.6	1.5	**1.6189**	0.016	1.0	ug/L	273	Standard
	Sb	123	9569.3	3.2	**2.0361**	0.048	2.4	ug/L	55	Standard
	Ba	135	218188.5	0.9	**91.4333**	0.859	0.9	ug/L	39	Standard
	Ce	140	6007.9	2.0				ug/L	28	Standard
>	**Tb**	159	1008140.3	0.6				ug/L	886833	Standard
	Ho	165	135.0	3.7				ug/L	10	Standard
	Tl	203	71.7	6.6	**0.0059**	0.000	8.0	ug/L	2	Standard
	Tl	205	68.3	47.0	**0.0140**	0.006	40.2	ug/L	0	Standard
	Pb	206	8750.5	2.5	**1.6343**	0.021	1.3	ug/L	199	Standard
	Pb	207	7244.4	1.5	**1.4990**	0.011	0.7	ug/L	178	Standard
	Pb	208	26052.5	0.6	**1.4976**	0.023	1.5	ug/L	654	Standard
	U	238	6147.9	1.1	**1.0493**	0.021	2.0	ug/L	1	Standard
>	**Bi**	209	505294.5	1.6				ug/L	418387	Standard

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Na	23	11.7	65.5	**18.1793**	12.213	67.2	mg/L	2	Standard
Mg	24	35623.5	4.3	**73.6321**	3.426	4.7	mg/L	27	Standard
K	39	500.0	18.5	**5.7902**	1.292	22.3	mg/L	20	Standard
Ca	43	401.7	7.1	**45.4486**	5.397	11.9	mg/L	40	Standard
Fe	54	286.9	8.3	**0.4261**	0.026	6.0	mg/L	74	Standard
Fe	57	1025.0	16.3	**1.5325**	1.053	68.7	mg/L	697	Standard
> **Sc-1**	45	31559.5	4.0				mg/L	28998	Standard
Cl	35	14121.3	6.8				ug/L	6091	Standard
Kr	83	3.3	34.6				ug/L	6	Standard
Br	81	3510.4	22.1				ug/L	383	Standard
P	31	14897.3	2.1				ug/L	8849	Standard
S	34	1273.4	7.1				ug/L	937	Standard
Sr	88	418.3	3.0				ug/L	188	Standard
C	12	1880.1	4.0				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	103.3	31.1				mg/L	0	Standard
Dy	164	181.6	24.7				mg/L	12	Standard
Ho-1	165	135.0	3.7				mg/L	10	Standard
Er	166	106.7	14.3				mg/L	23	Standard
I	127	274063.1	34.1				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		155.938	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.747	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	123.763
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	120.772
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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In 115 Int Std for sample	In	115	Rerun sample
Bi 209 Int Std for sample	Bi	209	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1508129201
Sample Date/Time: Thursday, August 27, 2015 14:01:59
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62995.9	4.5				ug/L	44982	Standard
	Be	9	18.3	68.6	**0.0118**	0.015	131.1	ug/L	8	Standard
	Al	27	1094657.9	7.3	**11.6003**	1.198	10.3	ug/L	318	Standard
	Sc	45	30433.9	2.7				ug/L	28998	Standard
	Ti	47	128.7	9.0	**0.5660**	0.058	10.2	ug/L	21	Standard
	V	51	1702.4	6.7	**0.1725**	0.027	15.8	ug/L	1052	Standard
	Cr	52	8598.8	1.5	**0.3548**	0.035	9.9	ug/L	6637	Standard
	Cr	53	2543.5	7.3	**3.4668**	0.282	8.1	ug/L	328	Standard
	Mn	55	41523.0	11.8	**12.1404**	1.469	12.1	ug/L	636	Standard
	Co	59	346.7	8.2	**0.0341**	0.008	23.7	ug/L	199	Standard
	Ni	60	843.0	18.5	**0.4541**	0.112	24.6	ug/L	185	Standard
	Cu	65	8434.3	2.2	**6.0110**	0.131	2.2	ug/L	133	Standard
	Zn	66	7615.9	3.2	**9.0584**	0.296	3.3	ug/L	187	Standard
>	**Ge**	72	316230.7	0.6				ug/L	311830	Standard
	As	75	258.3	13.0	**0.3431**	0.043	12.5	ug/L	-58	Standard
	Se	82	23.9	11.0	**-0.0577**	0.042	72.3	ug/L	25	Standard
	Se-1	77	193.7	8.5	**2.2792**	0.338	14.8	ug/L	90	Standard
>	**Ga**	71	35.0	37.8				mg/L	18	Standard
	Rb	85	3982.2	1.4				ug/L	27	Standard
	Y	89	317011.0	1.7				ug/L	295023	Standard
>	**Rh**	103	41.7	48.5				ug/L	7	Standard
	Mo	98	700.5	4.9	**0.4031**	0.021	5.2	ug/L	10	Standard
	Ag	107	134.0	6.4	**0.0093**	0.001	14.0	ug/L	58	Standard
	Cd	111	25.2	32.1	**0.0129**	0.005	38.5	mg/L	4	Standard
	Cd	114	71.2	28.7	**0.0041**	0.005	114.1	ug/L	-1	Standard
>	**In**	115	521787.2	0.6				ug/L	427691	Standard
	Sn	118	1196.7	9.1	**0.1553**	0.019	12.0	ug/L	273	Standard
	Sb	123	1033.2	0.7	**0.2225**	0.000	0.1	ug/L	55	Standard
	Ba	135	21564.0	1.6	**9.1481**	0.159	1.7	ug/L	39	Standard
	Ce	140	653.3	13.5				ug/L	28	Standard
>	**Tb**	159	995721.2	1.4				ug/L	886833	Standard
	Ho	165	20.0	25.0				ug/L	10	Standard
	Tl	203	24.0	67.1	**0.0001**	0.002	1687.5	ug/L	2	Standard
	Tl	205	15.0	88.2	**0.0047**	0.002	51.1	ug/L	0	Standard
	Pb	206	1149.7	2.1	**0.1719**	0.006	3.6	ug/L	199	Standard
	Pb	207	935.7	5.1	**0.1539**	0.011	7.1	ug/L	178	Standard
	Pb	208	3423.8	2.2	**0.1592**	0.004	2.7	ug/L	654	Standard
	U	238	632.7	8.7	**0.1113**	0.010	9.2	ug/L	1	Standard
>	**Bi**	209	483098.4	1.1				ug/L	418387	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3547.1	3.8	**7.5617**	0.488	6.5	mg/L	27	Standard
K	39	60.0	14.4	**0.6071**	0.116	19.1	mg/L	20	Standard
Ca	43	75.0	13.3	**5.1829**	1.074	20.7	mg/L	40	Standard
Fe	54	93.5	23.9	**0.0344**	0.052	150.5	mg/L	74	Standard
Fe	57	865.0	8.7	**0.5387**	0.451	83.7	mg/L	697	Standard
> **Sc-1**	45	30433.9	2.7				mg/L	28998	Standard
Cl	35	12615.9	2.9				ug/L	6091	Standard
Kr	83	6.0	16.7				ug/L	6	Standard
Br	81	1116.7	4.9				ug/L	383	Standard
P	31	11185.8	3.5				ug/L	8849	Standard
S	34	1190.0	6.8				ug/L	937	Standard
Sr	88	233.3	33.5				ug/L	188	Standard
C	12	406.7	7.5				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	31.9	19.4				mg/L	12	Standard
Ho-1	165	20.0	25.0				mg/L	10	Standard
Er	166	30.0	33.3				mg/L	23	Standard
I	127	62728.8	10.3				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		140.048	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.411	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		122.001
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		115.467
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
In 115 Int Std for sample	In	115	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1508130301
Sample Date/Time: Thursday, August 27, 2015 14:05:11
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59788.2	8.0				ug/L	44982	Standard
	Be	9	13.3	43.3	**0.0068**	0.008	113.8	ug/L	8	Standard
	Al	27	9819921.5	1.9	**109.7719**	6.562	6.0	ug/L	318	Standard
	Sc	45	29323.4	4.1				ug/L	28998	Standard
	Ti	47	154.0	3.6	**0.7197**	0.037	5.1	ug/L	21	Standard
	V	51	2250.3	10.2	**0.3285**	0.065	19.8	ug/L	1052	Standard
	Cr	52	8308.6	1.7	**0.3348**	0.048	14.3	ug/L	6637	Standard
	Cr	53	10695.4	2.2	**16.9390**	0.412	2.4	ug/L	328	Standard
	Mn	55	119161.6	2.3	**36.0201**	1.203	3.3	ug/L	636	Standard
	Co	59	759.4	2.0	**0.1529**	0.006	4.1	ug/L	199	Standard
	Ni	60	2430.2	1.1	**1.6236**	0.037	2.3	ug/L	185	Standard
	Cu	65	4970.8	1.7	**3.5747**	0.075	2.1	ug/L	133	Standard
	Zn	66	6912.9	2.9	**8.3542**	0.275	3.3	ug/L	187	Standard
>	Ge	72	309257.6	1.2				ug/L	311830	Standard
	As	75	1007.5	1.8	**1.3051**	0.013	1.0	ug/L	-58	Standard
	Se	82	56.0	6.9	**0.4610**	0.059	12.8	ug/L	25	Standard
	Se-1	77	740.0	0.7	**14.6749**	0.292	2.0	ug/L	90	Standard
>	Ga	71	380.0	7.0				mg/L	18	Standard
	Rb	85	38732.8	0.1				ug/L	27	Standard
	Y	89	302525.7	1.3				ug/L	295023	Standard
>	Rh	103	270.0	18.2				ug/L	7	Standard
	Mo	98	5221.3	0.5	**3.2755**	0.031	1.0	ug/L	10	Standard
	Ag	107	75.3	23.9	**0.0006**	0.003	537.2	ug/L	58	Standard
	Cd	111	33.8	13.1	**0.0197**	0.003	14.5	mg/L	4	Standard
	Cd	114	112.4	21.1	**0.0155**	0.006	39.3	ug/L	-1	Standard
>	In	115	485185.9	1.2				ug/L	427691	Standard
	Sn	118	595.0	3.4	**0.0539**	0.005	9.1	ug/L	273	Standard
	Sb	123	2675.5	1.2	**0.6208**	0.007	1.1	ug/L	55	Standard
	Ba	135	84039.8	0.8	**38.4111**	0.461	1.2	ug/L	39	Standard
	Ce	140	193.3	24.9				ug/L	28	Standard
>	Tb	159	943191.0	1.4				ug/L	886833	Standard
	Ho	165	36.7	28.4				ug/L	10	Standard
	Tl	203	36.3	18.7	**0.0021**	0.001	46.4	ug/L	2	Standard
	Tl	205	30.0	0.0	**0.0080**	0.000	0.6	ug/L	0	Standard
	Pb	206	525.3	2.5	**0.0551**	0.003	6.1	ug/L	199	Standard
	Pb	207	443.0	8.6	**0.0523**	0.010	18.9	ug/L	178	Standard
	Pb	208	1537.4	2.1	**0.0505**	0.002	3.3	ug/L	654	Standard
	U	238	292.3	3.8	**0.0552**	0.002	4.4	ug/L	1	Standard
>	Bi	209	442680.4	0.9				ug/L	418387	Standard

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Na	23	1.7	173.2	**2.8677**	4.958	172.9	mg/L	2	Standard
Mg	24	34786.6	2.3	**77.3879**	2.091	2.7	mg/L	27	Standard
K	39	420.0	13.7	**5.2162**	0.924	17.7	mg/L	20	Standard
Ca	43	271.7	7.0	**31.7819**	2.335	7.3	mg/L	40	Standard
Fe	54	90.4	17.6	**0.0355**	0.042	119.1	mg/L	74	Standard
Fe	57	991.7	6.3	**1.8909**	0.543	28.7	mg/L	697	Standard
> **Sc-1**	45	29323.4	4.1				mg/L	28998	Standard
Cl	35	11284.9	4.6				ug/L	6091	Standard
Kr	83	4.0	43.3				ug/L	6	Standard
Br	81	2850.3	8.2				ug/L	383	Standard
P	31	13099.0	4.2				ug/L	8849	Standard
S	34	1151.7	4.4				ug/L	937	Standard
Sr	88	411.7	21.4				ug/L	188	Standard
C	12	363.3	1.6				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	25.2	111.1				mg/L	12	Standard
Ho-1	165	36.7	28.4				mg/L	10	Standard
Er	166	30.0	66.7				mg/L	23	Standard
I	127	78845.0	5.2				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.917	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.175	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.443
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.806
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1508130401
Sample Date/Time: Thursday, August 27, 2015 14:08:22
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62294.5	2.1				ug/L	44982	Standard
	Be	9	33.3	60.6	**0.0304**	0.025	82.7	ug/L	8	Standard
	Al	27	7367528.5	3.9	**78.7747**	1.432	1.8	ug/L	318	Standard
	Sc	45	30846.5	7.1				ug/L	28998	Standard
	Ti	47	1396.1	1.8	**7.3150**	0.137	1.9	ug/L	21	Standard
	V	51	4001.8	6.9	**0.7706**	0.057	7.5	ug/L	1052	Standard
	Cr	52	12332.7	3.8	**1.0938**	0.049	4.5	ug/L	6637	Standard
	Cr	53	5359.3	2.4	**7.9965**	0.217	2.7	ug/L	328	Standard
	Mn	55	294299.7	3.5	**87.3370**	1.813	2.1	ug/L	636	Standard
	Co	59	1718.8	4.7	**0.4134**	0.014	3.3	ug/L	199	Standard
	Ni	60	3268.7	1.5	**2.1840**	0.023	1.0	ug/L	185	Standard
	Cu	65	65971.7	1.4	**47.8944**	0.481	1.0	ug/L	133	Standard
	Zn	66	53051.4	1.4	**67.7001**	0.577	0.9	ug/L	187	Standard
>	**Ge**	72	315914.0	2.0				ug/L	311830	Standard
	As	75	995.9	7.4	**1.2627**	0.068	5.3	ug/L	-58	Standard
	Se	82	66.3	19.9	**0.6025**	0.195	32.4	ug/L	25	Standard
	Se-1	77	376.0	4.6	**6.3087**	0.540	8.6	ug/L	90	Standard
>	**Ga**	71	223.3	15.2				mg/L	18	Standard
	Rb	85	35319.5	2.0				ug/L	27	Standard
	Y	89	316486.5	3.0				ug/L	295023	Standard
>	**Rh**	103	176.7	22.7				ug/L	7	Standard
	Mo	98	4361.5	4.1	**2.6102**	0.053	2.0	ug/L	10	Standard
	Ag	107	304.0	5.7	**0.0386**	0.002	5.2	ug/L	58	Standard
	Cd	111	154.8	5.4	**0.0942**	0.007	6.9	mg/L	4	Standard
	Cd	114	410.1	12.6	**0.0842**	0.013	15.0	ug/L	-1	Standard
>	**In**	115	508161.1	2.1				ug/L	427691	Standard
	Sn	118	3477.1	7.3	**0.5881**	0.041	7.0	ug/L	273	Standard
	Sb	123	1203.5	1.7	**0.2663**	0.007	2.5	ug/L	55	Standard
	Ba	135	136257.8	2.3	**59.4677**	0.178	0.3	ug/L	39	Standard
	Ce	140	7488.5	4.5				ug/L	28	Standard
>	**Tb**	159	975481.5	3.3				ug/L	886833	Standard
	Ho	165	153.3	24.7				ug/L	10	Standard
	Tl	203	52.3	6.7	**0.0036**	0.000	12.9	ug/L	2	Standard
	Tl	205	40.0	45.1	**0.0092**	0.003	37.0	ug/L	0	Standard
	Pb	206	9656.7	0.9	**1.8521**	0.054	2.9	ug/L	199	Standard
	Pb	207	7912.7	0.8	**1.6804**	0.039	2.3	ug/L	178	Standard
	Pb	208	29320.9	2.1	**1.7305**	0.013	0.8	ug/L	654	Standard
	U	238	3360.7	3.7	**0.5853**	0.013	2.2	ug/L	1	Standard
>	**Bi**	209	494442.4	2.8				ug/L	418387	Standard

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Na	23	10.0	50.0	**15.5755**	6.943	44.6	mg/L	2	Standard
Mg	24	15973.4	2.8	**33.8156**	1.885	5.6	mg/L	27	Standard
K	39	391.7	7.5	**4.6208**	0.703	15.2	mg/L	20	Standard
Ca	43	276.7	15.6	**30.8470**	6.713	21.8	mg/L	40	Standard
Fe	54	268.7	7.6	**0.4036**	0.052	12.8	mg/L	74	Standard
Fe	57	1005.0	12.9	**1.6585**	1.680	101.3	mg/L	697	Standard
Sc-1	45	30846.5	7.1				mg/L	28998	Standard
Cl	35	11108.7	2.8				ug/L	6091	Standard
Kr	83	5.7	10.2				ug/L	6	Standard
Br	81	1563.4	14.0				ug/L	383	Standard
P	31	14003.1	1.7				ug/L	8849	Standard
S	34	1200.0	10.4				ug/L	937	Standard
Sr	88	296.7	4.9				ug/L	188	Standard
C	12	1736.8	7.8				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	33.3	17.3				mg/L	0	Standard
Dy	164	197.9	10.6				mg/L	12	Standard
Ho-1	165	153.3	24.7				mg/L	10	Standard
Er	166	183.3	3.1				mg/L	23	Standard
I	127	46626.8	5.7				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		138.489	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.310	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		118.815
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		118.178
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1508130401
Sample Date/Time: Thursday, August 27, 2015 14:11:33
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58123.0	2.0				ug/L	44982	Standard
	Be	9	28.3	40.8	**0.0265**	0.015	56.1	ug/L	8	Standard
	Al	27	717125.8	0.7	**8.2176**	0.118	1.4	ug/L	318	Standard
	Sc	45	29453.6	2.9				ug/L	28998	Standard
	Ti	47	142.0	7.4	**0.6420**	0.060	9.4	ug/L	21	Standard
	V	51	1556.5	8.5	**0.1372**	0.035	25.7	ug/L	1052	Standard
	Cr	52	7901.4	1.2	**0.2271**	0.045	19.8	ug/L	6637	Standard
	Cr	53	1451.7	11.5	**1.7322**	0.303	17.5	ug/L	328	Standard
	Mn	55	30158.7	0.5	**8.8185**	0.128	1.4	ug/L	636	Standard
	Co	59	490.3	7.7	**0.0747**	0.012	16.3	ug/L	199	Standard
	Ni	60	672.7	2.2	**0.3359**	0.018	5.4	ug/L	185	Standard
	Cu	65	6792.2	0.2	**4.8484**	0.098	2.0	ug/L	133	Standard
	Zn	66	6704.8	0.7	**7.9389**	0.167	2.1	ug/L	187	Standard
>	**Ge**	72	314315.8	1.9				ug/L	311830	Standard
	As	75	47.6	24.6	**0.0809**	0.015	19.1	ug/L	-58	Standard
	Se	82	23.8	18.2	**-0.0573**	0.065	113.9	ug/L	25	Standard
	Se-1	77	132.3	4.4	**0.9495**	0.155	16.3	ug/L	90	Standard
>	**Ga**	71	41.7	48.5				mg/L	18	Standard
	Rb	85	3467.1	2.2				ug/L	27	Standard
	Y	89	312103.5	0.6				ug/L	295023	Standard
>	**Rh**	103	25.0	20.0				ug/L	7	Standard
	Mo	98	423.6	1.5	**0.2543**	0.002	1.0	ug/L	10	Standard
	Ag	107	94.7	6.7	**0.0037**	0.001	32.9	ug/L	58	Standard
	Cd	111	16.1	6.2	**0.0078**	0.000	5.5	mg/L	4	Standard
	Cd	114	53.6	26.6	**0.0007**	0.003	454.8	ug/L	-1	Standard
>	**In**	115	495606.8	2.1				ug/L	427691	Standard
	Sn	118	611.7	18.3	**0.0543**	0.019	35.5	ug/L	273	Standard
	Sb	123	208.6	4.7	**0.0469**	0.003	6.6	ug/L	55	Standard
	Ba	135	13479.7	1.9	**6.0157**	0.205	3.4	ug/L	39	Standard
	Ce	140	781.7	3.7				ug/L	28	Standard
>	**Tb**	159	983785.4	3.2				ug/L	886833	Standard
	Ho	165	38.3	49.4				ug/L	10	Standard
	Tl	203	11.0	41.7	**-0.0015**	0.001	39.7	ug/L	2	Standard
	Tl	205	11.7	65.5	**0.0042**	0.001	35.3	ug/L	0	Standard
	Pb	206	1197.0	2.4	**0.1902**	0.005	2.4	ug/L	199	Standard
	Pb	207	1035.4	1.2	**0.1846**	0.002	1.2	ug/L	178	Standard
	Pb	208	3718.5	1.3	**0.1860**	0.005	2.7	ug/L	654	Standard
	U	238	324.0	6.3	**0.0582**	0.003	5.8	ug/L	1	Standard
>	**Bi**	209	466281.6	1.1				ug/L	418387	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	1656.8	2.4	**3.6221**	0.165	4.6	mg/L	27	Standard
K	39	55.0	32.8	**0.5650**	0.212	37.5	mg/L	20	Standard
Ca	43	60.0	8.3	**3.5396**	0.834	23.6	mg/L	40	Standard
Fe	54	122.9	14.3	**0.1060**	0.042	40.0	mg/L	74	Standard
Fe	57	730.0	17.5	**-0.3347**	1.259	376.1	mg/L	697	Standard
> **Sc-1**	45	29453.6	2.9				mg/L	28998	Standard
Cl	35	11009.3	1.2				ug/L	6091	Standard
Kr	83	5.0	60.0				ug/L	6	Standard
Br	81	643.3	19.2				ug/L	383	Standard
P	31	10944.0	3.5				ug/L	8849	Standard
S	34	1285.1	2.6				ug/L	937	Standard
Sr	88	208.3	6.9				ug/L	188	Standard
C	12	386.7	3.0				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	22.1	56.8				mg/L	12	Standard
Ho-1	165	38.3	49.4				mg/L	10	Standard
Er	166	26.7	78.1				mg/L	23	Standard
I	127	23658.5	6.4				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.215	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.797	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		115.880
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		111.447
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1508130601
Sample Date/Time: Thursday, August 27, 2015 14:14:45
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56841.6	5.0				ug/L	44982	Standard
	Be	9	18.3	87.7	**0.0136**	0.021	153.9	ug/L	8	Standard
	Al	27	9251428.8	3.2	**108.4993**	2.018	1.9	ug/L	318	Standard
	Sc	45	30834.7	0.9				ug/L	28998	Standard
	Ti	47	729.0	8.8	**3.8439**	0.376	9.8	ug/L	21	Standard
	V	51	2315.0	12.1	**0.3443**	0.070	20.4	ug/L	1052	Standard
	Cr	52	11474.0	1.9	**0.9711**	0.060	6.2	ug/L	6637	Standard
	Cr	53	9868.2	1.7	**15.5635**	0.369	2.4	ug/L	328	Standard
	Mn	55	366055.1	1.8	**110.9230**	2.483	2.2	ug/L	636	Standard
	Co	59	858.0	2.9	**0.1804**	0.006	3.1	ug/L	199	Standard
	Ni	60	2709.6	1.6	**1.8248**	0.044	2.4	ug/L	185	Standard
	Cu	65	39038.9	1.3	**28.8700**	0.468	1.6	ug/L	133	Standard
	Zn	66	25812.3	0.7	**33.2277**	0.386	1.2	ug/L	187	Standard
>	**Ge**	72	309601.9	0.7				ug/L	311830	Standard
	As	75	2427.8	2.4	**3.1120**	0.083	2.7	ug/L	-58	Standard
	Se	82	55.1	11.8	**0.4470**	0.110	24.5	ug/L	25	Standard
	Se-1	77	655.7	3.0	**12.7571**	0.370	2.9	ug/L	90	Standard
>	**Ga**	71	105.0	17.2				mg/L	18	Standard
	Rb	85	37473.0	1.9				ug/L	27	Standard
	Y	89	310996.1	0.7				ug/L	295023	Standard
>	**Rh**	103	306.7	20.8				ug/L	7	Standard
	Mo	98	5148.0	2.1	**3.2444**	0.103	3.2	ug/L	10	Standard
	Ag	107	203.7	8.6	**0.0234**	0.003	13.9	ug/L	58	Standard
	Cd	111	44.8	5.9	**0.0270**	0.002	5.8	mg/L	4	Standard
	Cd	114	148.5	17.8	**0.0245**	0.007	26.5	ug/L	-1	Standard
>	**In**	115	483020.6	1.1				ug/L	427691	Standard
	Sn	118	2603.6	5.3	**0.4501**	0.027	6.0	ug/L	273	Standard
	Sb	123	6274.2	0.6	**1.4631**	0.014	1.0	ug/L	55	Standard
	Ba	135	167429.6	2.1	**76.8972**	2.218	2.9	ug/L	39	Standard
	Ce	140	1210.0	3.3				ug/L	28	Standard
>	**Tb**	159	936565.9	2.1				ug/L	886833	Standard
	Ho	165	43.3	17.6				ug/L	10	Standard
	Tl	203	30.0	14.5	**0.0012**	0.001	49.5	ug/L	2	Standard
	Tl	205	10.0	50.0	**0.0040**	0.001	25.6	ug/L	0	Standard
	Pb	206	2263.5	2.1	**0.4375**	0.012	2.8	ug/L	199	Standard
	Pb	207	1848.4	1.9	**0.3948**	0.005	1.4	ug/L	178	Standard
	Pb	208	6884.6	0.3	**0.4120**	0.002	0.5	ug/L	654	Standard
	U	238	4614.0	0.8	**0.8948**	0.010	1.1	ug/L	1	Standard
>	**Bi**	209	444489.1	0.7				ug/L	418387	Standard

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Na	23	3.3	173.2	**5.2751**	9.128	173.0	mg/L	2	Standard
Mg	24	33004.3	2.3	**69.7801**	1.730	2.5	mg/L	27	Standard
K	39	403.3	6.4	**4.7290**	0.268	5.7	mg/L	20	Standard
Ca	43	295.0	6.8	**32.9572**	2.548	7.7	mg/L	40	Standard
Fe	54	140.6	15.9	**0.1307**	0.045	34.6	mg/L	74	Standard
Fe	57	1030.0	7.3	**1.7847**	0.634	35.5	mg/L	697	Standard
> **Sc-1**	45	30834.7	0.9				mg/L	28998	Standard
Cl	35	10491.6	3.9				ug/L	6091	Standard
Kr	83	2.3	49.5				ug/L	6	Standard
Br	81	1730.1	13.6				ug/L	383	Standard
P	31	13526.0	1.4				ug/L	8849	Standard
S	34	1128.4	1.6				ug/L	937	Standard
Sr	88	431.7	7.1				ug/L	188	Standard
C	12	1373.4	4.4				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	37.1	80.2				mg/L	12	Standard
Ho-1	165	43.3	17.6				mg/L	10	Standard
Er	166	60.0	44.1				mg/L	23	Standard
I	127	88797.8	1.4				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		126.366	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.285	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.937
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.239
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508141101
Sample Date/Time: Thursday, August 27, 2015 14:17:56
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89057.8	2.7				ug/L	44982	Standard
	Be	9	40.0	12.5	**0.0237**	0.005	20.8	ug/L	8	Standard
	Al	27	20522312.2	1.3	**153.5673**	2.207	1.4	ug/L	318	Standard
	Sc	45	28279.7	0.8				ug/L	28998	Standard
	Ti	47	79.0	27.9	**0.3163**	0.122	38.6	ug/L	21	Standard
	V	51	1519.1	10.0	**0.1383**	0.047	33.6	ug/L	1052	Standard
	Cr	52	12900.2	0.4	**1.2877**	0.029	2.3	ug/L	6637	Standard
	Cr	53	2025.1	2.2	**2.7420**	0.043	1.6	ug/L	328	Standard
	Mn	55	862778.3	0.4	**264.6415**	2.518	1.0	ug/L	636	Standard
	Co	59	5744.8	0.2	**1.5771**	0.020	1.3	ug/L	199	Standard
	Ni	60	11662.5	2.8	**8.4303**	0.140	1.7	ug/L	185	Standard
	Cu	65	2414.9	1.8	**1.6925**	0.043	2.5	ug/L	133	Standard
	Zn	66	4374.3	2.0	**5.0669**	0.188	3.7	ug/L	187	Standard
>	**Ge**	72	306183.4	1.4				ug/L	311830	Standard
	As	75	145.7	20.2	**0.2083**	0.036	17.1	ug/L	-58	Standard
	Se	82	102.6	11.3	**1.2196**	0.167	13.7	ug/L	25	Standard
	Se-1	77	152.0	9.7	**1.4755**	0.365	24.7	ug/L	90	Standard
>	**Ga**	71	55.0	15.7				mg/L	18	Standard
	Rb	85	93053.4	3.1				ug/L	27	Standard
	Y	89	316262.6	2.2				ug/L	295023	Standard
>	**Rh**	103	151.7	13.3				ug/L	7	Standard
	Mo	98	124.9	9.6	**0.0700**	0.007	10.4	ug/L	10	Standard
	Ag	107	79.3	13.1	**0.0009**	0.002	195.0	ug/L	58	Standard
	Cd	111	37.7	5.3	**0.0215**	0.001	5.9	mg/L	4	Standard
	Cd	114	93.3	16.1	**0.0101**	0.004	35.3	ug/L	-1	Standard
>	**In**	115	499138.6	0.1				ug/L	427691	Standard
	Sn	118	498.3	8.2	**0.0321**	0.008	24.0	ug/L	273	Standard
	Sb	123	187.6	6.7	**0.0418**	0.003	6.8	ug/L	55	Standard
	Ba	135	6623.8	1.0	**2.9231**	0.030	1.0	ug/L	39	Standard
	Ce	140	6436.4	1.4				ug/L	28	Standard
>	**Tb**	159	951227.1	2.1				ug/L	886833	Standard
	Ho	165	463.3	11.5				ug/L	10	Standard
	Tl	203	648.7	4.0	**0.0905**	0.005	5.1	ug/L	2	Standard
	Tl	205	460.0	7.8	**0.0966**	0.008	7.9	ug/L	0	Standard
	Pb	206	312.3	5.0	**0.0094**	0.003	32.9	ug/L	199	Standard
	Pb	207	268.3	2.6	**0.0108**	0.002	17.9	ug/L	178	Standard
	Pb	208	977.3	3.8	**0.0137**	0.003	20.0	ug/L	654	Standard
	U	238	600.3	1.7	**0.1177**	0.001	0.8	ug/L	1	Standard
>	**Bi**	209	433961.2	0.9				ug/L	418387	Standard

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Na	23	18.3	83.3	**31.7176**	26.421	83.3	mg/L	2	Standard
Mg	24	36819.7	2.8	**84.8777**	1.804	2.1	mg/L	27	Standard
K	39	281.7	13.3	**3.5717**	0.489	13.7	mg/L	20	Standard
Ca	43	1625.1	9.1	**220.0815**	19.315	8.8	mg/L	40	Standard
Fe	54	215.4	26.4	**0.3303**	0.130	39.4	mg/L	74	Standard
Fe	57	1610.1	10.0	**7.6267**	1.362	17.9	mg/L	697	Standard
Sc-1	45	28279.7	0.8				mg/L	28998	Standard
Cl	35	23478.2	7.7				ug/L	6091	Standard
Kr	83	3.3	69.3				ug/L	6	Standard
Br	81	3783.8	11.1				ug/L	383	Standard
P	31	11846.3	5.1				ug/L	8849	Standard
S	34	1360.1	2.8				ug/L	937	Standard
Sr	88	306.7	5.2				ug/L	188	Standard
C	12	373.3	10.1				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	627.9	5.4				mg/L	12	Standard
Ho-1	165	463.3	11.5				mg/L	10	Standard
Er	166	323.3	9.9				mg/L	23	Standard
I	127	44508.7	5.0				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		197.987	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.189	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	116.705
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.722
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1508141101
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, August 27, 2015 14:21:10
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	56043.6	4.3				ug/L	44982	Standard
	Be	9	34353.9	4.3	**46.0450**	2.213	4.8	ug/L	8	Standard
	Al	27	3719092.1	2.3	**44.2430**	1.371	3.1	ug/L	318	Standard
	Sc	45	27281.2	3.0				ug/L	28998	Standard
	Ti	47	17786.4	1.6	**98.7097**	1.417	1.4	ug/L	21	Standard
	V	51	192421.6	0.1	**51.9817**	1.547	3.0	ug/L	1052	Standard
	Cr	52	242294.5	2.0	**48.6372**	1.258	2.6	ug/L	6637	Standard
	Cr	53	29528.8	3.2	**48.8859**	0.732	1.5	ug/L	328	Standard
	Mn	55	176036.4	0.4	**54.4703**	1.396	2.6	ug/L	636	Standard
	Co	59	187469.7	1.0	**54.0484**	1.787	3.3	ug/L	199	Standard
	Ni	60	65371.1	0.2	**48.5015**	1.310	2.7	ug/L	185	Standard
	Cu	65	63323.4	1.5	**47.9883**	1.401	2.9	ug/L	133	Standard
	Zn	66	36122.0	1.0	**47.8935**	0.957	2.0	ug/L	187	Standard
>	Ge	72	302758.0	2.9				ug/L	311830	Standard
	As	75	37723.6	1.2	**49.1487**	0.849	1.7	ug/L	-58	Standard
	Se	82	3201.9	2.0	**51.6590**	1.152	2.2	ug/L	25	Standard
	Se-1	77	2279.2	1.7	**50.4489**	2.024	4.0	ug/L	90	Standard
>	Ga	71	36.7	70.0				mg/L	18	Standard
	Rb	85	590.0	6.6				ug/L	27	Standard
	Y	89	304381.7	2.6				ug/L	295023	Standard
>	Rh	103	46.7	62.8				ug/L	7	Standard
	Mo	98	155580.8	1.4	**95.5381**	1.816	1.9	ug/L	10	Standard
	Ag	107	263407.1	1.0	**45.4731**	1.056	2.3	ug/L	58	Standard
	Cd	111	78580.9	1.9	**50.1557**	0.760	1.5	mg/L	4	Standard
	Cd	114	208055.0	2.6	**50.0008**	2.405	4.8	ug/L	-1	Standard
>	In	115	496756.2	3.3				ug/L	427691	Standard
	Sn	118	228405.5	1.2	**43.7317**	1.752	4.0	ug/L	273	Standard
	Sb	123	208803.2	0.9	**47.3892**	1.302	2.7	ug/L	55	Standard
	Ba	135	97924.5	1.3	**43.7367**	1.070	2.4	ug/L	39	Standard
	Ce	140	65.0	15.4				ug/L	28	Standard
>	Tb	159	938404.2	1.1				ug/L	886833	Standard
	Ho	165	6.7	86.6				ug/L	10	Standard
	Tl	203	346007.3	1.3	**47.9976**	1.371	2.9	ug/L	2	Standard
	Tl	205	248657.6	2.0	**49.2561**	0.589	1.2	ug/L	0	Standard
	Pb	206	226654.2	1.3	**49.1953**	1.276	2.6	ug/L	199	Standard
	Pb	207	203023.5	0.6	**48.8321**	1.466	3.0	ug/L	178	Standard
	Pb	208	713386.5	1.3	**47.5913**	1.238	2.6	ug/L	654	Standard
	U	238	247919.3	0.8	**47.5265**	0.984	2.1	ug/L	1	Standard
>	Bi	209	450725.0	2.9				ug/L	418387	Standard

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Na	23	1.7	173.2	**3.0642**	5.299	172.9	mg/L	2	Standard
Mg	24	2316.8	1.0	**5.4934**	0.184	3.3	mg/L	27	Standard
K	39	386.7	14.7	**5.1453**	0.858	16.7	mg/L	20	Standard
Ca	43	80.0	22.5	**6.9919**	2.326	33.3	mg/L	40	Standard
Fe	54	2222.4	7.7	**5.1486**	0.259	5.0	mg/L	74	Standard
Fe	57	1396.7	6.9	**6.2078**	0.873	14.1	mg/L	697	Standard
Sc-1	45	27281.2	3.0				mg/L	28998	Standard
Cl	35	10062.0	8.2				ug/L	6091	Standard
Kr	83	3.7	15.7				ug/L	6	Standard
Br	81	766.7	12.1				ug/L	383	Standard
P	31	11192.5	3.2				ug/L	8849	Standard
S	34	1305.1	7.9				ug/L	937	Standard
Sr	88	173.3	9.3				ug/L	188	Standard
C	12	336.7	12.0				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.5	122.8				mg/L	12	Standard
Ho-1	165	6.7	86.6				mg/L	10	Standard
Er	166	16.7	91.7				mg/L	23	Standard
I	127	14798.9	8.2				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	92.090		
Al	27	88.486		
Sc	45			
Ti	47	98.710		
V	51	103.963		
Cr	52	97.274		
Cr	53			
Mn	55	108.941		
Co	59	108.097		
Ni	60	97.003		
Cu	65	95.977		
Zn	66	95.787		
Ge	72		97.091	
As	75	98.297		
Se	82	103.318		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	95.538		
Ag	107	90.946		
Cd	111	100.311		
Cd	114			
In	115		116.148	
Sn	118	87.463		
Sb	123	94.778		
Ba	135	87.473		
Ce	140			
Tb	159			
Ho	165			
Tl	203	95.995		
Tl	205			
Pb	206			
Pb	207			
Pb	208	95.183		
U	238	95.053		
Bi	209		107.729	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	
QC Std 6	Ba	135	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, August 27, 2015 14:24:21
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54698.6	2.6				ug/L	44982	Standard
	Be	9	28.3	36.7	**0.0286**	0.014	47.3	ug/L	8	Standard
	Al	27	3328.8	53.5	**0.0360**	0.021	58.0	ug/L	318	Standard
	Sc	45	28765.6	1.1				ug/L	28998	Standard
	Ti	47	17.7	25.5	**-0.0206**	0.026	123.9	ug/L	21	Standard
	V	51	885.3	9.0	**-0.0315**	0.022	69.8	ug/L	1052	Standard
	Cr	52	5654.4	0.4	**-0.1867**	0.014	7.4	ug/L	6637	Standard
	Cr	53	716.7	21.8	**0.5768**	0.262	45.4	ug/L	328	Standard
	Mn	55	710.7	10.6	**0.0183**	0.024	130.4	ug/L	636	Standard
	Co	59	227.0	9.3	**0.0033**	0.006	184.8	ug/L	199	Standard
	Ni	60	279.3	4.5	**0.0599**	0.011	18.2	ug/L	185	Standard
	Cu	65	188.7	11.1	**0.0210**	0.015	72.9	ug/L	133	Standard
	Zn	66	218.3	5.5	**-0.4667**	0.014	3.0	ug/L	187	Standard
>	**Ge**	72	305337.7	0.8				ug/L	311830	Standard
	As	75	-54.6	47.9	**-0.0496**	0.034	69.0	ug/L	-58	Standard
	Se	82	22.5	12.0	**-0.0674**	0.041	61.1	ug/L	25	Standard
	Se-1	77	101.3	14.6	**0.3264**	0.323	99.0	ug/L	90	Standard
>	**Ga**	71	21.7	35.3				mg/L	18	Standard
	Rb	85	35.0	37.8				ug/L	27	Standard
	Y	89	300528.3	1.5				ug/L	295023	Standard
>	**Rh**	103	13.3	43.3				ug/L	7	Standard
	Mo	98	74.5	14.7	**0.0398**	0.007	17.1	ug/L	10	Standard
	Ag	107	87.7	12.1	**0.0025**	0.002	75.7	ug/L	58	Standard
	Cd	111	10.9	27.5	**0.0046**	0.002	42.3	mg/L	4	Standard
	Cd	114	24.3	34.9	**-0.0063**	0.002	33.1	ug/L	-1	Standard
>	**In**	115	492847.3	0.7				ug/L	427691	Standard
	Sn	118	461.7	8.3	**0.0263**	0.007	28.0	ug/L	273	Standard
	Sb	123	799.3	6.7	**0.1822**	0.012	6.8	ug/L	55	Standard
	Ba	135	54.7	34.9	**0.0035**	0.009	244.0	ug/L	39	Standard
	Ce	140	15.0	57.7				ug/L	28	Standard
>	**Tb**	159	943102.1	1.3				ug/L	886833	Standard
	Ho	165	15.0	66.7				ug/L	10	Standard
	Tl	203	34.3	46.1	**0.0017**	0.002	127.2	ug/L	2	Standard
	Tl	205	23.3	53.9	**0.0064**	0.002	37.2	ug/L	0	Standard
	Pb	206	227.0	5.0	**-0.0128**	0.003	23.8	ug/L	199	Standard
	Pb	207	199.0	7.0	**-0.0093**	0.004	38.2	ug/L	178	Standard
	Pb	208	712.7	7.6	**-0.0075**	0.003	40.6	ug/L	654	Standard
	U	238	29.0	31.6	**0.0036**	0.002	46.1	ug/L	1	Standard
>	**Bi**	209	460375.6	1.3				ug/L	418387	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	25.0	**0.0443**	0.024	54.0	mg/L	27	Standard
K	39	11.7	24.7	**0.0248**	0.039	156.8	mg/L	20	Standard
Ca	43	41.7	6.9	**1.2300**	0.446	36.3	mg/L	40	Standard
Fe	54	63.9	29.0	**-0.0218**	0.042	191.8	mg/L	74	Standard
Fe	57	828.4	8.2	**0.6345**	0.514	81.0	mg/L	697	Standard
> **Sc-1**	45	28765.6	1.1				mg/L	28998	Standard
Cl	35	9525.7	0.7				ug/L	6091	Standard
Kr	83	5.0	34.6				ug/L	6	Standard
Br	81	600.0	1.7				ug/L	383	Standard
P	31	10593.7	4.0				ug/L	8849	Standard
S	34	1288.4	5.0				ug/L	937	Standard
Sr	88	191.7	14.4				ug/L	188	Standard
C	12	223.3	11.3				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.4	46.7				mg/L	12	Standard
Ho-1	165	15.0	66.7				mg/L	10	Standard
Er	166	20.0	0.0				mg/L	23	Standard
I	127	12633.6	4.2				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.918	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		115.234
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.036
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508141102 WG536649-02
Sample Date/Time: Thursday, August 27, 2015 14:27:34
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83626.9	2.3				ug/L	44982	Standard
	Be	9	20.0	25.0	**0.0078**	0.004	54.7	ug/L	8	Standard
	Al	27	17796701.9	1.6	**141.7994**	1.127	0.8	ug/L	318	Standard
	Sc	45	26641.8	6.4				ug/L	28998	Standard
	Ti	47	62.7	5.6	**0.2451**	0.026	10.7	ug/L	21	Standard
	V	51	1419.6	6.9	**0.1323**	0.034	26.0	ug/L	1052	Standard
	Cr	52	12342.4	0.8	**1.3107**	0.057	4.3	ug/L	6637	Standard
	Cr	53	1528.4	4.5	**2.0551**	0.071	3.5	ug/L	328	Standard
	Mn	55	712300.8	1.5	**230.2902**	1.764	0.8	ug/L	636	Standard
	Co	59	3546.1	2.3	**1.0046**	0.007	0.7	ug/L	199	Standard
	Ni	60	8770.2	0.8	**6.6550**	0.135	2.0	ug/L	185	Standard
	Cu	65	2152.5	1.7	**1.5836**	0.061	3.9	ug/L	133	Standard
	Zn	66	2369.5	1.6	**2.5686**	0.110	4.3	ug/L	187	Standard
>	**Ge**	72	290450.2	1.9				ug/L	311830	Standard
	As	75	169.0	25.2	**0.2503**	0.058	23.1	ug/L	-58	Standard
	Se	82	99.1	1.9	**1.2506**	0.052	4.1	ug/L	25	Standard
	Se-1	77	117.3	6.9	**0.8289**	0.170	20.5	ug/L	90	Standard
>	**Ga**	71	33.3	48.2				mg/L	18	Standard
	Rb	85	84287.4	4.0				ug/L	27	Standard
	Y	89	290076.9	2.9				ug/L	295023	Standard
>	**Rh**	103	188.3	33.0				ug/L	7	Standard
	Mo	98	134.3	15.9	**0.0797**	0.013	16.7	ug/L	10	Standard
	Ag	107	103.7	27.9	**0.0059**	0.005	85.3	ug/L	58	Standard
	Cd	111	47.0	30.0	**0.0289**	0.009	32.6	mg/L	4	Standard
	Cd	114	163.8	38.7	**0.0289**	0.016	54.2	ug/L	-1	Standard
>	**In**	115	475916.2	0.8				ug/L	427691	Standard
	Sn	118	480.0	14.4	**0.0331**	0.013	39.9	ug/L	273	Standard
	Sb	123	315.8	9.8	**0.0742**	0.007	9.2	ug/L	55	Standard
	Ba	135	6495.7	1.5	**3.0073**	0.056	1.9	ug/L	39	Standard
	Ce	140	293.3	12.9				ug/L	28	Standard
>	**Tb**	159	911546.6	1.1				ug/L	886833	Standard
	Ho	165	18.3	41.7				ug/L	10	Standard
	Tl	203	629.0	6.7	**0.0918**	0.008	8.8	ug/L	2	Standard
	Tl	205	456.7	8.8	**0.1000**	0.007	6.6	ug/L	0	Standard
	Pb	206	294.0	9.1	**0.0082**	0.006	72.5	ug/L	199	Standard
	Pb	207	250.3	4.4	**0.0092**	0.004	43.3	ug/L	178	Standard
	Pb	208	903.7	8.6	**0.0115**	0.007	60.6	ug/L	654	Standard
	U	238	584.0	3.7	**0.1198**	0.007	5.8	ug/L	1	Standard
>	**Bi**	209	415226.6	2.1				ug/L	418387	Standard

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Na	23	15.0	57.7	**27.7370**	16.226	58.5	mg/L	2	Standard
Mg	24	33480.3	3.0	**82.0717**	3.645	4.4	mg/L	27	Standard
K	39	233.3	20.4	**3.1066**	0.460	14.8	mg/L	20	Standard
Ca	43	1365.1	7.8	**195.6953**	3.514	1.8	mg/L	40	Standard
Fe	54	83.4	20.8	**0.0384**	0.045	118.2	mg/L	74	Standard
Fe	57	1438.4	7.7	**6.9790**	1.879	26.9	mg/L	697	Standard
Sc-1	45	26641.8	6.4				mg/L	28998	Standard
Cl	35	20933.8	3.7				ug/L	6091	Standard
Kr	83	5.7	36.7				ug/L	6	Standard
Br	81	4293.9	5.3				ug/L	383	Standard
P	31	10927.3	1.6				ug/L	8849	Standard
S	34	1325.1	5.0				ug/L	937	Standard
Sr	88	326.7	4.9				ug/L	188	Standard
C	12	260.0	13.3				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	25.4	26.6				mg/L	12	Standard
Ho-1	165	18.3	41.7				mg/L	10	Standard
Er	166	26.7	78.1				mg/L	23	Standard
I	127	28181.2	3.4				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		185.913	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.144	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	111.276	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.245	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1508141102 WG536649-02
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Method 6020 - Summary Report

Sample ID: L1508141102S WG536649-08
Sample Date/Time: Thursday, August 27, 2015 14:30:45
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84583.9	2.6				ug/L	44982	Standard
	Be	9	35047.2	3.4	**31.1224**	1.685	5.4	ug/L	8	Standard
	Al	27	18482505.8	1.3	**145.6145**	2.006	1.4	ug/L	318	Standard
	Sc	45	26075.8	1.7				ug/L	28998	Standard
	Ti	47	73.7	14.1	**0.3126**	0.061	19.4	ug/L	21	Standard
	V	51	187082.2	1.3	**53.1578**	0.635	1.2	ug/L	1052	Standard
	Cr	52	237084.2	0.7	**50.1026**	0.355	0.7	ug/L	6637	Standard
	Cr	53	29448.6	3.1	**51.3339**	1.653	3.2	ug/L	328	Standard
	Mn	55	909063.7	2.0	**296.7450**	5.934	2.0	ug/L	636	Standard
	Co	59	184728.5	1.6	**56.0117**	0.847	1.5	ug/L	199	Standard
	Ni	60	69730.8	0.9	**54.4319**	0.480	0.9	ug/L	185	Standard
	Cu	65	59869.7	1.2	**47.7208**	0.608	1.3	ug/L	133	Standard
	Zn	66	35520.9	1.6	**49.5672**	0.765	1.5	ug/L	187	Standard
>	**Ge**	72	287707.2	0.2				ug/L	311830	Standard
	As	75	37495.1	0.6	**51.3884**	0.295	0.6	ug/L	-58	Standard
	Se	82	3326.1	1.6	**56.4932**	0.891	1.6	ug/L	25	Standard
	Se-1	77	2353.5	1.1	**54.9527**	0.595	1.1	ug/L	90	Standard
>	**Ga**	71	56.7	45.3				mg/L	18	Standard
	Rb	85	88747.5	1.4				ug/L	27	Standard
	Y	89	289459.3	1.7				ug/L	295023	Standard
>	**Rh**	103	175.0	18.7				ug/L	7	Standard
	Mo	98	154.1	11.0	**0.0928**	0.010	11.2	ug/L	10	Standard
	Ag	107	220680.3	1.3	**39.9348**	0.437	1.1	ug/L	58	Standard
	Cd	111	75214.3	1.8	**50.3329**	0.694	1.4	mg/L	4	Standard
	Cd	114	195669.9	2.0	**49.2745**	0.875	1.8	ug/L	-1	Standard
>	**In**	115	473632.9	0.7				ug/L	427691	Standard
	Sn	118	531.7	2.7	**0.0440**	0.003	7.9	ug/L	273	Standard
	Sb	123	211526.2	1.4	**50.3226**	0.767	1.5	ug/L	55	Standard
	Ba	135	98720.6	0.9	**46.2254**	0.687	1.5	ug/L	39	Standard
	Ce	140	290.0	10.8				ug/L	28	Standard
>	**Tb**	159	905069.5	1.7				ug/L	886833	Standard
	Ho	165	18.3	15.7				ug/L	10	Standard
	Tl	203	320474.1	0.2	**48.2199**	0.274	0.6	ug/L	2	Standard
	Tl	205	233946.1	2.1	**50.2784**	0.920	1.8	ug/L	0	Standard
	Pb	206	217015.5	0.9	**51.0976**	0.700	1.4	ug/L	199	Standard
	Pb	207	185059.8	1.4	**48.2757**	0.713	1.5	ug/L	178	Standard
	Pb	208	654262.5	0.8	**47.3438**	0.353	0.7	ug/L	654	Standard
	U	238	236690.6	1.2	**49.2188**	0.397	0.8	ug/L	1	Standard
>	**Bi**	209	415344.3	0.5				ug/L	418387	Standard

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Na	23	25.0	20.0	**47.0373**	9.749	20.7	mg/L	2	Standard
Mg	24	35033.8	1.1	**87.6073**	1.255	1.4	mg/L	27	Standard
K	39	216.7	21.4	**2.9656**	0.708	23.9	mg/L	20	Standard
Ca	43	1598.4	4.0	**235.2768**	13.557	5.8	mg/L	40	Standard
Fe	54	86.1	27.4	**0.0483**	0.055	114.1	mg/L	74	Standard
Fe	57	1463.4	4.5	**7.4264**	0.506	6.8	mg/L	697	Standard
> **Sc-1**	45	26075.8	1.7				mg/L	28998	Standard
Cl	35	22411.2	0.4				ug/L	6091	Standard
Kr	83	3.7	31.5				ug/L	6	Standard
Br	81	4270.6	10.2				ug/L	383	Standard
P	31	11537.7	3.7				ug/L	8849	Standard
S	34	1208.4	11.0				ug/L	937	Standard
Sr	88	323.3	12.5				ug/L	188	Standard
C	12	343.3	16.8				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	10.0	173.2				mg/L	0	Standard
Dy	164	35.7	71.3				mg/L	12	Standard
Ho-1	165	18.3	15.7				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	23	Standard
I	127	35757.2	3.5				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		188.041	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.264	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	110.742	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.273	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508142003
Sample Date/Time: Thursday, August 27, 2015 14:33:56
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 1000
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56276.1	4.1				ug/L	44982	Standard
	Be	9	21.7	48.0	**0.0190**	0.014	74.2	ug/L	8	Standard
	Al	27	27299.6	6.6	**0.3188**	0.011	3.4	ug/L	318	Standard
	Sc	45	26698.5	3.3				ug/L	28998	Standard
	Ti	47	26.0	10.2	**0.0309**	0.017	54.3	ug/L	21	Standard
	V	51	845.5	73.5	**-0.0341**	0.173	507.7	ug/L	1052	Standard
	Cr	52	125158.7	2.5	**25.2451**	0.374	1.5	ug/L	6637	Standard
	Cr	53	15180.9	3.7	**25.5990**	0.602	2.4	ug/L	328	Standard
	Mn	55	1129.7	3.7	**0.1608**	0.013	7.8	ug/L	636	Standard
	Co	59	244.3	8.8	**0.0110**	0.006	53.2	ug/L	199	Standard
	Ni	60	299.0	1.9	**0.0829**	0.005	5.8	ug/L	185	Standard
	Cu	65	379.7	4.7	**0.1760**	0.012	6.6	ug/L	133	Standard
	Zn	66	3230.3	2.1	**3.7233**	0.108	2.9	ug/L	187	Standard
>	**Ge**	72	293856.9	1.3				ug/L	311830	Standard
	As	75	-4.7	940.8	**0.0142**	0.060	419.1	ug/L	-58	Standard
	Se	82	28.3	27.8	**0.0439**	0.125	284.6	ug/L	25	Standard
	Se-1	77	97.0	14.5	**0.3187**	0.364	114.1	ug/L	90	Standard
>	**Ga**	71	13.3	57.3				mg/L	18	Standard
	Rb	85	35.0	65.5				ug/L	27	Standard
	Y	89	288624.5	4.1				ug/L	295023	Standard
>	**Rh**	103	13.3	94.4				ug/L	7	Standard
	Mo	98	32.2	32.5	**0.0143**	0.006	45.4	ug/L	10	Standard
	Ag	107	100.7	11.9	**0.0054**	0.002	34.7	ug/L	58	Standard
	Cd	111	10.9	15.8	**0.0049**	0.001	22.8	mg/L	4	Standard
	Cd	114	10.0	61.1	**-0.0097**	0.002	15.6	ug/L	-1	Standard
>	**In**	115	475485.0	1.6				ug/L	427691	Standard
	Sn	118	498.3	2.5	**0.0369**	0.003	7.9	ug/L	273	Standard
	Sb	123	200.0	11.3	**0.0468**	0.005	10.1	ug/L	55	Standard
	Ba	135	66.3	11.7	**0.0099**	0.004	36.2	ug/L	39	Standard
	Ce	140	51.7	36.6				ug/L	28	Standard
>	**Tb**	159	918141.6	2.6				ug/L	886833	Standard
	Ho	165	15.0	66.7				ug/L	10	Standard
	Tl	203	31.0	39.2	**0.0014**	0.002	118.3	ug/L	2	Standard
	Tl	205	25.0	52.9	**0.0070**	0.003	37.6	ug/L	0	Standard
	Pb	206	323.0	2.3	**0.0113**	0.002	19.9	ug/L	199	Standard
	Pb	207	263.7	2.2	**0.0092**	0.000	3.1	ug/L	178	Standard
	Pb	208	980.0	1.3	**0.0135**	0.002	13.3	ug/L	654	Standard
	U	238	28.7	32.4	**0.0039**	0.002	46.5	ug/L	1	Standard
>	**Bi**	209	436746.1	1.7				ug/L	418387	Standard

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Na	23	1.7	173.2	**2.9908**	5.172	172.9	mg/L	2	Standard
Mg	24	123.3	12.4	**0.2521**	0.047	18.7	mg/L	27	Standard
K	39	5.0	0.0	**-0.0565**	0.002	4.1	mg/L	20	Standard
Ca	43	28.3	36.7	**-0.2866**	1.494	521.2	mg/L	40	Standard
Fe	54	64.7	32.4	**-0.0076**	0.057	752.8	mg/L	74	Standard
Fe	57	828.4	10.2	**1.1983**	0.831	69.3	mg/L	697	Standard
> **Sc-1**	45	26698.5	3.3				mg/L	28998	Standard
Cl	35	12177.6	2.2				ug/L	6091	Standard
Kr	83	5.7	10.2				ug/L	6	Standard
Br	81	640.0	8.7				ug/L	383	Standard
P	31	10090.0	2.0				ug/L	8849	Standard
S	34	1201.7	7.0				ug/L	937	Standard
Sr	88	208.3	9.1				ug/L	188	Standard
C	12	263.3	11.6				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.5	86.6				mg/L	12	Standard
Ho-1	165	15.0	66.7				mg/L	10	Standard
Er	166	16.7	91.7				mg/L	23	Standard
I	127	9651.4	6.5				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		125.109	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.236	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.175
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.388
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1508129001
Sample Date/Time: Thursday, August 27, 2015 14:39:56
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54899.3	1.1				ug/L	44982	Standard
	Be	9	11.7	65.5	**0.0059**	0.011	180.0	ug/L	8	Standard
	Al	27	15972844.5	0.9	**193.8532**	2.010	1.0	ug/L	318	Standard
	Sc	45	27945.8	1.9				ug/L	28998	Standard
	Ti	47	22.0	7.9	**0.0047**	0.010	223.8	ug/L	21	Standard
	V	51	1632.8	10.7	**0.1750**	0.046	26.2	ug/L	1052	Standard
	Cr	52	8971.3	5.4	**0.5140**	0.090	17.6	ug/L	6637	Standard
	Cr	53	2386.9	3.9	**3.4031**	0.190	5.6	ug/L	328	Standard
	Mn	55	774081.7	0.7	**241.0295**	2.551	1.1	ug/L	636	Standard
	Co	59	4221.3	1.4	**1.1609**	0.027	2.3	ug/L	199	Standard
	Ni	60	21559.7	1.4	**15.9531**	0.287	1.8	ug/L	185	Standard
	Cu	65	538.0	3.4	**0.2892**	0.014	4.7	ug/L	133	Standard
	Zn	66	10023.3	2.2	**12.7911**	0.386	3.0	ug/L	187	Standard
>	**Ge**	72	301584.0	0.9				ug/L	311830	Standard
	As	75	175.6	28.5	**0.2509**	0.067	26.8	ug/L	-58	Standard
	Se	82	196.1	1.4	**2.7727**	0.055	2.0	ug/L	25	Standard
	Se-1	77	276.0	6.8	**4.3901**	0.479	10.9	ug/L	90	Standard
>	**Ga**	71	40.0	25.0				mg/L	18	Standard
	Rb	85	1795.1	4.9				ug/L	27	Standard
	Y	89	290875.2	2.7				ug/L	295023	Standard
>	**Rh**	103	38.3	19.9				ug/L	7	Standard
	Mo	98	1025.6	2.8	**0.6558**	0.017	2.5	ug/L	10	Standard
	Ag	107	65.3	10.4	**-0.0009**	0.001	144.2	ug/L	58	Standard
	Cd	111	1276.1	3.1	**0.8540**	0.028	3.3	mg/L	4	Standard
	Cd	114	3377.3	4.1	**0.8410**	0.036	4.3	ug/L	-1	Standard
>	**In**	115	472300.9	0.7				ug/L	427691	Standard
	Sn	118	361.7	8.0	**0.0100**	0.006	63.4	ug/L	273	Standard
	Sb	123	223.1	11.6	**0.0527**	0.007	12.5	ug/L	55	Standard
	Ba	135	1643.1	1.2	**0.7508**	0.014	1.9	ug/L	39	Standard
	Ce	140	133.3	17.7				ug/L	28	Standard
>	**Tb**	159	934152.7	1.4				ug/L	886833	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	422.7	9.1	**0.0579**	0.005	8.9	ug/L	2	Standard
	Tl	205	301.7	22.4	**0.0642**	0.015	23.3	ug/L	0	Standard
	Pb	206	260.0	8.7	**-0.0024**	0.004	171.6	ug/L	199	Standard
	Pb	207	235.3	9.9	**0.0026**	0.006	212.7	ug/L	178	Standard
	Pb	208	794.0	2.5	**0.0011**	0.002	216.1	ug/L	654	Standard
	U	238	9477.3	0.9	**1.8860**	0.035	1.8	ug/L	1	Standard
>	**Bi**	209	433698.6	1.7				ug/L	418387	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	1201.7	5.7	**2.7575**	0.209	7.6	mg/L	27	Standard
K	39	25.0	20.0	**0.2070**	0.073	35.1	mg/L	20	Standard
Ca	43	83.3	40.0	**7.2409**	4.700	64.9	mg/L	40	Standard
Fe	54	85.8	34.7	**0.0329**	0.066	201.1	mg/L	74	Standard
Fe	57	821.7	4.6	**0.7861**	0.209	26.6	mg/L	697	Standard
> **Sc-1**	45	27945.8	1.9				mg/L	28998	Standard
Cl	35	12491.8	1.3				ug/L	6091	Standard
Kr	83	3.3	69.3				ug/L	6	Standard
Br	81	5464.3	7.7				ug/L	383	Standard
P	31	10477.0	2.4				ug/L	8849	Standard
S	34	1178.4	11.5				ug/L	937	Standard
Sr	88	208.3	16.9				ug/L	188	Standard
C	12	203.3	23.2				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	2.2	248.1				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	23.3	24.7				mg/L	23	Standard
I	127	103261.8	6.8				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		122.048	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.714	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	110.430
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.660
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1508129001
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Method 6020 - Summary Report

Sample ID: FBLANK 46 WG536649-05
Sample Date/Time: Thursday, August 27, 2015 14:43:07
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55667.1	2.5				ug/L	44982	Standard
	Be	9	21.7	48.0	**0.0189**	0.013	71.1	ug/L	8	Standard
	Al	27	25661.9	122.9	**0.2980**	0.367	123.2	ug/L	318	Standard
	Sc	45	27474.9	3.2				ug/L	28998	Standard
	Ti	47	28.3	17.8	**0.0392**	0.026	65.2	ug/L	21	Standard
	V	51	1682.3	3.6	**0.1870**	0.009	5.0	ug/L	1052	Standard
	Cr	52	9759.8	2.6	**0.6709**	0.051	7.5	ug/L	6637	Standard
	Cr	53	590.0	6.4	**0.3744**	0.048	12.9	ug/L	328	Standard
	Mn	55	3796.7	90.4	**0.9672**	1.037	107.2	ug/L	636	Standard
	Co	59	291.3	22.9	**0.0223**	0.018	79.4	ug/L	199	Standard
	Ni	60	350.3	10.1	**0.1143**	0.022	19.0	ug/L	185	Standard
	Cu	65	251.3	13.3	**0.0697**	0.022	31.7	ug/L	133	Standard
	Zn	66	2304.8	3.0	**2.3466**	0.080	3.4	ug/L	187	Standard
>	**Ge**	72	302603.5	1.7				ug/L	311830	Standard
	As	75	-14.0	145.8	**0.0030**	0.027	892.0	ug/L	-58	Standard
	Se	82	27.4	17.0	**0.0162**	0.072	446.2	ug/L	25	Standard
	Se-1	77	96.7	7.5	**0.2422**	0.178	73.6	ug/L	90	Standard
>	**Ga**	71	31.7	24.1				mg/L	18	Standard
	Rb	85	76.7	10.0				ug/L	27	Standard
	Y	89	294999.3	0.9				ug/L	295023	Standard
>	**Rh**	103	18.3	95.8				ug/L	7	Standard
	Mo	98	42.9	83.6	**0.0214**	0.023	106.7	ug/L	10	Standard
	Ag	107	72.0	9.7	**0.0005**	0.001	303.5	ug/L	58	Standard
	Cd	111	11.6	13.2	**0.0054**	0.001	19.5	mg/L	4	Standard
	Cd	114	34.6	29.5	**-0.0034**	0.003	75.2	ug/L	-1	Standard
>	**In**	115	468557.9	1.2				ug/L	427691	Standard
	Sn	118	575.0	25.1	**0.0537**	0.028	51.6	ug/L	273	Standard
	Sb	123	121.7	2.1	**0.0287**	0.001	3.1	ug/L	55	Standard
	Ba	135	4658.7	1.1	**2.1849**	0.015	0.7	ug/L	39	Standard
	Ce	140	253.3	9.3				ug/L	28	Standard
>	**Tb**	159	918618.6	1.1				ug/L	886833	Standard
	Ho	165	15.0	88.2				ug/L	10	Standard
	Tl	203	28.3	23.5	**0.0011**	0.001	85.0	ug/L	2	Standard
	Tl	205	50.0	113.6	**0.0122**	0.012	95.2	ug/L	0	Standard
	Pb	206	285.0	3.8	**0.0035**	0.002	69.3	ug/L	199	Standard
	Pb	207	229.3	7.0	**0.0013**	0.004	279.1	ug/L	178	Standard
	Pb	208	966.0	22.8	**0.0132**	0.015	113.7	ug/L	654	Standard
	U	238	66.7	119.9	**0.0115**	0.016	138.4	ug/L	1	Standard
>	**Bi**	209	432045.6	0.8				ug/L	418387	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	63.3	39.7	**0.1004**	0.062	61.4	mg/L	27	Standard
K	39	15.0	57.7	**0.0781**	0.122	155.8	mg/L	20	Standard
Ca	43	28.3	10.2	**-0.3919**	0.531	135.6	mg/L	40	Standard
Fe	54	79.1	11.1	**0.0217**	0.026	121.6	mg/L	74	Standard
Fe	57	826.7	7.2	**0.9528**	0.295	31.0	mg/L	697	Standard
> **Sc-1**	45	27474.9	3.2				mg/L	28998	Standard
Cl	35	11483.7	0.6				ug/L	6091	Standard
Kr	83	4.0	43.3				ug/L	6	Standard
Br	81	606.7	15.0				ug/L	383	Standard
P	31	10683.8	2.6				ug/L	8849	Standard
S	34	1150.0	4.3				ug/L	937	Standard
Sr	88	155.0	14.1				ug/L	188	Standard
C	12	273.3	2.1				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	19.5	86.6				mg/L	12	Standard
Ho-1	165	15.0	88.2				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	11547.7	6.9				mg/L	1437	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		123.755	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.041	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	109.555
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.264
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, August 27, 2015 14:46:20
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	52256.7	3.5				ug/L	44982	Standard
	Be	9	32286.0	2.7	**46.4006**	1.655	3.6	ug/L	8	Standard
	Al	27	3438078.2	1.7	**43.8478**	0.749	1.7	ug/L	318	Standard
	Sc	45	26817.0	1.2				ug/L	28998	Standard
	Ti	47	17914.3	1.4	**99.8005**	0.174	0.2	ug/L	21	Standard
	V	51	186949.6	0.8	**50.6803**	0.784	1.5	ug/L	1052	Standard
	Cr	52	239986.4	2.4	**48.3424**	0.667	1.4	ug/L	6637	Standard
	Cr	53	28318.1	3.4	**47.0431**	1.069	2.3	ug/L	328	Standard
	Mn	55	170535.9	1.9	**52.9538**	0.816	1.5	ug/L	636	Standard
	Co	59	183173.1	1.4	**53.0025**	1.294	2.4	ug/L	199	Standard
	Ni	60	64059.1	0.9	**47.6988**	0.537	1.1	ug/L	185	Standard
	Cu	65	62831.0	0.7	**47.7907**	0.573	1.2	ug/L	133	Standard
	Zn	66	35648.2	1.2	**47.4364**	0.533	1.1	ug/L	187	Standard
>	Ge	72	301525.5	1.4				ug/L	311830	Standard
	As	75	36601.9	1.0	**47.8688**	0.217	0.5	ug/L	-58	Standard
	Se	82	3085.8	2.4	**49.9557**	0.502	1.0	ug/L	25	Standard
	Se-1	77	2225.2	0.8	**49.3860**	0.660	1.3	ug/L	90	Standard
>	Ga	71	41.7	36.7				mg/L	18	Standard
	Rb	85	536.7	4.3				ug/L	27	Standard
	Y	89	293451.4	1.2				ug/L	295023	Standard
>	Rh	103	25.0	34.6				ug/L	7	Standard
	Mo	98	146262.8	0.2	**95.9004**	1.466	1.5	ug/L	10	Standard
	Ag	107	248802.2	1.7	**45.8538**	0.806	1.8	ug/L	58	Standard
	Cd	111	71386.2	1.1	**48.6536**	0.800	1.6	mg/L	4	Standard
	Cd	114	184417.0	0.5	**47.2966**	0.581	1.2	ug/L	-1	Standard
>	In	115	465124.6	1.7				ug/L	427691	Standard
	Sn	118	215563.1	2.2	**44.0422**	0.584	1.3	ug/L	273	Standard
	Sb	123	195667.4	0.8	**47.4045**	0.423	0.9	ug/L	55	Standard
	Ba	135	94859.4	0.9	**45.2311**	0.419	0.9	ug/L	39	Standard
	Ce	140	75.0	6.7				ug/L	28	Standard
>	Tb	159	930202.1	1.0				ug/L	886833	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	329560.4	0.7	**47.2112**	0.432	0.9	ug/L	2	Standard
	Tl	205	235961.8	1.6	**48.2813**	0.480	1.0	ug/L	0	Standard
	Pb	206	213437.9	1.1	**47.8441**	0.772	1.6	ug/L	199	Standard
	Pb	207	192370.9	0.9	**47.7784**	0.520	1.1	ug/L	178	Standard
	Pb	208	675123.0	0.3	**46.5127**	0.333	0.7	ug/L	654	Standard
	U	238	233805.5	0.2	**46.2907**	0.177	0.4	ug/L	1	Standard
>	Bi	209	436245.9	0.6				ug/L	418387	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	2235.2	2.9	**5.3866**	0.107	2.0	mg/L	27	Standard
K	39	398.3	13.9	**5.3954**	0.827	15.3	mg/L	20	Standard
Ca	43	75.0	40.6	**6.5319**	4.530	69.4	mg/L	40	Standard
Fe	54	2181.4	7.2	**5.1484**	0.434	8.4	mg/L	74	Standard
Fe	57	1336.7	9.9	**5.8679**	1.217	20.7	mg/L	697	Standard
Sc-1	45	26817.0	1.2				mg/L	28998	Standard
Cl	35	9286.2	5.9				ug/L	6091	Standard
Kr	83	4.7	12.4				ug/L	6	Standard
Br	81	496.7	11.1				ug/L	383	Standard
P	31	10263.5	3.0				ug/L	8849	Standard
S	34	1203.4	4.6				ug/L	937	Standard
Sr	88	173.3	21.8				ug/L	188	Standard
C	12	240.0	14.4				mg/L	167	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	36.3	57.7				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	6.7	173.2				mg/L	23	Standard
I	127	9214.5	5.0				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	92.801		
Al	27	87.696		
Sc	45			
Ti	47	99.800		
V	51	101.361		
Cr	52	96.685		
Cr	53			
Mn	55	105.908		
Co	59	106.005		
Ni	60	95.398		
Cu	65	95.581		
Zn	66	94.873		
> Ge	72		96.695	
As	75	95.738		
Se	82	99.911		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	95.900		
Ag	107	91.708		
Cd	111	97.307		
Cd	114			
> In	115		108.752	
Sn	118	88.084		
Sb	123	94.809		
Ba	135	90.462		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	94.422		
Tl	205			
Pb	206			
Pb	207			
Pb	208	93.025		
U	238	92.581		
> Bi	209		104.268	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, August 27, 2015 14:49:31
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50283.4	3.1				ug/L	44982	Standard
	Be	9	11.7	24.7	**0.0073**	0.004	58.4	ug/L	8	Standard
	Al	27	1161.7	23.9	**0.0112**	0.004	37.3	ug/L	318	Standard
	Sc	45	27079.2	3.8				ug/L	28998	Standard
	Ti	47	19.3	35.2	**-0.0100**	0.039	384.3	ug/L	21	Standard
	V	51	967.7	4.9	**-0.0059**	0.013	225.8	ug/L	1052	Standard
	Cr	52	5872.1	2.5	**-0.1263**	0.030	23.9	ug/L	6637	Standard
	Cr	53	456.7	12.3	**0.1542**	0.091	59.3	ug/L	328	Standard
	Mn	55	652.0	3.2	**0.0029**	0.006	226.2	ug/L	636	Standard
	Co	59	219.7	3.4	**0.0021**	0.002	96.2	ug/L	199	Standard
	Ni	60	224.7	13.4	**0.0217**	0.023	104.9	ug/L	185	Standard
	Cu	65	163.3	3.7	**0.0037**	0.005	138.3	ug/L	133	Standard
	Zn	66	200.3	9.1	**-0.4871**	0.026	5.3	ug/L	187	Standard
>	**Ge**	72	301336.0	0.4				ug/L	311830	Standard
	As	75	-63.0	45.5	**-0.0613**	0.037	60.9	ug/L	-58	Standard
	Se	82	17.9	39.8	**-0.1369**	0.118	85.9	ug/L	25	Standard
	Se-1	77	99.3	21.9	**0.3113**	0.494	158.8	ug/L	90	Standard
>	**Ga**	71	20.0	66.1				mg/L	18	Standard
	Rb	85	35.0	74.2				ug/L	27	Standard
	Y	89	298339.0	1.6				ug/L	295023	Standard
>	**Rh**	103	15.0	0.0				ug/L	7	Standard
	Mo	98	51.0	11.1	**0.0270**	0.004	14.2	ug/L	10	Standard
	Ag	107	87.7	15.2	**0.0034**	0.003	75.9	ug/L	58	Standard
	Cd	111	10.5	23.9	**0.0047**	0.002	36.5	mg/L	4	Standard
	Cd	114	42.6	26.5	**-0.0012**	0.003	240.0	ug/L	-1	Standard
>	**In**	115	467036.4	0.9				ug/L	427691	Standard
	Sn	118	398.3	8.5	**0.0183**	0.006	34.8	ug/L	273	Standard
	Sb	123	702.4	9.4	**0.1689**	0.017	10.0	ug/L	55	Standard
	Ba	135	46.3	10.9	**0.0009**	0.002	246.9	ug/L	39	Standard
	Ce	140	13.3	57.3				ug/L	28	Standard
>	**Tb**	159	920485.4	2.1				ug/L	886833	Standard
	Ho	165	6.7	114.6				ug/L	10	Standard
	Tl	203	19.7	41.1	**-0.0001**	0.001	838.7	ug/L	2	Standard
	Tl	205	16.7	69.3	**0.0054**	0.002	43.3	ug/L	0	Standard
	Pb	206	216.0	4.6	**-0.0122**	0.003	23.7	ug/L	199	Standard
	Pb	207	198.0	10.4	**-0.0067**	0.004	66.1	ug/L	178	Standard
	Pb	208	689.7	3.4	**-0.0061**	0.001	20.4	ug/L	654	Standard
	U	238	20.3	67.1	**0.0022**	0.003	118.8	ug/L	1	Standard
>	**Bi**	209	432721.5	1.6				ug/L	418387	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	30.0	44.1	**0.0215**	0.031	142.1	mg/L	27	Standard
K	39	11.7	49.5	**0.0341**	0.080	233.8	mg/L	20	Standard
Ca	43	30.0	28.9	**-0.1272**	1.136	893.1	mg/L	40	Standard
Fe	54	70.8	32.0	**0.0054**	0.061	1144.5	mg/L	74	Standard
Fe	57	833.4	13.4	**1.1585**	1.257	108.5	mg/L	697	Standard
Sc-1	45	27079.2	3.8				mg/L	28998	Standard
Cl	35	8847.2	0.9				ug/L	6091	Standard
Kr	83	6.7	37.7				ug/L	6	Standard
Br	81	543.3	25.0				ug/L	383	Standard
P	31	9876.6	1.6				ug/L	8849	Standard
S	34	1153.4	5.1				ug/L	937	Standard
Sr	88	173.3	21.3				ug/L	188	Standard
C	12	216.7	33.4				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.2	48.8				mg/L	12	Standard
Ho-1	165	6.7	114.6				mg/L	10	Standard
Er	166	23.3	65.5				mg/L	23	Standard
I	127	8057.1	3.5				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.635	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.199
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.426
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW 61 WG536769-02
Sample Date/Time: Thursday, August 27, 2015 15:09:21
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48818.5	0.8				ug/L	44982	Standard
	Be	9	20.0	25.0	**0.0207**	0.008	37.9	ug/L	8	Standard
	Al	27	15442.9	113.4	**0.2076**	0.241	116.3	ug/L	318	Standard
	Sc	45	27695.3	1.9				ug/L	28998	Standard
	Ti	47	33.0	10.9	**0.0690**	0.020	29.6	ug/L	21	Standard
	V	51	998.9	7.7	**0.0069**	0.020	298.4	ug/L	1052	Standard
	Cr	52	10614.4	0.4	**0.8906**	0.012	1.4	ug/L	6637	Standard
	Cr	53	936.7	10.5	**0.9880**	0.175	17.7	ug/L	328	Standard
	Mn	55	1632.4	6.6	**0.3167**	0.036	11.5	ug/L	636	Standard
	Co	59	232.0	7.6	**0.0067**	0.005	81.4	ug/L	199	Standard
	Ni	60	337.0	11.8	**0.1097**	0.031	28.5	ug/L	185	Standard
	Cu	65	333.3	5.1	**0.1374**	0.014	10.2	ug/L	133	Standard
	Zn	66	1324.1	5.9	**1.0612**	0.115	10.8	ug/L	187	Standard
>	**Ge**	72	296696.1	0.4				ug/L	311830	Standard
	As	75	-11.4	394.8	**0.0061**	0.060	981.8	ug/L	-58	Standard
	Se	82	27.6	15.8	**0.0287**	0.074	257.5	ug/L	25	Standard
	Se-1	77	96.7	10.4	**0.2851**	0.227	79.8	ug/L	90	Standard
>	**Ga**	71	30.0	16.7				mg/L	18	Standard
	Rb	85	108.3	22.8				ug/L	27	Standard
	Y	89	290231.6	3.0				ug/L	295023	Standard
>	**Rh**	103	20.0	114.6				ug/L	7	Standard
	Mo	98	24.2	31.0	**0.0103**	0.005	50.8	ug/L	10	Standard
	Ag	107	65.3	10.4	**-0.0001**	0.001	1005.4	ug/L	58	Standard
	Cd	111	16.3	21.5	**0.0092**	0.003	27.5	mg/L	4	Standard
	Cd	114	35.3	9.0	**-0.0027**	0.001	31.1	ug/L	-1	Standard
>	**In**	115	445438.4	0.5				ug/L	427691	Standard
	Sn	118	485.0	5.5	**0.0408**	0.006	15.1	ug/L	273	Standard
	Sb	123	249.1	18.5	**0.0624**	0.012	18.9	ug/L	55	Standard
	Ba	135	445.7	5.9	**0.2009**	0.014	7.0	ug/L	39	Standard
	Ce	140	450.0	20.0				ug/L	28	Standard
>	**Tb**	159	903122.4	0.6				ug/L	886833	Standard
	Ho	165	21.7	26.6				ug/L	10	Standard
	Tl	203	33.7	24.2	**0.0020**	0.001	63.8	ug/L	2	Standard
	Tl	205	43.3	65.6	**0.0111**	0.006	55.0	ug/L	0	Standard
	Pb	206	313.0	2.9	**0.0110**	0.002	13.9	ug/L	199	Standard
	Pb	207	253.7	3.9	**0.0085**	0.002	27.8	ug/L	178	Standard
	Pb	208	980.3	5.2	**0.0153**	0.004	27.7	ug/L	654	Standard
	U	238	49.7	110.5	**0.0084**	0.011	135.3	ug/L	1	Standard
>	**Bi**	209	425326.2	1.1				ug/L	418387	Standard

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Na	23	1.7	173.2	**2.9105**	5.032	172.9	mg/L	2	Standard
Mg	24	53.3	32.9	**0.0754**	0.041	53.9	mg/L	27	Standard
K	39	13.3	94.4	**0.0525**	0.167	317.7	mg/L	20	Standard
Ca	43	35.0	65.5	**0.4719**	3.187	675.4	mg/L	40	Standard
Fe	54	85.8	26.3	**0.0359**	0.057	157.7	mg/L	74	Standard
Fe	57	858.4	2.8	**1.1842**	0.191	16.1	mg/L	697	Standard
> **Sc-1**	45	27695.3	1.9				mg/L	28998	Standard
Cl	35	8543.7	1.9				ug/L	6091	Standard
Kr	83	5.0	0.0				ug/L	6	Standard
Br	81	636.7	4.0				ug/L	383	Standard
P	31	9983.3	3.0				ug/L	8849	Standard
S	34	1128.4	5.8				ug/L	937	Standard
Sr	88	221.7	4.7				ug/L	188	Standard
C	12	223.3	20.7				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	25.4	46.6				mg/L	12	Standard
Ho-1	165	21.7	26.6				mg/L	10	Standard
Er	166	26.7	21.7				mg/L	23	Standard
I	127	6506.4	3.4				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.530	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.147	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.150
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.658
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 61 WG536769-02
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Method 6020 - Summary Report

Sample ID: LCSW 61 WG536769-03
Sample Date/Time: Thursday, August 27, 2015 15:12:33
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	49056.1	5.5				ug/L	44982	Standard
	Be	9	31095.2	3.2	**47.7310**	4.187	8.8	ug/L	8	Standard
	Al	27	4780.8	7.9	**0.0607**	0.002	3.5	ug/L	318	Standard
	Sc	45	28996.1	2.4				ug/L	28998	Standard
	Ti	47	30.3	29.9	**0.0468**	0.048	103.6	ug/L	21	Standard
	V	51	188671.7	2.0	**49.8923**	0.356	0.7	ug/L	1052	Standard
	Cr	52	250534.0	0.4	**49.2758**	0.624	1.3	ug/L	6637	Standard
	Cr	53	30417.2	2.3	**49.3425**	1.119	2.3	ug/L	328	Standard
	Mn	55	172516.8	1.7	**52.2624**	0.248	0.5	ug/L	636	Standard
	Co	59	179431.5	0.4	**50.6516**	0.596	1.2	ug/L	199	Standard
	Ni	60	66093.3	3.1	**48.0076**	0.823	1.7	ug/L	185	Standard
	Cu	65	65573.9	0.8	**48.6677**	0.557	1.1	ug/L	133	Standard
	Zn	66	37289.5	1.3	**48.4289**	0.219	0.5	ug/L	187	Standard
>	Ge	72	309032.9	1.5				ug/L	311830	Standard
	As	75	35785.8	0.4	**45.6690**	0.535	1.2	ug/L	-58	Standard
	Se	82	3035.1	0.7	**47.9355**	0.810	1.7	ug/L	25	Standard
	Se-1	77	2257.2	2.2	**48.8556**	0.916	1.9	ug/L	90	Standard
>	Ga	71	30.0	28.9				mg/L	18	Standard
	Rb	85	90.0	38.5				ug/L	27	Standard
	Y	89	294675.5	2.3				ug/L	295023	Standard
>	Rh	103	30.0	60.1				ug/L	7	Standard
	Mo	98	34.7	7.5	**0.0165**	0.002	10.6	ug/L	10	Standard
	Ag	107	227390.4	1.0	**42.0021**	0.257	0.6	ug/L	58	Standard
	Cd	111	70648.6	1.2	**48.2577**	0.351	0.7	mg/L	4	Standard
	Cd	114	179847.8	2.7	**46.2276**	1.199	2.6	ug/L	-1	Standard
>	In	115	464016.6	0.5				ug/L	427691	Standard
	Sn	118	585.0	8.7	**0.0571**	0.010	17.4	ug/L	273	Standard
	Sb	123	196880.0	0.5	**47.8076**	0.080	0.2	ug/L	55	Standard
	Ba	135	93996.0	0.7	**44.9216**	0.153	0.3	ug/L	39	Standard
	Ce	140	410.0	10.6				ug/L	28	Standard
>	Tb	159	934639.0	0.8				ug/L	886833	Standard
	Ho	165	10.0					ug/L	10	Standard
	Tl	203	327126.7	1.2	**46.6373**	0.491	1.1	ug/L	2	Standard
	Tl	205	227818.8	2.1	**46.3924**	0.804	1.7	ug/L	0	Standard
	Pb	206	217406.4	0.7	**48.5000**	0.457	0.9	ug/L	199	Standard
	Pb	207	186912.8	0.3	**46.1986**	0.231	0.5	ug/L	178	Standard
	Pb	208	672235.7	0.5	**46.0909**	0.170	0.4	ug/L	654	Standard
	U	238	228193.2	0.3	**44.9631**	0.078	0.2	ug/L	1	Standard
>	Bi	209	438341.4	0.5				ug/L	418387	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	46.7	12.4	**0.0548**	0.013	23.1	mg/L	27	Standard
K	39	13.3	114.6	**0.0465**	0.197	423.4	mg/L	20	Standard
Ca	43	40.0	45.1	**0.9985**	2.537	254.1	mg/L	40	Standard
Fe	54	93.1	15.5	**0.0424**	0.029	67.9	mg/L	74	Standard
Fe	57	858.4	1.2	**0.8422**	0.256	30.4	mg/L	697	Standard
> **Sc-1**	45	28996.1	2.4				mg/L	28998	Standard
Cl	35	8687.2	0.9				ug/L	6091	Standard
Kr	83	6.7	22.9				ug/L	6	Standard
Br	81	510.0	12.9				ug/L	383	Standard
P	31	10363.5	3.3				ug/L	8849	Standard
S	34	1176.7	2.3				ug/L	937	Standard
Sr	88	168.3	1.7				ug/L	188	Standard
C	12	226.7	17.8				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	22.4	62.7				mg/L	12	Standard
Ho-1	165	10.0					mg/L	10	Standard
Er	166	20.0	132.3				mg/L	23	Standard
I	127	6828.2	2.2				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.058	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.103	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.493
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.769
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508135810 WG536769-01
Sample Date/Time: Thursday, August 27, 2015 15:15:45
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51402.1	3.6				ug/L	44982	Standard
	Be	9	23.3	12.4	**0.0239**	0.003	14.4	ug/L	8	Standard
	Al	27	3882351.0	2.3	**50.3345**	0.780	1.6	ug/L	318	Standard
	Sc	45	28929.3	2.8				ug/L	28998	Standard
	Ti	47	69.7	9.6	**0.2692**	0.041	15.2	ug/L	21	Standard
	V	51	1315.8	5.8	**0.0873**	0.021	23.8	ug/L	1052	Standard
	Cr	52	7242.1	1.6	**0.1506**	0.046	30.3	ug/L	6637	Standard
	Cr	53	1348.4	9.8	**1.6476**	0.253	15.3	ug/L	328	Standard
	Mn	55	451956.7	0.4	**140.0773**	1.767	1.3	ug/L	636	Standard
	Co	59	744.4	3.2	**0.1532**	0.010	6.6	ug/L	199	Standard
	Ni	60	2138.8	2.3	**1.4443**	0.033	2.3	ug/L	185	Standard
	Cu	65	673.3	6.0	**0.3902**	0.029	7.5	ug/L	133	Standard
	Zn	66	2886.3	9.3	**3.1309**	0.418	13.3	ug/L	187	Standard
>	**Ge**	72	302830.6	1.6				ug/L	311830	Standard
	As	75	84.5	20.2	**0.1310**	0.022	17.1	ug/L	-58	Standard
	Se	82	59.0	12.5	**0.5289**	0.104	19.6	ug/L	25	Standard
	Se-1	77	136.7	8.5	**1.1609**	0.292	25.2	ug/L	90	Standard
>	**Ga**	71	43.3	29.0				mg/L	18	Standard
	Rb	85	448.3	7.2				ug/L	27	Standard
	Y	89	293145.5	1.0				ug/L	295023	Standard
>	**Rh**	103	40.0	21.7				ug/L	7	Standard
	Mo	98	57.3	20.8	**0.0317**	0.007	22.7	ug/L	10	Standard
	Ag	107	73.0	10.3	**0.0010**	0.002	176.7	ug/L	58	Standard
	Cd	111	38.9	16.1	**0.0245**	0.005	19.1	mg/L	4	Standard
	Cd	114	115.0	20.0	**0.0177**	0.005	30.6	ug/L	-1	Standard
>	**In**	115	458334.9	2.1				ug/L	427691	Standard
	Sn	118	498.3	9.0	**0.0407**	0.010	24.1	ug/L	273	Standard
	Sb	123	278.1	8.5	**0.0679**	0.007	10.5	ug/L	55	Standard
	Ba	135	34725.7	0.4	**16.7929**	0.333	2.0	ug/L	39	Standard
	Ce	140	506.7	14.4				ug/L	28	Standard
>	**Tb**	159	902804.4	1.6				ug/L	886833	Standard
	Ho	165	100.0	18.0				ug/L	10	Standard
	Tl	203	168.7	11.1	**0.0219**	0.003	12.8	ug/L	2	Standard
	Tl	205	131.7	13.3	**0.0296**	0.004	12.3	ug/L	0	Standard
	Pb	206	277.7	2.7	**0.0030**	0.002	53.3	ug/L	199	Standard
	Pb	207	235.3	5.3	**0.0039**	0.003	84.4	ug/L	178	Standard
	Pb	208	902.0	5.0	**0.0099**	0.003	31.1	ug/L	654	Standard
	U	238	218.7	3.8	**0.0427**	0.002	3.8	ug/L	1	Standard
>	**Bi**	209	424324.0	0.2				ug/L	418387	Standard

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Na	23	1.7	173.2	**2.9115**	5.034	172.9	mg/L	2	Standard
Mg	24	6773.2	2.8	**15.2263**	0.364	2.4	mg/L	27	Standard
K	39	90.0	20.0	**1.0254**	0.202	19.7	mg/L	20	Standard
Ca	43	318.3	16.9	**38.7032**	8.415	21.7	mg/L	40	Standard
Fe	54	95.5	21.2	**0.0497**	0.052	104.2	mg/L	74	Standard
Fe	57	895.0	7.7	**1.1701**	0.552	47.2	mg/L	697	Standard
Sc-1	45	28929.3	2.8				mg/L	28998	Standard
Cl	35	9326.9	1.4				ug/L	6091	Standard
Kr	83	4.3	13.3				ug/L	6	Standard
Br	81	3773.8	6.2				ug/L	383	Standard
P	31	11299.2	4.3				ug/L	8849	Standard
S	34	1101.7	3.3				ug/L	937	Standard
Sr	88	230.0	11.3				ug/L	188	Standard
C	12	310.0	16.8				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	90.1	7.7				mg/L	12	Standard
Ho-1	165	100.0	18.0				mg/L	10	Standard
Er	166	66.7	37.7				mg/L	23	Standard
I	127	70492.5	7.2				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.273	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.114	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.165
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.419
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508135810DP WG536769-04
Sample Date/Time: Thursday, August 27, 2015 15:18:56
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52295.2	3.4				ug/L	44982	Standard
	Be	9	13.3	21.7	**0.0090**	0.004	39.8	ug/L	8	Standard
	Al	27	4196591.1	1.3	**53.4898**	1.249	2.3	ug/L	318	Standard
	Sc	45	28470.1	3.5				ug/L	28998	Standard
	Ti	47	66.7	12.6	**0.2579**	0.055	21.4	ug/L	21	Standard
	V	51	1424.0	1.7	**0.1217**	0.003	2.5	ug/L	1052	Standard
	Cr	52	7425.5	3.2	**0.2078**	0.025	11.9	ug/L	6637	Standard
	Cr	53	1496.7	4.8	**1.9278**	0.146	7.6	ug/L	328	Standard
	Mn	55	464572.5	0.9	**145.8893**	2.073	1.4	ug/L	636	Standard
	Co	59	776.7	3.2	**0.1653**	0.003	2.0	ug/L	199	Standard
	Ni	60	2225.8	2.9	**1.5313**	0.067	4.4	ug/L	185	Standard
	Cu	65	692.3	2.9	**0.4119**	0.027	6.5	ug/L	133	Standard
	Zn	66	1585.1	2.8	**1.4046**	0.099	7.1	ug/L	187	Standard
>	**Ge**	72	298925.0	2.4				ug/L	311830	Standard
	As	75	109.3	33.3	**0.1645**	0.044	26.8	ug/L	-58	Standard
	Se	82	65.2	3.7	**0.6432**	0.014	2.2	ug/L	25	Standard
	Se-1	77	144.7	8.9	**1.3888**	0.333	24.0	ug/L	90	Standard
>	**Ga**	71	38.3	78.6				mg/L	18	Standard
	Rb	85	458.3	6.7				ug/L	27	Standard
	Y	89	287777.0	2.9				ug/L	295023	Standard
>	**Rh**	103	48.3	84.3				ug/L	7	Standard
	Mo	98	51.7	9.9	**0.0283**	0.003	10.8	ug/L	10	Standard
	Ag	107	75.3	2.8	**0.0015**	0.000	15.8	ug/L	58	Standard
	Cd	111	46.9	5.6	**0.0303**	0.002	5.8	mg/L	4	Standard
	Cd	114	122.1	25.7	**0.0199**	0.008	41.4	ug/L	-1	Standard
>	**In**	115	454329.4	1.1				ug/L	427691	Standard
	Sn	118	481.7	12.9	**0.0381**	0.014	36.4	ug/L	273	Standard
	Sb	123	125.7	4.3	**0.0306**	0.001	3.6	ug/L	55	Standard
	Ba	135	36095.6	1.2	**17.6070**	0.293	1.7	ug/L	39	Standard
	Ce	140	501.7	16.2				ug/L	28	Standard
>	**Tb**	159	896646.8	2.2				ug/L	886833	Standard
	Ho	165	65.0	42.8				ug/L	10	Standard
	Tl	203	175.3	4.9	**0.0229**	0.001	4.6	ug/L	2	Standard
	Tl	205	116.7	21.6	**0.0266**	0.005	19.9	ug/L	0	Standard
	Pb	206	275.3	8.3	**0.0026**	0.004	160.7	ug/L	199	Standard
	Pb	207	227.3	11.7	**0.0022**	0.008	357.1	ug/L	178	Standard
	Pb	208	834.7	6.4	**0.0054**	0.004	67.7	ug/L	654	Standard
	U	238	233.7	6.2	**0.0460**	0.004	8.1	ug/L	1	Standard
>	**Bi**	209	422814.5	2.0				ug/L	418387	Standard

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Na	23	8.3	34.6	**14.2869**	4.729	33.1	mg/L	2	Standard
Mg	24	7281.7	0.8	**16.6462**	0.497	3.0	mg/L	27	Standard
K	39	90.0	11.1	**1.0479**	0.130	12.4	mg/L	20	Standard
Ca	43	285.0	1.8	**34.7219**	1.641	4.7	mg/L	40	Standard
Fe	54	82.4	23.6	**0.0231**	0.050	216.2	mg/L	74	Standard
Fe	57	905.0	3.8	**1.3944**	0.564	40.4	mg/L	697	Standard
> **Sc-1**	45	28470.1	3.5				mg/L	28998	Standard
Cl	35	9504.3	2.6				ug/L	6091	Standard
Kr	83	2.3	49.5				ug/L	6	Standard
Br	81	3420.4	3.7				ug/L	383	Standard
P	31	11672.8	3.2				ug/L	8849	Standard
S	34	1158.4	13.2				ug/L	937	Standard
Sr	88	248.3	8.4				ug/L	188	Standard
C	12	563.3	19.8				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	46.5	21.0				mg/L	12	Standard
Ho-1	165	65.0	42.8				mg/L	10	Standard
Er	166	73.3	7.9				mg/L	23	Standard
I	127	74784.3	4.3				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.259	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.861	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	106.228
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.058
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508135810S WG536769-05
Sample Date/Time: Thursday, August 27, 2015 15:22:08
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53756.9	2.1				ug/L	44982	Standard
	Be	9	32104.0	4.1	**44.8188**	1.252	2.8	ug/L	8	Standard
	Al	27	3943587.0	1.3	**48.8945**	1.611	3.3	ug/L	318	Standard
	Sc	45	27900.7	3.8				ug/L	28998	Standard
	Ti	47	73.7	5.5	**0.2978**	0.023	7.8	ug/L	21	Standard
	V	51	187381.3	0.1	**51.3993**	0.188	0.4	ug/L	1052	Standard
	Cr	52	243012.1	0.9	**49.5723**	0.650	1.3	ug/L	6637	Standard
	Cr	53	30108.2	1.7	**50.6637**	0.606	1.2	ug/L	328	Standard
	Mn	55	613698.9	1.1	**193.3484**	1.254	0.6	ug/L	636	Standard
	Co	59	172701.0	0.8	**50.5545**	0.499	1.0	ug/L	199	Standard
	Ni	60	64423.0	0.6	**48.5387**	0.083	0.2	ug/L	185	Standard
	Cu	65	61238.2	0.5	**47.1282**	0.453	1.0	ug/L	133	Standard
	Zn	66	37068.3	2.8	**49.9483**	1.336	2.7	ug/L	187	Standard
>	**Ge**	72	297981.7	0.5				ug/L	311830	Standard
	As	75	36514.7	0.8	**48.3217**	0.523	1.1	ug/L	-58	Standard
	Se	82	3147.7	1.7	**51.5807**	0.684	1.3	ug/L	25	Standard
	Se-1	77	2229.2	0.8	**50.0865**	0.561	1.1	ug/L	90	Standard
>	**Ga**	71	33.3	48.2				mg/L	18	Standard
	Rb	85	403.3	13.3				ug/L	27	Standard
	Y	89	293485.4	1.2				ug/L	295023	Standard
>	**Rh**	103	31.7	9.1				ug/L	7	Standard
	Mo	98	73.4	3.9	**0.0429**	0.003	6.2	ug/L	10	Standard
	Ag	107	218321.7	0.7	**41.1158**	1.383	3.4	ug/L	58	Standard
	Cd	111	69432.6	0.5	**48.3458**	1.086	2.2	mg/L	4	Standard
	Cd	114	178929.7	2.9	**46.8718**	1.169	2.5	ug/L	-1	Standard
>	**In**	115	455390.2	2.7				ug/L	427691	Standard
	Sn	118	548.3	10.5	**0.0516**	0.010	19.7	ug/L	273	Standard
	Sb	123	196416.9	0.2	**48.6230**	1.368	2.8	ug/L	55	Standard
	Ba	135	124474.6	0.7	**60.6479**	1.484	2.4	ug/L	39	Standard
	Ce	140	483.3	5.9				ug/L	28	Standard
>	**Tb**	159	916786.0	2.9				ug/L	886833	Standard
	Ho	165	63.3	16.4				ug/L	10	Standard
	Tl	203	317203.3	0.2	**46.2626**	0.421	0.9	ug/L	2	Standard
	Tl	205	227226.4	1.5	**47.3339**	0.425	0.9	ug/L	0	Standard
	Pb	206	210902.4	0.3	**48.1285**	0.306	0.6	ug/L	199	Standard
	Pb	207	181174.2	1.0	**45.8068**	0.336	0.7	ug/L	178	Standard
	Pb	208	655258.4	0.5	**45.9587**	0.290	0.6	ug/L	654	Standard
	U	238	229896.7	0.6	**46.3403**	0.528	1.1	ug/L	1	Standard
>	**Bi**	209	428506.4	0.7				ug/L	418387	Standard

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Na	23	1.7	173.2	**2.9110**	5.033	172.9	mg/L	2	Standard
Mg	24	6773.2	2.8	**15.7999**	0.695	4.4	mg/L	27	Standard
K	39	98.3	35.7	**1.1767**	0.446	37.9	mg/L	20	Standard
Ca	43	268.3	2.8	**33.1661**	0.878	2.6	mg/L	40	Standard
Fe	54	107.7	3.6	**0.0856**	0.015	17.5	mg/L	74	Standard
Fe	57	951.7	10.1	**1.9759**	1.018	51.5	mg/L	697	Standard
> **Sc-1**	45	27900.7	3.8				mg/L	28998	Standard
Cl	35	9280.8	1.2				ug/L	6091	Standard
Kr	83	2.3	24.7				ug/L	6	Standard
Br	81	3207.0	2.3				ug/L	383	Standard
P	31	10982.3	3.4				ug/L	8849	Standard
S	34	1101.7	4.2				ug/L	937	Standard
Sr	88	180.0	33.7				ug/L	188	Standard
C	12	383.3	12.3				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	76.5	22.8				mg/L	12	Standard
Ho-1	165	63.3	16.4				mg/L	10	Standard
Er	166	73.3	20.8				mg/L	23	Standard
I	127	73502.9	2.8				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.508	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.559	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	106.476
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.419
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508135810SD WG536769-06
Sample Date/Time: Thursday, August 27, 2015 15:29:05
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55280.7	0.6				ug/L	44982	Standard
	Be	9	32910.7	2.1	**44.6852**	0.895	2.0	ug/L	8	Standard
	Al	27	4186033.6	0.8	**50.4501**	0.707	1.4	ug/L	318	Standard
	Sc	45	29298.3	2.3				ug/L	28998	Standard
	Ti	47	70.3	15.2	**0.2652**	0.055	20.7	ug/L	21	Standard
	V	51	199433.0	2.2	**52.8603**	0.653	1.2	ug/L	1052	Standard
	Cr	52	252877.0	2.1	**49.8448**	0.574	1.2	ug/L	6637	Standard
	Cr	53	31638.0	3.2	**51.4425**	1.049	2.0	ug/L	328	Standard
	Mn	55	656176.2	1.7	**199.7489**	1.319	0.7	ug/L	636	Standard
	Co	59	180186.8	1.1	**50.9657**	0.586	1.2	ug/L	199	Standard
	Ni	60	67512.8	0.7	**49.1524**	0.400	0.8	ug/L	185	Standard
	Cu	65	64494.3	1.5	**47.9569**	0.250	0.5	ug/L	133	Standard
	Zn	66	38574.7	0.8	**50.2283**	0.190	0.4	ug/L	187	Standard
>	**Ge**	72	308401.3	1.2				ug/L	311830	Standard
	As	75	38075.7	2.6	**48.6793**	0.806	1.7	ug/L	-58	Standard
	Se	82	3242.9	1.8	**51.3427**	0.331	0.6	ug/L	25	Standard
	Se-1	77	2298.8	1.7	**49.9100**	1.484	3.0	ug/L	90	Standard
>	**Ga**	71	33.3	31.2				mg/L	18	Standard
	Rb	85	441.7	9.4				ug/L	27	Standard
	Y	89	296583.0	0.4				ug/L	295023	Standard
>	**Rh**	103	65.0	33.5				ug/L	7	Standard
	Mo	98	74.6	9.4	**0.0431**	0.006	12.9	ug/L	10	Standard
	Ag	107	226792.8	0.7	**42.1471**	1.126	2.7	ug/L	58	Standard
	Cd	111	71949.3	1.0	**49.4356**	0.571	1.2	mg/L	4	Standard
	Cd	114	186789.0	1.3	**48.2951**	0.725	1.5	ug/L	-1	Standard
>	**In**	115	461388.2	2.2				ug/L	427691	Standard
	Sn	118	581.7	9.5	**0.0572**	0.013	22.2	ug/L	273	Standard
	Sb	123	204102.9	0.6	**49.8636**	1.356	2.7	ug/L	55	Standard
	Ba	135	130799.5	0.7	**62.9006**	1.751	2.8	ug/L	39	Standard
	Ce	140	521.7	9.1				ug/L	28	Standard
>	**Tb**	159	915250.9	1.3				ug/L	886833	Standard
	Ho	165	55.0	15.7				ug/L	10	Standard
	Tl	203	332567.5	1.1	**48.0937**	0.588	1.2	ug/L	2	Standard
	Tl	205	236481.3	0.8	**48.8480**	0.314	0.6	ug/L	0	Standard
	Pb	206	219322.6	0.3	**49.6293**	0.213	0.4	ug/L	199	Standard
	Pb	207	187755.2	0.3	**47.0727**	0.224	0.5	ug/L	178	Standard
	Pb	208	684468.1	0.8	**47.6047**	0.483	1.0	ug/L	654	Standard
	U	238	240921.1	0.9	**48.1534**	0.695	1.4	ug/L	1	Standard
>	**Bi**	209	432151.8	0.6				ug/L	418387	Standard

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Na	23	6.7	43.3	**11.1240**	4.669	42.0	mg/L	2	Standard
Mg	24	7110.0	3.4	**15.7784**	0.172	1.1	mg/L	27	Standard
K	39	91.7	17.5	**1.0340**	0.187	18.1	mg/L	20	Standard
Ca	43	328.3	25.2	**39.2349**	10.261	26.2	mg/L	40	Standard
Fe	54	61.9	22.3	**-0.0294**	0.028	95.4	mg/L	74	Standard
Fe	57	935.0	3.7	**1.4184**	0.439	31.0	mg/L	697	Standard
> **Sc-1**	45	29298.3	2.3				mg/L	28998	Standard
Cl	35	9740.5	3.5				ug/L	6091	Standard
Kr	83	3.7	83.3				ug/L	6	Standard
Br	81	3293.7	8.3				ug/L	383	Standard
P	31	11846.3	2.2				ug/L	8849	Standard
S	34	1208.4	10.3				ug/L	937	Standard
Sr	88	223.3	14.6				ug/L	188	Standard
C	12	323.3	4.7				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	71.9	8.7				mg/L	12	Standard
Ho-1	165	55.0	15.7				mg/L	10	Standard
Er	166	100.0	17.3				mg/L	23	Standard
I	127	98535.1	6.1				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		122.896	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.900	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	107.879
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.290
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508145401
Sample Date/Time: Thursday, August 27, 2015 15:32:16
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50341.8	1.2				ug/L	44982	Standard
	Be	9	38.3	15.1	**0.0471**	0.009	19.8	ug/L	8	Standard
	Al	27	5227377.7	1.4	**69.1782**	0.290	0.4	ug/L	318	Standard
	Sc	45	29081.2	3.1				ug/L	28998	Standard
	Ti	47	86.0	8.4	**0.3738**	0.041	11.0	ug/L	21	Standard
	V	51	861.3	35.1	**-0.0297**	0.082	274.9	ug/L	1052	Standard
	Cr	52	7830.4	1.8	**0.3195**	0.021	6.7	ug/L	6637	Standard
	Cr	53	15466.2	1.7	**26.0810**	0.606	2.3	ug/L	328	Standard
	Mn	55	419626.1	3.0	**133.8879**	2.602	1.9	ug/L	636	Standard
	Co	59	5579.0	2.8	**1.5952**	0.039	2.4	ug/L	199	Standard
	Ni	60	6096.6	2.6	**4.5218**	0.071	1.6	ug/L	185	Standard
	Cu	65	1154.7	3.8	**0.7821**	0.043	5.5	ug/L	133	Standard
	Zn	66	4802.4	1.1	**5.8996**	0.137	2.3	ug/L	187	Standard
>	**Ge**	72	294068.8	1.1				ug/L	311830	Standard
	As	75	191.2	68.5	**0.2774**	0.177	63.7	ug/L	-58	Standard
	Se	82	74.3	5.4	**0.8139**	0.076	9.3	ug/L	25	Standard
	Se-1	77	1034.0	2.4	**22.4975**	0.837	3.7	ug/L	90	Standard
>	**Ga**	71	50.0	10.0				mg/L	18	Standard
	Rb	85	19011.9	1.7				ug/L	27	Standard
	Y	89	282090.3	1.2				ug/L	295023	Standard
>	**Rh**	103	38.3	19.9				ug/L	7	Standard
	Mo	98	430.1	1.0	**0.3046**	0.007	2.2	ug/L	10	Standard
	Ag	107	83.7	17.9	**0.0043**	0.003	68.8	ug/L	58	Standard
	Cd	111	134.7	9.0	**0.0987**	0.008	7.6	mg/L	4	Standard
	Cd	114	326.2	8.1	**0.0800**	0.007	8.5	ug/L	-1	Standard
>	**In**	115	421950.8	1.6				ug/L	427691	Standard
	Sn	118	700.0	3.8	**0.0951**	0.008	8.7	ug/L	273	Standard
	Sb	123	1707.8	2.0	**0.4555**	0.011	2.5	ug/L	55	Standard
	Ba	135	23870.5	1.6	**12.5303**	0.086	0.7	ug/L	39	Standard
	Ce	140	188.3	26.6				ug/L	28	Standard
>	**Tb**	159	875079.1	1.0				ug/L	886833	Standard
	Ho	165	20.0	25.0				ug/L	10	Standard
	Tl	203	110.7	29.0	**0.0146**	0.005	35.0	ug/L	2	Standard
	Tl	205	75.0	17.6	**0.0190**	0.003	15.5	ug/L	0	Standard
	Pb	206	853.4	6.0	**0.1520**	0.013	8.6	ug/L	199	Standard
	Pb	207	710.4	6.1	**0.1402**	0.012	8.6	ug/L	178	Standard
	Pb	208	2613.8	3.1	**0.1465**	0.006	4.4	ug/L	654	Standard
	U	238	544.0	8.0	**0.1180**	0.009	8.0	ug/L	1	Standard
>	**Bi**	209	392210.2	0.3				ug/L	418387	Standard

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Na	23	3.3	86.6	**5.5454**	4.800	86.6	mg/L	2	Standard
Mg	24	91577.6	1.3	**205.4945**	6.292	3.1	mg/L	27	Standard
K	39	238.3	17.5	**2.9103**	0.454	15.6	mg/L	20	Standard
Ca	43	166.7	3.5	**17.9917**	1.414	7.9	mg/L	40	Standard
Fe	54	54.1	37.0	**-0.0449**	0.047	105.3	mg/L	74	Standard
Fe	57	961.7	4.2	**1.7116**	0.593	34.7	mg/L	697	Standard
> **Sc-1**	45	29081.2	3.1				mg/L	28998	Standard
Cl	35	9288.8	3.0				ug/L	6091	Standard
Kr	83	4.3	35.3				ug/L	6	Standard
Br	81	3930.5	7.7				ug/L	383	Standard
P	31	11279.2	4.5				ug/L	8849	Standard
S	34	1070.0	10.7				ug/L	937	Standard
Sr	88	240.0	5.5				ug/L	188	Standard
C	12	300.0	16.7				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	13.3	114.6				mg/L	0	Standard
Dy	164	25.2	83.5				mg/L	12	Standard
Ho-1	165	20.0	25.0				mg/L	10	Standard
Er	166	30.0	57.7				mg/L	23	Standard
I	127	19092.0	2.1				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.916	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.304	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.658
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.743
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508145401PS WG536807-01
Sample Date/Time: Thursday, August 27, 2015 15:35:27
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	48333.7	4.5				ug/L	44982	Standard
	Be	9	31235.5	3.7	**48.5754**	2.873	5.9	ug/L	8	Standard
	Al	27	5119014.8	2.8	**70.5958**	1.226	1.7	ug/L	318	Standard
	Sc	45	28276.4	2.1				ug/L	28998	Standard
	Ti	47	87.3	5.8	**0.3829**	0.033	8.6	ug/L	21	Standard
	V	51	188750.5	0.2	**52.6090**	0.326	0.6	ug/L	1052	Standard
	Cr	52	244401.8	0.9	**50.6814**	0.608	1.2	ug/L	6637	Standard
	Cr	53	43676.2	3.0	**74.9534**	1.624	2.2	ug/L	328	Standard
	Mn	55	577699.1	0.9	**184.9154**	2.299	1.2	ug/L	636	Standard
	Co	59	177285.5	0.4	**52.7288**	0.451	0.9	ug/L	199	Standard
	Ni	60	68848.4	1.2	**52.7147**	0.610	1.2	ug/L	185	Standard
	Cu	65	62403.2	0.3	**48.7956**	0.254	0.5	ug/L	133	Standard
	Zn	66	40384.4	0.6	**55.3699**	0.611	1.1	ug/L	187	Standard
>	Ge	72	293299.4	0.8				ug/L	311830	Standard
	As	75	37649.2	1.5	**50.6146**	0.464	0.9	ug/L	-58	Standard
	Se	82	3122.1	1.2	**51.9828**	0.202	0.4	ug/L	25	Standard
	Se-1	77	3190.3	4.1	**73.7151**	2.580	3.5	ug/L	90	Standard
>	Ga	71	51.7	22.3				mg/L	18	Standard
	Rb	85	19167.1	3.2				ug/L	27	Standard
	Y	89	277282.8	1.2				ug/L	295023	Standard
>	Rh	103	60.0	25.0				ug/L	7	Standard
	Mo	98	428.9	4.3	**0.3039**	0.014	4.5	ug/L	10	Standard
	Ag	107	292184.9	42.3	**59.3498**	24.851	41.9	ug/L	58	Standard
	Cd	111	64896.4	1.9	**48.7951**	0.922	1.9	mg/L	4	Standard
	Cd	114	171270.1	3.6	**48.4607**	1.823	3.8	ug/L	-1	Standard
>	In	115	421552.3	0.4				ug/L	427691	Standard
	Sn	118	628.3	11.3	**0.0790**	0.017	20.9	ug/L	273	Standard
	Sb	123	187385.7	1.0	**50.0876**	0.687	1.4	ug/L	55	Standard
	Ba	135	114059.0	0.1	**60.0087**	0.179	0.3	ug/L	39	Standard
	Ce	140	198.3	6.3				ug/L	28	Standard
>	Tb	159	865360.5	1.4				ug/L	886833	Standard
	Ho	165	15.0	33.3				ug/L	10	Standard
	Tl	203	307289.2	0.5	**48.9832**	0.396	0.8	ug/L	2	Standard
	Tl	205	219840.5	2.0	**50.0536**	0.811	1.6	ug/L	0	Standard
	Pb	206	202926.2	0.3	**50.6170**	0.301	0.6	ug/L	199	Standard
	Pb	207	181553.3	0.0	**50.1770**	0.205	0.4	ug/L	178	Standard
	Pb	208	635447.6	0.4	**48.7166**	0.343	0.7	ug/L	654	Standard
	U	238	225942.7	1.4	**49.7777**	0.815	1.6	ug/L	1	Standard
>	Bi	209	392050.1	0.4				ug/L	418387	Standard

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Na	23	1.7	173.2	**2.8408**	4.912	172.9	mg/L	2	Standard
Mg	24	91170.1	0.7	**210.3448**	4.400	2.1	mg/L	27	Standard
K	39	231.7	5.0	**2.9151**	0.109	3.8	mg/L	20	Standard
Ca	43	156.7	22.6	**17.2370**	4.950	28.7	mg/L	40	Standard
Fe	54	97.4	29.7	**0.0587**	0.069	118.2	mg/L	74	Standard
Fe	57	898.4	5.3	**1.3830**	0.530	38.4	mg/L	697	Standard
> **Sc-1**	45	28276.4	2.1				mg/L	28998	Standard
Cl	35	9281.5	0.8				ug/L	6091	Standard
Kr	83	5.0	52.9				ug/L	6	Standard
Br	81	3833.8	5.3				ug/L	383	Standard
P	31	11404.3	3.0				ug/L	8849	Standard
S	34	1120.0	3.5				ug/L	937	Standard
Sr	88	208.3	3.7				ug/L	188	Standard
C	12	250.0	43.3				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	15.5	98.1				mg/L	12	Standard
Ho-1	165	15.0	33.3				mg/L	10	Standard
Er	166	23.3	89.2				mg/L	23	Standard
I	127	18976.9	5.5				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.452	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.057	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.565
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.705
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508145401SDL WG536807-02
Sample Date/Time: Thursday, August 27, 2015 15:38:39
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49422.2	3.2				ug/L	44982	Standard
	Be	9	26.7	28.6	**0.0306**	0.013	42.0	ug/L	8	Standard
	Al	27	1079339.5	2.6	**14.5481**	0.081	0.6	ug/L	318	Standard
	Sc	45	29019.4	1.7				ug/L	28998	Standard
	Ti	47	34.0	20.6	**0.0714**	0.037	51.3	ug/L	21	Standard
	V	51	1115.5	6.2	**0.0344**	0.016	47.8	ug/L	1052	Standard
	Cr	52	7516.9	2.9	**0.2147**	0.042	19.8	ug/L	6637	Standard
	Cr	53	4550.7	3.0	**7.0494**	0.133	1.9	ug/L	328	Standard
	Mn	55	89224.7	2.4	**27.6289**	0.500	1.8	ug/L	636	Standard
	Co	59	1287.1	2.3	**0.3116**	0.013	4.3	ug/L	199	Standard
	Ni	60	1481.4	1.5	**0.9610**	0.013	1.4	ug/L	185	Standard
	Cu	65	393.0	3.1	**0.1790**	0.011	6.3	ug/L	133	Standard
	Zn	66	2833.3	3.9	**3.0745**	0.120	3.9	ug/L	187	Standard
>	**Ge**	72	301305.8	1.4				ug/L	311830	Standard
	As	75	6.6	344.2	**0.0300**	0.030	101.0	ug/L	-58	Standard
	Se	82	37.3	20.7	**0.1803**	0.135	74.7	ug/L	25	Standard
	Se-1	77	317.0	5.4	**5.3380**	0.296	5.5	ug/L	90	Standard
>	**Ga**	71	35.0	28.6				mg/L	18	Standard
	Rb	85	4142.2	2.9				ug/L	27	Standard
	Y	89	289379.4	1.5				ug/L	295023	Standard
>	**Rh**	103	21.7	87.4				ug/L	7	Standard
	Mo	98	90.9	5.0	**0.0574**	0.003	6.1	ug/L	10	Standard
	Ag	107	95.0	15.8	**0.0060**	0.003	45.5	ug/L	58	Standard
	Cd	111	36.8	5.4	**0.0244**	0.001	4.6	mg/L	4	Standard
	Cd	114	84.0	40.0	**0.0109**	0.009	85.3	ug/L	-1	Standard
>	**In**	115	435013.7	1.3				ug/L	427691	Standard
	Sn	118	346.7	33.3	**0.0129**	0.025	195.0	ug/L	273	Standard
	Sb	123	1076.7	10.6	**0.2781**	0.026	9.4	ug/L	55	Standard
	Ba	135	5053.5	0.9	**2.5564**	0.014	0.6	ug/L	39	Standard
	Ce	140	115.0	7.5				ug/L	28	Standard
>	**Tb**	159	880690.3	0.9				ug/L	886833	Standard
	Ho	165	18.3	68.6				ug/L	10	Standard
	Tl	203	57.7	29.5	**0.0058**	0.003	45.1	ug/L	2	Standard
	Tl	205	31.7	39.7	**0.0088**	0.003	30.7	ug/L	0	Standard
	Pb	206	387.7	5.9	**0.0312**	0.005	16.2	ug/L	199	Standard
	Pb	207	318.0	6.1	**0.0277**	0.005	19.6	ug/L	178	Standard
	Pb	208	1129.0	3.6	**0.0286**	0.002	8.5	ug/L	654	Standard
	U	238	136.7	17.9	**0.0269**	0.005	19.1	ug/L	1	Standard
>	**Bi**	209	411201.0	0.7				ug/L	418387	Standard

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Na	23	3.3	173.2	**5.5296**	9.569	173.0	mg/L	2	Standard
Mg	24	19090.4	3.2	**42.8723**	1.523	3.6	mg/L	27	Standard
K	39	63.3	48.2	**0.6841**	0.394	57.5	mg/L	20	Standard
Ca	43	66.7	11.5	**4.5468**	1.058	23.3	mg/L	40	Standard
Fe	54	77.2	22.2	**0.0068**	0.038	563.9	mg/L	74	Standard
Fe	57	871.7	2.0	**0.9493**	0.265	27.9	mg/L	697	Standard
> **Sc-1**	45	29019.4	1.7				mg/L	28998	Standard
Cl	35	9206.8	0.3				ug/L	6091	Standard
Kr	83	8.0	12.5				ug/L	6	Standard
Br	81	1283.4	5.9				ug/L	383	Standard
P	31	9881.6	4.2				ug/L	8849	Standard
S	34	1128.4	3.3				ug/L	937	Standard
Sr	88	191.7	18.5				ug/L	188	Standard
C	12	163.3	17.7				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	26.3	93.8				mg/L	12	Standard
Ho-1	165	18.3	68.6				mg/L	10	Standard
Er	166	6.7	173.2				mg/L	23	Standard
I	127	7812.0	1.3				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.872	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.625	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.712
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.282
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508145401SDL WG536807-02
Sample Date/Time: Thursday, August 27, 2015 15:41:49
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50485.6	1.2				ug/L	44982	Standard
	Be	9	16.7	17.3	**0.0147**	0.004	27.1	ug/L	8	Standard
	Al	27	219213.3	2.2	**2.8891**	0.080	2.8	ug/L	318	Standard
	Sc	45	29418.6	4.7				ug/L	28998	Standard
	Ti	47	18.0	48.4	**-0.0201**	0.048	238.0	ug/L	21	Standard
	V	51	1113.6	6.1	**0.0259**	0.020	75.7	ug/L	1052	Standard
	Cr	52	7454.8	1.1	**0.1605**	0.031	19.6	ug/L	6637	Standard
	Cr	53	1631.8	0.9	**2.0602**	0.040	1.9	ug/L	328	Standard
	Mn	55	18832.0	0.6	**5.5163**	0.096	1.7	ug/L	636	Standard
	Co	59	468.7	4.7	**0.0706**	0.005	7.2	ug/L	199	Standard
	Ni	60	535.7	3.4	**0.2435**	0.018	7.3	ug/L	185	Standard
	Cu	65	208.0	9.9	**0.0336**	0.017	50.4	ug/L	133	Standard
	Zn	66	1340.1	6.6	**1.0053**	0.095	9.5	ug/L	187	Standard
>	**Ge**	72	309624.2	1.1				ug/L	311830	Standard
	As	75	19.9	100.1	**0.0462**	0.025	54.0	ug/L	-58	Standard
	Se	82	29.9	12.1	**0.0460**	0.053	114.9	ug/L	25	Standard
	Se-1	77	129.7	12.8	**0.9327**	0.372	39.9	ug/L	90	Standard
>	**Ga**	71	26.7	43.3				mg/L	18	Standard
	Rb	85	818.4	5.8				ug/L	27	Standard
	Y	89	287621.6	3.6				ug/L	295023	Standard
>	**Rh**	103	26.7	21.7				ug/L	7	Standard
	Mo	98	27.0	19.0	**0.0118**	0.004	31.5	ug/L	10	Standard
	Ag	107	74.7	10.2	**0.0014**	0.002	115.1	ug/L	58	Standard
	Cd	111	12.6	52.8	**0.0064**	0.005	74.7	mg/L	4	Standard
	Cd	114	40.9	45.3	**-0.0014**	0.005	367.3	ug/L	-1	Standard
>	**In**	115	453330.7	1.5				ug/L	427691	Standard
	Sn	118	278.3	16.7	**-0.0045**	0.009	198.1	ug/L	273	Standard
	Sb	123	286.9	6.5	**0.0708**	0.005	7.4	ug/L	55	Standard
	Ba	135	1053.7	4.5	**0.4948**	0.027	5.4	ug/L	39	Standard
	Ce	140	111.7	47.9				ug/L	28	Standard
>	**Tb**	159	906734.7	2.8				ug/L	886833	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	21.3	84.4	**0.0001**	0.003	2245.3	ug/L	2	Standard
	Tl	205	13.3	78.1	**0.0047**	0.002	45.4	ug/L	0	Standard
	Pb	206	260.3	5.2	**-0.0016**	0.003	179.4	ug/L	199	Standard
	Pb	207	215.3	13.2	**-0.0018**	0.007	379.5	ug/L	178	Standard
	Pb	208	813.0	3.6	**0.0030**	0.002	63.9	ug/L	654	Standard
	U	238	25.3	27.7	**0.0033**	0.001	41.6	ug/L	1	Standard
>	**Bi**	209	428653.2	1.2				ug/L	418387	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3957.2	1.0	**8.7398**	0.483	5.5	mg/L	27	Standard
K	39	20.0	86.6	**0.1198**	0.213	177.7	mg/L	20	Standard
Ca	43	40.0	75.0	**0.7885**	3.861	489.8	mg/L	40	Standard
Fe	54	72.6	21.1	**-0.0059**	0.031	534.8	mg/L	74	Standard
Fe	57	805.0	9.4	**0.2893**	0.660	228.0	mg/L	697	Standard
> **Sc-1**	45	29418.6	4.7				mg/L	28998	Standard
Cl	35	9171.4	0.6				ug/L	6091	Standard
Kr	83	2.3	49.5				ug/L	6	Standard
Br	81	563.3	4.5				ug/L	383	Standard
P	31	9808.2	1.9				ug/L	8849	Standard
S	34	1141.7	5.8				ug/L	937	Standard
Sr	88	213.3	21.3				ug/L	188	Standard
C	12	200.0	21.8				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	15.4	131.0				mg/L	12	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	26.7	57.3				mg/L	23	Standard
I	127	5195.9	2.5				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.236	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.293	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.995
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.454
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, August 27, 2015 15:45:02
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	48666.4	2.8				ug/L	44982	Standard
	Be	9	29846.0	1.9	**46.0482**	1.133	2.5	ug/L	8	Standard
	Al	27	3271392.7	2.5	**44.7860**	0.400	0.9	ug/L	318	Standard
	Sc	45	28551.9	1.7				ug/L	28998	Standard
	Ti	47	18431.9	0.6	**100.9855**	0.973	1.0	ug/L	21	Standard
	V	51	188940.6	1.3	**50.3612**	0.369	0.7	ug/L	1052	Standard
	Cr	52	245292.4	1.8	**48.6011**	0.781	1.6	ug/L	6637	Standard
	Cr	53	30251.9	2.7	**49.4627**	1.473	3.0	ug/L	328	Standard
	Mn	55	170708.7	0.9	**52.1250**	0.626	1.2	ug/L	636	Standard
	Co	59	178412.6	0.5	**50.7567**	0.319	0.6	ug/L	199	Standard
	Ni	60	65343.9	0.6	**47.8452**	0.206	0.4	ug/L	185	Standard
	Cu	65	64068.5	1.4	**47.9187**	0.529	1.1	ug/L	133	Standard
	Zn	66	36366.9	1.6	**47.5872**	0.397	0.8	ug/L	187	Standard
>	Ge	72	306613.4	0.8				ug/L	311830	Standard
	As	75	37043.1	1.6	**47.6406**	0.721	1.5	ug/L	-58	Standard
	Se	82	3158.5	3.5	**50.2974**	1.972	3.9	ug/L	25	Standard
	Se-1	77	2262.2	1.3	**49.3672**	0.282	0.6	ug/L	90	Standard
>	Ga	71	31.7	18.2				mg/L	18	Standard
	Rb	85	526.7	3.3				ug/L	27	Standard
	Y	89	291653.0	2.4				ug/L	295023	Standard
>	Rh	103	41.7	6.9				ug/L	7	Standard
	Mo	98	138452.5	0.4	**94.3557**	0.412	0.4	ug/L	10	Standard
	Ag	107	239702.6	0.7	**45.9200**	0.153	0.3	ug/L	58	Standard
	Cd	111	68408.3	0.2	**48.4625**	0.300	0.6	mg/L	4	Standard
	Cd	114	179394.4	1.6	**47.8228**	0.746	1.6	ug/L	-1	Standard
>	In	115	447422.1	0.5				ug/L	427691	Standard
	Sn	118	211579.1	2.0	**44.9398**	0.877	2.0	ug/L	273	Standard
	Sb	123	187350.8	0.8	**47.1818**	0.481	1.0	ug/L	55	Standard
	Ba	135	93537.6	1.8	**46.3599**	0.665	1.4	ug/L	39	Standard
	Ce	140	81.7	19.7				ug/L	28	Standard
>	Tb	159	903844.3	0.9				ug/L	886833	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	325082.3	1.1	**47.9317**	0.269	0.6	ug/L	2	Standard
	Tl	205	229382.7	3.0	**48.3075**	1.236	2.6	ug/L	0	Standard
	Pb	206	208931.1	1.0	**48.2034**	0.476	1.0	ug/L	199	Standard
	Pb	207	188087.3	0.7	**48.0817**	0.234	0.5	ug/L	178	Standard
	Pb	208	667656.3	0.3	**47.3456**	0.187	0.4	ug/L	654	Standard
	U	238	231605.4	0.5	**47.1974**	0.060	0.1	ug/L	1	Standard
>	Bi	209	423834.7	0.6				ug/L	418387	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	2008.5	3.8	**4.5384**	0.136	3.0	mg/L	27	Standard
K	39	383.3	16.6	**4.8658**	0.879	18.1	mg/L	20	Standard
Ca	43	61.7	38.3	**4.0278**	3.316	82.3	mg/L	40	Standard
Fe	54	2276.4	2.2	**5.0413**	0.166	3.3	mg/L	74	Standard
Fe	57	1366.7	5.2	**5.3835**	0.749	13.9	mg/L	697	Standard
Sc-1	45	28551.9	1.7				mg/L	28998	Standard
Cl	35	8098.8	3.0				ug/L	6091	Standard
Kr	83	5.0	20.0				ug/L	6	Standard
Br	81	450.0	13.9				ug/L	383	Standard
P	31	10840.5	1.3				ug/L	8849	Standard
S	34	1223.4	2.9				ug/L	937	Standard
Sr	88	193.3	10.5				ug/L	188	Standard
C	12	213.3	19.5				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.4	109.4				mg/L	12	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	3592.1	2.8				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	92.096		
Al	27	89.572		
Sc	45			
Ti	47	100.985		
V	51	100.722		
Cr	52	97.202		
Cr	53			
Mn	55	104.250		
Co	59	101.513		
Ni	60	95.690		
Cu	65	95.837		
Zn	66	95.174		
Ge	72		98.327	
As	75	95.281		
Se	82	100.595		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	94.356		
Ag	107	91.840		
Cd	111	96.925		
Cd	114			
> In	115			104.613
Sn	118	89.880		
Sb	123	94.364		
Ba	135	92.720		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	95.863		
Tl	205			
Pb	206			
Pb	207			
Pb	208	94.691		
U	238	94.395		
> Bi	209			101.302
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, August 27, 2015 15:48:14
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48332.0	1.5				ug/L	44982	Standard
	Be	9	15.0	33.3	**0.0132**	0.008	58.6	ug/L	8	Standard
	Al	27	990.0	33.0	**0.0094**	0.004	46.7	ug/L	318	Standard
	Sc	45	30078.2	3.1				ug/L	28998	Standard
	Ti	47	20.0	13.2	**-0.0094**	0.013	138.9	ug/L	21	Standard
	V	51	875.7	4.2	**-0.0369**	0.013	35.2	ug/L	1052	Standard
	Cr	52	5664.1	1.1	**-0.1990**	0.027	13.6	ug/L	6637	Standard
	Cr	53	601.7	9.5	**0.3734**	0.100	26.7	ug/L	328	Standard
	Mn	55	725.7	2.7	**0.0202**	0.009	44.4	ug/L	636	Standard
	Co	59	246.3	14.4	**0.0080**	0.011	134.3	ug/L	199	Standard
	Ni	60	230.3	7.2	**0.0217**	0.014	65.9	ug/L	185	Standard
	Cu	65	169.7	4.7	**0.0052**	0.007	135.8	ug/L	133	Standard
	Zn	66	193.3	2.0	**-0.5032**	0.006	1.2	ug/L	187	Standard
>	**Ge**	72	309208.0	1.4				ug/L	311830	Standard
	As	75	-43.3	176.4	**-0.0351**	0.098	280.1	ug/L	-58	Standard
	Se	82	20.3	37.3	**-0.1084**	0.115	106.5	ug/L	25	Standard
	Se-1	77	97.3	7.8	**0.2103**	0.194	92.1	ug/L	90	Standard
>	**Ga**	71	20.0	66.1				mg/L	18	Standard
	Rb	85	23.3	32.7				ug/L	27	Standard
	Y	89	291280.3	1.5				ug/L	295023	Standard
>	**Rh**	103	15.0	33.3				ug/L	7	Standard
	Mo	98	67.9	15.4	**0.0390**	0.007	18.2	ug/L	10	Standard
	Ag	107	86.0	13.7	**0.0034**	0.002	57.5	ug/L	58	Standard
	Cd	111	5.9	44.8	**0.0017**	0.002	109.6	mg/L	4	Standard
	Cd	114	14.7	79.7	**-0.0083**	0.003	35.7	ug/L	-1	Standard
>	**In**	115	456993.6	1.7				ug/L	427691	Standard
	Sn	118	446.7	1.3	**0.0302**	0.003	8.7	ug/L	273	Standard
	Sb	123	774.4	2.1	**0.1903**	0.002	0.9	ug/L	55	Standard
	Ba	135	36.3	14.1	**-0.0035**	0.002	63.7	ug/L	39	Standard
	Ce	140	18.3	31.5				ug/L	28	Standard
>	**Tb**	159	919746.7	1.4				ug/L	886833	Standard
	Ho	165	5.0	100.0				ug/L	10	Standard
	Tl	203	25.7	36.2	**0.0007**	0.001	183.0	ug/L	2	Standard
	Tl	205	33.3	37.7	**0.0088**	0.003	29.8	ug/L	0	Standard
	Pb	206	230.3	10.5	**-0.0090**	0.005	57.8	ug/L	199	Standard
	Pb	207	204.3	13.9	**-0.0050**	0.007	147.6	ug/L	178	Standard
	Pb	208	761.7	6.9	**-0.0010**	0.004	402.8	ug/L	654	Standard
	U	238	37.0	47.1	**0.0056**	0.003	62.5	ug/L	1	Standard
>	**Bi**	209	432768.1	1.2				ug/L	418387	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	55.0	18.2	**0.0692**	0.023	33.3	mg/L	27	Standard
K	39	15.0	33.3	**0.0580**	0.056	96.8	mg/L	20	Standard
Ca	43	21.7	35.3	**-1.6365**	0.897	54.8	mg/L	40	Standard
Fe	54	64.4	8.0	**-0.0269**	0.013	47.3	mg/L	74	Standard
Fe	57	871.7	6.9	**0.6910**	0.605	87.6	mg/L	697	Standard
> **Sc-1**	45	30078.2	3.1				mg/L	28998	Standard
Cl	35	8332.3	1.1				ug/L	6091	Standard
Kr	83	4.7	32.7				ug/L	6	Standard
Br	81	546.7	11.6				ug/L	383	Standard
P	31	10738.8	2.5				ug/L	8849	Standard
S	34	1366.7	9.7				ug/L	937	Standard
Sr	88	195.0	5.1				ug/L	188	Standard
C	12	156.7	24.2				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	26.5	44.1				mg/L	12	Standard
Ho-1	165	5.0	100.0				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	23	Standard
I	127	4102.2	3.4				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.159	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.851
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.437
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1508147101
Sample Date/Time: Thursday, August 27, 2015 15:51:27
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64917.1	1.1				ug/L	44982	Standard
	Be	9	20.0	25.0	**0.0131**	0.006	45.9	ug/L	8	Standard
	Al	27	117848186.8	2.2	**1209.4201**	15.418	1.3	ug/L	318	Standard
	Sc	45	27107.6	3.0				ug/L	28998	Standard
	Ti	47	118.0	12.7	**0.5700**	0.077	13.5	ug/L	21	Standard
	V	51	17857.0	1.7	**4.8233**	0.075	1.6	ug/L	1052	Standard
	Cr	52	10706.4	1.6	**0.9780**	0.075	7.7	ug/L	6637	Standard
	Cr	53	3790.5	18.5	**6.0503**	1.113	18.4	ug/L	328	Standard
	Mn	55	44602.9	2.0	**14.3497**	0.242	1.7	ug/L	636	Standard
	Co	59	2245.2	1.8	**0.6191**	0.018	2.9	ug/L	199	Standard
	Ni	60	8271.9	2.4	**6.3223**	0.265	4.2	ug/L	185	Standard
	Cu	65	57091.4	1.5	**45.4421**	0.730	1.6	ug/L	133	Standard
	Zn	66	9060.4	1.5	**12.0610**	0.027	0.2	ug/L	187	Standard
>	**Ge**	72	288106.2	1.7				ug/L	311830	Standard
	As	75	1886.0	8.4	**2.5994**	0.176	6.8	ug/L	-58	Standard
	Se	82	3624.3	2.3	**61.5101**	0.935	1.5	ug/L	25	Standard
	Se-1	77	2599.9	3.7	**60.8117**	1.267	2.1	ug/L	90	Standard
>	**Ga**	71	70.0	12.4				mg/L	18	Standard
	Rb	85	15426.2	2.1				ug/L	27	Standard
	Y	89	285145.7	2.3				ug/L	295023	Standard
>	**Rh**	103	668.3	6.1				ug/L	7	Standard
	Mo	98	1293.1	3.3	**0.8874**	0.038	4.2	ug/L	10	Standard
	Ag	107	90.7	6.6	**0.0049**	0.001	23.7	ug/L	58	Standard
	Cd	111	30.5	35.8	**0.0194**	0.008	39.5	mg/L	4	Standard
	Cd	114	80.8	24.4	**0.0097**	0.005	53.3	ug/L	-1	Standard
>	**In**	115	441302.1	1.0				ug/L	427691	Standard
	Sn	118	591.7	6.8	**0.0647**	0.008	12.0	ug/L	273	Standard
	Sb	123	790.1	1.5	**0.2011**	0.003	1.6	ug/L	55	Standard
	Ba	135	9771.5	0.2	**4.8919**	0.056	1.2	ug/L	39	Standard
	Ce	140	275.0	21.4				ug/L	28	Standard
>	**Tb**	159	869267.3	0.5				ug/L	886833	Standard
	Ho	165	18.3	56.8				ug/L	10	Standard
	Tl	203	121.3	4.2	**0.0167**	0.001	5.2	ug/L	2	Standard
	Tl	205	61.7	16.9	**0.0163**	0.002	14.5	ug/L	0	Standard
	Pb	206	925.7	6.4	**0.1746**	0.013	7.7	ug/L	199	Standard
	Pb	207	776.4	4.1	**0.1629**	0.009	5.6	ug/L	178	Standard
	Pb	208	2745.4	1.5	**0.1609**	0.004	2.5	ug/L	654	Standard
	U	238	66858.9	0.7	**15.0236**	0.216	1.4	ug/L	1	Standard
>	**Bi**	209	384364.4	0.7				ug/L	418387	Standard

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Na	23	18.3	15.7	**33.0717**	4.336	13.1	mg/L	2	Standard
Mg	24	252901.5	0.2	**608.9703**	19.922	3.3	mg/L	27	Standard
K	39	351.7	8.6	**4.6964**	0.476	10.1	mg/L	20	Standard
Ca	43	885.0	4.5	**123.1708**	4.752	3.9	mg/L	40	Standard
Fe	54	93.1	9.2	**0.0575**	0.020	34.3	mg/L	74	Standard
Fe	57	1425.1	6.4	**6.5611**	1.060	16.2	mg/L	697	Standard
Sc-1	45	27107.6	3.0				mg/L	28998	Standard
Cl	35	33680.8	6.2				ug/L	6091	Standard
Kr	83	5.7	40.8				ug/L	6	Standard
Br	81	30474.0	2.2				ug/L	383	Standard
P	31	12560.2	0.8				ug/L	8849	Standard
S	34	1311.7	5.6				ug/L	937	Standard
Sr	88	728.4	14.2				ug/L	188	Standard
C	12	843.4	11.5				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.2	103.5				mg/L	12	Standard
Ho-1	165	18.3	56.8				mg/L	10	Standard
Er	166	16.7	69.3				mg/L	23	Standard
I	127	408097.6	2.0				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		144.319	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.392	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.182
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.868
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1508147102
Sample Date/Time: Thursday, August 27, 2015 15:54:39
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64195.7	1.0				ug/L	44982	Standard
	Be	9	25.0	0.0	**0.0191**	0.000	1.5	ug/L	8	Standard
	Al	27	121720299.4	4.4	**1263.6469**	65.202	5.2	ug/L	318	Standard
	Sc	45	26024.0	3.0				ug/L	28998	Standard
	Ti	47	120.0	7.9	**0.6166**	0.062	10.1	ug/L	21	Standard
	V	51	18132.9	2.3	**5.1517**	0.093	1.8	ug/L	1052	Standard
	Cr	52	10462.6	0.4	**1.0342**	0.020	1.9	ug/L	6637	Standard
	Cr	53	2998.6	1.4	**4.9237**	0.090	1.8	ug/L	328	Standard
	Mn	55	42838.1	1.2	**14.4496**	0.088	0.6	ug/L	636	Standard
	Co	59	2244.5	1.1	**0.6517**	0.004	0.6	ug/L	199	Standard
	Ni	60	8179.5	0.9	**6.5566**	0.024	0.4	ug/L	185	Standard
	Cu	65	38693.0	1.6	**32.2496**	0.326	1.0	ug/L	133	Standard
	Zn	66	6019.2	1.5	**8.1708**	0.160	2.0	ug/L	187	Standard
>	**Ge**	72	274797.6	0.6				ug/L	311830	Standard
	As	75	1770.4	11.8	**2.5596**	0.290	11.3	ug/L	-58	Standard
	Se	82	3550.8	1.9	**63.1928**	1.037	1.6	ug/L	25	Standard
	Se-1	77	2454.2	3.7	**60.1772**	2.285	3.8	ug/L	90	Standard
>	**Ga**	71	91.7	17.5				mg/L	18	Standard
	Rb	85	15719.8	0.9				ug/L	27	Standard
	Y	89	279407.8	0.8				ug/L	295023	Standard
>	**Rh**	103	661.7	4.9				ug/L	7	Standard
	Mo	98	1328.5	1.4	**0.9198**	0.016	1.7	ug/L	10	Standard
	Ag	107	88.3	23.8	**0.0046**	0.004	89.1	ug/L	58	Standard
	Cd	111	19.8	32.9	**0.0119**	0.005	39.4	mg/L	4	Standard
	Cd	114	37.8	54.2	**-0.0019**	0.006	300.1	ug/L	-1	Standard
>	**In**	115	437439.5	0.3				ug/L	427691	Standard
	Sn	118	516.7	2.2	**0.0495**	0.003	5.7	ug/L	273	Standard
	Sb	123	635.7	3.5	**0.1632**	0.006	3.7	ug/L	55	Standard
	Ba	135	9700.8	0.7	**4.8990**	0.024	0.5	ug/L	39	Standard
	Ce	140	248.3	10.1				ug/L	28	Standard
>	**Tb**	159	853530.8	2.4				ug/L	886833	Standard
	Ho	165	15.0	57.7				ug/L	10	Standard
	Tl	203	98.3	4.1	**0.0136**	0.001	6.8	ug/L	2	Standard
	Tl	205	56.7	10.2	**0.0156**	0.001	8.4	ug/L	0	Standard
	Pb	206	451.3	3.4	**0.0580**	0.006	10.6	ug/L	199	Standard
	Pb	207	355.7	9.5	**0.0475**	0.007	15.4	ug/L	178	Standard
	Pb	208	1270.0	3.1	**0.0490**	0.006	11.6	ug/L	654	Standard
	U	238	66597.0	0.4	**15.4940**	0.361	2.3	ug/L	1	Standard
>	**Bi**	209	371351.4	2.5				ug/L	418387	Standard

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Na	23	6.7	114.6	**12.4846**	14.045	112.5	mg/L	2	Standard
Mg	24	253562.4	0.4	**635.9182**	17.847	2.8	mg/L	27	Standard
K	39	405.0	10.5	**5.6662**	0.770	13.6	mg/L	20	Standard
Ca	43	836.7	6.3	**121.1419**	4.759	3.9	mg/L	40	Standard
Fe	54	71.7	14.5	**0.0128**	0.023	180.2	mg/L	74	Standard
Fe	57	1453.4	2.2	**7.3747**	0.727	9.9	mg/L	697	Standard
> **Sc-1**	45	26024.0	3.0				mg/L	28998	Standard
Cl	35	34771.9	1.3				ug/L	6091	Standard
Kr	83	3.3	45.8				ug/L	6	Standard
Br	81	30547.4	1.8				ug/L	383	Standard
P	31	11664.5	4.9				ug/L	8849	Standard
S	34	1380.1	4.4				ug/L	937	Standard
Sr	88	691.7	6.9				ug/L	188	Standard
C	12	836.7	12.8				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	22.9	102.9				mg/L	12	Standard
Ho-1	165	15.0	57.7				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	402977.5	1.3				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		142.715	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		88.124	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.279	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	88.758	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1508147103
Sample Date/Time: Thursday, August 27, 2015 15:57:50
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60580.9	0.7				ug/L	44982	Standard
	Be	9	30.0	33.3	**0.0270**	0.012	44.9	ug/L	8	Standard
	Al	27	105284259.2	1.0	**1157.9477**	15.229	1.3	ug/L	318	Standard
	Sc	45	25925.5	0.8				ug/L	28998	Standard
	Ti	47	2709.9	0.8	**16.0841**	0.249	1.5	ug/L	21	Standard
	V	51	149090.8	1.0	**43.2778**	0.436	1.0	ug/L	1052	Standard
	Cr	52	11540.7	1.1	**1.2184**	0.030	2.4	ug/L	6637	Standard
	Cr	53	3483.7	5.2	**5.6713**	0.349	6.2	ug/L	328	Standard
	Mn	55	57020.4	0.9	**18.8504**	0.315	1.7	ug/L	636	Standard
	Co	59	3351.7	0.5	**0.9790**	0.006	0.6	ug/L	199	Standard
	Ni	60	7285.1	0.9	**5.6861**	0.109	1.9	ug/L	185	Standard
	Cu	65	88204.3	0.8	**71.9659**	0.371	0.5	ug/L	133	Standard
	Zn	66	13802.0	0.5	**19.2417**	0.163	0.8	ug/L	187	Standard
>	Ge	72	281312.0	0.9				ug/L	311830	Standard
	As	75	2125.2	4.7	**2.9980**	0.115	3.8	ug/L	-58	Standard
	Se	82	3485.9	0.4	**60.5868**	0.516	0.9	ug/L	25	Standard
	Se-1	77	2280.8	1.1	**54.4544**	1.006	1.8	ug/L	90	Standard
>	Ga	71	1233.4	7.1				mg/L	18	Standard
	Rb	85	14527.0	1.9				ug/L	27	Standard
	Y	89	278667.6	3.2				ug/L	295023	Standard
>	Rh	103	581.7	4.9				ug/L	7	Standard
	Mo	98	1304.3	1.4	**0.9040**	0.012	1.3	ug/L	10	Standard
	Ag	107	528.7	3.9	**0.0910**	0.004	4.4	ug/L	58	Standard
	Cd	111	24.6	20.3	**0.0154**	0.004	23.6	mg/L	4	Standard
	Cd	114	91.3	12.1	**0.0128**	0.003	23.0	ug/L	-1	Standard
>	In	115	436892.5	0.3				ug/L	427691	Standard
	Sn	118	1505.1	7.9	**0.2650**	0.027	10.0	ug/L	273	Standard
	Sb	123	641.1	2.8	**0.1648**	0.004	2.6	ug/L	55	Standard
	Ba	135	9696.8	1.1	**4.9032**	0.053	1.1	ug/L	39	Standard
	Ce	140	410.0	10.6				ug/L	28	Standard
>	Tb	159	847111.2	0.9				ug/L	886833	Standard
	Ho	165	35.0	0.0				ug/L	10	Standard
	Tl	203	95.3	8.0	**0.0127**	0.001	9.8	ug/L	2	Standard
	Tl	205	66.7	26.3	**0.0176**	0.004	23.5	ug/L	0	Standard
	Pb	206	6809.2	0.3	**1.6918**	0.012	0.7	ug/L	199	Standard
	Pb	207	5671.4	0.7	**1.5613**	0.019	1.2	ug/L	178	Standard
	Pb	208	20093.6	0.2	**1.5356**	0.006	0.4	ug/L	654	Standard
	U	238	54547.3	0.5	**12.3855**	0.044	0.4	ug/L	1	Standard
>	Bi	209	380346.5	0.5				ug/L	418387	Standard

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Na	23	8.3	34.6	**15.7858**	5.545	35.1	mg/L	2	Standard
Mg	24	229413.9	1.0	**577.2442**	7.797	1.4	mg/L	27	Standard
K	39	348.3	7.2	**4.8615**	0.336	6.9	mg/L	20	Standard
Ca	43	813.4	11.7	**118.2064**	14.830	12.5	mg/L	40	Standard
Fe	54	12396.9	2.1	**31.0640**	0.760	2.4	mg/L	74	Standard
Fe	57	4629.0	1.1	**37.8544**	0.667	1.8	mg/L	697	Standard
Sc-1	45	25925.5	0.8				mg/L	28998	Standard
Cl	35	29341.7	1.6				ug/L	6091	Standard
Kr	83	3.0	33.3				ug/L	6	Standard
Br	81	45963.0	2.3				ug/L	383	Standard
P	31	12213.3	6.1				ug/L	8849	Standard
S	34	1180.0	4.9				ug/L	937	Standard
Sr	88	733.4	8.2				ug/L	188	Standard
C	12	1560.1	2.6				mg/L	167	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	18.9	107.2				mg/L	12	Standard
Ho-1	165	35.0	0.0				mg/L	10	Standard
Er	166	23.3	24.7				mg/L	23	Standard
I	127	530318.4	5.1				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		134.679	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		90.213	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.151	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	90.908	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1508147104
Sample Date/Time: Thursday, August 27, 2015 16:01:02
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61156.6	3.0				ug/L	44982	Standard
	Be	9	21.7	58.1	**0.0163**	0.015	92.3	ug/L	8	Standard
	Al	27	103507612.0	0.9	**1128.5140**	44.203	3.9	ug/L	318	Standard
	Sc	45	26117.5	1.8				ug/L	28998	Standard
	Ti	47	3117.3	2.1	**18.5553**	0.422	2.3	ug/L	21	Standard
	V	51	156215.5	1.4	**45.4453**	0.465	1.0	ug/L	1052	Standard
	Cr	52	11243.2	2.1	**1.1570**	0.040	3.4	ug/L	6637	Standard
	Cr	53	3197.0	2.5	**5.1642**	0.135	2.6	ug/L	328	Standard
	Mn	55	56515.2	1.5	**18.7159**	0.187	1.0	ug/L	636	Standard
	Co	59	3404.0	3.4	**0.9971**	0.031	3.1	ug/L	199	Standard
	Ni	60	7146.4	2.3	**5.5851**	0.101	1.8	ug/L	185	Standard
	Cu	65	74784.8	1.2	**61.1171**	0.730	1.2	ug/L	133	Standard
	Zn	66	11609.4	0.2	**16.0970**	0.108	0.7	ug/L	187	Standard
>	**Ge**	72	280766.2	0.5				ug/L	311830	Standard
	As	75	2506.5	5.9	**3.5395**	0.201	5.7	ug/L	-58	Standard
	Se	82	3516.9	0.4	**61.2477**	0.405	0.7	ug/L	25	Standard
	Se-1	77	2166.8	3.1	**51.7283**	1.435	2.8	ug/L	90	Standard
>	**Ga**	71	1315.1	6.3				mg/L	18	Standard
	Rb	85	13629.5	1.9				ug/L	27	Standard
	Y	89	281284.5	2.3				ug/L	295023	Standard
>	**Rh**	103	510.0	2.0				ug/L	7	Standard
	Mo	98	1273.3	2.8	**0.8887**	0.023	2.6	ug/L	10	Standard
	Ag	107	250.3	7.9	**0.0368**	0.004	9.8	ug/L	58	Standard
	Cd	111	19.7	46.3	**0.0119**	0.007	55.3	mg/L	4	Standard
	Cd	114	73.3	34.0	**0.0080**	0.007	86.5	ug/L	-1	Standard
>	**In**	115	433791.3	0.6				ug/L	427691	Standard
	Sn	118	995.0	3.1	**0.1554**	0.006	4.1	ug/L	273	Standard
	Sb	123	581.8	0.6	**0.1505**	0.001	0.9	ug/L	55	Standard
	Ba	135	9571.7	1.7	**4.8743**	0.067	1.4	ug/L	39	Standard
	Ce	140	280.0	21.7				ug/L	28	Standard
>	**Tb**	159	857327.8	1.8				ug/L	886833	Standard
	Ho	165	21.7	48.0				ug/L	10	Standard
	Tl	203	90.3	13.2	**0.0119**	0.002	15.6	ug/L	2	Standard
	Tl	205	128.3	95.6	**0.0321**	0.029	89.1	ug/L	0	Standard
	Pb	206	5469.3	0.9	**1.3557**	0.029	2.1	ug/L	199	Standard
	Pb	207	4419.3	2.6	**1.2119**	0.028	2.3	ug/L	178	Standard
	Pb	208	15824.9	2.7	**1.2055**	0.021	1.8	ug/L	654	Standard
	U	238	55832.7	1.7	**12.7551**	0.077	0.6	ug/L	1	Standard
>	**Bi**	209	378012.8	1.2				ug/L	418387	Standard

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Na	23	15.0	57.7	**28.2013**	16.397	58.1	mg/L	2	Standard
Mg	24	222620.2	0.4	**556.1071**	8.664	1.6	mg/L	27	Standard
K	39	311.7	6.5	**4.3081**	0.353	8.2	mg/L	20	Standard
Ca	43	735.0	4.1	**105.5208**	2.788	2.6	mg/L	40	Standard
Fe	54	13744.7	0.8	**34.2065**	0.394	1.2	mg/L	74	Standard
Fe	57	4970.8	0.8	**40.7849**	0.649	1.6	mg/L	697	Standard
Sc-1	45	26117.5	1.8				mg/L	28998	Standard
Cl	35	27835.5	1.5				ug/L	6091	Standard
Kr	83	5.7	62.0				ug/L	6	Standard
Br	81	56093.7	3.2				ug/L	383	Standard
P	31	12455.1	3.7				ug/L	8849	Standard
S	34	1186.7	2.7				ug/L	937	Standard
Sr	88	608.3	10.4				ug/L	188	Standard
C	12	1533.4	13.4				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.5	97.6				mg/L	12	Standard
Ho-1	165	21.7	48.0				mg/L	10	Standard
Er	166	10.0	173.2				mg/L	23	Standard
I	127	546699.3	3.1				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		135.959	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.038	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1508147104
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.426	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	90.350	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1508148001
Sample Date/Time: Thursday, August 27, 2015 16:04:14
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51114.4	2.6				ug/L	44982	Standard
	Be	9	40.0	33.1	**0.0490**	0.021	42.1	ug/L	8	Standard
	Al	27	2161071.4	3.7	**28.1630**	0.647	2.3	ug/L	318	Standard
	Sc	45	27501.6	2.8				ug/L	28998	Standard
	Ti	47	241.7	5.6	**1.2429**	0.067	5.4	ug/L	21	Standard
	V	51	1972.1	3.5	**0.2731**	0.024	8.9	ug/L	1052	Standard
	Cr	52	53054.1	2.2	**9.7494**	0.183	1.9	ug/L	6637	Standard
	Cr	53	6998.3	5.4	**11.2769**	0.531	4.7	ug/L	328	Standard
	Mn	55	1723725.8	2.2	**542.2830**	6.255	1.2	ug/L	636	Standard
	Co	59	2790.6	1.5	**0.7546**	0.004	0.5	ug/L	199	Standard
	Ni	60	5614.7	3.1	**4.0876**	0.086	2.1	ug/L	185	Standard
	Cu	65	52316.2	1.4	**40.1635**	0.688	1.7	ug/L	133	Standard
	Zn	66	9454.6	0.6	**12.1501**	0.204	1.7	ug/L	187	Standard
>	**Ge**	72	298592.4	1.1				ug/L	311830	Standard
	As	75	1255.1	2.2	**1.6782**	0.054	3.2	ug/L	-58	Standard
	Se	82	72.9	7.6	**0.7724**	0.104	13.4	ug/L	25	Standard
	Se-1	77	127.3	2.4	**0.9867**	0.097	9.9	ug/L	90	Standard
>	**Ga**	71	7116.7	1.5				mg/L	18	Standard
	Rb	85	10595.4	2.7				ug/L	27	Standard
	Y	89	286228.4	0.9				ug/L	295023	Standard
>	**Rh**	103	56.7	36.7				ug/L	7	Standard
	Mo	98	26505.9	0.7	**17.8783**	0.137	0.8	ug/L	10	Standard
	Ag	107	1499.4	2.5	**0.2717**	0.007	2.7	ug/L	58	Standard
	Cd	111	29.3	22.9	**0.0181**	0.005	27.0	mg/L	4	Standard
	Cd	114	149.1	29.6	**0.0272**	0.012	43.4	ug/L	-1	Standard
>	**In**	115	451953.8	1.1				ug/L	427691	Standard
	Sn	118	10223.5	4.3	**2.0895**	0.077	3.7	ug/L	273	Standard
	Sb	123	2247.2	1.8	**0.5596**	0.004	0.8	ug/L	55	Standard
	Ba	135	4993.8	1.1	**2.4304**	0.013	0.5	ug/L	39	Standard
	Ce	140	455.0	5.0				ug/L	28	Standard
>	**Tb**	159	890012.3	1.7				ug/L	886833	Standard
	Ho	165	20.0	75.0				ug/L	10	Standard
	Tl	203	147.3	21.3	**0.0193**	0.005	25.0	ug/L	2	Standard
	Tl	205	123.3	28.8	**0.0286**	0.008	27.3	ug/L	0	Standard
	Pb	206	2309.2	1.5	**0.4850**	0.012	2.5	ug/L	199	Standard
	Pb	207	1883.1	3.7	**0.4371**	0.016	3.8	ug/L	178	Standard
	Pb	208	6831.3	1.2	**0.4424**	0.005	1.0	ug/L	654	Standard
	U	238	383.0	10.8	**0.0781**	0.009	11.2	ug/L	1	Standard
>	**Bi**	209	414054.9	0.8				ug/L	418387	Standard

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Na	23	3.3	86.6	**6.0294**	5.219	86.6	mg/L	2	Standard
Mg	24	65149.8	0.5	**154.5659**	4.130	2.7	mg/L	27	Standard
K	39	108.3	19.2	**1.3364**	0.276	20.6	mg/L	20	Standard
Ca	43	48.3	21.5	**2.4599**	1.659	67.4	mg/L	40	Standard
Fe	54	9087.1	1.9	**21.4283**	0.909	4.2	mg/L	74	Standard
Fe	57	3047.0	4.6	**21.0066**	0.606	2.9	mg/L	697	Standard
> **Sc-1**	45	27501.6	2.8				mg/L	28998	Standard
Cl	35	8179.5	2.9				ug/L	6091	Standard
Kr	83	6.3	48.2				ug/L	6	Standard
Br	81	3010.3	1.4				ug/L	383	Standard
P	31	11716.2	0.8				ug/L	8849	Standard
S	34	1035.0	2.9				ug/L	937	Standard
Sr	88	221.7	13.2				ug/L	188	Standard
C	12	796.7	15.0				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	15.1	72.2				mg/L	12	Standard
Ho-1	165	20.0	75.0				mg/L	10	Standard
Er	166	33.3	62.5				mg/L	23	Standard
I	127	19219.1	16.4				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.634	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.755	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.673
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.964
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508147101
Sample Date/Time: Thursday, August 27, 2015 16:07:24
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56107.1	2.1				ug/L	44982	Standard
	Be	9	28.3	44.4	**0.0279**	0.017	60.9	ug/L	8	Standard
	Al	27	2544510.6	0.2	**30.2203**	0.627	2.1	ug/L	318	Standard
	Sc	45	28229.6	1.3				ug/L	28998	Standard
	Ti	47	21.7	14.8	**0.0014**	0.017	1237.2	ug/L	21	Standard
	V	51	1268.3	13.5	**0.0722**	0.048	66.9	ug/L	1052	Standard
	Cr	52	6005.5	7.1	**-0.1131**	0.095	84.0	ug/L	6637	Standard
	Cr	53	583.3	4.2	**0.3560**	0.039	10.9	ug/L	328	Standard
	Mn	55	1756.8	6.0	**0.3408**	0.029	8.5	ug/L	636	Standard
	Co	59	267.3	3.5	**0.0149**	0.002	14.3	ug/L	199	Standard
	Ni	60	824.7	6.6	**0.4626**	0.036	7.8	ug/L	185	Standard
	Cu	65	1663.1	3.7	**1.1326**	0.038	3.4	ug/L	133	Standard
	Zn	66	1392.1	1.7	**1.1024**	0.024	2.1	ug/L	187	Standard
>	**Ge**	72	304965.6	0.7				ug/L	311830	Standard
	As	75	29.1	177.8	**0.0585**	0.067	114.5	ug/L	-58	Standard
	Se	82	100.1	6.0	**1.1854**	0.090	7.6	ug/L	25	Standard
	Se-1	77	131.7	7.1	**1.0236**	0.224	21.9	ug/L	90	Standard
>	**Ga**	71	25.0	52.9				mg/L	18	Standard
	Rb	85	338.3	16.5				ug/L	27	Standard
	Y	89	304125.6	1.3				ug/L	295023	Standard
>	**Rh**	103	55.0	9.1				ug/L	7	Standard
	Mo	98	48.8	6.4	**0.0242**	0.002	9.0	ug/L	10	Standard
	Ag	107	61.7	3.4	**-0.0019**	0.000	25.7	ug/L	58	Standard
	Cd	111	7.2	52.5	**0.0023**	0.002	109.0	mg/L	4	Standard
	Cd	114	18.1	32.8	**-0.0077**	0.001	19.1	ug/L	-1	Standard
>	**In**	115	488284.4	1.1				ug/L	427691	Standard
	Sn	118	320.0	8.7	**-0.0005**	0.005	901.6	ug/L	273	Standard
	Sb	123	96.6	12.8	**0.0217**	0.003	12.7	ug/L	55	Standard
	Ba	135	258.7	2.9	**0.0965**	0.005	4.8	ug/L	39	Standard
	Ce	140	105.0	26.5				ug/L	28	Standard
>	**Tb**	159	935708.0	1.1				ug/L	886833	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	9.3	30.9	**-0.0017**	0.000	24.5	ug/L	2	Standard
	Tl	205	6.7	86.6	**0.0033**	0.001	35.3	ug/L	0	Standard
	Pb	206	274.0	0.0	**-0.0010**	0.000	51.7	ug/L	199	Standard
	Pb	207	230.3	8.5	**-0.0003**	0.005	1784.5	ug/L	178	Standard
	Pb	208	819.7	3.0	**0.0012**	0.002	137.2	ug/L	654	Standard
	U	238	1426.1	3.6	**0.2742**	0.008	2.8	ug/L	1	Standard
>	**Bi**	209	446202.8	0.8				ug/L	418387	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	5005.8	4.3	**11.5157**	0.403	3.5	mg/L	27	Standard
K	39	25.0	52.9	**0.2040**	0.178	87.3	mg/L	20	Standard
Ca	43	36.7	63.0	**0.6368**	3.189	500.8	mg/L	40	Standard
Fe	54	80.7	18.7	**0.0195**	0.033	167.8	mg/L	74	Standard
Fe	57	848.4	7.8	**0.9462**	0.504	53.3	mg/L	697	Standard
> **Sc-1**	45	28229.6	1.3				mg/L	28998	Standard
Cl	35	8840.6	5.7				ug/L	6091	Standard
Kr	83	4.3	13.3				ug/L	6	Standard
Br	81	1223.4	4.8				ug/L	383	Standard
P	31	10842.2	1.7				ug/L	8849	Standard
S	34	1036.7	4.6				ug/L	937	Standard
Sr	88	166.7	33.0				ug/L	188	Standard
C	12	216.7	7.1				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.5	86.7				mg/L	12	Standard
Ho-1	165	8.3	34.6				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	23	Standard
I	127	15975.1	2.6				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.733	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.799	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.167
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.648
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: August 28, 2015

Method 6020 - Summary Report

Sample ID: L1508147102
Sample Date/Time: Thursday, August 27, 2015 16:10:36
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52964.1	0.6				ug/L	44982	Standard
	Be	9	13.3	21.7	**0.0088**	0.004	45.5	ug/L	8	Standard
	Al	27	2464143.6	2.0	**30.9947**	0.678	2.2	ug/L	318	Standard
	Sc	45	28722.2	5.1				ug/L	28998	Standard
	Ti	47	25.7	14.8	**0.0246**	0.023	94.0	ug/L	21	Standard
	V	51	1569.6	3.5	**0.1559**	0.016	10.5	ug/L	1052	Standard
	Cr	52	7368.8	5.1	**0.1759**	0.094	53.5	ug/L	6637	Standard
	Cr	53	475.0	12.9	**0.1801**	0.093	51.6	ug/L	328	Standard
	Mn	55	1823.1	4.5	**0.3647**	0.016	4.5	ug/L	636	Standard
	Co	59	260.7	3.7	**0.0135**	0.003	25.4	ug/L	199	Standard
	Ni	60	763.4	7.2	**0.4207**	0.032	7.7	ug/L	185	Standard
	Cu	65	1206.0	2.5	**0.7940**	0.018	2.3	ug/L	133	Standard
	Zn	66	1981.1	1.4	**1.9068**	0.034	1.8	ug/L	187	Standard
>	**Ge**	72	303047.8	1.6				ug/L	311830	Standard
	As	75	1.7	2891.7	**0.0230**	0.065	282.1	ug/L	-58	Standard
	Se	82	95.5	4.3	**1.1219**	0.041	3.7	ug/L	25	Standard
	Se-1	77	129.0	11.4	**0.9842**	0.376	38.2	ug/L	90	Standard
>	**Ga**	71	13.3	173.2				mg/L	18	Standard
	Rb	85	345.0	2.5				ug/L	27	Standard
	Y	89	306058.9	1.2				ug/L	295023	Standard
>	**Rh**	103	35.0	37.8				ug/L	7	Standard
	Mo	98	47.1	13.8	**0.0237**	0.004	17.9	ug/L	10	Standard
	Ag	107	70.3	4.3	**-0.0001**	0.000	567.8	ug/L	58	Standard
	Cd	111	6.6	38.4	**0.0019**	0.002	86.1	mg/L	4	Standard
	Cd	114	19.0	45.1	**-0.0074**	0.002	28.7	ug/L	-1	Standard
>	**In**	115	477557.2	0.5				ug/L	427691	Standard
	Sn	118	408.3	1.4	**0.0185**	0.001	4.7	ug/L	273	Standard
	Sb	123	94.8	5.6	**0.0218**	0.001	5.2	ug/L	55	Standard
	Ba	135	272.0	11.5	**0.1052**	0.014	13.2	ug/L	39	Standard
	Ce	140	106.7	7.2				ug/L	28	Standard
>	**Tb**	159	937184.5	2.3				ug/L	886833	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	7.3	28.4	**-0.0019**	0.000	14.7	ug/L	2	Standard
	Tl	205	3.3	173.2	**0.0026**	0.001	44.4	ug/L	0	Standard
	Pb	206	253.0	5.5	**-0.0044**	0.003	79.5	ug/L	199	Standard
	Pb	207	217.0	4.6	**-0.0023**	0.003	139.6	ug/L	178	Standard
	Pb	208	791.3	4.4	**0.0005**	0.003	630.0	ug/L	654	Standard
	U	238	1411.4	1.3	**0.2773**	0.005	1.7	ug/L	1	Standard
>	**Bi**	209	436849.7	1.5				ug/L	418387	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	5052.5	3.2	**11.4554**	0.910	7.9	mg/L	27	Standard
K	39	30.0	16.7	**0.2618**	0.064	24.3	mg/L	20	Standard
Ca	43	63.3	39.7	**4.1792**	3.464	82.9	mg/L	40	Standard
Fe	54	82.6	39.7	**0.0236**	0.083	352.1	mg/L	74	Standard
Fe	57	900.0	9.3	**1.2789**	0.786	61.5	mg/L	697	Standard
Sc-1	45	28722.2	5.1				mg/L	28998	Standard
Cl	35	10239.5	4.8				ug/L	6091	Standard
Kr	83	3.7	15.7				ug/L	6	Standard
Br	81	1203.4	7.0				ug/L	383	Standard
P	31	10515.3	1.2				ug/L	8849	Standard
S	34	1030.0	8.1				ug/L	937	Standard
Sr	88	193.3	12.2				ug/L	188	Standard
C	12	230.0	4.3				mg/L	167	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	15.9	72.0				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	16.7	91.7				mg/L	23	Standard
I	127	13894.7	2.7				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.746	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.184	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.659
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.413
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1508147102
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Method 6020 - Summary Report

Sample ID: L1508147103
Sample Date/Time: Thursday, August 27, 2015 16:13:47
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56935.2	3.9				ug/L	44982	Standard
	Be	9	13.3	57.3	**0.0076**	0.010	138.0	ug/L	8	Standard
	Al	27	2370125.4	2.7	**27.7401**	0.347	1.3	ug/L	318	Standard
	Sc	45	28984.4	3.0				ug/L	28998	Standard
	Ti	47	75.7	3.1	**0.2933**	0.014	4.6	ug/L	21	Standard
	V	51	4558.5	3.6	**0.9409**	0.049	5.2	ug/L	1052	Standard
	Cr	52	7566.9	3.7	**0.1841**	0.063	34.2	ug/L	6637	Standard
	Cr	53	591.7	10.9	**0.3560**	0.108	30.5	ug/L	328	Standard
	Mn	55	2042.8	2.7	**0.4200**	0.018	4.2	ug/L	636	Standard
	Co	59	291.0	5.2	**0.0205**	0.005	22.0	ug/L	199	Standard
	Ni	60	758.4	4.6	**0.4057**	0.025	6.2	ug/L	185	Standard
	Cu	65	2420.5	1.6	**1.6775**	0.024	1.4	ug/L	133	Standard
	Zn	66	1579.7	3.3	**1.3230**	0.070	5.3	ug/L	187	Standard
>	**Ge**	72	309415.5	0.4				ug/L	311830	Standard
	As	75	-14.0	150.6	**0.0033**	0.027	806.9	ug/L	-58	Standard
	Se	82	89.4	1.1	**0.9923**	0.012	1.2	ug/L	25	Standard
	Se-1	77	138.3	9.0	**1.1290**	0.270	23.9	ug/L	90	Standard
>	**Ga**	71	53.3	35.5				mg/L	18	Standard
	Rb	85	341.7	14.2				ug/L	27	Standard
	Y	89	308761.1	0.9				ug/L	295023	Standard
>	**Rh**	103	46.7	40.6				ug/L	7	Standard
	Mo	98	39.2	25.0	**0.0180**	0.006	34.2	ug/L	10	Standard
	Ag	107	81.3	15.3	**0.0015**	0.002	150.2	ug/L	58	Standard
	Cd	111	4.2	36.1	**0.0003**	0.001	314.3	mg/L	4	Standard
	Cd	114	16.3	110.9	**-0.0082**	0.004	54.7	ug/L	-1	Standard
>	**In**	115	490981.3	1.3				ug/L	427691	Standard
	Sn	118	325.0	4.1	**0.0001**	0.002	1947.4	ug/L	273	Standard
	Sb	123	89.1	7.5	**0.0199**	0.001	6.7	ug/L	55	Standard
	Ba	135	253.0	6.0	**0.0933**	0.008	8.8	ug/L	39	Standard
	Ce	140	116.7	17.3				ug/L	28	Standard
>	**Tb**	159	948913.0	1.2				ug/L	886833	Standard
	Ho	165	5.0	100.0				ug/L	10	Standard
	Tl	203	9.0	44.4	**-0.0017**	0.001	31.5	ug/L	2	Standard
	Tl	205	10.0	100.0	**0.0039**	0.002	50.3	ug/L	0	Standard
	Pb	206	371.0	5.2	**0.0198**	0.004	22.2	ug/L	199	Standard
	Pb	207	331.7	5.7	**0.0239**	0.004	17.4	ug/L	178	Standard
	Pb	208	1210.0	1.8	**0.0270**	0.001	4.8	ug/L	654	Standard
	U	238	1200.7	1.9	**0.2292**	0.006	2.5	ug/L	1	Standard
>	**Bi**	209	449068.5	0.6				ug/L	418387	Standard

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Na	23	5.0	100.0	**8.3893**	8.221	98.0	mg/L	2	Standard
Mg	24	5019.2	1.0	**11.2511**	0.237	2.1	mg/L	27	Standard
K	39	26.7	28.6	**0.2177**	0.109	50.0	mg/L	20	Standard
Ca	43	48.3	51.0	**2.1461**	3.462	161.3	mg/L	40	Standard
Fe	54	334.3	10.6	**0.5877**	0.095	16.2	mg/L	74	Standard
Fe	57	885.0	4.4	**1.0742**	0.405	37.7	mg/L	697	Standard
Sc-1	45	28984.4	3.0				mg/L	28998	Standard
Cl	35	10591.0	1.4				ug/L	6091	Standard
Kr	83	5.0	20.0				ug/L	6	Standard
Br	81	1416.7	19.5				ug/L	383	Standard
P	31	11150.8	3.8				ug/L	8849	Standard
S	34	1100.0	8.7				ug/L	937	Standard
Sr	88	198.3	17.9				ug/L	188	Standard
C	12	290.0	21.5				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.7	43.3				mg/L	12	Standard
Ho-1	165	5.0	100.0				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	16006.8	2.7				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		126.574	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.226	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.798
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.333
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1508147104
Sample Date/Time: Thursday, August 27, 2015 16:16:58
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54989.6	2.5				ug/L	44982	Standard
	Be	9	23.3	99.0	**0.0215**	0.031	143.7	ug/L	8	Standard
	Al	27	2273499.2	2.7	**27.5412**	0.143	0.5	ug/L	318	Standard
	Sc	45	28767.3	2.0				ug/L	28998	Standard
	Ti	47	90.7	15.0	**0.3873**	0.068	17.5	ug/L	21	Standard
	V	51	4352.7	2.0	**0.9173**	0.009	1.0	ug/L	1052	Standard
	Cr	52	6676.8	3.3	**0.0405**	0.020	49.8	ug/L	6637	Standard
	Cr	53	571.7	15.1	**0.3465**	0.123	35.6	ug/L	328	Standard
	Mn	55	1919.5	1.2	**0.3985**	0.018	4.4	ug/L	636	Standard
	Co	59	278.3	4.6	**0.0190**	0.002	10.7	ug/L	199	Standard
	Ni	60	809.0	1.8	**0.4585**	0.010	2.2	ug/L	185	Standard
	Cu	65	2027.1	1.7	**1.4260**	0.020	1.4	ug/L	133	Standard
	Zn	66	1397.4	2.2	**1.1324**	0.009	0.8	ug/L	187	Standard
>	**Ge**	72	301294.5	2.2				ug/L	311830	Standard
	As	75	28.5	62.1	**0.0581**	0.022	38.3	ug/L	-58	Standard
	Se	82	98.5	3.5	**1.1800**	0.060	5.1	ug/L	25	Standard
	Se-1	77	123.3	3.8	**0.8675**	0.108	12.4	ug/L	90	Standard
>	**Ga**	71	63.3	9.1				mg/L	18	Standard
	Rb	85	313.3	17.1				ug/L	27	Standard
	Y	89	296626.8	2.7				ug/L	295023	Standard
>	**Rh**	103	48.3	11.9				ug/L	7	Standard
	Mo	98	35.9	6.6	**0.0164**	0.002	9.3	ug/L	10	Standard
	Ag	107	84.3	6.8	**0.0023**	0.001	35.8	ug/L	58	Standard
	Cd	111	8.2	25.1	**0.0030**	0.001	46.9	mg/L	4	Standard
	Cd	114	14.2	25.0	**-0.0086**	0.001	10.5	ug/L	-1	Standard
>	**In**	115	481860.2	1.5				ug/L	427691	Standard
	Sn	118	403.3	13.9	**0.0168**	0.012	68.9	ug/L	273	Standard
	Sb	123	89.2	1.7	**0.0203**	0.001	3.2	ug/L	55	Standard
	Ba	135	259.0	3.9	**0.0982**	0.004	4.1	ug/L	39	Standard
	Ce	140	135.0	11.1				ug/L	28	Standard
>	**Tb**	159	930979.1	1.3				ug/L	886833	Standard
	Ho	165	10.0	86.6				ug/L	10	Standard
	Tl	203	17.0	66.8	**-0.0006**	0.002	291.8	ug/L	2	Standard
	Tl	205	15.0	88.2	**0.0050**	0.003	54.3	ug/L	0	Standard
	Pb	206	380.3	3.4	**0.0238**	0.002	9.0	ug/L	199	Standard
	Pb	207	328.7	4.4	**0.0250**	0.004	15.8	ug/L	178	Standard
	Pb	208	1138.0	4.6	**0.0240**	0.004	15.2	ug/L	654	Standard
	U	238	1230.0	2.0	**0.2403**	0.005	2.2	ug/L	1	Standard
>	**Bi**	209	438845.1	1.1				ug/L	418387	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4840.8	3.1	**10.9279**	0.306	2.8	mg/L	27	Standard
K	39	25.0	34.6	**0.1952**	0.104	53.4	mg/L	20	Standard
Ca	43	53.3	19.5	**2.7959**	1.264	45.2	mg/L	40	Standard
Fe	54	400.6	12.9	**0.7413**	0.098	13.3	mg/L	74	Standard
Fe	57	915.0	16.3	**1.3782**	1.208	87.6	mg/L	697	Standard
> **Sc-1**	45	28767.3	2.0				mg/L	28998	Standard
Cl	35	10217.4	2.1				ug/L	6091	Standard
Kr	83	4.3	87.4				ug/L	6	Standard
Br	81	1570.1	5.1				ug/L	383	Standard
P	31	10527.0	0.8				ug/L	8849	Standard
S	34	1125.0	5.4				ug/L	937	Standard
Sr	88	193.3	9.1				ug/L	188	Standard
C	12	293.3	24.2				mg/L	167	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.7	96.4				mg/L	12	Standard
Ho-1	165	10.0	86.6				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	15571.3	1.4				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		122.249	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.621	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.665
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.890
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, August 27, 2015 16:20:12
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	54124.8	1.4				ug/L	44982	Standard
	Be	9	33189.7	2.5	**46.0221**	0.498	1.1	ug/L	8	Standard
	Al	27	3584522.9	3.6	**44.1146**	1.146	2.6	ug/L	318	Standard
	Sc	45	28939.3	1.9				ug/L	28998	Standard
	Ti	47	18452.2	2.8	**101.5764**	3.355	3.3	ug/L	21	Standard
	V	51	193965.1	0.2	**51.9526**	0.534	1.0	ug/L	1052	Standard
	Cr	52	246803.2	0.6	**49.1464**	0.734	1.5	ug/L	6637	Standard
	Cr	53	29869.4	3.2	**49.0658**	1.923	3.9	ug/L	328	Standard
	Mn	55	175405.9	0.8	**53.8147**	0.644	1.2	ug/L	636	Standard
	Co	59	182662.2	0.7	**52.2113**	0.769	1.5	ug/L	199	Standard
	Ni	60	66994.8	1.7	**49.2894**	1.062	2.2	ug/L	185	Standard
	Cu	65	63425.8	1.5	**47.6633**	1.058	2.2	ug/L	133	Standard
	Zn	66	35971.0	0.5	**47.2875**	0.580	1.2	ug/L	187	Standard
>	Ge	72	305197.6	0.9				ug/L	311830	Standard
	As	75	36698.8	0.8	**47.4184**	0.535	1.1	ug/L	-58	Standard
	Se	82	3089.8	2.2	**49.4141**	0.658	1.3	ug/L	25	Standard
	Se-1	77	2255.8	2.7	**49.4699**	1.680	3.4	ug/L	90	Standard
>	Ga	71	36.7	39.4				mg/L	18	Standard
	Rb	85	528.3	5.5				ug/L	27	Standard
	Y	89	302010.9	1.8				ug/L	295023	Standard
>	Rh	103	51.7	20.1				ug/L	7	Standard
	Mo	98	148271.9	1.5	**93.0853**	1.905	2.0	ug/L	10	Standard
	Ag	107	254095.0	1.0	**44.8375**	0.185	0.4	ug/L	58	Standard
	Cd	111	74943.5	0.7	**48.9052**	0.389	0.8	mg/L	4	Standard
	Cd	114	194463.2	4.3	**47.7461**	1.864	3.9	ug/L	-1	Standard
>	In	115	485728.5	0.6				ug/L	427691	Standard
	Sn	118	224382.7	0.9	**43.9004**	0.467	1.1	ug/L	273	Standard
	Sb	123	200043.2	0.9	**46.4045**	0.338	0.7	ug/L	55	Standard
	Ba	135	96061.6	1.3	**43.8595**	0.818	1.9	ug/L	39	Standard
	Ce	140	81.7	28.9				ug/L	28	Standard
>	Tb	159	950018.3	1.0				ug/L	886833	Standard
	Ho	165	8.3	124.9				ug/L	10	Standard
	Tl	203	333212.6	0.8	**46.7776**	0.394	0.8	ug/L	2	Standard
	Tl	205	241487.7	1.1	**48.4237**	0.439	0.9	ug/L	0	Standard
	Pb	206	214715.0	0.5	**47.1626**	0.078	0.2	ug/L	199	Standard
	Pb	207	194994.8	0.6	**47.4584**	0.171	0.4	ug/L	178	Standard
	Pb	208	684014.4	0.9	**46.1806**	0.518	1.1	ug/L	654	Standard
	U	238	239994.8	0.5	**46.5637**	0.156	0.3	ug/L	1	Standard
>	Bi	209	445162.7	0.4				ug/L	418387	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	2033.5	0.9	**4.5350**	0.112	2.5	mg/L	27	Standard
K	39	395.0	9.6	**4.9463**	0.539	10.9	mg/L	20	Standard
Ca	43	68.3	41.6	**4.7504**	3.655	76.9	mg/L	40	Standard
Fe	54	2116.5	1.2	**4.6098**	0.042	0.9	mg/L	74	Standard
Fe	57	1406.7	8.7	**5.5595**	0.994	17.9	mg/L	697	Standard
> **Sc-1**	45	28939.3	1.9				mg/L	28998	Standard
Cl	35	9206.8	2.5				ug/L	6091	Standard
Kr	83	5.0	52.9				ug/L	6	Standard
Br	81	600.0	3.3				ug/L	383	Standard
P	31	11477.7	2.9				ug/L	8849	Standard
S	34	1265.1	3.8				ug/L	937	Standard
Sr	88	160.0	18.8				ug/L	188	Standard
C	12	200.0	20.0				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.9	45.1				mg/L	12	Standard
Ho-1	165	8.3	124.9				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	3685.4	4.5				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	92.044		
Al	27	88.229		
Sc	45			
Ti	47	101.576		
V	51	103.905		
Cr	52	98.293		
Cr	53			
Mn	55	107.629		
Co	59	104.423		
Ni	60	98.579		
Cu	65	95.327		
Zn	66	94.575		
> Ge	72		97.873	
As	75	94.837		
Se	82	98.828		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	93.085		
Ag	107	89.675		
Cd	111	97.810		
Cd	114			
> In	115		113.570	
Sn	118	87.801		
Sb	123	92.809		
Ba	135	87.719		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	93.555		
Tl	205			
Pb	206			
Pb	207			
Pb	208	92.361		
U	238	93.127		
> Bi	209		106.400	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	
QC Std 6	Ag	107	
QC Std 6	Ba	135	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, August 27, 2015 16:23:23
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54319.0	5.2				ug/L	44982	Standard
	Be	9	11.7	49.5	**0.0058**	0.007	127.9	ug/L	8	Standard
	Al	27	1163.4	4.3	**0.0101**	0.001	9.6	ug/L	318	Standard
	Sc	45	28233.0	2.1				ug/L	28998	Standard
	Ti	47	17.7	40.9	**-0.0200**	0.039	193.6	ug/L	21	Standard
	V	51	881.9	5.9	**-0.0298**	0.012	41.4	ug/L	1052	Standard
	Cr	52	5517.7	2.3	**-0.2015**	0.042	20.7	ug/L	6637	Standard
	Cr	53	403.3	9.3	**0.0637**	0.068	106.6	ug/L	328	Standard
	Mn	55	641.7	4.8	**-0.0008**	0.008	1067.0	ug/L	636	Standard
	Co	59	240.7	4.6	**0.0080**	0.004	46.8	ug/L	199	Standard
	Ni	60	524.0	5.6	**0.2446**	0.021	8.4	ug/L	185	Standard
	Cu	65	204.7	8.7	**0.0348**	0.012	33.8	ug/L	133	Standard
	Zn	66	233.3	2.6	**-0.4430**	0.013	3.0	ug/L	187	Standard
>	**Ge**	72	301911.1	1.6				ug/L	311830	Standard
	As	75	-31.0	210.2	**-0.0203**	0.086	420.4	ug/L	-58	Standard
	Se	82	21.4	19.2	**-0.0822**	0.061	74.5	ug/L	25	Standard
	Se-1	77	90.3	12.9	**0.1015**	0.277	272.6	ug/L	90	Standard
>	**Ga**	71	31.7	9.1				mg/L	18	Standard
	Rb	85	31.7	9.1				ug/L	27	Standard
	Y	89	301791.1	3.1				ug/L	295023	Standard
>	**Rh**	103	38.3	27.2				ug/L	7	Standard
	Mo	98	54.0	3.9	**0.0280**	0.001	3.7	ug/L	10	Standard
	Ag	107	76.3	10.6	**0.0009**	0.001	155.3	ug/L	58	Standard
	Cd	111	10.2	22.5	**0.0043**	0.001	33.3	mg/L	4	Standard
	Cd	114	29.9	76.7	**-0.0048**	0.006	118.6	ug/L	-1	Standard
>	**In**	115	479844.2	1.2				ug/L	427691	Standard
	Sn	118	440.0	20.5	**0.0243**	0.017	69.9	ug/L	273	Standard
	Sb	123	731.1	6.9	**0.1710**	0.010	6.1	ug/L	55	Standard
	Ba	135	37.0	9.7	**-0.0040**	0.002	44.0	ug/L	39	Standard
	Ce	140	21.7	26.6				ug/L	28	Standard
>	**Tb**	159	942673.8	1.4				ug/L	886833	Standard
	Ho	165	5.0	173.2				ug/L	10	Standard
	Tl	203	18.3	11.4	**-0.0004**	0.000	61.3	ug/L	2	Standard
	Tl	205	18.3	31.5	**0.0056**	0.001	20.0	ug/L	0	Standard
	Pb	206	227.0	7.3	**-0.0117**	0.004	30.3	ug/L	199	Standard
	Pb	207	214.0	6.1	**-0.0046**	0.003	75.5	ug/L	178	Standard
	Pb	208	721.3	2.7	**-0.0058**	0.002	26.3	ug/L	654	Standard
	U	238	11.7	17.8	**0.0004**	0.000	87.5	ug/L	1	Standard
>	**Bi**	209	449873.6	0.8				ug/L	418387	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	60.0	43.3	**0.0893**	0.062	69.7	mg/L	27	Standard
K	39	11.7	49.5	**0.0268**	0.075	278.7	mg/L	20	Standard
Ca	43	40.0	33.1	**1.0795**	1.696	157.1	mg/L	40	Standard
Fe	54	67.7	27.8	**-0.0109**	0.040	364.7	mg/L	74	Standard
Fe	57	831.7	10.5	**0.7948**	0.632	79.5	mg/L	697	Standard
> **Sc-1**	45	28233.0	2.1				mg/L	28998	Standard
Cl	35	9218.8	0.9				ug/L	6091	Standard
Kr	83	4.7	24.7				ug/L	6	Standard
Br	81	526.7	12.4				ug/L	383	Standard
P	31	10817.2	5.2				ug/L	8849	Standard
S	34	1286.7	2.5				ug/L	937	Standard
Sr	88	156.7	16.4				ug/L	188	Standard
C	12	230.0	15.1				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.5	0.0				mg/L	12	Standard
Ho-1	165	5.0	173.2				mg/L	10	Standard
Er	166	10.0					mg/L	23	Standard
I	127	3998.9	6.5				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.819	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.194
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.526
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, August 27, 2015 16:26:36
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	53253.5	3.5				ug/L	44982	Standard
	Be	9	151.7	13.3	**0.2034**	0.024	11.6	ug/L	8	Standard
	Al	27	965.0	7.2	**0.0079**	0.001	16.1	ug/L	318	Standard
	Sc	45	28224.6	4.3				ug/L	28998	Standard
	Ti	47	22.7	40.0	**0.0109**	0.051	469.5	ug/L	21	Standard
	V	51	2389.5	2.8	**0.3946**	0.032	8.2	ug/L	1052	Standard
	Cr	52	9684.4	2.4	**0.7021**	0.062	8.9	ug/L	6637	Standard
	Cr	53	920.0	4.8	**0.9655**	0.106	11.0	ug/L	328	Standard
	Mn	55	2456.2	1.0	**0.5804**	0.026	4.5	ug/L	636	Standard
	Co	59	1614.1	1.7	**0.4152**	0.016	3.8	ug/L	199	Standard
	Ni	60	2524.2	2.1	**1.7760**	0.023	1.3	ug/L	185	Standard
	Cu	65	1143.0	4.2	**0.7673**	0.010	1.3	ug/L	133	Standard
	Zn	66	4722.1	1.3	**5.7530**	0.194	3.4	ug/L	187	Standard
>	Ge	72	295782.3	3.1				ug/L	311830	Standard
	As	75	250.9	8.8	**0.3553**	0.026	7.2	ug/L	-58	Standard
	Se	82	45.7	9.5	**0.3297**	0.058	17.6	ug/L	25	Standard
	Se-1	77	99.7	13.8	**0.3590**	0.271	75.6	ug/L	90	Standard
>	Ga	71	26.7	21.7				mg/L	18	Standard
	Rb	85	16.7	75.5				ug/L	27	Standard
	Y	89	298608.5	4.0				ug/L	295023	Standard
>	Rh	103	35.0	0.0				ug/L	7	Standard
	Mo	98	21.4	16.9	**0.0075**	0.002	33.1	ug/L	10	Standard
	Ag	107	2030.1	4.5	**0.3556**	0.021	5.9	ug/L	58	Standard
	Cd	111	356.0	2.4	**0.2362**	0.003	1.1	mg/L	4	Standard
	Cd	114	902.5	14.1	**0.2153**	0.030	13.7	ug/L	-1	Standard
>	In	115	472881.7	1.8				ug/L	427691	Standard
	Sn	118	406.7	7.0	**0.0190**	0.006	31.8	ug/L	273	Standard
	Sb	123	1682.1	3.6	**0.4005**	0.021	5.2	ug/L	55	Standard
	Ba	135	1370.7	1.1	**0.6221**	0.009	1.4	ug/L	39	Standard
	Ce	140	20.0	25.0				ug/L	28	Standard
>	Tb	159	917520.3	2.1				ug/L	886833	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	528.0	3.7	**0.0724**	0.003	4.3	ug/L	2	Standard
	Tl	205	375.0	15.0	**0.0785**	0.013	16.8	ug/L	0	Standard
	Pb	206	1102.0	2.8	**0.1854**	0.011	6.1	ug/L	199	Standard
	Pb	207	933.0	2.0	**0.1749**	0.008	4.5	ug/L	178	Standard
	Pb	208	3371.8	1.4	**0.1777**	0.006	3.5	ug/L	654	Standard
	U	238	1810.1	1.8	**0.3552**	0.008	2.3	ug/L	1	Standard
>	Bi	209	437989.3	2.0				ug/L	418387	Standard

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Na	23	1.7	173.2	**3.0448**	5.265	172.9	mg/L	2	Standard
Mg	24	46.7	30.9	**0.0580**	0.035	59.9	mg/L	27	Standard
K	39	8.3	91.7	**-0.0147**	0.104	711.5	mg/L	20	Standard
Ca	43	25.0	34.6	**-0.9591**	1.243	129.6	mg/L	40	Standard
Fe	54	61.1	20.7	**-0.0258**	0.026	101.5	mg/L	74	Standard
Fe	57	821.7	2.9	**0.7308**	0.509	69.6	mg/L	697	Standard
Sc-1	45	28224.6	4.3				mg/L	28998	Standard
Cl	35	8891.3	0.9				ug/L	6091	Standard
Kr	83	4.3	26.6				ug/L	6	Standard
Br	81	563.3	14.2				ug/L	383	Standard
P	31	10210.1	2.7				ug/L	8849	Standard
S	34	1131.7	8.3				ug/L	937	Standard
Sr	88	190.0	20.6				ug/L	188	Standard
C	12	170.0	36.7				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	2.7	235.5				mg/L	12	Standard
Ho-1	165	8.3	69.3				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	3732.1	6.4				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	101.709		
Al	27			
Sc	45			
Ti	47			
V	51	98.652		
Cr	52	87.761		
Cr	53			
Mn	55	116.087		
Co	59	103.812		
Ni	60	110.998		
Cu	65	95.910		
Zn	66	92.049		
Ge	72		94.854	
As	75	88.833		
Se	82	82.434		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	88.888		
Cd	111	98.405		
Cd	114			
> In	115			110.566
Sn	118			
Sb	123	100.114		
Ba	135	82.948		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	90.466		
Tl	205			
Pb	206			
Pb	207			
Pb	208	88.837		
U	238	88.808		
> Bi	209			104.685
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
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Method 6020 - Summary Report

Sample ID: L1508135801
Sample Date/Time: Thursday, August 27, 2015 16:29:48
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57714.8	2.5				ug/L	44982	Standard
	Be	9	8.3	91.7	**0.0006**	0.010	1630.6	ug/L	8	Standard
	Al	27	3680830.1	1.2	**42.5012**	0.948	2.2	ug/L	318	Standard
	Sc	45	29483.7	1.0				ug/L	28998	Standard
	Ti	47	101.7	46.6	**0.4541**	0.265	58.5	ug/L	21	Standard
	V	51	1427.0	4.2	**0.1226**	0.018	14.7	ug/L	1052	Standard
	Cr	52	7289.4	2.3	**0.1795**	0.031	17.5	ug/L	6637	Standard
	Cr	53	1476.7	11.9	**1.8945**	0.323	17.0	ug/L	328	Standard
	Mn	55	628636.6	1.2	**197.4364**	0.535	0.3	ug/L	636	Standard
	Co	59	1452.1	3.3	**0.3626**	0.014	3.8	ug/L	199	Standard
	Ni	60	2304.8	3.3	**1.5903**	0.065	4.1	ug/L	185	Standard
	Cu	65	547.3	4.1	**0.3000**	0.019	6.2	ug/L	133	Standard
	Zn	66	1927.5	1.9	**1.8703**	0.053	2.8	ug/L	187	Standard
>	**Ge**	72	298921.1	1.0				ug/L	311830	Standard
	As	75	103.6	38.9	**0.1573**	0.052	33.1	ug/L	-58	Standard
	Se	82	63.7	8.1	**0.6185**	0.076	12.4	ug/L	25	Standard
	Se-1	77	156.0	6.1	**1.6518**	0.255	15.4	ug/L	90	Standard
>	**Ga**	71	31.7	55.5				mg/L	18	Standard
	Rb	85	638.3	7.3				ug/L	27	Standard
	Y	89	292582.1	2.1				ug/L	295023	Standard
>	**Rh**	103	76.7	16.4				ug/L	7	Standard
	Mo	98	119.4	2.3	**0.0709**	0.001	2.1	ug/L	10	Standard
	Ag	107	106.3	10.1	**0.0066**	0.002	29.6	ug/L	58	Standard
	Cd	111	30.1	3.8	**0.0178**	0.001	4.0	mg/L	4	Standard
	Cd	114	71.0	34.8	**0.0058**	0.006	107.6	ug/L	-1	Standard
>	**In**	115	471286.9	0.4				ug/L	427691	Standard
	Sn	118	585.0	6.7	**0.0553**	0.008	14.5	ug/L	273	Standard
	Sb	123	325.4	7.8	**0.0772**	0.006	7.5	ug/L	55	Standard
	Ba	135	41506.8	1.1	**19.5189**	0.233	1.2	ug/L	39	Standard
	Ce	140	748.4	4.3				ug/L	28	Standard
>	**Tb**	159	925269.0	1.2				ug/L	886833	Standard
	Ho	165	33.3	34.6				ug/L	10	Standard
	Tl	203	138.7	4.7	**0.0170**	0.001	5.4	ug/L	2	Standard
	Tl	205	96.7	31.2	**0.0218**	0.006	28.5	ug/L	0	Standard
	Pb	206	299.7	6.7	**0.0064**	0.004	67.7	ug/L	199	Standard
	Pb	207	272.7	4.7	**0.0119**	0.004	29.7	ug/L	178	Standard
	Pb	208	996.0	1.5	**0.0150**	0.001	8.9	ug/L	654	Standard
	U	238	152.3	8.2	**0.0285**	0.002	8.3	ug/L	1	Standard
>	**Bi**	209	434375.3	0.5				ug/L	418387	Standard

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Na	23	11.7	24.7	**19.4303**	5.000	25.7	mg/L	2	Standard
Mg	24	5946.2	1.6	**13.1070**	0.232	1.8	mg/L	27	Standard
K	39	88.3	57.3	**0.9897**	0.643	64.9	mg/L	20	Standard
Ca	43	308.3	9.4	**36.4588**	4.146	11.4	mg/L	40	Standard
Fe	54	102.8	20.3	**0.0611**	0.048	79.0	mg/L	74	Standard
Fe	57	1085.0	9.2	**2.6283**	0.856	32.6	mg/L	697	Standard
> **Sc-1**	45	29483.7	1.0				mg/L	28998	Standard
Cl	35	10290.2	3.3				ug/L	6091	Standard
Kr	83	6.0	33.3				ug/L	6	Standard
Br	81	3820.5	2.3				ug/L	383	Standard
P	31	12591.9	1.4				ug/L	8849	Standard
S	34	1070.0	9.8				ug/L	937	Standard
Sr	88	248.3	16.8				ug/L	188	Standard
C	12	260.0	26.9				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	27.3	39.4				mg/L	12	Standard
Ho-1	165	33.3	34.6				mg/L	10	Standard
Er	166	56.7	36.7				mg/L	23	Standard
I	127	37389.5	4.2				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.307	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.860	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.193
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.821
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508135802
Sample Date/Time: Thursday, August 27, 2015 16:33:00
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59382.9	4.2				ug/L	44982	Standard
	Be	9	41.7	13.9	**0.0428**	0.009	21.6	ug/L	8	Standard
	Al	27	11655002.3	1.7	**130.8555**	3.402	2.6	ug/L	318	Standard
	Sc	45	28471.7	1.3				ug/L	28998	Standard
	Ti	47	109.7	29.8	**0.5083**	0.183	36.0	ug/L	21	Standard
	V	51	4358.8	1.5	**0.9473**	0.011	1.2	ug/L	1052	Standard
	Cr	52	8391.7	1.4	**0.4375**	0.022	5.1	ug/L	6637	Standard
	Cr	53	688.3	16.3	**0.5716**	0.186	32.5	ug/L	328	Standard
	Mn	55	198332.7	1.0	**63.1405**	0.603	1.0	ug/L	636	Standard
	Co	59	1530.4	2.3	**0.3927**	0.017	4.3	ug/L	199	Standard
	Ni	60	9271.8	2.9	**6.9495**	0.229	3.3	ug/L	185	Standard
	Cu	65	1405.7	5.4	**0.9768**	0.044	4.5	ug/L	133	Standard
	Zn	66	5363.6	1.2	**6.6715**	0.075	1.1	ug/L	187	Standard
>	**Ge**	72	294285.8	1.4				ug/L	311830	Standard
	As	75	937.2	7.6	**1.2761**	0.090	7.0	ug/L	-58	Standard
	Se	82	83.5	11.0	**0.9682**	0.166	17.2	ug/L	25	Standard
	Se-1	77	117.3	8.1	**0.7914**	0.190	24.0	ug/L	90	Standard
>	**Ga**	71	36.7	34.3				mg/L	18	Standard
	Rb	85	9936.6	5.0				ug/L	27	Standard
	Y	89	304773.7	1.8				ug/L	295023	Standard
>	**Rh**	103	116.7	25.1				ug/L	7	Standard
	Mo	98	2544.7	2.1	**1.6159**	0.037	2.3	ug/L	10	Standard
	Ag	107	99.3	7.6	**0.0051**	0.001	25.1	ug/L	58	Standard
	Cd	111	271.4	8.3	**0.1774**	0.016	8.9	mg/L	4	Standard
	Cd	114	749.4	11.3	**0.1748**	0.022	12.7	ug/L	-1	Standard
>	**In**	115	478358.3	0.7				ug/L	427691	Standard
	Sn	118	1950.1	4.3	**0.3252**	0.019	5.8	ug/L	273	Standard
	Sb	123	803.9	3.6	**0.1888**	0.007	3.5	ug/L	55	Standard
	Ba	135	16108.2	0.3	**7.4502**	0.068	0.9	ug/L	39	Standard
	Ce	140	2992.0	5.0				ug/L	28	Standard
>	**Tb**	159	913224.9	0.5				ug/L	886833	Standard
	Ho	165	623.3	11.6				ug/L	10	Standard
	Tl	203	265.7	10.2	**0.0355**	0.004	11.1	ug/L	2	Standard
	Tl	205	178.3	11.7	**0.0389**	0.004	11.6	ug/L	0	Standard
	Pb	206	319.7	9.9	**0.0115**	0.007	59.2	ug/L	199	Standard
	Pb	207	271.7	3.0	**0.0121**	0.003	21.2	ug/L	178	Standard
	Pb	208	968.3	4.0	**0.0135**	0.003	19.2	ug/L	654	Standard
	U	238	915.4	2.7	**0.1815**	0.004	2.0	ug/L	1	Standard
>	**Bi**	209	431259.6	0.8				ug/L	418387	Standard

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Na	23	11.7	24.7	**20.1315**	5.245	26.1	mg/L	2	Standard
Mg	24	7858.7	4.5	**17.9526**	0.644	3.6	mg/L	27	Standard
K	39	143.3	10.1	**1.7419**	0.167	9.6	mg/L	20	Standard
Ca	43	838.4	4.2	**110.6284**	4.191	3.8	mg/L	40	Standard
Fe	54	79.1	28.9	**0.0144**	0.052	359.1	mg/L	74	Standard
Fe	57	1105.0	5.6	**3.1317**	0.649	20.7	mg/L	697	Standard
> **Sc-1**	45	28471.7	1.3				mg/L	28998	Standard
Cl	35	14950.0	3.9				ug/L	6091	Standard
Kr	83	6.3	50.8				ug/L	6	Standard
Br	81	2093.5	5.6				ug/L	383	Standard
P	31	13616.1	3.8				ug/L	8849	Standard
S	34	1035.0	6.1				ug/L	937	Standard
Sr	88	256.7	20.6				ug/L	188	Standard
C	12	766.7	28.9				mg/L	167	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	636.7	9.9				mg/L	12	Standard
Ho-1	165	623.3	11.6				mg/L	10	Standard
Er	166	486.7	11.7				mg/L	23	Standard
I	127	11604.4	2.1				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.016	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.374	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.847
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.077
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1508135803
Sample Date/Time: Thursday, August 27, 2015 16:36:11
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56815.1	7.6				ug/L	44982	Standard
	Be	9	93.3	11.2	**0.1131**	0.006	4.9	ug/L	8	Standard
	Al	27	19054452.9	4.9	**223.7634**	6.622	3.0	ug/L	318	Standard
	Sc	45	27002.4	6.8				ug/L	28998	Standard
	Ti	47	125.0	11.1	**0.6346**	0.065	10.2	ug/L	21	Standard
	V	51	1390.5	11.2	**0.1386**	0.024	17.4	ug/L	1052	Standard
	Cr	52	6870.2	4.3	**0.1941**	0.027	13.7	ug/L	6637	Standard
	Cr	53	1163.4	3.3	**1.5019**	0.058	3.8	ug/L	328	Standard
	Mn	55	15541237.9	4.7	**5232.6104**	73.577	1.4	ug/L	636	Standard
	Co	59	81166.4	3.9	**25.3425**	0.533	2.1	ug/L	199	Standard
	Ni	60	95209.6	6.0	**76.6275**	0.264	0.3	ug/L	185	Standard
	Cu	65	2013.1	8.3	**1.5349**	0.049	3.2	ug/L	133	Standard
	Zn	66	36412.5	5.6	**52.4000**	0.390	0.7	ug/L	187	Standard
>	**Ge**	72	279232.3	5.7				ug/L	311830	Standard
	As	75	1229.9	5.4	**1.7574**	0.013	0.7	ug/L	-58	Standard
	Se	82	535.4	5.3	**9.0138**	0.218	2.4	ug/L	25	Standard
	Se-1	77	141.0	10.0	**1.5271**	0.169	11.0	ug/L	90	Standard
>	**Ga**	71	321.7	20.6				mg/L	18	Standard
	Rb	85	820.0	2.8				ug/L	27	Standard
	Y	89	344436.6	3.9				ug/L	295023	Standard
>	**Rh**	103	120.0	15.0				ug/L	7	Standard
	Mo	98	38.2	45.7	**0.0190**	0.011	57.1	ug/L	10	Standard
	Ag	107	80.0	26.0	**0.0023**	0.004	154.2	ug/L	58	Standard
	Cd	111	3507.0	3.7	**2.4363**	0.053	2.2	mg/L	4	Standard
	Cd	114	8896.1	6.2	**2.3141**	0.046	2.0	ug/L	-1	Standard
>	**In**	115	456039.9	4.7				ug/L	427691	Standard
	Sn	118	616.7	10.1	**0.0656**	0.007	10.9	ug/L	273	Standard
	Sb	123	129.9	28.1	**0.0314**	0.008	26.2	ug/L	55	Standard
	Ba	135	10470.3	5.3	**5.0719**	0.069	1.4	ug/L	39	Standard
	Ce	140	46551.5	4.1				ug/L	28	Standard
>	**Tb**	159	893978.6	4.6				ug/L	886833	Standard
	Ho	165	4389.0	2.7				ug/L	10	Standard
	Tl	203	99.0	14.7	**0.0122**	0.003	23.3	ug/L	2	Standard
	Tl	205	86.7	60.0	**0.0207**	0.011	52.3	ug/L	0	Standard
	Pb	206	1694.4	3.8	**0.3446**	0.007	2.0	ug/L	199	Standard
	Pb	207	1432.4	7.0	**0.3237**	0.021	6.4	ug/L	178	Standard
	Pb	208	5127.7	6.1	**0.3231**	0.012	3.6	ug/L	654	Standard
	U	238	85.7	19.0	**0.0163**	0.003	19.7	ug/L	1	Standard
>	**Bi**	209	408982.0	4.1				ug/L	418387	Standard

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Na	23	15.0	120.2	**28.5637**	35.697	125.0	mg/L	2	Standard
Mg	24	34910.2	4.7	**84.3836**	2.466	2.9	mg/L	27	Standard
K	39	45.0	29.4	**0.5031**	0.231	45.9	mg/L	20	Standard
Ca	43	928.4	9.2	**130.7779**	20.049	15.3	mg/L	40	Standard
Fe	54	94.2	24.9	**0.0597**	0.048	79.7	mg/L	74	Standard
Fe	57	1310.1	5.2	**5.5688**	0.905	16.2	mg/L	697	Standard
> **Sc-1**	45	27002.4	6.8				mg/L	28998	Standard
Cl	35	18239.7	5.6				ug/L	6091	Standard
Kr	83	4.0	25.0				ug/L	6	Standard
Br	81	48303.6	3.2				ug/L	383	Standard
P	31	13959.8	3.5				ug/L	8849	Standard
S	34	1145.0	5.0				ug/L	937	Standard
Sr	88	263.3	31.9				ug/L	188	Standard
C	12	440.0	12.0				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6756.8	0.7				mg/L	12	Standard
Ho-1	165	4389.0	2.7				mg/L	10	Standard
Er	166	3787.1	11.4				mg/L	23	Standard
I	127	12585.2	2.2				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		126.307	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		89.546	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	106.628
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.752
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508135804
Sample Date/Time: Thursday, August 27, 2015 16:39:23
Number of Replicates: 3
Autosampler Position: 227
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	93540.4	6.8				ug/L	44982	Standard
	Be	9	26.7	28.6	**0.0117**	0.008	66.7	ug/L	8	Standard
	Al	27	20212539.3	4.9	**144.1175**	4.326	3.0	ug/L	318	Standard
	Sc	45	30071.5	4.3				ug/L	28998	Standard
	Ti	47	139.3	12.8	**0.6557**	0.130	19.8	ug/L	21	Standard
	V	51	1636.1	6.0	**0.1718**	0.008	4.9	ug/L	1052	Standard
	Cr	52	8158.2	3.1	**0.3315**	0.022	6.8	ug/L	6637	Standard
	Cr	53	1386.7	4.0	**1.6989**	0.054	3.2	ug/L	328	Standard
	Mn	55	5083258.3	4.4	**1569.7459**	4.623	0.3	ug/L	636	Standard
	Co	59	5015.5	4.1	**1.3780**	0.017	1.3	ug/L	199	Standard
	Ni	60	27077.5	5.1	**19.8879**	0.168	0.8	ug/L	185	Standard
	Cu	65	2171.2	6.2	**1.5186**	0.031	2.1	ug/L	133	Standard
	Zn	66	5568.7	5.2	**6.7019**	0.235	3.5	ug/L	187	Standard
>	**Ge**	72	304284.3	4.3				ug/L	311830	Standard
	As	75	1367.4	3.2	**1.7928**	0.020	1.1	ug/L	-58	Standard
	Se	82	580.4	3.4	**8.9650**	0.087	1.0	ug/L	25	Standard
	Se-1	77	144.7	7.6	**1.3360**	0.370	27.7	ug/L	90	Standard
>	**Ga**	71	165.0	21.2				mg/L	18	Standard
	Rb	85	5192.6	1.6				ug/L	27	Standard
	Y	89	326597.6	5.5				ug/L	295023	Standard
>	**Rh**	103	243.3	16.6				ug/L	7	Standard
	Mo	98	57.9	2.9	**0.0283**	0.003	9.5	ug/L	10	Standard
	Ag	107	100.3	3.0	**0.0041**	0.001	29.5	ug/L	58	Standard
	Cd	111	467.5	3.8	**0.2877**	0.015	5.0	mg/L	4	Standard
	Cd	114	1173.0	7.5	**0.2613**	0.009	3.5	ug/L	-1	Standard
>	**In**	115	511403.7	4.7				ug/L	427691	Standard
	Sn	118	511.7	16.2	**0.0321**	0.012	36.2	ug/L	273	Standard
	Sb	123	168.2	4.1	**0.0365**	0.002	5.3	ug/L	55	Standard
	Ba	135	17241.1	2.6	**7.4638**	0.164	2.2	ug/L	39	Standard
	Ce	140	14972.4	1.4				ug/L	28	Standard
>	**Tb**	159	968834.8	3.7				ug/L	886833	Standard
	Ho	165	785.0	8.4				ug/L	10	Standard
	Tl	203	100.3	13.4	**0.0110**	0.001	12.3	ug/L	2	Standard
	Tl	205	76.7	37.7	**0.0174**	0.007	37.3	ug/L	0	Standard
	Pb	206	600.7	1.4	**0.0708**	0.007	10.1	ug/L	199	Standard
	Pb	207	480.3	7.2	**0.0605**	0.007	11.6	ug/L	178	Standard
	Pb	208	1817.4	3.8	**0.0685**	0.003	4.0	ug/L	654	Standard
	U	238	381.3	2.4	**0.0721**	0.004	5.8	ug/L	1	Standard
>	**Bi**	209	446375.1	4.0				ug/L	418387	Standard

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Na	23	25.0	20.0	**40.6566**	7.320	18.0	mg/L	2	Standard
Mg	24	32750.4	3.5	**71.0194**	1.350	1.9	mg/L	27	Standard
K	39	281.7	19.5	**3.3397**	0.577	17.3	mg/L	20	Standard
Ca	43	1196.7	4.8	**151.0827**	2.764	1.8	mg/L	40	Standard
Fe	54	87.5	14.3	**0.0242**	0.035	145.5	mg/L	74	Standard
Fe	57	1353.4	0.6	**4.6783**	0.437	9.3	mg/L	697	Standard
> **Sc-1**	45	30071.5	4.3				mg/L	28998	Standard
Cl	35	21097.4	6.5				ug/L	6091	Standard
Kr	83	7.3	7.9				ug/L	6	Standard
Br	81	51383.9	6.4				ug/L	383	Standard
P	31	13245.8	4.0				ug/L	8849	Standard
S	34	1266.7	8.3				ug/L	937	Standard
Sr	88	356.7	5.8				ug/L	188	Standard
C	12	740.0	3.6				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	1220.5	2.4				mg/L	12	Standard
Ho-1	165	785.0	8.4				mg/L	10	Standard
Er	166	616.7	5.7				mg/L	23	Standard
I	127	364115.3	4.4				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		207.952	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.580	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		119.573
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.689
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1508135804
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Method 6020 - Summary Report

Sample ID: L1508135805
Sample Date/Time: Thursday, August 27, 2015 16:42:34
Number of Replicates: 3
Autosampler Position: 228
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59384.7	5.5				ug/L	44982	Standard
	Be	9	21.7	13.3	**0.0175**	0.005	30.5	ug/L	8	Standard
	Al	27	5347421.9	3.3	**60.0467**	1.692	2.8	ug/L	318	Standard
	Sc	45	24007.4	3.8				ug/L	28998	Standard
	Ti	47	76.0	7.0	**0.3687**	0.038	10.4	ug/L	21	Standard
	V	51	920.7	9.6	**0.0186**	0.032	172.4	ug/L	1052	Standard
	Cr	52	5289.3	2.3	**-0.0861**	0.014	16.0	ug/L	6637	Standard
	Cr	53	898.4	5.3	**1.1200**	0.066	5.9	ug/L	328	Standard
	Mn	55	5746286.7	2.9	**2054.9169**	13.770	0.7	ug/L	636	Standard
	Co	59	7132.0	4.6	**2.3080**	0.051	2.2	ug/L	199	Standard
	Ni	60	3374.7	2.6	**2.7460**	0.026	0.9	ug/L	185	Standard
	Cu	65	999.4	2.9	**0.7535**	0.021	2.8	ug/L	133	Standard
	Zn	66	2654.9	5.8	**3.3583**	0.138	4.1	ug/L	187	Standard
>	**Ge**	72	262772.5	2.7				ug/L	311830	Standard
	As	75	1037.6	2.4	**1.5779**	0.043	2.7	ug/L	-58	Standard
	Se	82	74.8	3.8	**0.9728**	0.069	7.1	ug/L	25	Standard
	Se-1	77	120.3	14.9	**1.2043**	0.459	38.2	ug/L	90	Standard
>	**Ga**	71	118.3	19.1				mg/L	18	Standard
	Rb	85	866.7	10.4				ug/L	27	Standard
	Y	89	260916.7	2.5				ug/L	295023	Standard
>	**Rh**	103	63.3	18.2				ug/L	7	Standard
	Mo	98	70.1	14.6	**0.0438**	0.008	18.8	ug/L	10	Standard
	Ag	107	76.7	4.2	**0.0027**	0.001	23.2	ug/L	58	Standard
	Cd	111	91.2	7.7	**0.0651**	0.004	5.9	mg/L	4	Standard
	Cd	114	260.3	16.4	**0.0606**	0.013	21.3	ug/L	-1	Standard
>	**In**	115	427857.9	3.5				ug/L	427691	Standard
	Sn	118	546.7	9.0	**0.0591**	0.015	25.2	ug/L	273	Standard
	Sb	123	103.5	12.6	**0.0266**	0.003	9.6	ug/L	55	Standard
	Ba	135	16966.8	3.4	**8.7772**	0.010	0.1	ug/L	39	Standard
	Ce	140	3327.0	7.9				ug/L	28	Standard
>	**Tb**	159	827570.9	4.0				ug/L	886833	Standard
	Ho	165	93.3	20.3				ug/L	10	Standard
	Tl	203	129.3	8.5	**0.0175**	0.001	7.2	ug/L	2	Standard
	Tl	205	88.3	3.3	**0.0219**	0.001	3.2	ug/L	0	Standard
	Pb	206	315.0	6.3	**0.0172**	0.006	32.2	ug/L	199	Standard
	Pb	207	251.0	3.8	**0.0129**	0.004	32.8	ug/L	178	Standard
	Pb	208	916.3	2.1	**0.0159**	0.002	11.5	ug/L	654	Standard
	U	238	71.0	6.1	**0.0137**	0.001	3.9	ug/L	1	Standard
>	**Bi**	209	394396.8	2.7				ug/L	418387	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	8047.1	2.0	**21.8274**	0.495	2.3	mg/L	27	Standard
K	39	143.3	31.7	**2.0816**	0.647	31.1	mg/L	20	Standard
Ca	43	315.0	6.3	**46.8141**	1.546	3.3	mg/L	40	Standard
Fe	54	4632.0	4.6	**12.4438**	0.712	5.7	mg/L	74	Standard
Fe	57	2073.5	2.5	**14.9612**	0.848	5.7	mg/L	697	Standard
> **Sc-1**	45	24007.4	3.8				mg/L	28998	Standard
Cl	35	9821.2	1.6				ug/L	6091	Standard
Kr	83	4.3	53.3				ug/L	6	Standard
Br	81	5867.8	5.2				ug/L	383	Standard
P	31	12021.4	3.1				ug/L	8849	Standard
S	34	975.0	2.9				ug/L	937	Standard
Sr	88	245.0	10.8				ug/L	188	Standard
C	12	450.0	16.8				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	92.5	53.4				mg/L	12	Standard
Ho-1	165	93.3	20.3				mg/L	10	Standard
Er	166	86.7	26.6				mg/L	23	Standard
I	127	95150.4	6.8				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.020	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		84.268	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.039
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.266
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508135806
Sample Date/Time: Thursday, August 27, 2015 16:45:46
Number of Replicates: 3
Autosampler Position: 229
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55620.3	1.9				ug/L	44982	Standard
	Be	9	45.0	33.3	**0.0506**	0.020	39.2	ug/L	8	Standard
	Al	27	7832236.4	2.9	**93.8369**	3.179	3.4	ug/L	318	Standard
	Sc	45	28862.5	6.8				ug/L	28998	Standard
	Ti	47	157.0	6.7	**0.7660**	0.033	4.2	ug/L	21	Standard
	V	51	807.5	14.0	**-0.0468**	0.037	78.8	ug/L	1052	Standard
	Cr	52	5717.7	1.0	**-0.1463**	0.026	17.7	ug/L	6637	Standard
	Cr	53	4360.6	5.7	**6.7964**	0.199	2.9	ug/L	328	Standard
	Mn	55	68016478.6	3.4	**21416.1808**	180.765	0.8	ug/L	636	Standard
	Co	59	148189.8	2.5	**43.3107**	0.823	1.9	ug/L	199	Standard
	Ni	60	25852.1	3.2	**19.3591**	0.143	0.7	ug/L	185	Standard
	Cu	65	896.4	4.6	**0.5701**	0.042	7.3	ug/L	133	Standard
	Zn	66	6152.3	4.9	**7.6411**	0.152	2.0	ug/L	187	Standard
>	**Ge**	72	298462.5	3.1				ug/L	311830	Standard
	As	75	5177.6	0.8	**6.8619**	0.160	2.3	ug/L	-58	Standard
	Se	82	98.5	5.5	**1.1964**	0.090	7.5	ug/L	25	Standard
	Se-1	77	377.3	2.3	**6.8221**	0.294	4.3	ug/L	90	Standard
>	**Ga**	71	471.7	8.6				mg/L	18	Standard
	Rb	85	10291.8	1.7				ug/L	27	Standard
	Y	89	301534.0	6.5				ug/L	295023	Standard
>	**Rh**	103	105.0	9.5				ug/L	7	Standard
	Mo	98	104.3	6.6	**0.0616**	0.003	4.1	ug/L	10	Standard
	Ag	107	73.0	3.6	**0.0007**	0.000	30.7	ug/L	58	Standard
	Cd	111	46.5	10.9	**0.0291**	0.004	14.8	mg/L	4	Standard
	Cd	114	134.9	43.2	**0.0220**	0.014	63.1	ug/L	-1	Standard
>	**In**	115	467941.8	2.8				ug/L	427691	Standard
	Sn	118	561.7	4.5	**0.0515**	0.008	14.6	ug/L	273	Standard
	Sb	123	124.0	3.2	**0.0293**	0.001	3.4	ug/L	55	Standard
	Ba	135	71587.8	1.9	**33.9270**	0.406	1.2	ug/L	39	Standard
	Ce	140	14850.6	4.2				ug/L	28	Standard
>	**Tb**	159	914723.2	2.9				ug/L	886833	Standard
	Ho	165	365.0	13.1				ug/L	10	Standard
	Tl	203	57.7	4.4	**0.0054**	0.001	11.5	ug/L	2	Standard
	Tl	205	35.0	37.8	**0.0093**	0.003	32.7	ug/L	0	Standard
	Pb	206	914.4	5.1	**0.1468**	0.006	4.1	ug/L	199	Standard
	Pb	207	792.4	6.9	**0.1434**	0.010	7.3	ug/L	178	Standard
	Pb	208	2825.1	0.6	**0.1436**	0.006	4.3	ug/L	654	Standard
	U	238	67.7	6.2	**0.0118**	0.001	10.3	ug/L	1	Standard
>	**Bi**	209	430456.1	3.2				ug/L	418387	Standard

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Na	23	8.3	124.9	**14.2681**	17.392	121.9	mg/L	2	Standard
Mg	24	20879.4	4.2	**47.1984**	1.260	2.7	mg/L	27	Standard
K	39	35.0	14.3	**0.3285**	0.096	29.2	mg/L	20	Standard
Ca	43	381.7	17.4	**47.0296**	6.361	13.5	mg/L	40	Standard
Fe	54	24467.5	3.4	**55.2926**	2.307	4.2	mg/L	74	Standard
Fe	57	7090.0	4.1	**54.6536**	3.564	6.5	mg/L	697	Standard
Sc-1	45	28862.5	6.8				mg/L	28998	Standard
Cl	35	9523.7	1.3				ug/L	6091	Standard
Kr	83	4.0	43.3				ug/L	6	Standard
Br	81	6668.1	2.3				ug/L	383	Standard
P	31	14248.4	2.6				ug/L	8849	Standard
S	34	1058.4	7.2				ug/L	937	Standard
Sr	88	325.0	11.1				ug/L	188	Standard
C	12	286.7	13.2				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	544.2	1.9				mg/L	12	Standard
Ho-1	165	365.0	13.1				mg/L	10	Standard
Er	166	330.0	10.9				mg/L	23	Standard
I	127	395122.8	6.8				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.651	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.713	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	109.411
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.885
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1508135807
Sample Date/Time: Thursday, August 27, 2015 16:50:48
Number of Replicates: 3
Autosampler Position: 230
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56654.1	0.4				ug/L	44982	Standard
	Be	9	21.7	53.3	**0.0187**	0.015	82.8	ug/L	8	Standard
	Al	27	1810930.3	1.1	**21.2932**	0.295	1.4	ug/L	318	Standard
	Sc	45	30539.1	2.8				ug/L	28998	Standard
	Ti	47	88.7	5.3	**0.3660**	0.020	5.4	ug/L	21	Standard
	V	51	1013.4	10.6	**0.0008**	0.032	3744.2	ug/L	1052	Standard
	Cr	52	6977.9	5.5	**0.0725**	0.096	132.8	ug/L	6637	Standard
	Cr	53	1146.7	9.5	**1.2764**	0.197	15.4	ug/L	328	Standard
	Mn	55	41869.0	7.0	**12.5767**	0.886	7.0	ug/L	636	Standard
	Co	59	356.0	5.4	**0.0394**	0.006	14.2	ug/L	199	Standard
	Ni	60	1657.1	1.7	**1.0654**	0.009	0.9	ug/L	185	Standard
	Cu	65	1164.4	1.3	**0.7484**	0.019	2.5	ug/L	133	Standard
	Zn	66	6449.4	0.7	**7.7792**	0.130	1.7	ug/L	187	Standard
>	**Ge**	72	307966.4	1.4				ug/L	311830	Standard
	As	75	62.4	90.8	**0.1003**	0.072	71.7	ug/L	-58	Standard
	Se	82	56.6	10.3	**0.4744**	0.081	17.1	ug/L	25	Standard
	Se-1	77	103.3	6.9	**0.3551**	0.192	54.1	ug/L	90	Standard
>	**Ga**	71	63.3	16.4				mg/L	18	Standard
	Rb	85	1310.1	0.4				ug/L	27	Standard
	Y	89	313769.6	1.8				ug/L	295023	Standard
>	**Rh**	103	36.7	70.0				ug/L	7	Standard
	Mo	98	32.0	17.5	**0.0131**	0.003	25.4	ug/L	10	Standard
	Ag	107	66.7	12.6	**-0.0013**	0.001	108.7	ug/L	58	Standard
	Cd	111	99.6	2.1	**0.0605**	0.001	2.2	mg/L	4	Standard
	Cd	114	252.4	7.0	**0.0479**	0.004	8.1	ug/L	-1	Standard
>	**In**	115	501596.5	0.6				ug/L	427691	Standard
	Sn	118	533.3	6.8	**0.0383**	0.007	18.2	ug/L	273	Standard
	Sb	123	193.0	3.1	**0.0428**	0.001	2.7	ug/L	55	Standard
	Ba	135	40948.3	0.9	**18.0916**	0.235	1.3	ug/L	39	Standard
	Ce	140	448.3	19.5				ug/L	28	Standard
>	**Tb**	159	954805.0	3.1				ug/L	886833	Standard
	Ho	165	31.7	63.8				ug/L	10	Standard
	Tl	203	47.3	3.2	**0.0035**	0.000	4.1	ug/L	2	Standard
	Tl	205	23.3	44.6	**0.0065**	0.002	32.4	ug/L	0	Standard
	Pb	206	350.0	1.9	**0.0138**	0.003	19.2	ug/L	199	Standard
	Pb	207	286.0	7.9	**0.0116**	0.006	56.0	ug/L	178	Standard
	Pb	208	1003.0	2.2	**0.0119**	0.001	4.5	ug/L	654	Standard
	U	238	49.0	9.4	**0.0074**	0.001	12.6	ug/L	1	Standard
>	**Bi**	209	457951.7	1.7				ug/L	418387	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	1473.4	6.9	**3.0986**	0.228	7.3	mg/L	27	Standard
K	39	30.0	16.7	**0.2392**	0.064	26.7	mg/L	20	Standard
Ca	43	90.0	20.0	**7.1287**	2.597	36.4	mg/L	40	Standard
Fe	54	72.5	4.4	**-0.0118**	0.003	26.2	mg/L	74	Standard
Fe	57	965.0	7.3	**1.3291**	0.397	29.9	mg/L	697	Standard
> **Sc-1**	45	30539.1	2.8				mg/L	28998	Standard
Cl	35	9022.7	0.9				ug/L	6091	Standard
Kr	83	3.7	15.7				ug/L	6	Standard
Br	81	2863.6	2.5				ug/L	383	Standard
P	31	13559.4	1.3				ug/L	8849	Standard
S	34	1073.4	3.3				ug/L	937	Standard
Sr	88	216.7	8.1				ug/L	188	Standard
C	12	320.0	17.4				mg/L	167	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	48.4	55.6				mg/L	12	Standard
Ho-1	165	31.7	63.8				mg/L	10	Standard
Er	166	33.3	45.8				mg/L	23	Standard
I	127	33777.6	2.0				mg/L	1437	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		125.949	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.761	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		117.280
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.456
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1508135808
Sample Date/Time: Thursday, August 27, 2015 16:54:00
Number of Replicates: 3
Autosampler Position: 231
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56903.4	2.4				ug/L	44982	Standard
	Be	9	15.0	33.3	**0.0097**	0.006	67.0	ug/L	8	Standard
	Al	27	2349732.0	1.7	**27.5114**	0.220	0.8	ug/L	318	Standard
	Sc	45	29957.9	2.5				ug/L	28998	Standard
	Ti	47	76.7	11.8	**0.3022**	0.048	15.8	ug/L	21	Standard
	V	51	1305.6	5.5	**0.0800**	0.019	23.2	ug/L	1052	Standard
	Cr	52	7264.1	3.5	**0.1364**	0.069	50.9	ug/L	6637	Standard
	Cr	53	1528.4	9.6	**1.9145**	0.239	12.5	ug/L	328	Standard
	Mn	55	5531.3	66.8	**1.5021**	1.155	76.9	ug/L	636	Standard
	Co	59	520.0	4.6	**0.0865**	0.009	10.0	ug/L	199	Standard
	Ni	60	1166.0	1.7	**0.7102**	0.025	3.5	ug/L	185	Standard
	Cu	65	825.0	5.2	**0.4973**	0.024	4.9	ug/L	133	Standard
	Zn	66	1964.8	0.9	**1.8535**	0.033	1.8	ug/L	187	Standard
>	**Ge**	72	306684.0	1.2				ug/L	311830	Standard
	As	75	246.0	15.7	**0.3369**	0.047	13.9	ug/L	-58	Standard
	Se	82	115.8	8.2	**1.4287**	0.140	9.8	ug/L	25	Standard
	Se-1	77	136.7	1.5	**1.1196**	0.028	2.5	ug/L	90	Standard
>	**Ga**	71	36.7	7.9				mg/L	18	Standard
	Rb	85	975.0	2.2				ug/L	27	Standard
	Y	89	312253.6	1.6				ug/L	295023	Standard
>	**Rh**	103	50.0	17.3				ug/L	7	Standard
	Mo	98	115.2	17.3	**0.0647**	0.012	19.2	ug/L	10	Standard
	Ag	107	70.3	6.7	**-0.0005**	0.001	159.9	ug/L	58	Standard
	Cd	111	37.1	27.7	**0.0213**	0.007	31.0	mg/L	4	Standard
	Cd	114	90.1	32.8	**0.0096**	0.007	74.7	ug/L	-1	Standard
>	**In**	115	494890.0	0.3				ug/L	427691	Standard
	Sn	118	493.3	11.7	**0.0320**	0.011	35.3	ug/L	273	Standard
	Sb	123	229.4	4.9	**0.0516**	0.003	5.2	ug/L	55	Standard
	Ba	135	62110.4	0.3	**27.8236**	0.127	0.5	ug/L	39	Standard
	Ce	140	325.0	11.1				ug/L	28	Standard
>	**Tb**	159	954366.5	0.6				ug/L	886833	Standard
	Ho	165	108.3	23.2				ug/L	10	Standard
	Tl	203	48.7	11.9	**0.0038**	0.001	20.6	ug/L	2	Standard
	Tl	205	35.0	28.6	**0.0089**	0.002	22.0	ug/L	0	Standard
	Pb	206	300.3	0.5	**0.0048**	0.000	1.2	ug/L	199	Standard
	Pb	207	265.0	2.0	**0.0081**	0.001	18.2	ug/L	178	Standard
	Pb	208	908.7	1.1	**0.0072**	0.001	9.3	ug/L	654	Standard
	U	238	161.0	13.6	**0.0293**	0.004	14.0	ug/L	1	Standard
>	**Bi**	209	446478.2	0.4				ug/L	418387	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	5679.4	5.1	**12.3258**	0.791	6.4	mg/L	27	Standard
K	39	75.0	13.3	**0.8059**	0.148	18.3	mg/L	20	Standard
Ca	43	168.3	19.1	**17.5117**	4.048	23.1	mg/L	40	Standard
Fe	54	110.7	20.9	**0.0739**	0.046	62.3	mg/L	74	Standard
Fe	57	928.4	7.3	**1.1768**	0.377	32.0	mg/L	697	Standard
> **Sc-1**	45	29957.9	2.5				mg/L	28998	Standard
Cl	35	10111.4	1.7				ug/L	6091	Standard
Kr	83	2.0	100.0				ug/L	6	Standard
Br	81	7892.1	3.9				ug/L	383	Standard
P	31	12251.6	4.2				ug/L	8849	Standard
S	34	1180.0	2.6				ug/L	937	Standard
Sr	88	236.7	16.0				ug/L	188	Standard
C	12	340.0	10.6				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	139.6	41.7				mg/L	12	Standard
Ho-1	165	108.3	23.2				mg/L	10	Standard
Er	166	146.7	31.5				mg/L	23	Standard
I	127	15427.9	3.0				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		126.503	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.350	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	115.712
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	106.714
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1508135809
Sample Date/Time: Thursday, August 27, 2015 16:57:11
Number of Replicates: 3
Autosampler Position: 232
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57925.5	1.8				ug/L	44982	Standard
	Be	9	11.7	65.5	**0.0051**	0.010	198.2	ug/L	8	Standard
	Al	27	3752304.4	1.0	**43.1663**	1.030	2.4	ug/L	318	Standard
	Sc	45	30024.7	2.0				ug/L	28998	Standard
	Ti	47	68.7	15.4	**0.2573**	0.058	22.6	ug/L	21	Standard
	V	51	1287.1	2.8	**0.0740**	0.010	13.7	ug/L	1052	Standard
	Cr	52	7133.7	0.7	**0.1046**	0.014	13.6	ug/L	6637	Standard
	Cr	53	1433.4	4.2	**1.7499**	0.108	6.2	ug/L	328	Standard
	Mn	55	3095422.8	1.0	**945.3213**	15.222	1.6	ug/L	636	Standard
	Co	59	1030.4	2.3	**0.2308**	0.006	2.4	ug/L	199	Standard
	Ni	60	1533.7	2.0	**0.9764**	0.030	3.1	ug/L	185	Standard
	Cu	65	609.0	1.8	**0.3341**	0.011	3.3	ug/L	133	Standard
	Zn	66	4299.6	2.7	**4.9380**	0.154	3.1	ug/L	187	Standard
>	**Ge**	72	307687.9	0.7				ug/L	311830	Standard
	As	75	124.0	11.8	**0.1798**	0.018	10.0	ug/L	-58	Standard
	Se	82	50.8	8.6	**0.3831**	0.069	18.1	ug/L	25	Standard
	Se-1	77	140.0	13.1	**1.1839**	0.404	34.1	ug/L	90	Standard
>	**Ga**	71	51.7	5.6				mg/L	18	Standard
	Rb	85	991.7	18.2				ug/L	27	Standard
	Y	89	308375.5	1.7				ug/L	295023	Standard
>	**Rh**	103	53.3	10.8				ug/L	7	Standard
	Mo	98	1170.4	6.0	**0.7177**	0.044	6.1	ug/L	10	Standard
	Ag	107	75.7	6.7	**0.0005**	0.001	218.7	ug/L	58	Standard
	Cd	111	55.2	16.8	**0.0330**	0.006	17.2	mg/L	4	Standard
	Cd	114	138.2	15.7	**0.0213**	0.005	23.6	ug/L	-1	Standard
>	**In**	115	492956.2	0.8				ug/L	427691	Standard
	Sn	118	565.0	8.4	**0.0463**	0.010	21.8	ug/L	273	Standard
	Sb	123	108.7	20.1	**0.0243**	0.005	20.9	ug/L	55	Standard
	Ba	135	33406.5	1.4	**15.0141**	0.177	1.2	ug/L	39	Standard
	Ce	140	556.7	5.2				ug/L	28	Standard
>	**Tb**	159	945876.4	0.6				ug/L	886833	Standard
	Ho	165	80.0	39.0				ug/L	10	Standard
	Tl	203	55.7	10.4	**0.0047**	0.001	18.0	ug/L	2	Standard
	Tl	205	48.3	36.3	**0.0115**	0.003	29.7	ug/L	0	Standard
	Pb	206	282.3	3.3	**0.0001**	0.002	1055.1	ug/L	199	Standard
	Pb	207	239.0	13.1	**0.0012**	0.007	606.2	ug/L	178	Standard
	Pb	208	880.3	1.4	**0.0047**	0.000	10.3	ug/L	654	Standard
	U	238	155.3	3.3	**0.0279**	0.001	2.8	ug/L	1	Standard
>	**Bi**	209	451330.7	0.7				ug/L	418387	Standard

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Na	23	1.7	173.2	**2.6676**	4.612	172.9	mg/L	2	Standard
Mg	24	5382.6	1.0	**11.6491**	0.335	2.9	mg/L	27	Standard
K	39	78.3	3.7	**0.8428**	0.037	4.4	mg/L	20	Standard
Ca	43	186.7	16.1	**19.8203**	3.474	17.5	mg/L	40	Standard
Fe	54	81.1	31.7	**0.0094**	0.056	596.4	mg/L	74	Standard
Fe	57	938.4	1.7	**1.2489**	0.086	6.9	mg/L	697	Standard
Sc-1	45	30024.7	2.0				mg/L	28998	Standard
Cl	35	10521.0	1.2				ug/L	6091	Standard
Kr	83	5.0	34.6				ug/L	6	Standard
Br	81	3220.3	6.5				ug/L	383	Standard
P	31	12224.9	2.3				ug/L	8849	Standard
S	34	1156.7	2.8				ug/L	937	Standard
Sr	88	248.3	6.5				ug/L	188	Standard
C	12	460.0	10.0				mg/L	167	Standard
N	14	3.3	173.2				mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	77.3	32.6				mg/L	12	Standard
Ho-1	165	80.0	39.0				mg/L	10	Standard
Er	166	56.7	53.9				mg/L	23	Standard
I	127	67567.1	4.0				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		128.776	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.672	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	115.260	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	107.874	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1508135809
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Method 6020 - Summary Report

Sample ID: L1508135801
Sample Date/Time: Thursday, August 27, 2015 17:00:23
Number of Replicates: 3
Autosampler Position: 233
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57872.0	2.7				ug/L	44982	Standard
	Be	9	15.0	33.3	**0.0095**	0.007	74.0	ug/L	8	Standard
	Al	27	392474.1	2.8	**4.5143**	0.050	1.1	ug/L	318	Standard
	Sc	45	28989.4	2.8				ug/L	28998	Standard
	Ti	47	19.0	21.1	**-0.0120**	0.024	203.8	ug/L	21	Standard
	V	51	1213.2	14.6	**0.0609**	0.057	93.2	ug/L	1052	Standard
	Cr	52	6808.5	2.0	**0.0638**	0.043	67.9	ug/L	6637	Standard
	Cr	53	628.3	6.6	**0.4400**	0.060	13.6	ug/L	328	Standard
	Mn	55	65220.1	1.2	**20.0805**	0.309	1.5	ug/L	636	Standard
	Co	59	338.0	2.6	**0.0361**	0.005	13.7	ug/L	199	Standard
	Ni	60	470.0	1.7	**0.2040**	0.008	4.1	ug/L	185	Standard
	Cu	65	218.7	3.3	**0.0454**	0.005	11.9	ug/L	133	Standard
	Zn	66	1042.7	5.0	**0.6473**	0.039	6.0	ug/L	187	Standard
>	**Ge**	72	302290.6	2.4				ug/L	311830	Standard
	As	75	-29.4	107.0	**-0.0167**	0.041	244.4	ug/L	-58	Standard
	Se	82	26.6	35.0	**0.0066**	0.164	2471.7	ug/L	25	Standard
	Se-1	77	102.7	2.5	**0.3831**	0.093	24.3	ug/L	90	Standard
>	**Ga**	71	36.7	20.8				mg/L	18	Standard
	Rb	85	80.0	6.3				ug/L	27	Standard
	Y	89	299168.6	1.8				ug/L	295023	Standard
>	**Rh**	103	18.3	41.7				ug/L	7	Standard
	Mo	98	23.7	21.6	**0.0086**	0.003	37.8	ug/L	10	Standard
	Ag	107	83.3	13.9	**0.0021**	0.002	109.9	ug/L	58	Standard
	Cd	111	11.6	17.9	**0.0052**	0.001	23.9	mg/L	4	Standard
	Cd	114	12.7	124.3	**-0.0091**	0.004	42.1	ug/L	-1	Standard
>	**In**	115	484473.7	1.7				ug/L	427691	Standard
	Sn	118	396.7	6.3	**0.0151**	0.006	38.1	ug/L	273	Standard
	Sb	123	88.6	7.7	**0.0200**	0.002	9.4	ug/L	55	Standard
	Ba	135	4221.9	2.0	**1.9129**	0.063	3.3	ug/L	39	Standard
	Ce	140	161.7	4.7				ug/L	28	Standard
>	**Tb**	159	930773.5	1.3				ug/L	886833	Standard
	Ho	165	11.7	99.0				ug/L	10	Standard
	Tl	203	16.7	53.8	**-0.0007**	0.001	192.4	ug/L	2	Standard
	Tl	205	10.0	132.3	**0.0039**	0.003	67.2	ug/L	0	Standard
	Pb	206	294.7	9.8	**0.0033**	0.006	172.6	ug/L	199	Standard
	Pb	207	236.0	3.7	**0.0009**	0.001	157.0	ug/L	178	Standard
	Pb	208	945.3	3.8	**0.0095**	0.003	27.5	ug/L	654	Standard
	U	238	22.3	5.2	**0.0025**	0.000	10.7	ug/L	1	Standard
>	**Bi**	209	447751.8	1.1				ug/L	418387	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	670.0	9.2	**1.4597**	0.165	11.3	mg/L	27	Standard
K	39	20.0	25.0	**0.1291**	0.057	44.3	mg/L	20	Standard
Ca	43	70.0	18.9	**4.9763**	1.508	30.3	mg/L	40	Standard
Fe	54	69.0	45.1	**-0.0101**	0.073	723.8	mg/L	74	Standard
Fe	57	860.0	11.1	**0.8732**	1.014	116.1	mg/L	697	Standard
> **Sc-1**	45	28989.4	2.8				mg/L	28998	Standard
Cl	35	10276.8	1.5				ug/L	6091	Standard
Kr	83	4.0	43.3				ug/L	6	Standard
Br	81	950.0	13.1				ug/L	383	Standard
P	31	10898.9	5.9				ug/L	8849	Standard
S	34	1223.4	3.8				ug/L	937	Standard
Sr	88	180.0	12.7				ug/L	188	Standard
C	12	206.7	35.0				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.2	98.3				mg/L	12	Standard
Ho-1	165	11.7	99.0				mg/L	10	Standard
Er	166	16.7	124.9				mg/L	23	Standard
I	127	9201.1	4.0				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.657	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.941	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1508135801
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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	113.276
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	107.018
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: August 28, 2015

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, August 27, 2015 17:03:37
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	47023.1	7.2				ug/L	44982	Standard
	Be	9	28498.4	1.1	**45.6674**	3.751	8.2	ug/L	8	Standard
	Al	27	3098256.1	2.4	**44.0018**	2.276	5.2	ug/L	318	Standard
	Sc	45	25456.4	1.7				ug/L	28998	Standard
	Ti	47	16332.5	2.0	**102.6806**	3.135	3.1	ug/L	21	Standard
	V	51	168532.0	1.2	**51.5546**	1.316	2.6	ug/L	1052	Standard
	Cr	52	216988.8	2.0	**49.3425**	0.544	1.1	ug/L	6637	Standard
	Cr	53	27004.0	0.7	**50.6687**	0.399	0.8	ug/L	328	Standard
	Mn	55	154558.0	0.7	**54.1566**	1.008	1.9	ug/L	636	Standard
	Co	59	161398.8	0.4	**52.6837**	0.624	1.2	ug/L	199	Standard
	Ni	60	58314.7	0.6	**48.9970**	0.969	2.0	ug/L	185	Standard
	Cu	65	56196.4	1.0	**48.2226**	0.308	0.6	ug/L	133	Standard
	Zn	66	32102.6	0.5	**48.2089**	0.596	1.2	ug/L	187	Standard
>	Ge	72	267262.5	1.4				ug/L	311830	Standard
	As	75	32691.8	0.4	**48.2421**	0.861	1.8	ug/L	-58	Standard
	Se	82	2771.2	1.0	**50.6256**	0.274	0.5	ug/L	25	Standard
	Se-1	77	1988.1	1.6	**49.7923**	0.299	0.6	ug/L	90	Standard
>	Ga	71	45.0	29.4				mg/L	18	Standard
	Rb	85	468.3	4.3				ug/L	27	Standard
	Y	89	263147.1	3.3				ug/L	295023	Standard
>	Rh	103	31.7	74.6				ug/L	7	Standard
	Mo	98	129033.9	0.7	**93.0003**	1.193	1.3	ug/L	10	Standard
	Ag	107	223626.5	0.3	**45.3062**	0.302	0.7	ug/L	58	Standard
	Cd	111	66354.3	0.9	**49.7117**	0.454	0.9	mg/L	4	Standard
	Cd	114	171018.2	2.3	**48.2094**	0.847	1.8	ug/L	-1	Standard
>	In	115	423081.7	0.7				ug/L	427691	Standard
	Sn	118	196519.9	1.8	**44.1409**	0.669	1.5	ug/L	273	Standard
	Sb	123	177516.3	0.6	**47.2765**	0.188	0.4	ug/L	55	Standard
	Ba	135	85640.0	1.3	**44.8897**	0.668	1.5	ug/L	39	Standard
	Ce	140	65.0	35.3				ug/L	28	Standard
>	Tb	159	813142.4	1.0				ug/L	886833	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	300807.0	0.3	**47.3012**	0.371	0.8	ug/L	2	Standard
	Tl	205	217349.8	1.6	**48.8177**	0.654	1.3	ug/L	0	Standard
	Pb	206	194127.4	0.7	**47.7647**	0.570	1.2	ug/L	199	Standard
	Pb	207	175050.5	1.1	**47.7228**	0.593	1.2	ug/L	178	Standard
	Pb	208	620415.1	0.3	**46.9189**	0.380	0.8	ug/L	654	Standard
	U	238	215324.0	1.2	**46.7945**	0.469	1.0	ug/L	1	Standard
>	Bi	209	397429.0	0.5				ug/L	418387	Standard

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Na	23	1.7	173.2	**3.1601**	5.465	172.9	mg/L	2	Standard
Mg	24	1925.1	7.1	**4.8847**	0.368	7.5	mg/L	27	Standard
K	39	328.3	2.3	**4.6628**	0.082	1.8	mg/L	20	Standard
Ca	43	66.7	24.1	**5.8302**	2.655	45.5	mg/L	40	Standard
Fe	54	1831.3	7.2	**4.5358**	0.413	9.1	mg/L	74	Standard
Fe	57	1303.4	5.4	**6.2040**	0.609	9.8	mg/L	697	Standard
Sc-1	45	25456.4	1.7				mg/L	28998	Standard
Cl	35	8591.8	3.2				ug/L	6091	Standard
Kr	83	4.7	61.9				ug/L	6	Standard
Br	81	610.0	9.8				ug/L	383	Standard
P	31	10593.7	0.4				ug/L	8849	Standard
S	34	1136.7	2.5				ug/L	937	Standard
Sr	88	231.7	8.7				ug/L	188	Standard
C	12	240.0	15.0				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	9.4	101.7				mg/L	12	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	13.3	86.6				mg/L	23	Standard
I	127	4152.2	4.7				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	91.335		
Al	27	88.004		
Sc	45			
Ti	47	102.681		
V	51	103.109		
Cr	52	98.685		
Cr	53			
Mn	55	108.313		
Co	59	105.367		
Ni	60	97.994		
Cu	65	96.445		
Zn	66	96.418		
Ge	72		85.708	
As	75	96.484		
Se	82	101.251		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	93.000		
Ag	107	90.612		
Cd	111	99.423		
Cd	114			
> In	115			98.922
Sn	118	88.282		
Sb	123	94.553		
Ba	135	89.779		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	94.602		
Tl	205			
Pb	206			
Pb	207			
Pb	208	93.838		
U	238	93.589		
> Bi	209			94.991
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	
QC Std 6	Ba	135	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, August 27, 2015 17:06:48
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	47330.5	3.5				ug/L	44982	Standard
	Be	9	23.3	49.5	**0.0268**	0.018	67.5	ug/L	8	Standard
	Al	27	3123.8	74.8	**0.0392**	0.031	79.9	ug/L	318	Standard
	Sc	45	25012.3	2.1				ug/L	28998	Standard
	Ti	47	25.7	25.9	**0.0461**	0.043	93.7	ug/L	21	Standard
	V	51	794.3	5.1	**-0.0217**	0.014	63.3	ug/L	1052	Standard
	Cr	52	5044.5	0.5	**-0.1461**	0.011	7.4	ug/L	6637	Standard
	Cr	53	415.0	16.9	**0.1860**	0.138	74.1	ug/L	328	Standard
	Mn	55	997.7	29.8	**0.1562**	0.107	68.8	ug/L	636	Standard
	Co	59	234.7	15.8	**0.0163**	0.013	77.4	ug/L	199	Standard
	Ni	60	313.0	5.8	**0.1217**	0.017	13.8	ug/L	185	Standard
	Cu	65	154.7	13.7	**0.0142**	0.019	134.6	ug/L	133	Standard
	Zn	66	184.7	7.4	**-0.4721**	0.021	4.4	ug/L	187	Standard
>	**Ge**	72	263149.2	0.5				ug/L	311830	Standard
	As	75	-31.5	129.4	**-0.0262**	0.061	233.9	ug/L	-58	Standard
	Se	82	23.4	7.3	**0.0080**	0.034	421.4	ug/L	25	Standard
	Se-1	77	98.0	4.7	**0.6103**	0.130	21.3	ug/L	90	Standard
>	**Ga**	71	25.0	0.0				mg/L	18	Standard
	Rb	85	28.3	50.9				ug/L	27	Standard
	Y	89	268617.0	1.0				ug/L	295023	Standard
>	**Rh**	103	33.3	22.9				ug/L	7	Standard
	Mo	98	71.1	32.6	**0.0452**	0.017	38.3	ug/L	10	Standard
	Ag	107	107.7	30.7	**0.0092**	0.007	74.4	ug/L	58	Standard
	Cd	111	19.5	51.3	**0.0123**	0.008	61.2	mg/L	4	Standard
	Cd	114	47.3	50.4	**0.0013**	0.007	545.5	ug/L	-1	Standard
>	**In**	115	421653.3	0.9				ug/L	427691	Standard
	Sn	118	411.7	14.1	**0.0301**	0.014	45.0	ug/L	273	Standard
	Sb	123	664.5	6.4	**0.1771**	0.013	7.4	ug/L	55	Standard
	Ba	135	58.0	43.5	**0.0095**	0.013	141.0	ug/L	39	Standard
	Ce	140	16.7	62.4				ug/L	28	Standard
>	**Tb**	159	831592.2	1.7				ug/L	886833	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	59.7	46.3	**0.0064**	0.004	68.5	ug/L	2	Standard
	Tl	205	53.3	66.5	**0.0139**	0.008	58.0	ug/L	0	Standard
	Pb	206	221.3	18.1	**-0.0067**	0.009	140.6	ug/L	199	Standard
	Pb	207	196.3	6.4	**-0.0027**	0.003	127.6	ug/L	178	Standard
	Pb	208	733.7	13.5	**0.0015**	0.008	512.9	ug/L	654	Standard
	U	238	56.3	59.5	**0.0105**	0.007	71.1	ug/L	1	Standard
>	**Bi**	209	397734.4	1.7				ug/L	418387	Standard

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Na	23	1.7	173.2	**3.2544**	5.628	172.9	mg/L	2	Standard
Mg	24	68.3	18.4	**0.1283**	0.035	27.6	mg/L	27	Standard
K	39	15.0	57.7	**0.0984**	0.135	136.8	mg/L	20	Standard
Ca	43	40.0	65.0	**1.8307**	4.083	223.0	mg/L	40	Standard
Fe	54	67.6	21.9	**0.0096**	0.038	393.3	mg/L	74	Standard
Fe	57	796.7	6.9	**1.4052**	0.690	49.1	mg/L	697	Standard
> **Sc-1**	45	25012.3	2.1				mg/L	28998	Standard
Cl	35	8234.2	1.0				ug/L	6091	Standard
Kr	83	3.3	45.8				ug/L	6	Standard
Br	81	536.7	21.4				ug/L	383	Standard
P	31	10133.4	4.7				ug/L	8849	Standard
S	34	1133.4	8.2				ug/L	937	Standard
Sr	88	195.0	21.0				ug/L	188	Standard
C	12	173.3	8.8				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.2	193.4				mg/L	12	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	4183.9	6.1				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		84.389	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.588
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.064
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1508135810 WG536769-01
Sample Date/Time: Thursday, August 27, 2015 17:15:13
Number of Replicates: 3
Autosampler Position: 234
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49723.2	4.8				ug/L	44982	Standard
	Be	9	3.3	86.6	**-0.0049**	0.004	90.9	ug/L	8	Standard
	Al	27	371428.5	1.8	**4.9775**	0.152	3.1	ug/L	318	Standard
	Sc	45	26314.5	2.4				ug/L	28998	Standard
	Ti	47	22.0	40.4	**0.0158**	0.053	333.5	ug/L	21	Standard
	V	51	935.9	8.3	**0.0091**	0.024	262.1	ug/L	1052	Standard
	Cr	52	5477.3	0.4	**-0.1029**	0.016	15.9	ug/L	6637	Standard
	Cr	53	431.7	15.3	**0.1796**	0.122	67.7	ug/L	328	Standard
	Mn	55	42858.9	1.1	**14.4039**	0.018	0.1	ug/L	636	Standard
	Co	59	275.0	5.1	**0.0255**	0.004	15.3	ug/L	199	Standard
	Ni	60	454.0	9.4	**0.2247**	0.038	17.0	ug/L	185	Standard
	Cu	65	201.3	3.2	**0.0469**	0.007	15.1	ug/L	133	Standard
	Zn	66	1631.8	2.7	**1.6537**	0.068	4.1	ug/L	187	Standard
>	**Ge**	72	275796.0	1.0				ug/L	311830	Standard
	As	75	-30.9	60.5	**-0.0230**	0.027	115.5	ug/L	-58	Standard
	Se	82	19.3	20.5	**-0.0857**	0.067	78.0	ug/L	25	Standard
	Se-1	77	92.3	12.2	**0.3481**	0.283	81.4	ug/L	90	Standard
>	**Ga**	71	26.7	54.1				mg/L	18	Standard
	Rb	85	55.0	24.1				ug/L	27	Standard
	Y	89	266949.6	3.5				ug/L	295023	Standard
>	**Rh**	103	20.0	43.3				ug/L	7	Standard
	Mo	98	21.3	7.4	**0.0086**	0.001	11.5	ug/L	10	Standard
	Ag	107	60.7	4.8	**-0.0008**	0.001	91.3	ug/L	58	Standard
	Cd	111	7.0	14.3	**0.0026**	0.001	25.7	mg/L	4	Standard
	Cd	114	9.2	75.3	**-0.0096**	0.002	19.4	ug/L	-1	Standard
>	**In**	115	435170.5	1.3				ug/L	427691	Standard
	Sn	118	340.0	7.8	**0.0115**	0.005	44.0	ug/L	273	Standard
	Sb	123	207.4	25.4	**0.0531**	0.013	25.3	ug/L	55	Standard
	Ba	135	3237.3	1.5	**1.6298**	0.045	2.7	ug/L	39	Standard
	Ce	140	98.3	2.9				ug/L	28	Standard
>	**Tb**	159	859727.8	0.8				ug/L	886833	Standard
	Ho	165	18.3	41.7				ug/L	10	Standard
	Tl	203	22.0	7.9	**0.0004**	0.000	74.1	ug/L	2	Standard
	Tl	205	25.0	34.6	**0.0074**	0.002	25.6	ug/L	0	Standard
	Pb	206	252.0	8.9	**-0.0008**	0.005	662.6	ug/L	199	Standard
	Pb	207	206.3	8.3	**-0.0015**	0.004	293.7	ug/L	178	Standard
	Pb	208	736.0	2.1	**0.0001**	0.001	928.5	ug/L	654	Standard
	U	238	20.3	25.2	**0.0025**	0.001	43.2	ug/L	1	Standard
>	**Bi**	209	408992.0	0.5				ug/L	418387	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	706.7	17.7	**1.7045**	0.326	19.1	mg/L	27	Standard
K	39	20.0	0.0	**0.1562**	0.007	4.3	mg/L	20	Standard
Ca	43	66.7	31.2	**5.4459**	2.938	53.9	mg/L	40	Standard
Fe	54	77.5	35.5	**0.0266**	0.074	277.5	mg/L	74	Standard
Fe	57	798.4	4.4	**1.0187**	0.159	15.6	mg/L	697	Standard
> **Sc-1**	45	26314.5	2.4				mg/L	28998	Standard
Cl	35	8343.0	2.5				ug/L	6091	Standard
Kr	83	3.3	45.8				ug/L	6	Standard
Br	81	756.7	21.2				ug/L	383	Standard
P	31	9791.5	2.8				ug/L	8849	Standard
S	34	1150.0	3.0				ug/L	937	Standard
Sr	88	211.7	14.4				ug/L	188	Standard
C	12	216.7	7.1				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	6.0	173.2				mg/L	12	Standard
Ho-1	165	18.3	41.7				mg/L	10	Standard
Er	166	13.3	173.2				mg/L	23	Standard
I	127	9821.5	3.8				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.541	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		88.444	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.749
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.754
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 28, 2015

Method 6020 - Summary Report

Sample ID: L1508135810DP WG536769-04
Sample Date/Time: Thursday, August 27, 2015 17:18:24
Number of Replicates: 3
Autosampler Position: 235
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48552.7	0.4				ug/L	44982	Standard
	Be	9	3.3	173.2	**-0.0049**	0.009	181.8	ug/L	8	Standard
	Al	27	394188.7	0.7	**5.4050**	0.012	0.2	ug/L	318	Standard
	Sc	45	26693.5	2.1				ug/L	28998	Standard
	Ti	47	20.7	34.0	**0.0070**	0.042	604.9	ug/L	21	Standard
	V	51	886.0	6.7	**-0.0078**	0.017	219.1	ug/L	1052	Standard
	Cr	52	5767.8	1.9	**-0.0470**	0.027	57.4	ug/L	6637	Standard
	Cr	53	465.0	16.3	**0.2350**	0.141	60.2	ug/L	328	Standard
	Mn	55	44379.6	2.4	**14.8082**	0.312	2.1	ug/L	636	Standard
	Co	59	265.0	3.8	**0.0217**	0.003	15.5	ug/L	199	Standard
	Ni	60	468.0	7.1	**0.2331**	0.028	11.9	ug/L	185	Standard
	Cu	65	195.7	10.0	**0.0409**	0.017	40.5	ug/L	133	Standard
	Zn	66	1009.4	1.7	**0.7226**	0.030	4.2	ug/L	187	Standard
>	**Ge**	72	277880.0	0.4				ug/L	311830	Standard
	As	75	-19.1	48.4	**-0.0061**	0.013	214.7	ug/L	-58	Standard
	Se	82	31.5	30.9	**0.1276**	0.172	134.7	ug/L	25	Standard
	Se-1	77	86.7	8.1	**0.1884**	0.169	89.7	ug/L	90	Standard
>	**Ga**	71	33.3	22.9				mg/L	18	Standard
	Rb	85	73.3	43.8				ug/L	27	Standard
	Y	89	269214.1	0.7				ug/L	295023	Standard
>	**Rh**	103	21.7	81.0				ug/L	7	Standard
	Mo	98	20.5	33.9	**0.0081**	0.005	61.1	ug/L	10	Standard
	Ag	107	62.3	3.7	**-0.0003**	0.001	155.8	ug/L	58	Standard
	Cd	111	9.3	12.4	**0.0044**	0.001	20.3	mg/L	4	Standard
	Cd	114	17.4	100.2	**-0.0074**	0.005	65.6	ug/L	-1	Standard
>	**In**	115	432116.5	0.8				ug/L	427691	Standard
	Sn	118	345.0	6.3	**0.0131**	0.005	40.3	ug/L	273	Standard
	Sb	123	108.1	10.2	**0.0276**	0.003	10.5	ug/L	55	Standard
	Ba	135	3424.4	0.9	**1.7371**	0.007	0.4	ug/L	39	Standard
	Ce	140	88.3	33.2				ug/L	28	Standard
>	**Tb**	159	844305.0	0.4				ug/L	886833	Standard
	Ho	165	13.3	21.7				ug/L	10	Standard
	Tl	203	21.0	26.5	**0.0002**	0.001	419.8	ug/L	2	Standard
	Tl	205	6.7	114.6	**0.0034**	0.002	49.0	ug/L	0	Standard
	Pb	206	217.3	5.6	**-0.0093**	0.003	36.2	ug/L	199	Standard
	Pb	207	190.3	4.5	**-0.0060**	0.002	30.0	ug/L	178	Standard
	Pb	208	719.0	7.2	**-0.0014**	0.003	229.2	ug/L	654	Standard
	U	238	27.0	16.1	**0.0039**	0.001	23.1	ug/L	1	Standard
>	**Bi**	209	411136.4	0.9				ug/L	418387	Standard

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Na	23	3.3	86.6	**6.0693**	5.253	86.6	mg/L	2	Standard
Mg	24	653.3	8.7	**1.5485**	0.165	10.7	mg/L	27	Standard
K	39	15.0	0.0	**0.0826**	0.004	5.3	mg/L	20	Standard
Ca	43	58.3	27.6	**4.0994**	2.305	56.2	mg/L	40	Standard
Fe	54	57.5	26.4	**-0.0258**	0.039	152.3	mg/L	74	Standard
Fe	57	845.0	5.1	**1.3548**	0.521	38.5	mg/L	697	Standard
> **Sc-1**	45	26693.5	2.1				mg/L	28998	Standard
Cl	35	8731.2	1.0				ug/L	6091	Standard
Kr	83	3.3	34.6				ug/L	6	Standard
Br	81	830.0	3.2				ug/L	383	Standard
P	31	9843.2	1.5				ug/L	8849	Standard
S	34	1046.7	5.7				ug/L	937	Standard
Sr	88	168.3	19.3				ug/L	188	Standard
C	12	163.3	33.7				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.4	54.2				mg/L	12	Standard
Ho-1	165	13.3	21.7				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	10168.4	3.0				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.939	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		89.113	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.035
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.267
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 28, 2015

Method 6020 - Summary Report

Sample ID: L1508135810S WG536769-05
Sample Date/Time: Thursday, August 27, 2015 17:21:36
Number of Replicates: 3
Autosampler Position: 236
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48913.9	3.3				ug/L	44982	Standard
	Be	9	2855.3	6.4	**4.3786**	0.375	8.6	ug/L	8	Standard
	Al	27	379015.8	1.2	**5.1608**	0.119	2.3	ug/L	318	Standard
	Sc	45	25731.8	1.3				ug/L	28998	Standard
	Ti	47	24.7	15.3	**0.0326**	0.022	68.5	ug/L	21	Standard
	V	51	18271.0	1.9	**5.1851**	0.067	1.3	ug/L	1052	Standard
	Cr	52	27877.3	1.5	**4.9810**	0.060	1.2	ug/L	6637	Standard
	Cr	53	2980.3	5.9	**4.8826**	0.347	7.1	ug/L	328	Standard
	Mn	55	62186.2	10.0	**21.0460**	2.269	10.8	ug/L	636	Standard
	Co	59	16224.0	2.1	**5.0867**	0.086	1.7	ug/L	199	Standard
	Ni	60	6275.3	0.7	**4.9887**	0.024	0.5	ug/L	185	Standard
	Cu	65	5900.8	1.6	**4.8084**	0.045	0.9	ug/L	133	Standard
	Zn	66	4242.9	1.3	**5.5269**	0.121	2.2	ug/L	187	Standard
>	**Ge**	72	275199.5	0.7				ug/L	311830	Standard
	As	75	3303.4	2.7	**4.7519**	0.096	2.0	ug/L	-58	Standard
	Se	82	303.9	3.6	**5.0077**	0.170	3.4	ug/L	25	Standard
	Se-1	77	271.0	5.5	**4.8705**	0.335	6.9	ug/L	90	Standard
>	**Ga**	71	45.0	19.2				mg/L	18	Standard
	Rb	85	73.3	37.6				ug/L	27	Standard
	Y	89	272571.8	1.3				ug/L	295023	Standard
>	**Rh**	103	23.3	49.5				ug/L	7	Standard
	Mo	98	19.9	64.1	**0.0078**	0.009	118.9	ug/L	10	Standard
	Ag	107	20579.6	0.7	**4.0691**	0.044	1.1	ug/L	58	Standard
	Cd	111	6532.7	1.7	**4.7874**	0.010	0.2	mg/L	4	Standard
	Cd	114	17086.9	0.9	**4.7038**	0.068	1.4	ug/L	-1	Standard
>	**In**	115	432314.7	1.6				ug/L	427691	Standard
	Sn	118	350.0	8.7	**0.0142**	0.007	49.4	ug/L	273	Standard
	Sb	123	18548.3	1.1	**4.8340**	0.023	0.5	ug/L	55	Standard
	Ba	135	11706.9	0.1	**5.9879**	0.102	1.7	ug/L	39	Standard
	Ce	140	75.0	46.2				ug/L	28	Standard
>	**Tb**	159	850135.9	1.5				ug/L	886833	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	30337.3	0.8	**4.6860**	0.023	0.5	ug/L	2	Standard
	Tl	205	21560.3	2.0	**4.7613**	0.066	1.4	ug/L	0	Standard
	Pb	206	20127.0	0.7	**4.8127**	0.058	1.2	ug/L	199	Standard
	Pb	207	17411.3	1.2	**4.6146**	0.025	0.5	ug/L	178	Standard
	Pb	208	62965.3	0.2	**4.6316**	0.026	0.6	ug/L	654	Standard
	U	238	21550.0	0.8	**4.6015**	0.024	0.5	ug/L	1	Standard
>	**Bi**	209	404346.5	0.7				ug/L	418387	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	671.7	4.1	**1.6531**	0.082	5.0	mg/L	27	Standard
K	39	21.7	53.3	**0.1880**	0.172	91.4	mg/L	20	Standard
Ca	43	78.3	7.4	**7.4598**	0.783	10.5	mg/L	40	Standard
Fe	54	59.7	43.7	**-0.0147**	0.069	465.6	mg/L	74	Standard
Fe	57	896.7	4.7	**2.1460**	0.519	24.2	mg/L	697	Standard
> **Sc-1**	45	25731.8	1.3				mg/L	28998	Standard
Cl	35	8741.9	1.2				ug/L	6091	Standard
Kr	83	3.3	45.8				ug/L	6	Standard
Br	81	860.0	12.1				ug/L	383	Standard
P	31	9663.1	1.1				ug/L	8849	Standard
S	34	1073.4	3.5				ug/L	937	Standard
Sr	88	181.7	8.4				ug/L	188	Standard
C	12	170.0	11.8				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	5.7	94.7				mg/L	12	Standard
Ho-1	165	8.3	91.7				mg/L	10	Standard
Er	166	20.0	86.6				mg/L	23	Standard
I	127	9714.8	2.0				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.742	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		88.253	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.081	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.644	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 28, 2015

Method 6020 - Summary Report

Sample ID: L1508135810SD WG536769-06
Sample Date/Time: Thursday, August 27, 2015 17:24:48
Number of Replicates: 3
Autosampler Position: 237
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48566.1	2.0				ug/L	44982	Standard
	Be	9	2958.6	1.1	**4.5640**	0.047	1.0	ug/L	8	Standard
	Al	27	395723.7	1.7	**5.4252**	0.087	1.6	ug/L	318	Standard
	Sc	45	26750.3	3.5				ug/L	28998	Standard
	Ti	47	18.3	25.2	**-0.0062**	0.028	456.5	ug/L	21	Standard
	V	51	18844.1	1.6	**5.3428**	0.142	2.7	ug/L	1052	Standard
	Cr	52	28975.3	1.2	**5.2134**	0.074	1.4	ug/L	6637	Standard
	Cr	53	3097.0	1.1	**5.0819**	0.029	0.6	ug/L	328	Standard
	Mn	55	61732.2	1.2	**20.8259**	0.092	0.4	ug/L	636	Standard
	Co	59	16674.5	1.0	**5.2164**	0.055	1.1	ug/L	199	Standard
	Ni	60	6454.4	1.2	**5.1221**	0.102	2.0	ug/L	185	Standard
	Cu	65	6039.2	1.5	**4.9121**	0.130	2.6	ug/L	133	Standard
	Zn	66	4176.9	0.5	**5.4135**	0.125	2.3	ug/L	187	Standard
>	**Ge**	72	275927.2	1.5				ug/L	311830	Standard
	As	75	3418.0	3.5	**4.9035**	0.151	3.1	ug/L	-58	Standard
	Se	82	302.8	4.6	**4.9720**	0.188	3.8	ug/L	25	Standard
	Se-1	77	294.0	8.7	**5.4295**	0.556	10.2	ug/L	90	Standard
>	**Ga**	71	26.7	75.8				mg/L	18	Standard
	Rb	85	51.7	5.6				ug/L	27	Standard
	Y	89	270953.2	1.3				ug/L	295023	Standard
>	**Rh**	103	26.7	39.0				ug/L	7	Standard
	Mo	98	17.7	16.6	**0.0061**	0.002	33.2	ug/L	10	Standard
	Ag	107	21416.8	2.4	**4.2135**	0.087	2.1	ug/L	58	Standard
	Cd	111	6673.1	1.2	**4.8664**	0.082	1.7	mg/L	4	Standard
	Cd	114	18428.6	1.6	**5.0483**	0.080	1.6	ug/L	-1	Standard
>	**In**	115	434465.3	0.5				ug/L	427691	Standard
	Sn	118	285.0	10.7	**-0.0005**	0.006	1388.6	ug/L	273	Standard
	Sb	123	19327.6	1.1	**5.0118**	0.030	0.6	ug/L	55	Standard
	Ba	135	12276.3	0.8	**6.2479**	0.037	0.6	ug/L	39	Standard
	Ce	140	81.7	9.4				ug/L	28	Standard
>	**Tb**	159	858645.6	0.8				ug/L	886833	Standard
	Ho	165	20.0	25.0				ug/L	10	Standard
	Tl	203	31103.6	1.6	**4.7390**	0.045	1.0	ug/L	2	Standard
	Tl	205	21977.6	2.9	**4.7887**	0.181	3.8	ug/L	0	Standard
	Pb	206	20698.1	0.3	**4.8828**	0.033	0.7	ug/L	199	Standard
	Pb	207	17753.1	1.6	**4.6422**	0.108	2.3	ug/L	178	Standard
	Pb	208	64335.4	0.4	**4.6686**	0.040	0.9	ug/L	654	Standard
	U	238	22002.0	0.5	**4.6345**	0.051	1.1	ug/L	1	Standard
>	**Bi**	209	409920.4	0.9				ug/L	418387	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	706.7	9.7	**1.6707**	0.106	6.4	mg/L	27	Standard
K	39	30.0	44.1	**0.2897**	0.182	62.9	mg/L	20	Standard
Ca	43	66.7	33.8	**5.3585**	3.569	66.6	mg/L	40	Standard
Fe	54	89.4	23.5	**0.0528**	0.059	112.6	mg/L	74	Standard
Fe	57	858.4	2.4	**1.4590**	0.189	13.0	mg/L	697	Standard
> **Sc-1**	45	26750.3	3.5				mg/L	28998	Standard
Cl	35	8840.6	0.7				ug/L	6091	Standard
Kr	83	4.0	25.0				ug/L	6	Standard
Br	81	883.4	0.7				ug/L	383	Standard
P	31	9973.3	1.3				ug/L	8849	Standard
S	34	1030.0	8.4				ug/L	937	Standard
Sr	88	160.0	5.4				ug/L	188	Standard
C	12	150.0	13.3				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	5.5	116.6				mg/L	12	Standard
Ho-1	165	20.0	25.0				mg/L	10	Standard
Er	166	23.3	65.5				mg/L	23	Standard
I	127	12256.6	2.7				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.969	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		88.486	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1508135810SD WG536769-06
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.584	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.976	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: August 28, 2015

Method 6020 - Summary Report

Sample ID: L1508135803
Sample Date/Time: Thursday, August 27, 2015 17:27:59
Number of Replicates: 3
Autosampler Position: 238
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49745.0	5.0				ug/L	44982	Standard
	Be	9	8.3	69.3	**0.0023**	0.008	354.2	ug/L	8	Standard
	Al	27	180766.1	3.4	**2.4184**	0.055	2.3	ug/L	318	Standard
	Sc	45	26600.0	2.5				ug/L	28998	Standard
	Ti	47	21.0	20.8	**0.0095**	0.025	264.8	ug/L	21	Standard
	V	51	1032.3	4.2	**0.0369**	0.012	32.0	ug/L	1052	Standard
	Cr	52	6226.3	2.6	**0.0625**	0.029	46.9	ug/L	6637	Standard
	Cr	53	386.7	7.9	**0.0949**	0.057	60.1	ug/L	328	Standard
	Mn	55	159735.5	1.9	**54.0770**	0.755	1.4	ug/L	636	Standard
	Co	59	1016.4	1.2	**0.2593**	0.005	1.8	ug/L	199	Standard
	Ni	60	1282.4	5.0	**0.8981**	0.056	6.2	ug/L	185	Standard
	Cu	65	173.0	8.9	**0.0228**	0.012	51.2	ug/L	133	Standard
	Zn	66	1757.4	3.1	**1.8319**	0.068	3.7	ug/L	187	Standard
>	**Ge**	72	276567.5	1.0				ug/L	311830	Standard
	As	75	-7.6	479.1	**0.0106**	0.051	485.0	ug/L	-58	Standard
	Se	82	26.9	42.6	**0.0508**	0.208	409.2	ug/L	25	Standard
	Se-1	77	82.7	4.2	**0.0990**	0.106	106.6	ug/L	90	Standard
>	**Ga**	71	28.3	27.0				mg/L	18	Standard
	Rb	85	36.7	7.9				ug/L	27	Standard
	Y	89	279508.0	0.9				ug/L	295023	Standard
>	**Rh**	103	23.3	24.7				ug/L	7	Standard
	Mo	98	16.7	26.7	**0.0054**	0.003	56.0	ug/L	10	Standard
	Ag	107	72.3	16.7	**0.0015**	0.002	145.3	ug/L	58	Standard
	Cd	111	40.3	11.7	**0.0270**	0.003	12.1	mg/L	4	Standard
	Cd	114	103.6	18.0	**0.0163**	0.005	32.9	ug/L	-1	Standard
>	**In**	115	434759.4	1.0				ug/L	427691	Standard
	Sn	118	240.0	9.5	**-0.0104**	0.004	43.4	ug/L	273	Standard
	Sb	123	84.0	18.6	**0.0212**	0.004	19.5	ug/L	55	Standard
	Ba	135	144.0	3.2	**0.0524**	0.002	3.5	ug/L	39	Standard
	Ce	140	545.0	5.7				ug/L	28	Standard
>	**Tb**	159	844978.9	1.5				ug/L	886833	Standard
	Ho	165	46.7	6.2				ug/L	10	Standard
	Tl	203	15.0	67.7	**-0.0007**	0.002	213.0	ug/L	2	Standard
	Tl	205	10.0	50.0	**0.0041**	0.001	25.7	ug/L	0	Standard
	Pb	206	235.7	1.1	**-0.0047**	0.001	19.1	ug/L	199	Standard
	Pb	207	186.3	3.1	**-0.0069**	0.001	20.0	ug/L	178	Standard
	Pb	208	715.0	6.5	**-0.0015**	0.003	235.7	ug/L	654	Standard
	U	238	11.7	50.2	**0.0007**	0.001	188.2	ug/L	1	Standard
>	**Bi**	209	409414.9	1.6				ug/L	418387	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	353.3	9.1	**0.8167**	0.082	10.0	mg/L	27	Standard
K	39	11.7	65.5	**0.0359**	0.103	287.0	mg/L	20	Standard
Ca	43	48.3	26.0	**2.6856**	1.917	71.4	mg/L	40	Standard
Fe	54	74.3	40.9	**0.0155**	0.074	477.8	mg/L	74	Standard
Fe	57	880.0	5.1	**1.7134**	0.621	36.2	mg/L	697	Standard
> **Sc-1**	45	26600.0	2.5				mg/L	28998	Standard
Cl	35	9105.4	1.0				ug/L	6091	Standard
Kr	83	2.3	24.7				ug/L	6	Standard
Br	81	936.7	11.8				ug/L	383	Standard
P	31	9886.6	4.5				ug/L	8849	Standard
S	34	1071.7	2.4				ug/L	937	Standard
Sr	88	220.0	4.5				ug/L	188	Standard
C	12	160.0	16.5				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	74.3	41.1				mg/L	12	Standard
Ho-1	165	46.7	6.2				mg/L	10	Standard
Er	166	50.0	0.0				mg/L	23	Standard
I	127	3498.7	6.4				mg/L	1437	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		110.589	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		88.692	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.653
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.855
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508135804
Sample Date/Time: Thursday, August 27, 2015 17:31:11
Number of Replicates: 3
Autosampler Position: 239
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49462.4	4.9				ug/L	44982	Standard
	Be	9	6.7	43.3	**0.0001**	0.005	3749.6	ug/L	8	Standard
	Al	27	343469.4	0.1	**4.6297**	0.226	4.9	ug/L	318	Standard
	Sc	45	26743.6	4.1				ug/L	28998	Standard
	Ti	47	15.7	31.5	**-0.0242**	0.029	120.7	ug/L	21	Standard
	V	51	1093.6	5.4	**0.0504**	0.016	31.6	ug/L	1052	Standard
	Cr	52	6413.7	1.6	**0.0837**	0.012	13.9	ug/L	6637	Standard
	Cr	53	416.7	4.8	**0.1389**	0.042	30.0	ug/L	328	Standard
	Mn	55	95201.2	0.4	**31.6785**	0.335	1.1	ug/L	636	Standard
	Co	59	320.0	0.5	**0.0380**	0.001	3.3	ug/L	199	Standard
	Ni	60	777.0	3.9	**0.4774**	0.029	6.0	ug/L	185	Standard
	Cu	65	186.3	6.2	**0.0317**	0.009	29.9	ug/L	133	Standard
	Zn	66	1127.0	3.8	**0.8790**	0.073	8.3	ug/L	187	Standard
>	**Ge**	72	280667.1	0.7				ug/L	311830	Standard
	As	75	-15.0	199.3	**0.0001**	0.042	44705.5	ug/L	-58	Standard
	Se	82	29.7	29.6	**0.0909**	0.156	171.9	ug/L	25	Standard
	Se-1	77	85.0	12.2	**0.1264**	0.265	209.6	ug/L	90	Standard
>	**Ga**	71	25.0	69.3				mg/L	18	Standard
	Rb	85	135.0	20.6				ug/L	27	Standard
	Y	89	272689.6	2.4				ug/L	295023	Standard
>	**Rh**	103	30.0	16.7				ug/L	7	Standard
	Mo	98	14.0	13.8	**0.0035**	0.001	41.1	ug/L	10	Standard
	Ag	107	64.0	16.9	**-0.0002**	0.002	1242.4	ug/L	58	Standard
	Cd	111	16.3	24.7	**0.0094**	0.003	30.5	mg/L	4	Standard
	Cd	114	25.3	31.0	**-0.0053**	0.002	41.4	ug/L	-1	Standard
>	**In**	115	437258.6	0.9				ug/L	427691	Standard
	Sn	118	300.0	6.7	**0.0024**	0.004	155.9	ug/L	273	Standard
	Sb	123	65.0	20.7	**0.0162**	0.003	20.8	ug/L	55	Standard
	Ba	135	340.3	4.4	**0.1516**	0.009	5.9	ug/L	39	Standard
	Ce	140	333.3	5.3				ug/L	28	Standard
>	**Tb**	159	843901.9	2.5				ug/L	886833	Standard
	Ho	165	33.3	22.9				ug/L	10	Standard
	Tl	203	12.3	61.4	**-0.0011**	0.001	102.8	ug/L	2	Standard
	Tl	205	1.7	173.2	**0.0023**	0.001	27.5	ug/L	0	Standard
	Pb	206	211.0	7.9	**-0.0109**	0.004	32.9	ug/L	199	Standard
	Pb	207	189.0	5.2	**-0.0064**	0.003	48.2	ug/L	178	Standard
	Pb	208	701.0	4.4	**-0.0027**	0.003	94.6	ug/L	654	Standard
	U	238	5.7	66.8	**-0.0006**	0.001	129.4	ug/L	1	Standard
>	**Bi**	209	411194.6	1.4				ug/L	418387	Standard

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Na	23	1.7	173.2	**2.9293**	5.065	172.9	mg/L	2	Standard
Mg	24	611.7	5.6	**1.4413**	0.023	1.6	mg/L	27	Standard
K	39	11.7	89.2	**0.0400**	0.149	372.7	mg/L	20	Standard
Ca	43	66.7	45.8	**5.2986**	4.491	84.7	mg/L	40	Standard
Fe	54	72.7	23.9	**0.0103**	0.041	396.2	mg/L	74	Standard
Fe	57	886.7	7.9	**1.7233**	0.616	35.7	mg/L	697	Standard
> **Sc-1**	45	26743.6	4.1				mg/L	28998	Standard
Cl	35	9108.1	2.7				ug/L	6091	Standard
Kr	83	2.7	78.1				ug/L	6	Standard
Br	81	1260.1	6.2				ug/L	383	Standard
P	31	9668.1	5.3				ug/L	8849	Standard
S	34	1005.0	2.6				ug/L	937	Standard
Sr	88	196.7	25.7				ug/L	188	Standard
C	12	186.7	17.2				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	18.2	64.0				mg/L	12	Standard
Ho-1	165	33.3	22.9				mg/L	10	Standard
Er	166	36.7	95.8				mg/L	23	Standard
I	127	8449.0	2.4				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.961	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.006	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.237
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.281
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508135805
Sample Date/Time: Thursday, August 27, 2015 17:34:22
Number of Replicates: 3
Autosampler Position: 240
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48410.6	3.9				ug/L	44982	Standard
	Be	9	11.7	65.5	**0.0083**	0.013	153.7	ug/L	8	Standard
	Al	27	111322.5	1.1	**1.5292**	0.052	3.4	ug/L	318	Standard
	Sc	45	26404.7	0.3				ug/L	28998	Standard
	Ti	47	20.7	17.0	**0.0063**	0.021	340.3	ug/L	21	Standard
	V	51	1067.3	8.0	**0.0437**	0.023	51.9	ug/L	1052	Standard
	Cr	52	6198.9	1.2	**0.0412**	0.027	66.1	ug/L	6637	Standard
	Cr	53	396.7	5.7	**0.1051**	0.038	35.7	ug/L	328	Standard
	Mn	55	127050.1	0.2	**42.4986**	0.400	0.9	ug/L	636	Standard
	Co	59	347.3	9.8	**0.0469**	0.010	22.1	ug/L	199	Standard
	Ni	60	343.7	12.3	**0.1307**	0.035	27.0	ug/L	185	Standard
	Cu	65	167.0	8.2	**0.0164**	0.012	76.1	ug/L	133	Standard
	Zn	66	1077.0	2.1	**0.8119**	0.042	5.2	ug/L	187	Standard
>	**Ge**	72	279646.9	0.8				ug/L	311830	Standard
	As	75	-7.9	148.9	**0.0098**	0.017	170.3	ug/L	-58	Standard
	Se	82	17.7	39.3	**-0.1175**	0.125	106.5	ug/L	25	Standard
	Se-1	77	87.0	5.0	**0.1832**	0.104	56.7	ug/L	90	Standard
>	**Ga**	71	30.0	50.0				mg/L	18	Standard
	Rb	85	30.0	44.1				ug/L	27	Standard
	Y	89	266267.8	1.2				ug/L	295023	Standard
>	**Rh**	103	25.0	52.9				ug/L	7	Standard
	Mo	98	13.0	34.8	**0.0027**	0.003	113.3	ug/L	10	Standard
	Ag	107	59.3	6.4	**-0.0011**	0.001	56.9	ug/L	58	Standard
	Cd	111	7.0	62.5	**0.0026**	0.003	118.3	mg/L	4	Standard
	Cd	114	7.4	119.5	**-0.0101**	0.002	23.9	ug/L	-1	Standard
>	**In**	115	437066.7	1.2				ug/L	427691	Standard
	Sn	118	281.7	11.8	**-0.0015**	0.007	461.2	ug/L	273	Standard
	Sb	123	68.5	3.5	**0.0171**	0.001	4.8	ug/L	55	Standard
	Ba	135	385.3	5.1	**0.1745**	0.009	5.3	ug/L	39	Standard
	Ce	140	113.3	14.2				ug/L	28	Standard
>	**Tb**	159	845328.0	1.1				ug/L	886833	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	5.3	75.8	**-0.0022**	0.001	28.4	ug/L	2	Standard
	Tl	205	8.3	34.6	**0.0038**	0.001	16.8	ug/L	0	Standard
	Pb	206	207.7	1.5	**-0.0115**	0.001	7.0	ug/L	199	Standard
	Pb	207	184.3	5.6	**-0.0075**	0.003	36.3	ug/L	178	Standard
	Pb	208	676.7	5.2	**-0.0044**	0.002	55.8	ug/L	654	Standard
	U	238	3.3	17.3	**-0.0011**	0.000	10.9	ug/L	1	Standard
>	**Bi**	209	410097.2	0.2				ug/L	418387	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	231.7	13.0	**0.5221**	0.073	14.0	mg/L	27	Standard
K	39	16.7	34.6	**0.1083**	0.081	74.9	mg/L	20	Standard
Ca	43	51.7	5.6	**3.2125**	0.402	12.5	mg/L	40	Standard
Fe	54	159.7	16.7	**0.2282**	0.067	29.4	mg/L	74	Standard
Fe	57	866.7	6.7	**1.6383**	0.539	32.9	mg/L	697	Standard
> **Sc-1**	45	26404.7	0.3				mg/L	28998	Standard
Cl	35	8922.0	4.2				ug/L	6091	Standard
Kr	83	6.0	16.7				ug/L	6	Standard
Br	81	596.7	21.9				ug/L	383	Standard
P	31	9608.0	0.6				ug/L	8849	Standard
S	34	1030.0	7.1				ug/L	937	Standard
Sr	88	181.7	8.8				ug/L	188	Standard
C	12	163.3	3.5				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.7	5.7				mg/L	12	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	6.7	173.2				mg/L	23	Standard
I	127	4905.8	3.0				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.623	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		89.679	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.192	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.019	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508135806
Sample Date/Time: Thursday, August 27, 2015 17:37:33
Number of Replicates: 3
Autosampler Position: 241
Sample Description: 1000
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48422.3	4.0				ug/L	44982	Standard
	Be	9	10.0		**0.0054**	0.001	11.3	ug/L	8	Standard
	Al	27	7843.7	2.7	**0.1037**	0.002	1.5	ug/L	318	Standard
	Sc	45	26299.5	2.7				ug/L	28998	Standard
	Ti	47	15.3	21.0	**-0.0253**	0.019	76.7	ug/L	21	Standard
	V	51	1004.0	5.4	**0.0269**	0.016	57.8	ug/L	1052	Standard
	Cr	52	6008.9	1.4	**0.0064**	0.015	235.9	ug/L	6637	Standard
	Cr	53	378.3	9.0	**0.0758**	0.060	79.7	ug/L	328	Standard
	Mn	55	66681.4	1.3	**22.3386**	0.253	1.1	ug/L	636	Standard
	Co	59	338.0	7.8	**0.0445**	0.008	17.9	ug/L	199	Standard
	Ni	60	289.0	8.8	**0.0878**	0.020	22.8	ug/L	185	Standard
	Cu	65	142.3	6.9	**-0.0033**	0.008	238.2	ug/L	133	Standard
	Zn	66	912.4	4.6	**0.5794**	0.060	10.3	ug/L	187	Standard
>	**Ge**	72	278032.5	0.3				ug/L	311830	Standard
	As	75	-16.3	45.6	**-0.0021**	0.011	498.9	ug/L	-58	Standard
	Se	82	22.3	10.2	**-0.0351**	0.040	114.6	ug/L	25	Standard
	Se-1	77	82.7	10.6	**0.0870**	0.213	245.2	ug/L	90	Standard
>	**Ga**	71	30.0	50.0				mg/L	18	Standard
	Rb	85	46.7	16.4				ug/L	27	Standard
	Y	89	274632.3	2.1				ug/L	295023	Standard
>	**Rh**	103	18.3	78.7				ug/L	7	Standard
	Mo	98	11.7	66.7	**0.0019**	0.005	290.5	ug/L	10	Standard
	Ag	107	73.3	6.4	**0.0017**	0.001	51.7	ug/L	58	Standard
	Cd	111	4.3	74.6	**0.0007**	0.002	329.1	mg/L	4	Standard
	Cd	114	8.0	184.7	**-0.0100**	0.004	40.6	ug/L	-1	Standard
>	**In**	115	436051.4	0.6				ug/L	427691	Standard
	Sn	118	323.3	6.2	**0.0077**	0.005	62.6	ug/L	273	Standard
	Sb	123	63.6	6.2	**0.0158**	0.001	7.1	ug/L	55	Standard
	Ba	135	112.3	5.4	**0.0361**	0.003	9.5	ug/L	39	Standard
	Ce	140	53.3	39.0				ug/L	28	Standard
>	**Tb**	159	843336.6	0.4				ug/L	886833	Standard
	Ho	165	13.3	43.3				ug/L	10	Standard
	Tl	203	6.3	48.2	**-0.0020**	0.000	23.0	ug/L	2	Standard
	Tl	205	3.3	173.2	**0.0027**	0.001	47.5	ug/L	0	Standard
	Pb	206	222.7	0.9	**-0.0078**	0.001	14.6	ug/L	199	Standard
	Pb	207	188.3	8.2	**-0.0063**	0.003	53.9	ug/L	178	Standard
	Pb	208	689.3	5.8	**-0.0033**	0.004	107.7	ug/L	654	Standard
	U	238	2.7	21.7	**-0.0012**	0.000	9.5	ug/L	1	Standard
>	**Bi**	209	409164.4	1.3				ug/L	418387	Standard

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Na	23	1.7	173.2	**3.1965**	5.528	172.9	mg/L	2	Standard
Mg	24	78.3	3.7	**0.1443**	0.012	8.2	mg/L	27	Standard
K	39	10.0		**0.0152**	0.004	25.0	mg/L	20	Standard
Ca	43	33.3	8.7	**0.5154**	0.327	63.4	mg/L	40	Standard
Fe	54	89.3	5.8	**0.0551**	0.016	29.8	mg/L	74	Standard
Fe	57	805.0	12.6	**1.0863**	0.904	83.2	mg/L	697	Standard
> **Sc-1**	45	26299.5	2.7				mg/L	28998	Standard
Cl	35	8747.2	1.3				ug/L	6091	Standard
Kr	83	5.0	52.9				ug/L	6	Standard
Br	81	480.0	9.5				ug/L	383	Standard
P	31	9861.5	1.1				ug/L	8849	Standard
S	34	1093.4	12.2				ug/L	937	Standard
Sr	88	173.3	4.4				ug/L	188	Standard
C	12	186.7	71.1				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.4	182.1				mg/L	12	Standard
Ho-1	165	13.3	43.3				mg/L	10	Standard
Er	166	13.3	86.6				mg/L	23	Standard
I	127	3312.0	2.9				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.649	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		89.161	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.955
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.796
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1508135809
Sample Date/Time: Thursday, August 27, 2015 17:40:45
Number of Replicates: 3
Autosampler Position: 242
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49641.2	2.2				ug/L	44982	Standard
	Be	9	1.7	173.2	**-0.0076**	0.004	58.2	ug/L	8	Standard
	Al	27	67279.1	0.9	**0.8990**	0.019	2.1	ug/L	318	Standard
	Sc	45	26569.9	2.0				ug/L	28998	Standard
	Ti	47	21.0	20.8	**0.0076**	0.026	339.6	ug/L	21	Standard
	V	51	1024.5	11.9	**0.0298**	0.035	116.8	ug/L	1052	Standard
	Cr	52	6125.9	1.2	**0.0184**	0.020	107.1	ug/L	6637	Standard
	Cr	53	391.7	16.9	**0.0930**	0.121	130.0	ug/L	328	Standard
	Mn	55	59313.2	0.8	**19.6401**	0.099	0.5	ug/L	636	Standard
	Co	59	245.0	9.1	**0.0145**	0.007	47.3	ug/L	199	Standard
	Ni	60	308.0	6.0	**0.1007**	0.015	14.9	ug/L	185	Standard
	Cu	65	137.0	3.3	**-0.0089**	0.004	39.6	ug/L	133	Standard
	Zn	66	948.0	3.0	**0.6173**	0.041	6.7	ug/L	187	Standard
>	**Ge**	72	280947.8	0.3				ug/L	311830	Standard
	As	75	-43.2	49.8	**-0.0397**	0.030	76.4	ug/L	-58	Standard
	Se	82	18.6	30.2	**-0.1040**	0.099	94.8	ug/L	25	Standard
	Se-1	77	80.3	18.0	**0.0075**	0.353	4694.7	ug/L	90	Standard
>	**Ga**	71	16.7	17.3				mg/L	18	Standard
	Rb	85	35.0	51.5				ug/L	27	Standard
	Y	89	267835.2	1.5				ug/L	295023	Standard
>	**Rh**	103	25.0	72.1				ug/L	7	Standard
	Mo	98	25.3	19.2	**0.0114**	0.003	30.0	ug/L	10	Standard
	Ag	107	65.7	17.5	**0.0002**	0.002	1266.3	ug/L	58	Standard
	Cd	111	6.3	24.4	**0.0021**	0.001	53.6	mg/L	4	Standard
	Cd	114	6.7	175.5	**-0.0103**	0.003	31.0	ug/L	-1	Standard
>	**In**	115	436816.0	0.7				ug/L	427691	Standard
	Sn	118	248.3	6.5	**-0.0088**	0.004	42.5	ug/L	273	Standard
	Sb	123	55.4	10.8	**0.0137**	0.001	10.6	ug/L	55	Standard
	Ba	135	644.7	0.8	**0.3064**	0.001	0.2	ug/L	39	Standard
	Ce	140	43.3	29.0				ug/L	28	Standard
>	**Tb**	159	845583.5	0.5				ug/L	886833	Standard
	Ho	165	13.3	57.3				ug/L	10	Standard
	Tl	203	3.7	68.6	**-0.0024**	0.000	15.6	ug/L	2	Standard
	Tl	205	3.3	86.6	**0.0027**	0.001	23.4	ug/L	0	Standard
	Pb	206	214.7	11.1	**-0.0102**	0.006	57.7	ug/L	199	Standard
	Pb	207	185.3	6.7	**-0.0075**	0.003	46.1	ug/L	178	Standard
	Pb	208	671.7	5.5	**-0.0051**	0.003	50.2	ug/L	654	Standard
	U	238	2.7	21.7	**-0.0012**	0.000	9.9	ug/L	1	Standard
>	**Bi**	209	412731.0	0.5				ug/L	418387	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	136.7	22.4	**0.2847**	0.070	24.4	mg/L	27	Standard
K	39	13.3	43.3	**0.0604**	0.081	134.4	mg/L	20	Standard
Ca	43	40.0	21.7	**1.4530**	1.291	88.9	mg/L	40	Standard
Fe	54	72.6	15.5	**0.0115**	0.028	239.3	mg/L	74	Standard
Fe	57	780.0	10.0	**0.7701**	0.590	76.6	mg/L	697	Standard
> **Sc-1**	45	26569.9	2.0				mg/L	28998	Standard
Cl	35	8952.0	2.0				ug/L	6091	Standard
Kr	83	3.0	33.3				ug/L	6	Standard
Br	81	490.0	9.4				ug/L	383	Standard
P	31	9763.2	5.8				ug/L	8849	Standard
S	34	1145.0	5.7				ug/L	937	Standard
Sr	88	193.3	8.3				ug/L	188	Standard
C	12	170.0	27.0				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	26.0	59.7				mg/L	12	Standard
Ho-1	165	13.3	57.3				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	4065.5	3.5				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.359	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.096	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.133	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.648	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, August 27, 2015 17:43:58
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	49656.3	2.6				ug/L	44982	Standard
	Be	9	30363.8	3.9	**45.8917**	1.095	2.4	ug/L	8	Standard
	Al	27	3133091.6	2.0	**42.0579**	1.594	3.8	ug/L	318	Standard
	Sc	45	27742.0	0.5				ug/L	28998	Standard
	Ti	47	17682.3	0.0	**105.6031**	0.792	0.7	ug/L	21	Standard
	V	51	177565.7	1.5	**51.5963**	0.628	1.2	ug/L	1052	Standard
	Cr	52	231417.4	1.3	**50.0159**	0.280	0.6	ug/L	6637	Standard
	Cr	53	28358.2	2.0	**50.5495**	0.913	1.8	ug/L	328	Standard
	Mn	55	165259.4	0.8	**55.0116**	0.138	0.3	ug/L	636	Standard
	Co	59	167778.0	1.7	**52.0267**	0.691	1.3	ug/L	199	Standard
	Ni	60	62105.4	1.7	**49.5690**	0.517	1.0	ug/L	185	Standard
	Cu	65	59509.0	1.2	**48.5164**	0.524	1.1	ug/L	133	Standard
	Zn	66	33895.9	0.4	**48.3613**	0.395	0.8	ug/L	187	Standard
>	Ge	72	281296.6	0.8				ug/L	311830	Standard
	As	75	34306.4	0.8	**48.0911**	0.059	0.1	ug/L	-58	Standard
	Se	82	2900.3	1.3	**50.3350**	0.271	0.5	ug/L	25	Standard
	Se-1	77	2071.5	5.1	**49.2628**	2.266	4.6	ug/L	90	Standard
>	Ga	71	36.7	15.7				mg/L	18	Standard
	Rb	85	493.3	6.4				ug/L	27	Standard
	Y	89	280465.7	1.6				ug/L	295023	Standard
>	Rh	103	36.7	51.6				ug/L	7	Standard
	Mo	98	132257.0	1.2	**92.7395**	1.434	1.5	ug/L	10	Standard
	Ag	107	228928.6	0.9	**45.1233**	0.441	1.0	ug/L	58	Standard
	Cd	111	67589.0	0.4	**49.2660**	0.484	1.0	mg/L	4	Standard
	Cd	114	178687.3	2.1	**49.0094**	0.947	1.9	ug/L	-1	Standard
>	In	115	434863.2	0.6				ug/L	427691	Standard
	Sn	118	199707.8	1.9	**43.6460**	1.067	2.4	ug/L	273	Standard
	Sb	123	180868.2	0.7	**46.8637**	0.127	0.3	ug/L	55	Standard
	Ba	135	88302.6	0.9	**45.0321**	0.589	1.3	ug/L	39	Standard
	Ce	140	68.3	30.5				ug/L	28	Standard
>	Tb	159	863910.5	0.6				ug/L	886833	Standard
	Ho	165	3.3	173.2				ug/L	10	Standard
	Tl	203	307748.1	0.9	**46.9234**	0.053	0.1	ug/L	2	Standard
	Tl	205	222891.1	1.7	**48.5458**	0.844	1.7	ug/L	0	Standard
	Pb	206	200007.1	0.7	**47.7189**	0.514	1.1	ug/L	199	Standard
	Pb	207	179704.5	1.0	**47.5048**	0.417	0.9	ug/L	178	Standard
	Pb	208	642995.9	0.9	**47.1518**	0.445	0.9	ug/L	654	Standard
	U	238	223353.6	0.6	**47.0686**	0.310	0.7	ug/L	1	Standard
>	Bi	209	409864.6	0.9				ug/L	418387	Standard

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Na	23	1.7	173.2	**2.9643**	5.126	172.9	mg/L	2	Standard
Mg	24	1885.1	0.8	**4.3827**	0.032	0.7	mg/L	27	Standard
K	39	365.0	13.2	**4.7569**	0.621	13.0	mg/L	20	Standard
Ca	43	86.7	18.5	**7.7811**	2.317	29.8	mg/L	40	Standard
Fe	54	2021.5	2.5	**4.5920**	0.122	2.7	mg/L	74	Standard
Fe	57	1296.7	5.2	**5.0995**	0.666	13.1	mg/L	697	Standard
Sc-1	45	27742.0	0.5				mg/L	28998	Standard
Cl	35	8226.2	2.3				ug/L	6091	Standard
Kr	83	5.3	28.6				ug/L	6	Standard
Br	81	560.0	13.5				ug/L	383	Standard
P	31	11344.3	9.6				ug/L	8849	Standard
S	34	1253.4	8.5				ug/L	937	Standard
Sr	88	185.0	9.7				ug/L	188	Standard
C	12	160.0	10.8				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	23.0	26.4				mg/L	12	Standard
Ho-1	165	3.3	173.2				mg/L	10	Standard
Er	166	6.7	173.2				mg/L	23	Standard
I	127	2296.8	3.7				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	91.783		
Al	27	84.116		
Sc	45			
Ti	47	105.603		
V	51	103.193		
Cr	52	100.032		
Cr	53			
Mn	55	110.023		
Co	59	104.053		
Ni	60	99.138		
Cu	65	97.033		
Zn	66	96.723		
> Ge	72		90.208	
As	75	96.182		
Se	82	100.670		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	92.740		
Ag	107	90.247		
Cd	111	98.532		
Cd	114			
> In	115		101.677	
Sn	118	87.292		
Sb	123	93.727		
Ba	135	90.064		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	93.847		
Tl	205			
Pb	206			
Pb	207			
Pb	208	94.304		
U	238	94.137		
> Bi	209		97.963	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	
QC Std 6	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, August 27, 2015 17:47:10
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48868.8	5.4				ug/L	44982	Standard
	Be	9	25.0	60.0	**0.0276**	0.021	76.0	ug/L	8	Standard
	Al	27	1055.0	48.6	**0.0100**	0.006	61.2	ug/L	318	Standard
	Sc	45	26730.3	5.3				ug/L	28998	Standard
	Ti	47	21.3	27.5	**0.0101**	0.034	338.7	ug/L	21	Standard
	V	51	846.5	8.4	**-0.0208**	0.023	111.5	ug/L	1052	Standard
	Cr	52	5272.3	0.3	**-0.1653**	0.021	12.9	ug/L	6637	Standard
	Cr	53	366.7	9.3	**0.0507**	0.057	112.8	ug/L	328	Standard
	Mn	55	649.0	4.3	**0.0178**	0.011	60.4	ug/L	636	Standard
	Co	59	225.0	10.4	**0.0087**	0.007	80.8	ug/L	199	Standard
	Ni	60	265.3	12.4	**0.0675**	0.026	38.5	ug/L	185	Standard
	Cu	65	132.0	12.9	**-0.0124**	0.014	112.5	ug/L	133	Standard
	Zn	66	204.7	3.7	**-0.4598**	0.007	1.4	ug/L	187	Standard
>	**Ge**	72	279555.8	1.5				ug/L	311830	Standard
	As	75	-21.0	134.0	**-0.0085**	0.039	461.8	ug/L	-58	Standard
	Se	82	19.4	26.8	**-0.0886**	0.087	98.6	ug/L	25	Standard
	Se-1	77	86.3	8.7	**0.1659**	0.156	94.1	ug/L	90	Standard
>	**Ga**	71	31.7	18.2				mg/L	18	Standard
	Rb	85	28.3	40.8				ug/L	27	Standard
	Y	89	273376.0	0.9				ug/L	295023	Standard
>	**Rh**	103	13.3	21.7				ug/L	7	Standard
	Mo	98	65.1	19.2	**0.0395**	0.009	22.7	ug/L	10	Standard
	Ag	107	108.7	26.3	**0.0088**	0.006	65.7	ug/L	58	Standard
	Cd	111	18.8	61.1	**0.0114**	0.009	75.0	mg/L	4	Standard
	Cd	114	56.8	93.3	**0.0035**	0.015	417.1	ug/L	-1	Standard
>	**In**	115	433864.2	0.7				ug/L	427691	Standard
	Sn	118	428.3	16.6	**0.0312**	0.016	52.3	ug/L	273	Standard
	Sb	123	723.3	11.0	**0.1872**	0.020	10.5	ug/L	55	Standard
	Ba	135	54.7	49.1	**0.0069**	0.014	201.5	ug/L	39	Standard
	Ce	140	13.3	57.3				ug/L	28	Standard
>	**Tb**	159	842385.4	1.0				ug/L	886833	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	83.3	83.6	**0.0098**	0.011	109.9	ug/L	2	Standard
	Tl	205	55.0	31.5	**0.0140**	0.004	27.0	ug/L	0	Standard
	Pb	206	236.0	13.6	**-0.0045**	0.008	180.1	ug/L	199	Standard
	Pb	207	190.0	17.5	**-0.0058**	0.009	160.5	ug/L	178	Standard
	Pb	208	744.7	2.4	**0.0008**	0.001	153.5	ug/L	654	Standard
	U	238	35.7	59.1	**0.0057**	0.004	77.5	ug/L	1	Standard
>	**Bi**	209	408653.8	0.8				ug/L	418387	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	48.3	26.0	**0.0676**	0.028	42.2	mg/L	27	Standard
K	39	8.3	124.9	**-0.0090**	0.144	1597.5	mg/L	20	Standard
Ca	43	35.0	14.3	**0.7188**	1.004	139.7	mg/L	40	Standard
Fe	54	76.1	34.0	**0.0200**	0.065	326.4	mg/L	74	Standard
Fe	57	875.0	3.2	**1.6288**	0.427	26.2	mg/L	697	Standard
> **Sc-1**	45	26730.3	5.3				mg/L	28998	Standard
Cl	35	8227.6	1.4				ug/L	6091	Standard
Kr	83	4.0	50.0				ug/L	6	Standard
Br	81	446.7	11.0				ug/L	383	Standard
P	31	10356.9	2.1				ug/L	8849	Standard
S	34	1188.4	6.1				ug/L	937	Standard
Sr	88	190.0	10.5				ug/L	188	Standard
C	12	173.3	20.3				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.7	86.7				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	2523.5	6.2				mg/L	1437	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		89.650	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.443	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.674	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, August 27, 2015 17:50:23
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48763.4	1.7				ug/L	44982	Standard
	Be	9	131.7	26.9	**0.1933**	0.058	30.2	ug/L	8	Standard
	Al	27	558.3	9.5	**0.0034**	0.001	24.3	ug/L	318	Standard
	Sc	45	27376.4	3.6				ug/L	28998	Standard
	Ti	47	20.0	15.0	**0.0016**	0.019	1199.2	ug/L	21	Standard
	V	51	2248.8	4.7	**0.3867**	0.025	6.6	ug/L	1052	Standard
	Cr	52	9226.1	0.8	**0.7040**	0.008	1.1	ug/L	6637	Standard
	Cr	53	845.0	10.5	**0.9100**	0.170	18.7	ug/L	328	Standard
	Mn	55	2297.5	2.6	**0.5668**	0.017	3.0	ug/L	636	Standard
	Co	59	1523.4	3.9	**0.4111**	0.017	4.1	ug/L	199	Standard
	Ni	60	2115.5	2.6	**1.5465**	0.033	2.1	ug/L	185	Standard
	Cu	65	1058.0	3.4	**0.7436**	0.036	4.8	ug/L	133	Standard
	Zn	66	4371.3	1.8	**5.5747**	0.163	2.9	ug/L	187	Standard
>	**Ge**	72	281404.3	0.8				ug/L	311830	Standard
	As	75	250.4	13.0	**0.3716**	0.043	11.5	ug/L	-58	Standard
	Se	82	47.7	5.6	**0.4042**	0.050	12.4	ug/L	25	Standard
	Se-1	77	97.0	14.6	**0.4156**	0.336	80.8	ug/L	90	Standard
>	**Ga**	71	20.0	43.3				mg/L	18	Standard
	Rb	85	28.3	20.4				ug/L	27	Standard
	Y	89	278286.0	1.2				ug/L	295023	Standard
>	**Rh**	103	23.3	44.6				ug/L	7	Standard
	Mo	98	25.3	19.4	**0.0112**	0.003	31.0	ug/L	10	Standard
	Ag	107	1814.4	5.2	**0.3414**	0.016	4.8	ug/L	58	Standard
	Cd	111	308.0	5.1	**0.2199**	0.013	6.0	mg/L	4	Standard
	Cd	114	846.1	9.0	**0.2178**	0.021	9.9	ug/L	-1	Standard
>	**In**	115	439167.7	0.9				ug/L	427691	Standard
	Sn	118	393.3	2.9	**0.0224**	0.002	8.6	ug/L	273	Standard
	Sb	123	1552.7	2.0	**0.3978**	0.006	1.5	ug/L	55	Standard
	Ba	135	1320.7	2.0	**0.6462**	0.017	2.6	ug/L	39	Standard
	Ce	140	20.0	0.0				ug/L	28	Standard
>	**Tb**	159	861185.6	1.4				ug/L	886833	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	515.0	2.7	**0.0748**	0.002	2.2	ug/L	2	Standard
	Tl	205	358.3	17.7	**0.0792**	0.013	16.4	ug/L	0	Standard
	Pb	206	1003.7	1.6	**0.1764**	0.005	3.0	ug/L	199	Standard
	Pb	207	862.0	2.7	**0.1698**	0.008	4.4	ug/L	178	Standard
	Pb	208	3118.5	0.5	**0.1727**	0.002	1.2	ug/L	654	Standard
	U	238	1732.4	2.0	**0.3598**	0.008	2.1	ug/L	1	Standard
>	**Bi**	209	413802.9	1.0				ug/L	418387	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	42.1	**0.0482**	0.038	79.1	mg/L	27	Standard
K	39	20.0	66.1	**0.1418**	0.168	118.3	mg/L	20	Standard
Ca	43	35.0	24.7	**0.5439**	1.124	206.6	mg/L	40	Standard
Fe	54	79.0	16.3	**0.0222**	0.036	162.2	mg/L	74	Standard
Fe	57	860.0	3.1	**1.3008**	0.513	39.4	mg/L	697	Standard
Sc-1	45	27376.4	3.6				mg/L	28998	Standard
Cl	35	8222.9	0.3				ug/L	6091	Standard
Kr	83	6.7	67.6				ug/L	6	Standard
Br	81	490.0	10.8				ug/L	383	Standard
P	31	10695.4	4.3				ug/L	8849	Standard
S	34	1220.0	4.6				ug/L	937	Standard
Sr	88	195.0	17.9				ug/L	188	Standard
C	12	160.0	22.5				mg/L	167	Standard
N	14	0.0					mg/L	3	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	-1.1	99.0				mg/L	12	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	23.3	99.0				mg/L	23	Standard
I	127	2523.5	4.3				mg/L	1437	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	96.641		
Al	27			
Sc	45			
Ti	47			
V	51	96.685		
Cr	52	87.999		
Cr	53			
Mn	55	113.355		
Co	59	102.787		
Ni	60	96.658		
Cu	65	92.953		
Zn	66	89.195		
Ge	72		90.243	
As	75	92.907		
Se	82	101.058		
Se-1	77			
Ga	71			

Sample ID: QC Std 8
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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	85.362		
Cd	111	91.636		
Cd	114			
> In	115			102.683
Sn	118			
Sb	123	99.440		
Ba	135	86.161		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	93.485		
Tl	205			
Pb	206			
Pb	207			
Pb	208	86.366		
U	238	89.957		
> Bi	209			98.904
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
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2.4 General Chemistry Data

2.4.1 Method 9056

2.4.1.1 Summary Data

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081073-01	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW14-081915	**Prep Method:**	9056	**Prep Date:**	08/20/2015 13:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG535887	**Analyst:**	ALS	**Run Date:**	08/20/2015 19:57
Collect Date:	08/19/2015 08:20	**Dilution:**	5	**File ID:**	I2_082015-21
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	567	J	2.00	1.00	0.500
Nitrate	14797-55-8	1.00	U	2.00	1.00	0.500
Nitrite	14797-65-0	1.00	U	2.00	1.00	0.500
Sulfate	14808-79-8	379		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081073-01	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW14-081915	**Prep Method:**	9056	**Prep Date:**	08/21/2015 10:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG536070	**Analyst:**	ALS	**Run Date:**	08/21/2015 14:09
Collect Date:	08/19/2015 08:20	**Dilution:**	50	**File ID:**	I2_082115-11
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	495		20.0	10.0	5.00
Nitrate	14797-55-8	10.0	U	20.0	10.0	5.00
Nitrite	14797-65-0	10.0	U	20.0	10.0	5.00
Sulfate	14808-79-8	201		100	50.0	25.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081073-03	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW13-081915	**Prep Method:**	9056	**Prep Date:**	08/20/2015 13:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG535887	**Analyst:**	ALS	**Run Date:**	08/20/2015 20:33
Collect Date:	08/19/2015 09:35	**Dilution:**	5	**File ID:**	I2_082015-23
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	470	J	2.00	1.00	0.500
Nitrate	14797-55-8	1.00	U	2.00	1.00	0.500
Nitrite	14797-65-0	1.00	U	2.00	1.00	0.500
Sulfate	14808-79-8	369		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081073-03	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW13-081915	**Prep Method:**	9056	**Prep Date:**	08/20/2015 13:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG535887	**Analyst:**	ALS	**Run Date:**	08/20/2015 20:52
Collect Date:	08/19/2015 09:35	**Dilution:**	20	**File ID:**	I2_082015-24
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	387		8.00	4.00	2.00
Nitrate	14797-55-8	4.00	U	8.00	4.00	2.00
Nitrite	14797-65-0	4.00	U	8.00	4.00	2.00
Sulfate	14808-79-8	332		40.0	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.4.1.2 QC Summary Data

Example Calculations - Ion Chromatography

A. Methods 9056/300.0 (Quadratic with Offset)

1. Retrieve Curve Data from the ICAL Curve

c2 = the value of curve constant
c1= the curve slope
c0 = the curve offset

2. Obtain the area, y , from the instrument raw data

3. Calculate the concentration of the analyte, f(y), where:

$$f(y) = \frac{1}{2 * c_2} * \left(- c_1 \pm \sqrt{c_1^2 - 4 * c_2 * (c_0 - y)}\right)$$

Example Calculation:

Value of constant, c2, (curve):	0.0003
Value of curve constant, c1, (slope):	0.0869
Value of curve constant, c0, (offset):	-0.0103
Area of target analyte, y, (uS*min):	2.993
Calculated concentration, f(y), (mg/L):	31.1998864
or:	-40.1161215 *
Dilution factor (D):	1.00
Concentration of analyte in sample (mg/L):	31.200

* There are two possible solutions, but only one is valid.

B. Method 314.0 - Perchlorate (Linear)

Retrieve Curve Data from Linear Plot

c1 = the curve slope

Obtain the area, y , from the quantitation report

Calculate the concentration of the analyte, f(y), where:

f (y) = y / c1

Example Calculation:

Value of c1, slope:	0.0034
Area of target analyte, y:	0.083
Calculated concentration:	24.4117647
Dilution Factor:	1
Concentration in sample:	24.4117647

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC2 Dataset: 080315 ICAL IC2.SEQ
Analyst1: AED Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 17

Maintenance Log ID: 53330 Syringe Filter Lot#: 00195722
Eluent ID#: RGT34279
Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
Workgroups:

Internal STD: NA Surrogate STD: NA Calibration STD STD69215 (02/17/15)
CCV STD: STD69215 LCS STD: STD69216 MS/MSD STD: STD69216

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I2_080315-01	ELUENT	1	1		08/03/15 14:06
2	I2_080315-02	DI WATER	1	1		08/03/15 14:25
3	I2_080315-03	WG533569-01 STD \#6	1	1		08/03/15 14:43
4	I2_080315-04	WG533569-02 STD \#5	1	1		08/03/15 15:01
5	I2_080315-05	WG533569-03 STD \#4	1	1		08/03/15 15:19
6	I2_080315-06	WG533569-04 STD \#3	1	1		08/03/15 15:37
7	I2_080315-07	WG533569-05 STD \#2	1	1		08/03/15 15:56
8	I2_080315-08	WG533569-06 STD \#1	1	1		08/03/15 16:14
9	I2_080315-09	WG533569-07 SSCV	1	1		08/03/15 16:32
10	I2_080315-10	LCRV Level \#6	1	1		08/03/15 16:50
11	I2_080315-11	LCRV Level \#2	1	1		08/03/15 17:08
12	I2_080315-12	LCRV Eluent Blank	1	1		08/03/15 17:27
13	I2_080315-13	END	1	1		08/03/15 17:45

Comments

Seq.	Rerun	Dil.	Reason	Analytes

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC2 Dataset: 082015 IC2.SEQ
Analyst1: ALS Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 17

Maintenance Log ID: 53367 Syringe Filter Lot#: 00198584
Eluent ID#: RGT34523

Workgroups: Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
WG535886 WG535887

Internal STD: NA Surrogate STD: NA Calibration STD STD71545 (08/03/15)
CCV STD: STD71545 LCS STD: STD71546 MS/MSD STD: STD71546

Comments: Fractions L15081073-01 and -03 were analyzed at dilutions only due to CL and/or SO4 concentrations exceeding 200ppm.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I2_082015-01	ELUENT	1	1		08/20/15 13:53
2	I2_082015-02	DI WATER	1	1		08/20/15 14:11
3	I2_082015-03	WG535960-01 ANION CCV	1	1		08/20/15 14:29
4	I2_082015-04	WG535960-02 ANION CCB	1	1		08/20/15 14:47
5	I2_082015-05	WG535886-01 SOIL BLANK	18	1		08/20/15 15:06
6	I2_082015-06	WG535886-02 SOIL LCS	18	1		08/20/15 15:24
7	I2_082015-07	WG535886-03 SOIL LCS DUP	18	1		08/20/15 15:42
8	I2_082015-08	L15080896-01 1/3 (CL) RR CL	7	3		08/20/15 16:00
9	I2_082015-09	L15080896-02 1/2 (CL)	7	2		08/20/15 16:18
10	I2_082015-10	L15080896-03 1/2 (CL)	7	2		08/20/15 16:37
11	I2_082015-11	L15080896-04 1/3 (CL) RR CL	7	3		08/20/15 16:55
12	I2_082015-12	L15080896-05 (CL)	7	1		08/20/15 17:13
13	I2_082015-13	L15080896-06 (CL)	7	1		08/20/15 17:31
14	I2_082015-14	L15080965-01 1/2 (CL)	7	2		08/20/15 17:50
15	I2_082015-15	WG535960-03 ANION CCV	1	1		08/20/15 18:08
16	I2_082015-16	WG535960-04 ANION CCB	1	1		08/20/15 18:26
17	I2_082015-17	L15080965-02 (CL)	7	1		08/20/15 18:44
18	I2_082015-18	RINSE	1	1		08/20/15 19:02
19	I2_082015-19	WG535887-01 ANION BLANK	1	1		08/20/15 19:21
20	I2_082015-20	WG535887-02 ANION LCS	1	1		08/20/15 19:39
21	I2_082015-21	L15081073-01 1/5 (CL,NO2,NO3,SO4)	1	5		08/20/15 19:57
22	I2_082015-22	L15081073-01 1/20 (CL,NO2,NO3,SO4) RR CL	1	20		08/20/15 20:15
23	I2_082015-23	L15081073-03 1/5 (CL,NO2,NO3,SO4)	1	5		08/20/15 20:33
24	I2_082015-24	L15081073-03 1/20 (CL,NO2,NO3,SO4)	1	20		08/20/15 20:52
25	I2_082015-25	L15080992-05 1/100 CL	1	100		08/20/15 21:10
26	I2_082015-26	WG535759 FLUID BLANK	1	1		08/20/15 21:28
27	I2_082015-27	WG535960-05 ANION CCV	1	1		08/20/15 21:46
28	I2_082015-28	WG535960-06 ANION CCB	1	1		08/20/15 22:04
29	I2_082015-29	L15080896-01 1/2 (CL)	18	2		08/20/15 22:23
30	I2_082015-30	L15080896-02 (CL)	18	1		08/20/15 22:41
31	I2_082015-31	L15080896-03 (CL)	18	1		08/20/15 22:59
32	I2_082015-32	L15080896-04 1/2 (CL)	18	2		08/20/15 23:17
33	I2_082015-33	L15080896-05 (CL)	18	1		08/20/15 23:36

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Instrument Run Log

Instrument: IC2 Dataset: 082015 IC2.SEQ
Analyst1: ALS Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 17

Maintenance Log ID: 53367 Syringe Filter Lot#: 00198584
Eluent ID#: RGT34523
Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
Workgroups: WG535886 WG535887
Internal STD: NA Surrogate STD: NA STD71545 (08/03/15)
CCV STD: STD71545 LCS STD: STD71546 STD71546

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	I2_082015-34	L15080896-06 (CL) REF	18	1		08/20/15 23:54
35	I2_082015-35	WG535887-04 DUP 0896-06	18	1		08/21/15 00:12
36	I2_082015-36	WG535887-05 MS	18	1		08/21/15 00:30
37	I2_082015-37	WG535887-06 MSD	18	1		08/21/15 00:48
38	I2_082015-38	WG535960-07 ANION CCV	1	1		08/21/15 01:07
39	I2_082015-39	WG535960-08 ANION CCB	1	1		08/21/15 01:25
40	I2_082015-40	END	1	1		08/21/15 01:43

Comments

Seq.	Rerun	Dil.	Reason	Analytes
8	X	5	Over Calibration Range	CL
	L15080896-01 1/3 (CL) RR CL			
11	X	5	Over Calibration Range	CL
	L15080896-04 1/3 (CL) RR CL			
22	X	50	Over Calibration Range	CL
	L15081073-01 1/20 (CL,NO2,NO3,SO4) RR CL			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC2 Dataset: 082115 IC2.SEQ
Analyst1: ALS Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 17

Maintenance Log ID: 53370 Syringe Filter Lot#: 00198584
Eluent ID#: RGT34531
Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
Workgroups: WG536070
Internal STD: NA Surrogate STD: NA Calibration STD STD71545 (08/03/15)
CCV STD: STD71545 LCS STD: STD71546 MS/MSD STD: STD71546

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I2_082115-01	ELUENT	1	1		08/21/15 11:07
2	I2_082115-02	DI WATER	1	1		08/21/15 11:25
3	I2_082115-03	WG536131-01 ANION CCV	1	1		08/21/15 11:44
4	I2_082115-04	WG536131-02 ANION CCB	1	1		08/21/15 12:02
5	I2_082115-05	WG536070-01 ANION BLANK	1	1		08/21/15 12:20
6	I2_082115-06	WG536070-02 ANION LCS	1	1		08/21/15 12:38
7	I2_082115-07	L15081166-01 (CL,NO3,SO4)	1	1		08/21/15 12:57
8	I2_082115-08	L15081166-01 1/3 (CL,NO3,SO4)	1	3		08/21/15 13:15
9	I2_082115-09	L15081166-08 (CL,NO3,SO4)	1	1		08/21/15 13:33
10	I2_082115-10	L15081154-01 (NO2,NO3) RR NO3	2	1		08/21/15 13:51
11	I2_082115-11	L15081073-01 1/50 CL	1	50		08/21/15 14:09
12	I2_082115-12	FLUID BLANK WG535933	1	1		08/21/15 14:28
13	I2_082115-13	L15080965-01 (CL)	18	1		08/21/15 14:46
14	I2_082115-14	L15080965-02 (CL)	18	1		08/21/15 15:04
15	I2_082115-15	WG536131-03 ANION CCV	1	1		08/21/15 15:22
16	I2_082115-16	WG536131-04 ANION CCB	1	1		08/21/15 15:40
17	I2_082115-17	FLUID BLANK WG535934	1	1		08/21/15 15:59
18	I2_082115-18	L15081085-04 (F,CL,SO4)	18	1		08/21/15 16:17
19	I2_082115-19	L15081085-04 1/2 (F,CL,SO4)	18	2		08/21/15 16:35
20	I2_082115-20	L15081089-04 (F,CL,SO4)	18	1		08/21/15 16:53
21	I2_082115-21	L15081089-04 1/2 (F,CL,SO4)	18	2		08/21/15 17:11
22	I2_082115-22	L15081049-01 1/2 (CL,SO4)	1	2		08/21/15 17:30
23	I2_082115-23	L15081049-01 1/20 (CL,SO4)	1	20		08/21/15 17:48
24	I2_082115-24	L15081052-01 (CL,SO4)	1	1		08/21/15 18:06
25	I2_082115-25	L15081052-02 (CL,SO4)	1	1		08/21/15 18:24
26	I2_082115-26	L15081137-01 (CL,SO4)	1	1		08/21/15 18:43
27	I2_082115-27	WG536131-05 ANION CCV	1	1		08/21/15 19:01
28	I2_082115-28	WG536131-06 ANION CCB	1	1		08/21/15 19:19
29	I2_082115-29	L15081137-02 1/5 (CL,SO4)	1	5		08/21/15 19:37
30	I2_082115-30	L15081137-02 1/50 (CL,SO4)	1	50		08/21/15 19:55
31	I2_082115-31	L15081137-03 1/2 (CL,SO4)	1	2		08/21/15 20:14
32	I2_082115-32	L15081137-04 (CL,SO4) REF	1	1		08/21/15 20:32
33	I2_082115-33	WG536070-04 DUP 1137-04	1	1		08/21/15 20:50

Page: 1 Approved: 24-AUG-15

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC2 Dataset: 082115 IC2.SEQ
Analyst1: ALS Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 17

Maintenance Log ID: 53370 Syringe Filter Lot#: 00198584
Eluent ID#: RGT34531
Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
Workgroups: WG536070
Internal STD: NA Surrogate STD: NA STD71545 (08/03/15)
CCV STD: STD71545 LCS STD: STD71546 STD71546

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	I2_082115-34	WG536070-05 MS	1	1		08/21/15 21:08
35	I2_082115-35	WG536070-06 MSD	1	1		08/21/15 21:26
36	I2_082115-36	L15081154-01 1/5 (NO2,NO3)	2	5		08/21/15 21:45
37	I2_082115-37	L15081138-01 (CL,SO4)	1	1		08/21/15 22:03
38	I2_082115-38	L15081138-01 1/10 (CL,SO4)	1	10		08/21/15 22:21
39	I2_082115-39	WG536131-07 ANION CCV	1	1		08/21/15 22:39
40	I2_082115-40	WG536131-08 ANION CCB	1	1		08/21/15 22:58
41	I2_082115-41	L15081138-02 (CL,SO4)	1	1		08/21/15 23:16
42	I2_082115-42	L15081138-02 1/3 (CL,SO4)	1	3		08/21/15 23:34
43	I2_082115-43	L15081138-03 (CL,SO4)	1	1		08/21/15 23:52
44	I2_082115-44	L15081138-04 (CL,SO4)	1	1		08/22/15 00:10
45	I2_082115-45	WG536131-09 ANION CCV	1	1		08/22/15 00:29
46	I2_082115-46	WG536131-10 ANION CCB	1	1		08/22/15 00:47
47	I2_082115-47	END	1	1		08/22/15 02:54

Comments

Seq.	Rerun	Dil.	Reason	Analytes
10	X	5	Over Calibration Range	NO3
	L15081154-01 (NO2,NO3) RR NO3, was reanalyzed on this sequence.			
11				
	L15081073-01 1/50 CL was analyzed at a dilution due to CL exceeding the ICAL.			

Page: 2 Approved: 24-AUG-15

Microbac Laboratories Inc.

Data Checklist

Date: 03-AUG-2015
Analyst: AED
Analyst: NA
Method: 9056/300
Instrument: IC2
Curve Workgroup: NA
Runlog ID: 69606
Analytical Workgroups: WG533569 IC2 ICAL

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	NA
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	NA
Recoveries	NA
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	NA
TCL hits	NA
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	NA
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	AED
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
04-AUG-2015

Secondary Reviewer:
19-AUG-2015

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-19-2015 11:38:56

Microbac Laboratories Inc.

Data Checklist

Date: 20-AUG-2015
Analyst: ALS
Analyst: NA
Method: 9056/300
Instrument: IC2
Curve Workgroup: NA
Runlog ID: 69957
Analytical Workgroups: 08-0896 (300/9056),0965,0992,1073

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	X
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	X
Check for completeness	X
Primary Reviewer	ALS
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 21-AUG-2015

Secondary Reviewer: 21-AUG-2015

CHECKLIST1 - Modified 03/05/2008

Generated: AUG-21-2015 11:46:52

Microbac Laboratories Inc.

Data Checklist

Date: 21-AUG-2015
Analyst: ALS
Analyst: NA
Method: 9056/300
Instrument: IC2
Curve Workgroup: NA
Runlog ID: 69991
Analytical Workgroups: 080965, 1049, 1052, 1073, 1085, 1089, 1137, 1138, 1154, 1166

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	X
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	X
Check for completeness	X
Primary Reviewer	ALS
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 24-AUG-2015

Secondary Reviewer: 24-AUG-2015

CHECKLIST1 - Modified 03/05/2008

Generated: AUG-24-2015 15:55:32

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 9056 AAB#: WG535887

Login Number: L15081073

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW14-081915	01	08/19/15					08/20/2015	1.2	2		08/20/15	1.5	2	
50WW13-081915	03	08/19/15					08/20/2015	1.1	2		08/20/15	1.5	2	
50WW13-081915	03	08/19/15					08/20/2015	1.1	2		08/20/15	1.5	2	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4345769
Report generated 08/24/2015 16:04

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 9056 AAB#: WG536070

Login Number: L15081073

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW14-081915	01	08/19/15					08/21/2015	2.1	2	*	08/21/15	2.2	2	*

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4345769
Report generated 08/24/2015 16:04

METHOD BLANK SUMMARY

Login Number: L15081073
Blank File ID: I2_082015-19
Prep Date: 08/20/15 13:00
Analyzed Date: 08/20/15 19:21
Analyst: ALS

Work Group: WG535887
Blank Sample ID: WG535887-01
Instrument ID: IC2
Method: 9056

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG535887-02	I2_082015-20	08/20/15 19:39	01
50WW14-081915	L15081073-01	I2_082015-21	08/20/15 19:57	DL01
50WW13-081915	L15081073-03	I2_082015-23	08/20/15 20:33	DL01
50WW13-081915	L15081073-03	I2_082015-24	08/20/15 20:52	DL02
DUP	WG535887-04	I2_082015-35	08/21/15 00:12	01

Report Name: BLANK_SUMMARY
PDF File ID: 4345770
Report generated 08/24/2015 16:04

METHOD BLANK SUMMARY

Login Number: L15081073
Blank File ID: I2_082115-05
Prep Date: 08/21/15 10:00
Analyzed Date: 08/21/15 12:20
Analyst: ALS

Work Group: WG536070
Blank Sample ID: WG536070-01
Instrument ID: IC2
Method: 9056

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG536070-02	I2_082115-06	08/21/15 12:38	01
50WW14-081915	L15081073-01	I2_082115-11	08/21/15 14:09	DL02
DUP	WG536070-04	I2_082115-33	08/21/15 20:50	01

Report Name: BLANK_SUMMARY
PDF File ID: 4345770
Report generated 08/24/2015 16:04

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15081073 Prep Date: 08/20/15 13:00 Sample ID: WG535887-01
Instrument ID: IC2 Run Date: 08/20/15 19:21 Prep Method: 9056
File ID: I2 082015-19 Analyst: ALS Method: 9056
Workgroup (AAB#): WG535887 Matrix: Water Units: mg/L
Contract #: Cal ID: IC2 - 03-AUG-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Chloride	0.100	0.400	0.100	1	U
Nitrate	0.100	0.400	0.100	1	U
Nitrite	0.100	0.400	0.100	1	U
Sulfate	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4345771
24-AUG-2015 16:04

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15081073 Prep Date: 08/21/15 10:00 Sample ID: WG536070-01
Instrument ID: IC2 Run Date: 08/21/15 12:20 Prep Method: 9056
File ID: I2 082115-05 Analyst: ALS Method: 9056
Workgroup (AAB#): WG536070 Matrix: Water Units: mg/L
Contract #: Cal ID: IC2 - 03-AUG-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Chloride	0.100	0.400	0.100	1	U
Nitrate	0.100	0.400	0.100	1	U
Nitrite	0.100	0.400	0.100	1	U
Sulfate	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4345771
24-AUG-2015 16:04

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15081073 Run Date: 08/20/2015 Sample ID: WG535887-02
Instrument ID: IC2 Run Time: 19:39 Prep Method: 9056
File ID: I2 082015-20 Analyst: ALS Method: 9056
Workgroup (AAB#): WG535887 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD71546 Cal ID: IC2 - 03-AUG-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Chloride	8.00	8.28	103	90 - 110	
Nitrate	5.42	5.33	98.4	90 - 110	
Nitrite	4.87	5.07	104	90 - 110	
Sulfate	40.0	39.5	98.7	90 - 110	

LCS - Modified 03/06/2008
PDF File ID: 4345772
Report generated: 08/24/2015 16:04

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15081073 Run Date: 08/21/2015 Sample ID: WG536070-02
Instrument ID: IC2 Run Time: 12:38 Prep Method: 9056
File ID: I2 082115-06 Analyst: ALS Method: 9056
Workgroup (AAB#): WG536070 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD71546 Cal ID: IC2 - 03-AUG-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Chloride	8.00	8.27	103	90 - 110	
Nitrate	5.42	5.33	98.4	90 - 110	
Nitrite	4.87	5.07	104	90 - 110	
Sulfate	40.0	39.4	98.6	90 - 110	

LCS - Modified 03/06/2008
PDF File ID: 4345772
Report generated: 08/24/2015 16:04

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L15081073
Analytical Method: 9056
ICAL Workgroup: WG533569

Instrument ID: IC2
Initial Calibration Date: 03-AUG-15 16:14
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Chloride		5.425	8.21	0.99800	
Nitrate		2.145	11.5	0.99700	
Nitrite		2.773	7.31	1.00000	
Sulfate		7.062	16.0	0.99600	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4345773
Report generated 08/24/2015 16:04

Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number: L15081073
Analytical Method: 9056
Instrument ID: IC2
Initial Calibration Date: 03-AUG-15 16:14
Column ID: F

Analyte	WG533569-01			WG533569-02			WG533569-03		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	24.0	5.09400000	4.711	12.0	2.31500000	5.184	8.00	1.45300000	5.506
Nitrate	16.3	9.09800000	1.788	8.13	4.10300000	1.982	5.42	2.52000000	2.151
Nitrite	14.6	5.74700000	2.543	7.31	2.80200000	2.608	4.87	1.78800000	2.724
Sulfate	120	21.5820000	5.560	60.0	9.61600000	6.240	40.0	5.87200000	6.812

INT_CAL - Modified 03/06/2008
PDF File ID: 4345773
Report generated 08/24/2015 16:04

Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number: L15081073
Analytical Method: 9056
Instrument ID: IC2
Initial Calibration Date: 03-AUG-15 16:14
Column ID: F

Analyte	WG533569-04			WG533569-05			WG533569-06		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	4.00	0.716000000	5.587	1.00	0.176000000	5.682	0.200	0.0340000000	5.882
Nitrate	2.71	1.22300000	2.217	0.678	0.300000000	2.258	0.134	0.0540000000	2.473
Nitrite	2.44	0.889000000	2.740	0.609	0.210000000	2.900	0.122	0.0390000000	3.123
Sulfate	20.0	2.74900000	7.275	5.00	0.636000000	7.862	1.00	0.116000000	8.621

INT_CAL - Modified 03/06/2008
PDF File ID: 4345773
Report generated 08/24/2015 16:04

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15081073 Run Date: 08/03/2015 Sample ID: WG533569-07
Instrument ID: IC2 Run Time: 16:32 Method: 9056
File ID: I2 080315-09 Analyst: AED QC Key: DOD4
ICal Workgroup: WG533569 Cal ID: IC2 - 03-AUG-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloride		8.00	7.48	mg/L	5.38	6.60	10	
Nitrate		5.42	5.03	mg/L	2.08	7.20	10	
Nitrite		4.87	4.72	mg/L	2.70	3.10	10	
Sulfate		40.0	36.7	mg/L	6.63	8.40	10	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4345774
Report generated 08/24/2015 16:04

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15081073
Run Date: 08/20/2015
Sample ID: WG535960-04
Instrument ID: IC2
Run Time: 18:26
Method: 9056
File ID: I2 082015-16
Analyst: ALS
Units: mg/L
Workgroup (AAB#): WG535887
Cal ID: IC2 - 03-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4345776
Report generated 08/24/2015 16:04

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15081073
Run Date: 08/20/2015
Sample ID: WG535960-06
Instrument ID: IC2
Run Time: 22:04
Method: 9056
File ID: I2 082015-28
Analyst: ALS
Units: mg/L
Workgroup (AAB#): WG535887
Cal ID: IC2 - 03-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4345776
Report generated 08/24/2015 16:04

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15081073
Run Date: 08/21/2015
Sample ID: WG536131-02
Instrument ID: IC2
Run Time: 12:02
Method: 9056
File ID: I2 082115-04
Analyst: ALS
Units: mg/L
Workgroup (AAB#): WG536070
Cal ID: IC2 - 03-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4345776
Report generated 08/24/2015 16:04

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15081073
Run Date: 08/21/2015
Sample ID: WG536131-04
Instrument ID: IC2
Run Time: 15:40
Method: 9056
File ID: I2 082115-16
Analyst: ALS
Units: mg/L
Workgroup (AAB#): WG536070
Cal ID: IC2 - 03-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4345776
Report generated 08/24/2015 16:04

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15081073
Run Date: 08/20/2015
Sample ID: WG535960-03
Instrument ID: IC2
Run Time: 18:08
Method: 9056
File ID: I2 082015-15
Analyst: ALS
QC Key: DOD4
Workgroup (AAB#): WG535887
Cal ID: IC2 - 03-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.34	mg/L	4.82	4.21	10	
Nitrate		5.42	5.29	mg/L	1.98	2.52	10	
Nitrite		4.87	5.01	mg/L	2.54	2.82	10	
Sulfate		40.0	39.4	mg/L	6.17	1.61	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4345775
Report generated 08/24/2015 16:04

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15081073
Run Date: 08/20/2015
Sample ID: WG535960-05
Instrument ID: IC2
Run Time: 21:46
Method: 9056
File ID: I2 082015-27
Analyst: ALS
QC Key: DOD4
Workgroup (AAB#): WG535887
Cal ID: IC2 - 03-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.30	mg/L	4.85	3.74	10	
Nitrate		5.42	5.33	mg/L	1.96	1.63	10	
Nitrite		4.87	5.01	mg/L	2.54	2.93	10	
Sulfate		40.0	39.5	mg/L	6.15	1.31	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4345775
Report generated 08/24/2015 16:04

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15081073
Run Date: 08/21/2015
Sample ID: WG536131-01
Instrument ID: IC2
Run Time: 11:44
Method: 9056
File ID: I2 082115-03
Analyst: ALS
QC Key: DOD4
Workgroup (AAB#): WG536070
Cal ID: IC2 - 03-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.26	mg/L	4.87	3.19	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4345775
Report generated 08/24/2015 16:04

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15081073
Run Date: 08/21/2015
Sample ID: WG536131-03
Instrument ID: IC2
Run Time: 15:22
Method: 9056
File ID: I2 082115-15
Analyst: ALS
QC Key: DOD4
Workgroup (AAB#): WG536070
Cal ID: IC2 - 03-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.23	mg/L	4.89	2.84	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4345775
Report generated 08/24/2015 16:04

2.4.1.3 Sample Data

21 L15081073-01 1/5 (CL,NO2,NO3,SO4)

1,5 ALS (CL,SO4>200PPM)

Sample Name:	**L15081073-01 1/5 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**25.0**
Vial Number:	**21**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/20/2015 19:57**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

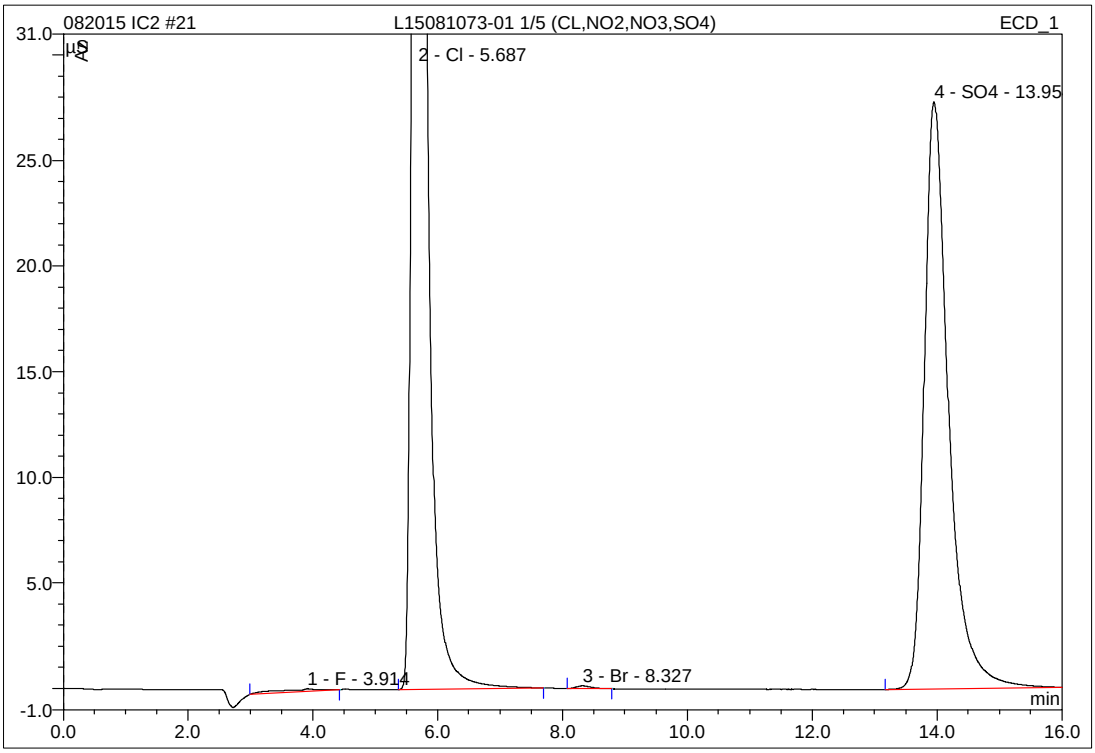

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.91	F	0.122	0.104	0.29	0.320	BMB
2	5.69	Cl	103.590	22.735	64.12	113.379	BMB
3	8.33	Br	0.130	0.036	0.10	0.520	BMB
4	13.95	SO4	27.797	12.585	35.49	75.760	BMB
Total:			131.639	35.460	100.00	189.979	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

11 L15081073-01 1/50 CL

1,50 ALS (CL>ICAL)

Sample Name:	**L15081073-01 1/50 CL**	*Injection Volume:*	**25.0**
Vial Number:	**11**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/21/2015 14:09**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

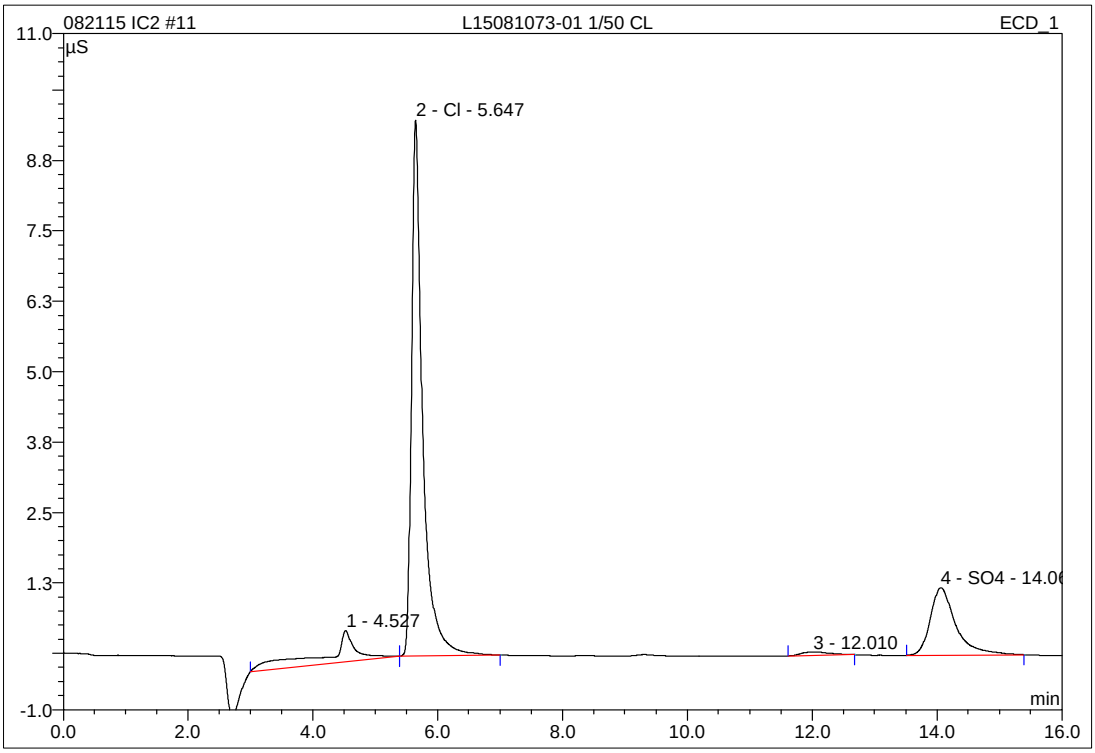

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	4.53	n.a.	0.556	0.326	11.25	n.a.	BMB
2	5.65	Cl	9.510	1.974	68.06	9.906	bMB
3	12.01	n.a.	0.065	0.033	1.14	n.a.	BMB
4	14.06	SO4	1.197	0.567	19.56	4.018	BMB
Total:			11.328	2.900	100.00	13.925	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

23 L15081073-03 1/5 (CL,NO2,NO3,SO4)

1,5 ALS (CL,SO4>200PPM)

Sample Name:	**L15081073-03 1/5 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**25.0**
Vial Number:	**23**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/20/2015 20:33**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

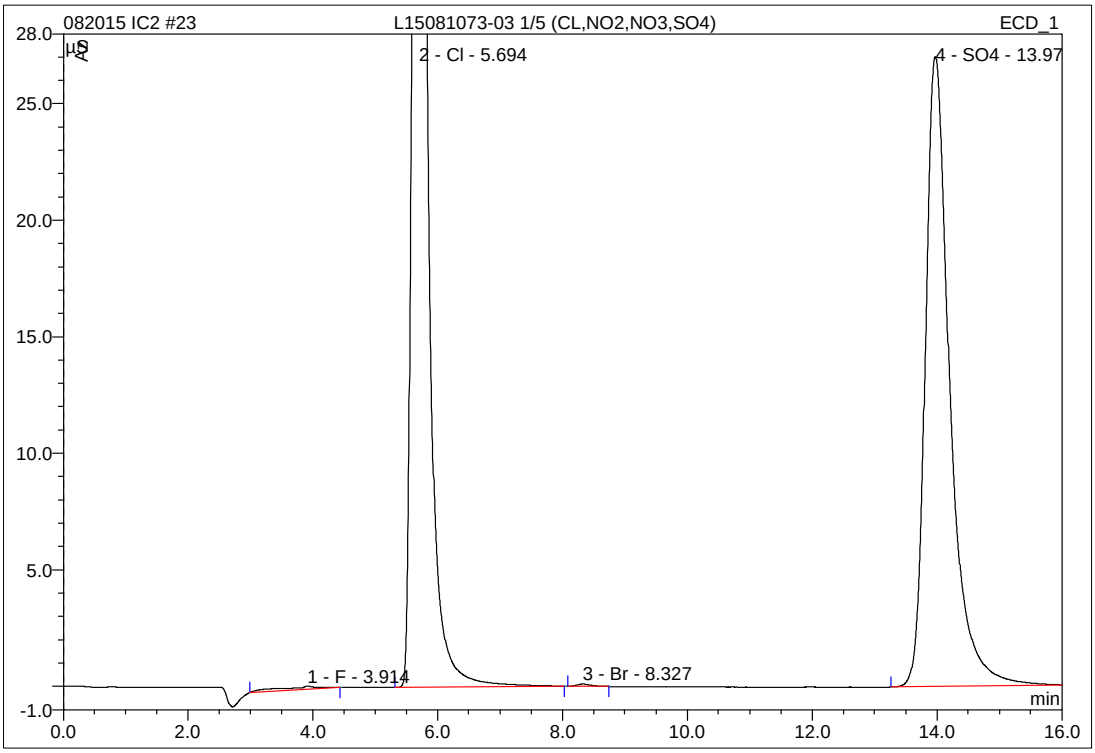

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.91	F	0.133	0.099	0.32	0.304	BMB
2	5.69	Cl	81.706	18.855	60.34	94.041	BMB
3	8.33	Br	0.096	0.025	0.08	0.373	BMB
4	13.97	SO4	27.018	12.268	39.26	73.869	BMB
Total:			108.952	31.247	100.00	168.588	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

24 L15081073-03 1/20 (CL,NO2,NO3,SO4)

1,20 ALS (CL,SO4>ICAL)

Sample Name:	**L15081073-03 1/20 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**25.0**
Vial Number:	**24**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/20/2015 20:52**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

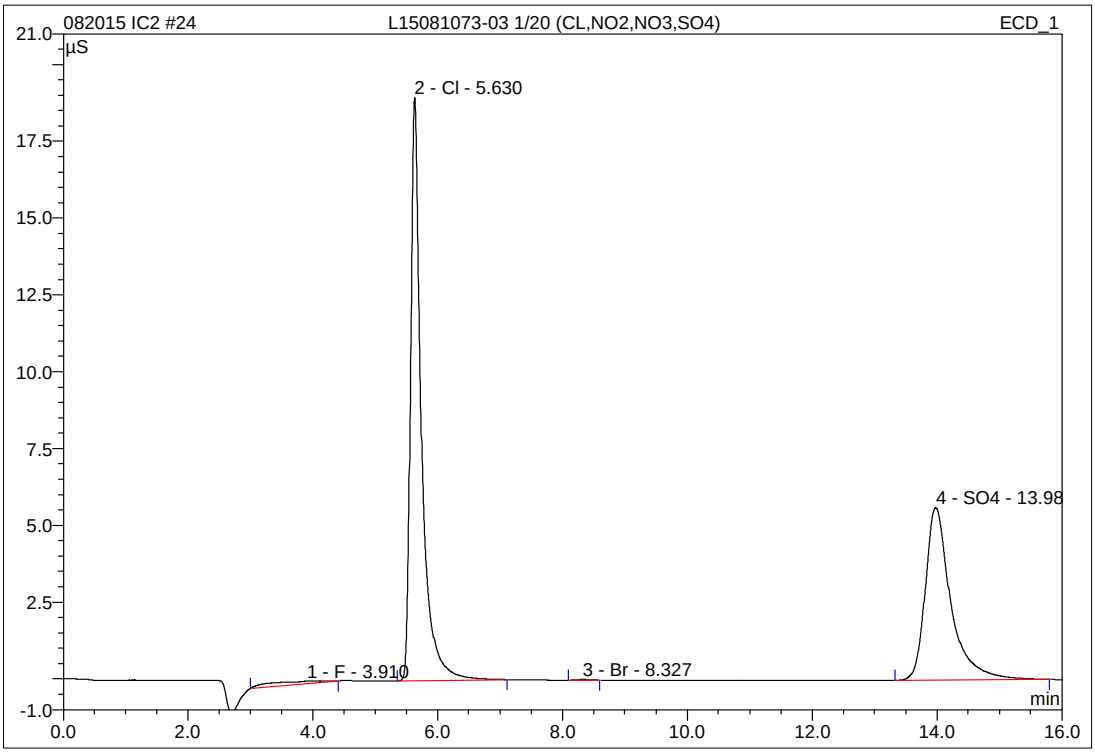

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.91	F	0.086	0.106	1.59	0.327	BMB
2	5.63	Cl	18.972	3.873	58.13	19.370	BMB
3	8.33	Br	0.024	0.006	0.09	0.115	BMB
4	13.98	SO4	5.613	2.678	40.19	16.619	BMB
Total:			24.694	6.662	100.00	36.431	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

2.4.1.4 Standards Data

3 WG533569-01 STD #6

1,1 AED STD71715

Sample Name:	**WG533569-01 STD #6**	*Injection Volume:*	**25.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/03/2015 14:43**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

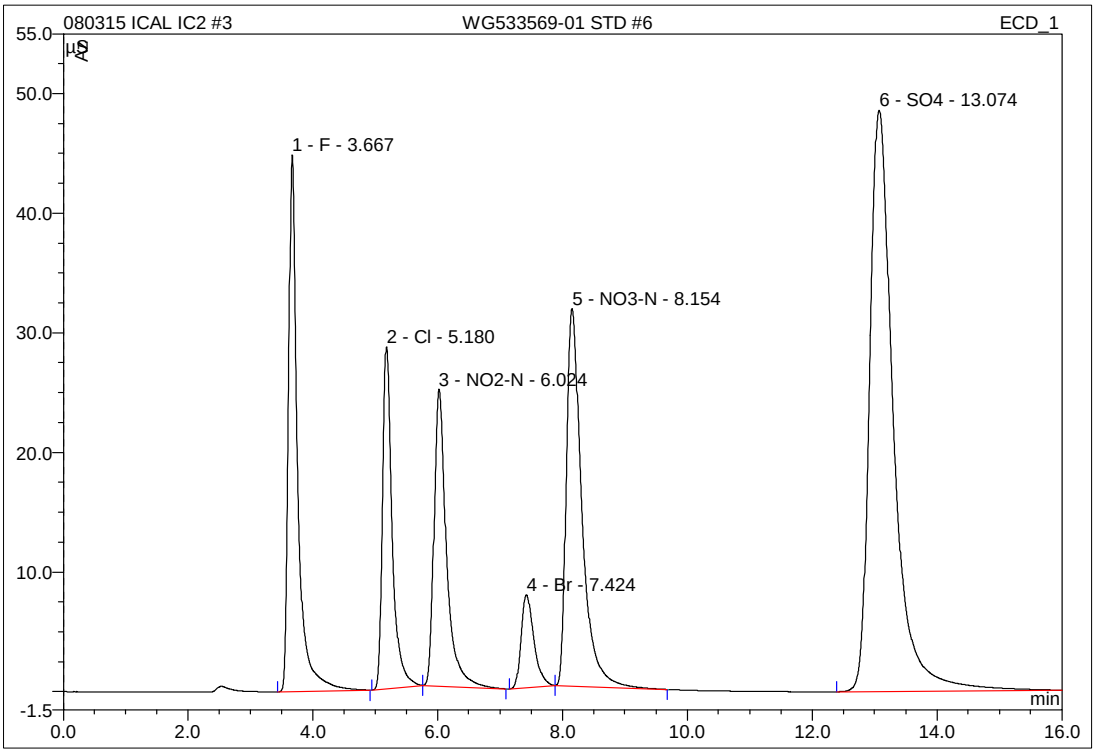

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.67	F	44.847	7.653	15.00	24.644	BMB
2	5.18	Cl	28.577	5.094	9.99	25.455	BMb
3	6.02	NO2-N	24.807	5.747	11.27	14.934	bMB
4	7.42	Br	7.771	1.837	3.60	24.664	BMb
5	8.15	NO3-N	31.557	9.098	17.84	17.397	bMB
6	13.07	SO4	48.562	21.582	42.31	129.474	BMB
Total:			186.121	51.010	100.00	236.568	

4 WG533569-02 STD #5

1,1 AED STD71715

Sample Name:	**WG533569-02 STD #5**	*Injection Volume:*	**25.0**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/03/2015 15:01**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

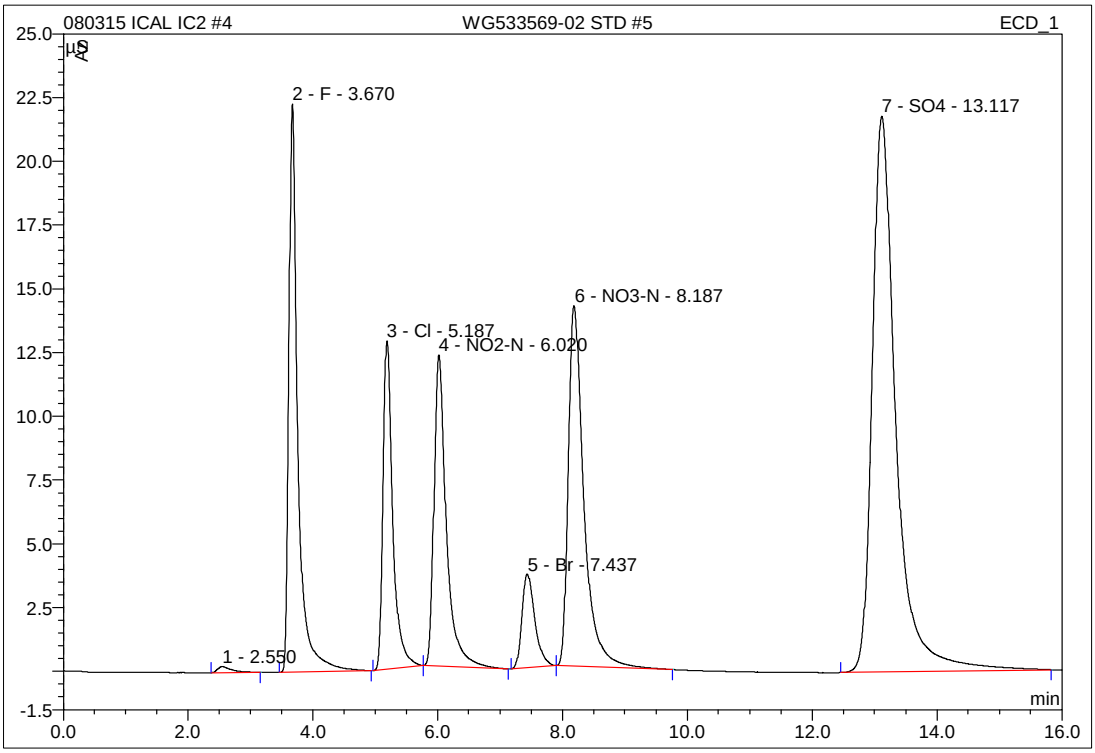

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.55	n.a.	0.232	0.060	0.25	n.a.	BMB
2	3.67	F	22.283	3.709	15.79	11.936	BMB
3	5.19	Cl	12.875	2.315	9.86	11.605	BMb
4	6.02	NO2-N	12.209	2.802	11.93	7.301	bMB
5	7.44	Br	3.673	0.879	3.74	11.828	BMb
6	8.19	NO3-N	14.133	4.103	17.47	7.881	bMB
7	13.12	SO4	21.786	9.616	40.95	58.039	BMB
Total:			87.191	23.484	100.00	108.591	

5 WG533569-03 STD #4

1,1 AED STD71715

Sample Name:	**WG533569-03 STD #4**	*Injection Volume:*	**25.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/03/2015 15:19**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

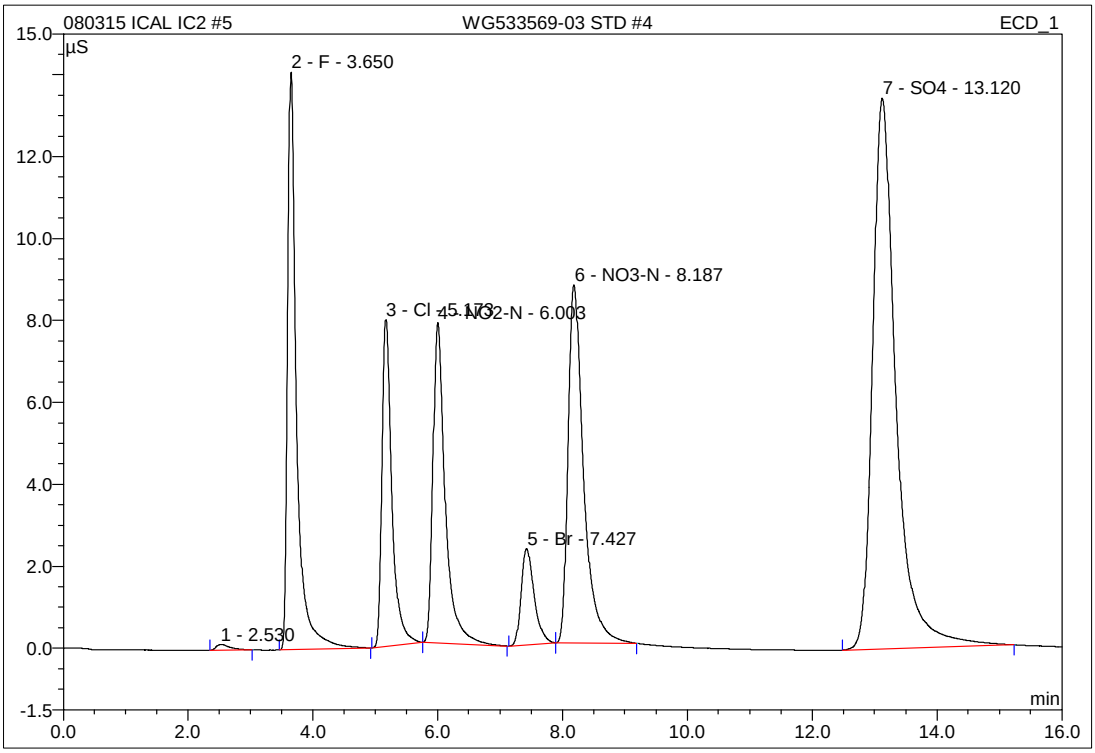

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.53	n.a.	0.143	0.036	0.25	n.a.	BMB
2	3.65	F	14.095	2.348	16.10	7.551	BMB
3	5.17	Cl	7.978	1.453	9.96	7.312	BMb
4	6.00	NO2-N	7.818	1.788	12.26	4.670	bMB
5	7.43	Br	2.352	0.566	3.88	7.625	BMB
6	8.19	NO3-N	8.740	2.520	17.28	4.866	bMB
7	13.12	SO4	13.444	5.872	40.27	35.687	BMB
Total:			54.570	14.583	100.00	67.710	

5 WG533569-03 STD #4

1,1 AED STD71715

Sample Name:	**WG533569-03 STD #4**	*Injection Volume:*	**25.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**8/3/2015 15:19**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

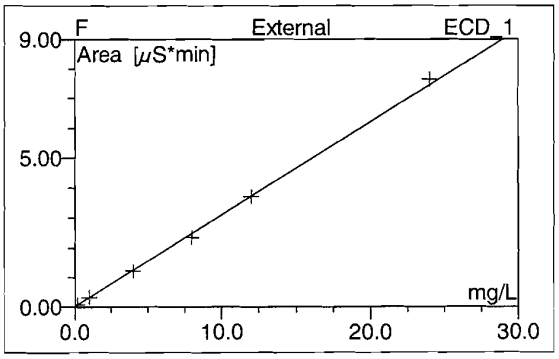

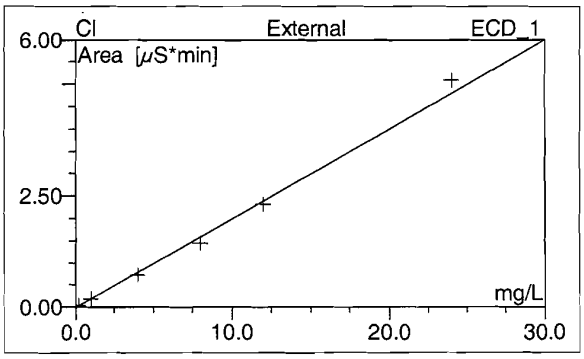

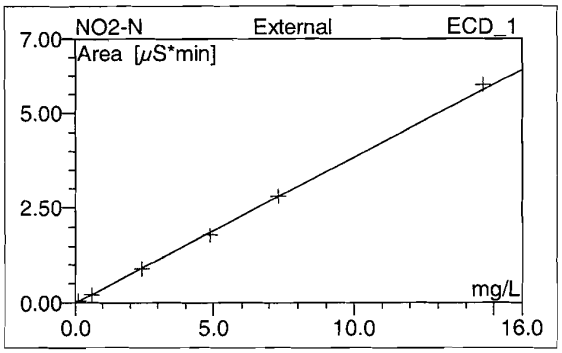

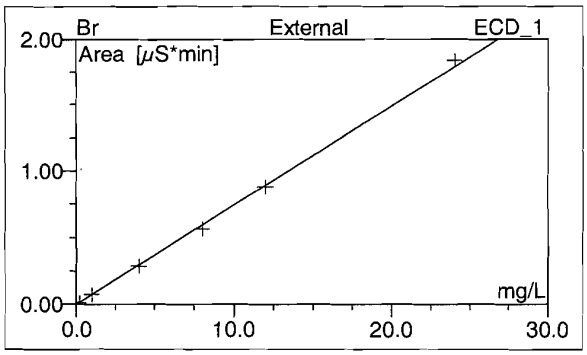

No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	2.53	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	3.65	F	XLOff	6	99.9442	0.0045	0.3104	0.0000
3	5.17	Cl	XLOff	6	99.7675	-0.0139	0.2006	0.0000
4	6.00	NO2-N	XLOff	6	99.9587	-0.0135	0.3857	0.0000
5	7.43	Br	XLOff	6	99.9503	-0.0028	0.0746	0.0000
6	8.19	NO3-N	XLOff	6	99.6785	-0.0340	0.5249	0.0000
7	13.12	SO4	XLOff	6	99.5716	-0.1060	0.1675	0.0000
Average:					99.8118	-0.0276	0.2773	0.0000

00648790

5 WG533569-03 STD #4

1,1 AED STD71715

Sample Name:	**WG533569-03 STD #4**	*Injection Volume:*	**25.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**8/3/2015 15:19**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

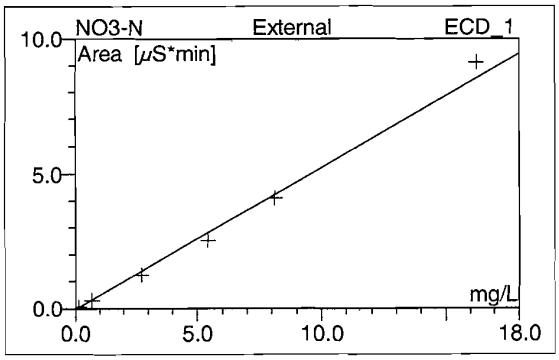

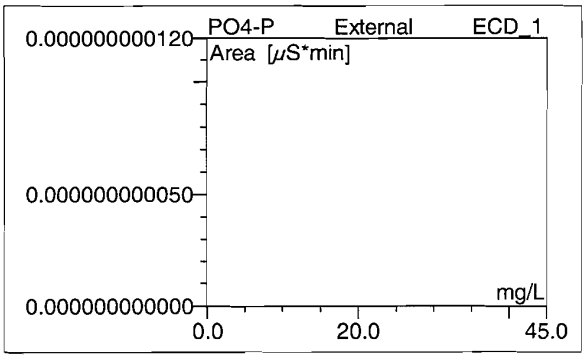

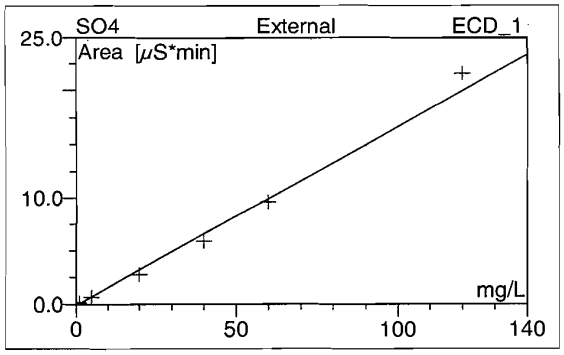

No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	2.53	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	3.65	F	XLOff	6	99.9442	0.0045	0.3104	0.0000
3	5.17	Cl	XLOff	6	99.7675	-0.0139	0.2006	0.0000
4	6.00	NO2-N	XLOff	6	99.9587	-0.0135	0.3857	0.0000
5	7.43	Br	XLOff	6	99.9503	-0.0028	0.0746	0.0000
6	8.19	NO3-N	XLOff	6	99.6785	-0.0340	0.5249	0.0000
7	13.12	SO4	XLOff	6	99.5716	-0.1060	0.1675	0.0000
Average:					99.8118	-0.0276	0.2773	0.0000

6 WG533569-04 STD #3

1,1 AED STD71715

Sample Name:	**WG533569-04 STD #3**	*Injection Volume:*	**25.0**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/03/2015 15:37**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

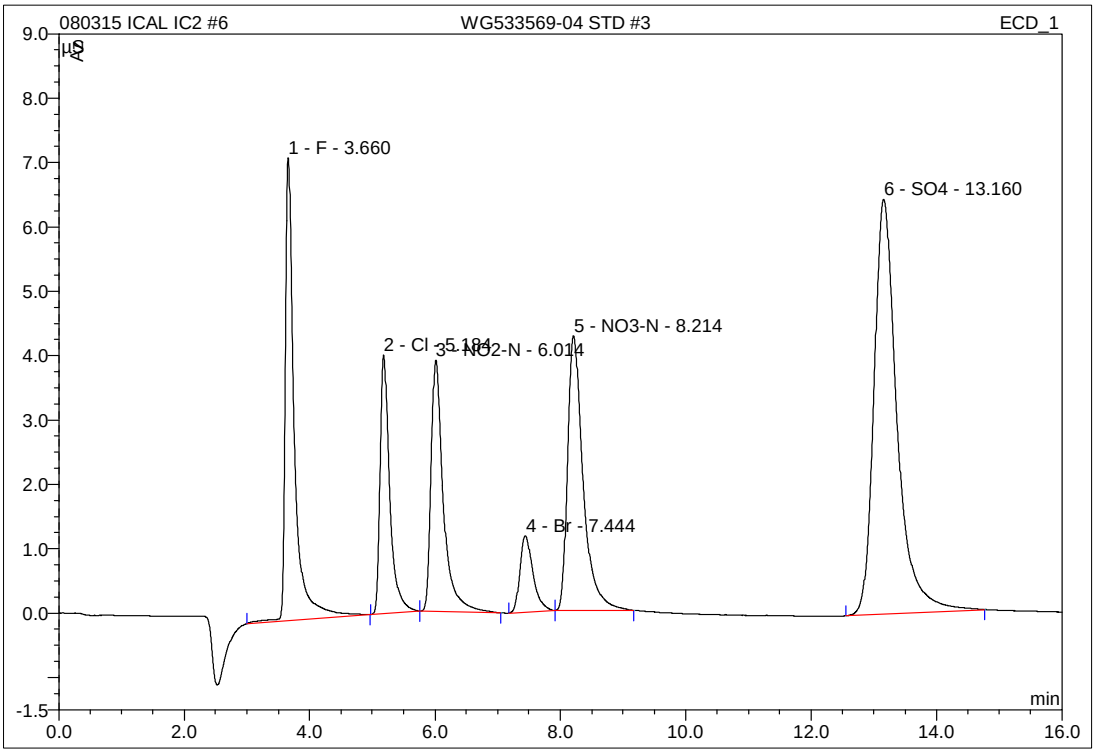

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.66	F	7.188	1.206	17.06	3.871	BMB
2	5.18	Cl	4.017	0.716	10.13	3.639	BMb
3	6.01	NO2-N	3.908	0.889	12.57	2.339	bMB
4	7.44	Br	1.187	0.286	4.05	3.872	BMB
5	8.21	NO3-N	4.268	1.223	17.30	2.394	BMB
6	13.16	SO4	6.444	2.749	38.89	17.045	BMB
Total:			27.012	7.069	100.00	33.160	

7 WG533569-05 STD #2

1,1 AED STD71715

Sample Name:	**WG533569-05 STD #2**	*Injection Volume:*	**25.0**
Vial Number:	**7**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/03/2015 15:56**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

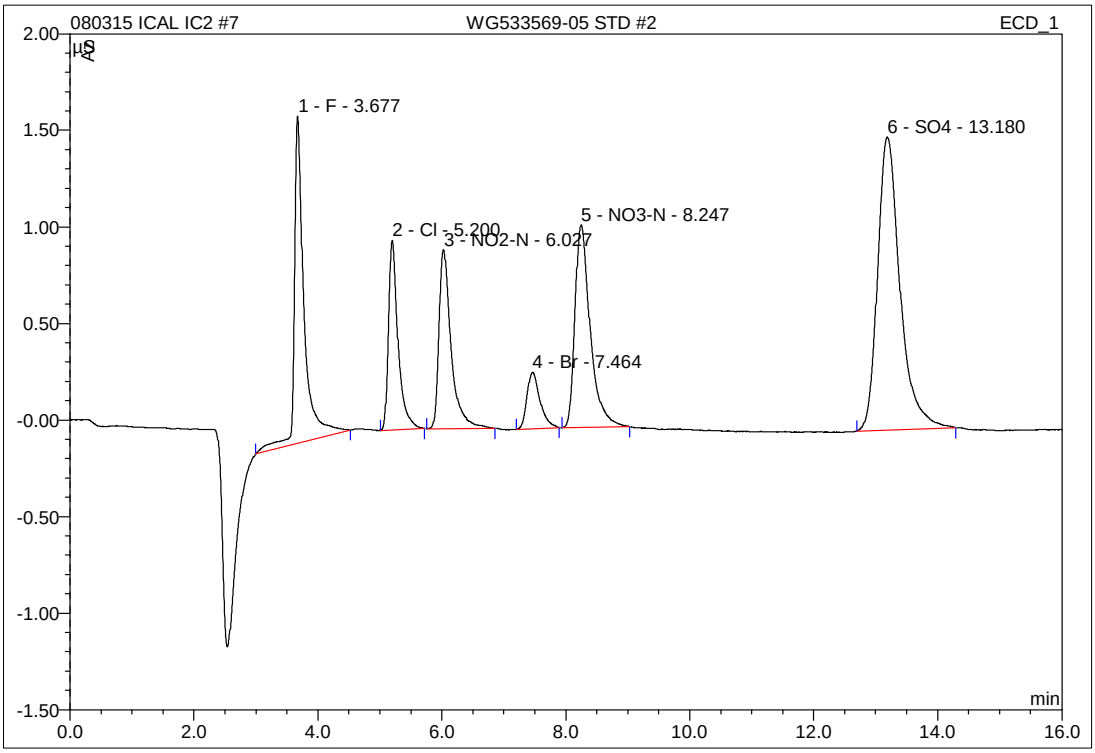

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.68	F	1.694	0.309	18.15	0.981	BMB
2	5.20	Cl	0.982	0.176	10.36	0.949	BMB
3	6.03	NO2-N	0.926	0.210	12.33	0.579	BMB
4	7.46	Br	0.293	0.072	4.20	0.997	BMB
5	8.25	NO3-N	1.048	0.300	17.59	0.635	BMB
6	13.18	SO4	1.519	0.636	37.37	4.432	BMB
Total:			6.462	1.703	100.00	8.574	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

8 WG533569-06 STD #1

1,1 AED STD71715

Sample Name:	**WG533569-06 STD #1**	*Injection Volume:*	**25.0**
Vial Number:	**8**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/03/2015 16:14**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

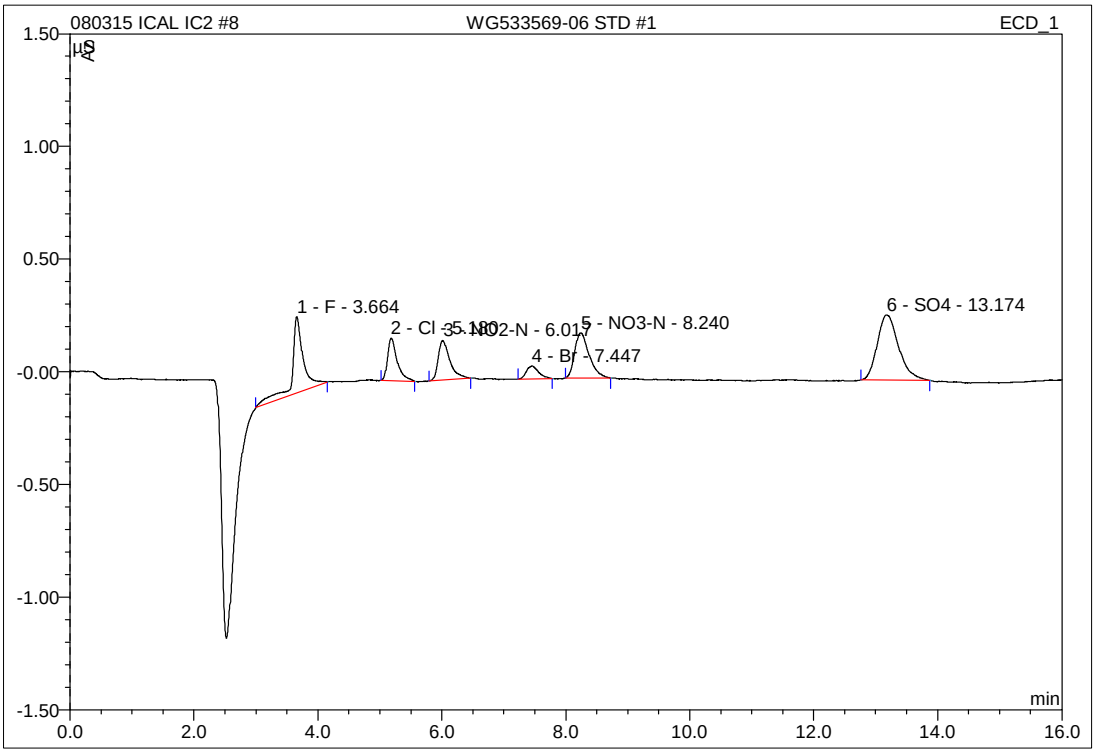

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.66	F	0.339	0.072	21.92	0.217	BMB
2	5.18	Cl	0.188	0.034	10.44	0.240	BMB
3	6.02	NO2-N	0.175	0.039	11.76	0.135	BMB
4	7.45	Br	0.057	0.013	4.02	0.214	BMB
5	8.24	NO3-N	0.201	0.054	16.59	0.168	BMB
6	13.17	SO4	0.290	0.116	35.26	1.323	BMB
Total:			1.251	0.328	100.00	2.297	

9 WG533569-07 SSCV

1,1 AED STD71716

Sample Name:	**WG533569-07 SSCV**	*Injection Volume:*	**25.0**
Vial Number:	**9**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/03/2015 16:32**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

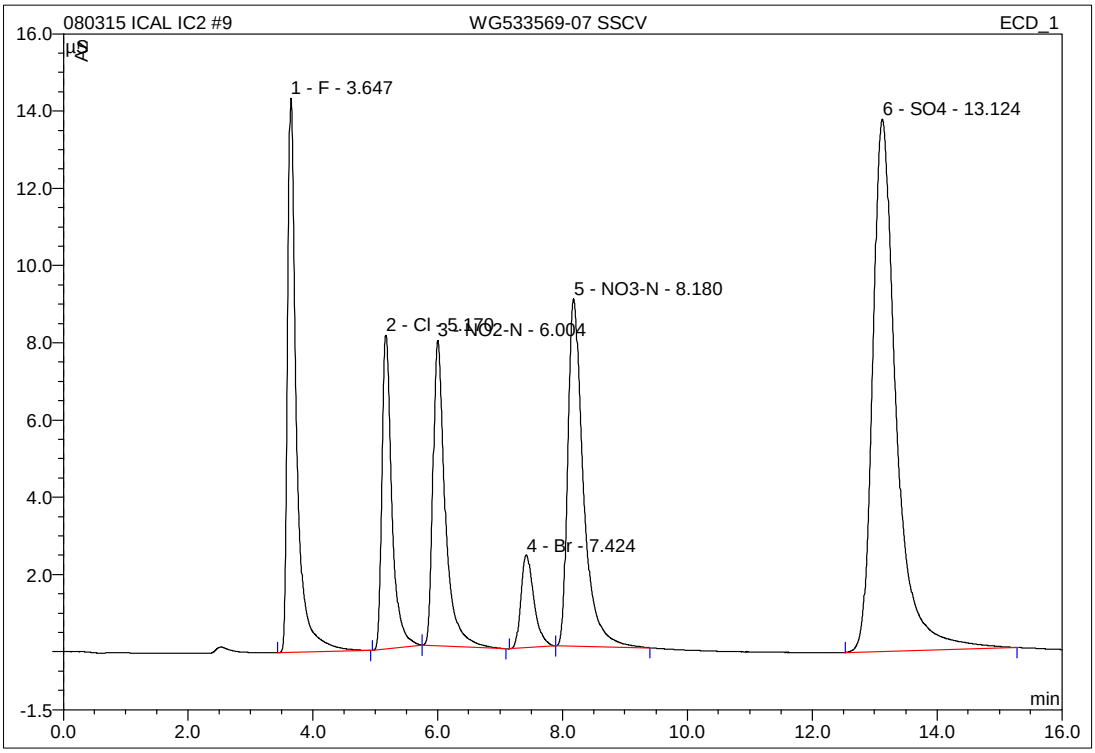

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.65	F	14.345	2.395	16.06	7.703	BMB
2	5.17	Cl	8.120	1.486	9.97	7.476	BMb
3	6.00	NO2-N	7.914	1.807	12.12	4.719	bMB
4	7.42	Br	2.406	0.580	3.89	7.809	BMB
5	8.18	NO3-N	8.988	2.608	17.49	5.033	BMB
6	13.12	SO4	13.783	6.034	40.47	36.657	BMB
Total:			55.556	14.910	100.00	69.397	

9 WG533569-07 SSCV

1,1 AED STD71716

Sample Name:	**WG533569-07 SSCV**	*Injection Volume:*	**25.0**
Vial Number:	**9**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**8/3/2015 16:32**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

WG533569-07 SSC	Actual mg/L	Recovered mg/L	%Difference	
F	8.00	7.7027	-3.72	PASS
Cl	8	7.4765	-6.54	PASS
NO2-N	4.8714	4.7193	-3.12	PASS
NO3-N	5.4216	5.0331	-7.17	PASS
Br	8	7.8092	-2.38	PASS
SO4	40	36.6566	-8.36	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!

15 WG535960-03 ANION CCV

1,1 ALS STD71545

Sample Name:	**WG535960-03 ANION CCV**	*Injection Volume:*	**25.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/20/2015 18:08**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

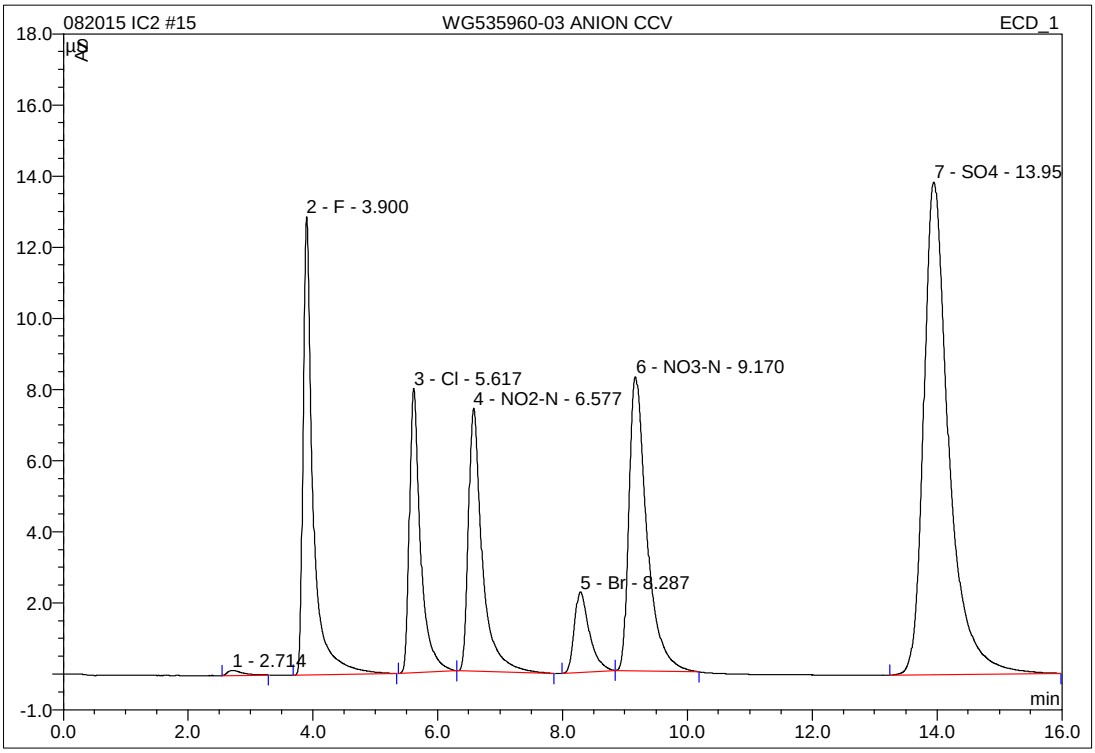

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.71	n.a.	0.142	0.038	0.24	n.a.	BMB
2	3.90	F	12.888	2.396	15.09	7.706	BMB
3	5.62	Cl	7.997	1.659	10.45	8.337	BMB
4	6.58	NO2-N	7.391	1.918	12.08	5.009	bMB
5	8.29	Br	2.265	0.637	4.01	8.574	BMB
6	9.17	NO3-N	8.267	2.740	17.26	5.285	bMB
7	13.95	SO4	13.850	6.486	40.86	39.355	BMB
Total:			52.801	15.875	100.00	74.265	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

15 WG535960-03 ANION CCV

1,1 ALS STD71545

Sample Name:	**WG535960-03 ANION CCV**	*Injection Volume:*	**25.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**8/20/2015 18:08**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

WG535960-03 ANI(	Actual mg/L	Recovered mg/L	%Difference	
F	8.00	7.7060	-3.68	PASS
Cl	8	8.3371	4.21	PASS
NO2-N	4.8714	5.0086	2.82	PASS
NO3-N	5.4216	5.2848	-2.52	PASS
Br	8	8.5737	7.17	PASS
SO4	40	39.3552	-1.61	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!

27 WG535960-05 ANION CCV

1,1 ALS STD71545

Sample Name:	**WG535960-05 ANION CCV**	*Injection Volume:*	**25.0**
Vial Number:	**27**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/20/2015 21:46**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

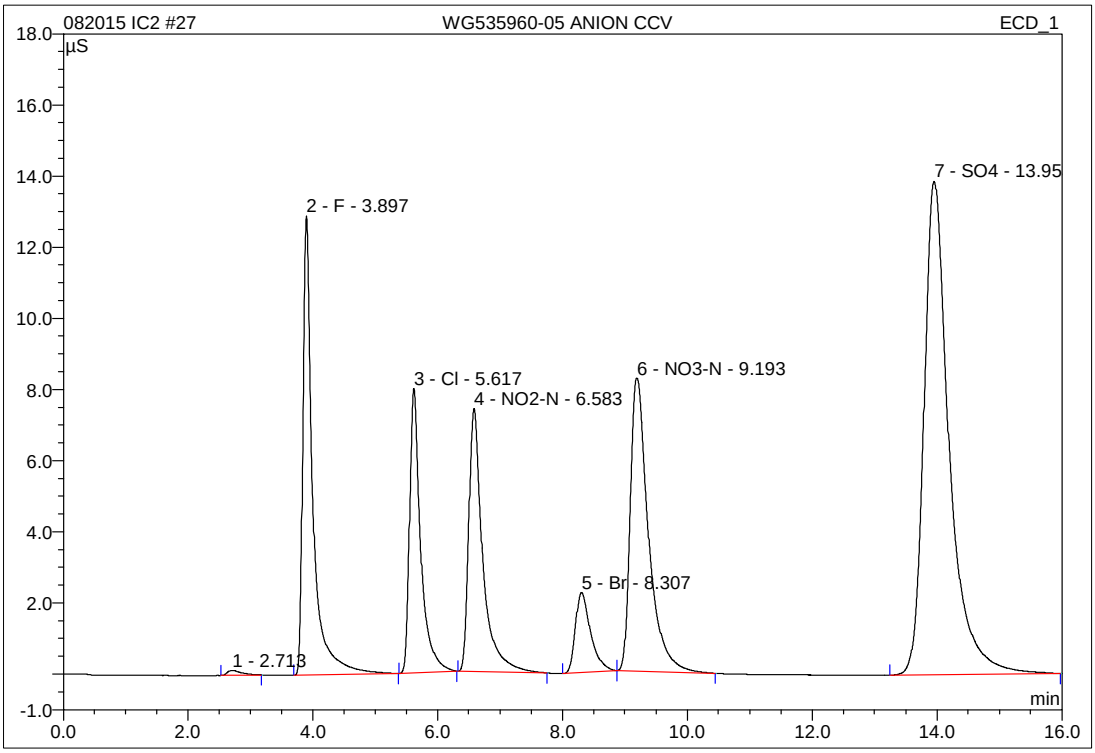

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.71	n.a.	0.138	0.036	0.23	n.a.	BMB
2	3.90	F	12.897	2.408	15.12	7.745	BMB
3	5.62	Cl	7.999	1.651	10.37	8.299	BMB
4	6.58	NO2-N	7.383	1.920	12.06	5.014	BMB
5	8.31	Br	2.257	0.639	4.01	8.606	BMb
6	9.19	NO3-N	8.244	2.765	17.36	5.333	bMB
7	13.95	SO4	13.864	6.507	40.85	39.478	BMB
Total:			52.782	15.928	100.00	74.476	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

27 WG535960-05 ANION CCV

1,1 ALS STD71545

Sample Name:	**WG535960-05 ANION CCV**	*Injection Volume:*	**25.0**
Vial Number:	**27**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**8/20/2015 21:46**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

WG535960-05 ANI(	Actual mg/L	Recovered mg/L	%Difference	
F	8.00	7.7450	-3.19	PASS
Cl	8	8.2992	3.74	PASS
NO2-N	4.8714	5.0142	2.93	PASS
NO3-N	5.4216	5.3332	-1.63	PASS
Br	8	8.6061	7.58	PASS
SO4	40	39.4778	-1.31	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!

3 WG536131-01 ANION CCV

1,1 ALS STD71545 (_____ psi)

Sample Name:	**WG536131-01 ANION CCV**	*Injection Volume:*	**25.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/21/2015 11:44**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

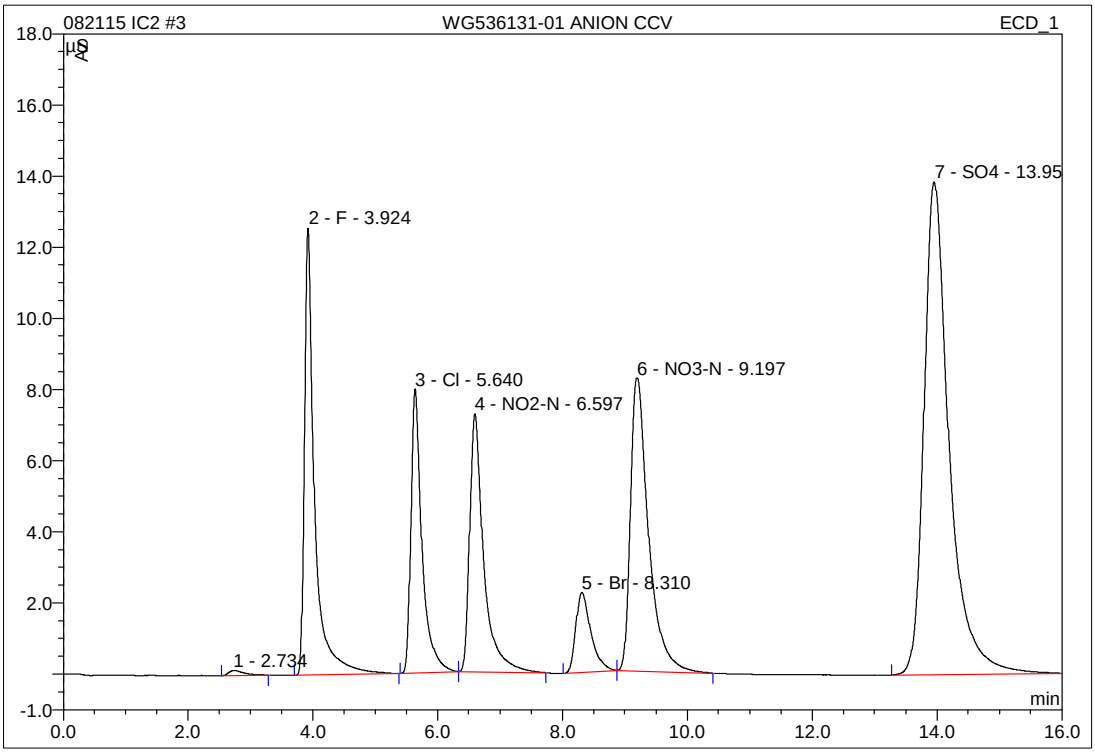

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.73	n.a.	0.142	0.039	0.25	n.a.	BMB
2	3.92	F	12.567	2.377	15.02	7.644	BMB
3	5.64	Cl	7.977	1.642	10.38	8.255	BMB
4	6.60	NO2-N	7.251	1.890	11.95	4.935	BMB
5	8.31	Br	2.251	0.634	4.01	8.543	BMb
6	9.20	NO3-N	8.238	2.755	17.41	5.313	bMB
7	13.96	SO4	13.849	6.484	40.98	39.340	BMB
Total:			52.276	15.822	100.00	74.031	

3 WG536131-01 ANION CCV

1,1 ALS STD71545 (_____ psi)

Sample Name:	**WG536131-01 ANION CCV**	*Injection Volume:*	**25.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**8/21/2015 11:44**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

WG536131-01 ANI(	Actual mg/L	Recovered mg/L	%Difference	
F	8.00	7.6444	-4.44	PASS
Cl	8	8.2552	3.19	PASS
NO2-N	4.8714	4.9352	1.31	PASS
NO3-N	5.4216	5.3131	-2.00	PASS
Br	8	8.5427	6.78	PASS
SO4	40	39.3404	-1.65	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!

15 WG536131-03 ANION CCV

1,1 ALS STD71545

Sample Name:	**WG536131-03 ANION CCV**	*Injection Volume:*	**25.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/21/2015 15:22**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

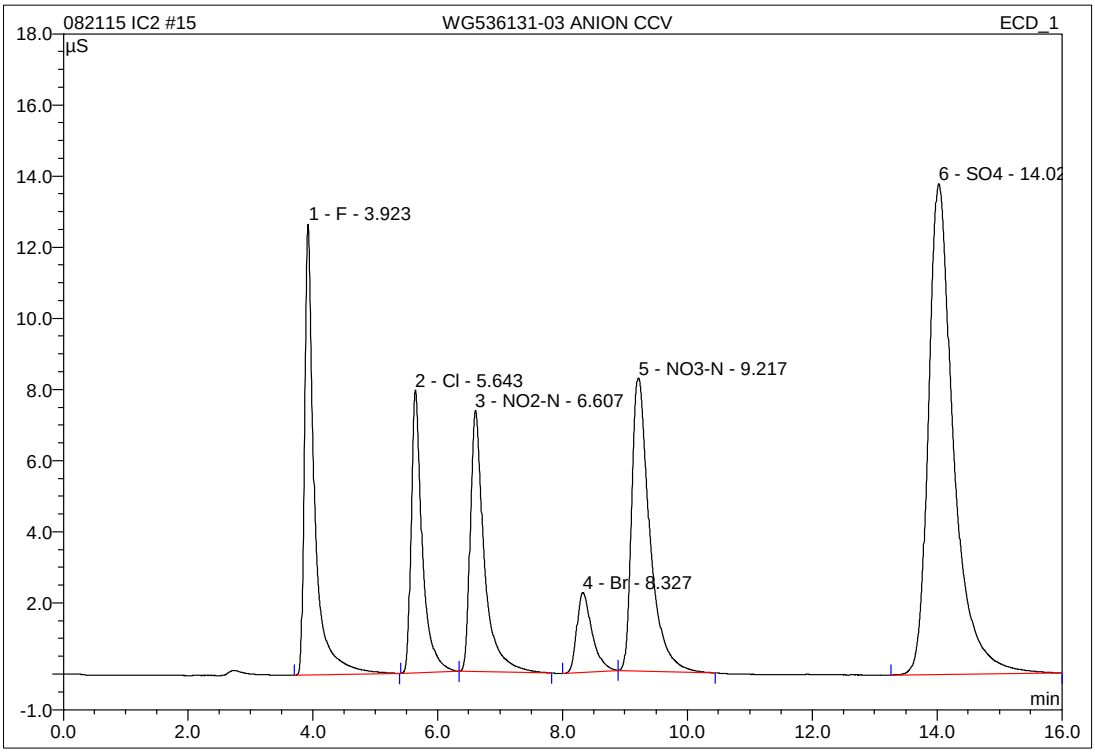

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.92	F	12.661	2.381	15.09	7.657	BMB
2	5.64	Cl	7.950	1.637	10.37	8.227	BMB
3	6.61	NO2-N	7.341	1.914	12.13	4.997	BMB
4	8.33	Br	2.251	0.636	4.03	8.564	BMB
5	9.22	NO3-N	8.241	2.755	17.46	5.313	BMB
6	14.03	SO4	13.795	6.455	40.91	39.167	BMB
Total:			52.240	15.777	100.00	73.924	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

15 WG536131-03 ANION CCV

1,1 ALS STD71545

Sample Name:	**WG536131-03 ANION CCV**	*Injection Volume:*	**25.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**8/21/2015 15:22**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

WG536131-03 ANI(	Actual mg/L	Recovered mg/L	%Difference	
F	8.00	7.6569	-4.29	PASS
Cl	8	8.2267	2.83	PASS
NO2-N	4.8714	4.9968	2.57	PASS
NO3-N	5.4216	5.3125	-2.01	PASS
Br	8	8.5635	7.04	PASS
SO4	40	39.1672	-2.08	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!

16 WG535960-04 ANION CCB

1,1 ALS

Sample Name:	**WG535960-04 ANION CCB**	*Injection Volume:*	**25.0**
Vial Number:	**16**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/20/2015 18:26**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

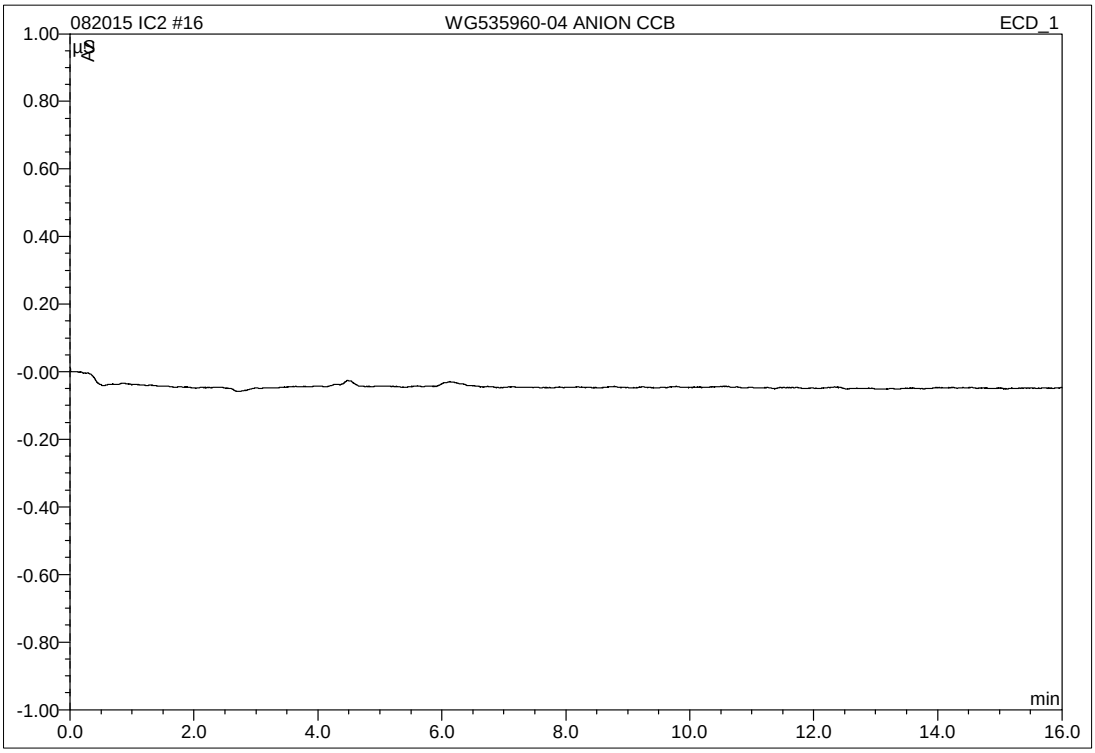

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

28 WG535960-06 ANION CCB

1,1 ALS

Sample Name:	**WG535960-06 ANION CCB**	*Injection Volume:*	**25.0**
Vial Number:	**28**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/20/2015 22:04**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

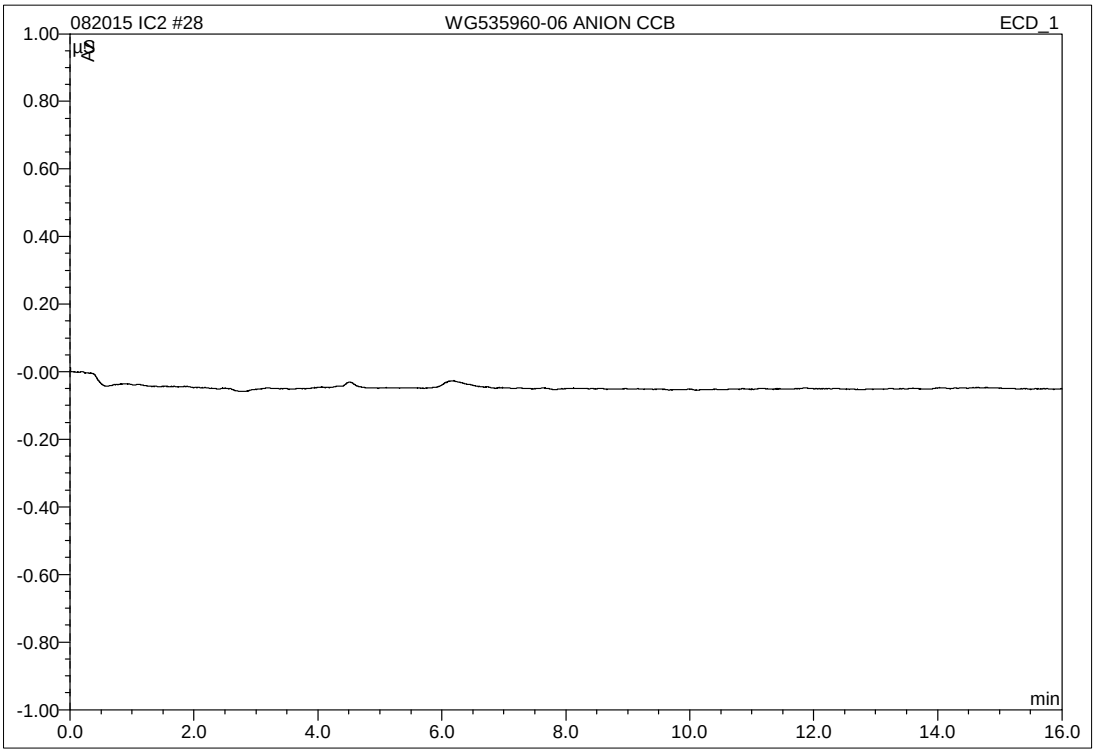

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

4 WG536131-02 ANION CCB

1,1 ALS

Sample Name:	**WG536131-02 ANION CCB**	*Injection Volume:*	**25.0**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/21/2015 12:02**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

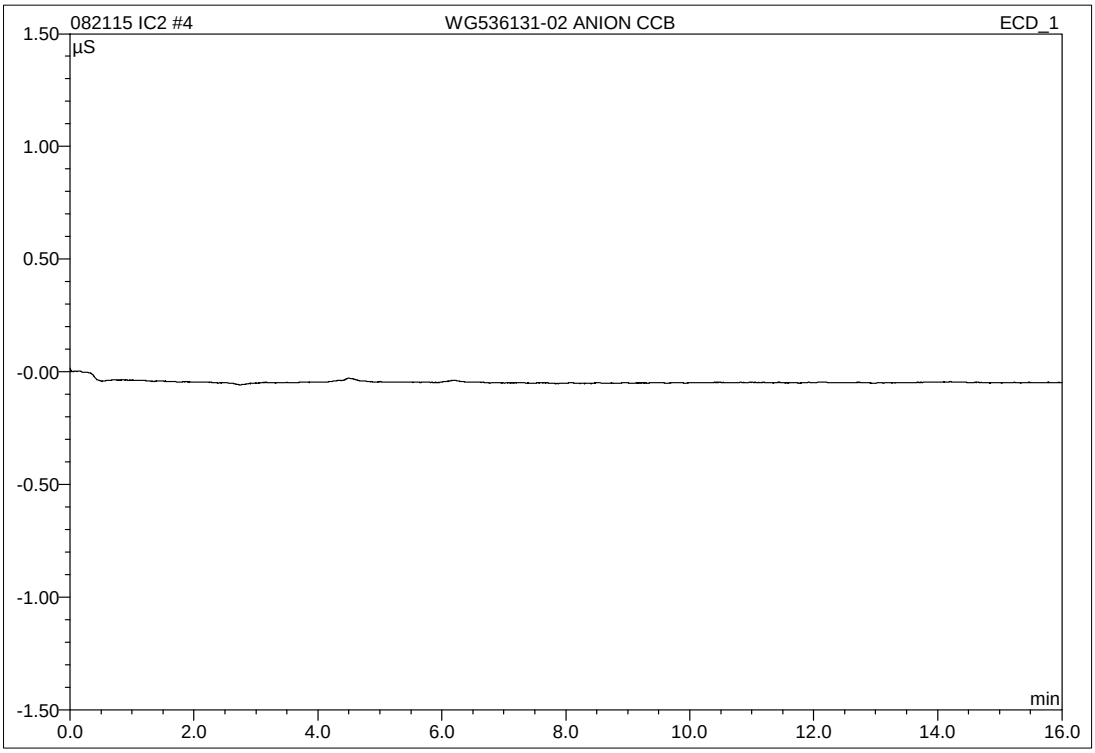

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

16 WG536131-04 ANION CCB

1,1 ALS

Sample Name:	**WG536131-04 ANION CCB**	*Injection Volume:*	**25.0**
Vial Number:	**16**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/21/2015 15:40**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

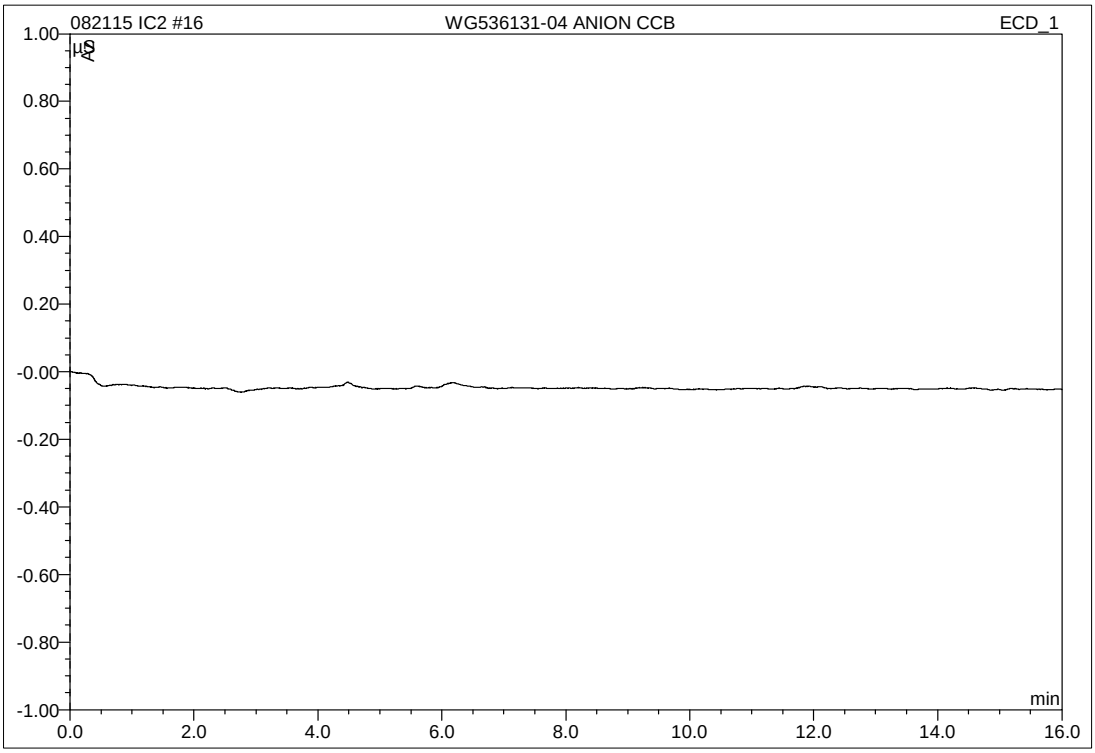

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

RETENTION TIME WINDOWS

Lab Name: MICROBAC Laboratories, Inc.

Instrument ID: IC1

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	6/5/2013	6/5/2013	6/6/2013
File #	WG432976-05	WG432976-07	WG433275-01
Time	16:16	18:25	16:50

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.41	3.40	3.41	0.017
Cl	4.87	4.87	4.88	0.017
NO2-N	5.67	5.66	5.67	0.017
Br	7.01	6.99	7.02	0.046
NO3-N	7.76	7.74	7.77	0.046
SO4	13.35	13.35	13.35	0.000

Instrument ID: IC2

IC Column: AS14A-4mm

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	3/2/2015	3/4/2015	3/5/2015
File #	WG514023-02	WG514341-02	WG514431-02
Time	23:15	18:47	17:41

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.33	3.33	3.32	0.017
Cl	4.75	4.78	4.76	0.043
NO2-N	5.54	5.59	5.56	0.082
Br	6.86	6.98	6.93	0.180
NO3-N	7.59	7.73	7.67	0.222
SO4	12.42	12.38	12.34	0.116

Instrument ID: IC3

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	5/20/2014	5/21/2014	5/21/2014
File #	WG476910-05	WG476934-01	WG476934-03
Time	12:41	9:54	13:59

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.41	3.41	3.41	0.000
Cl	5.11	5.09	5.07	0.050
NO2-N	6.14	6.11	6.07	0.101
Br	7.90	7.84	7.75	0.220
NO3-N	8.94	8.86	8.76	0.271
SO4	13.35	13.39	13.42	0.101

2.4.1.5 Raw QC Data

19 WG535887-01 ANION BLANK

1,1 ALS

Sample Name:	**WG535887-01 ANION BLANK**	*Injection Volume:*	**25.0**
Vial Number:	**19**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/20/2015 19:21**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

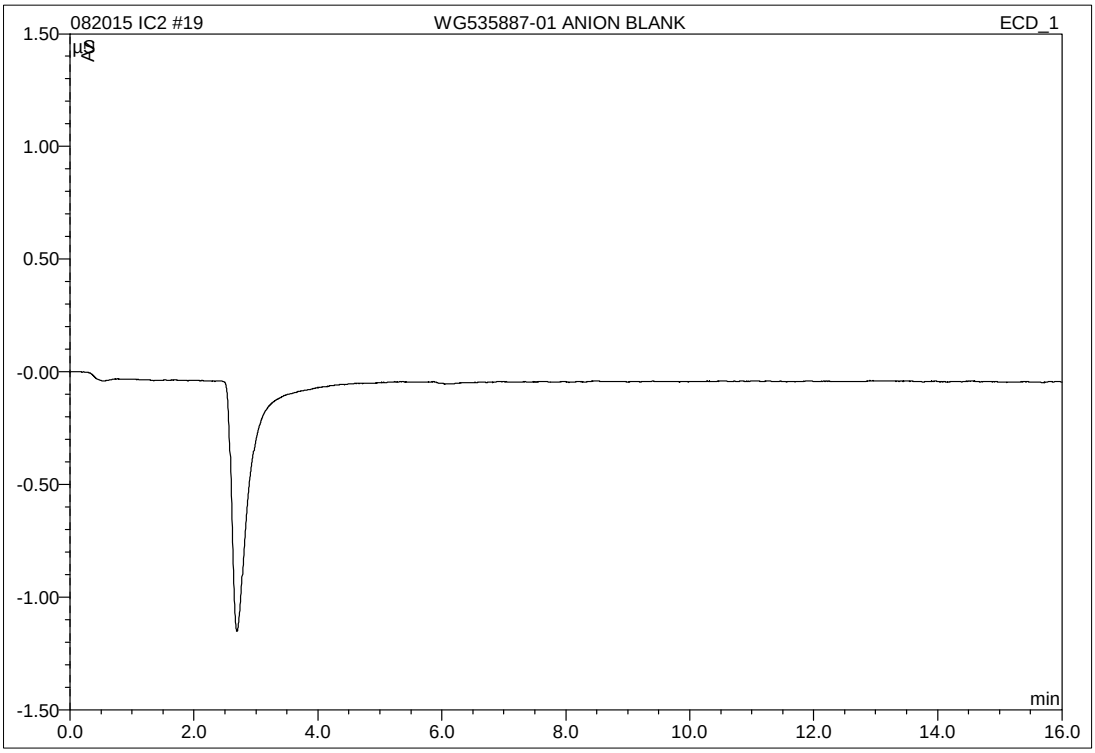

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

5 WG536070-01 ANION BLANK

1,1 ALS

Sample Name:	**WG536070-01 ANION BLANK**	*Injection Volume:*	**25.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/21/2015 12:20**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

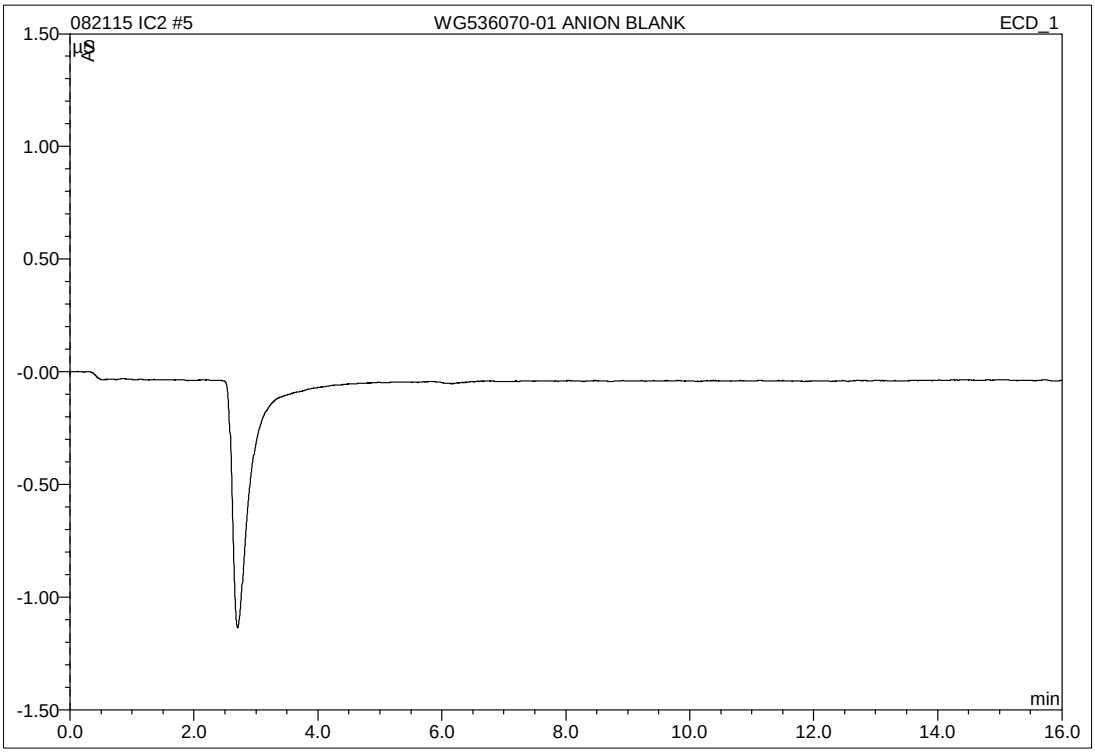

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

20 WG535887-02 ANION LCS

1,1 ALS

Sample Name:	**WG535887-02 ANION LCS**	*Injection Volume:*	**25.0**
Vial Number:	**20**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/20/2015 19:39**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

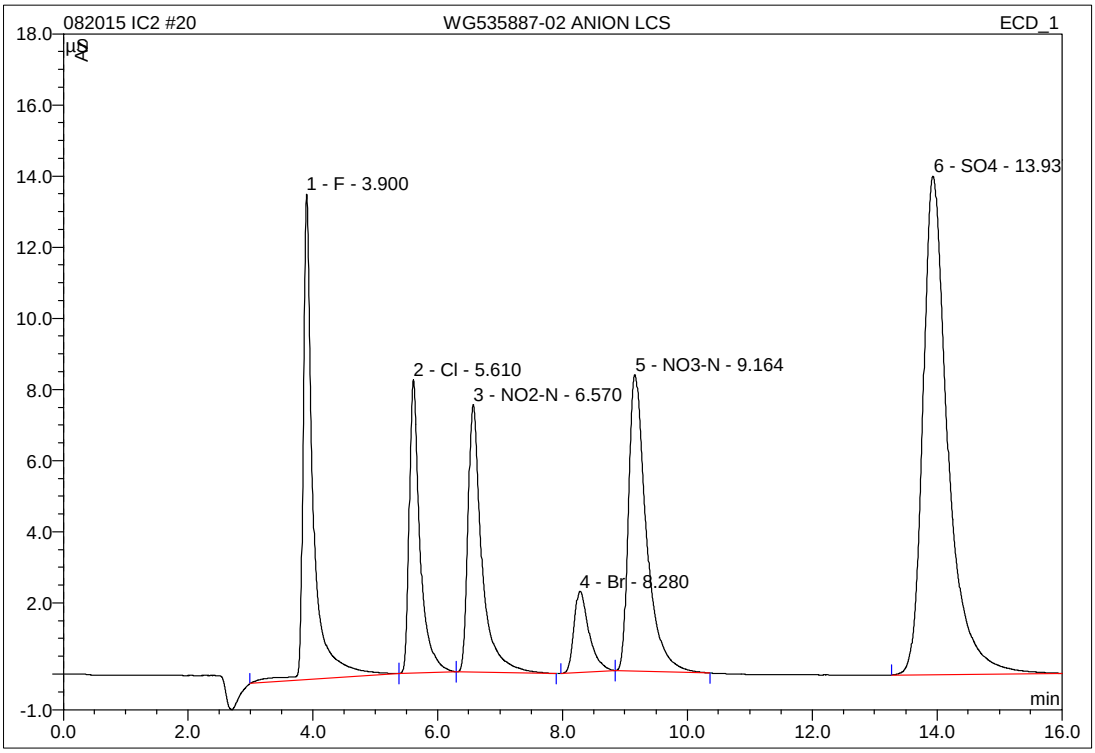

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.90	F	13.645	2.579	16.04	8.295	BMB
2	5.61	Cl	8.243	1.646	10.24	8.275	bMB
3	6.57	NO2-N	7.521	1.943	12.08	5.072	bMB
4	8.28	Br	2.290	0.641	3.99	8.635	BMB
5	9.16	NO3-N	8.337	2.763	17.18	5.328	bMB
6	13.94	SO4	14.009	6.505	40.46	39.467	BMB
Total:			54.045	16.077	100.00	75.071	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

6 WG536070-02 ANION LCS

1,1 ALS STD71546

Sample Name:	**WG536070-02 ANION LCS**	*Injection Volume:*	**25.0**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/21/2015 12:38**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

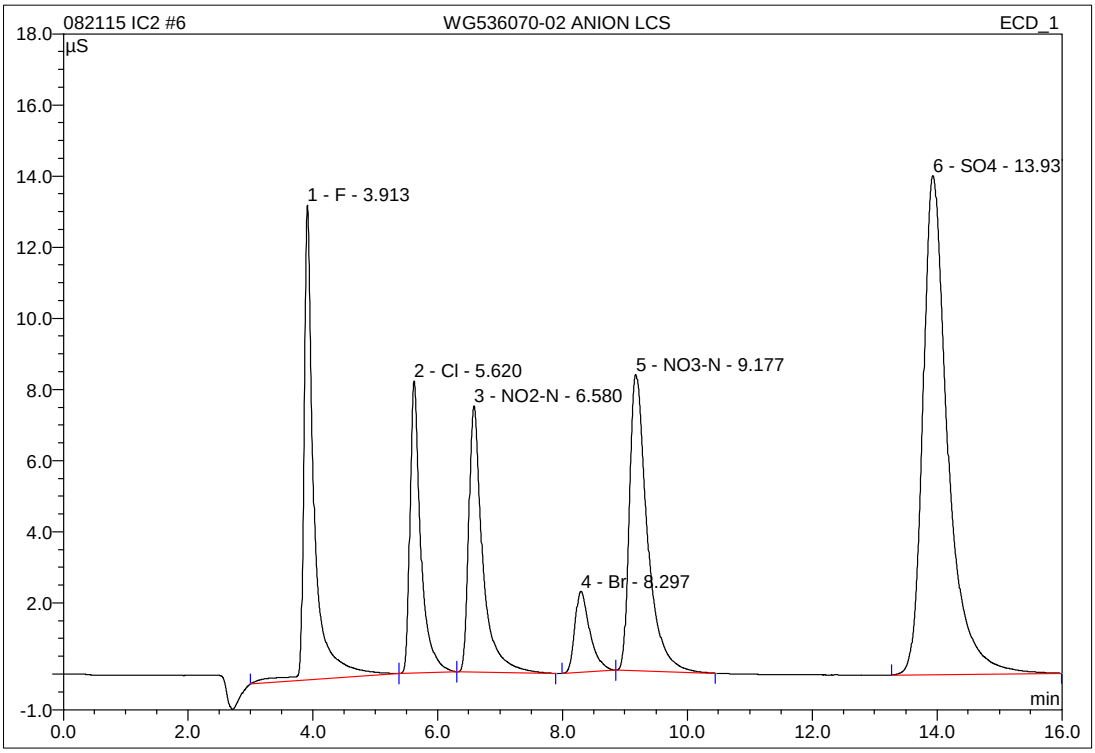

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.91	F	13.350	2.575	16.03	8.282	BMB
2	5.62	Cl	8.216	1.646	10.24	8.272	BMb
3	6.58	NO2-N	7.486	1.941	12.08	5.067	bMB
4	8.30	Br	2.284	0.639	3.98	8.601	BMb
5	9.18	NO3-N	8.332	2.763	17.20	5.329	bMB
6	13.94	SO4	14.026	6.502	40.47	39.449	BMB
Total:			53.694	16.066	100.00	75.000	

2.4.2 Alkalinity Data

2.4.2.1 Summary Data

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081073-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW14-081915	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	08/25/2015 11:59
Workgroup #:	WG536377	**Analyst:**	DCM	**Run Date:**	08/25/2015 12:04
Collect Date:	08/19/2015 08:20	**Dilution:**	1	**File ID:**	S2150825004.016
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	265		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L15081073-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW13-081915	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	08/25/2015 11:59
Workgroup #:	WG536377	**Analyst:**	DCM	**Run Date:**	08/25/2015 12:04
Collect Date:	08/19/2015 09:35	**Dilution:**	2	**File ID:**	S2150825004.017
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	348		80.0	40.0	20.0

2.4.2.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809
Value of b from plot:	0.0004135
Absorbance of unknown from quantitation report (y):	0.31
Calculated concentration (x):	0.03964483
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	0.0396 mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796
Value of B from plot:	318.9056
Value of C from plot:	-2.2712
Absorbance of unknown from quantitation report (x):	0.1583
Calculated concentration (y):	50.7495108
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	50.75 mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 25-AUG-2015
Analyst: DCM
Analyst: NA
Method: ALK
Instrument: SC
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG536315 WG536377

Calibration/Linearity	08-25-2015
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DCM
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
26-AUG-2015

Secondary Reviewer:
27-AUG-2015

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-27-2015 13:19:36

Microbac Laboratories Inc.

00648820

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 310.2 AAB#: WG536377

Login Number: L15081073

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW14-081915	01	08/19/15					08/25/2015	6.2	14		08/25/15	6.2	14	
50WW13-081915	03	08/19/15					08/25/2015	6.1	14		08/25/15	6.1	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4357042
Report generated 08/27/2015 10:03

METHOD BLANK SUMMARY

Login Number: L15081073
Blank File ID: S2150825004.012
Prep Date: 08/25/15 12:02
Analyzed Date: 08/25/15 12:02
Analyst: DCM

Work Group: WG536377
Blank Sample ID: WG536377-01
Instrument ID: SMARTCHEM2
Method: 310.2

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG536377-02	S2150825004.013	08/25/15 12:02	01
LCS2	WG536377-03	S2150825004.014	08/25/15 12:03	01
50WW14-081915	L15081073-01	S2150825004.016	08/25/15 12:04	01
50WW13-081915	L15081073-03	S2150825004.017	08/25/15 12:04	DL01
DUP	WG536377-05	S2150825004.020	08/25/15 12:06	01

Report Name: BLANK_SUMMARY
PDF File ID: 4357043
Report generated 08/27/2015 10:03

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15081073 Prep Date: 08/25/15 12:02 Sample ID: WG536377-01
Instrument ID: SMARTCHEM2 Run Date: 08/25/15 12:02 Prep Method: 310.2
File ID: S2150825004.012 Analyst: DCM Method: 310.2
Workgroup (AAB#): WG536377 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-25-AUG-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Alkalinity, Total (as CaCO3)	10.0	40.0	10.0	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4357044
27-AUG-2015 10:03

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15081073 Analyst: DCM Prep Method: 310.2
Instrument ID: SMARTCHEM2 Matrix: Water Method: 310.2
Workgroup (AAB#): WG536377 Units: mg/L
QC Key: DOD4 Lot #: STD71900

Sample ID: WG536377-02 LCS File ID: S2150825004.013 Run Date: 08/25/2015 12:02
Sample ID: WG536377-03 LCS2 File ID: S2150825004.014 Run Date: 08/25/2015 12:03

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Alkalinity, Total (as CaCO3)	200	207	103	200	203	102	1.85	85 - 115	20	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4357045
Report generated: 08/27/2015 10:03

2.4.2.3 Raw Data

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

WORKGROUP: WG536315

536377

Daily Check

- [x] Lamp On
- [x] Probe Rinse Full
- [x] DI Water > ½ Full
- [x] Wash Solution > ½ Full
- [ ] NO3 Reagent bottle connected / purged
- [ ] NO3 pH adj to pH 5-9

Syringe filter lot # _____

- [x] WBL Run
- [x] Reagents Full
- [x] Dilution H_2O Full
- [x] Waste Container Check

1) **Workgroup** _____
Plan # 20150825CU1
2) **Workgroup** _____
Plan # 20150825CU4
3) **Workgroup** _____
Plan # _____

Instrument: SC1 [ ] SC2 [x]

	Analyte	1	2	3
		Alk		
		Dilution		
SC Prepared Curve				
Position				
1-1	JCV			
1-2	Blk			
1-3	LCS			
1-4	LCSDUP			
1-5	08-1154-01	1/5		color
1-6	08-1169-02	1/4		color
1-7	03	1/4		color
1-8	05	1/4		color
1-9	06	1/4		color
1-10	08	1/4		color
1-11	09	1/4		color
1-12	08-1073-01			
1-13	03	1/2		
1-14	08-1166-01			
1-15	08	1/2		color
1-16	DUP 08-1166-01			
1-17				
1-18				
1-19				
1-20				
1-21				
1-22				
2-1				
2-2				
2-3				

	Analyte	1	2	3
Position				
2-1 1	JCV			
2-2 2	Blk			
2-3 3	LCS			
2-4 4	LCSDUP			
2-5 5	08-1169-09	1/4		color
2-6 6	08-1073-01			
2-10 7	03	1/2		
2-11 8	08-1166-01			
2-12 9	08	1/2		color
2-13 10	DUP 08-1166-01			
2-14				
2-15				
2-16				
2-17				
2-18				
2-19				
2-20				
2-21				
2-22				
2-23				
2-24				
2-25				
2-26				
3-1				
3-2				

NOTES:
* Run NO2 std on NO3 runs
* LCSD must be run if no MS or Duplicate
*MS(10% sample): NO3, TKN, NH3, PHOS

DCN#112750

SMARTCHEM RUN LOG
(smartchem2, smartchem3)

WORKGROUP: WG536315

Position	Analyte	1	2	3
3-3				
3-4				
3-5				
3-6				
3-7				
3-8				
3-9				
3-10				
3-11				
3-12				
3-13				
3-14				
3-15				

Position	Analyte	1	2	3
3-16				
3-17				
3-18				
3-19				
3-20				
3-21				
3-22				
3-23				
3-24				
3-25				
3-26				
3-27				
3-28				

	Chloride	EPA 325.2/SM 4500-CI E-2000
	Nitrate-Nitrite	EPA 353.2/SM 4500-NO3 F-2000
✓	Alkalinity	EPA 310.2
	Sulfate	EPA 375.4/SM 426C (15th)/ SM4500-504 E-1997

	Ammonia	EPA 350.1/SM 4500-NH3 B-1997
	TKN	EPA 351.2
	Phos	EPA 365.4

Analyte	Alk		Reagents
SOP & Revision	K3102 R17		RGT 34559
Curve Stock (SC made)	std 70552		
NO2 STD			
ICV	std 72134		
CCV	std 71996		
LCS	std 71900		
MS	NA Dilution		

Comments:

Analyst: David Merdich

Date: 8/25/15

DCN#112750

MICROBAC (OVD)

SMARTCHEM200 INST2 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.0	0.6859	0.00		9:40:01 AM
DIL-1	RBL	0.0	0.6861	0.00		9:40:19 AM
DIL-1	RBL	0.0	0.6828	0.00		9:44:13 AM
DIL-1	Std-1	0.0	-0.0020	0.00		9:44:31 AM
SR5-1	Std-2	10.0	-0.0143	0.00		9:45:25 AM
SR5-2	Std-3	20.0	-0.0280	0.00		9:45:43 AM
SR5-3	Std-4	50.0	-0.0739	0.00		9:46:37 AM
SR5-4	Std-5	100.0	-0.1415	0.00		9:46:55 AM
SR5-5	Std-6	200.0	-0.3041	0.00		9:47:49 AM
SR5-6	Std-7	250.0	-0.3832	0.00		9:48:07 AM
SR5-7	Std-8	300.0	-0.4611	0.00		9:49:01 AM
ST-3	1CCV (150 mg/L)	147.1	-0.2184	98.10		9:49:19 AM
ST-2	2CCB (0 mg/L)	9.3	-0.0134	0.00		9:50:13 AM
1	ICV	253.5	-0.3868	0.00		9:50:31 AM
2	WG536315-01 BLK	8.7	-0.0126	0.00		9:51:25 AM
3	WG536315-02 LCS	202.2	-0.3043	0.00		9:51:43 AM
4	WG536315-03 LCSDUP	205.8	-0.3100	0.00		9:52:37 AM
5	L15081154-01 (5)	20.2	-0.0292	0.00		9:52:55 AM
6	L15081169-02 (4)	260.9	-0.3988	0.00		9:53:49 AM
7	L15081169-03 (4)	151.2	-0.2247	0.00		9:54:07 AM
8	L15081169-05 (4)	190.9	-0.2865	0.00		9:55:01 AM
9	L15081169-06 (4)	161.3	-0.2403	0.00		9:55:19 AM
10	L15081169-08 (4)	277.7	-0.4265	0.00		9:56:13 AM
ST-3	1CCV (150 mg/L)	160.6	-0.2392	107.08		9:56:31 AM
ST-2	2CCB (0 mg/L)	17.1	-0.0247	0.00		9:57:25 AM
11	L15081169-09 (4)	X 137.4	-0.2034	0.00		9:57:43 AM
12	L15081073-01	X 279.2	-0.4290	0.00		9:58:37 AM
13	L15081073-03 (2)	X 183.6	-0.2750	0.00		9:58:55 AM
14	L15081166-01 WG-04 REF	61.7	-0.0898	0.00		9:59:49 AM
15	L15081166-08 (2)	X 61.8	-0.0899	0.00		10:00:07 AM
16	WG536315-05 DUP	67.6	-0.0984	0.00		10:01:01 AM
17	ID 17	40.7	-0.0589	0.00		10:01:19 AM

Report Date :08/25/2015 **Run Date :8/25/2015** **Operator : WESTCO** **Plan # :20150825001**

Plan Description : ALK-A2-DCM/08/25/2015

MICROBAC (OVD)
SMARTCHEM200 INST2 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
ST-3	**1CCV (150 mg/L)**	**171.4**	**-0.2560**	**114.29**		**10:02:13 AM**
ST-2	**2CCB (0 mg/L)**	**44.2**	**-0.0640**	**0.00**		**10:02:31 AM**

Report Date :08/25/2015 **Run Date :8/25/2015** **Operator : WESTCO** **Plan # :20150825001**

Plan Description : ALK-A2-DCM/08/25/2015

Calibrant Report - WALK -

Calib Lot #:010104 Exp Date:6/21/2020 User:MICROBAC

Plan # : 20150825001 Description : [ALK-A2-DCM/08/25/2015] Unit

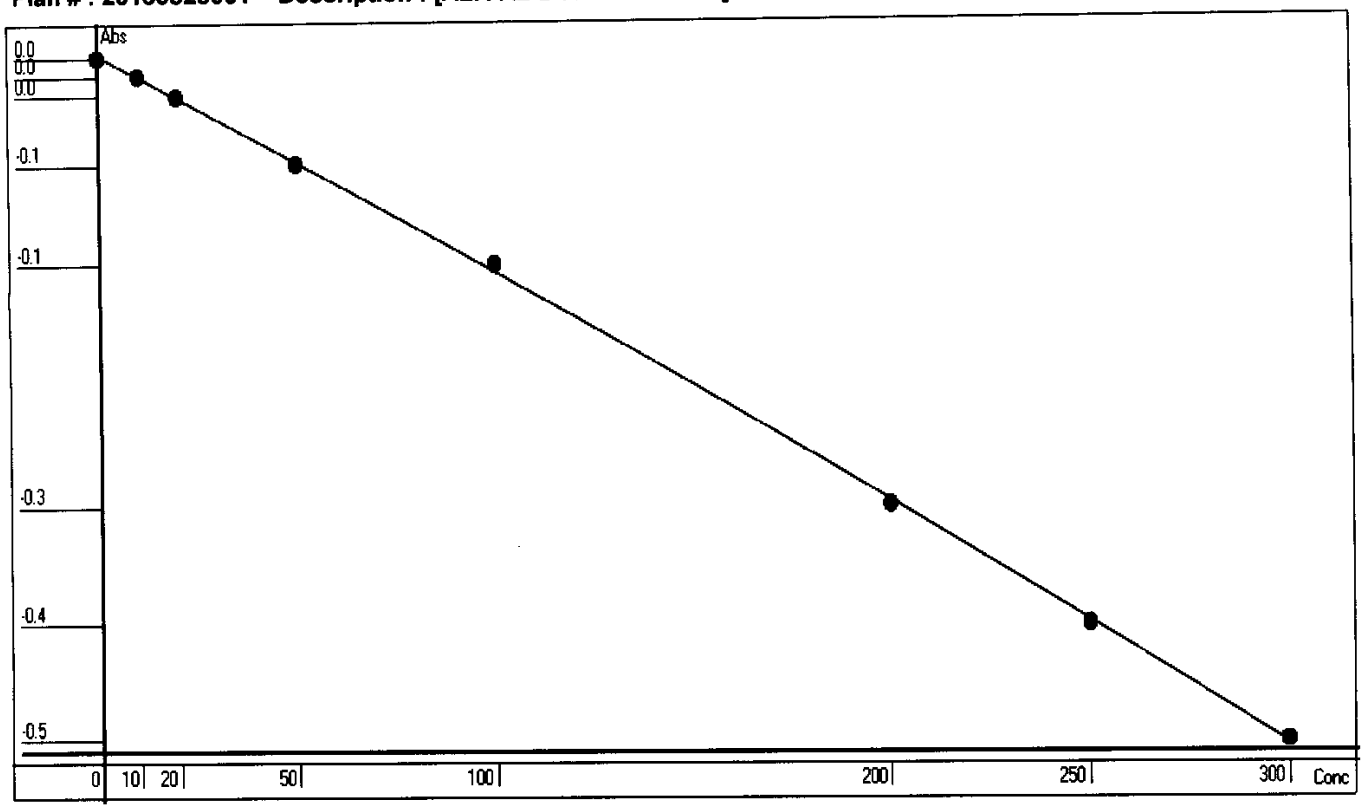

Point	OD	Conc	Recalc Conc	% Error
1	-0.0020	0	1.3553	135.53
2	-0.0143	10	9.9159	-0.84
3	-0.0280	20	19.4120	-2.94
4	-0.0739	50	50.9289	1.86
5	-0.1415	100	96.5088	-3.49
6	-0.3041	200	202.0592	1.03
7	-0.3832	250	251.3203	0.53
8	-0.4611	300	298.4996	-0.50

Conc= -109.1107*Abso^2 -697.7613*Abso -0.0398 R^2=0.9998

RBL
0.686
0

Report Date 8/25/2015 Run Date 8/25/2015

MICROBAC (OVD)

SMARTCHEM200 INST2 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.0	0.6450	0.00		11:51:49 AM
DIL-1	RBL	0.0	0.6461	0.00		11:52:07 AM
DIL-1	RBL	0.0	0.6458	0.00		11:53:01 AM
DIL-1	Std-1	0.0	0.0024	0.00	INV	11:53:19 AM
SR5-1	Std-2	10.0	-0.0121	0.00		11:54:13 AM
SR5-2	Std-3	20.0	-0.0173	0.00		11:54:31 AM
SR5-3	Std-4	50.0	-0.0599	0.00		11:57:13 AM
SR5-4	Std-5	100.0	-0.1361	0.00		11:57:31 AM
SR5-5	Std-6	200.0	-0.2851	0.00		11:58:25 AM
SR5-6	Std-7	250.0	-0.3639	0.00		11:58:43 AM
SR5-7	Std-8	300.0	-0.4391	0.00		11:59:37 AM
ST-3	1CCV (150 mg/L)	146.1	-0.2032	97.41		11:59:55 AM
ST-2	2CCB (0 mg/L)	0.8	0.0045	0.00	INV,><	12:00:50 PM
1	ICV	261.0	-0.3789	0.00		12:01:07 PM
2	WG536377-01 BLK	4.3	-0.0003	0.00		12:02:01 PM
3	WG536377-02 LCS	206.9	-0.2947	0.00		12:02:19 PM
4	WG536377-03 LCSDUP	203.1	-0.2889	0.00		12:03:13 PM
5	L15081169-09 (4)	123.9	-0.1705	0.00		12:03:31 PM
6	L15081073-01	264.6	-0.3845	0.00		12:04:25 PM
7	L15081073-03 (2)	173.9	-0.2447	0.00		12:04:43 PM
8	L15081166-01	43.1	-0.0545	0.00		12:05:37 PM
9	L15081166-08 (2)	24.7	-0.0287	0.00		12:05:55 PM
10	WG536377-05 DUP	46.0	-0.0585	0.00		12:06:49 PM
ST-3	1CCV (150 mg/L)	149.0	-0.2075	99.34		12:07:07 PM
ST-2	2CCB (0 mg/L)	6.3	-0.0030	0.00		12:08:01 PM

Report Date :08/25/2015 **Run Date :8/25/2015** **Operator : WESTCO** **Plan # :20150825003**

Plan Description : ALK-B2-DCM/08/25/2015

Calibrant Report - WALK -

Calib Lot #:010104 Exp Date:6/21/2020 User:MICROBAC

Plan # : 20150825004 Description : [ALK-B2-DCM/08/25/2015] Unit

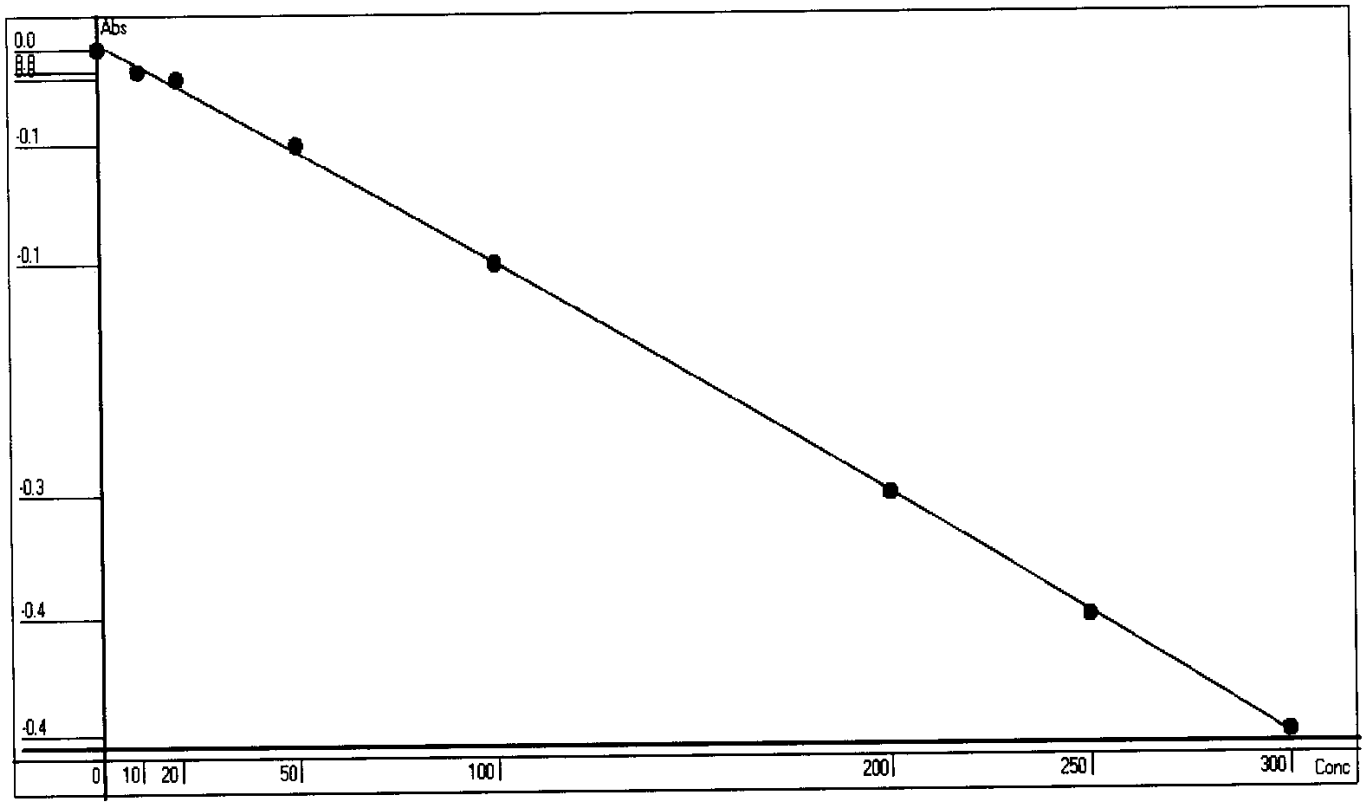

Point	OD	Conc	Recalc Conc	% Error
1	0.0024	0	2.3916	239.16
2	-0.0121	10	12.8578	28.58
3	-0.0172	20	16.5272	-17.36
4	-0.0599	50	47.0080	-5.98
5	-0.1361	100	100.3305	0.33
6	-0.2851	200	200.6271	0.31
7	-0.3638	250	251.4828	0.59
8	-0.4390	300	298.7079	-0.43

Conc= -118.2884*Abso^2 -722.9548*Abso +4.1274 R^2=0.9996

RBL
0.646
0

Report Date 8/25/2015 Run Date 8/25/2015

2.4.3 Phosphorus Data

2.4.3.1 Summary Data

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081073-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW14-081915	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	08/25/2015 09:30
Workgroup #:	WG536310	**Analyst:**	DCM	**Run Date:**	08/25/2015 09:40
Collect Date:	08/19/2015 08:20	**Dilution:**	1	**File ID:**	SC150825002.022
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.114	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081073-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW13-081915	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	08/25/2015 09:30
Workgroup #:	WG536310	**Analyst:**	DCM	**Run Date:**	08/25/2015 09:40
Collect Date:	08/19/2015 09:35	**Dilution:**	1	**File ID:**	SC150825002.023
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.160	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.4.3.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809	
Value of b from plot:	0.0004135	
Absorbance of unknown from quantitation report (y):	0.31	
Calculated concentration (x):	0.03964483	
Dilution factor (D):	1.00	
Concentration of analyte in sample, Cy:	0.0396	mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796	
Value of B from plot:	318.9056	
Value of C from plot:	-2.2712	
Absorbance of unknown from quantitation report (x):	0.1583	
Calculated concentration (y):	50.7495108	
Dilution factor (D):	1.00	
Concentration of analyte in sample, Cy:	50.75	mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 25-AUG-2015
Analyst: DCM
Analyst: NA
Method: PHOS
Instrument: SC
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG536310

Calibration/Linearity	08-25-2015
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DCM
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
25-AUG-2015

Secondary Reviewer:
26-AUG-2015

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-26-2015 14:13:30

Microbac Laboratories Inc.

00648840

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 365.4 AAB#: WG536310

Login Number: L15081073

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW14-081915	01	08/19/15					08/25/2015	6.1	28		08/25/15	6.1	28	
50WW13-081915	03	08/19/15					08/25/2015	6	28		08/25/15	6	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4354995
Report generated 08/26/2015 13:57

METHOD BLANK SUMMARY

Login Number: L15081073
Blank File ID: SC150825002.010
Prep Date: 08/25/15 09:33
Analyzed Date: 08/25/15 09:33
Analyst: DCM

Work Group: WG536310
Blank Sample ID: WG536310-01
Instrument ID: SMARTCHEM
Method: 365.4

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG536310-02	SC150825002.011	08/25/15 09:33	01
50WW14-081915	L15081073-01	SC150825002.022	08/25/15 09:40	01
50WW13-081915	L15081073-03	SC150825002.023	08/25/15 09:40	01
DUP	WG536310-04	SC150825002.024	08/25/15 09:41	01

Report Name: BLANK_SUMMARY
PDF File ID: 4354996
Report generated 08/26/2015 13:57

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15081073 Prep Date: 08/25/15 09:33 Sample ID: WG536310-01
Instrument ID: SMARTCHEM Run Date: 08/25/15 09:33 Prep Method: 365.4
File ID: SC150825002.010 Analyst: DCM Method: 365.4
Workgroup (AAB#): WG536310 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-25-AUG-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Phosphorus, Total	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4354997
26-AUG-2015 13:57

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15081073 Run Date: 08/25/2015 Sample ID: WG536310-02
Instrument ID: SMARTCHEM Run Time: 09:33 Prep Method: 365.4
File ID: SC150825002.011 Analyst: DCM Method: 365.4
Workgroup (AAB#): WG536310 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD71788 Cal ID: SMARTC-25-AUG-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Phosphorus, Total	1.00	1.05	105	70 - 130	

LCS - Modified 03/06/2008
PDF File ID: 4354998
Report generated: 08/26/2015 13:57

2.4.3.3 Raw Data

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

WORKGROUP: WG536310

Daily Check

- [x] Lamp On
- [x] Probe Rinse Full
- [x] DI Water > ½ Full
- [x] Wash Solution > ½ Full
- [ ] NO3 Reagent bottle connected / purged
- [ ] NO3 pH adj to pH 5-9

Syringe filter lot # _____

- [x] WBL Run
- [x] Reagents Full
- [x] Dilution H_2O Full
- [x] Waste Container Check

1) **Workgroup** _____
Plan # 20150825002
2) **Workgroup** _____
Plan # _____
3) **Workgroup** _____
Plan # _____

Instrument: SC1 [x] SC2 [ ]

	Analyte	1	2	3
		PHOS		
		Dilution		
SC Prepared Curve				
Position				
1-1	ICV			
1-2	BLK			
1-3	LCS			
1-4	CS-1168-01			
1-5	02			
1-6	03			
1-7	04			
1-8	CS-1610-01			
1-9	02			
1-10	03			
1-11	CS-1172-01	Auto 1/2		
1-12	CS-1073-01			
1-13	03			
1-14	DUP CS-1168-01			
1-15	MS CS-1168-01			
1-16	~~MS~~ dcm			
1-17	8/25/15			
1-18				
1-19				
1-20				
1-21				
1-22				
2-1				
2-2				
2-3				

Position	Analyte	1	2	3
2-4				
2-5				
2-6				
2-7				
2-8				
2-9				
2-10				
2-11				
2-12				
2-13				
2-14				
2-15				
2-16				
2-17				
2-18				
2-19				
2-20				
2-21				
2-22				
2-23				
2-24				
2-25				
2-26				
3-1				
3-2				

NOTES:
* Run NO2 std on NO3 runs
* LCSD must be run if no MS or Duplicate
*MS(10% sample): NO3, TKN, NH3, PHOS

DCN#112747

SMARTCHEM RUN LOG
(smartchem2, smartchem3)

WORKGROUP: WG536310

Position	Analyte	1	2	3
3-3				
3-4				
3-5				
3-6				
3-7				
3-8				
3-9				
3-10				
3-11				
3-12				
3-13				
3-14				
3-15				

Position	Analyte	1	2	3
3-16				
3-17				
3-18				
3-19				
3-20				
3-21				
3-22				
3-23				
3-24				
3-25				
3-26				
3-27				
3-28				

	Chloride	EPA 325.2/SM 4500-CI E-2000
	Nitrate-Nitrite	EPA 353.2/SM 4500-NO3 F-2000
	Alkalinity	EPA 310.2
	Sulfate	EPA 375.4/SM 426C (15th)/ SM4500-504 E-1997

	Ammonia	EPA 350.1/SM 4500-NH3 B-1997
	TKN	EPA 351.2
✓	Phos	EPA 365.4

Analyte	PHOS		Reagents
SOP & Revision	K 3654 R17		RGT 34313
Curve Stock (SC made)			RGT 34527
NO2 STD			RGT 34471
ICV	Digest		
CCV	set		
LCS	107		
MS	Dilution		

Comments: _____

Analyst: David Merrill Date: 8/25/15

DCN#112747

TKN/Phosphorus Digestion Log

TKN WG: _____ Phos WG: _____

TKN Std: Std 72108 Phos Std: Std 72108

TKN CCV: ½ (Std 72108) Phos CCV: ½ (Std 72108)

TKN ICV: Std 71708 Phos ICV: Std 71787

TKN LCS: Std 71707 Phos LCS: Std 71758

MS/MSD: Std 72041

Daily Dilution: 1 (25/25 = 1)

Block Digester Temperature: 380 °C Digest Reagent: RGT 34441

	Sample	Volume	TKN Dilution	Phos Dilution		Sample	Volume	TKN Dilution	Phos Dilution
1	Std		5	2	26	08-1073-01			✓
2	Std		5	2	27	03			✓
3	ICVT		2		28	DUP 08-1168-01		✓	✓
4	ICVP			1.5	29	MS 08-1168-01		✓	✓
5	LCST		1		30	MS 08-1168-02		✓	✓
6	LCSP			1	31				
7	08-841-02	1/10	✓		32				
8	08-842-01	1/10	✓		33				
9	08-844-01	1/10	✓		34				
10	08-912-01	1/10	✓		35				
11	08-914-01	1/10	✓		36				
12	08-1154-01		✓		37				
13	08-1169-02	1/50	✓		38				
14	05	1/50	✓		39				
15	08	1/50	✓		40				
16	08-1150-01		✓		41				
17	08-1168-01		✓	✓	42				
18	02		✓	✓	43				
19	03		✓	✓	44				
20	04		✓	✓	45				
21	08-1096-01		✓		46				
22	08-1010-01			✓	47				
23	02			✓	48				
24	03			✓	49				
25	08-1172-01			✓	50				

Analyst: David Merchle Date: 8/24/15

MICROBAC (OVD)

SMARTCHEM200 INST1 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WTPH -Unit [mg/L] - EPA 365.4 TOTAL PHOSPHORUS

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.000	0.0334	0.00		9:25:54 AM
DIL-1	RBL	0.000	0.0333	0.00		9:26:11 AM
DIL-1	RBL	0.000	0.0366	0.00		9:27:06 AM
SR5-1	Std-1	0.010	-0.0177	0.00	INV	9:27:23 AM
SR5-2	Std-2	0.200	0.0359	0.00		9:28:18 AM
SR5-3	Std-3	0.500	0.0767	0.00		9:28:35 AM
SR5-4	Std-4	1.000	0.1519	0.00		9:29:30 AM
SR5-5	Std-5	1.500	0.2183	0.00		9:29:48 AM
ST-1	Std-6	2.000	0.2959	0.00		9:30:43 AM
ST-3	1CCV (1 mg/L)	1.085	0.1597	108.46		9:30:59 AM
ST-2	2CCB (0 mg/L)	0.108	0.0113	0.00		9:31:54 AM
1	ICV	1.448	0.2149	0.00		9:32:12 AM
2	WG536310-01 BLK	0.056	0.0034	0.00		9:33:06 AM
3	WG536310-02 LCS	1.048	0.1541	0.00		9:33:24 AM
4	L15081168-01	0.072	0.0059	0.00		9:34:18 AM
5	L15081168-02	0.061	0.0042	0.00		9:34:36 AM
6	L15081168-03	0.142	0.0165	0.00		9:35:30 AM
7	L15081168-04	0.177	0.0218	0.00		9:35:48 AM
8	L15081010-01	0.221	0.0285	0.00	EPL	9:36:42 AM
9	L15081010-02	0.428	0.0599	0.00	EPL	9:37:00 AM
10	L15081010-03	0.633	0.0911	0.00	EPL	9:37:54 AM
ST-3	1CCV (1 mg/L)	1.066	0.1568	106.55		9:38:12 AM
ST-2	2CCB (0 mg/L)	0.114	0.0123	0.00		9:39:06 AM
11	L15081172-01	14.635	2.2184	0.00	EPL,><,LH	9:39:24 AM
12	L15081073-01	0.114	0.0123	0.00		9:40:18 AM
13	L15081073-03	0.160	0.0193	0.00		9:40:36 AM
14	WG536310-04 DUP	0.045	0.0018	0.00		9:41:30 AM
15	WG536310-05 MS	0.963	0.1412	0.00		9:41:48 AM
16	ID 16 B	0.010	-0.0035	0.00	INV	9:42:42 AM
17	ID 17 L	0.632	0.0909	0.00		9:43:00 AM
18	ID 18 L	1.043	0.1534	0.00		9:43:54 AM
ST-3	1CCV (1 mg/L)	1.066	0.1568	106.55		9:44:12 AM

Report Date :08/25/2015 **Run Date :8/25/2015** **Operator : WESTCO** **Plan # :20150825002**

Plan Description : PHOS-A1-DCM/08/25/2015

MICROBAC (OVD)
SMARTCHEM200 INST1 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WTPH -Unit [mg/L] - EPA 365.4 TOTAL PHOSPHORUS

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
ST-2	2CCB (0 mg/L)	0.097	0.0096	0.00		9:45:06 AM
11-[1/2]	L15081172-01	8.536	1.4030	0.00	EPL,><,LH	9:52:46 AM
ST-3	1CCV (1 mg/L)	1.054	0.1551	105.43		9:52:46 AM
ST-2	2CCB (0 mg/L)	0.080	0.0071	0.00		9:53:40 AM
11-[1/5]	L15081172-01	15.069	0.4528	0.00	><,LH	10:01:20 AM
ST-3	1CCV (1 mg/L)	1.076	0.1584	107.60		10:01:20 AM
ST-2	2CCB (0 mg/L)	0.079	0.0069	0.00		10:02:14 AM
11-[1/15]	L15081172-01 (2)	16.170	0.1587	0.00	LH	10:09:54 AM
ST-3	1CCV (1 mg/L)	1.069	0.1574	106.94		10:09:54 AM
ST-2	2CCB (0 mg/L)	0.080	0.0071	0.00		10:10:48 AM

Report Date :08/25/2015 Run Date :8/25/2015 Operator : WESTCO Plan # :20150825002

Plan Description : PHOS-A1-DCM/08/25/2015

Calibrant Report - WTPH -

Calib Lot #:010104 Exp Date:6/18/2020 User:MICROBAC

Plan # : 20150825002 Description : [PHOS-A1-DCM/08/25/2015] Unit

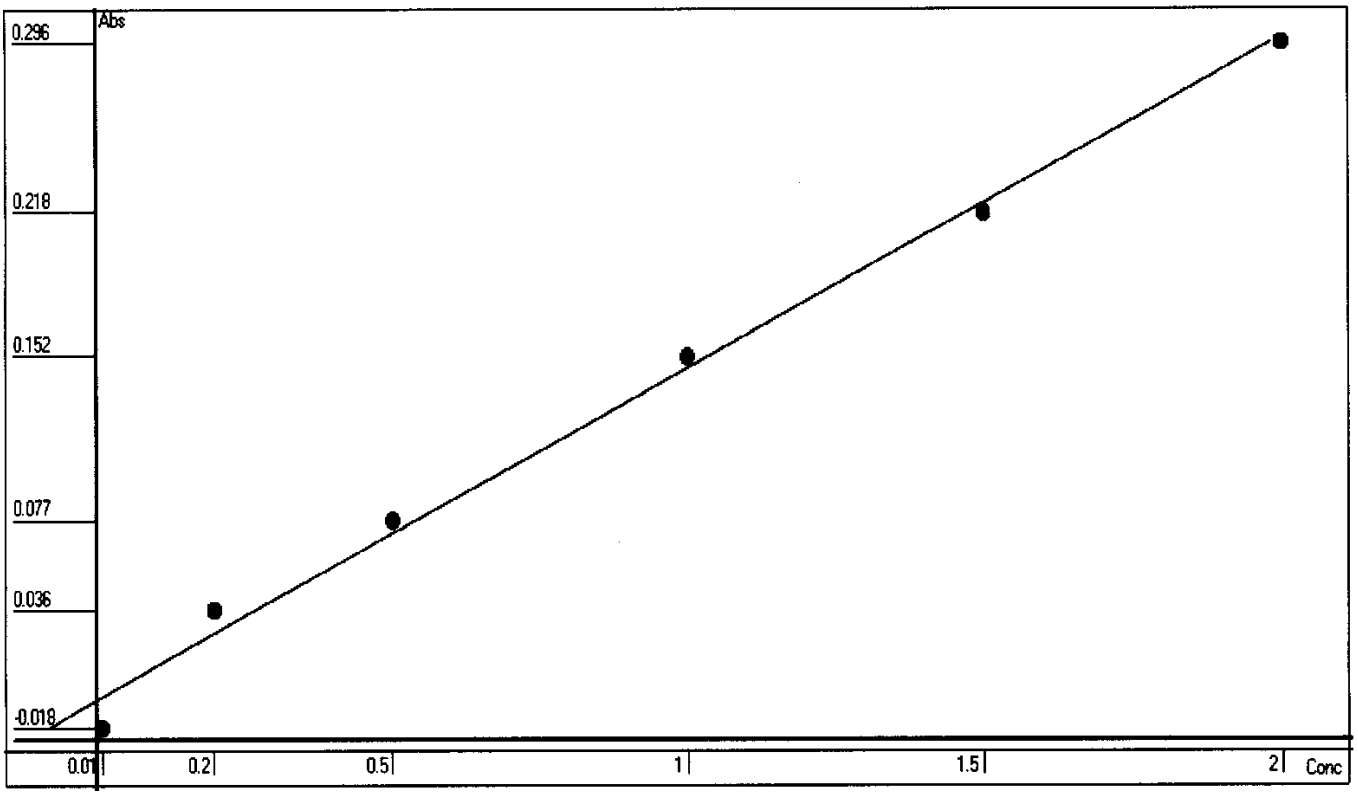

Point	OD	Conc	Recalc Conc	% Error
1	-0.0177	0.01	-0.0828	-928.00
2	0.0358	0.2	0.2693	34.65
3	0.0767	0.5	0.5385	7.70
4	0.1519	1	1.0335	3.35
5	0.2183	1.5	1.4706	-1.96
6	0.2959	2	1.9813	-0.94

Conc= +6.582*Abso +0.0337 R^2=0.9943

RBL
0.0333
0

Report Date 8/25/2015 Run Date 8/25/2015

2.4.4 Sulfide Data

2.4.4.1 Summary Data

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081073-01	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW14-081915	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG536448	**Analyst:**	TB	**Run Date:**	08/25/2015 16:00
Collect Date:	08/19/2015 08:20	**Dilution:**	1	**File ID:**	ET.1508251600-06
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081073-03	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW13-081915	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG536448	**Analyst:**	TB	**Run Date:**	08/25/2015 16:00
Collect Date:	08/19/2015 09:35	**Dilution:**	1	**File ID:**	ET.1508251600-07
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.4.4.2 QC Summary Data

Example Total Sulfide(Liquid) Calculations

[mL Iodine * N Iodide) - (mL titrant * N titrant)] * 16000/(volume * dilution) = mg/L Sulfide

where:

mL Iodine = mL of Iodine used
N Iodine = normality of Iodine
mL titrant = mL of titrant used
N titrant = normality of titrant
16000 = factor: 1mL of 0.025 N iodine reacts with 0.4mg sulfide
volume = mL filtered of mL titrated(if not filtered)
dilution = dilution in decimal form (1/5 = 0.2)

Example Total Sulfide(Soil) Calculations

[(mL Iodine * N Iodine) - (mL titrant * N titrant)] * 16.03/weight = mg/kg sulfide

where:

mL Iodine = mL of Iodine used
N Iodine = normality of Iodine
mL titrant = normality of titrant
16.03 = 32.06 grams per 2 equivalents
weight = kg of sample used

Microbac Laboratories Inc.

00648858

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: SM4500-S-(-2)-F-

AAB#: WG536448

Login Number: L15081073

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW14-081915	01	08/19/15					08/25/2015	6.3	7		08/25/15	6.3	7	
50WW13-081915	03	08/19/15					08/25/2015	6.3	7		08/25/15	6.3	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4358645
Report generated 08/27/2015 16:35

METHOD BLANK SUMMARY

Login Number: L15081073
Blank File ID: ET.1508251600-01
Prep Date: 08/25/15 16:00
Analyzed Date: 08/25/15 16:00
Analyst: TB

Work Group: WG536448
Blank Sample ID: WG536448-01
Instrument ID: BURET
Method: SM4500-S-(-2)-F-

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG536448-02	ET.1508251600-02	08/25/15 16:00	
LCS2	WG536448-03	ET.1508251600-03	08/25/15 16:00	
50WW14-081915	L15081073-01	ET.1508251600-06	08/25/15 16:00	
50WW13-081915	L15081073-03	ET.1508251600-07	08/25/15 16:00	

Report Name: BLANK_SUMMARY
PDF File ID: 4358646
Report generated 08/27/2015 16:35

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15081073 Prep Date: 08/25/15 16:00 Sample ID: WG536448-01
Instrument ID: BURET Run Date: 08/25/15 16:00 Prep Method: SM4500-S-(-2)-F
File ID: ET.1508251600-01 Analyst: TB Method: SM4500-S-(-2)-F
Workgroup (AAB#): WG536448 Matrix: Water Units: mg/L
Contract #: Cal ID: BURET-

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Sulfide	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4358647
27-AUG-2015 16:35

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15081073 Analyst: TB Prep Method: SM4500-S-(-2)-F
Instrument ID: BURET Matrix: Water Method: SM4500-S-(-2)-F
Workgroup (AAB#): WG536448 Units: mg/L
QC Key: DOD4 Lot #: STD72138

Sample ID: WG536448-02 LCS File ID: ET.1508251600-02 Run Date: 08/25/2015 16:00
Sample ID: WG536448-03 LCS2 File ID: ET.1508251600-03 Run Date: 08/25/2015 16:00

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Sulfide	20.5	19.8	96.5	20.5	19.8	96.5	0.00	85 - 115	10	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4358648
Report generated: 08/27/2015 16:35

2.4.4.3 Raw Data

SULFIDE
(sulfide1)

WORKGROUP: WG536448

Water:
EPA 376.1 / SM4500-S(-2)-F
SOP K3761 Revision #: 16

Soil:
SM846 9030B/9034
SOP K9030 Revision #: _____

Instrument: Buret

LCS: SH 72138

Iodine standardization (0.025N) COA: 18311
mL 0.025N titrant: 10.0
Volume I: 10.0 mL
Normality I: 0.025

(0.1 N I) COA: 15086
mL 0.025 N titrant: 8.0
Volume I: 2.0 mL
Normality I: 0.10

Stock standardization (in duplicate) 5.0 mL stock

mL I	1) 10.0	2) 10.0
N I	1) 0.10	2) 0.10
mL 0.025 titrant 1)	22.9	2) 22.9

LCS daily dilution: 3(1368)/200 = 20.5 mg/L

1368 = stock conc (mg/L)

Titrant: T- 1606-05-06

SAMPLE	Volume Filtered mL	mL Iodine	N Iodine	0.025 N Sodium Thiosulfate (mL)
BLANK	200	15.0	0.025	~~5.1~~ 15.0
LCS (mL)	200	15.0	0.025	5.1
LCSDUP (mL)	200	15.0	0.025	5.1
8.0001-04	200	15.0	0.025	14.5
05	200	15.0	0.025	14.5
1073-01	410	15.0	0.025	14.9
03	470	15.0	0.025	14.8
1280-06	500	15.0	0.025	>15.5 Interference

7(1368)/20.5
42.85
20(42.9)/1000
~~0.86~~
0.96
TB 8/25/15

TB 8/25/15

Analyst: Tom Bunch Date/Time: 1600 8/25/2015

DCN#112771

Microbac Laboratories Inc.
TITRAMETRIC REPORT

Workgroup (AAB#): WG536448
Product: EPA 376.1\9034
Analyte: Sulfide

Analyst: TB
Run Date: 08/25/2015 16:00

SAMPLE NUMBER	Volume	Vol I	Nor I	Vol T	Nor T	Dil	Analytical	Reported	Units
WG536448-01	200.0	15	.025	15	.025	1	0	0	mg/L
WG536448-02	200.0	15	.025	5.1	.025	1	19.8	19.80	mg/L
WG536448-03	200.0	15	.025	5.1	.025	1	19.8	19.80	mg/L
L15080001-04	200.0	15	.025	14.5	.025	1	1.00	1.000	mg/L
L15080001-05	200.0	15	.025	14.5	.025	1	1.00	1.000	mg/L
L15081073-01	410.0	15	.025	14.9	.025	1	0.0976	ND	mg/L
L15081073-03	470.0	15	.025	14.8	.025	1	0.170	ND	mg/L
L15081280-06	500.0	15	.025	15	.025	1	0	ND	mg/L

SULFIDE_REPORT - Modified 03/06/2008

Report generated 08/27/2015 15:18

[redacted]

2.4.5 Total Organic Carbon Data

2.4.5.1 Summary Data

Microbac

Lab Report #: L15081073
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081073-01	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW14-081915	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	05/27/2015 15:47
Workgroup #:	WG536390	**Analyst:**	DIH	**Run Date:**	08/26/2015 17:40
Collect Date:	08/19/2015 08:20	**Dilution:**	5	**File ID:**	TC08262015.011
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	13.7		10.0	5.00	2.50

Certificate of Analysis

Sample #:	L15081073-03	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW13-081915	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	05/27/2015 15:47
Workgroup #:	WG536390	**Analyst:**	DIH	**Run Date:**	08/26/2015 17:53
Collect Date:	08/19/2015 09:35	**Dilution:**	5	**File ID:**	TC08262015.012
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	10.4		10.0	5.00	2.50

2.4.5.2 QC Summary Data

Total Organic Carbon Example Calculations
(Direct Readout Parameter)

(Readout)/(dilution) = mg/L

where:

Readout = direct readout from the instrument
dilution = dilution in decimal form (ex. 1/5 dilution = 0.2)

Microbac Laboratories Inc.

Data Checklist

Date: 26-AUG-2015
Analyst: DIH
Analyst: NA
Method: TOC
Instrument: TOC
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG536603 WG536390

Calibration/Linearity	8/26/2015
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DIH
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
27-AUG-2015

Secondary Reviewer:
27-AUG-2015

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-27-2015 14:20:26

Microbac Laboratories Inc.

00648871

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 415.1 AAB#: WG536390

Login Number: L15081073

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW14-081915	01	08/19/15					08/26/2015	7.4	28		08/26/15	7.4	28	
50WW13-081915	03	08/19/15					08/26/2015	7.3	28		08/26/15	7.3	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4359957
Report generated 08/28/2015 12:29

METHOD BLANK SUMMARY

Login Number: L15081073
Blank File ID: TC08262015.003
Prep Date: 08/26/15 15:51
Analyzed Date: 08/26/15 15:51
Analyst: DIH

Work Group: WG536390
Blank Sample ID: WG536390-01
Instrument ID: TOC-VWP
Method: 415.1

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG536390-02	TC08262015.004	08/26/15 16:04	01
LCS2	WG536390-03	TC08262015.005	08/26/15 16:18	01
50WW14-081915	L15081073-01	TC08262015.011	08/26/15 17:40	DL01
50WW13-081915	L15081073-03	TC08262015.012	08/26/15 17:53	DL01
DUP	WG536390-05	TC08262015.017	08/26/15 18:55	01

Report Name: BLANK_SUMMARY
PDF File ID: 4359958
Report generated 08/28/2015 12:29

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15081073 Prep Date: 08/26/15 15:51 Sample ID: WG536390-01
Instrument ID: TOC-VWP Run Date: 08/26/15 15:51 Prep Method: 415.1
File ID: TC08262015.003 Analyst: DIH Method: 415.1
Workgroup (AAB#): WG536390 Matrix: Water Units: mg/L
Contract #: Cal ID: TOC-VW-27-MAY-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Total Organic Carbon	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4359959
28-AUG-2015 12:29

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15081073 Analyst: DIH Prep Method: 415.1
Instrument ID: TOC-VWP Matrix: Water Method: 415.1
Workgroup (AAB#): WG536390 Units: mg/L
QC Key: DOD4 Lot #: STD69935

Sample ID: WG536390-02 LCS File ID: TC08262015.004 Run Date: 08/26/2015 16:04
Sample ID: WG536390-03 LCS2 File ID: TC08262015.005 Run Date: 08/26/2015 16:18

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Total Organic Carbon	25.0	27.4	110	25.0	28.0	112	2.31	85 - 115	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4359960
Report generated: 08/28/2015 12:29

2.4.5.3 Raw Data

Curve wg525298

Total Organic Carbon

MAKE DAILY

CCV (TOC): _____ (5/200)(1000) = 25mg/L

LCS (TOC): _____ (5/200)(1000) = 25mg/L

CCV (TIC): _____ (5/200)(1000) = 25mg/L

see below

MS (TOC): _____

Calibration Curve Date: _____

Reagent: ~~RGT 33399~~ 33691 ~~RGT 32721~~

☑ SM5310-C : Matrix 2 WG_____

☐ EPA 415.1/9060A(mod): Matrix 1 WG_____ SOP: K 4151 Rev. 18

WG_____ Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

☑ drain reservoir filled
☑ ASI water bottle full
☑ dilution water bottle full
☑ 3rd bottle full
☑ sufficient gas
☑ sufficient persulfate
☑ sufficient acid
☑ waste container

Position	Sample ID	Dilution	Position	Sample ID	Dilution	Position	Sample ID	Dilution
1	TC curve		26	TC curve		51		
2	TC curve		27	std 65368		52	see SOP for	
3	TC ICV		28			53	curve points	
4	~~TOC~~ TIC ICV		29	TIC curve		54		
5	on		30	std 68972		55		
6			31			56		
7			32			57		
8			33	TOC(TC)		58		
9			34	ICV		59	5/200(1000) = 25	
10			35	std 69935		60		
11			36			61		
12			37	TIC ICV		62		
13	all points		38	std 68222		63		
14	analyzed		39			64		
15	in duplicate		40			65		
16			41			66		
17			42			67		
18			43			68		
19			44			69		
20			45			70		
21			46			71		
22			47			72		
23			48			73		
24			49			74		
25			50			75		

Analyst: [signature] Date/Time: 5/27/15

DCN#110878

C:\TOC3201\Data\05-27-2015-DIH-CURVE.t32

	Analysis	Sample Name	Result	Status	Date / Time	Vial	
1	TC	TCCURVE		Complete	5/27/2015 3:55:16 PM	0, 1, 2,	
2	IC	TICCURVE		Complete	5/27/2015 5:11:46 PM	0, 6, 7,	
3	TC	TC ICV	TC:24.70mg/L	Complete	5/27/2015 5:28:06 PM	11	98.8%
4	IC	TIC ICV	IC:24.92mg/L	Complete	5/27/2015 5:40:34 PM	12	99.7%

5/28/2015 7:38:55 AM

1/1

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Cal. Curve

Sample Name: TCCURVE
Sample ID: Untitled
Cal. Curve: TCCURVE-05-27-2015.2015_05_27_14_45_03.cal
Status Completed

Type	Anal.
Standard	TC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	14.21	500uL	1	*******		5/27/2015 2:48:37 PM
2	14.13	500uL	1	*******		5/27/2015 2:52:11 PM

Acid Add. 0.000%
Mean Area 14.17

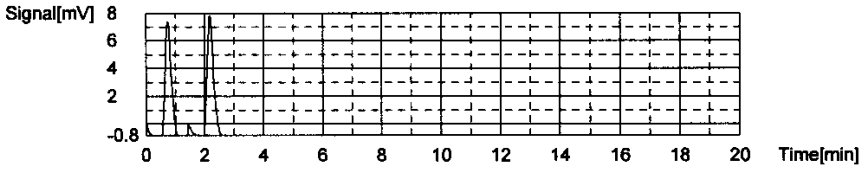

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	72.68	500uL	1	*******		5/27/2015 2:57:41 PM
2	73.82	500uL	1	*******		5/27/2015 3:01:49 PM

Acid Add. 0.000%
Mean Area 73.25

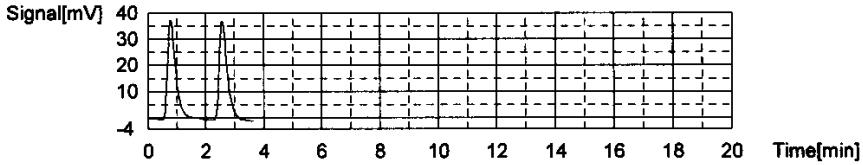

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	231.5	500uL	1	*******		5/27/2015 3:07:44 PM
2	231.3	500uL	1	*******		5/27/2015 3:12:05 PM

Acid Add. 0.000%
Mean Area 231.4

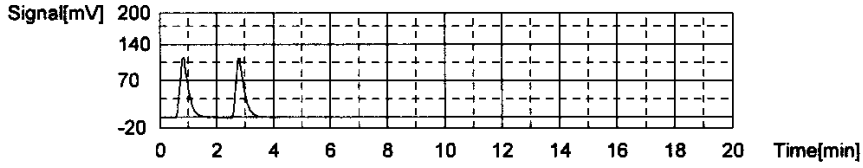

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	440.2	500uL	1	*******		5/27/2015 3:18:32 PM
2	435.3	500uL	1	*******		5/27/2015 3:23:03 PM

Acid Add. 0.000%
Mean Area 437.8

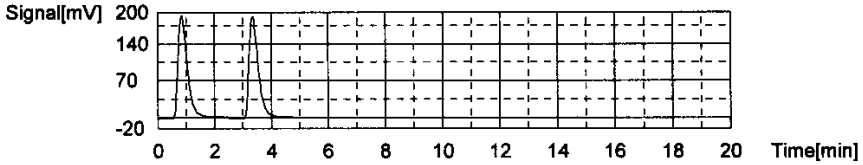

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1094	500uL	1	*******		5/27/2015 3:31:04 PM
2	1079	500uL	1	*******		5/27/2015 3:38:10 PM

Acid Add. 0.000%
Mean Area 1087

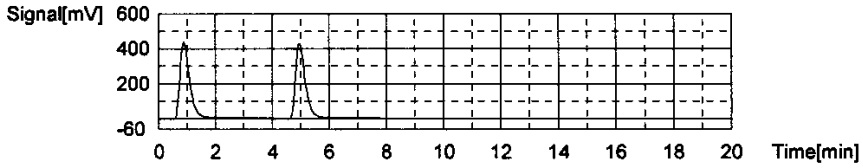

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	2210	500uL	1	T******		5/27/2015 3:47:01 PM
2	2208	500uL	1	T******		5/27/2015 3:55:16 PM

Acid Add. 0.000%
Mean Area 2209

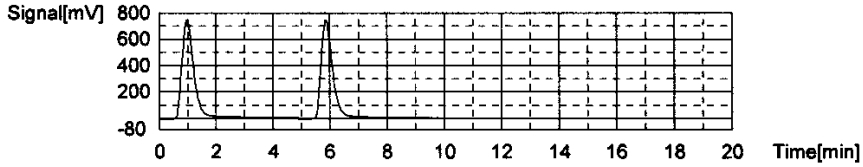

Slope: 43.70
Intercept 12.49
r^2 0.999746 ✓
Zero Shift No

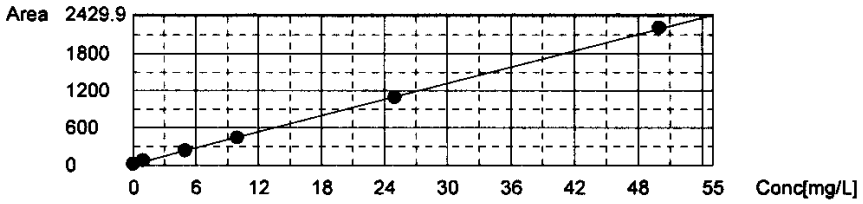

Cal. Curve

Sample Name: TICCURVE
Sample ID: Untitled
Cal. Curve: TICCURVE-05-27-2015.2015_05_27_15_55_16.cal
Status Completed

Type	Anal.
Standard	IC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	12.69	500uL	1	*******		5/27/2015 3:59:17 PM
2	12.56	500uL	1	*******		5/27/2015 4:03:21 PM

Acid Add. 10.00%
Mean Area 12.63

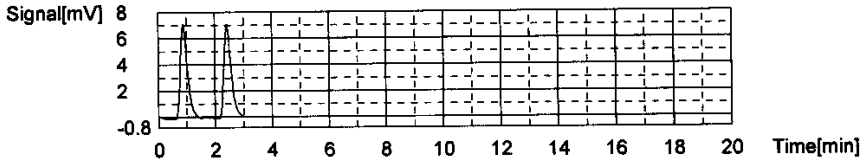

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	56.24	500uL	1	*******		5/27/2015 4:11:08 PM
2	56.43	500uL	1	*******		5/27/2015 4:15:44 PM

Acid Add. 10.00%
Mean Area 56.34

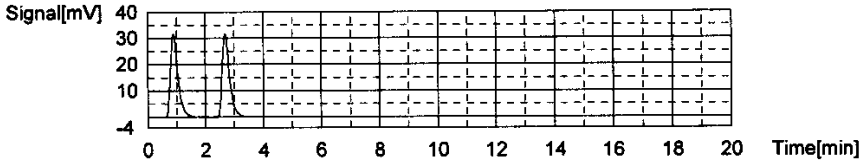

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	178.6	500uL	1	*******		5/27/2015 4:23:48 PM
2	185.6	500uL	1	*******		5/27/2015 4:28:40 PM

Acid Add. 10.00%
Mean Area 182.1

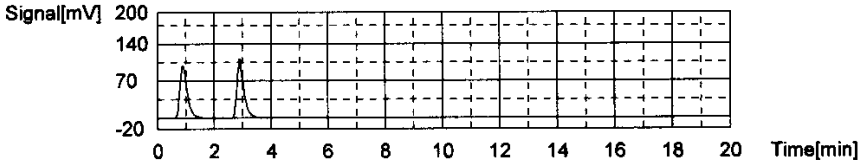

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	339.3	500uL	1	*******		5/27/2015 4:37:04 PM
2	343.0	500uL	1	*******		5/27/2015 4:42:04 PM

Acid Add. 10.00%
Mean Area 341.1

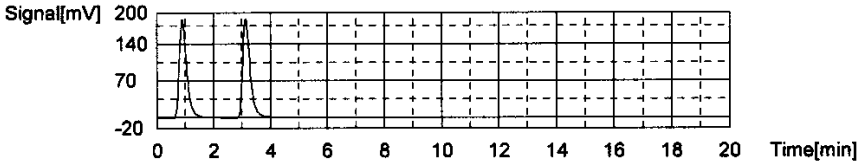

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	802.7	500uL	1	*******		5/27/2015 4:50:52 PM
2	804.1	500uL	1	*******		5/27/2015 4:56:25 PM

Acid Add. 10.00%
Mean Area 803.4

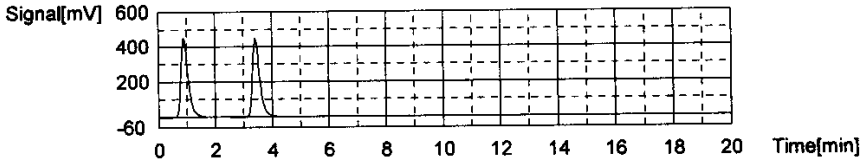

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1592	500uL	1	*******		5/27/2015 5:05:46 PM
2	1578	500uL	1	*******		5/27/2015 5:11:46 PM

Acid Add. 10.00%
Mean Area 1585

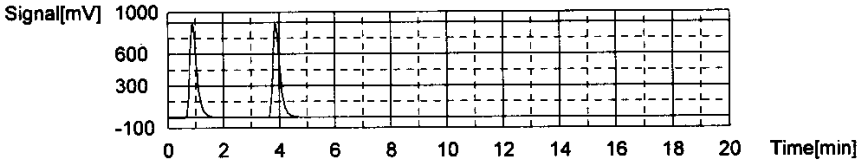

Slope: 31.27
Intercept 22.45
r^2 0.999917 ✓
Zero Shift No

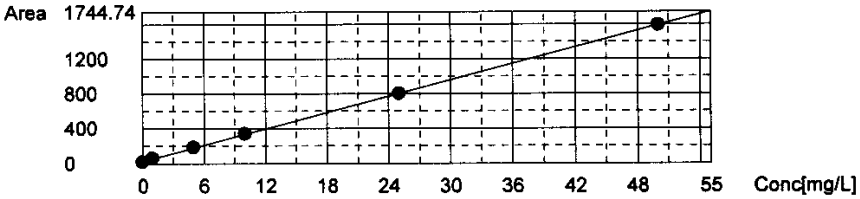

Sample

Sample Name: TC ICV
Sample ID: Untitled
Origin: TCCURVE-05-27-2015.cal
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TC	1.000	TC:24.70mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1111	25.13mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_05	5/27/2015 5:21:56 PM
2	1073	24.27mg/L	500uL	1		TCCURVE-05-27-2015.2015_05_27_14_45_05	5/27/2015 5:28:06 PM

Mean Area 1092
Mean Conc. 24.70mg/L

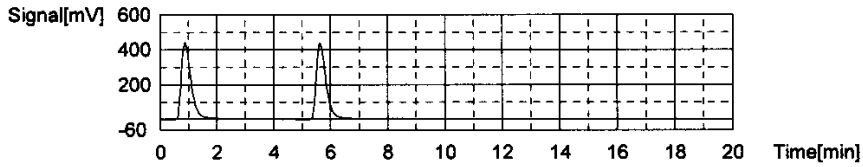

Sample

Sample Name:	TIC ICV
Sample ID:	Untitled
Origin:	TICCURVE-05-27-2015.cal
Status	Completed
Chk. Result	

Type	Anal.	Dil.	Result
Unknown	IC	1.000	IC:24.92mg/L

1. Det

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	800.1	24.87mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/27/2015 5:35:10 PM
2	803.2	24.97mg/L	500uL	1		TICCURVE-05-27-2015.2015_05_27_15_55_1	5/27/2015 5:40:34 PM

Mean Area	801.7
Mean Conc.	24.92mg/L

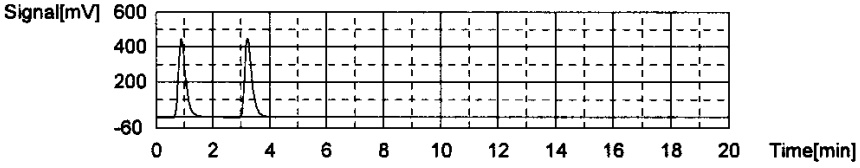

WORKGROUP: WG536390

536603

Total Organic Carbon

MAKE DAILY

CCV (TOC): STD 72133
(5/200)(1000) = 25mg/L

LCS (TOC): std 69935/72133
(5/200)(1000) = 25mg/L

CCV (TIC): STD 71349
(5/200)(1000) = 25mg/L

MS (TOC): 0.4/40(100) = 10

Calibration Curve Date: 8/26/15

Reagent: ROT 34171
ROT 34459

☑ SM5310-C : Matrix 2 WG 536603

☑ EPA 415.1/9060A(mod): Matrix 1 WG 536390 SOP: K 4151 Rev. 18

WG _____ Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

☒ drain reservoir filled
☒ ASl water bottle full
☒ dilution water bottle full
☒ 3rd bottle full
☒ sufficient gas
☒ sufficient persulfate
☒ sufficient acid
☒ waste container

Position	Sample ID	Dilution	Position	Sample ID	Dilution	Position	Sample ID	Dilution
1	TIC		26	CCV		51		
2	CCV		27	CCB		52		
3	BLK		28	BLK		53		
4	LCS		29	LCS 25		54		
5	LCSDUP		30	LCSDUP		55		
6	08-0992-05	1/4	31	08-1425-01		56		
7	-09	1/5	32	02		57		
8	08-0995-01	1/4	33	DUP		58		
9	-02		34	MS		59		
10	-04	1/5	35	CCV		60		
11	08-1073-01	1/5	36	CCB		61		
12	-03	1/5	37			62		
13	08-1166-01		38	CCV		63		
14	CCV		39	CCB		64		
15	CCB		40			65		
16	08-1166-08		41			66		
17	DUP		42			67		
18	MS		43			68		
19	08-1428-01		44			69		
20	02		45			70		
21	03		46			71		
22	04		47			72		
23	08-1429-01	1/5	48			73		
24	08-1287-01		49			74		
25			50			75		

1428

Algae

Analyst: ~~Ethan Tuck~~ Deanne Hessar

Date/Time: ~~08/25/15~~ 8/26 8/26/15

DCN#112763

C:\TOC3201\Data\08-26-2015-EPT-TOC.t32

	Analysis	Sample Name	Result	Status	Date / Time	Vial
1	TOC	TIC 25	TOC:3.224mg/L TC:28.34mg/L IC:25.12mg/L	Complete	8/26/2015 3:33:55 PM	1
2	TOC	CCV 25	TOC:24.67mg/L TC:24.71mg/L IC:0.03212mg/L	Complete	8/26/2015 3:46:31 PM	2
3	TOC	WG536390-01 BLK	!!Error!! TOC:0.03763mg/L TC:0.02484mg/L IC:-0.01279mg	Complete	8/26/2015 3:55:39 PM	0
4	TOC	WG536390-02 LCS	TOC:27.39mg/L TC:47.00mg/L IC:19.61mg/L	Complete	8/26/2015 4:09:44 PM	4
5	TOC	WG536390-03 LCSDUP	TOC:28.03mg/L TC:47.05mg/L IC:19.02mg/L	Complete	8/26/2015 4:23:55 PM	5
6	TOC	L15080992-05 (4)	TOC:6.587mg/L TC:28.90mg/L IC:22.31mg/L	Complete	8/26/2015 4:37:54 PM	6
7	TOC	L15080992-09 (5)	TOC:2.931mg/L TC:22.66mg/L IC:19.73mg/L	Complete	8/26/2015 4:51:39 PM	7
8	TOC	L15080995-01 (4)	TOC:6.888mg/L TC:40.77mg/L IC:33.88mg/L	Complete	8/26/2015 5:05:25 PM	8
9	TOC	L15080992-02	TOC:2.909mg/L TC:23.80mg/L IC:20.90mg/L	Complete	8/26/2015 5:19:00 PM	9
10	TOC	L15080992-04 (5)	TOC:5.841mg/L TC:26.40mg/L IC:20.56mg/L	Complete	8/26/2015 5:32:58 PM	10
11	TOC	L15081073-01 (5)	TOC:2.739mg/L TC:13.65mg/L IC:10.91mg/L	Complete	8/26/2015 5:46:00 PM	11
12	TOC	L15081073-03 (5)	TOC:2.076mg/L TC:23.62mg/L IC:21.55mg/L	Complete	8/26/2015 5:59:26 PM	12
13	TOC	L15081166-01	TOC:1.666mg/L TC:5.197mg/L IC:3.531mg/L	Complete	8/26/2015 6:11:49 PM	13
14	TOC	CCV	TOC:24.71mg/L TC:24.73mg/L IC:0.02155mg/L	Complete	8/26/2015 6:24:26 PM	14
15	TOC	CCB	!!Error!! TOC:0.05323mg/L TC:0.03102mg/L IC:-0.02221mg	Complete	8/26/2015 6:33:32 PM	0
16	TOC	L15081166-08	TOC:4.421mg/L TC:23.43mg/L IC:19.01mg/L	Complete	8/26/2015 6:47:08 PM	16
17	TOC	WG536390-05 DUP	TOC:4.349mg/L TC:23.62mg/L IC:19.27mg/L	Complete	8/26/2015 7:00:22 PM	17
18	TOC	WG536390-06 MS	TOC:15.02mg/L TC:36.15mg/L IC:21.13mg/L	Complete	8/26/2015 7:14:12 PM	18
19	TOC	L15081428-01	TOC:7.278mg/L TC:10.59mg/L IC:3.311mg/L	Complete	8/26/2015 7:27:09 PM	19
20	TOC	L15081428-02	TOC:18.81mg/L TC:46.50mg/L IC:27.69mg/L	Complete	8/26/2015 7:41:13 PM	20
21	TOC	L15081428-03	TOC:20.91mg/L TC:49.97mg/L IC:29.06mg/L	Complete	8/26/2015 7:56:28 PM	21
22	TOC	L15081428-04	TOC:7.144mg/L TC:22.51mg/L IC:15.37mg/L	Complete	8/26/2015 8:09:31 PM	22
23	TOC	L15081429-01 (5)	TOC:10.48mg/L TC:11.72mg/L IC:1.243mg/L	Complete	8/26/2015 8:22:43 PM	23
24	TOC	L15081287-01	TOC:15.60mg/L TC:37.52mg/L IC:21.91mg/L	Complete	8/26/2015 8:38:24 PM	24
25	TOC		TOC:0.1907mg/L TC:0.2954mg/L IC:0.1048mg/L	Complete	8/26/2015 8:50:01 PM	25
26	TOC	CCV	TOC:28.63mg/L TC:28.65mg/L IC:0.01118mg/L	Complete	8/26/2015 9:03:34 PM	26
27	TOC	CCB	!!Error!! TOC:0.04429mg/L TC:0.03274mg/L IC:-0.01155mg	Complete	8/26/2015 9:12:44 PM	0
28	TOC	WG536603-01 BLK	!!Error!! TOC:0.04289mg/L TC:0.02468mg/L IC:-0.01822mg	Complete	8/26/2015 9:29:20 PM	0
29	TOC		TOC:32.13mg/L TC:44.26mg/L IC:12.13mg/L	Complete	8/26/2015 9:56:58 PM	29
30	TOC		TOC:29.44mg/L TC:40.63mg/L IC:11.19mg/L	Complete	8/26/2015 10:21:39 P	30
31	TOC	L15081425-01	TOC:4.939mg/L TC:15.56mg/L IC:10.62mg/L	Complete	8/26/2015 10:46:17 P	31
32	TOC	L15081425-02	TOC:2.117mg/L TC:11.69mg/L IC:9.573mg/L	Complete	8/26/2015 11:08:41 P	32
33	TOC	WG536603-05 DUP	TOC:2.217mg/L TC:12.01mg/L IC:9.790mg/L	Complete	8/26/2015 11:31:45 P	33
34	TOC	WG536603-06 MS	TOC:13.39mg/L TC:23.80mg/L IC:10.40mg/L	Complete	8/26/2015 11:55:49 P	34
35	TOC	CCV	TOC:27.30mg/L TC:27.35mg/L IC:0.04577mg/L	Complete	8/27/2015 12:08:29 A	35
36	TOC	CCB	!!Error!! TOC:0.03816mg/L TC:0.03263mg/L IC:-0.00553mg	Complete	8/27/2015 12:17:31 A	0
37	TOC	WG536603-02 LCS	TOC:22.90mg/L TC:33.12mg/L IC:10.22mg/L	Complete	8/27/2015 8:21:42 AM	52
38	TOC	WG536603-03 LCSDUP	TOC:23.89mg/L TC:33.55mg/L IC:9.664mg/L	Complete	8/27/2015 8:45:08 AM	53
39	TOC	CCV	TOC:25.12mg/L TC:25.18mg/L IC:0.06130mg/L	Complete	8/27/2015 8:57:53 AM	2
40	TOC	CCB	TOC:0.09335mg/L TC:0.1117mg/L IC:0.01831mg/L	Complete	8/27/2015 9:07:04 AM	0

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Sample

Sample Name: TIC 25
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.224mg/L TC:28.34mg/L IC:25.12mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1026	28.34mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 3:28:14 PM

Mean Area 1026
Mean Conc. 28.34mg/L

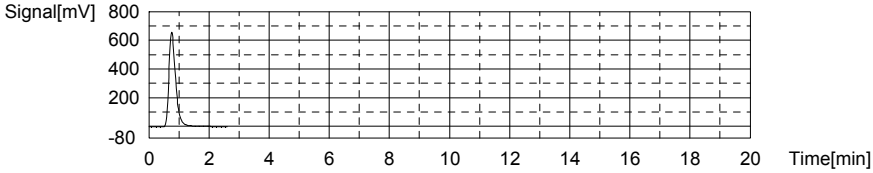

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	796.6	25.12mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 3:33:55 PM

Mean Area 796.6
Mean Conc. 25.12mg/L

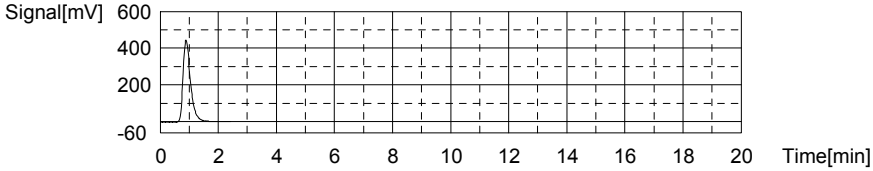

Sample

Sample Name: CCV 25
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:24.67mg/L TC:24.71mg/L IC:0.03212mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	895.3	24.71mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_2	8/26/2015 3:42:02 PM

Mean Area 895.3
Mean Conc. 24.71mg/L

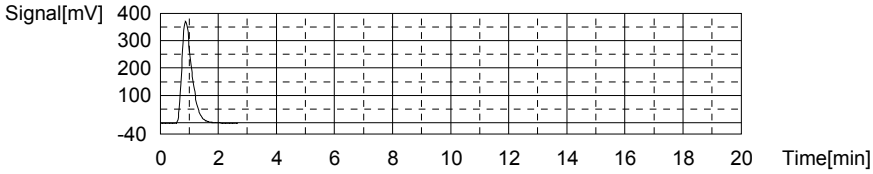

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.477	0.03212mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_5	8/26/2015 3:46:31 PM

Mean Area 8.477
Mean Conc. 0.03212mg/L

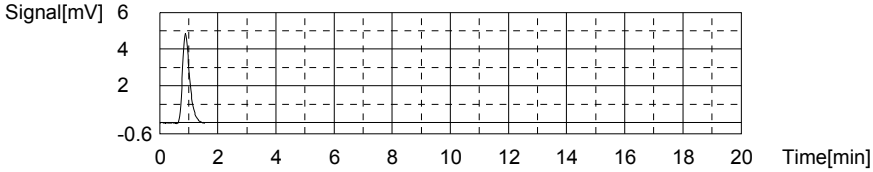

Sample

Sample Name: WG536390-01 BLK
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.03763mg/L TC:0.02484mg/L IC:-0.01279mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.688	0.02484mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_2	8/26/2015 3:51:42 PM

Mean Area 7.688
Mean Conc. 0.02484mg/L

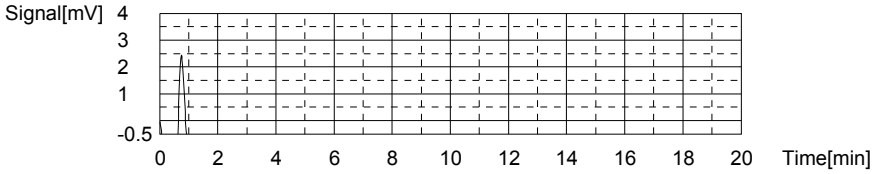

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.066	-0.01279mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_5	8/26/2015 3:55:39 PM

Mean Area 7.066
Mean Conc. -0.01279mg/L

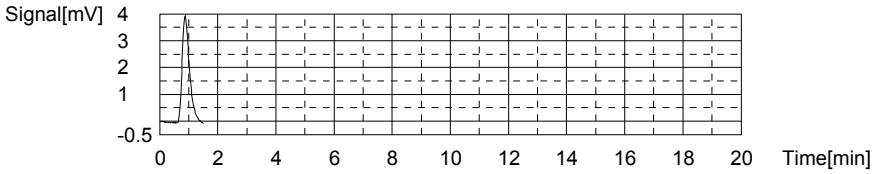

Sample

Sample Name: WG536390-02 LCS
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:27.39mg/L TC:47.00mg/L IC:19.61mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1697	47.00mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_29	8/26/2015 4:04:05 PM

Mean Area 1697
Mean Conc. 47.00mg/L

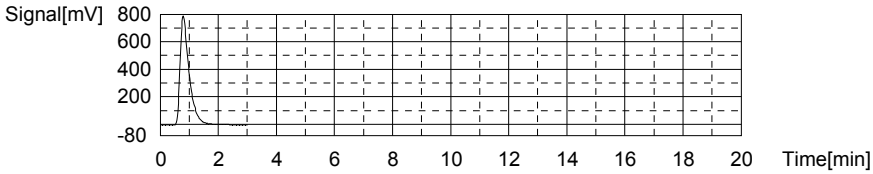

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	623.5	19.61mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 4:09:44 PM

Mean Area 623.5
Mean Conc. 19.61mg/L

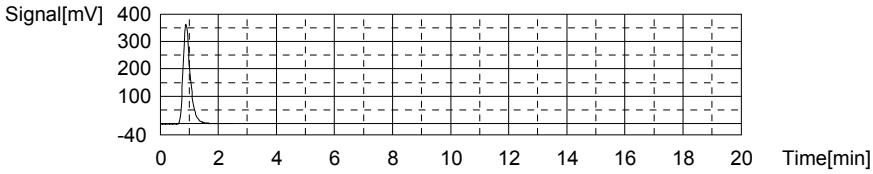

Sample

Sample Name: WG536390-03 LCSDUP
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:28.03mg/L TC:47.05mg/L IC:19.02mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1699	47.05mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 4:18:18 PM

Mean Area 1699
Mean Conc. 47.05mg/L

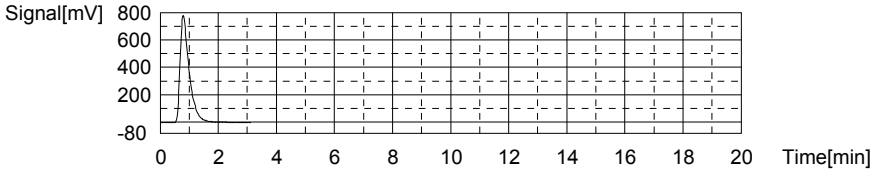

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	605.1	19.02mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 4:23:55 PM

Mean Area 605.1
Mean Conc. 19.02mg/L

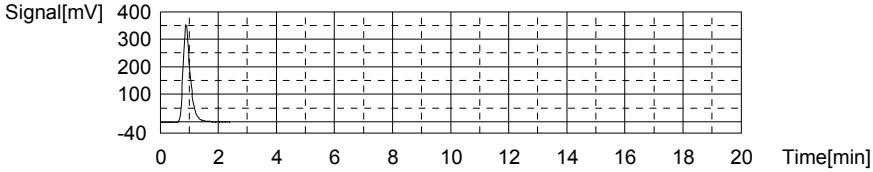

Sample

Sample Name: L15080992-05 (4)
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.587mg/L TC:28.90mg/L IC:22.31mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1046	28.90mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 4:32:06 PM

Mean Area 1046
Mean Conc. 28.90mg/L

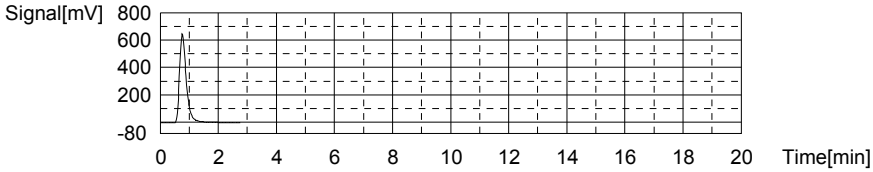

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	708.4	22.31mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 4:37:54 PM

Mean Area 708.4
Mean Conc. 22.31mg/L

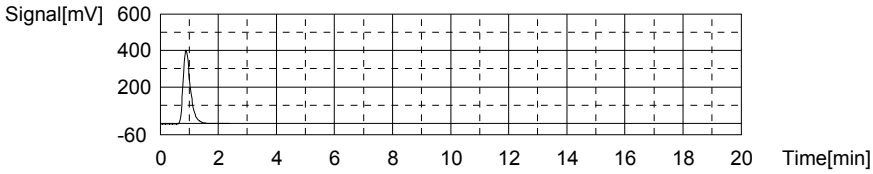

Sample

Sample Name: L15080992-09 (5)
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.931mg/L TC:22.66mg/L IC:19.73mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	821.8	22.66mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 4:45:58 PM

Mean Area 821.8
Mean Conc. 22.66mg/L

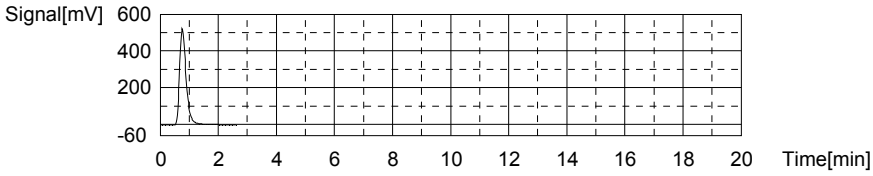

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	627.4	19.73mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 4:51:39 PM

Mean Area 627.4
Mean Conc. 19.73mg/L

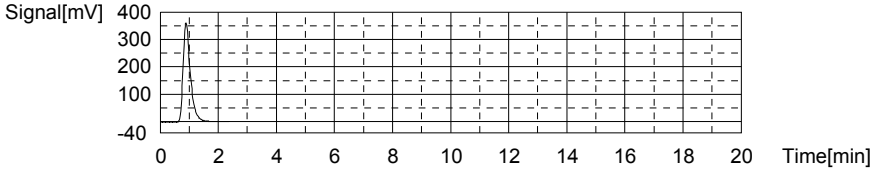

Sample

Sample Name: L15080995-01 (4)
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.888mg/L TC:40.77mg/L IC:33.88mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1473	40.77mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 4:59:36 PM

Mean Area 1473
Mean Conc. 40.77mg/L

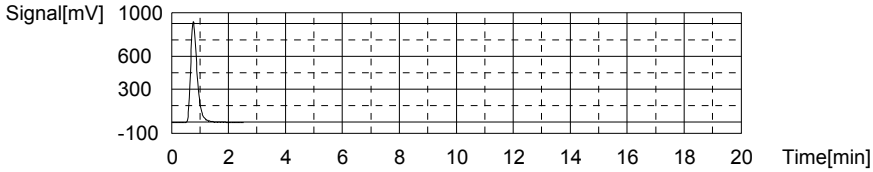

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1072	33.88mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 5:05:25 PM

Mean Area 1072
Mean Conc. 33.88mg/L

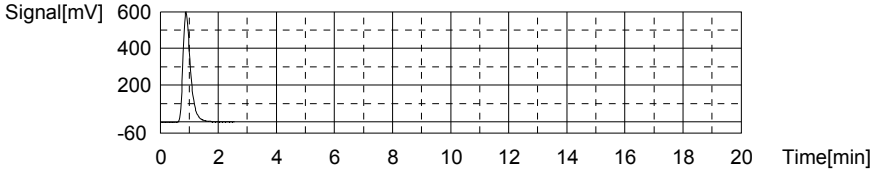

Sample

Sample Name: L15080992-02
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.909mg/L TC:23.80mg/L IC:20.90mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	862.9	23.80mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 5:13:27 PM

Mean Area 862.9
Mean Conc. 23.80mg/L

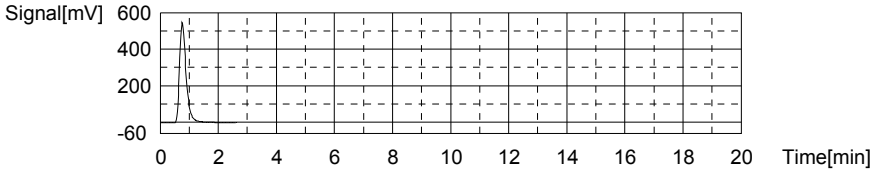

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	664.0	20.90mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 5:19:00 PM

Mean Area 664.0
Mean Conc. 20.90mg/L

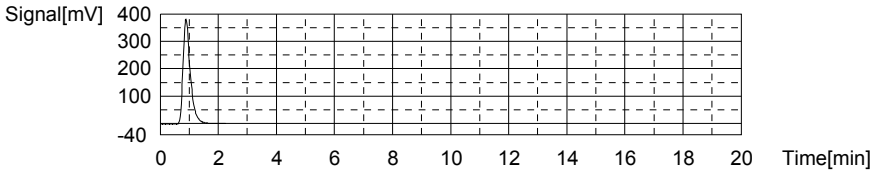

Sample

Sample Name: L15080992-04 (5)
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.841mg/L TC:26.40mg/L IC:20.56mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	956.2	26.40mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_29	8/26/2015 5:27:11 PM

Mean Area 956.2
Mean Conc. 26.40mg/L

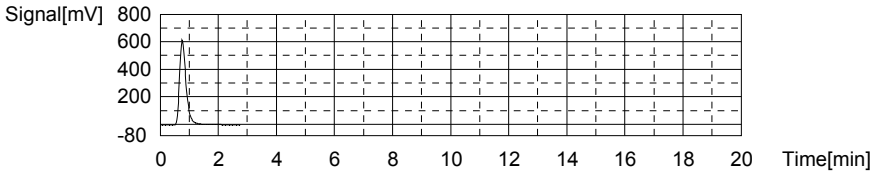

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	653.4	20.56mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 5:32:58 PM

Mean Area 653.4
Mean Conc. 20.56mg/L

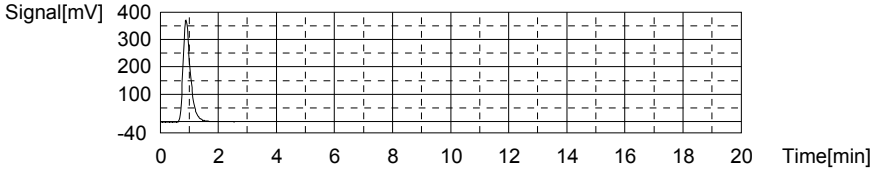

Sample

Sample Name: L15081073-01 (5)
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.739mg/L TC:13.65mg/L IC:10.91mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	497.7	13.65mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 5:40:47 PM

Mean Area 497.7
Mean Conc. 13.65mg/L

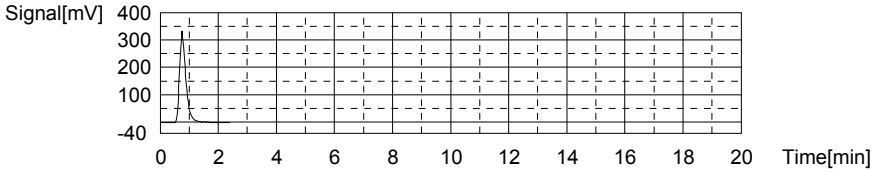

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	350.3	10.91mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 5:46:00 PM

Mean Area 350.3
Mean Conc. 10.91mg/L

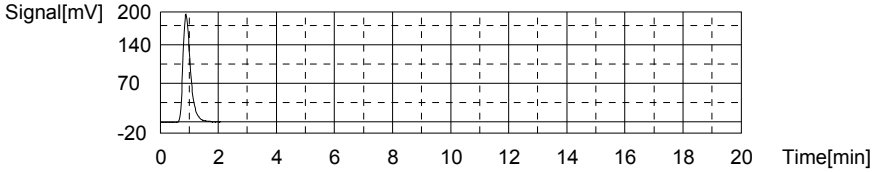

Sample

Sample Name: L15081073-03 (5)
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.076mg/L TC:23.62mg/L IC:21.55mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	856.4	23.62mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 5:53:49 PM

Mean Area 856.4
Mean Conc. 23.62mg/L

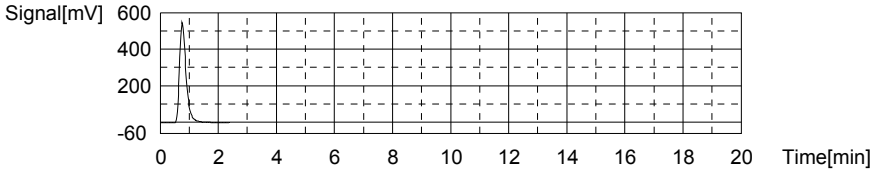

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	684.5	21.55mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 5:59:26 PM

Mean Area 684.5
Mean Conc. 21.55mg/L

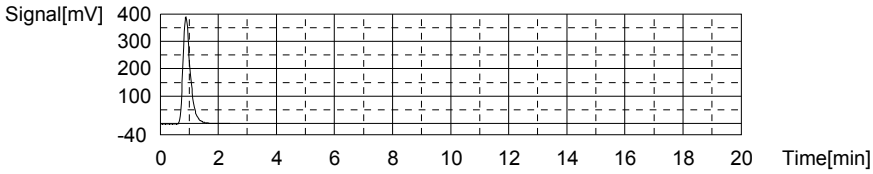

Sample

Sample Name: L15081166-01
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:1.666mg/L TC:5.197mg/L IC:3.531mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	193.7	5.197mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 6:06:54 PM

Mean Area 193.7
Mean Conc. 5.197mg/L

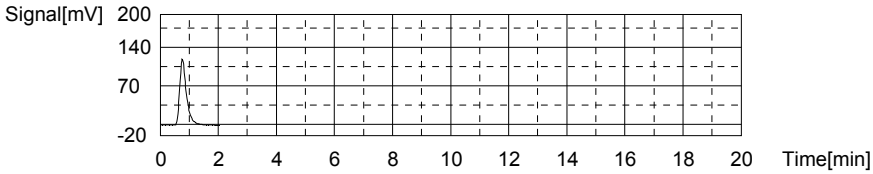

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	118.4	3.531mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 6:11:49 PM

Mean Area 118.4
Mean Conc. 3.531mg/L

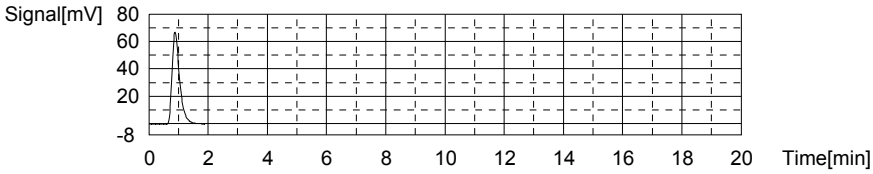

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:24.71mg/L TC:24.73mg/L IC:0.02155mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	896.2	24.73mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 6:19:54 PM

Mean Area 896.2
Mean Conc. 24.73mg/L

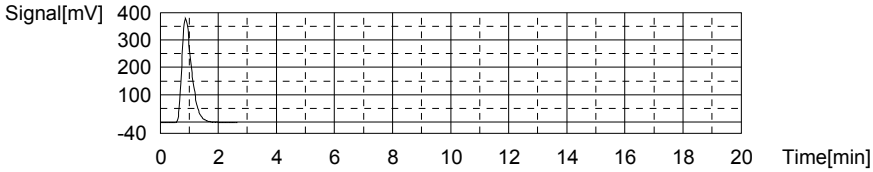

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.145	0.02155mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 6:24:26 PM

Mean Area 8.145
Mean Conc. 0.02155mg/L

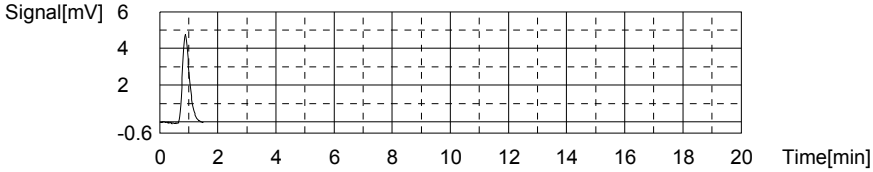

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.05323mg/L TC:0.03102mg/L IC:-0.02221mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.910	0.03102mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 6:29:36 PM

Mean Area 7.910
Mean Conc. 0.03102mg/L

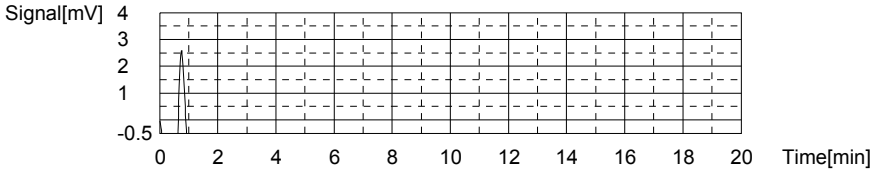

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.770	-0.02221mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 6:33:32 PM

Mean Area 6.770
Mean Conc. -0.02221mg/L

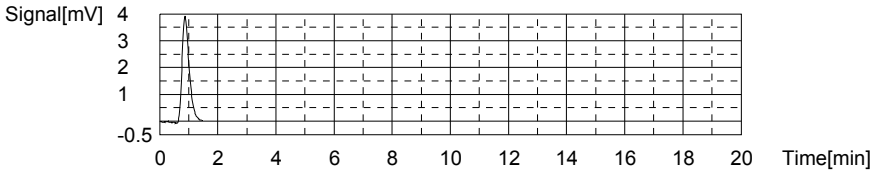

Sample

Sample Name: L15081166-08
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.421mg/L TC:23.43mg/L IC:19.01mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	849.5	23.43mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_29	8/26/2015 6:41:42 PM

Mean Area 849.5
Mean Conc. 23.43mg/L

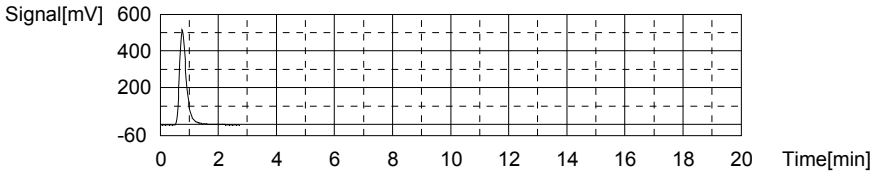

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	604.8	19.01mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 6:47:08 PM

Mean Area 604.8
Mean Conc. 19.01mg/L

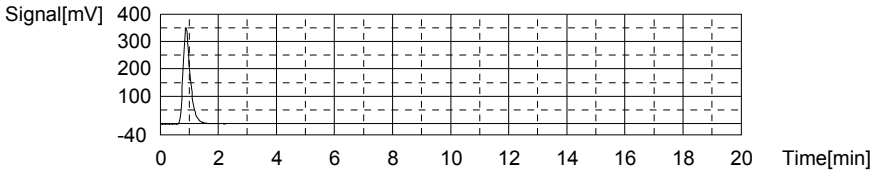

Sample

Sample Name: WG536390-05 DUP
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.349mg/L TC:23.62mg/L IC:19.27mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	856.2	23.62mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 6:55:05 PM

Mean Area 856.2
Mean Conc. 23.62mg/L

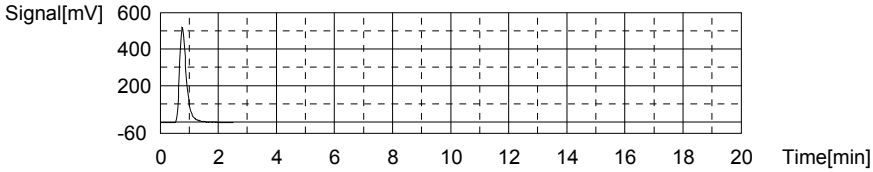

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	612.9	19.27mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 7:00:22 PM

Mean Area 612.9
Mean Conc. 19.27mg/L

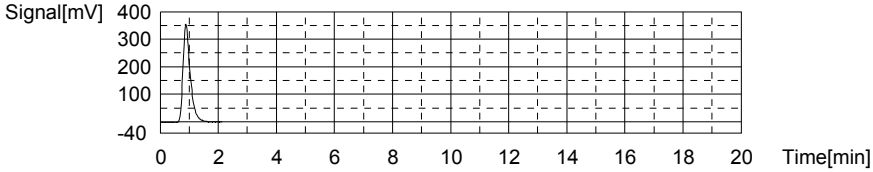

Sample

Sample Name: WG536390-06 MS
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:15.02mg/L TC:36.15mg/L IC:21.13mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1307	36.15mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 7:08:37 PM

Mean Area 1307
Mean Conc. 36.15mg/L

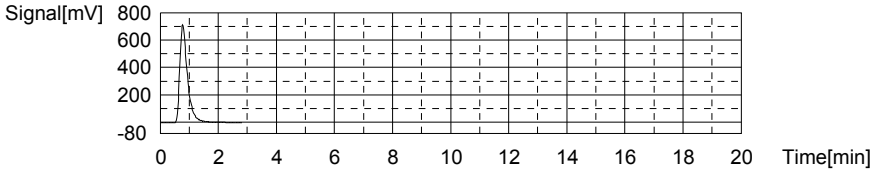

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	671.4	21.13mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 7:14:12 PM

Mean Area 671.4
Mean Conc. 21.13mg/L

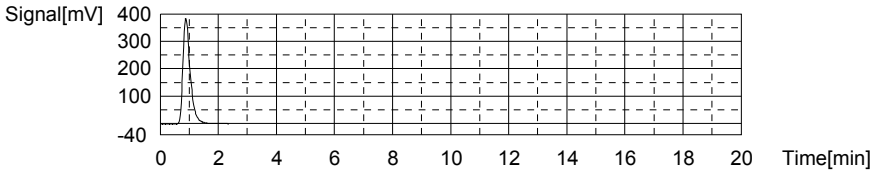

Sample

Sample Name: L15081428-01
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.278mg/L TC:10.59mg/L IC:3.311mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	387.6	10.59mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 7:22:22 PM

Mean Area 387.6
Mean Conc. 10.59mg/L

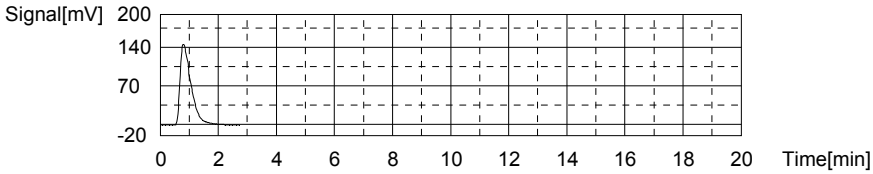

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	111.5	3.311mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 7:27:09 PM

Mean Area 111.5
Mean Conc. 3.311mg/L

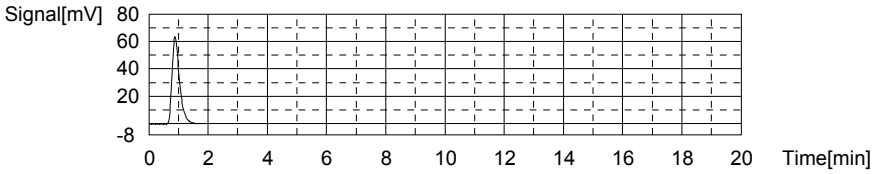

Sample

Sample Name: L15081428-02
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:18.81mg/L TC:46.50mg/L IC:27.69mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1679	46.50mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 7:35:45 PM

Mean Area 1679
Mean Conc. 46.50mg/L

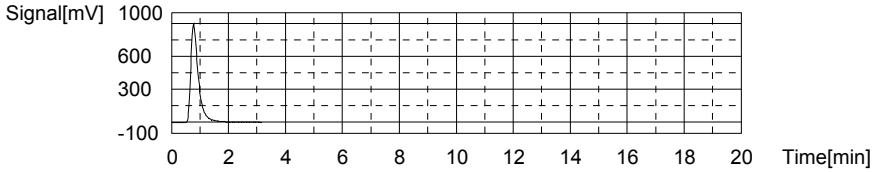

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	877.4	27.69mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 7:41:13 PM

Mean Area 877.4
Mean Conc. 27.69mg/L

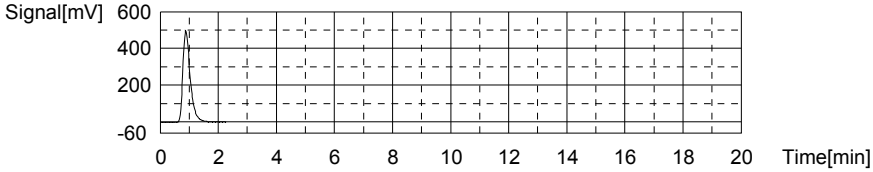

Sample

Sample Name: L15081428-03
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:20.91mg/L TC:49.97mg/L IC:29.06mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1804	49.97mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 7:50:44 PM

Mean Area 1804
Mean Conc. 49.97mg/L

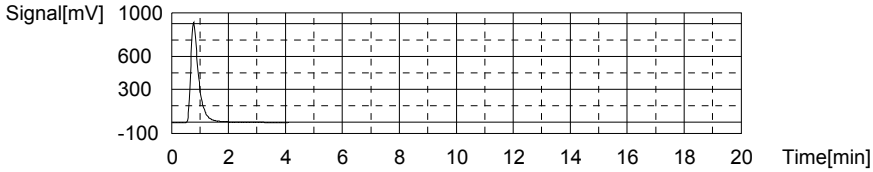

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	920.5	29.06mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 7:56:28 PM

Mean Area 920.5
Mean Conc. 29.06mg/L

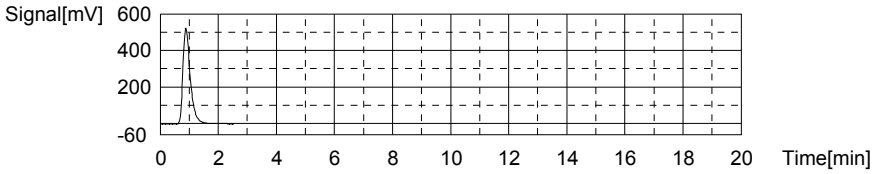

Sample

Sample Name: L15081428-04
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.144mg/L TC:22.51mg/L IC:15.37mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	816.5	22.51mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_29	8/26/2015 8:04:17 PM

Mean Area 816.5
Mean Conc. 22.51mg/L

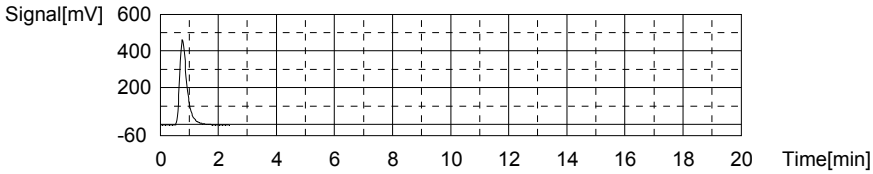

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	490.4	15.37mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 8:09:31 PM

Mean Area 490.4
Mean Conc. 15.37mg/L

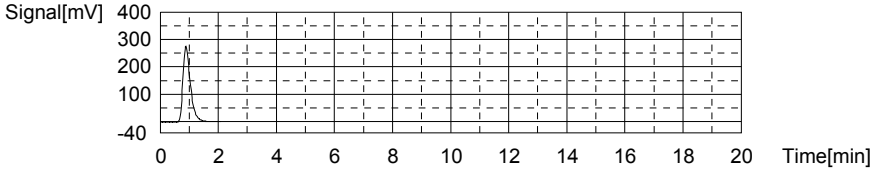

Sample

Sample Name: L15081429-01 (5)
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:10.48mg/L TC:11.72mg/L IC:1.243mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	428.3	11.72mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 8:18:06 PM

Mean Area 428.3
Mean Conc. 11.72mg/L

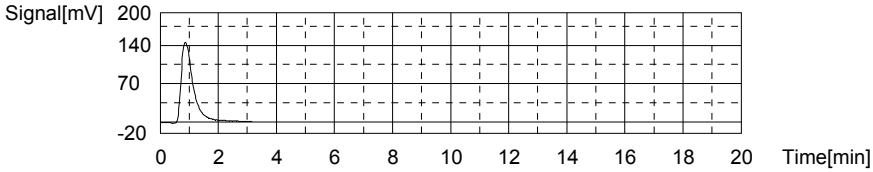

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	46.51	1.243mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 8:22:43 PM

Mean Area 46.51
Mean Conc. 1.243mg/L

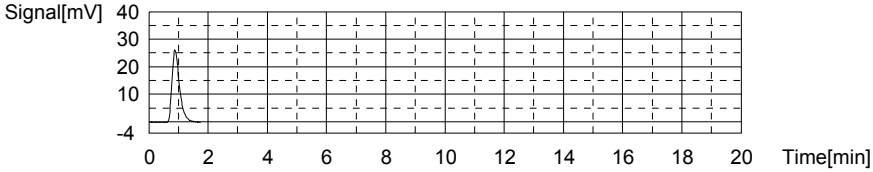

Sample

Sample Name: L15081287-01
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:15.60mg/L TC:37.52mg/L IC:21.91mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1356	37.52mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 8:33:03 PM

Mean Area 1356
Mean Conc. 37.52mg/L

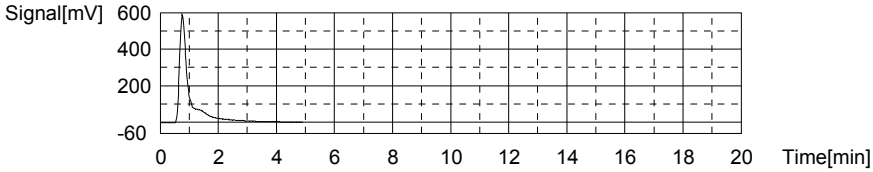

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	696.0	21.91mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 8:38:24 PM

Mean Area 696.0
Mean Conc. 21.91mg/L

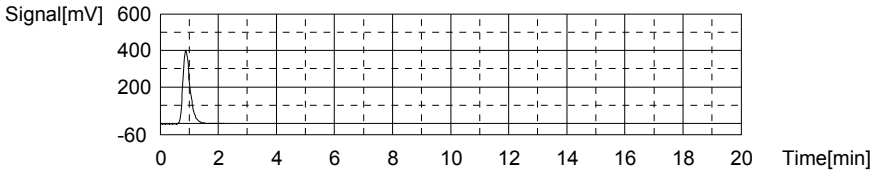

Sample

Sample Name:
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.1907mg/L TC:0.2954mg/L IC:0.1048mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	17.42	0.2954mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_29	8/26/2015 8:45:29 PM

Mean Area 17.42
Mean Conc. 0.2954mg/L

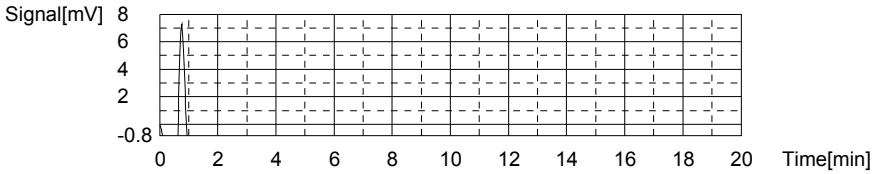

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.76	0.1048mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 8:50:01 PM

Mean Area 10.76
Mean Conc. 0.1048mg/L

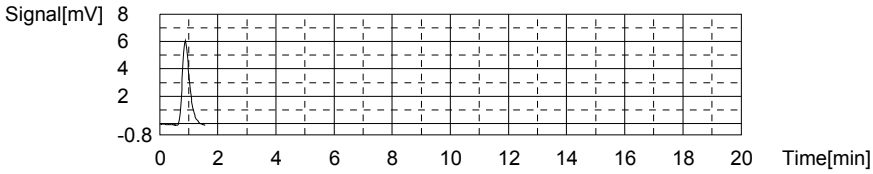

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:28.63mg/L TC:28.65mg/L IC:0.01118mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1037	28.65mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 8:59:12 PM

Mean Area 1037
Mean Conc. 28.65mg/L

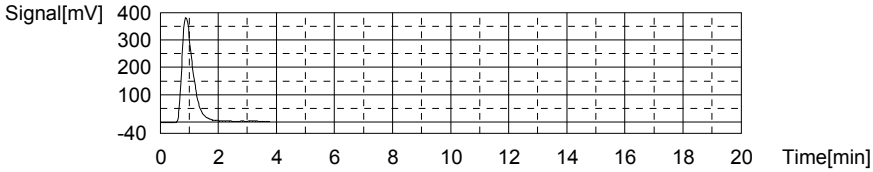

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.819	0.01118mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 9:03:34 PM

Mean Area 7.819
Mean Conc. 0.01118mg/L

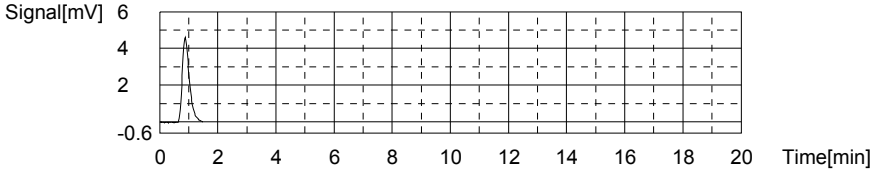

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.04429mg/L TC:0.03274mg/L IC:-0.01155mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.972	0.03274mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 9:08:45 PM

Mean Area 7.972
Mean Conc. 0.03274mg/L

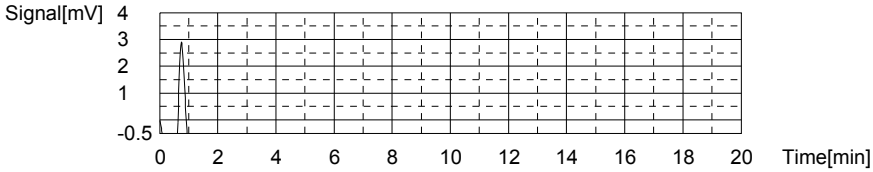

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.105	-0.01155mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 9:12:44 PM

Mean Area 7.105
Mean Conc. -0.01155mg/L

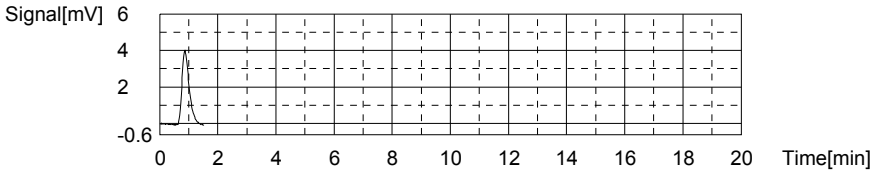

Sample

Sample Name: WG536603-01 BLK
Sample ID: <Untitled>
Origin: TOC-08-26-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.04289mg/L TC:0.02468mg/L IC:-0.01822mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.778	0.02735mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 9:17:50 PM
2	7.586	0.02201mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 9:21:27 PM

Mean Area 7.682
Mean Conc. 0.02468mg/L

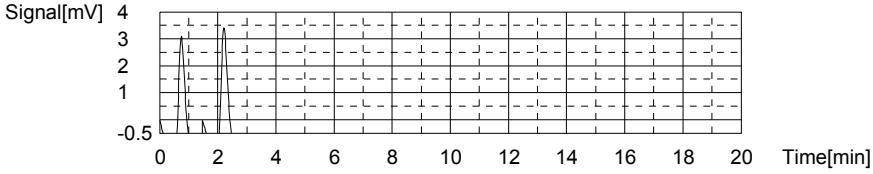

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.919	-0.01747mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 9:25:21 PM
2	6.872	-0.01897mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 9:29:20 PM

Mean Area 6.896
Mean Conc. -0.01822mg/L

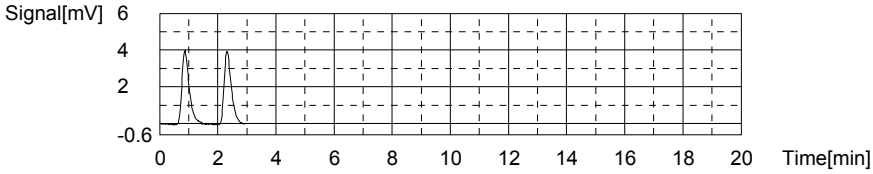

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-08-26-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:32.13mg/L TC:44.26mg/L IC:12.13mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1618	44.80mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 9:39:41 PM
2	1579	43.72mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 9:46:37 PM

Mean Area 1599
Mean Conc. 44.26mg/L

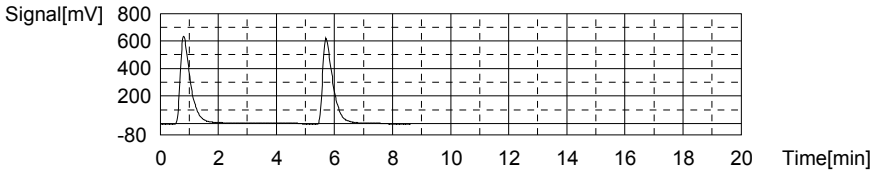

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	388.5	12.13mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 9:51:56 PM
2	388.4	12.12mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 9:56:58 PM

Mean Area 388.5
Mean Conc. 12.13mg/L

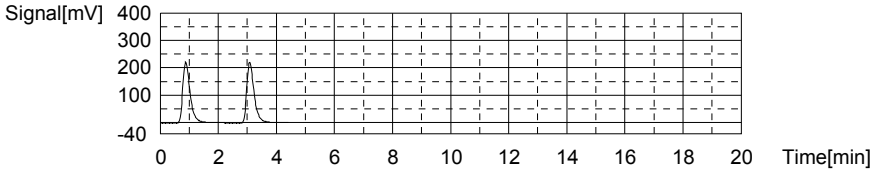

Sample

Sample Name:
Sample ID: <Untitled>
Origin: TOC-08-26-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:29.44mg/L TC:40.63mg/L IC:11.19mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1502	41.58mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 10:05:13 PM
2	1434	39.68mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 10:11:28 PM

Mean Area 1468
Mean Conc. 40.63mg/L

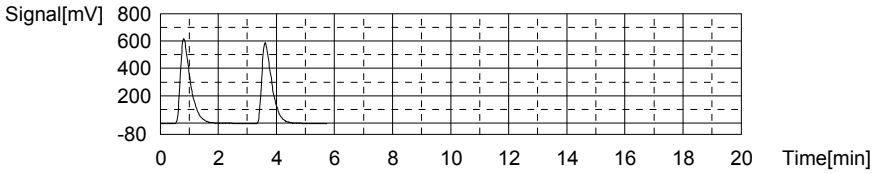

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	360.8	11.25mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 10:16:41 PM
2	357.3	11.13mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 10:21:39 PM

Mean Area 359.1
Mean Conc. 11.19mg/L

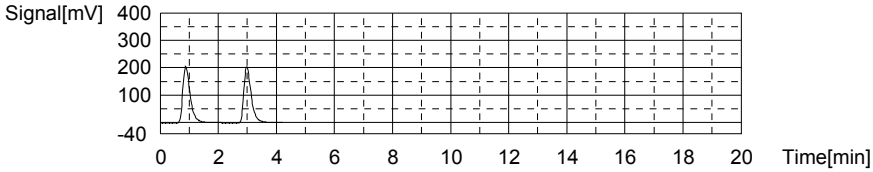

Sample

Sample Name: L15081425-01
Sample ID: <Untitled>
Origin: TOC-08-26-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.939mg/L TC:15.56mg/L IC:10.62mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	555.0	15.24mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 10:30:12 PM
2	577.5	15.87mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 10:36:14 PM

Mean Area 566.3
Mean Conc. 15.56mg/L

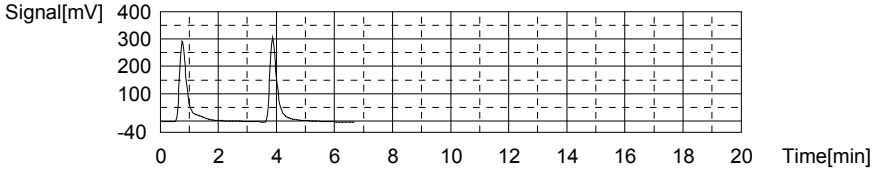

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	344.2	10.72mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 10:41:22 PM
2	337.9	10.52mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 10:46:17 PM

Mean Area 341.1
Mean Conc. 10.62mg/L

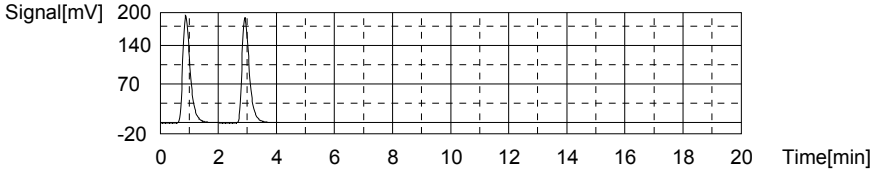

Sample

Sample Name: L15081425-02
Sample ID: <Untitled>
Origin: TOC-08-26-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.117mg/L TC:11.69mg/L IC:9.573mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	420.5	11.50mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 10:53:56 PM
2	433.9	11.88mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 10:58:40 PM

Mean Area 427.2
Mean Conc. 11.69mg/L

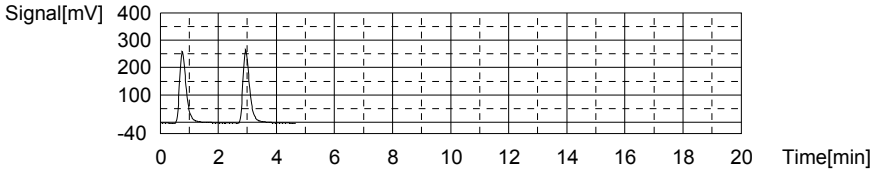

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	308.2	9.572mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 11:03:51 PM
2	308.3	9.575mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/26/2015 11:08:41 PM

Mean Area 308.3
Mean Conc. 9.573mg/L

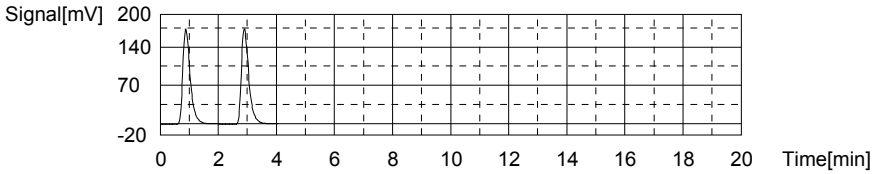

Sample

Sample Name: WG536603-05 DUP
Sample ID: <Untitled>
Origin: TOC-08-26-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.217mg/L TC:12.01mg/L IC:9.790mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	443.8	12.15mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 11:16:46 PM
2	433.4	11.86mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/26/2015 11:21:44 PM

Mean Area 438.6
Mean Conc. 12.01mg/L

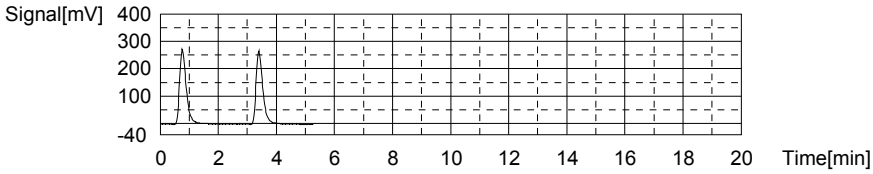

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	315.3	9.798mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_5	8/26/2015 11:26:51 PM
2	314.8	9.782mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_5	8/26/2015 11:31:45 PM

Mean Area 315.1
Mean Conc. 9.790mg/L

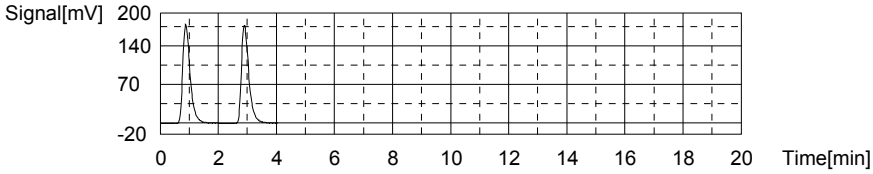

Sample

Sample Name: WG536603-06 MS
Sample ID: <Untitled>
Origin: TOC-08-26-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:13.39mg/L TC:23.80mg/L IC:10.40mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	862.6	23.80mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_2	8/26/2015 11:40:18 PM
2	862.5	23.79mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_2	8/26/2015 11:45:47 PM

Mean Area 862.5
Mean Conc. 23.80mg/L

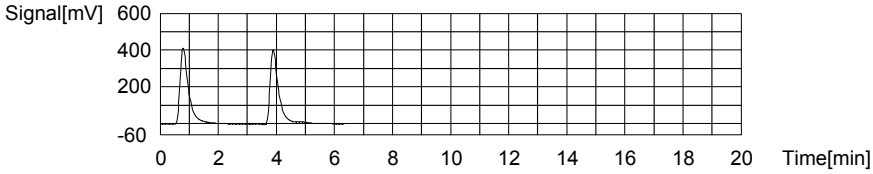

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	333.7	10.38mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_5	8/26/2015 11:50:52 PM
2	334.8	10.42mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_5	8/26/2015 11:55:49 PM

Mean Area 334.3
Mean Conc. 10.40mg/L

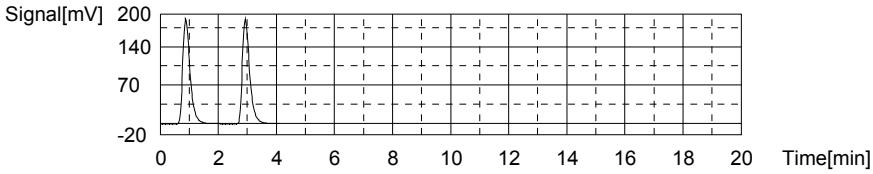

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:27.30mg/L TC:27.35mg/L IC:0.04577mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	990.3	27.35mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/27/2015 12:04:07 AM

Mean Area 990.3
Mean Conc. 27.35mg/L

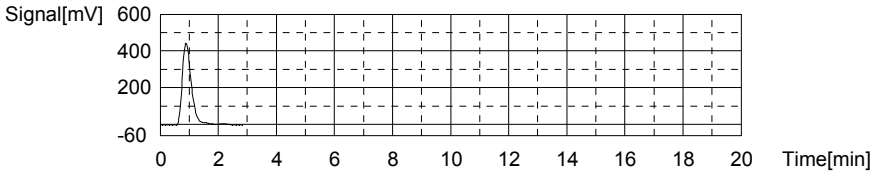

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.906	0.04577mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/27/2015 12:08:29 AM

Mean Area 8.906
Mean Conc. 0.04577mg/L

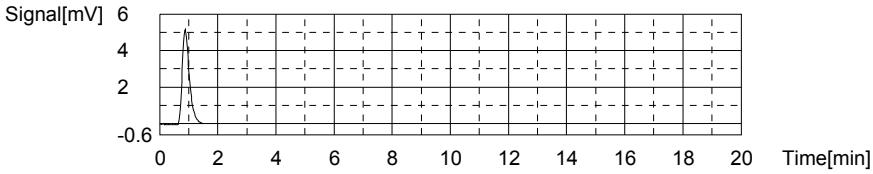

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:0.03816mg/L TC:0.03263mg/L IC:-0.00553mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.968	0.03263mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_2	8/27/2015 12:13:35 AM

Mean Area 7.968
Mean Conc. 0.03263mg/L

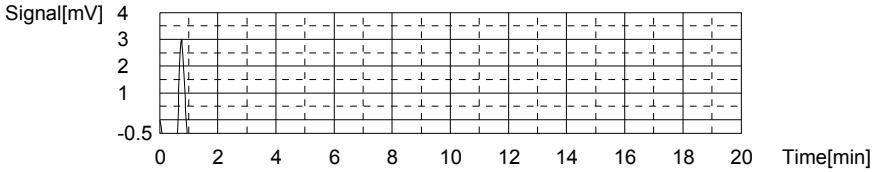

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.294	-0.00553mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_5	8/27/2015 12:17:31 AM

Mean Area 7.294
Mean Conc. -0.00553mg/L

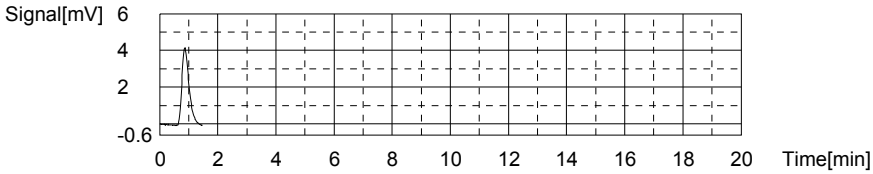

Sample

Sample Name: WG536603-02 LCS
Sample ID: <Untitled>
Origin: TOC-08-26-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:22.90mg/L TC:33.12mg/L IC:10.22mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1203	33.26mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_2	8/27/2015 8:06:26 AM
2	1193	32.98mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_2	8/27/2015 8:11:37 AM

Mean Area 1198
Mean Conc. 33.12mg/L

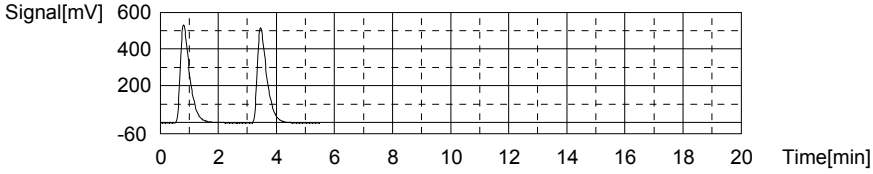

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	325.8	10.13mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_5	8/27/2015 8:16:44 AM
2	331.2	10.30mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_5	8/27/2015 8:21:42 AM

Mean Area 328.5
Mean Conc. 10.22mg/L

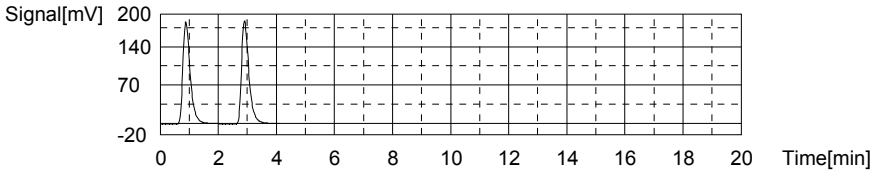

Sample

Sample Name: WG536603-03 LCSDUP
Sample ID: <Untitled>
Origin: TOC-08-26-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:23.89mg/L TC:33.55mg/L IC:9.664mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1227	33.93mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/27/2015 8:30:01 AM
2	1200	33.18mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/27/2015 8:35:05 AM

Mean Area 1214
Mean Conc. 33.55mg/L

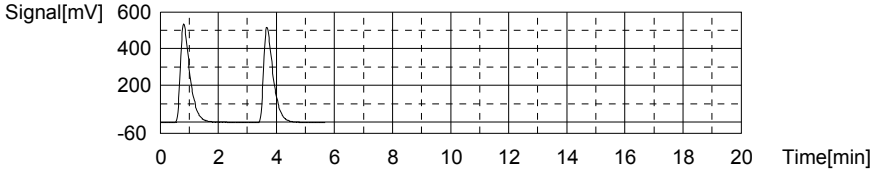

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	311.3	9.670mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/27/2015 8:40:11 AM
2	310.9	9.658mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/27/2015 8:45:08 AM

Mean Area 311.1
Mean Conc. 9.664mg/L

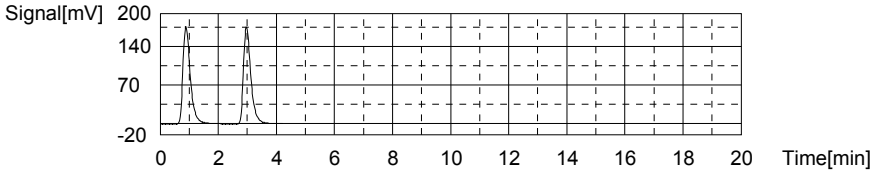

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:25.12mg/L TC:25.18mg/L IC:0.06130mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	912.4	25.18mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/27/2015 8:53:27 AM

Mean Area 912.4
Mean Conc. 25.18mg/L

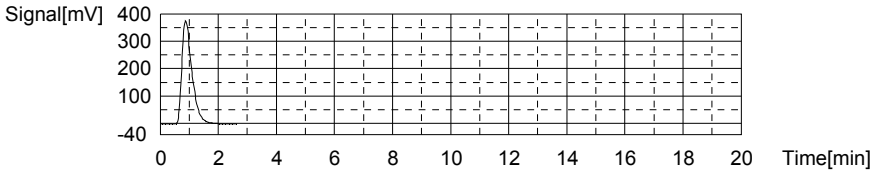

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.394	0.06130mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_58	8/27/2015 8:57:53 AM

Mean Area 9.394
Mean Conc. 0.06130mg/L

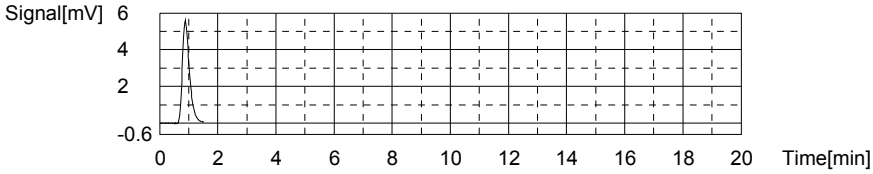

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-08-26-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.09335mg/L TC:0.1117mg/L IC:0.01831mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.81	0.1117mg/L	500uL	1		TCCURVE-08-26-2015.2015_08_26_11_53_28	8/27/2015 9:03:07 AM

Mean Area 10.81
Mean Conc. 0.1117mg/L

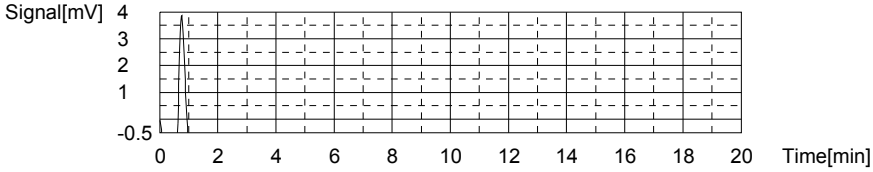

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.043	0.01831mg/L	500uL	1		TICCURVE-08-26-2015.2015_08_26_12_55_5	8/27/2015 9:07:04 AM

Mean Area 8.043
Mean Conc. 0.01831mg/L

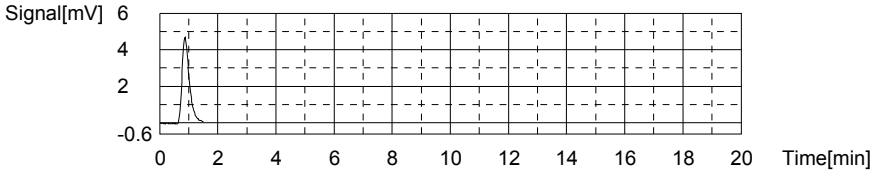

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
August 31, 2015

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001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK
EPT - ETHAN P. TIDD
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
August 31, 2015

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count
TNTC, B	Too numerous to count. Analyte present in method blank.

Microbac Laboratories Inc.
List of Valid Qualifiers
August 31, 2015

Qualkey: DOD

TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Mark Heaston	Mail to:	Linda Raabe
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000		112 East Pecan STE. 400
	Marietta, OH 45750	Sampler (print):	Scott Beesinger		San Antonio, TX 78205
Phone:	1-800-373-4071				210-296-2000
Client:	AECOM	Signature:	Scott Beesinger	Fed Ex Airbill No:	
Address:	112 East Pecan Ste. 400				
	San Antonio, TX 78205				
Turn Around Time:	STANDARD	pH:		Program:	
Project Name/Location:	Longhorn				
Project Number:	60256135.0002GA				

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Dissolved Gases / Carbon Dioxide	Alkalinity	Sulfide	Chloride / Sulfate Nitrate / Nitrite	TOC / Total Phosphorous	Dissolved Iron / Dissolved Manganese	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 50	50WW14-081915			8/19/15	0820		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW14FF-081915			8/19/15	0820		✓	W	1								✓					
	50WW13-081915			8/19/15	0935		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW13FF-081915			8/19/15	0935		✓	W	1								✓					
	50WW05-081915			8/19/15	1050		✓	W	4	✓	✓											
	50WW05FD-081915			8/19/15	1050		✓	W	4	✓	✓											
	50WW17-081915			8/19/15	1400		✓	W	4	✓	✓											
	TRip BLANK			8/19/15			✓	W	2	✓												

ERPIMS REQUIRED FIELDS

Comments: **STANDARD TAT**

Microbac OVD
Received: 08/20/2015 09:33
By: CARA STRICKLER 221000074214
Cara Strickler

Relinquished by: (Signature) Scott Beesinger	Date 8/19/15	Time 1600	Receive	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Receive (Signatu...)	Time	Remarks:

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15081073
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 31-AUG-2015

Samplenum	Container ID	Products
L15081073-01	619398	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		20-AUG-2015 11:36	CLS		

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-AUG-2015 11:36	CLS		
2	ANALYZ	V1	ORG4	20-AUG-2015 15:45	TMB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-AUG-2015 11:36	CLS		
2	ANALYZ	V1	ORG4	20-AUG-2015 15:45	TMB	CLS	

Samplenum	Container ID	Products
L15081073-01	619399	RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		20-AUG-2015 11:36	CLS		

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-AUG-2015 11:36	CLS		
2	ANALYZ	V1	ORG1	20-AUG-2015 15:45	TMB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-AUG-2015 11:36	CLS		
2	ANALYZ	V1	ORG1	20-AUG-2015 15:45	TMB	CLS	

Samplenum	Container ID	Products
L15081073-01	619400	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	SEM	20-AUG-2015 11:36	CLS		
2	STORE	SEM	A1	25-AUG-2015 13:10	CLS	ALS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15081073
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 31-AUG-2015

Samplenum	Container ID	Products
L15081073-01	619401	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-AUG-2015 11:36	CLS		

Samplenum	Container ID	Products
L15081073-01	619402	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-AUG-2015 11:36	CLS		
2	ANALYZ	W1	SEM	27-AUG-2015 12:50	JWR	CLS	
3	STORE	SEM	A1	27-AUG-2015 12:50	CLS	JWR	

Samplenum	Container ID	Products
L15081073-01	619403	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-AUG-2015 11:36	CLS		<2
2	ANALYZ	W1	WET	25-AUG-2015 11:44	EPT	CLS	

Samplenum	Container ID	Products
L15081073-01	619404	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-AUG-2015 11:36	CLS		
2	STORE	W1	A1	27-AUG-2015 09:08	CLS	TB	

Samplenum	Container ID	Products
L15081073-02	619405	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	DIG	20-AUG-2015 11:36	CLS		
2	STORE	DIG	A1	26-AUG-2015 14:38	CLS	ERP	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15081073
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 31-AUG-2015

Samplenum	Container ID	Products
L15081073-03	619406	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		20-AUG-2015 11:36	CLS		

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-AUG-2015 11:36	CLS		
2	ANALYZ	V1	ORG4	20-AUG-2015 15:45	TMB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-AUG-2015 11:36	CLS		
2	ANALYZ	V1	ORG4	20-AUG-2015 15:45	TMB	CLS	

Samplenum	Container ID	Products
L15081073-03	619407	RSK175EXT

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		20-AUG-2015 11:36	CLS		

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-AUG-2015 11:36	CLS		
2	ANALYZ	V1	ORG1	20-AUG-2015 15:46	TMB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-AUG-2015 11:36	CLS		
2	ANALYZ	V1	ORG1	20-AUG-2015 15:46	TMB	CLS	

Samplenum	Container ID	Products
L15081073-03	619408	9056

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	SEM	20-AUG-2015 11:36	CLS		
2	STORE	SEM	A1	25-AUG-2015 13:10	CLS	ALS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15081073
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 31-AUG-2015

Samplenum	Container ID	Products
L15081073-03	619409	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-AUG-2015 11:36	CLS		

Samplenum	Container ID	Products
L15081073-03	619410	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-AUG-2015 11:36	CLS		
2	ANALYZ	W1	SEM	27-AUG-2015 12:50	JWR	CLS	
3	STORE	SEM	A1	27-AUG-2015 12:50	CLS	JWR	

Samplenum	Container ID	Products
L15081073-03	619411	TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-AUG-2015 11:36	CLS		<2
2	ANALYZ	W1	WET	25-AUG-2015 11:44	EPT	CLS	

Samplenum	Container ID	Products
L15081073-03	619412	S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-AUG-2015 11:36	CLS		
2	STORE	W1	A1	27-AUG-2015 09:08	CLS	TB	

Samplenum	Container ID	Products
L15081073-04	619413	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	DIG	20-AUG-2015 11:36	CLS		
2	STORE	DIG	A1	26-AUG-2015 14:38	CLS	ERP	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15081073
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 31-AUG-2015

Samplenum	Container ID	Products
L15081073-05	619414	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		20-AUG-2015 11:36	CLS		

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-AUG-2015 11:36	CLS		
2	ANALYZ	V1	ORG4	20-AUG-2015 15:45	TMB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-AUG-2015 11:36	CLS		
2	ANALYZ	V1	ORG4	20-AUG-2015 15:45	TMB	CLS	

Samplenum	Container ID	Products
L15081073-05	619415	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-AUG-2015 11:36	CLS		
2	ANALYZ	W1	SEM	27-AUG-2015 12:50	JWR	CLS	
3	STORE	SEM	A1	27-AUG-2015 12:50	CLS	JWR	

Samplenum	Container ID	Products
L15081073-06	619416	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		20-AUG-2015 11:36	CLS		

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-AUG-2015 11:36	CLS		
2	ANALYZ	V1	ORG4	20-AUG-2015 15:45	TMB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-AUG-2015 11:36	CLS		
2	ANALYZ	V1	ORG4	20-AUG-2015 15:45	TMB	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15081073
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 31-AUG-2015

Samplenum	Container ID	Products
L15081073-06	619417	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-AUG-2015 11:36	CLS		
2	ANALYZ	W1	SEM	27-AUG-2015 12:50	JWR	CLS	
3	STORE	SEM	A1	27-AUG-2015 12:51	CLS	JWR	

Samplenum	Container ID	Products
L15081073-07	619418	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		20-AUG-2015 11:36	CLS		

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-AUG-2015 11:36	CLS		
2	ANALYZ	V1	ORG4	20-AUG-2015 15:45	TMB	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-AUG-2015 11:36	CLS		
2	ANALYZ	V1	ORG4	20-AUG-2015 15:45	TMB	CLS	

Samplenum	Container ID	Products
L15081073-07	619419	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-AUG-2015 11:36	CLS		
2	ANALYZ	W1	SEM	27-AUG-2015 12:50	JWR	CLS	
3	STORE	SEM	A1	27-AUG-2015 12:51	CLS	JWR	

Samplenum	Container ID	Products
L15081073-08	619420	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		20-AUG-2015 11:36	CLS		

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-AUG-2015 11:36	CLS		
2	ANALYZ	V1	ORG4	20-AUG-2015 15:45	TMB	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - July 27, 2015

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVL NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVL MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVL HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVL HPLC12/HPLC/UV

Acetate
Formate

OVL RSK01/GC-FID

Acetylene
Propane

OVL K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVL MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVL MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L15081251

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on September 01 2015

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

The following discrepancies were noted:

Discrepancy	Resolution
Sample ID: 50WW26-082015. (2 of 3 vials received with headspace). BRG	For the sample with no headspace please log that vial as the A vial.
Sample ID: Trip Blank (2 of 2 vials received with headspace). BRG	Please proceed with the trip blanks. SLM

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00112570	H	5.0		J2317162011	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	No

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
50WW26-082015	L15081251-01	08/20/2015 08:55	08/22/2015 09:59
50WW26MS-082015	L15081251-02	08/20/2015 08:55	08/22/2015 09:59
50WW26MSD-082015	L15081251-03	08/20/2015 08:55	08/22/2015 09:59
50WW21-082015	L15081251-04	08/20/2015 10:00	08/22/2015 09:59
50WW01-082015	L15081251-05	08/20/2015 10:23	08/22/2015 09:59
50WW28-082015	L15081251-06	08/20/2015 11:25	08/22/2015 09:59
50WW27-082015	L15081251-07	08/20/2015 13:35	08/22/2015 09:59
50WW15-082015	L15081251-08	08/20/2015 14:40	08/22/2015 09:59
50WW15FD-082015	L15081251-09	08/20/2015 14:40	08/22/2015 09:59
50WW16-082015	L15081251-10	08/20/2015 15:50	08/22/2015 09:59
50WW19-082115	L15081251-11	08/21/2015 08:15	08/22/2015 09:59
50WW20-082115	L15081251-12	08/21/2015 09:30	08/22/2015 09:59
50WW09-082115	L15081251-13	08/21/2015 10:35	08/22/2015 09:59
50WW09FD-082115	L15081251-14	08/21/2015 10:35	08/22/2015 09:59
50WW10-082115	L15081251-15	08/21/2015 11:40	08/22/2015 09:59
50WW07-082115	L15081251-16	08/21/2015 14:45	08/22/2015 09:59
50WW07MS-082115	L15081251-17	08/21/2015 14:45	08/22/2015 09:59
50WW07MSD-082115	L15081251-18	08/21/2015 14:45	08/22/2015 09:59
TRIP BLANK	L15081251-19	08/21/2015 00:00	08/22/2015 09:59

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
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Microbac REPORT L15081251
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.0 Summary Data

1.1 Narratives

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081251
Project Name:		**Method:**	8260
Prep Batch Number(s):	536332	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-08-28 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden	Franci Bolden	Analyst I	2015-08-28 15:52:49

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081251
Project Name:		**Method:**	8260
Prep Batch Number(s):	536332	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-08-28 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081251
Project Name:		**Method:**	8260
Prep Batch Number(s):	536332	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-08-28 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081251
Project Name:		**Method:**	8260
Prep Batch Number(s):	536332	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-08-28 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			2
Was the ICAL curve verified for each analyte?		X			1
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081251
Project Name:		**Method:**	8260
Prep Batch Number(s):	536332	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-08-28 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081251
Project Name:		**Method:**	8260
Prep Batch Number(s):	536332	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-08-28 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) Carbon disulfide was below the LCL in the ICV.

2) Bromomethane was below the LCL in the CCV.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081251
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG537121	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-09-01 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2015-09-01 16:15:34

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081251
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG537121	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-09-01 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081251
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG537121	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-09-01 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081251
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG537121	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-09-01 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081251
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG537121	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-09-01 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15081251
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG537121	**Reviewer Name:**	Eric Lawson
LRC Date:	2015-09-01 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

1.2 Certificate of Analysis

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW26-082015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536332	**Analyst:**	TMB	**Run Date:**	08/25/2015 14:11
Collect Date:	08/20/2015 08:55	**Dilution:**	1	**File ID:**	8M407000
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.3	85	115	
1,2-Dichloroethane-d4	97.4	70	120	
Toluene-d8	97.3	85	120	
4-Bromofluorobenzene	97.5	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW26-082015	**Prep Method:**	6850	**Prep Date:**	08/31/2015 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG537121	**Analyst:**	JWR	**Run Date:**	08/31/2015 13:00
Collect Date:	08/20/2015 08:55	**Dilution:**	1	**File ID:**	1LM.LM31510
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW26MS-082015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536332	**Analyst:**	TMB	**Run Date:**	08/25/2015 11:19
Collect Date:	08/20/2015 08:55	**Dilution:**	1	**File ID:**	8M406994
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	21.8		10.0	5.00	2.50
Benzene	71-43-2	20.4		1.00	0.250	0.125
Bromobenzene	108-86-1	18.9		1.00	0.250	0.125
Bromochloromethane	74-97-5	20.7		1.00	0.400	0.200
Bromodichloromethane	75-27-4	20.0		1.00	0.500	0.250
Bromoform	75-25-2	21.2		2.00	1.00	0.500
Bromomethane	74-83-9	10.6	Q	2.00	1.00	0.500
2-Butanone	78-93-3	21.8		10.0	5.00	2.50
n-Butylbenzene	104-51-8	18.1		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	19.3		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	18.0		1.00	0.500	0.250
Carbon disulfide	75-15-0	16.5		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	19.0		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.9		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	19.4		1.00	0.500	0.250
Chloroethane	75-00-3	21.2		2.00	1.00	0.500
Chloroform	67-66-3	19.5		1.00	0.250	0.125
Chloromethane	74-87-3	21.2		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	19.2		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	19.6		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	18.2		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	19.4		1.00	0.500	0.250
Dibromomethane	74-95-3	21.3		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	20.4		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	19.7		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	18.7		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	20.3		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	19.3		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	19.2		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	17.0		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	20.2		1.00	0.500	0.250

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	18.7		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	20.3		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	20.3		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	20.6		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	21.5		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	18.8		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	18.7		1.00	0.500	0.250
Ethylbenzene	100-41-4	19.4		1.00	0.500	0.250
2-Hexanone	591-78-6	20.7		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	14.6		1.00	0.500	0.250
Isopropylbenzene	98-82-8	20.5		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	18.1		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	21.7		10.0	5.00	2.50
Methylene chloride	75-09-2	19.9		1.00	0.500	0.250
Naphthalene	91-20-3	19.3		1.00	0.400	0.200
n-Propylbenzene	103-65-1	18.8		1.00	0.250	0.125
Styrene	100-42-5	20.5		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	19.1		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	21.3		1.00	0.400	0.200
Tetrachloroethene	127-18-4	19.3		1.00	0.500	0.250
Toluene	108-88-3	19.3		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	17.5		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	17.8		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	19.6		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	20.1		1.00	0.500	0.250
Trichloroethene	79-01-6	18.3		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	17.0		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	19.0		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	18.5		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	18.8		1.00	0.500	0.250
Vinyl chloride	75-01-4	23.3		1.00	0.500	0.250
o-Xylene	95-47-6	20.5		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	40.3		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	94.3	70	120	
Toluene-d8	97.0	85	120	
4-Bromofluorobenzene	92.2	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW26MS-082015	**Prep Method:**	6850	**Prep Date:**	08/31/2015 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG537121	**Analyst:**	JWR	**Run Date:**	08/31/2015 13:18
Collect Date:	08/20/2015 08:55	**Dilution:**	1	**File ID:**	1LM.LM31511
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.232	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW26MSD-082015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536332	**Analyst:**	TMB	**Run Date:**	08/25/2015 11:47
Collect Date:	08/20/2015 08:55	**Dilution:**	1	**File ID:**	8M406995
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	19.5		10.0	5.00	2.50
Benzene	71-43-2	19.6		1.00	0.250	0.125
Bromobenzene	108-86-1	18.1		1.00	0.250	0.125
Bromochloromethane	74-97-5	20.5		1.00	0.400	0.200
Bromodichloromethane	75-27-4	19.5		1.00	0.500	0.250
Bromoform	75-25-2	21.0		2.00	1.00	0.500
Bromomethane	74-83-9	11.0	Q	2.00	1.00	0.500
2-Butanone	78-93-3	20.6		10.0	5.00	2.50
n-Butylbenzene	104-51-8	17.4		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	18.4		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	18.3		1.00	0.500	0.250
Carbon disulfide	75-15-0	15.6		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	18.0		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.4		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	19.8		1.00	0.500	0.250
Chloroethane	75-00-3	20.4		2.00	1.00	0.500
Chloroform	67-66-3	19.7		1.00	0.250	0.125
Chloromethane	74-87-3	20.6		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	19.6		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	18.2		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	17.7		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	18.9		1.00	0.500	0.250
Dibromomethane	74-95-3	21.2		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	20.0		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	19.3		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	18.0		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	18.9		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	19.2		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	19.1		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	16.6		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	19.9		1.00	0.500	0.250

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	18.8		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	20.5		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	20.2		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	19.2		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	21.3		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	18.8		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	17.7		1.00	0.500	0.250
Ethylbenzene	100-41-4	18.4		1.00	0.500	0.250
2-Hexanone	591-78-6	21.4		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	14.3		1.00	0.500	0.250
Isopropylbenzene	98-82-8	19.7		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	17.6		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	21.4		10.0	5.00	2.50
Methylene chloride	75-09-2	20.0		1.00	0.500	0.250
Naphthalene	91-20-3	18.9		1.00	0.400	0.200
n-Propylbenzene	103-65-1	18.3		1.00	0.250	0.125
Styrene	100-42-5	20.1		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	19.3		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	20.2		1.00	0.400	0.200
Tetrachloroethene	127-18-4	18.1		1.00	0.500	0.250
Toluene	108-88-3	19.1		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	17.7		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	17.7		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	19.2		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	19.9		1.00	0.500	0.250
Trichloroethene	79-01-6	17.7		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	16.2		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	19.3		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	18.5		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	18.2		1.00	0.500	0.250
Vinyl chloride	75-01-4	22.4		1.00	0.500	0.250
o-Xylene	95-47-6	20.2		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	39.4		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	94.9	70	120	
Toluene-d8	97.1	85	120	
4-Bromofluorobenzene	92.9	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW26MSD-082015	**Prep Method:**	6850	**Prep Date:**	08/31/2015 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG537121	**Analyst:**	JWR	**Run Date:**	08/31/2015 13:37
Collect Date:	08/20/2015 08:55	**Dilution:**	1	**File ID:**	1LM.LM31512
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.242	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW21-082015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536332	**Analyst:**	TMB	**Run Date:**	08/25/2015 15:09
Collect Date:	08/20/2015 10:00	**Dilution:**	1	**File ID:**	8M407002
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	95.2	70	120	
Toluene-d8	97.4	85	120	
4-Bromofluorobenzene	94.6	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW21-082015	**Prep Method:**	6850	**Prep Date:**	08/31/2015 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG537121	**Analyst:**	JWR	**Run Date:**	08/31/2015 13:56
Collect Date:	08/20/2015 10:00	**Dilution:**	1	**File ID:**	1LM.LM31513
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.670		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15081251-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW01-082015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536332	**Analyst:**	TMB	**Run Date:**	08/25/2015 15:38
Collect Date:	08/20/2015 10:23	**Dilution:**	1	**File ID:**	8M407003
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.410	J	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.543	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	90.3	70	120	
Toluene-d8	98.9	85	120	
4-Bromofluorobenzene	93.8	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW01-082015	**Prep Method:**	6850	**Prep Date:**	08/31/2015 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG537121	**Analyst:**	JWR	**Run Date:**	08/31/2015 14:15
Collect Date:	08/20/2015 10:23	**Dilution:**	1	**File ID:**	1LM.LM31514
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW28-082015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536332	**Analyst:**	TMB	**Run Date:**	08/25/2015 16:07
Collect Date:	08/20/2015 11:25	**Dilution:**	1	**File ID:**	8M407004
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	91.4	70	120	
Toluene-d8	96.8	85	120	
4-Bromofluorobenzene	95.8	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW28-082015	**Prep Method:**	6850	**Prep Date:**	08/31/2015 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG537121	**Analyst:**	JWR	**Run Date:**	08/31/2015 14:34
Collect Date:	08/20/2015 11:25	**Dilution:**	1	**File ID:**	1LM.LM31515
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.688		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15081251-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW27-082015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536332	**Analyst:**	TMB	**Run Date:**	08/25/2015 16:36
Collect Date:	08/20/2015 13:35	**Dilution:**	1	**File ID:**	8M407005
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.330	J	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	95.0	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	94.2	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW27-082015	**Prep Method:**	6850	**Prep Date:**	08/31/2015 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG537121	**Analyst:**	JWR	**Run Date:**	08/31/2015 14:53
Collect Date:	08/20/2015 13:35	**Dilution:**	1	**File ID:**	1LM.LM31516
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW15-082015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536332	**Analyst:**	TMB	**Run Date:**	08/25/2015 19:00
Collect Date:	08/20/2015 14:40	**Dilution:**	1	**File ID:**	8M407010
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	10.1		1.00	0.500	0.250

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	1.92		1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	15.2		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	1.25		1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	94.9	70	120	
Toluene-d8	98.7	85	120	
4-Bromofluorobenzene	92.8	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW15-082015	**Prep Method:**	6850	**Prep Date:**	08/31/2015 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG537121	**Analyst:**	JWR	**Run Date:**	08/31/2015 17:06
Collect Date:	08/20/2015 14:40	**Dilution:**	1	**File ID:**	1LM.LM31523
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.237	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW15FD-082015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536332	**Analyst:**	TMB	**Run Date:**	08/25/2015 19:29
Collect Date:	08/20/2015 14:40	**Dilution:**	1	**File ID:**	8M407011
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	10.4		1.00	0.500	0.250

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Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	2.01		1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	15.1		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	1.38		1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	85	115	
1,2-Dichloroethane-d4	96.4	70	120	
Toluene-d8	98.0	85	120	
4-Bromofluorobenzene	93.7	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-09	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW15FD-082015	**Prep Method:**	6850	**Prep Date:**	08/31/2015 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG537121	**Analyst:**	JWR	**Run Date:**	08/31/2015 17:25
Collect Date:	08/20/2015 14:40	**Dilution:**	1	**File ID:**	1LM.LM31524
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.155	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW16-082015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536332	**Analyst:**	TMB	**Run Date:**	08/25/2015 17:05
Collect Date:	08/20/2015 15:50	**Dilution:**	1	**File ID:**	8M407006
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	1.50		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	96.6	70	120	
Toluene-d8	98.4	85	120	
4-Bromofluorobenzene	93.7	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-10	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW16-082015	**Prep Method:**	6850	**Prep Date:**	08/31/2015 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG537121	**Analyst:**	JWR	**Run Date:**	08/31/2015 17:44
Collect Date:	08/20/2015 15:50	**Dilution:**	1	**File ID:**	1LM.LM31525
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW19-082115	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536332	**Analyst:**	TMB	**Run Date:**	08/25/2015 17:34
Collect Date:	08/21/2015 08:15	**Dilution:**	1	**File ID:**	8M407007
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

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Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	96.8	70	120	
Toluene-d8	98.2	85	120	
4-Bromofluorobenzene	93.9	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-11	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW19-082115	**Prep Method:**	6850	**Prep Date:**	08/31/2015 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG537121	**Analyst:**	JWR	**Run Date:**	08/31/2015 18:03
Collect Date:	08/21/2015 08:15	**Dilution:**	1	**File ID:**	1LM.LM31526
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW20-082115	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536332	**Analyst:**	TMB	**Run Date:**	08/25/2015 18:03
Collect Date:	08/21/2015 09:30	**Dilution:**	1	**File ID:**	8M407008
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	85	115	
1,2-Dichloroethane-d4	93.0	70	120	
Toluene-d8	96.8	85	120	
4-Bromofluorobenzene	93.9	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-12	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW20-082115	**Prep Method:**	6850	**Prep Date:**	08/31/2015 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG537121	**Analyst:**	JWR	**Run Date:**	08/31/2015 18:22
Collect Date:	08/21/2015 09:30	**Dilution:**	1	**File ID:**	1LM.LM31527
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-13	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW09-082115	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536332	**Analyst:**	TMB	**Run Date:**	08/25/2015 20:26
Collect Date:	08/21/2015 10:35	**Dilution:**	1	**File ID:**	8M407013
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.485	J	1.00	0.250	0.125
Chloromethane	74-87-3	0.535	J	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.497	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.66		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	29.4		1.00	0.500	0.250

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.536	J	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	235		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	85	115	
1,2-Dichloroethane-d4	98.0	70	120	
Toluene-d8	98.3	85	120	
4-Bromofluorobenzene	93.2	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-13	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW09-082115	**Prep Method:**	6850	**Prep Date:**	08/31/2015 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG537121	**Analyst:**	JWR	**Run Date:**	08/31/2015 18:40
Collect Date:	08/21/2015 10:35	**Dilution:**	1	**File ID:**	1LM.LM31528
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-14	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW09FD-082115	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536332	**Analyst:**	TMB	**Run Date:**	08/25/2015 19:58
Collect Date:	08/21/2015 10:35	**Dilution:**	1	**File ID:**	8M407012
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.442	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.537	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.83		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	29.5		1.00	0.500	0.250

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.340	J	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	228		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	94.8	70	120	
Toluene-d8	97.8	85	120	
4-Bromofluorobenzene	94.1	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-14	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW09FD-082115	**Prep Method:**	6850	**Prep Date:**	08/31/2015 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG537121	**Analyst:**	JWR	**Run Date:**	08/31/2015 19:00
Collect Date:	08/21/2015 10:35	**Dilution:**	1	**File ID:**	1LM.LM31529
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-15	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW10-082115	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536332	**Analyst:**	TMB	**Run Date:**	08/25/2015 18:32
Collect Date:	08/21/2015 11:40	**Dilution:**	1	**File ID:**	8M407009
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	0.817	J	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.494	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	93.1	70	120	
Toluene-d8	98.3	85	120	
4-Bromofluorobenzene	91.1	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-15	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW10-082115	**Prep Method:**	6850	**Prep Date:**	08/31/2015 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG537121	**Analyst:**	JWR	**Run Date:**	08/31/2015 20:15
Collect Date:	08/21/2015 11:40	**Dilution:**	1	**File ID:**	1LM.LM31533
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-16	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW07-082115	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536332	**Analyst:**	TMB	**Run Date:**	08/25/2015 14:40
Collect Date:	08/21/2015 14:45	**Dilution:**	1	**File ID:**	8M407001
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	91.0	70	120	
Toluene-d8	98.1	85	120	
4-Bromofluorobenzene	95.7	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-16	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW07-082115	**Prep Method:**	6850	**Prep Date:**	08/31/2015 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG537121	**Analyst:**	JWR	**Run Date:**	08/31/2015 16:09
Collect Date:	08/21/2015 14:45	**Dilution:**	1	**File ID:**	1LM.LM31520
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-17	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW07MS-082115	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536332	**Analyst:**	TMB	**Run Date:**	08/25/2015 12:15
Collect Date:	08/21/2015 14:45	**Dilution:**	1	**File ID:**	8M406996
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	18.4		10.0	5.00	2.50
Benzene	71-43-2	19.5		1.00	0.250	0.125
Bromobenzene	108-86-1	17.7		1.00	0.250	0.125
Bromochloromethane	74-97-5	20.4		1.00	0.400	0.200
Bromodichloromethane	75-27-4	19.2		1.00	0.500	0.250
Bromoform	75-25-2	20.2		2.00	1.00	0.500
Bromomethane	74-83-9	10.8	Q	2.00	1.00	0.500
2-Butanone	78-93-3	20.7		10.0	5.00	2.50
n-Butylbenzene	104-51-8	16.9		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	18.3		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	17.4		1.00	0.500	0.250
Carbon disulfide	75-15-0	15.4		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	17.9		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.1		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	18.9		1.00	0.500	0.250
Chloroethane	75-00-3	19.7		2.00	1.00	0.500
Chloroform	67-66-3	19.2		1.00	0.250	0.125
Chloromethane	74-87-3	20.0		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	19.2		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	17.8		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	16.8		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	18.5		1.00	0.500	0.250
Dibromomethane	74-95-3	20.3		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	19.5		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	18.9		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	18.0		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	19.1		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	18.9		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	19.0		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	15.9		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	19.6		1.00	0.500	0.250

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	17.8		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	19.9		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	19.2		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	19.0		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	20.9		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	18.4		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	17.2		1.00	0.500	0.250
Ethylbenzene	100-41-4	18.7		1.00	0.500	0.250
2-Hexanone	591-78-6	19.8		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	14.4		1.00	0.500	0.250
Isopropylbenzene	98-82-8	19.3		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	17.2		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	21.1		10.0	5.00	2.50
Methylene chloride	75-09-2	19.5		1.00	0.500	0.250
Naphthalene	91-20-3	17.3		1.00	0.400	0.200
n-Propylbenzene	103-65-1	18.1		1.00	0.250	0.125
Styrene	100-42-5	19.2		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	18.7		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	19.7		1.00	0.400	0.200
Tetrachloroethene	127-18-4	17.7		1.00	0.500	0.250
Toluene	108-88-3	18.7		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	16.5		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	16.7		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	18.6		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	19.9		1.00	0.500	0.250
Trichloroethene	79-01-6	17.8		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	15.8		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	17.8		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	17.8		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	17.9		1.00	0.500	0.250
Vinyl chloride	75-01-4	22.0		1.00	0.500	0.250
o-Xylene	95-47-6	20.1		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	38.4		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	93.8	70	120	
Toluene-d8	96.6	85	120	
4-Bromofluorobenzene	94.1	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-17	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW07MS-082115	**Prep Method:**	6850	**Prep Date:**	08/31/2015 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG537121	**Analyst:**	JWR	**Run Date:**	08/31/2015 16:28
Collect Date:	08/21/2015 14:45	**Dilution:**	1	**File ID:**	1LM.LM31521
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.242	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-18	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW07MSD-082115	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536332	**Analyst:**	TMB	**Run Date:**	08/25/2015 12:44
Collect Date:	08/21/2015 14:45	**Dilution:**	1	**File ID:**	8M406997
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	18.8		10.0	5.00	2.50
Benzene	71-43-2	19.5		1.00	0.250	0.125
Bromobenzene	108-86-1	17.7		1.00	0.250	0.125
Bromochloromethane	74-97-5	19.7		1.00	0.400	0.200
Bromodichloromethane	75-27-4	19.0		1.00	0.500	0.250
Bromoform	75-25-2	19.5		2.00	1.00	0.500
Bromomethane	74-83-9	11.0	Q	2.00	1.00	0.500
2-Butanone	78-93-3	19.8		10.0	5.00	2.50
n-Butylbenzene	104-51-8	16.9		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	18.6		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	17.7		1.00	0.500	0.250
Carbon disulfide	75-15-0	15.9		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	18.3		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.3		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	18.6		1.00	0.500	0.250
Chloroethane	75-00-3	19.8		2.00	1.00	0.500
Chloroform	67-66-3	19.2		1.00	0.250	0.125
Chloromethane	74-87-3	20.3		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	18.9		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	18.7		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	15.7		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	18.2		1.00	0.500	0.250
Dibromomethane	74-95-3	19.9		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	19.4		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	19.1		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	17.7		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	19.1		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	18.6		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	18.1		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	16.1		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	19.5		1.00	0.500	0.250

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	17.7		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	19.8		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	18.9		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	18.4		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	20.8		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	18.2		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	17.6		1.00	0.500	0.250
Ethylbenzene	100-41-4	18.8		1.00	0.500	0.250
2-Hexanone	591-78-6	19.5		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	14.3		1.00	0.500	0.250
Isopropylbenzene	98-82-8	20.1		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	17.2		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	19.4		10.0	5.00	2.50
Methylene chloride	75-09-2	18.6		1.00	0.500	0.250
Naphthalene	91-20-3	16.7		1.00	0.400	0.200
n-Propylbenzene	103-65-1	18.3		1.00	0.250	0.125
Styrene	100-42-5	19.7		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	19.1		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	19.0		1.00	0.400	0.200
Tetrachloroethene	127-18-4	18.4		1.00	0.500	0.250
Toluene	108-88-3	19.1		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	16.2		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	16.1		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	18.6		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	18.9		1.00	0.500	0.250
Trichloroethene	79-01-6	17.6		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	16.0		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	18.2		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	17.8		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	18.3		1.00	0.500	0.250
Vinyl chloride	75-01-4	22.4		1.00	0.500	0.250
o-Xylene	95-47-6	20.3		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	39.9		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	91.2	70	120	
Toluene-d8	99.0	85	120	
4-Bromofluorobenzene	91.5	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-18	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW07MSD-082115	**Prep Method:**	6850	**Prep Date:**	08/31/2015 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG537121	**Analyst:**	JWR	**Run Date:**	08/31/2015 16:47
Collect Date:	08/21/2015 14:45	**Dilution:**	1	**File ID:**	1LM.LM31522
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.230	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-19	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536332	**Analyst:**	TMB	**Run Date:**	08/25/2015 13:42
Collect Date:	08/21/2015 00:00	**Dilution:**	1	**File ID:**	8M406999
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.365	J	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.3	85	115	
1,2-Dichloroethane-d4	89.0	70	120	
Toluene-d8	98.6	85	120	
4-Bromofluorobenzene	94.6	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW26-082015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536332	**Analyst:**	TMB	**Run Date:**	08/25/2015 14:11
Collect Date:	08/20/2015 08:55	**Dilution:**	1	**File ID:**	8M407000
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.3	85	115	
1,2-Dichloroethane-d4	97.4	70	120	
Toluene-d8	97.3	85	120	
4-Bromofluorobenzene	97.5	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW26MS-082015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536332	**Analyst:**	TMB	**Run Date:**	08/25/2015 11:19
Collect Date:	08/20/2015 08:55	**Dilution:**	1	**File ID:**	8M406994
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	21.8		10.0	5.00	2.50
Benzene	71-43-2	20.4		1.00	0.250	0.125
Bromobenzene	108-86-1	18.9		1.00	0.250	0.125
Bromochloromethane	74-97-5	20.7		1.00	0.400	0.200
Bromodichloromethane	75-27-4	20.0		1.00	0.500	0.250
Bromoform	75-25-2	21.2		2.00	1.00	0.500
Bromomethane	74-83-9	10.6	Q	2.00	1.00	0.500
2-Butanone	78-93-3	21.8		10.0	5.00	2.50
n-Butylbenzene	104-51-8	18.1		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	19.3		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	18.0		1.00	0.500	0.250
Carbon disulfide	75-15-0	16.5		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	19.0		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.9		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	19.4		1.00	0.500	0.250
Chloroethane	75-00-3	21.2		2.00	1.00	0.500
Chloroform	67-66-3	19.5		1.00	0.250	0.125
Chloromethane	74-87-3	21.2		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	19.2		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	19.6		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	18.2		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	19.4		1.00	0.500	0.250
Dibromomethane	74-95-3	21.3		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	20.4		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	19.7		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	18.7		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	20.3		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	19.3		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	19.2		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	17.0		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	20.2		1.00	0.500	0.250

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	18.7		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	20.3		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	20.3		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	20.6		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	21.5		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	18.8		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	18.7		1.00	0.500	0.250
Ethylbenzene	100-41-4	19.4		1.00	0.500	0.250
2-Hexanone	591-78-6	20.7		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	14.6		1.00	0.500	0.250
Isopropylbenzene	98-82-8	20.5		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	18.1		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	21.7		10.0	5.00	2.50
Methylene chloride	75-09-2	19.9		1.00	0.500	0.250
Naphthalene	91-20-3	19.3		1.00	0.400	0.200
n-Propylbenzene	103-65-1	18.8		1.00	0.250	0.125
Styrene	100-42-5	20.5		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	19.1		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	21.3		1.00	0.400	0.200
Tetrachloroethene	127-18-4	19.3		1.00	0.500	0.250
Toluene	108-88-3	19.3		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	17.5		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	17.8		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	19.6		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	20.1		1.00	0.500	0.250
Trichloroethene	79-01-6	18.3		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	17.0		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	19.0		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	18.5		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	18.8		1.00	0.500	0.250
Vinyl chloride	75-01-4	23.3		1.00	0.500	0.250
o-Xylene	95-47-6	20.5		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	40.3		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	94.3	70	120	
Toluene-d8	97.0	85	120	
4-Bromofluorobenzene	92.2	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW26MSD-082015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536332	**Analyst:**	TMB	**Run Date:**	08/25/2015 11:47
Collect Date:	08/20/2015 08:55	**Dilution:**	1	**File ID:**	8M406995
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	19.5		10.0	5.00	2.50
Benzene	71-43-2	19.6		1.00	0.250	0.125
Bromobenzene	108-86-1	18.1		1.00	0.250	0.125
Bromochloromethane	74-97-5	20.5		1.00	0.400	0.200
Bromodichloromethane	75-27-4	19.5		1.00	0.500	0.250
Bromoform	75-25-2	21.0		2.00	1.00	0.500
Bromomethane	74-83-9	11.0	Q	2.00	1.00	0.500
2-Butanone	78-93-3	20.6		10.0	5.00	2.50
n-Butylbenzene	104-51-8	17.4		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	18.4		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	18.3		1.00	0.500	0.250
Carbon disulfide	75-15-0	15.6		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	18.0		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.4		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	19.8		1.00	0.500	0.250
Chloroethane	75-00-3	20.4		2.00	1.00	0.500
Chloroform	67-66-3	19.7		1.00	0.250	0.125
Chloromethane	74-87-3	20.6		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	19.6		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	18.2		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	17.7		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	18.9		1.00	0.500	0.250
Dibromomethane	74-95-3	21.2		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	20.0		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	19.3		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	18.0		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	18.9		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	19.2		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	19.1		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	16.6		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	19.9		1.00	0.500	0.250

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Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	18.8		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	20.5		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	20.2		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	19.2		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	21.3		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	18.8		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	17.7		1.00	0.500	0.250
Ethylbenzene	100-41-4	18.4		1.00	0.500	0.250
2-Hexanone	591-78-6	21.4		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	14.3		1.00	0.500	0.250
Isopropylbenzene	98-82-8	19.7		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	17.6		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	21.4		10.0	5.00	2.50
Methylene chloride	75-09-2	20.0		1.00	0.500	0.250
Naphthalene	91-20-3	18.9		1.00	0.400	0.200
n-Propylbenzene	103-65-1	18.3		1.00	0.250	0.125
Styrene	100-42-5	20.1		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	19.3		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	20.2		1.00	0.400	0.200
Tetrachloroethene	127-18-4	18.1		1.00	0.500	0.250
Toluene	108-88-3	19.1		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	17.7		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	17.7		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	19.2		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	19.9		1.00	0.500	0.250
Trichloroethene	79-01-6	17.7		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	16.2		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	19.3		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	18.5		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	18.2		1.00	0.500	0.250
Vinyl chloride	75-01-4	22.4		1.00	0.500	0.250
o-Xylene	95-47-6	20.2		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	39.4		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	94.9	70	120	
Toluene-d8	97.1	85	120	
4-Bromofluorobenzene	92.9	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW21-082015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536332	**Analyst:**	TMB	**Run Date:**	08/25/2015 15:09
Collect Date:	08/20/2015 10:00	**Dilution:**	1	**File ID:**	8M407002
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	95.2	70	120	
Toluene-d8	97.4	85	120	
4-Bromofluorobenzene	94.6	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW01-082015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536332	**Analyst:**	TMB	**Run Date:**	08/25/2015 15:38
Collect Date:	08/20/2015 10:23	**Dilution:**	1	**File ID:**	8M407003
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.410	J	1.00	0.500	0.250

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Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.543	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	90.3	70	120	
Toluene-d8	98.9	85	120	
4-Bromofluorobenzene	93.8	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW28-082015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536332	**Analyst:**	TMB	**Run Date:**	08/25/2015 16:07
Collect Date:	08/20/2015 11:25	**Dilution:**	1	**File ID:**	8M407004
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	91.4	70	120	
Toluene-d8	96.8	85	120	
4-Bromofluorobenzene	95.8	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW27-082015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536332	**Analyst:**	TMB	**Run Date:**	08/25/2015 16:36
Collect Date:	08/20/2015 13:35	**Dilution:**	1	**File ID:**	8M407005
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.330	J	1.00	0.500	0.250

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	95.0	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	94.2	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW15-082015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536332	**Analyst:**	TMB	**Run Date:**	08/25/2015 19:00
Collect Date:	08/20/2015 14:40	**Dilution:**	1	**File ID:**	8M407010
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	10.1		1.00	0.500	0.250

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	1.92		1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	15.2		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	1.25		1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	94.9	70	120	
Toluene-d8	98.7	85	120	
4-Bromofluorobenzene	92.8	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW15FD-082015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536332	**Analyst:**	TMB	**Run Date:**	08/25/2015 19:29
Collect Date:	08/20/2015 14:40	**Dilution:**	1	**File ID:**	8M407011
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	10.4		1.00	0.500	0.250

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Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	2.01		1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	15.1		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	1.38		1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	85	115	
1,2-Dichloroethane-d4	96.4	70	120	
Toluene-d8	98.0	85	120	
4-Bromofluorobenzene	93.7	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW16-082015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536332	**Analyst:**	TMB	**Run Date:**	08/25/2015 17:05
Collect Date:	08/20/2015 15:50	**Dilution:**	1	**File ID:**	8M407006
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

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Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	1.50		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	96.6	70	120	
Toluene-d8	98.4	85	120	
4-Bromofluorobenzene	93.7	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW19-082115	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536332	**Analyst:**	TMB	**Run Date:**	08/25/2015 17:34
Collect Date:	08/21/2015 08:15	**Dilution:**	1	**File ID:**	8M407007
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	96.8	70	120	
Toluene-d8	98.2	85	120	
4-Bromofluorobenzene	93.9	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW20-082115	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536332	**Analyst:**	TMB	**Run Date:**	08/25/2015 18:03
Collect Date:	08/21/2015 09:30	**Dilution:**	1	**File ID:**	8M407008
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

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Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	85	115	
1,2-Dichloroethane-d4	93.0	70	120	
Toluene-d8	96.8	85	120	
4-Bromofluorobenzene	93.9	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-13	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW09-082115	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536332	**Analyst:**	TMB	**Run Date:**	08/25/2015 20:26
Collect Date:	08/21/2015 10:35	**Dilution:**	1	**File ID:**	8M407013
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.485	J	1.00	0.250	0.125
Chloromethane	74-87-3	0.535	J	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.497	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.66		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	29.4		1.00	0.500	0.250

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Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.536	J	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	235		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	85	115	
1,2-Dichloroethane-d4	98.0	70	120	
Toluene-d8	98.3	85	120	
4-Bromofluorobenzene	93.2	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-14	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW09FD-082115	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536332	**Analyst:**	TMB	**Run Date:**	08/25/2015 19:58
Collect Date:	08/21/2015 10:35	**Dilution:**	1	**File ID:**	8M407012
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.442	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.537	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.83		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	29.5		1.00	0.500	0.250

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.340	J	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	228		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	94.8	70	120	
Toluene-d8	97.8	85	120	
4-Bromofluorobenzene	94.1	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-15	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW10-082115	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536332	**Analyst:**	TMB	**Run Date:**	08/25/2015 18:32
Collect Date:	08/21/2015 11:40	**Dilution:**	1	**File ID:**	8M407009
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	0.817	J	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.494	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	93.1	70	120	
Toluene-d8	98.3	85	120	
4-Bromofluorobenzene	91.1	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-16	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW07-082115	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536332	**Analyst:**	TMB	**Run Date:**	08/25/2015 14:40
Collect Date:	08/21/2015 14:45	**Dilution:**	1	**File ID:**	8M407001
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	91.0	70	120	
Toluene-d8	98.1	85	120	
4-Bromofluorobenzene	95.7	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-17	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW07MS-082115	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536332	**Analyst:**	TMB	**Run Date:**	08/25/2015 12:15
Collect Date:	08/21/2015 14:45	**Dilution:**	1	**File ID:**	8M406996
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	18.4		10.0	5.00	2.50
Benzene	71-43-2	19.5		1.00	0.250	0.125
Bromobenzene	108-86-1	17.7		1.00	0.250	0.125
Bromochloromethane	74-97-5	20.4		1.00	0.400	0.200
Bromodichloromethane	75-27-4	19.2		1.00	0.500	0.250
Bromoform	75-25-2	20.2		2.00	1.00	0.500
Bromomethane	74-83-9	10.8	Q	2.00	1.00	0.500
2-Butanone	78-93-3	20.7		10.0	5.00	2.50
n-Butylbenzene	104-51-8	16.9		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	18.3		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	17.4		1.00	0.500	0.250
Carbon disulfide	75-15-0	15.4		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	17.9		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.1		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	18.9		1.00	0.500	0.250
Chloroethane	75-00-3	19.7		2.00	1.00	0.500
Chloroform	67-66-3	19.2		1.00	0.250	0.125
Chloromethane	74-87-3	20.0		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	19.2		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	17.8		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	16.8		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	18.5		1.00	0.500	0.250
Dibromomethane	74-95-3	20.3		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	19.5		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	18.9		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	18.0		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	19.1		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	18.9		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	19.0		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	15.9		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	19.6		1.00	0.500	0.250

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	17.8		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	19.9		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	19.2		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	19.0		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	20.9		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	18.4		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	17.2		1.00	0.500	0.250
Ethylbenzene	100-41-4	18.7		1.00	0.500	0.250
2-Hexanone	591-78-6	19.8		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	14.4		1.00	0.500	0.250
Isopropylbenzene	98-82-8	19.3		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	17.2		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	21.1		10.0	5.00	2.50
Methylene chloride	75-09-2	19.5		1.00	0.500	0.250
Naphthalene	91-20-3	17.3		1.00	0.400	0.200
n-Propylbenzene	103-65-1	18.1		1.00	0.250	0.125
Styrene	100-42-5	19.2		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	18.7		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	19.7		1.00	0.400	0.200
Tetrachloroethene	127-18-4	17.7		1.00	0.500	0.250
Toluene	108-88-3	18.7		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	16.5		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	16.7		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	18.6		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	19.9		1.00	0.500	0.250
Trichloroethene	79-01-6	17.8		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	15.8		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	17.8		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	17.8		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	17.9		1.00	0.500	0.250
Vinyl chloride	75-01-4	22.0		1.00	0.500	0.250
o-Xylene	95-47-6	20.1		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	38.4		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	93.8	70	120	
Toluene-d8	96.6	85	120	
4-Bromofluorobenzene	94.1	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-18	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW07MSD-082115	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536332	**Analyst:**	TMB	**Run Date:**	08/25/2015 12:44
Collect Date:	08/21/2015 14:45	**Dilution:**	1	**File ID:**	8M406997
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	18.8		10.0	5.00	2.50
Benzene	71-43-2	19.5		1.00	0.250	0.125
Bromobenzene	108-86-1	17.7		1.00	0.250	0.125
Bromochloromethane	74-97-5	19.7		1.00	0.400	0.200
Bromodichloromethane	75-27-4	19.0		1.00	0.500	0.250
Bromoform	75-25-2	19.5		2.00	1.00	0.500
Bromomethane	74-83-9	11.0	Q	2.00	1.00	0.500
2-Butanone	78-93-3	19.8		10.0	5.00	2.50
n-Butylbenzene	104-51-8	16.9		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	18.6		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	17.7		1.00	0.500	0.250
Carbon disulfide	75-15-0	15.9		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	18.3		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.3		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	18.6		1.00	0.500	0.250
Chloroethane	75-00-3	19.8		2.00	1.00	0.500
Chloroform	67-66-3	19.2		1.00	0.250	0.125
Chloromethane	74-87-3	20.3		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	18.9		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	18.7		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	15.7		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	18.2		1.00	0.500	0.250
Dibromomethane	74-95-3	19.9		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	19.4		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	19.1		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	17.7		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	19.1		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	18.6		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	18.1		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	16.1		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	19.5		1.00	0.500	0.250

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	17.7		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	19.8		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	18.9		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	18.4		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	20.8		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	18.2		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	17.6		1.00	0.500	0.250
Ethylbenzene	100-41-4	18.8		1.00	0.500	0.250
2-Hexanone	591-78-6	19.5		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	14.3		1.00	0.500	0.250
Isopropylbenzene	98-82-8	20.1		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	17.2		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	19.4		10.0	5.00	2.50
Methylene chloride	75-09-2	18.6		1.00	0.500	0.250
Naphthalene	91-20-3	16.7		1.00	0.400	0.200
n-Propylbenzene	103-65-1	18.3		1.00	0.250	0.125
Styrene	100-42-5	19.7		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	19.1		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	19.0		1.00	0.400	0.200
Tetrachloroethene	127-18-4	18.4		1.00	0.500	0.250
Toluene	108-88-3	19.1		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	16.2		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	16.1		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	18.6		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	18.9		1.00	0.500	0.250
Trichloroethene	79-01-6	17.6		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	16.0		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	18.2		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	17.8		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	18.3		1.00	0.500	0.250
Vinyl chloride	75-01-4	22.4		1.00	0.500	0.250
o-Xylene	95-47-6	20.3		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	39.9		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	91.2	70	120	
Toluene-d8	99.0	85	120	
4-Bromofluorobenzene	91.5	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-19	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	07/30/2015 20:51
Workgroup #:	WG536332	**Analyst:**	TMB	**Run Date:**	08/25/2015 13:42
Collect Date:	08/21/2015 00:00	**Dilution:**	1	**File ID:**	8M406999
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.365	J	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.3	85	115	
1,2-Dichloroethane-d4	89.0	70	120	
Toluene-d8	98.6	85	120	
4-Bromofluorobenzene	94.6	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

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Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

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Instrument Run Log

Instrument: HPMS8 Dataset: 100214
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 19
Method: 624 SOP: MSV10 Rev: 12
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 16
Maintenance Log ID: 51878

Internal Standard: STD66600 Surrogate Standard: STD66600
CCV: STD66818; STD66687 LCS: STD66693; STD66677 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG494714; WG494980

Comments: File # 8m400369 and 70 were skipped and not used.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M400354	RINSE	NA	1	1		10/02/14 10:24
8M400355	WG494714-01 50ng BFB STD 8260	NA	1	1	STD66476	10/02/14 11:16
8M400356	WG494714-01 50ng BFB STD 8260	NA	1	1	STD66476	10/02/14 11:33
8M400357	WG494714-01 50ng BFB STD 8260	NA	1	1	STD66476	10/02/14 11:58
8M400358	WG494714-02 5ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 12:24
8M400359	WG494714-03 20ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 12:53
8M400360	WG494714-04 50ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 13:22
8M400361	WG494714-05 100ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 13:51
8M400362	WG494714-06 200ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 14:19
8M400363	WG494714-07 300ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 14:48
8M400364	WG494714-08 400ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 15:16
8M400365	WG494714-09 500ug/L STD A9/FOO	NA	1	1	STD66818	10/02/14 15:45
8M400366	RINSE	NA	1	1		10/02/14 16:14
8M400367	WG494714-10 100ug/L ALT SRC STD A9/F	NA	1	1	STD66677	10/02/14 16:47
8M400368	WG494979-01 50ug/L CCV STD 8260	NA	1	1	STD66687	10/02/14 17:22
8M400371	WG494980-02 20ug/L LCS STD 624	NA	2	1	STD66693	10/02/14 17:51
8M400372	WG494980-03 20ug/L LCSDUP STD 624	NA	2	1	STD66693	10/02/14 18:20
8M400373	RINSE	NA	2	1		10/02/14 18:49
8M400374	WG494980-01 VBLK1002 BLANK STD 624	NA	2	1		10/02/14 19:18
8M400375	L14100004-01 LOD 826-SPE A9/FOO	NA	1	1		10/02/14 19:47
8M400376	L14100006-01 LOQ 826-SPE A9/FOO	NA	1	1		10/02/14 20:16
8M400377	L14100004-01 LOD 826-SPE	NA	1	1		10/02/14 20:45
8M400378	L14100006-01 LOQ 826-SPE	NA	1	1		10/02/14 21:14
8M400379	L14100004-01 LOD 826-SPE	NA	1	1		10/02/14 21:42
8M400380	L14100006-01 LOQ 826-SPE	NA	1	1		10/02/14 22:12
8M400381	L14100098-10 A 624-SPE	5	2	1		10/02/14 22:40
8M400382	L14100089-02 A 624-SPE	5	2	1		10/02/14 23:09
8M400383	L14100098-04 A 624-SPE	<2	2	1		10/02/14 23:38
8M400384	L14100098-05 A 624-SPE	<2	2	1		10/03/14 00:06
8M400385	L14100098-06 A 624-SPE	<2	2	1		10/03/14 00:36
8M400386	L14100098-07 A 624-SPE	<2	2	1		10/03/14 01:06
8M400387	L14100098-08 A 624-SPE	<2	2	1		10/03/14 01:34
8M400388	L14100098-09 A 624-SPE	<2	2	1		10/03/14 02:04
8M400389	L14100110-01 A 624-SPE2	<2	2	1		10/03/14 02:32

Approved: October 03, 2014

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Instrument Run Log

Instrument: HPMS8 Dataset: 100214
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 19
Method: 624 SOP: MSV10 Rev: 12
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 16
Maintenance Log ID: 51878

Internal Standard: STD66600 Surrogate Standard: STD66600
CCV: STD66818; STD66687 LCS: STD66693; STD66677 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG494714; WG494980

Comments: File # 8m400369 and 70 were skipped and not used.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M400390	L14100110-02 A 624-SPE1	<2	2	1		10/03/14 03:02
8M400391	RINSE	NA	1	1		10/03/14 03:30
8M400392	RINSE	NA	1	1		10/03/14 03:59

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 8M400355				
	Tune failed, DNR.			
3	X			
File ID: 8M400356				
	Tune failed, DNR.			
4				
File ID: 8M400357				
	Purged BFB.			
30	X	100	Over Calibration Range	TCE
File ID: 8M400385				
31	X	1	Carry-over contamination	
File ID: 8M400386				
	DNR.			
32	X	1	Carry-over contamination	
File ID: 8M400387				
	DNR.			
33	X	50	Over Calibration Range	TCE
File ID: 8M400388				
34	X	1	Carry-over contamination	
File ID: 8M400389				
	DNR.			

Approved: October 03, 2014

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Instrument Run Log

Instrument: HPMS8 Dataset: 073015
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 22
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD71712 Surrogate Standard: STD71712
CCV: STD71744 LCS: STD71618 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG533051

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M406467	RINSE	NA	1	1		07/30/15 08:51
8M406468	RINSE	NA	1	1		07/30/15 09:26
8M406469	RINSE	NA	1	1		07/30/15 09:55
8M406470	RINSE	NA	1	1		07/30/15 10:39
8M406471	RINSE	NA	1	1		07/30/15 11:08
8M406472	RINSE	NA	1	1		07/30/15 11:36
8M406473	RINSE	NA	1	1		07/30/15 12:05
8M406474	RINSE	NA	1	1		07/30/15 12:50
8M406475	RINSE	NA	1	1		07/30/15 13:18
8M406476	RINSE	NA	1	1		07/30/15 13:47
8M406477	WG533051-01 50ng BFB STD 8260	NA	1	1	STD71644	07/30/15 14:17
8M406478	RINSE	NA	1	1		07/30/15 14:41
8M406479	WG533051-04 1ug/L STD 8260	NA	1	1	STD71744	07/30/15 15:09
8M406480	WG533051-05 2ug/L STD 8260	NA	1	1	STD71744	07/30/15 15:37
8M406481	WG533051-06 5ug/L STD 8260	NA	1	1	STD71744	07/30/15 16:06
8M406482	WG533051-07 20ug/L STD 8260	NA	1	1	STD71744	07/30/15 16:35
8M406483	WG533051-08 50ug/L STD 8260	NA	1	1	STD71744	07/30/15 17:04
8M406484	WG533051-09 100ug/L STD 8260	NA	1	1	STD71744	07/30/15 17:33
8M406485	WG533051-10 200ug/L STD 8260	NA	1	1	STD71744	07/30/15 18:01
8M406486	WG533051-11 300ug/L STD 8260	NA	1	1	STD71744	07/30/15 18:29
8M406487	RINSE W/MEOH	NA	1	1		07/30/15 18:58
8M406488	RINSE	NA	1	1		07/30/15 19:26
8M406489	RINSE	NA	1	1		07/30/15 19:54
8M406490	WG533051-02 0.3ug/L STD 8260	NA	1	1	STD71744	07/30/15 20:22
8M406491	WG533051-03 0.4ug/L STD 8260	NA	1	1	STD71744	07/30/15 20:51
8M406492	WG533051-12 50ug/L ALT SRC STD 8260	NA	1	1	STD71618	07/30/15 21:20
8M406493	WG533051-13 50ug/L CCV STD 8260 DOD	NA	1	1	STD71744	07/30/15 21:49
8M406494	RINSE	NA	1	1		07/30/15 22:18
8M406495	RINSE	NA	1	1		07/30/15 22:46
8M406496	RINSE	NA	1	1		07/30/15 23:16
8M406497	RINSE	NA	1	1		07/30/15 23:44
8M406498	RINSE	NA	1	1		07/31/15 00:13
8M406499	RINSE	NA	1	1		07/31/15 00:42
8M406500	RINSE	NA	1	1		07/31/15 01:11

Approved: July 31, 2015

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 073015
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 22
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD71712 Surrogate Standard: STD71712
CCV: STD71744 LCS: STD71618 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG533051

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M406501	RINSE	NA	1	1		07/31/15 01:39

Approved: July 31, 2015

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 082515
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 22
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD71712 Surrogate Standard: STD71712
CCV: STD72111 LCS: STD72078 MS/MSD: STD72078

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG536332

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M406988	WG536331-01 50ng BFB STD 8260	NA	1	1	STD71644	08/25/15 08:45
8M406989	WG536331-01 50ng BFB STD 8260	NA	1	1	STD71644	08/25/15 09:00
8M406990	WG536331-02 50ug/L CCV STD 8260	NA	1	1	STD72111	08/25/15 09:23
8M406991	RINSE	NA	1	1		08/25/15 09:52
8M406992	WG536332-01 VBLK0825 BLANK STD 826	NA	1	1		08/25/15 10:21
8M406993	WG536332-02 20ug/L LCS STD 8260	NA	1	1	STD72078	08/25/15 10:50
8M406994	L15081251-02 A MS 826-LOW	<2	1	1	STD72078	08/25/15 11:19
8M406995	L15081251-03 A MSD 826-LOW	<2	1	1	STD72078	08/25/15 11:47
8M406996	L15081251-17 A MS 826-LOW	<2	1	1	STD72078	08/25/15 12:15
8M406997	L15081251-18 A MSD 826-LOW	<2	1	1	STD72078	08/25/15 12:44
8M406998	L15081272-01 A 826-SPE	<2	1	1		08/25/15 13:13
8M406999	L15081251-19 A TB 826-LOW	<2	1	1		08/25/15 13:42
8M407000	L15081251-01 A REF 826-LOW	<2	1	1		08/25/15 14:11
8M407001	L15081251-16 A REF 826-LOW	<2	1	1		08/25/15 14:40
8M407002	L15081251-04 A 826-LOW	<2	1	1		08/25/15 15:09
8M407003	L15081251-05 A 826-LOW	<2	1	1		08/25/15 15:38
8M407004	L15081251-06 A 826-LOW	<2	1	1		08/25/15 16:07
8M407005	L15081251-07 A 826-LOW	<2	1	1		08/25/15 16:36
8M407006	L15081251-10 A 826-LOW	<2	1	1		08/25/15 17:05
8M407007	L15081251-11 A 826-LOW	<2	1	1		08/25/15 17:34
8M407008	L15081251-12 A 826-LOW	<2	1	1		08/25/15 18:03
8M407009	L15081251-15 A 826-LOW	<2	1	1		08/25/15 18:32
8M407010	L15081251-08 A 826-LOW	<2	1	1		08/25/15 19:00
8M407011	L15081251-09 A 826-LOW	<2	1	1		08/25/15 19:29
8M407012	L15081251-14 A 826-LOW	<2	1	1		08/25/15 19:58
8M407013	L15081251-13 A 826-LOW	<2	1	1		08/25/15 20:26
8M407014	CCV	NA	1	1		08/25/15 20:56
8M407015	RINSE	NA	1	1		08/25/15 21:24
8M407016	RINSE	NA	1	1		08/25/15 21:52

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1	X			

Approved: August 27, 2015

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 082515

Analyst1: TMB Analyst2: NA

Method: 8260B SOP: MSV01 Rev: 22

Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD71712 Surrogate Standard: STD71712

CCV: STD72111 LCS: STD72078 MS/MSD: STD72078

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG536332

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
File ID: 8M406988				
Tune failed, DNR.				

Approved: August 27, 2015

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 02-OCT-2014
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 63840
Analytical Workgroups: WG494714; WG494980

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	MDA
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
03-OCT-2014
Tiffany Bailey

Secondary Reviewer:
03-OCT-2014

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-03-2014 13:21:54

Microbac Laboratories Inc.

Data Checklist

Date: 30-JUL-2015
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 69569
Analytical Workgroups: WG533051

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
31-JUL-2015
Tiffany Bailey

Secondary Reviewer:
31-JUL-2015

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-31-2015 18:12:12

Microbac Laboratories Inc.

Data Checklist

Date: 25-AUG-2015
Analyst: TMB
Analyst: NA
Method: 8260B
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 70046
Analytical Workgroups: WG536332

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
26-AUG-2015
Tiffany Bailey

Secondary Reviewer:
27-AUG-2015
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-27-2015 09:38:21

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG536332

Login Number: L15081251

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW26-082015	01	08/20/15					08/25/2015	5.2	14		08/25/15	5.2	14	
50WW26MS-082015	02	08/20/15					08/25/2015	5.1	14		08/25/15	5.1	14	
50WW26MSD-082015	03	08/20/15					08/25/2015	5.1	14		08/25/15	5.1	14	
50WW21-082015	04	08/20/15					08/25/2015	5.2	14		08/25/15	5.2	14	
50WW01-082015	05	08/20/15					08/25/2015	5.2	14		08/25/15	5.2	14	
50WW28-082015	06	08/20/15					08/25/2015	5.2	14		08/25/15	5.2	14	
50WW27-082015	07	08/20/15					08/25/2015	5.1	14		08/25/15	5.1	14	
50WW15-082015	08	08/20/15					08/25/2015	5.2	14		08/25/15	5.2	14	
50WW15FD-082015	09	08/20/15					08/25/2015	5.2	14		08/25/15	5.2	14	
50WW16-082015	10	08/20/15					08/25/2015	5.1	14		08/25/15	5.1	14	
50WW19-082115	11	08/21/15					08/25/2015	4.4	14		08/25/15	4.4	14	
50WW20-082115	12	08/21/15					08/25/2015	4.4	14		08/25/15	4.4	14	
50WW09-082115	13	08/21/15					08/25/2015	4.4	14		08/25/15	4.4	14	
50WW09FD-082115	14	08/21/15					08/25/2015	4.4	14		08/25/15	4.4	14	
50WW10-082115	15	08/21/15					08/25/2015	4.3	14		08/25/15	4.3	14	
50WW07-082115	16	08/21/15					08/25/2015	4	14		08/25/15	4	14	
50WW07MS-082115	17	08/21/15					08/25/2015	3.9	14		08/25/15	3.9	14	
50WW07MSD-082115	18	08/21/15					08/25/2015	3.9	14		08/25/15	3.9	14	
TRIP BLANK	19	08/21/15					08/25/2015	4.6	14		08/25/15	4.6	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4353508
Report generated 08/28/2015 11:52

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L15081251
Instrument Id: HPMS8
Workgroup (AAB#): WG536332

Method: 8260
CAL ID: HPMS8-30-JUL-15
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L15081251-01	1.00	01	97.4	99.3	97.5	97.3
L15081251-02	1.00	01	94.3	103	92.2	97.0
L15081251-03	1.00	01	94.9	101	92.9	97.1
L15081251-04	1.00	01	95.2	102	94.6	97.4
L15081251-05	1.00	01	90.3	102	93.8	98.9
L15081251-06	1.00	01	91.4	102	95.8	96.8
L15081251-07	1.00	01	95.0	104	94.2	100
L15081251-08	1.00	01	94.9	104	92.8	98.7
L15081251-09	1.00	01	96.4	107	93.7	98.0
L15081251-10	1.00	01	96.6	106	93.7	98.4
L15081251-11	1.00	01	96.8	104	93.9	98.2
L15081251-12	1.00	01	93.0	105	93.9	96.8
L15081251-13	1.00	01	98.0	105	93.2	98.3
L15081251-14	1.00	01	94.8	102	94.1	97.8
L15081251-15	1.00	01	93.1	104	91.1	98.3
L15081251-16	1.00	01	91.0	101	95.7	98.1
L15081251-17	1.00	01	93.8	103	94.1	96.6
L15081251-18	1.00	01	91.2	101	91.5	99.0
L15081251-19	1.00	01	89.0	99.3	94.6	98.6
WG536332-01	1.00	01	96.8	106	95.5	97.3
WG536332-02	1.00	01	93.4	103	91.2	98.2

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4353514
Report generated: 08/28/2015 11:52

METHOD BLANK SUMMARY

Login Number: L15081251
Blank File ID: 8M406992
Prep Date: 08/25/15 10:21
Analyzed Date: 08/25/15 10:21
Analyst: TMB

Work Group: WG536332
Blank Sample ID: WG536332-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG536332-02	8M406993	08/25/15 10:50	01
50WW26MS-082015	L15081251-02	8M406994	08/25/15 11:19	01
50WW26MSD-082015	L15081251-03	8M406995	08/25/15 11:47	01
50WW07MS-082115	L15081251-17	8M406996	08/25/15 12:15	01
50WW07MSD-082115	L15081251-18	8M406997	08/25/15 12:44	01
TRIP BLANK	L15081251-19	8M406999	08/25/15 13:42	01
50WW26-082015	L15081251-01	8M407000	08/25/15 14:11	01
50WW07-082115	L15081251-16	8M407001	08/25/15 14:40	01
50WW21-082015	L15081251-04	8M407002	08/25/15 15:09	01
50WW01-082015	L15081251-05	8M407003	08/25/15 15:38	01
50WW28-082015	L15081251-06	8M407004	08/25/15 16:07	01
50WW27-082015	L15081251-07	8M407005	08/25/15 16:36	01
50WW16-082015	L15081251-10	8M407006	08/25/15 17:05	01
50WW19-082115	L15081251-11	8M407007	08/25/15 17:34	01
50WW20-082115	L15081251-12	8M407008	08/25/15 18:03	01
50WW10-082115	L15081251-15	8M407009	08/25/15 18:32	01
50WW15-082015	L15081251-08	8M407010	08/25/15 19:00	01
50WW15FD-082015	L15081251-09	8M407011	08/25/15 19:29	01
50WW09FD-082115	L15081251-14	8M407012	08/25/15 19:58	01
50WW09-082115	L15081251-13	8M407013	08/25/15 20:26	01

Report Name: BLANK_SUMMARY
PDF File ID: 4359912
Report generated 08/28/2015 11:52

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15081251 Prep Date: 08/25/15 10:21 Sample ID: WG536332-01
Instrument ID: HPMS8 Run Date: 08/25/15 10:21 Prep Method: 5030B/5030C/503
File ID: 8M406992 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG536332 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-30-JUL-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4359913
28-AUG-2015 11:52

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15081251 Prep Date: 08/25/15 10:21 Sample ID: WG536332-01
Instrument ID: HPMS8 Run Date: 08/25/15 10:21 Prep Method: 5030B/5030C/503
File ID: 8M406992 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG536332 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-30-JUL-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	106	85 - 115	PASS
1,2-Dichloroethane-d4	96.8	70 - 120	PASS
Toluene-d8	97.3	85 - 120	PASS
4-Bromofluorobenzene	95.5	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4359913
28-AUG-2015 11:52

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15081251 | Run Date: 08/25/2015 | Sample ID: WG536332-02
Instrument ID: HPMS8 | Run Time: 10:50 | Prep Method: 5030B/5030C/503
File ID: 8M406993 | Analyst: TMB | Method: 8260B
Workgroup (AAB#): WG536332 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD72078 | Cal ID: HPMS8-30-JUL-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	21.8	109	40 - 140	
Benzene	20.0	21.5	107	80 - 120	
Bromobenzene	20.0	18.5	92.5	75 - 125	
Bromochloromethane	20.0	21.8	109	65 - 130	
Bromodichloromethane	20.0	19.7	98.4	75 - 120	
Bromoform	20.0	20.4	102	70 - 130	
Bromomethane	20.0	11.0	54.9	30 - 145	
2-Butanone	20.0	23.2	116	30 - 150	
n-Butylbenzene	20.0	18.6	93.0	70 - 135	
sec-Butylbenzene	20.0	20.2	101	70 - 125	
tert-Butylbenzene	20.0	20.0	100	70 - 130	
Carbon disulfide	20.0	17.2	85.8	35 - 160	
Carbon tetrachloride	20.0	20.8	104	65 - 140	
Chlorobenzene	20.0	21.0	105	80 - 120	
Chlorodibromomethane	20.0	19.5	97.5	60 - 135	
Chloroethane	20.0	21.5	107	60 - 135	
Chloroform	20.0	20.9	104	65 - 135	
Chloromethane	20.0	20.4	102	40 - 125	
2-Chlorotoluene	20.0	20.0	100	75 - 125	
4-Chlorotoluene	20.0	19.7	98.3	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	17.4	86.8	50 - 130	
1,2-Dibromoethane	20.0	18.7	93.5	80 - 120	
Dibromomethane	20.0	21.6	108	75 - 125	
1,2-Dichlorobenzene	20.0	20.1	101	70 - 120	
1,3-Dichlorobenzene	20.0	19.9	99.7	75 - 125	
1,4-Dichlorobenzene	20.0	18.1	90.5	75 - 125	
Dichlorodifluoromethane	20.0	20.3	102	30 - 155	
1,1-Dichloroethane	20.0	20.2	101	70 - 135	
1,2-Dichloroethane	20.0	19.6	97.8	70 - 130	
1,1-Dichloroethene	20.0	18.4	91.9	70 - 130	
cis-1,2-Dichloroethene	20.0	20.3	101	70 - 125	
trans-1,2-Dichloroethene	20.0	19.9	99.7	60 - 140	
1,2-Dichloropropane	20.0	21.5	108	75 - 125	
1,3-Dichloropropane	20.0	20.0	99.9	75 - 125	
2,2-Dichloropropane	20.0	20.4	102	70 - 135	
cis-1,3-Dichloropropene	20.0	21.3	107	70 - 130	
trans-1,3-Dichloropropene	20.0	18.4	92.0	55 - 140	
1,1-Dichloropropene	20.0	20.4	102	75 - 130	
Ethylbenzene	20.0	19.8	99.2	75 - 125	
2-Hexanone	20.0	20.3	101	55 - 130	
Hexachlorobutadiene	20.0	16.0	80.2	50 - 140	

LCS - Modified 03/06/2008
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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15081251 Run Date: 08/25/2015 Sample ID: WG536332-02
Instrument ID: HPMS8 Run Time: 10:50 Prep Method: 5030B/5030C/503
File ID: 8M406993 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG536332 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD72078 Cal ID: HPMS8-30-JUL-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	21.2	106	75 - 125	
p-Isopropyltoluene	20.0	18.8	93.9	75 - 130	
4-Methyl-2-pentanone	20.0	19.2	95.9	60 - 135	
Methylene chloride	20.0	20.2	101	55 - 140	
Naphthalene	20.0	18.0	90.1	55 - 140	
n-Propylbenzene	20.0	19.5	97.6	70 - 130	
Styrene	20.0	20.7	104	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	19.6	98.0	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	19.6	98.0	65 - 130	
Tetrachloroethene	20.0	20.1	100	45 - 150	
Toluene	20.0	20.2	101	75 - 120	
1,2,3-Trichlorobenzene	20.0	17.4	87.0	55 - 140	
1,2,4-Trichlorobenzene	20.0	17.2	86.2	65 - 135	
1,1,1-Trichloroethane	20.0	20.4	102	65 - 130	
1,1,2-Trichloroethane	20.0	20.1	101	75 - 125	
Trichloroethene	20.0	18.9	94.4	70 - 125	
Trichlorofluoromethane	20.0	17.9	89.7	60 - 145	
1,2,3-Trichloropropane	20.0	17.4	87.1	75 - 125	
1,2,4-Trimethylbenzene	20.0	19.1	95.7	75 - 130	
1,3,5-Trimethylbenzene	20.0	19.2	96.0	75 - 130	
Vinyl chloride	20.0	23.8	119	50 - 145	
o-Xylene	20.0	20.9	104	80 - 120	
m-,p-Xylene	40.0	41.4	103	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	103	85 - 115	PASS
1,2-Dichloroethane-d4	93.4	70 - 120	PASS
Toluene-d8	98.2	85 - 120	PASS
4-Bromofluorobenzene	91.2	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4353509
Report generated: 08/28/2015 11:52

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L15081251 Cal ID: HPMS8- 30-JUL-15 Worknum: WG536332

Instrument ID: HPMS8 Contract #: Prep Method: 5030B/5030C/

Parent ID: L15081251-01 File ID: 8M407000 Dil: 1 Method: 5035A

Sample ID: L15081251-02 MS File ID: 8M406994 Dil: 1 Matrix: 8260B

Sample ID: L15081251-03 MSD File ID: 8M406995 Dil: 1 Units: Water ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,1,1,2-Tetrachloroethane	U	20.0	19.1	95.5	20.0	19.3	96.6	1.11	80 - 130	30	
1,1,1-Trichloroethane	U	20.0	19.6	98.1	20.0	19.2	95.9	2.27	65 - 130	30	
1,1,2,2-Tetrachloroethane	U	20.0	21.3	106	20.0	20.2	101	5.50	65 - 130	30	
1,1,2-Trichloroethane	U	20.0	20.1	101	20.0	19.9	99.3	1.28	75 - 125	30	
1,1-Dichloroethane	U	20.0	19.3	96.3	20.0	19.2	96	0.259	70 - 135	30	
1,1-Dichloroethene	U	20.0	17.0	85	20.0	16.6	82.8	2.69	70 - 130	30	
1,1-Dichloropropene	U	20.0	18.7	93.7	20.0	17.7	88.4	5.88	75 - 130	30	
1,2,3-Trichlorobenzene	U	20.0	17.5	87.3	20.0	17.7	88.3	1.05	55 - 140	30	
1,2,3-Trichloropropane	U	20.0	19.0	95.1	20.0	19.3	96.5	1.53	75 - 125	30	
1,2,4-Trichlorobenzene	U	20.0	17.8	88.9	20.0	17.7	88.3	0.703	65 - 135	30	
1,2,4-Trimethylbenzene	U	20.0	18.5	92.6	20.0	18.5	92.3	0.284	75 - 130	30	
1,2-Dibromo-3-chloropropane	U	20.0	18.2	91.2	20.0	17.7	88.7	2.73	50 - 130	30	
1,2-Dibromoethane	U	20.0	19.4	97.2	20.0	18.9	94.5	2.80	80 - 120	30	
1,2-Dichlorobenzene	U	20.0	20.4	102	20.0	20.0	100	2.18	70 - 120	30	
1,2-Dichloroethane	U	20.0	19.2	96.2	20.0	19.1	95.4	0.783	70 - 130	30	
1,2-Dichloropropane	U	20.0	20.3	101	20.0	20.5	103	1.36	75 - 125	30	
1,3,5-Trimethylbenzene	U	20.0	18.8	93.8	20.0	18.2	91	3.03	75 - 130	30	
1,3-Dichlorobenzene	U	20.0	19.7	98.6	20.0	19.3	96.4	2.25	75 - 125	30	
1,3-Dichloropropane	U	20.0	20.3	102	20.0	20.2	101	0.702	75 - 125	30	
1,4-Dichlorobenzene	U	20.0	18.7	93.3	20.0	18.0	89.9	3.68	75 - 125	30	
2,2-Dichloropropane	U	20.0	20.6	103	20.0	19.2	96.1	6.75	70 - 135	30	
2-Butanone	U	20.0	21.8	109	20.0	20.6	103	5.87	30 - 150	30	
2-Chlorotoluene	U	20.0	19.2	95.9	20.0	19.6	97.9	2.00	75 - 125	30	
2-Hexanone	U	20.0	20.7	104	20.0	21.4	107	3.12	55 - 130	30	
4-Chlorotoluene	U	20.0	19.6	97.9	20.0	18.2	91.1	7.12	75 - 130	30	
4-Methyl-2-pentanone	U	20.0	21.7	108	20.0	21.4	107	1.16	60 - 135	30	
Acetone	U	20.0	21.8	109	20.0	19.5	97.5	11.0	40 - 140	30	
Benzene	U	20.0	20.4	102	20.0	19.6	98	3.71	80 - 120	30	
Bromobenzene	U	20.0	18.9	94.7	20.0	18.1	90.5	4.53	75 - 125	30	
Bromochloromethane	U	20.0	20.7	103	20.0	20.5	102	1.20	65 - 130	30	
Bromodichloromethane	U	20.0	20.0	99.8	20.0	19.5	97.6	2.21	75 - 120	30	
Bromoform	U	20.0	21.2	106	20.0	21.0	105	1.04	70 - 130	30	
Bromomethane	U	20.0	10.6	53.2	20.0	11.0	54.9	3.09	30 - 145	30	
Carbon disulfide	U	20.0	16.5	82.5	20.0	15.6	78.2	5.32	35 - 160	30	
Carbon tetrachloride	U	20.0	19.0	95	20.0	18.0	89.9	5.55	65 - 140	30	
Chlorobenzene	U	20.0	20.9	105	20.0	20.4	102	2.49	80 - 120	30	
Chloroethane	U	20.0	21.2	106	20.0	20.4	102	3.91	60 - 135	30	
Chloroform	U	20.0	19.5	97.5	20.0	19.7	98.5	1.04	65 - 135	30	
Chloromethane	U	20.0	21.2	106	20.0	20.6	103	2.74	40 - 125	30	
cis-1,2-Dichloroethene	U	20.0	20.2	101	20.0	19.9	99.6	1.30	70 - 125	30	
cis-1,3-Dichloropropene	U	20.0	21.5	107	20.0	21.3	106	0.910	70 - 130	30	

MS_MSD - Modified 03/06/2008
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Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L15081251 Cal ID: HPMS8 30-JUL-15 Worknum: WG536332

Instrument ID: HPMS8 Contract #: Prep Method: 5030B/5030C/

Parent ID: L15081251-01 File ID: 8M407000 Dil: 1 Method: 5035A

Sample ID: L15081251-02 MS File ID: 8M406994 Dil: 1 Matrix: 8260B

Sample ID: L15081251-03 MSD File ID: 8M406995 Dil: 1 Units: Water

ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chlorodibromomethane	U	20.0	19.4	97.1	20.0	19.8	99.2	2.05	60 - 135	30	
Dibromomethane	U	20.0	21.3	106	20.0	21.2	106	0.383	75 - 125	30	
Dichlorodifluoromethane	U	20.0	20.3	102	20.0	18.9	94.4	7.33	30 - 155	30	
Ethylbenzene	U	20.0	19.4	96.9	20.0	18.4	92	5.21	75 - 125	30	
Hexachlorobutadiene	U	20.0	14.6	72.8	20.0	14.3	71.6	1.58	50 - 140	30	
Isopropylbenzene	U	20.0	20.5	102	20.0	19.7	98.6	3.66	75 - 125	30	
m-,p-Xylene	U	40.0	40.3	101	40.0	39.4	98.6	2.24	75 - 130	30	
Methylene chloride	U	20.0	19.9	99.5	20.0	20.0	99.8	0.339	55 - 140	30	
n-Butylbenzene	U	20.0	18.1	90.4	20.0	17.4	86.9	3.98	70 - 135	30	
n-Propylbenzene	U	20.0	18.8	94.1	20.0	18.3	91.6	2.68	70 - 130	30	
Naphthalene	U	20.0	19.3	96.5	20.0	18.9	94.4	2.22	55 - 140	30	
o-Xylene	U	20.0	20.5	103	20.0	20.2	101	1.58	80 - 120	30	
p-Isopropyltoluene	U	20.0	18.1	90.5	20.0	17.6	87.8	3.02	75 - 130	30	
sec-Butylbenzene	U	20.0	19.3	96.3	20.0	18.4	92.2	4.34	70 - 125	30	
Styrene	U	20.0	20.5	103	20.0	20.1	100	2.22	65 - 135	30	
tert-Butylbenzene	U	20.0	18.0	90.1	20.0	18.3	91.5	1.54	70 - 130	30	
Tetrachloroethene	U	20.0	19.3	96.4	20.0	18.1	90.3	6.51	45 - 150	30	
Toluene	U	20.0	19.3	96.7	20.0	19.1	95.7	1.10	75 - 120	30	
trans-1,2-Dichloroethene	U	20.0	18.7	93.6	20.0	18.8	93.8	0.206	60 - 140	30	
trans-1,3-Dichloropropene	U	20.0	18.8	94	20.0	18.8	94.2	0.307	55 - 140	30	
Trichloroethene	U	20.0	18.3	91.4	20.0	17.7	88.7	2.99	70 - 125	30	
Trichlorofluoromethane	U	20.0	17.0	84.9	20.0	16.2	81.1	4.60	60 - 145	30	
Vinyl chloride	U	20.0	23.3	116	20.0	22.4	112	3.85	50 - 145	30	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
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Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L15081251 Cal ID: HPMS8- 30-JUL-15 Worknum: WG536332

Instrument ID: HPMS8 Contract #: Prep Method: 5030B/5030C/

Parent ID: L15081251-16 File ID: 8M407001 Dil: 1 Method: 5035A

Sample ID: L15081251-17 MS File ID: 8M406996 Dil: 1 Matrix: 8260B

Sample ID: L15081251-18 MSD File ID: 8M406997 Dil: 1 Units: Water ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,1,1,2-Tetrachloroethane	U	20.0	18.7	93.5	20.0	19.1	95.6	2.21	80 - 130	30	
1,1,1-Trichloroethane	U	20.0	18.6	93.2	20.0	18.6	93	0.204	65 - 130	30	
1,1,2,2-Tetrachloroethane	U	20.0	19.7	98.3	20.0	19.0	94.8	3.63	65 - 130	30	
1,1,2-Trichloroethane	U	20.0	19.9	99.5	20.0	18.9	94.3	5.37	75 - 125	30	
1,1-Dichloroethane	U	20.0	18.9	94.7	20.0	18.6	92.9	1.97	70 - 135	30	
1,1-Dichloroethene	U	20.0	15.9	79.4	20.0	16.1	80.6	1.54	70 - 130	30	
1,1-Dichloropropene	U	20.0	17.2	86.2	20.0	17.6	88.1	2.13	75 - 130	30	
1,2,3-Trichlorobenzene	U	20.0	16.5	82.7	20.0	16.2	81.1	1.98	55 - 140	30	
1,2,3-Trichloropropane	U	20.0	17.8	89	20.0	18.2	90.9	2.06	75 - 125	30	
1,2,4-Trichlorobenzene	U	20.0	16.7	83.6	20.0	16.1	80.4	3.97	65 - 135	30	
1,2,4-Trimethylbenzene	U	20.0	17.8	88.8	20.0	17.8	88.9	0.190	75 - 130	30	
1,2-Dibromo-3-chloropropane	U	20.0	16.8	84	20.0	15.7	78.5	6.85	50 - 130	30	
1,2-Dibromoethane	U	20.0	18.5	92.5	20.0	18.2	91.1	1.45	80 - 120	30	
1,2-Dichlorobenzene	U	20.0	19.5	97.5	20.0	19.4	96.9	0.674	70 - 120	30	
1,2-Dichloroethane	U	20.0	19.0	95	20.0	18.1	90.6	4.74	70 - 130	30	
1,2-Dichloropropane	U	20.0	19.9	99.3	20.0	19.8	98.9	0.354	75 - 125	30	
1,3,5-Trimethylbenzene	U	20.0	17.9	89.4	20.0	18.3	91.5	2.39	75 - 130	30	
1,3-Dichlorobenzene	U	20.0	18.9	94.7	20.0	19.1	95.5	0.838	75 - 125	30	
1,3-Dichloropropane	U	20.0	19.2	96	20.0	18.9	94.7	1.38	75 - 125	30	
1,4-Dichlorobenzene	U	20.0	18.0	90.2	20.0	17.7	88.6	1.75	75 - 125	30	
2,2-Dichloropropane	U	20.0	19.0	95.2	20.0	18.4	91.9	3.53	70 - 135	30	
2-Butanone	U	20.0	20.7	103	20.0	19.8	98.8	4.60	30 - 150	30	
2-Chlorotoluene	U	20.0	19.2	96	20.0	18.9	94.7	1.29	75 - 125	30	
2-Hexanone	U	20.0	19.8	98.9	20.0	19.5	97.3	1.73	55 - 130	30	
4-Chlorotoluene	U	20.0	17.8	89.1	20.0	18.7	93.3	4.58	75 - 130	30	
4-Methyl-2-pentanone	U	20.0	21.1	105	20.0	19.4	96.9	8.29	60 - 135	30	
Acetone	U	20.0	18.4	91.8	20.0	18.8	94.2	2.54	40 - 140	30	
Benzene	U	20.0	19.5	97.3	20.0	19.5	97.7	0.356	80 - 120	30	
Bromobenzene	U	20.0	17.7	88.5	20.0	17.7	88.5	0.0053	75 - 125	30	
Bromochloromethane	U	20.0	20.4	102	20.0	19.7	98.5	3.40	65 - 130	30	
Bromodichloromethane	U	20.0	19.2	96	20.0	19.0	94.9	1.14	75 - 120	30	
Bromoform	U	20.0	20.2	101	20.0	19.5	97.5	3.65	70 - 130	30	
Bromomethane	U	20.0	10.8	54.1	20.0	11.0	55.1	1.93	30 - 145	30	
Carbon disulfide	U	20.0	15.4	77.2	20.0	15.9	79.7	3.20	35 - 160	30	
Carbon tetrachloride	U	20.0	17.9	89.7	20.0	18.3	91.3	1.74	65 - 140	30	
Chlorobenzene	U	20.0	20.1	100	20.0	20.3	101	1.09	80 - 120	30	
Chloroethane	U	20.0	19.7	98.6	20.0	19.8	98.8	0.173	60 - 135	30	
Chloroform	U	20.0	19.2	96	20.0	19.2	95.8	0.122	65 - 135	30	
Chloromethane	U	20.0	20.0	100	20.0	20.3	101	1.28	40 - 125	30	
cis-1,2-Dichloroethene	U	20.0	19.6	98.2	20.0	19.5	97.7	0.538	70 - 125	30	
cis-1,3-Dichloropropene	U	20.0	20.9	105	20.0	20.8	104	0.510	70 - 130	30	

MS_MSD - Modified 03/06/2008
PDF File ID: 4353510
Report generated 08/28/2015 11:52

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L15081251 Cal ID: HPMS8 30-JUL-15 Worknum: WG536332

Instrument ID: HPMS8 Contract #: Prep Method: 5030B/5030C/

Parent ID: L15081251-16 File ID: 8M407001 Dil: 1 Method: 5035A

Sample ID: L15081251-17 MS File ID: 8M406996 Dil: 1 Matrix: 8260B

Sample ID: L15081251-18 MSD File ID: 8M406997 Dil: 1 Units: Water

ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chlorodibromomethane	U	20.0	18.9	94.7	20.0	18.6	93.1	1.72	60 - 135	30	
Dibromomethane	U	20.0	20.3	102	20.0	19.9	99.5	2.09	75 - 125	30	
Dichlorodifluoromethane	U	20.0	19.1	95.4	20.0	19.1	95.4	0.0135	30 - 155	30	
Ethylbenzene	U	20.0	18.7	93.5	20.0	18.8	94	0.611	75 - 125	30	
Hexachlorobutadiene	U	20.0	14.4	72	20.0	14.3	71.3	1.06	50 - 140	30	
Isopropylbenzene	U	20.0	19.3	96.4	20.0	20.1	100	3.97	75 - 125	30	
m-,p-Xylene	U	40.0	38.4	96.1	40.0	39.9	99.7	3.74	75 - 130	30	
Methylene chloride	U	20.0	19.5	97.3	20.0	18.6	92.9	4.66	55 - 140	30	
n-Butylbenzene	U	20.0	16.9	84.4	20.0	16.9	84.3	0.164	70 - 135	30	
n-Propylbenzene	U	20.0	18.1	90.7	20.0	18.3	91.7	1.07	70 - 130	30	
Naphthalene	U	20.0	17.3	86.5	20.0	16.7	83.5	3.56	55 - 140	30	
o-Xylene	U	20.0	20.1	101	20.0	20.3	102	0.919	80 - 120	30	
p-Isopropyltoluene	U	20.0	17.2	86.2	20.0	17.2	85.9	0.345	75 - 130	30	
sec-Butylbenzene	U	20.0	18.3	91.5	20.0	18.6	93.1	1.67	70 - 125	30	
Styrene	U	20.0	19.2	96.2	20.0	19.7	98.5	2.29	65 - 135	30	
tert-Butylbenzene	U	20.0	17.4	87.1	20.0	17.7	88.4	1.47	70 - 130	30	
Tetrachloroethene	U	20.0	17.7	88.5	20.0	18.4	92	3.94	45 - 150	30	
Toluene	U	20.0	18.7	93.4	20.0	19.1	95.5	2.20	75 - 120	30	
trans-1,2-Dichloroethene	U	20.0	17.8	88.8	20.0	17.7	88.6	0.219	60 - 140	30	
trans-1,3-Dichloropropene	U	20.0	18.4	91.8	20.0	18.2	91.1	0.781	55 - 140	30	
Trichloroethene	U	20.0	17.8	88.9	20.0	17.6	87.9	1.13	70 - 125	30	
Trichlorofluoromethane	U	20.0	15.8	79.1	20.0	16.0	80.1	1.21	60 - 145	30	
Vinyl chloride	U	20.0	22.0	110	20.0	22.4	112	1.66	50 - 145	30	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4353510
Report generated 08/28/2015 11:52

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15081251
Instrument: HPMS8
Analyst: TMB
Workgroup: WG494714

Tune ID: WG494714-01
Run Date: 10/02/2014
Run Time: 11:58
File ID: 8M400357
Cal ID: HPMS8 - 02-OCT-14

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.7	5158	PASS
75.0	95.0	30.0	60.0	51.7	12312	PASS
95.0	95.0	100	100	100	23818	PASS
96.0	95.0	5.00	9.00	7.56	1800	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	69.7	16590	PASS
175	174	5.00	9.00	7.78	1290	PASS
176	174	95.0	101	97.3	16145	PASS
177	176	5.00	9.00	6.34	1023	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG494714-02	STD	01	10/02/2014 12:24	
WG494714-03	STD	01	10/02/2014 12:53	
WG494714-04	STD	01	10/02/2014 13:22	
WG494714-05	STD	01	10/02/2014 13:51	
WG494714-06	STD	01	10/02/2014 14:19	
WG494714-07	STD	01	10/02/2014 14:48	
WG494714-08	STD	01	10/02/2014 15:16	
WG494714-09	STD	01	10/02/2014 15:45	
WG494714-10	SSCV	01	10/02/2014 16:47	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4353512
Report generated 08/28/2015 11:52

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15081251
Instrument: HPMS8
Analyst: TMB
Workgroup: WG533051

Tune ID: WG533051-01
Run Date: 07/30/2015
Run Time: 14:17
File ID: 8M406477
Cal ID: HPMS8 - 30-JUL-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.2	6881	PASS
75.0	95.0	30.0	60.0	50.6	15643	PASS
95.0	95.0	100	100	100	30939	PASS
96.0	95.0	5.00	9.00	6.97	2155	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	76.8	23758	PASS
175	174	5.00	9.00	7.90	1877	PASS
176	174	95.0	101	95.4	22662	PASS
177	176	5.00	9.00	6.56	1487	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG533051-04	STD	01	07/30/2015 15:09	
WG533051-05	STD	01	07/30/2015 15:37	
WG533051-06	STD	01	07/30/2015 16:06	
WG533051-07	STD	01	07/30/2015 16:35	
WG533051-08	STD-CCV	01	07/30/2015 17:04	
WG533051-09	STD	01	07/30/2015 17:33	
WG533051-10	STD	01	07/30/2015 18:01	
WG533051-11	STD	01	07/30/2015 18:29	
WG533051-02	STD	01	07/30/2015 20:22	
WG533051-03	STD	01	07/30/2015 20:51	
WG533051-12	SSCV	01	07/30/2015 21:20	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4353512
Report generated 08/28/2015 11:52

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15081251
Instrument: HPMS8
Analyst: TMB
Workgroup: WG536331

Tune ID: WG536331-01
Run Date: 08/25/2015
Run Time: 09:00
File ID: 8M406989
Cal ID: HPMS8 - 30-JUL-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	24.5	5779	PASS
75.0	95.0	30.0	60.0	47.5	11222	PASS
95.0	95.0	100	100	100	23621	PASS
96.0	95.0	5.00	9.00	6.23	1471	PASS
173	174	0	2.00	1.03	189	PASS
174	95.0	50.0	100	77.4	18271	PASS
175	174	5.00	9.00	8.64	1579	PASS
176	174	95.0	101	98.4	17974	PASS
177	176	5.00	9.00	6.82	1226	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG536331-02	CCV	01	08/25/2015 09:23	
WG536332-01	BLANK	01	08/25/2015 10:21	
WG536332-02	LCS	01	08/25/2015 10:50	
L15081251-02	50WW26MS-082015	01	08/25/2015 11:19	
L15081251-03	50WW26MSD-082015	01	08/25/2015 11:47	
L15081251-17	50WW07MS-082115	01	08/25/2015 12:15	
L15081251-18	50WW07MSD-082115	01	08/25/2015 12:44	
L15081251-19	TRIP BLANK	01	08/25/2015 13:42	
L15081251-01	50WW26-082015	01	08/25/2015 14:11	
L15081251-16	50WW07-082115	01	08/25/2015 14:40	
L15081251-04	50WW21-082015	01	08/25/2015 15:09	
L15081251-05	50WW01-082015	01	08/25/2015 15:38	
L15081251-06	50WW28-082015	01	08/25/2015 16:07	
L15081251-07	50WW27-082015	01	08/25/2015 16:36	
L15081251-10	50WW16-082015	01	08/25/2015 17:05	
L15081251-11	50WW19-082115	01	08/25/2015 17:34	
L15081251-12	50WW20-082115	01	08/25/2015 18:03	
L15081251-15	50WW10-082115	01	08/25/2015 18:32	
L15081251-08	50WW15-082015	01	08/25/2015 19:00	
L15081251-09	50WW15FD-082015	01	08/25/2015 19:29	
L15081251-14	50WW09FD-082115	01	08/25/2015 19:58	
L15081251-13	50WW09-082115	01	08/25/2015 20:26	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4353512
Report generated 08/28/2015 11:52

Calibration Table Report
Method: A9FOOWTR.M
Title: A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Calibration: Fri Oct 03 12:32:07 2014
Curve: WG494714
Calibration Files

	Compound	5 8M400358.D	20 8M400359.D	50 8M400360.D	100 8M400361.D	200 8M400362.D	300 8M400363.D	400 8M400364.D	500 8M400365.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD											
T	Acetonitrile	0.015	0.015	0.015	0.016	0.017	0.016	0.015	0.016	0.016	4.015		
T	3-Chloro-1-propene	0.416	0.403	0.416	0.438	0.434	0.423	0.407	0.394	0.416	3.619		
T	2-Chloro-1,3-butadiene	0.467	0.479	0.496	0.520	0.522	0.508	0.485	0.462	0.493	4.640		
T	Ethyl Acetate	0.104	0.115	0.123	0.133	0.135	0.133	0.126	0.130	0.125	8.569		
T	Methacrylonitrile	0.062	0.065	0.072	0.077	0.080	0.080	0.077	0.081	0.074	9.397		
T	Isobutyl Alcohol			0.004	0.005	0.005	0.005	0.005	0.005	0.005	9.693		
T	1-Butanol			0.002	0.002	0.003	0.003	0.003	0.003	0.003	21.690	0.995	
T	Methyl methacrylate	0.115	0.123	0.137	0.147	0.154	0.151	0.145	0.150	0.140	10.193		
T	2-Nitropropane	0.032	0.035	0.039	0.043	0.047	0.046	0.046	0.048	0.042	14.057		
I	Chlorobenzene-d5	ISTD											
I	1,4-Dichlorobenzene-d4	ISTD											
T	Cyclohexanone			0.039	0.043	0.037	0.043	0.036	0.038	0.039	7.787		

Fri Oct 03 12:35:36 2014

Calibration Table Report
Method: 8260WT.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Calibration: Fri Jul 31 13:26:17 2015
Curve: WG533051
Calibration Files

	Compound	0.3 8M406490.D	0.4 8M406491.D	1 8M406479.D	2 8M406480.D	5 8M406481.D	20 8M406482.D	50 8M406483.D	100 8M406484.D	200 8M406485.D	300 8M406486.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane		0.369	0.335	0.337	0.352	0.419	0.438	0.375	0.398	0.415	0.382	9.830		
P	Chloromethane			0.496	0.461	0.454	0.420	0.428	0.381	0.387	0.383	0.426	9.858		
C	Vinyl Chloride	0.386	0.326	0.285	0.312	0.300	0.304	0.327	0.289	0.300	0.307	0.313	9.241		
T	1,3-Butadiene		0.275	0.268	0.278	0.264	0.279	0.290	0.287	0.264	0.269	0.275	3.453		
T	Bromomethane		0.210	0.220	0.207	0.204	0.191	0.206	0.196	0.212	0.233	0.209	6.087		
T	Chloroethane		0.197	0.190	0.189	0.195	0.192	0.201	0.186	0.195	0.212	0.195	3.891		
T	Trichlorofluoromethane		0.389	0.385	0.380	0.392	0.406	0.425	0.383	0.420	0.467	0.405	7.002		
T	Diethyl ether			0.159	0.150	0.147	0.148	0.150	0.152		0.167	0.153	4.796		
T	Isoprene		0.264	0.302	0.317	0.312	0.317	0.332	0.329	0.330	0.351	0.317	7.664		
T	Acrolein				0.008	0.007	0.008	0.008	0.009		0.012	0.009	18.571		0.999
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.209	0.208	0.239	0.230	0.249	0.218	0.240	0.259	0.231	8.057		
T	Acetone					0.038	0.031	0.030	0.028	0.030	0.032	0.032	11.525		
C	1,1-Dichloroethene		0.388	0.368	0.396	0.388	0.383	0.407	0.370	0.402	0.431	0.393	4.947		
T	Tert-Butyl Alcohol				0.009	0.008	0.008	0.008	0.008		0.009	0.008	7.482		
T	Dimethyl Sulfide		0.223	0.246	0.244	0.248	0.234	0.251	0.252	0.252	0.270	0.247	5.309		
T	Iodomethane			0.109	0.131	0.161	0.201	0.242	0.246	0.242	0.249	0.198	28.680	0.999	
T	Methyl acetate					0.123	0.114	0.117	0.120	0.119	0.140	0.122	7.548		
T	Methylene Chloride			0.265	0.259	0.247	0.241	0.255	0.237	0.241	0.256	0.250	3.986		
T	Carbon Disulfide			0.815	0.851	0.801	0.796	0.827	0.808	0.758	0.759	0.802	3.956		
T	Acrylonitrile			0.052	0.045	0.047	0.048	0.053	0.054		0.068	0.052	14.572		
T	Methyl Tert Butyl Ether			0.411	0.463	0.411	0.427	0.448	0.437	0.448	0.489	0.442	5.983		
T	trans-1,2-Dichloroethene		0.362	0.331	0.360	0.376	0.358	0.384	0.363	0.381	0.399	0.368	5.284		
T	n-Hexane					0.385	0.389	0.411	0.399	0.390	0.414	0.398	3.043		
T	Diisopropyl ether			0.955	0.899	0.890	0.887	0.892	0.870		0.866	0.894	3.291		
T	Vinyl Acetate		0.191	0.230	0.228	0.244	0.229	0.226	0.253	0.236	0.221	0.229	7.579		
P	1,1-Dichloroethane		0.493	0.494	0.508	0.486	0.488	0.509	0.473	0.490	0.506	0.494	2.419		
T	Ethyl-Tert-Butyl ether			0.691	0.657	0.649	0.655	0.657	0.666		0.695	0.667	2.747		
T	2-Butanone					0.048	0.049	0.054	0.054	0.054	0.061	0.053	8.650		
T	Propionitrile			0.015	0.017	0.016	0.017	0.017	0.017		0.020	0.017	9.548		
T	2,2-Dichloropropane		0.332	0.389	0.401	0.379	0.371	0.395	0.361	0.385	0.412	0.381	6.207		
T	cis-1,2-Dichloroethene		0.227	0.254	0.277	0.267	0.267	0.276	0.264	0.270	0.282	0.265	6.143		
C	Chloroform	0.429	0.474	0.436	0.452	0.454	0.433	0.455	0.432	0.439	0.452	0.446	3.208		
T	1-Bromopropane			0.037	0.051	0.047	0.046	0.048	0.047	0.048	0.052	0.047	9.309		
T	Bromochloromethane		0.131	0.140	0.136	0.134	0.136	0.138	0.134	0.135	0.143	0.137	2.506		
T	Tetrahydrofuran			0.037	0.037	0.035	0.035	0.035	0.037		0.042	0.037	6.632		
S	Dibromofluoromethane			0.192	0.213	0.221	0.222	0.228	0.211	0.230	0.247	0.220	7.264		
T	1,1,1-Trichloroethane		0.353	0.418	0.404	0.409	0.405	0.430	0.398	0.428	0.455	0.411	6.772		
T	Cyclohexane			0.444	0.457	0.479	0.481	0.503	0.486	0.482	0.505	0.480	4.363		
T	1,1-Dichloropropene			0.339	0.353	0.351	0.352	0.368	0.330	0.353	0.370	0.352	3.752		
T	Tert-Amyl-Methyl ether			0.526	0.487	0.486	0.485	0.488	0.496		0.529	0.499	3.912		
T	Carbon Tetrachloride		0.318	0.335	0.357	0.362	0.363	0.389	0.357	0.385	0.41	0.364	7.63917		
S	1,2-Dichloroethane-d4			0.209	0.22	0.215	0.223	0.214	0.206	0.222	0.243	0.2191	5.20847		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.307	0.297	0.281	0.286	0.286	0.306	0.296	0.305	0.324	0.2985	4.50732		
T	Benzene	1.133	1.057	1.046	1.001	1.012	0.994	1.017	0.923	0.857	0.8	0.984	10.0188		
T	Trichloroethene		0.368	0.314	0.267	0.272	0.262	0.272	0.249	0.255	0.27	0.2809	13.2826		
T	Methylcyclohexane					0.394	0.404	0.414	0.409	0.401	0.422	0.4073	2.41832		
C	1,2-Dichloropropane		0.234	0.258	0.268	0.28	0.278	0.291	0.276	0.279	0.291	0.2726	6.49559		
T	Bromodichloromethane		0.302	0.357	0.323	0.33	0.335	0.355	0.339	0.344	0.359	0.3383	5.45197		
T	1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.001	12.4415		
T	Dibromomethane		0.119	0.121	0.127	0.117	0.12	0.129	0.125	0.127	0.138	0.1247	5.15203		
T	2-Chloroethyl Vinyl Ether					0.104	0.103	0.117	0.116	0.117	0.126	0.1139	7.6344		
T	4-Methyl-2-Pentanone					0.043	0.048	0.051	0.052	0.052	0.057	0.0505	9.18805		
T	cis-1,3-Dichloropropene		0.371	0.358	0.365	0.359	0.368	0.392	0.378	0.375	0.386	0.3724	3.14004		

T	Dimethyl Disulfide					0.172	0.186	0.204	0.209	0.213	0.227	0.2017	9.86408	
I	Chlorobenzene-d5	ISTD												
S	Toluene-d8			1.285	1.243	1.202	1.261	1.223	1.083	1.173	1.179	1.206	5.24163	
C	Toluene		1.727	1.565	1.526	1.549	1.523	1.521	1.342	1.267	1.128	1.461	12.4282	
T	Ethyl Methacrylate			0.251	0.251	0.262	0.28	0.288	0.285	0.299	0.315	0.2788	8.25598	
T	Paraldehyde											0	0	
T	trans-1,3-Dichloropropene			0.375	0.408	0.425	0.439	0.451	0.436	0.455	0.468	0.4322	6.8352	
T	1,1,2-Trichloroethane		0.22	0.209	0.222	0.234	0.227	0.238	0.225	0.237	0.248	0.229	5.13936	
T	2-Hexanone					0.055	0.062	0.065	0.065	0.068	0.074	0.0647	10.2519	
T	1,3-Dichloropropane		0.361	0.393	0.415	0.394	0.395	0.414	0.391	0.408	0.416	0.3985	4.38549	
T	Tetrachloroethene		0.303	0.322	0.287	0.307	0.317	0.321	0.284	0.309	0.324	0.308	4.80669	
T	Dibromochloromethane		0.272	0.256	0.306	0.283	0.305	0.317	0.309	0.327	0.34	0.3016	8.85969	
T	1,2-Dibromoethane		0.194	0.213	0.224	0.228	0.221	0.226	0.221	0.233	0.243	0.2226	6.09499	
T	1-Chlorohexane		0.588	0.484	0.496	0.509	0.522	0.527	0.504	0.505	0.512	0.5163	5.78352	
P	Chlorobenzene		0.973	0.951	0.968	1.001	0.985	0.971	0.888	0.863	0.818	0.9354	6.74964	
T	1,1,1,2-Tetrachloroethane		0.276	0.283	0.325	0.341	0.341	0.36	0.335	0.357	0.372	0.3323	9.95609	
C	Ethylbenzene		0.52	0.558	0.509	0.543	0.535	0.541	0.498	0.519	0.528	0.528	3.49701	
T	m-,p-Xylene		0.66	0.665	0.664	0.68	0.652	0.655	0.58	0.552	0.506	0.624	9.8816	
T	o-Xylene			0.549	0.641	0.623	0.635	0.649	0.597	0.61	0.607	0.6141	5.19856	
T	Styrene		1.005	1.009	1.045	1.033	1.042	1.068	0.976	0.953	0.894	1.0029	5.40326	
P	Bromoform			0.154	0.17	0.176	0.175	0.186	0.183	0.199	0.21	0.1813	9.52014	
T	Isopropylbenzene		1.642	1.585	1.646	1.672	1.651	1.651	1.448	1.35	1.192	1.5372	11.0657	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.387	0.462	0.444	0.465	0.443	0.455	0.458	0.485	0.488	0.4542	6.48844	
S	p-Bromofluorobenzene			0.983	0.868	0.836	0.835	0.837	0.78	0.868	0.911	0.8647	7.01404	
T	1,2,3-Trichloropropane			0.099	0.133	0.137	0.121	0.128	0.126	0.133	0.143	0.1275	10.3847	
T	trans-1,4-Dichloro-2-Butene			0.092	0.112	0.14	0.147	0.16	0.165	0.176	0.191	0.148	22.1797	0.996
T	n-Propylbenzene		4.089	3.784	3.926	3.944	3.771	3.81	3.286	2.837		3.6808	11.2499	
T	Bromobenzene	0.855	0.749	0.738	0.784	0.729	0.711	0.739	0.707	0.718	0.725	0.7456	5.96592	
T	1,3,5-Trimethylbenzene		2.6	2.463	2.606	2.578	2.54	2.571	2.328	2.207	1.978	2.4301	8.96614	
T	2-Chlorotoluene		2.315	2.476	2.401	2.377	2.265	2.394	2.104	2.081	1.822	2.2483	9.27831	
T	4-Chlorotoluene		2.503	2.148	2.29	2.282	2.192	2.19	2.08	1.876	1.722	2.1425	10.7892	
T	a-Methylstyrene					1.329	1.324	1.364	1.339	1.296	1.266	1.3197	2.6258	
T	tert-Butylbenzene			0.522	0.535	0.533	0.52	0.538	0.498	0.526	0.54	0.5265	2.57613	
T	1,2,4-Trimethylbenzene		2.578	2.481	2.72	2.608	2.588	2.633	2.38	2.208	1.964	2.4621	9.79915	
T	sec-Butylbenzene			3.249	3.275	3.286	3.228	3.272	2.843	2.591	2.243	2.9984	13.2796	
T	p-Isopropyltoluene			2.713	2.812	2.791	2.738	2.805	2.468	2.285	2.015	2.5785	11.4555	
T	1,3-Dichlorobenzene		1.659	1.472	1.547	1.485	1.459	1.488	1.388	1.358	1.302	1.462	7.21195	
T	1,4-Dichlorobenzene	1.816	1.821	1.439	1.577	1.509	1.434	1.478	1.375	1.345	1.276	1.5071	12.2459	
T	n-Butylbenzene			2.506	2.674	2.705	2.642	2.745	2.433	2.235	1.951	2.4864	11.0376	
T	1,2-Dichlorobenzene	1.389	1.322	1.317	1.311	1.314	1.285	1.318	1.249	1.223	1.182	1.2908	4.55521	
T	1,2-Dibromo-3-Chloropropane				0.077	0.067	0.073	0.082	0.08	0.087	0.091	0.0795	10.0106	
T	1,2,4-Trichlorobenzene		1.183	0.94	0.996	0.951	0.974	1.023	0.967	0.966	0.94	0.9933	7.63182	
T	Hexachlorobutadiene		0.59	0.517	0.49	0.495	0.488	0.506	0.471	0.488	0.505	0.5055	6.81586	
T	Naphthalene		1.141	1.257	1.216	1.207	1.264	1.417	1.392	1.384	1.321	1.2888	7.39825	
T	1,2,3-Trichlorobenzene	0.945	1.047	0.737	0.843	0.819	0.821	0.866	0.841	0.831	0.821	0.8572	9.80847	

Fri Jul 31 14:00:52 2015

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15081251 Run Date: 07/30/2015 Sample ID: WG533051-12
Instrument ID: HPMS8 Run Time: 21:20 Method: 8260B
File ID: 8M406492 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG533051 Cal ID: HPMS8 - 30-JUL-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	48.3	ug/L	0.430	3.50	20	
1,1-Dichloroethene	CCC	50.0	44.0	ug/L	0.345	12.0	20	
1,2-Dichloropropane	CCC	50.0	49.2	ug/L	0.268	1.60	20	
Ethylbenzene	CCC	50.0	49.1	ug/L	0.519	1.80	20	
Toluene	CCC	50.0	48.3	ug/L	1.41	3.40	20	
Vinyl Chloride	CCC	50.0	47.8	ug/L	0.300	4.30	20	
Bromoform	SPCC	50.0	49.0	ug/L	0.178	2.00	20	
Chlorobenzene	SPCC	50.0	50.7	ug/L	0.948	1.40	20	
Chloromethane	SPCC	50.0	46.9	ug/L	0.400	6.20	20	
1,1-Dichloroethane	SPCC	50.0	46.9	ug/L	0.463	6.30	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.3	ug/L	0.448	1.50	20	
Acetone		50.0	50.1	ug/L	0.0316	0.100	20	
Benzene		50.0	48.0	ug/L	0.945	3.90	20	
Bromobenzene		50.0	47.7	ug/L	0.711	4.60	20	
Bromochloromethane		50.0	48.3	ug/L	0.132	3.40	20	
Bromodichloromethane		50.0	47.5	ug/L	0.321	5.10	20	
Bromomethane		50.0	45.7	ug/L	0.191	8.70	20	
2-Butanone		50.0	52.9	ug/L	0.0565	5.80	20	
n-Butylbenzene		50.0	51.6	ug/L	2.57	3.20	20	
sec-Butylbenzene		50.0	53.3	ug/L	3.20	6.60	20	
tert-Butylbenzene		50.0	52.0	ug/L	0.548	4.00	20	
Carbon Disulfide		50.0	34.2	ug/L	0.549	31.6	20	*
Carbon Tetrachloride		50.0	49.6	ug/L	0.361	0.700	20	
Dibromochloromethane		50.0	47.9	ug/L	0.289	4.10	20	
Chloroethane		50.0	50.6	ug/L	0.198	1.20	20	
2-Chlorotoluene		50.0	54.0	ug/L	2.43	8.10	20	
4-Chlorotoluene		50.0	52.5	ug/L	2.25	5.00	20	
1,2-Dibromo-3-Chloropropane		50.0	46.3	ug/L	0.0736	7.50	20	
1,2-Dibromoethane		50.0	47.5	ug/L	0.211	5.10	20	
Dibromomethane		50.0	47.1	ug/L	0.118	5.80	20	
1,2-Dichlorobenzene		50.0	50.4	ug/L	1.30	0.800	20	
1,3-Dichlorobenzene		50.0	50.0	ug/L	1.46	0	20	
1,4-Dichlorobenzene		50.0	46.7	ug/L	1.41	6.70	20	
Dichlorodifluoromethane		50.0	49.9	ug/L	0.381	0.300	20	
1,2-Dichloroethane		50.0	46.4	ug/L	0.277	7.20	20	
cis-1,2-Dichloroethene		50.0	47.6	ug/L	0.253	4.70	20	
trans-1,2-Dichloroethene		50.0	46.6	ug/L	0.344	6.70	20	
1,3-Dichloropropane		50.0	48.7	ug/L	0.388	2.60	20	
2,2-Dichloropropane		50.0	46.0	ug/L	0.350	8.00	20	
cis-1,3-Dichloropropene		50.0	50.3	ug/L	0.375	0.600	20	
trans-1,3-Dichloropropene		50.0	47.1	ug/L	0.407	5.80	20	
1,1-Dichloropropene		50.0	46.6	ug/L	0.328	6.90	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4353511
Report generated 08/28/2015 11:52

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15081251 Run Date: 07/30/2015 Sample ID: WG533051-12
Instrument ID: HPMS8 Run Time: 21:20 Method: 8260B
File ID: 8M406492 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG533051 Cal ID: HPMS8 - 30-JUL-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	52.8	ug/L	0.0683	5.60	20	
Hexachlorobutadiene		50.0	46.1	ug/L	0.466	7.80	20	
Isopropylbenzene		50.0	51.4	ug/L	1.58	2.80	20	
p-Isopropyltoluene		50.0	50.7	ug/L	2.62	1.40	20	
4-Methyl-2-Pentanone		50.0	50.6	ug/L	0.0511	1.20	20	
Methylene Chloride		50.0	46.2	ug/L	0.231	7.50	20	
Naphthalene		50.0	50.7	ug/L	1.31	1.30	20	
n-Propylbenzene		50.0	51.1	ug/L	3.76	2.20	20	
Styrene		50.0	50.0	ug/L	1.00	0	20	
1,1,1,2-Tetrachloroethane		50.0	49.1	ug/L	0.326	1.80	20	
Tetrachloroethene		50.0	47.9	ug/L	0.295	4.20	20	
1,2,3-Trichlorobenzene		50.0	47.3	ug/L	0.811	5.40	20	
1,2,4-Trichlorobenzene		50.0	47.7	ug/L	0.947	4.60	20	
1,1,1-Trichloroethane		50.0	48.9	ug/L	0.402	2.20	20	
1,1,2-Trichloroethane		50.0	47.4	ug/L	0.217	5.20	20	
Trichloroethene		50.0	43.8	ug/L	0.246	12.5	20	
Trichlorofluoromethane		50.0	45.9	ug/L	0.372	8.20	20	
1,2,3-Trichloropropane		50.0	48.2	ug/L	0.123	3.60	20	
1,2,4-Trimethylbenzene		50.0	51.3	ug/L	2.53	2.60	20	
1,3,5-Trimethylbenzene		50.0	52.2	ug/L	2.54	4.40	20	
o-Xylene		50.0	51.3	ug/L	0.631	2.70	20	
m-,p-Xylene		100	100	ug/L	0.626	0.200	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4353511
Report generated 08/28/2015 11:52

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15081251 Run Date: 08/25/2015 Sample ID: WG536331-02
Instrument ID: HPMS8 Run Time: 09:23 Method: 8260B
File ID: 8M406990 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG536332 Cal ID: HPMS8 - 30-JUL-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	49.8	ug/L	0.444	0.319	20	
1,1-Dichloroethene	CCC	50.0	49.9	ug/L	0.392	0.249	20	
1,2-Dichloropropane	CCC	50.0	53.9	ug/L	0.294	7.79	20	
Ethylbenzene	CCC	50.0	49.9	ug/L	0.526	0.298	20	
Toluene	CCC	50.0	49.4	ug/L	1.44	1.11	20	
Vinyl Chloride	CCC	50.0	55.7	ug/L	0.349	11.5	20	
Bromoform	SPCC	50.0	49.6	ug/L	0.180	0.838	20	
Chlorobenzene	SPCC	50.0	49.7	ug/L	0.930	0.537	20	
Chloromethane	SPCC	50.0	48.2	ug/L	0.411	3.57	20	
1,1-Dichloroethane	SPCC	50.0	50.7	ug/L	0.501	1.48	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.3	ug/L	0.448	1.45	20	
Xylenes		150	151	ug/L	0.622	0.699	20	
Acetone		50.0	49.3	ug/L	0.0311	1.42	20	
Benzene		50.0	52.5	ug/L	1.03	4.95	20	
Bromobenzene		50.0	45.9	ug/L	0.684	8.23	20	
Bromochloromethane		50.0	50.9	ug/L	0.139	1.82	20	
Bromodichloromethane		50.0	51.0	ug/L	0.345	2.04	20	
Bromomethane		50.0	34.5	ug/L	0.144	30.9	20	*
2-Butanone		50.0	55.4	ug/L	0.0591	10.7	20	
n-Butylbenzene		50.0	49.8	ug/L	2.48	0.326	20	
sec-Butylbenzene		50.0	50.2	ug/L	3.01	0.495	20	
tert-Butylbenzene		50.0	48.0	ug/L	0.506	3.93	20	
Carbon Disulfide		50.0	53.1	ug/L	0.852	6.25	20	
Carbon Tetrachloride		50.0	53.1	ug/L	0.387	6.25	20	
Dibromochloromethane		50.0	48.3	ug/L	0.292	3.36	20	
Chloroethane		50.0	52.2	ug/L	0.204	4.42	20	
2-Chlorotoluene		50.0	47.7	ug/L	2.14	4.62	20	
4-Chlorotoluene		50.0	48.6	ug/L	2.08	2.85	20	
1,2-Dibromo-3-Chloropropane		50.0	43.7	ug/L	0.0695	12.6	20	
1,2-Dibromoethane		50.0	46.5	ug/L	0.207	6.93	20	
Dibromomethane		50.0	50.3	ug/L	0.126	0.658	20	
1,2-Dichlorobenzene		50.0	48.4	ug/L	1.25	3.26	20	
1,3-Dichlorobenzene		50.0	49.0	ug/L	1.43	2.07	20	
1,4-Dichlorobenzene		50.0	46.8	ug/L	1.41	6.35	20	
Dichlorodifluoromethane		50.0	47.8	ug/L	0.365	4.44	20	
1,2-Dichloroethane		50.0	48.3	ug/L	0.289	3.32	20	
cis-1,2-Dichloroethene		50.0	52.6	ug/L	0.279	5.14	20	
trans-1,2-Dichloroethene		50.0	51.9	ug/L	0.382	3.74	20	
1,3-Dichloropropane		50.0	48.2	ug/L	0.384	3.60	20	
2,2-Dichloropropane		50.0	53.6	ug/L	0.408	7.19	20	
cis-1,3-Dichloropropene		50.0	52.4	ug/L	0.391	4.89	20	
trans-1,3-Dichloropropene		50.0	48.2	ug/L	0.416	3.68	20	

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15081251 Run Date: 08/25/2015 Sample ID: WG536331-02
Instrument ID: HPMS8 Run Time: 09:23 Method: 8260B
File ID: 8M406990 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG536332 Cal ID: HPMS8 - 30-JUL-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	52.7	ug/L	0.371	5.45	20	
2-Hexanone		50.0	44.9	ug/L	0.0581	10.2	20	
Hexachlorobutadiene		50.0	42.7	ug/L	0.432	14.5	20	
Isopropylbenzene		50.0	51.2	ug/L	1.57	2.43	20	
p-Isopropyltoluene		50.0	49.8	ug/L	2.57	0.472	20	
4-Methyl-2-Pentanone		50.0	50.6	ug/L	0.0511	1.15	20	
Methylene Chloride		50.0	49.6	ug/L	0.248	0.841	20	
Naphthalene		50.0	45.2	ug/L	1.17	9.53	20	
n-Propylbenzene		50.0	48.2	ug/L	3.55	3.53	20	
Styrene		50.0	50.8	ug/L	1.02	1.53	20	
1,1,1,2-Tetrachloroethane		50.0	50.0	ug/L	0.332	0.00380	20	
Tetrachloroethene		50.0	50.2	ug/L	0.309	0.382	20	
1,2,3-Trichlorobenzene		50.0	43.0	ug/L	0.738	13.9	20	
1,2,4-Trichlorobenzene		50.0	45.7	ug/L	0.908	8.63	20	
1,1,1-Trichloroethane		50.0	51.3	ug/L	0.422	2.54	20	
1,1,2-Trichloroethane		50.0	48.1	ug/L	0.220	3.88	20	
Trichloroethene		50.0	48.5	ug/L	0.273	2.94	20	
Trichlorofluoromethane		50.0	48.0	ug/L	0.389	3.93	20	
1,2,3-Trichloropropane		50.0	43.2	ug/L	0.110	13.7	20	
1,2,4-Trimethylbenzene		50.0	48.9	ug/L	2.41	2.22	20	
1,3,5-Trimethylbenzene		50.0	48.3	ug/L	2.35	3.38	20	
o-Xylene		50.0	50.0	ug/L	0.614	0.0554	20	
m-,p-Xylene		100	101	ug/L	0.631	1.08	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4353513
Report generated 08/28/2015 11:52

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15081251
Instrument ID: HPMS8
Workgroup (AAB#): WG536332

ICAL CCV Number: WG533051-08
CAL ID: HPMS8-30-JUL-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG533051-08	NA	NA	356726	645629	905123
Upper Limit	NA	NA	713452	1291258	1810246
Lower Limit	NA	NA	178363	322815	452562
L15081251-01	1.00	01	306291	572819	727182
L15081251-02	1.00	01	342732	589764	756394
L15081251-03	1.00	01	351473	607485	777811
L15081251-04	1.00	01	299906	550830	694188
L15081251-05	1.00	01	285376	528590	681587
L15081251-06	1.00	01	277693	521026	655598
L15081251-07	1.00	01	283104	509997	660295
L15081251-08	1.00	01	265957	485777	620822
L15081251-09	1.00	01	260697	475745	615929
L15081251-10	1.00	01	277462	515478	648115
L15081251-11	1.00	01	274059	503961	641777
L15081251-12	1.00	01	267645	501811	632281
L15081251-13	1.00	01	266109	487376	631098
L15081251-14	1.00	01	263957	483971	627716
L15081251-15	1.00	01	272050	499358	629717
L15081251-16	1.00	01	300945	558098	721634
L15081251-17	1.00	01	353332	617259	782361
L15081251-18	1.00	01	356509	615828	795941
L15081251-19	1.00	01	316101	579571	742894
WG536332-01	1.00	01	303004	563644	722548
WG536332-02	1.00	01	337401	582036	766317

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4359914
Report generated 08/28/2015 11:52

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15081251
Instrument ID: HPMS8
Workgroup (AAB#): WG536332

ICAL CCV Number: WG533051-08
CAL ID: HPMS8-30-JUL-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG533051-08	NA	NA	17.6	14.58	10.71
Upper Limit	NA	NA	18.1	15.08	11.21
Lower Limit	NA	NA	17.1	14.08	10.21
L15081251-01	1.00	01	17.6	14.58	10.71
L15081251-02	1.00	01	17.6	14.58	10.71
L15081251-03	1.00	01	17.6	14.58	10.71
L15081251-04	1.00	01	17.6	14.58	10.71
L15081251-05	1.00	01	17.6	14.58	10.71
L15081251-06	1.00	01	17.6	14.58	10.71
L15081251-07	1.00	01	17.6	14.58	10.71
L15081251-08	1.00	01	17.6	14.58	10.71
L15081251-09	1.00	01	17.6	14.58	10.71
L15081251-10	1.00	01	17.6	14.58	10.71
L15081251-11	1.00	01	17.6	14.58	10.71
L15081251-12	1.00	01	17.6	14.58	10.71
L15081251-13	1.00	01	17.6	14.58	10.71
L15081251-14	1.00	01	17.6	14.58	10.71
L15081251-15	1.00	01	17.6	14.58	10.71
L15081251-16	1.00	01	17.6	14.58	10.71
L15081251-17	1.00	01	17.6	14.58	10.71
L15081251-18	1.00	01	17.6	14.58	10.71
L15081251-19	1.00	01	17.6	14.58	10.71
WG536332-01	1.00	01	17.6	14.58	10.71
WG536332-02	1.00	01	17.6	14.58	10.71

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4359915
Report generated: 08/28/2015 11:52

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082515\8M407000.D Vial: 12
Acq On : 25 Aug 2015 14:11 Operator: TMB
Sample : L15081251-01 A REF 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 26 08:00:29 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	727182	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	572819	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	306291	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	159145	24.8368 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.36%		
43) 1,2-Dichloroethane-d4	10.31	65	155128	24.3459 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.40%		
58) Toluene-d8	12.69	98	672022	24.3195 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.28%		
80) p-Bromofluorobenzene	16.08	95	258194	24.3710 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.48%		

Target Compounds					Qvalue
3) Chloromethane	3.62	50	5326	0.4296 ug/L	99
13) Acetone	6.28	43	1103	1.2029 ug/L #	48

(#) = qualifier out of range (m) = manual integration
8M407000.D 8260WT.M Wed Aug 26 08:00:29 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082515\8M407000.D Vial: 12
Acq On : 25 Aug 2015 14:11 Operator: TMB
Sample : L15081251-01 A REF 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 26 8:00 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

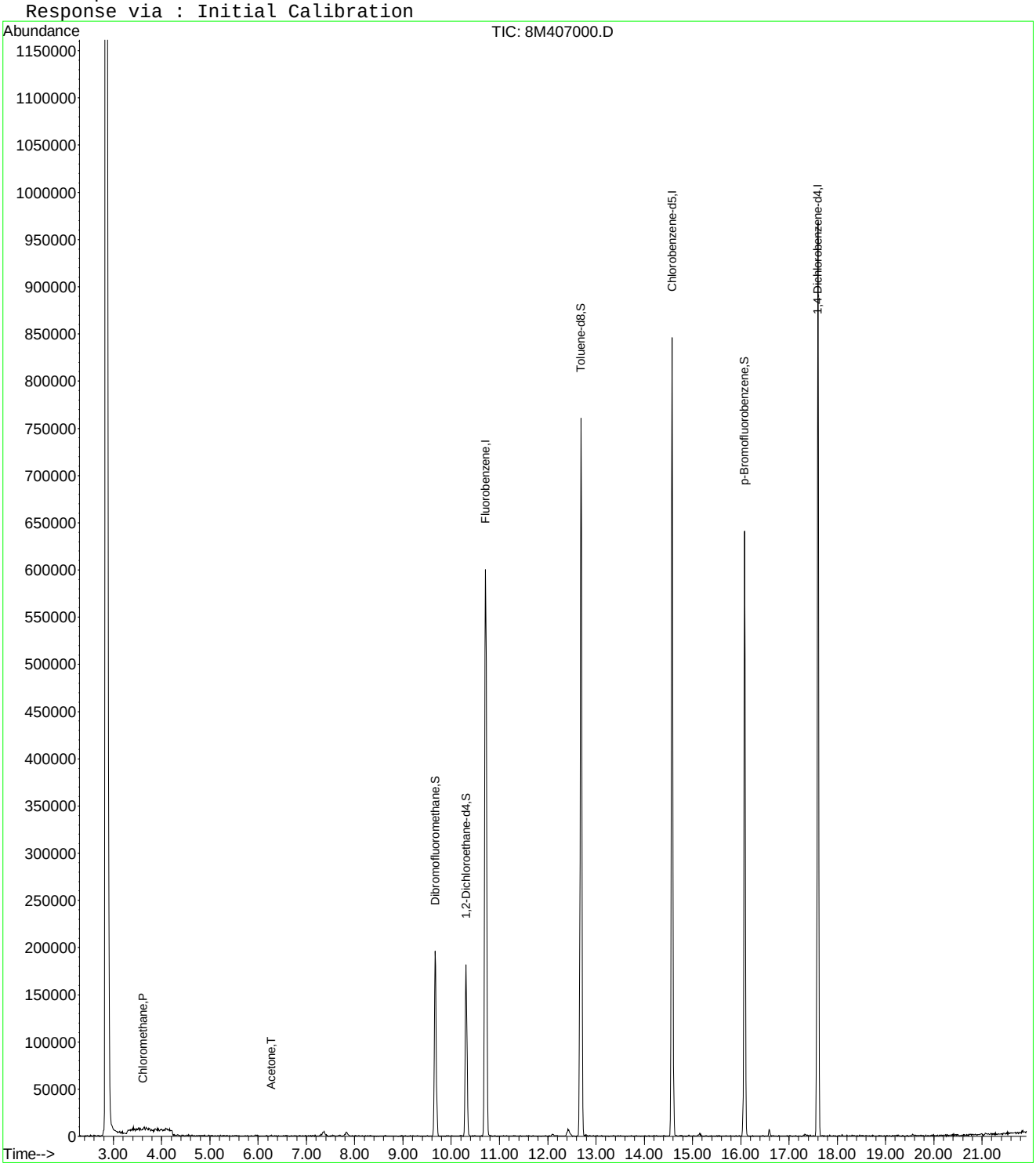

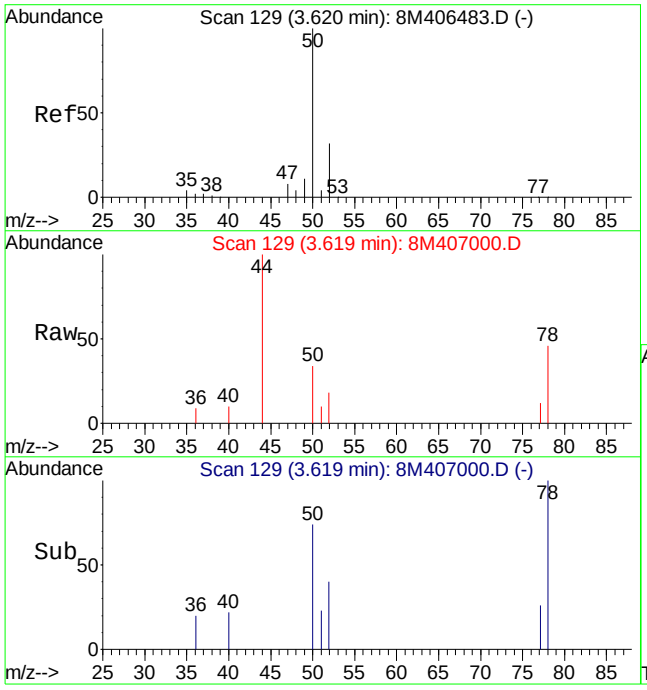

#3
Chloromethane
Concen: 0.43 ug/L
RT: 3.62 min Scan# 129
Delta R.T. 0.00 min
Lab File: 8M407000.D
Acq: 25 Aug 2015 14:11

Tgt Ion: 50 Resp: 5326

Ion	Ratio	Lower	Upper
50	100		
52	32.4	19.2	44.8

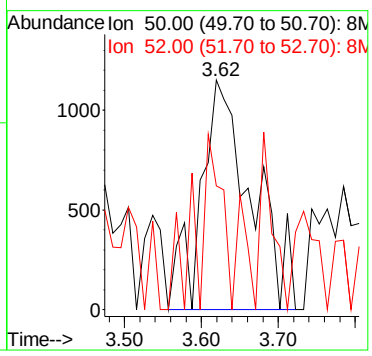

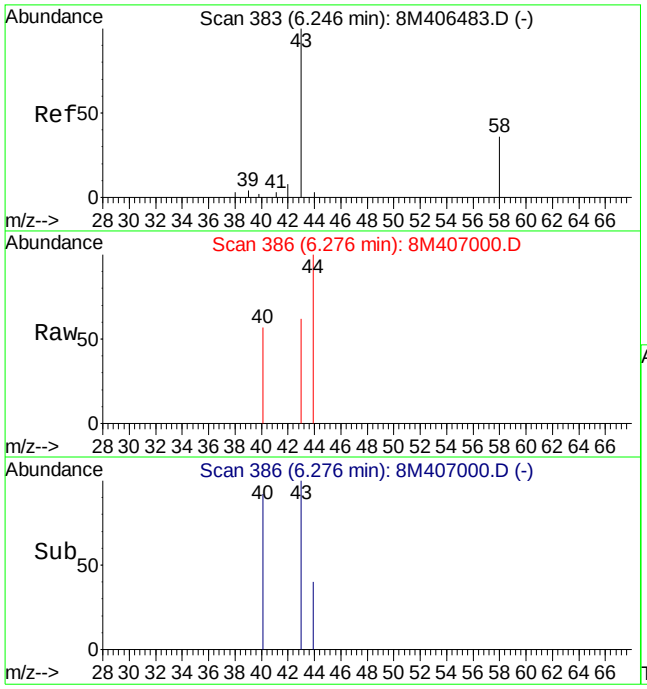

#13
Acetone
Concen: 1.20 ug/L
RT: 6.28 min Scan# 386
Delta R.T. 0.03 min
Lab File: 8M407000.D
Acq: 25 Aug 2015 14:11

Tgt Ion: 43 Resp: 1103

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

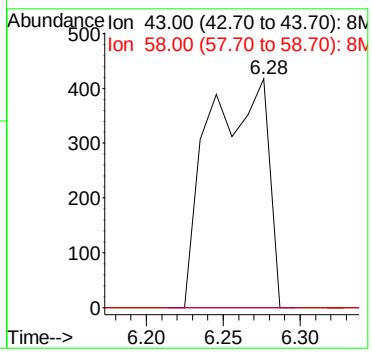

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\082515\8M406994.D Vial: 6
Acq On : 25 Aug 2015 11:19 Operator: TMB
Sample : L15081251-02 A MS 826-LOW Inst : HPMS8
Misc : 1,1 STD72078 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 25 11:41:07 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	756394	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	589764	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	342732	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.68	111	171166	25.6812 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.72%		
43) 1,2-Dichloroethane-d4	10.31	65	156168	23.5626 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.24%		
58) Toluene-d8	12.69	98	689748	24.2438 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.96%		
80) p-Bromofluorobenzene	16.08	95	273277	23.0521 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.20%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	234612	20.3094 ug/L	98
3) Chloromethane	3.62	50	273133	21.1782 ug/L	99
4) Vinyl Chloride	3.84	62	220560	23.2546 ug/L	99
5) 1,3-Butadiene	3.89	54	54056	6.5012 ug/L	99
6) Bromomethane	4.74	94	67262	10.6469 ug/L	96
7) Chloroethane	4.90	64	125386	21.2324 ug/L	98
8) Trichlorofluoromethane	5.39	101	208336	16.9875 ug/L	99
10) Isoprene	5.95	67	193929	20.2036 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	131453	18.7726 ug/L	98
13) Acetone	6.25	43	20765	21.7704 ug/L	100
14) 1,1-Dichloroethene	6.47	61	202000	17.0037 ug/L	95
15) Tert-Butyl Alcohol	6.57	59	952	3.7999 ug/L #	58
16) Dimethyl Sulfide	6.74	62	167775	22.4943 ug/L	97
17) Iodomethane	7.00	142	34519	5.5197 ug/L	91
18) Methyl acetate	7.01	43	62699	16.9398 ug/L	96
19) Methylene Chloride	7.26	84	150565	19.8972 ug/L	99
20) Carbon Disulfide	7.30	76	400176	16.4936 ug/L	99
21) Acrylonitrile	7.44	53	31817	20.0746 ug/L	98
22) Methyl Tert Butyl Ether	7.47	73	271140	20.2903 ug/L	99
23) trans-1,2-Dichloroethene	7.71	61	208602	18.7229 ug/L	95
24) n-Hexane	7.79	57	187718	15.5862 ug/L	99
26) Vinyl Acetate	8.30	43	211944	30.6473 ug/L	100
27) 1,1-Dichloroethane	8.33	63	287744	19.2559 ug/L	99
29) 2-Butanone	8.89	43	35209	21.8014 ug/L	99
31) 2,2-Dichloropropane	9.11	77	236693	20.5540 ug/L	99
32) cis-1,2-Dichloroethene	9.18	96	161751	20.1732 ug/L	94
33) Chloroform	9.39	83	262998	19.5020 ug/L	98
34) 1-Bromopropane	9.52	122	30152	21.1562 ug/L	98
35) Bromochloromethane	9.61	130	85482	20.6972 ug/L	100
38) 1,1,1-Trichloroethane	9.91	97	244158	19.6283 ug/L	99
39) Cyclohexane	9.95	56	258977	17.8502 ug/L	100
40) 1,1-Dichloropropene	10.11	75	199628	18.7440 ug/L	98
42) Carbon Tetrachloride	10.26	117	209229	18.9967 ug/L	98
45) 1,2-Dichloroethane	10.43	62	173736	19.2348 ug/L	99
46) Benzene	10.47	78	605867	20.3508 ug/L	98
47) Trichloroethene	11.22	130	155328	18.2793 ug/L	96
48) Methylcyclohexane	11.31	83	223284	18.1203 ug/L	96
49) 1,2-Dichloropropane	11.43	63	167039	20.2530 ug/L	95
50) Bromodichloromethane	11.73	83	204281	19.9574 ug/L	99
51) 1,4-Dioxane	11.72	88	1924	66.3347 ug/L	82

(#) = qualifier out of range (m) = manual integration
8M406994.D 8260WT.M Tue Aug 25 11:41:08 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\082515\8M406994.D Vial: 6
Acq On : 25 Aug 2015 11:19 Operator: TMB
Sample : L15081251-02 A MS 826-LOW Inst : HPMS8
Misc : 1,1 STD72078 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 25 11:41:07 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
52)	Dibromomethane	11.82	93	80216	21.2610 ug/L		96
54)	4-Methyl-2-Pentanone	12.06	58	33169	21.6891 ug/L		95
55)	cis-1,3-Dichloropropene	12.36	75	241865	21.4673 ug/L		98
56)	Dimethyl Disulfide	12.62	79	112864	18.4905 ug/L		87
59)	Toluene	12.79	91	666633	19.3421 ug/L		100
60)	Ethyl Methacrylate	12.88	69	142743	21.6999 ug/L		96
62)	trans-1,3-Dichloropropene	12.96	75	191572	18.7909 ug/L		98
63)	1,1,2-Trichloroethane	13.18	97	108688	20.1232 ug/L		100
64)	2-Hexanone	13.12	58	31599	20.7098 ug/L	#	97
65)	1,3-Dichloropropane	13.48	76	191172	20.3368 ug/L		95
66)	Tetrachloroethene	13.61	164	140051	19.2730 ug/L		92
67)	Dibromochloromethane	13.87	129	138238	19.4293 ug/L		97
68)	1,2-Dibromoethane	14.12	107	102068	19.4357 ug/L		100
69)	1-Chlorohexane	14.22	91	228116	18.7285 ug/L		95
70)	Chlorobenzene	14.63	112	462165	20.9434 ug/L		93
71)	1,1,1,2-Tetrachloroethane	14.66	131	149767	19.1045 ug/L		98
72)	Ethylbenzene	14.66	106	241465	19.3848 ug/L		96
73)	m-,p-Xylene	14.74	106	593530	40.3227 ug/L		97
74)	o-Xylene	15.31	106	297158	20.5136 ug/L		95
75)	Styrene	15.34	104	485034	20.5011 ug/L		94
76)	Bromoform	15.84	173	90626	21.1853 ug/L		96
77)	Isopropylbenzene	15.74	105	741911	20.4584 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.94	83	132633	21.2988 ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	33233	19.0125 ug/L		58
82)	trans-1,4-Dichloro-2-Buten	16.19	53	29656	12.8066 ug/L	#	25
83)	n-Propylbenzene	16.24	91	950056	18.8273 ug/L		99
84)	Bromobenzene	16.37	156	193683	18.9490 ug/L		94
85)	1,3,5-Trimethylbenzene	16.43	105	624825	18.7551 ug/L		97
86)	2-Chlorotoluene	16.51	91	591350	19.1854 ug/L		97
87)	4-Chlorotoluene	16.55	91	574934	19.5737 ug/L		95
88)	a-Methylstyrene	16.83	118	345478	19.0957 ug/L		96
89)	tert-Butylbenzene	16.89	134	130010	18.0129 ug/L		95
90)	1,2,4-Trimethylbenzene	16.94	105	625106	18.5194 ug/L		96
91)	sec-Butylbenzene	17.16	105	791418	19.2534 ug/L		98
92)	p-Isopropyltoluene	17.32	119	640025	18.1056 ug/L		97
93)	1,3-Dichlorobenzene	17.51	146	395240	19.7194 ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	385341	18.6506 ug/L		96
95)	n-Butylbenzene	17.84	91	616123	18.0752 ug/L		99
96)	1,2-Dichlorobenzene	18.13	146	361850	20.4481 ug/L		97
97)	1,2-Dibromo-3-Chloropropan	19.13	75	19883	18.2375 ug/L		97
98)	1,2,4-Trichlorobenzene	20.27	180	242077	17.7764 ug/L		99
99)	Hexachlorobutadiene	20.42	225	100837	14.5514 ug/L		98
100)	Naphthalene	20.64	128	340987	19.2989 ug/L		99
101)	1,2,3-Trichlorobenzene	20.95	180	205292	17.4695 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M406994.D 8260WT.M Tue Aug 25 11:41:08 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\082515\8M406994.D Vial: 6
Acq On : 25 Aug 2015 11:19 Operator: TMB
Sample : L15081251-02 A MS 826-LOW Inst : HPMS8
Misc : 1,1 STD72078 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 25 11:41 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

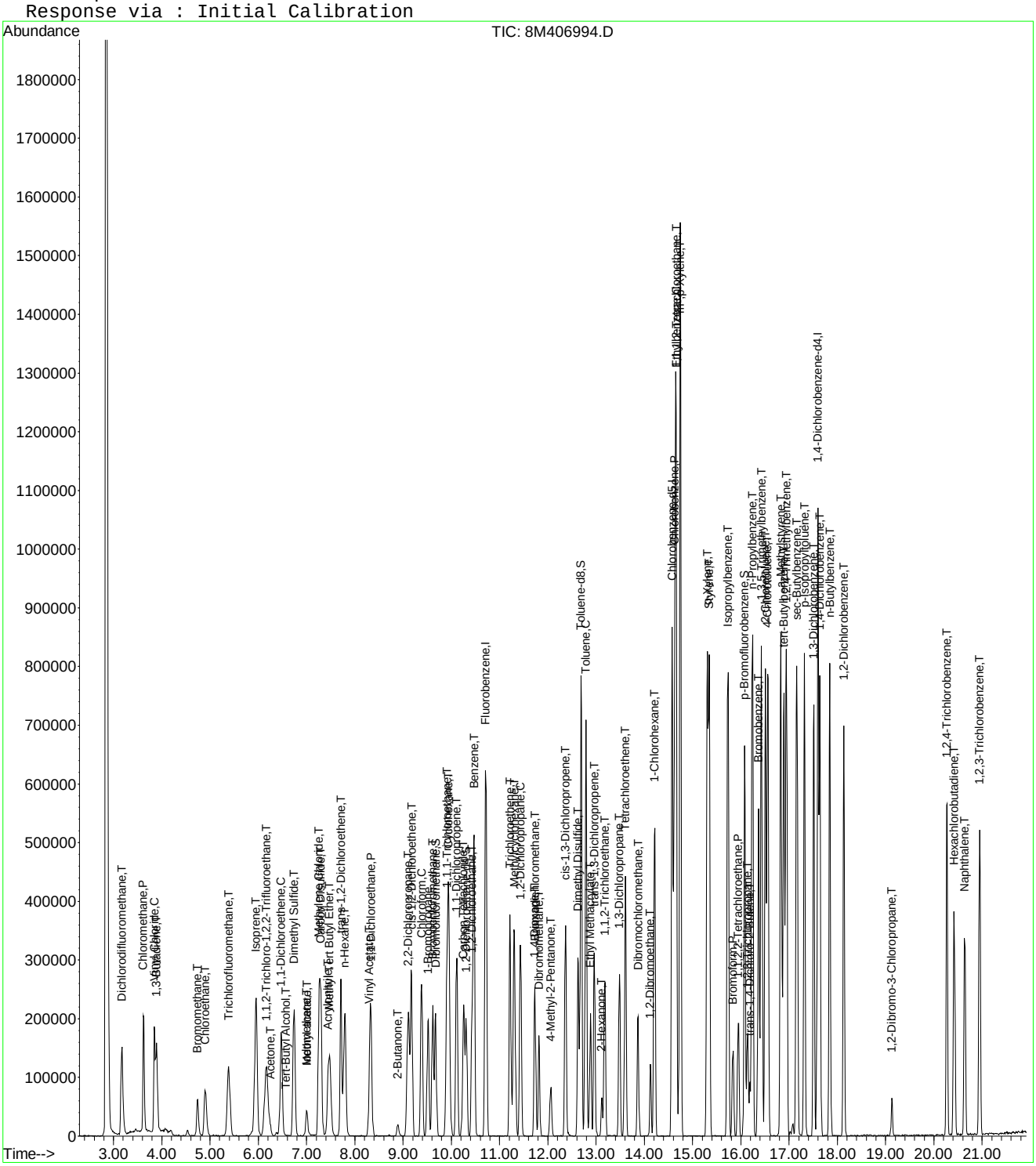

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\082515\8M406995.D Vial: 7
Acq On : 25 Aug 2015 11:47 Operator: TMB
Sample : L15081251-03 A MSD 826-LOW Inst : HPMS8
Misc : 1,1 STD72078 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 25 12:09:18 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	777811	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	607485	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	351473	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	173466	25.3097 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.24%		
43) 1,2-Dichloroethane-d4	10.31	65	161781	23.7374 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.96%		
58) Toluene-d8	12.69	98	711209	24.2689 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.08%		
80) p-Bromofluorobenzene	16.08	95	282274	23.2189 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.88%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.18	85	224191	18.8729 ug/L	97
3) Chloromethane	3.62	50	273277	20.6059 ug/L	99
4) Vinyl Chloride	3.85	62	218245	22.3769 ug/L	99
5) 1,3-Butadiene	3.89	54	49784	5.8226 ug/L	90
6) Bromomethane	4.74	94	71339	10.9813 ug/L	96
7) Chloroethane	4.90	64	123992	20.4182 ug/L	99
8) Trichlorofluoromethane	5.39	101	204599	16.2234 ug/L	98
10) Isoprene	5.95	67	181547	18.3928 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	128513	17.8474 ug/L	100
13) Acetone	6.26	43	19127	19.5009 ug/L	92
14) 1,1-Dichloroethene	6.47	61	202202	16.5521 ug/L	97
16) Dimethyl Sulfide	6.74	62	167416	21.8281 ug/L	98
17) Iodomethane	6.99	142	38691	5.9378 ug/L	92
18) Methyl acetate	7.00	43	60850	15.9876 ug/L	97
19) Methylene Chloride	7.26	84	155354	19.9648 ug/L	96
20) Carbon Disulfide	7.30	76	390201	15.6396 ug/L	98
21) Acrylonitrile	7.45	53	30205	18.5328 ug/L	98
22) Methyl Tert Butyl Ether	7.48	73	269382	19.6037 ug/L	100
23) trans-1,2-Dichloroethene	7.70	61	214951	18.7615 ug/L	94
24) n-Hexane	7.80	57	173830	14.0356 ug/L	97
26) Vinyl Acetate	8.30	43	216093	30.3869 ug/L	99
27) 1,1-Dichloroethane	8.33	63	295127	19.2062 ug/L	98
29) 2-Butanone	8.88	43	34141	20.5580 ug/L	100
31) 2,2-Dichloropropane	9.10	77	227500	19.2117 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	164177	19.9119 ug/L	91
33) Chloroform	9.38	83	273262	19.7051 ug/L	99
34) 1-Bromopropane	9.51	122	30211	20.6139 ug/L	98
35) Bromochloromethane	9.62	130	86853	20.4501 ug/L	99
38) 1,1,1-Trichloroethane	9.92	97	245431	19.1873 ug/L	97
39) Cyclohexane	9.95	56	244961	16.4192 ug/L	99
40) 1,1-Dichloropropene	10.11	75	193560	17.6738 ug/L	96
42) Carbon Tetrachloride	10.26	117	203536	17.9709 ug/L	99
45) 1,2-Dichloroethane	10.42	62	177261	19.0847 ug/L	96
46) Benzene	10.46	78	600335	19.6097 ug/L	98
47) Trichloroethene	11.22	130	155025	17.7413 ug/L	96
48) Methylcyclohexane	11.30	83	205700	16.2336 ug/L	98
49) 1,2-Dichloropropane	11.44	63	174116	20.5298 ug/L	93
50) Bromodichloromethane	11.73	83	205465	19.5204 ug/L	99
52) Dibromomethane	11.82	93	82172	21.1797 ug/L	96
54) 4-Methyl-2-Pentanone	12.06	58	33714	21.4385 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\082515\8M406995.D Vial: 7
Acq On : 25 Aug 2015 11:47 Operator: TMB
Sample : L15081251-03 A MSD 826-LOW Inst : HPMS8
Misc : 1,1 STD72078 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 25 12:09:18 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
55)	cis-1,3-Dichloropropene	12.37	75	246461	21.2729 ug/L		99
56)	Dimethyl Disulfide	12.63	79	113367	18.0615 ug/L		89
59)	Toluene	12.79	91	679147	19.1303 ug/L		100
60)	Ethyl Methacrylate	12.88	69	138381	20.4231 ug/L		100
62)	trans-1,3-Dichloropropene	12.97	75	197935	18.8487 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	110532	19.8676 ug/L		97
64)	2-Hexanone	13.11	58	33581	21.3667 ug/L	#	96
65)	1,3-Dichloropropane	13.48	76	195539	20.1945 ug/L		97
66)	Tetrachloroethene	13.61	164	135158	18.0571 ug/L		96
67)	Dibromochloromethane	13.87	129	145334	19.8308 ug/L		99
68)	1,2-Dibromoethane	14.12	107	102236	18.8998 ug/L		98
69)	1-Chlorohexane	14.22	91	214687	17.1118 ug/L		99
70)	Chlorobenzene	14.63	112	464360	20.4290 ug/L		93
71)	1,1,1,2-Tetrachloroethane	14.66	131	155983	19.3170 ug/L		98
72)	Ethylbenzene	14.65	106	236086	18.4001 ug/L		99
73)	m-,p-Xylene	14.75	106	597835	39.4304 ug/L		95
74)	o-Xylene	15.30	106	301277	20.1912 ug/L		92
75)	Styrene	15.34	104	488616	20.0501 ug/L		94
76)	Bromoform	15.84	173	92384	20.9663 ug/L		98
77)	Isopropylbenzene	15.73	105	736733	19.7230 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.94	83	128738	20.1592 ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	34605	19.3050 ug/L		83
82)	trans-1,4-Dichloro-2-Buten	16.18	53	25102	10.7096 ug/L	#	1
83)	n-Propylbenzene	16.23	91	948479	18.3286 ug/L		98
84)	Bromobenzene	16.37	156	189820	18.1092 ug/L		96
85)	1,3,5-Trimethylbenzene	16.43	105	621605	18.1944 ug/L		96
86)	2-Chlorotoluene	16.51	91	618676	19.5728 ug/L		98
87)	4-Chlorotoluene	16.55	91	549054	18.2278 ug/L		96
88)	a-Methylstyrene	16.83	118	336205	18.1210 ug/L		96
89)	tert-Butylbenzene	16.89	134	135393	18.2922 ug/L		91
90)	1,2,4-Trimethylbenzene	16.94	105	639232	18.4669 ug/L		99
91)	sec-Butylbenzene	17.16	105	777117	18.4353 ug/L		99
92)	p-Isopropyltoluene	17.32	119	636812	17.5667 ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	396314	19.2813 ug/L		96
94)	1,4-Dichlorobenzene	17.64	146	380898	17.9770 ug/L		96
95)	n-Butylbenzene	17.85	91	607208	17.3707 ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	363071	20.0068 ug/L		97
97)	1,2-Dibromo-3-Chloropropan	19.13	75	19840	17.7455 ug/L		85
98)	1,2,4-Trichlorobenzene	20.27	180	246513	17.6519 ug/L		98
99)	Hexachlorobutadiene	20.42	225	101784	14.3228 ug/L		98
100)	Naphthalene	20.64	128	341994	18.8745 ug/L		99
101)	1,2,3-Trichlorobenzene	20.95	180	212754	17.6542 ug/L		97

(#) = qualifier out of range (m) = manual integration
8M406995.D 8260WT.M Tue Aug 25 12:09:18 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\082515\8M406995.D Vial: 7
Acq On : 25 Aug 2015 11:47 Operator: TMB
Sample : L15081251-03 A MSD 826-LOW Inst : HPMS8
Misc : 1,1 STD72078 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 25 12:09 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

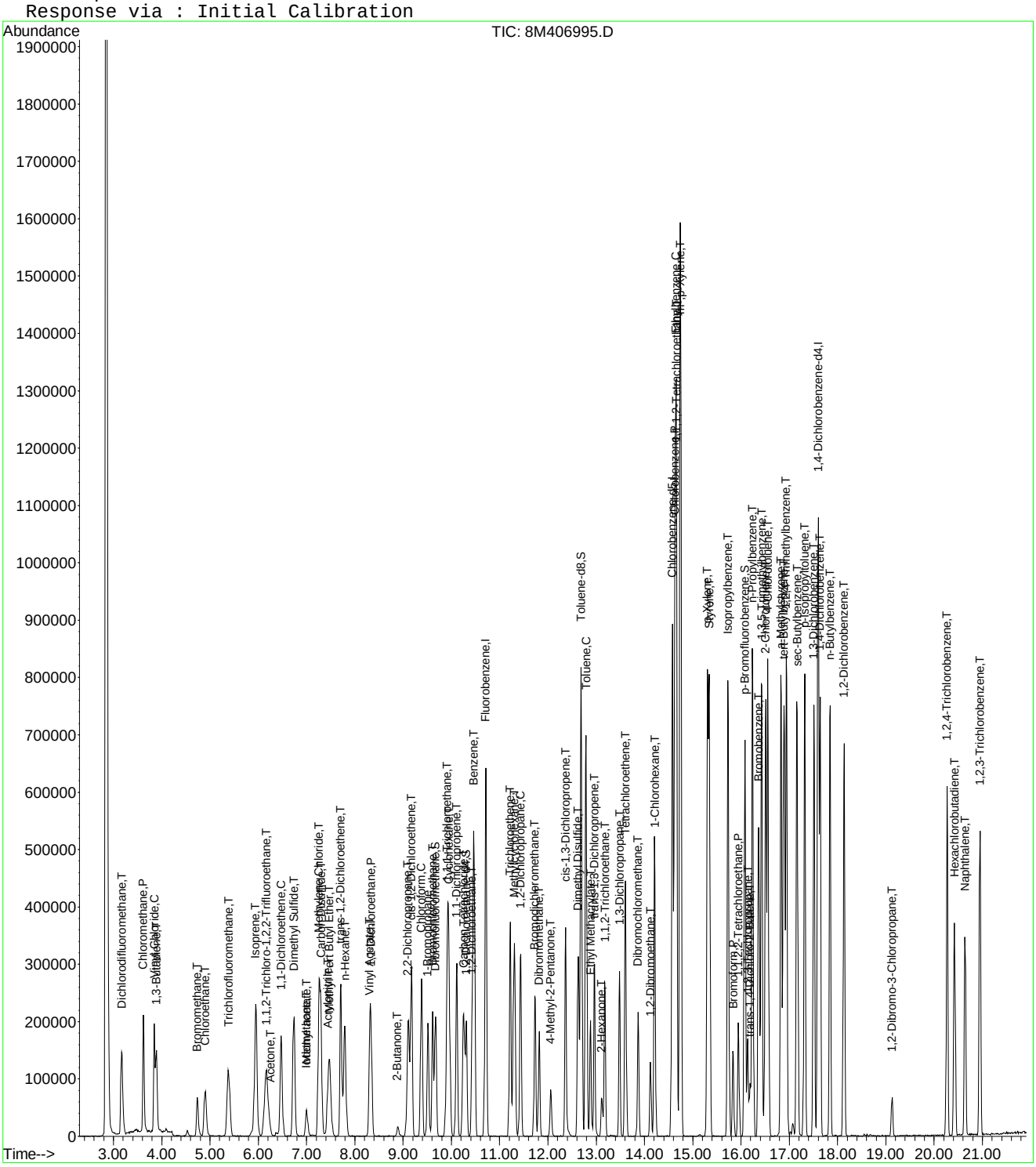

8M406995.D 8260WT.M Tue Aug 25 12:09:18 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082515\8M407002.D Vial: 14
Acq On : 25 Aug 2015 15:09 Operator: TMB
Sample : L15081251-04 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 26 08:00:31 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	694188	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	550830	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	299906	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	156505	25.5857 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.36%		
43) 1,2-Dichloroethane-d4	10.31	65	144814	23.8074 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 95.24%		
58) Toluene-d8	12.69	98	646922	24.3457 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.40%		
80) p-Bromofluorobenzene	16.08	95	245300	23.6469 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.60%		

Target Compounds					Qvalue
3) Chloromethane	3.62	50	3082	0.2604 ug/L	100
13) Acetone	6.26	43	259	0.2959 ug/L #	48

(#) = qualifier out of range (m) = manual integration
8M407002.D 8260WT.M Wed Aug 26 08:00:31 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082515\8M407002.D Vial: 14
Acq On : 25 Aug 2015 15:09 Operator: TMB
Sample : L15081251-04 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 26 8:00 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

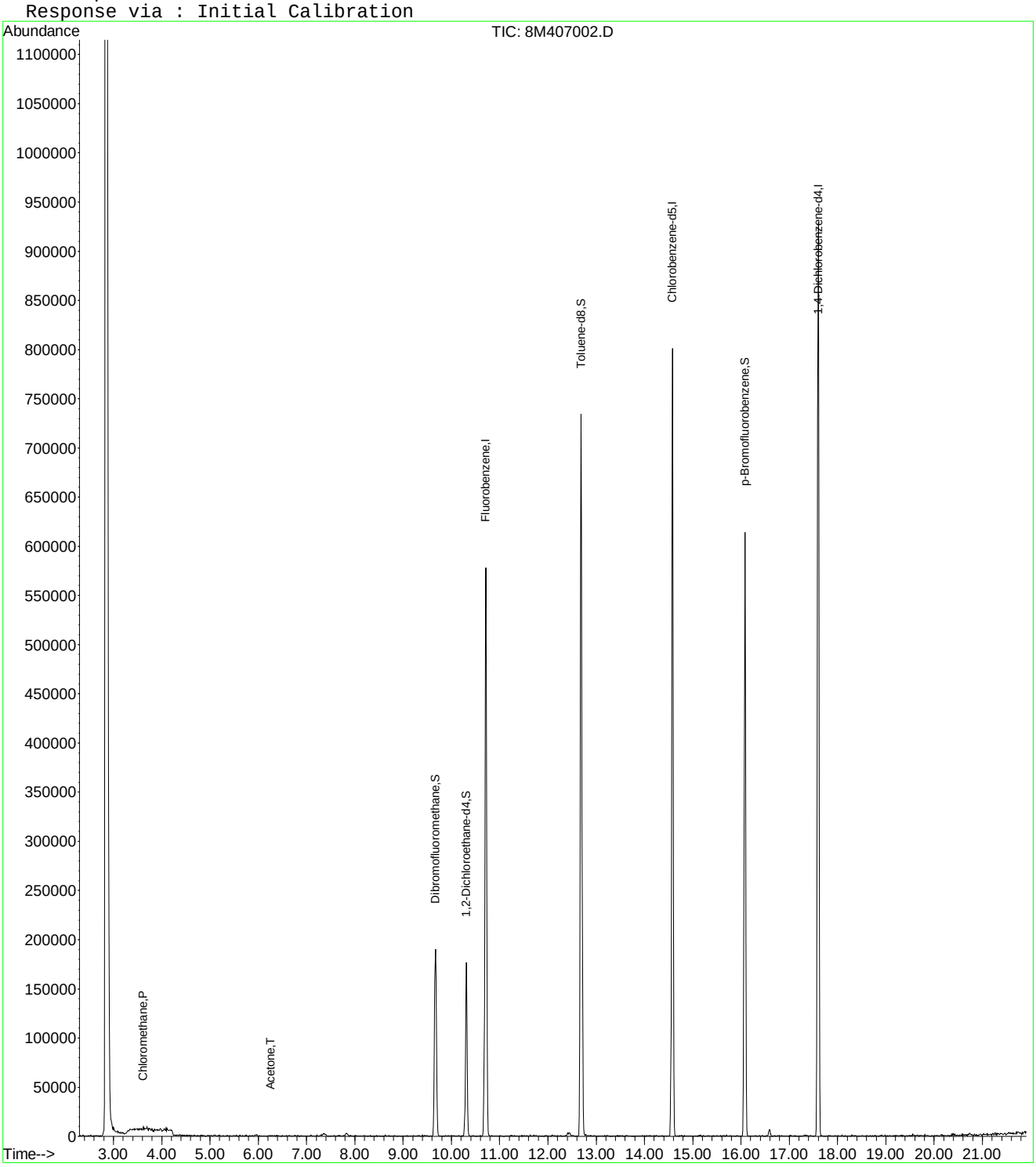

8M407002.D 8260WT.M Wed Aug 26 08:00:32 2015 Page 2

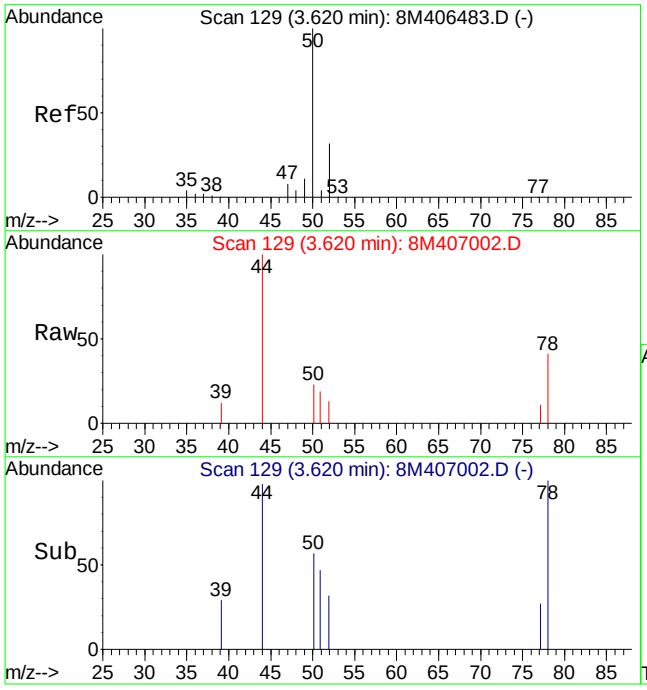

#3
Chloromethane
Concen: 0.26 ug/L
RT: 3.62 min Scan# 129
Delta R.T. 0.00 min
Lab File: 8M407002.D
Acq: 25 Aug 2015 15:09

Tgt Ion: 50 Resp: 3082

Ion	Ratio	Lower	Upper
50	100		
52	32.2	19.2	44.8

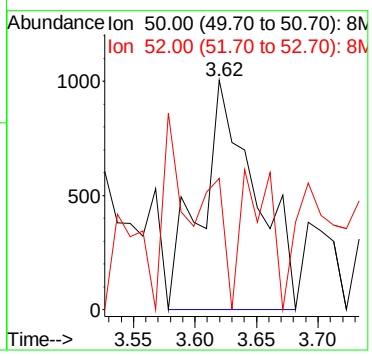

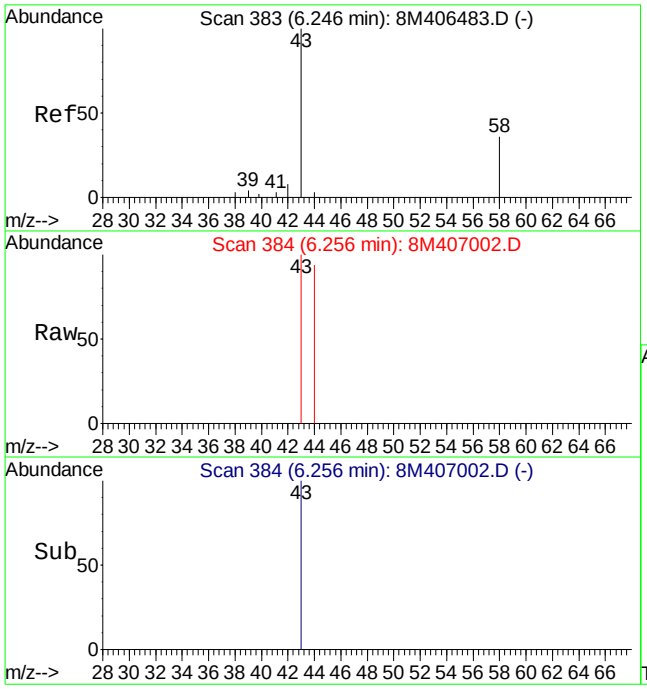

#13
Acetone
Concen: 0.30 ug/L
RT: 6.26 min Scan# 384
Delta R.T. 0.01 min
Lab File: 8M407002.D
Acq: 25 Aug 2015 15:09

Tgt Ion: 43 Resp: 259

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

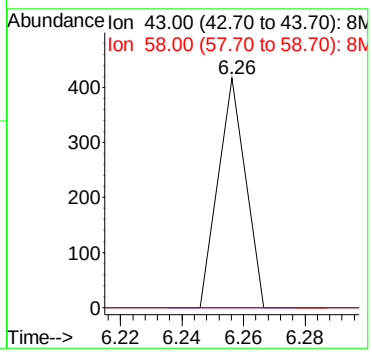

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082515\8M407003.D Vial: 15
Acq On : 25 Aug 2015 15:38 Operator: TMB
Sample : L15081251-05 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 26 08:00:32 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	681587	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	528590	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	285376	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	153717	25.5945 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.36%		
43) 1,2-Dichloroethane-d4	10.31	65	134805	22.5717 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 90.28%		
58) Toluene-d8	12.69	98	630523	24.7269 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.92%		
80) p-Bromofluorobenzene	16.08	95	231448	23.4476 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.80%		

Target Compounds					Qvalue
3) Chloromethane	3.62	50	3744	0.3222 ug/L #	68
32) cis-1,2-Dichloroethene	9.17	96	2961	0.4098 ug/L	82
47) Trichloroethene	11.22	130	4154	0.5425 ug/L	92

(#) = qualifier out of range (m) = manual integration
8M407003.D 8260WT.M Wed Aug 26 08:00:33 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082515\8M407003.D Vial: 15
Acq On : 25 Aug 2015 15:38 Operator: TMB
Sample : L15081251-05 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 26 8:00 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

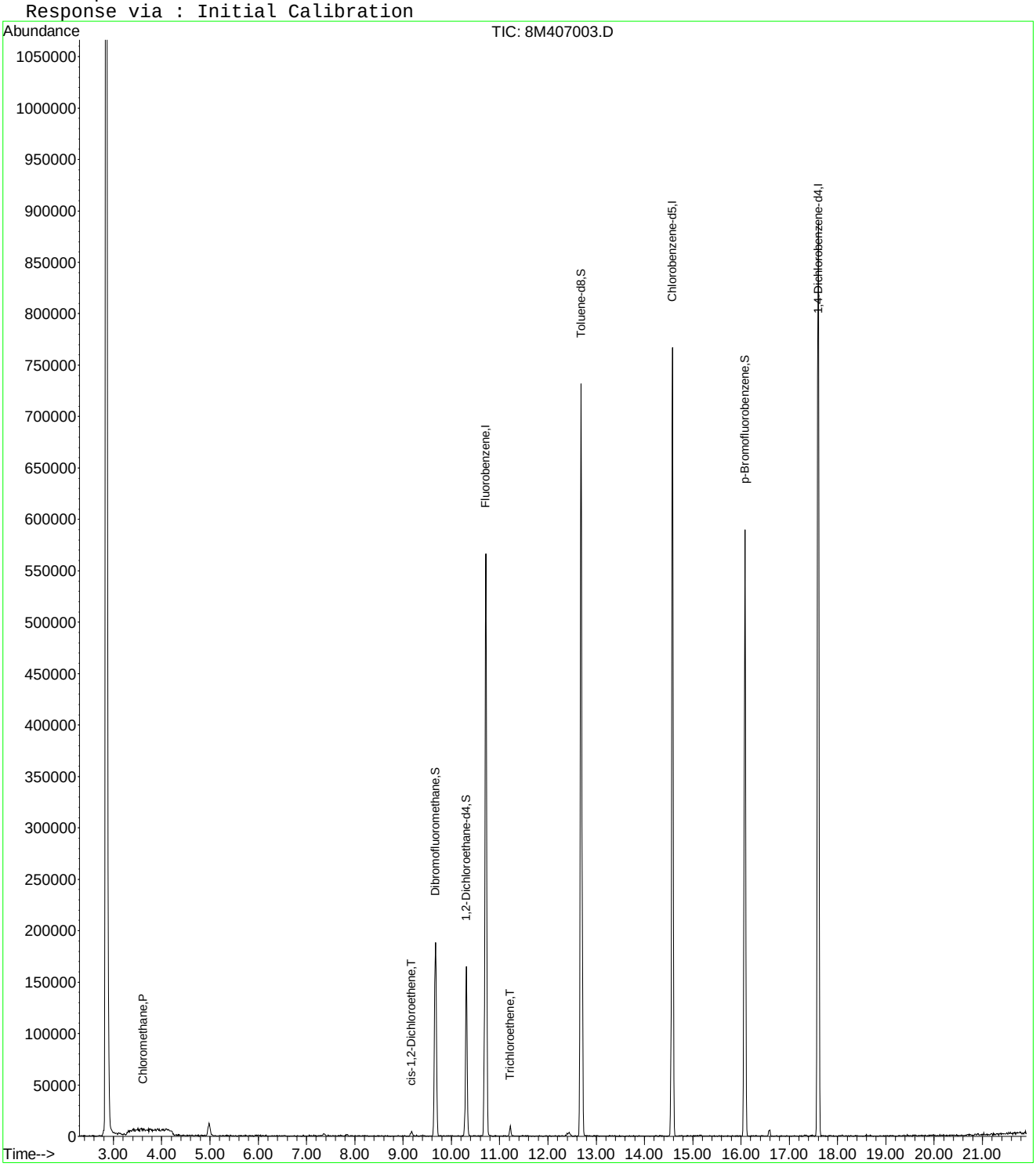

8M407003.D 8260WT.M Wed Aug 26 08:00:33 2015 Page 2

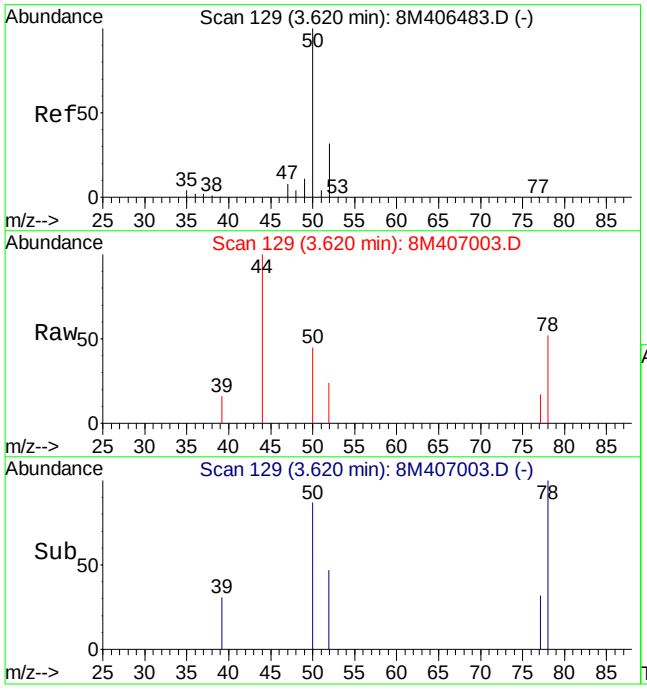

#3
Chloromethane
Concen: 0.32 ug/L
RT: 3.62 min Scan# 129
Delta R.T. 0.00 min
Lab File: 8M407003.D
Acq: 25 Aug 2015 15:38

Tgt Ion: 50 Resp: 3744

Ion	Ratio	Lower	Upper
50	100		
52	14.1	19.2	44.8#

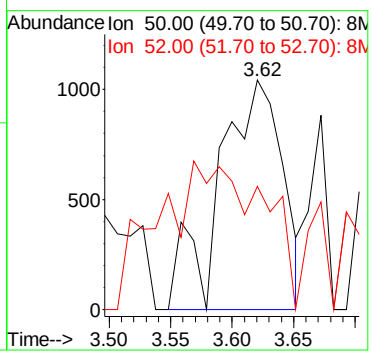

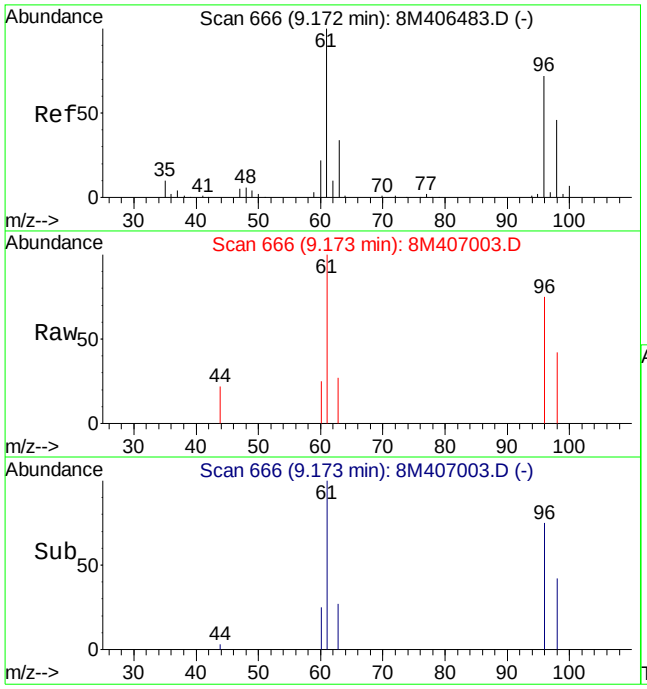

#32
cis-1,2-Dichloroethene
Concen: 0.41 ug/L
RT: 9.17 min Scan# 666
Delta R.T. 0.00 min
Lab File: 8M407003.D
Acq: 25 Aug 2015 15:38

Tgt Ion: 96 Resp: 2961

Ion	Ratio	Lower	Upper
96	100		
61	142.2	99.8	233.0

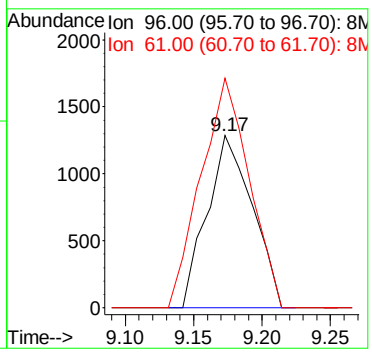

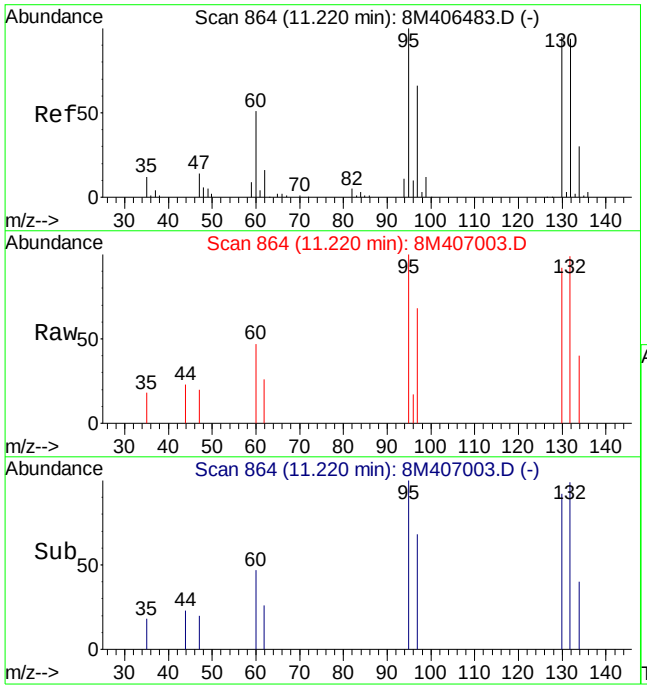

#47
Trichloroethene
Concen: 0.54 ug/L
RT: 11.22 min Scan# 864
Delta R.T. 0.00 min
Lab File: 8M407003.D
Acq: 25 Aug 2015 15:38

Tgt Ion:130 Resp: 4154

Ion	Ratio	Lower	Upper
130	100		
132	106.2	59.0	137.6
95	100.5	65.0	151.8

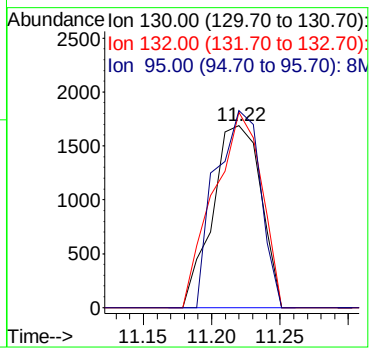

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082515\8M407004.D Vial: 16
Acq On : 25 Aug 2015 16:07 Operator: TMB
Sample : L15081251-06 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 26 08:00:33 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	655598	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	521026	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	277693	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	147655	25.5598 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.24%		
43) 1,2-Dichloroethane-d4	10.31	65	131292	22.8549 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 91.40%		
58) Toluene-d8	12.69	98	608243	24.1995 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.80%		
80) p-Bromofluorobenzene	16.08	95	229940	23.9393 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.76%		

Target Compounds					Qvalue
3) Chloromethane	3.63	50	4405	0.3941 ug/L	80
13) Acetone	6.26	43	636	0.7693 ug/L #	48

(#) = qualifier out of range (m) = manual integration
8M407004.D 8260WT.M Wed Aug 26 08:00:34 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082515\8M407004.D Vial: 16
Acq On : 25 Aug 2015 16:07 Operator: TMB
Sample : L15081251-06 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 26 8:00 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

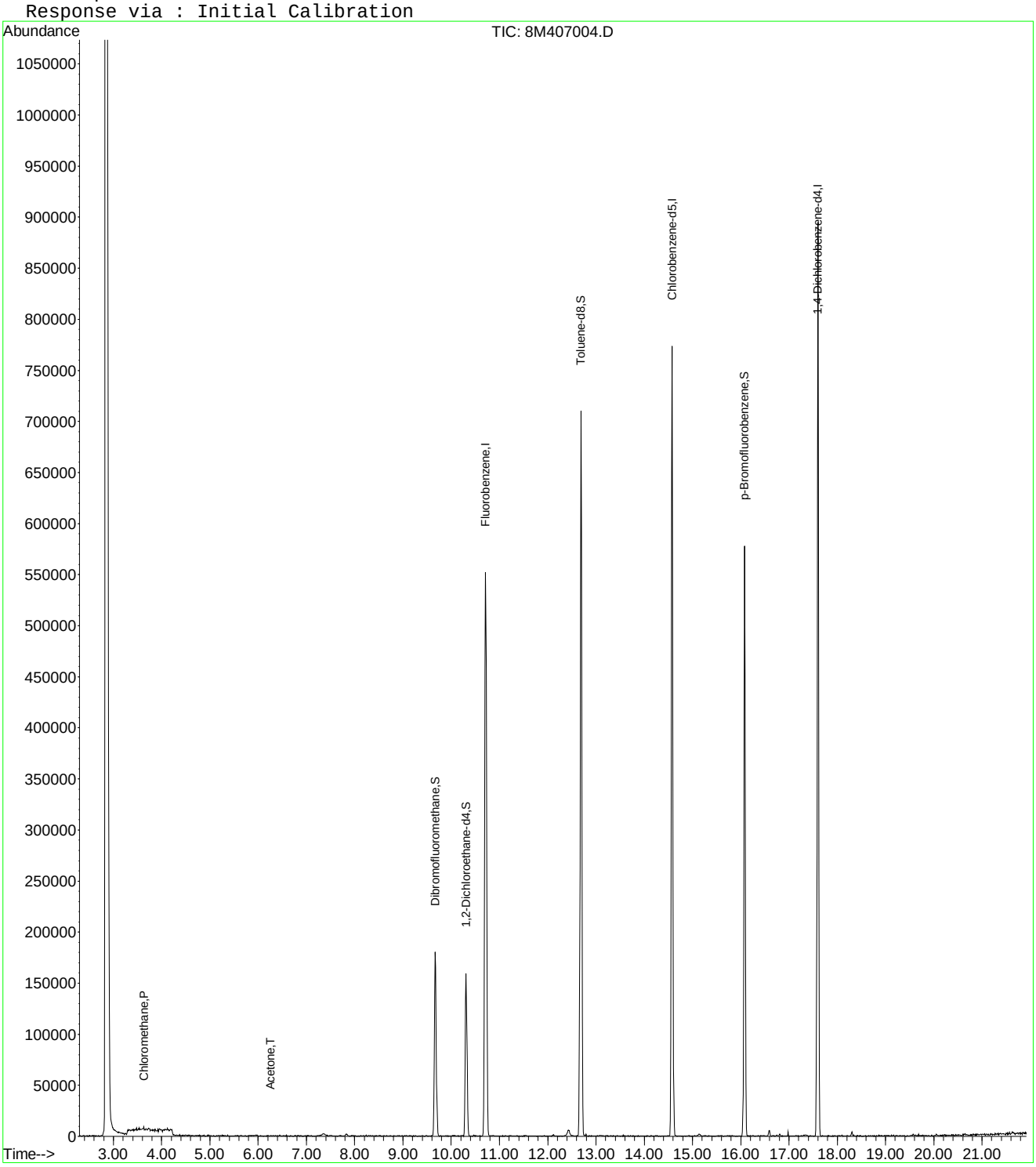

8M407004.D 8260WT.M Wed Aug 26 08:00:34 2015 Page 2

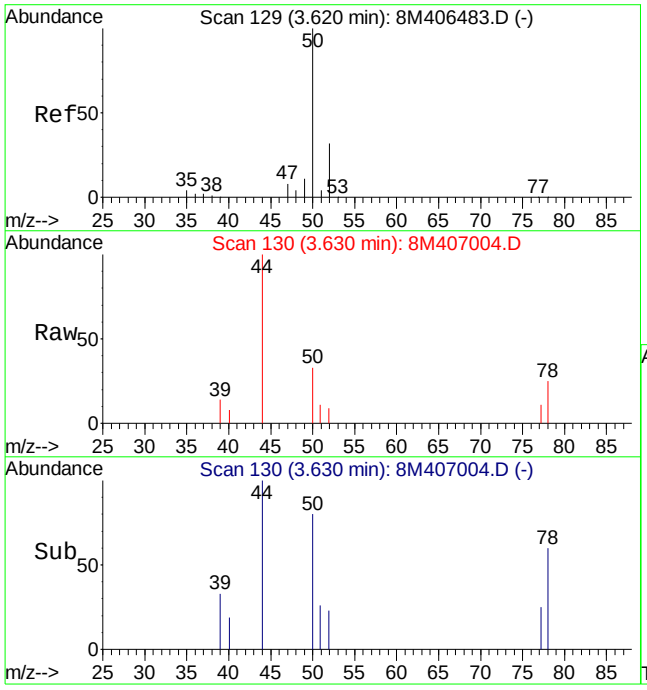

#3
Chloromethane
Concen: 0.39 ug/L
RT: 3.63 min Scan# 130
Delta R.T. 0.01 min
Lab File: 8M407004.D
Acq: 25 Aug 2015 16:07

Tgt Ion: 50 Resp: 4405

Ion	Ratio	Lower	Upper
50	100		
52	43.1	19.2	44.8

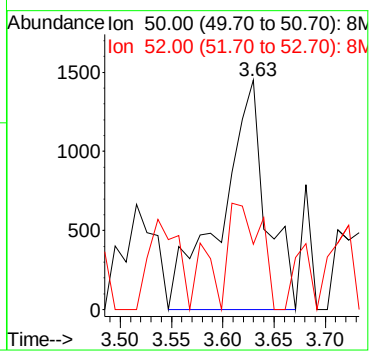

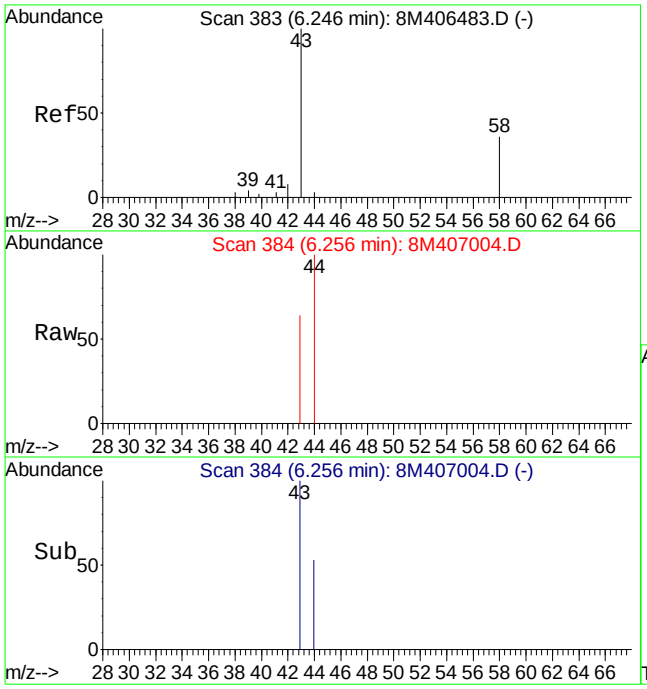

#13
Acetone
Concen: 0.77 ug/L
RT: 6.26 min Scan# 384
Delta R.T. 0.01 min
Lab File: 8M407004.D
Acq: 25 Aug 2015 16:07

Tgt Ion: 43 Resp: 636

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

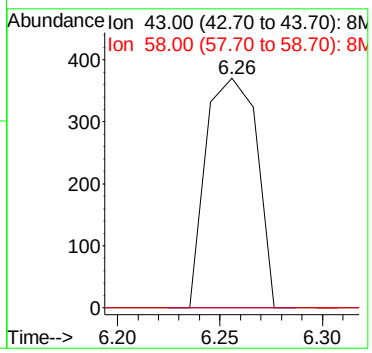

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082515\8M407005.D Vial: 17
Acq On : 25 Aug 2015 16:36 Operator: TMB
Sample : L15081251-07 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 26 08:00:34 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	660295	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	509997	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	283104	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	151197	25.9867 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.96%		
43) 1,2-Dichloroethane-d4	10.31	65	137356	23.7405 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.96%		
58) Toluene-d8	12.69	98	614961	24.9959 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.00%		
80) p-Bromofluorobenzene	16.08	95	230672	23.5565 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.24%		

Target Compounds					Qvalue
3) Chloromethane	3.61	50	3414	0.3032 ug/L	83
32) cis-1,2-Dichloroethene	9.18	96	2307	0.3296 ug/L	87

(#) = qualifier out of range (m) = manual integration
8M407005.D 8260WT.M Wed Aug 26 08:00:35 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082515\8M407005.D Vial: 17
Acq On : 25 Aug 2015 16:36 Operator: TMB
Sample : L15081251-07 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 26 8:00 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

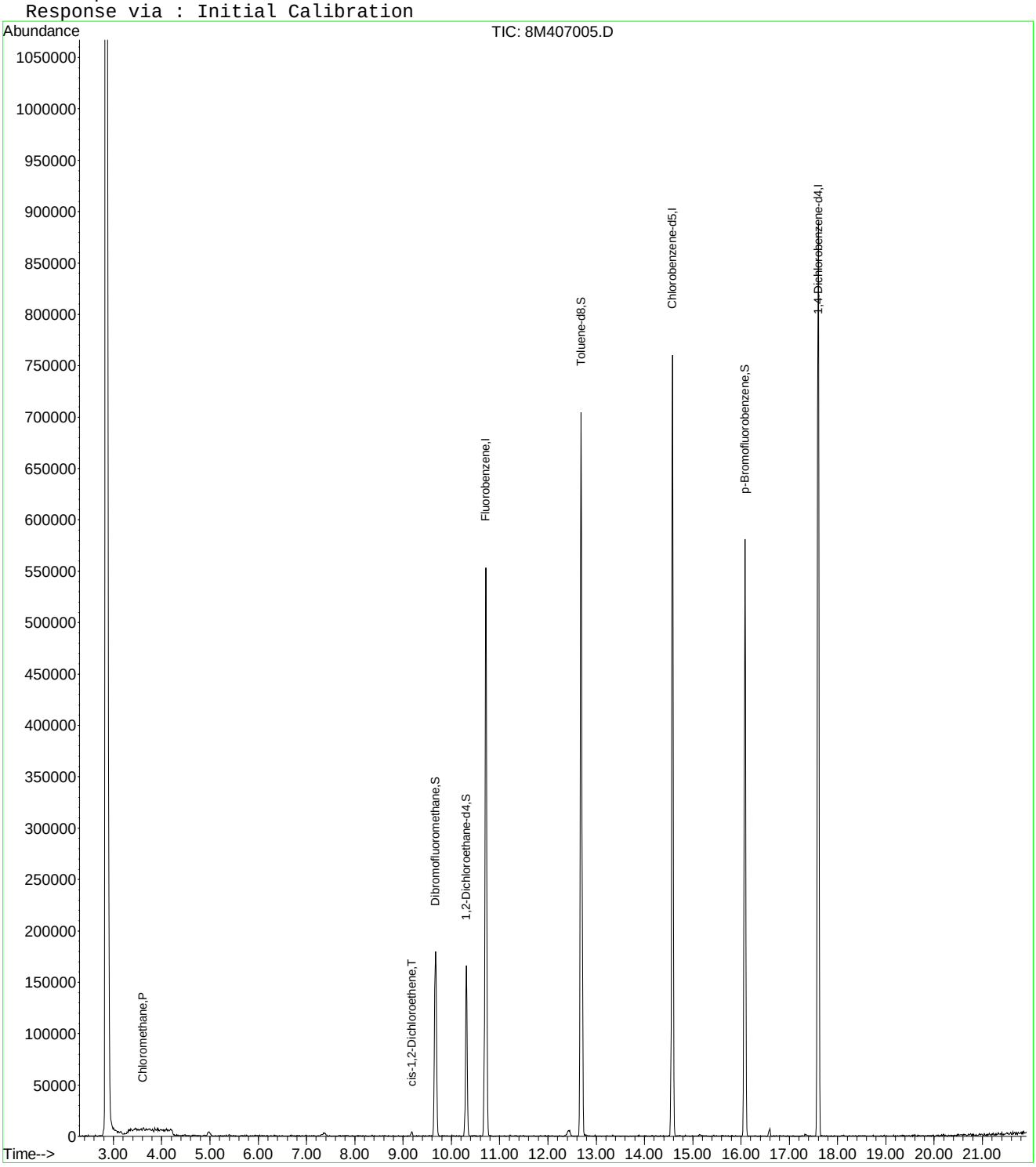

8M407005.D 8260WT.M Wed Aug 26 08:00:35 2015 Page 2

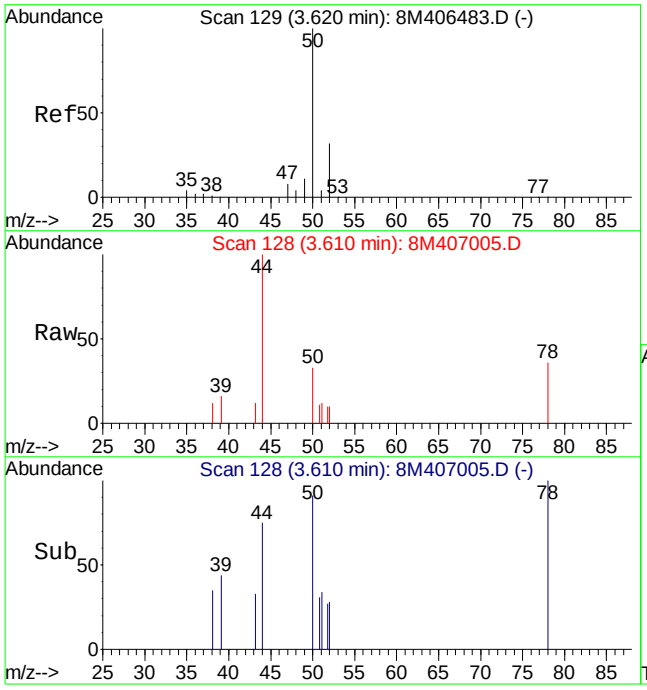

#3
Chloromethane
Concen: 0.30 ug/L
RT: 3.61 min Scan# 128
Delta R.T. -0.01 min
Lab File: 8M407005.D
Acq: 25 Aug 2015 16:36

Tgt Ion: 50 Resp: 3414

Ion	Ratio	Lower	Upper
50	100		
52	41.6	19.2	44.8

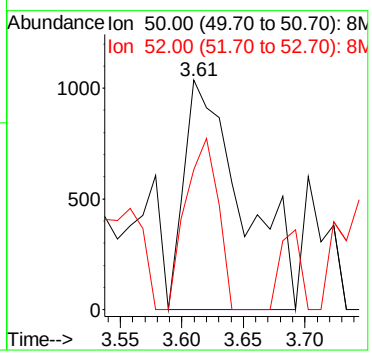

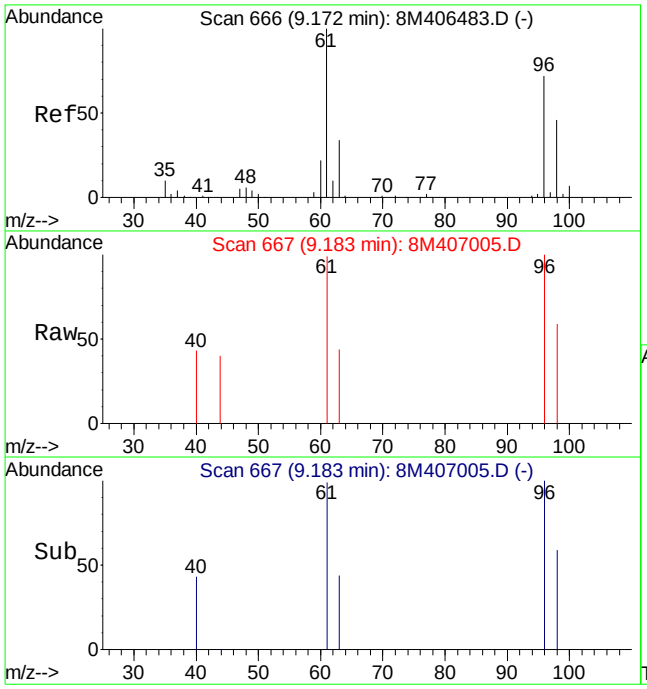

#32
cis-1,2-Dichloroethene
Concen: 0.33 ug/L
RT: 9.18 min Scan# 667
Delta R.T. 0.01 min
Lab File: 8M407005.D
Acq: 25 Aug 2015 16:36

Tgt Ion: 96 Resp: 2307

Ion	Ratio	Lower	Upper
96	100		
61	148.3	99.8	233.0

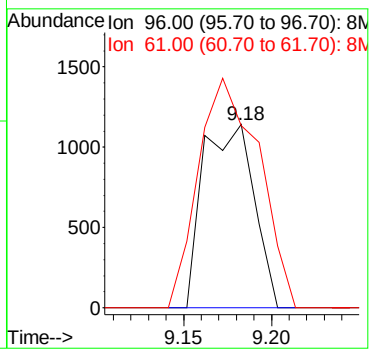

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082515\8M407010.D Vial: 22
Acq On : 25 Aug 2015 19:00 Operator: TMB
Sample : L15081251-08 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 26 08:00:40 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	620822	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	485777	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	265957	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	141906	25.9406 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.76%		
43) 1,2-Dichloroethane-d4	10.31	65	129078	23.7282 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.92%		
58) Toluene-d8	12.69	98	578164	24.6719 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.68%		
80) p-Bromofluorobenzene	16.08	95	213433	23.2013 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.80%		

Target Compounds					Qvalue
3) Chloromethane	3.62	50	3568	0.3371 ug/L	93
4) Vinyl Chloride	3.86	62	9736	1.2507 ug/L	89
13) Acetone	6.25	43	924	1.1803 ug/L #	48
32) cis-1,2-Dichloroethene	9.17	96	66761	10.1445 ug/L	81
47) Trichloroethene	11.22	130	106201	15.2272 ug/L	94
48) Methylcyclohexane	11.22	83	1453	0.1437 ug/L #	1
66) Tetrachloroethene	13.61	164	11503	1.9218 ug/L	96

(#) = qualifier out of range (m) = manual integration
8M407010.D 8260WT.M Wed Aug 26 08:00:41 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082515\8M407010.D Vial: 22
Acq On : 25 Aug 2015 19:00 Operator: TMB
Sample : L15081251-08 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 26 8:00 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

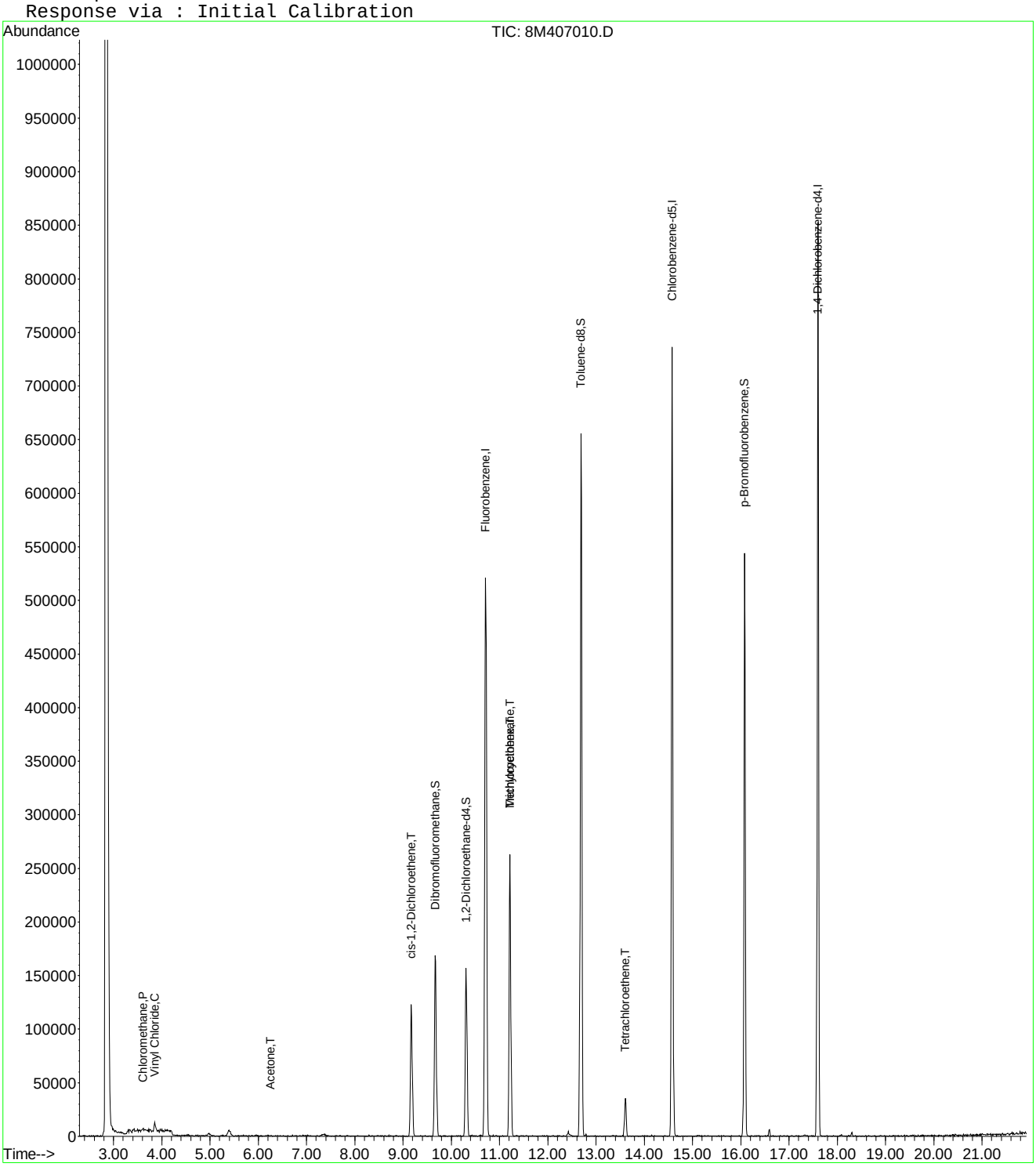

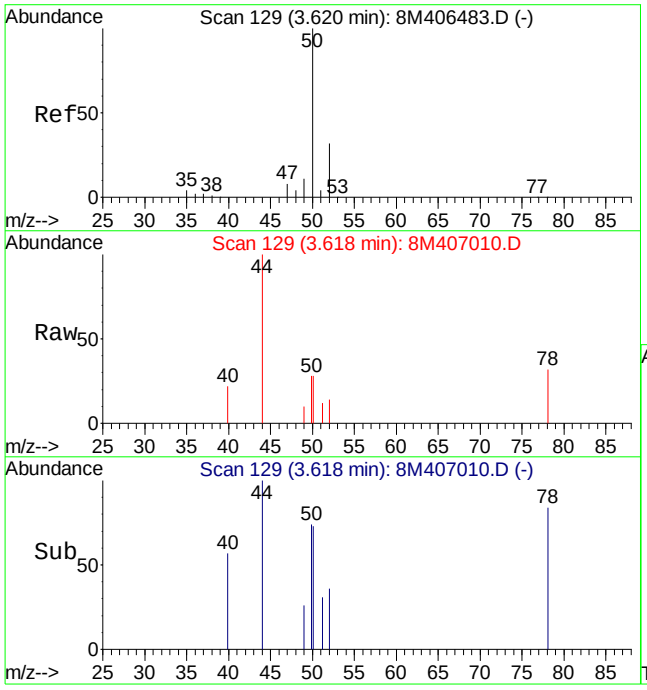

#3
Chloromethane
Concen: 0.34 ug/L
RT: 3.62 min Scan# 129
Delta R.T. -0.00 min
Lab File: 8M407010.D
Acq: 25 Aug 2015 19:00

Tgt Ion: 50 Resp: 3568

Ion	Ratio	Lower	Upper
50	100		
52	36.2	19.2	44.8

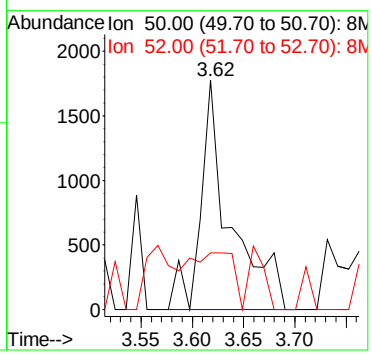

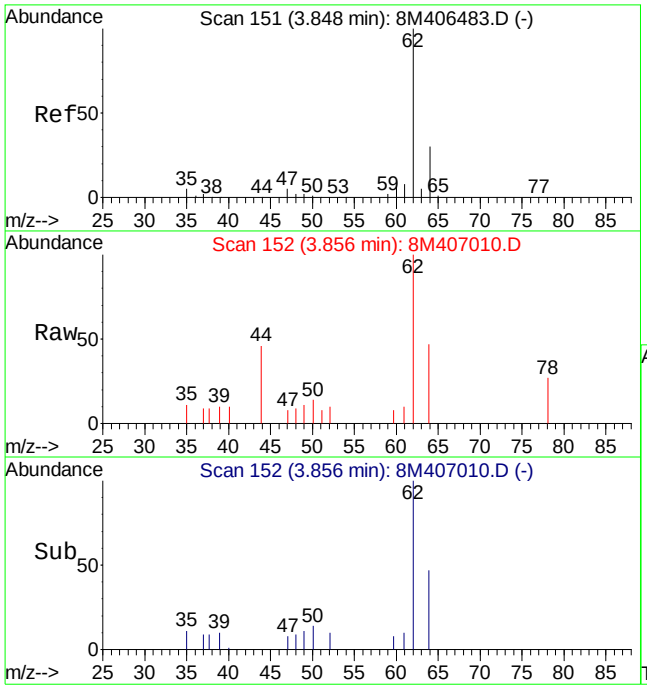

#4
Vinyl Chloride
Concen: 1.25 ug/L
RT: 3.86 min Scan# 152
Delta R.T. 0.01 min
Lab File: 8M407010.D
Acq: 25 Aug 2015 19:00

Tgt Ion: 62 Resp: 9736

Ion	Ratio	Lower	Upper
62	100		
64	36.2	18.2	42.6

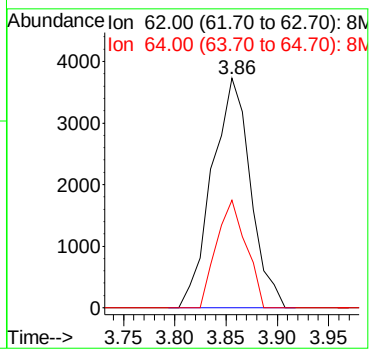

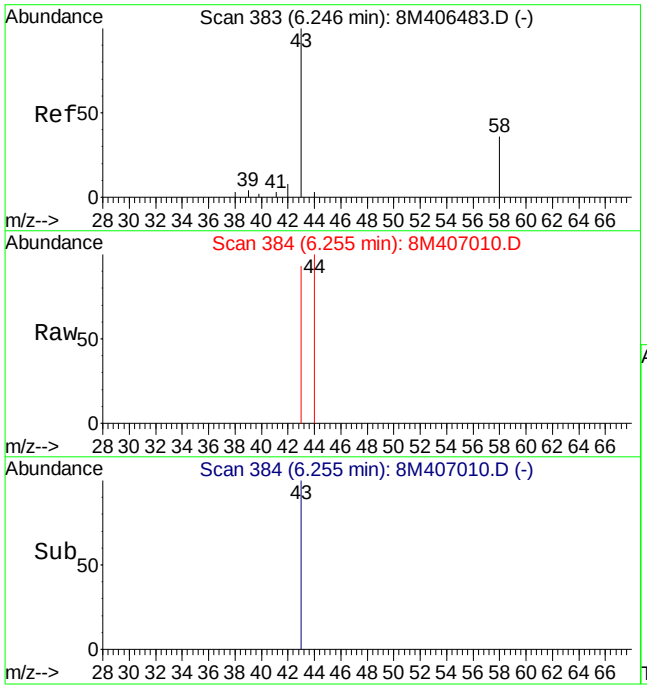

#13
Acetone
Concen: 1.18 ug/L
RT: 6.25 min Scan# 384
Delta R.T. 0.01 min
Lab File: 8M407010.D
Acq: 25 Aug 2015 19:00

Tgt Ion: 43 Resp: 924

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

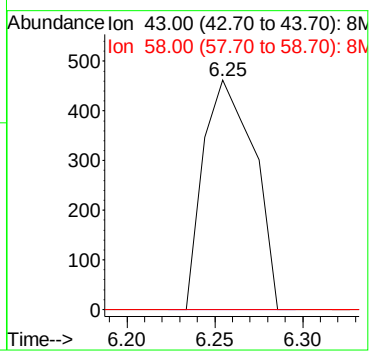

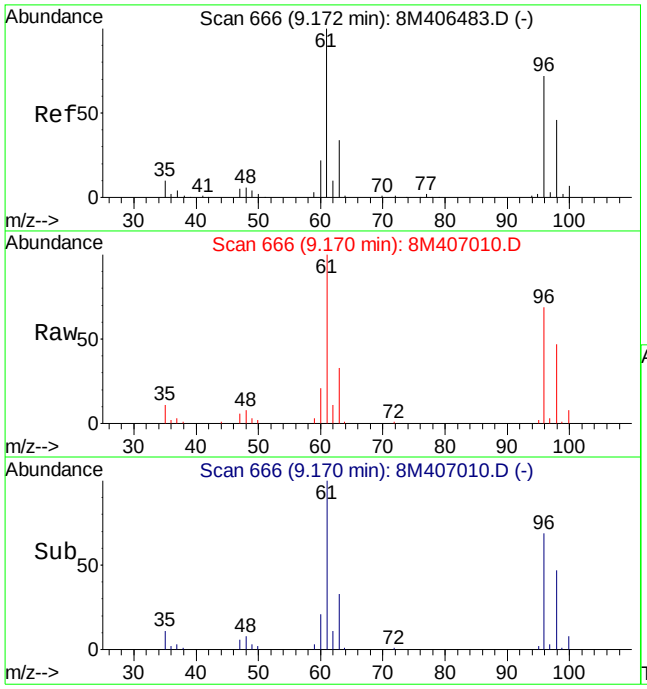

#32
cis-1,2-Dichloroethene
Concen: 10.14 ug/L
RT: 9.17 min Scan# 666
Delta R.T. -0.00 min
Lab File: 8M407010.D
Acq: 25 Aug 2015 19:00

Tgt Ion: 96 Resp: 66761

Ion	Ratio	Lower	Upper
96	100		
61	140.9	99.8	233.0

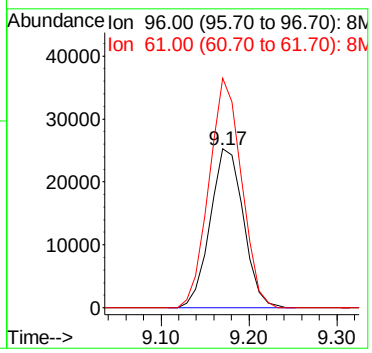

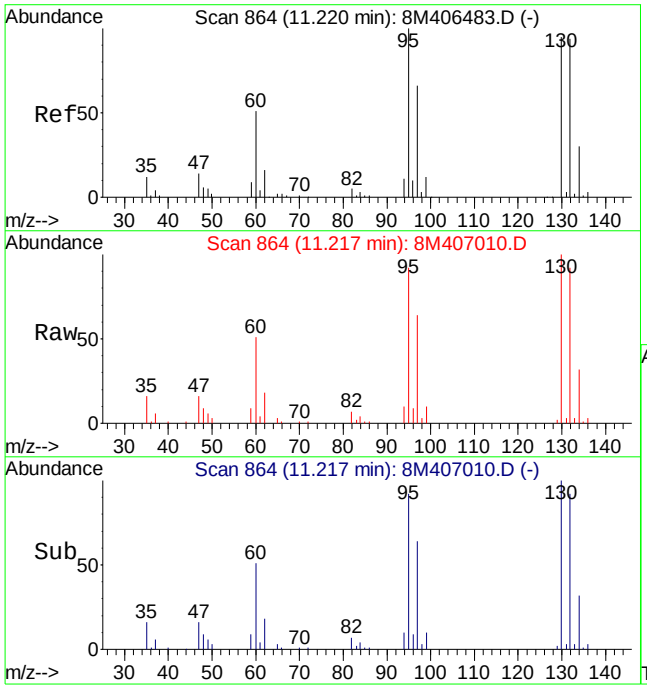

#47
Trichloroethene
Concen: 15.23 ug/L
RT: 11.22 min Scan# 864
Delta R.T. -0.00 min
Lab File: 8M407010.D
Acq: 25 Aug 2015 19:00

Tgt Ion:130 Resp: 106201

Ion	Ratio	Lower	Upper
130	100		
132	92.6	59.0	137.6
95	101.9	65.0	151.8

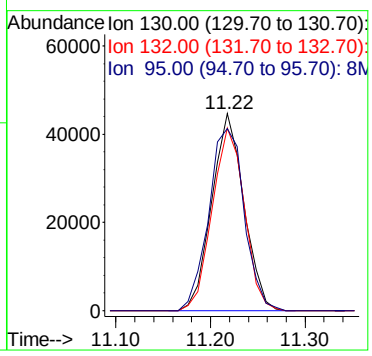

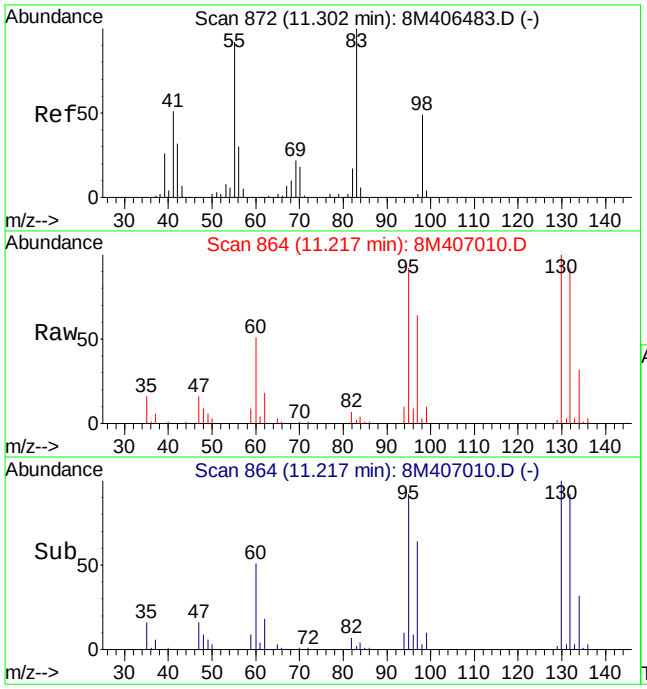

#48
Methylcyclohexane
Concen: 0.14 ug/L
RT: 11.22 min Scan# 864
Delta R.T. -0.08 min
Lab File: 8M407010.D
Acq: 25 Aug 2015 19:00

Tgt Ion: 83 Resp: 1453

Ion	Ratio	Lower	Upper
83	100		
55	0.0	54.8	128.0#
98	183.7	29.0	67.8#

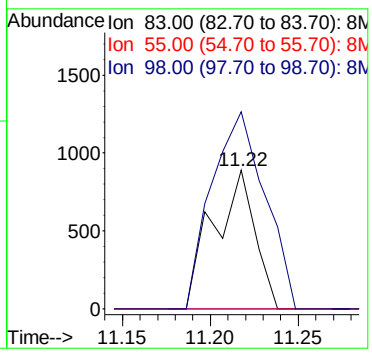

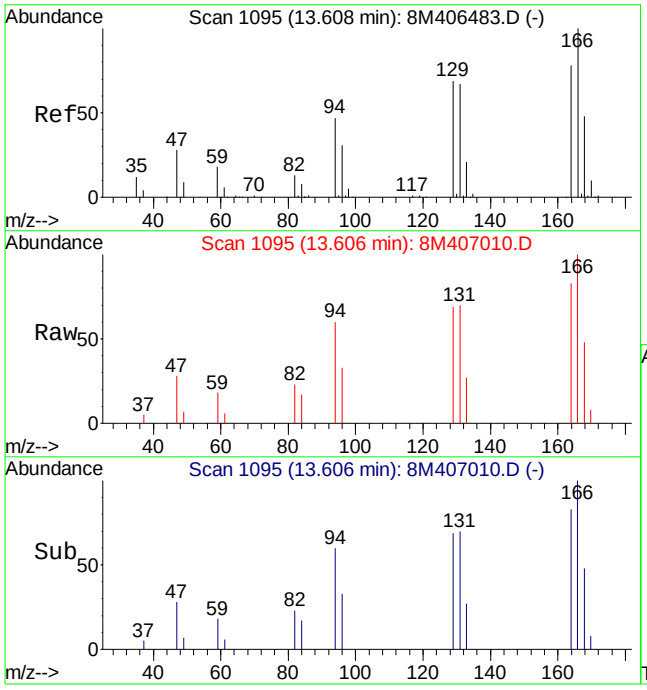

#66
Tetrachloroethene
Concen: 1.92 ug/L
RT: 13.61 min Scan# 1095
Delta R.T. -0.00 min
Lab File: 8M407010.D
Acq: 25 Aug 2015 19:00

Tgt Ion:164 Resp: 11503

Ion	Ratio	Lower	Upper
164	100		
129	84.3	54.3	126.7
94	64.1	38.3	89.5

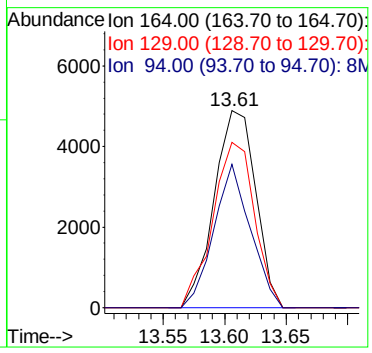

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082515\8M407011.D Vial: 23
Acq On : 25 Aug 2015 19:29 Operator: TMB
Sample : L15081251-09 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 26 08:00:42 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	615929	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	475745	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	260697	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	144965	26.7103 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.84%		
43) 1,2-Dichloroethane-d4	10.31	65	130028	24.0927 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.36%		
58) Toluene-d8	12.69	98	562431	24.5066 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.04%		
80) p-Bromofluorobenzene	16.08	95	211261	23.4285 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.72%		

Target Compounds

					Qvalue
3) Chloromethane	3.63	50	4480	0.4266 ug/L #	74
4) Vinyl Chloride	3.86	62	10679	1.3827 ug/L	96
13) Acetone	6.27	43	1101	1.4176 ug/L	88
32) cis-1,2-Dichloroethene	9.17	96	67711	10.3706 ug/L	80
47) Trichloroethene	11.22	130	104304	15.0740 ug/L	97
66) Tetrachloroethene	13.60	164	11790	2.0113 ug/L	96

(#) = qualifier out of range (m) = manual integration
8M407011.D 8260WT.M Wed Aug 26 08:00:42 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082515\8M407011.D Vial: 23
Acq On : 25 Aug 2015 19:29 Operator: TMB
Sample : L15081251-09 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 26 8:00 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

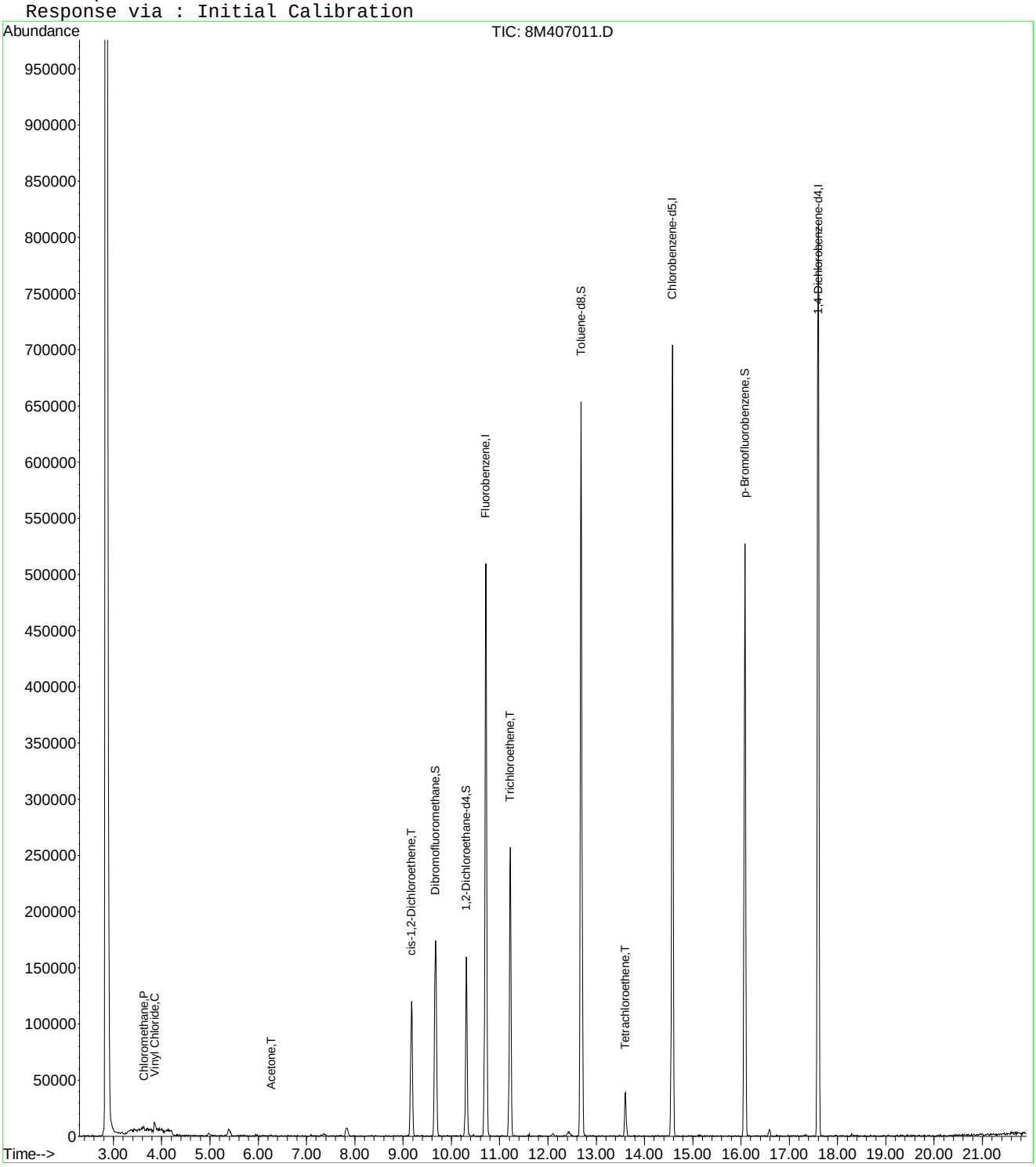

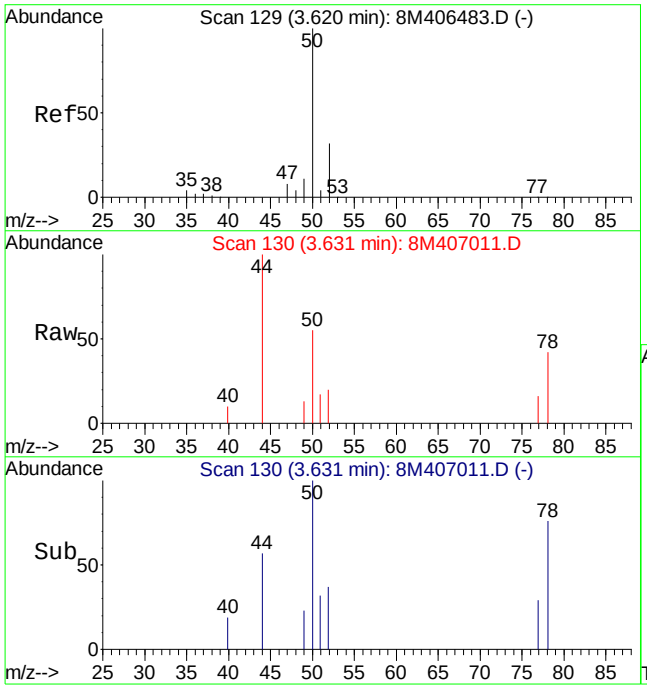

#3
Chloromethane
Concen: 0.43 ug/L
RT: 3.63 min Scan# 130
Delta R.T. 0.01 min
Lab File: 8M407011.D
Acq: 25 Aug 2015 19:29

Tgt Ion: 50 Resp: 4480

Ion	Ratio	Lower	Upper
50	100		
52	46.6	19.2	44.8#

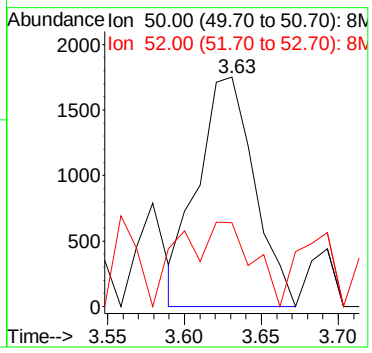

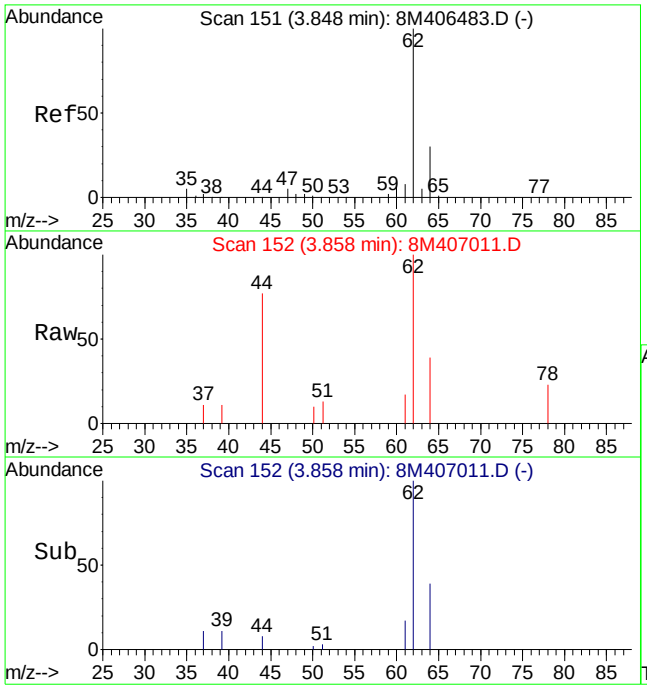

#4
Vinyl Chloride
Concen: 1.38 ug/L
RT: 3.86 min Scan# 152
Delta R.T. 0.01 min
Lab File: 8M407011.D
Acq: 25 Aug 2015 19:29

Tgt Ion: 62 Resp: 10679

Ion	Ratio	Lower	Upper
62	100		
64	32.7	18.2	42.6

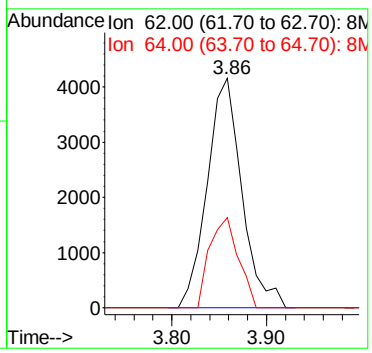

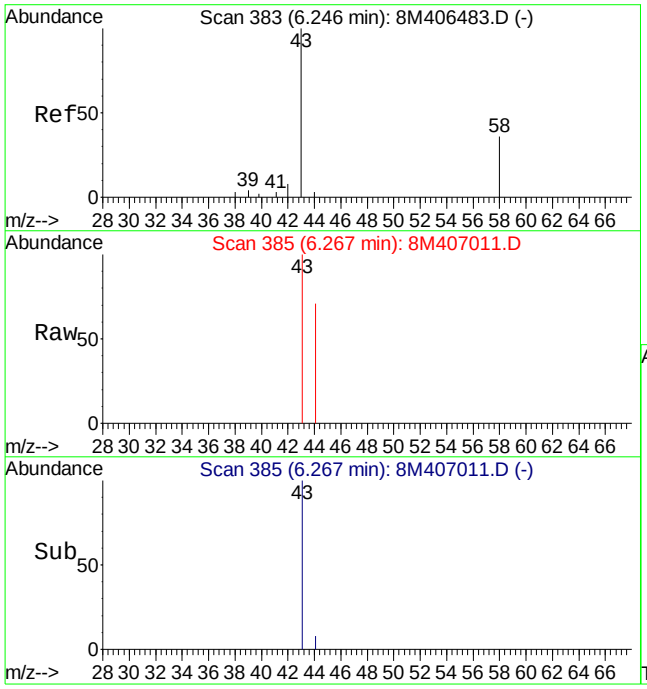

#13
Acetone
Concen: 1.42 ug/L
RT: 6.27 min Scan# 385
Delta R.T. 0.02 min
Lab File: 8M407011.D
Acq: 25 Aug 2015 19:29

Tgt Ion: 43 Resp: 1101

Ion	Ratio	Lower	Upper
43	100		
58	20.8	16.4	38.2

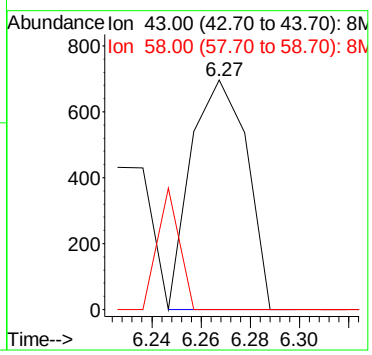

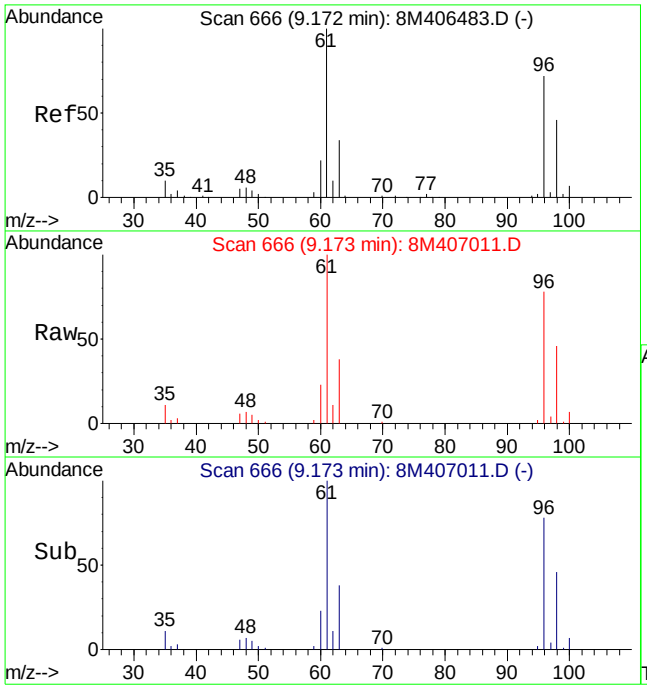

#32
cis-1,2-Dichloroethene
Concen: 10.37 ug/L
RT: 9.17 min Scan# 666
Delta R.T. 0.00 min
Lab File: 8M407011.D
Acq: 25 Aug 2015 19:29

Tgt Ion: 96 Resp: 67711

Ion	Ratio	Lower	Upper
96	100		
61	138.7	99.8	233.0

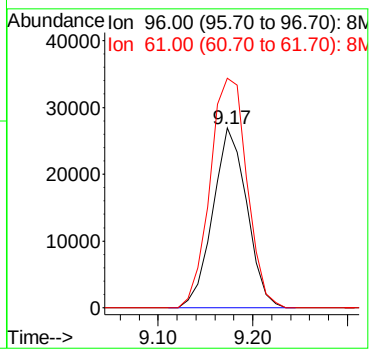

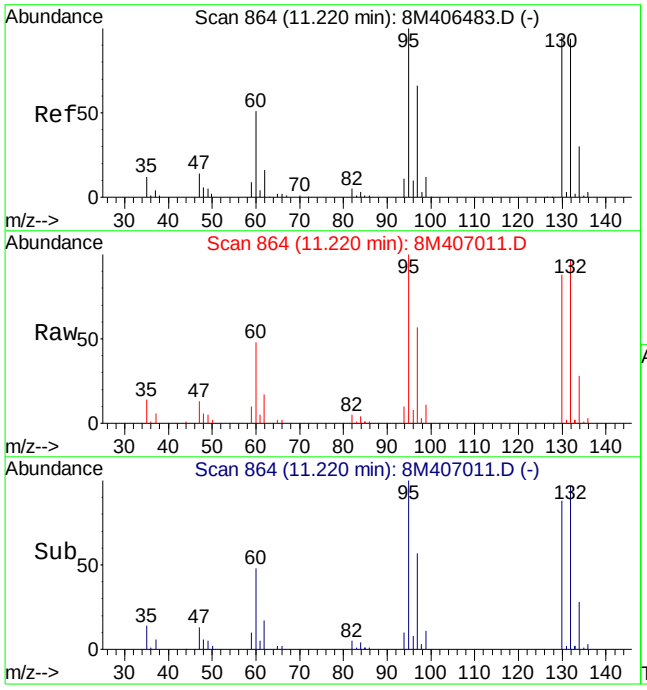

#47
Trichloroethene
Concen: 15.07 ug/L
RT: 11.22 min Scan# 864
Delta R.T. 0.00 min
Lab File: 8M407011.D
Acq: 25 Aug 2015 19:29

Tgt Ion:130 Resp: 104304

Ion	Ratio	Lower	Upper
130	100		
132	100.9	59.0	137.6
95	104.2	65.0	151.8

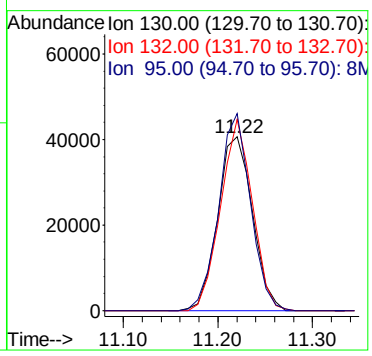

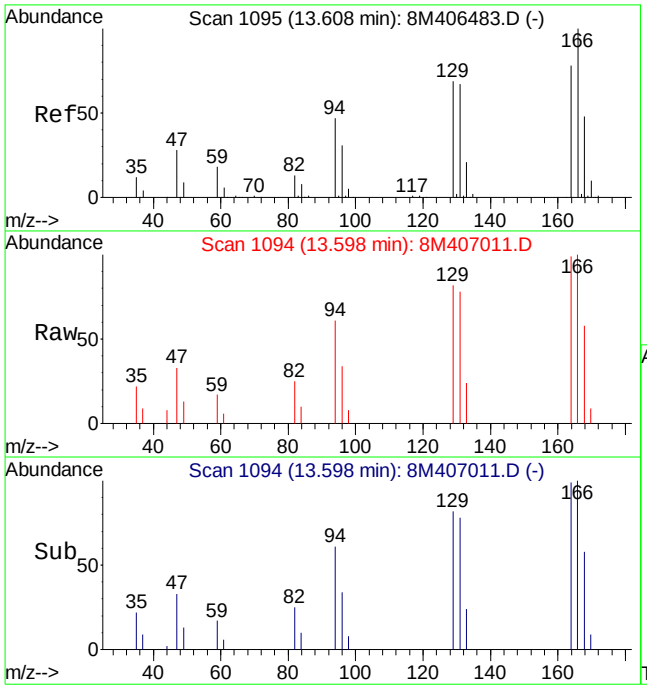

#66
Tetrachloroethene
Concen: 2.01 ug/L
RT: 13.60 min Scan# 1094
Delta R.T. -0.01 min
Lab File: 8M407011.D
Acq: 25 Aug 2015 19:29

Tgt Ion:164 Resp: 11790

Ion	Ratio	Lower	Upper
164	100		
129	95.3	54.3	126.7
94	65.3	38.3	89.5

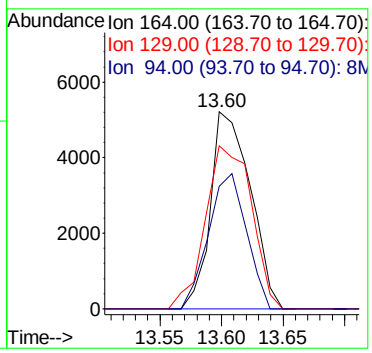

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082515\8M407006.D Vial: 18
Acq On : 25 Aug 2015 17:05 Operator: TMB
Sample : L15081251-10 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 26 08:00:35 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	648115	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	515478	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	277462	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	151791	26.5791 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.32%		
43) 1,2-Dichloroethane-d4	10.31	65	137086	24.1391 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.56%		
58) Toluene-d8	12.69	98	611416	24.5875 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.36%		
80) p-Bromofluorobenzene	16.08	95	224884	23.4324 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.72%		

Target Compounds

					Qvalue
3) Chloromethane	3.62	50	3693	0.3342 ug/L #	63
13) Acetone	6.23	43	205	0.2508 ug/L #	48
47) Trichloroethene	11.22	130	10945	1.5032 ug/L	90
81) 1,2,3-Trichloropropane	16.09	110	211	0.1491 ug/L #	1

(#) = qualifier out of range (m) = manual integration
8M407006.D 8260WT.M Wed Aug 26 08:00:36 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082515\8M407006.D Vial: 18
Acq On : 25 Aug 2015 17:05 Operator: TMB
Sample : L15081251-10 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 26 8:00 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

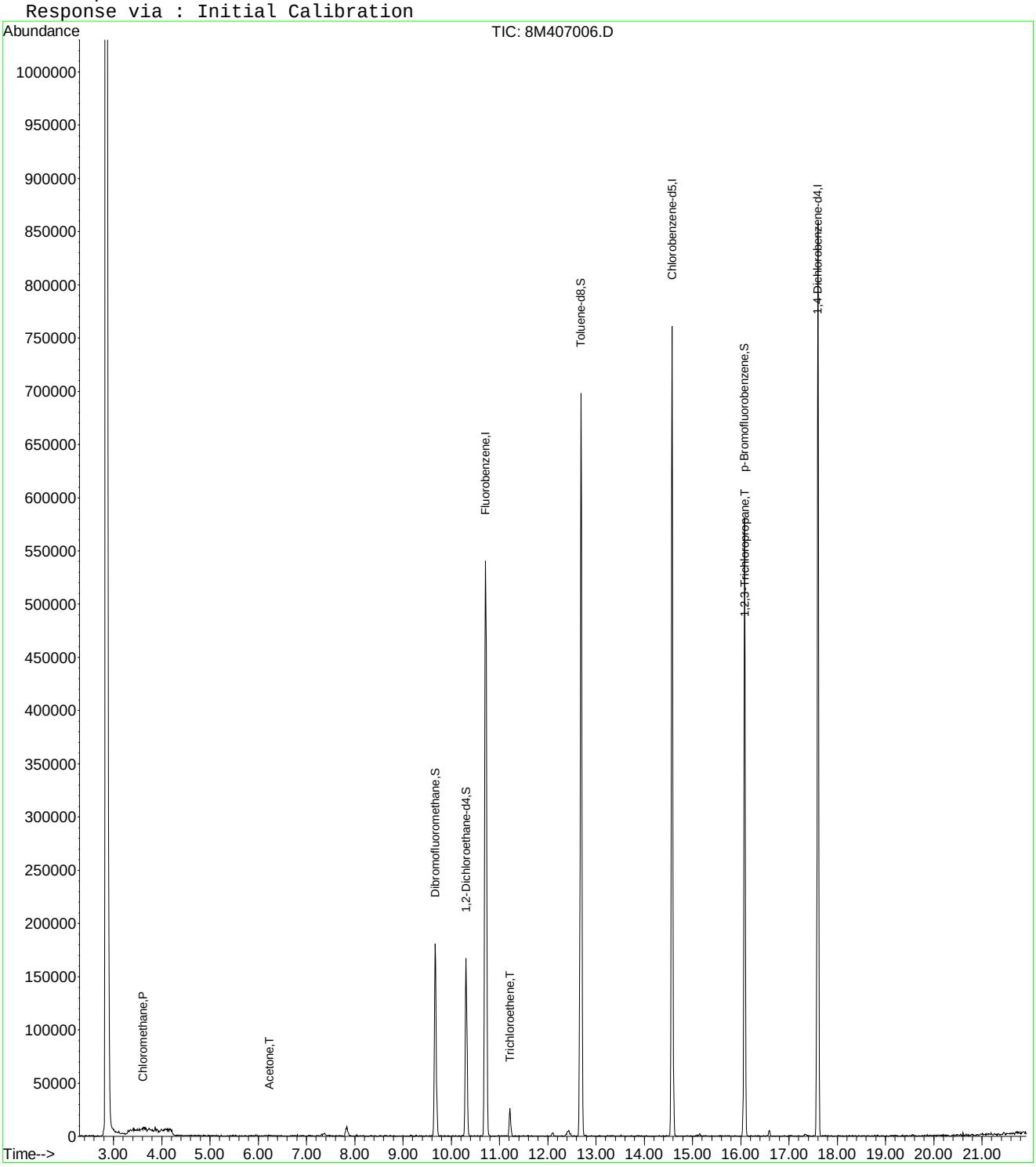

8M407006.D 8260WT.M Wed Aug 26 08:00:36 2015 Page 2

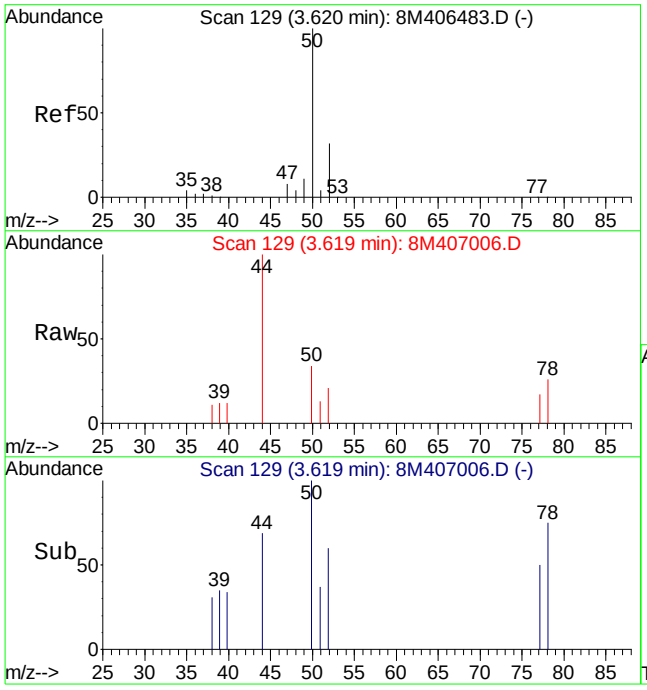

#3
Chloromethane
Concen: 0.33 ug/L
RT: 3.62 min Scan# 129
Delta R.T. 0.00 min
Lab File: 8M407006.D
Acq: 25 Aug 2015 17:05

Tgt Ion: 50 Resp: 3693

Ion	Ratio	Lower	Upper
50	100		
52	52.8	19.2	44.8#

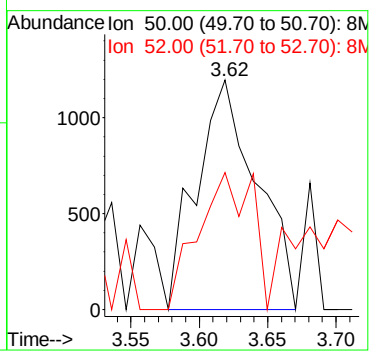

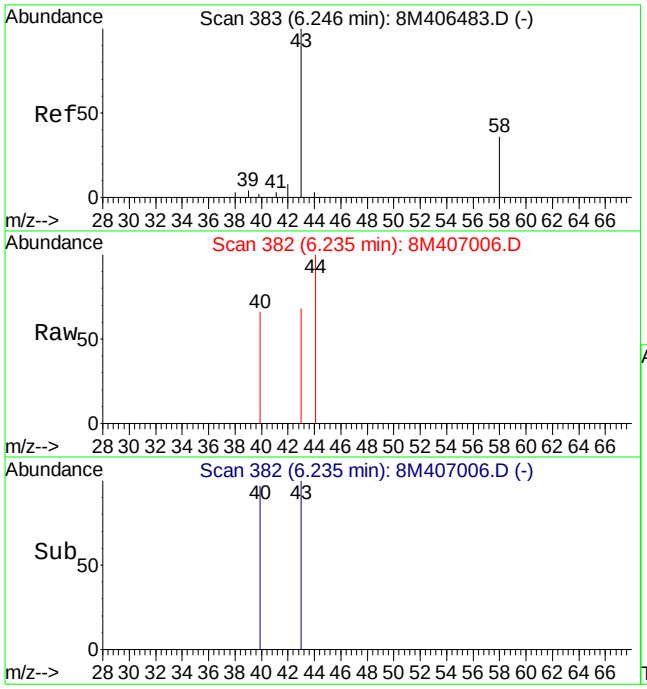

#13
Acetone
Concen: 0.25 ug/L
RT: 6.23 min Scan# 382
Delta R.T. -0.01 min
Lab File: 8M407006.D
Acq: 25 Aug 2015 17:05

Tgt Ion: 43 Resp: 205

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

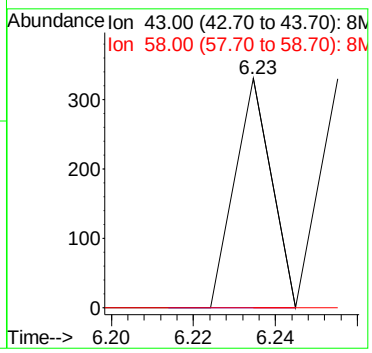

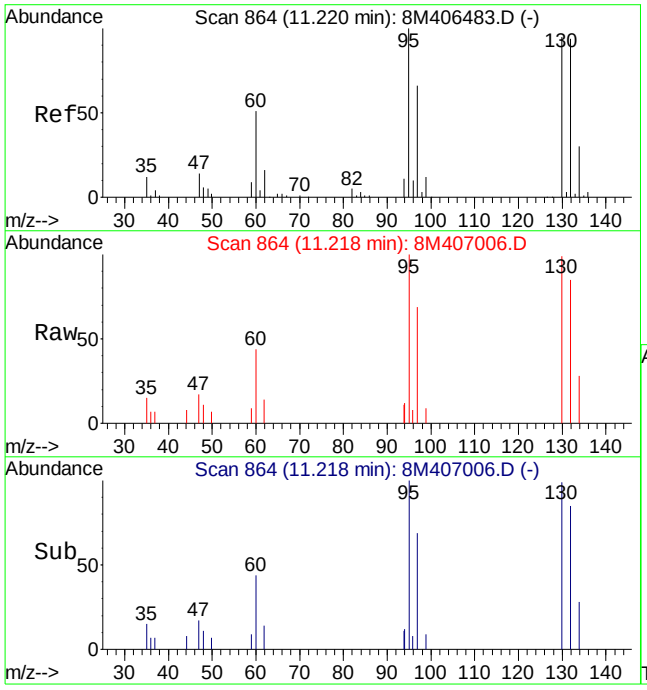

#47
Trichloroethene
Concen: 1.50 ug/L
RT: 11.22 min Scan# 864
Delta R.T. 0.00 min
Lab File: 8M407006.D
Acq: 25 Aug 2015 17:05

Tgt Ion:130 Resp: 10945

Ion	Ratio	Lower	Upper
130	100		
132	86.2	59.0	137.6
95	100.1	65.0	151.8

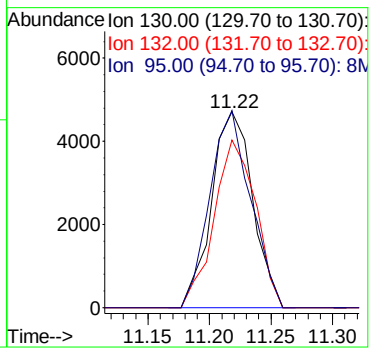

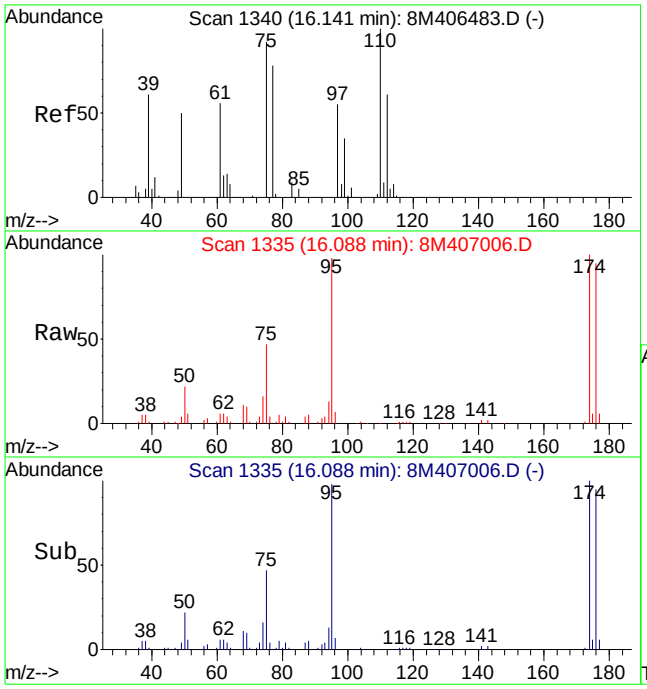

#81
1,2,3-Trichloropropane
Concen: 0.15 ug/L
RT: 16.09 min Scan# 1335
Delta R.T. -0.05 min
Lab File: 8M407006.D
Acq: 25 Aug 2015 17:05

Tgt Ion:110 Resp: 211

Ion	Ratio	Lower	Upper
110	100		
75	53624.2	168.8	393.8#
97	114.2	31.0	72.2#

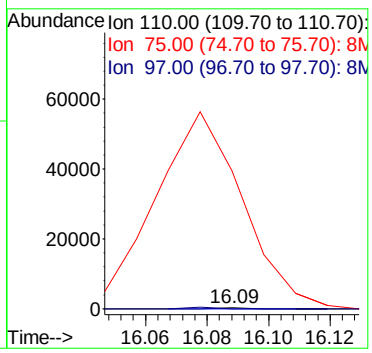

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082515\8M407007.D Vial: 19
Acq On : 25 Aug 2015 17:34 Operator: TMB
Sample : L15081251-11 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 26 08:00:37 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	641777	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	503961	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	274059	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.68	111	147061	26.0052 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.04%		
43) 1,2-Dichloroethane-d4	10.31	65	136070	24.1968 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.80%		
58) Toluene-d8	12.68	98	596860	24.5507 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.20%		
80) p-Bromofluorobenzene	16.08	95	222566	23.4788 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.92%		

Target Compounds					Qvalue
3) Chloromethane	3.60	50	2566	0.2345 ug/L #	61
13) Acetone	6.26	43	403	0.4980 ug/L #	48

(#) = qualifier out of range (m) = manual integration
8M407007.D 8260WT.M Wed Aug 26 08:00:37 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082515\8M407007.D Vial: 19
Acq On : 25 Aug 2015 17:34 Operator: TMB
Sample : L15081251-11 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 26 8:00 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

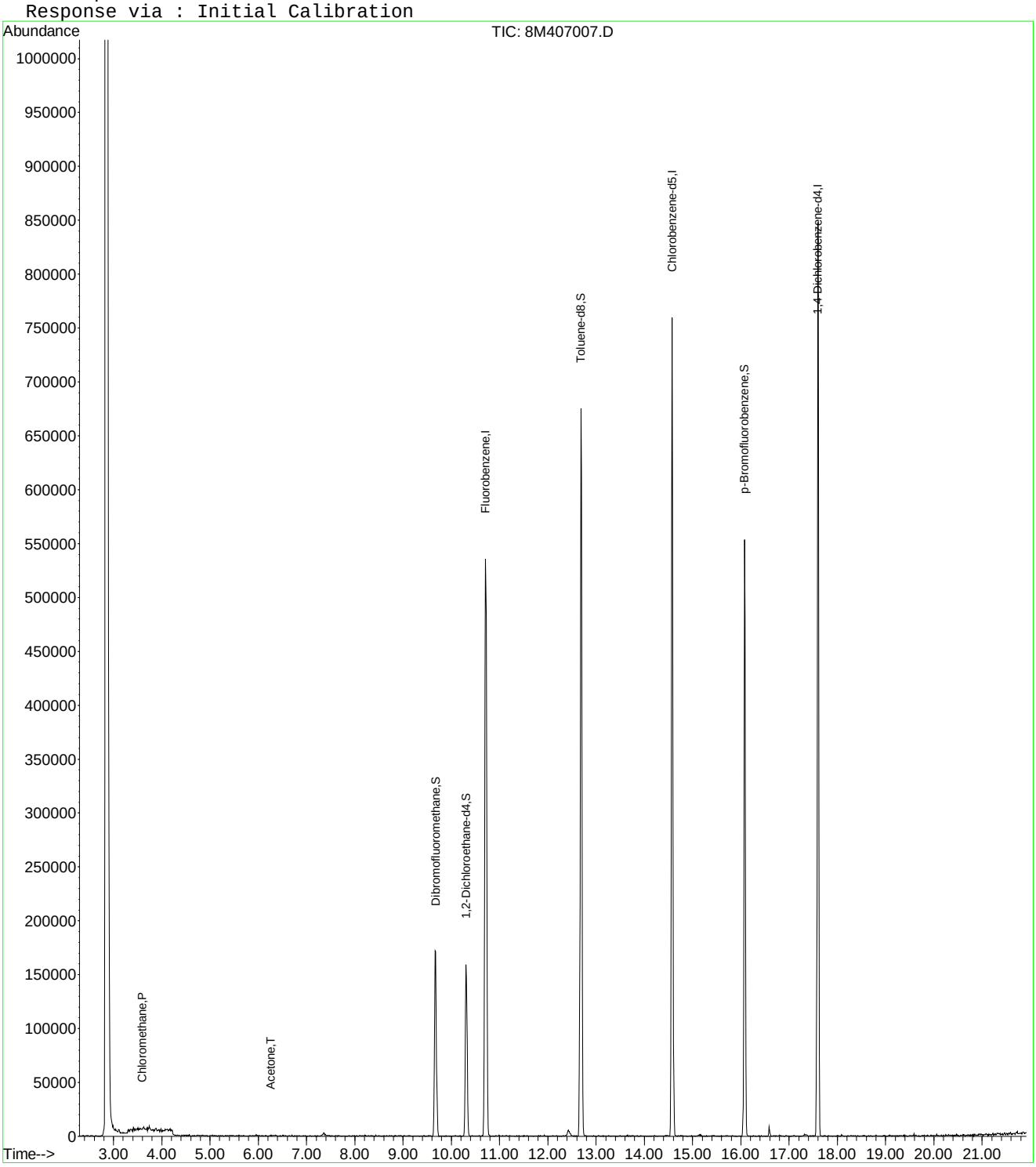

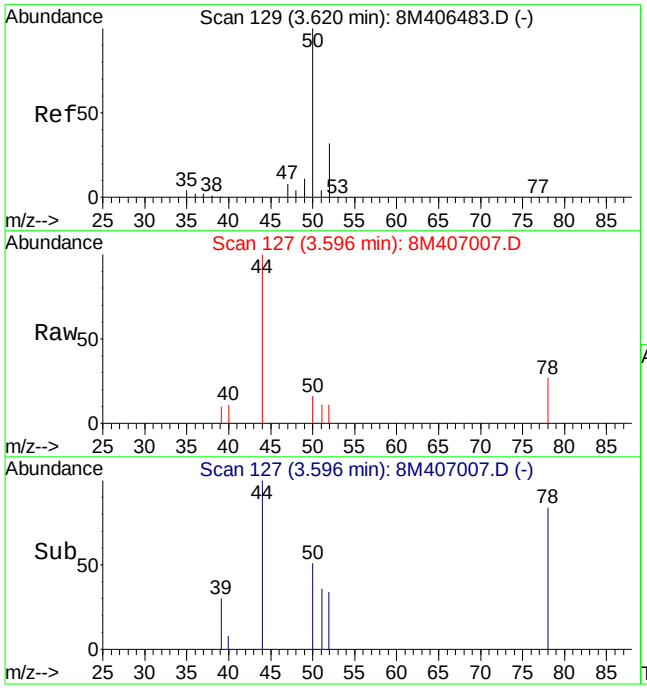

#3
Chloromethane
Concen: 0.23 ug/L
RT: 3.60 min Scan# 127
Delta R.T. -0.02 min
Lab File: 8M407007.D
Acq: 25 Aug 2015 17:34

Tgt Ion: 50 Resp: 2566

Ion	Ratio	Lower	Upper
50	100		
52	53.6	19.2	44.8#

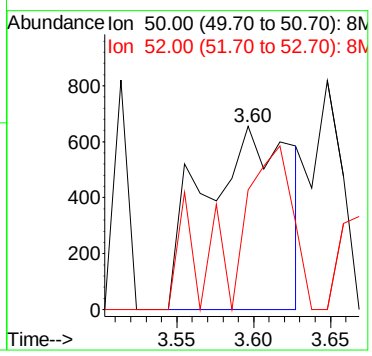

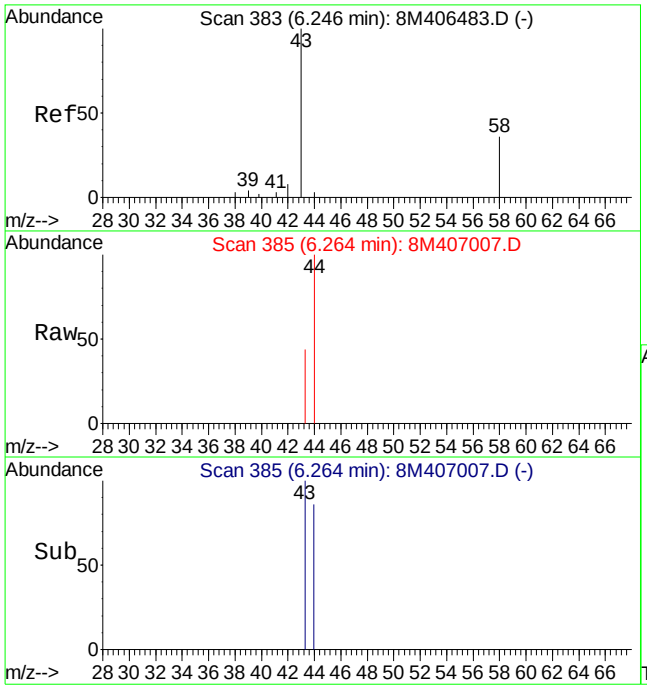

#13
Acetone
Concen: 0.50 ug/L
RT: 6.26 min Scan# 385
Delta R.T. 0.02 min
Lab File: 8M407007.D
Acq: 25 Aug 2015 17:34

Tgt Ion: 43 Resp: 403

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

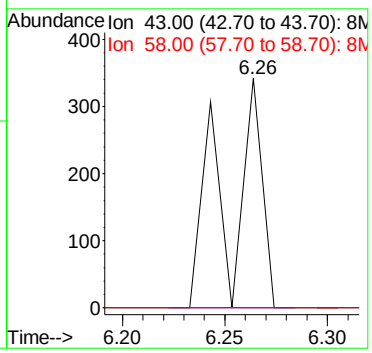

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082515\8M407008.D Vial: 20
Acq On : 25 Aug 2015 18:03 Operator: TMB
Sample : L15081251-12 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 26 08:00:38 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	632281	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	501811	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	267645	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	146256	26.2512 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 105.00%		
43) 1,2-Dichloroethane-d4	10.31	65	128794	23.2469 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 93.00%		
58) Toluene-d8	12.69	98	585645	24.1926 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.76%		
80) p-Bromofluorobenzene	16.08	95	217251	23.4674 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.88%		

Target Compounds					Qvalue
3) Chloromethane	3.65	50	2714	0.2517 ug/L #	66

(#) = qualifier out of range (m) = manual integration
8M407008.D 8260WT.M Wed Aug 26 08:00:38 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082515\8M407008.D Vial: 20
Acq On : 25 Aug 2015 18:03 Operator: TMB
Sample : L15081251-12 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 26 8:00 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

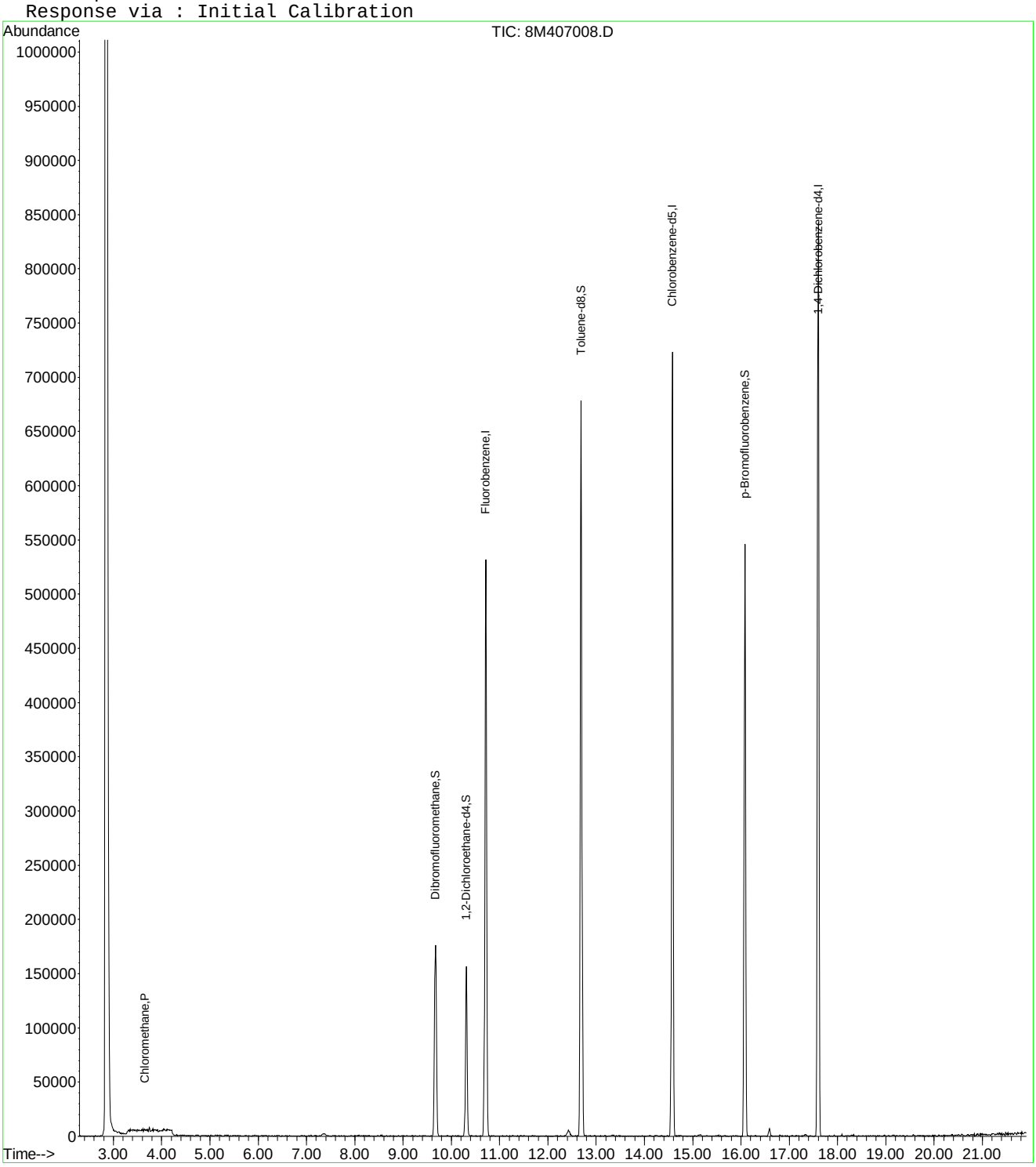

8M407008.D 8260WT.M Wed Aug 26 08:00:38 2015 Page 2

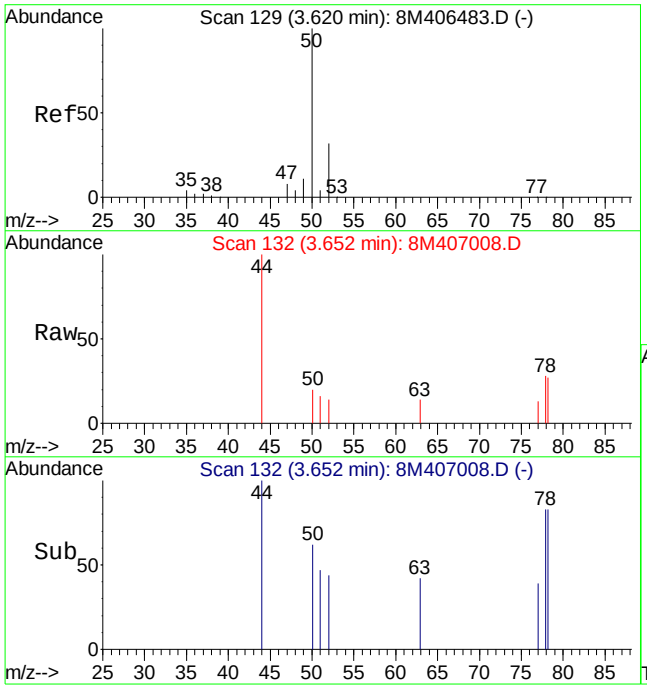

#3
Chloromethane
Concen: 0.25 ug/L
RT: 3.65 min Scan# 132
Delta R.T. 0.03 min
Lab File: 8M407008.D
Acq: 25 Aug 2015 18:03

Tgt Ion: 50 Resp: 2714

Ion	Ratio	Lower	Upper
50	100		
52	51.1	19.2	44.8#

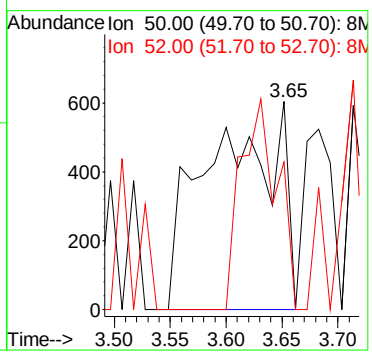

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082515\8M407013.D Vial: 25
Acq On : 25 Aug 2015 20:26 Operator: TMB
Sample : L15081251-13 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 26 08:00:45 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	631098	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	487376	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	266109	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	146062	26.2656 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 105.08%		
43) 1,2-Dichloroethane-d4	10.31	65	135516	24.5060 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.04%		
58) Toluene-d8	12.69	98	577498	24.5626 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.24%		
80) p-Bromofluorobenzene	16.08	95	214431	23.2965 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.20%		

Target Compounds

					Qvalue
3) Chloromethane	3.63	50	5757	0.5350 ug/L	78
13) Acetone	6.27	43	1314	1.6511 ug/L #	78
14) 1,1-Dichloroethene	6.47	61	1571	0.1585 ug/L #	61
23) trans-1,2-Dichloroethene	7.73	61	1661	0.1787 ug/L #	60
27) 1,1-Dichloroethane	8.33	63	6200	0.4973 ug/L #	84
32) cis-1,2-Dichloroethene	9.17	96	196877	29.4289 ug/L	81
33) Chloroform	9.38	83	5454	0.4847 ug/L	90
45) 1,2-Dichloroethane	10.42	62	12515	1.6607 ug/L	95
47) Trichloroethene	11.22	130	1663774	234.6688 ug/L	97
48) Methylcyclohexane	11.22	83	23468	2.2826 ug/L #	1
66) Tetrachloroethene	13.61	164	3221	0.5364 ug/L	86

(#) = qualifier out of range (m) = manual integration
8M407013.D 8260WT.M Wed Aug 26 08:00:45 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082515\8M407013.D Vial: 25
Acq On : 25 Aug 2015 20:26 Operator: TMB
Sample : L15081251-13 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 26 8:00 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

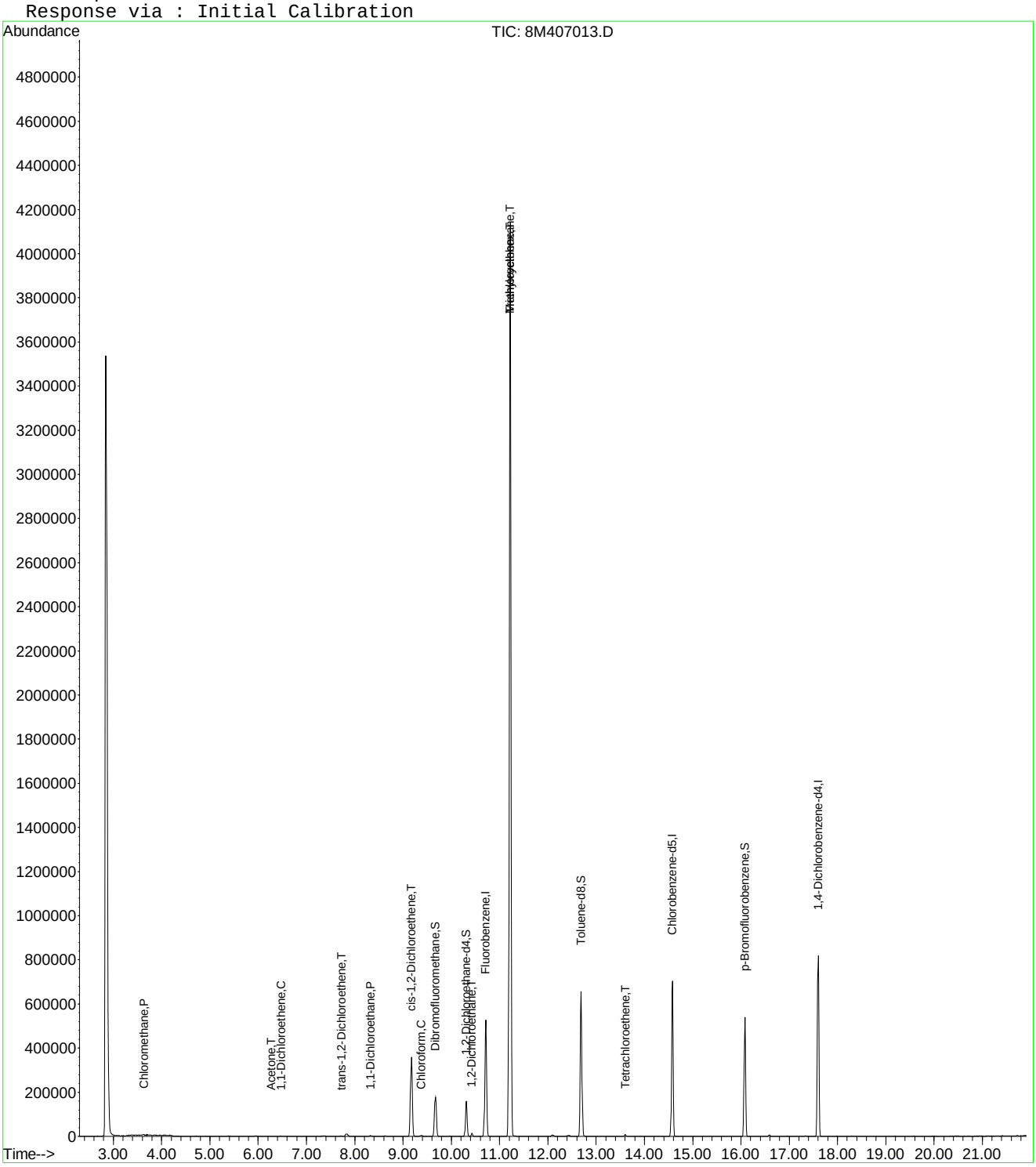

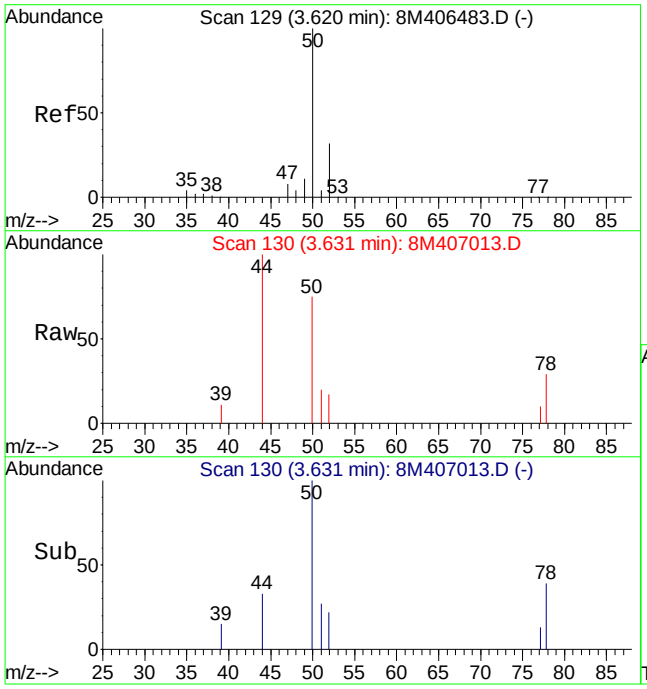

#3
Chloromethane
Concen: 0.54 ug/L
RT: 3.63 min Scan# 130
Delta R.T. 0.01 min
Lab File: 8M407013.D
Acq: 25 Aug 2015 20:26

Tgt Ion: 50 Resp: 5757

Ion	Ratio	Lower	Upper
50	100		
52	44.3	19.2	44.8

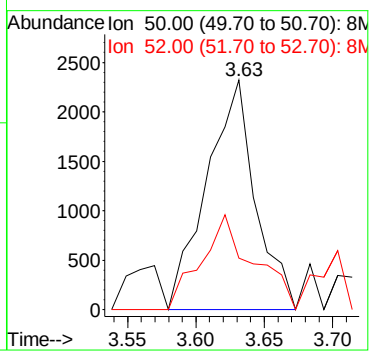

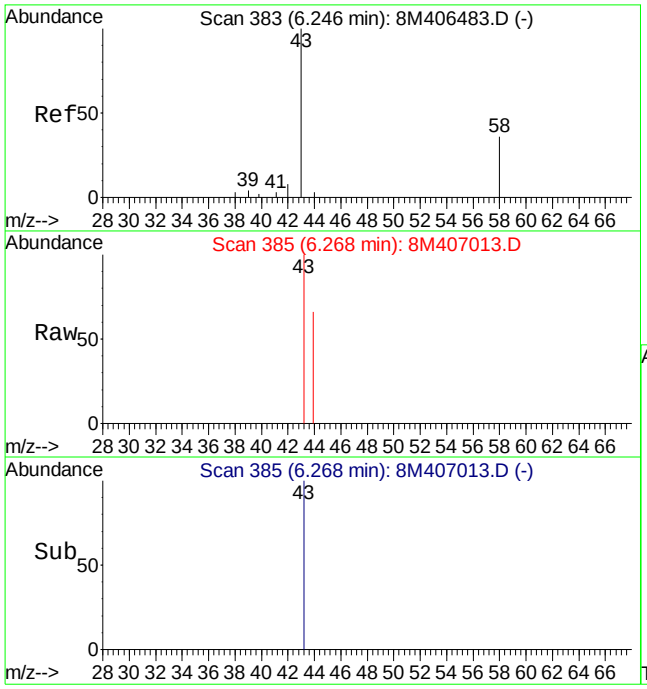

#13
Acetone
Concen: 1.65 ug/L
RT: 6.27 min Scan# 385
Delta R.T. 0.02 min
Lab File: 8M407013.D
Acq: 25 Aug 2015 20:26

Tgt Ion: 43 Resp: 1314

Ion	Ratio	Lower	Upper
43	100		
58	15.9	16.4	38.2#

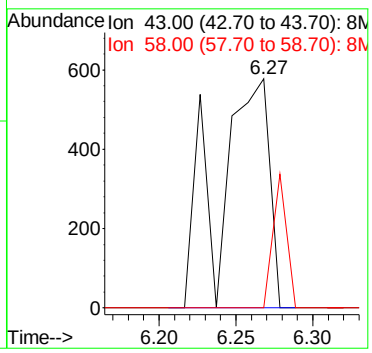

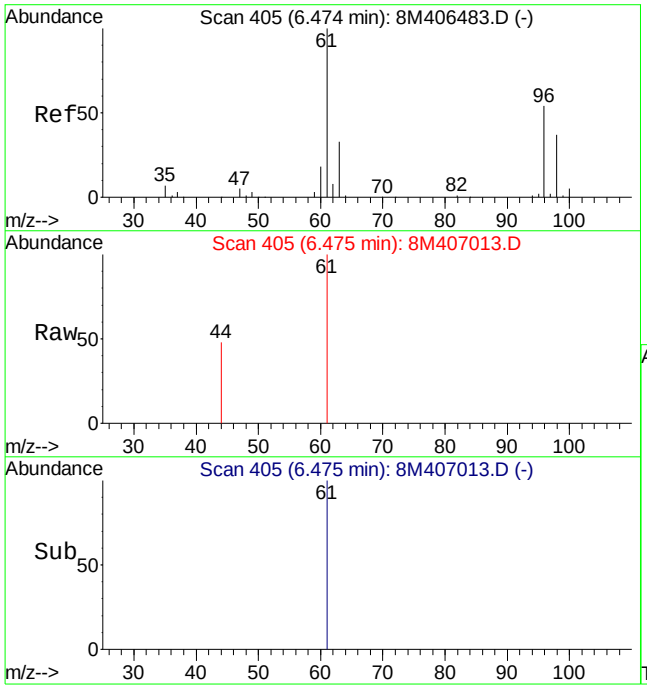

#14
1,1-Dichloroethene
Concen: 0.16 ug/L
RT: 6.47 min Scan# 405
Delta R.T. 0.00 min
Lab File: 8M407013.D
Acq: 25 Aug 2015 20:26

Tgt Ion: 61 Resp: 1571

Ion	Ratio	Lower	Upper
61	100		
96	26.0	32.3	75.3#

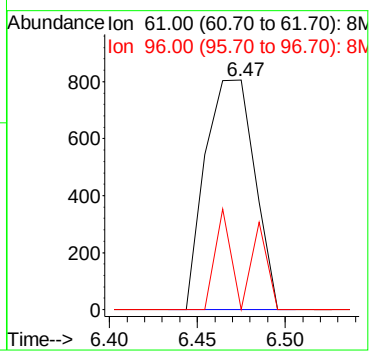

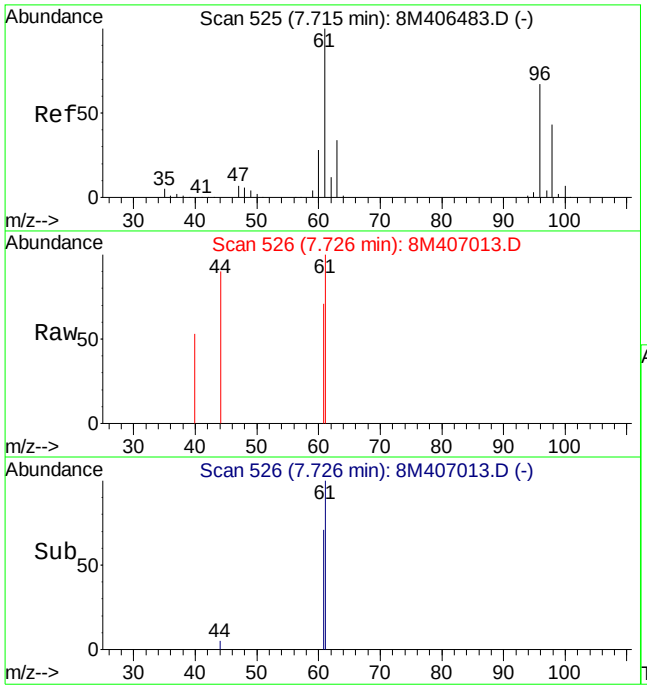

#23
trans-1,2-Dichloroethene
Concen: 0.18 ug/L
RT: 7.73 min Scan# 526
Delta R.T. 0.01 min
Lab File: 8M407013.D
Acq: 25 Aug 2015 20:26

Tgt Ion: 61 Resp: 1661

Ion	Ratio	Lower	Upper
61	100		
96	31.5	37.4	87.4#

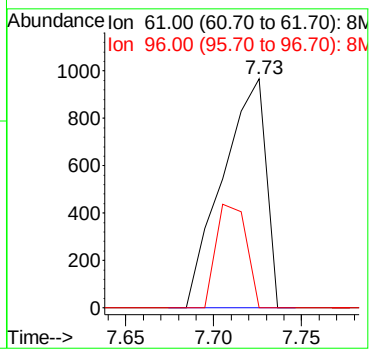

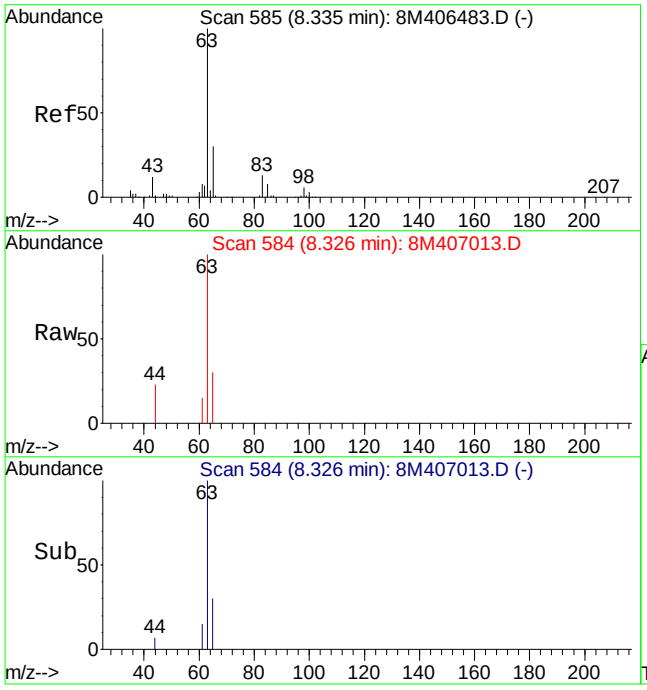

#27
1,1-Dichloroethane
Concen: 0.50 ug/L
RT: 8.33 min Scan# 584
Delta R.T. -0.01 min
Lab File: 8M407013.D
Acq: 25 Aug 2015 20:26

Tgt Ion: 63 Resp: 6200

Ion	Ratio	Lower	Upper
63	100		
65	37.8	18.4	43.0
83	4.0	7.7	18.1#

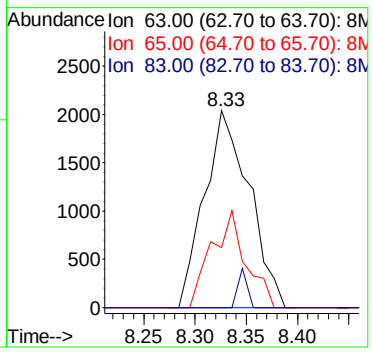

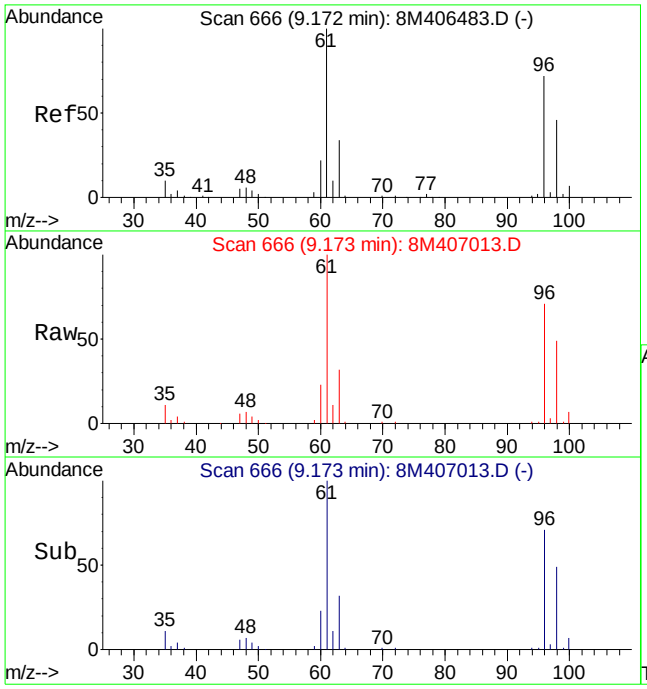

#32
cis-1,2-Dichloroethene
Concen: 29.43 ug/L
RT: 9.17 min Scan# 666
Delta R.T. 0.00 min
Lab File: 8M407013.D
Acq: 25 Aug 2015 20:26

Tgt Ion: 96 Resp: 196877

Ion	Ratio	Lower	Upper
96	100		
61	140.0	99.8	233.0

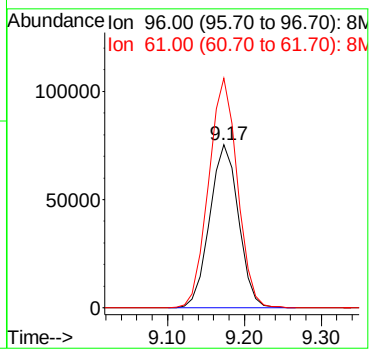

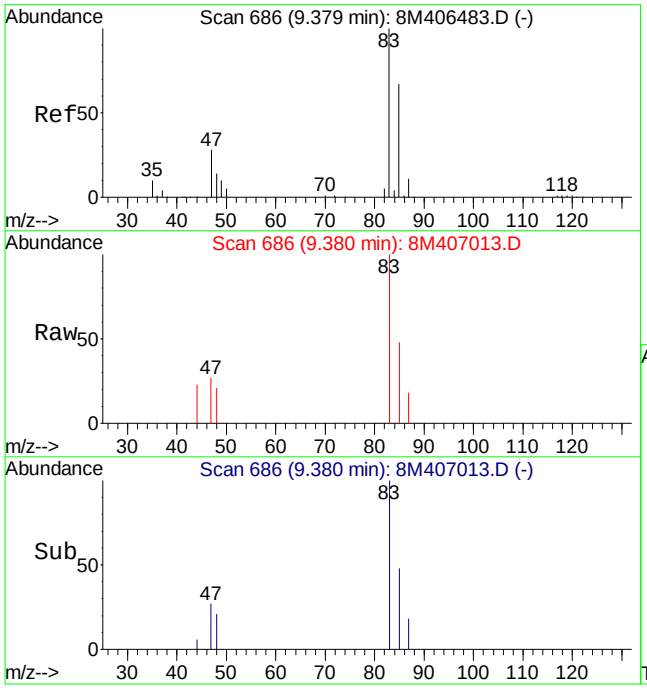

#33
Chloroform
Concen: 0.48 ug/L
RT: 9.38 min Scan# 686
Delta R.T. 0.00 min
Lab File: 8M407013.D
Acq: 25 Aug 2015 20:26

Tgt Ion: 83 Resp: 5454

Ion	Ratio	Lower	Upper
83	100		
85	56.4	38.8	90.4

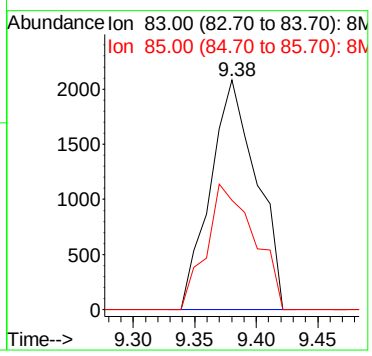

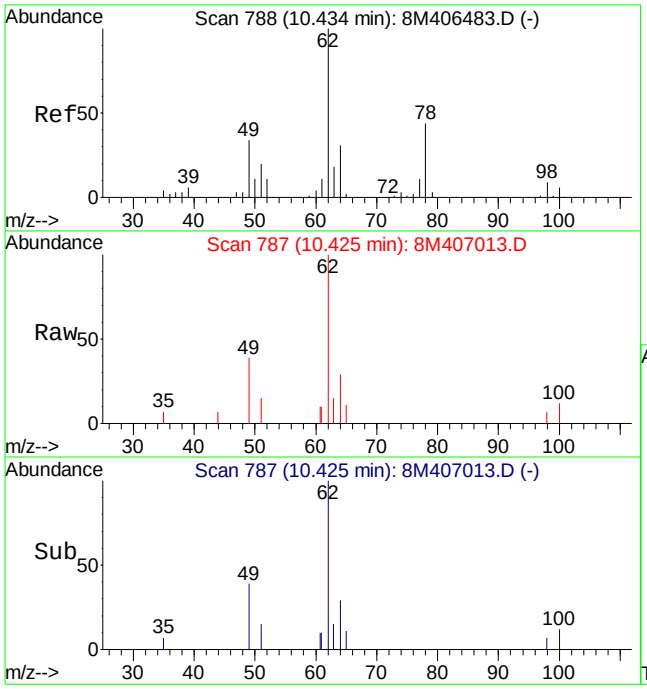

#45
1,2-Dichloroethane
Concen: 1.66 ug/L
RT: 10.42 min Scan# 787
Delta R.T. -0.01 min
Lab File: 8M407013.D
Acq: 25 Aug 2015 20:26

Tgt Ion: 62 Resp: 12515

Ion	Ratio	Lower	Upper
62	100		
64	32.2	18.8	44.0
49	37.4	25.3	58.9

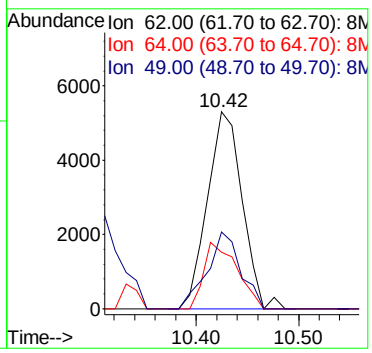

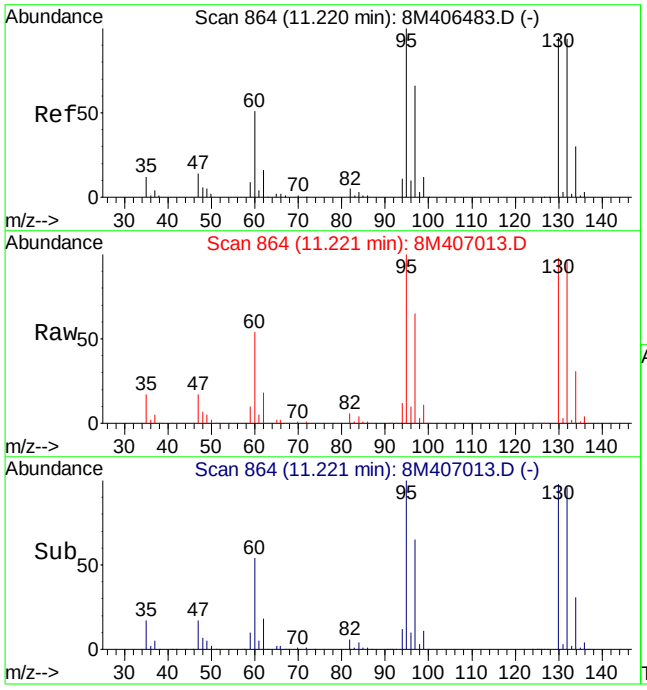

#47
Trichloroethene
Concen: 234.67 ug/L
RT: 11.22 min Scan# 864
Delta R.T. 0.00 min
Lab File: 8M407013.D
Acq: 25 Aug 2015 20:26

Tgt Ion:130 Resp: 1663774

Ion	Ratio	Lower	Upper
130	100		
132	97.4	59.0	137.6
95	103.1	65.0	151.8

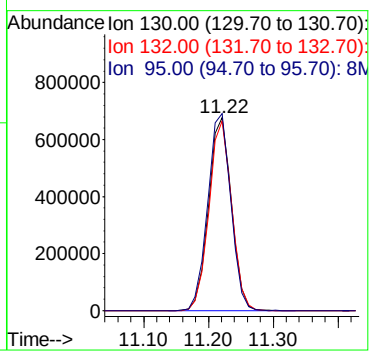

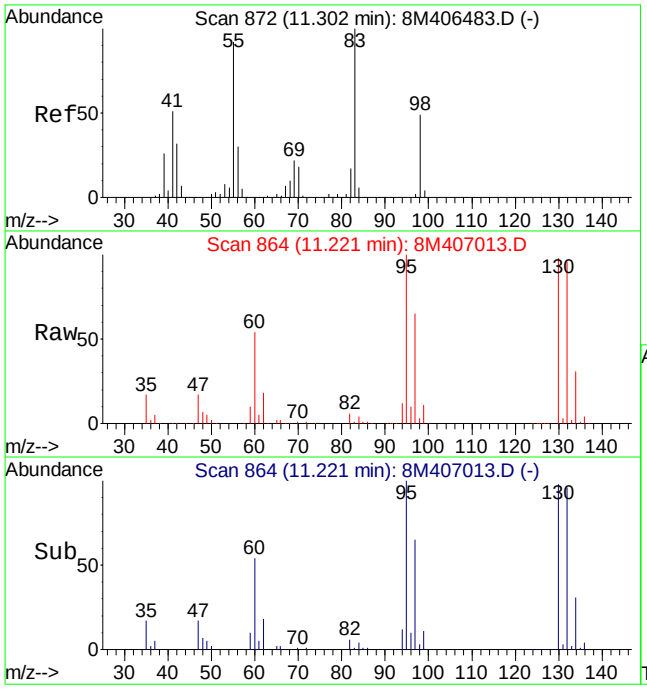

#48
Methylcyclohexane
Concen: 2.28 ug/L
RT: 11.22 min Scan# 864
Delta R.T. -0.08 min
Lab File: 8M407013.D
Acq: 25 Aug 2015 20:26

Tgt Ion: 83 Resp: 23468

Ion	Ratio	Lower	Upper
83	100		
55	0.0	54.8	128.0#
98	203.9	29.0	67.8#

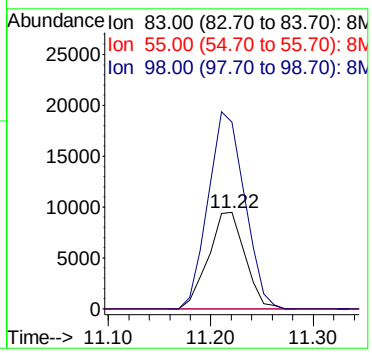

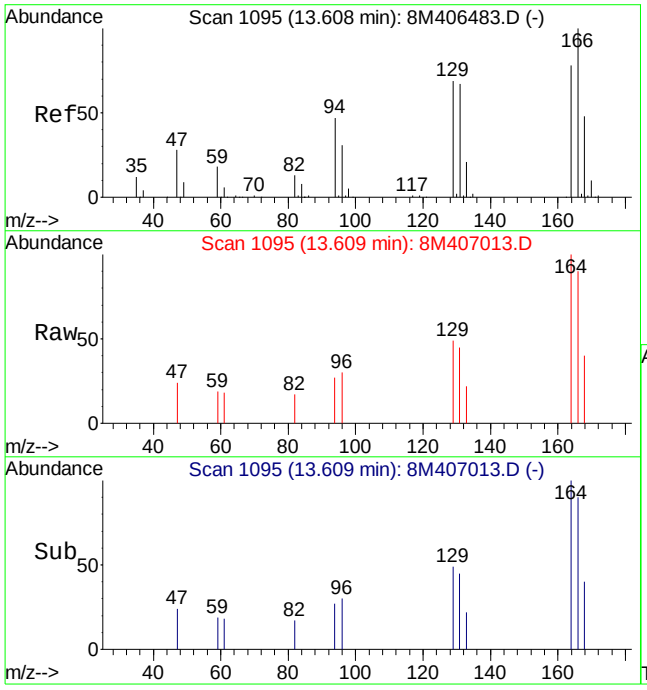

#66
Tetrachloroethene
Concen: 0.54 ug/L
RT: 13.61 min Scan# 1095
Delta R.T. 0.00 min
Lab File: 8M407013.D
Acq: 25 Aug 2015 20:26

Tgt Ion:164 Resp: 3221

Ion	Ratio	Lower	Upper
164	100		
129	75.9	54.3	126.7
94	54.1	38.3	89.5

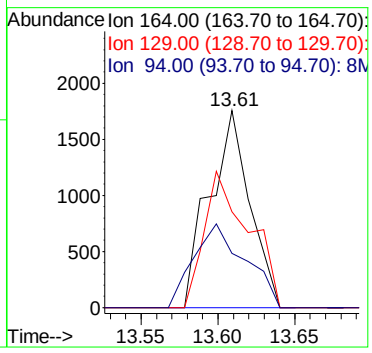

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082515\8M407012.D Vial: 24
Acq On : 25 Aug 2015 19:58 Operator: TMB
Sample : L15081251-14 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 26 08:00:43 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	627716	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	483971	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	263957	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.68	111	141550	25.5913 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.36%		
43) 1,2-Dichloroethane-d4	10.31	65	130383	23.7048 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.80%		
58) Toluene-d8	12.69	98	570997	24.4570 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.84%		
80) p-Bromofluorobenzene	16.08	95	214772	23.5237 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.08%		

Target Compounds					Qvalue
3) Chloromethane	3.62	50	2669	0.2494 ug/L #	72
14) 1,1-Dichloroethene	6.48	61	1367	0.1387 ug/L	72
27) 1,1-Dichloroethane	8.33	63	6663	0.5373 ug/L #	55
32) cis-1,2-Dichloroethene	9.17	96	195982	29.4529 ug/L	79
33) Chloroform	9.38	83	4946	0.4419 ug/L	92
45) 1,2-Dichloroethane	10.42	62	13699	1.8276 ug/L	94
47) Trichloroethene	11.22	130	1606712	227.8414 ug/L	97
48) Methylcyclohexane	11.22	83	22022	2.1535 ug/L #	1
66) Tetrachloroethene	13.60	164	2025	0.3396 ug/L	79

(#) = qualifier out of range (m) = manual integration
8M407012.D 8260WT.M Wed Aug 26 08:00:44 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082515\8M407012.D Vial: 24
Acq On : 25 Aug 2015 19:58 Operator: TMB
Sample : L15081251-14 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 26 8:00 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

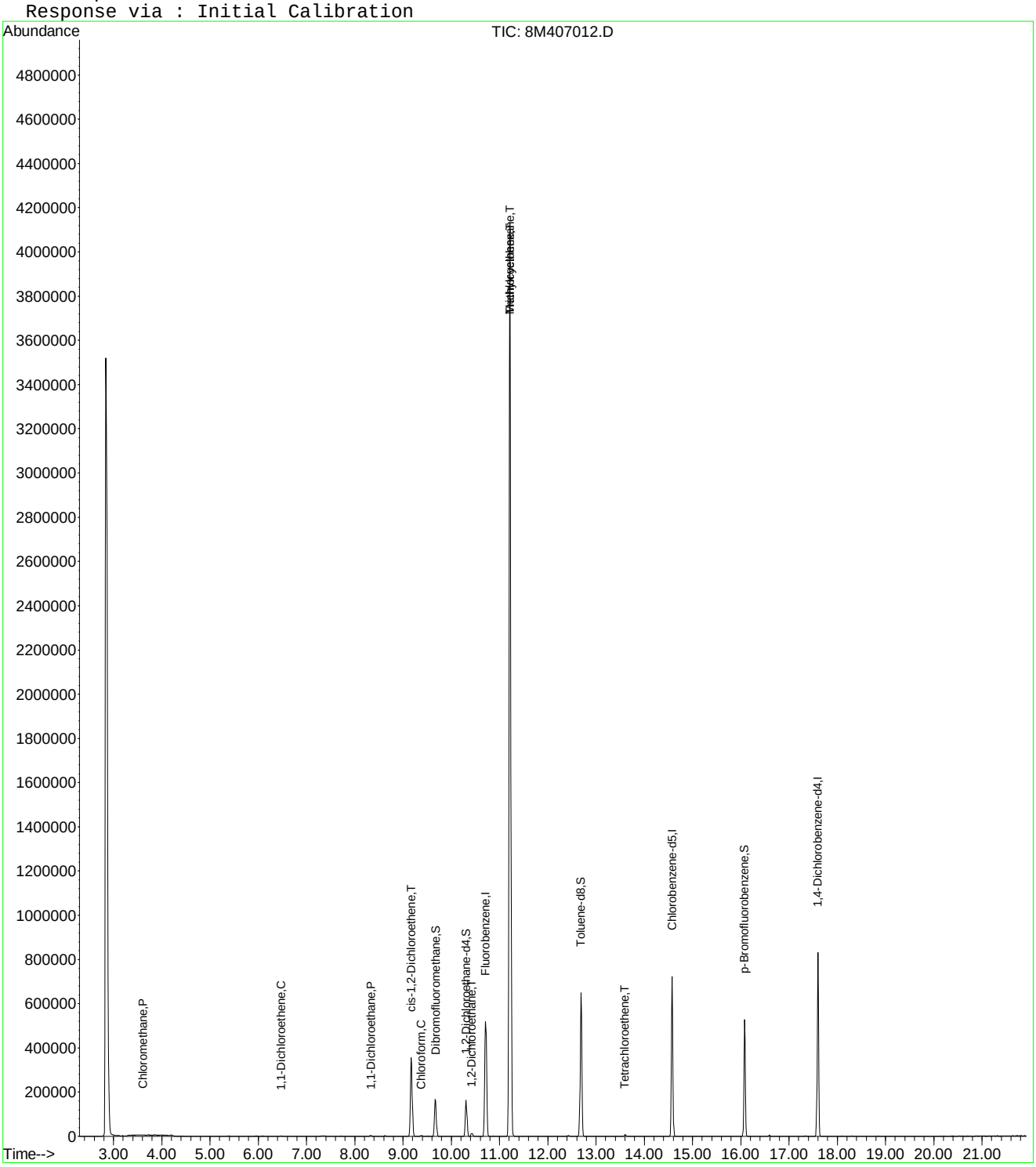

8M407012.D 8260WT.M Wed Aug 26 08:00:44 2015 Page 2

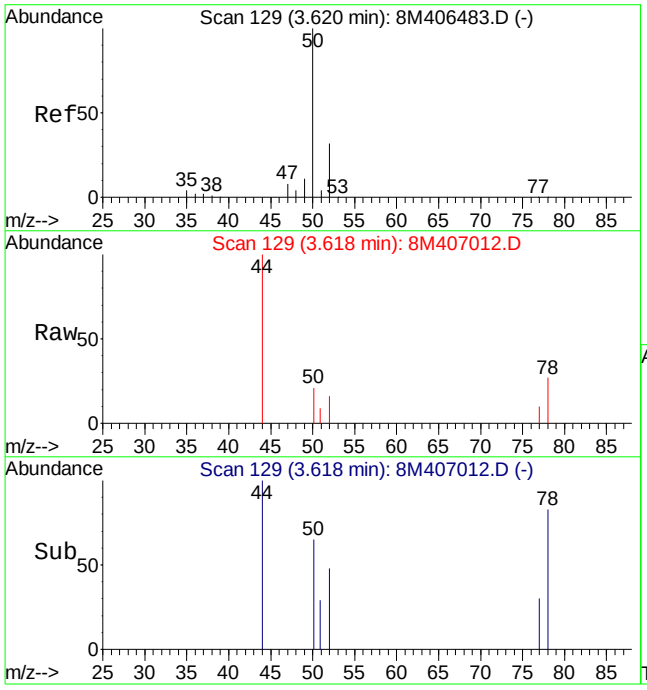

#3
Chloromethane
Concen: 0.25 ug/L
RT: 3.62 min Scan# 129
Delta R.T. -0.00 min
Lab File: 8M407012.D
Acq: 25 Aug 2015 19:58

Tgt Ion: 50 Resp: 2669

Ion	Ratio	Lower	Upper
50	100		
52	47.8	19.2	44.8#

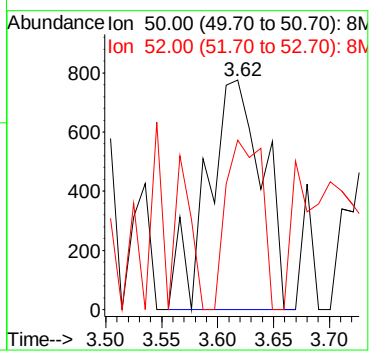

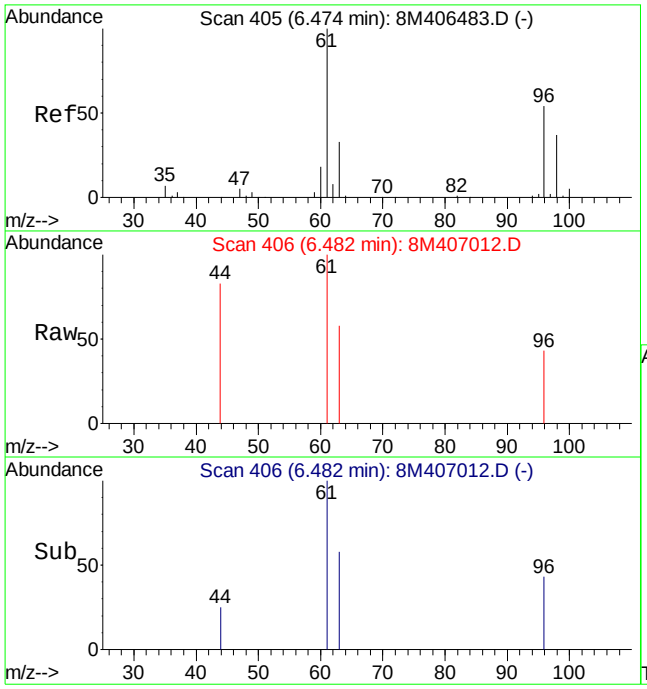

#14
1,1-Dichloroethene
Concen: 0.14 ug/L
RT: 6.48 min Scan# 406
Delta R.T. 0.01 min
Lab File: 8M407012.D
Acq: 25 Aug 2015 19:58

Tgt Ion: 61 Resp: 1367

Ion	Ratio	Lower	Upper
61	100		
96	74.0	32.3	75.3

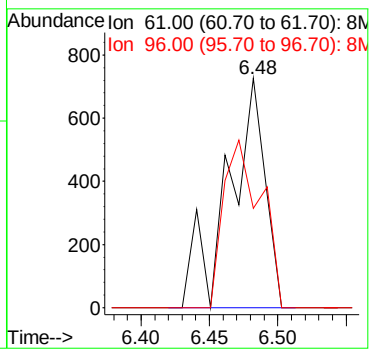

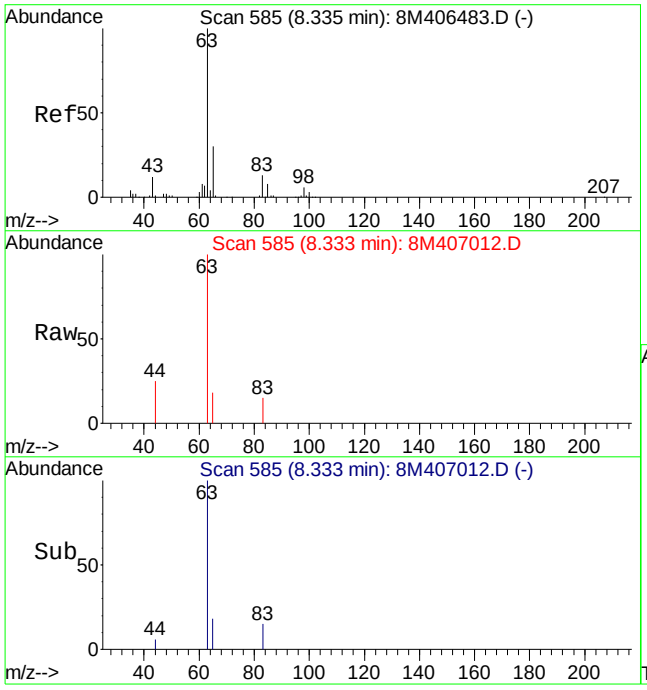

#27
1,1-Dichloroethane
Concen: 0.54 ug/L
RT: 8.33 min Scan# 585
Delta R.T. -0.00 min
Lab File: 8M407012.D
Acq: 25 Aug 2015 19:58

Tgt Ion: 63 Resp: 6663

Ion	Ratio	Lower	Upper
63	100		
65	0.0	18.4	43.0#
83	6.0	7.7	18.1#

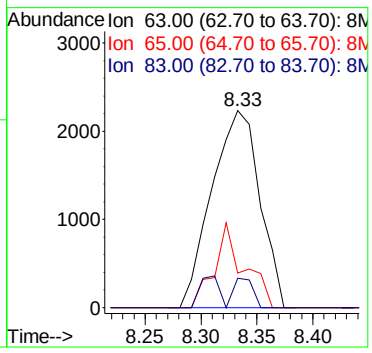

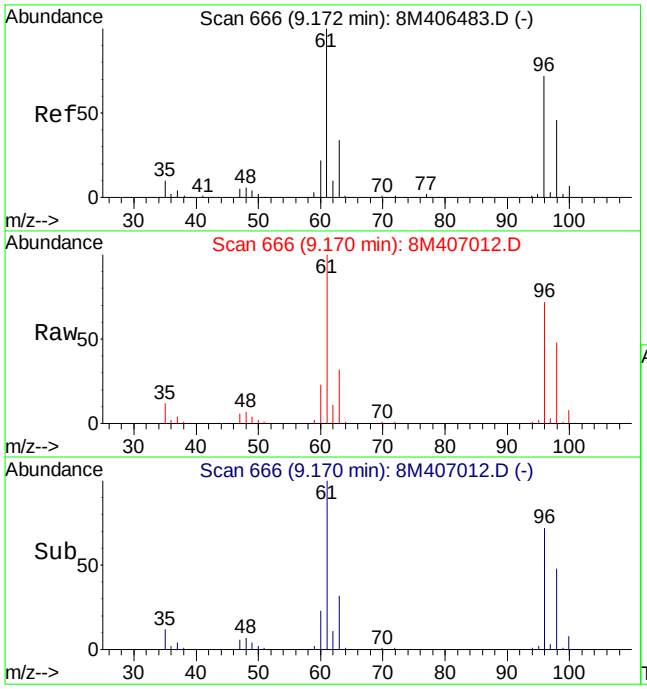

#32
cis-1,2-Dichloroethene
Concen: 29.45 ug/L
RT: 9.17 min Scan# 666
Delta R.T. -0.00 min
Lab File: 8M407012.D
Acq: 25 Aug 2015 19:58

Tgt Ion: 96 Resp: 195982

Ion	Ratio	Lower	Upper
96	100		
61	138.5	99.8	233.0

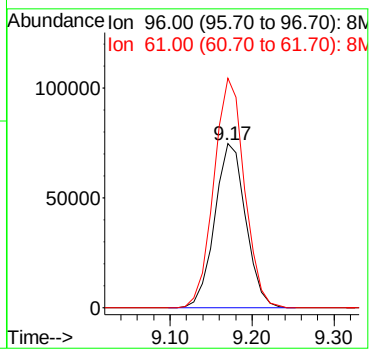

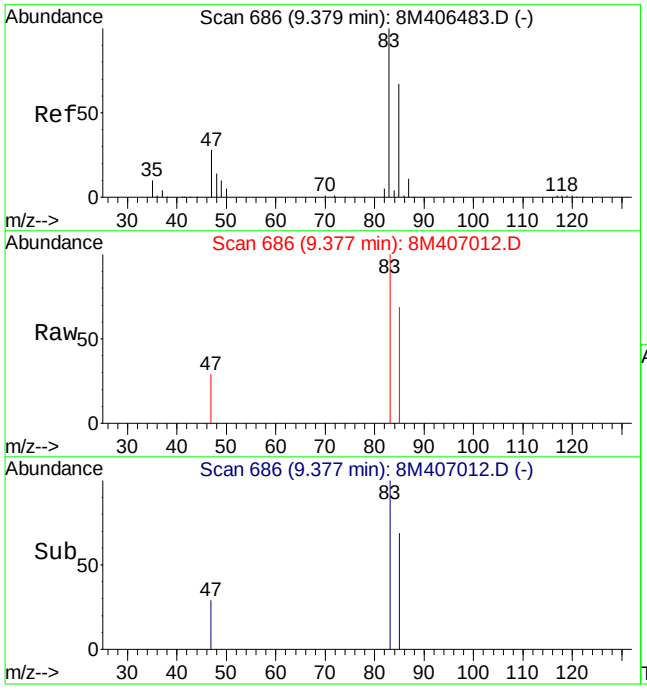

#33
Chloroform
Concen: 0.44 ug/L
RT: 9.38 min Scan# 686
Delta R.T. -0.00 min
Lab File: 8M407012.D
Acq: 25 Aug 2015 19:58

Tgt Ion: 83 Resp: 4946

Ion	Ratio	Lower	Upper
83	100		
85	71.2	38.8	90.4

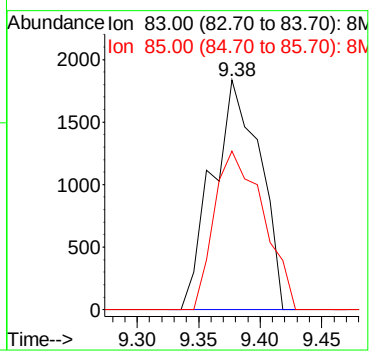

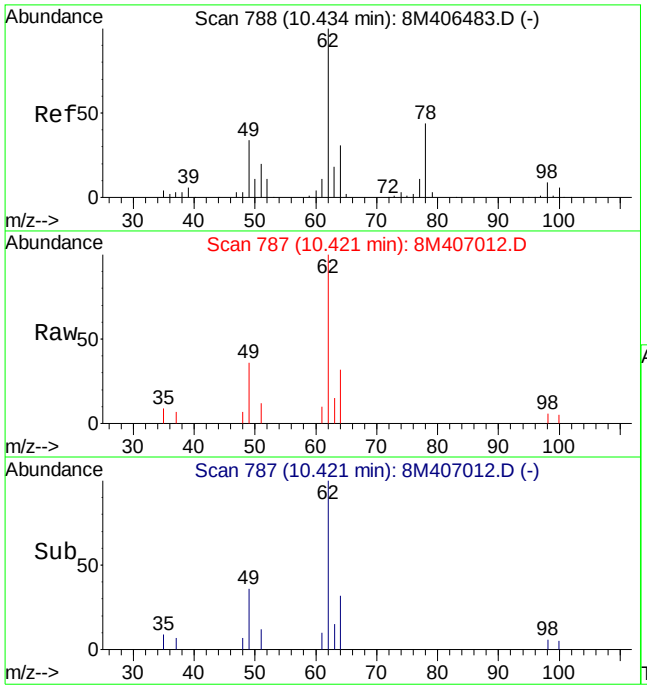

#45
1,2-Dichloroethane
Concen: 1.83 ug/L
RT: 10.42 min Scan# 787
Delta R.T. -0.01 min
Lab File: 8M407012.D
Acq: 25 Aug 2015 19:58

Tgt Ion: 62 Resp: 13699

Ion	Ratio	Lower	Upper
62	100		
64	29.5	18.8	44.0
49	37.0	25.3	58.9

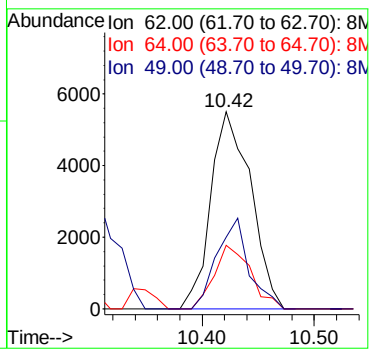

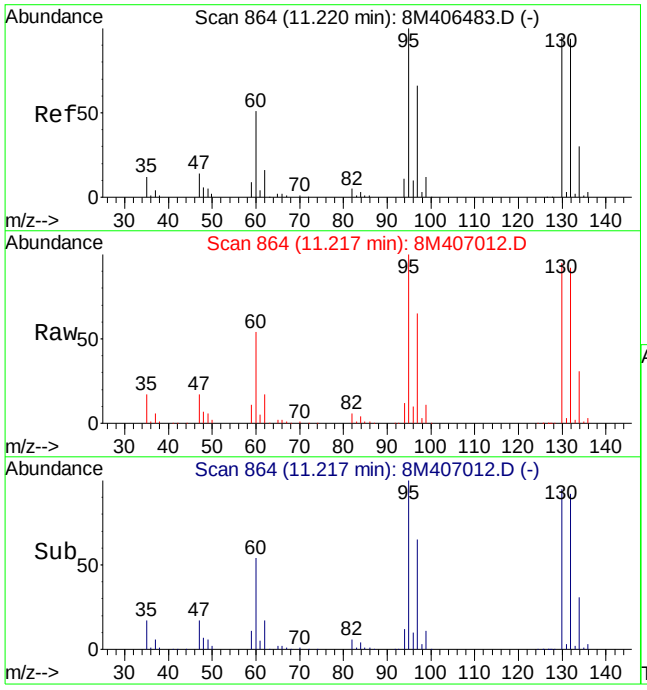

#47
Trichloroethene
Concen: 227.84 ug/L
RT: 11.22 min Scan# 864
Delta R.T. -0.00 min
Lab File: 8M407012.D
Acq: 25 Aug 2015 19:58

Tgt Ion:130 Resp: 1606712

Ion	Ratio	Lower	Upper
130	100		
132	96.7	59.0	137.6
95	103.7	65.0	151.8

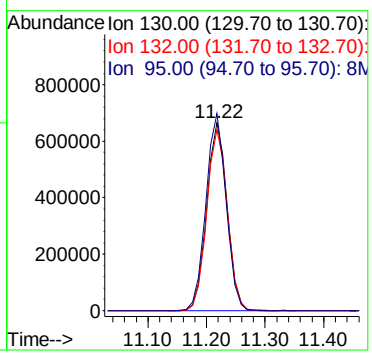

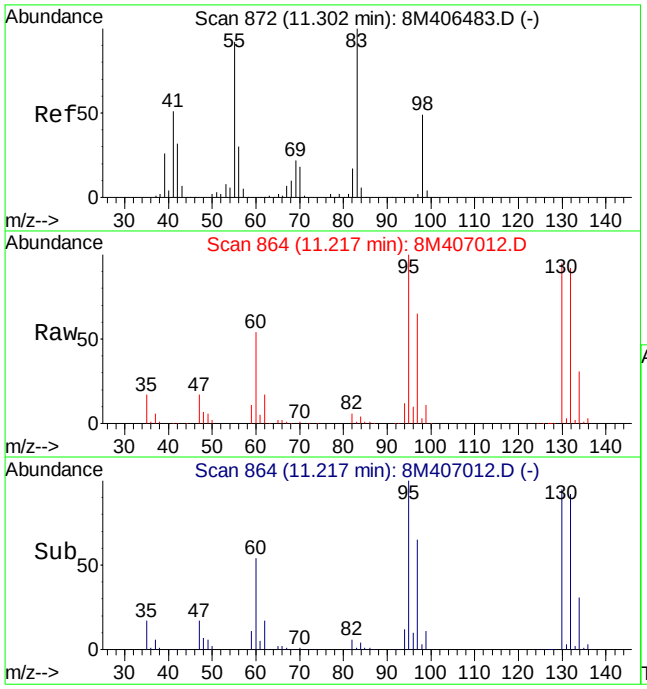

#48
Methylcyclohexane
Concen: 2.15 ug/L
RT: 11.22 min Scan# 864
Delta R.T. -0.08 min
Lab File: 8M407012.D
Acq: 25 Aug 2015 19:58

Tgt Ion: 83 Resp: 22022

Ion	Ratio	Lower	Upper
83	100		
55	0.0	54.8	128.0#
98	204.4	29.0	67.8#

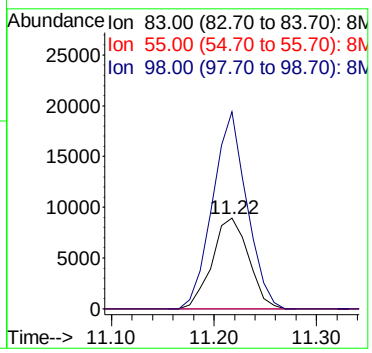

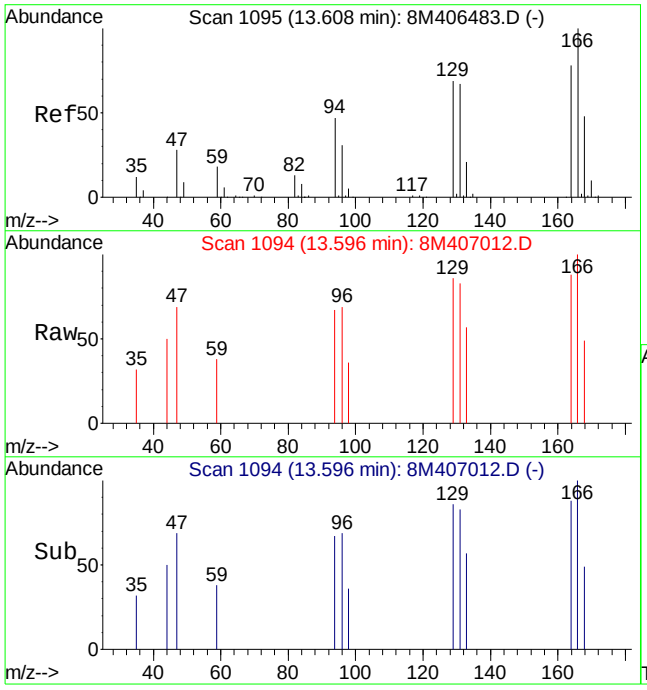

#66
Tetrachloroethene
Concen: 0.34 ug/L
RT: 13.60 min Scan# 1094
Delta R.T. -0.01 min
Lab File: 8M407012.D
Acq: 25 Aug 2015 19:58

Tgt Ion:164 Resp: 2025

Ion	Ratio	Lower	Upper
164	100		
129	105.9	54.3	126.7
94	84.7	38.3	89.5

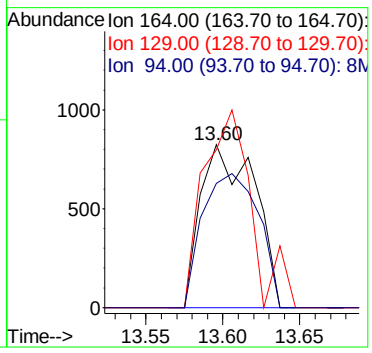

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082515\8M407009.D Vial: 21
Acq On : 25 Aug 2015 18:32 Operator: TMB
Sample : L15081251-15 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 26 08:00:39 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	629717	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	499358	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	272050	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	143798	25.9151 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.68%		
43) 1,2-Dichloroethane-d4	10.31	65	128490	23.2864 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 93.16%		
58) Toluene-d8	12.69	98	591734	24.5642 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.24%		
80) p-Bromofluorobenzene	16.08	95	214315	22.7754 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 91.12%		

Target Compounds

					Qvalue
3) Chloromethane	3.62	50	2560	0.2384 ug/L #	43
13) Acetone	6.23	43	1718	2.1635 ug/L #	48
16) Dimethyl Sulfide	6.74	62	1110	0.1788 ug/L	97
20) Carbon Disulfide	7.30	76	16503	0.8170 ug/L	99
28) Ethyl-Tert-Butyl ether	8.62	59	3414	0.2032 ug/L #	39
47) Trichloroethene	11.21	130	3496	0.4942 ug/L	85

(#) = qualifier out of range (m) = manual integration
8M407009.D 8260WT.M Wed Aug 26 08:00:39 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082515\8M407009.D Vial: 21
Acq On : 25 Aug 2015 18:32 Operator: TMB
Sample : L15081251-15 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 26 8:00 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

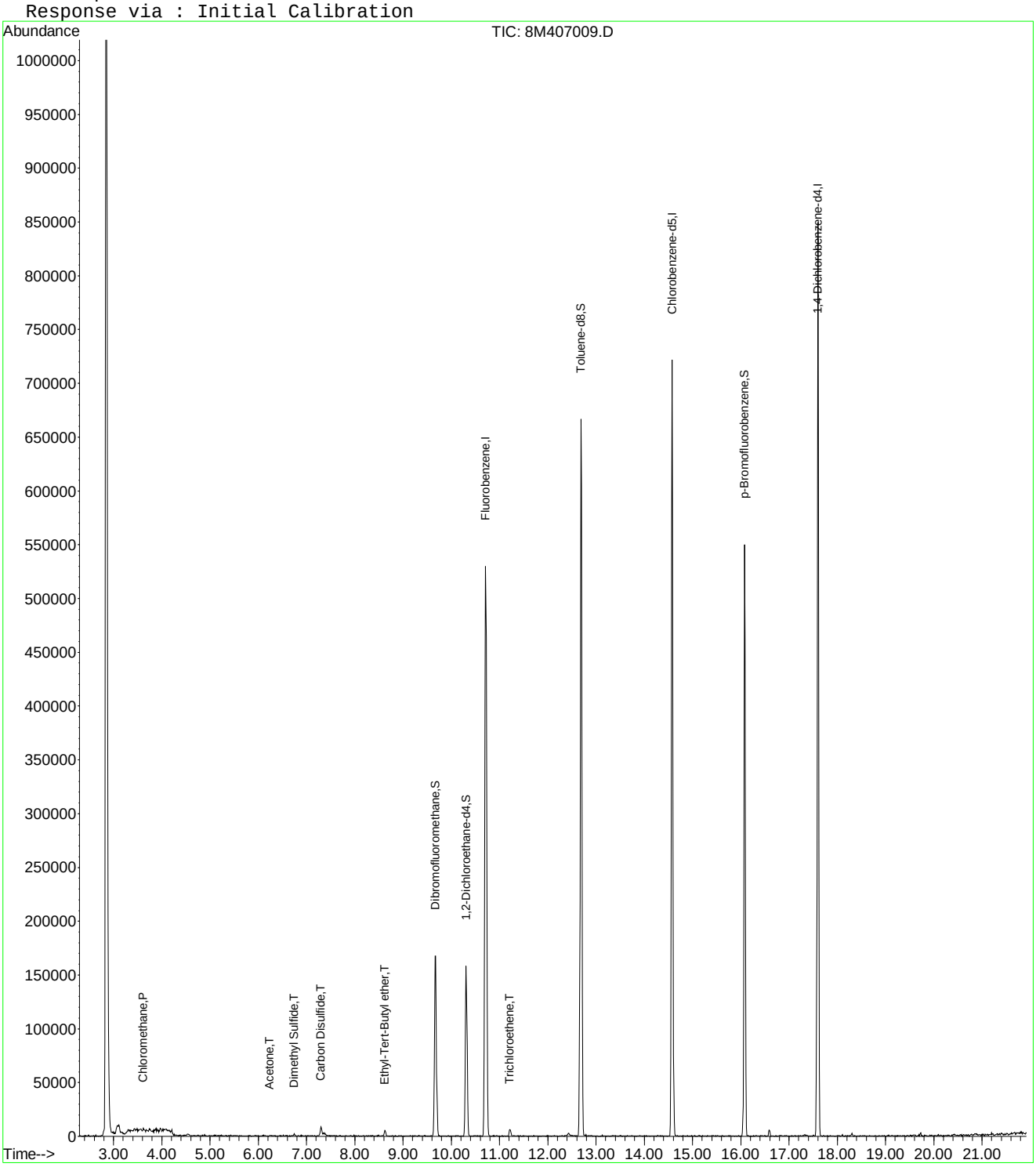

8M407009.D 8260WT.M Wed Aug 26 08:00:40 2015 Page 2

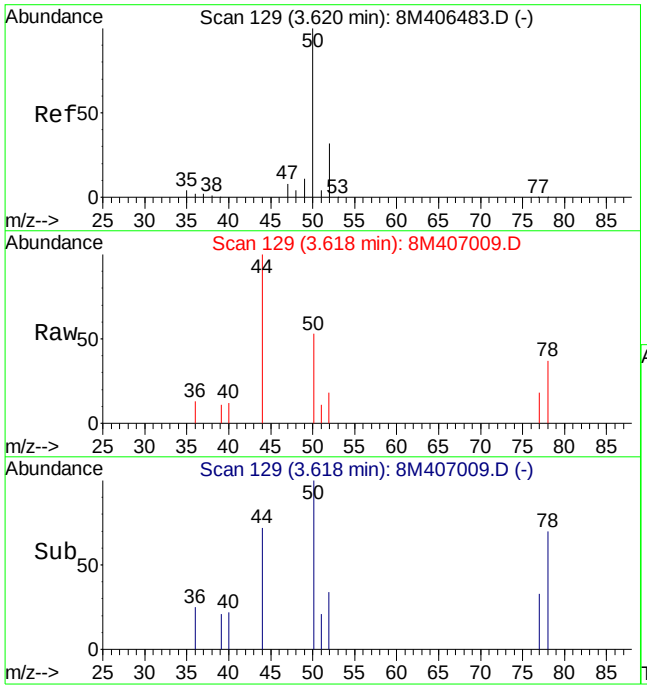

#3
Chloromethane
Concen: 0.24 ug/L
RT: 3.62 min Scan# 129
Delta R.T. -0.00 min
Lab File: 8M407009.D
Acq: 25 Aug 2015 18:32

Tgt Ion: 50 Resp: 2560

Ion	Ratio	Lower	Upper
50	100		
52	0.0	19.2	44.8#

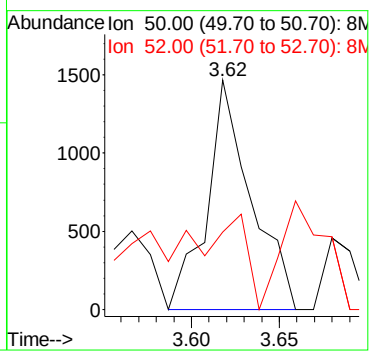

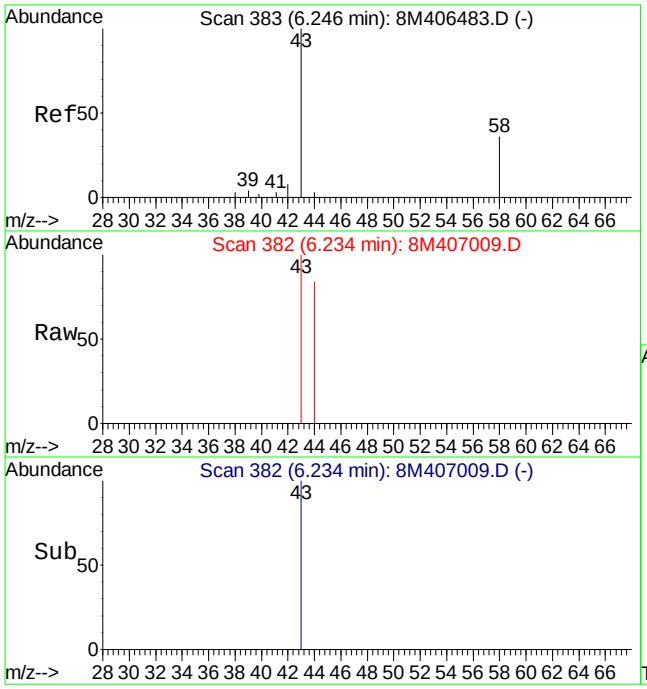

#13
Acetone
Concen: 2.16 ug/L
RT: 6.23 min Scan# 382
Delta R.T. -0.01 min
Lab File: 8M407009.D
Acq: 25 Aug 2015 18:32

Tgt Ion: 43 Resp: 1718

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

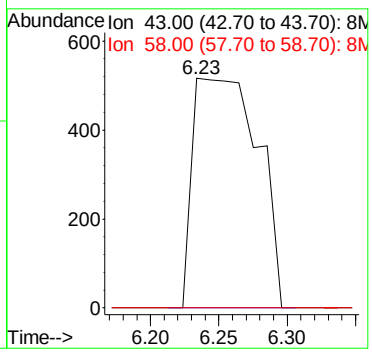

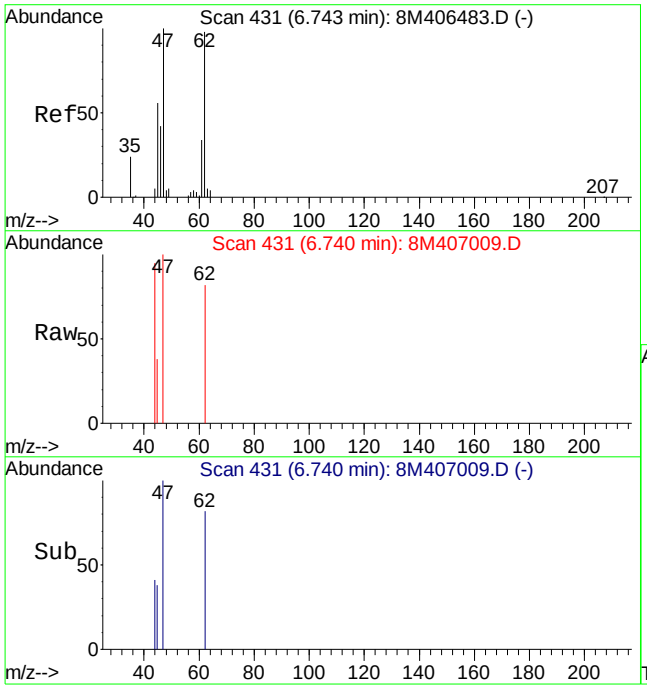

#16
Dimethyl Sulfide
Concen: 0.18 ug/L
RT: 6.74 min Scan# 431
Delta R.T. -0.00 min
Lab File: 8M407009.D
Acq: 25 Aug 2015 18:32

Tgt Ion: 62 Resp: 1110

Ion	Ratio	Lower	Upper
62	100		
47	109.7	64.3	149.9

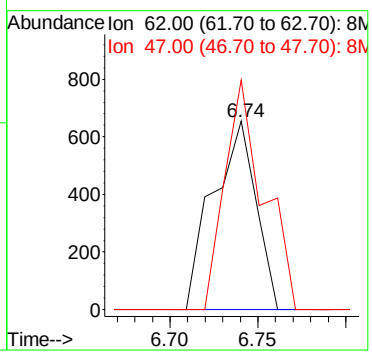

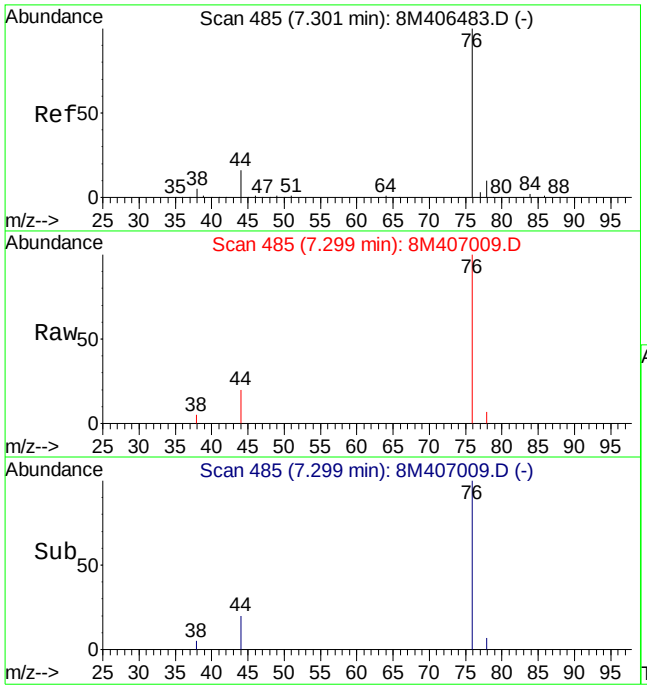

#20
Carbon Disulfide
Concen: 0.82 ug/L
RT: 7.30 min Scan# 485
Delta R.T. -0.00 min
Lab File: 8M407009.D
Acq: 25 Aug 2015 18:32

Tgt Ion: 76 Resp: 16503

Ion	Ratio	Lower	Upper
76	100		
78	9.7	5.7	13.3

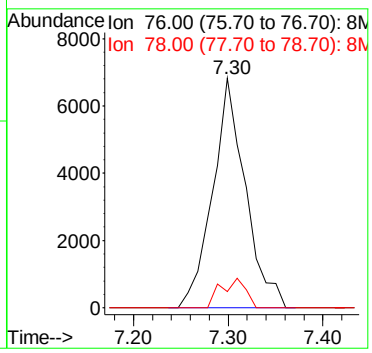

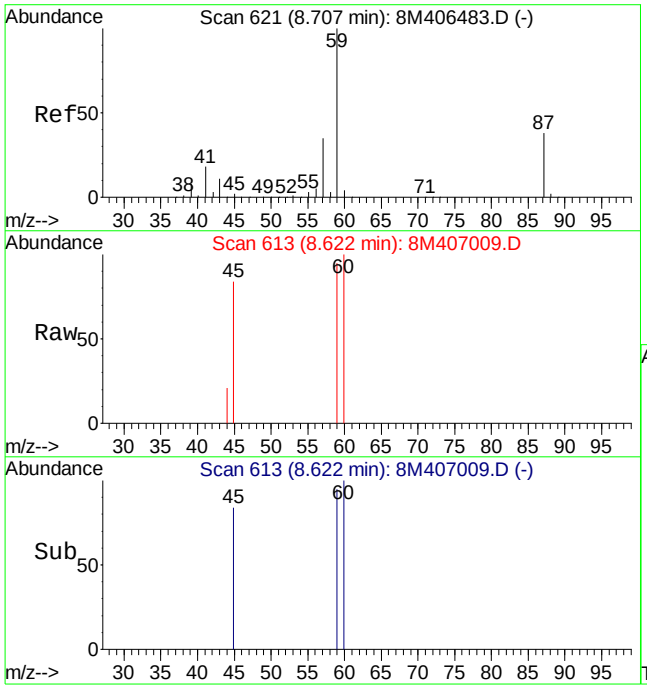

#28
Ethyl-Tert-Butyl ether
Concen: 0.20 ug/L
RT: 8.62 min Scan# 613
Delta R.T. -0.08 min
Lab File: 8M407009.D
Acq: 25 Aug 2015 18:32

Tgt Ion: 59 Resp: 3414

Ion	Ratio	Lower	Upper
59	100		
87	0.0	22.5	52.5#
57	0.0	20.0	46.6#

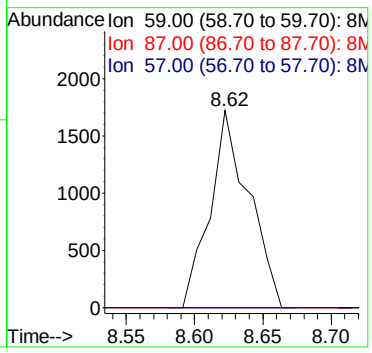

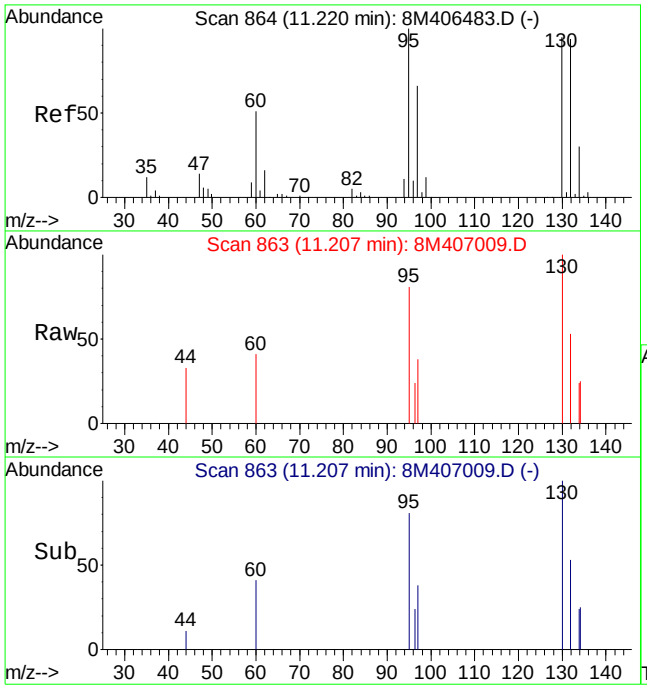

#47
Trichloroethene
Concen: 0.49 ug/L
RT: 11.21 min Scan# 863
Delta R.T. -0.01 min
Lab File: 8M407009.D
Acq: 25 Aug 2015 18:32

Tgt Ion:130 Resp: 3496

Ion	Ratio	Lower	Upper
130	100		
132	88.8	59.0	137.6
95	88.5	65.0	151.8

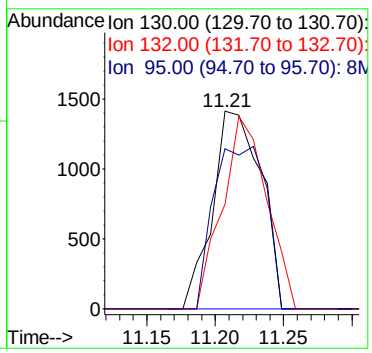

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082515\8M407001.D Vial: 13
Acq On : 25 Aug 2015 14:40 Operator: TMB
Sample : L15081251-16 A REF 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 26 08:00:30 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	721634	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	558098	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	300945	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	160006	25.1632 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.64%		
43) 1,2-Dichloroethane-d4	10.31	65	143880	22.7543 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 91.00%		
58) Toluene-d8	12.69	98	660077	24.5173 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.08%		
80) p-Bromofluorobenzene	16.08	95	248963	23.9172 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.68%		
Target Compounds					Qvalue
3) Chloromethane	3.62	50	4781	0.3886 ug/L	91
13) Acetone	6.27	43	654	0.7187 ug/L	93
15) Tert-Butyl Alcohol	6.58	59	223	0.9330 ug/L #	58

(#) = qualifier out of range (m) = manual integration
8M407001.D 8260WT.M Wed Aug 26 08:00:30 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082515\8M407001.D Vial: 13
Acq On : 25 Aug 2015 14:40 Operator: TMB
Sample : L15081251-16 A REF 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 26 8:00 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

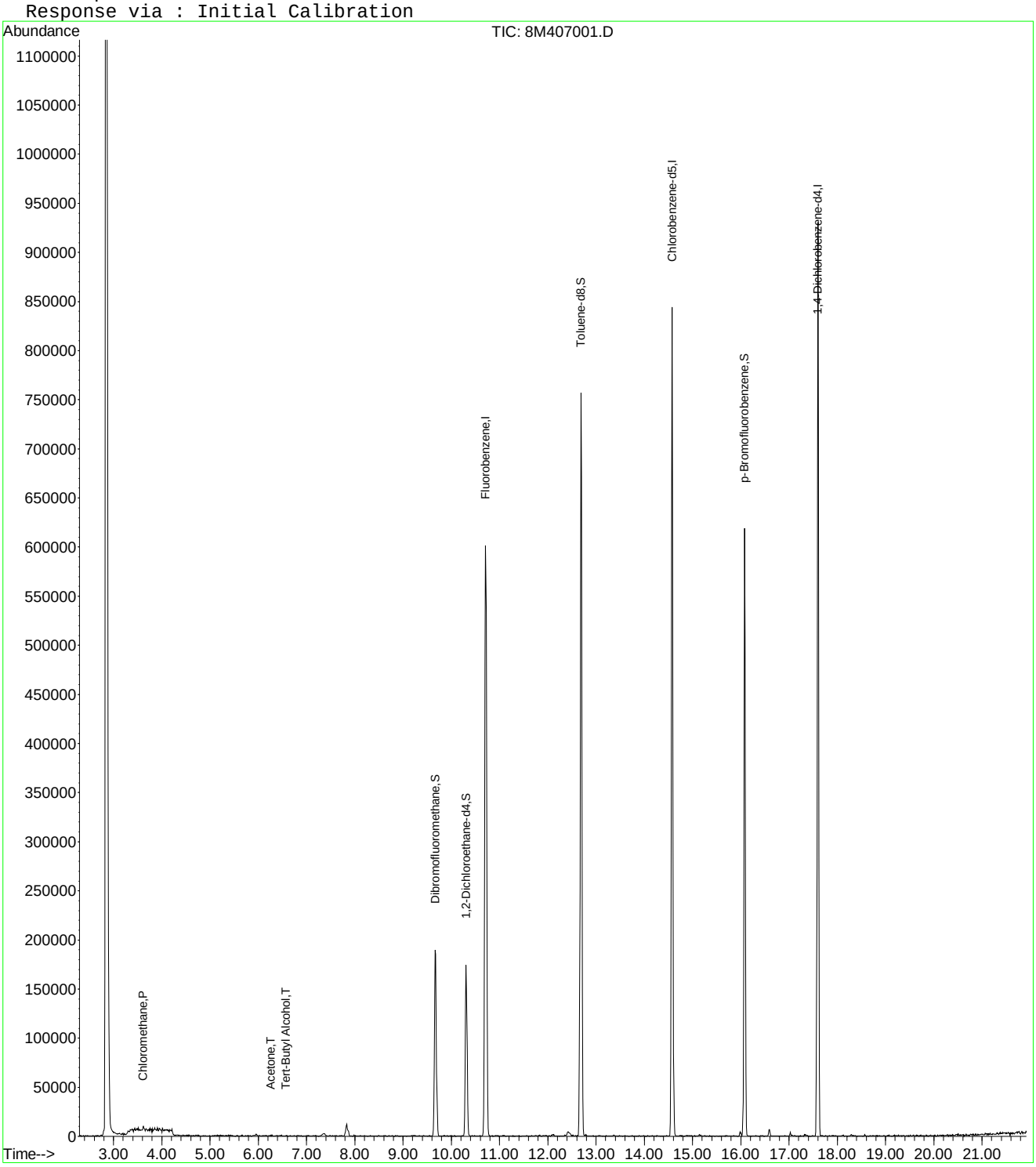

8M407001.D 8260WT.M Wed Aug 26 08:00:30 2015 Page 2

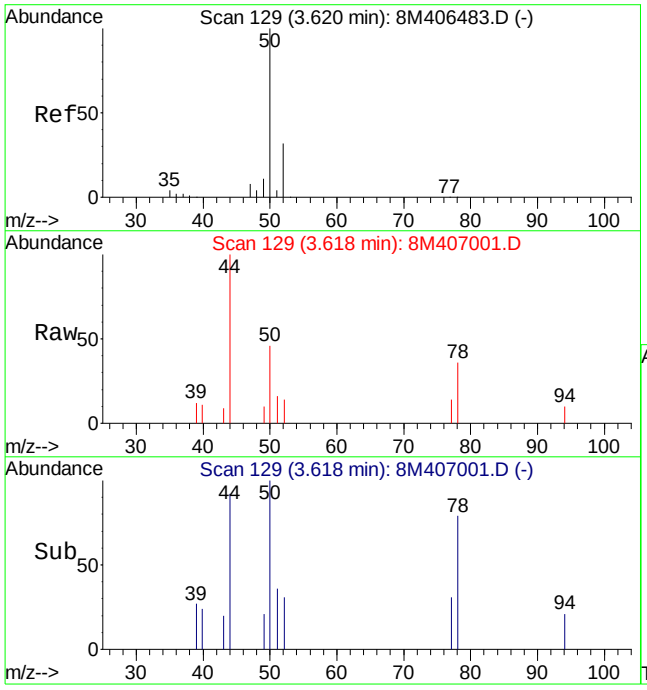

#3
Chloromethane
Concen: 0.39 ug/L
RT: 3.62 min Scan# 129
Delta R.T. -0.00 min
Lab File: 8M407001.D
Acq: 25 Aug 2015 14:40

Tgt Ion: 50 Resp: 4781

Ion	Ratio	Lower	Upper
50	100		
52	36.8	19.2	44.8

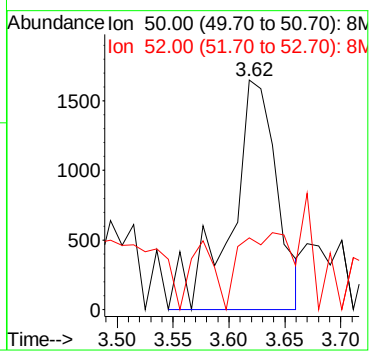

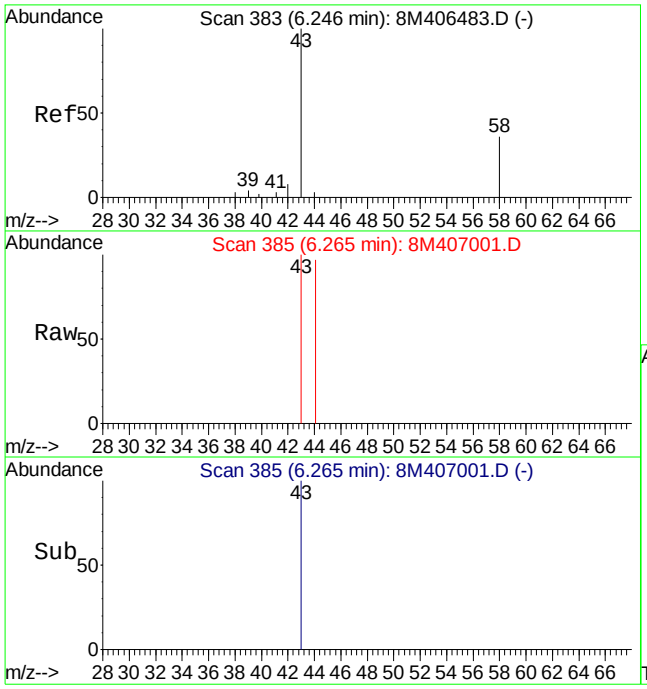

#13
Acetone
Concen: 0.72 ug/L
RT: 6.27 min Scan# 385
Delta R.T. 0.02 min
Lab File: 8M407001.D
Acq: 25 Aug 2015 14:40

Tgt Ion: 43 Resp: 654

Ion	Ratio	Lower	Upper
43	100		
58	31.0	16.4	38.2

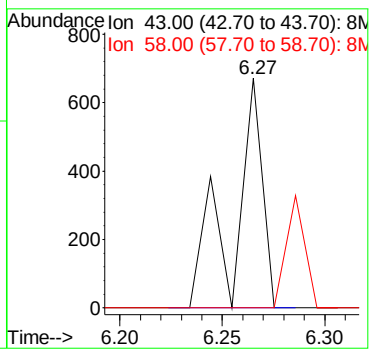

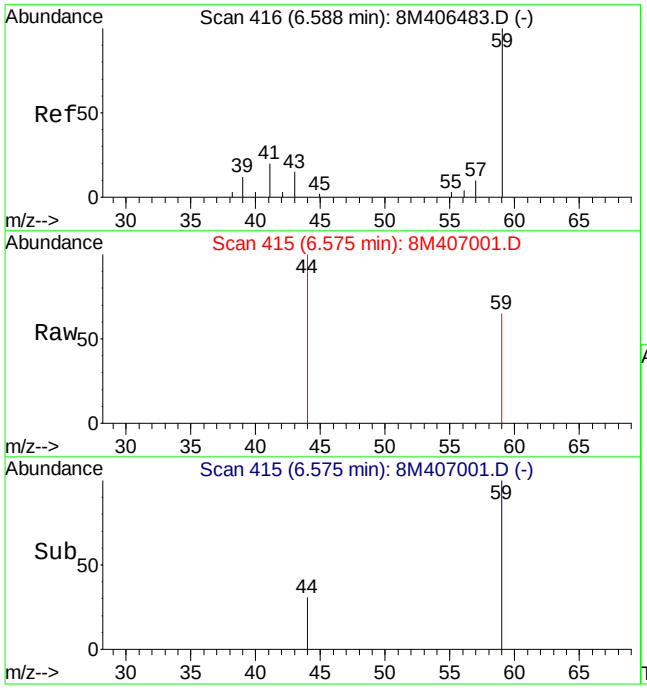

#15
Tert-Butyl Alcohol
Concen: 0.93 ug/L
RT: 6.58 min Scan# 415
Delta R.T. -0.01 min
Lab File: 8M407001.D
Acq: 25 Aug 2015 14:40

Tgt Ion: 59 Resp: 223

Ion	Ratio	Lower	Upper
59	100		
41	0.0	14.2	33.0#
57	0.0	6.5	15.3#

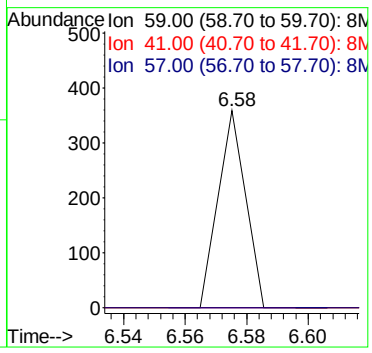

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\082515\8M406996.D Vial: 8
Acq On : 25 Aug 2015 12:15 Operator: TMB
Sample : L15081251-17 A MS 826-LOW Inst : HPMS8
Misc : 1,1 STD72078 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 25 12:37:37 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	782361	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	617259	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	353332	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	178332	25.8683 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.48%		
43) 1,2-Dichloroethane-d4	10.31	65	160722	23.4449 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 93.76%		
58) Toluene-d8	12.69	98	718919	24.1435 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.56%		
80) p-Bromofluorobenzene	16.08	95	287610	23.5333 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.12%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	227988	19.0809 ug/L	99
3) Chloromethane	3.62	50	266781	19.9991 ug/L	98
4) Vinyl Chloride	3.85	62	216307	22.0492 ug/L	99
5) 1,3-Butadiene	3.89	54	53853	6.2619 ug/L	94
6) Bromomethane	4.74	94	70695	10.8189 ug/L	99
7) Chloroethane	4.90	64	120483	19.7250 ug/L	99
8) Trichlorofluoromethane	5.38	101	200643	15.8172 ug/L	97
10) Isoprene	5.95	67	179912	18.1212 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	125867	17.3783 ug/L	99
13) Acetone	6.25	43	18121	18.3678 ug/L #	76
14) 1,1-Dichloroethene	6.47	61	195008	15.8703 ug/L	96
16) Dimethyl Sulfide	6.73	62	164045	21.2642 ug/L	98
17) Iodomethane	6.99	142	40432	6.1349 ug/L	95
18) Methyl acetate	7.01	43	60847	15.8938 ug/L	97
19) Methylene Chloride	7.26	84	152355	19.4655 ug/L	94
20) Carbon Disulfide	7.30	76	387469	15.4398 ug/L	99
21) Acrylonitrile	7.45	53	32091	19.5755 ug/L	96
22) Methyl Tert Butyl Ether	7.48	73	267081	19.3232 ug/L	100
23) trans-1,2-Dichloroethene	7.70	61	204634	17.7572 ug/L	95
24) n-Hexane	7.79	57	193968	15.5706 ug/L	96
26) Vinyl Acetate	8.30	43	219754	30.7220 ug/L	100
27) 1,1-Dichloroethane	8.33	63	292844	18.9468 ug/L	98
29) 2-Butanone	8.89	43	34571	20.6959 ug/L	98
31) 2,2-Dichloropropane	9.11	77	226709	19.0336 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	162860	19.6373 ug/L	92
33) Chloroform	9.38	83	267711	19.1926 ug/L	99
34) 1-Bromopropane	9.51	122	30184	20.4757 ug/L	99
35) Bromochloromethane	9.61	130	87108	20.3909 ug/L	98
38) 1,1,1-Trichloroethane	9.92	97	239835	18.6408 ug/L	98
39) Cyclohexane	9.95	56	258264	17.2102 ug/L	99
40) 1,1-Dichloropropene	10.11	75	189975	17.2456 ug/L	96
42) Carbon Tetrachloride	10.26	117	204472	17.9486 ug/L	98
45) 1,2-Dichloroethane	10.42	62	177574	19.0072 ug/L	99
46) Benzene	10.46	78	599448	19.4669 ug/L	97
47) Trichloroethene	11.22	130	156303	17.7835 ug/L	92
48) Methylcyclohexane	11.30	83	223972	17.5728 ug/L	98
49) 1,2-Dichloropropane	11.43	63	169357	19.8526 ug/L	95
50) Bromodichloromethane	11.73	83	203241	19.1968 ug/L	98
52) Dibromomethane	11.82	93	79315	20.3244 ug/L	96
54) 4-Methyl-2-Pentanone	12.06	58	33321	21.0654 ug/L	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\082515\8M406996.D Vial: 8
Acq On : 25 Aug 2015 12:15 Operator: TMB
Sample : L15081251-17 A MS 826-LOW Inst : HPMS8
Misc : 1,1 STD72078 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 25 12:37:37 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
55)	cis-1,3-Dichloropropene	12.37	75	243877	20.9274	ug/L		98
56)	Dimethyl Disulfide	12.63	79	112649	17.8428	ug/L		85
59)	Toluene	12.79	91	673958	18.6836	ug/L		99
60)	Ethyl Methacrylate	12.88	69	144452	20.9815	ug/L		98
62)	trans-1,3-Dichloropropene	12.97	75	195924	18.3618	ug/L		100
63)	1,1,2-Trichloroethane	13.17	97	112468	19.8955	ug/L		100
64)	2-Hexanone	13.12	58	31603	19.7898	ug/L	#	93
65)	1,3-Dichloropropane	13.48	76	188911	19.2011	ug/L		98
66)	Tetrachloroethene	13.61	164	134556	17.6920	ug/L		94
67)	Dibromochloromethane	13.87	129	141079	18.9454	ug/L		98
68)	1,2-Dibromoethane	14.12	107	101647	18.4934	ug/L		99
69)	1-Chlorohexane	14.21	91	221265	17.3569	ug/L		98
70)	Chlorobenzene	14.63	112	463670	20.0756	ug/L		95
71)	1,1,1,2-Tetrachloroethane	14.66	131	153483	18.7064	ug/L		99
72)	Ethylbenzene	14.65	106	243679	18.6912	ug/L		97
73)	m-,p-Xylene	14.75	106	592088	38.4330	ug/L		97
74)	o-Xylene	15.30	106	305176	20.1287	ug/L		92
75)	Styrene	15.34	104	476614	19.2479	ug/L		95
76)	Bromoform	15.84	173	90588	20.2331	ug/L		97
77)	Isopropylbenzene	15.74	105	731942	19.2845	ug/L		96
79)	1,1,2,2-Tetrachloroethane	15.94	83	126177	19.6542	ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	32091	17.8084	ug/L		54
82)	trans-1,4-Dichloro-2-Buten	16.18	53	26826	11.3347	ug/L	#	19
83)	n-Propylbenzene	16.23	91	943597	18.1383	ug/L		100
84)	Bromobenzene	16.37	156	186514	17.7002	ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	614000	17.8772	ug/L		95
86)	2-Chlorotoluene	16.51	91	609785	19.1900	ug/L		97
87)	4-Chlorotoluene	16.55	91	539902	17.8296	ug/L		96
88)	a-Methylstyrene	16.82	118	320620	17.1901	ug/L		96
89)	tert-Butylbenzene	16.90	134	129633	17.4218	ug/L		93
90)	1,2,4-Trimethylbenzene	16.95	105	617763	17.7528	ug/L		97
91)	sec-Butylbenzene	17.15	105	775807	18.3074	ug/L		98
92)	p-Isopropyltoluene	17.32	119	628551	17.2476	ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	391512	18.9474	ug/L		94
94)	1,4-Dichlorobenzene	17.64	146	384244	18.0395	ug/L		94
95)	n-Butylbenzene	17.85	91	593171	16.8798	ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	355844	19.5054	ug/L		96
97)	1,2-Dibromo-3-Chloropropan	19.13	75	18891	16.8078	ug/L		87
98)	1,2,4-Trichlorobenzene	20.27	180	234752	16.7213	ug/L		98
99)	Hexachlorobutadiene	20.42	225	102893	14.4026	ug/L		97
100)	Naphthalene	20.64	128	315124	17.3001	ug/L		98
101)	1,2,3-Trichlorobenzene	20.95	180	200381	16.5400	ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\082515\8M406996.D Vial: 8
Acq On : 25 Aug 2015 12:15 Operator: TMB
Sample : L15081251-17 A MS 826-LOW Inst : HPMS8
Misc : 1,1 STD72078 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 25 12:37 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

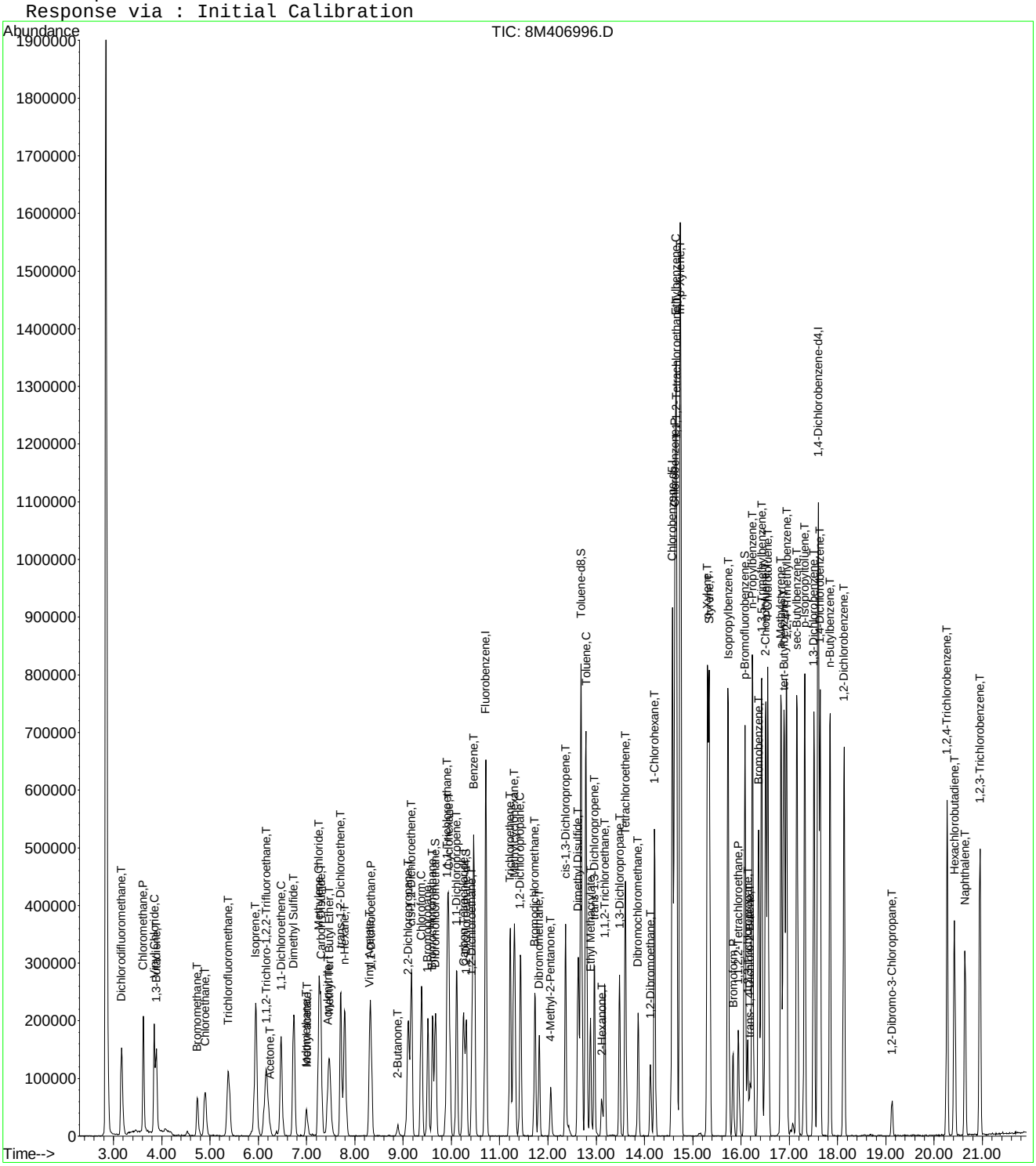

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\082515\8M406997.D Vial: 9
Acq On : 25 Aug 2015 12:44 Operator: TMB
Sample : L15081251-18 A MSD 826-LOW Inst : HPMS8
Misc : 1,1 STD72078 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 25 13:06:39 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	795941	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	615828	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	356509	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	177543	25.3145 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.24%		
43) 1,2-Dichloroethane-d4	10.31	65	159060	22.8065 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 91.24%		
58) Toluene-d8	12.69	98	734921	24.7383 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.96%		
80) p-Bromofluorobenzene	16.08	95	281951	22.8647 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 91.44%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	231914	19.0784 ug/L	98
3) Chloromethane	3.62	50	274904	20.2564 ug/L	99
4) Vinyl Chloride	3.85	62	223736	22.4174 ug/L	99
5) 1,3-Butadiene	3.89	54	49743	5.6853 ug/L	95
6) Bromomethane	4.74	94	73322	11.0294 ug/L	96
7) Chloroethane	4.90	64	122786	19.7591 ug/L	98
8) Trichlorofluoromethane	5.38	101	206618	16.0103 ug/L	99
10) Isoprene	5.95	67	191136	18.9232 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	129300	17.5477 ug/L	99
13) Acetone	6.25	43	18909	18.8395 ug/L	97
14) 1,1-Dichloroethene	6.47	61	201472	16.1166 ug/L	95
16) Dimethyl Sulfide	6.74	62	163967	20.8915 ug/L	96
17) Iodomethane	6.99	142	42696	6.3347 ug/L	98
18) Methyl acetate	7.01	43	57795	14.8391 ug/L	97
19) Methylene Chloride	7.26	84	147934	18.5782 ug/L	99
20) Carbon Disulfide	7.30	76	407012	15.9418 ug/L	99
21) Acrylonitrile	7.44	53	32164	19.2853 ug/L	98
22) Methyl Tert Butyl Ether	7.48	73	264811	18.8321 ug/L	98
23) trans-1,2-Dichloroethene	7.71	61	207731	17.7184 ug/L	94
24) n-Hexane	7.80	57	203129	16.0277 ug/L	92
26) Vinyl Acetate	8.30	43	209982	28.8550 ug/L	99
27) 1,1-Dichloroethane	8.33	63	292123	18.5777 ug/L	100
29) 2-Butanone	8.89	43	33591	19.7661 ug/L	100
31) 2,2-Dichloropropane	9.11	77	222647	18.3736 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	164798	19.5320 ug/L	92
33) Chloroform	9.38	83	272027	19.1693 ug/L	99
34) 1-Bromopropane	9.51	122	28925	19.2869 ug/L	96
35) Bromochloromethane	9.62	130	85655	19.7087 ug/L	99
38) 1,1,1-Trichloroethane	9.91	97	243501	18.6028 ug/L	97
39) Cyclohexane	9.95	56	264965	17.3555 ug/L	100
40) 1,1-Dichloropropene	10.11	75	197425	17.6161 ug/L	97
42) Carbon Tetrachloride	10.26	117	211662	18.2627 ug/L	99
45) 1,2-Dichloroethane	10.42	62	172298	18.1278 ug/L	96
46) Benzene	10.46	78	612029	19.5364 ug/L	98
47) Trichloroethene	11.22	130	157235	17.5843 ug/L	95
48) Methylcyclohexane	11.30	83	228861	17.6500 ug/L	97
49) 1,2-Dichloropropane	11.44	63	171688	19.7824 ug/L	94
50) Bromodichloromethane	11.74	83	204435	18.9801 ug/L	100
52) Dibromomethane	11.82	93	79024	19.9044 ug/L	95
54) 4-Methyl-2-Pentanone	12.06	58	31201	19.3886 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\082515\8M406997.D Vial: 9
Acq On : 25 Aug 2015 12:44 Operator: TMB
Sample : L15081251-18 A MSD 826-LOW Inst : HPMS8
Misc : 1,1 STD72078 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 25 13:06:39 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
55)	cis-1,3-Dichloropropene	12.37	75	246849	20.8210 ug/L		100
56)	Dimethyl Disulfide	12.62	79	112716	17.5488 ug/L		88
59)	Toluene	12.79	91	687363	19.0995 ug/L		99
60)	Ethyl Methacrylate	12.88	69	137537	20.0235 ug/L		97
62)	trans-1,3-Dichloropropene	12.97	75	193950	18.2190 ug/L		98
63)	1,1,2-Trichloroethane	13.18	97	106343	18.8557 ug/L		96
64)	2-Hexanone	13.12	58	30990	19.4510 ug/L	#	98
65)	1,3-Dichloropropane	13.48	76	185883	18.9372 ug/L		97
66)	Tetrachloroethene	13.61	164	139638	18.4029 ug/L		94
67)	Dibromochloromethane	13.87	129	138346	18.6215 ug/L		100
68)	1,2-Dibromoethane	14.12	107	99950	18.2269 ug/L		97
69)	1-Chlorohexane	14.22	91	228310	17.9511 ug/L		98
70)	Chlorobenzene	14.63	112	467657	20.2953 ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	156542	19.1236 ug/L		100
72)	Ethylbenzene	14.65	106	244604	18.8057 ug/L		98
73)	m-,p-Xylene	14.74	106	613205	39.8962 ug/L		93
74)	o-Xylene	15.30	106	307278	20.3144 ug/L		91
75)	Styrene	15.34	104	486537	19.6943 ug/L		95
76)	Bromoform	15.84	173	87134	19.5069 ug/L		99
77)	Isopropylbenzene	15.74	105	759791	20.0647 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.94	83	122769	18.9529 ug/L		100
81)	1,2,3-Trichloropropane	16.14	110	33055	18.1799 ug/L		53
82)	trans-1,4-Dichloro-2-Buten	16.18	53	24671	10.4018 ug/L	#	4
83)	n-Propylbenzene	16.24	91	962319	18.3334 ug/L		99
84)	Bromobenzene	16.37	156	188181	17.6993 ug/L		96
85)	1,3,5-Trimethylbenzene	16.43	105	634497	18.3094 ug/L		97
86)	2-Chlorotoluene	16.51	91	607394	18.9444 ug/L		97
87)	4-Chlorotoluene	16.55	91	570308	18.6659 ug/L		96
88)	a-Methylstyrene	16.83	118	324763	17.2570 ug/L		97
89)	tert-Butylbenzene	16.88	134	132737	17.6800 ug/L		94
90)	1,2,4-Trimethylbenzene	16.95	105	624506	17.7866 ug/L		96
91)	sec-Butylbenzene	17.16	105	795929	18.6148 ug/L		99
92)	p-Isopropyltoluene	17.32	119	632018	17.1882 ug/L		100
93)	1,3-Dichlorobenzene	17.52	146	398358	19.1069 ug/L		94
94)	1,4-Dichlorobenzene	17.64	146	380982	17.7270 ug/L		97
95)	n-Butylbenzene	17.85	91	597522	16.8521 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	356631	19.3743 ug/L		96
97)	1,2-Dibromo-3-Chloropropan	19.13	75	17798	15.6942 ug/L		80
98)	1,2,4-Trichlorobenzene	20.28	180	227640	16.0702 ug/L		97
99)	Hexachlorobutadiene	20.42	225	102722	14.2506 ug/L		99
100)	Naphthalene	20.64	128	306846	16.6955 ug/L		99
101)	1,2,3-Trichlorobenzene	20.95	180	198226	16.2164 ug/L		96

(#) = qualifier out of range (m) = manual integration
8M406997.D 8260WT.M Tue Aug 25 13:06:39 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\082515\8M406997.D Vial: 9
Acq On : 25 Aug 2015 12:44 Operator: TMB
Sample : L15081251-18 A MSD 826-LOW Inst : HPMS8
Misc : 1,1 STD72078 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 25 13:06 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

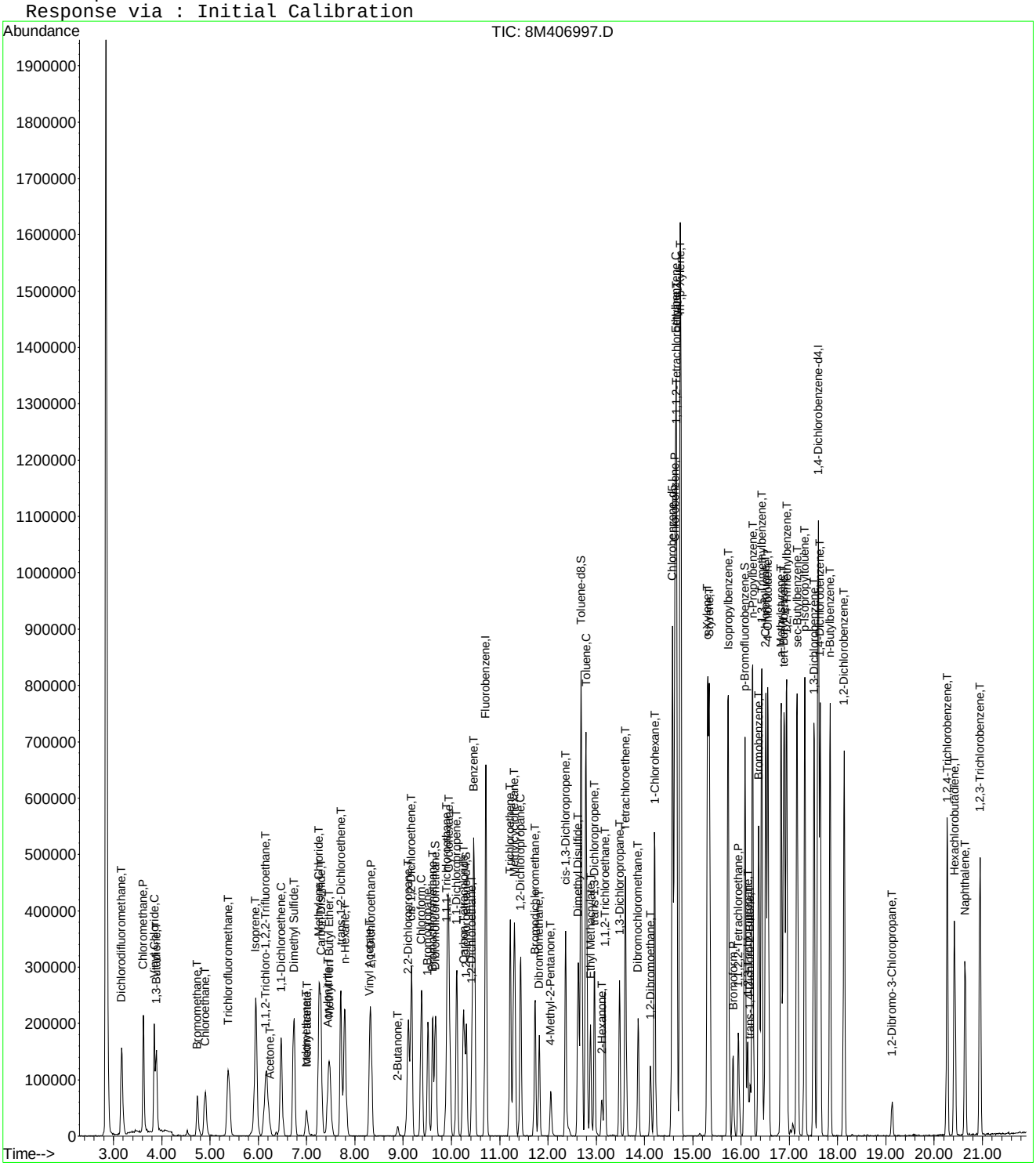

8M406997.D 8260WT.M Tue Aug 25 13:06:40 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082515\8M406999.D Vial: 11
Acq On : 25 Aug 2015 13:42 Operator: TMB
Sample : L15081251-19 A TB 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 26 08:00:27 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	742894	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	579571	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	316101	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	162444	24.8155 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.28%		
43) 1,2-Dichloroethane-d4	10.31	65	144786	22.2423 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 88.96%		
58) Toluene-d8	12.69	98	689351	24.6560 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.64%		
80) p-Bromofluorobenzene	16.08	95	258580	23.6500 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.60%		

Target Compounds					Qvalue
3) Chloromethane	3.61	50	2653	0.2094 ug/L	82
13) Acetone	6.25	43	720	0.7686 ug/L #	48
19) Methylene Chloride	7.26	84	2711	0.3648 ug/L	74
36) Tetrahydrofuran	9.63	42	639	0.5857 ug/L #	40

(#) = qualifier out of range (m) = manual integration
8M406999.D 8260WT.M Wed Aug 26 08:00:28 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082515\8M406999.D Vial: 11
Acq On : 25 Aug 2015 13:42 Operator: TMB
Sample : L15081251-19 A TB 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 26 8:00 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

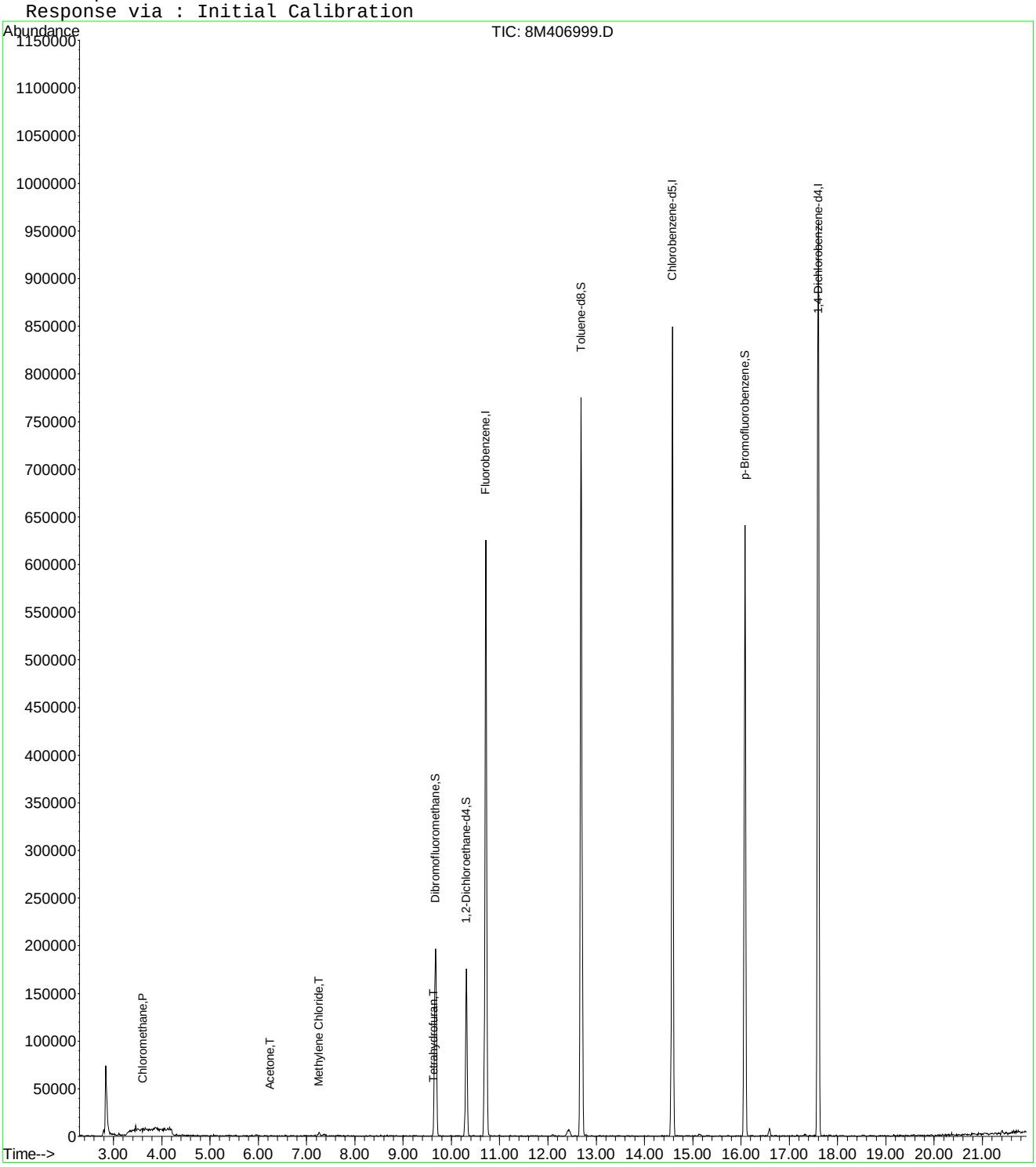

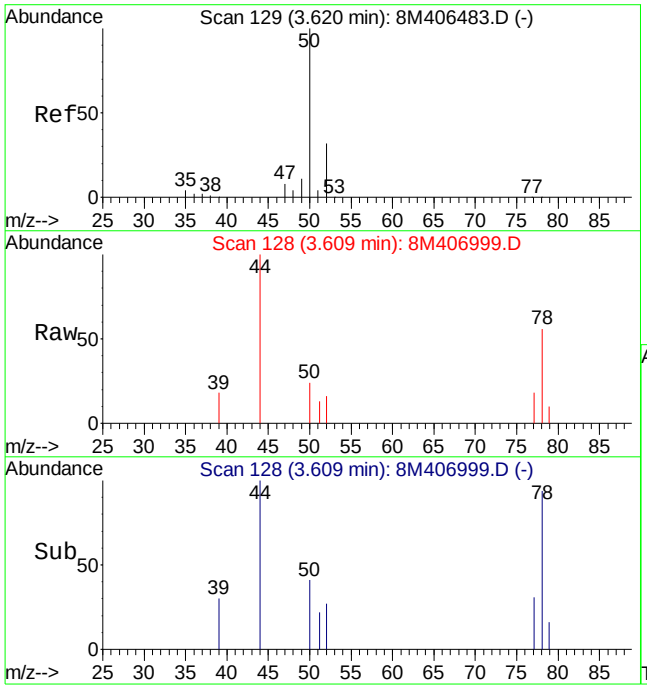

#3
Chloromethane
Concen: 0.21 ug/L
RT: 3.61 min Scan# 128
Delta R.T. -0.01 min
Lab File: 8M406999.D
Acq: 25 Aug 2015 13:42

Tgt Ion: 50 Resp: 2653

Ion	Ratio	Lower	Upper
50	100		
52	42.0	19.2	44.8

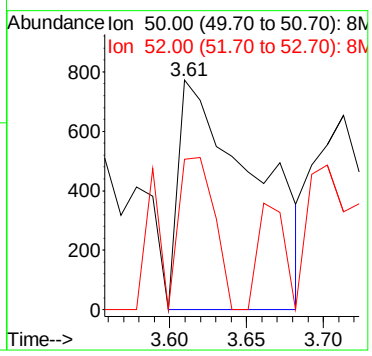

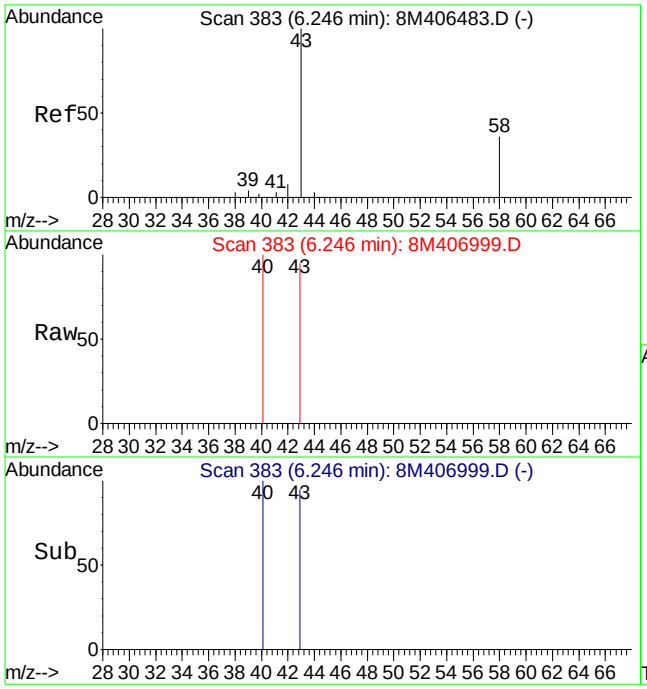

#13
Acetone
Concen: 0.77 ug/L
RT: 6.25 min Scan# 383
Delta R.T. 0.00 min
Lab File: 8M406999.D
Acq: 25 Aug 2015 13:42

Tgt Ion: 43 Resp: 720

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

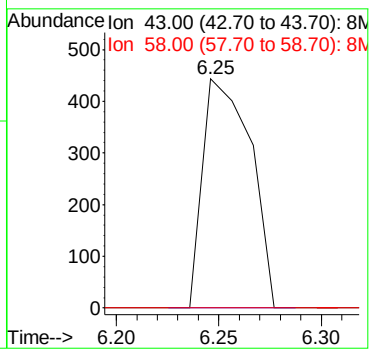

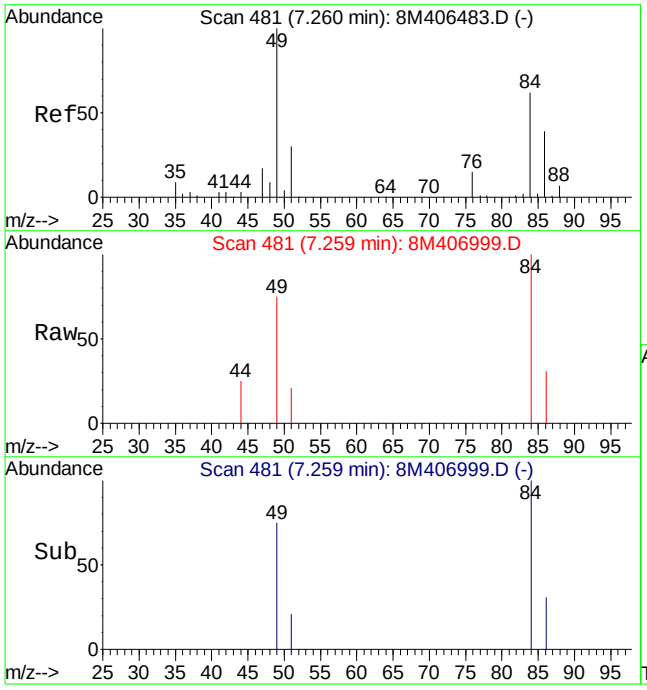

#19
Methylene Chloride
Concen: 0.36 ug/L
RT: 7.26 min Scan# 481
Delta R.T. 0.00 min
Lab File: 8M406999.D
Acq: 25 Aug 2015 13:42

Tgt Ion: 84 Resp: 2711

Ion	Ratio	Lower	Upper
84	100		
49	129.9	98.6	230.2

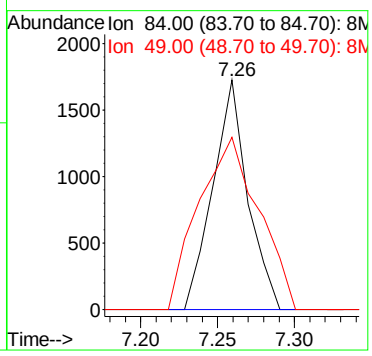

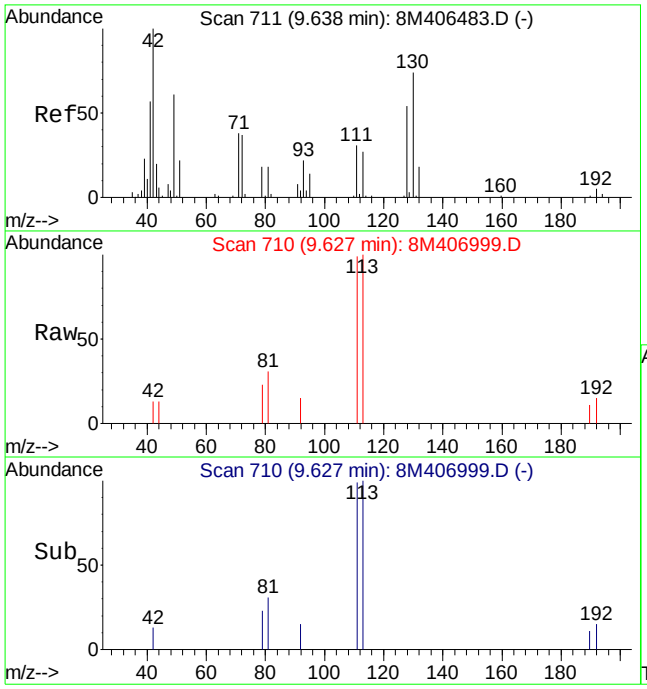

#36
Tetrahydrofuran
Concen: 0.59 ug/L
RT: 9.63 min Scan# 710
Delta R.T. -0.01 min
Lab File: 8M406999.D
Acq: 25 Aug 2015 13:42

Tgt Ion: 42 Resp: 639

Ion	Ratio	Lower	Upper
42	100		
72	0.0	22.4	52.4#
71	0.0	19.5	45.5#

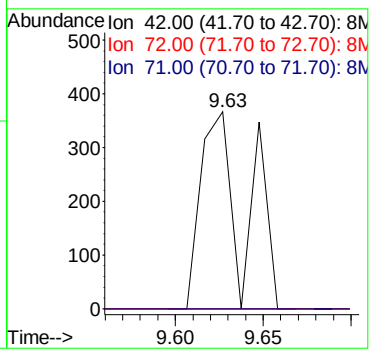

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400358.D Vial: 2
Acq On : 2 Oct 2014 12:24 Operator: TMB
Sample : WG494714-02 5ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:40 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	619208	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	544510	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	254129	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	1884	4.8234 ug/L #	23
3) 3-Chloro-1-propene	7.26	41	51461	4.9911 ug/L	88
4) 2-Chloro-1,3-butadiene	8.64	53	57885	4.7445 ug/L	89
5) Ethyl Acetate	9.28	43	12831	4.1474 ug/L	98
6) Methacrylonitrile	9.44	67	7738	4.2085 ug/L #	61
7) Isobutyl Alcohol	9.28	43	12831	104.0280 ug/L #	12
9) Methyl methacrylate	11.60	41	14247	4.0960 ug/L	83
10) 2-Nitropropane	11.94	43	3986	3.8294 ug/L	98
13) Cyclohexanone	16.03	55	1559	3.8882 ug/L #	43

(#) = qualifier out of range (m) = manual integration
8M400358.D A9FOOWTR.M Fri Oct 03 12:32:40 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400358.D Vial: 2
Acq On : 2 Oct 2014 12:24 Operator: TMB
Sample : WG494714-02 5ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

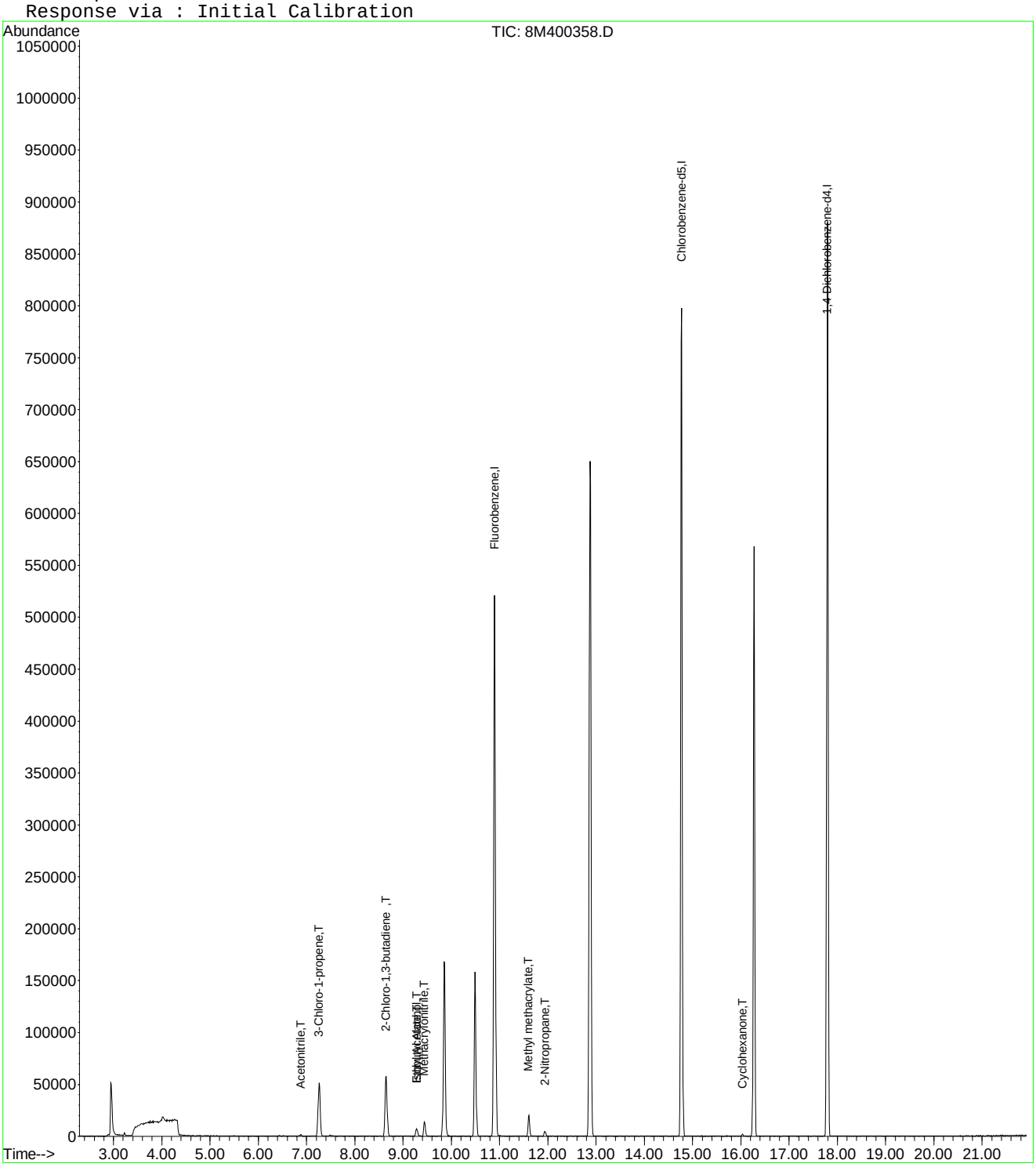

8M400358.D A9FOOWTR.M Fri Oct 03 12:32:41 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400359.D Vial: 3
Acq On : 2 Oct 2014 12:53 Operator: TMB
Sample : WG494714-03 20ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:41 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	590707	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	530005	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	246254	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	7263	19.4920 ug/L	97
3) 3-Chloro-1-propene	7.26	41	190581	19.3757 ug/L	90
4) 2-Chloro-1,3-butadiene	8.65	53	226534	19.4636 ug/L	90
5) Ethyl Acetate	9.28	43	54503	18.4670 ug/L	94
6) Methacrylonitrile	9.44	67	30898	17.6155 ug/L #	65
7) Isobutyl Alcohol	9.45	43	3143	26.7115 ug/L #	95
9) Methyl methacrylate	11.61	41	58234	17.5500 ug/L	72
10) 2-Nitropropane	11.94	43	16687	16.8050 ug/L	98
13) Cyclohexanone	16.03	55	7124	18.3357 ug/L	88

(#) = qualifier out of range (m) = manual integration
8M400359.D A9FOOWTR.M Fri Oct 03 12:32:41 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400359.D Vial: 3
Acq On : 2 Oct 2014 12:53 Operator: TMB
Sample : WG494714-03 20ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

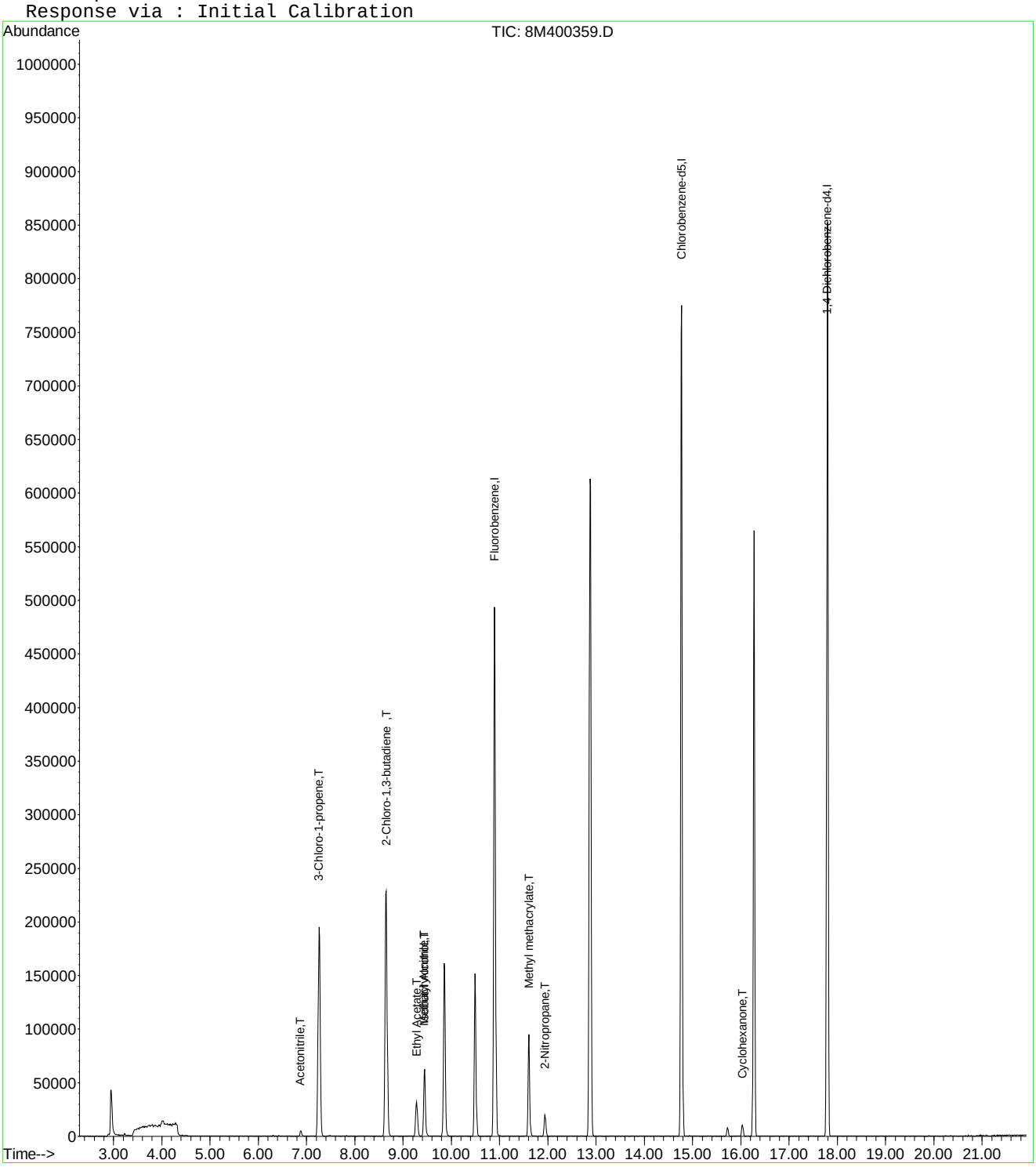

8M400359.D A9FOOWTR.M Fri Oct 03 12:32:42 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400360.D Vial: 4
Acq On : 2 Oct 2014 13:22 Operator: TMB
Sample : WG494714-04 50ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:42 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	590667	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	524443	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	249595	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	17698	47.5001 ug/L	100
3) 3-Chloro-1-propene	7.26	41	491365	49.9588 ug/L	90
4) 2-Chloro-1,3-butadiene	8.65	53	586258	50.3743 ug/L	90
5) Ethyl Acetate	9.27	43	145862	49.4250 ug/L	93
6) Methacrylonitrile	9.44	67	84924	48.4200 ug/L #	62
7) Isobutyl Alcohol	9.46	43	9563	81.2789 ug/L #	95
8) 1-Butanol	10.38	56	1895	48.4971 ug/L	87
9) Methyl methacrylate	11.61	41	161451	48.6599 ug/L	75
10) 2-Nitropropane	11.94	43	45766	46.0929 ug/L	98
13) Cyclohexanone	16.04	55	19698	50.0200 ug/L	89

(#) = qualifier out of range (m) = manual integration
8M400360.D A9FOOWTR.M Fri Oct 03 12:32:42 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400360.D Vial: 4
Acq On : 2 Oct 2014 13:22 Operator: TMB
Sample : WG494714-04 50ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

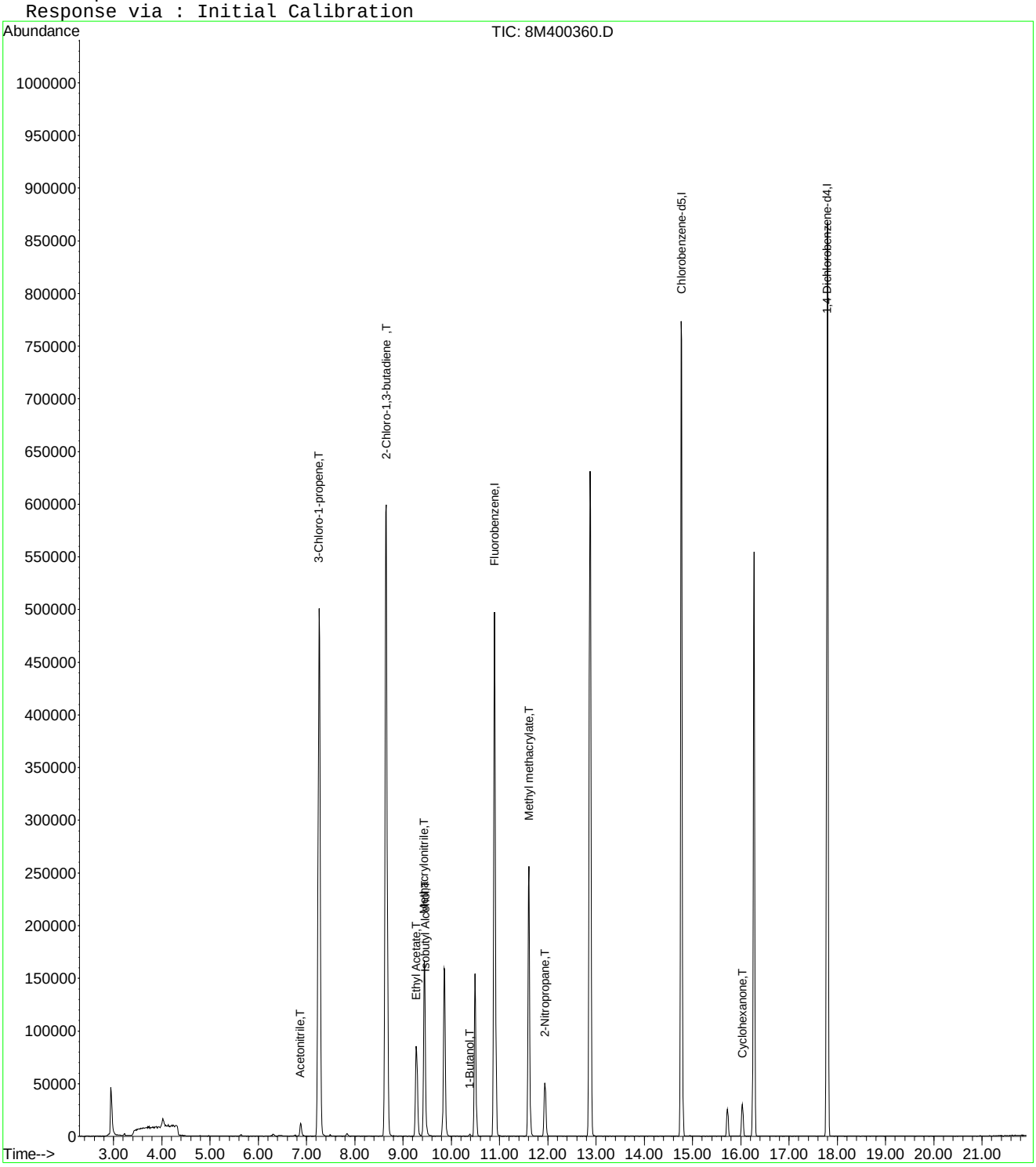

8M400360.D A9FOOWTR.M Fri Oct 03 12:32:42 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400361.D Vial: 5
Acq On : 2 Oct 2014 13:51 Operator: TMB
Sample : WG494714-05 100ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:43 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	595542	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	525736	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	251203	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	38265	101.8596 ug/L	98
3) 3-Chloro-1-propene	7.26	41	1042545	105.1315 ug/L	90
4) 2-Chloro-1,3-butadiene	8.65	53	1239135	105.6013 ug/L	88
5) Ethyl Acetate	9.27	43	315872	106.1564 ug/L	93
6) Methacrylonitrile	9.44	67	182857	103.4038 ug/L #	63
7) Isobutyl Alcohol	9.45	43	23247	195.9661 ug/L #	92
8) 1-Butanol	10.38	56	5482	96.3312 ug/L	88
9) Methyl methacrylate	11.61	41	351287	105.0082 ug/L	73
10) 2-Nitropropane	11.94	43	103249	103.1352 ug/L	99
13) Cyclohexanone	16.04	55	43523	109.8125 ug/L	88

(#) = qualifier out of range (m) = manual integration
8M400361.D A9FOOWTR.M Fri Oct 03 12:32:43 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400361.D Vial: 5
Acq On : 2 Oct 2014 13:51 Operator: TMB
Sample : WG494714-05 100ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

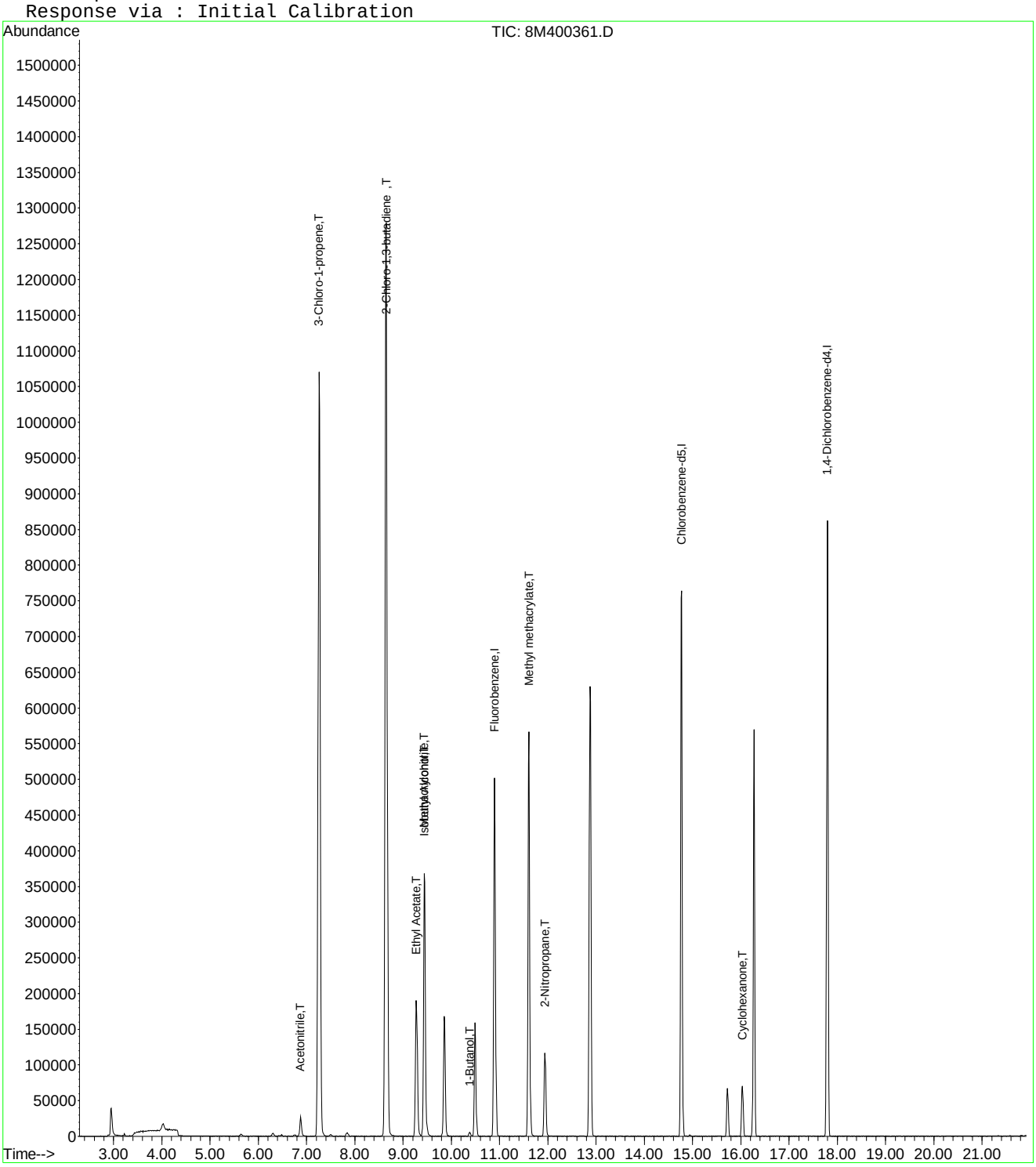

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400362.D Vial: 6
Acq On : 2 Oct 2014 14:19 Operator: TMB
Sample : WG494714-06 200ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:43 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	605985	25.00 ug/L	-0.02
11) Chlorobenzene-d5	14.77	117	543073	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.80	152	256990	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	81322	212.7447 ug/L	93
3) 3-Chloro-1-propene	7.26	41	2105378	208.6501 ug/L	89
4) 2-Chloro-1,3-butadiene	8.65	53	2530154	211.9083 ug/L	84
5) Ethyl Acetate	9.28	43	654842	216.2828 ug/L	92
6) Methacrylonitrile	9.44	67	386897	215.0159 ug/L #	62
7) Isobutyl Alcohol	9.44	43	51188	424.0654 ug/L	97
8) 1-Butanol	10.37	56	13189	196.5131 ug/L	88
9) Methyl methacrylate	11.60	41	747593	219.6225 ug/L	71
10) 2-Nitropropane	11.94	43	227212	223.0503 ug/L	99
13) Cyclohexanone	16.03	55	76140	187.7821 ug/L	85

(#) = qualifier out of range (m) = manual integration
8M400362.D A9FOOWTR.M Fri Oct 03 12:32:44 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400362.D Vial: 6
Acq On : 2 Oct 2014 14:19 Operator: TMB
Sample : WG494714-06 200ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

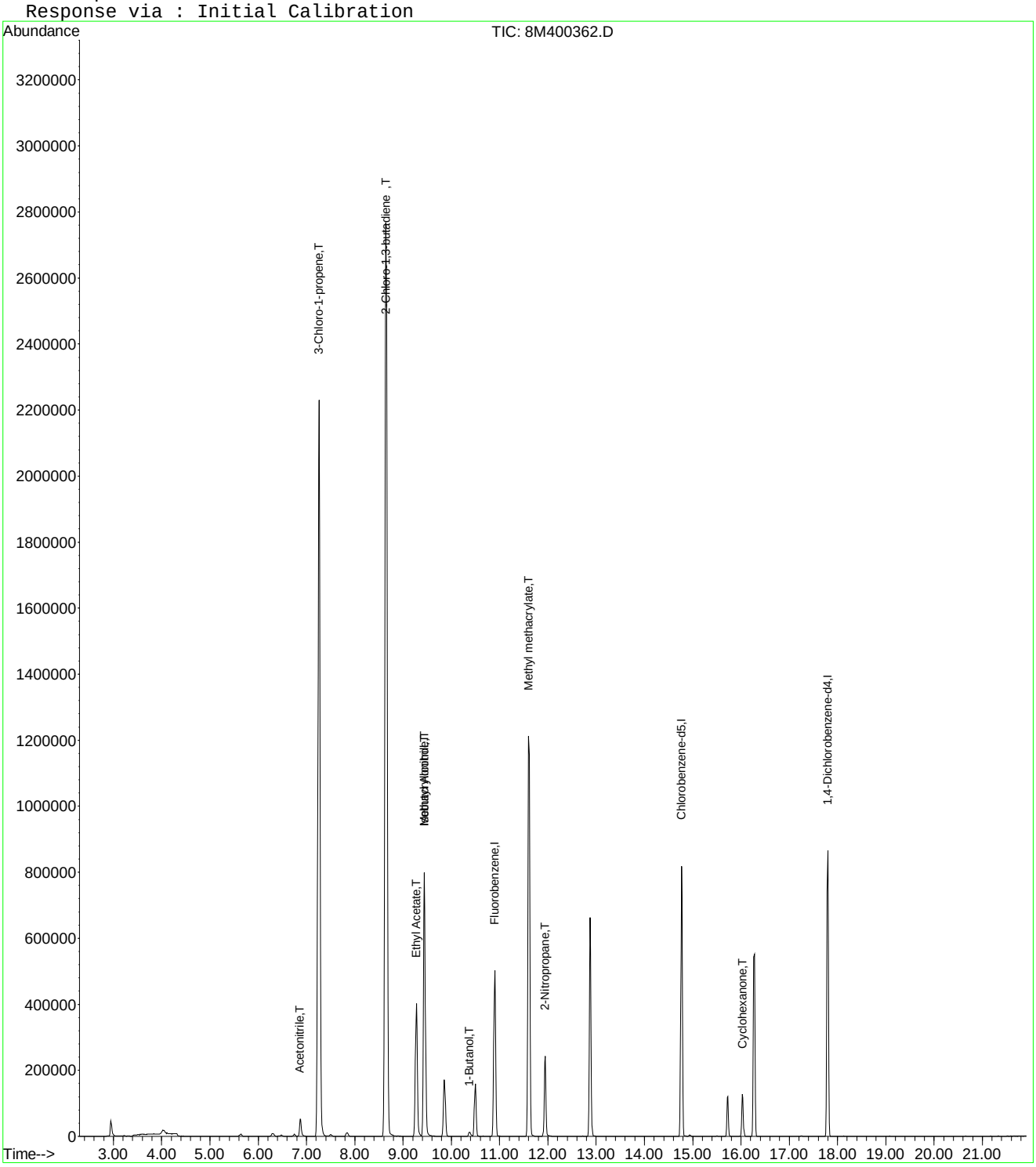

8M400362.D A9FOOWTR.M Fri Oct 03 12:32:44 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400363.D Vial: 7
Acq On : 2 Oct 2014 14:48 Operator: TMB
Sample : WG494714-07 300ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:45 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	617316	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	555877	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	259867	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	120718	310.0110 ug/L	94
3) 3-Chloro-1-propene	7.26	41	3133181	304.8093 ug/L	86
4) 2-Chloro-1,3-butadiene	8.64	53	3764580	309.5080 ug/L	79
5) Ethyl Acetate	9.27	43	984728	319.2685 ug/L	92
6) Methacrylonitrile	9.44	67	589378	321.5315 ug/L #	62
7) Isobutyl Alcohol	9.45	43	76604	622.9747 ug/L	98
8) 1-Butanol	10.37	56	23186	322.5015 ug/L	89
9) Methyl methacrylate	11.61	41	1120843	323.2293 ug/L	70
10) 2-Nitropropane	11.94	43	340074	327.7172 ug/L	99
13) Cyclohexanone	16.03	55	133635	325.9318 ug/L	85

(#) = qualifier out of range (m) = manual integration
8M400363.D A9FOOWTR.M Fri Oct 03 12:32:45 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400363.D Vial: 7
Acq On : 2 Oct 2014 14:48 Operator: TMB
Sample : WG494714-07 300ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

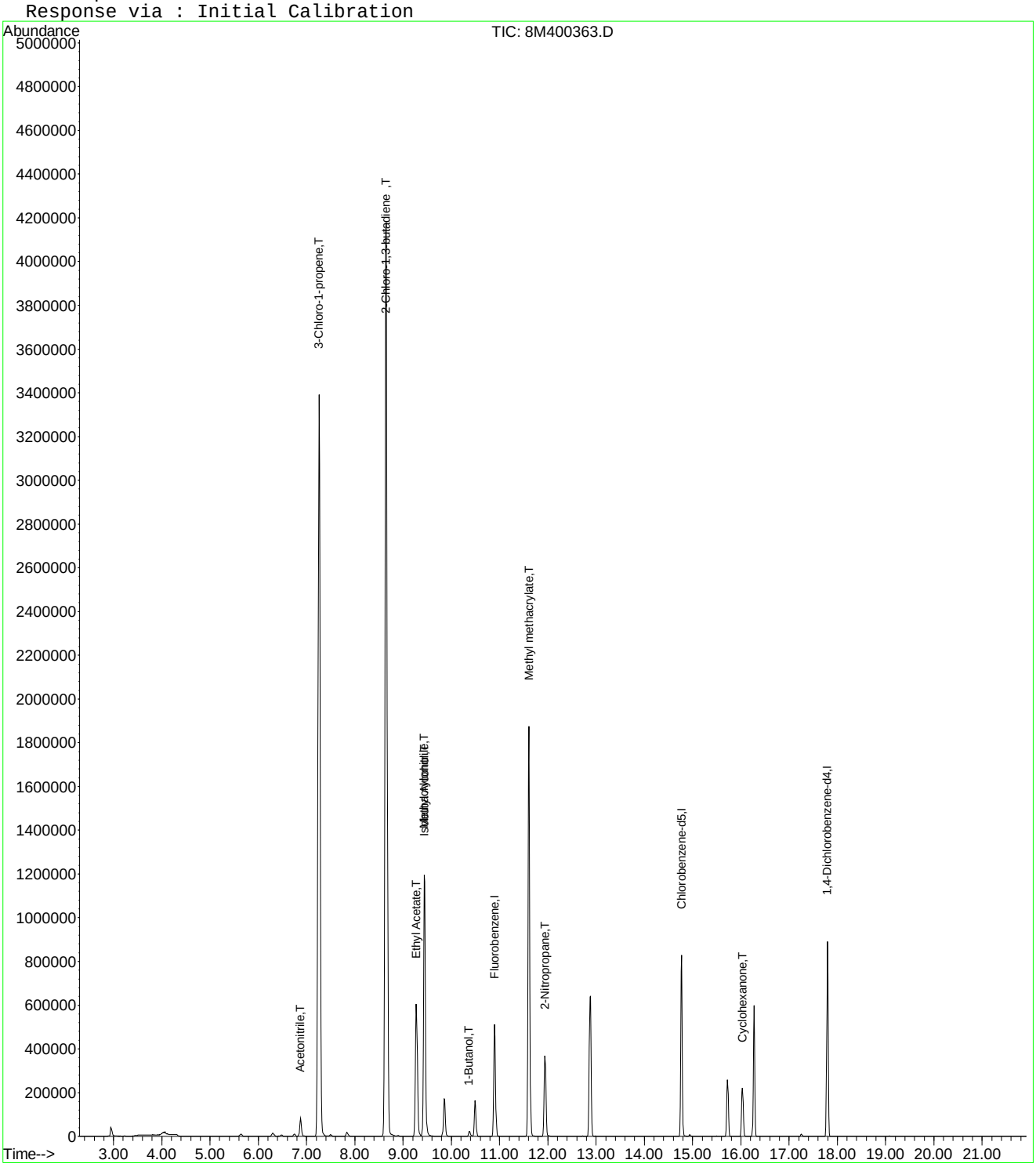

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400364.D Vial: 8
Acq On : 2 Oct 2014 15:16 Operator: TMB
Sample : WG494714-08 400ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:46 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	618926	25.00 ug/L	-0.02
11) Chlorobenzene-d5	14.77	117	559909	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.80	152	262346	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	151708	388.5818 ug/L	95
3) 3-Chloro-1-propene	7.26	41	4028272	390.8682 ug/L	83
4) 2-Chloro-1,3-butadiene	8.65	53	4802050	393.7774 ug/L	74
5) Ethyl Acetate	9.28	43	1250397	404.3491 ug/L	91
6) Methacrylonitrile	9.44	67	762998	415.1660 ug/L #	61
7) Isobutyl Alcohol	9.45	43	102436	830.8840 ug/L #	97
8) 1-Butanol	10.37	56	28243	386.8957 ug/L	89
9) Methyl methacrylate	11.60	41	1436773	413.2595 ug/L	68
10) 2-Nitropropane	11.94	43	451706	434.1607 ug/L	98
13) Cyclohexanone	16.03	55	150327	363.1785 ug/L	84

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400364.D Vial: 8
Acq On : 2 Oct 2014 15:16 Operator: TMB
Sample : WG494714-08 400ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

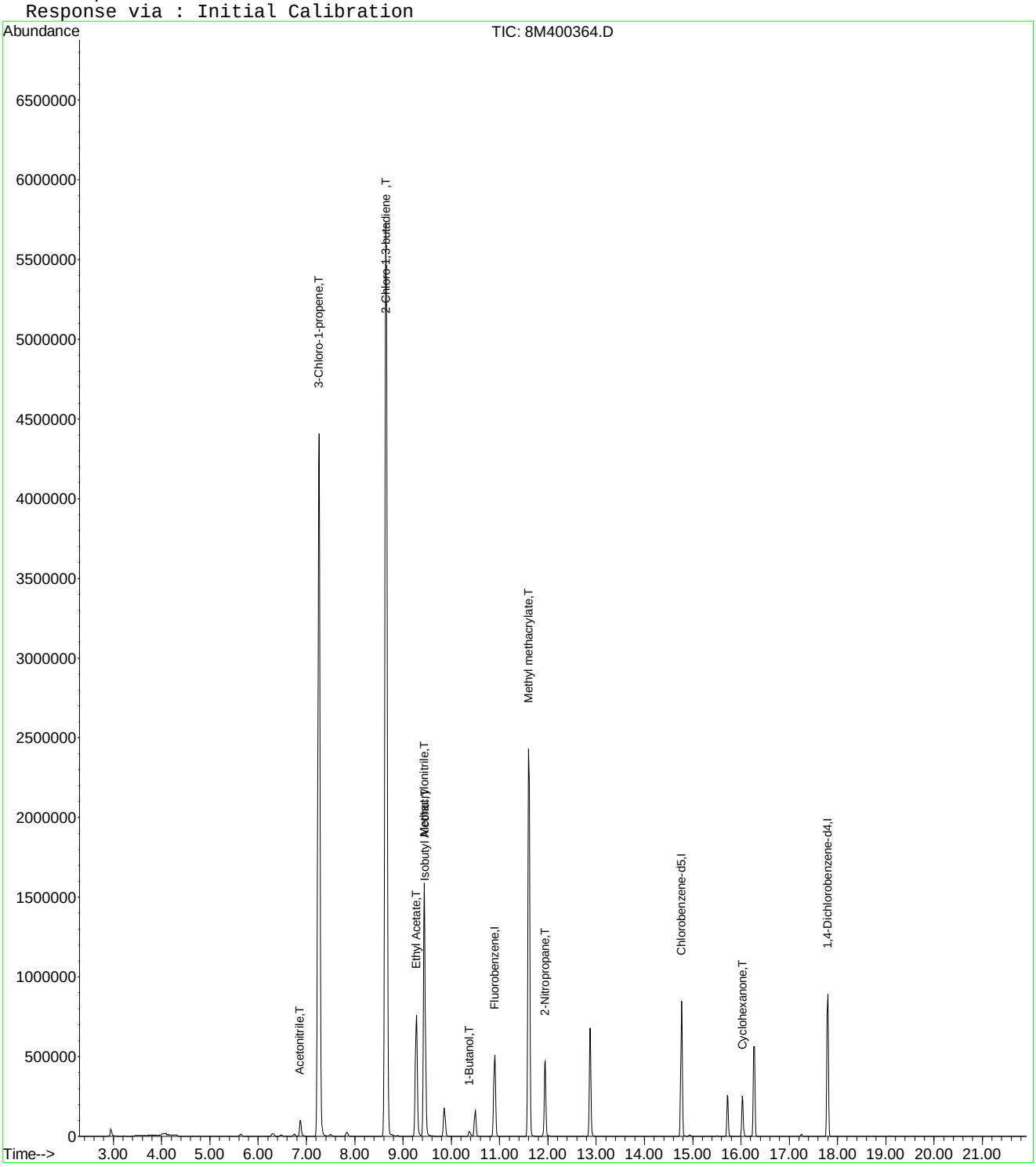

8M400364.D A9FOOWTR.M Fri Oct 03 12:32:47 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400365.D Vial: 9
Acq On : 2 Oct 2014 15:45 Operator: TMB
Sample : WG494714-09 500ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:47 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	611679	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	574048	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	266141	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	197468	511.7830 ug/L	95
3) 3-Chloro-1-propene	7.26	41	4817953	473.0307 ug/L	79
4) 2-Chloro-1,3-butadiene	8.64	53	5656851	469.3686 ug/L	68
5) Ethyl Acetate	9.27	43	1590123	520.3008 ug/L	90
6) Methacrylonitrile	9.44	67	990168	545.1581 ug/L #	61
7) Isobutyl Alcohol	9.45	43	130410	1070.3205 ug/L	98
8) 1-Butanol	10.38	56	36529	499.2614 ug/L	87
9) Methyl methacrylate	11.61	41	1840524	535.6626 ug/L	68
10) 2-Nitropropane	11.94	43	590003	573.8046 ug/L	98
13) Cyclohexanone	16.04	55	203273	484.0894 ug/L	84

(#) = qualifier out of range (m) = manual integration
8M400365.D A9FOOWTR.M Fri Oct 03 12:32:47 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400365.D Vial: 9
Acq On : 2 Oct 2014 15:45 Operator: TMB
Sample : WG494714-09 500ug/L STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66818 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

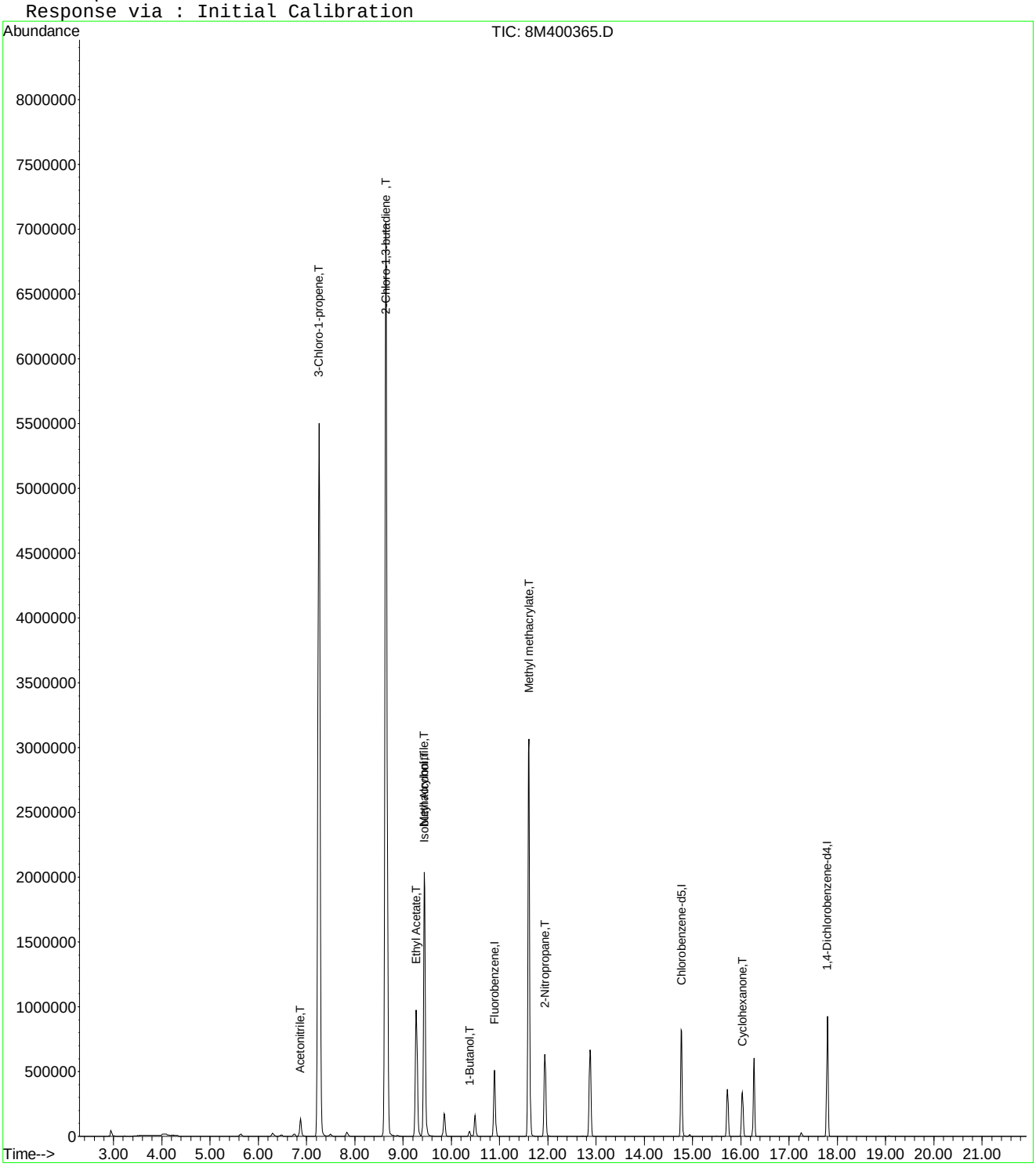

8M400365.D A9FOOWTR.M Fri Oct 03 12:32:47 2014 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400367.D Vial: 11
Acq On : 2 Oct 2014 16:47 Operator: TMB
Sample : WG494714-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66677 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 03 12:32:48 2014 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.90	96	548066	25.00 ug/L	-0.03
11) Chlorobenzene-d5	14.77	117	508831	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	17.79	152	240116	25.00 ug/L	-0.04

Target Compounds					Qvalue
2) Acetonitrile	6.87	41	36847	106.5815 ug/L	98
3) 3-Chloro-1-propene	7.26	41	1001386	109.7284 ug/L	90
4) 2-Chloro-1,3-butadiene	8.64	53	982184	90.9542 ug/L	89
5) Ethyl Acetate	9.27	43	328991	120.1430 ug/L	94
6) Methacrylonitrile	9.44	67	174278	107.0895 ug/L #	64
7) Isobutyl Alcohol	9.45	43	21185	194.0538 ug/L	99
8) 1-Butanol	10.39	56	5303	100.0865 ug/L	77
9) Methyl methacrylate	11.61	41	317777	103.2198 ug/L	73
10) 2-Nitropropane	11.94	43	95761	103.9416 ug/L	99
13) Cyclohexanone	16.03	55	11614	30.6562 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M400367.D A9FOOWTR.M Fri Oct 03 12:32:49 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100214\8M400367.D Vial: 11
Acq On : 2 Oct 2014 16:47 Operator: TMB
Sample : WG494714-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66677 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 3 12:32 2014 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Initial Calibration

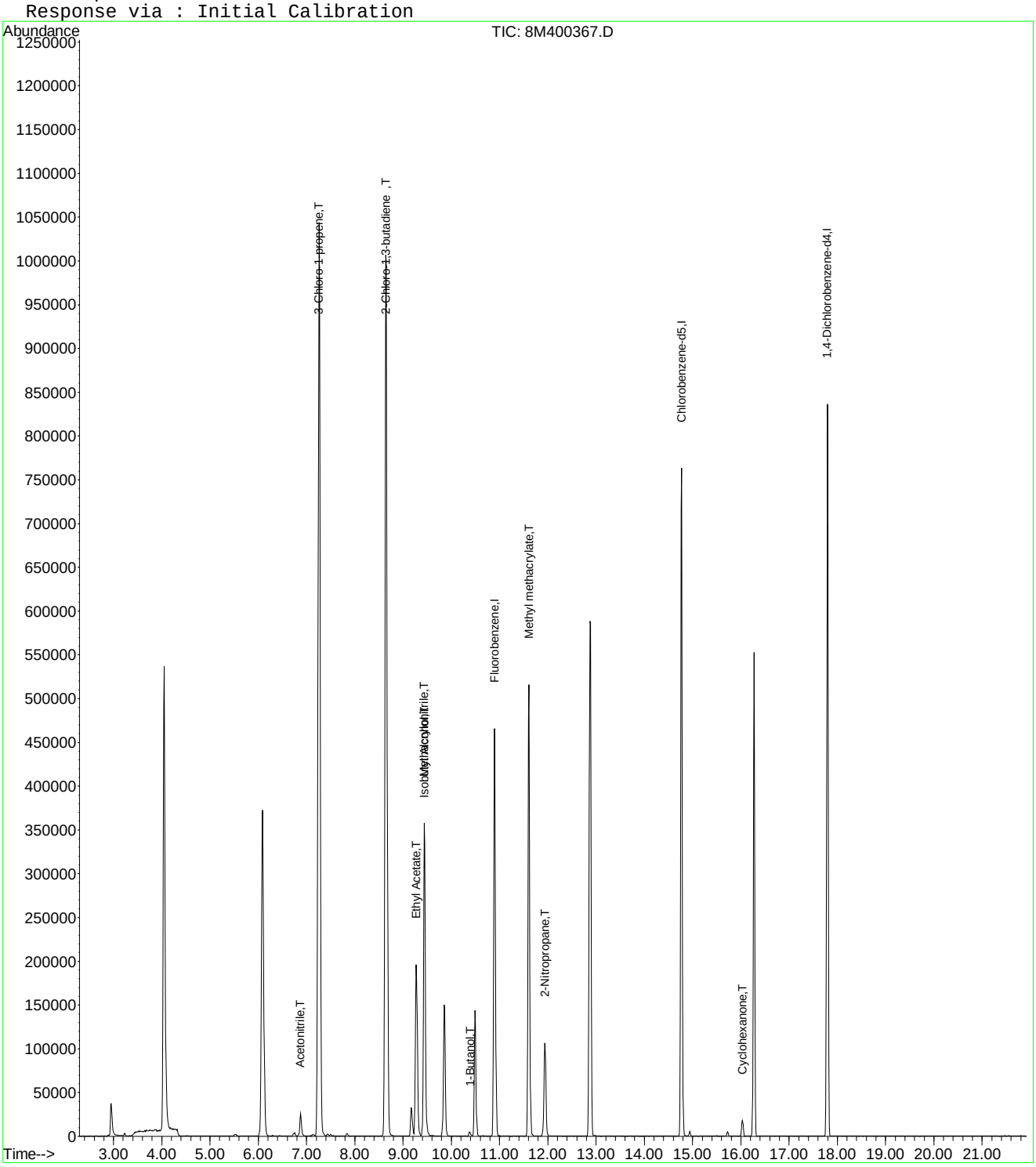

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\100214\8M400367.D Vial: 11
Acq On : 2 Oct 2014 16:47 Operator: TMB
Sample : WG494714-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD66677 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-02-14 HPMS8
Last Update : Fri Oct 03 12:32:07 2014
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	92	-0.03
2	T	Acetonitrile	100.0000	106.5815	-6.6	96	-0.02
3	T	3-Chloro-1-propene	100.0000	109.7284	-9.7	96	-0.03
4	T	2-Chloro-1,3-butadiene	100.0000	90.9542	9.0	79	-0.03
5	T	Ethyl Acetate	100.0000	120.1430	-20.1	104	-0.02
6	T	Methacrylonitrile	100.0000	107.0895	-7.1	95	-0.03
7	T	Isobutyl Alcohol	200.0000	194.0538	3.0	91	-0.02
8	T	1-Butanol	100.0000	100.0865	-0.1	97	0.00
9	T	Methyl methacrylate	100.0000	103.2198	-3.2	90	-0.02
10	T	2-Nitropropane	100.0000	103.9416	-3.9	93	-0.03
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	97	-0.03
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	96	-0.04
13	T	Cyclohexanone	100.0000	30.6562	69.3	27	-0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M400367.D A9FOOWTR.M Fri Oct 03 12:33:23 2014 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406479.D Vial: 3
Acq On : 30 Jul 2015 15:09 Operator: TMB
Sample : WG533051-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:04 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	855570	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	610993	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	330138	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	3287	0.4360 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.76%#	
43) 1,2-Dichloroethane-d4	10.32	65	3577	0.4771 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	1.92%#	
58) Toluene-d8	12.69	98	15700	0.5327 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.12%#	
80) p-Bromofluorobenzene	16.08	95	6489	0.5683 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	11451	0.8764 ug/L	94
3) Chloromethane	3.62	50	16976	1.1637 ug/L	91
4) Vinyl Chloride	3.86	62	9759	0.9097 ug/L	85
5) 1,3-Butadiene	3.91	54	9164	0.9744 ug/L #	73
6) Bromomethane	4.74	94	7543	1.0556 ug/L	92
7) Chloroethane	4.90	64	6509	0.9744 ug/L	95
8) Trichlorofluoromethane	5.40	101	13188	0.9507 ug/L	98
9) Diethyl ether	5.91	59	27288	5.1969 ug/L	93
10) Isoprene	5.95	67	10349	0.9532 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	7136	0.9010 ug/L	81
13) Acetone	6.24	43	1885	1.7472 ug/L #	48
14) 1,1-Dichloroethene	6.47	61	12577	0.9360 ug/L	90
15) Tert-Butyl Alcohol	6.61	59	3097	10.9286 ug/L #	58
16) Dimethyl Sulfide	6.73	62	8416	0.9976 ug/L	99
17) Iodomethane	6.98	142	3742	1.3194 ug/L	77
18) Methyl acetate	6.99	43	4174	0.9970 ug/L #	80
19) Methylene Chloride	7.27	84	9077	1.0605 ug/L	93
20) Carbon Disulfide	7.31	76	27875	1.0157 ug/L	100
21) Acrylonitrile	7.44	53	4457	2.4861 ug/L	100
22) Methyl Tert Butyl Ether	7.47	73	14050	0.9295 ug/L	94
23) trans-1,2-Dichloroethene	7.70	61	11341	0.8999 ug/L	93
24) n-Hexane	7.79	57	12352	0.9067 ug/L	90
25) Diisopropyl ether	8.14	45	163476	5.3419 ug/L	96
26) Vinyl Acetate	8.30	43	7858	1.0046 ug/L #	87
27) 1,1-Dichloroethane	8.33	63	16892	0.9994 ug/L	97
28) Ethyl-Tert-Butyl ether	8.72	59	118161	5.1752 ug/L	99
29) 2-Butanone	8.90	43	1905	1.0428 ug/L #	57
30) Propionitrile	9.00	54	2543	4.3767 ug/L #	56
31) 2,2-Dichloropropane	9.12	77	13296	1.0208 ug/L	94
32) cis-1,2-Dichloroethene	9.18	96	8705	0.9598 ug/L	91
33) Chloroform	9.39	83	14935	0.9791 ug/L	95
34) 1-Bromopropane	9.51	122	1278	0.7928 ug/L	88
35) Bromochloromethane	9.61	130	4797	1.0268 ug/L	98
36) Tetrahydrofuran	9.65	42	6338	5.0444 ug/L	96
38) 1,1,1-Trichloroethane	9.90	97	14299	1.0163 ug/L	92
39) Cyclohexane	9.95	56	15187	0.9254 ug/L	97
40) 1,1-Dichloropropene	10.11	75	11610	0.9638 ug/L	99
41) Tert-Amyl-Methyl ether	10.22	73	90014	5.2666 ug/L	98
42) Carbon Tetrachloride	10.26	117	11478	0.9213 ug/L	92
45) 1,2-Dichloroethane	10.44	62	10157	0.9942 ug/L	91

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406479.D Vial: 3
Acq On : 30 Jul 2015 15:09 Operator: TMB
Sample : WG533051-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:04 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
46)	Benzene	10.46	78	35799	1.0631 ug/L	95
47)	Trichloroethene	11.23	130	10735	1.1169 ug/L	94
48)	Methylcyclohexane	11.29	83	12274	0.8806 ug/L	93
49)	1,2-Dichloropropane	11.42	63	8833	0.9468 ug/L	98
50)	Bromodichloromethane	11.73	83	12231	1.0564 ug/L	91
52)	Dibromomethane	11.82	93	4139	0.9699 ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.02	63	3341	0.8574 ug/L #	81
54)	4-Methyl-2-Pentanone	12.04	58	1468	0.8486 ug/L #	64
55)	cis-1,3-Dichloropropene	12.36	75	12247	0.9610 ug/L	98
56)	Dimethyl Disulfide	12.62	79	4052	0.5869 ug/L	66
59)	Toluene	12.79	91	38254	1.0714 ug/L	97
60)	Ethyl Methacrylate	12.88	69	6131	0.8997 ug/L	95
62)	trans-1,3-Dichloropropene	12.96	75	9175	0.8687 ug/L	92
63)	1,1,2-Trichloroethane	13.17	97	5099	0.9113 ug/L	94
64)	2-Hexanone	13.12	58	1248	0.7895 ug/L #	83
65)	1,3-Dichloropropane	13.48	76	9612	0.9870 ug/L	98
66)	Tetrachloroethene	13.61	164	7876	1.0462 ug/L	87
67)	Dibromochloromethane	13.87	129	6256	0.8487 ug/L	93
68)	1,2-Dibromoethane	14.12	107	5204	0.9565 ug/L	90
69)	1-Chlorohexane	14.22	91	11819	0.9366 ug/L	96
70)	Chlorobenzene	14.63	112	23245	1.0168 ug/L	98
71)	1,1,1,2-Tetrachloroethane	14.65	131	6924	0.8525 ug/L	95
72)	Ethylbenzene	14.66	106	13644	1.0573 ug/L	99
73)	m-,p-Xylene	14.74	106	32527	2.1330 ug/L	100
74)	o-Xylene	15.31	106	13412	0.8937 ug/L	80
75)	Styrene	15.34	104	24649	1.0056 ug/L	98
76)	Bromoform	15.83	173	3759	0.8482 ug/L	93
77)	Isopropylbenzene	15.74	105	38730	1.0309 ug/L	96
79)	1,1,2,2-Tetrachloroethane	15.95	83	6103	1.0174 ug/L #	96
81)	1,2,3-Trichloropropane	16.14	110	1310	0.7780 ug/L #	17
82)	trans-1,4-Dichloro-2-Buten	16.19	53	1214	1.3077 ug/L #	1
83)	n-Propylbenzene	16.24	91	49968	1.0280 ug/L	96
84)	Bromobenzene	16.36	156	9745	0.9898 ug/L	95
85)	1,3,5-Trimethylbenzene	16.43	105	32520	1.0134 ug/L	98
86)	2-Chlorotoluene	16.51	91	32697	1.1013 ug/L	96
87)	4-Chlorotoluene	16.56	91	28365	1.0025 ug/L	99
88)	a-Methylstyrene	16.83	118	15462	0.8872 ug/L	100
89)	tert-Butylbenzene	16.89	134	6892	0.9913 ug/L	98
90)	1,2,4-Trimethylbenzene	16.95	105	32767	1.0078 ug/L	95
91)	sec-Butylbenzene	17.16	105	42903	1.0835 ug/L	100
92)	p-Isopropyltoluene	17.32	119	35830	1.0523 ug/L	100
93)	1,3-Dichlorobenzene	17.51	146	19432	1.0065 ug/L	95
94)	1,4-Dichlorobenzene	17.64	146	19007	0.9550 ug/L	85
95)	n-Butylbenzene	17.84	91	33094	1.0079 ug/L	98
96)	1,2-Dichlorobenzene	18.13	146	17388	1.0201 ug/L	93
97)	1,2-Dibromo-3-Chloropropan	19.12	75	277	0.2638 ug/L #	1
98)	1,2,4-Trichlorobenzene	20.27	180	12417	0.9466 ug/L	95
99)	Hexachlorobutadiene	20.41	225	6827	1.0228 ug/L	89
100)	Naphthalene	20.64	128	16604	0.9756 ug/L	97
101)	1,2,3-Trichlorobenzene	20.95	180	9728	0.8594 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M406479.D 8260WT.M Fri Jul 31 14:02:04 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406479.D Vial: 3
Acq On : 30 Jul 2015 15:09 Operator: TMB
Sample : WG533051-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

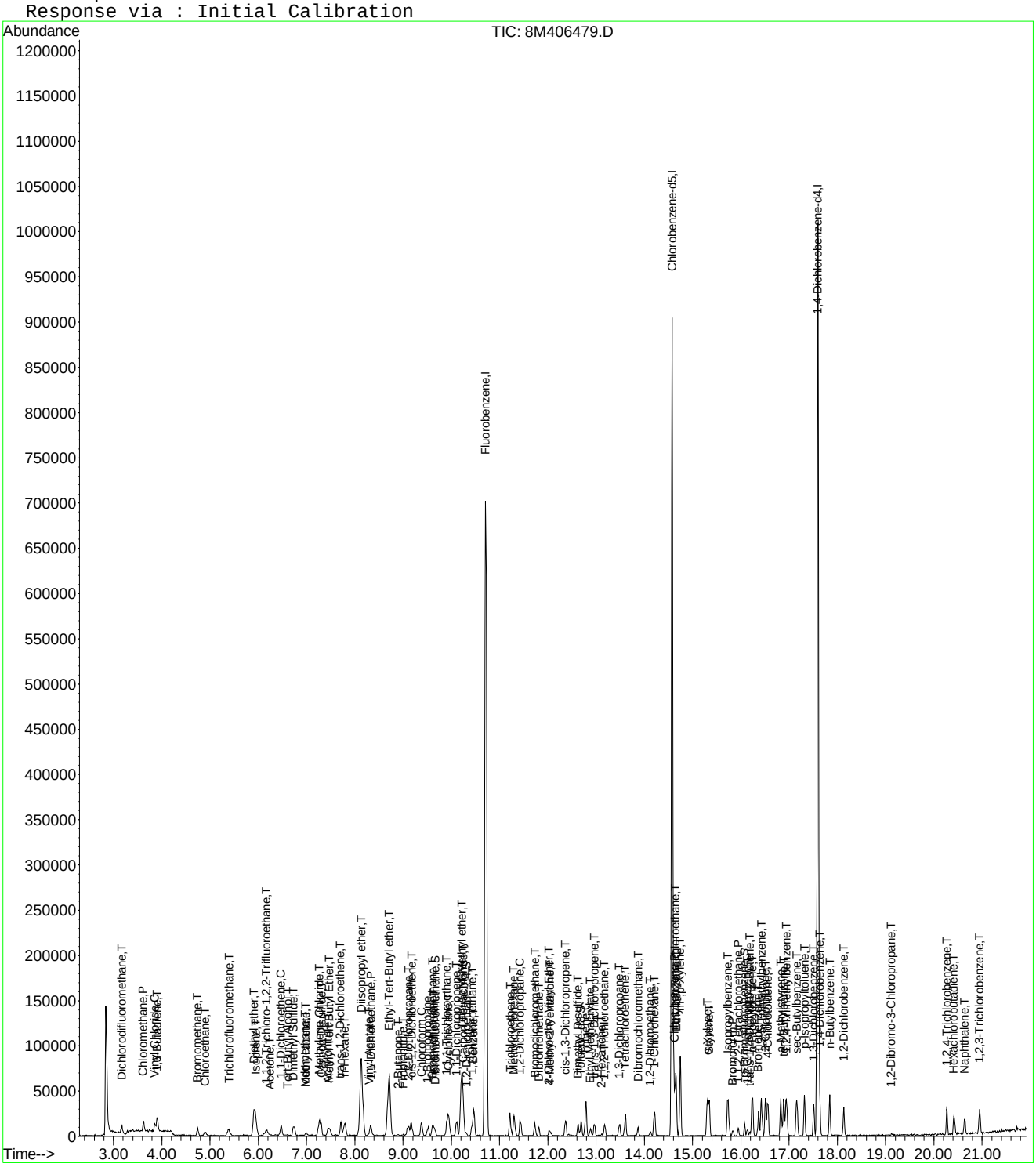

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\073015\8M406479.D Vial: 3
Acq On : 30 Jul 2015 15:09 Operator: TMB
Sample : WG533051-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.8764	12.4	100	0.00
3	P	Chloromethane	1.0000	1.1637	-16.4	100	0.00
4	C	Vinyl Chloride	1.0000	0.9097	9.0	100	0.01
5	T	1,3-Butadiene	1.0000	0.9744	2.6	100	0.02
6	T	Bromomethane	1.0000	1.0556	-5.6	100	0.00
7	T	Chloroethane	1.0000	0.9744	2.6	100	0.00
8	T	Trichlorofluoromethane	1.0000	0.9507	4.9	100	0.00
9	T	Diethyl ether	5.0000	5.1970	-3.9	100	0.00
10	T	Isoprene	1.0000	0.9532	4.7	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.15#
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	0.9010	9.9	100	0.00
13	T	Acetone	-1.0000	1.7472	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	0.9360	6.4	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	10.9286	0.0	100	0.02
16	T	Dimethyl Sulfide	1.0000	0.9976	0.2	100	-0.01
17	T	Iodomethane	1.0000	1.3194	-31.9#	100	-0.01
18	T	Methyl acetate	-1.0000	0.9970	0.0	100	-0.02
19	T	Methylene Chloride	1.0000	1.0605	-6.0	100	0.00
20	T	Carbon Disulfide	1.0000	1.0157	-1.6	100	0.00
21	T	Acrylonitrile	2.5000	2.4861	0.6	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9295	7.0	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	0.8999	10.0	100	-0.01
24	T	n-Hexane	-1.0000	0.9067	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	5.3419	-6.8	100	0.00
26	T	Vinyl Acetate	1.0000	1.0046	-0.5	100	0.00
27	P	1,1-Dichloroethane	1.0000	0.9994	0.1	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	5.1752	-3.5	100	0.00
29	T	2-Butanone	-1.0000	1.0428	0.0	100	0.00
30	T	Propionitrile	5.0000	4.3767	12.5	100	0.00
31	T	2,2-Dichloropropane	1.0000	1.0208	-2.1	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	0.9598	4.0	100	0.00
33	C	Chloroform	1.0000	0.9791	2.1	100	0.00
34		1-Bromopropane	1.0000	0.7928	20.7	100	-0.01
35	T	Bromochloromethane	1.0000	1.0268	-2.7	100	0.00
36	T	Tetrahydrofuran	5.0000	5.0444	-0.9	100	0.00
37	S	Dibromofluoromethane	0.5000	0.4360	12.8	100	0.00
38	T	1,1,1-Trichloroethane	1.0000	1.0163	-1.6	100	-0.01
39	T	Cyclohexane	1.0000	0.9254	7.5	100	0.00
40	T	1,1-Dichloropropene	1.0000	0.9638	3.6	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	5.2666	-5.3	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.9213	7.9	100	0.00
43	S	1,2-Dichloroethane-d4	0.5000	0.4771	4.6	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	1.0000	0.9942	0.6	100	0.00
46	T	Benzene	1.0000	1.0631	-6.3	100	-0.01
47	T	Trichloroethene	1.0000	1.1169	-11.7	100	0.00
48	T	Methylcyclohexane	-1.0000	0.8806	0.0	100	-0.01
49	C	1,2-Dichloropropane	1.0000	0.9468	5.3	100	-0.01
50	T	Bromodichloromethane	1.0000	1.0564	-5.6	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	1.0000	0.9699	3.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.8574	0.0	100	-0.01
54	T	4-Methyl-2-Pentanone	-1.0000	0.8486	0.0	100	-0.02

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\073015\8M406479.D Vial: 3
Acq On : 30 Jul 2015 15:09 Operator: TMB
Sample : WG533051-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9610	3.9	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.5869	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	0.5000	0.5327	-6.5	100	0.00
59	C	Toluene	1.0000	1.0714	-7.1	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.8996	10.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	1.0000	0.8687	13.1	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.9113	8.9	100	-0.01
64	T	2-Hexanone	-1.0000	0.7895	0.0	100	0.00
65	T	1,3-Dichloropropane	1.0000	0.9870	1.3	100	0.00
66	T	Tetrachloroethene	1.0000	1.0462	-4.6	100	0.00
67	T	Dibromochloromethane	1.0000	0.8487	15.1	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.9565	4.3	100	0.00
69	T	1-Chlorohexane	1.0000	0.9366	6.3	100	0.00
70	P	Chlorobenzene	1.0000	1.0168	-1.7	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.8526	14.7	100	-0.01
72	C	Ethylbenzene	1.0000	1.0573	-5.7	100	0.00
73	T	m-,p-Xylene	2.0000	2.1330	-6.7	100	0.00
74	T	o-Xylene	1.0000	0.8937	10.6	100	0.00
75	T	Styrene	1.0000	1.0056	-0.6	100	0.00
76	P	Bromoform	1.0000	0.8482	15.2	100	-0.01
77	T	Isopropylbenzene	1.0000	1.0309	-3.1	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	1.0174	-1.7	100	0.00
80	S	p-Bromofluorobenzene	0.5000	0.5683	-13.7	100	0.00
81	T	1,2,3-Trichloropropane	1.0000	0.7780	22.2	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	1.0000	1.3077	-30.8#	100	0.00
83	T	n-Propylbenzene	1.0000	1.0280	-2.8	100	0.00
84	T	Bromobenzene	1.0000	0.9898	1.0	100	-0.01
85	T	1,3,5-Trimethylbenzene	1.0000	1.0134	-1.3	100	0.00
86	T	2-Chlorotoluene	1.0000	1.1013	-10.1	100	0.00
87	T	4-Chlorotoluene	1.0000	1.0025	-0.3	100	0.00
88	T	a-Methylstyrene	-1.0000	0.8872	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	0.9913	0.9	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	1.0078	-0.8	100	0.00
91	T	sec-Butylbenzene	1.0000	1.0836	-8.4	100	0.00
92	T	p-Isopropyltoluene	1.0000	1.0523	-5.2	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0065	-0.6	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	0.9550	4.5	100	0.00
95	T	n-Butylbenzene	1.0000	1.0079	-0.8	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0201	-2.0	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.2638	0.0	100	-0.01
98	T	1,2,4-Trichlorobenzene	1.0000	0.9466	5.3	100	0.00
99	T	Hexachlorobutadiene	1.0000	1.0228	-2.3	100	-0.02
100	T	Naphthalene	1.0000	0.9756	2.4	100	-0.01
101	T	1,2,3-Trichlorobenzene	1.0000	0.8594	14.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M406479.D 8260WT.M Fri Jul 31 14:02:50 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406480.D Vial: 4
Acq On : 30 Jul 2015 15:37 Operator: TMB
Sample : WG533051-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:05 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	842185	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	601155	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	323926	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	7165	0.9655 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.88%#	
43) 1,2-Dichloroethane-d4	10.31	65	7402	1.0030 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	4.00%#	
58) Toluene-d8	12.69	98	29887	1.0306 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.12%#	
80) p-Bromofluorobenzene	16.08	95	11241	1.0033 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	22708	1.7655 ug/L	98
3) Chloromethane	3.62	50	31078	2.1643 ug/L	88
4) Vinyl Chloride	3.85	62	21014	1.9899 ug/L	94
5) 1,3-Butadiene	3.90	54	18707	2.0207 ug/L	81
6) Bromomethane	4.73	94	13961	1.9848 ug/L	98
7) Chloroethane	4.91	64	12745	1.9383 ug/L	96
8) Trichlorofluoromethane	5.39	101	25572	1.8727 ug/L	98
9) Diethyl ether	5.91	59	126603	24.4945 ug/L	97
10) Isoprene	5.94	67	21343	1.9970 ug/L	97
11) Acrolein	6.15	56	3415	11.0191 ug/L	84
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	14034	1.8000 ug/L	89
13) Acetone	6.24	43	2345	2.2081 ug/L	82
14) 1,1-Dichloroethene	6.48	61	26690	2.0178 ug/L	99
15) Tert-Butyl Alcohol	6.56	59	14997	53.7622 ug/L #	75
16) Dimethyl Sulfide	6.75	62	16424	1.9777 ug/L	98
17) Iodomethane	7.00	142	8811	1.9392 ug/L	99
18) Methyl acetate	7.00	43	7612	1.8471 ug/L #	79
19) Methylene Chloride	7.27	84	17419	2.0674 ug/L	97
20) Carbon Disulfide	7.30	76	57347	2.1228 ug/L	99
21) Acrylonitrile	7.44	53	19063	10.8024 ug/L	96
22) Methyl Tert Butyl Ether	7.47	73	31185	2.0960 ug/L	98
23) trans-1,2-Dichloroethene	7.71	61	24260	1.9556 ug/L	92
24) n-Hexane	7.79	57	27012	2.0143 ug/L	98
25) Diisopropyl ether	8.14	45	757167	25.1353 ug/L	97
26) Vinyl Acetate	8.31	43	15328	1.9907 ug/L #	86
27) 1,1-Dichloroethane	8.32	63	34218	2.0566 ug/L	97
28) Ethyl-Tert-Butyl ether	8.72	59	553606	24.6321 ug/L	99
29) 2-Butanone	8.90	43	3250	1.8074 ug/L #	57
30) Propionitrile	8.99	54	14005	24.4866 ug/L	91
31) 2,2-Dichloropropane	9.11	77	26994	2.1053 ug/L	90
32) cis-1,2-Dichloroethene	9.17	96	18634	2.0872 ug/L	85
33) Chloroform	9.38	83	30476	2.0297 ug/L	98
34) 1-Bromopropane	9.51	122	3425	2.1584 ug/L	99
35) Bromochloromethane	9.63	130	9189	1.9982 ug/L	94
36) Tetrahydrofuran	9.65	42	30961	25.0332 ug/L	96
38) 1,1,1-Trichloroethane	9.91	97	27246	1.9672 ug/L	98
39) Cyclohexane	9.95	56	30760	1.9042 ug/L	97
40) 1,1-Dichloropropene	10.10	75	23767	2.0043 ug/L	95
41) Tert-Amyl-Methyl ether	10.21	73	409936	24.3659 ug/L	99
42) Carbon Tetrachloride	10.26	117	24059	1.9619 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M406480.D 8260WT.M Fri Jul 31 14:02:05 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406480.D Vial: 4
Acq On : 30 Jul 2015 15:37 Operator: TMB
Sample : WG533051-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:05 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	18911	1.8804 ug/L		96
46)	Benzene	10.47	78	67444	2.0346 ug/L		96
47)	Trichloroethene	11.22	130	18008	1.9033 ug/L		95
48)	Methylcyclohexane	11.30	83	26755	1.9501 ug/L		96
49)	1,2-Dichloropropane	11.43	63	18045	1.9650 ug/L		100
50)	Bromodichloromethane	11.73	83	21770	1.9102 ug/L		95
51)	1,4-Dioxane	11.71	88	1562	48.3679 ug/L	#	29
52)	Dibromomethane	11.82	93	8550	2.0353 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.02	63	6526	1.7013 ug/L		99
54)	4-Methyl-2-Pentanone	12.07	58	2541	1.4923 ug/L		94
55)	cis-1,3-Dichloropropene	12.37	75	24560	1.9578 ug/L		98
56)	Dimethyl Disulfide	12.63	79	11521	1.6952 ug/L		95
59)	Toluene	12.79	91	73403	2.0894 ug/L		95
60)	Ethyl Methacrylate	12.88	69	12053	1.7976 ug/L		99
62)	trans-1,3-Dichloropropene	12.97	75	19611	1.8872 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	10698	1.9432 ug/L		90
64)	2-Hexanone	13.12	58	2502	1.6087 ug/L	#	87
65)	1,3-Dichloropropane	13.48	76	19951	2.0822 ug/L		95
66)	Tetrachloroethene	13.61	164	13782	1.8607 ug/L		95
67)	Dibromochloromethane	13.86	129	14706	2.0278 ug/L		95
68)	1,2-Dibromoethane	14.12	107	10788	2.0153 ug/L		90
69)	1-Chlorohexane	14.22	91	23854	1.9213 ug/L		95
70)	Chlorobenzene	14.63	112	46564	2.0701 ug/L		86
71)	1,1,1,2-Tetrachloroethane	14.66	131	15629	1.9559 ug/L		91
72)	Ethylbenzene	14.66	106	24492	1.9290 ug/L		89
73)	m-,p-Xylene	14.74	106	63849	4.2555 ug/L		98
74)	o-Xylene	15.31	106	30844	2.0889 ug/L		94
75)	Styrene	15.34	104	50259	2.0841 ug/L		95
76)	Bromoform	15.84	173	8154	1.8700 ug/L		90
77)	Isopropylbenzene	15.74	105	79139	2.1409 ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.94	83	11517	1.9568 ug/L		89
81)	1,2,3-Trichloropropane	16.14	110	3439	2.0817 ug/L		56
82)	trans-1,4-Dichloro-2-Buten	16.19	53	2913	2.0454 ug/L	#	7
83)	n-Propylbenzene	16.24	91	101745	2.1333 ug/L		99
84)	Bromobenzene	16.37	156	20327	2.1042 ug/L		88
85)	1,3,5-Trimethylbenzene	16.43	105	67532	2.1448 ug/L		99
86)	2-Chlorotoluene	16.51	91	62208	2.1354 ug/L		99
87)	4-Chlorotoluene	16.55	91	59334	2.1373 ug/L		98
88)	a-Methylstyrene	16.83	118	34116	1.9952 ug/L		98
89)	tert-Butylbenzene	16.89	134	13854	2.0309 ug/L		94
90)	1,2,4-Trimethylbenzene	16.95	105	70483	2.2094 ug/L		98
91)	sec-Butylbenzene	17.16	105	84869	2.1845 ug/L		100
92)	p-Isopropyltoluene	17.32	119	72879	2.1814 ug/L		98
93)	1,3-Dichlorobenzene	17.51	146	40091	2.1164 ug/L		100
94)	1,4-Dichlorobenzene	17.64	146	40876	2.0933 ug/L		93
95)	n-Butylbenzene	17.85	91	69304	2.1512 ug/L		99
96)	1,2-Dichlorobenzene	18.13	146	33974	2.0313 ug/L		95
97)	1,2-Dibromo-3-Chloropropan	19.14	75	1986	1.9274 ug/L		90
98)	1,2,4-Trichlorobenzene	20.28	180	25822	2.0063 ug/L		95
99)	Hexachlorobutadiene	20.42	225	12690	1.9376 ug/L		97
100)	Naphthalene	20.64	128	31513	1.8871 ug/L		98
101)	1,2,3-Trichlorobenzene	20.95	180	21856	1.9678 ug/L		93

(#) = qualifier out of range (m) = manual integration
8M406480.D 8260WT.M Fri Jul 31 14:02:05 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406480.D Vial: 4
Acq On : 30 Jul 2015 15:37 Operator: TMB
Sample : WG533051-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

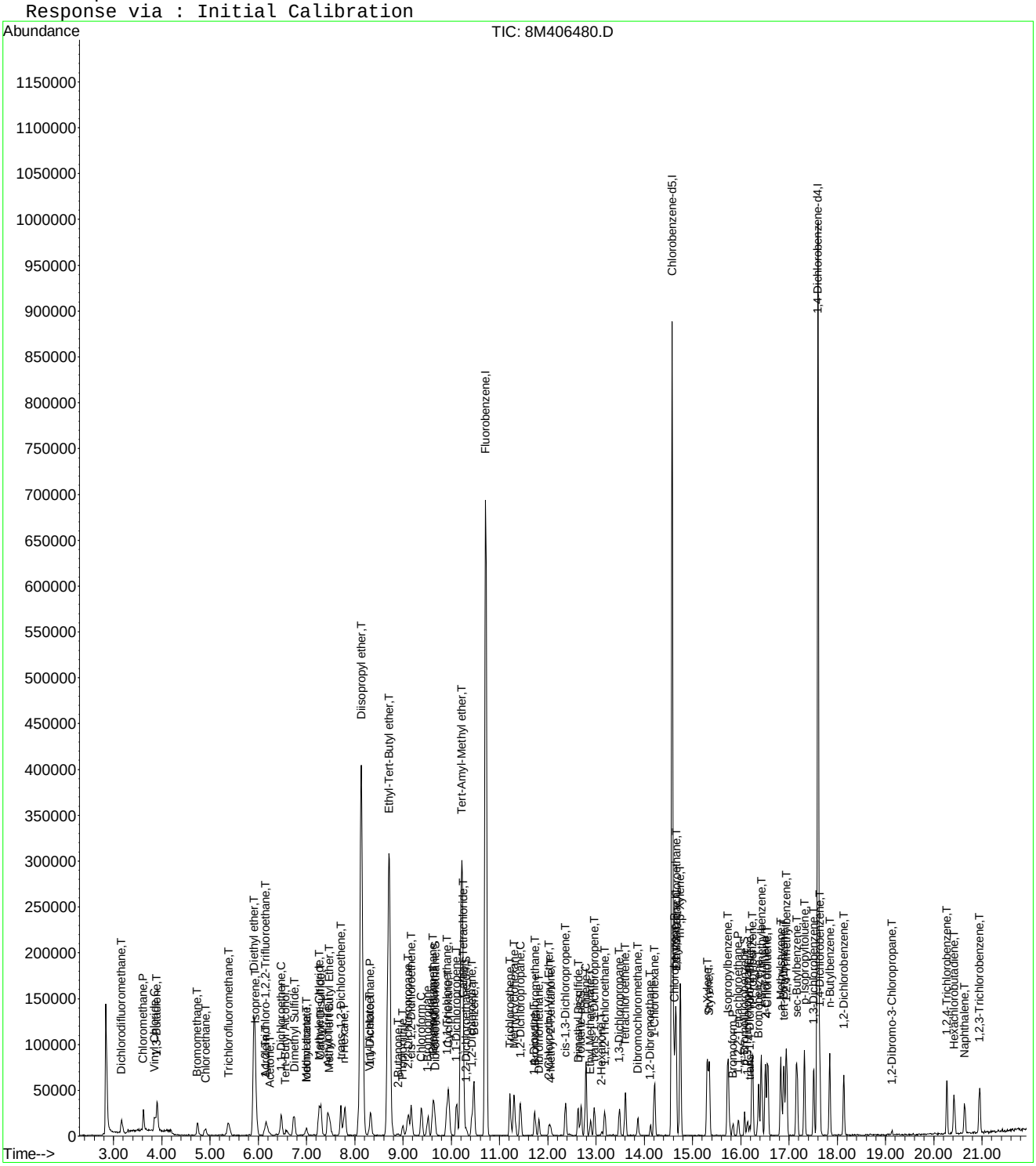

8M406480.D 8260WT.M Fri Jul 31 14:02:06 2015 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\073015\8M406480.D Vial: 4
Acq On : 30 Jul 2015 15:37 Operator: TMB
Sample : WG533051-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.7655	11.7	100	0.00
3	P	Chloromethane	2.0000	2.1643	-8.2	100	0.00
4	C	Vinyl Chloride	2.0000	1.9899	0.5	100	0.00
5	T	1,3-Butadiene	2.0000	2.0207	-1.0	100	0.01
6	T	Bromomethane	2.0000	1.9848	0.8	100	0.00
7	T	Chloroethane	2.0000	1.9383	3.1	100	0.01
8	T	Trichlorofluoromethane	2.0000	1.8727	6.4	100	0.00
9	T	Diethyl ether	25.0000	24.4945	2.0	100	0.00
10	T	Isoprene	2.0000	1.9970	0.1	100	-0.01
11	T	Acrolein	12.5000	11.0191	11.8	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.8000	10.0	100	-0.01
13	T	Acetone	-1.0000	2.2081	0.0	100	0.00
14	C	1,1-Dichloroethene	2.0000	2.0178	-0.9	100	0.01
15	T	Tert-Butyl Alcohol	50.0000	53.7622	-7.5	100	-0.02
16	T	Dimethyl Sulfide	2.0000	1.9777	1.1	100	0.01
17	T	Iodomethane	2.0000	1.9392	3.0	100	0.01
18	T	Methyl acetate	-1.0000	1.8471	0.0	100	0.00
19	T	Methylene Chloride	2.0000	2.0674	-3.4	100	0.01
20	T	Carbon Disulfide	2.0000	2.1228	-6.1	100	0.00
21	T	Acrylonitrile	12.5000	10.8024	13.6	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	2.0960	-4.8	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.9556	2.2	100	0.00
24	T	n-Hexane	-1.0000	2.0143	0.0	100	-0.01
25	T	Diisopropyl ether	25.0000	25.1353	-0.5	100	0.00
26	T	Vinyl Acetate	2.0000	1.9907	0.5	100	0.01
27	P	1,1-Dichloroethane	2.0000	2.0566	-2.8	100	-0.01
28	T	Ethyl-Tert-Butyl ether	25.0000	24.6321	1.5	100	0.01
29	T	2-Butanone	-1.0000	1.8074	0.0	100	0.01
30	T	Propionitrile	25.0000	24.4866	2.1	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1053	-5.3	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0873	-4.4	100	0.00
33	C	Chloroform	2.0000	2.0297	-1.5	100	0.00
34		1-Bromopropane	2.0000	2.1584	-7.9	100	-0.01
35	T	Bromochloromethane	2.0000	1.9982	0.1	100	0.01
36	T	Tetrahydrofuran	25.0000	25.0332	-0.1	100	0.01
37	S	Dibromofluoromethane	1.0000	0.9655	3.4	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.9672	1.6	100	0.00
39	T	Cyclohexane	2.0000	1.9042	4.8	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0043	-0.2	100	-0.01
41	T	Tert-Amyl-Methyl ether	25.0000	24.3659	2.5	100	0.00
42	T	Carbon Tetrachloride	2.0000	1.9619	1.9	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0031	-0.3	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	2.0000	1.8804	6.0	100	0.00
46	T	Benzene	2.0000	2.0346	-1.7	100	0.00
47	T	Trichloroethene	2.0000	1.9033	4.8	100	0.00
48	T	Methylcyclohexane	-1.0000	1.9501	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	1.9650	1.7	100	0.00
50	T	Bromodichloromethane	2.0000	1.9102	4.5	100	0.00
51	T	1,4-Dioxane	-1.0000	48.3679	0.0	100	0.00
52	T	Dibromomethane	2.0000	2.0353	-1.8	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	1.7013	0.0	100	-0.01
54	T	4-Methyl-2-Pentanone	-1.0000	1.4923	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\073015\8M406480.D Vial: 4
Acq On : 30 Jul 2015 15:37 Operator: TMB
Sample : WG533051-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.9578	2.1	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.6952	0.0	100	0.01
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	1.0306	-3.1	100	0.00
59	C	Toluene	2.0000	2.0894	-4.5	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.7976	10.1	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	2.0000	1.8872	5.6	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.9432	2.8	100	0.00
64	T	2-Hexanone	-1.0000	1.6087	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.0822	-4.1	100	0.00
66	T	Tetrachloroethene	2.0000	1.8607	7.0	100	0.00
67	T	Dibromochloromethane	2.0000	2.0278	-1.4	100	-0.01
68	T	1,2-Dibromoethane	2.0000	2.0153	-0.8	100	0.00
69	T	1-Chlorohexane	2.0000	1.9213	3.9	100	0.00
70	P	Chlorobenzene	2.0000	2.0701	-3.5	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.9559	2.2	100	0.00
72	C	Ethylbenzene	2.0000	1.9290	3.6	100	0.00
73	T	m-,p-Xylene	4.0000	4.2555	-6.4	100	0.00
74	T	o-Xylene	2.0000	2.0889	-4.4	100	0.00
75	T	Styrene	2.0000	2.0841	-4.2	100	0.00
76	P	Bromoform	2.0000	1.8700	6.5	100	0.00
77	T	Isopropylbenzene	2.0000	2.1409	-7.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	1.9568	2.2	100	0.00
80	S	p-Bromofluorobenzene	1.0000	1.0033	-0.3	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	2.0817	-4.1	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	2.0454	-2.3	100	0.00
83	T	n-Propylbenzene	2.0000	2.1334	-6.7	100	0.00
84	T	Bromobenzene	2.0000	2.1042	-5.2	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.1448	-7.2	100	0.00
86	T	2-Chlorotoluene	2.0000	2.1354	-6.8	100	0.00
87	T	4-Chlorotoluene	2.0000	2.1373	-6.9	100	-0.01
88	T	a-Methylstyrene	-1.0000	1.9952	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	2.0309	-1.5	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.2094	-10.5	100	0.00
91	T	sec-Butylbenzene	2.0000	2.1845	-9.2	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.1814	-9.1	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.1164	-5.8	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.0933	-4.7	100	0.00
95	T	n-Butylbenzene	2.0000	2.1512	-7.6	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0313	-1.6	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.9274	3.6	100	0.01
98	T	1,2,4-Trichlorobenzene	2.0000	2.0063	-0.3	100	0.00
99	T	Hexachlorobutadiene	2.0000	1.9376	3.1	100	-0.01
100	T	Naphthalene	2.0000	1.8871	5.6	100	-0.01
101	T	1,2,3-Trichlorobenzene	2.0000	1.9678	1.6	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M406480.D 8260WT.M Fri Jul 31 14:03:02 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406481.D Vial: 5
Acq On : 30 Jul 2015 16:06 Operator: TMB
Sample : WG533051-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:06 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	855387	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	612677	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	332830	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.68	111	18863	2.5026 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 10.00%#		
43) 1,2-Dichloroethane-d4	10.31	65	18410	2.4562 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 9.84%#		
58) Toluene-d8	12.68	98	73674	2.4927 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 9.96%#		
80) p-Bromofluorobenzene	16.08	95	27813	2.4159 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 9.68%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	60134	4.6031 ug/L	99
3) Chloromethane	3.62	50	77643	5.3236 ug/L	99
4) Vinyl Chloride	3.84	62	51255	4.7786 ug/L	94
5) 1,3-Butadiene	3.90	54	45203	4.8073 ug/L	83
6) Bromomethane	4.74	94	34945	4.8913 ug/L	99
7) Chloroethane	4.90	64	33390	4.9998 ug/L	98
8) Trichlorofluoromethane	5.39	101	67008	4.8314 ug/L	98
9) Diethyl ether	5.91	59	251096	47.8310 ug/L	99
10) Isoprene	5.95	67	53450	4.9240 ug/L	99
11) Acrolein	6.15	56	6016	23.2099 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	40879	5.1623 ug/L	94
13) Acetone	6.24	43	6548	6.0706 ug/L	97
14) 1,1-Dichloroethene	6.48	61	66355	4.9391 ug/L	96
15) Tert-Butyl Alcohol	6.58	59	27930	98.5799 ug/L	92
16) Dimethyl Sulfide	6.74	62	42375	5.0239 ug/L	91
17) Iodomethane	6.99	142	27526	4.1499 ug/L	98
18) Methyl acetate	7.00	43	21128	5.0477 ug/L #	89
19) Methylene Chloride	7.26	84	42199	4.9312 ug/L	97
20) Carbon Disulfide	7.30	76	137010	4.9935 ug/L	100
21) Acrylonitrile	7.44	53	40009	22.3219 ug/L	96
22) Methyl Tert Butyl Ether	7.47	73	70276	4.6504 ug/L	98
23) trans-1,2-Dichloroethene	7.71	61	64291	5.1026 ug/L	99
24) n-Hexane	7.79	57	65836	4.8337 ug/L	97
25) Diisopropyl ether	8.14	45	1522211	49.7523 ug/L	98
26) Vinyl Acetate	8.30	43	41769	5.3409 ug/L	96
27) 1,1-Dichloroethane	8.33	63	83162	4.9212 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1110375	48.6424 ug/L	99
29) 2-Butanone	8.90	43	8186	4.4822 ug/L	98
30) Propionitrile	8.99	54	27074	46.6060 ug/L	98
31) 2,2-Dichloropropane	9.11	77	64849	4.9797 ug/L	99
32) cis-1,2-Dichloroethene	9.18	96	45762	5.0468 ug/L	93
33) Chloroform	9.38	83	77721	5.0962 ug/L	100
34) 1-Bromopropane	9.52	122	8030	4.9822 ug/L	96
35) Bromochloromethane	9.61	130	22966	4.9171 ug/L	95
36) Tetrahydrofuran	9.63	42	59578	47.4278 ug/L	96
38) 1,1,1-Trichloroethane	9.91	97	70007	4.9767 ug/L	97
39) Cyclohexane	9.95	56	81916	4.9927 ug/L	97
40) 1,1-Dichloropropene	10.11	75	60071	4.9876 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	830703	48.6134 ug/L	100
42) Carbon Tetrachloride	10.26	117	61930	4.9721 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M406481.D 8260WT.M Fri Jul 31 14:02:06 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406481.D Vial: 5
Acq On : 30 Jul 2015 16:06 Operator: TMB
Sample : WG533051-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:06 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	48928	4.7901 ug/L		98
46)	Benzene	10.47	78	173193	5.1442 ug/L		98
47)	Trichloroethene	11.22	130	46467	4.8355 ug/L		97
48)	Methylcyclohexane	11.30	83	67444	4.8399 ug/L		97
49)	1,2-Dichloropropane	11.43	63	47873	5.1327 ug/L		97
50)	Bromodichloromethane	11.73	83	56499	4.8809 ug/L		98
51)	1,4-Dioxane	11.73	88	3529	107.5902 ug/L	#	63
52)	Dibromomethane	11.82	93	19997	4.6868 ug/L		93
53)	2-Chloroethyl Vinyl Ether	12.03	63	17790	4.5663 ug/L		96
54)	4-Methyl-2-Pentanone	12.05	58	7369	4.2609 ug/L		92
55)	cis-1,3-Dichloropropene	12.36	75	61410	4.8198 ug/L		99
56)	Dimethyl Disulfide	12.63	79	29344	4.2511 ug/L		98
59)	Toluene	12.79	91	189851	5.3024 ug/L		99
60)	Ethyl Methacrylate	12.88	69	32117	4.6998 ug/L		99
62)	trans-1,3-Dichloropropene	12.96	75	52110	4.9202 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	28717	5.1180 ug/L		98
64)	2-Hexanone	13.12	58	6680	4.2143 ug/L	#	91
65)	1,3-Dichloropropane	13.49	76	48239	4.9397 ug/L		96
66)	Tetrachloroethene	13.61	164	37579	4.9780 ug/L		98
67)	Dibromochloromethane	13.87	129	34634	4.6858 ug/L		98
68)	1,2-Dibromoethane	14.12	107	27979	5.1285 ug/L		93
69)	1-Chlorohexane	14.22	91	62398	4.9313 ug/L		98
70)	Chlorobenzene	14.63	112	122630	5.3493 ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.66	131	41727	5.1237 ug/L		99
72)	Ethylbenzene	14.66	106	66582	5.1453 ug/L		100
73)	m-,p-Xylene	14.74	106	166752	10.9050 ug/L		96
74)	o-Xylene	15.31	106	76340	5.0729 ug/L		98
75)	Styrene	15.34	104	126606	5.1512 ug/L		98
76)	Bromoform	15.83	173	21576	4.8551 ug/L		96
77)	Isopropylbenzene	15.74	105	204868	5.4380 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.94	83	30972	5.1216 ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	9098	5.3598 ug/L		52
82)	trans-1,4-Dichloro-2-Buten	16.19	53	9344	4.6938 ug/L	#	51
83)	n-Propylbenzene	16.24	91	262533	5.3574 ug/L		99
84)	Bromobenzene	16.37	156	48547	4.8909 ug/L		97
85)	1,3,5-Trimethylbenzene	16.43	105	171622	5.3048 ug/L		97
86)	2-Chlorotoluene	16.51	91	158232	5.2863 ug/L		100
87)	4-Chlorotoluene	16.55	91	151910	5.3257 ug/L		97
88)	a-Methylstyrene	16.83	118	88491	5.0367 ug/L		98
89)	tert-Butylbenzene	16.89	134	35466	5.0600 ug/L		96
90)	1,2,4-Trimethylbenzene	16.94	105	173574	5.2953 ug/L		98
91)	sec-Butylbenzene	17.16	105	218704	5.4789 ug/L		99
92)	p-Isopropyltoluene	17.32	119	185799	5.4124 ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	98863	5.0792 ug/L		98
94)	1,4-Dichlorobenzene	17.64	146	100465	5.0072 ug/L		99
95)	n-Butylbenzene	17.84	91	180077	5.4401 ug/L		99
96)	1,2-Dichlorobenzene	18.13	146	87449	5.0887 ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.13	75	4483	4.2343 ug/L		71
98)	1,2,4-Trichlorobenzene	20.27	180	63290	4.7858 ug/L		98
99)	Hexachlorobutadiene	20.42	225	32926	4.8928 ug/L		97
100)	Naphthalene	20.65	128	80359	4.6834 ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	54533	4.7786 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M406481.D 8260WT.M Fri Jul 31 14:02:06 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406481.D Vial: 5
Acq On : 30 Jul 2015 16:06 Operator: TMB
Sample : WG533051-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

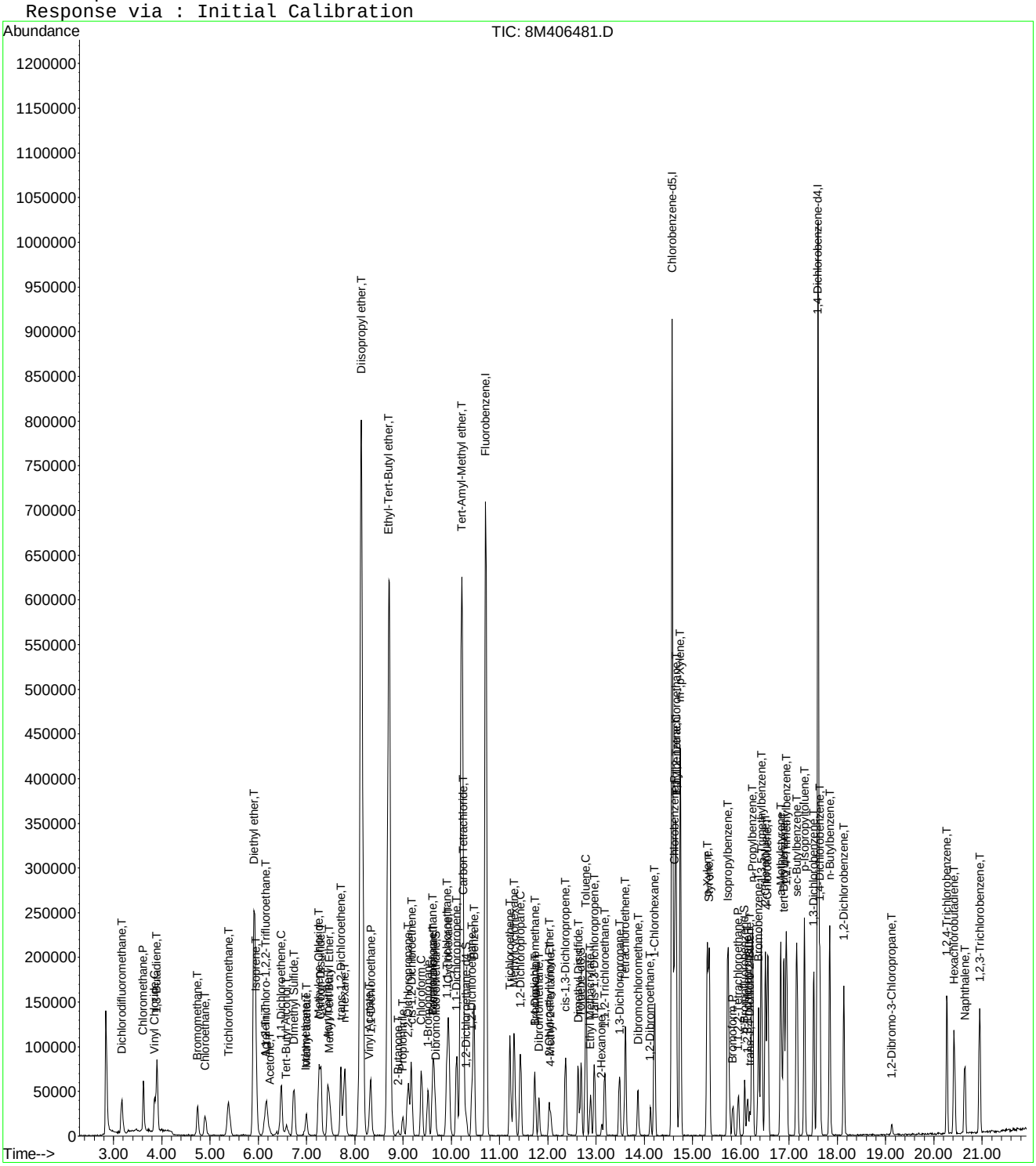

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\073015\8M406481.D Vial: 5
Acq On : 30 Jul 2015 16:06 Operator: TMB
Sample : WG533051-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.6031	7.9	100	0.00
3	P	Chloromethane	5.0000	5.3236	-6.5	100	0.00
4	C	Vinyl Chloride	5.0000	4.7786	4.4	100	0.00
5	T	1,3-Butadiene	5.0000	4.8073	3.9	100	0.00
6	T	Bromomethane	5.0000	4.8913	2.2	100	0.00
7	T	Chloroethane	5.0000	4.9998	0.0	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.8315	3.4	100	0.00
9	T	Diethyl ether	50.0000	47.8310	4.3	100	0.00
10	T	Isoprene	5.0000	4.9240	1.5	100	0.00
11	T	Acrolein	25.0000	23.2099	7.2	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	5.1623	-3.2	100	0.00
13	T	Acetone	5.0000	6.0705	-21.4	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.9391	1.2	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	98.5799	1.4	100	0.00
16	T	Dimethyl Sulfide	5.0000	5.0239	-0.5	100	0.00
17	T	Iodomethane	5.0000	4.1499	17.0	100	0.00
18	T	Methyl acetate	5.0000	5.0477	-1.0	100	-0.01
19	T	Methylene Chloride	5.0000	4.9312	1.4	100	0.00
20	T	Carbon Disulfide	5.0000	4.9935	0.1	100	0.00
21	T	Acrylonitrile	25.0000	22.3219	10.7	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.6504	7.0	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	5.1026	-2.1	100	0.00
24	T	n-Hexane	5.0000	4.8337	3.3	100	0.00
25	T	Diisopropyl ether	50.0000	49.7523	0.5	100	0.00
26	T	Vinyl Acetate	5.0000	5.3409	-6.8	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.9212	1.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	48.6424	2.7	100	0.00
29	T	2-Butanone	5.0000	4.4822	10.4	100	0.00
30	T	Propionitrile	50.0000	46.6060	6.8	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.9797	0.4	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	5.0468	-0.9	100	0.00
33	C	Chloroform	5.0000	5.0962	-1.9	100	0.00
34		1-Bromopropane	5.0000	4.9822	0.4	100	0.00
35	T	Bromochloromethane	5.0000	4.9171	1.7	100	0.00
36	T	Tetrahydrofuran	50.0000	47.4278	5.1	100	0.00
37	S	Dibromofluoromethane	2.5000	2.5026	-0.1	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.9767	0.5	100	0.00
39	T	Cyclohexane	5.0000	4.9927	0.1	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.9876	0.2	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	48.6134	2.8	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.9721	0.6	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.4562	1.8	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	5.0000	4.7901	4.2	100	0.00
46	T	Benzene	5.0000	5.1442	-2.9	100	0.00
47	T	Trichloroethene	5.0000	4.8355	3.3	100	0.00
48	T	Methylcyclohexane	5.0000	4.8399	3.2	100	0.00
49	C	1,2-Dichloropropane	5.0000	5.1327	-2.7	100	0.00
50	T	Bromodichloromethane	5.0000	4.8809	2.4	100	0.00
51	T	1,4-Dioxane	100.0000	107.5902	-7.6	100	0.02
52	T	Dibromomethane	5.0000	4.6868	6.3	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.5663	8.7	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.2609	14.8	100	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\073015\8M406481.D Vial: 5
Acq On : 30 Jul 2015 16:06 Operator: TMB
Sample : WG533051-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.8198	3.6	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.2511	15.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.4927	0.3	100	0.00
59	C	Toluene	5.0000	5.3024	-6.0	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.6998	6.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	5.0000	4.9202	1.6	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	5.1180	-2.4	100	0.00
64	T	2-Hexanone	5.0000	4.2143	15.7	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.9397	1.2	100	0.00
66	T	Tetrachloroethene	5.0000	4.9780	0.4	100	0.00
67	T	Dibromochloromethane	5.0000	4.6857	6.3	100	0.00
68	T	1,2-Dibromoethane	5.0000	5.1285	-2.6	100	0.00
69	T	1-Chlorohexane	5.0000	4.9313	1.4	100	0.00
70	P	Chlorobenzene	5.0000	5.3492	-7.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	5.1237	-2.5	100	0.00
72	C	Ethylbenzene	5.0000	5.1453	-2.9	100	0.00
73	T	m-,p-Xylene	10.0000	10.9050	-9.0	100	0.00
74	T	o-Xylene	5.0000	5.0729	-1.5	100	0.00
75	T	Styrene	5.0000	5.1512	-3.0	100	0.00
76	P	Bromoform	5.0000	4.8551	2.9	100	-0.01
77	T	Isopropylbenzene	5.0000	5.4380	-8.8	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	5.1216	-2.4	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.4160	3.4	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.3598	-7.2	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.6938	6.1	100	0.00
83	T	n-Propylbenzene	5.0000	5.3574	-7.1	100	0.00
84	T	Bromobenzene	5.0000	4.8909	2.2	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	5.3048	-6.1	100	0.00
86	T	2-Chlorotoluene	5.0000	5.2863	-5.7	100	0.00
87	T	4-Chlorotoluene	5.0000	5.3257	-6.5	100	-0.01
88	T	a-Methylstyrene	5.0000	5.0367	-0.7	100	0.00
89	T	tert-Butylbenzene	5.0000	5.0600	-1.2	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.2953	-5.9	100	0.00
91	T	sec-Butylbenzene	5.0000	5.4789	-9.6	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.4124	-8.2	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	5.0792	-1.6	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	5.0072	-0.1	100	0.00
95	T	n-Butylbenzene	5.0000	5.4401	-8.8	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	5.0887	-1.8	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	4.2343	15.3	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.7858	4.3	100	0.00
99	T	Hexachlorobutadiene	5.0000	4.8928	2.1	100	-0.01
100	T	Naphthalene	5.0000	4.6834	6.3	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.7786	4.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M406481.D 8260WT.M Fri Jul 31 14:03:30 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406482.D Vial: 6
Acq On : 30 Jul 2015 16:35 Operator: TMB
Sample : WG533051-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:07 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	878579	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	612458	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	341682	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.68	111	77858	10.0570 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 40.24%#		
43) 1,2-Dichloroethane-d4	10.31	65	78334	10.1753 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 40.72%#		
58) Toluene-d8	12.69	98	308881	10.4545 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 41.80%#		
80) p-Bromofluorobenzene	16.08	95	114109	9.6552 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 38.64%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	294392	21.9402 ug/L	99
3) Chloromethane	3.62	50	295235	19.7083 ug/L	99
4) Vinyl Chloride	3.85	62	213802	19.4071 ug/L	100
5) 1,3-Butadiene	3.90	54	195992	20.2936 ug/L	92
6) Bromomethane	4.74	94	134045	18.2671 ug/L	99
7) Chloroethane	4.90	64	135011	19.6828 ug/L	99
8) Trichlorofluoromethane	5.38	101	285503	20.0421 ug/L	99
9) Diethyl ether	5.91	59	416800	77.2999 ug/L	99
10) Isoprene	5.94	67	222724	19.9765 ug/L	99
11) Acrolein	6.15	56	10886	41.1889 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	161968	19.9137 ug/L	97
13) Acetone	6.25	43	21749	19.6309 ug/L	90
14) 1,1-Dichloroethene	6.47	61	269452	19.5273 ug/L	96
15) Tert-Butyl Alcohol	6.60	59	46659	160.3374 ug/L	96
16) Dimethyl Sulfide	6.74	62	164675	19.0082 ug/L	99
17) Iodomethane	6.99	142	141587	17.2789 ug/L	97
18) Methyl acetate	7.01	43	80285	18.6746 ug/L	97
19) Methylene Chloride	7.26	84	169710	19.3082 ug/L	97
20) Carbon Disulfide	7.30	76	559773	19.8629 ug/L	99
21) Acrylonitrile	7.44	53	67398	36.6102 ug/L	96
22) Methyl Tert Butyl Ether	7.47	73	300217	19.3418 ug/L	99
23) trans-1,2-Dichloroethene	7.71	61	251692	19.4487 ug/L	95
24) n-Hexane	7.79	57	273707	19.5653 ug/L	98
25) Diisopropyl ether	8.14	45	2493814	79.3568 ug/L	98
26) Vinyl Acetate	8.30	43	160888	20.0291 ug/L	100
27) 1,1-Dichloroethane	8.33	63	342819	19.7511 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	1842255	78.5736 ug/L	100
29) 2-Butanone	8.89	43	34580	18.4342 ug/L	100
30) Propionitrile	8.99	54	47189	79.0883 ug/L	100
31) 2,2-Dichloropropane	9.11	77	260916	19.5065 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	187379	20.1194 ug/L	94
33) Chloroform	9.38	83	304643	19.4484 ug/L	99
34) 1-Bromopropane	9.51	122	32572	19.6758 ug/L	95
35) Bromochloromethane	9.61	130	95370	19.8800 ug/L	97
36) Tetrahydrofuran	9.64	42	98153	76.0733 ug/L	95
38) 1,1,1-Trichloroethane	9.91	97	284730	19.7066 ug/L	99
39) Cyclohexane	9.95	56	338069	20.0611 ug/L	98
40) 1,1-Dichloropropene	10.11	75	247480	20.0055 ug/L	100
41) Tert-Amyl-Methyl ether	10.21	73	1363363	77.6791 ug/L	100
42) Carbon Tetrachloride	10.26	117	254833	19.9195 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M406482.D 8260WT.M Fri Jul 31 14:02:08 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406482.D Vial: 6
Acq On : 30 Jul 2015 16:35 Operator: TMB
Sample : WG533051-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:07 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	201171	19.1748 ug/L		100
46)	Benzene	10.47	78	698528	20.2002 ug/L		98
47)	Trichloroethene	11.22	130	183971	18.6392 ug/L		96
48)	Methylcyclohexane	11.30	83	284091	19.8487 ug/L		97
49)	1,2-Dichloropropane	11.43	63	195318	20.3883 ug/L		96
50)	Bromodichloromethane	11.73	83	235526	19.8099 ug/L		99
51)	1,4-Dioxane	11.72	88	4585	136.0950 ug/L		87
52)	Dibromomethane	11.82	93	84217	19.2172 ug/L		95
53)	2-Chloroethyl Vinyl Ether	12.02	63	72635	18.1515 ug/L		99
54)	4-Methyl-2-Pentanone	12.07	58	34061	19.1750 ug/L		95
55)	cis-1,3-Dichloropropene	12.37	75	258884	19.7823 ug/L		98
56)	Dimethyl Disulfide	12.62	79	130981	18.4744 ug/L		99
59)	Toluene	12.79	91	746088	20.8453 ug/L		99
60)	Ethyl Methacrylate	12.88	69	137128	20.0738 ug/L		97
62)	trans-1,3-Dichloropropene	12.96	75	215089	20.3159 ug/L		98
63)	1,1,2-Trichloroethane	13.18	97	111425	19.8655 ug/L		98
64)	2-Hexanone	13.12	58	30148	19.0266 ug/L	#	98
65)	1,3-Dichloropropane	13.48	76	193594	19.8313 ug/L		97
66)	Tetrachloroethene	13.61	164	155127	20.5567 ug/L		95
67)	Dibromochloromethane	13.86	129	149584	20.2450 ug/L		99
68)	1,2-Dibromoethane	14.12	107	108175	19.8353 ug/L		100
69)	1-Chlorohexane	14.22	91	255638	20.2104 ug/L		98
70)	Chlorobenzene	14.63	112	482376	21.0493 ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	167264	20.5459 ug/L		98
72)	Ethylbenzene	14.65	106	262135	20.2644 ug/L		100
73)	m-,p-Xylene	14.74	106	638747	41.7867 ug/L		99
74)	o-Xylene	15.31	106	311292	20.6930 ug/L		97
75)	Styrene	15.34	104	510559	20.7804 ug/L		97
76)	Bromoform	15.84	173	85509	19.2484 ug/L		98
77)	Isopropylbenzene	15.74	105	808892	21.4789 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.94	83	121205	19.5234 ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	33046	18.9636 ug/L		70
82)	trans-1,4-Dichloro-2-Buten	16.18	53	40201	17.1268 ug/L	#	46
83)	n-Propylbenzene	16.24	91	1030697	20.4882 ug/L		99
84)	Bromobenzene	16.37	156	194478	19.0853 ug/L		97
85)	1,3,5-Trimethylbenzene	16.43	105	694288	20.9042 ug/L		97
86)	2-Chlorotoluene	16.51	91	619140	20.1488 ug/L		98
87)	4-Chlorotoluene	16.55	91	599261	20.4646 ug/L		97
88)	a-Methylstyrene	16.83	118	361855	20.0624 ug/L		98
89)	tert-Butylbenzene	16.89	134	142107	19.7494 ug/L		95
90)	1,2,4-Trimethylbenzene	16.95	105	707460	21.0236 ug/L		99
91)	sec-Butylbenzene	17.16	105	882383	21.5323 ug/L		100
92)	p-Isopropyltoluene	17.32	119	748439	21.2376 ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	398721	19.9542 ug/L		99
94)	1,4-Dichlorobenzene	17.64	146	392008	19.0315 ug/L		97
95)	n-Butylbenzene	17.84	91	722188	21.2520 ug/L		99
96)	1,2-Dichlorobenzene	18.13	146	351296	19.9127 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	20012	18.4123 ug/L		88
98)	1,2,4-Trichlorobenzene	20.27	180	266319	19.6166 ug/L		99
99)	Hexachlorobutadiene	20.43	225	133344	19.3015 ug/L		99
100)	Naphthalene	20.64	128	345480	19.6133 ug/L		98
101)	1,2,3-Trichlorobenzene	20.95	180	224501	19.1628 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M406482.D 8260WT.M Fri Jul 31 14:02:08 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406482.D Vial: 6
Acq On : 30 Jul 2015 16:35 Operator: TMB
Sample : WG533051-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

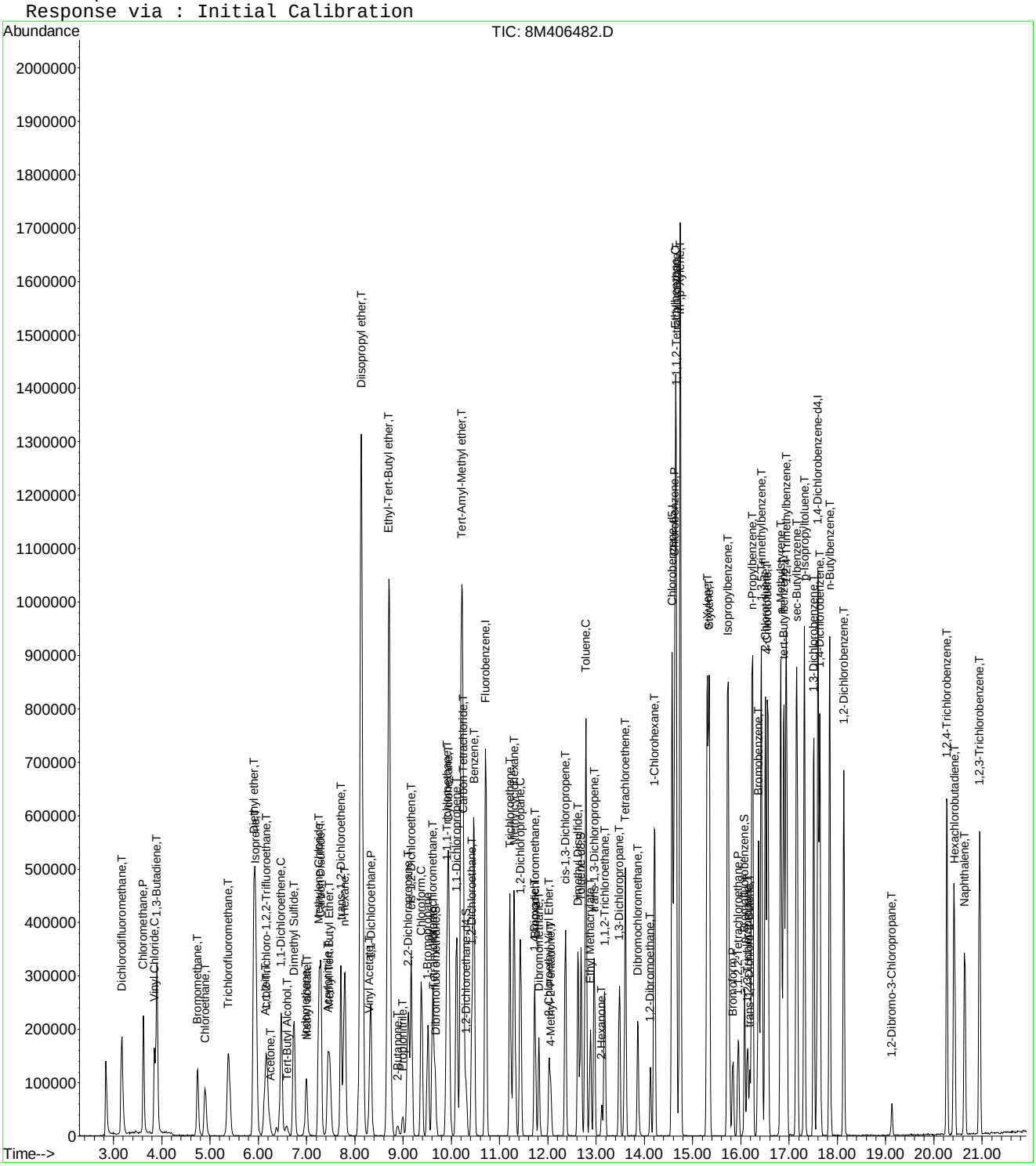

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406483.D Vial: 7
Acq On : 30 Jul 2015 17:04 Operator: TMB
Sample : WG533051-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:08 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	905123	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	645629	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	356726	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	206363	25.8744 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.48%		
43) 1,2-Dichloroethane-d4	10.31	65	193407	24.3862 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.56%		
58) Toluene-d8	12.69	98	789617	25.3525 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.40%		
80) p-Bromofluorobenzene	16.08	95	298735	24.2110 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.84%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	793389	57.3949 ug/L	98
3) Chloromethane	3.62	50	774629	50.1936 ug/L	100
4) Vinyl Chloride	3.85	62	591558	52.1218 ug/L	100
5) 1,3-Butadiene	3.89	54	525687	52.8348 ug/L	96
6) Bromomethane	4.75	94	372151	49.2279 ug/L	98
7) Chloroethane	4.90	64	363278	51.4079 ug/L	99
8) Trichlorofluoromethane	5.39	101	770145	52.4781 ug/L	99
9) Diethyl ether	5.92	59	543358	97.8162 ug/L	99
10) Isoprene	5.95	67	601625	52.3784 ug/L	100
11) Acrolein	6.15	56	15050	53.2458 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	450283	53.7379 ug/L	100
13) Acetone	6.25	43	54001	47.3125 ug/L	89
14) 1,1-Dichloroethene	6.47	61	737038	51.8469 ug/L	97
15) Tert-Butyl Alcohol	6.59	59	54494	181.7696 ug/L	98
16) Dimethyl Sulfide	6.74	62	453799	50.8451 ug/L	96
17) Iodomethane	6.99	142	438030	50.1373 ug/L	96
18) Methyl acetate	7.01	43	211513	47.7558 ug/L	98
19) Methylene Chloride	7.26	84	462069	51.0288 ug/L	99
20) Carbon Disulfide	7.30	76	1497961	51.5946 ug/L	100
21) Acrylonitrile	7.45	53	95327	50.2625 ug/L	99
22) Methyl Tert Butyl Ether	7.48	73	810723	50.7000 ug/L	98
23) trans-1,2-Dichloroethene	7.71	61	695571	52.1719 ug/L	96
24) n-Hexane	7.80	57	743489	51.5880 ug/L	100
25) Diisopropyl ether	8.14	45	3228603	99.7258 ug/L	98
26) Vinyl Acetate	8.30	43	409257	49.4548 ug/L	100
27) 1,1-Dichloroethane	8.33	63	920738	51.4914 ug/L	100
28) Ethyl-Tert-Butyl ether	8.71	59	2377982	98.4484 ug/L	99
29) 2-Butanone	8.88	43	97575	50.4906 ug/L	100
30) Propionitrile	9.00	54	62717	102.0304 ug/L	99
31) 2,2-Dichloropropane	9.11	77	715194	51.9009 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	500332	52.1466 ug/L	96
33) Chloroform	9.38	83	823551	51.0337 ug/L	98
34) 1-Bromopropane	9.52	122	86861	50.9315 ug/L	97
35) Bromochloromethane	9.62	130	249925	50.5694 ug/L	97
36) Tetrahydrofuran	9.64	42	127091	95.6129 ug/L	97
38) 1,1,1-Trichloroethane	9.92	97	778847	52.3243 ug/L	98
39) Cyclohexane	9.95	56	911186	52.4843 ug/L	99
40) 1,1-Dichloropropene	10.11	75	665469	52.2167 ug/L	99
41) Tert-Amyl-Methyl ether	10.22	73	1766552	97.6994 ug/L	99
42) Carbon Tetrachloride	10.26	117	704730	53.4711 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M406483.D 8260WT.M Fri Jul 31 14:02:09 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406483.D Vial: 7
Acq On : 30 Jul 2015 17:04 Operator: TMB
Sample : WG533051-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:08 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	553108	51.1739 ug/L		99
46)	Benzene	10.46	78	1840314	51.6579 ug/L		99
47)	Trichloroethene	11.22	130	492891	48.4731 ug/L		98
48)	Methylcyclohexane	11.30	83	748840	50.7851 ug/L		100
49)	1,2-Dichloropropane	11.44	63	526138	53.3105 ug/L		95
50)	Bromodichloromethane	11.74	83	642036	52.4176 ug/L		100
51)	1,4-Dioxane	11.72	88	6404	184.5131 ug/L		87
52)	Dibromomethane	11.82	93	233147	51.6407 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.03	63	212458	51.5361 ug/L		99
54)	4-Methyl-2-Pentanone	12.06	58	91945	50.2433 ug/L		97
55)	cis-1,3-Dichloropropene	12.37	75	710508	52.7003 ug/L		99
56)	Dimethyl Disulfide	12.63	79	368941	50.5116 ug/L		99
59)	Toluene	12.79	91	1964017	52.0543 ug/L		99
60)	Ethyl Methacrylate	12.88	69	372212	51.6878 ug/L		97
62)	trans-1,3-Dichloropropene	12.97	75	582148	52.1608 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	307585	52.0206 ug/L		100
64)	2-Hexanone	13.12	58	83346	49.8978 ug/L	#	98
65)	1,3-Dichloropropane	13.48	76	534141	51.9049 ug/L		97
66)	Tetrachloroethene	13.61	164	414054	52.0494 ug/L		97
67)	Dibromochloromethane	13.87	129	408742	52.4777 ug/L		99
68)	1,2-Dibromoethane	14.13	107	291774	50.7519 ug/L		98
69)	1-Chlorohexane	14.21	91	679889	50.9895 ug/L		100
70)	Chlorobenzene	14.63	112	1254057	51.9113 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.66	131	464369	54.1101 ug/L		100
72)	Ethylbenzene	14.65	106	698254	51.2055 ug/L		99
73)	m-,p-Xylene	14.75	106	1692501	105.0343 ug/L		94
74)	o-Xylene	15.30	106	838582	52.8805 ug/L		95
75)	Styrene	15.35	104	1379102	53.2472 ug/L		97
76)	Bromoform	15.84	173	239694	51.1839 ug/L		99
77)	Isopropylbenzene	15.73	105	2131296	53.6857 ug/L		98
79)	1,1,2,2-Tetrachloroethane	15.94	83	324676	50.0926 ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	91482	50.2834 ug/L		99
82)	trans-1,4-Dichloro-2-Buten	16.18	53	114476	45.3360 ug/L		95
83)	n-Propylbenzene	16.23	91	2718432	51.7580 ug/L		99
84)	Bromobenzene	16.37	156	526890	49.5262 ug/L		99
85)	1,3,5-Trimethylbenzene	16.43	105	1834447	52.9036 ug/L		97
86)	2-Chlorotoluene	16.51	91	1707990	53.2393 ug/L		98
87)	4-Chlorotoluene	16.55	91	1562668	51.1143 ug/L		97
88)	a-Methylstyrene	16.83	118	973493	51.6973 ug/L		97
89)	tert-Butylbenzene	16.90	134	383962	51.1110 ug/L		95
90)	1,2,4-Trimethylbenzene	16.95	105	1878267	53.4626 ug/L		98
91)	sec-Butylbenzene	17.16	105	2334618	54.5678 ug/L		98
92)	p-Isopropyltoluene	17.32	119	2001322	54.3943 ug/L		98
93)	1,3-Dichlorobenzene	17.52	146	1061972	50.9057 ug/L		99
94)	1,4-Dichlorobenzene	17.64	146	1054477	49.0347 ug/L		96
95)	n-Butylbenzene	17.85	91	1958128	55.1921 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	939992	51.0349 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	58169	51.2620 ug/L		98
98)	1,2,4-Trichlorobenzene	20.27	180	729904	51.4962 ug/L		99
99)	Hexachlorobutadiene	20.42	225	360991	50.0496 ug/L		99
100)	Naphthalene	20.64	128	1011034	54.9769 ug/L		98
101)	1,2,3-Trichlorobenzene	20.95	180	617964	50.5233 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M406483.D 8260WT.M Fri Jul 31 14:02:09 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406483.D Vial: 7
Acq On : 30 Jul 2015 17:04 Operator: TMB
Sample : WG533051-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

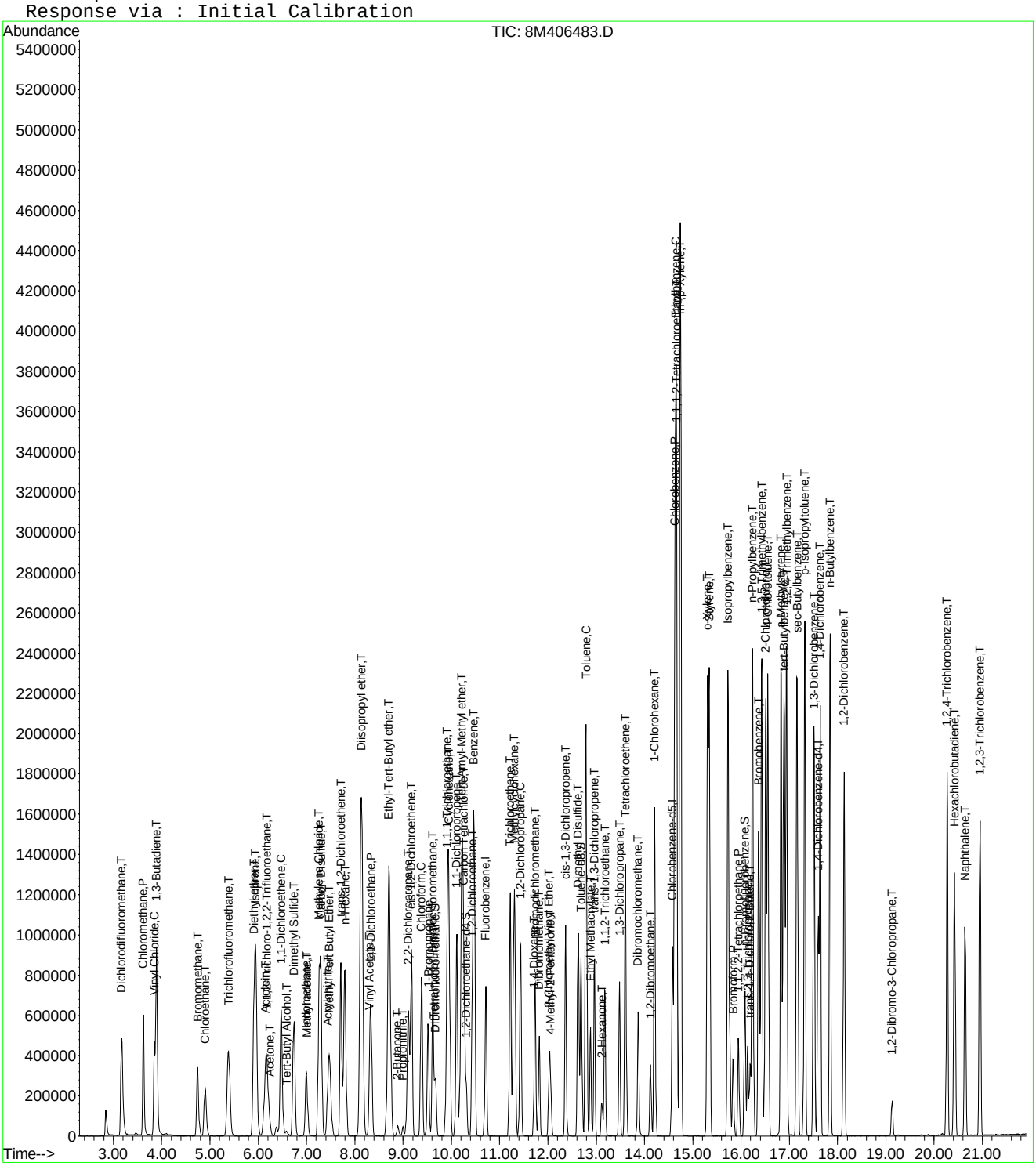

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406484.D Vial: 8
Acq On : 30 Jul 2015 17:33 Operator: TMB
Sample : WG533051-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:09 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	965047	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	693992	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	377100	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.68	111	407361	47.9046 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 191.60%#		
43) 1,2-Dichloroethane-d4	10.31	65	398417	47.1160 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 188.48%#		
58) Toluene-d8	12.69	98	1502516	44.8800 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 179.52%#		
80) p-Bromofluorobenzene	16.08	95	588300	45.1029 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 180.40%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	1447067	98.1828 ug/L	99
3) Chloromethane	3.62	50	1469585	89.3117 ug/L	100
4) Vinyl Chloride	3.85	62	1113972	92.0567 ug/L	99
5) 1,3-Butadiene	3.89	54	1106871	104.3396 ug/L	93
6) Bromomethane	4.74	94	754878	93.6544 ug/L	99
7) Chloroethane	4.90	64	716703	95.1238 ug/L	99
8) Trichlorofluoromethane	5.39	101	1479847	94.5761 ug/L	99
9) Diethyl ether	5.91	59	1171644	197.8242 ug/L	99
10) Isoprene	5.95	67	1270504	103.7437 ug/L	100
11) Acrolein	6.15	56	35545	97.9111 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	839906	94.0124 ug/L	99
13) Acetone	6.25	43	106698	87.6778 ug/L	88
14) 1,1-Dichloroethene	6.47	61	1429955	94.3441 ug/L	98
15) Tert-Butyl Alcohol	6.60	59	119175	372.8351 ug/L	97
16) Dimethyl Sulfide	6.74	62	972688	102.2159 ug/L	97
17) Iodomethane	6.99	142	950888	101.1755 ug/L	97
18) Methyl acetate	7.01	43	462726	97.9879 ug/L	98
19) Methylene Chloride	7.26	84	914681	94.7409 ug/L	100
20) Carbon Disulfide	7.30	76	3117324	100.7035 ug/L	100
21) Acrylonitrile	7.44	53	208069	102.8952 ug/L	99
22) Methyl Tert Butyl Ether	7.47	73	1688263	99.0227 ug/L	98
23) trans-1,2-Dichloroethene	7.71	61	1400434	98.5184 ug/L	97
24) n-Hexane	7.79	57	1539123	100.1628 ug/L	100
25) Diisopropyl ether	8.14	45	6719736	194.6724 ug/L	99
26) Vinyl Acetate	8.30	43	978547	110.9054 ug/L	100
27) 1,1-Dichloroethane	8.33	63	1824047	95.6740 ug/L	99
28) Ethyl-Tert-Butyl ether	8.71	59	5140284	199.5934 ug/L	98
29) 2-Butanone	8.89	43	209399	101.6262 ug/L	99
30) Propionitrile	8.99	54	133996	204.4539 ug/L	100
31) 2,2-Dichloropropane	9.11	77	1395201	94.9614 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	1020076	99.7147 ug/L	96
33) Chloroform	9.39	83	1666101	96.8338 ug/L	99
34) 1-Bromopropane	9.52	122	183147	100.7212 ug/L	100
35) Bromochloromethane	9.61	130	518828	98.4601 ug/L	99
36) Tetrahydrofuran	9.64	42	282096	199.0480 ug/L	97
38) 1,1,1-Trichloroethane	9.91	97	1537931	96.9053 ug/L	98
39) Cyclohexane	9.95	56	1874220	101.2517 ug/L	100
40) 1,1-Dichloropropene	10.11	75	1274818	93.8186 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	3827307	198.5263 ug/L	98
42) Carbon Tetrachloride	10.26	117	1376730	97.9725 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M406484.D 8260WT.M Fri Jul 31 14:02:10 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406484.D Vial: 8
Acq On : 30 Jul 2015 17:33 Operator: TMB
Sample : WG533051-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:09 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	1142285	99.1225	ug/L		99
46)	Benzene	10.47	78	3562491	93.7903	ug/L		99
47)	Trichloroethene	11.22	130	960301	88.5761	ug/L		98
48)	Methylcyclohexane	11.30	83	1578829	100.4249	ug/L		99
49)	1,2-Dichloropropane	11.43	63	1064186	101.1322	ug/L		97
50)	Bromodichloromethane	11.73	83	1308458	100.1928	ug/L		99
51)	1,4-Dioxane	11.72	88	14577	393.9157	ug/L		85
52)	Dibromomethane	11.82	93	483518	100.4464	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.02	63	447158	101.7323	ug/L		98
54)	4-Methyl-2-Pentanone	12.05	58	198955	101.9681	ug/L		99
55)	cis-1,3-Dichloropropene	12.36	75	1459255	101.5160	ug/L		99
56)	Dimethyl Disulfide	12.62	79	805354	103.4142	ug/L		97
59)	Toluene	12.79	91	3726198	91.8768	ug/L		96
60)	Ethyl Methacrylate	12.88	69	790872	102.1721	ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	1209023	100.7799	ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	623496	98.1008	ug/L		97
64)	2-Hexanone	13.12	58	179741	100.1089	ug/L	#	97
65)	1,3-Dichloropropane	13.48	76	1084202	98.0148	ug/L		97
66)	Tetrachloroethene	13.61	164	788124	92.1684	ug/L		98
67)	Dibromochloromethane	13.86	129	858396	102.5278	ug/L		99
68)	1,2-Dibromoethane	14.12	107	613039	99.2024	ug/L		100
69)	1-Chlorohexane	14.22	91	1399721	97.6592	ug/L		99
70)	Chlorobenzene	14.63	112	2464965	94.9258	ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.66	131	930502	100.8698	ug/L		98
72)	Ethylbenzene	14.66	106	1383565	94.3911	ug/L		91
73)	m-,p-Xylene	14.74	106	3220173	185.9131	ug/L		89
74)	o-Xylene	15.31	106	1658540	97.2981	ug/L		92
75)	Styrene	15.34	104	2709684	97.3302	ug/L		100
76)	Bromoform	15.84	173	507847	100.8877	ug/L		99
77)	Isopropylbenzene	15.74	105	4019718	94.1975	ug/L		96
79)	1,1,2,2-Tetrachloroethane	15.94	83	690755	100.8151	ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	190295	98.9452	ug/L		99
82)	trans-1,4-Dichloro-2-Buten	16.19	53	248869	92.3924	ug/L		95
83)	n-Propylbenzene	16.24	91	4956532	89.2720	ug/L		96
84)	Bromobenzene	16.37	156	1065712	94.7617	ug/L		97
85)	1,3,5-Trimethylbenzene	16.43	105	3512095	95.8131	ug/L		95
86)	2-Chlorotoluene	16.51	91	3173720	93.5823	ug/L		96
87)	4-Chlorotoluene	16.56	91	3137655	97.0865	ug/L		96
88)	a-Methylstyrene	16.83	118	2020165	101.4846	ug/L		99
89)	tert-Butylbenzene	16.89	134	751885	94.6795	ug/L		94
90)	1,2,4-Trimethylbenzene	16.95	105	3589344	96.6464	ug/L		96
91)	sec-Butylbenzene	17.16	105	4288380	94.8183	ug/L		96
92)	p-Isopropyltoluene	17.32	119	3722574	95.7102	ug/L		97
93)	1,3-Dichlorobenzene	17.51	146	2093524	94.9313	ug/L		100
94)	1,4-Dichlorobenzene	17.64	146	2074493	91.2550	ug/L		98
95)	n-Butylbenzene	17.84	91	3669233	97.8339	ug/L		97
96)	1,2-Dichlorobenzene	18.13	146	1883412	96.7313	ug/L		100
97)	1,2-Dibromo-3-Chloropropan	19.13	75	121212	101.0480	ug/L		93
98)	1,2,4-Trichlorobenzene	20.27	180	1458227	97.3224	ug/L		99
99)	Hexachlorobutadiene	20.43	225	710996	93.2502	ug/L		99
100)	Naphthalene	20.65	128	2100408	108.0429	ug/L		100
101)	1,2,3-Trichlorobenzene	20.95	180	1268320	98.0924	ug/L		98

(#) = qualifier out of range (m) = manual integration
8M406484.D 8260WT.M Fri Jul 31 14:02:10 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406484.D Vial: 8
Acq On : 30 Jul 2015 17:33 Operator: TMB
Sample : WG533051-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

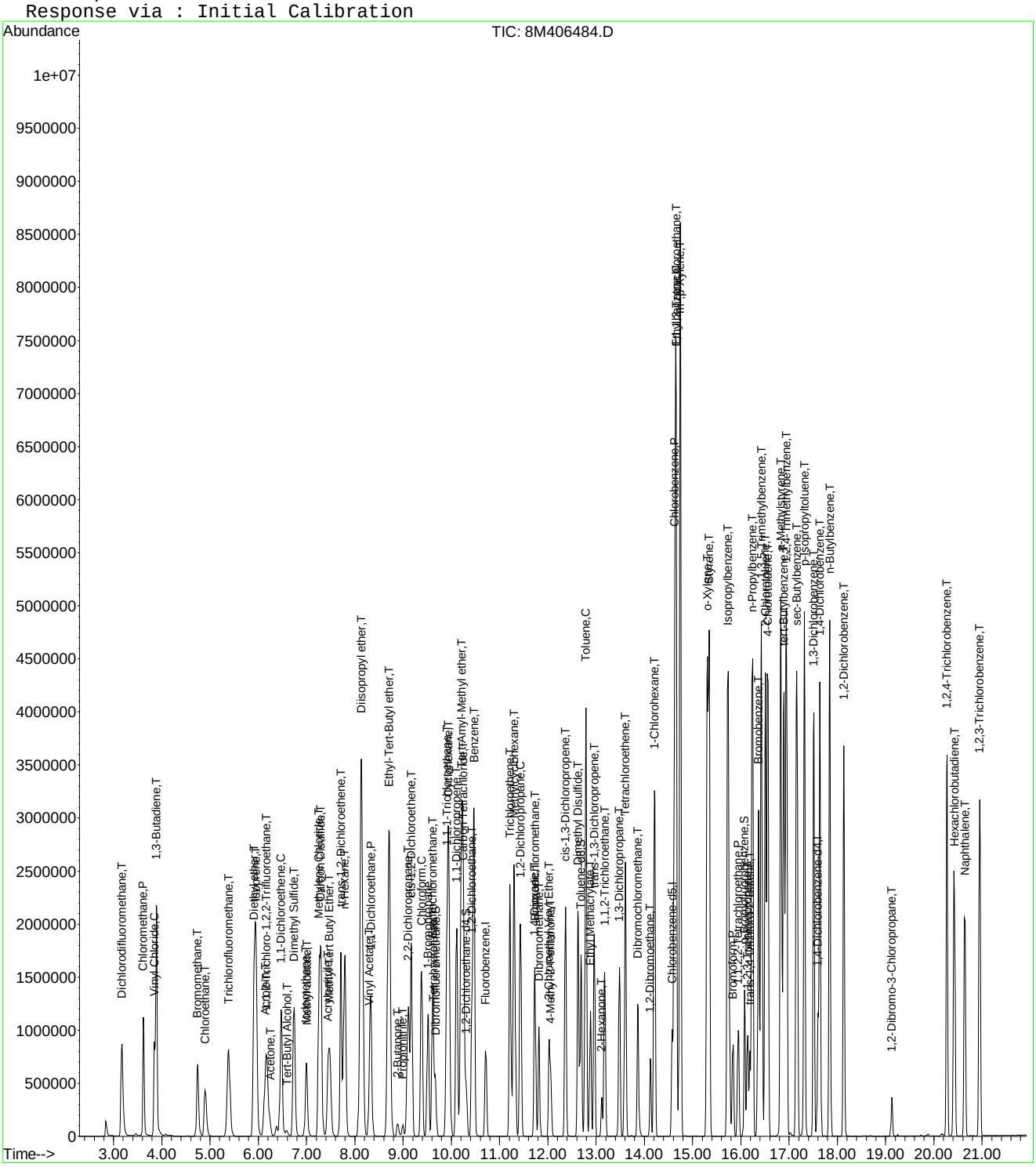

8M406484.D 8260WT.M Fri Jul 31 14:02:10 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406485.D Vial: 9
Acq On : 30 Jul 2015 18:01 Operator: TMB
Sample : WG533051-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:10 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	1040394	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	724738	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	397471	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	955134	104.1868 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 416.76%#		
43) 1,2-Dichloroethane-d4	10.31	65	925081	101.4755 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 405.92%#		
58) Toluene-d8	12.69	98	3399366	97.2311 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 388.92%#		
80) p-Bromofluorobenzene	16.08	95	1380717	100.4294 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 401.72%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	3311592	208.4174 ug/L	97
3) Chloromethane	3.62	50	3220138	181.5261 ug/L	97
4) Vinyl Chloride	3.85	62	2492880	191.0878 ug/L	98
5) 1,3-Butadiene	3.89	54	2199328	192.3060 ug/L	90
6) Bromomethane	4.74	94	1766615	203.3032 ug/L	98
7) Chloroethane	4.89	64	1624026	199.9372 ug/L	99
8) Trichlorofluoromethane	5.38	101	3499539	207.4561 ug/L	100
9) Diethyl ether	5.92	59	1482	0.2321 ug/L #	52
10) Isoprene	5.95	67	2748255	208.1580 ug/L	99
11) Acrolein	6.14	56	230	Below Cal #	12
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	1999365	207.5855 ug/L	99
13) Acetone	6.25	43	251669	191.8288 ug/L	89
14) 1,1-Dichloroethene	6.47	61	3348532	204.9261 ug/L	98
15) Tert-Butyl Alcohol	6.47	59	115167	334.2030 ug/L #	58
16) Dimethyl Sulfide	6.74	62	2093852	204.0993 ug/L	97
17) Iodomethane	6.99	142	2010247	197.5620 ug/L	100
18) Methyl acetate	7.00	43	994464	195.3386 ug/L	99
19) Methylene Chloride	7.26	84	2007363	192.8610 ug/L	99
20) Carbon Disulfide	7.30	76	6310743	189.1010 ug/L	97
21) Acrylonitrile	7.46	53	40607	18.6268 ug/L #	26
22) Methyl Tert Butyl Ether	7.48	73	3730350	202.9528 ug/L	97
23) trans-1,2-Dichloroethene	7.70	61	3169136	206.7979 ug/L	97
24) n-Hexane	7.79	57	3249384	196.1483 ug/L	99
26) Vinyl Acetate	8.30	43	1962793	206.3461 ug/L	99
27) 1,1-Dichloroethane	8.34	63	4074812	198.2512 ug/L	98
29) 2-Butanone	8.88	43	450663	202.8775 ug/L	99
30) Propionitrile	8.93	54	1013	1.4337 ug/L #	56
31) 2,2-Dichloropropane	9.11	77	3202826	202.2061 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	2245305	203.5882 ug/L	97
33) Chloroform	9.38	83	3657299	197.1681 ug/L	97
34) 1-Bromopropane	9.51	122	399971	204.0328 ug/L	98
35) Bromochloromethane	9.62	130	1126272	198.2581 ug/L	99
36) Tetrahydrofuran	9.65	42	781	0.5112 ug/L #	40
38) 1,1,1-Trichloroethane	9.92	97	3558174	207.9642 ug/L	100
39) Cyclohexane	9.95	56	4014231	201.1568 ug/L	99
40) 1,1-Dichloropropene	10.11	75	2934077	200.2917 ug/L	98
42) Carbon Tetrachloride	10.26	117	3202446	211.3916 ug/L	100
45) 1,2-Dichloroethane	10.42	62	2535974	204.1237 ug/L	99
46) Benzene	10.47	78	7129962	174.1172 ug/L	92
47) Trichloroethene	11.22	130	2119855	181.3703 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M406485.D 8260WT.M Fri Jul 31 14:02:11 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406485.D Vial: 9
Acq On : 30 Jul 2015 18:01 Operator: TMB
Sample : WG533051-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:10 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
48)	Methylcyclohexane	11.30	83	3333904	196.7026 ug/L		98
49)	1,2-Dichloropropane	11.44	63	2321617	204.6506 ug/L		100
50)	Bromodichloromethane	11.73	83	2863290	203.3727 ug/L		98
51)	1,4-Dioxane	11.73	88	7313	183.3079 ug/L	#	42
52)	Dibromomethane	11.82	93	1057674	203.8094 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	971763	205.0732 ug/L		99
54)	4-Methyl-2-Pentanone	12.06	58	434877	206.7410 ug/L		98
55)	cis-1,3-Dichloropropene	12.37	75	3117841	201.1908 ug/L		96
56)	Dimethyl Disulfide	12.63	79	1770920	210.9322 ug/L		97
59)	Toluene	12.79	91	7346526	173.4585 ug/L		90
60)	Ethyl Methacrylate	12.88	69	1733386	214.4346 ug/L		98
62)	trans-1,3-Dichloropropene	12.97	75	2638443	210.6011 ug/L		98
63)	1,1,2-Trichloroethane	13.18	97	1375417	207.2273 ug/L		99
64)	2-Hexanone	13.12	58	396773	211.6123 ug/L	#	94
65)	1,3-Dichloropropane	13.48	76	2364848	204.7189 ug/L		98
66)	Tetrachloroethene	13.61	164	1792548	200.7390 ug/L		99
67)	Dibromochloromethane	13.87	129	1893932	216.6166 ug/L		99
68)	1,2-Dibromoethane	14.13	107	1353003	209.6556 ug/L		100
69)	1-Chlorohexane	14.21	91	2929109	195.6954 ug/L		97
70)	Chlorobenzene	14.63	112	5005557	184.5862 ug/L		93
71)	1,1,1,2-Tetrachloroethane	14.66	131	2071416	215.0229 ug/L		99
72)	Ethylbenzene	14.65	106	3010230	196.6548 ug/L		72
73)	m-,p-Xylene	14.75	106	6405975	354.1518 ug/L		70
74)	o-Xylene	15.30	106	3538965	198.8053 ug/L		84
75)	Styrene	15.35	104	5528100	190.1421 ug/L		91
76)	Bromoform	15.84	173	1151383	219.0274 ug/L		99
77)	Isopropylbenzene	15.73	105	7826297	175.6197 ug/L		89
79)	1,1,2,2-Tetrachloroethane	15.95	83	1541509	213.4512 ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	423906	209.1164 ug/L		94
82)	trans-1,4-Dichloro-2-Buten	16.18	53	559393	196.1276 ug/L		97
83)	n-Propylbenzene	16.23	91	9019678	154.1273 ug/L		86
84)	Bromobenzene	16.37	156	2284366	192.7125 ug/L		98
85)	1,3,5-Trimethylbenzene	16.43	105	7016916	181.6167 ug/L		90
86)	2-Chlorotoluene	16.51	91	6618013	185.1414 ug/L		93
87)	4-Chlorotoluene	16.56	91	5964330	175.0921 ug/L		89
88)	a-Methylstyrene	16.83	118	4119431	196.3367 ug/L		95
89)	tert-Butylbenzene	16.90	134	1671119	199.6472 ug/L		87
90)	1,2,4-Trimethylbenzene	16.95	105	7021954	179.3824 ug/L		88
91)	sec-Butylbenzene	17.17	105	8237897	172.8090 ug/L		89
92)	p-Isopropyltoluene	17.32	119	7266674	177.2563 ug/L		90
93)	1,3-Dichlorobenzene	17.52	146	4318785	185.7993 ug/L		95
94)	1,4-Dichlorobenzene	17.64	146	4277939	178.5379 ug/L		97
95)	n-Butylbenzene	17.85	91	7108277	179.8165 ug/L		91
96)	1,2-Dichlorobenzene	18.14	146	3887769	189.4407 ug/L		95
97)	1,2-Dibromo-3-Chloropropan	19.13	75	276298	218.5299 ug/L		95
98)	1,2,4-Trichlorobenzene	20.28	180	3070768	194.4400 ug/L		99
99)	Hexachlorobutadiene	20.42	225	1550628	192.9484 ug/L		98
100)	Naphthalene	20.64	128	4400286	214.7458 ug/L		98
101)	1,2,3-Trichlorobenzene	20.95	180	2641708	193.8396 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M406485.D 8260WT.M Fri Jul 31 14:02:11 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406485.D Vial: 9
Acq On : 30 Jul 2015 18:01 Operator: TMB
Sample : WG533051-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

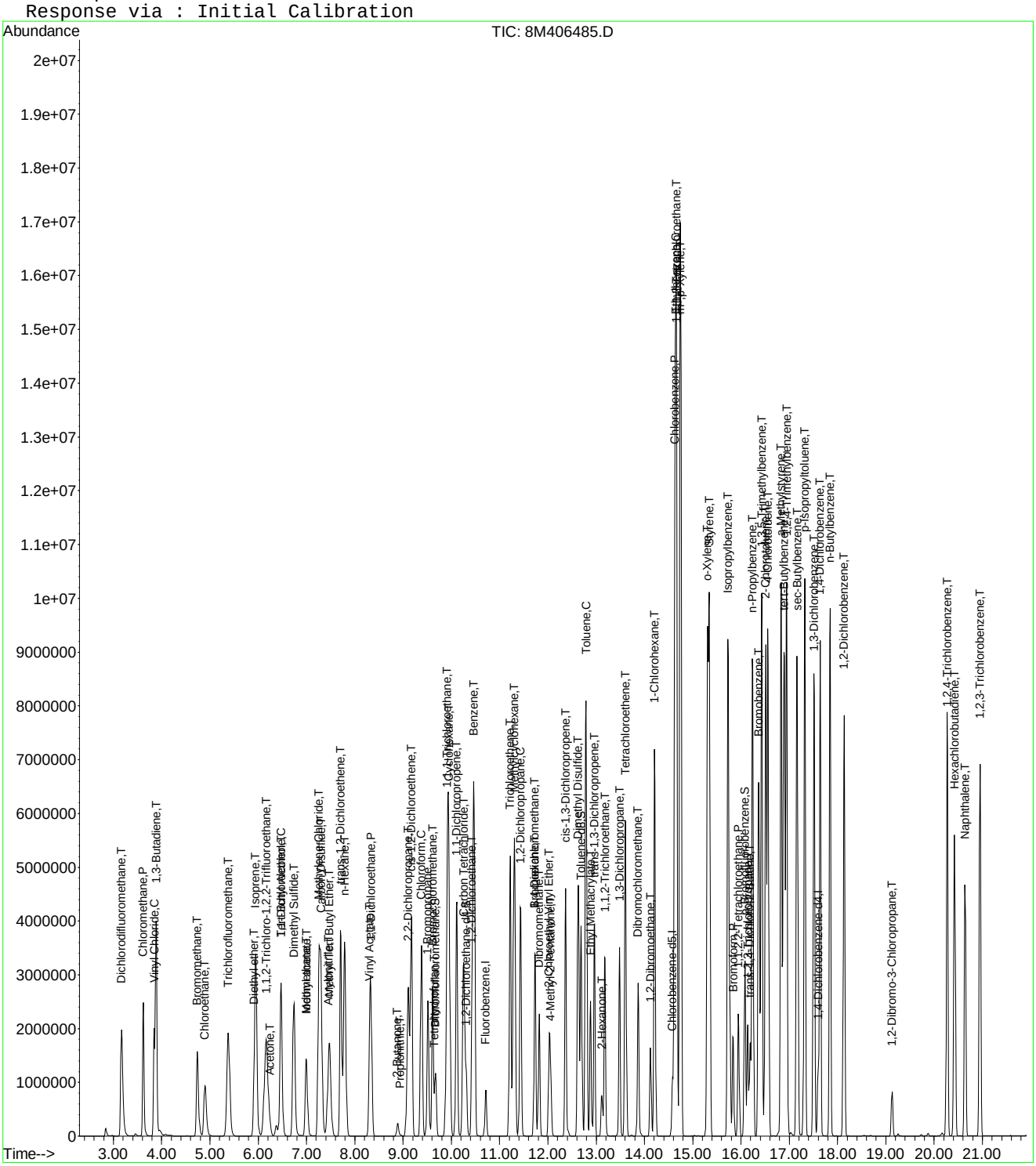

8M406485.D 8260WT.M Fri Jul 31 14:02:11 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406486.D Vial: 10
Acq On : 30 Jul 2015 18:29 Operator: TMB
Sample : WG533051-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:12 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	1028584	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	729846	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	400318	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	1523750	168.1203 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 672.48%#		
43) 1,2-Dichloroethane-d4	10.31	65	1500807	166.5192 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 666.08%#		
58) Toluene-d8	12.69	98	5162645	146.6321 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 586.52%#		
80) p-Bromofluorobenzene	16.08	95	2188157	158.0284 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 632.12%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	5117633	325.7800 ug/L	96
3) Chloromethane	3.62	50	4732198	269.8271 ug/L	94
4) Vinyl Chloride	3.85	62	3785878	293.5325 ug/L	95
5) 1,3-Butadiene	3.89	54	3316393	293.3100 ug/L	89
6) Bromomethane	4.74	94	2881777	335.4445 ug/L	98
7) Chloroethane	4.89	64	2610645	325.0921 ug/L	99
8) Trichlorofluoromethane	5.38	101	5765049	345.6818 ug/L	100
9) Diethyl ether	5.92	59	2065500	327.2033 ug/L	98
10) Isoprene	5.95	67	4331415	331.8364 ug/L	97
11) Acrolein	6.14	56	71709	150.4913 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	3194012	335.4281 ug/L	99
13) Acetone	6.25	43	397743	306.6513 ug/L	86
14) 1,1-Dichloroethene	6.47	61	5316346	329.0897 ug/L	96
15) Tert-Butyl Alcohol	6.60	59	224020	657.5476 ug/L	99
16) Dimethyl Sulfide	6.74	62	3335527	328.8653 ug/L	98
17) Iodomethane	6.99	142	3067351	304.4378 ug/L	99
18) Methyl acetate	7.00	43	1728968	343.5137 ug/L	100
19) Methylene Chloride	7.26	84	3154514	306.5554 ug/L	97
20) Carbon Disulfide	7.30	76	9369568	283.9822 ug/L	95
21) Acrylonitrile	7.45	53	419964	194.8536 ug/L	97
22) Methyl Tert Butyl Ether	7.48	73	6031202	331.9001 ug/L	96
23) trans-1,2-Dichloroethene	7.70	61	4927650	325.2394 ug/L	97
24) n-Hexane	7.79	57	5114139	312.2584 ug/L	99
25) Diisopropyl ether	8.14	45	10690367	290.5718 ug/L	96
26) Vinyl Acetate	8.30	43	2722389	289.4876 ug/L	99
27) 1,1-Dichloroethane	8.33	63	6249418	307.5431 ug/L	96
28) Ethyl-Tert-Butyl ether	8.71	59	8582411	312.6635 ug/L	96
29) 2-Butanone	8.89	43	751998	342.4181 ug/L	99
30) Propionitrile	9.00	54	247681	354.5725 ug/L	99
31) 2,2-Dichloropropane	9.11	77	5088250	324.9282 ug/L	97
32) cis-1,2-Dichloroethene	9.17	96	3483978	319.5294 ug/L	98
33) Chloroform	9.38	83	5576785	304.1012 ug/L	95
34) 1-Bromopropane	9.51	122	640622	330.5456 ug/L	99
35) Bromochloromethane	9.62	130	1763334	313.9643 ug/L	100
36) Tetrahydrofuran	9.64	42	516131	341.6878 ug/L	98
38) 1,1,1-Trichloroethane	9.92	97	5610901	331.7050 ug/L	99
39) Cyclohexane	9.95	56	6231793	315.8664 ug/L	99
40) 1,1-Dichloropropene	10.11	75	4572229	315.7021 ug/L	97
41) Tert-Amyl-Methyl ether	10.22	73	6529096	317.7507 ug/L	97
42) Carbon Tetrachloride	10.26	117	5060847	337.8992 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M406486.D 8260WT.M Fri Jul 31 14:02:12 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406486.D Vial: 10
Acq On : 30 Jul 2015 18:29 Operator: TMB
Sample : WG533051-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:12 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	4000729	325.7210	ug/L		98
46)	Benzene	10.46	78	9875498	243.9336	ug/L		85
47)	Trichloroethene	11.22	130	3333538	288.4851	ug/L		98
48)	Methylcyclohexane	11.30	83	5208570	310.8376	ug/L		97
49)	1,2-Dichloropropane	11.44	63	3586239	319.7568	ug/L		98
50)	Bromodichloromethane	11.74	83	4433850	318.5417	ug/L		97
51)	1,4-Dioxane	11.73	88	27597	699.6900	ug/L		83
52)	Dibromomethane	11.82	93	1700087	331.3612	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.03	63	1554095	331.7296	ug/L		98
54)	4-Methyl-2-Pentanone	12.06	58	705495	339.2440	ug/L		99
55)	cis-1,3-Dichloropropene	12.37	75	4762357	310.8380	ug/L		94
56)	Dimethyl Disulfide	12.63	79	2806438	338.1096	ug/L		95
59)	Toluene	12.79	91	9877956	231.5957	ug/L		83
60)	Ethyl Methacrylate	12.88	69	2760219	339.0727	ug/L		99
62)	trans-1,3-Dichloropropene	12.97	75	4102405	325.1631	ug/L		95
63)	1,1,2-Trichloroethane	13.18	97	2171921	324.9424	ug/L		99
64)	2-Hexanone	13.12	58	650699	344.6107	ug/L	#	92
65)	1,3-Dichloropropane	13.48	76	3646600	313.4676	ug/L		99
66)	Tetrachloroethene	13.61	164	2834870	315.2419	ug/L		99
67)	Dibromochloromethane	13.87	129	2977513	338.1666	ug/L		98
68)	1,2-Dibromoethane	14.12	107	2126044	327.1370	ug/L		100
69)	1-Chlorohexane	14.22	91	4484324	297.5033	ug/L		94
70)	Chlorobenzene	14.63	112	7166893	262.4386	ug/L		86
71)	1,1,1,2-Tetrachloroethane	14.66	131	3261834	336.2243	ug/L		99
72)	Ethylbenzene	14.66	106	4621120	299.7795	ug/L		53
73)	m-,p-Xylene	14.74	106	8870609	486.9759	ug/L		59
74)	o-Xylene	15.31	106	5313519	296.4038	ug/L		73
75)	Styrene	15.34	104	7831227	267.4742	ug/L		82
76)	Bromoform	15.84	173	1835375	346.6995	ug/L		99
77)	Isopropylbenzene	15.74	105	10435377	232.5278	ug/L		79
79)	1,1,2,2-Tetrachloroethane	15.94	83	2343040	322.1310	ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	686174	336.0880	ug/L		96
82)	trans-1,4-Dichloro-2-Buten	16.19	53	917720	318.9702	ug/L		94
83)	n-Propylbenzene	16.24	91	11456032	194.3672	ug/L	#	73
84)	Bromobenzene	16.37	156	3483406	291.7753	ug/L		97
85)	1,3,5-Trimethylbenzene	16.43	105	9500295	244.1445	ug/L		82
86)	2-Chlorotoluene	16.51	91	8751876	243.0958	ug/L		85
87)	4-Chlorotoluene	16.56	91	8272493	241.1246	ug/L		80
88)	a-Methylstyrene	16.83	118	6080021	287.7198	ug/L		91
89)	tert-Butylbenzene	16.90	134	2596133	307.9520	ug/L		79
90)	1,2,4-Trimethylbenzene	16.95	105	9434588	239.3014	ug/L		78
91)	sec-Butylbenzene	17.16	105	10777038	224.4655	ug/L	#	79
92)	p-Isopropyltoluene	17.32	119	9679217	234.4264	ug/L		81
93)	1,3-Dichlorobenzene	17.52	146	6256898	267.2648	ug/L		89
94)	1,4-Dichlorobenzene	17.64	146	6127643	253.9157	ug/L		91
95)	n-Butylbenzene	17.85	91	9371345	235.3789	ug/L	#	82
96)	1,2-Dichlorobenzene	18.14	146	5678643	274.7373	ug/L		90
97)	1,2-Dibromo-3-Chloropropan	19.13	75	435677	342.1355	ug/L		95
98)	1,2,4-Trichlorobenzene	20.28	180	4516301	283.9369	ug/L		98
99)	Hexachlorobutadiene	20.42	225	2425051	299.6089	ug/L		97
100)	Naphthalene	20.64	128	6344214	307.4127	ug/L		95
101)	1,2,3-Trichlorobenzene	20.95	180	3945194	287.4262	ug/L		98

(#) = qualifier out of range (m) = manual integration
8M406486.D 8260WT.M Fri Jul 31 14:02:12 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406486.D Vial: 10
Acq On : 30 Jul 2015 18:29 Operator: TMB
Sample : WG533051-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

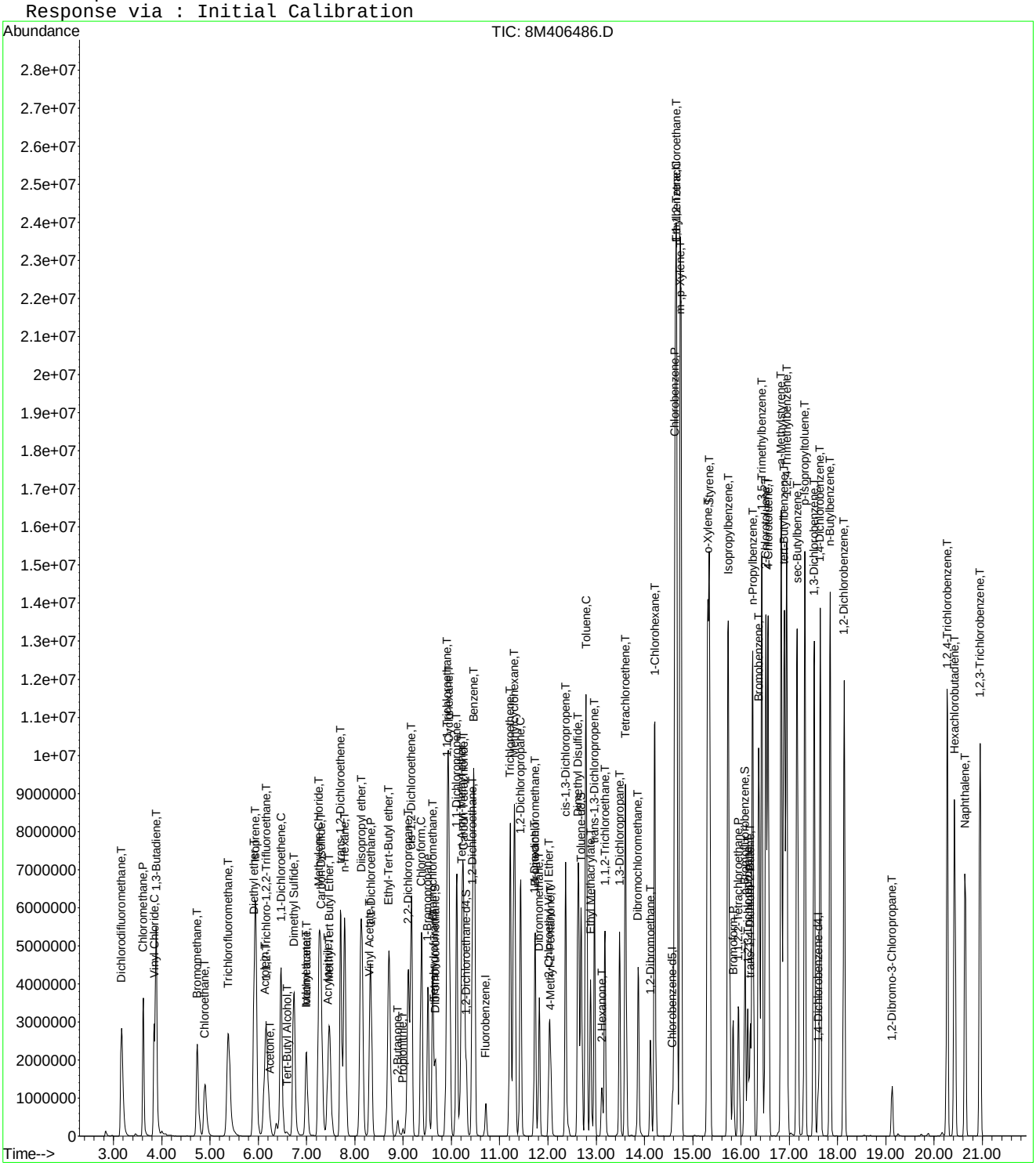

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406490.D Vial: 14
Acq On : 30 Jul 2015 20:22 Operator: TMB
Sample : WG533051-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:13 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	1008944	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	720402	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	380793	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	12.69	98	983	0.0283 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.12%#	
80) p-Bromofluorobenzene	16.08	95	326	0.0248 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.08%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	4543	0.2948 ug/L	95
3) Chloromethane	3.62	50	6070	0.3528 ug/L #	35
4) Vinyl Chloride	3.85	62	4674	0.3694 ug/L	98
5) 1,3-Butadiene	3.90	54	4380	0.3949 ug/L #	39
6) Bromomethane	4.74	94	2512	0.2981 ug/L	87
7) Chloroethane	4.90	64	2354	0.2988 ug/L #	43
8) Trichlorofluoromethane	5.37	101	4252	0.2599 ug/L #	92
10) Isoprene	5.96	67	3719	0.2905 ug/L	83
12) 1,1,2-Trichloro-1,2,2-Trif	6.19	101	2539	0.2718 ug/L #	46
13) Acetone	6.26	43	1060	0.8331 ug/L #	48
14) 1,1-Dichloroethene	6.47	61	5948	0.3754 ug/L	85
16) Dimethyl Sulfide	6.74	62	2808	0.2822 ug/L	100
17) Iodomethane	7.00	142	2256	1.1018 ug/L #	70
18) Methyl acetate	7.01	43	910	0.1843 ug/L #	64
19) Methylene Chloride	7.27	84	4210	0.4171 ug/L	96
20) Carbon Disulfide	7.30	76	14225	0.4395 ug/L	96
22) Methyl Tert Butyl Ether	7.49	73	4586	0.2573 ug/L #	67
23) trans-1,2-Dichloroethene	7.72	61	4895	0.3294 ug/L	73
24) n-Hexane	7.79	57	6977	0.4343 ug/L	90
26) Vinyl Acetate	8.30	43	2618	0.2838 ug/L #	77
27) 1,1-Dichloroethane	8.34	63	5973	0.2997 ug/L #	89
31) 2,2-Dichloropropane	9.12	77	4517	0.2941 ug/L #	70
32) cis-1,2-Dichloroethene	9.17	96	3851	0.3601 ug/L	65
33) Chloroform	9.38	83	5188	0.2884 ug/L	95
35) Bromochloromethane	9.62	130	1196	0.2171 ug/L	79
36) Tetrahydrofuran	9.65	42	429	0.2895 ug/L #	40
38) 1,1,1-Trichloroethane	9.92	97	4248	0.2560 ug/L	95
39) Cyclohexane	9.95	56	5790	0.2992 ug/L #	93
40) 1,1-Dichloropropene	10.10	75	4587	0.3229 ug/L	95
42) Carbon Tetrachloride	10.26	117	3801	0.2587 ug/L	80
45) 1,2-Dichloroethane	10.42	62	3893	0.3231 ug/L #	83
46) Benzene	10.48	78	13718	0.3454 ug/L	96
47) Trichloroethene	11.22	130	5579	0.4922 ug/L	88
48) Methylcyclohexane	11.31	83	6507	0.3959 ug/L	91
49) 1,2-Dichloropropane	11.44	63	2823	0.2566 ug/L	96
50) Bromodichloromethane	11.73	83	3594	0.2632 ug/L #	96
52) Dibromomethane	11.82	93	1790	0.3557 ug/L	91
53) 2-Chloroethyl Vinyl Ether	12.03	63	851	0.1852 ug/L #	53
55) cis-1,3-Dichloropropene	12.37	75	4421	0.2942 ug/L	98
56) Dimethyl Disulfide	12.62	79	1705	0.2094 ug/L	90

(#) = qualifier out of range (m) = manual integration
8M406490.D 8260WT.M Fri Jul 31 14:02:13 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406490.D Vial: 14
Acq On : 30 Jul 2015 20:22 Operator: TMB
Sample : WG533051-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:13 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
59)	Toluene	12.79	91	14603	0.3469 ug/L		96
60)	Ethyl Methacrylate	12.89	69	1978	0.2462 ug/L		93
62)	trans-1,3-Dichloropropene	12.97	75	3988	0.3202 ug/L		92
63)	1,1,2-Trichloroethane	13.18	97	2047	0.3103 ug/L		84
65)	1,3-Dichloropropane	13.47	76	3431	0.2988 ug/L		98
66)	Tetrachloroethene	13.62	164	3148	0.3547 ug/L		92
67)	Dibromochloromethane	13.87	129	2780	0.3199 ug/L		79
68)	1,2-Dibromoethane	14.13	107	1842	0.2871 ug/L		94
69)	1-Chlorohexane	14.22	91	4991	0.3355 ug/L		87
70)	Chlorobenzene	14.63	112	9008	0.3342 ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.65	131	2729	0.2850 ug/L		98
72)	Ethylbenzene	14.65	106	5606	0.3684 ug/L		87
73)	m-,p-Xylene	14.75	106	12100	0.6730 ug/L		97
74)	o-Xylene	15.30	106	5696	0.3219 ug/L		97
75)	Styrene	15.35	104	8917	0.3086 ug/L		92
76)	Bromoform	15.84	173	1357	0.2597 ug/L	#	39
77)	Isopropylbenzene	15.73	105	14415	0.3254 ug/L		98
79)	1,1,2,2-Tetrachloroethane	15.96	83	1905	0.2753 ug/L	#	86
81)	1,2,3-Trichloropropane	16.14	110	272	0.1401 ug/L	#	1
82)	trans-1,4-Dichloro-2-Buten	16.18	53	534	0.9919 ug/L	#	1
83)	n-Propylbenzene	16.24	91	20221	0.3607 ug/L		99
84)	Bromobenzene	16.36	156	3909	0.3442 ug/L		94
85)	1,3,5-Trimethylbenzene	16.42	105	13127	0.3546 ug/L		100
86)	2-Chlorotoluene	16.51	91	13411	0.3916 ug/L		94
87)	4-Chlorotoluene	16.56	91	13020	0.3990 ug/L		84
88)	a-Methylstyrene	16.83	118	5920	0.2945 ug/L		94
89)	tert-Butylbenzene	16.90	134	2558	0.3190 ug/L		90
90)	1,2,4-Trimethylbenzene	16.94	105	13142	0.3504 ug/L		83
91)	sec-Butylbenzene	17.16	105	16120	0.3530 ug/L		94
92)	p-Isopropyltoluene	17.32	119	15239	0.3880 ug/L		94
93)	1,3-Dichlorobenzene	17.52	146	8224	0.3693 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	8297	0.3614 ug/L	#	66
95)	n-Butylbenzene	17.85	91	14908	0.3936 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	6345	0.3227 ug/L		89
97)	1,2-Dibromo-3-Chloropropan	19.12	75	468	0.3864 ug/L	#	1
98)	1,2,4-Trichlorobenzene	20.27	180	6486	0.4287 ug/L		95
99)	Hexachlorobutadiene	20.42	225	3955	0.5137 ug/L		85
100)	Naphthalene	20.64	128	6840	0.3484 ug/L		97
101)	1,2,3-Trichlorobenzene	20.95	180	4318	0.3307 ug/L		80

(#) = qualifier out of range (m) = manual integration
8M406490.D 8260WT.M Fri Jul 31 14:02:13 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406490.D Vial: 14
Acq On : 30 Jul 2015 20:22 Operator: TMB
Sample : WG533051-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

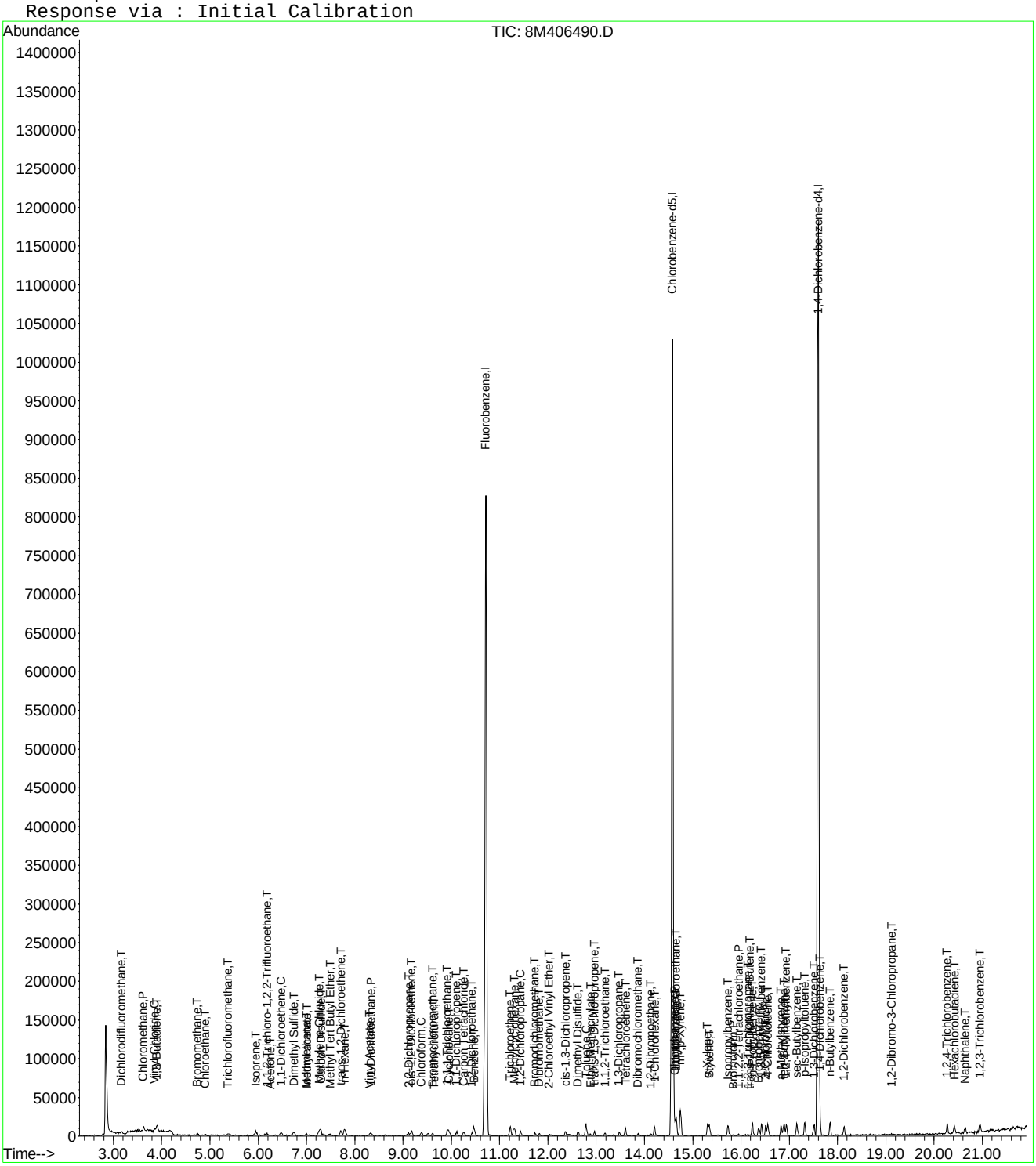

8M406490.D 8260WT.M Fri Jul 31 14:02:14 2015 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\073015\8M406490.D Vial: 14
Acq On : 30 Jul 2015 20:22 Operator: TMB
Sample : WG533051-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2948	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.3528	0.0	100	0.00
4	C	Vinyl Chloride	0.3000	0.3695	-23.2#	100	0.00
5	T	1,3-Butadiene	-1.0000	0.3949	0.0	100	0.01
6	T	Bromomethane	-1.0000	0.2981	0.0	100	0.00
7	T	Chloroethane	-1.0000	0.2988	0.0	100	0.00
8	T	Trichlorofluoromethane	-1.0000	0.2599	0.0	100	-0.02
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.91#
10	T	Isoprene	-1.0000	0.2905	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.15#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2718	0.0	100	0.02
13	T	Acetone	-1.0000	0.8331	0.0	100	0.01
14	C	1,1-Dichloroethene	-1.0000	0.3754	0.0	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.59#
16	T	Dimethyl Sulfide	-1.0000	0.2822	0.0	100	0.00
17	T	Iodomethane	-1.0000	1.1018	0.0	0	0.01
18	T	Methyl acetate	-1.0000	0.1843	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4171	0.0	100	0.01
20	T	Carbon Disulfide	-1.0000	0.4395	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.44#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2573	0.0	100	0.01
23	T	trans-1,2-Dichloroethene	-1.0000	0.3294	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.4343	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.14#
26	T	Vinyl Acetate	-1.0000	0.2838	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.2997	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.89#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.00#
31	T	2,2-Dichloropropane	-1.0000	0.2941	0.0	100	0.01
32	T	cis-1,2-Dichloroethene	-1.0000	0.3601	0.0	100	0.00
33	C	Chloroform	0.3000	0.2884	3.9	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.52#
35	T	Bromochloromethane	-1.0000	0.2171	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.2895	0.0	100	0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	-1.0000	0.2560	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.2992	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.3229	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.22#
42	T	Carbon Tetrachloride	-1.0000	0.2587	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	-1.0000	0.3231	0.0	100	0.00
46	T	Benzene	0.3000	0.3454	-15.1	100	0.00
47	T	Trichloroethene	-1.0000	0.4922	0.0	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3959	0.0	100	0.01
49	C	1,2-Dichloropropane	-1.0000	0.2566	0.0	100	0.00
50	T	Bromodichloromethane	-1.0000	0.2632	0.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	-1.0000	0.3557	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1852	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.07#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\073015\8M406490.D Vial: 14
Acq On : 30 Jul 2015 20:22 Operator: TMB
Sample : WG533051-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.2942	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2094	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0283	0.0	100	0.00
59	C	Toluene	-1.0000	0.3469	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2462	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3202	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.3103	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	-1.0000	0.2988	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.3547	0.0	100	0.01
67	T	Dibromochloromethane	-1.0000	0.3199	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.2871	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.3355	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.3342	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.2850	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.3684	0.0	100	0.00
73	T	m-,p-Xylene	-1.0000	0.6730	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.3219	0.0	100	0.00
75	T	Styrene	-1.0000	0.3086	0.0	100	0.00
76	P	Bromoform	-1.0000	0.2597	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.3254	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2753	0.0	100	0.01
80	S	p-Bromofluorobenzene	-1.0000	0.0248	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.1401	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.9919	0.0	0	0.00
83	T	n-Propylbenzene	-1.0000	0.3607	0.0	0	0.00
84	T	Bromobenzene	0.3000	0.3442	-14.7	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.3546	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.3916	0.0	100	0.00
87	T	4-Chlorotoluene	-1.0000	0.3990	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2945	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3190	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.3504	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3530	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.3880	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.3693	0.0	100	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.3614	-20.5	100	0.00
95	T	n-Butylbenzene	-1.0000	0.3936	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.3227	-7.6	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.3864	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	-1.0000	0.4287	0.0	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.5137	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.3484	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.3307	-10.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1
8M406490.D 8260WT.M Fri Jul 31 14:02:28 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406491.D Vial: 15
Acq On : 30 Jul 2015 20:51 Operator: TMB
Sample : WG533051-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:14 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	981988	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	699821	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	372451	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	12.68	98	213	0.0063 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.04%#	
80) p-Bromofluorobenzene	16.08	95	483	0.0375 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.16%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	5792	0.3862 ug/L	92
3) Chloromethane	3.63	50	9042	0.5400 ug/L #	53
4) Vinyl Chloride	3.85	62	5127	0.4164 ug/L	98
5) 1,3-Butadiene	3.91	54	4317	0.3999 ug/L #	60
6) Bromomethane	4.74	94	3296	0.4019 ug/L	92
7) Chloroethane	4.91	64	3096	0.4038 ug/L #	61
8) Trichlorofluoromethane	5.37	101	6112	0.3839 ug/L #	92
10) Isoprene	5.94	67	4151	0.3331 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.18	101	3248	0.3573 ug/L	97
13) Acetone	6.24	43	1636	1.3212 ug/L #	48
14) 1,1-Dichloroethene	6.47	61	6101	0.3956 ug/L	88
16) Dimethyl Sulfide	6.75	62	3496	0.3610 ug/L	97
17) Iodomethane	6.99	142	2328	1.1155 ug/L	87
18) Methyl acetate	7.01	43	1699	0.3536 ug/L #	64
19) Methylene Chloride	7.26	84	4441	0.4521 ug/L	90
20) Carbon Disulfide	7.30	76	16637	0.5282 ug/L	98
22) Methyl Tert Butyl Ether	7.48	73	5955	0.3433 ug/L #	73
23) trans-1,2-Dichloroethene	7.70	61	5685	0.3930 ug/L	82
24) n-Hexane	7.79	57	7224	0.4620 ug/L	92
26) Vinyl Acetate	8.32	43	3001	0.3343 ug/L #	77
27) 1,1-Dichloroethane	8.34	63	7741	0.3990 ug/L	90
29) 2-Butanone	8.91	43	463	0.2208 ug/L #	57
31) 2,2-Dichloropropane	9.11	77	5224	0.3494 ug/L #	67
32) cis-1,2-Dichloroethene	9.18	96	3573	0.3432 ug/L	91
33) Chloroform	9.38	83	7455	0.4258 ug/L	89
35) Bromochloromethane	9.61	130	2065	0.3851 ug/L	94
36) Tetrahydrofuran	9.63	42	202	0.1401 ug/L #	40
38) 1,1,1-Trichloroethane	9.92	97	5545	0.3434 ug/L	94
39) Cyclohexane	9.94	56	7293	0.3872 ug/L	92
40) 1,1-Dichloropropene	10.10	75	6059	0.4382 ug/L	89
42) Carbon Tetrachloride	10.24	117	5004	0.3500 ug/L	97
45) 1,2-Dichloroethane	10.42	62	4821	0.4111 ug/L	91
46) Benzene	10.46	78	16612	0.4298 ug/L	92
47) Trichloroethene	11.22	130	5775	0.5235 ug/L	95
48) Methylcyclohexane	11.31	83	7747	0.4843 ug/L	94
49) 1,2-Dichloropropane	11.44	63	3675	0.3432 ug/L	98
50) Bromodichloromethane	11.72	83	4746	0.3571 ug/L #	95
52) Dibromomethane	11.82	93	1868	0.3814 ug/L	87
53) 2-Chloroethyl Vinyl Ether	12.03	63	1396	0.3121 ug/L #	53
55) cis-1,3-Dichloropropene	12.37	75	5826	0.3983 ug/L	92

(#) = qualifier out of range (m) = manual integration
8M406491.D 8260WT.M Fri Jul 31 14:02:14 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406491.D Vial: 15
Acq On : 30 Jul 2015 20:51 Operator: TMB
Sample : WG533051-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:14 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
56)	Dimethyl Disulfide	12.62	79	1737	0.2192 ug/L		78
59)	Toluene	12.79	91	19337	0.4728 ug/L		99
60)	Ethyl Methacrylate	12.89	69	2609	0.3342 ug/L		94
62)	trans-1,3-Dichloropropene	12.96	75	3967	0.3279 ug/L		85
63)	1,1,2-Trichloroethane	13.19	97	2460	0.3838 ug/L		87
65)	1,3-Dichloropropane	13.49	76	4041	0.3623 ug/L		97
66)	Tetrachloroethene	13.60	164	3390	0.3931 ug/L		99
67)	Dibromochloromethane	13.86	129	3049	0.3611 ug/L		100
68)	1,2-Dibromoethane	14.13	107	2175	0.3490 ug/L		80
69)	1-Chlorohexane	14.21	91	6587	0.4558 ug/L		78
70)	Chlorobenzene	14.63	112	10900	0.4163 ug/L		86
71)	1,1,1,2-Tetrachloroethane	14.66	131	3091	0.3323 ug/L		92
72)	Ethylbenzene	14.66	106	5826	0.3942 ug/L		94
73)	m-,p-Xylene	14.74	106	14777	0.8460 ug/L		92
74)	o-Xylene	15.31	106	7575	0.4407 ug/L		91
75)	Styrene	15.34	104	11258	0.4010 ug/L		99
76)	Bromoform	15.84	173	1447	0.2851 ug/L		95
77)	Isopropylbenzene	15.73	105	18387	0.4273 ug/L		92
79)	1,1,2,2-Tetrachloroethane	15.94	83	2308	0.3411 ug/L	#	90
81)	1,2,3-Trichloropropane	16.15	110	486	0.2559 ug/L	#	1
82)	trans-1,4-Dichloro-2-Buten	16.19	53	794	1.0932 ug/L	#	1
83)	n-Propylbenzene	16.24	91	24368	0.4444 ug/L		97
84)	Bromobenzene	16.37	156	4461	0.4016 ug/L		92
85)	1,3,5-Trimethylbenzene	16.43	105	15495	0.4280 ug/L		95
86)	2-Chlorotoluene	16.51	91	13796	0.4119 ug/L		97
87)	4-Chlorotoluene	16.55	91	14914	0.4672 ug/L		99
88)	a-Methylstyrene	16.83	118	7575	0.3853 ug/L		88
89)	tert-Butylbenzene	16.90	134	3120	0.3978 ug/L		97
90)	1,2,4-Trimethylbenzene	16.94	105	15362	0.4188 ug/L		99
91)	sec-Butylbenzene	17.16	105	20922	0.4684 ug/L		94
92)	p-Isopropyltoluene	17.32	119	16439	0.4279 ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	9884	0.4538 ug/L		98
94)	1,4-Dichlorobenzene	17.64	146	10851	0.4833 ug/L		80
95)	n-Butylbenzene	17.84	91	19783	0.5341 ug/L		98
96)	1,2-Dichlorobenzene	18.13	146	7878	0.4097 ug/L		94
97)	1,2-Dibromo-3-Chloropropan	19.13	75	335	0.2828 ug/L	#	1
98)	1,2,4-Trichlorobenzene	20.27	180	7047	0.4762 ug/L		93
99)	Hexachlorobutadiene	20.43	225	3518	0.4672 ug/L		98
100)	Naphthalene	20.65	128	6798	0.3540 ug/L		95
101)	1,2,3-Trichlorobenzene	20.96	180	6241	0.4887 ug/L		92

(#) = qualifier out of range (m) = manual integration
8M406491.D 8260WT.M Fri Jul 31 14:02:14 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406491.D Vial: 15
Acq On : 30 Jul 2015 20:51 Operator: TMB
Sample : WG533051-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

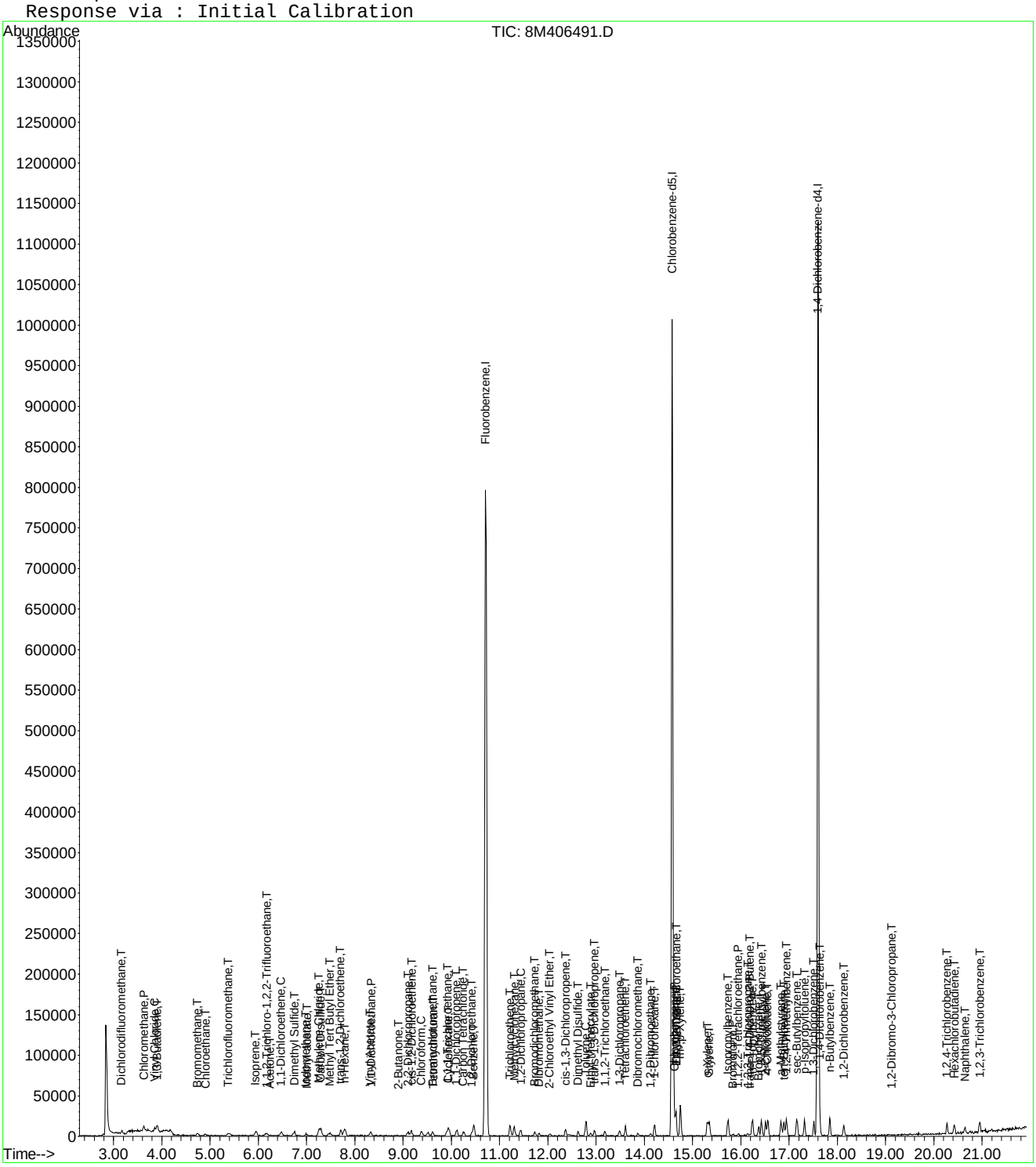

8M406491.D 8260WT.M Fri Jul 31 14:02:15 2015 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\073015\8M406491.D Vial: 15
Acq On : 30 Jul 2015 20:51 Operator: TMB
Sample : WG533051-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	0.4000	0.3862	3.5	100	-0.01
3	P	Chloromethane	-1.0000	0.5400	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.4164	-4.1	100	0.00
5	T	1,3-Butadiene	0.4000	0.3999	0.0	100	0.02
6	T	Bromomethane	0.4000	0.4019	-0.5	100	0.00
7	T	Chloroethane	0.4000	0.4038	-1.0	100	0.00
8	T	Trichlorofluoromethane	0.4000	0.3839	4.0	100	-0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.91#
10	T	Isoprene	0.4000	0.3331	16.7	100	-0.01
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.15#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3573	0.0	100	0.02
13	T	Acetone	-1.0000	1.3212	0.0	100	0.00
14	C	1,1-Dichloroethene	0.4000	0.3956	1.1	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.59#
16	T	Dimethyl Sulfide	0.4000	0.3610	9.7	100	0.00
17	T	Iodomethane	-1.0000	1.1155	0.0	0	0.00
18	T	Methyl acetate	-1.0000	0.3536	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4521	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.5282	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.44#
22	T	Methyl Tert Butyl Ether	-1.0000	0.3433	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.3930	1.7	100	-0.01
24	T	n-Hexane	-1.0000	0.4620	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.14#
26	T	Vinyl Acetate	0.4000	0.3343	16.4	100	0.02
27	P	1,1-Dichloroethane	0.4000	0.3990	0.2	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.2208	0.0	100	0.02
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.00#
31	T	2,2-Dichloropropane	0.4000	0.3494	12.6	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.3432	14.2	100	0.00
33	C	Chloroform	0.4000	0.4258	-6.5	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.52#
35	T	Bromochloromethane	0.4000	0.3851	3.7	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.1401	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	0.4000	0.3434	14.2	100	0.00
39	T	Cyclohexane	-1.0000	0.3872	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4382	0.0	100	-0.01
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.22#
42	T	Carbon Tetrachloride	0.4000	0.3500	12.5	100	-0.01
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	0.4000	0.4111	-2.8	100	-0.01
46	T	Benzene	0.4000	0.4298	-7.4	100	-0.01
47	T	Trichloroethene	0.4000	0.5235	-30.9#	100	0.00
48	T	Methylcyclohexane	-1.0000	0.4843	0.0	100	0.00
49	C	1,2-Dichloropropane	0.4000	0.3432	14.2	100	0.00
50	T	Bromodichloromethane	0.4000	0.3572	10.7	100	-0.01
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	0.4000	0.3814	4.7	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.3121	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.07#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\073015\8M406491.D Vial: 15
Acq On : 30 Jul 2015 20:51 Operator: TMB
Sample : WG533051-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD71744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3983	0.4	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2192	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0063	0.0	100	0.00
59	C	Toluene	0.4000	0.4728	-18.2	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3342	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3279	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.3838	4.0	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	0.4000	0.3623	9.4	100	0.00
66	T	Tetrachloroethene	0.4000	0.3932	1.7	100	0.00
67	T	Dibromochloromethane	0.4000	0.3611	9.7	100	-0.01
68	T	1,2-Dibromoethane	0.4000	0.3490	12.7	100	0.00
69	T	1-Chlorohexane	0.4000	0.4557	-13.9	100	0.00
70	P	Chlorobenzene	0.4000	0.4163	-4.1	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3323	16.9	100	0.00
72	C	Ethylbenzene	0.4000	0.3942	1.5	100	0.00
73	T	m-,p-Xylene	0.8000	0.8460	-5.8	100	0.00
74	T	o-Xylene	-1.0000	0.4407	0.0	100	0.00
75	T	Styrene	0.4000	0.4010	-0.3	100	0.00
76	P	Bromoform	-1.0000	0.2851	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.4273	-6.8	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.3411	14.7	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0375	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.2559	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	1.0932	0.0	0	0.00
83	T	n-Propylbenzene	0.4000	0.4444	-11.1	100	0.00
84	T	Bromobenzene	0.4000	0.4016	-0.4	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.4280	-7.0	100	0.00
86	T	2-Chlorotoluene	0.4000	0.4119	-3.0	100	0.00
87	T	4-Chlorotoluene	0.4000	0.4672	-16.8	100	-0.01
88	T	a-Methylstyrene	-1.0000	0.3853	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3978	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	0.4000	0.4188	-4.7	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.4684	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4279	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.4538	-13.4	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.4833	-20.8	100	0.00
95	T	n-Butylbenzene	-1.0000	0.5341	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.4097	-2.4	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.2828	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	0.4000	0.4762	-19.0	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.4672	-16.8	100	0.00
100	T	Naphthalene	0.4000	0.3540	11.5	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.4887	-22.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M406491.D 8260WT.M Fri Jul 31 14:02:37 2015 Page 2

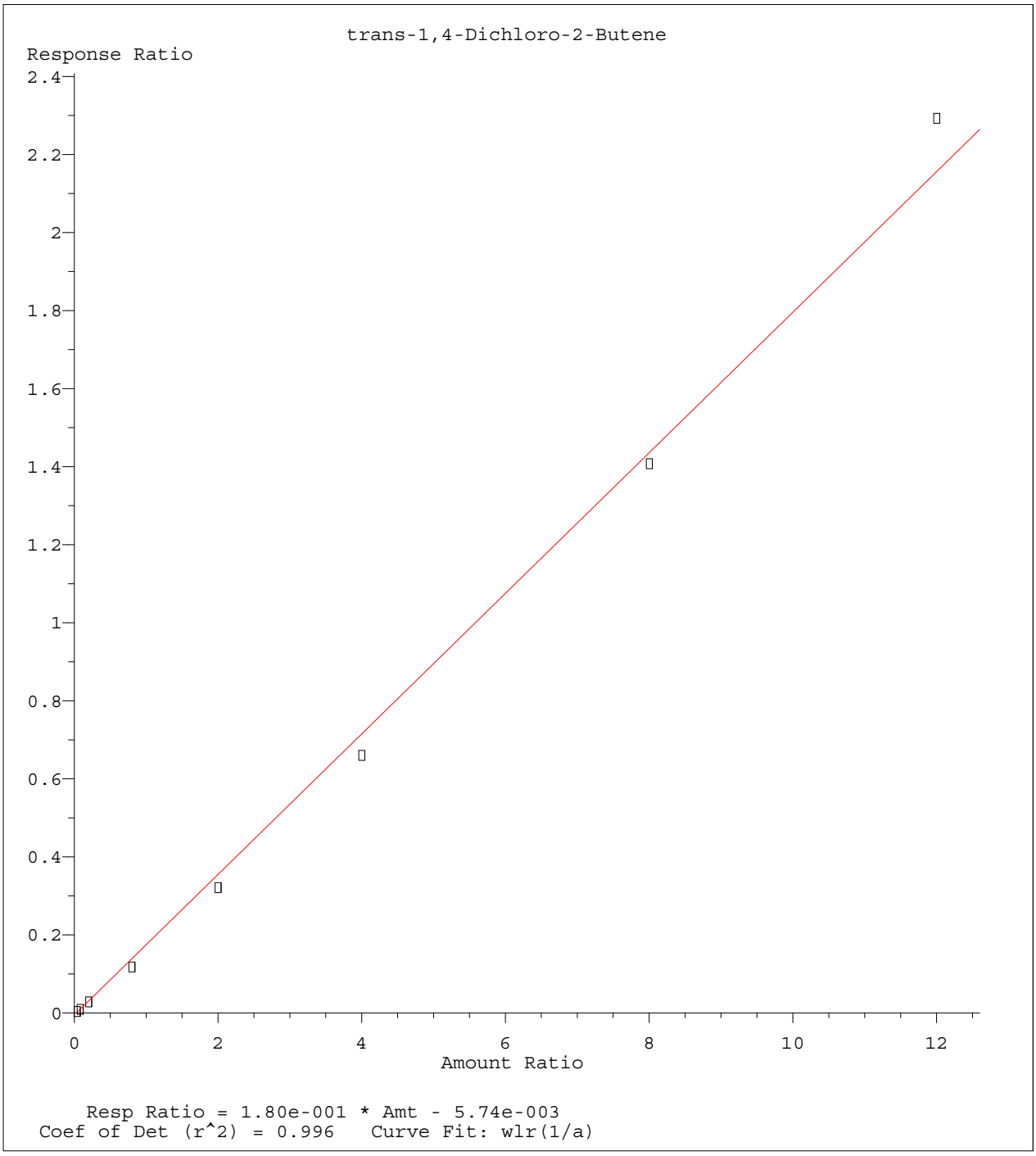

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Fri Jul 31 13:26:17 2015

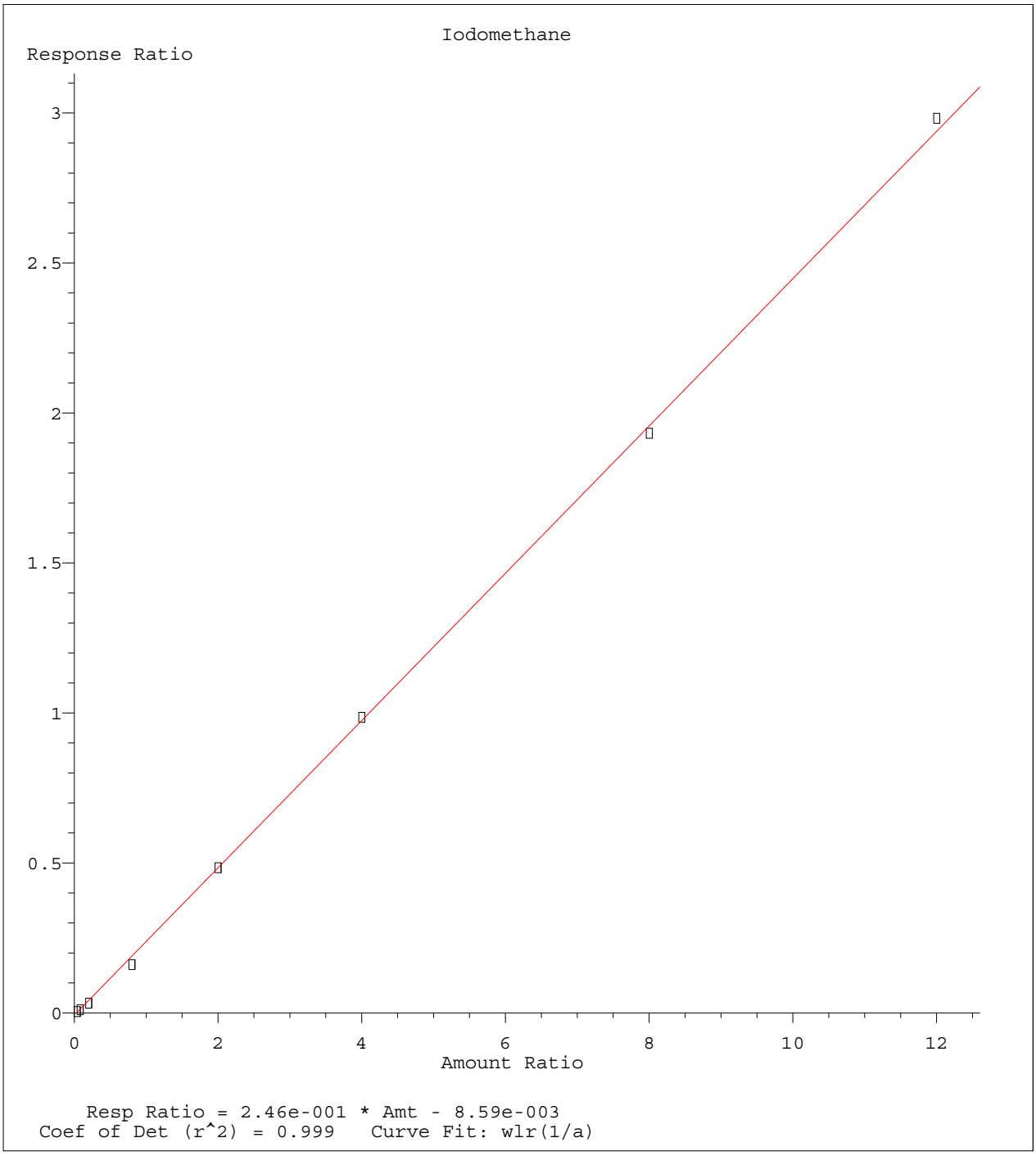

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Fri Jul 31 13:26:17 2015

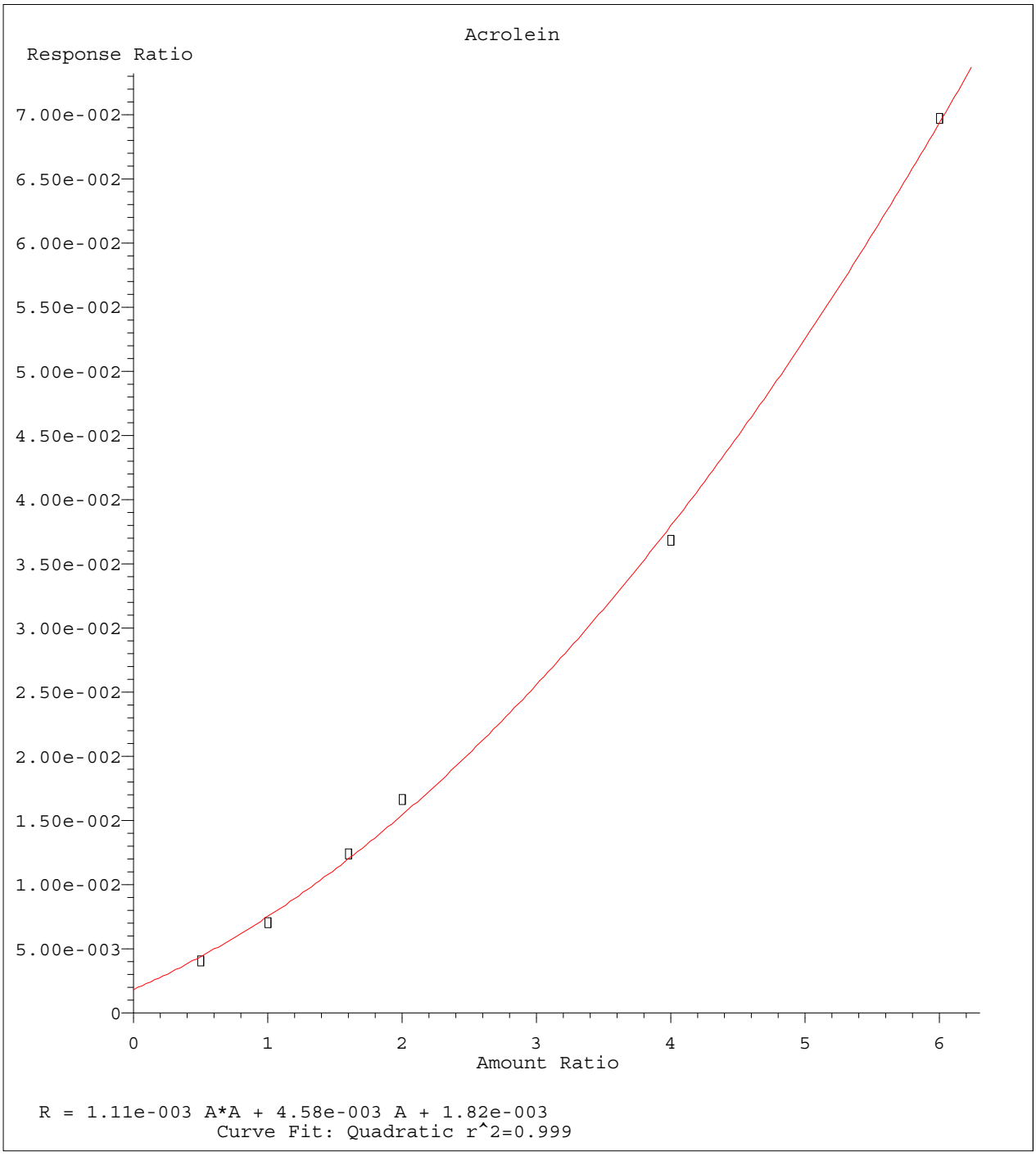

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Fri Jul 31 13:26:17 2015

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406492.D Vial: 16
Acq On : 30 Jul 2015 21:20 Operator: TMB
Sample : WG533051-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD71618 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:15 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	998188	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	705097	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	372507	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	221952	25.2344 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.92%		
43) 1,2-Dichloroethane-d4	10.31	65	213180	24.3733 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.48%		
58) Toluene-d8	12.69	98	842131	24.7582 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.04%		
80) p-Bromofluorobenzene	16.08	95	319261	24.7784 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.12%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	760257	49.8704 ug/L	99
3) Chloromethane	3.62	50	798332	46.9066 ug/L	99
4) Vinyl Chloride	3.85	62	598895	47.8484 ug/L	99
5) 1,3-Butadiene	3.89	54	390174	35.5588 ug/L	91
6) Bromomethane	4.74	94	380637	45.6561 ug/L	98
7) Chloroethane	4.89	64	394516	50.6233 ug/L	99
8) Trichlorofluoromethane	5.38	101	742918	45.9031 ug/L	100
9) Diethyl ether	5.91	59	508023	82.9284 ug/L	99
10) Isoprene	5.94	67	554917	43.8076 ug/L	100
11) Acrolein	6.15	56	25077	73.9767 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	427942	46.3101 ug/L	98
13) Acetone	6.24	43	63026	50.0714 ug/L	85
14) 1,1-Dichloroethene	6.47	61	689436	43.9767 ug/L	96
15) Tert-Butyl Alcohol	6.60	59	62923	190.3168 ug/L	99
16) Dimethyl Sulfide	6.74	62	510518	51.8671 ug/L	96
17) Iodomethane	6.99	142	379173	39.5421 ug/L	97
18) Methyl acetate	7.01	43	192753	39.4626 ug/L	98
19) Methylene Chloride	7.26	84	461816	46.2459 ug/L	98
20) Carbon Disulfide	7.30	76	1095623	34.2184 ug/L	100
21) Acrylonitrile	7.44	53	103087	49.2865 ug/L	97
22) Methyl Tert Butyl Ether	7.48	73	847872	48.0796 ug/L	98
23) trans-1,2-Dichloroethene	7.71	61	685784	46.6421 ug/L	97
24) n-Hexane	7.80	57	587027	36.9341 ug/L	100
25) Diisopropyl ether	8.14	45	3319277	92.9676 ug/L	98
26) Vinyl Acetate	8.30	43	639904	70.1168 ug/L	100
27) 1,1-Dichloroethane	8.33	63	924236	46.8680 ug/L	99
28) Ethyl-Tert-Butyl ether	8.71	59	2407237	90.3679 ug/L	100
29) 2-Butanone	8.89	43	112752	52.9044 ug/L	99
30) Propionitrile	9.00	54	68332	100.8008 ug/L	94
31) 2,2-Dichloropropane	9.11	77	699305	46.0164 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	504121	47.6428 ug/L	95
33) Chloroform	9.38	83	858972	48.2659 ug/L	98
34) 1-Bromopropane	9.52	122	102385	54.4369 ug/L	96
35) Bromochloromethane	9.62	130	263358	48.3192 ug/L	99
36) Tetrahydrofuran	9.64	42	141291	96.3854 ug/L	96
38) 1,1,1-Trichloroethane	9.92	97	802864	48.9090 ug/L	99
39) Cyclohexane	9.95	56	843061	44.0328 ug/L	100
40) 1,1-Dichloropropene	10.11	75	654340	46.5565 ug/L	98
41) Tert-Amyl-Methyl ether	10.22	73	1909722	95.7703 ug/L	100
42) Carbon Tetrachloride	10.26	117	721323	49.6274 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M406492.D 8260WT.M Fri Jul 31 14:02:15 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406492.D Vial: 16
Acq On : 30 Jul 2015 21:20 Operator: TMB
Sample : WG533051-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD71618 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02:15 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	552896	46.3850 ug/L		99
46)	Benzene	10.46	78	1887464	48.0417 ug/L		99
47)	Trichloroethene	11.22	130	490661	43.7549 ug/L		97
48)	Methylcyclohexane	11.30	83	742729	45.6744 ug/L		99
49)	1,2-Dichloropropane	11.44	63	535572	49.2069 ug/L		97
50)	Bromodichloromethane	11.73	83	641047	47.4573 ug/L		99
51)	1,4-Dioxane	11.72	88	6953	181.6534 ug/L		83
52)	Dibromomethane	11.82	93	234491	47.0960 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	230887	50.7848 ug/L		100
54)	4-Methyl-2-Pentanone	12.06	58	102085	50.5834 ug/L		98
55)	cis-1,3-Dichloropropene	12.37	75	747778	50.2935 ug/L		99
56)	Dimethyl Disulfide	12.62	79	403465	50.0882 ug/L		95
59)	Toluene	12.79	91	1989406	48.2802 ug/L		98
60)	Ethyl Methacrylate	12.88	69	422204	53.6851 ug/L		94
62)	trans-1,3-Dichloropropene	12.97	75	574201	47.1096 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	306195	47.4179 ug/L		98
64)	2-Hexanone	13.12	58	96303	52.7923 ug/L	#	94
65)	1,3-Dichloropropane	13.48	76	547512	48.7170 ug/L		95
66)	Tetrachloroethene	13.61	164	415959	47.8788 ug/L		99
67)	Dibromochloromethane	13.86	129	407864	47.9485 ug/L		98
68)	1,2-Dibromoethane	14.12	107	297966	47.4577 ug/L		99
69)	1-Chlorohexane	14.22	91	720733	49.4939 ug/L		99
70)	Chlorobenzene	14.63	112	1337432	50.6933 ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.66	131	460306	49.1130 ug/L		100
72)	Ethylbenzene	14.66	106	731345	49.1088 ug/L		95
73)	m-,p-Xylene	14.74	106	1764113	100.2450 ug/L		95
74)	o-Xylene	15.31	106	889253	51.3463 ug/L		96
75)	Styrene	15.34	104	1414087	49.9932 ug/L		100
76)	Bromoform	15.84	173	250708	49.0206 ug/L		98
77)	Isopropylbenzene	15.74	105	2227657	51.3804 ug/L		98
79)	1,1,2,2-Tetrachloroethane	15.94	83	333440	49.2653 ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	91572	48.2006 ug/L		61
82)	trans-1,4-Dichloro-2-Buten	16.18	53	105948	40.2718 ug/L	#	51
83)	n-Propylbenzene	16.24	91	2803567	51.1176 ug/L		99
84)	Bromobenzene	16.37	156	530000	47.7080 ug/L		98
85)	1,3,5-Trimethylbenzene	16.43	105	1890061	52.1983 ug/L		97
86)	2-Chlorotoluene	16.51	91	1810366	54.0398 ug/L		100
87)	4-Chlorotoluene	16.55	91	1675878	52.4950 ug/L		98
88)	a-Methylstyrene	16.83	118	1101871	56.0359 ug/L		99
89)	tert-Butylbenzene	16.89	134	407869	51.9933 ug/L		93
90)	1,2,4-Trimethylbenzene	16.95	105	1882712	51.3188 ug/L		97
91)	sec-Butylbenzene	17.16	105	2381458	53.3045 ug/L		98
92)	p-Isopropyltoluene	17.32	119	1948217	50.7078 ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	1088924	49.9863 ug/L		99
94)	1,4-Dichlorobenzene	17.64	146	1047998	46.6689 ug/L		98
95)	n-Butylbenzene	17.85	91	1912025	51.6095 ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	969811	50.4233 ug/L		100
97)	1,2-Dibromo-3-Chloropropan	19.13	75	54805	46.2513 ug/L		88
98)	1,2,4-Trichlorobenzene	20.28	180	705673	47.6775 ug/L		99
99)	Hexachlorobutadiene	20.43	225	347054	46.0788 ug/L		99
100)	Naphthalene	20.64	128	972942	50.6643 ug/L		99
101)	1,2,3-Trichlorobenzene	20.95	180	603944	47.2852 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M406492.D 8260WT.M Fri Jul 31 14:02:16 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\073015\8M406492.D Vial: 16
Acq On : 30 Jul 2015 21:20 Operator: TMB
Sample : WG533051-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD71618 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 31 14:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

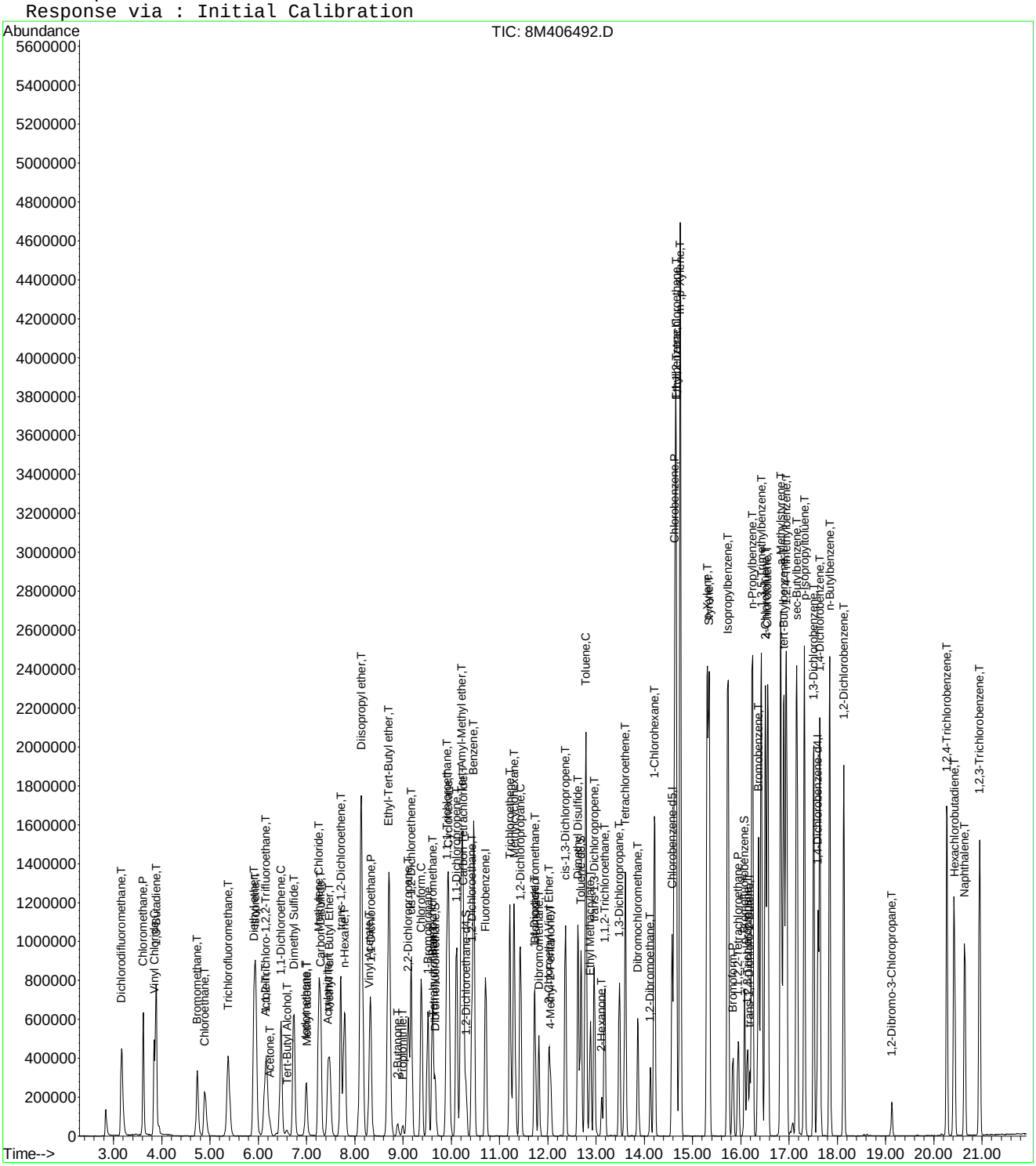

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\073015\8M406492.D Vial: 16
Acq On : 30 Jul 2015 21:20 Operator: TMB
Sample : WG533051-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD71618 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	110	0.00
2	T	Dichlorodifluoromethane	50.0000	49.8704	0.3	96	0.00
3	P	Chloromethane	50.0000	46.9066	6.2	103	0.00
4	C	Vinyl Chloride	50.0000	47.8484	4.3	101	0.00
5	T	1,3-Butadiene	50.0000	35.5588	28.9#	74	0.00
6	T	Bromomethane	50.0000	45.6561	8.7	102	0.00
7	T	Chloroethane	50.0000	50.6233	-1.2	109	-0.01
8	T	Trichlorofluoromethane	50.0000	45.9031	8.2	96	-0.01
9	T	Diethyl ether	100.0000	82.9284	17.1	93	0.00
10	T	Isoprene	50.0000	43.8076	12.4	92	-0.01
11	T	Acrolein	50.0000	73.9767	-48.0#	167	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	46.3100	7.4	95	0.00
13	T	Acetone	50.0000	50.0714	-0.1	117	0.00
14	C	1,1-Dichloroethene	50.0000	43.9767	12.0	94	0.00
15	T	Tert-Butyl Alcohol	200.0000	190.3168	4.8	115	0.01
16	T	Dimethyl Sulfide	50.0000	51.8671	-3.7	112	0.00
17	T	Iodomethane	50.0000	39.5421	20.9	87	0.00
18	T	Methyl acetate	50.0000	39.4626	21.1	91	0.00
19	T	Methylene Chloride	50.0000	46.2459	7.5	100	0.00
20	T	Carbon Disulfide	50.0000	34.2184	31.6#	73	0.00
21	T	Acrylonitrile	50.0000	49.2865	1.4	108	0.00
22	T	Methyl Tert Butyl Ether	50.0000	48.0796	3.8	105	0.00
23	T	trans-1,2-Dichloroethene	50.0000	46.6421	6.7	99	0.00
24	T	n-Hexane	50.0000	36.9341	26.1#	79	0.00
25	T	Diisopropyl ether	100.0000	92.9676	7.0	103	0.00
26	T	Vinyl Acetate	50.0000	70.1168	-40.2#	156	0.00
27	P	1,1-Dichloroethane	50.0000	46.8680	6.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	90.3679	9.6	101	0.00
29	T	2-Butanone	50.0000	52.9044	-5.8	116	0.00
30	T	Propionitrile	100.0000	100.8008	-0.8	109	0.00
31	T	2,2-Dichloropropane	50.0000	46.0164	8.0	98	0.00
32	T	cis-1,2-Dichloroethene	50.0000	47.6428	4.7	101	0.00
33	C	Chloroform	50.0000	48.2659	3.5	104	0.00
34		1-Bromopropane	50.0000	54.4369	-8.9	118	0.00
35	T	Bromochloromethane	50.0000	48.3192	3.4	105	0.00
36	T	Tetrahydrofuran	100.0000	96.3855	3.6	111	0.00
37	S	Dibromofluoromethane	25.0000	25.2344	-0.9	108	0.00
38	T	1,1,1-Trichloroethane	50.0000	48.9090	2.2	103	0.00
39	T	Cyclohexane	50.0000	44.0329	11.9	93	0.00
40	T	1,1-Dichloropropene	50.0000	46.5565	6.9	98	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	95.7703	4.2	108	0.00
42	T	Carbon Tetrachloride	50.0000	49.6274	0.7	102	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.3732	2.5	110	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	46.3850	7.2	100	0.00
46	T	Benzene	50.0000	48.0417	3.9	103	-0.01
47	T	Trichloroethene	50.0000	43.7549	12.5	100	0.00
48	T	Methylcyclohexane	50.0000	45.6744	8.7	99	0.00
49	C	1,2-Dichloropropane	50.0000	49.2069	1.6	102	0.00
50	T	Bromodichloromethane	50.0000	47.4573	5.1	100	0.00
51	T	1,4-Dioxane	200.0000	181.6534	9.2	109	0.01
52	T	Dibromomethane	50.0000	47.0960	5.8	101	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	50.7848	-1.6	109	-0.01
54	T	4-Methyl-2-Pentanone	50.0000	50.5834	-1.2	111	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\073015\8M406492.D Vial: 16
Acq On : 30 Jul 2015 21:20 Operator: TMB
Sample : WG533051-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD71618 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	50.2936	-0.6	105	0.00
56	T	Dimethyl Disulfide	50.0000	50.0882	-0.2	109	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	109	0.00
58	S	Toluene-d8	25.0000	24.7582	1.0	107	0.00
59	C	Toluene	50.0000	48.2802	3.4	101	0.00
60	T	Ethyl Methacrylate	50.0000	53.6851	-7.4	113	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	47.1096	5.8	99	0.00
63	T	1,1,2-Trichloroethane	50.0000	47.4179	5.2	100	0.00
64	T	2-Hexanone	50.0000	52.7923	-5.6	116	0.00
65	T	1,3-Dichloropropane	50.0000	48.7170	2.6	103	0.00
66	T	Tetrachloroethene	50.0000	47.8788	4.2	100	0.00
67	T	Dibromochloromethane	50.0000	47.9485	4.1	100	-0.01
68	T	1,2-Dibromoethane	50.0000	47.4577	5.1	102	0.00
69	T	1-Chlorohexane	50.0000	49.4939	1.0	106	0.00
70	P	Chlorobenzene	50.0000	50.6933	-1.4	107	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	49.1130	1.8	99	0.00
72	C	Ethylbenzene	50.0000	49.1088	1.8	105	0.00
73	T	m-,p-Xylene	100.0000	100.2450	-0.2	104	0.00
74	T	o-Xylene	50.0000	51.3463	-2.7	106	0.00
75	T	Styrene	50.0000	49.9932	0.0	103	0.00
76	P	Bromoform	50.0000	49.0206	2.0	105	0.00
77	T	Isopropylbenzene	50.0000	51.3804	-2.8	105	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	104	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	49.2653	1.5	103	0.00
80	S	p-Bromofluorobenzene	25.0000	24.7784	0.9	107	0.00
81	T	1,2,3-Trichloropropane	50.0000	48.2006	3.6	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	40.2718	19.5	93	-0.01
83	T	n-Propylbenzene	50.0000	51.1176	-2.2	103	0.00
84	T	Bromobenzene	50.0000	47.7080	4.6	101	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	52.1983	-4.4	103	0.00
86	T	2-Chlorotoluene	50.0000	54.0398	-8.1	106	0.00
87	T	4-Chlorotoluene	50.0000	52.4950	-5.0	107	-0.01
88	T	a-Methylstyrene	50.0000	56.0359	-12.1	113	0.00
89	T	tert-Butylbenzene	50.0000	51.9933	-4.0	106	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	51.3188	-2.6	100	0.00
91	T	sec-Butylbenzene	50.0000	53.3045	-6.6	102	0.00
92	T	p-Isopropyltoluene	50.0000	50.7077	-1.4	97	0.00
93	T	1,3-Dichlorobenzene	50.0000	49.9863	0.0	103	0.00
94	T	1,4-Dichlorobenzene	50.0000	46.6689	6.7	99	0.00
95	T	n-Butylbenzene	50.0000	51.6095	-3.2	98	0.00
96	T	1,2-Dichlorobenzene	50.0000	50.4233	-0.8	103	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	46.2513	7.5	94	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	47.6775	4.6	97	0.00
99	T	Hexachlorobutadiene	50.0000	46.0789	7.8	96	0.00
100	T	Naphthalene	50.0000	50.6643	-1.3	96	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	47.2852	5.4	98	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M406492.D 8260WT.M Fri Jul 31 14:04:07 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082515\8M406990.D Vial: 2
Acq On : 25 Aug 2015 9:23 Operator: TMB
Sample : WG536331-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD72111 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 25 09:46:18 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	803202	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	615808	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	351009	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.68	111	183684	25.9533 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.80%		
43) 1,2-Dichloroethane-d4	10.31	65	166436	23.6484 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.60%		
58) Toluene-d8	12.68	98	722283	24.3137 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.24%		
80) p-Bromofluorobenzene	16.08	95	282485	23.2669 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.08%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	586123	47.7814 ug/L	98
3) Chloromethane	3.62	50	660313	48.2156 ug/L	99
4) Vinyl Chloride	3.84	62	561342	55.7355 ug/L	99
5) 1,3-Butadiene	3.89	54	576235	65.2643 ug/L	91
6) Bromomethane	4.74	94	231619	34.5263 ug/L	99
7) Chloroethane	4.90	64	327406	52.2108 ug/L	98
8) Trichlorofluoromethane	5.39	101	625574	48.0360 ug/L	98
9) Diethyl ether	5.91	59	527790	107.0702 ug/L	97
10) Isoprene	5.94	67	553976	54.3501 ug/L	100
11) Acrolein	6.15	56	15533	60.2807 ug/L	86
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	398493	53.5918 ug/L	100
13) Acetone	6.25	43	49925	49.2919 ug/L	89
14) 1,1-Dichloroethene	6.47	61	629173	49.8754 ug/L	98
15) Tert-Butyl Alcohol	6.57	59	51678	194.2500 ug/L	97
16) Dimethyl Sulfide	6.74	62	398644	50.3331 ug/L	96
17) Iodomethane	6.99	142	180678	23.7726 ug/L	95
18) Methyl acetate	7.01	43	202285	51.4678 ug/L	96
19) Methylene Chloride	7.26	84	398394	49.5797 ug/L	98
20) Carbon Disulfide	7.30	76	1368675	53.1235 ug/L	100
21) Acrylonitrile	7.44	53	86477	51.3821 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	696847	49.1084 ug/L	97
23) trans-1,2-Dichloroethene	7.71	61	613700	51.8722 ug/L	95
24) n-Hexane	7.79	57	670593	52.4343 ug/L	97
25) Diisopropyl ether	8.14	45	3127700	108.8682 ug/L	99
26) Vinyl Acetate	8.30	43	472740	64.3750 ug/L	99
27) 1,1-Dichloroethane	8.33	63	805142	50.7404 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	2246879	104.8244 ug/L	99
29) 2-Butanone	8.89	43	94924	55.3517 ug/L	99
30) Propionitrile	8.99	54	56473	103.5305 ug/L	97
31) 2,2-Dichloropropane	9.11	77	655353	53.5931 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	447576	52.5675 ug/L	95
33) Chloroform	9.38	83	713729	49.8405 ug/L	99
34) 1-Bromopropane	9.52	122	81548	53.8838 ug/L	98
35) Bromochloromethane	9.61	130	223271	50.9088 ug/L	98
36) Tetrahydrofuran	9.63	42	149359	126.6240 ug/L	95
38) 1,1,1-Trichloroethane	9.91	97	677186	51.2675 ug/L	98
39) Cyclohexane	9.94	56	836103	54.2707 ug/L	99
40) 1,1-Dichloropropene	10.11	75	596256	52.7227 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	1664919	103.7628 ug/L	100
42) Carbon Tetrachloride	10.26	117	621335	53.1257 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M406990.D 8260WT.M Tue Aug 25 09:46:18 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082515\8M406990.D Vial: 2
Acq On : 25 Aug 2015 9:23 Operator: TMB
Sample : WG536331-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD72111 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 25 09:46:18 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	463626	48.3381 ug/L		97
46)	Benzene	10.47	78	1658858	52.4731 ug/L		99
47)	Trichloroethene	11.22	130	437891	48.5287 ug/L		97
48)	Methylcyclohexane	11.30	83	685880	52.4177 ug/L		98
49)	1,2-Dichloropropane	11.43	63	472017	53.8956 ug/L		94
50)	Bromodichloromethane	11.73	83	554539	51.0191 ug/L		99
51)	1,4-Dioxane	11.71	88	5084	165.0685 ug/L		83
52)	Dibromomethane	11.82	93	201638	50.3290 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	180516	49.3443 ug/L		98
54)	4-Methyl-2-Pentanone	12.05	58	82133	50.5768 ug/L		96
55)	cis-1,3-Dichloropropene	12.36	75	627445	52.4448 ug/L		100
56)	Dimethyl Disulfide	12.62	79	325186	50.1706 ug/L		99
59)	Toluene	12.79	91	1779406	49.4452 ug/L		99
60)	Ethyl Methacrylate	12.88	69	338141	49.2304 ug/L		99
62)	trans-1,3-Dichloropropene	12.96	75	512666	48.1596 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	271053	48.0621 ug/L		96
64)	2-Hexanone	13.12	58	71543	44.9057 ug/L	#	93
65)	1,3-Dichloropropane	13.48	76	473112	48.2008 ug/L		95
66)	Tetrachloroethene	13.61	164	380828	50.1910 ug/L		94
67)	Dibromochloromethane	13.86	129	358988	48.3218 ug/L		99
68)	1,2-Dibromoethane	14.12	107	255180	46.5361 ug/L		97
69)	1-Chlorohexane	14.22	91	647059	50.8774 ug/L		98
70)	Chlorobenzene	14.63	112	1145910	49.7317 ug/L		95
71)	1,1,1,2-Tetrachloroethane	14.66	131	409261	49.9981 ug/L		98
72)	Ethylbenzene	14.66	106	648384	49.8509 ug/L		94
73)	m-,p-Xylene	14.74	106	1553483	101.0756 ug/L		94
74)	o-Xylene	15.31	106	755861	49.9723 ug/L		94
75)	Styrene	15.34	104	1254043	50.7634 ug/L		96
76)	Bromoform	15.84	173	221464	49.5812 ug/L		99
77)	Isopropylbenzene	15.73	105	1939347	51.2163 ug/L		98
79)	1,1,2,2-Tetrachloroethane	15.94	83	314260	49.2752 ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	77255	43.1551 ug/L		71
82)	trans-1,4-Dichloro-2-Buten	16.18	53	81648	33.0812 ug/L	#	25
83)	n-Propylbenzene	16.24	91	2492751	48.2342 ug/L		99
84)	Bromobenzene	16.37	156	480344	45.8864 ug/L		97
85)	1,3,5-Trimethylbenzene	16.43	105	1648275	48.3088 ug/L		95
86)	2-Chlorotoluene	16.51	91	1505412	47.6890 ug/L		96
87)	4-Chlorotoluene	16.56	91	1461211	48.5741 ug/L		95
88)	a-Methylstyrene	16.83	118	946306	51.0720 ug/L		98
89)	tert-Butylbenzene	16.89	134	355066	48.0344 ug/L		91
90)	1,2,4-Trimethylbenzene	16.94	105	1690087	48.8898 ug/L		96
91)	sec-Butylbenzene	17.16	105	2115333	50.2477 ug/L		98
92)	p-Isopropyltoluene	17.32	119	1801609	49.7638 ug/L		98
93)	1,3-Dichlorobenzene	17.51	146	1005074	48.9630 ug/L		97
94)	1,4-Dichlorobenzene	17.64	146	990804	46.8242 ug/L		94
95)	n-Butylbenzene	17.84	91	1739798	49.8369 ug/L		99
96)	1,2-Dichlorobenzene	18.13	146	876600	48.3684 ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.13	75	48821	43.7247 ug/L		86
98)	1,2,4-Trichlorobenzene	20.27	180	637146	45.6841 ug/L		99
99)	Hexachlorobutadiene	20.42	225	303255	42.7296 ug/L		99
100)	Naphthalene	20.65	128	818579	45.2368 ug/L		99
101)	1,2,3-Trichlorobenzene	20.95	180	518048	43.0442 ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082515\8M406990.D Vial: 2
Acq On : 25 Aug 2015 9:23 Operator: TMB
Sample : WG536331-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD72111 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 25 9:46 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

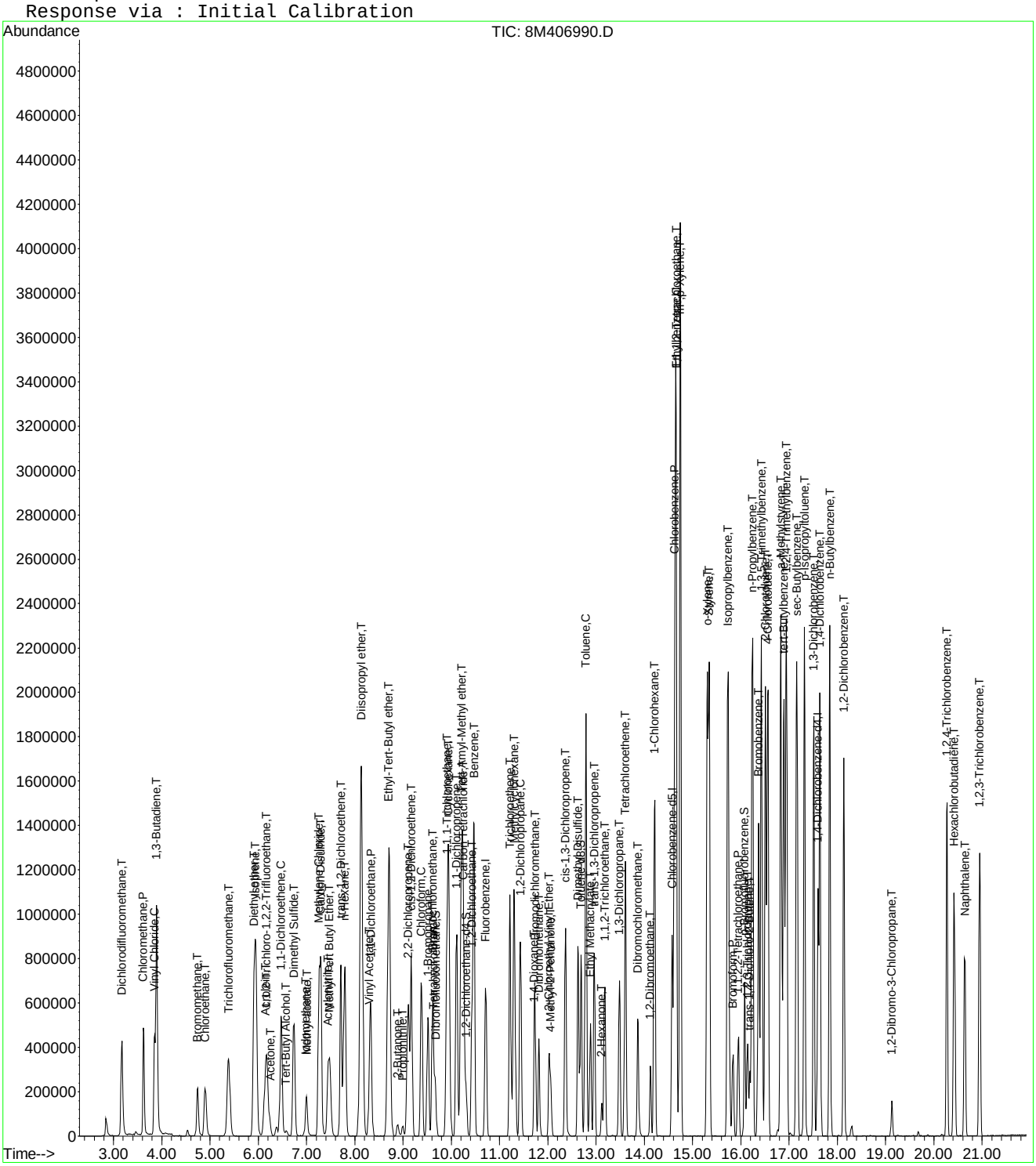

Continuing Calibration Area and RT check

Instrument: HPMS8
Initial cal date: 30 Jul 2015 17:04
CCV date: 25 Aug 2015 9:23
CCV Filename: 8M406990.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	905123	10.71	645629	14.58	356726	17.60
CCV	803202	10.71	615808	14.58	351009	17.60

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\082515\8M406990.D Vial: 2
Acq On : 25 Aug 2015 9:23 Operator: TMB
Sample : WG536331-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD72111 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	89	0.00
2	T	Dichlorodifluoromethane	0.3818	0.3649	4.4	74	0.00
3	P	Chloromethane	0.4263	0.4111	3.6	85	0.00
4	C	Vinyl Chloride	0.3135	0.3494	-11.5	95	0.00
5	T	1,3-Butadiene	0.2748	0.3587	-30.5#	110	0.00
6	T	Bromomethane	0.2088	0.1442	30.9#	62	0.00
7	T	Chloroethane	0.1952	0.2038	-4.4	90	0.00
8	T	Trichlorofluoromethane	0.4053	0.3894	3.9	81	0.00
9	T	Diethyl ether	0.1534	0.1643	-7.1	97	0.00
10	T	Isoprene	0.3172	0.3448	-8.7	92	-0.01
11	T	Acrolein	0.0087	0.0097	-11.5	103	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2314	0.2481	-7.2	88	0.00
13	T	Acetone	0.0315	0.0311	1.4	92	0.00
14	C	1,1-Dichloroethene	0.3926	0.3917	0.2	85	0.00
15	T	Tert-Butyl Alcohol	0.0083	0.0080	2.9	95	-0.01
16	T	Dimethyl Sulfide	0.2465	0.2482	-0.7	88	0.00
17	T	Iodomethane	0.1976	0.1125	43.1#	41#	0.00
18	T	Methyl acetate	0.1223	0.1259	-2.9	96	0.00
19	T	Methylene Chloride	0.2501	0.2480	0.8	86	0.00
20	T	Carbon Disulfide	0.8019	0.8520	-6.2	91	0.00
21	T	Acrylonitrile	0.0524	0.0538	-2.8	91	0.00
22	T	Methyl Tert Butyl Ether	0.4417	0.4338	1.8	86	0.00
23	T	trans-1,2-Dichloroethene	0.3683	0.3820	-3.7	88	0.00
24	T	n-Hexane	0.3981	0.4174	-4.9	90	0.00
25	T	Diisopropyl ether	0.8942	0.9735	-8.9	97	0.00
26	T	Vinyl Acetate	0.2286	0.2943	-28.7#	116	0.00
27	P	1,1-Dichloroethane	0.4939	0.5012	-1.5	87	0.00
28	T	Ethyl-Tert-Butyl ether	0.6672	0.6994	-4.8	94	0.00
29	T	2-Butanone	0.0534	0.0591	-10.7	97	0.00
30	T	Propionitrile	0.0170	0.0176	-3.5	90	0.00
31	T	2,2-Dichloropropane	0.3806	0.4080	-7.2	92	0.00
32	T	cis-1,2-Dichloroethene	0.2650	0.2786	-5.1	89	0.00
33	C	Chloroform	0.4457	0.4443	0.3	87	0.00
34		1-Bromopropane	0.0471	0.0508	-7.7	94	0.00
35	T	Bromochloromethane	0.1365	0.1390	-1.8	89	0.00
36	T	Tetrahydrofuran	0.0367	0.0465	-26.6#	118	0.00
37	S	Dibromofluoromethane	0.2203	0.2287	-3.8	89	0.00
38	T	1,1,1-Trichloroethane	0.4111	0.4215	-2.5	87	0.00
39	T	Cyclohexane	0.4795	0.5205	-8.5	92	0.00
40	T	1,1-Dichloropropene	0.3520	0.3712	-5.4	90	0.00
41	T	Tert-Amyl-Methyl ether	0.4994	0.5182	-3.8	94	0.00
42	T	Carbon Tetrachloride	0.3640	0.3868	-6.3	88	0.00
43	S	1,2-Dichloroethane-d4	0.2191	0.2072	5.4	86	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.2985	0.2886	3.3	84	0.00
46	T	Benzene	0.9840	1.0327	-4.9	90	0.00
47	T	Trichloroethene	0.2809	0.2726	2.9	89	0.00
48	T	Methylcyclohexane	0.4073	0.4270	-4.8	92	0.00
49	C	1,2-Dichloropropane	0.2726	0.2938	-7.8	90	0.00
50	T	Bromodichloromethane	0.3383	0.3452	-2.0	86	0.00
51	T	1,4-Dioxane	0.0010	0.0008	17.7	79	0.00
52	T	Dibromomethane	0.1247	0.1255	-0.7	86	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1139	0.1124	1.3	85	-0.01
54	T	4-Methyl-2-Pentanone	0.0505	0.0511	-1.1	89	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\082515\8M406990.D Vial: 2
Acq On : 25 Aug 2015 9:23 Operator: TMB
Sample : WG536331-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD72111 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.3724	0.3906	-4.9	88	0.00
56	T	Dimethyl Disulfide	0.2017	0.2024	-0.3	88	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	95	0.00
58	S	Toluene-d8	1.2060	1.1729	2.7	91	0.00
59	C	Toluene	1.4610	1.4448	1.1	91	0.00
60	T	Ethyl Methacrylate	0.2788	0.2746	1.5	91	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.4322	0.4163	3.7	88	0.00
63	T	1,1,2-Trichloroethane	0.2289	0.2201	3.9	88	0.00
64	T	2-Hexanone	0.0647	0.0581	10.2	86	0.00
65	T	1,3-Dichloropropane	0.3985	0.3841	3.6	89	0.00
66	T	Tetrachloroethene	0.3080	0.3092	-0.4	92	0.00
67	T	Dibromochloromethane	0.3016	0.2915	3.4	88	-0.01
68	T	1,2-Dibromoethane	0.2226	0.2072	6.9	87	0.00
69	T	1-Chlorohexane	0.5163	0.5254	-1.8	95	0.00
70	P	Chlorobenzene	0.9354	0.9304	0.5	91	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3323	0.3323	0.0	88	0.00
72	C	Ethylbenzene	0.5280	0.5264	0.3	93	0.00
73	T	m-,p-Xylene	0.6240	0.6307	-1.1	92	0.00
74	T	o-Xylene	0.6140	0.6137	0.1	90	0.00
75	T	Styrene	1.0029	1.0182	-1.5	91	0.00
76	P	Bromoform	0.1813	0.1798	0.8	92	0.00
77	T	Isopropylbenzene	1.5372	1.5746	-2.4	91	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	98	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4542	0.4476	1.5	97	0.00
80	S	p-Bromofluorobenzene	0.8647	0.8048	6.9	95	0.00
81	T	1,2,3-Trichloropropane	0.1275	0.1101	13.7	84	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1480	0.1163	21.4	71	-0.01
83	T	n-Propylbenzene	3.6808	3.5508	3.5	92	0.00
84	T	Bromobenzene	0.7456	0.6842	8.2	91	0.00
85	T	1,3,5-Trimethylbenzene	2.4301	2.3479	3.4	90	0.00
86	T	2-Chlorotoluene	2.2483	2.1444	4.6	88	0.00
87	T	4-Chlorotoluene	2.1425	2.0814	2.9	94	0.00
88	T	a-Methylstyrene	1.3197	1.3480	-2.1	97	0.00
89	T	tert-Butylbenzene	0.5265	0.5058	3.9	92	0.00
90	T	1,2,4-Trimethylbenzene	2.4621	2.4075	2.2	90	0.00
91	T	sec-Butylbenzene	2.9984	3.0132	-0.5	91	0.00
92	T	p-Isopropyltoluene	2.5785	2.5663	0.5	90	0.00
93	T	1,3-Dichlorobenzene	1.4620	1.4317	2.1	95	0.00
94	T	1,4-Dichlorobenzene	1.5071	1.4114	6.4	94	0.00
95	T	n-Butylbenzene	2.4864	2.4783	0.3	89	0.00
96	T	1,2-Dichlorobenzene	1.2908	1.2487	3.3	93	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.0795	0.0695	12.6	84	0.00
98	T	1,2,4-Trichlorobenzene	0.9933	0.9076	8.6	87	0.00
99	T	Hexachlorobutadiene	0.5055	0.4320	14.5	84	-0.01
100	T	Naphthalene	1.2888	1.1660	9.5	81	0.00
101	T	1,2,3-Trichlorobenzene	0.8572	0.7379	13.9	84	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M406990.D 8260WT.M Tue Aug 25 09:46:32 2015 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\082515\8M406990.D Vial: 2
Acq On : 25 Aug 2015 9:23 Operator: TMB
Sample : WG536331-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD72111 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	89	0.00
2	T	Dichlorodifluoromethane	50.0000	47.7814	4.4	74	0.00
3	P	Chloromethane	50.0000	48.2156	3.6	85	0.00
4	C	Vinyl Chloride	50.0000	55.7355	-11.5	95	0.00
5	T	1,3-Butadiene	50.0000	65.2643	-30.5#	110	0.00
6	T	Bromomethane	50.0000	34.5263	30.9#	62	0.00
7	T	Chloroethane	50.0000	52.2108	-4.4	90	0.00
8	T	Trichlorofluoromethane	50.0000	48.0360	3.9	81	0.00
9	T	Diethyl ether	100.0000	107.0702	-7.1	97	0.00
10	T	Isoprene	50.0000	54.3501	-8.7	92	-0.01
11	T	Acrolein	50.0000	60.2807	-20.6	103	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	53.5918	-7.2	88	0.00
13	T	Acetone	50.0000	49.2919	1.4	92	0.00
14	C	1,1-Dichloroethene	50.0000	49.8754	0.2	85	0.00
15	T	Tert-Butyl Alcohol	200.0000	194.2500	2.9	95	-0.01
16	T	Dimethyl Sulfide	50.0000	50.3331	-0.7	88	0.00
17	T	Iodomethane	50.0000	23.7726	52.5#	41	0.00
18	T	Methyl acetate	50.0000	51.4678	-2.9	96	0.00
19	T	Methylene Chloride	50.0000	49.5797	0.8	86	0.00
20	T	Carbon Disulfide	50.0000	53.1235	-6.2	91	0.00
21	T	Acrylonitrile	50.0000	51.3821	-2.8	91	0.00
22	T	Methyl Tert Butyl Ether	50.0000	49.1084	1.8	86	0.00
23	T	trans-1,2-Dichloroethene	50.0000	51.8722	-3.7	88	0.00
24	T	n-Hexane	50.0000	52.4343	-4.9	90	0.00
25	T	Diisopropyl ether	100.0000	108.8682	-8.9	97	0.00
26	T	Vinyl Acetate	50.0000	64.3750	-28.7#	116	0.00
27	P	1,1-Dichloroethane	50.0000	50.7404	-1.5	87	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	104.8244	-4.8	94	0.00
29	T	2-Butanone	50.0000	55.3517	-10.7	97	0.00
30	T	Propionitrile	100.0000	103.5305	-3.5	90	0.00
31	T	2,2-Dichloropropane	50.0000	53.5932	-7.2	92	0.00
32	T	cis-1,2-Dichloroethene	50.0000	52.5675	-5.1	89	0.00
33	C	Chloroform	50.0000	49.8405	0.3	87	0.00
34		1-Bromopropane	50.0000	53.8838	-7.8	94	0.00
35	T	Bromochloromethane	50.0000	50.9088	-1.8	89	0.00
36	T	Tetrahydrofuran	100.0000	126.6240	-26.6#	118	0.00
37	S	Dibromofluoromethane	25.0000	25.9533	-3.8	89	0.00
38	T	1,1,1-Trichloroethane	50.0000	51.2675	-2.5	87	0.00
39	T	Cyclohexane	50.0000	54.2707	-8.5	92	0.00
40	T	1,1-Dichloropropene	50.0000	52.7227	-5.4	90	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	103.7628	-3.8	94	0.00
42	T	Carbon Tetrachloride	50.0000	53.1257	-6.3	88	0.00
43	S	1,2-Dichloroethane-d4	25.0000	23.6484	5.4	86	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	48.3381	3.3	84	0.00
46	T	Benzene	50.0000	52.4731	-4.9	90	0.00
47	T	Trichloroethene	50.0000	48.5287	2.9	89	0.00
48	T	Methylcyclohexane	50.0000	52.4177	-4.8	92	0.00
49	C	1,2-Dichloropropane	50.0000	53.8956	-7.8	90	0.00
50	T	Bromodichloromethane	50.0000	51.0191	-2.0	86	0.00
51	T	1,4-Dioxane	200.0000	165.0685	17.5	79	0.00
52	T	Dibromomethane	50.0000	50.3289	-0.7	86	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	49.3443	1.3	85	-0.01
54	T	4-Methyl-2-Pentanone	50.0000	50.5767	-1.2	89	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\082515\8M406990.D Vial: 2
Acq On : 25 Aug 2015 9:23 Operator: TMB
Sample : WG536331-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD72111 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	52.4449	-4.9	88	0.00
56	T	Dimethyl Disulfide	50.0000	50.1706	-0.3	88	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	95	0.00
58	S	Toluene-d8	25.0000	24.3136	2.7	91	0.00
59	C	Toluene	50.0000	49.4452	1.1	91	0.00
60	T	Ethyl Methacrylate	50.0000	49.2304	1.5	91	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	48.1596	3.7	88	0.00
63	T	1,1,2-Trichloroethane	50.0000	48.0621	3.9	88	0.00
64	T	2-Hexanone	50.0000	44.9057	10.2	86	0.00
65	T	1,3-Dichloropropane	50.0000	48.2008	3.6	89	0.00
66	T	Tetrachloroethene	50.0000	50.1910	-0.4	92	0.00
67	T	Dibromochloromethane	50.0000	48.3218	3.4	88	-0.01
68	T	1,2-Dibromoethane	50.0000	46.5361	6.9	87	0.00
69	T	1-Chlorohexane	50.0000	50.8774	-1.8	95	0.00
70	P	Chlorobenzene	50.0000	49.7317	0.5	91	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	49.9981	0.0	88	0.00
72	C	Ethylbenzene	50.0000	49.8509	0.3	93	0.00
73	T	m-,p-Xylene	100.0000	101.0756	-1.1	92	0.00
74	T	o-Xylene	50.0000	49.9723	0.1	90	0.00
75	T	Styrene	50.0000	50.7634	-1.5	91	0.00
76	P	Bromoform	50.0000	49.5812	0.8	92	0.00
77	T	Isopropylbenzene	50.0000	51.2163	-2.4	91	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	98	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	49.2752	1.4	97	0.00
80	S	p-Bromofluorobenzene	25.0000	23.2669	6.9	95	0.00
81	T	1,2,3-Trichloropropane	50.0000	43.1551	13.7	84	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	33.0812	33.8#	71	-0.01
83	T	n-Propylbenzene	50.0000	48.2342	3.5	92	0.00
84	T	Bromobenzene	50.0000	45.8864	8.2	91	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	48.3088	3.4	90	0.00
86	T	2-Chlorotoluene	50.0000	47.6890	4.6	88	0.00
87	T	4-Chlorotoluene	50.0000	48.5741	2.9	94	0.00
88	T	a-Methylstyrene	50.0000	51.0720	-2.1	97	0.00
89	T	tert-Butylbenzene	50.0000	48.0344	3.9	92	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	48.8898	2.2	90	0.00
91	T	sec-Butylbenzene	50.0000	50.2477	-0.5	91	0.00
92	T	p-Isopropyltoluene	50.0000	49.7638	0.5	90	0.00
93	T	1,3-Dichlorobenzene	50.0000	48.9629	2.1	95	0.00
94	T	1,4-Dichlorobenzene	50.0000	46.8242	6.4	94	0.00
95	T	n-Butylbenzene	50.0000	49.8369	0.3	89	0.00
96	T	1,2-Dichlorobenzene	50.0000	48.3684	3.3	93	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	43.7247	12.6	84	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	45.6841	8.6	87	0.00
99	T	Hexachlorobutadiene	50.0000	42.7296	14.5	84	-0.01
100	T	Naphthalene	50.0000	45.2368	9.5	81	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	43.0442	13.9	84	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M406990.D 8260WT.M Tue Aug 25 09:46:33 2015 Page 2

BFB

```
Data File : C:\MSDchem\2\data\082515\Snapshot\8M406990.D Vial: 2
Acq On    : 25 Aug 2015   9:23                        Operator: TMB
Sample    : WG536331-02 50ug/L CCV STD 8260           Inst    : HPMS8
Misc      : 1,1 STD72111                              Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

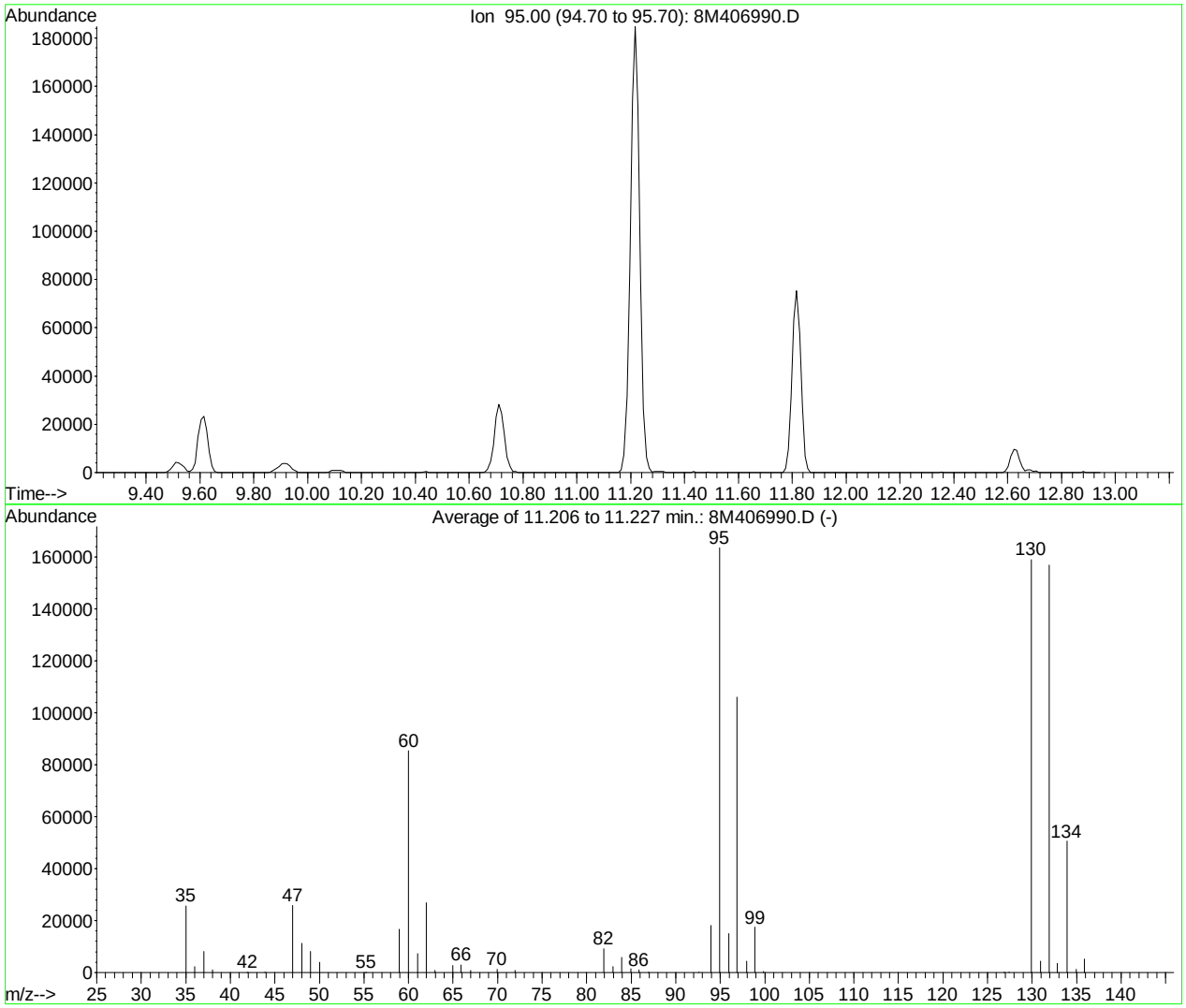

AutoFind: Scans 863, 864, 865; Background Corrected with Scan 856

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	2.4	3918	FAIL*
75	95	30	60	0.0	0	FAIL*
95	95	100	100	100.0	163520	PASS
96	95	5	9	9.1	14923	FAIL*
173	174	COMPARISON MASS IS NOT PRESENT!!!				
174	95	50	100	0.0	0	FAIL*
175	174	COMPARISON MASS IS NOT PRESENT!!!				
176	174	COMPARISON MASS IS NOT PRESENT!!!				
177	176	COMPARISON MASS IS NOT PRESENT!!!				

8M406990.D BFB.M Tue Aug 25 09:39:51 2015

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\2\DATA\100214\8M400357.D          Vial: 3
Acq On    :  2 Oct 2014  11:58                       Operator: TMB
Sample    : WG494714-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD66476                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

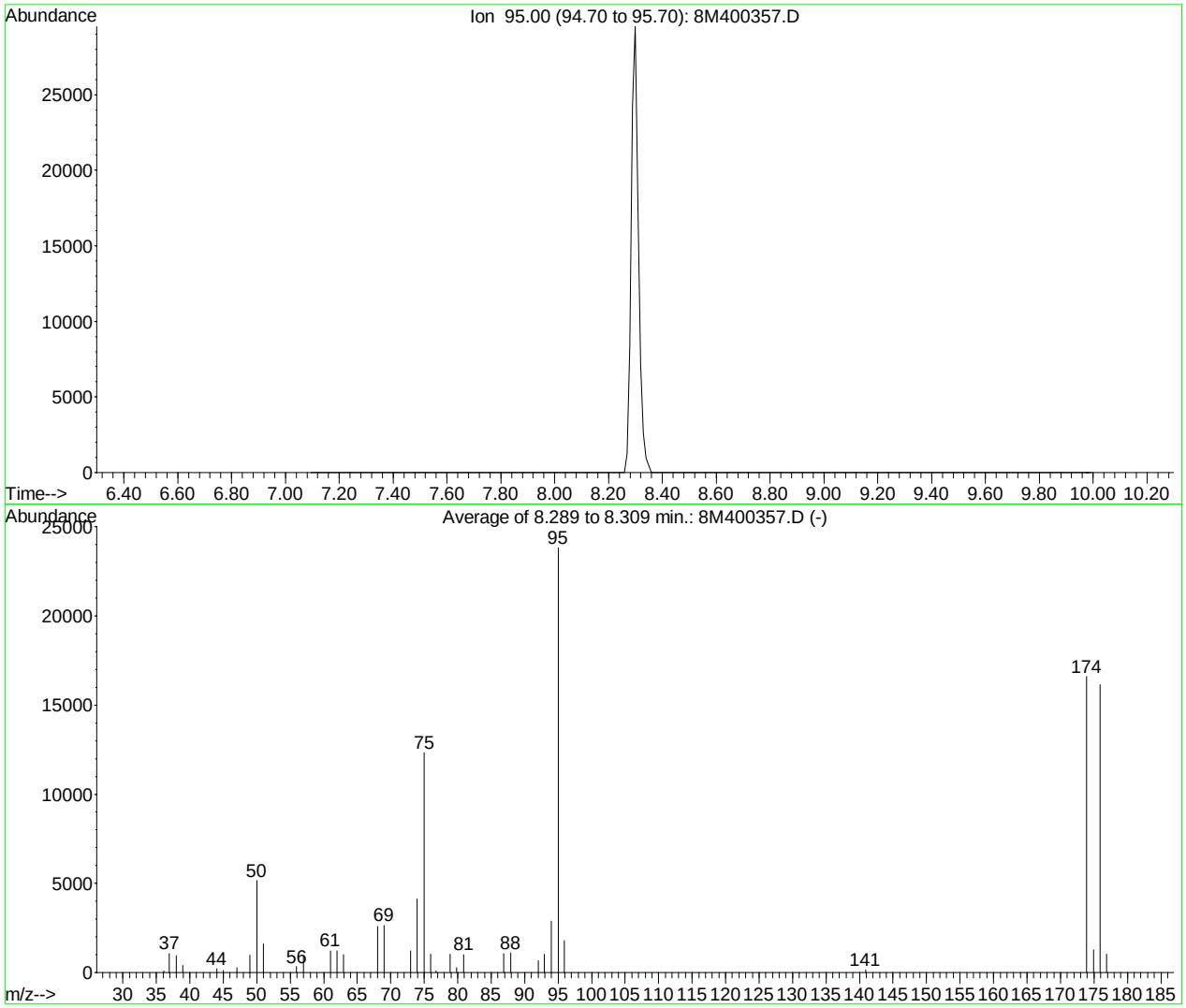

AutoFind: Scans 118, 119, 120; Background Corrected with Scan 113

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.7	5158	PASS
75	95	30	60	51.7	12312	PASS
95	95	100	100	100.0	23818	PASS
96	95	5	9	7.6	1800	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	69.7	16590	PASS
175	174	5	9	7.8	1290	PASS
176	174	95	101	97.3	16145	PASS
177	176	5	9	6.3	1023	PASS

8M400357.D BFB.M Thu Oct 02 12:09:27 2014

BFB

```
Data File : C:\MSDCHEM\2\DATA\073015\8M406477.D          Vial: 1
Acq On    : 30 Jul 2015  14:17                       Operator: TMB
Sample    : WG533051-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD71644                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

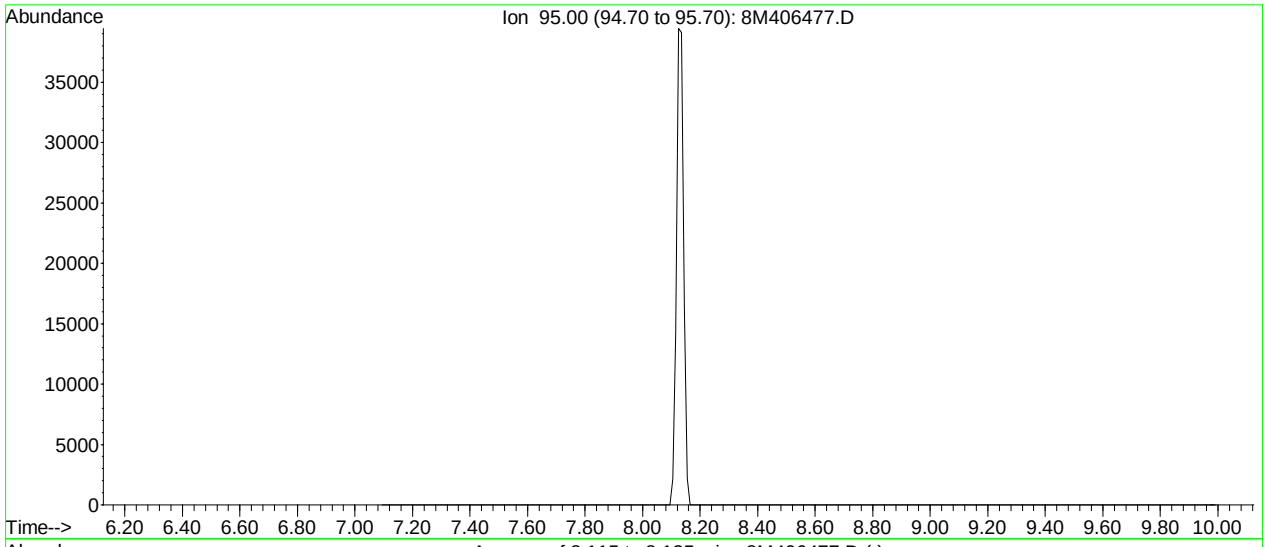

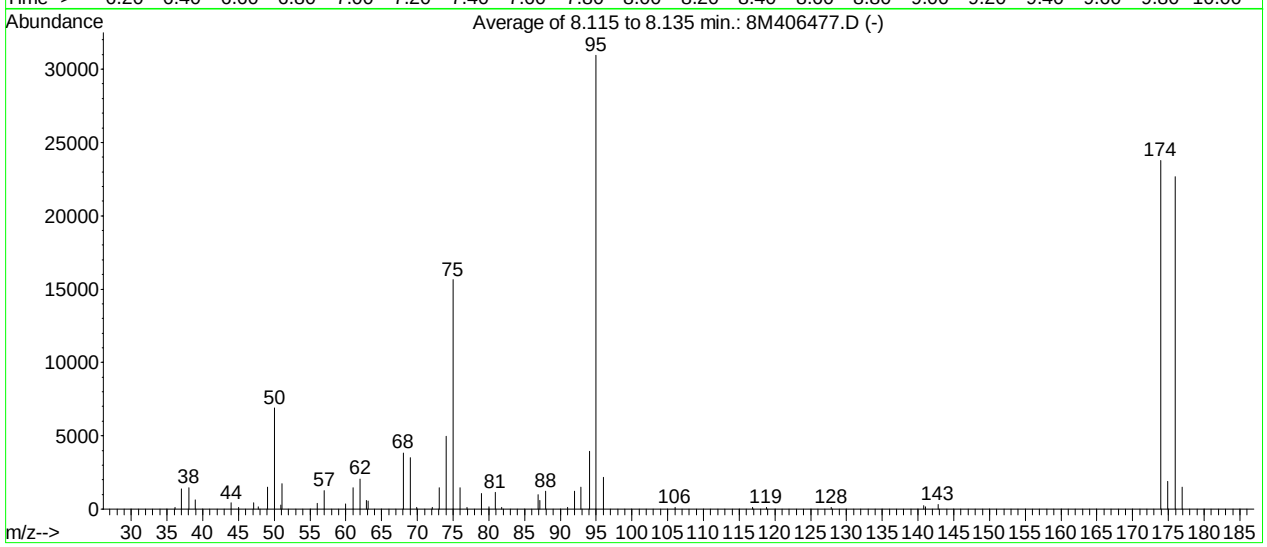

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.2	6881	PASS
75	95	30	60	50.6	15643	PASS
95	95	100	100	100.0	30939	PASS
96	95	5	9	7.0	2155	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	76.8	23758	PASS
175	174	5	9	7.9	1877	PASS
176	174	95	101	95.4	22662	PASS
177	176	5	9	6.6	1487	PASS

8M406477.D BFB.M Thu Jul 30 14:28:24 2015

BFB

```
Data File : C:\MSDCHEM\2\DATA\082515\8M406989.D          Vial: 2
Acq On    : 25 Aug 2015   9:00                       Operator: TMB
Sample    : WG536331-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD71644                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
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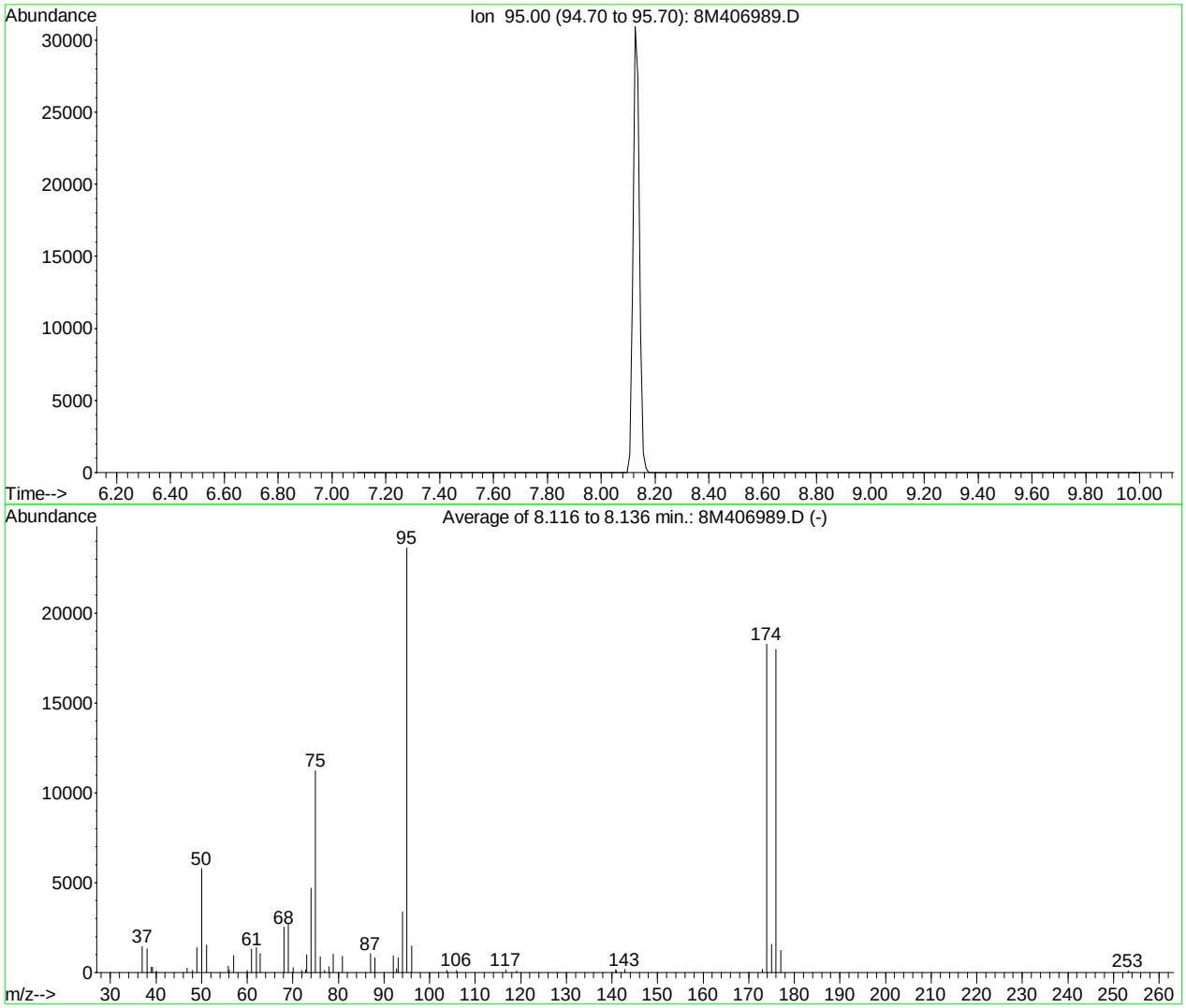

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	24.5	5779	PASS
75	95	30	60	47.5	11222	PASS
95	95	100	100	100.0	23621	PASS
96	95	5	9	6.2	1471	PASS
173	174	0.00	2	1.0	189	PASS
174	95	50	100	77.4	18271	PASS
175	174	5	9	8.6	1579	PASS
176	174	95	101	98.4	17974	PASS
177	176	5	9	6.8	1226	PASS

8M406989.D BFB.M Tue Aug 25 09:40:37 2015

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082515\8M406992.D Vial: 4
Acq On : 25 Aug 2015 10:21 Operator: TMB
Sample : WG536332-01 VBLK0825 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 26 08:00:24 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	722548	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	563644	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	303004	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	168511	26.4672 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 105.88%		
43) 1,2-Dichloroethane-d4	10.31	65	153260	24.2070 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.84%		
58) Toluene-d8	12.68	98	661547	24.3301 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.32%		
80) p-Bromofluorobenzene	16.08	95	250221	23.8747 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.48%		

Target Compounds					Qvalue
3) Chloromethane	3.63	50	1636	0.1328 ug/L #	43
19) Methylene Chloride	7.27	84	1052	0.1455 ug/L	82
36) Tetrahydrofuran	9.66	42	243	0.2290 ug/L #	40

(#) = qualifier out of range (m) = manual integration
8M406992.D 8260WT.M Wed Aug 26 08:00:25 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\082515\8M406992.D Vial: 4
Acq On : 25 Aug 2015 10:21 Operator: TMB
Sample : WG536332-01 VBLK0825 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 26 8:00 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

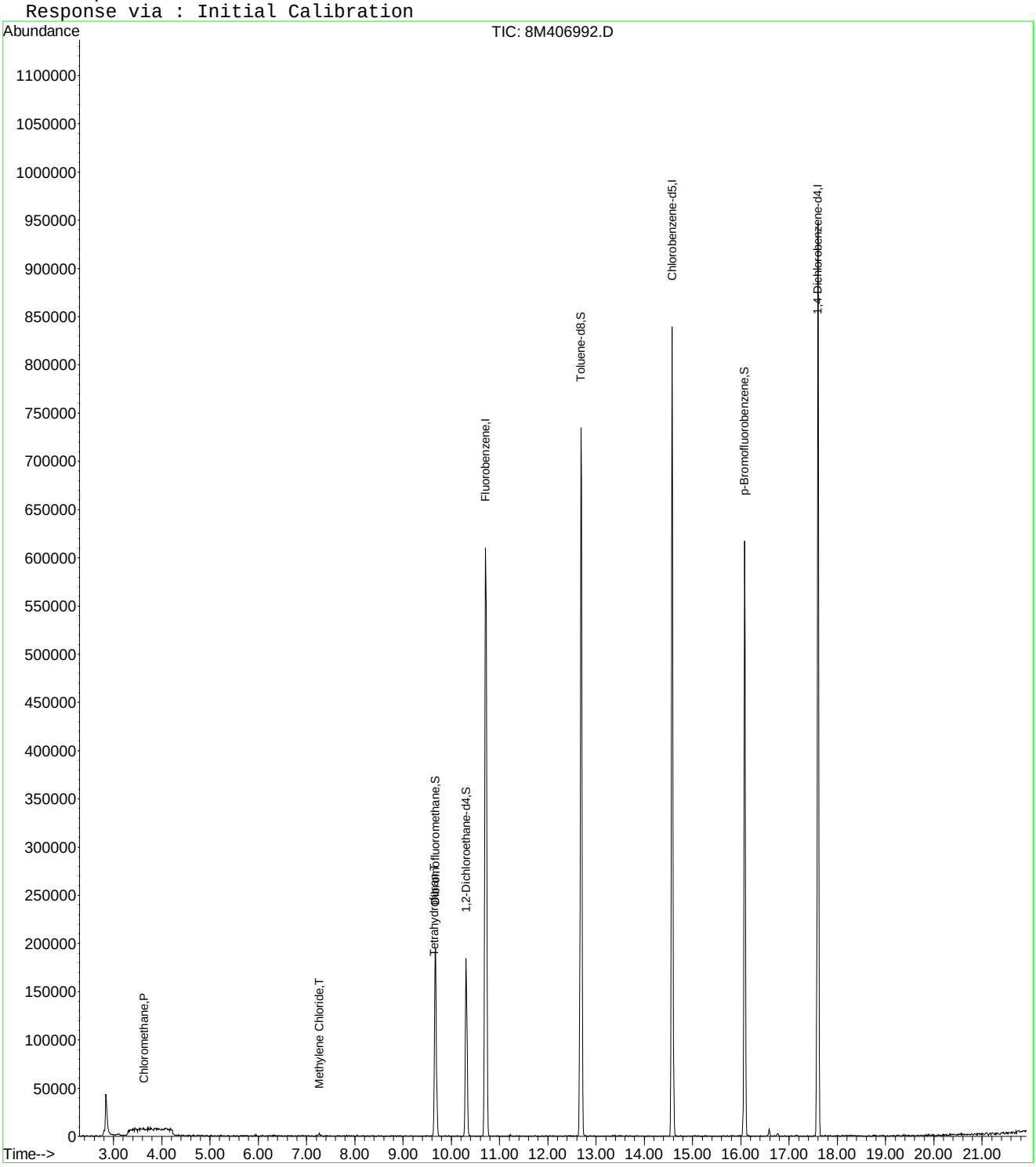

8M406992.D 8260WT.M Wed Aug 26 08:00:25 2015 Page 2

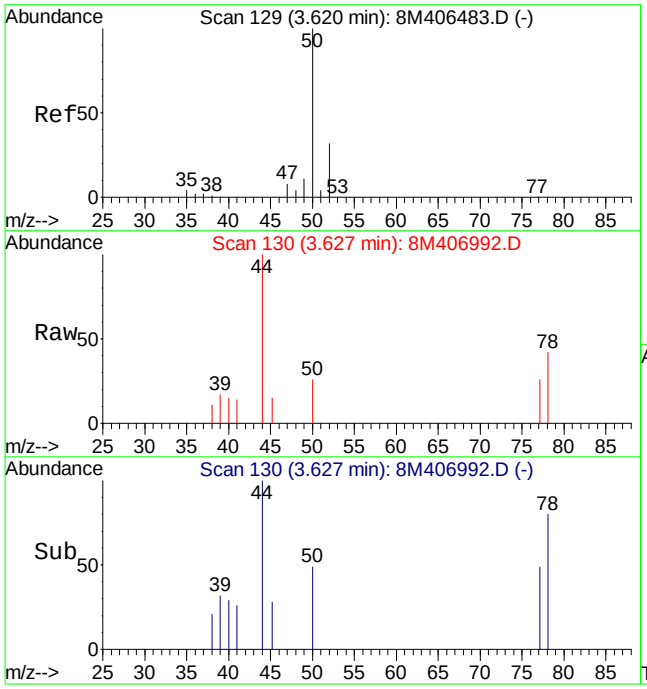

#3
Chloromethane
Concen: 0.13 ug/L
RT: 3.63 min Scan# 130
Delta R.T. 0.01 min
Lab File: 8M406992.D
Acq: 25 Aug 2015 10:21

Tgt Ion: 50 Resp: 1636

Ion	Ratio	Lower	Upper
50	100		
52	0.0	19.2	44.8#

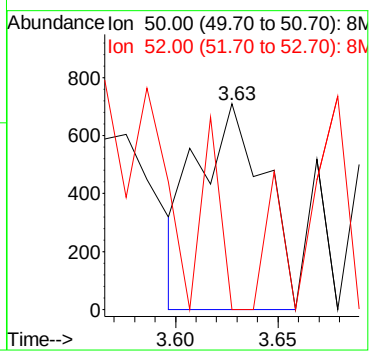

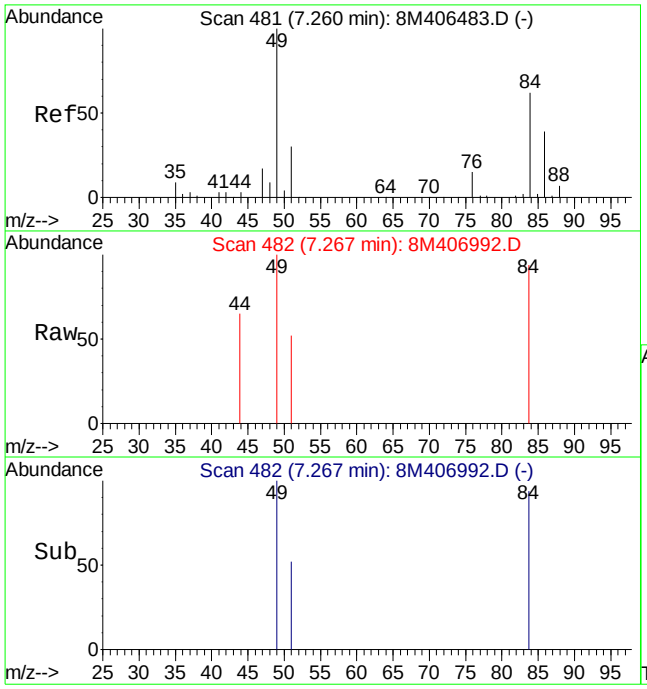

#19
Methylene Chloride
Concen: 0.15 ug/L
RT: 7.27 min Scan# 482
Delta R.T. 0.01 min
Lab File: 8M406992.D
Acq: 25 Aug 2015 10:21

Tgt Ion: 84 Resp: 1052

Ion	Ratio	Lower	Upper
84	100		
49	187.9	98.6	230.2

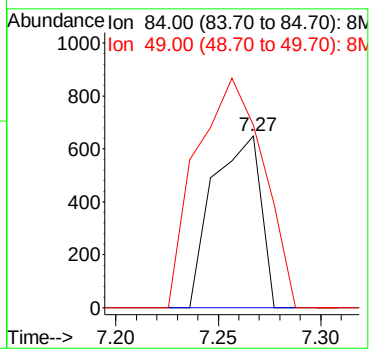

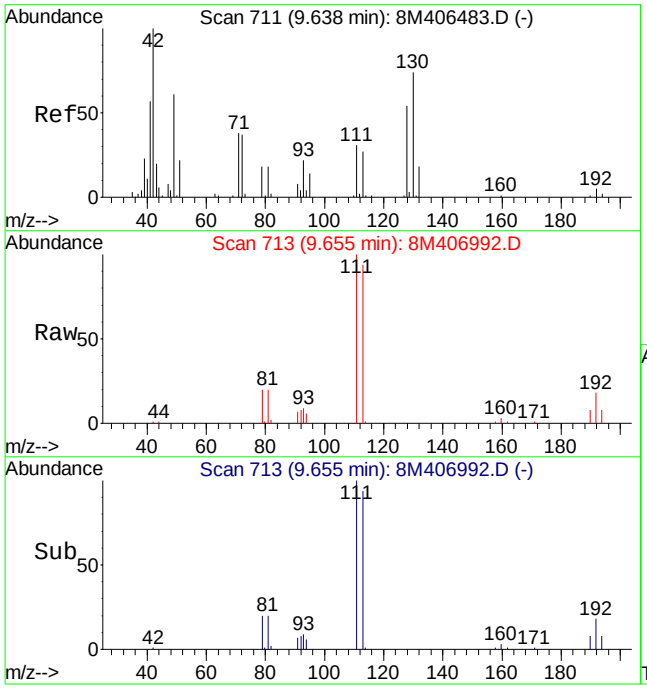

#36
Tetrahydrofuran
Concen: 0.23 ug/L
RT: 9.66 min Scan# 713
Delta R.T. 0.02 min
Lab File: 8M406992.D
Acq: 25 Aug 2015 10:21

Tgt Ion: 42 Resp: 243

Ion	Ratio	Lower	Upper
42	100		
72	0.0	22.4	52.4#
71	0.0	19.5	45.5#

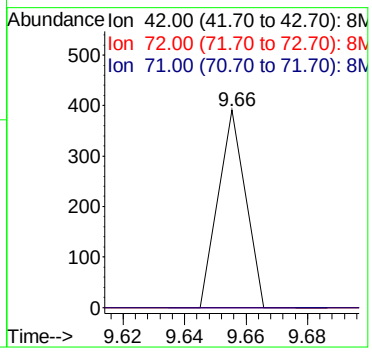

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\082515\8M406993.D Vial: 5
Acq On : 25 Aug 2015 10:50 Operator: TMB
Sample : WG536332-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD72078 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 25 11:12:00 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	766317	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	582036	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	337401	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.68	111	174470	25.8380 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.36%		
43) 1,2-Dichloroethane-d4	10.31	65	156818	23.3543 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 93.40%		
58) Toluene-d8	12.68	98	689448	24.5550 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.20%		
80) p-Bromofluorobenzene	16.08	95	266035	22.7958 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 91.20%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	238150	20.3487 ug/L	99
3) Chloromethane	3.62	50	267087	20.4412 ug/L	99
4) Vinyl Chloride	3.84	62	228428	23.7723 ug/L	98
5) 1,3-Butadiene	3.89	54	191636	22.7494 ug/L	98
6) Bromomethane	4.74	94	70334	10.9890 ug/L	97
7) Chloroethane	4.90	64	128529	21.4828 ug/L	99
8) Trichlorofluoromethane	5.39	101	222879	17.9380 ug/L	100
9) Diethyl ether	5.91	59	479654	101.9887 ug/L	99
10) Isoprene	5.95	67	220511	22.6754 ug/L	95
11) Acrolein	6.15	56	37301	118.7295 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	146718	20.6813 ug/L	100
13) Acetone	6.25	43	21106	21.8414 ug/L	97
14) 1,1-Dichloroethene	6.47	61	221201	18.3789 ug/L	96
15) Tert-Butyl Alcohol	6.58	59	44653	175.9229 ug/L	94
16) Dimethyl Sulfide	6.74	62	166441	22.0265 ug/L	98
17) Iodomethane	6.99	142	35964	5.6515 ug/L	95
18) Methyl acetate	7.01	43	58974	15.7271 ug/L	96
19) Methylene Chloride	7.26	84	154534	20.1573 ug/L	97
20) Carbon Disulfide	7.30	76	422051	17.1699 ug/L	100
21) Acrylonitrile	7.44	53	31689	19.7350 ug/L	98
22) Methyl Tert Butyl Ether	7.47	73	271457	20.0510 ug/L	99
23) trans-1,2-Dichloroethene	7.71	61	224998	19.9330 ug/L	96
24) n-Hexane	7.79	57	208742	17.1074 ug/L	99
25) Diisopropyl ether	8.14	45	2833689	103.3819 ug/L	99
26) Vinyl Acetate	8.30	43	251875	35.9498 ug/L	99
27) 1,1-Dichloroethane	8.33	63	305595	20.1857 ug/L	98
28) Ethyl-Tert-Butyl ether	8.71	59	1977499	96.6975 ug/L	99
29) 2-Butanone	8.89	43	37900	23.1638 ug/L	98
30) Propionitrile	8.99	54	56207	108.0026 ug/L	96
31) 2,2-Dichloropropane	9.11	77	237777	20.3807 ug/L	98
32) cis-1,2-Dichloroethene	9.18	96	164519	20.2527 ug/L	97
33) Chloroform	9.38	83	284956	20.8566 ug/L	99
34) 1-Bromopropane	9.52	122	31717	21.9661 ug/L	95
35) Bromochloromethane	9.61	130	91209	21.7979 ug/L	95
36) Tetrahydrofuran	9.63	42	117073	104.0298 ug/L	97
38) 1,1,1-Trichloroethane	9.91	97	257363	20.4219 ug/L	99
39) Cyclohexane	9.94	56	280090	19.0555 ug/L	99
40) 1,1-Dichloropropene	10.11	75	219623	20.3544 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1589072	103.8026 ug/L	99
42) Carbon Tetrachloride	10.26	117	232452	20.8319 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M406993.D 8260WT.M Tue Aug 25 11:12:00 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\082515\8M406993.D Vial: 5
Acq On : 25 Aug 2015 10:50 Operator: TMB
Sample : WG536332-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD72078 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 25 11:12:00 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	178911	19.5513 ug/L		99
46)	Benzene	10.46	78	647520	21.4683 ug/L		97
47)	Trichloroethene	11.22	130	162584	18.8854 ug/L		96
48)	Methylcyclohexane	11.30	83	229373	18.3734 ug/L		100
49)	1,2-Dichloropropane	11.43	63	179889	21.5286 ug/L		93
50)	Bromodichloromethane	11.73	83	204004	19.6723 ug/L		98
51)	1,4-Dioxane	11.71	88	3832	130.4069 ug/L		71
52)	Dibromomethane	11.82	93	82426	21.5638 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.02	63	70194	20.1112 ug/L		100
54)	4-Methyl-2-Pentanone	12.06	58	29723	19.1841 ug/L		98
55)	cis-1,3-Dichloropropene	12.36	75	243324	21.3171 ug/L		99
56)	Dimethyl Disulfide	12.62	79	109096	17.6418 ug/L		90
59)	Toluene	12.79	91	688279	20.2353 ug/L		99
60)	Ethyl Methacrylate	12.88	69	133828	20.6147 ug/L		97
62)	trans-1,3-Dichloropropene	12.96	75	185035	18.3907 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	107240	20.1187 ug/L		100
64)	2-Hexanone	13.12	58	30528	20.2735 ug/L	#	99
65)	1,3-Dichloropropane	13.48	76	185345	19.9787 ug/L		96
66)	Tetrachloroethene	13.61	164	143889	20.0641 ug/L		94
67)	Dibromochloromethane	13.86	129	136893	19.4957 ug/L		98
68)	1,2-Dibromoethane	14.12	107	96884	18.6935 ug/L		97
69)	1-Chlorohexane	14.22	91	221081	18.3919 ug/L		99
70)	Chlorobenzene	14.63	112	456746	20.9726 ug/L		95
71)	1,1,1,2-Tetrachloroethane	14.66	131	151569	19.5911 ug/L		100
72)	Ethylbenzene	14.65	106	243962	19.8453 ug/L		98
73)	m-,p-Xylene	14.74	106	601365	41.3974 ug/L		97
74)	o-Xylene	15.31	106	298310	20.8666 ug/L		95
75)	Styrene	15.34	104	483969	20.7277 ug/L		95
76)	Bromoform	15.84	173	86070	20.3874 ug/L		98
77)	Isopropylbenzene	15.73	105	759229	21.2139 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.94	83	120202	19.6075 ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	29981	17.4230 ug/L		55
82)	trans-1,4-Dichloro-2-Buten	16.18	53	27732	12.2049 ug/L	#	33
83)	n-Propylbenzene	16.24	91	969926	19.5248 ug/L		99
84)	Bromobenzene	16.37	156	186167	18.5015 ug/L		94
85)	1,3,5-Trimethylbenzene	16.43	105	629795	19.2029 ug/L		95
86)	2-Chlorotoluene	16.51	91	607401	20.0175 ug/L		99
87)	4-Chlorotoluene	16.55	91	568675	19.6665 ug/L		96
88)	a-Methylstyrene	16.83	118	350869	19.7001 ug/L		96
89)	tert-Butylbenzene	16.89	134	142065	19.9941 ug/L		84
90)	1,2,4-Trimethylbenzene	16.94	105	636210	19.1462 ug/L		97
91)	sec-Butylbenzene	17.16	105	818116	20.2173 ug/L		99
92)	p-Isopropyltoluene	17.32	119	653873	18.7896 ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	393425	19.9390 ug/L		96
94)	1,4-Dichlorobenzene	17.64	146	368058	18.0955 ug/L		98
95)	n-Butylbenzene	17.84	91	623994	18.5954 ug/L		98
96)	1,2-Dichlorobenzene	18.13	146	350716	20.1320 ug/L		97
97)	1,2-Dibromo-3-Chloropropan	19.13	75	18638	17.3657 ug/L		92
98)	1,2,4-Trichlorobenzene	20.27	180	231152	17.2423 ug/L		97
99)	Hexachlorobutadiene	20.42	225	109421	16.0396 ug/L		99
100)	Naphthalene	20.64	128	313438	18.0200 ug/L		100
101)	1,2,3-Trichlorobenzene	20.95	180	201265	17.3974 ug/L		97

(#) = qualifier out of range (m) = manual integration
8M406993.D 8260WT.M Tue Aug 25 11:12:01 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\082515\8M406993.D Vial: 5
Acq On : 25 Aug 2015 10:50 Operator: TMB
Sample : WG536332-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD72078 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Aug 25 11:12 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 07-30-15 HPMS 8
Last Update : Fri Jul 31 13:26:17 2015
Response via : Initial Calibration

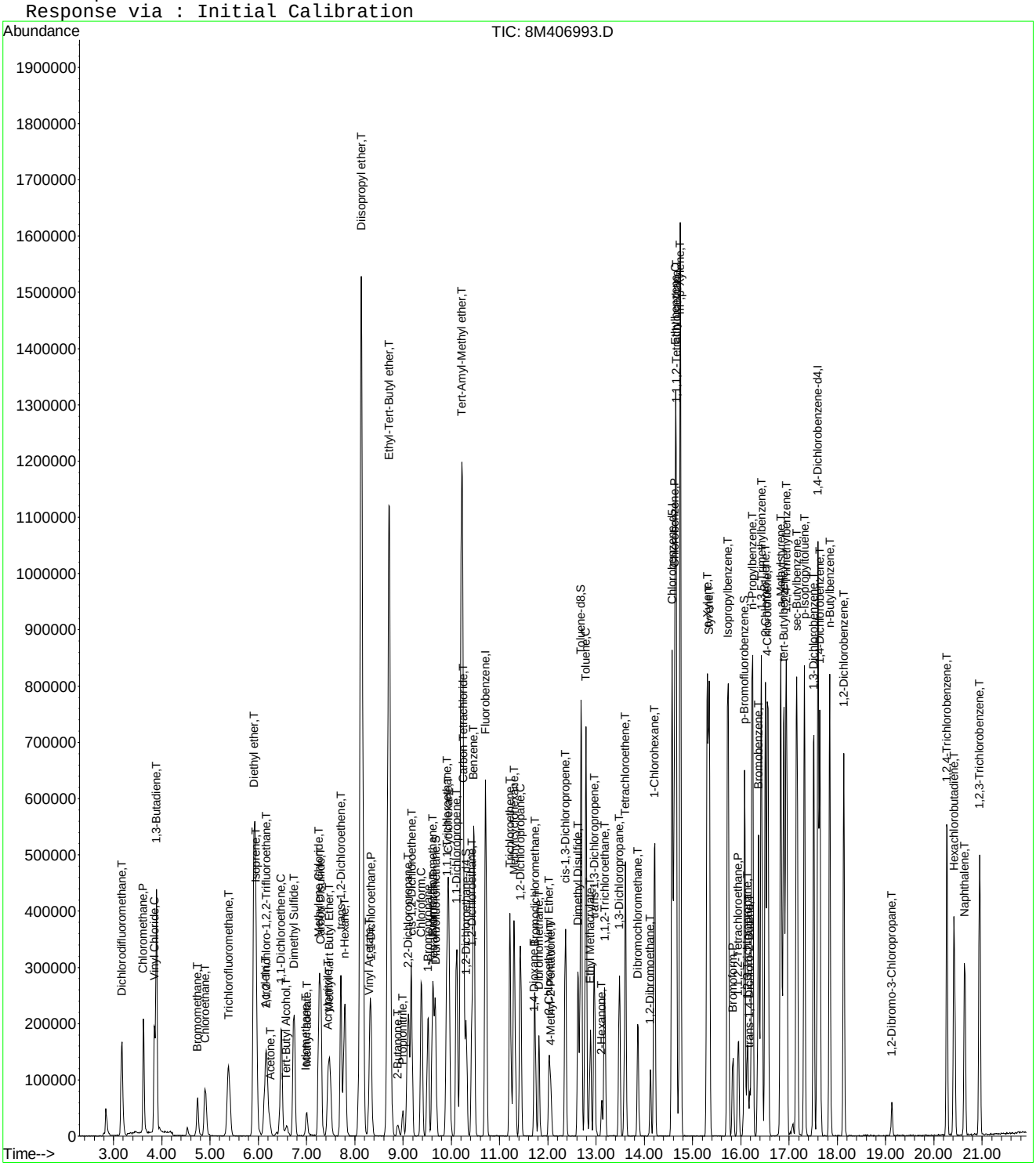

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2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW26-082015	**Prep Method:**	6850	**Prep Date:**	08/31/2015 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG537121	**Analyst:**	JWR	**Run Date:**	08/31/2015 13:00
Collect Date:	08/20/2015 08:55	**Dilution:**	1	**File ID:**	1LM.LM31510
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW26MS-082015	**Prep Method:**	6850	**Prep Date:**	08/31/2015 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG537121	**Analyst:**	JWR	**Run Date:**	08/31/2015 13:18
Collect Date:	08/20/2015 08:55	**Dilution:**	1	**File ID:**	1LM.LM31511
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.232	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW26MSD-082015	**Prep Method:**	6850	**Prep Date:**	08/31/2015 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG537121	**Analyst:**	JWR	**Run Date:**	08/31/2015 13:37
Collect Date:	08/20/2015 08:55	**Dilution:**	1	**File ID:**	1LM.LM31512
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.242	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW21-082015	**Prep Method:**	6850	**Prep Date:**	08/31/2015 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG537121	**Analyst:**	JWR	**Run Date:**	08/31/2015 13:56
Collect Date:	08/20/2015 10:00	**Dilution:**	1	**File ID:**	1LM.LM31513
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.670		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15081251-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW01-082015	**Prep Method:**	6850	**Prep Date:**	08/31/2015 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG537121	**Analyst:**	JWR	**Run Date:**	08/31/2015 14:15
Collect Date:	08/20/2015 10:23	**Dilution:**	1	**File ID:**	1LM.LM31514
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW28-082015	**Prep Method:**	6850	**Prep Date:**	08/31/2015 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG537121	**Analyst:**	JWR	**Run Date:**	08/31/2015 14:34
Collect Date:	08/20/2015 11:25	**Dilution:**	1	**File ID:**	1LM.LM31515
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.688		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15081251-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW27-082015	**Prep Method:**	6850	**Prep Date:**	08/31/2015 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG537121	**Analyst:**	JWR	**Run Date:**	08/31/2015 14:53
Collect Date:	08/20/2015 13:35	**Dilution:**	1	**File ID:**	1LM.LM31516
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW15-082015	**Prep Method:**	6850	**Prep Date:**	08/31/2015 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG537121	**Analyst:**	JWR	**Run Date:**	08/31/2015 17:06
Collect Date:	08/20/2015 14:40	**Dilution:**	1	**File ID:**	1LM.LM31523
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.237	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-09	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW15FD-082015	**Prep Method:**	6850	**Prep Date:**	08/31/2015 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG537121	**Analyst:**	JWR	**Run Date:**	08/31/2015 17:25
Collect Date:	08/20/2015 14:40	**Dilution:**	1	**File ID:**	1LM.LM31524
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.155	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-10	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW16-082015	**Prep Method:**	6850	**Prep Date:**	08/31/2015 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG537121	**Analyst:**	JWR	**Run Date:**	08/31/2015 17:44
Collect Date:	08/20/2015 15:50	**Dilution:**	1	**File ID:**	1LM.LM31525
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-11	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW19-082115	**Prep Method:**	6850	**Prep Date:**	08/31/2015 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG537121	**Analyst:**	JWR	**Run Date:**	08/31/2015 18:03
Collect Date:	08/21/2015 08:15	**Dilution:**	1	**File ID:**	1LM.LM31526
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-12	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW20-082115	**Prep Method:**	6850	**Prep Date:**	08/31/2015 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG537121	**Analyst:**	JWR	**Run Date:**	08/31/2015 18:22
Collect Date:	08/21/2015 09:30	**Dilution:**	1	**File ID:**	1LM.LM31527
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-13	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW09-082115	**Prep Method:**	6850	**Prep Date:**	08/31/2015 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG537121	**Analyst:**	JWR	**Run Date:**	08/31/2015 18:40
Collect Date:	08/21/2015 10:35	**Dilution:**	1	**File ID:**	1LM.LM31528
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-14	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW09FD-082115	**Prep Method:**	6850	**Prep Date:**	08/31/2015 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG537121	**Analyst:**	JWR	**Run Date:**	08/31/2015 19:00
Collect Date:	08/21/2015 10:35	**Dilution:**	1	**File ID:**	1LM.LM31529
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-15	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW10-082115	**Prep Method:**	6850	**Prep Date:**	08/31/2015 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG537121	**Analyst:**	JWR	**Run Date:**	08/31/2015 20:15
Collect Date:	08/21/2015 11:40	**Dilution:**	1	**File ID:**	1LM.LM31533
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-16	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW07-082115	**Prep Method:**	6850	**Prep Date:**	08/31/2015 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG537121	**Analyst:**	JWR	**Run Date:**	08/31/2015 16:09
Collect Date:	08/21/2015 14:45	**Dilution:**	1	**File ID:**	1LM.LM31520
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-17	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW07MS-082115	**Prep Method:**	6850	**Prep Date:**	08/31/2015 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG537121	**Analyst:**	JWR	**Run Date:**	08/31/2015 16:28
Collect Date:	08/21/2015 14:45	**Dilution:**	1	**File ID:**	1LM.LM31521
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.242	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15081251-18	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	50WW07MSD-082115	**Prep Method:**	6850	**Prep Date:**	08/31/2015 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	08/06/2015 00:22
Workgroup #:	WG537121	**Analyst:**	JWR	**Run Date:**	08/31/2015 16:47
Collect Date:	08/21/2015 14:45	**Dilution:**	1	**File ID:**	1LM.LM31522
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.230	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15081251
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1413 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG537121-01 MCT	9,960.	
-02 Blank	0.48	
-03 LCS	0.56	
L15081251-01 RS	5,430.	
-02 MS	5,430.	
-03 MSD	5,440.	
-04	8,870.	
-05	878.	
-06	123.5	
-07	1,517.	
-08	1,773.	
-09	1,770.	
-10	261.	
-11	1,298.	
-12	1,687.	
-13	2,650.	
-14	2,640.	
-15	1,524.	
-16 RS	1,655.	
-17 MS	1,659.	
-18 MSD	1,663.	

Analyst: John Richards

Date/Time: 09/01/15 / 10:00

DCN#112913

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 080515_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 140701254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: ICAL-Only

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD69537 (08/05/2015)

CCV STD: NA LCS STD: NA MS/MSD STD: NA

Comments: ICAL WG533952 : Alternate Source STD69913

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM31292	WG533952-01 CCB	1	1		08/05/15 22:09
2	1LM.LM31293	WG533952-02 STD (0.1 ug/L)	1	1	STD69537	08/05/15 22:28
3	1LM.LM31294	WG533952-03 STD (0.2 ug/L)	1	1	STD69537	08/05/15 22:47
4	1LM.LM31295	WG533952-04 STD (0.5 ug/L)	1	1	STD69537	08/05/15 23:06
5	1LM.LM31296	WG533952-05 STD (1.0 ug/L)	1	1	STD69537	08/05/15 23:25
6	1LM.LM31297	WG533952-06 STD (2.0 ug/L)	1	1	STD69537	08/05/15 23:44
7	1LM.LM31298	WG533952-07 STD (5.0 ug/L)	1	1	STD69537	08/06/15 00:03
8	1LM.LM31299	WG533952-08 STD (10 ug/L)	1	1	STD69537	08/06/15 00:22
9	1LM.LM31300	WG533952-09 SSCV (1.0 ug/L)	1	1	STD69913	08/06/15 00:41

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 10-AUG-15

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 083115_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 140701254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG537121 (waters)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD69537 (08/05/2015)

CCV STD: STD69537 LCS STD: STD69913 MS/MSD STD: STD69913

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM31504	WG537122-01 CCB	1	1		08/31/15 11:06
2	1LM.LM31505	WG537122-02 CCV (1.0ug/L)	1	1	STD69537	08/31/15 11:25
3	1LM.LM31506	WG537121-10 MRL (0.2ug/L)	1	1	STD69537	08/31/15 11:44
4	1LM.LM31507	WG537121-01 MCT (0.2ug/L)	1	1	STD69913	08/31/15 12:03
5	1LM.LM31508	WG537121-02 BLANK	1	1		08/31/15 12:22
6	1LM.LM31509	WG537121-03 LCS (0.2ug/L)	1	1	STD69913	08/31/15 12:41
7	1LM.LM31510	L15081251-01 RS	1	1		08/31/15 13:00
8	1LM.LM31511	L15081251-02 MS	1	1	STD69913	08/31/15 13:18
9	1LM.LM31512	L15081251-03 MSD	1	1	STD69913	08/31/15 13:37
10	1LM.LM31513	L15081251-04	1	1		08/31/15 13:56
11	1LM.LM31514	L15081251-05	1	1		08/31/15 14:15
12	1LM.LM31515	L15081251-06	1	1		08/31/15 14:34
13	1LM.LM31516	L15081251-07	1	1		08/31/15 14:53
14	1LM.LM31517	WG537122-03 CCV (1.0ug/L)	1	1	STD69537	08/31/15 15:12
15	1LM.LM31518	WG537121-11 MRL (0.2ug/L)	1	1	STD69537	08/31/15 15:31
16	1LM.LM31519	WG537122-04 CCB	1	1		08/31/15 15:50
17	1LM.LM31520	L15081251-16 RS	1	1		08/31/15 16:09
18	1LM.LM31521	L15081251-17 MS	1	1	STD69913	08/31/15 16:28
19	1LM.LM31522	L15081251-18 MSD	1	1	STD69913	08/31/15 16:47
20	1LM.LM31523	L15081251-08	1	1		08/31/15 17:06
21	1LM.LM31524	L15081251-09	1	1		08/31/15 17:25
22	1LM.LM31525	L15081251-10	1	1		08/31/15 17:44
23	1LM.LM31526	L15081251-11	1	1		08/31/15 18:03
24	1LM.LM31527	L15081251-12	1	1		08/31/15 18:22
25	1LM.LM31528	L15081251-13	1	1		08/31/15 18:40
26	1LM.LM31529	L15081251-14	1	1		08/31/15 19:00
27	1LM.LM31530	WG537122-05 CCV (1.0ug/L)	1	1	STD69537	08/31/15 19:18
28	1LM.LM31531	WG537121-12 MRL (0.2ug/L)	1	1	STD69537	08/31/15 19:37
29	1LM.LM31532	WG537122-06 CCB	1	1		08/31/15 19:56
30	1LM.LM31533	L15081251-15	1	1		08/31/15 20:15
31	1LM.LM31534	WG537122-07 CCV (1.0ug/L)	1	1	STD69537	08/31/15 20:34
32	1LM.LM31535	WG537121-13 MRL (0.2ug/L)	1	1	STD69537	08/31/15 20:53
33	1LM.LM31536	WG537122-08 CCB	1	1		08/31/15 21:12

Page: 1 Approved: 01-SEP-15

Microbac Laboratories Inc.

Data Checklist

Date: 05-AUG-2015
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG533952
Runlog ID: 69666
Analytical Workgroups: ICAL ONLY

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	NA
Limit of quantitation verification (LOQV) (LCMS)	NA
Special standards	NA
Blanks	NA
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	NA
Recoveries	NA
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	NA
Samples	NA
TCL hits	NA
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 06-AUG-2015 John Richards

Secondary Reviewer: 10-AUG-2015 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-10-2015 15:44:17

Microbac Laboratories Inc.

Data Checklist

Date: 31-AUG-2015
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 70200
Analytical Workgroups: L15081251

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 01-SEP-2015 John Richards

Secondary Reviewer: 01-SEP-2015 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: SEP-01-2015 11:16:59

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG537121

Login Number: L15081251

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW26-082015	01	08/20/15					08/31/2015	11.1	28		08/31/15	.1	28	
50WW26MS-082015	02	08/20/15					08/31/2015	11.1	28		08/31/15	.1	28	
50WW26MSD-082015	03	08/20/15					08/31/2015	11.1	28		08/31/15	.1	28	
50WW21-082015	04	08/20/15					08/31/2015	11	28		08/31/15	.1	28	
50WW01-082015	05	08/20/15					08/31/2015	11	28		08/31/15	.1	28	
50WW28-082015	06	08/20/15					08/31/2015	11	28		08/31/15	.1	28	
50WW27-082015	07	08/20/15					08/31/2015	10.9	28		08/31/15	.2	28	
50WW15-082015	08	08/20/15					08/31/2015	10.8	28		08/31/15	.3	28	
50WW15FD-082015	09	08/20/15					08/31/2015	10.8	28		08/31/15	.3	28	
50WW16-082015	10	08/20/15					08/31/2015	10.8	28		08/31/15	.3	28	
50WW19-082115	11	08/21/15					08/31/2015	10.1	28		08/31/15	.3	28	
50WW20-082115	12	08/21/15					08/31/2015	10.1	28		08/31/15	.3	28	
50WW09-082115	13	08/21/15					08/31/2015	10	28		08/31/15	.3	28	
50WW09FD-082115	14	08/21/15					08/31/2015	10	28		08/31/15	.3	28	
50WW10-082115	15	08/21/15					08/31/2015	10	28		08/31/15	.4	28	
50WW07-082115	16	08/21/15					08/31/2015	9.8	28		08/31/15	.2	28	
50WW07MS-082115	17	08/21/15					08/31/2015	9.8	28		08/31/15	.2	28	
50WW07MSD-082115	18	08/21/15					08/31/2015	9.8	28		08/31/15	.2	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4365978
Report generated 09/01/2015 11:39

METHOD BLANK SUMMARY

Login Number: L15081251
Blank File ID: 1LM.LM31508
Prep Date: 08/31/15 11:00
Analyzed Date: 08/31/15 12:22
Analyst: JWR

Work Group: WG537121
Blank Sample ID: WG537121-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG537121-10	1LM.LM31506	08/31/15 11:44	01
MCT	WG537121-01	1LM.LM31507	08/31/15 12:03	01
LCS	WG537121-03	1LM.LM31509	08/31/15 12:41	01
50WW26-082015	L15081251-01	1LM.LM31510	08/31/15 13:00	01
50WW26MS-082015	L15081251-02	1LM.LM31511	08/31/15 13:18	01
50WW26MSD-082015	L15081251-03	1LM.LM31512	08/31/15 13:37	01
50WW21-082015	L15081251-04	1LM.LM31513	08/31/15 13:56	01
50WW01-082015	L15081251-05	1LM.LM31514	08/31/15 14:15	01
50WW28-082015	L15081251-06	1LM.LM31515	08/31/15 14:34	01
50WW27-082015	L15081251-07	1LM.LM31516	08/31/15 14:53	01
QCMRL	WG537121-11	1LM.LM31518	08/31/15 15:31	01
50WW07-082115	L15081251-16	1LM.LM31520	08/31/15 16:09	01
50WW07MS-082115	L15081251-17	1LM.LM31521	08/31/15 16:28	01
50WW07MSD-082115	L15081251-18	1LM.LM31522	08/31/15 16:47	01
50WW15-082015	L15081251-08	1LM.LM31523	08/31/15 17:06	01
50WW15FD-082015	L15081251-09	1LM.LM31524	08/31/15 17:25	01
50WW16-082015	L15081251-10	1LM.LM31525	08/31/15 17:44	01
50WW19-082115	L15081251-11	1LM.LM31526	08/31/15 18:03	01
50WW20-082115	L15081251-12	1LM.LM31527	08/31/15 18:22	01
50WW09-082115	L15081251-13	1LM.LM31528	08/31/15 18:40	01
50WW09FD-082115	L15081251-14	1LM.LM31529	08/31/15 19:00	01
QCMRL	WG537121-12	1LM.LM31531	08/31/15 19:37	01
50WW10-082115	L15081251-15	1LM.LM31533	08/31/15 20:15	01
QCMRL	WG537121-13	1LM.LM31535	08/31/15 20:53	01

Report Name: BLANK_SUMMARY
PDF File ID: 4365979
Report generated 09/01/2015 11:39

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15081251 Prep Date: 08/31/15 11:00 Sample ID: WG537121-02
Instrument ID: LCMS1 Run Date: 08/31/15 12:22 Prep Method: 6850
File ID: 1LM.LM31508 Analyst: JWR Method: 6850
Workgroup (AAB#): WG537121 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-06-AUG-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4365980
01-SEP-2015 11:39

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15081251 Run Date: 08/31/2015 Sample ID: WG537121-03
Instrument ID: LCMS1 Run Time: 12:41 Prep Method: 6850
File ID: 1LM.LM31509 Analyst: JWR Method: 6850
Workgroup (AAB#): WG537121 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD69913 Cal ID: LCMS1-06-AUG-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	0.200	0.212	106	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4365981
Report generated: 09/01/2015 11:39

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L15081251 Cal ID: LCMS1- 06-AUG-15 Worknum: WG537121
Instrument ID: LCMS1 Contract #: Prep Method: 6850
Parent ID: L15081251-01 File ID: 1LM.LM31510 Dil: 1 Method: 6850
Sample ID: L15081251-02 MS File ID: 1LM.LM31511 Dil: 1 Matrix: Water
Sample ID: L15081251-03 MSD File ID: 1LM.LM31512 Dil: 1 Units: ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Perchlorate	0.0512	0.200	0.232	90.4	0.200	0.242	95.4	4.22	80 - 120	15	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4365982
Report generated 09/01/2015 11:39

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L15081251 Cal ID: LCMS1- 06-AUG-15 Worknum: WG537121
Instrument ID: LCMS1 Contract #: Prep Method: 6850
Parent ID: L15081251-16 File ID: 1LM.LM31520 Dil: 1 Method: 6850
Sample ID: L15081251-17 MS File ID: 1LM.LM31521 Dil: 1 Matrix: Water
Sample ID: L15081251-18 MSD File ID: 1LM.LM31522 Dil: 1 Units: ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Perchlorate	0.0424	0.200	0.242	99.8	0.200	0.230	93.8	5.08	80 - 120	15	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4365982
Report generated 09/01/2015 11:39

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L15081251
Analytical Method: 6850
ICAL Workgroup: WG533952

Instrument ID: LCMS1
Initial Calibration Date: 06-AUG-15 00:22
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.372	8.13	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4366022
Report generated 09/01/2015 11:39

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15081251

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 06-AUG-15 00:22

Column ID: F

Analyte	WG533952-02			WG533952-03			WG533952-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	11400.0000	1.406	0.200	25600.0000	1.446	0.500	59400.0000	1.351

INT_CAL - Modified 03/06/2008
PDF File ID: 4366022
Report generated 09/01/2015 11:39

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15081251

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 06-AUG-15 00:22

Column ID: F

Analyte	WG533952-05			WG533952-06			WG533952-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	112000.000	1.326	2.00	231000.000	1.381	5.00	550000.000	1.342

INT_CAL - Modified 03/06/2008
PDF File ID: 4366022
Report generated 09/01/2015 11:39

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L15081251

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 06-AUG-15 00:22

Column ID: F

Analyte	WG533952-08		
	CONC	RESP	RF
Perchlorate	10.0	975000.000	1.354

INT_CAL - Modified 03/06/2008

PDF File ID: 4366022

Report generated 09/01/2015 11:39

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15081251 Run Date: 08/06/2015 Sample ID: WG533952-09
Instrument ID: LCMS1 Run Time: 00:41 Method: 6850
File ID: 1LM.LM31300 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG533952 Cal ID: LCMS1 - 06-AUG-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.956	ug/L	1.30	4.40	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4366027
Report generated 09/01/2015 11:39

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15081251
Run Date: 08/31/2015
Sample ID: WG537122-01
Instrument ID: LCMS1
Run Time: 11:06
Method: 6850
File ID: 1LM.LM31504
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG537121
Cal ID: LCMS1 - 06-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4365985
Report generated 09/01/2015 11:39

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15081251
Run Date: 08/31/2015
Sample ID: WG537122-04
Instrument ID: LCMS1
Run Time: 15:50
Method: 6850
File ID: 1LM.LM31519
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG537121
Cal ID: LCMS1 - 06-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4365985
Report generated 09/01/2015 11:39

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15081251
Run Date: 08/31/2015
Sample ID: WG537122-06
Instrument ID: LCMS1
Run Time: 19:56
Method: 6850
File ID: 1LM.LM31532
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG537121
Cal ID: LCMS1 - 06-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4365985
Report generated 09/01/2015 11:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15081251
Run Date: 08/31/2015
Sample ID: WG537122-08
Instrument ID: LCMS1
Run Time: 21:12
Method: 6850
File ID: 1LM.LM31536
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG537121
Cal ID: LCMS1 - 06-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4365985
Report generated 09/01/2015 11:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15081251
Run Date: 08/31/2015
Sample ID: WG537122-02
Instrument ID: LCMS1
Run Time: 11:25
Method: 6850
File ID: 1LM.LM31505
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG537121
Cal ID: LCMS1 - 06-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.09	ug/L	1.48	9.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4365984
Report generated 09/01/2015 11:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15081251
Run Date: 08/31/2015
Sample ID: WG537122-03
Instrument ID: LCMS1
Run Time: 15:12
Method: 6850
File ID: 1LM.LM31517
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG537121
Cal ID: LCMS1 - 06-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.39	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4365984
Report generated 09/01/2015 11:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15081251
Run Date: 08/31/2015
Sample ID: WG537122-05
Instrument ID: LCMS1
Run Time: 19:18
Method: 6850
File ID: 1LM.LM31530
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG537121
Cal ID: LCMS1 - 06-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.39	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4365984
Report generated 09/01/2015 11:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15081251
Run Date: 08/31/2015
Sample ID: WG537122-07
Instrument ID: LCMS1
Run Time: 20:34
Method: 6850
File ID: 1LM.LM31534
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG537121
Cal ID: LCMS1 - 06-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.37	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4365984
Report generated 09/01/2015 11:39

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15081251 Run Date: 08/31/2015 Sample ID: WG537121-10
Instrument ID: LCMS1 Run Time: 11:44 Prep Method: 6850
File ID: 1LM.LM31506 Analyst: JWR Method: 6850
Workgroup (AAB#): WG537121 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-06-AUG-15

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.208	104	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4365983
Report generated 09/01/2015 11:39

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15081251 Run Date: 08/31/2015 Sample ID: WG537121-11

Instrument ID: LCMS1 Run Time: 15:31 Prep Method: 6850

File ID: 1LM.LM31518 Analyst: JWR Method: 6850

Workgroup (AAB#): WG537121 Matrix: Water Units: ug/L

Contract #: Cal ID: LCMS1-06-AUG-15

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.198	99.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4365983
Report generated 09/01/2015 11:39

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15081251 Run Date: 08/31/2015 Sample ID: WG537121-12
Instrument ID: LCMS1 Run Time: 19:37 Prep Method: 6850
File ID: 1LM.LM31531 Analyst: JWR Method: 6850
Workgroup (AAB#): WG537121 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-06-AUG-15

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.209	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4365983
Report generated 09/01/2015 11:39

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L15081251 Run Date: 08/31/2015 Sample ID: WG537121-13
Instrument ID: LCMS1 Run Time: 20:53 Prep Method: 6850
File ID: 1LM.LM31535 Analyst: JWR Method: 6850
Workgroup (AAB#): WG537121 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-06-AUG-15

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.204	102	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4365983
Report generated 09/01/2015 11:39

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L15081251
Instrument ID: LCMS1
Workgroup (AAB#): WG537121

ICAL CCV Number: WG533952-05
CAL ID: LCMS1-06-AUG-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG533952	NA	NA	414000
Upper Limit	NA	NA	621000
Lower Limit	NA	NA	207000
L15081251-01	1.00	01	467000
L15081251-02	1.00	01	453000
L15081251-03	1.00	01	447000
L15081251-04	1.00	01	452000
L15081251-05	1.00	01	467000
L15081251-06	1.00	01	455000
L15081251-07	1.00	01	446000
L15081251-08	1.00	01	463000
L15081251-09	1.00	01	457000
L15081251-10	1.00	01	481000
L15081251-11	1.00	01	443000
L15081251-12	1.00	01	436000
L15081251-13	1.00	01	444000
L15081251-14	1.00	01	447000
L15081251-15	1.00	01	451000
L15081251-16	1.00	01	445000
L15081251-17	1.00	01	455000
L15081251-18	1.00	01	452000
WG537121-02	1.00	01	474000
WG537121-03	1.00	01	439000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4365986
Report generated 09/01/2015 11:39

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081251	**Prep Method:**	6850	**Samplenum:**	L15081251-01
Instrument:	LCMS1	**Prep Date:**	08/31/2015 11:00	**File ID:**	1LM.LM31510
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG537121	**Analysis Date:**	08/31/2015 13:00	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	7210	1930	3.74	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081251	**Prep Method:**	6850	**Samplenum:**	L15081251-02
Instrument:	LCMS1	**Prep Date:**	08/31/2015 11:00	**File ID:**	1LM.LM31511
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG537121	**Analysis Date:**	08/31/2015 13:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	29200	10200	2.86	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081251	**Prep Method:**	6850	**Samplenum:**	L15081251-03
Instrument:	LCMS1	**Prep Date:**	08/31/2015 11:00	**File ID:**	1LM.LM31512
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG537121	**Analysis Date:**	08/31/2015 13:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	30000	9550	3.14	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081251	**Prep Method:**	6850	**Samplenum:**	L15081251-04
Instrument:	LCMS1	**Prep Date:**	08/31/2015 11:00	**File ID:**	1LM.LM31513
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG537121	**Analysis Date:**	08/31/2015 13:56	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82600	27000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081251	**Prep Method:**	6850	**Samplenum:**	L15081251-05
Instrument:	LCMS1	**Prep Date:**	08/31/2015 11:00	**File ID:**	1LM.LM31514
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG537121	**Analysis Date:**	08/31/2015 14:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1830	508	3.60	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081251	**Prep Method:**	6850	**Samplenum:**	L15081251-06
Instrument:	LCMS1	**Prep Date:**	08/31/2015 11:00	**File ID:**	1LM.LM31515
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG537121	**Analysis Date:**	08/31/2015 14:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	85200	28000	3.04	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081251	**Prep Method:**	6850	**Samplenum:**	L15081251-07
Instrument:	LCMS1	**Prep Date:**	08/31/2015 11:00	**File ID:**	1LM.LM31516
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG537121	**Analysis Date:**	08/31/2015 14:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	11000	3890	2.83	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081251	**Prep Method:**	6850	**Samplenum:**	L15081251-08
Instrument:	LCMS1	**Prep Date:**	08/31/2015 11:00	**File ID:**	1LM.LM31523
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG537121	**Analysis Date:**	08/31/2015 17:06	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	30300	10000	3.03	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081251	**Prep Method:**	6850	**Samplenum:**	L15081251-09
Instrument:	LCMS1	**Prep Date:**	08/31/2015 11:00	**File ID:**	1LM.LM31524
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG537121	**Analysis Date:**	08/31/2015 17:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	19900	6680	2.98	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081251	**Prep Method:**	6850	**Samplenum:**	L15081251-10
Instrument:	LCMS1	**Prep Date:**	08/31/2015 11:00	**File ID:**	1LM.LM31525
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG537121	**Analysis Date:**	08/31/2015 17:44	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	5080	2010	2.53	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081251	**Prep Method:**	6850	**Samplenum:**	L15081251-11
Instrument:	LCMS1	**Prep Date:**	08/31/2015 11:00	**File ID:**	1LM.LM31526
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG537121	**Analysis Date:**	08/31/2015 18:03	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	5630	1830	3.08	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081251	**Prep Method:**	6850	**Samplenum:**	L15081251-12
Instrument:	LCMS1	**Prep Date:**	08/31/2015 11:00	**File ID:**	1LM.LM31527
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG537121	**Analysis Date:**	08/31/2015 18:22	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	2130	557	3.82	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081251	**Prep Method:**	6850	**Samplenum:**	L15081251-13
Instrument:	LCMS1	**Prep Date:**	08/31/2015 11:00	**File ID:**	1LM.LM31528
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG537121	**Analysis Date:**	08/31/2015 18:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	9030	3310	2.73	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081251	**Prep Method:**	6850	**Samplenum:**	L15081251-14
Instrument:	LCMS1	**Prep Date:**	08/31/2015 11:00	**File ID:**	1LM.LM31529
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG537121	**Analysis Date:**	08/31/2015 19:00	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	6510	1990	3.27	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081251	**Prep Method:**	6850	**Samplenum:**	L15081251-15
Instrument:	LCMS1	**Prep Date:**	08/31/2015 11:00	**File ID:**	1LM.LM31533
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG537121	**Analysis Date:**	08/31/2015 20:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	8630	2760	3.13	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081251	**Prep Method:**	6850	**Samplenum:**	L15081251-16
Instrument:	LCMS1	**Prep Date:**	08/31/2015 11:00	**File ID:**	1LM.LM31520
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG537121	**Analysis Date:**	08/31/2015 16:09	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	5820	1930	3.02	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081251	**Prep Method:**	6850	**Samplenum:**	L15081251-17
Instrument:	LCMS1	**Prep Date:**	08/31/2015 11:00	**File ID:**	1LM.LM31521
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG537121	**Analysis Date:**	08/31/2015 16:28	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	30400	9250	3.29	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081251	**Prep Method:**	6850	**Samplenum:**	L15081251-18
Instrument:	LCMS1	**Prep Date:**	08/31/2015 11:00	**File ID:**	1LM.LM31522
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG537121	**Analysis Date:**	08/31/2015 16:47	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	28900	9400	3.07	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081251	**Prep Method:**		**Samplenum:**	WG533952-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31293
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG537121	**Analysis Date:**	08/05/2015 22:28	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	11400	3660	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081251	**Prep Method:**		**Samplenum:**	WG533952-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31294
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG537121	**Analysis Date:**	08/05/2015 22:47	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	25600	7580	3.38	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081251	**Prep Method:**		**Samplenum:**	WG533952-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31295
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG537121	**Analysis Date:**	08/05/2015 23:06	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	59400	19000	3.13	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081251	**Prep Method:**		**Samplenum:**	WG533952-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31296
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG537121	**Analysis Date:**	08/05/2015 23:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	112000	35600	3.15	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081251	**Prep Method:**		**Samplenum:**	WG533952-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31297
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG537121	**Analysis Date:**	08/05/2015 23:44	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	231000	70300	3.29	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081251	**Prep Method:**		**Samplenum:**	WG533952-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31298
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG537121	**Analysis Date:**	08/06/2015 00:03	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	550000	170000	3.24	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081251	**Prep Method:**		**Samplenum:**	WG533952-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31299
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG537121	**Analysis Date:**	08/06/2015 00:22	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	975000	304000	3.21	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081251	**Prep Method:**		**Samplenum:**	WG533952-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31300
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG537121	**Analysis Date:**	08/06/2015 00:41	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	109000	34100	3.20	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081251	**Prep Method:**	6850	**Samplenum:**	WG537121-01
Instrument:	LCMS1	**Prep Date:**	08/31/2015 11:00	**File ID:**	1LM.LM31507
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG537121	**Analysis Date:**	08/31/2015 12:03	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	25000	7790	3.21	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081251	**Prep Method:**	6850	**Samplenum:**	WG537121-02
Instrument:	LCMS1	**Prep Date:**	08/31/2015 11:00	**File ID:**	1LM.LM31508
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG537121	**Analysis Date:**	08/31/2015 12:22	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081251	**Prep Method:**	6850	**Samplenum:**	WG537121-03
Instrument:	LCMS1	**Prep Date:**	08/31/2015 11:00	**File ID:**	1LM.LM31509
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG537121	**Analysis Date:**	08/31/2015 12:41	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	25800	8330	3.10	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081251	**Prep Method:**	6850	**Samplenum:**	WG537121-10
Instrument:	LCMS1	**Prep Date:**	08/31/2015 11:00	**File ID:**	1LM.LM31506
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG537121	**Analysis Date:**	08/31/2015 11:44	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	20500	6670	3.07	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081251	**Prep Method:**	6850	**Samplenum:**	WG537121-11
Instrument:	LCMS1	**Prep Date:**	08/31/2015 11:00	**File ID:**	1LM.LM31518
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG537121	**Analysis Date:**	08/31/2015 15:31	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	24200	8010	3.02	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081251	**Prep Method:**	6850	**Samplenum:**	WG537121-12
Instrument:	LCMS1	**Prep Date:**	08/31/2015 11:00	**File ID:**	1LM.LM31531
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG537121	**Analysis Date:**	08/31/2015 19:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	26800	8440	3.18	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081251	**Prep Method:**	6850	**Samplenum:**	WG537121-13
Instrument:	LCMS1	**Prep Date:**	08/31/2015 11:00	**File ID:**	1LM.LM31535
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG537121	**Analysis Date:**	08/31/2015 20:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	24300	8050	3.02	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081251	**Prep Method:**		**Samplenum:**	WG537122-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31504
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG537121	**Analysis Date:**	08/31/2015 11:06	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081251	**Prep Method:**		**Samplenum:**	WG537122-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31505
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG537121	**Analysis Date:**	08/31/2015 11:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	104000	31800	3.27	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081251	**Prep Method:**		**Samplenum:**	WG537122-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31517
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG537121	**Analysis Date:**	08/31/2015 15:12	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	134000	42900	3.12	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081251	**Prep Method:**		**Samplenum:**	WG537122-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31519
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG537121	**Analysis Date:**	08/31/2015 15:50	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	310	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081251	**Prep Method:**		**Samplenum:**	WG537122-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31530
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG537121	**Analysis Date:**	08/31/2015 19:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	132000	40700	3.24	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081251	**Prep Method:**		**Samplenum:**	WG537122-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31532
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG537121	**Analysis Date:**	08/31/2015 19:56	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	668	350	1.91	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081251	**Prep Method:**		**Samplenum:**	WG537122-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31534
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG537121	**Analysis Date:**	08/31/2015 20:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	128000	41100	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L15081251	**Prep Method:**		**Samplenum:**	WG537122-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM31536
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG537121	**Analysis Date:**	08/31/2015 21:12	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	130	0.000	2.3	3.8	*

2.2.1.3 Sample Data

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Data File	LM31510.wiff	**Result Table**	083115_JWR.rdb
Acquisition Date	8/31/2015 1:00:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15081251-01 RS	**Injection Vial**	7.00
Data File	LM31510.wiff	**Injection Volume**	10.00
Acquisition Date	8/31/2015 1:00:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	083115_JWR.rdb
Sample ID	WG537121-04	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.670e+05	9.29	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.210e+03	9.29	N/A	0.0512
Perchlorate conf	1.930e+03	9.29	N/A	0.0427

O18LP (Internal Standard)

RT (Exp. RT): 9.29(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

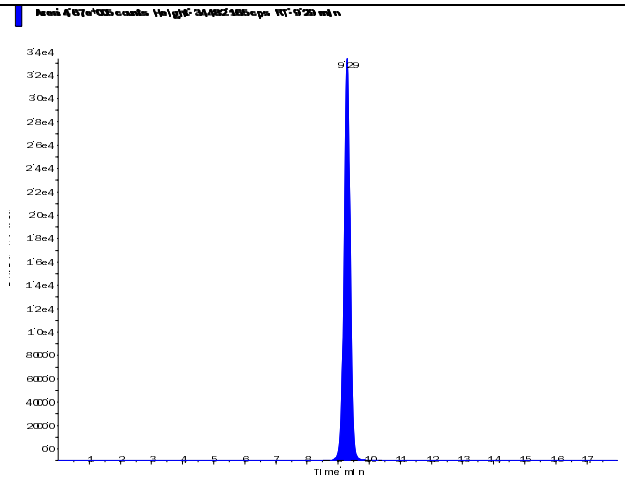

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.29 (9.52) min
Calculated conc:	0.0512 ng/ml
Area Ratio:	0.015
Sample Type:	(Unknown)

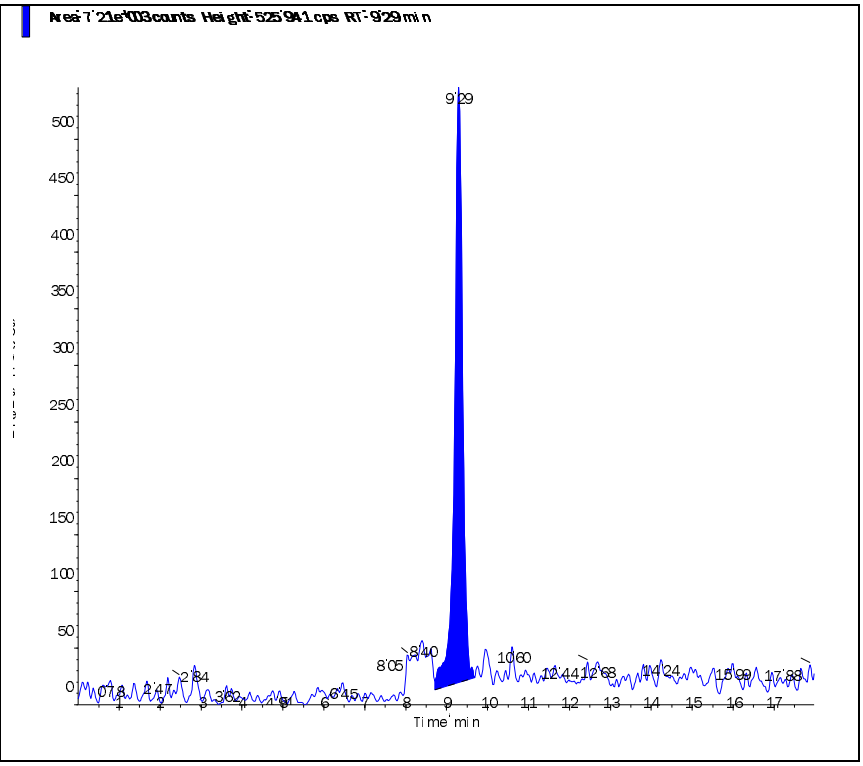

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.29 (9.48) min
Calculated conc:	0.0427 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)

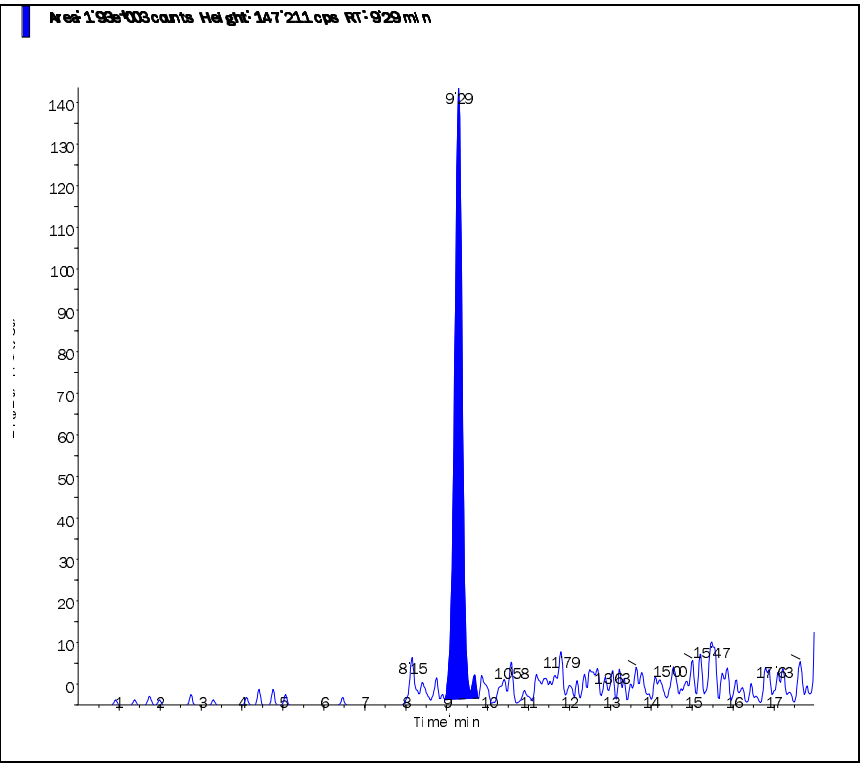

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Data File	LM31511.wiff	**Result Table**	083115_JWR.rdb
Acquisition Date	8/31/2015 1:18:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15081251-02 MS	**Injection Vial**	8.00
Data File	LM31511.wiff	**Injection Volume**	10.00
Acquisition Date	8/31/2015 1:18:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	083115_JWR.rdb
Sample ID	WG537121-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD69913	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.530e+05	9.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.920e+04	9.31	N/A	0.232
Perchlorate conf	1.020e+04	9.30	N/A	0.263

O18LP (Internal Standard)

RT (Exp. RT): 9.30(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

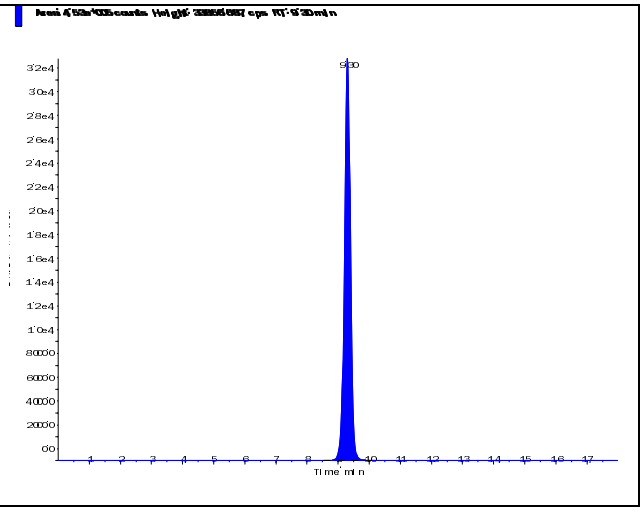

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.31 (9.52) min Calculated conc: 0.232 ng/ml Area Ratio: 0.064 Sample Type: (Unknown)	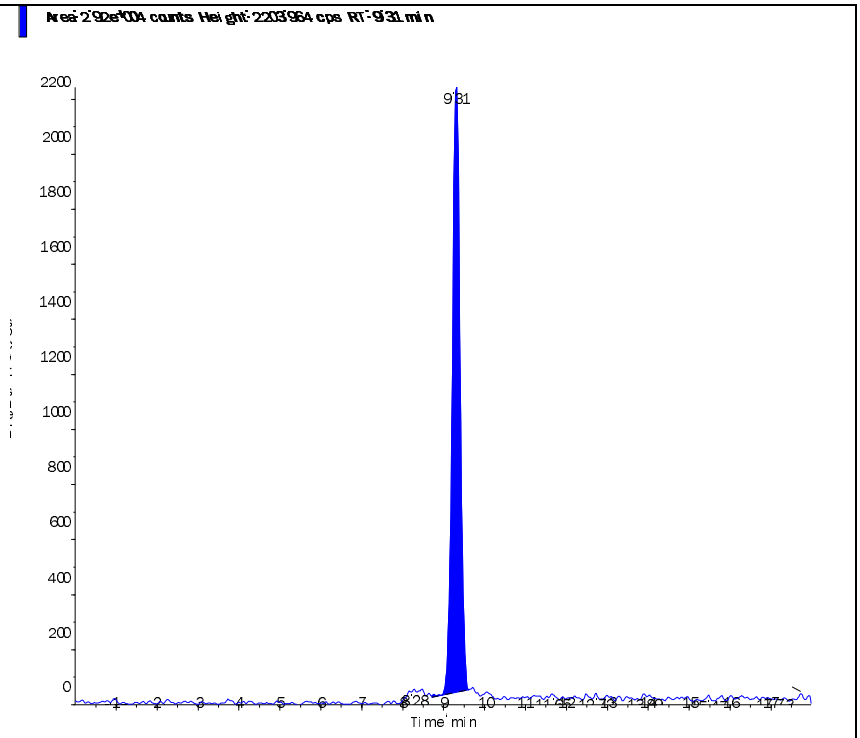
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.30 (9.48) min Calculated conc: 0.263 ng/ml Area Ratio: 0.023 Sample Type: (Unknown)	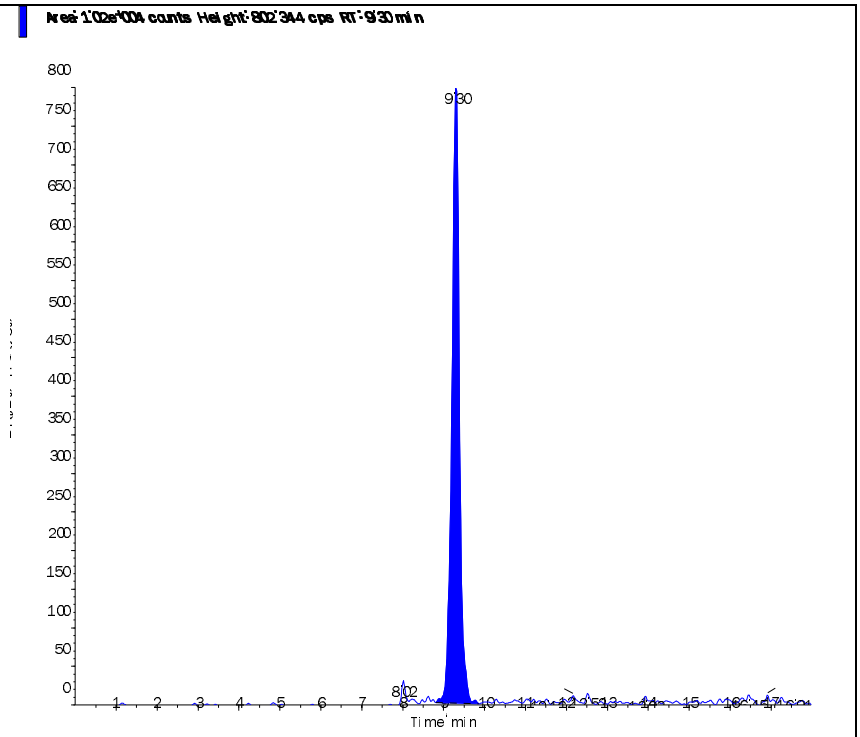

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Data File	LM31512.wiff	**Result Table**	083115_JWR.rdb
Acquisition Date	8/31/2015 1:37:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15081251-03 MSD	**Injection Vial**	9.00
Data File	LM31512.wiff	**Injection Volume**	10.00
Acquisition Date	8/31/2015 1:37:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	083115_JWR.rdb
Sample ID	WG537121-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD69913	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.470e+05	9.32	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.000e+04	9.33	N/A	0.242
Perchlorate conf	9.550e+03	9.31	N/A	0.248

O18LP (Internal Standard)

RT (Exp. RT): 9.32(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

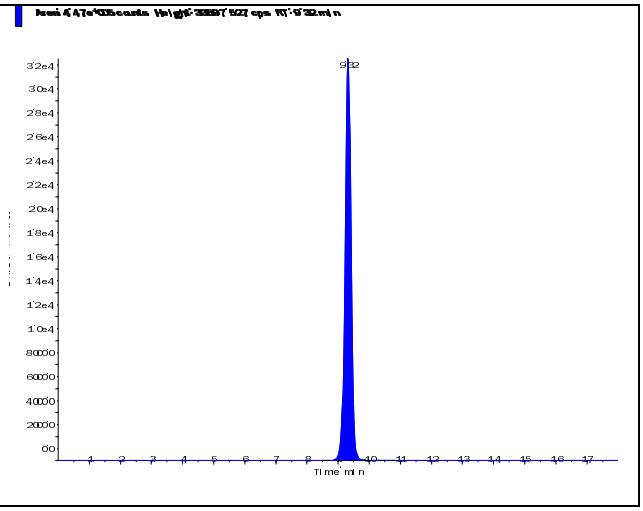

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.33 (9.52) min Calculated conc: 0.242 ng/ml Area Ratio: 0.067 Sample Type: (Unknown)	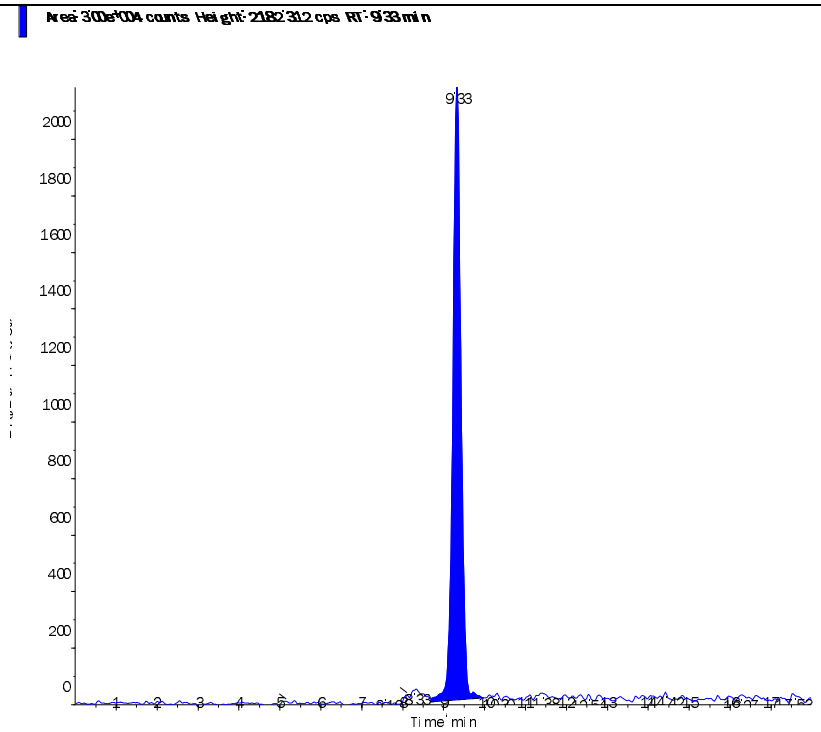
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.31 (9.48) min Calculated conc: 0.248 ng/ml Area Ratio: 0.021 Sample Type: (Unknown)	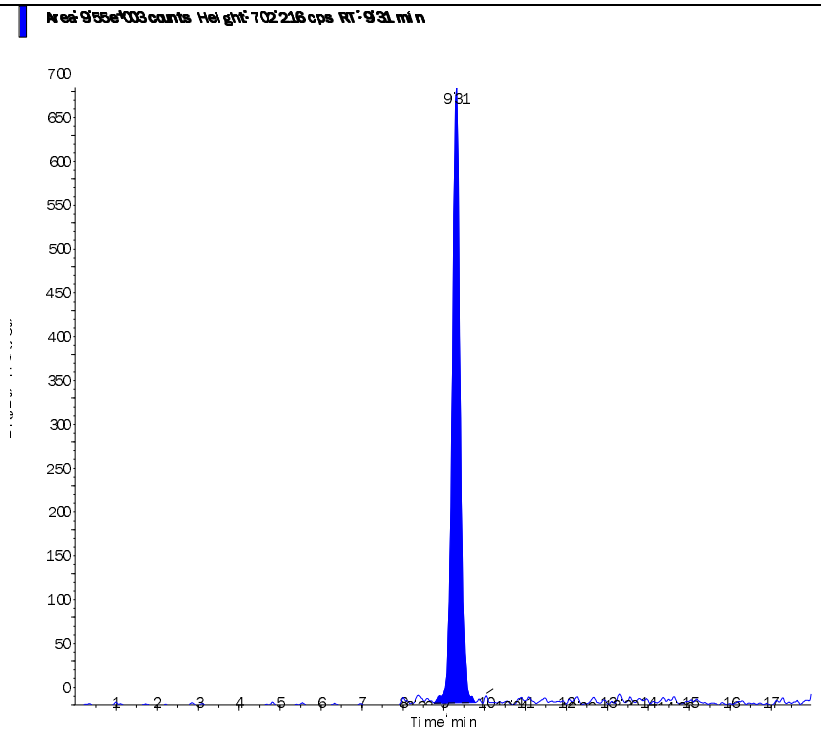

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Data File	LM31513.wiff	**Result Table**	083115_JWR.rdb
Acquisition Date	8/31/2015 1:56:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15081251-04	**Injection Vial**	10.00
Data File	LM31513.wiff	**Injection Volume**	10.00
Acquisition Date	8/31/2015 1:56:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	083115_JWR.rdb
Sample ID	L15081251-04	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.520e+05	9.29	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.260e+04	9.30	N/A	0.67
Perchlorate conf	2.700e+04	9.29	N/A	0.706

O18LP (Internal Standard)

RT (Exp. RT): 9.29(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

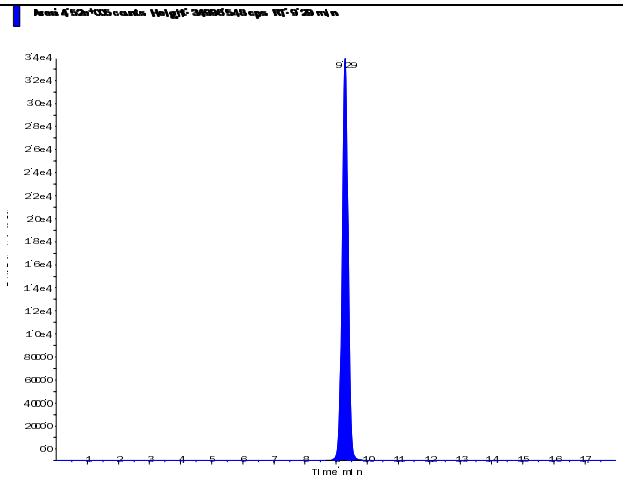

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.30 (9.52) min
Calculated conc:	0.67 ng/ml
Area Ratio:	0.183
Sample Type:	(Unknown)

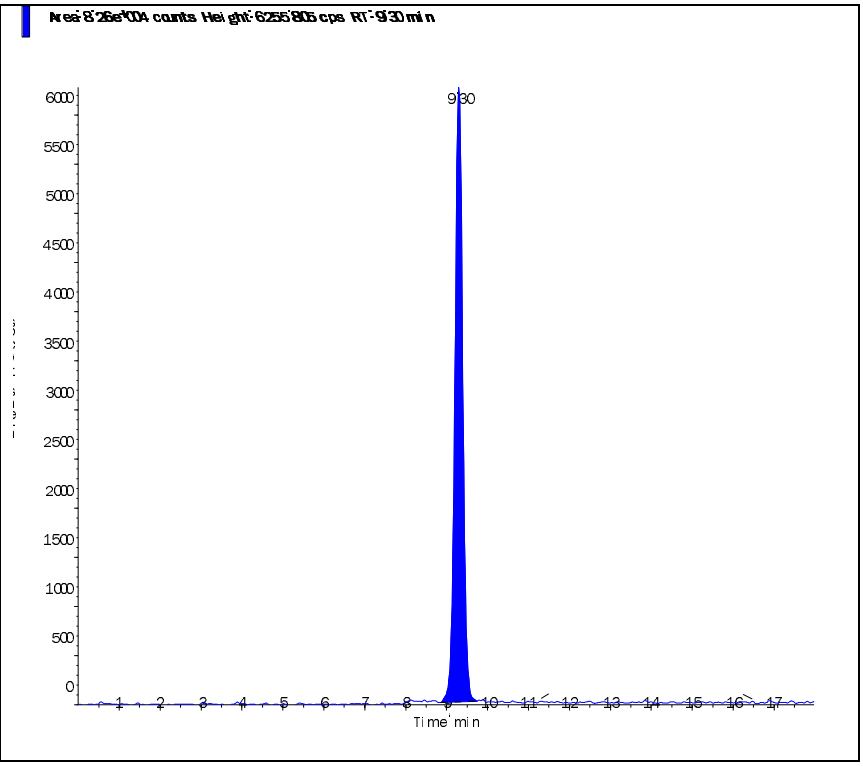

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.29 (9.48) min
Calculated conc:	0.706 ng/ml
Area Ratio:	0.06
Sample Type:	(Unknown)

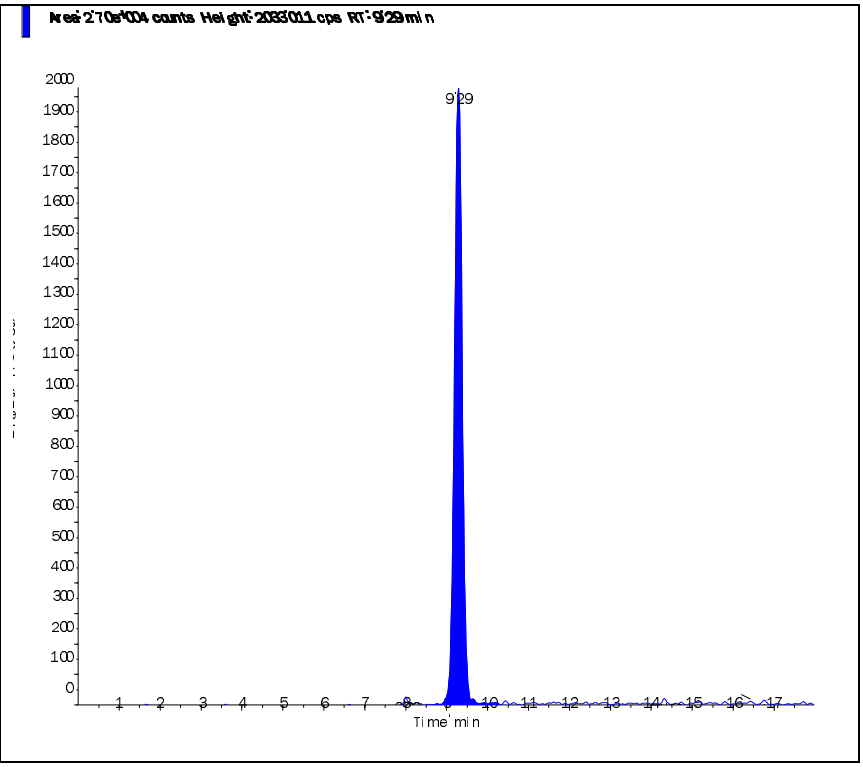

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Data File	LM31514.wiff	**Result Table**	083115_JWR.rdb
Acquisition Date	8/31/2015 2:15:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15081251-05	**Injection Vial**	11.00
Data File	LM31514.wiff	**Injection Volume**	10.00
Acquisition Date	8/31/2015 2:15:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	083115_JWR.rdb
Sample ID	L15081251-05	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.670e+05	9.44	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.830e+03	9.42	N/A	0.0085
Perchlorate conf	5.080e+02	9.45	N/A	0.0065

O18LP (Internal Standard)

RT (Exp. RT): 9.44(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

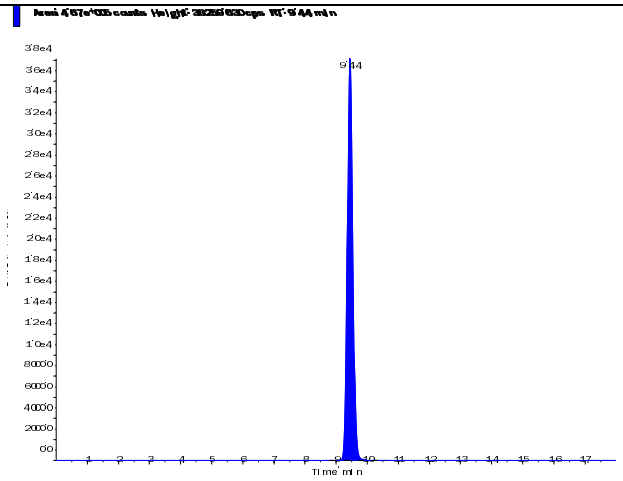

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.42 (9.52) min
Calculated conc:	0.0085 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)

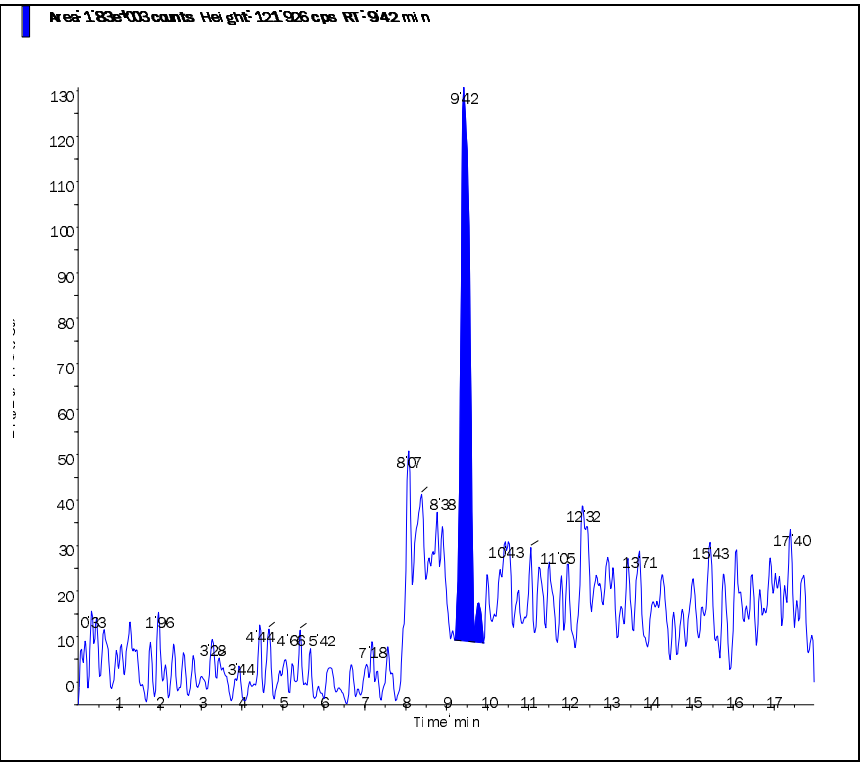

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.45 (9.48) min
Calculated conc:	0.0065 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

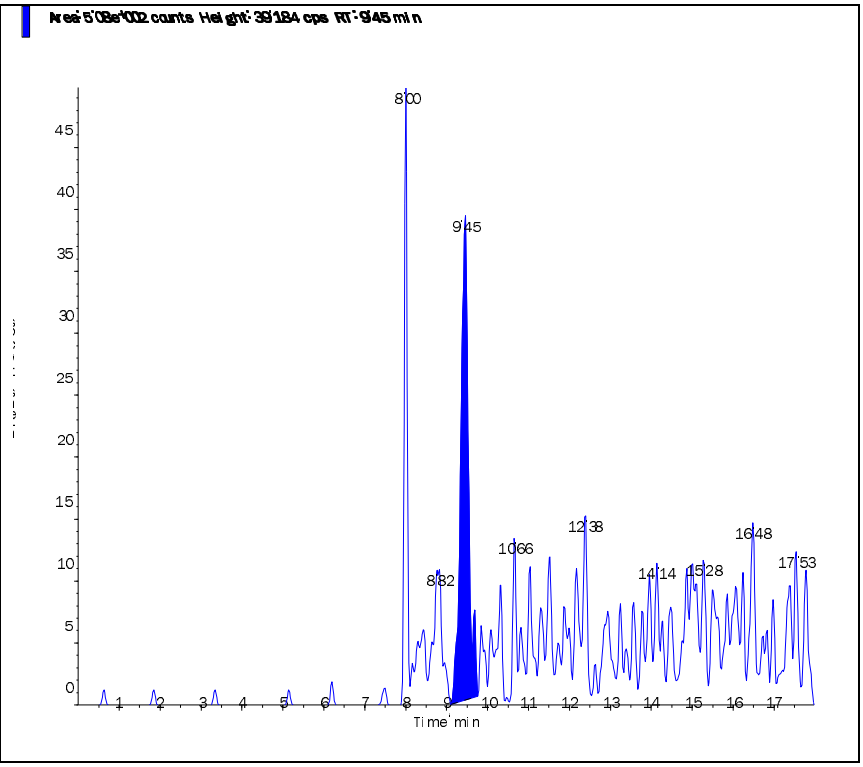

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Data File	LM31515.wiff	**Result Table**	083115_JWR.rdb
Acquisition Date	8/31/2015 2:34:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15081251-06	**Injection Vial**	12.00
Data File	LM31515.wiff	**Injection Volume**	10.00
Acquisition Date	8/31/2015 2:34:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	083115_JWR.rdb
Sample ID	L15081251-06	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.550e+05	9.62	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.520e+04	9.64	N/A	0.688
Perchlorate conf	2.800e+04	9.63	N/A	0.728

O18LP (Internal Standard)

RT (Exp. RT): 9.62(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

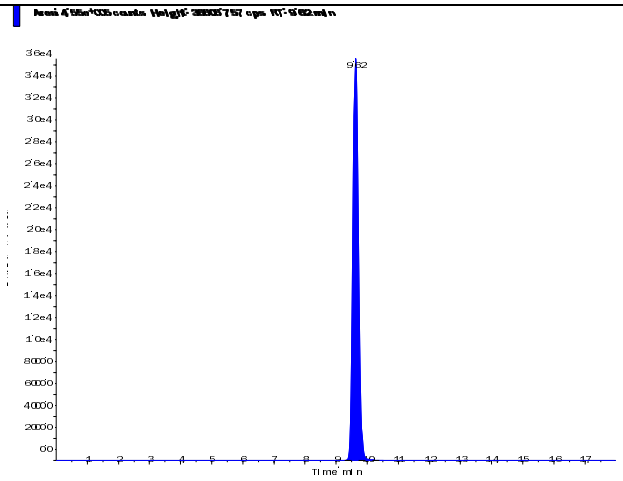

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.64 (9.52) min Calculated conc: 0.688 ng/ml Area Ratio: 0.187 Sample Type: (Unknown)	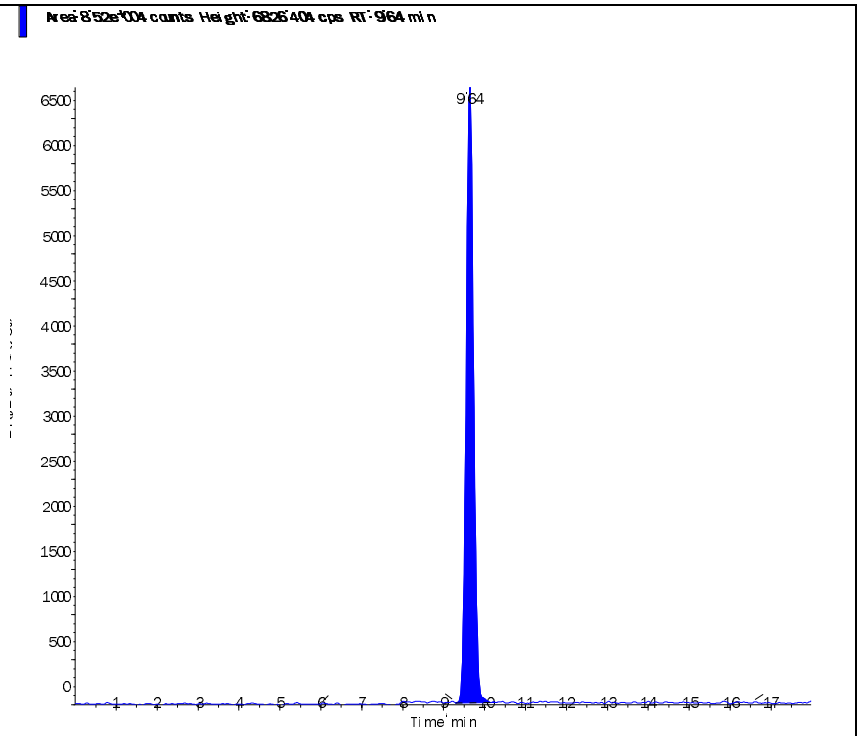
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.63 (9.48) min Calculated conc: 0.728 ng/ml Area Ratio: 0.062 Sample Type: (Unknown)	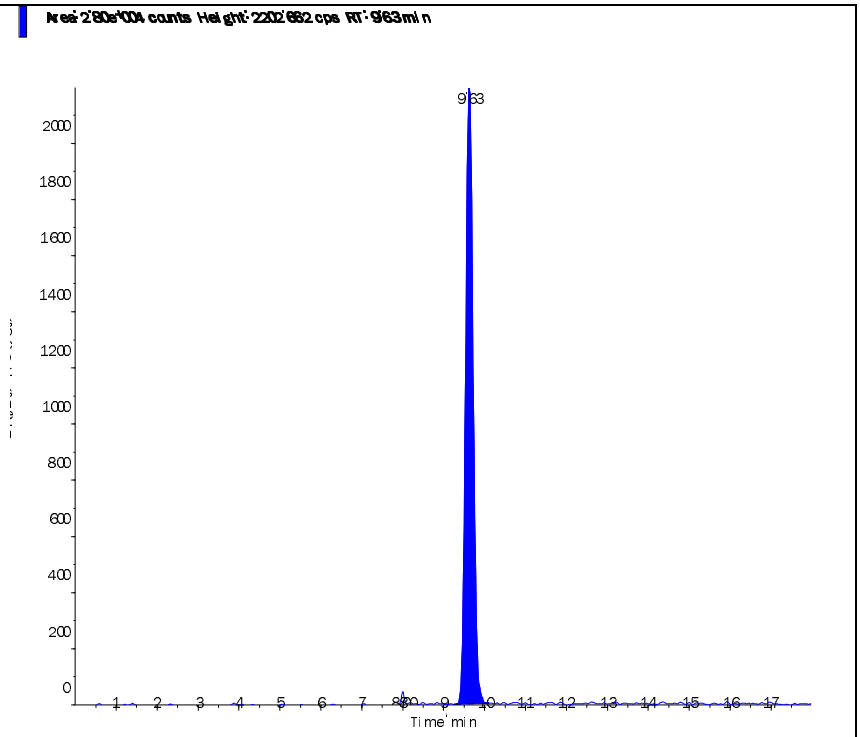

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Data File	LM31516.wiff	**Result Table**	083115_JWR.rdb
Acquisition Date	8/31/2015 2:53:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15081251-07	**Injection Vial**	13.00
Data File	LM31516.wiff	**Injection Volume**	10.00
Acquisition Date	8/31/2015 2:53:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	083115_JWR.rdb
Sample ID	L15081251-07	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.460e+05	9.38	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.100e+04	9.40	N/A	0.0849
Perchlorate conf	3.890e+03	9.38	N/A	0.0973

O18LP (Internal Standard)

RT (Exp. RT): 9.38(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

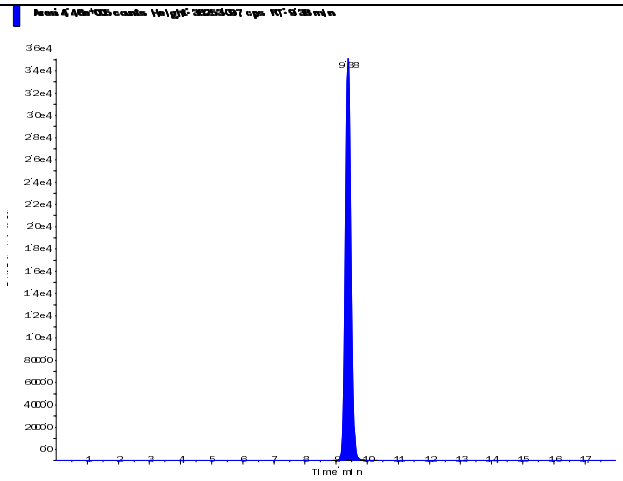

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.52) min
Calculated conc:	0.0849 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

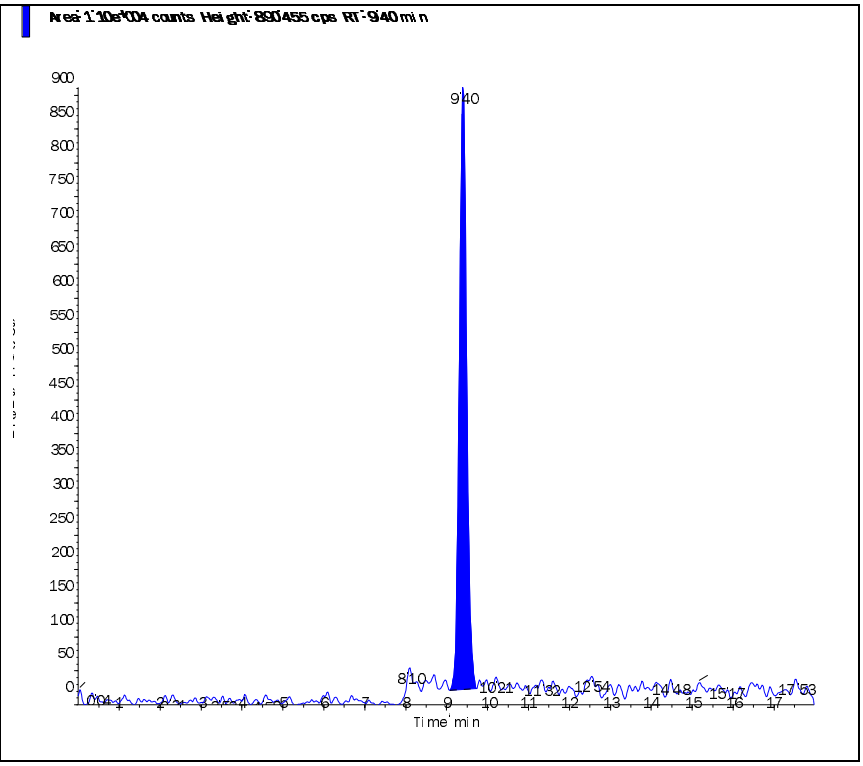

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.38 (9.48) min
Calculated conc:	0.0973 ng/ml
Area Ratio:	0.009
Sample Type:	(Unknown)

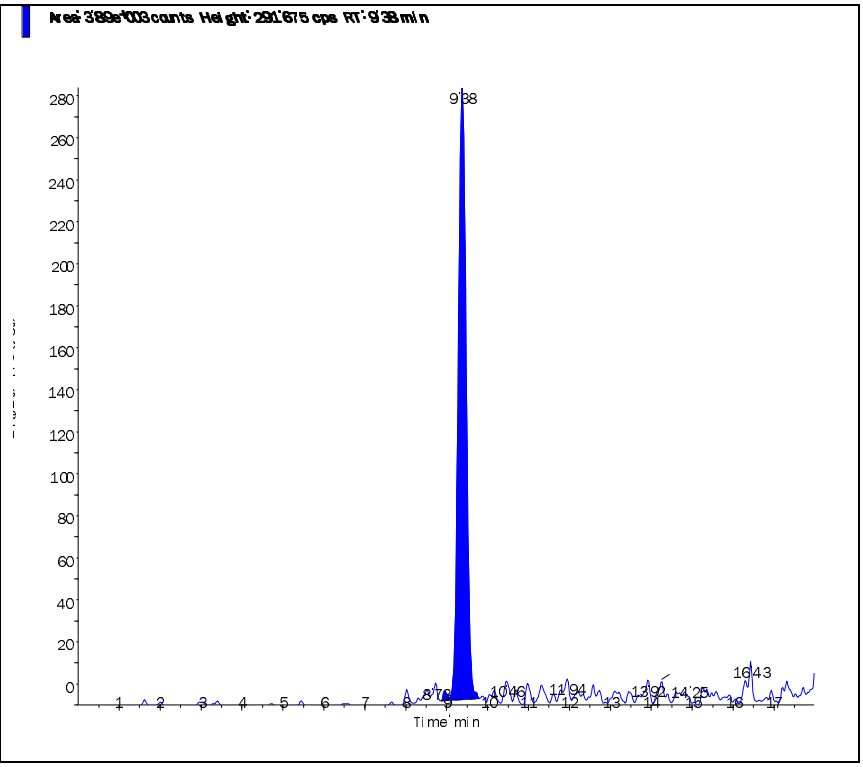

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Data File	LM31523.wiff	**Result Table**	083115_JWR.rdb
Acquisition Date	8/31/2015 5:06:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15081251-08	**Injection Vial**	17.00
Data File	LM31523.wiff	**Injection Volume**	10.00
Acquisition Date	8/31/2015 5:06:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	083115_JWR.rdb
Sample ID	L15081251-08	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.630e+05	9.35	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.030e+04	9.37	N/A	0.237
Perchlorate conf	1.000e+04	9.35	N/A	0.251

O18LP (Internal Standard)

RT (Exp. RT): 9.35(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

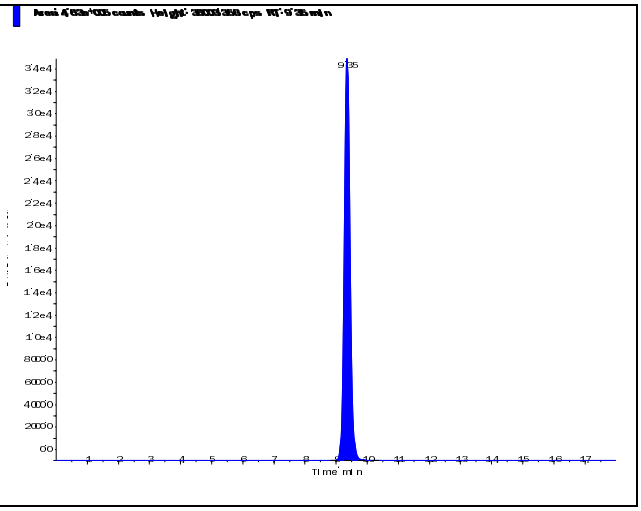

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.37 (9.52) min
Calculated conc:	0.237 ng/ml
Area Ratio:	0.066
Sample Type:	(Unknown)

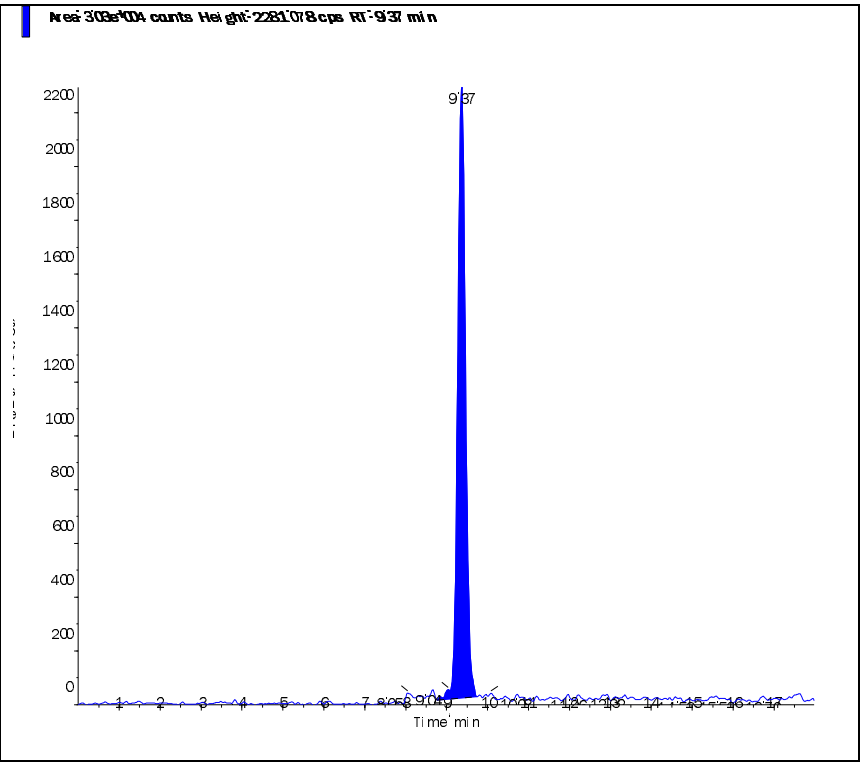

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.35 (9.48) min
Calculated conc:	0.251 ng/ml
Area Ratio:	0.022
Sample Type:	(Unknown)

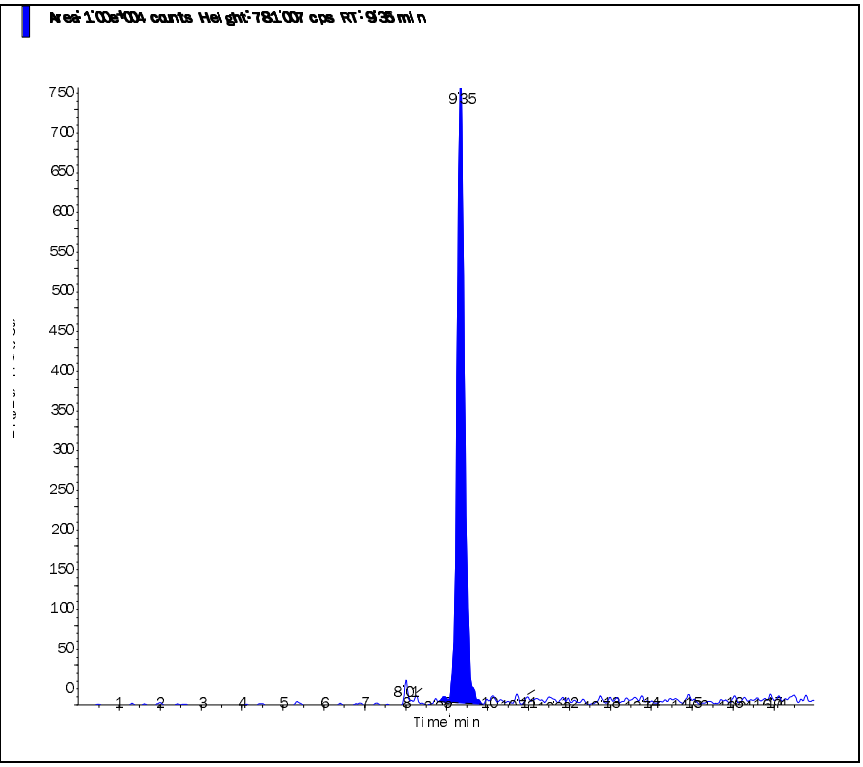

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Data File	LM31524.wiff	**Result Table**	083115_JWR.rdb
Acquisition Date	8/31/2015 5:25:11 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15081251-09	**Injection Vial**	18.00
Data File	LM31524.wiff	**Injection Volume**	10.00
Acquisition Date	8/31/2015 5:25:11 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	083115_JWR.rdb
Sample ID	L15081251-09	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.570e+05	9.34	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.990e+04	9.36	N/A	0.155
Perchlorate conf	6.680e+03	9.33	N/A	0.168

O18LP (Internal Standard)

RT (Exp. RT): 9.34(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

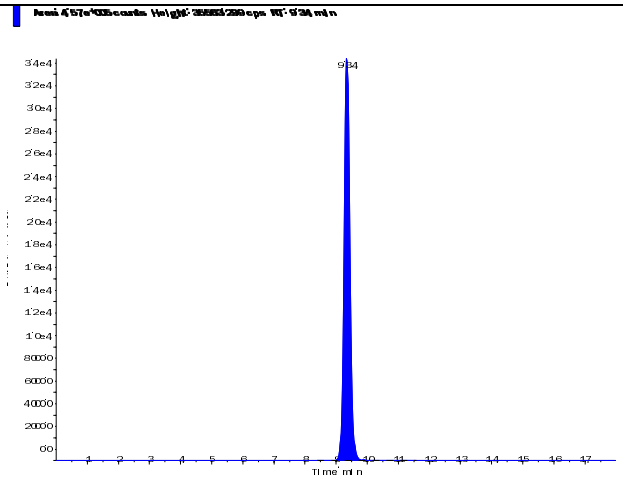

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.36 (9.52) min Calculated conc: 0.155 ng/ml Area Ratio: 0.043 Sample Type: (Unknown)	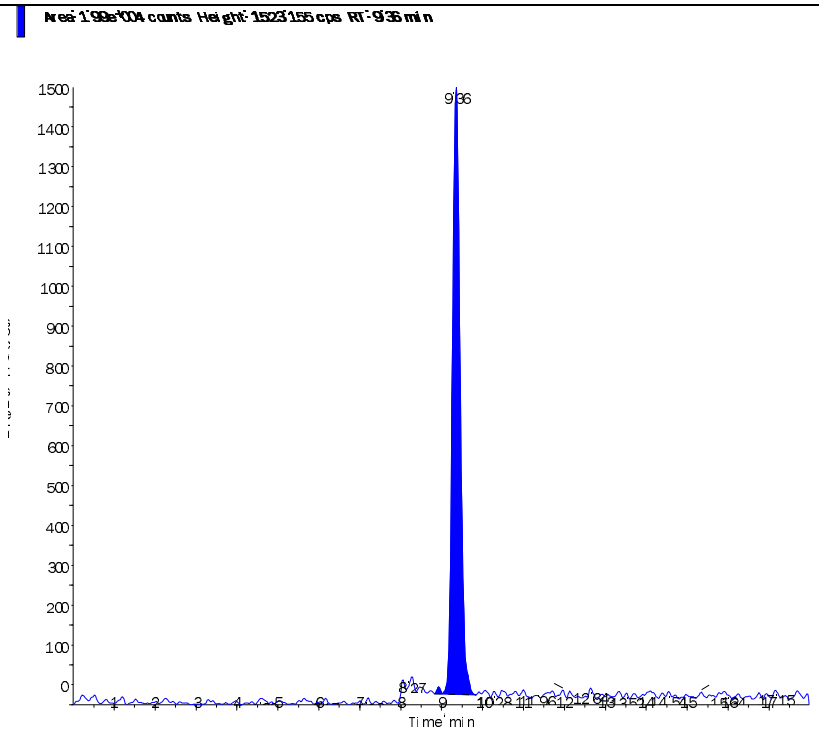
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.33 (9.48) min Calculated conc: 0.168 ng/ml Area Ratio: 0.015 Sample Type: (Unknown)	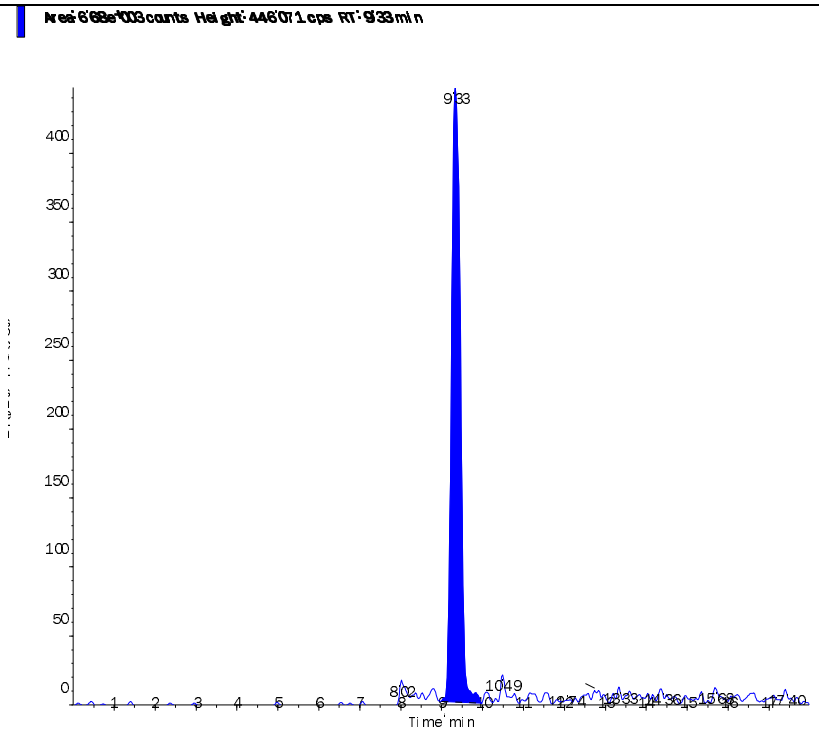

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Data File	LM31525.wiff	**Result Table**	083115_JWR.rdb
Acquisition Date	8/31/2015 5:44:07 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15081251-10	**Injection Vial**	19.00
Data File	LM31525.wiff	**Injection Volume**	10.00
Acquisition Date	8/31/2015 5:44:07 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	083115_JWR.rdb
Sample ID	L15081251-10	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.810e+05	9.59	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.080e+03	9.59	N/A	0.0332
Perchlorate conf	2.010e+03	9.57	N/A	0.0434

O18LP (Internal Standard)

RT (Exp. RT): 9.59(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

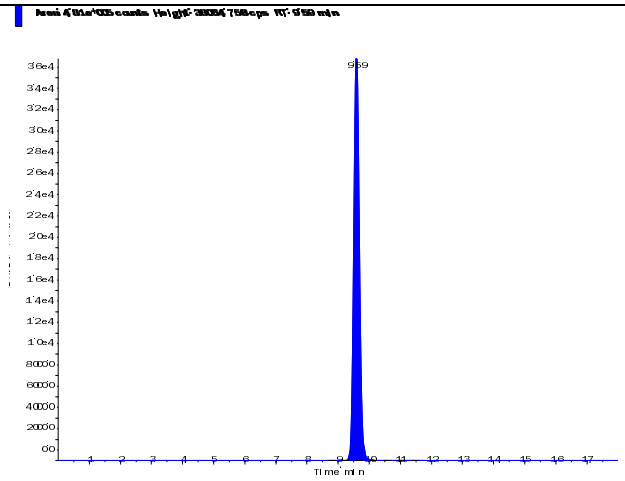

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.59 (9.52) min Calculated conc: 0.0332 ng/ml Area Ratio: 0.011 Sample Type: (Unknown)	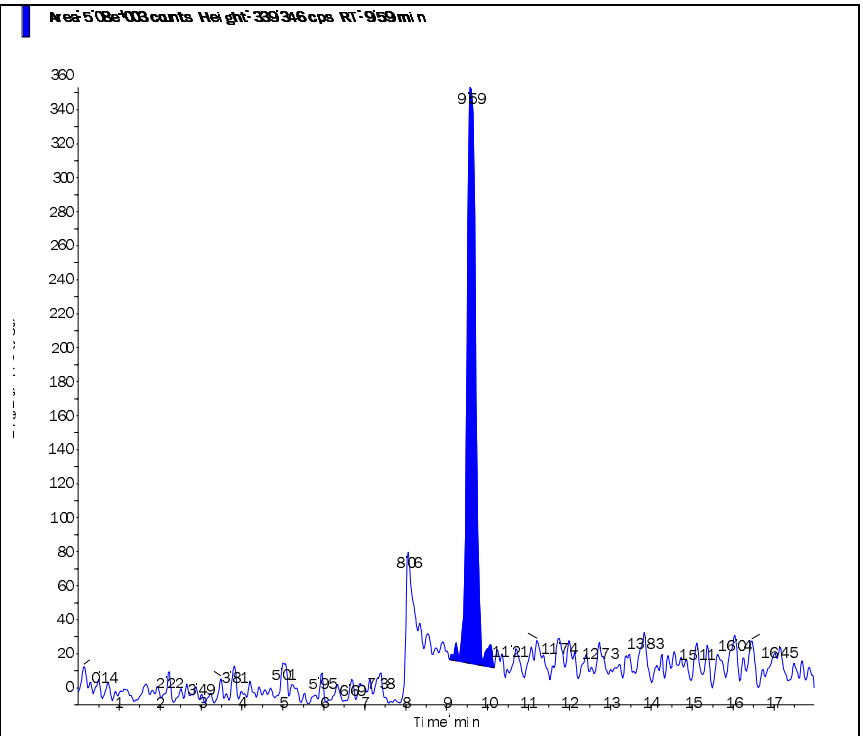
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.57 (9.48) min Calculated conc: 0.0434 ng/ml Area Ratio: 0.004 Sample Type: (Unknown)	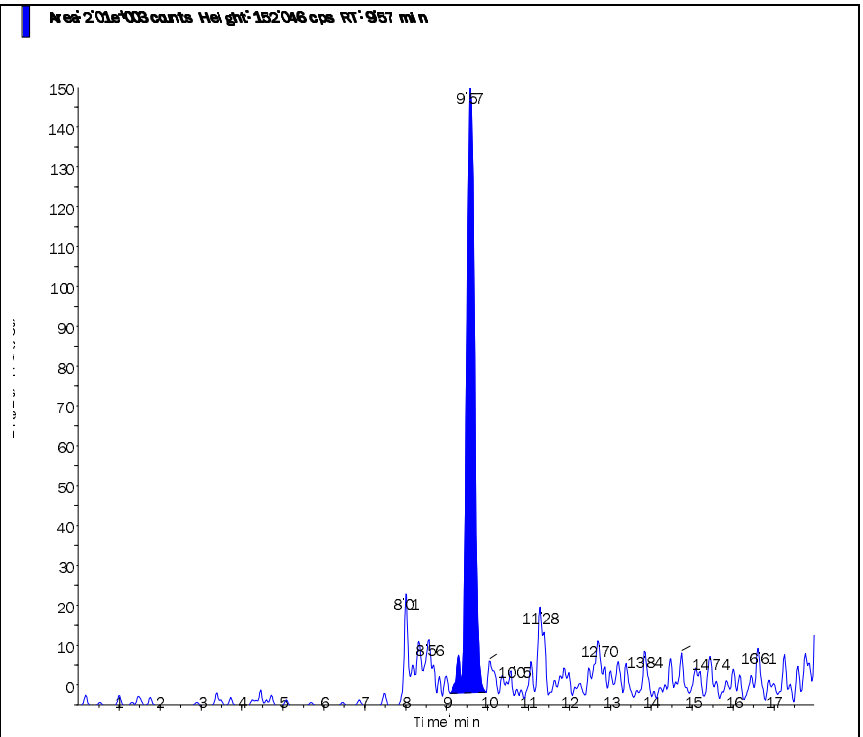

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Data File	LM31526.wiff	**Result Table**	083115_JWR.rdb
Acquisition Date	8/31/2015 6:03:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15081251-11	**Injection Vial**	20.00
Data File	LM31526.wiff	**Injection Volume**	10.00
Acquisition Date	8/31/2015 6:03:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	083115_JWR.rdb
Sample ID	L15081251-11	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.430e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.630e+03	9.40	N/A	0.0411
Perchlorate conf	1.830e+03	9.39	N/A	0.0429

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

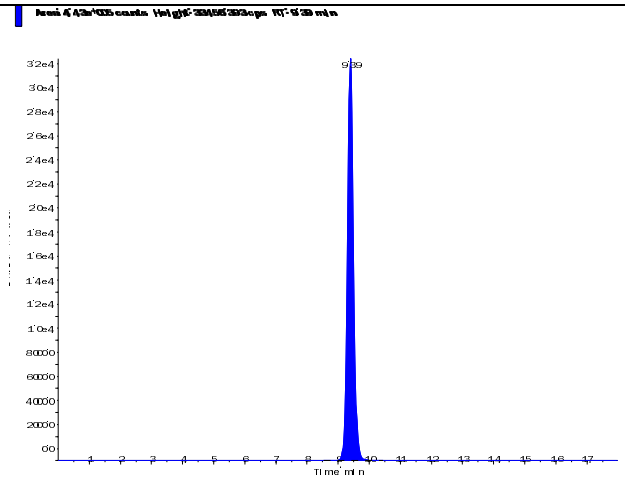

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.52) min
Calculated conc:	0.0411 ng/ml
Area Ratio:	0.013
Sample Type:	(Unknown)

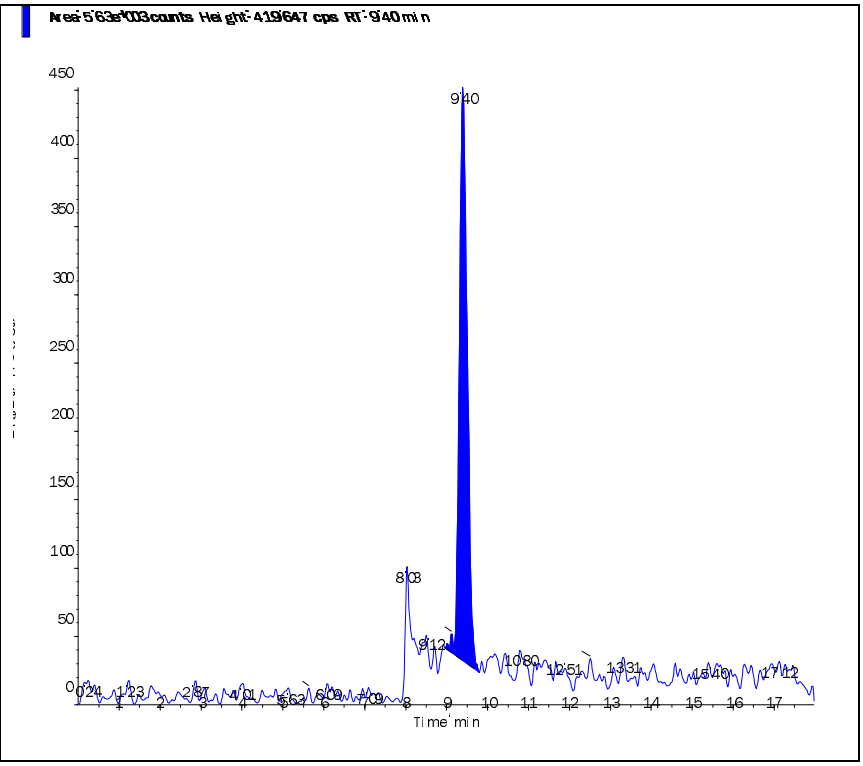

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.39 (9.48) min
Calculated conc:	0.0429 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)

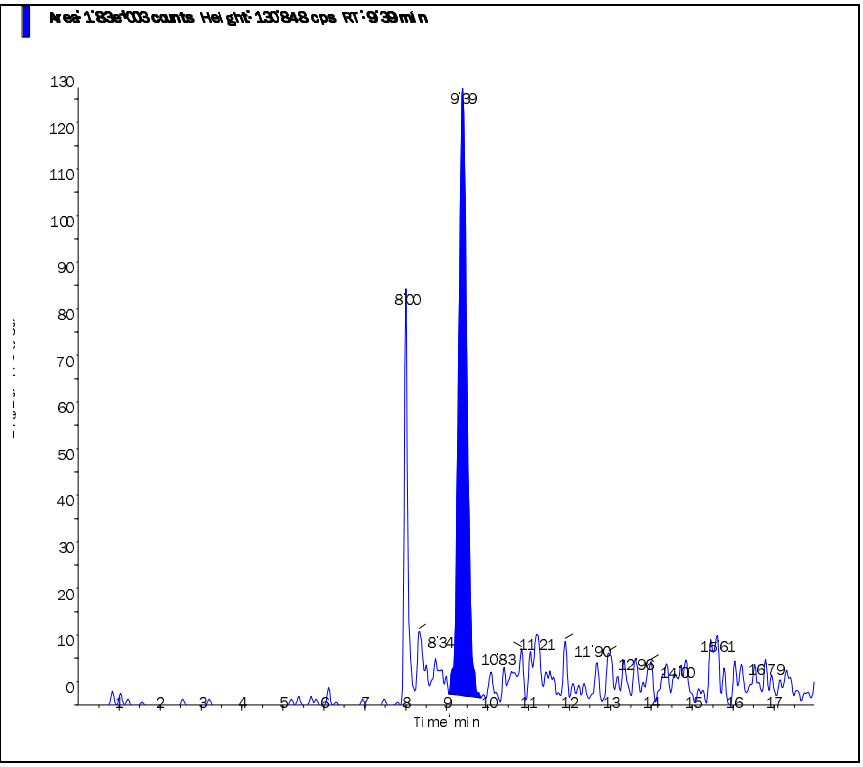

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Data File	LM31527.wiff	**Result Table**	083115_JWR.rdb
Acquisition Date	8/31/2015 6:22:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15081251-12	**Injection Vial**	21.00
Data File	LM31527.wiff	**Injection Volume**	10.00
Acquisition Date	8/31/2015 6:22:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	083115_JWR.rdb
Sample ID	L15081251-12	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.360e+05	9.37	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.130e+03	9.38	N/A	0.0121
Perchlorate conf	5.570e+02	9.38	N/A	0.0087

O18LP (Internal Standard)

RT (Exp. RT): 9.37(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

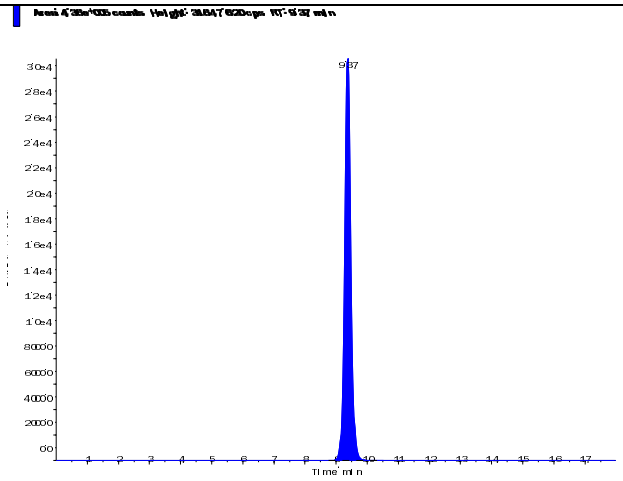

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.38 (9.52) min Calculated conc: 0.0121 ng/ml Area Ratio: 0.005 Sample Type: (Unknown)	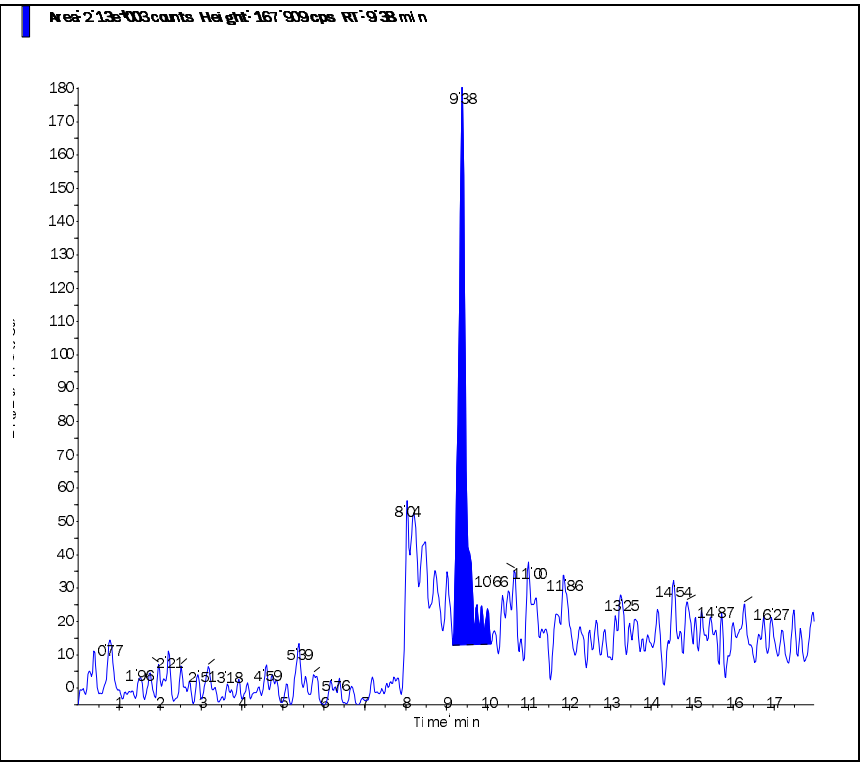
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.38 (9.48) min Calculated conc: 0.0087 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	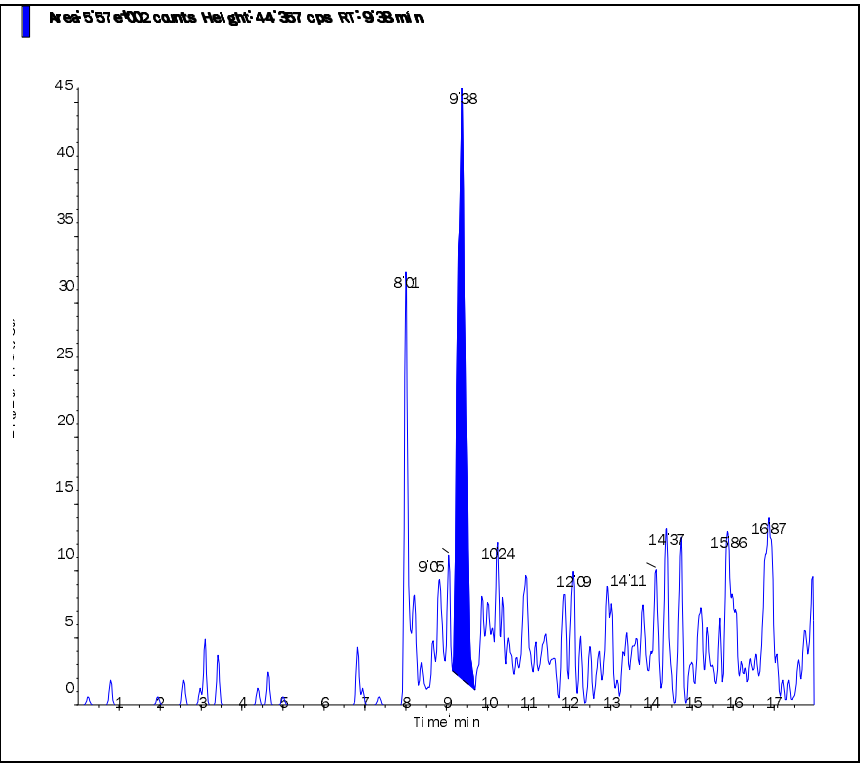

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Data File	LM31528.wiff	**Result Table**	083115_JWR.rdb
Acquisition Date	8/31/2015 6:40:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15081251-13	**Injection Vial**	22.00
Data File	LM31528.wiff	**Injection Volume**	10.00
Acquisition Date	8/31/2015 6:40:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	083115_JWR.rdb
Sample ID	L15081251-13	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.440e+05	9.34	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	9.030e+03	9.34	N/A	0.0694
Perchlorate conf	3.310e+03	9.34	N/A	0.0824

O18LP (Internal Standard)

RT (Exp. RT): 9.34(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

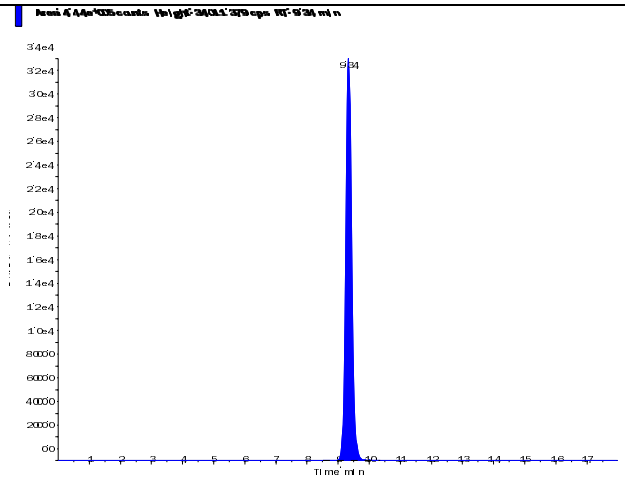

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.34 (9.52) min
Calculated conc:	0.0694 ng/ml
Area Ratio:	0.02
Sample Type:	(Unknown)

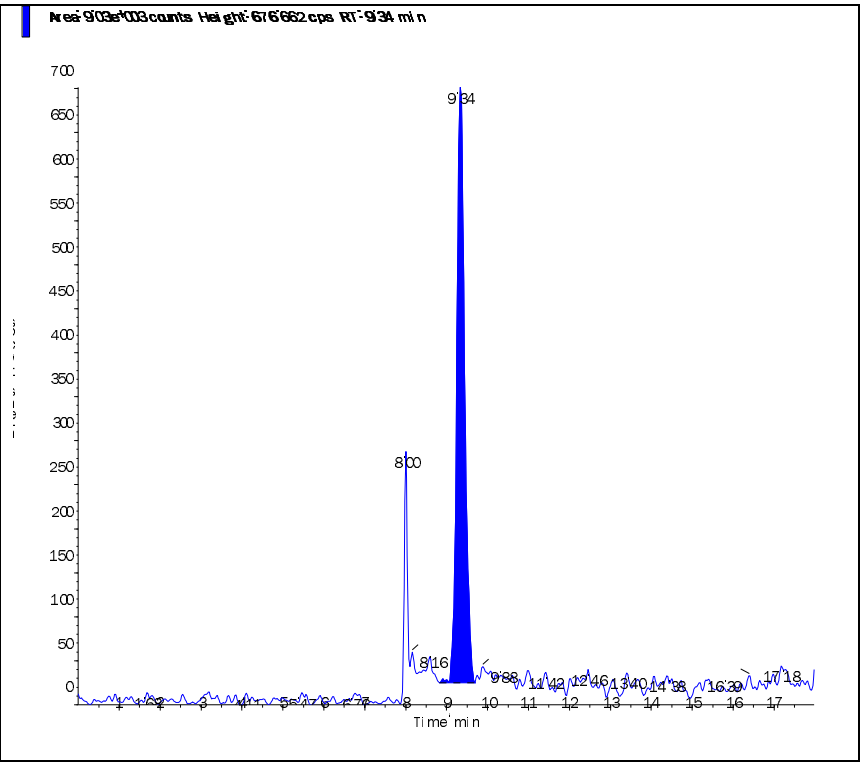

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.34 (9.48) min
Calculated conc:	0.0824 ng/ml
Area Ratio:	0.007
Sample Type:	(Unknown)

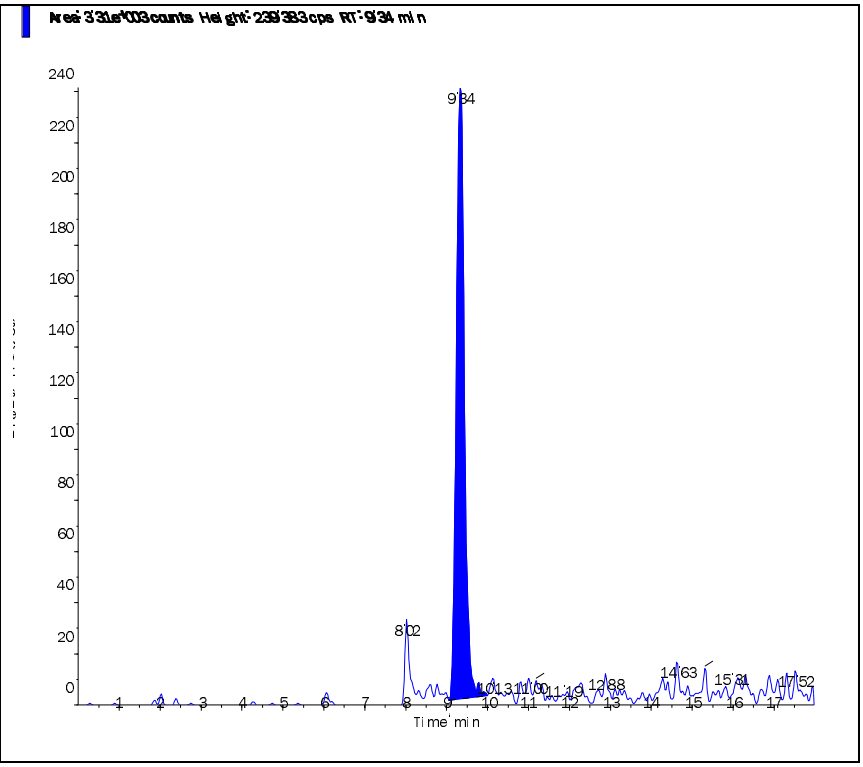

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Data File	LM31529.wiff	**Result Table**	083115_JWR.rdb
Acquisition Date	8/31/2015 7:00:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15081251-14	**Injection Vial**	23.00
Data File	LM31529.wiff	**Injection Volume**	10.00
Acquisition Date	8/31/2015 7:00:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	083115_JWR.rdb
Sample ID	L15081251-14	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.470e+05	9.34	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	6.510e+03	9.36	N/A	0.0479
Perchlorate conf	1.990e+03	9.34	N/A	0.0466

O18LP (Internal Standard)

RT (Exp. RT): 9.34(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

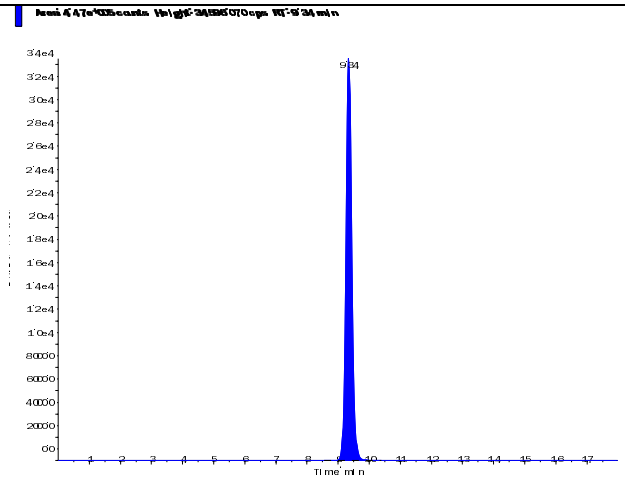

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.36 (9.52) min Calculated conc: 0.0479 ng/ml Area Ratio: 0.015 Sample Type: (Unknown)	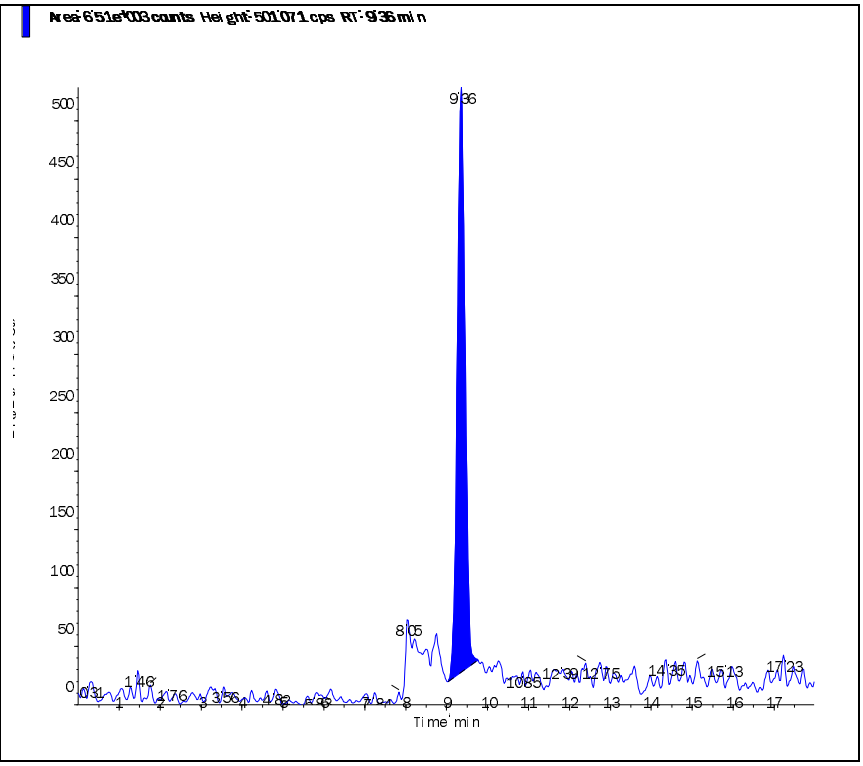
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.34 (9.48) min Calculated conc: 0.0466 ng/ml Area Ratio: 0.004 Sample Type: (Unknown)	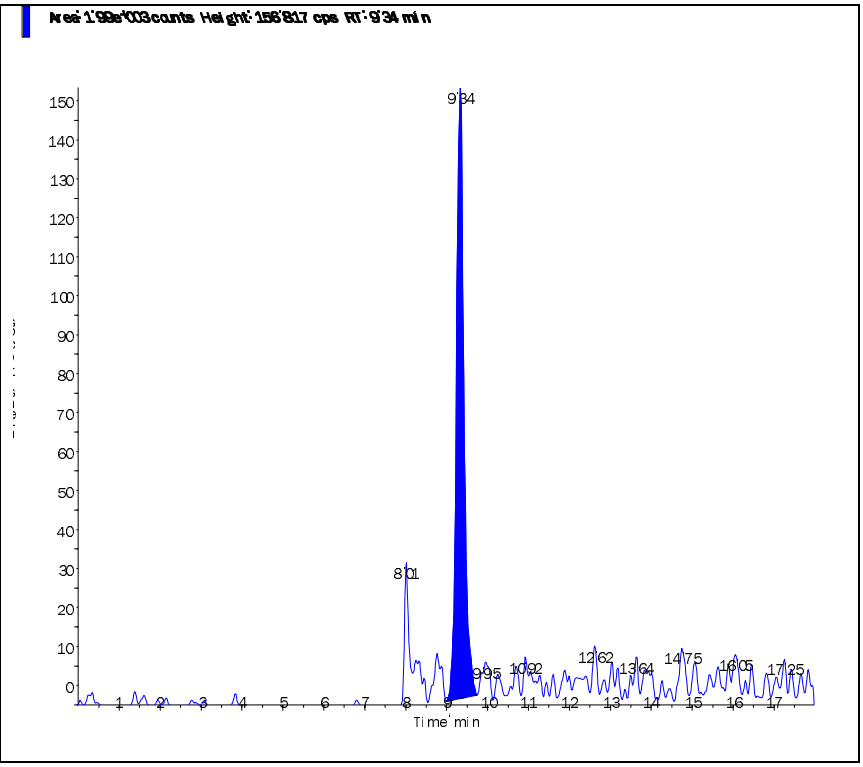

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Data File	LM31533.wiff	**Result Table**	083115_JWR.rdb
Acquisition Date	8/31/2015 8:15:44 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15081251-15	**Injection Vial**	24.00
Data File	LM31533.wiff	**Injection Volume**	10.00
Acquisition Date	8/31/2015 8:15:44 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	083115_JWR.rdb
Sample ID	L15081251-15	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.510e+05	9.44	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.630e+03	9.46	N/A	0.0649
Perchlorate conf	2.760e+03	9.44	N/A	0.0666

O18LP (Internal Standard)

RT (Exp. RT): 9.44(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

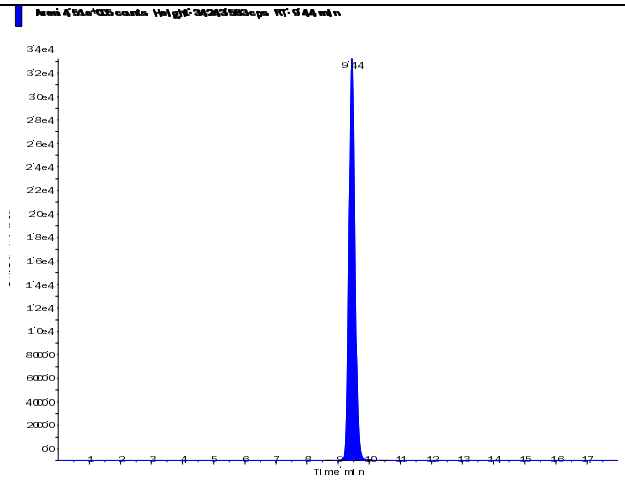

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.46 (9.52) min Calculated conc: 0.0649 ng/ml Area Ratio: 0.019 Sample Type: (Unknown)	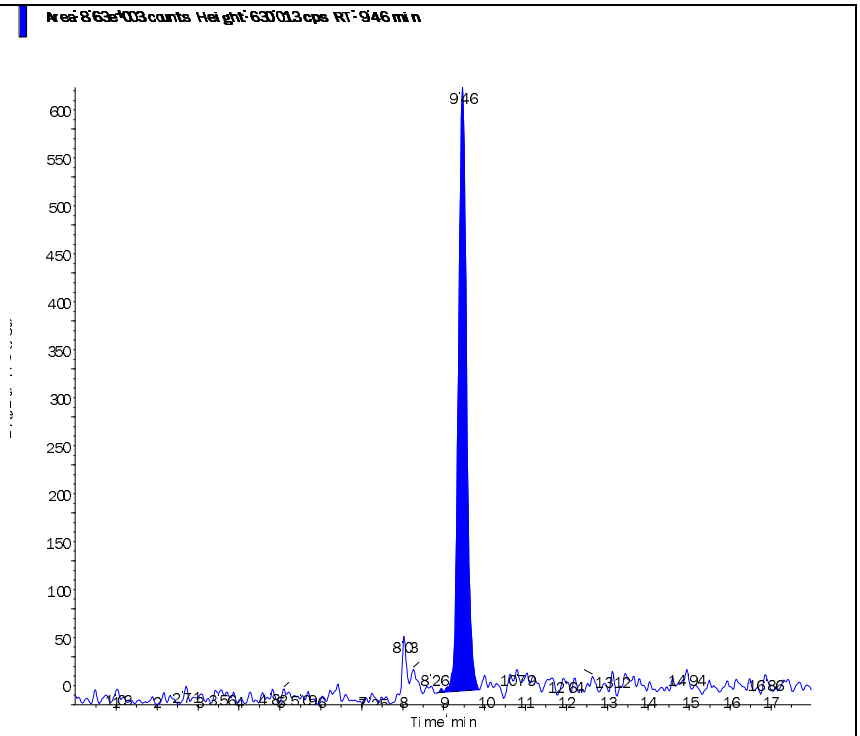
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.44 (9.48) min Calculated conc: 0.0666 ng/ml Area Ratio: 0.006 Sample Type: (Unknown)	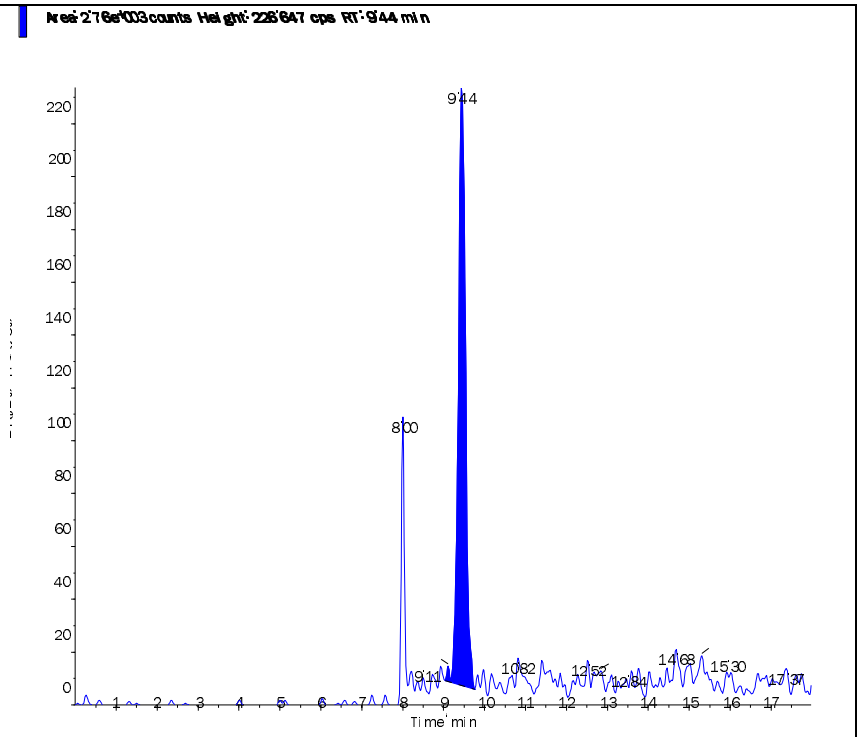

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Data File	LM31520.wiff	**Result Table**	083115_JWR.rdb
Acquisition Date	8/31/2015 4:09:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15081251-16 RS	**Injection Vial**	14.00
Data File	LM31520.wiff	**Injection Volume**	10.00
Acquisition Date	8/31/2015 4:09:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	083115_JWR.rdb
Sample ID	WG537121-07	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.450e+05	9.37	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.820e+03	9.38	N/A	0.0424
Perchlorate conf	1.930e+03	9.35	N/A	0.0452

O18LP (Internal Standard)

RT (Exp. RT): 9.37(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

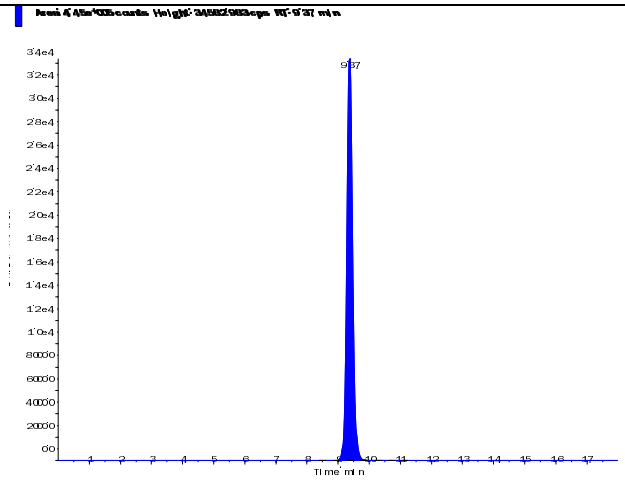

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.38 (9.52) min
Calculated conc:	0.0424 ng/ml
Area Ratio:	0.013
Sample Type:	(Unknown)

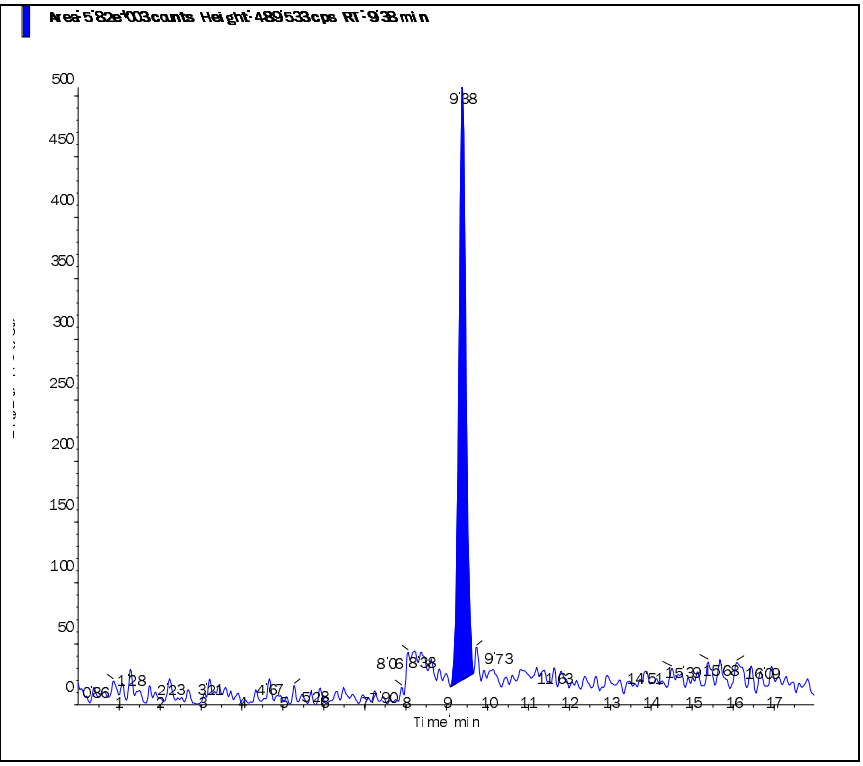

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.35 (9.48) min
Calculated conc:	0.0452 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)

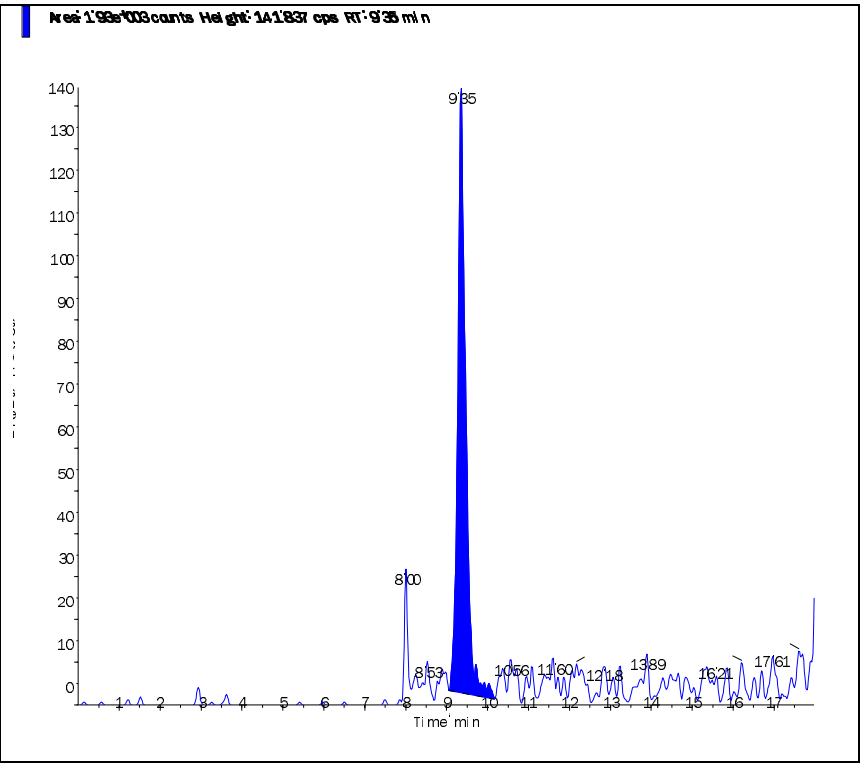

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Data File	LM31521.wiff	**Result Table**	083115_JWR.rdb
Acquisition Date	8/31/2015 4:28:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15081251-17 MS	**Injection Vial**	15.00
Data File	LM31521.wiff	**Injection Volume**	10.00
Acquisition Date	8/31/2015 4:28:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	083115_JWR.rdb
Sample ID	WG537121-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD69913	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.550e+05	9.37	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.040e+04	9.38	N/A	0.242
Perchlorate conf	9.250e+03	9.37	N/A	0.236

O18LP (Internal Standard)

RT (Exp. RT): 9.37(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

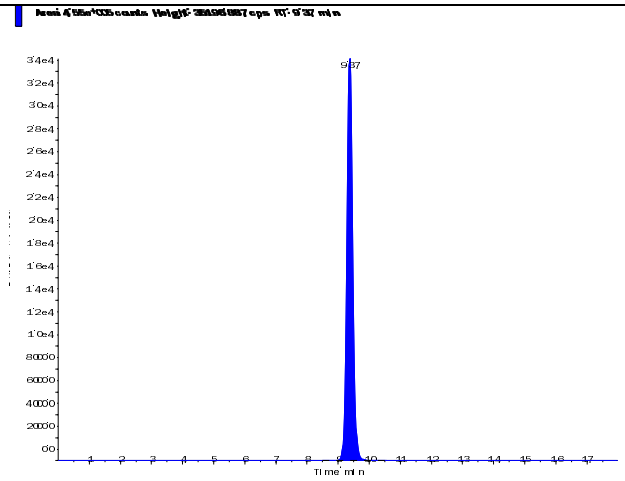

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.38 (9.52) min Calculated conc: 0.242 ng/ml Area Ratio: 0.067 Sample Type: (Unknown)	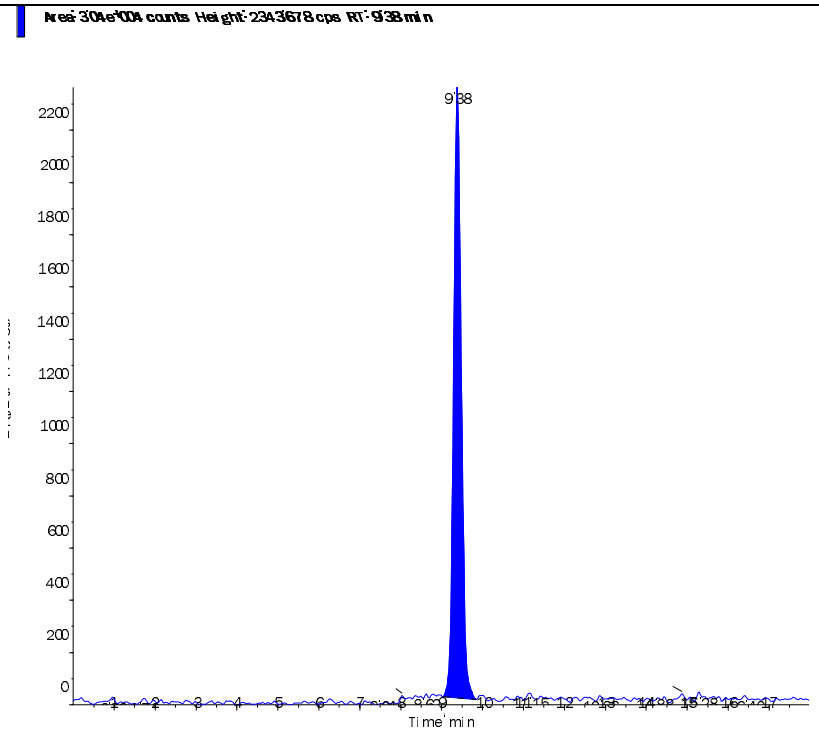
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.37 (9.48) min Calculated conc: 0.236 ng/ml Area Ratio: 0.02 Sample Type: (Unknown)	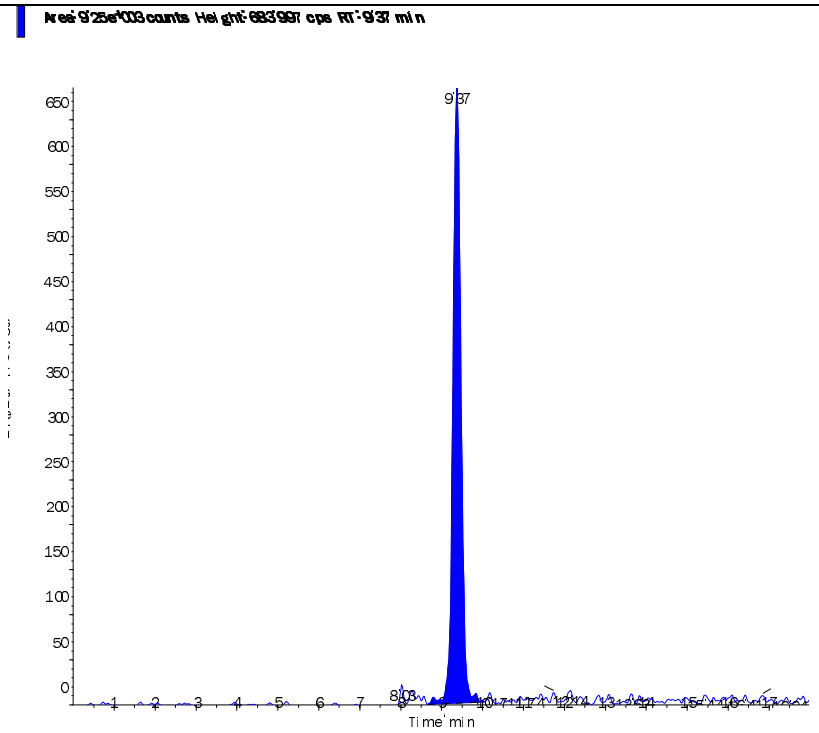

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Data File	LM31522.wiff	**Result Table**	083115_JWR.rdb
Acquisition Date	8/31/2015 4:47:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L15081251-18 MSD	**Injection Vial**	16.00
Data File	LM31522.wiff	**Injection Volume**	10.00
Acquisition Date	8/31/2015 4:47:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	083115_JWR.rdb
Sample ID	WG537121-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD69913	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.520e+05	9.37	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.890e+04	9.39	N/A	0.23
Perchlorate conf	9.400e+03	9.37	N/A	0.241

O18LP (Internal Standard)

RT (Exp. RT): 9.37(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

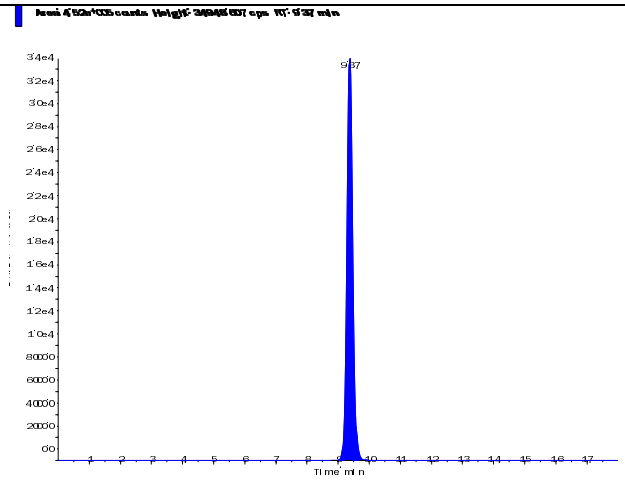

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.39 (9.52) min
Calculated conc:	0.23 ng/ml
Area Ratio:	0.064
Sample Type:	(Unknown)

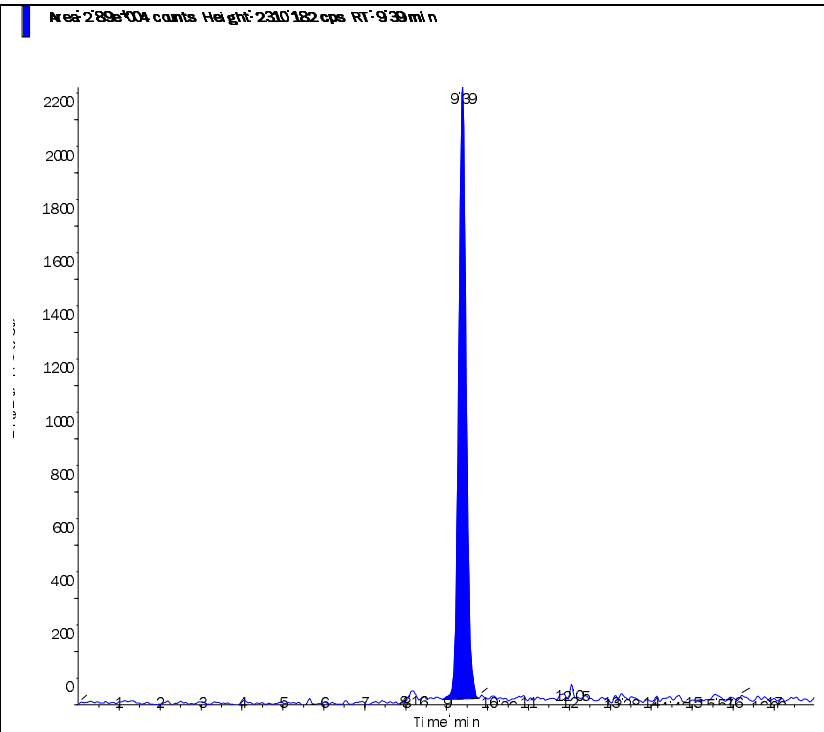

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.37 (9.48) min
Calculated conc:	0.241 ng/ml
Area Ratio:	0.021
Sample Type:	(Unknown)

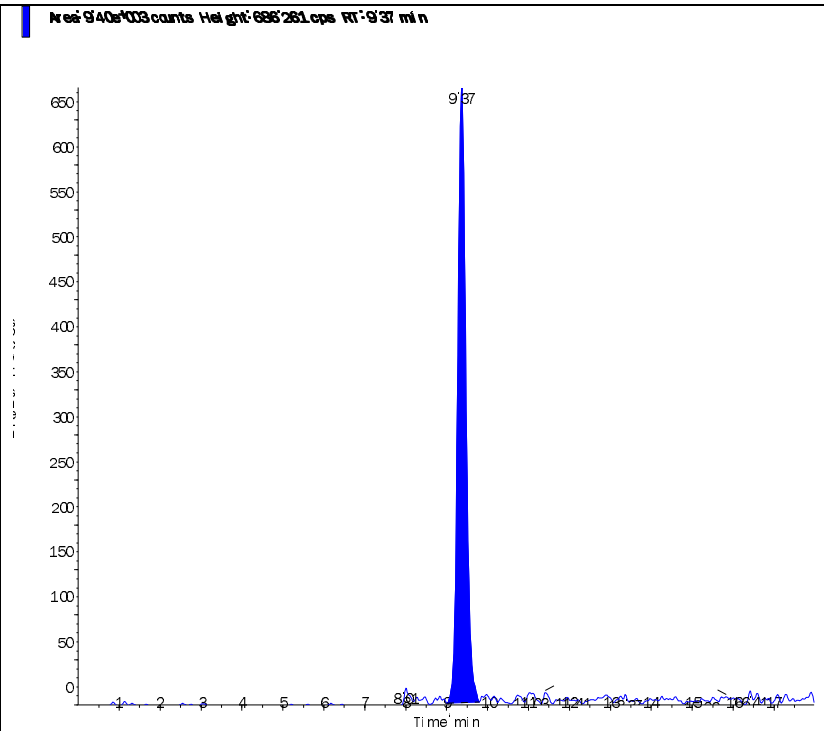

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2.2.1.4 Standards Data

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Data File	LM31292.wiff	**Result Table**	083115_JWR.rdb
Acquisition Date	8/5/2015 10:09:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG533952-01 CCB	**Injection Vial**	1.00
Data File	LM31292.wiff	**Injection Volume**	10.00
Acquisition Date	8/5/2015 10:09:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	083115_JWR.rdb
Sample ID	WG533952-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.160e+05	9.71	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.040e+03	9.73	N/A	0.0122
Perchlorate conf	6.020e+02	9.74	N/A	0.0108

O18LP (Internal Standard)

RT (Exp. RT): 9.71(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

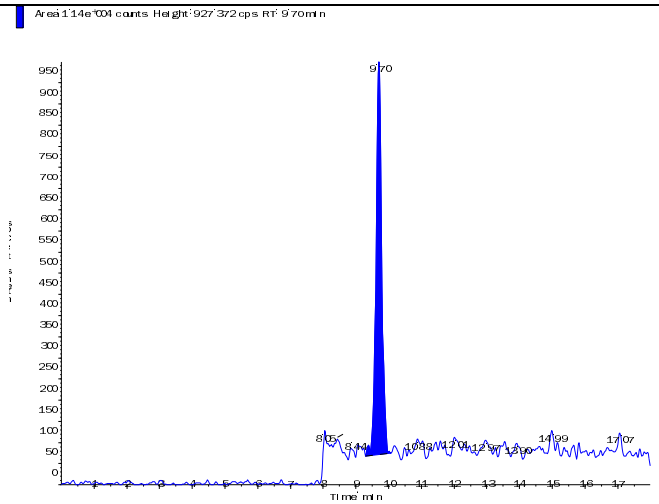

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.73 (9.52) min Calculated conc: 0.0122 ng/ml Area Ratio: 0.005 Sample Type: (Unknown)	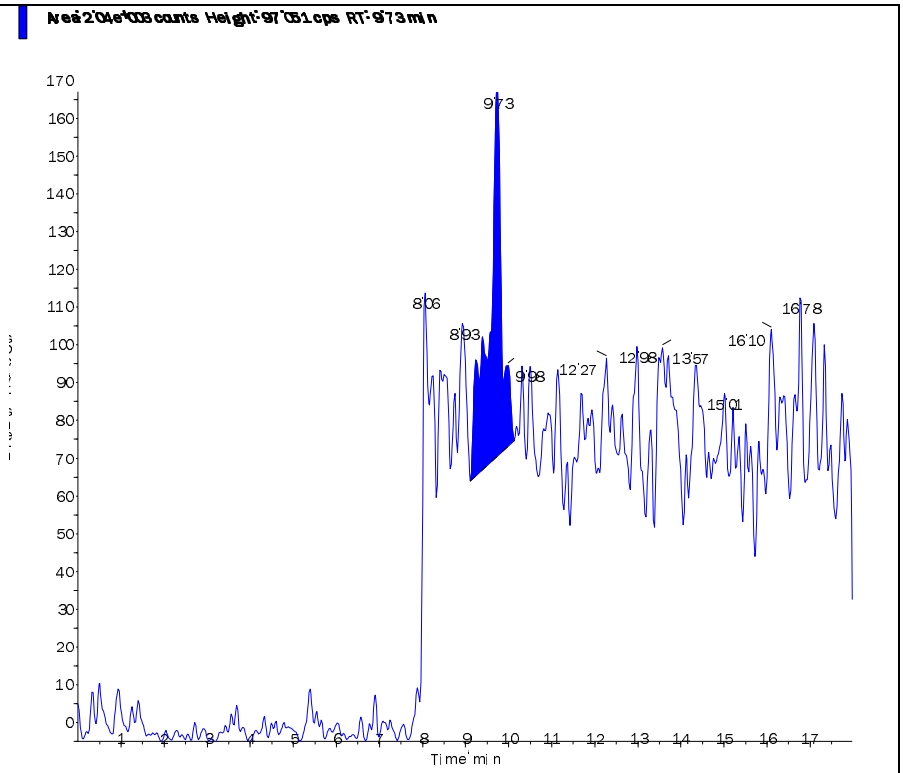
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.74 (9.48) min Calculated conc: 0.0108 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	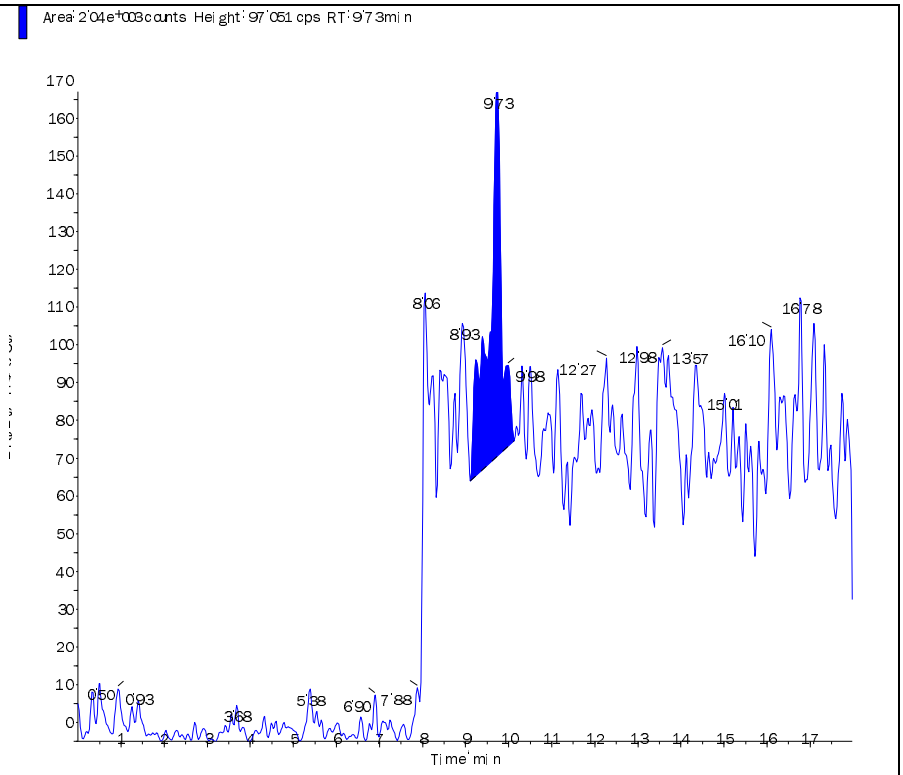

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Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM31292.wiff	**Result Table**	080515_JWR.rdb
Acquisition Date	8/5/2015 10:09:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.35 x + 0.00162 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	98.1	N/A	N/A
0.20	1	0.21	104.1	N/A	N/A
0.50	1	0.49	98.8	N/A	N/A
1.00	1	0.98	97.6	N/A	N/A
2.00	1	2.04	101.9	N/A	N/A
5.00	1	4.96	99.3	N/A	N/A
10.00	1	10.02	100.2	N/A	N/A

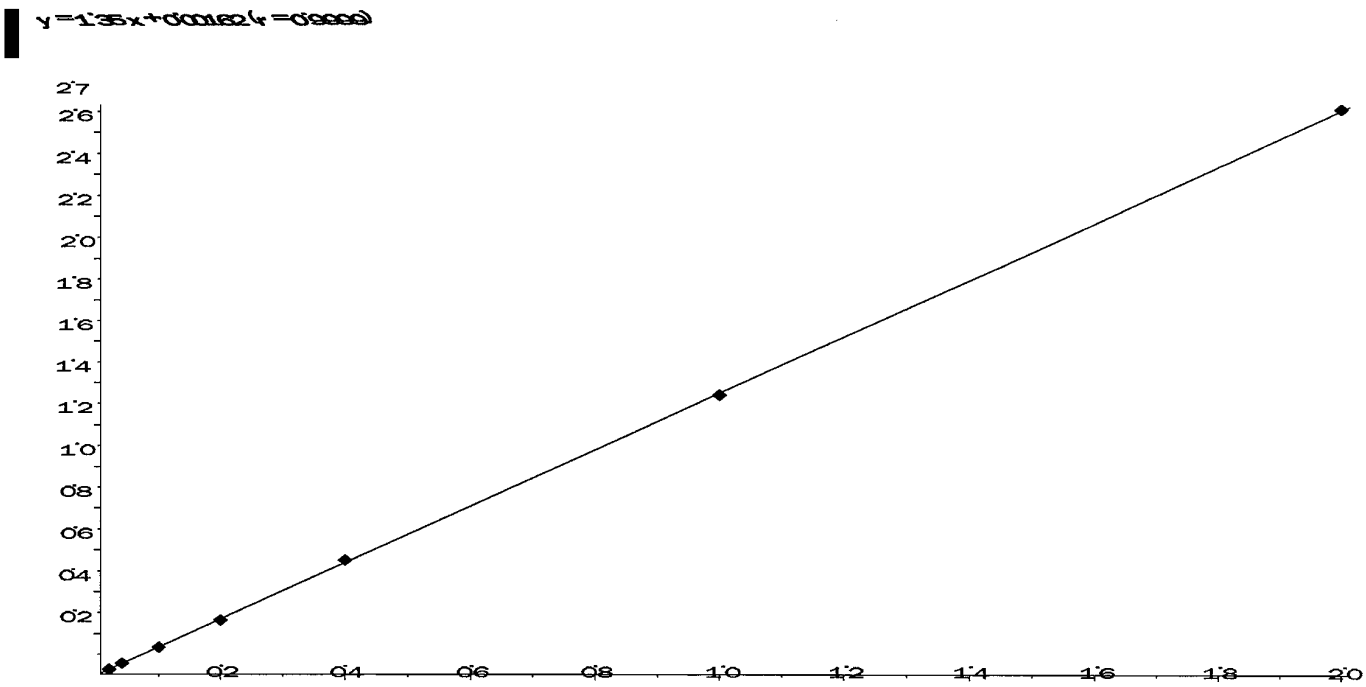

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Printed: 8/6/2015 1:49 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM31292.wiff	**Result Table**	080515_JWR.rdb
Acquisition Date	8/5/2015 10:09:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.42 x + 0.000545 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	100.9	N/A	N/A
0.20	1	0.20	98.7	N/A	N/A
0.50	1	0.51	101.5	N/A	N/A
1.00	1	1.00	99.5	N/A	N/A
2.00	1	2.00	99.9	N/A	N/A
5.00	1	4.94	98.8	N/A	N/A
10.00	1	10.06	100.6	N/A	N/A

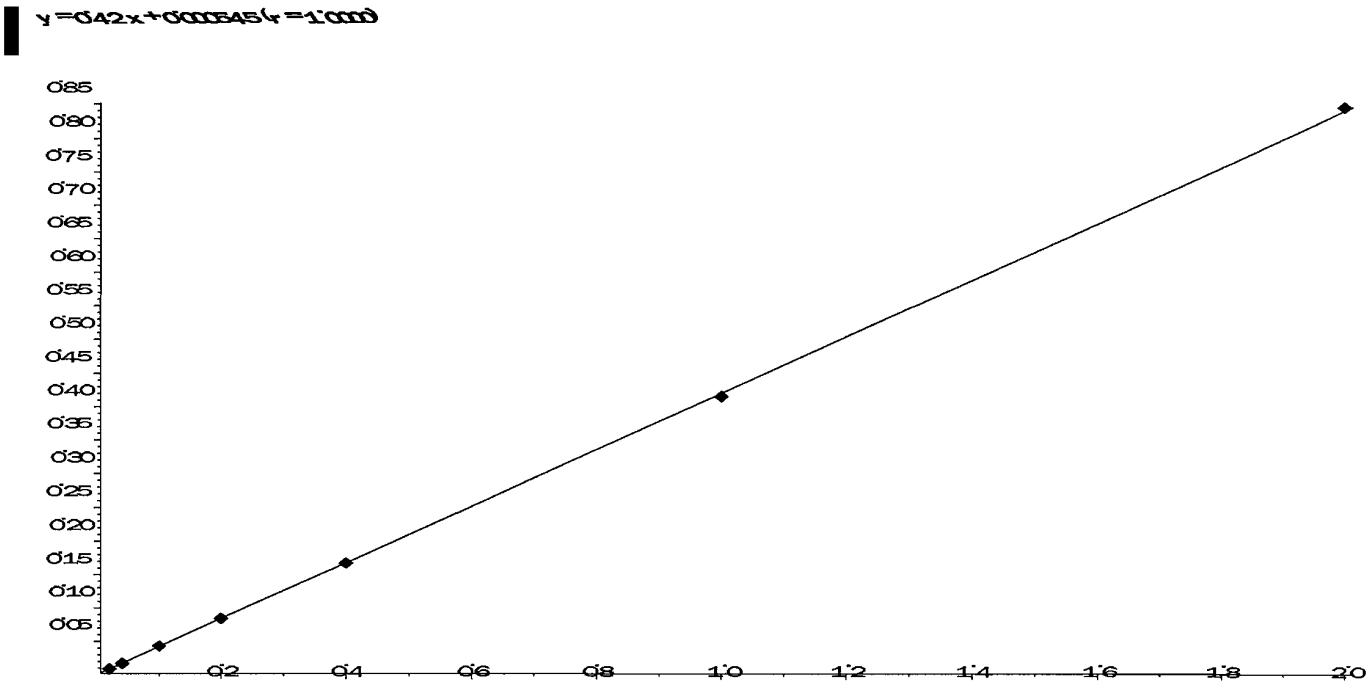

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Data File	LM31293.wiff	**Result Table**	083115_JWR.rdb
Acquisition Date	8/5/2015 10:28:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG533952-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM31293.wiff	**Injection Volume**	10.00
Acquisition Date	8/5/2015 10:28:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	083115_JWR.rdb
Sample ID	WG533952-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.060e+05	9.69	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.140e+04	9.70	0.10	0.0981
Perchlorate conf	3.660e+03	9.69	0.10	0.101

O18LP (Internal Standard)

RT (Exp. RT): 9.69(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

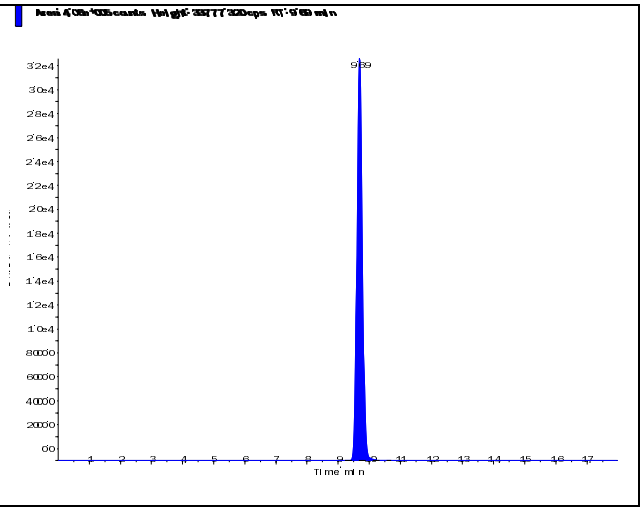

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.70 (9.52) min Calculated conc: 0.0981 ng/ml Area Ratio: 0.028 Sample Type: (Standard)	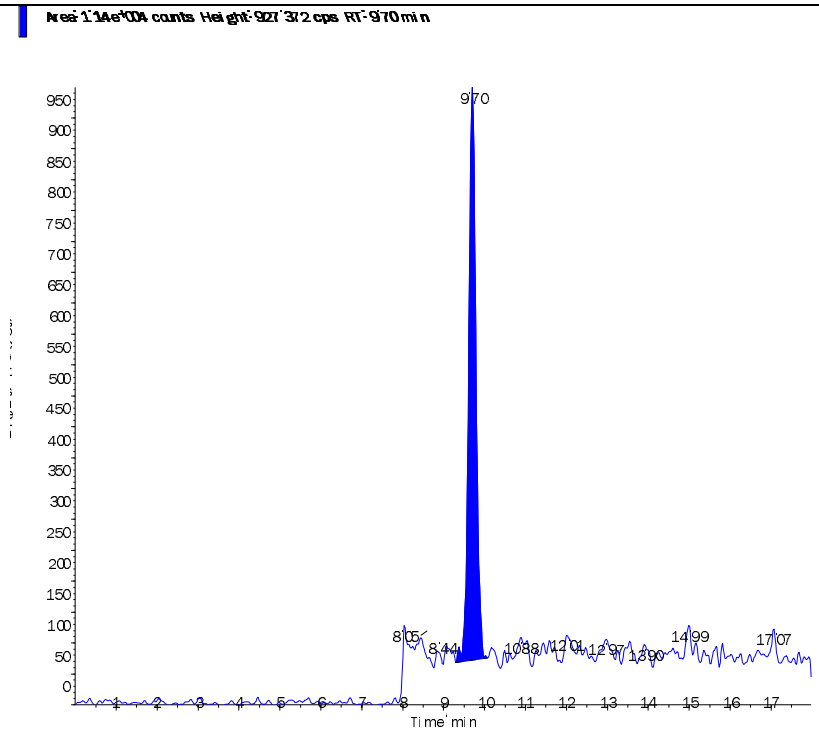
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.69 (9.48) min Calculated conc: 0.101 ng/ml Area Ratio: 0.009 Sample Type: (Standard)	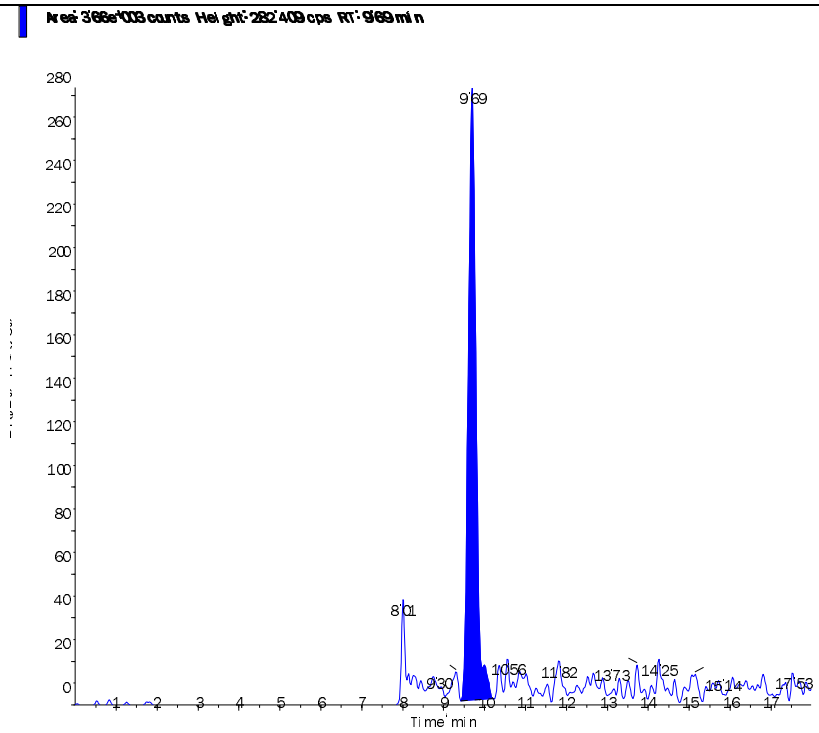

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Data File	LM31294.wiff	**Result Table**	083115_JWR.rdb
Acquisition Date	8/5/2015 10:47:26 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG533952-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM31294.wiff	**Injection Volume**	10.00
Acquisition Date	8/5/2015 10:47:26 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	083115_JWR.rdb
Sample ID	WG533952-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.430e+05	9.50	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.560e+04	9.51	0.20	0.208
Perchlorate conf	7.580e+03	9.48	0.20	0.197

O18LP (Internal Standard)

RT (Exp. RT): 9.50(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

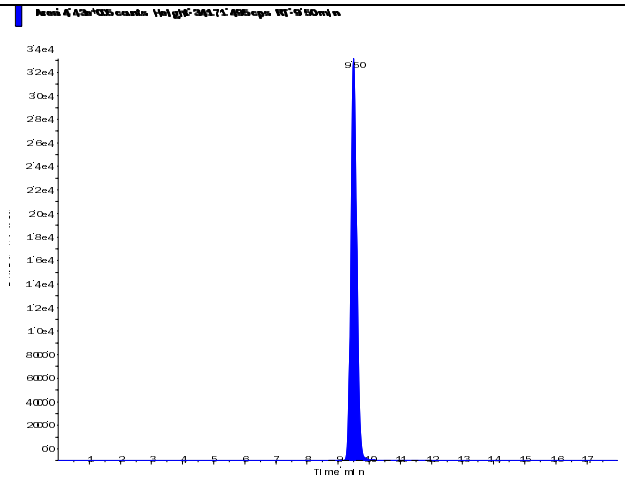

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.51 (9.52) min Calculated conc: 0.208 ng/ml Area Ratio: 0.058 Sample Type: (Standard)	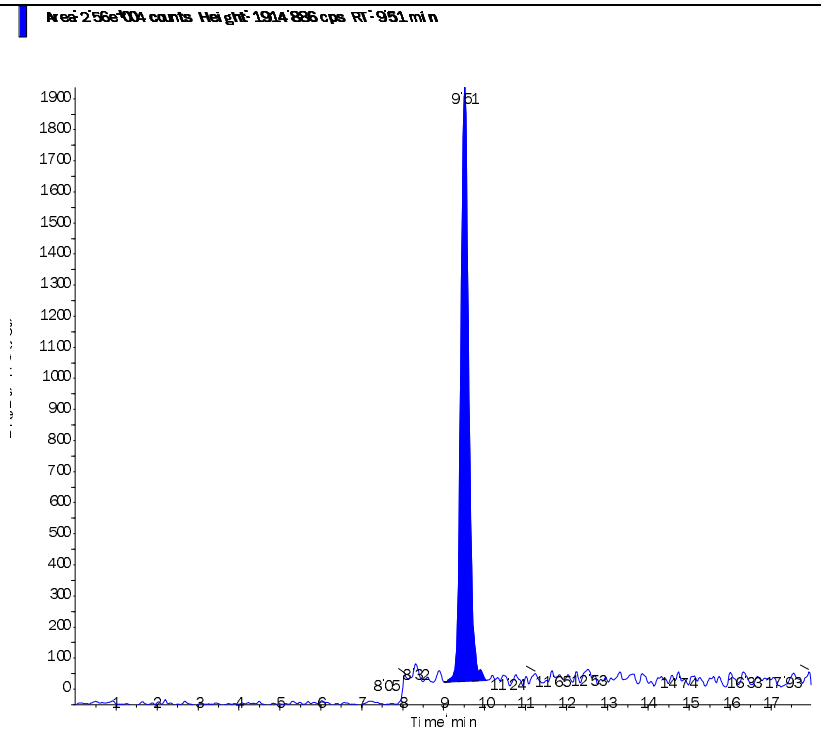
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.48 (9.48) min Calculated conc: 0.197 ng/ml Area Ratio: 0.017 Sample Type: (Standard)	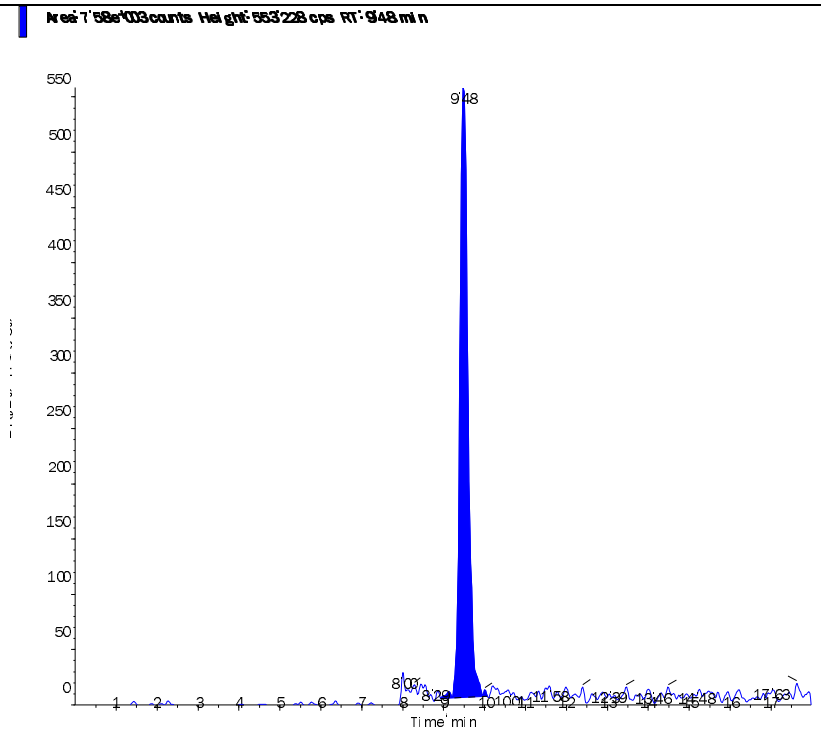

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Printed: 9/1/2015 9:33 AM

Data File	LM31295.wiff	**Result Table**	083115_JWR.rdb
Acquisition Date	8/5/2015 11:06:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG533952-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM31295.wiff	**Injection Volume**	10.00
Acquisition Date	8/5/2015 11:06:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	083115_JWR.rdb
Sample ID	WG533952-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.400e+05	9.52	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.940e+04	9.52	0.50	0.494
Perchlorate conf	1.900e+04	9.51	0.50	0.508

O18LP (Internal Standard)

RT (Exp. RT): 9.52(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

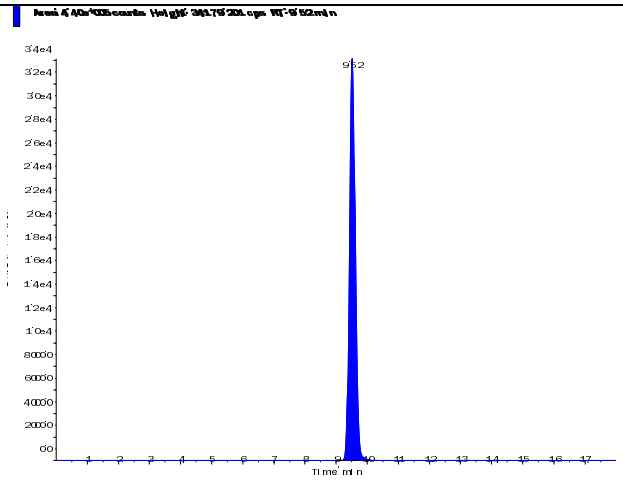

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.52 (9.52) min Calculated conc: 0.494 ng/ml Area Ratio: 0.135 Sample Type: (Standard)	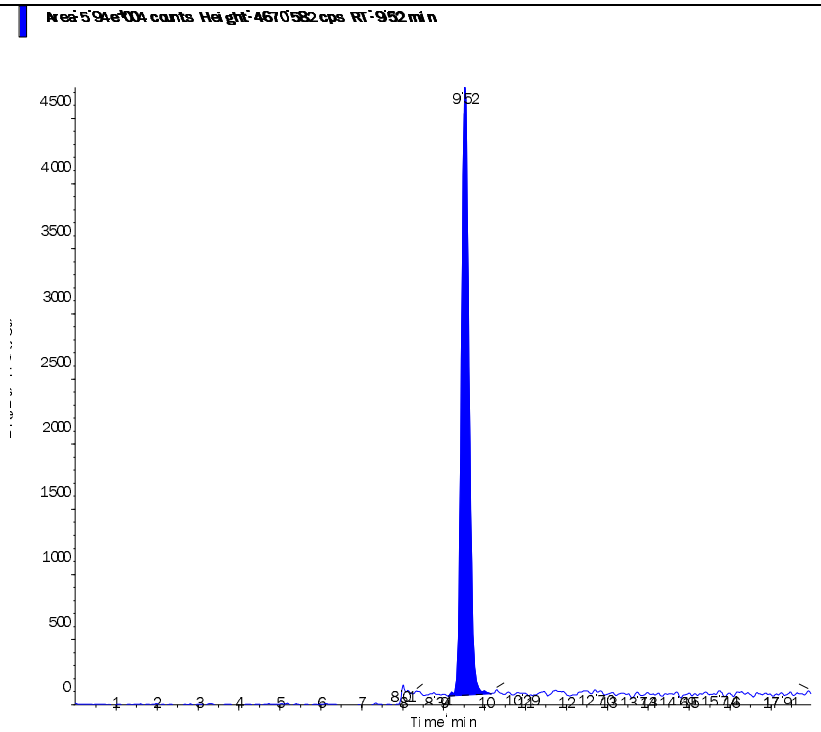
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.51 (9.48) min Calculated conc: 0.508 ng/ml Area Ratio: 0.043 Sample Type: (Standard)	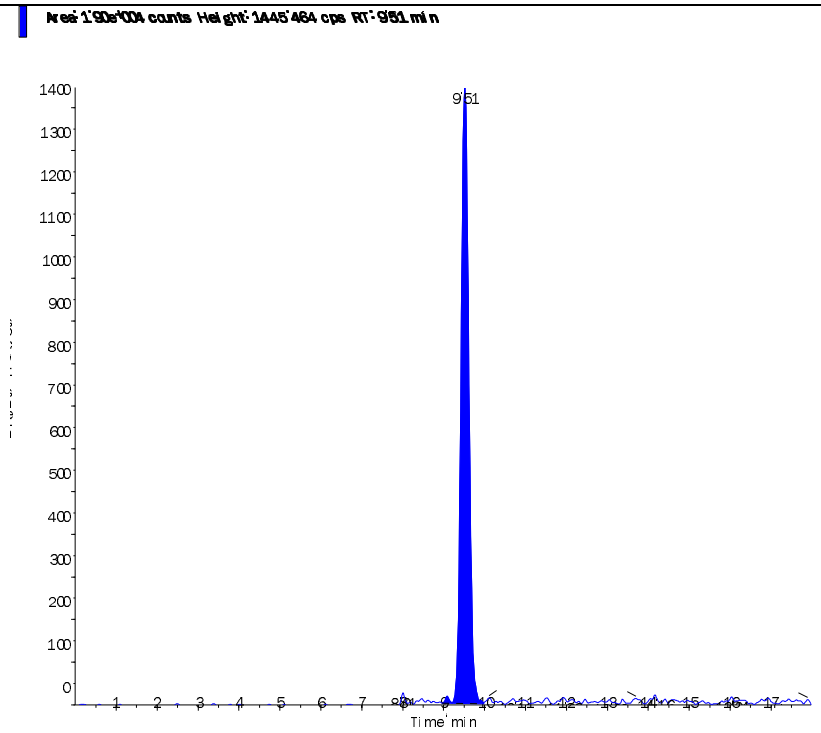

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Data File	LM31296.wiff	**Result Table**	083115_JWR.rdb
Acquisition Date	8/5/2015 11:25:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG533952-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM31296.wiff	**Injection Volume**	10.00
Acquisition Date	8/5/2015 11:25:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	083115_JWR.rdb
Sample ID	WG533952-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.230e+05	9.61	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.120e+05	9.63	1.00	0.976
Perchlorate conf	3.560e+04	9.60	1.00	0.995

O18LP (Internal Standard)

RT (Exp. RT): 9.61(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

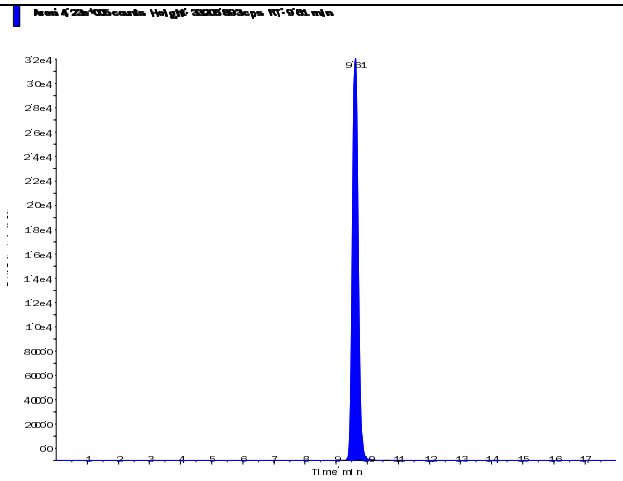

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.63 (9.52) min Calculated conc: 0.976 ng/ml Area Ratio: 0.265 Sample Type: (Standard)	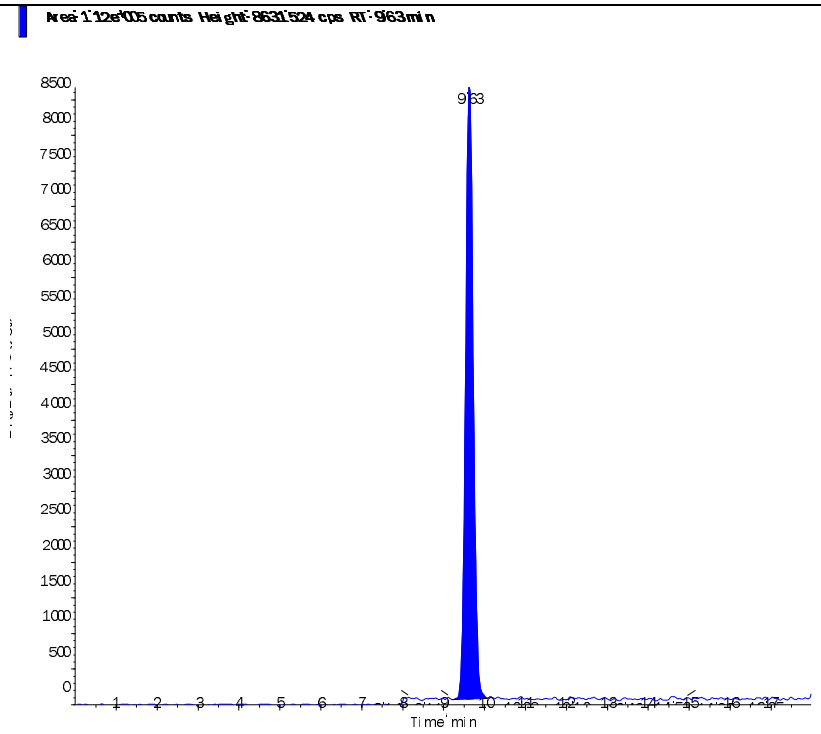
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.60 (9.48) min Calculated conc: 0.995 ng/ml Area Ratio: 0.084 Sample Type: (Standard)	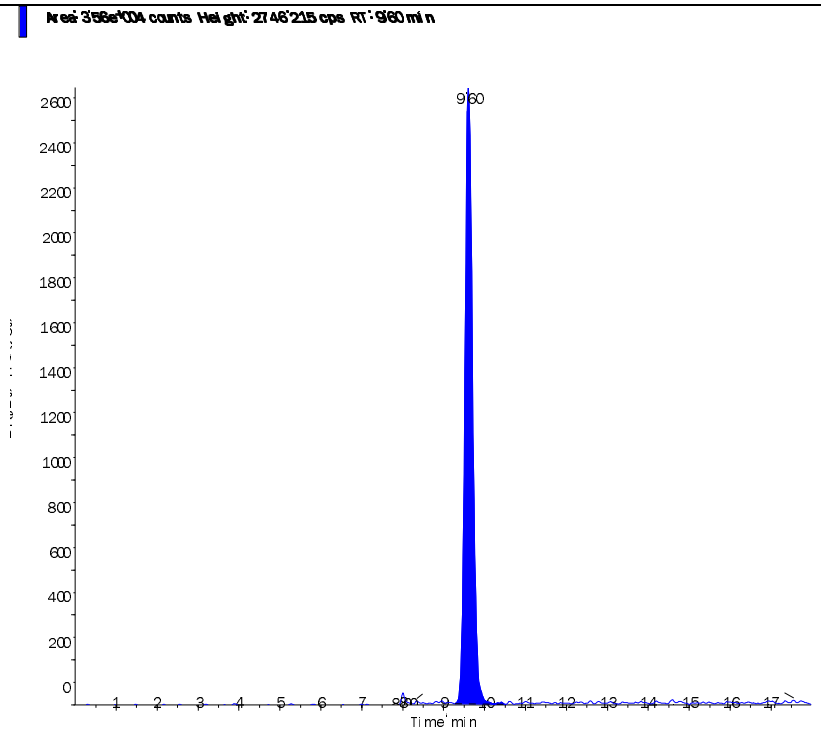

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Data File	LM31297.wiff	**Result Table**	083115_JWR.rdb
Acquisition Date	8/5/2015 11:44:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG533952-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM31297.wiff	**Injection Volume**	10.00
Acquisition Date	8/5/2015 11:44:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	083115_JWR.rdb
Sample ID	WG533952-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.180e+05	9.46	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.310e+05	9.47	2.00	2.04
Perchlorate conf	7.030e+04	9.46	2.00	2.00

O18LP (Internal Standard)

RT (Exp. RT): 9.46(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

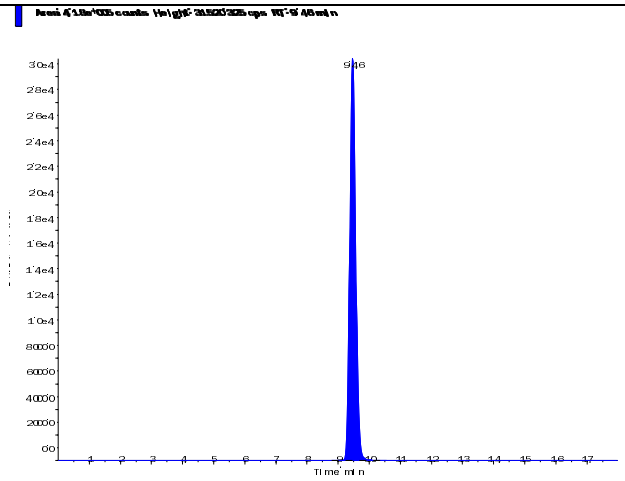

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.47 (9.52) min Calculated conc: 2.04 ng/ml Area Ratio: 0.552 Sample Type: (Standard)	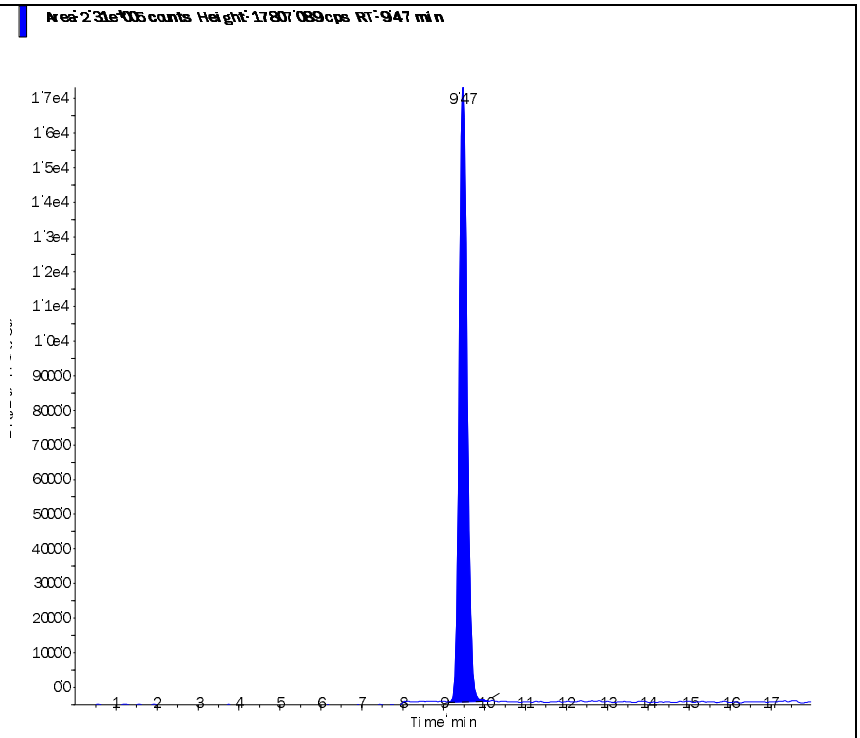
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.46 (9.48) min Calculated conc: 2.00 ng/ml Area Ratio: 0.168 Sample Type: (Standard)	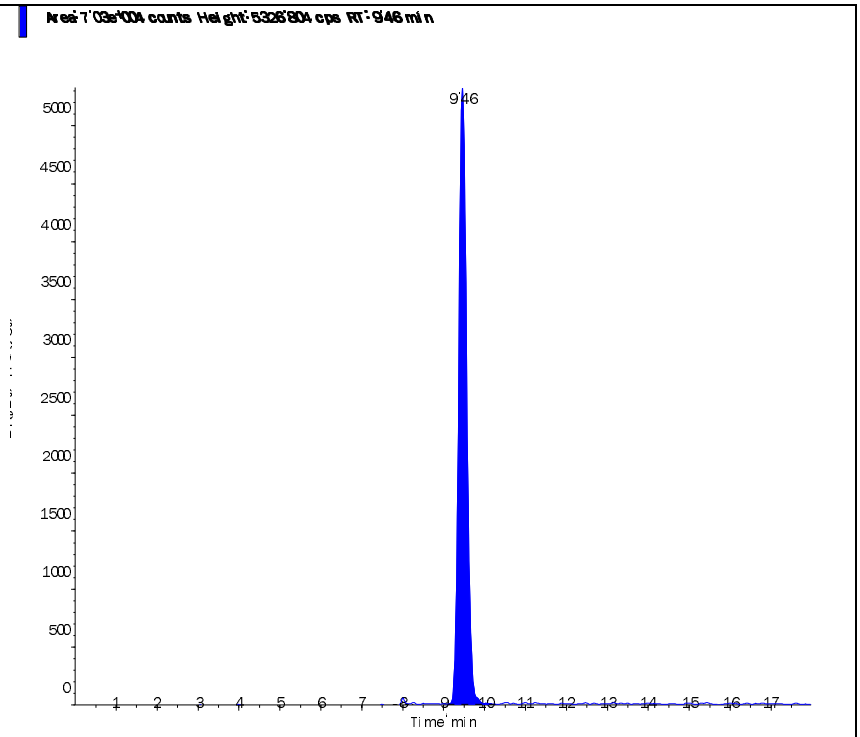

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Data File	LM31298.wiff	**Result Table**	083115_JWR.rdb
Acquisition Date	8/6/2015 12:03:11 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG533952-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM31298.wiff	**Injection Volume**	10.00
Acquisition Date	8/6/2015 12:03:11 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	083115_JWR.rdb
Sample ID	WG533952-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.100e+05	9.57	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.500e+05	9.58	5.00	4.96
Perchlorate conf	1.700e+05	9.56	5.00	4.94

O18LP (Internal Standard)

RT (Exp. RT): 9.57(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

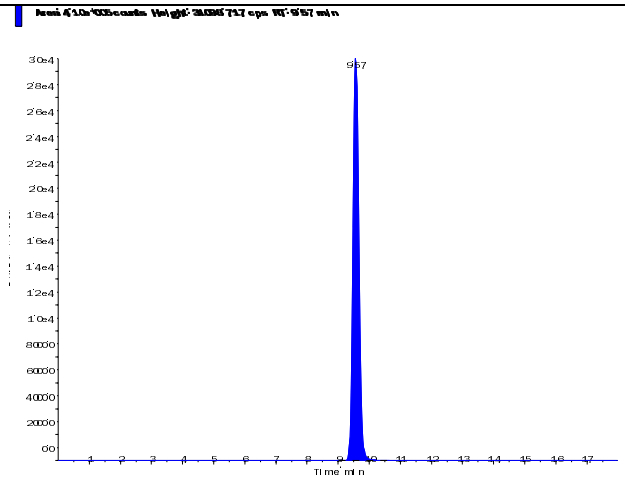

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.58 (9.52) min Calculated conc: 4.96 ng/ml Area Ratio: 1.342 Sample Type: (Standard)	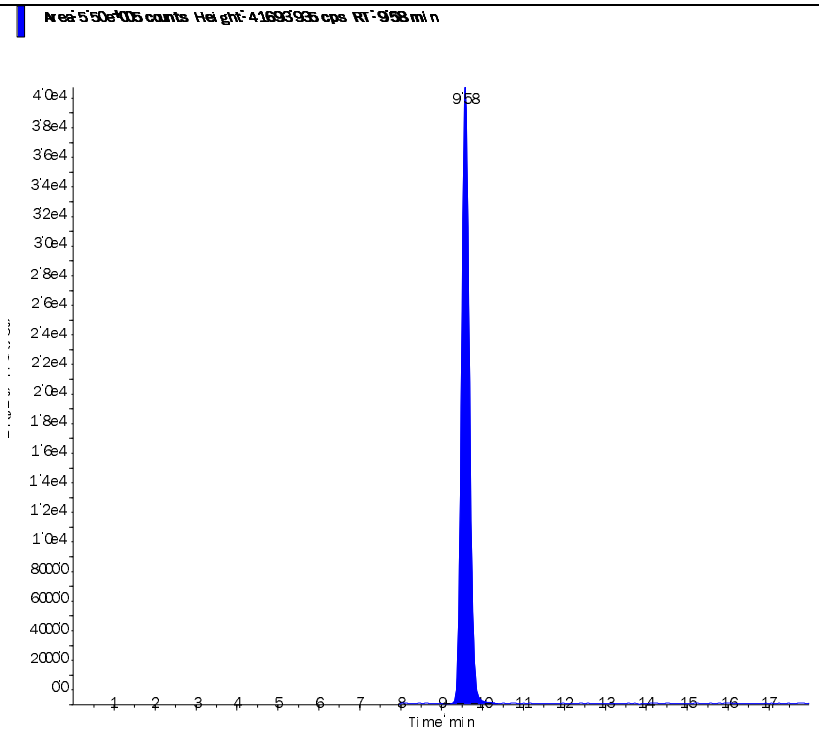
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.56 (9.48) min Calculated conc: 4.94 ng/ml Area Ratio: 0.415 Sample Type: (Standard)	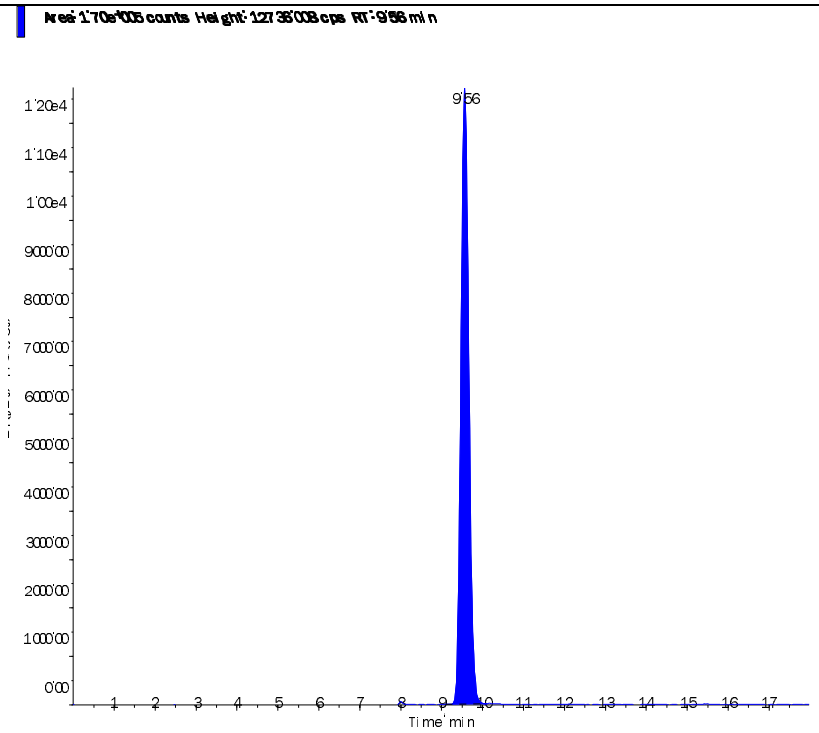

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Data File	LM31299.wiff	**Result Table**	083115_JWR.rdb
Acquisition Date	8/6/2015 12:22:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG533952-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM31299.wiff	**Injection Volume**	10.00
Acquisition Date	8/6/2015 12:22:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	083115_JWR.rdb
Sample ID	WG533952-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.600e+05	9.65	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	9.750e+05	9.66	10.00	10.00
Perchlorate conf	3.040e+05	9.64	10.00	10.10

O18LP (Internal Standard)

RT (Exp. RT): 9.65(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

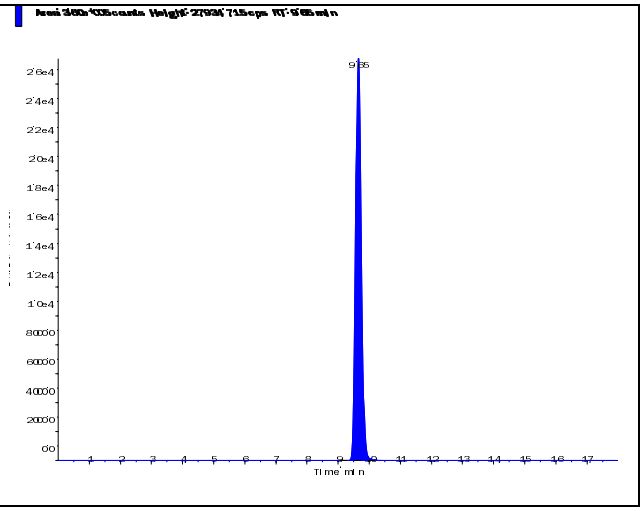

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Printed: 9/1/2015 9:34 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.66 (9.52) min Calculated conc: 10.00 ng/ml Area Ratio: 2.709 Sample Type: (Standard)	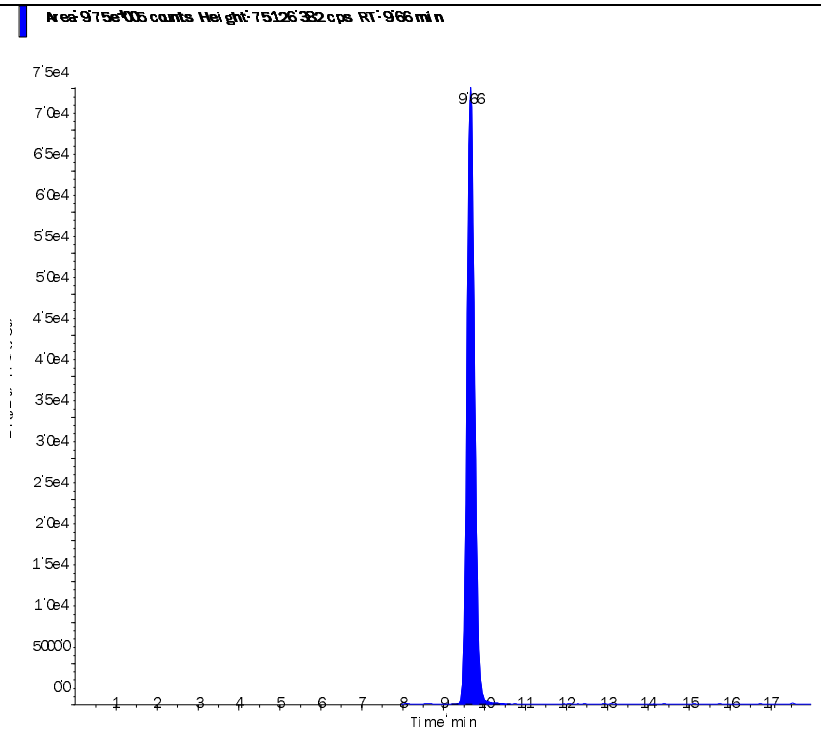
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.64 (9.48) min Calculated conc: 10.10 ng/ml Area Ratio: 0.845 Sample Type: (Standard)	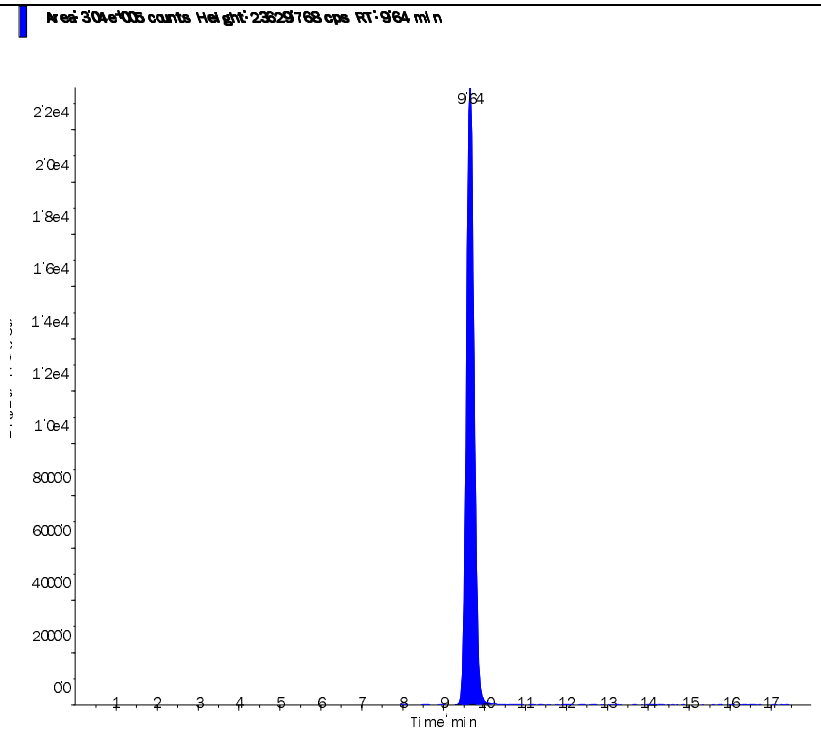

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Data File	LM31300.wiff	**Result Table**	080515_JWR.rdb
Acquisition Date	8/6/2015 12:41:03 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG533952-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM31300.wiff	**Injection Volume**	10.00
Acquisition Date	8/6/2015 12:41:03 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	080515_JWR.rdb
Sample ID	WG533952-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD69913	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.180e+05	9.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.090e+05	9.71	1.00	0.956
Perchlorate conf	3.410e+04	9.70	1.00	0.964

O18LP (Internal Standard)

RT (Exp. RT): 9.70(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

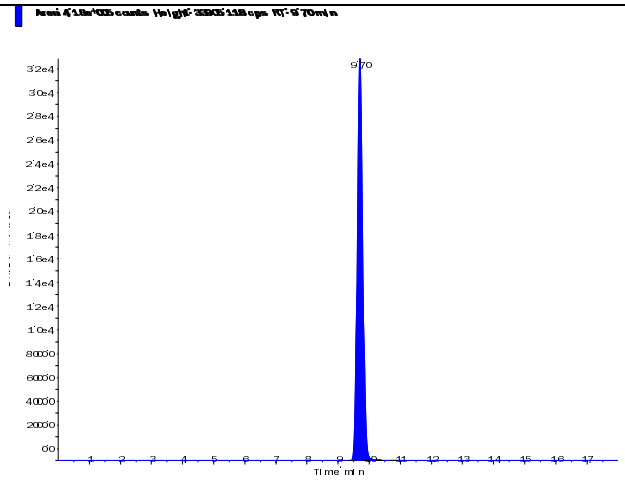

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.71 (9.52) min
Calculated conc:	0.956 ng/ml
Area Ratio:	0.26
Sample Type:	(Quality Control)

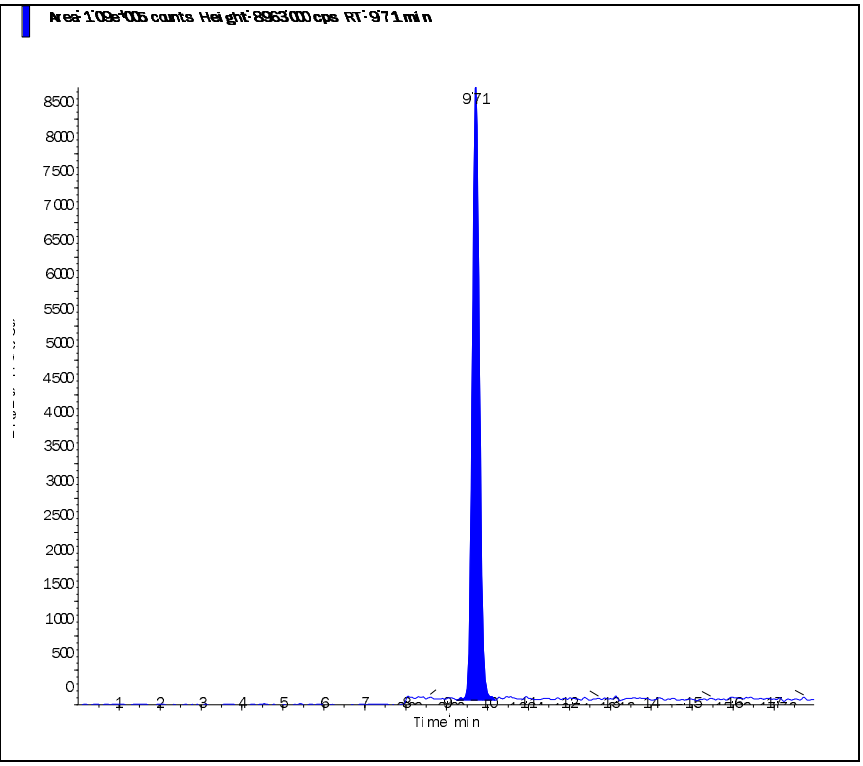

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.70 (9.48) min
Calculated conc:	0.964 ng/ml
Area Ratio:	0.081
Sample Type:	(Quality Control)

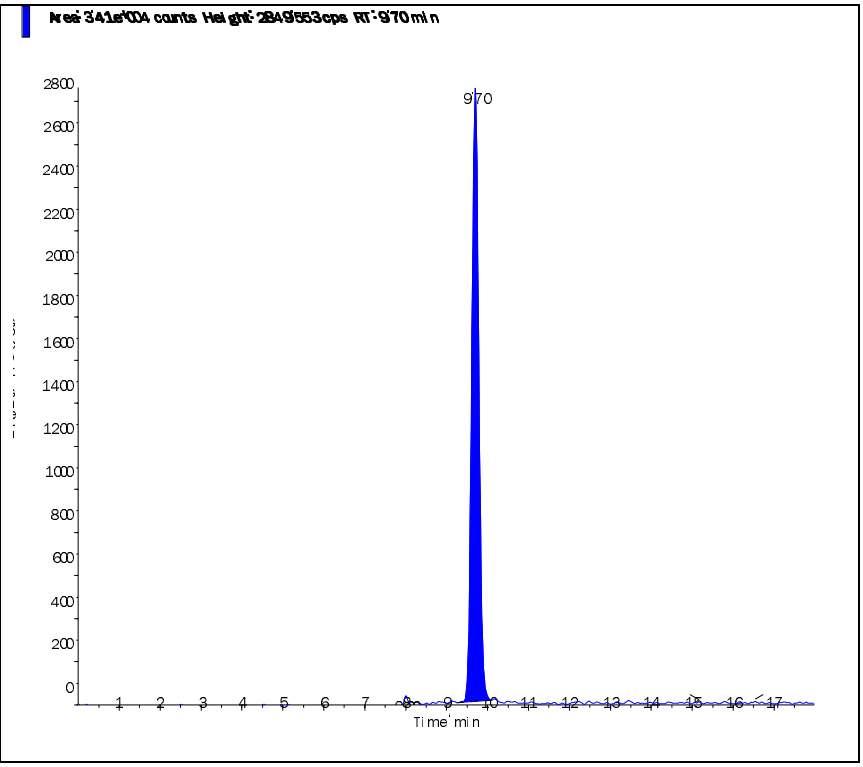

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Data File	LM31505.wiff	**Result Table**	083115_JWR.rdb
Acquisition Date	8/31/2015 11:25:22 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG537122-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM31505.wiff	**Injection Volume**	10.00
Acquisition Date	8/31/2015 11:25:22 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	083115_JWR.rdb
Sample ID	WG537122-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.520e+05	9.59	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.040e+05	9.60	1.00	1.09
Perchlorate conf	3.180e+04	9.58	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 9.59(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

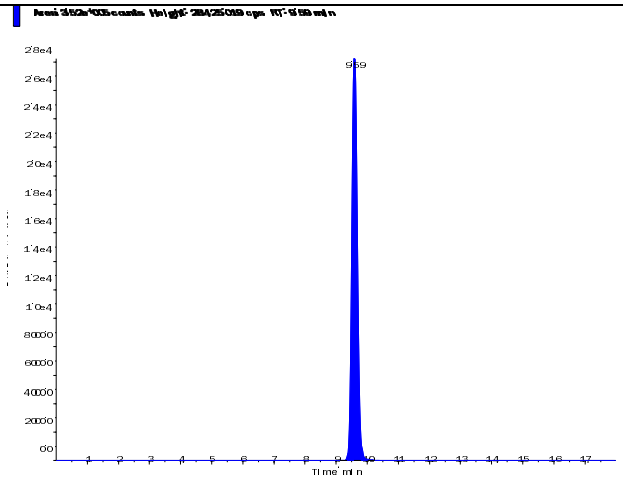

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.60 (9.52) min Calculated conc: 1.09 ng/ml Area Ratio: 0.296 Sample Type: (Quality Control)	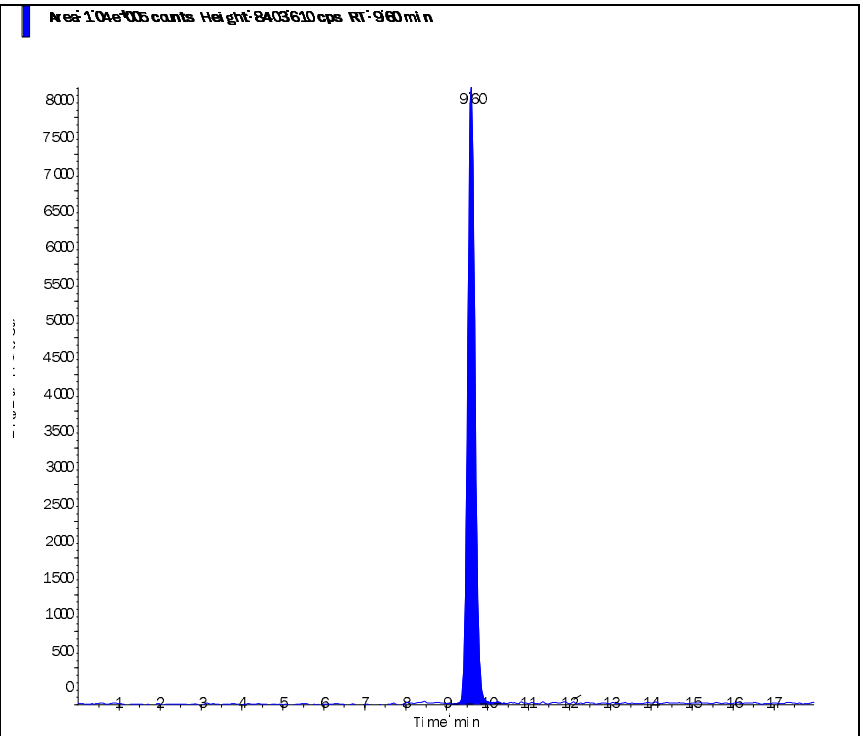
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.58 (9.48) min Calculated conc: 1.07 ng/ml Area Ratio: 0.09 Sample Type: (Quality Control)	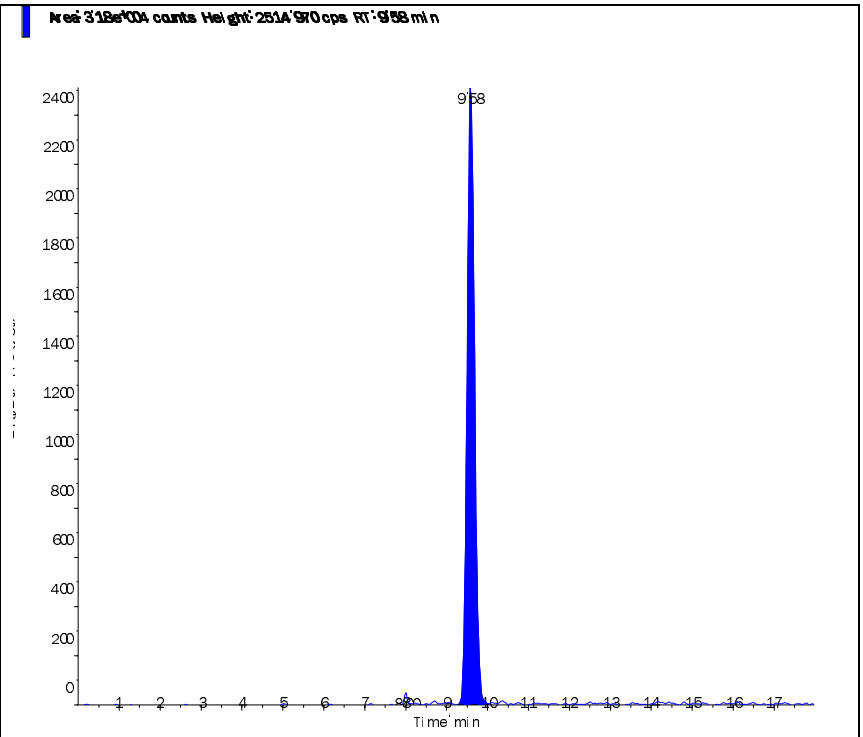

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Created with Analyst Reporter
Printed: 9/1/2015 9:37 AM

Data File	LM31517.wiff	**Result Table**	083115_JWR.rdb
Acquisition Date	8/31/2015 3:12:36 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG537122-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM31517.wiff	**Injection Volume**	10.00
Acquisition Date	8/31/2015 3:12:36 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	083115_JWR.rdb
Sample ID	WG537122-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.850e+05	9.58	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.340e+05	9.59	1.00	1.02
Perchlorate conf	4.290e+04	9.58	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.58(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

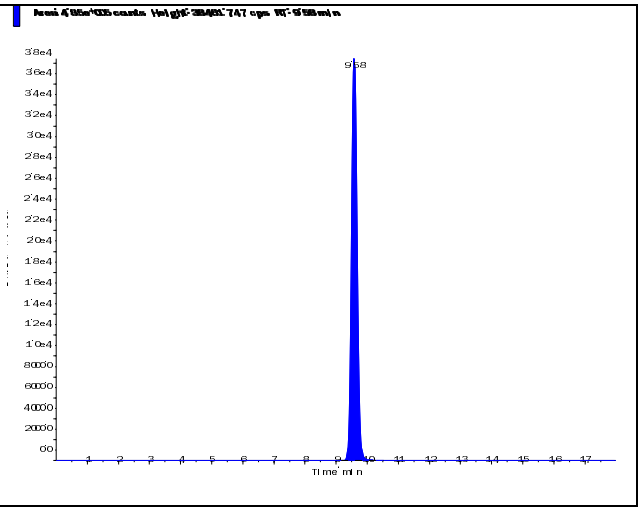

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.59 (9.52) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.277
Sample Type:	(Quality Control)

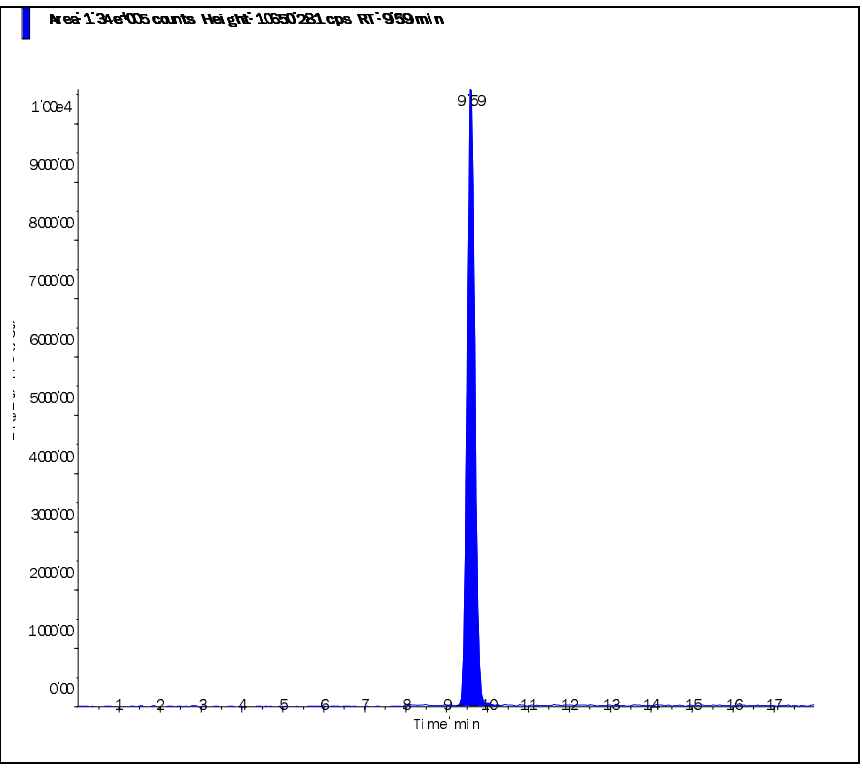

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.58 (9.48) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.088
Sample Type:	(Quality Control)

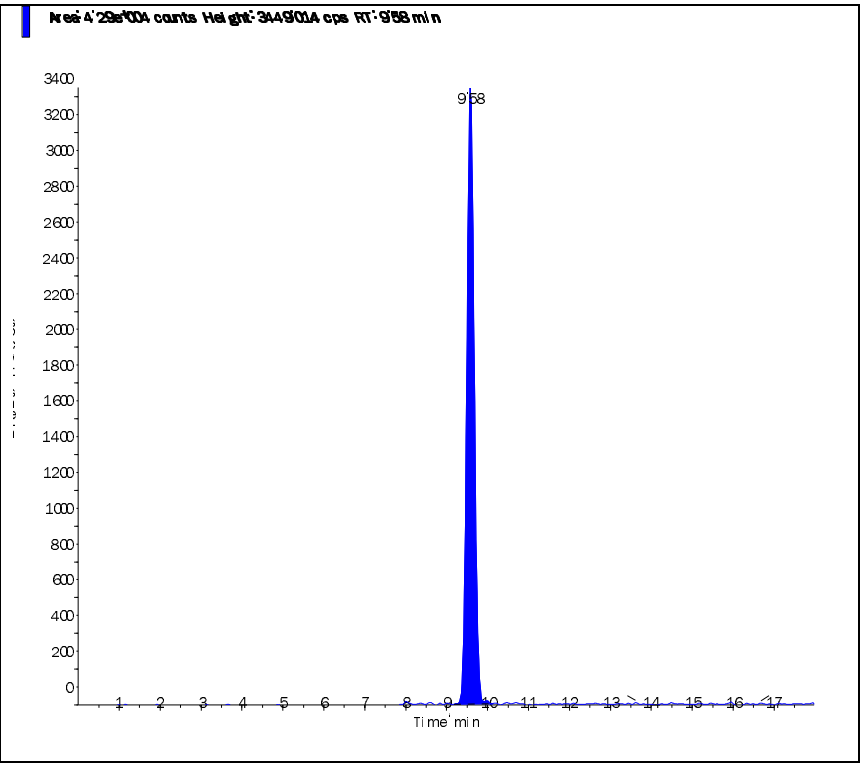

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Created with Analyst Reporter
Printed: 9/1/2015 9:40 AM

Data File	LM31530.wiff	**Result Table**	083115_JWR.rdb
Acquisition Date	8/31/2015 7:18:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG537122-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM31530.wiff	**Injection Volume**	10.00
Acquisition Date	8/31/2015 7:18:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	083115_JWR.rdb
Sample ID	WG537122-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.760e+05	9.59	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.320e+05	9.59	1.00	1.02
Perchlorate conf	4.070e+04	9.58	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.59(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

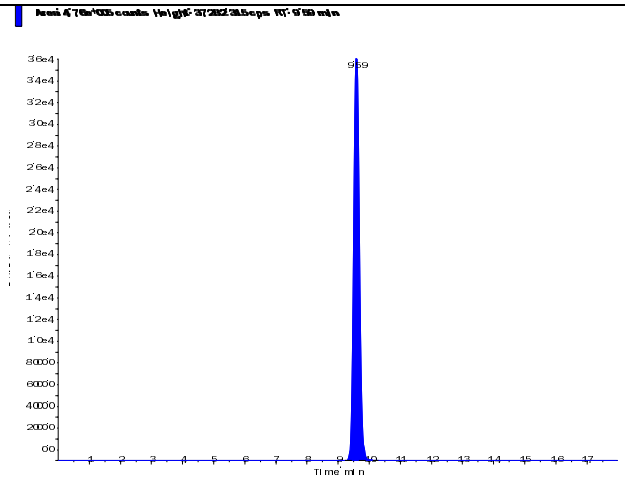

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.59 (9.52) min Calculated conc: 1.02 ng/ml Area Ratio: 0.278 Sample Type: (Quality Control)	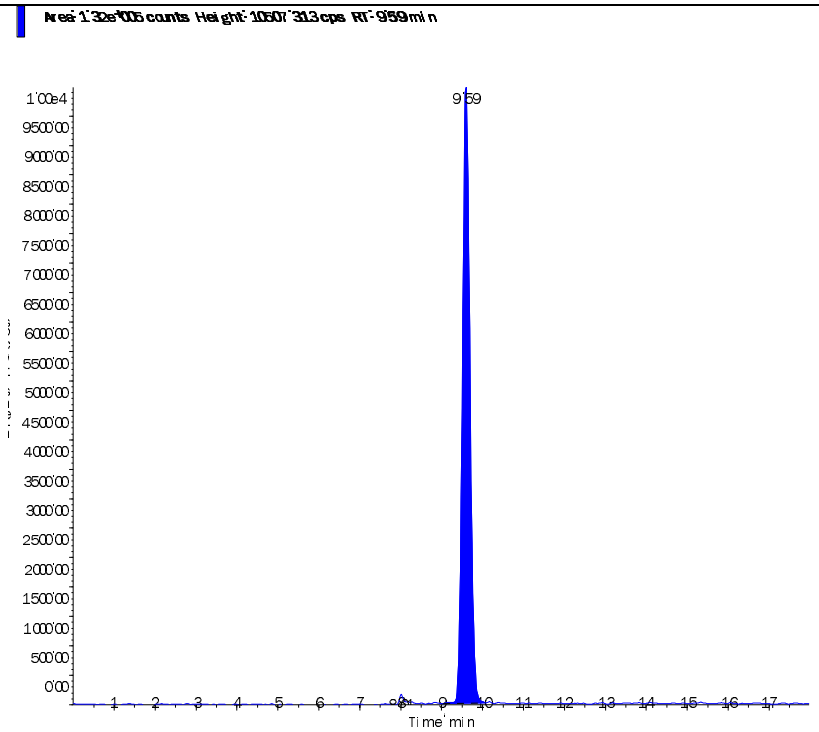
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.58 (9.48) min Calculated conc: 1.01 ng/ml Area Ratio: 0.086 Sample Type: (Quality Control)	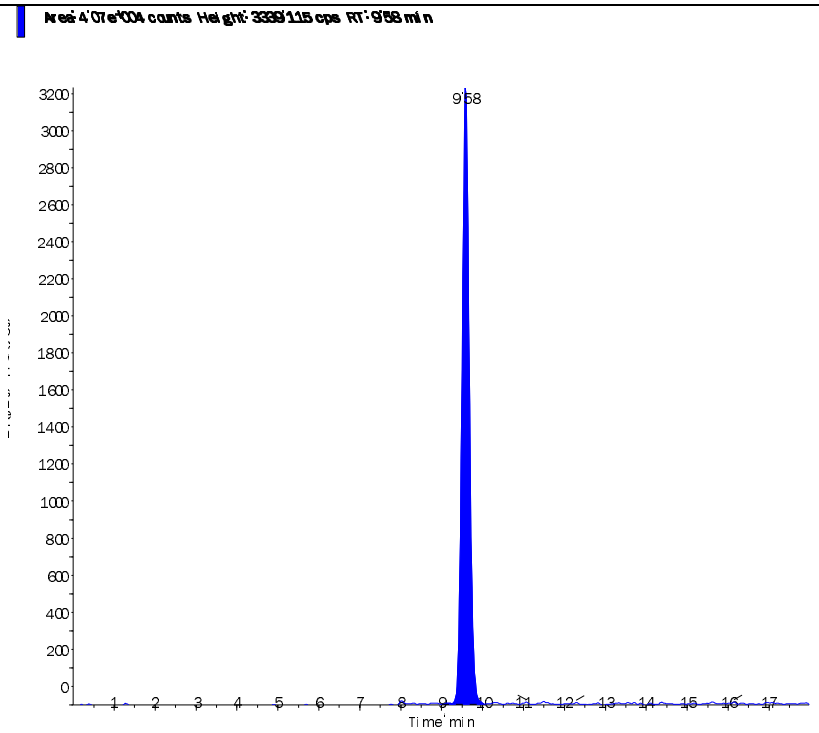

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Printed: 9/1/2015 9:41 AM

Data File	LM31534.wiff	**Result Table**	083115_JWR.rdb
Acquisition Date	8/31/2015 8:34:41 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG537122-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM31534.wiff	**Injection Volume**	10.00
Acquisition Date	8/31/2015 8:34:41 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	083115_JWR.rdb
Sample ID	WG537122-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.670e+05	9.59	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.280e+05	9.60	1.00	1.01
Perchlorate conf	4.110e+04	9.59	1.00	1.04

O18LP (Internal Standard)

RT (Exp. RT): 9.59(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

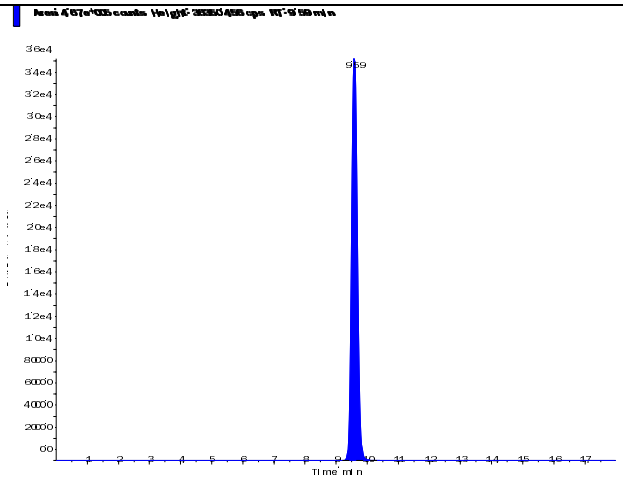

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.60 (9.52) min Calculated conc: 1.01 ng/ml Area Ratio: 0.274 Sample Type: (Quality Control)	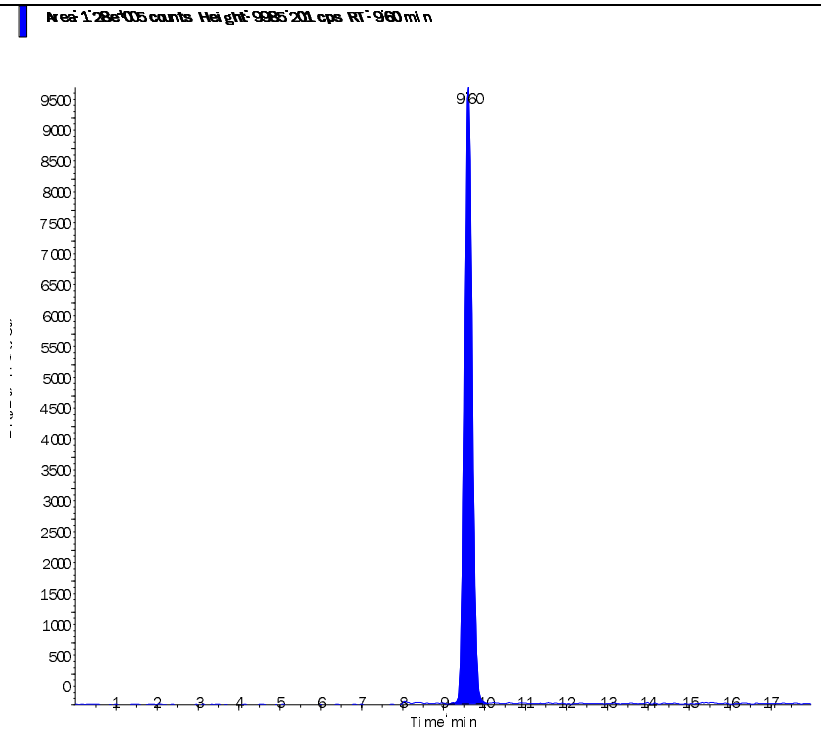
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.59 (9.48) min Calculated conc: 1.04 ng/ml Area Ratio: 0.088 Sample Type: (Quality Control)	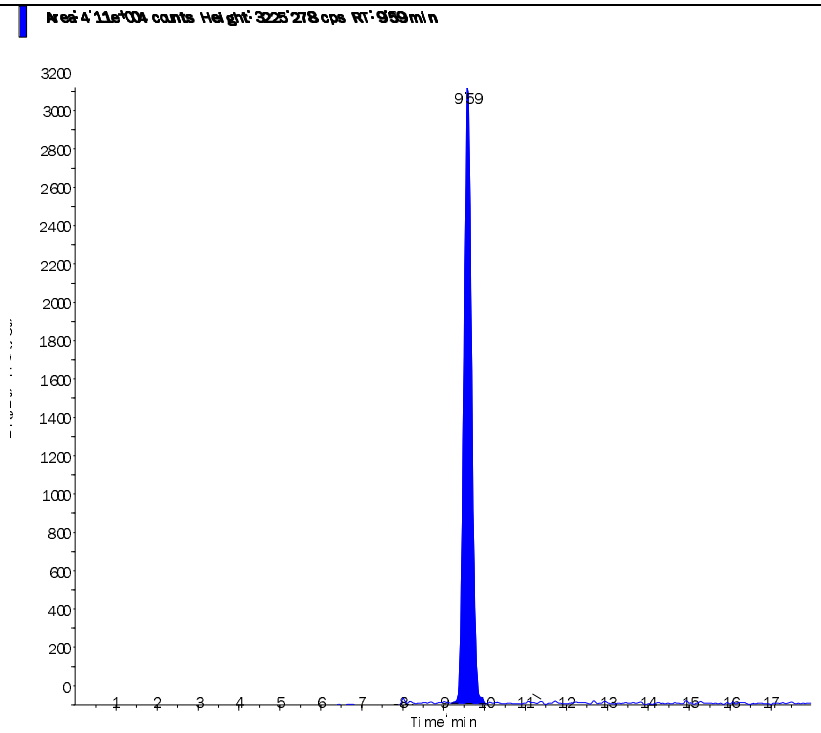

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Data File	LM31506.wiff	**Result Table**	083115_JWR.rdb
Acquisition Date	8/31/2015 11:44:17 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG537121-10 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM31506.wiff	**Injection Volume**	10.00
Acquisition Date	8/31/2015 11:44:17 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	083115_JWR.rdb
Sample ID	WG537121-10	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.540e+05	9.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.050e+04	9.72	N/A	0.208
Perchlorate conf	6.670e+03	9.71	N/A	0.218

O18LP (Internal Standard)

RT (Exp. RT): 9.70(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

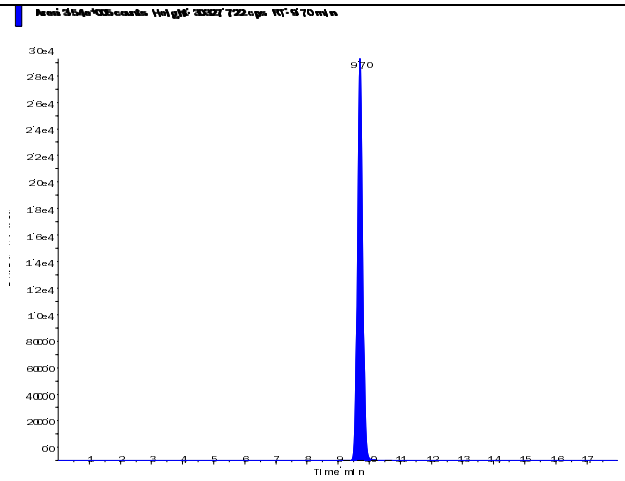

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.72 (9.52) min
Calculated conc:	0.208 ng/ml
Area Ratio:	0.058
Sample Type:	(Unknown)

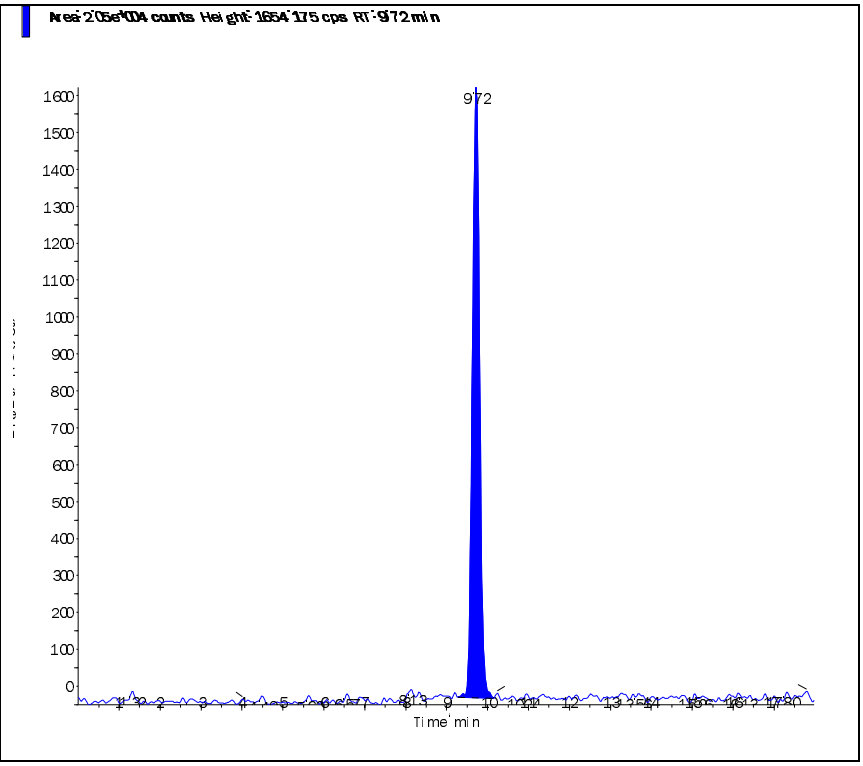

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.71 (9.48) min
Calculated conc:	0.218 ng/ml
Area Ratio:	0.019
Sample Type:	(Unknown)

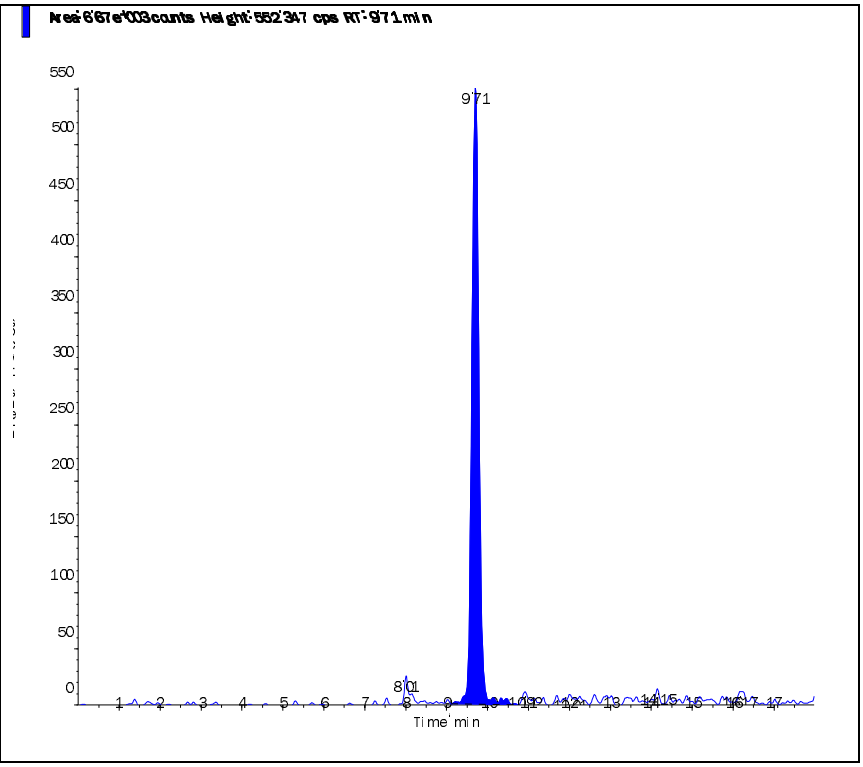

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Data File	LM31518.wiff	**Result Table**	083115_JWR.rdb
Acquisition Date	8/31/2015 3:31:31 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG537121-11 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM31518.wiff	**Injection Volume**	10.00
Acquisition Date	8/31/2015 3:31:31 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	083115_JWR.rdb
Sample ID	WG537121-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.380e+05	9.69	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.420e+04	9.70	N/A	0.198
Perchlorate conf	8.010e+03	9.70	N/A	0.212

O18LP (Internal Standard)

RT (Exp. RT): 9.69(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

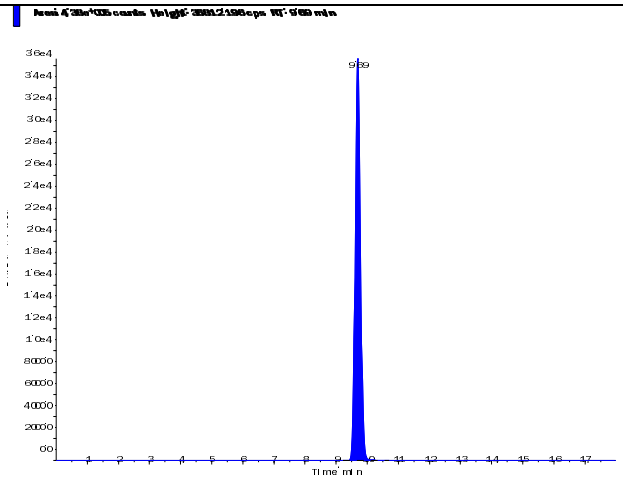

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.70 (9.52) min Calculated conc: 0.198 ng/ml Area Ratio: 0.055 Sample Type: (Unknown)	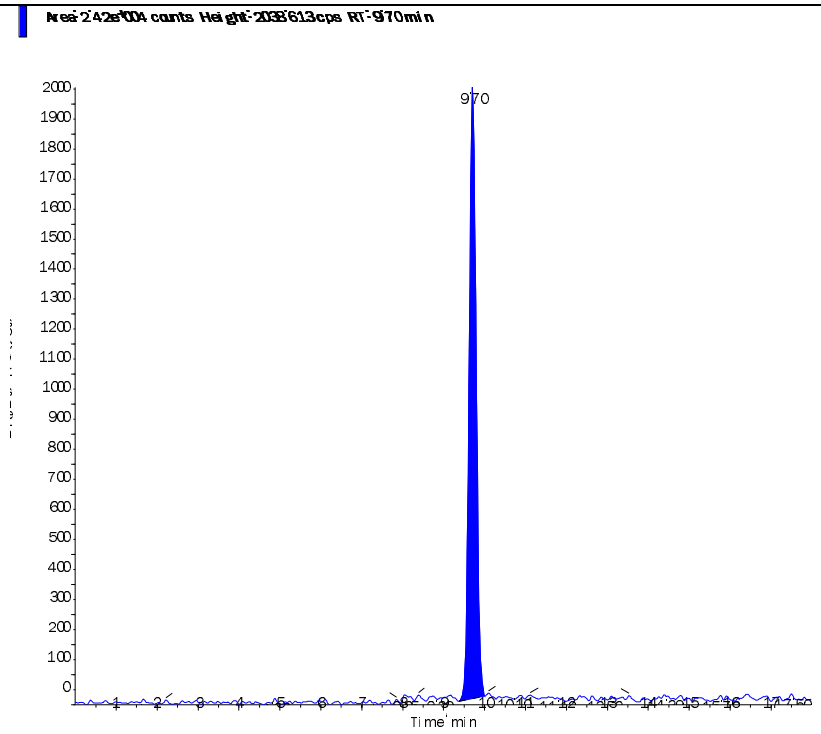
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.70 (9.48) min Calculated conc: 0.212 ng/ml Area Ratio: 0.018 Sample Type: (Unknown)	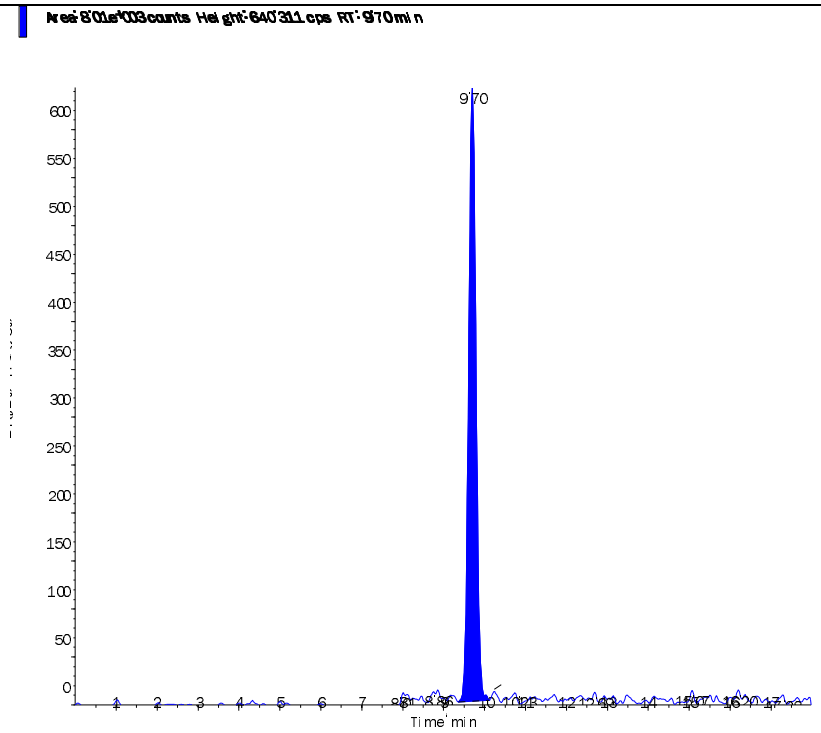

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Data File	LM31531.wiff	**Result Table**	083115_JWR.rdb
Acquisition Date	8/31/2015 7:37:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG537121-12 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM31531.wiff	**Injection Volume**	10.00
Acquisition Date	8/31/2015 7:37:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	083115_JWR.rdb
Sample ID	WG537121-12	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.620e+05	9.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.680e+04	9.72	N/A	0.209
Perchlorate conf	8.440e+03	9.70	N/A	0.211

O18LP (Internal Standard)

RT (Exp. RT): 9.70(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

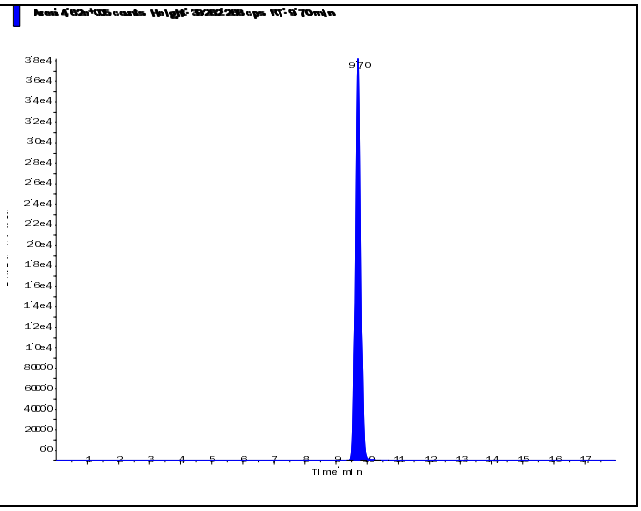

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.72 (9.52) min
Calculated conc:	0.209 ng/ml
Area Ratio:	0.058
Sample Type:	(Unknown)

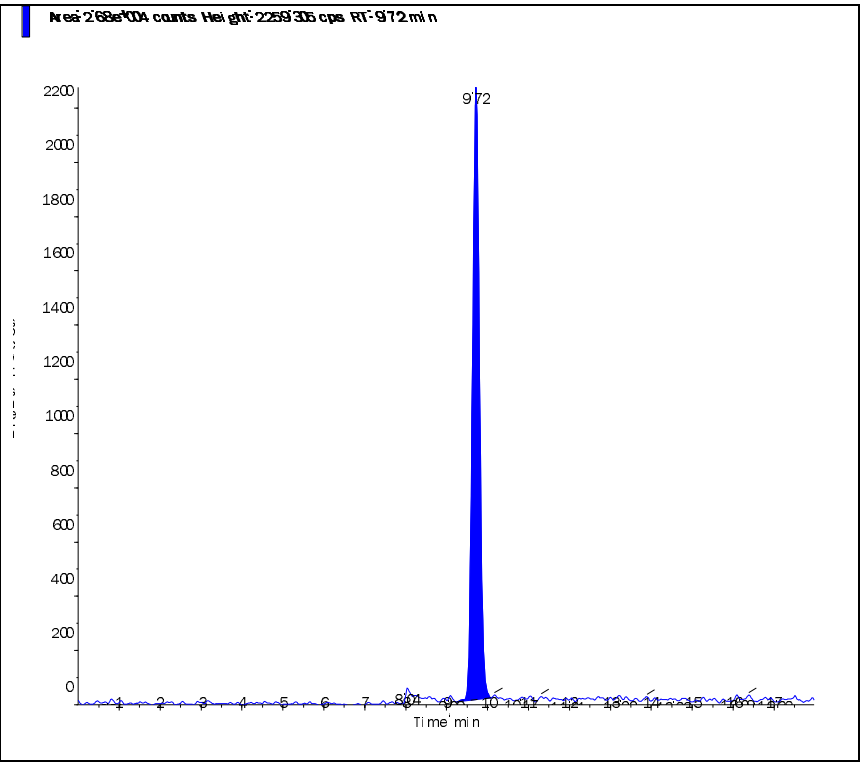

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.70 (9.48) min
Calculated conc:	0.211 ng/ml
Area Ratio:	0.018
Sample Type:	(Unknown)

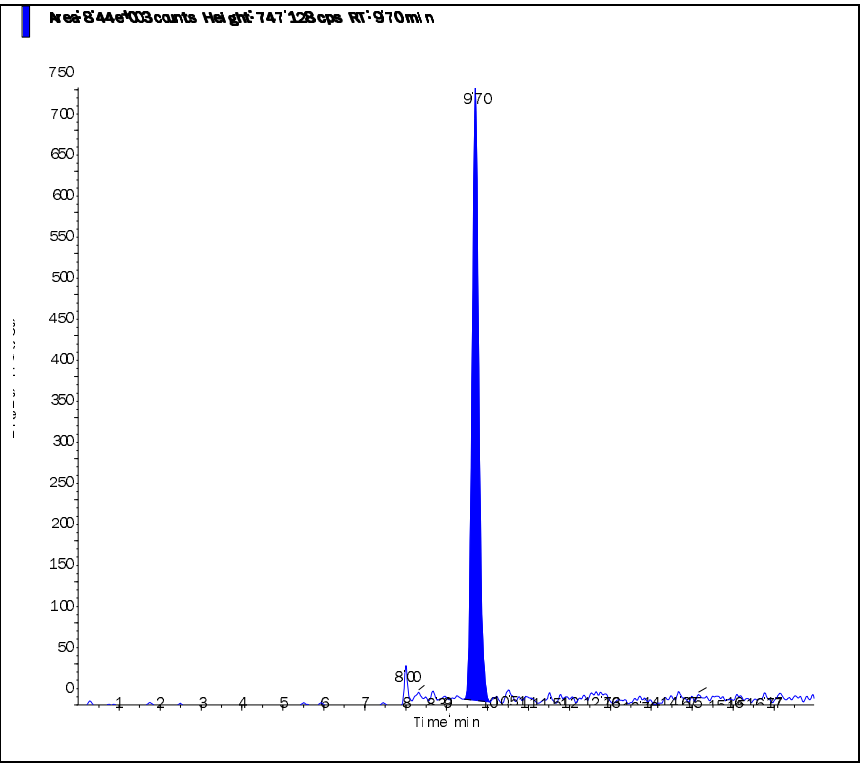

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Data File	LM31535.wiff	**Result Table**	083115_JWR.rdb
Acquisition Date	8/31/2015 8:53:36 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG537121-13 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM31535.wiff	**Injection Volume**	10.00
Acquisition Date	8/31/2015 8:53:36 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	083115_JWR.rdb
Sample ID	WG537121-13	**Dilution Factor**	1.00
Sample Comment	1,1 STD69537	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.280e+05	9.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.430e+04	9.72	N/A	0.204
Perchlorate conf	8.050e+03	9.70	N/A	0.218

O18LP (Internal Standard)

RT (Exp. RT): 9.70(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

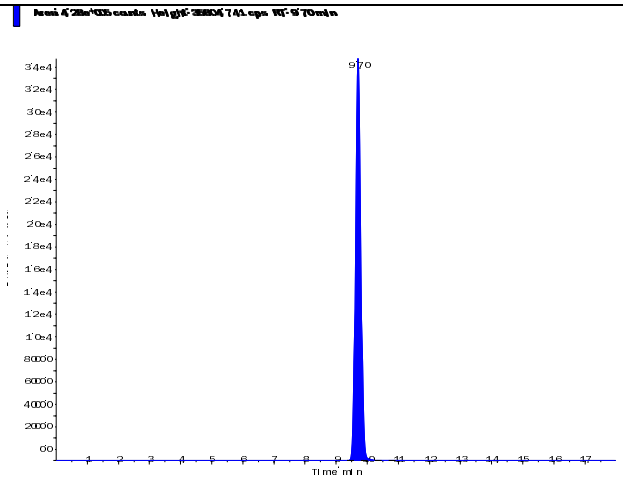

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.72 (9.52) min Calculated conc: 0.204 ng/ml Area Ratio: 0.057 Sample Type: (Unknown)	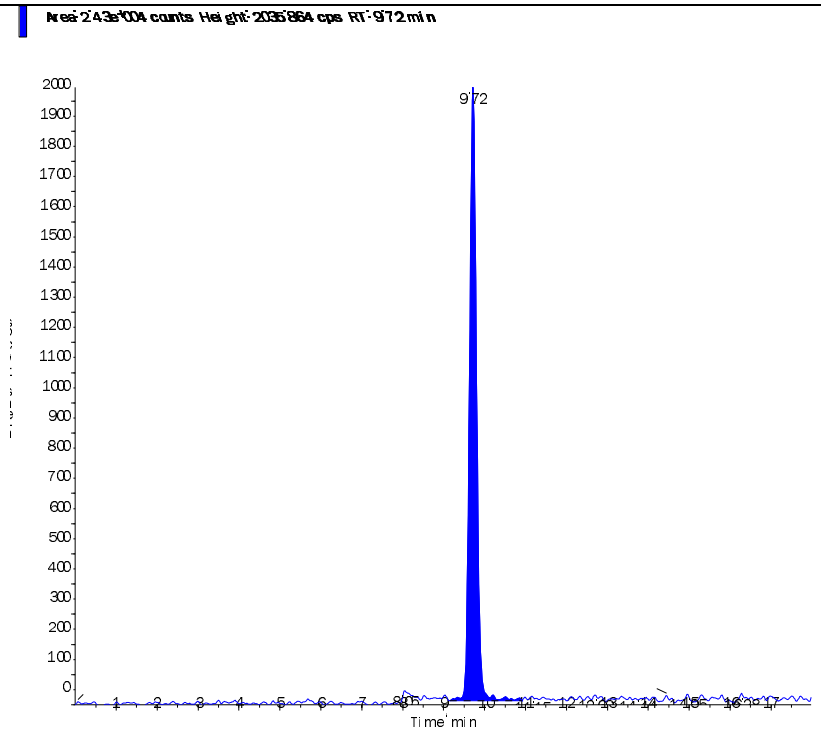
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.70 (9.48) min Calculated conc: 0.218 ng/ml Area Ratio: 0.019 Sample Type: (Unknown)	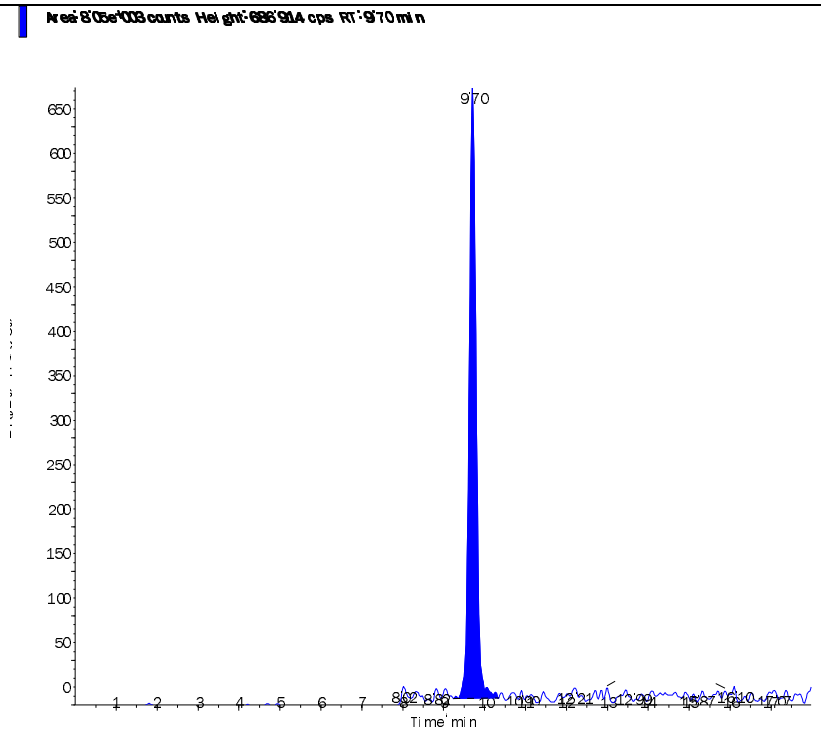

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Data File	LM31504.wiff	**Result Table**	083115_JWR.rdb
Acquisition Date	8/31/2015 11:06:28 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG537122-01 CCB	**Injection Vial**	1.00
Data File	LM31504.wiff	**Injection Volume**	10.00
Acquisition Date	8/31/2015 11:06:28 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	083115_JWR.rdb
Sample ID	WG537122-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.380e+05	9.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.70(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

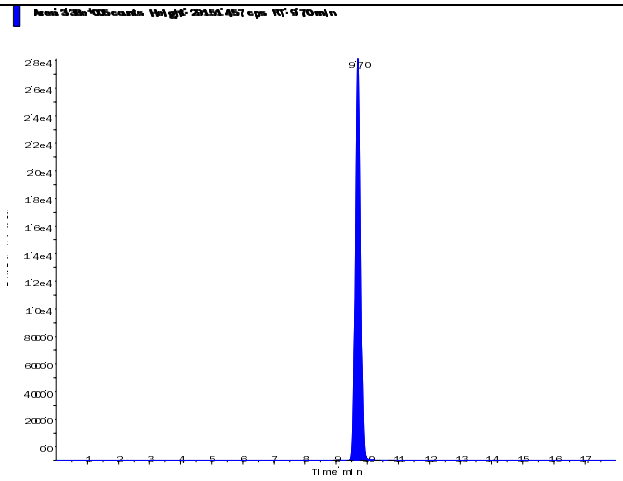

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.52) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	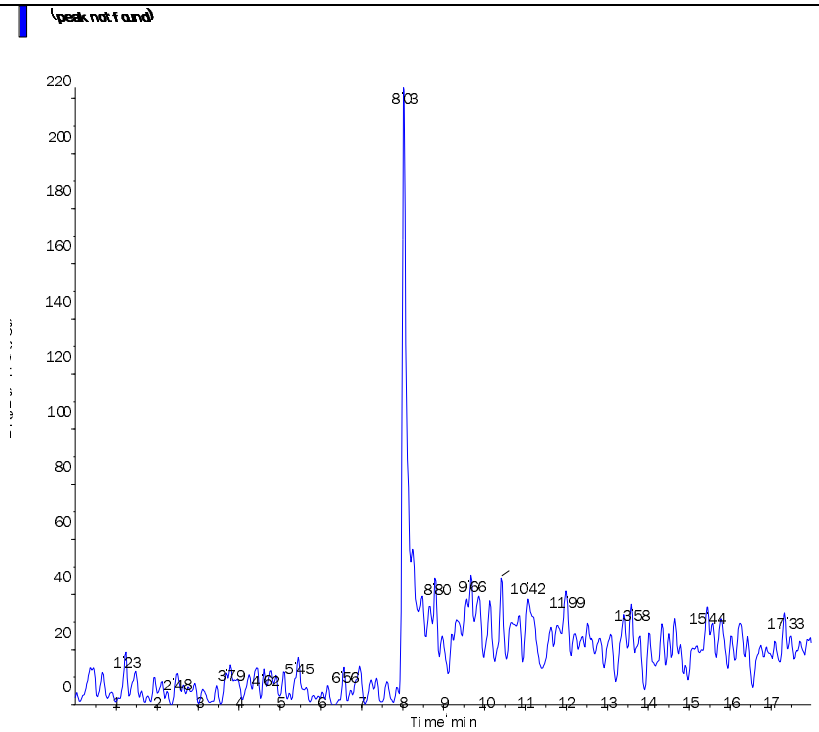
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.48) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	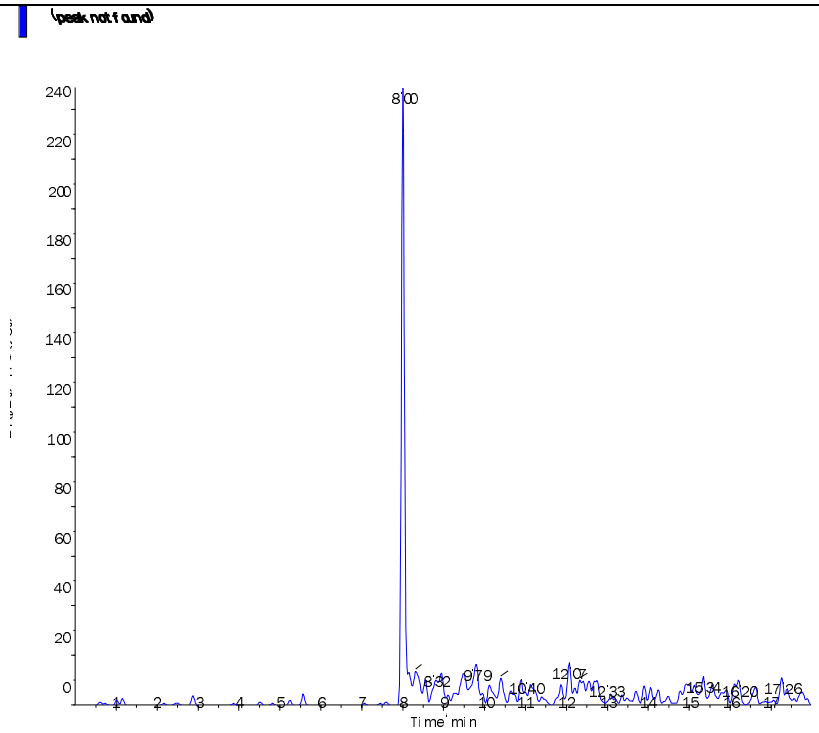

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Printed: 9/1/2015 9:38 AM

Data File	LM31519.wiff	**Result Table**	083115_JWR.rdb
Acquisition Date	8/31/2015 3:50:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG537122-04 CCB	**Injection Vial**	1.00
Data File	LM31519.wiff	**Injection Volume**	10.00
Acquisition Date	8/31/2015 3:50:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	083115_JWR.rdb
Sample ID	WG537122-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.230e+05	9.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	3.100e+02	9.63	N/A	0.0023

O18LP (Internal Standard)

RT (Exp. RT): 9.70(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

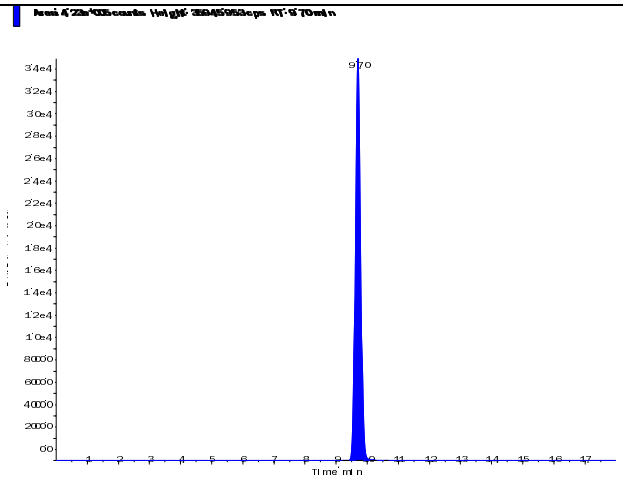

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.52) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	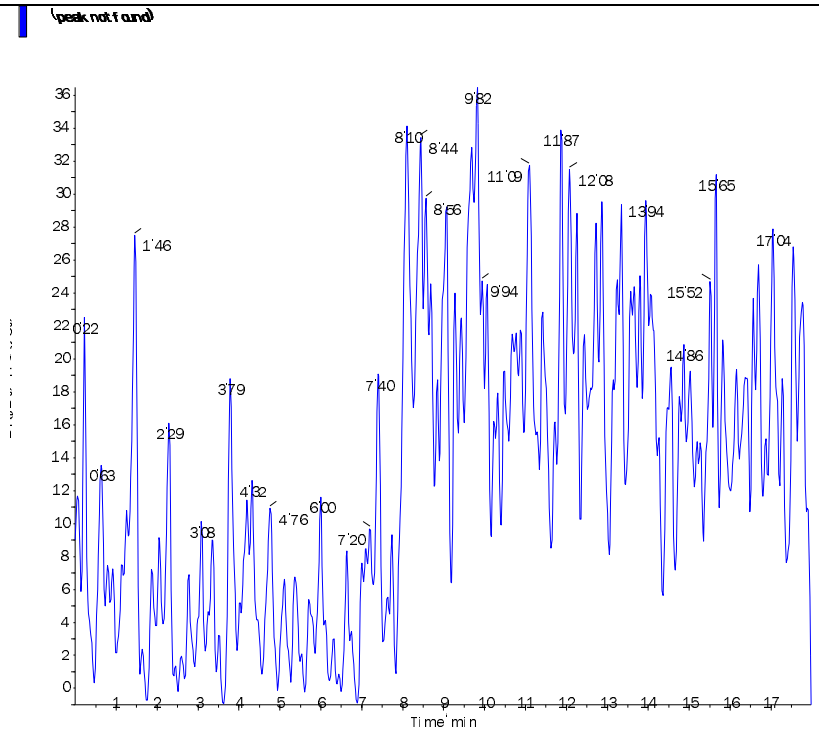
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.63 (9.48) min Calculated conc: 0.0023 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	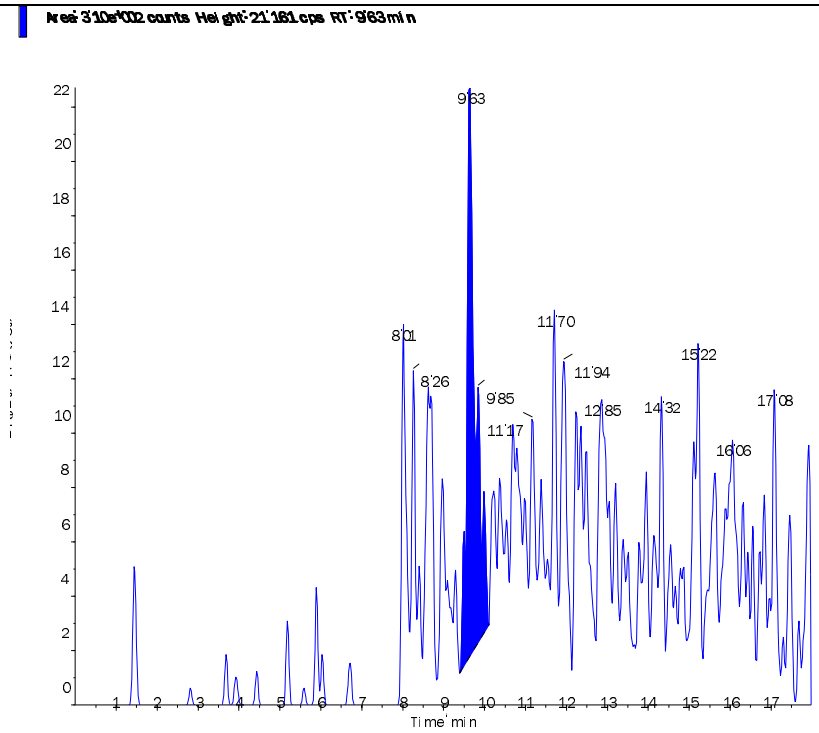

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Created with Analyst Reporter
Printed: 9/1/2015 9:41 AM

Data File	LM31532.wiff	**Result Table**	083115_JWR.rdb
Acquisition Date	8/31/2015 7:56:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG537122-06 CCB	**Injection Vial**	1.00
Data File	LM31532.wiff	**Injection Volume**	10.00
Acquisition Date	8/31/2015 7:56:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	083115_JWR.rdb
Sample ID	WG537122-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.370e+05	9.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	6.680e+02	9.62	N/A	< 0
Perchlorate conf	3.500e+02	9.69	N/A	0.0031

O18LP (Internal Standard)

RT (Exp. RT): 9.70(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

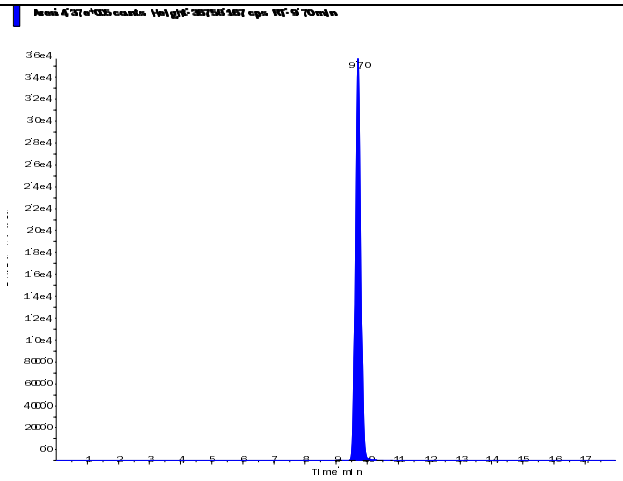

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.62 (9.52) min Calculated conc: < 0 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	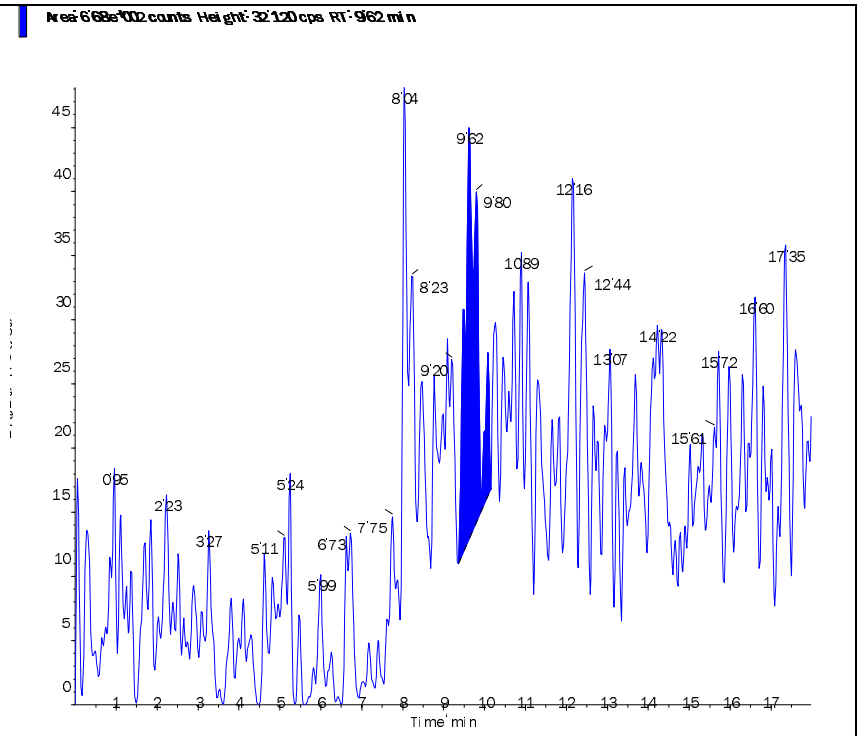
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.69 (9.48) min Calculated conc: 0.0031 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	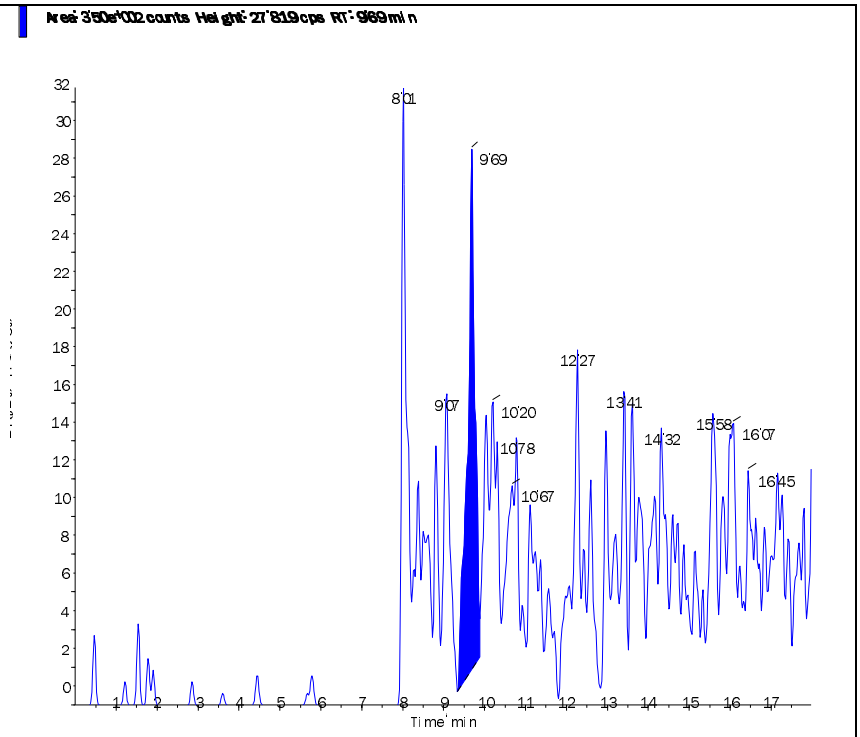

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Printed: 9/1/2015 9:42 AM

Data File	LM31536.wiff	**Result Table**	083115_JWR.rdb
Acquisition Date	8/31/2015 9:12:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG537122-08 CCB	**Injection Vial**	1.00
Data File	LM31536.wiff	**Injection Volume**	10.00
Acquisition Date	8/31/2015 9:12:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	083115_JWR.rdb
Sample ID	WG537122-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.090e+05	9.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	1.300e+02	9.68	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.70(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

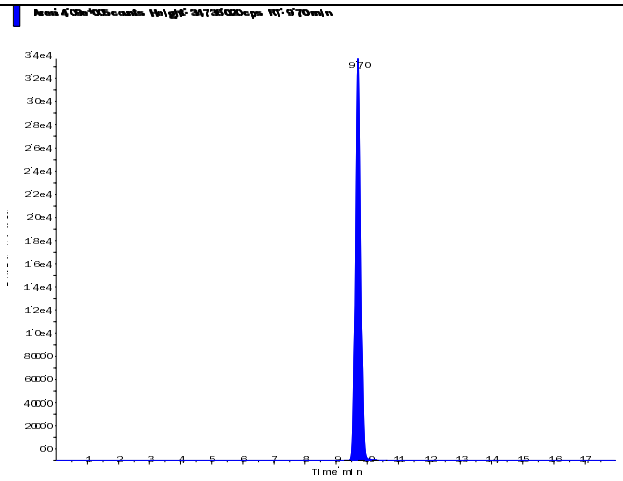

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.52) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	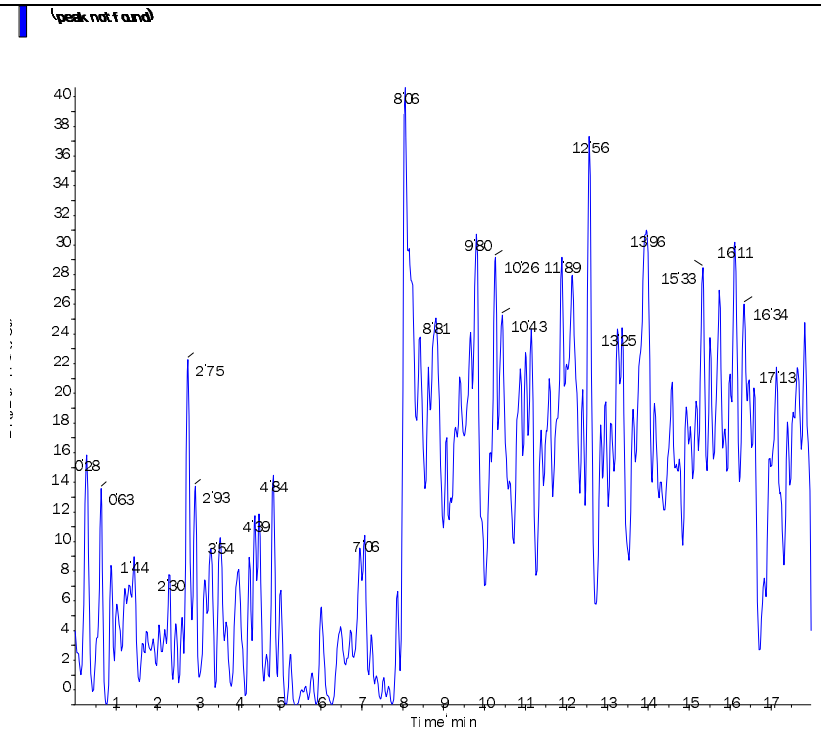
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.68 (9.48) min Calculated conc: < 0 ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	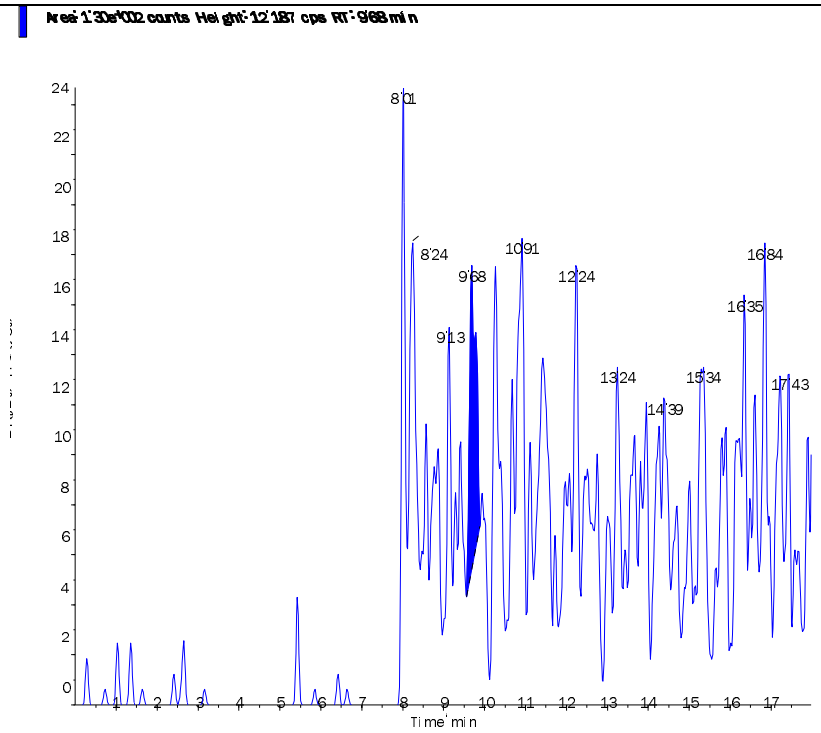

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Created with Analyst Reporter
Printed: 9/1/2015 9:35 AM

Data File	LM31507.wiff	**Result Table**	083115_JWR.rdb
Acquisition Date	8/31/2015 12:03:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG537121-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM31507.wiff	**Injection Volume**	10.00
Acquisition Date	8/31/2015 12:03:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	083115_JWR.rdb
Sample ID	WG537121-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD69913	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.090e+05	9.28	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.500e+04	9.30	N/A	0.22
Perchlorate conf	7.790e+03	9.28	N/A	0.221

O18LP (Internal Standard)

RT (Exp. RT): 9.28(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

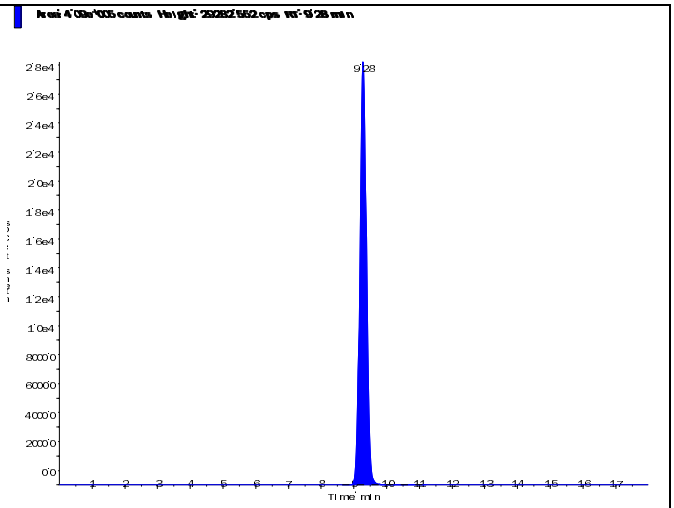

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Created with Analyst Reporter
Printed: 9/1/2015 9:35 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.30 (9.52) min Calculated conc: 0.22 ng/ml Area Ratio: 0.061 Sample Type: (Unknown)	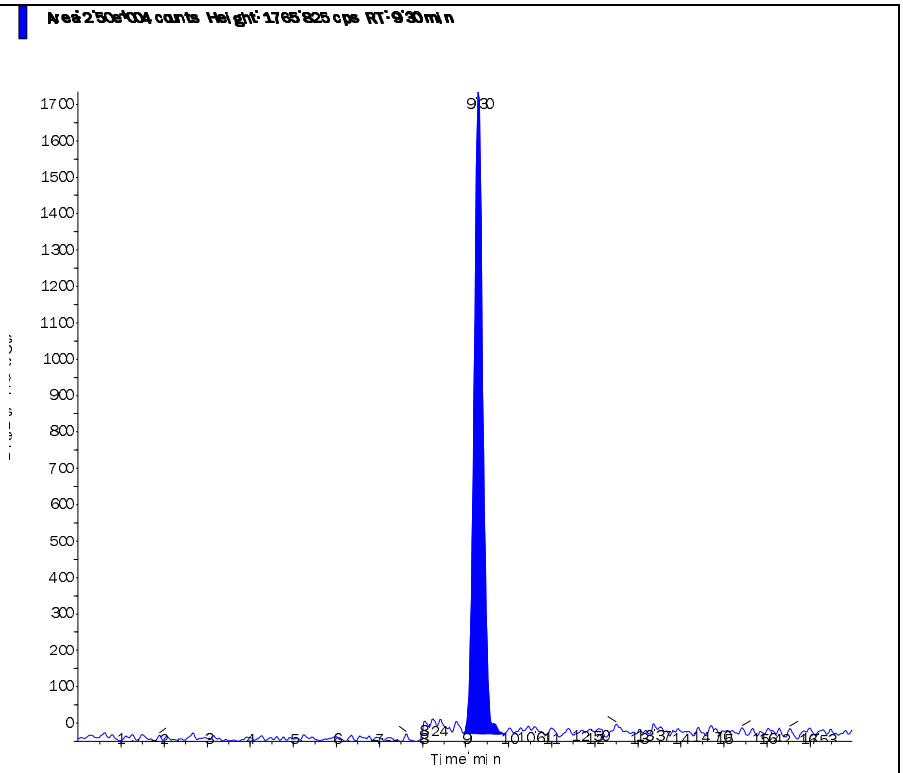
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.28 (9.48) min Calculated conc: 0.221 ng/ml Area Ratio: 0.019 Sample Type: (Unknown)	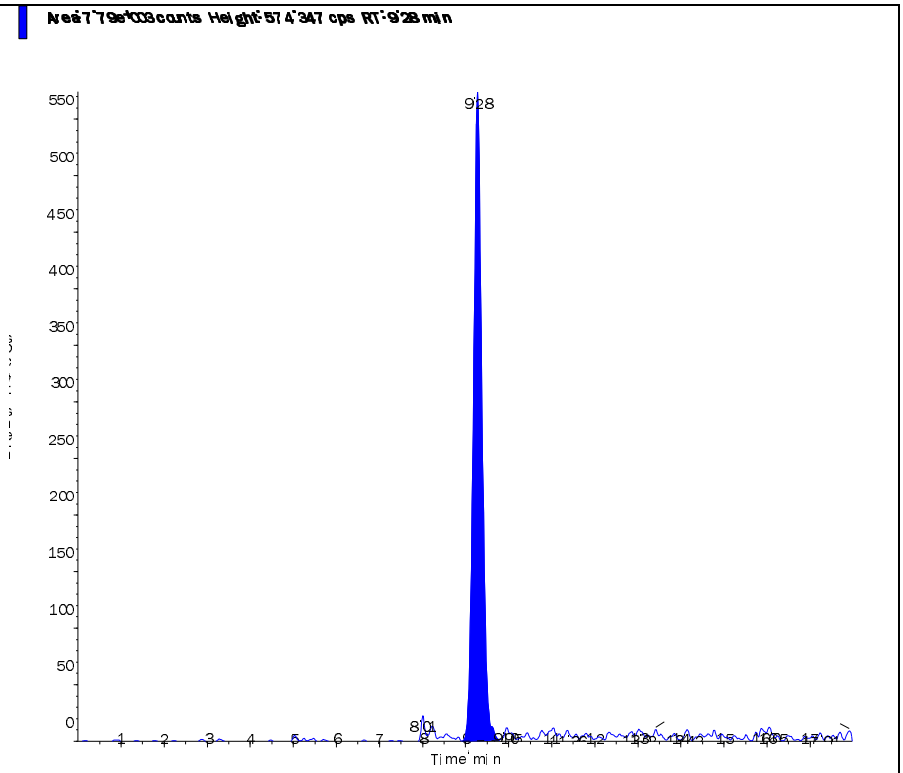

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2.2.1.5 Raw QC Data

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Created with Analyst Reporter
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Data File	LM31508.wiff	**Result Table**	083115_JWR.rdb
Acquisition Date	8/31/2015 12:22:08 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG537121-02 BLANK	**Injection Vial**	5.00
Data File	LM31508.wiff	**Injection Volume**	10.00
Acquisition Date	8/31/2015 12:22:08 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	083115_JWR.rdb
Sample ID	WG537121-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.740e+05	9.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.70(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

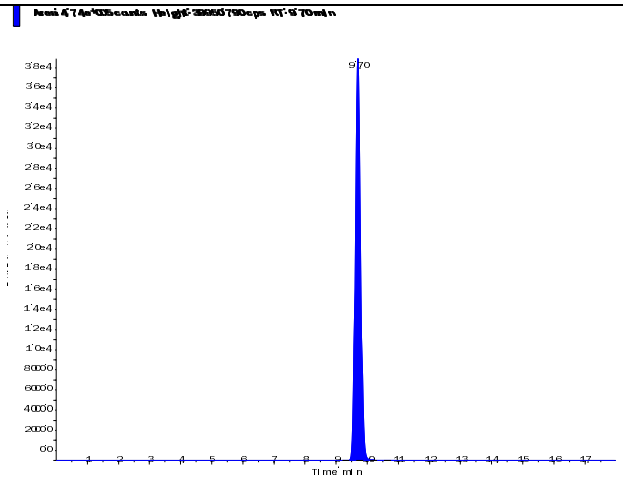

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.52) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	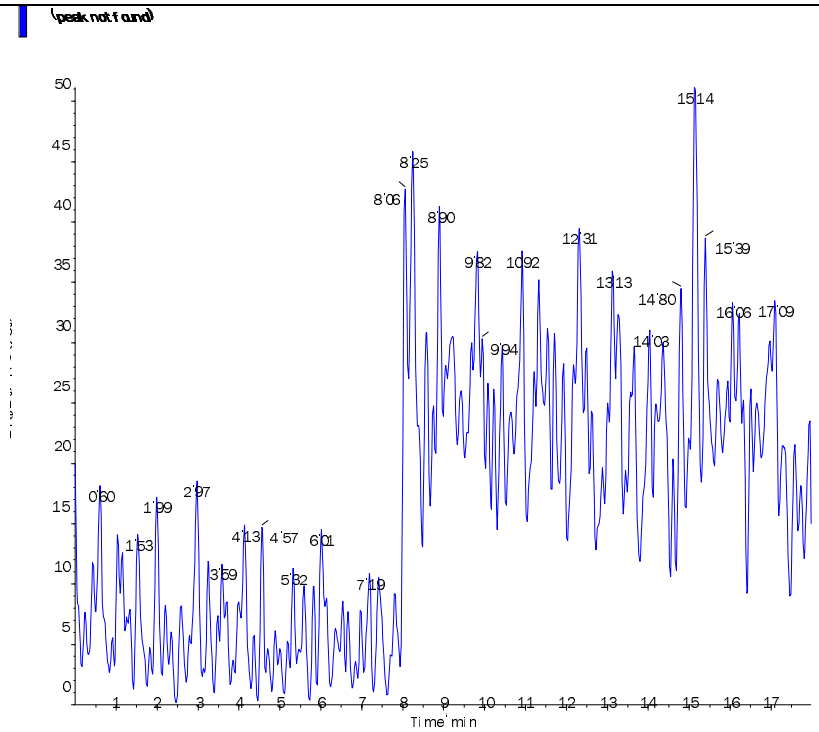
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.48) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	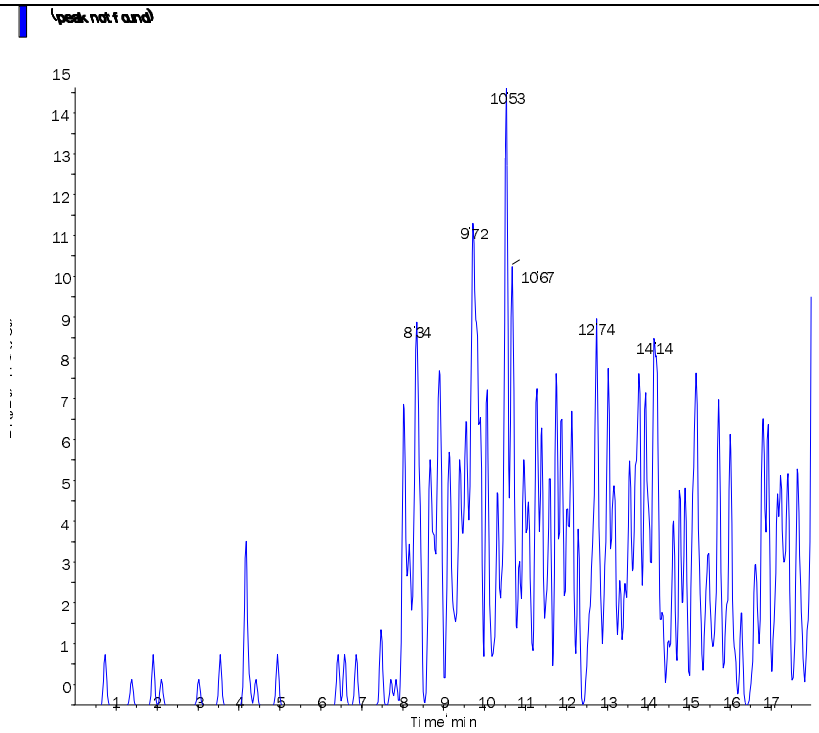

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Data File	LM31509.wiff	**Result Table**	083115_JWR.rdb
Acquisition Date	8/31/2015 12:41:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG537121-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM31509.wiff	**Injection Volume**	10.00
Acquisition Date	8/31/2015 12:41:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	083115_JWR.rdb
Sample ID	WG537121-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD69913	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.390e+05	9.71	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.580e+04	9.72	N/A	0.212
Perchlorate conf	8.330e+03	9.69	N/A	0.22

O18LP (Internal Standard)

RT (Exp. RT): 9.71(9.50) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

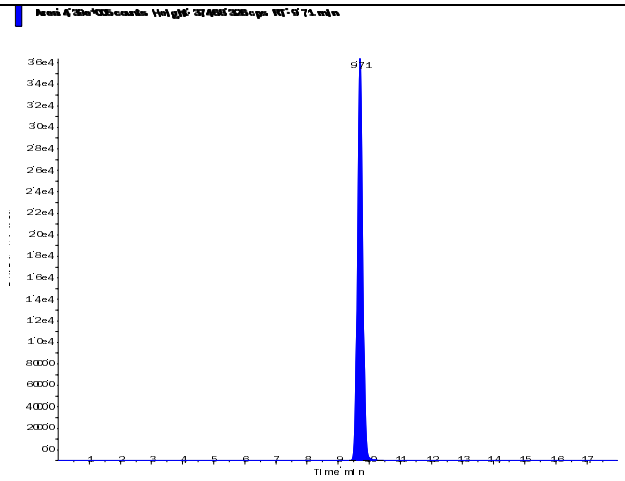

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.72 (9.52) min
Calculated conc:	0.212 ng/ml
Area Ratio:	0.059
Sample Type:	(Unknown)

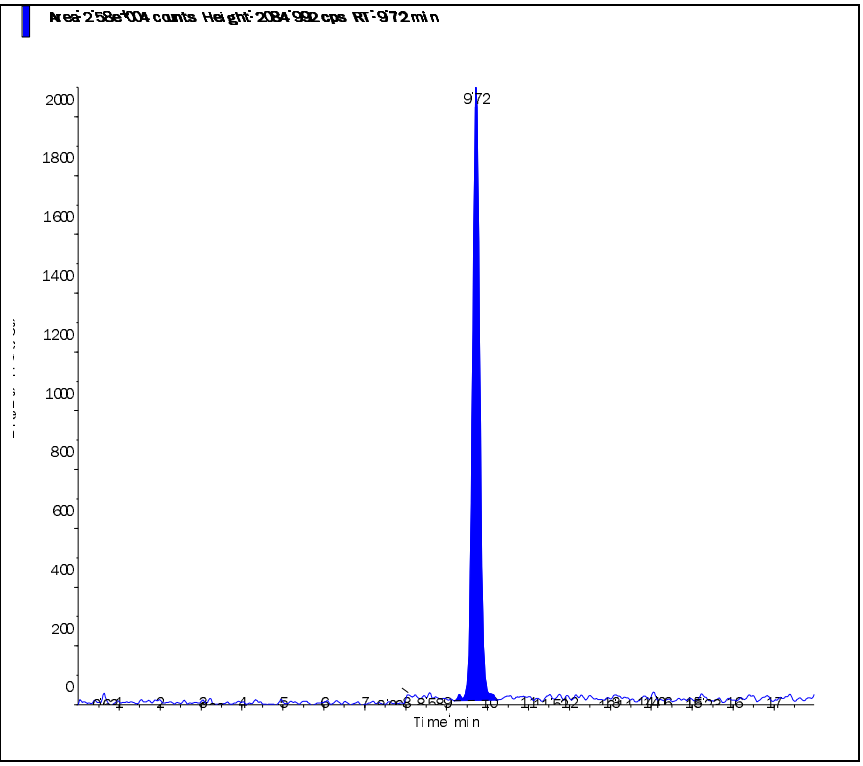

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.69 (9.48) min
Calculated conc:	0.22 ng/ml
Area Ratio:	0.019
Sample Type:	(Unknown)

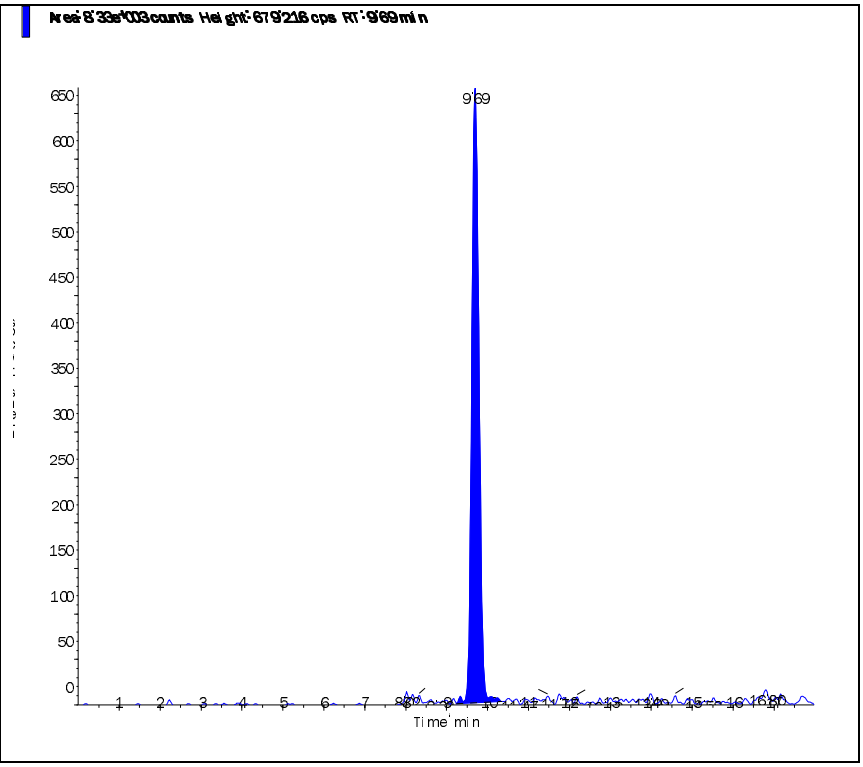

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
September 1, 2015

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001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK
EPT - ETHAN P. TIDD
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
September 01, 2015

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count
TNTC, B	Too numerous to count. Analyte present in method blank.

Microbac Laboratories Inc.
List of Valid Qualifiers
September 01, 2015

Qualkey: DOD

TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Mark Heaston	Mail to:	Linda Raabe
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000		112 East Pecan STE. 400
	Marietta, OH 45750	Sampler (print):	Scott Beesinger		San Antonio, TX 78205
Phone:	1-800-373-4071				210-296-2000
Client:	AECOM	Signature:	Scott Beesinger	Fed Ex Airbill No:	
Address:	112 East Pecan Ste. 400				
	San Antonio, TX 78205	pH:		Program:	
Turn Around Time:	STANDARD				
Project Name/Location:	Longhorn				
Project Number:	60256135.0002GA				

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 50	50WW26-082015			8/20/15	0855		✓	W	4	✓	✓					
	50WW26MS-082015			8/20/15	0855		✓	W	4	✓	✓					
	50WW26MSD-082015			8/20/15	0855		✓	W	4	✓	✓					
	50WW21-082015			8/20/15	1000		✓	W	4	✓	✓					
	50WW01-082015			8/20/15	1023		✓	W	4	✓	✓					
	50WW28-082015			8/20/15	1125		✓	W	4	✓	✓					
	50WW27-082015			8/20/15	1335		✓	W	4	✓	✓					
	50WW15-082015			8/20/15	1440		✓	W	4	✓	✓					
	50WW15FD-082015			8/20/15	1440		✓	W	4	✓	✓					
	50WW16-082015			8/20/15	1550		✓	W	4	✓	✓					
	50WW19-082115			8/21/15	0815		✓	W	4	✓	✓					
	50WW20-082115			8/21/15	0930		✓	W	4	✓	✓					
	50WW09-082115			8/21/15	1035		✓	W	4	✓	✓					
	50WW09FD-082115			8/21/15	1035		✓	W	4	✓	✓					

ERPIMS REQUIRED FIELDS

Comments: **STANDARD TAT**

	Date	Time	Received		Time	Relinquished by: (Signature)
Relinquished by: (Signature) Scott Beesinger	8/21/15	1600				
Relinquished by: (Signature)	Date	Time	Received (Signature)			Remarks:

Microbac OVD
Received: 08/22/2015 09:59
By: CARA STRICKLER 221000074351
Cara Strickler

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Mark Heaston
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD	pH:	
Project Name/Location:	Longhorn		
Project Number:	60256135.0002GA		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 50	SDWW 10-082115			8/21/15	1140		✓	W	4	✓	✓					
	SDWW 07-082115			8/21/15	1445		✓	W	4	✓	✓					
	SDWW07MS-082115			8/21/15	1445		✓	W	4	✓	✓					
	SDWW07MSD-082115			8/21/15	1445		✓	W	4	✓	✓					
	TRIP BLANK			8/21/15			✓	W	2	✓						

Comments: **STANDARD TAT**

Relinquished by: (Signature)	Date	Time	Receive
Scott Beesinger	8/21/15	1600	
Relinquished by: (Signature)	Date	Time	Receive (Signatu

Microbac OVD
Received: 08/22/2015 09:59
By: CARA STRICKLER 221000074351
Cara Strickler

Time	Relinquished by: (Signature)
Time	Remarks:

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

00649459

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15081251
Account: 2551
Project: 2551.096
Samples: 19
Due Date: 04-SEP-2015

Samplenum	Container ID	Products
L15081251-01	620579	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:42	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:42	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:42	TMB	BRG	

Samplenum	Container ID	Products
L15081251-01	620580	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	24-AUG-2015 14:56	CLS		
2	ANALYZ	W1	SEM	31-AUG-2015 09:33	JWR	CLS	
3	STORE	SEM	A1	01-SEP-2015 10:55	CLS	JWR	

Samplenum	Container ID	Products
L15081251-02	620581	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:42	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:42	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:42	TMB	BRG	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15081251
Account: 2551
Project: 2551.096
Samples: 19
Due Date: 04-SEP-2015

Samplenum	Container ID	Products
L15081251-02	620582	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	24-AUG-2015 14:56	CLS		
2	ANALYZ	W1	SEM	31-AUG-2015 09:33	JWR	CLS	
3	STORE	SEM	A1	01-SEP-2015 10:55	CLS	JWR	

Samplenum	Container ID	Products
L15081251-03	620583	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:42	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:42	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:42	TMB	BRG	

Samplenum	Container ID	Products
L15081251-03	620584	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	24-AUG-2015 14:56	CLS		
2	ANALYZ	W1	SEM	31-AUG-2015 09:33	JWR	CLS	
3	STORE	SEM	A1	01-SEP-2015 10:55	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15081251
Account: 2551
Project: 2551.096
Samples: 19
Due Date: 04-SEP-2015

Samplenum	Container ID	Products
L15081251-04	620585	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:42	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:42	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:42	TMB	BRG	

Samplenum	Container ID	Products
L15081251-04	620586	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	24-AUG-2015 14:56	CLS		
2	ANALYZ	W1	SEM	31-AUG-2015 09:33	JWR	CLS	
3	STORE	SEM	A1	01-SEP-2015 10:55	CLS	JWR	

Samplenum	Container ID	Products
L15081251-05	620587	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:43	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:43	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:43	TMB	BRG	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15081251
Account: 2551
Project: 2551.096
Samples: 19
Due Date: 04-SEP-2015

Samplenum	Container ID	Products
L15081251-05	620588	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	24-AUG-2015 14:56	CLS		
2	ANALYZ	W1	SEM	31-AUG-2015 09:33	JWR	CLS	
3	STORE	SEM	A1	01-SEP-2015 10:55	CLS	JWR	

Samplenum	Container ID	Products
L15081251-06	620589	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:43	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:43	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:43	TMB	BRG	

Samplenum	Container ID	Products
L15081251-06	620590	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	24-AUG-2015 14:56	CLS		
2	ANALYZ	W1	SEM	31-AUG-2015 09:33	JWR	CLS	
3	STORE	SEM	A1	01-SEP-2015 10:55	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15081251
Account: 2551
Project: 2551.096
Samples: 19
Due Date: 04-SEP-2015

Samplenum	Container ID	Products
L15081251-07	620591	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:43	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:43	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:43	TMB	BRG	

Samplenum	Container ID	Products
L15081251-07	620592	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	24-AUG-2015 14:56	CLS		
2	ANALYZ	W1	SEM	31-AUG-2015 09:33	JWR	CLS	
3	STORE	SEM	A1	01-SEP-2015 10:55	CLS	JWR	

Samplenum	Container ID	Products
L15081251-08	620593	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:43	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:43	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:43	TMB	BRG	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15081251
Account: 2551
Project: 2551.096
Samples: 19
Due Date: 04-SEP-2015

Samplenum	Container ID	Products
L15081251-08	620594	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	24-AUG-2015 14:56	CLS		
2	ANALYZ	W1	SEM	31-AUG-2015 09:33	JWR	CLS	
3	STORE	SEM	A1	01-SEP-2015 10:55	CLS	JWR	

Samplenum	Container ID	Products
L15081251-09	620595	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:43	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:43	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:43	TMB	BRG	

Samplenum	Container ID	Products
L15081251-09	620596	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	24-AUG-2015 14:56	CLS		
2	ANALYZ	W1	SEM	31-AUG-2015 09:33	JWR	CLS	
3	STORE	SEM	A1	01-SEP-2015 10:56	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15081251
Account: 2551
Project: 2551.096
Samples: 19
Due Date: 04-SEP-2015

Samplenum	Container ID	Products
L15081251-10	620597	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:43	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:43	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:43	TMB	BRG	

Samplenum	Container ID	Products
L15081251-10	620598	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	24-AUG-2015 14:56	CLS		
2	ANALYZ	W1	SEM	31-AUG-2015 09:33	JWR	CLS	
3	STORE	SEM	A1	01-SEP-2015 10:56	CLS	JWR	

Samplenum	Container ID	Products
L15081251-11	620599	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:43	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:43	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:43	TMB	BRG	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15081251
Account: 2551
Project: 2551.096
Samples: 19
Due Date: 04-SEP-2015

Samplenum	Container ID	Products
L15081251-11	620600	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	24-AUG-2015 14:56	CLS		
2	ANALYZ	W1	SEM	31-AUG-2015 09:33	JWR	CLS	
3	STORE	SEM	A1	01-SEP-2015 10:56	CLS	JWR	

Samplenum	Container ID	Products
L15081251-12	620601	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:43	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:43	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:43	TMB	BRG	

Samplenum	Container ID	Products
L15081251-12	620602	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	24-AUG-2015 14:56	CLS		
2	ANALYZ	W1	SEM	31-AUG-2015 09:33	JWR	CLS	
3	STORE	SEM	A1	01-SEP-2015 10:56	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15081251
Account: 2551
Project: 2551.096
Samples: 19
Due Date: 04-SEP-2015

Samplenum	Container ID	Products
L15081251-13	620603	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:43	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:43	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:43	TMB	BRG	

Samplenum	Container ID	Products
L15081251-13	620604	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	24-AUG-2015 14:56	CLS		
2	ANALYZ	W1	SEM	31-AUG-2015 09:34	JWR	CLS	
3	STORE	SEM	A1	01-SEP-2015 10:56	CLS	JWR	

Samplenum	Container ID	Products
L15081251-14	620605	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:43	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:43	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:43	TMB	BRG	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15081251
Account: 2551
Project: 2551.096
Samples: 19
Due Date: 04-SEP-2015

Samplenum	Container ID	Products
L15081251-14	620606	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	24-AUG-2015 14:56	CLS		
2	ANALYZ	W1	SEM	31-AUG-2015 09:34	JWR	CLS	
3	STORE	SEM	A1	01-SEP-2015 10:56	CLS	JWR	

Samplenum	Container ID	Products
L15081251-15	620607	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:43	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:43	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:43	TMB	BRG	

Samplenum	Container ID	Products
L15081251-15	620608	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	24-AUG-2015 14:56	CLS		
2	ANALYZ	W1	SEM	31-AUG-2015 09:34	JWR	CLS	
3	STORE	SEM	A1	01-SEP-2015 10:56	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15081251
Account: 2551
Project: 2551.096
Samples: 19
Due Date: 04-SEP-2015

Samplenum	Container ID	Products
L15081251-16	620609	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:43	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:43	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:43	TMB	BRG	

Samplenum	Container ID	Products
L15081251-16	620610	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	24-AUG-2015 14:56	CLS		
2	ANALYZ	W1	SEM	31-AUG-2015 09:34	JWR	CLS	
3	STORE	SEM	A1	01-SEP-2015 10:56	CLS	JWR	

Samplenum	Container ID	Products
L15081251-17	620611	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:43	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:43	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:44	TMB	BRG	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15081251
Account: 2551
Project: 2551.096
Samples: 19
Due Date: 04-SEP-2015

Samplenum	Container ID	Products
L15081251-17	620612	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	24-AUG-2015 14:56	CLS		
2	ANALYZ	W1	SEM	31-AUG-2015 09:34	JWR	CLS	
3	STORE	SEM	A1	01-SEP-2015 10:56	CLS	JWR	

Samplenum	Container ID	Products
L15081251-18	620613	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:44	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:44	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:44	TMB	BRG	

Samplenum	Container ID	Products
L15081251-18	620614	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	24-AUG-2015 14:56	CLS		
2	ANALYZ	W1	SEM	31-AUG-2015 09:34	JWR	CLS	
3	STORE	SEM	A1	01-SEP-2015 10:56	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15081251
Account: 2551
Project: 2551.096
Samples: 19
Due Date: 04-SEP-2015

Samplenum	Container ID	Products
L15081251-19	620615	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:44	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	24-AUG-2015 14:56	CLS		
2	ANALYZ	V1	ORG4	24-AUG-2015 15:44	TMB	BRG	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
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W1 - Walkin Cooler in Login

NELAP Addendum - July 27, 2015

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVL NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVL MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVL MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVL HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVL HPLC12/HPLC/UV

Acetate
Formate

OVL RSK01/GC-FID

Acetylene
Propane

OVL K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVL MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVL MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L15110610

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on November 23 2015

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L15110610
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
0019698	I	4.0		J4599413199	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L15110610
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
50WW17-110915	L15110610-01	11/09/2015 08:15	11/11/2015 09:49
50WW19-110915	L15110610-02	11/09/2015 09:25	11/11/2015 09:49
50WW07-110915	L15110610-03	11/09/2015 10:35	11/11/2015 09:49
50WW07MS-110915	L15110610-04	11/09/2015 10:35	11/11/2015 09:49
50WW07MSD-110915	L15110610-05	11/09/2015 10:35	11/11/2015 09:49
50WW26-111015	L15110610-06	11/10/2015 13:10	11/11/2015 09:49
50WW26FD-111015	L15110610-07	11/10/2015 13:10	11/11/2015 09:49
50WW21-111015	L15110610-08	11/10/2015 14:15	11/11/2015 09:49
50WW20-111015	L15110610-09	11/10/2015 15:10	11/11/2015 09:49
TRIP BLANK	L15110610-10	11/10/2015 00:01	11/11/2015 09:49

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L15110610
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.0 Summary Data

1.1 Narratives

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110610
Project Name:		**Method:**	8260
Prep Batch Number(s):	546600	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-11-19 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden	Franci Bolden	Analyst I	2015-11-19 21:25:19

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110610
Project Name:		**Method:**	8260
Prep Batch Number(s):	546600	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-11-19 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110610
Project Name:		**Method:**	8260
Prep Batch Number(s):	546600	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-11-19 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110610
Project Name:		**Method:**	8260
Prep Batch Number(s):	546600	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-11-19 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110610
Project Name:		**Method:**	8260
Prep Batch Number(s):	546600	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-11-19 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110610
Project Name:		**Method:**	8260
Prep Batch Number(s):	546600	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-11-19 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

1.2 Certificate of Analysis

Microbac

Lab Report #: L15110610
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110610-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW17-110915	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	09/30/2015 14:52
Workgroup #:	WG546600	**Analyst:**	TMB	**Run Date:**	11/12/2015 18:15
Collect Date:	11/09/2015 08:15	**Dilution:**	1	**File ID:**	8M408662
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110610
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	101	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110610
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110610-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW19-110915	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	09/30/2015 14:52
Workgroup #:	WG546600	**Analyst:**	TMB	**Run Date:**	11/12/2015 18:45
Collect Date:	11/09/2015 09:25	**Dilution:**	1	**File ID:**	8M408663
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110610
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	99.3	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110610
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110610-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW07-110915	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	09/30/2015 14:52
Workgroup #:	WG546600	**Analyst:**	TMB	**Run Date:**	11/12/2015 17:46
Collect Date:	11/09/2015 10:35	**Dilution:**	1	**File ID:**	8M408661
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110610
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	101	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110610
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110610-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW07MS-110915	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	09/30/2015 14:52
Workgroup #:	WG546600	**Analyst:**	TMB	**Run Date:**	11/12/2015 13:49
Collect Date:	11/09/2015 10:35	**Dilution:**	1	**File ID:**	8M408653
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	24.8		10.0	5.00	2.50
Benzene	71-43-2	20.4		1.00	0.250	0.125
Bromobenzene	108-86-1	19.5		1.00	0.250	0.125
Bromochloromethane	74-97-5	21.8		1.00	0.400	0.200
Bromodichloromethane	75-27-4	20.0		1.00	0.500	0.250
Bromoform	75-25-2	21.3		2.00	1.00	0.500
Bromomethane	74-83-9	20.9		2.00	1.00	0.500
2-Butanone	78-93-3	21.0		10.0	5.00	2.50
n-Butylbenzene	104-51-8	21.4		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	20.2		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	19.4		1.00	0.500	0.250
Carbon disulfide	75-15-0	17.1		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	20.4		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.2		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	20.2		1.00	0.500	0.250
Chloroethane	75-00-3	22.2		2.00	1.00	0.500
Chloroform	67-66-3	20.9		1.00	0.250	0.125
Chloromethane	74-87-3	23.3		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	19.8		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	20.1		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	20.2		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	19.8		1.00	0.500	0.250
Dibromomethane	74-95-3	21.2		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	20.7		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	20.4		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	19.7		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	23.9		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	20.0		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	20.2		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	19.6		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	20.2		1.00	0.500	0.250

Microbac

Lab Report #: L15110610
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	20.1		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	20.0		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	20.0		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	20.3		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	21.0		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	19.6		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	19.5		1.00	0.500	0.250
Ethylbenzene	100-41-4	18.6		1.00	0.500	0.250
2-Hexanone	591-78-6	20.0		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	19.9		1.00	0.500	0.250
Isopropylbenzene	98-82-8	21.2		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	19.9		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	18.3		10.0	5.00	2.50
Methylene chloride	75-09-2	19.7		1.00	0.500	0.250
Naphthalene	91-20-3	23.2		1.00	0.400	0.200
n-Propylbenzene	103-65-1	20.0		1.00	0.250	0.125
Styrene	100-42-5	19.8		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	19.1		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	20.0		1.00	0.400	0.200
Tetrachloroethene	127-18-4	20.1		1.00	0.500	0.250
Toluene	108-88-3	19.9		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	21.4		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	20.8		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	20.6		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	19.8		1.00	0.500	0.250
Trichloroethene	79-01-6	19.4		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	20.3		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	20.0		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	20.0		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	20.1		1.00	0.500	0.250
Vinyl chloride	75-01-4	22.9		1.00	0.500	0.250
o-Xylene	95-47-6	19.3		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	40.1		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	102	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	99.3	75	120	

Certificate of Analysis

Microbac

Lab Report #: L15110610
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15110610-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW07MSD-110915	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	09/30/2015 14:52
Workgroup #:	WG546600	**Analyst:**	TMB	**Run Date:**	11/12/2015 14:19
Collect Date:	11/09/2015 10:35	**Dilution:**	1	**File ID:**	8M408654
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	24.1		10.0	5.00	2.50
Benzene	71-43-2	20.7		1.00	0.250	0.125
Bromobenzene	108-86-1	20.2		1.00	0.250	0.125
Bromochloromethane	74-97-5	22.6		1.00	0.400	0.200
Bromodichloromethane	75-27-4	20.7		1.00	0.500	0.250
Bromoform	75-25-2	21.4		2.00	1.00	0.500
Bromomethane	74-83-9	21.4		2.00	1.00	0.500
2-Butanone	78-93-3	21.7		10.0	5.00	2.50
n-Butylbenzene	104-51-8	21.4		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	20.4		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	19.9		1.00	0.500	0.250
Carbon disulfide	75-15-0	15.8		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	20.6		1.00	0.500	0.250
Chlorobenzene	108-90-7	21.0		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	20.9		1.00	0.500	0.250
Chloroethane	75-00-3	22.5		2.00	1.00	0.500
Chloroform	67-66-3	21.5		1.00	0.250	0.125
Chloromethane	74-87-3	23.5		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	20.1		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	20.7		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	18.5		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	20.7		1.00	0.500	0.250
Dibromomethane	74-95-3	21.4		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	21.3		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	20.6		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	20.0		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	24.7		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	20.7		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	21.0		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	20.1		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	20.1		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	20.5		1.00	0.500	0.250

Microbac

Lab Report #: L15110610
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	20.4		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	20.7		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	20.3		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	21.3		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	20.3		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	19.9		1.00	0.500	0.250
Ethylbenzene	100-41-4	19.3		1.00	0.500	0.250
2-Hexanone	591-78-6	18.7		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	19.8		1.00	0.500	0.250
Isopropylbenzene	98-82-8	21.8		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	20.0		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	18.4		10.0	5.00	2.50
Methylene chloride	75-09-2	20.3		1.00	0.500	0.250
Naphthalene	91-20-3	23.3		1.00	0.400	0.200
n-Propylbenzene	103-65-1	20.2		1.00	0.250	0.125
Styrene	100-42-5	20.7		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	19.7		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	20.2		1.00	0.400	0.200
Tetrachloroethene	127-18-4	20.5		1.00	0.500	0.250
Toluene	108-88-3	20.5		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	21.5		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	21.3		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	21.0		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	20.4		1.00	0.500	0.250
Trichloroethene	79-01-6	19.6		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	20.8		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	19.9		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	20.4		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	20.2		1.00	0.500	0.250
Vinyl chloride	75-01-4	23.2		1.00	0.500	0.250
o-Xylene	95-47-6	20.3		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	41.6		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	99.1	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	96.3	75	120	

Certificate of Analysis

Microbac

Lab Report #: L15110610
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15110610-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW26-111015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	09/30/2015 14:52
Workgroup #:	WG546600	**Analyst:**	TMB	**Run Date:**	11/12/2015 19:15
Collect Date:	11/10/2015 13:10	**Dilution:**	1	**File ID:**	8M408664
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

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Lab Report #: L15110610
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	85	115	
1,2-Dichloroethane-d4	106	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	99.9	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110610
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110610-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW26FD-111015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	09/30/2015 14:52
Workgroup #:	WG546600	**Analyst:**	TMB	**Run Date:**	11/12/2015 19:44
Collect Date:	11/10/2015 13:10	**Dilution:**	1	**File ID:**	8M408665
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110610
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	100	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110610
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110610-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW21-111015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	09/30/2015 14:52
Workgroup #:	WG546600	**Analyst:**	TMB	**Run Date:**	11/12/2015 20:14
Collect Date:	11/10/2015 14:15	**Dilution:**	1	**File ID:**	8M408666
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110610
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	85	115	
1,2-Dichloroethane-d4	105	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	101	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110610
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110610-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW20-111015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	09/30/2015 14:52
Workgroup #:	WG546600	**Analyst:**	TMB	**Run Date:**	11/12/2015 20:43
Collect Date:	11/10/2015 15:10	**Dilution:**	1	**File ID:**	8M408667
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110610
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	102	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	101	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110610
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110610-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	09/30/2015 14:52
Workgroup #:	WG546600	**Analyst:**	TMB	**Run Date:**	11/12/2015 17:17
Collect Date:	11/10/2015 00:01	**Dilution:**	1	**File ID:**	8M408660
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110610
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	1.47		1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	105	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	99.6	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110610
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L15110610
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110610-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW17-110915	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	09/30/2015 14:52
Workgroup #:	WG546600	**Analyst:**	TMB	**Run Date:**	11/12/2015 18:15
Collect Date:	11/09/2015 08:15	**Dilution:**	1	**File ID:**	8M408662
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110610
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	101	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110610
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110610-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW19-110915	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	09/30/2015 14:52
Workgroup #:	WG546600	**Analyst:**	TMB	**Run Date:**	11/12/2015 18:45
Collect Date:	11/09/2015 09:25	**Dilution:**	1	**File ID:**	8M408663
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110610
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	99.3	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110610
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110610-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW07-110915	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	09/30/2015 14:52
Workgroup #:	WG546600	**Analyst:**	TMB	**Run Date:**	11/12/2015 17:46
Collect Date:	11/09/2015 10:35	**Dilution:**	1	**File ID:**	8M408661
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110610
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	101	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110610
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110610-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW07MS-110915	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	09/30/2015 14:52
Workgroup #:	WG546600	**Analyst:**	TMB	**Run Date:**	11/12/2015 13:49
Collect Date:	11/09/2015 10:35	**Dilution:**	1	**File ID:**	8M408653
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	24.8		10.0	5.00	2.50
Benzene	71-43-2	20.4		1.00	0.250	0.125
Bromobenzene	108-86-1	19.5		1.00	0.250	0.125
Bromochloromethane	74-97-5	21.8		1.00	0.400	0.200
Bromodichloromethane	75-27-4	20.0		1.00	0.500	0.250
Bromoform	75-25-2	21.3		2.00	1.00	0.500
Bromomethane	74-83-9	20.9		2.00	1.00	0.500
2-Butanone	78-93-3	21.0		10.0	5.00	2.50
n-Butylbenzene	104-51-8	21.4		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	20.2		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	19.4		1.00	0.500	0.250
Carbon disulfide	75-15-0	17.1		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	20.4		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.2		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	20.2		1.00	0.500	0.250
Chloroethane	75-00-3	22.2		2.00	1.00	0.500
Chloroform	67-66-3	20.9		1.00	0.250	0.125
Chloromethane	74-87-3	23.3		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	19.8		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	20.1		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	20.2		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	19.8		1.00	0.500	0.250
Dibromomethane	74-95-3	21.2		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	20.7		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	20.4		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	19.7		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	23.9		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	20.0		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	20.2		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	19.6		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	20.2		1.00	0.500	0.250

Microbac

Lab Report #: L15110610
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	20.1		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	20.0		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	20.0		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	20.3		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	21.0		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	19.6		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	19.5		1.00	0.500	0.250
Ethylbenzene	100-41-4	18.6		1.00	0.500	0.250
2-Hexanone	591-78-6	20.0		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	19.9		1.00	0.500	0.250
Isopropylbenzene	98-82-8	21.2		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	19.9		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	18.3		10.0	5.00	2.50
Methylene chloride	75-09-2	19.7		1.00	0.500	0.250
Naphthalene	91-20-3	23.2		1.00	0.400	0.200
n-Propylbenzene	103-65-1	20.0		1.00	0.250	0.125
Styrene	100-42-5	19.8		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	19.1		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	20.0		1.00	0.400	0.200
Tetrachloroethene	127-18-4	20.1		1.00	0.500	0.250
Toluene	108-88-3	19.9		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	21.4		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	20.8		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	20.6		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	19.8		1.00	0.500	0.250
Trichloroethene	79-01-6	19.4		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	20.3		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	20.0		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	20.0		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	20.1		1.00	0.500	0.250
Vinyl chloride	75-01-4	22.9		1.00	0.500	0.250
o-Xylene	95-47-6	19.3		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	40.1		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	102	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	99.3	75	120	

Certificate of Analysis

Microbac

Lab Report #: L15110610
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15110610-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW07MSD-110915	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	09/30/2015 14:52
Workgroup #:	WG546600	**Analyst:**	TMB	**Run Date:**	11/12/2015 14:19
Collect Date:	11/09/2015 10:35	**Dilution:**	1	**File ID:**	8M408654
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	24.1		10.0	5.00	2.50
Benzene	71-43-2	20.7		1.00	0.250	0.125
Bromobenzene	108-86-1	20.2		1.00	0.250	0.125
Bromochloromethane	74-97-5	22.6		1.00	0.400	0.200
Bromodichloromethane	75-27-4	20.7		1.00	0.500	0.250
Bromoform	75-25-2	21.4		2.00	1.00	0.500
Bromomethane	74-83-9	21.4		2.00	1.00	0.500
2-Butanone	78-93-3	21.7		10.0	5.00	2.50
n-Butylbenzene	104-51-8	21.4		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	20.4		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	19.9		1.00	0.500	0.250
Carbon disulfide	75-15-0	15.8		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	20.6		1.00	0.500	0.250
Chlorobenzene	108-90-7	21.0		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	20.9		1.00	0.500	0.250
Chloroethane	75-00-3	22.5		2.00	1.00	0.500
Chloroform	67-66-3	21.5		1.00	0.250	0.125
Chloromethane	74-87-3	23.5		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	20.1		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	20.7		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	18.5		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	20.7		1.00	0.500	0.250
Dibromomethane	74-95-3	21.4		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	21.3		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	20.6		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	20.0		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	24.7		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	20.7		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	21.0		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	20.1		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	20.1		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	20.5		1.00	0.500	0.250

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Lab Report #: L15110610
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	20.4		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	20.7		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	20.3		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	21.3		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	20.3		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	19.9		1.00	0.500	0.250
Ethylbenzene	100-41-4	19.3		1.00	0.500	0.250
2-Hexanone	591-78-6	18.7		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	19.8		1.00	0.500	0.250
Isopropylbenzene	98-82-8	21.8		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	20.0		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	18.4		10.0	5.00	2.50
Methylene chloride	75-09-2	20.3		1.00	0.500	0.250
Naphthalene	91-20-3	23.3		1.00	0.400	0.200
n-Propylbenzene	103-65-1	20.2		1.00	0.250	0.125
Styrene	100-42-5	20.7		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	19.7		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	20.2		1.00	0.400	0.200
Tetrachloroethene	127-18-4	20.5		1.00	0.500	0.250
Toluene	108-88-3	20.5		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	21.5		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	21.3		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	21.0		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	20.4		1.00	0.500	0.250
Trichloroethene	79-01-6	19.6		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	20.8		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	19.9		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	20.4		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	20.2		1.00	0.500	0.250
Vinyl chloride	75-01-4	23.2		1.00	0.500	0.250
o-Xylene	95-47-6	20.3		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	41.6		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	99.1	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	96.3	75	120	

Certificate of Analysis

Microbac

Lab Report #: L15110610
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15110610-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW26-111015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	09/30/2015 14:52
Workgroup #:	WG546600	**Analyst:**	TMB	**Run Date:**	11/12/2015 19:15
Collect Date:	11/10/2015 13:10	**Dilution:**	1	**File ID:**	8M408664
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110610
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	85	115	
1,2-Dichloroethane-d4	106	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	99.9	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110610
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110610-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW26FD-111015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	09/30/2015 14:52
Workgroup #:	WG546600	**Analyst:**	TMB	**Run Date:**	11/12/2015 19:44
Collect Date:	11/10/2015 13:10	**Dilution:**	1	**File ID:**	8M408665
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110610
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	100	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110610
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110610-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW21-111015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	09/30/2015 14:52
Workgroup #:	WG546600	**Analyst:**	TMB	**Run Date:**	11/12/2015 20:14
Collect Date:	11/10/2015 14:15	**Dilution:**	1	**File ID:**	8M408666
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110610
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	85	115	
1,2-Dichloroethane-d4	105	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	101	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110610
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110610-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW20-111015	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	09/30/2015 14:52
Workgroup #:	WG546600	**Analyst:**	TMB	**Run Date:**	11/12/2015 20:43
Collect Date:	11/10/2015 15:10	**Dilution:**	1	**File ID:**	8M408667
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110610
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	102	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	101	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110610
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110610-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	09/30/2015 14:52
Workgroup #:	WG546600	**Analyst:**	TMB	**Run Date:**	11/12/2015 17:17
Collect Date:	11/10/2015 00:01	**Dilution:**	1	**File ID:**	8M408660
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110610
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	1.47		1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	105	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	99.6	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110610
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 093015
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 22
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53451

Internal Standard: STD72206 Surrogate Standard: STD72206
CCV: STD72739 LCS: STD72747 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG540912

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M407744	WG540912-01 50ng BFB STD 8260	NA	1	1	STD72715	09/30/15 09:14
8M407745	WG540912-01 50ng BFB STD 8260	NA	1	1	STD72715	09/30/15 09:38
8M407746	RINSE	NA	1	1		09/30/15 10:01
8M407747	WG540912-02 0.3ug/L STD 8260	NA	1	1	STD72739	09/30/15 10:30
8M407748	WG540912-03 0.4ug/L STD 8260	NA	1	1	STD72739	09/30/15 10:59
8M407749	WG540912-04 1ug/L STD 8260	NA	1	1	STD72739	09/30/15 11:32
8M407750	WG540912-05 2ug/L STD 8260	NA	1	1	STD72739	09/30/15 12:01
8M407751	WG540912-06 5ug/L STD 8260	NA	1	1	STD72739	09/30/15 12:29
8M407752	WG540912-07 20ug/L STD 8260	NA	1	1	STD72739	09/30/15 12:58
8M407753	WG540912-08 50ug/L STD 8260	NA	1	1	STD72739	09/30/15 13:27
8M407754	WG540912-09 100ug/L STD 8260	NA	1	1	STD72739	09/30/15 13:56
8M407755	WG540912-10 200ug/L STD 8260	NA	1	1	STD72739	09/30/15 14:24
8M407756	WG540912-11 300ug/L STD 8260	NA	1	1	STD72739	09/30/15 14:52
8M407757	RINSE	NA	1	1		09/30/15 15:25
8M407758	RINSE	NA	1	1		09/30/15 15:54
8M407759	WG540912-12 50ug/L ALT SRC STD 8260	NA	1	1	STD727747	09/30/15 16:22
8M407760	RINSE	NA	1	1		09/30/15 16:52
8M407761	WG540912-12 50ug/L ALT SRC STD 8260	NA	1	1	STD72747	09/30/15 17:27
8M407762	CCV	NA	1	1	STD72739	09/30/15 17:56
8M407763	RINSE	NA	1	1		09/30/15 18:24

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1	X			
File ID: 8M407744				
			Tune failed, DNR.	
16	X			
File ID: 8M407759				
			Carbon disulfide was low, DNR. Made a new lcs adds mix.	

Approved: October 01, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 100515
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 22
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53462

Internal Standard: STD72767 Surrogate Standard: STD72767
CCV: STD72810 LCS: STD72811 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG540826

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M407827	WG540826-01 50ng BFB STD 8260	NA	1	1	STD72715	10/05/15 11:26
8M407828	WG540826-02 5ug/L STD A9FOO	NA	1	1	STD72810	10/05/15 11:49
8M407829	WG540826-03 20ug/L STD A9FOO	NA	1	1	STD72810	10/05/15 12:17
8M407830	WG540826-04 50ug/L STD A9FOO	NA	1	1	STD72810	10/05/15 12:51
8M407831	WG540826-05 100ug/L STD A9FOO	NA	1	1	STD72810	10/05/15 13:20
8M407832	WG540826-06 200ug/L STD A9FOO	NA	1	1	STD72810	10/05/15 13:49
8M407833	WG540826-07 300ug/L STD A9FOO	NA	1	1	STD72810	10/05/15 14:17
8M407834	WG540826-08 400ug/L STD A9FOO	NA	1	1	STD72810	10/05/15 14:47
8M407835	WG540826-09 500ug/L STD A9FOO	NA	1	1	STD72810	10/05/15 15:15
8M407836	RINSE	NA	1	1		10/05/15 15:50
8M407837	RINSE	NA	1	1		10/05/15 16:19
8M407838	WG540826-10 100ug/L ALT SRC STD A9/F	NA	1	1	STD72811	10/05/15 16:48

Approved: October 09, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 111215
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 22
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID: 53545

Internal Standard: STD73295 Surrogate Standard: STD73295
CCV: STD73419 LCS: STD73297 MS/MSD: STD73297

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG546600

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M408643	RINSE	NA	1	1		11/12/15 08:34
8M408644	RINSE	NA	1	1		11/12/15 09:11
8M408645	RINSE	NA	1	1		11/12/15 09:48
8M408646	RINSE	NA	1	1		11/12/15 10:22
8M408647	WG546599-01 50ng BFB STD 8260	NA	1	1	STD73273	11/12/15 10:55
8M408648	WG546599-02 50ug/L CCV STD 8260	NA	1	1	STD73419	11/12/15 11:18
8M408649	WG546599-02 50ug/L CCV STD 8260	NA	1	1	STD73419	11/12/15 11:50
8M408650	WG000000-01 100ug/L A9CCV STD 8260	NA	1	1	STD73389	11/12/15 12:20
8M408651	WG546600-01 VBLK1112 BLANK STD 826	NA	1	1		11/12/15 12:50
8M408652	WG546600-02 20ug/L LCS STD 8260	NA	1	1	STD73297	11/12/15 13:19
8M408653	L15110610-04 A MS 826-LOW	<2	1	1	STD73297	11/12/15 13:49
8M408654	L15110610-05 A MSD 826-LOW	<2	1	1	STD73297	11/12/15 14:19
8M408655	L15110554-01 A 10X 826-TC	NA	17	10		11/12/15 14:48
8M408656	L15110110-03 B EB 826-SPE	<2	1	1		11/12/15 15:18
8M408657	L15110110-04 B 826-SPE	<2	1	1		11/12/15 15:48
8M408658	L15110088-07 B 826-SPE	<2	1	1		11/12/15 16:17
8M408659	L15110527-02 TB A 826-SPE	<2	1	1		11/12/15 16:47
8M408660	L15110610-10 TB A 826-LOW	<2	1	1		11/12/15 17:17
8M408661	L15110610-03 REF A 826-LOW	<2	1	1		11/12/15 17:46
8M408662	L15110610-01 A 826-LOW	<2	1	1		11/12/15 18:15
8M408663	L15110610-02 A 826-LOW	<2	1	1		11/12/15 18:45
8M408664	L15110610-06 A 826-LOW	<2	1	1		11/12/15 19:15
8M408665	L15110610-07 A 826-LOW	<2	1	1		11/12/15 19:44
8M408666	L15110610-08 A 826-LOW	<2	1	1		11/12/15 20:14
8M408667	L15110610-09 A 826-LOW	<2	1	1		11/12/15 20:43
8M408668	L15110366-12 B 50X 826-SPE4 A1	<2	1	50		11/12/15 21:13
8M408669	L15110366-04 B 5000X 826-SPE4 D1	<2	1	5000		11/12/15 21:42
8M408670	L15110366-02 B 250X 826-SPE4 D1	<2	1	250		11/12/15 22:12
8M408671	L15110527-01 A 826-SPE	<2	1	1		11/12/15 22:41
8M408672	CCV	NA	1	1		11/12/15 23:10
8M408673	RINSE	NA	1	1		11/12/15 23:39
8M408674	RINSE	NA	1	1		11/13/15 00:09
8M408675	RINSE	NA	1	1		11/13/15 00:38

Approved: November 16, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 111215
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 22
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID: 53545

Internal Standard: STD73295 Surrogate Standard: STD73295
CCV: STD73419 LCS: STD73297 MS/MSD: STD73297

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG546600

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
6	X			
File ID: 8M408648				
	Vc was high, DNR.			
8				
File ID: 8M408650				
	Not needed, DNR.			

Approved: November 16, 2015

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Microbac Laboratories Inc.

Data Checklist

Date: 30-SEP-2015
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 70802
Analytical Workgroups: WG540912

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
01-OCT-2015
Tiffany Bailey

Secondary Reviewer:
01-OCT-2015

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-01-2015 16:52:52

Microbac Laboratories Inc.

Data Checklist

Date: 05-OCT-2015
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 70874
Analytical Workgroups: WG540826

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
06-OCT-2015
Tiffany Bailey

Secondary Reviewer:
09-OCT-2015

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-09-2015 12:12:03

Microbac Laboratories Inc.

Data Checklist

Date: 12-NOV-2015
Analyst: TMB
Analyst: NA
Method: 8260B
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 71662
Analytical Workgroups: WG546600

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
13-NOV-2015
Tiffany Bailey

Secondary Reviewer:
16-NOV-2015
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: NOV-16-2015 16:37:22

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG546600

Login Number: L15110610

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW17-110915	01	11/09/15					11/12/2015	3.4	14		11/12/15	3.4	14	
50WW19-110915	02	11/09/15					11/12/2015	3.4	14		11/12/15	3.4	14	
50WW07-110915	03	11/09/15					11/12/2015	3.3	14		11/12/15	3.3	14	
50WW07MS-110915	04	11/09/15					11/12/2015	3.1	14		11/12/15	3.1	14	
50WW07MSD-110915	05	11/09/15					11/12/2015	3.2	14		11/12/15	3.2	14	
50WW26-111015	06	11/10/15					11/12/2015	2.3	14		11/12/15	2.3	14	
50WW26FD-111015	07	11/10/15					11/12/2015	2.3	14		11/12/15	2.3	14	
50WW21-111015	08	11/10/15					11/12/2015	2.2	14		11/12/15	2.2	14	
50WW20-111015	09	11/10/15					11/12/2015	2.2	14		11/12/15	2.2	14	
TRIP BLANK	10	11/10/15					11/12/2015	2.7	14		11/12/15	2.7	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4496839
Report generated 11/19/2015 15:48

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L15110610
Instrument Id: HPMS8
Workgroup (AAB#): WG546600

Method: 8260
CAL ID: HPMS8 - 30-SEP-15
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L15110610-01	1.00	01	103	104	101	102
L15110610-02	1.00	01	103	106	99.3	104
L15110610-03	1.00	01	103	106	101	101
L15110610-04	1.00	01	102	106	99.3	102
L15110610-05	1.00	01	99.1	106	96.3	102
L15110610-06	1.00	01	106	105	99.9	102
L15110610-07	1.00	01	103	106	100	103
L15110610-08	1.00	01	105	107	101	103
L15110610-09	1.00	01	102	104	101	104
L15110610-10	1.00	01	105	106	99.6	102
WG546600-01	1.00	01	102	104	100	101
WG546600-02	1.00	01	102	105	98.2	102

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4496845
Report generated: 11/19/2015 15:48

METHOD BLANK SUMMARY

Login Number: L15110610
Blank File ID: 8M408651
Prep Date: 11/12/15 12:50
Analyzed Date: 11/12/15 12:50
Analyst: TMB

Work Group: WG546600
Blank Sample ID: WG546600-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG546600-02	8M408652	11/12/15 13:19	01
50WW07MS-110915	L15110610-04	8M408653	11/12/15 13:49	01
50WW07MSD-110915	L15110610-05	8M408654	11/12/15 14:19	01
TRIP BLANK	L15110610-10	8M408660	11/12/15 17:17	01
50WW07-110915	L15110610-03	8M408661	11/12/15 17:46	01
50WW17-110915	L15110610-01	8M408662	11/12/15 18:15	01
50WW19-110915	L15110610-02	8M408663	11/12/15 18:45	01
50WW26-111015	L15110610-06	8M408664	11/12/15 19:15	01
50WW26FD-111015	L15110610-07	8M408665	11/12/15 19:44	01
50WW21-111015	L15110610-08	8M408666	11/12/15 20:14	01
50WW20-111015	L15110610-09	8M408667	11/12/15 20:43	01

Report Name: BLANK_SUMMARY
PDF File ID: 4510224
Report generated 11/19/2015 15:48

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L15110610 Prep Date: 11/12/15 12:50 Sample ID: WG546600-01
Instrument ID: HPMS8 Run Date: 11/12/15 12:50 Prep Method: 5030B/5030C/503
File ID: 8M408651 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG546600 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-30-SEP-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4510225
19-NOV-2015 15:48

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L15110610 Prep Date: 11/12/15 12:50 Sample ID: WG546600-01
Instrument ID: HPMS8 Run Date: 11/12/15 12:50 Prep Method: 5030B/5030C/503
File ID: 8M408651 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG546600 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-30-SEP-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	104	85 - 115	PASS
1,2-Dichloroethane-d4	102	70 - 120	PASS
Toluene-d8	101	85 - 120	PASS
4-Bromofluorobenzene	100	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4510225
19-NOV-2015 15:48

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15110610 | Run Date: 11/12/2015 | Sample ID: WG546600-02
Instrument ID: HPMS8 | Run Time: 13:19 | Prep Method: 5030B/5030C/503
File ID: 8M408652 | Analyst: TMB | Method: 8260B
Workgroup (AAB#): WG546600 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD73297 | Cal ID: HPMS8-30-SEP-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	24.3	121	40 - 140	
Benzene	20.0	21.3	106	80 - 120	
Bromobenzene	20.0	20.1	101	75 - 125	
Bromochloromethane	20.0	22.8	114	65 - 130	
Bromodichloromethane	20.0	20.5	103	75 - 120	
Bromoform	20.0	21.6	108	70 - 130	
Bromomethane	20.0	19.2	96.2	30 - 145	
2-Butanone	20.0	22.5	112	30 - 150	
n-Butylbenzene	20.0	21.8	109	70 - 135	
sec-Butylbenzene	20.0	21.0	105	70 - 125	
tert-Butylbenzene	20.0	20.2	101	70 - 130	
Carbon disulfide	20.0	17.7	88.6	35 - 160	
Carbon tetrachloride	20.0	21.3	107	65 - 140	
Chlorobenzene	20.0	20.9	105	80 - 120	
Chlorodibromomethane	20.0	20.9	104	60 - 135	
Chloroethane	20.0	22.7	113	60 - 135	
Chloroform	20.0	21.3	106	65 - 135	
Chloromethane	20.0	23.6	118	40 - 125	
2-Chlorotoluene	20.0	20.2	101	75 - 125	
4-Chlorotoluene	20.0	21.2	106	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	19.6	98.2	50 - 130	
1,2-Dibromoethane	20.0	20.3	102	80 - 120	
Dibromomethane	20.0	21.5	108	75 - 125	
1,2-Dichlorobenzene	20.0	21.5	107	70 - 120	
1,3-Dichlorobenzene	20.0	20.7	104	75 - 125	
1,4-Dichlorobenzene	20.0	20.0	100	75 - 125	
Dichlorodifluoromethane	20.0	24.1	121	30 - 155	
1,1-Dichloroethane	20.0	20.6	103	70 - 135	
1,2-Dichloroethane	20.0	21.2	106	70 - 130	
1,1-Dichloroethene	20.0	20.1	101	70 - 130	
cis-1,2-Dichloroethene	20.0	20.4	102	70 - 125	
trans-1,2-Dichloroethene	20.0	20.5	103	60 - 140	
1,2-Dichloropropane	20.0	20.8	104	75 - 125	
1,3-Dichloropropane	20.0	20.4	102	75 - 125	
2,2-Dichloropropane	20.0	20.1	100	70 - 135	
cis-1,3-Dichloropropene	20.0	21.0	105	70 - 130	
trans-1,3-Dichloropropene	20.0	19.9	99.7	55 - 140	
1,1-Dichloropropene	20.0	20.1	101	75 - 130	
Ethylbenzene	20.0	19.3	96.5	75 - 125	
2-Hexanone	20.0	19.6	98.0	55 - 130	
Hexachlorobutadiene	20.0	19.7	98.5	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4496840
Report generated: 11/19/2015 15:48

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15110610 Run Date: 11/12/2015 Sample ID: WG546600-02
Instrument ID: HPMS8 Run Time: 13:19 Prep Method: 5030B/5030C/503
File ID: 8M408652 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG546600 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD73297 Cal ID: HPMS8-30-SEP-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	21.6	108	75 - 125	
p-Isopropyltoluene	20.0	20.4	102	75 - 130	
4-Methyl-2-pentanone	20.0	20.2	101	60 - 135	
Methylene chloride	20.0	20.3	102	55 - 140	
Naphthalene	20.0	23.5	118	55 - 140	
n-Propylbenzene	20.0	20.5	103	70 - 130	
Styrene	20.0	20.6	103	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	20.0	100	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	20.7	103	65 - 130	
Tetrachloroethene	20.0	20.8	104	45 - 150	
Toluene	20.0	20.7	103	75 - 120	
1,2,3-Trichlorobenzene	20.0	21.6	108	55 - 140	
1,2,4-Trichlorobenzene	20.0	21.6	108	65 - 135	
1,1,1-Trichloroethane	20.0	21.5	107	65 - 130	
1,1,2-Trichloroethane	20.0	20.1	101	75 - 125	
Trichloroethene	20.0	19.8	99.2	70 - 125	
Trichlorofluoromethane	20.0	21.0	105	60 - 145	
1,2,3-Trichloropropane	20.0	20.0	100	75 - 125	
1,2,4-Trimethylbenzene	20.0	20.8	104	75 - 130	
1,3,5-Trimethylbenzene	20.0	20.5	103	75 - 130	
Vinyl chloride	20.0	23.7	118	50 - 145	
o-Xylene	20.0	20.1	101	80 - 120	
m-,p-Xylene	40.0	41.5	104	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	105	85 - 115	PASS
1,2-Dichloroethane-d4	102	70 - 120	PASS
Toluene-d8	102	85 - 120	PASS
4-Bromofluorobenzene	98.2	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4496840
Report generated: 11/19/2015 15:48

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L15110610 Cal ID: HPMS8- 30-SEP-15 Worknum: WG546600

Instrument ID: HPMS8 Contract #: Prep Method: 5030B/5030C/

Parent ID: L15110610-03 File ID: 8M408661 Dil: 1 Method: 5035A

Sample ID: L15110610-04 MS File ID: 8M408653 Dil: 1 Matrix: 8260B

Sample ID: L15110610-05 MSD File ID: 8M408654 Dil: 1 Units: Water ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,1,1,2-Tetrachloroethane	U	20.0	19.1	95.6	20.0	19.7	98.3	2.82	80 - 130	30	
1,1,1-Trichloroethane	U	20.0	20.6	103	20.0	21.0	105	2.10	65 - 130	30	
1,1,2,2-Tetrachloroethane	U	20.0	20.0	100	20.0	20.2	101	0.774	65 - 130	30	
1,1,2-Trichloroethane	U	20.0	19.8	99.2	20.0	20.4	102	3.00	75 - 125	30	
1,1-Dichloroethane	U	20.0	20.0	99.8	20.0	20.7	103	3.43	70 - 135	30	
1,1-Dichloroethene	U	20.0	19.6	98.2	20.0	20.1	100	2.26	70 - 130	30	
1,1-Dichloropropene	U	20.0	19.5	97.3	20.0	19.9	99.7	2.40	75 - 130	30	
1,2,3-Trichlorobenzene	U	20.0	21.4	107	20.0	21.5	108	0.368	55 - 140	30	
1,2,3-Trichloropropane	U	20.0	20.0	100	20.0	19.9	99.7	0.380	75 - 125	30	
1,2,4-Trichlorobenzene	U	20.0	20.8	104	20.0	21.3	107	2.38	65 - 135	30	
1,2,4-Trimethylbenzene	U	20.0	20.0	100	20.0	20.4	102	1.99	75 - 130	30	
1,2-Dibromo-3-chloropropane	U	20.0	20.2	101	20.0	18.5	92.7	8.47	50 - 130	30	
1,2-Dibromoethane	U	20.0	19.8	98.9	20.0	20.7	103	4.43	80 - 120	30	
1,2-Dichlorobenzene	U	20.0	20.7	104	20.0	21.3	106	2.64	70 - 120	30	
1,2-Dichloroethane	U	20.0	20.2	101	20.0	21.0	105	3.69	70 - 130	30	
1,2-Dichloropropane	U	20.0	20.0	99.9	20.0	20.4	102	1.83	75 - 125	30	
1,3,5-Trimethylbenzene	U	20.0	20.1	101	20.0	20.2	101	0.413	75 - 130	30	
1,3-Dichlorobenzene	U	20.0	20.4	102	20.0	20.6	103	1.17	75 - 125	30	
1,3-Dichloropropane	U	20.0	20.0	100	20.0	20.7	103	3.01	75 - 125	30	
1,4-Dichlorobenzene	U	20.0	19.7	98.6	20.0	20.0	99.9	1.30	75 - 125	30	
2,2-Dichloropropane	U	20.0	20.3	101	20.0	20.3	102	0.164	70 - 135	30	
2-Butanone	U	20.0	21.0	105	20.0	21.7	109	3.40	30 - 150	30	
2-Chlorotoluene	U	20.0	19.8	98.8	20.0	20.1	101	1.71	75 - 125	30	
2-Hexanone	U	20.0	20.0	99.8	20.0	18.7	93.4	6.59	55 - 130	30	
4-Chlorotoluene	U	20.0	20.1	101	20.0	20.7	103	2.52	75 - 130	30	
4-Methyl-2-pentanone	U	20.0	18.3	91.5	20.0	18.4	92.1	0.624	60 - 135	30	
Acetone	U	20.0	24.8	124	20.0	24.1	120	3.20	40 - 140	30	
Benzene	U	20.0	20.4	102	20.0	20.7	104	1.32	80 - 120	30	
Bromobenzene	U	20.0	19.5	97.6	20.0	20.2	101	3.26	75 - 125	30	
Bromochloromethane	U	20.0	21.8	109	20.0	22.6	113	3.57	65 - 130	30	
Bromodichloromethane	U	20.0	20.0	100	20.0	20.7	103	3.35	75 - 120	30	
Bromoform	U	20.0	21.3	106	20.0	21.4	107	0.628	70 - 130	30	
Bromomethane	U	20.0	20.9	105	20.0	21.4	107	2.26	30 - 145	30	
Carbon disulfide	U	20.0	17.1	85.6	20.0	15.8	78.8	8.31	35 - 160	30	
Carbon tetrachloride	U	20.0	20.4	102	20.0	20.6	103	1.05	65 - 140	30	
Chlorobenzene	U	20.0	20.2	101	20.0	21.0	105	3.67	80 - 120	30	
Chloroethane	U	20.0	22.2	111	20.0	22.5	113	1.24	60 - 135	30	
Chloroform	U	20.0	20.9	105	20.0	21.5	108	2.62	65 - 135	30	
Chloromethane	U	20.0	23.3	116	20.0	23.5	117	0.946	40 - 125	30	
cis-1,2-Dichloroethene	U	20.0	20.2	101	20.0	20.1	101	0.559	70 - 125	30	
cis-1,3-Dichloropropene	U	20.0	21.0	105	20.0	21.3	106	1.26	70 - 130	30	

MS_MSD - Modified 03/06/2008
PDF File ID: 4496841
Report generated 11/19/2015 15:48

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L15110610 Cal ID: HPMS8 30-SEP-15 Worknum: WG546600

Instrument ID: HPMS8 Contract #: Prep Method: 5030B/5030C/

Parent ID: L15110610-03 File ID: 8M408661 Dil: 1 Method: 5035A

Sample ID: L15110610-04 MS File ID: 8M408653 Dil: 1 Matrix: 8260B

Sample ID: L15110610-05 MSD File ID: 8M408654 Dil: 1 Units: Water

ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chlorodibromomethane	U	20.0	20.2	101	20.0	20.9	104	3.56	60 - 135	30	
Dibromomethane	U	20.0	21.2	106	20.0	21.4	107	1.09	75 - 125	30	
Dichlorodifluoromethane	U	20.0	23.9	119	20.0	24.7	123	3.34	30 - 155	30	
Ethylbenzene	U	20.0	18.6	93	20.0	19.3	96.7	3.86	75 - 125	30	
Hexachlorobutadiene	U	20.0	19.9	99.6	20.0	19.8	99.1	0.521	50 - 140	30	
Isopropylbenzene	U	20.0	21.2	106	20.0	21.8	109	2.70	75 - 125	30	
m-,p-Xylene	U	40.0	40.1	100	40.0	41.6	104	3.71	75 - 130	30	
Methylene chloride	U	20.0	19.7	98.7	20.0	20.3	102	3.01	55 - 140	30	
n-Butylbenzene	U	20.0	21.4	107	20.0	21.4	107	0.0076	70 - 135	30	
n-Propylbenzene	U	20.0	20.0	100	20.0	20.2	101	0.646	70 - 130	30	
Naphthalene	U	20.0	23.2	116	20.0	23.3	116	0.438	55 - 140	30	
o-Xylene	U	20.0	19.3	96.7	20.0	20.3	102	5.09	80 - 120	30	
p-Isopropyltoluene	U	20.0	19.9	99.7	20.0	20.0	100	0.318	75 - 130	30	
sec-Butylbenzene	U	20.0	20.2	101	20.0	20.4	102	0.940	70 - 125	30	
Styrene	U	20.0	19.8	99.1	20.0	20.7	104	4.51	65 - 135	30	
tert-Butylbenzene	U	20.0	19.4	97.1	20.0	19.9	99.7	2.64	70 - 130	30	
Tetrachloroethene	U	20.0	20.1	101	20.0	20.5	102	1.63	45 - 150	30	
Toluene	U	20.0	19.9	99.6	20.0	20.5	103	2.99	75 - 120	30	
trans-1,2-Dichloroethene	U	20.0	20.1	100	20.0	20.5	102	1.92	60 - 140	30	
trans-1,3-Dichloropropene	U	20.0	19.6	98.1	20.0	20.3	102	3.57	55 - 140	30	
Trichloroethene	U	20.0	19.4	97.2	20.0	19.6	98.1	0.901	70 - 125	30	
Trichlorofluoromethane	U	20.0	20.3	101	20.0	20.8	104	2.35	60 - 145	30	
Vinyl chloride	U	20.0	22.9	114	20.0	23.2	116	1.21	50 - 145	30	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4496841
Report generated 11/19/2015 15:48

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15110610
Instrument: HPMS8
Analyst: TMB
Workgroup: WG540912

Tune ID: WG540912-01
Run Date: 09/30/2015
Run Time: 09:38
File ID: 8M407745
Cal ID: HPMS8 - 30-SEP-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.5	9471	PASS
75.0	95.0	30.0	60.0	51.7	21732	PASS
95.0	95.0	100	100	100	42018	PASS
96.0	95.0	5.00	9.00	6.75	2835	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	78.3	32893	PASS
175	174	5.00	9.00	7.63	2510	PASS
176	174	95.0	101	95.1	31272	PASS
177	176	5.00	9.00	6.85	2141	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG540912-02	STD	01	09/30/2015 10:30	
WG540912-03	STD	01	09/30/2015 10:59	
WG540912-04	STD	01	09/30/2015 11:32	
WG540912-05	STD	01	09/30/2015 12:01	
WG540912-06	STD	01	09/30/2015 12:29	
WG540912-07	STD	01	09/30/2015 12:58	
WG540912-08	STD-CCV	01	09/30/2015 13:27	
WG540912-09	STD	01	09/30/2015 13:56	
WG540912-10	STD	01	09/30/2015 14:24	
WG540912-11	STD	01	09/30/2015 14:52	
WG540912-12	SSCV	01	09/30/2015 17:27	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4496843
Report generated 11/19/2015 15:48

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15110610
Instrument: HPMS8
Analyst: TMB
Workgroup: WG540826

Tune ID: WG540826-01
Run Date: 10/05/2015
Run Time: 11:26
File ID: 8M407827
Cal ID: HPMS8 - 05-OCT-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	24.7	8565	PASS
75.0	95.0	30.0	60.0	52.2	18121	PASS
95.0	95.0	100	100	100	34714	PASS
96.0	95.0	5.00	9.00	6.52	2262	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	74.2	25773	PASS
175	174	5.00	9.00	7.16	1845	PASS
176	174	95.0	101	98.5	25378	PASS
177	176	5.00	9.00	6.88	1746	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG540826-02	STD	01	10/05/2015 11:49	
WG540826-03	STD	01	10/05/2015 12:17	
WG540826-04	STD	01	10/05/2015 12:51	
WG540826-05	STD-CCV	01	10/05/2015 13:20	
WG540826-06	STD	01	10/05/2015 13:49	
WG540826-07	STD	01	10/05/2015 14:17	
WG540826-08	STD	01	10/05/2015 14:47	
WG540826-09	STD	01	10/05/2015 15:15	
WG540826-10	SSCV	01	10/05/2015 16:48	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4496843
Report generated 11/19/2015 15:48

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15110610
Instrument: HPMS8
Analyst: TMB
Workgroup: WG546599

Tune ID: WG546599-01
Run Date: 11/12/2015
Run Time: 10:55
File ID: 8M408647
Cal ID: HPMS8 - 30-SEP-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	24.1	11408	PASS
75.0	95.0	30.0	60.0	52.4	24826	PASS
95.0	95.0	100	100	100	47405	PASS
96.0	95.0	5.00	9.00	6.66	3156	PASS
173	174	0	2.00	0.286	116	PASS
174	95.0	50.0	100	85.5	40530	PASS
175	174	5.00	9.00	7.75	3142	PASS
176	174	95.0	101	95.3	38613	PASS
177	176	5.00	9.00	6.60	2549	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG546599-02	CCV	01	11/12/2015 11:50	
WG546600-01	BLANK	01	11/12/2015 12:50	
WG546600-02	LCS	01	11/12/2015 13:19	
L15110610-04	50WW07MS-110915	01	11/12/2015 13:49	
L15110610-05	50WW07MSD-110915	01	11/12/2015 14:19	
L15110610-10	TRIP BLANK	01	11/12/2015 17:17	
L15110610-03	50WW07-110915	01	11/12/2015 17:46	
L15110610-01	50WW17-110915	01	11/12/2015 18:15	
L15110610-02	50WW19-110915	01	11/12/2015 18:45	
L15110610-06	50WW26-111015	01	11/12/2015 19:15	
L15110610-07	50WW26FD-111015	01	11/12/2015 19:44	
L15110610-08	50WW21-111015	01	11/12/2015 20:14	
L15110610-09	50WW20-111015	01	11/12/2015 20:43	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4496843
Report generated 11/19/2015 15:48

Calibration Table Report
Method: A9FOOWTR.M
Title: A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Calibration: Tue Oct 06 11:55:21 2015
Curve: WG540826
Calibration Files

	Compound	5 8M407828.D	20 8M407829.D	50 8M407830.D	100 8M407831.D	200 8M407832.D	300 8M407833.D	400 8M407834.D	500 8M407835.D	Avg	%RSD
I	Fluorobenzene	ISTD									
T	Acetonitrile	0.020	0.019	0.020	0.019	0.019	0.019	0.019	0.019	0.019	3.019
T	3-Chloro-1-propene	0.474	0.484	0.476	0.471	0.484	0.465	0.458	0.432	0.468	3.632
T	2-Chloro-1,3-butadiene	0.448	0.481	0.482	0.486	0.514	0.495	0.486	0.460	0.481	4.206
T	Ethyl Acetate	0.104	0.129	0.132	0.131	0.132	0.128	0.128	0.133	0.127	7.528
T	Methacrylonitrile	0.046	0.055	0.058	0.057	0.057	0.056	0.057	0.060	0.056	7.551
T	Isobutyl Alcohol			0.005	0.005	0.005	0.005	0.005	0.006	0.005	4.964
T	1-Butanol			0.002	0.002	0.003	0.003	0.003	0.003	0.003	10.874
T	Methyl methacrylate	0.120	0.147	0.158	0.162	0.162	0.158	0.160	0.165	0.154	9.638
T	2-Nitropropane			0.021	0.022	0.025	0.026	0.029	0.031	0.026	14.916
I	Chlorobenzene-d5	ISTD									
I	1,4-Dichlorobenzene-d4	ISTD									
T	Cyclohexanone			0.057	0.052	0.054	0.051	0.052	0.054	0.053	3.733

Tue Oct 06 11:57:17 2015

Calibration Table Report
Method: 8260WT.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Calibration: Wed Sep 30 15:45:31 2015
Curve: WG540912
Calibration Files

	Compound	0.3 8M407747.D	0.4 8M407748.D	1 8M407749.D	2 8M407750.D	5 8M407751.D	20 8M407752.D	50 8M407753.D	100 8M407754.D	200 8M407755.D	300 8M407756.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane		0.380	0.381	0.359	0.346	0.426	0.391	0.412	0.377	0.348	0.380	7.176		
P	Chloromethane			0.693	0.621	0.587	0.619	0.579	0.579	0.515	0.447	0.580	12.684		
C	Vinyl Chloride		0.547	0.520	0.465	0.459	0.488	0.424	0.407	0.355		0.458	13.571		
T	1,3-Butadiene					0.415	0.434	0.316	0.248	0.208	0.174	0.299	36.091		1.007
T	Bromomethane			0.104	0.099	0.100	0.128	0.142	0.174	0.183	0.185	0.139	26.623		1.000
T	Chloroethane		0.143	0.197	0.184	0.189	0.202	0.190	0.198	0.194	0.186	0.187	9.444		
T	Trichlorofluoromethane		0.452	0.468	0.421	0.434	0.455	0.428	0.456	0.442	0.431	0.443	3.518		
T	Diethyl ether			0.169	0.169	0.169	0.164	0.164	0.176		0.184	0.170	4.169		
T	Isoprene		0.296	0.323	0.283	0.302	0.340	0.346	0.362	0.340	0.334	0.325	8.057		
T	Acrolein				0.021	0.021	0.020	0.020	0.021		0.024	0.021	7.793		
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.245	0.229	0.236	0.244	0.233	0.251	0.239	0.228	0.238	3.475		
T	Acetone					0.038	0.037	0.033	0.034	0.042	0.039	0.037	8.864		
C	1,1-Dichloroethene		0.427	0.426	0.381	0.398	0.408	0.387	0.419	0.413	0.389	0.405	4.243		
T	Tert-Butyl Alcohol				0.011	0.011	0.011	0.010	0.011		0.012	0.011	6.872		
T	Dimethyl Sulfide		0.193	0.233	0.224	0.224	0.238	0.236	0.247	0.252	0.246	0.233	7.587		
T	Iodomethane				0.047	0.081	0.127	0.149	0.172	0.165	0.153	0.128	36.698	0.997	
T	Methyl acetate					0.149	0.139	0.127	0.137	0.146	0.145	0.140	5.557		
T	Methylene Chloride			0.270	0.237	0.247	0.257	0.244	0.253	0.257	0.248	0.252	4.037		
T	Carbon Disulfide			0.873	0.793	0.800	0.856	0.843	0.864	0.807	0.740	0.822	5.489		
T	Acrylonitrile			0.050	0.050	0.052	0.054	0.055	0.058		0.071	0.056	13.209		
T	Methyl Tert Butyl Ether			0.456	0.433	0.479	0.485	0.464	0.497	0.514	0.489	0.477	5.314		
T	trans-1,2-Dichloroethene		0.375	0.384	0.364	0.378	0.395	0.384	0.409	0.401	0.375	0.385	3.701		
T	n-Hexane					0.371	0.385	0.388	0.404	0.375	0.358	0.380	4.129		
T	Diisopropyl ether			0.990	0.981	0.965	0.946	0.947	0.950		0.862	0.949	4.398		
T	Vinyl Acetate		0.248	0.230	0.237	0.265	0.261	0.253	0.253	0.264	0.258	0.252	4.767		
P	1,1-Dichloroethane		0.482	0.508	0.482	0.490	0.497	0.477	0.504	0.496	0.464	0.489	2.856		
T	Ethyl-Tert-Butyl ether			0.749	0.754	0.756	0.741	0.738	0.765		0.729	0.747	1.610		
T	2-Butanone					0.061	0.063	0.059	0.065	0.067	0.068	0.064	5.457		
T	Propionitrile			0.017	0.019	0.019	0.019	0.018	0.019		0.021	0.019	7.390		
T	2,2-Dichloropropane		0.393	0.438	0.390	0.399	0.421	0.403	0.428	0.414	0.389	0.408	4.343		
T	cis-1,2-Dichloroethene		0.265	0.291	0.270	0.271	0.278	0.269	0.280	0.281	0.266	0.275	3.128		
C	Chloroform	0.453	0.499	0.475	0.451	0.465	0.477	0.460	0.474	0.462	0.427	0.464	4.130		
T	1-Bromopropane			0.036	0.044	0.045	0.048	0.048	0.048	0.046	0.045	0.045	8.589		
T	Bromochloromethane		0.117	0.143	0.125	0.136	0.138	0.136	0.142	0.143	0.137	0.135	6.408		
T	Tetrahydrofuran			0.046	0.041	0.041	0.040	0.039	0.040		0.045	0.042	6.813		
S	Dibromofluoromethane			0.228	0.229	0.236	0.244	0.239	0.247	0.244	0.237	0.238	2.882		
T	1,1,1-Trichloroethane		0.396	0.411	0.383	0.413	0.432	0.420	0.449	0.436	0.411	0.417	4.879		
T	Cyclohexane			0.500	0.472	0.470	0.505	0.502	0.528	0.506	0.485	0.496	3.912		
T	1,1-Dichloropropene			0.372	0.320	0.353	0.376	0.358	0.382	0.366	0.344	0.359	5.566		
T	Tert-Amyl-Methyl ether			0.553	0.552	0.554	0.550	0.539	0.564		0.567	0.554	1.666		
T	Carbon Tetrachloride		0.342	0.387	0.342	0.352	0.388	0.378	0.409	0.384	0.37	0.3725	6.23053		
S	1,2-Dichloroethane-d4			0.227	0.237	0.235	0.251	0.242	0.251	0.252	0.245	0.2426	3.75472		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.282	0.308	0.304	0.32	0.332	0.319	0.338	0.344	0.323	0.3188	5.97586		
T	Benzene	0.948	1.053	1.068	1.016	1.012	1.055	1.009	1.017	0.904	0.765	0.9846	9.33012		
T	Trichloroethene		0.296	0.263	0.255	0.248	0.271	0.259	0.276	0.265	0.254	0.2651	5.51495		
T	Methylcyclohexane					0.405	0.421	0.417	0.43	0.403	0.385	0.4101	3.90762		
C	1,2-Dichloropropane		0.238	0.269	0.253	0.265	0.275	0.263	0.278	0.28	0.267	0.2652	4.99091		
T	Bromodichloromethane		0.331	0.324	0.32	0.329	0.357	0.348	0.364	0.365	0.343	0.3424	5.04612		
T	1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.0012	13.1586		
T	Dibromomethane		0.113	0.119	0.121	0.13	0.132	0.125	0.13	0.135	0.131	0.1263	5.73877		
T	2-Chloroethyl Vinyl Ether					0.1	0.109	0.103	0.112	0.115	0.117	0.1093	6.11607		
T	4-Methyl-2-Pentanone					0.051	0.055	0.051	0.056	0.06	0.063	0.0561	8.3812		
T	cis-1,3-Dichloropropene		0.36	0.371	0.355	0.364	0.398	0.387	0.405	0.404	0.376	0.3801	5.00621		

T	Dimethyl Disulfide					0.158	0.19	0.202	0.22	0.232	0.227	0.2049	13.705
I	Chlorobenzene-d5	ISTD											
S	Toluene-d8			1.192	1.154	1.143	1.206	1.188	1.231	1.129	1.036	1.16	5.2193
C	Toluene		1.586	1.558	1.513	1.462	1.54	1.446	1.465	1.226	0.99	1.4206	13.5587
T	Ethyl Methacrylate			0.229	0.248	0.275	0.293	0.284	0.312	0.318	0.307	0.2832	11.1162
T	Paraldehyde											0	0
T	trans-1,3-Dichloropropene			0.382	0.396	0.43	0.454	0.443	0.474	0.47	0.437	0.4358	7.50736
T	1,1,2-Trichloroethane		0.215	0.213	0.222	0.233	0.23	0.218	0.234	0.237	0.228	0.2255	3.87257
T	2-Hexanone					0.062	0.072	0.065	0.073	0.076	0.077	0.0709	8.49385
T	1,3-Dichloropropane		0.409	0.416	0.386	0.399	0.412	0.389	0.418	0.411	0.387	0.4029	3.20744
T	Tetrachloroethene		0.274	0.335	0.293	0.297	0.304	0.295	0.319	0.307	0.293	0.302	5.77936
T	Dibromochloromethane		0.265	0.264	0.262	0.285	0.303	0.293	0.318	0.324	0.31	0.2915	8.29724
T	1,2-Dibromoethane		0.235	0.211	0.202	0.225	0.233	0.22	0.235	0.239	0.226	0.2251	5.51845
T	1-Chlorohexane		0.511	0.53	0.496	0.497	0.518	0.521	0.539	0.499	0.464	0.5083	4.39894
P	Chlorobenzene		1.019	0.978	0.95	0.944	0.986	0.956	1.013	0.935	0.787	0.9519	7.22423
T	1,1,1,2-Tetrachloroethane		0.265	0.325	0.323	0.339	0.363	0.358	0.402	0.41	0.382	0.352	12.8056
C	Ethylbenzene		0.553	0.548	0.513	0.519	0.561	0.544	0.602	0.603	0.549	0.5545	5.65783
T	m-,p-Xylene		0.653	0.672	0.647	0.659	0.677	0.656	0.688	0.594	0.478	0.6359	10.2214
T	o-Xylene			0.69	0.616	0.608	0.654	0.636	0.672	0.662	0.607	0.6431	4.84917
T	Styrene		0.957	1.011	0.983	1.079	1.09	1.068	1.114	1.015	0.854	1.0189	7.95219
P	Bromoform			0.143	0.145	0.164	0.179	0.174	0.193	0.203	0.201	0.1753	13.4432
T	Isopropylbenzene		1.674	1.711	1.59	1.59	1.701	1.607	1.616	1.333	1.062	1.5426	13.7434
I	1,4-Dichlorobenzene-d4	ISTD											
P	1,1,2,2-Tetrachloroethane		0.466	0.431	0.447	0.482	0.487	0.445	0.461	0.475	0.456	0.4612	3.98563
S	p-Bromofluorobenzene				0.839	0.861	0.897	0.872	0.9	0.883	0.855	0.8723	2.5773
T	1,2,3-Trichloropropane			0.117	0.121	0.128	0.136	0.124	0.131	0.136	0.132	0.1282	5.47011
T	trans-1,4-Dichloro-2-Butene			0.165	0.121	0.159	0.173	0.169	0.184	0.195	0.191	0.1695	13.7331
T	n-Propylbenzene		3.853	4.064	3.646	3.829	3.894	3.605	3.431	2.634		3.6196	12.2626
T	Bromobenzene	0.716	0.667	0.795	0.742	0.733	0.765	0.727	0.757	0.745	0.701	0.7348	4.83527
T	1,3,5-Trimethylbenzene		2.694	2.781	2.538	2.617	2.699	2.581	2.572	2.175	1.741	2.4886	13.2002
T	2-Chlorotoluene		2.572	2.712	2.449	2.619	2.629	2.438	2.425	2.115	1.617	2.3974	14.1849
T	4-Chlorotoluene		2.301	2.388	2.204	2.076	2.232	2.159	2.12	1.736	1.443	2.0734	14.4053
T	a-Methylstyrene					1.309	1.407	1.402	1.437	1.365	1.219	1.3567	5.94098
T	tert-Butylbenzene			0.554	0.526	0.527	0.551	0.531	0.57	0.571	0.55	0.5475	3.2892
T	1,2,4-Trimethylbenzene		2.628	2.739	2.592	2.702	2.752	2.637	2.622	2.21	1.751	2.5147	13.0606
T	sec-Butylbenzene			3.403	3.108	3.202	3.306	3.103	3.049	2.467		3.0914	9.77187
T	p-Isopropyltoluene			2.69	2.604	2.632	2.712	2.601	2.619	2.181	1.735	2.4717	13.7983
T	1,3-Dichlorobenzene		1.534	1.588	1.433	1.519	1.547	1.468	1.495	1.403	1.213	1.4666	7.58144
T	1,4-Dichlorobenzene	1.487	1.624	1.584	1.427	1.505	1.506	1.438	1.464	1.381	1.188	1.4604	8.193
T	n-Butylbenzene			2.514	2.27	2.452	2.509	2.482	2.49	2.075	1.64	2.3041	13.4157
T	1,2-Dichlorobenzene	1.241	1.291	1.402	1.288	1.325	1.343	1.269	1.306	1.257	1.11	1.2833	5.96211
T	1,2-Dibromo-3-Chloropropane				0.068	0.075	0.084	0.078	0.083	0.09	0.087	0.0808	9.2848
T	1,2,4-Trichlorobenzene		0.786	0.858	0.844	0.9	0.906	0.905	0.947	0.946	0.843	0.8816	6.03392
T	Hexachlorobutadiene		0.419	0.411	0.423	0.422	0.427	0.417	0.442	0.432	0.402	0.4217	2.75284
T	Naphthalene		1.416	1.32	1.314	1.295	1.264	1.247	1.273	1.259	1.084	1.2746	6.86659
T	1,2,3-Trichlorobenzene	0.681	0.712	0.793	0.719	0.764	0.777	0.762	0.79	0.8	0.72	0.7518	5.44426

Thu Oct 01 09:11:48 2015

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15110610 Run Date: 09/30/2015 Sample ID: WG540912-12
Instrument ID: HPMS8 Run Time: 17:27 Method: 8260B
File ID: 8M407761 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG540912 Cal ID: HPMS8 - 30-SEP-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	53.5	ug/L	0.497	7.10	20	
1,1-Dichloroethene	CCC	50.0	49.6	ug/L	0.402	0.800	20	
1,2-Dichloropropane	CCC	50.0	51.4	ug/L	0.273	2.90	20	
Ethylbenzene	CCC	50.0	49.2	ug/L	0.546	1.60	20	
Toluene	CCC	50.0	50.2	ug/L	1.42	0.300	20	
Vinyl Chloride	CCC	50.0	44.0	ug/L	0.404	12.0	20	
Bromoform	SPCC	50.0	51.2	ug/L	0.180	2.40	20	
Chlorobenzene	SPCC	50.0	51.8	ug/L	0.986	3.50	20	
Chloromethane	SPCC	50.0	49.6	ug/L	0.576	0.700	20	
1,1-Dichloroethane	SPCC	50.0	51.9	ug/L	0.507	3.70	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	47.9	ug/L	0.442	4.10	20	
Acetone		50.0	59.2	ug/L	0.0439	18.4	20	
Benzene		50.0	52.9	ug/L	1.04	5.80	20	
Bromobenzene		50.0	49.3	ug/L	0.724	1.40	20	
Bromochloromethane		50.0	53.5	ug/L	0.145	7.00	20	
Bromodichloromethane		50.0	52.2	ug/L	0.358	4.40	20	
Bromomethane		50.0	45.2	ug/L	0.141	9.70	20	
2-Butanone		50.0	54.2	ug/L	0.0693	8.40	20	
n-Butylbenzene		50.0	52.9	ug/L	2.44	5.70	20	
sec-Butylbenzene		50.0	51.8	ug/L	3.20	3.60	20	
tert-Butylbenzene		50.0	51.7	ug/L	0.566	3.40	20	
Carbon Disulfide		50.0	48.8	ug/L	0.802	2.50	20	
Carbon Tetrachloride		50.0	54.5	ug/L	0.406	9.00	20	
Dibromochloromethane		50.0	49.3	ug/L	0.287	1.40	20	
Chloroethane		50.0	55.9	ug/L	0.209	11.7	20	
2-Chlorotoluene		50.0	53.2	ug/L	2.55	6.40	20	
4-Chlorotoluene		50.0	52.9	ug/L	2.19	5.80	20	
1,2-Dibromo-3-Chloropropane		50.0	47.3	ug/L	0.0765	5.30	20	
1,2-Dibromoethane		50.0	47.8	ug/L	0.215	4.40	20	
Dibromomethane		50.0	51.7	ug/L	0.131	3.40	20	
1,2-Dichlorobenzene		50.0	50.8	ug/L	1.30	1.60	20	
1,3-Dichlorobenzene		50.0	50.5	ug/L	1.48	1.00	20	
1,4-Dichlorobenzene		50.0	48.6	ug/L	1.42	2.80	20	
Dichlorodifluoromethane		50.0	58.7	ug/L	0.446	17.4	20	
1,2-Dichloroethane		50.0	52.5	ug/L	0.335	5.10	20	
cis-1,2-Dichloroethene		50.0	51.1	ug/L	0.281	2.20	20	
trans-1,2-Dichloroethene		50.0	51.7	ug/L	0.398	3.30	20	
1,3-Dichloropropane		50.0	48.2	ug/L	0.388	3.60	20	
2,2-Dichloropropane		50.0	56.9	ug/L	0.465	13.9	20	
cis-1,3-Dichloropropene		50.0	55.2	ug/L	0.420	10.5	20	
trans-1,3-Dichloropropene		50.0	49.1	ug/L	0.428	1.80	20	
1,1-Dichloropropene		50.0	52.7	ug/L	0.378	5.40	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4496842
Report generated 11/19/2015 15:48

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15110610 Run Date: 09/30/2015 Sample ID: WG540912-12
Instrument ID: HPMS8 Run Time: 17:27 Method: 8260B
File ID: 8M407761 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG540912 Cal ID: HPMS8 - 30-SEP-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	48.3	ug/L	0.0684	3.50	20	
Hexachlorobutadiene		50.0	51.2	ug/L	0.432	2.40	20	
Isopropylbenzene		50.0	54.1	ug/L	1.67	8.20	20	
p-Isopropyltoluene		50.0	51.9	ug/L	2.57	3.80	20	
4-Methyl-2-Pentanone		50.0	50.6	ug/L	0.0568	1.30	20	
Methylene Chloride		50.0	50.4	ug/L	0.254	0.800	20	
Naphthalene		50.0	44.3	ug/L	1.13	11.3	20	
n-Propylbenzene		50.0	50.9	ug/L	3.69	1.90	20	
Styrene		50.0	52.5	ug/L	1.07	5.10	20	
1,1,1,2-Tetrachloroethane		50.0	49.6	ug/L	0.349	0.900	20	
Tetrachloroethene		50.0	50.4	ug/L	0.304	0.700	20	
1,2,3-Trichlorobenzene		50.0	48.6	ug/L	0.731	2.70	20	
1,2,4-Trichlorobenzene		50.0	49.3	ug/L	0.869	1.40	20	
1,1,1-Trichloroethane		50.0	55.1	ug/L	0.460	10.3	20	
1,1,2-Trichloroethane		50.0	47.4	ug/L	0.214	5.20	20	
Trichloroethene		50.0	50.9	ug/L	0.270	1.90	20	
Trichlorofluoromethane		50.0	49.4	ug/L	0.438	1.20	20	
1,2,3-Trichloropropane		50.0	49.0	ug/L	0.126	2.10	20	
1,2,4-Trimethylbenzene		50.0	51.5	ug/L	2.59	3.00	20	
1,3,5-Trimethylbenzene		50.0	52.6	ug/L	2.62	5.30	20	
o-Xylene		50.0	51.6	ug/L	0.664	3.20	20	
m-,p-Xylene		100	105	ug/L	0.668	5.10	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4496842
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Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110610 Run Date: 11/12/2015 Sample ID: WG546599-02
Instrument ID: HPMS8 Run Time: 11:50 Method: 8260B
File ID: 8M408649 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG546600 Cal ID: HPMS8 - 30-SEP-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	52.9	ug/L	0.491	5.77	20	
1,1-Dichloroethene	CCC	50.0	54.5	ug/L	0.442	9.05	20	
1,2-Dichloropropane	CCC	50.0	51.7	ug/L	0.274	3.46	20	
Ethylbenzene	CCC	50.0	49.6	ug/L	0.551	0.704	20	
Toluene	CCC	50.0	51.1	ug/L	1.45	2.21	20	
Vinyl Chloride	CCC	50.0	56.3	ug/L	0.516	12.6	20	
Bromoform	SPCC	50.0	55.7	ug/L	0.195	11.4	20	
Chlorobenzene	SPCC	50.0	50.4	ug/L	0.959	0.717	20	
Chloromethane	SPCC	50.0	57.3	ug/L	0.665	14.7	20	
1,1-Dichloroethane	SPCC	50.0	52.7	ug/L	0.515	5.35	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	51.1	ug/L	0.471	2.15	20	
Xylenes		150	152	ug/L	0.643	1.17	20	
Acetone		50.0	51.9	ug/L	0.0385	3.84	20	
Benzene		50.0	52.0	ug/L	1.02	4.02	20	
Bromobenzene		50.0	49.8	ug/L	0.732	0.443	20	
Bromochloromethane		50.0	55.0	ug/L	0.149	10.0	20	
Bromodichloromethane		50.0	53.2	ug/L	0.364	6.31	20	
Bromomethane		50.0	51.3	ug/L	0.161	2.65	20	
2-Butanone		50.0	55.1	ug/L	0.0704	10.2	20	
n-Butylbenzene		50.0	54.4	ug/L	2.51	8.81	20	
sec-Butylbenzene		50.0	48.8	ug/L	3.02	2.43	20	
tert-Butylbenzene		50.0	48.0	ug/L	0.525	4.09	20	
Carbon Disulfide		50.0	52.4	ug/L	0.861	4.77	20	
Carbon Tetrachloride		50.0	54.1	ug/L	0.403	8.14	20	
Dibromochloromethane		50.0	54.7	ug/L	0.319	9.33	20	
Chloroethane		50.0	54.1	ug/L	0.202	8.15	20	
2-Chlorotoluene		50.0	49.2	ug/L	2.36	1.67	20	
4-Chlorotoluene		50.0	47.7	ug/L	1.98	4.57	20	
1,2-Dibromo-3-Chloropropane		50.0	49.8	ug/L	0.0805	0.358	20	
1,2-Dibromoethane		50.0	52.8	ug/L	0.238	5.61	20	
Dibromomethane		50.0	54.0	ug/L	0.136	8.00	20	
1,2-Dichlorobenzene		50.0	50.6	ug/L	1.30	1.20	20	
1,3-Dichlorobenzene		50.0	50.3	ug/L	1.47	0.551	20	
1,4-Dichlorobenzene		50.0	49.7	ug/L	1.45	0.669	20	
Dichlorodifluoromethane		50.0	59.5	ug/L	0.452	18.9	20	
1,2-Dichloroethane		50.0	53.5	ug/L	0.341	7.04	20	
cis-1,2-Dichloroethene		50.0	52.7	ug/L	0.289	5.38	20	
trans-1,2-Dichloroethene		50.0	53.8	ug/L	0.414	7.60	20	
1,3-Dichloropropane		50.0	51.2	ug/L	0.412	2.32	20	
2,2-Dichloropropane		50.0	53.0	ug/L	0.433	5.99	20	
cis-1,3-Dichloropropene		50.0	53.0	ug/L	0.403	5.96	20	
trans-1,3-Dichloropropene		50.0	53.6	ug/L	0.467	7.13	20	

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110610 Run Date: 11/12/2015 Sample ID: WG546599-02
Instrument ID: HPMS8 Run Time: 11:50 Method: 8260B
File ID: 8M408649 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG546600 Cal ID: HPMS8 - 30-SEP-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	52.3	ug/L	0.375	4.52	20	
2-Hexanone		50.0	51.1	ug/L	0.0725	2.25	20	
Hexachlorobutadiene		50.0	49.9	ug/L	0.420	0.295	20	
Isopropylbenzene		50.0	51.8	ug/L	1.60	3.63	20	
p-Isopropyltoluene		50.0	51.0	ug/L	2.52	2.03	20	
4-Methyl-2-Pentanone		50.0	52.1	ug/L	0.0585	4.27	20	
Methylene Chloride		50.0	51.8	ug/L	0.261	3.56	20	
Naphthalene		50.0	58.1	ug/L	1.48	16.3	20	
n-Propylbenzene		50.0	47.8	ug/L	3.46	4.37	20	
Styrene		50.0	51.8	ug/L	1.06	3.67	20	
1,1,1,2-Tetrachloroethane		50.0	53.5	ug/L	0.377	7.06	20	
Tetrachloroethene		50.0	51.5	ug/L	0.311	3.06	20	
1,2,3-Trichlorobenzene		50.0	53.9	ug/L	0.810	7.71	20	
1,2,4-Trichlorobenzene		50.0	53.9	ug/L	0.950	7.71	20	
1,1,1-Trichloroethane		50.0	52.6	ug/L	0.438	5.16	20	
1,1,2-Trichloroethane		50.0	52.8	ug/L	0.238	5.70	20	
Trichloroethene		50.0	50.4	ug/L	0.267	0.822	20	
Trichlorofluoromethane		50.0	54.0	ug/L	0.479	8.06	20	
1,2,3-Trichloropropane		50.0	50.8	ug/L	0.130	1.63	20	
1,2,4-Trimethylbenzene		50.0	50.9	ug/L	2.56	1.78	20	
1,3,5-Trimethylbenzene		50.0	49.7	ug/L	2.47	0.556	20	
o-Xylene		50.0	49.3	ug/L	0.633	1.50	20	
m-,p-Xylene		100	103	ug/L	0.652	2.51	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4496844
Report generated 11/19/2015 15:48

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15110610
Instrument ID: HPMS8
Workgroup (AAB#): WG546600

ICAL CCV Number: WG540912-08
CAL ID: HPMS8-30-SEP-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG540912-08	NA	NA	378981	687265	938292
Upper Limit	NA	NA	757962	1374530	1876584
Lower Limit	NA	NA	189491	343633	469146
L15110610-01	1.00	01	436651	836873	1136715
L15110610-02	1.00	01	433217	814219	1115135
L15110610-03	1.00	01	443210	834318	1139595
L15110610-04	1.00	01	529443	955590	1297060
L15110610-05	1.00	01	544023	963205	1320030
L15110610-06	1.00	01	420141	814737	1113226
L15110610-07	1.00	01	420043	805586	1093979
L15110610-08	1.00	01	419697	799836	1092877
L15110610-09	1.00	01	416891	792874	1090650
L15110610-10	1.00	01	452581	854928	1159975
WG546600-01	1.00	01	482731	918700	1247290
WG546600-02	1.00	01	526197	946217	1290563

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4510226
Report generated 11/19/2015 15:48

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15110610
Instrument ID: HPMS8
Workgroup (AAB#): WG546600

ICAL CCV Number: WG540912-08
CAL ID: HPMS8-30-SEP-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG540912-08	NA	NA	17.6	14.58	10.72
Upper Limit	NA	NA	18.1	15.08	11.22
Lower Limit	NA	NA	17.1	14.08	10.22
L15110610-01	1.00	01	17.6	14.58	10.72
L15110610-02	1.00	01	17.6	14.58	10.72
L15110610-03	1.00	01	17.6	14.58	10.71
L15110610-04	1.00	01	17.6	14.58	10.72
L15110610-05	1.00	01	17.6	14.58	10.72
L15110610-06	1.00	01	17.6	14.58	10.72
L15110610-07	1.00	01	17.6	14.58	10.72
L15110610-08	1.00	01	17.6	14.57	10.72
L15110610-09	1.00	01	17.6	14.58	10.72
L15110610-10	1.00	01	17.6	14.58	10.72
WG546600-01	1.00	01	17.6	14.58	10.72
WG546600-02	1.00	01	17.6	14.58	10.72

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4510227
Report generated: 11/19/2015 15:48

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\111215\8M408662.D Vial: 16
Acq On : 12 Nov 2015 18:15 Operator: TMB
Sample : L15110610-01 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 13 08:18:16 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	1136715	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	836873	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	436651	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	281765	26.0446 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.16%		
43) 1,2-Dichloroethane-d4	10.31	65	283227	25.6770 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.72%		
58) Toluene-d8	12.69	98	986632	25.4095 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.64%		
80) p-Bromofluorobenzene	16.08	95	384134	25.2132 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.84%		
Target Compounds					Qvalue
3) Chloromethane	3.63	50	4218	0.1600 ug/L	93
5) 1,3-Butadiene	3.92	54	212	Below Cal #	1
13) Acetone	6.25	43	2541	1.5061 ug/L #	67

(#) = qualifier out of range (m) = manual integration
8M408662.D 8260WT.M Fri Nov 13 08:18:17 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\111215\8M408662.D Vial: 16
Acq On : 12 Nov 2015 18:15 Operator: TMB
Sample : L15110610-01 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 13 8:18 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration

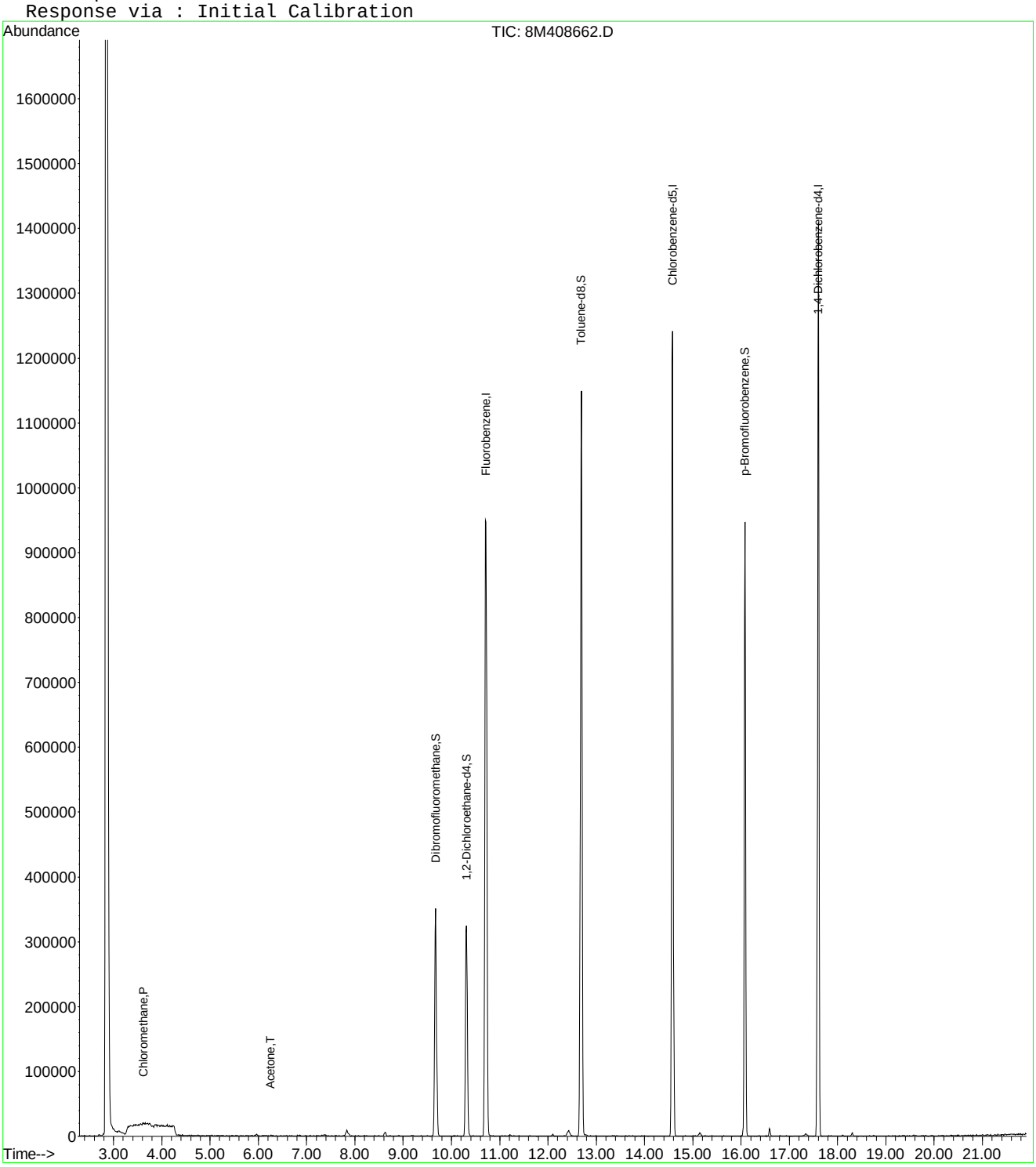

8M408662.D 8260WT.M Fri Nov 13 08:18:17 2015 Page 2

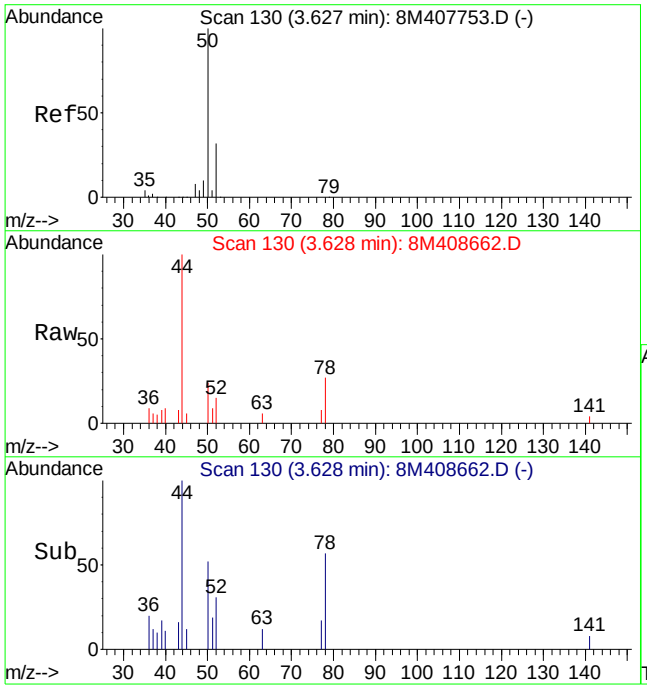

#3
Chloromethane
Concen: 0.16 ug/L
RT: 3.63 min Scan# 130
Delta R.T. 0.01 min
Lab File: 8M408662.D
Acq: 12 Nov 2015 18:15

Tgt Ion: 50 Resp: 4218

Ion	Ratio	Lower	Upper
50	100		
52	36.1	19.2	44.8

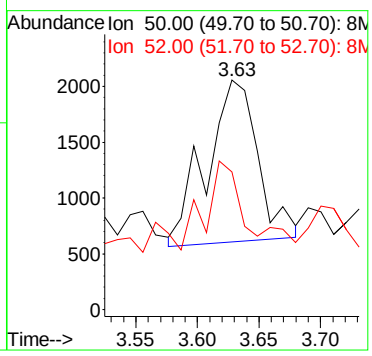

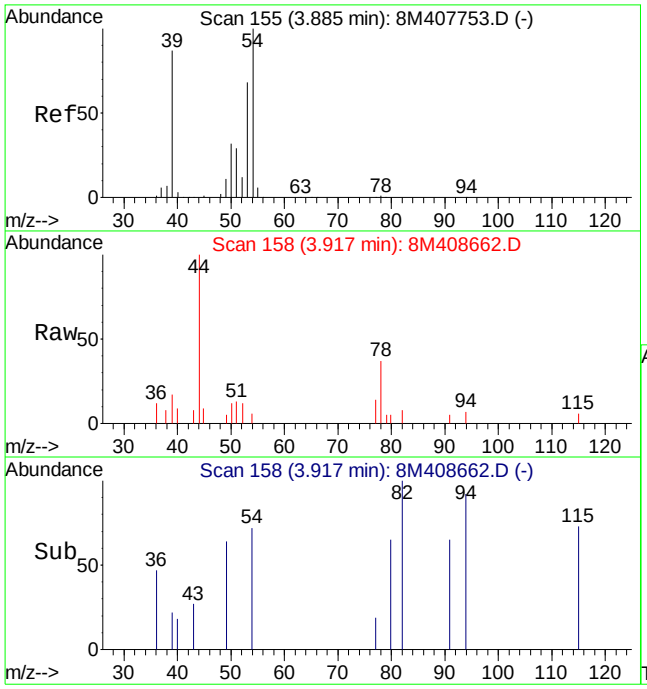

#5
1,3-Butadiene
Concen: Below Cal
RT: 3.92 min Scan# 158
Delta R.T. 0.03 min
Lab File: 8M408662.D
Acq: 12 Nov 2015 18:15

Tgt Ion: 54 Resp: 212

Ion	Ratio	Lower	Upper
54	100		
39	488.2	60.8	142.0#
53	94.3	42.4	99.0

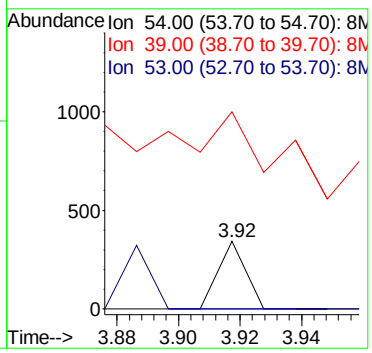

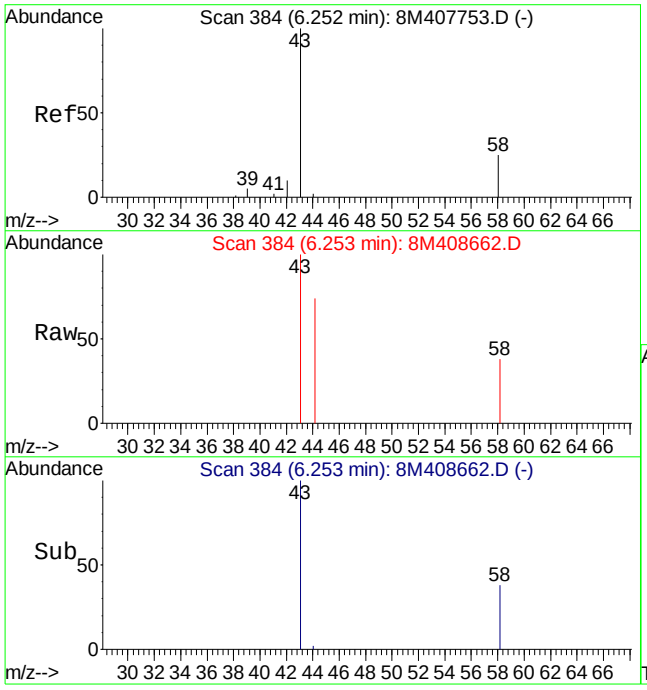

#13
Acetone
Concen: 1.51 ug/L
RT: 6.25 min Scan# 384
Delta R.T. 0.01 min
Lab File: 8M408662.D
Acq: 12 Nov 2015 18:15

Tgt Ion: 43 Resp: 2541

Ion	Ratio	Lower	Upper
43	100		
58	10.0	16.4	38.2#

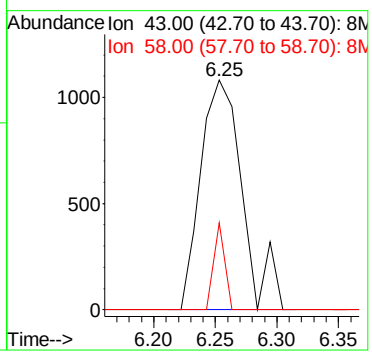

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\111215\8M408663.D Vial: 17
Acq On : 12 Nov 2015 18:45 Operator: TMB
Sample : L15110610-02 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 13 08:18:17 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	1115135	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	814219	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	433217	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	280030	26.3851 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 105.56%		
43) 1,2-Dichloroethane-d4	10.31	65	278893	25.7734 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.08%		
58) Toluene-d8	12.69	98	979147	25.9184 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.68%		
80) p-Bromofluorobenzene	16.08	95	375138	24.8179 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.28%		

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
8M408663.D 8260WT.M Fri Nov 13 08:18:18 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\111215\8M408663.D Vial: 17
Acq On : 12 Nov 2015 18:45 Operator: TMB
Sample : L15110610-02 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 13 8:18 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration

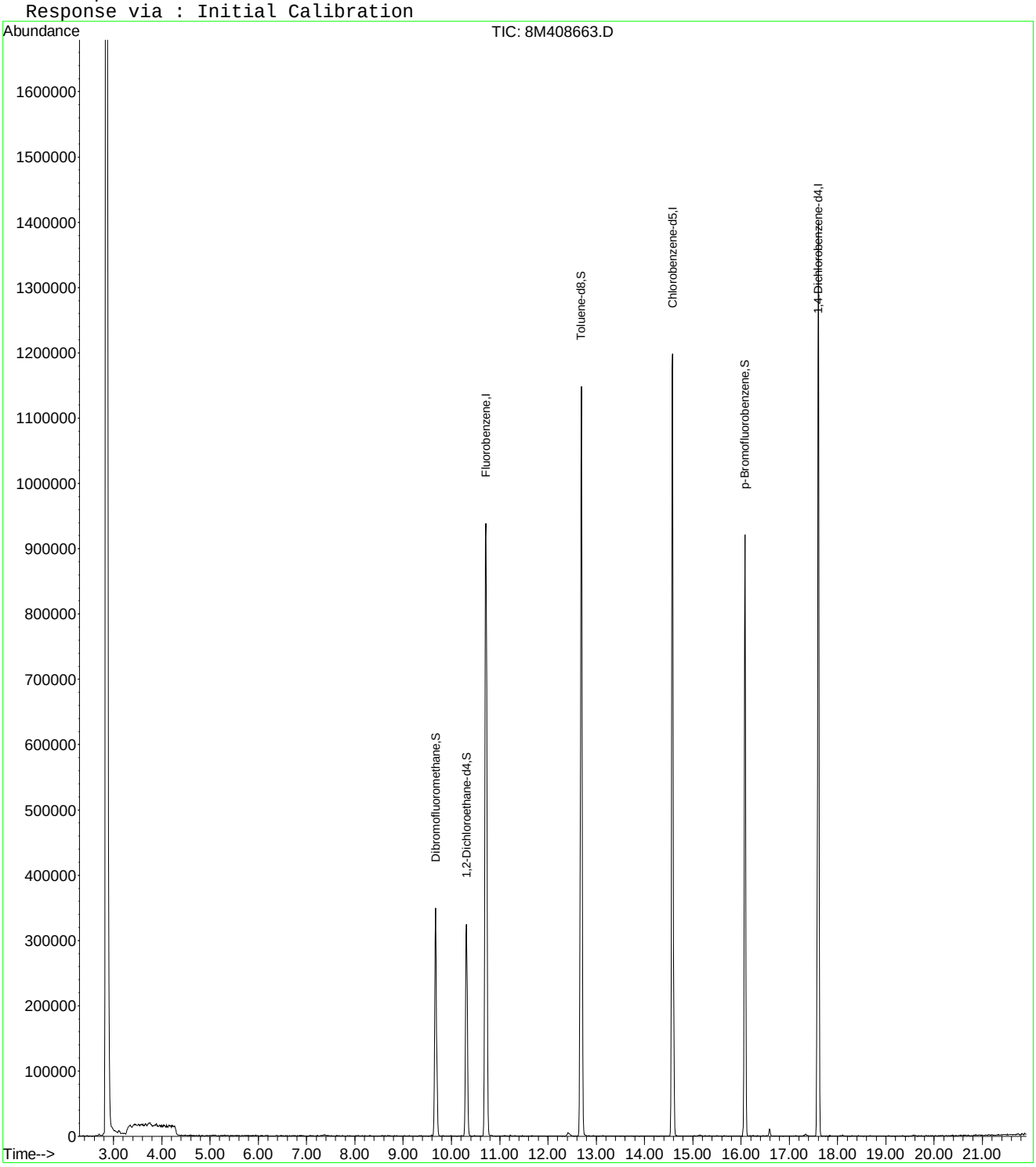

8M408663.D 8260WT.M Fri Nov 13 08:18:18 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\111215\8M408661.D Vial: 15
Acq On : 12 Nov 2015 17:46 Operator: TMB
Sample : L15110610-03 REF A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 13 08:18:15 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	1139595	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	834318	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	443210	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	286089	26.3774 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 105.52%		
43) 1,2-Dichloroethane-d4	10.31	65	283675	25.6526 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.60%		
58) Toluene-d8	12.68	98	976238	25.2189 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.88%		
80) p-Bromofluorobenzene	16.08	95	389509	25.1877 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.76%		

Target Compounds					Qvalue
3) Chloromethane	3.63	50	3455	0.1307 ug/L #	64
13) Acetone	6.26	43	2352	1.3905 ug/L #	48

(#) = qualifier out of range (m) = manual integration
8M408661.D 8260WT.M Fri Nov 13 08:18:15 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\111215\8M408661.D Vial: 15
Acq On : 12 Nov 2015 17:46 Operator: TMB
Sample : L15110610-03 REF A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 13 8:18 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration

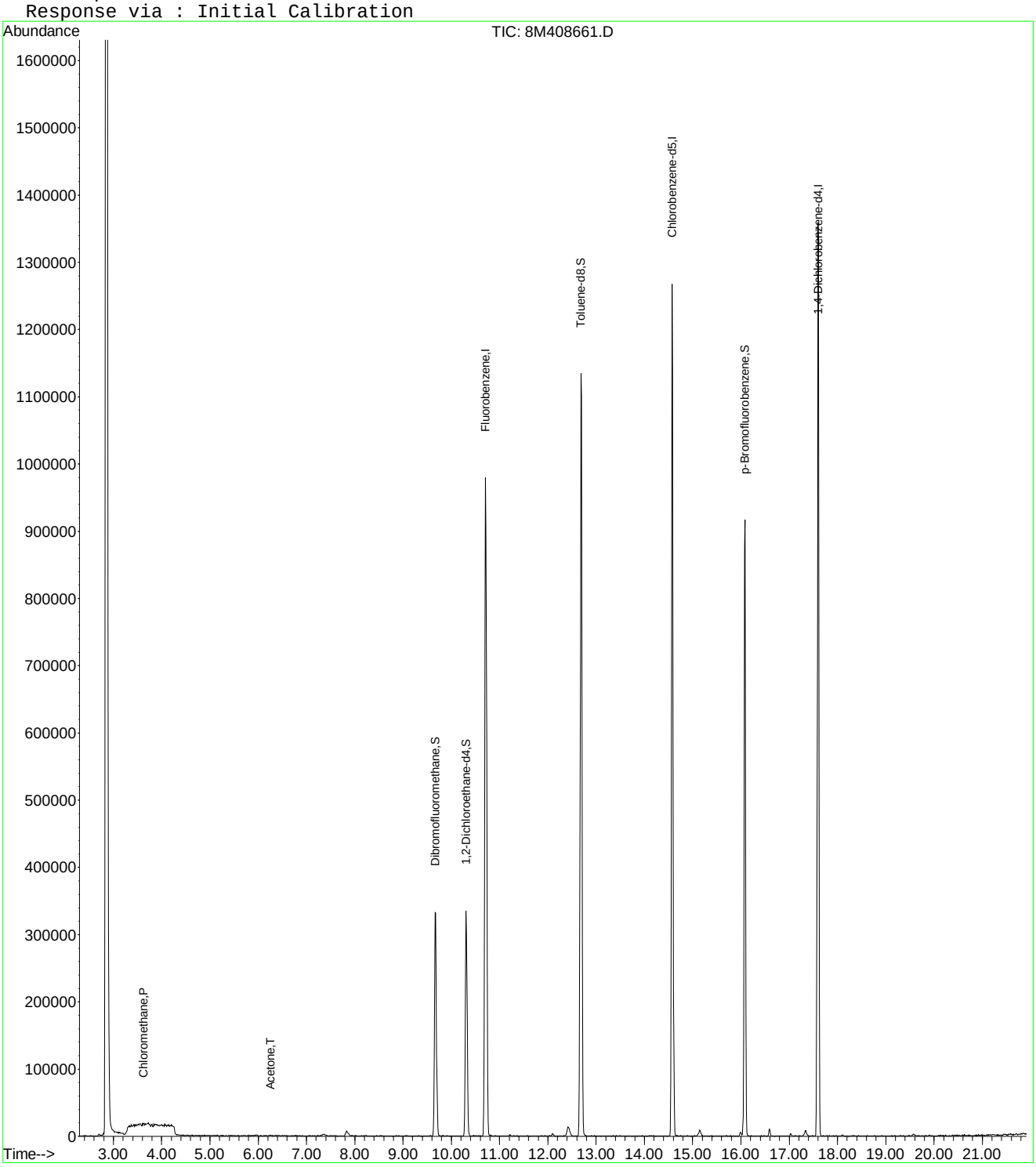

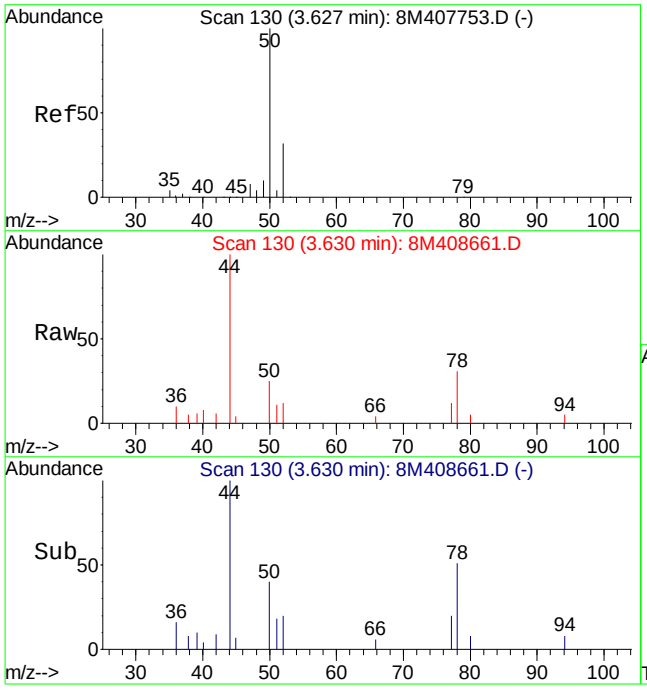

#3
Chloromethane
Concen: 0.13 ug/L
RT: 3.63 min Scan# 130
Delta R.T. 0.01 min
Lab File: 8M408661.D
Acq: 12 Nov 2015 17:46

Tgt Ion: 50 Resp: 3455

Ion	Ratio	Lower	Upper
50	100		
52	52.0	19.2	44.8#

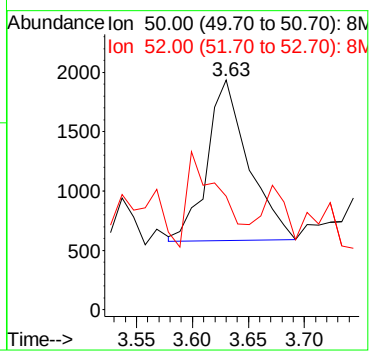

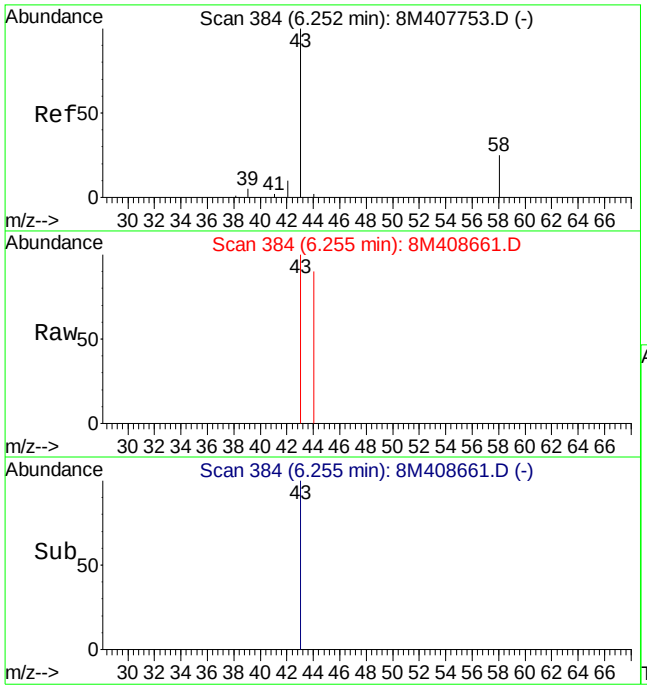

#13
Acetone
Concen: 1.39 ug/L
RT: 6.26 min Scan# 384
Delta R.T. 0.01 min
Lab File: 8M408661.D
Acq: 12 Nov 2015 17:46

Tgt Ion: 43 Resp: 2352

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

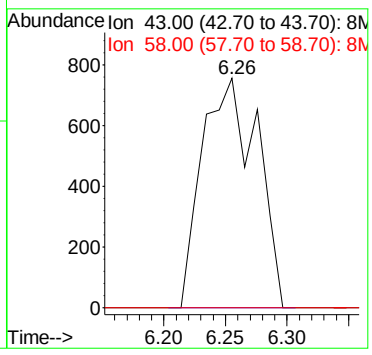

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\111215\8M408653.D Vial: 7
Acq On : 12 Nov 2015 13:49 Operator: TMB
Sample : L15110610-04 A MS 826-LOW Inst : HPMS8
Misc : 1,1 STD73297 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 12 14:11:10 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	1297060	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	955590	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	529443	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.68	111	327727	26.5481 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.20%		
43) 1,2-Dichloroethane-d4	10.32	65	319914	25.4176 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.68%		
58) Toluene-d8	12.69	98	1132257	25.5373 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.16%		
80) p-Bromofluorobenzene	16.08	95	458527	24.8214 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.28%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	470959	23.8833 ug/L	99
3) Chloromethane	3.63	50	700147	23.2690 ug/L	99
4) Vinyl Chloride	3.85	62	544175	22.8863 ug/L	100
5) 1,3-Butadiene	3.89	54	173817	7.9021 ug/L	94
6) Bromomethane	4.73	94	163014	20.9053 ug/L	97
7) Chloroethane	4.90	64	215609	22.2268 ug/L	98
8) Trichlorofluoromethane	5.39	101	465981	20.2768 ug/L	98
10) Isoprene	5.95	67	336014	19.9158 ug/L	95
11) Acrolein	6.16	56	211	0.1922 ug/L #	12
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	264850	21.4397 ug/L	96
13) Acetone	6.25	43	47823	24.8409 ug/L	100
14) 1,1-Dichloroethene	6.48	61	412877	19.6342 ug/L	98
15) Tert-Butyl Alcohol	6.57	59	6332	11.1313 ug/L #	65
16) Dimethyl Sulfide	6.74	62	316552	26.2287 ug/L	99
17) Iodomethane	7.00	142	61660	9.2172 ug/L	95
18) Methyl acetate	7.01	43	133654	18.3589 ug/L	98
19) Methylene Chloride	7.26	84	257688	19.7310 ug/L	100
20) Carbon Disulfide	7.30	76	729925	17.1166 ug/L	99
21) Acrylonitrile	7.44	53	64715	22.3922 ug/L	99
22) Methyl Tert Butyl Ether	7.48	73	534095	21.5732 ug/L	98
23) trans-1,2-Dichloroethene	7.71	61	401211	20.0911 ug/L	100
24) n-Hexane	7.79	57	347163	17.5983 ug/L	90
26) Vinyl Acetate	8.31	43	385282	29.4485 ug/L	98
27) 1,1-Dichloroethane	8.33	63	506212	19.9620 ug/L	98
29) 2-Butanone	8.89	43	69665	21.0036 ug/L	99
30) Propionitrile	9.00	54	1058	1.0871 ug/L #	56
31) 2,2-Dichloropropane	9.11	77	429640	20.2726 ug/L	99
32) cis-1,2-Dichloroethene	9.18	96	288124	20.2218 ug/L	98
33) Chloroform	9.39	83	504628	20.9489 ug/L	100
34) 1-Bromopropane	9.52	122	62859	26.8660 ug/L	95
35) Bromochloromethane	9.61	130	153216	21.8441 ug/L	100
36) Tetrahydrofuran	9.64	42	1354	0.6219 ug/L #	57
38) 1,1,1-Trichloroethane	9.91	97	444603	20.5620 ug/L	98
39) Cyclohexane	9.94	56	477092	18.5418 ug/L	98
40) 1,1-Dichloropropene	10.11	75	362251	19.4581 ug/L	99
42) Carbon Tetrachloride	10.25	117	394517	20.4155 ug/L	98
45) 1,2-Dichloroethane	10.43	62	334423	20.2171 ug/L	99
46) Benzene	10.47	78	1044186	20.4409 ug/L	99
47) Trichloroethene	11.22	130	267260	19.4344 ug/L	97
48) Methylcyclohexane	11.31	83	389820	18.3200 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M408653.D 8260WT.M Thu Nov 12 14:11:10 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\111215\8M408653.D Vial: 7
Acq On : 12 Nov 2015 13:49 Operator: TMB
Sample : L15110610-04 A MS 826-LOW Inst : HPMS8
Misc : 1,1 STD73297 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 12 14:11:10 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
49)	1,2-Dichloropropane	11.43	63	274986	19.9820 ug/L	97
50)	Bromodichloromethane	11.73	83	355448	20.0107 ug/L	99
51)	1,4-Dioxane	11.72	88	1440	22.7283 ug/L #	44
52)	Dibromomethane	11.81	93	138766	21.1759 ug/L	99
54)	4-Methyl-2-Pentanone	12.06	58	53242	18.2974 ug/L	98
55)	cis-1,3-Dichloropropene	12.37	75	414475	21.0196 ug/L	100
56)	Dimethyl Disulfide	12.63	79	200547	18.8615 ug/L	96
59)	Toluene	12.79	91	1081443	19.9160 ug/L	99
60)	Ethyl Methacrylate	12.88	69	228354	21.0935 ug/L	94
62)	trans-1,3-Dichloropropene	12.96	75	326815	19.6183 ug/L	99
63)	1,1,2-Trichloroethane	13.18	97	171016	19.8427 ug/L	97
64)	2-Hexanone	13.12	58	54092	19.9626 ug/L #	99
65)	1,3-Dichloropropane	13.49	76	308717	20.0441 ug/L	94
66)	Tetrachloroethene	13.61	164	232389	20.1316 ug/L	97
67)	Dibromochloromethane	13.87	129	224743	20.1689 ug/L	100
68)	1,2-Dibromoethane	14.13	107	170252	19.7863 ug/L	99
69)	1-Chlorohexane	14.21	91	368045	18.9420 ug/L	99
70)	Chlorobenzene	14.63	112	736754	20.2491 ug/L	100
71)	1,1,1,2-Tetrachloroethane	14.66	131	257154	19.1147 ug/L	99
72)	Ethylbenzene	14.66	106	394405	18.6081 ug/L	97
73)	m-,p-Xylene	14.75	106	973851	40.0647 ug/L	100
74)	o-Xylene	15.31	106	475281	19.3358 ug/L	99
75)	Styrene	15.35	104	772184	19.8278 ug/L	100
76)	Bromoform	15.83	173	142470	21.2681 ug/L	99
77)	Isopropylbenzene	15.73	105	1249436	21.1899 ug/L	99
79)	1,1,2,2-Tetrachloroethane	15.95	83	195330	19.9971 ug/L	99
81)	1,2,3-Trichloropropane	16.14	110	54353	20.0248 ug/L	56
82)	trans-1,4-Dichloro-2-Buten	16.19	53	67515	18.8091 ug/L #	67
83)	n-Propylbenzene	16.24	91	1536138	20.0398 ug/L	100
84)	Bromobenzene	16.37	156	303770	19.5220 ug/L	98
85)	1,3,5-Trimethylbenzene	16.42	105	1060461	20.1218 ug/L	98
86)	2-Chlorotoluene	16.52	91	1003702	19.7689 ug/L	98
87)	4-Chlorotoluene	16.56	91	884386	20.1413 ug/L	99
88)	a-Methylstyrene	16.84	118	571865	19.9041 ug/L	99
89)	tert-Butylbenzene	16.89	134	225065	19.4122 ug/L	92
90)	1,2,4-Trimethylbenzene	16.94	105	1066106	20.0185 ug/L	98
91)	sec-Butylbenzene	17.16	105	1324026	20.2239 ug/L	99
92)	p-Isopropyltoluene	17.32	119	1043767	19.9404 ug/L	96
93)	1,3-Dichlorobenzene	17.51	146	632044	20.3502 ug/L	97
94)	1,4-Dichlorobenzene	17.64	146	609988	19.7226 ug/L	97
95)	n-Butylbenzene	17.85	91	1042404	21.3627 ug/L	97
96)	1,2-Dichlorobenzene	18.14	146	562941	20.7143 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	19.13	75	34551	20.1845 ug/L	96
98)	1,2,4-Trichlorobenzene	20.28	180	388572	20.8116 ug/L	98
99)	Hexachlorobutadiene	20.42	225	177930	19.9241 ug/L	99
100)	Naphthalene	20.64	128	625825	23.1844 ug/L	99
101)	1,2,3-Trichlorobenzene	20.95	180	341471	21.4469 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M408653.D 8260WT.M Thu Nov 12 14:11:11 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\111215\8M408653.D Vial: 7
Acq On : 12 Nov 2015 13:49 Operator: TMB
Sample : L15110610-04 A MS 826-LOW Inst : HPMS8
Misc : 1,1 STD73297 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 12 14:11 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration

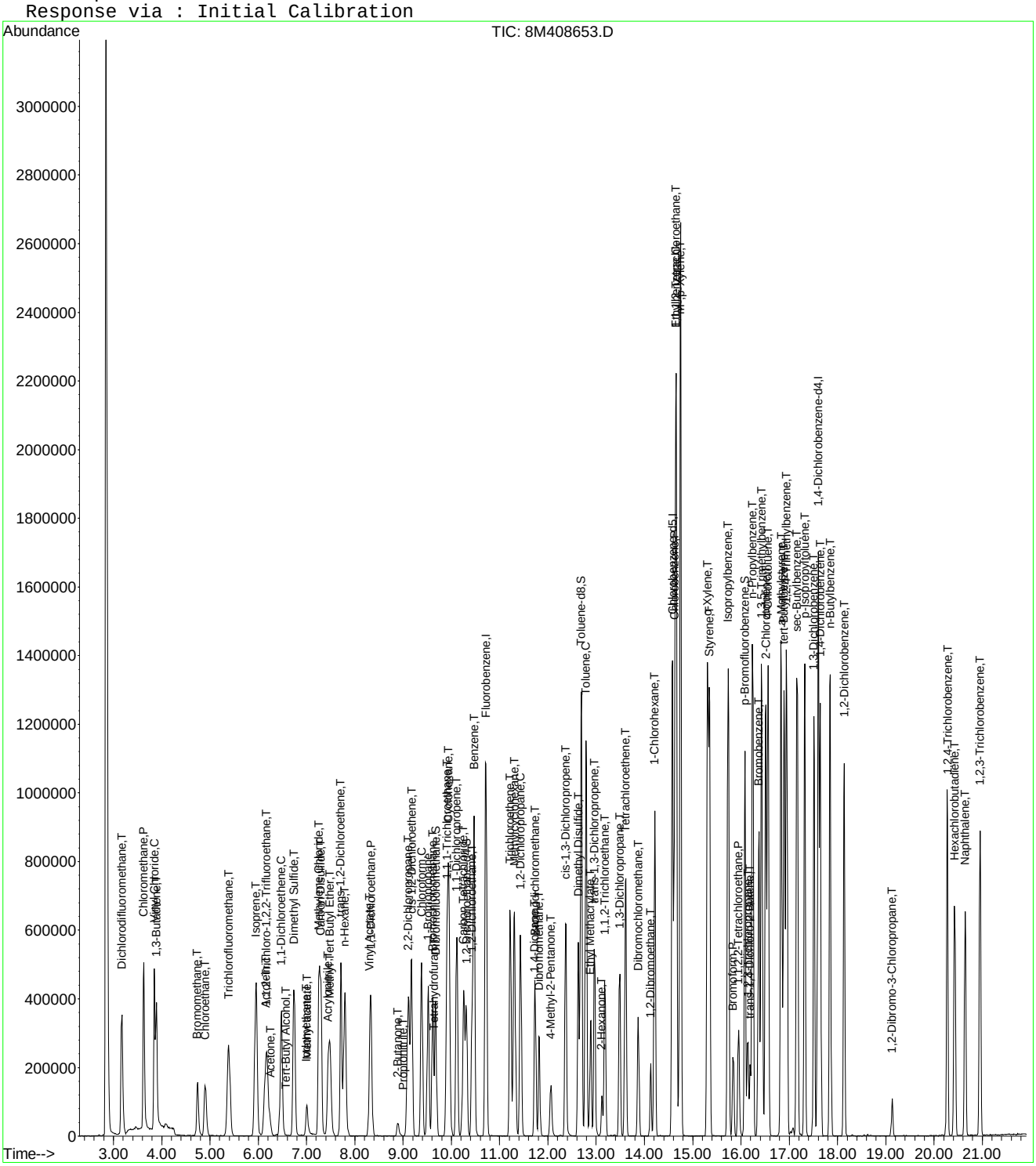

8M408653.D 8260WT.M Thu Nov 12 14:11:11 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\111215\8M408654.D Vial: 8
Acq On : 12 Nov 2015 14:19 Operator: TMB
Sample : L15110610-05 A MSD 826-LOW Inst : HPMS8
Misc : 1,1 STD73297 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 12 14:41:15 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	1320030	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	963205	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	544023	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	332092	26.4336 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 105.72%		
43) 1,2-Dichloroethane-d4	10.31	65	317464	24.7841 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.12%		
58) Toluene-d8	12.69	98	1138410	25.4731 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.88%		
80) p-Bromofluorobenzene	16.08	95	457042	24.0779 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.32%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	495568	24.6940 ug/L	98
3) Chloromethane	3.63	50	719322	23.4903 ug/L	100
4) Vinyl Chloride	3.85	62	560548	23.1647 ug/L	99
5) 1,3-Butadiene	3.90	54	167602	7.3103 ug/L	94
6) Bromomethane	4.74	94	169882	21.3829 ug/L	99
7) Chloroethane	4.90	64	222172	22.5048 ug/L	98
8) Trichlorofluoromethane	5.38	101	485487	20.7580 ug/L	99
10) Isoprene	5.95	67	314453	18.3135 ug/L	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	282071	22.4364 ug/L	99
13) Acetone	6.25	43	47137	24.0585 ug/L	99
14) 1,1-Dichloroethene	6.48	61	429798	20.0832 ug/L	98
15) Tert-Butyl Alcohol	6.58	59	430	0.7428 ug/L #	58
16) Dimethyl Sulfide	6.75	62	305703	24.8890 ug/L	100
17) Iodomethane	7.01	142	83705	11.6887 ug/L	77
18) Methyl acetate	7.01	43	138566	18.7024 ug/L	96
19) Methylene Chloride	7.26	84	270272	20.3344 ug/L	99
20) Carbon Disulfide	7.31	76	683609	15.7516 ug/L	99
21) Acrylonitrile	7.44	53	65030	22.1096 ug/L	96
22) Methyl Tert Butyl Ether	7.48	73	522494	20.7374 ug/L	99
23) trans-1,2-Dichloroethene	7.71	61	416225	20.4803 ug/L	98
24) n-Hexane	7.79	57	322571	16.0671 ug/L	93
26) Vinyl Acetate	8.31	43	386612	29.0360 ug/L	99
27) 1,1-Dichloroethane	8.34	63	533138	20.6580 ug/L	99
29) 2-Butanone	8.90	43	73351	21.7301 ug/L	99
31) 2,2-Dichloropropane	9.11	77	437968	20.3060 ug/L	99
32) cis-1,2-Dichloroethene	9.18	96	291591	20.1090 ug/L	99
33) Chloroform	9.38	83	527214	21.5057 ug/L	100
34) 1-Bromopropane	9.52	122	58292	24.4805 ug/L	99
35) Bromochloromethane	9.62	130	161597	22.6381 ug/L	98
36) Tetrahydrofuran	9.63	42	718	0.3240 ug/L #	40
38) 1,1,1-Trichloroethane	9.92	97	462092	20.9990 ug/L	100
39) Cyclohexane	9.94	56	447613	17.0934 ug/L	98
40) 1,1-Dichloropropene	10.11	75	377614	19.9304 ug/L	97
42) Carbon Tetrachloride	10.25	117	405726	20.6302 ug/L	99
45) 1,2-Dichloroethane	10.43	62	353134	20.9768 ug/L	99
46) Benzene	10.47	78	1076785	20.7122 ug/L	99
47) Trichloroethene	11.22	130	274454	19.6103 ug/L	97
48) Methylcyclohexane	11.31	83	366518	16.9252 ug/L	99
49) 1,2-Dichloropropane	11.43	63	285033	20.3516 ug/L	99
50) Bromodichloromethane	11.73	83	374076	20.6930 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M408654.D 8260WT.M Thu Nov 12 14:41:16 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\111215\8M408654.D Vial: 8
Acq On : 12 Nov 2015 14:19 Operator: TMB
Sample : L15110610-05 A MSD 826-LOW Inst : HPMS8
Misc : 1,1 STD73297 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 12 14:41:15 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
51)	1,4-Dioxane	11.73	88	228	3.5360 ug/L #	10
52)	Dibromomethane	11.82	93	142771	21.4079 ug/L	95
54)	4-Methyl-2-Pentanone	12.06	58	54524	18.4119 ug/L	98
55)	cis-1,3-Dichloropropene	12.37	75	427172	21.2865 ug/L	99
56)	Dimethyl Disulfide	12.63	79	191624	17.7087 ug/L	93
59)	Toluene	12.79	91	1123182	20.5211 ug/L	99
60)	Ethyl Methacrylate	12.89	69	225696	20.6831 ug/L	96
62)	trans-1,3-Dichloropropene	12.96	75	341387	20.3310 ug/L	98
63)	1,1,2-Trichloroethane	13.18	97	177623	20.4464 ug/L	98
64)	2-Hexanone	13.11	58	51045	18.6891 ug/L #	89
65)	1,3-Dichloropropane	13.49	76	320681	20.6563 ug/L	95
66)	Tetrachloroethene	13.61	164	238090	20.4625 ug/L	96
67)	Dibromochloromethane	13.87	129	234733	20.8989 ug/L	100
68)	1,2-Dibromoethane	14.13	107	179382	20.6825 ug/L	99
69)	1-Chlorohexane	14.21	91	347598	17.7482 ug/L	99
70)	Chlorobenzene	14.63	112	770418	21.0070 ug/L	99
71)	1,1,1,2-Tetrachloroethane	14.66	131	266611	19.6610 ug/L	99
72)	Ethylbenzene	14.65	106	413207	19.3410 ug/L	94
73)	m-,p-Xylene	14.75	106	1018731	41.5798 ug/L	98
74)	o-Xylene	15.31	106	504067	20.3448 ug/L	97
75)	Styrene	15.35	104	814213	20.7417 ug/L	99
76)	Bromoform	15.84	173	144510	21.4021 ug/L	99
77)	Isopropylbenzene	15.73	105	1293920	21.7709 ug/L	99
79)	1,1,2,2-Tetrachloroethane	15.95	83	202268	20.1524 ug/L	98
81)	1,2,3-Trichloropropane	16.14	110	55638	19.9489 ug/L	57
82)	trans-1,4-Dichloro-2-Buten	16.18	53	65885	17.8631 ug/L #	61
83)	n-Propylbenzene	16.24	91	1588674	20.1697 ug/L	99
84)	Bromobenzene	16.37	156	322471	20.1685 ug/L	96
85)	1,3,5-Trimethylbenzene	16.43	105	1094172	20.2050 ug/L	99
86)	2-Chlorotoluene	16.51	91	1049169	20.1106 ug/L	99
87)	4-Chlorotoluene	16.56	91	931930	20.6552 ug/L	98
88)	a-Methylstyrene	16.84	118	549127	18.6005 ug/L	98
89)	tert-Butylbenzene	16.90	134	237459	19.9323 ug/L	87
90)	1,2,4-Trimethylbenzene	16.95	105	1117524	20.4216 ug/L	98
91)	sec-Butylbenzene	17.17	105	1373342	20.4149 ug/L	98
92)	p-Isopropyltoluene	17.32	119	1075926	20.0039 ug/L	96
93)	1,3-Dichlorobenzene	17.52	146	657060	20.5886 ug/L	97
94)	1,4-Dichlorobenzene	17.64	146	634966	19.9800 ug/L	97
95)	n-Butylbenzene	17.85	91	1071028	21.3611 ug/L	96
96)	1,2-Dichlorobenzene	18.14	146	593897	21.2677 ug/L	98
97)	1,2-Dibromo-3-Chloropropan	19.13	75	32616	18.5434 ug/L	87
98)	1,2,4-Trichlorobenzene	20.28	180	408883	21.3125 ug/L	100
99)	Hexachlorobutadiene	20.42	225	181879	19.8205 ug/L	99
100)	Naphthalene	20.65	128	645883	23.2862 ug/L	98
101)	1,2,3-Trichlorobenzene	20.95	180	352168	21.5259 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M408654.D 8260WT.M Thu Nov 12 14:41:16 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\111215\8M408654.D Vial: 8
Acq On : 12 Nov 2015 14:19 Operator: TMB
Sample : L15110610-05 A MSD 826-LOW Inst : HPMS8
Misc : 1,1 STD73297 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 12 14:41 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration

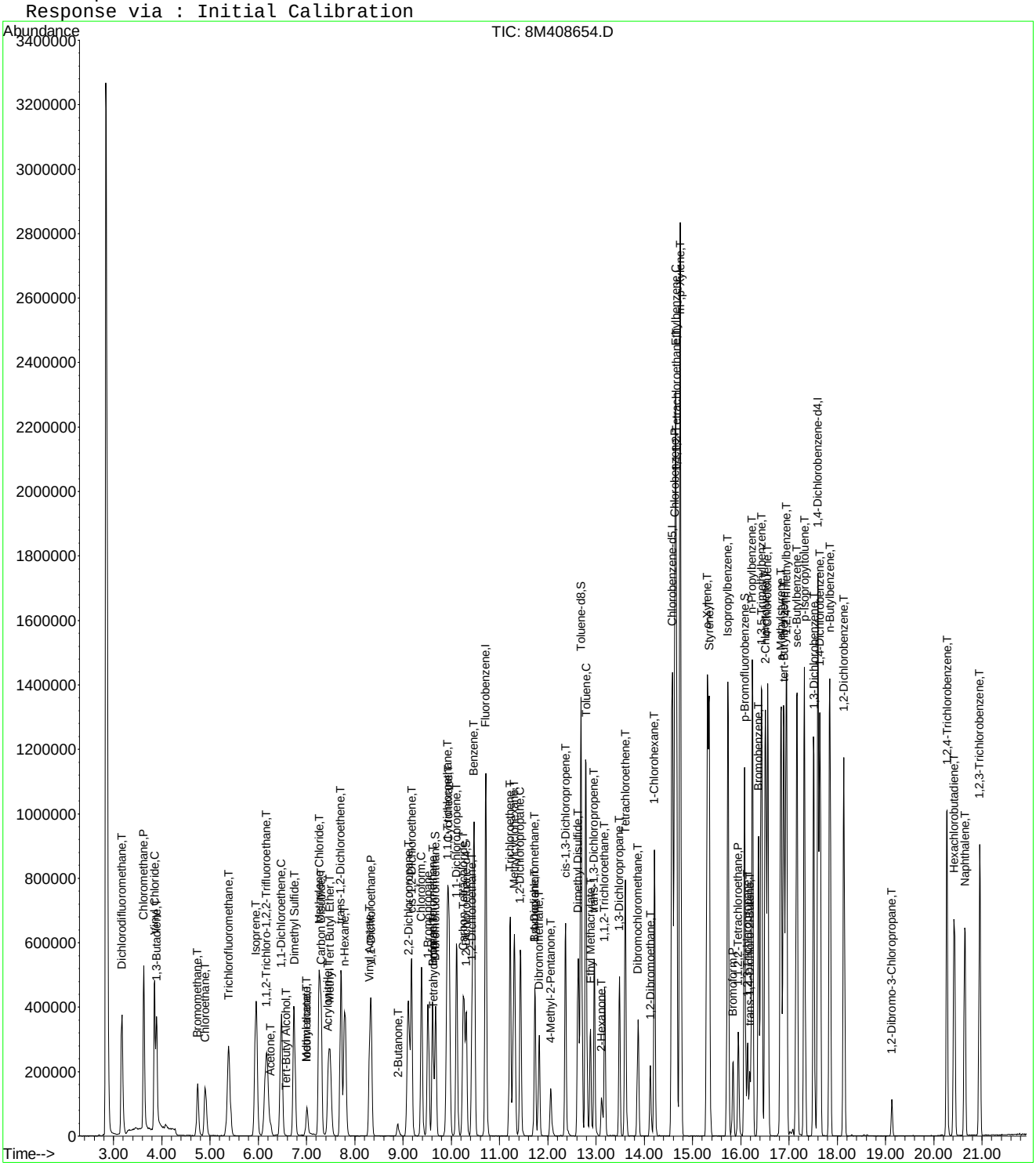

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\111215\8M408664.D Vial: 18
Acq On : 12 Nov 2015 19:15 Operator: TMB
Sample : L15110610-06 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 13 08:18:18 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	1113226	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	814737	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	420141	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	276798	26.1253 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.52%		
43) 1,2-Dichloroethane-d4	10.32	65	286545	26.5260 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 106.12%		
58) Toluene-d8	12.69	98	965155	25.5318 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.12%		
80) p-Bromofluorobenzene	16.08	95	366104	24.9741 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.88%		
Target Compounds					Qvalue
13) Acetone	6.24	43	2147	1.2994 ug/L #	48

(#) = qualifier out of range (m) = manual integration
8M408664.D 8260WT.M Fri Nov 13 08:18:19 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\111215\8M408664.D Vial: 18
Acq On : 12 Nov 2015 19:15 Operator: TMB
Sample : L15110610-06 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 13 8:18 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration

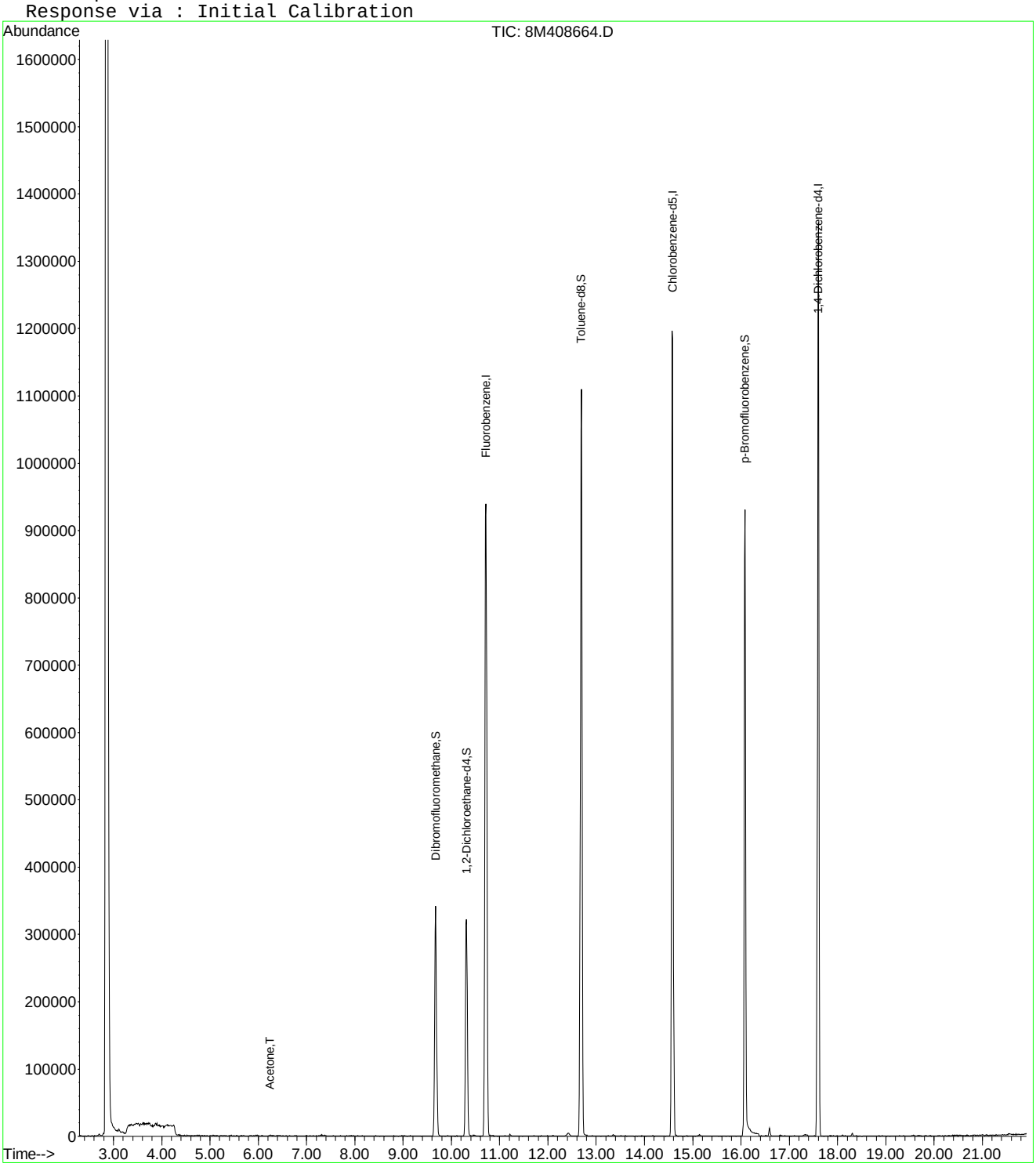

8M408664.D 8260WT.M Fri Nov 13 08:18:19 2015 Page 2

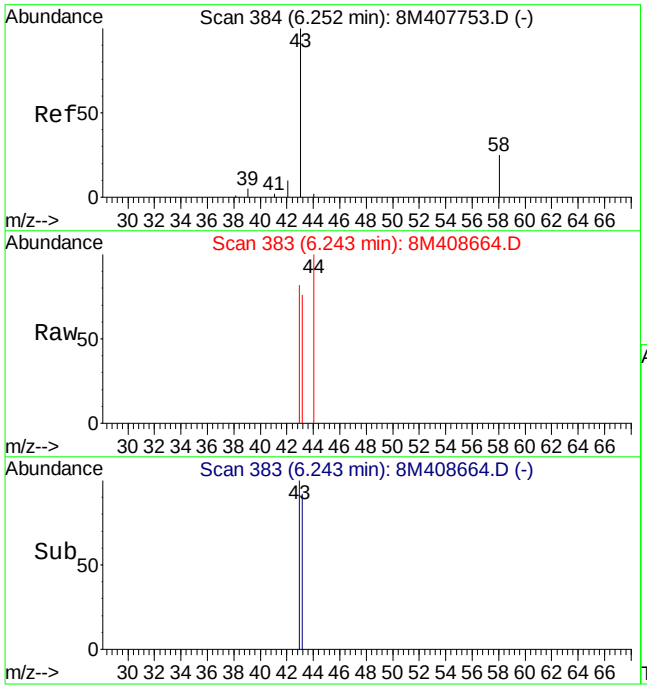

#13
Acetone
Concen: 1.30 ug/L
RT: 6.24 min Scan# 383
Delta R.T. -0.00 min
Lab File: 8M408664.D
Acq: 12 Nov 2015 19:15

Tgt Ion: 43 Resp: 2147

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

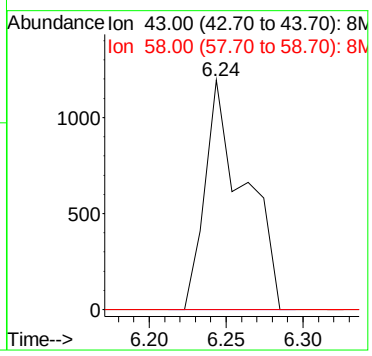

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\111215\8M408665.D Vial: 19
Acq On : 12 Nov 2015 19:44 Operator: TMB
Sample : L15110610-07 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 13 08:18:19 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	1093979	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	805586	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	420043	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	276323	26.5393 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.16%		
43) 1,2-Dichloroethane-d4	10.31	65	274146	25.8247 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.28%		
58) Toluene-d8	12.69	98	963430	25.7756 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.12%		
80) p-Bromofluorobenzene	16.08	95	368156	25.1199 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.48%		
Target Compounds					Qvalue
13) Acetone	6.26	43	1300	0.8006 ug/L #	48

(#) = qualifier out of range (m) = manual integration
8M408665.D 8260WT.M Fri Nov 13 08:18:20 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\111215\8M408665.D Vial: 19
Acq On : 12 Nov 2015 19:44 Operator: TMB
Sample : L15110610-07 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 13 8:18 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration

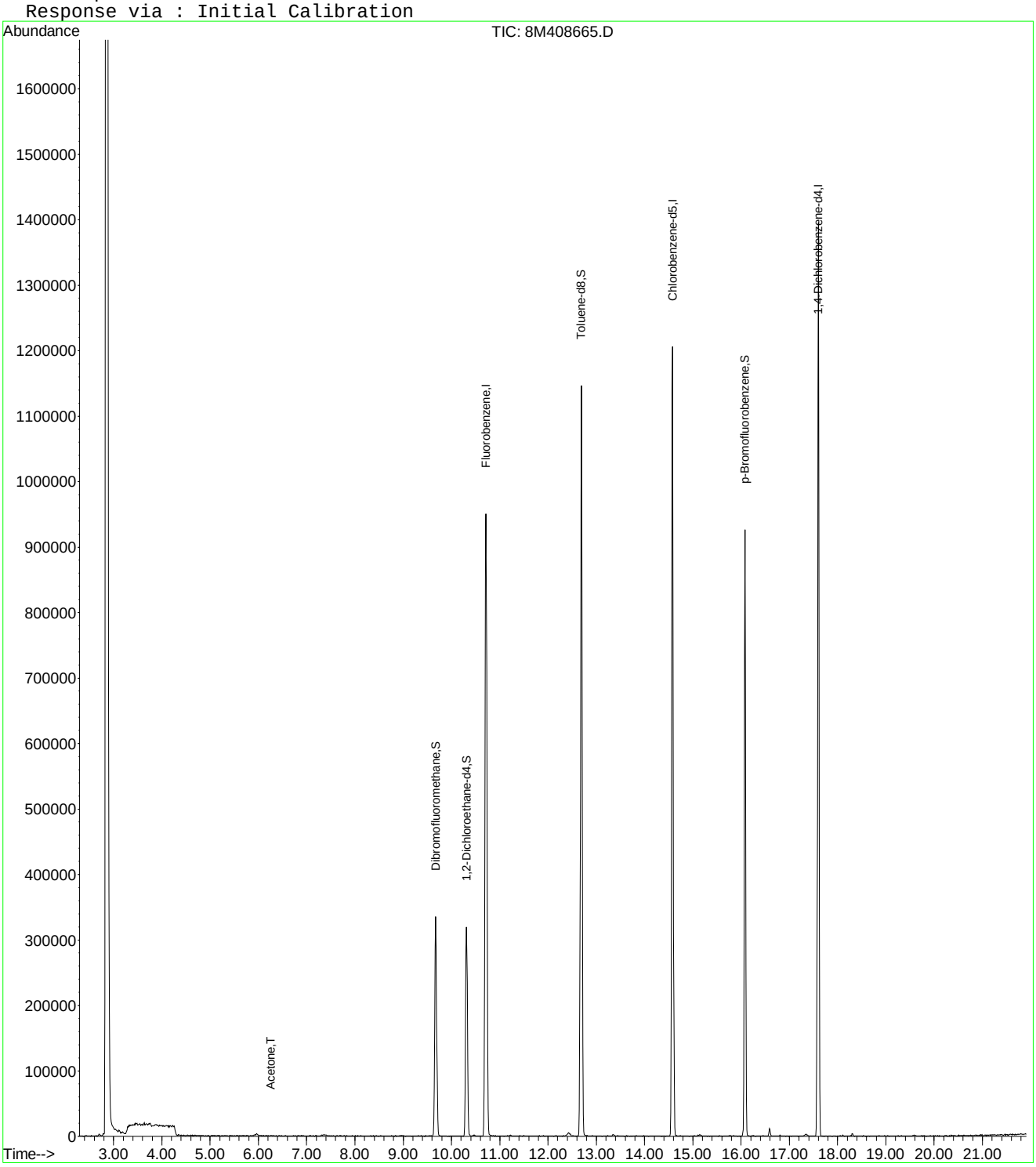

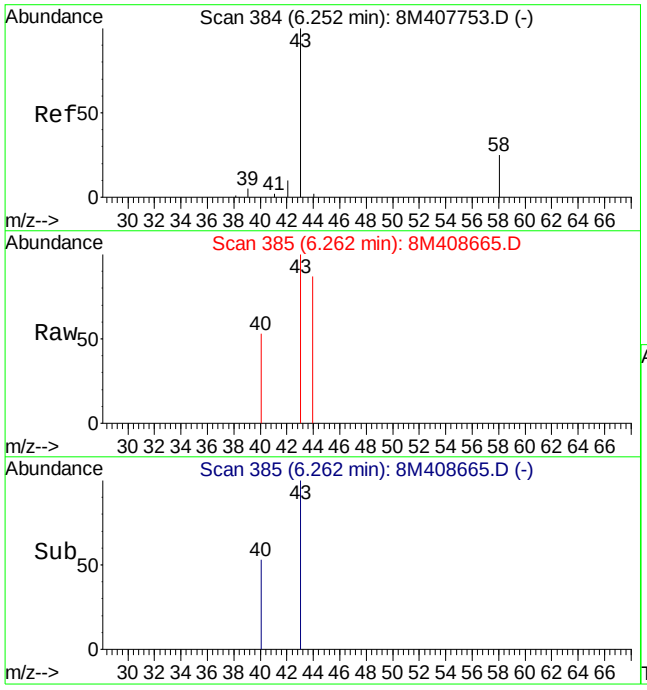

#13
Acetone
Concen: 0.80 ug/L
RT: 6.26 min Scan# 385
Delta R.T. 0.02 min
Lab File: 8M408665.D
Acq: 12 Nov 2015 19:44

Tgt Ion: 43 Resp: 1300

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

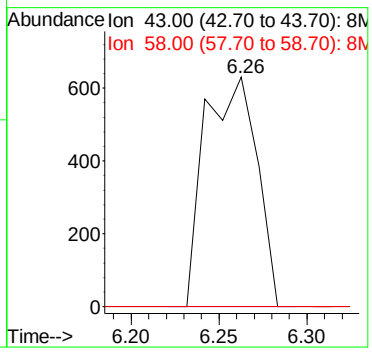

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\111215\8M408666.D Vial: 20
Acq On : 12 Nov 2015 20:14 Operator: TMB
Sample : L15110610-08 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 13 08:18:20 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	1092877	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	799836	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	419697	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.68	111	278659	26.7907 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.16%		
43) 1,2-Dichloroethane-d4	10.31	65	277717	26.1874 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 104.76%		
58) Toluene-d8	12.69	98	954838	25.7294 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.92%		
80) p-Bromofluorobenzene	16.08	95	370251	25.2837 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.12%		
Target Compounds					Qvalue
3) Chloromethane	3.63	50	6423	0.2533 ug/L	88
13) Acetone	6.24	43	3282	2.0233 ug/L	88
29) 2-Butanone	8.91	43	526	0.1882 ug/L #	57

(#) = qualifier out of range (m) = manual integration
8M408666.D 8260WT.M Fri Nov 13 08:18:21 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\111215\8M408666.D Vial: 20
Acq On : 12 Nov 2015 20:14 Operator: TMB
Sample : L15110610-08 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 13 8:18 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration

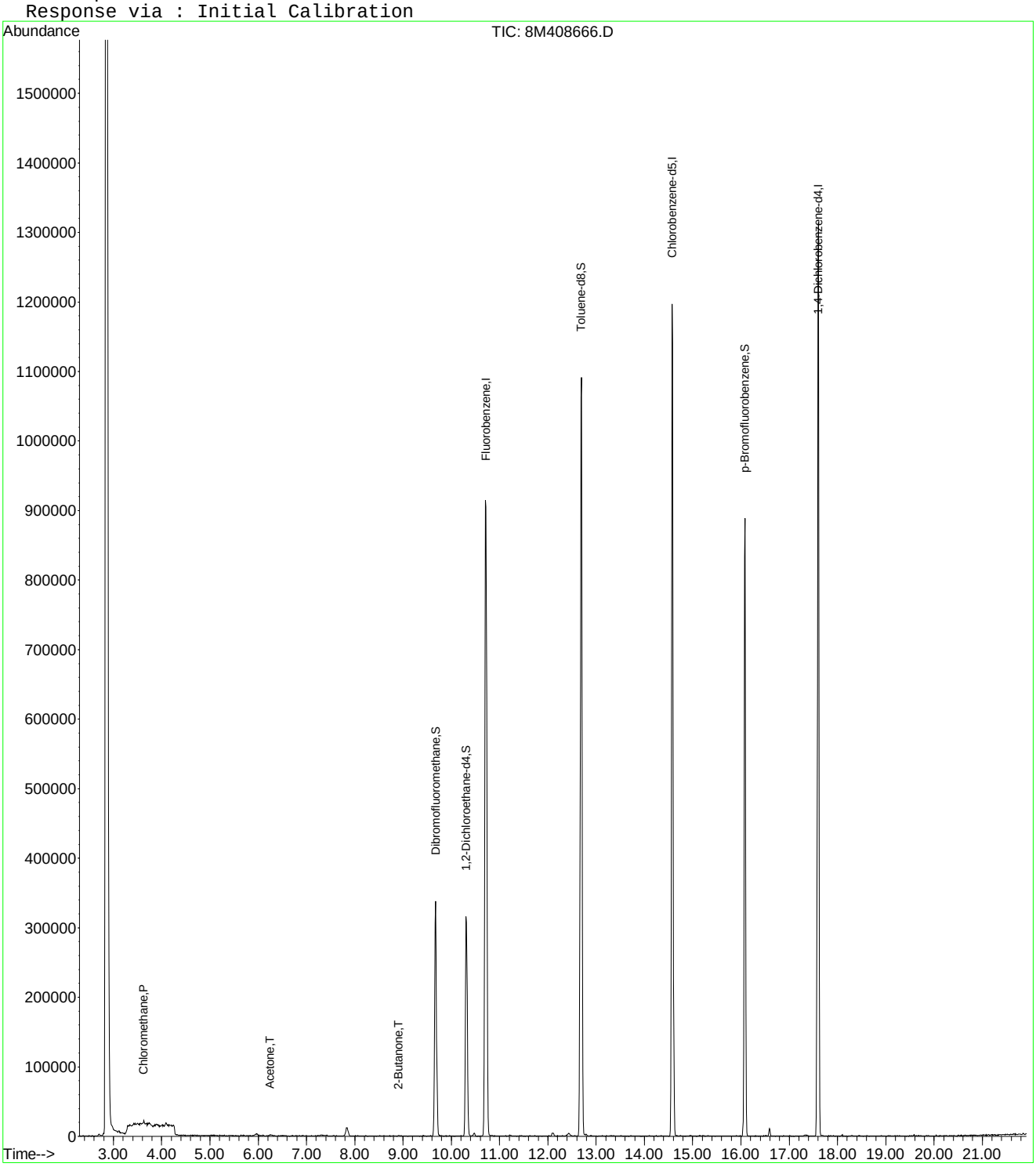

8M408666.D 8260WT.M Fri Nov 13 08:18:21 2015 Page 2

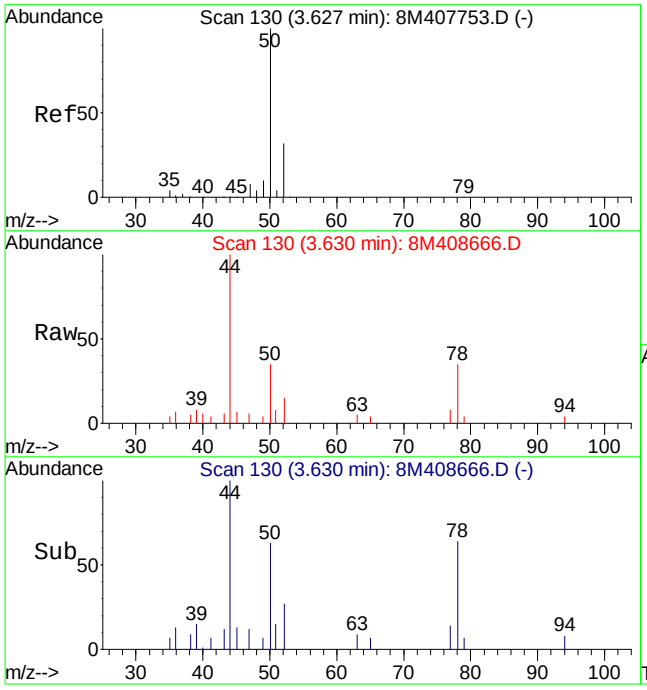

#3
Chloromethane
Concen: 0.25 ug/L
RT: 3.63 min Scan# 130
Delta R.T. 0.01 min
Lab File: 8M408666.D
Acq: 12 Nov 2015 20:14

Tgt Ion: 50 Resp: 6423

Ion	Ratio	Lower	Upper
50	100		
52	25.3	19.2	44.8

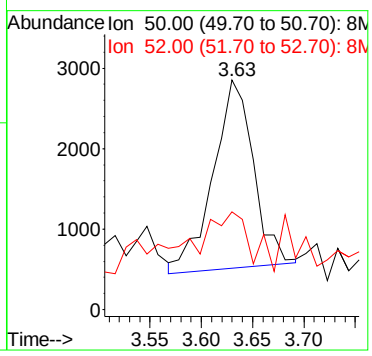

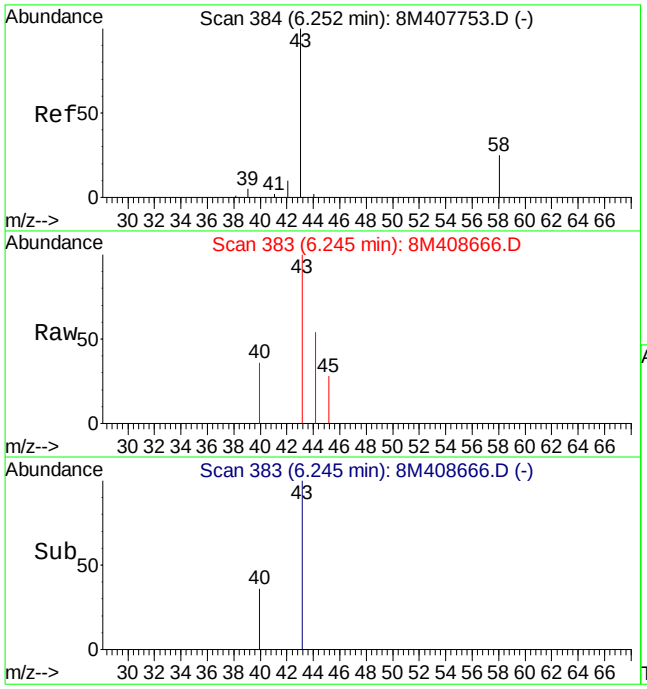

#13
Acetone
Concen: 2.02 ug/L
RT: 6.24 min Scan# 383
Delta R.T. -0.00 min
Lab File: 8M408666.D
Acq: 12 Nov 2015 20:14

Tgt Ion: 43 Resp: 3282

Ion	Ratio	Lower	Upper
43	100		
58	21.2	16.4	38.2

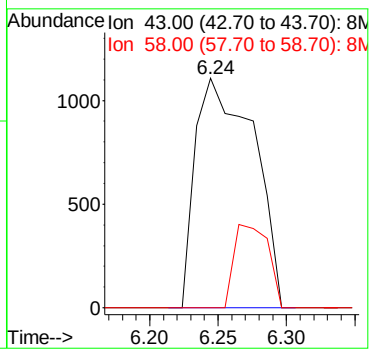

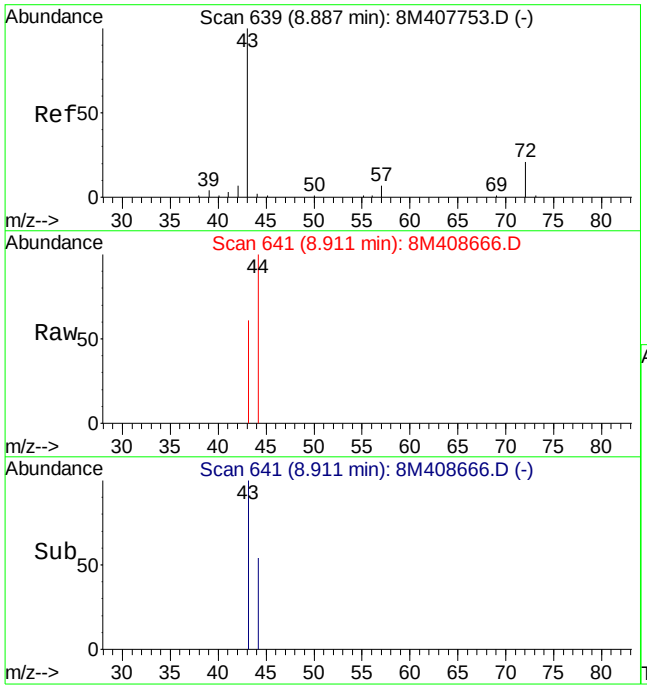

#29
2-Butanone
Concen: 0.19 ug/L
RT: 8.91 min Scan# 641
Delta R.T. 0.02 min
Lab File: 8M408666.D
Acq: 12 Nov 2015 20:14

Tgt Ion: 43 Resp: 526

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.9	27.9#

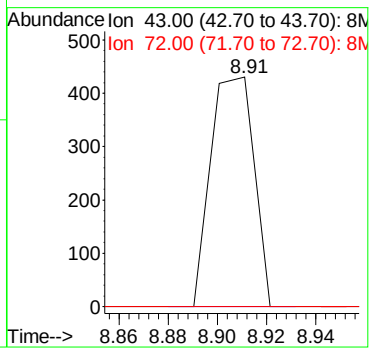

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\111215\8M408667.D Vial: 21
Acq On : 12 Nov 2015 20:43 Operator: TMB
Sample : L15110610-09 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 13 08:18:21 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	1090650	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	792874	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	416891	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	269597	25.9723 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.88%		
43) 1,2-Dichloroethane-d4	10.31	65	269836	25.4962 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.00%		
58) Toluene-d8	12.69	98	953299	25.9135 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.64%		
80) p-Bromofluorobenzene	16.08	95	365575	25.1324 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.52%		
Target Compounds					Qvalue
3) Chloromethane	3.63	50	8343	0.3298 ug/L	82
13) Acetone	6.26	43	3167	1.9564 ug/L #	73

(#) = qualifier out of range (m) = manual integration
8M408667.D 8260WT.M Fri Nov 13 08:18:22 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\111215\8M408667.D Vial: 21
Acq On : 12 Nov 2015 20:43 Operator: TMB
Sample : L15110610-09 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 13 8:18 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration

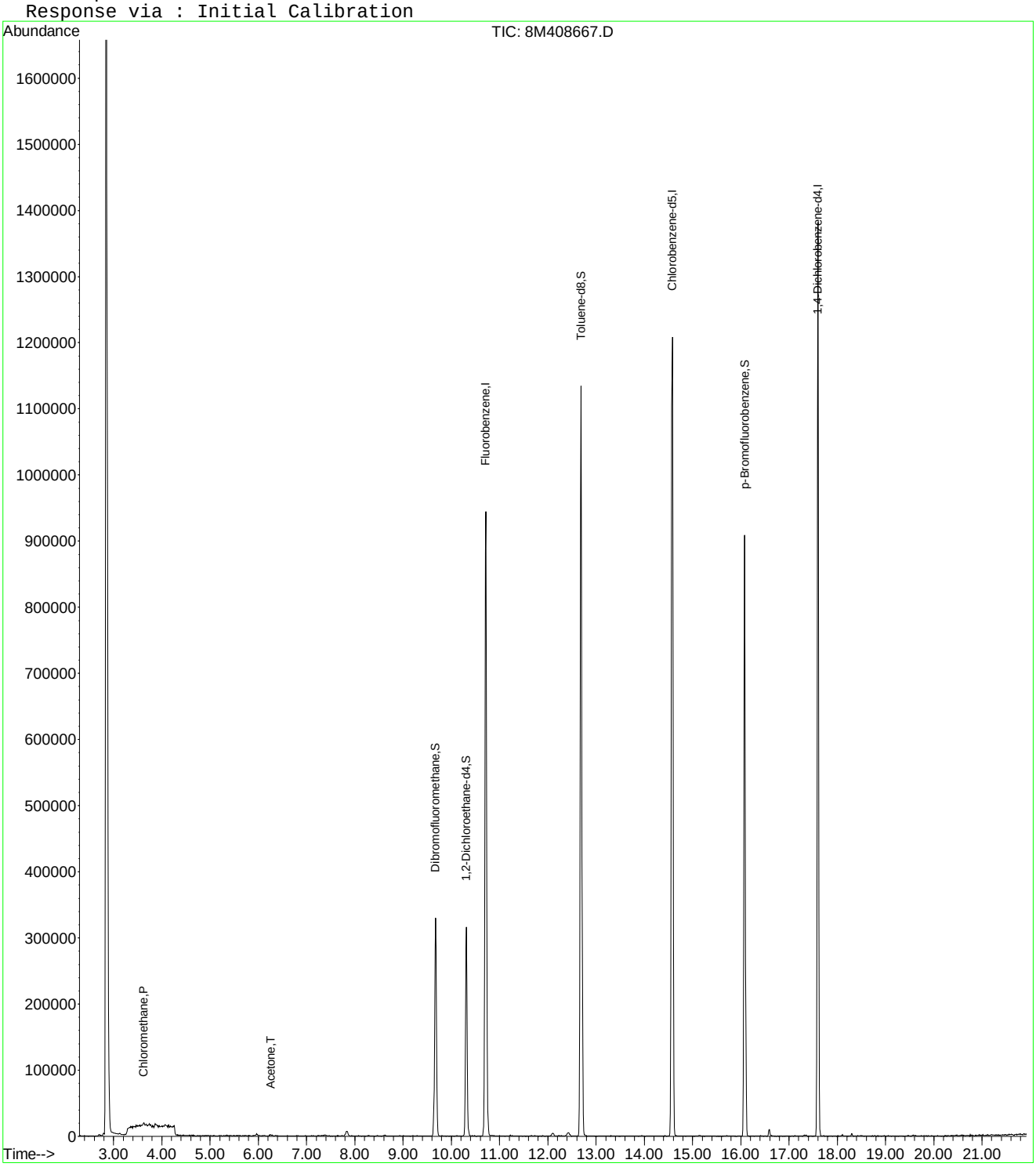

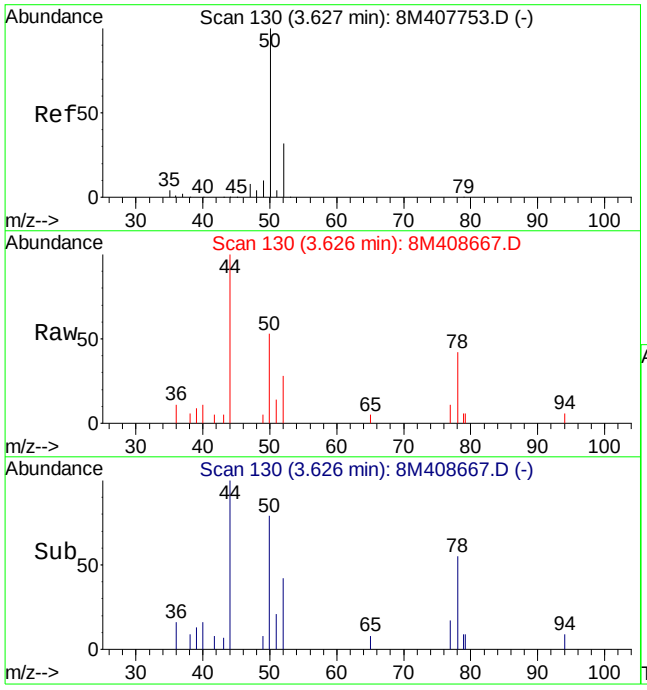

#3
Chloromethane
Concen: 0.33 ug/L
RT: 3.63 min Scan# 130
Delta R.T. 0.01 min
Lab File: 8M408667.D
Acq: 12 Nov 2015 20:43

Tgt Ion: 50 Resp: 8343

Ion	Ratio	Lower	Upper
50	100		
52	42.1	19.2	44.8

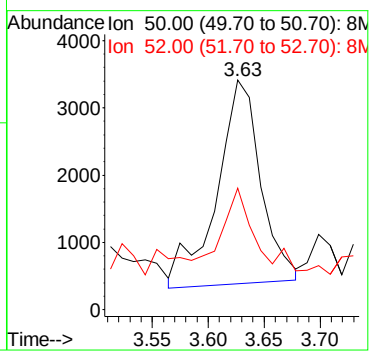

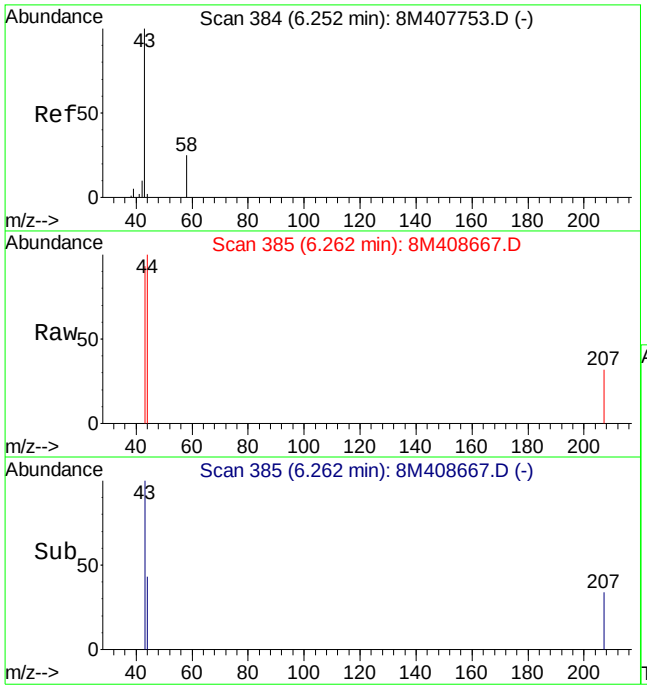

#13
Acetone
Concen: 1.96 ug/L
RT: 6.26 min Scan# 385
Delta R.T. 0.02 min
Lab File: 8M408667.D
Acq: 12 Nov 2015 20:43

Tgt Ion: 43 Resp: 3167

Ion	Ratio	Lower	Upper
43	100		
58	13.5	16.4	38.2#

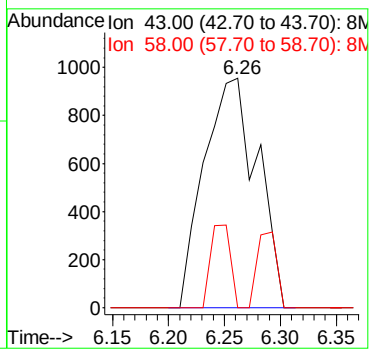

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\111215\8M408660.D Vial: 14
Acq On : 12 Nov 2015 17:17 Operator: TMB
Sample : L15110610-10 TB A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 13 08:18:14 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	1159975	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	854928	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	452581	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	292746	26.5170 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.08%		
43) 1,2-Dichloroethane-d4	10.31	65	295263	26.2314 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 104.92%		
58) Toluene-d8	12.69	98	1015709	25.6060 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.44%		
80) p-Bromofluorobenzene	16.08	95	393035	24.8894 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.56%		
Target Compounds					Qvalue
13) Acetone	6.25	43	1060	0.6157 ug/L #	48
19) Methylene Chloride	7.26	84	17130	1.4666 ug/L	91
36) Tetrahydrofuran	9.64	42	8321	4.2735 ug/L	93

(#) = qualifier out of range (m) = manual integration
8M408660.D 8260WT.M Fri Nov 13 08:18:14 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\111215\8M408660.D Vial: 14
Acq On : 12 Nov 2015 17:17 Operator: TMB
Sample : L15110610-10 TB A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 13 8:18 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration

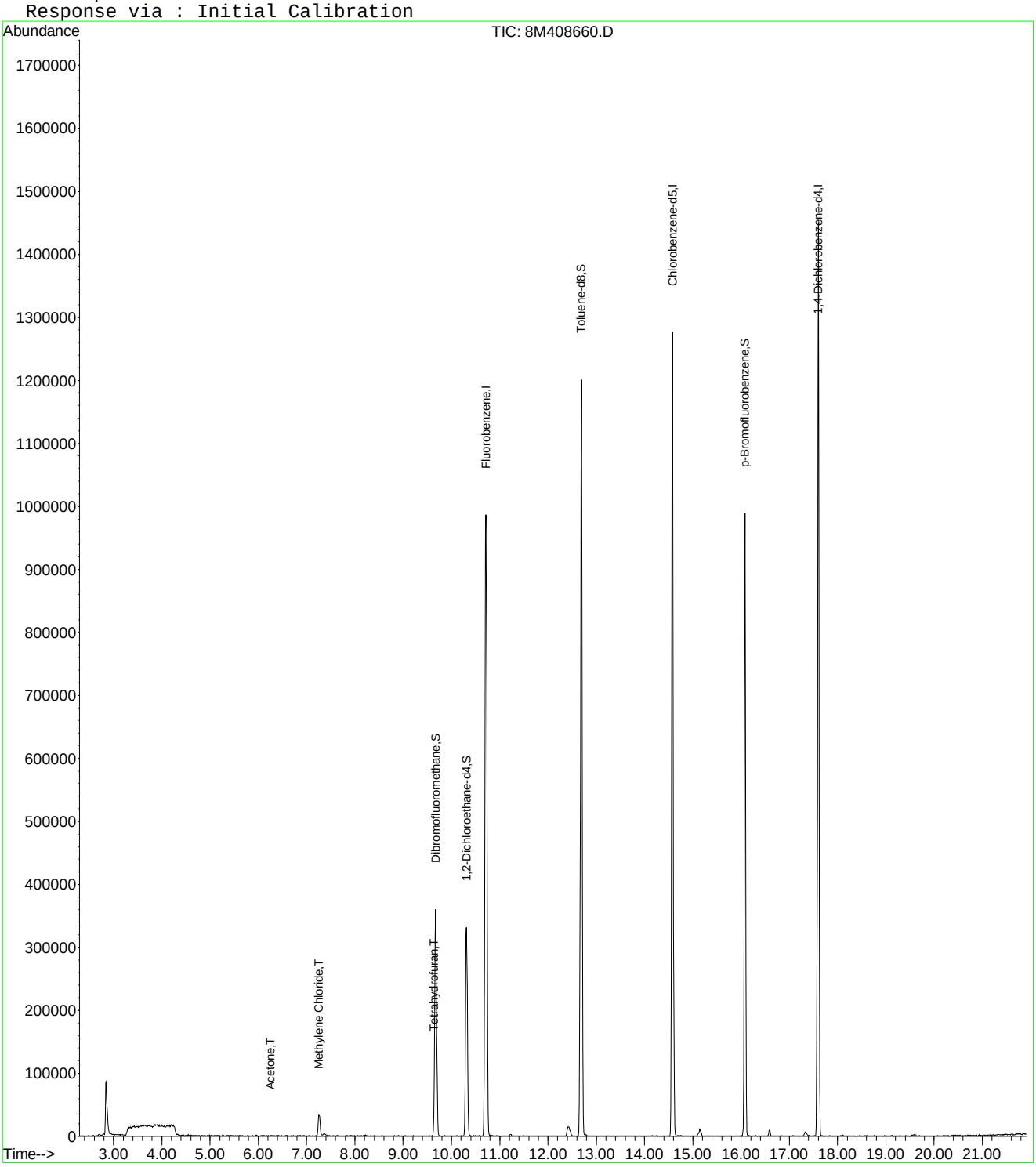

8M408660.D 8260WT.M Fri Nov 13 08:18:14 2015 Page 2

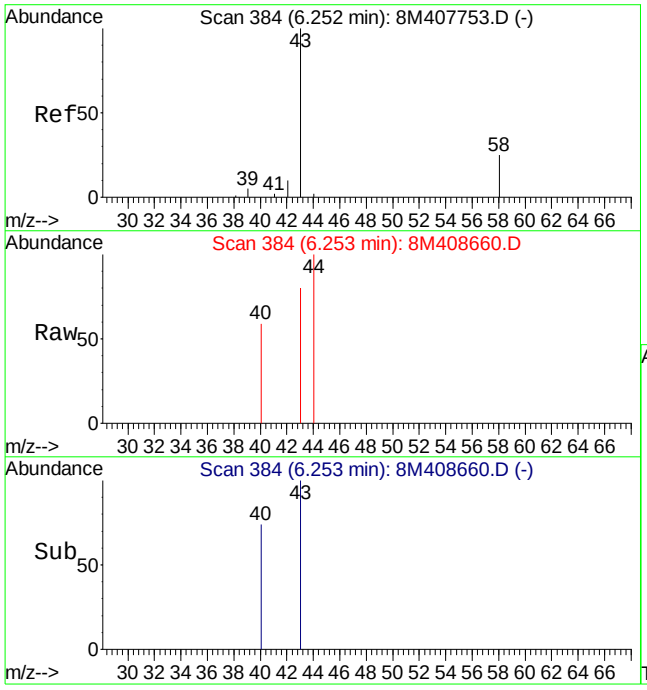

#13
Acetone
Concen: 0.62 ug/L
RT: 6.25 min Scan# 384
Delta R.T. 0.01 min
Lab File: 8M408660.D
Acq: 12 Nov 2015 17:17

Tgt Ion: 43 Resp: 1060

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

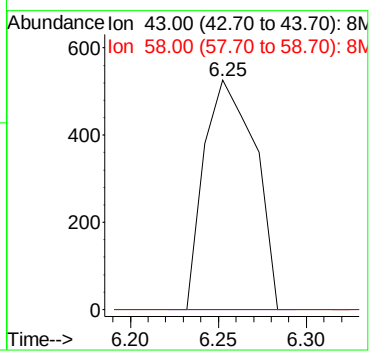

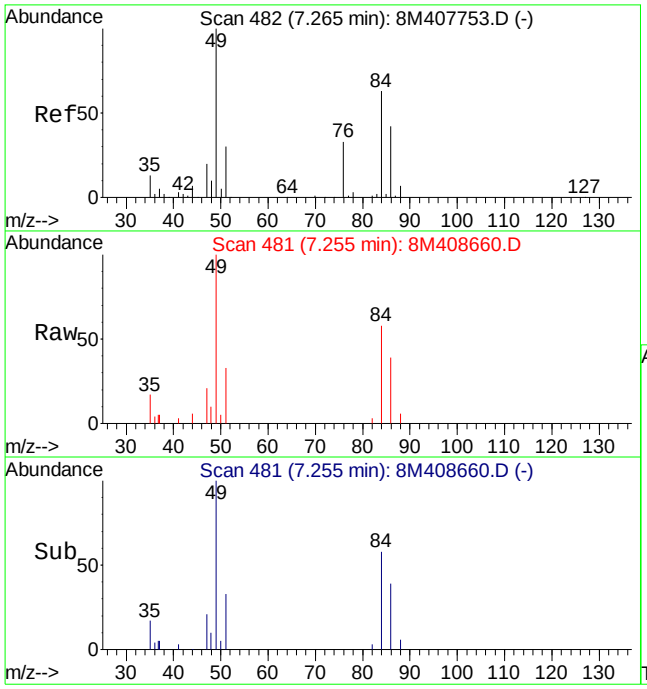

#19
Methylene Chloride
Concen: 1.47 ug/L
RT: 7.26 min Scan# 481
Delta R.T. -0.00 min
Lab File: 8M408660.D
Acq: 12 Nov 2015 17:17

Tgt Ion: 84 Resp: 17130

Ion	Ratio	Lower	Upper
84	100		
49	176.3	98.6	230.2

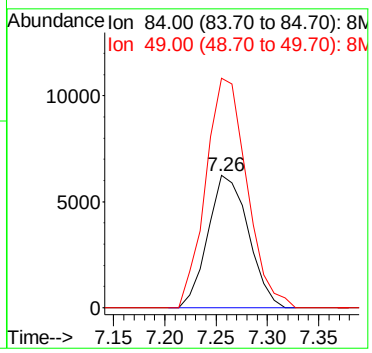

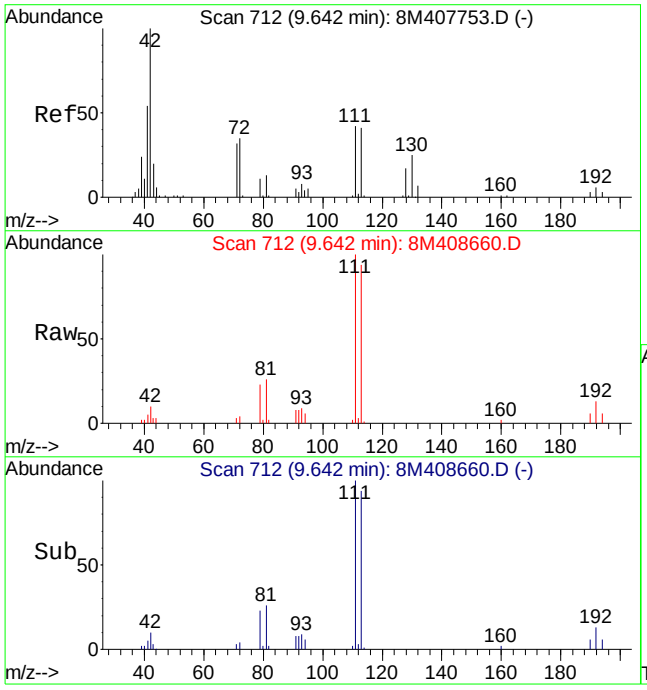

#36
Tetrahydrofuran
Concen: 4.27 ug/L
RT: 9.64 min Scan# 712
Delta R.T. 0.01 min
Lab File: 8M408660.D
Acq: 12 Nov 2015 17:17

Tgt Ion: 42 Resp: 8321

Ion	Ratio	Lower	Upper
42	100		
72	33.6	22.4	52.4
71	28.1	19.5	45.5

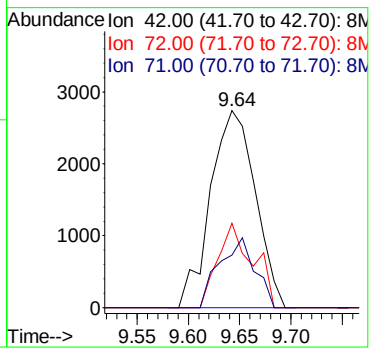

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407828.D Vial: 2
Acq On : 5 Oct 2015 11:49 Operator: TMB
Sample : WG540826-02 5ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 11:56:55 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	928093	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	670481	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	347120	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.71	41	3724	5.2139 ug/L	81
3) 3-Chloro-1-propene	7.08	41	87895	5.0600 ug/L	95
4) 2-Chloro-1,3-butadiene	8.46	53	83096	4.6491 ug/L	97
5) Ethyl Acetate	9.11	43	19297	4.0869 ug/L	95
6) Methacrylonitrile	9.27	67	8508	4.1055 ug/L	97
7) Isobutyl Alcohol	9.26	43	1318	6.8122 ug/L #	56
8) 1-Butanol	10.19	56	1930	20.2377 ug/L #	64
9) Methyl methacrylate	11.43	41	22250	3.8908 ug/L	96
10) 2-Nitropropane	11.75	43	2454	2.5566 ug/L	66
13) Cyclohexanone	15.83	55	2773	3.7471 ug/L #	43

(#) = qualifier out of range (m) = manual integration
8M407828.D A9FOOWTR.M Tue Oct 06 11:56:56 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407828.D Vial: 2
Acq On : 5 Oct 2015 11:49 Operator: TMB
Sample : WG540826-02 5ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 11:56 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

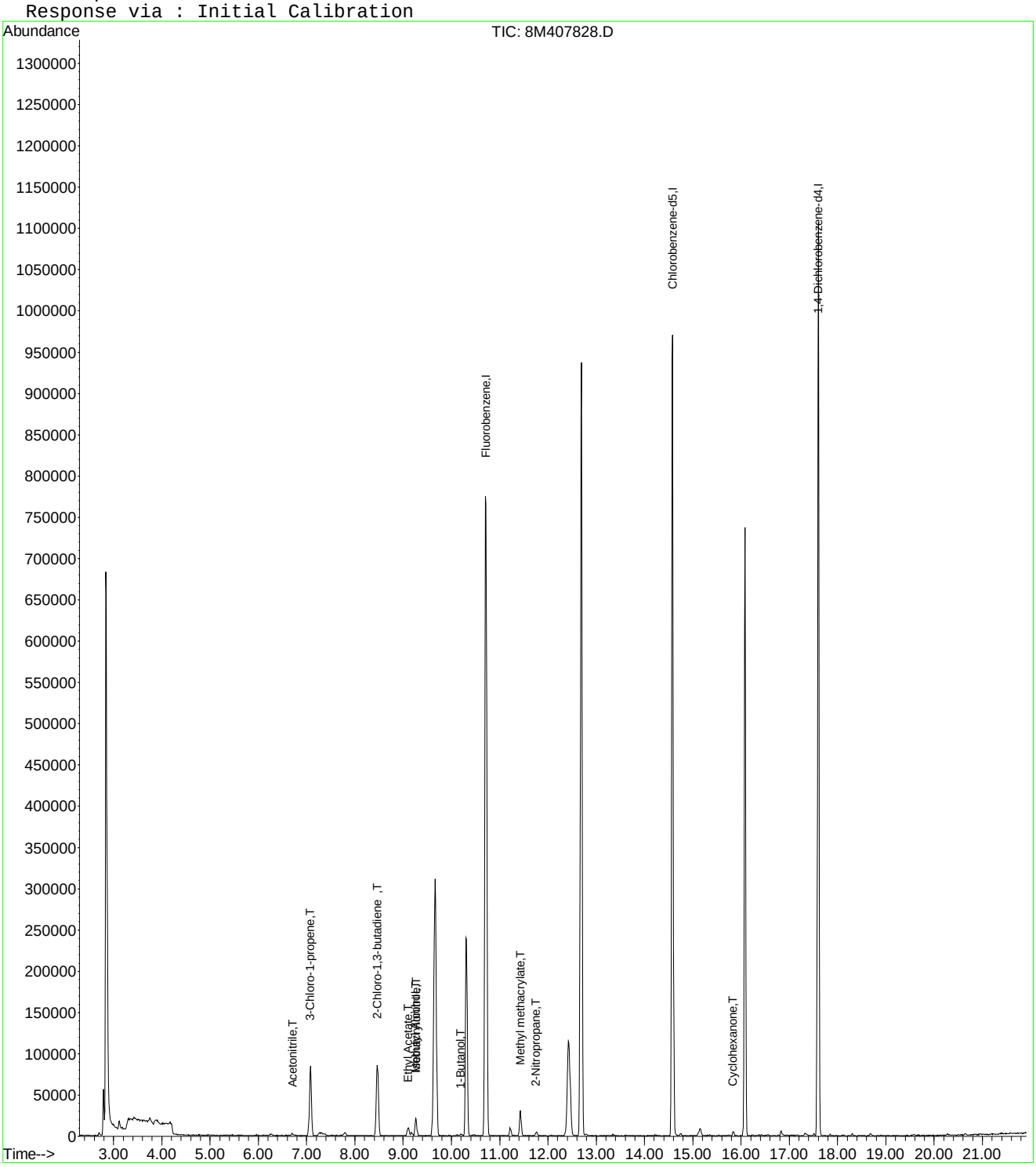

8M407828.D A9FOOWTR.M Tue Oct 06 11:56:56 2015 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\100515\8M407828.D Vial: 2
Acq On : 5 Oct 2015 11:49 Operator: TMB
Sample : WG540826-02 5ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:54:01 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	5.0000	5.2139	-4.3	100	0.01
3	T	3-Chloro-1-propene	5.0000	5.0600	-1.2	100	0.00
4	T	2-Chloro-1,3-butadiene	5.0000	4.6491	7.0	100	0.00
5	T	Ethyl Acetate	5.0000	4.0869	18.3	100	0.01
6	T	Methacrylonitrile	5.0000	4.1055	17.9	100	0.01
7	T	Isobutyl Alcohol	-1.0000	6.8122	0.0	100	-0.01
8	T	1-Butanol	-1.0000	20.2377	0.0	100	0.00
9	T	Methyl methacrylate	5.0000	3.8908	22.2	100	0.00
10	T	2-Nitropropane	-1.0000	2.5566	0.0	0	-0.01
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	3.7471	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M407828.D A9FOOWTR.M Tue Oct 06 11:54:24 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407829.D Vial: 3
Acq On : 5 Oct 2015 12:17 Operator: TMB
Sample : WG540826-03 20ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 11:56:56 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	903673	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	657140	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	345767	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.71	41	14085	20.2529 ug/L	98
3) 3-Chloro-1-propene	7.08	41	349549	20.6667 ug/L	100
4) 2-Chloro-1,3-butadiene	8.46	53	347796	19.9846 ug/L	100
5) Ethyl Acetate	9.10	43	93237	20.2805 ug/L	97
6) Methacrylonitrile	9.26	67	40077	19.8617 ug/L	100
7) Isobutyl Alcohol	9.27	43	6436	34.1640 ug/L #	94
9) Methyl methacrylate	11.43	41	106029	19.0419 ug/L	97
10) 2-Nitropropane	11.76	43	12836	13.7339 ug/L	86
13) Cyclohexanone	15.84	55	14620	19.8329 ug/L	92

(#) = qualifier out of range (m) = manual integration
8M407829.D A9FOOWTR.M Tue Oct 06 11:56:56 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407829.D Vial: 3
Acq On : 5 Oct 2015 12:17 Operator: TMB
Sample : WG540826-03 20ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 11:56 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

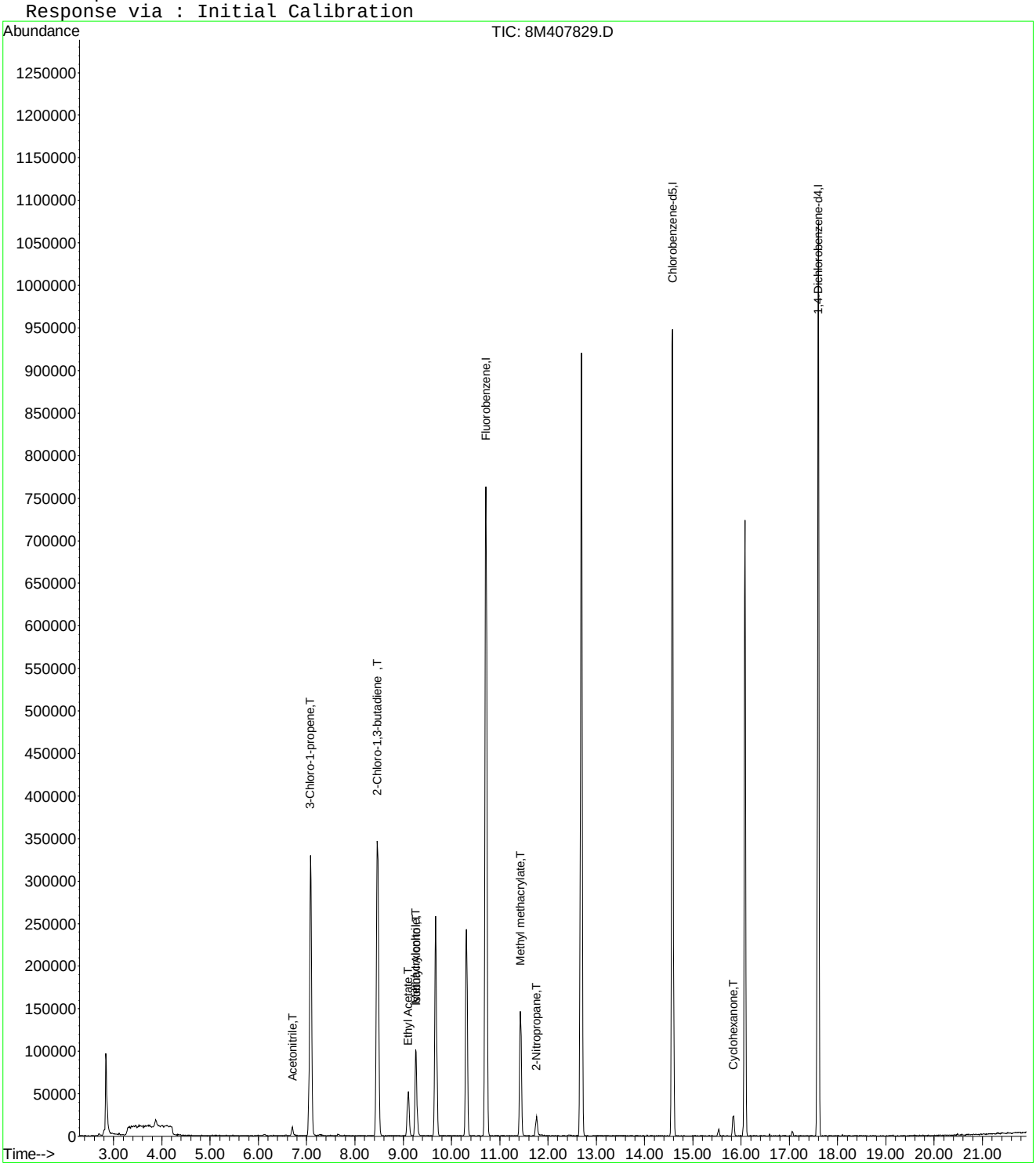

8M407829.D A9FOOWTR.M Tue Oct 06 11:56:57 2015 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\100515\8M407829.D Vial: 3
Acq On : 5 Oct 2015 12:17 Operator: TMB
Sample : WG540826-03 20ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:54:01 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	20.2529	-1.3	100	0.00
3	T	3-Chloro-1-propene	20.0000	20.6667	-3.3	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	19.9846	0.1	100	0.00
5	T	Ethyl Acetate	20.0000	20.2805	-1.4	100	0.00
6	T	Methacrylonitrile	20.0000	19.8618	0.7	100	0.00
7	T	Isobutyl Alcohol	-1.0000	34.1640	0.0	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.19#
9	T	Methyl methacrylate	20.0000	19.0419	4.8	100	0.00
10	T	2-Nitropropane	-1.0000	13.7339	0.0	0	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	19.8329	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M407829.D A9FOOWTR.M Tue Oct 06 11:54:38 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407830.D Vial: 4
Acq On : 5 Oct 2015 12:51 Operator: TMB
Sample : WG540826-04 50ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 05 13:13:37 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	883897	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	665815	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	354078	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.68	111	212038	25.2054 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.84%		
43) 1,2-Dichloroethane-d4	10.31	65	214919	25.0573 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.24%		
58) Toluene-d8	12.69	98	784209	25.3851 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.56%		
80) p-Bromofluorobenzene	16.07	95	309869	25.0818 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.32%		

Target Compounds					Qvalue
13) Acetone	6.26	43	674	0.5137 ug/L #	48
19) Methylene Chloride	7.26	84	1894	0.2128 ug/L	67
24) n-Hexane	7.79	57	2250	0.1674 ug/L	96
36) Tetrahydrofuran	9.64	42	735	0.4954 ug/L #	40
79) 1,1,2,2-Tetrachloroethane	15.85	83	3323	0.5087 ug/L #	26

(#) = qualifier out of range (m) = manual integration
8M407830.D 8260WT.M Mon Oct 05 13:13:38 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407830.D Vial: 4
Acq On : 5 Oct 2015 12:51 Operator: TMB
Sample : WG540826-04 50ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 5 13:13 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration

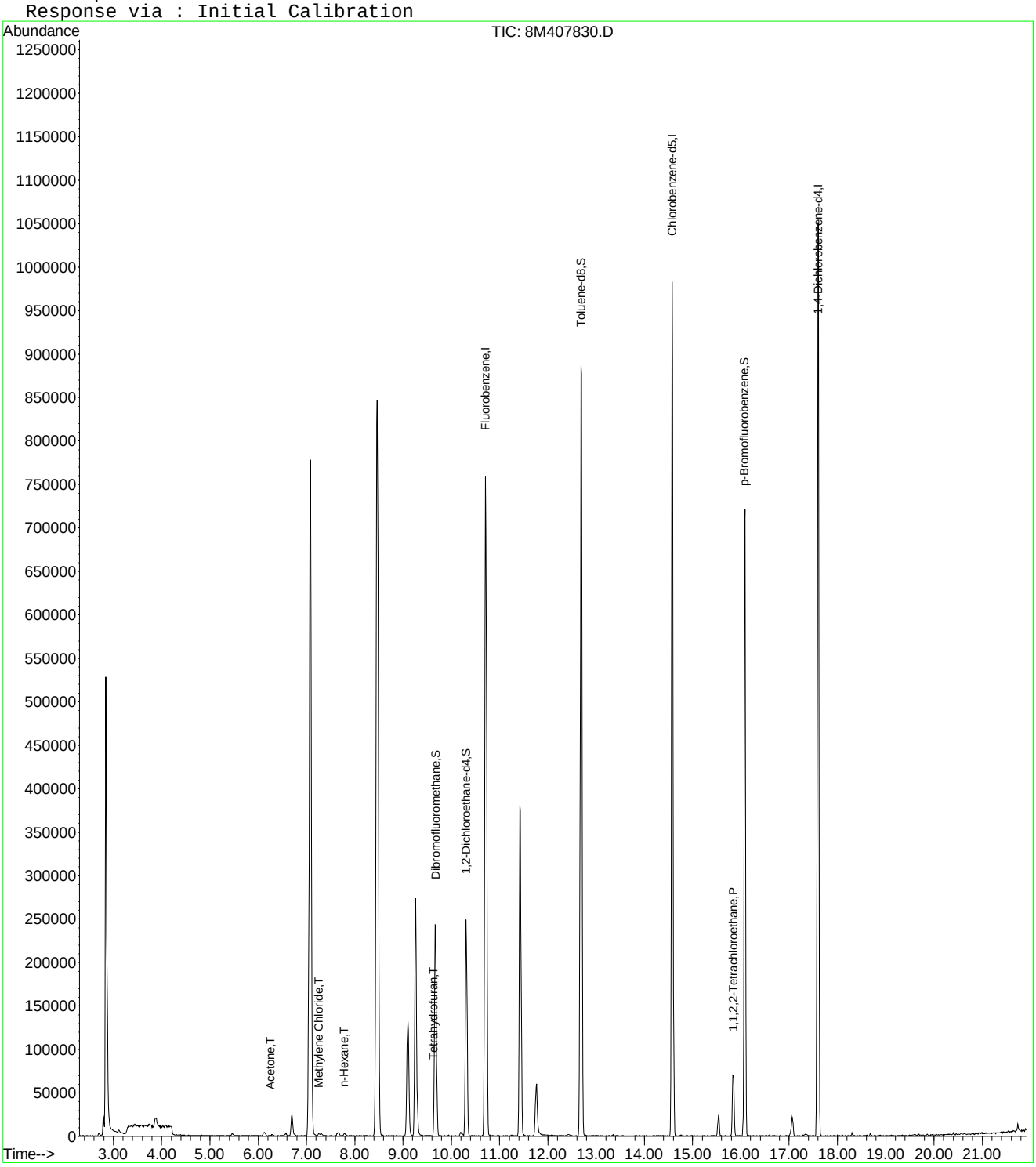

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407830.D Vial: 4
Acq On : 5 Oct 2015 12:51 Operator: TMB
Sample : WG540826-04 50ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 11:56:57 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	883897	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	665815	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	354078	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	35080	51.5703 ug/L	99
3) 3-Chloro-1-propene	7.07	41	841804	50.8844 ug/L	100
4) 2-Chloro-1,3-butadiene	8.47	53	851495	50.0222 ug/L	100
5) Ethyl Acetate	9.10	43	233139	51.8459 ug/L	97
6) Methacrylonitrile	9.26	67	101702	51.5301 ug/L	97
7) Isobutyl Alcohol	9.26	43	17567	95.3366 ug/L	98
8) 1-Butanol	10.19	56	3729	41.0570 ug/L	92
9) Methyl methacrylate	11.42	41	280126	51.4337 ug/L	98
10) 2-Nitropropane	11.76	43	37061	40.5407 ug/L	95
13) Cyclohexanone	15.84	55	40139	53.1730 ug/L	88

(#) = qualifier out of range (m) = manual integration
8M407830.D A9FOOWTR.M Tue Oct 06 11:56:57 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407830.D Vial: 4
Acq On : 5 Oct 2015 12:51 Operator: TMB
Sample : WG540826-04 50ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 11:56 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

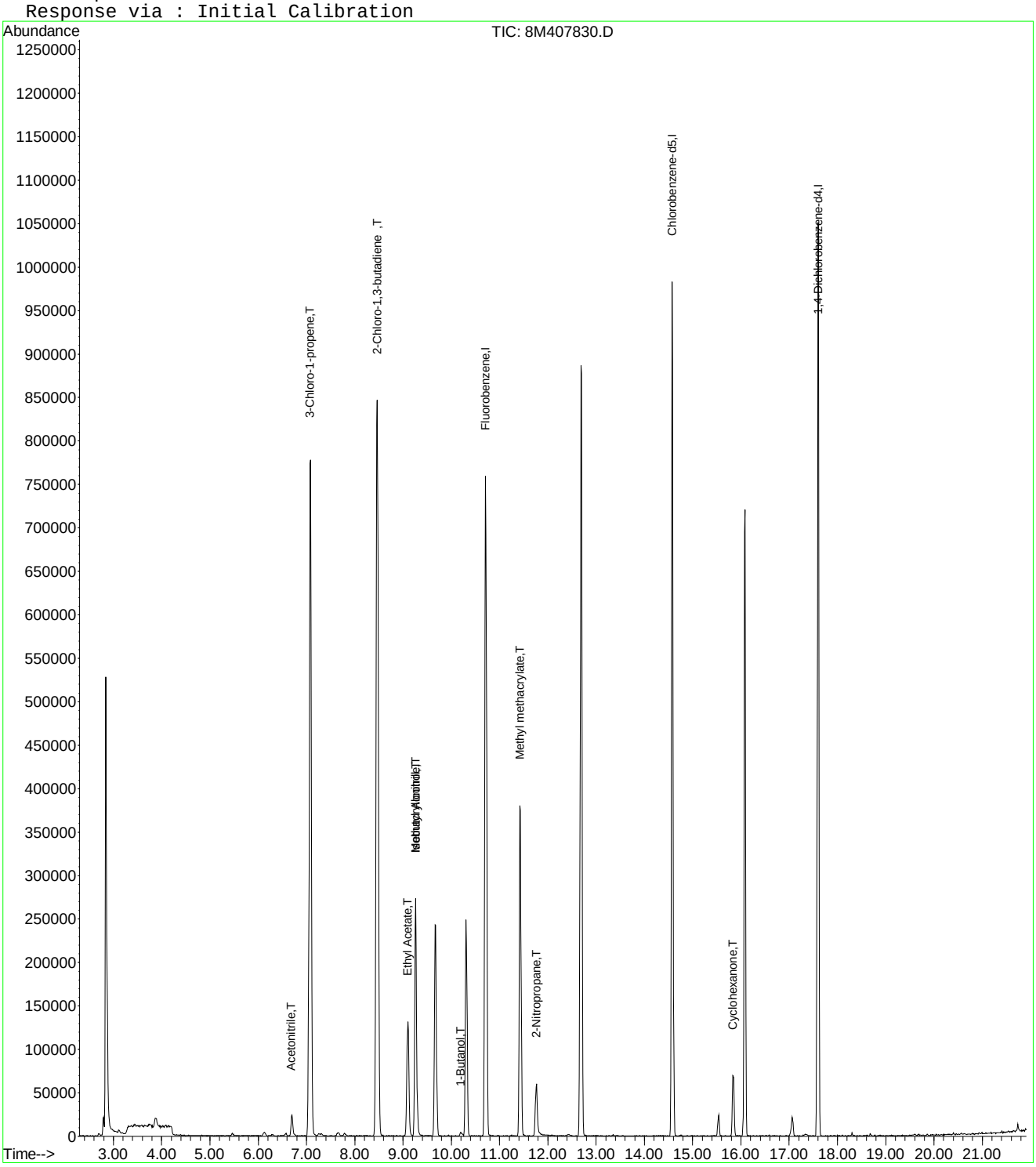

8M407830.D A9FOOWTR.M Tue Oct 06 11:56:57 2015 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\100515\8M407830.D Vial: 4
Acq On : 5 Oct 2015 12:51 Operator: TMB
Sample : WG540826-04 50ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:54:01 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	51.5703	-3.1	100	0.00
3	T	3-Chloro-1-propene	50.0000	50.8844	-1.8	100	0.00
4	T	2-Chloro-1,3-butadiene	50.0000	50.0222	-0.0	100	0.00
5	T	Ethyl Acetate	50.0000	51.8459	-3.7	100	0.00
6	T	Methacrylonitrile	50.0000	51.5301	-3.1	100	0.00
7	T	Isobutyl Alcohol	100.0000	95.3366	4.7	100	0.00
8	T	1-Butanol	50.0000	41.0570	17.9	100	0.00
9	T	Methyl methacrylate	50.0000	51.4337	-2.9	100	0.00
10	T	2-Nitropropane	50.0000	40.5407	18.9	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	50.0000	53.1730	-6.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M407830.D A9FOOWTR.M Tue Oct 06 11:54:56 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407831.D Vial: 5
Acq On : 5 Oct 2015 13:20 Operator: TMB
Sample : WG540826-05 100ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 05 13:42:04 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	866178	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	661111	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	356230	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	202803	24.6008 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.40%		
43) 1,2-Dichloroethane-d4	10.31	65	203632	24.2270 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.92%		
58) Toluene-d8	12.69	98	789106	25.7254 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.92%		
80) p-Bromofluorobenzene	16.08	95	308907	24.8529 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.40%		

Target Compounds					Qvalue
24) n-Hexane	7.79	57	3351	0.2544 ug/L	79
36) Tetrahydrofuran	9.64	42	639	0.4395 ug/L #	40
39) Cyclohexane	9.94	56	2379	0.1385 ug/L #	66

(#) = qualifier out of range (m) = manual integration
8M407831.D 8260WT.M Mon Oct 05 13:42:05 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407831.D Vial: 5
Acq On : 5 Oct 2015 13:20 Operator: TMB
Sample : WG540826-05 100ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 5 13:42 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration

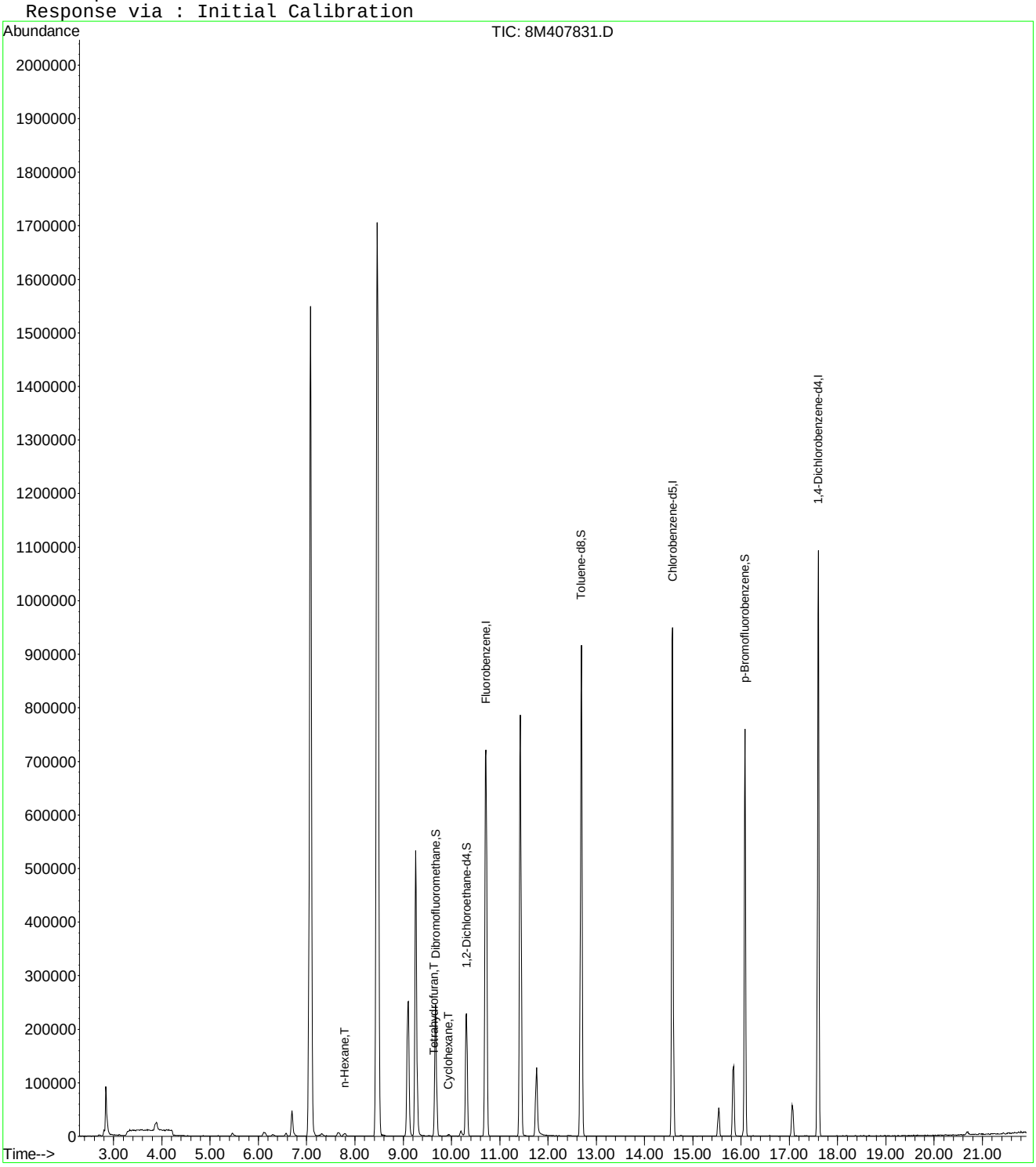

8M407831.D 8260WT.M Mon Oct 05 13:42:06 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407831.D Vial: 5
Acq On : 5 Oct 2015 13:20 Operator: TMB
Sample : WG540826-05 100ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 11:56:58 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	866178	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	661111	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	356230	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	67393	101.0995 ug/L	100
3) 3-Chloro-1-propene	7.08	41	1633129	100.7368 ug/L	100
4) 2-Chloro-1,3-butadiene	8.46	53	1684207	100.9649 ug/L	99
5) Ethyl Acetate	9.10	43	453445	102.9007 ug/L	99
6) Methacrylonitrile	9.26	67	196843	101.7762 ug/L	95
7) Isobutyl Alcohol	9.27	43	37534	207.8650 ug/L	92
8) 1-Butanol	10.20	56	8253	92.7258 ug/L	78
9) Methyl methacrylate	11.43	41	562497	105.3924 ug/L	98
10) 2-Nitropropane	11.76	43	77739	86.7776 ug/L	89
13) Cyclohexanone	15.84	55	74077	97.5385 ug/L	84

(#) = qualifier out of range (m) = manual integration
8M407831.D A9FOOWTR.M Tue Oct 06 11:56:58 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407831.D Vial: 5
Acq On : 5 Oct 2015 13:20 Operator: TMB
Sample : WG540826-05 100ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 11:56 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

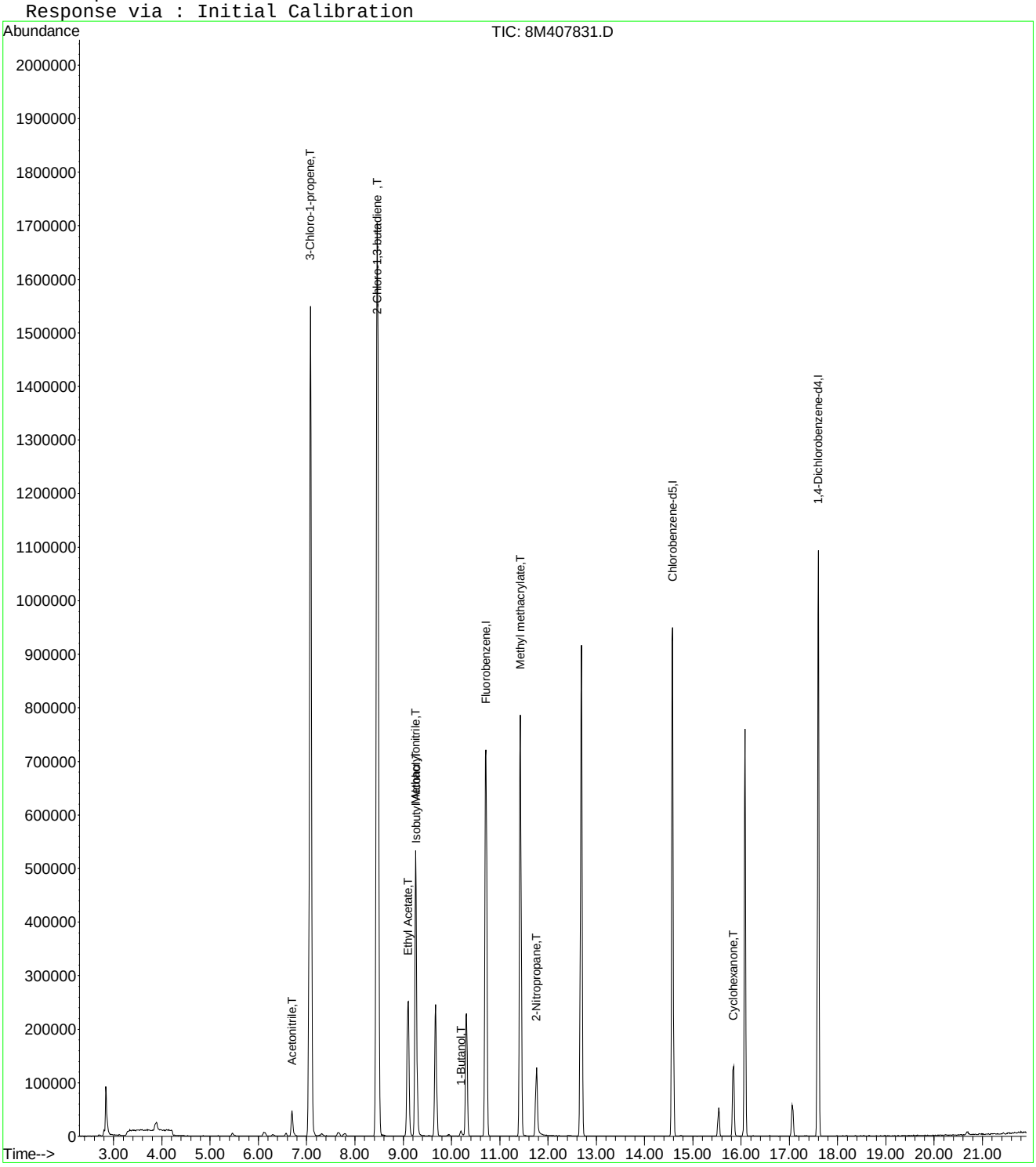

8M407831.D A9FOOWTR.M Tue Oct 06 11:56:58 2015 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\100515\8M407831.D Vial: 5
Acq On : 5 Oct 2015 13:20 Operator: TMB
Sample : WG540826-05 100ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:54:01 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	101.0995	-1.1	100	0.00
3	T	3-Chloro-1-propene	100.0000	100.7368	-0.7	100	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	100.9649	-1.0	100	0.00
5	T	Ethyl Acetate	100.0000	102.9007	-2.9	100	0.00
6	T	Methacrylonitrile	100.0000	101.7762	-1.8	100	0.00
7	T	Isobutyl Alcohol	200.0000	207.8650	-3.9	100	0.00
8	T	1-Butanol	100.0000	92.7258	7.3	100	0.00
9	T	Methyl methacrylate	100.0000	105.3924	-5.4	100	0.00
10	T	2-Nitropropane	100.0000	86.7776	13.2	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	100.0000	97.5386	2.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M407831.D A9FOOWTR.M Tue Oct 06 11:55:12 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407832.D Vial: 6
Acq On : 5 Oct 2015 13:49 Operator: TMB
Sample : WG540826-06 200ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 05 14:10:58 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	897754	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	673480	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	363907	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	208738	24.4301 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.72%		
43) 1,2-Dichloroethane-d4	10.30	65	213605	24.5197 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.08%		
58) Toluene-d8	12.69	98	807841	25.8525 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.40%		
80) p-Bromofluorobenzene	16.08	95	324104	25.5255 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.12%		

Target Compounds

					Qvalue
13) Acetone	6.25	43	677	0.5081 ug/L #	48
18) Methyl acetate	7.08	43	1823	0.3618 ug/L #	1
20) Carbon Disulfide	7.30	76	5054	0.1712 ug/L #	78
24) n-Hexane	7.78	57	7743	0.5671 ug/L	88
36) Tetrahydrofuran	9.64	42	1466	0.9728 ug/L #	40
39) Cyclohexane	9.95	56	4715	0.2647 ug/L	84

(#) = qualifier out of range (m) = manual integration
8M407832.D 8260WT.M Mon Oct 05 14:10:59 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407832.D Vial: 6
Acq On : 5 Oct 2015 13:49 Operator: TMB
Sample : WG540826-06 200ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 5 14:10 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration

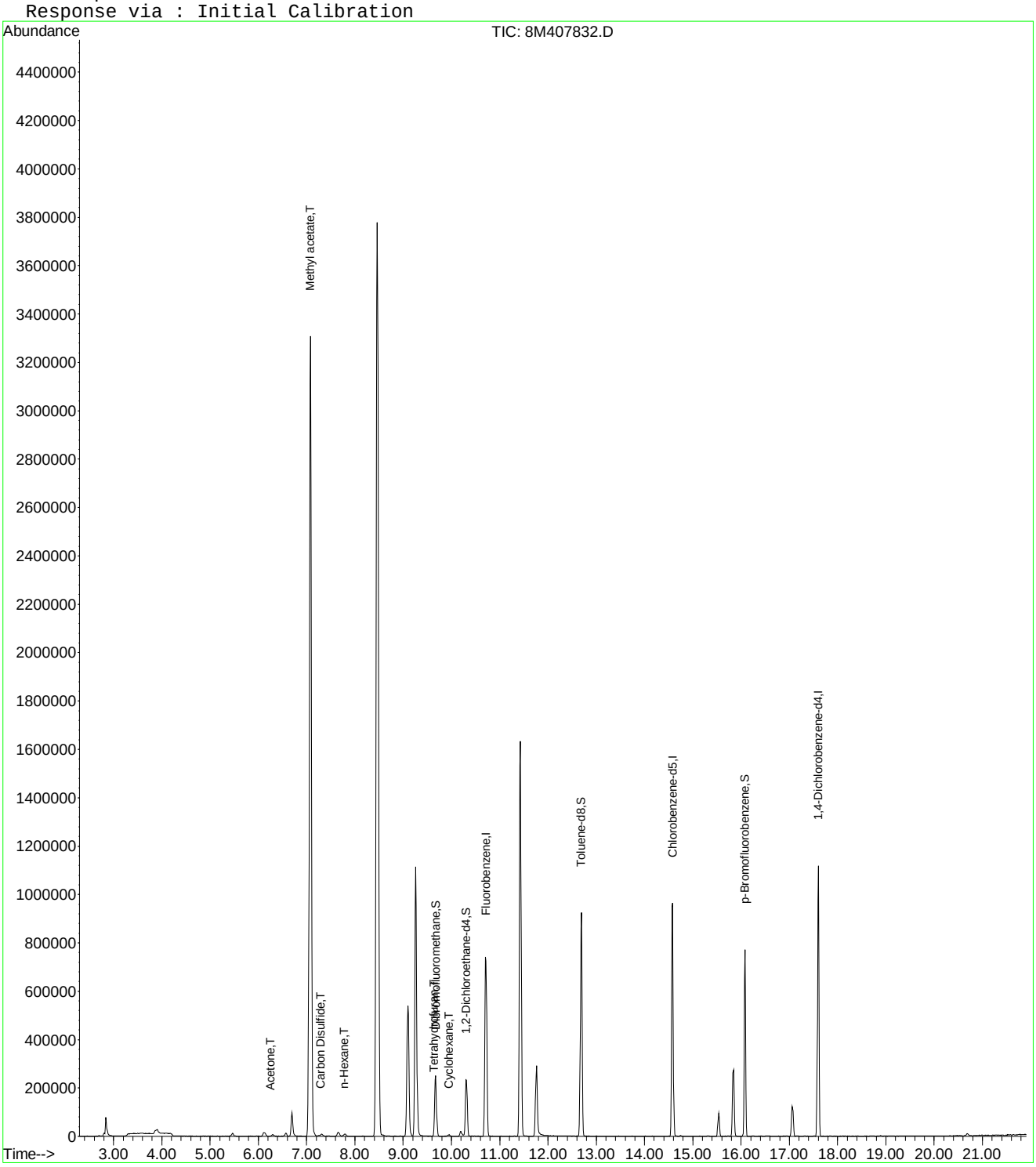

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407832.D Vial: 6
Acq On : 5 Oct 2015 13:49 Operator: TMB
Sample : WG540826-06 200ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 11:56:58 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	897754	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	673480	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	363907	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	138277	200.1400 ug/L	97
3) 3-Chloro-1-propene	7.08	41	3475078	206.8151 ug/L	99
4) 2-Chloro-1,3-butadiene	8.46	53	3691199	213.4973 ug/L	98
5) Ethyl Acetate	9.09	43	949825	207.9635 ug/L	98
6) Methacrylonitrile	9.26	67	412747	205.9018 ug/L	95
7) Isobutyl Alcohol	9.27	43	71985	384.6346 ug/L	94
8) 1-Butanol	10.20	56	18764	203.4062 ug/L	78
9) Methyl methacrylate	11.43	41	1165248	210.6479 ug/L	99
10) 2-Nitropropane	11.76	43	181242	195.1989 ug/L	92
13) Cyclohexanone	15.84	55	156208	201.3429 ug/L	89

(#) = qualifier out of range (m) = manual integration
8M407832.D A9FOOWTR.M Tue Oct 06 11:56:59 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407832.D Vial: 6
Acq On : 5 Oct 2015 13:49 Operator: TMB
Sample : WG540826-06 200ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 11:56 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

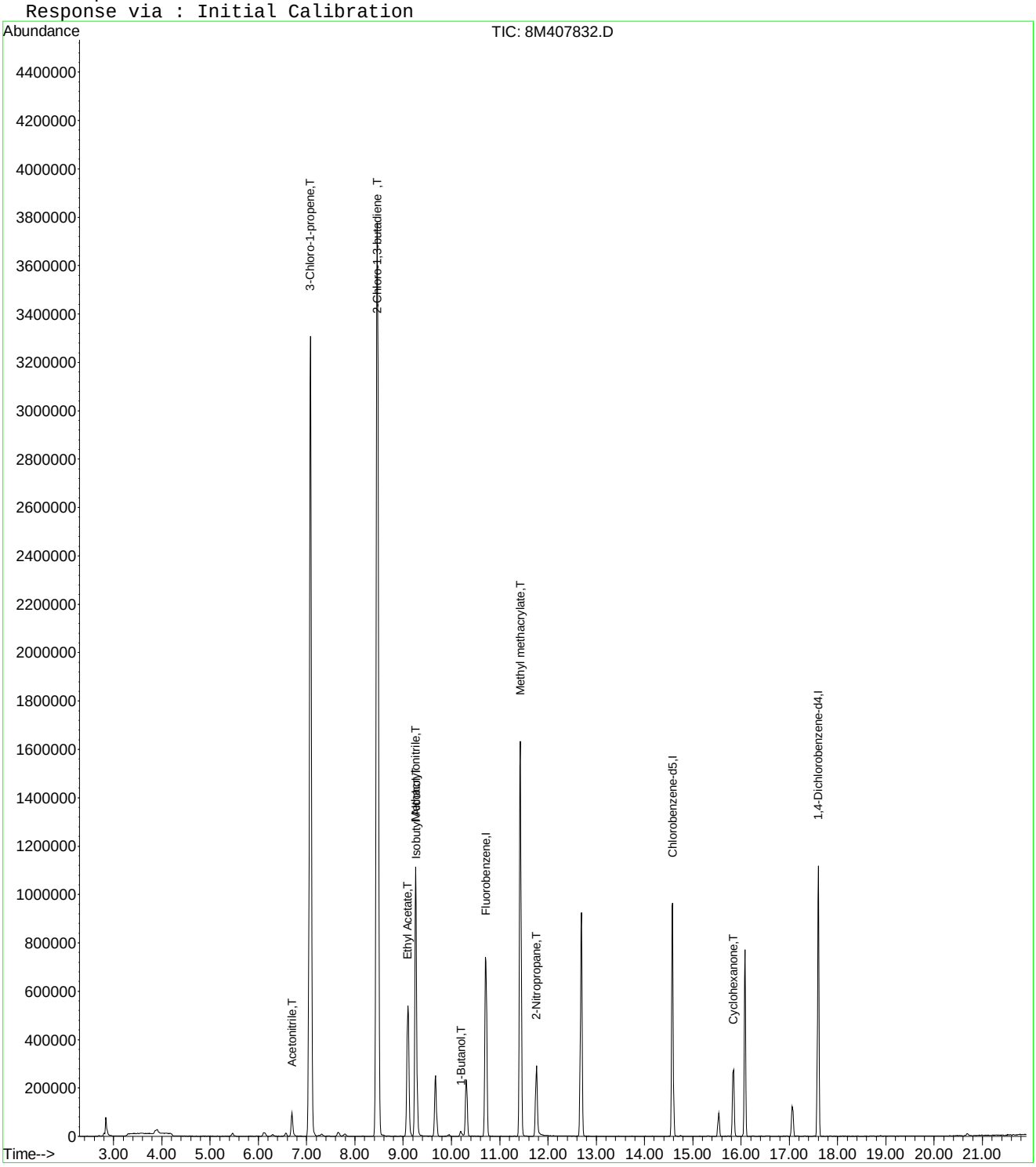

8M407832.D A9FOOWTR.M Tue Oct 06 11:56:59 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407833.D Vial: 7
Acq On : 5 Oct 2015 14:17 Operator: TMB
Sample : WG540826-07 300ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 05 14:39:56 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	914795	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	689423	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	367388	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	213426	24.5135 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.04%		
43) 1,2-Dichloroethane-d4	10.30	65	216408	24.3787 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.52%		
58) Toluene-d8	12.69	98	818846	25.5987 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.40%		
80) p-Bromofluorobenzene	16.08	95	327784	25.5707 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.28%		

Target Compounds

					Qvalue
13) Acetone	6.25	43	1107	0.8153 ug/L #	48
18) Methyl acetate	7.07	43	3926	0.7646 ug/L #	1
19) Methylene Chloride	7.26	84	1197	0.1300 ug/L	55
20) Carbon Disulfide	7.31	76	6659	0.2214 ug/L #	86
24) n-Hexane	7.78	57	11874	0.8534 ug/L	97
30) Propionitrile	9.05	54	208	0.3030 ug/L #	1
31) 2,2-Dichloropropane	9.09	77	2023	0.1353 ug/L #	42
36) Tetrahydrofuran	9.64	42	1301	0.8472 ug/L #	40
39) Cyclohexane	9.94	56	6598	0.3636 ug/L	94
72) Ethylbenzene	14.75	106	2422	0.1584 ug/L	54
73) m-,p-Xylene	14.75	106	2422	0.1381 ug/L	82

(#) = qualifier out of range (m) = manual integration
8M407833.D 8260WT.M Mon Oct 05 14:39:57 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407833.D Vial: 7
Acq On : 5 Oct 2015 14:17 Operator: TMB
Sample : WG540826-07 300ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 5 14:39 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration

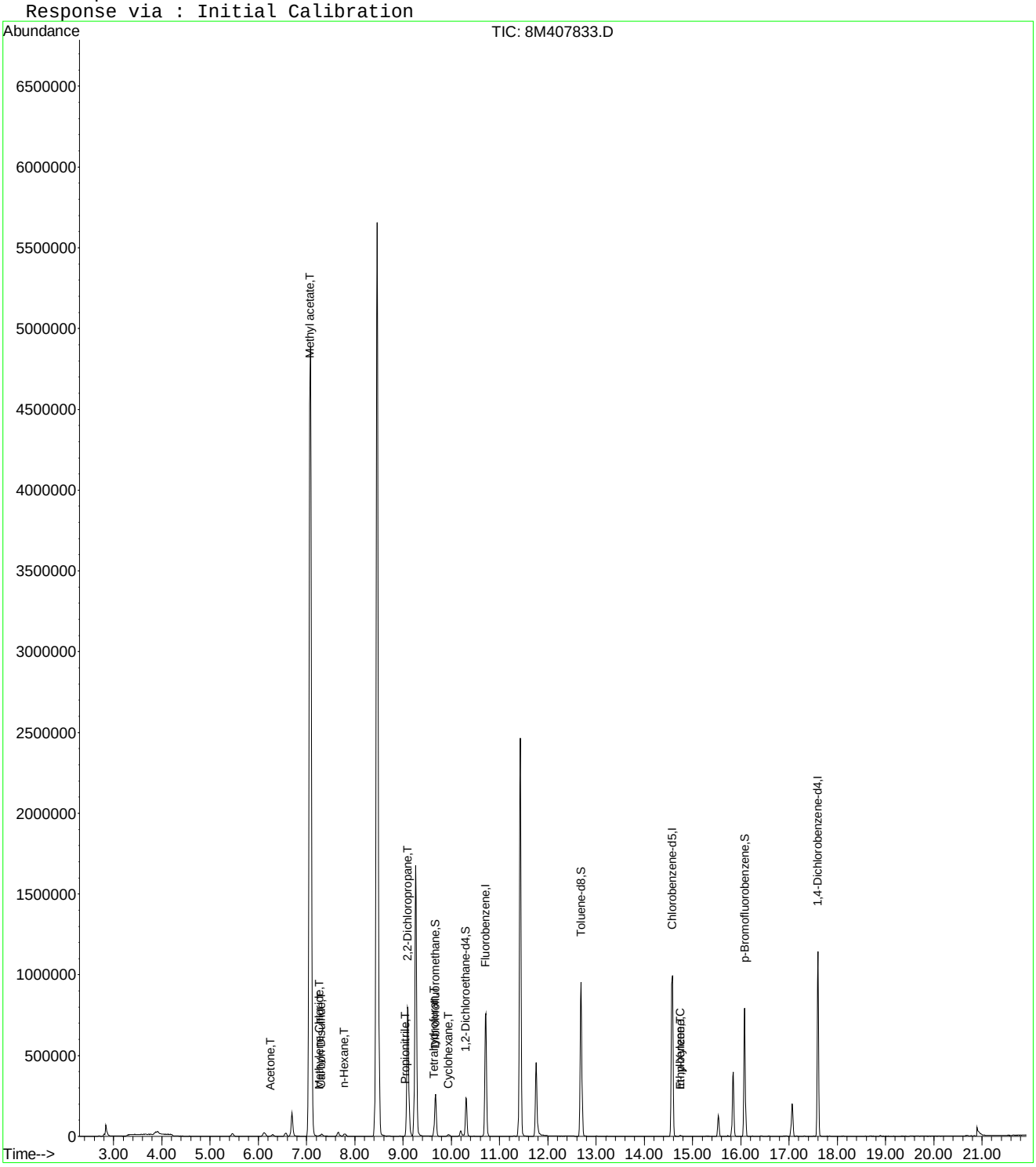

8M407833.D 8260WT.M Mon Oct 05 14:39:58 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407833.D Vial: 7
Acq On : 5 Oct 2015 14:17 Operator: TMB
Sample : WG540826-07 300ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 11:56:59 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	914795	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	689423	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	367388	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	204679	290.7307 ug/L	99
3) 3-Chloro-1-propene	7.08	41	5107808	298.3223 ug/L	99
4) 2-Chloro-1,3-butadiene	8.46	53	5432917	308.3838 ug/L	97
5) Ethyl Acetate	9.09	43	1404245	301.7310 ug/L	99
6) Methacrylonitrile	9.26	67	619787	303.4256 ug/L	96
7) Isobutyl Alcohol	9.27	43	113276	593.9881 ug/L	97
8) 1-Butanol	10.19	56	30662	326.1916 ug/L	85
9) Methyl methacrylate	11.43	41	1738162	308.3633 ug/L	98
10) 2-Nitropropane	11.76	43	289289	305.7623 ug/L	92
13) Cyclohexanone	15.84	55	224807	287.0174 ug/L	90

(#) = qualifier out of range (m) = manual integration
8M407833.D A9FOOWTR.M Tue Oct 06 11:56:59 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407833.D Vial: 7
Acq On : 5 Oct 2015 14:17 Operator: TMB
Sample : WG540826-07 300ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 11:56 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

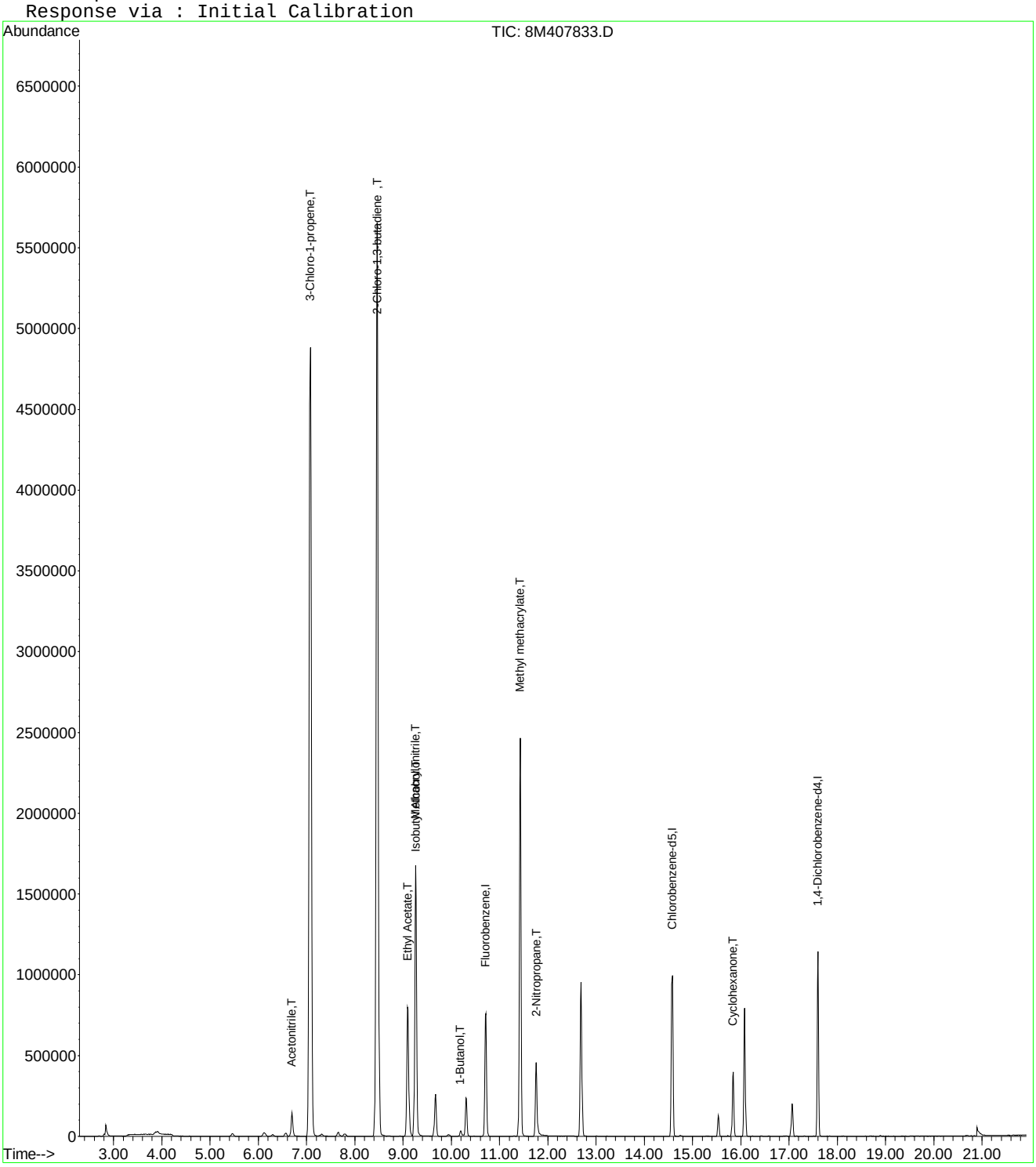

8M407833.D A9FOOWTR.M Tue Oct 06 11:57:00 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407834.D Vial: 8
Acq On : 5 Oct 2015 14:47 Operator: TMB
Sample : WG540826-08 400ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 05 15:09:02 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	933879	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	691340	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	373332	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	222232	25.0033 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.00%		
43) 1,2-Dichloroethane-d4	10.31	65	222556	24.5590 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.24%		
58) Toluene-d8	12.69	98	831940	25.9359 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.76%		
80) p-Bromofluorobenzene	16.08	95	329799	25.3183 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.28%		

Target Compounds

					Qvalue
13) Acetone	6.25	43	2307	1.6644 ug/L #	48
18) Methyl acetate	7.07	43	5300	1.0111 ug/L #	1
19) Methylene Chloride	7.26	84	1631	0.1735 ug/L #	6
20) Carbon Disulfide	7.30	76	9227	0.3005 ug/L #	79
24) n-Hexane	7.79	57	16005	1.1268 ug/L	89
29) 2-Butanone	8.89	43	1241	0.5197 ug/L #	57
30) Propionitrile	9.07	54	773	1.1032 ug/L #	1
31) 2,2-Dichloropropane	9.11	77	2811	0.1842 ug/L #	42
36) Tetrahydrofuran	9.65	42	1879	1.1986 ug/L #	40
39) Cyclohexane	9.95	56	9653	0.5211 ug/L	94
73) m-,p-Xylene	14.75	106	3655	0.2078 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M407834.D 8260WT.M Mon Oct 05 15:09:03 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407834.D Vial: 8
Acq On : 5 Oct 2015 14:47 Operator: TMB
Sample : WG540826-08 400ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 5 15:09 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration

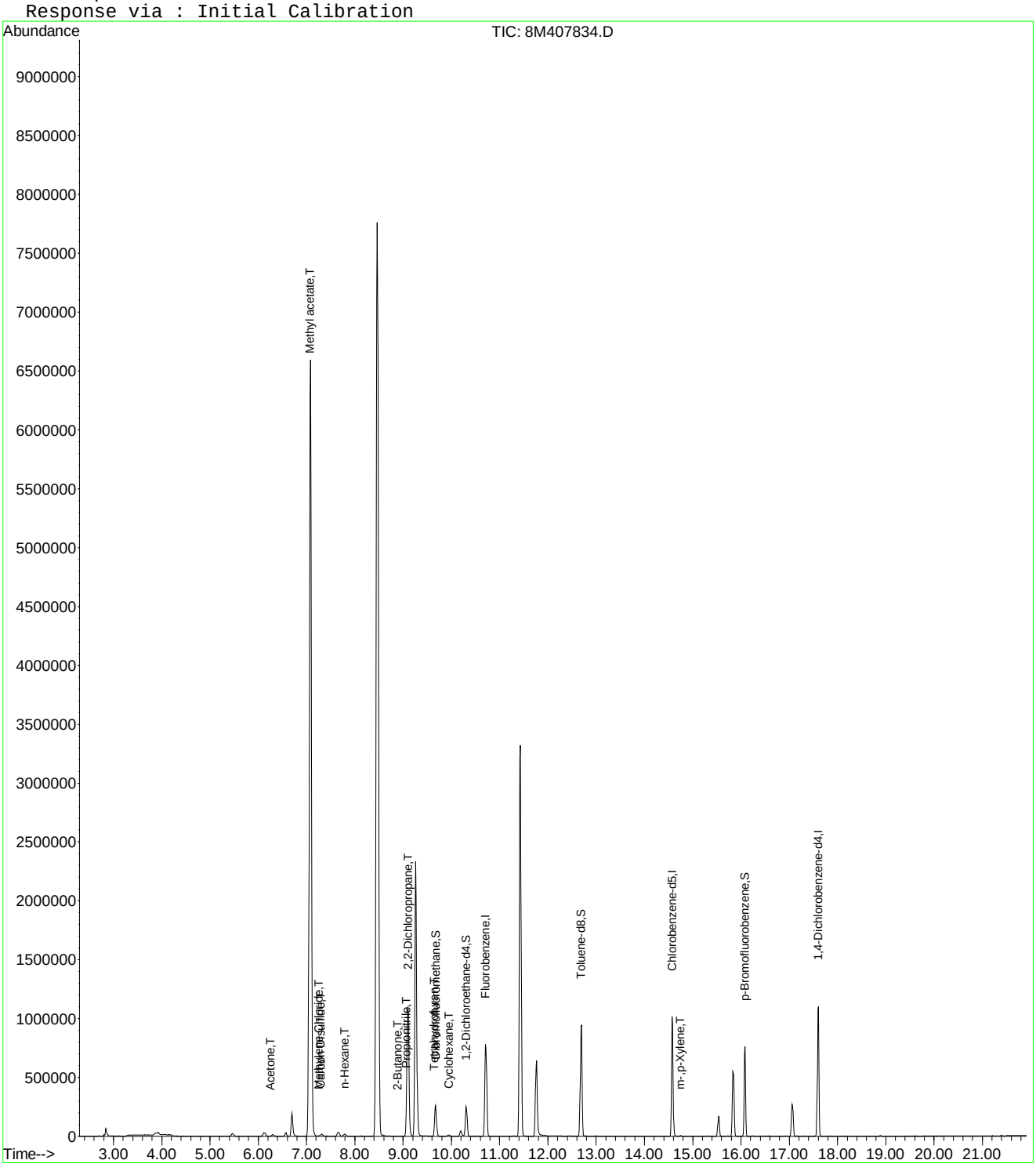

8M407834.D 8260WT.M Mon Oct 05 15:09:03 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407834.D Vial: 8
Acq On : 5 Oct 2015 14:47 Operator: TMB
Sample : WG540826-08 400ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 11:57:00 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	933879	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	691340	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	373332	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	276454	384.6570 ug/L	96
3) 3-Chloro-1-propene	7.08	41	6839307	391.2880 ug/L	97
4) 2-Chloro-1,3-butadiene	8.47	53	7261886	403.7765 ug/L	94
5) Ethyl Acetate	9.10	43	1919647	404.0467 ug/L	99
6) Methacrylonitrile	9.26	67	856150	410.5753 ug/L	97
7) Isobutyl Alcohol	9.27	43	151941	780.4553 ug/L	92
8) 1-Butanol	10.19	56	39703	413.7412 ug/L	80
9) Methyl methacrylate	11.43	41	2385524	414.5619 ug/L	99
10) 2-Nitropropane	11.76	43	432493	447.7796 ug/L	93
13) Cyclohexanone	15.83	55	313432	393.7962 ug/L	87

(#) = qualifier out of range (m) = manual integration
8M407834.D A9FOOWTR.M Tue Oct 06 11:57:00 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407834.D Vial: 8
Acq On : 5 Oct 2015 14:47 Operator: TMB
Sample : WG540826-08 400ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 11:57 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

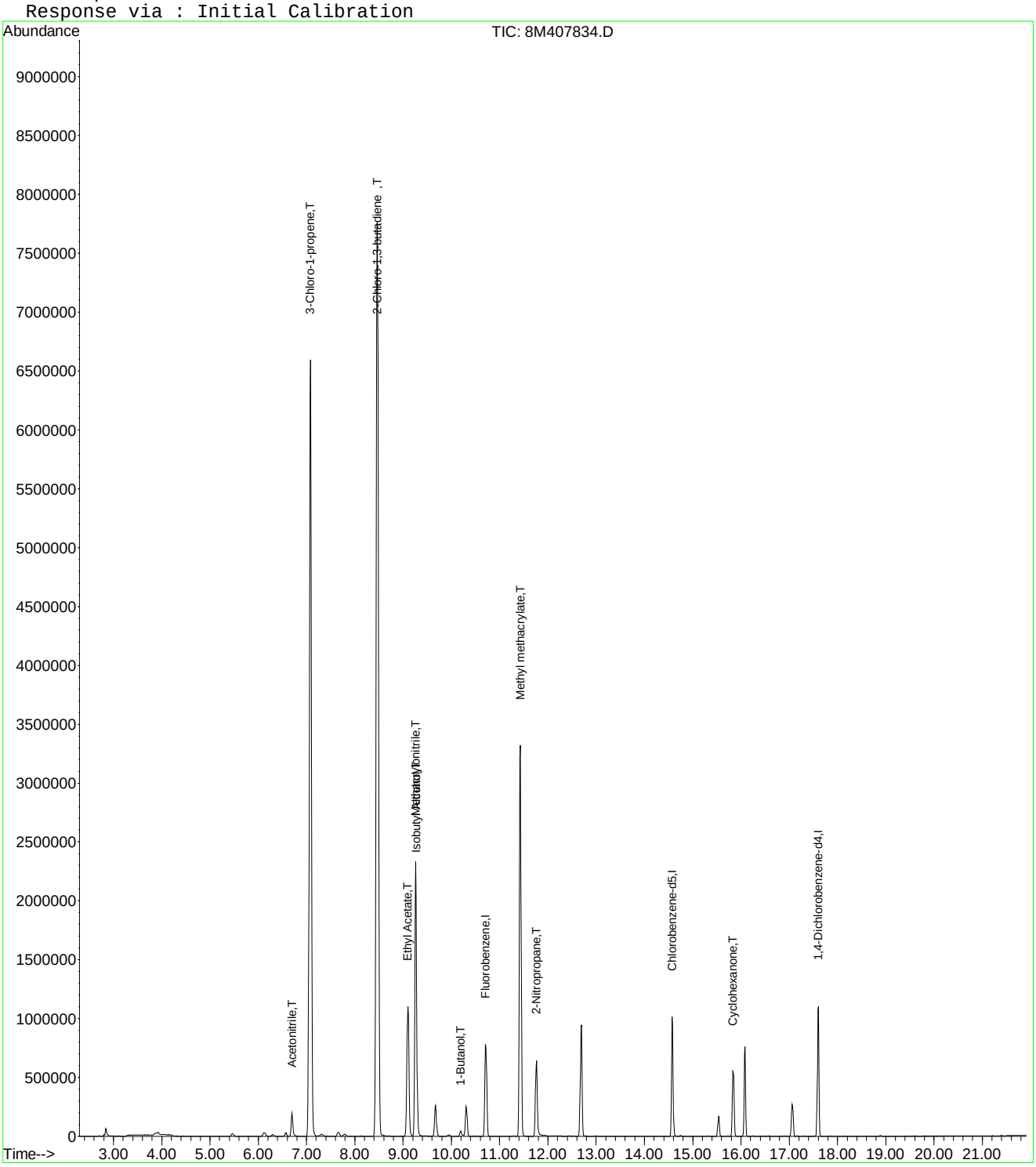

8M407834.D A9FOOWTR.M Tue Oct 06 11:57:00 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407835.D Vial: 9
Acq On : 5 Oct 2015 15:15 Operator: TMB
Sample : WG540826-09 500ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 05 15:37:56 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	952136	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	712384	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	381907	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	222948	24.6029 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.40%		
43) 1,2-Dichloroethane-d4	10.30	65	229612	24.8518 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.40%		
58) Toluene-d8	12.69	98	849027	25.6867 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.76%		
80) p-Bromofluorobenzene	16.08	95	340742	25.5710 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.28%		

Target Compounds

					Qvalue
13) Acetone	6.26	43	2624	1.8568 ug/L #	48
17) Iodomethane	6.98	142	414	1.8830 ug/L #	28
18) Methyl acetate	7.00	43	818	0.1531 ug/L #	64
19) Methylene Chloride	7.27	84	2206	0.2301 ug/L	69
20) Carbon Disulfide	7.30	76	12486	0.3989 ug/L #	78
24) n-Hexane	7.79	57	21760	1.5026 ug/L	96
29) 2-Butanone	8.90	43	1797	0.7381 ug/L #	57
30) Propionitrile	9.07	54	1629	2.2802 ug/L #	1
31) 2,2-Dichloropropane	9.11	77	3861	0.2482 ug/L #	52
36) Tetrahydrofuran	9.65	42	2063	1.2908 ug/L #	40
39) Cyclohexane	9.94	56	13508	0.7152 ug/L	88
48) Methylcyclohexane	11.31	83	2456	0.1572 ug/L #	73
73) m-,p-Xylene	14.75	106	3865	0.2133 ug/L	76

(#) = qualifier out of range (m) = manual integration
8M407835.D 8260WT.M Mon Oct 05 15:37:57 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407835.D Vial: 9
Acq On : 5 Oct 2015 15:15 Operator: TMB
Sample : WG540826-09 500ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 5 15:37 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration

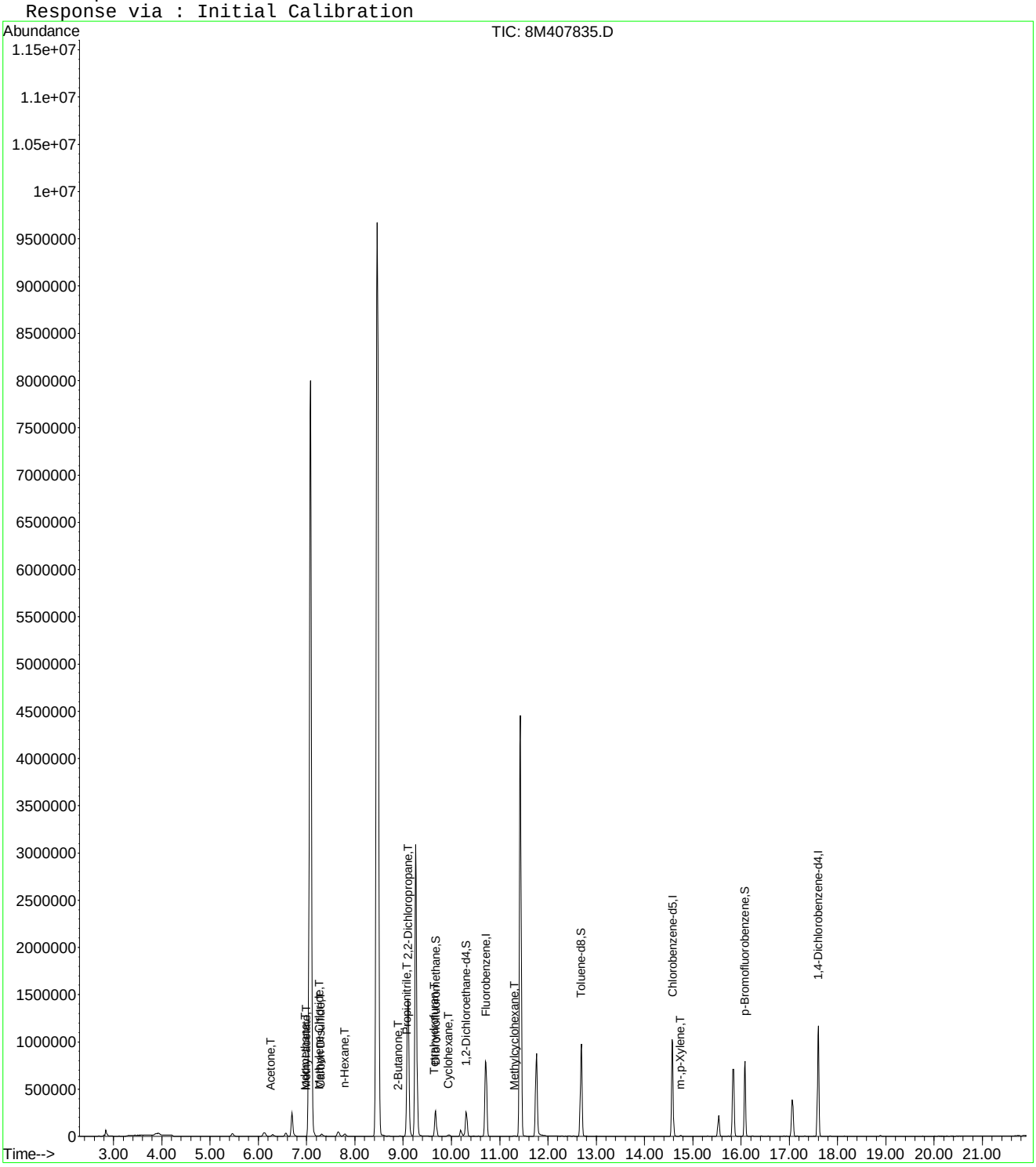

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407835.D Vial: 9
Acq On : 5 Oct 2015 15:15 Operator: TMB
Sample : WG540826-09 500ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 11:57:01 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	952136	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	712384	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	381907	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	355656	485.3695 ug/L	97
3) 3-Chloro-1-propene	7.08	41	8223448	461.4556 ug/L	95
4) 2-Chloro-1,3-butadiene	8.46	53	8764656	477.9893 ug/L	90
5) Ethyl Acetate	9.09	43	2535700	523.4795 ug/L	100
6) Methacrylonitrile	9.26	67	1137496	535.0377 ug/L	97
7) Isobutyl Alcohol	9.27	43	214402	1080.1734 ug/L	98
8) 1-Butanol	10.19	56	54442	556.4564 ug/L	87
9) Methyl methacrylate	11.43	41	3137676	534.8171 ug/L	99
10) 2-Nitropropane	11.76	43	594174	603.3794 ug/L	94
13) Cyclohexanone	15.83	55	412487	506.6127 ug/L	87

(#) = qualifier out of range (m) = manual integration
8M407835.D A9FOOWTR.M Tue Oct 06 11:57:01 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407835.D Vial: 9
Acq On : 5 Oct 2015 15:15 Operator: TMB
Sample : WG540826-09 500ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 11:57 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

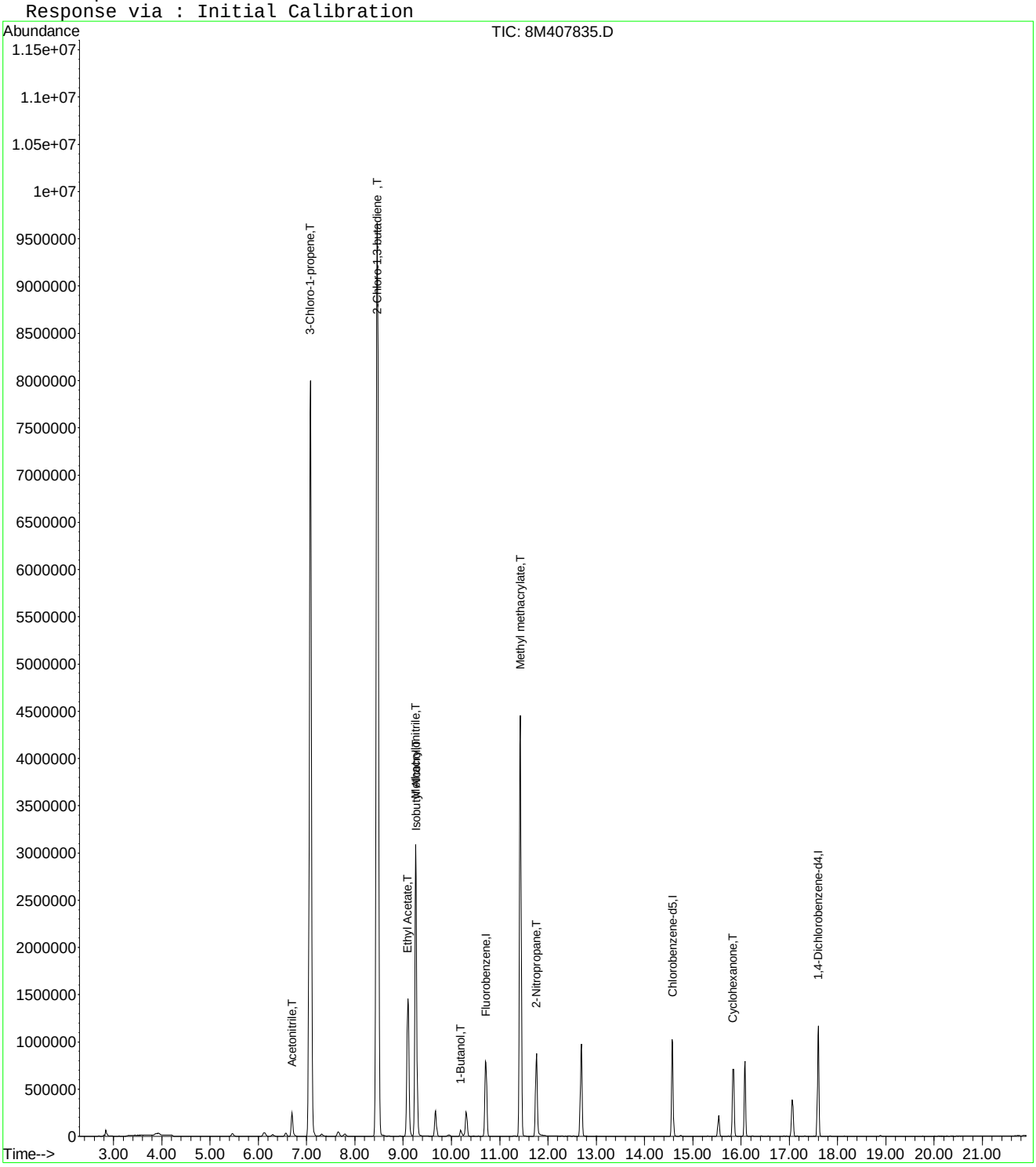

8M407835.D A9FOOWTR.M Tue Oct 06 11:57:01 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407838.D Vial: 12
Acq On : 5 Oct 2015 16:48 Operator: TMB
Sample : WG541826-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD72811 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 05 17:10:31 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	910348	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	672710	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	361469	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	216028	24.9336 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.72%		
43) 1,2-Dichloroethane-d4	10.31	65	220386	24.9481 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.80%		
58) Toluene-d8	12.68	98	805489	25.8067 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.24%		
80) p-Bromofluorobenzene	16.07	95	318985	25.2918 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.16%		

Target Compounds

					Qvalue
5) 1,3-Butadiene	3.90	54	680860	64.5479 ug/L	96
9) Diethyl ether	5.91	59	636031	102.4537 ug/L	99
18) Methyl acetate	7.09	43	861	0.1685 ug/L #	1
29) 2-Butanone	8.90	43	1914	0.8222 ug/L	83
30) Propionitrile	8.99	54	68619	100.4600 ug/L	99
36) Tetrahydrofuran	9.65	42	849	0.5556 ug/L #	40
39) Cyclohexane	9.96	56	4155	0.2301 ug/L #	88
51) 1,4-Dioxane	11.71	88	8398	188.8572 ug/L	85

(#) = qualifier out of range (m) = manual integration
8M407838.D 8260WT.M Mon Oct 05 17:10:32 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407838.D Vial: 12
Acq On : 5 Oct 2015 16:48 Operator: TMB
Sample : WG541826-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD72811 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 5 17:10 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration

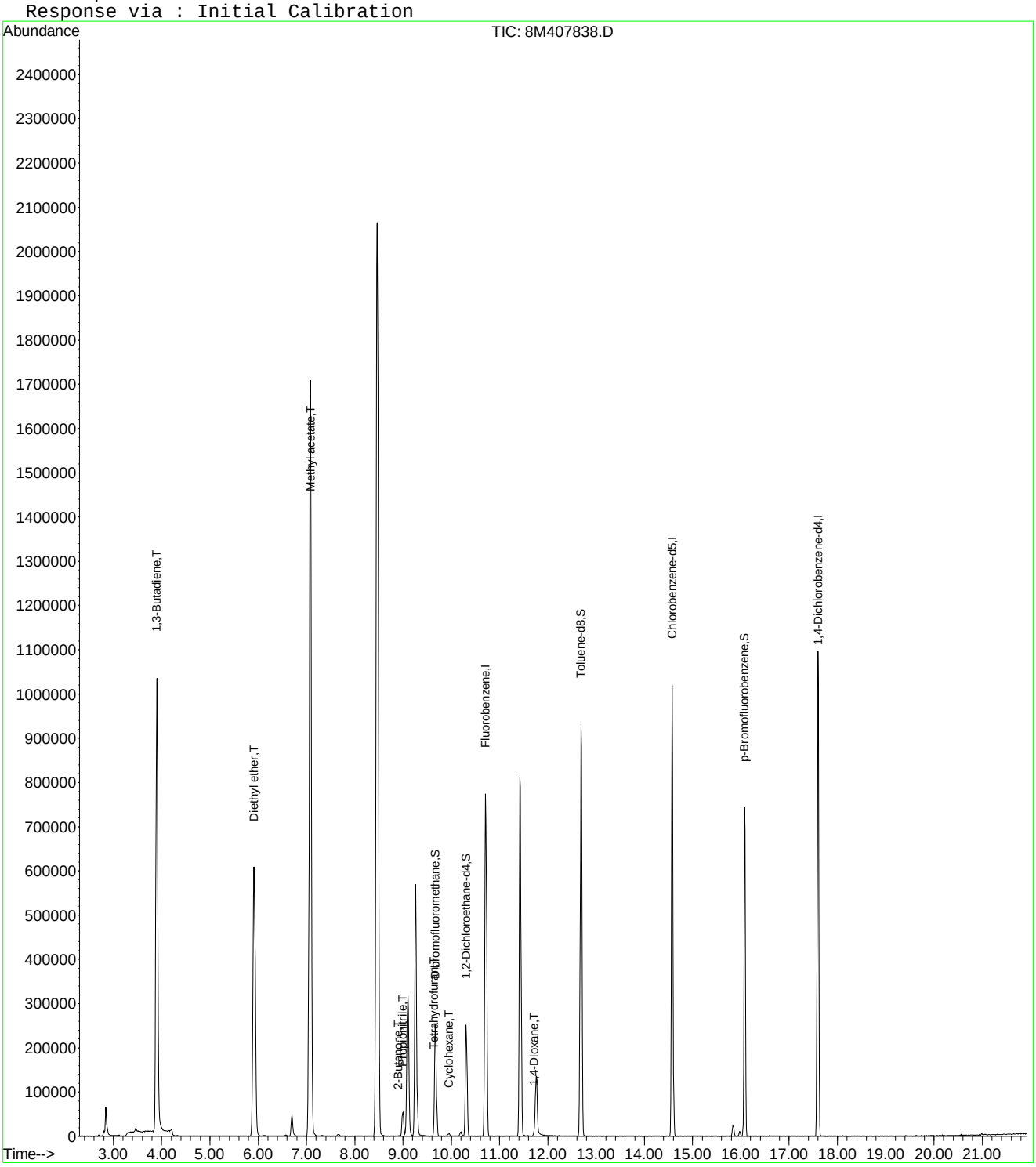

8M407838.D 8260WT.M Mon Oct 05 17:10:33 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407838.D Vial: 12
Acq On : 5 Oct 2015 16:48 Operator: TMB
Sample : WG541826-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD72811 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 11:57:03 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	910348	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	672710	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	361469	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	68331	97.5330 ug/L	99
3) 3-Chloro-1-propene	7.08	41	1823769	107.0379 ug/L	100
4) 2-Chloro-1,3-butadiene	8.47	53	2081638	118.7353 ug/L	100
5) Ethyl Acetate	9.10	43	556798	120.2240 ug/L	97
6) Methacrylonitrile	9.26	67	209938	103.2802 ug/L	94
7) Isobutyl Alcohol	9.27	43	38987	205.4358 ug/L	96
8) 1-Butanol	10.20	56	7758	82.9351 ug/L	93
9) Methyl methacrylate	11.42	41	590033	105.1877 ug/L	99
10) 2-Nitropropane	11.75	43	94685	100.5656 ug/L	93
13) Cyclohexanone	15.84	55	13964	18.1202 ug/L	94

(#) = qualifier out of range (m) = manual integration
8M407838.D A9FOOWTR.M Tue Oct 06 11:57:03 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407838.D Vial: 12
Acq On : 5 Oct 2015 16:48 Operator: TMB
Sample : WG541826-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD72811 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 11:57 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

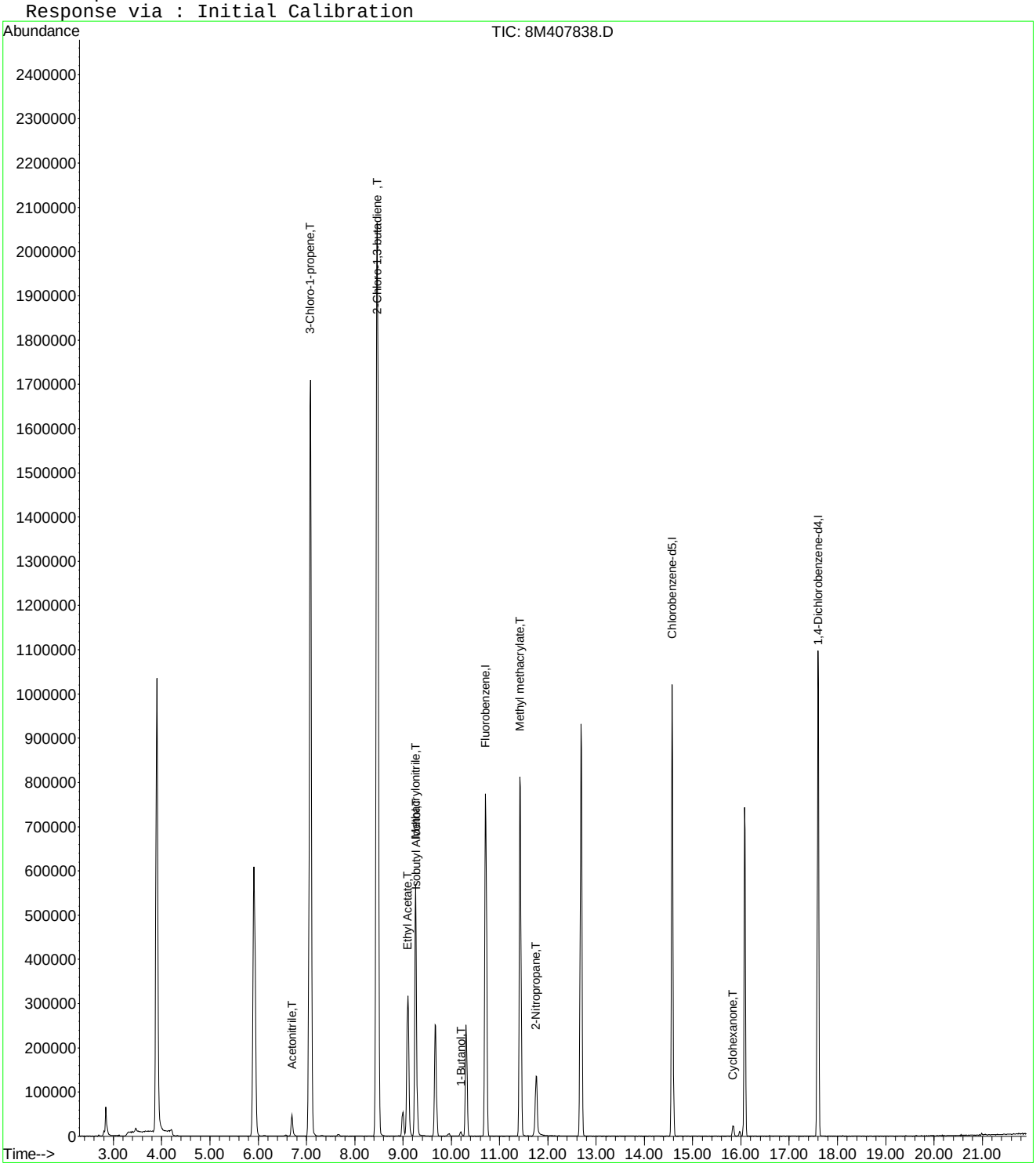

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407838.D Vial: 12
Acq On : 5 Oct 2015 16:48 Operator: TMB
Sample : WG540826-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD72811 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 12:32:35 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	910348	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	672710	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	361469	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	68331	97.5330 ug/L	99
3) 3-Chloro-1-propene	7.08	41	1823769	107.0379 ug/L	100
4) 2-Chloro-1,3-butadiene	8.47	53	2081638	118.7353 ug/L	100
5) Ethyl Acetate	9.10	43	556798	120.2240 ug/L	97
6) Methacrylonitrile	9.26	67	209938	103.2802 ug/L	94
7) Isobutyl Alcohol	9.27	43	38987	205.4358 ug/L	96
8) 1-Butanol	10.20	56	7758	82.9351 ug/L	93
9) Methyl methacrylate	11.42	41	590033	105.1877 ug/L	99
10) 2-Nitropropane	11.75	43	94685	100.5656 ug/L	93
13) Cyclohexanone	15.84	55	13964	18.1202 ug/L	94

(#) = qualifier out of range (m) = manual integration
8M407838.D A9FOOWTR.M Tue Oct 06 12:32:36 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407838.D Vial: 12
Acq On : 5 Oct 2015 16:48 Operator: TMB
Sample : WG540826-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD72811 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 12:32 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

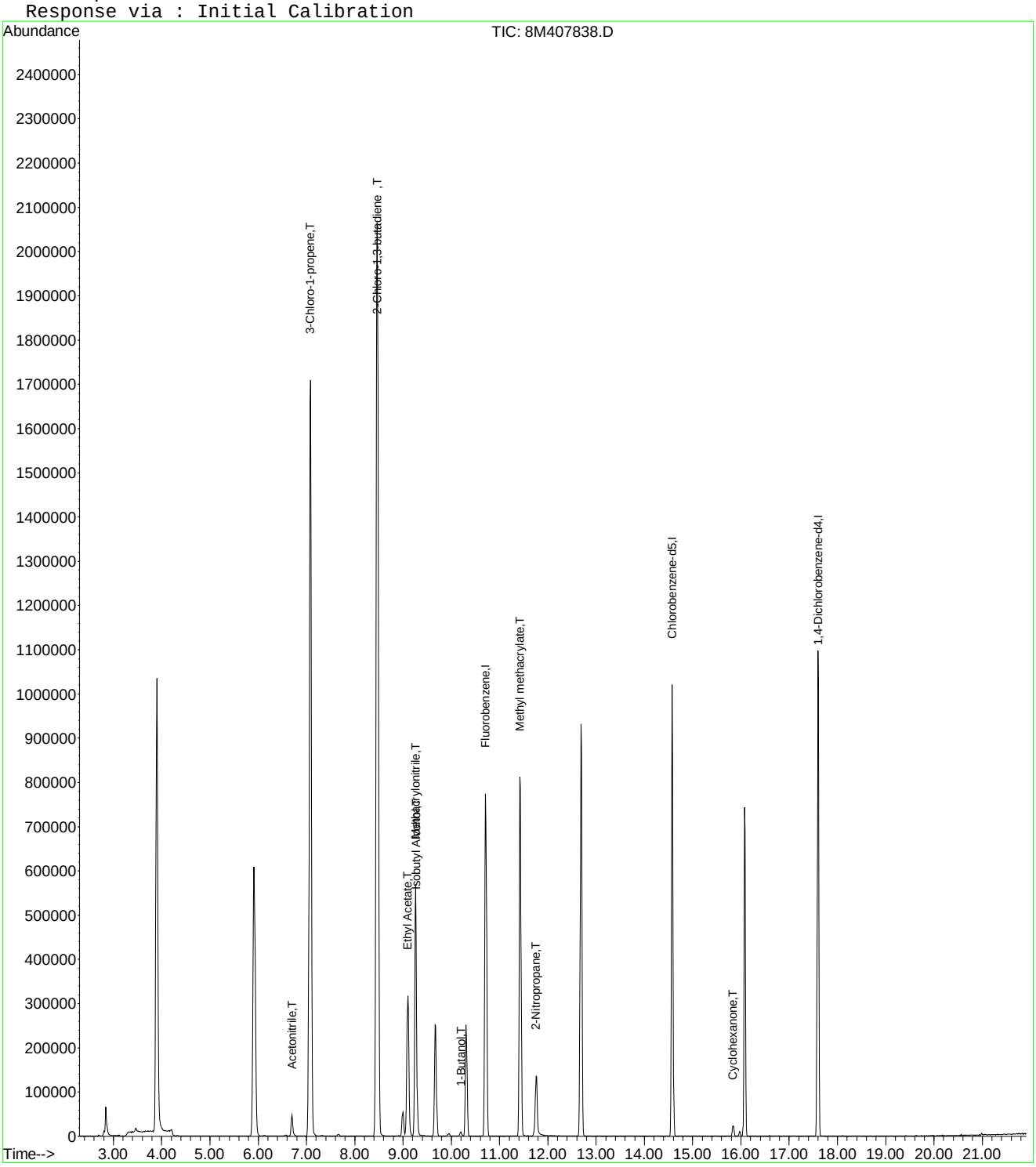

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\100515\8M407838.D Vial: 12
Acq On : 5 Oct 2015 16:48 Operator: TMB
Sample : WG540826-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD72811 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	105	0.00
2	T	Acetonitrile	100.0000	97.5330	2.5	101	0.00
3	T	3-Chloro-1-propene	100.0000	107.0379	-7.0	112	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	118.7354	-18.7	124	0.00
5	T	Ethyl Acetate	100.0000	120.2240	-20.2	123	0.00
6	T	Methacrylonitrile	100.0000	103.2802	-3.3	107	0.00
7	T	Isobutyl Alcohol	200.0000	205.4358	-2.7	104	0.00
8	T	1-Butanol	100.0000	82.9351	17.1	94	0.01
9	T	Methyl methacrylate	100.0000	105.1877	-5.2	105	0.00
10	T	2-Nitropropane	100.0000	100.5656	-0.6	122	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	102	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	101	0.00
13	T	Cyclohexanone	100.0000	18.1202	81.9#	19	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M407838.D A9FOOWTR.M Tue Oct 06 12:32:39 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407747.D Vial: 3
Acq On : 30 Sep 2015 10:30 Operator: TMB
Sample : WG540912-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:02:55 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	842533	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	629942	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	326399	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.00%#	
80) p-Bromofluorobenzene	16.07	95	245	0.0215 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.08%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	3460	0.2701 ug/L	81
3) Chloromethane	3.63	50	5818	0.2977 ug/L	95
4) Vinyl Chloride	3.86	62	5033	0.3259 ug/L	85
5) 1,3-Butadiene	3.90	54	3968	Below Cal #	58
6) Bromomethane	4.74	94	879	0.8599 ug/L #	61
7) Chloroethane	4.90	64	1584	0.2514 ug/L #	43
8) Trichlorofluoromethane	5.37	101	3597	0.2410 ug/L #	92
10) Isoprene	5.95	67	2731	0.2492 ug/L	79
12) 1,1,2-Trichloro-1,2,2-Trif	6.18	101	1287	0.1604 ug/L #	49
14) 1,1-Dichloroethene	6.47	61	4105	0.3005 ug/L	98
16) Dimethyl Sulfide	6.75	62	1886	0.2406 ug/L	92
18) Methyl acetate	7.02	43	897	0.1897 ug/L #	64
19) Methylene Chloride	7.27	84	2727	0.3214 ug/L	93
20) Carbon Disulfide	7.30	76	7953	0.2871 ug/L	93
22) Methyl Tert Butyl Ether	7.49	73	4097	0.2548 ug/L #	50
23) trans-1,2-Dichloroethene	7.70	61	3282	0.2530 ug/L	98
24) n-Hexane	7.79	57	3786	0.2955 ug/L	89
26) Vinyl Acetate	8.31	43	2197	0.2585 ug/L #	77
27) 1,1-Dichloroethane	8.33	63	4345	0.2638 ug/L #	89
31) 2,2-Dichloropropane	9.11	77	4023	0.2922 ug/L #	62
32) cis-1,2-Dichloroethene	9.18	96	2188	0.2364 ug/L	88
33) Chloroform	9.38	83	4576	0.2924 ug/L	85
35) Bromochloromethane	9.62	130	1136	0.2493 ug/L	83
36) Tetrahydrofuran	9.63	42	248	0.1754 ug/L #	40
38) 1,1,1-Trichloroethane	9.90	97	3114	0.2217 ug/L	98
39) Cyclohexane	9.94	56	3908	0.2338 ug/L #	92
40) 1,1-Dichloropropene	10.12	75	3184	0.2633 ug/L	86
42) Carbon Tetrachloride	10.26	117	2506	0.1996 ug/L	93
45) 1,2-Dichloroethane	10.44	62	2693	0.2506 ug/L #	69
46) Benzene	10.47	78	9583	0.2888 ug/L	94
47) Trichloroethene	11.22	130	2701	0.3024 ug/L	94
48) Methylcyclohexane	11.30	83	3801	0.2750 ug/L	90
49) 1,2-Dichloropropane	11.43	63	1944	0.2175 ug/L	86
50) Bromodichloromethane	11.73	83	2933	0.2542 ug/L #	91
53) 2-Chloroethyl Vinyl Ether	12.03	63	715	0.1941 ug/L #	53
55) cis-1,3-Dichloropropene	12.36	75	3481	0.2718 ug/L	98
56) Dimethyl Disulfide	12.63	79	1238	0.1792 ug/L	71
59) Toluene	12.79	91	10440	0.2917 ug/L	93
60) Ethyl Methacrylate	12.89	69	1527	0.2140 ug/L	91
62) trans-1,3-Dichloropropene	12.96	75	2685	0.2445 ug/L	95

(#) = qualifier out of range (m) = manual integration
8M407747.D 8260WT.M Thu Oct 01 09:02:55 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407747.D Vial: 3
Acq On : 30 Sep 2015 10:30 Operator: TMB
Sample : WG540912-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:02:55 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
63)	1,1,2-Trichloroethane	13.18	97	1180	0.2077 ug/L		69
65)	1,3-Dichloropropane	13.48	76	2279	0.2245 ug/L	#	62
66)	Tetrachloroethene	13.61	164	1978	0.2599 ug/L		83
67)	Dibromochloromethane	13.87	129	1603	0.2182 ug/L		80
68)	1,2-Dibromoethane	14.13	107	1502	0.2648 ug/L		82
69)	1-Chlorohexane	14.21	91	3124	0.2439 ug/L		89
70)	Chlorobenzene	14.64	112	6537	0.2725 ug/L		79
71)	1,1,1,2-Tetrachloroethane	14.66	131	2228	0.2512 ug/L		90
72)	Ethylbenzene	14.66	106	3689	0.2640 ug/L		97
73)	m-,p-Xylene	14.75	106	8556	0.5340 ug/L		90
74)	o-Xylene	15.31	106	3959	0.2443 ug/L		89
75)	Styrene	15.35	104	6791	0.2645 ug/L		89
76)	Bromoform	15.83	173	752	0.1703 ug/L	#	27
77)	Isopropylbenzene	15.73	105	10790	0.2776 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	1111	0.1845 ug/L	#	53
83)	n-Propylbenzene	16.25	91	13425	0.2841 ug/L		94
84)	Bromobenzene	16.36	156	2804	0.2923 ug/L		86
85)	1,3,5-Trimethylbenzene	16.42	105	9334	0.2873 ug/L		97
86)	2-Chlorotoluene	16.51	91	9080	0.2901 ug/L		94
87)	4-Chlorotoluene	16.56	91	8463	0.3126 ug/L		91
88)	a-Methylstyrene	16.83	118	4105	0.2318 ug/L		90
89)	tert-Butylbenzene	16.90	134	1912	0.2675 ug/L		87
90)	1,2,4-Trimethylbenzene	16.94	105	8960	0.2729 ug/L		92
91)	sec-Butylbenzene	17.17	105	10929	0.2708 ug/L		99
92)	p-Isopropyltoluene	17.32	119	8859	0.2745 ug/L		100
93)	1,3-Dichlorobenzene	17.51	146	5736	0.2996 ug/L		97
94)	1,4-Dichlorobenzene	17.64	146	5824	0.3054 ug/L	#	38
95)	n-Butylbenzene	17.85	91	8274	0.2750 ug/L	#	92
96)	1,2-Dichlorobenzene	18.13	146	4859	0.2900 ug/L		84
98)	1,2,4-Trichlorobenzene	20.28	180	3220	0.2797 ug/L		94
99)	Hexachlorobutadiene	20.43	225	1169	0.2123 ug/L	#	84
100)	Naphthalene	20.64	128	4792	0.2880 ug/L	#	67
101)	1,2,3-Trichlorobenzene	20.95	180	2667	0.2717 ug/L		93

(#) = qualifier out of range (m) = manual integration
8M407747.D 8260WT.M Thu Oct 01 09:02:55 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407747.D Vial: 3
Acq On : 30 Sep 2015 10:30 Operator: TMB
Sample : WG540912-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 1 9:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration

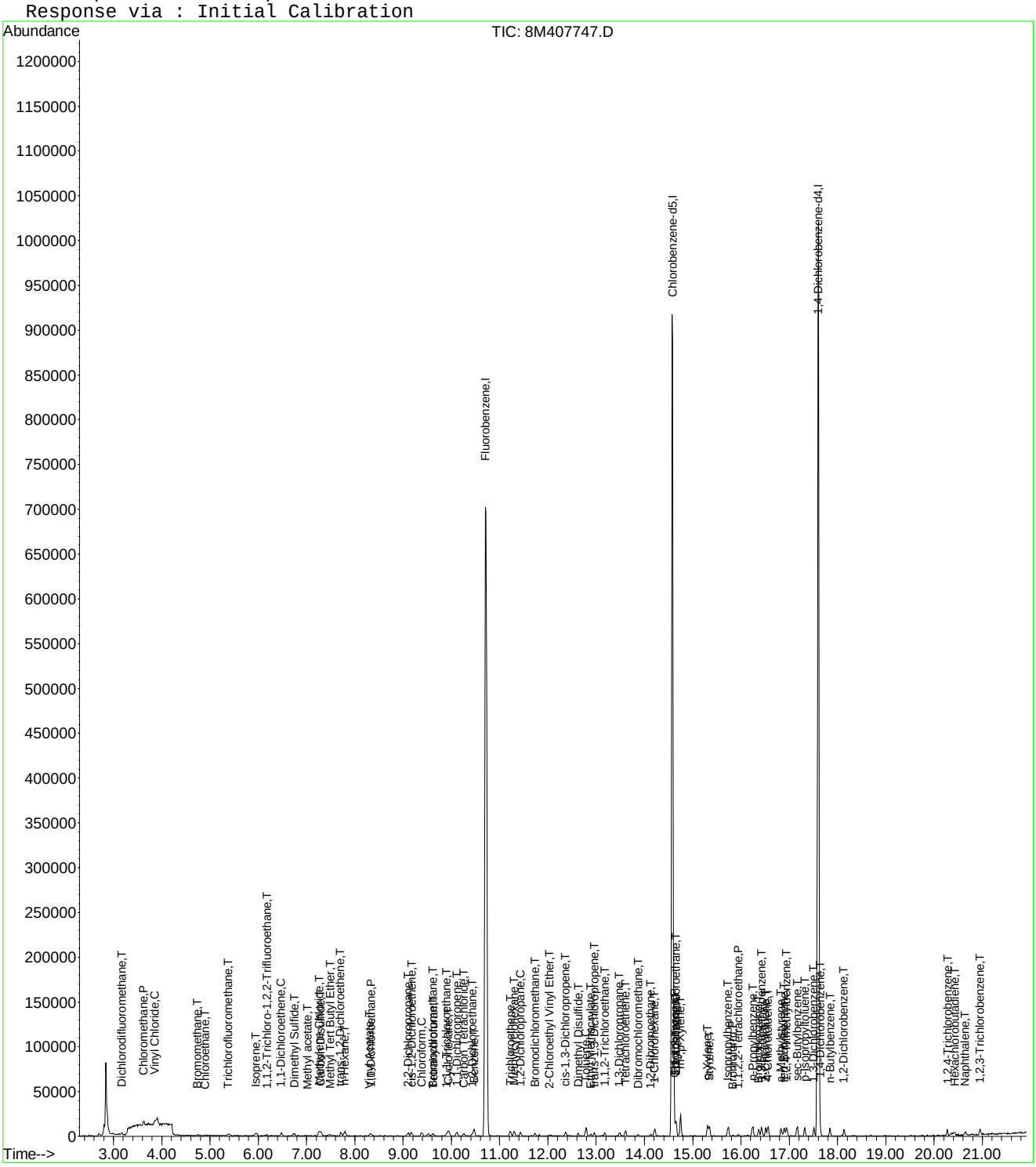

8M407747.D 8260WT.M Thu Oct 01 09:02:55 2015 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\093015\8M407747.D Vial: 3
Acq On : 30 Sep 2015 10:30 Operator: TMB
Sample : WG540912-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2701	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.2977	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.3259	0.0	0	0.01
5	T	1,3-Butadiene	-1.0000	-1.0000	0.0	0	0.00
6	T	Bromomethane	-1.0000	0.8599	0.0	100	0.00
7	T	Chloroethane	-1.0000	0.2514	0.0	100	0.00
8	T	Trichlorofluoromethane	-1.0000	0.2410	0.0	100	-0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.91#
10	T	Isoprene	-1.0000	0.2492	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.15#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.1604	0.0	100	0.02
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.24#
14	C	1,1-Dichloroethene	-1.0000	0.3005	0.0	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.59#
16	T	Dimethyl Sulfide	-1.0000	0.2406	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.99#
18	T	Methyl acetate	-1.0000	0.1897	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.3214	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.2871	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.44#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2548	0.0	100	0.02
23	T	trans-1,2-Dichloroethene	-1.0000	0.2530	0.0	100	-0.01
24	T	n-Hexane	-1.0000	0.2955	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.14#
26	T	Vinyl Acetate	-1.0000	0.2585	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.2638	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0970	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.00#
31	T	2,2-Dichloropropane	-1.0000	0.2922	0.0	100	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.2364	0.0	100	0.00
33	C	Chloroform	0.3000	0.2924	2.5	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.52#
35	T	Bromochloromethane	-1.0000	0.2493	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.1754	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	-1.0000	0.2217	0.0	100	-0.01
39	T	Cyclohexane	-1.0000	0.2338	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.2633	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.22#
42	T	Carbon Tetrachloride	-1.0000	0.1996	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	-1.0000	0.2506	0.0	100	0.00
46	T	Benzene	0.3000	0.2888	3.7	100	0.00
47	T	Trichloroethene	-1.0000	0.3024	0.0	100	0.00
48	T	Methylcyclohexane	-1.0000	0.2750	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2175	0.0	100	0.00
50	T	Bromodichloromethane	-1.0000	0.2542	0.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	-1.0000	0.1149	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1941	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.07#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\093015\8M407747.D Vial: 3
Acq On : 30 Sep 2015 10:30 Operator: TMB
Sample : WG540912-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.2718	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.1792	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0000	0.0	0	-12.69#
59	C	Toluene	-1.0000	0.2917	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2140	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.2445	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.2077	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	-1.0000	0.2245	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.2599	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.2182	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.2648	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.2439	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.2725	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.2512	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.2640	0.0	100	0.00
73	T	m-,p-Xylene	-1.0000	0.5340	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.2443	0.0	100	0.00
75	T	Styrene	-1.0000	0.2645	0.0	100	0.00
76	P	Bromoform	-1.0000	0.1703	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.2776	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.1845	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0215	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.14#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	-1.0000	0.2841	0.0	0	0.00
84	T	Bromobenzene	0.3000	0.2923	2.6	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.2873	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.2901	0.0	100	0.00
87	T	4-Chlorotoluene	-1.0000	0.3126	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2318	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.2675	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.2729	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.2708	0.0	0	0.00
92	T	p-Isopropyltoluene	-1.0000	0.2745	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.2996	0.0	100	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.3055	-1.8	100	0.00
95	T	n-Butylbenzene	-1.0000	0.2750	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.2900	3.3	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.2797	0.0	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.2123	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.2880	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.2717	9.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M407747.D 8260WT.M Thu Oct 01 09:03:21 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407748.D Vial: 4
Acq On : 30 Sep 2015 10:59 Operator: TMB
Sample : WG540912-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:02:56 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	843843	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	621698	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	327803	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	12.69	98	242	0.0084 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.04%#	
80) p-Bromofluorobenzene	0.00	95	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	5134	0.4002 ug/L	83
3) Chloromethane	3.63	50	10943	0.5590 ug/L	98
4) Vinyl Chloride	3.87	62	7387	0.4775 ug/L	99
5) 1,3-Butadiene	3.91	54	7288	Below Cal	88
6) Bromomethane	4.74	94	1106	0.9036 ug/L	82
7) Chloroethane	4.90	64	1927	0.3053 ug/L #	53
8) Trichlorofluoromethane	5.38	101	6101	0.4081 ug/L #	91
10) Isoprene	5.96	67	4001	0.3645 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	2348	0.2922 ug/L	66
13) Acetone	6.23	43	210	0.1677 ug/L #	48
14) 1,1-Dichloroethene	6.48	61	5765	0.4214 ug/L	100
16) Dimethyl Sulfide	6.74	62	2612	0.3327 ug/L	95
18) Methyl acetate	7.01	43	1748	0.3691 ug/L #	64
19) Methylene Chloride	7.27	84	3457	0.4069 ug/L	90
20) Carbon Disulfide	7.31	76	12436	0.4482 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	6170	0.3831 ug/L #	75
23) trans-1,2-Dichloroethene	7.71	61	5061	0.3896 ug/L	87
24) n-Hexane	7.80	57	5793	0.4514 ug/L	92
26) Vinyl Acetate	8.30	43	3350	0.3936 ug/L #	77
27) 1,1-Dichloroethane	8.34	63	6510	0.3946 ug/L #	90
29) 2-Butanone	8.90	43	383	0.1775 ug/L #	57
31) 2,2-Dichloropropane	9.12	77	5308	0.3850 ug/L	93
32) cis-1,2-Dichloroethene	9.17	96	3581	0.3863 ug/L	92
33) Chloroform	9.37	83	6738	0.4300 ug/L	94
35) Bromochloromethane	9.61	130	1581	0.3465 ug/L	79
38) 1,1,1-Trichloroethane	9.91	97	5349	0.3802 ug/L	88
39) Cyclohexane	9.94	56	6694	0.3999 ug/L	97
40) 1,1-Dichloropropene	10.11	75	4735	0.3909 ug/L	98
42) Carbon Tetrachloride	10.26	117	4620	0.3675 ug/L	96
45) 1,2-Dichloroethane	10.43	62	3809	0.3539 ug/L	87
46) Benzene	10.47	78	14221	0.4279 ug/L	100
47) Trichloroethene	11.22	130	4002	0.4473 ug/L	91
48) Methylcyclohexane	11.31	83	5900	0.4262 ug/L	94
49) 1,2-Dichloropropane	11.43	63	3209	0.3584 ug/L	98
50) Bromodichloromethane	11.74	83	4465	0.3864 ug/L #	90
52) Dibromomethane	11.81	93	1530	0.3589 ug/L	88
53) 2-Chloroethyl Vinyl Ether	12.03	63	992	0.2688 ug/L #	53
54) 4-Methyl-2-Pentanone	12.06	58	712	0.3761 ug/L #	40
55) cis-1,3-Dichloropropene	12.37	75	4857	0.3786 ug/L	99
56) Dimethyl Disulfide	12.63	79	1384	0.2001 ug/L	64

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407748.D Vial: 4
Acq On : 30 Sep 2015 10:59 Operator: TMB
Sample : WG540912-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:02:56 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
59)	Toluene	12.79	91	15773	0.4465 ug/L		96
60)	Ethyl Methacrylate	12.89	69	2057	0.2921 ug/L	#	62
62)	trans-1,3-Dichloropropene	12.96	75	4017	0.3706 ug/L		93
63)	1,1,2-Trichloroethane	13.19	97	2143	0.3822 ug/L		95
64)	2-Hexanone	13.13	58	381	0.2161 ug/L	#	4
65)	1,3-Dichloropropane	13.49	76	4066	0.4058 ug/L		94
66)	Tetrachloroethene	13.60	164	2729	0.3634 ug/L		96
67)	Dibromochloromethane	13.87	129	2633	0.3632 ug/L		91
68)	1,2-Dibromoethane	14.13	107	2336	0.4173 ug/L		97
69)	1-Chlorohexane	14.21	91	5084	0.4022 ug/L		98
70)	Chlorobenzene	14.62	112	10137	0.4282 ug/L		92
71)	1,1,1,2-Tetrachloroethane	14.66	131	2637	0.3013 ug/L		89
72)	Ethylbenzene	14.66	106	5499	0.3988 ug/L		92
73)	m-,p-Xylene	14.75	106	12993	0.8216 ug/L		94
74)	o-Xylene	15.31	106	5938	0.3713 ug/L		82
75)	Styrene	15.35	104	9522	0.3758 ug/L		94
76)	Bromoform	15.84	173	1354	0.3107 ug/L	#	71
77)	Isopropylbenzene	15.73	105	16651	0.4341 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.94	83	2444	0.4041 ug/L	#	84
81)	1,2,3-Trichloropropane	16.14	110	444	0.2642 ug/L	#	34
82)	trans-1,4-Dichloro-2-Buten	16.18	53	458	0.2061 ug/L	#	1
83)	n-Propylbenzene	16.24	91	20209	0.4258 ug/L		97
84)	Bromobenzene	16.37	156	3499	0.3632 ug/L		77
85)	1,3,5-Trimethylbenzene	16.43	105	14131	0.4331 ug/L		95
86)	2-Chlorotoluene	16.52	91	13492	0.4292 ug/L		89
87)	4-Chlorotoluene	16.56	91	12070	0.4440 ug/L		99
88)	a-Methylstyrene	16.84	118	5722	0.3217 ug/L		89
89)	tert-Butylbenzene	16.90	134	2905	0.4047 ug/L		93
90)	1,2,4-Trimethylbenzene	16.95	105	13785	0.4181 ug/L		99
91)	sec-Butylbenzene	17.16	105	16834	0.4153 ug/L		95
92)	p-Isopropyltoluene	17.32	119	13597	0.4195 ug/L		98
93)	1,3-Dichlorobenzene	17.51	146	8047	0.4185 ug/L		97
94)	1,4-Dichlorobenzene	17.64	146	8517	0.4448 ug/L	#	72
95)	n-Butylbenzene	17.85	91	13596	0.4500 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	6772	0.4025 ug/L		98
98)	1,2,4-Trichlorobenzene	20.28	180	4122	0.3566 ug/L		82
99)	Hexachlorobutadiene	20.43	225	2196	0.3972 ug/L	#	81
100)	Naphthalene	20.64	128	7425	0.4443 ug/L		89
101)	1,2,3-Trichlorobenzene	20.95	180	3734	0.3788 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M407748.D 8260WT.M Thu Oct 01 09:02:56 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407748.D Vial: 4
Acq On : 30 Sep 2015 10:59 Operator: TMB
Sample : WG540912-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 1 9:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration

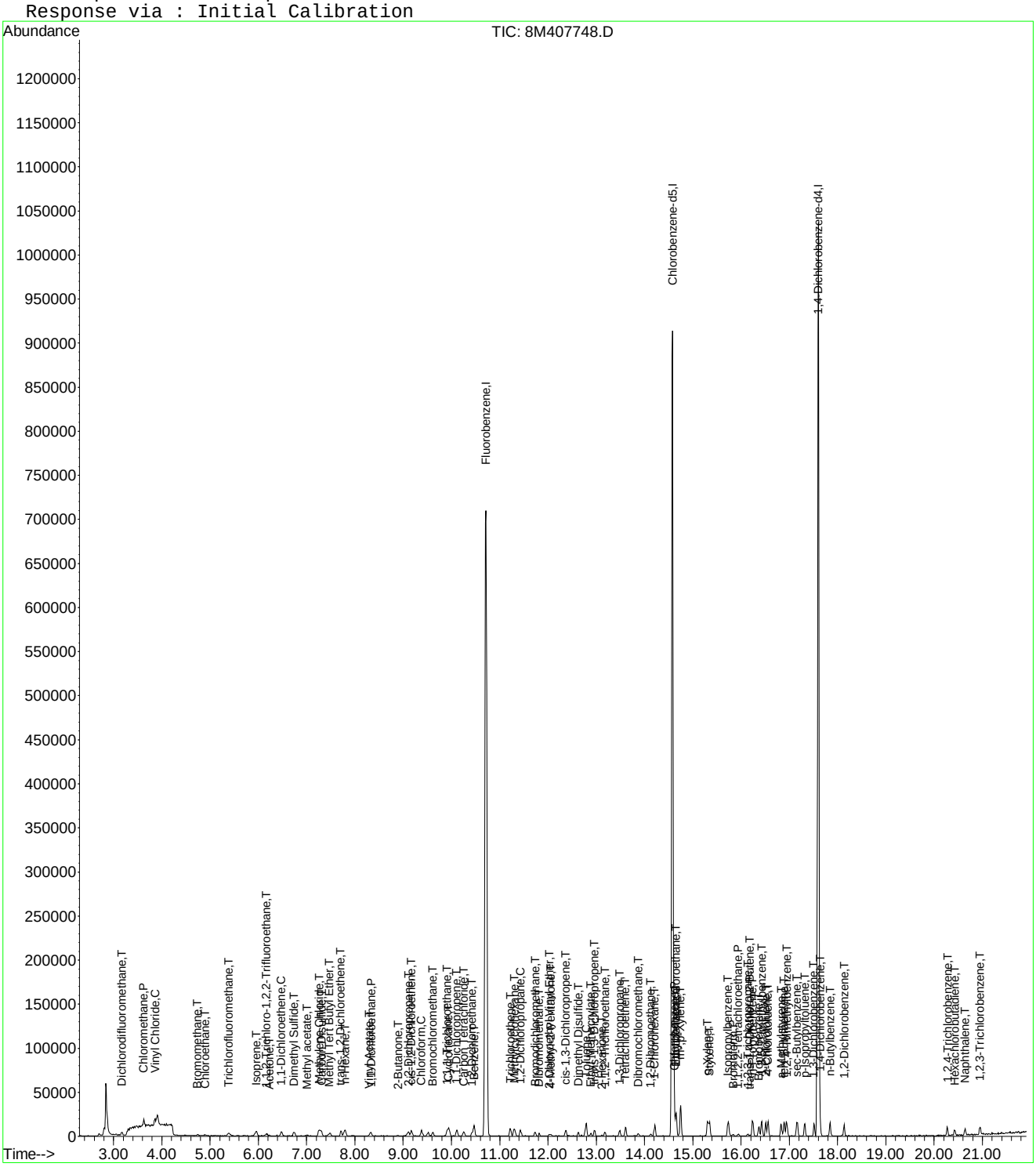

8M407748.D 8260WT.M Thu Oct 01 09:02:57 2015 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\093015\8M407748.D Vial: 4
Acq On : 30 Sep 2015 10:59 Operator: TMB
Sample : WG540912-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	0.4000	0.4002	-0.0	100	0.00
3	P	Chloromethane	-1.0000	0.5590	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.4775	-19.4	100	0.02
5	T	1,3-Butadiene	-1.0000	-1.0000	0.0	0	0.02
6	T	Bromomethane	-1.0000	0.9036	0.0	100	0.00
7	T	Chloroethane	0.4000	0.3053	23.7	100	0.00
8	T	Trichlorofluoromethane	0.4000	0.4081	-2.0	100	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.91#
10	T	Isoprene	0.4000	0.3645	8.9	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.15#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2922	0.0	100	0.00
13	T	Acetone	-1.0000	0.1677	0.0	100	-0.01
14	C	1,1-Dichloroethene	0.4000	0.4214	-5.3	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.59#
16	T	Dimethyl Sulfide	0.4000	0.3327	16.8	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.99#
18	T	Methyl acetate	-1.0000	0.3691	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4069	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4482	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.44#
22	T	Methyl Tert Butyl Ether	-1.0000	0.3831	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.3896	2.6	100	0.00
24	T	n-Hexane	-1.0000	0.4514	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.14#
26	T	Vinyl Acetate	0.4000	0.3936	1.6	100	0.00
27	P	1,1-Dichloroethane	0.4000	0.3946	1.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.1775	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.00#
31	T	2,2-Dichloropropane	0.4000	0.3850	3.8	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.3863	3.4	100	0.00
33	C	Chloroform	0.4000	0.4300	-7.5	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.52#
35	T	Bromochloromethane	0.4000	0.3465	13.4	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.0000	0.0	0	-9.64#
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	0.4000	0.3802	4.9	100	0.00
39	T	Cyclohexane	-1.0000	0.3999	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.3909	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.22#
42	T	Carbon Tetrachloride	0.4000	0.3675	8.1	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	0.4000	0.3539	11.5	100	0.00
46	T	Benzene	0.4000	0.4279	-7.0	100	0.00
47	T	Trichloroethene	0.4000	0.4473	-11.8	100	0.00
48	T	Methylcyclohexane	-1.0000	0.4262	0.0	100	0.00
49	C	1,2-Dichloropropane	0.4000	0.3584	10.4	100	0.00
50	T	Bromodichloromethane	0.4000	0.3864	3.4	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	0.4000	0.3589	10.3	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2688	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.3761	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\093015\8M407748.D Vial: 4
Acq On : 30 Sep 2015 10:59 Operator: TMB
Sample : WG540912-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3786	5.3	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2001	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0084	0.0	100	0.00
59	C	Toluene	0.4000	0.4465	-11.6	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2921	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3706	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.3822	4.5	100	0.00
64	T	2-Hexanone	-1.0000	0.2161	0.0	100	0.00
65	T	1,3-Dichloropropane	0.4000	0.4058	-1.4	100	0.00
66	T	Tetrachloroethene	0.4000	0.3634	9.2	100	0.00
67	T	Dibromochloromethane	0.4000	0.3632	9.2	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.4173	-4.3	100	0.00
69	T	1-Chlorohexane	0.4000	0.4022	-0.5	100	0.00
70	P	Chlorobenzene	0.4000	0.4282	-7.1	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3013	24.7	100	0.00
72	C	Ethylbenzene	0.4000	0.3988	0.3	100	0.00
73	T	m-,p-Xylene	0.8000	0.8216	-2.7	100	0.00
74	T	o-Xylene	-1.0000	0.3713	0.0	100	0.00
75	T	Styrene	0.4000	0.3758	6.0	100	0.00
76	P	Bromoform	-1.0000	0.3107	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.4341	-8.5	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.4041	-1.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0000	0.0	0	-16.08#
81	T	1,2,3-Trichloropropane	-1.0000	0.2642	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.2061	0.0	100	0.00
83	T	n-Propylbenzene	0.4000	0.4258	-6.5	100	0.00
84	T	Bromobenzene	0.4000	0.3632	9.2	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.4331	-8.3	100	0.00
86	T	2-Chlorotoluene	0.4000	0.4292	-7.3	100	0.00
87	T	4-Chlorotoluene	0.4000	0.4440	-11.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.3217	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.4047	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	0.4000	0.4181	-4.5	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.4153	0.0	0	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4195	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.4185	-4.6	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.4448	-11.2	100	0.00
95	T	n-Butylbenzene	-1.0000	0.4500	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.4025	-0.6	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	0.4000	0.3566	10.9	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.3972	0.7	100	0.00
100	T	Naphthalene	0.4000	0.4443	-11.1	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.3788	5.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M407748.D 8260WT.M Thu Oct 01 09:03:30 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407749.D Vial: 5
Acq On : 30 Sep 2015 11:32 Operator: TMB
Sample : WG540912-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:02:57 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	824629	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	595142	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	310452	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	3760	0.4791 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.92%#	
43) 1,2-Dichloroethane-d4	10.31	65	3739	0.4673 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	1.88%#	
58) Toluene-d8	12.69	98	14193	0.5140 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.04%#	
80) p-Bromofluorobenzene	16.08	95	5646	0.5212 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.08%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	12560	1.0019 ug/L	91
3) Chloromethane	3.63	50	22855	1.1947 ug/L	98
4) Vinyl Chloride	3.86	62	17167	1.1356 ug/L	98
5) 1,3-Butadiene	3.91	54	17031	Below Cal	87
6) Bromomethane	4.74	94	3443	1.3712 ug/L	94
7) Chloroethane	4.90	64	6509	1.0554 ug/L	95
8) Trichlorofluoromethane	5.37	101	15428	1.0559 ug/L	99
9) Diethyl ether	5.92	59	27834	4.9496 ug/L	94
10) Isoprene	5.95	67	10646	0.9925 ug/L	94
11) Acrolein	6.15	56	1375	1.9702 ug/L #	63
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	8094	1.0306 ug/L	87
13) Acetone	6.26	43	1007	0.8227 ug/L #	48
14) 1,1-Dichloroethene	6.47	61	14040	1.0502 ug/L	100
15) Tert-Butyl Alcohol	6.58	59	3663	10.1285 ug/L #	58
16) Dimethyl Sulfide	6.74	62	7699	1.0034 ug/L	94
17) Iodomethane	7.00	142	1516	2.1016 ug/L #	28
18) Methyl acetate	7.01	43	4667	1.0083 ug/L #	64
19) Methylene Chloride	7.27	84	8915	1.0737 ug/L	98
20) Carbon Disulfide	7.31	76	28782	1.0616 ug/L	96
21) Acrylonitrile	7.43	53	4083	2.2221 ug/L	96
22) Methyl Tert Butyl Ether	7.47	73	15039	0.9555 ug/L	96
23) trans-1,2-Dichloroethene	7.71	61	12677	0.9985 ug/L	89
24) n-Hexane	7.79	57	12774	1.0185 ug/L	90
25) Diisopropyl ether	8.13	45	163256	5.2163 ug/L	99
26) Vinyl Acetate	8.31	43	7588	0.9122 ug/L #	77
27) 1,1-Dichloroethane	8.33	63	16753	1.0391 ug/L	98
28) Ethyl-Tert-Butyl ether	8.71	59	123570	5.0127 ug/L	96
29) 2-Butanone	8.89	43	1526	0.7237 ug/L #	57
30) Propionitrile	9.00	54	2724	4.4026 ug/L #	56
31) 2,2-Dichloropropane	9.12	77	14447	1.0722 ug/L	97
32) cis-1,2-Dichloroethene	9.18	96	9612	1.0611 ug/L	96
33) Chloroform	9.38	83	15678	1.0237 ug/L	98
34) 1-Bromopropane	9.51	122	1192	0.8013 ug/L	86
35) Bromochloromethane	9.61	130	4709	1.0560 ug/L	97
36) Tetrahydrofuran	9.64	42	7663	5.5360 ug/L	91
38) 1,1,1-Trichloroethane	9.91	97	13556	0.9861 ug/L	98
39) Cyclohexane	9.94	56	16484	1.0077 ug/L	98
40) 1,1-Dichloropropene	10.11	75	12255	1.0354 ug/L	100
41) Tert-Amyl-Methyl ether	10.21	73	91204	4.9900 ug/L	98
42) Carbon Tetrachloride	10.25	117	12771	1.0395 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M407749.D 8260WT.M Thu Oct 01 09:02:57 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407749.D Vial: 5
Acq On : 30 Sep 2015 11:32 Operator: TMB
Sample : WG540912-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:02:57 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	10153	0.9654 ug/L		97
46)	Benzene	10.47	78	35220	1.0845 ug/L		97
47)	Trichloroethene	11.21	130	8672	0.9919 ug/L		96
48)	Methylcyclohexane	11.30	83	14046	1.0383 ug/L		95
49)	1,2-Dichloropropane	11.43	63	8870	1.0138 ug/L		99
50)	Bromodichloromethane	11.73	83	10676	0.9454 ug/L		94
52)	Dibromomethane	11.81	93	3913	0.9392 ug/L		94
53)	2-Chloroethyl Vinyl Ether	12.03	63	2929	0.8122 ug/L	#	53
54)	4-Methyl-2-Pentanone	12.07	58	1715	0.9270 ug/L	#	40
55)	cis-1,3-Dichloropropene	12.37	75	12248	0.9770 ug/L		96
56)	Dimethyl Disulfide	12.63	79	4694	0.6944 ug/L		86
59)	Toluene	12.79	91	37092	1.0968 ug/L		98
60)	Ethyl Methacrylate	12.89	69	5450	0.8083 ug/L		89
62)	trans-1,3-Dichloropropene	12.96	75	9101	0.8772 ug/L		89
63)	1,1,2-Trichloroethane	13.19	97	5067	0.9440 ug/L		92
64)	2-Hexanone	13.12	58	1227	0.7271 ug/L	#	74
65)	1,3-Dichloropropane	13.49	76	9904	1.0325 ug/L		97
66)	Tetrachloroethene	13.60	164	7979	1.1098 ug/L		91
67)	Dibromochloromethane	13.87	129	6283	0.9053 ug/L		98
68)	1,2-Dibromoethane	14.13	107	5024	0.9375 ug/L		94
69)	1-Chlorohexane	14.21	91	12607	1.0418 ug/L		100
70)	Chlorobenzene	14.62	112	23286	1.0276 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.66	131	7725	0.9220 ug/L		91
72)	Ethylbenzene	14.66	106	13047	0.9884 ug/L		100
73)	m-,p-Xylene	14.75	106	31986	2.1129 ug/L		94
74)	o-Xylene	15.31	106	16415	1.0723 ug/L		86
75)	Styrene	15.35	104	24064	0.9921 ug/L		99
76)	Bromoform	15.84	173	3394	0.8135 ug/L		88
77)	Isopropylbenzene	15.73	105	40727	1.1090 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	5352	0.9344 ug/L	#	90
81)	1,2,3-Trichloropropane	16.15	110	1453	0.9129 ug/L		87
82)	trans-1,4-Dichloro-2-Buten	16.18	53	2043	0.9706 ug/L	#	38
83)	n-Propylbenzene	16.24	91	50469	1.1228 ug/L		97
84)	Bromobenzene	16.37	156	9871	1.0818 ug/L		98
85)	1,3,5-Trimethylbenzene	16.43	105	34529	1.1173 ug/L		96
86)	2-Chlorotoluene	16.52	91	33677	1.1312 ug/L		96
87)	4-Chlorotoluene	16.56	91	29657	1.1519 ug/L		97
88)	a-Methylstyrene	16.83	118	15521	0.9213 ug/L		94
89)	tert-Butylbenzene	16.90	134	6877	1.0116 ug/L		92
90)	1,2,4-Trimethylbenzene	16.94	105	34007	1.0890 ug/L		99
91)	sec-Butylbenzene	17.16	105	42264	1.1009 ug/L		100
92)	p-Isopropyltoluene	17.32	119	33409	1.0885 ug/L		95
93)	1,3-Dichlorobenzene	17.51	146	19715	1.0825 ug/L		99
94)	1,4-Dichlorobenzene	17.64	146	19673	1.0848 ug/L	#	69
95)	n-Butylbenzene	17.85	91	31225	1.0913 ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	17412	1.0926 ug/L		95
97)	1,2-Dibromo-3-Chloropropan	19.13	75	677	0.6745 ug/L		68
98)	1,2,4-Trichlorobenzene	20.27	180	10656	0.9733 ug/L		97
99)	Hexachlorobutadiene	20.43	225	5105	0.9749 ug/L		88
100)	Naphthalene	20.64	128	16387	1.0353 ug/L		95
101)	1,2,3-Trichlorobenzene	20.95	180	9842	1.0542 ug/L		93

(#) = qualifier out of range (m) = manual integration
8M407749.D 8260WT.M Thu Oct 01 09:02:57 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407749.D Vial: 5
Acq On : 30 Sep 2015 11:32 Operator: TMB
Sample : WG540912-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 1 9:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration

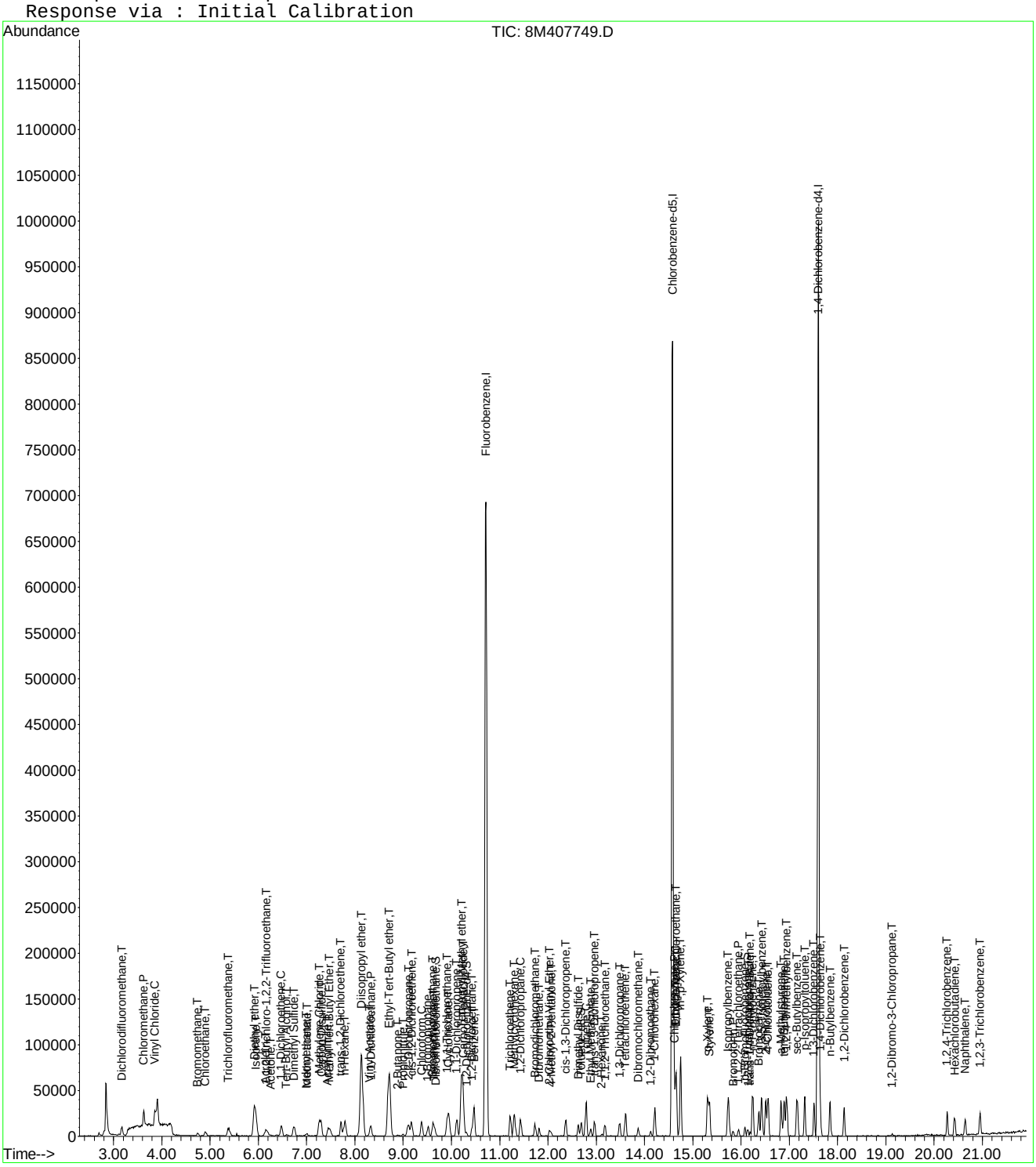

8M407749.D 8260WT.M Thu Oct 01 09:02:58 2015 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\093015\8M407749.D Vial: 5
Acq On : 30 Sep 2015 11:32 Operator: TMB
Sample : WG540912-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	1.0018	-0.2	100	0.00
3	P	Chloromethane	1.0000	1.1947	-19.5	100	0.00
4	C	Vinyl Chloride	1.0000	1.1356	-13.6	100	0.01
5	T	1,3-Butadiene	-1.0000	-1.0000	0.0	0	0.02
6	T	Bromomethane	1.0000	1.3712	-37.1#	100	0.00
7	T	Chloroethane	1.0000	1.0554	-5.5	100	0.00
8	T	Trichlorofluoromethane	1.0000	1.0559	-5.6	100	-0.01
9	T	Diethyl ether	5.0000	4.9496	1.0	100	0.00
10	T	Isoprene	1.0000	0.9925	0.8	100	0.00
11	T	Acrolein	-1.0000	1.9702	0.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0306	-3.1	100	0.00
13	T	Acetone	-1.0000	0.8227	0.0	100	0.02
14	C	1,1-Dichloroethene	1.0000	1.0502	-5.0	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	10.1285	0.0	100	0.00
16	T	Dimethyl Sulfide	1.0000	1.0034	-0.3	100	0.00
17	T	Iodomethane	-1.0000	2.1016	0.0	0	0.00
18	T	Methyl acetate	-1.0000	1.0083	0.0	100	0.00
19	T	Methylene Chloride	1.0000	1.0737	-7.4	100	0.00
20	T	Carbon Disulfide	1.0000	1.0616	-6.2	100	0.00
21	T	Acrylonitrile	2.5000	2.2221	11.1	100	-0.01
22	T	Methyl Tert Butyl Ether	1.0000	0.9555	4.5	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	0.9985	0.1	100	0.00
24	T	n-Hexane	-1.0000	1.0185	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	5.2163	-4.3	100	0.00
26	T	Vinyl Acetate	1.0000	0.9123	8.8	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0391	-3.9	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	5.0127	-0.3	100	0.00
29	T	2-Butanone	-1.0000	0.7237	0.0	100	0.00
30	T	Propionitrile	5.0000	4.4025	11.9	100	0.00
31	T	2,2-Dichloropropane	1.0000	1.0722	-7.2	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	1.0611	-6.1	100	0.00
33	C	Chloroform	1.0000	1.0237	-2.4	100	0.00
34		1-Bromopropane	1.0000	0.8013	19.9	100	-0.01
35	T	Bromochloromethane	1.0000	1.0560	-5.6	100	0.00
36	T	Tetrahydrofuran	5.0000	5.5360	-10.7	100	0.00
37	S	Dibromofluoromethane	0.5000	0.4791	4.2	100	0.00
38	T	1,1,1-Trichloroethane	1.0000	0.9861	1.4	100	0.00
39	T	Cyclohexane	1.0000	1.0077	-0.8	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0354	-3.5	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	4.9900	0.2	100	0.00
42	T	Carbon Tetrachloride	1.0000	1.0395	-3.9	100	0.00
43	S	1,2-Dichloroethane-d4	0.5000	0.4673	6.5	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	1.0000	0.9654	3.5	100	0.00
46	T	Benzene	1.0000	1.0845	-8.4	100	0.00
47	T	Trichloroethene	1.0000	0.9919	0.8	100	0.00
48	T	Methylcyclohexane	-1.0000	1.0383	0.0	100	0.00
49	C	1,2-Dichloropropane	1.0000	1.0138	-1.4	100	0.00
50	T	Bromodichloromethane	1.0000	0.9454	5.5	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	1.0000	0.9392	6.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.8122	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.9270	0.0	100	0.00

(#) = Out of Range
8M407749.D 8260WT.M Thu Oct 01 09:03:41 2015 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\093015\8M407749.D Vial: 5
Acq On : 30 Sep 2015 11:32 Operator: TMB
Sample : WG540912-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9770	2.3	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.6944	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	0.5000	0.5140	-2.8	100	0.00
59	C	Toluene	1.0000	1.0968	-9.7	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.8083	19.2	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	1.0000	0.8772	12.3	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.9440	5.6	100	0.00
64	T	2-Hexanone	-1.0000	0.7271	0.0	100	0.00
65	T	1,3-Dichloropropane	1.0000	1.0325	-3.2	100	0.00
66	T	Tetrachloroethene	1.0000	1.1099	-11.0	100	0.00
67	T	Dibromochloromethane	1.0000	0.9053	9.5	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.9375	6.3	100	0.00
69	T	1-Chlorohexane	1.0000	1.0418	-4.2	100	0.00
70	P	Chlorobenzene	1.0000	1.0276	-2.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.9220	7.8	100	0.00
72	C	Ethylbenzene	1.0000	0.9884	1.2	100	0.00
73	T	m-,p-Xylene	2.0000	2.1129	-5.6	100	0.00
74	T	o-Xylene	1.0000	1.0723	-7.2	100	0.00
75	T	Styrene	1.0000	0.9921	0.8	100	0.00
76	P	Bromoform	1.0000	0.8135	18.6	100	0.00
77	T	Isopropylbenzene	1.0000	1.1090	-10.9	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	0.9344	6.6	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5212	0.0	100	0.00
81	T	1,2,3-Trichloropropane	1.0000	0.9129	8.7	100	0.01
82	T	trans-1,4-Dichloro-2-Butene	1.0000	0.9707	2.9	100	0.00
83	T	n-Propylbenzene	1.0000	1.1228	-12.3	100	0.00
84	T	Bromobenzene	1.0000	1.0819	-8.2	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	1.1173	-11.7	100	0.00
86	T	2-Chlorotoluene	1.0000	1.1312	-13.1	100	0.00
87	T	4-Chlorotoluene	1.0000	1.1519	-15.2	100	0.00
88	T	a-Methylstyrene	-1.0000	0.9213	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	1.0116	-1.2	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	1.0890	-8.9	100	0.00
91	T	sec-Butylbenzene	1.0000	1.1009	-10.1	100	0.00
92	T	p-Isopropyltoluene	1.0000	1.0885	-8.8	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0825	-8.3	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	1.0848	-8.5	100	0.00
95	T	n-Butylbenzene	1.0000	1.0913	-9.1	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0926	-9.3	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.6745	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	1.0000	0.9733	2.7	100	0.00
99	T	Hexachlorobutadiene	1.0000	0.9749	2.5	100	0.00
100	T	Naphthalene	1.0000	1.0353	-3.5	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	1.0542	-5.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M407749.D 8260WT.M Thu Oct 01 09:03:41 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407750.D Vial: 6
Acq On : 30 Sep 2015 12:01 Operator: TMB
Sample : WG540912-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:02:58 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	857795	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	621989	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	331050	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	7870	0.9640 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.84%#	
43) 1,2-Dichloroethane-d4	10.31	65	8146	0.9786 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.92%#	
58) Toluene-d8	12.69	98	28719	0.9951 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.00%#	
80) p-Bromofluorobenzene	16.08	95	11108	0.9617 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	3.84%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	24621	1.8880 ug/L	100
3) Chloromethane	3.63	50	42586	2.1401 ug/L	97
4) Vinyl Chloride	3.85	62	31937	2.0310 ug/L	99
5) 1,3-Butadiene	3.91	54	30141	Below Cal	88
6) Bromomethane	4.74	94	6766	1.9768 ug/L	94
7) Chloroethane	4.91	64	12659	1.9733 ug/L	96
8) Trichlorofluoromethane	5.38	101	28876	1.9000 ug/L	97
9) Diethyl ether	5.92	59	144653	24.7287 ug/L	99
10) Isoprene	5.96	67	19444	1.7426 ug/L	93
11) Acrolein	6.16	56	8940	12.3146 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.18	101	15681	1.9194 ug/L	94
13) Acetone	6.26	43	2409	1.8921 ug/L #	64
14) 1,1-Dichloroethene	6.48	61	26153	1.8806 ug/L	99
15) Tert-Butyl Alcohol	6.59	59	18302	48.6497 ug/L	92
16) Dimethyl Sulfide	6.74	62	15350	1.9232 ug/L	95
17) Iodomethane	7.00	142	3232	2.4020 ug/L	84
18) Methyl acetate	7.02	43	9921	2.0606 ug/L #	85
19) Methylene Chloride	7.26	84	16259	1.8825 ug/L	97
20) Carbon Disulfide	7.31	76	54440	1.9303 ug/L	99
21) Acrylonitrile	7.44	53	21507	11.2525 ug/L	94
22) Methyl Tert Butyl Ether	7.48	73	29739	1.8164 ug/L	97
23) trans-1,2-Dichloroethene	7.72	61	24958	1.8898 ug/L	96
24) n-Hexane	7.79	57	24980	1.9147 ug/L	97
25) Diisopropyl ether	8.13	45	841489	25.8476 ug/L	99
26) Vinyl Acetate	8.31	43	16251	1.8782 ug/L	100
27) 1,1-Dichloroethane	8.34	63	33045	1.9704 ug/L	98
28) Ethyl-Tert-Butyl ether	8.71	59	646426	25.2090 ug/L	97
29) 2-Butanone	8.90	43	4029	1.8368 ug/L #	78
30) Propionitrile	9.00	54	16194	25.1609 ug/L	94
31) 2,2-Dichloropropane	9.11	77	26768	1.9098 ug/L	99
32) cis-1,2-Dichloroethene	9.18	96	18545	1.9681 ug/L	95
33) Chloroform	9.38	83	30928	1.9414 ug/L	97
34) 1-Bromopropane	9.52	122	3050	1.9711 ug/L	88
35) Bromochloromethane	9.62	130	8600	1.8540 ug/L	95
36) Tetrahydrofuran	9.64	42	35553	24.6915 ug/L	97
38) 1,1,1-Trichloroethane	9.91	97	26263	1.8366 ug/L	99
39) Cyclohexane	9.94	56	32415	1.9049 ug/L	94
40) 1,1-Dichloropropene	10.12	75	21975	1.7848 ug/L	99
41) Tert-Amyl-Methyl ether	10.22	73	473187	24.8880 ug/L	98
42) Carbon Tetrachloride	10.26	117	23450	1.8349 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M407750.D 8260WT.M Thu Oct 01 09:02:59 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407750.D Vial: 6
Acq On : 30 Sep 2015 12:01 Operator: TMB
Sample : WG540912-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:02:58 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	20835	1.9046 ug/L		100
46)	Benzene	10.47	78	69691	2.0629 ug/L		98
47)	Trichloroethene	11.22	130	17472	1.9211 ug/L		95
48)	Methylcyclohexane	11.31	83	26751	1.9010 ug/L		97
49)	1,2-Dichloropropane	11.43	63	17329	1.9040 ug/L		100
50)	Bromodichloromethane	11.73	83	21972	1.8704 ug/L		98
51)	1,4-Dioxane	11.73	88	1992	47.5413 ug/L		73
52)	Dibromomethane	11.81	93	8300	1.9152 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	6643	1.7709 ug/L		100
54)	4-Methyl-2-Pentanone	12.06	58	3171	1.6478 ug/L	#	76
55)	cis-1,3-Dichloropropene	12.37	75	24382	1.8697 ug/L		98
56)	Dimethyl Disulfide	12.63	79	9241	1.3142 ug/L		100
59)	Toluene	12.79	91	75292	2.1303 ug/L		97
60)	Ethyl Methacrylate	12.89	69	12345	1.7519 ug/L		94
62)	trans-1,3-Dichloropropene	12.96	75	19728	1.8194 ug/L		100
63)	1,1,2-Trichloroethane	13.19	97	11042	1.9683 ug/L		95
64)	2-Hexanone	13.12	58	3024	1.7146 ug/L	#	92
65)	1,3-Dichloropropane	13.49	76	19190	1.9142 ug/L		97
66)	Tetrachloroethene	13.61	164	14596	1.9426 ug/L		96
67)	Dibromochloromethane	13.87	129	13023	1.7955 ug/L		100
68)	1,2-Dibromoethane	14.13	107	10033	1.7914 ug/L		93
69)	1-Chlorohexane	14.21	91	24696	1.9527 ug/L		99
70)	Chlorobenzene	14.63	112	47264	1.9957 ug/L		81
71)	1,1,1,2-Tetrachloroethane	14.66	131	16097	1.8383 ug/L		99
72)	Ethylbenzene	14.65	106	25517	1.8496 ug/L		99
73)	m-,p-Xylene	14.75	106	64368	4.0684 ug/L		99
74)	o-Xylene	15.30	106	30646	1.9155 ug/L		99
75)	Styrene	15.35	104	48909	1.9294 ug/L		99
76)	Bromoform	15.84	173	7198	1.6508 ug/L		99
77)	Isopropylbenzene	15.73	105	79109	2.0612 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	11848	1.9398 ug/L	#	95
81)	1,2,3-Trichloropropane	16.13	110	3207	1.8896 ug/L		68
82)	trans-1,4-Dichloro-2-Buten	16.18	53	3210	1.4302 ug/L	#	22
83)	n-Propylbenzene	16.24	91	96558	2.0145 ug/L		99
84)	Bromobenzene	16.37	156	19644	2.0190 ug/L		97
85)	1,3,5-Trimethylbenzene	16.42	105	67207	2.0394 ug/L		95
86)	2-Chlorotoluene	16.51	91	64870	2.0434 ug/L		98
87)	4-Chlorotoluene	16.56	91	58369	2.1259 ug/L		98
88)	a-Methylstyrene	16.83	118	31799	1.7701 ug/L		97
89)	tert-Butylbenzene	16.90	134	13942	1.9232 ug/L		92
90)	1,2,4-Trimethylbenzene	16.95	105	68650	2.0616 ug/L		98
91)	sec-Butylbenzene	17.17	105	82325	2.0111 ug/L		98
92)	p-Isopropyltoluene	17.32	119	68961	2.1070 ug/L		100
93)	1,3-Dichlorobenzene	17.51	146	37945	1.9539 ug/L		98
94)	1,4-Dichlorobenzene	17.64	146	37796	1.9544 ug/L		82
95)	n-Butylbenzene	17.85	91	60131	1.9708 ug/L		100
96)	1,2-Dichlorobenzene	18.14	146	34109	2.0073 ug/L		100
97)	1,2-Dibromo-3-Chloropropan	19.14	75	1806	1.6873 ug/L		98
98)	1,2,4-Trichlorobenzene	20.28	180	22341	1.9136 ug/L		97
99)	Hexachlorobutadiene	20.42	225	11201	2.0059 ug/L		99
100)	Naphthalene	20.64	128	34803	2.0620 ug/L		98
101)	1,2,3-Trichlorobenzene	20.95	180	19034	1.9119 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M407750.D 8260WT.M Thu Oct 01 09:02:59 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407750.D Vial: 6
Acq On : 30 Sep 2015 12:01 Operator: TMB
Sample : WG540912-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 1 9:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration

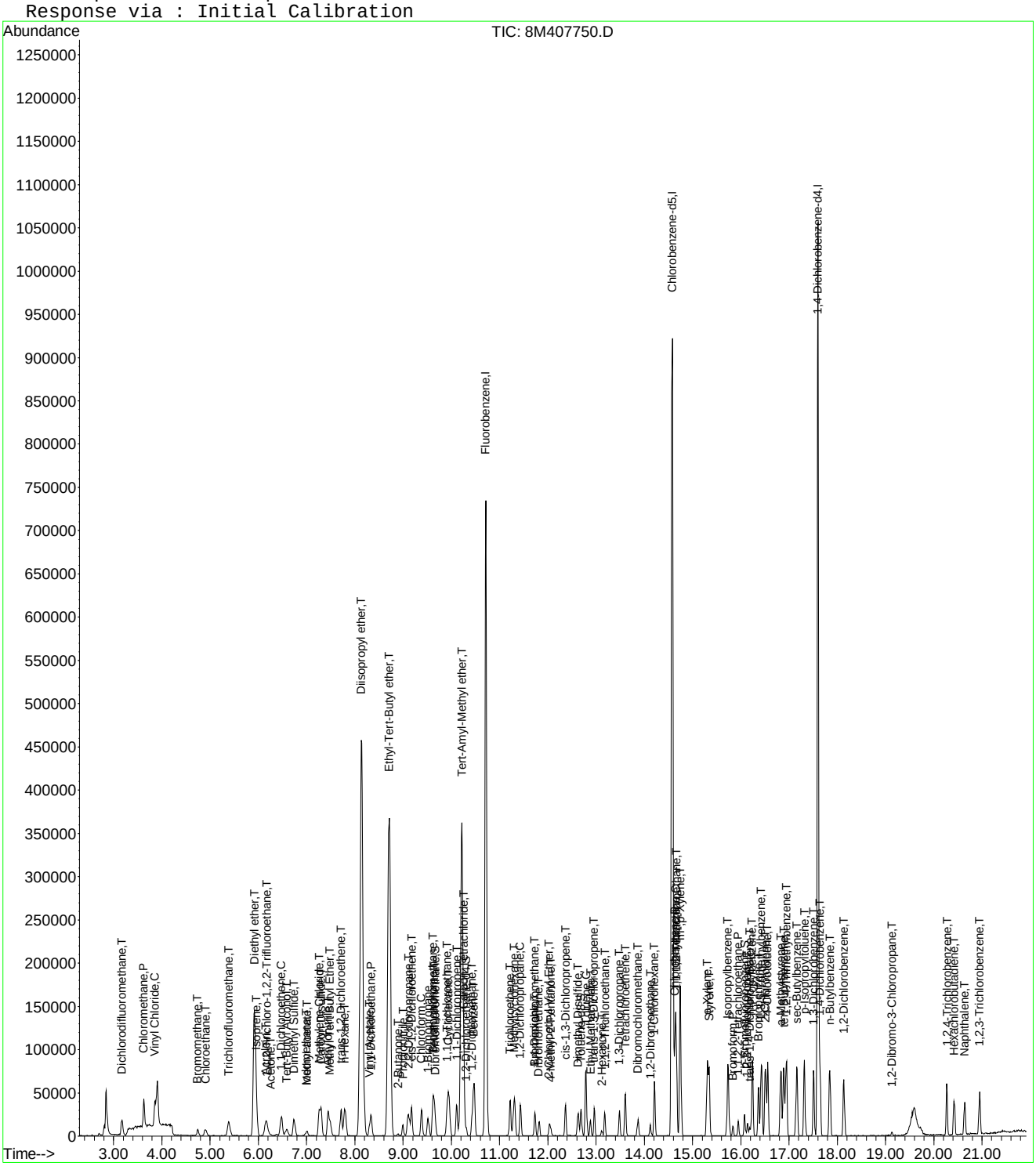

8M407750.D 8260WT.M Thu Oct 01 09:02:59 2015 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\093015\8M407750.D Vial: 6
Acq On : 30 Sep 2015 12:01 Operator: TMB
Sample : WG540912-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.8880	5.6	100	0.00
3	P	Chloromethane	2.0000	2.1401	-7.0	100	0.00
4	C	Vinyl Chloride	2.0000	2.0310	-1.5	100	0.00
5	T	1,3-Butadiene	-1.0000	-1.0000	0.0	0	0.02
6	T	Bromomethane	2.0000	1.9768	1.2	100	0.00
7	T	Chloroethane	2.0000	1.9733	1.3	100	0.00
8	T	Trichlorofluoromethane	2.0000	1.9000	5.0	100	0.00
9	T	Diethyl ether	25.0000	24.7287	1.1	100	0.00
10	T	Isoprene	2.0000	1.7426	12.9	100	0.00
11	T	Acrolein	12.5000	12.3146	1.5	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.9194	4.0	100	0.02
13	T	Acetone	-1.0000	1.8921	0.0	100	0.02
14	C	1,1-Dichloroethene	2.0000	1.8806	6.0	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	48.6497	2.7	100	0.00
16	T	Dimethyl Sulfide	2.0000	1.9232	3.8	100	0.00
17	T	Iodomethane	2.0000	2.4020	-20.1	100	0.00
18	T	Methyl acetate	-1.0000	2.0606	0.0	100	0.00
19	T	Methylene Chloride	2.0000	1.8825	5.9	100	0.00
20	T	Carbon Disulfide	2.0000	1.9303	3.5	100	0.00
21	T	Acrylonitrile	12.5000	11.2525	10.0	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.8163	9.2	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.8898	5.5	100	0.00
24	T	n-Hexane	-1.0000	1.9147	0.0	100	0.00
25	T	Diisopropyl ether	25.0000	25.8476	-3.4	100	0.00
26	T	Vinyl Acetate	2.0000	1.8782	6.1	100	0.00
27	P	1,1-Dichloroethane	2.0000	1.9704	1.5	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	25.2090	-0.8	100	0.00
29	T	2-Butanone	-1.0000	1.8368	0.0	100	0.00
30	T	Propionitrile	25.0000	25.1609	-0.6	100	0.00
31	T	2,2-Dichloropropane	2.0000	1.9099	4.5	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	1.9681	1.6	100	0.00
33	C	Chloroform	2.0000	1.9414	2.9	100	0.00
34		1-Bromopropane	2.0000	1.9711	1.4	100	0.00
35	T	Bromochloromethane	2.0000	1.8540	7.3	100	0.00
36	T	Tetrahydrofuran	25.0000	24.6915	1.2	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9640	3.6	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.8366	8.2	100	0.00
39	T	Cyclohexane	2.0000	1.9049	4.8	100	0.00
40	T	1,1-Dichloropropene	2.0000	1.7848	10.8	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	24.8880	0.4	100	0.00
42	T	Carbon Tetrachloride	2.0000	1.8349	8.3	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	0.9786	2.1	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	2.0000	1.9046	4.8	100	0.00
46	T	Benzene	2.0000	2.0629	-3.1	100	0.00
47	T	Trichloroethene	2.0000	1.9211	3.9	100	0.00
48	T	Methylcyclohexane	-1.0000	1.9010	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	1.9041	4.8	100	0.00
50	T	Bromodichloromethane	2.0000	1.8704	6.5	100	0.00
51	T	1,4-Dioxane	-1.0000	47.5413	0.0	100	0.01
52	T	Dibromomethane	2.0000	1.9152	4.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	1.7709	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.6478	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\093015\8M407750.D Vial: 6
Acq On : 30 Sep 2015 12:01 Operator: TMB
Sample : WG540912-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.8697	6.5	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.3142	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	0.9951	0.5	100	0.00
59	C	Toluene	2.0000	2.1303	-6.5	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.7519	12.4	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	2.0000	1.8194	9.0	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.9683	1.6	100	0.00
64	T	2-Hexanone	-1.0000	1.7146	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	1.9142	4.3	100	0.00
66	T	Tetrachloroethene	2.0000	1.9426	2.9	100	0.00
67	T	Dibromochloromethane	2.0000	1.7955	10.2	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.7914	10.4	100	0.00
69	T	1-Chlorohexane	2.0000	1.9527	2.4	100	0.00
70	P	Chlorobenzene	2.0000	1.9957	0.2	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.8383	8.1	100	0.00
72	C	Ethylbenzene	2.0000	1.8496	7.5	100	0.00
73	T	m-,p-Xylene	4.0000	4.0685	-1.7	100	0.00
74	T	o-Xylene	2.0000	1.9155	4.2	100	0.00
75	T	Styrene	2.0000	1.9294	3.5	100	0.00
76	P	Bromoform	2.0000	1.6508	17.5	100	0.00
77	T	Isopropylbenzene	2.0000	2.0612	-3.1	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	1.9399	3.0	100	0.00
80	S	p-Bromofluorobenzene	1.0000	0.9617	3.8	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	1.8896	5.5	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	1.4302	28.5#	100	0.00
83	T	n-Propylbenzene	2.0000	2.0145	-0.7	100	0.00
84	T	Bromobenzene	2.0000	2.0190	-1.0	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.0394	-2.0	100	0.00
86	T	2-Chlorotoluene	2.0000	2.0434	-2.2	100	0.00
87	T	4-Chlorotoluene	2.0000	2.1260	-6.3	100	0.00
88	T	a-Methylstyrene	-1.0000	1.7701	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	1.9232	3.8	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.0616	-3.1	100	0.00
91	T	sec-Butylbenzene	2.0000	2.0111	-0.6	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.1070	-5.3	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	1.9539	2.3	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	1.9544	2.3	100	0.00
95	T	n-Butylbenzene	2.0000	1.9708	1.5	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0073	-0.4	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.6873	15.6	100	0.01
98	T	1,2,4-Trichlorobenzene	2.0000	1.9137	4.3	100	0.00
99	T	Hexachlorobutadiene	2.0000	2.0059	-0.3	100	0.00
100	T	Naphthalene	2.0000	2.0620	-3.1	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9119	4.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M407750.D 8260WT.M Thu Oct 01 09:03:51 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407751.D Vial: 7
Acq On : 30 Sep 2015 12:29 Operator: TMB
Sample : WG540912-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:02:59 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	888090	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	648250	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	345626	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.68	111	20923	2.4754 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	9.92%#	
43) 1,2-Dichloroethane-d4	10.31	65	20861	2.4207 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	9.68%#	
58) Toluene-d8	12.69	98	74103	2.4637 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	9.84%#	
80) p-Bromofluorobenzene	16.08	95	29759	2.4677 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	9.88%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.18	85	61437	4.5504 ug/L	99
3) Chloromethane	3.62	50	104260	5.0607 ug/L	99
4) Vinyl Chloride	3.85	62	81501	5.0061 ug/L	99
5) 1,3-Butadiene	3.90	54	73714	3.6389 ug/L	95
6) Bromomethane	4.75	94	17849	3.9647 ug/L	99
7) Chloroethane	4.90	64	33514	5.0459 ug/L	97
8) Trichlorofluoromethane	5.39	101	77150	4.9031 ug/L	97
9) Diethyl ether	5.91	59	300564	49.6291 ug/L	100
10) Isoprene	5.96	67	53581	4.6382 ug/L	98
11) Acrolein	6.15	56	18363	24.4317 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	41910	4.9550 ug/L	97
13) Acetone	6.24	43	6790	5.1511 ug/L	97
14) 1,1-Dichloroethene	6.48	61	70653	4.9071 ug/L	98
15) Tert-Butyl Alcohol	6.59	59	39888	102.4118 ug/L	97
16) Dimethyl Sulfide	6.74	62	39764	4.8120 ug/L	98
17) Iodomethane	6.99	142	14332	4.3281 ug/L	92
18) Methyl acetate	7.01	43	26384	5.2931 ug/L	89
19) Methylene Chloride	7.26	84	43891	4.9083 ug/L	98
20) Carbon Disulfide	7.30	76	142074	4.8658 ug/L	100
21) Acrylonitrile	7.44	53	46132	23.3129 ug/L	95
22) Methyl Tert Butyl Ether	7.48	73	85068	5.0184 ug/L	96
23) trans-1,2-Dichloroethene	7.71	61	67170	4.9126 ug/L	98
24) n-Hexane	7.79	57	65873	4.8769 ug/L	97
25) Diisopropyl ether	8.14	45	1713583	50.8397 ug/L	99
26) Vinyl Acetate	8.30	43	46988	5.2454 ug/L	94
27) 1,1-Dichloroethane	8.33	63	86979	5.0094 ug/L	99
28) Ethyl-Tert-Butyl ether	8.71	59	1342420	50.5651 ug/L	97
29) 2-Butanone	8.90	43	10887	4.7939 ug/L	94
30) Propionitrile	8.99	54	33524	50.3101 ug/L	100
31) 2,2-Dichloropropane	9.11	77	70912	4.8868 ug/L	98
32) cis-1,2-Dichloroethene	9.18	96	48210	4.9417 ug/L	98
33) Chloroform	9.39	83	82654	5.0114 ug/L	100
34) 1-Bromopropane	9.52	122	8041	5.0194 ug/L	98
35) Bromochloromethane	9.61	130	24188	5.0366 ug/L	100
36) Tetrahydrofuran	9.63	42	73084	49.0254 ug/L	96
38) 1,1,1-Trichloroethane	9.91	97	73396	4.9576 ug/L	97
39) Cyclohexane	9.94	56	83438	4.7361 ug/L	98
40) 1,1-Dichloropropene	10.11	75	62637	4.9139 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	983884	49.9837 ug/L	99
42) Carbon Tetrachloride	10.25	117	62444	4.7194 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M407751.D 8260WT.M Thu Oct 01 09:03:00 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407751.D Vial: 7
Acq On : 30 Sep 2015 12:29 Operator: TMB
Sample : WG540912-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:02:59 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	56848	5.0193 ug/L		98
46)	Benzene	10.47	78	179728	5.1385 ug/L		99
47)	Trichloroethene	11.22	130	44015	4.6746 ug/L		94
48)	Methylcyclohexane	11.31	83	71852	4.9318 ug/L		97
49)	1,2-Dichloropropane	11.43	63	47121	5.0009 ug/L		94
50)	Bromodichloromethane	11.73	83	58514	4.8112 ug/L		100
51)	1,4-Dioxane	11.72	88	3839	88.4965 ug/L		92
52)	Dibromomethane	11.82	93	23054	5.1382 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	17693	4.5557 ug/L		96
54)	4-Methyl-2-Pentanone	12.06	58	9027	4.5309 ug/L		94
55)	cis-1,3-Dichloropropene	12.36	75	64722	4.7938 ug/L		99
56)	Dimethyl Disulfide	12.63	79	28062	3.8546 ug/L		100
59)	Toluene	12.79	91	189538	5.1455 ug/L		99
60)	Ethyl Methacrylate	12.88	69	35620	4.8502 ug/L		96
62)	trans-1,3-Dichloropropene	12.96	75	55720	4.9306 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	30150	5.1568 ug/L		98
64)	2-Hexanone	13.12	58	8027	4.3668 ug/L	#	80
65)	1,3-Dichloropropane	13.49	76	51742	4.9522 ug/L		96
66)	Tetrachloroethene	13.60	164	38521	4.9192 ug/L		98
67)	Dibromochloromethane	13.87	129	36922	4.8844 ug/L		98
68)	1,2-Dibromoethane	14.12	107	29112	4.9874 ug/L		100
69)	1-Chlorohexane	14.21	91	64380	4.8843 ug/L		97
70)	Chlorobenzene	14.63	112	122342	4.9567 ug/L		94
71)	1,1,1,2-Tetrachloroethane	14.66	131	43922	4.8127 ug/L		95
72)	Ethylbenzene	14.66	106	67237	4.6762 ug/L		100
73)	m-,p-Xylene	14.75	106	170940	10.3667 ug/L		99
74)	o-Xylene	15.31	106	78832	4.7276 ug/L		98
75)	Styrene	15.35	104	139834	5.2929 ug/L		98
76)	Bromoform	15.84	173	21291	4.6852 ug/L		96
77)	Isopropylbenzene	15.73	105	206201	5.1551 ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	33322	5.2257 ug/L		100
81)	1,2,3-Trichloropropane	16.14	110	8869	5.0053 ug/L		63
82)	trans-1,4-Dichloro-2-Buten	16.19	53	10961	4.6777 ug/L	#	1
83)	n-Propylbenzene	16.24	91	264651	5.2887 ug/L		97
84)	Bromobenzene	16.37	156	50669	4.9881 ug/L		97
85)	1,3,5-Trimethylbenzene	16.42	105	180896	5.2579 ug/L		99
86)	2-Chlorotoluene	16.51	91	181035	5.4620 ug/L		100
87)	4-Chlorotoluene	16.56	91	143482	5.0056 ug/L		100
88)	a-Methylstyrene	16.83	118	90467	4.8234 ug/L		99
89)	tert-Butylbenzene	16.89	134	36404	4.8098 ug/L		95
90)	1,2,4-Trimethylbenzene	16.94	105	186780	5.3725 ug/L		95
91)	sec-Butylbenzene	17.16	105	221368	5.1796 ug/L		99
92)	p-Isopropyltoluene	17.32	119	181903	5.3233 ug/L		97
93)	1,3-Dichlorobenzene	17.51	146	104992	5.1783 ug/L		99
94)	1,4-Dichlorobenzene	17.64	146	104006	5.1513 ug/L		96
95)	n-Butylbenzene	17.84	91	169482	5.3206 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	91565	5.1612 ug/L		100
97)	1,2-Dibromo-3-Chloropropan	19.13	75	5183	4.6382 ug/L		92
98)	1,2,4-Trichlorobenzene	20.27	180	62214	5.1043 ug/L		98
99)	Hexachlorobutadiene	20.42	225	29150	5.0001 ug/L		99
100)	Naphthalene	20.64	128	89499	5.0789 ug/L		97
101)	1,2,3-Trichlorobenzene	20.95	180	52799	5.0798 ug/L		95

(#) = qualifier out of range (m) = manual integration
8M407751.D 8260WT.M Thu Oct 01 09:03:00 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407751.D Vial: 7
Acq On : 30 Sep 2015 12:29 Operator: TMB
Sample : WG540912-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 1 9:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration

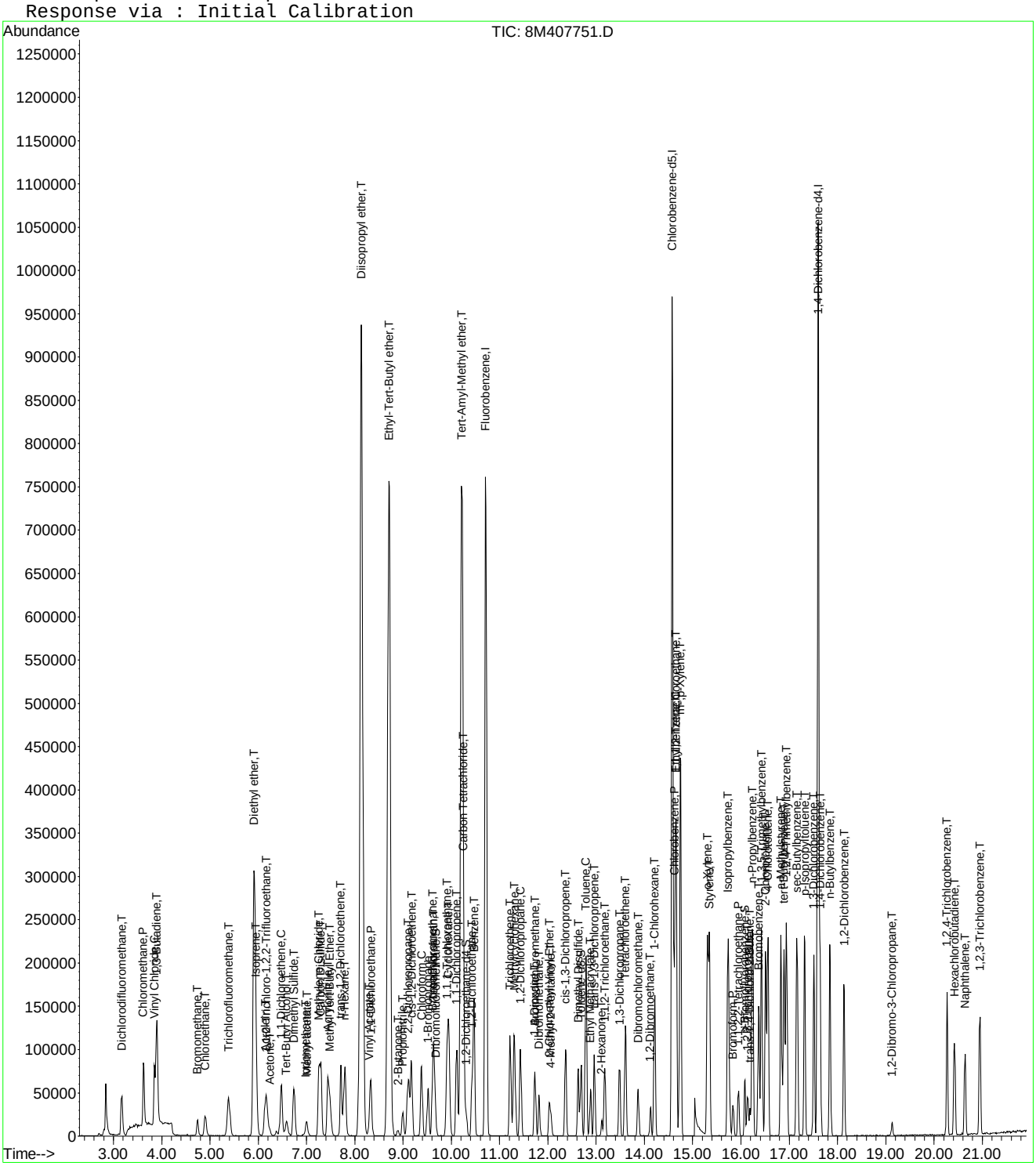

8M407751.D 8260WT.M Thu Oct 01 09:03:00 2015 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\093015\8M407751.D Vial: 7
Acq On : 30 Sep 2015 12:29 Operator: TMB
Sample : WG540912-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.5503	9.0	100	0.00
3	P	Chloromethane	5.0000	5.0607	-1.2	100	0.00
4	C	Vinyl Chloride	5.0000	5.0061	-0.1	100	0.00
5	T	1,3-Butadiene	5.0000	3.6389	27.2#	100	0.01
6	T	Bromomethane	5.0000	3.9647	20.7	100	0.01
7	T	Chloroethane	5.0000	5.0459	-0.9	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.9031	1.9	100	0.00
9	T	Diethyl ether	50.0000	49.6291	0.7	100	0.00
10	T	Isoprene	5.0000	4.6382	7.2	100	0.00
11	T	Acrolein	25.0000	24.4317	2.3	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.9550	0.9	100	0.01
13	T	Acetone	5.0000	5.1511	-3.0	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.9071	1.9	100	0.01
15	T	Tert-Butyl Alcohol	100.0000	102.4118	-2.4	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.8120	3.8	100	0.00
17	T	Iodomethane	5.0000	4.3281	13.4	100	0.00
18	T	Methyl acetate	5.0000	5.2931	-5.9	100	0.00
19	T	Methylene Chloride	5.0000	4.9083	1.8	100	0.00
20	T	Carbon Disulfide	5.0000	4.8658	2.7	100	0.00
21	T	Acrylonitrile	25.0000	23.3129	6.7	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	5.0184	-0.4	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.9126	1.7	100	0.00
24	T	n-Hexane	5.0000	4.8769	2.5	100	0.00
25	T	Diisopropyl ether	50.0000	50.8397	-1.7	100	0.00
26	T	Vinyl Acetate	5.0000	5.2454	-4.9	100	0.00
27	P	1,1-Dichloroethane	5.0000	5.0094	-0.2	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	50.5651	-1.1	100	0.00
29	T	2-Butanone	5.0000	4.7939	4.1	100	0.00
30	T	Propionitrile	50.0000	50.3101	-0.6	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.8868	2.3	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.9417	1.2	100	0.00
33	C	Chloroform	5.0000	5.0114	-0.2	100	0.00
34		1-Bromopropane	5.0000	5.0194	-0.4	100	0.00
35	T	Bromochloromethane	5.0000	5.0366	-0.7	100	0.00
36	T	Tetrahydrofuran	50.0000	49.0254	1.9	100	0.00
37	S	Dibromofluoromethane	2.5000	2.4754	1.0	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.9576	0.8	100	0.00
39	T	Cyclohexane	5.0000	4.7361	5.3	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.9139	1.7	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	49.9837	0.0	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.7194	5.6	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.4207	3.2	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	5.0000	5.0193	-0.4	100	0.00
46	T	Benzene	5.0000	5.1385	-2.8	100	0.00
47	T	Trichloroethene	5.0000	4.6746	6.5	100	0.00
48	T	Methylcyclohexane	5.0000	4.9318	1.4	100	0.00
49	C	1,2-Dichloropropane	5.0000	5.0009	-0.0	100	0.00
50	T	Bromodichloromethane	5.0000	4.8112	3.8	100	0.00
51	T	1,4-Dioxane	100.0000	88.4965	11.5	100	0.00
52	T	Dibromomethane	5.0000	5.1382	-2.8	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.5557	8.9	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.5309	9.4	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\093015\8M407751.D Vial: 7
Acq On : 30 Sep 2015 12:29 Operator: TMB
Sample : WG540912-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.7938	4.1	100	0.00
56	T	Dimethyl Disulfide	5.0000	3.8546	22.9	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.4637	1.5	100	0.00
59	C	Toluene	5.0000	5.1455	-2.9	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.8502	3.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	5.0000	4.9306	1.4	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	5.1568	-3.1	100	0.00
64	T	2-Hexanone	5.0000	4.3668	12.7	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.9522	1.0	100	0.00
66	T	Tetrachloroethene	5.0000	4.9192	1.6	100	0.00
67	T	Dibromochloromethane	5.0000	4.8844	2.3	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.9874	0.3	100	0.00
69	T	1-Chlorohexane	5.0000	4.8843	2.3	100	0.00
70	P	Chlorobenzene	5.0000	4.9566	0.9	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.8127	3.7	100	0.00
72	C	Ethylbenzene	5.0000	4.6762	6.5	100	0.00
73	T	m-,p-Xylene	10.0000	10.3668	-3.7	100	0.00
74	T	o-Xylene	5.0000	4.7276	5.4	100	0.00
75	T	Styrene	5.0000	5.2929	-5.9	100	0.00
76	P	Bromoform	5.0000	4.6852	6.3	100	0.00
77	T	Isopropylbenzene	5.0000	5.1551	-3.1	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	5.2257	-4.5	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.4677	1.3	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.0053	-0.1	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.6777	6.4	100	0.00
83	T	n-Propylbenzene	5.0000	5.2887	-5.8	100	0.00
84	T	Bromobenzene	5.0000	4.9881	0.2	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	5.2579	-5.2	100	0.00
86	T	2-Chlorotoluene	5.0000	5.4620	-9.2	100	0.00
87	T	4-Chlorotoluene	5.0000	5.0056	-0.1	100	0.00
88	T	a-Methylstyrene	5.0000	4.8234	3.5	100	0.00
89	T	tert-Butylbenzene	5.0000	4.8098	3.8	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.3725	-7.4	100	0.00
91	T	sec-Butylbenzene	5.0000	5.1796	-3.6	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.3233	-6.5	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	5.1783	-3.6	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	5.1513	-3.0	100	0.00
95	T	n-Butylbenzene	5.0000	5.3206	-6.4	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	5.1612	-3.2	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	4.6382	7.2	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	5.1043	-2.1	100	0.00
99	T	Hexachlorobutadiene	5.0000	5.0001	-0.0	100	0.00
100	T	Naphthalene	5.0000	5.0789	-1.6	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	5.0798	-1.6	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M407751.D 8260WT.M Thu Oct 01 09:04:04 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407752.D Vial: 8
Acq On : 30 Sep 2015 12:58 Operator: TMB
Sample : WG540912-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:03:00 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	900838	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	664231	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	361897	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	87806	10.2414 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 40.96%#		
43) 1,2-Dichloroethane-d4	10.30	65	90496	10.3525 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 41.40%#		
58) Toluene-d8	12.69	98	320320	10.3936 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 41.56%#		
80) p-Bromofluorobenzene	16.08	95	129852	10.2836 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 41.12%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	307188	22.4300 ug/L	99
3) Chloromethane	3.63	50	446213	21.3523 ug/L	99
4) Vinyl Chloride	3.86	62	351710	21.2978 ug/L	98
5) 1,3-Butadiene	3.90	54	312471	26.3405 ug/L	96
6) Bromomethane	4.74	94	92181	17.1959 ug/L	100
7) Chloroethane	4.90	64	145908	21.6572 ug/L	98
8) Trichlorofluoromethane	5.39	101	327782	20.5367 ug/L	97
9) Diethyl ether	5.91	59	471725	76.7890 ug/L	99
10) Isoprene	5.95	67	245212	20.9264 ug/L	96
11) Acrolein	6.15	56	28707	37.6537 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	175903	20.5024 ug/L	100
13) Acetone	6.24	43	26318	19.6832 ug/L	99
14) 1,1-Dichloroethene	6.48	61	293960	20.1277 ug/L	100
15) Tert-Butyl Alcohol	6.58	59	64085	162.2088 ug/L	99
16) Dimethyl Sulfide	6.74	62	171747	20.4896 ug/L	98
17) Iodomethane	6.99	142	91383	17.6102 ug/L	97
18) Methyl acetate	7.01	43	99926	19.7631 ug/L	96
19) Methylene Chloride	7.27	84	185506	20.4515 ug/L	98
20) Carbon Disulfide	7.30	76	617002	20.8324 ug/L	99
21) Acrylonitrile	7.44	53	77746	38.7331 ug/L	98
22) Methyl Tert Butyl Ether	7.48	73	349527	20.3278 ug/L	99
23) trans-1,2-Dichloroethene	7.71	61	284568	20.5178 ug/L	100
24) n-Hexane	7.79	57	277423	20.2485 ug/L	95
25) Diisopropyl ether	8.13	45	2727543	79.7774 ug/L	99
26) Vinyl Acetate	8.30	43	188420	20.7360 ug/L	99
27) 1,1-Dichloroethane	8.33	63	358235	20.3401 ug/L	98
28) Ethyl-Tert-Butyl ether	8.71	59	2135457	79.2983 ug/L	97
29) 2-Butanone	8.89	43	45574	19.7838 ug/L	99
30) Propionitrile	8.99	54	55835	82.6068 ug/L	99
31) 2,2-Dichloropropane	9.11	77	303356	20.6097 ug/L	100
32) cis-1,2-Dichloroethene	9.18	96	200218	20.2328 ug/L	99
33) Chloroform	9.38	83	343682	20.5429 ug/L	100
34) 1-Bromopropane	9.52	122	34243	21.0727 ug/L	96
35) Bromochloromethane	9.61	130	99523	20.4300 ug/L	98
36) Tetrahydrofuran	9.63	42	116173	76.8270 ug/L	97
38) 1,1,1-Trichloroethane	9.92	97	311675	20.7543 ug/L	99
39) Cyclohexane	9.94	56	363746	20.3546 ug/L	99
40) 1,1-Dichloropropene	10.11	75	271014	20.9603 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1584402	79.3524 ug/L	99
42) Carbon Tetrachloride	10.25	117	279951	20.8588 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M407752.D 8260WT.M Thu Oct 01 09:03:01 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407752.D Vial: 8
Acq On : 30 Sep 2015 12:58 Operator: TMB
Sample : WG540912-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:03:00 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	239119	20.8138 ug/L		99
46)	Benzene	10.47	78	760303	21.4300 ug/L		100
47)	Trichloroethene	11.21	130	195002	20.4169 ug/L		97
48)	Methylcyclohexane	11.31	83	303425	20.5318 ug/L		99
49)	1,2-Dichloropropane	11.43	63	197896	20.7051 ug/L		96
50)	Bromodichloromethane	11.73	83	257488	20.8717 ug/L		99
51)	1,4-Dioxane	11.72	88	7134	162.1255 ug/L		98
52)	Dibromomethane	11.81	93	95150	20.9065 ug/L		100
53)	2-Chloroethyl Vinyl Ether	12.03	63	78627	19.9589 ug/L		94
54)	4-Methyl-2-Pentanone	12.06	58	39837	19.7122 ug/L		96
55)	cis-1,3-Dichloropropene	12.37	75	286918	20.9506 ug/L		100
56)	Dimethyl Disulfide	12.63	79	136599	18.4979 ug/L		98
59)	Toluene	12.79	91	818164	21.6766 ug/L		99
60)	Ethyl Methacrylate	12.89	69	155537	20.6693 ug/L		93
62)	trans-1,3-Dichloropropene	12.96	75	241309	20.8394 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	122012	20.3666 ug/L		95
64)	2-Hexanone	13.12	58	38289	20.3287 ug/L	#	98
65)	1,3-Dichloropropane	13.49	76	218983	20.4545 ug/L		94
66)	Tetrachloroethene	13.61	164	161585	20.1380 ug/L		98
67)	Dibromochloromethane	13.87	129	161138	20.8040 ug/L		98
68)	1,2-Dibromoethane	14.13	107	123618	20.6684 ug/L		100
69)	1-Chlorohexane	14.21	91	275180	20.3748 ug/L		99
70)	Chlorobenzene	14.62	112	523989	20.7185 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.66	131	193093	20.6487 ug/L		100
72)	Ethylbenzene	14.66	106	298198	20.2403 ug/L		95
73)	m-,p-Xylene	14.75	106	719109	42.5615 ug/L		99
74)	o-Xylene	15.31	106	347392	20.3322 ug/L		98
75)	Styrene	15.35	104	579322	21.4006 ug/L		98
76)	Bromoform	15.83	173	95340	20.4754 ug/L		99
77)	Isopropylbenzene	15.73	105	903868	22.0533 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	141095	21.1321 ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	39490	21.2846 ug/L		63
82)	trans-1,4-Dichloro-2-Buten	16.19	53	50178	20.4511 ug/L	#	61
83)	n-Propylbenzene	16.24	91	1127416	21.5170 ug/L		100
84)	Bromobenzene	16.37	156	221432	20.8188 ug/L		99
85)	1,3,5-Trimethylbenzene	16.42	105	781503	21.6939 ug/L		99
86)	2-Chlorotoluene	16.52	91	761104	21.9308 ug/L		99
87)	4-Chlorotoluene	16.56	91	646199	21.5301 ug/L		100
88)	a-Methylstyrene	16.83	118	407468	20.7481 ug/L		99
89)	tert-Butylbenzene	16.89	134	159496	20.1257 ug/L		95
90)	1,2,4-Trimethylbenzene	16.94	105	796688	21.8854 ug/L		97
91)	sec-Butylbenzene	17.16	105	957105	21.3876 ug/L		98
92)	p-Isopropyltoluene	17.32	119	785233	21.9463 ug/L		97
93)	1,3-Dichlorobenzene	17.51	146	447916	21.0985 ug/L		99
94)	1,4-Dichlorobenzene	17.64	146	435999	20.6235 ug/L		100
95)	n-Butylbenzene	17.84	91	726378	21.7780 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	388938	20.9374 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	24405	20.8579 ug/L		95
98)	1,2,4-Trichlorobenzene	20.27	180	262199	20.5447 ug/L		99
99)	Hexachlorobutadiene	20.42	225	123628	20.2526 ug/L		97
100)	Naphthalene	20.64	128	366056	19.8392 ug/L		98
101)	1,2,3-Trichlorobenzene	20.95	180	225034	20.6772 ug/L		97

(#) = qualifier out of range (m) = manual integration
8M407752.D 8260WT.M Thu Oct 01 09:03:01 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407752.D Vial: 8
Acq On : 30 Sep 2015 12:58 Operator: TMB
Sample : WG540912-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 1 9:03 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration

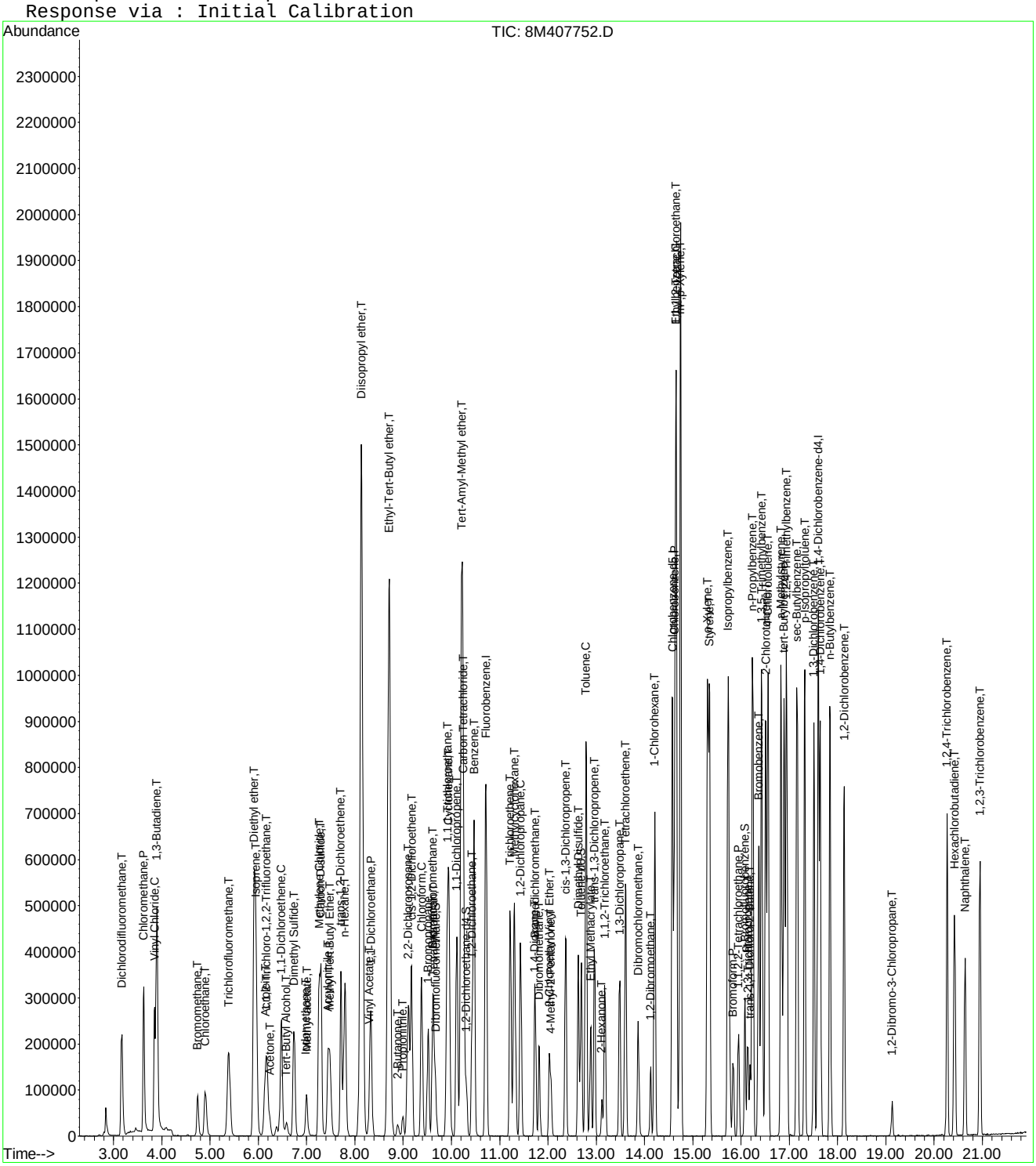

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407753.D Vial: 9
Acq On : 30 Sep 2015 13:27 Operator: TMB
Sample : WG540912-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:03:01 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	938292	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	687265	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	378981	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	224039	25.0881 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.36%		
43) 1,2-Dichloroethane-d4	10.31	65	227424	24.9781 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.92%		
58) Toluene-d8	12.69	98	816431	25.6033 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.40%		
80) p-Bromofluorobenzene	16.08	95	330422	24.9880 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.96%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	734220	51.4707 ug/L	99
3) Chloromethane	3.63	50	1087458	49.9602 ug/L	99
4) Vinyl Chloride	3.84	62	796347	46.2979 ug/L	100
5) 1,3-Butadiene	3.88	54	593404	53.0036 ug/L	96
6) Bromomethane	4.74	94	267289	45.6614 ug/L	98
7) Chloroethane	4.90	64	355876	50.7142 ug/L	98
8) Trichlorofluoromethane	5.38	101	803416	48.3275 ug/L	98
9) Diethyl ether	5.91	59	614294	96.0052 ug/L	99
10) Isoprene	5.95	67	649397	53.2074 ug/L	96
11) Acrolein	6.15	56	37091	46.7086 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	436438	48.8386 ug/L	100
13) Acetone	6.25	43	62565	44.9246 ug/L	98
14) 1,1-Dichloroethene	6.47	61	726859	47.7821 ug/L	100
15) Tert-Butyl Alcohol	6.59	59	74384	180.7617 ug/L	100
16) Dimethyl Sulfide	6.74	62	442407	50.6728 ug/L	100
17) Iodomethane	7.00	142	280116	48.2985 ug/L	94
18) Methyl acetate	7.01	43	238696	45.3243 ug/L	98
19) Methylene Chloride	7.26	84	457295	48.4030 ug/L	97
20) Carbon Disulfide	7.30	76	1581063	51.2521 ug/L	100
21) Acrylonitrile	7.44	53	103250	49.3859 ug/L	97
22) Methyl Tert Butyl Ether	7.48	73	870767	48.6206 ug/L	98
23) trans-1,2-Dichloroethene	7.71	61	720460	49.8727 ug/L	100
24) n-Hexane	7.79	57	728359	51.0392 ug/L	95
25) Diisopropyl ether	8.13	45	3555432	99.8411 ug/L	99
26) Vinyl Acetate	8.31	43	475013	50.1894 ug/L	99
27) 1,1-Dichloroethane	8.33	63	895300	48.8047 ug/L	98
28) Ethyl-Tert-Butyl ether	8.71	59	2771592	98.8123 ug/L	97
29) 2-Butanone	8.89	43	110691	46.1332 ug/L	100
30) Propionitrile	8.99	54	66254	94.1088 ug/L	99
31) 2,2-Dichloropropane	9.10	77	756513	49.3451 ug/L	100
32) cis-1,2-Dichloroethene	9.18	96	504047	48.9027 ug/L	99
33) Chloroform	9.38	83	862577	49.5006 ug/L	99
34) 1-Bromopropane	9.52	122	89544	52.9047 ug/L	98
35) Bromochloromethane	9.61	130	254810	50.2191 ug/L	97
36) Tetrahydrofuran	9.64	42	144978	92.0491 ug/L	97
38) 1,1,1-Trichloroethane	9.91	97	787445	50.3425 ug/L	98
39) Cyclohexane	9.94	56	942520	50.6365 ug/L	99
40) 1,1-Dichloropropene	10.11	75	670931	49.8186 ug/L	99
41) Tert-Amyl-Methyl ether	10.22	73	2024717	97.3571 ug/L	98
42) Carbon Tetrachloride	10.25	117	709220	50.7337 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M407753.D 8260WT.M Thu Oct 01 09:03:02 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407753.D Vial: 9
Acq On : 30 Sep 2015 13:27 Operator: TMB
Sample : WG540912-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:03:01 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	598223	49.9929 ug/L		99
46)	Benzene	10.47	78	1893240	51.2329 ug/L		100
47)	Trichloroethene	11.22	130	485477	48.8010 ug/L		96
48)	Methylcyclohexane	11.31	83	782615	50.8431 ug/L		98
49)	1,2-Dichloropropane	11.43	63	493718	49.5940 ug/L		96
50)	Bromodichloromethane	11.73	83	652718	50.7966 ug/L		100
51)	1,4-Dioxane	11.72	88	8670	189.1673 ug/L		94
52)	Dibromomethane	11.81	93	235258	49.6278 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.03	63	194118	47.3085 ug/L		95
54)	4-Methyl-2-Pentanone	12.06	58	96161	45.6831 ug/L		98
55)	cis-1,3-Dichloropropene	12.37	75	727126	50.9750 ug/L		100
56)	Dimethyl Disulfide	12.63	79	379036	49.2792 ug/L		99
59)	Toluene	12.78	91	1987253	50.8860 ug/L		100
60)	Ethyl Methacrylate	12.89	69	390916	50.2077 ug/L		94
62)	trans-1,3-Dichloropropene	12.96	75	608665	50.8025 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	299502	48.3182 ug/L		97
64)	2-Hexanone	13.11	58	89700	46.0281 ug/L	#	93
65)	1,3-Dichloropropane	13.49	76	534461	48.2492 ug/L		93
66)	Tetrachloroethene	13.61	164	405188	48.8054 ug/L		99
67)	Dibromochloromethane	13.87	129	402200	50.1864 ug/L		100
68)	1,2-Dibromoethane	14.13	107	302616	48.9002 ug/L		99
69)	1-Chlorohexane	14.21	91	715689	51.2148 ug/L		99
70)	Chlorobenzene	14.62	112	1313794	50.2063 ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.65	131	492148	50.8647 ug/L		98
72)	Ethylbenzene	14.65	106	747123	49.0115 ug/L		93
73)	m-,p-Xylene	14.75	106	1803271	103.1521 ug/L		96
74)	o-Xylene	15.31	106	874498	49.4673 ug/L		96
75)	Styrene	15.35	104	1468155	52.4170 ug/L		98
76)	Bromoform	15.83	173	239681	49.7493 ug/L		99
77)	Isopropylbenzene	15.73	105	2208758	52.0848 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	337508	48.2706 ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	93694	48.2234 ug/L		58
82)	trans-1,4-Dichloro-2-Buten	16.18	53	127917	49.7850 ug/L	#	74
83)	n-Propylbenzene	16.24	91	2732764	49.8043 ug/L		99
84)	Bromobenzene	16.37	156	550772	49.4486 ug/L		98
85)	1,3,5-Trimethylbenzene	16.43	105	1956096	51.8518 ug/L		100
86)	2-Chlorotoluene	16.51	91	1847698	50.8405 ug/L		100
87)	4-Chlorotoluene	16.56	91	1636735	52.0745 ug/L		99
88)	a-Methylstyrene	16.82	118	1062639	51.6698 ug/L		99
89)	tert-Butylbenzene	16.89	134	402620	48.5137 ug/L		95
90)	1,2,4-Trimethylbenzene	16.94	105	1998748	52.4314 ug/L		99
91)	sec-Butylbenzene	17.16	105	2351971	50.1881 ug/L		97
92)	p-Isopropyltoluene	17.32	119	1971230	52.6100 ug/L		96
93)	1,3-Dichlorobenzene	17.51	146	1112381	50.0352 ug/L		99
94)	1,4-Dichlorobenzene	17.64	146	1089923	49.2313 ug/L		99
95)	n-Butylbenzene	17.85	91	1881534	53.8685 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	962067	49.4555 ug/L		100
97)	1,2-Dibromo-3-Chloropropan	19.13	75	59325	48.4169 ug/L		96
98)	1,2,4-Trichlorobenzene	20.28	180	685856	51.3179 ug/L		99
99)	Hexachlorobutadiene	20.42	225	316117	49.4515 ug/L		99
100)	Naphthalene	20.64	128	945131	48.9144 ug/L		99
101)	1,2,3-Trichlorobenzene	20.95	180	577810	50.6987 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M407753.D 8260WT.M Thu Oct 01 09:03:02 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407753.D Vial: 9
Acq On : 30 Sep 2015 13:27 Operator: TMB
Sample : WG540912-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 1 9:03 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration

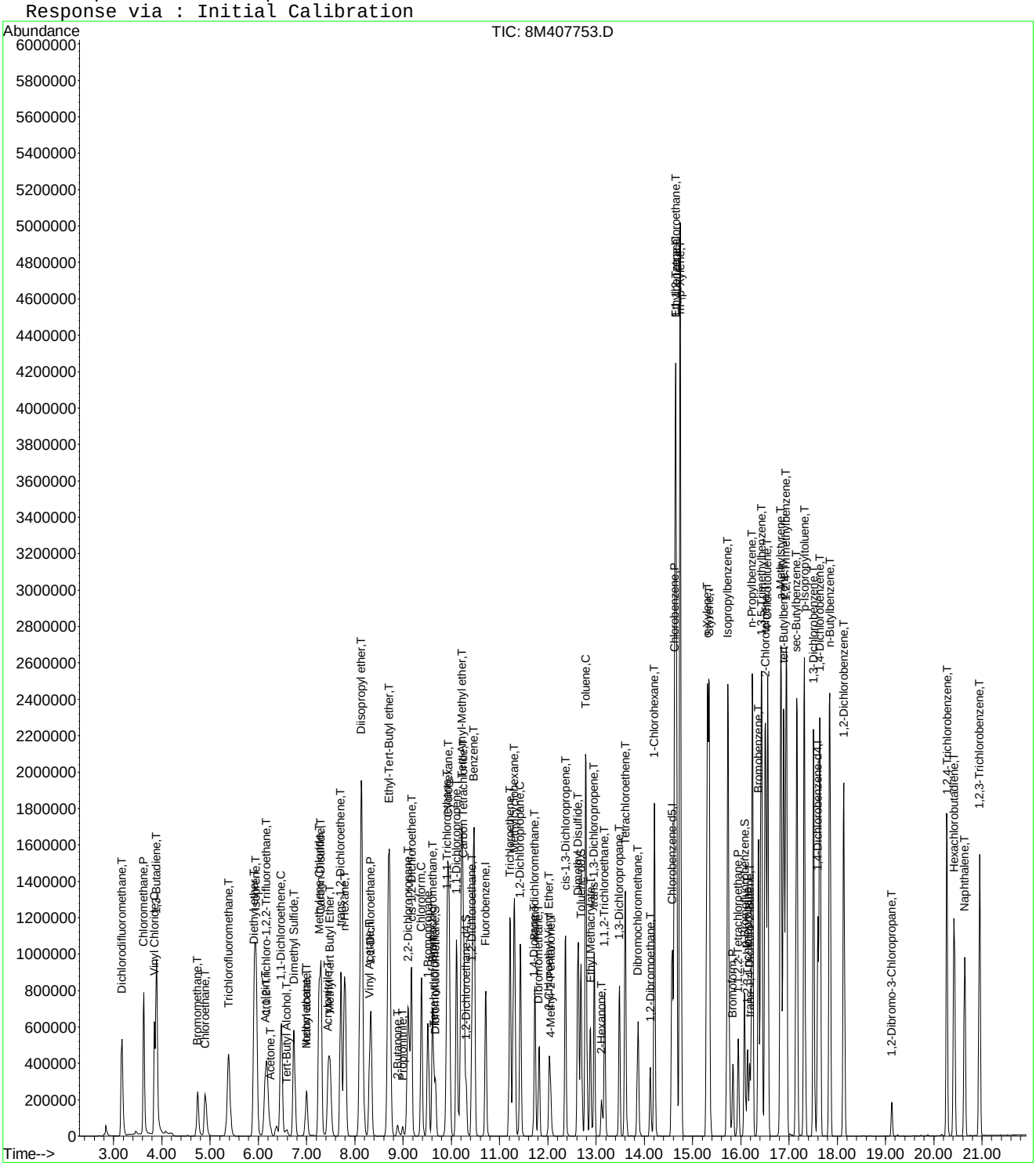

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407754.D Vial: 10
Acq On : 30 Sep 2015 13:56 Operator: TMB
Sample : WG540912-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:03:03 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	999044	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	721896	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	401543	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	492634	51.8109 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 207.24%#		
43) 1,2-Dichloroethane-d4	10.31	65	502331	51.8164 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 207.28%#		
58) Toluene-d8	12.69	98	1777410	53.0657 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 212.28%#		
80) p-Bromofluorobenzene	16.08	95	722720	51.5844 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 206.32%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	1648287	108.5226 ug/L	99
3) Chloromethane	3.63	50	2312431	99.7777 ug/L	98
4) Vinyl Chloride	3.84	62	1625053	88.7319 ug/L	99
5) 1,3-Butadiene	3.89	54	991629	90.8465 ug/L	91
6) Bromomethane	4.74	94	694277	105.6792 ug/L	99
7) Chloroethane	4.90	64	792001	106.0011 ug/L	98
8) Trichlorofluoromethane	5.38	101	1823452	103.0152 ug/L	99
9) Diethyl ether	5.91	59	1404955	206.2217 ug/L	99
10) Isoprene	5.95	67	1448354	111.4525 ug/L	95
11) Acrolein	6.15	56	85817	101.4974 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	1002514	105.3622 ug/L	99
13) Acetone	6.25	43	134519	90.7172 ug/L	96
14) 1,1-Dichloroethene	6.48	61	1674359	103.3754 ug/L	100
15) Tert-Butyl Alcohol	6.59	59	170829	389.8897 ug/L	98
16) Dimethyl Sulfide	6.74	62	987415	106.2200 ug/L	99
17) Iodomethane	7.00	142	688771	109.1615 ug/L	94
18) Methyl acetate	7.01	43	547190	97.5838 ug/L	98
19) Methylene Chloride	7.27	84	1012557	100.6582 ug/L	98
20) Carbon Disulfide	7.30	76	3453967	105.1559 ug/L	99
21) Acrylonitrile	7.44	53	233747	105.0056 ug/L	100
22) Methyl Tert Butyl Ether	7.47	73	1985878	104.1417 ug/L	99
23) trans-1,2-Dichloroethene	7.71	61	1633107	106.1748 ug/L	100
24) n-Hexane	7.79	57	1613498	106.1891 ug/L	96
25) Diisopropyl ether	8.13	45	7594269	200.2886 ug/L	96
26) Vinyl Acetate	8.31	43	1012138	100.4384 ug/L	99
27) 1,1-Dichloroethane	8.33	63	2013235	103.0722 ug/L	98
28) Ethyl-Tert-Butyl ether	8.71	59	6110510	204.6032 ug/L	99
29) 2-Butanone	8.89	43	258564	101.2099 ug/L	99
30) Propionitrile	8.99	54	152397	203.3049 ug/L	100
31) 2,2-Dichloropropane	9.11	77	1712102	104.8844 ug/L	100
32) cis-1,2-Dichloroethene	9.18	96	1120623	102.1115 ug/L	99
33) Chloroform	9.38	83	1894369	102.1012 ug/L	98
34) 1-Bromopropane	9.52	122	192894	107.0360 ug/L	100
35) Bromochloromethane	9.61	130	566755	104.9063 ug/L	99
36) Tetrahydrofuran	9.64	42	322938	192.5707 ug/L	97
38) 1,1,1-Trichloroethane	9.91	97	1794082	107.7235 ug/L	98
39) Cyclohexane	9.94	56	2109904	106.4606 ug/L	99
40) 1,1-Dichloropropene	10.11	75	1527222	106.5049 ug/L	99
41) Tert-Amyl-Methyl ether	10.22	73	4505369	203.4638 ug/L	97
42) Carbon Tetrachloride	10.25	117	1635708	109.8941 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M407754.D 8260WT.M Thu Oct 01 09:03:03 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407754.D Vial: 10
Acq On : 30 Sep 2015 13:56 Operator: TMB
Sample : WG540912-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:03:03 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	1351252	106.0560 ug/L		99
46)	Benzene	10.47	78	4063079	103.2647 ug/L		97
47)	Trichloroethene	11.22	130	1102366	104.0732 ug/L		97
48)	Methylcyclohexane	11.31	83	1719853	104.9371 ug/L		98
49)	1,2-Dichloropropane	11.43	63	1111363	104.8478 ug/L		95
50)	Bromodichloromethane	11.73	83	1456240	106.4376 ug/L		99
51)	1,4-Dioxane	11.72	88	18255	374.0781 ug/L		91
52)	Dibromomethane	11.81	93	520924	103.2069 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	448768	102.7186 ug/L		95
54)	4-Methyl-2-Pentanone	12.06	58	225734	100.7179 ug/L		97
55)	cis-1,3-Dichloropropene	12.37	75	1616749	106.4496 ug/L		98
56)	Dimethyl Disulfide	12.63	79	880541	107.5192 ug/L		97
59)	Toluene	12.78	91	4231266	103.1491 ug/L		97
60)	Ethyl Methacrylate	12.89	69	900291	110.0828 ug/L		96
62)	trans-1,3-Dichloropropene	12.96	75	1369595	108.8301 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	676060	103.8356 ug/L		97
64)	2-Hexanone	13.12	58	211271	103.2096 ug/L	#	95
65)	1,3-Dichloropropane	13.49	76	1205913	103.6429 ug/L		95
66)	Tetrachloroethene	13.61	164	922464	105.7816 ug/L		99
67)	Dibromochloromethane	13.87	129	918991	109.1703 ug/L		99
68)	1,2-Dibromoethane	14.13	107	679902	104.5960 ug/L		100
69)	1-Chlorohexane	14.21	91	1557671	106.1199 ug/L		97
70)	Chlorobenzene	14.62	112	2925423	106.4313 ug/L		94
71)	1,1,1,2-Tetrachloroethane	14.66	131	1162122	114.3464 ug/L		98
72)	Ethylbenzene	14.66	106	1738524	108.5766 ug/L		82
73)	m-,p-Xylene	14.75	106	3972122	216.3163 ug/L		80
74)	o-Xylene	15.31	106	1940782	104.5168 ug/L		92
75)	Styrene	15.35	104	3215522	109.2953 ug/L		94
76)	Bromoform	15.83	173	556496	109.9676 ug/L		98
77)	Isopropylbenzene	15.73	105	4665259	104.7341 ug/L		95
79)	1,1,2,2-Tetrachloroethane	15.95	83	740784	99.9945 ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	210912	102.4550 ug/L		61
82)	trans-1,4-Dichloro-2-Buten	16.18	53	295589	108.5784 ug/L	#	72
83)	n-Propylbenzene	16.24	91	5511450	94.8017 ug/L		93
84)	Bromobenzene	16.37	156	1216625	103.0918 ug/L		97
85)	1,3,5-Trimethylbenzene	16.42	105	4130512	103.3387 ug/L		97
86)	2-Chlorotoluene	16.52	91	3894393	101.1355 ug/L		97
87)	4-Chlorotoluene	16.56	91	3405729	102.2686 ug/L		96
88)	a-Methylstyrene	16.83	118	2308871	105.9586 ug/L		99
89)	tert-Butylbenzene	16.89	134	915158	104.0760 ug/L		89
90)	1,2,4-Trimethylbenzene	16.94	105	4211193	104.2614 ug/L		97
91)	sec-Butylbenzene	17.16	105	4897753	98.6396 ug/L		93
92)	p-Isopropyltoluene	17.32	119	4206090	105.9486 ug/L		92
93)	1,3-Dichlorobenzene	17.51	146	2401799	101.9634 ug/L		97
94)	1,4-Dichlorobenzene	17.64	146	2352221	100.2787 ug/L		99
95)	n-Butylbenzene	17.84	91	3998669	108.0497 ug/L		94
96)	1,2-Dichlorobenzene	18.14	146	2098195	101.7983 ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.13	75	133354	102.7190 ug/L		98
98)	1,2,4-Trichlorobenzene	20.27	180	1521471	107.4447 ug/L		99
99)	Hexachlorobutadiene	20.42	225	710580	104.9132 ug/L		99
100)	Naphthalene	20.64	128	2043864	99.8347 ug/L		100
101)	1,2,3-Trichlorobenzene	20.95	180	1268996	105.0890 ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407754.D Vial: 10
Acq On : 30 Sep 2015 13:56 Operator: TMB
Sample : WG540912-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 1 9:03 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration

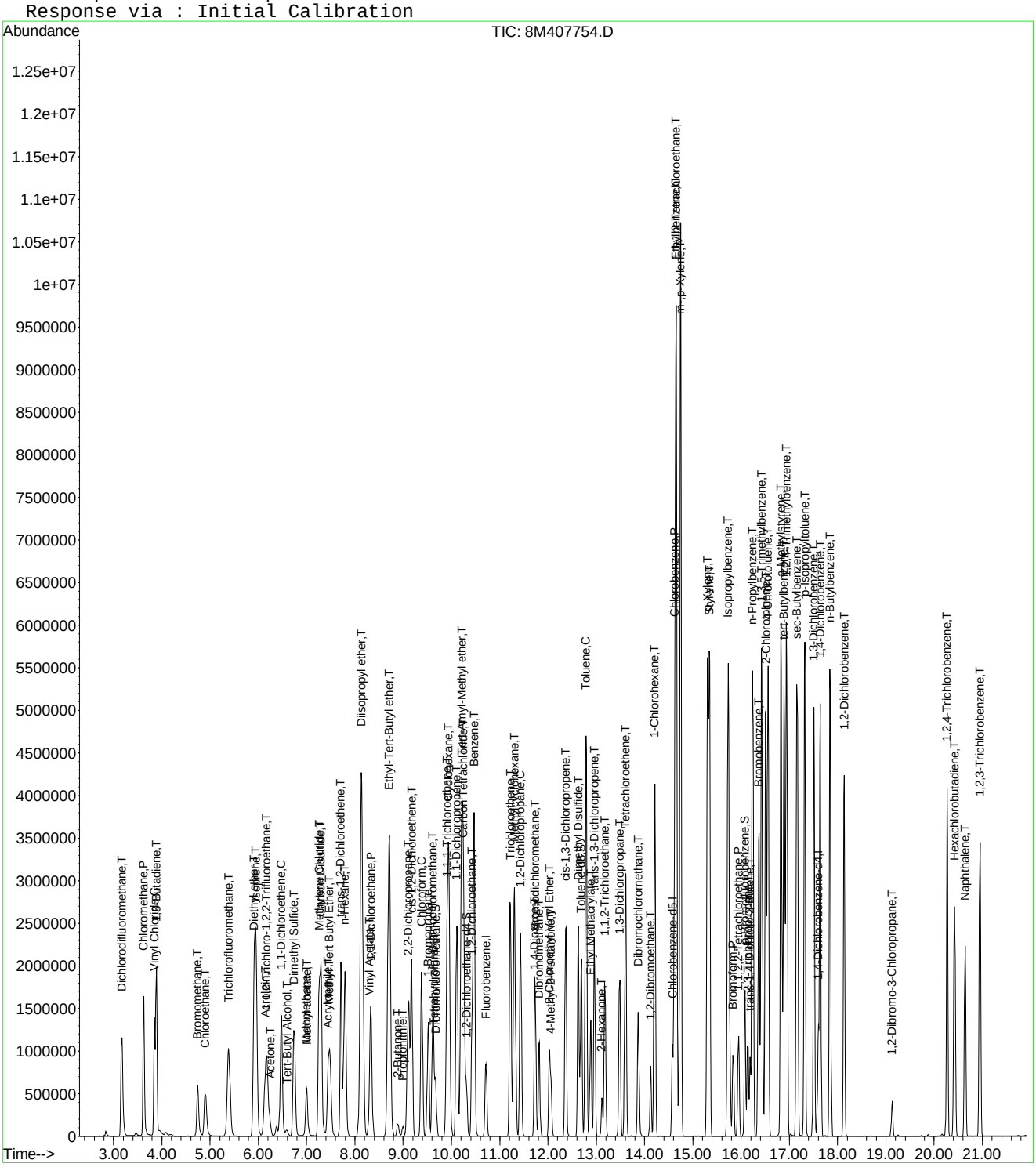

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407755.D Vial: 11
Acq On : 30 Sep 2015 14:24 Operator: TMB
Sample : WG540912-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:03:04 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	1019915	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	757249	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	423760	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.68	111	997322	102.7432 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 410.96%#		
43) 1,2-Dichloroethane-d4	10.31	65	1027552	103.8249 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 415.28%#		
58) Toluene-d8	12.69	98	3420899	97.3650 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 389.44%#		
80) p-Bromofluorobenzene	16.07	95	1495937	101.1751 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 404.72%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	3073735	198.2323 ug/L	96
3) Chloromethane	3.62	50	4198667	177.4585 ug/L	96
4) Vinyl Chloride	3.85	62	2900469	155.1319 ug/L	97
5) 1,3-Butadiene	3.89	54	1696169	185.8080 ug/L	90
6) Bromomethane	4.74	94	1490093	206.5308 ug/L	97
7) Chloroethane	4.90	64	1580424	207.1948 ug/L	98
8) Trichlorofluoromethane	5.39	101	3602432	199.3532 ug/L	99
9) Diethyl ether	5.90	59	1289	0.1853 ug/L #	45
10) Isoprene	5.94	67	2777274	209.3410 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	1952371	200.9914 ug/L	100
13) Acetone	6.24	43	341749	225.7531 ug/L	96
14) 1,1-Dichloroethene	6.47	61	3369596	203.7826 ug/L	100
16) Dimethyl Sulfide	6.74	62	2052730	216.3013 ug/L	100
17) Iodomethane	7.00	142	1342604	206.7806 ug/L	96
18) Methyl acetate	7.01	43	1189139	207.7270 ug/L	100
19) Methylene Chloride	7.26	84	2095681	204.0683 ug/L	97
20) Carbon Disulfide	7.30	76	6585198	196.3835 ug/L	97
21) Acrylonitrile	7.47	53	48336	21.2695 ug/L #	34
22) Methyl Tert Butyl Ether	7.47	73	4193880	215.4313 ug/L	100
23) trans-1,2-Dichloroethene	7.71	61	3271432	208.3365 ug/L	100
24) n-Hexane	7.79	57	3062998	197.4599 ug/L	95
26) Vinyl Acetate	8.30	43	2151883	209.1701 ug/L	100
27) 1,1-Dichloroethane	8.33	63	4045048	202.8576 ug/L	96
29) 2-Butanone	8.89	43	549079	210.5282 ug/L	99
30) Propionitrile	8.90	54	1482	1.9366 ug/L	86
31) 2,2-Dichloropropane	9.11	77	3379783	202.8106 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	2289136	204.3184 ug/L	99
33) Chloroform	9.39	83	3770537	199.0628 ug/L	97
34) 1-Bromopropane	9.52	122	377992	205.4540 ug/L	100
35) Bromochloromethane	9.61	130	1167712	211.7204 ug/L	99
36) Tetrahydrofuran	9.64	42	2035	1.1887 ug/L #	40
38) 1,1,1-Trichloroethane	9.91	97	3554199	209.0406 ug/L	100
39) Cyclohexane	9.94	56	4130086	204.1295 ug/L	98
40) 1,1-Dichloropropene	10.11	75	2986535	204.0119 ug/L	99
42) Carbon Tetrachloride	10.25	117	3135755	206.3629 ug/L	100
45) 1,2-Dichloroethane	10.43	62	2808454	215.9170 ug/L	98
46) Benzene	10.47	78	7375672	183.6195 ug/L	90
47) Trichloroethene	11.22	130	2161282	199.8689 ug/L	98
48) Methylcyclohexane	11.31	83	3284260	196.2889 ug/L	97
49) 1,2-Dichloropropane	11.43	63	2280795	210.7707 ug/L	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407755.D Vial: 11
Acq On : 30 Sep 2015 14:24 Operator: TMB
Sample : WG540912-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:03:04 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
50)	Bromodichloromethane	11.73	83	2976618	213.1111 ug/L		98
51)	1,4-Dioxane	11.72	88	4118	82.6585 ug/L	#	10
52)	Dibromomethane	11.81	93	1102889	214.0359 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.03	63	934357	209.4887 ug/L		96
54)	4-Methyl-2-Pentanone	12.06	58	490003	214.1554 ug/L		98
55)	cis-1,3-Dichloropropene	12.36	75	3292430	212.3433 ug/L		96
56)	Dimethyl Disulfide	12.63	79	1896563	226.8424 ug/L		92
59)	Toluene	12.79	91	7427590	172.6151 ug/L		89
60)	Ethyl Methacrylate	12.88	69	1925828	224.4865 ug/L		95
62)	trans-1,3-Dichloropropene	12.96	75	2848227	215.7582 ug/L		97
63)	1,1,2-Trichloroethane	13.18	97	1435328	210.1590 ug/L		97
64)	2-Hexanone	13.12	58	462088	215.1992 ug/L	#	97
65)	1,3-Dichloropropane	13.49	76	2491344	204.1236 ug/L		92
66)	Tetrachloroethene	13.61	164	1859849	203.3173 ug/L		98
67)	Dibromochloromethane	13.87	129	1962613	222.2613 ug/L		98
68)	1,2-Dibromoethane	14.13	107	1449499	212.5800 ug/L		100
69)	1-Chlorohexane	14.21	91	3025747	196.5123 ug/L		95
70)	Chlorobenzene	14.63	112	5662002	196.3752 ug/L		88
71)	1,1,1,2-Tetrachloroethane	14.66	131	2482321	232.8437 ug/L		97
72)	Ethylbenzene	14.66	106	3652304	217.4495 ug/L		54
73)	m-,p-Xylene	14.75	106	7200744	373.8350 ug/L		60
74)	o-Xylene	15.31	106	4011298	205.9350 ug/L		76
75)	Styrene	15.35	104	6146741	199.1732 ug/L		85
76)	Bromoform	15.84	173	1230396	231.7841 ug/L		99
77)	Isopropylbenzene	15.73	105	8074176	172.8010 ug/L		85
79)	1,1,2,2-Tetrachloroethane	15.95	83	1609027	205.8068 ug/L		98
81)	1,2,3-Trichloropropane	16.15	110	460163	211.8144 ug/L		66
82)	trans-1,4-Dichloro-2-Buten	16.19	53	659628	229.5972 ug/L	#	69
83)	n-Propylbenzene	16.24	91	8929204	145.5375 ug/L	#	79
84)	Bromobenzene	16.37	156	2526645	202.8727 ug/L		99
85)	1,3,5-Trimethylbenzene	16.42	105	7372697	174.7823 ug/L		87
86)	2-Chlorotoluene	16.51	91	7171461	176.4752 ug/L		88
87)	4-Chlorotoluene	16.56	91	5885379	167.4629 ug/L		84
88)	a-Methylstyrene	16.83	118	4628606	201.2793 ug/L		95
89)	tert-Butylbenzene	16.89	134	1937230	208.7602 ug/L		78
90)	1,2,4-Trimethylbenzene	16.94	105	7491629	175.7546 ug/L		84
91)	sec-Butylbenzene	17.16	105	8363908	159.6158 ug/L	#	82
92)	p-Isopropyltoluene	17.32	119	7394359	176.4937 ug/L		81
93)	1,3-Dichlorobenzene	17.51	146	4755218	191.2891 ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	4681127	189.1007 ug/L		94
95)	n-Butylbenzene	17.84	91	7035050	180.1306 ug/L		84
96)	1,2-Dichlorobenzene	18.14	146	4260447	195.8672 ug/L		93
97)	1,2-Dibromo-3-Chloropropan	19.13	75	303791	221.7336 ug/L		98
98)	1,2,4-Trichlorobenzene	20.27	180	3208659	214.7122 ug/L		98
99)	Hexachlorobutadiene	20.42	225	1464137	204.8382 ug/L		98
100)	Naphthalene	20.64	128	4269643	197.6211 ug/L		98
101)	1,2,3-Trichlorobenzene	20.95	180	2712907	212.8844 ug/L		97

(#) = qualifier out of range (m) = manual integration
8M407755.D 8260WT.M Thu Oct 01 09:03:04 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407755.D Vial: 11
Acq On : 30 Sep 2015 14:24 Operator: TMB
Sample : WG540912-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 1 9:03 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration

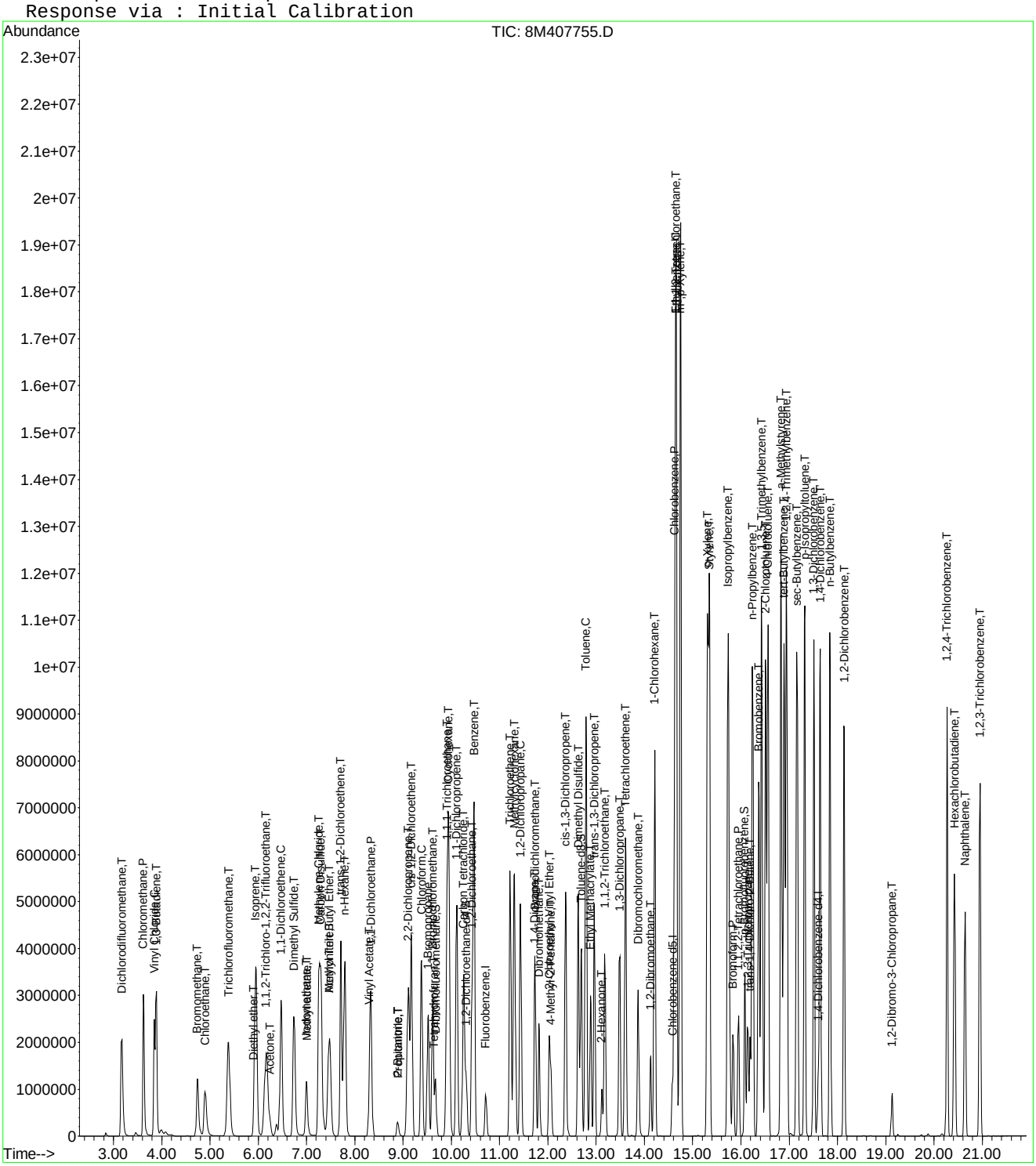

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407756.D Vial: 12
Acq On : 30 Sep 2015 14:52 Operator: TMB
Sample : WG540912-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:03:05 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	1065746	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	805472	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	452330	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	1515938	149.4546 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 597.80%#		
43) 1,2-Dichloroethane-d4	10.31	65	1566170	151.4422 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 605.76%#		
58) Toluene-d8	12.69	98	5005555	133.9377 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 535.76%#		
80) p-Bromofluorobenzene	16.08	95	2319893	146.9916 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 587.96%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	4453985	274.8952 ug/L	95
3) Chloromethane	3.62	50	5719893	231.3574 ug/L	92
4) Vinyl Chloride	3.84	62	3908072	200.0349 ug/L	95
5) 1,3-Butadiene	3.89	54	2229495	Below Cal	91
6) Bromomethane	4.73	94	2360356	295.2548 ug/L	99
7) Chloroethane	4.90	64	2372692	297.6849 ug/L	98
8) Trichlorofluoromethane	5.38	101	5511756	291.8957 ug/L	100
9) Diethyl ether	5.91	59	2348893	323.1961 ug/L	99
10) Isoprene	5.94	67	4265273	307.6753 ug/L	94
11) Acrolein	6.15	56	155193	172.0618 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	2917906	287.4727 ug/L	100
13) Acetone	6.25	43	498841	315.3544 ug/L	99
14) 1,1-Dichloroethene	6.47	61	4975754	287.9774 ug/L	99
15) Tert-Butyl Alcohol	6.60	59	311443	666.3305 ug/L	98
16) Dimethyl Sulfide	6.74	62	3151512	317.8019 ug/L	99
17) Iodomethane	7.00	142	1961731	288.4192 ug/L	96
18) Methyl acetate	7.01	43	1852436	309.6804 ug/L	99
19) Methylene Chloride	7.26	84	3173784	295.7590 ug/L	95
20) Carbon Disulfide	7.30	76	9459683	269.9747 ug/L	95
21) Acrylonitrile	7.44	53	453204	190.8495 ug/L	94
22) Methyl Tert Butyl Ether	7.47	73	6257021	307.5889 ug/L	99
23) trans-1,2-Dichloroethene	7.71	61	4791642	292.0263 ug/L	98
24) n-Hexane	7.79	57	4581735	282.6652 ug/L	94
25) Diisopropyl ether	8.13	45	11029782	272.6893 ug/L	92
26) Vinyl Acetate	8.30	43	3305041	307.4454 ug/L	100
27) 1,1-Dichloroethane	8.33	63	5933365	284.7599 ug/L	94
28) Ethyl-Tert-Butyl ether	8.71	59	9322882	292.6281 ug/L	98
29) 2-Butanone	8.89	43	870424	319.3865 ug/L	99
30) Propionitrile	9.00	54	267878	334.9959 ug/L	99
31) 2,2-Dichloropropane	9.11	77	4977286	285.8279 ug/L	97
32) cis-1,2-Dichloroethene	9.18	96	3400905	290.4964 ug/L	100
33) Chloroform	9.38	83	5463339	276.0294 ug/L	95
34) 1-Bromopropane	9.52	122	576665	299.9617 ug/L	98
35) Bromochloromethane	9.61	130	1746232	302.9975 ug/L	99
36) Tetrahydrofuran	9.64	42	580129	324.2847 ug/L	97
38) 1,1,1-Trichloroethane	9.91	97	5257764	295.9377 ug/L	99
39) Cyclohexane	9.94	56	6196433	293.0885 ug/L	98
40) 1,1-Dichloropropene	10.11	75	4405096	287.9742 ug/L	97
41) Tert-Amyl-Methyl ether	10.22	73	7256729	307.2053 ug/L	95
42) Carbon Tetrachloride	10.25	117	4725876	297.6336 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407756.D Vial: 12
Acq On : 30 Sep 2015 14:52 Operator: TMB
Sample : WG540912-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:03:05 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	4130044	303.8676 ug/L		98
46)	Benzene	10.47	78	9784739	233.1185 ug/L	#	82
47)	Trichloroethene	11.21	130	3245468	287.2244 ug/L		98
48)	Methylcyclohexane	11.31	83	4927101	281.8124 ug/L		97
49)	1,2-Dichloropropane	11.43	63	3420992	302.5424 ug/L		93
50)	Bromodichloromethane	11.73	83	4386556	300.5501 ug/L		96
51)	1,4-Dioxane	11.72	88	38129	732.4310 ug/L		87
52)	Dibromomethane	11.81	93	1677042	311.4648 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	1496210	321.0337 ug/L		96
54)	4-Methyl-2-Pentanone	12.06	58	800902	334.9808 ug/L		98
55)	cis-1,3-Dichloropropene	12.37	75	4810146	296.8866 ug/L		93
56)	Dimethyl Disulfide	12.63	79	2907112	332.7583 ug/L		89
59)	Toluene	12.79	91	9565632	208.9935 ug/L		81
60)	Ethyl Methacrylate	12.89	69	2969611	325.4322 ug/L		95
62)	trans-1,3-Dichloropropene	12.96	75	4220324	300.5569 ug/L		95
63)	1,1,2-Trichloroethane	13.18	97	2203723	303.3487 ug/L		96
64)	2-Hexanone	13.12	58	741076	324.4643 ug/L	#	97
65)	1,3-Dichloropropane	13.49	76	3741871	288.2282 ug/L		92
66)	Tetrachloroethene	13.61	164	2828983	290.7470 ug/L		99
67)	Dibromochloromethane	13.87	129	3001146	319.5247 ug/L		98
68)	1,2-Dibromoethane	14.13	107	2188511	301.7460 ug/L		99
69)	1-Chlorohexane	14.21	91	4484491	273.8158 ug/L		93
70)	Chlorobenzene	14.63	112	7602943	247.9058 ug/L		81
71)	1,1,1,2-Tetrachloroethane	14.67	131	3693596	325.7198 ug/L		97
72)	Ethylbenzene	14.66	106	5302756	296.8120 ug/L		39
73)	m-,p-Xylene	14.75	106	9232185	450.6043 ug/L		52
74)	o-Xylene	15.31	106	5865525	283.1004 ug/L		63
75)	Styrene	15.35	104	8250991	251.3508 ug/L		76
76)	Bromoform	15.83	173	1942351	343.9970 ug/L		98
77)	Isopropylbenzene	15.73	105	10265255	206.5409 ug/L	#	72
79)	1,1,2,2-Tetrachloroethane	15.95	83	2476655	296.7745 ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	715785	308.6675 ug/L		95
82)	trans-1,4-Dichloro-2-Buten	16.18	53	1036558	338.0069 ug/L		95
83)	n-Propylbenzene	16.24	91	10987624	167.7763 ug/L	#	65
84)	Bromobenzene	16.37	156	3802914	286.0623 ug/L		97
85)	1,3,5-Trimethylbenzene	16.43	105	9451191	209.9047 ug/L		77
86)	2-Chlorotoluene	16.52	91	8779258	202.3943 ug/L	#	76
87)	4-Chlorotoluene	16.56	91	7834256	208.8366 ug/L	#	71
88)	a-Methylstyrene	16.84	118	6616753	269.5618 ug/L		88
89)	tert-Butylbenzene	16.90	134	2982807	301.1315 ug/L		64
90)	1,2,4-Trimethylbenzene	16.95	105	9504140	208.8853 ug/L		71
91)	sec-Butylbenzene	17.17	105	10503392	187.7849 ug/L	#	70
92)	p-Isopropyltoluene	17.32	119	9416903	210.5723 ug/L	#	69
93)	1,3-Dichlorobenzene	17.52	146	6583121	248.0939 ug/L		85
94)	1,4-Dichlorobenzene	17.64	146	6449422	244.0777 ug/L		86
95)	n-Butylbenzene	17.85	91	8901534	213.5255 ug/L	#	74
96)	1,2-Dichlorobenzene	18.14	146	6027193	259.5890 ug/L		87
97)	1,2-Dibromo-3-Chloropropan	19.13	75	474533	324.4798 ug/L		99
98)	1,2,4-Trichlorobenzene	20.27	180	4574770	286.7920 ug/L		97
99)	Hexachlorobutadiene	20.42	225	2184179	286.2741 ug/L		98
100)	Naphthalene	20.64	128	5884557	255.1644 ug/L		94
101)	1,2,3-Trichlorobenzene	20.95	180	3909833	287.4298 ug/L		97

(#) = qualifier out of range (m) = manual integration
8M407756.D 8260WT.M Thu Oct 01 09:03:06 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407756.D Vial: 12
Acq On : 30 Sep 2015 14:52 Operator: TMB
Sample : WG540912-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 1 9:03 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration

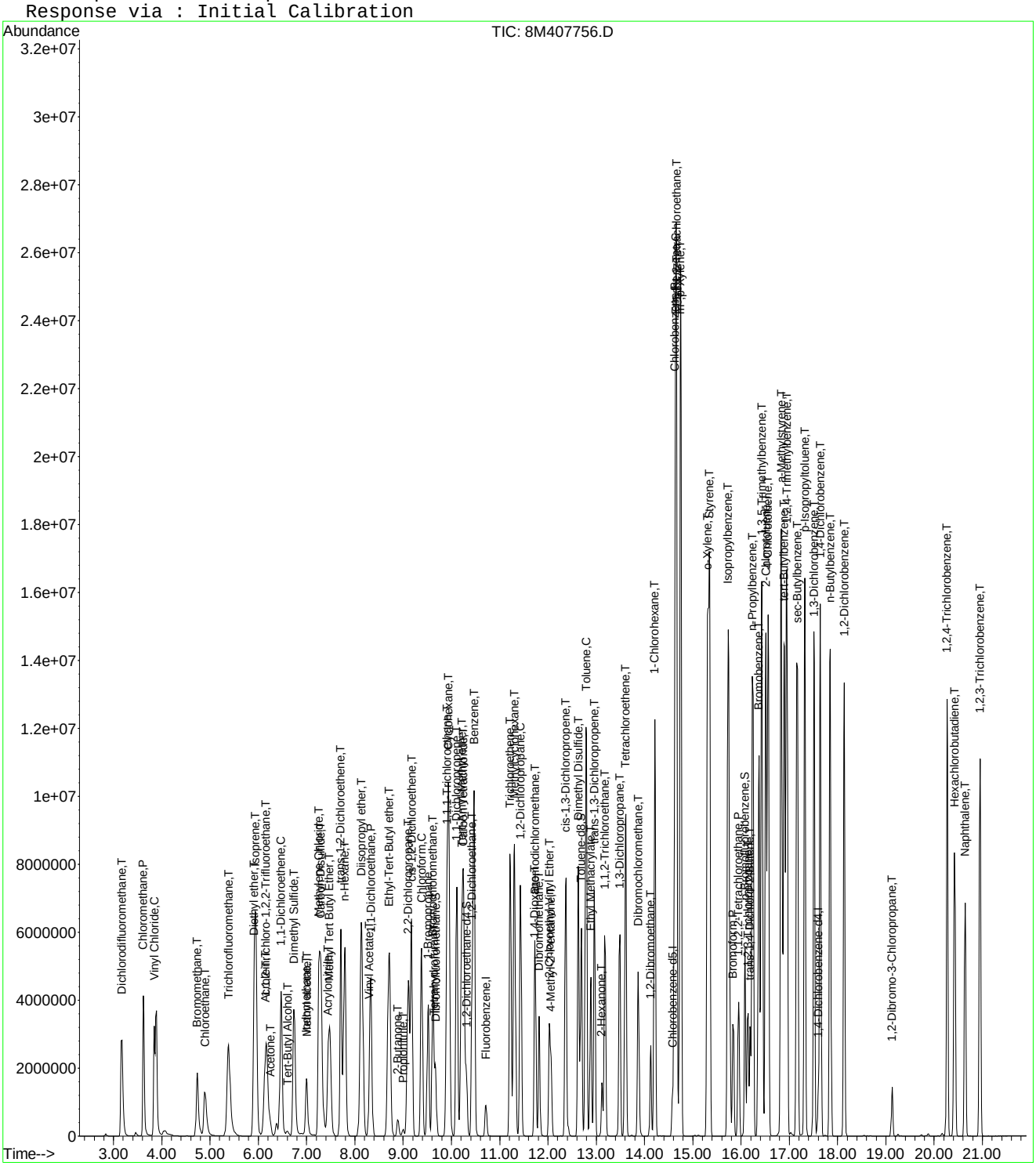

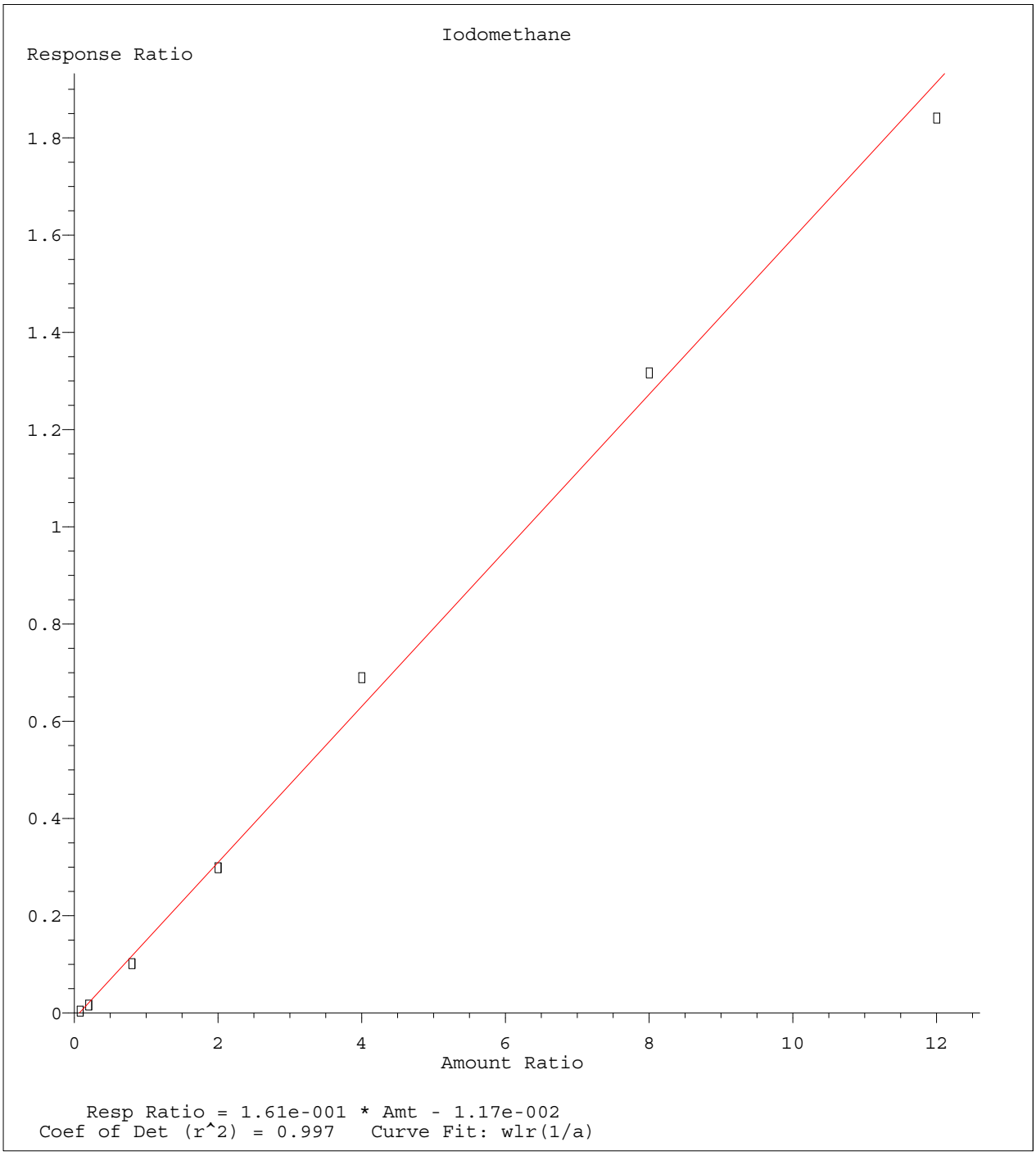

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Thu Oct 01 09:04:46 2015

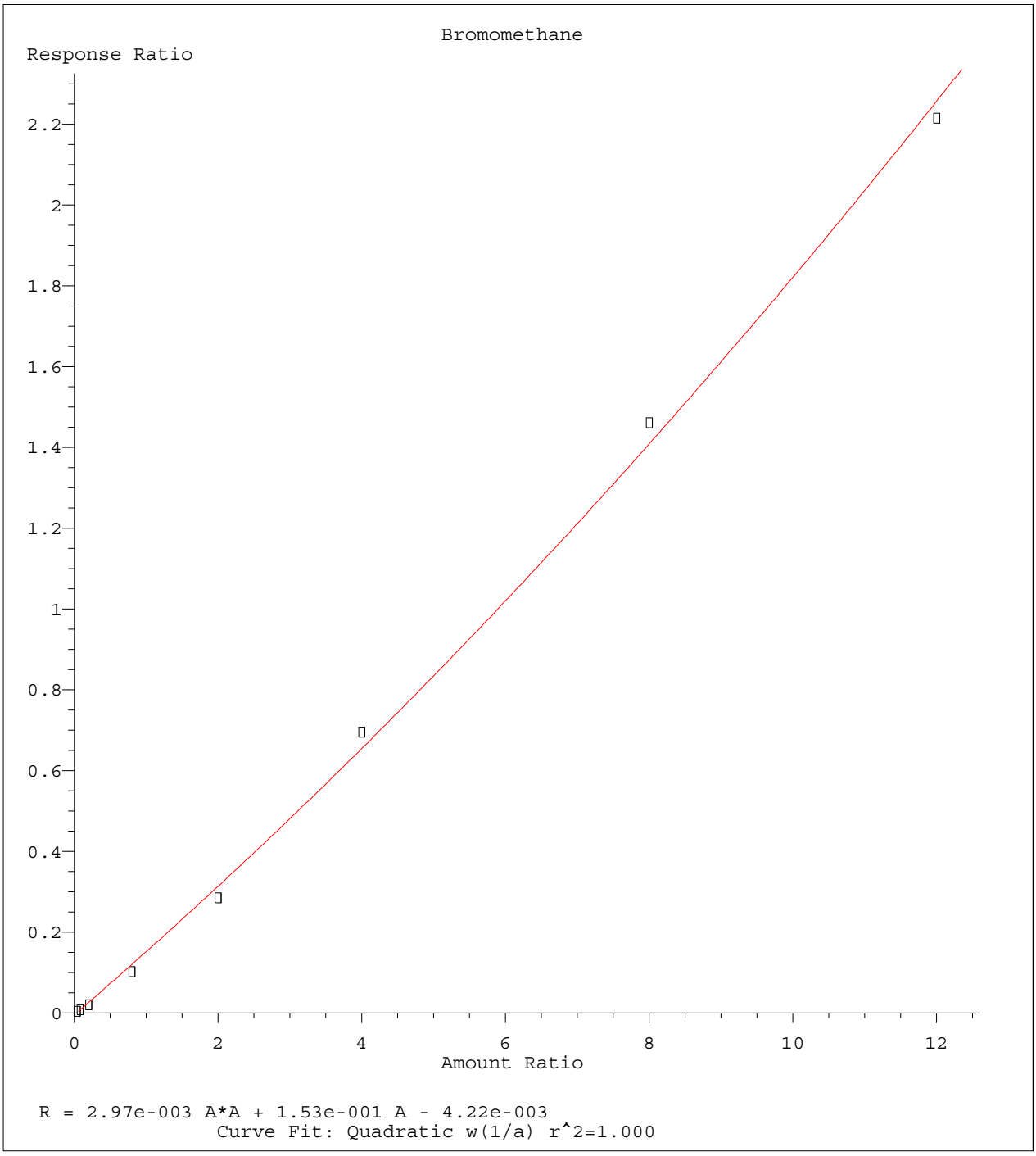

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Thu Oct 01 09:04:46 2015

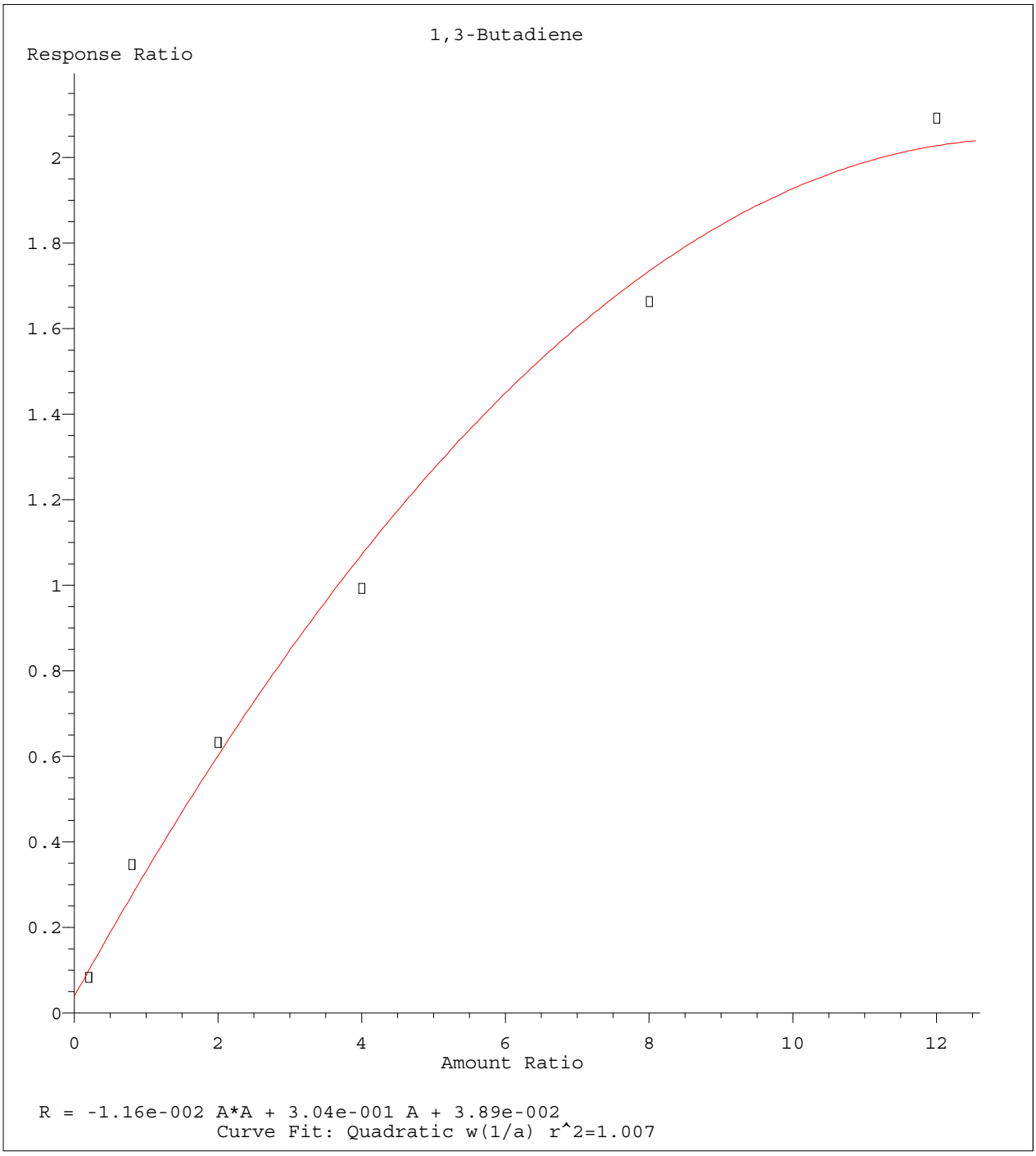

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Thu Oct 01 09:04:46 2015

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407761.D Vial: 17
Acq On : 30 Sep 2015 17:27 Operator: TMB
Sample : WG540912-12 50ug/L ALT SRC STD 8 Inst : HPMS8
Misc : 1,1 STD72747 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:03:07 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	973469	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	760814	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	418744	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	232214	25.0639 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.24%		
43) 1,2-Dichloroethane-d4	10.30	65	231666	24.5246 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.08%		
58) Toluene-d8	12.69	98	861595	24.4076 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.64%		
80) p-Bromofluorobenzene	16.08	95	366835	25.1074 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.44%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	868942	58.7139 ug/L	99
3) Chloromethane	3.62	50	1121121	49.6455 ug/L	100
4) Vinyl Chloride	3.84	62	785577	44.0214 ug/L	100
5) 1,3-Butadiene	3.89	54	349607	27.4376 ug/L	90
6) Bromomethane	4.73	94	274076	45.1539 ug/L	98
7) Chloroethane	4.89	64	406712	55.8643 ug/L	98
8) Trichlorofluoromethane	5.37	101	851761	49.3841 ug/L	98
9) Diethyl ether	5.91	59	681811	102.7066 ug/L	99
10) Isoprene	5.94	67	811140	64.0580 ug/L	96
11) Acrolein	6.15	56	80880	98.1714 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	494289	53.3136 ug/L	98
13) Acetone	6.25	43	85566	59.2202 ug/L	100
14) 1,1-Dichloroethene	6.47	61	782591	49.5868 ug/L	99
15) Tert-Butyl Alcohol	6.59	59	92214	215.9929 ug/L	99
16) Dimethyl Sulfide	6.74	62	585403	64.6285 ug/L	99
17) Iodomethane	6.99	142	218559	36.7730 ug/L	94
18) Methyl acetate	7.01	43	230990	42.2761 ug/L	97
19) Methylene Chloride	7.26	84	493851	50.3835 ug/L	97
20) Carbon Disulfide	7.30	76	1560781	48.7663 ug/L	100
21) Acrylonitrile	7.44	53	119847	55.2530 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	1039620	55.9512 ug/L	98
23) trans-1,2-Dichloroethene	7.71	61	774357	51.6667 ug/L	100
24) n-Hexane	7.79	57	795155	53.7064 ug/L	96
25) Diisopropyl ether	8.13	45	3847749	104.1453 ug/L	99
26) Vinyl Acetate	8.30	43	823818	83.8985 ug/L	99
27) 1,1-Dichloroethane	8.33	63	987280	51.8740 ug/L	99
28) Ethyl-Tert-Butyl ether	8.71	59	2933980	100.8218 ug/L	97
29) 2-Butanone	8.89	43	134931	54.2037 ug/L	99
30) Propionitrile	8.99	54	75739	103.6940 ug/L	97
31) 2,2-Dichloropropane	9.11	77	905546	56.9317 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	546221	51.0794 ug/L	98
33) Chloroform	9.38	83	967794	53.5318 ug/L	99
34) 1-Bromopropane	9.52	122	106430	60.6091 ug/L	99
35) Bromochloromethane	9.61	130	281529	53.4801 ug/L	98
36) Tetrahydrofuran	9.64	42	163322	99.9489 ug/L	98
38) 1,1,1-Trichloroethane	9.91	97	894608	55.1269 ug/L	98
39) Cyclohexane	9.94	56	1022711	52.9592 ug/L	99
40) 1,1-Dichloropropene	10.11	75	736268	52.6946 ug/L	100
41) Tert-Amyl-Methyl ether	10.21	73	2268375	105.1318 ug/L	99
42) Carbon Tetrachloride	10.25	117	790345	54.4939 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M407761.D 8260WT.M Thu Oct 01 09:03:08 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407761.D Vial: 17
Acq On : 30 Sep 2015 17:27 Operator: TMB
Sample : WG540912-12 50ug/L ALT SRC STD 8 Inst : HPMS8
Misc : 1,1 STD72747 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:03:07 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	652312	52.5432 ug/L		98
46)	Benzene	10.47	78	2027923	52.8945 ug/L		99
47)	Trichloroethene	11.21	130	525698	50.9345 ug/L		96
48)	Methylcyclohexane	11.31	83	858331	53.7471 ug/L		99
49)	1,2-Dichloropropane	11.43	63	531322	51.4427 ug/L		94
50)	Bromodichloromethane	11.73	83	695935	52.2028 ug/L		100
51)	1,4-Dioxane	11.72	88	10964	230.5749 ug/L		87
52)	Dibromomethane	11.81	93	254190	51.6839 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	220739	51.8524 ug/L		95
54)	4-Methyl-2-Pentanone	12.06	58	110611	50.6490 ug/L		96
55)	cis-1,3-Dichloropropene	12.36	75	817619	55.2478 ug/L		100
56)	Dimethyl Disulfide	12.63	79	433239	54.2908 ug/L		97
59)	Toluene	12.78	91	2168150	50.1511 ug/L		100
60)	Ethyl Methacrylate	12.89	69	467899	54.2856 ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	651098	49.0907 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	325095	47.3770 ug/L		97
64)	2-Hexanone	13.12	58	104133	48.2686 ug/L	#	94
65)	1,3-Dichloropropane	13.49	76	590786	48.1781 ug/L		94
66)	Tetrachloroethene	13.61	164	462809	50.3569 ug/L		99
67)	Dibromochloromethane	13.87	129	437204	49.2803 ug/L		98
68)	1,2-Dibromoethane	14.13	107	327494	47.8044 ug/L		99
69)	1-Chlorohexane	14.21	91	794949	51.3874 ug/L		99
70)	Chlorobenzene	14.62	112	1499530	51.7645 ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.66	131	530992	49.5741 ug/L		98
72)	Ethylbenzene	14.66	106	830493	49.2139 ug/L		93
73)	m-,p-Xylene	14.75	106	2033249	105.0639 ug/L		95
74)	o-Xylene	15.31	106	1009684	51.5930 ug/L		97
75)	Styrene	15.35	104	1628775	52.5300 ug/L		96
76)	Bromoform	15.83	173	273147	51.2148 ug/L		98
77)	Isopropylbenzene	15.73	105	2539990	54.1054 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	370394	47.9437 ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	105109	48.9615 ug/L		65
82)	trans-1,4-Dichloro-2-Buten	16.18	53	124572	43.8793 ug/L	#	51
83)	n-Propylbenzene	16.24	91	3088551	50.9435 ug/L		98
84)	Bromobenzene	16.37	156	606575	49.2873 ug/L		97
85)	1,3,5-Trimethylbenzene	16.42	105	2194366	52.6443 ug/L		100
86)	2-Chlorotoluene	16.52	91	2136948	53.2159 ug/L		100
87)	4-Chlorotoluene	16.56	91	1837561	52.9124 ug/L		99
88)	a-Methylstyrene	16.83	118	1243601	54.7270 ug/L		100
89)	tert-Butylbenzene	16.89	134	474225	51.7157 ug/L		91
90)	1,2,4-Trimethylbenzene	16.94	105	2170152	51.5219 ug/L		100
91)	sec-Butylbenzene	17.16	105	2683180	51.8189 ug/L		96
92)	p-Isopropyltoluene	17.32	119	2149600	51.9227 ug/L		96
93)	1,3-Dichlorobenzene	17.51	146	1240636	50.5051 ug/L		99
94)	1,4-Dichlorobenzene	17.64	146	1189152	48.6129 ug/L		99
95)	n-Butylbenzene	17.85	91	2040120	52.8625 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	1091732	50.7918 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	64091	47.3397 ug/L		98
98)	1,2,4-Trichlorobenzene	20.27	180	727823	49.2868 ug/L		98
99)	Hexachlorobutadiene	20.42	225	361689	51.2078 ug/L		99
100)	Naphthalene	20.64	128	946559	44.3364 ug/L		99
101)	1,2,3-Trichlorobenzene	20.95	180	612517	48.6406 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M407761.D 8260WT.M Thu Oct 01 09:03:08 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407761.D Vial: 17
Acq On : 30 Sep 2015 17:27 Operator: TMB
Sample : WG540912-12 50ug/L ALT SRC STD 8 Inst : HPMS8
Misc : 1,1 STD72747 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 1 9:03 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration

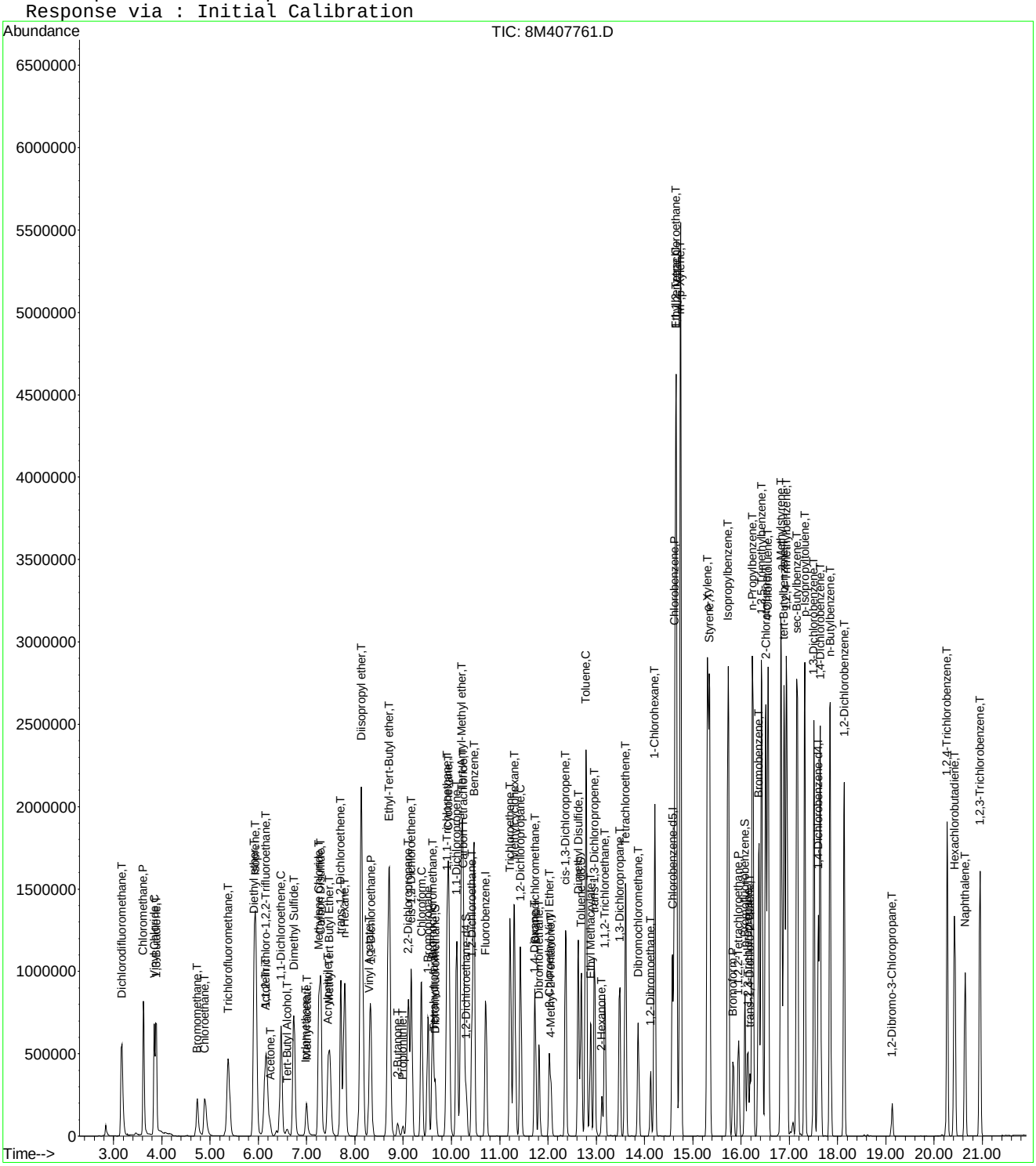

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\093015\8M407761.D Vial: 17
Acq On : 30 Sep 2015 17:27 Operator: TMB
Sample : WG540912-12 50ug/L ALT SRC STD 8 Inst : HPMS8
Misc : 1,1 STD72747 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	104	0.00
2	T	Dichlorodifluoromethane	50.0000	58.7139	-17.4	118	0.00
3	P	Chloromethane	50.0000	49.6455	0.7	103	0.00
4	C	Vinyl Chloride	50.0000	44.0214	12.0	99	0.00
5	T	1,3-Butadiene	50.0000	27.4376	45.1#	59	0.00
6	T	Bromomethane	50.0000	45.1538	9.7	103	0.00
7	T	Chloroethane	50.0000	55.8643	-11.7	114	-0.01
8	T	Trichlorofluoromethane	50.0000	49.3841	1.2	106	-0.01
9	T	Diethyl ether	100.0000	102.7066	-2.7	111	0.00
10	T	Isoprene	50.0000	64.0580	-28.1#	125	-0.01
11	T	Acrolein	50.0000	98.1714	-96.3#	218	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	53.3136	-6.6	113	0.00
13	T	Acetone	50.0000	59.2202	-18.4	137	0.00
14	C	1,1-Dichloroethene	50.0000	49.5868	0.8	108	0.00
15	T	Tert-Butyl Alcohol	200.0000	215.9929	-8.0	124	0.00
16	T	Dimethyl Sulfide	50.0000	64.6285	-29.3#	132	0.00
17	T	Iodomethane	50.0000	36.7730	26.5#	78	0.00
18	T	Methyl acetate	50.0000	42.2761	15.4	97	0.00
19	T	Methylene Chloride	50.0000	50.3835	-0.8	108	0.00
20	T	Carbon Disulfide	50.0000	48.7663	2.5	99	0.00
21	T	Acrylonitrile	50.0000	55.2530	-10.5	116	0.00
22	T	Methyl Tert Butyl Ether	50.0000	55.9512	-11.9	119	0.00
23	T	trans-1,2-Dichloroethene	50.0000	51.6667	-3.3	107	0.00
24	T	n-Hexane	50.0000	53.7064	-7.4	109	0.00
25	T	Diisopropyl ether	100.0000	104.1453	-4.1	108	0.00
26	T	Vinyl Acetate	50.0000	83.8985	-67.8#	173	0.00
27	P	1,1-Dichloroethane	50.0000	51.8740	-3.7	110	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	100.8218	-0.8	106	0.00
29	T	2-Butanone	50.0000	54.2037	-8.4	122	0.00
30	T	Propionitrile	100.0000	103.6940	-3.7	114	0.00
31	T	2,2-Dichloropropane	50.0000	56.9317	-13.9	120	0.00
32	T	cis-1,2-Dichloroethene	50.0000	51.0795	-2.2	108	0.00
33	C	Chloroform	50.0000	53.5318	-7.1	112	0.00
34		1-Bromopropane	50.0000	60.6091	-21.2	119	0.00
35	T	Bromochloromethane	50.0000	53.4801	-7.0	110	0.00
36	T	Tetrahydrofuran	100.0000	99.9489	0.1	113	0.00
37	S	Dibromofluoromethane	25.0000	25.0638	-0.3	104	0.00
38	T	1,1,1-Trichloroethane	50.0000	55.1269	-10.3	114	0.00
39	T	Cyclohexane	50.0000	52.9592	-5.9	109	0.00
40	T	1,1-Dichloropropene	50.0000	52.6946	-5.4	110	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	105.1318	-5.1	112	0.00
42	T	Carbon Tetrachloride	50.0000	54.4939	-9.0	111	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.5246	1.9	102	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	52.5432	-5.1	109	0.00
46	T	Benzene	50.0000	52.8945	-5.8	107	0.00
47	T	Trichloroethene	50.0000	50.9345	-1.9	108	0.00
48	T	Methylcyclohexane	50.0000	53.7471	-7.5	110	0.00
49	C	1,2-Dichloropropane	50.0000	51.4427	-2.9	108	0.00
50	T	Bromodichloromethane	50.0000	52.2028	-4.4	107	0.00
51	T	1,4-Dioxane	200.0000	230.5749	-15.3	126	0.00
52	T	Dibromomethane	50.0000	51.6839	-3.4	108	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	51.8524	-3.7	114	0.00
54	T	4-Methyl-2-Pentanone	50.0000	50.6489	-1.3	115	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\093015\8M407761.D Vial: 17
Acq On : 30 Sep 2015 17:27 Operator: TMB
Sample : WG540912-12 50ug/L ALT SRC STD 8 Inst : HPMS8
Misc : 1,1 STD72747 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	55.2478	-10.5	112	0.00
56	T	Dimethyl Disulfide	50.0000	54.2908	-8.6	114	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	111	0.00
58	S	Toluene-d8	25.0000	24.4077	2.4	106	0.00
59	C	Toluene	50.0000	50.1511	-0.3	109	0.00
60	T	Ethyl Methacrylate	50.0000	54.2856	-8.6	120	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	49.0907	1.8	107	0.00
63	T	1,1,2-Trichloroethane	50.0000	47.3770	5.2	109	0.00
64	T	2-Hexanone	50.0000	48.2686	3.5	116	0.00
65	T	1,3-Dichloropropane	50.0000	48.1781	3.6	111	0.00
66	T	Tetrachloroethene	50.0000	50.3569	-0.7	114	0.00
67	T	Dibromochloromethane	50.0000	49.2803	1.4	109	0.00
68	T	1,2-Dibromoethane	50.0000	47.8044	4.4	108	0.00
69	T	1-Chlorohexane	50.0000	51.3874	-2.8	111	0.00
70	P	Chlorobenzene	50.0000	51.7645	-3.5	114	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	49.5741	0.9	108	0.00
72	C	Ethylbenzene	50.0000	49.2139	1.6	111	0.00
73	T	m-,p-Xylene	100.0000	105.0639	-5.1	113	0.00
74	T	o-Xylene	50.0000	51.5930	-3.2	115	0.00
75	T	Styrene	50.0000	52.5300	-5.1	111	0.00
76	P	Bromoform	50.0000	51.2148	-2.4	114	0.00
77	T	Isopropylbenzene	50.0000	54.1054	-8.2	115	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	110	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	47.9437	4.1	110	0.00
80	S	p-Bromofluorobenzene	25.0000	25.1074	-0.4	111	0.00
81	T	1,2,3-Trichloropropane	50.0000	48.9615	2.1	112	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	43.8792	12.2	97	0.00
83	T	n-Propylbenzene	50.0000	50.9435	-1.9	113	0.00
84	T	Bromobenzene	50.0000	49.2873	1.4	110	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	52.6443	-5.3	112	0.00
86	T	2-Chlorotoluene	50.0000	53.2159	-6.4	116	0.00
87	T	4-Chlorotoluene	50.0000	52.9124	-5.8	112	0.00
88	T	a-Methylstyrene	50.0000	54.7270	-9.5	117	0.00
89	T	tert-Butylbenzene	50.0000	51.7157	-3.4	118	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	51.5219	-3.0	109	0.00
91	T	sec-Butylbenzene	50.0000	51.8188	-3.6	114	0.00
92	T	p-Isopropyltoluene	50.0000	51.9227	-3.8	109	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.5051	-1.0	112	0.00
94	T	1,4-Dichlorobenzene	50.0000	48.6129	2.8	109	0.00
95	T	n-Butylbenzene	50.0000	52.8625	-5.7	108	0.00
96	T	1,2-Dichlorobenzene	50.0000	50.7918	-1.6	113	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	47.3396	5.3	108	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	49.2868	1.4	106	0.00
99	T	Hexachlorobutadiene	50.0000	51.2078	-2.4	114	0.00
100	T	Naphthalene	50.0000	44.3364	11.3	100	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	48.6406	2.7	106	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M407761.D 8260WT.M Thu Oct 01 09:04:55 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\111215\8M408649.D Vial: 3
Acq On : 12 Nov 2015 11:50 Operator: TMB
Sample : WG546599-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD73419 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 12 12:12:45 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	1318034	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	971425	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	550390	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.68	111	327919	26.1410 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.56%		
43) 1,2-Dichloroethane-d4	10.31	65	328167	25.6584 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.64%		
58) Toluene-d8	12.69	98	1156922	25.6682 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.68%		
80) p-Bromofluorobenzene	16.08	95	462218	24.0689 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.28%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.18	85	1191585	59.4662 ug/L	99
3) Chloromethane	3.63	50	1753335	57.3439 ug/L	99
4) Vinyl Chloride	3.85	62	1360268	56.2982 ug/L	99
5) 1,3-Butadiene	3.89	54	1109585	74.3238 ug/L	100
6) Bromomethane	4.74	94	424533	51.3238 ug/L	99
7) Chloroethane	4.90	64	533046	54.0763 ug/L	97
8) Trichlorofluoromethane	5.39	101	1261789	54.0321 ug/L	99
9) Diethyl ether	5.91	59	906444	100.8489 ug/L	99
10) Isoprene	5.96	67	907023	52.9043 ug/L	94
11) Acrolein	6.15	56	43262	38.7834 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	678764	54.0718 ug/L	99
13) Acetone	6.26	43	101571	51.9199 ug/L	91
14) 1,1-Dichloroethene	6.47	61	1165160	54.5271 ug/L	100
15) Tert-Butyl Alcohol	6.59	59	117475	203.2280 ug/L	94
16) Dimethyl Sulfide	6.74	62	630082	51.3762 ug/L	99
17) Iodomethane	7.00	142	259494	32.4700 ug/L	93
18) Methyl acetate	7.01	43	362766	49.0370 ug/L	96
19) Methylene Chloride	7.26	84	687211	51.7819 ug/L	99
20) Carbon Disulfide	7.30	76	2270044	52.3851 ug/L	100
21) Acrylonitrile	7.44	53	161335	54.9355 ug/L	100
22) Methyl Tert Butyl Ether	7.47	73	1373992	54.6153 ug/L	98
23) trans-1,2-Dichloroethene	7.71	61	1091764	53.8014 ug/L	99
24) n-Hexane	7.80	57	1062619	53.0087 ug/L	95
25) Diisopropyl ether	8.14	45	5068442	101.3218 ug/L	99
26) Vinyl Acetate	8.30	43	1111702	83.6193 ug/L	99
27) 1,1-Dichloroethane	8.33	63	1357322	52.6730 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	3997517	101.4573 ug/L	97
29) 2-Butanone	8.89	43	185628	55.0752 ug/L	99
30) Propionitrile	8.99	54	101728	102.8656 ug/L	100
31) 2,2-Dichloropropane	9.11	77	1141254	52.9934 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	762873	52.6897 ug/L	100
33) Chloroform	9.39	83	1294491	52.8839 ug/L	100
34) 1-Bromopropane	9.52	122	126022	53.0049 ug/L	99
35) Bromochloromethane	9.61	130	392097	55.0120 ug/L	99
36) Tetrahydrofuran	9.63	42	231776	104.7605 ug/L	97
38) 1,1,1-Trichloroethane	9.91	97	1155248	52.5777 ug/L	98
39) Cyclohexane	9.94	56	1367240	52.2912 ug/L	97
40) 1,1-Dichloropropene	10.11	75	988636	52.2591 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	2925750	100.1503 ug/L	97
42) Carbon Tetrachloride	10.26	117	1061740	54.0686 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M408649.D 8260WT.M Thu Nov 12 12:12:46 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\111215\8M408649.D Vial: 3
Acq On : 12 Nov 2015 11:50 Operator: TMB
Sample : WG546599-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD73419 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 12 12:12:45 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	899624	53.5202 ug/L		99
46)	Benzene	10.47	78	2699714	52.0083 ug/L		99
47)	Trichloroethene	11.22	130	704456	50.4110 ug/L		97
48)	Methylcyclohexane	11.31	83	1092821	50.5411 ug/L		98
49)	1,2-Dichloropropane	11.43	63	723437	51.7323 ug/L		97
50)	Bromodichloromethane	11.73	83	959440	53.1543 ug/L		100
51)	1,4-Dioxane	11.72	88	13351	207.3730 ug/L		97
52)	Dibromomethane	11.82	93	359589	54.0006 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.03	63	303782	52.7044 ug/L		96
54)	4-Methyl-2-Pentanone	12.06	58	154153	52.1338 ug/L		97
55)	cis-1,3-Dichloropropene	12.36	75	1061610	52.9815 ug/L		100
56)	Dimethyl Disulfide	12.63	79	555874	51.4483 ug/L		97
59)	Toluene	12.79	91	2820900	51.1032 ug/L		100
60)	Ethyl Methacrylate	12.88	69	590566	53.6625 ug/L		95
62)	trans-1,3-Dichloropropene	12.96	75	907078	53.5632 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	463019	52.8476 ug/L		98
64)	2-Hexanone	13.12	58	140821	51.1226 ug/L	#	95
65)	1,3-Dichloropropane	13.49	76	800995	51.1586 ug/L		95
66)	Tetrachloroethene	13.60	164	604705	51.5311 ug/L		97
67)	Dibromochloromethane	13.87	129	619244	54.6664 ug/L		99
68)	1,2-Dibromoethane	14.13	107	461896	52.8054 ug/L		98
69)	1-Chlorohexane	14.21	91	988653	50.0530 ug/L		98
70)	Chlorobenzene	14.63	112	1862634	50.3586 ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.66	131	732071	53.5290 ug/L		99
72)	Ethylbenzene	14.66	106	1069750	49.6482 ug/L		91
73)	m-,p-Xylene	14.75	106	2532994	102.5100 ug/L		92
74)	o-Xylene	15.31	106	1230668	49.2511 ug/L		94
75)	Styrene	15.35	104	2052148	51.8351 ug/L		98
76)	Bromoform	15.84	173	379402	55.7144 ug/L		99
77)	Isopropylbenzene	15.73	105	3105822	51.8148 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	518613	51.0728 ug/L		99
81)	1,2,3-Trichloropropane	16.15	110	143383	50.8149 ug/L		64
82)	trans-1,4-Dichloro-2-Buten	16.19	53	197678	52.9755 ug/L	#	68
83)	n-Propylbenzene	16.24	91	3810352	47.8164 ug/L		98
84)	Bromobenzene	16.37	156	805214	49.7783 ug/L		98
85)	1,3,5-Trimethylbenzene	16.43	105	2724135	49.7221 ug/L		100
86)	2-Chlorotoluene	16.51	91	2595070	49.1671 ug/L		97
87)	4-Chlorotoluene	16.56	91	2178067	47.7161 ug/L		96
88)	a-Methylstyrene	16.83	118	1456061	48.7504 ug/L		99
89)	tert-Butylbenzene	16.89	134	577963	47.9530 ug/L		90
90)	1,2,4-Trimethylbenzene	16.94	105	2817345	50.8885 ug/L		98
91)	sec-Butylbenzene	17.16	105	3320200	48.7843 ug/L		97
92)	p-Isopropyltoluene	17.32	119	2775864	51.0125 ug/L		95
93)	1,3-Dichlorobenzene	17.51	146	1623258	50.2755 ug/L		98
94)	1,4-Dichlorobenzene	17.64	146	1596845	49.6655 ug/L		98
95)	n-Butylbenzene	17.84	91	2759651	54.4031 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	1429530	50.5999 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	88656	49.8212 ug/L		95
98)	1,2,4-Trichlorobenzene	20.27	180	1045267	53.8530 ug/L		99
99)	Hexachlorobutadiene	20.42	225	462817	49.8526 ug/L		99
100)	Naphthalene	20.64	128	1631179	58.1290 ug/L		99
101)	1,2,3-Trichlorobenzene	20.95	180	891400	53.8556 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M408649.D 8260WT.M Thu Nov 12 12:12:46 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\111215\8M408649.D Vial: 3
Acq On : 12 Nov 2015 11:50 Operator: TMB
Sample : WG546599-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD73419 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 12 12:12 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration

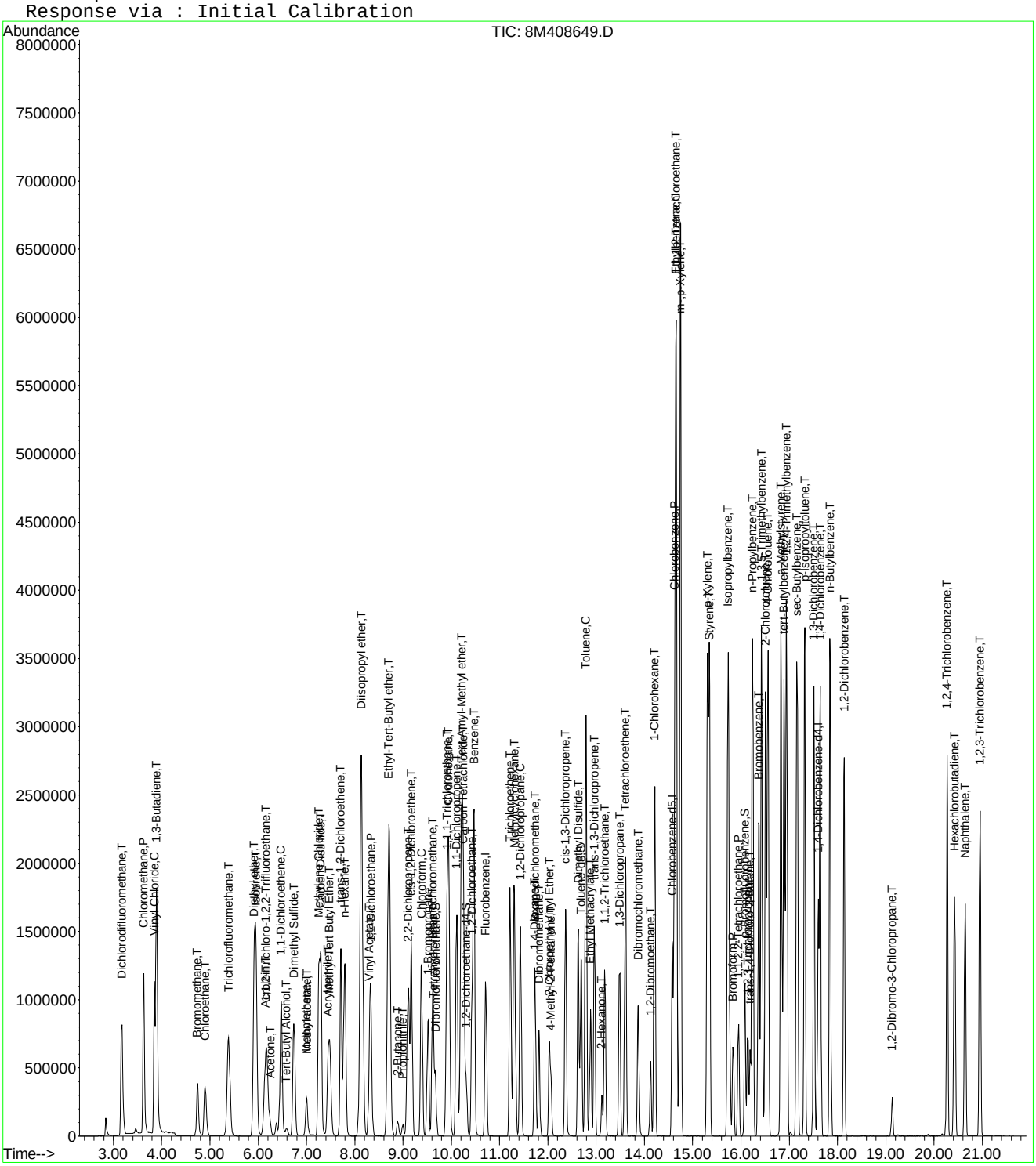

Continuing Calibration Area and RT check

Instrument: HPMS8
Initial cal date: 30 Sep 2015 13:27
CCV date: 12 Nov 2015 11:50
CCV Filename: 8M408649.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	938292	10.72	687265	14.58	378981	17.60
CCV	1318034	10.71	971425	14.58	550390	17.60

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\111215\8M408649.D Vial: 3
Acq On : 12 Nov 2015 11:50 Operator: TMB
Sample : WG546599-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD73419 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	140	0.00
2	T	Dichlorodifluoromethane	0.3801	0.4520	-18.9	162#	0.00
3	P	Chloromethane	0.5799	0.6651	-14.7	161#	0.01
4	C	Vinyl Chloride	0.4583	0.5160	-12.6	171#	0.00
5	T	1,3-Butadiene	0.2992	0.4209	-40.7#	187#	0.00
6	T	Bromomethane	0.1393	0.1611	-15.6	159#	0.00
7	T	Chloroethane	0.1870	0.2022	-8.2	150	0.00
8	T	Trichlorofluoromethane	0.4429	0.4787	-8.1	157#	0.00
9	T	Diethyl ether	0.1705	0.1719	-0.9	148	0.00
10	T	Isoprene	0.3252	0.3441	-5.8	140	0.00
11	T	Acrolein	0.0212	0.0164	22.4	117	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2381	0.2575	-8.1	156#	0.00
13	T	Acetone	0.0371	0.0385	-3.8	162#	0.01
14	C	1,1-Dichloroethene	0.4053	0.4420	-9.1	160#	0.00
15	T	Tert-Butyl Alcohol	0.0110	0.0111	-1.6	158#	0.00
16	T	Dimethyl Sulfide	0.2326	0.2390	-2.8	142	0.00
17	T	Iodomethane	0.1277	0.0984	22.9	93	0.01
18	T	Methyl acetate	0.1403	0.1376	1.9	152#	0.00
19	T	Methylene Chloride	0.2517	0.2607	-3.6	150#	0.00
20	T	Carbon Disulfide	0.8219	0.8611	-4.8	144	0.00
21	T	Acrylonitrile	0.0557	0.0612	-9.9	156#	0.00
22	T	Methyl Tert Butyl Ether	0.4772	0.5212	-9.2	158#	0.00
23	T	trans-1,2-Dichloroethene	0.3849	0.4142	-7.6	152#	0.00
24	T	n-Hexane	0.3802	0.4031	-6.0	146	0.00
25	T	Diisopropyl ether	0.9488	0.9614	-1.3	143	0.00
26	T	Vinyl Acetate	0.2522	0.4217	-67.2#	234#	0.00
27	P	1,1-Dichloroethane	0.4888	0.5149	-5.3	152#	0.00
28	T	Ethyl-Tert-Butyl ether	0.7473	0.7582	-1.5	144	0.00
29	T	2-Butanone	0.0639	0.0704	-10.2	168#	0.00
30	T	Propionitrile	0.0188	0.0193	-2.9	154#	0.00
31	T	2,2-Dichloropropane	0.4085	0.4329	-6.0	151#	0.00
32	T	cis-1,2-Dichloroethene	0.2746	0.2894	-5.4	151#	0.00
33	C	Chloroform	0.4643	0.4911	-5.8	150#	0.00
34		1-Bromopropane	0.0451	0.0478	-6.0	141	0.00
35	T	Bromochloromethane	0.1352	0.1487	-10.0	154#	0.00
36	T	Tetrahydrofuran	0.0420	0.0440	-4.8	160#	0.00
37	S	Dibromofluoromethane	0.2379	0.2488	-4.6	146	0.00
38	T	1,1,1-Trichloroethane	0.4168	0.4382	-5.2	147	0.00
39	T	Cyclohexane	0.4959	0.5187	-4.6	145	0.00
40	T	1,1-Dichloropropene	0.3588	0.3750	-4.5	147	0.00
41	T	Tert-Amyl-Methyl ether	0.5541	0.5550	-0.2	145	0.00
42	T	Carbon Tetrachloride	0.3725	0.4028	-8.1	150	0.00
43	S	1,2-Dichloroethane-d4	0.2426	0.2490	-2.6	144	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.3188	0.3413	-7.0	150#	0.00
46	T	Benzene	0.9846	1.0241	-4.0	143	0.00
47	T	Trichloroethene	0.2651	0.2672	-0.8	145	0.00
48	T	Methylcyclohexane	0.4101	0.4146	-1.1	140	0.00
49	C	1,2-Dichloropropane	0.2652	0.2744	-3.5	147	0.00
50	T	Bromodichloromethane	0.3424	0.3640	-6.3	147	0.00
51	T	1,4-Dioxane	0.0012	0.0013	-4.1	154#	0.00
52	T	Dibromomethane	0.1263	0.1364	-8.0	153#	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1093	0.1152	-5.4	156#	0.00
54	T	4-Methyl-2-Pentanone	0.0561	0.0585	-4.3	160#	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\111215\8M408649.D Vial: 3
Acq On : 12 Nov 2015 11:50 Operator: TMB
Sample : WG546599-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD73419 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.3801	0.4027	-6.0	146	0.00
56	T	Dimethyl Disulfide	0.2049	0.2109	-2.9	147	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	141	0.00
58	S	Toluene-d8	1.1600	1.1910	-2.7	142	0.00
59	C	Toluene	1.4206	1.4519	-2.2	142	0.00
60	T	Ethyl Methacrylate	0.2832	0.3040	-7.3	151#	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.4358	0.4669	-7.1	149	0.00
63	T	1,1,2-Trichloroethane	0.2255	0.2383	-5.7	155#	0.00
64	T	2-Hexanone	0.0709	0.0725	-2.2	157#	0.00
65	T	1,3-Dichloropropane	0.4029	0.4123	-2.3	150	0.00
66	T	Tetrachloroethene	0.3020	0.3113	-3.1	149	0.00
67	T	Dibromochloromethane	0.2915	0.3187	-9.3	154#	0.00
68	T	1,2-Dibromoethane	0.2251	0.2377	-5.6	153#	0.00
69	T	1-Chlorohexane	0.5083	0.5089	-0.1	138	0.00
70	P	Chlorobenzene	0.9519	0.9587	-0.7	142	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3520	0.3768	-7.1	149	0.00
72	C	Ethylbenzene	0.5545	0.5506	0.7	143	0.00
73	T	m-,p-Xylene	0.6359	0.6519	-2.5	140	0.00
74	T	o-Xylene	0.6431	0.6334	1.5	141	0.00
75	T	Styrene	1.0189	1.0563	-3.7	140	0.00
76	P	Bromoform	0.1752	0.1953	-11.4	158#	0.00
77	T	Isopropylbenzene	1.5426	1.5986	-3.6	141	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	145	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4612	0.4711	-2.1	154#	0.00
80	S	p-Bromofluorobenzene	0.8723	0.8398	3.7	140	0.00
81	T	1,2,3-Trichloropropane	0.1282	0.1303	-1.6	153#	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1695	0.1796	-6.0	155#	0.00
83	T	n-Propylbenzene	3.6196	3.4615	4.4	139	0.00
84	T	Bromobenzene	0.7348	0.7315	0.4	146	0.00
85	T	1,3,5-Trimethylbenzene	2.4886	2.4747	0.6	139	0.00
86	T	2-Chlorotoluene	2.3974	2.3575	1.7	140	0.00
87	T	4-Chlorotoluene	2.0734	1.9787	4.6	133	0.00
88	T	a-Methylstyrene	1.3567	1.3228	2.5	137	0.00
89	T	tert-Butylbenzene	0.5475	0.5251	4.1	144	0.00
90	T	1,2,4-Trimethylbenzene	2.5147	2.5594	-1.8	141	0.00
91	T	sec-Butylbenzene	3.0914	3.0162	2.4	141	0.00
92	T	p-Isopropyltoluene	2.4717	2.5217	-2.0	141	0.00
93	T	1,3-Dichlorobenzene	1.4666	1.4746	-0.6	146	0.00
94	T	1,4-Dichlorobenzene	1.4604	1.4507	0.7	147	0.00
95	T	n-Butylbenzene	2.3041	2.5070	-8.8	147	0.00
96	T	1,2-Dichlorobenzene	1.2833	1.2987	-1.2	149	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.0808	0.0805	0.4	149	0.00
98	T	1,2,4-Trichlorobenzene	0.8816	0.9496	-7.7	152#	0.00
99	T	Hexachlorobutadiene	0.4217	0.4204	0.3	146	0.00
100	T	Naphthalene	1.2746	1.4818	-16.3	173#	0.00
101	T	1,2,3-Trichlorobenzene	0.7518	0.8098	-7.7	154#	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M408649.D 8260WT.M Thu Nov 12 12:16:54 2015 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\111215\8M408649.D Vial: 3
Acq On : 12 Nov 2015 11:50 Operator: TMB
Sample : WG546599-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD73419 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	140	0.00
2	T	Dichlorodifluoromethane	50.0000	59.4662	-18.9	162	0.00
3	P	Chloromethane	50.0000	57.3439	-14.7	161	0.01
4	C	Vinyl Chloride	50.0000	56.2982	-12.6	171	0.00
5	T	1,3-Butadiene	50.0000	74.3238	-48.6#	187	0.00
6	T	Bromomethane	50.0000	51.3238	-2.6	159	0.00
7	T	Chloroethane	50.0000	54.0763	-8.2	150	0.00
8	T	Trichlorofluoromethane	50.0000	54.0321	-8.1	157	0.00
9	T	Diethyl ether	100.0000	100.8489	-0.8	148	0.00
10	T	Isoprene	50.0000	52.9043	-5.8	140	0.00
11	T	Acrolein	50.0000	38.7834	22.4	117	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	54.0718	-8.1	156	0.00
13	T	Acetone	50.0000	51.9199	-3.8	162	0.01
14	C	1,1-Dichloroethene	50.0000	54.5271	-9.1	160	0.00
15	T	Tert-Butyl Alcohol	200.0000	203.2281	-1.6	158	0.00
16	T	Dimethyl Sulfide	50.0000	51.3762	-2.8	142	0.00
17	T	Iodomethane	50.0000	32.4700	35.1#	93	0.01
18	T	Methyl acetate	50.0000	49.0370	1.9	152	0.00
19	T	Methylene Chloride	50.0000	51.7819	-3.6	150	0.00
20	T	Carbon Disulfide	50.0000	52.3851	-4.8	144	0.00
21	T	Acrylonitrile	50.0000	54.9355	-9.9	156	0.00
22	T	Methyl Tert Butyl Ether	50.0000	54.6153	-9.2	158	0.00
23	T	trans-1,2-Dichloroethene	50.0000	53.8014	-7.6	152	0.00
24	T	n-Hexane	50.0000	53.0087	-6.0	146	0.00
25	T	Diisopropyl ether	100.0000	101.3218	-1.3	143	0.00
26	T	Vinyl Acetate	50.0000	83.6193	-67.2#	234	0.00
27	P	1,1-Dichloroethane	50.0000	52.6730	-5.3	152	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	101.4573	-1.5	144	0.00
29	T	2-Butanone	50.0000	55.0752	-10.2	168	0.00
30	T	Propionitrile	100.0000	102.8656	-2.9	154	0.00
31	T	2,2-Dichloropropane	50.0000	52.9934	-6.0	151	0.00
32	T	cis-1,2-Dichloroethene	50.0000	52.6897	-5.4	151	0.00
33	C	Chloroform	50.0000	52.8839	-5.8	150	0.00
34		1-Bromopropane	50.0000	53.0049	-6.0	141	0.00
35	T	Bromochloromethane	50.0000	55.0120	-10.0	154	0.00
36	T	Tetrahydrofuran	100.0000	104.7605	-4.8	160	0.00
37	S	Dibromofluoromethane	25.0000	26.1410	-4.6	146	0.00
38	T	1,1,1-Trichloroethane	50.0000	52.5777	-5.2	147	0.00
39	T	Cyclohexane	50.0000	52.2912	-4.6	145	0.00
40	T	1,1-Dichloropropene	50.0000	52.2591	-4.5	147	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	100.1503	-0.2	145	0.00
42	T	Carbon Tetrachloride	50.0000	54.0686	-8.1	150	0.00
43	S	1,2-Dichloroethane-d4	25.0000	25.6584	-2.6	144	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	53.5202	-7.0	150	0.00
46	T	Benzene	50.0000	52.0083	-4.0	143	0.00
47	T	Trichloroethene	50.0000	50.4110	-0.8	145	0.00
48	T	Methylcyclohexane	50.0000	50.5411	-1.1	140	0.00
49	C	1,2-Dichloropropane	50.0000	51.7323	-3.5	147	0.00
50	T	Bromodichloromethane	50.0000	53.1543	-6.3	147	0.00
51	T	1,4-Dioxane	200.0000	207.3730	-3.7	154	0.00
52	T	Dibromomethane	50.0000	54.0006	-8.0	153	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	52.7044	-5.4	156	0.00
54	T	4-Methyl-2-Pentanone	50.0000	52.1338	-4.3	160	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\111215\8M408649.D Vial: 3
Acq On : 12 Nov 2015 11:50 Operator: TMB
Sample : WG546599-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD73419 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	52.9815	-6.0	146	0.00
56	T	Dimethyl Disulfide	50.0000	51.4483	-2.9	147	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	141	0.00
58	S	Toluene-d8	25.0000	25.6682	-2.7	142	0.00
59	C	Toluene	50.0000	51.1032	-2.2	142	0.00
60	T	Ethyl Methacrylate	50.0000	53.6625	-7.3	151	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	53.5632	-7.1	149	0.00
63	T	1,1,2-Trichloroethane	50.0000	52.8476	-5.7	155	0.00
64	T	2-Hexanone	50.0000	51.1226	-2.2	157	0.00
65	T	1,3-Dichloropropane	50.0000	51.1586	-2.3	150	0.00
66	T	Tetrachloroethene	50.0000	51.5311	-3.1	149	0.00
67	T	Dibromochloromethane	50.0000	54.6664	-9.3	154	0.00
68	T	1,2-Dibromoethane	50.0000	52.8054	-5.6	153	0.00
69	T	1-Chlorohexane	50.0000	50.0530	-0.1	138	0.00
70	P	Chlorobenzene	50.0000	50.3586	-0.7	142	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	53.5290	-7.1	149	0.00
72	C	Ethylbenzene	50.0000	49.6482	0.7	143	0.00
73	T	m-,p-Xylene	100.0000	102.5100	-2.5	140	0.00
74	T	o-Xylene	50.0000	49.2511	1.5	141	0.00
75	T	Styrene	50.0000	51.8351	-3.7	140	0.00
76	P	Bromoform	50.0000	55.7144	-11.4	158	0.00
77	T	Isopropylbenzene	50.0000	51.8148	-3.6	141	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	145	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	51.0727	-2.1	154	0.00
80	S	p-Bromofluorobenzene	25.0000	24.0689	3.7	140	0.00
81	T	1,2,3-Trichloropropane	50.0000	50.8149	-1.6	153	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	52.9755	-6.0	155	0.00
83	T	n-Propylbenzene	50.0000	47.8164	4.4	139	0.00
84	T	Bromobenzene	50.0000	49.7783	0.4	146	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	49.7221	0.6	139	0.00
86	T	2-Chlorotoluene	50.0000	49.1671	1.7	140	0.00
87	T	4-Chlorotoluene	50.0000	47.7161	4.6	133	0.00
88	T	a-Methylstyrene	50.0000	48.7504	2.5	137	0.00
89	T	tert-Butylbenzene	50.0000	47.9530	4.1	144	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	50.8885	-1.8	141	0.00
91	T	sec-Butylbenzene	50.0000	48.7843	2.4	141	0.00
92	T	p-Isopropyltoluene	50.0000	51.0125	-2.0	141	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.2755	-0.6	146	0.00
94	T	1,4-Dichlorobenzene	50.0000	49.6655	0.7	147	0.00
95	T	n-Butylbenzene	50.0000	54.4031	-8.8	147	0.00
96	T	1,2-Dichlorobenzene	50.0000	50.5999	-1.2	149	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	49.8212	0.4	149	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	53.8530	-7.7	152	0.00
99	T	Hexachlorobutadiene	50.0000	49.8526	0.3	146	0.00
100	T	Naphthalene	50.0000	58.1290	-16.3	173	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	53.8556	-7.7	154	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M408649.D 8260WT.M Thu Nov 12 12:16:59 2015 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\2\DATA\093015\8M407745.D          Vial: 2
Acq On    : 30 Sep 2015   9:38                        Operator: TMB
Sample    : WG540912-01 50ng BFB STD 8260             Inst    : HPMS8
Misc      : 1,1 STD72715                              Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

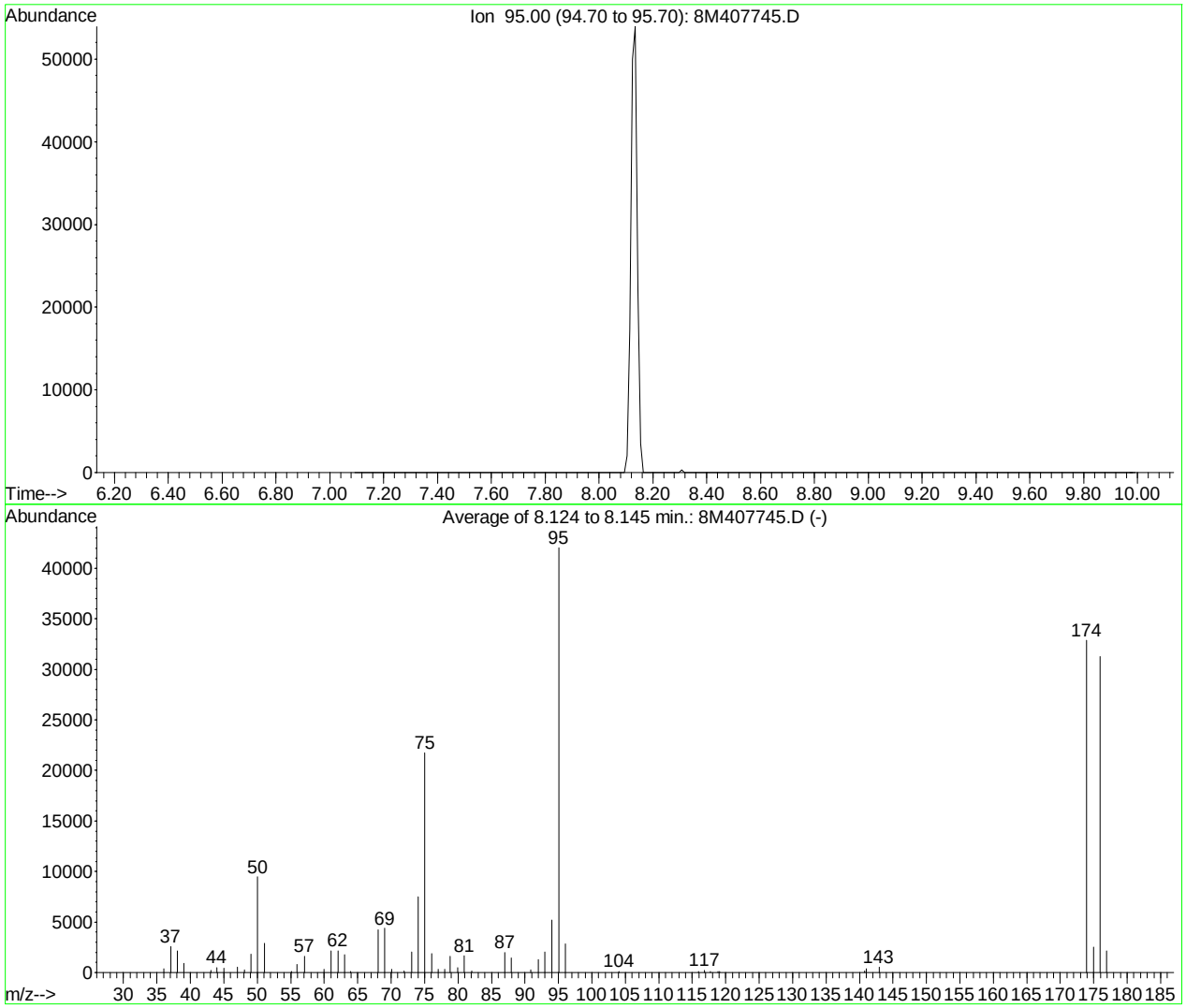

AutoFind: Scans 102, 103, 104; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.5	9471	PASS
75	95	30	60	51.7	21732	PASS
95	95	100	100	100.0	42018	PASS
96	95	5	9	6.7	2835	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	78.3	32893	PASS
175	174	5	9	7.6	2510	PASS
176	174	95	101	95.1	31272	PASS
177	176	5	9	6.8	2141	PASS

8M407745.D BFB.M Wed Sep 30 09:54:57 2015

BFB

```
Data File : C:\MSDCHEM\2\DATA\100515\8M407827.D          Vial: 1
Acq On    :  5 Oct 2015  11:26                       Operator: TMB
Sample    : WG540826-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD72715                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
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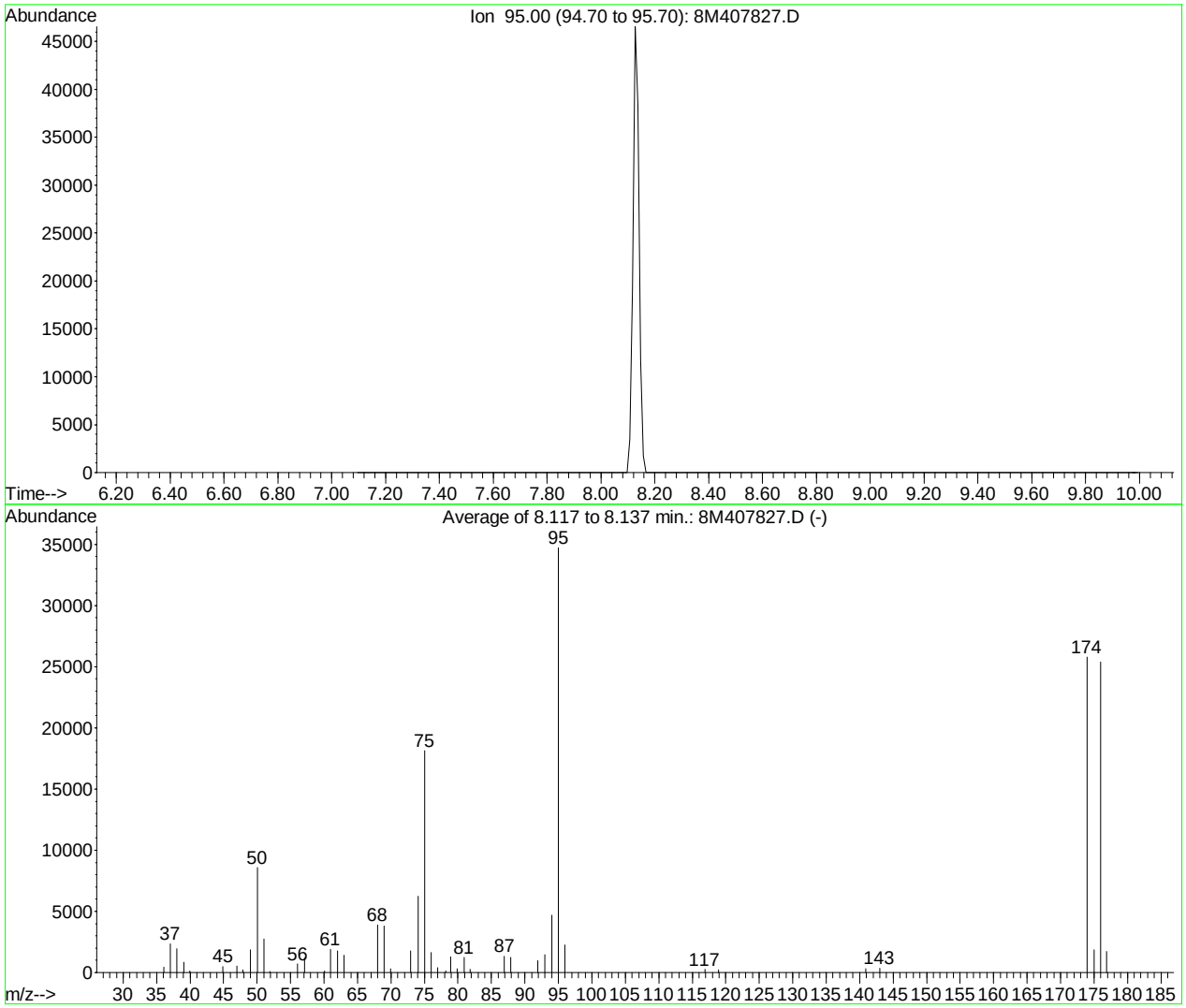

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	24.7	8565	PASS
75	95	30	60	52.2	18121	PASS
95	95	100	100	100.0	34714	PASS
96	95	5	9	6.5	2262	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	74.2	25773	PASS
175	174	5	9	7.2	1845	PASS
176	174	95	101	98.5	25378	PASS
177	176	5	9	6.9	1746	PASS

8M407827.D BFB.M Mon Oct 05 12:46:56 2015

BFB

```
Data File : C:\MSDCHEM\2\DATA\111215\8M408647.D          Vial: 1
Acq On    : 12 Nov 2015  10:55                       Operator: TMB
Sample    : WG546599-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD73273                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
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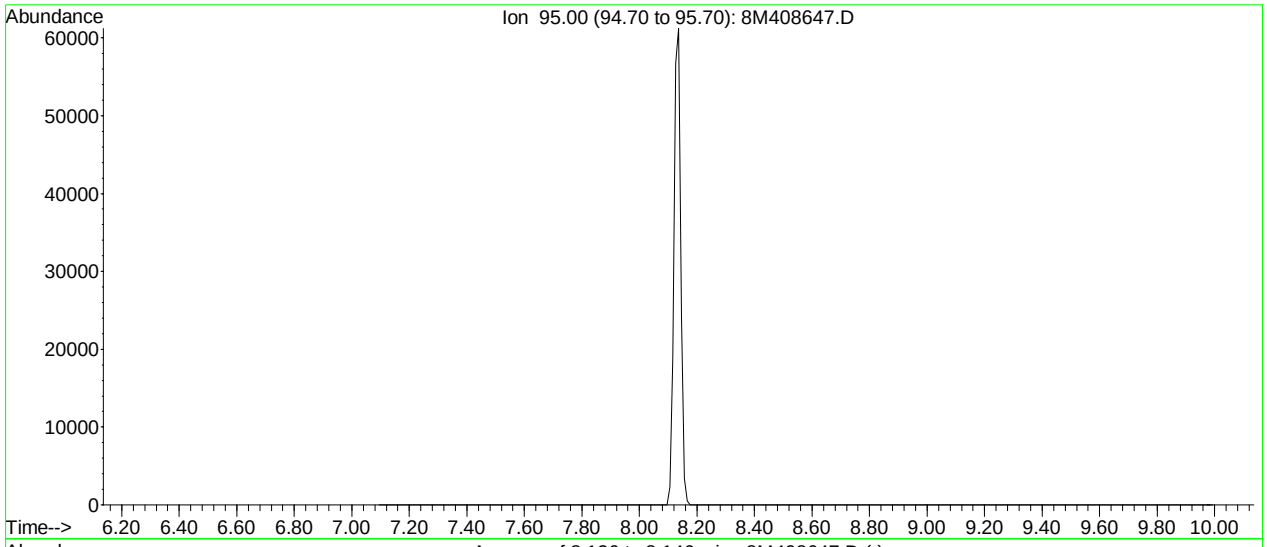

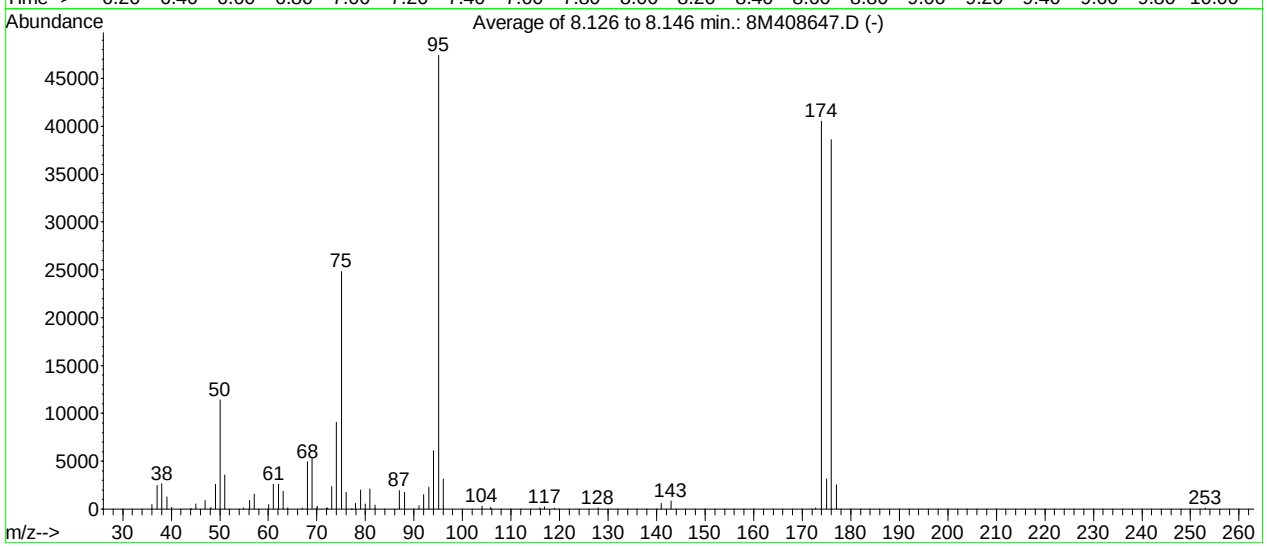

AutoFind: Scans 102, 103, 104; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	24.1	11408	PASS
75	95	30	60	52.4	24826	PASS
95	95	100	100	100.0	47405	PASS
96	95	5	9	6.7	3156	PASS
173	174	0.00	2	0.3	116	PASS
174	95	50	100	85.5	40530	PASS
175	174	5	9	7.8	3142	PASS
176	174	95	101	95.3	38613	PASS
177	176	5	9	6.6	2549	PASS

8M408647.D BFB.M Thu Nov 12 11:09:55 2015

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\111215\8M408651.D Vial: 5
Acq On : 12 Nov 2015 12:50 Operator: TMB
Sample : WG546600-01 VBLK1112 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 13 08:18:05 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	1247290	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	918700	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	482731	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	309130	26.0409 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.16%		
43) 1,2-Dichloroethane-d4	10.31	65	308721	25.5071 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.04%		
58) Toluene-d8	12.69	98	1075811	25.2385 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.96%		
80) p-Bromofluorobenzene	16.08	95	423100	25.1199 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.48%		

Target Compounds

					Qvalue
24) n-Hexane	7.80	57	5228	0.2756 ug/L	73
36) Tetrahydrofuran	9.66	42	1265	0.6042 ug/L #	40
47) Trichloroethene	11.22	130	1968	0.1488 ug/L	93

(#) = qualifier out of range (m) = manual integration
8M408651.D 8260WT.M Fri Nov 13 08:18:06 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\111215\8M408651.D Vial: 5
Acq On : 12 Nov 2015 12:50 Operator: TMB
Sample : WG546600-01 VBLK1112 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 13 8:18 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration

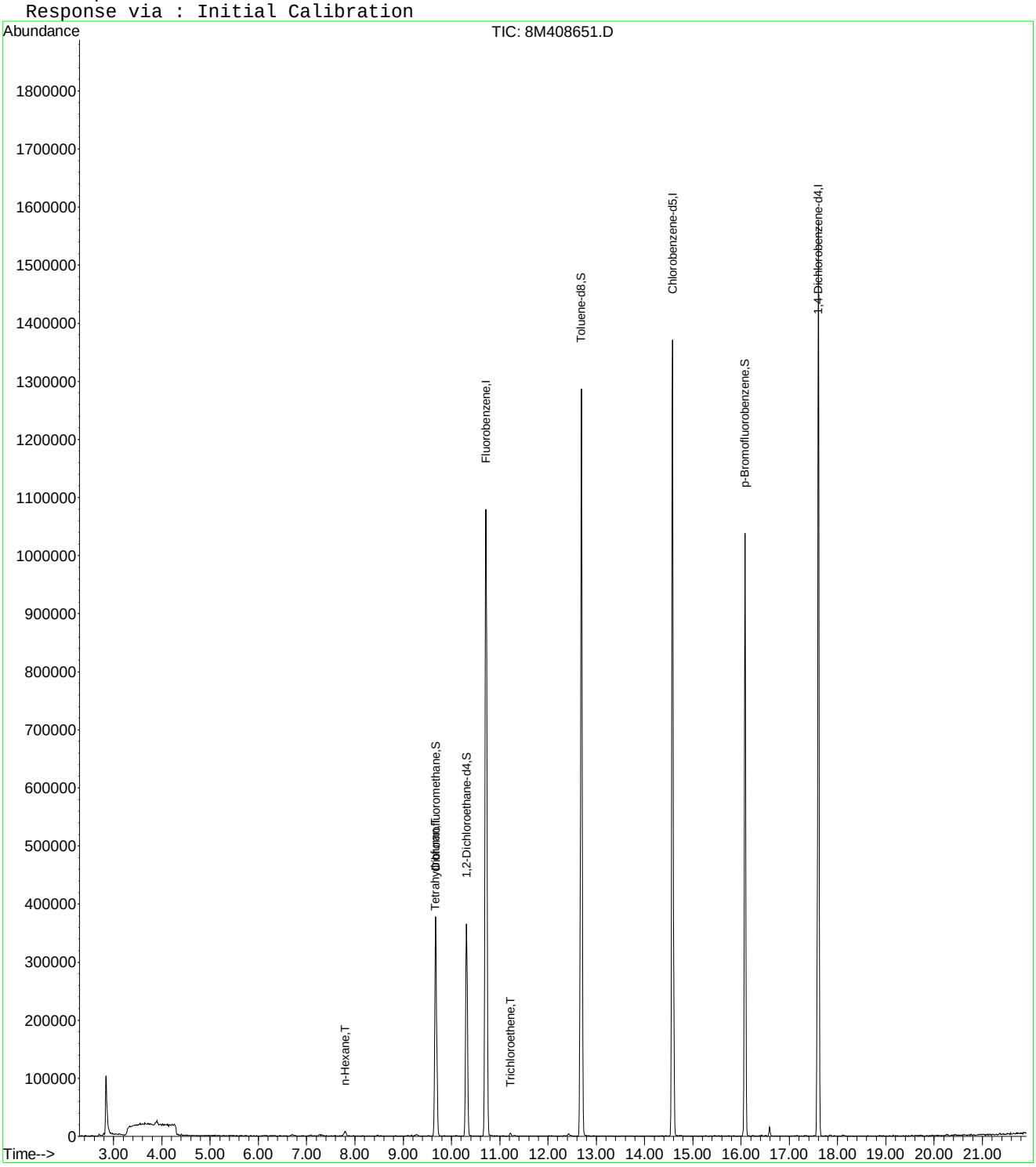

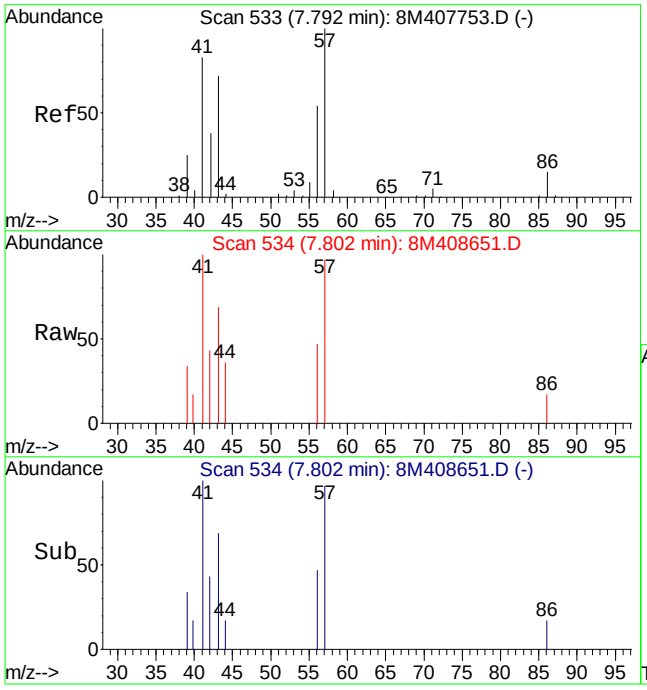

#24
n-Hexane
Concen: 0.28 ug/L
RT: 7.80 min Scan# 534
Delta R.T. 0.01 min
Lab File: 8M408651.D
Acq: 12 Nov 2015 12:50

Tgt Ion: 57 Resp: 5228

Ion	Ratio	Lower	Upper
57	100		
43	89.5	40.6	94.6

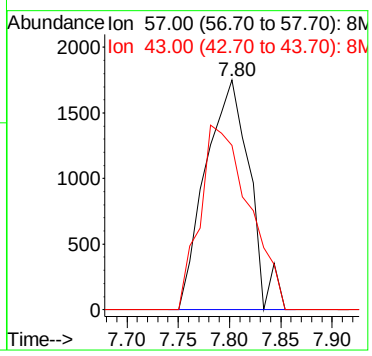

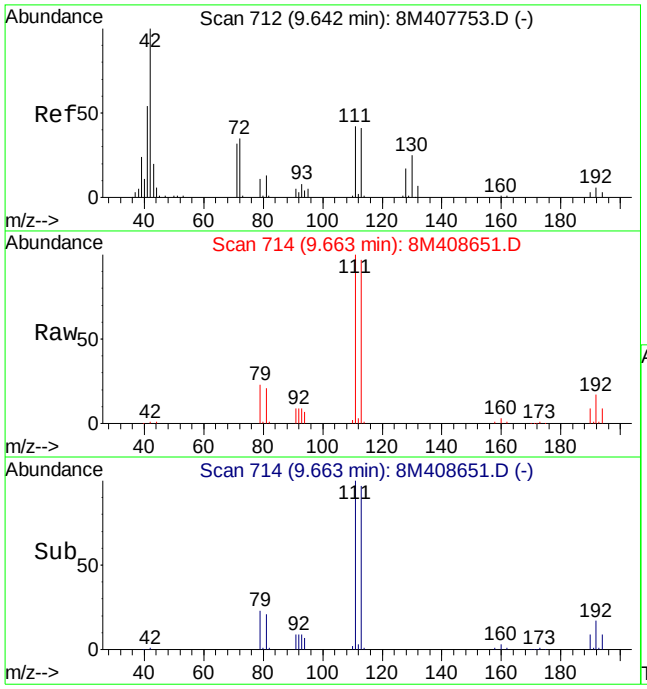

#36
Tetrahydrofuran
Concen: 0.60 ug/L
RT: 9.66 min Scan# 714
Delta R.T. 0.03 min
Lab File: 8M408651.D
Acq: 12 Nov 2015 12:50

Tgt Ion: 42 Resp: 1265

Ion	Ratio	Lower	Upper
42	100		
72	0.0	22.4	52.4#
71	0.0	19.5	45.5#

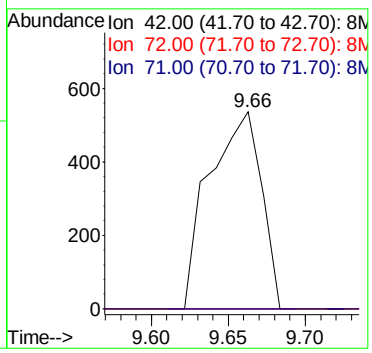

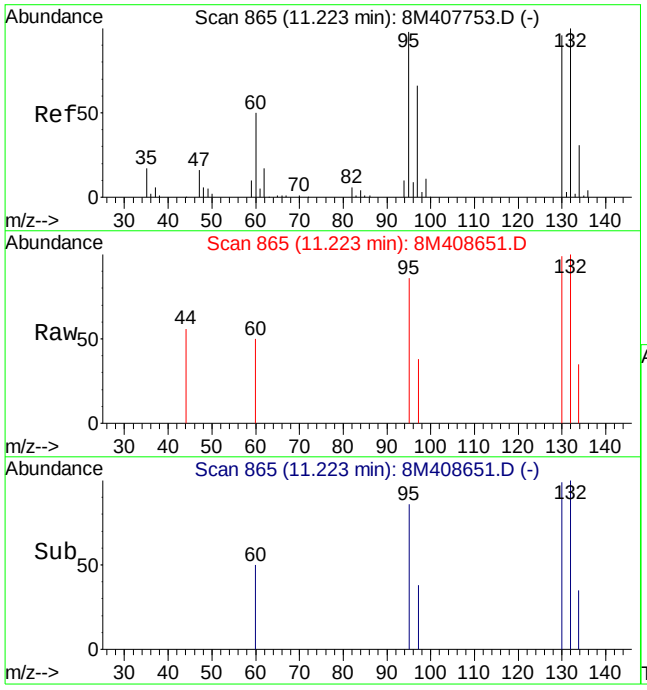

#47
Trichloroethene
Concen: 0.15 ug/L
RT: 11.22 min Scan# 865
Delta R.T. 0.01 min
Lab File: 8M408651.D
Acq: 12 Nov 2015 12:50

Tgt Ion:130 Resp: 1968

Ion	Ratio	Lower	Upper
130	100		
132	100.5	59.0	137.6
95	120.9	65.0	151.8

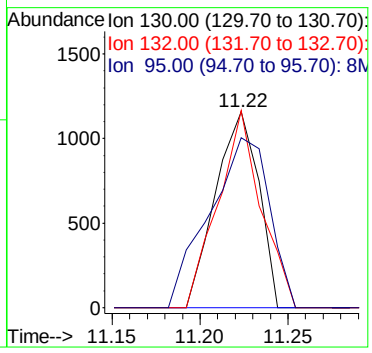

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\111215\8M408652.D Vial: 6
Acq On : 12 Nov 2015 13:19 Operator: TMB
Sample : WG546600-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD73297 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 12 13:41:49 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	1290563	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	946217	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	526197	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	322287	26.2389 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.96%		
43) 1,2-Dichloroethane-d4	10.31	65	319959	25.5492 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.20%		
58) Toluene-d8	12.69	98	1115057	25.3985 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.60%		
80) p-Bromofluorobenzene	16.08	95	450589	24.5421 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.16%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	473826	24.1497 ug/L	99
3) Chloromethane	3.63	50	706281	23.5911 ug/L	99
4) Vinyl Chloride	3.84	62	560563	23.6942 ug/L	100
5) 1,3-Butadiene	3.89	54	336452	18.7447 ug/L	91
6) Bromomethane	4.74	94	148649	19.2403 ug/L	97
7) Chloroethane	4.90	64	219048	22.6950 ug/L	99
8) Trichlorofluoromethane	5.38	101	481091	21.0397 ug/L	98
9) Diethyl ether	5.92	59	925830	105.1983 ug/L	99
10) Isoprene	5.95	67	366347	21.8229 ug/L	94
11) Acrolein	6.15	56	110242	100.9332 ug/L	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	274901	22.3654 ug/L	100
13) Acetone	6.25	43	46506	24.2784 ug/L	100
14) 1,1-Dichloroethene	6.48	61	421161	20.1290 ug/L	100
15) Tert-Butyl Alcohol	6.60	59	115649	204.3278 ug/L	95
16) Dimethyl Sulfide	6.74	62	330585	27.5293 ug/L	97
17) Iodomethane	7.00	142	52179	8.1106 ug/L	98
18) Methyl acetate	7.01	43	131420	18.1429 ug/L	96
19) Methylene Chloride	7.27	84	264309	20.3398 ug/L	99
20) Carbon Disulfide	7.30	76	751808	17.7185 ug/L	99
21) Acrylonitrile	7.45	53	65889	22.9131 ug/L	98
22) Methyl Tert Butyl Ether	7.47	73	547135	22.2112 ug/L	99
23) trans-1,2-Dichloroethene	7.71	61	407533	20.5104 ug/L	98
24) n-Hexane	7.79	57	349226	17.7919 ug/L	95
25) Diisopropyl ether	8.13	45	5002501	102.1322 ug/L	98
26) Vinyl Acetate	8.31	43	444425	34.1400 ug/L	99
27) 1,1-Dichloroethane	8.33	63	518663	20.5560 ug/L	98
28) Ethyl-Tert-Butyl ether	8.71	59	3753592	97.2943 ug/L	98
29) 2-Butanone	8.89	43	74156	22.4702 ug/L	98
30) Propionitrile	9.00	54	98112	101.3209 ug/L	98
31) 2,2-Dichloropropane	9.12	77	423083	20.0638 ug/L	99
32) cis-1,2-Dichloroethene	9.18	96	288546	20.3533 ug/L	99
33) Chloroform	9.38	83	510493	21.2991 ug/L	99
34) 1-Bromopropane	9.52	122	61749	26.5245 ug/L	99
35) Bromochloromethane	9.61	130	159189	22.8100 ug/L	97
36) Tetrahydrofuran	9.64	42	221771	102.3720 ug/L	97
38) 1,1,1-Trichloroethane	9.92	97	461884	21.4687 ug/L	98
39) Cyclohexane	9.94	56	496199	19.3815 ug/L	97
40) 1,1-Dichloropropene	10.11	75	372585	20.1140 ug/L	98
41) Tert-Amyl-Methyl ether	10.22	73	2887507	100.9451 ug/L	96
42) Carbon Tetrachloride	10.25	117	409588	21.3021 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M408652.D 8260WT.M Thu Nov 12 13:41:49 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\111215\8M408652.D Vial: 6
Acq On : 12 Nov 2015 13:19 Operator: TMB
Sample : WG546600-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD73297 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 12 13:41:49 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.43	62	348523	21.1756 ug/L	99
46)	Benzene	10.47	78	1081427	21.2765 ug/L	99
47)	Trichloroethene	11.22	130	271407	19.8353 ug/L	96
48)	Methylcyclohexane	11.31	83	397815	18.7899 ug/L	99
49)	1,2-Dichloropropane	11.43	63	284274	20.7609 ug/L	98
50)	Bromodichloromethane	11.73	83	362880	20.5320 ug/L	100
51)	1,4-Dioxane	11.73	88	12623	200.2389 ug/L	94
52)	Dibromomethane	11.81	93	140318	21.5205 ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.03	63	121093	21.4561 ug/L	96
54)	4-Methyl-2-Pentanone	12.06	58	58460	20.1917 ug/L	96
55)	cis-1,3-Dichloropropene	12.37	75	412443	21.0218 ug/L	99
56)	Dimethyl Disulfide	12.63	79	206589	19.5276 ug/L	98
59)	Toluene	12.79	91	1110464	20.6530 ug/L	99
60)	Ethyl Methacrylate	12.89	69	232401	21.6800 ug/L	96
62)	trans-1,3-Dichloropropene	12.96	75	329060	19.9488 ug/L	100
63)	1,1,2-Trichloroethane	13.18	97	171671	20.1160 ug/L	96
64)	2-Hexanone	13.12	58	52564	19.5908 ug/L #	88
65)	1,3-Dichloropropane	13.49	76	311249	20.4087 ug/L	93
66)	Tetrachloroethene	13.61	164	237758	20.8008 ug/L	97
67)	Dibromochloromethane	13.87	129	230555	20.8954 ug/L	99
68)	1,2-Dibromoethane	14.13	107	172993	20.3040 ug/L	99
69)	1-Chlorohexane	14.21	91	378614	19.6789 ug/L	98
70)	Chlorobenzene	14.63	112	753250	20.9076 ug/L	99
71)	1,1,1,2-Tetrachloroethane	14.67	131	266499	20.0055 ug/L	99
72)	Ethylbenzene	14.66	106	404974	19.2960 ug/L	95
73)	m-,p-Xylene	14.75	106	997767	41.4553 ug/L	99
74)	o-Xylene	15.31	106	490164	20.1388 ug/L	98
75)	Styrene	15.35	104	795209	20.6213 ug/L	100
76)	Bromoform	15.84	173	143204	21.5895 ug/L	99
77)	Isopropylbenzene	15.73	105	1263796	21.6458 ug/L	100
79)	1,1,2,2-Tetrachloroethane	15.95	83	200739	20.6776 ug/L	99
81)	1,2,3-Trichloropropane	16.14	110	53991	20.0141 ug/L	55
82)	trans-1,4-Dichloro-2-Buten	16.18	53	65908	18.4747 ug/L #	67
83)	n-Propylbenzene	16.24	91	1564926	20.5413 ug/L	100
84)	Bromobenzene	16.37	156	311334	20.1316 ug/L	98
85)	1,3,5-Trimethylbenzene	16.42	105	1074551	20.5149 ug/L	98
86)	2-Chlorotoluene	16.52	91	1020391	20.2215 ug/L	100
87)	4-Chlorotoluene	16.56	91	924345	21.1812 ug/L	98
88)	a-Methylstyrene	16.84	118	595665	20.8604 ug/L	98
89)	tert-Butylbenzene	16.89	134	232442	20.1722 ug/L	88
90)	1,2,4-Trimethylbenzene	16.95	105	1099778	20.7782 ug/L	97
91)	sec-Butylbenzene	17.17	105	1363849	20.9606 ug/L	99
92)	p-Isopropyltoluene	17.32	119	1061219	20.3988 ug/L	97
93)	1,3-Dichlorobenzene	17.52	146	639649	20.7221 ug/L	98
94)	1,4-Dichlorobenzene	17.64	146	615390	20.0200 ug/L	98
95)	n-Butylbenzene	17.85	91	1055535	21.7653 ug/L	98
96)	1,2-Dichlorobenzene	18.14	146	580382	21.4878 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	19.13	75	33428	19.6489 ug/L	92
98)	1,2,4-Trichlorobenzene	20.28	180	400482	21.5818 ug/L	100
99)	Hexachlorobutadiene	20.43	225	174870	19.7023 ug/L	98
100)	Naphthalene	20.65	128	630588	23.5049 ug/L	98
101)	1,2,3-Trichlorobenzene	20.95	180	342514	21.6451 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M408652.D 8260WT.M Thu Nov 12 13:41:49 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\111215\8M408652.D Vial: 6
Acq On : 12 Nov 2015 13:19 Operator: TMB
Sample : WG546600-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD73297 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 12 13:41 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration

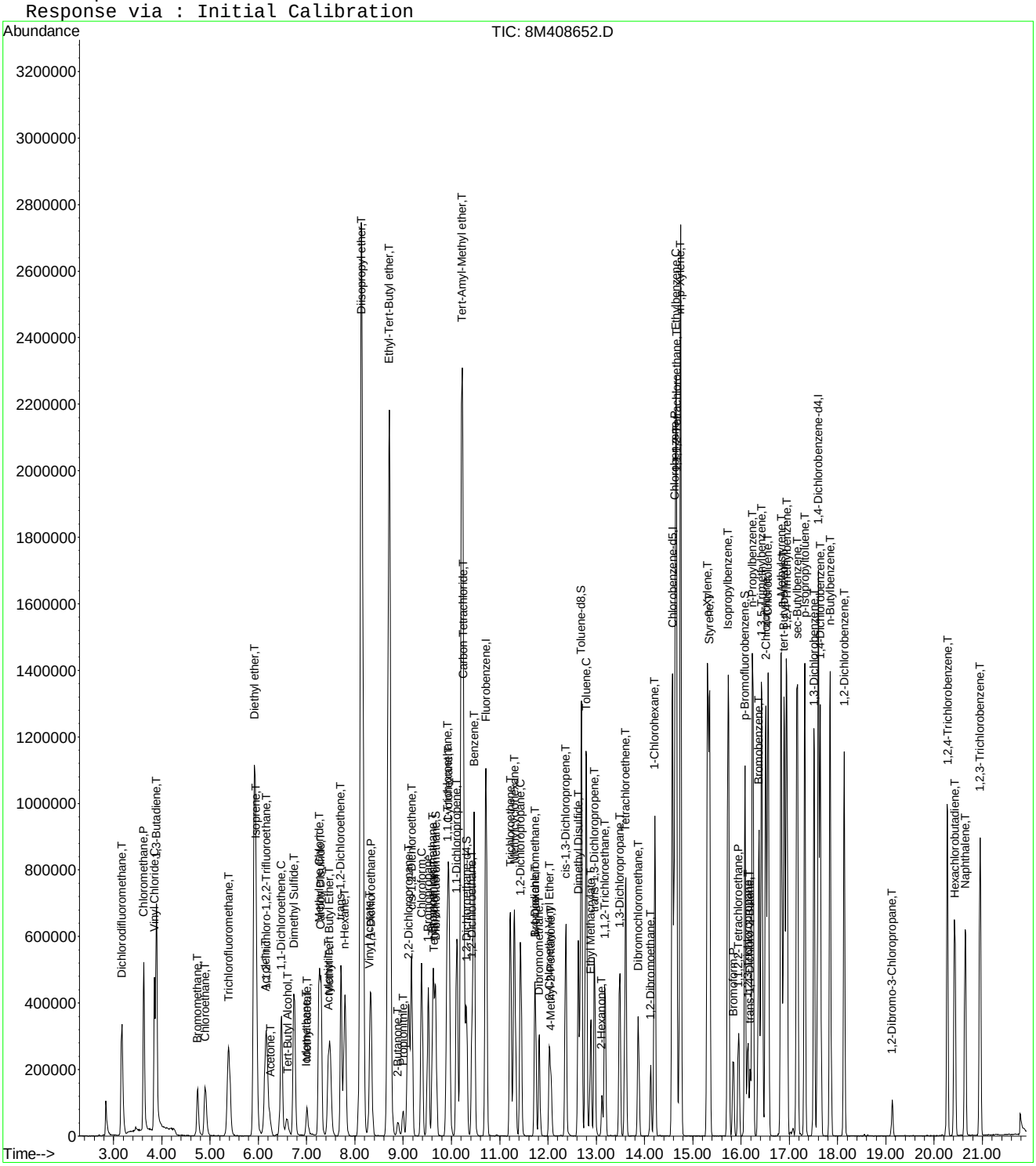

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
November 23, 2015

001 - BIO-CHEM TESTING WVDEP 220	002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental	004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES	006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES	008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND	AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER	ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS	ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG	AZH - AFTER HOURS
BJO - BRIAN J. OGDEN	BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT	BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN	CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES	CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD	CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS	CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL	DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE	DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON	DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE	DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR	ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK	EPT - ETHAN P. TIDD
ERP - ERIN R. PORTER	FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY	JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH	JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS	JLL - JOHN L. LENT
JMW - JEANA M. WHITE	JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS	JWS - JACK W. SHEAVES
JYH - JI Y. HU	KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER	KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES	KHR - KIM H. RHODES
KKB - KERRI K. BUCK	KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER	KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER	LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS	LSB - LESLIE S. BUCINA
MBK - MORGAN B. KNOWLTON	MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN	MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE	MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR	MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS	PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB	PSW - PEGGY S. WEBB
QX - QIN XU	RAH - ROY A. HALSTEAD
REK - BOB E. KYER	RLB - BOB BUCHANAN
RM - RAYMOND MALEKE	RNP - RICK N. PETTY
RST - ROBIN S. TURNER	SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN	SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG	SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE	TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY	TMM - TAMMY M. MORRIS
VC - VICKI COLLIER	WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS	WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT	

Microbac Laboratories Inc.
List of Valid Qualifiers
November 23, 2015

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
November 23, 2015

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Stephanie Mossburg	Project Manager: Mark Heaston	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): Scott Beesinger	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205		Program:	
Turn Around Time: STANDARD	pH:		
Project Name/Location: Longhorn			
Project Number: 60256135.0002GA			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 50	50WW17-110915			11/9/15	0815		✓	W	4	✓	✓					
	50WW19-110915			11/9/15	0925		✓	W	4	✓	✓					
	50WW07-110915			11/9/15	1035		✓	W	4	✓	✓					
	50WW07MS-110915			11/9/15	1035		✓	W	4	✓	✓					
	50WW07MSD-110915			11/9/15	1035		✓	W	4	✓	✓					
	50WW26-111015			11/10/15	1310		✓	W	4	✓	✓					
	50WW26FD-111015			11/10/15	1310		✓	W	4	✓	✓					
	50WW21-111015			11/10/15	1415		✓	W	4	✓	✓					
	50WW20-111015			11/10/15	1510		✓	W	4	✓	✓					
	Trip Blank			11/10/15			✓	W	2	✓						

ERPIMS REQUIRED FIELDS

Comments: **STANDARD TAT**

Microbac OVD
Received: 11/11/2015 09:49
By: CARA STRICKLER 221000078200
Cara Strickler

Relinquished by: (Signature) Scott Beesinger	Date 11/10/15	Time 1600	Received by: (Sign			Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time	Remarks:

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15110610
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 20-NOV-2015

Samplenum	Container ID	Products
L15110610-01	660241	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	11-NOV-2015 11:47	CLS		
2	ANALYZ	V1	ORG4	11-NOV-2015 16:14	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	11-NOV-2015 11:47	CLS		
2	ANALYZ	V1	ORG4	11-NOV-2015 16:14	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	11-NOV-2015 11:47	CLS		
2	ANALYZ	V1	ORG4	11-NOV-2015 16:14	AWE	CLS	

Samplenum	Container ID	Products
L15110610-01	660242	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	11-NOV-2015 11:47	CLS		
2	ANALYZ	W1	SEM	12-NOV-2015 15:13	JWR	CLS	
3	STORE	SEM	W1	13-NOV-2015 10:43	BRG	JWR	

Samplenum	Container ID	Products
L15110610-02	660243	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	11-NOV-2015 11:47	CLS		
2	ANALYZ	V1	ORG4	11-NOV-2015 16:14	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	11-NOV-2015 11:47	CLS		
2	ANALYZ	V1	ORG4	11-NOV-2015 16:14	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	11-NOV-2015 11:47	CLS		
2	ANALYZ	V1	ORG4	11-NOV-2015 16:14	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15110610
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 20-NOV-2015

Samplenum	Container ID	Products
L15110610-02	660244	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	11-NOV-2015 11:47	CLS		
2	ANALYZ	W1	SEM	12-NOV-2015 15:13	JWR	CLS	
3	STORE	SEM	W1	13-NOV-2015 10:43	BRG	JWR	

Samplenum	Container ID	Products
L15110610-03	660245	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	11-NOV-2015 11:47	CLS		
2	ANALYZ	V1	ORG4	11-NOV-2015 16:14	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	11-NOV-2015 11:47	CLS		
2	ANALYZ	V1	ORG4	11-NOV-2015 16:14	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	11-NOV-2015 11:47	CLS		
2	ANALYZ	V1	ORG4	11-NOV-2015 16:14	AWE	CLS	

Samplenum	Container ID	Products
L15110610-03	660246	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	11-NOV-2015 11:47	CLS		
2	ANALYZ	W1	SEM	12-NOV-2015 15:13	JWR	CLS	
3	STORE	SEM	W1	13-NOV-2015 10:43	BRG	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15110610
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 20-NOV-2015

Samplenum	Container ID	Products
L15110610-04	660247	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	11-NOV-2015 11:47	CLS		
2	ANALYZ	V1	ORG4	11-NOV-2015 16:14	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	11-NOV-2015 11:47	CLS		
2	ANALYZ	V1	ORG4	11-NOV-2015 16:14	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	11-NOV-2015 11:47	CLS		
2	ANALYZ	V1	ORG4	11-NOV-2015 16:14	AWE	CLS	

Samplenum	Container ID	Products
L15110610-04	660248	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	11-NOV-2015 11:47	CLS		
2	ANALYZ	W1	SEM	12-NOV-2015 15:13	JWR	CLS	
3	STORE	SEM	W1	13-NOV-2015 10:43	BRG	JWR	

Samplenum	Container ID	Products
L15110610-05	660249	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	11-NOV-2015 11:47	CLS		
2	ANALYZ	V1	ORG4	11-NOV-2015 16:14	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	11-NOV-2015 11:47	CLS		
2	ANALYZ	V1	ORG4	11-NOV-2015 16:14	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	11-NOV-2015 11:47	CLS		
2	ANALYZ	V1	ORG4	11-NOV-2015 16:14	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15110610
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 20-NOV-2015

Samplenum	Container ID	Products
L15110610-05	660250	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	11-NOV-2015 11:47	CLS		
2	ANALYZ	W1	SEM	12-NOV-2015 15:13	JWR	CLS	
3	STORE	SEM	W1	13-NOV-2015 10:44	BRG	JWR	

Samplenum	Container ID	Products
L15110610-06	660251	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	11-NOV-2015 11:47	CLS		
2	ANALYZ	V1	ORG4	11-NOV-2015 16:14	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	11-NOV-2015 11:47	CLS		
2	ANALYZ	V1	ORG4	11-NOV-2015 16:14	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	11-NOV-2015 11:47	CLS		
2	ANALYZ	V1	ORG4	11-NOV-2015 16:14	AWE	CLS	

Samplenum	Container ID	Products
L15110610-06	660252	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	11-NOV-2015 11:47	CLS		
2	ANALYZ	W1	SEM	12-NOV-2015 15:13	JWR	CLS	
3	STORE	SEM	W1	13-NOV-2015 10:44	BRG	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15110610
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 20-NOV-2015

Samplenum	Container ID	Products
L15110610-07	660253	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		11-NOV-2015 11:47	CLS		

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		11-NOV-2015 11:47	CLS		

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	11-NOV-2015 11:47	CLS		
2	ANALYZ	V1	ORG4	11-NOV-2015 16:13	AWE	CLS	

Samplenum	Container ID	Products
L15110610-07	660254	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	11-NOV-2015 11:47	CLS		
2	ANALYZ	W1	SEM	12-NOV-2015 15:13	JWR	CLS	
3	STORE	SEM	W1	13-NOV-2015 10:44	BRG	JWR	

Samplenum	Container ID	Products
L15110610-08	660255	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	11-NOV-2015 11:47	CLS		
2	ANALYZ	V1	ORG4	11-NOV-2015 16:13	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	11-NOV-2015 11:47	CLS		
2	ANALYZ	V1	ORG4	11-NOV-2015 16:13	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	11-NOV-2015 11:47	CLS		
2	ANALYZ	V1	ORG4	11-NOV-2015 16:13	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15110610
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 20-NOV-2015

Samplenum	Container ID	Products
L15110610-08	660256	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	11-NOV-2015 11:47	CLS		
2	ANALYZ	W1	SEM	12-NOV-2015 15:13	JWR	CLS	
3	STORE	SEM	W1	13-NOV-2015 10:44	BRG	JWR	

Samplenum	Container ID	Products
L15110610-09	660257	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	11-NOV-2015 11:47	CLS		
2	ANALYZ	V1	ORG4	11-NOV-2015 16:13	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	11-NOV-2015 11:47	CLS		
2	ANALYZ	V1	ORG4	11-NOV-2015 16:13	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	11-NOV-2015 11:47	CLS		
2	ANALYZ	V1	ORG4	11-NOV-2015 16:13	AWE	CLS	

Samplenum	Container ID	Products
L15110610-09	660258	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	11-NOV-2015 11:47	CLS		
2	ANALYZ	W1	SEM	12-NOV-2015 15:13	JWR	CLS	
3	STORE	SEM	W1	13-NOV-2015 10:44	BRG	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15110610
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 20-NOV-2015

Samplenum	Container ID	Products
L15110610-10	660259	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	11-NOV-2015 11:47	CLS		
2	ANALYZ	V1	ORG4	11-NOV-2015 16:13	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	11-NOV-2015 11:47	CLS		
2	ANALYZ	V1	ORG4	11-NOV-2015 16:13	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - November 10, 2015

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Non-DoD LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD DoD Scope of Accreditation:

SOLID AND HAZARDOUS CHEMICALS

Fluoride by EPA 300.0/9056/9056A
Bromide by EPA 9056/9056A
Nitrate as N by EPA 9056/9056A

Non-Pennsylvania LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD Pennsylvania Scope of Accreditation:

NONPOTABLE WATER

Ethylene glycol EPA 8015 (pending certification)
m,p-Xylenes EPA 8260 (pending certification)
o-xylene EPA 8260 (pending certification)
n-butane RSK175 (pending certification)

Microbac

Laboratory Report Number: L15110793

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on December 08 2015

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

The following discrepancies were noted:

Discrepancy	Resolution
Sample ID: 50WW13-111215. (1 of 3 RSK vials received w/headspace). BRG Sample ID: 50WW14-111215 (1 of 3 RSK vials received w/headspace). BRG Sample ID: 50WW11-111215 (1 of 3 RSK vials received w/headspace). BRG Sample ID: 50WW06-111215 (2 of 3 RSK vials received w/headspace. BRG Sample ID: 50WW12-111215 (2 of 3 RSK vials received w/headspace. BRG	Please log the vials with no headspace as the A vials. SLM

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00112887	H	2.0		J4599413215	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	No

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
50WW27-111115	L15110793-01	11/11/2015 08:15	11/13/2015 09:48
50WW15-111115	L15110793-02	11/11/2015 09:15	11/13/2015 09:48
50WW15FD-111115	L15110793-03	11/11/2015 09:15	11/13/2015 09:48
50WW09-111115	L15110793-04	11/11/2015 10:35	11/13/2015 09:48
50WW09FD-111115	L15110793-05	11/11/2015 10:35	11/13/2015 09:48
50WW10-111115	L15110793-06	11/11/2015 14:35	11/13/2015 09:48
50WW13-111215	L15110793-07	11/12/2015 08:40	11/13/2015 09:48
50WW13FF-111215	L15110793-08	11/12/2015 08:40	11/13/2015 09:48
50WW14-111215	L15110793-09	11/12/2015 09:50	11/13/2015 09:48
50WW14FF-111215	L15110793-10	11/12/2015 09:50	11/13/2015 09:48
50WW11-111215	L15110793-11	11/12/2015 11:00	11/13/2015 09:48
50WW11FF-111215	L15110793-12	11/12/2015 11:00	11/13/2015 09:48
50WW06-111215	L15110793-13	11/12/2015 13:25	11/13/2015 09:48
50WW06FF-111215	L15110793-14	11/12/2015 13:25	11/13/2015 09:48
50WW12-111215	L15110793-15	11/12/2015 14:35	11/13/2015 09:48
50WW12FF-111215	L15110793-16	11/12/2015 14:35	11/13/2015 09:48
TRIP BLANK	L15110793-17	11/12/2015 00:01	11/13/2015 09:48

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L15110793
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.0 Summary Data

1.1 Narratives

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	8260
Prep Batch Number(s):		**Reviewer Name:**	Mary Schilling
LRC Date:	2015-12-02 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Mary Schilling	Mary Schilling	Anaylst III	2015-12-02 14:33:50

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	8260
Prep Batch Number(s):		**Reviewer Name:**	Mary Schilling
LRC Date:	2015-12-02 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	8260
Prep Batch Number(s):		**Reviewer Name:**	Mary Schilling
LRC Date:	2015-12-02 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		X			3
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	8260
Prep Batch Number(s):		**Reviewer Name:**	Mary Schilling
LRC Date:	2015-12-02 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			1
Was the ICAL curve verified for each analyte?		X			2
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	8260
Prep Batch Number(s):		**Reviewer Name:**	Mary Schilling
LRC Date:	2015-12-02 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	8260
Prep Batch Number(s):		**Reviewer Name:**	Mary Schilling
LRC Date:	2015-12-02 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. For the CCV analyzed on 11/13/15 on HPMS11, WG546879-02, bromoform and dibromochloromethane exceeded the limit for percent difference, biased high. The associated samples were non-detect. For the CCV analyzed on 11/24/15 on HPMS17, WG548398-02, chloroethane and trichlorofluoromethane exceeded the limit for percent difference, biased high. The associated samples were non-detect. In addition, in the same CCV, 2-hexanone and 4-methyl-2-pentanone exceeded the limit for percent difference, biased low.
2. For the curve analyzed 11/11/15 on HPMS17, the alternate source yielded recoveries for carbon disulfide and trichlorofluoromethane that exceed the limit for percent difference, biased low.
3. For the LCS and LCSDUP analyzed 11/13/15 on HPMS11, bromoform yielded recoveries above the limit for percent recovery. The associated samples were non-detect.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	547086, 547425	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-11-23 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden	Franci Bolden	Analyst I	2015-11-23 19:06:21

RG-366/TRRP-13 May 2010 **ID:** 6859

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	547086, 547425	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-11-23 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	547086, 547425	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-11-23 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?		X			1
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	547086, 547425	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-11-23 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	547086, 547425	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-11-23 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	547086, 547425	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-11-23 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) Samples require carbon dioxide results, but were preserved with HCl, pH<2.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG546952	**Reviewer Name:**	Maren Beery
LRC Date:	2015-11-22 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Maren Beery	Maren Beery	Metals Supervisor	2015-11-22 20:21:23

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG546952	**Reviewer Name:**	Maren Beery
LRC Date:	2015-11-22 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?			X		
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG546952	**Reviewer Name:**	Maren Beery
LRC Date:	2015-11-22 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG546952	**Reviewer Name:**	Maren Beery
LRC Date:	2015-11-22 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG546952	**Reviewer Name:**	Maren Beery
LRC Date:	2015-11-22 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG546952	**Reviewer Name:**	Maren Beery
LRC Date:	2015-11-22 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG546949	**Reviewer Name:**	Maren Beery
LRC Date:	2015-11-22 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Maren Beery	Maren Beery	Metals Supervisor	2015-11-22 20:12:32

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG546949	**Reviewer Name:**	Maren Beery
LRC Date:	2015-11-22 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG546949	**Reviewer Name:**	Maren Beery
LRC Date:	2015-11-22 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				ER#1
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG546949	**Reviewer Name:**	Maren Beery
LRC Date:	2015-11-22 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG546949	**Reviewer Name:**	Maren Beery
LRC Date:	2015-11-22 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG546949	**Reviewer Name:**	Maren Beery
LRC Date:	2015-11-22 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - Due to high levels of target analyte, all client samples were initially analyzed at dilutions for manganese. Client sample 14 yielded a result for manganese that was below the reporting detection limit. The sample was reanalyzed at a lesser dilution for manganese.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG546860	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-11-13 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Adriane Steed	Adriane Steed		2015-11-16 13:55:13

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG546860	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-11-13 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?	X				
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG546860	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-11-13 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG546860	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-11-13 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG546860	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-11-13 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG546860	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-11-13 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. Fractions -07,09,11 and -15 were analyzed at dilutions only due to their high analyte concentrations (Cl and/or SO4) which were over 200 ppm. Any sample that has a single anion load greater than 200 ppm (or a total anion load greater than 400 ppm) will be diluted in order to prevent damage to the IC from repeated overloading of the analytical column and oversaturation of the suppressor membranes.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG547028	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-11-20 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-11-20 21:31:58

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG547028	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-11-20 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG547028	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-11-20 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG547028	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-11-20 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG547028	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-11-20 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG547028	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-11-20 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG547563	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-11-20 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-11-20 21:32:36

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG547563	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-11-20 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG547563	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-11-20 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG547563	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-11-20 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG547563	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-11-20 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG547563	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-11-20 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	S
Prep Batch Number(s):	WG547058	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-11-20 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-11-20 21:31:05

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	S
Prep Batch Number(s):	WG547058	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-11-20 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	S
Prep Batch Number(s):	WG547058	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-11-20 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	S
Prep Batch Number(s):	WG547058	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-11-20 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	S
Prep Batch Number(s):	WG547058	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-11-20 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

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Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	S
Prep Batch Number(s):	WG547058	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-11-20 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG547552, WG547976	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-11-20 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-11-20 21:33:09

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG547552, WG547976	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-11-20 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG547552, WG547976	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-11-20 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG547552, WG547976	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-11-20 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG547552, WG547976	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-11-20 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110793
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG547552, WG547976	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-11-20 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW27-111115	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	11/11/2015 17:53
Workgroup #:	WG546844	**Analyst:**	ADC	**Run Date:**	11/13/2015 18:21
Collect Date:	11/11/2015 08:15	**Dilution:**	1	**File ID:**	17M016446
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.581	J	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.8	85	115	
1,2-Dichloroethane-d4	108	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	100	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW15-111115	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	11/11/2015 17:53
Workgroup #:	WG546844	**Analyst:**	ADC	**Run Date:**	11/13/2015 18:40
Collect Date:	11/11/2015 09:15	**Dilution:**	1	**File ID:**	17M016447
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	7.16		1.00	0.500	0.250

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	1.83		1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	8.20		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.966	J	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.4	85	115	
1,2-Dichloroethane-d4	109	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	105	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW15FD-111115	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	11/11/2015 17:53
Workgroup #:	WG546844	**Analyst:**	ADC	**Run Date:**	11/13/2015 19:00
Collect Date:	11/11/2015 09:15	**Dilution:**	1	**File ID:**	17M016448
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	6.89		1.00	0.500	0.250

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	1.76		1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	8.05		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.923	J	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	85	115	
1,2-Dichloroethane-d4	112	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	104	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW09-111115	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	11/11/2015 17:53
Workgroup #:	WG546844	**Analyst:**	ADC	**Run Date:**	11/13/2015 19:20
Collect Date:	11/11/2015 10:35	**Dilution:**	1	**File ID:**	17M016449
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.246	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.308	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.09		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	16.3		1.00	0.500	0.250

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.404	J	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	173		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	109	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	103	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW09FD-111115	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	11/11/2015 17:53
Workgroup #:	WG546844	**Analyst:**	ADC	**Run Date:**	11/13/2015 19:40
Collect Date:	11/11/2015 10:35	**Dilution:**	1	**File ID:**	17M016450
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	2.72	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.256	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.310	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.05		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	16.0		1.00	0.500	0.250

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.393	J	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	170		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	107	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	103	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW10-111115	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	11/11/2015 17:53
Workgroup #:	WG546844	**Analyst:**	ADC	**Run Date:**	11/13/2015 20:00
Collect Date:	11/11/2015 14:35	**Dilution:**	1	**File ID:**	17M016451
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	3.95	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	0.888	J	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.766	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	108	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	104	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW13-111215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	11/11/2015 17:53
Workgroup #:	WG548399	**Analyst:**	JDS/FJB	**Run Date:**	11/25/2015 00:05
Collect Date:	11/12/2015 08:40	**Dilution:**	50	**File ID:**	17M016677
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	250	U	500	250	125
Benzene	71-43-2	12.5	U	50.0	12.5	6.25
Bromobenzene	108-86-1	12.5	U	50.0	12.5	6.25
Bromochloromethane	74-97-5	20.0	U	50.0	20.0	10.0
Bromodichloromethane	75-27-4	25.0	U	50.0	25.0	12.5
Bromoform	75-25-2	50.0	U	100	50.0	25.0
Bromomethane	74-83-9	50.0	U	100	50.0	25.0
2-Butanone	78-93-3	250	U	500	250	125
n-Butylbenzene	104-51-8	25.0	U	50.0	25.0	12.5
sec-Butylbenzene	135-98-8	25.0	U	50.0	25.0	12.5
tert-Butylbenzene	98-06-6	25.0	U	50.0	25.0	12.5
Carbon disulfide	75-15-0	50.0	U	100	50.0	25.0
Carbon tetrachloride	56-23-5	25.0	U	50.0	25.0	12.5
Chlorobenzene	108-90-7	12.5	U	50.0	12.5	6.25
Chlorodibromomethane	124-48-1	25.0	U	50.0	25.0	12.5
Chloroethane	75-00-3	50.0	Q	100	50.0	25.0
Chloroform	67-66-3	12.5	U	50.0	12.5	6.25
Chloromethane	74-87-3	50.0	U	100	50.0	25.0
2-Chlorotoluene	95-49-8	12.5	U	50.0	12.5	6.25
4-Chlorotoluene	106-43-4	25.0	U	50.0	25.0	12.5
1,2-Dibromo-3-chloropropane	96-12-8	100	U	250	100	50.0
1,2-Dibromoethane	106-93-4	25.0	U	50.0	25.0	12.5
Dibromomethane	74-95-3	25.0	U	50.0	25.0	12.5
1,2-Dichlorobenzene	95-50-1	12.5	U	50.0	12.5	6.25
1,3-Dichlorobenzene	541-73-1	25.0	U	50.0	25.0	12.5
1,4-Dichlorobenzene	106-46-7	12.5	U	50.0	12.5	6.25
Dichlorodifluoromethane	75-71-8	25.0	U	50.0	25.0	12.5
1,1-Dichloroethane	75-34-3	6.92	J	50.0	12.5	6.25
1,2-Dichloroethane	107-06-2	43.4	J	50.0	25.0	12.5
1,1-Dichloroethene	75-35-4	50.0	U	100	50.0	25.0
cis-1,2-Dichloroethene	156-59-2	231		50.0	25.0	12.5

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	25.0	U	50.0	25.0	12.5
1,2-Dichloropropane	78-87-5	20.0	U	50.0	20.0	10.0
1,3-Dichloropropane	142-28-9	20.0	U	50.0	20.0	10.0
2,2-Dichloropropane	594-20-7	25.0	U	50.0	25.0	12.5
cis-1,3-Dichloropropene	10061-01-5	25.0	U	50.0	25.0	12.5
trans-1,3-Dichloropropene	10061-02-6	50.0	U	100	50.0	25.0
1,1-Dichloropropene	563-58-6	25.0	U	50.0	25.0	12.5
Ethylbenzene	100-41-4	25.0	U	50.0	25.0	12.5
2-Hexanone	591-78-6	250	Q	500	250	125
Hexachlorobutadiene	87-68-3	25.0	U	50.0	25.0	12.5
Isopropylbenzene	98-82-8	25.0	U	50.0	25.0	12.5
p-Isopropyltoluene	99-87-6	25.0	U	50.0	25.0	12.5
4-Methyl-2-pentanone	108-10-1	250	Q	500	250	125
Methylene chloride	75-09-2	25.0	U	50.0	25.0	12.5
Naphthalene	91-20-3	20.0	U	50.0	20.0	10.0
n-Propylbenzene	103-65-1	12.5	U	50.0	12.5	6.25
Styrene	100-42-5	12.5	U	50.0	12.5	6.25
1,1,1,2-Tetrachloroethane	630-20-6	25.0	U	50.0	25.0	12.5
1,1,2,2-Tetrachloroethane	79-34-5	20.0	U	50.0	20.0	10.0
Tetrachloroethene	127-18-4	25.0	U	50.0	25.0	12.5
Toluene	108-88-3	25.0	U	50.0	25.0	12.5
1,2,3-Trichlorobenzene	87-61-6	15.0	U	50.0	15.0	7.50
1,2,4-Trichlorobenzene	120-82-1	20.0	U	50.0	20.0	10.0
1,1,1-Trichloroethane	71-55-6	25.0	U	50.0	25.0	12.5
1,1,2-Trichloroethane	79-00-5	25.0	U	50.0	25.0	12.5
Trichloroethene	79-01-6	7710		50.0	25.0	12.5
Trichlorofluoromethane	75-69-4	25.0	Q	50.0	25.0	12.5
1,2,3-Trichloropropane	96-18-4	50.0	U	100	50.0	25.0
1,2,4-Trimethylbenzene	95-63-6	25.0	U	50.0	25.0	12.5
1,3,5-Trimethylbenzene	108-67-8	25.0	U	50.0	25.0	12.5
Vinyl chloride	75-01-4	25.0	U	50.0	25.0	12.5
o-Xylene	95-47-6	25.0	U	50.0	25.0	12.5
m-,p-Xylene	179601-23-1	50.0	U	100	50.0	25.0

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	109	85	115	
1,2-Dichloroethane-d4	116	70	120	
Toluene-d8	111	85	120	
4-Bromofluorobenzene	106	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-07	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW13-111215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG547086	**Analyst:**	JDS	**Run Date:**	11/16/2015 18:03
Collect Date:	11/12/2015 08:40	**Dilution:**	1	**File ID:**	16G49017
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	23.0		5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-07	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW13-111215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG547425	**Analyst:**	JDS	**Run Date:**	11/18/2015 15:25
Collect Date:	11/12/2015 08:40	**Dilution:**	10	**File ID:**	16G49029
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	464000		100000	50000	25000

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-07	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW13-111215	**Prep Method:**	9056	**Prep Date:**	11/13/2015 12:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/29/2015 17:57
Workgroup #:	WG546860	**Analyst:**	ALS	**Run Date:**	11/13/2015 19:26
Collect Date:	11/12/2015 08:40	**Dilution:**	5	**File ID:**	I1_111315-22
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	1.00	U	2.00	1.00	0.500
Nitrite	14797-65-0	0.615	J	2.00	1.00	0.500
Sulfate	14808-79-8	367		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-07	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW13-111215	**Prep Method:**	9056	**Prep Date:**	11/13/2015 12:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/29/2015 17:57
Workgroup #:	WG546860	**Analyst:**	ALS	**Run Date:**	11/13/2015 19:44
Collect Date:	11/12/2015 08:40	**Dilution:**	25	**File ID:**	I1_111315-23
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	336		10.0	5.00	2.50

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-07	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW13-111215	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	11/16/2015 12:07
Workgroup #:	WG547028	**Analyst:**	DCM	**Run Date:**	11/16/2015 12:17
Collect Date:	11/12/2015 08:40	**Dilution:**	2	**File ID:**	SC151116003.026
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	368		80.0	40.0	20.0

Certificate of Analysis

Sample #:	L15110793-07	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW13-111215	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	11/19/2015 12:01
Workgroup #:	WG547563	**Analyst:**	DCM	**Run Date:**	11/19/2015 12:15
Collect Date:	11/12/2015 08:40	**Dilution:**	2	**File ID:**	SC151119003.030
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	2.05		0.800	0.400	0.200

Certificate of Analysis

Sample #:	L15110793-07	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW13-111215	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG547058	**Analyst:**	TB	**Run Date:**	11/16/2015 17:00
Collect Date:	11/12/2015 08:40	**Dilution:**	1	**File ID:**	ET.1511161700-18
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-07	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW13-111215	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	10/30/2015 17:00
Workgroup #:	WG547552	**Analyst:**	DIH	**Run Date:**	11/19/2015 09:13
Collect Date:	11/12/2015 08:40	**Dilution:**	10	**File ID:**	TC11192015.009
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	79.0		20.0	10.0	5.00

Certificate of Analysis

Sample #:	L15110793-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	50WW13FF-111215	**Prep Method:**	3015	**Prep Date:**	11/16/2015 08:43
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	11/17/2015 10:17
Workgroup #:	WG547108	**Analyst:**	JYH	**Run Date:**	11/17/2015 12:33
Collect Date:	11/12/2015 08:40	**Dilution:**	1	**File ID:**	T3.111715.123329
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.0904	J	0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW13FF-111215	**Prep Method:**	3015	**Prep Date:**	11/16/2015 09:00
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	11/16/2015 13:31
Workgroup #:	WG547044	**Analyst:**	BKT	**Run Date:**	11/16/2015 16:47
Collect Date:	11/12/2015 08:40	**Dilution:**	5	**File ID:**	NI.111615.164701
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.149		0.0200	0.0100	0.00500

Certificate of Analysis

Sample #:	L15110793-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	50WW14-111215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	10/09/2015 21:42
Workgroup #:	WG546880	**Analyst:**	JDS	**Run Date:**	11/13/2015 20:26
Collect Date:	11/12/2015 09:50	**Dilution:**	1	**File ID:**	11M10259
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	Q	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	14.2		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	5.78		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.8	85	115	
1,2-Dichloroethane-d4	88.1	70	120	
Toluene-d8	113	85	120	
4-Bromofluorobenzene	108	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-09	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW14-111215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG547086	**Analyst:**	JDS	**Run Date:**	11/16/2015 18:15
Collect Date:	11/12/2015 09:50	**Dilution:**	1	**File ID:**	16G49018
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	11.3		5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-09	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW14-111215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG547425	**Analyst:**	JDS	**Run Date:**	11/18/2015 15:37
Collect Date:	11/12/2015 09:50	**Dilution:**	5	**File ID:**	16G49030
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	253000		50000	25000	12500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-09	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW14-111215	**Prep Method:**	9056	**Prep Date:**	11/13/2015 12:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/29/2015 17:57
Workgroup #:	WG546860	**Analyst:**	ALS	**Run Date:**	11/13/2015 20:01
Collect Date:	11/12/2015 09:50	**Dilution:**	5	**File ID:**	I1_111315-24
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	1.00	U	2.00	1.00	0.500
Nitrite	14797-65-0	0.805	J	2.00	1.00	0.500
Sulfate	14808-79-8	385		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-09	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW14-111215	**Prep Method:**	9056	**Prep Date:**	11/13/2015 12:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/29/2015 17:57
Workgroup #:	WG546860	**Analyst:**	ALS	**Run Date:**	11/13/2015 20:19
Collect Date:	11/12/2015 09:50	**Dilution:**	25	**File ID:**	I1_111315-25
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	392		10.0	5.00	2.50

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-09	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW14-111215	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	11/16/2015 12:07
Workgroup #:	WG547028	**Analyst:**	DCM	**Run Date:**	11/16/2015 12:18
Collect Date:	11/12/2015 09:50	**Dilution:**	1	**File ID:**	SC151116003.027
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	254		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L15110793-09	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW14-111215	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	11/19/2015 12:01
Workgroup #:	WG547563	**Analyst:**	DCM	**Run Date:**	11/19/2015 12:10
Collect Date:	11/12/2015 09:50	**Dilution:**	1	**File ID:**	SC151119003.021
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.719		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15110793-09	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW14-111215	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG547058	**Analyst:**	TB	**Run Date:**	11/16/2015 17:00
Collect Date:	11/12/2015 09:50	**Dilution:**	1	**File ID:**	ET.1511161700-19
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-09	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW14-111215	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	10/30/2015 17:00
Workgroup #:	WG546976	**Analyst:**	DIH	**Run Date:**	11/16/2015 23:14
Collect Date:	11/12/2015 09:50	**Dilution:**	3	**File ID:**	TC11152015.049
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	16.1		6.00	3.00	1.50

Certificate of Analysis

Sample #:	L15110793-10	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	50WW14FF-111215	**Prep Method:**	3015	**Prep Date:**	11/16/2015 08:43
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	11/17/2015 10:17
Workgroup #:	WG547108	**Analyst:**	JYH	**Run Date:**	11/17/2015 12:37
Collect Date:	11/12/2015 09:50	**Dilution:**	1	**File ID:**	T3.111715.123728
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	7.43		0.200	0.100	0.0500

Certificate of Analysis

Sample #:	L15110793-10	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW14FF-111215	**Prep Method:**	3015	**Prep Date:**	11/16/2015 09:00
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	11/16/2015 13:31
Workgroup #:	WG547044	**Analyst:**	BKT	**Run Date:**	11/16/2015 16:50
Collect Date:	11/12/2015 09:50	**Dilution:**	5	**File ID:**	NI.111615.165012
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.495		0.0200	0.0100	0.00500

Certificate of Analysis

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15110793-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW11-111215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	09/30/2015 14:52
Workgroup #:	WG547025	**Analyst:**	TMB	**Run Date:**	11/16/2015 22:27
Collect Date:	11/12/2015 11:00	**Dilution:**	20	**File ID:**	8M408729
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	100	U	200	100	50.0
Benzene	71-43-2	5.00	U	20.0	5.00	2.50
Bromobenzene	108-86-1	5.00	U	20.0	5.00	2.50
Bromochloromethane	74-97-5	8.00	U	20.0	8.00	4.00
Bromodichloromethane	75-27-4	10.0	U	20.0	10.0	5.00
Bromoform	75-25-2	20.0	U	40.0	20.0	10.0
Bromomethane	74-83-9	20.0	U	40.0	20.0	10.0
2-Butanone	78-93-3	100	U	200	100	50.0
n-Butylbenzene	104-51-8	10.0	U	20.0	10.0	5.00
sec-Butylbenzene	135-98-8	10.0	U	20.0	10.0	5.00
tert-Butylbenzene	98-06-6	10.0	U	20.0	10.0	5.00
Carbon disulfide	75-15-0	20.0	U	40.0	20.0	10.0
Carbon tetrachloride	56-23-5	10.0	U	20.0	10.0	5.00
Chlorobenzene	108-90-7	5.00	U	20.0	5.00	2.50
Chlorodibromomethane	124-48-1	10.0	U	20.0	10.0	5.00
Chloroethane	75-00-3	20.0	U	40.0	20.0	10.0
Chloroform	67-66-3	5.00	U	20.0	5.00	2.50
Chloromethane	74-87-3	20.0	U	40.0	20.0	10.0
2-Chlorotoluene	95-49-8	5.00	U	20.0	5.00	2.50
4-Chlorotoluene	106-43-4	10.0	U	20.0	10.0	5.00
1,2-Dibromo-3-chloropropane	96-12-8	40.0	U	100	40.0	20.0
1,2-Dibromoethane	106-93-4	10.0	U	20.0	10.0	5.00
Dibromomethane	74-95-3	10.0	U	20.0	10.0	5.00
1,2-Dichlorobenzene	95-50-1	5.00	U	20.0	5.00	2.50
1,3-Dichlorobenzene	541-73-1	10.0	U	20.0	10.0	5.00
1,4-Dichlorobenzene	106-46-7	5.00	U	20.0	5.00	2.50
Dichlorodifluoromethane	75-71-8	10.0	U	20.0	10.0	5.00
1,1-Dichloroethane	75-34-3	4.97	J	20.0	5.00	2.50
1,2-Dichloroethane	107-06-2	22.9		20.0	10.0	5.00
1,1-Dichloroethene	75-35-4	17.5	J	40.0	20.0	10.0
cis-1,2-Dichloroethene	156-59-2	54.1		20.0	10.0	5.00
trans-1,2-Dichloroethene	156-60-5	10.0	U	20.0	10.0	5.00

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	8.00	U	20.0	8.00	4.00
1,3-Dichloropropane	142-28-9	8.00	U	20.0	8.00	4.00
2,2-Dichloropropane	594-20-7	10.0	U	20.0	10.0	5.00
cis-1,3-Dichloropropene	10061-01-5	10.0	U	20.0	10.0	5.00
trans-1,3-Dichloropropene	10061-02-6	20.0	U	40.0	20.0	10.0
1,1-Dichloropropene	563-58-6	10.0	U	20.0	10.0	5.00
Ethylbenzene	100-41-4	10.0	U	20.0	10.0	5.00
2-Hexanone	591-78-6	100	U	200	100	50.0
Hexachlorobutadiene	87-68-3	10.0	U	20.0	10.0	5.00
Isopropylbenzene	98-82-8	10.0	U	20.0	10.0	5.00
p-Isopropyltoluene	99-87-6	10.0	U	20.0	10.0	5.00
4-Methyl-2-pentanone	108-10-1	100	U	200	100	50.0
Methylene chloride	75-09-2	10.0	U	20.0	10.0	5.00
Naphthalene	91-20-3	8.00	U	20.0	8.00	4.00
n-Propylbenzene	103-65-1	5.00	U	20.0	5.00	2.50
Styrene	100-42-5	5.00	U	20.0	5.00	2.50
1,1,1,2-Tetrachloroethane	630-20-6	10.0	U	20.0	10.0	5.00
1,1,2,2-Tetrachloroethane	79-34-5	8.00	U	20.0	8.00	4.00
Tetrachloroethene	127-18-4	10.0	U	20.0	10.0	5.00
Toluene	108-88-3	10.0	U	20.0	10.0	5.00
1,2,3-Trichlorobenzene	87-61-6	6.00	U	20.0	6.00	3.00
1,2,4-Trichlorobenzene	120-82-1	8.00	U	20.0	8.00	4.00
1,1,1-Trichloroethane	71-55-6	10.0	U	20.0	10.0	5.00
1,1,2-Trichloroethane	79-00-5	10.0	U	20.0	10.0	5.00
Trichloroethene	79-01-6	2670		20.0	10.0	5.00
Trichlorofluoromethane	75-69-4	10.0	U	20.0	10.0	5.00
1,2,3-Trichloropropane	96-18-4	20.0	U	40.0	20.0	10.0
1,2,4-Trimethylbenzene	95-63-6	10.0	U	20.0	10.0	5.00
1,3,5-Trimethylbenzene	108-67-8	10.0	U	20.0	10.0	5.00
Vinyl chloride	75-01-4	10.0	U	20.0	10.0	5.00
o-Xylene	95-47-6	10.0	U	20.0	10.0	5.00
m-,p-Xylene	179601-23-1	20.0	U	40.0	20.0	10.0

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	98.8	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-11	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW11-111215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG547086	**Analyst:**	JDS	**Run Date:**	11/16/2015 18:40
Collect Date:	11/12/2015 11:00	**Dilution:**	1	**File ID:**	16G49020
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	8.84		5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-11	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW11-111215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG547425	**Analyst:**	JDS	**Run Date:**	11/18/2015 15:50
Collect Date:	11/12/2015 11:00	**Dilution:**	10	**File ID:**	16G49031
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	819000		100000	50000	25000

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-11	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW11-111215	**Prep Method:**	9056	**Prep Date:**	11/13/2015 12:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/29/2015 17:57
Workgroup #:	WG546860	**Analyst:**	ALS	**Run Date:**	11/13/2015 20:37
Collect Date:	11/12/2015 11:00	**Dilution:**	5	**File ID:**	I1_111315-26
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	1.00	U	2.00	1.00	0.500
Nitrite	14797-65-0	0.640	J	2.00	1.00	0.500
Sulfate	14808-79-8	439		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-11	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW11-111215	**Prep Method:**	9056	**Prep Date:**	11/13/2015 12:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/29/2015 17:57
Workgroup #:	WG546860	**Analyst:**	ALS	**Run Date:**	11/13/2015 21:30
Collect Date:	11/12/2015 11:00	**Dilution:**	25	**File ID:**	I1_111315-29
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	377		10.0	5.00	2.50

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-11	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW11-111215	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	11/16/2015 12:07
Workgroup #:	WG547028	**Analyst:**	DCM	**Run Date:**	11/16/2015 12:19
Collect Date:	11/12/2015 11:00	**Dilution:**	2	**File ID:**	SC151116003.028
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	296		80.0	40.0	20.0

Certificate of Analysis

Sample #:	L15110793-11	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW11-111215	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	11/19/2015 12:01
Workgroup #:	WG547563	**Analyst:**	DCM	**Run Date:**	11/19/2015 12:11
Collect Date:	11/12/2015 11:00	**Dilution:**	1	**File ID:**	SC151119003.022
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.321	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-11	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW11-111215	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG547058	**Analyst:**	TB	**Run Date:**	11/16/2015 17:00
Collect Date:	11/12/2015 11:00	**Dilution:**	1	**File ID:**	ET.1511161700-20
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-11	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW11-111215	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	10/30/2015 17:00
Workgroup #:	WG546976	**Analyst:**	DIH	**Run Date:**	11/16/2015 23:27
Collect Date:	11/12/2015 11:00	**Dilution:**	4	**File ID:**	TC11152015.050
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	13.0		8.00	4.00	2.00

Certificate of Analysis

Sample #:	L15110793-12	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	50WW11FF-111215	**Prep Method:**	3015	**Prep Date:**	11/16/2015 08:43
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	11/17/2015 10:17
Workgroup #:	WG547108	**Analyst:**	JYH	**Run Date:**	11/17/2015 12:41
Collect Date:	11/12/2015 11:00	**Dilution:**	1	**File ID:**	T3.111715.124115
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.0610	J	0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-12	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW11FF-111215	**Prep Method:**	3015	**Prep Date:**	11/16/2015 09:00
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	11/16/2015 13:31
Workgroup #:	WG547044	**Analyst:**	BKT	**Run Date:**	11/16/2015 16:53
Collect Date:	11/12/2015 11:00	**Dilution:**	5	**File ID:**	NI.111615.165323
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.108		0.0200	0.0100	0.00500

Certificate of Analysis

Sample #:	L15110793-13	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	50WW06-111215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	10/09/2015 21:42
Workgroup #:	WG546880	**Analyst:**	JDS	**Run Date:**	11/13/2015 20:58
Collect Date:	11/12/2015 13:25	**Dilution:**	1	**File ID:**	11M10260
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	Q	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.250	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	1.04		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	59.4		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.3	85	115	
1,2-Dichloroethane-d4	89.8	70	120	
Toluene-d8	113	85	120	
4-Bromofluorobenzene	107	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-13	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW06-111215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG547086	**Analyst:**	JDS	**Run Date:**	11/16/2015 18:53
Collect Date:	11/12/2015 13:25	**Dilution:**	1	**File ID:**	16G49021
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-13	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW06-111215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG547425	**Analyst:**	JDS	**Run Date:**	11/18/2015 16:02
Collect Date:	11/12/2015 13:25	**Dilution:**	10	**File ID:**	16G49032
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	806000		100000	50000	25000

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-13	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW06-111215	**Prep Method:**	9056	**Prep Date:**	11/13/2015 12:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/29/2015 17:57
Workgroup #:	WG546860	**Analyst:**	ALS	**Run Date:**	11/13/2015 21:48
Collect Date:	11/12/2015 13:25	**Dilution:**	1	**File ID:**	I1_111315-30
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	0.196	J	0.400	0.200	0.100
Nitrite	14797-65-0	0.200	U	0.400	0.200	0.100
Sulfate	14808-79-8	39.8		2.00	1.00	0.500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-13	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW06-111215	**Prep Method:**	9056	**Prep Date:**	11/13/2015 12:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/29/2015 17:57
Workgroup #:	WG546860	**Analyst:**	ALS	**Run Date:**	11/13/2015 22:05
Collect Date:	11/12/2015 13:25	**Dilution:**	5	**File ID:**	I1_111315-31
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	97.9		2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-13	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW06-111215	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	11/16/2015 12:07
Workgroup #:	WG547028	**Analyst:**	DCM	**Run Date:**	11/16/2015 12:19
Collect Date:	11/12/2015 13:25	**Dilution:**	1	**File ID:**	SC151116003.029
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	275		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L15110793-13	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW06-111215	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	11/19/2015 12:01
Workgroup #:	WG547563	**Analyst:**	DCM	**Run Date:**	11/19/2015 12:11
Collect Date:	11/12/2015 13:25	**Dilution:**	1	**File ID:**	SC151119003.023
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.408		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15110793-13	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW06-111215	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG547058	**Analyst:**	TB	**Run Date:**	11/16/2015 17:00
Collect Date:	11/12/2015 13:25	**Dilution:**	1	**File ID:**	ET.1511161700-21
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-13	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW06-111215	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	10/30/2015 17:00
Workgroup #:	WG547552	**Analyst:**	DIH	**Run Date:**	11/19/2015 09:25
Collect Date:	11/12/2015 13:25	**Dilution:**	10	**File ID:**	TC11192015.010
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	149		20.0	10.0	5.00

Certificate of Analysis

Sample #:	L15110793-14	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	50WW06FF-111215	**Prep Method:**	3015	**Prep Date:**	11/16/2015 08:43
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	11/17/2015 10:17
Workgroup #:	WG547108	**Analyst:**	JYH	**Run Date:**	11/17/2015 12:45
Collect Date:	11/12/2015 13:25	**Dilution:**	1	**File ID:**	T3.111715.124513
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.100	U	0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-14	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW06FF-111215	**Prep Method:**	3015	**Prep Date:**	11/16/2015 09:00
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	11/16/2015 13:31
Workgroup #:	WG547044	**Analyst:**	BKT	**Run Date:**	11/16/2015 17:53
Collect Date:	11/12/2015 13:25	**Dilution:**	2	**File ID:**	NI.111615.175347
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0196		0.00800	0.00400	0.00200

Certificate of Analysis

Sample #:	L15110793-15	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	50WW12-111215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	10/09/2015 21:42
Workgroup #:	WG546880	**Analyst:**	JDS	**Run Date:**	11/13/2015 21:30
Collect Date:	11/12/2015 14:35	**Dilution:**	1	**File ID:**	11M10261
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	Q	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	17.6		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.7	85	115	
1,2-Dichloroethane-d4	89.1	70	120	
Toluene-d8	113	85	120	
4-Bromofluorobenzene	106	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-15	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW12-111215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG547086	**Analyst:**	JDS	**Run Date:**	11/16/2015 19:05
Collect Date:	11/12/2015 14:35	**Dilution:**	1	**File ID:**	16G49022
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-15	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW12-111215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG547425	**Analyst:**	JDS	**Run Date:**	11/18/2015 16:14
Collect Date:	11/12/2015 14:35	**Dilution:**	5	**File ID:**	16G49033
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	309000		50000	25000	12500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-15	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW12-111215	**Prep Method:**	9056	**Prep Date:**	11/13/2015 12:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/29/2015 17:57
Workgroup #:	WG546860	**Analyst:**	ALS	**Run Date:**	11/13/2015 22:23
Collect Date:	11/12/2015 14:35	**Dilution:**	10	**File ID:**	I1_111315-32
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	2.00	U	4.00	2.00	1.00
Nitrite	14797-65-0	1.93	J	4.00	2.00	1.00
Sulfate	14808-79-8	574		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-15	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW12-111215	**Prep Method:**	9056	**Prep Date:**	11/13/2015 12:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/29/2015 17:57
Workgroup #:	WG546860	**Analyst:**	ALS	**Run Date:**	11/13/2015 22:41
Collect Date:	11/12/2015 14:35	**Dilution:**	100	**File ID:**	I1_111315-33
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1110		40.0	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-15	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW12-111215	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	11/16/2015 12:07
Workgroup #:	WG547028	**Analyst:**	DCM	**Run Date:**	11/16/2015 12:20
Collect Date:	11/12/2015 14:35	**Dilution:**	2	**File ID:**	SC151116003.030
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	282		80.0	40.0	20.0

Certificate of Analysis

Sample #:	L15110793-15	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW12-111215	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	11/19/2015 12:01
Workgroup #:	WG547563	**Analyst:**	DCM	**Run Date:**	11/19/2015 12:12
Collect Date:	11/12/2015 14:35	**Dilution:**	1	**File ID:**	SC151119003.024
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-15	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW12-111215	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG547058	**Analyst:**	TB	**Run Date:**	11/16/2015 17:00
Collect Date:	11/12/2015 14:35	**Dilution:**	1	**File ID:**	ET.1511161700-22
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-15	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW12-111215	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	10/30/2015 17:00
Workgroup #:	WG546976	**Analyst:**	DIH	**Run Date:**	11/17/2015 00:15
Collect Date:	11/12/2015 14:35	**Dilution:**	4	**File ID:**	TC11152015.054
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	67.2		8.00	4.00	2.00

Certificate of Analysis

Sample #:	L15110793-16	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	50WW12FF-111215	**Prep Method:**	3015	**Prep Date:**	11/16/2015 08:43
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	11/17/2015 10:17
Workgroup #:	WG547108	**Analyst:**	JYH	**Run Date:**	11/17/2015 12:49
Collect Date:	11/12/2015 14:35	**Dilution:**	1	**File ID:**	T3.111715.124911
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.100	U	0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-16	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW12FF-111215	**Prep Method:**	3015	**Prep Date:**	11/16/2015 09:00
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	11/16/2015 13:31
Workgroup #:	WG547044	**Analyst:**	BKT	**Run Date:**	11/16/2015 16:59
Collect Date:	11/12/2015 14:35	**Dilution:**	5	**File ID:**	NI.111615.165946
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0581		0.0200	0.0100	0.00500

Certificate of Analysis

Sample #:	L15110793-17	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	10/09/2015 21:42
Workgroup #:	WG546880	**Analyst:**	JDS	**Run Date:**	11/13/2015 19:54
Collect Date:	11/12/2015 00:01	**Dilution:**	1	**File ID:**	11M10258
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	Q	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.2	85	115	
1,2-Dichloroethane-d4	87.1	70	120	
Toluene-d8	114	85	120	
4-Bromofluorobenzene	108	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW27-111115	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	11/11/2015 17:53
Workgroup #:	WG546844	**Analyst:**	ADC	**Run Date:**	11/13/2015 18:21
Collect Date:	11/11/2015 08:15	**Dilution:**	1	**File ID:**	17M016446
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.581	J	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

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Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.8	85	115	
1,2-Dichloroethane-d4	108	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	100	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW15-111115	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	11/11/2015 17:53
Workgroup #:	WG546844	**Analyst:**	ADC	**Run Date:**	11/13/2015 18:40
Collect Date:	11/11/2015 09:15	**Dilution:**	1	**File ID:**	17M016447
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	7.16		1.00	0.500	0.250

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Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	1.83		1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	8.20		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.966	J	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.4	85	115	
1,2-Dichloroethane-d4	109	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	105	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW15FD-111115	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	11/11/2015 17:53
Workgroup #:	WG546844	**Analyst:**	ADC	**Run Date:**	11/13/2015 19:00
Collect Date:	11/11/2015 09:15	**Dilution:**	1	**File ID:**	17M016448
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	6.89		1.00	0.500	0.250

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Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	1.76		1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	8.05		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.923	J	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	85	115	
1,2-Dichloroethane-d4	112	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	104	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW09-111115	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	11/11/2015 17:53
Workgroup #:	WG546844	**Analyst:**	ADC	**Run Date:**	11/13/2015 19:20
Collect Date:	11/11/2015 10:35	**Dilution:**	1	**File ID:**	17M016449
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.246	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.308	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.09		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	16.3		1.00	0.500	0.250

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.404	J	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	173		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	109	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	103	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW09FD-111115	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	11/11/2015 17:53
Workgroup #:	WG546844	**Analyst:**	ADC	**Run Date:**	11/13/2015 19:40
Collect Date:	11/11/2015 10:35	**Dilution:**	1	**File ID:**	17M016450
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	2.72	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.256	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.310	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.05		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	16.0		1.00	0.500	0.250

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.393	J	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	170		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	107	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	103	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW10-111115	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	11/11/2015 17:53
Workgroup #:	WG546844	**Analyst:**	ADC	**Run Date:**	11/13/2015 20:00
Collect Date:	11/11/2015 14:35	**Dilution:**	1	**File ID:**	17M016451
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	3.95	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	0.888	J	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

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Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.766	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	108	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	104	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW13-111215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	11/11/2015 17:53
Workgroup #:	WG548399	**Analyst:**	JDS/FJB	**Run Date:**	11/25/2015 00:05
Collect Date:	11/12/2015 08:40	**Dilution:**	50	**File ID:**	17M016677
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	250	U	500	250	125
Benzene	71-43-2	12.5	U	50.0	12.5	6.25
Bromobenzene	108-86-1	12.5	U	50.0	12.5	6.25
Bromochloromethane	74-97-5	20.0	U	50.0	20.0	10.0
Bromodichloromethane	75-27-4	25.0	U	50.0	25.0	12.5
Bromoform	75-25-2	50.0	U	100	50.0	25.0
Bromomethane	74-83-9	50.0	U	100	50.0	25.0
2-Butanone	78-93-3	250	U	500	250	125
n-Butylbenzene	104-51-8	25.0	U	50.0	25.0	12.5
sec-Butylbenzene	135-98-8	25.0	U	50.0	25.0	12.5
tert-Butylbenzene	98-06-6	25.0	U	50.0	25.0	12.5
Carbon disulfide	75-15-0	50.0	U	100	50.0	25.0
Carbon tetrachloride	56-23-5	25.0	U	50.0	25.0	12.5
Chlorobenzene	108-90-7	12.5	U	50.0	12.5	6.25
Chlorodibromomethane	124-48-1	25.0	U	50.0	25.0	12.5
Chloroethane	75-00-3	50.0	Q	100	50.0	25.0
Chloroform	67-66-3	12.5	U	50.0	12.5	6.25
Chloromethane	74-87-3	50.0	U	100	50.0	25.0
2-Chlorotoluene	95-49-8	12.5	U	50.0	12.5	6.25
4-Chlorotoluene	106-43-4	25.0	U	50.0	25.0	12.5
1,2-Dibromo-3-chloropropane	96-12-8	100	U	250	100	50.0
1,2-Dibromoethane	106-93-4	25.0	U	50.0	25.0	12.5
Dibromomethane	74-95-3	25.0	U	50.0	25.0	12.5
1,2-Dichlorobenzene	95-50-1	12.5	U	50.0	12.5	6.25
1,3-Dichlorobenzene	541-73-1	25.0	U	50.0	25.0	12.5
1,4-Dichlorobenzene	106-46-7	12.5	U	50.0	12.5	6.25
Dichlorodifluoromethane	75-71-8	25.0	U	50.0	25.0	12.5
1,1-Dichloroethane	75-34-3	6.92	J	50.0	12.5	6.25
1,2-Dichloroethane	107-06-2	43.4	J	50.0	25.0	12.5
1,1-Dichloroethene	75-35-4	50.0	U	100	50.0	25.0
cis-1,2-Dichloroethene	156-59-2	231		50.0	25.0	12.5

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	25.0	U	50.0	25.0	12.5
1,2-Dichloropropane	78-87-5	20.0	U	50.0	20.0	10.0
1,3-Dichloropropane	142-28-9	20.0	U	50.0	20.0	10.0
2,2-Dichloropropane	594-20-7	25.0	U	50.0	25.0	12.5
cis-1,3-Dichloropropene	10061-01-5	25.0	U	50.0	25.0	12.5
trans-1,3-Dichloropropene	10061-02-6	50.0	U	100	50.0	25.0
1,1-Dichloropropene	563-58-6	25.0	U	50.0	25.0	12.5
Ethylbenzene	100-41-4	25.0	U	50.0	25.0	12.5
2-Hexanone	591-78-6	250	Q	500	250	125
Hexachlorobutadiene	87-68-3	25.0	U	50.0	25.0	12.5
Isopropylbenzene	98-82-8	25.0	U	50.0	25.0	12.5
p-Isopropyltoluene	99-87-6	25.0	U	50.0	25.0	12.5
4-Methyl-2-pentanone	108-10-1	250	Q	500	250	125
Methylene chloride	75-09-2	25.0	U	50.0	25.0	12.5
Naphthalene	91-20-3	20.0	U	50.0	20.0	10.0
n-Propylbenzene	103-65-1	12.5	U	50.0	12.5	6.25
Styrene	100-42-5	12.5	U	50.0	12.5	6.25
1,1,1,2-Tetrachloroethane	630-20-6	25.0	U	50.0	25.0	12.5
1,1,2,2-Tetrachloroethane	79-34-5	20.0	U	50.0	20.0	10.0
Tetrachloroethene	127-18-4	25.0	U	50.0	25.0	12.5
Toluene	108-88-3	25.0	U	50.0	25.0	12.5
1,2,3-Trichlorobenzene	87-61-6	15.0	U	50.0	15.0	7.50
1,2,4-Trichlorobenzene	120-82-1	20.0	U	50.0	20.0	10.0
1,1,1-Trichloroethane	71-55-6	25.0	U	50.0	25.0	12.5
1,1,2-Trichloroethane	79-00-5	25.0	U	50.0	25.0	12.5
Trichloroethene	79-01-6	7710		50.0	25.0	12.5
Trichlorofluoromethane	75-69-4	25.0	Q	50.0	25.0	12.5
1,2,3-Trichloropropane	96-18-4	50.0	U	100	50.0	25.0
1,2,4-Trimethylbenzene	95-63-6	25.0	U	50.0	25.0	12.5
1,3,5-Trimethylbenzene	108-67-8	25.0	U	50.0	25.0	12.5
Vinyl chloride	75-01-4	25.0	U	50.0	25.0	12.5
o-Xylene	95-47-6	25.0	U	50.0	25.0	12.5
m-,p-Xylene	179601-23-1	50.0	U	100	50.0	25.0

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	109	85	115	
1,2-Dichloroethane-d4	116	70	120	
Toluene-d8	111	85	120	
4-Bromofluorobenzene	106	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	50WW14-111215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	10/09/2015 21:42
Workgroup #:	WG546880	**Analyst:**	JDS	**Run Date:**	11/13/2015 20:26
Collect Date:	11/12/2015 09:50	**Dilution:**	1	**File ID:**	11M10259
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	Q	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	14.2		1.00	0.500	0.250

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	5.78		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.8	85	115	
1,2-Dichloroethane-d4	88.1	70	120	
Toluene-d8	113	85	120	
4-Bromofluorobenzene	108	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW11-111215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	09/30/2015 14:52
Workgroup #:	WG547025	**Analyst:**	TMB	**Run Date:**	11/16/2015 22:27
Collect Date:	11/12/2015 11:00	**Dilution:**	20	**File ID:**	8M408729
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	100	U	200	100	50.0
Benzene	71-43-2	5.00	U	20.0	5.00	2.50
Bromobenzene	108-86-1	5.00	U	20.0	5.00	2.50
Bromochloromethane	74-97-5	8.00	U	20.0	8.00	4.00
Bromodichloromethane	75-27-4	10.0	U	20.0	10.0	5.00
Bromoform	75-25-2	20.0	U	40.0	20.0	10.0
Bromomethane	74-83-9	20.0	U	40.0	20.0	10.0
2-Butanone	78-93-3	100	U	200	100	50.0
n-Butylbenzene	104-51-8	10.0	U	20.0	10.0	5.00
sec-Butylbenzene	135-98-8	10.0	U	20.0	10.0	5.00
tert-Butylbenzene	98-06-6	10.0	U	20.0	10.0	5.00
Carbon disulfide	75-15-0	20.0	U	40.0	20.0	10.0
Carbon tetrachloride	56-23-5	10.0	U	20.0	10.0	5.00
Chlorobenzene	108-90-7	5.00	U	20.0	5.00	2.50
Chlorodibromomethane	124-48-1	10.0	U	20.0	10.0	5.00
Chloroethane	75-00-3	20.0	U	40.0	20.0	10.0
Chloroform	67-66-3	5.00	U	20.0	5.00	2.50
Chloromethane	74-87-3	20.0	U	40.0	20.0	10.0
2-Chlorotoluene	95-49-8	5.00	U	20.0	5.00	2.50
4-Chlorotoluene	106-43-4	10.0	U	20.0	10.0	5.00
1,2-Dibromo-3-chloropropane	96-12-8	40.0	U	100	40.0	20.0
1,2-Dibromoethane	106-93-4	10.0	U	20.0	10.0	5.00
Dibromomethane	74-95-3	10.0	U	20.0	10.0	5.00
1,2-Dichlorobenzene	95-50-1	5.00	U	20.0	5.00	2.50
1,3-Dichlorobenzene	541-73-1	10.0	U	20.0	10.0	5.00
1,4-Dichlorobenzene	106-46-7	5.00	U	20.0	5.00	2.50
Dichlorodifluoromethane	75-71-8	10.0	U	20.0	10.0	5.00
1,1-Dichloroethane	75-34-3	4.97	J	20.0	5.00	2.50
1,2-Dichloroethane	107-06-2	22.9		20.0	10.0	5.00
1,1-Dichloroethene	75-35-4	17.5	J	40.0	20.0	10.0
cis-1,2-Dichloroethene	156-59-2	54.1		20.0	10.0	5.00

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	10.0	U	20.0	10.0	5.00
1,2-Dichloropropane	78-87-5	8.00	U	20.0	8.00	4.00
1,3-Dichloropropane	142-28-9	8.00	U	20.0	8.00	4.00
2,2-Dichloropropane	594-20-7	10.0	U	20.0	10.0	5.00
cis-1,3-Dichloropropene	10061-01-5	10.0	U	20.0	10.0	5.00
trans-1,3-Dichloropropene	10061-02-6	20.0	U	40.0	20.0	10.0
1,1-Dichloropropene	563-58-6	10.0	U	20.0	10.0	5.00
Ethylbenzene	100-41-4	10.0	U	20.0	10.0	5.00
2-Hexanone	591-78-6	100	U	200	100	50.0
Hexachlorobutadiene	87-68-3	10.0	U	20.0	10.0	5.00
Isopropylbenzene	98-82-8	10.0	U	20.0	10.0	5.00
p-Isopropyltoluene	99-87-6	10.0	U	20.0	10.0	5.00
4-Methyl-2-pentanone	108-10-1	100	U	200	100	50.0
Methylene chloride	75-09-2	10.0	U	20.0	10.0	5.00
Naphthalene	91-20-3	8.00	U	20.0	8.00	4.00
n-Propylbenzene	103-65-1	5.00	U	20.0	5.00	2.50
Styrene	100-42-5	5.00	U	20.0	5.00	2.50
1,1,1,2-Tetrachloroethane	630-20-6	10.0	U	20.0	10.0	5.00
1,1,2,2-Tetrachloroethane	79-34-5	8.00	U	20.0	8.00	4.00
Tetrachloroethene	127-18-4	10.0	U	20.0	10.0	5.00
Toluene	108-88-3	10.0	U	20.0	10.0	5.00
1,2,3-Trichlorobenzene	87-61-6	6.00	U	20.0	6.00	3.00
1,2,4-Trichlorobenzene	120-82-1	8.00	U	20.0	8.00	4.00
1,1,1-Trichloroethane	71-55-6	10.0	U	20.0	10.0	5.00
1,1,2-Trichloroethane	79-00-5	10.0	U	20.0	10.0	5.00
Trichloroethene	79-01-6	2670		20.0	10.0	5.00
Trichlorofluoromethane	75-69-4	10.0	U	20.0	10.0	5.00
1,2,3-Trichloropropane	96-18-4	20.0	U	40.0	20.0	10.0
1,2,4-Trimethylbenzene	95-63-6	10.0	U	20.0	10.0	5.00
1,3,5-Trimethylbenzene	108-67-8	10.0	U	20.0	10.0	5.00
Vinyl chloride	75-01-4	10.0	U	20.0	10.0	5.00
o-Xylene	95-47-6	10.0	U	20.0	10.0	5.00
m-,p-Xylene	179601-23-1	20.0	U	40.0	20.0	10.0

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	98.8	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-13	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	50WW06-111215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	10/09/2015 21:42
Workgroup #:	WG546880	**Analyst:**	JDS	**Run Date:**	11/13/2015 20:58
Collect Date:	11/12/2015 13:25	**Dilution:**	1	**File ID:**	11M10260
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	Q	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.250	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	1.04		1.00	0.500	0.250

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	59.4		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.3	85	115	
1,2-Dichloroethane-d4	89.8	70	120	
Toluene-d8	113	85	120	
4-Bromofluorobenzene	107	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-15	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	50WW12-111215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	10/09/2015 21:42
Workgroup #:	WG546880	**Analyst:**	JDS	**Run Date:**	11/13/2015 21:30
Collect Date:	11/12/2015 14:35	**Dilution:**	1	**File ID:**	11M10261
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	Q	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	17.6		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.7	85	115	
1,2-Dichloroethane-d4	89.1	70	120	
Toluene-d8	113	85	120	
4-Bromofluorobenzene	106	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-17	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	10/09/2015 21:42
Workgroup #:	WG546880	**Analyst:**	JDS	**Run Date:**	11/13/2015 19:54
Collect Date:	11/12/2015 00:01	**Dilution:**	1	**File ID:**	11M10258
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	Q	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.2	85	115	
1,2-Dichloroethane-d4	87.1	70	120	
Toluene-d8	114	85	120	
4-Bromofluorobenzene	108	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 061415
Analyst1: TMB Analyst2: DLW
Method: 8260B SOP: MSV01 Rev: 22
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD70890 Surrogate Standard: STD70872
CCV: STD70883 LCS: STD70514 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG527475

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M08234	WG527475-01 50ng BFB STD	NA	1	1	STD70707	06/14/15 09:34
11M08235	WG527475-02 5ug/L STD8260	NA	1	1	STD70883	06/14/15 09:58
11M08236	WG527475-03 20ug/L STD8260	NA	1	1	STD70883	06/14/15 10:30
11M08237	WG527475-04 50ug/L STD8260	NA	1	1	STD70883	06/14/15 11:02
11M08238	WG527475-05 100ug/L STD8260	NA	1	1	STD70883	06/14/15 11:34
11M08239	WG527475-06 200ug/L STD8260	NA	1	1	STD70883	06/14/15 12:06
11M08240	WG527475-07 300ug/L STD8260	NA	1	1	STD70883	06/14/15 12:38
11M08241	WG527475-08 400ug/L STD8260	NA	1	1	STD70883	06/14/15 13:10
11M08242	WG527475-09 500ug/L STD8260	NA	1	1	STD70883	06/14/15 13:42
11M08243	RINSE	NA	1	1		06/14/15 14:14
11M08244	RINSE	NA	1	1		06/14/15 14:46
11M08245	WG527475-10 100ug/L ALT STD8260	NA	1	1	STD70514	06/14/15 15:18

Approved: September 15, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 093015
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 22
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53451

Internal Standard: STD72206 Surrogate Standard: STD72206
CCV: STD72739 LCS: STD72747 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG540912

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M407744	WG540912-01 50ng BFB STD 8260	NA	1	1	STD72715	09/30/15 09:14
8M407745	WG540912-01 50ng BFB STD 8260	NA	1	1	STD72715	09/30/15 09:38
8M407746	RINSE	NA	1	1		09/30/15 10:01
8M407747	WG540912-02 0.3ug/L STD 8260	NA	1	1	STD72739	09/30/15 10:30
8M407748	WG540912-03 0.4ug/L STD 8260	NA	1	1	STD72739	09/30/15 10:59
8M407749	WG540912-04 1ug/L STD 8260	NA	1	1	STD72739	09/30/15 11:32
8M407750	WG540912-05 2ug/L STD 8260	NA	1	1	STD72739	09/30/15 12:01
8M407751	WG540912-06 5ug/L STD 8260	NA	1	1	STD72739	09/30/15 12:29
8M407752	WG540912-07 20ug/L STD 8260	NA	1	1	STD72739	09/30/15 12:58
8M407753	WG540912-08 50ug/L STD 8260	NA	1	1	STD72739	09/30/15 13:27
8M407754	WG540912-09 100ug/L STD 8260	NA	1	1	STD72739	09/30/15 13:56
8M407755	WG540912-10 200ug/L STD 8260	NA	1	1	STD72739	09/30/15 14:24
8M407756	WG540912-11 300ug/L STD 8260	NA	1	1	STD72739	09/30/15 14:52
8M407757	RINSE	NA	1	1		09/30/15 15:25
8M407758	RINSE	NA	1	1		09/30/15 15:54
8M407759	WG540912-12 50ug/L ALT SRC STD 8260	NA	1	1	STD727747	09/30/15 16:22
8M407760	RINSE	NA	1	1		09/30/15 16:52
8M407761	WG540912-12 50ug/L ALT SRC STD 8260	NA	1	1	STD72747	09/30/15 17:27
8M407762	CCV	NA	1	1	STD72739	09/30/15 17:56
8M407763	RINSE	NA	1	1		09/30/15 18:24

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1	X			
File ID: 8M407744				
			Tune failed, DNR.	
16	X			
File ID: 8M407759				
			Carbon disulfide was low, DNR. Made a new lcs adds mix.	

Approved: October 01, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 100515
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 22
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53462

Internal Standard: STD72767 Surrogate Standard: STD72767
CCV: STD72810 LCS: STD72811 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG540826

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M407827	WG540826-01 50ng BFB STD 8260	NA	1	1	STD72715	10/05/15 11:26
8M407828	WG540826-02 5ug/L STD A9FOO	NA	1	1	STD72810	10/05/15 11:49
8M407829	WG540826-03 20ug/L STD A9FOO	NA	1	1	STD72810	10/05/15 12:17
8M407830	WG540826-04 50ug/L STD A9FOO	NA	1	1	STD72810	10/05/15 12:51
8M407831	WG540826-05 100ug/L STD A9FOO	NA	1	1	STD72810	10/05/15 13:20
8M407832	WG540826-06 200ug/L STD A9FOO	NA	1	1	STD72810	10/05/15 13:49
8M407833	WG540826-07 300ug/L STD A9FOO	NA	1	1	STD72810	10/05/15 14:17
8M407834	WG540826-08 400ug/L STD A9FOO	NA	1	1	STD72810	10/05/15 14:47
8M407835	WG540826-09 500ug/L STD A9FOO	NA	1	1	STD72810	10/05/15 15:15
8M407836	RINSE	NA	1	1		10/05/15 15:50
8M407837	RINSE	NA	1	1		10/05/15 16:19
8M407838	WG540826-10 100ug/L ALT SRC STD A9/F	NA	1	1	STD72811	10/05/15 16:48

Approved: October 09, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 100915
Analyst1: JDS Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 22
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD72438 Surrogate Standard: STD72439
CCV: STD72922 LCS: STD72901 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG542333 WG542371

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M09739	WG542333-01 BFB 8260	NA	1	1	STD72715	10/09/15 15:59
11M09740	RINSE	NA	1	1		10/09/15 16:24
11M09741	WG542333-02 0.3ug/L STD 8260	NA	1	1	STD72922	10/09/15 16:56
11M09742	WG542333-03 0.4ug/L STD 8260	NA	1	1	STD72922	10/09/15 17:28
11M09743	WG542333-04 1.0ug/L STD 8260	NA	1	1	STD72922	10/09/15 17:59
11M09744	WG542333-05 2.0ug/L STD 8260	NA	1	1	STD72922	10/09/15 18:31
11M09745	WG542333-06 5.0ug/L STD 8260	NA	1	1	STD72922	10/09/15 19:03
11M09746	WG542333-07 20ug/L STD 8260	NA	1	1	STD72922	10/09/15 19:35
11M09747	WG542333-08 50ug/L STD 8260	NA	1	1	STD72922	10/09/15 20:06
11M09748	WG542333-09 100ug/L STD 8260	NA	1	1	STD72922	10/09/15 20:38
11M09749	WG542333-10 200ug/L STD 8260	NA	1	1	STD72922	10/09/15 21:10
11M09750	WG542333-11 300ug/L STD 8260	NA	1	1	STD72922	10/09/15 21:42
11M09751	RINSE	NA	1	1		10/09/15 22:14
11M09752	WG542333-12 50ug/L ALT SRC 8260	NA	1	1	STD72901	10/09/15 22:45
11M09753	RINSE	NA	1	1		10/09/15 23:17
11M09754	WG542371-01 BLANK 8260	NA	1	1		10/09/15 23:49
11M09755	WG542371-02 20ug/L LCS 8260	NA	1	1	STD72901	10/10/15 00:21
11M09756	WG542371-03 20ug/L LCS DUP 8260	NA	1	1	STD72901	10/10/15 00:53
11M09757	RINSE	NA	1	1		10/10/15 01:25
11M09758	L15100447-56 TB A 826-SPE	<2	1	1		10/10/15 01:56
11M09759	L15100447-52 A 826-SPE	<2	1	1		10/10/15 02:28
11M09760	L15100447-53 A 826-SPE	<2	1	1		10/10/15 03:00
11M09761	L15100447-54 A 826-SPE	<2	1	1		10/10/15 03:32
11M09762	L15100447-55 A 826-SPE	<2	1	1		10/10/15 04:04
11M09763	RINSE	NA	1	1		10/10/15 04:35

Comments

Seq.	Rerun	Dil.	Reason	Analytes
24	X			All
File ID: 11M09762				
	L15100447-55 Missed tune			

Approved: October 21, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS17 Dataset: 111115

Analyst1: ADC Analyst2: NA

Method: 8260B SOP: MSV01 Rev: 23

Method: 5035/5030B/ 5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD72995 Surrogate Standard: STD72996

CCV: STD73343 LCS: STD73034 MS/MSD: STD73034

Column 1 ID: RTX-VMS Column 2 ID: NA

Workgroups: WG546498 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
17M016364	TEST BFB	NA	1	1	STD72715	11/11/15 13:32
17M016366	WG546498-01 50ng BFB STD	NA	1	1	STD72715	11/11/15 14:17
17M016367	WG546498-02 50ug/L CCV STD	NA	1	1	STD73185	11/11/15 14:34
17M016368	RINSE	NA	1	1	STD73185	11/11/15 14:54
17M016369	WG546498-03 0.3ug/L STD	NA	1	1	STD73185	11/11/15 15:14
17M016370	WG546498-04 0.4ug/L STD	NA	1	1	STD73185	11/11/15 15:34
17M016371	WG546498-05 1.0ug/L STD	NA	1	1	STD73185	11/11/15 15:54
17M016372	WG546498-06 2.0ug/L STD 8260	NA	1	1	STD73185	11/11/15 16:14
17M016373	WG546498-07 5.0ug/L STD 8260	NA	1	1	STD73185	11/11/15 16:33
17M016374	WG546498-08 20.0ug/L STD 8260	NA	1	1	STD73185	11/11/15 16:53
17M016375	WG546498-09 100.0ug/L STD 8260	NA	1	1	STD73185	11/11/15 17:13
17M016376	WG546498-10 200.0ug/L STD 8260	NA	1	1	STD73185	11/11/15 17:33
17M016377	WG546498-11 300.0ug/L STD 8260	NA	1	1	STD73185	11/11/15 17:53
17M016378	RINSE	NA	1	1		11/11/15 18:13
17M016379	WG546498-12 50.0ug/L ALT 8260	NA	1	1	STD73387	11/11/15 18:33

Approved: November 16, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS17 Dataset: 111315
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18
Method: 624 SOP: MSV10 Rev: 12
Maintenance Log ID:

Internal Standard: STD72995 Surrogate Standard: STD72996
CCV: STD73343 LCS: STD73387 MS/MSD: STD73387

Column 1 ID: RTX-VMS Column 2 ID: NA
Workgroups: WG546844

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
17M016432	WG546843-01 50ng BFB STD	NA	1	1	STD72715	11/13/15 13:32
17M016433	WG546843-02 50ug/L CCV STD	NA	1	1	STD73185	11/13/15 13:50
17M016434	RINSE	NA	1	1		11/13/15 14:22
17M016435	WG546844-01 BLK 8260	NA	1	1		11/13/15 14:42
17M016436	WG546844-02 20ug/L LCS 8260	NA	1	1	STD73387	11/13/15 15:01
17M016437	L15110636-05 A MS 826-SPE	<2	12	1	STD73387	11/13/15 15:21
17M016438	L15110636-06 A MSD 826-SPE	<2	12	1	STD73387	11/13/15 15:41
17M016439	RINSE	NA	1	1		11/13/15 16:01
17M016440	L15110599-08 A 826-SPE	<2	1	1		11/13/15 16:21
17M016441	L15110599-18 A 826-SPE	<2	1	1		11/13/15 16:41
17M016442	L15110636-01 A 826-SPE	<2	1	1		11/13/15 17:01
17M016443	L15110636-17 A 826-SPE	<2	1	1		11/13/15 17:21
17M016444	L15110636-03 A 826-SPE	<2	1	1		11/13/15 17:41
17M016445	L15110248-09 B 826-SPE4	<2	1	1		11/13/15 18:01
17M016446	L15110793-01 A 826-LOW	<2	1	1		11/13/15 18:21
17M016447	L15110793-02 A 826-LOW	<2	1	1		11/13/15 18:40
17M016448	L15110793-03 A 826-LOW	<2	1	1		11/13/15 19:00
17M016449	L15110793-04 A 826-LOW	<2	1	1		11/13/15 19:20
17M016450	L15110793-05 A 826-LOW	<2	1	1		11/13/15 19:40
17M016451	L15110793-06 A 826-LOW	<2	1	1		11/13/15 20:00
17M016452	L15110636-04 A 826-SPE	<2	12	1		11/13/15 20:20
17M016453	L15110636-16 A 826-SPE	<2	1	1		11/13/15 20:40
17M016454	L15110599-06 A 826-SPE	3	1	1		11/13/15 21:00
17M016455	L15110599-07 A 826-SPE	<2	1	1		11/13/15 21:20
17M016456	L15110599-17 A 826-SPE	<2	1	1		11/13/15 21:40
17M016457	RINSE	NA	1	1		11/13/15 21:59
17M016458	RINSE	NA	1	1		11/13/15 22:19
17M016459	RINSE	NA	1	1		11/13/15 22:39
17M016460	RINSE	NA	1	1		11/13/15 22:59
17M016461	RINSE	NA	1	1		11/13/15 23:19

Approved: November 22, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 111315
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 22
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD73528 Surrogate Standard: STD73487
CCV: STD73419 LCS: STD73459 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG546880

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M10248	WG546879-01 50ng BFB STD 8260	NA	1	1	STD73273	11/13/15 14:42
11M10249	WG546879-02 50ug/L CCV STD 8260	NA	1	1	STD73419	11/13/15 15:06
11M10250	WG546879-02 50ug/L CCV STD 8260	NA	1	1	STD73419	11/13/15 15:40
11M10251	WG000000-01 50ug/L A9-CCV STD 8260	NA	1	1	STD73389	11/13/15 16:12
11M10252	WG546880-01 BLANK STD 8260	NA	1	1		11/13/15 16:43
11M10253	WG546880-02 20ug/L LCS STD 8260	NA	1	1	STD73459	11/13/15 17:15
11M10254	WG546880-03 20ug/L LCS2 STD 8260	NA	1	1	STD73459	11/13/15 17:47
11M10255	L15110714-01 B 00 5X 826-SPE	5	1	5		11/13/15 18:19
11M10256	L15110650-01 A TB 826-SPE1	<2	1	1		11/13/15 18:50
11M10257	L15110682-06 A TB 826-SPE	<2	1	1		11/13/15 19:22
11M10258	L15110793-17 A TB 826-LOW	<2	1	1		11/13/15 19:54
11M10259	L15110793-09 A 826-LOW	<2	1	1		11/13/15 20:26
11M10260	L15110793-13 A 826-LOW	<2	1	1		11/13/15 20:58
11M10261	L15110793-15 A 826-LOW	<2	1	1		11/13/15 21:30
11M10262	L15110650-02 A 826-SPE1	<2	1	1		11/13/15 22:02
11M10263	L15110650-04 A 826-SPE1	<2	1	1		11/13/15 22:34
11M10264	L15110650-06 A 826-SPE1	<2	1	1		11/13/15 23:05
11M10265	L15110650-08 A 826-SPE1	<2	1	1		11/13/15 23:37
11M10266	L15110650-10 A 826-SPE1	<2	1	1		11/14/15 00:09
11M10267	L15110650-12 A 826-SPE1	<2	1	1		11/14/15 00:41
11M10268	L15110682-01 A 826-SPE	<2	1	1		11/14/15 01:13
11M10269	L15110682-07 A 826-SPE	<2	1	1		11/14/15 01:45
11M10270	L15110793-07 A 100X 826-LOW	<2	1	100		11/14/15 02:16
11M10271	CCV	NA	1	1		11/14/15 02:48
11M10272	RINSE	NA	1	1		11/14/15 03:20
11M10273	RINSE	NA	1	1		11/14/15 03:52

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 11M10249				
	Vc was low, DNR.			
4				

Approved: November 23, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 111315
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 22
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD73528 Surrogate Standard: STD73487
CCV: STD73419 LCS: STD73459 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG546880

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
File ID: 11M10251				
	Not needed, DNR.			
23	X	50	Analyzed too dilute	
File ID: 11M10270				

Approved: November 23, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 111615
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 22
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53552

Internal Standard: STD73295 Surrogate Standard: STD73295
CCV: STD73419 LCS: STD73459 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG547025

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M408706	WG547022-01 50ng BFB STD 8260	NA	1	1	STD73273	11/16/15 11:16
8M408707	WG547022-02 50ug/L CCV STD 8260	NA	1	1	STD73419	11/16/15 11:39
8M408708	WG000000-01 100ug/L A9CCV STD 8260	NA	1	1	STD73389	11/16/15 12:09
8M408709	WG547025-01 VBLK1116 BLANK STD 826	NA	1	1		11/16/15 12:39
8M408710	WG547025-02 20ug/L LCS STD 8260	NA	1	1	STD73459	11/16/15 13:09
8M408711	WG547025-03 20ug/L LCSDUP STD 8260	NA	1	1	STD73459	11/16/15 13:38
8M408712	L15110686-03 B TB 826-BETX	NA	2	1		11/16/15 14:08
8M408713	L15110634-01 C 826-BETX	<2	2	1		11/16/15 14:37
8M408714	L15110684-01 B 826-BETX	<2	2	1		11/16/15 15:06
8M408715	L15110832-01 A 10X 826-SPE	<2	1	10		11/16/15 15:36
8M408716	RINSE	NA	1	1		11/16/15 16:06
8M408717	L15110685-01 B 826-BETX	<2	2	1		11/16/15 16:35
8M408718	L15110686-01 B 826-BETX	<2	2	1		11/16/15 17:05
8M408719	L15110799-04 TB A 826-SPE	<2	1	1		11/16/15 17:34
8M408720	L15110818-02 TB A 826-SPE	<2	1	1		11/16/15 18:04
8M408721	L15110832-02 TB A 826-SPE	<2	1	1		11/16/15 18:33
8M408722	L15110650-20 ER A 826-SPE1	<2	1	1		11/16/15 19:02
8M408723	L15110650-18 A 826-SPE1	<2	1	1		11/16/15 19:32
8M408724	L15110650-16 A 826-SPE1	<2	1	1		11/16/15 20:01
8M408725	L15110650-14 A 826-SPE1	<2	1	1		11/16/15 20:30
8M408726	L15110799-01 A 826-SPE	<2	1	1		11/16/15 21:00
8M408727	L15110799-02 A 826-SPE	<2	1	1		11/16/15 21:29
8M408728	L15110799-03 A 826-SPE	<2	1	1		11/16/15 21:58
8M408729	L15110793-11 A 20X 826-LOW	<2	1	20		11/16/15 22:27
8M408730	L15110818-01 A 826-SPE	<2	1	1		11/16/15 22:55
8M408731	CCV	NA	1	1		11/16/15 23:24
8M408732	RINSE	NA	1	1		11/16/15 23:53
8M408733	ANTIFOAM BLANK	NA	1	1		11/17/15 00:22
8M408734	RINSE	NA	1	1		11/17/15 00:51

Comments

Seq.	Rerun	Dil.	Reason	Analytes
3				

Approved: November 18, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS8	Dataset:	111615		
Analyst1:	TMB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	22
Method:	624	SOP:	MSV10	Rev:	13
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:	53552				

Internal Standard: STD73295 Surrogate Standard: STD73295

CCV: STD73419 LCS: STD73459 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG547025

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
File ID: 8M408708				
	Not needed, DNR.			
10	X	1	Analyzed too dilute	
File ID: 8M408715				

Approved: November 18, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS17 Dataset: 112415
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 22
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD73495 Surrogate Standard: STD73496
CCV: STD73185 LCS: STD73387 MS/MSD: NA

Column 1 ID: RTX-VMS Column 2 ID: NA
Workgroups: WG548399

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
17M016665	WG548398-01 50ng BFB STD	NA	1	1	STD72715	11/24/15 20:08
17M016666	WG548398-02 50ug/L CCV STD	NA	1	1	STD73343	11/24/15 20:26
17M016667	RINSE	NA	1	1		11/24/15 20:47
17M016668	WG548399-01 BLK 8260	NA	1	1		11/24/15 21:07
17M016669	WG548399-02 20ug/L LCS 8260	NA	1	1	STD73387	11/24/15 21:26
17M016670	L15111384-02 A MS 826-SPE	7	1	1	STD73387	11/24/15 21:46
17M016671	L15111384-03 A MSD 826-SPE	7	1	1	STD73387	11/24/15 22:06
17M016672	L15111211-08 B D1 20X 826-LOW	<2	1	20		11/24/15 22:26
17M016673	L15110809-04 C 00 826-SPE1	<2	1	1		11/24/15 22:46
17M016674	RINSE	NA	1	1		11/24/15 23:06
17M016675	L15111380-11 A TB 826-LOW	<2	2	1		11/24/15 23:25
17M016676	L15111384-01 A REF 826-SPE	7	1	1		11/24/15 23:45
17M016677	L15110793-07 B 00 50X 826-SPE1	<2	1	50		11/25/15 00:05
17M016678	L15110809-02 C D1 10X 826-SPE1	<2	1	10		11/25/15 00:25
17M016679	RINSE	NA	1	1		11/25/15 00:45
17M016680	L15111380-01 A 826-LOW	<2	2	1		11/25/15 01:04
17M016681	L15111380-02 A 826-LOW	<2	2	1		11/25/15 01:24
17M016682	L15111380-03 A 826-LOW	<2	2	1		11/25/15 01:44
17M016683	L15111380-04 A 826-LOW	<2	2	1		11/25/15 02:04
17M016684	L15111380-05 A 826-LOW	<2	2	1		11/25/15 02:24
17M016685	L15111380-06 A 826-LOW	<2	2	1		11/25/15 02:43
17M016686	L15111380-07 A 826-LOW	<2	2	1		11/25/15 03:03
17M016687	L15111380-08 A 826-LOW	<2	2	1		11/25/15 03:23
17M016688	RINSE	NA	1	1		11/25/15 03:43
17M016689	L15111384-04 A 826-SPE	7	1	1		11/25/15 04:03
17M016690	L15111384-05 A 5X 826-SPE	7	1	5		11/25/15 04:22
17M016691	L15111384-06 A 10X 826-SPE	7	1	10		11/25/15 04:42
17M016692	L15111384-07 A 10X 826-SPE	7	1	10		11/25/15 05:02
17M016693	CCV	NA	1	1		11/25/15 05:22
17M016694	RINSE	NA	1	1		11/25/15 05:42
17M016695	RINSE	NA	1	1		11/25/15 06:02

Comments

Approved: December 01, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS17	Dataset:	112415		
Analyst1:	ADC	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	22
Method:	624	SOP:	MSV10	Rev:	13
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:					

Internal Standard: STD73495 Surrogate Standard: STD73496

CCV: STD73185 LCS: STD73387 MS/MSD: NA

Column 1 ID: RTX-VMS Column 2 ID: NA

Workgroups: WG548399

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
27	X		Analyzed too dilute	
File ID:	17M016691			
	L15111384-06			
28	X		Analyzed too dilute	
File ID:	17M016692			
	L15111384-07			

Approved: December 01, 2015

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Microbac Laboratories Inc.

Data Checklist

Date: 14-JUN-2015
Analyst: TMB
Analyst: DLW
Method: 8260B/624
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 69930
Analytical Workgroups: WG527475

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
20-AUG-2015
Tiffany Bailey

Secondary Reviewer:
15-SEP-2015

CHECKLIST1 - Modified 03/05/2008
Generated: SEP-15-2015 14:33:53

Microbac Laboratories Inc.

Data Checklist

Date: 30-SEP-2015
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 70802
Analytical Workgroups: WG540912

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
01-OCT-2015
Tiffany Bailey

Secondary Reviewer:
01-OCT-2015

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-01-2015 16:52:52

Microbac Laboratories Inc.

Data Checklist

Date: 05-OCT-2015
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 70874
Analytical Workgroups: WG540826

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
06-OCT-2015
Tiffany Bailey

Secondary Reviewer:
09-OCT-2015

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-09-2015 12:12:03

Microbac Laboratories Inc.

Data Checklist

Date: 09-OCT-2015
Analyst: JDS
Analyst: FJB
Method: 8260
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 71157
Analytical Workgroups: WG542333 WG542371

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	JDS
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
20-OCT-2015

Secondary Reviewer:
21-OCT-2015

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-21-2015 12:31:42

Microbac Laboratories Inc.

Data Checklist

Date: 11-NOV-2015
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS17
Curve Workgroup: WG546498
Runlog ID: 71668
Analytical Workgroups:

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
13-NOV-2015

Secondary Reviewer:
16-NOV-2015

CHECKLIST1 - Modified 03/05/2008
Generated: NOV-16-2015 09:59:26

Microbac Laboratories Inc.

Data Checklist

Date: 13-NOV-2015
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS17
Curve Workgroup: NA
Runlog ID: 71710
Analytical Workgroups: WG546844

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
16-NOV-2015

Secondary Reviewer:
22-NOV-2015

CHECKLIST1 - Modified 03/05/2008
Generated: NOV-22-2015 15:09:14

Microbac Laboratories Inc.

Data Checklist

Date: 13-NOV-2015
Analyst: JDS
Analyst: NA
Method: 8260B/624
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 71879
Analytical Workgroups: WG546880

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
23-NOV-2015
Tiffany Bailey

Secondary Reviewer:
23-NOV-2015
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: NOV-23-2015 17:20:08

Microbac Laboratories Inc.

Data Checklist

Date: 16-NOV-2015
Analyst: TMB
Analyst: NA
Method: 8260B
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 71719
Analytical Workgroups: WG547025

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
17-NOV-2015
Tiffany Bailey

Secondary Reviewer:
18-NOV-2015
Wadei Dg

CHECKLIST1 - Modified 03/05/2008
Generated: NOV-18-2015 13:30:56

Microbac Laboratories Inc.

Data Checklist

Date: 24-NOV-2015
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS17
Curve Workgroup: NA
Runlog ID: 71986
Analytical Workgroups: WG548399

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
01-DEC-2015

Secondary Reviewer:
01-DEC-2015

CHECKLIST1 - Modified 03/05/2008
Generated: DEC-01-2015 17:09:38

Microbac Laboratories Inc.

00649913

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG546844

Login Number: L15110793

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW27-111115	01	11/11/15					11/13/2015	2.4	14		11/13/15	2.4	14	
50WW15-111115	02	11/11/15					11/13/2015	2.4	14		11/13/15	2.4	14	
50WW15FD-111115	03	11/11/15					11/13/2015	2.4	14		11/13/15	2.4	14	
50WW09-111115	04	11/11/15					11/13/2015	2.4	14		11/13/15	2.4	14	
50WW09FD-111115	05	11/11/15					11/13/2015	2.4	14		11/13/15	2.4	14	
50WW10-111115	06	11/11/15					11/13/2015	2.2	14		11/13/15	2.2	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4501850
Report generated 12/01/2015 17:01

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG546880

Login Number: L15110793

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW14-111215	09	11/12/15					11/13/2015	1.4	14		11/13/15	1.4	14	
50WW06-111215	13	11/12/15					11/13/2015	1.3	14		11/13/15	1.3	14	
50WW12-111215	15	11/12/15					11/13/2015	1.3	14		11/13/15	1.3	14	
TRIP BLANK	17	11/12/15					11/13/2015	1.8	14		11/13/15	1.8	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4501850
Report generated 12/01/2015 17:01

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG547025

Login Number: L15110793

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW11-111215	11	11/12/15					11/16/2015	4.5	14		11/16/15	4.5	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4501850
Report generated 12/01/2015 17:01

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG548399

Login Number: L15110793

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW13-111215	07	11/12/15					11/25/2015	12.6	14		11/25/15	12.6	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4501850
Report generated 12/01/2015 17:01

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L15110793
Instrument Id: HPMS17
Workgroup (AAB#): WG546844

Method: 8260
CAL ID: HPMS17-11-NOV-15
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L15110793-01	1.00	01	108	99.8	100	101
L15110793-02	1.00	01	109	98.4	105	102
L15110793-03	1.00	01	112	100	104	104
L15110793-04	1.00	01	109	103	103	102
L15110793-05	1.00	01	107	102	103	101
L15110793-06	1.00	01	108	103	104	102
WG546844-01	1.00	01	107	98.0	104	104
WG546844-02	1.00	01	105	103	99.4	102

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4501858
Report generated: 12/01/2015 17:02

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L15110793
Instrument Id: HPMS17
Workgroup (AAB#): WG548399

Method: 8260
CAL ID: HPMS17-11-NOV-15
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L15110793-07	50.0	DL01	116	109	106	111
WG548399-01	1.00	01	115	106	111	112
WG548399-02	1.00	01	113	109	105	110

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4501858
Report generated: 12/01/2015 17:02

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L15110793
Instrument Id: HPMS8
Workgroup (AAB#): WG547025

Method: 8260
CAL ID: HPMS8-30-SEP-15
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L15110793-11	20.0	DL01	103	105	98.8	102
WG547025-01	1.00	01	101	107	97.1	102
WG547025-02	1.00	01	104	105	95.8	101
WG547025-03	1.00	01	100	105	95.1	101

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4501858
Report generated: 12/01/2015 17:02

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L15110793
Instrument Id: HPMS11
Workgroup (AAB#): WG546880

Method: 8260
CAL ID: HPMS11-09-OCT-15
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L15110793-09	1.00	01	88.1	95.8	108	113
L15110793-13	1.00	01	89.8	97.3	107	113
L15110793-15	1.00	01	89.1	97.7	106	113
L15110793-17	1.00	01	87.1	95.2	108	114
WG546880-01	1.00	01	86.8	95.2	107	114
WG546880-02	1.00	01	92.6	101	110	117
WG546880-03	1.00	01	90.1	100	109	115

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4501858
Report generated: 12/01/2015 17:02

METHOD BLANK SUMMARY

Login Number: L15110793
Blank File ID: 11M10252
Prep Date: 11/13/15 16:43
Analyzed Date: 11/13/15 16:43
Analyst: JDS

Work Group: WG546880
Blank Sample ID: WG546880-01
Instrument ID: HPMS11
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG546880-02	11M10253	11/13/15 17:15	01
LCS2	WG546880-03	11M10254	11/13/15 17:47	01
TRIP BLANK	L15110793-17	11M10258	11/13/15 19:54	01
50WW14-111215	L15110793-09	11M10259	11/13/15 20:26	01
50WW06-111215	L15110793-13	11M10260	11/13/15 20:58	01
50WW12-111215	L15110793-15	11M10261	11/13/15 21:30	01

Report Name: BLANK_SUMMARY
PDF File ID: 4501851
Report generated 12/01/2015 17:01

METHOD BLANK SUMMARY

Login Number: L15110793
Blank File ID: 17M016435
Prep Date: 11/13/15 14:42
Analyzed Date: 11/13/15 14:42
Analyst: ADC

Work Group: WG546844
Blank Sample ID: WG546844-01
Instrument ID: HPMS17
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG546844-02	17M016436	11/13/15 15:01	01
50WW27-111115	L15110793-01	17M016446	11/13/15 18:21	01
50WW15-111115	L15110793-02	17M016447	11/13/15 18:40	01
50WW15FD-111115	L15110793-03	17M016448	11/13/15 19:00	01
50WW09-111115	L15110793-04	17M016449	11/13/15 19:20	01
50WW09FD-111115	L15110793-05	17M016450	11/13/15 19:40	01
50WW10-111115	L15110793-06	17M016451	11/13/15 20:00	01

Report Name: BLANK_SUMMARY
PDF File ID: 4501851
Report generated 12/01/2015 17:01

METHOD BLANK SUMMARY

Login Number: L15110793
Blank File ID: 17M016668
Prep Date: 11/24/15 21:07
Analyzed Date: 11/24/15 21:07
Analyst: JDS/FJB

Work Group: WG548399
Blank Sample ID: WG548399-01
Instrument ID: HPMS17
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG548399-02	17M016669	11/24/15 21:26	01
50WW13-111215	L15110793-07	17M016677	11/25/15 00:05	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4501851
Report generated 12/01/2015 17:01

METHOD BLANK SUMMARY

Login Number: L15110793
Blank File ID: 8M408709
Prep Date: 11/16/15 12:39
Analyzed Date: 11/16/15 12:39
Analyst: TMB

Work Group: WG547025
Blank Sample ID: WG547025-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG547025-02	8M408710	11/16/15 13:09	01
LCS2	WG547025-03	8M408711	11/16/15 13:38	01
50WW11-111215	L15110793-11	8M408729	11/16/15 22:27	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4501851
Report generated 12/01/2015 17:01

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15110793 Prep Date: 11/13/15 16:43 Sample ID: WG546880-01
Instrument ID: HPMS11 Run Date: 11/13/15 16:43 Prep Method: 5030B/5030C/503
File ID: 11M10252 Analyst: JDS Method: 8260B
Workgroup (AAB#): WG546880 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-09-OCT-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 4501852
01-DEC-2015 17:01

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15110793 Prep Date: 11/13/15 16:43 Sample ID: WG546880-01
Instrument ID: HPMS11 Run Date: 11/13/15 16:43 Prep Method: 5030B/5030C/503
File ID: 11M10252 Analyst: JDS Method: 8260B
Workgroup (AAB#): WG546880 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-09-OCT-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	95.2	85 - 115	PASS
1,2-Dichloroethane-d4	86.8	70 - 120	PASS
Toluene-d8	114	85 - 120	PASS
4-Bromofluorobenzene	107	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4501852
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Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15110793 Prep Date: 11/13/15 14:42 Sample ID: WG546844-01
Instrument ID: HPMS17 Run Date: 11/13/15 14:42 Prep Method: 5030B/5030C/503
File ID: 17M016435 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG546844 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS17-11-NOV-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
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Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15110793 Prep Date: 11/13/15 14:42 Sample ID: WG546844-01
Instrument ID: HPMS17 Run Date: 11/13/15 14:42 Prep Method: 5030B/5030C/503
File ID: 17M016435 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG546844 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS17-11-NOV-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	98.0	85 - 115	PASS
1,2-Dichloroethane-d4	107	70 - 120	PASS
Toluene-d8	104	85 - 120	PASS
4-Bromofluorobenzene	104	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4501852
01-DEC-2015 17:01

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15110793 Prep Date: 11/24/15 21:07 Sample ID: WG548399-01
Instrument ID: HPMS17 Run Date: 11/24/15 21:07 Prep Method: 5030B/5030C/503
File ID: 17M016668 Analyst: JDS/FJB Method: 8260B
Workgroup (AAB#): WG548399 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS17-11-NOV-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 4501852
01-DEC-2015 17:01

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15110793 Prep Date: 11/24/15 21:07 Sample ID: WG548399-01
Instrument ID: HPMS17 Run Date: 11/24/15 21:07 Prep Method: 5030B/5030C/503
File ID: 17M016668 Analyst: JDS/FJB Method: 8260B
Workgroup (AAB#): WG548399 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS17-11-NOV-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	106	85 - 115	PASS
1,2-Dichloroethane-d4	115	70 - 120	PASS
Toluene-d8	112	85 - 120	PASS
4-Bromofluorobenzene	111	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4501852
01-DEC-2015 17:01

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15110793 Prep Date: 11/16/15 12:39 Sample ID: WG547025-01
Instrument ID: HPMS8 Run Date: 11/16/15 12:39 Prep Method: 5030B/5030C/503
File ID: 8M408709 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG547025 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-30-SEP-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

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Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15110793 Prep Date: 11/16/15 12:39 Sample ID: WG547025-01
Instrument ID: HPMS8 Run Date: 11/16/15 12:39 Prep Method: 5030B/5030C/503
File ID: 8M408709 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG547025 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-30-SEP-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	107	85 - 115	PASS
1,2-Dichloroethane-d4	101	70 - 120	PASS
Toluene-d8	102	85 - 120	PASS
4-Bromofluorobenzene	97.1	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15110793 | Run Date: 11/13/2015 | Sample ID: WG546880-02
Instrument ID: HPMS11 | Run Time: 17:15 | Prep Method: 5030B/5030C/503
File ID: 11M10253 | Analyst: JDS | Method: 8260B
Workgroup (AAB#): WG546880 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD73459 | Cal ID: HPMS11-09-OCT-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	21.8	109	40 - 140	
Benzene	20.0	19.8	99.2	80 - 120	
Bromobenzene	20.0	22.4	112	75 - 125	
Bromochloromethane	20.0	20.8	104	65 - 130	
Bromodichloromethane	20.0	21.4	107	75 - 120	
Bromoform	20.0	28.2	141	70 - 130	*
Bromomethane	20.0	20.0	100	30 - 145	
2-Butanone	20.0	20.7	103	30 - 150	
n-Butylbenzene	20.0	23.2	116	70 - 135	
sec-Butylbenzene	20.0	24.1	120	70 - 125	
tert-Butylbenzene	20.0	22.4	112	70 - 130	
Carbon disulfide	20.0	17.3	86.5	35 - 160	
Carbon tetrachloride	20.0	23.4	117	65 - 140	
Chlorobenzene	20.0	23.2	116	80 - 120	
Chlorodibromomethane	20.0	25.7	129	60 - 135	
Chloroethane	20.0	20.8	104	60 - 135	
Chloroform	20.0	19.7	98.7	65 - 135	
Chloromethane	20.0	18.7	93.3	40 - 125	
2-Chlorotoluene	20.0	23.2	116	75 - 125	
4-Chlorotoluene	20.0	21.7	108	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	20.4	102	50 - 130	
1,2-Dibromoethane	20.0	24.1	120	80 - 120	
Dibromomethane	20.0	20.6	103	75 - 125	
1,2-Dichlorobenzene	20.0	23.4	117	70 - 120	
1,3-Dichlorobenzene	20.0	23.1	116	75 - 125	
1,4-Dichlorobenzene	20.0	22.4	112	75 - 125	
Dichlorodifluoromethane	20.0	22.0	110	30 - 155	
1,1-Dichloroethane	20.0	18.7	93.7	70 - 135	
1,2-Dichloroethane	20.0	17.8	89.0	70 - 130	
1,1-Dichloroethene	20.0	18.2	91.1	70 - 130	
cis-1,2-Dichloroethene	20.0	19.3	96.4	70 - 125	
trans-1,2-Dichloroethene	20.0	19.6	98.2	60 - 140	
1,2-Dichloropropane	20.0	19.0	95.2	75 - 125	
1,3-Dichloropropane	20.0	21.8	109	75 - 125	
2,2-Dichloropropane	20.0	17.6	87.8	70 - 135	
cis-1,3-Dichloropropene	20.0	21.1	105	70 - 130	
trans-1,3-Dichloropropene	20.0	21.6	108	55 - 140	
1,1-Dichloropropene	20.0	19.9	99.4	75 - 130	
Ethylbenzene	20.0	22.9	115	75 - 125	
2-Hexanone	20.0	22.8	114	55 - 130	
Hexachlorobutadiene	20.0	22.1	111	50 - 140	

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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15110793 | Run Date: 11/13/2015 | Sample ID: WG546880-02
Instrument ID: HPMS11 | Run Time: 17:15 | Prep Method: 5030B/5030C/503
File ID: 11M10253 | Analyst: JDS | Method: 8260B
Workgroup (AAB#): WG546880 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD73459 | Cal ID: HPMS11-09-OCT-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	24.3	122	75 - 125	
p-Isopropyltoluene	20.0	23.8	119	75 - 130	
4-Methyl-2-pentanone	20.0	20.9	105	60 - 135	
Methylene chloride	20.0	19.7	98.4	55 - 140	
Naphthalene	20.0	25.3	126	55 - 140	
n-Propylbenzene	20.0	24.6	123	70 - 130	
Styrene	20.0	23.6	118	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	23.9	119	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	23.7	118	65 - 130	
Tetrachloroethene	20.0	24.2	121	45 - 150	
Toluene	20.0	22.8	114	75 - 120	
1,2,3-Trichlorobenzene	20.0	23.7	118	55 - 140	
1,2,4-Trichlorobenzene	20.0	22.6	113	65 - 135	
1,1,1-Trichloroethane	20.0	21.2	106	65 - 130	
1,1,2-Trichloroethane	20.0	22.8	114	75 - 125	
Trichloroethene	20.0	20.3	101	70 - 125	
Trichlorofluoromethane	20.0	19.4	97.1	60 - 145	
1,2,3-Trichloropropane	20.0	22.4	112	75 - 125	
1,2,4-Trimethylbenzene	20.0	23.4	117	75 - 130	
1,3,5-Trimethylbenzene	20.0	23.5	118	75 - 130	
Vinyl chloride	20.0	19.0	95.0	50 - 145	
o-Xylene	20.0	23.4	117	80 - 120	
m-,p-Xylene	40.0	47.7	119	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	101	85 - 115	PASS
1,2-Dichloroethane-d4	92.6	70 - 120	PASS
Toluene-d8	117	85 - 120	PASS
4-Bromofluorobenzene	110	75 - 120	PASS

* EXCEEDS %REC LIMIT

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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15110793 | Run Date: 11/13/2015 | Sample ID: WG546844-02
Instrument ID: HPMS17 | Run Time: 15:01 | Prep Method: 5030B/5030C/503
File ID: 17M016436 | Analyst: ADC | Method: 8260B
Workgroup (AAB#): WG546844 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD73387 | Cal ID: HPMS17-11-NOV-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	22.3	111	40 - 140	
Benzene	20.0	20.2	101	80 - 120	
Bromobenzene	20.0	19.4	97.1	75 - 125	
Bromochloromethane	20.0	21.4	107	65 - 130	
Bromodichloromethane	20.0	20.3	101	75 - 120	
Bromoform	20.0	21.9	109	70 - 130	
Bromomethane	20.0	19.8	99.2	30 - 145	
2-Butanone	20.0	20.7	103	30 - 150	
n-Butylbenzene	20.0	20.1	101	70 - 135	
sec-Butylbenzene	20.0	20.9	104	70 - 125	
tert-Butylbenzene	20.0	20.9	105	70 - 130	
Carbon disulfide	20.0	6.30	31.5	35 - 160	*
Carbon tetrachloride	20.0	20.6	103	65 - 140	
Chlorobenzene	20.0	21.4	107	80 - 120	
Chlorodibromomethane	20.0	20.0	100	60 - 135	
Chloroethane	20.0	21.7	109	60 - 135	
Chloroform	20.0	20.6	103	65 - 135	
Chloromethane	20.0	18.3	91.6	40 - 125	
2-Chlorotoluene	20.0	20.5	102	75 - 125	
4-Chlorotoluene	20.0	20.0	100	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	19.8	99.2	50 - 130	
1,2-Dibromoethane	20.0	19.4	96.8	80 - 120	
Dibromomethane	20.0	20.2	101	75 - 125	
1,2-Dichlorobenzene	20.0	20.7	104	70 - 120	
1,3-Dichlorobenzene	20.0	20.5	102	75 - 125	
1,4-Dichlorobenzene	20.0	19.4	97.1	75 - 125	
Dichlorodifluoromethane	20.0	22.9	114	30 - 155	
1,1-Dichloroethane	20.0	20.2	101	70 - 135	
1,2-Dichloroethane	20.0	20.7	103	70 - 130	
1,1-Dichloroethene	20.0	20.7	103	70 - 130	
cis-1,2-Dichloroethene	20.0	19.7	98.5	70 - 125	
trans-1,2-Dichloroethene	20.0	19.7	98.5	60 - 140	
1,2-Dichloropropane	20.0	20.1	101	75 - 125	
1,3-Dichloropropane	20.0	20.2	101	75 - 125	
2,2-Dichloropropane	20.0	22.4	112	70 - 135	
cis-1,3-Dichloropropene	20.0	21.3	107	70 - 130	
trans-1,3-Dichloropropene	20.0	20.1	100	55 - 140	
1,1-Dichloropropene	20.0	20.2	101	75 - 130	
Ethylbenzene	20.0	20.3	101	75 - 125	
2-Hexanone	20.0	19.6	98.0	55 - 130	
Hexachlorobutadiene	20.0	20.7	104	50 - 140	

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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15110793 Run Date: 11/13/2015 Sample ID: WG546844-02
Instrument ID: HPMS17 Run Time: 15:01 Prep Method: 5030B/5030C/503
File ID: 17M016436 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG546844 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD73387 Cal ID: HPMS17 - 11-NOV-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	21.3	106	75 - 125	
p-Isopropyltoluene	20.0	20.0	99.8	75 - 130	
4-Methyl-2-pentanone	20.0	19.4	97.0	60 - 135	
Methylene chloride	20.0	18.5	92.3	55 - 140	
Naphthalene	20.0	20.2	101	55 - 140	
n-Propylbenzene	20.0	20.9	104	70 - 130	
Styrene	20.0	20.2	101	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	20.1	101	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	19.5	97.3	65 - 130	
Tetrachloroethene	20.0	20.7	103	45 - 150	
Toluene	20.0	20.1	101	75 - 120	
1,2,3-Trichlorobenzene	20.0	20.8	104	55 - 140	
1,2,4-Trichlorobenzene	20.0	20.8	104	65 - 135	
1,1,1-Trichloroethane	20.0	21.1	106	65 - 130	
1,1,2-Trichloroethane	20.0	19.0	95.2	75 - 125	
Trichloroethene	20.0	20.2	101	70 - 125	
Trichlorofluoromethane	20.0	17.3	86.3	60 - 145	
1,2,3-Trichloropropane	20.0	18.3	91.5	75 - 125	
1,2,4-Trimethylbenzene	20.0	19.7	98.5	75 - 130	
1,3,5-Trimethylbenzene	20.0	20.0	99.9	75 - 130	
Vinyl chloride	20.0	21.8	109	50 - 145	
o-Xylene	20.0	21.2	106	80 - 120	
m-,p-Xylene	40.0	42.2	105	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	103	85 - 115	PASS
1,2-Dichloroethane-d4	105	70 - 120	PASS
Toluene-d8	102	85 - 120	PASS
4-Bromofluorobenzene	99.4	75 - 120	PASS

* EXCEEDS %REC LIMIT

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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15110793 | Run Date: 11/24/2015 | Sample ID: WG548399-02
Instrument ID: HPMS17 | Run Time: 21:26 | Prep Method: 5030B/5030C/503
File ID: 17M016669 | Analyst: JDS/FJB | Method: 8260B
Workgroup (AAB#): WG548399 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD73387 | Cal ID: HPMS17-11-NOV-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	22.1	110	40 - 140	
Benzene	20.0	19.9	99.7	80 - 120	
Bromobenzene	20.0	20.1	101	75 - 125	
Bromochloromethane	20.0	20.7	103	65 - 130	
Bromodichloromethane	20.0	20.2	101	75 - 120	
Bromoform	20.0	21.8	109	70 - 130	
Bromomethane	20.0	20.4	102	30 - 145	
2-Butanone	20.0	20.9	104	30 - 150	
n-Butylbenzene	20.0	20.9	105	70 - 135	
sec-Butylbenzene	20.0	21.2	106	70 - 125	
tert-Butylbenzene	20.0	21.3	106	70 - 130	
Carbon disulfide	20.0	5.45	27.3	35 - 160	*
Carbon tetrachloride	20.0	20.1	100	65 - 140	
Chlorobenzene	20.0	21.4	107	80 - 120	
Chlorodibromomethane	20.0	20.9	104	60 - 135	
Chloroethane	20.0	26.1	131	60 - 135	
Chloroform	20.0	19.8	98.9	65 - 135	
Chloromethane	20.0	16.5	82.4	40 - 125	
2-Chlorotoluene	20.0	20.5	102	75 - 125	
4-Chlorotoluene	20.0	21.3	107	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	21.3	106	50 - 130	
1,2-Dibromoethane	20.0	20.5	103	80 - 120	
Dibromomethane	20.0	19.8	98.8	75 - 125	
1,2-Dichlorobenzene	20.0	21.2	106	70 - 120	
1,3-Dichlorobenzene	20.0	21.3	107	75 - 125	
1,4-Dichlorobenzene	20.0	21.2	106	75 - 125	
Dichlorodifluoromethane	20.0	22.3	111	30 - 155	
1,1-Dichloroethane	20.0	18.8	94.0	70 - 135	
1,2-Dichloroethane	20.0	21.4	107	70 - 130	
1,1-Dichloroethene	20.0	18.9	94.7	70 - 130	
cis-1,2-Dichloroethene	20.0	20.2	101	70 - 125	
trans-1,2-Dichloroethene	20.0	20.1	101	60 - 140	
1,2-Dichloropropane	20.0	20.3	102	75 - 125	
1,3-Dichloropropane	20.0	21.8	109	75 - 125	
2,2-Dichloropropane	20.0	21.2	106	70 - 135	
cis-1,3-Dichloropropene	20.0	21.7	108	70 - 130	
trans-1,3-Dichloropropene	20.0	21.0	105	55 - 140	
1,1-Dichloropropene	20.0	19.3	96.6	75 - 130	
Ethylbenzene	20.0	20.6	103	75 - 125	
2-Hexanone	20.0	19.8	98.8	55 - 130	
Hexachlorobutadiene	20.0	20.4	102	50 - 140	

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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15110793 Run Date: 11/24/2015 Sample ID: WG548399-02
Instrument ID: HPMS17 Run Time: 21:26 Prep Method: 5030B/5030C/503
File ID: 17M016669 Analyst: JDS/FJB Method: 8260B
Workgroup (AAB#): WG548399 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD73387 Cal ID: HPMS17 - 11-NOV-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	21.5	108	75 - 125	
p-Isopropyltoluene	20.0	20.6	103	75 - 130	
4-Methyl-2-pentanone	20.0	19.2	95.8	60 - 135	
Methylene chloride	20.0	18.5	92.6	55 - 140	
Naphthalene	20.0	18.6	92.8	55 - 140	
n-Propylbenzene	20.0	21.3	107	70 - 130	
Styrene	20.0	20.7	103	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	21.1	106	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	21.5	107	65 - 130	
Tetrachloroethene	20.0	20.5	102	45 - 150	
Toluene	20.0	20.4	102	75 - 120	
1,2,3-Trichlorobenzene	20.0	20.3	102	55 - 140	
1,2,4-Trichlorobenzene	20.0	20.7	104	65 - 135	
1,1,1-Trichloroethane	20.0	20.3	101	65 - 130	
1,1,2-Trichloroethane	20.0	20.4	102	75 - 125	
Trichloroethene	20.0	21.2	106	70 - 125	
Trichlorofluoromethane	20.0	22.8	114	60 - 145	
1,2,3-Trichloropropane	20.0	20.9	105	75 - 125	
1,2,4-Trimethylbenzene	20.0	20.2	101	75 - 130	
1,3,5-Trimethylbenzene	20.0	20.5	102	75 - 130	
Vinyl chloride	20.0	21.0	105	50 - 145	
o-Xylene	20.0	21.3	106	80 - 120	
m-,p-Xylene	40.0	42.9	107	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	109	85 - 115	PASS
1,2-Dichloroethane-d4	113	70 - 120	PASS
Toluene-d8	110	85 - 120	PASS
4-Bromofluorobenzene	105	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4501853
Report generated: 12/01/2015 13:50

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15110793 | Run Date: 11/16/2015 | Sample ID: WG547025-02
Instrument ID: HPMS8 | Run Time: 13:09 | Prep Method: 5030B/5030C/503
File ID: 8M408710 | Analyst: TMB | Method: 8260B
Workgroup (AAB#): WG547025 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD73459 | Cal ID: HPMS8-30-SEP-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	23.6	118	40 - 140	
Benzene	20.0	21.3	107	80 - 120	
Bromobenzene	20.0	19.9	99.7	75 - 125	
Bromochloromethane	20.0	22.9	114	65 - 130	
Bromodichloromethane	20.0	20.8	104	75 - 120	
Bromoform	20.0	21.2	106	70 - 130	
Bromomethane	20.0	18.4	92.1	30 - 145	
2-Butanone	20.0	23.0	115	30 - 150	
n-Butylbenzene	20.0	21.2	106	70 - 135	
sec-Butylbenzene	20.0	20.0	100	70 - 125	
tert-Butylbenzene	20.0	19.7	98.3	70 - 130	
Carbon disulfide	20.0	13.6	68.1	35 - 160	
Carbon tetrachloride	20.0	21.5	107	65 - 140	
Chlorobenzene	20.0	20.8	104	80 - 120	
Chlorodibromomethane	20.0	20.5	102	60 - 135	
Chloroethane	20.0	22.6	113	60 - 135	
Chloroform	20.0	21.5	107	65 - 135	
Chloromethane	20.0	23.7	118	40 - 125	
2-Chlorotoluene	20.0	20.1	100	75 - 125	
4-Chlorotoluene	20.0	19.5	97.6	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	18.3	91.3	50 - 130	
1,2-Dibromoethane	20.0	20.1	100	80 - 120	
Dibromomethane	20.0	21.6	108	75 - 125	
1,2-Dichlorobenzene	20.0	20.7	103	70 - 120	
1,3-Dichlorobenzene	20.0	20.3	102	75 - 125	
1,4-Dichlorobenzene	20.0	19.7	98.4	75 - 125	
Dichlorodifluoromethane	20.0	23.4	117	30 - 155	
1,1-Dichloroethane	20.0	20.8	104	70 - 135	
1,2-Dichloroethane	20.0	21.1	106	70 - 130	
1,1-Dichloroethene	20.0	20.4	102	70 - 130	
cis-1,2-Dichloroethene	20.0	20.7	103	70 - 125	
trans-1,2-Dichloroethene	20.0	20.5	103	60 - 140	
1,2-Dichloropropane	20.0	20.8	104	75 - 125	
1,3-Dichloropropane	20.0	20.1	101	75 - 125	
2,2-Dichloropropane	20.0	20.7	103	70 - 135	
cis-1,3-Dichloropropene	20.0	21.4	107	70 - 130	
trans-1,3-Dichloropropene	20.0	19.9	99.6	55 - 140	
1,1-Dichloropropene	20.0	20.5	103	75 - 130	
Ethylbenzene	20.0	19.1	95.3	75 - 125	
2-Hexanone	20.0	19.4	97.2	55 - 130	
Hexachlorobutadiene	20.0	19.2	95.9	50 - 140	

LCS - Modified 03/06/2008
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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15110793 Run Date: 11/16/2015 Sample ID: WG547025-02
Instrument ID: HPMS8 Run Time: 13:09 Prep Method: 5030B/5030C/503
File ID: 8M408710 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG547025 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD73459 Cal ID: HPMS8-30-SEP-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	21.6	108	75 - 125	
p-Isopropyltoluene	20.0	19.8	99.0	75 - 130	
4-Methyl-2-pentanone	20.0	20.6	103	60 - 135	
Methylene chloride	20.0	20.3	102	55 - 140	
Naphthalene	20.0	23.3	116	55 - 140	
n-Propylbenzene	20.0	19.8	99.0	70 - 130	
Styrene	20.0	20.6	103	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	19.9	99.6	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	20.2	101	65 - 130	
Tetrachloroethene	20.0	20.2	101	45 - 150	
Toluene	20.0	20.7	104	75 - 120	
1,2,3-Trichlorobenzene	20.0	20.9	104	55 - 140	
1,2,4-Trichlorobenzene	20.0	20.7	104	65 - 135	
1,1,1-Trichloroethane	20.0	21.6	108	65 - 130	
1,1,2-Trichloroethane	20.0	20.5	102	75 - 125	
Trichloroethene	20.0	20.3	101	70 - 125	
Trichlorofluoromethane	20.0	21.1	105	60 - 145	
1,2,3-Trichloropropane	20.0	20.2	101	75 - 125	
1,2,4-Trimethylbenzene	20.0	19.9	99.6	75 - 130	
1,3,5-Trimethylbenzene	20.0	19.7	98.6	75 - 130	
Vinyl chloride	20.0	23.1	116	50 - 145	
o-Xylene	20.0	20.0	100	80 - 120	
m-,p-Xylene	40.0	41.2	103	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	105	85 - 115	PASS
1,2-Dichloroethane-d4	104	70 - 120	PASS
Toluene-d8	101	85 - 120	PASS
4-Bromofluorobenzene	95.8	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4501853
Report generated: 12/01/2015 13:50

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15110793 Analyst: JDS Prep Method: 5030B/5030C/503
Instrument ID: HPMS11 Matrix: Water Method: 8260B
Workgroup (AAB#): WG546880 Units: ug/L
QC Key: DOD4 Lot #: STD73459

Sample ID: WG546880-02 LCS File ID: 11M10253 Run Date: 11/13/2015 17:15
Sample ID: WG546880-03 LCS2 File ID: 11M10254 Run Date: 11/13/2015 17:47

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	23.9	119	20.0	23.5	118	1.58	80 - 130	30	
1,1,1-Trichloroethane	20.0	21.2	106	20.0	21.0	105	1.34	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	23.7	118	20.0	22.6	113	4.48	65 - 130	30	
1,1,2-Trichloroethane	20.0	22.8	114	20.0	21.6	108	5.75	75 - 125	30	
1,1-Dichloroethane	20.0	18.7	93.7	20.0	18.4	92.0	1.73	70 - 135	30	
1,1-Dichloroethene	20.0	18.2	91.1	20.0	18.0	90.0	1.16	70 - 130	30	
1,1-Dichloropropene	20.0	19.9	99.4	20.0	19.8	98.8	0.601	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	23.7	118	20.0	22.9	114	3.34	55 - 140	30	
1,2,3-Trichloropropane	20.0	22.4	112	20.0	21.3	107	4.74	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	22.6	113	20.0	22.3	112	1.23	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	23.4	117	20.0	23.0	115	1.61	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	20.4	102	20.0	18.7	93.3	8.96	50 - 130	30	
1,2-Dibromoethane	20.0	24.1	120	20.0	22.7	114	5.75	80 - 120	30	
1,2-Dichlorobenzene	20.0	23.4	117	20.0	23.2	116	0.588	70 - 120	30	
1,2-Dichloroethane	20.0	17.8	89.0	20.0	17.5	87.5	1.74	70 - 130	30	
1,2-Dichloropropane	20.0	19.0	95.2	20.0	19.0	95.2	0.0039	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	23.5	118	20.0	23.0	115	2.17	75 - 130	30	
1,3-Dichlorobenzene	20.0	23.1	116	20.0	22.9	114	1.06	75 - 125	30	
1,3-Dichloropropane	20.0	21.8	109	20.0	20.5	102	6.49	75 - 125	30	
1,4-Dichlorobenzene	20.0	22.4	112	20.0	22.0	110	1.47	75 - 125	30	
2,2-Dichloropropane	20.0	17.6	87.8	20.0	17.9	89.7	2.19	70 - 135	30	
2-Butanone	20.0	20.7	103	20.0	19.1	95.7	7.70	30 - 150	30	
2-Chlorotoluene	20.0	23.2	116	20.0	23.2	116	0.265	75 - 125	30	
2-Hexanone	20.0	22.8	114	20.0	20.7	103	9.61	55 - 130	30	
4-Chlorotoluene	20.0	21.7	108	20.0	21.7	108	0.175	75 - 130	30	
4-Methyl-2-pentanone	20.0	20.9	105	20.0	19.9	99.3	5.24	60 - 135	30	
Acetone	20.0	21.8	109	20.0	20.4	102	6.83	40 - 140	30	
Benzene	20.0	19.8	99.2	20.0	19.8	98.8	0.369	80 - 120	30	
Bromobenzene	20.0	22.4	112	20.0	22.1	111	1.10	75 - 125	30	
Bromochloromethane	20.0	20.8	104	20.0	20.4	102	2.21	65 - 130	30	
Bromodichloromethane	20.0	21.4	107	20.0	21.2	106	0.783	75 - 120	30	
Bromoform	20.0	28.2	141	20.0	26.2	131	7.17	70 - 130	30	*
Bromomethane	20.0	20.0	100	20.0	20.7	103	3.18	30 - 145	30	
Carbon disulfide	20.0	17.3	86.5	20.0	16.1	80.3	7.46	35 - 160	30	
Carbon tetrachloride	20.0	23.4	117	20.0	23.1	115	1.30	65 - 140	30	
Chlorobenzene	20.0	23.2	116	20.0	22.5	112	2.93	80 - 120	30	
Chloroethane	20.0	20.8	104	20.0	20.7	103	0.473	60 - 135	30	
Chloroform	20.0	19.7	98.7	20.0	19.7	98.6	0.104	65 - 135	30	
Chloromethane	20.0	18.7	93.3	20.0	17.8	88.9	4.85	40 - 125	30	
cis-1,2-Dichloroethene	20.0	19.3	96.4	20.0	19.2	96.1	0.309	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15110793 Analyst: JDS Prep Method: 5030B/5030C/503
Instrument ID: HPMS11 Matrix: Water Method: 8260B
Workgroup (AAB#): WG546880 Units: ug/L
QC Key: DOD4 Lot #: STD73459

Sample ID: WG546880-02 LCS File ID: 11M10253 Run Date: 11/13/2015 17:15
Sample ID: WG546880-03 LCS2 File ID: 11M10254 Run Date: 11/13/2015 17:47

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	21.1	105	20.0	20.9	105	0.525	70 - 130	30	
Chlorodibromomethane	20.0	25.7	129	20.0	24.5	122	5.00	60 - 135	30	
Dibromomethane	20.0	20.6	103	20.0	20.1	101	2.54	75 - 125	30	
Dichlorodifluoromethane	20.0	22.0	110	20.0	21.2	106	3.70	30 - 155	30	
Ethylbenzene	20.0	22.9	115	20.0	22.1	110	3.86	75 - 125	30	
Hexachlorobutadiene	20.0	22.1	111	20.0	21.2	106	4.28	50 - 140	30	
Isopropylbenzene	20.0	24.3	122	20.0	24.0	120	1.45	75 - 125	30	
m-,p-Xylene	40.0	47.7	119	40.0	46.4	116	2.78	75 - 130	30	
Methylene chloride	20.0	19.7	98.4	20.0	19.5	97.6	0.819	55 - 140	30	
n-Butylbenzene	20.0	23.2	116	20.0	22.7	114	1.99	70 - 135	30	
n-Propylbenzene	20.0	24.6	123	20.0	23.9	120	2.94	70 - 130	30	
Naphthalene	20.0	25.3	126	20.0	23.8	119	5.98	55 - 140	30	
o-Xylene	20.0	23.4	117	20.0	23.1	115	1.22	80 - 120	30	
p-Isopropyltoluene	20.0	23.8	119	20.0	23.3	117	2.25	75 - 130	30	
sec-Butylbenzene	20.0	24.1	120	20.0	23.6	118	1.92	70 - 125	30	
Styrene	20.0	23.6	118	20.0	22.8	114	3.55	65 - 135	30	
tert-Butylbenzene	20.0	22.4	112	20.0	22.2	111	0.806	70 - 130	30	
Tetrachloroethene	20.0	24.2	121	20.0	23.4	117	3.19	45 - 150	30	
Toluene	20.0	22.8	114	20.0	22.5	113	1.14	75 - 120	30	
trans-1,2-Dichloroethene	20.0	19.6	98.2	20.0	19.2	96.2	2.00	60 - 140	30	
trans-1,3-Dichloropropene	20.0	21.6	108	20.0	20.6	103	4.55	55 - 140	30	
Trichloroethene	20.0	20.3	101	20.0	19.8	98.9	2.42	70 - 125	30	
Trichlorofluoromethane	20.0	19.4	97.1	20.0	19.2	95.9	1.31	60 - 145	30	
Vinyl chloride	20.0	19.0	95.0	20.0	18.8	94.2	0.822	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	92.6	90.1	70 - 120	PASS
Dibromofluoromethane	101	100	85 - 115	PASS
4-Bromofluorobenzene	110	109	75 - 120	PASS
Toluene-d8	117	115	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
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Report generated: 12/01/2015 17:01

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15110793 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG547025 Units: ug/L
QC Key: DOD4 Lot #: STD73459

Sample ID: WG547025-02 LCS File ID: 8M408710 Run Date: 11/16/2015 13:09
Sample ID: WG547025-03 LCS2 File ID: 8M408711 Run Date: 11/16/2015 13:38

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	19.9	99.6	20.0	19.6	98.0	1.61	80 - 130	30	
1,1,1-Trichloroethane	20.0	21.6	108	20.0	21.4	107	1.28	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	20.2	101	20.0	19.8	99.0	2.05	65 - 130	30	
1,1,2-Trichloroethane	20.0	20.5	102	20.0	20.4	102	0.267	75 - 125	30	
1,1-Dichloroethane	20.0	20.8	104	20.0	20.8	104	0.0894	70 - 135	30	
1,1-Dichloroethene	20.0	20.4	102	20.0	20.1	101	1.18	70 - 130	30	
1,1-Dichloropropene	20.0	20.5	103	20.0	20.3	101	1.14	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	20.9	104	20.0	20.9	104	0.112	55 - 140	30	
1,2,3-Trichloropropane	20.0	20.2	101	20.0	19.9	99.4	1.57	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	20.7	104	20.0	20.8	104	0.425	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	19.9	99.6	20.0	19.9	99.4	0.235	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	18.3	91.3	20.0	18.8	93.9	2.71	50 - 130	30	
1,2-Dibromoethane	20.0	20.1	100	20.0	20.1	101	0.290	80 - 120	30	
1,2-Dichlorobenzene	20.0	20.7	103	20.0	20.5	102	0.953	70 - 120	30	
1,2-Dichloroethane	20.0	21.1	106	20.0	21.0	105	0.680	70 - 130	30	
1,2-Dichloropropane	20.0	20.8	104	20.0	20.2	101	2.89	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	19.7	98.6	20.0	19.8	99.1	0.510	75 - 130	30	
1,3-Dichlorobenzene	20.0	20.3	102	20.0	20.2	101	0.613	75 - 125	30	
1,3-Dichloropropane	20.0	20.1	101	20.0	20.4	102	1.46	75 - 125	30	
1,4-Dichlorobenzene	20.0	19.7	98.4	20.0	19.6	98.0	0.434	75 - 125	30	
2,2-Dichloropropane	20.0	20.7	103	20.0	21.1	105	1.82	70 - 135	30	
2-Butanone	20.0	23.0	115	20.0	22.8	114	0.733	30 - 150	30	
2-Chlorotoluene	20.0	20.1	100	20.0	19.8	98.8	1.65	75 - 125	30	
2-Hexanone	20.0	19.4	97.2	20.0	20.8	104	6.82	55 - 130	30	
4-Chlorotoluene	20.0	19.5	97.6	20.0	19.6	97.8	0.131	75 - 130	30	
4-Methyl-2-pentanone	20.0	20.6	103	20.0	20.7	104	0.555	60 - 135	30	
Acetone	20.0	23.6	118	20.0	25.6	128	7.87	40 - 140	30	
Benzene	20.0	21.3	107	20.0	21.2	106	0.523	80 - 120	30	
Bromobenzene	20.0	19.9	99.7	20.0	19.6	98.2	1.61	75 - 125	30	
Bromochloromethane	20.0	22.9	114	20.0	22.7	113	0.932	65 - 130	30	
Bromodichloromethane	20.0	20.8	104	20.0	20.4	102	1.92	75 - 120	30	
Bromoform	20.0	21.2	106	20.0	21.7	109	2.26	70 - 130	30	
Bromomethane	20.0	18.4	92.1	20.0	19.7	98.3	6.55	30 - 145	30	
Carbon disulfide	20.0	13.6	68.1	20.0	13.8	69.1	1.43	35 - 160	30	
Carbon tetrachloride	20.0	21.5	107	20.0	21.6	108	0.437	65 - 140	30	
Chlorobenzene	20.0	20.8	104	20.0	20.7	103	0.780	80 - 120	30	
Chloroethane	20.0	22.6	113	20.0	22.4	112	1.08	60 - 135	30	
Chloroform	20.0	21.5	107	20.0	21.6	108	0.358	65 - 135	30	
Chloromethane	20.0	23.7	118	20.0	23.7	119	0.175	40 - 125	30	
cis-1,2-Dichloroethene	20.0	20.7	103	20.0	20.3	102	1.60	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15110793 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG547025 Units: ug/L
QC Key: DOD4 Lot #: STD73459

Sample ID: WG547025-02 LCS File ID: 8M408710 Run Date: 11/16/2015 13:09
Sample ID: WG547025-03 LCS2 File ID: 8M408711 Run Date: 11/16/2015 13:38

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	21.4	107	20.0	21.4	107	0.0145	70 - 130	30	
Chlorodibromomethane	20.0	20.5	102	20.0	20.6	103	0.481	60 - 135	30	
Dibromomethane	20.0	21.6	108	20.0	21.4	107	0.786	75 - 125	30	
Dichlorodifluoromethane	20.0	23.4	117	20.0	23.9	120	2.22	30 - 155	30	
Ethylbenzene	20.0	19.1	95.3	20.0	19.2	95.8	0.506	75 - 125	30	
Hexachlorobutadiene	20.0	19.2	95.9	20.0	19.0	94.8	1.13	50 - 140	30	
Isopropylbenzene	20.0	21.6	108	20.0	21.5	108	0.468	75 - 125	30	
m-,p-Xylene	40.0	41.2	103	40.0	41.3	103	0.0581	75 - 130	30	
Methylene chloride	20.0	20.3	102	20.0	20.3	101	0.318	55 - 140	30	
n-Butylbenzene	20.0	21.2	106	20.0	21.0	105	1.19	70 - 135	30	
n-Propylbenzene	20.0	19.8	99.0	20.0	19.7	98.7	0.222	70 - 130	30	
Naphthalene	20.0	23.3	116	20.0	22.8	114	1.99	55 - 140	30	
o-Xylene	20.0	20.0	100	20.0	20.1	100	0.0569	80 - 120	30	
p-Isopropyltoluene	20.0	19.8	99.0	20.0	19.7	98.5	0.436	75 - 130	30	
sec-Butylbenzene	20.0	20.0	100	20.0	20.0	100	0.110	70 - 125	30	
Styrene	20.0	20.6	103	20.0	20.1	100	2.32	65 - 135	30	
tert-Butylbenzene	20.0	19.7	98.3	20.0	19.5	97.7	0.598	70 - 130	30	
Tetrachloroethene	20.0	20.2	101	20.0	20.7	103	2.23	45 - 150	30	
Toluene	20.0	20.7	104	20.0	20.7	103	0.345	75 - 120	30	
trans-1,2-Dichloroethene	20.0	20.5	103	20.0	20.8	104	1.21	60 - 140	30	
trans-1,3-Dichloropropene	20.0	19.9	99.6	20.0	20.2	101	1.40	55 - 140	30	
Trichloroethene	20.0	20.3	101	20.0	20.2	101	0.234	70 - 125	30	
Trichlorofluoromethane	20.0	21.1	105	20.0	20.8	104	1.36	60 - 145	30	
Vinyl chloride	20.0	23.1	116	20.0	22.7	113	2.01	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	104	100	70 - 120	PASS
Dibromofluoromethane	105	105	85 - 115	PASS
4-Bromofluorobenzene	95.8	95.1	75 - 120	PASS
Toluene-d8	101	101	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4502962
Report generated: 12/01/2015 17:01

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15110793
Instrument: HPMS11
Analyst: TMB /DLW
Workgroup: WG527475

Tune ID: WG527475-01
Run Date: 06/14/2015
Run Time: 09:34
File ID: 11M08234
Cal ID: HPMS11 - 14-JUN-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.9	7754	PASS
75.0	95.0	30.0	60.0	49.9	19472	PASS
95.0	95.0	100	100	100	38997	PASS
96.0	95.0	5.00	9.00	7.00	2731	PASS
173	174	0	2.00	0.338	111	PASS
174	95.0	50.0	100	84.2	32837	PASS
175	174	5.00	9.00	7.18	2357	PASS
176	174	95.0	101	97.9	32146	PASS
177	176	5.00	9.00	7.11	2284	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG527475-02	STD	01	06/14/2015 09:58	
WG527475-03	STD	01	06/14/2015 10:30	
WG527475-04	STD	01	06/14/2015 11:02	
WG527475-05	STD-CCV	01	06/14/2015 11:34	
WG527475-06	STD	01	06/14/2015 12:06	
WG527475-07	STD	01	06/14/2015 12:38	
WG527475-08	STD	01	06/14/2015 13:10	
WG527475-09	STD	01	06/14/2015 13:42	
WG527475-10	SSCV	01	06/14/2015 15:18	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4501855
Report generated 12/01/2015 17:01

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15110793
Instrument: HPMS11
Analyst: JDS
Workgroup: WG542333

Tune ID: WG542333-01
Run Date: 10/09/2015
Run Time: 15:59
File ID: 11M09739
Cal ID: HPMS11 - 09-OCT-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.8	14788	PASS
75.0	95.0	30.0	60.0	46.5	30144	PASS
95.0	95.0	100	100	100	64874	PASS
96.0	95.0	5.00	9.00	6.57	4259	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	91.4	59301	PASS
175	174	5.00	9.00	7.85	4658	PASS
176	174	95.0	101	98.2	58213	PASS
177	176	5.00	9.00	6.44	3751	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG542333-02	STD	01	10/09/2015 16:56	
WG542333-03	STD	01	10/09/2015 17:28	
WG542333-04	STD	01	10/09/2015 17:59	
WG542333-05	STD	01	10/09/2015 18:31	
WG542333-06	STD	01	10/09/2015 19:03	
WG542333-07	STD	01	10/09/2015 19:35	
WG542333-08	STD-CCV	01	10/09/2015 20:06	
WG542333-09	STD	01	10/09/2015 20:38	
WG542333-10	STD	01	10/09/2015 21:10	
WG542333-11	STD	01	10/09/2015 21:42	
WG542333-12	SSCV	01	10/09/2015 22:45	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4501855
Report generated 12/01/2015 17:01

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15110793
Instrument: HPMS11
Analyst: JDS
Workgroup: WG546879

Tune ID: WG546879-01
Run Date: 11/13/2015
Run Time: 14:42
File ID: 11M10248
Cal ID: HPMS11 - 09-OCT-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.6	10841	PASS
75.0	95.0	30.0	60.0	45.2	23808	PASS
95.0	95.0	100	100	100	52725	PASS
96.0	95.0	5.00	9.00	6.88	3628	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	93.6	49349	PASS
175	174	5.00	9.00	7.56	3729	PASS
176	174	95.0	101	97.8	48274	PASS
177	176	5.00	9.00	7.20	3477	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG546879-02	CCV	01	11/13/2015 15:40	
WG546880-01	BLANK	01	11/13/2015 16:43	
WG546880-02	LCS	01	11/13/2015 17:15	
WG546880-03	LCS2	01	11/13/2015 17:47	
L15110793-17	TRIP BLANK	01	11/13/2015 19:54	
L15110793-09	50WW14-111215	01	11/13/2015 20:26	
L15110793-13	50WW06-111215	01	11/13/2015 20:58	
L15110793-15	50WW12-111215	01	11/13/2015 21:30	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4501855
Report generated 12/01/2015 17:01

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15110793
Instrument: HPMS17
Analyst: ADC
Workgroup: WG546498

Tune ID: WG546498-01
Run Date: 11/11/2015
Run Time: 14:17
File ID: 17M016366
Cal ID: HPMS17 - 11-NOV-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	17.7	8344	PASS
75.0	95.0	30.0	60.0	48.1	22677	PASS
95.0	95.0	100	100	100	47164	PASS
96.0	95.0	5.00	9.00	6.75	3185	PASS
173	174	0	2.00	0.643	273	PASS
174	95.0	50.0	100	90.1	42488	PASS
175	174	5.00	9.00	7.71	3275	PASS
176	174	95.0	101	97.8	41568	PASS
177	176	5.00	9.00	6.69	2779	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG546498-02	STD-CCV	01	11/11/2015 14:34	
WG546498-03	STD	01	11/11/2015 15:14	
WG546498-04	STD	01	11/11/2015 15:34	
WG546498-05	STD	01	11/11/2015 15:54	
WG546498-06	STD	01	11/11/2015 16:14	
WG546498-07	STD	01	11/11/2015 16:33	
WG546498-08	STD	01	11/11/2015 16:53	
WG546498-09	STD	01	11/11/2015 17:13	
WG546498-10	STD	01	11/11/2015 17:33	
WG546498-11	STD	01	11/11/2015 17:53	
WG546498-12	SSCV	01	11/11/2015 18:33	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4501855
Report generated 12/01/2015 17:01

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15110793
Instrument: HPMS17
Analyst: ADC
Workgroup: WG546843

Tune ID: WG546843-01
Run Date: 11/13/2015
Run Time: 13:32
File ID: 17M016432
Cal ID: HPMS17 - 11-NOV-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	18.1	9779	PASS
75.0	95.0	30.0	60.0	50.0	27035	PASS
95.0	95.0	100	100	100	54019	PASS
96.0	95.0	5.00	9.00	6.72	3629	PASS
173	174	0	2.00	1.07	521	PASS
174	95.0	50.0	100	90.4	48853	PASS
175	174	5.00	9.00	7.24	3539	PASS
176	174	95.0	101	97.6	47696	PASS
177	176	5.00	9.00	6.93	3307	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG546843-02	CCV	01	11/13/2015 13:50	
WG546844-01	BLANK	01	11/13/2015 14:42	
WG546844-02	LCS	01	11/13/2015 15:01	
L15110793-01	50WW27-111115	01	11/13/2015 18:21	
L15110793-02	50WW15-111115	01	11/13/2015 18:40	
L15110793-03	50WW15FD-111115	01	11/13/2015 19:00	
L15110793-04	50WW09-111115	01	11/13/2015 19:20	
L15110793-05	50WW09FD-111115	01	11/13/2015 19:40	
L15110793-06	50WW10-111115	01	11/13/2015 20:00	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4501855
Report generated 12/01/2015 17:01

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15110793
Instrument: HPMS17
Analyst: JDS/FJB
Workgroup: WG548398

Tune ID: WG548398-01
Run Date: 11/24/2015
Run Time: 20:08
File ID: 17M016665
Cal ID: HPMS17 - 11-NOV-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	17.7	8138	PASS
75.0	95.0	30.0	60.0	49.1	22627	PASS
95.0	95.0	100	100	100	46107	PASS
96.0	95.0	5.00	9.00	6.70	3090	PASS
173	174	0	2.00	1.03	451	PASS
174	95.0	50.0	100	95.2	43909	PASS
175	174	5.00	9.00	7.24	3179	PASS
176	174	95.0	101	98.1	43053	PASS
177	176	5.00	9.00	6.65	2861	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG548398-02	CCV	01	11/24/2015 20:26	
WG548399-01	BLANK	01	11/24/2015 21:07	
WG548399-02	LCS	01	11/24/2015 21:26	
L15110793-07	50WW13-111215	DL01	11/25/2015 00:05	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4501855
Report generated 12/01/2015 17:01

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15110793
Instrument: HPMS8
Analyst: TMB
Workgroup: WG540912

Tune ID: WG540912-01
Run Date: 09/30/2015
Run Time: 09:38
File ID: 8M407745
Cal ID: HPMS8 - 30-SEP-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.5	9471	PASS
75.0	95.0	30.0	60.0	51.7	21732	PASS
95.0	95.0	100	100	100	42018	PASS
96.0	95.0	5.00	9.00	6.75	2835	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	78.3	32893	PASS
175	174	5.00	9.00	7.63	2510	PASS
176	174	95.0	101	95.1	31272	PASS
177	176	5.00	9.00	6.85	2141	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG540912-02	STD	01	09/30/2015 10:30	
WG540912-03	STD	01	09/30/2015 10:59	
WG540912-04	STD	01	09/30/2015 11:32	
WG540912-05	STD	01	09/30/2015 12:01	
WG540912-06	STD	01	09/30/2015 12:29	
WG540912-07	STD	01	09/30/2015 12:58	
WG540912-08	STD-CCV	01	09/30/2015 13:27	
WG540912-09	STD	01	09/30/2015 13:56	
WG540912-10	STD	01	09/30/2015 14:24	
WG540912-11	STD	01	09/30/2015 14:52	
WG540912-12	SSCV	01	09/30/2015 17:27	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4501855
Report generated 12/01/2015 17:01

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15110793
Instrument: HPMS8
Analyst: TMB
Workgroup: WG540826

Tune ID: WG540826-01
Run Date: 10/05/2015
Run Time: 11:26
File ID: 8M407827
Cal ID: HPMS8 - 05-OCT-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	24.7	8565	PASS
75.0	95.0	30.0	60.0	52.2	18121	PASS
95.0	95.0	100	100	100	34714	PASS
96.0	95.0	5.00	9.00	6.52	2262	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	74.2	25773	PASS
175	174	5.00	9.00	7.16	1845	PASS
176	174	95.0	101	98.5	25378	PASS
177	176	5.00	9.00	6.88	1746	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG540826-02	STD	01	10/05/2015 11:49	
WG540826-03	STD	01	10/05/2015 12:17	
WG540826-04	STD	01	10/05/2015 12:51	
WG540826-05	STD-CCV	01	10/05/2015 13:20	
WG540826-06	STD	01	10/05/2015 13:49	
WG540826-07	STD	01	10/05/2015 14:17	
WG540826-08	STD	01	10/05/2015 14:47	
WG540826-09	STD	01	10/05/2015 15:15	
WG540826-10	SSCV	01	10/05/2015 16:48	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4501855
Report generated 12/01/2015 17:01

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15110793
Instrument: HPMS8
Analyst: TMB
Workgroup: WG547022

Tune ID: WG547022-01
Run Date: 11/16/2015
Run Time: 11:16
File ID: 8M408706
Cal ID: HPMS8 - 30-SEP-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	25.2	11716	PASS
75.0	95.0	30.0	60.0	52.9	24587	PASS
95.0	95.0	100	100	100	46456	PASS
96.0	95.0	5.00	9.00	7.00	3251	PASS
173	174	0	2.00	0.608	250	PASS
174	95.0	50.0	100	88.5	41114	PASS
175	174	5.00	9.00	6.87	2825	PASS
176	174	95.0	101	95.8	39405	PASS
177	176	5.00	9.00	6.55	2580	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG547022-02	CCV	01	11/16/2015 11:39	
WG547025-01	BLANK	01	11/16/2015 12:39	
WG547025-02	LCS	01	11/16/2015 13:09	
WG547025-03	LCS2	01	11/16/2015 13:38	
L15110793-11	50WW11-111215	DL01	11/16/2015 22:27	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4501855
Report generated 12/01/2015 17:01

Calibration Table Report
Method: A9FOOWT.M
Title: Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Calibration: Thu Aug 20 11:41:47 2015
Curve: WG527475
Calibration Files

	Compound	5 11M08235.D	20 11M08236.D	50 11M08237.D	100 11M08238.D	200 11M08239.D	300 11M08240.D	400 11M08241.D	500 11M08242.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD											
T	Acetonitrile	0.024	0.022	0.018	0.018	0.018	0.018	0.018	0.018	0.019	13.425		
T	3-Chloro-1-propene	0.380	0.372	0.371	0.380	0.375	0.379	0.368	0.385	0.376	1.470		
T	2-Chloro-1,3-butadiene	0.421	0.418	0.426	0.444	0.450	0.482	0.477	0.496	0.452	6.648		
T	Methacrylonitrile	0.124	0.115	0.112	0.114	0.112	0.114	0.120	0.119	0.116	3.530		
T	Isobutyl Alcohol		0.006	0.006	0.006	0.005	0.006	0.006	0.006	0.006	5.929		
T	1-Butanol			0.003	0.003	0.003	0.003	0.003	0.003	0.003	5.214		
T	Cyclohexanone		0.031	0.028	0.031	0.030	0.027	0.028	0.026	0.029	6.768		
T	2-Nitropropane			0.028	0.032	0.035	0.039	0.042	0.044	0.037	16.955	0.996	
T	Ethyl Acetate	0.133	0.145	0.133	0.140	0.137	0.136	0.141	0.139	0.138	3.039		
T	Methyl methacrylate	0.151	0.161	0.151	0.158	0.158	0.161	0.170	0.172	0.160	4.681		
I	Chlorobenzene-d5	ISTD											
I	1,4-Dichlorobenzene-d4	ISTD											

Thu Aug 20 11:49:17 2015

Calibration Table Report
Method: 8260_WTR.M
Title: 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Calibration: Sun Oct 11 10:32:15 2015
Curve: WG542333
Calibration Files

	Compound	0.3	0.4	1	2	5	20	50	100	200	300	Avg	%RSD	Linear	Quadratic
		11M09741.D	11M09742.D	11M09743.D	11M09744.D	11M09745.D	11M09746.D	11M09747.D	11M09748.D	11M09749.D	11M09750.D				
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.292	0.305	0.334	0.416	0.404	0.395	0.408	0.409	0.370	13.833		
P	Chloromethane			0.373	0.350	0.330	0.376	0.332	0.334	0.357	0.376	0.354	5.701		
C	Vinyl Chloride		0.336	0.275	0.293	0.280	0.299	0.285	0.272	0.274	0.251	0.285	8.236		
T	1,3-Butadiene					0.126	0.190	0.122	0.111	0.105	0.105	0.126	25.666		0.998
T	Bromomethane			0.188	0.182	0.172	0.170	0.181	0.196	0.218	0.219	0.191	9.893		
T	Chloroethane			0.195	0.201	0.205	0.212	0.208	0.206	0.215	0.216	0.207	3.451		
T	Trichlorofluoromethane		0.464	0.411	0.431	0.455	0.472	0.463	0.456	0.476	0.489	0.457	5.175		
T	Diethyl ether			0.198	0.212	0.216	0.207	0.214	0.217		0.221	0.212	3.461		
T	Isoprene					0.312	0.353	0.333	0.349	0.344	0.355	0.341	4.734		
T	Acrolein			0.026	0.030	0.030	0.030	0.030	0.031		0.034	0.030	8.096		
T	1,1,2-Trichloro-1,2,2-Trifluoroe			0.220	0.240	0.255	0.266	0.260	0.257	0.271	0.281	0.256	7.417		
T	Acetone					0.064	0.062	0.064	0.064	0.065	0.067	0.064	2.566		
C	1,1-Dichloroethene		0.532	0.413	0.410	0.450	0.457	0.456	0.447	0.466	0.474	0.456	7.873		
T	Tert-Butyl Alcohol				0.012	0.013	0.014	0.017	0.018		0.020	0.016	19.852		0.998
T	Dimethyl Sulfide					0.266	0.275	0.274	0.280	0.282	0.281	0.276	2.134		
T	Iodomethane			0.061	0.108	0.175	0.301	0.289	0.299	0.302	0.298	0.229	43.531	0.999	
T	Methyl acetate					0.191	0.175	0.189	0.188	0.192	0.201	0.189	4.489		
T	Methylene Chloride			0.276	0.267	0.286	0.275	0.272	0.274	0.284	0.281	0.277	2.256		
T	Carbon Disulfide			0.711	0.723	0.772	0.854	0.798	0.817	0.769	0.741	0.773	6.303		
T	Acrylonitrile			0.080	0.085	0.088	0.087	0.096	0.096		0.107	0.091	9.946		
T	Methyl Tert Butyl Ether			0.665	0.642	0.656	0.646	0.680	0.668	0.674	0.672	0.663	2.037		
T	trans-1,2-Dichloroethene		0.331	0.276	0.270	0.276	0.282	0.282	0.280	0.292	0.297	0.287	6.371		
T	n-Hexane			0.334	0.354	0.387	0.427	0.395	0.410	0.397	0.400	0.388	7.794		
T	Diisopropyl ether			1.118	1.173	1.192	1.147	1.162	1.147		1.088	1.147	3.042		
T	Vinyl Acetate					0.279	0.340	0.386	0.478	0.497	0.514	0.416	22.943	0.996	
P	1,1-Dichloroethane		0.669	0.516	0.535	0.547	0.546	0.539	0.532	0.546	0.538	0.552	8.110		
T	Ethyl-Tert-Butyl ether			0.905	0.962	0.988	0.946	0.959	0.958		0.926	0.949	2.831		
T	2-Butanone					0.102	0.097	0.104	0.104	0.105	0.109	0.103	3.861		
T	Propionitrile			0.030	0.032	0.033	0.032	0.033	0.034		0.035	0.033	4.652		
T	2,2-Dichloropropane		0.427	0.362	0.354	0.383	0.378	0.379	0.373	0.388	0.393	0.382	5.432		
T	cis-1,2-Dichloroethene		0.384	0.303	0.314	0.323	0.322	0.316	0.315	0.324	0.320	0.324	7.157		
C	Chloroform	0.435	0.610	0.468	0.483	0.489	0.481	0.480	0.474	0.487	0.475	0.488	9.323		
T	1-Bromopropane			0.048	0.052	0.062	0.056	0.055	0.056	0.056	0.066	0.057	9.852		
T	Bromochloromethane		0.202	0.182	0.182	0.195	0.197	0.196	0.195	0.204	0.202	0.195	4.196		
T	Tetrahydrofuran			0.069	0.067	0.070	0.066	0.071	0.070		0.071	0.069	2.498		
S	Dibromofluoromethane			0.283	0.279	0.282	0.279	0.283	0.297	0.288	0.284	0.284	2.115		
T	1,1,1-Trichloroethane		0.430	0.358	0.364	0.395	0.404	0.417	0.420	0.443	0.451	0.409	7.941		
T	Cyclohexane			0.516	0.494	0.547	0.593	0.549	0.565	0.540	0.542	0.543	5.517		
T	1,1-Dichloropropene			0.320	0.349	0.373	0.376	0.371	0.363	0.374	0.378	0.363	5.395		
T	Carbon Tetrachloride		0.229	0.228	0.244	0.277	0.304	0.335	0.350	0.390	0.391	0.305	21.315		1.000
T	Tert-Amyl-Methyl ether			0.663	0.712	0.727	0.698	0.714	0.704		0.680	0.700	3.128		
S	1,2-Dichloroethane-d4				0.294	0.309	0.290	0.294	0.293	0.289	0.278	0.292	3.224		
T	1,2-Dichloroethane		0.471	0.402	0.408	0.412	0.403	0.402	0.396	0.400	0.385	0.409	5.961		
T	Benzene		1.423	1.089	1.092	1.128	1.104	1.092	1.051	1.004	0.912	1.099	12.552		
T	Trichloroethene		0.387	0.313	0.313	0.328	0.319	0.323	0.312	0.327	0.329	0.328	7.100		
T	Methylcyclohexane				0.356	0.392	0.432	0.401	0.413	0.397	0.402	0.399	5.790		
C	1,2-Dichloropropane		0.368	0.291	0.287	0.308	0.298	0.300	0.300	0.306	0.303	0.307	7.791		
T	1,4-Dioxane				0.001	0.002	0.002	0.002	0.002		0.002	0.002	13.974		
T	Bromodichloromethane		0.283	0.275	0.281	0.303	0.320	0.346	0.362	0.380	0.378	0.325	12.993		
T	Dibromomethane		0.170	0.137	0.154	0.157	0.158	0.164	0.161	0.164	0.162	0.159	5.843		
T	2-Chloroethyl Vinyl Ether					0.143	0.150	0.161	0.162	0.163	0.164	0.157	5.563		
T	4-Methyl-2-Pentanone					0.080	0.080	0.091	0.088	0.091	0.094	0.087	6.655		
T	cis-1,3-Dichloropropene		0.432	0.356	0.357	0.390	0.410	0.424	0.431	0.447	0.435	0.409	8.288		
T	Dimethyl Disulfide					0.073	0.103	0.142	0.180	0.214	0.228	0.157	39.363		1.001

I	Chlorobenzene-d5	ISTD														
S	Toluene-d8			1.043	1.035	1.125	1.069	1.117	1.118	1.024	0.995	1.066	4.625			
C	Toluene		1.586	1.295	1.304	1.372	1.345	1.351	1.273	1.126	0.973	1.292	13.098			
T	Ethyl Methacrylate			0.173	0.196	0.225	0.267	0.318	0.321	0.311	0.306	0.265	22.393	0.999		
T	trans-1,3-Dichloropropene			0.328	0.341	0.381	0.394	0.428	0.422	0.416	0.398	0.388	9.534			
T	1,1,2-Trichloroethane		0.210	0.244	0.234	0.246	0.238	0.257	0.248	0.248	0.243	0.241	5.474			
T	2-Hexanone					0.162	0.162	0.180	0.174	0.171	0.176	0.171	4.480			
T	1,3-Dichloropropane		0.463	0.420	0.399	0.417	0.404	0.421	0.404	0.400	0.386	0.413	5.340			
T	Tetrachloroethene		0.312	0.278	0.293	0.312	0.302	0.308	0.297	0.298	0.296	0.299	3.580			
T	Dibromochloromethane		0.178	0.186	0.198	0.214	0.239	0.291	0.306	0.323		0.242	23.714		1.000	
T	1,2-Dibromoethane		0.197	0.189	0.208	0.242	0.236	0.261	0.255	0.255	0.250	0.233	11.656			
T	1-Chlorohexane		0.391	0.346	0.355	0.395	0.448	0.431	0.442	0.417	0.411	0.404	8.924			
P	Chlorobenzene		1.256	0.927	0.926	0.959	0.921	0.944	0.913	0.848	0.758	0.939	14.252			
T	1,1,1,2-Tetrachloroethane		0.212	0.209	0.226	0.245	0.279	0.315	0.324	0.327		0.267	18.902		1.000	
C	Ethylbenzene		0.544	0.443	0.453	0.490	0.478	0.484	0.468	0.448	0.426	0.471	7.390			
T	m-,p-Xylene		0.667	0.542	0.564	0.587	0.576	0.580	0.543	0.477	0.413	0.550	13.042			
T	o-Xylene			0.544	0.526	0.572	0.564	0.586	0.574	0.569	0.538	0.559	3.670			
T	Styrene		1.015	0.840	0.867	0.941	0.967	1.013	0.981	0.889	0.781	0.921	8.877			
P	Bromoform			0.078	0.091	0.107	0.135	0.176	0.190	0.205	0.210	0.149	35.510		1.000	
T	Isopropylbenzene		1.550	1.299	1.349	1.443	1.418	1.463	1.389	1.213	1.033	1.351	11.390			
I	1,4-Dichlorobenzene-d4	ISTD														
P	1,1,2,2-Tetrachloroethane		0.322	0.355	0.367	0.413	0.435	0.450	0.452	0.470	0.479	0.416	13.346			
S	p-Bromofluorobenzene			0.676	0.675	0.719	0.707	0.727	0.750	0.766	0.743	0.720	4.618			
T	1,2,3-Trichloropropane			0.116	0.146	0.137	0.138	0.143	0.139	0.144	0.146	0.139	7.151			
T	trans-1,4-Dichloro-2-Butene			0.086	0.095	0.119	0.138	0.175	0.178	0.190	0.194	0.147	29.539		1.000	
T	n-Propylbenzene		3.061	2.561	2.671	2.836	2.861	2.824	2.648	2.346	1.939	2.639	12.596			
T	Bromobenzene	0.707	0.810	0.713	0.730	0.724	0.746	0.744	0.742	0.774	0.729	0.742	4.121			
T	1,3,5-Trimethylbenzene		2.229	1.812	1.915	1.996	2.028	2.017	1.940	1.801	1.540	1.920	9.972			
T	2-Chlorotoluene		2.416	1.883	1.838	1.883	1.895	1.871	1.763	1.654	1.402	1.845	14.495			
T	4-Chlorotoluene		2.060	1.614	1.738	1.756	1.719	1.679	1.615	1.500		1.710	9.602			
T	a-Methylstyrene			0.896	0.918	1.011	1.192	1.184	1.223	1.202	1.112	1.092	12.146			
T	tert-Butylbenzene			0.486	0.540	0.611	0.617	0.635	0.632	0.661	0.640	0.603	9.818			
T	1,2,4-Trimethylbenzene		2.260	1.849	1.959	2.065	2.085	2.076	1.974	1.793	1.522	1.954	10.885			
T	sec-Butylbenzene		2.583	2.166	2.251	2.382	2.464	2.457	2.344	2.167	1.848	2.296	9.527			
T	p-Isopropyltoluene			1.854	1.925	2.142	2.216	2.232	2.147	1.974	1.690	2.023	9.558			
T	1,3-Dichlorobenzene		1.636	1.314	1.382	1.429	1.383	1.398	1.389	1.370	1.238	1.393	7.678			
T	1,4-Dichlorobenzene	1.303	1.777	1.438	1.412	1.427	1.392	1.401	1.366	1.330	1.200	1.405	10.606			
T	n-Butylbenzene			1.659	1.602	1.806	1.866	1.880	1.837	1.744	1.538	1.742	7.372			
T	1,2-Dichlorobenzene	1.173	1.448	1.256	1.331	1.317	1.298	1.317	1.305	1.288	1.206	1.294	5.762			
T	1,2-Dibromo-3-Chloropropane				0.032	0.045	0.059	0.075	0.076	0.083	0.091	0.066	32.499	0.994		
T	1,2,4-Trichlorobenzene		1.055	0.890	0.904	0.896	0.914	0.929	0.916	0.958	0.935	0.933	5.386			
T	Hexachlorobutadiene		0.339	0.294	0.299	0.322	0.319	0.331	0.327	0.349	0.359	0.327	6.519			
T	Naphthalene		1.751	1.500	1.555	1.645	1.649	1.784	1.699	1.660	1.504	1.639	6.197			
T	1,2,3-Trichlorobenzene	0.765	0.970	0.783	0.780	0.823	0.811	0.843	0.830	0.883	0.871	0.836	7.271			

Tue Oct 20 14:39:57 2015

Response Factor Report HPMS17

Method Path : D:\MassHunter\GCMS\1\methods\
Method File : 8260_VMS.M
Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
Last Update : Thu Nov 12 09:48:27 2015
Response Via : Initial Calibration
Curve: WG546498
Calibration Files
0.3 =17M016369.D 0.4 =17M016370.D 1 =17M016371.D 2 =17M016372.D 5 =17M016373.D 20 =17M016374.D 50 =17M016367.D
100 =17M016375.D 200 =17M016376.D 300 =17M016377.D

		Compound	0.3	0.4	1	2	5	20	50	100	200	300	Avg	%RSD	Linear	Quadratic
															R^2	
1)	I	Fluorobenzene	----------ISTD----------													
2)	T	Dichlorodifluo...			0.304	0.313	0.357	0.359	0.367	0.386	0.374	0.385	0.356	8.72		
3)	P	Chloromethane			0.416	0.390	0.413	0.367	0.354	0.370	0.356	0.364	0.379	6.53		
4)	C	Vinyl Chloride		0.347	0.309	0.317	0.362	0.333	0.331	0.350	0.343	0.352	0.338	5.08#		
5)	T	1,3-Butadiene			0.255	0.224	0.215	0.204	0.205	0.209	0.210	0.217	0.217	7.55		
6)	T	Bromomethane			0.195	0.195	0.194	0.164	0.156	0.169	0.172	0.183	0.178	8.61		
7)	T	Chloroethane			0.205	0.184	0.201	0.172	0.178	0.151	0.145	0.147	0.173	13.74		
8)	T	Trichlorofluor...		0.446	0.403	0.411	0.454	0.406	0.405	0.412	0.284	0.292	0.390	15.58		0.992
9)	T	Diethyl ether			0.194	0.218	0.215	0.200	0.175	0.194	0.196	0.205	0.200	6.77		
10)	C	1,1-Dichloroet...		0.386	0.369	0.381	0.434	0.387	0.385	0.401	0.384	0.406	0.392	4.85#		
11)	T	Carbon Disulfide		0.997	0.810	0.781	0.811	0.782	0.803	0.808	0.805	0.843	0.827	8.04		
12)	T	1,1,2-Trichlor...		0.233	0.230	0.238	0.272	0.237	0.242	0.250	0.237	0.252	0.243	5.36		
13)	T	Iodomethane											0.000	-1.00		
14)	T	Acrolein					0.032	0.026	0.021	0.026	0.027	0.028	0.027	12.92		
15)	T	Methylene Chlo...			0.355	0.317	0.329	0.268	0.252	0.267	0.262	0.273	0.290	13.00		
16)	T	Acetone					0.064	0.054	0.040	0.047	0.049	0.053	0.051	15.38	0.993	
17)	T	trans-1,2-Dich...		0.270	0.254	0.248	0.278	0.251	0.242	0.254	0.252	0.261	0.257	4.33		
18)	T	Methyl acetate	0.172	0.111	0.153	0.118	0.144	0.143	0.126	0.146	0.153	0.163	0.143	13.64		
19)	T	Methyl Tert Bu...		0.643	0.635	0.653	0.758	0.648	0.570	0.651	0.646	0.682	0.654	7.52		
20)	P	1,1-Dichloroet...		0.489	0.465	0.479	0.547	0.484	0.474	0.494	0.485	0.501	0.491	4.81		
21)	T	Acrylonitrile				0.075	0.075	0.068	0.057	0.064	0.067	0.070	0.068	9.16		
22)	T	Vinyl Acetate					0.018	0.025	0.026	0.030	0.032	0.035	0.028	21.73	0.993	
23)	T	cis-1,2-Dichlo...		0.347	0.275	0.285	0.321	0.285	0.274	0.286	0.284	0.295	0.295	8.21		
24)	T	2,2-Dichloropr...		0.392	0.314	0.325	0.376	0.354	0.389	0.390	0.379	0.387	0.367	8.09		
25)	T	Cyclohexane		0.471	0.474	0.483	0.483	0.451	0.467	0.469	0.469	0.487	0.473	2.32		
26)	T	Bromochloromet...			0.155	0.163	0.192	0.172	0.165	0.179	0.178	0.186	0.174	7.21		
27)	C	Chloroform	0.563	0.544	0.449	0.466	0.526	0.461	0.447	0.470	0.462	0.476	0.486	8.59#		
28)	T	Carbon Tetrach...		0.344	0.346	0.370	0.418	0.372	0.371	0.393	0.385	0.401	0.378	6.46		
29)	S	Dibromofluorom...					0.269	0.248	0.257	0.261	0.248		0.256	3.37		
30)	T	1,1,1-Trichlor...		0.447	0.402	0.422	0.480	0.410	0.405	0.426	0.418	0.431	0.427	5.68		
31)	T	1,1-Dichloropr...		0.360	0.339	0.354	0.404	0.349	0.351	0.366	0.359	0.373	0.362	5.11		
32)	T	2-Butanone					0.086	0.084	0.068	0.081	0.084	0.091	0.082	9.16		
33)	T	Benzene		1.123	1.044	1.052	1.185	1.047	1.027	1.066	1.052	1.075	1.074	4.61		
34)	S	1,2-Dichloroet...					0.265	0.239	0.239	0.248	0.240		0.246	4.59		
35)	T	1,2-Dichloroet...		0.311	0.303	0.323	0.369	0.323	0.298	0.326	0.322	0.335	0.323	6.44		
36)	T	Methylcyclohexane	0.633	0.558	0.479	0.486	0.486	0.450	0.478	0.476	0.479	0.499	0.502	10.67		
37)	T	Trichloroethene		0.313	0.290	0.289	0.325	0.287	0.283	0.298	0.294	0.305	0.298	4.64		
38)	T	Dibromomethane		0.177	0.151	0.156	0.178	0.154	0.140	0.157	0.157	0.165	0.159	7.63		
39)	C	1,2-Dichloropr...		0.289	0.282	0.293	0.332	0.290	0.281	0.297	0.293	0.302	0.295	5.19#		

40)	T	Bromodichlorom...		0.365	0.338	0.361	0.408	0.361	0.347	0.372	0.370	0.382	0.367	5.53
41)	T	1,4-Dioxane						0.001	0.002	0.002	0.002	0.002	0.002	14.12
42)	T	2-Chloroethyl ...			0.144	0.146	0.157	0.152	0.133	0.147	0.152	0.162	0.149	5.95
43)	T	cis-1,3-Dichlo...		0.407	0.400	0.415	0.484	0.432	0.416	0.444	0.442	0.456	0.433	6.17
44)	T	4-Methyl-2-Pen...					0.082	0.074	0.058	0.071	0.076	0.080	0.073	11.50
45)	T	trans-1,3-Dich...		0.344	0.340	0.356	0.414	0.370	0.348	0.383	0.384	0.396	0.370	6.91
46)	I	Chlorobenzene-d5	----------ISTD----------											
47)	S	Toluene-d8					1.349	1.225	1.331	1.300	1.238		1.289	4.28
48)	C	Toluene		1.641	1.494	1.580	1.811	1.538	1.544	1.579	1.529	1.538	1.584	5.98#
49)	T	Tetrachloroethene		0.450	0.402	0.416	0.471	0.403	0.414	0.426	0.422	0.438	0.427	5.32
50)	T	1,1,2-Trichlor...		0.352	0.286	0.290	0.334	0.279	0.254	0.282	0.282	0.292	0.295	10.17
51)	T	Dibromochlorom...		0.363	0.356	0.366	0.425	0.372	0.351	0.389	0.393	0.408	0.380	6.59
52)	T	1,3-Dichloropr...		0.460	0.454	0.472	0.539	0.457	0.423	0.464	0.463	0.475	0.467	6.58
53)	T	1,2-Dibromoethane		0.294	0.287	0.296	0.333	0.283	0.260	0.289	0.289	0.301	0.292	6.56
54)	T	2-Hexanone				0.212	0.203	0.188	0.151	0.179	0.190	0.202	0.189	10.69
55)	P	Chlorobenzene		1.044	0.969	1.007	1.137	0.988	0.993	1.028	1.015	1.006	1.021	4.78
56)	T	1-Chlorohexane			0.124	0.110	0.104	0.095	0.103	0.100	0.101	0.102	0.105	8.37
57)	C	Ethylbenzene		0.576	0.532	0.535	0.614	0.535	0.542	0.561	0.552	0.554	0.556	4.68#
58)	T	1,1,1,2-Tetrac...		0.363	0.353	0.373	0.425	0.371	0.364	0.383	0.383	0.384	0.378	5.49
59)	T	m-,p-Xylene		0.672	0.629	0.657	0.754	0.655	0.662	0.681	0.657	0.632	0.667	5.52
60)	T	o-Xylene		0.655	0.625	0.637	0.741	0.637	0.642	0.667	0.662	0.654	0.658	5.15
61)	T	Styrene		1.087	1.036	1.079	1.220	1.064	1.063	1.110	1.105	1.073	1.093	4.81
62)	P	Bromoform		0.220	0.219	0.242	0.283	0.248	0.225	0.263	0.274	0.281	0.251	10.31
63)	T	Isopropylbenzene		1.787	1.651	1.716	1.956	1.683	1.687	1.735	1.660	1.555	1.714	6.46
64)	I	1,4-Dichlorobenzen...	----------ISTD----------											
65)	T	1,3,5-Trimethy...		2.902	2.679	2.778	3.133	2.629	2.726	2.724	2.598	2.469	2.737	6.97
66)	S	p-Bromofluorob...					0.871	0.809	0.896	0.887	0.859		0.864	3.95
67)	T	Bromobenzene	0.938	0.870	0.817	0.818	0.951	0.806	0.806	0.838			0.856	6.88
68)	T	n-Propylbenzene		3.686	3.447	3.602	4.131	3.513	3.654	3.611	3.354	3.160	3.573	7.48
69)	P	1,1,2,2-Tetrac...		0.678	0.590	0.605	0.717	0.595	0.534	0.609	0.613	0.643	0.621	8.57
70)	T	2-Chlorotoluene		2.275	2.115	2.156	2.497	2.102	2.157	2.191	2.115	2.058	2.185	6.05
71)	T	1,2,3-Trichlor...			0.197	0.184	0.202	0.158	0.143	0.164	0.164	0.170	0.173	11.67
72)	T	trans-1,4-Dich...		0.186	0.136	0.151	0.148	0.131	0.120	0.136	0.140	0.144	0.144	12.70
73)	T	1,2,4-Trimethy...		2.899	2.683	2.733	3.139	2.641	2.725	2.723	2.603	2.448	2.733	7.10
74)	T	4-Chlorotoluene		2.395	2.117	2.258	2.567	2.133	2.256	2.238	2.167	2.105	2.248	6.70
75)	T	tert-Butylbenzene		0.485	0.479	0.492	0.561	0.477	0.498	0.508	0.507	0.510	0.502	5.07
76)	T	sec-Butylbenzene		3.569	3.291	3.426	3.890	3.252	3.390	3.382	3.152	2.921	3.364	8.02
77)	T	p-Isopropyltol...		2.965	2.848	2.901	3.367	2.820	2.976	2.947	2.789	2.570	2.909	7.29
78)	T	1,3-Dichlorobe...		1.618	1.522	1.552	1.750	1.507	1.543	1.573	1.554	1.522	1.571	4.76
79)	T	1,4-Dichlorobe...	1.968	1.586	1.531	1.540	1.762	1.488	1.525	1.566	1.547	1.516	1.603	9.28
80)	T	n-Butylbenzene		2.805	2.560	2.658	3.036	2.571	2.765	2.711	2.590	2.402	2.678	6.76
81)	T	1,2-Dichlorobe...	1.695	1.467	1.426	1.445	1.691	1.421	1.416	1.484	1.463	1.451	1.496	7.10
82)	T	1,2-Dibromo-3-...				0.114	0.133	0.111	0.099	0.117	0.117	0.124	0.116	9.10
83)	T	Hexachlorobuta...		0.696	0.634	0.665	0.758	0.655	0.706	0.682	0.705	0.695	0.689	5.16
84)	T	1,2,4-Trichlor...		1.229	1.131	1.145	1.349	1.158	1.168	1.175	1.192	1.198	1.194	5.45
85)	T	Naphthalene		2.380	2.183	2.277	2.624	2.160	1.937	2.124	2.113	2.102	2.211	8.92
86)	T	1,2,3-Trichlor...		1.132	1.062	1.083	1.275	1.067	1.029	1.066	1.092	1.109	1.102	6.48

(#) = Out of Range

8260_VMS.M Thu Nov 12 09:59:47 2015

Calibration Table Report
Method: A9FOOWTR.M
Title: A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Calibration: Tue Oct 06 11:55:21 2015
Curve: WG540826
Calibration Files

	Compound	5 8M407828.D	20 8M407829.D	50 8M407830.D	100 8M407831.D	200 8M407832.D	300 8M407833.D	400 8M407834.D	500 8M407835.D	Avg	%RSD
I	Fluorobenzene	ISTD									
T	Acetonitrile	0.020	0.019	0.020	0.019	0.019	0.019	0.019	0.019	0.019	3.019
T	3-Chloro-1-propene	0.474	0.484	0.476	0.471	0.484	0.465	0.458	0.432	0.468	3.632
T	2-Chloro-1,3-butadiene	0.448	0.481	0.482	0.486	0.514	0.495	0.486	0.460	0.481	4.206
T	Ethyl Acetate	0.104	0.129	0.132	0.131	0.132	0.128	0.128	0.133	0.127	7.528
T	Methacrylonitrile	0.046	0.055	0.058	0.057	0.057	0.056	0.057	0.060	0.056	7.551
T	Isobutyl Alcohol			0.005	0.005	0.005	0.005	0.005	0.006	0.005	4.964
T	1-Butanol			0.002	0.002	0.003	0.003	0.003	0.003	0.003	10.874
T	Methyl methacrylate	0.120	0.147	0.158	0.162	0.162	0.158	0.160	0.165	0.154	9.638
T	2-Nitropropane			0.021	0.022	0.025	0.026	0.029	0.031	0.026	14.916
I	Chlorobenzene-d5	ISTD									
I	1,4-Dichlorobenzene-d4	ISTD									
T	Cyclohexanone			0.057	0.052	0.054	0.051	0.052	0.054	0.053	3.733

Tue Oct 06 11:57:17 2015

Calibration Table Report
Method: 8260WT.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Calibration: Wed Sep 30 15:45:31 2015
Curve: WG540912
Calibration Files

	Compound	0.3 8M407747.D	0.4 8M407748.D	1 8M407749.D	2 8M407750.D	5 8M407751.D	20 8M407752.D	50 8M407753.D	100 8M407754.D	200 8M407755.D	300 8M407756.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane		0.380	0.381	0.359	0.346	0.426	0.391	0.412	0.377	0.348	0.380	7.176		
P	Chloromethane			0.693	0.621	0.587	0.619	0.579	0.579	0.515	0.447	0.580	12.684		
C	Vinyl Chloride		0.547	0.520	0.465	0.459	0.488	0.424	0.407	0.355		0.458	13.571		
T	1,3-Butadiene					0.415	0.434	0.316	0.248	0.208	0.174	0.299	36.091		1.007
T	Bromomethane			0.104	0.099	0.100	0.128	0.142	0.174	0.183	0.185	0.139	26.623		1.000
T	Chloroethane		0.143	0.197	0.184	0.189	0.202	0.190	0.198	0.194	0.186	0.187	9.444		
T	Trichlorofluoromethane		0.452	0.468	0.421	0.434	0.455	0.428	0.456	0.442	0.431	0.443	3.518		
T	Diethyl ether			0.169	0.169	0.169	0.164	0.164	0.176		0.184	0.170	4.169		
T	Isoprene		0.296	0.323	0.283	0.302	0.340	0.346	0.362	0.340	0.334	0.325	8.057		
T	Acrolein				0.021	0.021	0.020	0.020	0.021		0.024	0.021	7.793		
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.245	0.229	0.236	0.244	0.233	0.251	0.239	0.228	0.238	3.475		
T	Acetone					0.038	0.037	0.033	0.034	0.042	0.039	0.037	8.864		
C	1,1-Dichloroethene		0.427	0.426	0.381	0.398	0.408	0.387	0.419	0.413	0.389	0.405	4.243		
T	Tert-Butyl Alcohol				0.011	0.011	0.011	0.010	0.011		0.012	0.011	6.872		
T	Dimethyl Sulfide		0.193	0.233	0.224	0.224	0.238	0.236	0.247	0.252	0.246	0.233	7.587		
T	Iodomethane				0.047	0.081	0.127	0.149	0.172	0.165	0.153	0.128	36.698	0.997	
T	Methyl acetate					0.149	0.139	0.127	0.137	0.146	0.145	0.140	5.557		
T	Methylene Chloride			0.270	0.237	0.247	0.257	0.244	0.253	0.257	0.248	0.252	4.037		
T	Carbon Disulfide			0.873	0.793	0.800	0.856	0.843	0.864	0.807	0.740	0.822	5.489		
T	Acrylonitrile			0.050	0.050	0.052	0.054	0.055	0.058		0.071	0.056	13.209		
T	Methyl Tert Butyl Ether			0.456	0.433	0.479	0.485	0.464	0.497	0.514	0.489	0.477	5.314		
T	trans-1,2-Dichloroethene		0.375	0.384	0.364	0.378	0.395	0.384	0.409	0.401	0.375	0.385	3.701		
T	n-Hexane					0.371	0.385	0.388	0.404	0.375	0.358	0.380	4.129		
T	Diisopropyl ether			0.990	0.981	0.965	0.946	0.947	0.950		0.862	0.949	4.398		
T	Vinyl Acetate		0.248	0.230	0.237	0.265	0.261	0.253	0.253	0.264	0.258	0.252	4.767		
P	1,1-Dichloroethane		0.482	0.508	0.482	0.490	0.497	0.477	0.504	0.496	0.464	0.489	2.856		
T	Ethyl-Tert-Butyl ether			0.749	0.754	0.756	0.741	0.738	0.765		0.729	0.747	1.610		
T	2-Butanone					0.061	0.063	0.059	0.065	0.067	0.068	0.064	5.457		
T	Propionitrile			0.017	0.019	0.019	0.019	0.018	0.019		0.021	0.019	7.390		
T	2,2-Dichloropropane		0.393	0.438	0.390	0.399	0.421	0.403	0.428	0.414	0.389	0.408	4.343		
T	cis-1,2-Dichloroethene		0.265	0.291	0.270	0.271	0.278	0.269	0.280	0.281	0.266	0.275	3.128		
C	Chloroform	0.453	0.499	0.475	0.451	0.465	0.477	0.460	0.474	0.462	0.427	0.464	4.130		
T	1-Bromopropane			0.036	0.044	0.045	0.048	0.048	0.048	0.046	0.045	0.045	8.589		
T	Bromochloromethane		0.117	0.143	0.125	0.136	0.138	0.136	0.142	0.143	0.137	0.135	6.408		
T	Tetrahydrofuran			0.046	0.041	0.041	0.040	0.039	0.040		0.045	0.042	6.813		
S	Dibromofluoromethane			0.228	0.229	0.236	0.244	0.239	0.247	0.244	0.237	0.238	2.882		
T	1,1,1-Trichloroethane		0.396	0.411	0.383	0.413	0.432	0.420	0.449	0.436	0.411	0.417	4.879		
T	Cyclohexane			0.500	0.472	0.470	0.505	0.502	0.528	0.506	0.485	0.496	3.912		
T	1,1-Dichloropropene			0.372	0.320	0.353	0.376	0.358	0.382	0.366	0.344	0.359	5.566		
T	Tert-Amyl-Methyl ether			0.553	0.552	0.554	0.550	0.539	0.564		0.567	0.554	1.666		
T	Carbon Tetrachloride		0.342	0.387	0.342	0.352	0.388	0.378	0.409	0.384	0.37	0.3725	6.23053		
S	1,2-Dichloroethane-d4			0.227	0.237	0.235	0.251	0.242	0.251	0.252	0.245	0.2426	3.75472		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.282	0.308	0.304	0.32	0.332	0.319	0.338	0.344	0.323	0.3188	5.97586		
T	Benzene	0.948	1.053	1.068	1.016	1.012	1.055	1.009	1.017	0.904	0.765	0.9846	9.33012		
T	Trichloroethene		0.296	0.263	0.255	0.248	0.271	0.259	0.276	0.265	0.254	0.2651	5.51495		
T	Methylcyclohexane					0.405	0.421	0.417	0.43	0.403	0.385	0.4101	3.90762		
C	1,2-Dichloropropane		0.238	0.269	0.253	0.265	0.275	0.263	0.278	0.28	0.267	0.2652	4.99091		
T	Bromodichloromethane		0.331	0.324	0.32	0.329	0.357	0.348	0.364	0.365	0.343	0.3424	5.04612		
T	1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.0012	13.1586		
T	Dibromomethane		0.113	0.119	0.121	0.13	0.132	0.125	0.13	0.135	0.131	0.1263	5.73877		
T	2-Chloroethyl Vinyl Ether					0.1	0.109	0.103	0.112	0.115	0.117	0.1093	6.11607		
T	4-Methyl-2-Pentanone					0.051	0.055	0.051	0.056	0.06	0.063	0.0561	8.3812		
T	cis-1,3-Dichloropropene		0.36	0.371	0.355	0.364	0.398	0.387	0.405	0.404	0.376	0.3801	5.00621		

T	Dimethyl Disulfide					0.158	0.19	0.202	0.22	0.232	0.227	0.2049	13.705
I	Chlorobenzene-d5	ISTD											
S	Toluene-d8			1.192	1.154	1.143	1.206	1.188	1.231	1.129	1.036	1.16	5.2193
C	Toluene		1.586	1.558	1.513	1.462	1.54	1.446	1.465	1.226	0.99	1.4206	13.5587
T	Ethyl Methacrylate			0.229	0.248	0.275	0.293	0.284	0.312	0.318	0.307	0.2832	11.1162
T	Paraldehyde											0	0
T	trans-1,3-Dichloropropene			0.382	0.396	0.43	0.454	0.443	0.474	0.47	0.437	0.4358	7.50736
T	1,1,2-Trichloroethane		0.215	0.213	0.222	0.233	0.23	0.218	0.234	0.237	0.228	0.2255	3.87257
T	2-Hexanone					0.062	0.072	0.065	0.073	0.076	0.077	0.0709	8.49385
T	1,3-Dichloropropane		0.409	0.416	0.386	0.399	0.412	0.389	0.418	0.411	0.387	0.4029	3.20744
T	Tetrachloroethene		0.274	0.335	0.293	0.297	0.304	0.295	0.319	0.307	0.293	0.302	5.77936
T	Dibromochloromethane		0.265	0.264	0.262	0.285	0.303	0.293	0.318	0.324	0.31	0.2915	8.29724
T	1,2-Dibromoethane		0.235	0.211	0.202	0.225	0.233	0.22	0.235	0.239	0.226	0.2251	5.51845
T	1-Chlorohexane		0.511	0.53	0.496	0.497	0.518	0.521	0.539	0.499	0.464	0.5083	4.39894
P	Chlorobenzene		1.019	0.978	0.95	0.944	0.986	0.956	1.013	0.935	0.787	0.9519	7.22423
T	1,1,1,2-Tetrachloroethane		0.265	0.325	0.323	0.339	0.363	0.358	0.402	0.41	0.382	0.352	12.8056
C	Ethylbenzene		0.553	0.548	0.513	0.519	0.561	0.544	0.602	0.603	0.549	0.5545	5.65783
T	m-,p-Xylene		0.653	0.672	0.647	0.659	0.677	0.656	0.688	0.594	0.478	0.6359	10.2214
T	o-Xylene			0.69	0.616	0.608	0.654	0.636	0.672	0.662	0.607	0.6431	4.84917
T	Styrene		0.957	1.011	0.983	1.079	1.09	1.068	1.114	1.015	0.854	1.0189	7.95219
P	Bromoform			0.143	0.145	0.164	0.179	0.174	0.193	0.203	0.201	0.1753	13.4432
T	Isopropylbenzene		1.674	1.711	1.59	1.59	1.701	1.607	1.616	1.333	1.062	1.5426	13.7434
I	1,4-Dichlorobenzene-d4	ISTD											
P	1,1,2,2-Tetrachloroethane		0.466	0.431	0.447	0.482	0.487	0.445	0.461	0.475	0.456	0.4612	3.98563
S	p-Bromofluorobenzene				0.839	0.861	0.897	0.872	0.9	0.883	0.855	0.8723	2.5773
T	1,2,3-Trichloropropane			0.117	0.121	0.128	0.136	0.124	0.131	0.136	0.132	0.1282	5.47011
T	trans-1,4-Dichloro-2-Butene			0.165	0.121	0.159	0.173	0.169	0.184	0.195	0.191	0.1695	13.7331
T	n-Propylbenzene		3.853	4.064	3.646	3.829	3.894	3.605	3.431	2.634		3.6196	12.2626
T	Bromobenzene	0.716	0.667	0.795	0.742	0.733	0.765	0.727	0.757	0.745	0.701	0.7348	4.83527
T	1,3,5-Trimethylbenzene		2.694	2.781	2.538	2.617	2.699	2.581	2.572	2.175	1.741	2.4886	13.2002
T	2-Chlorotoluene		2.572	2.712	2.449	2.619	2.629	2.438	2.425	2.115	1.617	2.3974	14.1849
T	4-Chlorotoluene		2.301	2.388	2.204	2.076	2.232	2.159	2.12	1.736	1.443	2.0734	14.4053
T	a-Methylstyrene					1.309	1.407	1.402	1.437	1.365	1.219	1.3567	5.94098
T	tert-Butylbenzene			0.554	0.526	0.527	0.551	0.531	0.57	0.571	0.55	0.5475	3.2892
T	1,2,4-Trimethylbenzene		2.628	2.739	2.592	2.702	2.752	2.637	2.622	2.21	1.751	2.5147	13.0606
T	sec-Butylbenzene			3.403	3.108	3.202	3.306	3.103	3.049	2.467		3.0914	9.77187
T	p-Isopropyltoluene			2.69	2.604	2.632	2.712	2.601	2.619	2.181	1.735	2.4717	13.7983
T	1,3-Dichlorobenzene		1.534	1.588	1.433	1.519	1.547	1.468	1.495	1.403	1.213	1.4666	7.58144
T	1,4-Dichlorobenzene	1.487	1.624	1.584	1.427	1.505	1.506	1.438	1.464	1.381	1.188	1.4604	8.193
T	n-Butylbenzene			2.514	2.27	2.452	2.509	2.482	2.49	2.075	1.64	2.3041	13.4157
T	1,2-Dichlorobenzene	1.241	1.291	1.402	1.288	1.325	1.343	1.269	1.306	1.257	1.11	1.2833	5.96211
T	1,2-Dibromo-3-Chloropropane				0.068	0.075	0.084	0.078	0.083	0.09	0.087	0.0808	9.2848
T	1,2,4-Trichlorobenzene		0.786	0.858	0.844	0.9	0.906	0.905	0.947	0.946	0.843	0.8816	6.03392
T	Hexachlorobutadiene		0.419	0.411	0.423	0.422	0.427	0.417	0.442	0.432	0.402	0.4217	2.75284
T	Naphthalene		1.416	1.32	1.314	1.295	1.264	1.247	1.273	1.259	1.084	1.2746	6.86659
T	1,2,3-Trichlorobenzene	0.681	0.712	0.793	0.719	0.764	0.777	0.762	0.79	0.8	0.72	0.7518	5.44426

Thu Oct 01 09:11:48 2015

Microbac Laboratories Inc.

ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15110793 Run Date: 06/14/2015 Sample ID: WG527475-10
Instrument ID: HPMS11 Run Time: 15:18 Method: 8260B
File ID: 11M08245 Analyst: TMB /DLW QC Key: DOD4
ICal Workgroup: WG527475 Cal ID: HPMS11 - 14-JUN-15

Analyte	Expected	Found	Units	RF	%D	UCL	Q

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4501854
Report generated 12/01/2015 17:01

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15110793 Run Date: 10/09/2015 Sample ID: WG542333-12
Instrument ID: HPMS11 Run Time: 22:45 Method: 8260B
File ID: 11M09752 Analyst: JDS QC Key: DOD4
ICal Workgroup: WG542333 Cal ID: HPMS11 - 09-OCT-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.4	ug/L	0.492	0.700	20	
1,1-Dichloroethene	CCC	50.0	47.3	ug/L	0.432	5.30	20	
1,2-Dichloropropane	CCC	50.0	48.5	ug/L	0.298	2.90	20	
Ethylbenzene	CCC	50.0	52.2	ug/L	0.491	4.40	20	
Toluene	CCC	50.0	52.1	ug/L	1.35	4.10	20	
Vinyl Chloride	CCC	50.0	45.5	ug/L	0.259	9.00	20	
Bromoform	SPCC	50.0	53.8	ug/L	0.191	7.60	20	
Chlorobenzene	SPCC	50.0	51.4	ug/L	0.965	2.70	20	
Chloromethane	SPCC	50.0	55.7	ug/L	0.394	11.3	20	
1,1-Dichloroethane	SPCC	50.0	48.1	ug/L	0.531	3.80	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	52.8	ug/L	0.439	5.60	20	
Acetone		50.0	54.6	ug/L	0.0703	9.20	20	
Benzene		50.0	49.2	ug/L	1.08	1.50	20	
Bromobenzene		50.0	48.5	ug/L	0.720	2.90	20	
Bromochloromethane		50.0	50.3	ug/L	0.196	0.600	20	
Bromodichloromethane		50.0	54.4	ug/L	0.354	8.90	20	
Bromomethane		50.0	48.4	ug/L	0.184	3.20	20	
2-Butanone		50.0	53.8	ug/L	0.111	7.50	20	
n-Butylbenzene		50.0	53.6	ug/L	1.87	7.10	20	
sec-Butylbenzene		50.0	54.9	ug/L	2.52	9.70	20	
tert-Butylbenzene		50.0	51.2	ug/L	0.617	2.40	20	
Carbon Disulfide		50.0	53.3	ug/L	0.824	6.60	20	
Carbon Tetrachloride		50.0	55.8	ug/L	0.381	11.6	20	
Dibromochloromethane		50.0	53.4	ug/L	0.302	6.70	20	
Chloroethane		50.0	51.4	ug/L	0.213	2.90	20	
2-Chlorotoluene		50.0	51.4	ug/L	1.90	2.80	20	
4-Chlorotoluene		50.0	49.8	ug/L	1.70	0.400	20	
1,2-Dibromo-3-Chloropropane		50.0	47.1	ug/L	0.0771	5.70	20	
1,2-Dibromoethane		50.0	52.6	ug/L	0.245	5.30	20	
Dibromomethane		50.0	50.9	ug/L	0.161	1.70	20	
1,2-Dichlorobenzene		50.0	51.6	ug/L	1.33	3.10	20	
1,3-Dichlorobenzene		50.0	50.7	ug/L	1.41	1.40	20	
1,4-Dichlorobenzene		50.0	48.7	ug/L	1.37	2.70	20	
Dichlorodifluoromethane		50.0	54.9	ug/L	0.407	9.80	20	
1,2-Dichloroethane		50.0	46.9	ug/L	0.383	6.30	20	
cis-1,2-Dichloroethene		50.0	47.9	ug/L	0.311	4.20	20	
trans-1,2-Dichloroethene		50.0	48.0	ug/L	0.276	4.00	20	
1,3-Dichloropropane		50.0	49.3	ug/L	0.407	1.50	20	
2,2-Dichloropropane		50.0	48.6	ug/L	0.371	2.80	20	
cis-1,3-Dichloropropene		50.0	53.6	ug/L	0.439	7.30	20	
trans-1,3-Dichloropropene		50.0	51.8	ug/L	0.402	3.60	20	
1,1-Dichloropropene		50.0	50.5	ug/L	0.367	1.10	20	

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Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15110793 Run Date: 10/09/2015 Sample ID: WG542333-12
Instrument ID: HPMS11 Run Time: 22:45 Method: 8260B
File ID: 11M09752 Analyst: JDS QC Key: DOD4
ICal Workgroup: WG542333 Cal ID: HPMS11 - 09-OCT-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	54.8	ug/L	0.187	9.50	20	
Hexachlorobutadiene		50.0	51.7	ug/L	0.337	3.30	20	
Isopropylbenzene		50.0	55.8	ug/L	1.51	11.6	20	
p-Isopropyltoluene		50.0	53.9	ug/L	2.18	7.70	20	
4-Methyl-2-Pentanone		50.0	53.2	ug/L	0.0930	6.40	20	
Methylene Chloride		50.0	48.5	ug/L	0.269	3.00	20	
Naphthalene		50.0	54.4	ug/L	1.78	8.70	20	
n-Propylbenzene		50.0	54.5	ug/L	2.88	9.00	20	
Styrene		50.0	54.2	ug/L	0.999	8.40	20	
1,1,1,2-Tetrachloroethane		50.0	52.5	ug/L	0.324	5.00	20	
Tetrachloroethene		50.0	52.0	ug/L	0.312	4.10	20	
1,2,3-Trichlorobenzene		50.0	51.1	ug/L	0.854	2.20	20	
1,2,4-Trichlorobenzene		50.0	49.6	ug/L	0.925	0.900	20	
1,1,1-Trichloroethane		50.0	54.9	ug/L	0.449	9.80	20	
1,1,2-Trichloroethane		50.0	51.0	ug/L	0.246	2.00	20	
Trichloroethene		50.0	48.5	ug/L	0.318	3.00	20	
Trichlorofluoromethane		50.0	47.3	ug/L	0.433	5.40	20	
1,2,3-Trichloropropane		50.0	49.0	ug/L	0.136	2.00	20	
1,2,4-Trimethylbenzene		50.0	51.8	ug/L	2.03	3.60	20	
1,3,5-Trimethylbenzene		50.0	52.6	ug/L	2.02	5.20	20	
o-Xylene		50.0	54.1	ug/L	0.605	8.20	20	
m-,p-Xylene		100	107	ug/L	0.587	6.70	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

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Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15110793 Run Date: 11/11/2015 Sample ID: WG546498-12
Instrument ID: HPMS17 Run Time: 18:33 Method: 8260B
File ID: 17M016379 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG546498 Cal ID: HPMS17 - 11-NOV-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.9	ug/L	0.496	1.90	20	
1,1-Dichloroethene	CCC	50.0	48.4	ug/L	0.380	3.30	20	
1,2-Dichloropropane	CCC	50.0	51.7	ug/L	0.306	3.50	20	
Ethylbenzene	CCC	50.0	51.4	ug/L	0.571	2.90	20	
Toluene	CCC	50.0	51.1	ug/L	1.62	2.10	20	
Vinyl Chloride	CCC	50.0	55.3	ug/L	0.374	10.6	20	
Bromoform	SPCC	50.0	56.3	ug/L	0.283	12.7	20	
Chlorobenzene	SPCC	50.0	53.9	ug/L	1.10	7.70	20	
Chloromethane	SPCC	50.0	50.3	ug/L	0.381	0.600	20	
1,1-Dichloroethane	SPCC	50.0	50.8	ug/L	0.498	1.50	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	51.8	ug/L	0.643	3.50	20	
Acetone		50.0	56.9	ug/L	0.0569	13.7	20	
Benzene		50.0	50.9	ug/L	1.09	1.80	20	
Bromobenzene		50.0	49.8	ug/L	0.853	0.300	20	
Bromochloromethane		50.0	54.7	ug/L	0.190	9.40	20	
Bromodichloromethane		50.0	51.3	ug/L	0.377	2.50	20	
Bromomethane		50.0	48.8	ug/L	0.174	2.40	20	
2-Butanone		50.0	55.4	ug/L	0.0913	10.7	20	
n-Butylbenzene		50.0	50.8	ug/L	2.72	1.60	20	
sec-Butylbenzene		50.0	52.8	ug/L	3.55	5.50	20	
tert-Butylbenzene		50.0	53.1	ug/L	0.533	6.20	20	
Carbon Disulfide		50.0	15.9	ug/L	0.263	68.1	20	*
Carbon Tetrachloride		50.0	52.5	ug/L	0.396	4.90	20	
Dibromochloromethane		50.0	52.2	ug/L	0.397	4.30	20	
Chloroethane		50.0	45.5	ug/L	0.157	8.90	20	
2-Chlorotoluene		50.0	52.6	ug/L	2.30	5.10	20	
4-Chlorotoluene		50.0	51.7	ug/L	2.32	3.40	20	
1,2-Dibromo-3-Chloropropane		50.0	53.9	ug/L	0.126	7.70	20	
1,2-Dibromoethane		50.0	51.2	ug/L	0.300	2.50	20	
Dibromomethane		50.0	52.4	ug/L	0.167	4.70	20	
1,2-Dichlorobenzene		50.0	53.0	ug/L	1.59	6.00	20	
1,3-Dichlorobenzene		50.0	52.2	ug/L	1.64	4.50	20	
1,4-Dichlorobenzene		50.0	49.5	ug/L	1.59	0.900	20	
Dichlorodifluoromethane		50.0	57.1	ug/L	0.406	14.2	20	
1,2-Dichloroethane		50.0	52.0	ug/L	0.337	4.10	20	
cis-1,2-Dichloroethene		50.0	49.6	ug/L	0.292	0.800	20	
trans-1,2-Dichloroethene		50.0	49.9	ug/L	0.256	0.300	20	
1,3-Dichloropropane		50.0	52.4	ug/L	0.490	4.90	20	
2,2-Dichloropropane		50.0	52.8	ug/L	0.388	5.60	20	
cis-1,3-Dichloropropene		50.0	54.7	ug/L	0.473	9.40	20	
trans-1,3-Dichloropropene		50.0	51.8	ug/L	0.384	3.60	20	
1,1-Dichloropropene		50.0	50.7	ug/L	0.367	1.40	20	

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Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15110793 Run Date: 11/11/2015 Sample ID: WG546498-12
Instrument ID: HPMS17 Run Time: 18:33 Method: 8260B
File ID: 17M016379 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG546498 Cal ID: HPMS17 - 11-NOV-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	53.0	ug/L	0.201	6.00	20	
Hexachlorobutadiene		50.0	51.9	ug/L	0.715	3.90	20	
Isopropylbenzene		50.0	53.1	ug/L	1.82	6.20	20	
p-Isopropyltoluene		50.0	50.5	ug/L	2.94	0.900	20	
4-Methyl-2-Pentanone		50.0	53.5	ug/L	0.0785	7.00	20	
Methylene Chloride		50.0	46.9	ug/L	0.272	6.30	20	
Naphthalene		50.0	53.4	ug/L	2.36	6.70	20	
n-Propylbenzene		50.0	53.5	ug/L	3.83	7.10	20	
Styrene		50.0	51.3	ug/L	1.12	2.70	20	
1,1,1,2-Tetrachloroethane		50.0	50.7	ug/L	0.383	1.30	20	
Tetrachloroethene		50.0	51.7	ug/L	0.441	3.30	20	
1,2,3-Trichlorobenzene		50.0	53.3	ug/L	1.17	6.60	20	
1,2,4-Trichlorobenzene		50.0	53.3	ug/L	1.27	6.60	20	
1,1,1-Trichloroethane		50.0	52.3	ug/L	0.446	4.50	20	
1,1,2-Trichloroethane		50.0	49.6	ug/L	0.292	0.800	20	
Trichloroethene		50.0	50.7	ug/L	0.302	1.40	20	
Trichlorofluoromethane		50.0	35.2	ug/L	0.286	29.5	20	*
1,2,3-Trichloropropane		50.0	49.5	ug/L	0.171	1.00	20	
1,2,4-Trimethylbenzene		50.0	50.0	ug/L	2.74	0.100	20	
1,3,5-Trimethylbenzene		50.0	51.3	ug/L	2.81	2.70	20	
o-Xylene		50.0	53.1	ug/L	0.699	6.20	20	
m-,p-Xylene		100	107	ug/L	0.710	6.60	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

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Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15110793 Run Date: 09/30/2015 Sample ID: WG540912-12
Instrument ID: HPMS8 Run Time: 17:27 Method: 8260B
File ID: 8M407761 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG540912 Cal ID: HPMS8 - 30-SEP-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	53.5	ug/L	0.497	7.10	20	
1,1-Dichloroethene	CCC	50.0	49.6	ug/L	0.402	0.800	20	
1,2-Dichloropropane	CCC	50.0	51.4	ug/L	0.273	2.90	20	
Ethylbenzene	CCC	50.0	49.2	ug/L	0.546	1.60	20	
Toluene	CCC	50.0	50.2	ug/L	1.42	0.300	20	
Vinyl Chloride	CCC	50.0	44.0	ug/L	0.404	12.0	20	
Bromoform	SPCC	50.0	51.2	ug/L	0.180	2.40	20	
Chlorobenzene	SPCC	50.0	51.8	ug/L	0.986	3.50	20	
Chloromethane	SPCC	50.0	49.6	ug/L	0.576	0.700	20	
1,1-Dichloroethane	SPCC	50.0	51.9	ug/L	0.507	3.70	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	47.9	ug/L	0.442	4.10	20	
Acetone		50.0	59.2	ug/L	0.0439	18.4	20	
Benzene		50.0	52.9	ug/L	1.04	5.80	20	
Bromobenzene		50.0	49.3	ug/L	0.724	1.40	20	
Bromochloromethane		50.0	53.5	ug/L	0.145	7.00	20	
Bromodichloromethane		50.0	52.2	ug/L	0.358	4.40	20	
Bromomethane		50.0	45.2	ug/L	0.141	9.70	20	
2-Butanone		50.0	54.2	ug/L	0.0693	8.40	20	
n-Butylbenzene		50.0	52.9	ug/L	2.44	5.70	20	
sec-Butylbenzene		50.0	51.8	ug/L	3.20	3.60	20	
tert-Butylbenzene		50.0	51.7	ug/L	0.566	3.40	20	
Carbon Disulfide		50.0	48.8	ug/L	0.802	2.50	20	
Carbon Tetrachloride		50.0	54.5	ug/L	0.406	9.00	20	
Dibromochloromethane		50.0	49.3	ug/L	0.287	1.40	20	
Chloroethane		50.0	55.9	ug/L	0.209	11.7	20	
2-Chlorotoluene		50.0	53.2	ug/L	2.55	6.40	20	
4-Chlorotoluene		50.0	52.9	ug/L	2.19	5.80	20	
1,2-Dibromo-3-Chloropropane		50.0	47.3	ug/L	0.0765	5.30	20	
1,2-Dibromoethane		50.0	47.8	ug/L	0.215	4.40	20	
Dibromomethane		50.0	51.7	ug/L	0.131	3.40	20	
1,2-Dichlorobenzene		50.0	50.8	ug/L	1.30	1.60	20	
1,3-Dichlorobenzene		50.0	50.5	ug/L	1.48	1.00	20	
1,4-Dichlorobenzene		50.0	48.6	ug/L	1.42	2.80	20	
Dichlorodifluoromethane		50.0	58.7	ug/L	0.446	17.4	20	
1,2-Dichloroethane		50.0	52.5	ug/L	0.335	5.10	20	
cis-1,2-Dichloroethene		50.0	51.1	ug/L	0.281	2.20	20	
trans-1,2-Dichloroethene		50.0	51.7	ug/L	0.398	3.30	20	
1,3-Dichloropropane		50.0	48.2	ug/L	0.388	3.60	20	
2,2-Dichloropropane		50.0	56.9	ug/L	0.465	13.9	20	
cis-1,3-Dichloropropene		50.0	55.2	ug/L	0.420	10.5	20	
trans-1,3-Dichloropropene		50.0	49.1	ug/L	0.428	1.80	20	
1,1-Dichloropropene		50.0	52.7	ug/L	0.378	5.40	20	

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Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15110793 Run Date: 09/30/2015 Sample ID: WG540912-12
Instrument ID: HPMS8 Run Time: 17:27 Method: 8260B
File ID: 8M407761 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG540912 Cal ID: HPMS8 - 30-SEP-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	48.3	ug/L	0.0684	3.50	20	
Hexachlorobutadiene		50.0	51.2	ug/L	0.432	2.40	20	
Isopropylbenzene		50.0	54.1	ug/L	1.67	8.20	20	
p-Isopropyltoluene		50.0	51.9	ug/L	2.57	3.80	20	
4-Methyl-2-Pentanone		50.0	50.6	ug/L	0.0568	1.30	20	
Methylene Chloride		50.0	50.4	ug/L	0.254	0.800	20	
Naphthalene		50.0	44.3	ug/L	1.13	11.3	20	
n-Propylbenzene		50.0	50.9	ug/L	3.69	1.90	20	
Styrene		50.0	52.5	ug/L	1.07	5.10	20	
1,1,1,2-Tetrachloroethane		50.0	49.6	ug/L	0.349	0.900	20	
Tetrachloroethene		50.0	50.4	ug/L	0.304	0.700	20	
1,2,3-Trichlorobenzene		50.0	48.6	ug/L	0.731	2.70	20	
1,2,4-Trichlorobenzene		50.0	49.3	ug/L	0.869	1.40	20	
1,1,1-Trichloroethane		50.0	55.1	ug/L	0.460	10.3	20	
1,1,2-Trichloroethane		50.0	47.4	ug/L	0.214	5.20	20	
Trichloroethene		50.0	50.9	ug/L	0.270	1.90	20	
Trichlorofluoromethane		50.0	49.4	ug/L	0.438	1.20	20	
1,2,3-Trichloropropane		50.0	49.0	ug/L	0.126	2.10	20	
1,2,4-Trimethylbenzene		50.0	51.5	ug/L	2.59	3.00	20	
1,3,5-Trimethylbenzene		50.0	52.6	ug/L	2.62	5.30	20	
o-Xylene		50.0	51.6	ug/L	0.664	3.20	20	
m-,p-Xylene		100	105	ug/L	0.668	5.10	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

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ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15110793 Run Date: 10/05/2015 Sample ID: WG540826-10
Instrument ID: HPMS8 Run Time: 16:48 Method: 8260B
File ID: 8M407838 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG540826 Cal ID: HPMS8 - 05-OCT-15

Analyte	Expected	Found	Units	RF	%D	UCL	Q

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

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Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110793 Run Date: 11/13/2015 Sample ID: WG546843-02
Instrument ID: HPMS17 Run Time: 13:50 Method: 8260B
File ID: 17M016433 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG546844 Cal ID: HPMS17 - 11-NOV-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.8	ug/L	0.465	4.43	20	
1,1-Dichloroethene	CCC	50.0	52.7	ug/L	0.414	5.45	20	
1,2-Dichloropropane	CCC	50.0	47.8	ug/L	0.283	4.33	20	
Ethylbenzene	CCC	50.0	49.6	ug/L	0.551	0.780	20	
Toluene	CCC	50.0	48.8	ug/L	1.55	2.42	20	
Vinyl Chloride	CCC	50.0	51.7	ug/L	0.350	3.49	20	
Bromoform	SPCC	50.0	49.4	ug/L	0.248	1.15	20	
Chlorobenzene	SPCC	50.0	49.6	ug/L	1.01	0.771	20	
Chloromethane	SPCC	50.0	44.7	ug/L	0.338	10.7	20	
1,1-Dichloroethane	SPCC	50.0	49.0	ug/L	0.481	2.00	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	45.1	ug/L	0.560	9.85	20	
Xylenes		150	151	ug/L	0.663	0.956	20	
Acetone		50.0	42.2	ug/L	0.0424	15.6	20	
Benzene		50.0	48.3	ug/L	1.04	3.33	20	
Bromobenzene		50.0	48.7	ug/L	0.834	2.52	20	
Bromochloromethane		50.0	49.8	ug/L	0.173	0.407	20	
Bromodichloromethane		50.0	49.0	ug/L	0.360	1.94	20	
Bromomethane		50.0	56.3	ug/L	0.201	12.7	20	
2-Butanone		50.0	43.0	ug/L	0.0709	14.1	20	
n-Butylbenzene		50.0	52.4	ug/L	2.81	4.89	20	
sec-Butylbenzene		50.0	51.4	ug/L	3.46	2.77	20	
tert-Butylbenzene		50.0	50.6	ug/L	0.508	1.11	20	
Carbon Disulfide		50.0	51.2	ug/L	0.847	2.46	20	
Carbon Tetrachloride		50.0	50.4	ug/L	0.381	0.773	20	
Dibromochloromethane		50.0	48.2	ug/L	0.366	3.66	20	
Chloroethane		50.0	52.6	ug/L	0.182	5.24	20	
2-Chlorotoluene		50.0	49.9	ug/L	2.18	0.168	20	
4-Chlorotoluene		50.0	49.6	ug/L	2.23	0.776	20	
1,2-Dibromo-3-Chloropropane		50.0	44.5	ug/L	0.104	11.0	20	
1,2-Dibromoethane		50.0	44.9	ug/L	0.263	10.1	20	
Dibromomethane		50.0	45.8	ug/L	0.146	8.34	20	
1,2-Dichlorobenzene		50.0	48.8	ug/L	1.46	2.36	20	
1,3-Dichlorobenzene		50.0	50.5	ug/L	1.59	1.09	20	
1,4-Dichlorobenzene		50.0	49.3	ug/L	1.58	1.42	20	
Dichlorodifluoromethane		50.0	53.8	ug/L	0.382	7.57	20	
1,2-Dichloroethane		50.0	48.5	ug/L	0.314	3.02	20	
cis-1,2-Dichloroethene		50.0	48.1	ug/L	0.283	3.90	20	
trans-1,2-Dichloroethene		50.0	49.5	ug/L	0.254	1.05	20	
1,3-Dichloropropane		50.0	46.1	ug/L	0.431	7.82	20	
2,2-Dichloropropane		50.0	55.2	ug/L	0.406	10.4	20	
cis-1,3-Dichloropropene		50.0	48.9	ug/L	0.423	2.23	20	
trans-1,3-Dichloropropene		50.0	48.6	ug/L	0.360	2.83	20	

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110793 Run Date: 11/13/2015 Sample ID: WG546843-02
Instrument ID: HPMS17 Run Time: 13:50 Method: 8260B
File ID: 17M016433 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG546844 Cal ID: HPMS17 - 11-NOV-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	49.8	ug/L	0.360	0.389	20	
2-Hexanone		50.0	41.5	ug/L	0.157	17.0	20	
Hexachlorobutadiene		50.0	51.4	ug/L	0.708	2.88	20	
Isopropylbenzene		50.0	50.3	ug/L	1.73	0.639	20	
p-Isopropyltoluene		50.0	52.2	ug/L	3.04	4.49	20	
4-Methyl-2-Pentanone		50.0	41.7	ug/L	0.0612	16.5	20	
Methylene Chloride		50.0	44.8	ug/L	0.260	10.4	20	
Naphthalene		50.0	45.1	ug/L	1.99	9.89	20	
n-Propylbenzene		50.0	51.6	ug/L	3.69	3.18	20	
Styrene		50.0	49.6	ug/L	1.09	0.737	20	
1,1,1,2-Tetrachloroethane		50.0	49.8	ug/L	0.376	0.379	20	
Tetrachloroethene		50.0	50.2	ug/L	0.428	0.301	20	
1,2,3-Trichlorobenzene		50.0	47.9	ug/L	1.05	4.29	20	
1,2,4-Trichlorobenzene		50.0	50.2	ug/L	1.20	0.308	20	
1,1,1-Trichloroethane		50.0	49.4	ug/L	0.422	1.17	20	
1,1,2-Trichloroethane		50.0	44.3	ug/L	0.261	11.3	20	
Trichloroethene		50.0	49.0	ug/L	0.292	1.95	20	
Trichlorofluoromethane		50.0	58.0	ug/L	0.457	16.0	20	
1,2,3-Trichloropropane		50.0	43.2	ug/L	0.149	13.5	20	
1,2,4-Trimethylbenzene		50.0	50.5	ug/L	2.76	1.05	20	
1,3,5-Trimethylbenzene		50.0	50.5	ug/L	2.77	1.05	20	
o-Xylene		50.0	48.9	ug/L	0.643	2.27	20	
m-,p-Xylene		100	103	ug/L	0.684	2.57	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110793 Run Date: 11/13/2015 Sample ID: WG546879-02
Instrument ID: HPMS11 Run Time: 15:40 Method: 8260B
File ID: 11M10250 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG546880 Cal ID: HPMS11 - 09-OCT-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.3	ug/L	0.462	5.30	20	
1,1-Dichloroethene	CCC	50.0	47.1	ug/L	0.430	5.72	20	
1,2-Dichloropropane	CCC	50.0	47.6	ug/L	0.292	4.84	20	
Ethylbenzene	CCC	50.0	53.6	ug/L	0.504	7.13	20	
Toluene	CCC	50.0	54.3	ug/L	1.40	8.58	20	
Vinyl Chloride	CCC	50.0	45.5	ug/L	0.259	8.91	20	
Bromoform	SPCC	50.0	64.9	ug/L	0.233	29.8	20	*
Chlorobenzene	SPCC	50.0	52.4	ug/L	0.985	4.86	20	
Chloromethane	SPCC	50.0	44.9	ug/L	0.318	10.2	20	
1,1-Dichloroethane	SPCC	50.0	46.3	ug/L	0.511	7.46	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	58.1	ug/L	0.483	16.2	20	
Xylenes		150	163	ug/L	0.605	8.73	20	
Acetone		50.0	47.6	ug/L	0.0613	4.72	20	
Benzene		50.0	48.3	ug/L	1.06	3.45	20	
Bromobenzene		50.0	55.5	ug/L	0.823	11.0	20	
Bromochloromethane		50.0	51.0	ug/L	0.199	2.02	20	
Bromodichloromethane		50.0	55.2	ug/L	0.359	10.4	20	
Bromomethane		50.0	49.4	ug/L	0.189	1.11	20	
2-Butanone		50.0	47.2	ug/L	0.0977	5.59	20	
n-Butylbenzene		50.0	58.1	ug/L	2.02	16.1	20	
sec-Butylbenzene		50.0	57.0	ug/L	2.62	14.0	20	
tert-Butylbenzene		50.0	57.3	ug/L	0.691	14.6	20	
Carbon Disulfide		50.0	54.3	ug/L	0.839	8.58	20	
Carbon Tetrachloride		50.0	56.1	ug/L	0.383	12.1	20	
Dibromochloromethane		50.0	61.5	ug/L	0.351	23.0	20	*
Chloroethane		50.0	50.3	ug/L	0.209	0.603	20	
2-Chlorotoluene		50.0	53.3	ug/L	1.97	6.70	20	
4-Chlorotoluene		50.0	51.1	ug/L	1.75	2.23	20	
1,2-Dibromo-3-Chloropropane		50.0	46.2	ug/L	0.0755	7.60	20	
1,2-Dibromoethane		50.0	58.1	ug/L	0.270	16.2	20	
Dibromomethane		50.0	49.4	ug/L	0.157	1.27	20	
1,2-Dichlorobenzene		50.0	55.8	ug/L	1.44	11.5	20	
1,3-Dichlorobenzene		50.0	55.5	ug/L	1.55	11.1	20	
1,4-Dichlorobenzene		50.0	54.1	ug/L	1.52	8.27	20	
Dichlorodifluoromethane		50.0	52.2	ug/L	0.387	4.39	20	
1,2-Dichloroethane		50.0	44.0	ug/L	0.360	12.1	20	
cis-1,2-Dichloroethene		50.0	48.5	ug/L	0.315	2.91	20	
trans-1,2-Dichloroethene		50.0	48.8	ug/L	0.280	2.46	20	
1,3-Dichloropropane		50.0	51.0	ug/L	0.421	1.91	20	
2,2-Dichloropropane		50.0	44.3	ug/L	0.338	11.4	20	
cis-1,3-Dichloropropene		50.0	51.1	ug/L	0.418	2.12	20	
trans-1,3-Dichloropropene		50.0	55.2	ug/L	0.429	10.4	20	

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110793 Run Date: 11/13/2015 Sample ID: WG546879-02
Instrument ID: HPMS11 Run Time: 15:40 Method: 8260B
File ID: 11M10250 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG546880 Cal ID: HPMS11 - 09-OCT-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	49.6	ug/L	0.360	0.736	20	
2-Hexanone		50.0	50.8	ug/L	0.174	1.65	20	
Hexachlorobutadiene		50.0	56.7	ug/L	0.370	13.4	20	
Isopropylbenzene		50.0	55.9	ug/L	1.51	11.8	20	
p-Isopropyltoluene		50.0	59.1	ug/L	2.39	18.3	20	
4-Methyl-2-Pentanone		50.0	48.9	ug/L	0.0855	2.20	20	
Methylene Chloride		50.0	48.8	ug/L	0.270	2.45	20	
Naphthalene		50.0	60.0	ug/L	1.97	20.0	20	
n-Propylbenzene		50.0	57.2	ug/L	3.02	14.3	20	
Styrene		50.0	56.7	ug/L	1.04	13.3	20	
1,1,1,2-Tetrachloroethane		50.0	58.5	ug/L	0.362	16.9	20	
Tetrachloroethene		50.0	56.3	ug/L	0.337	12.7	20	
1,2,3-Trichlorobenzene		50.0	57.9	ug/L	0.968	15.7	20	
1,2,4-Trichlorobenzene		50.0	56.9	ug/L	1.06	13.9	20	
1,1,1-Trichloroethane		50.0	51.0	ug/L	0.418	2.08	20	
1,1,2-Trichloroethane		50.0	54.9	ug/L	0.265	9.87	20	
Trichloroethene		50.0	49.3	ug/L	0.323	1.45	20	
Trichlorofluoromethane		50.0	48.5	ug/L	0.444	3.02	20	
1,2,3-Trichloropropane		50.0	53.5	ug/L	0.149	7.07	20	
1,2,4-Trimethylbenzene		50.0	55.8	ug/L	2.18	11.6	20	
1,3,5-Trimethylbenzene		50.0	55.6	ug/L	2.13	11.2	20	
o-Xylene		50.0	55.0	ug/L	0.615	9.95	20	
m-,p-Xylene		100	108	ug/L	0.595	8.12	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110793 Run Date: 11/16/2015 Sample ID: WG547022-02
Instrument ID: HPMS8 Run Time: 11:39 Method: 8260B
File ID: 8M408707 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG547025 Cal ID: HPMS8 - 30-SEP-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	51.6	ug/L	0.479	3.16	20	
1,1-Dichloroethene	CCC	50.0	54.0	ug/L	0.438	8.07	20	
1,2-Dichloropropane	CCC	50.0	50.4	ug/L	0.268	0.884	20	
Ethylbenzene	CCC	50.0	49.3	ug/L	0.547	1.39	20	
Toluene	CCC	50.0	50.2	ug/L	1.43	0.379	20	
Vinyl Chloride	CCC	50.0	57.9	ug/L	0.531	15.8	20	
Bromoform	SPCC	50.0	51.3	ug/L	0.180	2.64	20	
Chlorobenzene	SPCC	50.0	49.7	ug/L	0.947	0.547	20	
Chloromethane	SPCC	50.0	57.7	ug/L	0.669	15.3	20	
1,1-Dichloroethane	SPCC	50.0	52.4	ug/L	0.512	4.75	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	45.2	ug/L	0.417	9.61	20	
Xylenes		150	151	ug/L	0.642	0.964	20	
Acetone		50.0	51.0	ug/L	0.0378	1.94	20	
Benzene		50.0	51.9	ug/L	1.02	3.75	20	
Bromobenzene		50.0	48.8	ug/L	0.717	2.47	20	
Bromochloromethane		50.0	52.3	ug/L	0.142	4.65	20	
Bromodichloromethane		50.0	50.8	ug/L	0.348	1.67	20	
Bromomethane		50.0	59.3	ug/L	0.188	18.7	20	
2-Butanone		50.0	47.9	ug/L	0.0612	4.24	20	
n-Butylbenzene		50.0	54.7	ug/L	2.52	9.50	20	
sec-Butylbenzene		50.0	49.3	ug/L	3.05	1.38	20	
tert-Butylbenzene		50.0	48.6	ug/L	0.532	2.84	20	
Carbon Disulfide		50.0	54.1	ug/L	0.889	8.11	20	
Carbon Tetrachloride		50.0	54.0	ug/L	0.402	7.91	20	
Dibromochloromethane		50.0	50.1	ug/L	0.292	0.263	20	
Chloroethane		50.0	54.3	ug/L	0.203	8.52	20	
2-Chlorotoluene		50.0	49.1	ug/L	2.36	1.77	20	
4-Chlorotoluene		50.0	48.7	ug/L	2.02	2.70	20	
1,2-Dibromo-3-Chloropropane		50.0	42.8	ug/L	0.0693	14.3	20	
1,2-Dibromoethane		50.0	47.4	ug/L	0.214	5.11	20	
Dibromomethane		50.0	49.1	ug/L	0.124	1.72	20	
1,2-Dichlorobenzene		50.0	49.4	ug/L	1.27	1.16	20	
1,3-Dichlorobenzene		50.0	50.3	ug/L	1.48	0.675	20	
1,4-Dichlorobenzene		50.0	49.6	ug/L	1.45	0.818	20	
Dichlorodifluoromethane		50.0	59.1	ug/L	0.449	18.1	20	
1,2-Dichloroethane		50.0	50.4	ug/L	0.321	0.754	20	
cis-1,2-Dichloroethene		50.0	52.1	ug/L	0.286	4.10	20	
trans-1,2-Dichloroethene		50.0	53.0	ug/L	0.408	6.09	20	
1,3-Dichloropropane		50.0	46.3	ug/L	0.373	7.34	20	
2,2-Dichloropropane		50.0	52.2	ug/L	0.426	4.32	20	
cis-1,3-Dichloropropene		50.0	50.7	ug/L	0.385	1.35	20	
trans-1,3-Dichloropropene		50.0	49.1	ug/L	0.428	1.83	20	

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110793 Run Date: 11/16/2015 Sample ID: WG547022-02
Instrument ID: HPMS8 Run Time: 11:39 Method: 8260B
File ID: 8M408707 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG547025 Cal ID: HPMS8 - 30-SEP-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	51.8	ug/L	0.372	3.60	20	
2-Hexanone		50.0	41.4	ug/L	0.0588	17.1	20	
Hexachlorobutadiene		50.0	51.0	ug/L	0.430	1.98	20	
Isopropylbenzene		50.0	51.8	ug/L	1.60	3.67	20	
p-Isopropyltoluene		50.0	51.8	ug/L	2.56	3.69	20	
4-Methyl-2-Pentanone		50.0	44.0	ug/L	0.0494	12.0	20	
Methylene Chloride		50.0	50.4	ug/L	0.254	0.877	20	
Naphthalene		50.0	52.1	ug/L	1.33	4.20	20	
n-Propylbenzene		50.0	48.3	ug/L	3.50	3.34	20	
Styrene		50.0	51.3	ug/L	1.05	2.58	20	
1,1,1,2-Tetrachloroethane		50.0	51.2	ug/L	0.361	2.43	20	
Tetrachloroethene		50.0	50.9	ug/L	0.307	1.79	20	
1,2,3-Trichlorobenzene		50.0	50.4	ug/L	0.758	0.878	20	
1,2,4-Trichlorobenzene		50.0	51.8	ug/L	0.913	3.53	20	
1,1,1-Trichloroethane		50.0	52.4	ug/L	0.437	4.79	20	
1,1,2-Trichloroethane		50.0	47.8	ug/L	0.216	4.44	20	
Trichloroethene		50.0	50.3	ug/L	0.267	0.693	20	
Trichlorofluoromethane		50.0	53.9	ug/L	0.478	7.82	20	
1,2,3-Trichloropropane		50.0	45.8	ug/L	0.118	8.31	20	
1,2,4-Trimethylbenzene		50.0	51.5	ug/L	2.59	3.07	20	
1,3,5-Trimethylbenzene		50.0	50.1	ug/L	2.49	0.134	20	
o-Xylene		50.0	49.4	ug/L	0.636	1.13	20	
m-,p-Xylene		100	102	ug/L	0.649	2.01	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110793 Run Date: 11/24/2015 Sample ID: WG548398-02
Instrument ID: HPMS17 Run Time: 20:26 Method: 8260B
File ID: 17M016666 Analyst: JDS/FJB QC Key: DOD4
Workgroup (AAB#): WG548399 Cal ID: HPMS17 - 11-NOV-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.7	ug/L	0.465	4.52	20	
1,1-Dichloroethene	CCC	50.0	53.5	ug/L	0.420	7.09	20	
1,2-Dichloropropane	CCC	50.0	46.3	ug/L	0.274	7.40	20	
Ethylbenzene	CCC	50.0	50.6	ug/L	0.562	1.19	20	
Toluene	CCC	50.0	50.0	ug/L	1.58	0.0940	20	
Vinyl Chloride	CCC	50.0	51.0	ug/L	0.345	1.98	20	
Bromoform	SPCC	50.0	53.1	ug/L	0.266	6.13	20	
Chlorobenzene	SPCC	50.0	50.4	ug/L	1.03	0.731	20	
Chloromethane	SPCC	50.0	41.3	ug/L	0.313	17.4	20	
1,1-Dichloroethane	SPCC	50.0	48.4	ug/L	0.475	3.27	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	47.4	ug/L	0.588	5.18	20	
Xylenes		150	155	ug/L	0.677	3.21	20	
Acetone		50.0	44.1	ug/L	0.0443	11.8	20	
Benzene		50.0	47.6	ug/L	1.02	4.89	20	
Bromobenzene		50.0	49.9	ug/L	0.854	0.246	20	
Bromochloromethane		50.0	49.4	ug/L	0.172	1.13	20	
Bromodichloromethane		50.0	48.5	ug/L	0.356	3.08	20	
Bromomethane		50.0	55.5	ug/L	0.198	11.1	20	
2-Butanone		50.0	42.2	ug/L	0.0696	15.6	20	
n-Butylbenzene		50.0	54.1	ug/L	2.90	8.18	20	
sec-Butylbenzene		50.0	53.9	ug/L	3.62	7.71	20	
tert-Butylbenzene		50.0	52.0	ug/L	0.522	3.92	20	
Carbon Disulfide		50.0	47.0	ug/L	0.776	6.10	20	
Carbon Tetrachloride		50.0	51.7	ug/L	0.391	3.36	20	
Dibromochloromethane		50.0	49.5	ug/L	0.377	1.01	20	
Chloroethane		50.0	64.8	ug/L	0.224	29.5	20	*
2-Chlorotoluene		50.0	51.3	ug/L	2.24	2.54	20	
4-Chlorotoluene		50.0	51.0	ug/L	2.29	2.06	20	
1,2-Dibromo-3-Chloropropane		50.0	45.6	ug/L	0.106	8.90	20	
1,2-Dibromoethane		50.0	47.3	ug/L	0.277	5.41	20	
Dibromomethane		50.0	46.7	ug/L	0.149	6.65	20	
1,2-Dichlorobenzene		50.0	49.9	ug/L	1.49	0.148	20	
1,3-Dichlorobenzene		50.0	52.5	ug/L	1.65	4.95	20	
1,4-Dichlorobenzene		50.0	50.9	ug/L	1.63	1.87	20	
Dichlorodifluoromethane		50.0	53.5	ug/L	0.381	7.02	20	
1,2-Dichloroethane		50.0	48.5	ug/L	0.314	2.94	20	
cis-1,2-Dichloroethene		50.0	47.4	ug/L	0.279	5.17	20	
trans-1,2-Dichloroethene		50.0	48.7	ug/L	0.250	2.57	20	
1,3-Dichloropropane		50.0	47.0	ug/L	0.440	5.95	20	
2,2-Dichloropropane		50.0	53.2	ug/L	0.391	6.44	20	
cis-1,3-Dichloropropene		50.0	47.7	ug/L	0.413	4.65	20	
trans-1,3-Dichloropropene		50.0	47.9	ug/L	0.355	4.19	20	

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110793 Run Date: 11/24/2015 Sample ID: WG548398-02
Instrument ID: HPMS17 Run Time: 20:26 Method: 8260B
File ID: 17M016666 Analyst: JDS/FJB QC Key: DOD4
Workgroup (AAB#): WG548399 Cal ID: HPMS17 - 11-NOV-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	49.4	ug/L	0.357	1.27	20	
2-Hexanone		50.0	39.5	ug/L	0.150	21.1	20	*
Hexachlorobutadiene		50.0	49.5	ug/L	0.681	1.05	20	
Isopropylbenzene		50.0	52.0	ug/L	1.78	3.91	20	
p-Isopropyltoluene		50.0	54.0	ug/L	3.14	8.05	20	
4-Methyl-2-Pentanone		50.0	37.8	ug/L	0.0555	24.3	20	*
Methylene Chloride		50.0	43.9	ug/L	0.255	12.2	20	
Naphthalene		50.0	44.1	ug/L	1.95	11.8	20	
n-Propylbenzene		50.0	53.9	ug/L	3.85	7.85	20	
Styrene		50.0	50.6	ug/L	1.11	1.24	20	
1,1,1,2-Tetrachloroethane		50.0	50.6	ug/L	0.383	1.24	20	
Tetrachloroethene		50.0	51.3	ug/L	0.438	2.60	20	
1,2,3-Trichlorobenzene		50.0	46.3	ug/L	1.02	7.32	20	
1,2,4-Trichlorobenzene		50.0	48.9	ug/L	1.17	2.15	20	
1,1,1-Trichloroethane		50.0	49.4	ug/L	0.421	1.27	20	
1,1,2-Trichloroethane		50.0	45.3	ug/L	0.267	9.46	20	
Trichloroethene		50.0	49.1	ug/L	0.293	1.75	20	
Trichlorofluoromethane		50.0	62.4	ug/L	0.490	24.8	20	*
1,2,3-Trichloropropane		50.0	46.6	ug/L	0.161	6.76	20	
1,2,4-Trimethylbenzene		50.0	51.9	ug/L	2.84	3.85	20	
1,3,5-Trimethylbenzene		50.0	52.2	ug/L	2.86	4.42	20	
o-Xylene		50.0	49.7	ug/L	0.654	0.565	20	
m-,p-Xylene		100	105	ug/L	0.701	5.09	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4501856
Report generated 12/01/2015 17:02

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15110793
Instrument ID: HPMS17
Workgroup (AAB#): WG546844

ICAL CCV Number: WG546498-02
CAL ID: HPMS17 - 11-NOV-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG546498-02	NA	NA	185646	339437	458822
Upper Limit	NA	NA	371292	678874	917644
Lower Limit	NA	NA	92823	169719	229411
L15110793-01	1.00	01	171366	300816	396552
L15110793-02	1.00	01	163582	296680	393460
L15110793-03	1.00	01	161947	290744	383464
L15110793-04	1.00	01	163854	294374	389656
L15110793-05	1.00	01	160927	291566	388098
L15110793-06	1.00	01	160251	291491	384612
WG546844-01	1.00	01	171439	308293	407991
WG546844-02	1.00	01	170620	299327	392527

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4501857
Report generated 12/01/2015 17:02

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15110793
Instrument ID: HPMS11
Workgroup (AAB#): WG546880

ICAL CCV Number: WG542333-08
CAL ID: HPMS11-09-OCT-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG542333-08	NA	NA	381033	623738	696692
Upper Limit	NA	NA	762066	1247476	1393384
Lower Limit	NA	NA	190517	311869	348346
L15110793-09	1.00	01	449508	763733	924766
L15110793-13	1.00	01	450671	762422	918643
L15110793-15	1.00	01	446978	762474	925461
L15110793-17	1.00	01	445786	759526	930081
WG546880-01	1.00	01	458272	778532	955796
WG546880-02	1.00	01	459892	767443	931980
WG546880-03	1.00	01	460534	776307	931289

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4501857
Report generated 12/01/2015 17:02

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15110793
Instrument ID: HPMS8
Workgroup (AAB#): WG547025

ICAL CCV Number: WG540912-08
CAL ID: HPMS8-30-SEP-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG540912-08	NA	NA	378981	687265	938292
Upper Limit	NA	NA	757962	1374530	1876584
Lower Limit	NA	NA	189491	343633	469146
L15110793-11	20.0	DL01	414866	790200	1069450
WG547025-01	1.00	01	495063	911287	1226109
WG547025-02	1.00	01	546215	958081	1288290
WG547025-03	1.00	01	564844	984469	1333102

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4501857
Report generated 12/01/2015 17:02

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15110793
Instrument ID: HPMS17
Workgroup (AAB#): WG548399

ICAL CCV Number: WG546498-02
CAL ID: HPMS17-11-NOV-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG546498-02	NA	NA	185646	339437	458822
Upper Limit	NA	NA	371292	678874	917644
Lower Limit	NA	NA	92823	169719	229411
L15110793-07	50.0	DL01	131558	233006	307708
WG548399-01	1.00	01	132306	244149	329539
WG548399-02	1.00	01	137777	240799	320627

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4501857
Report generated 12/01/2015 17:02

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15110793
Instrument ID: HPMS8
Workgroup (AAB#): WG547025

ICAL CCV Number: WG540912-08
CAL ID: HPMS8 - 30-SEP-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG540912-08	NA	NA	17.6	14.58	10.72
Upper Limit	NA	NA	18.1	15.08	11.22
Lower Limit	NA	NA	17.1	14.08	10.22
L15110793-11	20.0	DL01	17.6	14.57	10.71
WG547025-01	1.00	01	17.6	14.58	10.72
WG547025-02	1.00	01	17.6	14.58	10.72
WG547025-03	1.00	01	17.6	14.58	10.72

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4501859
Report generated: 12/01/2015 17:02

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15110793
Instrument ID: HPMS11
Workgroup (AAB#): WG546880

ICAL CCV Number: WG542333-08
CAL ID: HPMS11-09-OCT-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG542333-08	NA	NA	17.11	14.3	10.66
Upper Limit	NA	NA	17.61	14.8	11.16
Lower Limit	NA	NA	16.61	13.8	10.16
L15110793-09	1.00	01	17.1	14.28	10.64
L15110793-13	1.00	01	17.1	14.28	10.64
L15110793-15	1.00	01	17.1	14.28	10.64
L15110793-17	1.00	01	17.1	14.28	10.64
WG546880-01	1.00	01	17.1	14.28	10.65
WG546880-02	1.00	01	17.1	14.28	10.65
WG546880-03	1.00	01	17.1	14.28	10.65

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4501859
Report generated: 12/01/2015 17:02

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15110793
Instrument ID: HPMS17
Workgroup (AAB#): WG546844

ICAL CCV Number: WG546498-02
CAL ID: HPMS17 - 11-NOV-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG546498-02	NA	NA	9.305	7.976	5.141
Upper Limit	NA	NA	9.805	8.476	5.641
Lower Limit	NA	NA	8.805	7.476	4.641
L15110793-01	1.00	01	9.3	7.97	5.14
L15110793-02	1.00	01	9.3	7.97	5.14
L15110793-03	1.00	01	9.3	7.97	5.14
L15110793-04	1.00	01	9.3	7.97	5.14
L15110793-05	1.00	01	9.3	7.97	5.14
L15110793-06	1.00	01	9.3	7.97	5.14
WG546844-01	1.00	01	9.3	7.97	5.14
WG546844-02	1.00	01	9.3	7.97	5.14

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4501859
Report generated: 12/01/2015 17:02

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15110793
Instrument ID: HPMS17
Workgroup (AAB#): WG548399

ICAL CCV Number: WG546498-02
CAL ID: HPMS17-11-NOV-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG546498-02	NA	NA	9.305	7.976	5.141
Upper Limit	NA	NA	9.805	8.476	5.641
Lower Limit	NA	NA	8.805	7.476	4.641
L15110793-07	50.0	DL01	9.3	7.97	5.14
WG548399-01	1.00	01	9.3	7.97	5.14
WG548399-02	1.00	01	9.3	7.97	5.14

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4501859
Report generated: 12/01/2015 17:02

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111315\
Data File : 17M016446.D
Acq On : 13 Nov 2015 18:21
Operator : ADC
Sample : L15110793-01 A 826-LOW
Misc : 1,1
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Nov 16 13:07:27 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.141	96	396552	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	300816	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.302	152	171366	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.180	111	101495	24.9499 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.800%		
34) 1,2-Dichloroethane-d4	4.814	65	105718	27.0614 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 108.246%		
47) Toluene-d8	6.710	98	393131	25.3531 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.412%		
66) p-Bromofluorobenzene	8.723	95	148465	25.0624 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.250%		
Target Compounds					Qvalue
4) Vinyl Chloride	1.195	62	877	0.1634 ug/L	96
16) Acetone	2.347	43	1621	1.4501 ug/L #	74
23) cis-1,2-Dichloroethene	3.569	96	2714	0.5808 ug/L	94
32) 2-Butanone	4.273	43	1138	0.8701 ug/L #	38
37) Trichloroethene	5.324	130	584	0.1235 ug/L #	34

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\111315\
Data File : 17M016446.D
Acq On : 13 Nov 2015 18:21
Operator : ADC
Sample : L15110793-01 A 826-LOW
Misc : 1,1
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Nov 16 13:07:27 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

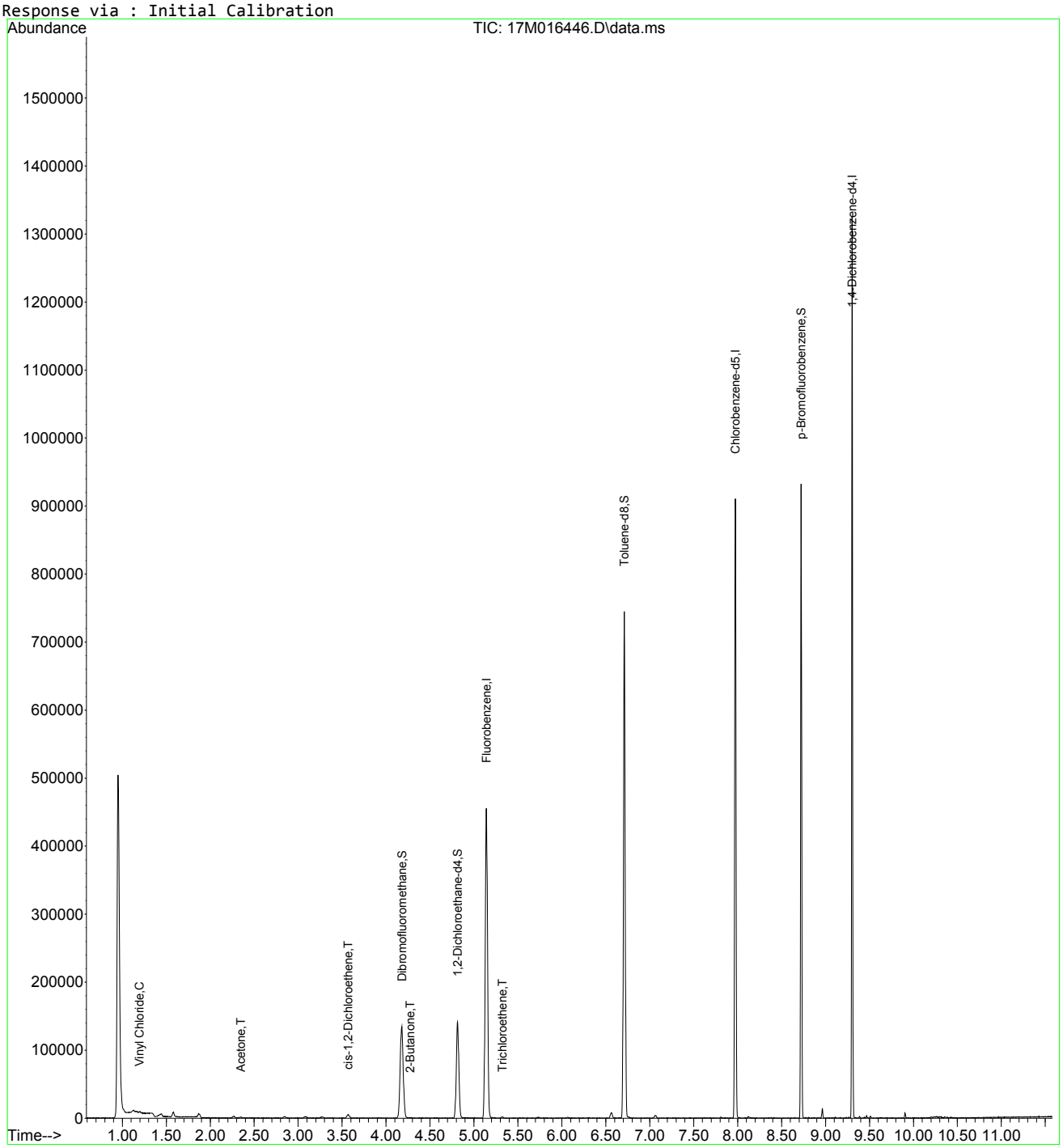

8260_VMS.M Mon Nov 16 13:07:28 2015 Page: 2

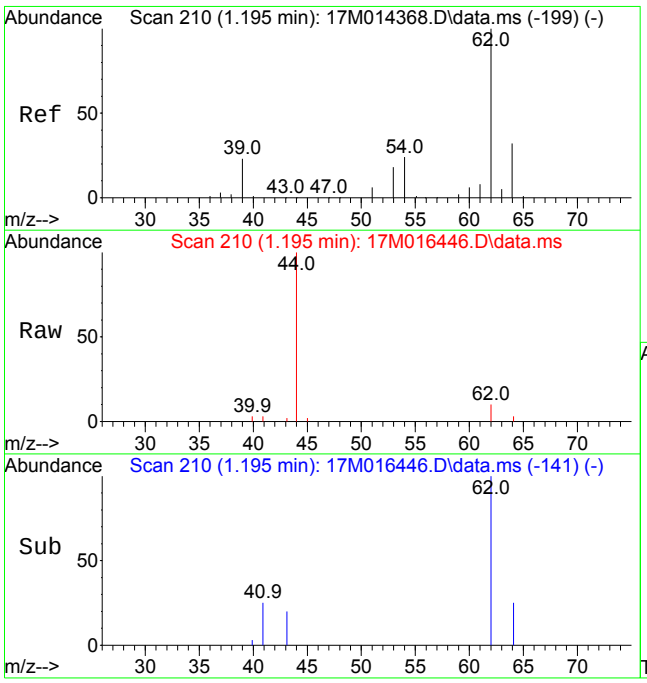

#4
Vinyl Chloride
Concen: 0.1634 ug/L
RT: 1.195 min Scan# 210
Delta R.T. -0.000 min
Lab File: 17M016446.D
Acq: 13 Nov 2015 18:21

Tgt Ion: 62 Resp: 877

Ion	Ratio	Lower	Upper
62	100		
64	29.9	19.2	44.8

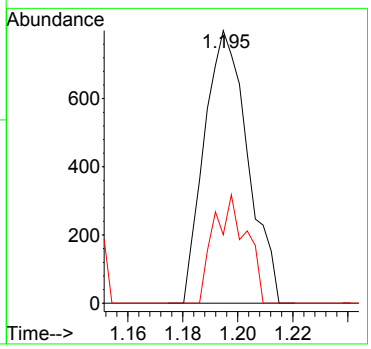

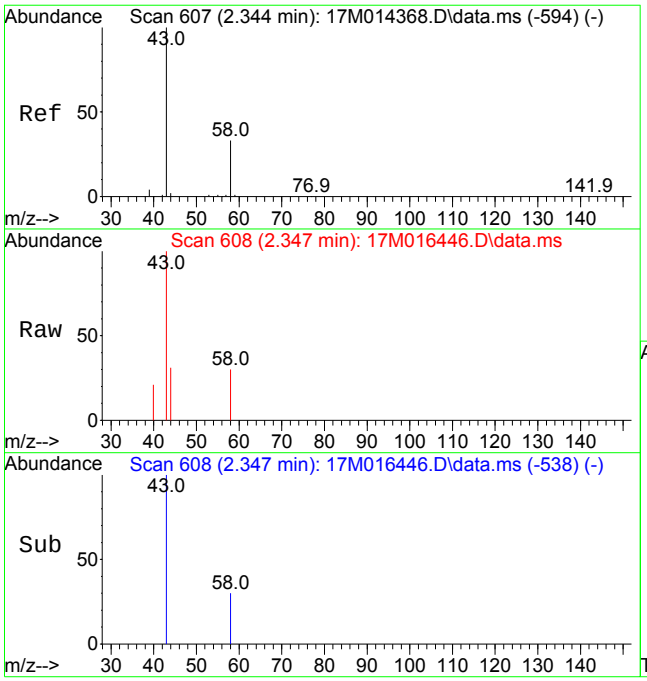

#16
Acetone
Concen: 1.4501 ug/L
RT: 2.347 min Scan# 608
Delta R.T. 0.003 min
Lab File: 17M016446.D
Acq: 13 Nov 2015 18:21

Tgt Ion: 43 Resp: 1621

Ion	Ratio	Lower	Upper
43	100		
58	18.0	19.4	45.4#

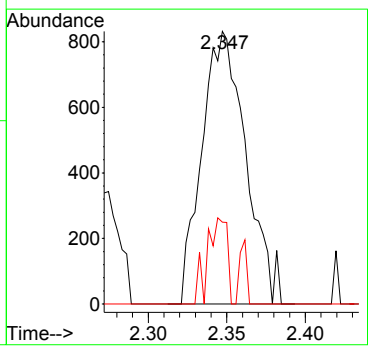

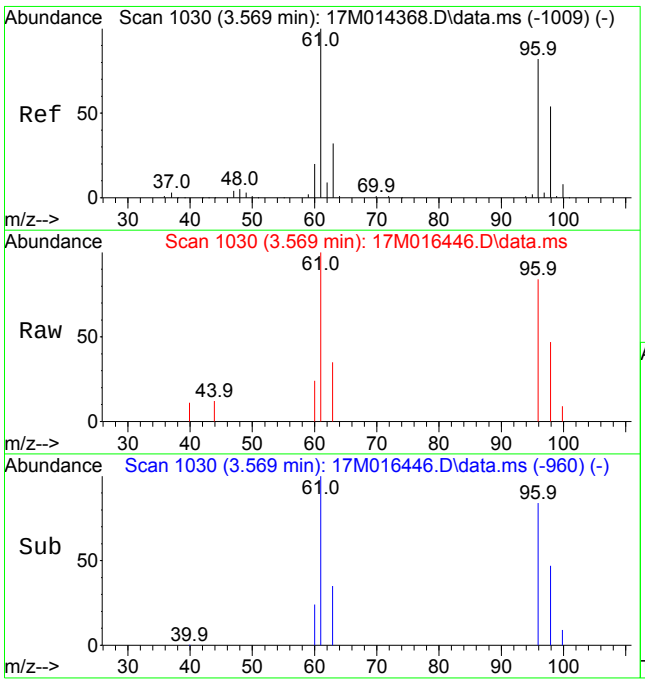

#23
cis-1,2-Dichloroethene
Concen: 0.5808 ug/L
RT: 3.569 min Scan# 1030
Delta R.T. 0.003 min
Lab File: 17M016446.D
Acq: 13 Nov 2015 18:21

Tgt Ion: 96 Resp: 2714

Ion	Ratio	Lower	Upper
96	100		
61	126.8	107.0	160.4

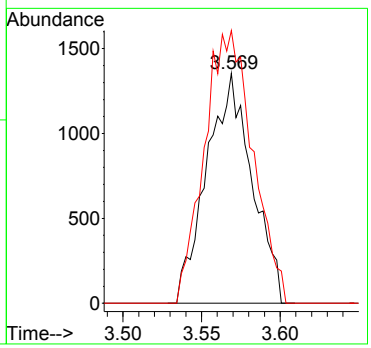

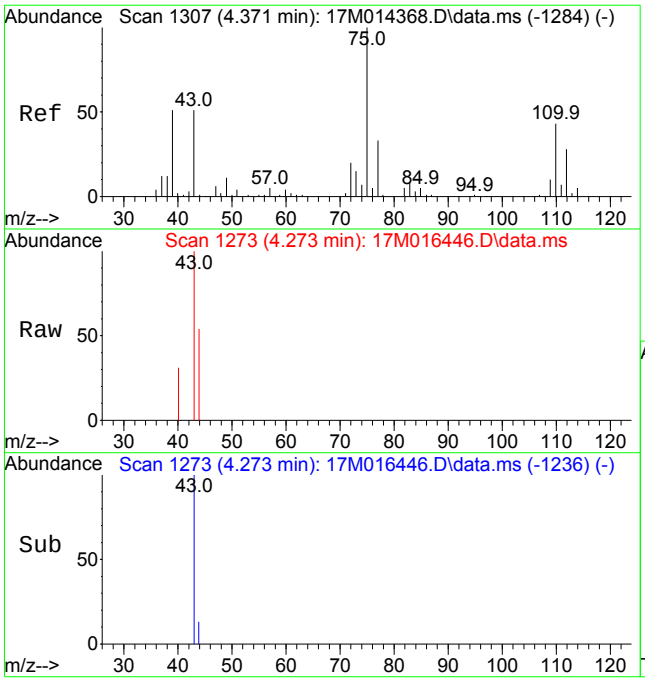

#32
2-Butanone
Concen: 0.8701 ug/L
RT: 4.273 min Scan# 1273
Delta R.T. -0.093 min
Lab File: 17M016446.D
Acq: 13 Nov 2015 18:21

Tgt Ion: 43 Resp: 1138

Ion	Ratio	Lower	Upper
43	100		
72	0.0	37.0	55.4#
57	0.0	7.2	10.8#

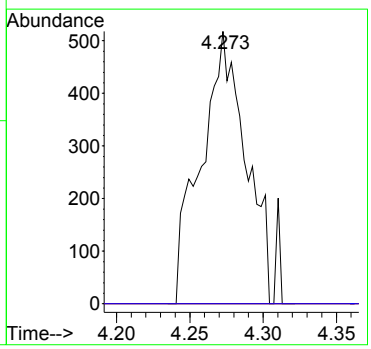

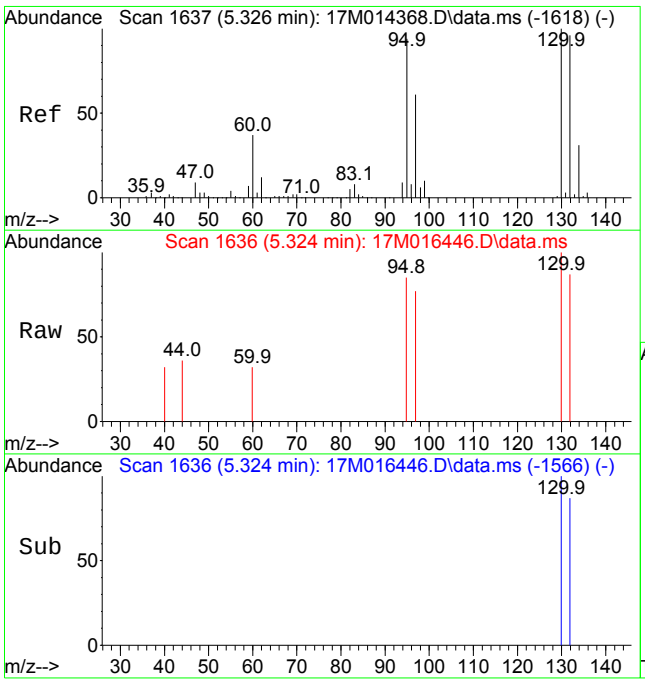

#37
Trichloroethene
Concen: 0.1235 ug/L
RT: 5.324 min Scan# 1636
Delta R.T. 0.003 min
Lab File: 17M016446.D
Acq: 13 Nov 2015 18:21

Tgt Ion:130 Resp: 584

Ion	Ratio	Lower	Upper
130	100		
60	0.0	25.3	58.9#

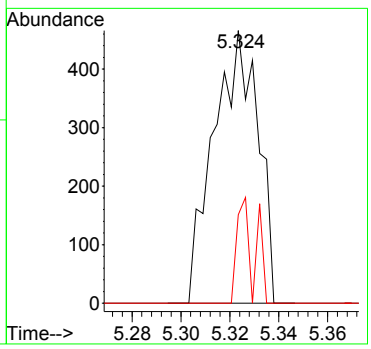

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111315\
Data File : 17M016447.D
Acq On : 13 Nov 2015 18:40
Operator : ADC
Sample : L15110793-02 A 826-LOW
Misc : 1,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Nov 16 13:07:30 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.141	96	393460	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	296680	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.305	152	163582	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.174	111	99274	24.5957 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.383%		
34) 1,2-Dichloroethane-d4	4.811	65	105856	27.3097 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 109.239%		
47) Toluene-d8	6.710	98	391862	25.6236 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.494%		
66) p-Bromofluorobenzene	8.723	95	148927	26.3367 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.347%		
Target Compounds					Qvalue
3) Chloromethane	1.151	50	961	0.1612 ug/L	84
4) Vinyl Chloride	1.195	62	5143	0.9660 ug/L	98
16) Acetone	2.347	43	2132	2.1221 ug/L	85
23) cis-1,2-Dichloroethene	3.566	96	33182	7.1569 ug/L	98
37) Trichloroethene	5.321	130	38469	8.1979 ug/L	99
49) Tetrachloroethene	7.087	166	9272	1.8303 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\111315\
Data File : 17M016447.D
Acq On : 13 Nov 2015 18:40
Operator : ADC
Sample : L15110793-02 A 826-LOW
Misc : 1,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Nov 16 13:07:30 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

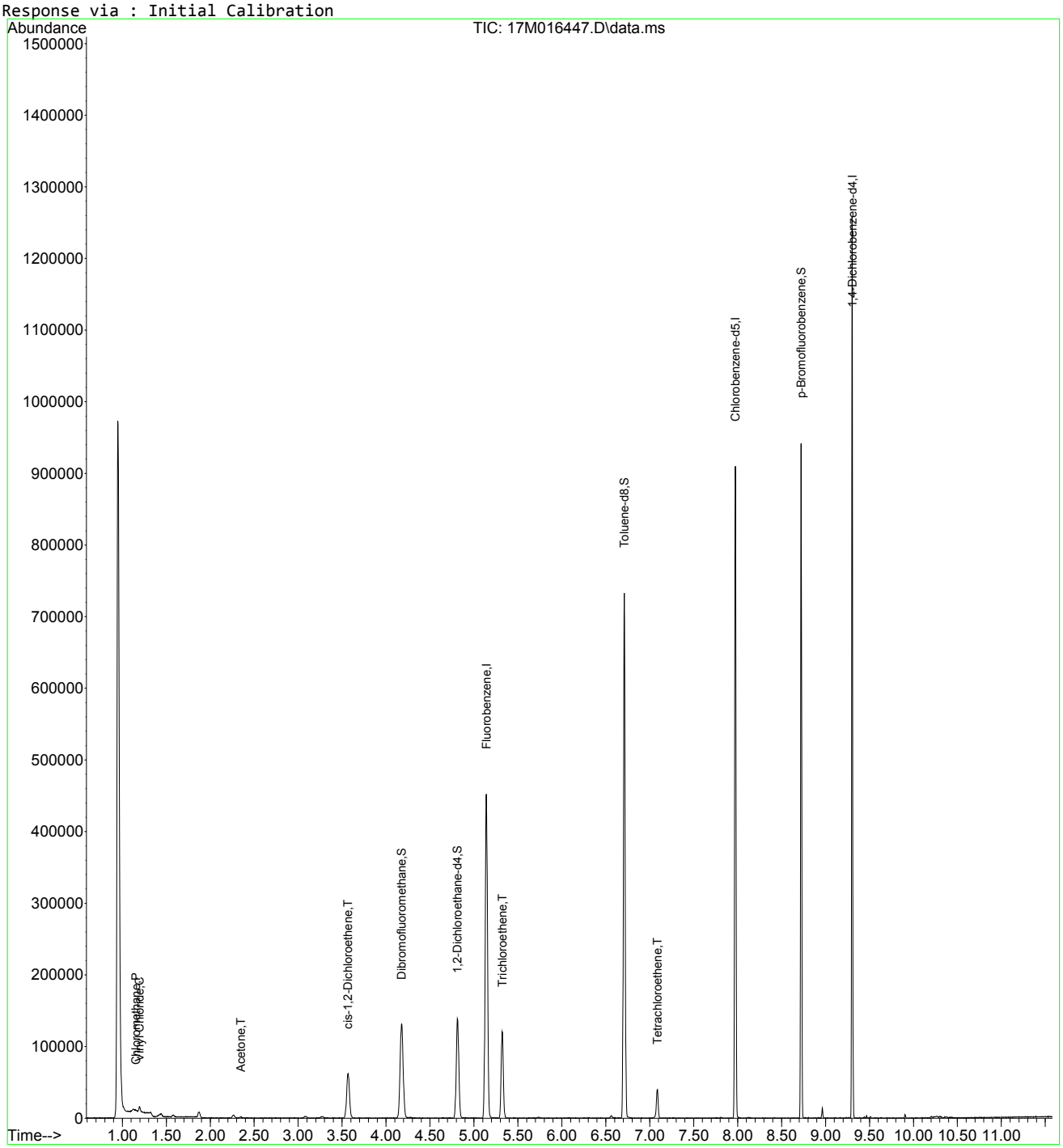

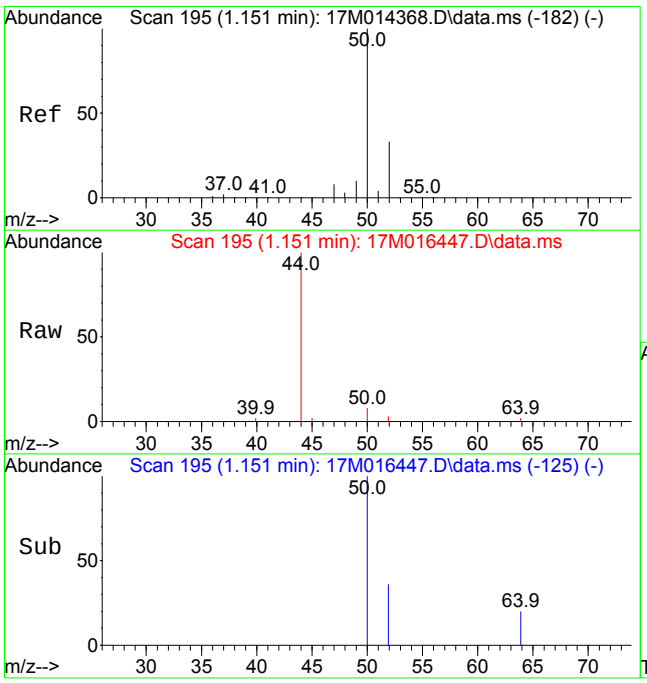

#3
Chloromethane
Concen: 0.1612 ug/L
RT: 1.151 min Scan# 195
Delta R.T. 0.002 min
Lab File: 17M016447.D
Acq: 13 Nov 2015 18:40

Tgt Ion: 50 Resp: 961

Ion	Ratio	Lower	Upper
50	100		
52	23.4	19.6	45.6

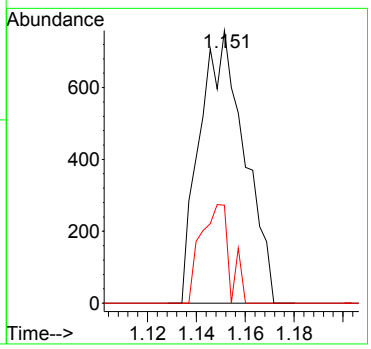

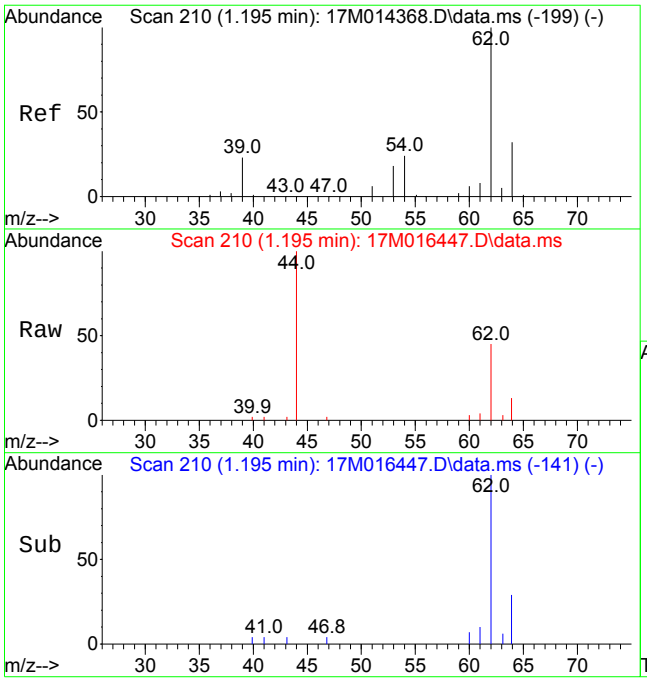

#4
Vinyl Chloride
Concen: 0.9660 ug/L
RT: 1.195 min Scan# 210
Delta R.T. -0.000 min
Lab File: 17M016447.D
Acq: 13 Nov 2015 18:40

Tgt Ion: 62 Resp: 5143

Ion	Ratio	Lower	Upper
62	100		
64	30.9	19.2	44.8

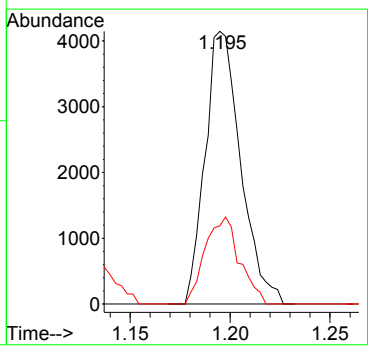

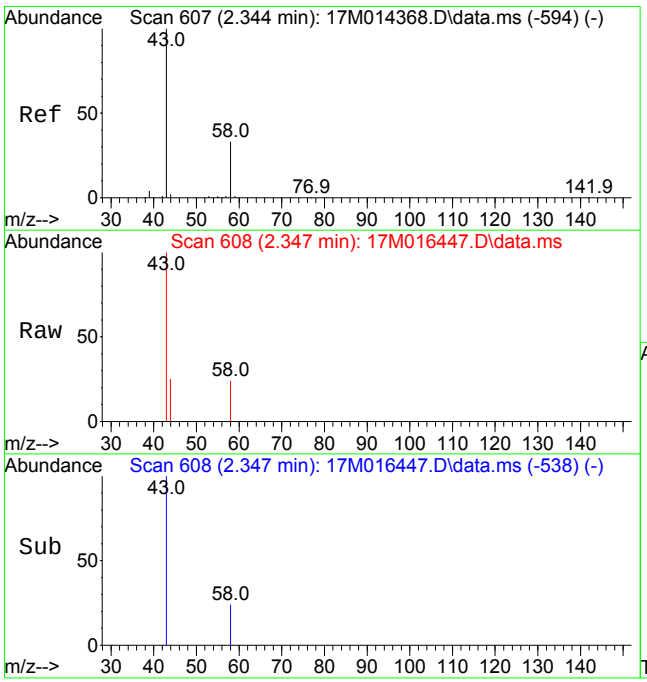

#16
Acetone
Concen: 2.1221 ug/L
RT: 2.347 min Scan# 608
Delta R.T. 0.003 min
Lab File: 17M016447.D
Acq: 13 Nov 2015 18:40

Tgt Ion: 43 Resp: 2132

Ion	Ratio	Lower	Upper
43	100		
58	23.8	19.4	45.4

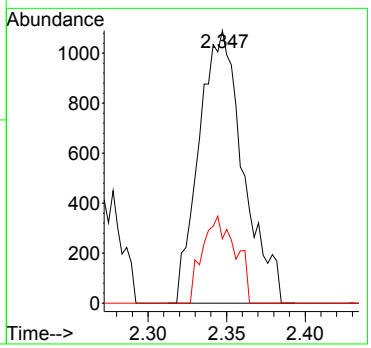

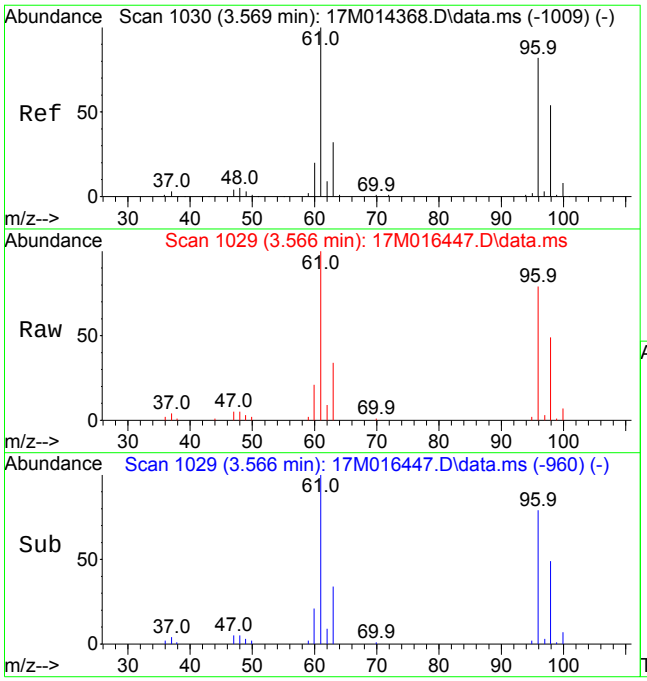

#23
cis-1,2-Dichloroethene
Concen: 7.1569 ug/L
RT: 3.566 min Scan# 1029
Delta R.T. 0.000 min
Lab File: 17M016447.D
Acq: 13 Nov 2015 18:40

Tgt Ion: 96 Resp: 33182

Ion	Ratio	Lower	Upper
96	100		
61	131.3	107.0	160.4

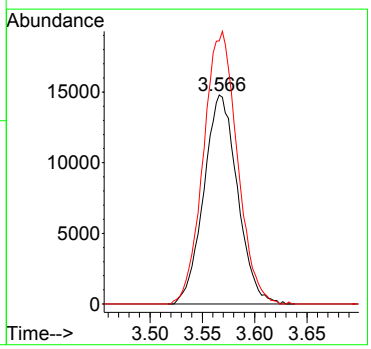

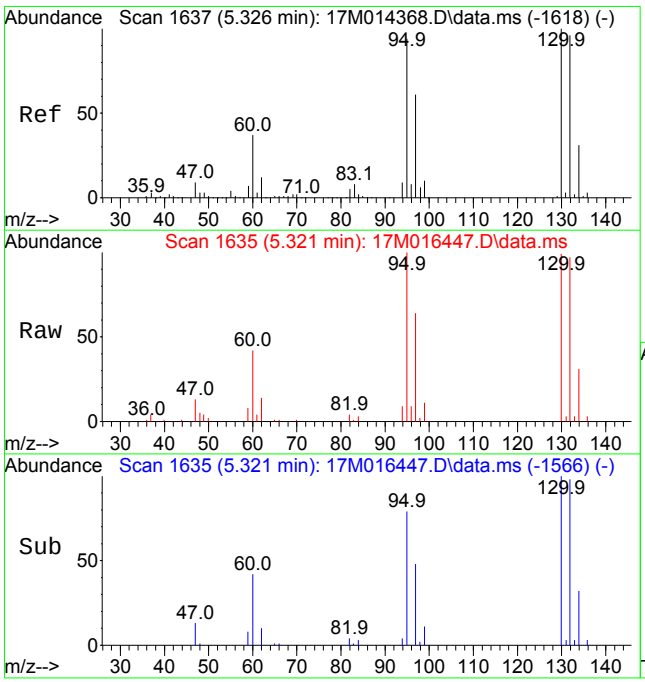

#37
Trichloroethene
Concen: 8.1979 ug/L
RT: 5.321 min Scan# 1635
Delta R.T. -0.000 min
Lab File: 17M016447.D
Acq: 13 Nov 2015 18:40

Tgt Ion:130 Resp: 38469

Ion	Ratio	Lower	Upper
130	100		
60	42.6	25.3	58.9

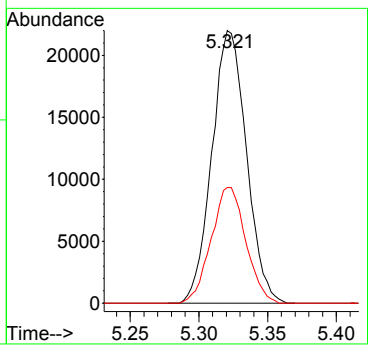

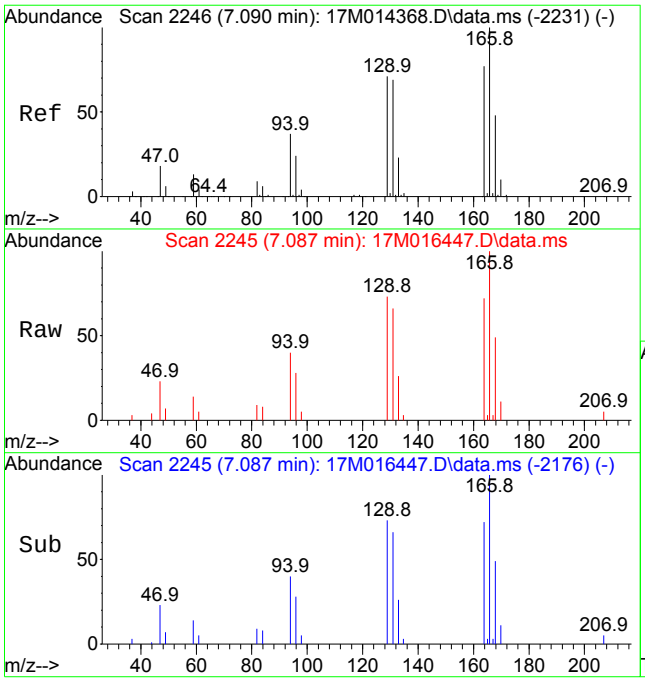

#49
Tetrachloroethene
Concen: 1.8303 ug/L
RT: 7.087 min Scan# 2245
Delta R.T. -0.000 min
Lab File: 17M016447.D
Acq: 13 Nov 2015 18:40

Tgt Ion:166 Resp: 9272

Ion	Ratio	Lower	Upper
166	100		
129	72.6	59.4	89.2
94	40.3	31.9	47.9

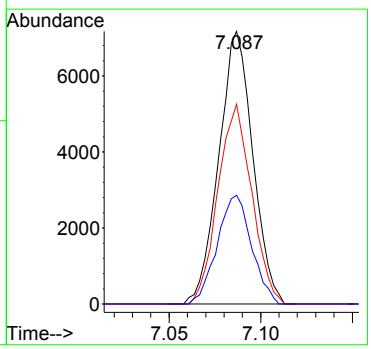

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111315\
Data File : 17M016448.D
Acq On : 13 Nov 2015 19:00
Operator : ADC
Sample : L15110793-03 A 826-LOW
Misc : 1,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Nov 16 13:07:33 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.141	96	383464	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	290744	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.302	152	161947	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.177	111	98625	25.0718 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.287%		
34) 1,2-Dichloroethane-d4	4.814	65	106127	28.0933 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.373%		
47) Toluene-d8	6.711	98	388079	25.8943 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.577%		
66) p-Bromofluorobenzene	8.723	95	146188	26.1133 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.453%		
Target Compounds					Qvalue
3) Chloromethane	1.151	50	728	0.1253 ug/L	79
4) Vinyl Chloride	1.195	62	4789	0.9230 ug/L	97
16) Acetone	2.347	43	1922	1.9169 ug/L	80
23) cis-1,2-Dichloroethene	3.569	96	31137	6.8909 ug/L	99
32) 2-Butanone	4.276	43	1819	1.4382 ug/L #	38
37) Trichloroethene	5.324	130	36797	8.0460 ug/L	98
49) Tetrachloroethene	7.084	166	8718	1.7561 ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\111315\
Data File : 17M016448.D
Acq On : 13 Nov 2015 19:00
Operator : ADC
Sample : L15110793-03 A 826-LOW
Misc : 1,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Nov 16 13:07:33 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

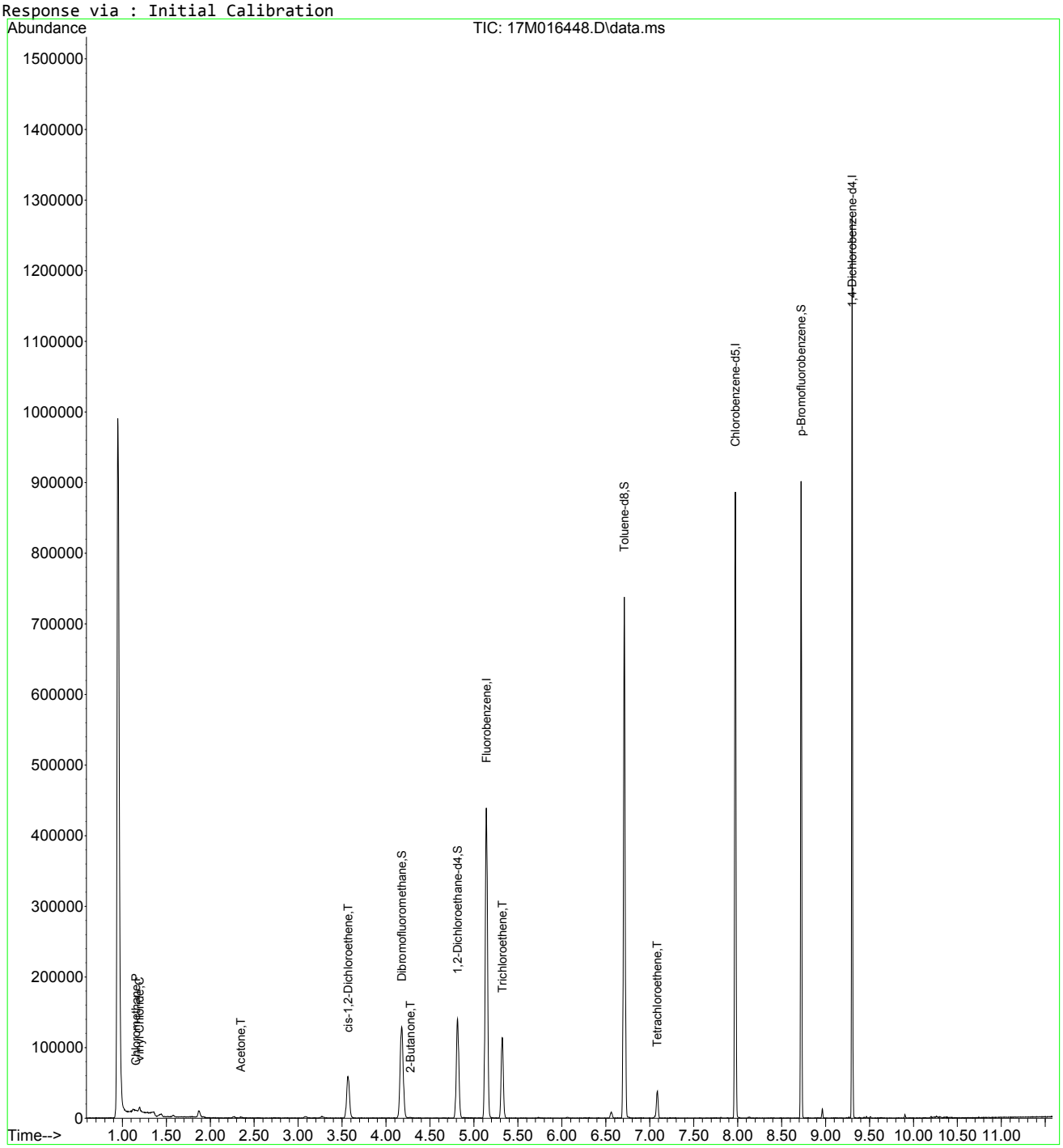

8260_VMS.M Mon Nov 16 13:07:34 2015 Page: 2

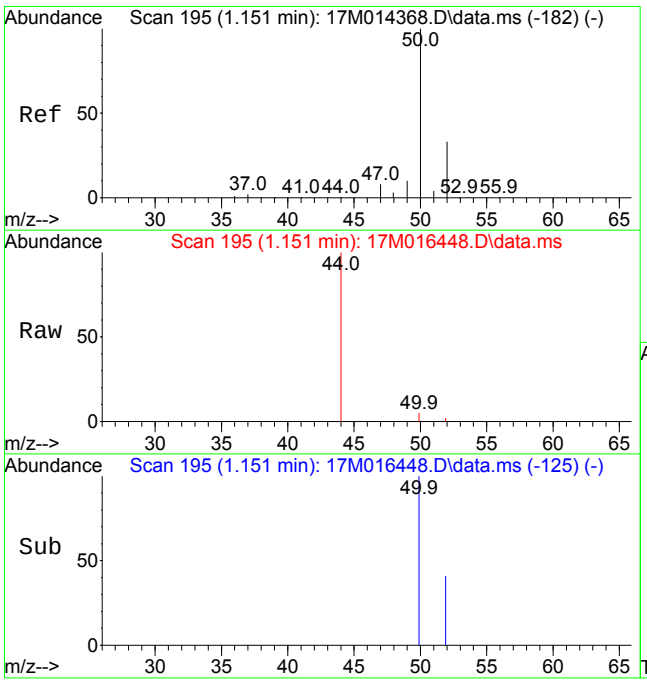

#3
Chloromethane
Concen: 0.1253 ug/L
RT: 1.151 min Scan# 195
Delta R.T. 0.002 min
Lab File: 17M016448.D
Acq: 13 Nov 2015 19:00

Tgt Ion: 50 Resp: 728

Ion	Ratio	Lower	Upper
50	100		
52	21.0	19.6	45.6

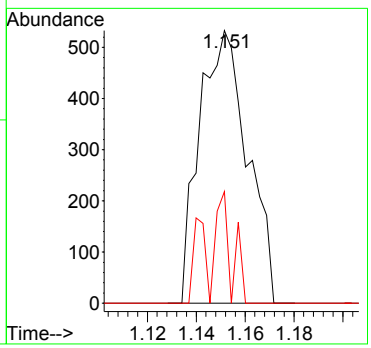

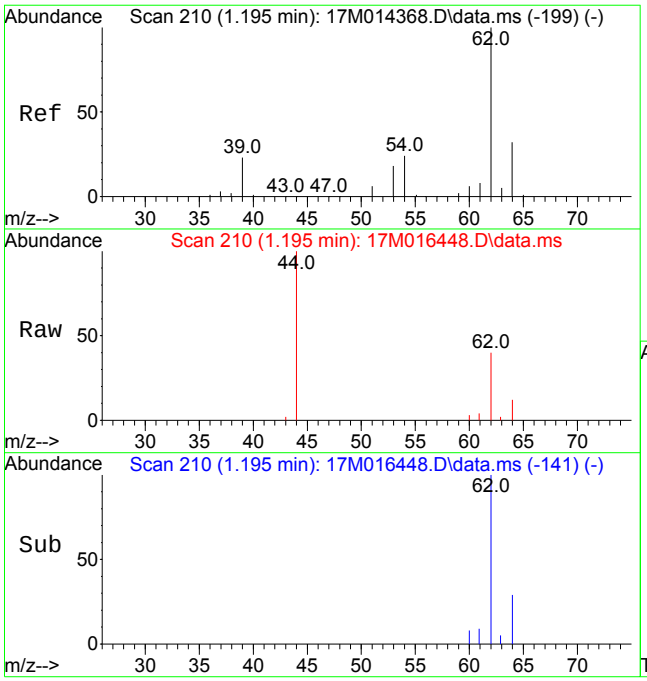

#4
Vinyl Chloride
Concen: 0.9230 ug/L
RT: 1.195 min Scan# 210
Delta R.T. -0.000 min
Lab File: 17M016448.D
Acq: 13 Nov 2015 19:00

Tgt Ion: 62 Resp: 4789

Ion	Ratio	Lower	Upper
62	100		
64	30.3	19.2	44.8

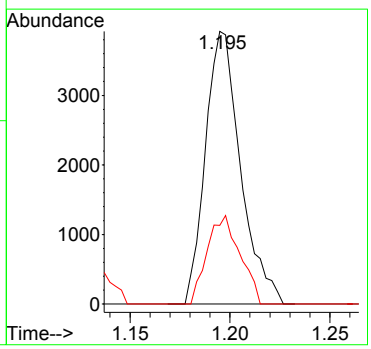

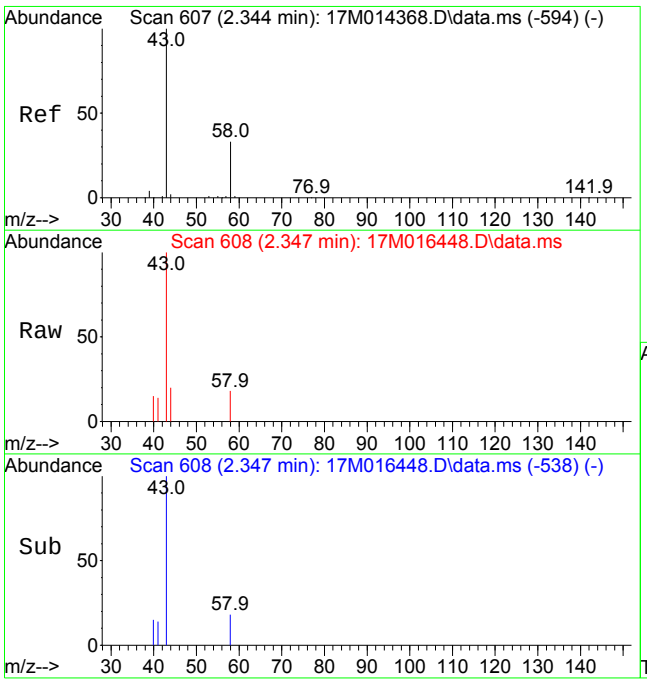

#16
Acetone
Concen: 1.9169 ug/L
RT: 2.347 min Scan# 608
Delta R.T. 0.003 min
Lab File: 17M016448.D
Acq: 13 Nov 2015 19:00

Tgt Ion: 43 Resp: 1922

Ion	Ratio	Lower	Upper
43	100		
58	21.3	19.4	45.4

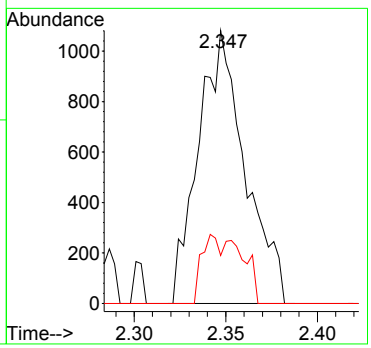

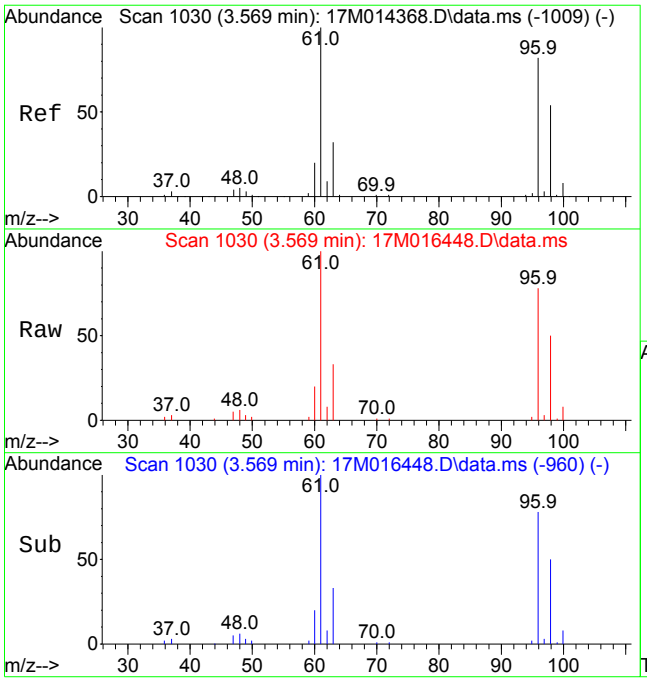

#23
cis-1,2-Dichloroethene
Concen: 6.8909 ug/L
RT: 3.569 min Scan# 1030
Delta R.T. 0.003 min
Lab File: 17M016448.D
Acq: 13 Nov 2015 19:00

Tgt Ion: 96 Resp: 31137

Ion	Ratio	Lower	Upper
96	100		
61	132.7	107.0	160.4

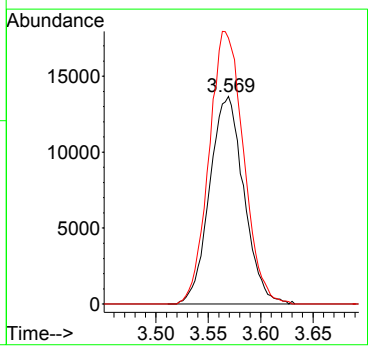

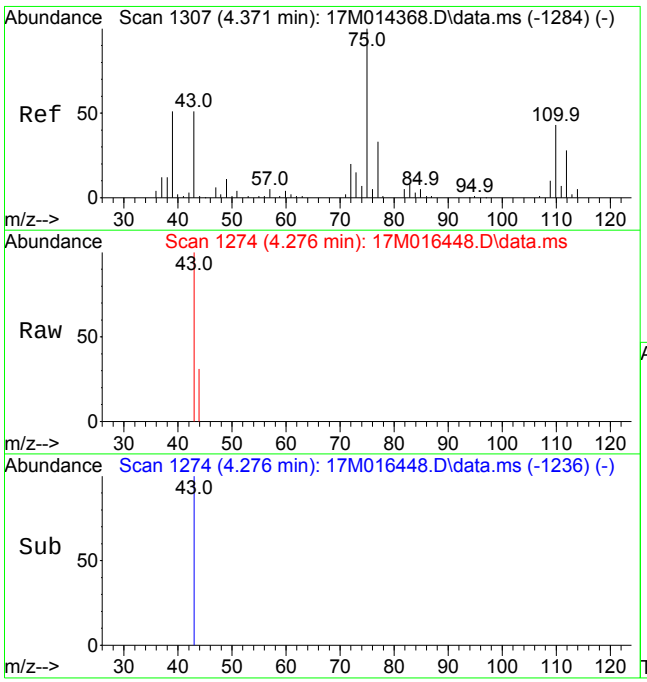

#32
2-Butanone
Concen: 1.4382 ug/L
RT: 4.276 min Scan# 1274
Delta R.T. -0.089 min
Lab File: 17M016448.D
Acq: 13 Nov 2015 19:00

Tgt Ion: 43 Resp: 1819

Ion	Ratio	Lower	Upper
43	100		
72	0.0	37.0	55.4#
57	0.0	7.2	10.8#

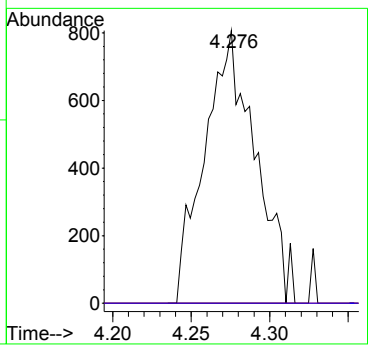

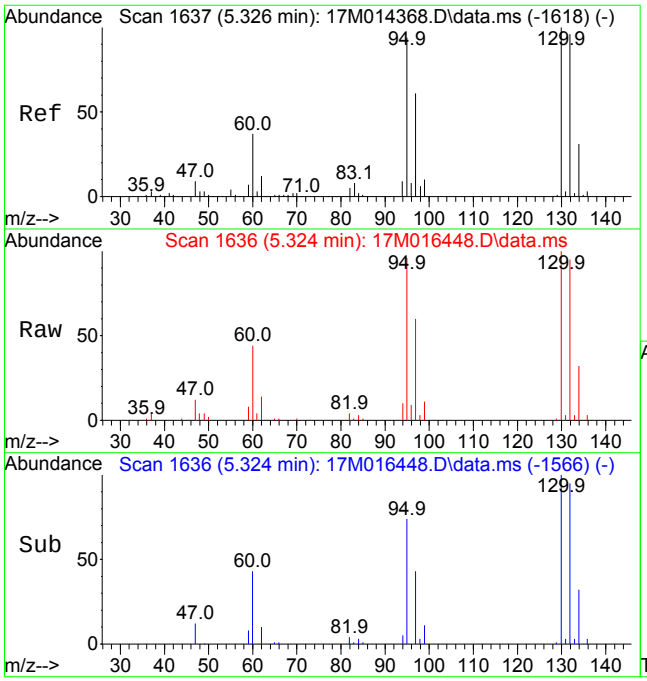

#37
Trichloroethene
Concen: 8.0460 ug/L
RT: 5.324 min Scan# 1636
Delta R.T. 0.003 min
Lab File: 17M016448.D
Acq: 13 Nov 2015 19:00

Tgt Ion:130 Resp: 36797

Ion	Ratio	Lower	Upper
130	100		
60	43.1	25.3	58.9

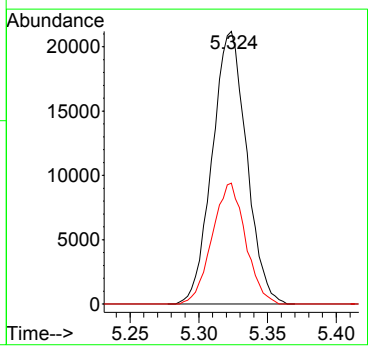

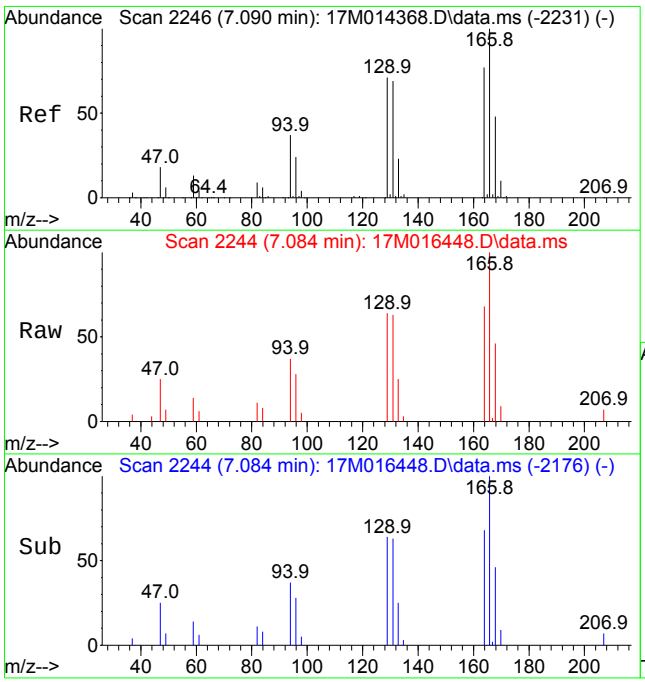

#49
Tetrachloroethene
Concen: 1.7561 ug/L
RT: 7.084 min Scan# 2244
Delta R.T. -0.003 min
Lab File: 17M016448.D
Acq: 13 Nov 2015 19:00

Tgt Ion:166 Resp: 8718

Ion	Ratio	Lower	Upper
166	100		
129	72.7	59.4	89.2
94	41.0	31.9	47.9

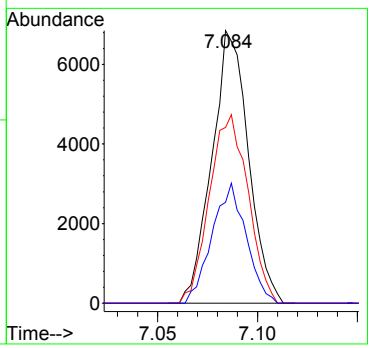

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111315\
Data File : 17M016449.D
Acq On : 13 Nov 2015 19:20
Operator : ADC
Sample : L15110793-04 A 826-LOW
Misc : 1,1
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Nov 16 13:07:36 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.141	96	389656	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	294374	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.302	152	163854	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.177	111	103209	25.8202 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.281%		
34) 1,2-Dichloroethane-d4	4.814	65	104905	27.3285 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 109.314%		
47) Toluene-d8	6.710	98	385375	25.3968 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.587%		
66) p-Bromofluorobenzene	8.723	95	146458	25.8571 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.428%		
Target Compounds					Qvalue
3) Chloromethane	1.151	50	1730	0.2931 ug/L #	62
10) 1,1-Dichloroethene	1.869	61	1097	0.1793 ug/L	99
11) Carbon Disulfide	1.884	76	2300	0.1785 ug/L #	92
12) 1,1,2-Trichloro-1,2,2-...	1.893	101	1006	0.2652 ug/L	94
16) Acetone	2.344	43	2140	2.1592 ug/L	81
20) 1,1-Dichloroethane	2.975	63	2360	0.3084 ug/L	93
23) cis-1,2-Dichloroethene	3.566	96	74758	16.2816 ug/L	99
27) Chloroform	3.937	83	1863	0.2457 ug/L #	92
35) 1,2-Dichloroethane	4.889	62	5474	1.0863 ug/L	97
36) Methylcyclohexane	5.321	83	9238	1.1797 ug/L #	1
37) Trichloroethene	5.324	130	803560	172.9134 ug/L	99
49) Tetrachloroethene	7.087	166	2031	0.4041 ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\111315\
Data File : 17M016449.D
Acq On : 13 Nov 2015 19:20
Operator : ADC
Sample : L15110793-04 A 826-LOW
Misc : 1,1
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Nov 16 13:07:36 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

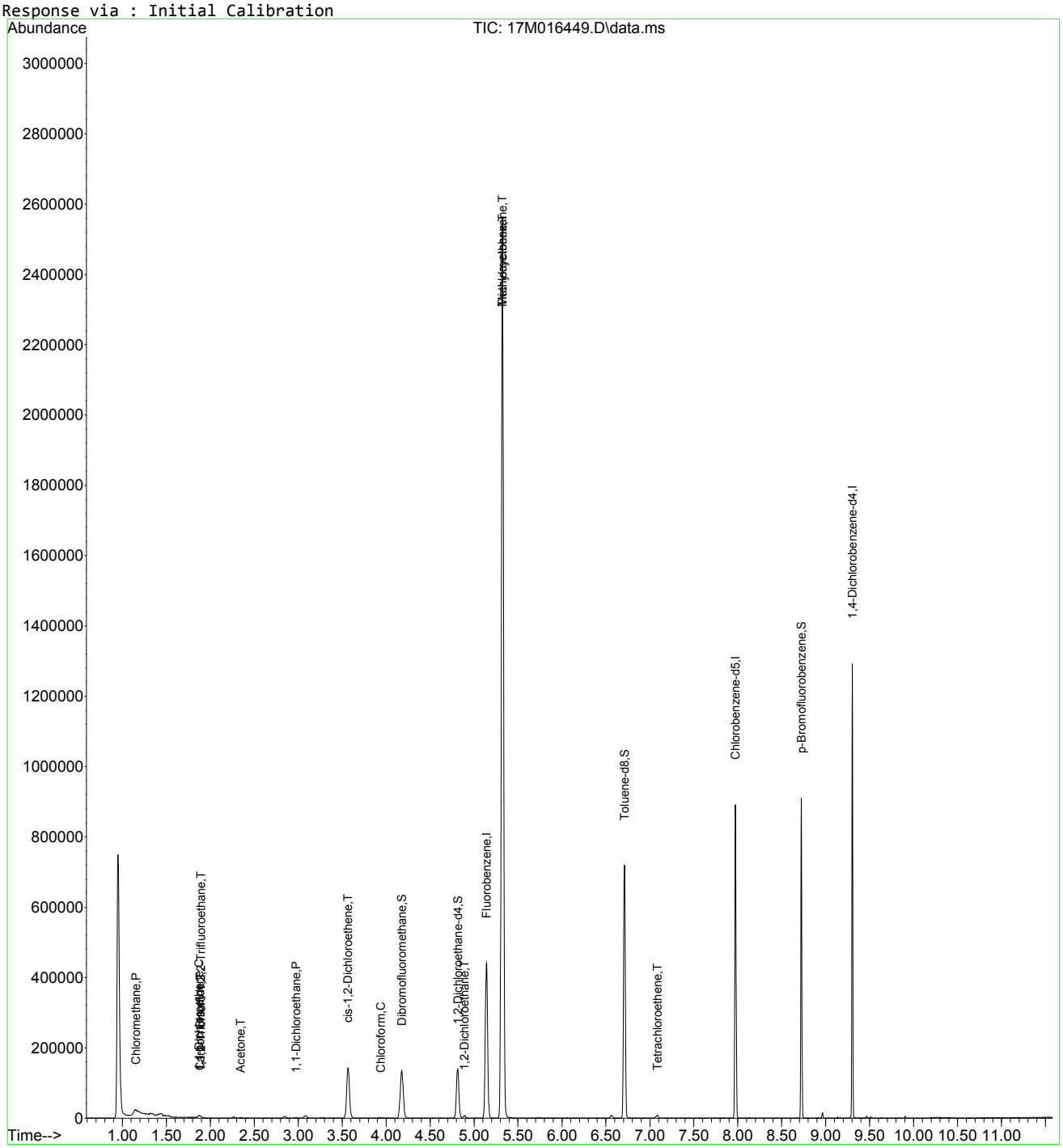

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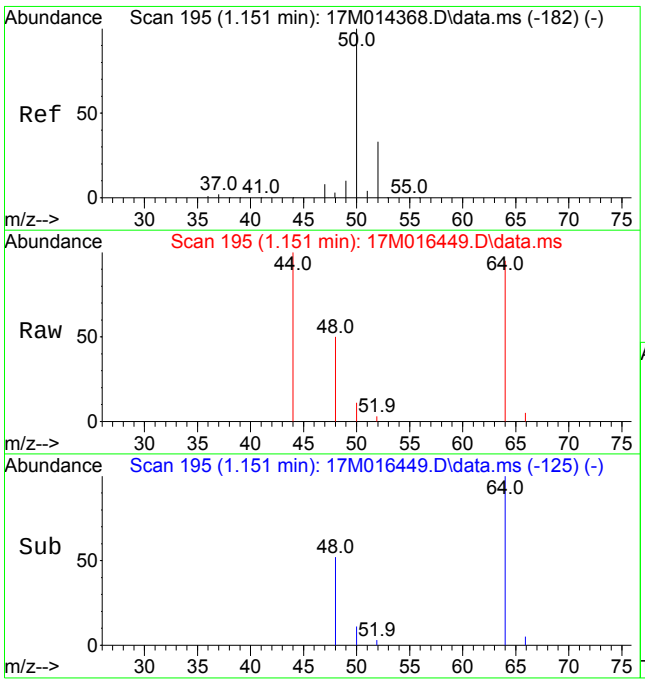

#3
Chloromethane
Concen: 0.2931 ug/L
RT: 1.151 min Scan# 195
Delta R.T. 0.002 min
Lab File: 17M016449.D
Acq: 13 Nov 2015 19:20

Tgt Ion: 50 Resp: 1730

Ion	Ratio	Lower	Upper
50	100		
52	11.2	19.6	45.6#

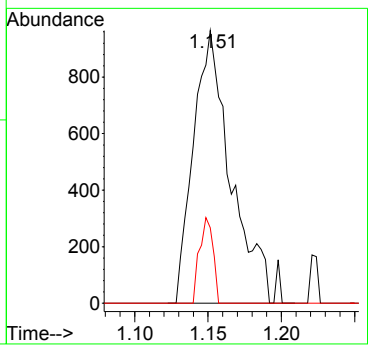

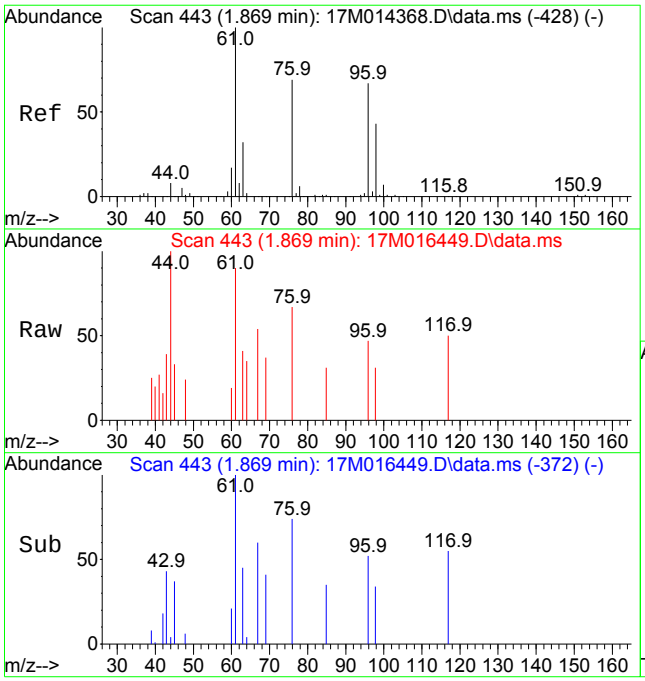

#10
1,1-Dichloroethene
Concen: 0.1793 ug/L
RT: 1.869 min Scan# 443
Delta R.T. 0.005 min
Lab File: 17M016449.D
Acq: 13 Nov 2015 19:20

Tgt Ion: 61 Resp: 1097

Ion	Ratio	Lower	Upper
61	100		
96	61.5	48.4	72.6

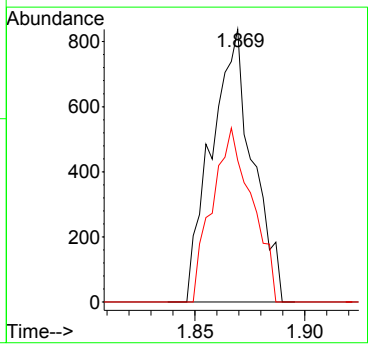

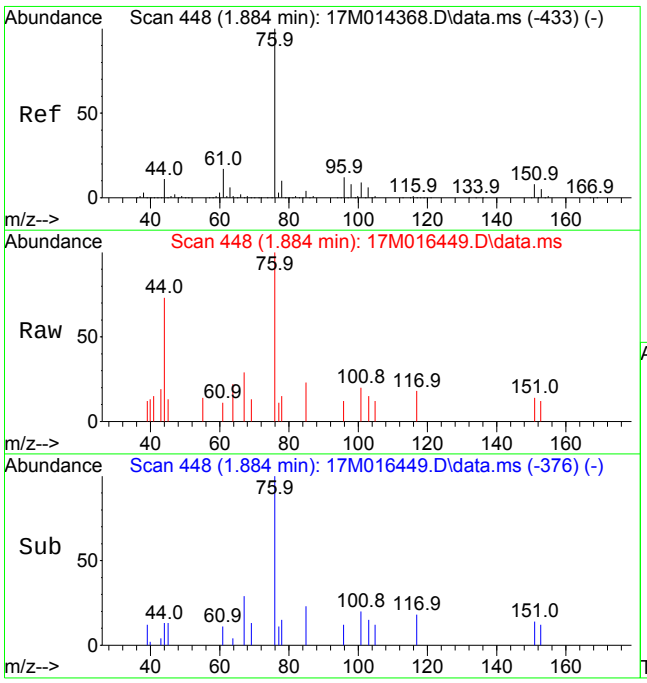

#11
Carbon Disulfide
Concen: 0.1785 ug/L
RT: 1.884 min Scan# 448
Delta R.T. 0.009 min
Lab File: 17M016449.D
Acq: 13 Nov 2015 19:20

Tgt Ion: 76 Resp: 2300

Ion	Ratio	Lower	Upper
76	100		
78	13.0	8.0	12.0#

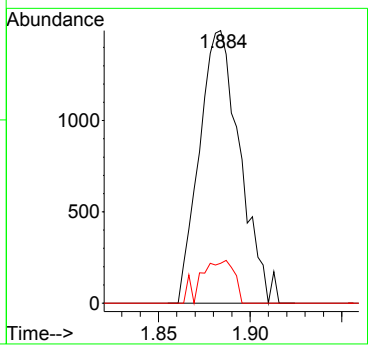

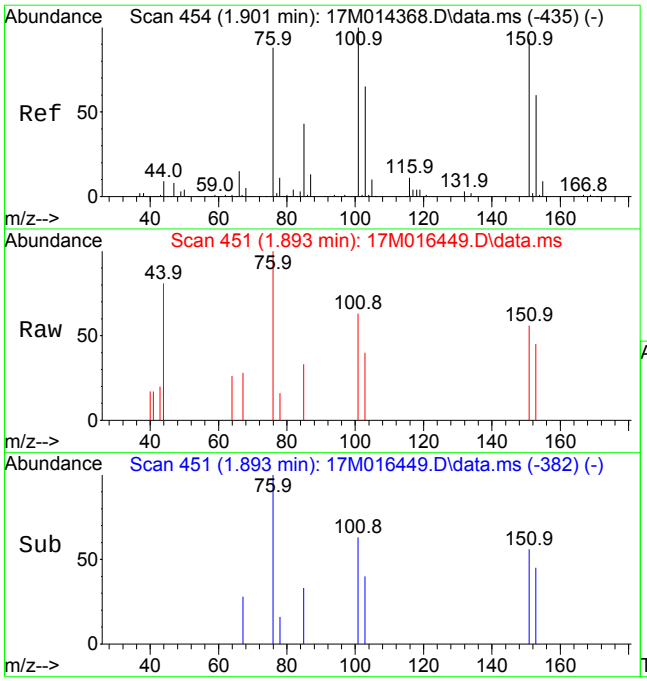

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 0.2652 ug/L
RT: 1.893 min Scan# 451
Delta R.T. -0.000 min
Lab File: 17M016449.D
Acq: 13 Nov 2015 19:20

Tgt Ion:101 Resp: 1006

Ion	Ratio	Lower	Upper
101	100		
151	81.7	71.4	107.0
103	61.6	51.6	77.4

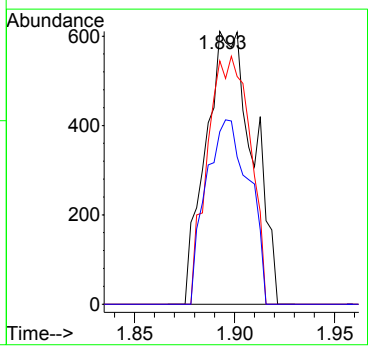

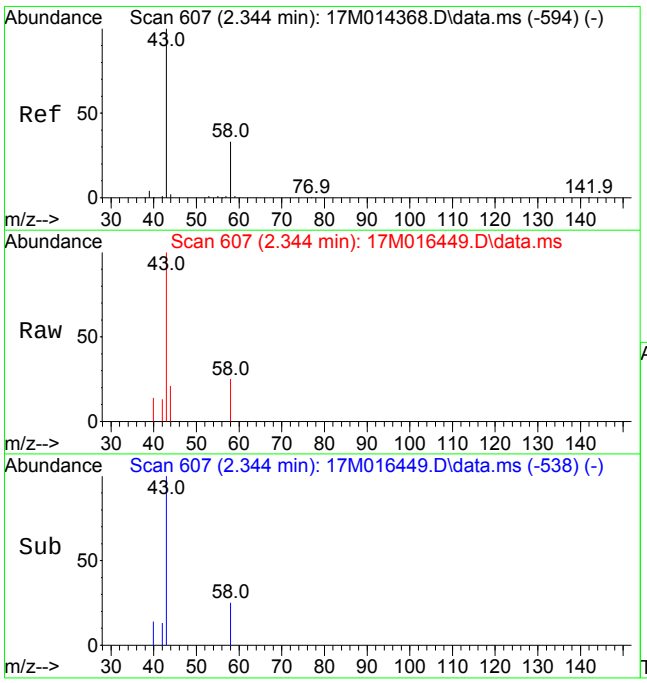

#16
Acetone
Concen: 2.1592 ug/L
RT: 2.344 min Scan# 607
Delta R.T. 0.000 min
Lab File: 17M016449.D
Acq: 13 Nov 2015 19:20

Tgt Ion: 43 Resp: 2140

Ion	Ratio	Lower	Upper
43	100		
58	21.7	19.4	45.4

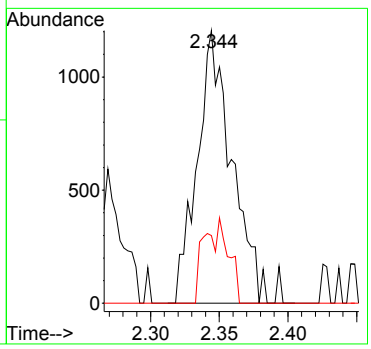

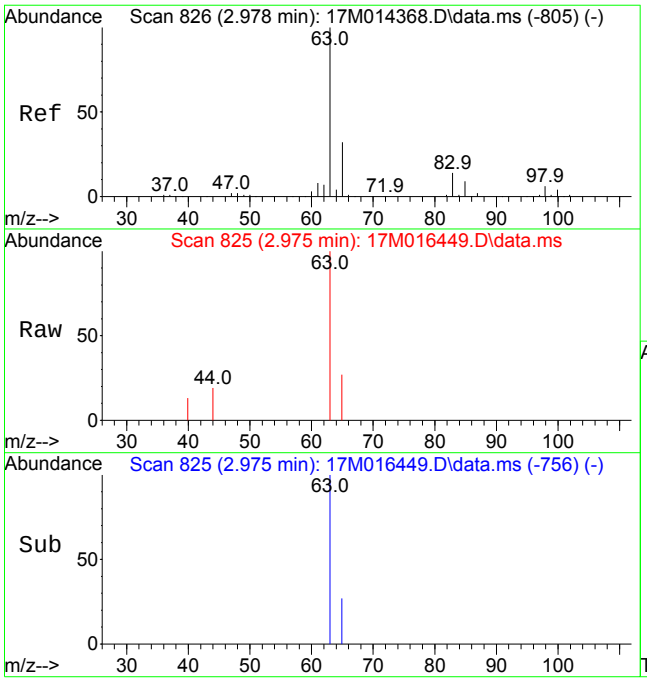

#20
1,1-Dichloroethane
Concen: 0.3084 ug/L
RT: 2.975 min Scan# 825
Delta R.T. 0.000 min
Lab File: 17M016449.D
Acq: 13 Nov 2015 19:20

Tgt Ion: 63 Resp: 2360

Ion	Ratio	Lower	Upper
63	100		
65	27.6	25.4	38.0

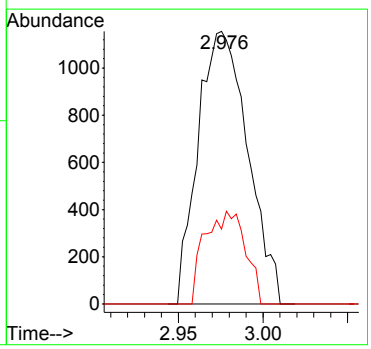

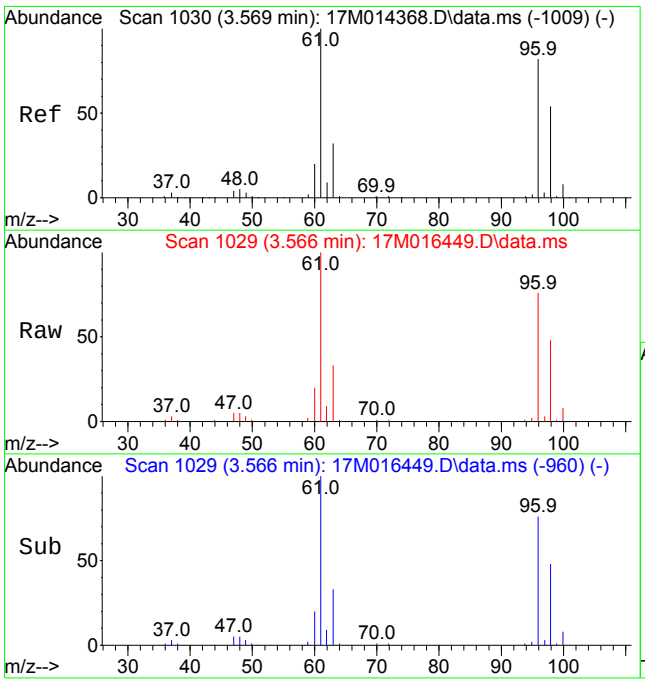

#23
cis-1,2-Dichloroethene
Concen: 16.2816 ug/L
RT: 3.566 min Scan# 1029
Delta R.T. 0.000 min
Lab File: 17M016449.D
Acq: 13 Nov 2015 19:20

Tgt Ion: 96 Resp: 74758

Ion	Ratio	Lower	Upper
96	100		
61	132.0	107.0	160.4

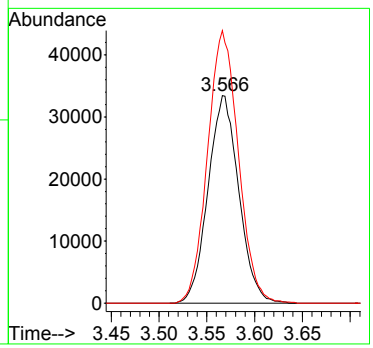

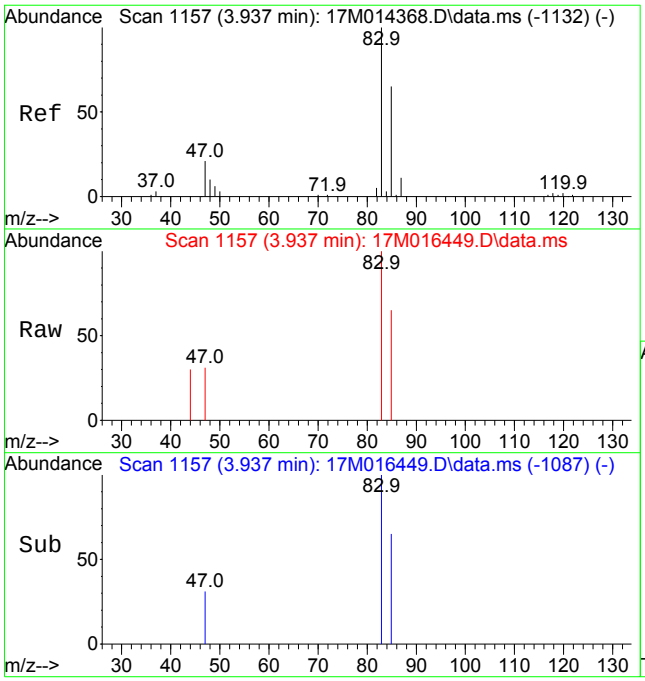

#27
Chloroform
Concen: 0.2457 ug/L
RT: 3.937 min Scan# 1157
Delta R.T. 0.003 min
Lab File: 17M016449.D
Acq: 13 Nov 2015 19:20

Tgt Ion: 83 Resp: 1863

Ion	Ratio	Lower	Upper
83	100		
85	66.8	39.1	91.1
47	12.5	14.1	32.9#

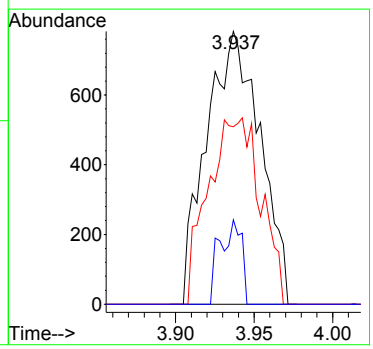

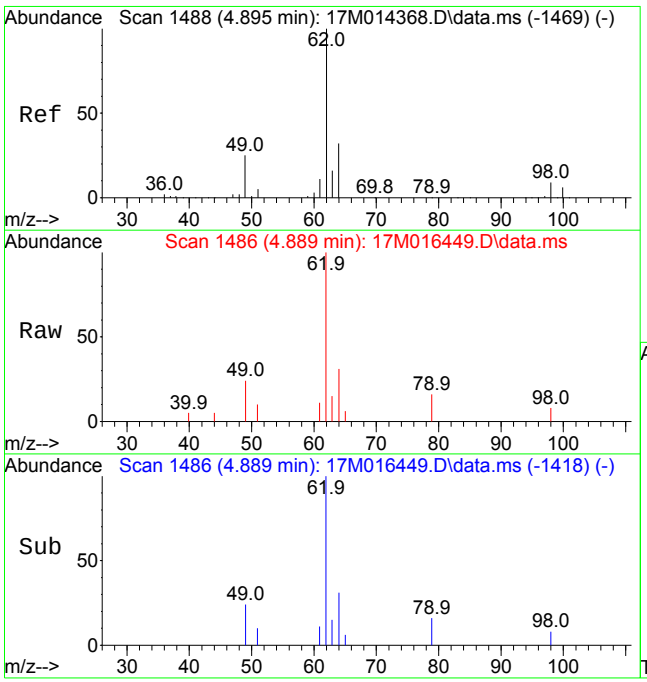

#35
1,2-Dichloroethane
Concen: 1.0863 ug/L
RT: 4.889 min Scan# 1486
Delta R.T. -0.003 min
Lab File: 17M016449.D
Acq: 13 Nov 2015 19:20

Tgt Ion: 62 Resp: 5474

Ion	Ratio	Lower	Upper
62	100		
49	26.7	16.9	39.3
98	6.2	4.9	11.5

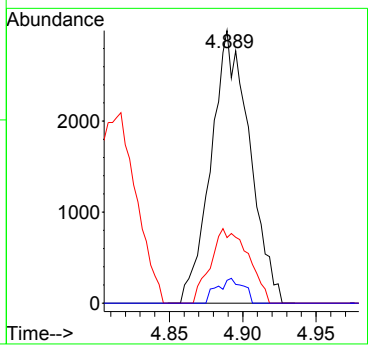

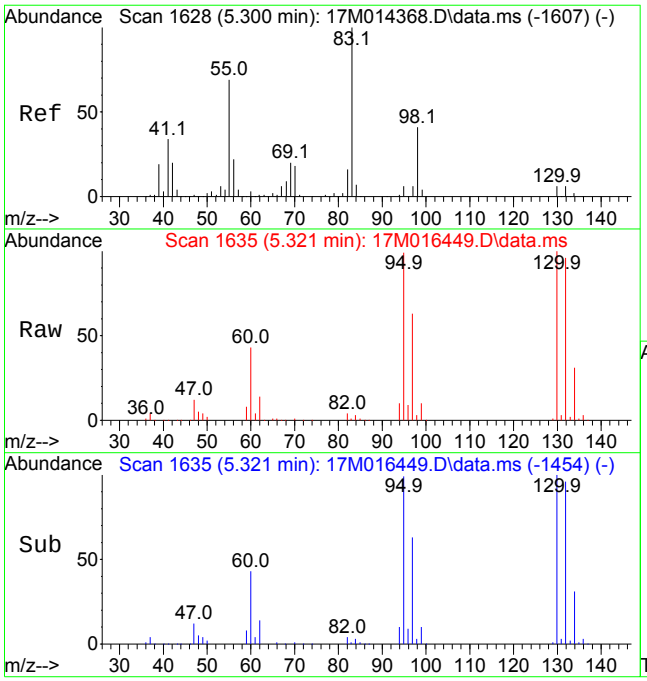

#36
Methylcyclohexane
Concen: 1.1797 ug/L
RT: 5.321 min Scan# 1635
Delta R.T. 0.023 min
Lab File: 17M016449.D
Acq: 13 Nov 2015 19:20

Tgt Ion: 83 Resp: 9238

Ion	Ratio	Lower	Upper
83	100		
55	0.0	63.0	94.4#
98	212.9	32.8	49.2#

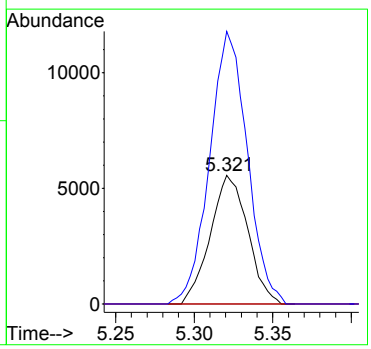

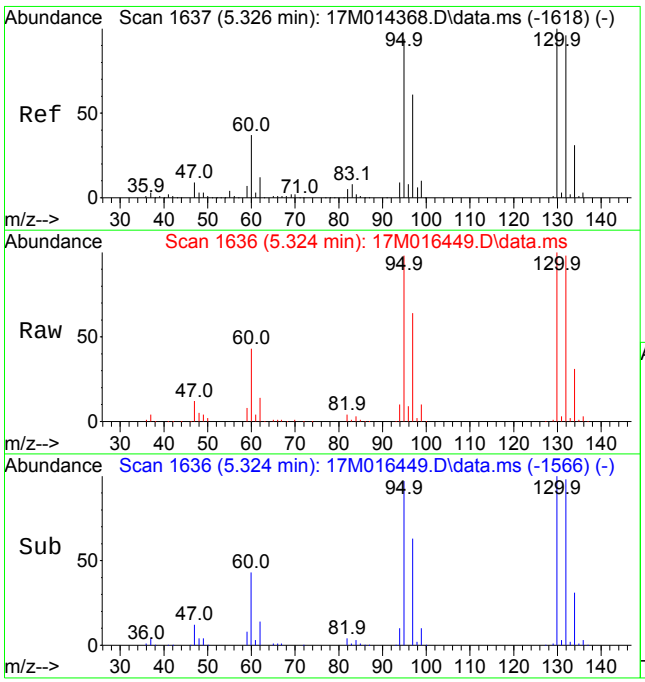

#37
Trichloroethene
Concen: 172.9134 ug/L
RT: 5.324 min Scan# 1636
Delta R.T. 0.003 min
Lab File: 17M016449.D
Acq: 13 Nov 2015 19:20

Tgt Ion:130 Resp: 803560

Ion	Ratio	Lower	Upper
130	100		
60	43.0	25.3	58.9

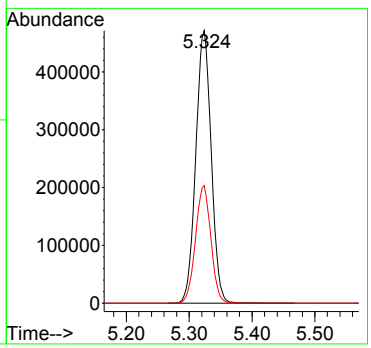

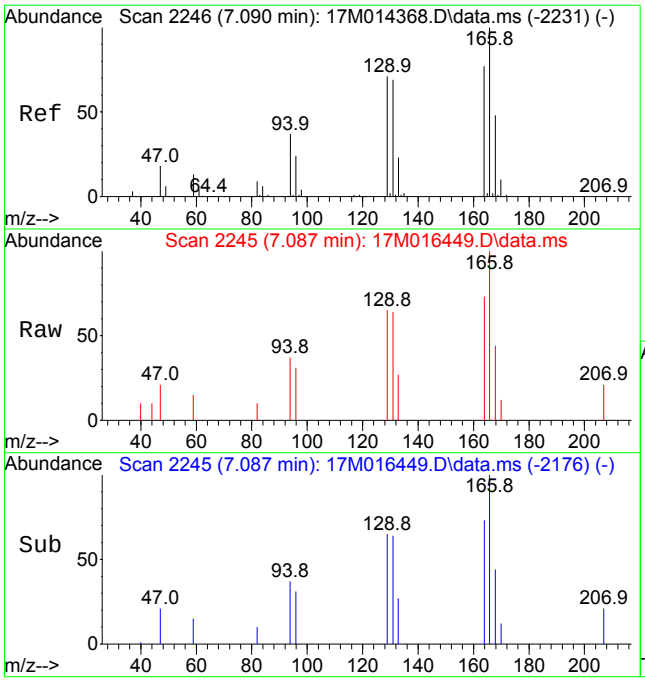

#49
Tetrachloroethene
Concen: 0.4041 ug/L
RT: 7.087 min Scan# 2245
Delta R.T. -0.000 min
Lab File: 17M016449.D
Acq: 13 Nov 2015 19:20

Tgt Ion:166 Resp: 2031

Ion	Ratio	Lower	Upper
166	100		
129	73.4	59.4	89.2
94	38.5	31.9	47.9

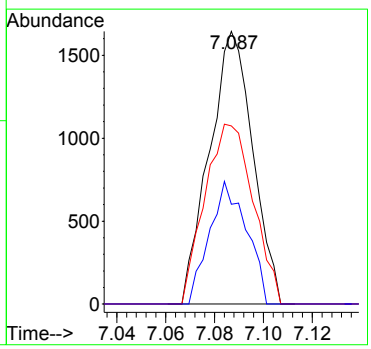

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111315\
Data File : 17M016450.D
Acq On : 13 Nov 2015 19:40
Operator : ADC
Sample : L15110793-05 A 826-LOW
Misc : 1,1
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Nov 16 13:07:40 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.141	96	388098	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	291566	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.302	152	160927	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.177	111	101415	25.4733 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.893%		
34) 1,2-Dichloroethane-d4	4.814	65	102010	26.6811 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 106.724%		
47) Toluene-d8	6.711	98	381091	25.3563 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.425%		
66) p-Bromofluorobenzene	8.723	95	143547	25.8041 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.216%		
Target Compounds					Qvalue
3) Chloromethane	1.151	50	1867	0.3176 ug/L	77
10) 1,1-Dichloroethene	1.870	61	983	0.1614 ug/L	96
11) Carbon Disulfide	1.884	76	1983	0.1545 ug/L #	89
12) 1,1,2-Trichloro-1,2,2-...	1.898	101	918	0.2430 ug/L	94
16) Acetone	2.341	43	2564	2.7220 ug/L	84
20) 1,1-Dichloroethane	2.976	63	2366	0.3104 ug/L	91
23) cis-1,2-Dichloroethene	3.566	96	72995	15.9615 ug/L	99
27) Chloroform	3.937	83	1930	0.2556 ug/L #	89
32) 2-Butanone	4.281	43	242	0.1891 ug/L #	38
35) 1,2-Dichloroethane	4.889	62	5271	1.0502 ug/L	98
36) Methylcyclohexane	5.321	83	9212	1.1811 ug/L #	1
37) Trichloroethene	5.324	130	786575	169.9380 ug/L	99
49) Tetrachloroethene	7.087	166	1957	0.3931 ug/L	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\111315\
Data File : 17M016450.D
Acq On : 13 Nov 2015 19:40
Operator : ADC
Sample : L15110793-05 A 826-LOW
Misc : 1,1
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Nov 16 13:07:40 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

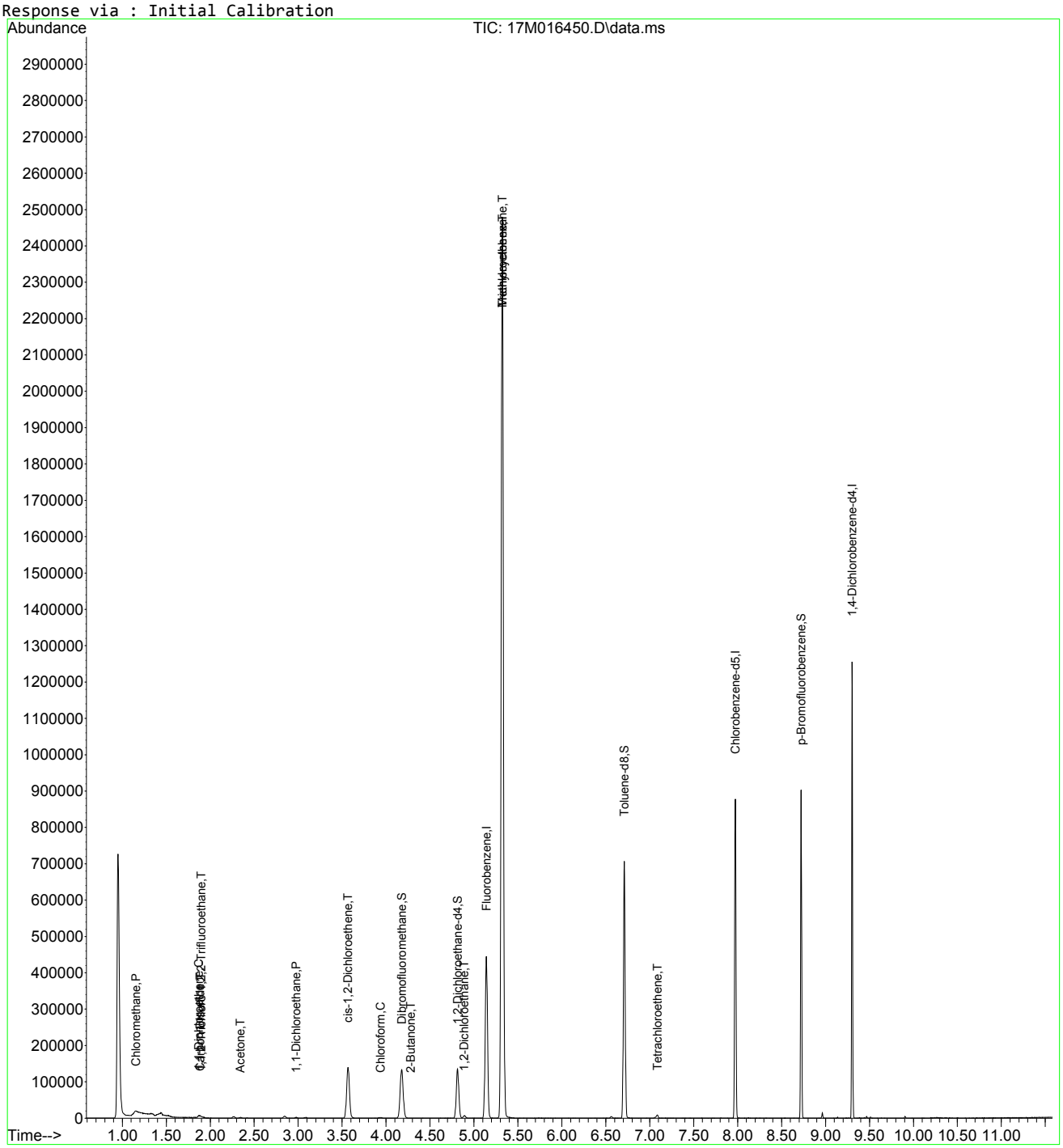

8260_VMS.M Mon Nov 16 13:07:41 2015 Page: 2

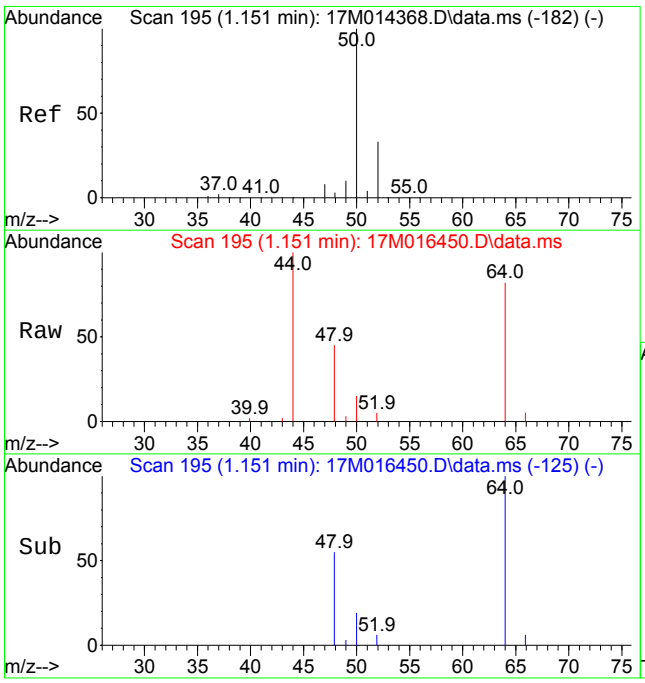

#3
Chloromethane
Concen: 0.3176 ug/L
RT: 1.151 min Scan# 195
Delta R.T. 0.002 min
Lab File: 17M016450.D
Acq: 13 Nov 2015 19:40

Tgt Ion: 50 Resp: 1867

Ion	Ratio	Lower	Upper
50	100		
52	19.9	19.6	45.6

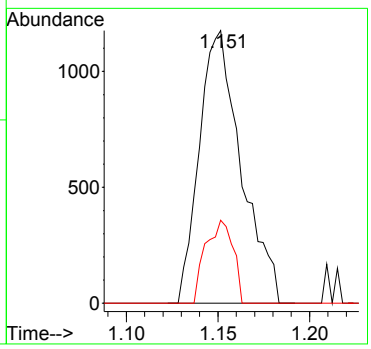

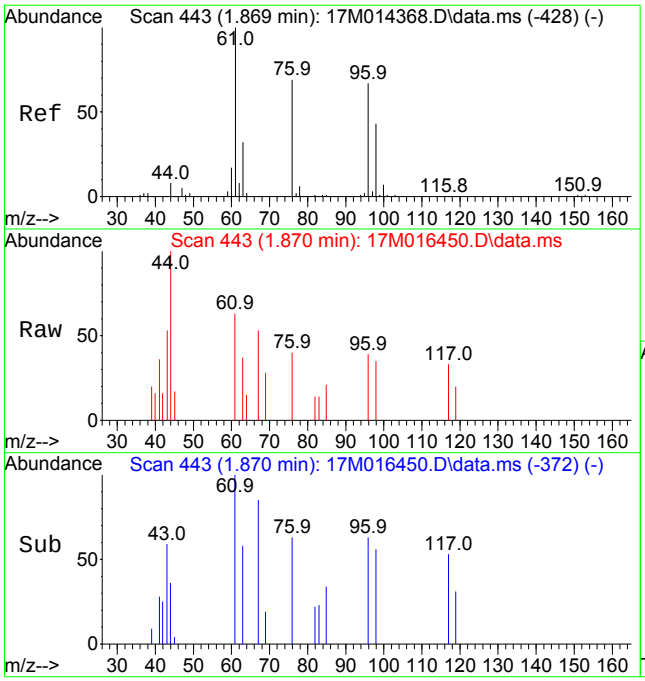

#10
1,1-Dichloroethene
Concen: 0.1614 ug/L
RT: 1.870 min Scan# 443
Delta R.T. 0.006 min
Lab File: 17M016450.D
Acq: 13 Nov 2015 19:40

Tgt Ion: 61 Resp: 983

Ion	Ratio	Lower	Upper
61	100		
96	63.3	48.4	72.6

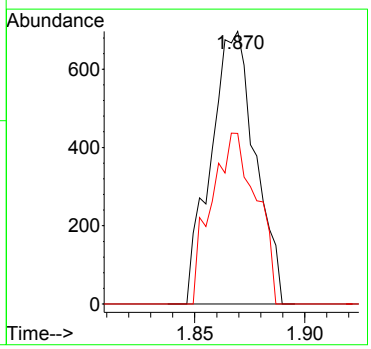

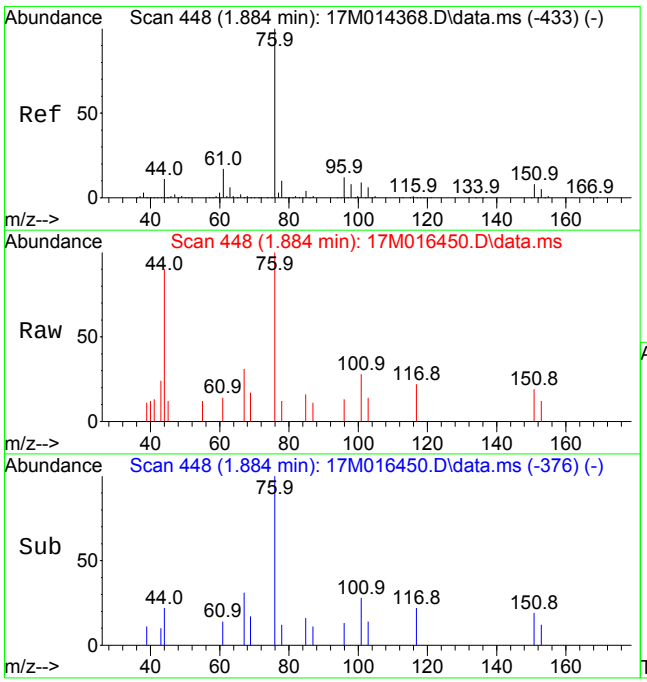

#11
Carbon Disulfide
Concen: 0.1545 ug/L
RT: 1.884 min Scan# 448
Delta R.T. 0.009 min
Lab File: 17M016450.D
Acq: 13 Nov 2015 19:40

Tgt Ion: 76 Resp: 1983

Ion	Ratio	Lower	Upper
76	100		
78	6.1	8.0	12.0#

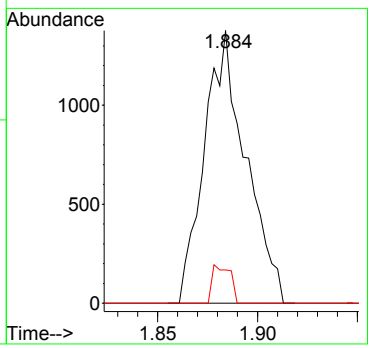

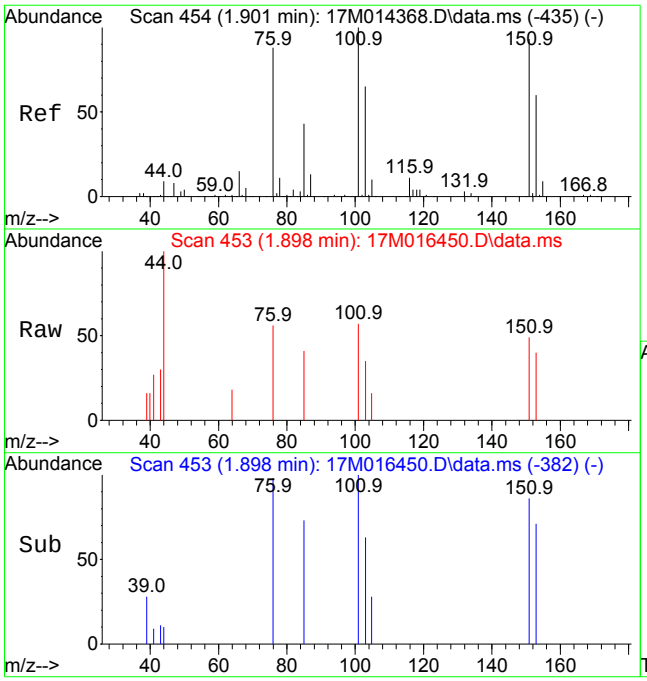

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 0.2430 ug/L
RT: 1.898 min Scan# 453
Delta R.T. 0.005 min
Lab File: 17M016450.D
Acq: 13 Nov 2015 19:40

Tgt Ion:101 Resp: 918

Ion	Ratio	Lower	Upper
101	100		
151	84.4	71.4	107.0
103	58.7	51.6	77.4

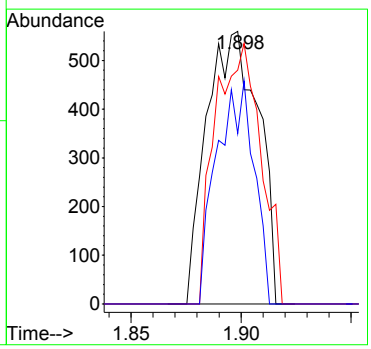

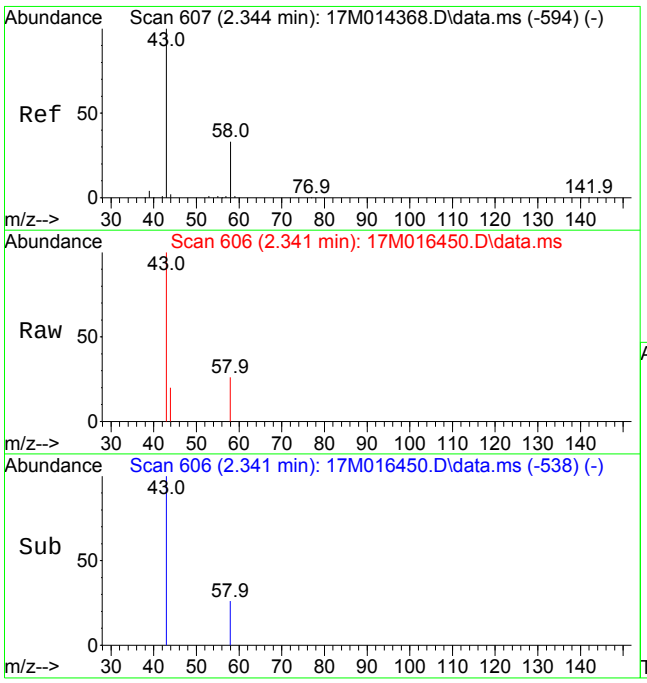

#16
Acetone
Concen: 2.7220 ug/L
RT: 2.341 min Scan# 606
Delta R.T. -0.003 min
Lab File: 17M016450.D
Acq: 13 Nov 2015 19:40

Tgt Ion: 43 Resp: 2564

Ion	Ratio	Lower	Upper
43	100		
58	23.6	19.4	45.4

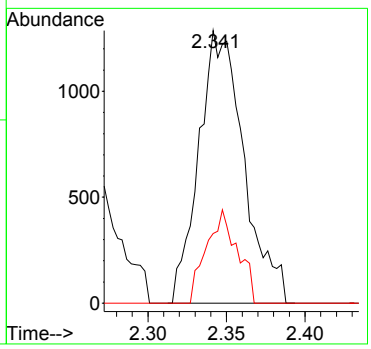

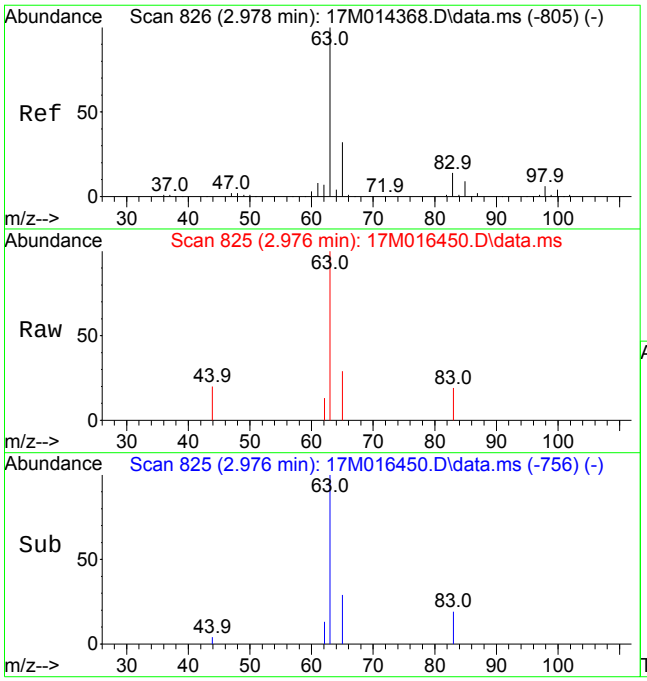

#20
1,1-Dichloroethane
Concen: 0.3104 ug/L
RT: 2.976 min Scan# 825
Delta R.T. 0.001 min
Lab File: 17M016450.D
Acq: 13 Nov 2015 19:40

Tgt Ion: 63 Resp: 2366

Ion	Ratio	Lower	Upper
63	100		
65	26.9	25.4	38.0

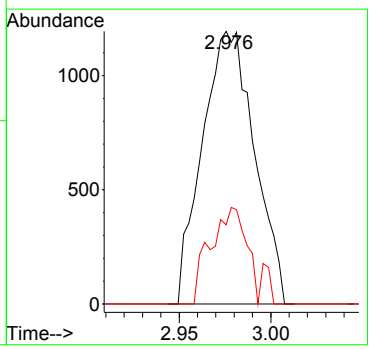

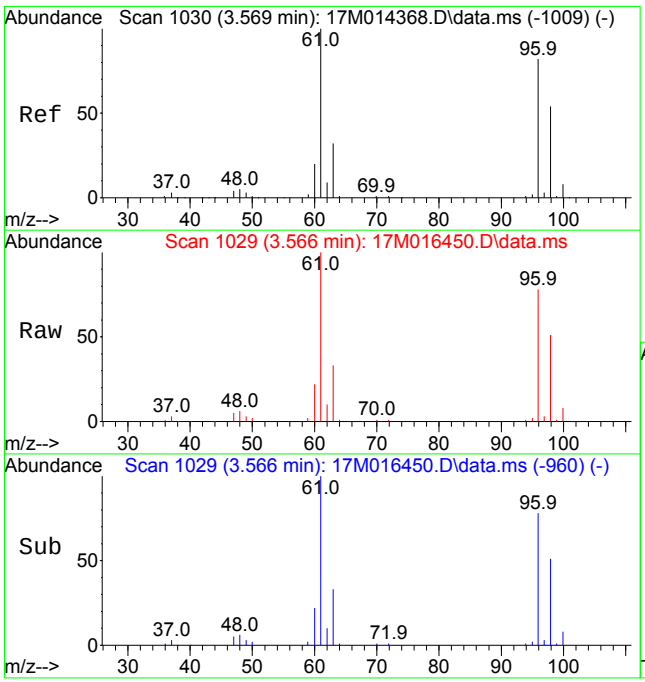

#23
cis-1,2-Dichloroethene
Concen: 15.9615 ug/L
RT: 3.566 min Scan# 1029
Delta R.T. 0.000 min
Lab File: 17M016450.D
Acq: 13 Nov 2015 19:40

Tgt Ion: 96 Resp: 72995

Ion	Ratio	Lower	Upper
96	100		
61	132.8	107.0	160.4

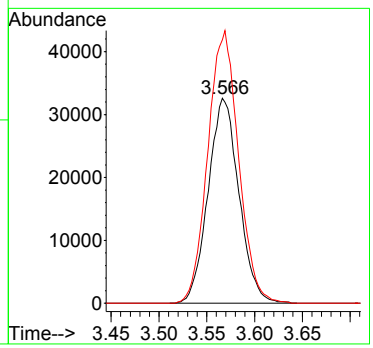

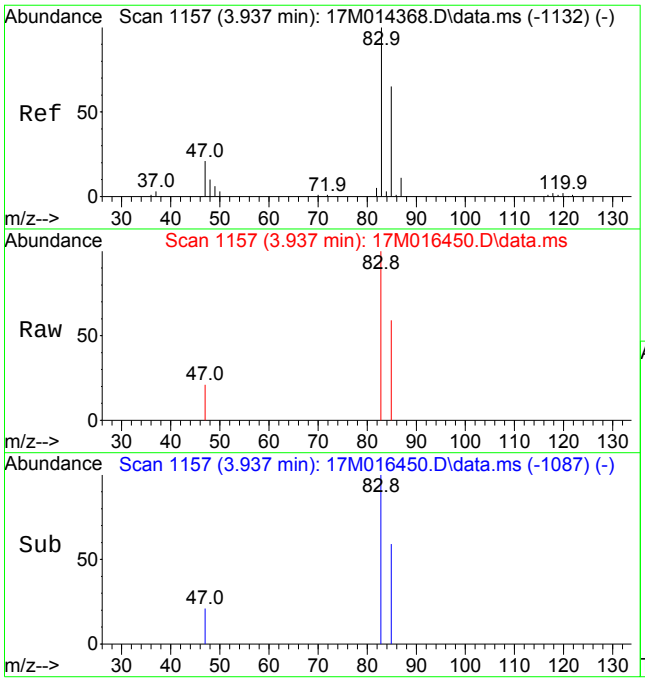

#27
Chloroform
Concen: 0.2556 ug/L
RT: 3.937 min Scan# 1157
Delta R.T. 0.003 min
Lab File: 17M016450.D
Acq: 13 Nov 2015 19:40

Tgt Ion: 83 Resp: 1930

Ion	Ratio	Lower	Upper
83	100		
85	59.2	39.1	91.1
47	12.7	14.1	32.9#

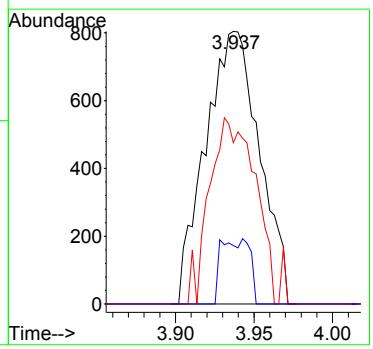

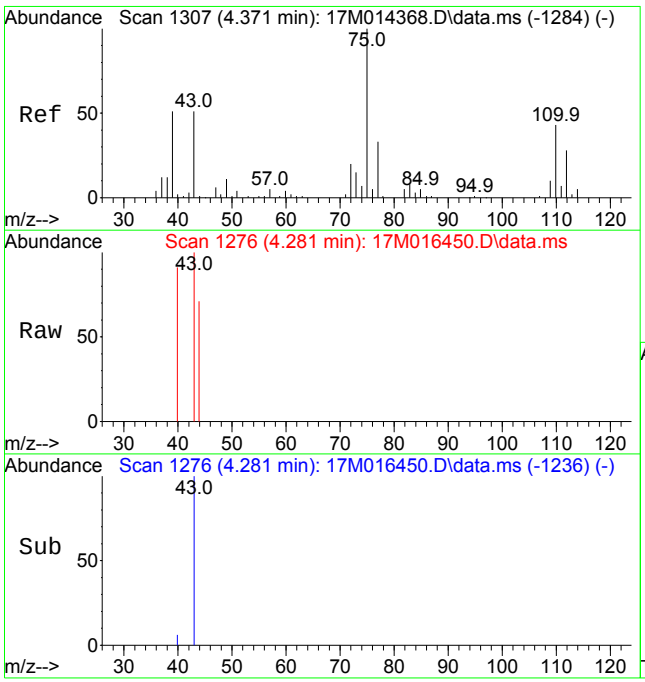

#32
2-Butanone
Concen: 0.1891 ug/L
RT: 4.281 min Scan# 1276
Delta R.T. -0.084 min
Lab File: 17M016450.D
Acq: 13 Nov 2015 19:40

Tgt Ion: 43 Resp: 242

Ion	Ratio	Lower	Upper
43	100		
72	0.0	37.0	55.4#
57	0.0	7.2	10.8#

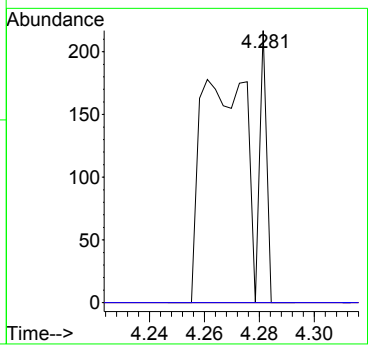

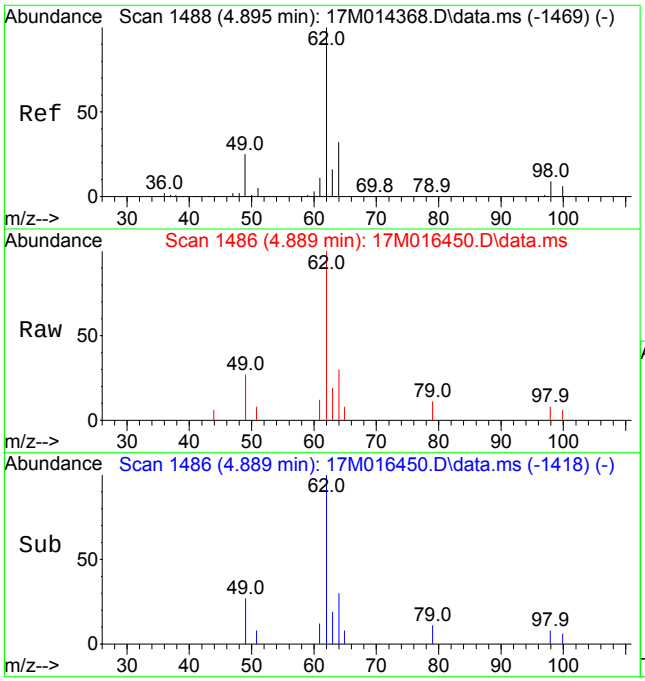

#35
1,2-Dichloroethane
Concen: 1.0502 ug/L
RT: 4.889 min Scan# 1486
Delta R.T. -0.003 min
Lab File: 17M016450.D
Acq: 13 Nov 2015 19:40

Tgt Ion: 62 Resp: 5271

Ion	Ratio	Lower	Upper
62	100		
49	28.1	16.9	39.3
98	5.6	4.9	11.5

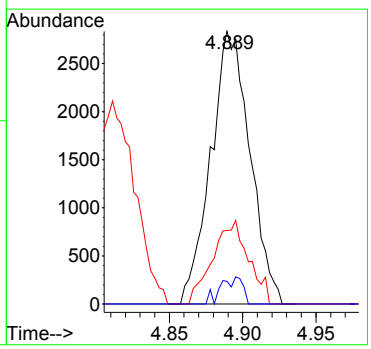

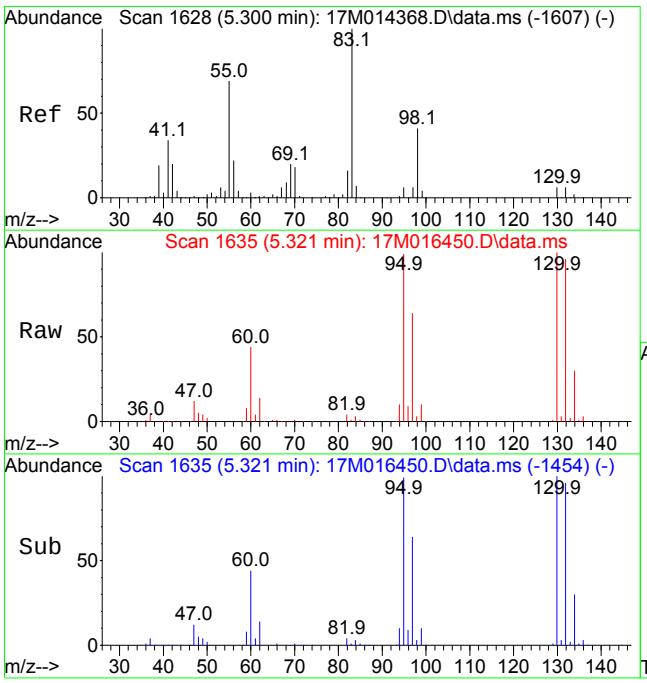

#36
Methylcyclohexane
Concen: 1.1811 ug/L
RT: 5.321 min Scan# 1635
Delta R.T. 0.023 min
Lab File: 17M016450.D
Acq: 13 Nov 2015 19:40

Tgt Ion: 83 Resp: 9212

Ion	Ratio	Lower	Upper
83	100		
55	0.0	63.0	94.4#
98	213.1	32.8	49.2#

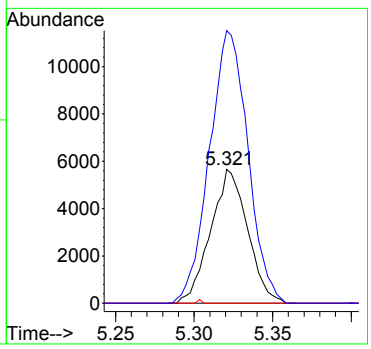

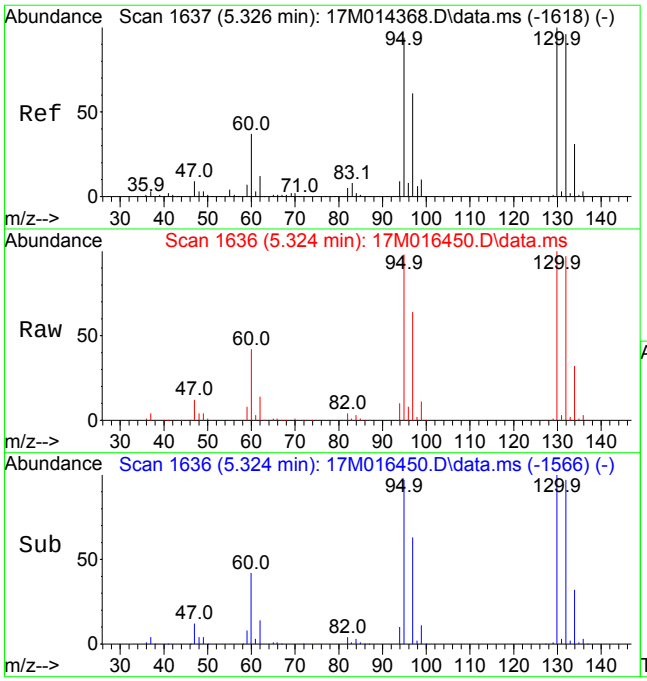

#37
Trichloroethene
Concen: 169.9380 ug/L
RT: 5.324 min Scan# 1636
Delta R.T. 0.003 min
Lab File: 17M016450.D
Acq: 13 Nov 2015 19:40

Tgt Ion:130 Resp: 786575

Ion	Ratio	Lower	Upper
130	100		
60	42.9	25.3	58.9

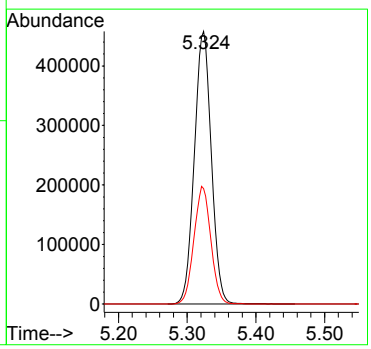

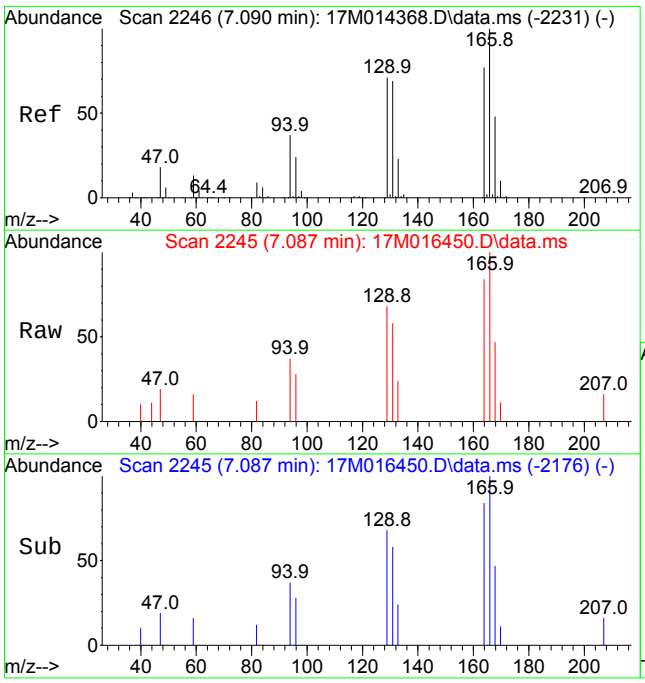

#49
Tetrachloroethene
Concen: 0.3931 ug/L
RT: 7.087 min Scan# 2245
Delta R.T. -0.000 min
Lab File: 17M016450.D
Acq: 13 Nov 2015 19:40

Tgt Ion:166 Resp: 1957

Ion	Ratio	Lower	Upper
166	100		
129	75.1	59.4	89.2
94	36.1	31.9	47.9

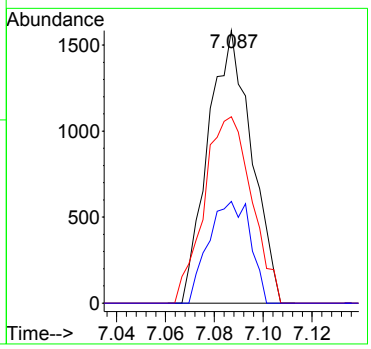

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111315\
Data File : 17M016451.D
Acq On : 13 Nov 2015 20:00
Operator : ADC
Sample : L15110793-06 A 826-LOW
Misc : 1,1
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Nov 16 13:07:44 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.141	96	384612	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	291491	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.302	152	160251	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.177	111	101580	25.7460 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.984%		
34) 1,2-Dichloroethane-d4	4.811	65	102314	27.0031 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 108.012%		
47) Toluene-d8	6.710	98	382923	25.4848 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.939%		
66) p-Bromofluorobenzene	8.723	95	144573	26.0981 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.392%		
Target Compounds					Qvalue
3) Chloromethane	1.151	50	2890	0.4960 ug/L #	58
11) Carbon Disulfide	1.878	76	11293	0.8881 ug/L	99
16) Acetone	2.347	43	3477	3.9509 ug/L	86
32) 2-Butanone	4.383	43	327	0.2578 ug/L #	38
37) Trichloroethene	5.324	130	3512	0.7656 ug/L	93

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111315\
Data File : 17M016451.D
Acq On : 13 Nov 2015 20:00
Operator : ADC
Sample : L15110793-06 A 826-LOW
Misc : 1,1
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Nov 16 13:07:44 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

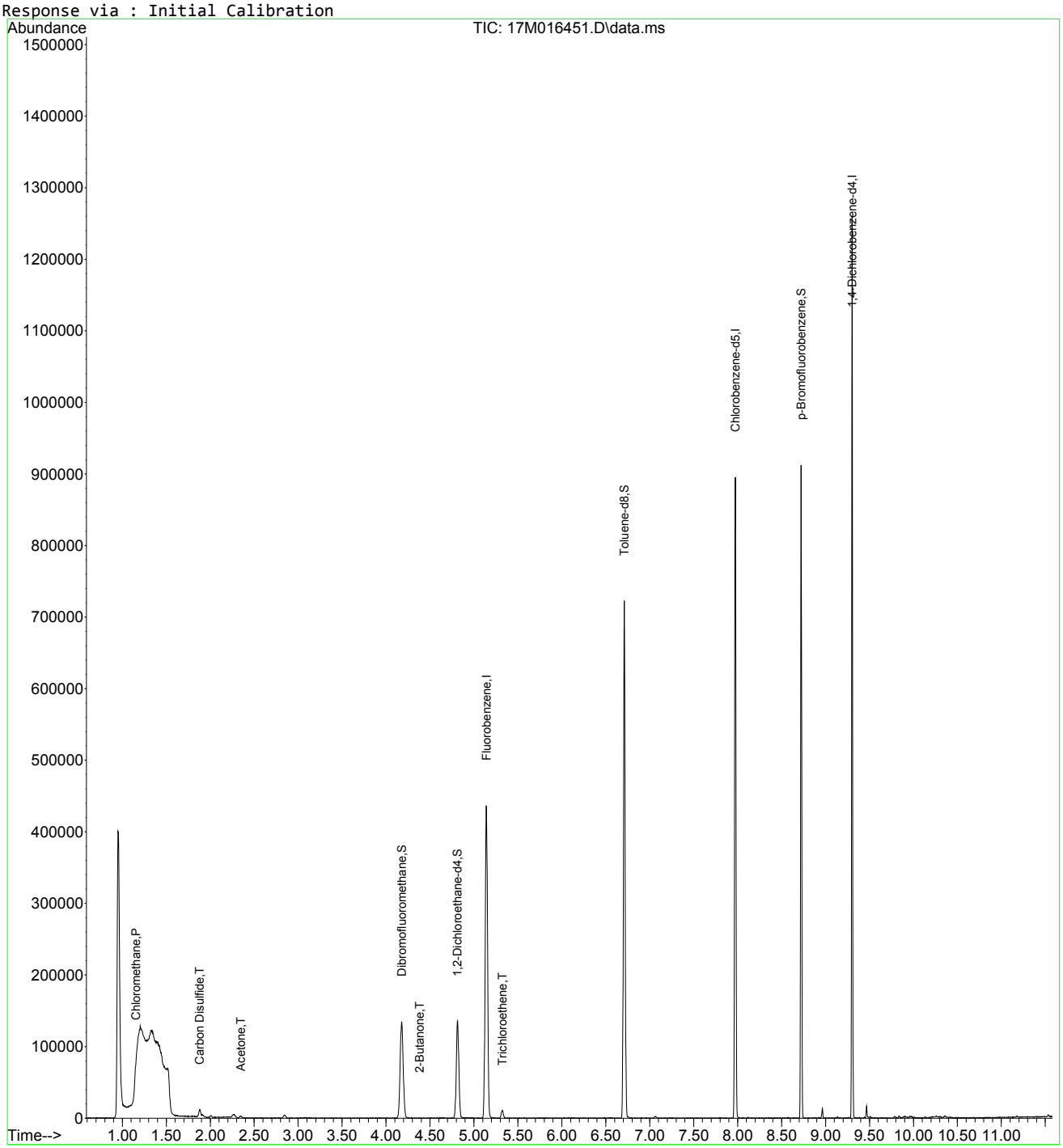

8260_VMS.M Mon Nov 16 13:07:45 2015 Page: 2

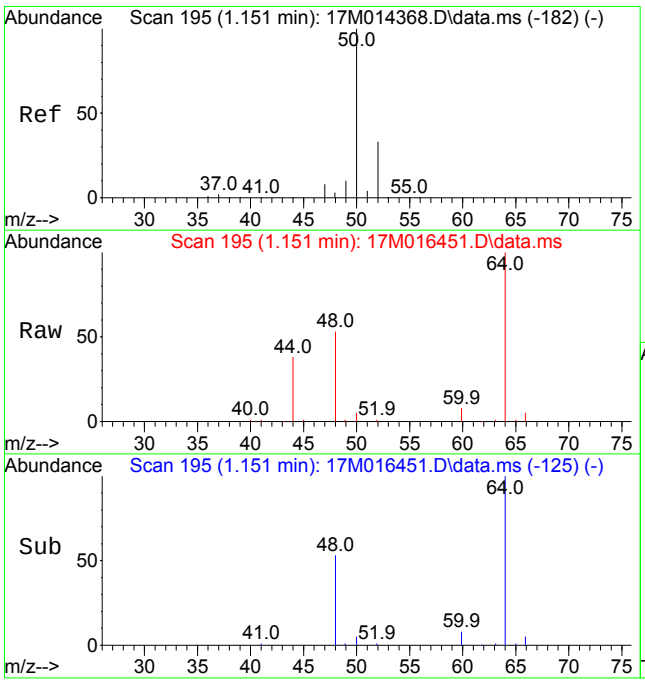

#3
Chloromethane
Concen: 0.4960 ug/L
RT: 1.151 min Scan# 195
Delta R.T. 0.002 min
Lab File: 17M016451.D
Acq: 13 Nov 2015 20:00

Tgt Ion: 50 Resp: 2890

Ion	Ratio	Lower	Upper
50	100		
52	9.2	19.6	45.6#

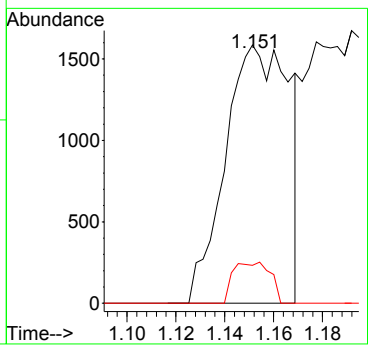

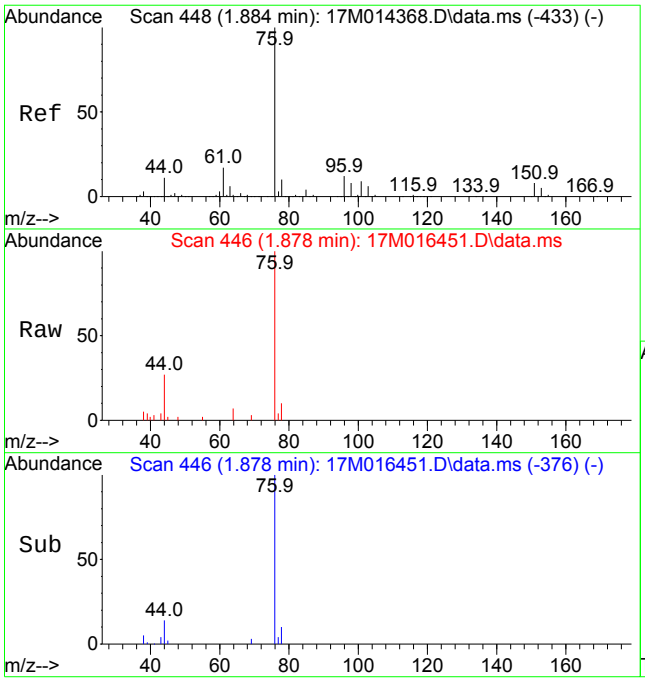

#11
Carbon Disulfide
Concen: 0.8881 ug/L
RT: 1.878 min Scan# 446
Delta R.T. 0.003 min
Lab File: 17M016451.D
Acq: 13 Nov 2015 20:00

Tgt Ion: 76 Resp: 11293

Ion	Ratio	Lower	Upper
76	100		
78	10.2	8.0	12.0

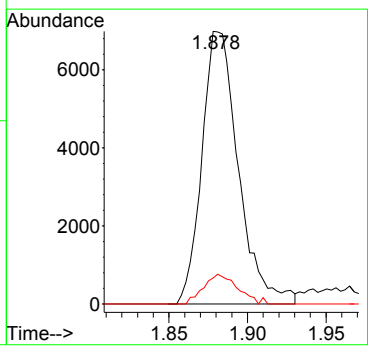

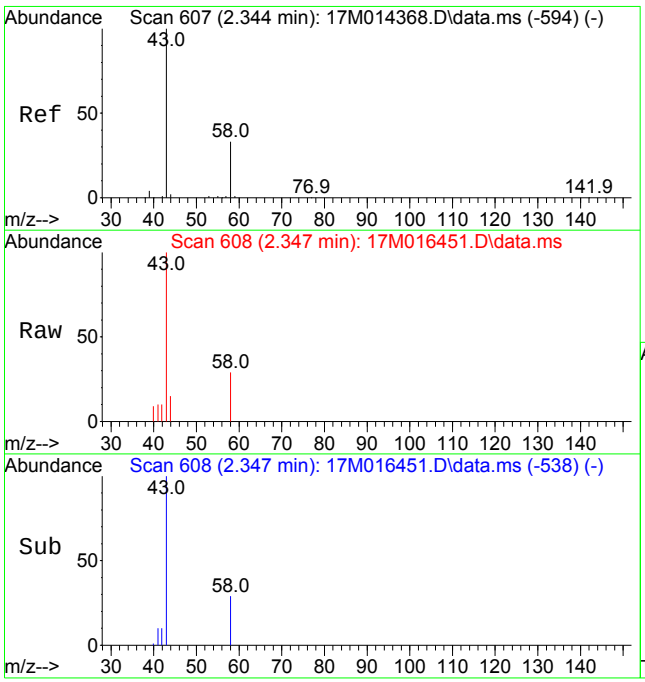

#16
Acetone
Concen: 3.9509 ug/L
RT: 2.347 min Scan# 608
Delta R.T. 0.003 min
Lab File: 17M016451.D
Acq: 13 Nov 2015 20:00

Tgt Ion: 43 Resp: 3477

Ion	Ratio	Lower	Upper
43	100		
58	24.4	19.4	45.4

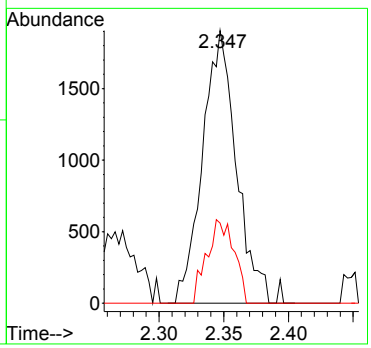

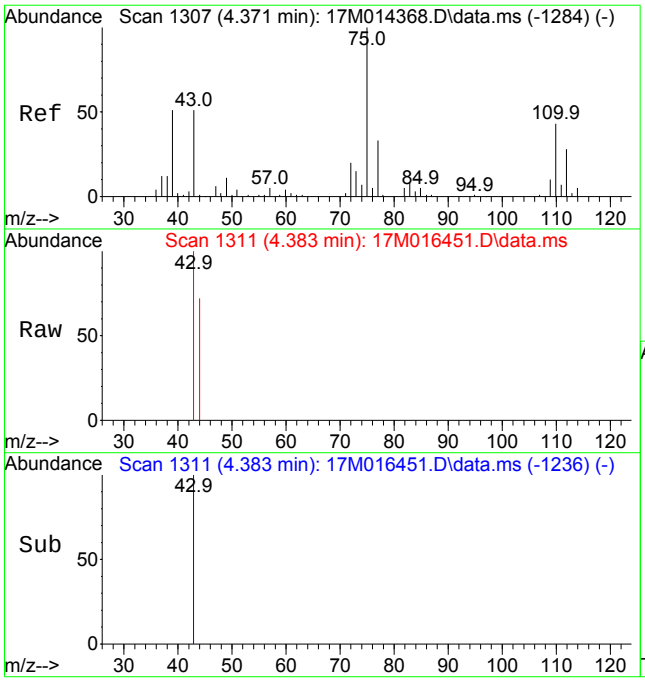

#32
2-Butanone
Concen: 0.2578 ug/L
RT: 4.383 min Scan# 1311
Delta R.T. 0.018 min
Lab File: 17M016451.D
Acq: 13 Nov 2015 20:00

Tgt Ion: 43 Resp: 327

Ion	Ratio	Lower	Upper
43	100		
72	0.0	37.0	55.4#
57	0.0	7.2	10.8#

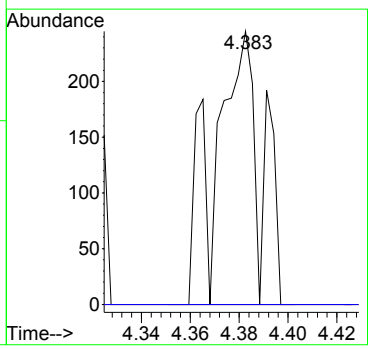

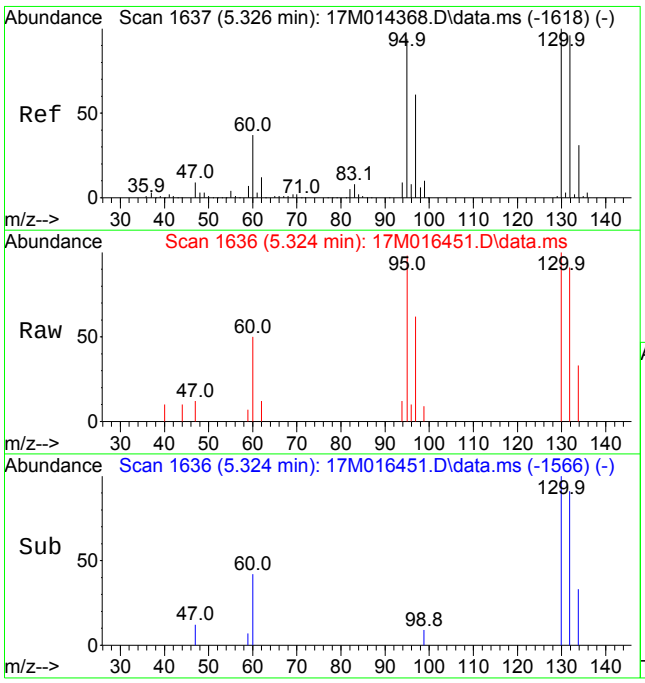

#37
Trichloroethene
Concen: 0.7656 ug/L
RT: 5.324 min Scan# 1636
Delta R.T. 0.003 min
Lab File: 17M016451.D
Acq: 13 Nov 2015 20:00

Tgt Ion:130 Resp: 3512

Ion	Ratio	Lower	Upper
130	100		
60	46.4	25.3	58.9

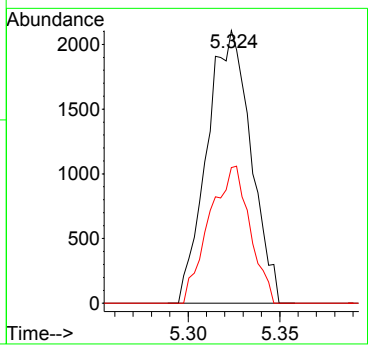

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\112415\
Data File : 17M016677.D
Acq On : 25 Nov 2015 00:05
Operator : JDS/FJB
Sample : L15110793-07 B 00 50X 826-SPE1
Misc : 1,50
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Dec 01 11:09:38 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.141	96	307708	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	233006	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.302	152	131558	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.177	111	85698	27.1491 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 108.596%		
34) 1,2-Dichloroethane-d4	4.811	65	88189	29.0922 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 116.369%		
47) Toluene-d8	6.710	98	334616	27.8596 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 111.438%#		
66) p-Bromofluorobenzene	8.723	95	120245	26.4407 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.763%		
Target Compounds					Qvalue
10) 1,1-Dichloroethene	1.866	61	1476	0.3056 ug/L	96
12) 1,1,2-Trichloro-1,2,2-...	1.895	101	859	0.2868 ug/L	93
20) 1,1-Dichloroethane	2.978	63	836	0.1383 ug/L #	43
23) cis-1,2-Dichloroethene	3.569	96	16744	4.6179 ug/L	97
35) 1,2-Dichloroethane	4.895	62	3456	0.8685 ug/L #	89
36) Methylcyclohexane	5.321	83	6606	1.0683 ug/L #	1
37) Trichloroethene	5.324	130	566197	154.2838 ug/L	98
49) Tetrachloroethene	7.084	166	665	0.1671 ug/L	92

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\112415\
Data File : 17M016677.D
Acq On : 25 Nov 2015 00:05
Operator : JDS/FJB
Sample : L15110793-07 B 00 50X 826-SPE1
Misc : 1,50
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Dec 01 11:09:38 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

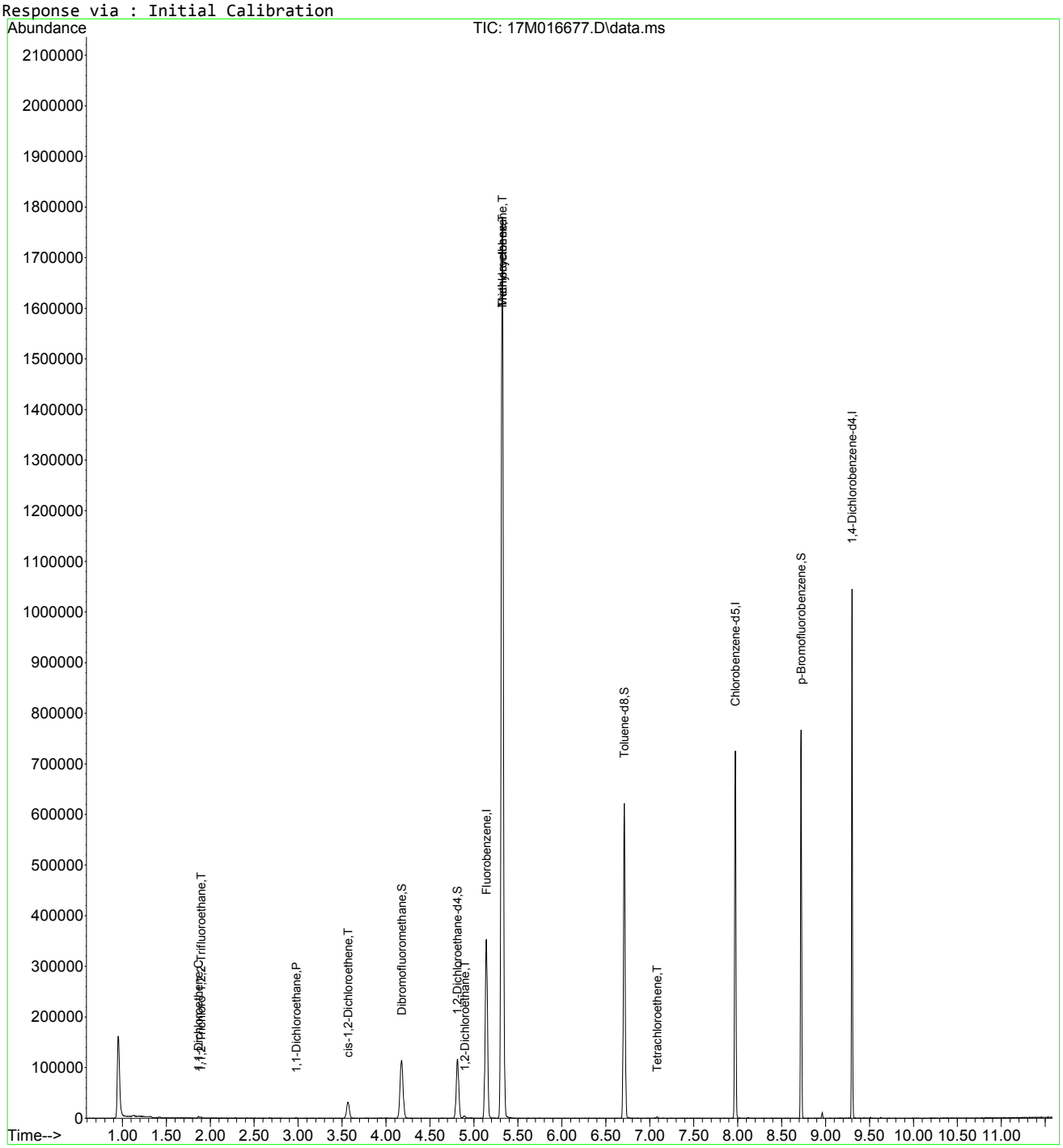

8260_VMS.M Tue Dec 01 11:09:39 2015 Page: 2

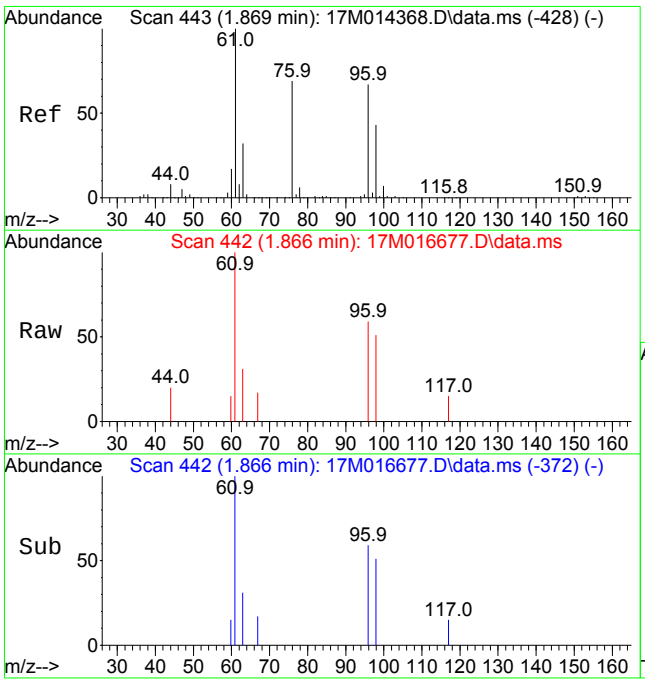

#10
1,1-Dichloroethene
Concen: 0.3056 ug/L
RT: 1.866 min Scan# 442
Delta R.T. 0.002 min
Lab File: 17M016677.D
Acq: 25 Nov 2015 00:05

Tgt Ion: 61 Resp: 1476

Ion	Ratio	Lower	Upper
61	100		
96	63.4	48.4	72.6

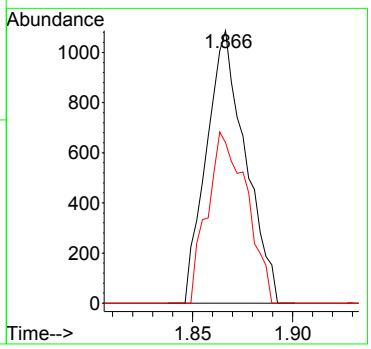

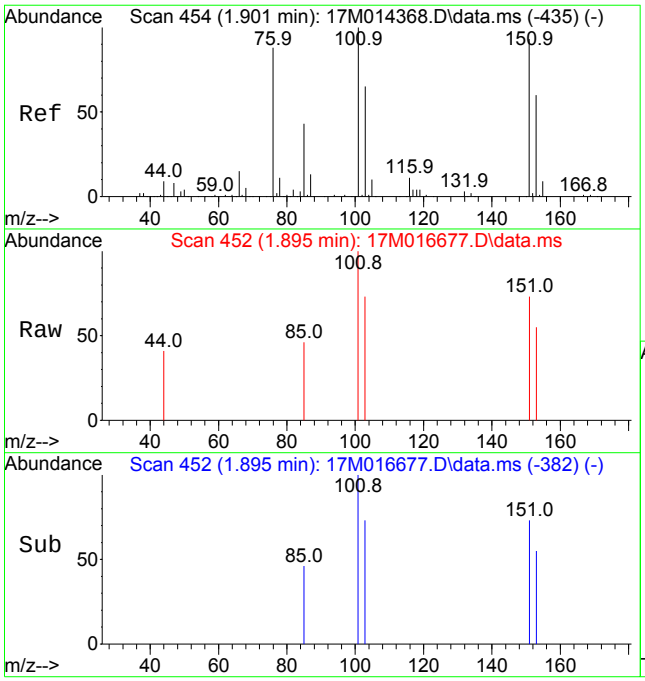

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 0.2868 ug/L
RT: 1.895 min Scan# 452
Delta R.T. 0.002 min
Lab File: 17M016677.D
Acq: 25 Nov 2015 00:05

Tgt Ion:101 Resp: 859

Ion	Ratio	Lower	Upper
101	100		
151	85.6	71.4	107.0
103	55.8	51.6	77.4

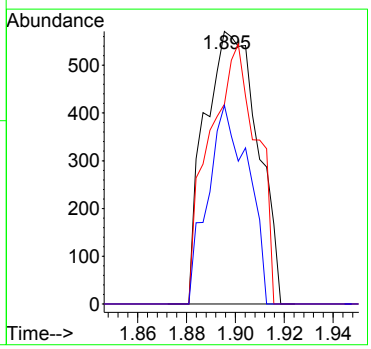

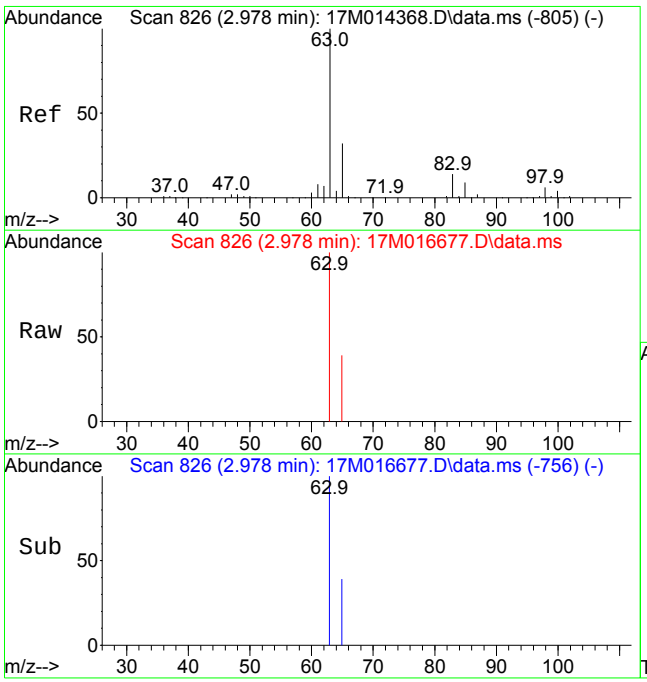

#20
1,1-Dichloroethane
Concen: 0.1383 ug/L
RT: 2.978 min Scan# 826
Delta R.T. 0.003 min
Lab File: 17M016677.D
Acq: 25 Nov 2015 00:05

Tgt Ion: 63 Resp: 836

Ion	Ratio	Lower	Upper
63	100		
65	0.0	25.4	38.0#

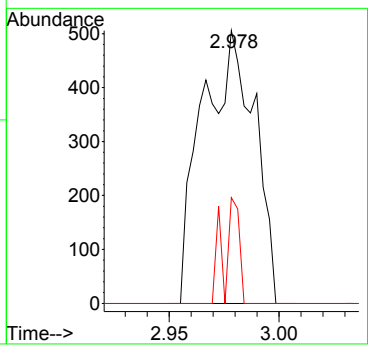

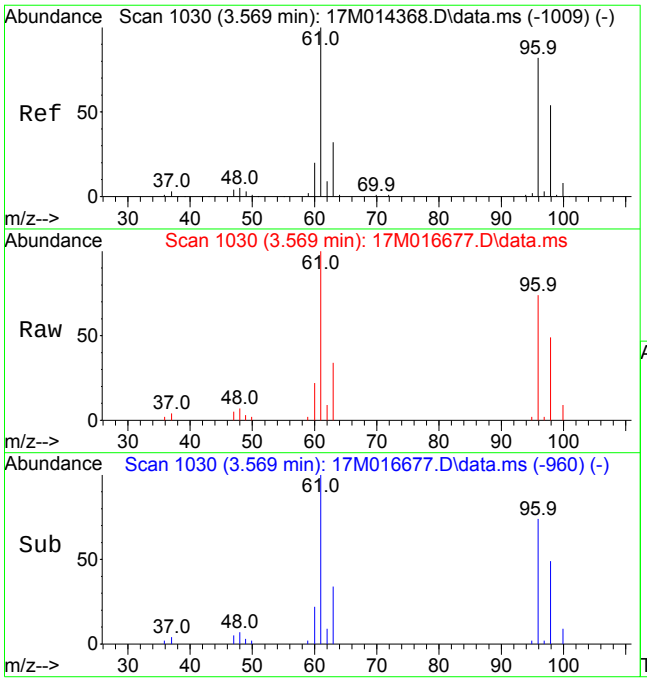

#23
cis-1,2-Dichloroethene
Concen: 4.6179 ug/L
RT: 3.569 min Scan# 1030
Delta R.T. 0.003 min
Lab File: 17M016677.D
Acq: 25 Nov 2015 00:05

Tgt Ion: 96 Resp: 16744

Ion	Ratio	Lower	Upper
96	100		
61	130.5	107.0	160.4

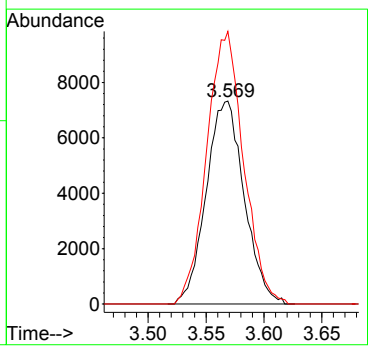

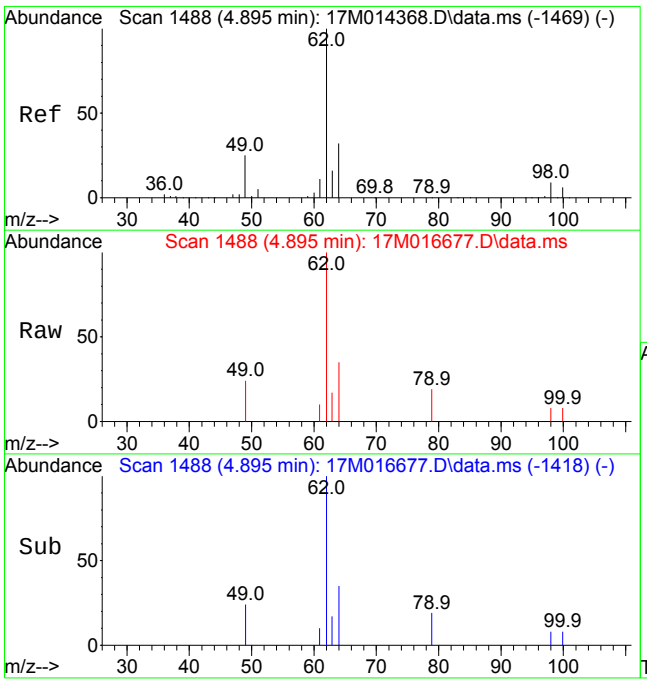

#35
1,2-Dichloroethane
Concen: 0.8685 ug/L
RT: 4.895 min Scan# 1488
Delta R.T. 0.003 min
Lab File: 17M016677.D
Acq: 25 Nov 2015 00:05

Tgt Ion: 62 Resp: 3456

Ion	Ratio	Lower	Upper
62	100		
49	24.3	16.9	39.3
98	0.0	4.9	11.5#

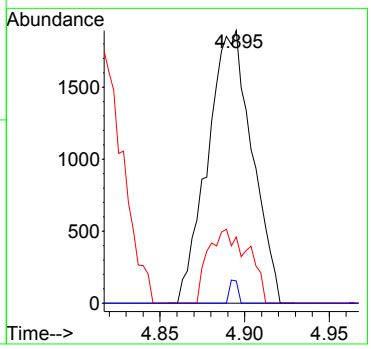

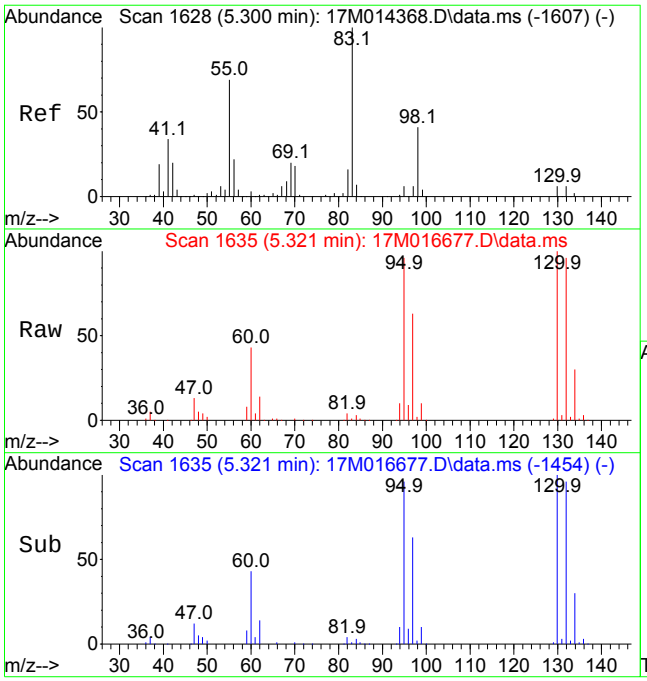

#36
Methylcyclohexane
Concen: 1.0683 ug/L
RT: 5.321 min Scan# 1635
Delta R.T. 0.023 min
Lab File: 17M016677.D
Acq: 25 Nov 2015 00:05

Tgt Ion: 83 Resp: 6606

Ion	Ratio	Lower	Upper
83	100		
55	0.0	63.0	94.4#
98	213.4	32.8	49.2#

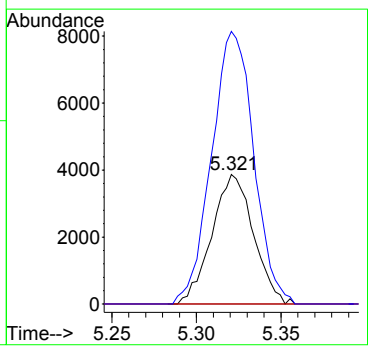

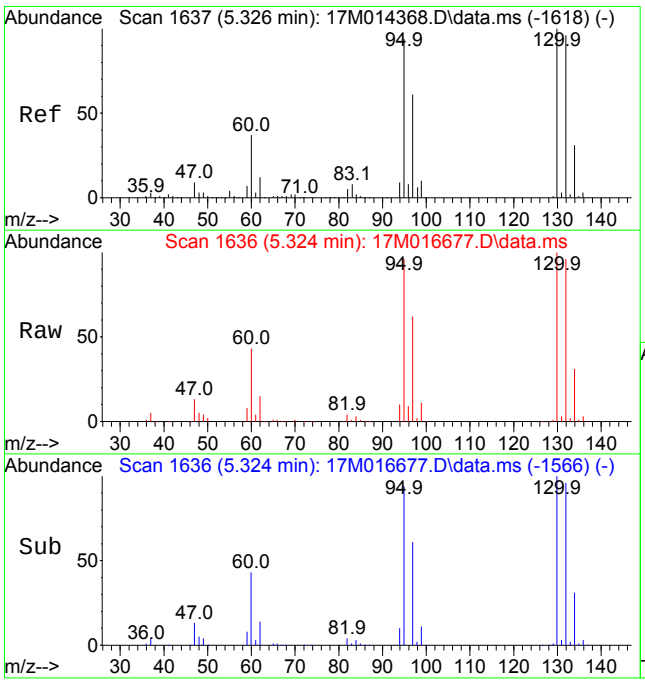

#37
Trichloroethene
Concen: 154.2838 ug/L
RT: 5.324 min Scan# 1636
Delta R.T. 0.003 min
Lab File: 17M016677.D
Acq: 25 Nov 2015 00:05

Tgt Ion:130 Resp: 566197

Ion	Ratio	Lower	Upper
130	100		
60	43.4	25.3	58.9

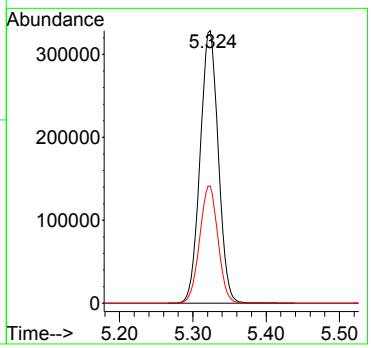

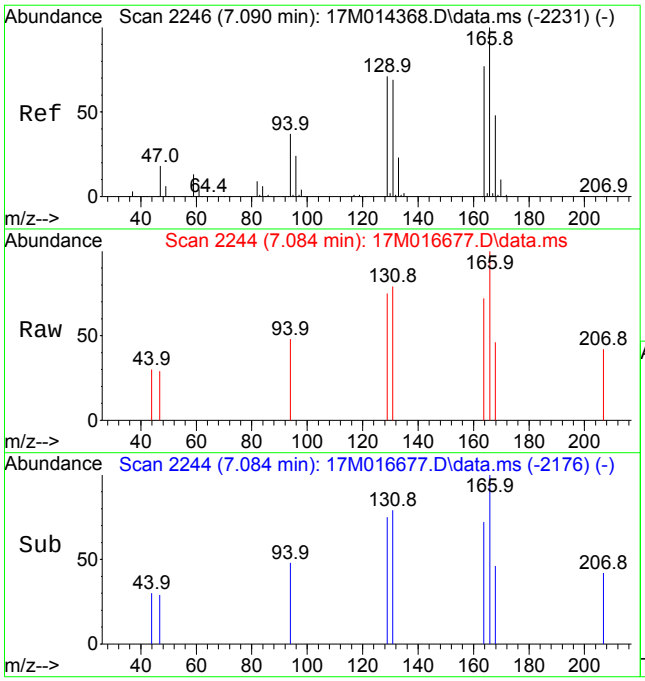

#49
Tetrachloroethene
Concen: 0.1671 ug/L
RT: 7.084 min Scan# 2244
Delta R.T. -0.003 min
Lab File: 17M016677.D
Acq: 25 Nov 2015 00:05

Tgt Ion:166 Resp: 665

Ion	Ratio	Lower	Upper
166	100		
129	65.3	59.4	89.2
94	37.9	31.9	47.9

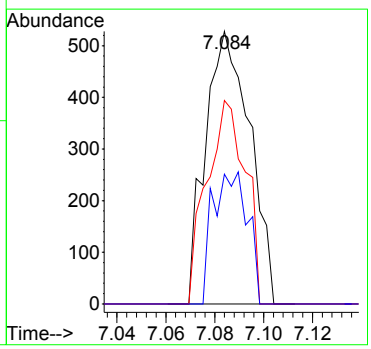

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\111315\11M10259.D Vial: 12
Acq On : 13 Nov 2015 20:26 Operator: JDS
Sample : L15110793-09 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 23 12:44:16 2015 Quant Results File: 8260_WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 10:32:15 2015
Response via : Initial Calibration
DataAcq Meth : 8260_WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.64	96	924766	25.00 ug/L	-0.02
56) Chlorobenzene-d5	14.28	117	763733	25.00 ug/L	-0.02
76) 1,4-Dichlorobenzene-d4	17.10	152	449508	25.00 ug/L	-0.01
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	251789	23.9387 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.76%		
43) 1,2-Dichloroethane-d4	10.26	65	238263	22.0260 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 88.12%		
57) Toluene-d8	12.51	98	920250	28.2654 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 113.08%#		
78) p-Bromofluorobenzene	15.69	95	348355	26.8969 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 107.60%		
Target Compounds					Qvalue
13) Acetone	6.35	43	304	0.1277 ug/L #	44
32) cis-1,2-Dichloroethene	9.18	96	169895	14.1555 ug/L	83
46) Trichloroethene	11.13	130	70155	5.7842 ug/L	97

(#) = qualifier out of range (m) = manual integration
11M10259.D 8260_WTR.M Mon Nov 23 12:44:17 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\111315\11M10259.D Vial: 12
Acq On : 13 Nov 2015 20:26 Operator: JDS
Sample : L15110793-09 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 23 12:44 2015 Quant Results File: 8260_WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 10:32:15 2015
Response via : Initial Calibration

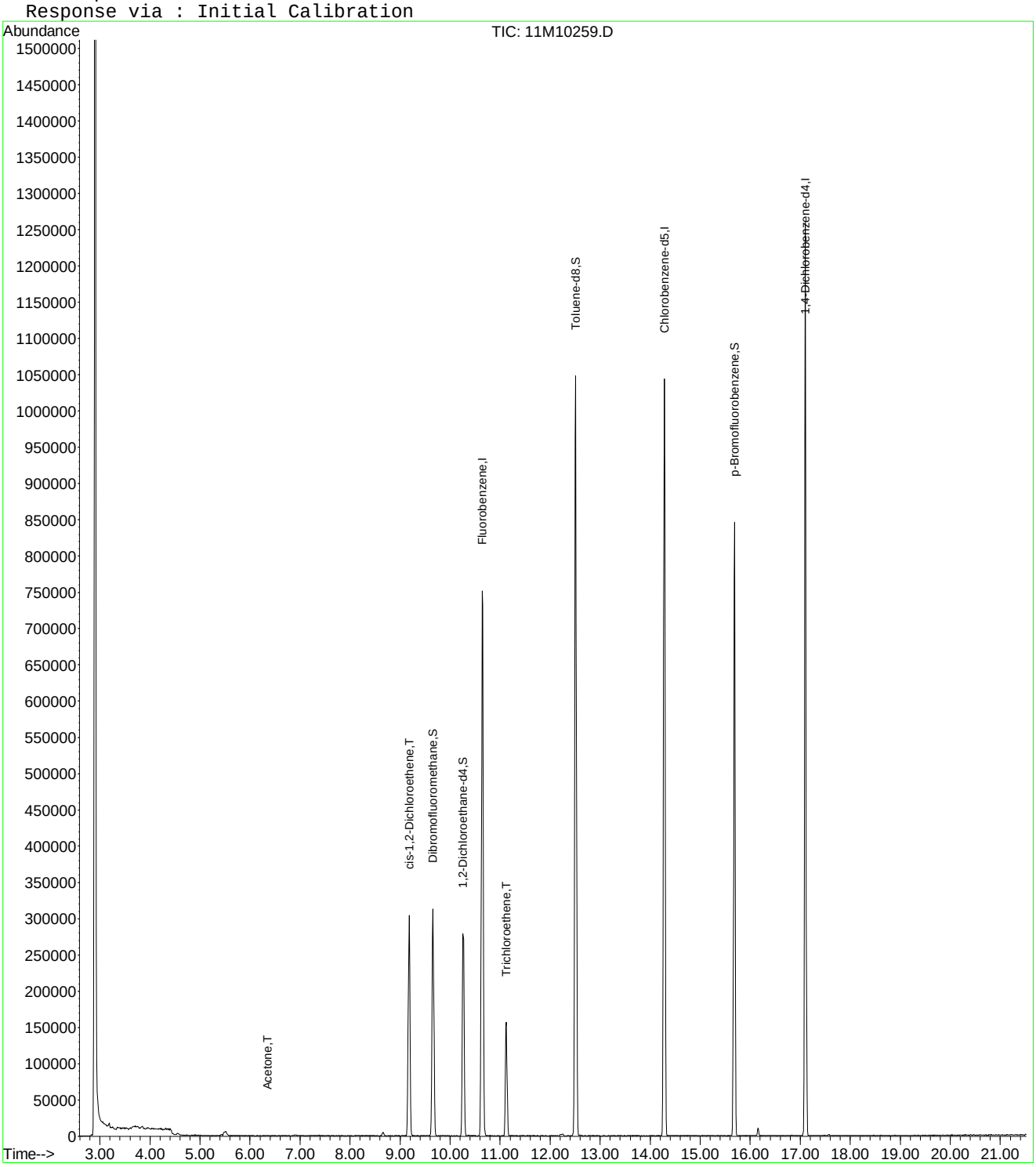

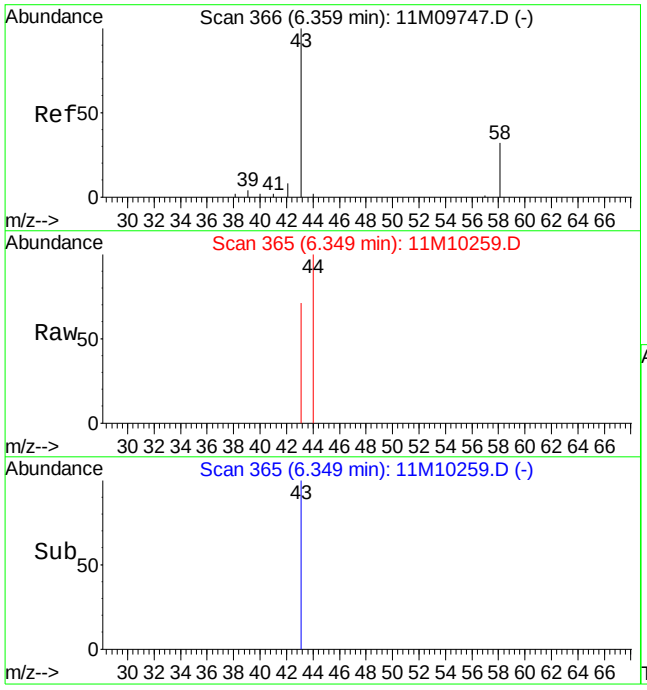

#13
Acetone
Concen: 0.13 ug/L
RT: 6.35 min Scan# 365
Delta R.T. -0.01 min
Lab File: 11M10259.D
Acq: 13 Nov 2015 20:26

Tgt Ion: 43 Resp: 304

Ion	Ratio	Lower	Upper
43	100		
58	0.0	18.1	42.3#

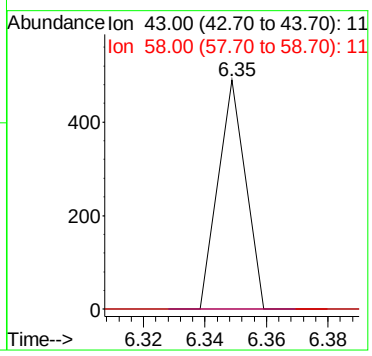

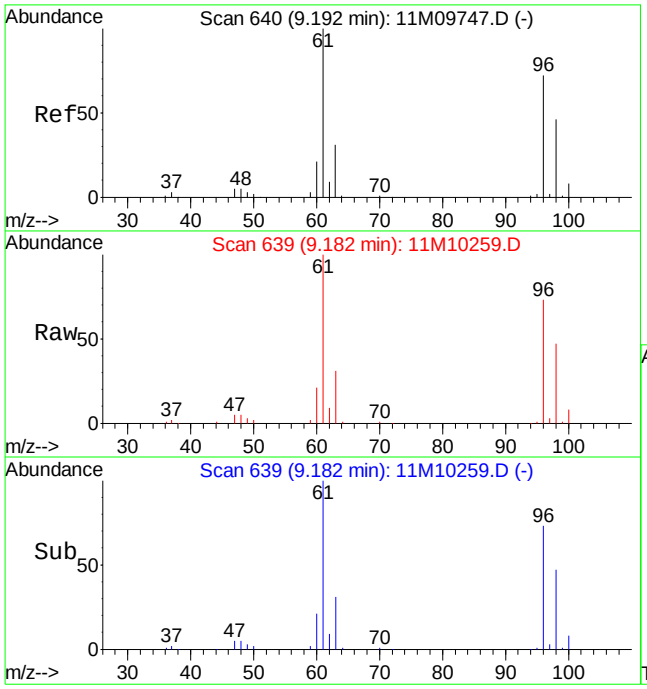

#32
cis-1,2-Dichloroethene
Concen: 14.16 ug/L
RT: 9.18 min Scan# 639
Delta R.T. -0.01 min
Lab File: 11M10259.D
Acq: 13 Nov 2015 20:26

Tgt Ion: 96 Resp: 169895

Ion	Ratio	Lower	Upper
96	100		
61	137.8	95.8	223.4

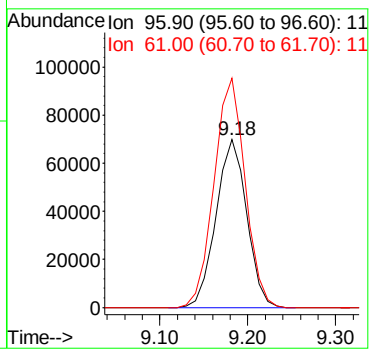

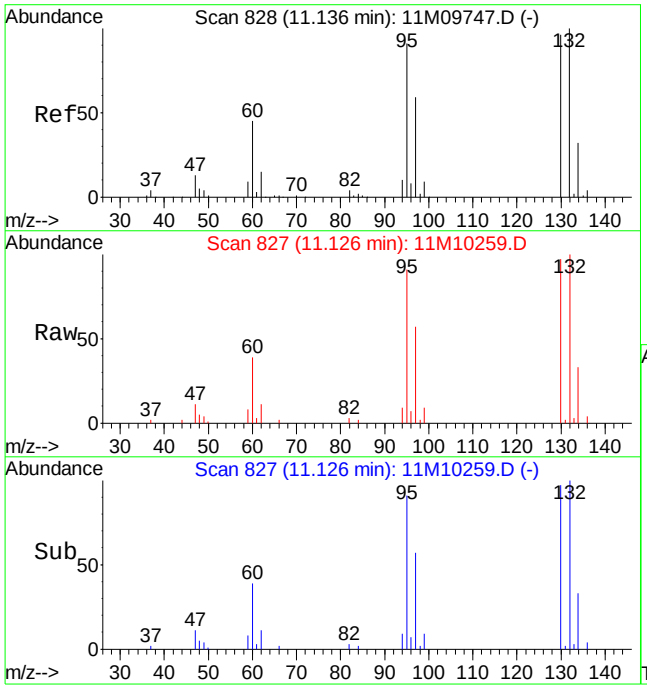

#46
Trichloroethene
Concen: 5.78 ug/L
RT: 11.13 min Scan# 827
Delta R.T. -0.01 min
Lab File: 11M10259.D
Acq: 13 Nov 2015 20:26

Tgt Ion:130 Resp: 70155

Ion	Ratio	Lower	Upper
130	100		
132	106.5	61.7	144.1
95	93.1	56.9	132.7

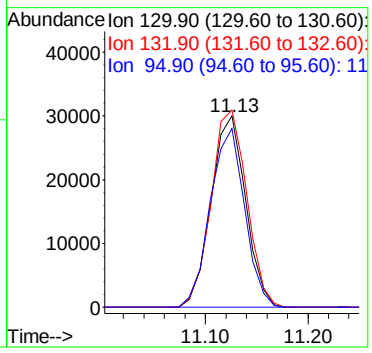

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\111615\8M408729.D Vial: 24
Acq On : 16 Nov 2015 22:27 Operator: TMB
Sample : L15110793-11 A 20X 826-LOW Inst : HPMS8
Misc : 1,20 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 17 07:32:17 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	1069450	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	790200	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	414866	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	267432	26.2745 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 105.08%		
43) 1,2-Dichloroethane-d4	10.31	65	267253	25.7528 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.00%		
58) Toluene-d8	12.68	98	936058	25.5309 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.12%		
80) p-Bromofluorobenzene	16.07	95	357486	24.6963 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.80%		

Target Compounds

					Qvalue
4) Vinyl Chloride	3.86	62	2537	0.1294 ug/L	83
14) 1,1-Dichloroethene	6.46	61	15143	0.8734 ug/L	94
27) 1,1-Dichloroethane	8.33	63	5194	0.2484 ug/L #	93
32) cis-1,2-Dichloroethene	9.17	96	31766	2.7040 ug/L	85
45) 1,2-Dichloroethane	10.43	62	15619	1.1452 ug/L	89
47) Trichloroethene	11.22	130	1511252	133.2828 ug/L	98
48) Methylcyclohexane	11.22	83	21985	1.2531 ug/L #	1
66) Tetrachloroethene	13.61	164	1622	0.1699 ug/L	92

(#) = qualifier out of range (m) = manual integration
8M408729.D 8260WT.M Tue Nov 17 07:32:17 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\111615\8M408729.D Vial: 24
Acq On : 16 Nov 2015 22:27 Operator: TMB
Sample : L15110793-11 A 20X 826-LOW Inst : HPMS8
Misc : 1,20 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 17 7:32 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration

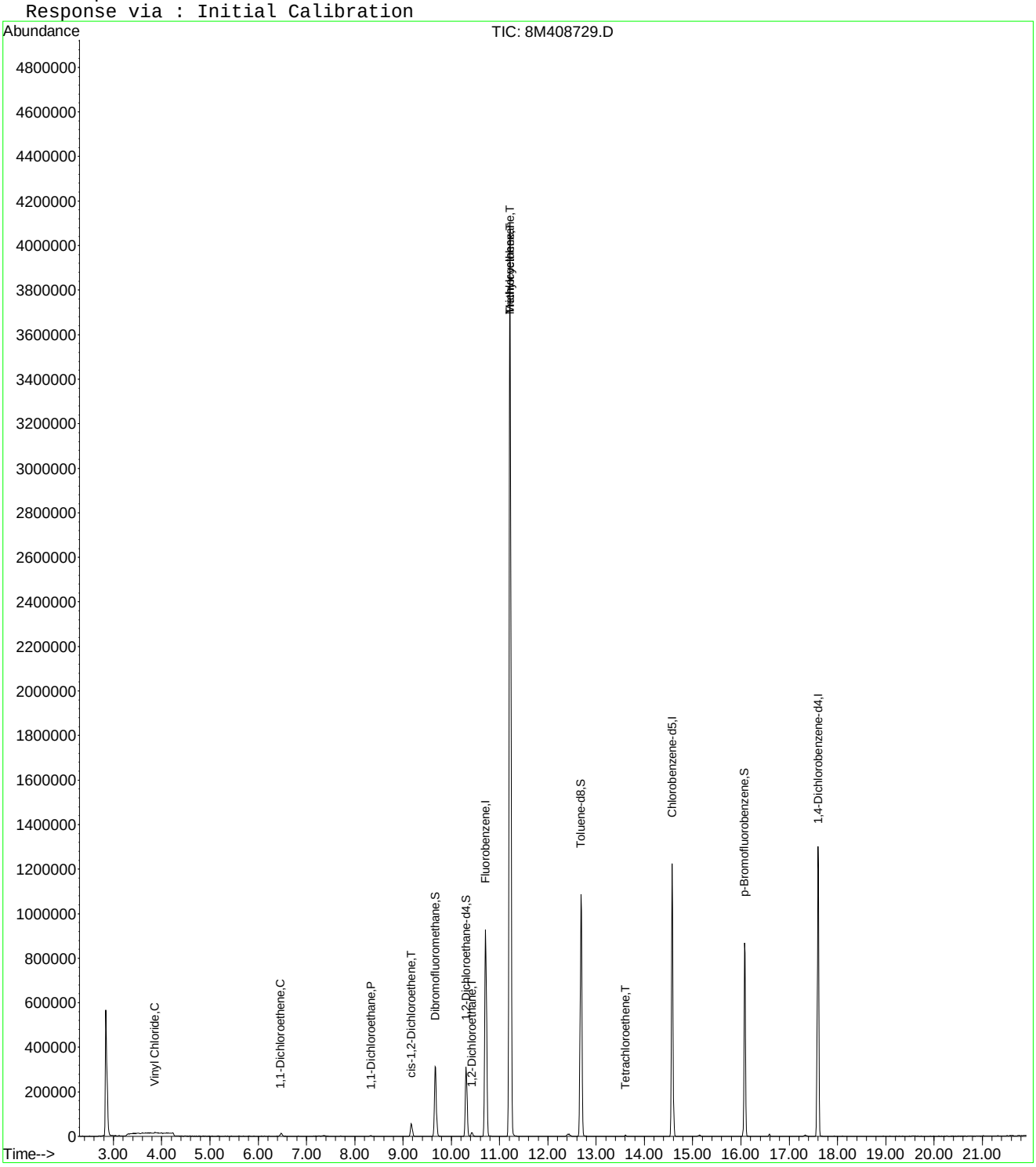

8M408729.D 8260WT.M Tue Nov 17 07:32:17 2015 Page 2

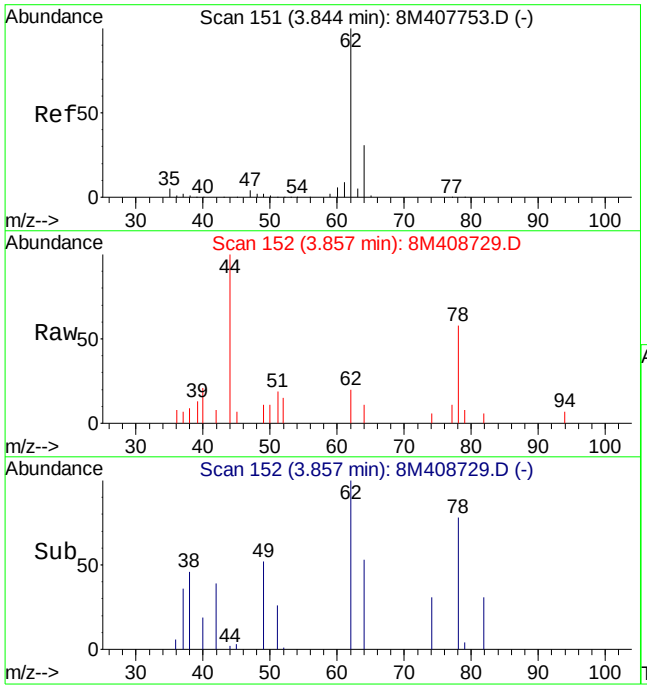

#4
Vinyl Chloride
Concen: 0.13 ug/L
RT: 3.86 min Scan# 152
Delta R.T. 0.01 min
Lab File: 8M408729.D
Acq: 16 Nov 2015 22:27

Tgt Ion: 62 Resp: 2537

Ion	Ratio	Lower	Upper
62	100		
64	39.5	18.2	42.6

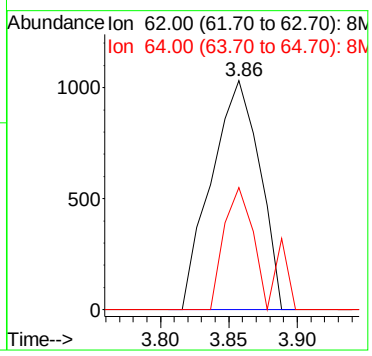

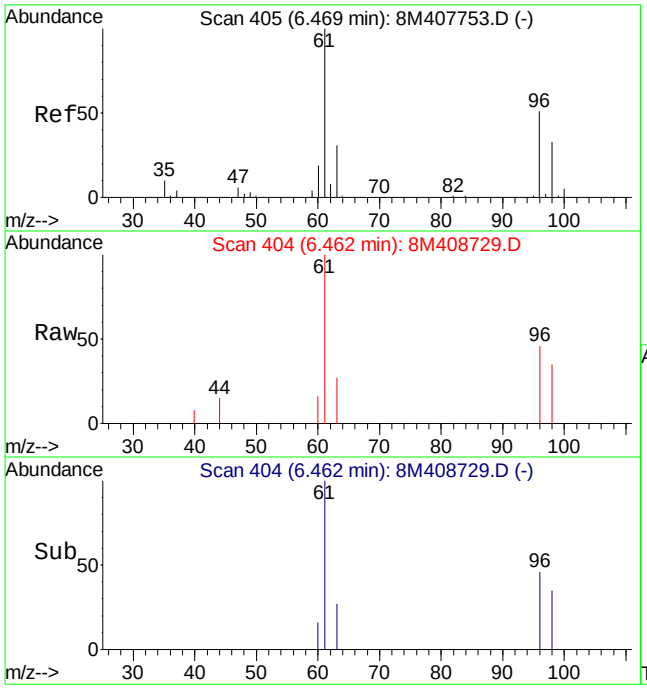

#14
1,1-Dichloroethene
Concen: 0.87 ug/L
RT: 6.46 min Scan# 404
Delta R.T. -0.01 min
Lab File: 8M408729.D
Acq: 16 Nov 2015 22:27

Tgt Ion: 61 Resp: 15143

Ion	Ratio	Lower	Upper
61	100		
96	49.8	32.3	75.3

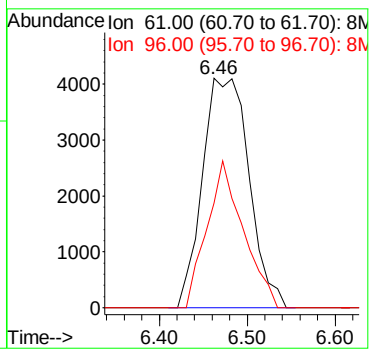

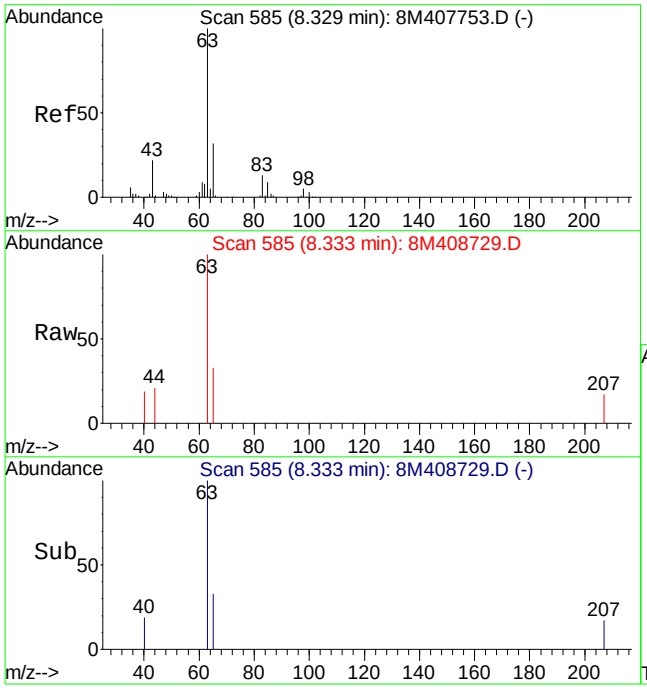

#27
1,1-Dichloroethane
Concen: 0.25 ug/L
RT: 8.33 min Scan# 585
Delta R.T. -0.00 min
Lab File: 8M408729.D
Acq: 16 Nov 2015 22:27

Tgt Ion: 63 Resp: 5194

Ion	Ratio	Lower	Upper
63	100		
65	31.2	18.4	43.0
83	4.0	7.7	18.1#

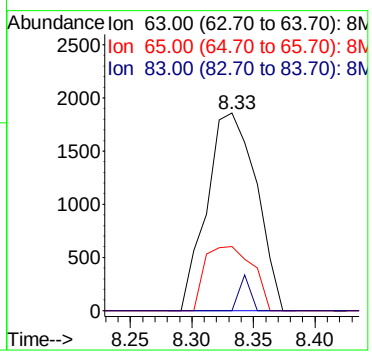

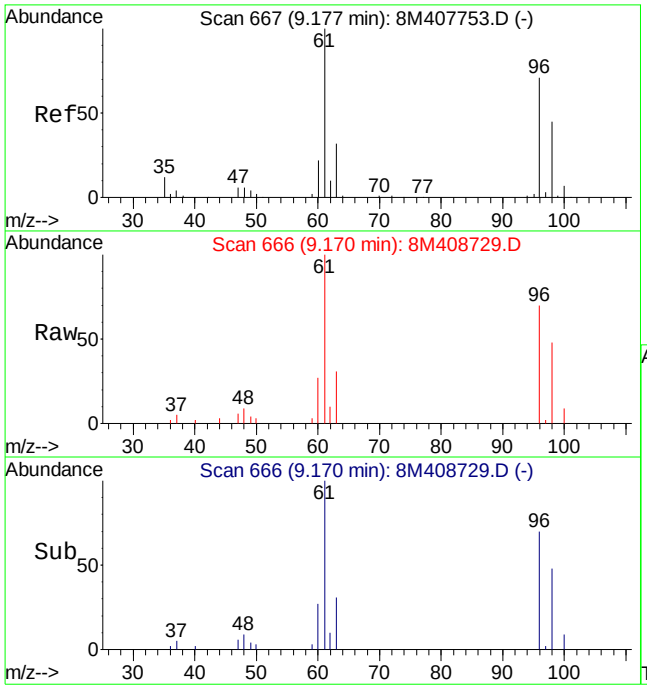

#32
cis-1,2-Dichloroethene
Concen: 2.70 ug/L
RT: 9.17 min Scan# 666
Delta R.T. -0.00 min
Lab File: 8M408729.D
Acq: 16 Nov 2015 22:27

Tgt Ion: 96 Resp: 31766

Ion	Ratio	Lower	Upper
96	100		
61	146.1	99.8	233.0

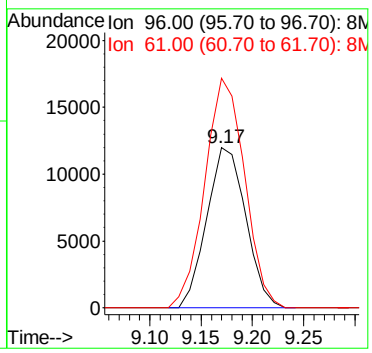

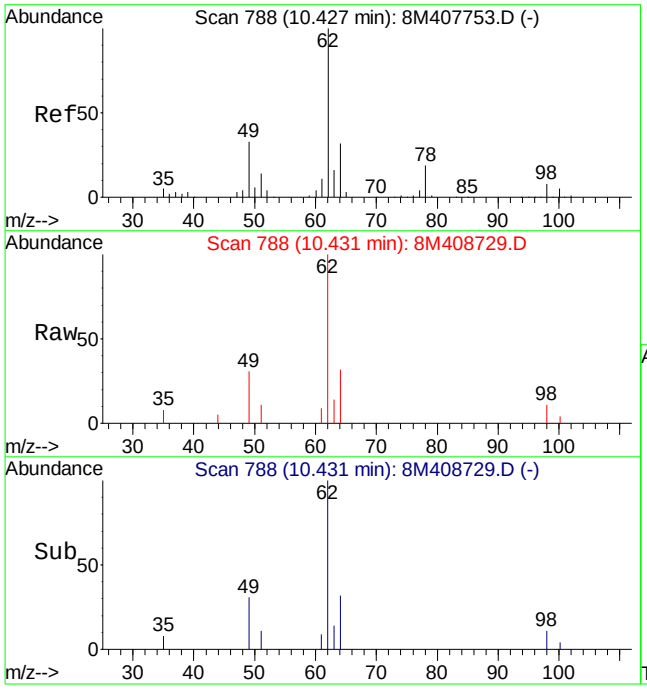

#45
1,2-Dichloroethane
Concen: 1.15 ug/L
RT: 10.43 min Scan# 788
Delta R.T. -0.00 min
Lab File: 8M408729.D
Acq: 16 Nov 2015 22:27

Tgt Ion: 62 Resp: 15619

Ion	Ratio	Lower	Upper
62	100		
64	27.5	18.8	44.0
49	32.8	25.3	58.9

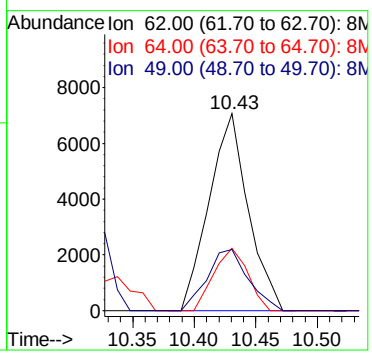

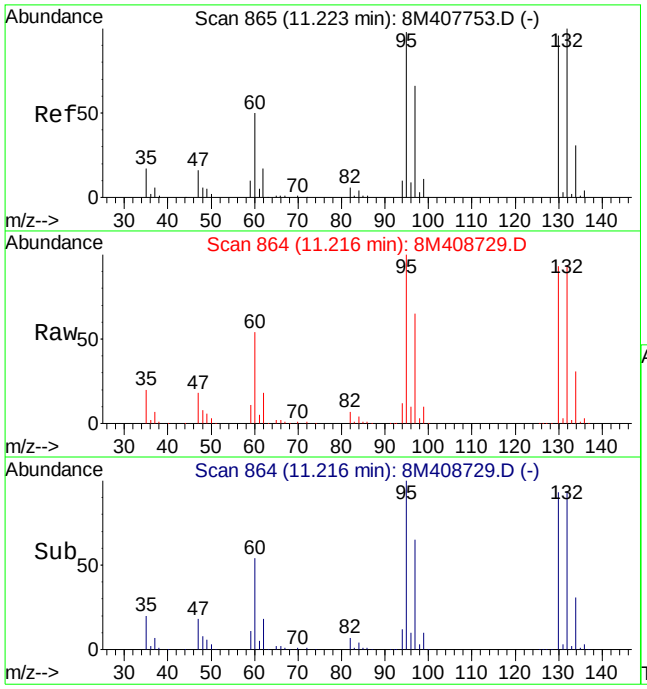

#47
Trichloroethene
Concen: 133.28 ug/L
RT: 11.22 min Scan# 864
Delta R.T. -0.00 min
Lab File: 8M408729.D
Acq: 16 Nov 2015 22:27

Tgt Ion:130 Resp: 1511252

Ion	Ratio	Lower	Upper
130	100		
132	101.7	59.0	137.6
95	106.8	65.0	151.8

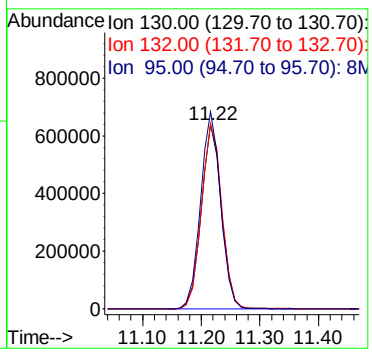

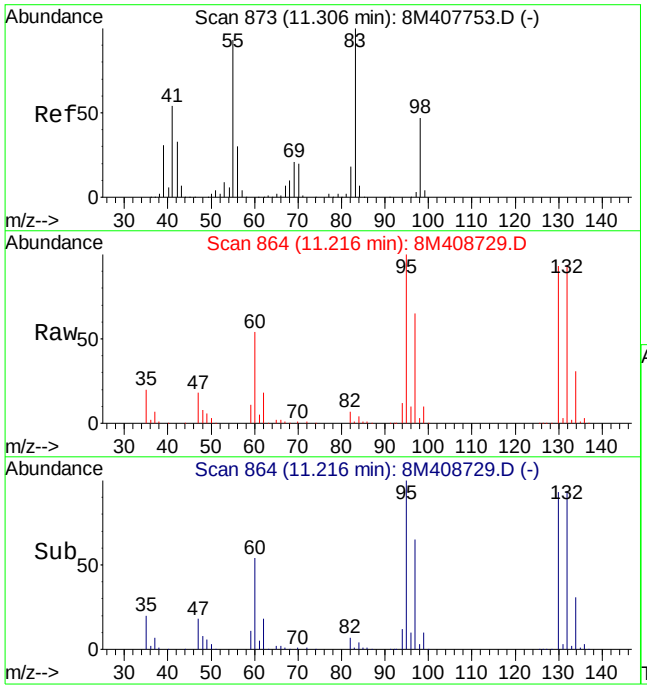

#48
Methylcyclohexane
Concen: 1.25 ug/L
RT: 11.22 min Scan# 864
Delta R.T. -0.08 min
Lab File: 8M408729.D
Acq: 16 Nov 2015 22:27

Tgt Ion: 83 Resp: 21985

Ion	Ratio	Lower	Upper
83	100		
55	0.0	54.8	128.0#
98	196.8	29.0	67.8#

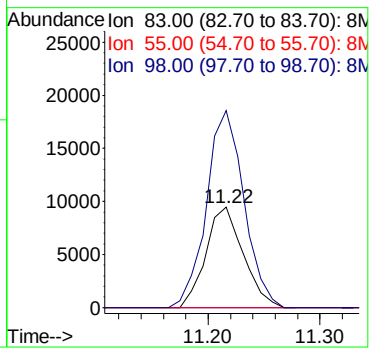

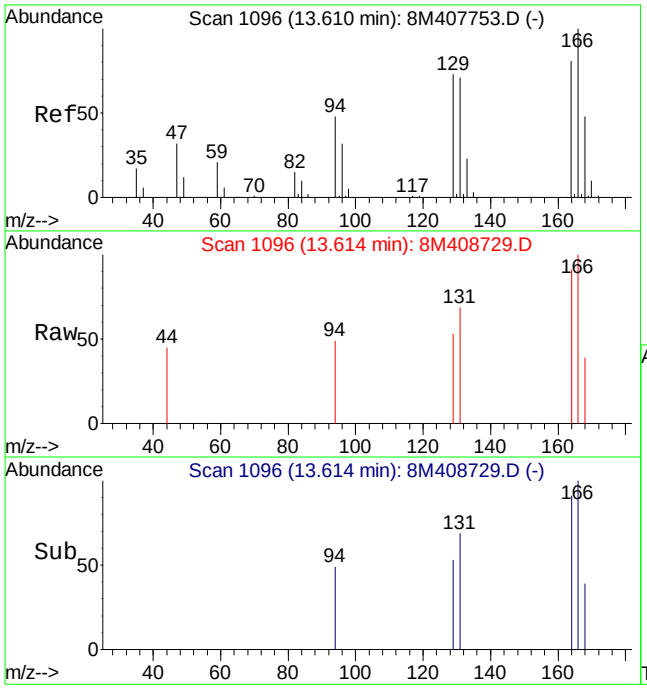

#66
Tetrachloroethene
Concen: 0.17 ug/L
RT: 13.61 min Scan# 1096
Delta R.T. 0.01 min
Lab File: 8M408729.D
Acq: 16 Nov 2015 22:27

Tgt Ion:164 Resp: 1622

Ion	Ratio	Lower	Upper
164	100		
129	87.7	54.3	126.7
94	52.0	38.3	89.5

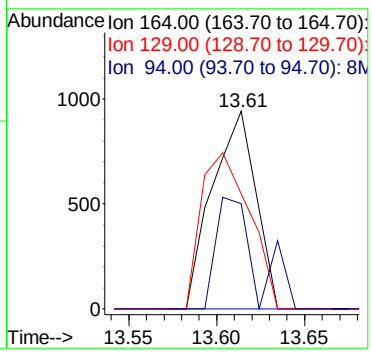

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\111315\11M10260.D Vial: 13
Acq On : 13 Nov 2015 20:58 Operator: JDS
Sample : L15110793-13 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 23 12:44:18 2015 Quant Results File: 8260_WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 10:32:15 2015
Response via : Initial Calibration
DataAcq Meth : 8260_WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.64	96	918643	25.00 ug/L	-0.02
56) Chlorobenzene-d5	14.28	117	762422	25.00 ug/L	-0.02
76) 1,4-Dichlorobenzene-d4	17.10	152	450671	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	254080	24.3176 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.28%		
43) 1,2-Dichloroethane-d4	10.26	65	241231	22.4490 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 89.80%		
57) Toluene-d8	12.51	98	915109	28.1558 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 112.64%#		
78) p-Bromofluorobenzene	15.69	95	346381	26.6755 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 106.72%		

Target Compounds

					Qvalue
3) Chloromethane	3.70	50	2596	0.1998 ug/L #	70
13) Acetone	6.36	43	456	0.1928 ug/L #	44
14) 1,1-Dichloroethene	6.58	61	4906	0.2927 ug/L	96
32) cis-1,2-Dichloroethene	9.18	96	12454	1.0446 ug/L	83
44) 1,2-Dichloroethane	10.37	62	3763	0.2504 ug/L	77
46) Trichloroethene	11.13	130	715631	59.3966 ug/L	98
47) Methylcyclohexane	11.13	83	7446	0.5079 ug/L #	1
64) Tetrachloroethene	13.38	164	1472	0.1612 ug/L	72

(#) = qualifier out of range (m) = manual integration
11M10260.D 8260_WTR.M Mon Nov 23 12:44:20 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\111315\11M10260.D Vial: 13
Acq On : 13 Nov 2015 20:58 Operator: JDS
Sample : L15110793-13 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 23 12:44 2015 Quant Results File: 8260_WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 10:32:15 2015
Response via : Initial Calibration

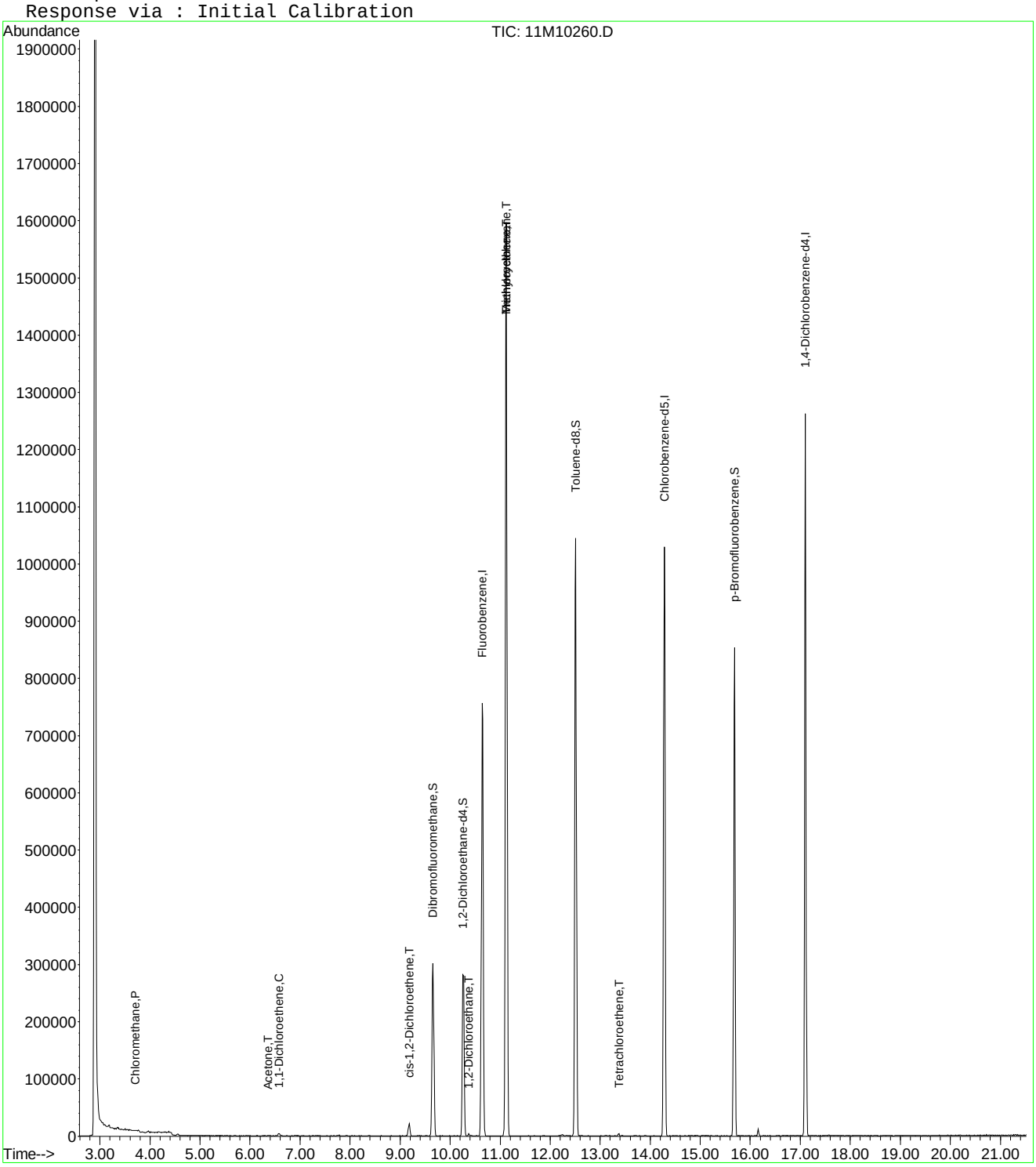

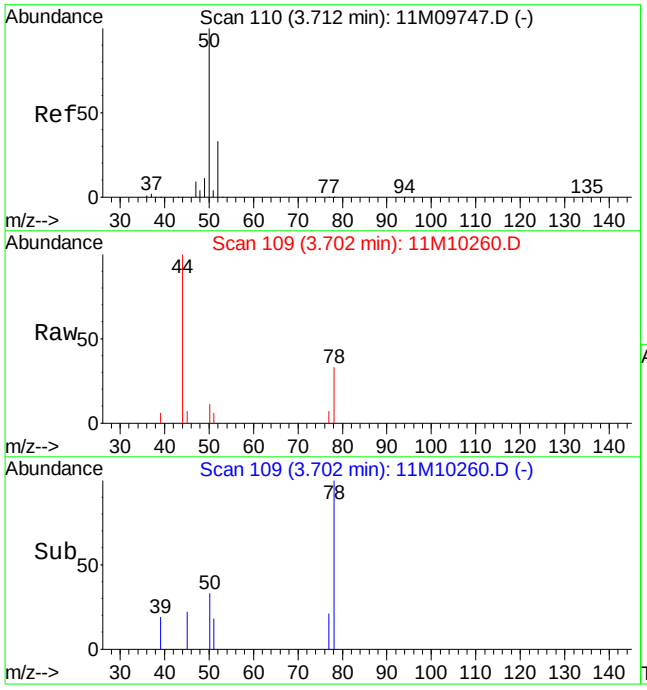

#3
Chloromethane
Concen: 0.20 ug/L
RT: 3.70 min Scan# 109
Delta R.T. -0.01 min
Lab File: 11M10260.D
Acq: 13 Nov 2015 20:58

Tgt Ion: 50 Resp: 2596

Ion	Ratio	Lower	Upper
50	100		
52	50.8	20.3	47.5#

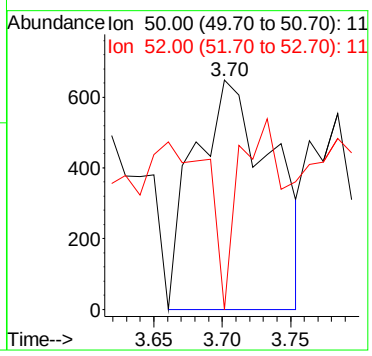

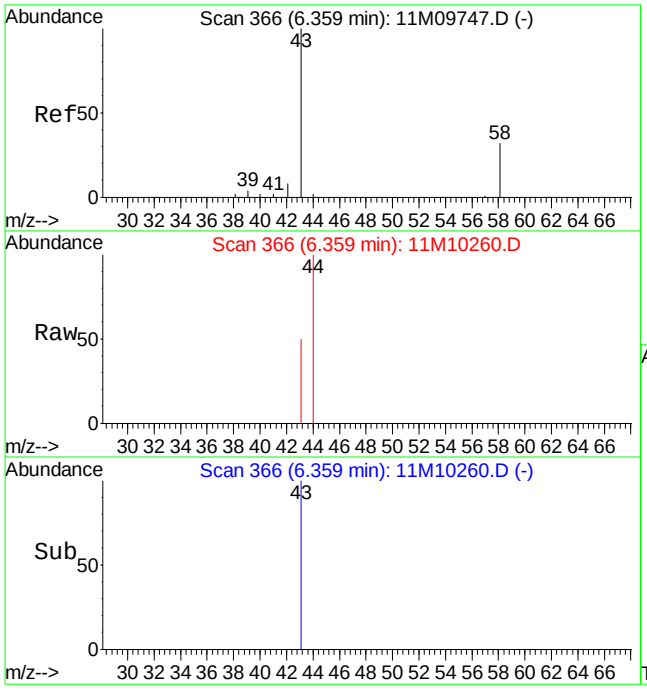

#13
Acetone
Concen: 0.19 ug/L
RT: 6.36 min Scan# 366
Delta R.T. -0.00 min
Lab File: 11M10260.D
Acq: 13 Nov 2015 20:58

Tgt Ion: 43 Resp: 456

Ion	Ratio	Lower	Upper
43	100		
58	0.0	18.1	42.3#

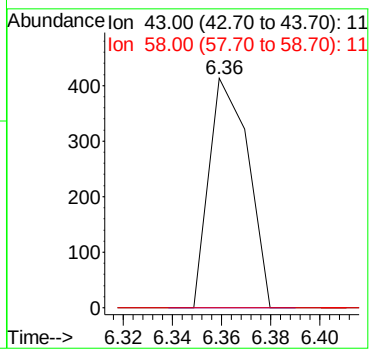

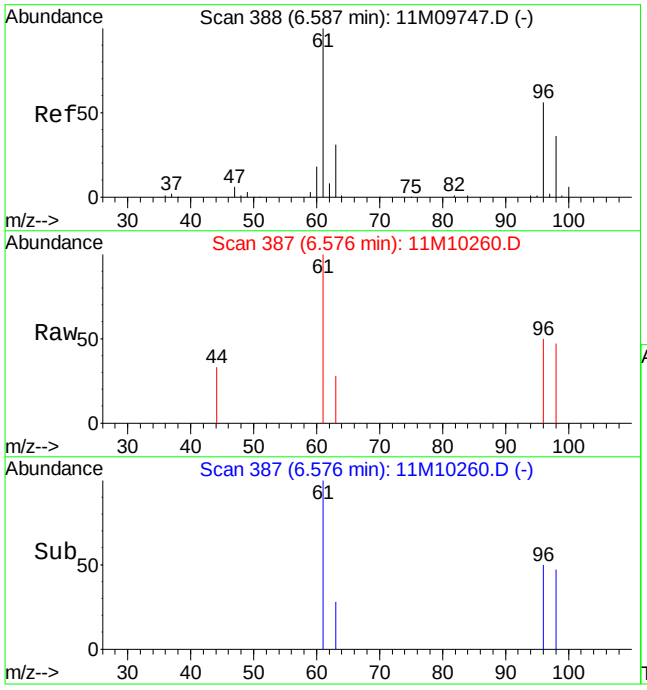

#14
1,1-Dichloroethene
Concen: 0.29 ug/L
RT: 6.58 min Scan# 387
Delta R.T. -0.01 min
Lab File: 11M10260.D
Acq: 13 Nov 2015 20:58

Tgt Ion: 61 Resp: 4906

Ion	Ratio	Lower	Upper
61	100		
96	52.8	33.5	78.3

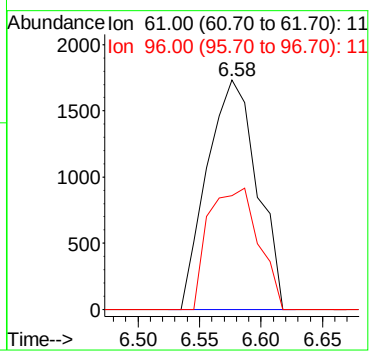

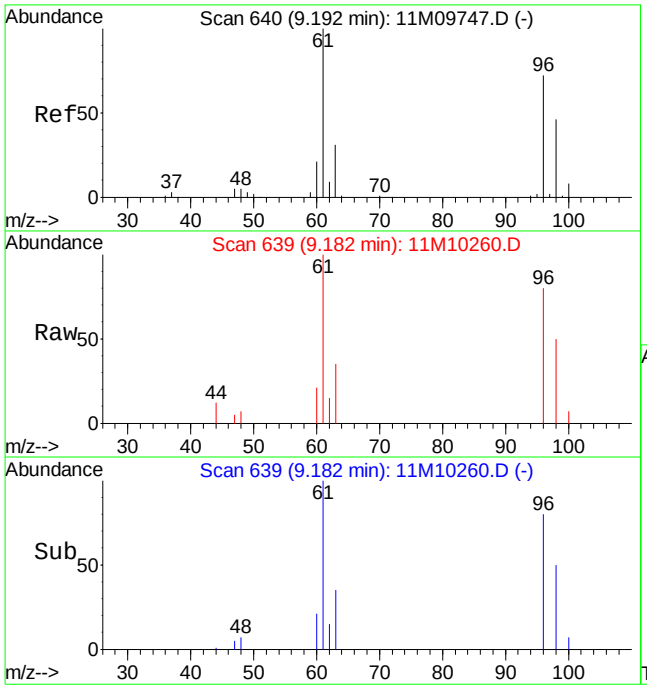

#32
cis-1,2-Dichloroethene
Concen: 1.04 ug/L
RT: 9.18 min Scan# 639
Delta R.T. -0.01 min
Lab File: 11M10260.D
Acq: 13 Nov 2015 20:58

Tgt Ion: 96 Resp: 12454

Ion	Ratio	Lower	Upper
96	100		
61	137.4	95.8	223.4

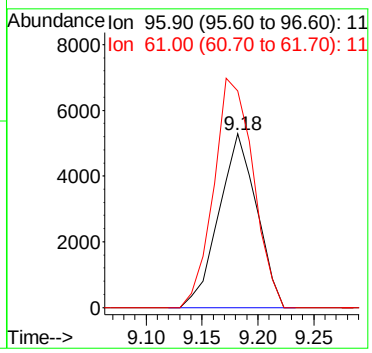

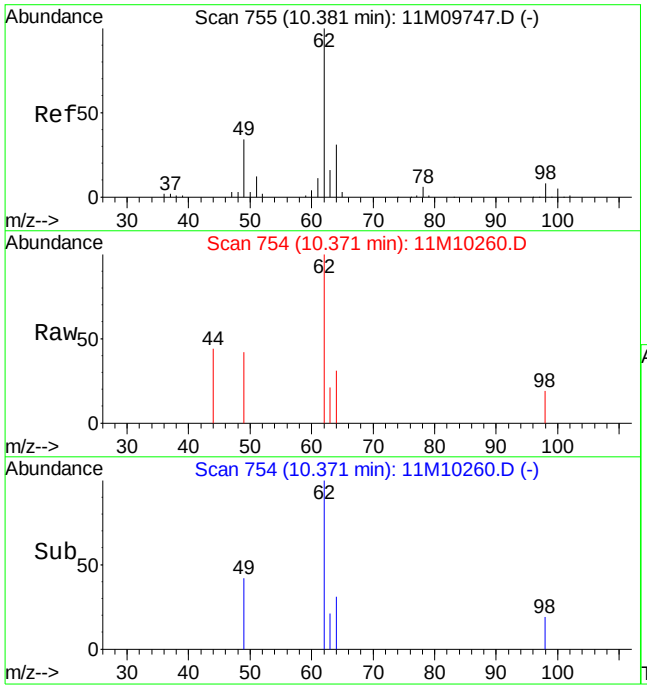

#44
1,2-Dichloroethane
Concen: 0.25 ug/L
RT: 10.37 min Scan# 754
Delta R.T. -0.01 min
Lab File: 11M10260.D
Acq: 13 Nov 2015 20:58

Tgt Ion: 62 Resp: 3763

Ion	Ratio	Lower	Upper
62	100		
64	20.9	19.0	44.4
49	24.6	24.4	56.8

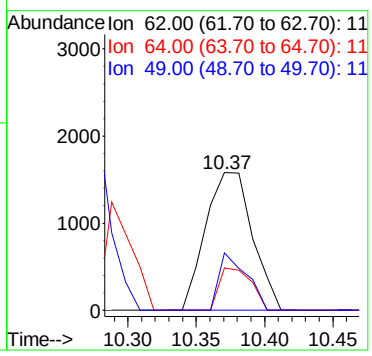

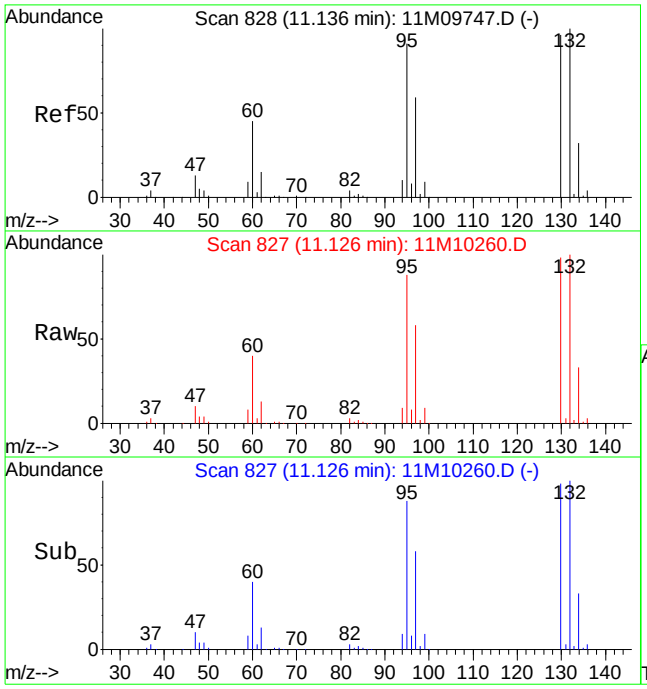

#46
Trichloroethene
Concen: 59.40 ug/L
RT: 11.13 min Scan# 827
Delta R.T. -0.01 min
Lab File: 11M10260.D
Acq: 13 Nov 2015 20:58

Tgt Ion:130 Resp: 715631

Ion	Ratio	Lower	Upper
130	100		
132	103.3	61.7	144.1
95	91.5	56.9	132.7

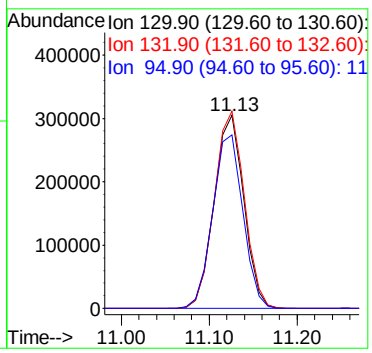

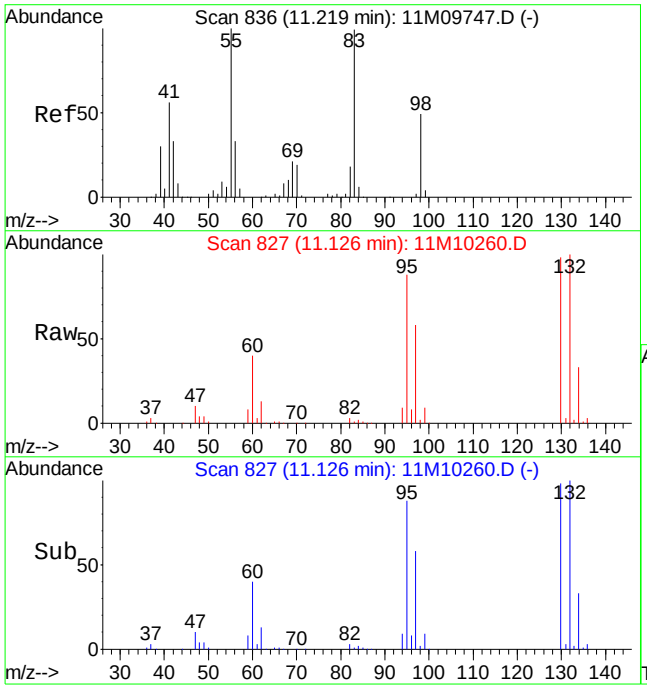

#47
Methylcyclohexane
Concen: 0.51 ug/L
RT: 11.13 min Scan# 827
Delta R.T. -0.09 min
Lab File: 11M10260.D
Acq: 13 Nov 2015 20:58

Tgt Ion: 83 Resp: 7446

Ion	Ratio	Lower	Upper
83	100		
55	0.0	60.0	140.0#
98	220.1	29.0	67.8#

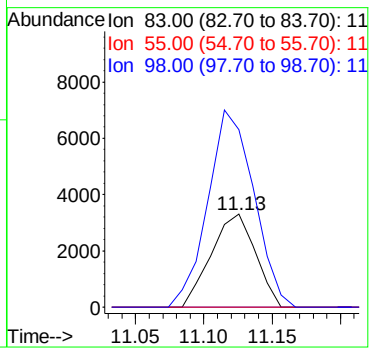

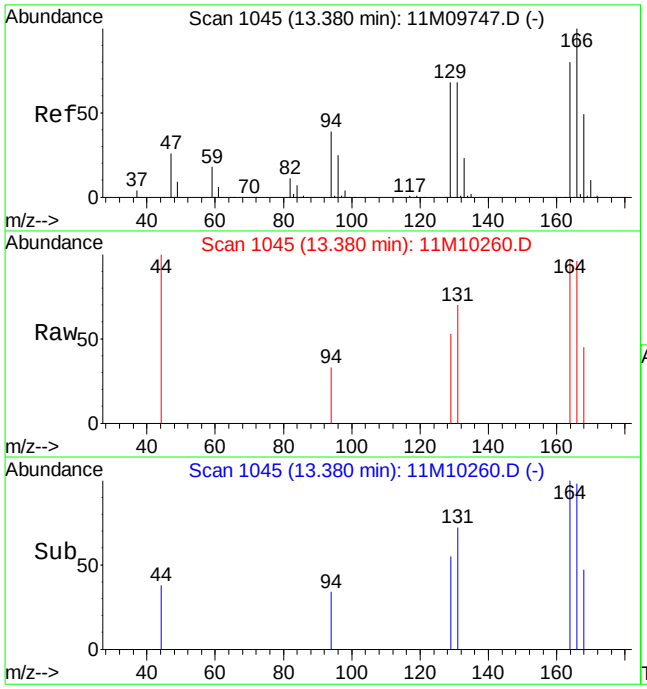

#64
Tetrachloroethene
Concen: 0.16 ug/L
RT: 13.38 min Scan# 1045
Delta R.T. -0.00 min
Lab File: 11M10260.D
Acq: 13 Nov 2015 20:58

Tgt Ion:164 Resp: 1472

Ion	Ratio	Lower	Upper
164	100		
129	59.2	51.0	119.0

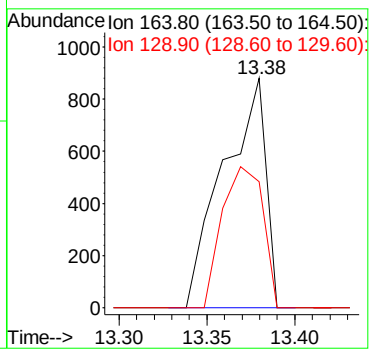

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\111315\11M10261.D Vial: 14
Acq On : 13 Nov 2015 21:30 Operator: JDS
Sample : L15110793-15 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 23 12:44:22 2015 Quant Results File: 8260_WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 10:32:15 2015
Response via : Initial Calibration
DataAcq Meth : 8260_WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.64	96	925461	25.00 ug/L	-0.02
56) Chlorobenzene-d5	14.28	117	762474	25.00 ug/L	-0.02
76) 1,4-Dichlorobenzene-d4	17.10	152	446978	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	257225	24.4372 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.76%		
43) 1,2-Dichloroethane-d4	10.26	65	241148	22.2760 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 89.12%		
57) Toluene-d8	12.51	98	916104	28.1845 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 112.72%#		
78) p-Bromofluorobenzene	15.69	95	342268	26.5765 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 106.32%		

Target Compounds					Qvalue
14) 1,1-Dichloroethene	6.58	61	7770	0.4601 ug/L	93
28) Ethyl-Tert-Butyl ether	8.66	59	5359	0.1525 ug/L #	48
44) 1,2-Dichloroethane	10.38	62	2916	0.1926 ug/L #	79
46) Trichloroethene	11.13	130	213886	17.6215 ug/L	97
47) Methylcyclohexane	11.12	83	1937	0.1312 ug/L #	1

(#) = qualifier out of range (m) = manual integration
11M10261.D 8260_WTR.M Mon Nov 23 12:44:23 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\111315\11M10261.D Vial: 14
Acq On : 13 Nov 2015 21:30 Operator: JDS
Sample : L15110793-15 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 23 12:44 2015 Quant Results File: 8260_WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 10:32:15 2015
Response via : Initial Calibration

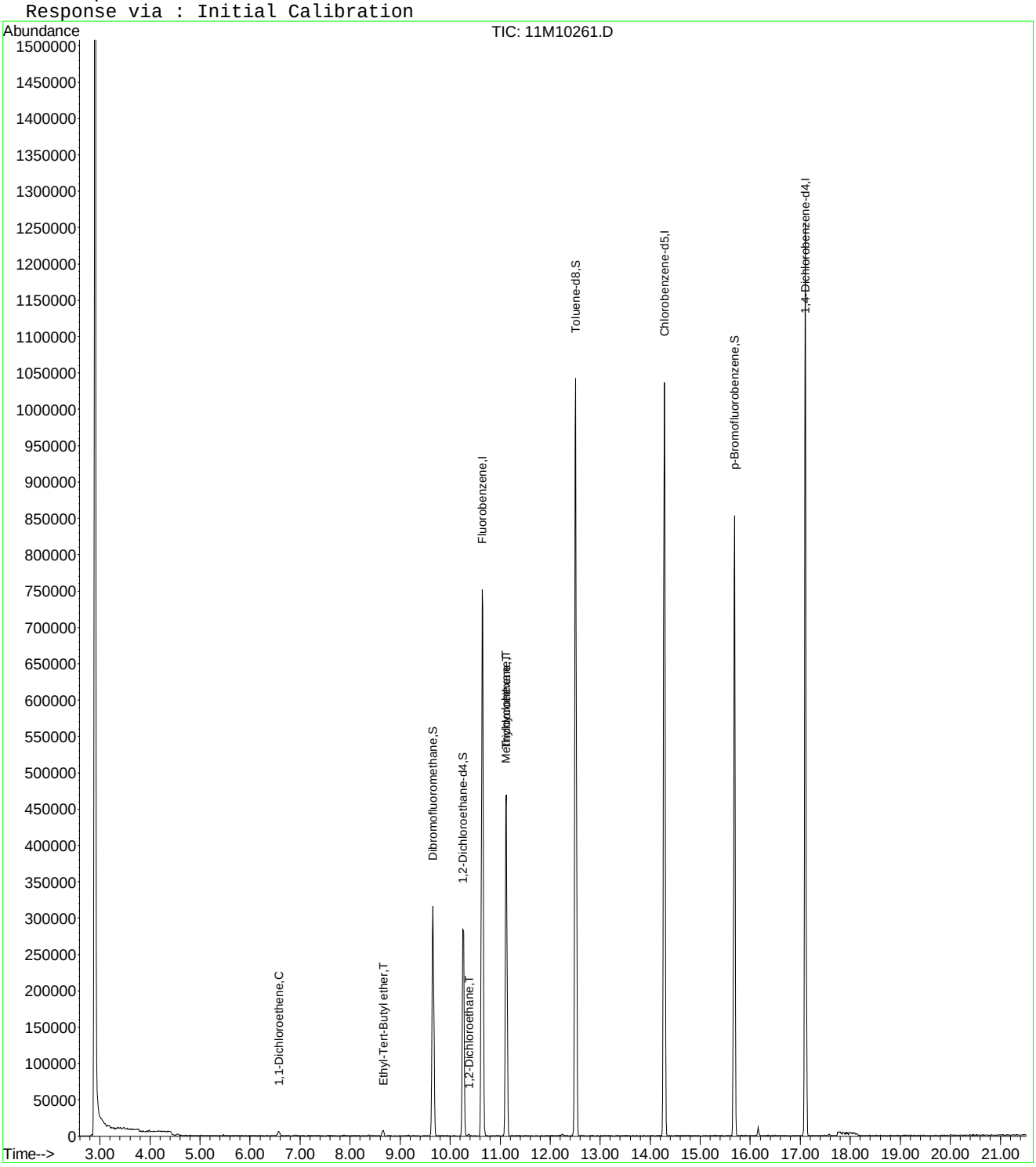

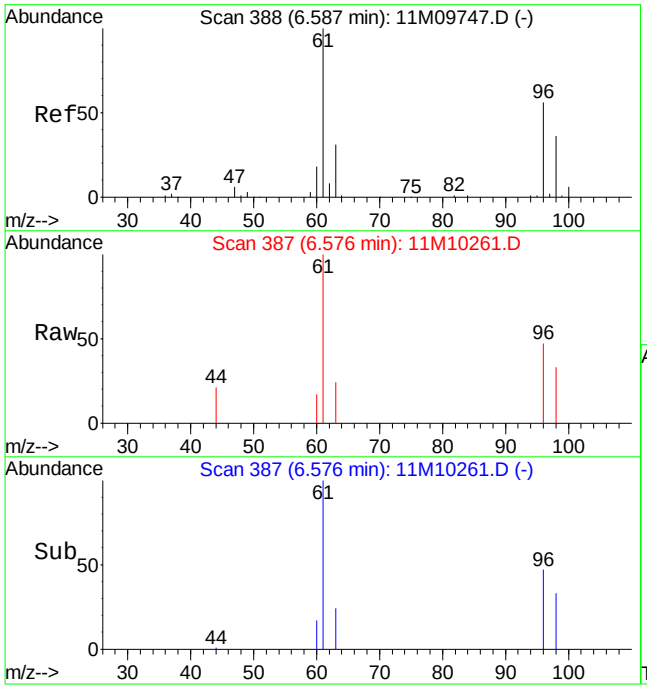

#14
1,1-Dichloroethene
Concen: 0.46 ug/L
RT: 6.58 min Scan# 387
Delta R.T. -0.01 min
Lab File: 11M10261.D
Acq: 13 Nov 2015 21:30

Tgt Ion: 61 Resp: 7770

Ion	Ratio	Lower	Upper
61	100		
96	61.1	33.5	78.3

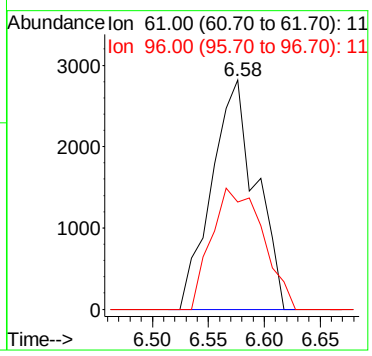

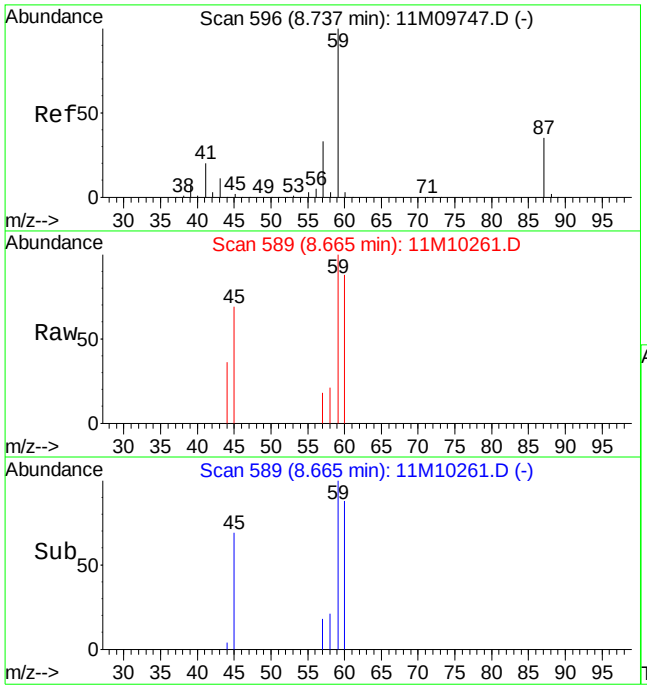

#28
Ethyl-Tert-Butyl ether
Concen: 0.15 ug/L
RT: 8.66 min Scan# 589
Delta R.T. -0.07 min
Lab File: 11M10261.D
Acq: 13 Nov 2015 21:30

Tgt Ion: 59 Resp: 5359

Ion	Ratio	Lower	Upper
59	100		
87	0.0	20.8	48.6#
57	8.5	19.6	45.8#

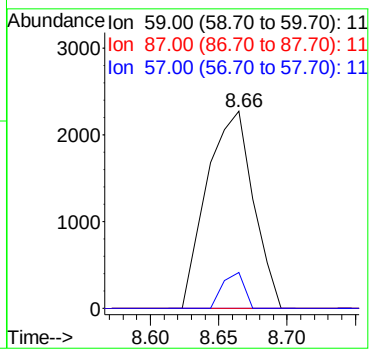

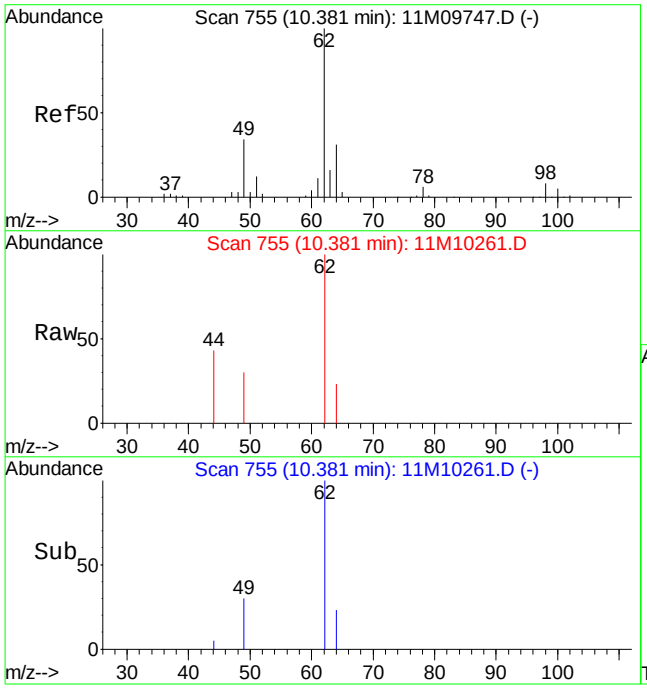

#44
1,2-Dichloroethane
Concen: 0.19 ug/L
RT: 10.38 min Scan# 755
Delta R.T. -0.00 min
Lab File: 11M10261.D
Acq: 13 Nov 2015 21:30

Tgt Ion: 62 Resp: 2916

Ion	Ratio	Lower	Upper
62	100		
64	24.1	19.0	44.4
49	23.5	24.4	56.8#

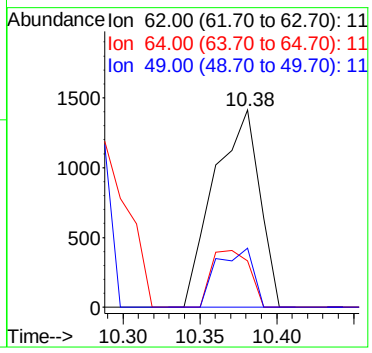

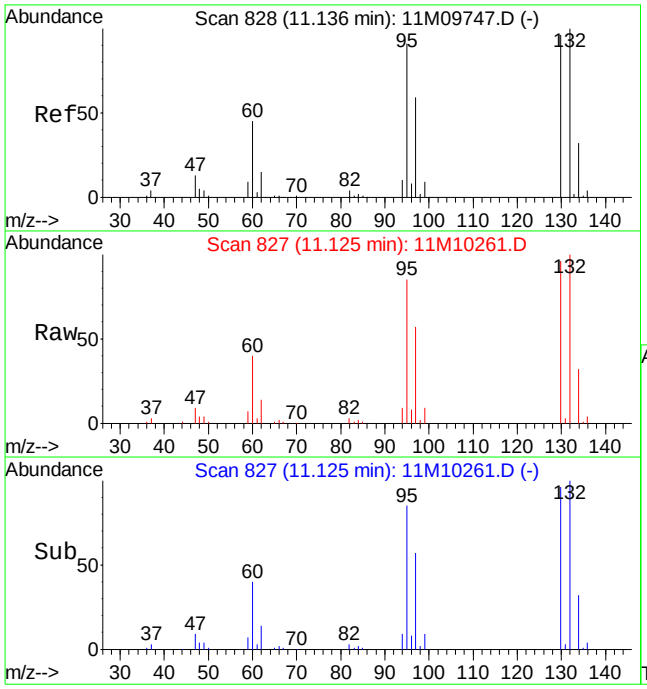

#46
Trichloroethene
Concen: 17.62 ug/L
RT: 11.13 min Scan# 827
Delta R.T. -0.01 min
Lab File: 11M10261.D
Acq: 13 Nov 2015 21:30

Tgt Ion:130 Resp: 213886

Ion	Ratio	Lower	Upper
130	100		
132	104.6	61.7	144.1
95	91.2	56.9	132.7

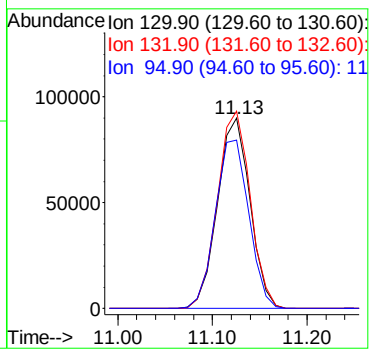

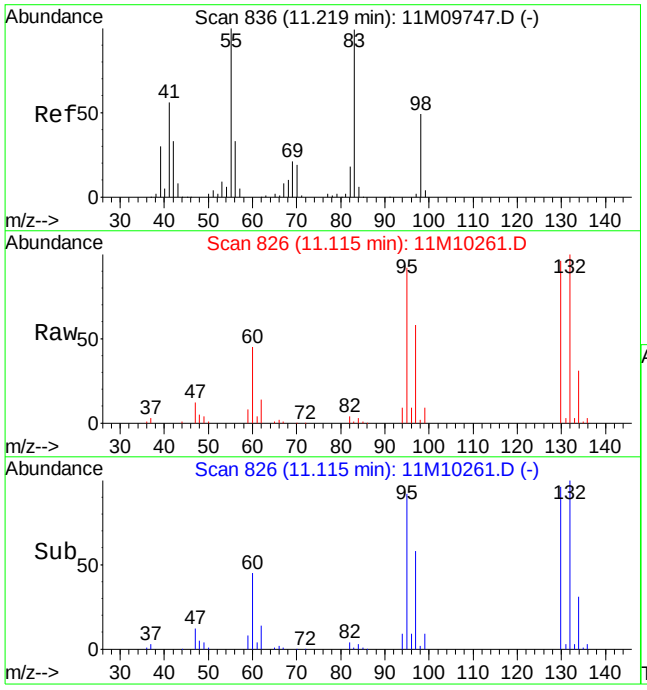

#47
Methylcyclohexane
Concen: 0.13 ug/L
RT: 11.12 min Scan# 826
Delta R.T. -0.10 min
Lab File: 11M10261.D
Acq: 13 Nov 2015 21:30

Tgt Ion: 83 Resp: 1937

Ion	Ratio	Lower	Upper
83	100		
55	0.0	60.0	140.0#
98	232.3	29.0	67.8#

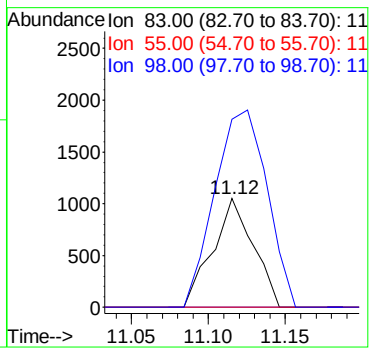

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\111315\11M10258.D Vial: 11
Acq On : 13 Nov 2015 19:54 Operator: JDS
Sample : L15110793-17 A TB 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 23 12:44:13 2015 Quant Results File: 8260_WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 10:32:15 2015
Response via : Initial Calibration
DataAcq Meth : 8260_WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.64	96	930081	25.00 ug/L	-0.02
56) Chlorobenzene-d5	14.28	117	759526	25.00 ug/L	-0.02
76) 1,4-Dichlorobenzene-d4	17.10	152	445786	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	251889	23.8114 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.24%		
43) 1,2-Dichloroethane-d4	10.26	65	236780	21.7638 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 87.04%		
57) Toluene-d8	12.51	98	920370	28.4257 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 113.72%#		
78) p-Bromofluorobenzene	15.69	95	347517	27.0562 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 108.24%		

Target Compounds					Qvalue
3) Chloromethane	3.70	50	2486	0.1890 ug/L #	62
13) Acetone	6.36	43	1707	0.7130 ug/L #	44
36) Tetrahydrofuran	9.64	42	751	0.2921 ug/L #	43

(#) = qualifier out of range (m) = manual integration
11M10258.D 8260_WTR.M Mon Nov 23 12:44:14 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\111315\11M10258.D Vial: 11
Acq On : 13 Nov 2015 19:54 Operator: JDS
Sample : L15110793-17 A TB 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 23 12:44 2015 Quant Results File: 8260_WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 10:32:15 2015
Response via : Initial Calibration

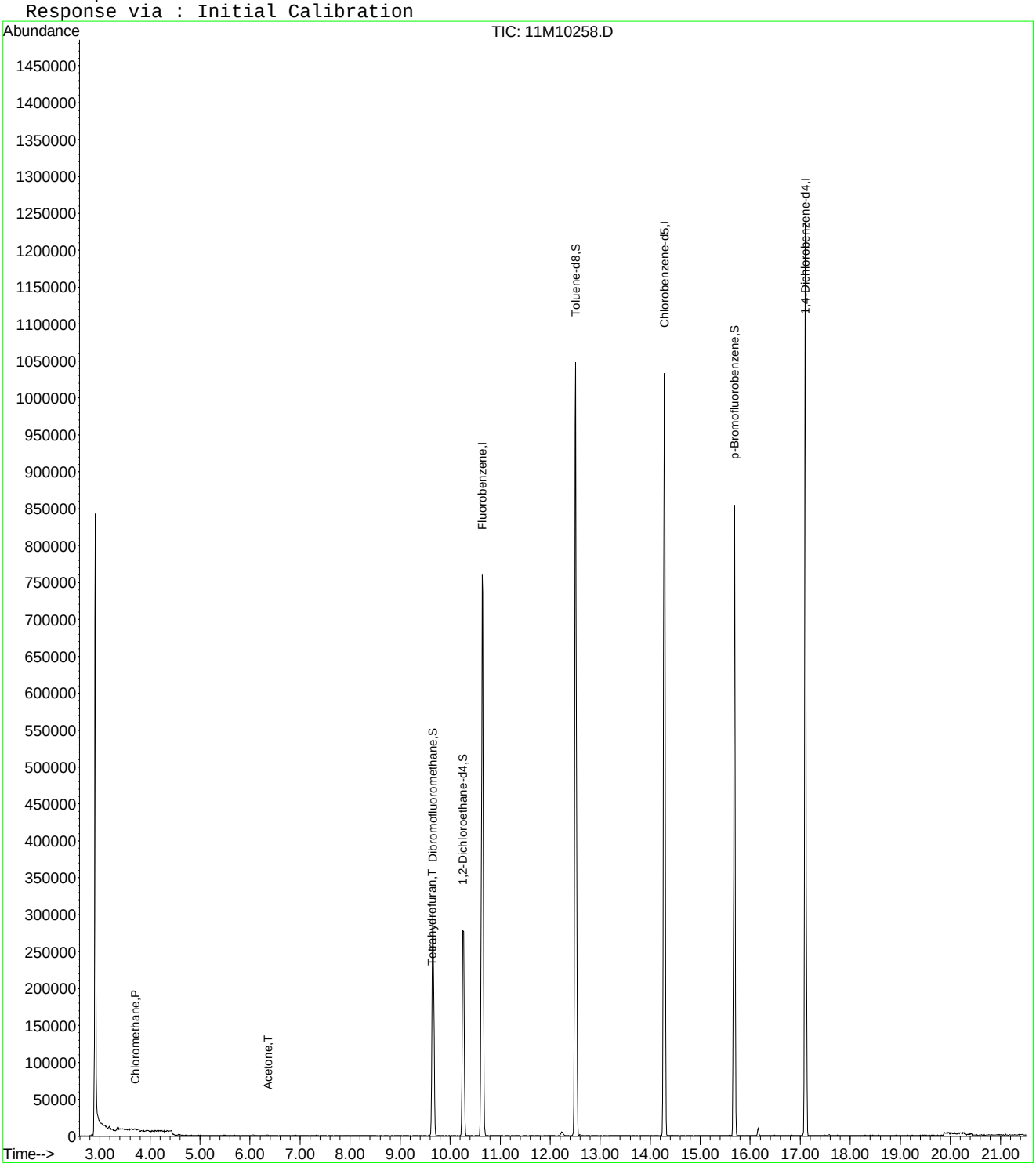

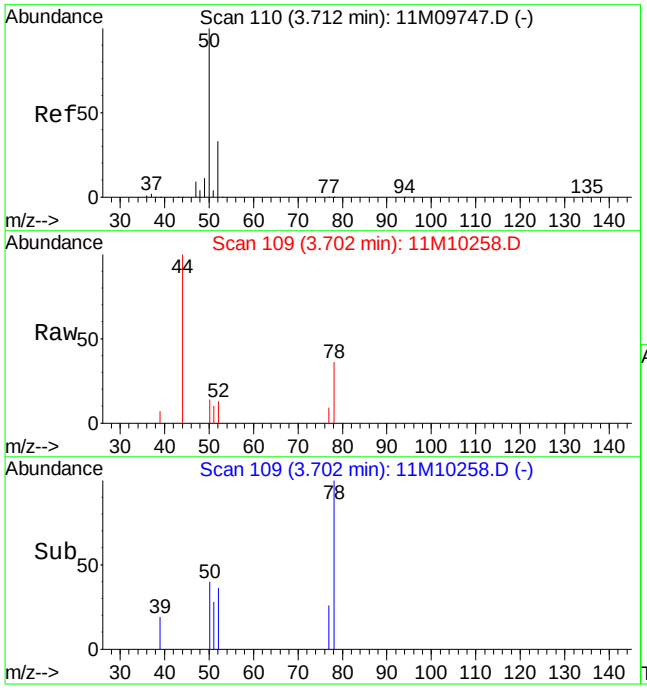

#3
Chloromethane
Concen: 0.19 ug/L
RT: 3.70 min Scan# 109
Delta R.T. -0.01 min
Lab File: 11M10258.D
Acq: 13 Nov 2015 19:54

Tgt Ion: 50 Resp: 2486

Ion	Ratio	Lower	Upper
50	100		
52	12.1	20.3	47.5#

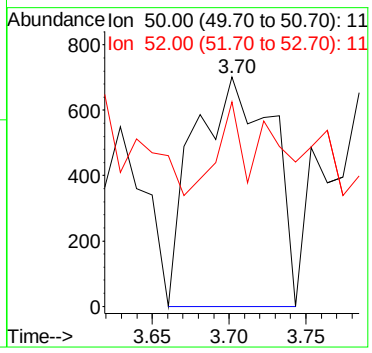

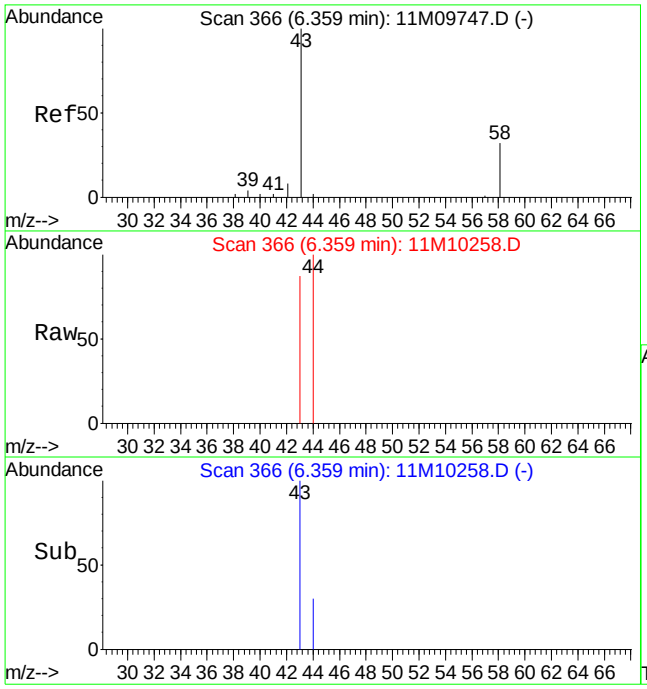

#13
Acetone
Concen: 0.71 ug/L
RT: 6.36 min Scan# 366
Delta R.T. -0.00 min
Lab File: 11M10258.D
Acq: 13 Nov 2015 19:54

Tgt Ion: 43 Resp: 1707

Ion	Ratio	Lower	Upper
43	100		
58	0.0	18.1	42.3#

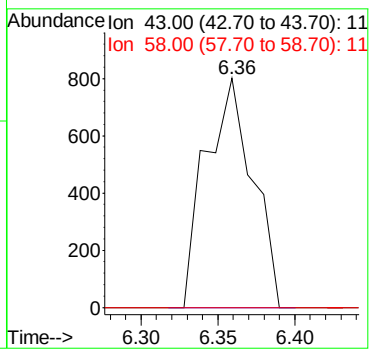

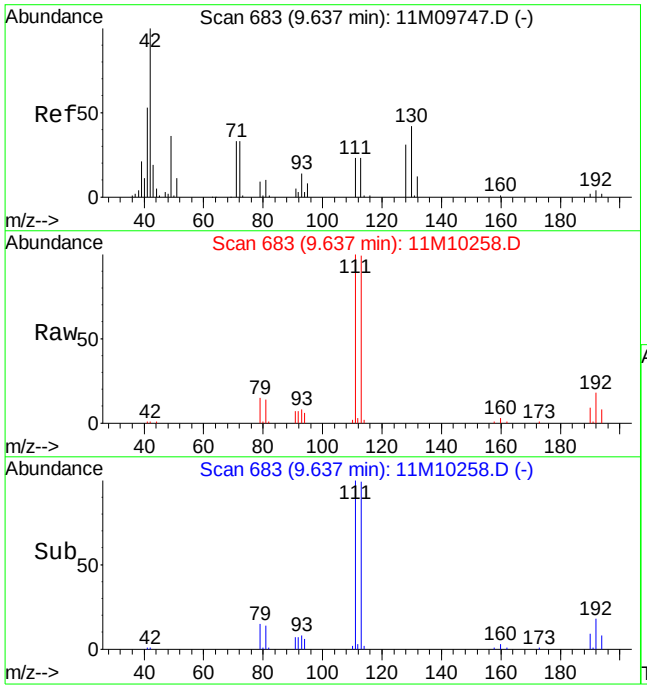

#36
Tetrahydrofuran
Concen: 0.29 ug/L
RT: 9.64 min Scan# 683
Delta R.T. -0.00 min
Lab File: 11M10258.D
Acq: 13 Nov 2015 19:54

Tgt Ion: 42 Resp: 751

Ion	Ratio	Lower	Upper
42	100		
71	0.0	18.6	43.4#
72	0.0	19.7	45.9#

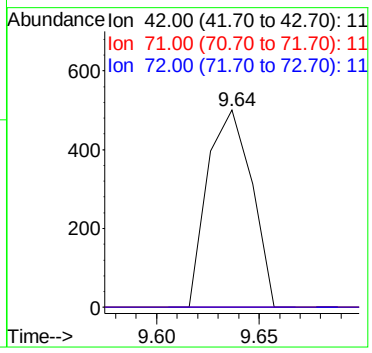

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 10:20:26 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	665958	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.19	117	486224	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.01	152	252862	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	169215	22.8906 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 91.56%		
43) 1,2-Dichloroethane-d4	10.17	65	154962	19.2999 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 77.20%#		
57) Toluene-d8	12.42	98	584744	28.4742 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 113.88%#		
78) p-Bromofluorobenzene	15.58	95	202664	25.0472 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.20%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.23	85	8067	0.8041 ug/L #	81
3) Chloromethane	3.68	50	5797	0.5011 ug/L	91
4) Vinyl Chloride	3.91	62	15554	1.9132 ug/L	97
5) 1,3-Butadiene	3.96	54	11402	1.8745 ug/L	83
6) Bromomethane	4.80	94	1566	0.4085 ug/L	98
7) Chloroethane	4.96	64	1797	0.3015 ug/L #	43
8) Trichlorofluoromethane	5.43	101	4457	0.3306 ug/L	92
10) Isoprene	5.99	67	2109	0.2044 ug/L #	51
12) 1,1,2-Trichloro-1,2,2-Trif	6.23	101	1597	0.2057 ug/L	98
13) Acetone	6.30	43	3590	1.8309 ug/L #	60
14) 1,1-Dichloroethene	6.50	61	4933	0.3633 ug/L	96
19) Methylene Chloride	7.28	84	2287	0.2902 ug/L	89
20) Carbon Disulfide	7.31	76	24059	1.0619 ug/L	98
23) trans-1,2-Dichloroethene	7.69	96	3973	0.5072 ug/L	81
24) n-Hexane	7.78	57	5925	0.4871 ug/L #	85
32) cis-1,2-Dichloroethene	9.10	96	2970	0.3509 ug/L	71
33) Chloroform	9.30	83	1689	0.1200 ug/L	78
35) Bromochloromethane	9.51	130	597	0.1244 ug/L #	66
36) Tetrahydrofuran	9.56	42	405	0.1826 ug/L #	44
39) Cyclohexane	9.83	56	2167	0.1307 ug/L	90
40) 1,1-Dichloropropene	9.99	75	3207	0.2986 ug/L	86
45) Benzene	10.32	78	3922	0.1286 ug/L	88
46) Trichloroethene	11.03	130	3473	0.3872 ug/L	90
47) Methylcyclohexane	11.10	83	2708	0.2333 ug/L #	77
51) Dibromomethane	11.60	93	782	0.1870 ug/L	62
54) cis-1,3-Dichloropropene	12.11	75	1452	0.1277 ug/L #	41
58) Toluene	12.51	91	4350	0.1662 ug/L	83
60) trans-1,3-Dichloropropene	12.68	75	1450	0.1811 ug/L #	47
64) Tetrachloroethene	13.28	164	1514	0.2507 ug/L	75
66) 1,2-Dibromoethane	13.77	107	783	0.1520 ug/L	82
67) 1-Chlorohexane	13.83	91	2267	0.2766 ug/L	67
68) Chlorobenzene	14.24	112	4044	0.2287 ug/L	88
70) Ethylbenzene	14.25	106	1461	0.1464 ug/L	62
71) m-,p-Xylene	14.34	106	3596	0.3050 ug/L #	47
73) Styrene	14.90	104	2784	0.1479 ug/L	80
75) Isopropylbenzene	15.25	105	4163	0.1408 ug/L #	74
81) n-Propylbenzene	15.73	91	6395	0.2079 ug/L #	73
82) Bromobenzene	15.86	156	1681	0.2112 ug/L	100
83) 1,3,5-Trimethylbenzene	15.90	105	3253	0.1356 ug/L	100
84) 2-Chlorotoluene	16.00	91	3395	0.1597 ug/L	86

(#) = qualifier out of range (m) = manual integration
11M08235.D 8260WTR.M Sun Jun 14 10:20:27 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 10:20:26 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
85)	4-Chlorotoluene	16.03	91	4746	0.2598 ug/L	84
86)	a-Methylstyrene	16.27	118	1776	0.1452 ug/L	76
88)	1,2,4-Trimethylbenzene	16.39	105	3776	0.1571 ug/L	77
89)	sec-Butylbenzene	16.58	105	5834	0.2044 ug/L #	77
90)	p-Isopropyltoluene	16.73	119	5149	0.2137 ug/L	87
91)	1,3-Dichlorobenzene	16.93	146	3649	0.2531 ug/L	97
92)	1,4-Dichlorobenzene	17.04	146	5213	0.3507 ug/L #	7
93)	n-Butylbenzene	17.23	91	5778	0.3036 ug/L #	78
94)	1,2-Dichlorobenzene	17.51	146	2232	0.1581 ug/L	92
96)	1,2,4-Trichlorobenzene	19.49	180	1750	0.2281 ug/L #	64
97)	Hexachlorobutadiene	19.62	225	1771	0.4493 ug/L	86
98)	Naphthalene	19.84	128	2058	0.1572 ug/L #	63
99)	1,2,3-Trichlorobenzene	20.13	180	1072	0.1483 ug/L #	40

(#) = qualifier out of range (m) = manual integration
11M08235.D 8260WTR.M Sun Jun 14 10:20:27 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 10:20 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration

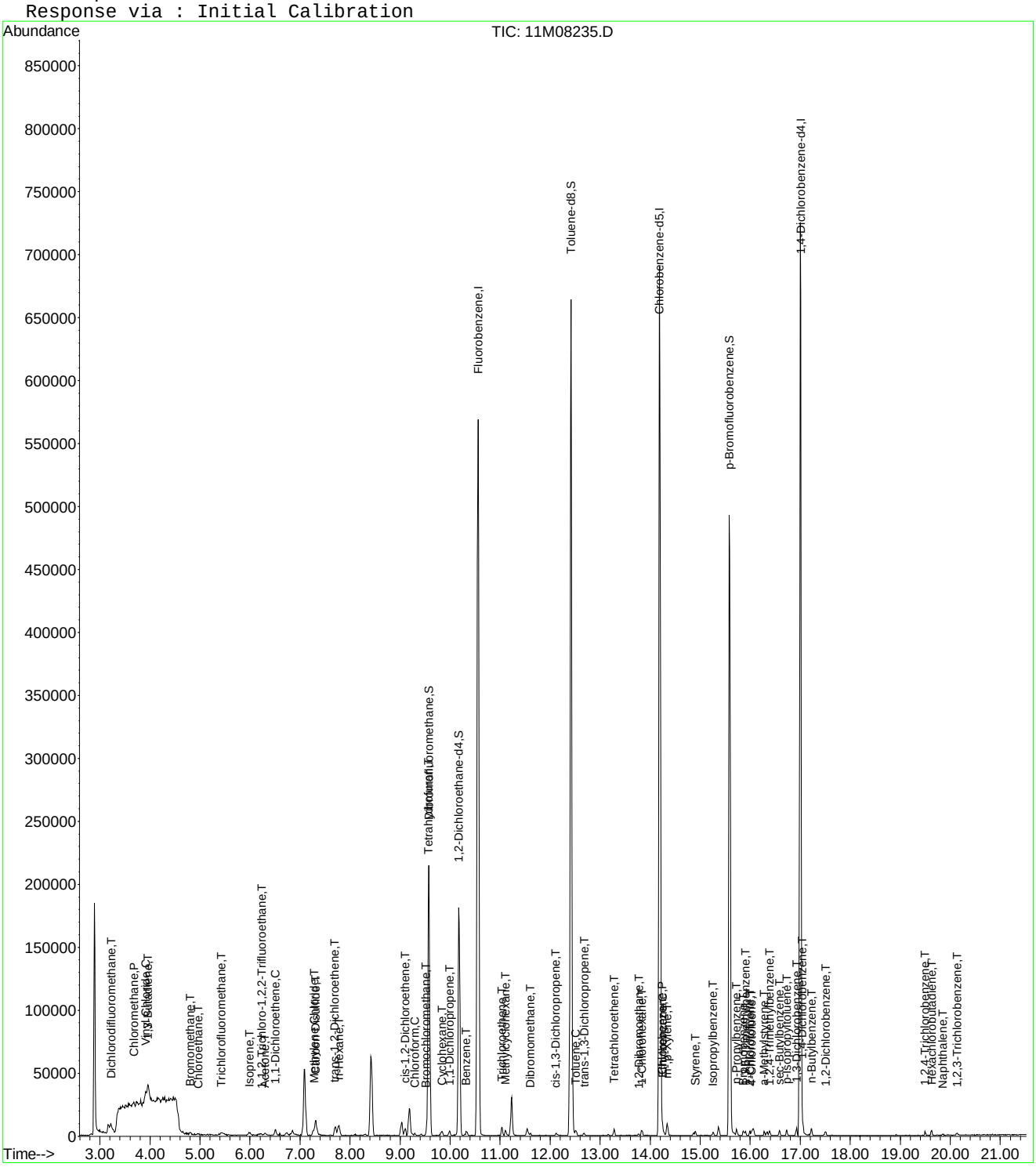

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 09:43:53 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	665958	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	486224	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.01	152	252862	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	6.73	41	3211	6.0366 ug/L	70
3) 3-Chloro-1-propene	7.08	41	50601	4.3748 ug/L	86
4) 2-Chloro-1,3-butadiene	8.42	53	56035	4.7289 ug/L	97
5) Methacrylonitrile	9.18	41	16495	5.1749 ug/L	91
6) Isobutyl Alcohol	9.21	43	2014	16.4797 ug/L #	1
8) Cyclohexanone	15.36	55	3979	4.5232 ug/L	98
9) 2-Nitropropane	11.54	43	3915	3.2057 ug/L #	72
10) Ethyl Acetate	9.03	43	17657	4.5044 ug/L	95
11) Methyl methacrylate	11.22	41	20122	4.7597 ug/L	95

(#) = qualifier out of range (m) = manual integration
11M08235.D A9FOOWT.M Tue Jun 16 09:43:53 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 9:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration

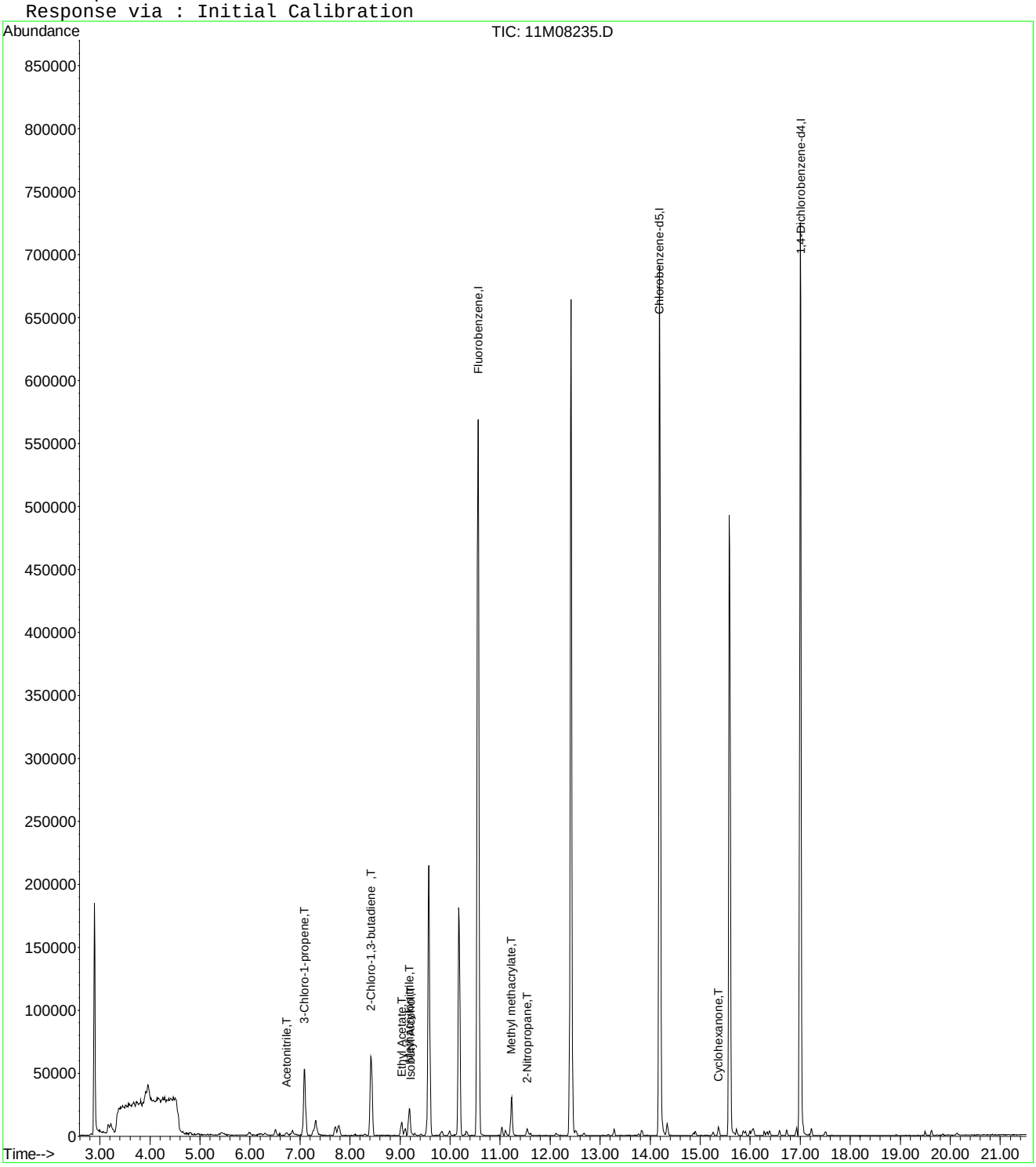

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28:04 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	665958	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	486224	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.01	152	252862	25.00 ug/L	-0.02

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M08235.D A9FOOWT.M Thu Aug 20 11:28:04 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration

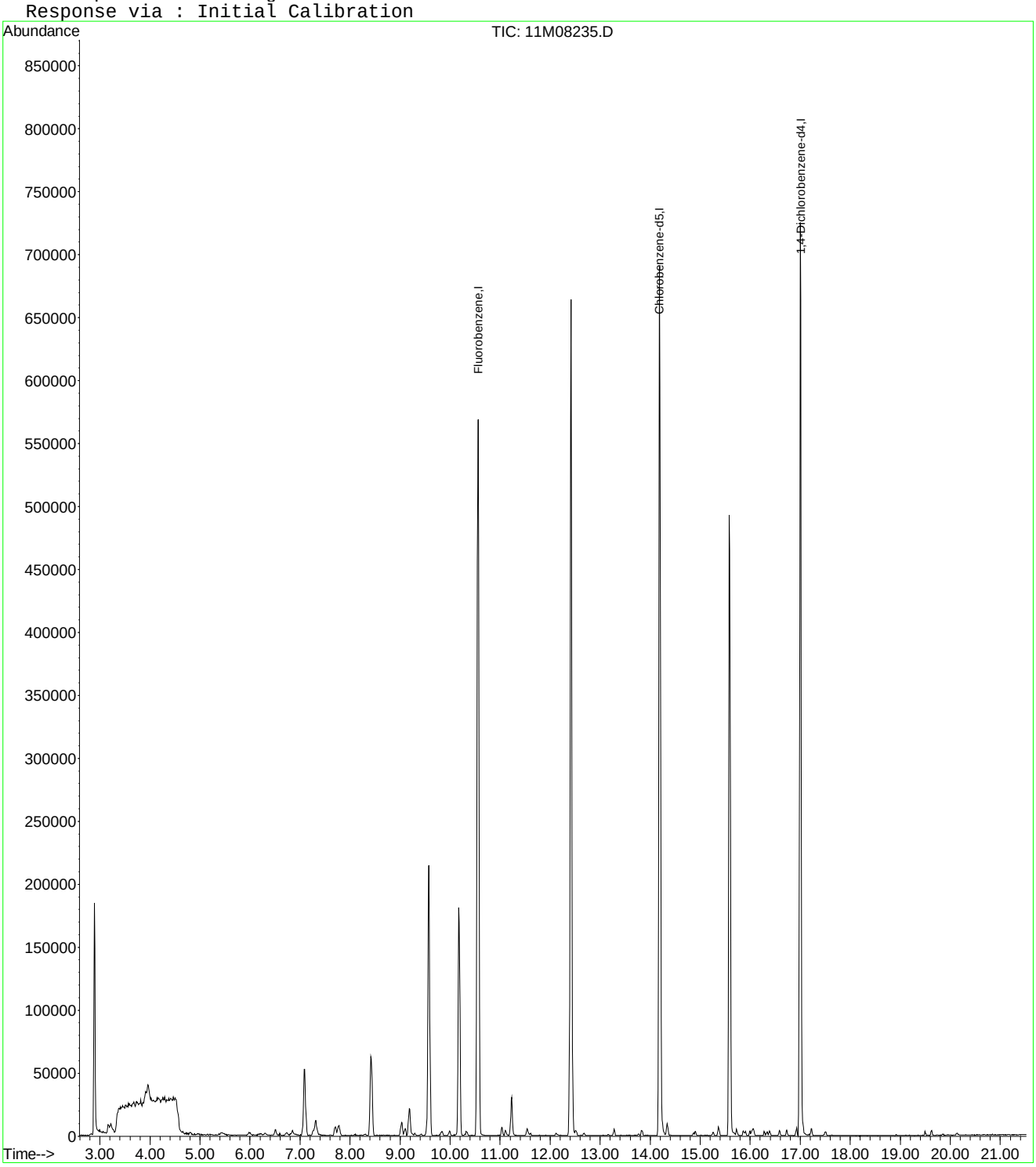

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43:46 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	665958	25.00 ug/L	0.00
12) Chlorobenzene-d5	14.19	117	486224	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.01	152	252862	25.00 ug/L	0.01

Target Compounds					Qvalue
2) Acetonitrile	6.73	41	3211	6.2865 ug/L	70
3) 3-Chloro-1-propene	7.08	41	50601	5.0485 ug/L	86
4) 2-Chloro-1,3-butadiene	8.42	53	56035	4.6571 ug/L	97
5) Methacrylonitrile	9.18	41	16495	5.3246 ug/L	91
6) Isobutyl Alcohol	9.21	43	2014	12.6338 ug/L #	1
7) 1-Butanol	9.83	56	2167	25.6978 ug/L #	47
8) Cyclohexanone	15.36	55	3979	5.1947 ug/L	98
9) 2-Nitropropane	11.54	43	3915	35.7530 ug/L #	72
10) Ethyl Acetate	9.03	43	17657	4.8057 ug/L	95
11) Methyl methacrylate	11.22	41	20122	4.7099 ug/L	95

(#) = qualifier out of range (m) = manual integration
11M08235.D A9FOOWT.M Thu Aug 20 11:43:47 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration

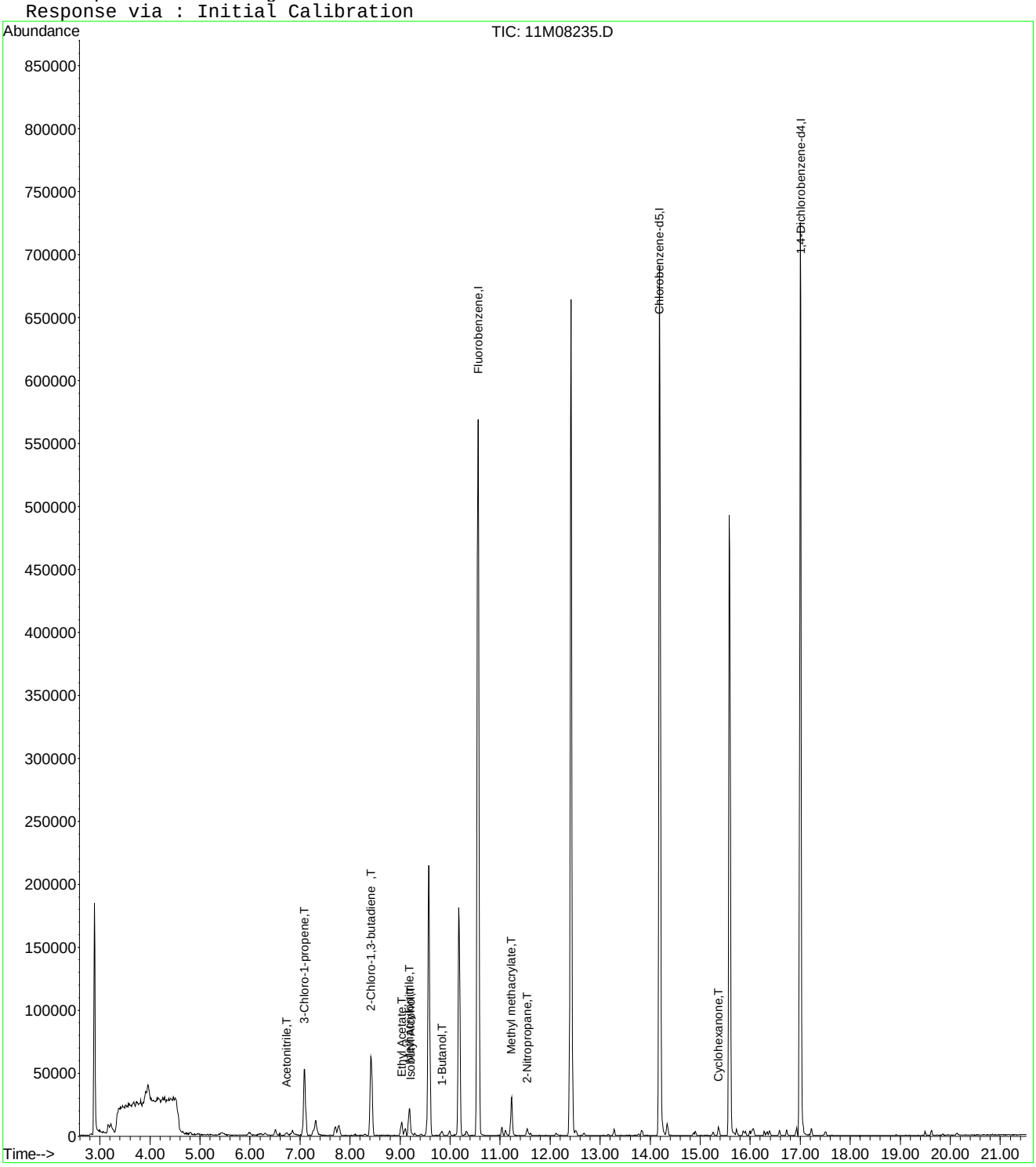

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	5.0000	6.2866	-25.7	100	0.01
3	T	3-Chloro-1-propene	5.0000	5.0485	-1.0	100	-0.01
4	T	2-Chloro-1,3-butadiene	5.0000	4.6571	6.9	100	0.00
5	T	Methacrylonitrile	5.0000	5.3246	-6.5	100	0.00
6	T	Isobutyl Alcohol	-1.0000	12.6338	0.0	100	0.02
7	T	1-Butanol	-1.0000	25.6978	0.0	0	-0.24
8	T	Cyclohexanone	-1.0000	5.1947	0.0	100	0.00
9	T	2-Nitropropane	-1.0000	35.7530	0.0	0	0.00
10	T	Ethyl Acetate	5.0000	4.8057	3.9	100	0.00
11	T	Methyl methacrylate	5.0000	4.7099	5.8	100	0.00
12	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
13	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M08235.D A9FOOWT.M Thu Aug 20 11:44:19 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08236.D Vial: 3
Acq On : 14 Jun 2015 10:30 Operator: TMB /DLW
Sample : WG527475-03 20ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 10:52:27 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	610715	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.19	117	451165	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.00	152	232233	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	159209	23.4852 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.96%		
43) 1,2-Dichloroethane-d4	10.17	65	149549	20.3105 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 81.24%		
57) Toluene-d8	12.42	98	551790	28.9575 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 115.84%#		
78) p-Bromofluorobenzene	15.58	95	193663	26.0609 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.24%		

Target Compounds					Qvalue
3) Chloromethane	3.68	50	2560	0.2413 ug/L	85
5) 1,3-Butadiene	3.94	54	1485	0.2662 ug/L #	60
13) Acetone	6.30	43	3499	1.9459 ug/L #	49

(#) = qualifier out of range (m) = manual integration
11M08236.D 8260WTR.M Sun Jun 14 10:52:28 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08236.D Vial: 3
Acq On : 14 Jun 2015 10:30 Operator: TMB /DLW
Sample : WG527475-03 20ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 10:52 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration

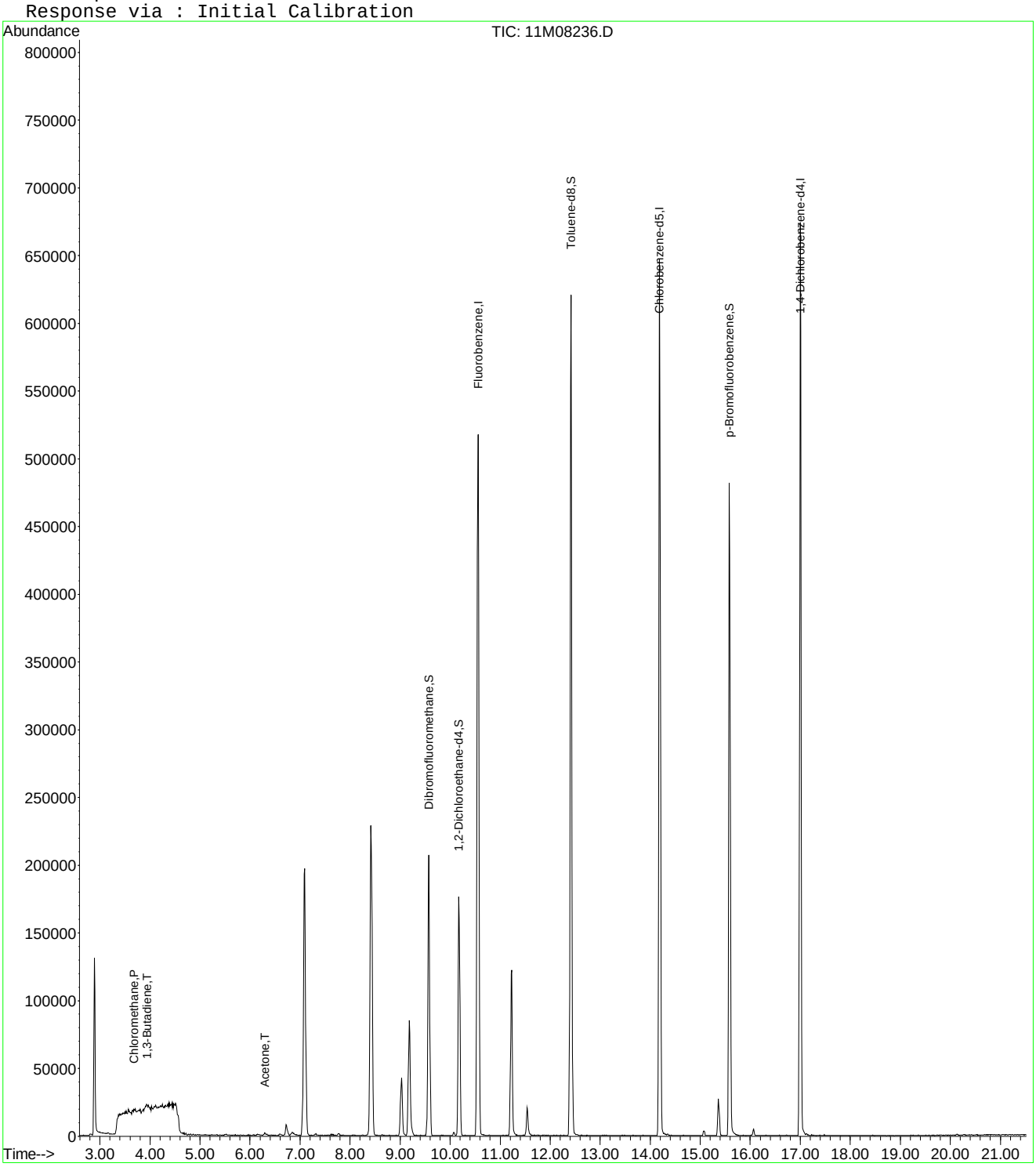

11M08236.D 8260WTR.M Sun Jun 14 10:52:28 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08236.D Vial: 3
Acq On : 14 Jun 2015 10:30 Operator: TMB /DLW
Sample : WG527475-03 20ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 09:43:55 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	610715	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	451165	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	232233	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	10965	22.4787 ug/L	99
3) 3-Chloro-1-propene	7.09	41	181745	17.1344 ug/L	86
4) 2-Chloro-1,3-butadiene	8.42	53	204133	18.7856 ug/L	96
5) Methacrylonitrile	9.18	41	56411	19.2984 ug/L	84
6) Isobutyl Alcohol	9.19	43	6275	55.9901 ug/L	85
7) 1-Butanol	10.07	56	1474	31.3751 ug/L	93
8) Cyclohexanone	15.36	55	15226	18.8740 ug/L	98
9) 2-Nitropropane	11.54	43	14015	12.5138 ug/L #	72
10) Ethyl Acetate	9.03	43	70834	19.7046 ug/L	96
11) Methyl methacrylate	11.22	41	78843	20.3367 ug/L	93

(#) = qualifier out of range (m) = manual integration
11M08236.D A9FOOWT.M Tue Jun 16 09:43:55 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08236.D Vial: 3
Acq On : 14 Jun 2015 10:30 Operator: TMB /DLW
Sample : WG527475-03 20ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 9:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration

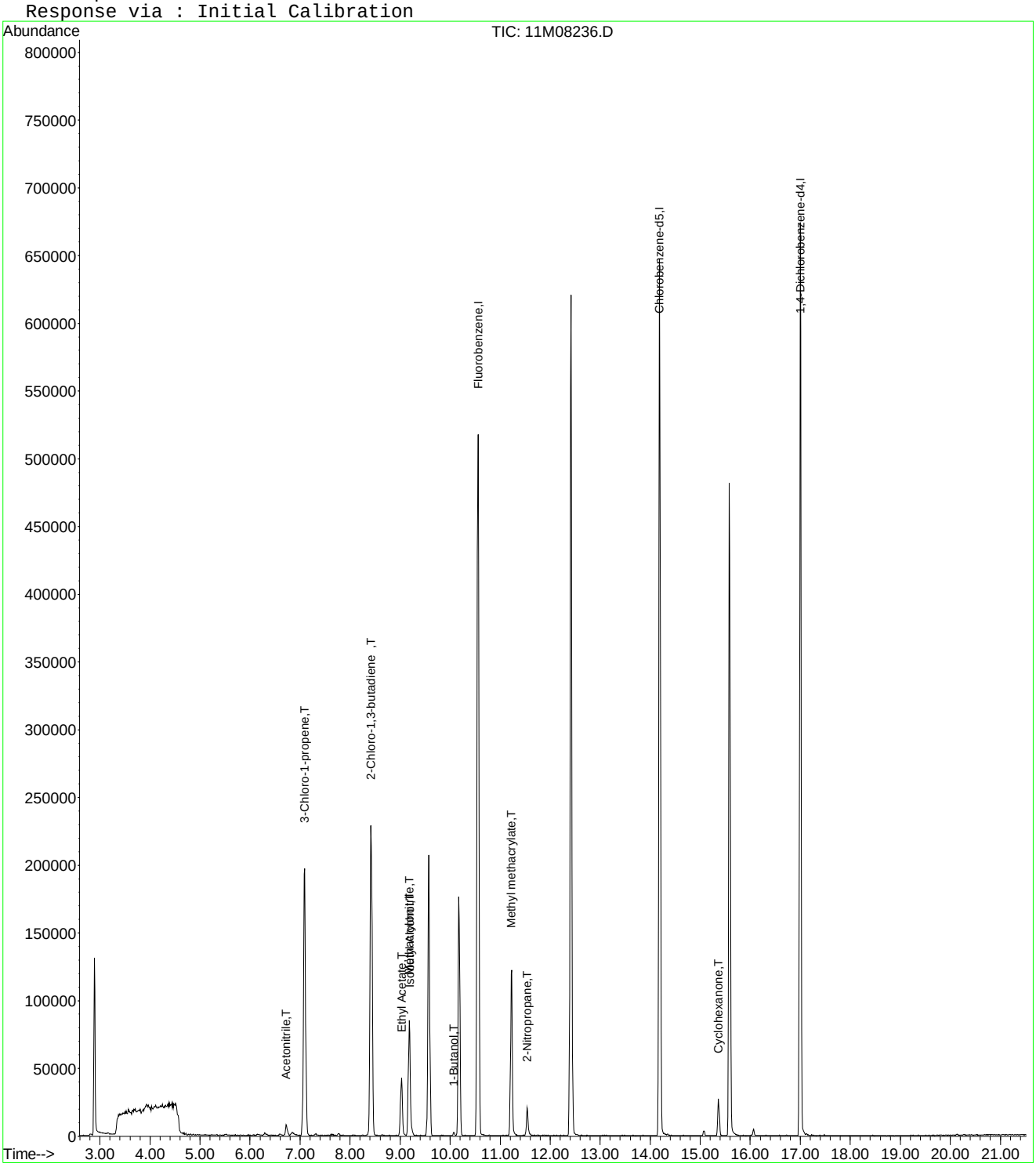

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08236.D Vial: 3
Acq On : 14 Jun 2015 10:30 Operator: TMB /DLW
Sample : WG527475-03 20ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28:06 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	610715	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	451165	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	232233	25.00 ug/L	-0.03

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M08236.D A9FOOWT.M Thu Aug 20 11:28:07 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08236.D Vial: 3
Acq On : 14 Jun 2015 10:30 Operator: TMB /DLW
Sample : WG527475-03 20ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration

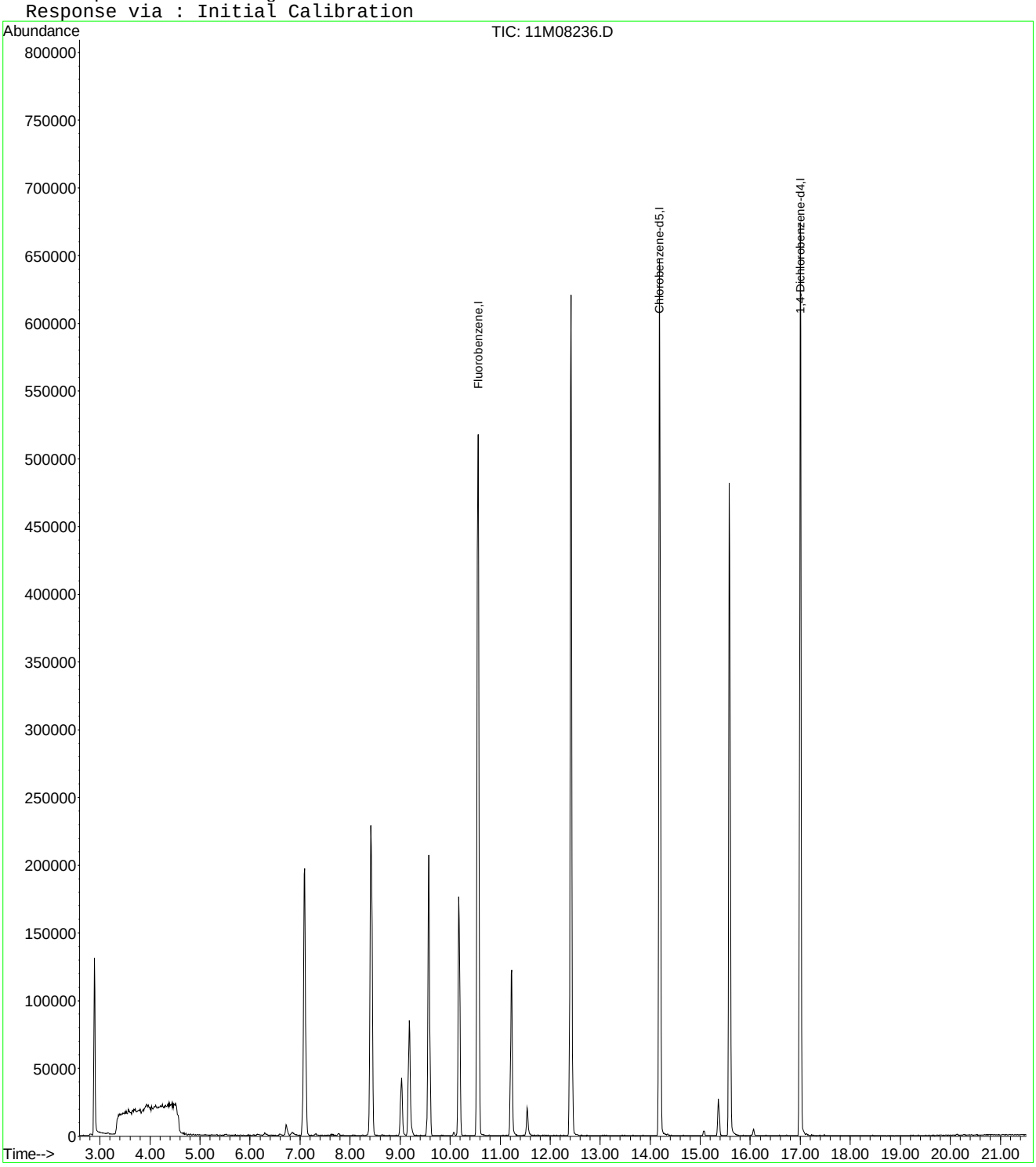

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08236.D Vial: 3
Acq On : 14 Jun 2015 10:30 Operator: TMB /DLW
Sample : WG527475-03 20ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43:48 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	610715	25.00 ug/L	0.00
12) Chlorobenzene-d5	14.19	117	451165	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.00	152	232233	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	10965	23.4093 ug/L	99
3) 3-Chloro-1-propene	7.09	41	181745	19.7730 ug/L	86
4) 2-Chloro-1,3-butadiene	8.42	53	204133	18.5003 ug/L	96
5) Methacrylonitrile	9.18	41	56411	19.8567 ug/L	84
6) Isobutyl Alcohol	9.19	43	6275	42.9238 ug/L	85
7) 1-Butanol	10.07	56	1474	19.0608 ug/L	93
8) Cyclohexanone	15.36	55	15226	21.6762 ug/L	98
9) 2-Nitropropane	11.54	43	14015	45.0214 ug/L #	72
10) Ethyl Acetate	9.03	43	70834	21.0227 ug/L	96
11) Methyl methacrylate	11.22	41	78843	20.1239 ug/L	93

(#) = qualifier out of range (m) = manual integration
11M08236.D A9FOOWT.M Thu Aug 20 11:43:48 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08236.D Vial: 3
Acq On : 14 Jun 2015 10:30 Operator: TMB /DLW
Sample : WG527475-03 20ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration

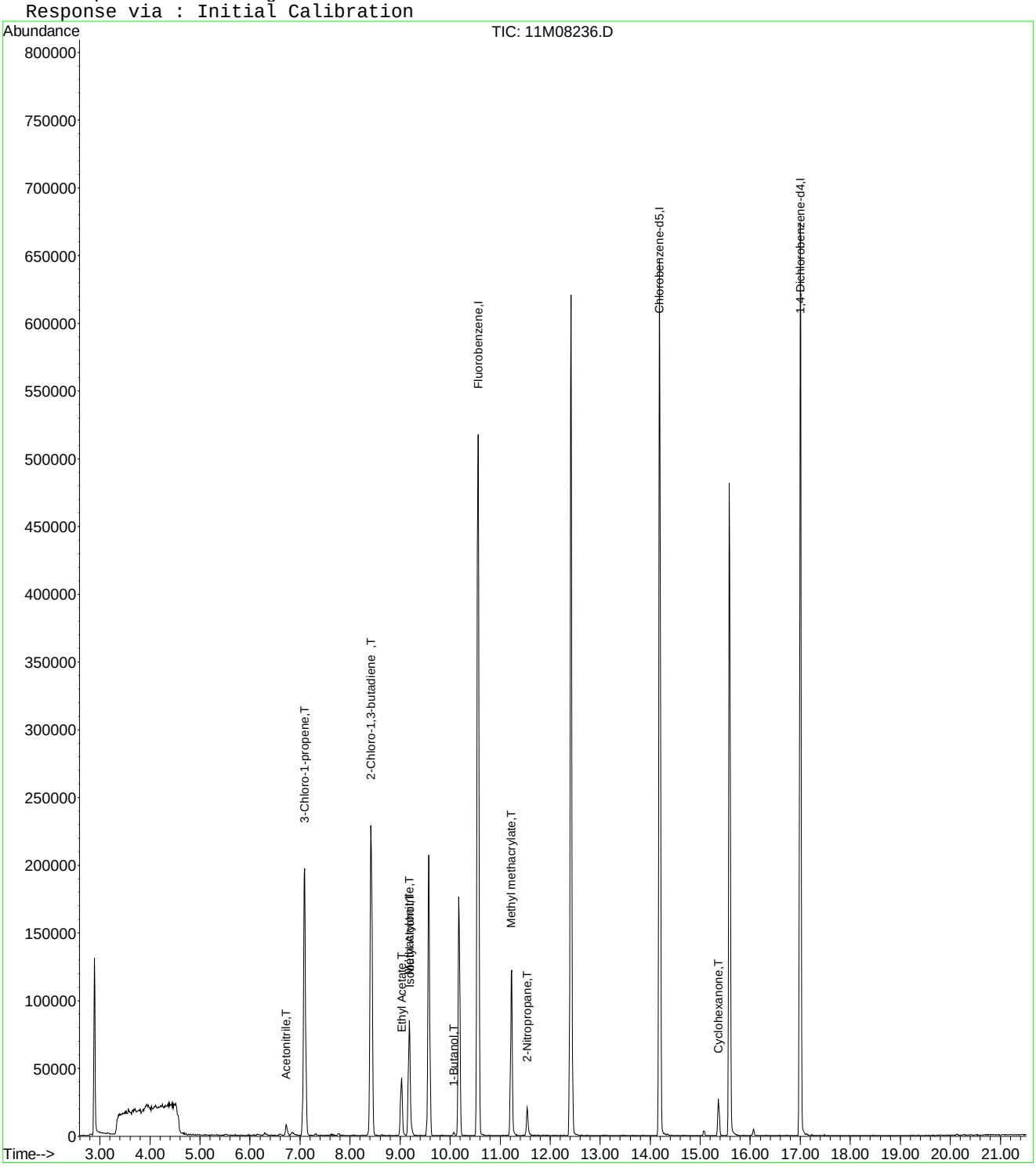

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061415\11M08236.D Vial: 3
Acq On : 14 Jun 2015 10:30 Operator: TMB /DLW
Sample : WG527475-03 20ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	23.4093	-17.0	100	0.00
3	T	3-Chloro-1-propene	20.0000	19.7730	1.1	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	18.5003	7.5	100	0.00
5	T	Methacrylonitrile	20.0000	19.8567	0.7	100	0.00
6	T	Isobutyl Alcohol	40.0000	42.9238	-7.3	100	0.00
7	T	1-Butanol	-1.0000	19.0608	0.0	100	0.00
8	T	Cyclohexanone	20.0000	21.6762	-8.4	100	0.00
9	T	2-Nitropropane	-1.0000	45.0214	0.0	0	0.00
10	T	Ethyl Acetate	20.0000	21.0227	-5.1	100	0.00
11	T	Methyl methacrylate	20.0000	20.1239	-0.6	100	0.00
12	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
13	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M08236.D A9FOOWT.M Thu Aug 20 11:44:30 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08237.D Vial: 4
Acq On : 14 Jun 2015 11:02 Operator: TMB /DLW
Sample : WG527475-04 50ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 11:24:26 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	593911	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.19	117	439398	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.00	152	227606	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	153812	23.3311 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.32%		
43) 1,2-Dichloroethane-d4	10.17	65	141347	19.7397 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 78.96%#		
57) Toluene-d8	12.42	98	530398	28.5803 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 114.32%#		
78) p-Bromofluorobenzene	15.58	95	184116	25.2799 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.12%		

Target Compounds					Qvalue
3) Chloromethane	3.68	50	1722	0.1669 ug/L #	66
13) Acetone	6.30	43	6340	3.6256 ug/L	95

(#) = qualifier out of range (m) = manual integration
11M08237.D 8260WTR.M Sun Jun 14 11:24:27 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08237.D Vial: 4
Acq On : 14 Jun 2015 11:02 Operator: TMB /DLW
Sample : WG527475-04 50ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 11:24 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration

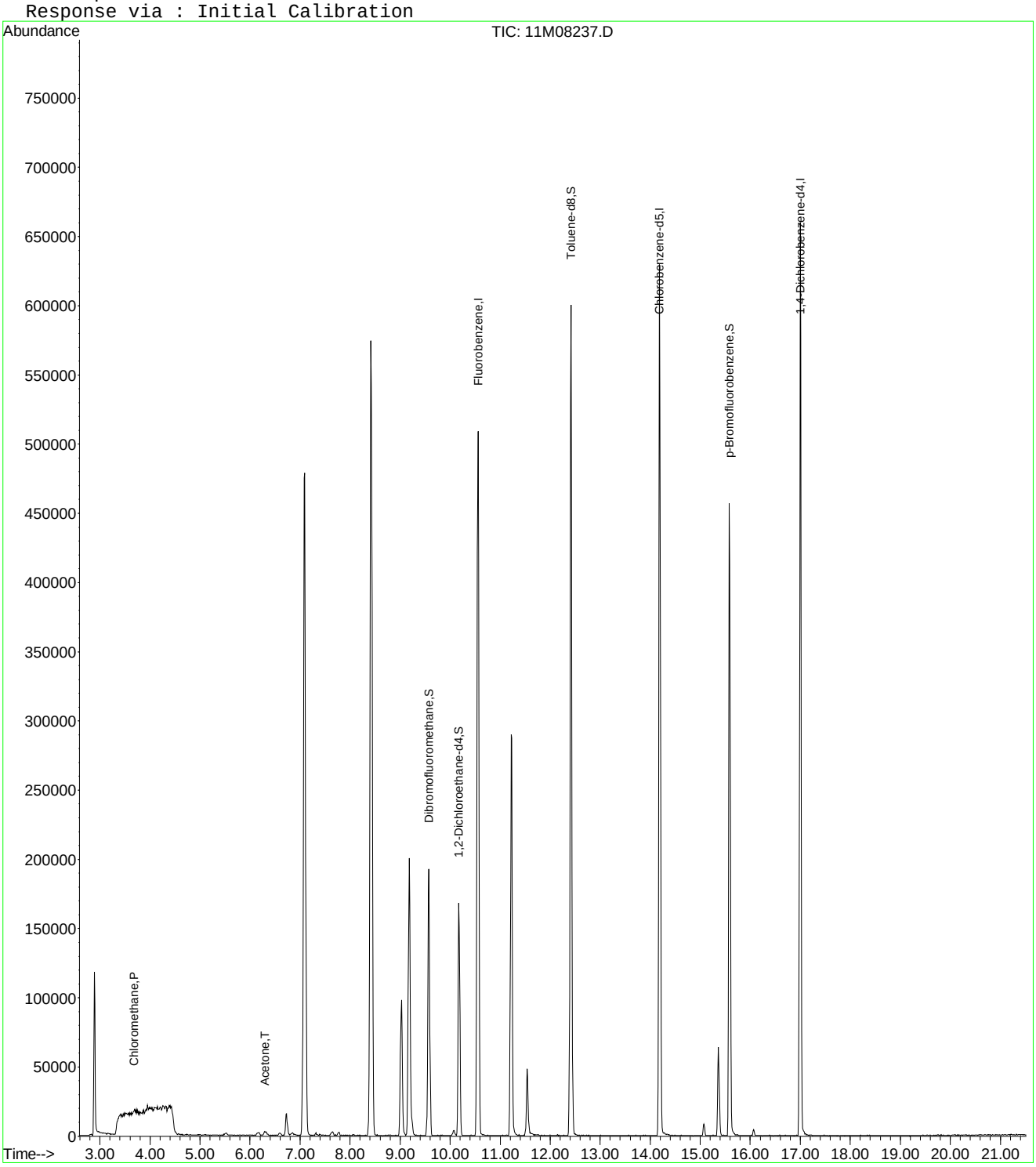

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08237.D Vial: 4
Acq On : 14 Jun 2015 11:02 Operator: TMB /DLW
Sample : WG527475-04 50ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 09:43:56 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	593911	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	439398	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	227606	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	6.73	41	21370	45.0489 ug/L	93
3) 3-Chloro-1-propene	7.08	41	441208	42.7727 ug/L	85
4) 2-Chloro-1,3-butadiene	8.42	53	506427	47.9232 ug/L	96
5) Methacrylonitrile	9.18	41	133439	46.9416 ug/L	86
6) Isobutyl Alcohol	9.19	43	13722	125.9019 ug/L	88
7) 1-Butanol	10.06	56	3449	75.4914 ug/L #	8
8) Cyclohexanone	15.36	55	33575	42.7968 ug/L	96
9) 2-Nitropropane	11.54	43	32837	30.1492 ug/L #	75
10) Ethyl Acetate	9.03	43	158260	45.2705 ug/L	95
11) Methyl methacrylate	11.22	41	179947	47.7287 ug/L	89

(#) = qualifier out of range (m) = manual integration
11M08237.D A9FOOWT.M Tue Jun 16 09:43:57 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08237.D Vial: 4
Acq On : 14 Jun 2015 11:02 Operator: TMB /DLW
Sample : WG527475-04 50ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 9:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration

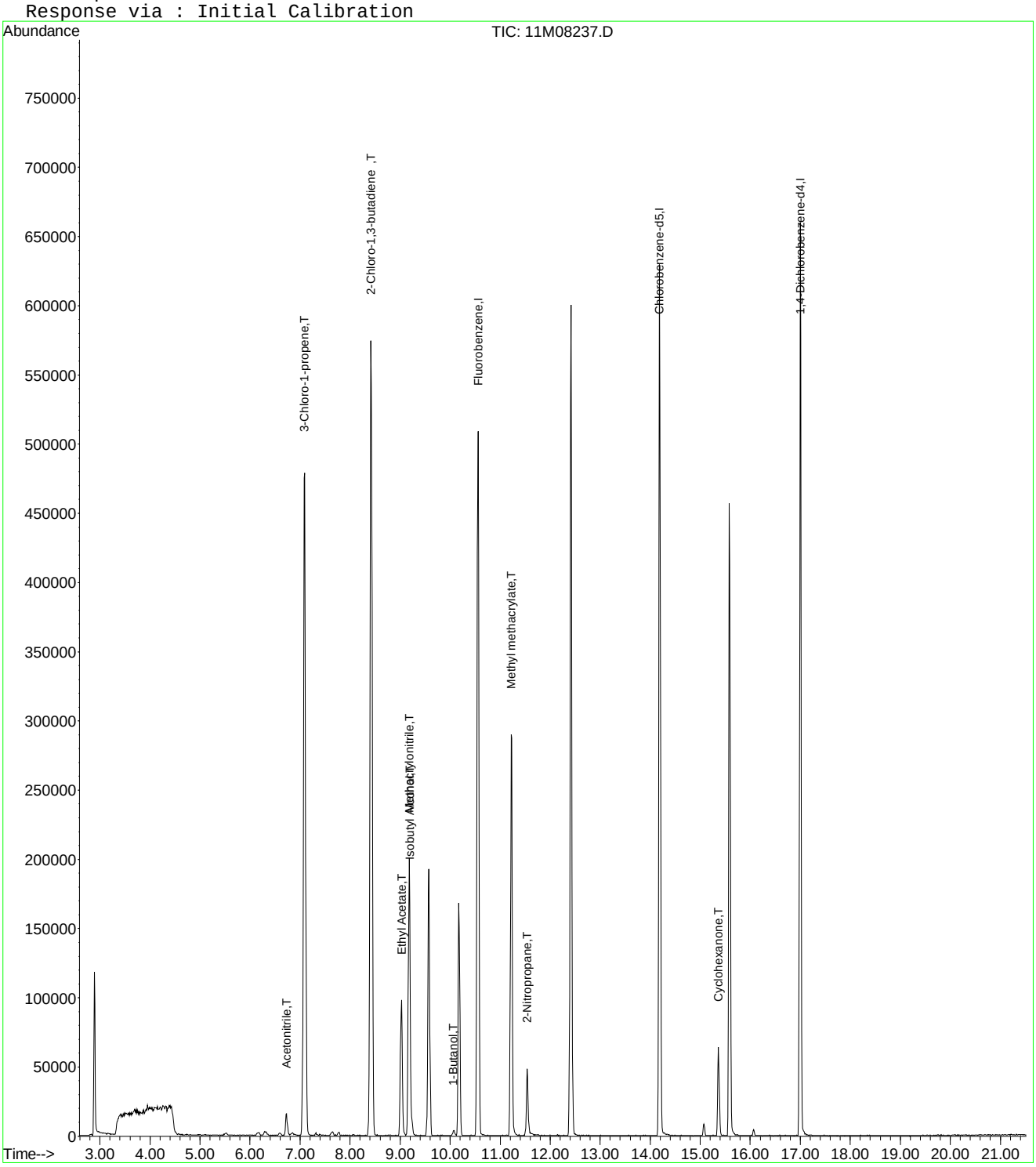

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08237.D Vial: 4
Acq On : 14 Jun 2015 11:02 Operator: TMB /DLW
Sample : WG527475-04 50ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28:07 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	593911	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	439398	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	227606	25.00 ug/L	-0.03

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M08237.D A9FOOWT.M Thu Aug 20 11:28:08 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08237.D Vial: 4
Acq On : 14 Jun 2015 11:02 Operator: TMB /DLW
Sample : WG527475-04 50ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration

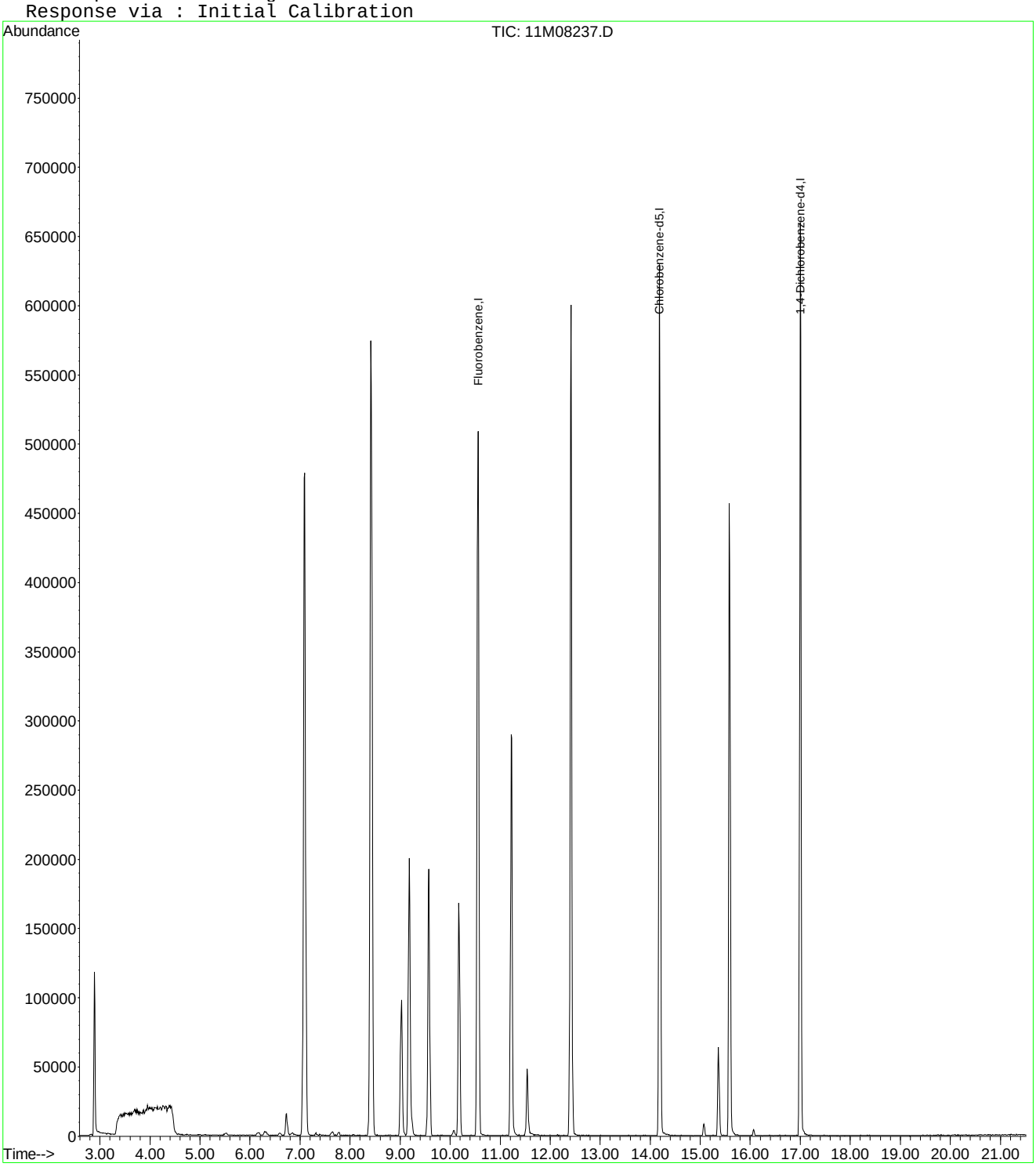

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08237.D Vial: 4
Acq On : 14 Jun 2015 11:02 Operator: TMB /DLW
Sample : WG527475-04 50ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43:49 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	593911	25.00 ug/L	0.00
12) Chlorobenzene-d5	14.19	117	439398	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.00	152	227606	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.73	41	21370	46.9139 ug/L	93
3) 3-Chloro-1-propene	7.08	41	441208	49.3594 ug/L	85
4) 2-Chloro-1,3-butadiene	8.42	53	506427	47.1955 ug/L	96
5) Methacrylonitrile	9.18	41	133439	48.2996 ug/L	86
6) Isobutyl Alcohol	9.19	43	13722	96.5203 ug/L	88
7) 1-Butanol	10.06	56	3449	45.8622 ug/L #	8
8) Cyclohexanone	15.36	55	33575	49.1507 ug/L	96
9) 2-Nitropropane	11.54	43	32837	62.5818 ug/L #	75
10) Ethyl Acetate	9.03	43	158260	48.2986 ug/L	95
11) Methyl methacrylate	11.22	41	179947	47.2293 ug/L	89

(#) = qualifier out of range (m) = manual integration
11M08237.D A9FOOWT.M Thu Aug 20 11:43:49 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08237.D Vial: 4
Acq On : 14 Jun 2015 11:02 Operator: TMB /DLW
Sample : WG527475-04 50ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration

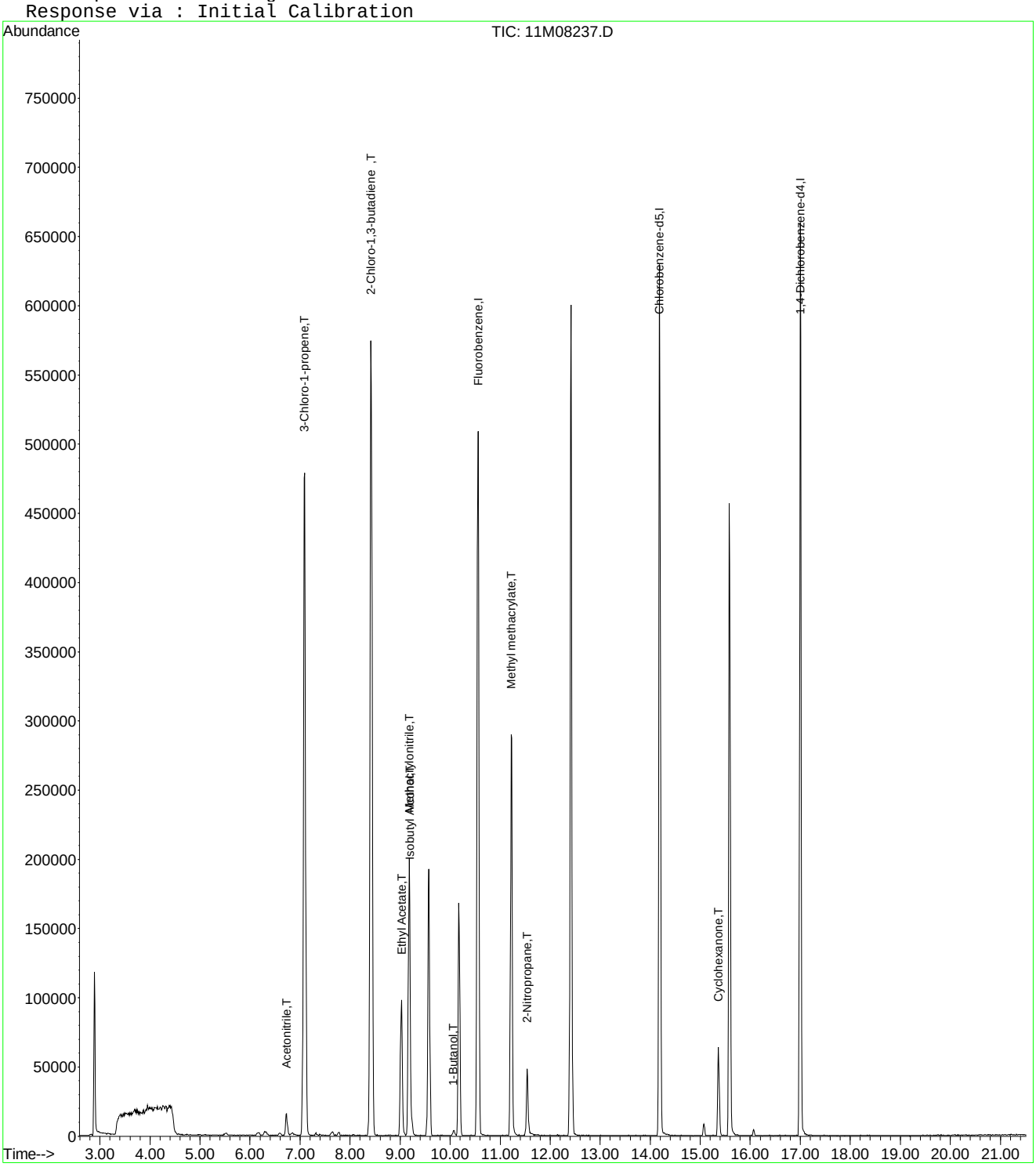

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061415\11M08237.D Vial: 4
Acq On : 14 Jun 2015 11:02 Operator: TMB /DLW
Sample : WG527475-04 50ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	46.9140	6.2	100	0.01
3	T	3-Chloro-1-propene	50.0000	49.3594	1.3	100	-0.01
4	T	2-Chloro-1,3-butadiene	50.0000	47.1955	5.6	100	0.00
5	T	Methacrylonitrile	50.0000	48.2996	3.4	100	0.00
6	T	Isobutyl Alcohol	100.0000	96.5203	3.5	100	0.00
7	T	1-Butanol	50.0000	45.8622	8.3	100	-0.01
8	T	Cyclohexanone	50.0000	49.1508	1.7	100	0.00
9	T	2-Nitropropane	50.0000	62.5818	-25.2	100	0.00
10	T	Ethyl Acetate	50.0000	48.2986	3.4	100	0.00
11	T	Methyl methacrylate	50.0000	47.2293	5.5	100	0.00
12	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
13	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M08237.D A9FOOWT.M Thu Aug 20 11:44:41 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08238.D Vial: 5
Acq On : 14 Jun 2015 11:34 Operator: TMB /DLW
Sample : WG527475-05 100ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 11:56:24 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	593660	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.19	117	435951	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.00	152	224898	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	154015	23.3717 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.48%		
43) 1,2-Dichloroethane-d4	10.17	65	141727	19.8012 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 79.20%#		
57) Toluene-d8	12.42	98	525710	28.5517 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 114.20%#		
78) p-Bromofluorobenzene	15.58	95	182017	25.2926 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.16%		

Target Compounds					Qvalue
3) Chloromethane	3.68	50	2521	0.2445 ug/L	100
13) Acetone	6.30	43	8631	4.9378 ug/L	80
24) n-Hexane	7.78	57	2688	0.2479 ug/L #	72
29) 2-Butanone	8.85	43	412	0.1450 ug/L #	77

(#) = qualifier out of range (m) = manual integration
11M08238.D 8260WTR.M Sun Jun 14 11:56:26 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08238.D Vial: 5
Acq On : 14 Jun 2015 11:34 Operator: TMB /DLW
Sample : WG527475-05 100ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 11:56 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration

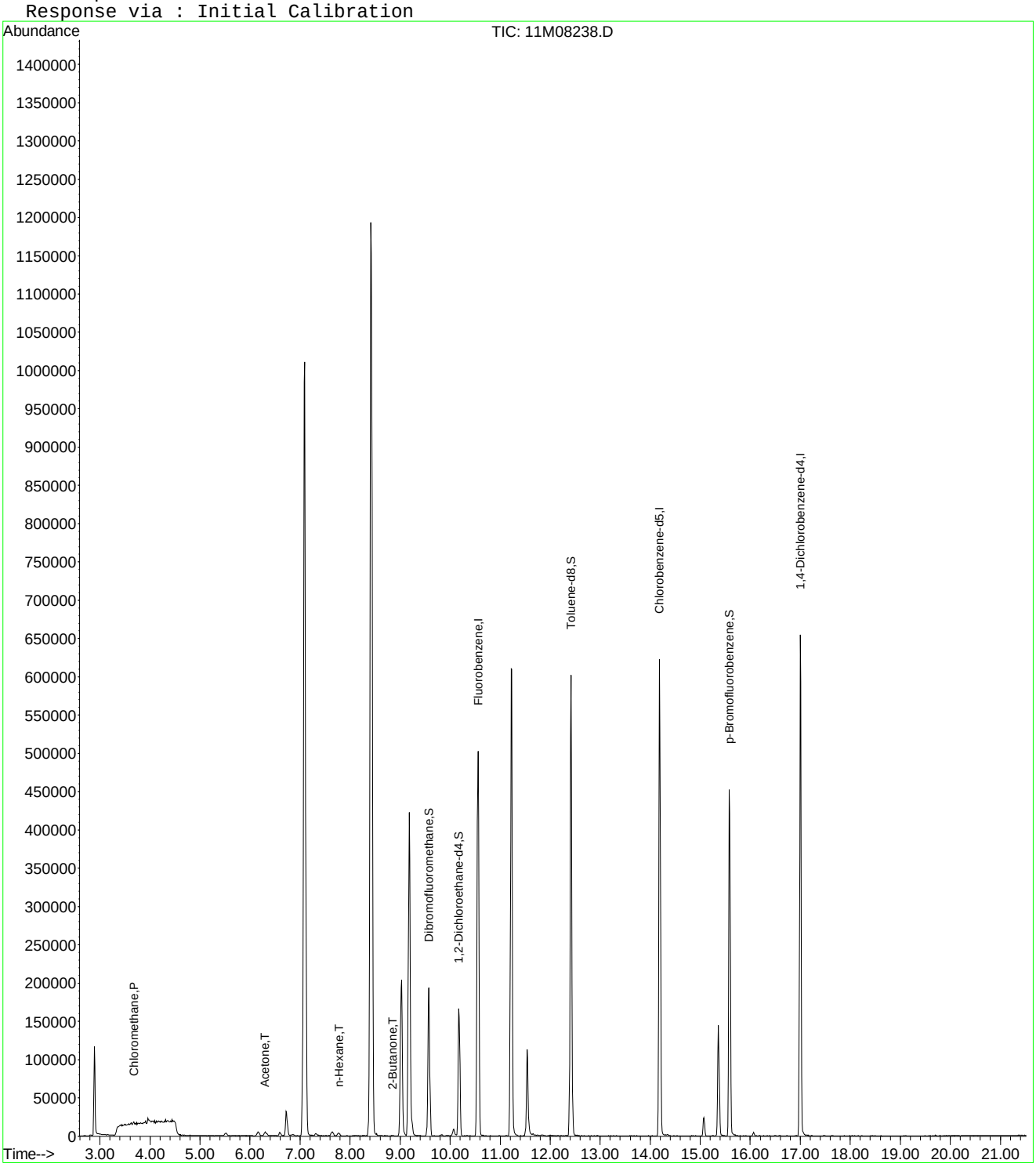

11M08238.D 8260WTR.M Sun Jun 14 11:56:26 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08238.D Vial: 5
Acq On : 14 Jun 2015 11:34 Operator: TMB /DLW
Sample : WG527475-05 100ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 09:43:58 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	593660	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	435951	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	224898	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	41783	88.1177 ug/L	97
3) 3-Chloro-1-propene	7.09	41	901667	87.4486 ug/L	84
4) 2-Chloro-1,3-butadiene	8.42	53	1055196	99.8955 ug/L	96
5) Methacrylonitrile	9.18	41	269812	94.9555 ug/L	83
6) Isobutyl Alcohol	9.19	43	28965	265.8717 ug/L	87
7) 1-Butanol	10.07	56	7719	169.0243 ug/L	87
8) Cyclohexanone	15.36	55	72878	92.9342 ug/L	95
9) 2-Nitropropane	11.54	43	76568	70.3304 ug/L	82
10) Ethyl Acetate	9.03	43	331707	94.9253 ug/L	95
11) Methyl methacrylate	11.22	41	375863	99.7350 ug/L	89

(#) = qualifier out of range (m) = manual integration
11M08238.D A9FOOWT.M Tue Jun 16 09:43:58 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08238.D Vial: 5
Acq On : 14 Jun 2015 11:34 Operator: TMB /DLW
Sample : WG527475-05 100ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 9:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration

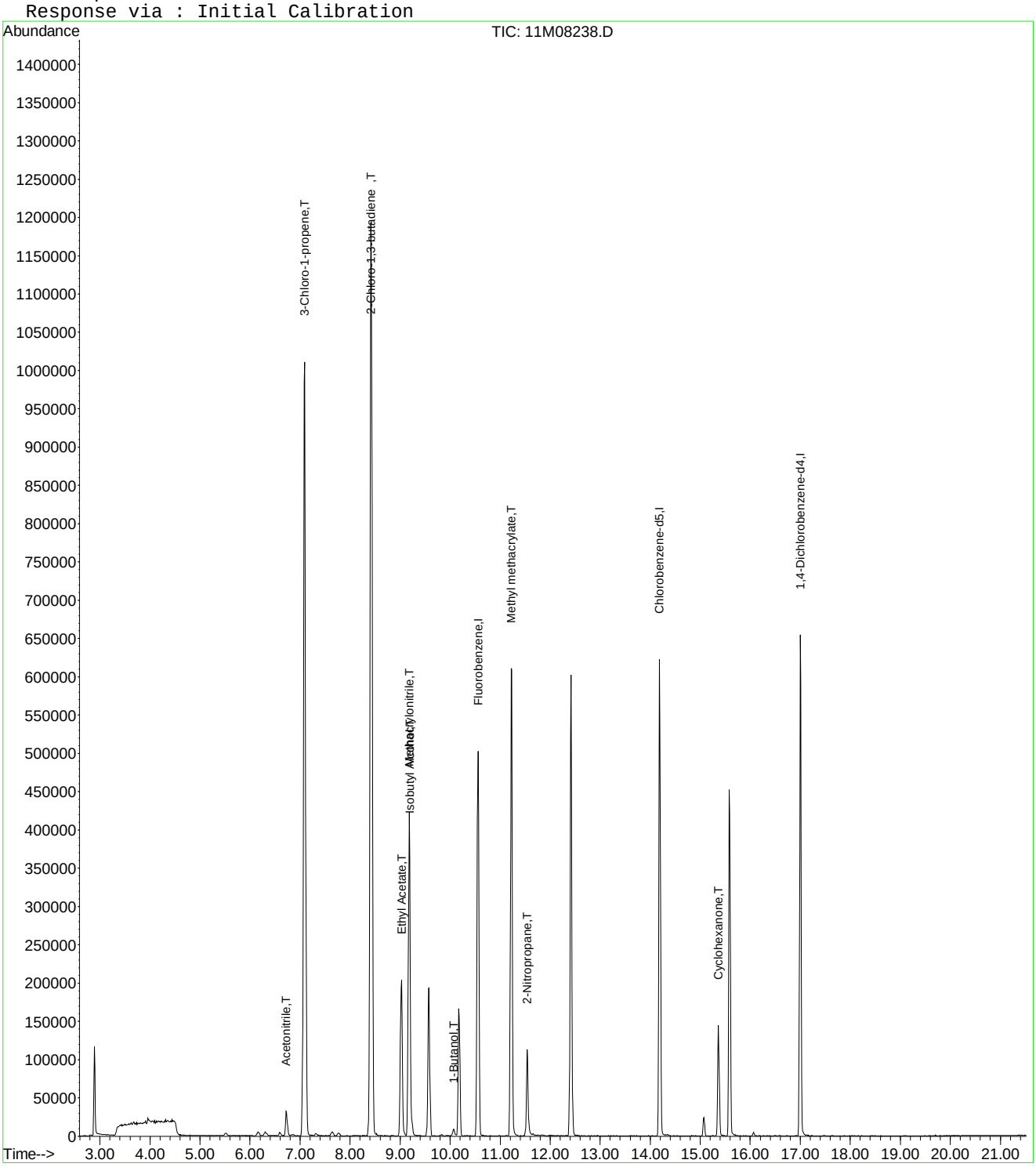

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08238.D Vial: 5
Acq On : 14 Jun 2015 11:34 Operator: TMB /DLW
Sample : WG527475-05 100ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28:09 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	593660	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	435951	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	224898	25.00 ug/L	-0.03

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M08238.D A9FOOWT.M Thu Aug 20 11:28:10 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08238.D Vial: 5
Acq On : 14 Jun 2015 11:34 Operator: TMB /DLW
Sample : WG527475-05 100ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration

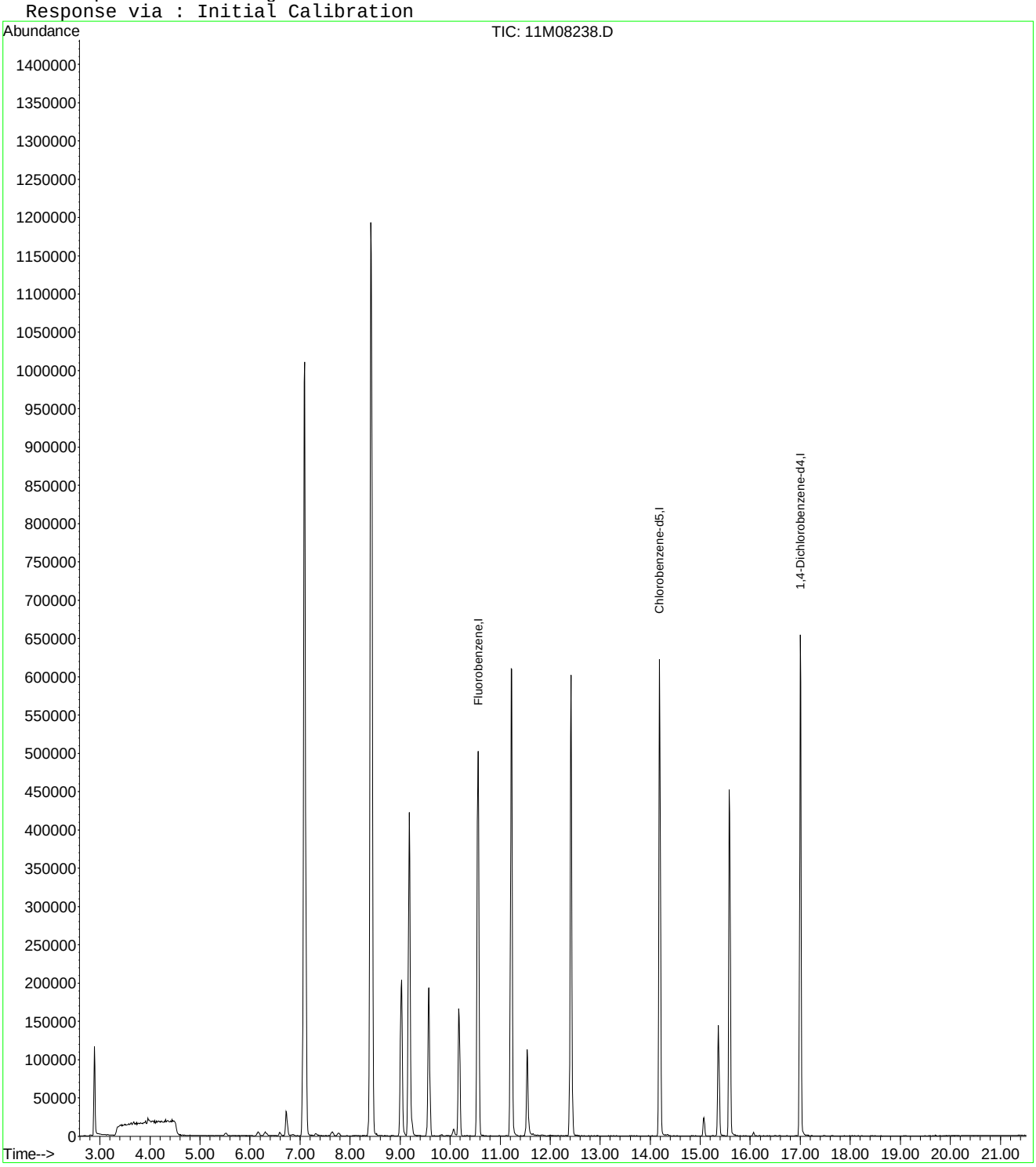

11M08238.D A9FOOWT.M Thu Aug 20 11:28:10 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08238.D Vial: 5
Acq On : 14 Jun 2015 11:34 Operator: TMB /DLW
Sample : WG527475-05 100ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43:50 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	593660	25.00 ug/L	0.00
12) Chlorobenzene-d5	14.19	117	435951	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.00	152	224898	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	41783	91.7658 ug/L	97
3) 3-Chloro-1-propene	7.09	41	901667	100.9151 ug/L	84
4) 2-Chloro-1,3-butadiene	8.42	53	1055196	98.3785 ug/L	96
5) Methacrylonitrile	9.18	41	269812	97.7026 ug/L	83
6) Isobutyl Alcohol	9.19	43	28965	203.8255 ug/L	87
7) 1-Butanol	10.07	56	7719	102.6849 ug/L	87
8) Cyclohexanone	15.36	55	72878	106.7319 ug/L	95
9) 2-Nitropropane	11.54	43	76568	102.5921 ug/L	82
10) Ethyl Acetate	9.03	43	331707	101.2749 ug/L	95
11) Methyl methacrylate	11.22	41	375863	98.6916 ug/L	89

(#) = qualifier out of range (m) = manual integration
11M08238.D A9FOOWT.M Thu Aug 20 11:43:50 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08238.D Vial: 5
Acq On : 14 Jun 2015 11:34 Operator: TMB /DLW
Sample : WG527475-05 100ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration

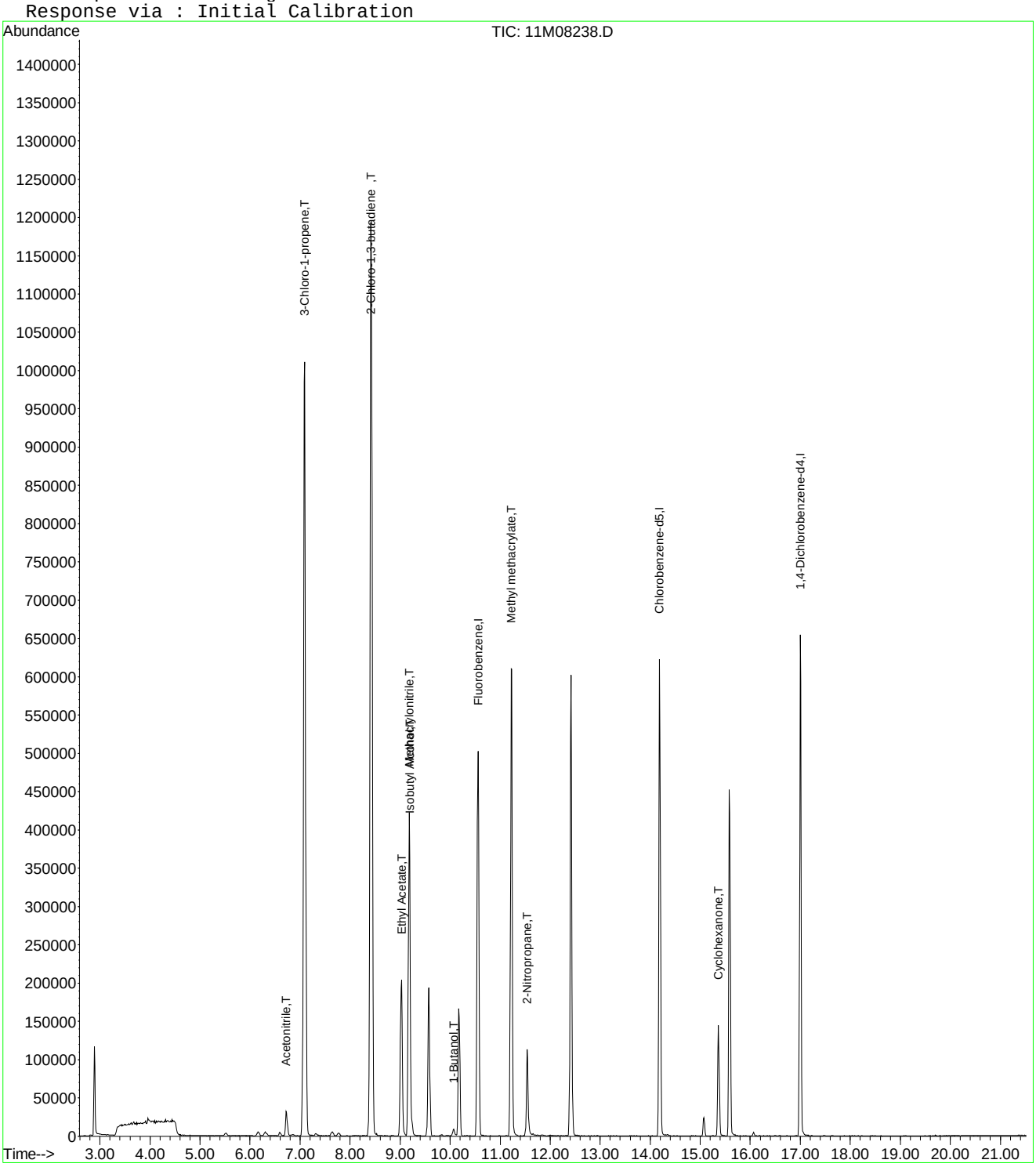

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061415\11M08238.D Vial: 5
Acq On : 14 Jun 2015 11:34 Operator: TMB /DLW
Sample : WG527475-05 100ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	91.7658	8.2	100	0.00
3	T	3-Chloro-1-propene	100.0000	100.9152	-0.9	100	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	98.3785	1.6	100	0.00
5	T	Methacrylonitrile	100.0000	97.7026	2.3	100	0.00
6	T	Isobutyl Alcohol	200.0000	203.8255	-1.9	100	0.00
7	T	1-Butanol	100.0000	102.6849	-2.7	100	0.00
8	T	Cyclohexanone	100.0000	106.7319	-6.7	100	0.00
9	T	2-Nitropropane	100.0000	102.5921	-2.6	100	0.00
10	T	Ethyl Acetate	100.0000	101.2749	-1.3	100	0.00
11	T	Methyl methacrylate	100.0000	98.6916	1.3	100	0.00
12	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
13	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M08238.D A9FOOWT.M Thu Aug 20 11:44:51 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08239.D Vial: 6
Acq On : 14 Jun 2015 12:06 Operator: TMB /DLW
Sample : WG527475-06 200ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 12:28:24 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	594644	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.19	117	435974	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.00	152	229058	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	154998	23.4820 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.92%		
43) 1,2-Dichloroethane-d4	10.17	65	140981	19.6644 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 78.64%#		
57) Toluene-d8	12.42	98	523704	28.4412 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 113.76%#		
78) p-Bromofluorobenzene	15.58	95	185106	25.2547 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.00%		

Target Compounds

					Qvalue
3) Chloromethane	3.68	50	2432	0.2354 ug/L #	41
6) Bromomethane	4.80	94	741	0.2165 ug/L	88
13) Acetone	6.30	43	14437	8.2458 ug/L	88
24) n-Hexane	7.78	57	4836	0.4453 ug/L #	80
29) 2-Butanone	8.84	43	1521	0.5342 ug/L #	77
39) Cyclohexane	9.83	56	2702	0.1826 ug/L #	90
47) Methylcyclohexane	11.23	83	2411	0.2326 ug/L #	1
70) Ethylbenzene	14.34	106	1287	0.1439 ug/L	84
71) m-,p-Xylene	14.34	106	1287	0.1218 ug/L #	4

(#) = qualifier out of range (m) = manual integration
11M08239.D 8260WTR.M Sun Jun 14 12:28:25 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08239.D Vial: 6
Acq On : 14 Jun 2015 12:06 Operator: TMB /DLW
Sample : WG527475-06 200ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 12:28 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration

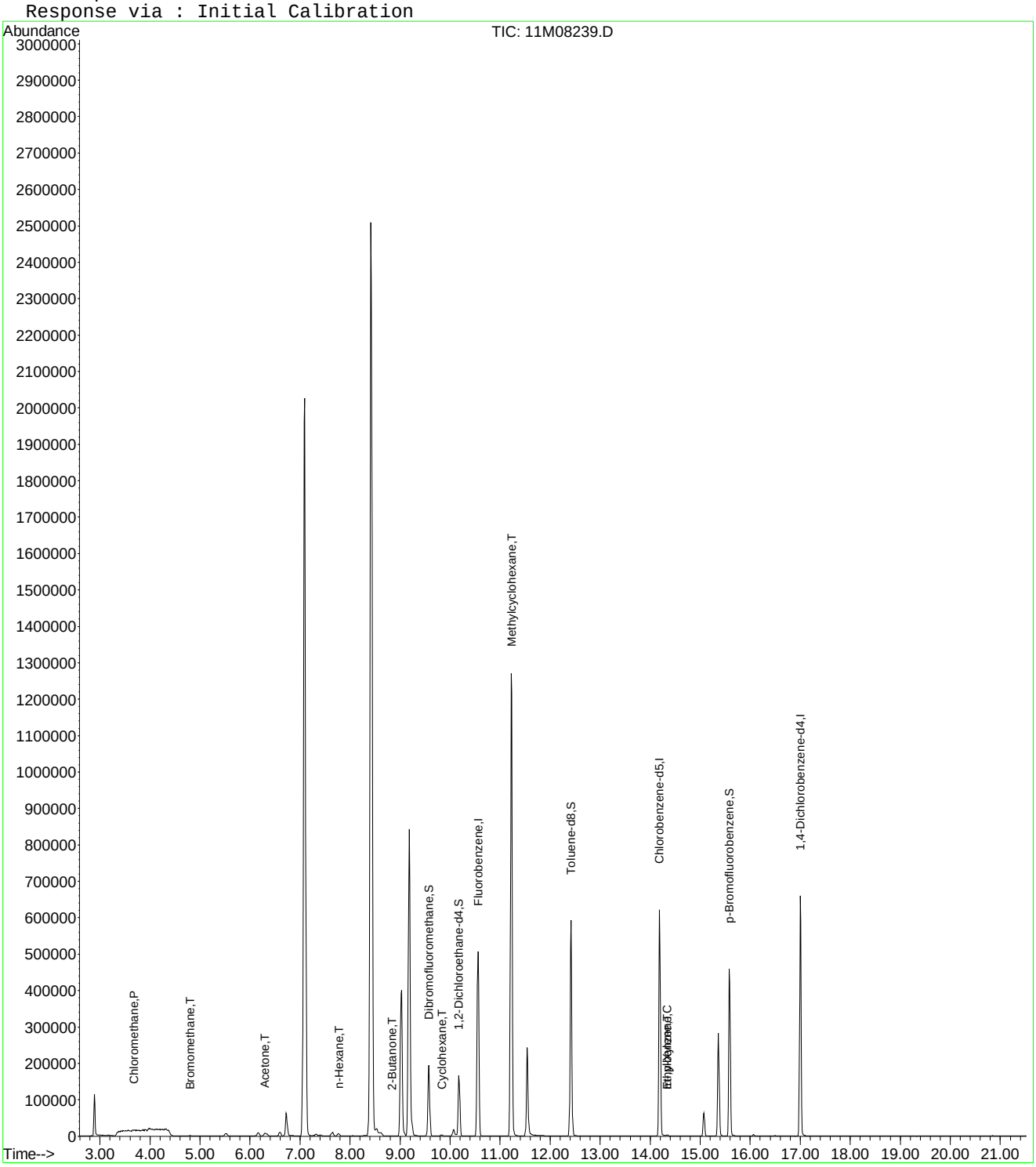

11M08239.D 8260WTR.M Sun Jun 14 12:28:25 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08239.D Vial: 6
Acq On : 14 Jun 2015 12:06 Operator: TMB /DLW
Sample : WG527475-06 200ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 09:43:59 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.56	96	594644	25.00	ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	435974	25.00	ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	229058	25.00	ug/L	-0.03

Target Compounds						Qvalue
2) Acetonitrile	6.72	41	84573	178.0639	ug/L	99
3) 3-Chloro-1-propene	7.09	41	1784664	172.8000	ug/L	83
4) 2-Chloro-1,3-butadiene	8.42	53	2139008	202.1651	ug/L	95
5) Methacrylonitrile	9.18	41	534300	187.7261	ug/L	82
6) Isobutyl Alcohol	9.19	43	51366	470.7117	ug/L	98
7) 1-Butanol	10.07	56	15596	340.9432	ug/L #	87
8) Cyclohexanone	15.36	55	142194	181.0260	ug/L	95
9) 2-Nitropropane	11.54	43	168554	154.5666	ug/L	84
10) Ethyl Acetate	9.03	43	649446	185.5458	ug/L	94
11) Methyl methacrylate	11.22	41	751654	199.1209	ug/L	88

(#) = qualifier out of range (m) = manual integration
11M08239.D A9FOOWT.M Tue Jun 16 09:43:59 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08239.D Vial: 6
Acq On : 14 Jun 2015 12:06 Operator: TMB /DLW
Sample : WG527475-06 200ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 9:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration

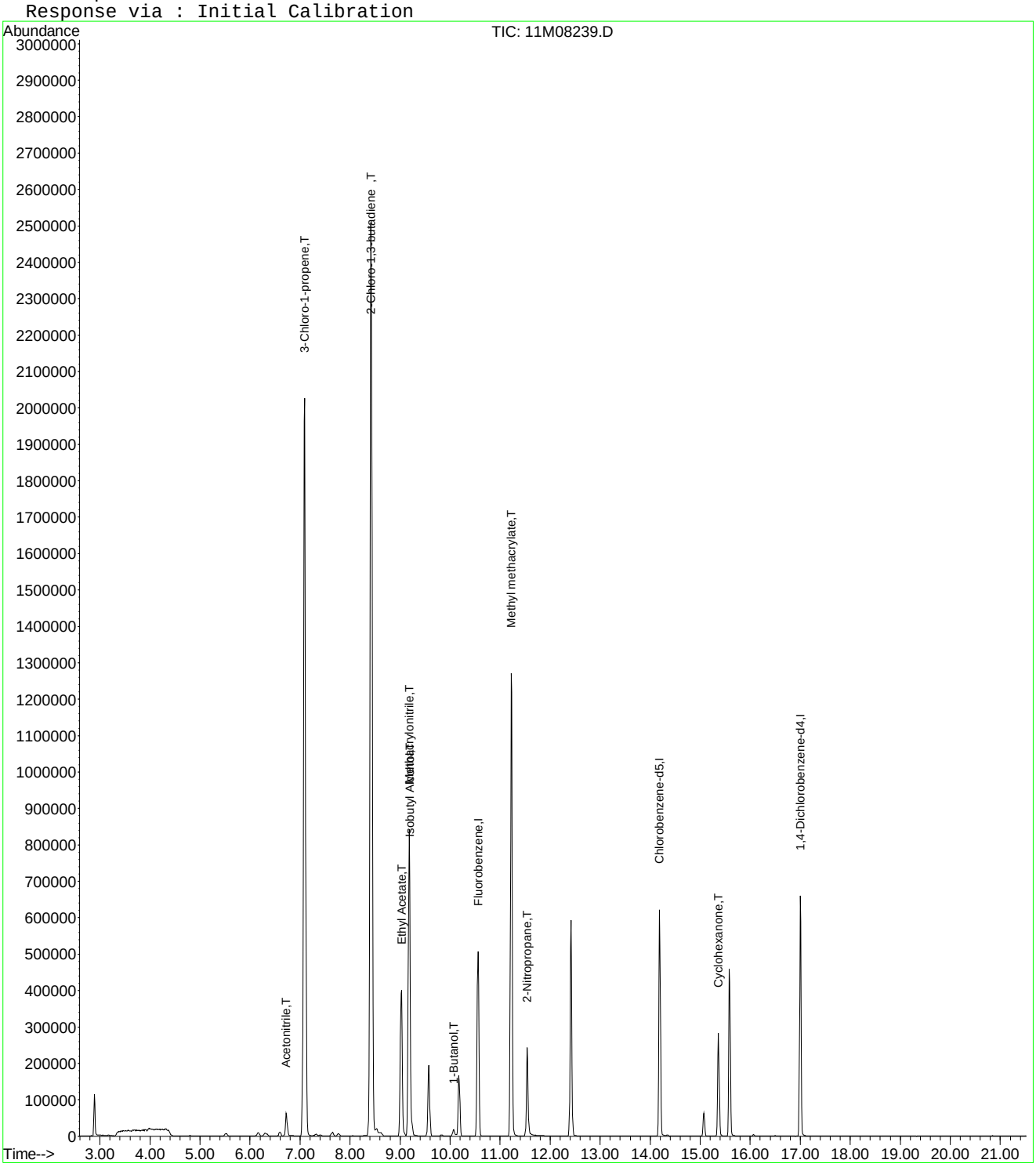

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08239.D Vial: 6
Acq On : 14 Jun 2015 12:06 Operator: TMB /DLW
Sample : WG527475-06 200ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28:11 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	594644	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	435974	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	229058	25.00 ug/L	-0.03

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M08239.D A9FOOWT.M Thu Aug 20 11:28:11 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08239.D Vial: 6
Acq On : 14 Jun 2015 12:06 Operator: TMB /DLW
Sample : WG527475-06 200ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration

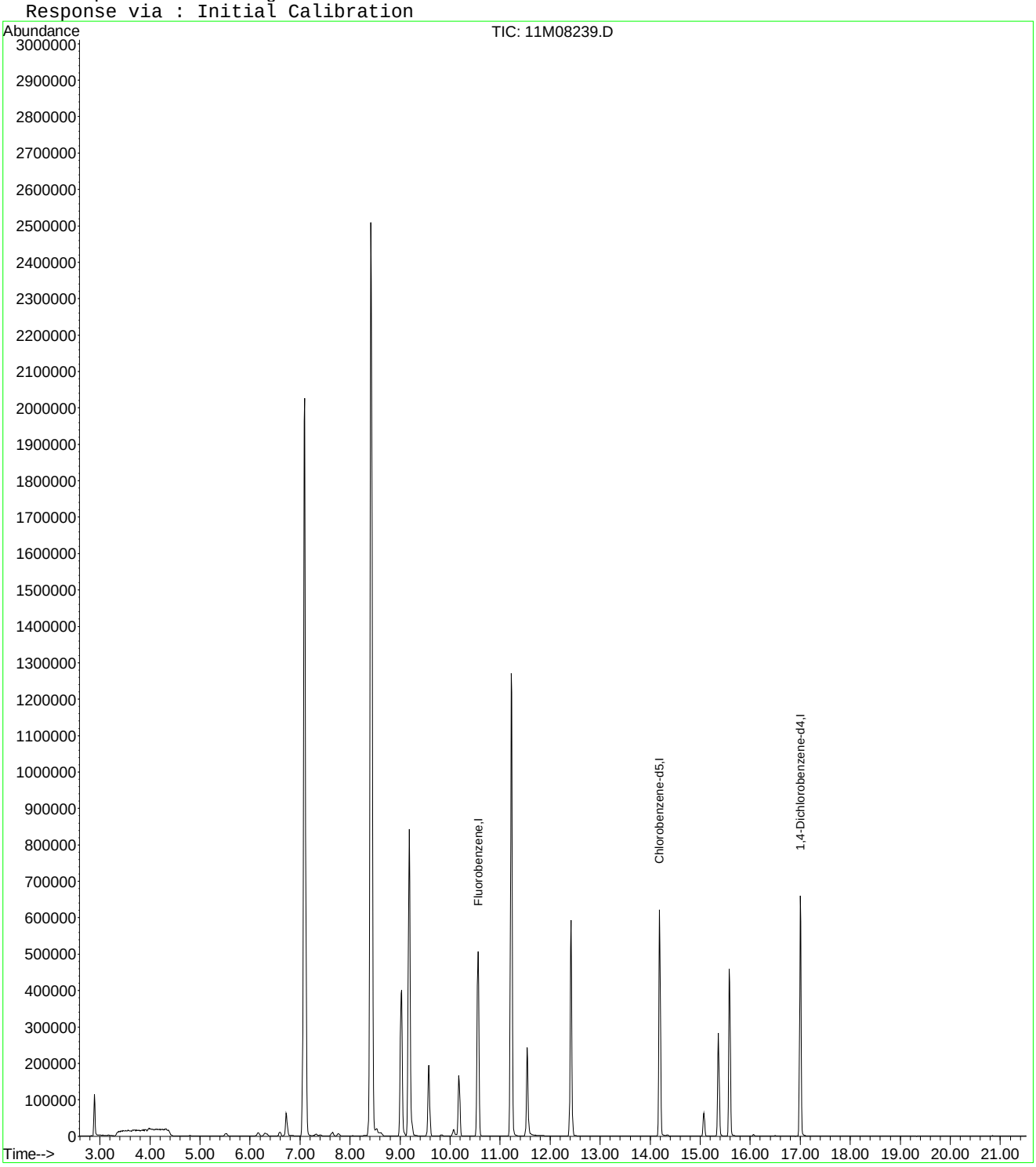

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08239.D Vial: 6
Acq On : 14 Jun 2015 12:06 Operator: TMB /DLW
Sample : WG527475-06 200ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43:51 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	594644	25.00 ug/L	0.00
12) Chlorobenzene-d5	14.19	117	435974	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.00	152	229058	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	84573	185.4358 ug/L	99
3) 3-Chloro-1-propene	7.09	41	1784664	199.4102 ug/L	83
4) 2-Chloro-1,3-butadiene	8.42	53	2139008	199.0949 ug/L	95
5) Methacrylonitrile	9.18	41	534300	193.1571 ug/L	82
6) Isobutyl Alcohol	9.19	43	51337	360.6585 ug/L	98
7) 1-Butanol	10.07	56	15596	207.1283 ug/L #	87
8) Cyclohexanone	15.36	55	142194	207.9025 ug/L	95
9) 2-Nitropropane	11.54	43	168554	186.4698 ug/L	84
10) Ethyl Acetate	9.03	43	649446	197.9570 ug/L	94
11) Methyl methacrylate	11.22	41	751654	197.0377 ug/L	88

(#) = qualifier out of range (m) = manual integration
11M08239.D A9FOOWT.M Thu Aug 20 11:43:51 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08239.D Vial: 6
Acq On : 14 Jun 2015 12:06 Operator: TMB /DLW
Sample : WG527475-06 200ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration

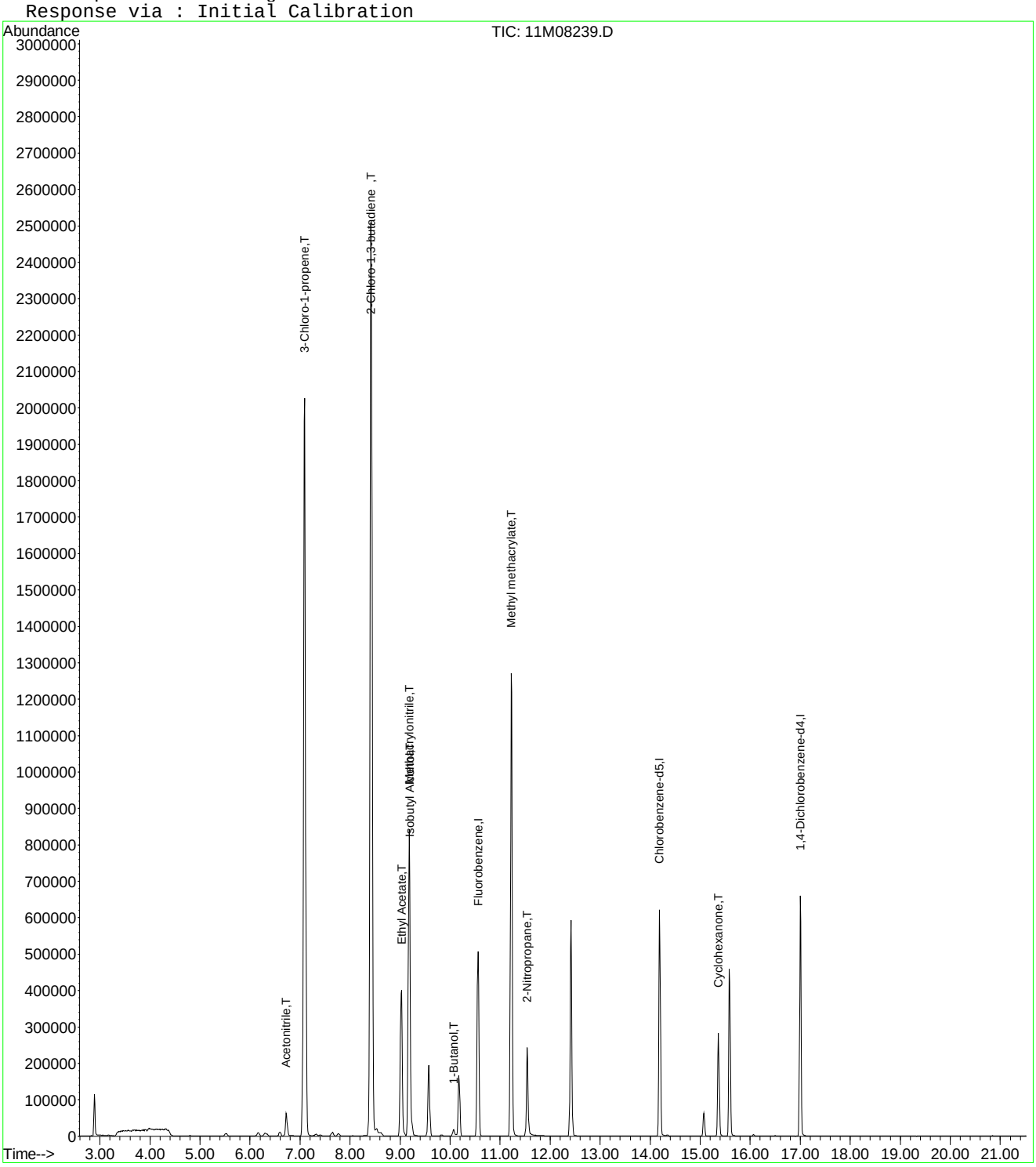

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08240.D Vial: 7
Acq On : 14 Jun 2015 12:38 Operator: TMB /DLW
Sample : WG527475-07 300ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 13:00:23 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	590021	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.19	117	427539	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.00	152	226251	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	154989	23.6646 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.64%		
43) 1,2-Dichloroethane-d4	10.17	65	137616	19.3454 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 77.40%#		
57) Toluene-d8	12.42	98	526940	29.1815 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 116.72%#		
78) p-Bromofluorobenzene	15.58	95	183651	25.3670 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.48%		

Target Compounds					Qvalue
3) Chloromethane	3.68	50	4067	0.3968 ug/L	98
6) Bromomethane	4.81	94	1456	0.4286 ug/L	94
11) Acrolein	6.23	56	2665	2.6647 ug/L #	63
13) Acetone	6.30	43	17405	10.0188 ug/L	87
18) Methyl acetate	7.03	43	1109	0.1829 ug/L #	67
20) Carbon Disulfide	7.31	76	3126	0.1557 ug/L #	88
24) n-Hexane	7.78	57	7639	0.7089 ug/L #	89
29) 2-Butanone	8.84	43	1699	0.6014 ug/L #	77
30) Propionitrile	9.00	54	221	0.2481 ug/L #	1
39) Cyclohexane	9.84	56	3351	0.2282 ug/L #	68
71) m-,p-Xylene	14.34	106	1591	0.1535 ug/L #	17

(#) = qualifier out of range (m) = manual integration
11M08240.D 8260WTR.M Sun Jun 14 13:00:23 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08240.D Vial: 7
Acq On : 14 Jun 2015 12:38 Operator: TMB /DLW
Sample : WG527475-07 300ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 13:00 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration

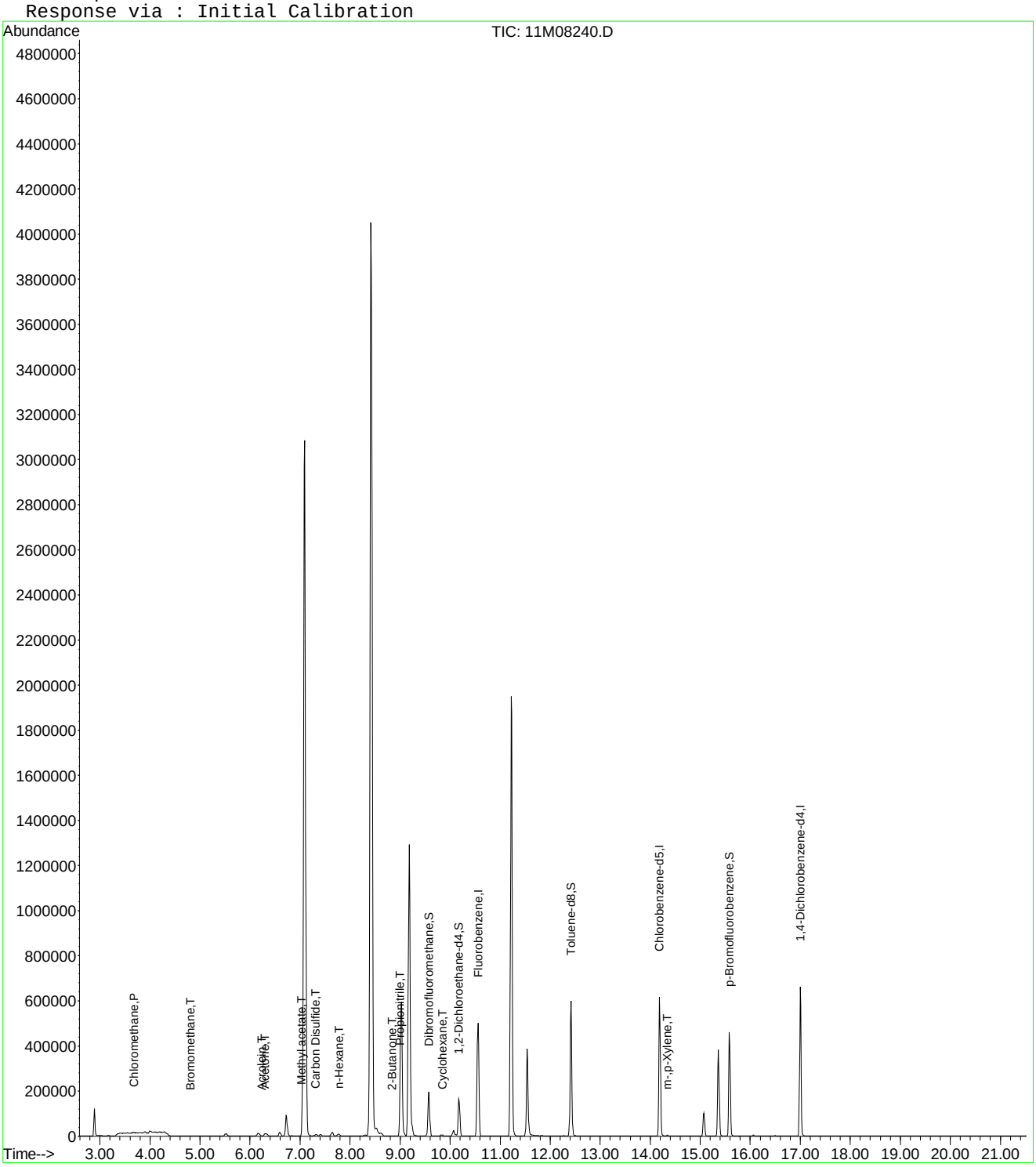

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08240.D Vial: 7
Acq On : 14 Jun 2015 12:38 Operator: TMB /DLW
Sample : WG527475-07 300ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 09:44:00 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	590021	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	427539	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	226251	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	124797	264.8121 ug/L	99
3) 3-Chloro-1-propene	7.09	41	2683921	261.9067 ug/L	83
4) 2-Chloro-1,3-butadiene	8.42	53	3409409	324.7599 ug/L	95
5) Methacrylonitrile	9.18	41	809195	286.5380 ug/L	82
6) Isobutyl Alcohol	9.19	43	83440	770.6251 ug/L	88
7) 1-Butanol	10.07	56	21640	476.7773 ug/L	91
8) Cyclohexanone	15.36	55	191378	245.5507 ug/L	95
9) 2-Nitropropane	11.54	43	277273	256.2558 ug/L	85
10) Ethyl Acetate	9.03	43	962378	277.1043 ug/L #	93
11) Methyl methacrylate	11.22	41	1142167	304.9426 ug/L	88

(#) = qualifier out of range (m) = manual integration
11M08240.D A9FOOWT.M Tue Jun 16 09:44:01 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08240.D Vial: 7
Acq On : 14 Jun 2015 12:38 Operator: TMB /DLW
Sample : WG527475-07 300ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 9:44 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration

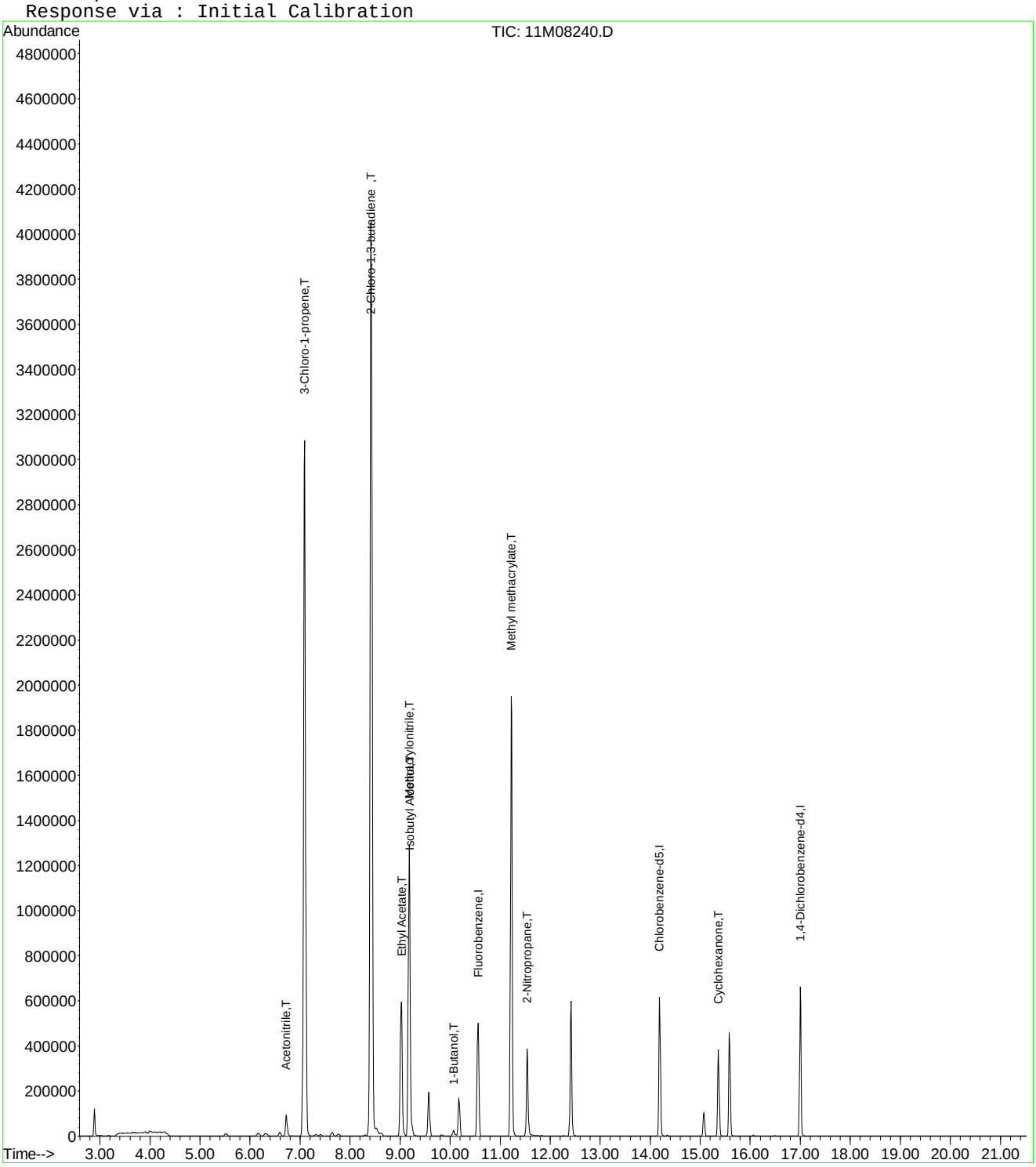

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08240.D Vial: 7
Acq On : 14 Jun 2015 12:38 Operator: TMB /DLW
Sample : WG527475-07 300ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28:12 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.56	96	590021	25.00	ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	427539	25.00	ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	226251	25.00	ug/L	-0.03

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M08240.D A9FOOWT.M Thu Aug 20 11:28:12 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08240.D Vial: 7
Acq On : 14 Jun 2015 12:38 Operator: TMB /DLW
Sample : WG527475-07 300ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration

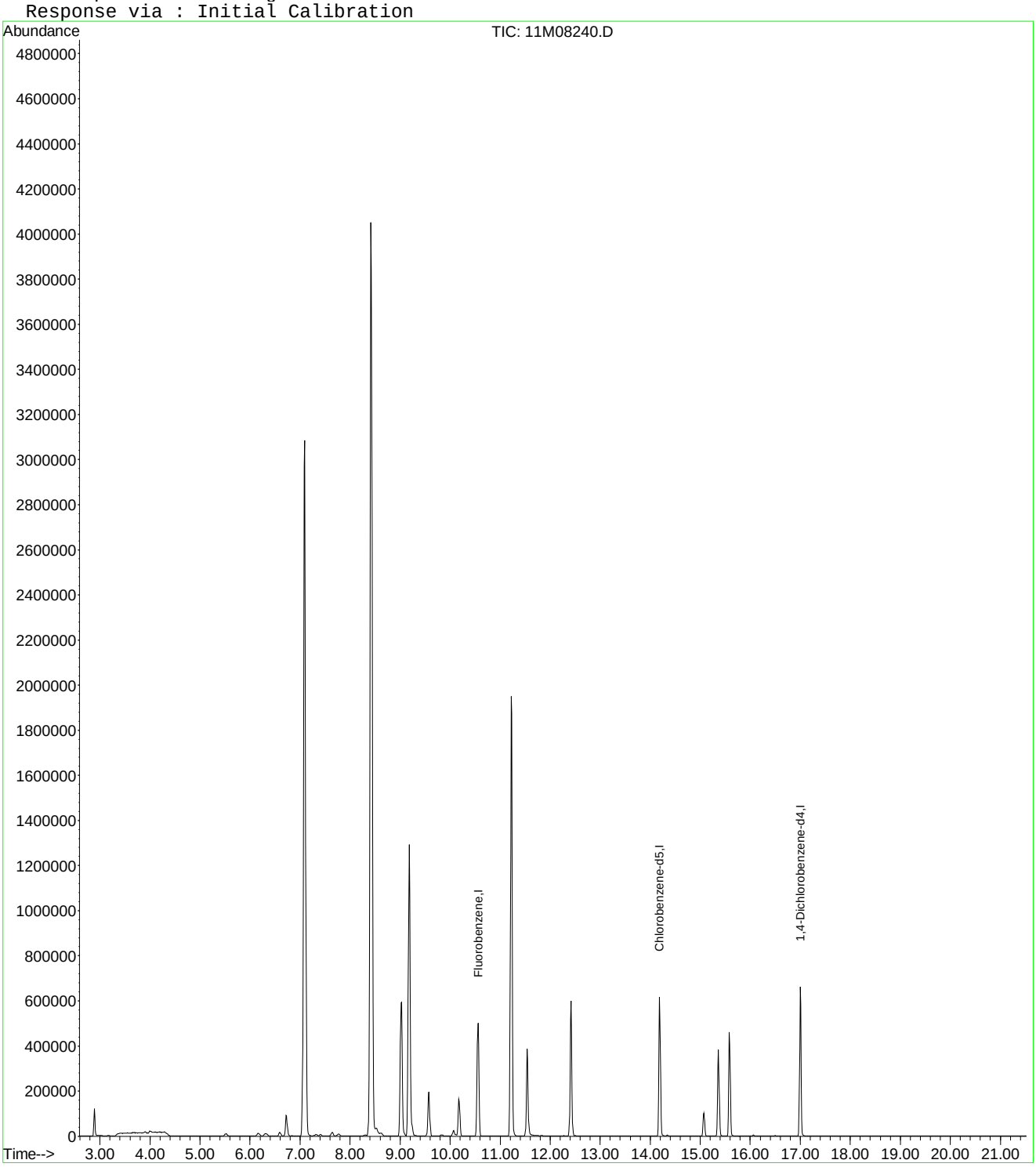

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08240.D Vial: 7
Acq On : 14 Jun 2015 12:38 Operator: TMB /DLW
Sample : WG527475-07 300ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43:52 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	590021	25.00 ug/L	0.00
12) Chlorobenzene-d5	14.19	117	427539	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.00	152	226251	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	124797	275.7754 ug/L	99
3) 3-Chloro-1-propene	7.09	41	2683921	302.2388 ug/L	83
4) 2-Chloro-1,3-butadiene	8.42	53	3409409	319.8280 ug/L	95
5) Methacrylonitrile	9.18	41	809195	294.8276 ug/L	82
6) Isobutyl Alcohol	9.19	43	83440	590.7851 ug/L	88
7) 1-Butanol	10.07	56	21640	289.6496 ug/L	91
8) Cyclohexanone	15.36	55	191378	282.0071 ug/L	95
9) 2-Nitropropane	11.54	43	277273	287.7263 ug/L	85
10) Ethyl Acetate	9.03	43	962378	295.6400 ug/L #	93
11) Methyl methacrylate	11.22	41	1142167	301.7522 ug/L	88

(#) = qualifier out of range (m) = manual integration
11M08240.D A9FOOWT.M Thu Aug 20 11:43:53 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08240.D Vial: 7
Acq On : 14 Jun 2015 12:38 Operator: TMB /DLW
Sample : WG527475-07 300ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration

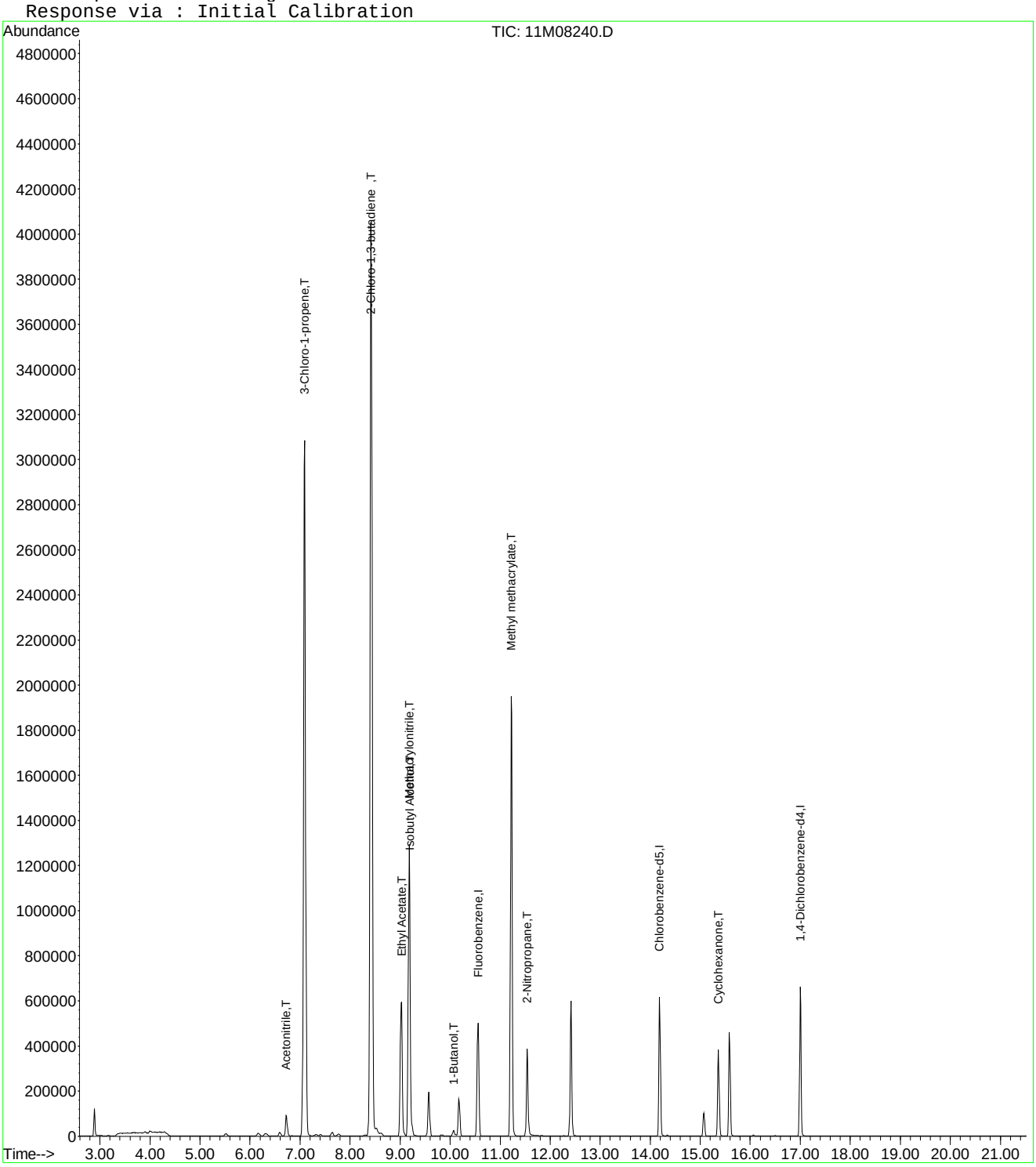

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08241.D Vial: 8
Acq On : 14 Jun 2015 13:10 Operator: TMB /DLW
Sample : WG527475-08 400ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 13:32:12 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	602921	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.19	117	438769	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.00	152	234608	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	157490	23.5320 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.12%		
43) 1,2-Dichloroethane-d4	10.17	65	142445	19.5958 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 78.40%#		
57) Toluene-d8	12.42	98	529319	28.5630 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 114.24%#		
78) p-Bromofluorobenzene	15.58	95	184124	24.5264 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.12%		

Target Compounds

					Qvalue
3) Chloromethane	3.67	50	5951	0.5682 ug/L	86
4) Vinyl Chloride	3.90	62	1145	0.1556 ug/L #	42
6) Bromomethane	4.81	94	1631	0.4699 ug/L #	56
11) Acrolein	6.25	56	3616	3.5382 ug/L #	49
13) Acetone	6.30	43	20681	11.6499 ug/L	94
18) Methyl acetate	7.02	43	2450	0.3954 ug/L #	67
19) Methylene Chloride	7.28	84	869	0.1218 ug/L #	49
20) Carbon Disulfide	7.31	76	4210	0.2052 ug/L	97
24) n-Hexane	7.77	57	9223	0.8376 ug/L #	93
29) 2-Butanone	8.83	43	2572	0.8910 ug/L #	77
31) 2,2-Dichloropropane	9.03	77	1535	0.1632 ug/L #	41
39) Cyclohexane	9.83	56	5053	0.3367 ug/L	91
71) m-,p-Xylene	14.34	106	2254	0.2119 ug/L #	36

(#) = qualifier out of range (m) = manual integration
11M08241.D 8260WTR.M Sun Jun 14 13:32:14 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08241.D Vial: 8
Acq On : 14 Jun 2015 13:10 Operator: TMB /DLW
Sample : WG527475-08 400ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 13:32 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration

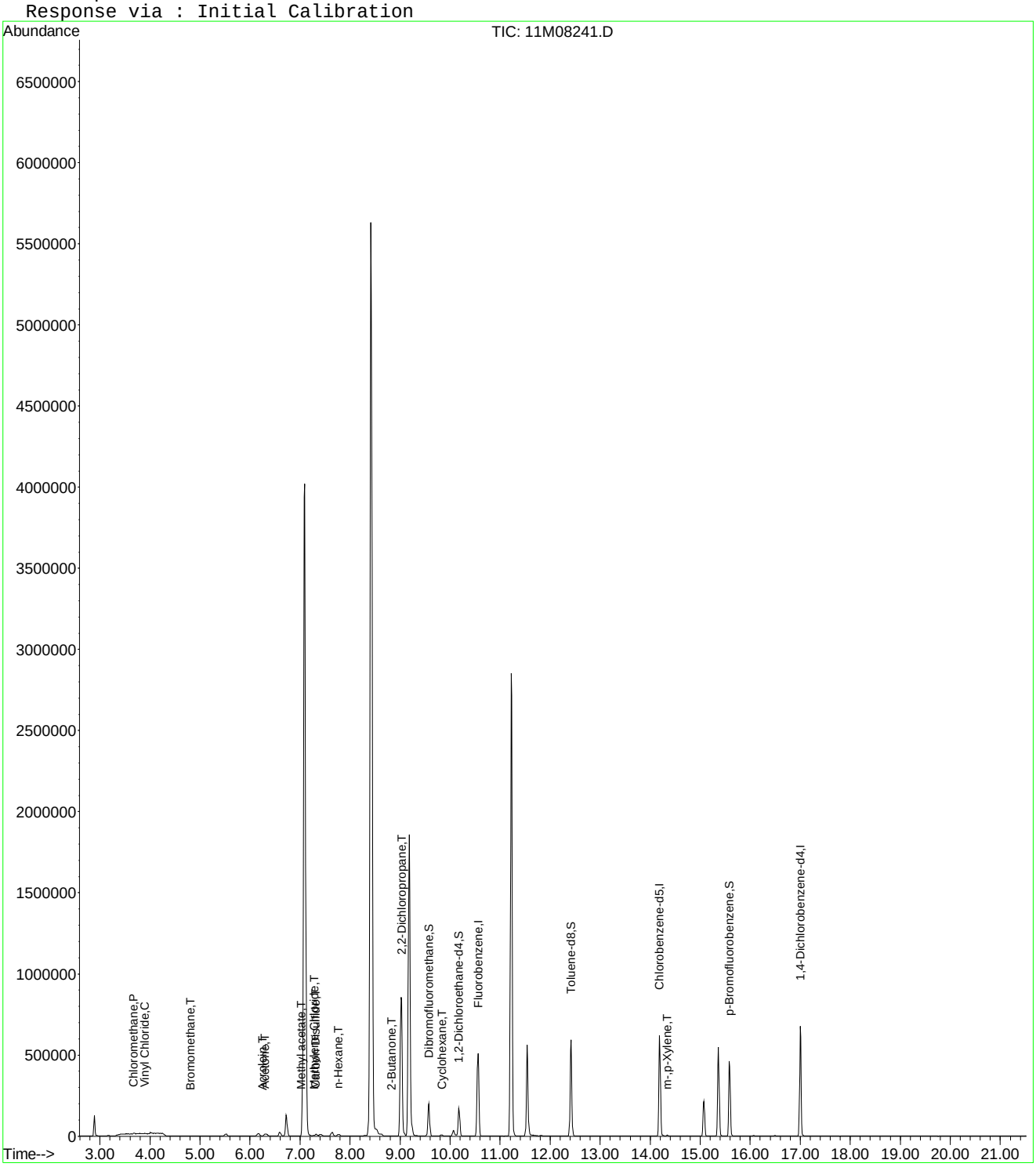

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08241.D Vial: 8
Acq On : 14 Jun 2015 13:10 Operator: TMB /DLW
Sample : WG527475-08 400ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 09:44:01 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	602921	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	438769	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	234608	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	173440	360.1555 ug/L	100
3) 3-Chloro-1-propene	7.09	41	3550959	339.1014 ug/L	82
4) 2-Chloro-1,3-butadiene	8.42	53	4600620	428.8513 ug/L	94
5) Methacrylonitrile	9.18	41	1153886	399.8518 ug/L	82
6) Isobutyl Alcohol	9.19	43	123004	1111.7192 ug/L	89
7) 1-Butanol	10.07	56	32355	697.6005 ug/L #	86
8) Cyclohexanone	15.36	55	274055	344.1074 ug/L	95
9) 2-Nitropropane	11.54	43	405951	367.1528 ug/L	87
10) Ethyl Acetate	9.02	43	1363919	384.3202 ug/L #	93
11) Methyl methacrylate	11.22	41	1637406	427.8110 ug/L	87

(#) = qualifier out of range (m) = manual integration
11M08241.D A9FOOWT.M Tue Jun 16 09:44:02 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08241.D Vial: 8
Acq On : 14 Jun 2015 13:10 Operator: TMB /DLW
Sample : WG527475-08 400ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 9:44 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration

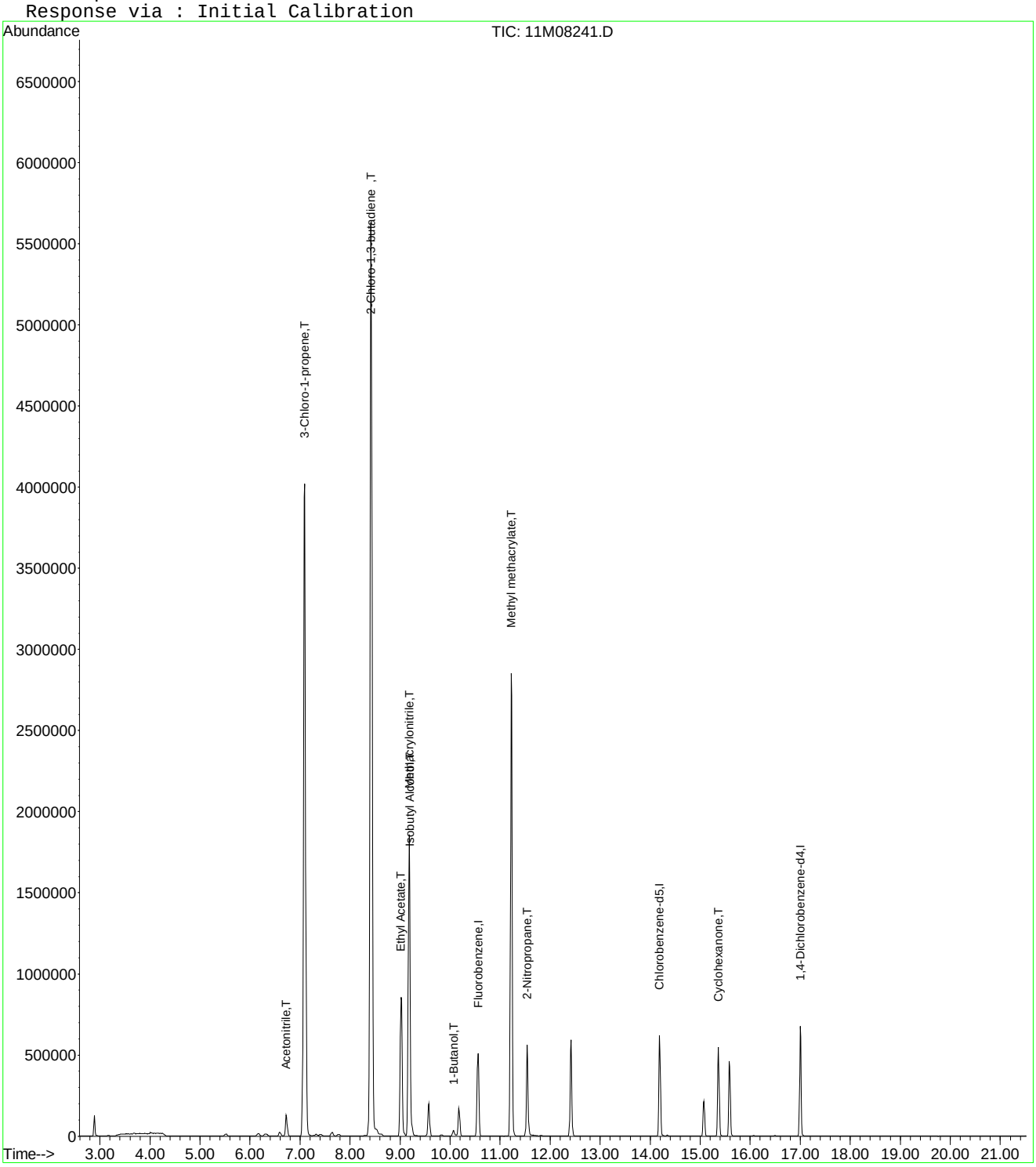

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08241.D Vial: 8
Acq On : 14 Jun 2015 13:10 Operator: TMB /DLW
Sample : WG527475-08 400ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28:13 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	602921	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	438769	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	234608	25.00 ug/L	-0.03

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M08241.D A9FOOWT.M Thu Aug 20 11:28:14 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08241.D Vial: 8
Acq On : 14 Jun 2015 13:10 Operator: TMB /DLW
Sample : WG527475-08 400ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration

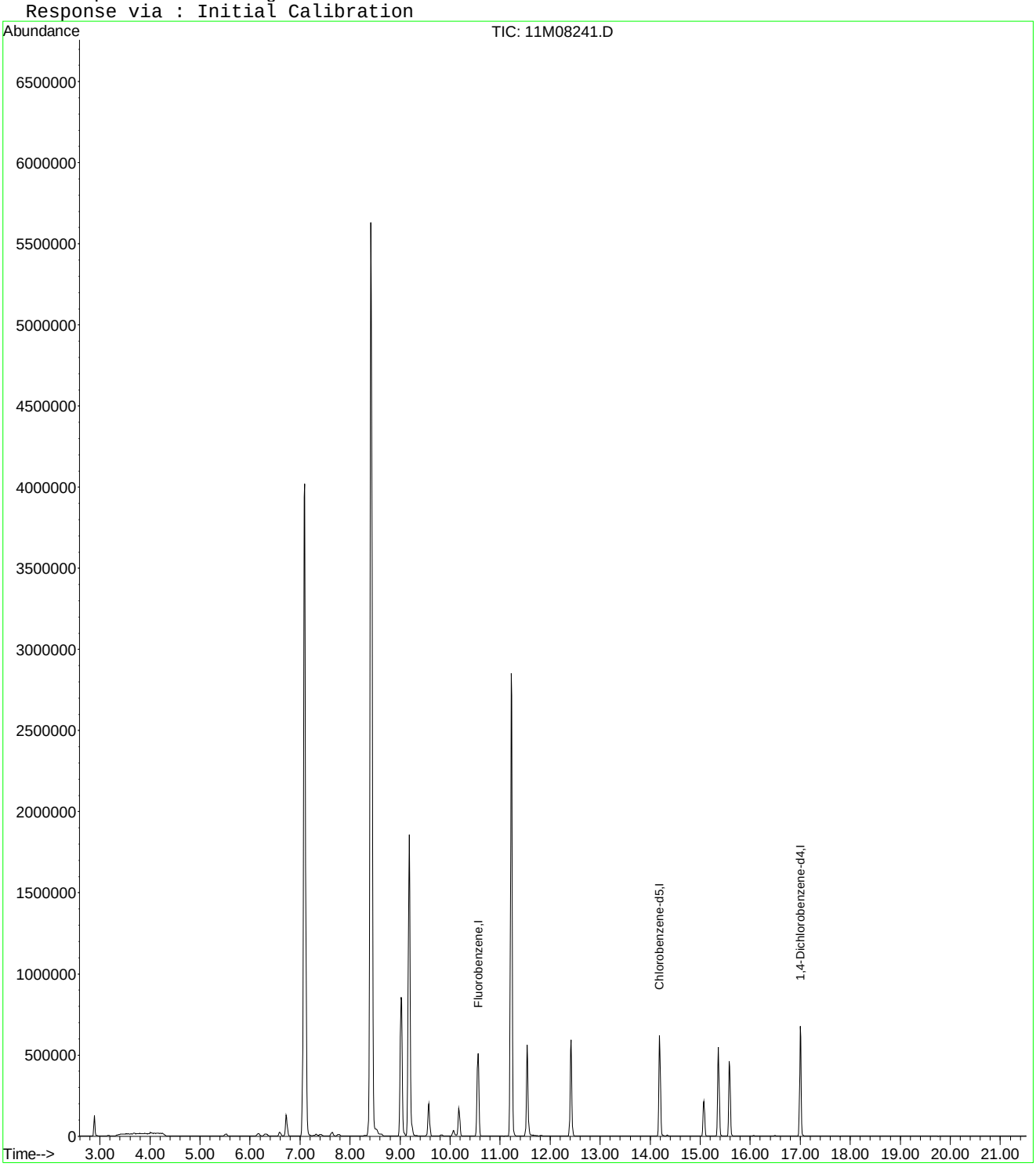

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08241.D Vial: 8
Acq On : 14 Jun 2015 13:10 Operator: TMB /DLW
Sample : WG527475-08 400ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43:53 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	602921	25.00 ug/L	0.00
12) Chlorobenzene-d5	14.19	117	438769	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.00	152	234608	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	173440	375.0660 ug/L	100
3) 3-Chloro-1-propene	7.09	41	3550959	391.3211 ug/L	82
4) 2-Chloro-1,3-butadiene	8.42	53	4600620	422.3386 ug/L	94
5) Methacrylonitrile	9.18	41	1153886	411.4196 ug/L	82
6) Isobutyl Alcohol	9.19	43	123004	852.2785 ug/L	89
7) 1-Butanol	10.07	56	32355	423.8032 ug/L #	86
8) Cyclohexanone	15.36	55	274055	395.1962 ug/L	95
9) 2-Nitropropane	11.54	43	405951	398.1514 ug/L	87
10) Ethyl Acetate	9.02	43	1363919	410.0276 ug/L #	93
11) Methyl methacrylate	11.22	41	1637406	423.3352 ug/L	87

(#) = qualifier out of range (m) = manual integration
11M08241.D A9FOOWT.M Thu Aug 20 11:43:54 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08241.D Vial: 8
Acq On : 14 Jun 2015 13:10 Operator: TMB /DLW
Sample : WG527475-08 400ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration

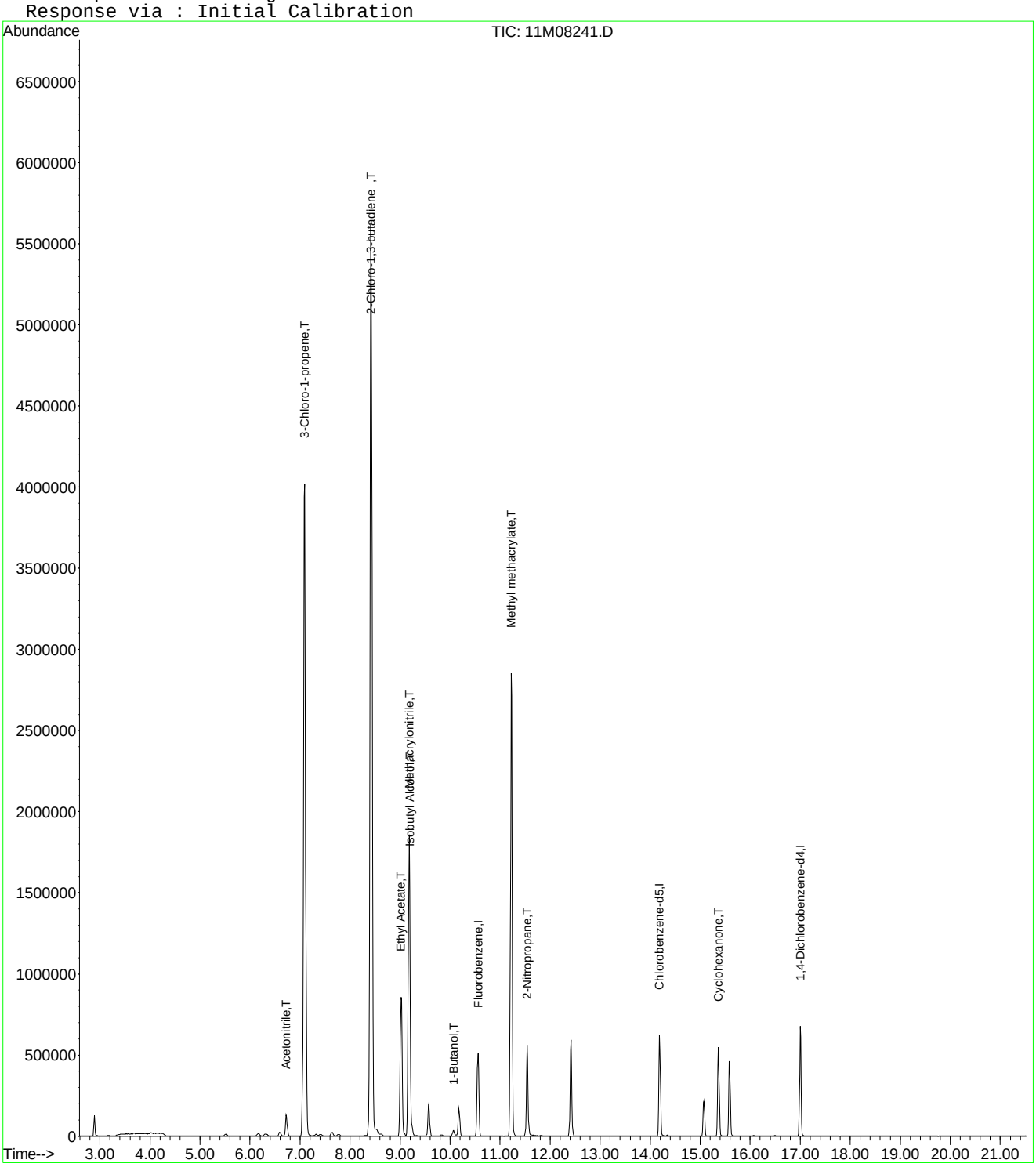

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08242.D Vial: 9
Acq On : 14 Jun 2015 13:42 Operator: TMB /DLW
Sample : WG527475-09 500ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 14:04:11 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	597347	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.19	117	436979	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.00	152	232858	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	155779	23.4935 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.96%		
43) 1,2-Dichloroethane-d4	10.17	65	141894	19.7022 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 78.80%#		
57) Toluene-d8	12.42	98	528602	28.6412 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 114.56%#		
78) p-Bromofluorobenzene	15.58	95	185769	24.9315 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.72%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.22	85	1211	0.1346 ug/L #	65
3) Chloromethane	3.68	50	8612	0.8299 ug/L	97
4) Vinyl Chloride	3.90	62	1110	0.1522 ug/L #	42
6) Bromomethane	4.80	94	872	0.2536 ug/L	68
11) Acrolein	6.25	56	4513	4.4571 ug/L	75
13) Acetone	6.30	43	20816	11.8354 ug/L	98
18) Methyl acetate	7.02	43	2826	0.4604 ug/L #	67
19) Methylene Chloride	7.26	84	1446	0.2045 ug/L	95
20) Carbon Disulfide	7.31	76	5502	0.2707 ug/L #	81
24) n-Hexane	7.77	57	12135	1.1123 ug/L #	96
29) 2-Butanone	8.83	43	2711	0.9479 ug/L #	77
30) Propionitrile	9.00	54	625	0.6931 ug/L #	1
31) 2,2-Dichloropropane	9.03	77	1917	0.2057 ug/L #	41
39) Cyclohexane	9.84	56	6427	0.4323 ug/L	96
71) m-,p-Xylene	14.34	106	3239	0.3057 ug/L	58

(#) = qualifier out of range (m) = manual integration
11M08242.D 8260WTR.M Sun Jun 14 14:04:12 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08242.D Vial: 9
Acq On : 14 Jun 2015 13:42 Operator: TMB /DLW
Sample : WG527475-09 500ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 14:04 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration

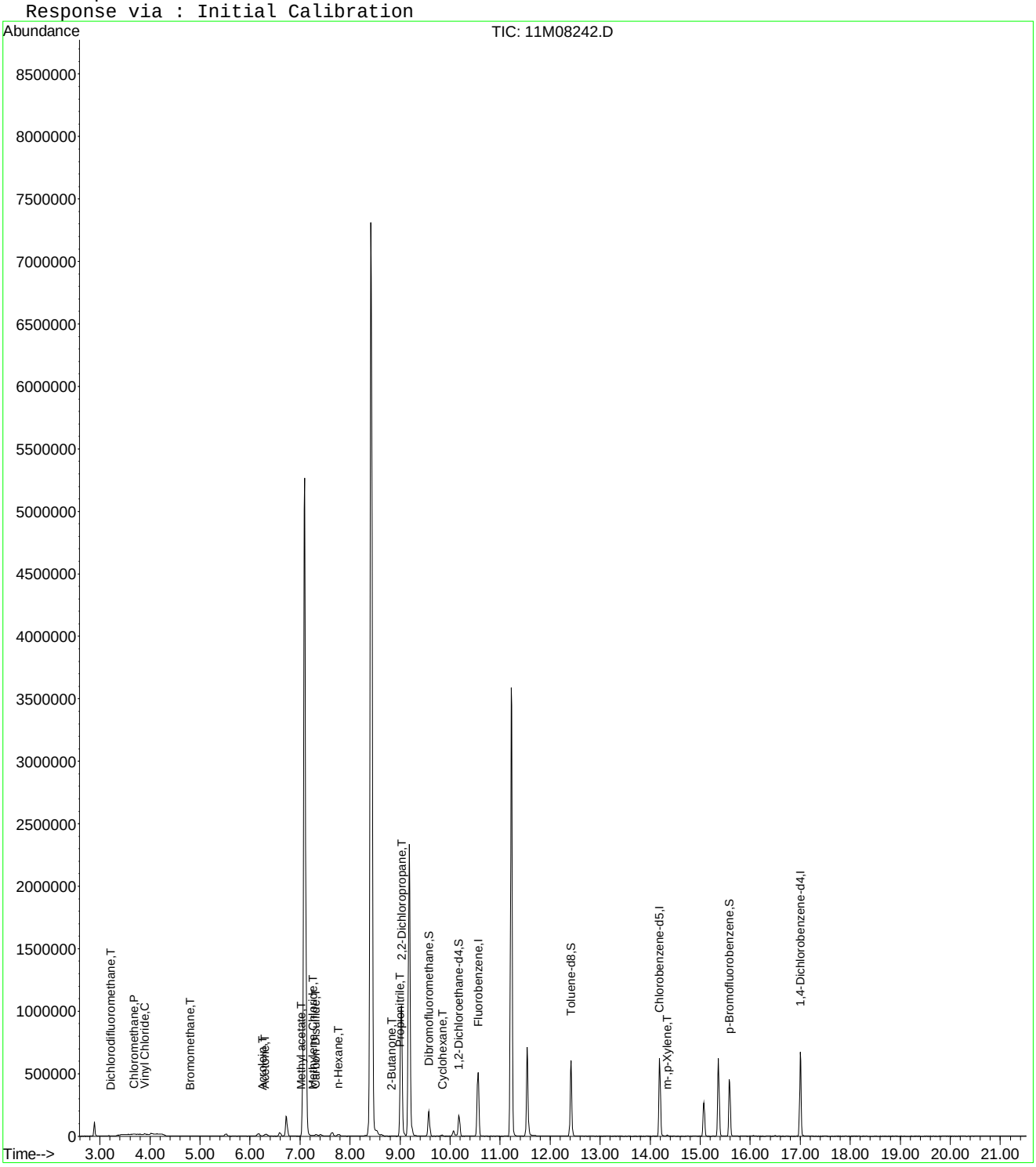

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08242.D Vial: 9
Acq On : 14 Jun 2015 13:42 Operator: TMB /DLW
Sample : WG527475-09 500ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 09:44:02 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.56	96	597347	25.00	ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	436979	25.00	ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	232858	25.00	ug/L	-0.03

Target Compounds						Qvalue
2) Acetonitrile	6.72	41	213542	447.5667	ug/L	100
3) 3-Chloro-1-propene	7.09	41	4596340	443.0265	ug/L	80
4) 2-Chloro-1,3-butadiene	8.42	53	5927514	557.6949	ug/L	92
5) Methacrylonitrile	9.18	41	1420105	496.6956	ug/L	79
6) Isobutyl Alcohol	9.19	43	141621	1291.9249	ug/L	95
7) 1-Butanol	10.07	56	37640	819.1222	ug/L	86
8) Cyclohexanone	15.36	55	308601	391.0996	ug/L	95
9) 2-Nitropropane	11.54	43	527973	481.9685	ug/L	88
10) Ethyl Acetate	9.03	43	1662142	472.7227	ug/L #	93
11) Methyl methacrylate	11.22	41	2052004	541.1374	ug/L	86

(#) = qualifier out of range (m) = manual integration
11M08242.D A9FOOWT.M Tue Jun 16 09:44:03 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08242.D Vial: 9
Acq On : 14 Jun 2015 13:42 Operator: TMB /DLW
Sample : WG527475-09 500ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 9:44 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration

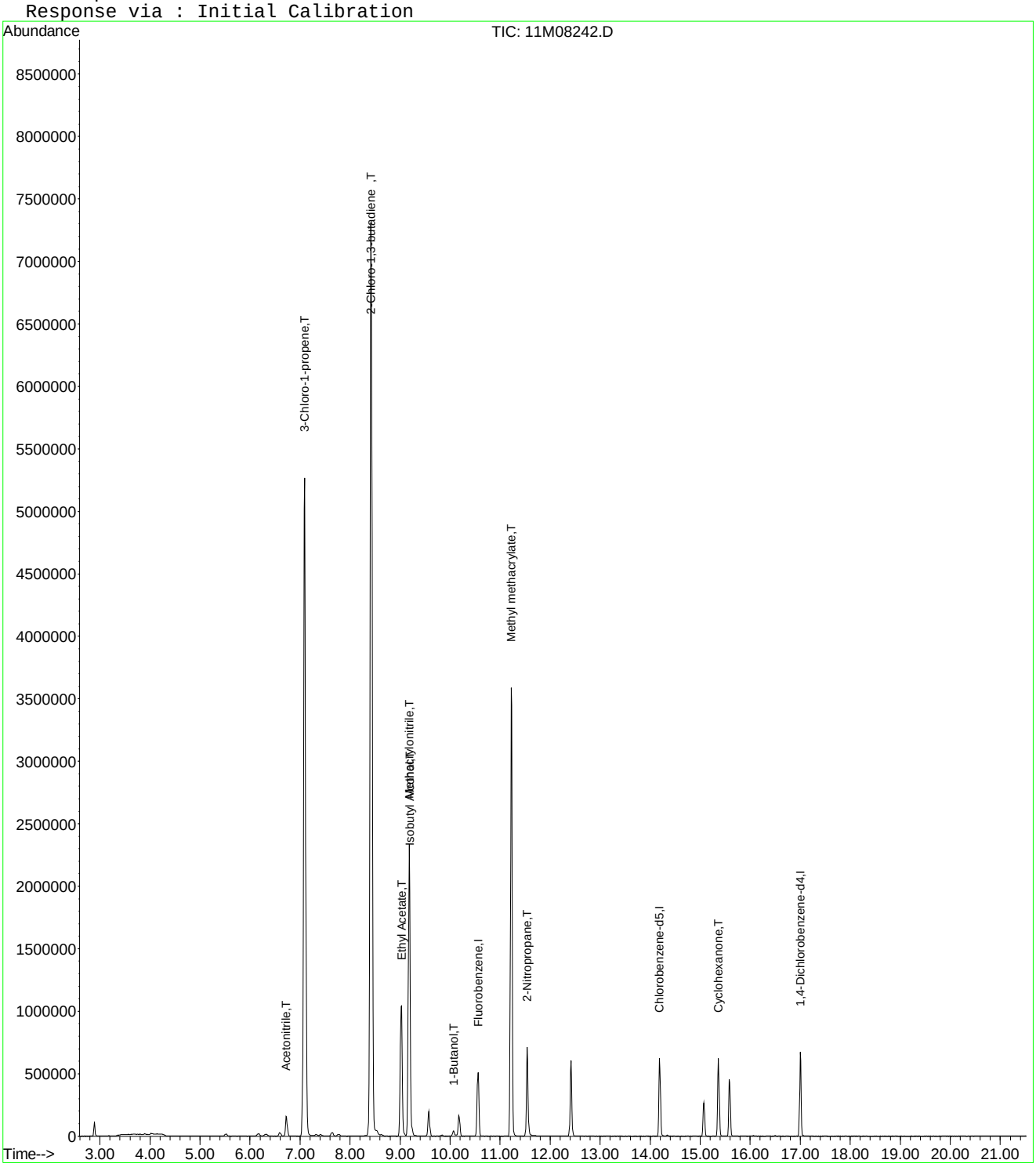

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08242.D Vial: 9
Acq On : 14 Jun 2015 13:42 Operator: TMB /DLW
Sample : WG527475-09 500ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28:15 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	597347	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	436979	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	232858	25.00 ug/L	-0.03

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M08242.D A9FOOWT.M Thu Aug 20 11:28:15 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08242.D Vial: 9
Acq On : 14 Jun 2015 13:42 Operator: TMB /DLW
Sample : WG527475-09 500ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration

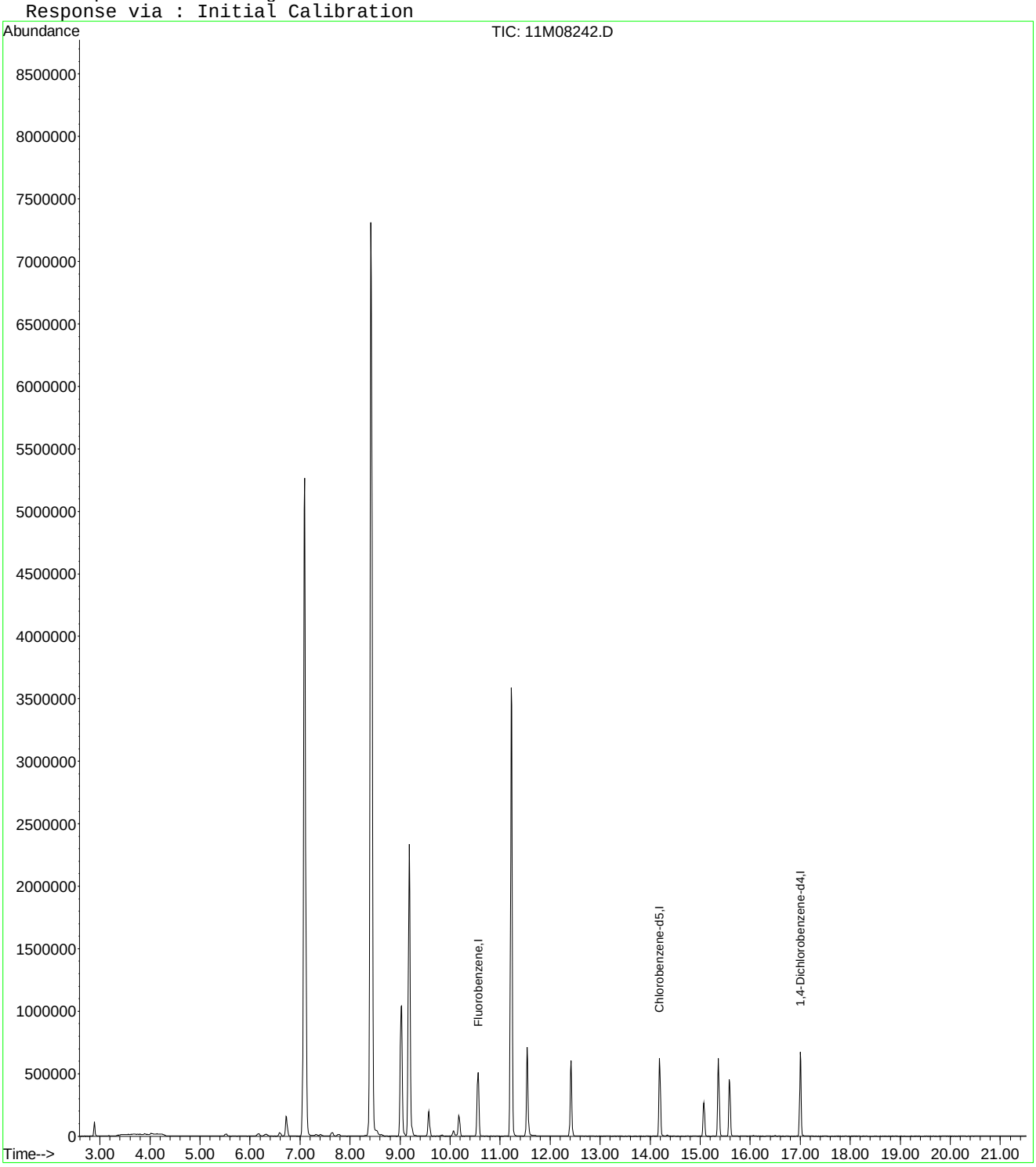

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08242.D Vial: 9
Acq On : 14 Jun 2015 13:42 Operator: TMB /DLW
Sample : WG527475-09 500ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43:54 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	597347	25.00 ug/L	0.00
12) Chlorobenzene-d5	14.19	117	436979	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.00	152	232858	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	213542	466.0961 ug/L	100
3) 3-Chloro-1-propene	7.09	41	4596340	511.2501 ug/L	80
4) 2-Chloro-1,3-butadiene	8.42	53	5927514	549.2255 ug/L	92
5) Methacrylonitrile	9.18	41	1420105	511.0651 ug/L	79
6) Isobutyl Alcohol	9.19	43	141574	990.1011 ug/L	95
7) 1-Butanol	10.07	56	37640	497.6295 ug/L	86
8) Cyclohexanone	15.36	55	308601	449.1652 ug/L	95
9) 2-Nitropropane	11.54	43	527973	512.4786 ug/L	88
10) Ethyl Acetate	9.03	43	1662142	504.3435 ug/L #	93
11) Methyl methacrylate	11.22	41	2052004	535.4759 ug/L	86

(#) = qualifier out of range (m) = manual integration
11M08242.D A9FOOWT.M Thu Aug 20 11:43:55 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08242.D Vial: 9
Acq On : 14 Jun 2015 13:42 Operator: TMB /DLW
Sample : WG527475-09 500ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration

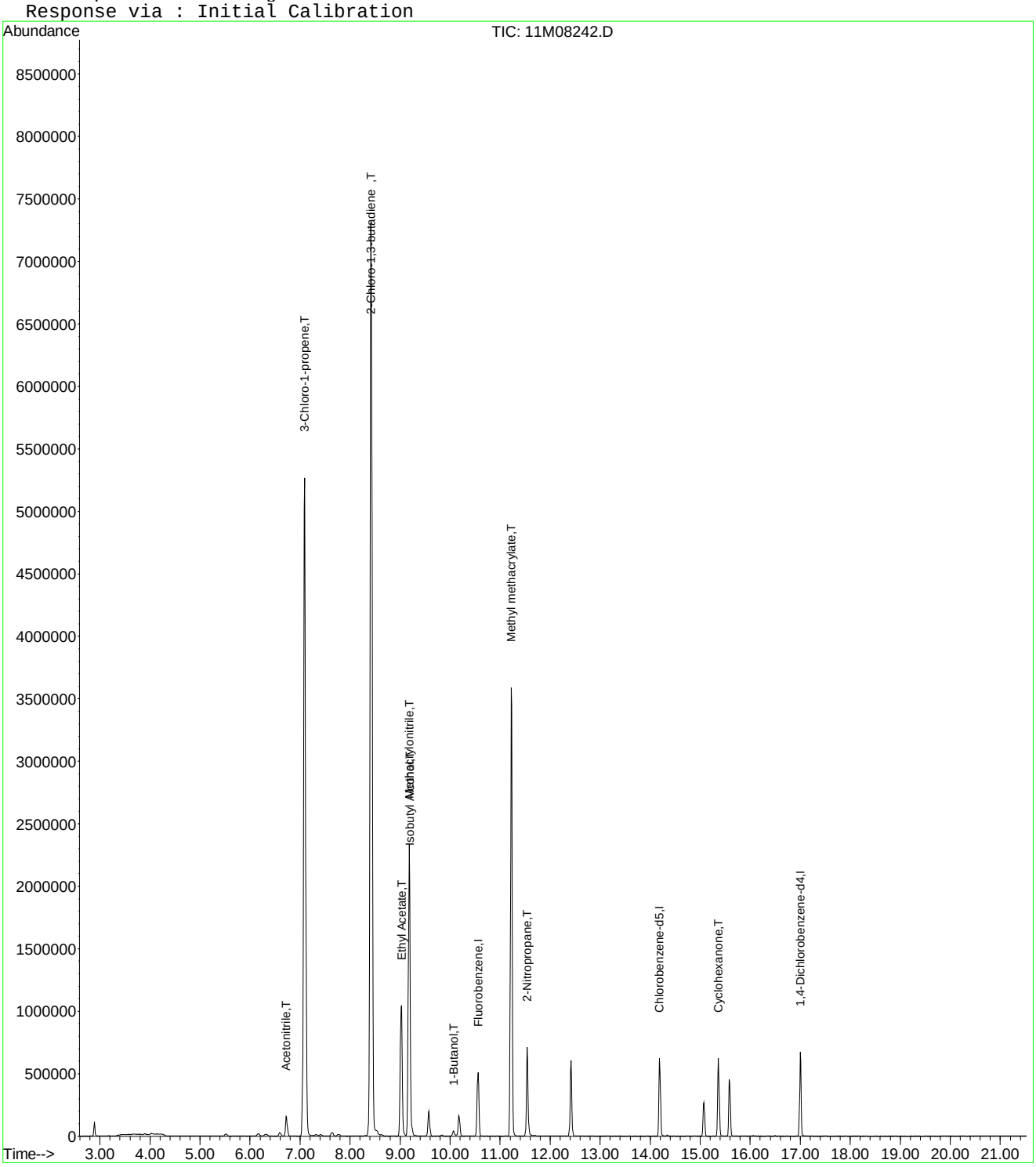

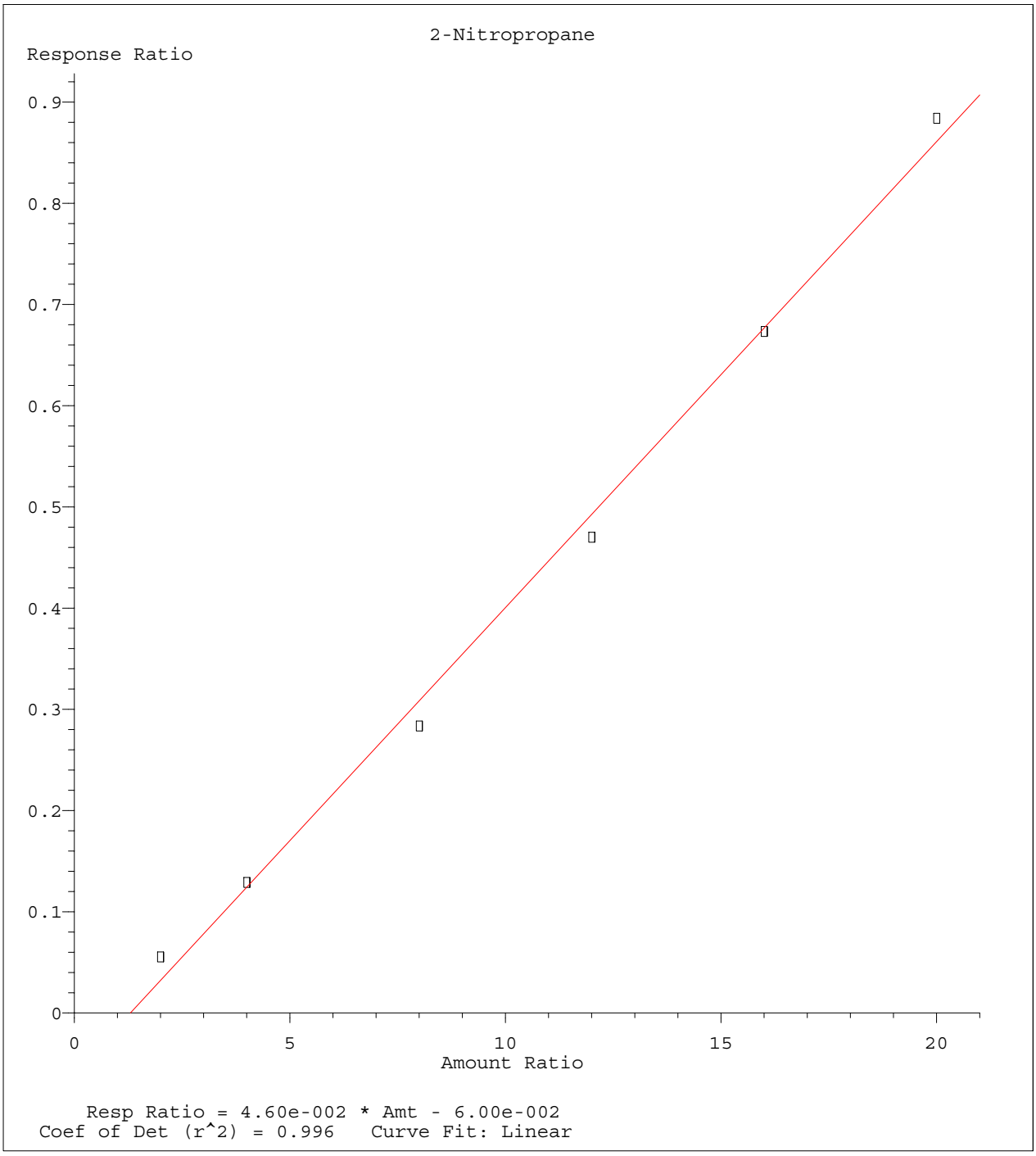

Method Name: C:\MSDCHEM\1\METHODS\A9FOOWT.M
Calibration Table Last Updated: Thu Aug 20 11:44:55 2015

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08245.D Vial: 12
Acq On : 14 Jun 2015 15:18 Operator: TMB /DLW
Sample : WG527475-10 100ug/L ALT STD8260 Inst : hpms11
Misc : 1,1 STD70514 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 15:40:10 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	543635	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.19	117	396503	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.01	152	206025	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	140300	23.2496 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.00%		
43) 1,2-Dichloroethane-d4	10.17	65	129308	19.7285 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 78.92%#		
57) Toluene-d8	12.42	98	479748	28.6477 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 114.60%#		
78) p-Bromofluorobenzene	15.58	95	164471	24.9480 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.80%		

Target Compounds					Qvalue
3) Chloromethane	3.67	50	1708	0.1809 ug/L #	64
5) 1,3-Butadiene	3.96	54	337713	68.0129 ug/L	95
9) Diethyl ether	5.96	59	421860	68.0021 ug/L	82
13) Acetone	6.30	43	8473	5.2935 ug/L	79
29) 2-Butanone	8.83	43	2399	0.9217 ug/L #	77
30) Propionitrile	8.93	54	45537	55.4849 ug/L	96
49) 1,4-Dioxane	11.51	88	6417	143.4316 ug/L	93
77) 1,1,2,2-Tetrachloroethane	15.38	83	1792	0.4132 ug/L #	17

(#) = qualifier out of range (m) = manual integration
11M08245.D 8260WTR.M Sun Jun 14 15:40:11 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08245.D Vial: 12
Acq On : 14 Jun 2015 15:18 Operator: TMB /DLW
Sample : WG527475-10 100ug/L ALT STD8260 Inst : hpms11
Misc : 1,1 STD70514 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 15:40 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration

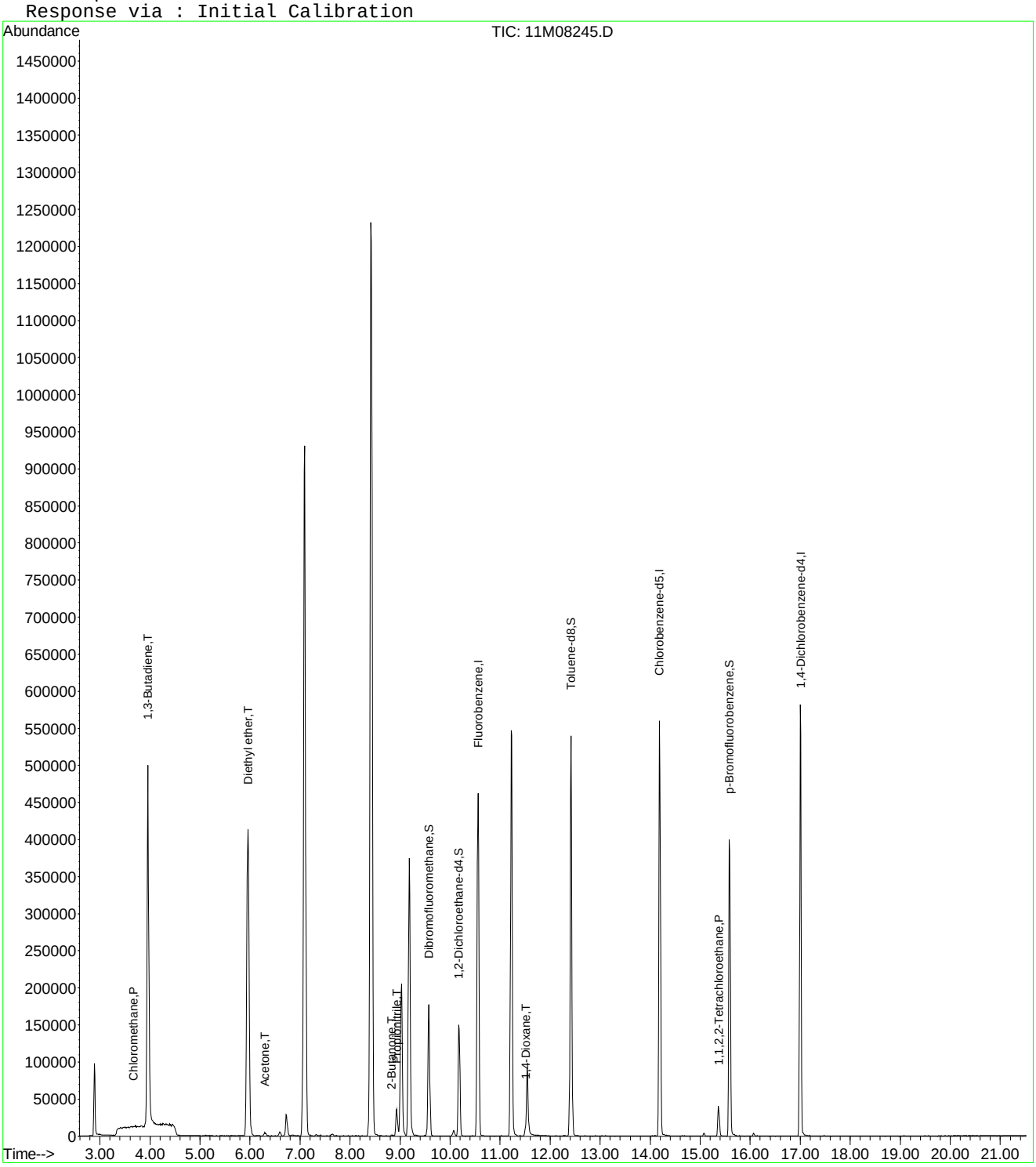

11M08245.D 8260WTR.M Sun Jun 14 15:40:11 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08245.D Vial: 12
Acq On : 14 Jun 2015 15:18 Operator: TMB /DLW
Sample : WG527475-10 100ug/L ALT STD8260 Inst : hpms11
Misc : 1,1 STD70514 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28:16 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	543635	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	396503	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.01	152	206025	25.00 ug/L	-0.02

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M08245.D A9FOOWT.M Thu Aug 20 11:28:17 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08245.D Vial: 12
Acq On : 14 Jun 2015 15:18 Operator: TMB /DLW
Sample : WG527475-10 100ug/L ALT STD8260 Inst : hpms11
Misc : 1,1 STD70514 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration

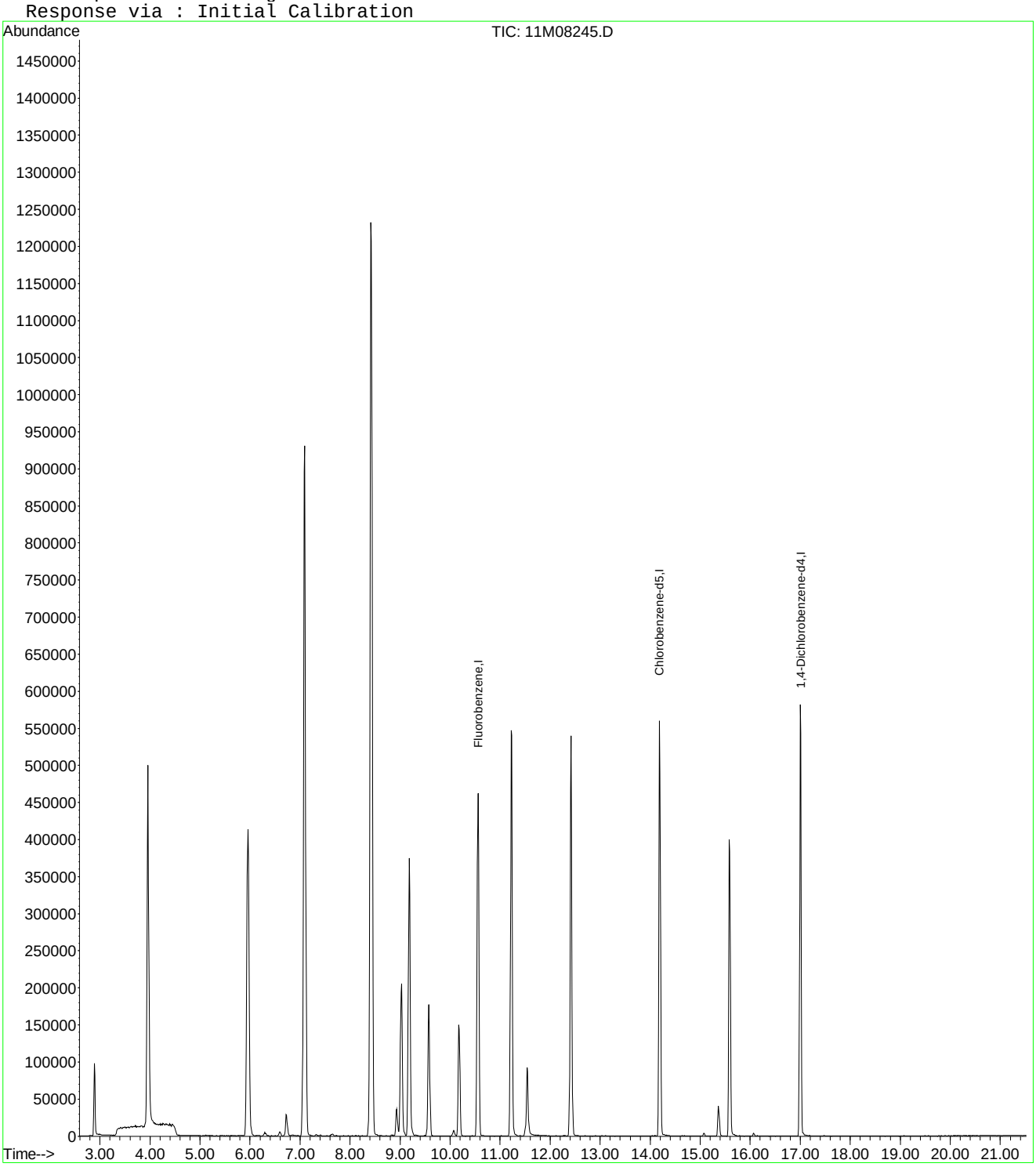

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08245.D Vial: 12
Acq On : 14 Jun 2015 15:18 Operator: TMB /DLW
Sample : WG527475-10 100ug/L ALT STD8260 Inst : hpms11
Misc : 1,1 STD70514 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43:56 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	543635	25.00 ug/L	0.00
12) Chlorobenzene-d5	14.19	117	396503	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.01	152	206025	25.00 ug/L	0.01

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	38243	91.7199 ug/L	100
3) 3-Chloro-1-propene	7.09	41	808581	98.8244 ug/L	82
4) 2-Chloro-1,3-butadiene	8.42	53	1078924	109.8470 ug/L	94
5) Methacrylonitrile	9.18	41	233249	92.2348 ug/L	79
6) Isobutyl Alcohol	9.19	43	24110	185.2732 ug/L	90
7) 1-Butanol	10.07	56	6038	87.7140 ug/L #	79
8) Cyclohexanone	15.36	55	22693	36.2928 ug/L	98
9) 2-Nitropropane	11.54	43	62961	95.4458 ug/L	82
10) Ethyl Acetate	9.03	43	328836	109.6369 ug/L #	93
11) Methyl methacrylate	11.22	41	327033	93.7719 ug/L	87

(#) = qualifier out of range (m) = manual integration
11M08245.D A9FOOWT.M Thu Aug 20 11:43:56 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08245.D Vial: 12
Acq On : 14 Jun 2015 15:18 Operator: TMB /DLW
Sample : WG527475-10 100ug/L ALT STD8260 Inst : hpms11
Misc : 1,1 STD70514 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration

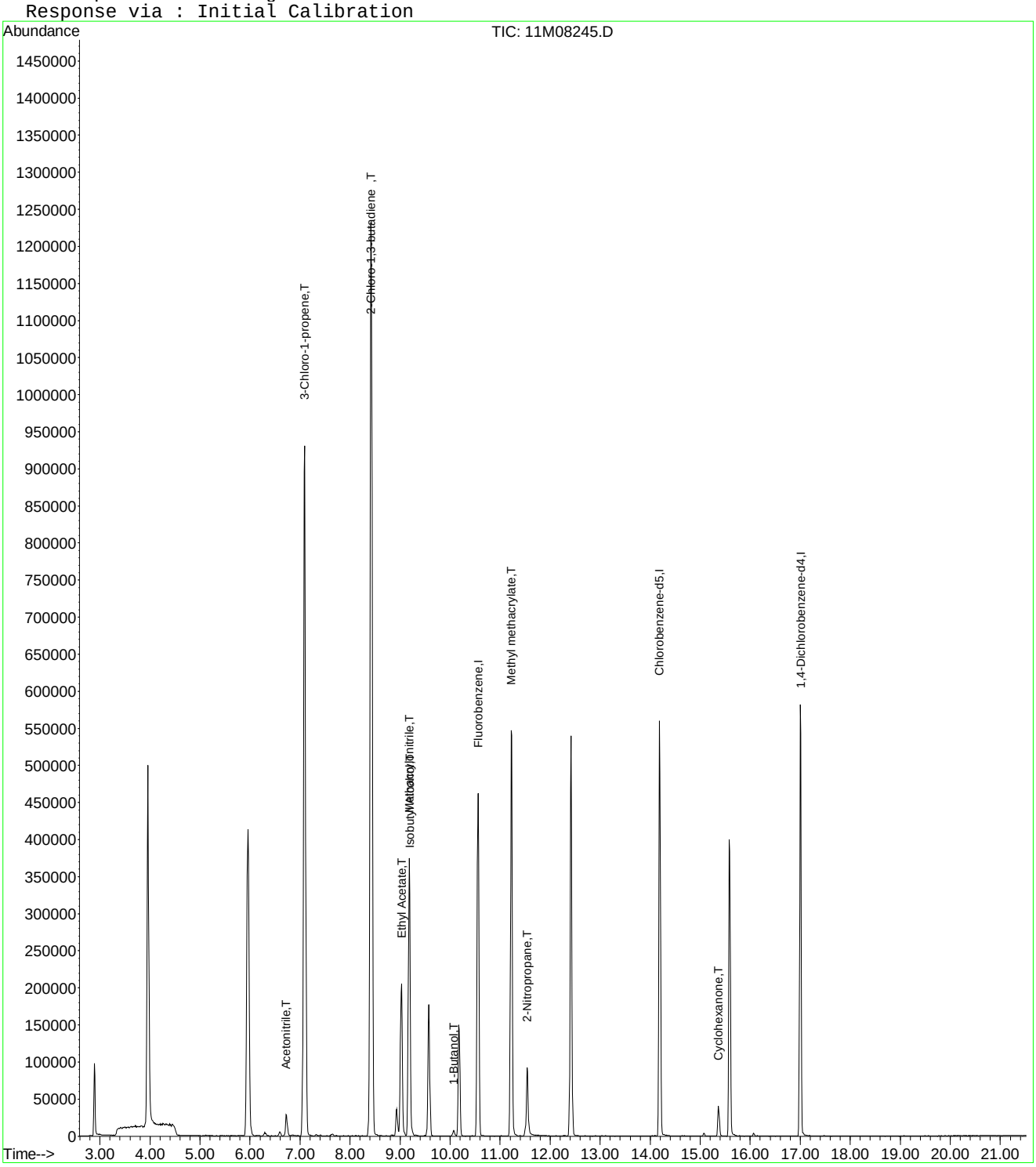

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061415\11M08245.D Vial: 12
Acq On : 14 Jun 2015 15:18 Operator: TMB /DLW
Sample : WG527475-10 100ug/L ALT STD8260 Inst : hpms11
Misc : 1,1 STD70514 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	92	0.00
2	T	Acetonitrile	100.0000	91.7199	8.3	92	0.00
3	T	3-Chloro-1-propene	100.0000	98.8244	1.2	90	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	109.8470	-9.8	102	0.00
5	T	Methacrylonitrile	100.0000	92.2348	7.8	86	0.00
6	T	Isobutyl Alcohol	200.0000	185.2732	7.4	83	0.00
7	T	1-Butanol	100.0000	87.7140	12.3	78	0.00
8	T	Cyclohexanone	100.0000	36.2928	63.7	31	0.00
9	T	2-Nitropropane	100.0000	95.4458	4.6	82	0.00
10	T	Ethyl Acetate	100.0000	109.6369	-9.6	99	0.00
11	T	Methyl methacrylate	100.0000	93.7719	6.2	87	0.00
12	I	Chlorobenzene-d5	25.0000	25.0000	0.0	91	0.00
13	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	92	0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M08245.D A9FOOWT.M Thu Aug 20 11:45:26 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\100915\11M09741.D Vial: 3
Acq On : 9 Oct 2015 16:56 Operator: JDS
Sample : WG542333-02 0.3ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD72922 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 09 17:18:14 2015 Quant Results File: 8260_WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Fri Oct 09 14:43:33 2015
Response via : Initial Calibration
DataAcq Meth : 8260_WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.66	96	654514	25.00 ug/L	-0.02
56) Chlorobenzene-d5	14.30	117	575509	25.00 ug/L	-0.02
76) 1,4-Dichlorobenzene-d4	17.11	152	339568	25.00 ug/L	-0.03

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
57) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
78) p-Bromofluorobenzene	0.00	95	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.24	85	2085	0.3238 ug/L #	64
3) Chloromethane	3.71	50	4093	0.4913 ug/L	99
4) Vinyl Chloride	3.95	62	2312	0.3806 ug/L	86
5) 1,3-Butadiene	4.01	54	1852	0.5068 ug/L #	66
6) Bromomethane	4.86	94	1166	0.2318 ug/L	96
7) Chloroethane	5.00	64	1378	0.3058 ug/L #	44
8) Trichlorofluoromethane	5.50	101	2920	0.3055 ug/L	89
10) Isoprene	6.05	67	1635	0.1867 ug/L	89
13) Acetone	6.37	43	222	0.1287 ug/L #	41
14) 1,1-Dichloroethene	6.59	61	2928	0.2935 ug/L	88
16) Dimethyl Sulfide	6.85	62	1702	0.2415 ug/L	89
18) Methyl acetate	7.11	43	1259	0.2389 ug/L #	66
19) Methylene Chloride	7.34	84	2253	0.3523 ug/L	83
20) Carbon Disulfide	7.39	76	5797	0.3089 ug/L #	86
22) Methyl Tert Butyl Ether	7.55	73	5417	0.3232 ug/L #	62
23) trans-1,2-Dichloroethene	7.79	96	1942	0.3051 ug/L	90
24) n-Hexane	7.86	57	2344	0.2487 ug/L #	72
27) 1,1-Dichloroethane	8.39	63	4104	0.3275 ug/L #	88
31) 2,2-Dichloropropane	9.13	77	2144	0.2456 ug/L #	42
32) cis-1,2-Dichloroethene	9.19	96	2120	0.2890 ug/L	99
33) Chloroform	9.39	83	3417	0.2999 ug/L	93
35) Bromochloromethane	9.62	130	1338	0.3346 ug/L	71
36) Tetrahydrofuran	9.64	42	490	0.2600 ug/L #	43
38) 1,1,1-Trichloroethane	9.90	97	2562	0.2534 ug/L #	74
39) Cyclohexane	9.94	56	2913	0.2284 ug/L #	77
40) 1,1-Dichloropropene	10.08	75	2581	0.3033 ug/L #	39
41) Carbon Tetrachloride	10.22	117	1365	0.1502 ug/L #	57
44) 1,2-Dichloroethane	10.39	62	3177	0.3281 ug/L	84
45) Benzene	10.43	78	8591	0.3453 ug/L	94
46) Trichloroethene	11.13	130	2213	0.3073 ug/L	98
47) Methylcyclohexane	11.21	83	2448	0.2567 ug/L	83
48) 1,2-Dichloropropane	11.34	63	2584	0.3570 ug/L #	56
50) Bromodichloromethane	11.62	83	1799	0.1961 ug/L #	92
51) Dibromomethane	11.70	93	656	0.1698 ug/L #	53
52) 2-Chloroethyl Vinyl Ether	11.89	63	969	0.2278 ug/L #	49
54) cis-1,3-Dichloropropene	12.21	75	2193	0.2051 ug/L #	80
58) Toluene	12.61	91	8480	0.2788 ug/L	98
60) trans-1,3-Dichloropropene	12.78	75	1324	0.1220 ug/L #	50
61) 1,1,2-Trichloroethane	12.98	97	1513	0.2462 ug/L	72
62) 2-Hexanone	12.91	43	764	0.1579 ug/L #	16

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\100915\11M09741.D Vial: 3
Acq On : 9 Oct 2015 16:56 Operator: JDS
Sample : WG542333-02 0.3ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD72922 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 09 17:18:14 2015 Quant Results File: 8260_WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Fri Oct 09 14:43:33 2015
Response via : Initial Calibration
DataAcq Meth : 8260_WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
63)	1,3-Dichloropropane	13.26	76	2691	0.2633 ug/L		81
64)	Tetrachloroethene	13.39	164	1759	0.2670 ug/L		83
66)	1,2-Dibromoethane	13.88	107	1244	0.1983 ug/L		84
67)	1-Chlorohexane	13.94	91	1793	0.1780 ug/L		78
68)	Chlorobenzene	14.34	112	6719	0.3166 ug/L		91
69)	1,1,1,2-Tetrachloroethane	14.36	131	1105	0.1346 ug/L		91
70)	Ethylbenzene	14.36	106	2541	0.2268 ug/L		69
71)	m-,p-Xylene	14.44	106	7229	0.5509 ug/L		94
72)	o-Xylene	14.96	106	3294	0.2434 ug/L		90
73)	Styrene	15.00	104	5446	0.2336 ug/L		93
75)	Isopropylbenzene	15.38	105	8692	0.2733 ug/L		99
77)	1,1,2,2-Tetrachloroethane	15.56	83	1247	0.1740 ug/L	#	50
81)	n-Propylbenzene	15.84	91	9674	0.2375 ug/L		95
82)	Bromobenzene	15.97	156	2879	0.2659 ug/L		97
83)	1,3,5-Trimethylbenzene	16.02	105	6700	0.2343 ug/L		94
84)	2-Chlorotoluene	16.14	91	6673	0.2400 ug/L		84
85)	4-Chlorotoluene	16.14	91	6673	0.2524 ug/L		82
86)	a-Methylstyrene	16.38	118	3298	0.1978 ug/L		82
87)	tert-Butylbenzene	16.84	134	1717	0.1956 ug/L		69
88)	1,2,4-Trimethylbenzene	16.49	105	7230	0.2430 ug/L		89
89)	sec-Butylbenzene	16.70	105	8306	0.2511 ug/L		88
90)	p-Isopropyltoluene	16.85	119	7299	0.2455 ug/L		91
91)	1,3-Dichlorobenzene	17.04	146	5785	0.2926 ug/L		89
92)	1,4-Dichlorobenzene	17.15	146	5308	0.2569 ug/L	#	1
93)	n-Butylbenzene	17.34	91	6533	0.2499 ug/L	#	92
94)	1,2-Dichlorobenzene	17.62	146	4780	0.2517 ug/L		99
96)	1,2,4-Trichlorobenzene	19.60	180	3865	0.2789 ug/L	#	70
97)	Hexachlorobutadiene	19.75	225	1065	0.2192 ug/L	#	53
98)	Naphthalene	19.97	128	6248	0.2299 ug/L	#	88
99)	1,2,3-Trichlorobenzene	20.26	180	3118	0.2286 ug/L	#	76

(#) = qualifier out of range (m) = manual integration
11M09741.D 8260_WTR.M Fri Oct 09 17:18:15 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\100915\11M09741.D Vial: 3
Acq On : 9 Oct 2015 16:56 Operator: JDS
Sample : WG542333-02 0.3ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD72922 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 9 17:18 2015 Quant Results File: 8260_WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Fri Oct 09 14:43:33 2015
Response via : Initial Calibration

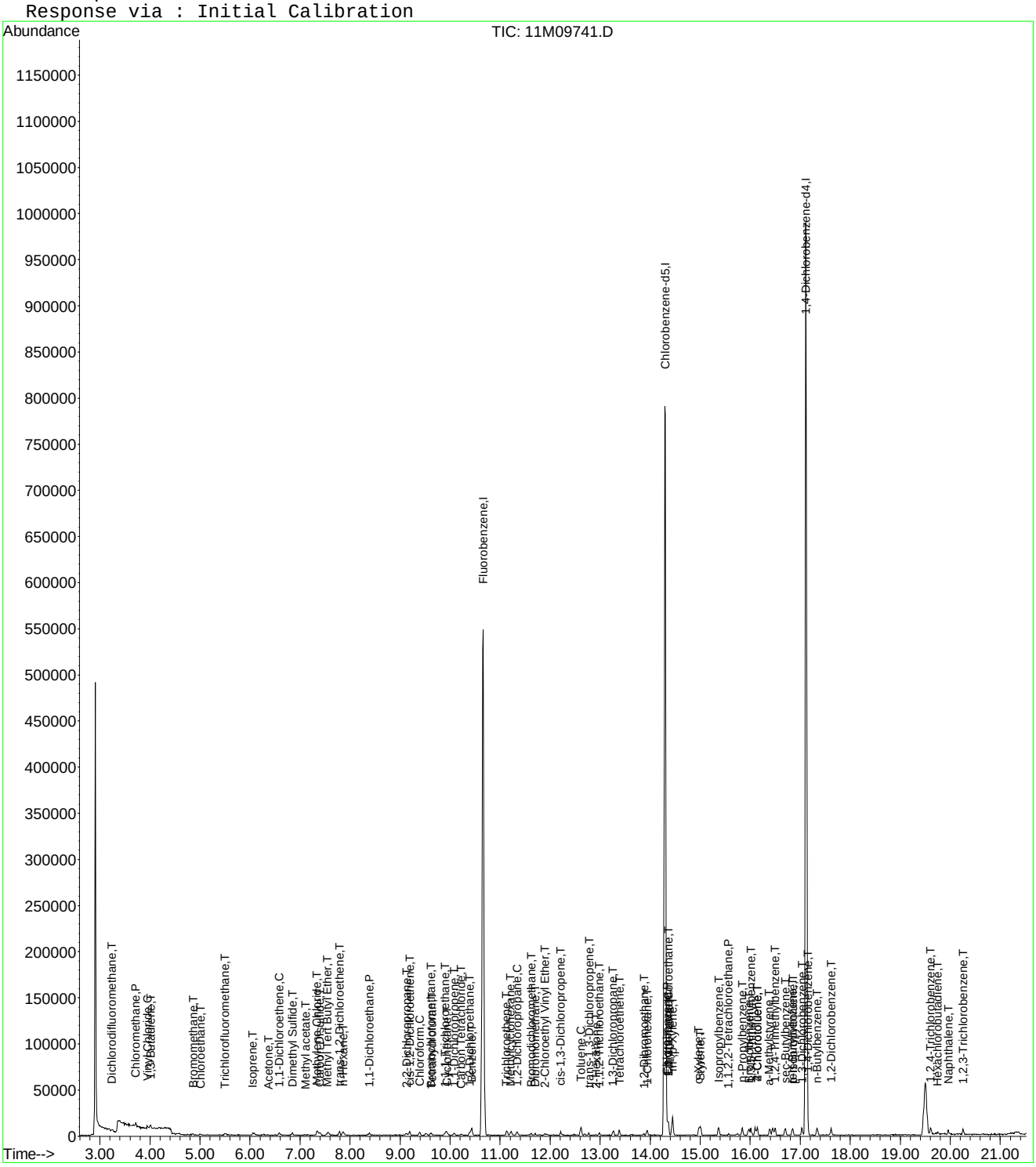

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\100915\11M09741.D Vial: 3
Acq On : 9 Oct 2015 16:56 Operator: JDS
Sample : WG542333-02 0.3ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD72922 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 10:29:46 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2150	0.0	0	0.00
3	P	Chloromethane	-1.0000	0.4422	0.0	0	0.00
4	C	Vinyl Chloride	-1.0000	0.3101	0.0	0	0.01
5	T	1,3-Butadiene	-1.0000	-1.0000	0.0	0	0.02
6	T	Bromomethane	-1.0000	0.2337	0.0	0	0.00
7	T	Chloroethane	-1.0000	0.2540	0.0	0	-0.01
8	T	Trichlorofluoromethane	-1.0000	0.2438	0.0	0	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.03#
10	T	Isoprene	-1.0000	0.1831	0.0	0	-0.02
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.27#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.0656	0.0	0	0.00
13	T	Acetone	-1.0000	0.1318	0.0	0	0.01
14	C	1,1-Dichloroethene	-1.0000	0.2452	0.0	0	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.69#
16	T	Dimethyl Sulfide	-1.0000	0.2352	0.0	0	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.09#
18	T	Methyl acetate	-1.0000	0.2541	0.0	0	0.01
19	T	Methylene Chloride	-1.0000	0.3107	0.0	0	0.00
20	T	Carbon Disulfide	-1.0000	0.2864	0.0	0	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.53#
22	T	Methyl Tert Butyl Ether	-1.0000	0.3121	0.0	0	-0.01
23	T	trans-1,2-Dichloroethene	-1.0000	0.2581	0.0	0	0.00
24	T	n-Hexane	-1.0000	0.2307	0.0	0	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.19#
26	T	Vinyl Acetate	-1.0000	3.6662	0.0	0	0.00
27	P	1,1-Dichloroethane	-1.0000	0.2840	0.0	0	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.74#
29	T	2-Butanone	-1.0000	0.0734	0.0	0	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.02#
31	T	2,2-Dichloropropane	-1.0000	0.2144	0.0	0	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.2496	0.0	0	0.00
33	C	Chloroform	0.3000	0.2673	10.9	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.52#
35	T	Bromochloromethane	-1.0000	0.2620	0.0	0	0.00
36	T	Tetrahydrofuran	-1.0000	0.2708	0.0	0	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	-1.0000	0.2392	0.0	0	0.00
39	T	Cyclohexane	-1.0000	0.2048	0.0	0	0.01
40	T	1,1-Dichloropropene	-1.0000	0.2716	0.0	0	0.00
41	T	Carbon Tetrachloride	-1.0000	0.5436	0.0	0	-0.01
42	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.17#
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.28#
44	T	1,2-Dichloroethane	-1.0000	0.2968	0.0	0	0.01
45	T	Benzene	-1.0000	0.2985	0.0	0	0.00
46	T	Trichloroethene	-1.0000	0.2578	0.0	0	-0.01
47	T	Methylcyclohexane	-1.0000	0.2344	0.0	0	-0.01
48	C	1,2-Dichloropropane	-1.0000	0.3217	0.0	0	0.01
49	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.60#
50	T	Bromodichloromethane	-1.0000	0.2112	0.0	0	0.00
51	T	Dibromomethane	-1.0000	0.1580	0.0	0	0.00
52	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2354	0.0	0	0.00
53	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-11.92#
54	T	cis-1,3-Dichloropropene	-1.0000	0.2048	0.0	0	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\100915\11M09741.D Vial: 3
Acq On : 9 Oct 2015 16:56 Operator: JDS
Sample : WG542333-02 0.3ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD72922 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 10:29:46 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	-1.0000	0.0000	0.0	0	-12.47#
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	-1.0000	0.0000	0.0	0	-12.52#
58	C	Toluene	-1.0000	0.2852	0.0	0	0.00
59	T	Ethyl Methacrylate	-1.0000	0.7802	0.0	0	0.00
60	T	trans-1,3-Dichloropropene	-1.0000	0.1481	0.0	0	0.01
61	T	1,1,2-Trichloroethane	-1.0000	0.2729	0.0	0	0.00
62	T	2-Hexanone	-1.0000	0.1942	0.0	0	0.01
63	T	1,3-Dichloropropane	-1.0000	0.2833	0.0	0	-0.01
64	T	Tetrachloroethene	-1.0000	0.2552	0.0	0	0.01
65	T	Dibromochloromethane	-1.0000	0.5442	0.0	0	0.01
66	T	1,2-Dibromoethane	-1.0000	0.2324	0.0	0	0.00
67	T	1-Chlorohexane	-1.0000	0.1929	0.0	0	0.00
68	P	Chlorobenzene	-1.0000	0.3108	0.0	0	0.00
69	T	1,1,1,2-Tetrachloroethane	-1.0000	0.4539	0.0	0	0.00
70	C	Ethylbenzene	-1.0000	0.2346	0.0	0	0.00
71	T	m-,p-Xylene	-1.0000	0.5710	0.0	0	0.00
72	T	o-Xylene	-1.0000	0.2559	0.0	0	-0.01
73	T	Styrene	-1.0000	0.2568	0.0	0	0.00
74	P	Bromoform	-1.0000	0.0000	0.0	0	-15.48#
75	T	Isopropylbenzene	-1.0000	0.2795	0.0	0	0.01
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2207	0.0	0	0.00
78	S	p-Bromofluorobenzene	-1.0000	0.0000	0.0	0	-15.70#
79	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-15.75#
80	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-15.78#
81	T	n-Propylbenzene	-1.0000	0.2699	0.0	0	0.00
82	T	Bromobenzene	0.3000	0.2857	4.8	100	0.00
83	T	1,3,5-Trimethylbenzene	-1.0000	0.2569	0.0	0	0.00
84	T	2-Chlorotoluene	-1.0000	0.3034	0.0	0	0.00
85	T	4-Chlorotoluene	-1.0000	0.2873	0.0	0	0.00
86	T	a-Methylstyrene	-1.0000	0.2223	0.0	0	-0.01
87	T	tert-Butylbenzene	-1.0000	0.2097	0.0	0	0.00
88	T	1,2,4-Trimethylbenzene	-1.0000	0.2725	0.0	0	0.00
89	T	sec-Butylbenzene	-1.0000	0.2663	0.0	0	0.00
90	T	p-Isopropyltoluene	-1.0000	0.2657	0.0	0	0.01
91	T	1,3-Dichlorobenzene	-1.0000	0.3057	0.0	0	0.01
92	T	1,4-Dichlorobenzene	0.3000	0.2782	7.3	100	0.00
93	T	n-Butylbenzene	-1.0000	0.2762	0.0	0	0.01
94	T	1,2-Dichlorobenzene	0.3000	0.2720	9.3	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-18.54#
96	T	1,2,4-Trichlorobenzene	-1.0000	0.3049	0.0	0	0.00
97	T	Hexachlorobutadiene	-1.0000	0.2401	0.0	0	0.00
98	T	Naphthalene	-1.0000	0.2807	0.0	0	0.01
99	T	1,2,3-Trichlorobenzene	0.3000	0.2746	8.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M09741.D 8260_WTR.M Sun Oct 11 10:30:19 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100915\11M09742.D Vial: 4
Acq On : 9 Oct 2015 17:28 Operator: JDS
Sample : WG542333-03 0.4ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD72922 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 11 09:58:19 2015 Quant Results File: 8260_WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Fri Oct 09 14:43:33 2015
Response via : Initial Calibration
DataAcq Meth : 8260_WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.66	96	649699	25.00 ug/L	-0.02
56) Chlorobenzene-d5	14.30	117	579468	25.00 ug/L	-0.02
76) 1,4-Dichlorobenzene-d4	17.11	152	345646	25.00 ug/L	-0.03

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
57) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
78) p-Bromofluorobenzene	0.00	95	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.25	85	2835	0.4435 ug/L #	81
3) Chloromethane	3.71	50	5625	0.6801 ug/L #	4
4) Vinyl Chloride	3.94	62	3488	0.5784 ug/L	95
5) 1,3-Butadiene	4.00	54	2513	0.6927 ug/L	87
6) Bromomethane	4.86	94	2026	0.4057 ug/L	84
7) Chloroethane	5.01	64	2584	0.5776 ug/L #	57
8) Trichlorofluoromethane	5.49	101	4821	0.5082 ug/L	93
9) Diethyl ether	6.03	59	2332	0.3973 ug/L #	83
10) Isoprene	6.07	67	2754	0.3167 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	2120	0.3949 ug/L	95
13) Acetone	6.38	43	491	0.2869 ug/L #	41
14) 1,1-Dichloroethene	6.58	61	5535	0.5589 ug/L	95
16) Dimethyl Sulfide	6.85	62	2234	0.3193 ug/L	93
18) Methyl acetate	7.11	43	1810	0.3460 ug/L #	66
19) Methylene Chloride	7.34	84	3913	0.6164 ug/L	94
20) Carbon Disulfide	7.39	76	8382	0.4500 ug/L	90
22) Methyl Tert Butyl Ether	7.56	73	7601	0.4568 ug/L #	77
23) trans-1,2-Dichloroethene	7.79	96	3440	0.5444 ug/L	95
24) n-Hexane	7.86	57	3306	0.3533 ug/L #	72
26) Vinyl Acetate	8.34	43	1230	0.1387 ug/L #	78
27) 1,1-Dichloroethane	8.40	63	6950	0.5587 ug/L #	91
29) 2-Butanone	8.91	43	958	0.3449 ug/L #	58
31) 2,2-Dichloropropane	9.13	77	4436	0.5120 ug/L	87
32) cis-1,2-Dichloroethene	9.19	96	3991	0.5481 ug/L	97
33) Chloroform	9.39	83	6344	0.5610 ug/L	99
35) Bromochloromethane	9.62	130	2102	0.5295 ug/L	98
36) Tetrahydrofuran	9.64	42	485	0.2592 ug/L #	43
38) 1,1,1-Trichloroethane	9.91	97	4467	0.4451 ug/L #	78
39) Cyclohexane	9.93	56	5212	0.4117 ug/L #	83
40) 1,1-Dichloropropene	10.08	75	4370	0.5173 ug/L	90
41) Carbon Tetrachloride	10.23	117	2376	0.2634 ug/L #	79
44) 1,2-Dichloroethane	10.39	62	4894	0.5091 ug/L	85
45) Benzene	10.43	78	14794	0.5990 ug/L	97
46) Trichloroethene	11.14	130	4027	0.5633 ug/L	96
47) Methylcyclohexane	11.22	83	3843	0.4060 ug/L	91
48) 1,2-Dichloropropane	11.33	63	3825	0.5323 ug/L	95
50) Bromodichloromethane	11.63	83	2938	0.3226 ug/L #	87
51) Dibromomethane	11.69	93	1769	0.4612 ug/L	97
52) 2-Chloroethyl Vinyl Ether	11.89	63	1298	0.3074 ug/L #	49
53) 4-Methyl-2-Pentanone	11.93	58	397	0.1636 ug/L #	42

(#) = qualifier out of range (m) = manual integration
11M09742.D 8260_WTR.M Sun Oct 11 09:58:20 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100915\11M09742.D Vial: 4
Acq On : 9 Oct 2015 17:28 Operator: JDS
Sample : WG542333-03 0.4ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD72922 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 11 09:58:19 2015 Quant Results File: 8260_WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Fri Oct 09 14:43:33 2015
Response via : Initial Calibration
DataAcq Meth : 8260_WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
54)	cis-1,3-Dichloropropene	12.21	75	4495	0.4235 ug/L		92
58)	Toluene	12.61	91	14708	0.4803 ug/L		95
59)	Ethyl Methacrylate	12.69	69	1463	0.1672 ug/L		99
60)	trans-1,3-Dichloropropene	12.77	75	2992	0.2739 ug/L		97
61)	1,1,2-Trichloroethane	12.98	97	1948	0.3148 ug/L		99
62)	2-Hexanone	12.90	43	1304	0.2677 ug/L	#	33
63)	1,3-Dichloropropane	13.26	76	4291	0.4170 ug/L		97
64)	Tetrachloroethene	13.38	164	2893	0.4362 ug/L		98
65)	Dibromochloromethane	13.63	129	1654	0.2021 ug/L		85
66)	1,2-Dibromoethane	13.88	107	1831	0.2899 ug/L		86
67)	1-Chlorohexane	13.94	91	3623	0.3572 ug/L		92
68)	Chlorobenzene	14.34	112	11643	0.5448 ug/L		93
69)	1,1,1,2-Tetrachloroethane	14.36	131	1970	0.2383 ug/L		78
70)	Ethylbenzene	14.36	106	5047	0.4474 ug/L		88
71)	m-,p-Xylene	14.44	106	12373	0.9364 ug/L		87
72)	o-Xylene	14.97	106	5869	0.4306 ug/L		91
73)	Styrene	15.00	104	9411	0.4010 ug/L		96
75)	Isopropylbenzene	15.36	105	14373	0.4488 ug/L		97
77)	1,1,2,2-Tetrachloroethane	15.57	83	1781	0.2442 ug/L		98
81)	n-Propylbenzene	15.84	91	16930	0.4083 ug/L		97
82)	Bromobenzene	15.96	156	4478	0.4063 ug/L		96
83)	1,3,5-Trimethylbenzene	16.02	105	12328	0.4235 ug/L		99
84)	2-Chlorotoluene	16.10	91	13364	0.4722 ug/L		99
85)	4-Chlorotoluene	16.14	91	11390	0.4232 ug/L		99
86)	a-Methylstyrene	16.39	118	3996	0.2355 ug/L		87
87)	tert-Butylbenzene	16.84	134	3058	0.3422 ug/L		85
88)	1,2,4-Trimethylbenzene	16.49	105	12498	0.4127 ug/L		96
89)	sec-Butylbenzene	16.70	105	14284	0.4243 ug/L		99
90)	p-Isopropyltoluene	16.84	119	11977	0.3957 ug/L		95
91)	1,3-Dichlorobenzene	17.03	146	9049	0.4496 ug/L		100
92)	1,4-Dichlorobenzene	17.15	146	9827	0.4673 ug/L		84
93)	n-Butylbenzene	17.34	91	11063	0.4158 ug/L	#	96
94)	1,2-Dichlorobenzene	17.62	146	8008	0.4143 ug/L		96
96)	1,2,4-Trichlorobenzene	19.60	180	5834	0.4136 ug/L		95
97)	Hexachlorobutadiene	19.75	225	1873	0.3788 ug/L		86
98)	Naphthalene	19.96	128	9685	0.3500 ug/L		97
99)	1,2,3-Trichlorobenzene	20.26	180	5367	0.3865 ug/L		90

(#) = qualifier out of range (m) = manual integration
11M09742.D 8260_WTR.M Sun Oct 11 09:58:20 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100915\11M09742.D Vial: 4
Acq On : 9 Oct 2015 17:28 Operator: JDS
Sample : WG542333-03 0.4ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD72922 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 11 9:58 2015 Quant Results File: 8260_WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 09:57:42 2015
Response via : Initial Calibration

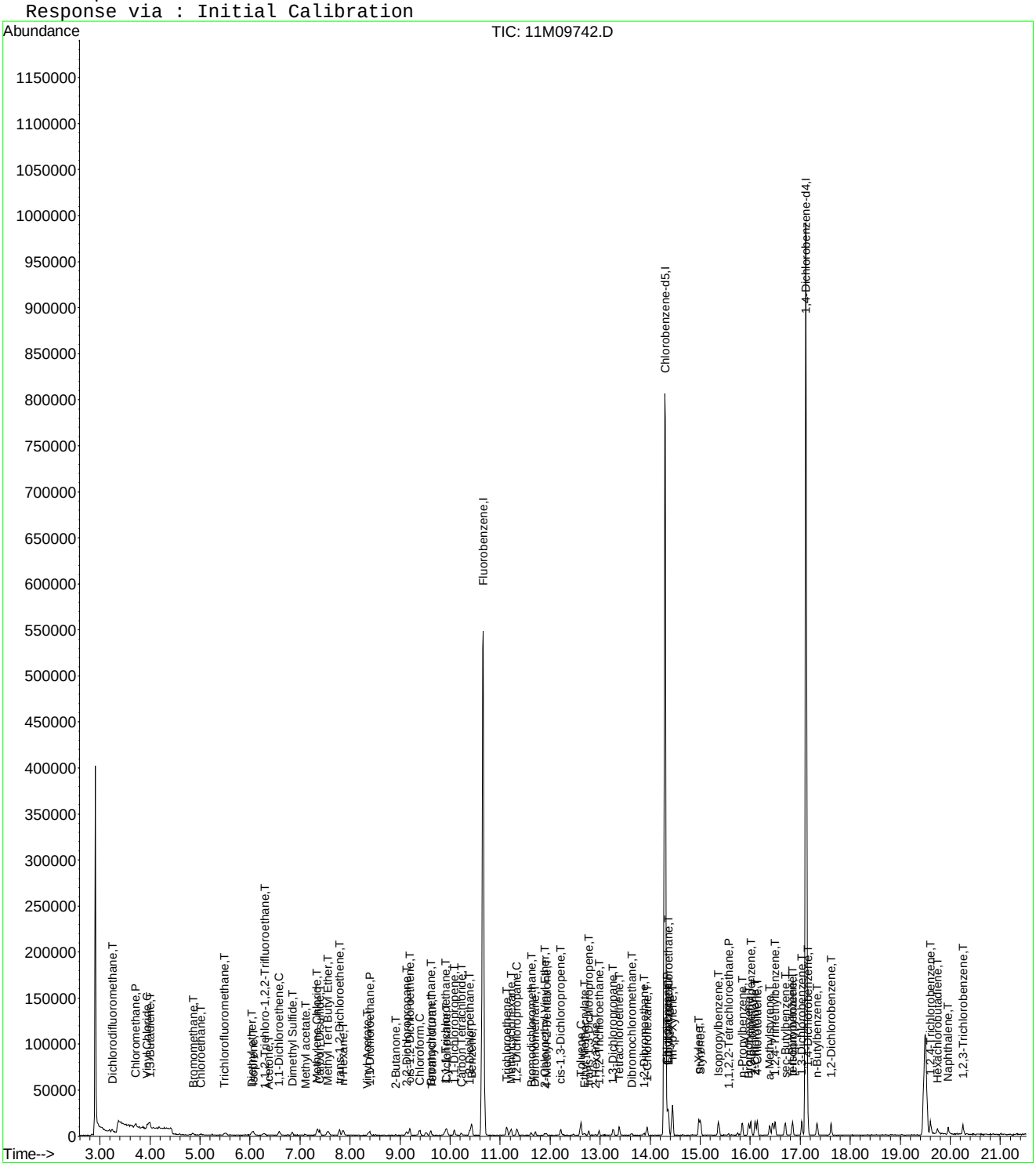

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\100915\11M09742.D Vial: 4
Acq On : 9 Oct 2015 17:28 Operator: JDS
Sample : WG542333-03 0.4ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD72922 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 10:29:46 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2945	0.0	100	0.01
3	P	Chloromethane	-1.0000	0.6122	0.0	0	0.00
4	C	Vinyl Chloride	0.4000	0.4713	-17.8	100	0.00
5	T	1,3-Butadiene	-1.0000	-1.0000	0.0	0	0.01
6	T	Bromomethane	-1.0000	0.4090	0.0	100	0.00
7	T	Chloroethane	-1.0000	0.4798	0.0	100	0.00
8	T	Trichlorofluoromethane	0.4000	0.4055	-1.4	100	-0.01
9	T	Diethyl ether	-1.0000	0.4230	0.0	100	0.00
10	T	Isoprene	-1.0000	0.3107	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.27#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3185	0.0	100	0.02
13	T	Acetone	-1.0000	0.2936	0.0	0	0.02
14	C	1,1-Dichloroethene	0.4000	0.4669	-16.7	100	-0.01
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.69#
16	T	Dimethyl Sulfide	-1.0000	0.3111	0.0	100	0.00
17	T	Iodomethane	-1.0000	1.0933	0.0	0	0.00
18	T	Methyl acetate	-1.0000	0.3680	0.0	0	0.01
19	T	Methylene Chloride	-1.0000	0.5437	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4172	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.53#
22	T	Methyl Tert Butyl Ether	-1.0000	0.4412	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.4606	-15.1	100	0.00
24	T	n-Hexane	-1.0000	0.3278	0.0	0	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.19#
26	T	Vinyl Acetate	-1.0000	3.7250	0.0	0	0.00
27	P	1,1-Dichloroethane	0.4000	0.4845	-21.1	100	0.01
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.74#
29	T	2-Butanone	-1.0000	0.3562	0.0	0	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.02#
31	T	2,2-Dichloropropane	0.4000	0.4470	-11.7	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.4733	-18.3	100	0.00
33	C	Chloroform	0.4000	0.5000	-25.0#	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.52#
35	T	Bromochloromethane	0.4000	0.4146	-3.6	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.2701	0.0	0	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	0.4000	0.4201	-5.0	100	0.01
39	T	Cyclohexane	-1.0000	0.3692	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4633	0.0	100	0.00
41	T	Carbon Tetrachloride	0.4000	0.5428	-35.7#	100	0.00
42	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.17#
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.28#
44	T	1,2-Dichloroethane	0.4000	0.4605	-15.1	100	0.01
45	T	Benzene	0.4000	0.5178	-29.4#	100	0.00
46	T	Trichloroethene	0.4000	0.4726	-18.1	100	0.00
47	T	Methylcyclohexane	-1.0000	0.3707	0.0	100	0.00
48	C	1,2-Dichloropropane	0.4000	0.4798	-19.9	100	0.00
49	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.60#
50	T	Bromodichloromethane	0.4000	0.3475	13.1	100	0.01
51	T	Dibromomethane	0.4000	0.4293	-7.3	100	-0.01
52	T	2-Chloroethyl Vinyl Ether	-1.0000	0.3177	0.0	0	0.00
53	T	4-Methyl-2-Pentanone	-1.0000	0.1747	0.0	0	0.01
54	T	cis-1,3-Dichloropropene	0.4000	0.4228	-5.7	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\100915\11M09742.D Vial: 4
Acq On : 9 Oct 2015 17:28 Operator: JDS
Sample : WG542333-03 0.4ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD72922 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 10:29:46 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	-1.0000	3.7557	0.0	100	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	-1.0000	0.0000	0.0	0	-12.52#
58	C	Toluene	0.4000	0.4912	-22.8#	100	0.00
59	T	Ethyl Methacrylate	-1.0000	0.8692	0.0	100	0.00
60	T	trans-1,3-Dichloropropene	-1.0000	0.3324	0.0	100	0.00
61	T	1,1,2-Trichloroethane	0.4000	0.3489	12.8	100	0.00
62	T	2-Hexanone	-1.0000	0.3292	0.0	100	0.00
63	T	1,3-Dichloropropane	0.4000	0.4487	-12.2	100	-0.01
64	T	Tetrachloroethene	0.4000	0.4169	-4.2	100	0.00
65	T	Dibromochloromethane	0.4000	0.5474	-36.9#	100	0.00
66	T	1,2-Dibromoethane	0.4000	0.3397	15.1	100	0.00
67	T	1-Chlorohexane	0.4000	0.3870	3.2	100	0.00
68	P	Chlorobenzene	0.4000	0.5349	-33.7#	100	0.00
69	T	1,1,1,2-Tetrachloroethane	0.4000	0.5402	-35.1#	100	0.00
70	C	Ethylbenzene	0.4000	0.4628	-15.7	100	0.00
71	T	m-,p-Xylene	0.8000	0.9706	-21.3	100	0.00
72	T	o-Xylene	-1.0000	0.4528	0.0	100	0.00
73	T	Styrene	0.4000	0.4406	-10.2	100	0.00
74	P	Bromoform	-1.0000	1.2744	0.0	100	0.00
75	T	Isopropylbenzene	0.4000	0.4590	-14.8	100	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	0.4000	0.3097	22.6	100	0.01
78	S	p-Bromofluorobenzene	-1.0000	0.0000	0.0	0	-15.70#
79	T	1,2,3-Trichloropropane	-1.0000	0.1007	0.0	100	0.00
80	T	trans-1,4-Dichloro-2-Butene	-1.0000	1.0674	0.0	0	0.00
81	T	n-Propylbenzene	0.4000	0.4641	-16.0	100	0.00
82	T	Bromobenzene	0.4000	0.4366	-9.2	100	-0.01
83	T	1,3,5-Trimethylbenzene	0.4000	0.4645	-16.1	100	0.00
84	T	2-Chlorotoluene	0.4000	0.5239	-31.0#	100	0.00
85	T	4-Chlorotoluene	0.4000	0.4818	-20.4	100	0.00
86	T	a-Methylstyrene	-1.0000	0.2646	0.0	100	0.00
87	T	tert-Butylbenzene	-1.0000	0.3669	0.0	100	0.00
88	T	1,2,4-Trimethylbenzene	0.4000	0.4627	-15.7	100	0.00
89	T	sec-Butylbenzene	0.4000	0.4500	-12.5	100	0.00
90	T	p-Isopropyltoluene	-1.0000	0.4283	0.0	100	0.00
91	T	1,3-Dichlorobenzene	0.4000	0.4698	-17.4	100	0.00
92	T	1,4-Dichlorobenzene	0.4000	0.5061	-26.5#	100	0.00
93	T	n-Butylbenzene	-1.0000	0.4595	0.0	100	0.01
94	T	1,2-Dichlorobenzene	0.4000	0.4476	-11.9	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-18.54#
96	T	1,2,4-Trichlorobenzene	0.4000	0.4522	-13.1	100	0.00
97	T	Hexachlorobutadiene	0.4000	0.4148	-3.7	100	0.00
98	T	Naphthalene	0.4000	0.4275	-6.9	100	0.00
99	T	1,2,3-Trichlorobenzene	0.4000	0.4643	-16.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 2
11M09742.D 8260_WTR.M Sun Oct 11 10:30:07 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100915\11M09743.D Vial: 5
Acq On : 9 Oct 2015 17:59 Operator: JDS
Sample : WG542333-04 1.0ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD72922 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 11 09:58:21 2015 Quant Results File: 8260_WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 09:57:42 2015
Response via : Initial Calibration
DataAcq Meth : 8260_WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.66	96	654957	25.00 ug/L	-0.02
56) Chlorobenzene-d5	14.30	117	573887	25.00 ug/L	-0.02
76) 1,4-Dichlorobenzene-d4	17.11	152	343577	25.00 ug/L	-0.03

System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	3702	0.5505 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery =	2.20%#	
43) 1,2-Dichloroethane-d4	10.27	65	3862	0.5036 ug/L	-0.03
Spiked Amount 25.000	Range 80 - 120		Recovery =	2.00%#	
57) Toluene-d8	12.52	98	11977	0.4355 ug/L	-0.02
Spiked Amount 25.000	Range 88 - 110		Recovery =	1.76%#	
78) p-Bromofluorobenzene	15.70	95	4644	0.3838 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery =	1.52%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.24	85	7657	1.1882 ug/L	96
3) Chloromethane	3.71	50	9780	1.1730 ug/L	92
4) Vinyl Chloride	3.95	62	7197	1.1839 ug/L	98
5) 1,3-Butadiene	3.99	54	4267	1.1668 ug/L	86
6) Bromomethane	4.85	94	4932	0.9798 ug/L	97
7) Chloroethane	5.01	64	5103	1.1316 ug/L	88
8) Trichlorofluoromethane	5.50	101	10774	1.1266 ug/L	99
9) Diethyl ether	6.04	59	25990	4.3922 ug/L	97
10) Isoprene	6.06	67	7294	0.8321 ug/L	94
11) Acrolein	6.26	56	1677	2.1484 ug/L	73
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	5756	1.0637 ug/L	92
13) Acetone	6.37	43	1720	0.9968 ug/L #	41
14) 1,1-Dichloroethene	6.58	61	10818	1.0837 ug/L	99
15) Tert-Butyl Alcohol	6.69	59	2579	4.6319 ug/L #	59
16) Dimethyl Sulfide	6.85	62	6322	0.8964 ug/L	96
17) Iodomethane	7.09	142	1589	0.2836 ug/L #	57
18) Methyl acetate	7.10	43	4049	0.7677 ug/L #	66
19) Methylene Chloride	7.34	84	7230	1.1298 ug/L	95
20) Carbon Disulfide	7.39	76	18618	0.9915 ug/L	99
21) Acrylonitrile	7.52	53	5241	2.1246 ug/L	94
22) Methyl Tert Butyl Ether	7.56	73	17432	1.0392 ug/L	93
23) trans-1,2-Dichloroethene	7.79	96	7226	1.1343 ug/L	92
24) n-Hexane	7.86	57	8744	0.9270 ug/L #	82
25) Diisopropyl ether	8.19	45	146387	5.3200 ug/L	99
26) Vinyl Acetate	8.35	43	4600	0.5145 ug/L #	78
27) 1,1-Dichloroethane	8.39	63	13520	1.0781 ug/L	95
28) Ethyl-Tert-Butyl ether	8.74	59	118593	5.0288 ug/L	99
29) 2-Butanone	8.91	43	2555	0.9124 ug/L #	58
30) Propionitrile	9.03	54	3950	4.4982 ug/L #	71
31) 2,2-Dichloropropane	9.12	77	9475	1.0848 ug/L	95
32) cis-1,2-Dichloroethene	9.19	96	7931	1.0804 ug/L	94
33) Chloroform	9.39	83	12271	1.0763 ug/L	99
34) 1-Bromopropane	9.52	122	1270	1.0608 ug/L	99
35) Bromochloromethane	9.62	130	4769	1.1916 ug/L	88
36) Tetrahydrofuran	9.64	42	9023	4.7840 ug/L	95
38) 1,1,1-Trichloroethane	9.91	97	9366	0.9257 ug/L #	94
39) Cyclohexane	9.94	56	13506	1.0583 ug/L	88
40) 1,1-Dichloropropene	10.09	75	8390	0.9852 ug/L	97
41) Carbon Tetrachloride	10.23	117	5985	0.6580 ug/L	90
42) Tert-Amyl-Methyl ether	10.18	73	86834	4.8215 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100915\11M09743.D Vial: 5
Acq On : 9 Oct 2015 17:59 Operator: JDS
Sample : WG542333-04 1.0ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD72922 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 11 09:58:21 2015 Quant Results File: 8260_WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 09:57:42 2015
Response via : Initial Calibration
DataAcq Meth : 8260_WTR

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.38	62	10541	1.0877 ug/L	95
45) Benzene	10.43	78	28543	1.1465 ug/L	99
46) Trichloroethene	11.14	130	8213	1.1396 ug/L	94
47) Methylcyclohexane	11.22	83	9501	0.9957 ug/L	98
48) 1,2-Dichloropropane	11.33	63	7625	1.0526 ug/L	92
50) Bromodichloromethane	11.62	83	7217	0.7860 ug/L	95
51) Dibromomethane	11.70	93	3601	0.9314 ug/L	91
52) 2-Chloroethyl Vinyl Ether	11.89	63	3308	0.7772 ug/L	93
53) 4-Methyl-2-Pentanone	11.92	58	1377	0.5628 ug/L #	55
54) cis-1,3-Dichloropropene	12.21	75	9328	0.8718 ug/L	92
55) Dimethyl Disulfide	12.47	79	1354	0.2108 ug/L	90
58) Toluene	12.61	91	29716	0.9799 ug/L	98
59) Ethyl Methacrylate	12.69	69	3980	0.4594 ug/L	99
60) trans-1,3-Dichloropropene	12.77	75	7518	0.6948 ug/L	90
61) 1,1,2-Trichloroethane	12.98	97	5596	0.9132 ug/L	93
62) 2-Hexanone	12.91	43	3221	0.6677 ug/L #	55
63) 1,3-Dichloropropane	13.27	76	9647	0.9466 ug/L	97
64) Tetrachloroethene	13.38	164	6377	0.9708 ug/L	97
65) Dibromochloromethane	13.63	129	4268	0.5265 ug/L	99
66) 1,2-Dibromoethane	13.88	107	4344	0.6944 ug/L	86
67) 1-Chlorohexane	13.94	91	7934	0.7898 ug/L	99
68) Chlorobenzene	14.34	112	21270	1.0049 ug/L	98
69) 1,1,1,2-Tetrachloroethane	14.36	131	4797	0.5859 ug/L	97
70) Ethylbenzene	14.36	106	10164	0.9099 ug/L	85
71) m-,p-Xylene	14.44	106	24906	1.9032 ug/L	93
72) o-Xylene	14.97	106	12498	0.9260 ug/L	100
73) Styrene	15.00	104	19283	0.8296 ug/L	97
74) Bromoform	15.48	173	1797	0.3445 ug/L	90
75) Isopropylbenzene	15.36	105	29817	0.9400 ug/L	98
77) 1,1,2,2-Tetrachloroethane	15.56	83	4880	0.6731 ug/L	91
79) 1,2,3-Trichloropropane	15.75	110	1590	0.7244 ug/L	68
80) trans-1,4-Dichloro-2-Buten	15.79	53	1177	0.4187 ug/L #	28
81) n-Propylbenzene	15.84	91	35200	0.8539 ug/L	97
82) Bromobenzene	15.97	156	9795	0.8941 ug/L	92
83) 1,3,5-Trimethylbenzene	16.02	105	24903	0.8606 ug/L	97
84) 2-Chlorotoluene	16.10	91	25884	0.9201 ug/L	99
85) 4-Chlorotoluene	16.14	91	22178	0.8290 ug/L	100
86) a-Methylstyrene	16.39	118	12316	0.7302 ug/L	99
87) tert-Butylbenzene	16.85	134	6681	0.7522 ug/L	91
88) 1,2,4-Trimethylbenzene	16.49	105	25417	0.8443 ug/L	99
89) sec-Butylbenzene	16.70	105	29769	0.8895 ug/L	99
90) p-Isopropyltoluene	16.84	119	25477	0.8469 ug/L	97
91) 1,3-Dichlorobenzene	17.04	146	18054	0.9025 ug/L	98
92) 1,4-Dichlorobenzene	17.15	146	19769	0.9457 ug/L #	70
93) n-Butylbenzene	17.33	91	22803	0.8622 ug/L	98
94) 1,2-Dichlorobenzene	17.62	146	17266	0.8986 ug/L	94
96) 1,2,4-Trichlorobenzene	19.60	180	12234	0.8726 ug/L	96
97) Hexachlorobutadiene	19.75	225	4043	0.8226 ug/L	98
98) Naphthalene	19.97	128	20614	0.7495 ug/L #	93
99) 1,2,3-Trichlorobenzene	20.26	180	10760	0.7796 ug/L	89

(#) = qualifier out of range (m) = manual integration
11M09743.D 8260_WTR.M Sun Oct 11 09:58:23 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100915\11M09743.D Vial: 5
Acq On : 9 Oct 2015 17:59 Operator: JDS
Sample : WG542333-04 1.0ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD72922 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 11 9:58 2015 Quant Results File: 8260_WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 09:57:42 2015
Response via : Initial Calibration

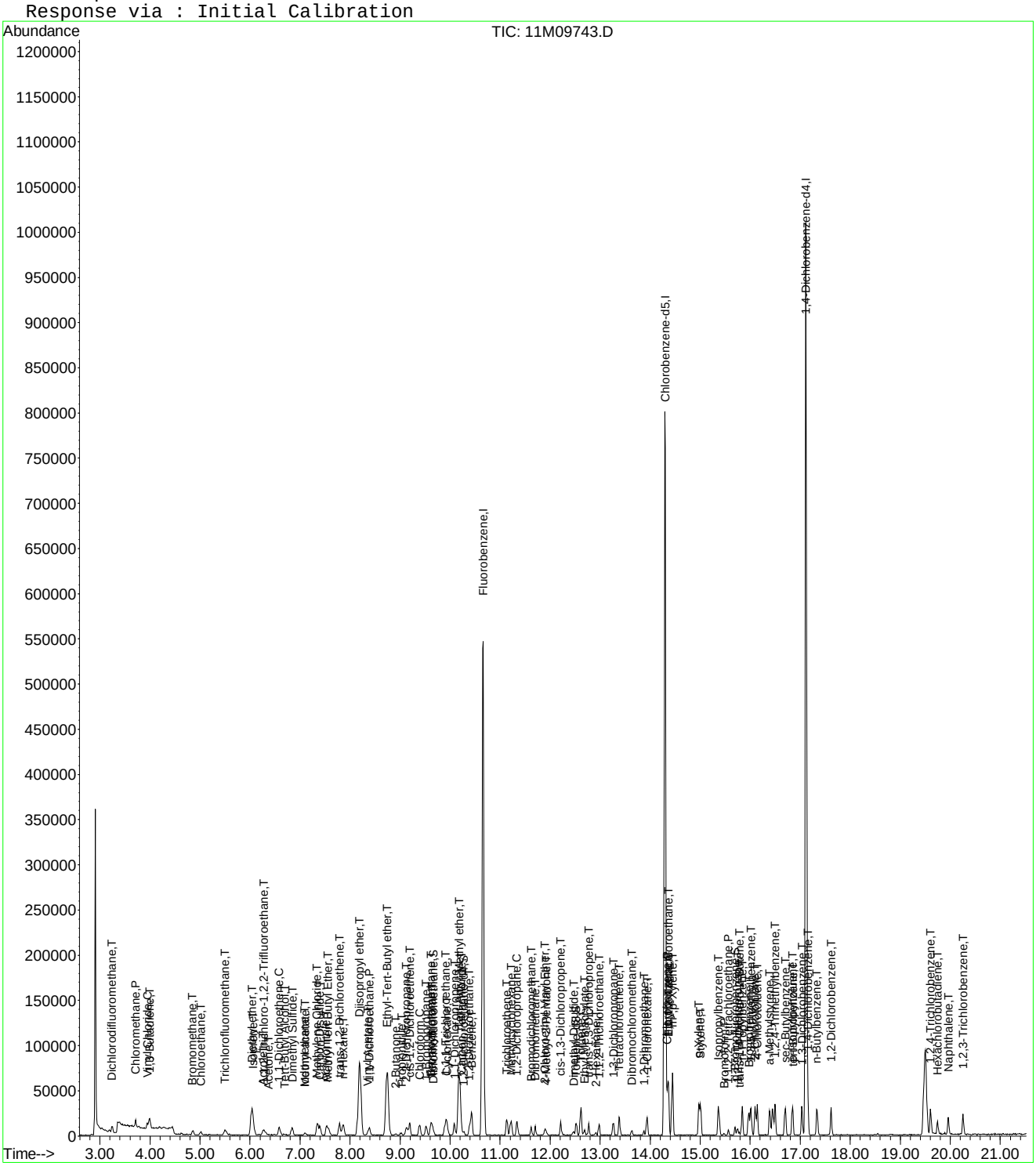

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\100915\11M09743.D Vial: 5
Acq On : 9 Oct 2015 17:59 Operator: JDS
Sample : WG542333-04 1.0ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD72922 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 10:32:15 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.7891	21.1	100	0.00
3	P	Chloromethane	1.0000	1.0559	-5.6	100	0.00
4	C	Vinyl Chloride	1.0000	0.9647	3.5	100	0.01
5	T	1,3-Butadiene	-1.0000	-1.0000	0.0	0	0.00
6	T	Bromomethane	1.0000	0.9878	1.2	100	-0.01
7	T	Chloroethane	1.0000	0.9398	6.0	100	0.00
8	T	Trichlorofluoromethane	1.0000	0.8990	10.1	100	0.00
9	T	Diethyl ether	5.0000	4.6761	6.5	100	0.01
10	T	Isoprene	-1.0000	0.8163	0.0	100	-0.01
11	T	Acrolein	2.5000	2.1315	14.7	100	-0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	0.8577	14.2	100	0.00
13	T	Acetone	-1.0000	1.0202	0.0	0	0.01
14	C	1,1-Dichloroethene	1.0000	0.9052	9.5	100	-0.01
15	T	Tert-Butyl Alcohol	-1.0000	16.7155	0.0	0	0.00
16	T	Dimethyl Sulfide	-1.0000	0.8732	0.0	100	0.00
17	T	Iodomethane	1.0000	1.2681	-26.8#	100	0.00
18	T	Methyl acetate	-1.0000	0.8166	0.0	0	0.00
19	T	Methylene Chloride	1.0000	0.9965	0.3	100	0.00
20	T	Carbon Disulfide	1.0000	0.9193	8.1	100	0.00
21	T	Acrylonitrile	2.5000	2.1911	12.4	100	-0.01
22	T	Methyl Tert Butyl Ether	1.0000	1.0037	-0.4	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	0.9597	4.0	100	0.00
24	T	n-Hexane	1.0000	0.8601	14.0	100	0.00
25	T	Diisopropyl ether	5.0000	4.8731	2.5	100	0.00
26	T	Vinyl Acetate	-1.0000	3.9797	0.0	0	0.00
27	P	1,1-Dichloroethane	1.0000	0.9349	6.5	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.7686	4.6	100	0.00
29	T	2-Butanone	-1.0000	0.9424	0.0	0	0.00
30	T	Propionitrile	5.0000	4.5985	8.0	100	0.01
31	T	2,2-Dichloropropane	1.0000	0.9470	5.3	100	-0.01
32	T	cis-1,2-Dichloroethene	1.0000	0.9330	6.7	100	0.00
33	C	Chloroform	1.0000	0.9594	4.1	100	0.00
34	T	1-Bromopropane	1.0000	0.8579	14.2	100	0.00
35	T	Bromochloromethane	1.0000	0.9331	6.7	100	0.00
36	T	Tetrahydrofuran	5.0000	4.9840	0.3	100	0.00
37	S	Dibromofluoromethane	0.5000	0.4970	0.6	100	0.00
38	T	1,1,1-Trichloroethane	1.0000	0.8737	12.6	100	0.01
39	T	Cyclohexane	1.0000	0.9489	5.1	100	0.01
40	T	1,1-Dichloropropene	1.0000	0.8824	11.8	100	0.01
41	T	Carbon Tetrachloride	1.0000	0.9573	4.3	100	0.00
42	T	Tert-Amyl-Methyl ether	5.0000	4.7376	5.2	100	0.01
43	S	1,2-Dichloroethane-d4	-1.0000	0.5041	0.0	100	-0.01
44	T	1,2-Dichloroethane	1.0000	0.9839	1.6	100	0.00
45	T	Benzene	1.0000	0.9909	0.9	100	0.00
46	T	Trichloroethene	1.0000	0.9561	4.4	100	0.00
47	T	Methylcyclohexane	-1.0000	0.9091	0.0	100	0.00
48	C	1,2-Dichloropropane	1.0000	0.9487	5.1	100	0.00
49	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.60#
50	T	Bromodichloromethane	1.0000	0.8468	15.3	100	0.00
51	T	Dibromomethane	1.0000	0.8669	13.3	100	0.00
52	T	2-Chloroethyl Vinyl Ether	-1.0000	0.8031	0.0	100	0.00
53	T	4-Methyl-2-Pentanone	-1.0000	0.6012	0.0	100	0.00
54	T	cis-1,3-Dichloropropene	1.0000	0.8703	13.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\100915\11M09743.D Vial: 5
Acq On : 9 Oct 2015 17:59 Operator: JDS
Sample : WG542333-04 1.0ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD72922 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 10:32:15 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	-1.0000	4.0360	0.0	100	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	0.5000	0.4896	2.1	100	0.00
58	C	Toluene	1.0000	1.0021	-0.2	100	0.00
59	T	Ethyl Methacrylate	1.0000	1.2237	-22.4	100	0.00
60	T	trans-1,3-Dichloropropene	1.0000	0.8434	15.7	100	0.00
61	T	1,1,2-Trichloroethane	1.0000	1.0121	-1.2	100	0.00
62	T	2-Hexanone	-1.0000	0.8211	0.0	100	0.01
63	T	1,3-Dichloropropane	1.0000	1.0185	-1.8	100	0.00
64	T	Tetrachloroethene	1.0000	0.9278	7.2	100	0.00
65	T	Dibromochloromethane	1.0000	0.9720	2.8	100	0.00
66	T	1,2-Dibromoethane	1.0000	0.8138	18.6	100	0.00
67	T	1-Chlorohexane	1.0000	0.8558	14.4	100	0.00
68	P	Chlorobenzene	1.0000	0.9868	1.3	100	0.00
69	T	1,1,1,2-Tetrachloroethane	1.0000	0.9493	5.1	100	0.00
70	C	Ethylbenzene	1.0000	0.9411	5.9	100	0.00
71	T	m-,p-Xylene	2.0000	1.9727	1.4	100	0.00
72	T	o-Xylene	1.0000	0.9737	2.6	100	0.00
73	T	Styrene	1.0000	0.9117	8.8	100	0.00
74	P	Bromoform	1.0000	1.3671	-36.7#	100	0.00
75	T	Isopropylbenzene	1.0000	0.9615	3.8	100	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	1.0000	0.8536	14.6	100	0.00
78	S	p-Bromofluorobenzene	0.5000	0.4691	6.2	100	0.00
79	T	1,2,3-Trichloropropane	1.0000	0.8343	16.6	100	0.00
80	T	trans-1,4-Dichloro-2-Butene	1.0000	1.2869	-28.7#	100	0.01
81	T	n-Propylbenzene	1.0000	0.9707	2.9	100	0.00
82	T	Bromobenzene	1.0000	0.9608	3.9	100	0.00
83	T	1,3,5-Trimethylbenzene	1.0000	0.9439	5.6	100	0.00
84	T	2-Chlorotoluene	1.0000	1.0207	-2.1	100	0.00
85	T	4-Chlorotoluene	1.0000	0.9437	5.6	100	0.00
86	T	a-Methylstyrene	1.0000	0.8204	18.0	100	0.00
87	T	tert-Butylbenzene	1.0000	0.8064	19.4	100	0.01
88	T	1,2,4-Trimethylbenzene	1.0000	0.9466	5.3	100	0.00
89	T	sec-Butylbenzene	1.0000	0.9435	5.7	100	0.00
90	T	p-Isopropyltoluene	1.0000	0.9166	8.3	100	0.00
91	T	1,3-Dichlorobenzene	1.0000	0.9429	5.7	100	0.01
92	T	1,4-Dichlorobenzene	1.0000	1.0242	-2.4	100	0.00
93	T	n-Butylbenzene	1.0000	0.9527	4.7	100	0.00
94	T	1,2-Dichlorobenzene	1.0000	0.9709	2.9	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-18.54#
96	T	1,2,4-Trichlorobenzene	1.0000	0.9540	4.6	100	0.00
97	T	Hexachlorobutadiene	1.0000	0.9008	9.9	100	0.00
98	T	Naphthalene	1.0000	0.9154	8.5	100	0.01
99	T	1,2,3-Trichlorobenzene	1.0000	0.9365	6.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M09743.D 8260_WTR.M Sun Oct 11 10:32:37 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100915\11M09744.D Vial: 6
Acq On : 9 Oct 2015 18:31 Operator: JDS
Sample : WG542333-05 2.0ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD72922 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 11 09:58:24 2015 Quant Results File: 8260_WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 09:57:42 2015
Response via : Initial Calibration
DataAcq Meth : 8260_WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.66	96	657004	25.00 ug/L	-0.02
56) Chlorobenzene-d5	14.30	117	583530	25.00 ug/L	-0.02
76) 1,4-Dichlorobenzene-d4	17.11	152	346671	25.00 ug/L	-0.03

System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	7344	1.0888 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery =	4.36%#	
43) 1,2-Dichloroethane-d4	10.27	65	7717	1.0032 ug/L	-0.03
Spiked Amount 25.000	Range 80 - 120		Recovery =	4.00%#	
57) Toluene-d8	12.52	98	24153	0.8637 ug/L	-0.02
Spiked Amount 25.000	Range 88 - 110		Recovery =	3.44%#	
78) p-Bromofluorobenzene	15.70	95	9363	0.7668 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery =	3.08%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.24	85	16028	2.4794 ug/L	93
3) Chloromethane	3.71	50	18407	2.2009 ug/L	92
4) Vinyl Chloride	3.95	62	15378	2.5218 ug/L	94
5) 1,3-Butadiene	4.00	54	11630	3.1703 ug/L	92
6) Bromomethane	4.85	94	9547	1.8906 ug/L	96
7) Chloroethane	5.01	64	10569	2.3364 ug/L	98
8) Trichlorofluoromethane	5.50	101	22645	2.3606 ug/L	100
9) Diethyl ether	6.03	59	139287	23.4654 ug/L	99
10) Isoprene	6.06	67	14826	1.6862 ug/L	94
11) Acrolein	6.27	56	9750	12.4515 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.27	101	12610	2.3231 ug/L	100
13) Acetone	6.37	43	3980	2.2995 ug/L #	70
14) 1,1-Dichloroethene	6.58	61	21569	2.1539 ug/L	95
15) Tert-Butyl Alcohol	6.69	59	15890	28.4495 ug/L #	91
16) Dimethyl Sulfide	6.85	62	13248	1.8725 ug/L	100
17) Iodomethane	7.09	142	5698	1.0137 ug/L	89
18) Methyl acetate	7.10	43	8959	1.6934 ug/L #	86
19) Methylene Chloride	7.34	84	14049	2.1885 ug/L	85
20) Carbon Disulfide	7.39	76	37975	2.0161 ug/L	99
21) Acrylonitrile	7.53	53	27818	11.2420 ug/L	93
22) Methyl Tert Butyl Ether	7.56	73	33750	2.0058 ug/L	99
23) trans-1,2-Dichloroethene	7.79	96	14209	2.2236 ug/L	94
24) n-Hexane	7.86	57	18595	1.9651 ug/L #	92
25) Diisopropyl ether	8.19	45	770415	27.9110 ug/L	99
26) Vinyl Acetate	8.35	43	13217	1.4738 ug/L #	89
27) 1,1-Dichloroethane	8.39	63	28129	2.2360 ug/L	97
28) Ethyl-Tert-Butyl ether	8.74	59	632278	26.7273 ug/L	100
29) 2-Butanone	8.92	43	5102	1.8163 ug/L	93
30) Propionitrile	9.02	54	21326	24.2102 ug/L	97
31) 2,2-Dichloropropane	9.13	77	18628	2.1261 ug/L	99
32) cis-1,2-Dichloroethene	9.19	96	16487	2.2390 ug/L	99
33) Chloroform	9.39	83	25364	2.2178 ug/L	98
34) 1-Bromopropane	9.52	122	2715	2.2607 ug/L	87
35) Bromochloromethane	9.62	130	9554	2.3798 ug/L	97
36) Tetrahydrofuran	9.64	42	44181	23.3517 ug/L	98
38) 1,1,1-Trichloroethane	9.90	97	19136	1.8854 ug/L	98
39) Cyclohexane	9.93	56	25954	2.0274 ug/L	96
40) 1,1-Dichloropropene	10.08	75	18353	2.1485 ug/L	99
41) Carbon Tetrachloride	10.23	117	12801	1.4031 ug/L	96
42) Tert-Amyl-Methyl ether	10.18	73	467861	25.8973 ug/L	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100915\11M09744.D Vial: 6
Acq On : 9 Oct 2015 18:31 Operator: JDS
Sample : WG542333-05 2.0ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD72922 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 11 09:58:24 2015 Quant Results File: 8260_WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 09:57:42 2015
Response via : Initial Calibration
DataAcq Meth : 8260_WTR

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.39	62	21450	2.2065 ug/L	97
45) Benzene	10.43	78	57372	2.2973 ug/L	99
46) Trichloroethene	11.14	130	16441	2.2743 ug/L	96
47) Methylcyclohexane	11.22	83	18710	1.9548 ug/L	97
48) 1,2-Dichloropropane	11.33	63	15085	2.0760 ug/L	95
49) 1,4-Dioxane	11.61	88	1891	38.8356 ug/L	99
50) Bromodichloromethane	11.62	83	14774	1.6041 ug/L	99
51) Dibromomethane	11.70	93	8071	2.0810 ug/L	91
52) 2-Chloroethyl Vinyl Ether	11.89	63	6757	1.5826 ug/L	95
53) 4-Methyl-2-Pentanone	11.92	58	3738	1.5230 ug/L	88
54) cis-1,3-Dichloropropene	12.21	75	18764	1.7482 ug/L	99
55) Dimethyl Disulfide	12.47	79	3159	0.4904 ug/L	76
58) Toluene	12.61	91	60870	1.9740 ug/L	100
59) Ethyl Methacrylate	12.69	69	9127	1.0361 ug/L	93
60) trans-1,3-Dichloropropene	12.77	75	15900	1.4452 ug/L	96
61) 1,1,2-Trichloroethane	12.98	97	10942	1.7560 ug/L	96
62) 2-Hexanone	12.91	43	7089	1.4453 ug/L #	94
63) 1,3-Dichloropropane	13.27	76	18637	1.7985 ug/L	98
64) Tetrachloroethene	13.38	164	13679	2.0480 ug/L	95
65) Dibromochloromethane	13.63	129	9235	1.1203 ug/L	97
66) 1,2-Dibromoethane	13.88	107	9723	1.5286 ug/L	96
67) 1-Chlorohexane	13.94	91	16571	1.6224 ug/L	98
68) Chlorobenzene	14.34	112	43213	2.0079 ug/L	99
69) 1,1,1,2-Tetrachloroethane	14.37	131	10540	1.2660 ug/L	96
70) Ethylbenzene	14.36	106	21135	1.8607 ug/L	92
71) m-,p-Xylene	14.44	106	52621	3.9546 ug/L	97
72) o-Xylene	14.97	106	24563	1.7898 ug/L	93
73) Styrene	15.00	104	40471	1.7124 ug/L	98
74) Bromoform	15.48	173	4230	0.7975 ug/L	87
75) Isopropylbenzene	15.36	105	62971	1.9524 ug/L	98
77) 1,1,2,2-Tetrachloroethane	15.56	83	10184	1.3921 ug/L	100
79) 1,2,3-Trichloropropane	15.74	110	4047	1.8274 ug/L	62
80) trans-1,4-Dichloro-2-Buten	15.79	53	2635	0.9291 ug/L #	39
81) n-Propylbenzene	15.84	91	74088	1.7813 ug/L	98
82) Bromobenzene	15.97	156	20236	1.8306 ug/L	89
83) 1,3,5-Trimethylbenzene	16.02	105	53109	1.8189 ug/L	96
84) 2-Chlorotoluene	16.10	91	50977	1.7959 ug/L	98
85) 4-Chlorotoluene	16.14	91	48207	1.7859 ug/L	99
86) a-Methylstyrene	16.39	118	25458	1.4958 ug/L	99
87) tert-Butylbenzene	16.84	134	14983	1.6719 ug/L	99
88) 1,2,4-Trimethylbenzene	16.50	105	54327	1.7885 ug/L	99
89) sec-Butylbenzene	16.70	105	62438	1.8491 ug/L	99
90) p-Isopropyltoluene	16.84	119	53391	1.7589 ug/L	100
91) 1,3-Dichlorobenzene	17.03	146	38338	1.8993 ug/L	94
92) 1,4-Dichlorobenzene	17.15	146	39159	1.8565 ug/L	88
93) n-Butylbenzene	17.34	91	44428	1.6648 ug/L	95
94) 1,2-Dichlorobenzene	17.62	146	36923	1.9044 ug/L	95
95) 1,2-Dibromo-3-Chloropropan	18.54	75	877	0.5908 ug/L	99
96) 1,2,4-Trichlorobenzene	19.60	180	25063	1.7716 ug/L	90
97) Hexachlorobutadiene	19.75	225	8292	1.6720 ug/L	93
98) Naphthalene	19.97	128	43133	1.5543 ug/L	98
99) 1,2,3-Trichlorobenzene	20.26	180	21643	1.5542 ug/L	92

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100915\11M09744.D Vial: 6
Acq On : 9 Oct 2015 18:31 Operator: JDS
Sample : WG542333-05 2.0ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD72922 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 11 9:58 2015 Quant Results File: 8260_WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 09:57:42 2015
Response via : Initial Calibration

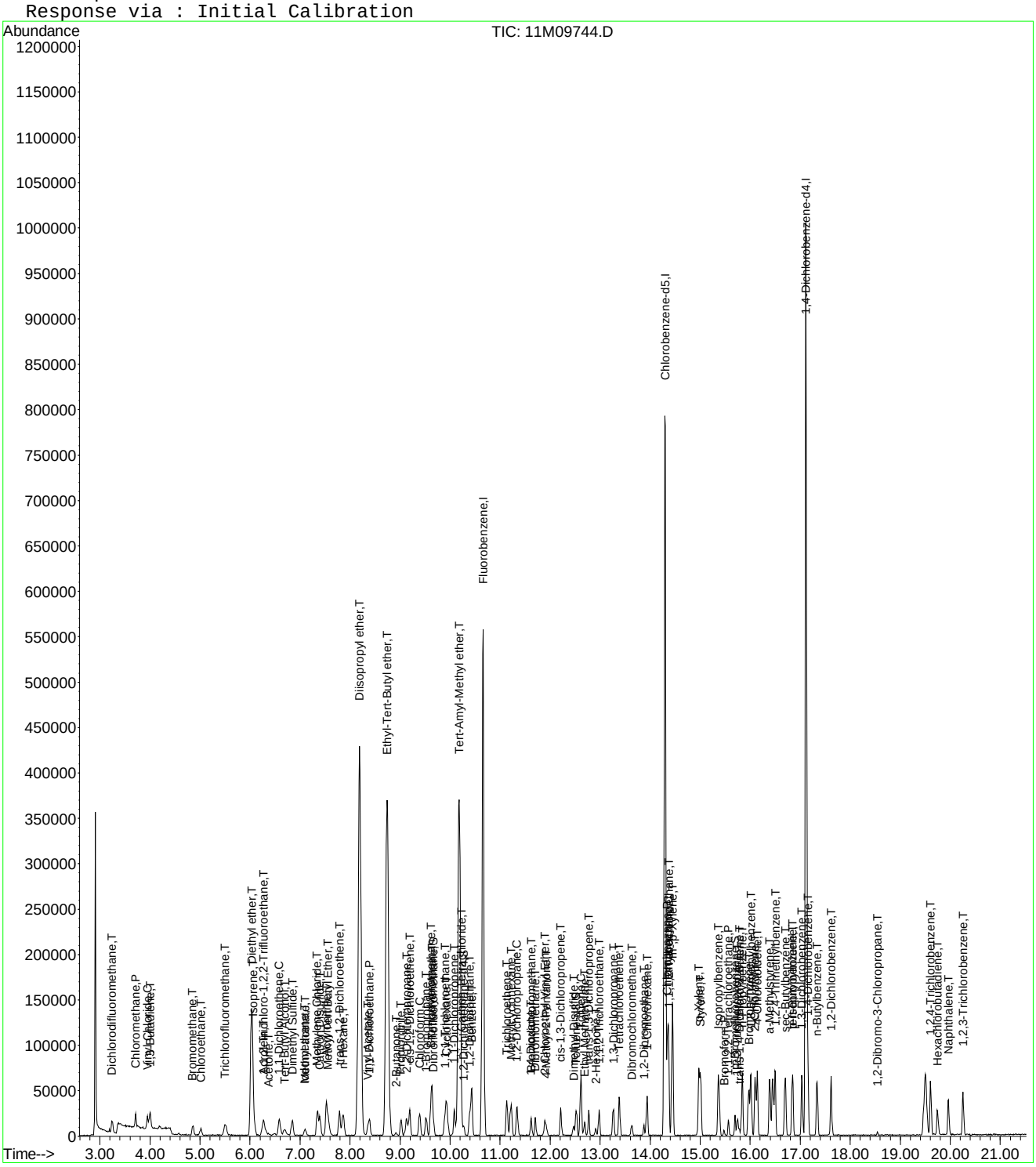

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\100915\11M09744.D Vial: 6
Acq On : 9 Oct 2015 18:31 Operator: JDS
Sample : WG542333-05 2.0ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD72922 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 10:32:15 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.6467	17.7	100	0.00
3	P	Chloromethane	2.0000	2.0893	-4.5	105	0.00
4	C	Vinyl Chloride	2.0000	2.0548	-2.7	100	0.01
5	T	1,3-Butadiene	-1.0000	1.5678	0.0	0	0.01
6	T	Bromomethane	2.0000	1.9061	4.7	100	-0.01
7	T	Chloroethane	2.0000	1.9405	3.0	100	0.00
8	T	Trichlorofluoromethane	2.0000	1.8837	5.8	100	0.00
9	T	Diethyl ether	25.0000	24.9822	0.1	100	0.00
10	T	Isoprene	-1.0000	1.6540	0.0	100	-0.01
11	T	Acrolein	12.5000	12.3541	1.2	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.8732	6.3	100	-0.01
13	T	Acetone	-1.0000	2.3534	0.0	100	0.01
14	C	1,1-Dichloroethene	2.0000	1.7991	10.0	100	-0.01
15	T	Tert-Butyl Alcohol	50.0000	51.0140	-2.0	100	0.00
16	T	Dimethyl Sulfide	-1.0000	1.8242	0.0	100	0.00
17	T	Iodomethane	2.0000	1.7872	10.6	100	0.00
18	T	Methyl acetate	-1.0000	1.8013	0.0	100	0.00
19	T	Methylene Chloride	2.0000	1.9303	3.5	100	0.00
20	T	Carbon Disulfide	2.0000	1.8693	6.5	100	0.00
21	T	Acrylonitrile	12.5000	11.5936	7.3	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.9372	3.1	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.8812	5.9	100	0.00
24	T	n-Hexane	2.0000	1.8234	8.8	100	0.00
25	T	Diisopropyl ether	25.0000	25.5664	-2.3	100	0.00
26	T	Vinyl Acetate	-1.0000	4.6295	0.0	0	0.00
27	P	1,1-Dichloroethane	2.0000	1.9391	3.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	25.3446	-1.4	100	0.00
29	T	2-Butanone	-1.0000	1.8759	0.0	100	0.01
30	T	Propionitrile	25.0000	24.7498	1.0	100	0.00
31	T	2,2-Dichloropropane	2.0000	1.8560	7.2	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	1.9335	3.3	100	0.00
33	C	Chloroform	2.0000	1.9769	1.2	100	0.00
34	T	1-Bromopropane	2.0000	1.8282	8.6	100	0.00
35	T	Bromochloromethane	2.0000	1.8634	6.8	100	0.00
36	T	Tetrahydrofuran	25.0000	24.3280	2.7	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9828	1.7	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.7795	11.0	100	0.00
39	T	Cyclohexane	2.0000	1.8179	9.1	100	0.00
40	T	1,1-Dichloropropene	2.0000	1.9242	3.8	100	0.00
41	T	Carbon Tetrachloride	2.0000	1.7390	13.0	100	0.00
42	T	Tert-Amyl-Methyl ether	25.0000	25.4468	-1.8	100	0.01
43	S	1,2-Dichloroethane-d4	1.0000	1.0041	-0.4	100	-0.01
44	T	1,2-Dichloroethane	2.0000	1.9960	0.2	100	0.01
45	T	Benzene	2.0000	1.9855	0.7	100	0.00
46	T	Trichloroethene	2.0000	1.9080	4.6	100	0.00
47	T	Methylcyclohexane	2.0000	1.7846	10.8	100	0.00
48	C	1,2-Dichloropropane	2.0000	1.8710	6.5	100	0.00
49	T	1,4-Dioxane	50.0000	38.0835	23.8	100	0.01
50	T	Bromodichloromethane	2.0000	1.7281	13.6	100	0.00
51	T	Dibromomethane	2.0000	1.9368	3.2	100	0.00
52	T	2-Chloroethyl Vinyl Ether	-1.0000	1.6353	0.0	100	0.00
53	T	4-Methyl-2-Pentanone	-1.0000	1.6269	0.0	100	0.00
54	T	cis-1,3-Dichloropropene	2.0000	1.7453	12.7	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\100915\11M09744.D Vial: 6
Acq On : 9 Oct 2015 18:31 Operator: JDS
Sample : WG542333-05 2.0ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD72922 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 10:32:15 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	-1.0000	4.4724	0.0	100	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	1.0000	0.9709	2.9	100	0.00
58	C	Toluene	2.0000	2.0188	-0.9	100	0.00
59	T	Ethyl Methacrylate	2.0000	1.9236	3.8	100	0.00
60	T	trans-1,3-Dichloropropene	2.0000	1.7543	12.3	100	0.00
61	T	1,1,2-Trichloroethane	2.0000	1.9462	2.7	100	0.00
62	T	2-Hexanone	-1.0000	1.7774	0.0	100	0.01
63	T	1,3-Dichloropropane	2.0000	1.9351	3.2	100	0.00
64	T	Tetrachloroethene	2.0000	1.9573	2.1	100	0.00
65	T	Dibromochloromethane	2.0000	1.7483	12.6	100	0.00
66	T	1,2-Dibromoethane	2.0000	1.7914	10.4	100	0.00
67	T	1-Chlorohexane	2.0000	1.7580	12.1	100	0.00
68	P	Chlorobenzene	2.0000	1.9716	1.4	100	0.00
69	T	1,1,1,2-Tetrachloroethane	2.0000	1.7493	12.5	100	0.01
70	C	Ethylbenzene	2.0000	1.9245	3.8	100	0.00
71	T	m-,p-Xylene	4.0000	4.0991	-2.5	100	0.00
72	T	o-Xylene	2.0000	1.8820	5.9	100	0.00
73	T	Styrene	2.0000	1.8818	5.9	100	0.00
74	P	Bromoform	2.0000	1.9594	2.0	100	0.00
75	T	Isopropylbenzene	2.0000	1.9971	0.1	100	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	2.0000	1.7654	11.7	100	0.00
78	S	p-Bromofluorobenzene	1.0000	0.9374	6.3	100	0.00
79	T	1,2,3-Trichloropropane	2.0000	2.1045	-5.2	100	-0.01
80	T	trans-1,4-Dichloro-2-Butene	2.0000	1.9077	4.6	100	0.01
81	T	n-Propylbenzene	2.0000	2.0248	-1.2	100	0.00
82	T	Bromobenzene	2.0000	1.9672	1.6	100	0.00
83	T	1,3,5-Trimethylbenzene	2.0000	1.9950	0.3	100	0.00
84	T	2-Chlorotoluene	2.0000	1.9923	0.4	100	0.00
85	T	4-Chlorotoluene	2.0000	2.0329	-1.6	100	0.00
86	T	a-Methylstyrene	2.0000	1.6807	16.0	100	0.00
87	T	tert-Butylbenzene	2.0000	1.7923	10.4	100	0.00
88	T	1,2,4-Trimethylbenzene	2.0000	2.0053	-0.3	100	0.01
89	T	sec-Butylbenzene	2.0000	1.9612	1.9	100	0.00
90	T	p-Isopropyltoluene	2.0000	1.9037	4.8	100	0.00
91	T	1,3-Dichlorobenzene	2.0000	1.9844	0.8	100	0.00
92	T	1,4-Dichlorobenzene	2.0000	2.0106	-0.5	100	0.00
93	T	n-Butylbenzene	2.0000	1.8397	8.0	100	0.01
94	T	1,2-Dichlorobenzene	2.0000	2.0578	-2.9	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	2.0000	2.7876	-39.4#	100	0.00
96	T	1,2,4-Trichlorobenzene	2.0000	1.9369	3.2	100	0.00
97	T	Hexachlorobutadiene	2.0000	1.8309	8.5	100	0.00
98	T	Naphthalene	2.0000	1.8984	5.1	100	0.01
99	T	1,2,3-Trichlorobenzene	2.0000	1.8668	6.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M09744.D 8260_WTR.M Sun Oct 11 10:32:58 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100915\11M09745.D Vial: 7
Acq On : 9 Oct 2015 19:03 Operator: JDS
Sample : WG542333-06 5.0ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD72922 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 11 09:58:26 2015 Quant Results File: 8260_WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 09:57:42 2015
Response via : Initial Calibration
DataAcq Meth : 8260_WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.66	96	673129	25.00 ug/L	-0.02
56) Chlorobenzene-d5	14.30	117	596702	25.00 ug/L	-0.02
76) 1,4-Dichlorobenzene-d4	17.11	152	358938	25.00 ug/L	-0.03

System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	18963	2.7439 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery = 10.96%#		
43) 1,2-Dichloroethane-d4	10.28	65	20831	2.6432 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 10.56%#		
57) Toluene-d8	12.52	98	67127	2.3473 ug/L	-0.02
Spiked Amount 25.000	Range 88 - 110		Recovery = 9.40%#		
78) p-Bromofluorobenzene	15.70	95	25806	2.0412 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 8.16%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.24	85	45009	6.7958 ug/L	99
3) Chloromethane	3.71	50	44473	5.1901 ug/L	93
4) Vinyl Chloride	3.94	62	37677	6.0306 ug/L	96
5) 1,3-Butadiene	3.99	54	16918	4.5014 ug/L	96
6) Bromomethane	4.86	94	23202	4.4847 ug/L	99
7) Chloroethane	5.01	64	27651	5.9660 ug/L	97
8) Trichlorofluoromethane	5.50	101	61251	6.2320 ug/L	99
9) Diethyl ether	6.03	59	291059	47.8594 ug/L	99
10) Isoprene	6.07	67	42066	4.6696 ug/L	98
11) Acrolein	6.27	56	20446	25.4856 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	34313	6.1699 ug/L	93
13) Acetone	6.36	43	8583	4.8401 ug/L	90
14) 1,1-Dichloroethene	6.59	61	60604	5.9070 ug/L	98
15) Tert-Butyl Alcohol	6.70	59	35651	62.3006 ug/L	98
16) Dimethyl Sulfide	6.84	62	35862	4.9475 ug/L	96
17) Iodomethane	7.08	142	23518	4.0838 ug/L	99
18) Methyl acetate	7.10	43	25708	4.7430 ug/L	94
19) Methylene Chloride	7.35	84	38453	5.8465 ug/L	100
20) Carbon Disulfide	7.39	76	103998	5.3890 ug/L	99
21) Acrylonitrile	7.53	53	59263	23.3760 ug/L	96
22) Methyl Tert Butyl Ether	7.56	73	88369	5.1260 ug/L	99
23) trans-1,2-Dichloroethene	7.79	96	37138	5.6725 ug/L	99
24) n-Hexane	7.86	57	52167	5.3810 ug/L	96
25) Diisopropyl ether	8.19	45	1605192	56.7607 ug/L	100
26) Vinyl Acetate	8.35	43	37536	4.0853 ug/L	98
27) 1,1-Dichloroethane	8.39	63	73596	5.7101 ug/L	99
28) Ethyl-Tert-Butyl ether	8.74	59	1330180	54.8817 ug/L	99
29) 2-Butanone	8.92	43	13728	4.7702 ug/L	98
30) Propionitrile	9.02	54	45088	49.9597 ug/L	99
31) 2,2-Dichloropropane	9.13	77	51537	5.7413 ug/L	99
32) cis-1,2-Dichloroethene	9.19	96	43489	5.7645 ug/L	94
33) Chloroform	9.39	83	65766	5.6128 ug/L	99
34) 1-Bromopropane	9.51	122	8350	6.7863 ug/L	96
35) Bromochloromethane	9.62	130	26223	6.3755 ug/L	94
36) Tetrahydrofuran	9.64	42	93631	48.3029 ug/L	99
38) 1,1,1-Trichloroethane	9.90	97	53201	5.1163 ug/L	99
39) Cyclohexane	9.94	56	73587	5.6107 ug/L	98
40) 1,1-Dichloropropene	10.08	75	50153	5.7304 ug/L	100
41) Carbon Tetrachloride	10.23	117	37265	3.9866 ug/L	99
42) Tert-Amyl-Methyl ether	10.18	73	979229	52.9044 ug/L	97

(#) = qualifier out of range (m) = manual integration
11M09745.D 8260_WTR.M Sun Oct 11 09:58:27 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100915\11M09745.D Vial: 7
Acq On : 9 Oct 2015 19:03 Operator: JDS
Sample : WG542333-06 5.0ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD72922 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 11 09:58:26 2015 Quant Results File: 8260_WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 09:57:42 2015
Response via : Initial Calibration
DataAcq Meth : 8260_WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
44)	1,2-Dichloroethane	10.38	62	55446	5.5670 ug/L		100
45)	Benzene	10.42	78	151919	5.9374 ug/L		99
46)	Trichloroethene	11.14	130	44175	5.9643 ug/L		98
47)	Methylcyclohexane	11.22	83	52791	5.3833 ug/L		98
48)	1,2-Dichloropropane	11.34	63	41437	5.5660 ug/L		98
49)	1,4-Dioxane	11.60	88	5425	108.7446 ug/L		77
50)	Bromodichloromethane	11.62	83	40786	4.3223 ug/L		100
51)	Dibromomethane	11.70	93	21082	5.3055 ug/L		95
52)	2-Chloroethyl Vinyl Ether	11.89	63	19247	4.4001 ug/L		97
53)	4-Methyl-2-Pentanone	11.92	58	10771	4.2833 ug/L		97
54)	cis-1,3-Dichloropropene	12.21	75	52529	4.7768 ug/L		99
55)	Dimethyl Disulfide	12.47	79	9796	1.4842 ug/L		89
58)	Toluene	12.61	91	163741	5.1930 ug/L		98
59)	Ethyl Methacrylate	12.69	69	26868	2.9826 ug/L		99
60)	trans-1,3-Dichloropropene	12.77	75	45428	4.0381 ug/L		100
61)	1,1,2-Trichloroethane	12.98	97	29323	4.6021 ug/L		100
62)	2-Hexanone	12.91	43	19306	3.8492 ug/L	#	92
63)	1,3-Dichloropropane	13.27	76	49793	4.6992 ug/L		99
64)	Tetrachloroethene	13.38	164	37216	5.4490 ug/L		97
65)	Dibromochloromethane	13.64	129	25512	3.0266 ug/L		99
66)	1,2-Dibromoethane	13.88	107	28832	4.4328 ug/L		97
67)	1-Chlorohexane	13.94	91	47096	4.5091 ug/L		98
68)	Chlorobenzene	14.34	112	114411	5.1988 ug/L		99
69)	1,1,1,2-Tetrachloroethane	14.37	131	29238	3.4345 ug/L		97
70)	Ethylbenzene	14.36	106	58489	5.0356 ug/L		97
71)	m-,p-Xylene	14.44	106	140022	10.2908 ug/L		95
72)	o-Xylene	14.97	106	68294	4.8664 ug/L		100
73)	Styrene	15.00	104	112272	4.6456 ug/L		100
74)	Bromoform	15.48	173	12790	2.3581 ug/L		96
75)	Isopropylbenzene	15.36	105	172180	5.2207 ug/L		98
77)	1,1,2,2-Tetrachloroethane	15.57	83	29671	3.9172 ug/L		98
79)	1,2,3-Trichloropropane	15.75	110	9869	4.3039 ug/L		72
80)	trans-1,4-Dichloro-2-Buten	15.79	53	8509	2.8977 ug/L		66
81)	n-Propylbenzene	15.84	91	203590	4.7276 ug/L		99
82)	Bromobenzene	15.97	156	51965	4.5403 ug/L		92
83)	1,3,5-Trimethylbenzene	16.02	105	143285	4.7395 ug/L		99
84)	2-Chlorotoluene	16.10	91	135163	4.5989 ug/L		97
85)	4-Chlorotoluene	16.14	91	126083	4.5113 ug/L		99
86)	a-Methylstyrene	16.39	118	72612	4.1206 ug/L		97
87)	tert-Butylbenzene	16.84	134	43829	4.7236 ug/L		97
88)	1,2,4-Trimethylbenzene	16.50	105	148232	4.7132 ug/L		100
89)	sec-Butylbenzene	16.70	105	171032	4.8920 ug/L		98
90)	p-Isopropyltoluene	16.84	119	153759	4.8924 ug/L		99
91)	1,3-Dichlorobenzene	17.03	146	102590	4.9088 ug/L		95
92)	1,4-Dichlorobenzene	17.15	146	102439	4.6905 ug/L		99
93)	n-Butylbenzene	17.34	91	129641	4.6919 ug/L		99
94)	1,2-Dichlorobenzene	17.62	146	94529	4.7090 ug/L		95
95)	1,2-Dibromo-3-Chloropropan	18.54	75	3243	2.1101 ug/L		95
96)	1,2,4-Trichlorobenzene	19.60	180	64322	4.3912 ug/L		98
97)	Hexachlorobutadiene	19.75	225	23107	4.5002 ug/L		95
98)	Naphthalene	19.97	128	118079	4.1096 ug/L		98
99)	1,2,3-Trichlorobenzene	20.26	180	59096	4.0986 ug/L		98

(#) = qualifier out of range (m) = manual integration
11M09745.D 8260_WTR.M Sun Oct 11 09:58:27 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100915\11M09745.D Vial: 7
Acq On : 9 Oct 2015 19:03 Operator: JDS
Sample : WG542333-06 5.0ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD72922 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 11 9:58 2015 Quant Results File: 8260_WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 09:57:42 2015
Response via : Initial Calibration

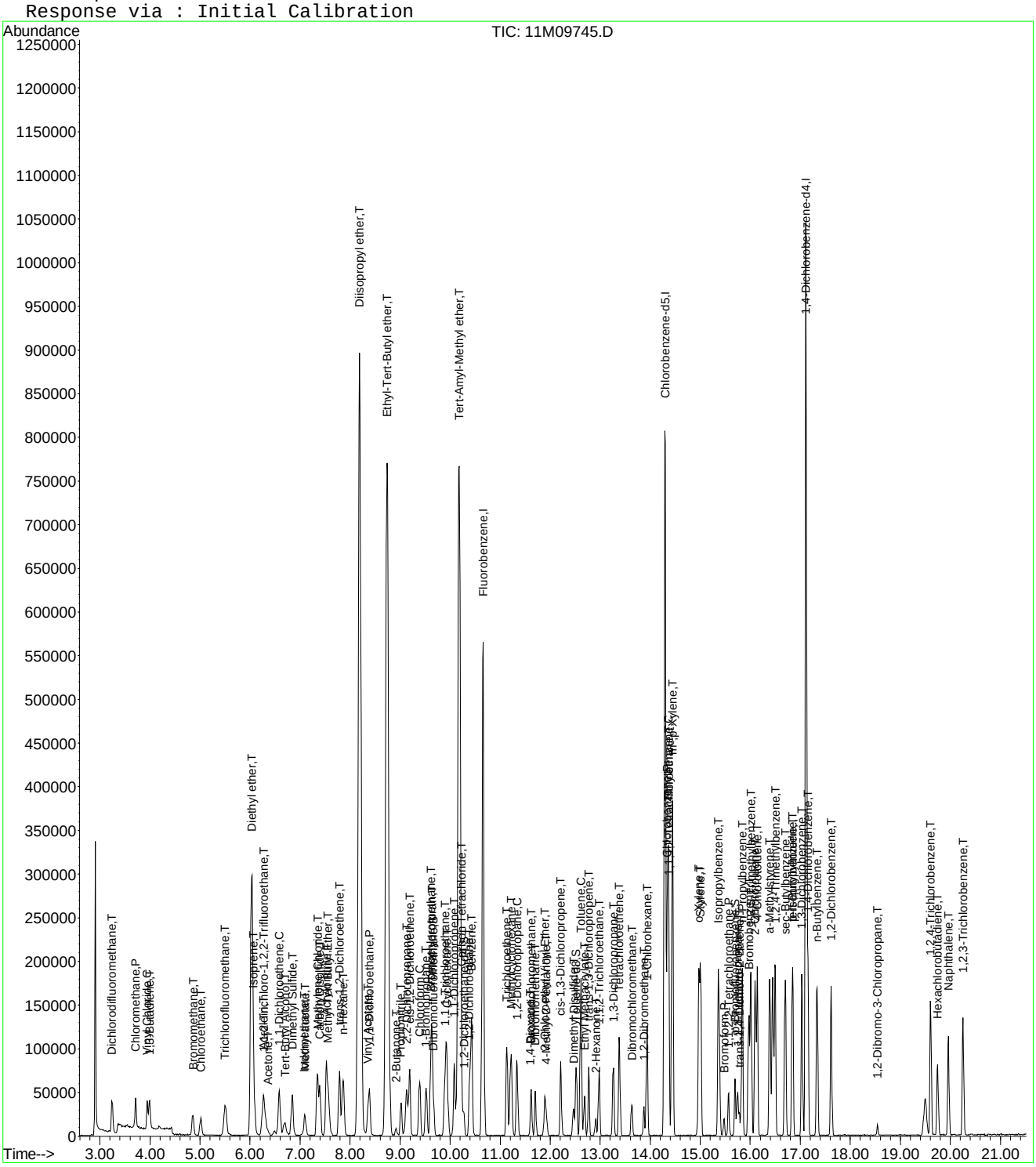

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\100915\11M09745.D Vial: 7
Acq On : 9 Oct 2015 19:03 Operator: JDS
Sample : WG542333-06 5.0ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD72922 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 10:32:15 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.5133	9.7	100	0.00
3	P	Chloromethane	5.0000	4.6720	6.6	100	0.00
4	C	Vinyl Chloride	5.0000	4.9138	1.7	100	0.00
5	T	1,3-Butadiene	5.0000	3.0930	38.1#	100	0.00
6	T	Bromomethane	5.0000	4.5213	9.6	100	0.00
7	T	Chloroethane	5.0000	4.9551	0.9	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.9731	0.5	100	0.00
9	T	Diethyl ether	50.0000	50.9530	-1.9	100	0.00
10	T	Isoprene	5.0000	4.5806	8.4	100	0.00
11	T	Acrolein	25.0000	25.2861	-1.1	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.9751	0.5	100	0.00
13	T	Acetone	5.0000	4.9536	0.9	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.9340	1.3	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	97.0740	2.9	100	0.01
16	T	Dimethyl Sulfide	5.0000	4.8197	3.6	100	0.00
17	T	Iodomethane	5.0000	3.9698	20.6	100	-0.01
18	T	Methyl acetate	5.0000	5.0451	-0.9	100	0.00
19	T	Methylene Chloride	5.0000	5.1568	-3.1	100	0.01
20	T	Carbon Disulfide	5.0000	4.9965	0.1	100	0.00
21	T	Acrylonitrile	25.0000	24.1070	3.6	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.9509	1.0	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.7990	4.0	100	0.00
24	T	n-Hexane	5.0000	4.9930	0.1	100	0.00
25	T	Diisopropyl ether	50.0000	51.9926	-4.0	100	0.00
26	T	Vinyl Acetate	5.0000	6.3988	-28.0#	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.9519	1.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	52.0425	-4.1	100	0.00
29	T	2-Butanone	5.0000	4.9267	1.5	100	0.01
30	T	Propionitrile	50.0000	51.0731	-2.1	100	0.00
31	T	2,2-Dichloropropane	5.0000	5.0119	-0.2	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.9780	0.4	100	0.00
33	C	Chloroform	5.0000	5.0032	-0.1	100	0.00
34	T	1-Bromopropane	5.0000	5.4879	-9.8	100	-0.01
35	T	Bromochloromethane	5.0000	4.9920	0.2	100	0.00
36	T	Tetrahydrofuran	50.0000	50.3222	-0.6	100	0.00
37	S	Dibromofluoromethane	2.5000	2.4769	0.9	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.8288	3.4	100	0.00
39	T	Cyclohexane	5.0000	5.0307	-0.6	100	0.01
40	T	1,1-Dichloropropene	5.0000	5.1322	-2.6	100	0.00
41	T	Carbon Tetrachloride	5.0000	4.4434	11.1	100	0.00
42	T	Tert-Amyl-Methyl ether	50.0000	51.9840	-4.0	100	0.01
43	S	1,2-Dichloroethane-d4	2.5000	2.6456	-5.8	100	0.00
44	T	1,2-Dichloroethane	5.0000	5.0359	-0.7	100	0.00
45	T	Benzene	5.0000	5.1317	-2.6	100	-0.01
46	T	Trichloroethene	5.0000	5.0038	-0.1	100	0.00
47	T	Methylcyclohexane	5.0000	4.9148	1.7	100	0.00
48	C	1,2-Dichloropropane	5.0000	5.0164	-0.3	100	0.01
49	T	1,4-Dioxane	100.0000	106.6387	-6.6	100	0.00
50	T	Bromodichloromethane	5.0000	4.6563	6.9	100	0.00
51	T	Dibromomethane	5.0000	4.9379	1.2	100	0.00
52	T	2-Chloroethyl Vinyl Ether	5.0000	4.5465	9.1	100	0.00
53	T	4-Methyl-2-Pentanone	5.0000	4.5756	8.5	100	0.00
54	T	cis-1,3-Dichloropropene	5.0000	4.7689	4.6	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\100915\11M09745.D Vial: 7
Acq On : 9 Oct 2015 19:03 Operator: JDS
Sample : WG542333-06 5.0ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD72922 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 10:32:15 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	5.0000	6.0190	-20.4	100	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	2.5000	2.6389	-5.6	100	0.00
58	C	Toluene	5.0000	5.3106	-6.2	100	0.00
59	T	Ethyl Methacrylate	5.0000	4.2861	14.3	100	0.00
60	T	trans-1,3-Dichloropropene	5.0000	4.9017	2.0	100	0.00
61	T	1,1,2-Trichloroethane	5.0000	5.1005	-2.0	100	0.00
62	T	2-Hexanone	5.0000	4.7336	5.3	100	0.01
63	T	1,3-Dichloropropane	5.0000	5.0560	-1.1	100	0.00
64	T	Tetrachloroethene	5.0000	5.2076	-4.2	100	0.00
65	T	Dibromochloromethane	5.0000	4.2316	15.4	100	0.01
66	T	1,2-Dibromoethane	5.0000	5.1949	-3.9	100	0.00
67	T	1-Chlorohexane	5.0000	4.8860	2.3	100	0.00
68	P	Chlorobenzene	5.0000	5.1048	-2.1	100	0.00
69	T	1,1,1,2-Tetrachloroethane	5.0000	4.2958	14.1	100	0.01
70	C	Ethylbenzene	5.0000	5.2083	-4.2	100	0.00
71	T	m-,p-Xylene	10.0000	10.6666	-6.7	100	0.00
72	T	o-Xylene	5.0000	5.1170	-2.3	100	0.00
73	T	Styrene	5.0000	5.1051	-2.1	100	0.00
74	P	Bromoform	5.0000	3.9962	20.1	100	0.00
75	T	Isopropylbenzene	5.0000	5.3400	-6.8	100	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	5.0000	4.9678	0.6	100	0.01
78	S	p-Bromofluorobenzene	2.5000	2.4953	0.2	100	0.00
79	T	1,2,3-Trichloropropane	5.0000	4.9566	0.9	100	0.00
80	T	trans-1,4-Dichloro-2-Butene	5.0000	4.2979	14.0	100	0.01
81	T	n-Propylbenzene	5.0000	5.3740	-7.5	100	0.00
82	T	Bromobenzene	5.0000	4.8790	2.4	100	0.00
83	T	1,3,5-Trimethylbenzene	5.0000	5.1984	-4.0	100	0.00
84	T	2-Chlorotoluene	5.0000	5.1020	-2.0	100	0.00
85	T	4-Chlorotoluene	5.0000	5.1358	-2.7	100	0.00
86	T	a-Methylstyrene	5.0000	4.6298	7.4	100	0.00
87	T	tert-Butylbenzene	5.0000	5.0639	-1.3	100	0.00
88	T	1,2,4-Trimethylbenzene	5.0000	5.2845	-5.7	100	0.01
89	T	sec-Butylbenzene	5.0000	5.1885	-3.8	100	0.00
90	T	p-Isopropyltoluene	5.0000	5.2950	-5.9	100	0.00
91	T	1,3-Dichlorobenzene	5.0000	5.1288	-2.6	100	0.00
92	T	1,4-Dichlorobenzene	5.0000	5.0799	-1.6	100	0.00
93	T	n-Butylbenzene	5.0000	5.1847	-3.7	100	0.01
94	T	1,2-Dichlorobenzene	5.0000	5.0881	-1.8	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	5.0000	4.6892	6.2	100	0.00
96	T	1,2,4-Trichlorobenzene	5.0000	4.8011	4.0	100	0.00
97	T	Hexachlorobutadiene	5.0000	4.9278	1.4	100	0.00
98	T	Naphthalene	5.0000	5.0193	-0.4	100	0.01
99	T	1,2,3-Trichlorobenzene	5.0000	4.9232	1.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M09745.D 8260_WTR.M Sun Oct 11 10:33:12 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100915\11M09746.D Vial: 8
Acq On : 9 Oct 2015 19:35 Operator: JDS
Sample : WG542333-07 20ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD72922 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 11 09:58:28 2015 Quant Results File: 8260_WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 09:57:42 2015
Response via : Initial Calibration
DataAcq Meth : 8260_WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.66	96	674650	25.00 ug/L	-0.02
56) Chlorobenzene-d5	14.29	117	609406	25.00 ug/L	-0.03
76) 1,4-Dichlorobenzene-d4	17.11	152	362995	25.00 ug/L	-0.03

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	75279	10.8683 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery = 43.48%#		
43) 1,2-Dichloroethane-d4	10.28	65	78377	9.9225 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 39.68%#		
57) Toluene-d8	12.52	98	260636	8.9241 ug/L	-0.02
Spiked Amount 25.000	Range 88 - 110		Recovery = 35.68%#		
78) p-Bromofluorobenzene	15.70	95	102625	8.0267 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 32.12%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.24	85	224513	33.8225 ug/L	98
3) Chloromethane	3.71	50	202933	23.6296 ug/L	98
4) Vinyl Chloride	3.94	62	161183	25.7410 ug/L	98
5) 1,3-Butadiene	3.99	54	102722	27.2696 ug/L	95
6) Bromomethane	4.86	94	91484	17.6430 ug/L	99
7) Chloroethane	5.01	64	114650	24.6813 ug/L	99
8) Trichlorofluoromethane	5.50	101	254768	25.8632 ug/L	99
9) Diethyl ether	6.03	59	447567	73.4284 ug/L	99
10) Isoprene	6.07	67	190571	21.1068 ug/L	98
11) Acrolein	6.27	56	32075	39.8908 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	143324	25.7133 ug/L	98
13) Acetone	6.36	43	33480	18.8373 ug/L	93
14) 1,1-Dichloroethene	6.59	61	246592	23.9808 ug/L	97
15) Tert-Butyl Alcohol	6.69	59	60209	104.9788 ug/L	98
16) Dimethyl Sulfide	6.84	62	148192	20.3983 ug/L	99
17) Iodomethane	7.09	142	162467	28.1483 ug/L	98
18) Methyl acetate	7.10	43	94412	17.3791 ug/L	97
19) Methylene Chloride	7.34	84	148366	22.5072 ug/L	99
20) Carbon Disulfide	7.39	76	461022	23.8356 ug/L	99
21) Acrylonitrile	7.53	53	94196	37.0714 ug/L	99
22) Methyl Tert Butyl Ether	7.56	73	348681	20.1801 ug/L	99
23) trans-1,2-Dichloroethene	7.79	96	152425	23.2292 ug/L	96
24) n-Hexane	7.86	57	230388	23.7109 ug/L	99
25) Diisopropyl ether	8.19	45	2476804	87.3840 ug/L	100
26) Vinyl Acetate	8.35	43	183660	19.9438 ug/L	99
27) 1,1-Dichloroethane	8.39	63	294915	22.8301 ug/L	98
28) Ethyl-Tert-Butyl ether	8.74	59	2043176	84.1090 ug/L	100
29) 2-Butanone	8.91	43	52280	18.1251 ug/L	97
30) Propionitrile	9.02	54	68269	75.4749 ug/L	99
31) 2,2-Dichloropropane	9.13	77	204279	22.7055 ug/L	100
32) cis-1,2-Dichloroethene	9.19	96	173656	22.9662 ug/L	93
33) Chloroform	9.39	83	259646	22.1097 ug/L	99
34) 1-Bromopropane	9.52	122	30282	24.5555 ug/L	97
35) Bromochloromethane	9.62	130	106344	25.7967 ug/L	91
36) Tetrahydrofuran	9.64	42	143214	73.7154 ug/L	99
38) 1,1,1-Trichloroethane	9.90	97	218254	20.9419 ug/L	99
39) Cyclohexane	9.93	56	320318	24.3678 ug/L	99
40) 1,1-Dichloropropene	10.08	75	202768	23.1159 ug/L	99
41) Carbon Tetrachloride	10.23	117	164216	17.5283 ug/L	99
42) Tert-Amyl-Methyl ether	10.18	73	1506344	81.1992 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100915\11M09746.D Vial: 8
Acq On : 9 Oct 2015 19:35 Operator: JDS
Sample : WG542333-07 20ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD72922 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 11 09:58:28 2015 Quant Results File: 8260_WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 09:57:42 2015
Response via : Initial Calibration
DataAcq Meth : 8260_WTR

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.39	62	217755	21.8142 ug/L	99
45) Benzene	10.43	78	595703	23.2292 ug/L	100
46) Trichloroethene	11.14	130	171959	23.1647 ug/L	98
47) Methylcyclohexane	11.22	83	233079	23.7145 ug/L	98
48) 1,2-Dichloropropane	11.33	63	160819	21.5531 ug/L	97
49) 1,4-Dioxane	11.60	88	7547	150.9392 ug/L	91
50) Bromodichloromethane	11.62	83	172918	18.2837 ug/L	99
51) Dibromomethane	11.70	93	85289	21.4155 ug/L	94
52) 2-Chloroethyl Vinyl Ether	11.89	63	80830	18.4370 ug/L	100
53) 4-Methyl-2-Pentanone	11.92	58	43423	17.2291 ug/L	98
54) cis-1,3-Dichloropropene	12.21	75	221265	20.0756 ug/L	98
55) Dimethyl Disulfide	12.47	79	55756	8.4288 ug/L	92
58) Toluene	12.61	91	655776	20.3640 ug/L	99
59) Ethyl Methacrylate	12.69	69	130068	14.1378 ug/L	98
60) trans-1,3-Dichloropropene	12.77	75	192290	16.7362 ug/L	98
61) 1,1,2-Trichloroethane	12.98	97	116088	17.8395 ug/L	98
62) 2-Hexanone	12.90	43	78906	15.4040 ug/L	97
63) 1,3-Dichloropropane	13.27	76	197013	18.2053 ug/L	100
64) Tetrachloroethene	13.38	164	147154	21.0966 ug/L	97
65) Dibromochloromethane	13.63	129	116698	13.5557 ug/L	99
66) 1,2-Dibromoethane	13.88	107	115035	17.3173 ug/L	99
67) 1-Chlorohexane	13.94	91	218629	20.4958 ug/L	99
68) Chlorobenzene	14.34	112	449131	19.9829 ug/L	99
69) 1,1,1,2-Tetrachloroethane	14.36	131	136015	15.6442 ug/L	99
70) Ethylbenzene	14.36	106	232941	19.6369 ug/L	99
71) m-,p-Xylene	14.44	106	561806	40.4286 ug/L	96
72) o-Xylene	14.97	106	274945	19.1833 ug/L	99
73) Styrene	15.00	104	471262	19.0934 ug/L	97
74) Bromoform	15.48	173	65931	11.9022 ug/L	98
75) Isopropylbenzene	15.36	105	691469	20.5290 ug/L	99
77) 1,1,2,2-Tetrachloroethane	15.56	83	126335	16.4924 ug/L	97
79) 1,2,3-Trichloropropane	15.75	110	40024	17.2595 ug/L	86
80) trans-1,4-Dichloro-2-Buten	15.78	53	40111	13.5068 ug/L	89
81) n-Propylbenzene	15.84	91	830778	19.0761 ug/L	100
82) Bromobenzene	15.97	156	216700	18.7219 ug/L	90
83) 1,3,5-Trimethylbenzene	16.02	105	589041	19.2664 ug/L	99
84) 2-Chlorotoluene	16.10	91	550426	18.5190 ug/L	97
85) 4-Chlorotoluene	16.14	91	499203	17.6619 ug/L	99
86) a-Methylstyrene	16.39	118	346209	19.4272 ug/L	98
87) tert-Butylbenzene	16.84	134	179185	19.0956 ug/L	99
88) 1,2,4-Trimethylbenzene	16.49	105	605504	19.0376 ug/L	99
89) sec-Butylbenzene	16.70	105	715654	20.2408 ug/L	99
90) p-Isopropyltoluene	16.84	119	643593	20.2493 ug/L	100
91) 1,3-Dichlorobenzene	17.03	146	401500	18.9965 ug/L	96
92) 1,4-Dichlorobenzene	17.15	146	404109	18.2967 ug/L	97
93) n-Butylbenzene	17.33	91	541742	19.3871 ug/L	99
94) 1,2-Dichlorobenzene	17.62	146	376872	18.5643 ug/L	96
95) 1,2-Dibromo-3-Chloropropan	18.54	75	17215	11.0760 ug/L	93
96) 1,2,4-Trichlorobenzene	19.60	180	265517	17.9241 ug/L	96
97) Hexachlorobutadiene	19.75	225	92636	17.8396 ug/L	97
98) Naphthalene	19.97	128	478974	16.4838 ug/L	99
99) 1,2,3-Trichlorobenzene	20.26	180	235638	16.1600 ug/L	97

(#) = qualifier out of range (m) = manual integration
11M09746.D 8260_WTR.M Sun Oct 11 09:58:29 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100915\11M09746.D Vial: 8
Acq On : 9 Oct 2015 19:35 Operator: JDS
Sample : WG542333-07 20ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD72922 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 11 9:58 2015 Quant Results File: 8260_WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 09:57:42 2015
Response via : Initial Calibration

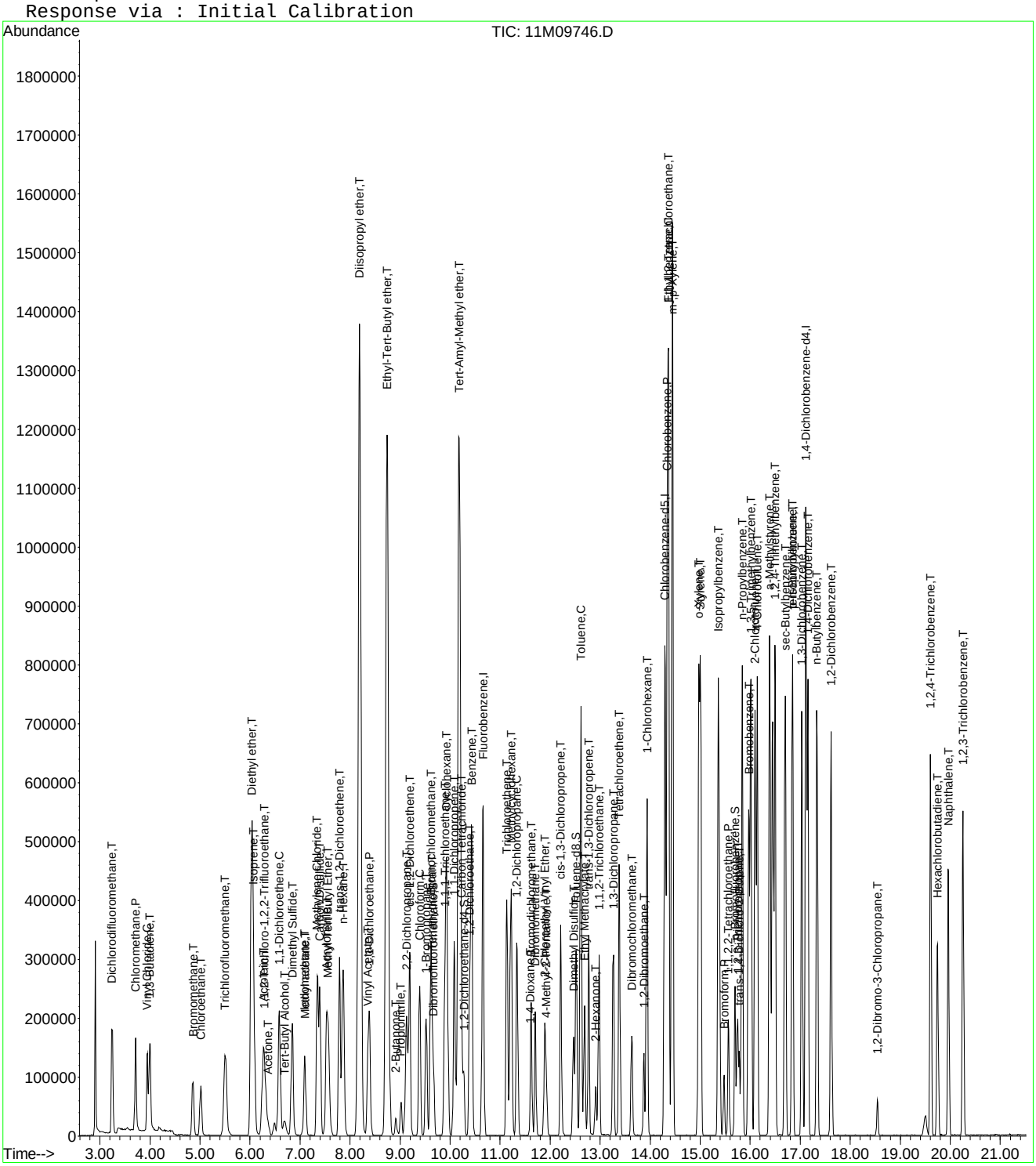

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100915\11M09747.D Vial: 9
Acq On : 9 Oct 2015 20:06 Operator: JDS
Sample : WG542333-08 50ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD72922 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 11 09:58:30 2015 Quant Results File: 8260_WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 09:57:42 2015
Response via : Initial Calibration
DataAcq Meth : 8260_WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.66	96	696692	25.00 ug/L	-0.02
56) Chlorobenzene-d5	14.30	117	623738	25.00 ug/L	-0.02
76) 1,4-Dichlorobenzene-d4	17.11	152	381033	25.00 ug/L	-0.03

System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	197029	27.5458 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.20%		
43) 1,2-Dichloroethane-d4	10.28	65	204732	25.0990 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.40%		
57) Toluene-d8	12.52	98	696450	23.2982 ug/L	-0.02
Spiked Amount 25.000	Range 88 - 110		Recovery = 93.20%		
78) p-Bromofluorobenzene	15.70	95	276883	20.6310 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 82.52%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.24	85	562511	82.0602 ug/L	99
3) Chloromethane	3.71	50	462050	52.0990 ug/L	98
4) Vinyl Chloride	3.94	62	397193	61.4251 ug/L	100
5) 1,3-Butadiene	3.99	54	170109	43.7301 ug/L	98
6) Bromomethane	4.86	94	252263	47.1106 ug/L	100
7) Chloroethane	5.01	64	289686	60.3893 ug/L	100
8) Trichlorofluoromethane	5.50	101	645257	63.4319 ug/L	99
9) Diethyl ether	6.03	59	595876	94.6672 ug/L	99
10) Isoprene	6.07	67	463768	49.7398 ug/L	100
11) Acrolein	6.27	56	41641	50.1493 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	362762	63.0228 ug/L	96
13) Acetone	6.36	43	89647	48.8436 ug/L	94
14) 1,1-Dichloroethene	6.59	61	635607	59.8566 ug/L	97
15) Tert-Butyl Alcohol	6.69	59	93971	158.6615 ug/L	95
16) Dimethyl Sulfide	6.85	62	382061	50.9261 ug/L	100
17) Iodomethane	7.09	142	402939	67.6028 ug/L	97
18) Methyl acetate	7.10	43	262771	46.8398 ug/L	99
19) Methylene Chloride	7.34	84	379152	55.6979 ug/L	100
20) Carbon Disulfide	7.39	76	1112055	55.6761 ug/L	100
21) Acrylonitrile	7.53	53	133229	50.7742 ug/L	99
22) Methyl Tert Butyl Ether	7.56	73	946812	53.0636 ug/L	99
23) trans-1,2-Dichloroethene	7.79	96	392737	57.9585 ug/L	96
24) n-Hexane	7.86	57	550051	54.8187 ug/L	100
25) Diisopropyl ether	8.19	45	3236891	110.5875 ug/L	100
26) Vinyl Acetate	8.35	43	538408	56.6163 ug/L	99
27) 1,1-Dichloroethane	8.39	63	751380	56.3259 ug/L	100
28) Ethyl-Tert-Butyl ether	8.74	59	2672227	106.5240 ug/L	100
29) 2-Butanone	8.91	43	145328	48.7902 ug/L	99
30) Propionitrile	9.02	54	92787	99.3353 ug/L	96
31) 2,2-Dichloropropane	9.13	77	528669	56.9023 ug/L	100
32) cis-1,2-Dichloroethene	9.19	96	440543	56.4189 ug/L	95
33) Chloroform	9.39	83	668146	55.0947 ug/L	100
34) 1-Bromopropane	9.52	122	76787	60.2960 ug/L	100
35) Bromochloromethane	9.62	130	273630	64.2766 ug/L	94
36) Tetrahydrofuran	9.64	42	197236	98.3098 ug/L	99
38) 1,1,1-Trichloroethane	9.90	97	581308	54.0128 ug/L	99
39) Cyclohexane	9.93	56	765217	56.3712 ug/L	99
40) 1,1-Dichloropropene	10.08	75	516624	57.0326 ug/L	97
41) Carbon Tetrachloride	10.23	117	466201	48.1876 ug/L	100
42) Tert-Amyl-Methyl ether	10.17	73	1988662	103.8069 ug/L	97

(#) = qualifier out of range (m) = manual integration
11M09747.D 8260_WTR.M Sun Oct 11 09:58:31 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100915\11M09747.D Vial: 9
Acq On : 9 Oct 2015 20:06 Operator: JDS
Sample : WG542333-08 50ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD72922 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 11 09:58:30 2015 Quant Results File: 8260_WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 09:57:42 2015
Response via : Initial Calibration
DataAcq Meth : 8260_WTR

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
44) 1,2-Dichloroethane	10.38	62	560084	54.3329	ug/L	99
45) Benzene	10.43	78	1521116	57.4386	ug/L	99
46) Trichloroethene	11.14	130	449770	58.6720	ug/L	98
47) Methylcyclohexane	11.22	83	558347	55.0115	ug/L	98
48) 1,2-Dichloropropane	11.33	63	417411	54.1719	ug/L	99
49) 1,4-Dioxane	11.60	88	11011	213.2515	ug/L	92
50) Bromodichloromethane	11.62	83	481467	49.2979	ug/L	99
51) Dibromomethane	11.70	93	228173	55.4800	ug/L	96
52) 2-Chloroethyl Vinyl Ether	11.89	63	224807	49.6552	ug/L	99
53) 4-Methyl-2-Pentanone	11.92	58	127341	48.9270	ug/L	99
54) cis-1,3-Dichloropropene	12.21	75	590841	51.9116	ug/L	100
55) Dimethyl Disulfide	12.47	79	197730	28.9458	ug/L	96
58) Toluene	12.61	91	1685768	51.1459	ug/L	99
59) Ethyl Methacrylate	12.69	69	396879	42.1476	ug/L	100
60) trans-1,3-Dichloropropene	12.77	75	533334	45.3528	ug/L	98
61) 1,1,2-Trichloroethane	12.98	97	320733	48.1553	ug/L	99
62) 2-Hexanone	12.90	43	225033	42.9215	ug/L	99
63) 1,3-Dichloropropane	13.27	76	524927	47.3921	ug/L	99
64) Tetrachloroethene	13.38	164	383856	53.7666	ug/L	96
65) Dibromochloromethane	13.63	129	362898	41.1859	ug/L	100
66) 1,2-Dibromoethane	13.88	107	325341	47.8513	ug/L	100
67) 1-Chlorohexane	13.94	91	537245	49.2078	ug/L	99
68) Chlorobenzene	14.34	112	1177865	51.2018	ug/L	99
69) 1,1,1,2-Tetrachloroethane	14.36	131	392549	44.1128	ug/L	100
70) Ethylbenzene	14.36	106	604139	49.7586	ug/L	99
71) m-,p-Xylene	14.44	106	1448068	101.8114	ug/L	100
72) o-Xylene	14.97	106	730831	49.8195	ug/L	98
73) Styrene	15.00	104	1263433	50.0125	ug/L	97
74) Bromoform	15.48	173	219728	38.7549	ug/L	98
75) Isopropylbenzene	15.36	105	1825366	52.9480	ug/L	100
77) 1,1,2,2-Tetrachloroethane	15.56	83	342843	42.6376	ug/L	99
79) 1,2,3-Trichloropropane	15.75	110	108857	44.7201	ug/L	90
80) trans-1,4-Dichloro-2-Buten	15.78	53	133308	42.7646	ug/L	97
81) n-Propylbenzene	15.84	91	2151779	47.0696	ug/L	99
82) Bromobenzene	15.97	156	567197	46.6835	ug/L	88
83) 1,3,5-Trimethylbenzene	16.02	105	1537058	47.8942	ug/L	100
84) 2-Chlorotoluene	16.10	91	1426007	45.7066	ug/L	97
85) 4-Chlorotoluene	16.14	91	1279436	43.1237	ug/L	98
86) a-Methylstyrene	16.39	118	902426	48.2416	ug/L	100
87) tert-Butylbenzene	16.84	134	484284	49.1666	ug/L	97
88) 1,2,4-Trimethylbenzene	16.49	105	1582346	47.3952	ug/L	98
89) sec-Butylbenzene	16.70	105	1872420	50.4505	ug/L	100
90) p-Isopropyltoluene	16.84	119	1700782	50.9784	ug/L	99
91) 1,3-Dichlorobenzene	17.03	146	1065058	48.0065	ug/L	96
92) 1,4-Dichlorobenzene	17.15	146	1067473	46.0435	ug/L	96
93) n-Butylbenzene	17.33	91	1432964	48.8533	ug/L	99
94) 1,2-Dichlorobenzene	17.62	146	1003561	47.0940	ug/L	96
95) 1,2-Dibromo-3-Chloropropan	18.54	75	56903	34.8777	ug/L	92
96) 1,2,4-Trichlorobenzene	19.60	180	707845	45.5221	ug/L	98
97) Hexachlorobutadiene	19.75	225	252349	46.2961	ug/L	98
98) Naphthalene	19.96	128	1359674	44.5778	ug/L	99
99) 1,2,3-Trichlorobenzene	20.26	180	642401	41.9700	ug/L	97

(#) = qualifier out of range (m) = manual integration
11M09747.D 8260_WTR.M Sun Oct 11 09:58:31 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100915\11M09747.D Vial: 9
Acq On : 9 Oct 2015 20:06 Operator: JDS
Sample : WG542333-08 50ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD72922 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 11 9:58 2015 Quant Results File: 8260_WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 09:57:42 2015
Response via : Initial Calibration

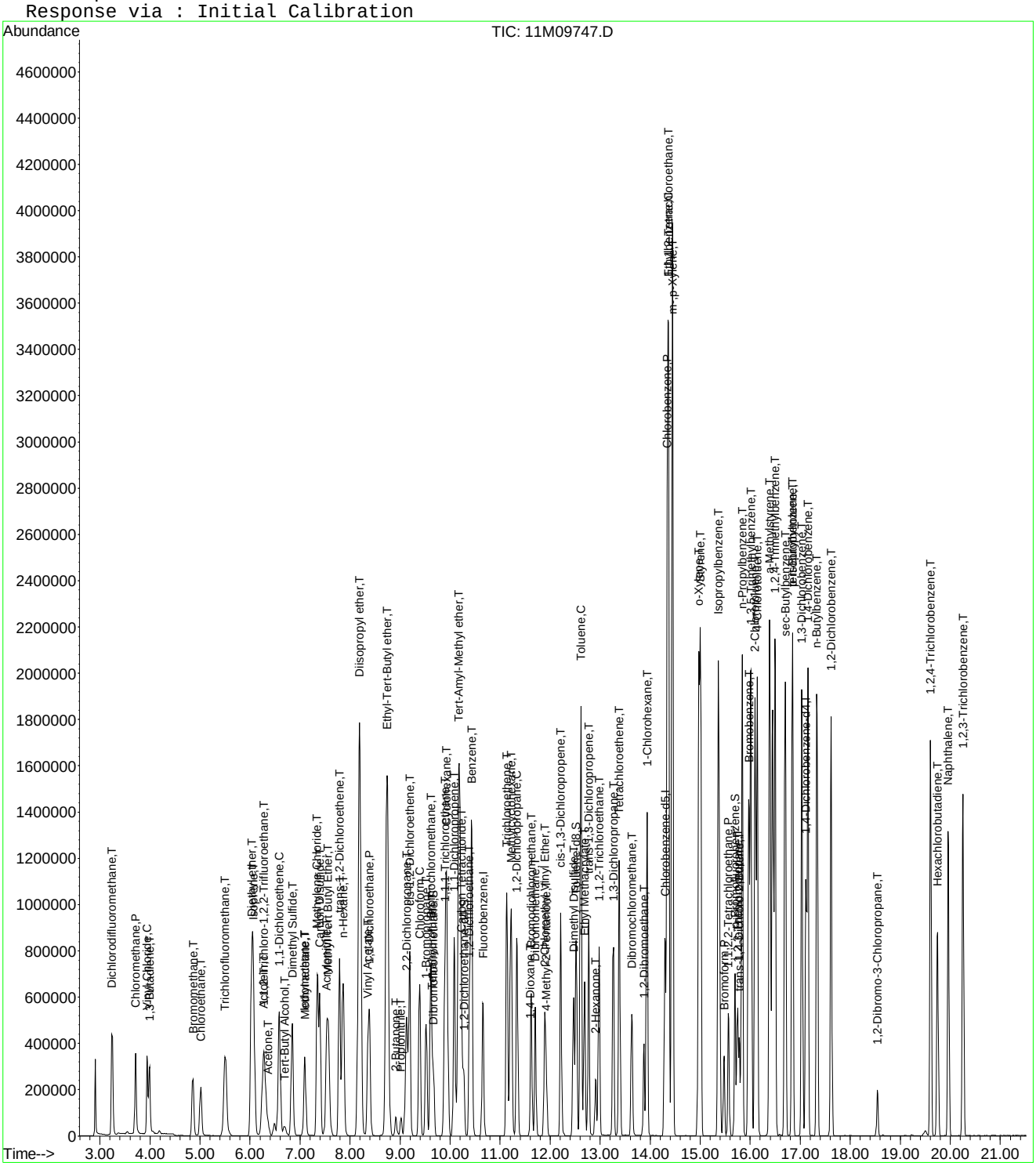

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100915\11M09748.D Vial: 10
Acq On : 9 Oct 2015 20:38 Operator: JDS
Sample : WG542333-09 100ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD72922 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 11 09:58:33 2015 Quant Results File: 8260_WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 09:57:42 2015
Response via : Initial Calibration
DataAcq Meth : 8260_WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.66	96	695443	25.00 ug/L	-0.02
56) Chlorobenzene-d5	14.30	117	633829	25.00 ug/L	-0.02
76) 1,4-Dichlorobenzene-d4	17.11	152	382027	25.00 ug/L	-0.03

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	413734	57.9463 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery = 231.80%#		
43) 1,2-Dichloroethane-d4	10.28	65	407816	50.0858 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 200.36%#		
57) Toluene-d8	12.52	98	1416924	46.6454 ug/L	-0.02
Spiked Amount 25.000	Range 88 - 110		Recovery = 186.60%#		
78) p-Bromofluorobenzene	15.70	95	573091	42.5907 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 170.36%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.24	85	1098421	160.5276 ug/L	100
3) Chloromethane	3.71	50	928142	104.8418 ug/L	99
4) Vinyl Chloride	3.94	62	757584	117.3693 ug/L	100
5) 1,3-Butadiene	3.98	54	307558	79.2062 ug/L	99
6) Bromomethane	4.85	94	544869	101.9380 ug/L	99
7) Chloroethane	5.01	64	572256	119.5094 ug/L	99
8) Trichlorofluoromethane	5.50	101	1267588	124.8339 ug/L	99
9) Diethyl ether	6.03	59	1205963	191.9363 ug/L	99
10) Isoprene	6.06	67	969849	104.2046 ug/L	100
11) Acrolein	6.26	56	86653	104.5459 ug/L	91
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	714747	124.3963 ug/L	96
13) Acetone	6.36	43	178586	97.4762 ug/L	92
14) 1,1-Dichloroethene	6.59	61	1242878	117.2549 ug/L	97
15) Tert-Butyl Alcohol	6.69	59	195860	331.2858 ug/L	98
16) Dimethyl Sulfide	6.85	62	778303	103.9287 ug/L	100
17) Iodomethane	7.09	142	831110	139.6892 ug/L	98
18) Methyl acetate	7.10	43	521872	93.1926 ug/L	99
19) Methylene Chloride	7.34	84	763310	112.3325 ug/L	98
20) Carbon Disulfide	7.39	76	2271839	113.9460 ug/L	100
21) Acrylonitrile	7.52	53	267806	102.2454 ug/L	99
22) Methyl Tert Butyl Ether	7.56	73	1856904	104.2562 ug/L	100
23) trans-1,2-Dichloroethene	7.79	96	779035	115.1733 ug/L	95
24) n-Hexane	7.86	57	1141542	113.9718 ug/L	100
25) Diisopropyl ether	8.19	45	6383917	218.4965 ug/L	99
26) Vinyl Acetate	8.35	43	1328999	140.0020 ug/L	100
27) 1,1-Dichloroethane	8.39	63	1478955	111.0663 ug/L	100
28) Ethyl-Tert-Butyl ether	8.74	59	5330187	212.8609 ug/L	98
29) 2-Butanone	8.91	43	288265	96.9515 ug/L	99
30) Propionitrile	9.02	54	187585	201.1843 ug/L	98
31) 2,2-Dichloropropane	9.13	77	1036599	111.7727 ug/L	99
32) cis-1,2-Dichloroethene	9.19	96	875626	112.3400 ug/L	93
33) Chloroform	9.39	83	1319834	109.0277 ug/L	99
34) 1-Bromopropane	9.52	122	156819	123.3613 ug/L	98
35) Bromochloromethane	9.62	130	543282	127.8479 ug/L	95
36) Tetrahydrofuran	9.64	42	391578	195.5277 ug/L	99
38) 1,1,1-Trichloroethane	9.90	97	1169144	108.8273 ug/L	99
39) Cyclohexane	9.93	56	1572900	116.0789 ug/L	99
40) 1,1-Dichloropropene	10.08	75	1009481	111.6415 ug/L	96
41) Carbon Tetrachloride	10.23	117	974818	100.9403 ug/L	100
42) Tert-Amyl-Methyl ether	10.17	73	3914175	204.6845 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100915\11M09748.D Vial: 10
Acq On : 9 Oct 2015 20:38 Operator: JDS
Sample : WG542333-09 100ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD72922 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 11 09:58:33 2015 Quant Results File: 8260_WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 09:57:42 2015
Response via : Initial Calibration
DataAcq Meth : 8260_WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44)	1,2-Dichloroethane	10.38	62	1101149	107.0126 ug/L	99
45)	Benzene	10.43	78	2924775	110.6404 ug/L	99
46)	Trichloroethene	11.14	130	868405	113.4859 ug/L	98
47)	Methylcyclohexane	11.22	83	1149934	113.5014 ug/L	98
48)	1,2-Dichloropropane	11.33	63	834297	108.4701 ug/L	99
49)	1,4-Dioxane	11.60	88	21769	422.3603 ug/L	84
50)	Bromodichloromethane	11.62	83	1006418	103.2332 ug/L	99
51)	Dibromomethane	11.70	93	449205	109.4199 ug/L	95
52)	2-Chloroethyl Vinyl Ether	11.89	63	450833	99.7586 ug/L	100
53)	4-Methyl-2-Pentanone	11.92	58	245824	94.6203 ug/L	98
54)	cis-1,3-Dichloropropene	12.21	75	1198593	105.4982 ug/L	100
55)	Dimethyl Disulfide	12.47	79	501706	73.5769 ug/L	99
58)	Toluene	12.61	91	3228627	96.3964 ug/L	99
59)	Ethyl Methacrylate	12.69	69	812789	84.9420 ug/L	100
60)	trans-1,3-Dichloropropene	12.77	75	1068759	89.4365 ug/L	97
61)	1,1,2-Trichloroethane	12.98	97	628587	92.8744 ug/L	99
62)	2-Hexanone	12.90	43	441921	82.9476 ug/L	100
63)	1,3-Dichloropropane	13.27	76	1023034	90.8923 ug/L	100
64)	Tetrachloroethene	13.38	164	753048	103.7999 ug/L	96
65)	Dibromochloromethane	13.63	129	777034	86.7828 ug/L	100
66)	1,2-Dibromoethane	13.88	107	645939	93.4924 ug/L	99
67)	1-Chlorohexane	13.94	91	1119621	100.9167 ug/L	97
68)	Chlorobenzene	14.34	112	2315488	99.0518 ug/L	100
69)	1,1,1,2-Tetrachloroethane	14.36	131	821665	90.8648 ug/L	100
70)	Ethylbenzene	14.36	106	1187776	96.2712 ug/L	93
71)	m-,p-Xylene	14.44	106	2755268	190.6344 ug/L	91
72)	o-Xylene	14.97	106	1454276	97.5573 ug/L	96
73)	Styrene	15.00	104	2486787	96.8712 ug/L	97
74)	Bromoform	15.48	173	482922	83.8202 ug/L	99
75)	Isopropylbenzene	15.36	105	3522714	100.5557 ug/L	98
77)	1,1,2,2-Tetrachloroethane	15.56	83	690732	85.6792 ug/L	99
79)	1,2,3-Trichloropropane	15.75	110	212720	87.1612 ug/L	93
80)	trans-1,4-Dichloro-2-Buten	15.79	53	271658	86.9199 ug/L	97
81)	n-Propylbenzene	15.84	91	4047097	88.2988 ug/L	96
82)	Bromobenzene	15.97	156	1133138	93.0211 ug/L	87
83)	1,3,5-Trimethylbenzene	16.02	105	2964442	92.1307 ug/L	98
84)	2-Chlorotoluene	16.10	91	2694293	86.1332 ug/L	95
85)	4-Chlorotoluene	16.14	91	2468004	82.9682 ug/L	96
86)	a-Methylstyrene	16.39	118	1868176	99.6085 ug/L	100
87)	tert-Butylbenzene	16.84	134	965212	97.7375 ug/L	93
88)	1,2,4-Trimethylbenzene	16.50	105	3015840	90.0968 ug/L	97
89)	sec-Butylbenzene	16.70	105	3582388	96.2728 ug/L	97
90)	p-Isopropyltoluene	16.84	119	3280554	98.0738 ug/L	97
91)	1,3-Dichlorobenzene	17.03	146	2122713	95.4303 ug/L	97
92)	1,4-Dichlorobenzene	17.15	146	2087365	89.8004 ug/L	96
93)	n-Butylbenzene	17.33	91	2807050	95.4503 ug/L	97
94)	1,2-Dichlorobenzene	17.62	146	1994021	93.3298 ug/L	96
95)	1,2-Dibromo-3-Chloropropan	18.54	75	116068	70.9566 ug/L	88
96)	1,2,4-Trichlorobenzene	19.60	180	1400403	89.8267 ug/L	97
97)	Hexachlorobutadiene	19.75	225	500014	91.4941 ug/L	97
98)	Naphthalene	19.97	128	2595808	84.8838 ug/L	99
99)	1,2,3-Trichlorobenzene	20.26	180	1268588	82.6651 ug/L	97

(#) = qualifier out of range (m) = manual integration
11M09748.D 8260_WTR.M Sun Oct 11 09:58:34 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100915\11M09748.D Vial: 10
Acq On : 9 Oct 2015 20:38 Operator: JDS
Sample : WG542333-09 100ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD72922 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 11 9:58 2015 Quant Results File: 8260_WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 09:57:42 2015
Response via : Initial Calibration

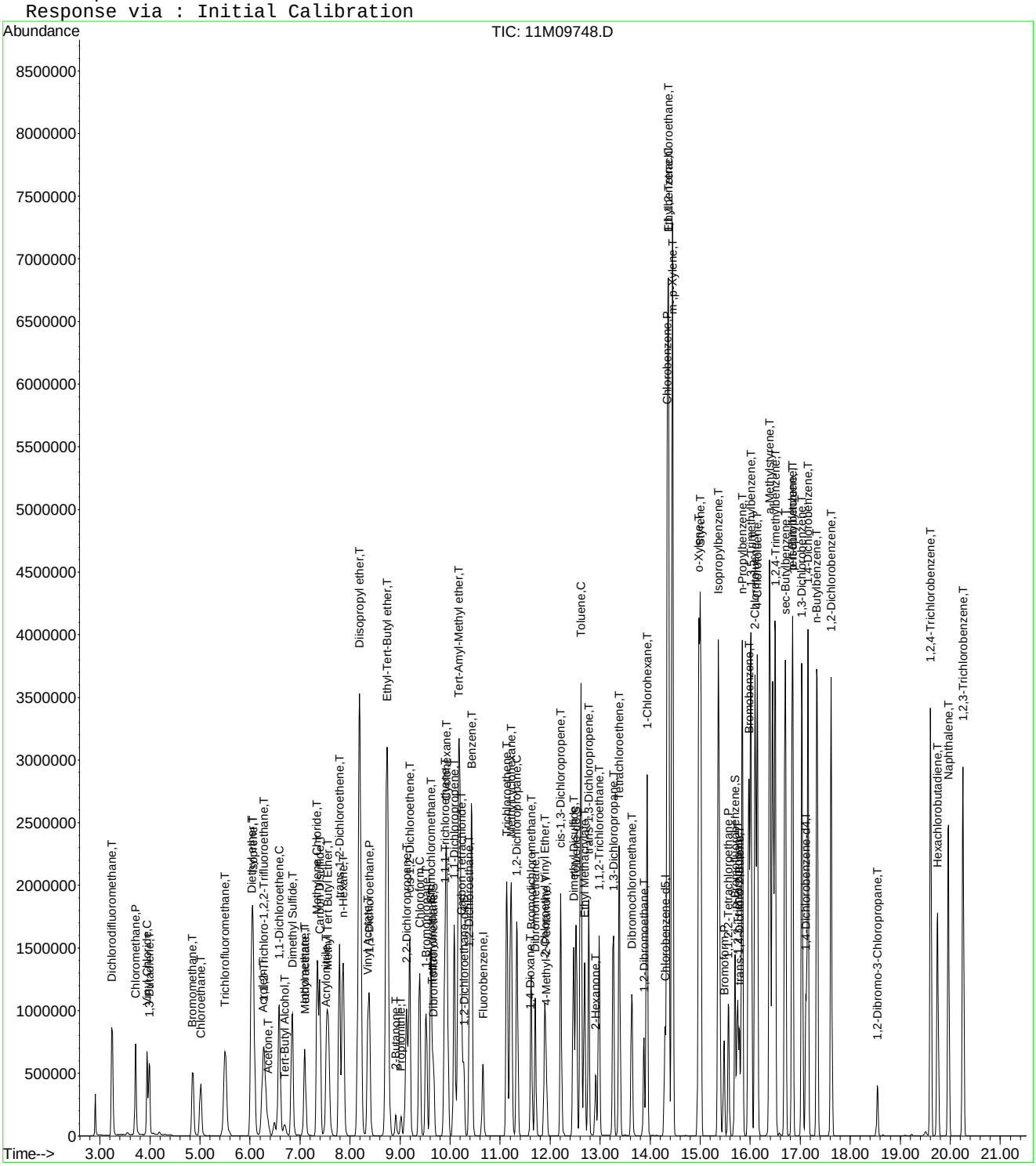

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100915\11M09749.D Vial: 11
Acq On : 9 Oct 2015 21:10 Operator: JDS
Sample : WG542333-10 200ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD72922 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 11 09:58:35 2015 Quant Results File: 8260_WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 09:57:42 2015
Response via : Initial Calibration
DataAcq Meth : 8260_WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.66	96	688630	25.00 ug/L	-0.02
56) Chlorobenzene-d5	14.30	117	649576	25.00 ug/L	-0.02
76) 1,4-Dichlorobenzene-d4	17.11	152	364079	25.00 ug/L	-0.03

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	793972	112.3015 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery = 449.20%#		
43) 1,2-Dichloroethane-d4	10.28	65	795825	98.7061 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 394.84%#		
57) Toluene-d8	12.52	98	2661153	85.4819 ug/L	-0.02
Spiked Amount 25.000	Range 88 - 110		Recovery = 341.92%#		
78) p-Bromofluorobenzene	15.70	95	1116155	87.0391 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 348.16%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.24	85	2248676	331.8818 ug/L	100
3) Chloromethane	3.71	50	1967231	224.4145 ug/L	99
4) Vinyl Chloride	3.94	62	1507273	235.8257 ug/L	100
5) 1,3-Butadiene	3.98	54	580070	150.8649 ug/L	99
6) Bromomethane	4.85	94	1198344	226.4129 ug/L	100
7) Chloroethane	5.01	64	1184955	249.9131 ug/L	99
8) Trichlorofluoromethane	5.50	101	2624344	261.0061 ug/L	99
9) Diethyl ether	6.03	59	4168	0.6699 ug/L	89
10) Isoprene	6.06	67	1894745	205.5934 ug/L	100
11) Acrolein	6.26	56	1535	1.8703 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	1494502	262.6801 ug/L	96
13) Acetone	6.36	43	356121	196.3018 ug/L	96
14) 1,1-Dichloroethene	6.58	61	2569087	244.7693 ug/L	96
15) Tert-Butyl Alcohol	6.70	59	5460	9.3266 ug/L #	81
16) Dimethyl Sulfide	6.84	62	1553863	209.5440 ug/L	99
17) Iodomethane	7.09	142	1662995	282.2741 ug/L	97
18) Methyl acetate	7.10	43	1059694	191.1056 ug/L	99
19) Methylene Chloride	7.34	84	1565779	232.7076 ug/L	96
20) Carbon Disulfide	7.39	76	4235565	214.5402 ug/L	99
21) Acrylonitrile	7.56	53	44662	17.2202 ug/L #	35
22) Methyl Tert Butyl Ether	7.56	73	3715745	210.6852 ug/L	99
23) trans-1,2-Dichloroethene	7.79	96	1609961	240.3730 ug/L	92
24) n-Hexane	7.86	57	2186716	220.4821 ug/L	100
25) Diisopropyl ether	8.19	45	29337	1.0140 ug/L	98
26) Vinyl Acetate	8.35	43	2740413	291.5420 ug/L	99
27) 1,1-Dichloroethane	8.39	63	3007769	228.1117 ug/L	99
28) Ethyl-Tert-Butyl ether	8.74	59	17624	0.7108 ug/L	99
29) 2-Butanone	8.91	43	579579	196.8570 ug/L	98
30) Propionitrile	9.03	54	3070	3.3251 ug/L #	60
31) 2,2-Dichloropropane	9.13	77	2136219	232.6197 ug/L	99
32) cis-1,2-Dichloroethene	9.19	96	1783680	231.1044 ug/L	92
33) Chloroform	9.39	83	2683750	223.8903 ug/L	99
34) 1-Bromopropane	9.52	122	308599	245.1605 ug/L	97
35) Bromochloromethane	9.62	130	1123672	267.0444 ug/L	93
36) Tetrahydrofuran	9.65	42	4847	2.4442 ug/L	89
38) 1,1,1-Trichloroethane	9.90	97	2442576	229.6115 ug/L	99
39) Cyclohexane	9.93	56	2974288	221.6719 ug/L	98
40) 1,1-Dichloropropene	10.08	75	2060591	230.1416 ug/L	96
41) Carbon Tetrachloride	10.23	117	2150286	224.8604 ug/L	100
42) Tert-Amyl-Methyl ether	10.18	73	9437	0.4984 ug/L #	97

(#) = qualifier out of range (m) = manual integration
11M09749.D 8260_WTR.M Sun Oct 11 09:58:36 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100915\11M09749.D Vial: 11
Acq On : 9 Oct 2015 21:10 Operator: JDS
Sample : WG542333-10 200ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD72922 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 11 09:58:35 2015 Quant Results File: 8260_WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 09:57:42 2015
Response via : Initial Calibration
DataAcq Meth : 8260_WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
44)	1,2-Dichloroethane	10.38	62	2206286	216.5341 ug/L		98
45)	Benzene	10.43	78	5529307	211.2357 ug/L		96
46)	Trichloroethene	11.14	130	1801073	237.6985 ug/L		98
47)	Methylcyclohexane	11.22	83	2184897	217.7885 ug/L		98
48)	1,2-Dichloropropane	11.33	63	1688277	221.6708 ug/L		99
49)	1,4-Dioxane	11.61	88	2728	53.4521 ug/L	#	11
50)	Bromodichloromethane	11.62	83	2093588	216.8742 ug/L		99
51)	Dibromomethane	11.70	93	903272	222.2010 ug/L		94
52)	2-Chloroethyl Vinyl Ether	11.89	63	896682	200.3773 ug/L		98
53)	4-Methyl-2-Pentanone	11.92	58	500023	194.3684 ug/L		99
54)	cis-1,3-Dichloropropene	12.21	75	2461701	218.8185 ug/L		99
55)	Dimethyl Disulfide	12.47	79	1179871	174.7441 ug/L		100
58)	Toluene	12.61	91	5852104	170.4892 ug/L		93
59)	Ethyl Methacrylate	12.69	69	1617508	164.9427 ug/L		97
60)	trans-1,3-Dichloropropene	12.77	75	2164347	176.7275 ug/L		96
61)	1,1,2-Trichloroethane	12.98	97	1286304	185.4455 ug/L		99
62)	2-Hexanone	12.91	43	888255	162.6818 ug/L		99
63)	1,3-Dichloropropane	13.27	76	2077660	180.1166 ug/L		100
64)	Tetrachloroethene	13.38	164	1548226	208.2337 ug/L		95
65)	Dibromochloromethane	13.63	129	1678166	182.8819 ug/L		99
66)	1,2-Dibromoethane	13.88	107	1325400	187.1863 ug/L		99
67)	1-Chlorohexane	13.94	91	2166207	190.5172 ug/L		96
68)	Chlorobenzene	14.34	112	4407304	183.9649 ug/L		94
69)	1,1,1,2-Tetrachloroethane	14.36	131	1701631	183.6151 ug/L		99
70)	Ethylbenzene	14.36	106	2329348	184.2206 ug/L		76
71)	m-,p-Xylene	14.44	106	4961416	334.9540 ug/L		73
72)	o-Xylene	14.97	106	2955798	193.4772 ug/L		84
73)	Styrene	15.00	104	4618758	175.5591 ug/L		98
74)	Bromoform	15.48	173	1065196	180.4028 ug/L		100
75)	Isopropylbenzene	15.36	105	6301753	175.5226 ug/L		90
77)	1,1,2,2-Tetrachloroethane	15.56	83	1370348	178.3590 ug/L		100
79)	1,2,3-Trichloropropane	15.75	110	420020	180.5857 ug/L		94
80)	trans-1,4-Dichloro-2-Buten	15.79	53	552989	185.6572 ug/L		94
81)	n-Propylbenzene	15.84	91	6834000	156.4533 ug/L		87
82)	Bromobenzene	15.97	156	2255400	194.2766 ug/L		85
83)	1,3,5-Trimethylbenzene	16.02	105	5244459	171.0253 ug/L		91
84)	2-Chlorotoluene	16.10	91	4817816	161.6123 ug/L		89
85)	4-Chlorotoluene	16.14	91	4367748	154.0713 ug/L		89
86)	a-Methylstyrene	16.39	118	3501003	195.8708 ug/L		98
87)	tert-Butylbenzene	16.84	134	1926340	204.6774 ug/L		77
88)	1,2,4-Trimethylbenzene	16.50	105	5221839	163.6903 ug/L		89
89)	sec-Butylbenzene	16.70	105	6311226	177.9685 ug/L		90
90)	p-Isopropyltoluene	16.84	119	5750395	180.3857 ug/L		90
91)	1,3-Dichlorobenzene	17.03	146	3990453	188.2417 ug/L		99
92)	1,4-Dichlorobenzene	17.15	146	3873079	174.8376 ug/L		99
93)	n-Butylbenzene	17.33	91	5079959	181.2533 ug/L		92
94)	1,2-Dichlorobenzene	17.62	146	3751948	184.2662 ug/L		98
95)	1,2-Dibromo-3-Chloropropan	18.54	75	241549	154.9474 ug/L		88
96)	1,2,4-Trichlorobenzene	19.60	180	2791279	187.8685 ug/L		98
97)	Hexachlorobutadiene	19.75	225	1017352	195.3353 ug/L		97
98)	Naphthalene	19.97	128	4833760	165.8577 ug/L	#	96
99)	1,2,3-Trichlorobenzene	20.26	180	2570653	175.7695 ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100915\11M09749.D Vial: 11
Acq On : 9 Oct 2015 21:10 Operator: JDS
Sample : WG542333-10 200ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD72922 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 11 9:58 2015 Quant Results File: 8260_WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 09:57:42 2015
Response via : Initial Calibration

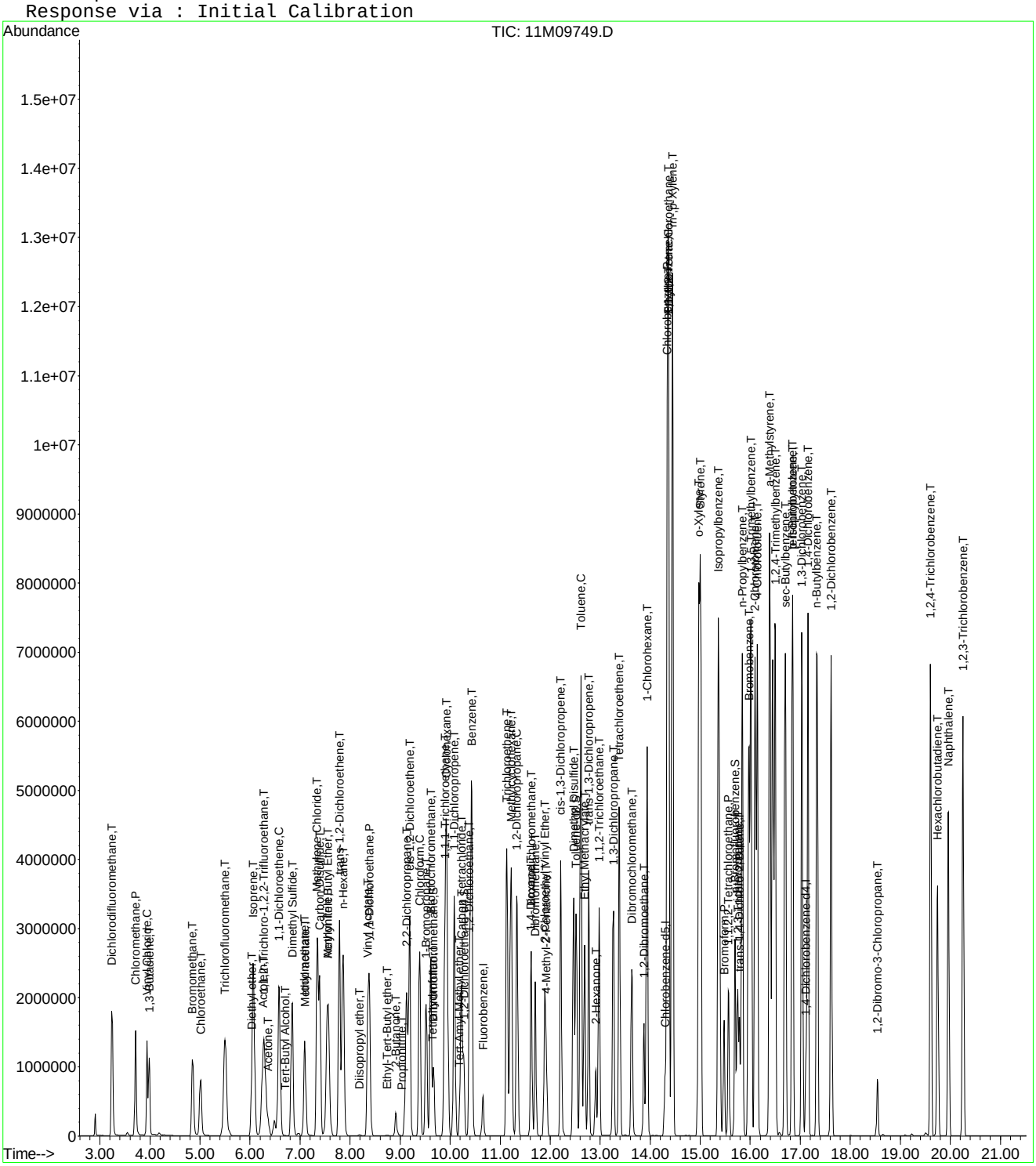

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100915\11M09750.D Vial: 12
Acq On : 9 Oct 2015 21:42 Operator: JDS
Sample : WG542333-11 300ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD72922 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 11 09:58:37 2015 Quant Results File: 8260_WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 09:57:42 2015
Response via : Initial Calibration
DataAcq Meth : 8260_WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.66	96	669915	25.00 ug/L	-0.02
56) Chlorobenzene-d5	14.30	117	639263	25.00 ug/L	-0.02
76) 1,4-Dichlorobenzene-d4	17.11	152	359452	25.00 ug/L	-0.03

System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	1139547	165.6833 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery = 662.72%#		
43) 1,2-Dichloroethane-d4	10.28	65	1115458	142.2151 ug/L	-0.02
Spiked Amount 25.000	Range 80 - 120		Recovery = 568.88%#		
57) Toluene-d8	12.52	98	3816006	124.5558 ug/L	-0.02
Spiked Amount 25.000	Range 88 - 110		Recovery = 498.24%#		
78) p-Bromofluorobenzene	15.70	95	1601520	126.4961 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery = 506.00%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.24	85	3286100	498.5441 ug/L	99
3) Chloromethane	3.71	50	3023617	354.5590 ug/L	98
4) Vinyl Chloride	3.94	62	2014836	324.0448 ug/L	98
5) 1,3-Butadiene	3.98	54	842712	225.2958 ug/L	99
6) Bromomethane	4.85	94	1756850	341.2091 ug/L	100
7) Chloroethane	5.00	64	1733366	375.7887 ug/L	100
8) Trichlorofluoromethane	5.50	101	3930154	401.7961 ug/L	98
9) Diethyl ether	6.03	59	1773173	292.9652 ug/L	100
10) Isoprene	6.06	67	2857689	318.7422 ug/L	100
11) Acrolein	6.27	56	135886	170.1923 ug/L	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	2255777	407.5614 ug/L	96
13) Acetone	6.37	43	539749	305.8333 ug/L	94
14) 1,1-Dichloroethene	6.58	61	3806948	372.8389 ug/L	95
15) Tert-Butyl Alcohol	6.70	59	326669	573.5970 ug/L	99
16) Dimethyl Sulfide	6.83	62	2259613	313.2296 ug/L	99
17) Iodomethane	7.09	142	2399091	418.5940 ug/L	97
18) Methyl acetate	7.10	43	1616511	299.6663 ug/L	99
19) Methylene Chloride	7.34	84	2259136	345.1347 ug/L	93
20) Carbon Disulfide	7.39	76	5955458	310.0835 ug/L	97
21) Acrylonitrile	7.53	53	430977	170.8124 ug/L	95
22) Methyl Tert Butyl Ether	7.56	73	5401343	314.8155 ug/L	98
23) trans-1,2-Dichloroethene	7.79	96	2389387	366.7103 ug/L	90
24) n-Hexane	7.86	57	3218665	333.5977 ug/L	99
25) Diisopropyl ether	8.19	45	8744460	310.6934 ug/L	96
26) Vinyl Acetate	8.35	43	4133052	451.9832 ug/L	99
27) 1,1-Dichloroethane	8.39	63	4325127	337.1849 ug/L	98
28) Ethyl-Tert-Butyl ether	8.74	59	7442682	308.5495 ug/L	96
29) 2-Butanone	8.91	43	876006	305.8522 ug/L	99
30) Propionitrile	9.02	54	279541	311.2313 ug/L	99
31) 2,2-Dichloropropane	9.13	77	3161368	353.8685 ug/L	99
32) cis-1,2-Dichloroethene	9.19	96	2574989	342.9516 ug/L	92
33) Chloroform	9.39	83	3818288	327.4373 ug/L	97
34) 1-Bromopropane	9.52	122	533082	435.3277 ug/L	97
35) Bromochloromethane	9.62	130	1626981	397.4592 ug/L	93
36) Tetrahydrofuran	9.64	42	567174	294.0005 ug/L	100
38) 1,1,1-Trichloroethane	9.90	97	3625140	350.2972 ug/L	100
39) Cyclohexane	9.93	56	4358658	333.9233 ug/L	98
40) 1,1-Dichloropropene	10.08	75	3040231	349.0407 ug/L	95
41) Carbon Tetrachloride	10.23	117	3143095	337.8629 ug/L	99
42) Tert-Amyl-Methyl ether	10.18	73	5466522	296.7547 ug/L	97

(#) = qualifier out of range (m) = manual integration
11M09750.D 8260_WTR.M Sun Oct 11 09:58:38 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100915\11M09750.D Vial: 12
Acq On : 9 Oct 2015 21:42 Operator: JDS
Sample : WG542333-11 300ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD72922 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 11 09:58:37 2015 Quant Results File: 8260_WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 09:57:42 2015
Response via : Initial Calibration
DataAcq Meth : 8260_WTR

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.39	62	3098281	312.5730 ug/L	97
45) Benzene	10.43	78	7333912	288.0041 ug/L	91
46) Trichloroethene	11.14	130	2641899	358.4079 ug/L	98
47) Methylcyclohexane	11.22	83	3230475	331.0065 ug/L	98
48) 1,2-Dichloropropane	11.33	63	2439077	329.1975 ug/L	99
49) 1,4-Dioxane	11.60	88	35414	713.2822 ug/L	82
50) Bromodichloromethane	11.62	83	3038570	323.5579 ug/L	98
51) Dibromomethane	11.70	93	1302948	329.4737 ug/L	94
52) 2-Chloroethyl Vinyl Ether	11.89	63	1322118	303.7013 ug/L	98
53) 4-Methyl-2-Pentanone	11.92	58	752292	300.5995 ug/L	99
54) cis-1,3-Dichloropropene	12.21	75	3492997	319.1635 ug/L	97
55) Dimethyl Disulfide	12.47	79	1830900	278.7397 ug/L	96
58) Toluene	12.61	91	7465664	221.0058 ug/L	86
59) Ethyl Methacrylate	12.69	69	2350841	243.5906 ug/L	97
60) trans-1,3-Dichloropropene	12.77	75	3050016	253.0637 ug/L	94
61) 1,1,2-Trichloroethane	12.98	97	1865192	273.2415 ug/L	99
62) 2-Hexanone	12.91	43	1350266	251.2877 ug/L	100
63) 1,3-Dichloropropane	13.27	76	2959466	260.7012 ug/L	99
64) Tetrachloroethene	13.38	164	2267254	309.8612 ug/L	96
65) Dibromochloromethane	13.63	129	2450962	271.4081 ug/L	98
66) 1,2-Dibromoethane	13.88	107	1914611	274.7628 ug/L	99
67) 1-Chlorohexane	13.94	91	3153267	281.8028 ug/L	97
68) Chlorobenzene	14.34	112	5810901	246.4654 ug/L	89
69) 1,1,1,2-Tetrachloroethane	14.36	131	2398589	262.9960 ug/L	100
70) Ethylbenzene	14.36	106	3265847	262.4521 ug/L	61
71) m-,p-Xylene	14.44	106	6329355	434.1995 ug/L	66
72) o-Xylene	14.97	106	4129329	274.6533 ug/L	74
73) Styrene	15.00	104	5989084	231.3178 ug/L	93
74) Bromoform	15.48	173	1607915	276.7116 ug/L	100
75) Isopropylbenzene	15.36	105	7928004	224.3809 ug/L	81
77) 1,1,2,2-Tetrachloroethane	15.56	83	2065673	272.3205 ug/L	100
79) 1,2,3-Trichloropropane	15.75	110	630837	274.7169 ug/L	93
80) trans-1,4-Dichloro-2-Buten	15.79	53	838098	285.0000 ug/L	93
81) n-Propylbenzene	15.84	91	8362165	193.9024 ug/L #	77
82) Bromobenzene	15.97	156	3145920	274.4728 ug/L	84
83) 1,3,5-Trimethylbenzene	16.02	105	6642916	219.4184 ug/L	86
84) 2-Chlorotoluene	16.10	91	6047059	205.4581 ug/L	82
86) a-Methylstyrene	16.39	118	4797996	271.8891 ug/L	95
87) tert-Butylbenzene	16.84	134	2761648	297.2076 ug/L	65
88) 1,2,4-Trimethylbenzene	16.50	105	6565999	208.4755 ug/L	81
89) sec-Butylbenzene	16.70	105	7970656	227.6556 ug/L	82
90) p-Isopropyltoluene	16.84	119	7291620	231.6771 ug/L	81
91) 1,3-Dichlorobenzene	17.03	146	5340470	255.1689 ug/L	97
92) 1,4-Dichlorobenzene	17.15	146	5177685	236.7384 ug/L	97
93) n-Butylbenzene	17.33	91	6636010	239.8211 ug/L	84
94) 1,2-Dichlorobenzene	17.62	146	5203965	258.8677 ug/L	97
95) 1,2-Dibromo-3-Chloropropan	18.54	75	392276	254.8740 ug/L	88
96) 1,2,4-Trichlorobenzene	19.60	180	4034359	275.0299 ug/L	99
97) Hexachlorobutadiene	19.75	225	1548604	301.1651 ug/L	96
98) Naphthalene	19.97	128	6485598	225.4008 ug/L #	90
99) 1,2,3-Trichlorobenzene	20.26	180	3757675	260.2399 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100915\11M09750.D Vial: 12
Acq On : 9 Oct 2015 21:42 Operator: JDS
Sample : WG542333-11 300ug/L STD 8260 Inst : hpms11
Misc : 1,1 STD72922 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 11 9:58 2015 Quant Results File: 8260_WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 09:57:42 2015
Response via : Initial Calibration

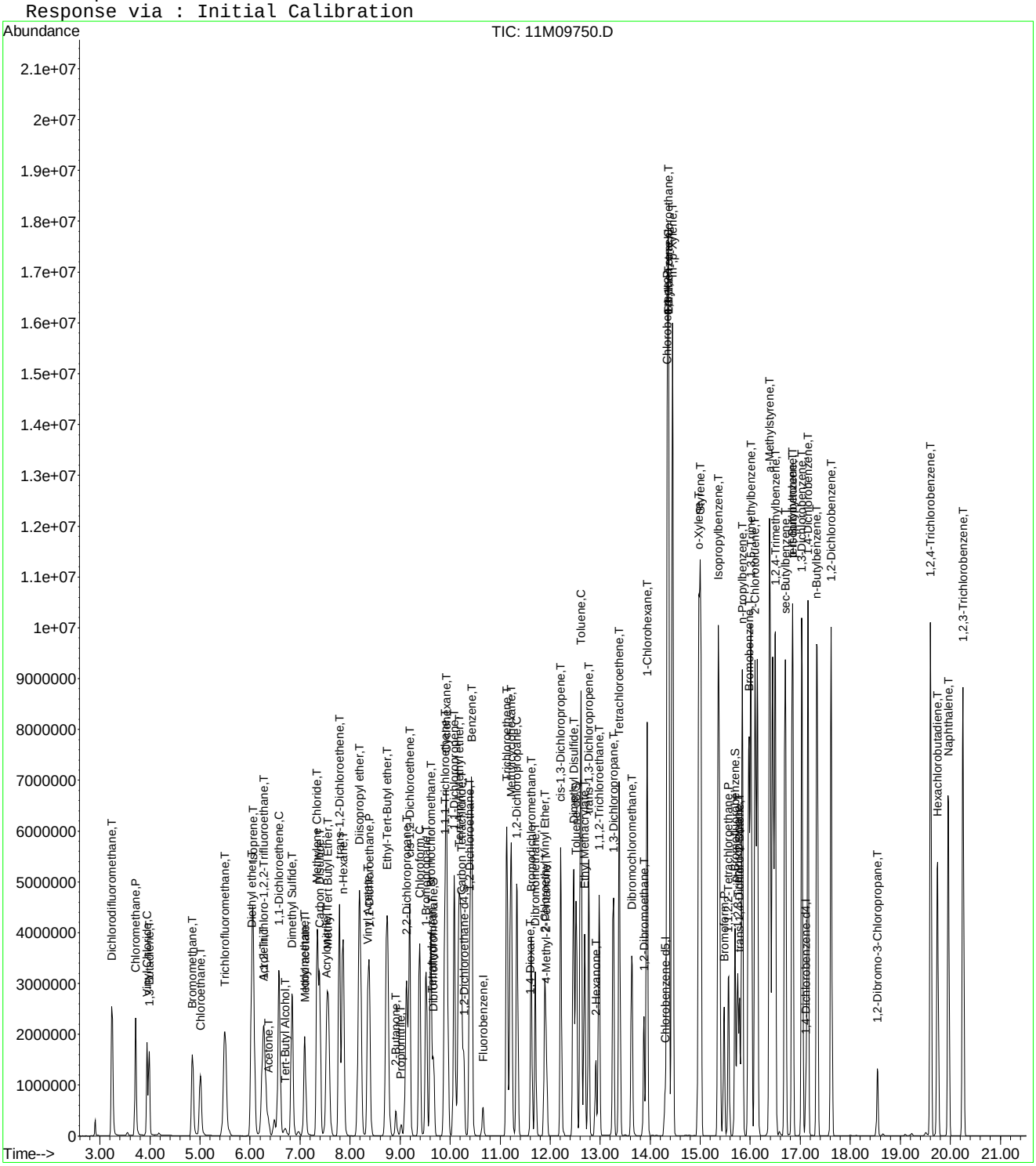

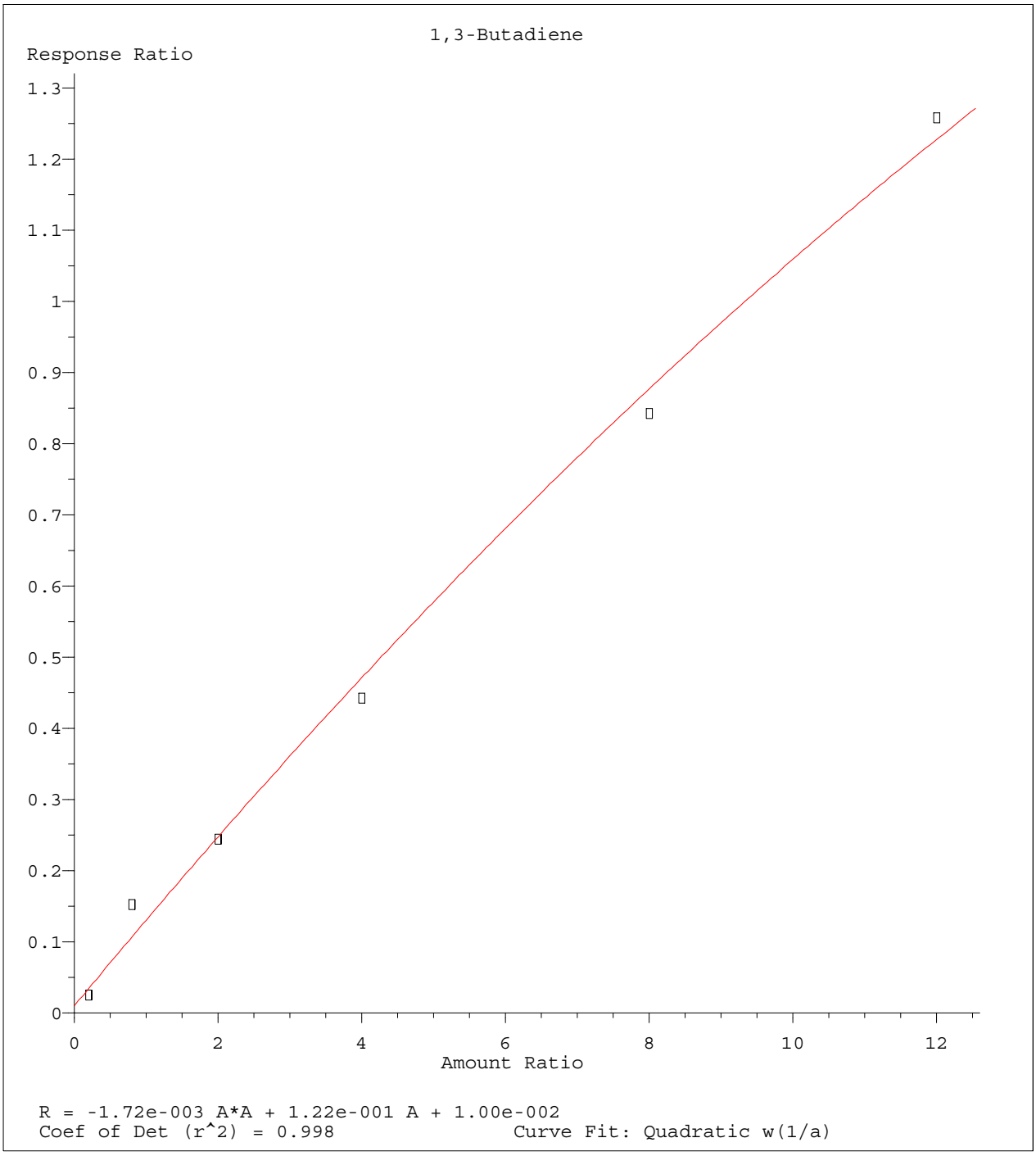

Method Name: C:\MSDCHEM\1\METHODS\8260_WTR.M
Calibration Table Last Updated: Sun Oct 11 10:32:15 2015

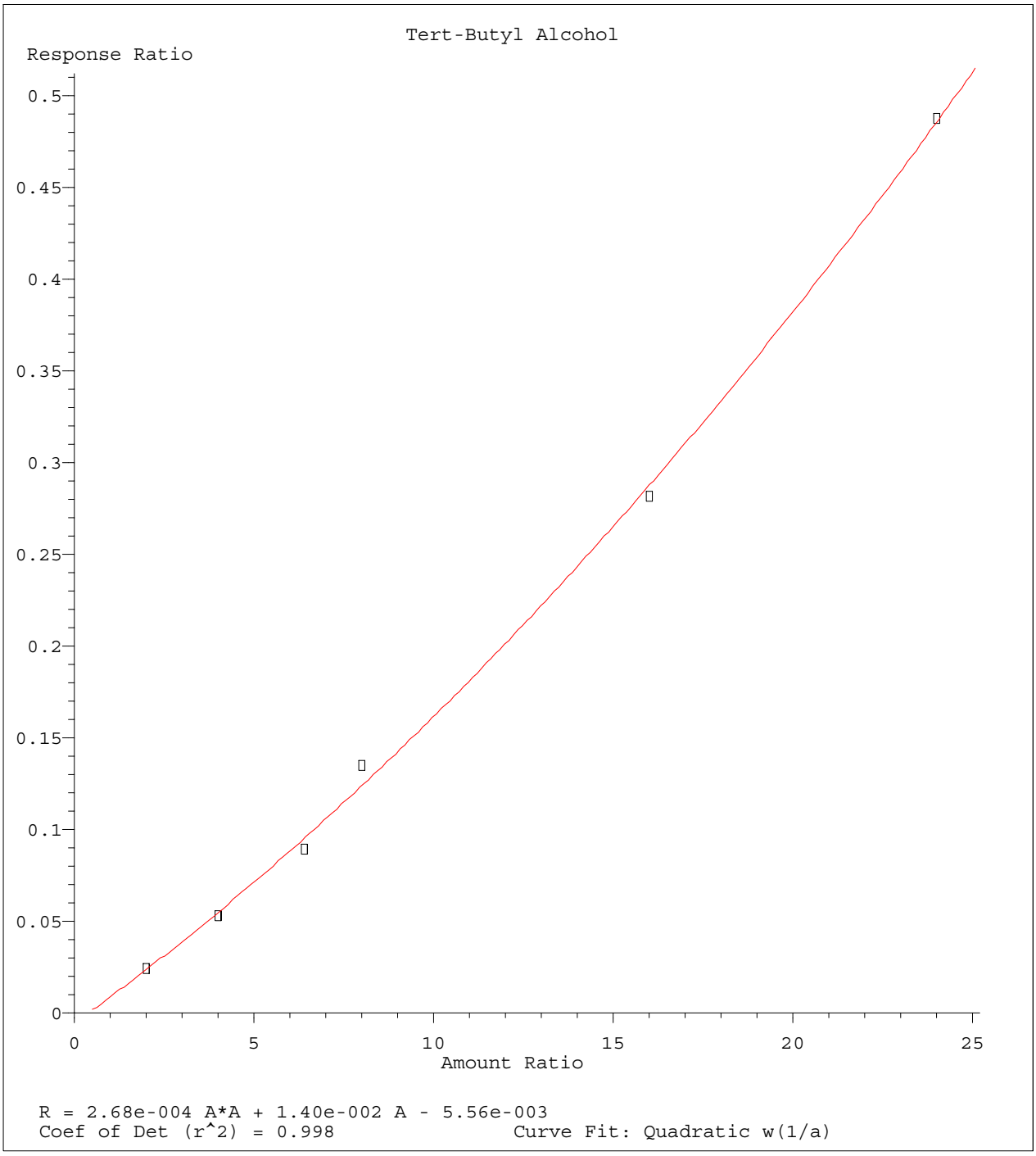

Method Name: C:\MSDCHEM\1\METHODS\8260_WTR.M
Calibration Table Last Updated: Sun Oct 11 10:32:15 2015

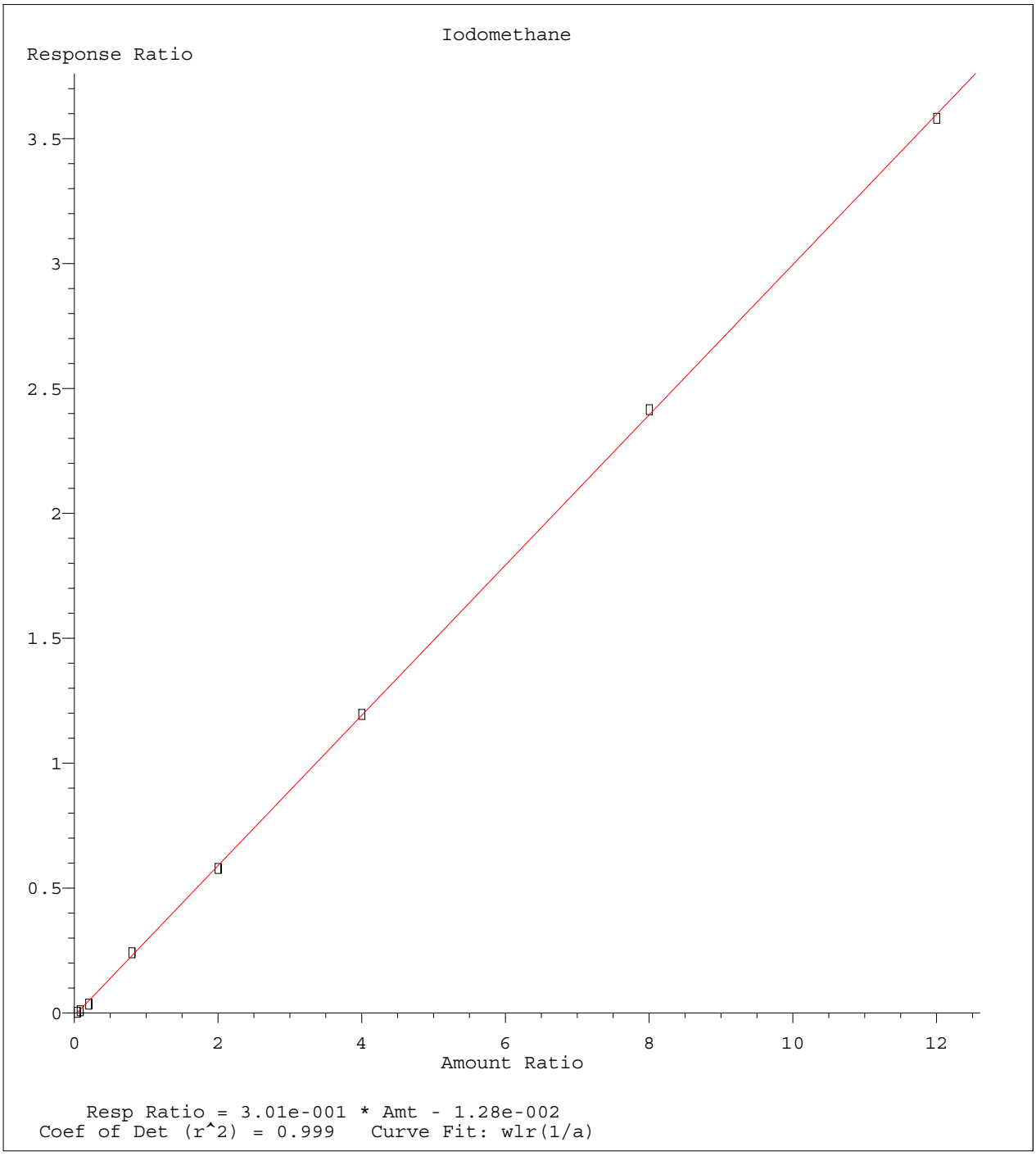

Method Name: C:\MSDCHEM\1\METHODS\8260_WTR.M
Calibration Table Last Updated: Sun Oct 11 10:32:15 2015

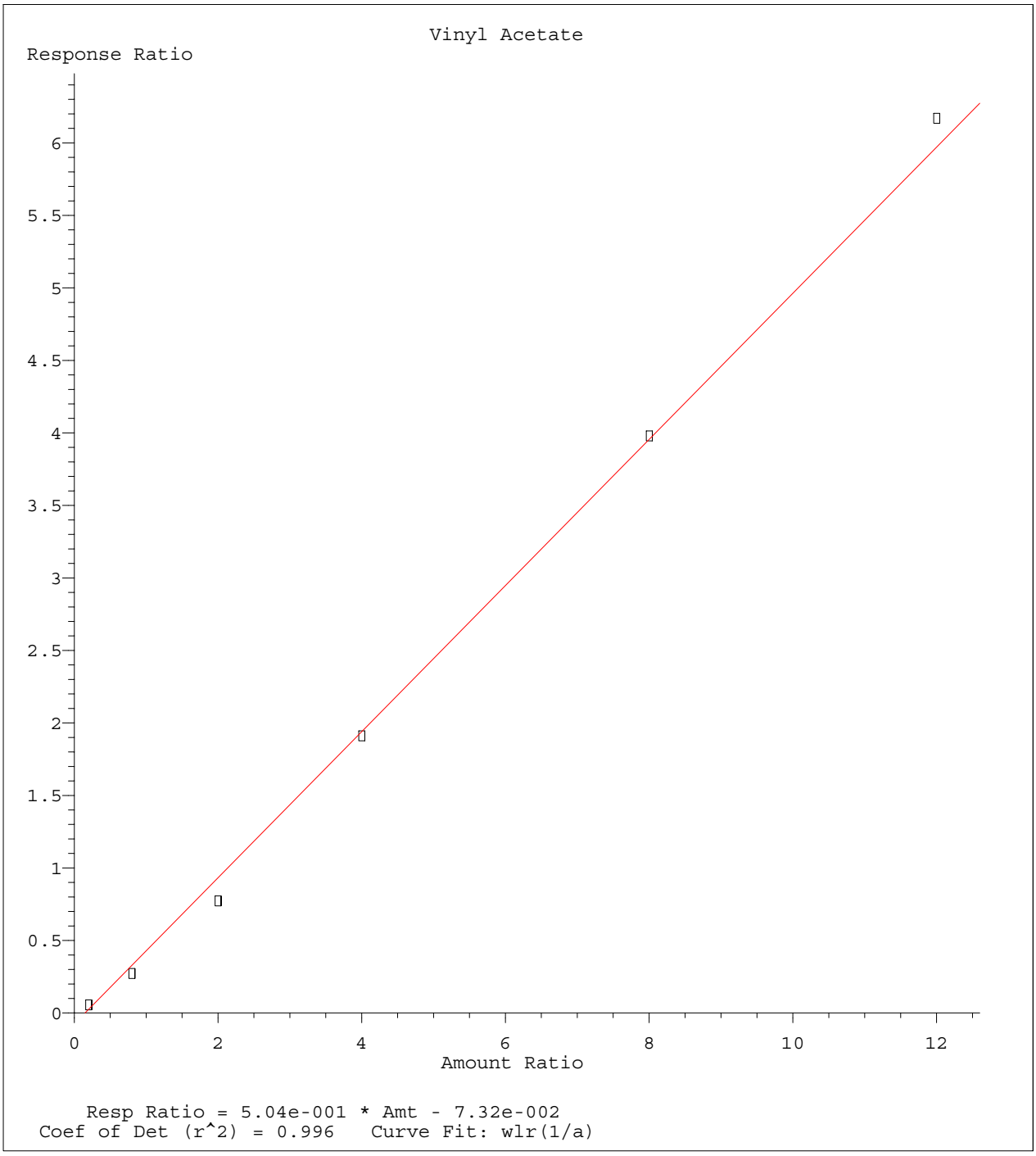

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Calibration Table Last Updated: Sun Oct 11 10:32:15 2015

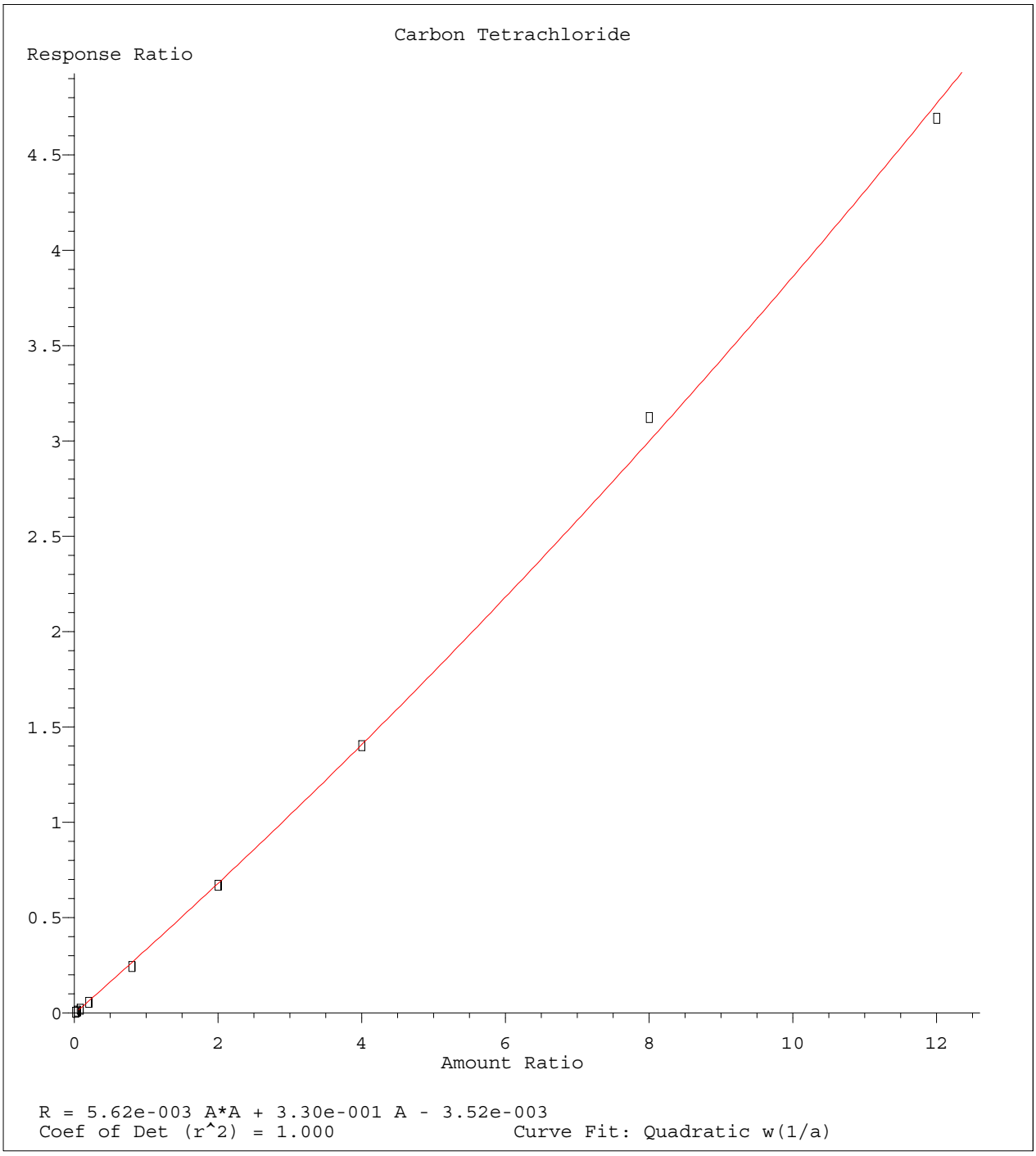

Method Name: C:\MSDCHEM\1\METHODS\8260_WTR.M
Calibration Table Last Updated: Sun Oct 11 10:32:15 2015

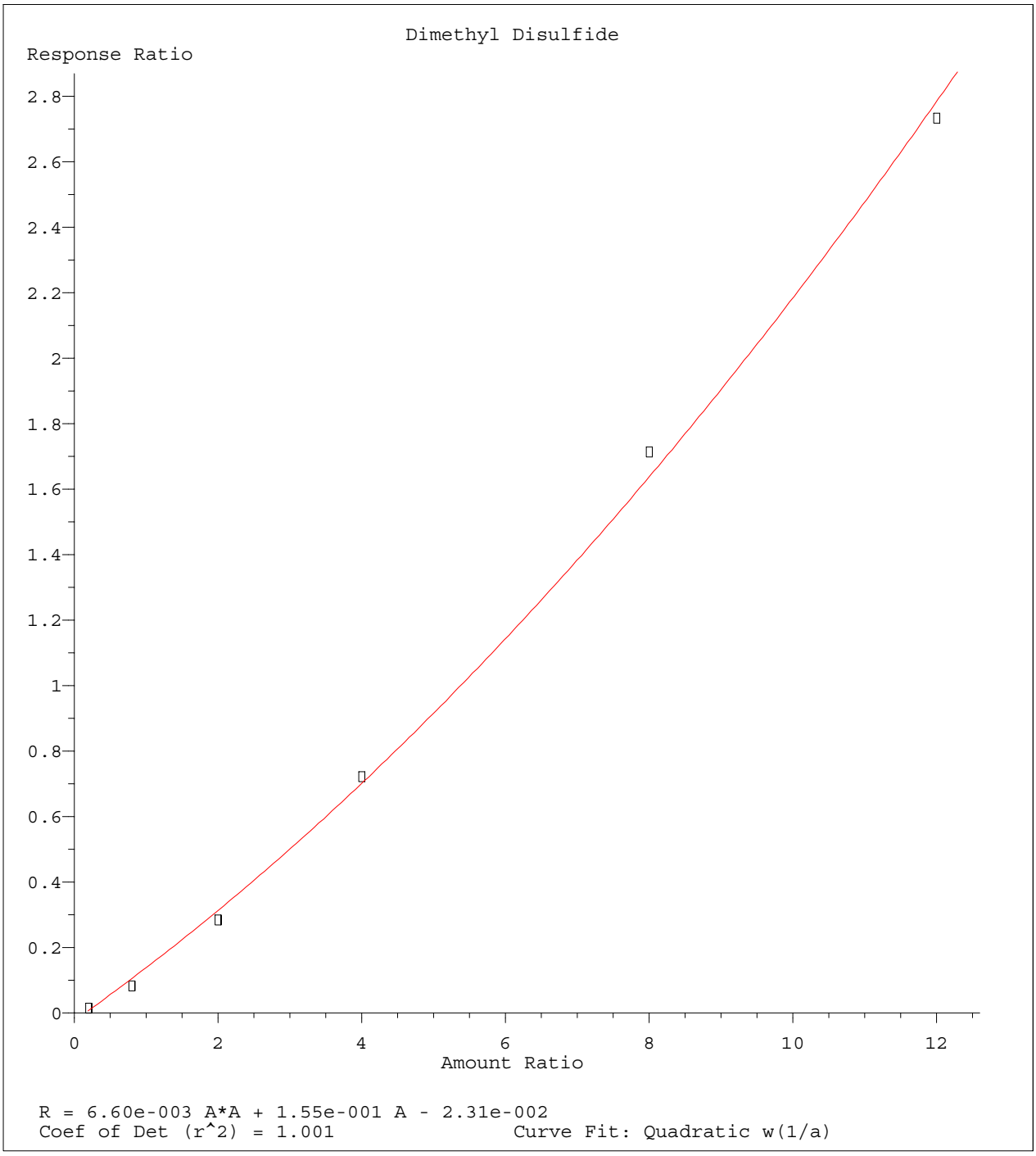

Method Name: C:\MSDCHEM\1\METHODS\8260_WTR.M
Calibration Table Last Updated: Sun Oct 11 10:32:15 2015

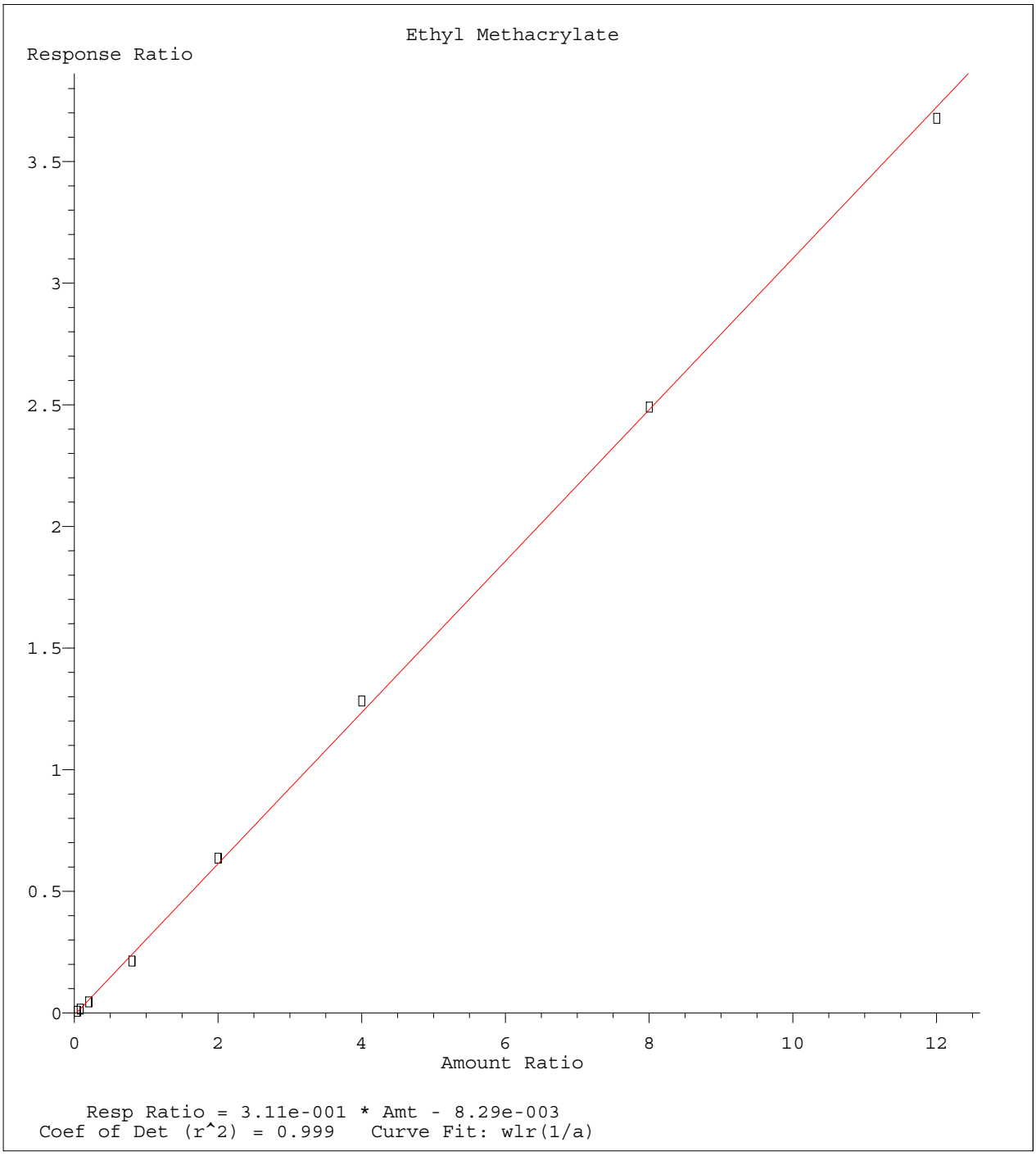

Method Name: C:\MSDCHEM\1\METHODS\8260_WTR.M
Calibration Table Last Updated: Sun Oct 11 10:32:15 2015

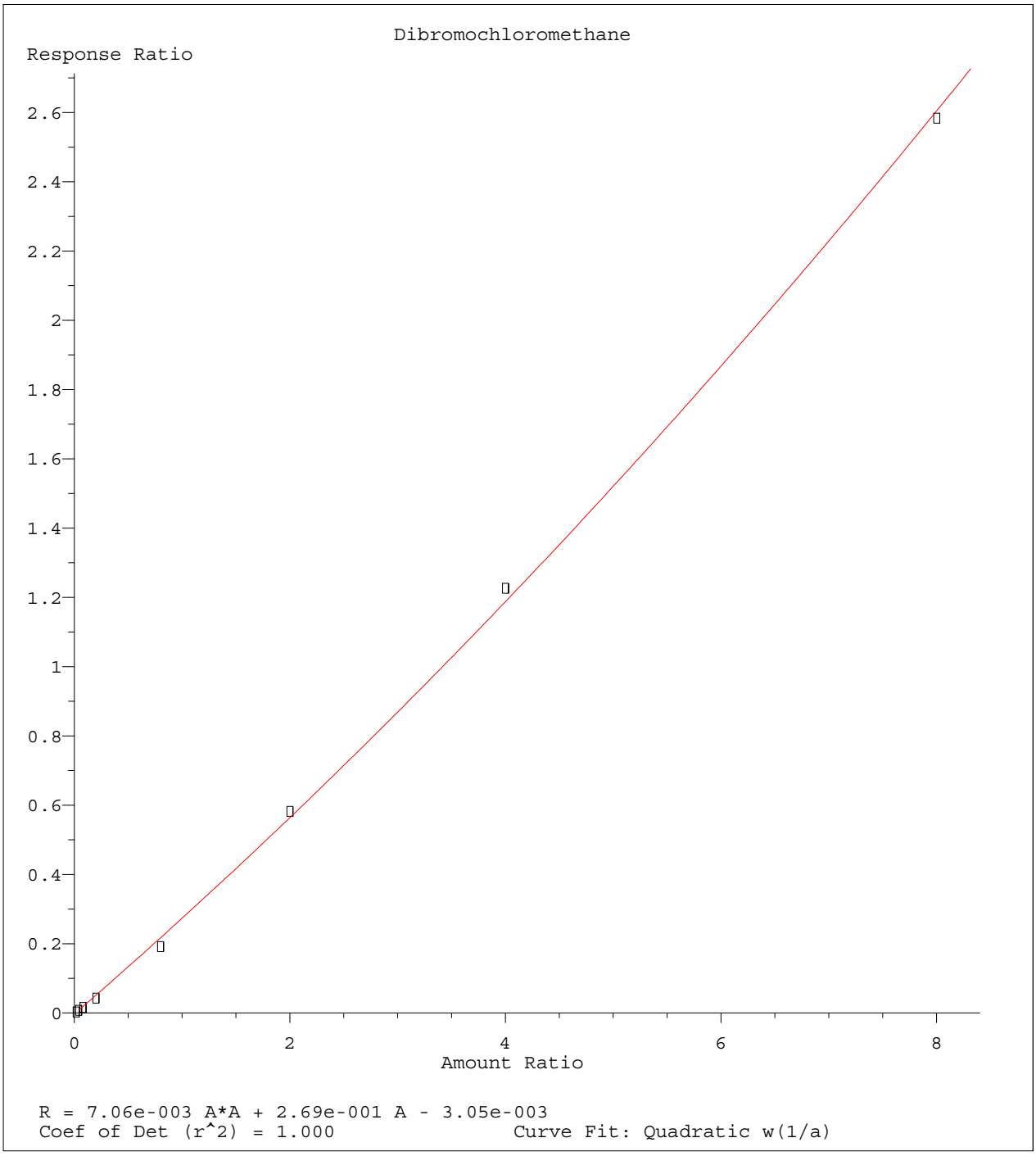

Method Name: C:\MSDCHEM\1\METHODS\8260_WTR.M
Calibration Table Last Updated: Sun Oct 11 10:32:15 2015

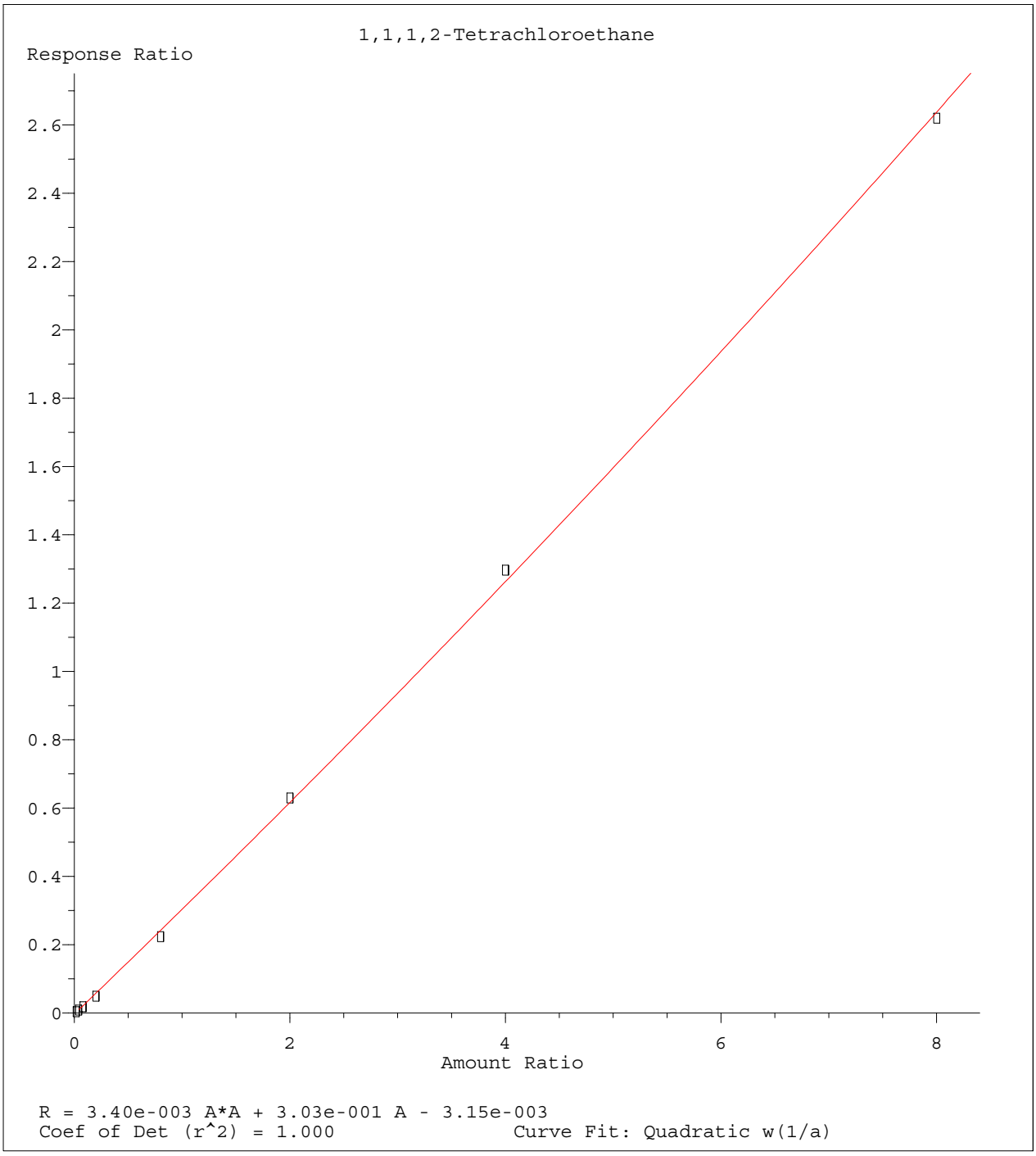

Method Name: C:\MSDCHEM\1\METHODS\8260_WTR.M
Calibration Table Last Updated: Sun Oct 11 10:32:15 2015

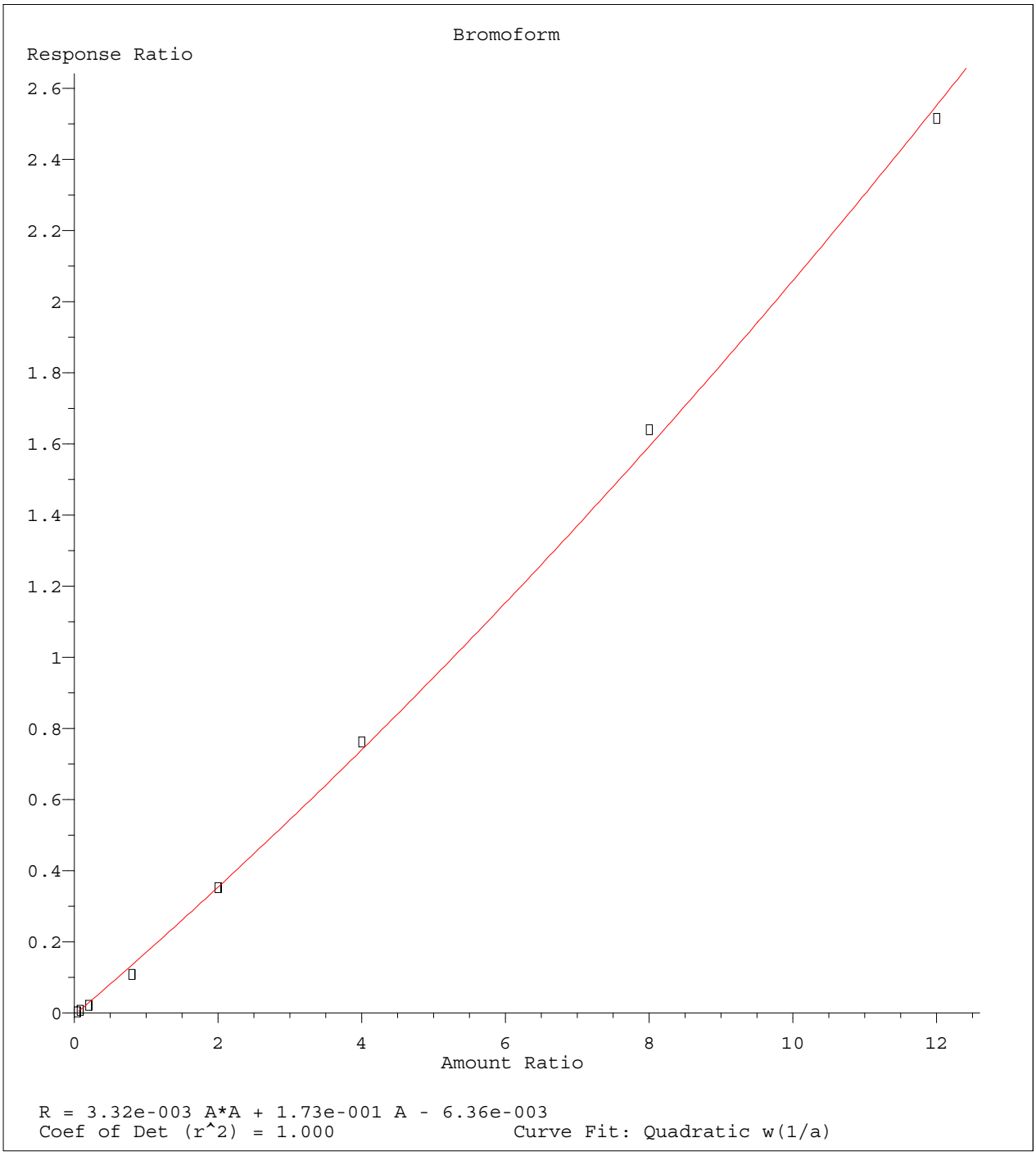

Method Name: C:\MSDCHEM\1\METHODS\8260_WTR.M
Calibration Table Last Updated: Sun Oct 11 10:32:15 2015

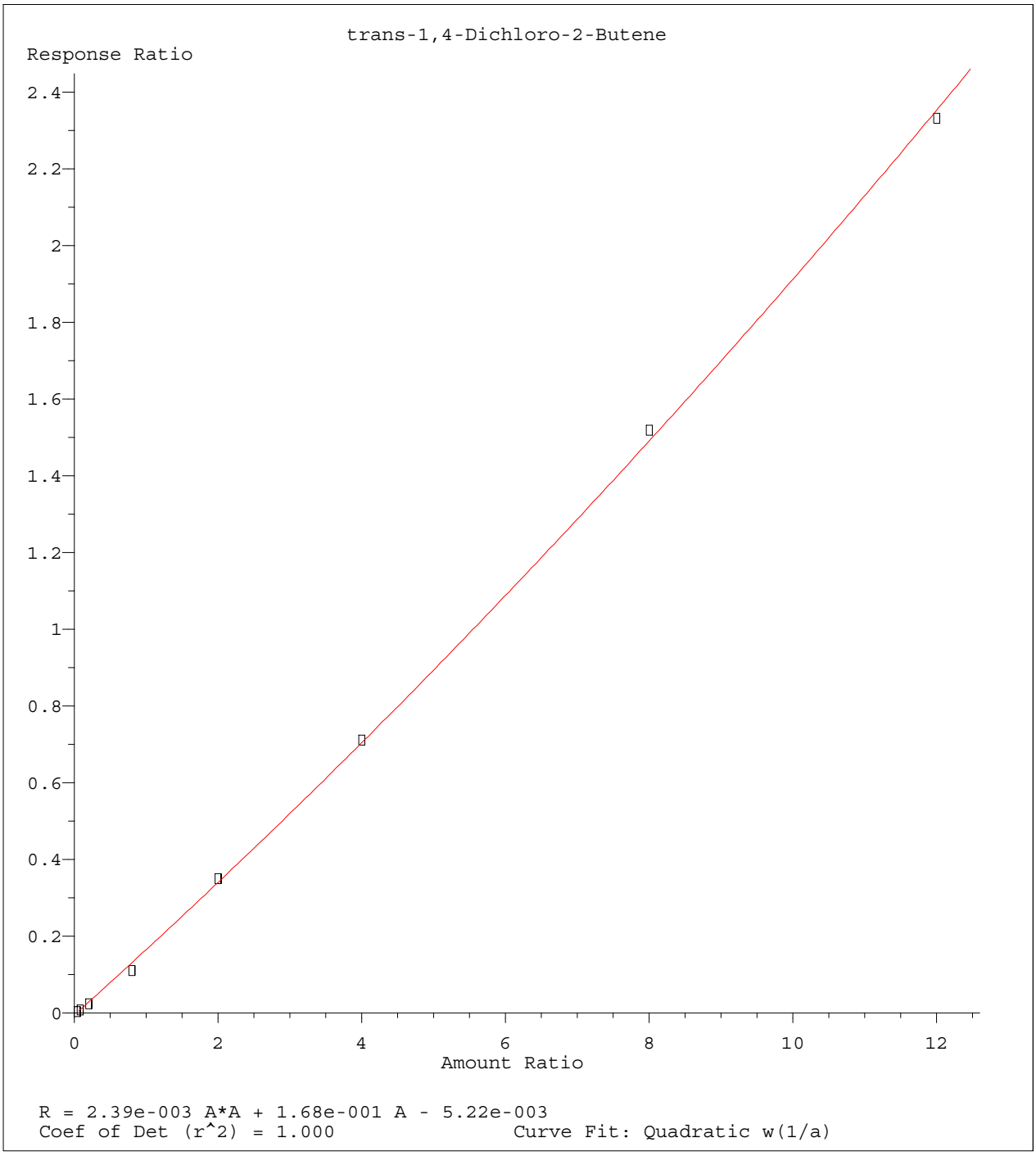

Method Name: C:\MSDCHEM\1\METHODS\8260_WTR.M
Calibration Table Last Updated: Sun Oct 11 10:32:15 2015

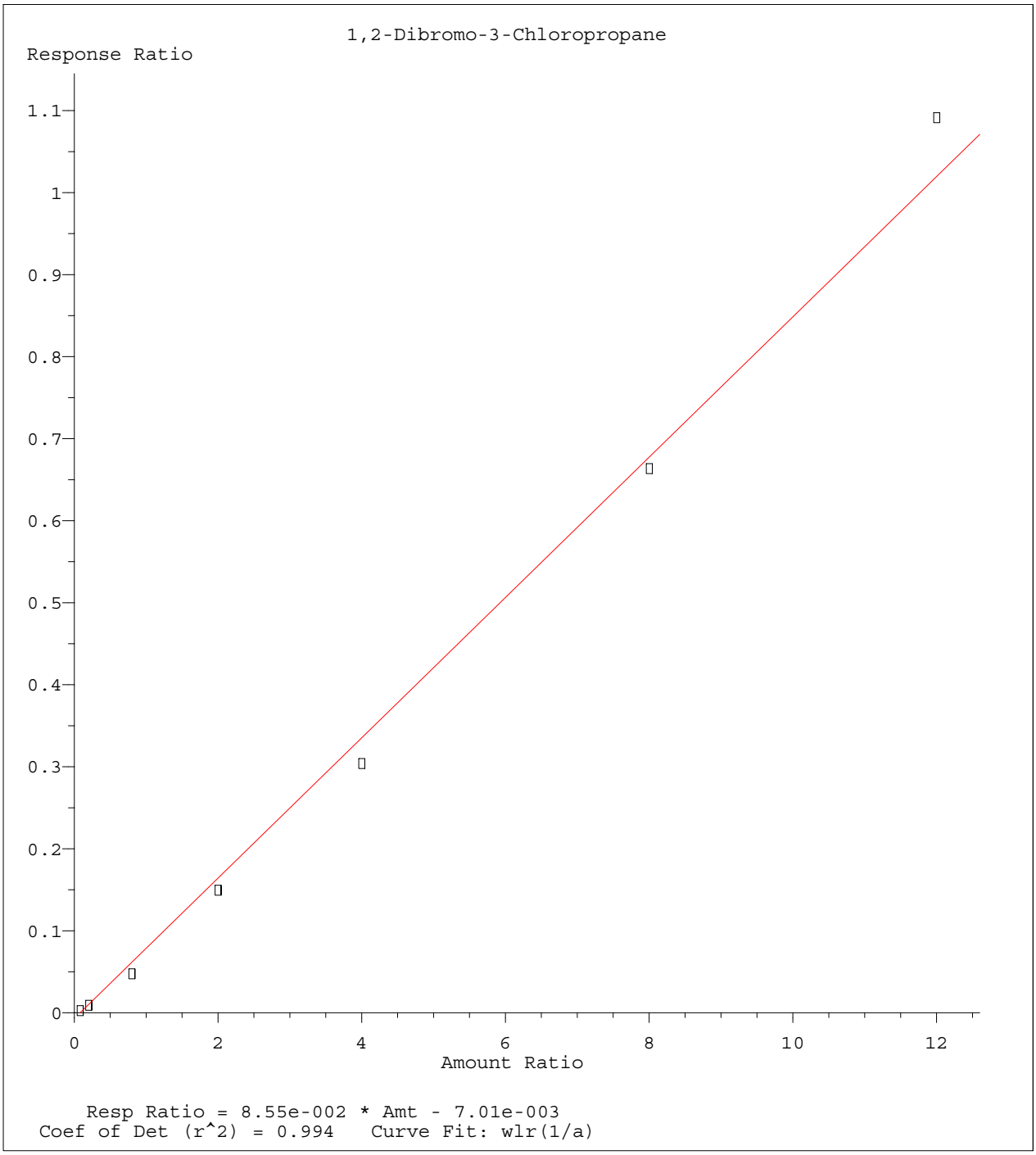

Method Name: C:\MSDCHEM\1\METHODS\8260_WTR.M
Calibration Table Last Updated: Sun Oct 11 10:32:15 2015

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100915\11M09752.D Vial: 14
Acq On : 9 Oct 2015 22:45 Operator: JDS
Sample : WG542333-12 50ug/L ALT SRC 8260 Inst : hpms11
Misc : 1,1 STD72901 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 11 10:33:33 2015 Quant Results File: 8260_WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 10:32:15 2015
Response via : Initial Calibration
DataAcq Meth : 8260_WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	648513	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.29	117	581634	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.11	152	358881	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	188272	25.5249 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.08%		
43) 1,2-Dichloroethane-d4	10.27	65	189481	24.9780 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.92%		
57) Toluene-d8	12.52	98	647059	26.0967 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.40%		
78) p-Bromofluorobenzene	15.70	95	258018	24.9527 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.80%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.24	85	527554	54.9087 ug/L	100
3) Chloromethane	3.71	50	510482	55.6625 ug/L	98
4) Vinyl Chloride	3.94	62	336258	45.5191 ug/L	100
5) 1,3-Butadiene	3.98	54	147453	45.6584 ug/L	96
6) Bromomethane	4.85	94	239231	48.3881 ug/L	99
7) Chloroethane	5.00	64	276510	51.4321 ug/L	99
8) Trichlorofluoromethane	5.50	101	561020	47.2795 ug/L	100
9) Diethyl ether	6.03	59	625133	113.5902 ug/L	99
10) Isoprene	6.06	67	575936	65.0947 ug/L	100
11) Acrolein	6.27	56	70761	90.8339 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	337217	50.7494 ug/L	100
13) Acetone	6.36	43	91185	54.6245 ug/L	100
14) 1,1-Dichloroethene	6.58	61	560172	47.3371 ug/L	99
15) Tert-Butyl Alcohol	6.70	59	102568	245.6160 ug/L	95
16) Dimethyl Sulfide	6.83	62	466003	65.0065 ug/L	100
17) Iodomethane	7.09	142	263620	34.8456 ug/L	99
18) Methyl acetate	7.10	43	249865	50.8962 ug/L	99
19) Methylene Chloride	7.34	84	348486	48.5085 ug/L	97
20) Carbon Disulfide	7.39	76	1068508	53.2843 ug/L	100
21) Acrylonitrile	7.53	53	129759	54.7870 ug/L	99
22) Methyl Tert Butyl Ether	7.56	73	921954	53.6129 ug/L	100
23) trans-1,2-Dichloroethene	7.79	96	358034	48.0217 ug/L	99
24) n-Hexane	7.86	57	545453	54.1874 ug/L	100
25) Diisopropyl ether	8.19	45	3098950	104.1858 ug/L	100
26) Vinyl Acetate	8.35	43	705022	57.5890 ug/L	99
27) 1,1-Dichloroethane	8.39	63	689066	48.1238 ug/L	100
28) Ethyl-Tert-Butyl ether	8.74	59	2453895	99.6514 ug/L	100
29) 2-Butanone	8.91	43	144312	53.7561 ug/L	99
30) Propionitrile	9.02	54	87242	102.5739 ug/L	97
31) 2,2-Dichloropropane	9.13	77	481320	48.5840 ug/L	100
32) cis-1,2-Dichloroethene	9.19	96	403356	47.9234 ug/L	99
33) Chloroform	9.39	83	637646	50.3506 ug/L	100
34) 1-Bromopropane	9.52	122	86671	59.1257 ug/L	99
35) Bromochloromethane	9.62	130	254676	50.3222 ug/L	99
36) Tetrahydrofuran	9.64	42	180624	100.7616 ug/L	99
38) 1,1,1-Trichloroethane	9.90	97	582509	54.8788 ug/L	99
39) Cyclohexane	9.93	56	775192	55.0072 ug/L	99
40) 1,1-Dichloropropene	10.08	75	475776	50.5342 ug/L	100
41) Carbon Tetrachloride	10.23	117	494165	55.8243 ug/L	99
42) Tert-Amyl-Methyl ether	10.18	73	1892713	104.2916 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M09752.D 8260_WTR.M Sun Oct 11 10:33:34 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100915\11M09752.D Vial: 14
Acq On : 9 Oct 2015 22:45 Operator: JDS
Sample : WG542333-12 50ug/L ALT SRC 8260 Inst : hpms11
Misc : 1,1 STD72901 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 11 10:33:33 2015 Quant Results File: 8260_WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 10:32:15 2015
Response via : Initial Calibration
DataAcq Meth : 8260_WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44)	1,2-Dichloroethane	10.38	62	496980	46.8516 ug/L	100
45)	Benzene	10.42	78	1404242	49.2347 ug/L	99
46)	Trichloroethene	11.14	130	412455	48.4928 ug/L	98
47)	Methylcyclohexane	11.22	83	570622	55.1409 ug/L	100
48)	1,2-Dichloropropane	11.33	63	386259	48.5353 ug/L	99
49)	1,4-Dioxane	11.60	88	10665	217.5982 ug/L	91
50)	Bromodichloromethane	11.62	83	459486	54.4483 ug/L	99
51)	Dibromomethane	11.70	93	209211	50.8627 ug/L	100
52)	2-Chloroethyl Vinyl Ether	11.89	63	215834	52.9192 ug/L	99
53)	4-Methyl-2-Pentanone	11.92	58	120677	53.2105 ug/L	100
54)	cis-1,3-Dichloropropene	12.21	75	569138	53.6306 ug/L	100
55)	Dimethyl Disulfide	12.47	79	237873	57.3719 ug/L	98
58)	Toluene	12.61	91	1564944	52.0711 ug/L	100
59)	Ethyl Methacrylate	12.69	69	408662	57.1517 ug/L	98
60)	trans-1,3-Dichloropropene	12.77	75	468145	51.8215 ug/L	99
61)	1,1,2-Trichloroethane	12.98	97	285694	50.9815 ug/L	100
62)	2-Hexanone	12.91	43	217734	54.7684 ug/L	100
63)	1,3-Dichloropropane	13.27	76	472964	49.2688 ug/L	99
64)	Tetrachloroethene	13.38	164	362547	52.0449 ug/L	99
65)	Dibromochloromethane	13.63	129	351422	53.3638 ug/L	98
66)	1,2-Dibromoethane	13.88	107	284721	52.6297 ug/L	99
67)	1-Chlorohexane	13.94	91	542616	57.7517 ug/L	97
68)	Chlorobenzene	14.34	112	1122347	51.3745 ug/L	99
69)	1,1,1,2-Tetrachloroethane	14.36	131	376853	52.5008 ug/L	99
70)	Ethylbenzene	14.36	106	571568	52.2150 ug/L	98
71)	m-,p-Xylene	14.44	106	1365045	106.6806 ug/L	99
72)	o-Xylene	14.97	106	704060	54.1195 ug/L	99
73)	Styrene	15.00	104	1162172	54.2141 ug/L	99
74)	Bromoform	15.48	173	222146	53.7875 ug/L	97
75)	Isopropylbenzene	15.36	105	1753734	55.8000 ug/L	100
77)	1,1,2,2-Tetrachloroethane	15.56	83	315221	52.7854 ug/L	99
79)	1,2,3-Trichloropropane	15.75	110	97562	49.0075 ug/L	97
80)	trans-1,4-Dichloro-2-Buten	15.78	53	95403	39.4836 ug/L	73
81)	n-Propylbenzene	15.84	91	2065240	54.5228 ug/L	100
82)	Bromobenzene	15.97	156	516890	48.5387 ug/L	99
83)	1,3,5-Trimethylbenzene	16.02	105	1449730	52.6046 ug/L	100
84)	2-Chlorotoluene	16.10	91	1361272	51.3919 ug/L	100
85)	4-Chlorotoluene	16.14	91	1222132	49.7848 ug/L	100
86)	a-Methylstyrene	16.39	118	928110	59.1867 ug/L	99
87)	tert-Butylbenzene	16.84	134	443137	51.2067 ug/L	99
88)	1,2,4-Trimethylbenzene	16.49	105	1453451	51.8244 ug/L	99
89)	sec-Butylbenzene	16.70	105	1808057	54.8587 ug/L	100
90)	p-Isopropyltoluene	16.84	119	1563633	53.8548 ug/L	100
91)	1,3-Dichlorobenzene	17.03	146	1014043	50.7028 ug/L	99
92)	1,4-Dichlorobenzene	17.15	146	981356	48.6723 ug/L	100
93)	n-Butylbenzene	17.33	91	1339221	53.5677 ug/L	100
94)	1,2-Dichlorobenzene	17.62	146	957987	51.5731 ug/L	100
95)	1,2-Dibromo-3-Chloropropan	18.54	75	55346	47.1290 ug/L	98
96)	1,2,4-Trichlorobenzene	19.60	180	663955	49.5669 ug/L	100
97)	Hexachlorobutadiene	19.75	225	242176	51.6543 ug/L	99
98)	Naphthalene	19.97	128	1278856	54.3697 ug/L	100
99)	1,2,3-Trichlorobenzene	20.26	180	613018	51.0775 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M09752.D 8260_WTR.M Sun Oct 11 10:33:34 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\100915\11M09752.D Vial: 14
Acq On : 9 Oct 2015 22:45 Operator: JDS
Sample : WG542333-12 50ug/L ALT SRC 8260 Inst : hpms11
Misc : 1,1 STD72901 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 11 10:33 2015 Quant Results File: 8260_WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 10:32:15 2015
Response via : Initial Calibration

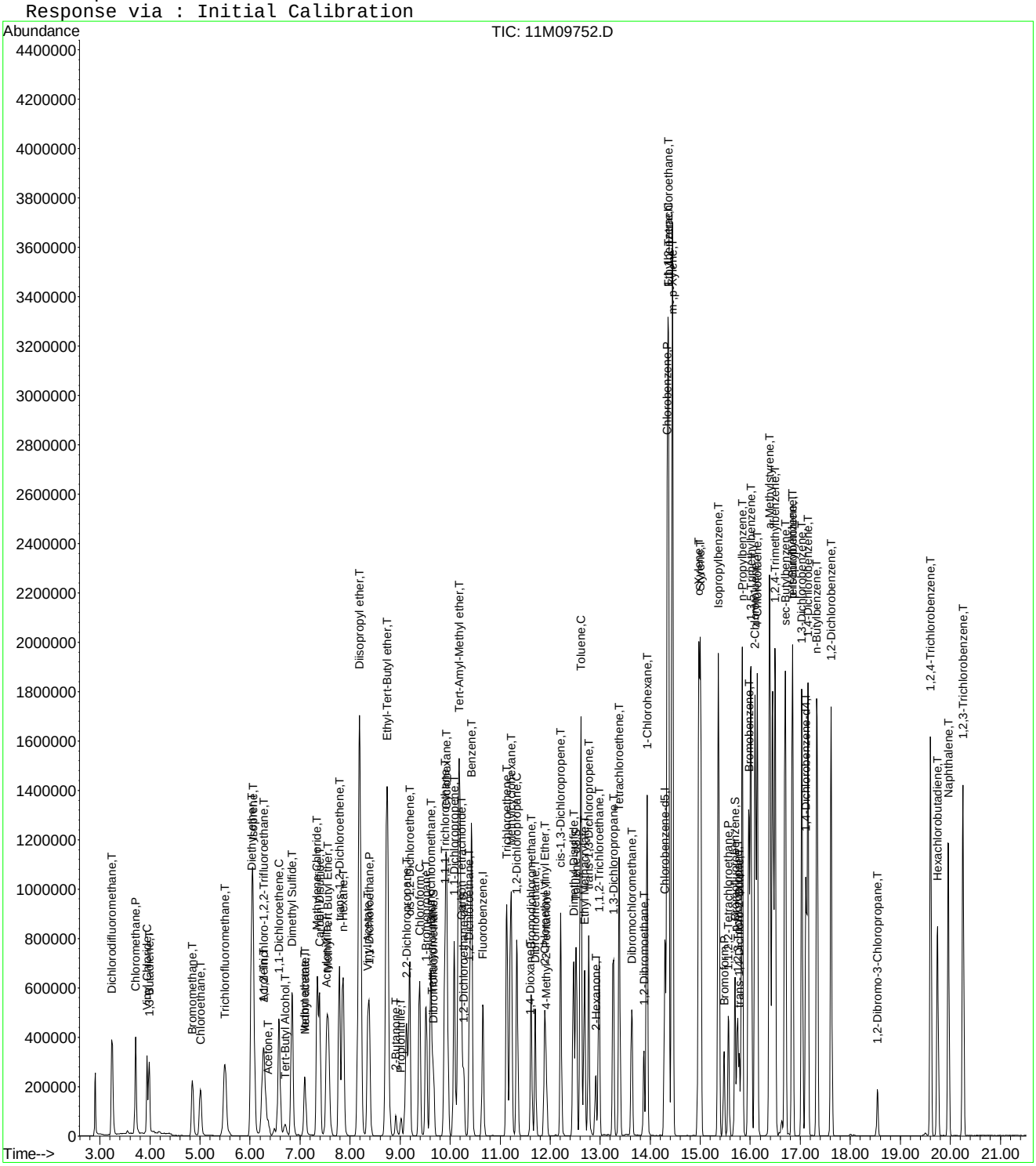

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\100915\11M09752.D Vial: 14
Acq On : 9 Oct 2015 22:45 Operator: JDS
Sample : WG542333-12 50ug/L ALT SRC 8260 Inst : hpms11
Misc : 1,1 STD72901 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 10:32:15 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	93	-0.01
2	T	Dichlorodifluoromethane	50.0000	54.9087	-9.8	94	0.00
3	P	Chloromethane	50.0000	55.6625	-11.3	110	0.00
4	C	Vinyl Chloride	50.0000	45.5191	9.0	85	0.00
5	T	1,3-Butadiene	50.0000	45.6584	8.7	87	-0.01
6	T	Bromomethane	50.0000	48.3881	3.2	95	-0.01
7	T	Chloroethane	50.0000	51.4321	-2.9	95	-0.01
8	T	Trichlorofluoromethane	50.0000	47.2795	5.4	87	0.00
9	T	Diethyl ether	100.0000	113.5902	-13.6	105	0.00
10	T	Isoprene	50.0000	65.0947	-30.2#	124	-0.01
11	T	Acrolein	50.0000	90.8339	-81.7#	170	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	50.7494	-1.5	93	0.00
13	T	Acetone	50.0000	54.6245	-9.2	102	0.00
14	C	1,1-Dichloroethene	50.0000	47.3371	5.3	88	-0.01
15	T	Tert-Butyl Alcohol	200.0000	245.6160	-22.8	109	0.01
16	T	Dimethyl Sulfide	50.0000	65.0065	-30.0#	122	-0.01
17	T	Iodomethane	50.0000	34.8456	30.3#	65	0.00
18	T	Methyl acetate	50.0000	50.8962	-1.8	95	0.00
19	T	Methylene Chloride	50.0000	48.5085	3.0	92	0.00
20	T	Carbon Disulfide	50.0000	53.2843	-6.6	96	0.00
21	T	Acrylonitrile	50.0000	54.7870	-9.6	97	0.00
22	T	Methyl Tert Butyl Ether	50.0000	53.6129	-7.2	97	0.00
23	T	trans-1,2-Dichloroethene	50.0000	48.0217	4.0	91	0.00
24	T	n-Hexane	50.0000	54.1874	-8.4	99	0.00
25	T	Diisopropyl ether	100.0000	104.1858	-4.2	96	0.00
26	T	Vinyl Acetate	50.0000	57.5890	-15.2	131	0.00
27	P	1,1-Dichloroethane	50.0000	48.1238	3.8	92	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	99.6513	0.3	92	0.00
29	T	2-Butanone	50.0000	53.7561	-7.5	99	0.00
30	T	Propionitrile	100.0000	102.5739	-2.6	94	0.00
31	T	2,2-Dichloropropane	50.0000	48.5840	2.8	91	0.00
32	T	cis-1,2-Dichloroethene	50.0000	47.9233	4.2	92	0.00
33	C	Chloroform	50.0000	50.3507	-0.7	95	0.00
34	T	1-Bromopropane	50.0000	59.1257	-18.3	113	0.00
35	T	Bromochloromethane	50.0000	50.3222	-0.6	93	0.00
36	T	Tetrahydrofuran	100.0000	100.7616	-0.8	92	0.00
37	S	Dibromofluoromethane	25.0000	25.5249	-2.1	96	0.00
38	T	1,1,1-Trichloroethane	50.0000	54.8788	-9.8	100	0.00
39	T	Cyclohexane	50.0000	55.0072	-10.0	101	0.00
40	T	1,1-Dichloropropene	50.0000	50.5342	-1.1	92	0.00
41	T	Carbon Tetrachloride	50.0000	55.8243	-11.6	106	0.00
42	T	Tert-Amyl-Methyl ether	100.0000	104.2917	-4.3	95	0.01
43	S	1,2-Dichloroethane-d4	25.0000	24.9780	0.1	93	-0.01
44	T	1,2-Dichloroethane	50.0000	46.8516	6.3	89	0.00
45	T	Benzene	50.0000	49.2347	1.5	92	-0.01
46	T	Trichloroethene	50.0000	48.4928	3.0	92	0.00
47	T	Methylcyclohexane	50.0000	55.1409	-10.3	102	0.00
48	C	1,2-Dichloropropane	50.0000	48.5353	2.9	93	0.00
49	T	1,4-Dioxane	200.0000	217.5983	-8.8	97	0.00
50	T	Bromodichloromethane	50.0000	54.4483	-8.9	95	0.00
51	T	Dibromomethane	50.0000	50.8627	-1.7	92	0.00
52	T	2-Chloroethyl Vinyl Ether	50.0000	52.9192	-5.8	96	0.00
53	T	4-Methyl-2-Pentanone	50.0000	53.2105	-6.4	95	0.00
54	T	cis-1,3-Dichloropropene	50.0000	53.6306	-7.3	96	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\100915\11M09752.D Vial: 14
Acq On : 9 Oct 2015 22:45 Operator: JDS
Sample : WG542333-12 50ug/L ALT SRC 8260 Inst : hpms11
Misc : 1,1 STD72901 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 10:32:15 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	50.0000	57.3719	-14.7	120	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	93	-0.01
57	S	Toluene-d8	25.0000	26.0967	-4.4	93	0.00
58	C	Toluene	50.0000	52.0711	-4.1	93	0.00
59	T	Ethyl Methacrylate	50.0000	57.1517	-14.3	103	0.00
60	T	trans-1,3-Dichloropropene	50.0000	51.8215	-3.6	88	0.00
61	T	1,1,2-Trichloroethane	50.0000	50.9815	-2.0	89	0.00
62	T	2-Hexanone	50.0000	54.7684	-9.5	97	0.01
63	T	1,3-Dichloropropane	50.0000	49.2688	1.5	90	0.00
64	T	Tetrachloroethene	50.0000	52.0448	-4.1	94	0.00
65	T	Dibromochloromethane	50.0000	53.3638	-6.7	97	0.00
66	T	1,2-Dibromoethane	50.0000	52.6298	-5.3	88	0.00
67	T	1-Chlorohexane	50.0000	57.7517	-15.5	101	0.00
68	P	Chlorobenzene	50.0000	51.3745	-2.7	95	0.00
69	T	1,1,1,2-Tetrachloroethane	50.0000	52.5008	-5.0	96	0.00
70	C	Ethylbenzene	50.0000	52.2150	-4.4	95	0.00
71	T	m-,p-Xylene	100.0000	106.6806	-6.7	94	0.00
72	T	o-Xylene	50.0000	54.1195	-8.2	96	0.00
73	T	Styrene	50.0000	54.2141	-8.4	92	0.00
74	P	Bromoform	50.0000	53.7875	-7.6	101	0.00
75	T	Isopropylbenzene	50.0000	55.8000	-11.6	96	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	94	0.00
77	P	1,1,2,2-Tetrachloroethane	50.0000	52.7854	-5.6	92	0.00
78	S	p-Bromofluorobenzene	25.0000	24.9527	0.2	93	0.00
79	T	1,2,3-Trichloropropane	50.0000	49.0075	2.0	90	0.00
80	T	trans-1,4-Dichloro-2-Butene	50.0000	39.4836	21.0	72	0.00
81	T	n-Propylbenzene	50.0000	54.5228	-9.0	96	0.00
82	T	Bromobenzene	50.0000	48.5387	2.9	91	0.00
83	T	1,3,5-Trimethylbenzene	50.0000	52.6046	-5.2	94	0.00
84	T	2-Chlorotoluene	50.0000	51.3919	-2.8	95	0.00
85	T	4-Chlorotoluene	50.0000	49.7848	0.4	96	0.00
86	T	a-Methylstyrene	50.0000	59.1867	-18.4	103	0.00
87	T	tert-Butylbenzene	50.0000	51.2068	-2.4	92	0.00
88	T	1,2,4-Trimethylbenzene	50.0000	51.8244	-3.6	92	0.00
89	T	sec-Butylbenzene	50.0000	54.8587	-9.7	97	0.00
90	T	p-Isopropyltoluene	50.0000	53.8548	-7.7	92	0.00
91	T	1,3-Dichlorobenzene	50.0000	50.7028	-1.4	95	0.00
92	T	1,4-Dichlorobenzene	50.0000	48.6723	2.7	92	0.00
93	T	n-Butylbenzene	50.0000	53.5677	-7.1	93	0.00
94	T	1,2-Dichlorobenzene	50.0000	51.5731	-3.1	95	0.00
95	T	1,2-Dibromo-3-Chloropropane	50.0000	47.1290	5.7	97	0.00
96	T	1,2,4-Trichlorobenzene	50.0000	49.5669	0.9	94	0.00
97	T	Hexachlorobutadiene	50.0000	51.6543	-3.3	96	0.00
98	T	Naphthalene	50.0000	54.3697	-8.7	94	0.01
99	T	1,2,3-Trichlorobenzene	50.0000	51.0775	-2.2	95	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M09752.D 8260_WTR.M Sun Oct 11 10:33:45 2015 Page 2

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016367.D
Acq On : 11 Nov 2015 14:34
Operator : ADC
Sample : WG546498-02 50ug/L CCV STD
Misc : 1,1 STD73185
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 12 09:55:23 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.141	96	458822	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.976	117	339437	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.305	152	185646	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.174	111	117230	24.9068 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.627%		
34) 1,2-Dichloroethane-d4	4.814	65	109219	24.1633 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.653%		
47) Toluene-d8	6.713	98	451841	25.8239 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.296%		
66) p-Bromofluorobenzene	8.723	95	166533	25.9500 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.800%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.039	85	335655	51.4419 ug/L	100
3) Chloromethane	1.149	50	324623	46.7065 ug/L	100
4) Vinyl Chloride	1.195	62	302744	48.7635 ug/L	100
5) 1,3-Butadiene	1.204	54	187905	47.0884 ug/L	99
6) Bromomethane	1.380	94	144179	44.0291 ug/L	99
7) Chloroethane	1.450	64	162615	51.3007 ug/L	100
8) Trichlorofluoromethane	1.531	101	371160	50.8195 ug/L	100
9) Diethyl ether	1.748	59	160210	43.7335 ug/L	100
10) 1,1-Dichloroethene	1.864	61	352128	48.8893 ug/L	100
11) Carbon Disulfide	1.875	76	735227	48.4661 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.893	101	221329	49.5559 ug/L	100
14) Acrolein	2.113	56	19271	39.2750 ug/L	100
15) Methylene Chloride	2.289	84	231020	43.3508 ug/L	100
16) Acetone	2.344	43	36680	39.7538 ug/L	100
17) trans-1,2-Dichloroethene	2.417	96	221824	47.1071 ug/L	100
18) Methyl acetate	2.449	43	114978	43.8882 ug/L #	100
19) Methyl Tert Butyl Ether	2.530	73	521300	43.4294 ug/L	100
20) 1,1-Dichloroethane	2.975	63	432976	48.0443 ug/L	100
21) Acrylonitrile	3.033	53	52338	41.9566 ug/L	100
22) Vinyl Acetate	3.274	86	23768	42.3588 ug/L	100
23) cis-1,2-Dichloroethene	3.566	96	250754	46.3794 ug/L	100
24) 2,2-Dichloropropane	3.694	77	356884	52.9451 ug/L	100
25) Cyclohexane	3.795	56	427191	49.2519 ug/L	100
26) Bromochloromethane	3.806	130	150619	47.1793 ug/L	100
27) Chloroform	3.934	83	408941	45.8012 ug/L	100
28) Carbon Tetrachloride	4.079	117	339341	48.9449 ug/L	100
30) 1,1,1-Trichloroethane	4.177	97	368726	47.0816 ug/L	100
31) 1,1-Dichloropropene	4.345	75	321276	48.3906 ug/L	100
32) 2-Butanone	4.365	43	62587	41.3567 ug/L	100
33) Benzene	4.646	78	939455	47.6412 ug/L	100
35) 1,2-Dichloroethane	4.892	62	272253	45.8836 ug/L	100
36) Methylcyclohexane	5.298	83	436849	47.3782 ug/L	100
37) Trichloroethene	5.321	130	258556	47.2500 ug/L	100
38) Dibromomethane	5.741	93	128239	43.8243 ug/L	100
39) 1,2-Dichloropropane	5.851	63	256757	47.3682 ug/L	100
40) Bromodichloromethane	5.937	83	316920	47.0276 ug/L	100
41) 1,4-Dioxane	6.149	88	3229	98.0789 ug/L	99
42) 2-Chloroethyl Vinyl Ether	6.528	63	121436	44.3247 ug/L	100
43) cis-1,3-Dichloropropene	6.545	75	380601	47.9030 ug/L	100
44) 4-Methyl-2-Pentanone	7.814	58	53208	39.5325 ug/L	99
45) trans-1,3-Dichloropropene	7.145	75	318685	46.8800 ug/L	100
48) Toluene	6.757	91	1047176	48.6967 ug/L	100
49) Tetrachloroethene	7.087	166	281120	48.5026 ug/L	100
50) 1,1,2-Trichloroethane	7.275	97	172931	43.2287 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016367.D
Acq On : 11 Nov 2015 14:34
Operator : ADC
Sample : WG546498-02 50ug/L CCV STD
Misc : 1,1 STD73185
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 12 09:55:23 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
51)	Dibromochloromethane	7.417	129	238478	46.1774 ug/L	100
52)	1,3-Dichloropropane	7.498	76	287243	45.2709 ug/L	100
53)	1,2-Dibromoethane	7.585	107	176507	44.4634 ug/L	100
54)	2-Hexanone	7.814	43	103462	40.2276 ug/L	99
55)	Chlorobenzene	7.984	112	674203	48.6490 ug/L	100
56)	1-Chlorohexane	7.999	69	69305	48.6888 ug/L	98
57)	Ethylbenzene	8.022	106	367709	48.7457 ug/L	100
58)	1,1,1,2-Tetrachloroethane	8.039	131	247369	48.2138 ug/L	100
59)	m-,p-Xylene	8.123	106	899052	99.3448 ug/L	100
60)	o-Xylene	8.384	106	435980	48.8219 ug/L	100
61)	Styrene	8.419	104	720887	48.5753 ug/L	100
62)	Bromoform	8.422	173	152687	44.8427 ug/L	100
63)	Isopropylbenzene	8.575	105	1145537	49.2114 ug/L	100
65)	1,3,5-Trimethylbenzene	8.914	105	1011949	49.7817 ug/L	100
67)	Bromobenzene	8.775	156	299300	47.1063 ug/L	99
68)	n-Propylbenzene	8.804	91	1356725	51.1343 ug/L	100
69)	1,1,2,2-Tetrachloroethane	8.844	83	198425	43.0559 ug/L	100
70)	2-Chlorotoluene	8.879	91	800522	49.3327 ug/L	100
71)	1,2,3-Trichloropropane	8.911	110	52918	41.2540 ug/L	100
72)	trans-1,4-Dichloro-2-B...	8.937	53	45281	42.4657 ug/L #	99
73)	1,2,4-Trimethylbenzene	9.111	105	1011612	49.8516 ug/L	100
74)	4-Chlorotoluene	8.969	91	823222	49.3067 ug/L	99
75)	tert-Butylbenzene	9.076	134	184752	49.5630 ug/L	100
76)	sec-Butylbenzene	9.166	105	1259196	50.4106 ug/L	100
77)	p-Isopropyltoluene	9.238	119	1105207	51.1600 ug/L	100
78)	1,3-Dichlorobenzene	9.267	146	573087	49.1162 ug/L	100
79)	1,4-Dichlorobenzene	9.310	146	565458	47.5085 ug/L	100
80)	n-Butylbenzene	9.441	91	1026625	51.6336 ug/L	100
81)	1,2-Dichlorobenzene	9.513	146	525641	47.3213 ug/L	100
82)	1,2-Dibromo-3-Chloropr...	9.890	75	36703	42.4356 ug/L	100
83)	Hexachlorobutadiene	10.188	225	262150	51.2717 ug/L	100
84)	1,2,4-Trichlorobenzene	10.202	180	433827	48.9385 ug/L	100
85)	Naphthalene	10.353	128	719141	43.7967 ug/L	100
86)	1,2,3-Trichlorobenzene	10.437	180	382234	46.7201 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016367.D
Acq On : 11 Nov 2015 14:34
Operator : ADC
Sample : WG546498-02 50ug/L CCV STD
Misc : 1,1 STD73185
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 12 09:55:23 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

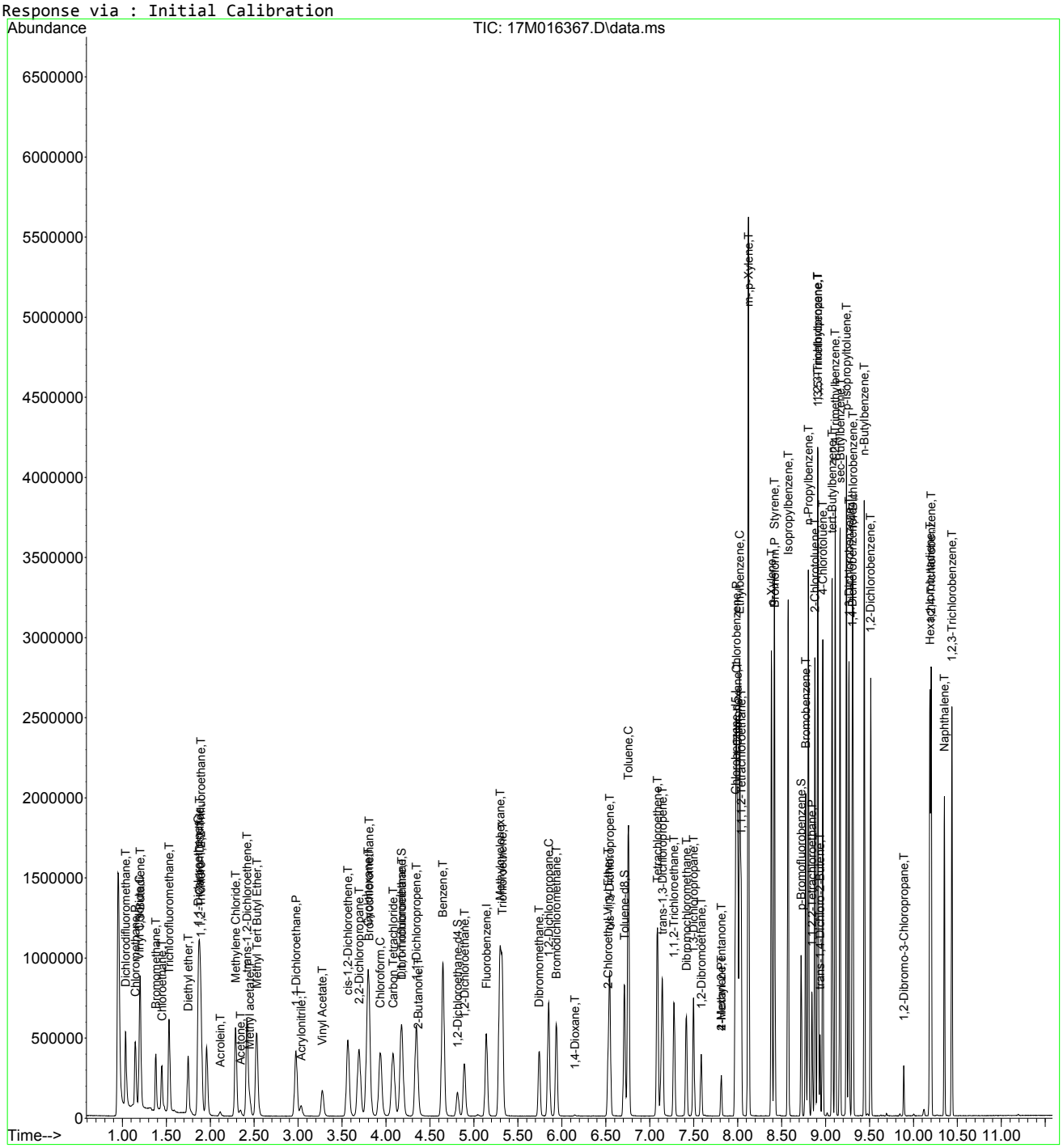

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016369.D
Acq On : 11 Nov 2015 15:14
Operator : ADC
Sample : WG546498-03 0.3ug/L STD
Misc : 1,1 STD73185
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 12 09:49:10 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	5.141	96	439106	25.00000	ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	325410	25.00000	ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.302	152	177701	25.00000	ug/L	0.0000
System Monitoring Compounds						
29) Dibromofluoromethane	4.180	111	805	0.1787	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery	=	0.715%#	
34) 1,2-Dichloroethane-d4	4.811	65	993	0.2296	ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery	=	0.918%#	
47) Toluene-d8	6.710	98	2790	0.1663	ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery	=	0.665%#	
66) p-Bromofluorobenzene	8.723	95	1579	0.2570	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery	=	1.028%#	
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.038	85	2307	0.3694	ug/L	95
3) Chloromethane	1.148	50	3131	0.4707	ug/L	98
4) Vinyl Chloride	1.195	62	1967	0.3311	ug/L	97
5) 1,3-Butadiene	1.206	54	2510	0.6572	ug/L	92
6) Bromomethane	1.383	94	1901	0.6066	ug/L	75
7) Chloroethane	1.426	64	13916	4.5872	ug/L #	58
8) Trichlorofluoromethane	1.545	101	2531	0.3193	ug/L #	77
9) Diethyl ether	1.745	59	2180	0.6218	ug/L #	65
10) 1,1-Dichloroethene	1.867	61	2371	0.3440	ug/L #	69
11) Carbon Disulfide	1.881	76	5882	0.4052	ug/L #	68
12) 1,1,2-Trichloro-1,2,2-...	1.895	101	1495	0.3498	ug/L #	91
14) Acrolein	2.118	56	410	0.8731	ug/L	80
15) Methylene Chloride	2.286	84	3861	0.7570	ug/L #	66
16) Acetone	2.344	43	1441	1.0431	ug/L	93
17) trans-1,2-Dichloroethene	2.417	96	1871	0.4152	ug/L #	75
18) Methyl acetate	2.446	43	906	0.3614	ug/L #	57
19) Methyl Tert Butyl Ether	2.532	73	3666	0.3191	ug/L #	62
20) 1,1-Dichloroethane	2.975	63	2707	0.3139	ug/L #	74
21) Acrylonitrile	3.033	53	314	0.2630	ug/L #	54
23) cis-1,2-Dichloroethene	3.572	96	2030	0.3923	ug/L	78
24) 2,2-Dichloropropane	3.702	77	2489	0.3858	ug/L	97
25) Cyclohexane	3.798	56	2908	0.3503	ug/L #	67
26) Bromochloromethane	3.801	130	869	0.2844	ug/L	99
27) Chloroform	3.931	83	2965	0.3470	ug/L #	91
28) Carbon Tetrachloride	4.087	117	2090	0.3150	ug/L #	94
30) 1,1,1-Trichloroethane	4.189	97	2828	0.3773	ug/L	90
31) 1,1-Dichloropropene	4.342	75	2168	0.3412	ug/L #	66
32) 2-Butanone	4.362	43	768	0.5303	ug/L #	28
33) Benzene	4.646	78	6827	0.3618	ug/L	97
35) 1,2-Dichloroethane	4.892	62	1698	0.2990	ug/L	88
36) Methylcyclohexane	5.292	83	3337	0.3782	ug/L #	80
37) Trichloroethene	5.324	130	1957	0.3737	ug/L	98
38) Dibromomethane	5.743	93	1009	0.3603	ug/L	89
39) 1,2-Dichloropropane	5.851	63	1623	0.3129	ug/L	94
40) Bromodichloromethane	5.937	83	2224	0.3448	ug/L	98
42) 2-Chloroethyl Vinyl Ether	6.525	63	864	0.3295	ug/L	100
43) cis-1,3-Dichloropropene	6.545	75	2413	0.3173	ug/L #	74
44) 4-Methyl-2-Pentanone	7.816	58	692	0.5372	ug/L #	1
45) trans-1,3-Dichloropropene	7.148	75	1977	0.3039	ug/L #	75
48) Toluene	6.757	91	7140	0.3463	ug/L	98
49) Tetrachloroethene	7.087	166	1943	0.3497	ug/L	96
50) 1,1,2-Trichloroethane	7.275	97	1612	0.4203	ug/L	83
51) Dibromochloromethane	7.420	129	1509	0.3048	ug/L	98
52) 1,3-Dichloropropane	7.495	76	1902	0.3127	ug/L #	59

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016369.D
Acq On : 11 Nov 2015 15:14
Operator : ADC
Sample : WG546498-03 0.3ug/L STD
Misc : 1,1 STD73185
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 12 09:49:10 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) 1,2-Dibromoethane	7.585	107	1289	0.3387 ug/L	71
54) 2-Hexanone	7.814	43	1273	0.5163 ug/L	96
55) Chlorobenzene	7.984	112	4633	0.3487 ug/L #	1
56) 1-Chlorohexane	7.999	69	849	0.6222 ug/L #	1
57) Ethylbenzene	8.019	106	2418	0.3344 ug/L	100
58) 1,1,1,2-Tetrachloroethane	8.039	131	1431	0.2909 ug/L #	66
59) m-,p-Xylene	8.120	106	5961	0.6871 ug/L	97
60) o-Xylene	8.387	106	2794	0.3264 ug/L	99
61) Styrene	8.419	104	4886	0.3434 ug/L	97
62) Bromoform	8.422	173	887	0.2717 ug/L #	91
63) Isopropylbenzene	8.575	105	8316	0.3726 ug/L	93
65) 1,3,5-Trimethylbenzene	8.911	105	6999	0.3597 ug/L	95
67) Bromobenzene	8.775	156	2001	0.3290 ug/L	86
68) n-Propylbenzene	8.804	91	9056	0.3566 ug/L #	98
69) 1,1,2,2-Tetrachloroethane	8.844	83	1383	0.3135 ug/L	93
70) 2-Chlorotoluene	8.879	91	5492	0.3536 ug/L	99
71) 1,2,3-Trichloropropane	8.911	110	821	0.6687 ug/L #	18
72) trans-1,4-Dichloro-2-B...	8.937	53	553	0.5418 ug/L #	44
73) 1,2,4-Trimethylbenzene	9.111	105	7227	0.3721 ug/L	94
74) 4-Chlorotoluene	8.966	91	6024	0.3769 ug/L	99
75) tert-Butylbenzene	9.076	134	1256	0.3520 ug/L	93
76) sec-Butylbenzene	9.163	105	8905	0.3724 ug/L	96
77) p-Isopropyltoluene	9.235	119	7255	0.3508 ug/L	98
78) 1,3-Dichlorobenzene	9.264	146	3977	0.3561 ug/L	82
79) 1,4-Dichlorobenzene	9.310	146	4196	0.3683 ug/L	86
80) n-Butylbenzene	9.441	91	7271	0.3820 ug/L	99
81) 1,2-Dichlorobenzene	9.513	146	3615	0.3400 ug/L	83
82) 1,2-Dibromo-3-Chloropr...	9.890	75	220	0.2657 ug/L	86
83) Hexachlorobutadiene	10.188	225	1776	0.3629 ug/L	97
84) 1,2,4-Trichlorobenzene	10.199	180	3287	0.3874 ug/L	97
85) Naphthalene	10.350	128	5757	0.3663 ug/L	99
86) 1,2,3-Trichlorobenzene	10.437	180	2990	0.3818 ug/L	95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016369.D
Acq On : 11 Nov 2015 15:14
Operator : ADC
Sample : WG546498-03 0.3ug/L STD
Misc : 1,1 STD73185
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 12 09:49:10 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

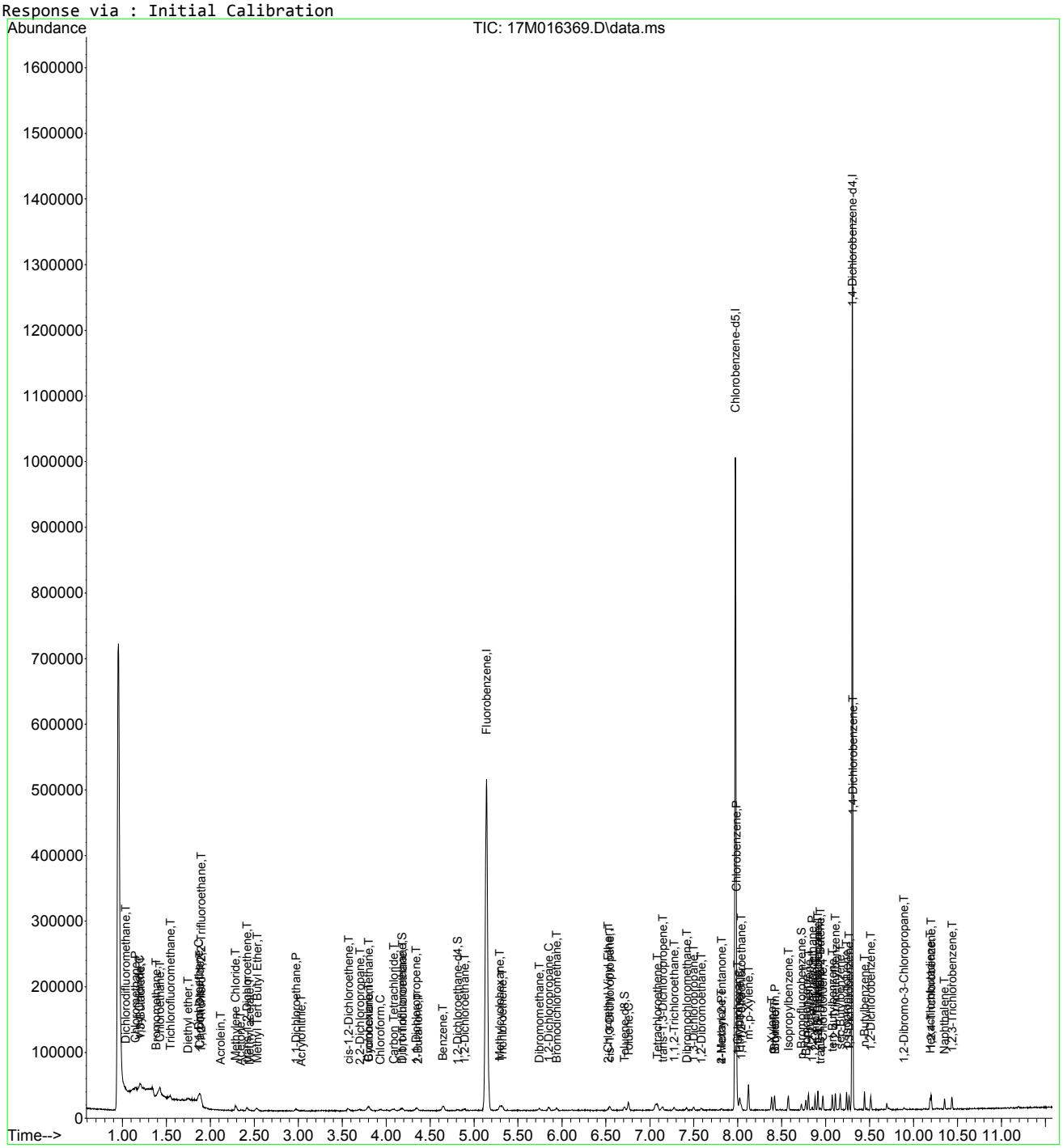

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016369.D
Acq On : 11 Nov 2015 15:14
Operator : ADC
Sample : WG546498-03 0.3ug/L STD
Misc : 1,1 STD73185
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 12 09:49:10 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	100	0.000
2	T	Dichlorodifluoromethane	-1.000	0.369	0.0	0	0.000
3	P	Chloromethane	-1.000	0.471	0.0	0	0.000
4	C	Vinyl Chloride	-1.000	0.331	0.0	0	0.000
5	T	1,3-Butadiene	-1.000	0.657	0.0	0	0.000
6	T	Bromomethane	-1.000	0.607	0.0	0	0.000
7	T	Chloroethane	-1.000	4.587	0.0	0	-0.024
8	T	Trichlorofluoromethane	-1.000	0.319	0.0	0	0.014
9	T	Diethyl ether	-1.000	0.622	0.0	0	0.000
10	C	1,1-Dichloroethene	-1.000	0.344	0.0	0	0.000
11	T	Carbon Disulfide	-1.000	0.405	0.0	0	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.000	0.350	0.0	0	0.000
13	T	Iodomethane	-1.000	0.000	0.0	0	0.000
14	T	Acrolein	-1.000	0.873	0.0	0	0.000
15	T	Methylene Chloride	-1.000	0.757	0.0	0	0.000
16	T	Acetone	-1.000	1.043	0.0	0	0.000
17	T	trans-1,2-Dichloroethene	-1.000	0.415	0.0	0	0.000
18	T	Methyl acetate	0.300	0.361	-20.3	100	0.000
19	T	Methyl Tert Butyl Ether	-1.000	0.319	0.0	0	0.000
20	P	1,1-Dichloroethane	-1.000	0.314	0.0	0	0.000
21	T	Acrylonitrile	-1.000	0.263	0.0	0	0.000
22	T	Vinyl Acetate	-1.000	0.000	0.0	0	-3.274#
23	T	cis-1,2-Dichloroethene	-1.000	0.392	0.0	0	0.000
24	T	2,2-Dichloropropane	-1.000	0.386	0.0	0	0.000
25	T	Cyclohexane	-1.000	0.350	0.0	0	0.000
26	T	Bromochloromethane	-1.000	0.284	0.0	0	0.000
27	C	Chloroform	0.300	0.347	-15.7#	100	0.000
28	T	Carbon Tetrachloride	-1.000	0.315	0.0	0	0.000
29	S	Dibromofluoromethane	-1.000	0.179	0.0	0	0.000
30	T	1,1,1-Trichloroethane	-1.000	0.377	0.0	0	0.012
31	T	1,1-Dichloropropene	-1.000	0.341	0.0	0	0.000
32	T	2-Butanone	-1.000	0.530	0.0	0	0.000
33	T	Benzene	-1.000	0.362	0.0	0	0.000
34	S	1,2-Dichloroethane-d4	-1.000	0.230	0.0	0	0.000
35	T	1,2-Dichloroethane	-1.000	0.299	0.0	0	0.000
36	T	Methylcyclohexane	0.300	0.378	-26.0#	100	0.000
37	T	Trichloroethene	-1.000	0.374	0.0	0	0.000
38	T	Dibromomethane	-1.000	0.360	0.0	0	0.000
39	C	1,2-Dichloropropane	-1.000	0.313	0.0	0	0.000
40	T	Bromodichloromethane	-1.000	0.345	0.0	0	0.000
41	T	1,4-Dioxane	-1.000	0.000	0.0	0	-6.149#
42	T	2-Chloroethyl Vinyl Ether	-1.000	0.330	0.0	0	0.000
43	T	cis-1,3-Dichloropropene	-1.000	0.317	0.0	0	0.000
44	T	4-Methyl-2-Pentanone	-1.000	0.537	0.0	0	0.000
45	T	trans-1,3-Dichloropropene	-1.000	0.304	0.0	0	0.000
46	I	Chlorobenzene-d5	25.000	25.000	0.0	100	0.000
47	S	Toluene-d8	-1.000	0.166	0.0	0	0.000
48	C	Toluene	-1.000	0.346	0.0	0	0.000
49	T	Tetrachloroethene	-1.000	0.350	0.0	0	0.000
50	T	1,1,2-Trichloroethane	-1.000	0.420	0.0	0	0.000
51	T	Dibromochloromethane	-1.000	0.305	0.0	0	0.000
52	T	1,3-Dichloropropane	-1.000	0.313	0.0	0	0.000
53	T	1,2-Dibromoethane	-1.000	0.339	0.0	0	0.000
54	T	2-Hexanone	-1.000	0.516	0.0	0	0.000
55	P	Chlorobenzene	-1.000	0.349	0.0	0	0.000

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016369.D
Acq On : 11 Nov 2015 15:14
Operator : ADC
Sample : WG546498-03 0.3ug/L STD
Misc : 1,1 STD73185
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 12 09:49:10 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	1-Chlorohexane	-1.000	0.622	0.0	0	0.000
57	C	Ethylbenzene	-1.000	0.334	0.0	0	0.000
58	T	1,1,1,2-Tetrachloroethane	-1.000	0.291	0.0	0	0.000
59	T	m-,p-Xylene	-1.000	0.687	0.0	0	0.000
60	T	o-Xylene	-1.000	0.326	0.0	0	0.000
61	T	Styrene	-1.000	0.343	0.0	0	0.000
62	P	Bromoform	-1.000	0.272	0.0	0	0.000
63	T	Isopropylbenzene	-1.000	0.373	0.0	0	0.000
64	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	100	0.000
65	T	1,3,5-Trimethylbenzene	-1.000	0.360	0.0	0	0.000
66	S	p-Bromofluorobenzene	-1.000	0.257	0.0	0	0.000
67	T	Bromobenzene	0.300	0.329	-9.7	100	0.000
68	T	n-Propylbenzene	-1.000	0.357	0.0	0	0.000
69	P	1,1,2,2-Tetrachloroethane	-1.000	0.314	0.0	0	0.000
70	T	2-Chlorotoluene	-1.000	0.354	0.0	0	0.000
71	T	1,2,3-Trichloropropane	-1.000	0.669	0.0	0	0.000
72	T	trans-1,4-Dichloro-2-Butene	-1.000	0.542	0.0	0	0.000
73	T	1,2,4-Trimethylbenzene	-1.000	0.372	0.0	0	0.000
74	T	4-Chlorotoluene	-1.000	0.377	0.0	0	0.000
75	T	tert-Butylbenzene	-1.000	0.352	0.0	0	0.000
76	T	sec-Butylbenzene	-1.000	0.372	0.0	0	0.000
77	T	p-Isopropyltoluene	-1.000	0.351	0.0	0	0.000
78	T	1,3-Dichlorobenzene	-1.000	0.356	0.0	0	0.000
79	T	1,4-Dichlorobenzene	0.300	0.368	-22.7	100	0.000
80	T	n-Butylbenzene	-1.000	0.382	0.0	0	0.000
81	T	1,2-Dichlorobenzene	0.300	0.340	-13.3	100	0.000
82	T	1,2-Dibromo-3-Chloropropane	-1.000	0.266	0.0	0	0.000
83	T	Hexachlorobutadiene	-1.000	0.363	0.0	0	0.000
84	T	1,2,4-Trichlorobenzene	-1.000	0.387	0.0	0	0.000
85	T	Naphthalene	-1.000	0.366	0.0	0	0.000
86	T	1,2,3-Trichlorobenzene	-1.000	0.382	0.0	0	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 1

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016370.D
Acq On : 11 Nov 2015 15:34
Operator : ADC
Sample : WG546498-04 0.4ug/L STD
Misc : 1,1 STD73185
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 12 09:49:12 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	5.141	96	441960	25.00000	ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	330272	25.00000	ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.302	152	179952	25.00000	ug/L	0.0000
System Monitoring Compounds						
29) Dibromofluoromethane	4.183	111	716	0.1579	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.632%#		
34) 1,2-Dichloroethane-d4	4.805	65	795	0.1826	ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.730%#		
47) Toluene-d8	6.713	98	2899	0.1703	ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.681%#		
66) p-Bromofluorobenzene	8.723	95	1391	0.2236	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.894%#		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.038	85	2219	0.3531	ug/L	91
3) Chloromethane	1.148	50	3970	0.5930	ug/L	96
4) Vinyl Chloride	1.195	62	2454	0.4104	ug/L	93
5) 1,3-Butadiene	1.206	54	2446	0.6363	ug/L	90
6) Bromomethane	1.380	94	2302	0.7298	ug/L	80
7) Chloroethane	1.461	64	3782	1.2386	ug/L #	69
8) Trichlorofluoromethane	1.548	101	3151	0.4003	ug/L #	89
9) Diethyl ether	1.748	59	2054	0.5821	ug/L	76
10) 1,1-Dichloroethene	1.867	61	2730	0.3935	ug/L	90
11) Carbon Disulfide	1.887	76	7051	0.4825	ug/L #	61
12) 1,1,2-Trichloro-1,2,2-...	1.895	101	1648	0.3831	ug/L #	86
14) Acrolein	2.040	56	209	0.4422	ug/L	85
15) Methylene Chloride	2.289	84	3898	0.7594	ug/L #	71
16) Acetone	2.269	43	352	Below Cal		97
17) trans-1,2-Dichloroethene	2.422	96	1909	0.4209	ug/L	94
18) Methyl acetate	2.451	43	783	0.3103	ug/L #	51
19) Methyl Tert Butyl Ether	2.530	73	4547	0.3933	ug/L #	81
20) 1,1-Dichloroethane	2.978	63	3455	0.3980	ug/L	93
21) Acrylonitrile	3.045	53	813	0.6766	ug/L #	57
23) cis-1,2-Dichloroethene	3.566	96	2457	0.4718	ug/L	78
24) 2,2-Dichloropropane	3.688	77	2771	0.4268	ug/L	98
25) Cyclohexane	3.801	56	3331	0.3987	ug/L #	76
26) Bromochloromethane	3.806	130	1045	0.3398	ug/L	90
27) Chloroform	3.928	83	3848	0.4474	ug/L	94
28) Carbon Tetrachloride	4.084	117	2434	0.3645	ug/L #	94
30) 1,1,1-Trichloroethane	4.171	97	3164	0.4194	ug/L	97
31) 1,1-Dichloropropene	4.342	75	2548	0.3984	ug/L #	83
32) 2-Butanone	4.374	43	1298	0.8904	ug/L #	41
33) Benzene	4.652	78	7938	0.4179	ug/L	99
35) 1,2-Dichloroethane	4.892	62	2197	0.3844	ug/L #	87
36) Methylcyclohexane	5.295	83	3944	0.4441	ug/L #	90
37) Trichloroethene	5.324	130	2213	0.4198	ug/L	96
38) Dibromomethane	5.738	93	1249	0.4431	ug/L	98
39) 1,2-Dichloropropane	5.848	63	2044	0.3915	ug/L	92
40) Bromodichloromethane	5.934	83	2582	0.3978	ug/L	99
42) 2-Chloroethyl Vinyl Ether	6.528	63	1041	0.3945	ug/L	96
43) cis-1,3-Dichloropropene	6.545	75	2878	0.3760	ug/L #	67
44) 4-Methyl-2-Pentanone	7.816	58	659	0.5083	ug/L #	68
45) trans-1,3-Dichloropropene	7.145	75	2430	0.3711	ug/L #	72
48) Toluene	6.757	91	8674	0.4146	ug/L	100
49) Tetrachloroethene	7.084	166	2376	0.4213	ug/L	96
50) 1,1,2-Trichloroethane	7.275	97	1862	0.4784	ug/L	92
51) Dibromochloromethane	7.417	129	1919	0.3819	ug/L	96
52) 1,3-Dichloropropane	7.498	76	2429	0.3934	ug/L	77

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016370.D
Acq On : 11 Nov 2015 15:34
Operator : ADC
Sample : WG546498-04 0.4ug/L STD
Misc : 1,1 STD73185
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 12 09:49:12 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) 1,2-Dibromoethane	7.588	107	1554	0.4023 ug/L	65
55) Chlorobenzene	7.984	112	5515	0.4090 ug/L #	15
56) 1-Chlorohexane	7.996	69	783	0.5653 ug/L #	1
57) Ethylbenzene	8.019	106	3043	0.4146 ug/L	90
58) 1,1,1,2-Tetrachloroethane	8.037	131	1919	0.3844 ug/L	78
59) m-,p-Xylene	8.120	106	7103	0.8067 ug/L	95
60) o-Xylene	8.384	106	3462	0.3984 ug/L	99
61) Styrene	8.419	104	5746	0.3979 ug/L	94
62) Bromoform	8.419	173	1165	0.3516 ug/L #	90
63) Isopropylbenzene	8.572	105	9444	0.4170 ug/L	96
65) 1,3,5-Trimethylbenzene	8.911	105	8355	0.4240 ug/L	95
67) Bromobenzene	8.775	156	2505	0.4067 ug/L	95
68) n-Propylbenzene	8.804	91	10612	0.4126 ug/L #	96
69) 1,1,2,2-Tetrachloroethane	8.844	83	1952	0.4370 ug/L	86
70) 2-Chlorotoluene	8.879	91	6551	0.4165 ug/L	98
71) 1,2,3-Trichloropropane	8.911	110	844	0.6788 ug/L #	36
72) trans-1,4-Dichloro-2-B...	8.937	53	535	0.5176 ug/L #	60
73) 1,2,4-Trimethylbenzene	9.111	105	8347	0.4244 ug/L	97
74) 4-Chlorotoluene	8.966	91	6896	0.4261 ug/L	100
75) tert-Butylbenzene	9.076	134	1397	0.3866 ug/L	95
76) sec-Butylbenzene	9.163	105	10277	0.4244 ug/L	97
77) p-Isopropyltoluene	9.238	119	8537	0.4077 ug/L	99
78) 1,3-Dichlorobenzene	9.264	146	4658	0.4118 ug/L	86
79) 1,4-Dichlorobenzene	9.310	146	4566	0.3958 ug/L #	78
80) n-Butylbenzene	9.441	91	8075	0.4190 ug/L	99
81) 1,2-Dichlorobenzene	9.513	146	4223	0.3922 ug/L	74
82) 1,2-Dibromo-3-Chloropr...	9.892	75	280	0.3340 ug/L	98
83) Hexachlorobutadiene	10.188	225	2004	0.4043 ug/L	97
84) 1,2,4-Trichlorobenzene	10.202	180	3538	0.4117 ug/L	96
85) Naphthalene	10.353	128	6853	0.4306 ug/L	100
86) 1,2,3-Trichlorobenzene	10.437	180	3258	0.4108 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016370.D
Acq On : 11 Nov 2015 15:34
Operator : ADC
Sample : WG546498-04 0.4ug/L STD
Misc : 1,1 STD73185
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 12 09:49:12 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

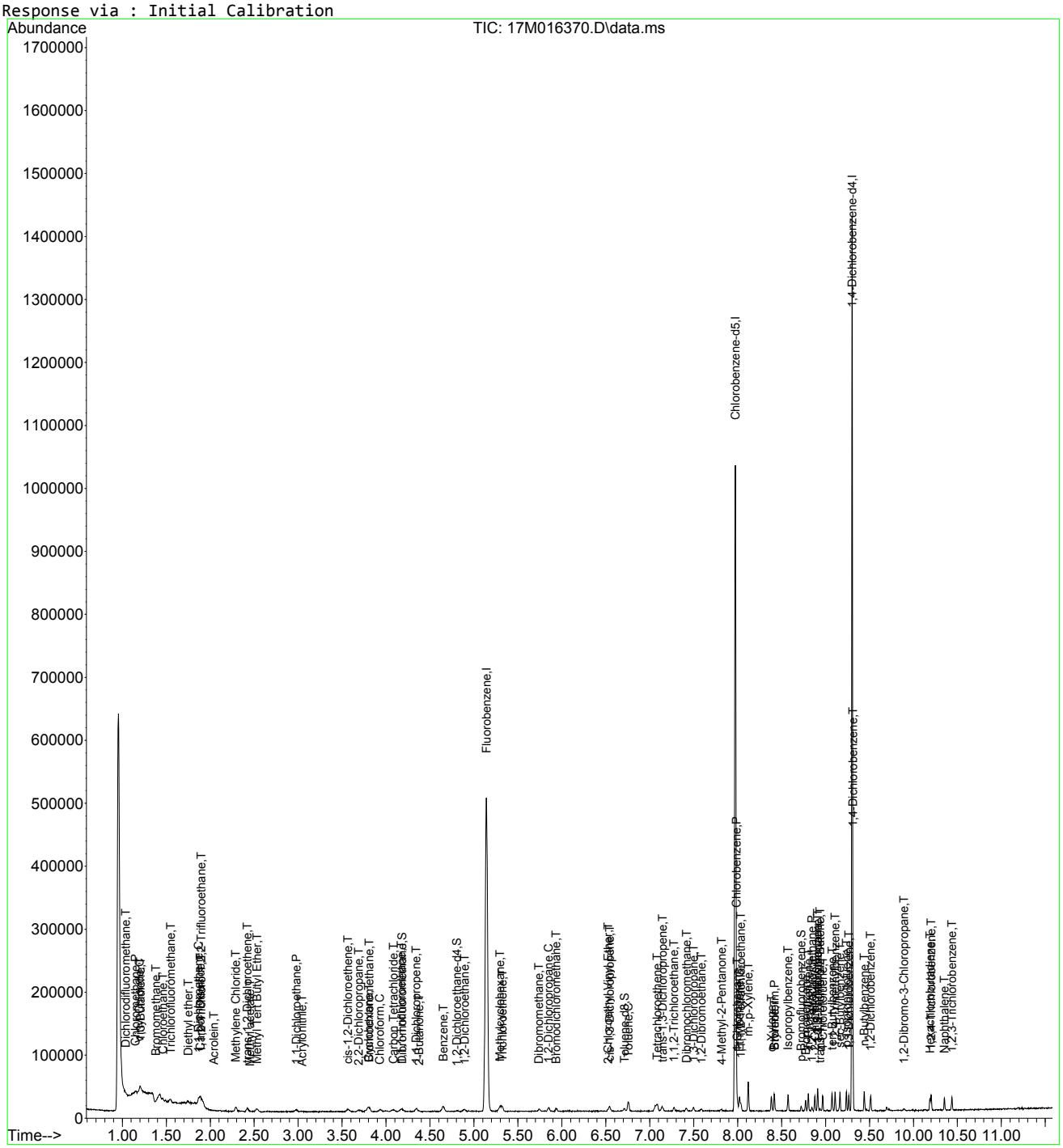

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016370.D
Acq On : 11 Nov 2015 15:34
Operator : ADC
Sample : WG546498-04 0.4ug/L STD
Misc : 1,1 STD73185
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 12 09:49:12 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	100	0.000
2	T	Dichlorodifluoromethane	-1.000	0.353	0.0	0	0.000
3	P	Chloromethane	-1.000	0.593	0.0	0	0.000
4	C	Vinyl Chloride	0.400	0.410	-2.5#	100	0.000
5	T	1,3-Butadiene	-1.000	0.636	0.0	0	0.000
6	T	Bromomethane	-1.000	0.730	0.0	0	0.000
7	T	Chloroethane	-1.000	1.239	0.0	0	0.011
8	T	Trichlorofluoromethane	0.400	0.400	0.0	100	0.017
9	T	Diethyl ether	-1.000	0.582	0.0	0	0.000
10	C	1,1-Dichloroethene	0.400	0.393	1.8#	100	0.000
11	T	Carbon Disulfide	0.400	0.483	-20.7	100	0.012
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.400	0.383	4.3	100	0.000
13	T	Iodomethane	-1.000	0.000	0.0	0	0.000
14	T	Acrolein	-1.000	0.442	0.0	0	-0.073
15	T	Methylene Chloride	-1.000	0.759	0.0	0	0.000
16	T	Acetone	-1.000	-0.212	0.0	0	-0.075
17	T	trans-1,2-Dichloroethene	0.400	0.421	-5.2	100	0.000
18	T	Methyl acetate	0.400	0.310	22.5	100	0.000
19	T	Methyl Tert Butyl Ether	0.400	0.393	1.8	100	0.000
20	P	1,1-Dichloroethane	0.400	0.398	0.5	100	0.000
21	T	Acrylonitrile	-1.000	0.677	0.0	0	0.012
22	T	Vinyl Acetate	-1.000	0.000	0.0	0	-3.274#
23	T	cis-1,2-Dichloroethene	0.400	0.472	-18.0	100	0.000
24	T	2,2-Dichloropropane	0.400	0.427	-6.7	100	0.000
25	T	Cyclohexane	0.400	0.399	0.3	100	0.000
26	T	Bromochloromethane	-1.000	0.340	0.0	0	0.000
27	C	Chloroform	0.400	0.447	-11.7#	100	0.000
28	T	Carbon Tetrachloride	0.400	0.364	9.0	100	0.000
29	S	Dibromofluoromethane	-1.000	0.158	0.0	0	0.000
30	T	1,1,1-Trichloroethane	0.400	0.419	-4.7	100	0.000
31	T	1,1-Dichloropropene	0.400	0.398	0.5	100	0.000
32	T	2-Butanone	-1.000	0.890	0.0	0	0.000
33	T	Benzene	0.400	0.418	-4.5	100	0.000
34	S	1,2-Dichloroethane-d4	-1.000	0.183	0.0	0	0.000
35	T	1,2-Dichloroethane	0.400	0.384	4.0	100	0.000
36	T	Methylcyclohexane	0.400	0.444	-11.0	100	0.000
37	T	Trichloroethene	0.400	0.420	-5.0	100	0.000
38	T	Dibromomethane	0.400	0.443	-10.7	100	0.000
39	C	1,2-Dichloropropane	0.400	0.391	2.3#	100	0.000
40	T	Bromodichloromethane	0.400	0.398	0.5	100	0.000
41	T	1,4-Dioxane	-1.000	0.000	0.0	0	-6.149#
42	T	2-Chloroethyl Vinyl Ether	-1.000	0.394	0.0	0	0.000
43	T	cis-1,3-Dichloropropene	0.400	0.376	6.0	100	0.000
44	T	4-Methyl-2-Pentanone	-1.000	0.508	0.0	0	0.000
45	T	trans-1,3-Dichloropropene	0.400	0.371	7.3	100	0.000
46	I	Chlorobenzene-d5	25.000	25.000	0.0	100	0.000
47	S	Toluene-d8	-1.000	0.170	0.0	0	0.000
48	C	Toluene	0.400	0.415	-3.7#	100	0.000
49	T	Tetrachloroethene	0.400	0.421	-5.2	100	0.000
50	T	1,1,2-Trichloroethane	0.400	0.478	-19.5	100	0.000
51	T	Dibromochloromethane	0.400	0.382	4.5	100	0.000
52	T	1,3-Dichloropropane	0.400	0.393	1.8	100	0.000
53	T	1,2-Dibromoethane	0.400	0.402	-0.5	100	0.000
54	T	2-Hexanone	-1.000	0.101	0.0	0	-0.061
55	P	Chlorobenzene	0.400	0.409	-2.2	100	0.000

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016370.D
Acq On : 11 Nov 2015 15:34
Operator : ADC
Sample : WG546498-04 0.4ug/L STD
Misc : 1,1 STD73185
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 12 09:49:12 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	1-Chlorohexane	-1.000	0.565	0.0	0	0.000
57	C	Ethylbenzene	0.400	0.415	-3.7#	100	0.000
58	T	1,1,1,2-Tetrachloroethane	0.400	0.384	4.0	100	0.000
59	T	m-,p-Xylene	0.800	0.807	-0.9	100	0.000
60	T	o-Xylene	0.400	0.398	0.5	100	0.000
61	T	Styrene	0.400	0.398	0.5	100	0.000
62	P	Bromoform	0.400	0.352	12.0	100	0.000
63	T	Isopropylbenzene	0.400	0.417	-4.2	100	0.000
64	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	100	0.000
65	T	1,3,5-Trimethylbenzene	0.400	0.424	-6.0	100	0.000
66	S	p-Bromofluorobenzene	-1.000	0.224	0.0	0	0.000
67	T	Bromobenzene	0.400	0.407	-1.7	100	0.000
68	T	n-Propylbenzene	0.400	0.413	-3.2	100	0.000
69	P	1,1,2,2-Tetrachloroethane	0.400	0.437	-9.2	100	0.000
70	T	2-Chlorotoluene	0.400	0.416	-4.0	100	0.000
71	T	1,2,3-Trichloropropane	-1.000	0.679	0.0	0	0.000
72	T	trans-1,4-Dichloro-2-Butene	0.400	0.518	-29.5#	100	0.000
73	T	1,2,4-Trimethylbenzene	0.400	0.424	-6.0	100	0.000
74	T	4-Chlorotoluene	0.400	0.426	-6.5	100	0.000
75	T	tert-Butylbenzene	0.400	0.387	3.3	100	0.000
76	T	sec-Butylbenzene	0.400	0.424	-6.0	100	0.000
77	T	p-Isopropyltoluene	0.400	0.408	-2.0	100	0.000
78	T	1,3-Dichlorobenzene	0.400	0.412	-3.0	100	0.000
79	T	1,4-Dichlorobenzene	0.400	0.396	1.0	100	0.000
80	T	n-Butylbenzene	0.400	0.419	-4.7	100	0.000
81	T	1,2-Dichlorobenzene	0.400	0.392	2.0	100	0.000
82	T	1,2-Dibromo-3-Chloropropane	-1.000	0.334	0.0	0	0.000
83	T	Hexachlorobutadiene	0.400	0.404	-1.0	100	0.000
84	T	1,2,4-Trichlorobenzene	0.400	0.412	-3.0	100	0.000
85	T	Naphthalene	0.400	0.431	-7.7	100	0.000
86	T	1,2,3-Trichlorobenzene	0.400	0.411	-2.7	100	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016371.D
Acq On : 11 Nov 2015 15:54
Operator : ADC
Sample : WG546498-05 1.0ug/L STD
Misc : 1,1 STD73185
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 12 09:49:14 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	5.141	96	445058	25.00000	ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	332322	25.00000	ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.302	152	180826	25.00000	ug/L	0.0000
System Monitoring Compounds						
29) Dibromofluoromethane	4.168	111	618	0.1354	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.542%#		
34) 1,2-Dichloroethane-d4	4.811	65	856	0.1952	ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.781%#		
47) Toluene-d8	6.713	98	3321	0.1939	ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.776%#		
66) p-Bromofluorobenzene	8.723	95	994	0.1590	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.636%#		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.041	85	5409	0.8546	ug/L	99
3) Chloromethane	1.148	50	7399	1.0975	ug/L	99
4) Vinyl Chloride	1.195	62	5503	0.9138	ug/L	98
5) 1,3-Butadiene	1.209	54	4534	1.1713	ug/L	92
6) Bromomethane	1.383	94	3471	1.0927	ug/L	90
7) Chloroethane	1.458	64	3649	1.1868	ug/L	100
8) Trichlorofluoromethane	1.545	101	7176	0.9336	ug/L #	93
9) Diethyl ether	1.748	59	3461	0.9740	ug/L	91
10) 1,1-Dichloroethene	1.869	61	6561	0.9391	ug/L	94
11) Carbon Disulfide	1.884	76	14418	0.9798	ug/L #	93
12) 1,1,2-Trichloro-1,2,2-...	1.898	101	4094	0.9450	ug/L	97
14) Acrolein	2.113	56	698	1.4665	ug/L #	63
15) Methylene Chloride	2.292	84	6316	1.2218	ug/L	83
16) Acetone	2.347	43	2407	2.1169	ug/L	83
17) trans-1,2-Dichloroethene	2.419	96	4523	0.9902	ug/L	93
18) Methyl acetate	2.448	43	2044	0.8043	ug/L #	82
19) Methyl Tert Butyl Ether	2.532	73	11296	0.9702	ug/L	93
20) 1,1-Dichloroethane	2.981	63	8285	0.9478	ug/L	95
21) Acrylonitrile	3.039	53	1509	1.2471	ug/L	76
23) cis-1,2-Dichloroethene	3.566	96	4887	0.9319	ug/L	97
24) 2,2-Dichloropropane	3.693	77	5589	0.8548	ug/L	92
25) Cyclohexane	3.798	56	8433	1.0023	ug/L	95
26) Bromochloromethane	3.806	130	2760	0.8913	ug/L	99
27) Chloroform	3.940	83	8002	0.9239	ug/L	95
28) Carbon Tetrachloride	4.081	117	6155	0.9152	ug/L	99
30) 1,1,1-Trichloroethane	4.180	97	7156	0.9420	ug/L	97
31) 1,1-Dichloropropene	4.345	75	6043	0.9383	ug/L	91
32) 2-Butanone	4.383	43	2111	1.4381	ug/L #	64
33) Benzene	4.649	78	18589	0.9718	ug/L	99
35) 1,2-Dichloroethane	4.895	62	5395	0.9374	ug/L #	86
36) Methylcyclohexane	5.297	83	8495	0.9498	ug/L #	92
37) Trichloroethene	5.321	130	5165	0.9731	ug/L	98
38) Dibromomethane	5.740	93	2682	0.9449	ug/L #	53
39) 1,2-Dichloropropane	5.850	63	5018	0.9544	ug/L	99
40) Bromodichloromethane	5.937	83	6016	0.9203	ug/L	99
42) 2-Chloroethyl Vinyl Ether	6.528	63	2565	0.9652	ug/L	94
43) cis-1,3-Dichloropropene	6.542	75	7125	0.9245	ug/L #	87
44) 4-Methyl-2-Pentanone	7.813	58	1421	1.0884	ug/L	92
45) trans-1,3-Dichloropropene	7.145	75	6054	0.9181	ug/L	93
48) Toluene	6.757	91	19859	0.9433	ug/L	98
49) Tetrachloroethene	7.084	166	5340	0.9411	ug/L	97
50) 1,1,2-Trichloroethane	7.272	97	3805	0.9715	ug/L	97
51) Dibromochloromethane	7.414	129	4728	0.9351	ug/L	99
52) 1,3-Dichloropropane	7.495	76	6040	0.9723	ug/L	88

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016371.D
Acq On : 11 Nov 2015 15:54
Operator : ADC
Sample : WG546498-05 1.0ug/L STD
Misc : 1,1 STD73185
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 12 09:49:14 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) 1,2-Dibromoethane	7.585	107	3809	0.9801 ug/L	96
54) 2-Hexanone	7.816	43	2683	1.0655 ug/L	98
55) Chlorobenzene	7.984	112	12879	0.9492 ug/L #	64
56) 1-Chlorohexane	7.996	69	1649	1.1833 ug/L #	1
57) Ethylbenzene	8.019	106	7075	0.9580 ug/L	99
58) 1,1,1,2-Tetrachloroethane	8.036	131	4693	0.9343 ug/L	95
59) m-,p-Xylene	8.120	106	16718	1.8869 ug/L	97
60) o-Xylene	8.384	106	8304	0.9498 ug/L	100
61) Styrene	8.416	104	13773	0.9479 ug/L	97
62) Bromoform	8.419	173	2916	0.8747 ug/L	96
63) Isopropylbenzene	8.572	105	21951	0.9632 ug/L	98
65) 1,3,5-Trimethylbenzene	8.911	105	19374	0.9785 ug/L	98
67) Bromobenzene	8.775	156	5908	0.9546 ug/L	97
68) n-Propylbenzene	8.804	91	24929	0.9646 ug/L #	98
69) 1,1,2,2-Tetrachloroethane	8.844	83	4271	0.9515 ug/L	97
70) 2-Chlorotoluene	8.879	91	15301	0.9681 ug/L	99
71) 1,2,3-Trichloropropane	8.908	110	1422	1.1381 ug/L	78
72) trans-1,4-Dichloro-2-B...	8.937	53	987	0.9503 ug/L #	79
73) 1,2,4-Trimethylbenzene	9.108	105	19409	0.9820 ug/L	99
74) 4-Chlorotoluene	8.966	91	15311	0.9415 ug/L	96
75) tert-Butylbenzene	9.073	134	3468	0.9552 ug/L	99
76) sec-Butylbenzene	9.163	105	23806	0.9785 ug/L	99
77) p-Isopropyltoluene	9.238	119	20603	0.9791 ug/L	100
78) 1,3-Dichlorobenzene	9.264	146	11012	0.9689 ug/L	96
79) 1,4-Dichlorobenzene	9.310	146	11073	0.9551 ug/L	93
80) n-Butylbenzene	9.441	91	18519	0.9562 ug/L	100
81) 1,2-Dichlorobenzene	9.513	146	10314	0.9533 ug/L	93
82) 1,2-Dibromo-3-Chloropr...	9.889	75	842	0.9995 ug/L	93
83) Hexachlorobutadiene	10.188	225	4589	0.9214 ug/L	97
84) 1,2,4-Trichlorobenzene	10.202	180	8177	0.9470 ug/L	99
85) Naphthalene	10.353	128	15793	0.9875 ug/L	99
86) 1,2,3-Trichlorobenzene	10.437	180	7685	0.9644 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016371.D
Acq On : 11 Nov 2015 15:54
Operator : ADC
Sample : WG546498-05 1.0ug/L STD
Misc : 1,1 STD73185
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 12 09:49:14 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

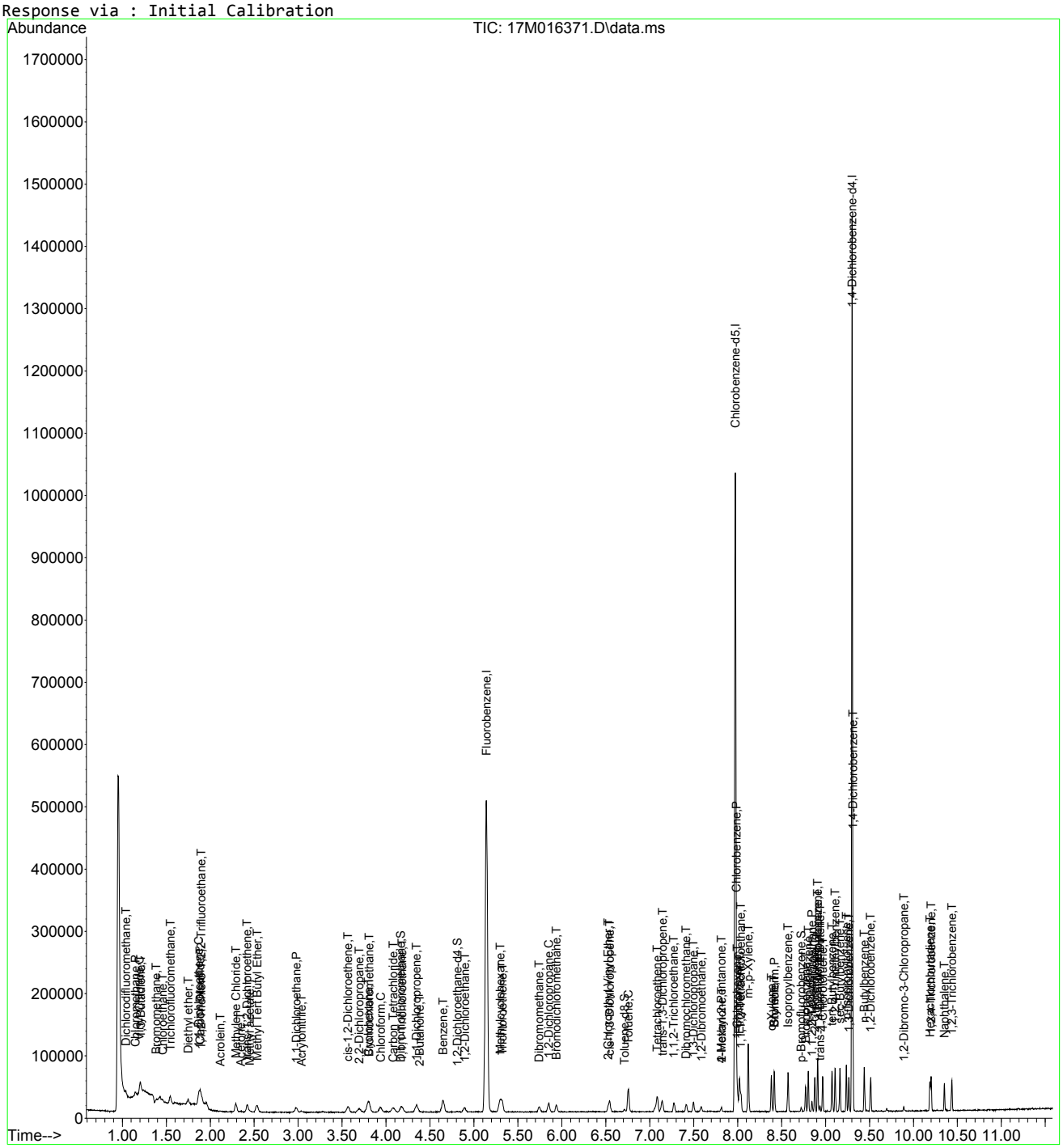

8260_VMS.M Thu Nov 12 09:53:38 2015 Page: 3

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016371.D
Acq On : 11 Nov 2015 15:54
Operator : ADC
Sample : WG546498-05 1.0ug/L STD
Misc : 1,1 STD73185
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 12 09:49:14 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	100	0.000
2	T	Dichlorodifluoromethane	1.000	0.855	14.5	100	0.000
3	P	Chloromethane	1.000	1.097	-9.7	100	0.000
4	C	Vinyl Chloride	1.000	0.914	8.6#	100	0.000
5	T	1,3-Butadiene	1.000	1.171	-17.1	100	0.000
6	T	Bromomethane	1.000	1.093	-9.3	100	0.000
7	T	Chloroethane	1.000	1.187	-18.7	100	0.000
8	T	Trichlorofluoromethane	1.000	0.934	6.6	100	0.014
9	T	Diethyl ether	1.000	0.974	2.6	100	0.000
10	C	1,1-Dichloroethene	1.000	0.939	6.1#	100	0.000
11	T	Carbon Disulfide	1.000	0.980	2.0	100	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.000	0.945	5.5	100	0.000
13	T	Iodomethane	-1.000	0.000	0.0	0	0.000
14	T	Acrolein	-1.000	1.467	0.0	0	0.000
15	T	Methylene Chloride	1.000	1.222	-22.2	100	0.000
16	T	Acetone	-1.000	2.117	0.0	0	0.000
17	T	trans-1,2-Dichloroethene	1.000	0.990	1.0	100	0.000
18	T	Methyl acetate	1.000	0.804	19.6	75	0.000
19	T	Methyl Tert Butyl Ether	1.000	0.970	3.0	100	0.000
20	P	1,1-Dichloroethane	1.000	0.948	5.2	100	0.000
21	T	Acrylonitrile	-1.000	1.247	0.0	0	0.000
22	T	Vinyl Acetate	-1.000	0.000	0.0	0	-3.274#
23	T	cis-1,2-Dichloroethene	1.000	0.932	6.8	100	0.000
24	T	2,2-Dichloropropane	1.000	0.855	14.5	100	0.000
25	T	Cyclohexane	1.000	1.002	-0.2	100	0.000
26	T	Bromochloromethane	1.000	0.891	10.9	100	0.000
27	C	Chloroform	1.000	0.924	7.6#	100	0.000
28	T	Carbon Tetrachloride	1.000	0.915	8.5	100	0.000
29	S	Dibromofluoromethane	-1.000	0.135	0.0	0	0.000
30	T	1,1,1-Trichloroethane	1.000	0.942	5.8	100	0.000
31	T	1,1-Dichloropropene	1.000	0.938	6.2	100	0.000
32	T	2-Butanone	-1.000	1.438	0.0	0	0.018
33	T	Benzene	1.000	0.972	2.8	100	0.000
34	S	1,2-Dichloroethane-d4	-1.000	0.195	0.0	0	0.000
35	T	1,2-Dichloroethane	1.000	0.937	6.3	100	0.000
36	T	Methylcyclohexane	1.000	0.950	5.0	100	0.000
37	T	Trichloroethene	1.000	0.973	2.7	100	0.000
38	T	Dibromomethane	1.000	0.945	5.5	100	0.000
39	C	1,2-Dichloropropane	1.000	0.954	4.6#	100	0.000
40	T	Bromodichloromethane	1.000	0.920	8.0	100	0.000
41	T	1,4-Dioxane	-1.000	0.000	0.0	0	-6.149#
42	T	2-Chloroethyl Vinyl Ether	1.000	0.965	3.5	100	0.000
43	T	cis-1,3-Dichloropropene	1.000	0.924	7.6	100	0.000
44	T	4-Methyl-2-Pentanone	-1.000	1.088	0.0	0	0.000
45	T	trans-1,3-Dichloropropene	1.000	0.918	8.2	100	0.000
46	I	Chlorobenzene-d5	25.000	25.000	0.0	100	0.000
47	S	Toluene-d8	-1.000	0.194	0.0	0	0.000
48	C	Toluene	1.000	0.943	5.7#	100	0.000
49	T	Tetrachloroethene	1.000	0.941	5.9	100	0.000
50	T	1,1,2-Trichloroethane	1.000	0.972	2.8	100	0.000
51	T	Dibromochloromethane	1.000	0.935	6.5	100	0.000
52	T	1,3-Dichloropropane	1.000	0.972	2.8	100	0.000
53	T	1,2-Dibromoethane	1.000	0.980	2.0	100	0.000
54	T	2-Hexanone	-1.000	1.066	0.0	0	0.000
55	P	Chlorobenzene	1.000	0.949	5.1	100	0.000

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016371.D
Acq On : 11 Nov 2015 15:54
Operator : ADC
Sample : WG546498-05 1.0ug/L STD
Misc : 1,1 STD73185
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 12 09:49:14 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	1-Chlorohexane	1.000	1.183	-18.3	100	0.000
57	C	Ethylbenzene	1.000	0.958	4.2#	100	0.000
58	T	1,1,1,2-Tetrachloroethane	1.000	0.934	6.6	100	0.000
59	T	m-,p-Xylene	2.000	1.887	5.6	100	0.000
60	T	o-Xylene	1.000	0.950	5.0	100	0.000
61	T	Styrene	1.000	0.948	5.2	100	0.000
62	P	Bromoform	1.000	0.875	12.5	100	0.000
63	T	Isopropylbenzene	1.000	0.963	3.7	100	0.000
64	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	100	0.000
65	T	1,3,5-Trimethylbenzene	1.000	0.978	2.2	100	0.000
66	S	p-Bromofluorobenzene	-1.000	0.159	0.0	0	0.000
67	T	Bromobenzene	1.000	0.955	4.5	100	0.000
68	T	n-Propylbenzene	1.000	0.965	3.5	100	0.000
69	P	1,1,2,2-Tetrachloroethane	1.000	0.951	4.9	100	0.000
70	T	2-Chlorotoluene	1.000	0.968	3.2	100	0.000
71	T	1,2,3-Trichloropropane	1.000	1.138	-13.8	100	0.000
72	T	trans-1,4-Dichloro-2-Butene	1.000	0.950	5.0	100	0.000
73	T	1,2,4-Trimethylbenzene	1.000	0.982	1.8	100	0.000
74	T	4-Chlorotoluene	1.000	0.941	5.9	100	0.000
75	T	tert-Butylbenzene	1.000	0.955	4.5	100	0.000
76	T	sec-Butylbenzene	1.000	0.978	2.2	100	0.000
77	T	p-Isopropyltoluene	1.000	0.979	2.1	100	0.000
78	T	1,3-Dichlorobenzene	1.000	0.969	3.1	100	0.000
79	T	1,4-Dichlorobenzene	1.000	0.955	4.5	100	0.000
80	T	n-Butylbenzene	1.000	0.956	4.4	100	0.000
81	T	1,2-Dichlorobenzene	1.000	0.953	4.7	100	0.000
82	T	1,2-Dibromo-3-Chloropropane	-1.000	0.999	0.0	0	0.000
83	T	Hexachlorobutadiene	1.000	0.921	7.9	100	0.000
84	T	1,2,4-Trichlorobenzene	1.000	0.947	5.3	100	0.000
85	T	Naphthalene	1.000	0.987	1.3	100	0.000
86	T	1,2,3-Trichlorobenzene	1.000	0.964	3.6	100	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016372.D
Acq On : 11 Nov 2015 16:14
Operator : ADC
Sample : WG546498-06 2.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 12 09:49:16 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	5.141	96	441729	25.00000	ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	328196	25.00000	ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.302	152	179770	25.00000	ug/L	0.0000
System Monitoring Compounds						
29) Dibromofluoromethane	4.171	111	953	0.2103	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery	=	0.841%#	
34) 1,2-Dichloroethane-d4	4.814	65	759	0.1744	ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery	=	0.698%#	
47) Toluene-d8	6.710	98	2962	0.1751	ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery	=	0.700%#	
66) p-Bromofluorobenzene	8.723	95	1652	0.2658	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery	=	1.063%#	
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.038	85	11070	1.7622	ug/L	99
3) Chloromethane	1.151	50	13794	2.0615	ug/L	99
4) Vinyl Chloride	1.195	62	11207	1.8750	ug/L	98
5) 1,3-Butadiene	1.206	54	7924	2.0626	ug/L	99
6) Bromomethane	1.383	94	6882	2.1829	ug/L	83
7) Chloroethane	1.455	64	6503	2.1309	ug/L #	74
8) Trichlorofluoromethane	1.542	101	14507	1.9268	ug/L	97
9) Diethyl ether	1.748	59	7718	2.1884	ug/L	93
10) 1,1-Dichloroethene	1.869	61	13450	1.9397	ug/L	98
11) Carbon Disulfide	1.884	76	27593	1.8893	ug/L #	90
12) 1,1,2-Trichloro-1,2,2-...	1.898	101	8397	1.9529	ug/L	99
14) Acrolein	2.115	56	1360	2.8790	ug/L	85
15) Methylene Chloride	2.289	84	11187	2.1805	ug/L	90
16) Acetone	2.344	43	2472	2.2118	ug/L	96
17) trans-1,2-Dichloroethene	2.419	96	8767	1.9338	ug/L	98
18) Methyl acetate	2.448	43	4481	1.7766	ug/L #	91
19) Methyl Tert Butyl Ether	2.532	73	23088	1.9979	ug/L	95
20) 1,1-Dichloroethane	2.975	63	16937	1.9521	ug/L	98
21) Acrylonitrile	3.042	53	2643	2.2007	ug/L	91
22) Vinyl Acetate	3.282	86	272	4.0182	ug/L #	1
23) cis-1,2-Dichloroethene	3.566	96	10057	1.9321	ug/L	97
24) 2,2-Dichloropropane	3.693	77	11469	1.7673	ug/L	94
25) Cyclohexane	3.792	56	17078	2.0452	ug/L	98
26) Bromochloromethane	3.812	130	5776	1.8793	ug/L	100
27) Chloroform	3.937	83	16478	1.9169	ug/L	98
28) Carbon Tetrachloride	4.079	117	13065	1.9574	ug/L	97
30) 1,1,1-Trichloroethane	4.174	97	14902	1.9764	ug/L	100
31) 1,1-Dichloropropene	4.345	75	12522	1.9590	ug/L	94
32) 2-Butanone	4.374	43	3362	2.3075	ug/L #	40
33) Benzene	4.649	78	37184	1.9586	ug/L	100
35) 1,2-Dichloroethane	4.889	62	11420	1.9991	ug/L #	95
36) Methylcyclohexane	5.295	83	17144	1.9313	ug/L	96
37) Trichloroethene	5.324	130	10227	1.9413	ug/L	97
38) Dibromomethane	5.743	93	5519	1.9590	ug/L	98
39) 1,2-Dichloropropane	5.850	63	10340	1.9814	ug/L	100
40) Bromodichloromethane	5.937	83	12772	1.9686	ug/L	99
42) 2-Chloroethyl Vinyl Ether	6.525	63	5173	1.9612	ug/L	97
43) cis-1,3-Dichloropropene	6.545	75	14648	1.9150	ug/L	95
44) 4-Methyl-2-Pentanone	7.811	58	2934	2.2643	ug/L	89
45) trans-1,3-Dichloropropene	7.145	75	12566	1.9200	ug/L	96
48) Toluene	6.757	91	41495	1.9957	ug/L	99
49) Tetrachloroethene	7.084	166	10927	1.9498	ug/L	99
50) 1,1,2-Trichloroethane	7.275	97	7614	1.9685	ug/L	96
51) Dibromochloromethane	7.414	129	9610	1.9246	ug/L	99

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016372.D
Acq On : 11 Nov 2015 16:14
Operator : ADC
Sample : WG546498-06 2.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 12 09:49:16 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
52)	1,3-Dichloropropane	7.495	76	12384	2.0186 ug/L	97
53)	1,2-Dibromoethane	7.588	107	7777	2.0262 ug/L	100
54)	2-Hexanone	7.814	43	5573	2.2411 ug/L	99
55)	Chlorobenzene	7.984	112	26437	1.9730 ug/L	85
56)	1-Chlorohexane	7.999	69	2876	2.0897 ug/L #	83
57)	Ethylbenzene	8.019	106	14041	1.9251 ug/L	94
58)	1,1,1,2-Tetrachloroethane	8.036	131	9797	1.9749 ug/L	97
59)	m-,p-Xylene	8.120	106	34517	3.9447 ug/L	100
60)	o-Xylene	8.384	106	16733	1.9380 ug/L	97
61)	Styrene	8.416	104	28327	1.9741 ug/L	99
62)	Bromoform	8.419	173	6362	1.9325 ug/L	98
63)	Isopropylbenzene	8.575	105	45060	2.0020 ug/L	99
65)	1,3,5-Trimethylbenzene	8.911	105	39947	2.0294 ug/L	98
67)	Bromobenzene	8.775	156	11767	1.9125 ug/L	97
68)	n-Propylbenzene	8.804	91	51807	2.0164 ug/L	99
69)	1,1,2,2-Tetrachloroethane	8.844	83	8705	1.9506 ug/L	100
70)	2-Chlorotoluene	8.879	91	31003	1.9730 ug/L	99
71)	1,2,3-Trichloropropane	8.911	110	2646	2.1302 ug/L	90
72)	trans-1,4-Dichloro-2-B...	8.937	53	2166	2.0977 ug/L #	81
73)	1,2,4-Trimethylbenzene	9.108	105	39303	2.0001 ug/L	99
74)	4-Chlorotoluene	8.966	91	32473	2.0085 ug/L	100
75)	tert-Butylbenzene	9.073	134	7070	1.9586 ug/L	97
76)	sec-Butylbenzene	9.163	105	49271	2.0370 ug/L	99
77)	p-Isopropyltoluene	9.238	119	41728	1.9947 ug/L	99
78)	1,3-Dichlorobenzene	9.264	146	22316	1.9751 ug/L	98
79)	1,4-Dichlorobenzene	9.310	146	22145	1.9214 ug/L	97
80)	n-Butylbenzene	9.441	91	38221	1.9851 ug/L	99
81)	1,2-Dichlorobenzene	9.513	146	20783	1.9322 ug/L	95
82)	1,2-Dibromo-3-Chloropr...	9.889	75	1645	1.9641 ug/L	95
83)	Hexachlorobutadiene	10.185	225	9564	1.9317 ug/L	99
84)	1,2,4-Trichlorobenzene	10.199	180	16464	1.9180 ug/L	99
85)	Naphthalene	10.353	128	32754	2.0600 ug/L	98
86)	1,2,3-Trichlorobenzene	10.434	180	15576	1.9661 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016372.D
Acq On : 11 Nov 2015 16:14
Operator : ADC
Sample : WG546498-06 2.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 12 09:49:16 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

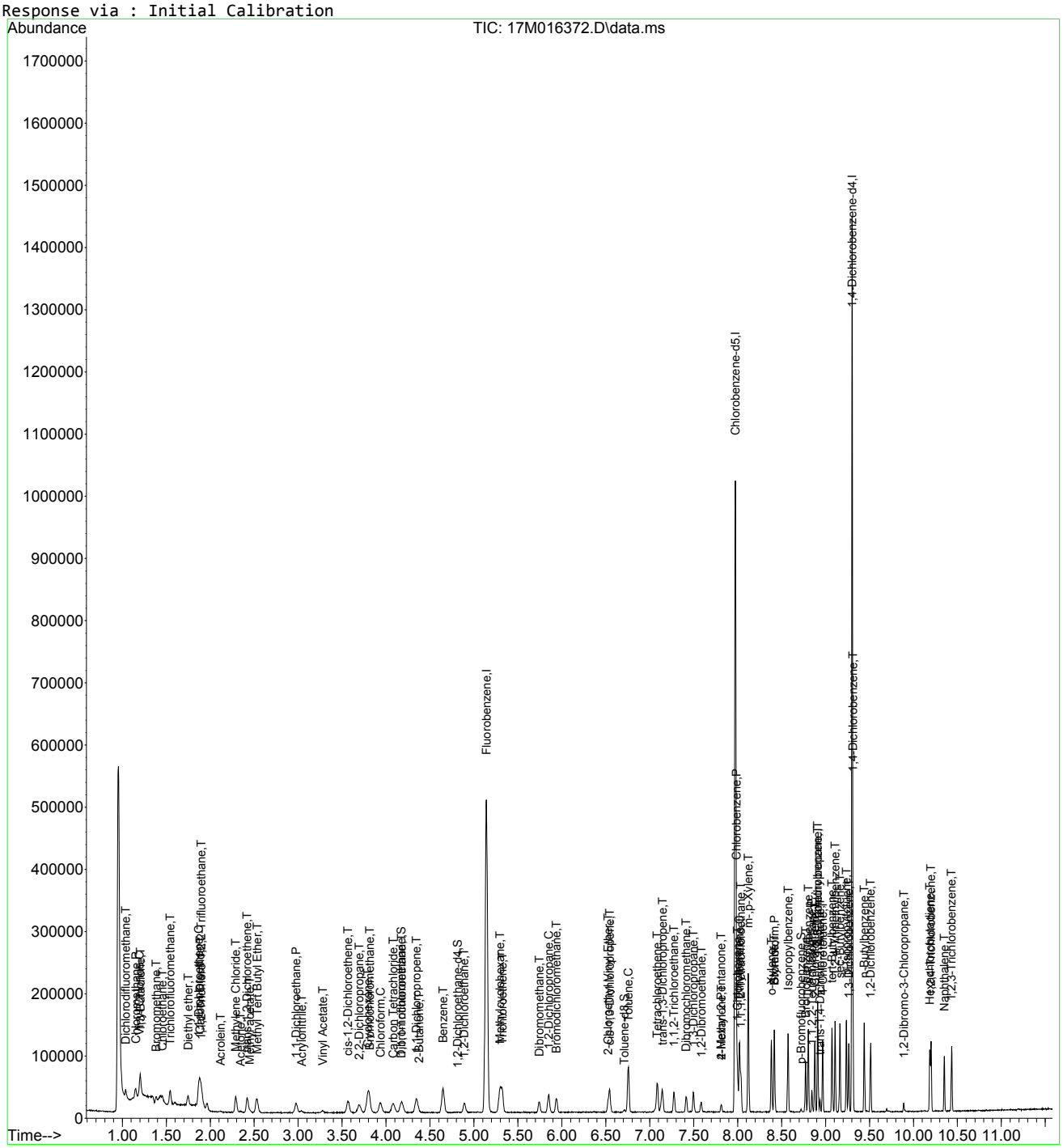

8260_VMS.M Thu Nov 12 09:53:56 2015 Page: 3

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016372.D
Acq On : 11 Nov 2015 16:14
Operator : ADC
Sample : WG546498-06 2.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 12 09:49:16 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	100	0.000
2	T	Dichlorodifluoromethane	2.000	1.762	11.9	100	0.000
3	P	Chloromethane	2.000	2.061	-3.0	100	0.000
4	C	Vinyl Chloride	2.000	1.875	6.3#	100	0.000
5	T	1,3-Butadiene	2.000	2.063	-3.2	100	0.000
6	T	Bromomethane	2.000	2.183	-9.1	100	0.000
7	T	Chloroethane	2.000	2.131	-6.5	100	0.000
8	T	Trichlorofluoromethane	2.000	1.927	3.6	100	0.011
9	T	Diethyl ether	2.000	2.188	-9.4	100	0.000
10	C	1,1-Dichloroethene	2.000	1.940	3.0#	100	0.000
11	T	Carbon Disulfide	2.000	1.889	5.5	100	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.000	1.953	2.3	100	0.000
13	T	Iodomethane	-1.000	0.000	0.0	0	0.000
14	T	Acrolein	-1.000	2.879	0.0	0	0.000
15	T	Methylene Chloride	2.000	2.180	-9.0	100	0.000
16	T	Acetone	-1.000	2.212	0.0	0	0.000
17	T	trans-1,2-Dichloroethene	2.000	1.934	3.3	100	0.000
18	T	Methyl acetate	2.000	1.777	11.2	108	0.000
19	T	Methyl Tert Butyl Ether	2.000	1.998	0.1	100	0.000
20	P	1,1-Dichloroethane	2.000	1.952	2.4	100	0.000
21	T	Acrylonitrile	2.000	2.201	-10.1	100	0.000
22	T	Vinyl Acetate	-1.000	4.018	0.0	0	0.000
23	T	cis-1,2-Dichloroethene	2.000	1.932	3.4	100	0.000
24	T	2,2-Dichloropropane	2.000	1.767	11.7	100	0.000
25	T	Cyclohexane	2.000	2.045	-2.2	100	0.000
26	T	Bromochloromethane	2.000	1.879	6.0	100	0.000
27	C	Chloroform	2.000	1.917	4.1#	100	0.000
28	T	Carbon Tetrachloride	2.000	1.957	2.1	100	0.000
29	S	Dibromofluoromethane	-1.000	0.210	0.0	0	0.000
30	T	1,1,1-Trichloroethane	2.000	1.976	1.2	100	0.000
31	T	1,1-Dichloropropene	2.000	1.959	2.0	100	0.000
32	T	2-Butanone	-1.000	2.308	0.0	0	0.000
33	T	Benzene	2.000	1.959	2.0	100	0.000
34	S	1,2-Dichloroethane-d4	-1.000	0.174	0.0	0	0.000
35	T	1,2-Dichloroethane	2.000	1.999	0.0	100	0.000
36	T	Methylcyclohexane	2.000	1.931	3.4	100	0.000
37	T	Trichloroethene	2.000	1.941	2.9	100	0.000
38	T	Dibromomethane	2.000	1.959	2.0	100	0.000
39	C	1,2-Dichloropropane	2.000	1.981	0.9#	100	0.000
40	T	Bromodichloromethane	2.000	1.969	1.5	100	0.000
41	T	1,4-Dioxane	-1.000	0.000	0.0	0	-6.149#
42	T	2-Chloroethyl Vinyl Ether	2.000	1.961	1.9	100	0.000
43	T	cis-1,3-Dichloropropene	2.000	1.915	4.2	100	0.000
44	T	4-Methyl-2-Pentanone	-1.000	2.264	0.0	0	0.000
45	T	trans-1,3-Dichloropropene	2.000	1.920	4.0	100	0.000
46	I	Chlorobenzene-d5	25.000	25.000	0.0	100	0.000
47	S	Toluene-d8	-1.000	0.175	0.0	0	0.000
48	C	Toluene	2.000	1.996	0.2#	100	0.000
49	T	Tetrachloroethene	2.000	1.950	2.5	100	0.000
50	T	1,1,2-Trichloroethane	2.000	1.969	1.5	100	0.000
51	T	Dibromochloromethane	2.000	1.925	3.7	100	0.000
52	T	1,3-Dichloropropane	2.000	2.019	-1.0	100	0.000
53	T	1,2-Dibromoethane	2.000	2.026	-1.3	100	0.000
54	T	2-Hexanone	2.000	2.241	-12.1	100	0.000
55	P	Chlorobenzene	2.000	1.973	1.3	100	0.000

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016372.D
Acq On : 11 Nov 2015 16:14
Operator : ADC
Sample : WG546498-06 2.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 12 09:49:16 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	1-Chlorohexane	2.000	2.090	-4.5	100	0.000
57	C	Ethylbenzene	2.000	1.925	3.7#	100	0.000
58	T	1,1,1,2-Tetrachloroethane	2.000	1.975	1.2	100	0.000
59	T	m-,p-Xylene	4.000	3.945	1.4	100	0.000
60	T	o-Xylene	2.000	1.938	3.1	100	0.000
61	T	Styrene	2.000	1.974	1.3	100	0.000
62	P	Bromoform	2.000	1.932	3.4	100	0.000
63	T	Isopropylbenzene	2.000	2.002	-0.1	100	0.000
64	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	100	0.000
65	T	1,3,5-Trimethylbenzene	2.000	2.029	-1.4	100	0.000
66	S	p-Bromofluorobenzene	-1.000	0.266	0.0	0	0.000
67	T	Bromobenzene	2.000	1.913	4.3	100	0.000
68	T	n-Propylbenzene	2.000	2.016	-0.8	100	0.000
69	P	1,1,2,2-Tetrachloroethane	2.000	1.951	2.4	100	0.000
70	T	2-Chlorotoluene	2.000	1.973	1.3	100	0.000
71	T	1,2,3-Trichloropropane	2.000	2.130	-6.5	100	0.000
72	T	trans-1,4-Dichloro-2-Butene	2.000	2.098	-4.9	100	0.000
73	T	1,2,4-Trimethylbenzene	2.000	2.000	0.0	100	0.000
74	T	4-Chlorotoluene	2.000	2.009	-0.4	100	0.000
75	T	tert-Butylbenzene	2.000	1.959	2.0	100	0.000
76	T	sec-Butylbenzene	2.000	2.037	-1.8	100	0.000
77	T	p-Isopropyltoluene	2.000	1.995	0.2	100	0.000
78	T	1,3-Dichlorobenzene	2.000	1.975	1.2	100	0.000
79	T	1,4-Dichlorobenzene	2.000	1.921	3.9	100	0.000
80	T	n-Butylbenzene	2.000	1.985	0.7	100	0.000
81	T	1,2-Dichlorobenzene	2.000	1.932	3.4	100	0.000
82	T	1,2-Dibromo-3-Chloropropane	2.000	1.964	1.8	100	0.000
83	T	Hexachlorobutadiene	2.000	1.932	3.4	100	0.000
84	T	1,2,4-Trichlorobenzene	2.000	1.918	4.1	100	0.000
85	T	Naphthalene	2.000	2.060	-3.0	100	0.000
86	T	1,2,3-Trichlorobenzene	2.000	1.966	1.7	100	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016373.D
Acq On : 11 Nov 2015 16:33
Operator : ADC
Sample : WG546498-07 5.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 12 09:55:30 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.141	96	432623	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	320606	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.302	152	175287	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.180	111	23235	5.2355 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 20.942%#		
34) 1,2-Dichloroethane-d4	4.814	65	22950	5.3849 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 21.540%#		
47) Toluene-d8	6.710	98	86498	5.2339 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 20.936%#		
66) p-Bromofluorobenzene	8.723	95	30541	5.0403 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 20.161%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.038	85	30889	5.0207 ug/L	99
3) Chloromethane	1.148	50	35766	5.4576 ug/L	99
4) Vinyl Chloride	1.195	62	31301	5.3470 ug/L	98
5) 1,3-Butadiene	1.206	54	18569	4.9351 ug/L	98
6) Bromomethane	1.383	94	16788	5.4372 ug/L	100
7) Chloroethane	1.452	64	17410	5.8250 ug/L	83
8) Trichlorofluoromethane	1.539	101	39315	5.3920 ug/L	98
9) Diethyl ether	1.748	59	18562	5.3738 ug/L	99
10) 1,1-Dichloroethene	1.866	61	37561	5.5308 ug/L	99
11) Carbon Disulfide	1.881	76	70129	4.9029 ug/L	99
12) 1,1,2-Trichloro-1,2,2-...	1.898	101	23545	5.5910 ug/L	100
14) Acrolein	2.113	56	2740	5.9224 ug/L	91
15) Methylene Chloride	2.292	84	28500	5.6719 ug/L	95
16) Acetone	2.347	43	5507	5.8137 ug/L #	72
17) trans-1,2-Dichloroethene	2.422	96	24016	5.4089 ug/L	100
18) Methyl acetate	2.451	43	12641	5.1174 ug/L #	98
19) Methyl Tert Butyl Ether	2.529	73	65593	5.7955 ug/L	99
20) 1,1-Dichloroethane	2.978	63	47350	5.5723 ug/L	100
21) Acrylonitrile	3.036	53	6503	5.5288 ug/L	96
22) Vinyl Acetate	3.276	86	1562	6.2614 ug/L #	76
23) cis-1,2-Dichloroethene	3.566	96	27739	5.4413 ug/L	100
24) 2,2-Dichloropropane	3.693	77	32509	5.1149 ug/L	99
25) Cyclohexane	3.792	56	41807	5.1119 ug/L	97
26) Bromochloromethane	3.803	130	16652	5.5319 ug/L	100
27) Chloroform	3.934	83	45552	5.4108 ug/L	99
28) Carbon Tetrachloride	4.081	117	36188	5.5357 ug/L	99
30) 1,1,1-Trichloroethane	4.180	97	41493	5.6190 ug/L	99
31) 1,1-Dichloropropene	4.345	75	34916	5.5775 ug/L	99
32) 2-Butanone	4.374	43	7475	5.2385 ug/L #	95
33) Benzene	4.646	78	102565	5.5162 ug/L	99
35) 1,2-Dichloroethane	4.892	62	31926	5.7064 ug/L	98
36) Methylcyclohexane	5.297	83	41963	4.8267 ug/L	98
37) Trichloroethene	5.323	130	28145	5.4549 ug/L	98
38) Dibromomethane	5.743	93	15419	5.5884 ug/L	99
39) 1,2-Dichloropropane	5.850	63	28726	5.6205 ug/L	99
40) Bromodichloromethane	5.937	83	35304	5.5560 ug/L	96
41) 1,4-Dioxane	6.157	88	236	7.6025 ug/L #	1
42) 2-Chloroethyl Vinyl Ether	6.528	63	13598	5.2639 ug/L	100
43) cis-1,3-Dichloropropene	6.545	75	41870	5.5889 ug/L	99
44) 4-Methyl-2-Pentanone	7.813	58	7057	5.5607 ug/L	100
45) trans-1,3-Dichloropropene	7.145	75	35851	5.5932 ug/L	98
48) Toluene	6.754	91	116097	5.7160 ug/L	99
49) Tetrachloroethene	7.087	166	30215	5.5193 ug/L	100
50) 1,1,2-Trichloroethane	7.275	97	21414	5.6674 ug/L	99

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016373.D
Acq On : 11 Nov 2015 16:33
Operator : ADC
Sample : WG546498-07 5.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 12 09:55:30 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
51) Dibromochloromethane	7.417	129	27260	5.5885 ug/L	98
52) 1,3-Dichloropropane	7.498	76	34573	5.7689 ug/L	98
53) 1,2-Dibromoethane	7.585	107	21349	5.6938 ug/L	100
54) 2-Hexanone	7.813	43	12998	5.3507 ug/L	97
55) Chlorobenzene	7.984	112	72910	5.5700 ug/L	94
56) 1-Chlorohexane	7.999	69	6646	4.9432 ug/L	70
57) Ethylbenzene	8.019	106	39341	5.5216 ug/L	99
58) 1,1,1,2-Tetrachloroethane	8.036	131	27278	5.6289 ug/L	97
59) m-,p-Xylene	8.120	106	96707	11.3137 ug/L	100
60) o-Xylene	8.384	106	47483	5.6295 ug/L	98
61) Styrene	8.416	104	78212	5.5797 ug/L	99
62) Bromoform	8.419	173	18171	5.6501 ug/L	99
63) Isopropylbenzene	8.572	105	125413	5.7041 ug/L	99
65) 1,3,5-Trimethylbenzene	8.911	105	109819	5.7217 ug/L	99
67) Bromobenzene	8.772	156	33338	5.5571 ug/L	99
68) n-Propylbenzene	8.804	91	144838	5.7815 ug/L	99
69) 1,1,2,2-Tetrachloroethane	8.844	83	25151	5.7800 ug/L	99
70) 2-Chlorotoluene	8.879	91	87536	5.7133 ug/L	99
71) 1,2,3-Trichloropropane	8.908	110	7088	5.8522 ug/L	95
72) trans-1,4-Dichloro-2-B...	8.937	53	5177	5.1421 ug/L #	94
73) 1,2,4-Trimethylbenzene	9.108	105	110041	5.7432 ug/L	99
74) 4-Chlorotoluene	8.966	91	89996	5.7088 ug/L	99
75) tert-Butylbenzene	9.073	134	19681	5.5918 ug/L	96
76) sec-Butylbenzene	9.163	105	136371	5.7821 ug/L	99
77) p-Isopropyltoluene	9.238	119	118047	5.7873 ug/L	99
78) 1,3-Dichlorobenzene	9.264	146	61365	5.5701 ug/L	99
79) 1,4-Dichlorobenzene	9.310	146	61766	5.4961 ug/L	99
80) n-Butylbenzene	9.441	91	106426	5.6690 ug/L	100
81) 1,2-Dichlorobenzene	9.513	146	59292	5.6533 ug/L	100
82) 1,2-Dibromo-3-Chloropr...	9.889	75	4656	5.7013 ug/L	96
83) Hexachlorobutadiene	10.185	225	26568	5.5033 ug/L	99
84) 1,2,4-Trichlorobenzene	10.199	180	47276	5.6482 ug/L	100
85) Naphthalene	10.350	128	91986	5.9331 ug/L	100
86) 1,2,3-Trichlorobenzene	10.434	180	44703	5.7869 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016373.D
Acq On : 11 Nov 2015 16:33
Operator : ADC
Sample : WG546498-07 5.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 12 09:55:30 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

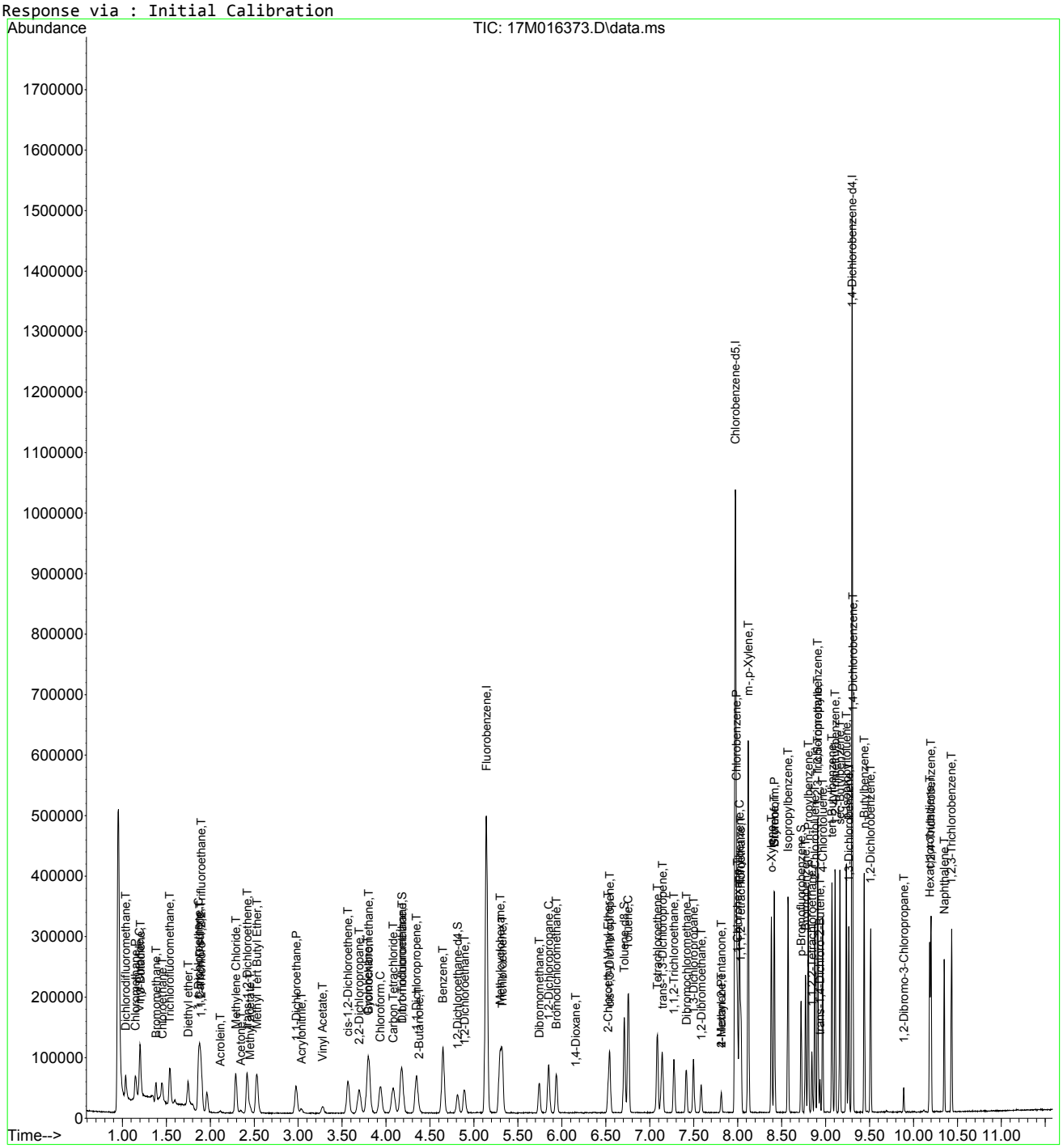

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016373.D
Acq On : 11 Nov 2015 16:33
Operator : ADC
Sample : WG546498-07 5.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 12 09:49:18 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	100	0.000
2	T	Dichlorodifluoromethane	5.000	5.021	-0.4	100	0.000
3	P	Chloromethane	5.000	5.458	-9.2	100	0.000
4	C	Vinyl Chloride	5.000	5.347	-6.9#	100	0.000
5	T	1,3-Butadiene	5.000	4.935	1.3	100	0.000
6	T	Bromomethane	5.000	5.437	-8.7	100	0.000
7	T	Chloroethane	5.000	5.825	-16.5	100	0.000
8	T	Trichlorofluoromethane	5.000	5.392	-7.8	100	0.000
9	T	Diethyl ether	5.000	5.374	-7.5	100	0.000
10	C	1,1-Dichloroethene	5.000	5.531	-10.6#	100	0.000
11	T	Carbon Disulfide	5.000	4.903	1.9	100	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.000	5.591	-11.8	100	0.000
13	T	Iodomethane	-1.000	0.000	0.0	0	0.000
14	T	Acrolein	5.000	5.922	-18.4	100	0.000
15	T	Methylene Chloride	5.000	5.672	-13.4	100	0.000
16	T	Acetone	5.000	5.814	-16.3	100	0.000
17	T	trans-1,2-Dichloroethene	5.000	5.409	-8.2	100	0.000
18	T	Methyl acetate	5.000	5.117	-2.3	102	0.000
19	T	Methyl Tert Butyl Ether	5.000	5.795	-15.9	100	0.000
20	P	1,1-Dichloroethane	5.000	5.572	-11.4	100	0.000
21	T	Acrylonitrile	5.000	5.529	-10.6	100	0.000
22	T	Vinyl Acetate	5.000	6.261	-25.2#	100	0.000
23	T	cis-1,2-Dichloroethene	5.000	5.441	-8.8	100	0.000
24	T	2,2-Dichloropropane	5.000	5.115	-2.3	100	0.000
25	T	Cyclohexane	5.000	5.112	-2.2	100	0.000
26	T	Bromochloromethane	5.000	5.532	-10.6	100	0.000
27	C	Chloroform	5.000	5.411	-8.2#	100	0.000
28	T	Carbon Tetrachloride	5.000	5.536	-10.7	100	0.000
29	S	Dibromofluoromethane	5.000	5.235	-4.7	100	0.000
30	T	1,1,1-Trichloroethane	5.000	5.619	-12.4	100	0.000
31	T	1,1-Dichloropropene	5.000	5.578	-11.6	100	0.000
32	T	2-Butanone	5.000	5.239	-4.8	100	0.000
33	T	Benzene	5.000	5.516	-10.3	100	0.000
34	S	1,2-Dichloroethane-d4	5.000	5.385	-7.7	100	0.000
35	T	1,2-Dichloroethane	5.000	5.706	-14.1	100	0.000
36	T	Methylcyclohexane	5.000	4.827	3.5	100	0.000
37	T	Trichloroethene	5.000	5.455	-9.1	100	0.000
38	T	Dibromomethane	5.000	5.588	-11.8	100	0.000
39	C	1,2-Dichloropropane	5.000	5.620	-12.4#	100	0.000
40	T	Bromodichloromethane	5.000	5.556	-11.1	100	0.000
41	T	1,4-Dioxane	-1.000	7.602	0.0	0	0.000
42	T	2-Chloroethyl Vinyl Ether	5.000	5.264	-5.3	100	0.000
43	T	cis-1,3-Dichloropropene	5.000	5.589	-11.8	100	0.000
44	T	4-Methyl-2-Pentanone	5.000	5.561	-11.2	100	0.000
45	T	trans-1,3-Dichloropropene	5.000	5.593	-11.9	100	0.000
46	I	Chlorobenzene-d5	25.000	25.000	0.0	100	0.000
47	S	Toluene-d8	5.000	5.234	-4.7	100	0.000
48	C	Toluene	5.000	5.716	-14.3#	100	0.000
49	T	Tetrachloroethene	5.000	5.519	-10.4	100	0.000
50	T	1,1,2-Trichloroethane	5.000	5.667	-13.3	100	0.000
51	T	Dibromochloromethane	5.000	5.588	-11.8	100	0.000
52	T	1,3-Dichloropropane	5.000	5.769	-15.4	100	0.000
53	T	1,2-Dibromoethane	5.000	5.694	-13.9	100	0.000
54	T	2-Hexanone	5.000	5.351	-7.0	100	0.000
55	P	Chlorobenzene	5.000	5.570	-11.4	100	0.000

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016373.D
Acq On : 11 Nov 2015 16:33
Operator : ADC
Sample : WG546498-07 5.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 12 09:49:18 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	1-Chlorohexane	5.000	4.943	1.1	100	0.000
57	C	Ethylbenzene	5.000	5.522	-10.4#	100	0.000
58	T	1,1,1,2-Tetrachloroethane	5.000	5.629	-12.6	100	0.000
59	T	m-,p-Xylene	10.000	11.314	-13.1	100	0.000
60	T	o-Xylene	5.000	5.630	-12.6	100	0.000
61	T	Styrene	5.000	5.580	-11.6	100	0.000
62	P	Bromoform	5.000	5.650	-13.0	100	0.000
63	T	Isopropylbenzene	5.000	5.704	-14.1	100	0.000
64	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	100	0.000
65	T	1,3,5-Trimethylbenzene	5.000	5.722	-14.4	100	0.000
66	S	p-Bromofluorobenzene	5.000	5.040	-0.8	100	0.000
67	T	Bromobenzene	5.000	5.557	-11.1	100	0.000
68	T	n-Propylbenzene	5.000	5.781	-15.6	100	0.000
69	P	1,1,2,2-Tetrachloroethane	5.000	5.780	-15.6	100	0.000
70	T	2-Chlorotoluene	5.000	5.713	-14.3	100	0.000
71	T	1,2,3-Trichloropropane	5.000	5.852	-17.0	100	0.000
72	T	trans-1,4-Dichloro-2-Butene	5.000	5.142	-2.8	100	0.000
73	T	1,2,4-Trimethylbenzene	5.000	5.743	-14.9	100	0.000
74	T	4-Chlorotoluene	5.000	5.709	-14.2	100	0.000
75	T	tert-Butylbenzene	5.000	5.592	-11.8	100	0.000
76	T	sec-Butylbenzene	5.000	5.782	-15.6	100	0.000
77	T	p-Isopropyltoluene	5.000	5.787	-15.7	100	0.000
78	T	1,3-Dichlorobenzene	5.000	5.570	-11.4	100	0.000
79	T	1,4-Dichlorobenzene	5.000	5.496	-9.9	100	0.000
80	T	n-Butylbenzene	5.000	5.669	-13.4	100	0.000
81	T	1,2-Dichlorobenzene	5.000	5.653	-13.1	100	0.000
82	T	1,2-Dibromo-3-Chloropropane	5.000	5.701	-14.0	100	0.000
83	T	Hexachlorobutadiene	5.000	5.503	-10.1	100	0.000
84	T	1,2,4-Trichlorobenzene	5.000	5.648	-13.0	100	0.000
85	T	Naphthalene	5.000	5.933	-18.7	100	0.000
86	T	1,2,3-Trichlorobenzene	5.000	5.787	-15.7	100	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016374.D
Acq On : 11 Nov 2015 16:53
Operator : ADC
Sample : WG546498-08 20.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 12 09:55:33 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.141	96	432020	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	326915	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.302	152	182702	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.177	111	42853	9.6694 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery	= 38.678%#	
34) 1,2-Dichloroethane-d4	4.814	65	41338	9.7129 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery	= 38.852%#	
47) Toluene-d8	6.710	98	160163	9.5043 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery	= 38.017%#	
66) p-Bromofluorobenzene	8.723	95	59106	9.3586 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery	= 37.434%#	
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.038	85	123979	20.1796 ug/L	99
3) Chloromethane	1.148	50	126802	19.3760 ug/L	100
4) Vinyl Chloride	1.195	62	115155	19.6989 ug/L	100
5) 1,3-Butadiene	1.206	54	70591	18.7874 ug/L	99
6) Bromomethane	1.380	94	56601	18.3570 ug/L	100
7) Chloroethane	1.452	64	59359	19.8879 ug/L	90
8) Trichlorofluoromethane	1.539	101	140439	19.6669 ug/L	99
9) Diethyl ether	1.748	59	68959	19.9920 ug/L	100
10) 1,1-Dichloroethene	1.867	61	133678	19.7112 ug/L	100
11) Carbon Disulfide	1.881	76	270202	18.9167 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.895	101	81830	19.4585 ug/L	99
14) Acrolein	2.113	56	9085	19.6642 ug/L	95
15) Methylene Chloride	2.289	84	92582	18.4508 ug/L	99
16) Acetone	2.344	43	18531	21.0453 ug/L	97
17) trans-1,2-Dichloroethene	2.420	96	86627	19.5376 ug/L	97
18) Methyl acetate	2.448	43	49421	20.0348 ug/L #	100
19) Methyl Tert Butyl Ether	2.530	73	224023	19.8211 ug/L	100
20) 1,1-Dichloroethane	2.975	63	167386	19.7259 ug/L	100
21) Acrylonitrile	3.036	53	23363	19.8908 ug/L	98
22) Vinyl Acetate	3.277	86	8716	18.6688 ug/L #	98
23) cis-1,2-Dichloroethene	3.566	96	98647	19.3777 ug/L	98
24) 2,2-Dichloropropane	3.693	77	122341	19.2757 ug/L	100
25) Cyclohexane	3.792	56	155883	19.0871 ug/L	99
26) Bromochloromethane	3.806	130	59579	19.8201 ug/L	100
27) Chloroform	3.934	83	159418	18.9624 ug/L	100
28) Carbon Tetrachloride	4.081	117	128615	19.7017 ug/L	100
30) 1,1,1-Trichloroethane	4.180	97	141801	19.2295 ug/L	100
31) 1,1-Dichloropropene	4.345	75	120635	19.2973 ug/L	99
32) 2-Butanone	4.365	43	28955	20.3201 ug/L	95
33) Benzene	4.649	78	361894	19.4908 ug/L	100
35) 1,2-Dichloroethane	4.892	62	111640	19.9823 ug/L	99
36) Methylcyclohexane	5.297	83	155527	17.9140 ug/L	99
37) Trichloroethene	5.324	130	99096	19.2329 ug/L	100
38) Dibromomethane	5.743	93	53396	19.3796 ug/L	100
39) 1,2-Dichloropropane	5.851	63	100181	19.6287 ug/L	99
40) Bromodichloromethane	5.937	83	124598	19.6361 ug/L	100
41) 1,4-Dioxane	6.152	88	996	32.1298 ug/L	83
42) 2-Chloroethyl Vinyl Ether	6.528	63	52665	20.4156 ug/L	100
43) cis-1,3-Dichloropropene	6.545	75	149360	19.9649 ug/L	100
44) 4-Methyl-2-Pentanone	7.814	58	25486	20.1103 ug/L	100
45) trans-1,3-Dichloropropene	7.145	75	127855	19.9749 ug/L	100
48) Toluene	6.757	91	402334	19.4263 ug/L	100
49) Tetrachloroethene	7.087	166	105353	18.8732 ug/L	100
50) 1,1,2-Trichloroethane	7.278	97	72898	18.9208 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016374.D
Acq On : 11 Nov 2015 16:53
Operator : ADC
Sample : WG546498-08 20.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 12 09:55:33 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
51) Dibromochloromethane	7.414	129	97313	19.5649 ug/L	100
52) 1,3-Dichloropropane	7.498	76	119400	19.5388 ug/L	98
53) 1,2-Dibromoethane	7.585	107	73953	19.3429 ug/L	100
54) 2-Hexanone	7.814	43	49286	19.8972 ug/L	100
55) Chlorobenzene	7.984	112	258377	19.3581 ug/L	100
56) 1-Chlorohexane	7.999	69	24751	18.0543 ug/L	82
57) Ethylbenzene	8.022	106	139900	19.2563 ug/L	100
58) 1,1,1,2-Tetrachloroethane	8.036	131	97056	19.6414 ug/L	99
59) m-,p-Xylene	8.120	106	342429	39.2876 ug/L	100
60) o-Xylene	8.384	106	166521	19.3616 ug/L	99
61) Styrene	8.419	104	278369	19.4757 ug/L	100
62) Bromoform	8.419	173	64836	19.7711 ug/L	100
63) Isopropylbenzene	8.575	105	440028	19.6273 ug/L	100
65) 1,3,5-Trimethylbenzene	8.911	105	384226	19.2062 ug/L	100
67) Bromobenzene	8.775	156	117847	18.8466 ug/L	99
68) n-Propylbenzene	8.804	91	513406	19.6618 ug/L	100
69) 1,1,2,2-Tetrachloroethane	8.844	83	86968	19.1751 ug/L	100
70) 2-Chlorotoluene	8.879	91	307191	19.2359 ug/L	100
71) 1,2,3-Trichloropropane	8.911	110	23108	18.3049 ug/L	97
72) trans-1,4-Dichloro-2-B...	8.937	53	19213	18.3088 ug/L #	97
73) 1,2,4-Trimethylbenzene	9.111	105	385956	19.3261 ug/L	100
74) 4-Chlorotoluene	8.966	91	311813	18.9769 ug/L	99
75) tert-Butylbenzene	9.073	134	69746	19.0121 ug/L	99
76) sec-Butylbenzene	9.163	105	475309	19.3351 ug/L	100
77) p-Isopropyltoluene	9.238	119	412112	19.3841 ug/L	99
78) 1,3-Dichlorobenzene	9.264	146	220206	19.1768 ug/L	99
79) 1,4-Dichlorobenzene	9.310	146	217507	18.5689 ug/L	100
80) n-Butylbenzene	9.441	91	375849	19.2078 ug/L	100
81) 1,2-Dichlorobenzene	9.513	146	207637	18.9939 ug/L	99
82) 1,2-Dibromo-3-Chloropr...	9.890	75	16258	19.1002 ug/L	99
83) Hexachlorobutadiene	10.185	225	95794	19.0374 ug/L	100
84) 1,2,4-Trichlorobenzene	10.199	180	169274	19.4029 ug/L	99
85) Naphthalene	10.350	128	315706	19.5368 ug/L	100
86) 1,2,3-Trichlorobenzene	10.434	180	155899	19.3625 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016374.D
Acq On : 11 Nov 2015 16:53
Operator : ADC
Sample : WG546498-08 20.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 12 09:55:33 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

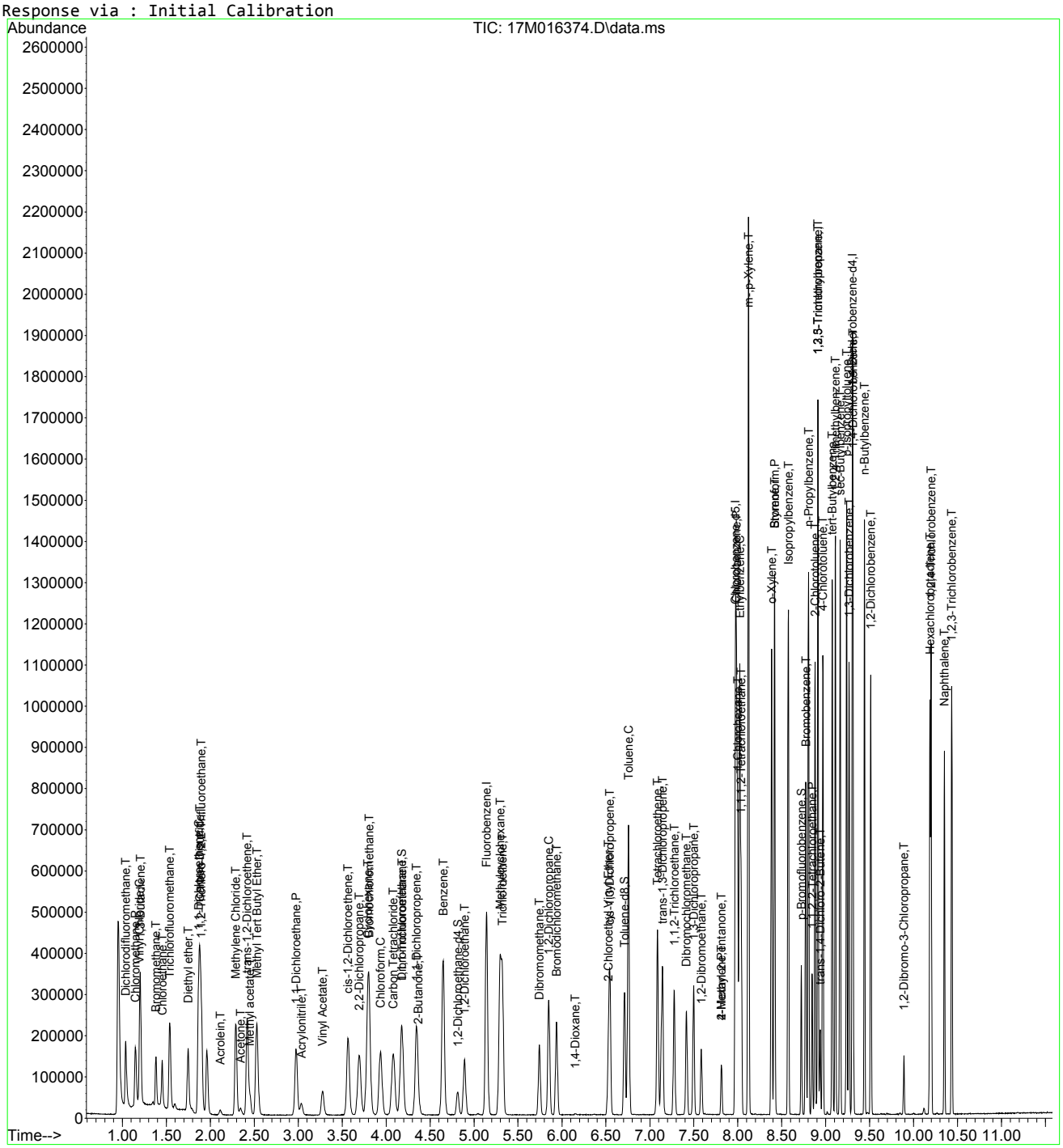

8260_VMS.M Thu Nov 12 09:55:34 2015 Page: 3

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016375.D
Acq On : 11 Nov 2015 17:13
Operator : ADC
Sample : WG546498-09 100.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 12 09:55:36 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.141	96	435819	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.976	117	329330	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.305	152	183512	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.177	111	227102	50.7971 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 203.188%#		
34) 1,2-Dichloroethane-d4	4.814	65	216427	50.4089 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 201.636%#		
47) Toluene-d8	6.713	98	856306	50.4420 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 201.768%#		
66) p-Bromofluorobenzene	8.723	95	325380	51.2920 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 205.168%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.036	85	672429	108.4947 ug/L	100
3) Chloromethane	1.146	50	645008	97.7016 ug/L	100
4) Vinyl Chloride	1.195	62	610828	103.5801 ug/L	100
5) 1,3-Butadiene	1.204	54	364239	96.0949 ug/L	99
6) Bromomethane	1.380	94	294852	94.7939 ug/L	99
7) Chloroethane	1.447	64	263145	87.3968 ug/L	93
8) Trichlorofluoromethane	1.525	101	718507	111.8531 ug/L	99
9) Diethyl ether	1.751	59	337490	96.9892 ug/L	100
10) 1,1-Dichloroethene	1.858	61	699242	102.2065 ug/L	100
11) Carbon Disulfide	1.872	76	1408250	97.7315 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.890	101	435206	102.5865 ug/L	100
14) Acrolein	2.116	56	45618	97.8782 ug/L	98
15) Methylene Chloride	2.286	84	465653	91.9915 ug/L	99
16) Acetone	2.347	43	82674	95.1744 ug/L	100
17) trans-1,2-Dichloroethene	2.417	96	442162	98.8546 ug/L	100
18) Methyl acetate	2.451	43	254121	102.1203 ug/L #	100
19) Methyl Tert Butyl Ether	2.533	73	1134395	99.4943 ug/L	100
20) 1,1-Dichloroethane	2.973	63	861653	100.6580 ug/L	100
21) Acrylonitrile	3.036	53	112295	94.7724 ug/L	97
22) Vinyl Acetate	3.277	86	51476	92.0281 ug/L	100
23) cis-1,2-Dichloroethene	3.563	96	498482	97.0654 ug/L	99
24) 2,2-Dichloropropane	3.691	77	680182	106.2335 ug/L	100
25) Cyclohexane	3.795	56	816785	99.1396 ug/L	100
26) Bromochloromethane	3.804	130	312915	103.1896 ug/L	99
27) Chloroform	3.937	83	818816	96.5474 ug/L	100
28) Carbon Tetrachloride	4.079	117	685171	104.0420 ug/L	100
30) 1,1,1-Trichloroethane	4.177	97	743102	99.8928 ug/L	100
31) 1,1-Dichloropropene	4.345	75	637540	101.0947 ug/L	100
32) 2-Butanone	4.368	43	141619	98.5194 ug/L	96
33) Benzene	4.649	78	1857716	99.1801 ug/L	100
35) 1,2-Dichloroethane	4.892	62	568138	100.8038 ug/L	100
36) Methylcyclohexane	5.298	83	830648	94.8424 ug/L	99
37) Trichloroethene	5.324	130	518925	99.8367 ug/L	100
38) Dibromomethane	5.743	93	273038	98.2326 ug/L	100
39) 1,2-Dichloropropane	5.851	63	517749	100.5593 ug/L	100
40) Bromodichloromethane	5.937	83	649100	101.4034 ug/L	100
41) 1,4-Dioxane	6.149	88	6000	191.8656 ug/L	98
42) 2-Chloroethyl Vinyl Ether	6.528	63	256923	98.7279 ug/L	99
43) cis-1,3-Dichloropropene	6.545	75	774345	102.6042 ug/L	100
44) 4-Methyl-2-Pentanone	7.814	58	124090	97.0627 ug/L	99
45) trans-1,3-Dichloropropene	7.148	75	666807	103.2676 ug/L	100
48) Toluene	6.760	91	2080036	99.6962 ug/L	100
49) Tetrachloroethene	7.087	166	561598	99.8681 ug/L	100
50) 1,1,2-Trichloroethane	7.278	97	371905	95.8206 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016375.D
Acq On : 11 Nov 2015 17:13
Operator : ADC
Sample : WG546498-09 100.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 12 09:55:36 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
51) Dibromochloromethane	7.417	129	512307	102.2445 ug/L	100
52) 1,3-Dichloropropane	7.498	76	610983	99.2491 ug/L	99
53) 1,2-Dibromoethane	7.585	107	380846	98.8822 ug/L	100
54) 2-Hexanone	7.814	43	236286	94.6911 ug/L	99
55) Chlorobenzene	7.987	112	1353581	100.6690 ug/L	99
56) 1-Chlorohexane	8.002	69	132271	95.7760 ug/L	91
57) Ethylbenzene	8.025	106	739094	100.9856 ug/L	97
58) 1,1,1,2-Tetrachloroethane	8.039	131	504662	101.3805 ug/L	99
59) m-,p-Xylene	8.123	106	1793260	204.2356 ug/L	97
60) o-Xylene	8.387	106	878654	101.4130 ug/L	100
61) Styrene	8.419	104	1461980	101.5355 ug/L	99
62) Bromoform	8.422	173	346760	104.9655 ug/L	99
63) Isopropylbenzene	8.575	105	2285181	101.1825 ug/L	99
65) 1,3,5-Trimethylbenzene	8.914	105	1999382	99.5012 ug/L	99
67) Bromobenzene	8.775	156	615182	97.9484 ug/L	100
68) n-Propylbenzene	8.807	91	2650686	101.0647 ug/L	99
69) 1,1,2,2-Tetrachloroethane	8.847	83	447119	98.1479 ug/L	100
70) 2-Chlorotoluene	8.882	91	1608621	100.2851 ug/L	100
71) 1,2,3-Trichloropropane	8.911	110	120391	94.9462 ug/L	99
72) trans-1,4-Dichloro-2-B...	8.937	53	100016	94.8885 ug/L #	95
73) 1,2,4-Trimethylbenzene	9.111	105	1998749	99.6424 ug/L	99
74) 4-Chlorotoluene	8.969	91	1642797	99.5391 ug/L	99
75) tert-Butylbenzene	9.076	134	373097	101.2538 ug/L	98
76) sec-Butylbenzene	9.166	105	2482748	100.5500 ug/L	100
77) p-Isopropyltoluene	9.241	119	2163497	101.3129 ug/L	99
78) 1,3-Dichlorobenzene	9.267	146	1154638	100.1085 ug/L	100
79) 1,4-Dichlorobenzene	9.313	146	1149692	97.7177 ug/L	99
80) n-Butylbenzene	9.444	91	1990054	101.2528 ug/L	99
81) 1,2-Dichlorobenzene	9.516	146	1089096	99.1869 ug/L	100
82) 1,2-Dibromo-3-Chloropr...	9.890	75	85646	100.1744 ug/L	99
83) Hexachlorobutadiene	10.185	225	500717	99.0697 ug/L	100
84) 1,2,4-Trichlorobenzene	10.202	180	862453	98.4217 ug/L	99
85) Naphthalene	10.350	128	1559335	96.0701 ug/L	100
86) 1,2,3-Trichlorobenzene	10.437	180	782232	96.7234 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016375.D
Acq On : 11 Nov 2015 17:13
Operator : ADC
Sample : WG546498-09 100.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 12 09:55:36 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

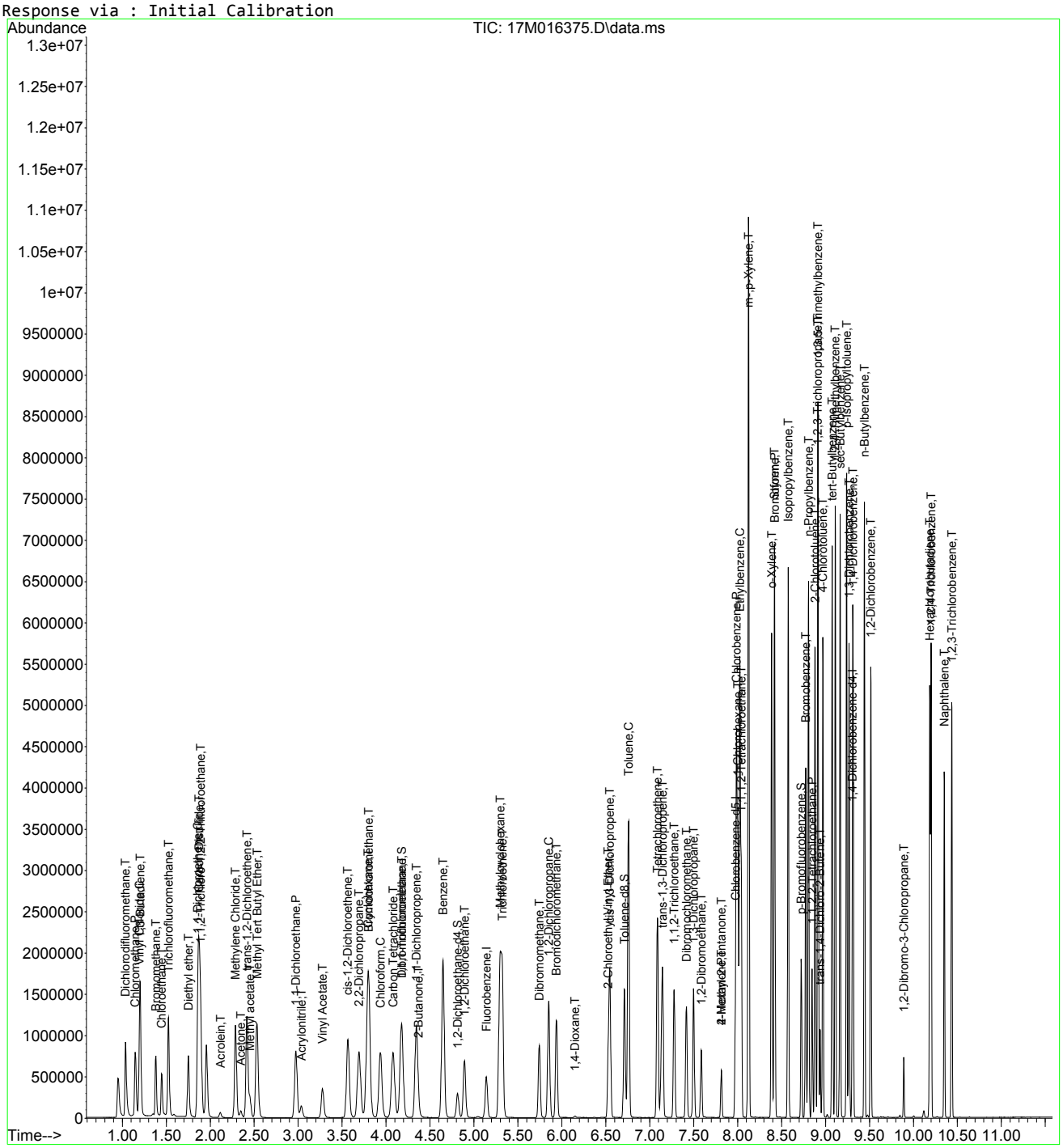

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016376.D
Acq On : 11 Nov 2015 17:33
Operator : ADC
Sample : WG546498-10 200.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Nov 12 09:55:39 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	5.141	96	423136	25.00000	ug/L	0.0000
46) Chlorobenzene-d5	7.976	117	320833	25.00000	ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.308	152	183130	25.00000	ug/L	# 0.0000
System Monitoring Compounds						
29) Dibromofluoromethane	4.177	111	420579	96.8928	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 387.571%#			
34) 1,2-Dichloroethane-d4	4.814	65	405549	97.2893	ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 389.157%#			
47) Toluene-d8	6.713	98	1589278	96.0983	ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 384.393%#			
66) p-Bromofluorobenzene	8.726	95	628947	99.3522	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 397.409%#			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.036	85	1264469	210.1340	ug/L	100
3) Chloromethane	1.146	50	1204363	187.8971	ug/L	100
4) Vinyl Chloride	1.192	62	1161924	202.9371	ug/L	100
5) 1,3-Butadiene	1.204	54	712072	193.4925	ug/L	99
6) Bromomethane	1.380	94	582345	192.8336	ug/L	99
7) Chloroethane	1.447	64	489582	167.4758	ug/L	95
8) Trichlorofluoromethane	1.519	101	962068	166.0101	ug/L	99
9) Diethyl ether	1.754	59	664790	196.7764	ug/L	99
10) 1,1-Dichloroethene	1.852	61	1300715	195.8211	ug/L	99
11) Carbon Disulfide	1.864	76	2724227	194.7261	ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.881	101	800798	194.4217	ug/L	100
14) Acrolein	2.119	56	90976	201.0493	ug/L	97
15) Methylene Chloride	2.286	84	887378	180.5595	ug/L	99
16) Acetone	2.356	43	164198	195.3327	ug/L	100
17) trans-1,2-Dichloroethene	2.414	96	851904	196.1699	ug/L	99
18) Methyl acetate	2.454	43	519405	214.9829	ug/L #	100
19) Methyl Tert Butyl Ether	2.535	73	2188063	197.6605	ug/L	100
20) 1,1-Dichloroethane	2.973	63	1641677	197.5284	ug/L	100
21) Acrylonitrile	3.042	53	225747	196.2319	ug/L	97
22) Vinyl Acetate	3.280	86	108500	195.6239	ug/L	99
23) cis-1,2-Dichloroethene	3.563	96	960093	192.5549	ug/L	100
24) 2,2-Dichloropropane	3.694	77	1283660	206.4964	ug/L	100
25) Cyclohexane	3.792	56	1586635	198.3547	ug/L	99
26) Bromochloromethane	3.806	130	602274	204.5643	ug/L	100
27) Chloroform	3.937	83	1564805	190.0381	ug/L	99
28) Carbon Tetrachloride	4.079	117	1303376	203.8475	ug/L	99
30) 1,1,1-Trichloroethane	4.174	97	1414455	195.8398	ug/L	100
31) 1,1-Dichloropropene	4.345	75	1215152	198.4622	ug/L	100
32) 2-Butanone	4.377	43	285771	204.7598	ug/L	95
33) Benzene	4.649	78	3559886	195.7526	ug/L	100
35) 1,2-Dichloroethane	4.892	62	1090735	199.3282	ug/L	100
36) Methylcyclohexane	5.298	83	1621652	190.7083	ug/L	99
37) Trichloroethene	5.324	130	995167	197.2003	ug/L	99
38) Dibromomethane	5.743	93	530177	196.4626	ug/L	100
39) 1,2-Dichloropropane	5.851	63	991101	198.2655	ug/L	100
40) Bromodichloromethane	5.940	83	1254068	201.7847	ug/L	100
41) 1,4-Dioxane	6.160	88	12975	427.3457	ug/L	98
42) 2-Chloroethyl Vinyl Ether	6.531	63	515167	203.8971	ug/L	99
43) cis-1,3-Dichloropropene	6.548	75	1497163	204.3271	ug/L	100
44) 4-Methyl-2-Pentanone	7.819	58	255733	206.0290	ug/L	99
45) trans-1,3-Dichloropropene	7.148	75	1298472	207.1204	ug/L	100
48) Toluene	6.760	91	3923514	193.0347	ug/L	99
49) Tetrachloroethene	7.090	166	1081912	197.4901	ug/L	100
50) 1,1,2-Trichloroethane	7.278	97	722575	191.1007	ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016376.D
Acq On : 11 Nov 2015 17:33
Operator : ADC
Sample : WG546498-10 200.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Nov 12 09:55:39 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
51) Dibromochloromethane	7.420	129	1009082	206.7227 ug/L	100
52) 1,3-Dichloropropane	7.501	76	1187193	197.9571 ug/L	99
53) 1,2-Dibromoethane	7.588	107	742133	197.7892 ug/L	100
54) 2-Hexanone	7.819	43	487942	200.7205 ug/L	99
55) Chlorobenzene	7.987	112	2606043	198.9506 ug/L	100
56) 1-Chlorohexane	8.005	69	259970	193.2269 ug/L	99
57) Ethylbenzene	8.028	106	1416629	198.6864 ug/L	94
58) 1,1,1,2-Tetrachloroethane	8.045	131	983720	202.8513 ug/L	99
59) m-,p-Xylene	8.129	106	3371507	394.1526 ug/L	91
60) o-Xylene	8.390	106	1697857	201.1541 ug/L	97
61) Styrene	8.422	104	2836707	202.2289 ug/L	99
62) Bromoform	8.425	173	703885	218.7114 ug/L	99
63) Isopropylbenzene	8.578	105	4261510	193.6870 ug/L	97
65) 1,3,5-Trimethylbenzene	8.917	105	3806148	189.8118 ug/L	97
67) Bromobenzene	8.778	156	1229913	196.2334 ug/L	99
68) n-Propylbenzene	8.810	91	4913490	187.7312 ug/L	96
69) 1,1,2,2-Tetrachloroethane	8.847	83	897807	197.4902 ug/L	100
70) 2-Chlorotoluene	8.882	91	3098585	193.5759 ug/L	99
71) 1,2,3-Trichloropropane	8.914	110	240327	189.9290 ug/L	99
72) trans-1,4-Dichloro-2-B...	8.940	53	204813	194.7181 ug/L #	99
73) 1,2,4-Trimethylbenzene	9.114	105	3814185	190.5429 ug/L	97
74) 4-Chlorotoluene	8.972	91	3174219	192.7311 ug/L	97
75) tert-Butylbenzene	9.079	134	742569	201.9442 ug/L	93
76) sec-Butylbenzene	9.169	105	4617155	187.3825 ug/L	97
77) p-Isopropyltoluene	9.241	119	4086031	191.7410 ug/L	96
78) 1,3-Dichlorobenzene	9.270	146	2276647	197.7997 ug/L	99
79) 1,4-Dichlorobenzene	9.313	146	2266056	193.0044 ug/L	99
80) n-Butylbenzene	9.444	91	3793868	193.4324 ug/L	97
81) 1,2-Dichlorobenzene	9.516	146	2143436	195.6157 ug/L	99
82) 1,2-Dibromo-3-Chloropr...	9.890	75	171231	200.6953 ug/L	98
83) Hexachlorobutadiene	10.188	225	1033545	204.9194 ug/L	99
84) 1,2,4-Trichlorobenzene	10.202	180	1746090	199.6766 ug/L	99
85) Naphthalene	10.353	128	3095323	191.0995 ug/L	99
86) 1,2,3-Trichlorobenzene	10.437	180	1600471	198.3119 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016376.D
Acq On : 11 Nov 2015 17:33
Operator : ADC
Sample : WG546498-10 200.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Nov 12 09:55:39 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

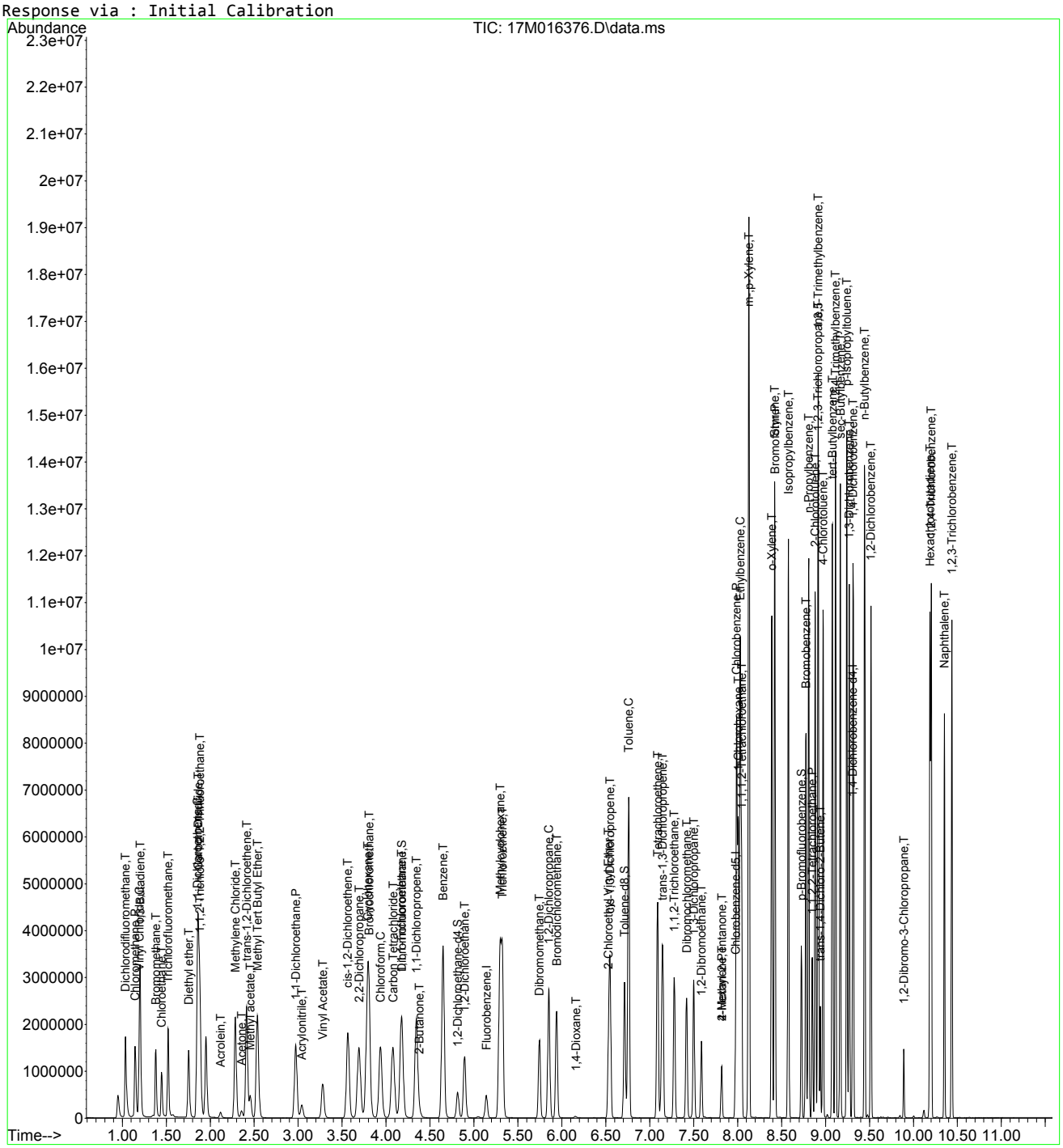

8260_VMS.M Thu Nov 12 09:55:40 2015 Page: 3

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016377.D
Acq On : 11 Nov 2015 17:53
Operator : ADC
Sample : WG546498-11 300.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Nov 12 09:55:42 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	5.141	96	420818	25.00000	ug/L	0.0000
46) Chlorobenzene-d5	7.979	117	319267	25.00000	ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.308	152	178164	25.00000	ug/L	# 0.0000
System Monitoring Compounds						
29) Dibromofluoromethane	4.174	111	2005	0.4645	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 1.858%#			
34) 1,2-Dichloroethane-d4	4.895	65	75388	18.1848	ug/L	0.0811
Spiked Amount 25.000	Range 80 - 120		Recovery = 72.739%#			
47) Toluene-d8	6.713	98	7696	0.4676	ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 1.870%#			
66) p-Bromofluorobenzene	8.726	95	4059	0.6591	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 2.636%#			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.036	85	1945784	325.1385	ug/L	100
3) Chloromethane	1.146	50	1837720	288.2887	ug/L	100
4) Vinyl Chloride	1.192	62	1776531	311.9911	ug/L	100
5) 1,3-Butadiene	1.201	54	1096278	299.5343	ug/L	99
6) Bromomethane	1.377	94	923135	307.3642	ug/L	99
7) Chloroethane	1.447	64	740775	254.7995	ug/L	96
8) Trichlorofluoromethane	1.519	101	1475110	336.7949	ug/L	99
9) Diethyl ether	1.754	59	1034731	307.9652	ug/L	99
10) 1,1-Dichloroethene	1.849	61	2048985	310.1714	ug/L	99
11) Carbon Disulfide	1.861	76	4256834	305.9520	ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.878	101	1274995	311.2546	ug/L	100
14) Acrolein	2.118	56	143184	318.1676	ug/L	99
15) Methylene Chloride	2.284	84	1378330	282.0009	ug/L	98
16) Acetone	2.359	43	265332	317.7657	ug/L	99
17) trans-1,2-Dichloroethene	2.411	96	1318765	305.3478	ug/L	99
18) Methyl acetate	2.457	43	821397	341.8507	ug/L #	100
19) Methyl Tert Butyl Ether	2.538	73	3445729	312.9873	ug/L	99
20) 1,1-Dichloroethane	2.970	63	2532008	306.3322	ug/L	100
21) Acrylonitrile	3.045	53	353163	308.6800	ug/L	98
22) Vinyl Acetate	3.282	86	177753	319.9490	ug/L	97
23) cis-1,2-Dichloroethene	3.566	96	1490170	300.5126	ug/L	100
24) 2,2-Dichloropropane	3.694	77	1953259	315.9425	ug/L	99
25) Cyclohexane	3.792	56	2458451	309.0386	ug/L	99
26) Bromochloromethane	3.809	130	940915	321.3451	ug/L	100
27) Chloroform	3.937	83	2402887	293.4265	ug/L	99
28) Carbon Tetrachloride	4.079	117	2024773	318.4181	ug/L	99
30) 1,1,1-Trichloroethane	4.174	97	2174917	302.7891	ug/L	100
31) 1,1-Dichloropropene	4.345	75	1885045	309.5670	ug/L	100
32) 2-Butanone	4.377	43	457131	329.3463	ug/L	94
33) Benzene	4.649	78	5427000	300.0661	ug/L	99
35) 1,2-Dichloroethane	4.895	62	1692616	311.0238	ug/L	99
36) Methylcyclohexane	5.300	83	2521219	298.1316	ug/L	99
37) Trichloroethene	5.327	130	1538806	306.6064	ug/L	99
38) Dibromomethane	5.746	93	835373	311.2612	ug/L	100
39) 1,2-Dichloropropane	5.853	63	1527247	307.2021	ug/L	100
40) Bromodichloromethane	5.940	83	1930467	312.3311	ug/L	100
41) 1,4-Dioxane	6.160	88	21478	711.2978	ug/L	95
42) 2-Chloroethyl Vinyl Ether	6.534	63	817699	325.4185	ug/L	100
43) cis-1,3-Dichloropropene	6.551	75	2302818	316.0110	ug/L	100
44) 4-Methyl-2-Pentanone	7.819	58	403770	327.0855	ug/L	98
45) trans-1,3-Dichloropropene	7.151	75	1998087	320.4722	ug/L	100
48) Toluene	6.763	91	5891973	291.3037	ug/L	97
49) Tetrachloroethene	7.090	166	1679502	308.0767	ug/L	100
50) 1,1,2-Trichloroethane	7.281	97	1120163	297.7046	ug/L	99

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016377.D
Acq On : 11 Nov 2015 17:53
Operator : ADC
Sample : WG546498-11 300.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Nov 12 09:55:42 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
51)	Dibromochloromethane	7.420	129	1562657	321.6995 ug/L	100
52)	1,3-Dichloropropane	7.504	76	1819636	304.9014 ug/L	99
53)	1,2-Dibromoethane	7.591	107	1152224	308.5906 ug/L	99
54)	2-Hexanone	7.819	43	775083	320.4031 ug/L	100
55)	Chlorobenzene	7.990	112	3853710	295.6431 ug/L	99
56)	1-Chlorohexane	8.011	69	392578	293.2211 ug/L #	1
57)	Ethylbenzene	8.034	106	2123533	299.2926 ug/L	90
58)	1,1,1,2-Tetrachloroethane	8.048	131	1472443	305.1193 ug/L	99
59)	m-,p-Xylene	8.132	106	4844404	569.1225 ug/L	84
60)	o-Xylene	8.390	106	2506623	298.4296 ug/L	95
61)	Styrene	8.425	104	4111228	294.5271 ug/L	97
62)	Bromoform	8.427	173	1077319	336.3869 ug/L	99
63)	Isopropylbenzene	8.578	105	5955931	272.0268 ug/L	94
65)	1,3,5-Trimethylbenzene	8.920	105	5279568	270.6297 ug/L	94
67)	Bromobenzene	8.778	156	1836436	301.1715 ug/L	99
68)	n-Propylbenzene	8.810	91	6755527	265.3048 ug/L	93
69)	1,1,2,2-Tetrachloroethane	8.850	83	1375069	310.9043 ug/L	100
70)	2-Chlorotoluene	8.885	91	4400883	282.5968 ug/L	97
71)	1,2,3-Trichloropropane	8.914	110	364474	296.0703 ug/L	98
72)	trans-1,4-Dichloro-2-B...	8.943	53	307861	300.8452 ug/L #	98
73)	1,2,4-Trimethylbenzene	9.117	105	5234243	268.7723 ug/L	93
74)	4-Chlorotoluene	8.975	91	4499465	280.8118 ug/L	96
75)	tert-Butylbenzene	9.079	134	1090615	304.8636 ug/L	87
76)	sec-Butylbenzene	9.169	105	6245857	260.5470 ug/L	93
77)	p-Isopropyltoluene	9.244	119	5493886	264.9919 ug/L	93
78)	1,3-Dichlorobenzene	9.273	146	3254851	290.6703 ug/L	97
79)	1,4-Dichlorobenzene	9.316	146	3240905	283.7282 ug/L	98
80)	n-Butylbenzene	9.447	91	5136023	269.1618 ug/L	93
81)	1,2-Dichlorobenzene	9.519	146	3102408	291.0259 ug/L	98
82)	1,2-Dibromo-3-Chloropr...	9.890	75	266133	320.6218 ug/L	98
83)	Hexachlorobutadiene	10.188	225	1484949	302.6249 ug/L	99
84)	1,2,4-Trichlorobenzene	10.205	180	2561526	301.0917 ug/L	99
85)	Naphthalene	10.353	128	4493705	285.1660 ug/L	97
86)	1,2,3-Trichlorobenzene	10.440	180	2371583	302.0500 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016377.D
Acq On : 11 Nov 2015 17:53
Operator : ADC
Sample : WG546498-11 300.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Nov 12 09:55:42 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

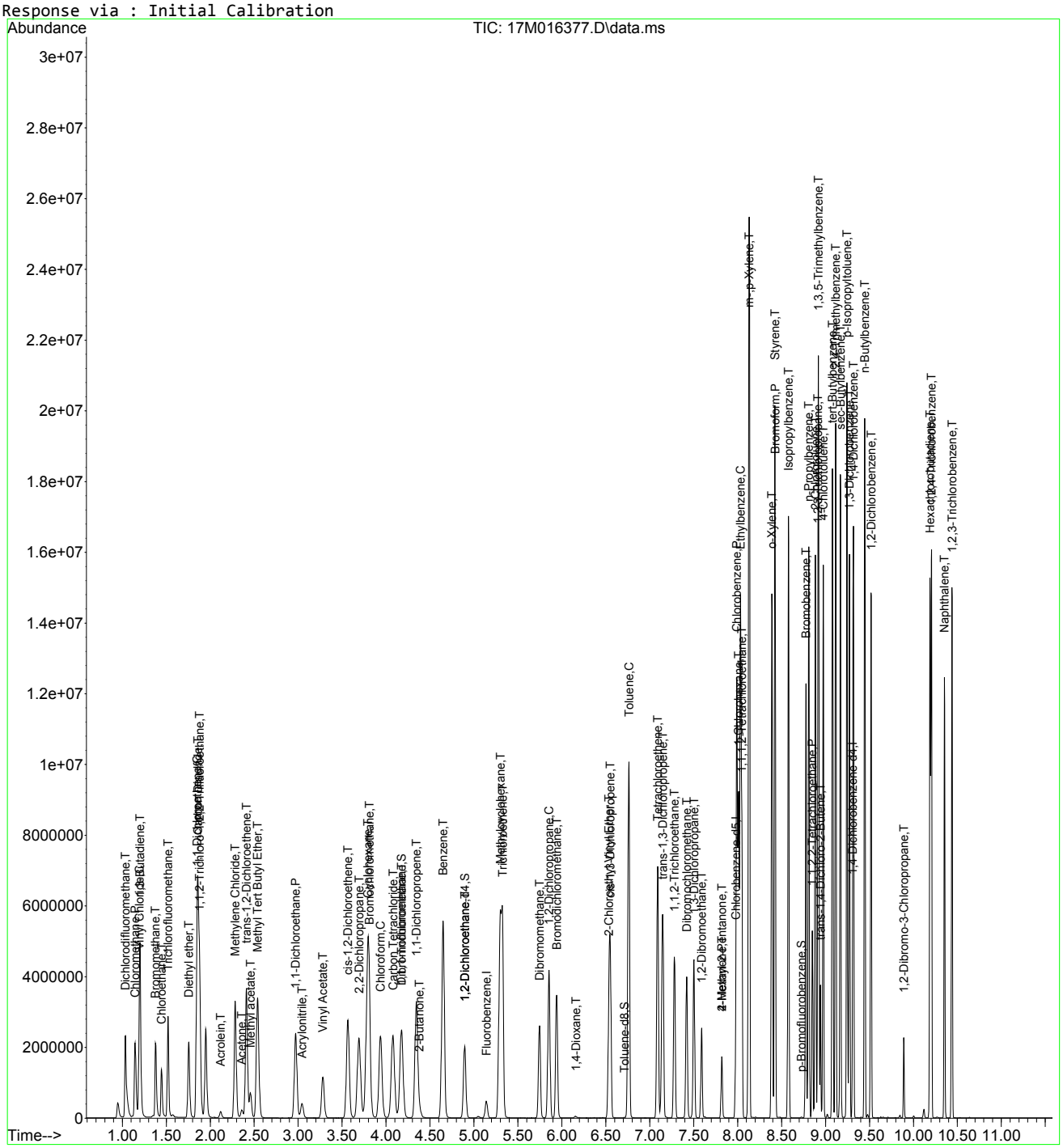

8260_VMS.M Thu Nov 12 09:55:43 2015 Page: 3

Trichlorofluoromethane

00650231

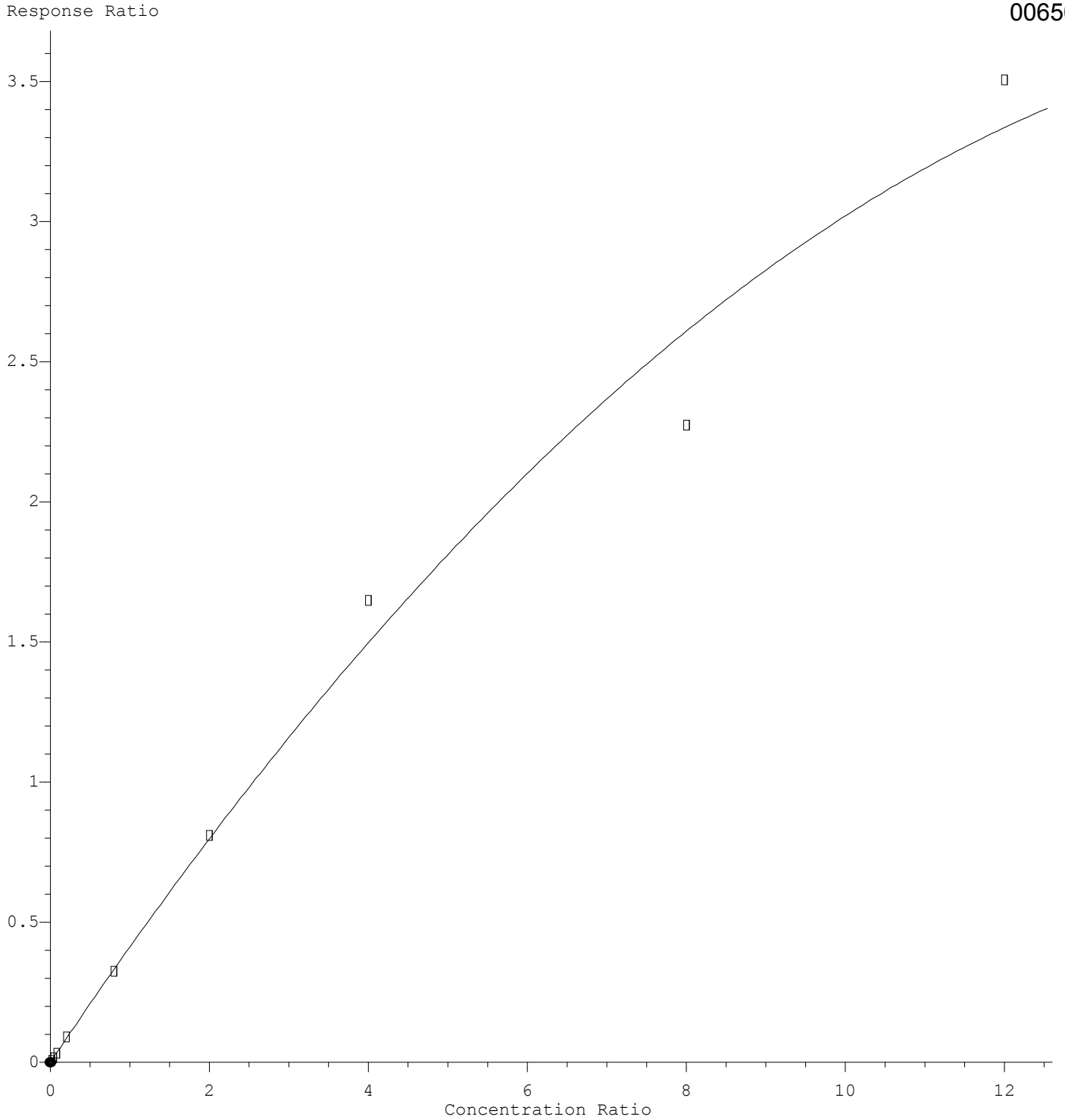

R = -1.203e-002 A*A + 4.222e-001 A + 3.726e-004
Coef of Det (r^2) = 0.991819 Curve Fit: Quadratic w(1/a)
Method Name: D:\MassHunter\GCMS\1\methods\8260_VMS.M
Calibration Table Last Updated: Thu Nov 12 09:48:27 2015

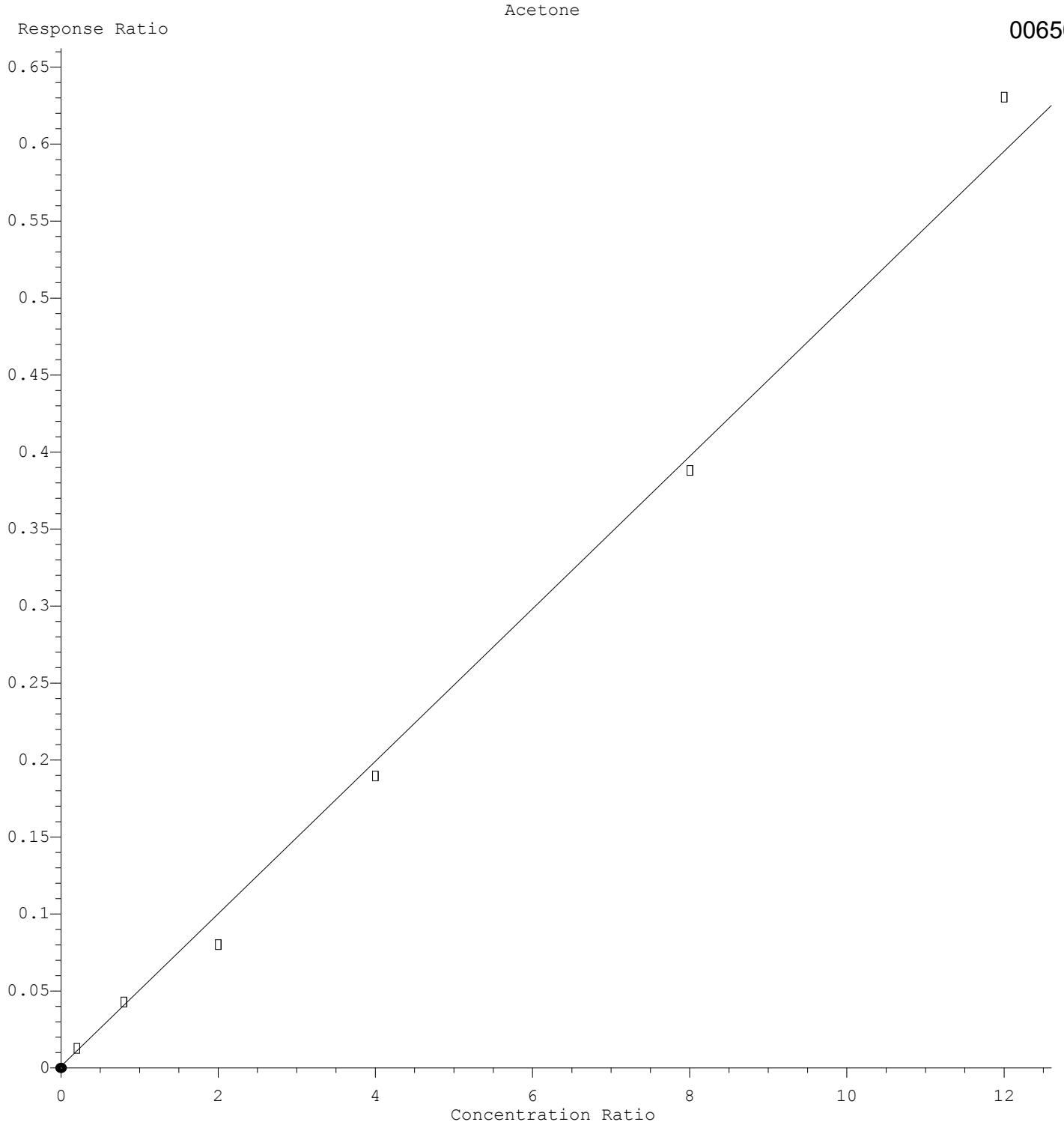

Response = 4.951e-002 * Amt + 1.216e-003
Coef of Det (r^2) = 0.993438 Curve Fit: wlr(1/a)
Method Name: D:\MassHunter\GCMS\1\methods\8260_VMS.M
Calibration Table Last Updated: Thu Nov 12 09:48:27 2015

Vinyl Acetate

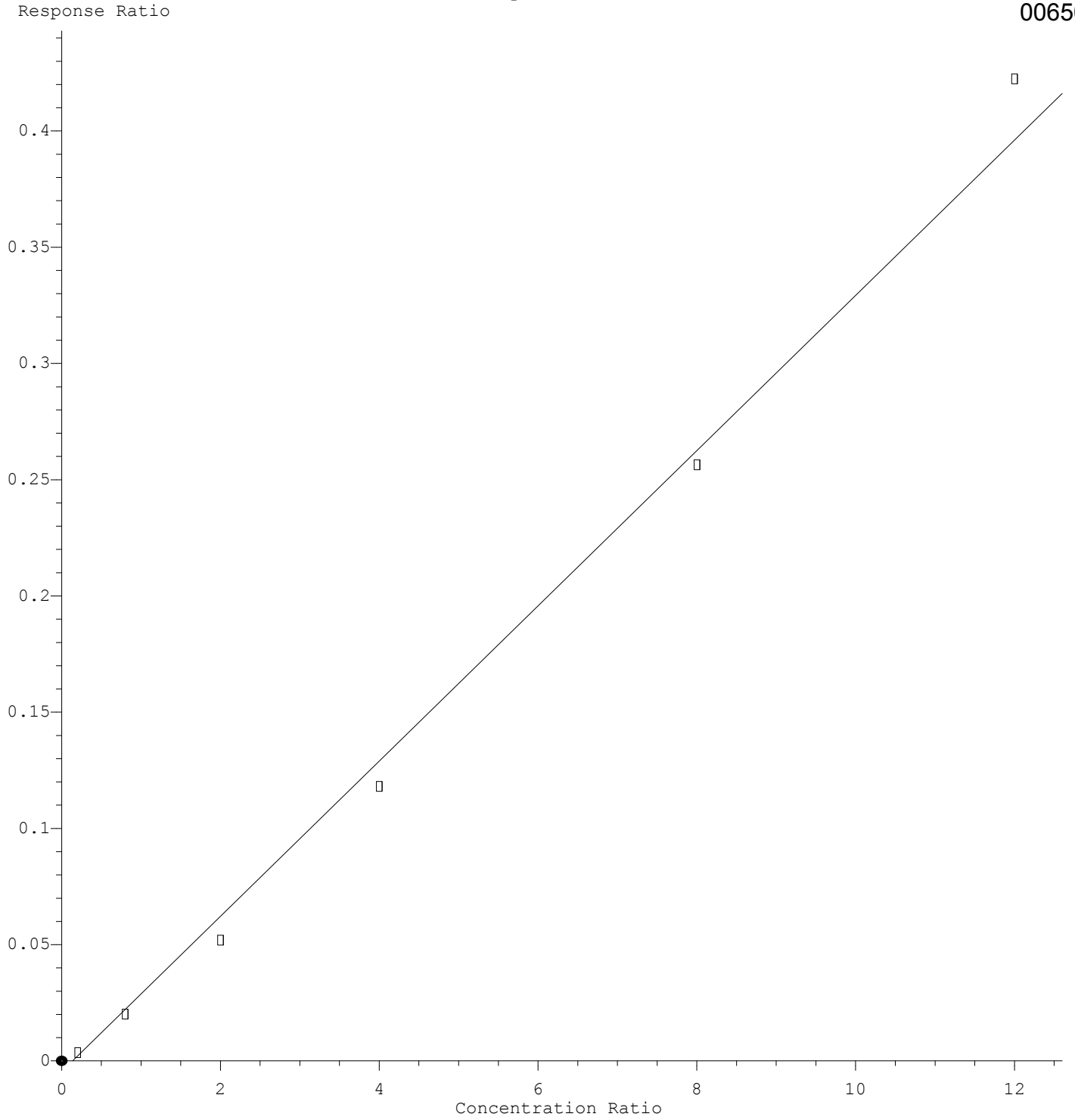

Response = 3.338e-002 * Amt - 4.749e-003
Coef of Det (r^2) = 0.993500 Curve Fit: wlr(1/a)
Method Name: D:\MassHunter\GCMS\1\methods\8260_VMS.M
Calibration Table Last Updated: Thu Nov 12 09:48:27 2015

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016379.D
Acq On : 11 Nov 2015 18:33
Operator : ADC
Sample : WG546498-12 50.0ug/L ALT 8260
Misc : 1,1 STD73387
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Nov 12 09:55:48 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.135	96	439844	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.976	117	330854	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.305	152	182862	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.177	111	117314	26.0001 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.000%		
34) 1,2-Dichloroethane-d4	4.811	65	114324	26.3840 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 105.536%		
47) Toluene-d8	6.711	98	441253	25.8730 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.492%		
66) p-Bromofluorobenzene	8.723	95	162405	25.6921 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.768%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.030	85	357156	57.0989 ug/L	100
3) Chloromethane	1.143	50	335169	50.3046 ug/L	100
4) Vinyl Chloride	1.189	62	329215	55.3152 ug/L	100
5) 1,3-Butadiene	1.201	54	220256	57.5770 ug/L	100
6) Bromomethane	1.374	94	153126	48.7790 ug/L	100
7) Chloroethane	1.444	64	138377	45.5378 ug/L	93
8) Trichlorofluoromethane	1.516	101	251328	35.2255 ug/L	100
9) Diethyl ether	1.757	59	839605	239.0809 ug/L	100
10) 1,1-Dichloroethene	1.838	61	333854	48.3521 ug/L	100
11) Carbon Disulfide	1.849	76	231598	15.9256 ug/L	95
12) 1,1,2-Trichloro-1,2,2-...	1.867	101	223754	52.2605 ug/L	99
14) Acrolein	2.119	56	51908	110.3548 ug/L	97
15) Methylene Chloride	2.278	84	239345	46.8508 ug/L	99
16) Acetone	2.368	43	50068	56.8653 ug/L	98
17) trans-1,2-Dichloroethene	2.405	96	225050	49.8542 ug/L	99
18) Methyl acetate	2.460	43	137709	54.8329 ug/L #	100
19) Methyl Tert Butyl Ether	2.541	73	619677	53.8526 ug/L	100
20) 1,1-Dichloroethane	2.967	63	438476	50.7539 ug/L	100
21) Acrylonitrile	3.045	53	56047	46.8685 ug/L	99
22) Vinyl Acetate	3.280	86	27714	50.7528 ug/L	99
23) cis-1,2-Dichloroethene	3.560	96	256956	49.5771 ug/L	100
24) 2,2-Dichloropropane	3.682	77	341133	52.7919 ug/L	100
25) Cyclohexane	3.775	56	400484	48.1650 ug/L	100
26) Bromochloromethane	3.801	130	167330	54.6753 ug/L	100
27) Chloroform	3.934	83	435896	50.9266 ug/L	100
28) Carbon Tetrachloride	4.070	117	348721	52.4681 ug/L	99
30) 1,1,1-Trichloroethane	4.168	97	392404	52.2669 ug/L	100
31) 1,1-Dichloropropene	4.333	75	322773	50.7138 ug/L	100
32) 2-Butanone	4.383	43	80321	55.3652 ug/L #	73
33) Benzene	4.640	78	962221	50.9011 ug/L	100
35) 1,2-Dichloroethane	4.889	62	296059	52.0486 ug/L	100
36) Methylcyclohexane	5.289	83	405489	45.8746 ug/L	99
37) Trichloroethene	5.318	130	265903	50.6893 ug/L	100
38) Dibromomethane	5.741	93	146903	52.3686 ug/L	99
39) 1,2-Dichloropropane	5.848	63	268793	51.7283 ug/L	100
40) Bromodichloromethane	5.937	83	331206	51.2680 ug/L	100
41) 1,4-Dioxane	6.158	88	18832	596.6913 ug/L	92
42) 2-Chloroethyl Vinyl Ether	6.528	63	142411	54.2235 ug/L	99
43) cis-1,3-Dichloropropene	6.546	75	416471	54.6793 ug/L	100
44) 4-Methyl-2-Pentanone	7.817	58	69050	53.5164 ug/L	98
45) trans-1,3-Dichloropropene	7.145	75	337676	51.8169 ug/L	100
48) Toluene	6.754	91	1070197	51.0583 ug/L	100
49) Tetrachloroethene	7.087	166	291797	51.6508 ug/L	100
50) 1,1,2-Trichloroethane	7.278	97	193335	49.5830 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016379.D
Acq On : 11 Nov 2015 18:33
Operator : ADC
Sample : WG546498-12 50.0ug/L ALT 8260
Misc : 1,1 STD73387
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Nov 12 09:55:48 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
51)	Dibromochloromethane	7.417	129	262533	52.1541 ug/L	99
52)	1,3-Dichloropropane	7.498	76	324341	52.4438 ug/L	100
53)	1,2-Dibromoethane	7.585	107	198274	51.2424 ug/L	100
54)	2-Hexanone	7.817	43	132872	53.0029 ug/L	100
55)	Chlorobenzene	7.984	112	727708	53.8720 ug/L	99
56)	1-Chlorohexane	7.999	69	65457	47.1784 ug/L	81
57)	Ethylbenzene	8.022	106	378118	51.4259 ug/L	97
58)	1,1,1,2-Tetrachloroethane	8.040	131	253352	50.6609 ug/L	100
59)	m-,p-Xylene	8.123	106	940133	106.5792 ug/L	99
60)	o-Xylene	8.387	106	462189	53.0995 ug/L	99
61)	Styrene	8.419	104	742734	51.3458 ug/L	100
62)	Bromoform	8.422	173	186982	56.3394 ug/L	99
63)	Isopropylbenzene	8.575	105	1205164	53.1161 ug/L	100
65)	1,3,5-Trimethylbenzene	8.914	105	1027919	51.3372 ug/L	100
67)	Bromobenzene	8.775	156	311835	49.8264 ug/L	100
68)	n-Propylbenzene	8.804	91	1399192	53.5377 ug/L	100
69)	1,1,2,2-Tetrachloroethane	8.847	83	235015	51.7719 ug/L	100
70)	2-Chlorotoluene	8.879	91	840062	52.5576 ug/L	100
71)	1,2,3-Trichloropropane	8.911	110	62512	49.4753 ug/L	100
72)	trans-1,4-Dichloro-2-B...	8.937	53	45129	42.9676 ug/L #	96
73)	1,2,4-Trimethylbenzene	9.111	105	1000330	50.0461 ug/L	99
74)	4-Chlorotoluene	8.969	91	849980	51.6844 ug/L	98
75)	tert-Butylbenzene	9.076	134	194975	53.1018 ug/L	100
76)	sec-Butylbenzene	9.166	105	1298213	52.7639 ug/L	100
77)	p-Isopropyltoluene	9.238	119	1073778	50.4619 ug/L	100
78)	1,3-Dichlorobenzene	9.267	146	600361	52.2370 ug/L	99
79)	1,4-Dichlorobenzene	9.311	146	580802	49.5405 ug/L	100
80)	n-Butylbenzene	9.444	91	995390	50.8249 ug/L	100
81)	1,2-Dichlorobenzene	9.513	146	579966	53.0068 ug/L	99
82)	1,2-Dibromo-3-Chloropr...	9.890	75	45888	53.8629 ug/L	99
83)	Hexachlorobutadiene	10.188	225	261520	51.9272 ug/L	100
84)	1,2,4-Trichlorobenzene	10.202	180	465537	53.3152 ug/L	100
85)	Naphthalene	10.353	128	863260	53.3742 ug/L	100
86)	1,2,3-Trichlorobenzene	10.437	180	429354	53.2786 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016379.D
Acq On : 11 Nov 2015 18:33
Operator : ADC
Sample : WG546498-12 50.0ug/L ALT 8260
Misc : 1,1 STD73387
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Nov 12 09:55:48 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

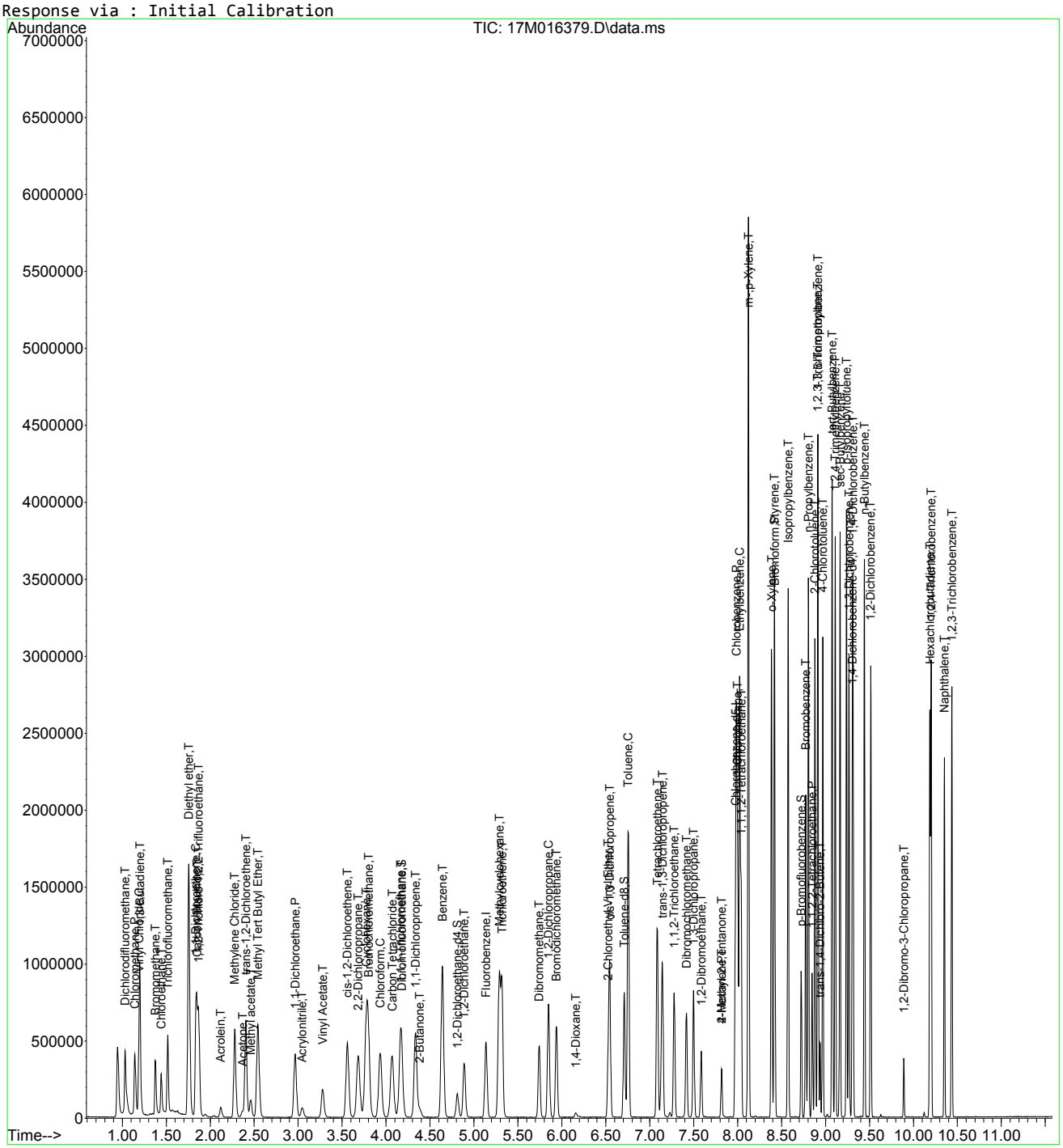

8260_VMS.M Thu Nov 12 09:55:49 2015 Page: 3

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016379.D
Acq On : 11 Nov 2015 18:33
Operator : ADC
Sample : WG546498-12 50.0ug/L ALT 8260
Misc : 1,1 STD73387
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Nov 12 09:55:48 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	96	0.000
2	T	Dichlorodifluoromethane	50.000	57.099	-14.2	106	0.000
3	P	Chloromethane	50.000	50.305	-0.6	104	0.000
4	C	Vinyl Chloride	50.000	55.315	-10.6#	109	0.000
5	T	1,3-Butadiene	50.000	57.577	-15.2	117	0.000
6	T	Bromomethane	50.000	48.779	2.4	107	0.000
7	T	Chloroethane	50.000	45.538	8.9	85	0.000
8	T	Trichlorofluoromethane	50.000	35.225	29.5#	68	-0.015
9	T	Diethyl ether	50.000	239.081	-378.2#	524	0.000
10	C	1,1-Dichloroethene	50.000	48.352	3.3#	95	-0.026
11	T	Carbon Disulfide	50.000	15.926	68.1#	32	-0.026
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.000	52.261	-4.5	101	-0.026
13	T	Iodomethane	-1.000	0.000	0.0	0	-0.014
14	T	Acrolein	50.000	110.355	-120.7#	269	0.000
15	T	Methylene Chloride	50.000	46.851	6.3	104	-0.011
16	T	Acetone	50.000	56.865	-13.7	136	0.024
17	T	trans-1,2-Dichloroethene	50.000	49.854	0.3	101	-0.012
18	T	Methyl acetate	50.000	54.833	-9.7	120	0.011
19	T	Methyl Tert Butyl Ether	50.000	53.853	-7.7	119	0.011
20	P	1,1-Dichloroethane	50.000	50.754	-1.5	101	0.000
21	T	Acrylonitrile	50.000	46.869	6.3	107	0.012
22	T	Vinyl Acetate	50.000	50.753	-1.5	117	0.000
23	T	cis-1,2-Dichloroethene	50.000	49.577	0.8	102	0.000
24	T	2,2-Dichloropropane	50.000	52.792	-5.6	96	-0.012
25	T	Cyclohexane	50.000	48.165	3.7	94	-0.020
26	T	Bromochloromethane	50.000	54.675	-9.3	111	0.000
27	C	Chloroform	50.000	50.927	-1.9#	107	0.000
28	T	Carbon Tetrachloride	50.000	52.468	-4.9	103	0.000
29	S	Dibromofluoromethane	25.000	26.000	-4.0	100	0.000
30	T	1,1,1-Trichloroethane	50.000	52.267	-4.5	106	0.000
31	T	1,1-Dichloropropene	50.000	50.714	-1.4	100	-0.012
32	T	2-Butanone	50.000	55.365	-10.7	128	0.018
33	T	Benzene	50.000	50.901	-1.8	102	0.000
34	S	1,2-Dichloroethane-d4	25.000	26.384	-5.5	105	0.000
35	T	1,2-Dichloroethane	50.000	52.049	-4.1	109	0.000
36	T	Methylcyclohexane	50.000	45.875	8.3	93	0.000
37	T	Trichloroethene	50.000	50.689	-1.4	103	0.000
38	T	Dibromomethane	50.000	52.369	-4.7	115	0.000
39	C	1,2-Dichloropropane	50.000	51.728	-3.5#	105	0.000
40	T	Bromodichloromethane	50.000	51.268	-2.5	104	0.000
41	T	1,4-Dioxane	100.000	596.691	-496.7#	583	0.000
42	T	2-Chloroethyl Vinyl Ether	50.000	54.224	-8.4	117	0.000
43	T	cis-1,3-Dichloropropene	50.000	54.679	-9.4	109	0.000
44	T	4-Methyl-2-Pentanone	50.000	53.516	-7.0	130	0.000
45	T	trans-1,3-Dichloropropene	50.000	51.817	-3.6	106	0.000
46	I	Chlorobenzene-d5	25.000	25.000	0.0	97	0.000
47	S	Toluene-d8	25.000	25.873	-3.5	98	0.000
48	C	Toluene	50.000	51.058	-2.1#	102	0.000
49	T	Tetrachloroethene	50.000	51.651	-3.3	104	0.000
50	T	1,1,2-Trichloroethane	50.000	49.583	0.8	112	0.000
51	T	Dibromochloromethane	50.000	52.154	-4.3	110	0.000
52	T	1,3-Dichloropropane	50.000	52.444	-4.9	113	0.000
53	T	1,2-Dibromoethane	50.000	51.242	-2.5	112	0.000
54	T	2-Hexanone	50.000	53.003	-6.0	130	0.000
55	P	Chlorobenzene	50.000	53.872	-7.7	108	0.000

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016379.D
Acq On : 11 Nov 2015 18:33
Operator : ADC
Sample : WG546498-12 50.0ug/L ALT 8260
Misc : 1,1 STD73387
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Nov 12 09:55:48 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	1-Chlorohexane	50.000	47.178	5.6	94	0.000
57	C	Ethylbenzene	50.000	51.426	-2.9#	103	0.000
58	T	1,1,1,2-Tetrachloroethane	50.000	50.661	-1.3	102	0.000
59	T	m-,p-Xylene	100.000	106.579	-6.6	105	0.000
60	T	o-Xylene	50.000	53.099	-6.2	106	0.000
61	T	Styrene	50.000	51.346	-2.7	103	0.000
62	P	Bromoform	50.000	56.339	-12.7	122	0.000
63	T	Isopropylbenzene	50.000	53.116	-6.2	105	0.000
64	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	99	0.000
65	T	1,3,5-Trimethylbenzene	50.000	51.337	-2.7	102	0.000
66	S	p-Bromofluorobenzene	25.000	25.692	-2.8	98	0.000
67	T	Bromobenzene	50.000	49.826	0.3	104	0.000
68	T	n-Propylbenzene	50.000	53.538	-7.1	103	0.000
69	P	1,1,2,2-Tetrachloroethane	50.000	51.772	-3.5	118	0.000
70	T	2-Chlorotoluene	50.000	52.558	-5.1	105	0.000
71	T	1,2,3-Trichloropropane	50.000	49.475	1.0	118	0.000
72	T	trans-1,4-Dichloro-2-Butene	50.000	42.968	14.1	101	0.000
73	T	1,2,4-Trimethylbenzene	50.000	50.046	-0.1	99	0.000
74	T	4-Chlorotoluene	50.000	51.684	-3.4	101	0.000
75	T	tert-Butylbenzene	50.000	53.102	-6.2	106	0.000
76	T	sec-Butylbenzene	50.000	52.764	-5.5	103	0.000
77	T	p-Isopropyltoluene	50.000	50.462	-0.9	97	0.000
78	T	1,3-Dichlorobenzene	50.000	52.237	-4.5	105	0.000
79	T	1,4-Dichlorobenzene	50.000	49.541	0.9	103	0.000
80	T	n-Butylbenzene	50.000	50.825	-1.7	97	0.000
81	T	1,2-Dichlorobenzene	50.000	53.007	-6.0	110	0.000
82	T	1,2-Dibromo-3-Chloropropane	50.000	53.863	-7.7	125	0.000
83	T	Hexachlorobutadiene	50.000	51.927	-3.9	100	0.000
84	T	1,2,4-Trichlorobenzene	50.000	53.315	-6.6	107	0.000
85	T	Naphthalene	50.000	53.374	-6.7	120	0.000
86	T	1,2,3-Trichlorobenzene	50.000	53.279	-6.6	112	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407828.D Vial: 2
Acq On : 5 Oct 2015 11:49 Operator: TMB
Sample : WG540826-02 5ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 11:56:55 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	928093	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	670481	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	347120	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.71	41	3724	5.2139 ug/L	81
3) 3-Chloro-1-propene	7.08	41	87895	5.0600 ug/L	95
4) 2-Chloro-1,3-butadiene	8.46	53	83096	4.6491 ug/L	97
5) Ethyl Acetate	9.11	43	19297	4.0869 ug/L	95
6) Methacrylonitrile	9.27	67	8508	4.1055 ug/L	97
7) Isobutyl Alcohol	9.26	43	1318	6.8122 ug/L #	56
8) 1-Butanol	10.19	56	1930	20.2377 ug/L #	64
9) Methyl methacrylate	11.43	41	22250	3.8908 ug/L	96
10) 2-Nitropropane	11.75	43	2454	2.5566 ug/L	66
13) Cyclohexanone	15.83	55	2773	3.7471 ug/L #	43

(#) = qualifier out of range (m) = manual integration
8M407828.D A9FOOWTR.M Tue Oct 06 11:56:56 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407828.D Vial: 2
Acq On : 5 Oct 2015 11:49 Operator: TMB
Sample : WG540826-02 5ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 11:56 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

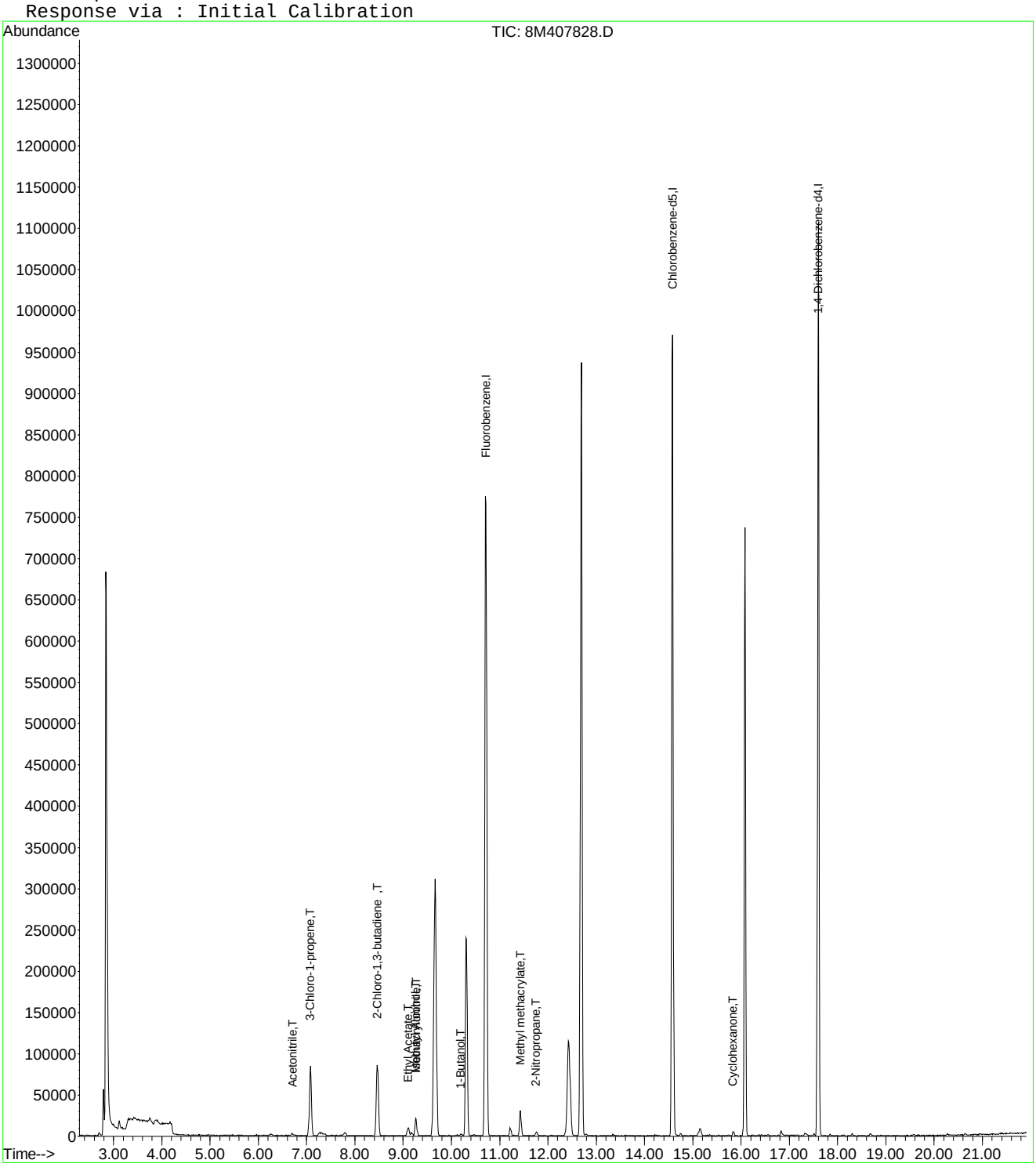

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\100515\8M407828.D Vial: 2
Acq On : 5 Oct 2015 11:49 Operator: TMB
Sample : WG540826-02 5ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:54:01 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	5.0000	5.2139	-4.3	100	0.01
3	T	3-Chloro-1-propene	5.0000	5.0600	-1.2	100	0.00
4	T	2-Chloro-1,3-butadiene	5.0000	4.6491	7.0	100	0.00
5	T	Ethyl Acetate	5.0000	4.0869	18.3	100	0.01
6	T	Methacrylonitrile	5.0000	4.1055	17.9	100	0.01
7	T	Isobutyl Alcohol	-1.0000	6.8122	0.0	100	-0.01
8	T	1-Butanol	-1.0000	20.2377	0.0	100	0.00
9	T	Methyl methacrylate	5.0000	3.8908	22.2	100	0.00
10	T	2-Nitropropane	-1.0000	2.5566	0.0	0	-0.01
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	3.7471	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M407828.D A9FOOWTR.M Tue Oct 06 11:54:24 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407829.D Vial: 3
Acq On : 5 Oct 2015 12:17 Operator: TMB
Sample : WG540826-03 20ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 11:56:56 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	903673	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	657140	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	345767	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.71	41	14085	20.2529 ug/L	98
3) 3-Chloro-1-propene	7.08	41	349549	20.6667 ug/L	100
4) 2-Chloro-1,3-butadiene	8.46	53	347796	19.9846 ug/L	100
5) Ethyl Acetate	9.10	43	93237	20.2805 ug/L	97
6) Methacrylonitrile	9.26	67	40077	19.8617 ug/L	100
7) Isobutyl Alcohol	9.27	43	6436	34.1640 ug/L #	94
9) Methyl methacrylate	11.43	41	106029	19.0419 ug/L	97
10) 2-Nitropropane	11.76	43	12836	13.7339 ug/L	86
13) Cyclohexanone	15.84	55	14620	19.8329 ug/L	92

(#) = qualifier out of range (m) = manual integration
8M407829.D A9FOOWTR.M Tue Oct 06 11:56:56 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407829.D Vial: 3
Acq On : 5 Oct 2015 12:17 Operator: TMB
Sample : WG540826-03 20ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 11:56 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

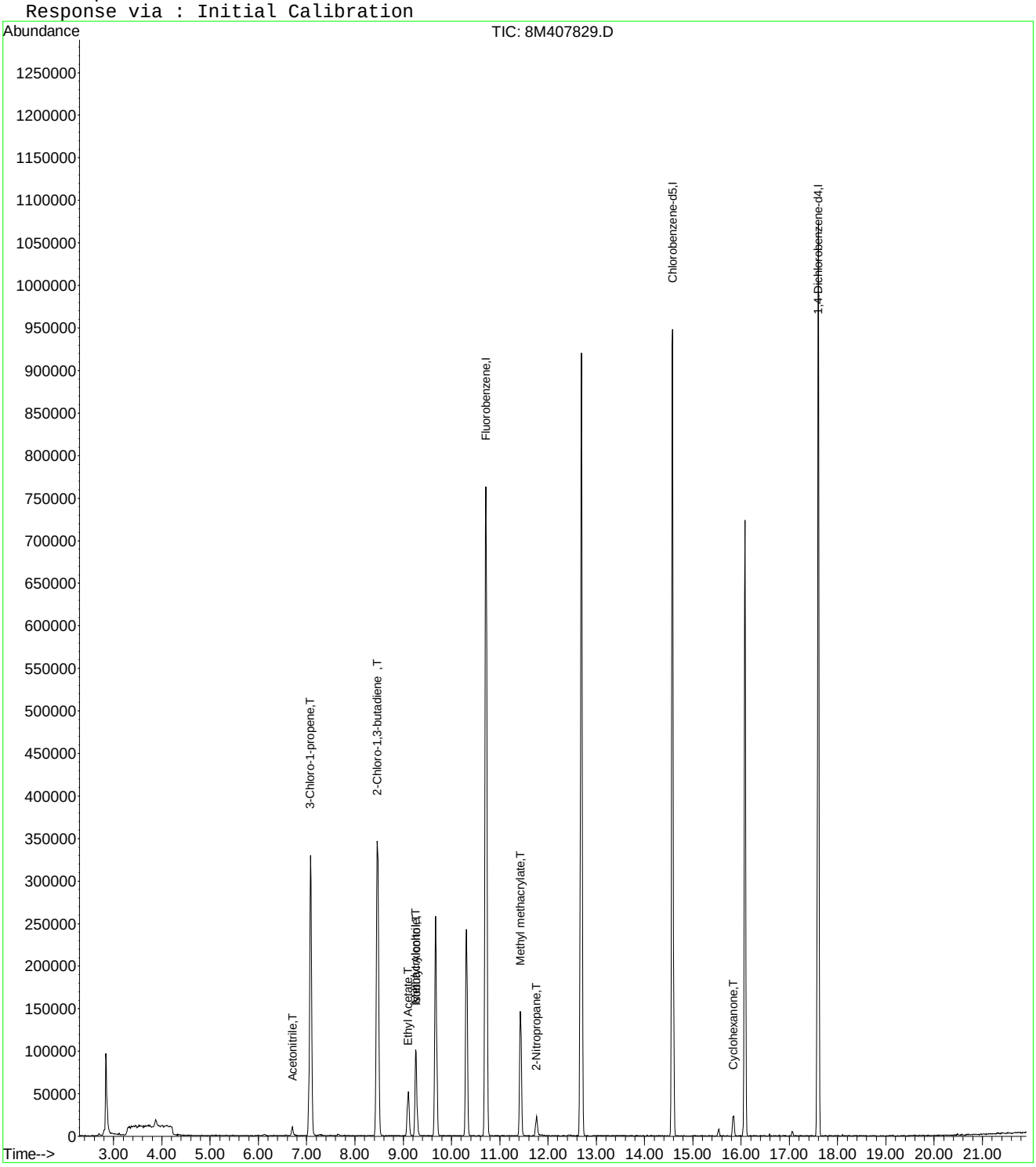

8M407829.D A9FOOWTR.M Tue Oct 06 11:56:57 2015 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\100515\8M407829.D Vial: 3
Acq On : 5 Oct 2015 12:17 Operator: TMB
Sample : WG540826-03 20ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:54:01 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	20.2529	-1.3	100	0.00
3	T	3-Chloro-1-propene	20.0000	20.6667	-3.3	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	19.9846	0.1	100	0.00
5	T	Ethyl Acetate	20.0000	20.2805	-1.4	100	0.00
6	T	Methacrylonitrile	20.0000	19.8618	0.7	100	0.00
7	T	Isobutyl Alcohol	-1.0000	34.1640	0.0	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.19#
9	T	Methyl methacrylate	20.0000	19.0419	4.8	100	0.00
10	T	2-Nitropropane	-1.0000	13.7339	0.0	0	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	19.8329	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M407829.D A9FOOWTR.M Tue Oct 06 11:54:38 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407830.D Vial: 4
Acq On : 5 Oct 2015 12:51 Operator: TMB
Sample : WG540826-04 50ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 05 13:13:37 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	883897	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	665815	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	354078	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.68	111	212038	25.2054 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.84%		
43) 1,2-Dichloroethane-d4	10.31	65	214919	25.0573 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.24%		
58) Toluene-d8	12.69	98	784209	25.3851 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.56%		
80) p-Bromofluorobenzene	16.07	95	309869	25.0818 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.32%		

Target Compounds					Qvalue
13) Acetone	6.26	43	674	0.5137 ug/L #	48
19) Methylene Chloride	7.26	84	1894	0.2128 ug/L	67
24) n-Hexane	7.79	57	2250	0.1674 ug/L	96
36) Tetrahydrofuran	9.64	42	735	0.4954 ug/L #	40
79) 1,1,2,2-Tetrachloroethane	15.85	83	3323	0.5087 ug/L #	26

(#) = qualifier out of range (m) = manual integration
8M407830.D 8260WT.M Mon Oct 05 13:13:38 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407830.D Vial: 4
Acq On : 5 Oct 2015 12:51 Operator: TMB
Sample : WG540826-04 50ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 5 13:13 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration

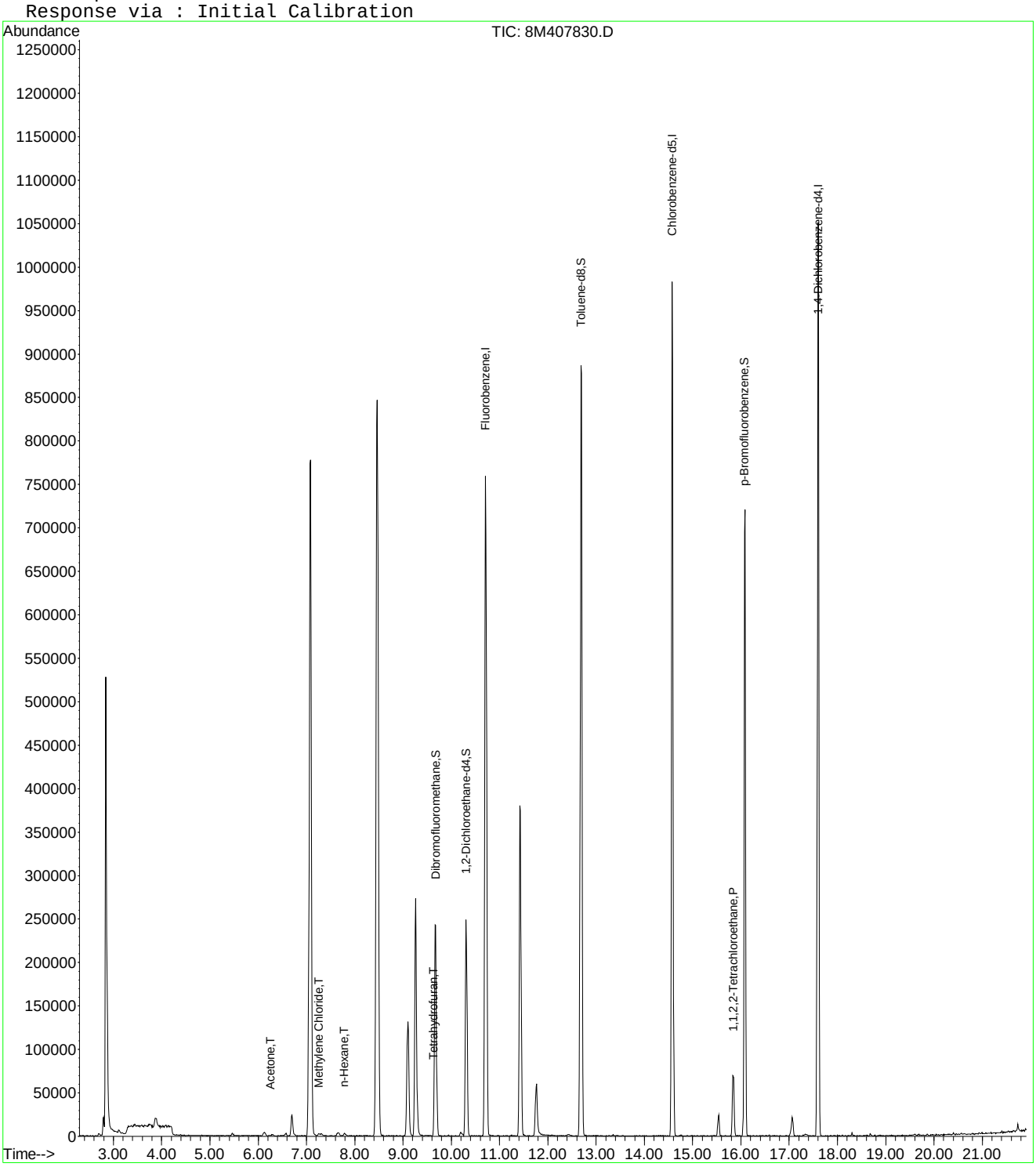

8M407830.D 8260WT.M Mon Oct 05 13:13:39 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407830.D Vial: 4
Acq On : 5 Oct 2015 12:51 Operator: TMB
Sample : WG540826-04 50ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 11:56:57 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	883897	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	665815	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	354078	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	35080	51.5703 ug/L	99
3) 3-Chloro-1-propene	7.07	41	841804	50.8844 ug/L	100
4) 2-Chloro-1,3-butadiene	8.47	53	851495	50.0222 ug/L	100
5) Ethyl Acetate	9.10	43	233139	51.8459 ug/L	97
6) Methacrylonitrile	9.26	67	101702	51.5301 ug/L	97
7) Isobutyl Alcohol	9.26	43	17567	95.3366 ug/L	98
8) 1-Butanol	10.19	56	3729	41.0570 ug/L	92
9) Methyl methacrylate	11.42	41	280126	51.4337 ug/L	98
10) 2-Nitropropane	11.76	43	37061	40.5407 ug/L	95
13) Cyclohexanone	15.84	55	40139	53.1730 ug/L	88

(#) = qualifier out of range (m) = manual integration
8M407830.D A9FOOWTR.M Tue Oct 06 11:56:57 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407830.D Vial: 4
Acq On : 5 Oct 2015 12:51 Operator: TMB
Sample : WG540826-04 50ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 11:56 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

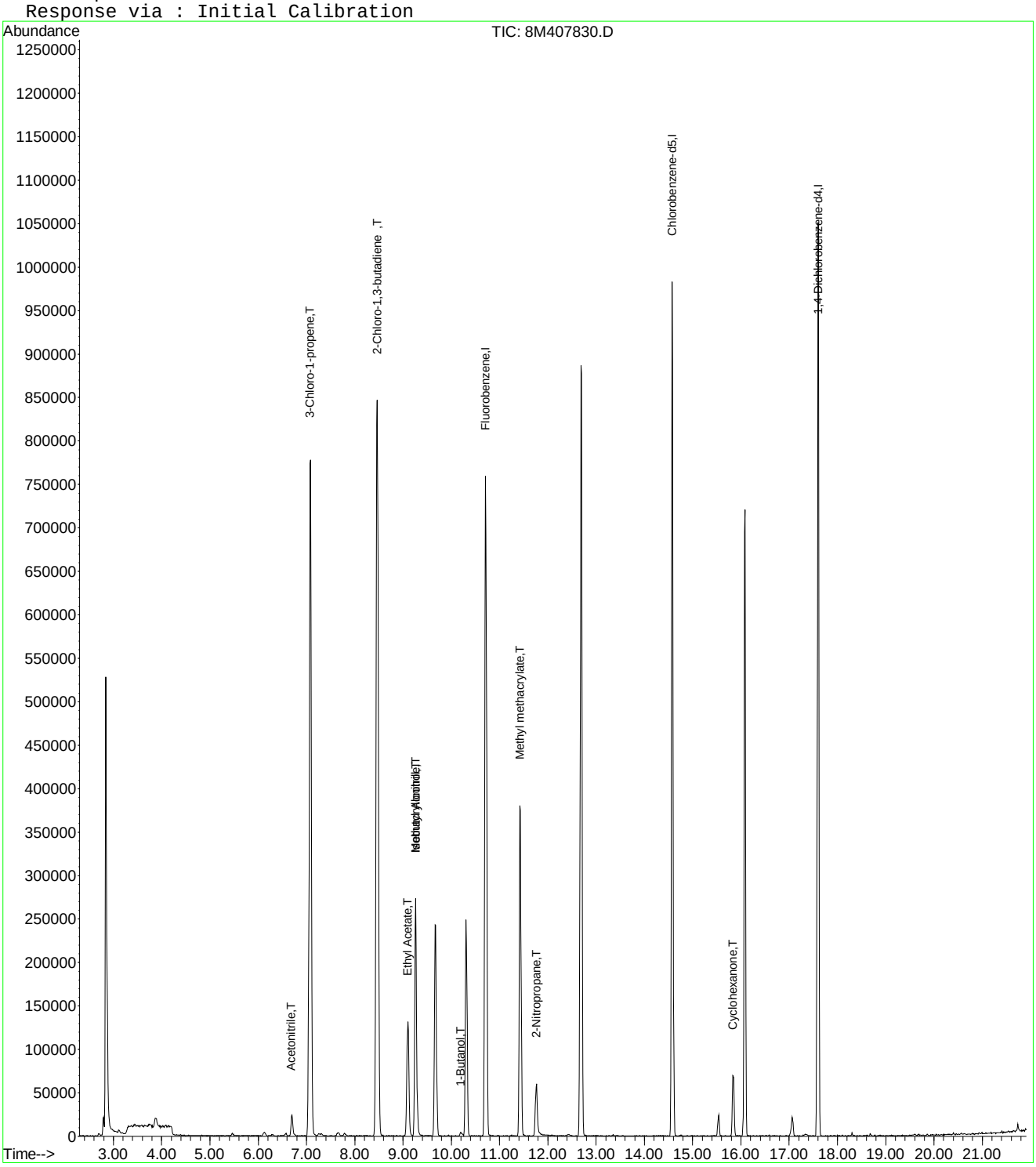

8M407830.D A9FOOWTR.M Tue Oct 06 11:56:57 2015 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\100515\8M407830.D Vial: 4
Acq On : 5 Oct 2015 12:51 Operator: TMB
Sample : WG540826-04 50ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:54:01 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	51.5703	-3.1	100	0.00
3	T	3-Chloro-1-propene	50.0000	50.8844	-1.8	100	0.00
4	T	2-Chloro-1,3-butadiene	50.0000	50.0222	-0.0	100	0.00
5	T	Ethyl Acetate	50.0000	51.8459	-3.7	100	0.00
6	T	Methacrylonitrile	50.0000	51.5301	-3.1	100	0.00
7	T	Isobutyl Alcohol	100.0000	95.3366	4.7	100	0.00
8	T	1-Butanol	50.0000	41.0570	17.9	100	0.00
9	T	Methyl methacrylate	50.0000	51.4337	-2.9	100	0.00
10	T	2-Nitropropane	50.0000	40.5407	18.9	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	50.0000	53.1730	-6.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M407830.D A9FOOWTR.M Tue Oct 06 11:54:56 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407831.D Vial: 5
Acq On : 5 Oct 2015 13:20 Operator: TMB
Sample : WG540826-05 100ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 05 13:42:04 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	866178	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	661111	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	356230	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	202803	24.6008 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.40%		
43) 1,2-Dichloroethane-d4	10.31	65	203632	24.2270 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.92%		
58) Toluene-d8	12.69	98	789106	25.7254 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.92%		
80) p-Bromofluorobenzene	16.08	95	308907	24.8529 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.40%		

Target Compounds					Qvalue
24) n-Hexane	7.79	57	3351	0.2544 ug/L	79
36) Tetrahydrofuran	9.64	42	639	0.4395 ug/L #	40
39) Cyclohexane	9.94	56	2379	0.1385 ug/L #	66

(#) = qualifier out of range (m) = manual integration
8M407831.D 8260WT.M Mon Oct 05 13:42:05 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407831.D Vial: 5
Acq On : 5 Oct 2015 13:20 Operator: TMB
Sample : WG540826-05 100ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 5 13:42 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration

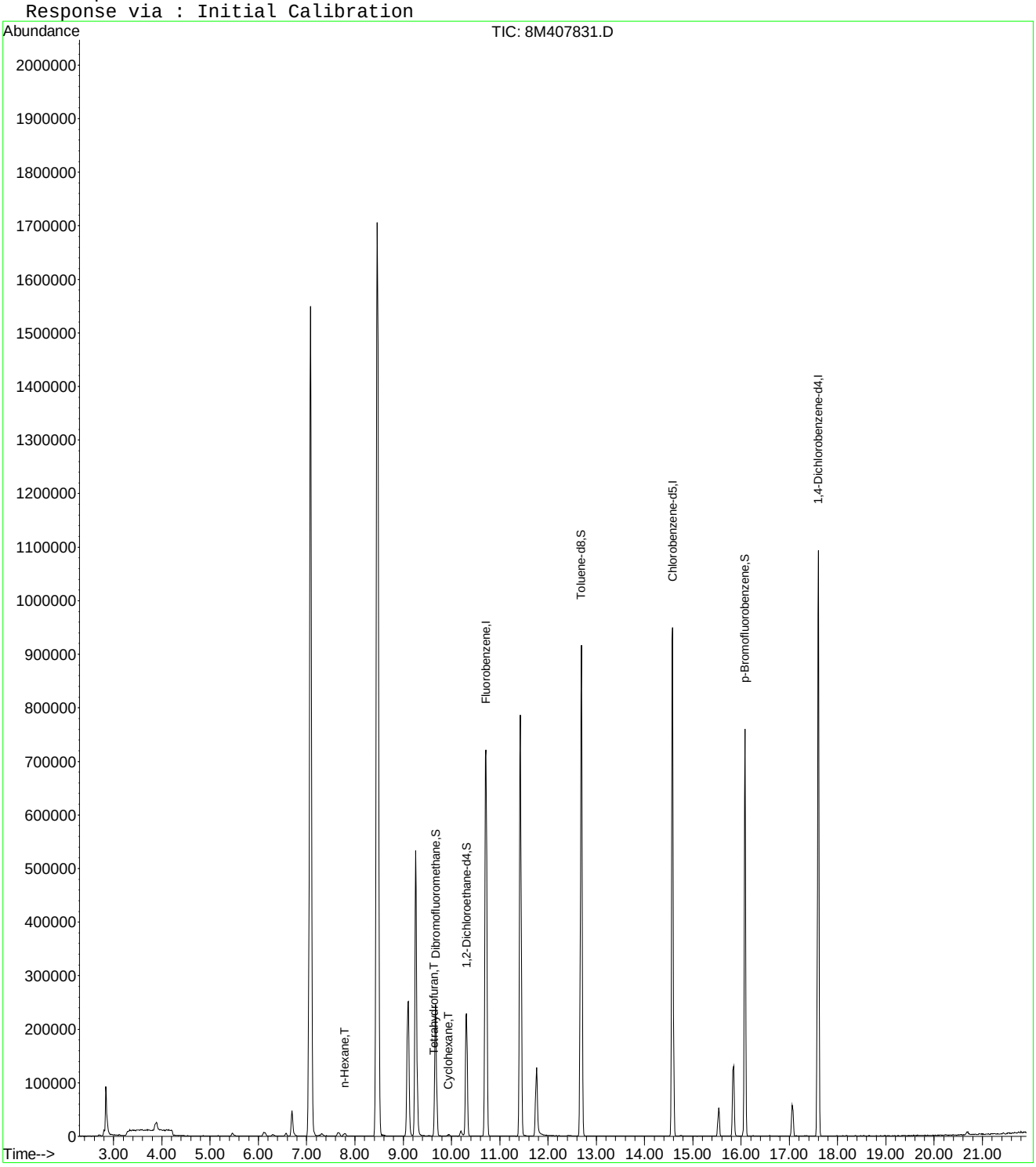

8M407831.D 8260WT.M Mon Oct 05 13:42:06 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407831.D Vial: 5
Acq On : 5 Oct 2015 13:20 Operator: TMB
Sample : WG540826-05 100ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 11:56:58 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	866178	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	661111	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	356230	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	67393	101.0995 ug/L	100
3) 3-Chloro-1-propene	7.08	41	1633129	100.7368 ug/L	100
4) 2-Chloro-1,3-butadiene	8.46	53	1684207	100.9649 ug/L	99
5) Ethyl Acetate	9.10	43	453445	102.9007 ug/L	99
6) Methacrylonitrile	9.26	67	196843	101.7762 ug/L	95
7) Isobutyl Alcohol	9.27	43	37534	207.8650 ug/L	92
8) 1-Butanol	10.20	56	8253	92.7258 ug/L	78
9) Methyl methacrylate	11.43	41	562497	105.3924 ug/L	98
10) 2-Nitropropane	11.76	43	77739	86.7776 ug/L	89
13) Cyclohexanone	15.84	55	74077	97.5385 ug/L	84

(#) = qualifier out of range (m) = manual integration
8M407831.D A9FOOWTR.M Tue Oct 06 11:56:58 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407831.D Vial: 5
Acq On : 5 Oct 2015 13:20 Operator: TMB
Sample : WG540826-05 100ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 11:56 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

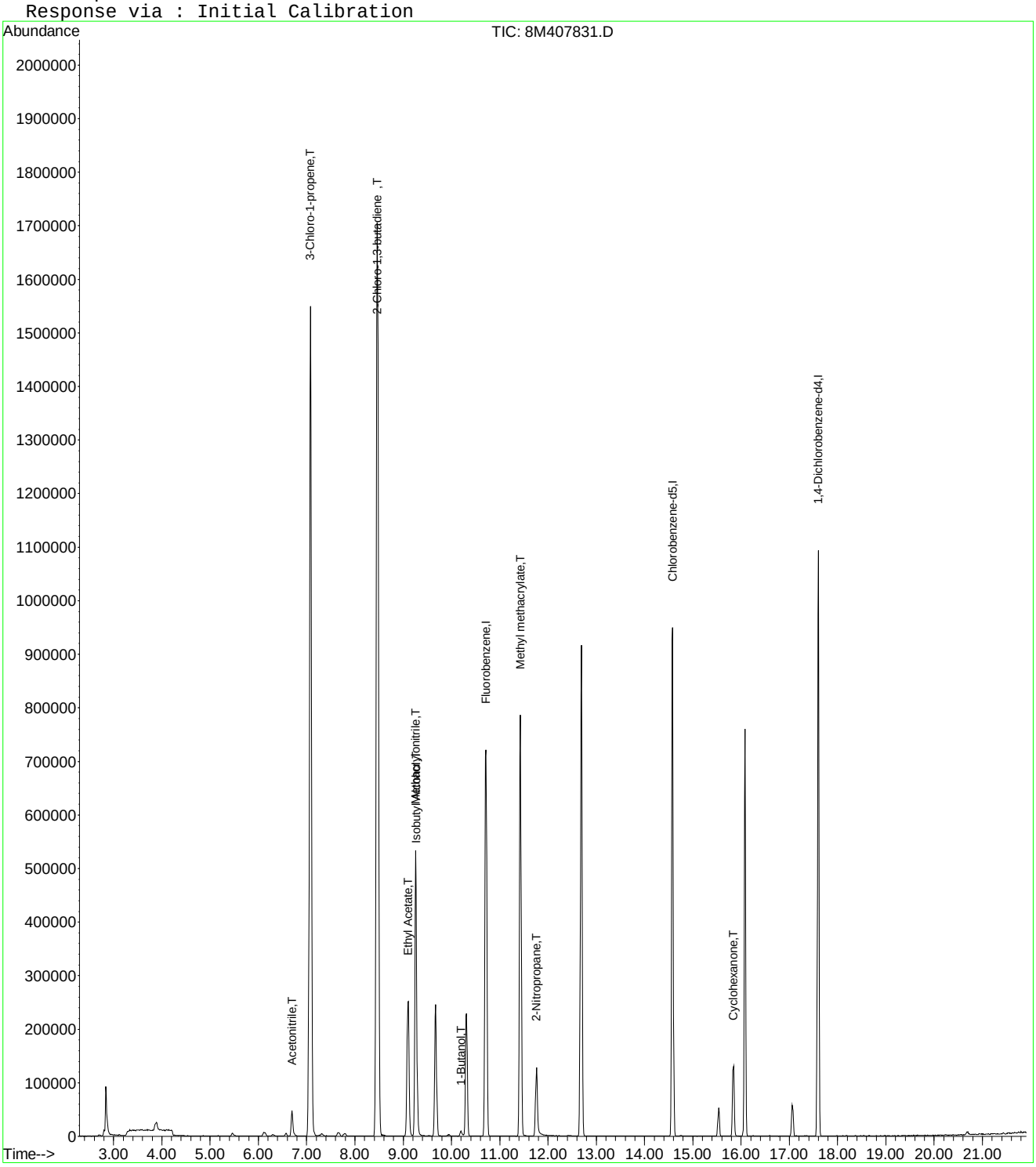

8M407831.D A9FOOWTR.M Tue Oct 06 11:56:58 2015 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\100515\8M407831.D Vial: 5
Acq On : 5 Oct 2015 13:20 Operator: TMB
Sample : WG540826-05 100ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:54:01 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	101.0995	-1.1	100	0.00
3	T	3-Chloro-1-propene	100.0000	100.7368	-0.7	100	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	100.9649	-1.0	100	0.00
5	T	Ethyl Acetate	100.0000	102.9007	-2.9	100	0.00
6	T	Methacrylonitrile	100.0000	101.7762	-1.8	100	0.00
7	T	Isobutyl Alcohol	200.0000	207.8650	-3.9	100	0.00
8	T	1-Butanol	100.0000	92.7258	7.3	100	0.00
9	T	Methyl methacrylate	100.0000	105.3924	-5.4	100	0.00
10	T	2-Nitropropane	100.0000	86.7776	13.2	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	100.0000	97.5386	2.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M407831.D A9FOOWTR.M Tue Oct 06 11:55:12 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407832.D Vial: 6
Acq On : 5 Oct 2015 13:49 Operator: TMB
Sample : WG540826-06 200ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 05 14:10:58 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	897754	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	673480	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	363907	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	208738	24.4301 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.72%		
43) 1,2-Dichloroethane-d4	10.30	65	213605	24.5197 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.08%		
58) Toluene-d8	12.69	98	807841	25.8525 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.40%		
80) p-Bromofluorobenzene	16.08	95	324104	25.5255 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.12%		

Target Compounds

					Qvalue
13) Acetone	6.25	43	677	0.5081 ug/L #	48
18) Methyl acetate	7.08	43	1823	0.3618 ug/L #	1
20) Carbon Disulfide	7.30	76	5054	0.1712 ug/L #	78
24) n-Hexane	7.78	57	7743	0.5671 ug/L	88
36) Tetrahydrofuran	9.64	42	1466	0.9728 ug/L #	40
39) Cyclohexane	9.95	56	4715	0.2647 ug/L	84

(#) = qualifier out of range (m) = manual integration
8M407832.D 8260WT.M Mon Oct 05 14:10:59 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407832.D Vial: 6
Acq On : 5 Oct 2015 13:49 Operator: TMB
Sample : WG540826-06 200ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 5 14:10 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration

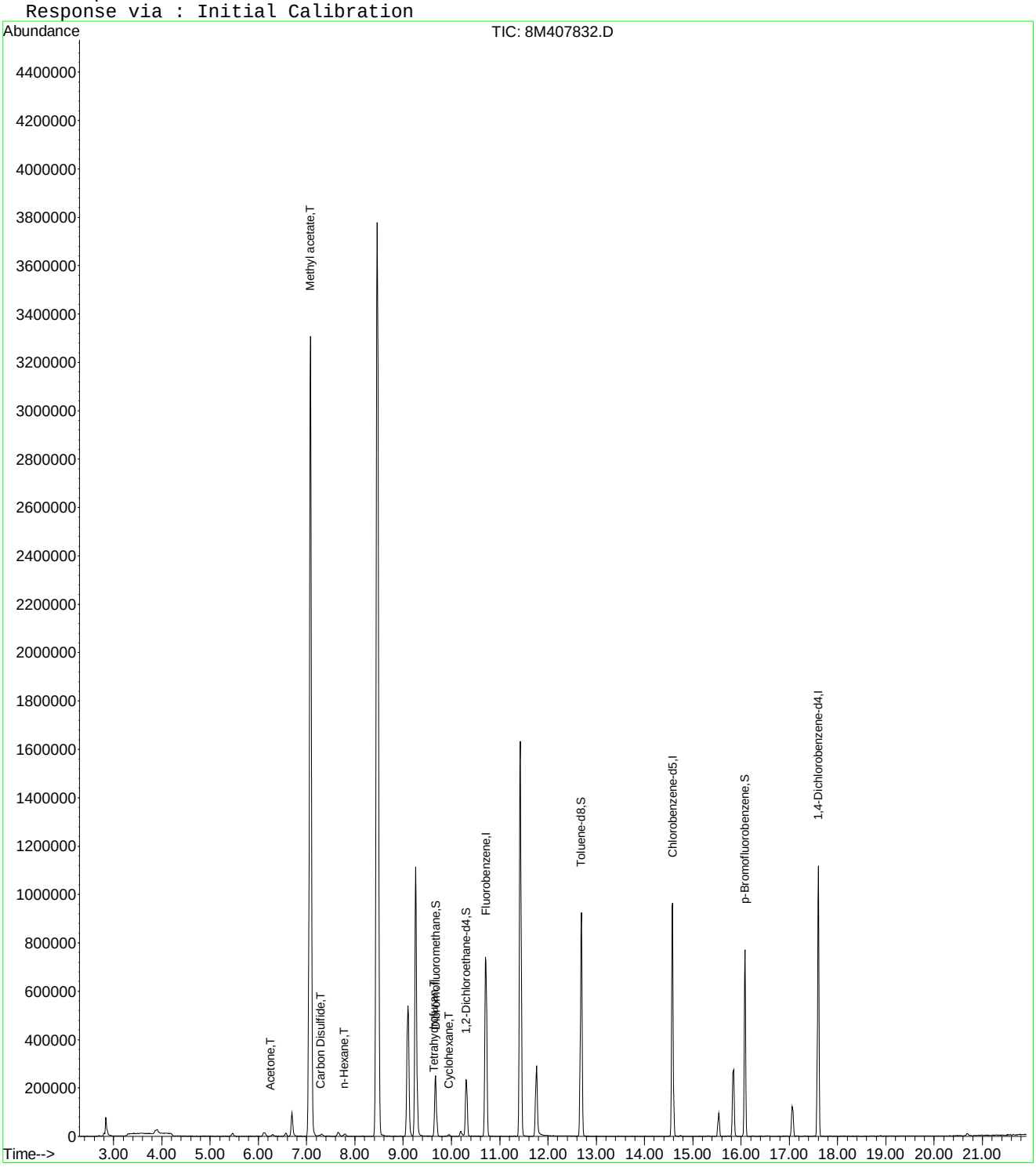

8M407832.D 8260WT.M Mon Oct 05 14:10:59 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407832.D Vial: 6
Acq On : 5 Oct 2015 13:49 Operator: TMB
Sample : WG540826-06 200ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 11:56:58 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	897754	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	673480	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	363907	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	138277	200.1400 ug/L	97
3) 3-Chloro-1-propene	7.08	41	3475078	206.8151 ug/L	99
4) 2-Chloro-1,3-butadiene	8.46	53	3691199	213.4973 ug/L	98
5) Ethyl Acetate	9.09	43	949825	207.9635 ug/L	98
6) Methacrylonitrile	9.26	67	412747	205.9018 ug/L	95
7) Isobutyl Alcohol	9.27	43	71985	384.6346 ug/L	94
8) 1-Butanol	10.20	56	18764	203.4062 ug/L	78
9) Methyl methacrylate	11.43	41	1165248	210.6479 ug/L	99
10) 2-Nitropropane	11.76	43	181242	195.1989 ug/L	92
13) Cyclohexanone	15.84	55	156208	201.3429 ug/L	89

(#) = qualifier out of range (m) = manual integration
8M407832.D A9FOOWTR.M Tue Oct 06 11:56:59 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407832.D Vial: 6
Acq On : 5 Oct 2015 13:49 Operator: TMB
Sample : WG540826-06 200ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 11:56 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

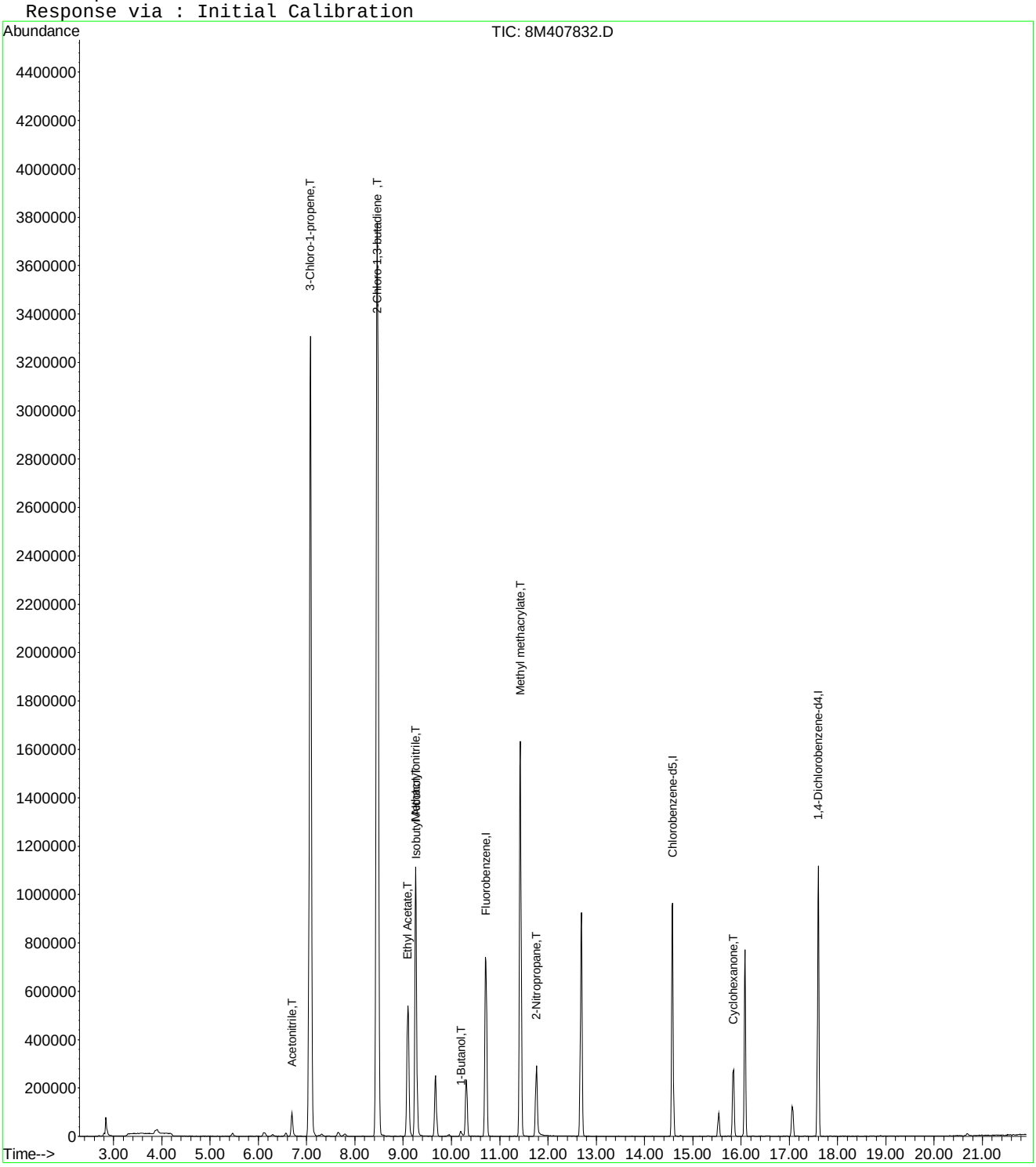

8M407832.D A9FOOWTR.M Tue Oct 06 11:56:59 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407833.D Vial: 7
Acq On : 5 Oct 2015 14:17 Operator: TMB
Sample : WG540826-07 300ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 05 14:39:56 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	914795	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	689423	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	367388	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	213426	24.5135 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.04%		
43) 1,2-Dichloroethane-d4	10.30	65	216408	24.3787 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.52%		
58) Toluene-d8	12.69	98	818846	25.5987 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.40%		
80) p-Bromofluorobenzene	16.08	95	327784	25.5707 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.28%		

Target Compounds

					Qvalue
13) Acetone	6.25	43	1107	0.8153 ug/L #	48
18) Methyl acetate	7.07	43	3926	0.7646 ug/L #	1
19) Methylene Chloride	7.26	84	1197	0.1300 ug/L	55
20) Carbon Disulfide	7.31	76	6659	0.2214 ug/L #	86
24) n-Hexane	7.78	57	11874	0.8534 ug/L	97
30) Propionitrile	9.05	54	208	0.3030 ug/L #	1
31) 2,2-Dichloropropane	9.09	77	2023	0.1353 ug/L #	42
36) Tetrahydrofuran	9.64	42	1301	0.8472 ug/L #	40
39) Cyclohexane	9.94	56	6598	0.3636 ug/L	94
72) Ethylbenzene	14.75	106	2422	0.1584 ug/L	54
73) m-,p-Xylene	14.75	106	2422	0.1381 ug/L	82

(#) = qualifier out of range (m) = manual integration
8M407833.D 8260WT.M Mon Oct 05 14:39:57 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407833.D Vial: 7
Acq On : 5 Oct 2015 14:17 Operator: TMB
Sample : WG540826-07 300ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 5 14:39 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration

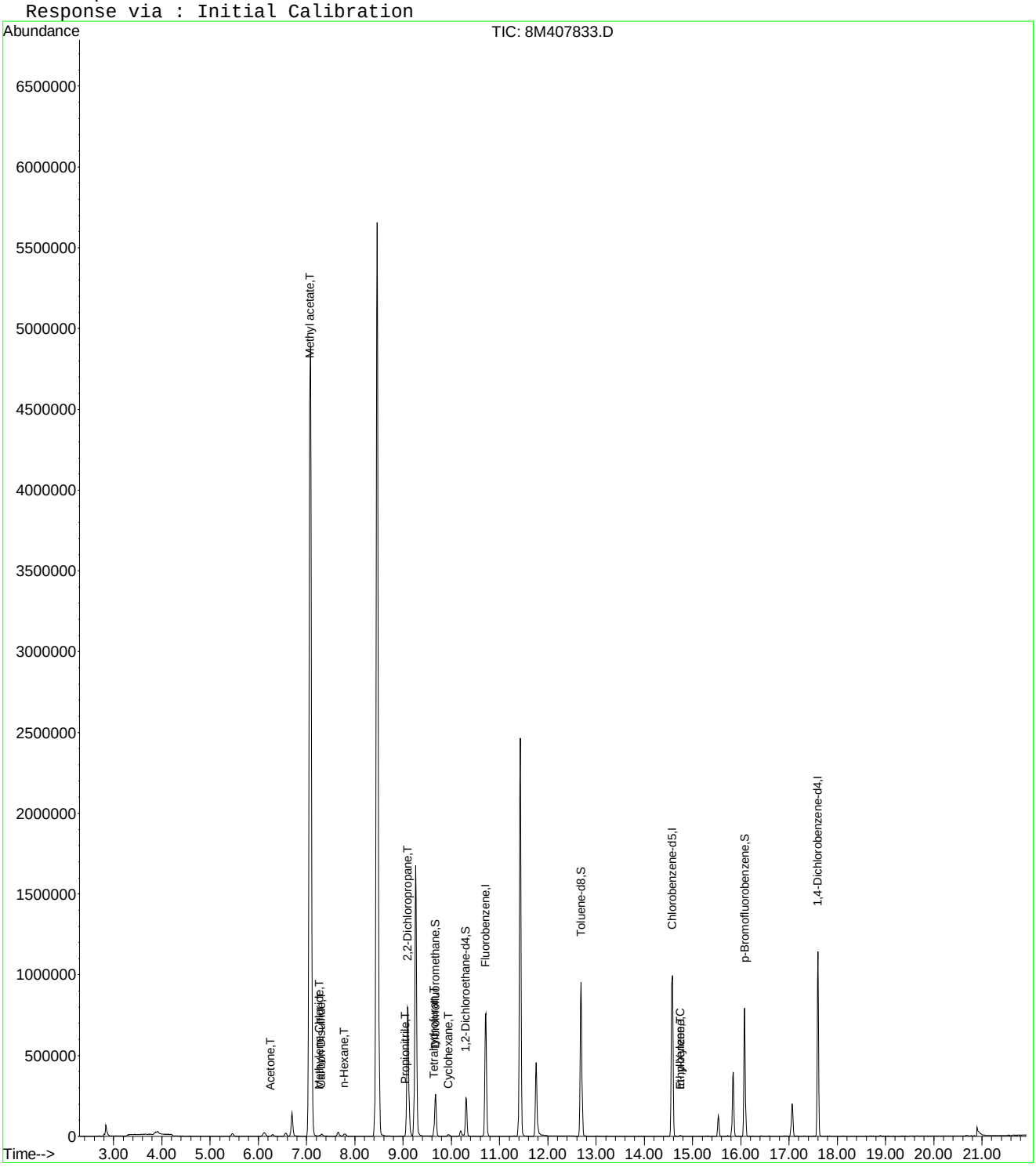

8M407833.D 8260WT.M Mon Oct 05 14:39:58 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407833.D Vial: 7
Acq On : 5 Oct 2015 14:17 Operator: TMB
Sample : WG540826-07 300ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 11:56:59 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	914795	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	689423	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	367388	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	204679	290.7307 ug/L	99
3) 3-Chloro-1-propene	7.08	41	5107808	298.3223 ug/L	99
4) 2-Chloro-1,3-butadiene	8.46	53	5432917	308.3838 ug/L	97
5) Ethyl Acetate	9.09	43	1404245	301.7310 ug/L	99
6) Methacrylonitrile	9.26	67	619787	303.4256 ug/L	96
7) Isobutyl Alcohol	9.27	43	113276	593.9881 ug/L	97
8) 1-Butanol	10.19	56	30662	326.1916 ug/L	85
9) Methyl methacrylate	11.43	41	1738162	308.3633 ug/L	98
10) 2-Nitropropane	11.76	43	289289	305.7623 ug/L	92
13) Cyclohexanone	15.84	55	224807	287.0174 ug/L	90

(#) = qualifier out of range (m) = manual integration
8M407833.D A9FOOWTR.M Tue Oct 06 11:56:59 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407833.D Vial: 7
Acq On : 5 Oct 2015 14:17 Operator: TMB
Sample : WG540826-07 300ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 11:56 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

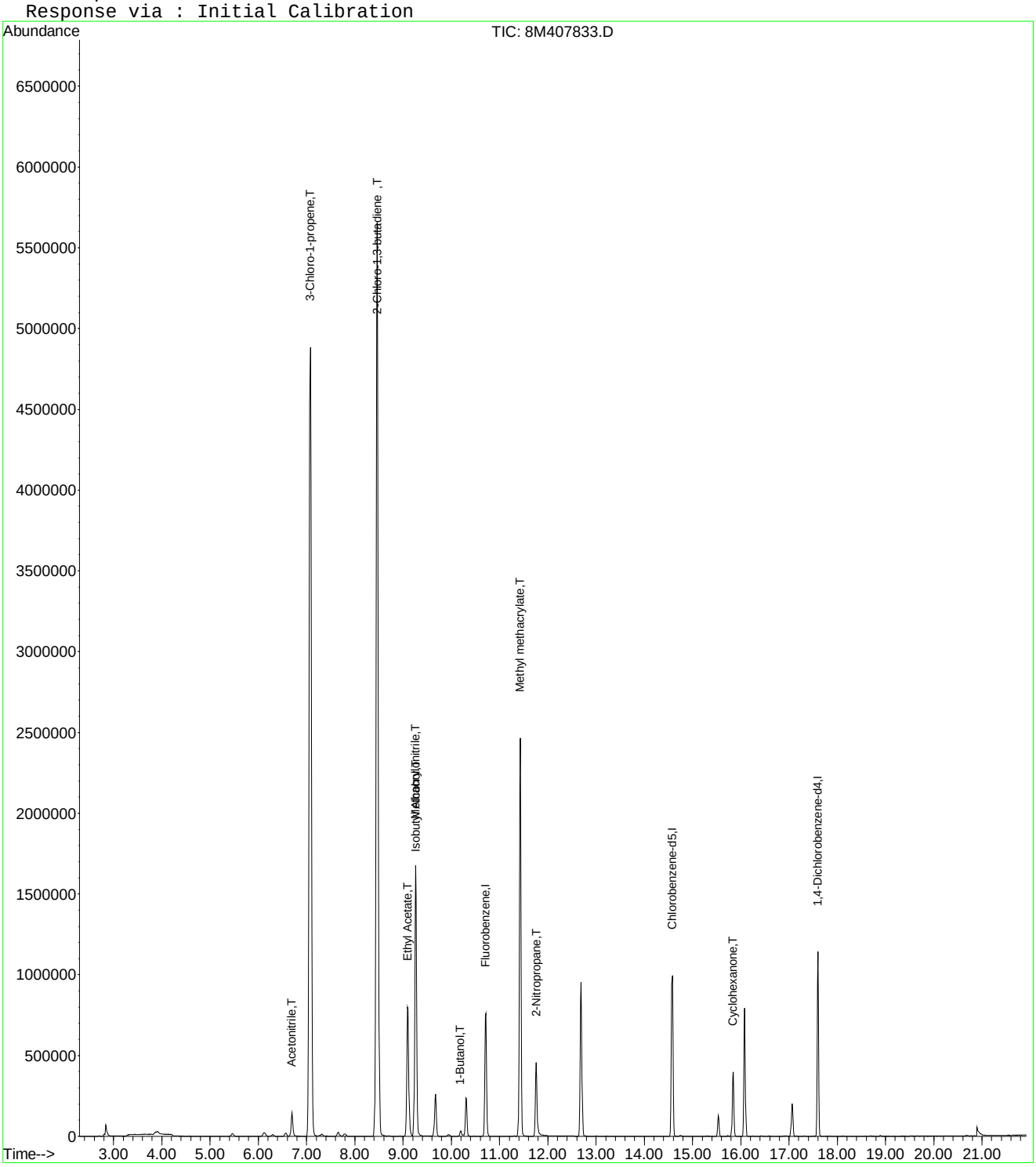

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407834.D Vial: 8
Acq On : 5 Oct 2015 14:47 Operator: TMB
Sample : WG540826-08 400ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 05 15:09:02 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	933879	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	691340	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	373332	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	222232	25.0033 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.00%		
43) 1,2-Dichloroethane-d4	10.31	65	222556	24.5590 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.24%		
58) Toluene-d8	12.69	98	831940	25.9359 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.76%		
80) p-Bromofluorobenzene	16.08	95	329799	25.3183 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.28%		

Target Compounds

					Qvalue
13) Acetone	6.25	43	2307	1.6644 ug/L #	48
18) Methyl acetate	7.07	43	5300	1.0111 ug/L #	1
19) Methylene Chloride	7.26	84	1631	0.1735 ug/L #	6
20) Carbon Disulfide	7.30	76	9227	0.3005 ug/L #	79
24) n-Hexane	7.79	57	16005	1.1268 ug/L	89
29) 2-Butanone	8.89	43	1241	0.5197 ug/L #	57
30) Propionitrile	9.07	54	773	1.1032 ug/L #	1
31) 2,2-Dichloropropane	9.11	77	2811	0.1842 ug/L #	42
36) Tetrahydrofuran	9.65	42	1879	1.1986 ug/L #	40
39) Cyclohexane	9.95	56	9653	0.5211 ug/L	94
73) m-,p-Xylene	14.75	106	3655	0.2078 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M407834.D 8260WT.M Mon Oct 05 15:09:03 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407834.D Vial: 8
Acq On : 5 Oct 2015 14:47 Operator: TMB
Sample : WG540826-08 400ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 5 15:09 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration

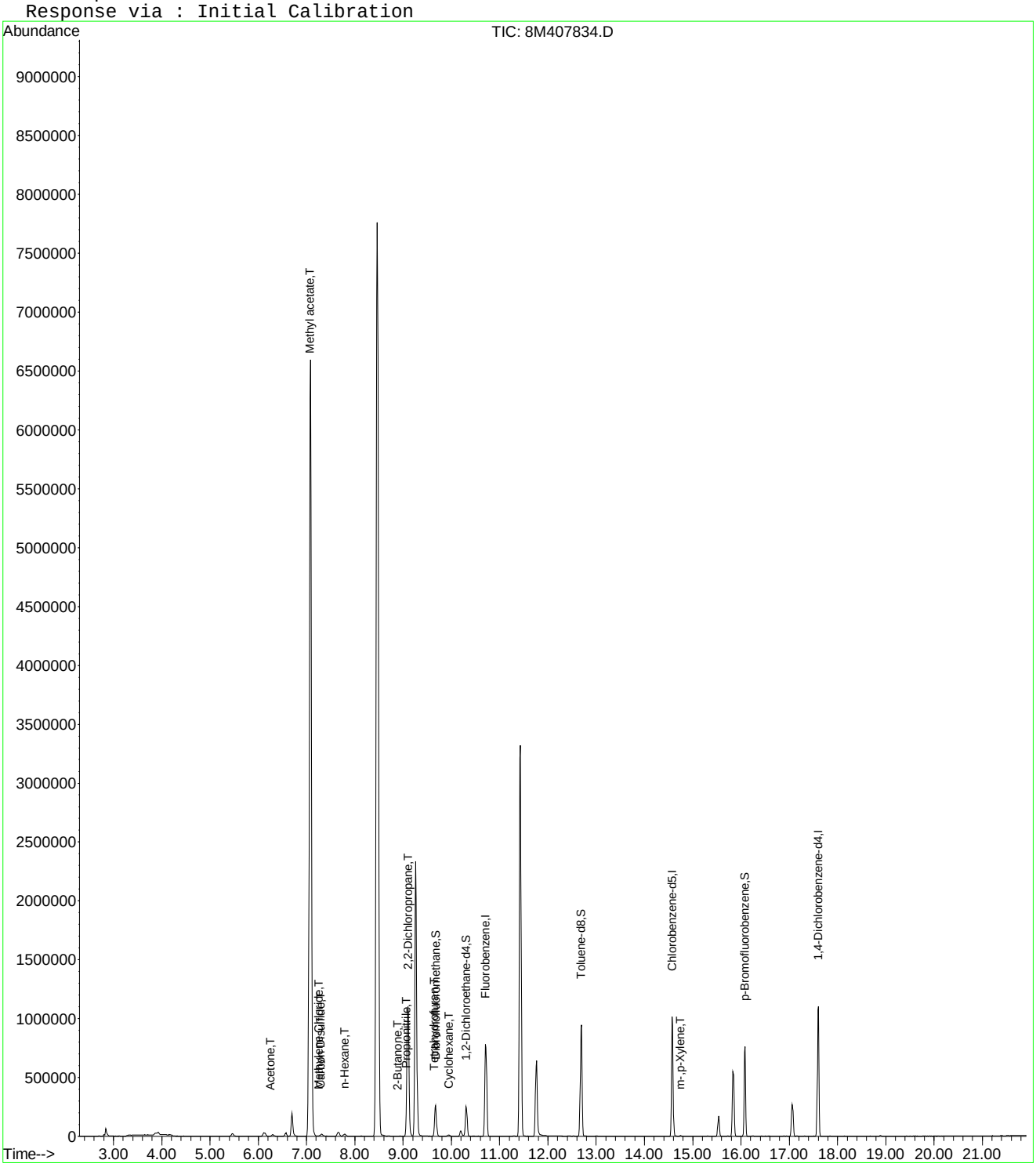

8M407834.D 8260WT.M Mon Oct 05 15:09:03 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407834.D Vial: 8
Acq On : 5 Oct 2015 14:47 Operator: TMB
Sample : WG540826-08 400ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 11:57:00 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	933879	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	691340	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	373332	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	276454	384.6570 ug/L	96
3) 3-Chloro-1-propene	7.08	41	6839307	391.2880 ug/L	97
4) 2-Chloro-1,3-butadiene	8.47	53	7261886	403.7765 ug/L	94
5) Ethyl Acetate	9.10	43	1919647	404.0467 ug/L	99
6) Methacrylonitrile	9.26	67	856150	410.5753 ug/L	97
7) Isobutyl Alcohol	9.27	43	151941	780.4553 ug/L	92
8) 1-Butanol	10.19	56	39703	413.7412 ug/L	80
9) Methyl methacrylate	11.43	41	2385524	414.5619 ug/L	99
10) 2-Nitropropane	11.76	43	432493	447.7796 ug/L	93
13) Cyclohexanone	15.83	55	313432	393.7962 ug/L	87

(#) = qualifier out of range (m) = manual integration
8M407834.D A9FOOWTR.M Tue Oct 06 11:57:00 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407834.D Vial: 8
Acq On : 5 Oct 2015 14:47 Operator: TMB
Sample : WG540826-08 400ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 11:57 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

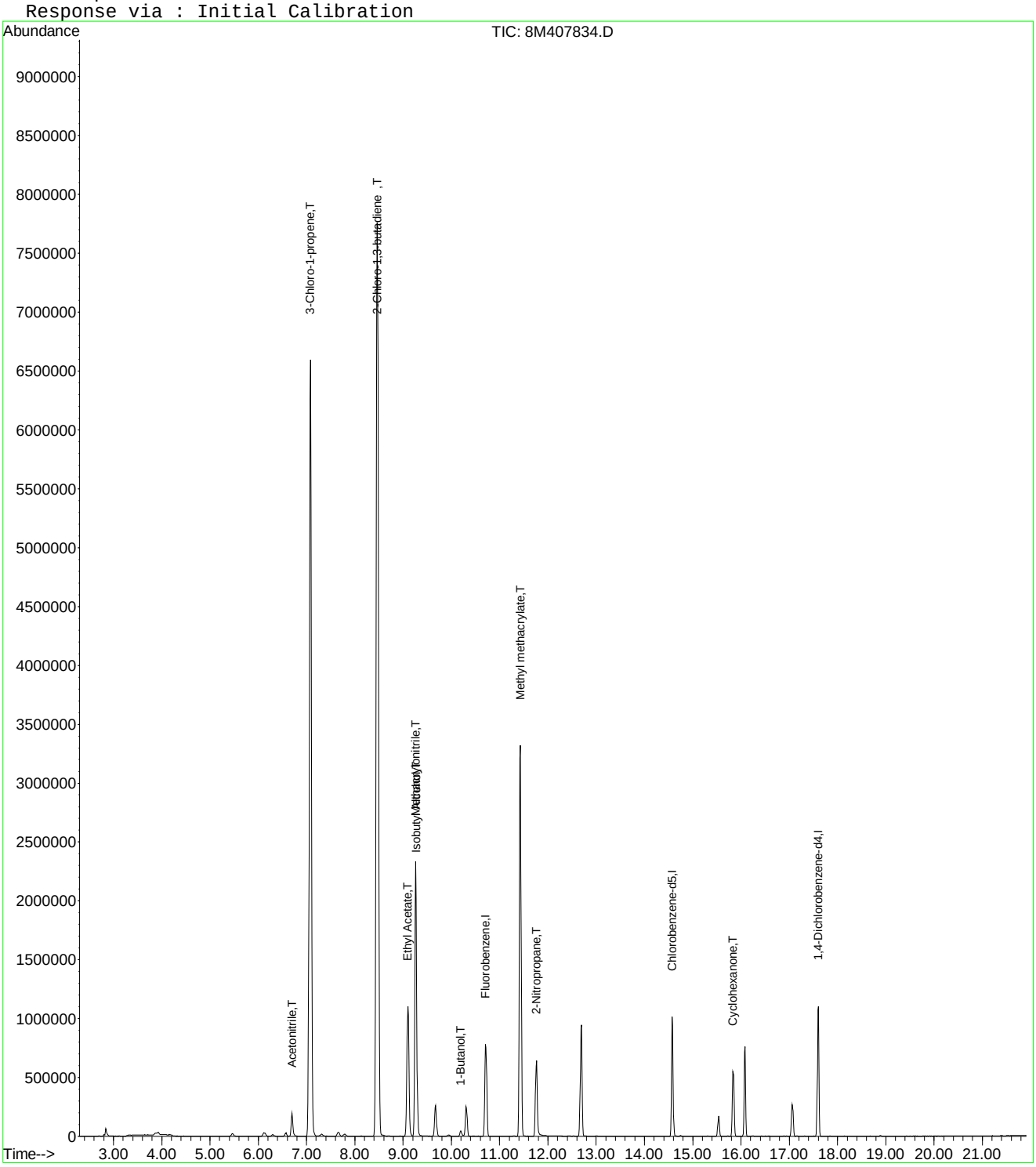

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407835.D Vial: 9
Acq On : 5 Oct 2015 15:15 Operator: TMB
Sample : WG540826-09 500ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 05 15:37:56 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	952136	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	712384	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	381907	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	222948	24.6029 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.40%		
43) 1,2-Dichloroethane-d4	10.30	65	229612	24.8518 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.40%		
58) Toluene-d8	12.69	98	849027	25.6867 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.76%		
80) p-Bromofluorobenzene	16.08	95	340742	25.5710 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.28%		

Target Compounds

					Qvalue
13) Acetone	6.26	43	2624	1.8568 ug/L #	48
17) Iodomethane	6.98	142	414	1.8830 ug/L #	28
18) Methyl acetate	7.00	43	818	0.1531 ug/L #	64
19) Methylene Chloride	7.27	84	2206	0.2301 ug/L	69
20) Carbon Disulfide	7.30	76	12486	0.3989 ug/L #	78
24) n-Hexane	7.79	57	21760	1.5026 ug/L	96
29) 2-Butanone	8.90	43	1797	0.7381 ug/L #	57
30) Propionitrile	9.07	54	1629	2.2802 ug/L #	1
31) 2,2-Dichloropropane	9.11	77	3861	0.2482 ug/L #	52
36) Tetrahydrofuran	9.65	42	2063	1.2908 ug/L #	40
39) Cyclohexane	9.94	56	13508	0.7152 ug/L	88
48) Methylcyclohexane	11.31	83	2456	0.1572 ug/L #	73
73) m-,p-Xylene	14.75	106	3865	0.2133 ug/L	76

(#) = qualifier out of range (m) = manual integration
8M407835.D 8260WT.M Mon Oct 05 15:37:57 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407835.D Vial: 9
Acq On : 5 Oct 2015 15:15 Operator: TMB
Sample : WG540826-09 500ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 5 15:37 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration

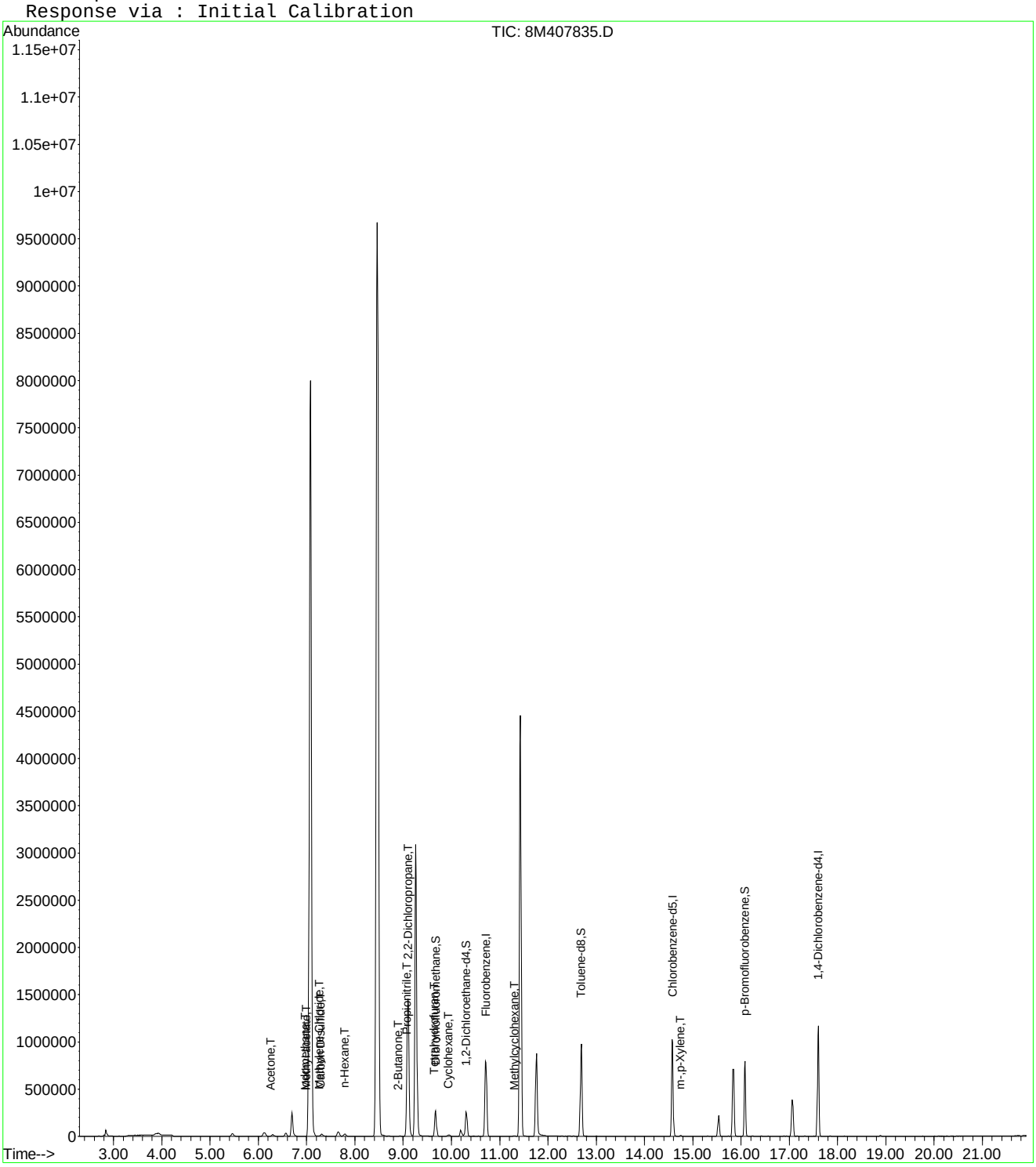

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407835.D Vial: 9
Acq On : 5 Oct 2015 15:15 Operator: TMB
Sample : WG540826-09 500ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 11:57:01 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	952136	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	712384	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	381907	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	355656	485.3695 ug/L	97
3) 3-Chloro-1-propene	7.08	41	8223448	461.4556 ug/L	95
4) 2-Chloro-1,3-butadiene	8.46	53	8764656	477.9893 ug/L	90
5) Ethyl Acetate	9.09	43	2535700	523.4795 ug/L	100
6) Methacrylonitrile	9.26	67	1137496	535.0377 ug/L	97
7) Isobutyl Alcohol	9.27	43	214402	1080.1734 ug/L	98
8) 1-Butanol	10.19	56	54442	556.4564 ug/L	87
9) Methyl methacrylate	11.43	41	3137676	534.8171 ug/L	99
10) 2-Nitropropane	11.76	43	594174	603.3794 ug/L	94
13) Cyclohexanone	15.83	55	412487	506.6127 ug/L	87

(#) = qualifier out of range (m) = manual integration
8M407835.D A9FOOWTR.M Tue Oct 06 11:57:01 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407835.D Vial: 9
Acq On : 5 Oct 2015 15:15 Operator: TMB
Sample : WG540826-09 500ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 11:57 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

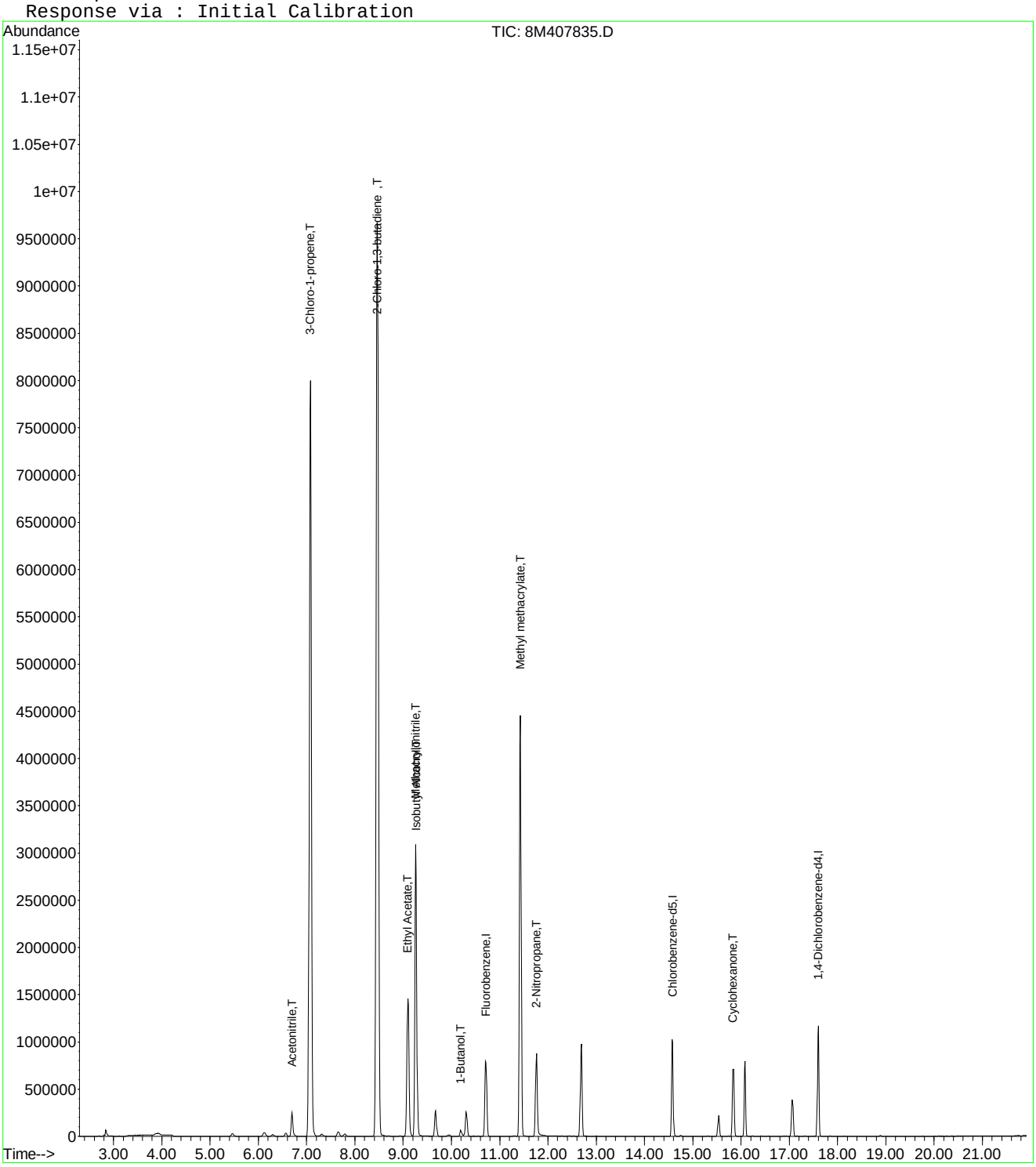

8M407835.D A9FOOWTR.M Tue Oct 06 11:57:01 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407838.D Vial: 12
Acq On : 5 Oct 2015 16:48 Operator: TMB
Sample : WG541826-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD72811 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 05 17:10:31 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	910348	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	672710	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	361469	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	216028	24.9336 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.72%		
43) 1,2-Dichloroethane-d4	10.31	65	220386	24.9481 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.80%		
58) Toluene-d8	12.68	98	805489	25.8067 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.24%		
80) p-Bromofluorobenzene	16.07	95	318985	25.2918 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.16%		

Target Compounds

					Qvalue
5) 1,3-Butadiene	3.90	54	680860	64.5479 ug/L	96
9) Diethyl ether	5.91	59	636031	102.4537 ug/L	99
18) Methyl acetate	7.09	43	861	0.1685 ug/L #	1
29) 2-Butanone	8.90	43	1914	0.8222 ug/L	83
30) Propionitrile	8.99	54	68619	100.4600 ug/L	99
36) Tetrahydrofuran	9.65	42	849	0.5556 ug/L #	40
39) Cyclohexane	9.96	56	4155	0.2301 ug/L #	88
51) 1,4-Dioxane	11.71	88	8398	188.8572 ug/L	85

(#) = qualifier out of range (m) = manual integration
8M407838.D 8260WT.M Mon Oct 05 17:10:32 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407838.D Vial: 12
Acq On : 5 Oct 2015 16:48 Operator: TMB
Sample : WG541826-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD72811 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 5 17:10 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration

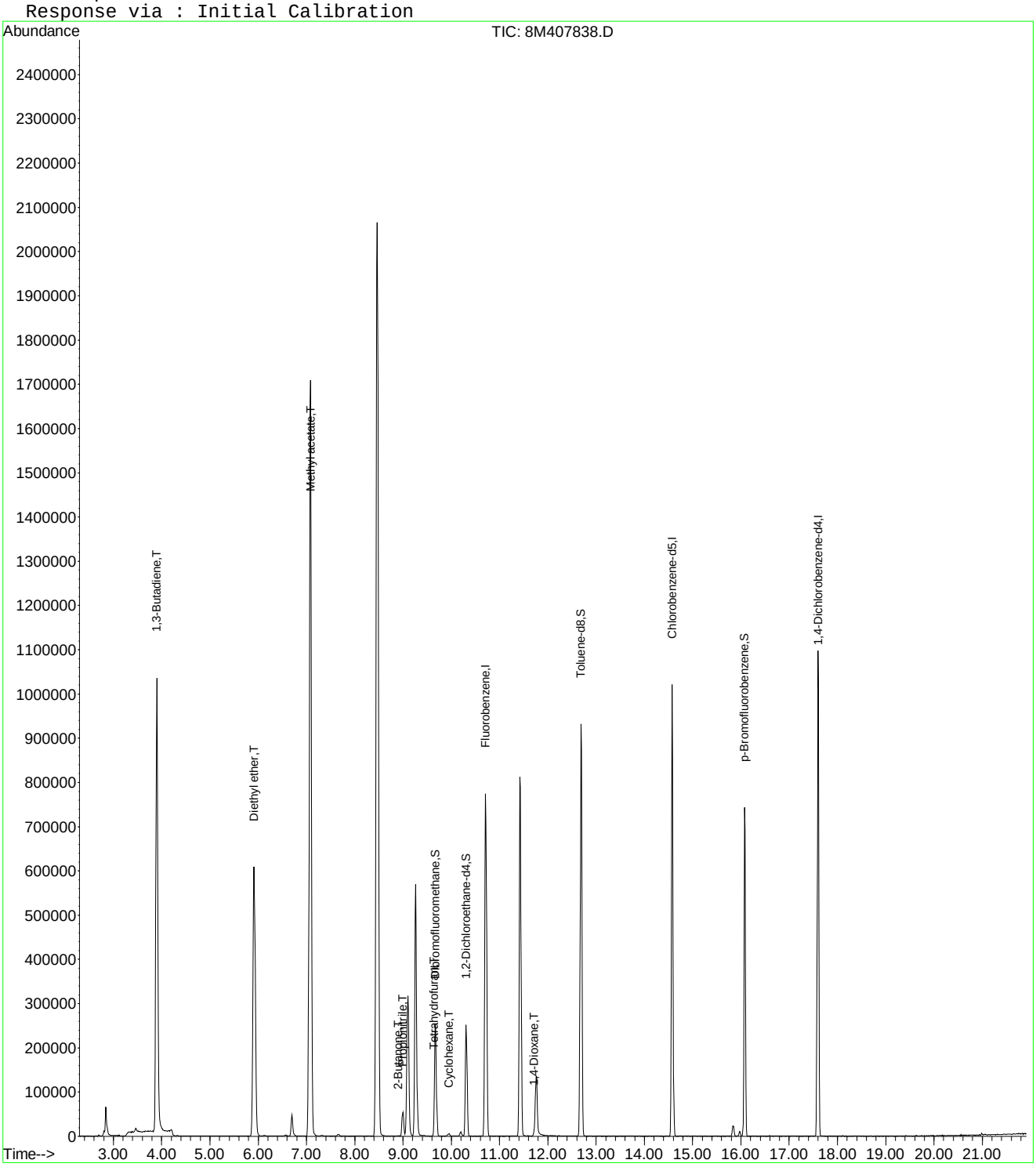

8M407838.D 8260WT.M Mon Oct 05 17:10:33 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407838.D Vial: 12
Acq On : 5 Oct 2015 16:48 Operator: TMB
Sample : WG541826-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD72811 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 11:57:03 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	910348	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	672710	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	361469	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	68331	97.5330 ug/L	99
3) 3-Chloro-1-propene	7.08	41	1823769	107.0379 ug/L	100
4) 2-Chloro-1,3-butadiene	8.47	53	2081638	118.7353 ug/L	100
5) Ethyl Acetate	9.10	43	556798	120.2240 ug/L	97
6) Methacrylonitrile	9.26	67	209938	103.2802 ug/L	94
7) Isobutyl Alcohol	9.27	43	38987	205.4358 ug/L	96
8) 1-Butanol	10.20	56	7758	82.9351 ug/L	93
9) Methyl methacrylate	11.42	41	590033	105.1877 ug/L	99
10) 2-Nitropropane	11.75	43	94685	100.5656 ug/L	93
13) Cyclohexanone	15.84	55	13964	18.1202 ug/L	94

(#) = qualifier out of range (m) = manual integration
8M407838.D A9FOOWTR.M Tue Oct 06 11:57:03 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407838.D Vial: 12
Acq On : 5 Oct 2015 16:48 Operator: TMB
Sample : WG541826-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD72811 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 11:57 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

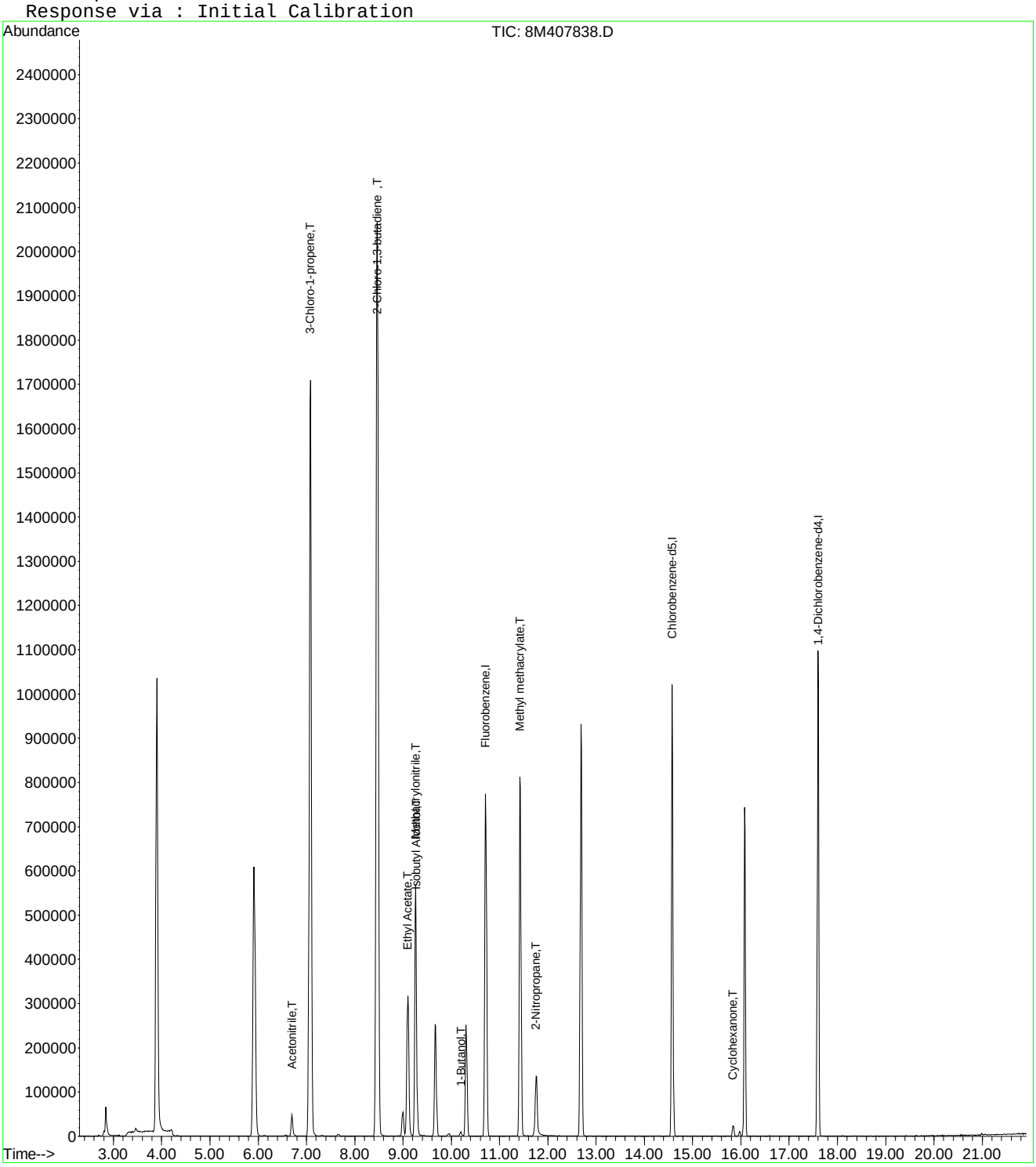

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407838.D Vial: 12
Acq On : 5 Oct 2015 16:48 Operator: TMB
Sample : WG540826-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD72811 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 12:32:35 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	910348	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	672710	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	361469	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	68331	97.5330 ug/L	99
3) 3-Chloro-1-propene	7.08	41	1823769	107.0379 ug/L	100
4) 2-Chloro-1,3-butadiene	8.47	53	2081638	118.7353 ug/L	100
5) Ethyl Acetate	9.10	43	556798	120.2240 ug/L	97
6) Methacrylonitrile	9.26	67	209938	103.2802 ug/L	94
7) Isobutyl Alcohol	9.27	43	38987	205.4358 ug/L	96
8) 1-Butanol	10.20	56	7758	82.9351 ug/L	93
9) Methyl methacrylate	11.42	41	590033	105.1877 ug/L	99
10) 2-Nitropropane	11.75	43	94685	100.5656 ug/L	93
13) Cyclohexanone	15.84	55	13964	18.1202 ug/L	94

(#) = qualifier out of range (m) = manual integration
8M407838.D A9FOOWTR.M Tue Oct 06 12:32:36 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407838.D Vial: 12
Acq On : 5 Oct 2015 16:48 Operator: TMB
Sample : WG540826-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD72811 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 12:32 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

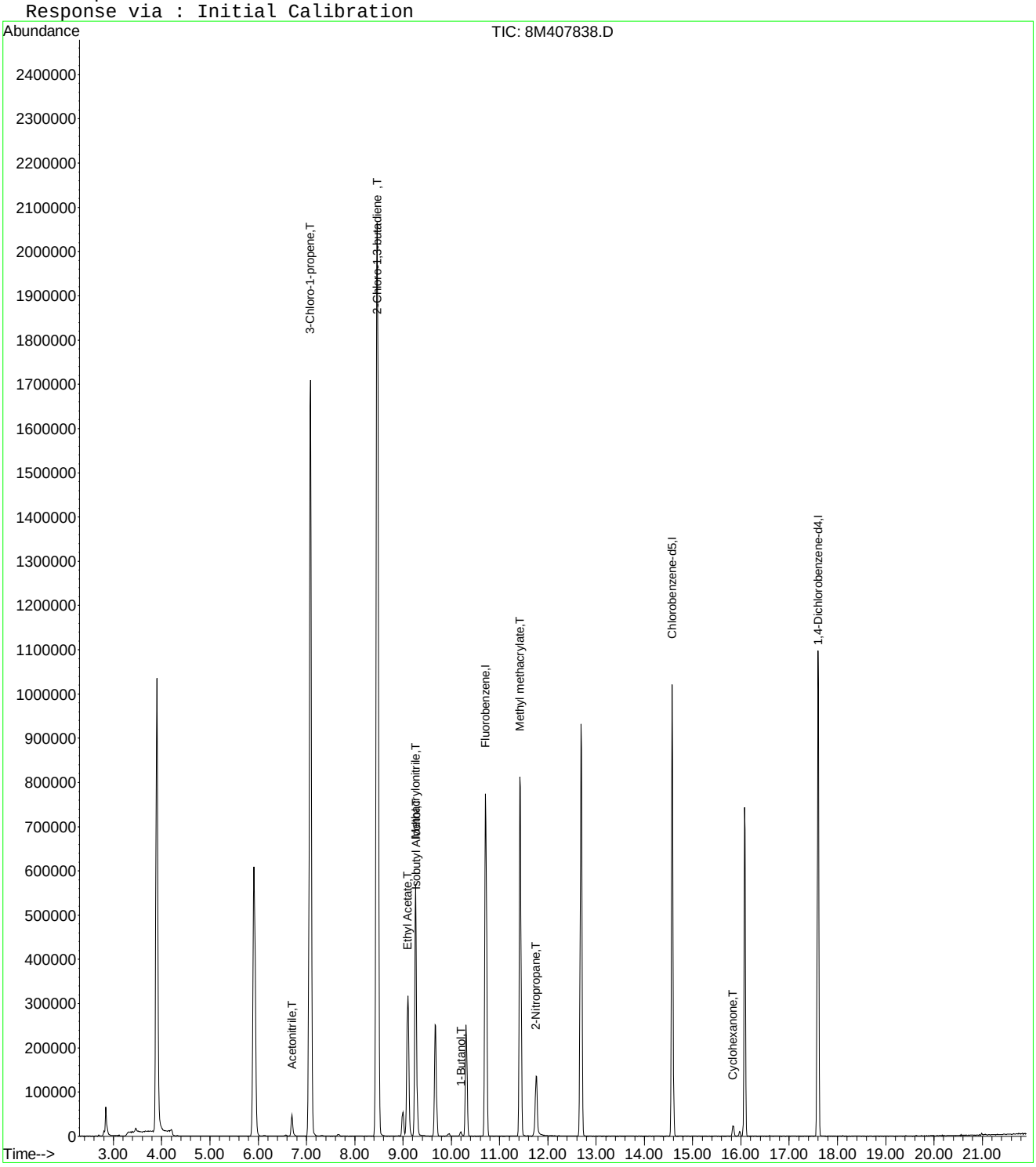

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\100515\8M407838.D Vial: 12
Acq On : 5 Oct 2015 16:48 Operator: TMB
Sample : WG540826-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD72811 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	105	0.00
2	T	Acetonitrile	100.0000	97.5330	2.5	101	0.00
3	T	3-Chloro-1-propene	100.0000	107.0379	-7.0	112	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	118.7354	-18.7	124	0.00
5	T	Ethyl Acetate	100.0000	120.2240	-20.2	123	0.00
6	T	Methacrylonitrile	100.0000	103.2802	-3.3	107	0.00
7	T	Isobutyl Alcohol	200.0000	205.4358	-2.7	104	0.00
8	T	1-Butanol	100.0000	82.9351	17.1	94	0.01
9	T	Methyl methacrylate	100.0000	105.1877	-5.2	105	0.00
10	T	2-Nitropropane	100.0000	100.5656	-0.6	122	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	102	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	101	0.00
13	T	Cyclohexanone	100.0000	18.1202	81.9#	19	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M407838.D A9FOOWTR.M Tue Oct 06 12:32:39 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407747.D Vial: 3
Acq On : 30 Sep 2015 10:30 Operator: TMB
Sample : WG540912-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:02:55 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	842533	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	629942	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	326399	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
80) p-Bromofluorobenzene	16.07	95	245	0.0215 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.08%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	3460	0.2701 ug/L	81
3) Chloromethane	3.63	50	5818	0.2977 ug/L	95
4) Vinyl Chloride	3.86	62	5033	0.3259 ug/L	85
5) 1,3-Butadiene	3.90	54	3968	Below Cal #	58
6) Bromomethane	4.74	94	879	0.8599 ug/L #	61
7) Chloroethane	4.90	64	1584	0.2514 ug/L #	43
8) Trichlorofluoromethane	5.37	101	3597	0.2410 ug/L #	92
10) Isoprene	5.95	67	2731	0.2492 ug/L	79
12) 1,1,2-Trichloro-1,2,2-Trif	6.18	101	1287	0.1604 ug/L #	49
14) 1,1-Dichloroethene	6.47	61	4105	0.3005 ug/L	98
16) Dimethyl Sulfide	6.75	62	1886	0.2406 ug/L	92
18) Methyl acetate	7.02	43	897	0.1897 ug/L #	64
19) Methylene Chloride	7.27	84	2727	0.3214 ug/L	93
20) Carbon Disulfide	7.30	76	7953	0.2871 ug/L	93
22) Methyl Tert Butyl Ether	7.49	73	4097	0.2548 ug/L #	50
23) trans-1,2-Dichloroethene	7.70	61	3282	0.2530 ug/L	98
24) n-Hexane	7.79	57	3786	0.2955 ug/L	89
26) Vinyl Acetate	8.31	43	2197	0.2585 ug/L #	77
27) 1,1-Dichloroethane	8.33	63	4345	0.2638 ug/L #	89
31) 2,2-Dichloropropane	9.11	77	4023	0.2922 ug/L #	62
32) cis-1,2-Dichloroethene	9.18	96	2188	0.2364 ug/L	88
33) Chloroform	9.38	83	4576	0.2924 ug/L	85
35) Bromochloromethane	9.62	130	1136	0.2493 ug/L	83
36) Tetrahydrofuran	9.63	42	248	0.1754 ug/L #	40
38) 1,1,1-Trichloroethane	9.90	97	3114	0.2217 ug/L	98
39) Cyclohexane	9.94	56	3908	0.2338 ug/L #	92
40) 1,1-Dichloropropene	10.12	75	3184	0.2633 ug/L	86
42) Carbon Tetrachloride	10.26	117	2506	0.1996 ug/L	93
45) 1,2-Dichloroethane	10.44	62	2693	0.2506 ug/L #	69
46) Benzene	10.47	78	9583	0.2888 ug/L	94
47) Trichloroethene	11.22	130	2701	0.3024 ug/L	94
48) Methylcyclohexane	11.30	83	3801	0.2750 ug/L	90
49) 1,2-Dichloropropane	11.43	63	1944	0.2175 ug/L	86
50) Bromodichloromethane	11.73	83	2933	0.2542 ug/L #	91
53) 2-Chloroethyl Vinyl Ether	12.03	63	715	0.1941 ug/L #	53
55) cis-1,3-Dichloropropene	12.36	75	3481	0.2718 ug/L	98
56) Dimethyl Disulfide	12.63	79	1238	0.1792 ug/L	71
59) Toluene	12.79	91	10440	0.2917 ug/L	93
60) Ethyl Methacrylate	12.89	69	1527	0.2140 ug/L	91
62) trans-1,3-Dichloropropene	12.96	75	2685	0.2445 ug/L	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407747.D Vial: 3
Acq On : 30 Sep 2015 10:30 Operator: TMB
Sample : WG540912-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:02:55 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
63)	1,1,2-Trichloroethane	13.18	97	1180	0.2077 ug/L		69
65)	1,3-Dichloropropane	13.48	76	2279	0.2245 ug/L	#	62
66)	Tetrachloroethene	13.61	164	1978	0.2599 ug/L		83
67)	Dibromochloromethane	13.87	129	1603	0.2182 ug/L		80
68)	1,2-Dibromoethane	14.13	107	1502	0.2648 ug/L		82
69)	1-Chlorohexane	14.21	91	3124	0.2439 ug/L		89
70)	Chlorobenzene	14.64	112	6537	0.2725 ug/L		79
71)	1,1,1,2-Tetrachloroethane	14.66	131	2228	0.2512 ug/L		90
72)	Ethylbenzene	14.66	106	3689	0.2640 ug/L		97
73)	m-,p-Xylene	14.75	106	8556	0.5340 ug/L		90
74)	o-Xylene	15.31	106	3959	0.2443 ug/L		89
75)	Styrene	15.35	104	6791	0.2645 ug/L		89
76)	Bromoform	15.83	173	752	0.1703 ug/L	#	27
77)	Isopropylbenzene	15.73	105	10790	0.2776 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	1111	0.1845 ug/L	#	53
83)	n-Propylbenzene	16.25	91	13425	0.2841 ug/L		94
84)	Bromobenzene	16.36	156	2804	0.2923 ug/L		86
85)	1,3,5-Trimethylbenzene	16.42	105	9334	0.2873 ug/L		97
86)	2-Chlorotoluene	16.51	91	9080	0.2901 ug/L		94
87)	4-Chlorotoluene	16.56	91	8463	0.3126 ug/L		91
88)	a-Methylstyrene	16.83	118	4105	0.2318 ug/L		90
89)	tert-Butylbenzene	16.90	134	1912	0.2675 ug/L		87
90)	1,2,4-Trimethylbenzene	16.94	105	8960	0.2729 ug/L		92
91)	sec-Butylbenzene	17.17	105	10929	0.2708 ug/L		99
92)	p-Isopropyltoluene	17.32	119	8859	0.2745 ug/L		100
93)	1,3-Dichlorobenzene	17.51	146	5736	0.2996 ug/L		97
94)	1,4-Dichlorobenzene	17.64	146	5824	0.3054 ug/L	#	38
95)	n-Butylbenzene	17.85	91	8274	0.2750 ug/L	#	92
96)	1,2-Dichlorobenzene	18.13	146	4859	0.2900 ug/L		84
98)	1,2,4-Trichlorobenzene	20.28	180	3220	0.2797 ug/L		94
99)	Hexachlorobutadiene	20.43	225	1169	0.2123 ug/L	#	84
100)	Naphthalene	20.64	128	4792	0.2880 ug/L	#	67
101)	1,2,3-Trichlorobenzene	20.95	180	2667	0.2717 ug/L		93

(#) = qualifier out of range (m) = manual integration
8M407747.D 8260WT.M Thu Oct 01 09:02:55 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407747.D Vial: 3
Acq On : 30 Sep 2015 10:30 Operator: TMB
Sample : WG540912-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 1 9:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration

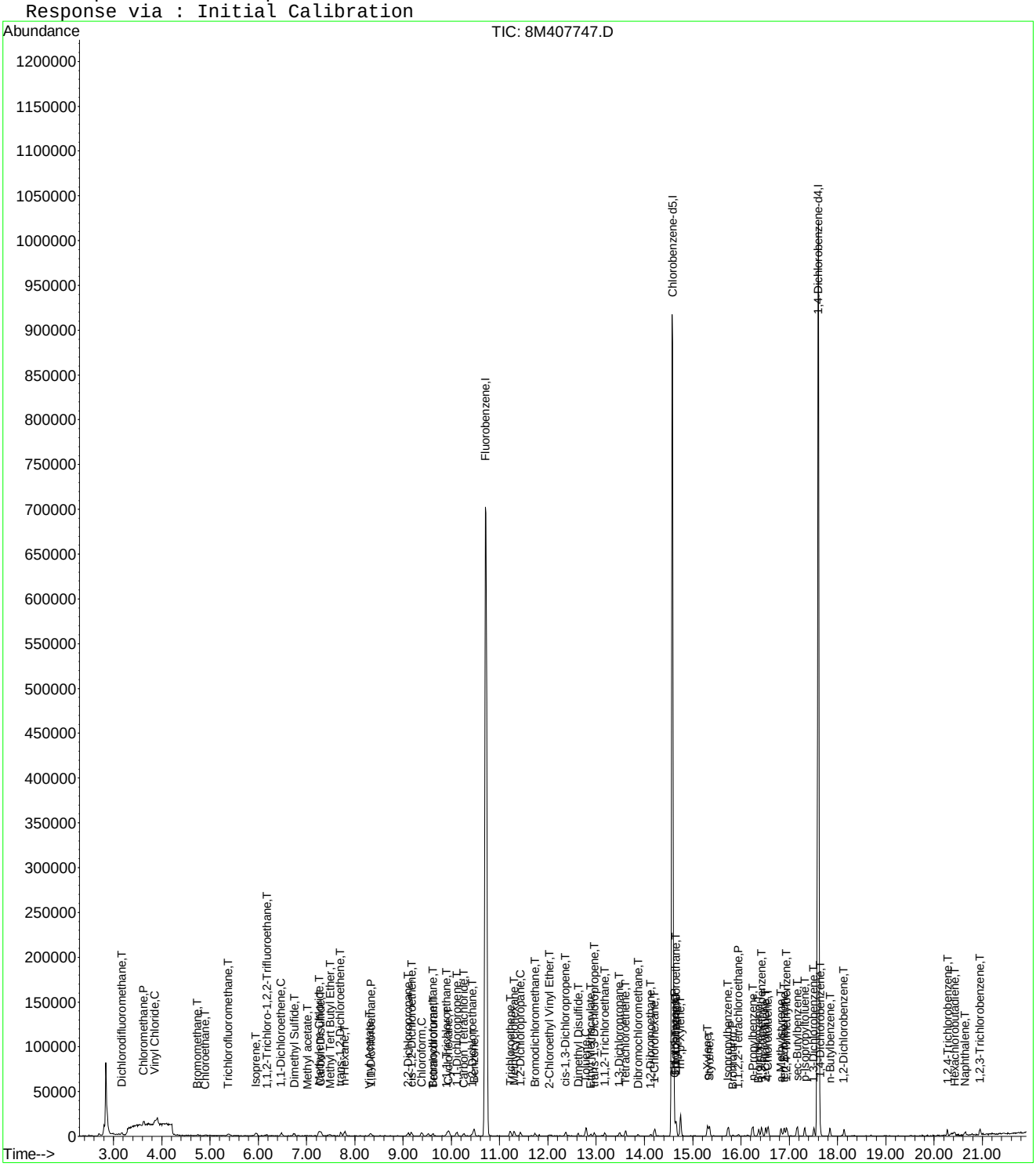

8M407747.D 8260WT.M Thu Oct 01 09:02:55 2015 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\093015\8M407747.D Vial: 3
Acq On : 30 Sep 2015 10:30 Operator: TMB
Sample : WG540912-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2701	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.2977	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.3259	0.0	0	0.01
5	T	1,3-Butadiene	-1.0000	-1.0000	0.0	0	0.00
6	T	Bromomethane	-1.0000	0.8599	0.0	100	0.00
7	T	Chloroethane	-1.0000	0.2514	0.0	100	0.00
8	T	Trichlorofluoromethane	-1.0000	0.2410	0.0	100	-0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.91#
10	T	Isoprene	-1.0000	0.2492	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.15#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.1604	0.0	100	0.02
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.24#
14	C	1,1-Dichloroethene	-1.0000	0.3005	0.0	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.59#
16	T	Dimethyl Sulfide	-1.0000	0.2406	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.99#
18	T	Methyl acetate	-1.0000	0.1897	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.3214	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.2871	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.44#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2548	0.0	100	0.02
23	T	trans-1,2-Dichloroethene	-1.0000	0.2530	0.0	100	-0.01
24	T	n-Hexane	-1.0000	0.2955	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.14#
26	T	Vinyl Acetate	-1.0000	0.2585	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.2638	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0970	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.00#
31	T	2,2-Dichloropropane	-1.0000	0.2922	0.0	100	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.2364	0.0	100	0.00
33	C	Chloroform	0.3000	0.2924	2.5	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.52#
35	T	Bromochloromethane	-1.0000	0.2493	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.1754	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	-1.0000	0.2217	0.0	100	-0.01
39	T	Cyclohexane	-1.0000	0.2338	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.2633	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.22#
42	T	Carbon Tetrachloride	-1.0000	0.1996	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	-1.0000	0.2506	0.0	100	0.00
46	T	Benzene	0.3000	0.2888	3.7	100	0.00
47	T	Trichloroethene	-1.0000	0.3024	0.0	100	0.00
48	T	Methylcyclohexane	-1.0000	0.2750	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2175	0.0	100	0.00
50	T	Bromodichloromethane	-1.0000	0.2542	0.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	-1.0000	0.1149	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1941	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.07#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\093015\8M407747.D Vial: 3
Acq On : 30 Sep 2015 10:30 Operator: TMB
Sample : WG540912-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.2718	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.1792	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0000	0.0	0	-12.69#
59	C	Toluene	-1.0000	0.2917	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2140	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.2445	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.2077	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	-1.0000	0.2245	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.2599	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.2182	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.2648	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.2439	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.2725	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.2512	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.2640	0.0	100	0.00
73	T	m-,p-Xylene	-1.0000	0.5340	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.2443	0.0	100	0.00
75	T	Styrene	-1.0000	0.2645	0.0	100	0.00
76	P	Bromoform	-1.0000	0.1703	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.2776	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.1845	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0215	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.14#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	-1.0000	0.2841	0.0	0	0.00
84	T	Bromobenzene	0.3000	0.2923	2.6	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.2873	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.2901	0.0	100	0.00
87	T	4-Chlorotoluene	-1.0000	0.3126	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2318	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.2675	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.2729	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.2708	0.0	0	0.00
92	T	p-Isopropyltoluene	-1.0000	0.2745	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.2996	0.0	100	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.3055	-1.8	100	0.00
95	T	n-Butylbenzene	-1.0000	0.2750	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.2900	3.3	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.2797	0.0	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.2123	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.2880	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.2717	9.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M407747.D 8260WT.M Thu Oct 01 09:03:21 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407748.D Vial: 4
Acq On : 30 Sep 2015 10:59 Operator: TMB
Sample : WG540912-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:02:56 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	843843	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	621698	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	327803	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	12.69	98	242	0.0084 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.04%#	
80) p-Bromofluorobenzene	0.00	95	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	5134	0.4002 ug/L	83
3) Chloromethane	3.63	50	10943	0.5590 ug/L	98
4) Vinyl Chloride	3.87	62	7387	0.4775 ug/L	99
5) 1,3-Butadiene	3.91	54	7288	Below Cal	88
6) Bromomethane	4.74	94	1106	0.9036 ug/L	82
7) Chloroethane	4.90	64	1927	0.3053 ug/L #	53
8) Trichlorofluoromethane	5.38	101	6101	0.4081 ug/L #	91
10) Isoprene	5.96	67	4001	0.3645 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	2348	0.2922 ug/L	66
13) Acetone	6.23	43	210	0.1677 ug/L #	48
14) 1,1-Dichloroethene	6.48	61	5765	0.4214 ug/L	100
16) Dimethyl Sulfide	6.74	62	2612	0.3327 ug/L	95
18) Methyl acetate	7.01	43	1748	0.3691 ug/L #	64
19) Methylene Chloride	7.27	84	3457	0.4069 ug/L	90
20) Carbon Disulfide	7.31	76	12436	0.4482 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	6170	0.3831 ug/L #	75
23) trans-1,2-Dichloroethene	7.71	61	5061	0.3896 ug/L	87
24) n-Hexane	7.80	57	5793	0.4514 ug/L	92
26) Vinyl Acetate	8.30	43	3350	0.3936 ug/L #	77
27) 1,1-Dichloroethane	8.34	63	6510	0.3946 ug/L #	90
29) 2-Butanone	8.90	43	383	0.1775 ug/L #	57
31) 2,2-Dichloropropane	9.12	77	5308	0.3850 ug/L	93
32) cis-1,2-Dichloroethene	9.17	96	3581	0.3863 ug/L	92
33) Chloroform	9.37	83	6738	0.4300 ug/L	94
35) Bromochloromethane	9.61	130	1581	0.3465 ug/L	79
38) 1,1,1-Trichloroethane	9.91	97	5349	0.3802 ug/L	88
39) Cyclohexane	9.94	56	6694	0.3999 ug/L	97
40) 1,1-Dichloropropene	10.11	75	4735	0.3909 ug/L	98
42) Carbon Tetrachloride	10.26	117	4620	0.3675 ug/L	96
45) 1,2-Dichloroethane	10.43	62	3809	0.3539 ug/L	87
46) Benzene	10.47	78	14221	0.4279 ug/L	100
47) Trichloroethene	11.22	130	4002	0.4473 ug/L	91
48) Methylcyclohexane	11.31	83	5900	0.4262 ug/L	94
49) 1,2-Dichloropropane	11.43	63	3209	0.3584 ug/L	98
50) Bromodichloromethane	11.74	83	4465	0.3864 ug/L #	90
52) Dibromomethane	11.81	93	1530	0.3589 ug/L	88
53) 2-Chloroethyl Vinyl Ether	12.03	63	992	0.2688 ug/L #	53
54) 4-Methyl-2-Pentanone	12.06	58	712	0.3761 ug/L #	40
55) cis-1,3-Dichloropropene	12.37	75	4857	0.3786 ug/L	99
56) Dimethyl Disulfide	12.63	79	1384	0.2001 ug/L	64

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407748.D Vial: 4
Acq On : 30 Sep 2015 10:59 Operator: TMB
Sample : WG540912-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:02:56 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
59)	Toluene	12.79	91	15773	0.4465 ug/L		96
60)	Ethyl Methacrylate	12.89	69	2057	0.2921 ug/L	#	62
62)	trans-1,3-Dichloropropene	12.96	75	4017	0.3706 ug/L		93
63)	1,1,2-Trichloroethane	13.19	97	2143	0.3822 ug/L		95
64)	2-Hexanone	13.13	58	381	0.2161 ug/L	#	4
65)	1,3-Dichloropropane	13.49	76	4066	0.4058 ug/L		94
66)	Tetrachloroethene	13.60	164	2729	0.3634 ug/L		96
67)	Dibromochloromethane	13.87	129	2633	0.3632 ug/L		91
68)	1,2-Dibromoethane	14.13	107	2336	0.4173 ug/L		97
69)	1-Chlorohexane	14.21	91	5084	0.4022 ug/L		98
70)	Chlorobenzene	14.62	112	10137	0.4282 ug/L		92
71)	1,1,1,2-Tetrachloroethane	14.66	131	2637	0.3013 ug/L		89
72)	Ethylbenzene	14.66	106	5499	0.3988 ug/L		92
73)	m-,p-Xylene	14.75	106	12993	0.8216 ug/L		94
74)	o-Xylene	15.31	106	5938	0.3713 ug/L		82
75)	Styrene	15.35	104	9522	0.3758 ug/L		94
76)	Bromoform	15.84	173	1354	0.3107 ug/L	#	71
77)	Isopropylbenzene	15.73	105	16651	0.4341 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.94	83	2444	0.4041 ug/L	#	84
81)	1,2,3-Trichloropropane	16.14	110	444	0.2642 ug/L	#	34
82)	trans-1,4-Dichloro-2-Buten	16.18	53	458	0.2061 ug/L	#	1
83)	n-Propylbenzene	16.24	91	20209	0.4258 ug/L		97
84)	Bromobenzene	16.37	156	3499	0.3632 ug/L		77
85)	1,3,5-Trimethylbenzene	16.43	105	14131	0.4331 ug/L		95
86)	2-Chlorotoluene	16.52	91	13492	0.4292 ug/L		89
87)	4-Chlorotoluene	16.56	91	12070	0.4440 ug/L		99
88)	a-Methylstyrene	16.84	118	5722	0.3217 ug/L		89
89)	tert-Butylbenzene	16.90	134	2905	0.4047 ug/L		93
90)	1,2,4-Trimethylbenzene	16.95	105	13785	0.4181 ug/L		99
91)	sec-Butylbenzene	17.16	105	16834	0.4153 ug/L		95
92)	p-Isopropyltoluene	17.32	119	13597	0.4195 ug/L		98
93)	1,3-Dichlorobenzene	17.51	146	8047	0.4185 ug/L		97
94)	1,4-Dichlorobenzene	17.64	146	8517	0.4448 ug/L	#	72
95)	n-Butylbenzene	17.85	91	13596	0.4500 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	6772	0.4025 ug/L		98
98)	1,2,4-Trichlorobenzene	20.28	180	4122	0.3566 ug/L		82
99)	Hexachlorobutadiene	20.43	225	2196	0.3972 ug/L	#	81
100)	Naphthalene	20.64	128	7425	0.4443 ug/L		89
101)	1,2,3-Trichlorobenzene	20.95	180	3734	0.3788 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M407748.D 8260WT.M Thu Oct 01 09:02:56 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407748.D Vial: 4
Acq On : 30 Sep 2015 10:59 Operator: TMB
Sample : WG540912-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 1 9:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration

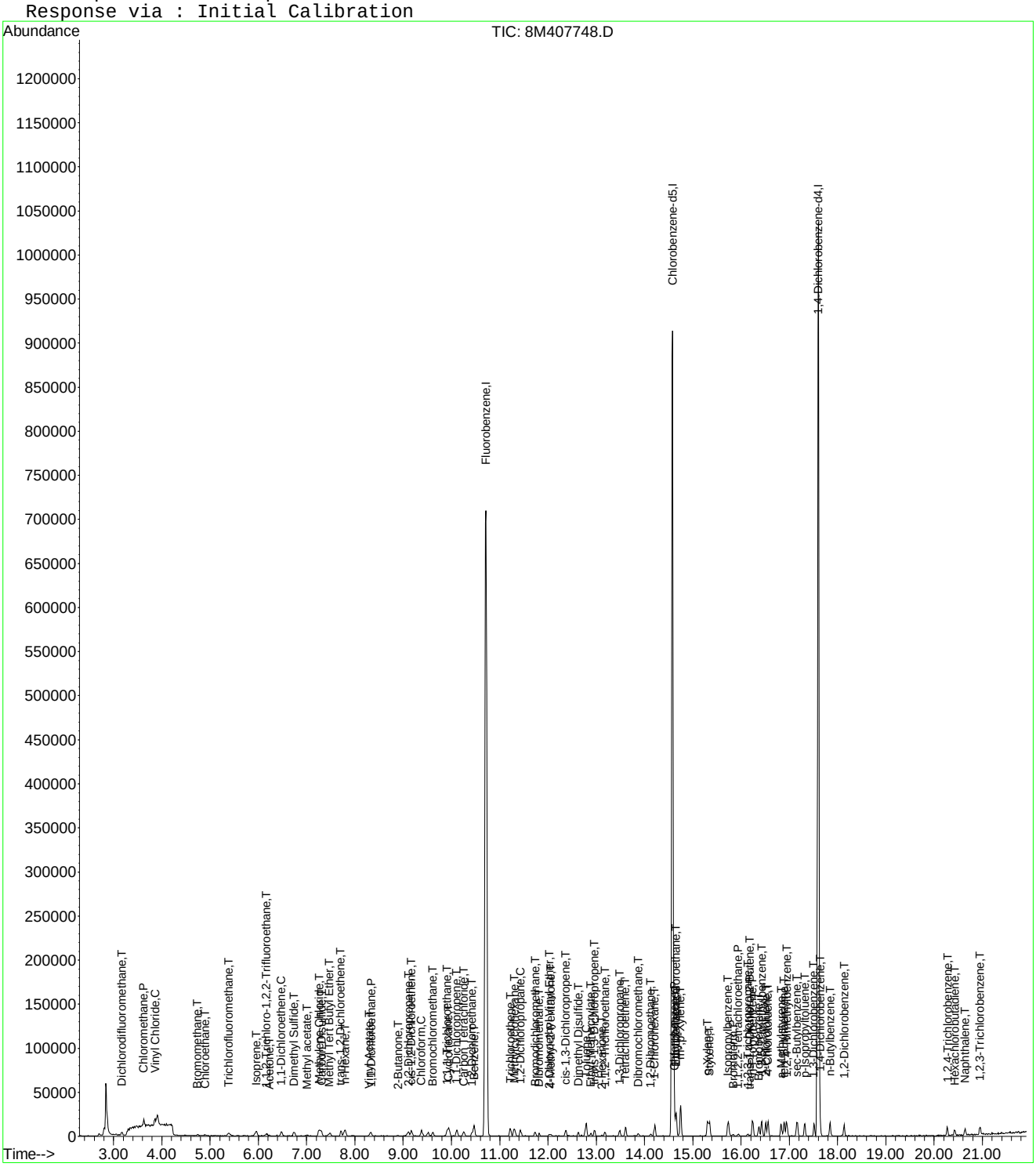

8M407748.D 8260WT.M Thu Oct 01 09:02:57 2015 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\093015\8M407748.D Vial: 4
Acq On : 30 Sep 2015 10:59 Operator: TMB
Sample : WG540912-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	0.4000	0.4002	-0.0	100	0.00
3	P	Chloromethane	-1.0000	0.5590	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.4775	-19.4	100	0.02
5	T	1,3-Butadiene	-1.0000	-1.0000	0.0	0	0.02
6	T	Bromomethane	-1.0000	0.9036	0.0	100	0.00
7	T	Chloroethane	0.4000	0.3053	23.7	100	0.00
8	T	Trichlorofluoromethane	0.4000	0.4081	-2.0	100	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.91#
10	T	Isoprene	0.4000	0.3645	8.9	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.15#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2922	0.0	100	0.00
13	T	Acetone	-1.0000	0.1677	0.0	100	-0.01
14	C	1,1-Dichloroethene	0.4000	0.4214	-5.3	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.59#
16	T	Dimethyl Sulfide	0.4000	0.3327	16.8	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.99#
18	T	Methyl acetate	-1.0000	0.3691	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4069	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4482	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.44#
22	T	Methyl Tert Butyl Ether	-1.0000	0.3831	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.3896	2.6	100	0.00
24	T	n-Hexane	-1.0000	0.4514	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.14#
26	T	Vinyl Acetate	0.4000	0.3936	1.6	100	0.00
27	P	1,1-Dichloroethane	0.4000	0.3946	1.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.1775	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.00#
31	T	2,2-Dichloropropane	0.4000	0.3850	3.8	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.3863	3.4	100	0.00
33	C	Chloroform	0.4000	0.4300	-7.5	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.52#
35	T	Bromochloromethane	0.4000	0.3465	13.4	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.0000	0.0	0	-9.64#
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	0.4000	0.3802	4.9	100	0.00
39	T	Cyclohexane	-1.0000	0.3999	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.3909	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.22#
42	T	Carbon Tetrachloride	0.4000	0.3675	8.1	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	0.4000	0.3539	11.5	100	0.00
46	T	Benzene	0.4000	0.4279	-7.0	100	0.00
47	T	Trichloroethene	0.4000	0.4473	-11.8	100	0.00
48	T	Methylcyclohexane	-1.0000	0.4262	0.0	100	0.00
49	C	1,2-Dichloropropane	0.4000	0.3584	10.4	100	0.00
50	T	Bromodichloromethane	0.4000	0.3864	3.4	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	0.4000	0.3589	10.3	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2688	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.3761	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\093015\8M407748.D Vial: 4
Acq On : 30 Sep 2015 10:59 Operator: TMB
Sample : WG540912-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3786	5.3	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2001	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0084	0.0	100	0.00
59	C	Toluene	0.4000	0.4465	-11.6	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2921	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3706	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.3822	4.5	100	0.00
64	T	2-Hexanone	-1.0000	0.2161	0.0	100	0.00
65	T	1,3-Dichloropropane	0.4000	0.4058	-1.4	100	0.00
66	T	Tetrachloroethene	0.4000	0.3634	9.2	100	0.00
67	T	Dibromochloromethane	0.4000	0.3632	9.2	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.4173	-4.3	100	0.00
69	T	1-Chlorohexane	0.4000	0.4022	-0.5	100	0.00
70	P	Chlorobenzene	0.4000	0.4282	-7.1	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3013	24.7	100	0.00
72	C	Ethylbenzene	0.4000	0.3988	0.3	100	0.00
73	T	m-,p-Xylene	0.8000	0.8216	-2.7	100	0.00
74	T	o-Xylene	-1.0000	0.3713	0.0	100	0.00
75	T	Styrene	0.4000	0.3758	6.0	100	0.00
76	P	Bromoform	-1.0000	0.3107	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.4341	-8.5	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.4041	-1.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0000	0.0	0	-16.08#
81	T	1,2,3-Trichloropropane	-1.0000	0.2642	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.2061	0.0	100	0.00
83	T	n-Propylbenzene	0.4000	0.4258	-6.5	100	0.00
84	T	Bromobenzene	0.4000	0.3632	9.2	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.4331	-8.3	100	0.00
86	T	2-Chlorotoluene	0.4000	0.4292	-7.3	100	0.00
87	T	4-Chlorotoluene	0.4000	0.4440	-11.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.3217	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.4047	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	0.4000	0.4181	-4.5	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.4153	0.0	0	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4195	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.4185	-4.6	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.4448	-11.2	100	0.00
95	T	n-Butylbenzene	-1.0000	0.4500	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.4025	-0.6	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	0.4000	0.3566	10.9	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.3972	0.7	100	0.00
100	T	Naphthalene	0.4000	0.4443	-11.1	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.3788	5.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M407748.D 8260WT.M Thu Oct 01 09:03:30 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407749.D Vial: 5
Acq On : 30 Sep 2015 11:32 Operator: TMB
Sample : WG540912-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:02:57 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	824629	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	595142	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	310452	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	3760	0.4791 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.92%#	
43) 1,2-Dichloroethane-d4	10.31	65	3739	0.4673 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	1.88%#	
58) Toluene-d8	12.69	98	14193	0.5140 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.04%#	
80) p-Bromofluorobenzene	16.08	95	5646	0.5212 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.08%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	12560	1.0019 ug/L	91
3) Chloromethane	3.63	50	22855	1.1947 ug/L	98
4) Vinyl Chloride	3.86	62	17167	1.1356 ug/L	98
5) 1,3-Butadiene	3.91	54	17031	Below Cal	87
6) Bromomethane	4.74	94	3443	1.3712 ug/L	94
7) Chloroethane	4.90	64	6509	1.0554 ug/L	95
8) Trichlorofluoromethane	5.37	101	15428	1.0559 ug/L	99
9) Diethyl ether	5.92	59	27834	4.9496 ug/L	94
10) Isoprene	5.95	67	10646	0.9925 ug/L	94
11) Acrolein	6.15	56	1375	1.9702 ug/L #	63
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	8094	1.0306 ug/L	87
13) Acetone	6.26	43	1007	0.8227 ug/L #	48
14) 1,1-Dichloroethene	6.47	61	14040	1.0502 ug/L	100
15) Tert-Butyl Alcohol	6.58	59	3663	10.1285 ug/L #	58
16) Dimethyl Sulfide	6.74	62	7699	1.0034 ug/L	94
17) Iodomethane	7.00	142	1516	2.1016 ug/L #	28
18) Methyl acetate	7.01	43	4667	1.0083 ug/L #	64
19) Methylene Chloride	7.27	84	8915	1.0737 ug/L	98
20) Carbon Disulfide	7.31	76	28782	1.0616 ug/L	96
21) Acrylonitrile	7.43	53	4083	2.2221 ug/L	96
22) Methyl Tert Butyl Ether	7.47	73	15039	0.9555 ug/L	96
23) trans-1,2-Dichloroethene	7.71	61	12677	0.9985 ug/L	89
24) n-Hexane	7.79	57	12774	1.0185 ug/L	90
25) Diisopropyl ether	8.13	45	163256	5.2163 ug/L	99
26) Vinyl Acetate	8.31	43	7588	0.9122 ug/L #	77
27) 1,1-Dichloroethane	8.33	63	16753	1.0391 ug/L	98
28) Ethyl-Tert-Butyl ether	8.71	59	123570	5.0127 ug/L	96
29) 2-Butanone	8.89	43	1526	0.7237 ug/L #	57
30) Propionitrile	9.00	54	2724	4.4026 ug/L #	56
31) 2,2-Dichloropropane	9.12	77	14447	1.0722 ug/L	97
32) cis-1,2-Dichloroethene	9.18	96	9612	1.0611 ug/L	96
33) Chloroform	9.38	83	15678	1.0237 ug/L	98
34) 1-Bromopropane	9.51	122	1192	0.8013 ug/L	86
35) Bromochloromethane	9.61	130	4709	1.0560 ug/L	97
36) Tetrahydrofuran	9.64	42	7663	5.5360 ug/L	91
38) 1,1,1-Trichloroethane	9.91	97	13556	0.9861 ug/L	98
39) Cyclohexane	9.94	56	16484	1.0077 ug/L	98
40) 1,1-Dichloropropene	10.11	75	12255	1.0354 ug/L	100
41) Tert-Amyl-Methyl ether	10.21	73	91204	4.9900 ug/L	98
42) Carbon Tetrachloride	10.25	117	12771	1.0395 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M407749.D 8260WT.M Thu Oct 01 09:02:57 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407749.D Vial: 5
Acq On : 30 Sep 2015 11:32 Operator: TMB
Sample : WG540912-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:02:57 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	10153	0.9654 ug/L		97
46)	Benzene	10.47	78	35220	1.0845 ug/L		97
47)	Trichloroethene	11.21	130	8672	0.9919 ug/L		96
48)	Methylcyclohexane	11.30	83	14046	1.0383 ug/L		95
49)	1,2-Dichloropropane	11.43	63	8870	1.0138 ug/L		99
50)	Bromodichloromethane	11.73	83	10676	0.9454 ug/L		94
52)	Dibromomethane	11.81	93	3913	0.9392 ug/L		94
53)	2-Chloroethyl Vinyl Ether	12.03	63	2929	0.8122 ug/L	#	53
54)	4-Methyl-2-Pentanone	12.07	58	1715	0.9270 ug/L	#	40
55)	cis-1,3-Dichloropropene	12.37	75	12248	0.9770 ug/L		96
56)	Dimethyl Disulfide	12.63	79	4694	0.6944 ug/L		86
59)	Toluene	12.79	91	37092	1.0968 ug/L		98
60)	Ethyl Methacrylate	12.89	69	5450	0.8083 ug/L		89
62)	trans-1,3-Dichloropropene	12.96	75	9101	0.8772 ug/L		89
63)	1,1,2-Trichloroethane	13.19	97	5067	0.9440 ug/L		92
64)	2-Hexanone	13.12	58	1227	0.7271 ug/L	#	74
65)	1,3-Dichloropropane	13.49	76	9904	1.0325 ug/L		97
66)	Tetrachloroethene	13.60	164	7979	1.1098 ug/L		91
67)	Dibromochloromethane	13.87	129	6283	0.9053 ug/L		98
68)	1,2-Dibromoethane	14.13	107	5024	0.9375 ug/L		94
69)	1-Chlorohexane	14.21	91	12607	1.0418 ug/L		100
70)	Chlorobenzene	14.62	112	23286	1.0276 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.66	131	7725	0.9220 ug/L		91
72)	Ethylbenzene	14.66	106	13047	0.9884 ug/L		100
73)	m-,p-Xylene	14.75	106	31986	2.1129 ug/L		94
74)	o-Xylene	15.31	106	16415	1.0723 ug/L		86
75)	Styrene	15.35	104	24064	0.9921 ug/L		99
76)	Bromoform	15.84	173	3394	0.8135 ug/L		88
77)	Isopropylbenzene	15.73	105	40727	1.1090 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	5352	0.9344 ug/L	#	90
81)	1,2,3-Trichloropropane	16.15	110	1453	0.9129 ug/L		87
82)	trans-1,4-Dichloro-2-Buten	16.18	53	2043	0.9706 ug/L	#	38
83)	n-Propylbenzene	16.24	91	50469	1.1228 ug/L		97
84)	Bromobenzene	16.37	156	9871	1.0818 ug/L		98
85)	1,3,5-Trimethylbenzene	16.43	105	34529	1.1173 ug/L		96
86)	2-Chlorotoluene	16.52	91	33677	1.1312 ug/L		96
87)	4-Chlorotoluene	16.56	91	29657	1.1519 ug/L		97
88)	a-Methylstyrene	16.83	118	15521	0.9213 ug/L		94
89)	tert-Butylbenzene	16.90	134	6877	1.0116 ug/L		92
90)	1,2,4-Trimethylbenzene	16.94	105	34007	1.0890 ug/L		99
91)	sec-Butylbenzene	17.16	105	42264	1.1009 ug/L		100
92)	p-Isopropyltoluene	17.32	119	33409	1.0885 ug/L		95
93)	1,3-Dichlorobenzene	17.51	146	19715	1.0825 ug/L		99
94)	1,4-Dichlorobenzene	17.64	146	19673	1.0848 ug/L	#	69
95)	n-Butylbenzene	17.85	91	31225	1.0913 ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	17412	1.0926 ug/L		95
97)	1,2-Dibromo-3-Chloropropan	19.13	75	677	0.6745 ug/L		68
98)	1,2,4-Trichlorobenzene	20.27	180	10656	0.9733 ug/L		97
99)	Hexachlorobutadiene	20.43	225	5105	0.9749 ug/L		88
100)	Naphthalene	20.64	128	16387	1.0353 ug/L		95
101)	1,2,3-Trichlorobenzene	20.95	180	9842	1.0542 ug/L		93

(#) = qualifier out of range (m) = manual integration
8M407749.D 8260WT.M Thu Oct 01 09:02:57 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407749.D Vial: 5
Acq On : 30 Sep 2015 11:32 Operator: TMB
Sample : WG540912-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 1 9:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration

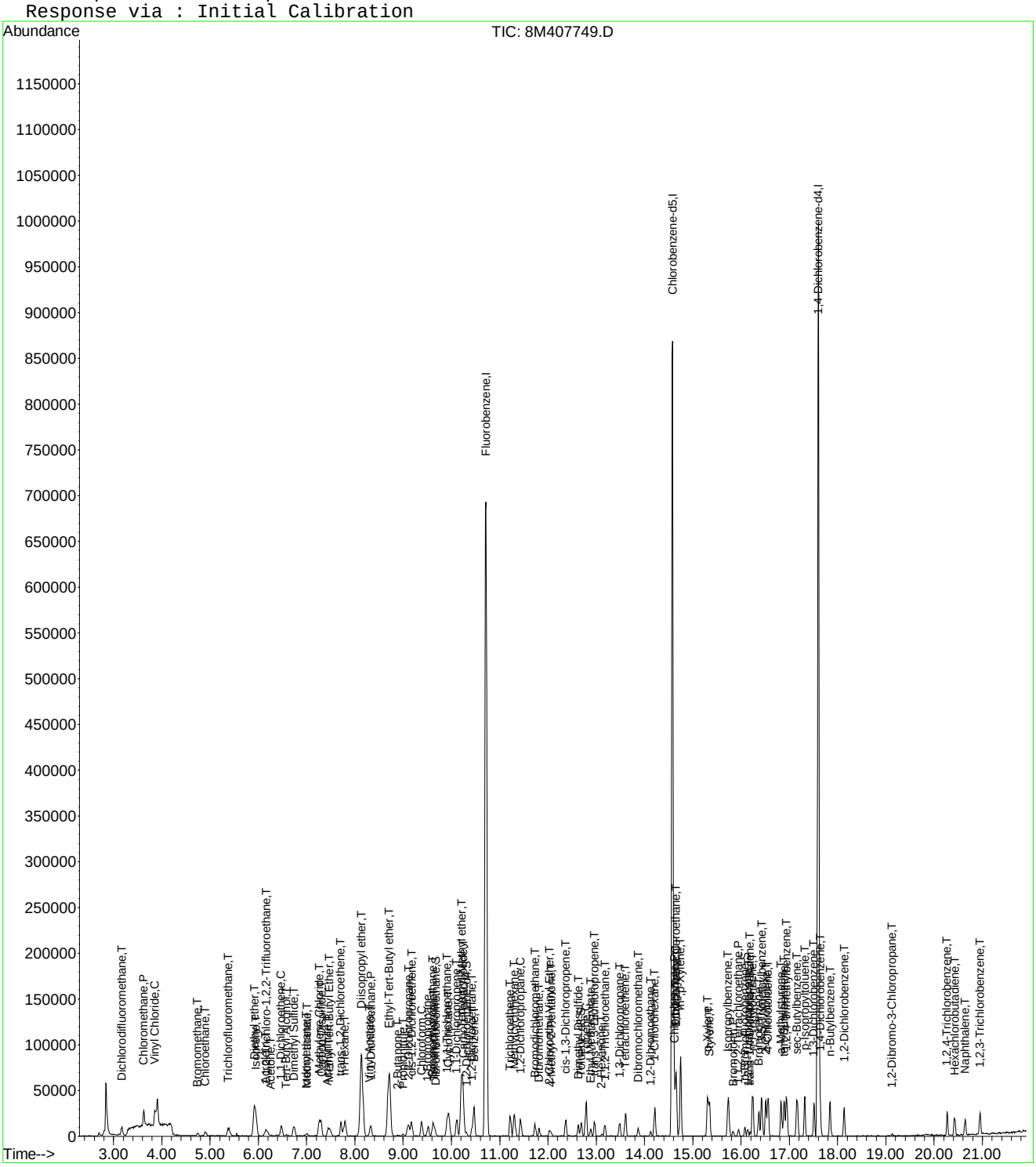

8M407749.D 8260WT.M Thu Oct 01 09:02:58 2015 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\093015\8M407749.D Vial: 5
Acq On : 30 Sep 2015 11:32 Operator: TMB
Sample : WG540912-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	1.0018	-0.2	100	0.00
3	P	Chloromethane	1.0000	1.1947	-19.5	100	0.00
4	C	Vinyl Chloride	1.0000	1.1356	-13.6	100	0.01
5	T	1,3-Butadiene	-1.0000	-1.0000	0.0	0	0.02
6	T	Bromomethane	1.0000	1.3712	-37.1#	100	0.00
7	T	Chloroethane	1.0000	1.0554	-5.5	100	0.00
8	T	Trichlorofluoromethane	1.0000	1.0559	-5.6	100	-0.01
9	T	Diethyl ether	5.0000	4.9496	1.0	100	0.00
10	T	Isoprene	1.0000	0.9925	0.8	100	0.00
11	T	Acrolein	-1.0000	1.9702	0.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0306	-3.1	100	0.00
13	T	Acetone	-1.0000	0.8227	0.0	100	0.02
14	C	1,1-Dichloroethene	1.0000	1.0502	-5.0	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	10.1285	0.0	100	0.00
16	T	Dimethyl Sulfide	1.0000	1.0034	-0.3	100	0.00
17	T	Iodomethane	-1.0000	2.1016	0.0	0	0.00
18	T	Methyl acetate	-1.0000	1.0083	0.0	100	0.00
19	T	Methylene Chloride	1.0000	1.0737	-7.4	100	0.00
20	T	Carbon Disulfide	1.0000	1.0616	-6.2	100	0.00
21	T	Acrylonitrile	2.5000	2.2221	11.1	100	-0.01
22	T	Methyl Tert Butyl Ether	1.0000	0.9555	4.5	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	0.9985	0.1	100	0.00
24	T	n-Hexane	-1.0000	1.0185	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	5.2163	-4.3	100	0.00
26	T	Vinyl Acetate	1.0000	0.9123	8.8	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0391	-3.9	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	5.0127	-0.3	100	0.00
29	T	2-Butanone	-1.0000	0.7237	0.0	100	0.00
30	T	Propionitrile	5.0000	4.4025	11.9	100	0.00
31	T	2,2-Dichloropropane	1.0000	1.0722	-7.2	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	1.0611	-6.1	100	0.00
33	C	Chloroform	1.0000	1.0237	-2.4	100	0.00
34		1-Bromopropane	1.0000	0.8013	19.9	100	-0.01
35	T	Bromochloromethane	1.0000	1.0560	-5.6	100	0.00
36	T	Tetrahydrofuran	5.0000	5.5360	-10.7	100	0.00
37	S	Dibromofluoromethane	0.5000	0.4791	4.2	100	0.00
38	T	1,1,1-Trichloroethane	1.0000	0.9861	1.4	100	0.00
39	T	Cyclohexane	1.0000	1.0077	-0.8	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0354	-3.5	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	4.9900	0.2	100	0.00
42	T	Carbon Tetrachloride	1.0000	1.0395	-3.9	100	0.00
43	S	1,2-Dichloroethane-d4	0.5000	0.4673	6.5	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	1.0000	0.9654	3.5	100	0.00
46	T	Benzene	1.0000	1.0845	-8.4	100	0.00
47	T	Trichloroethene	1.0000	0.9919	0.8	100	0.00
48	T	Methylcyclohexane	-1.0000	1.0383	0.0	100	0.00
49	C	1,2-Dichloropropane	1.0000	1.0138	-1.4	100	0.00
50	T	Bromodichloromethane	1.0000	0.9454	5.5	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	1.0000	0.9392	6.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.8122	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.9270	0.0	100	0.00

(#) = Out of Range
8M407749.D 8260WT.M Thu Oct 01 09:03:41 2015 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\093015\8M407749.D Vial: 5
Acq On : 30 Sep 2015 11:32 Operator: TMB
Sample : WG540912-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9770	2.3	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.6944	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	0.5000	0.5140	-2.8	100	0.00
59	C	Toluene	1.0000	1.0968	-9.7	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.8083	19.2	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	1.0000	0.8772	12.3	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.9440	5.6	100	0.00
64	T	2-Hexanone	-1.0000	0.7271	0.0	100	0.00
65	T	1,3-Dichloropropane	1.0000	1.0325	-3.2	100	0.00
66	T	Tetrachloroethene	1.0000	1.1099	-11.0	100	0.00
67	T	Dibromochloromethane	1.0000	0.9053	9.5	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.9375	6.3	100	0.00
69	T	1-Chlorohexane	1.0000	1.0418	-4.2	100	0.00
70	P	Chlorobenzene	1.0000	1.0276	-2.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.9220	7.8	100	0.00
72	C	Ethylbenzene	1.0000	0.9884	1.2	100	0.00
73	T	m-,p-Xylene	2.0000	2.1129	-5.6	100	0.00
74	T	o-Xylene	1.0000	1.0723	-7.2	100	0.00
75	T	Styrene	1.0000	0.9921	0.8	100	0.00
76	P	Bromoform	1.0000	0.8135	18.6	100	0.00
77	T	Isopropylbenzene	1.0000	1.1090	-10.9	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	0.9344	6.6	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5212	0.0	100	0.00
81	T	1,2,3-Trichloropropane	1.0000	0.9129	8.7	100	0.01
82	T	trans-1,4-Dichloro-2-Butene	1.0000	0.9707	2.9	100	0.00
83	T	n-Propylbenzene	1.0000	1.1228	-12.3	100	0.00
84	T	Bromobenzene	1.0000	1.0819	-8.2	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	1.1173	-11.7	100	0.00
86	T	2-Chlorotoluene	1.0000	1.1312	-13.1	100	0.00
87	T	4-Chlorotoluene	1.0000	1.1519	-15.2	100	0.00
88	T	a-Methylstyrene	-1.0000	0.9213	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	1.0116	-1.2	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	1.0890	-8.9	100	0.00
91	T	sec-Butylbenzene	1.0000	1.1009	-10.1	100	0.00
92	T	p-Isopropyltoluene	1.0000	1.0885	-8.8	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0825	-8.3	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	1.0848	-8.5	100	0.00
95	T	n-Butylbenzene	1.0000	1.0913	-9.1	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0926	-9.3	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.6745	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	1.0000	0.9733	2.7	100	0.00
99	T	Hexachlorobutadiene	1.0000	0.9749	2.5	100	0.00
100	T	Naphthalene	1.0000	1.0353	-3.5	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	1.0542	-5.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M407749.D 8260WT.M Thu Oct 01 09:03:41 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407750.D Vial: 6
Acq On : 30 Sep 2015 12:01 Operator: TMB
Sample : WG540912-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:02:58 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	857795	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	621989	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	331050	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	7870	0.9640 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.84%#	
43) 1,2-Dichloroethane-d4	10.31	65	8146	0.9786 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.92%#	
58) Toluene-d8	12.69	98	28719	0.9951 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.00%#	
80) p-Bromofluorobenzene	16.08	95	11108	0.9617 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	3.84%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	24621	1.8880 ug/L	100
3) Chloromethane	3.63	50	42586	2.1401 ug/L	97
4) Vinyl Chloride	3.85	62	31937	2.0310 ug/L	99
5) 1,3-Butadiene	3.91	54	30141	Below Cal	88
6) Bromomethane	4.74	94	6766	1.9768 ug/L	94
7) Chloroethane	4.91	64	12659	1.9733 ug/L	96
8) Trichlorofluoromethane	5.38	101	28876	1.9000 ug/L	97
9) Diethyl ether	5.92	59	144653	24.7287 ug/L	99
10) Isoprene	5.96	67	19444	1.7426 ug/L	93
11) Acrolein	6.16	56	8940	12.3146 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.18	101	15681	1.9194 ug/L	94
13) Acetone	6.26	43	2409	1.8921 ug/L #	64
14) 1,1-Dichloroethene	6.48	61	26153	1.8806 ug/L	99
15) Tert-Butyl Alcohol	6.59	59	18302	48.6497 ug/L	92
16) Dimethyl Sulfide	6.74	62	15350	1.9232 ug/L	95
17) Iodomethane	7.00	142	3232	2.4020 ug/L	84
18) Methyl acetate	7.02	43	9921	2.0606 ug/L #	85
19) Methylene Chloride	7.26	84	16259	1.8825 ug/L	97
20) Carbon Disulfide	7.31	76	54440	1.9303 ug/L	99
21) Acrylonitrile	7.44	53	21507	11.2525 ug/L	94
22) Methyl Tert Butyl Ether	7.48	73	29739	1.8164 ug/L	97
23) trans-1,2-Dichloroethene	7.72	61	24958	1.8898 ug/L	96
24) n-Hexane	7.79	57	24980	1.9147 ug/L	97
25) Diisopropyl ether	8.13	45	841489	25.8476 ug/L	99
26) Vinyl Acetate	8.31	43	16251	1.8782 ug/L	100
27) 1,1-Dichloroethane	8.34	63	33045	1.9704 ug/L	98
28) Ethyl-Tert-Butyl ether	8.71	59	646426	25.2090 ug/L	97
29) 2-Butanone	8.90	43	4029	1.8368 ug/L #	78
30) Propionitrile	9.00	54	16194	25.1609 ug/L	94
31) 2,2-Dichloropropane	9.11	77	26768	1.9098 ug/L	99
32) cis-1,2-Dichloroethene	9.18	96	18545	1.9681 ug/L	95
33) Chloroform	9.38	83	30928	1.9414 ug/L	97
34) 1-Bromopropane	9.52	122	3050	1.9711 ug/L	88
35) Bromochloromethane	9.62	130	8600	1.8540 ug/L	95
36) Tetrahydrofuran	9.64	42	35553	24.6915 ug/L	97
38) 1,1,1-Trichloroethane	9.91	97	26263	1.8366 ug/L	99
39) Cyclohexane	9.94	56	32415	1.9049 ug/L	94
40) 1,1-Dichloropropene	10.12	75	21975	1.7848 ug/L	99
41) Tert-Amyl-Methyl ether	10.22	73	473187	24.8880 ug/L	98
42) Carbon Tetrachloride	10.26	117	23450	1.8349 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M407750.D 8260WT.M Thu Oct 01 09:02:59 2015 Page 1

Data File : C:\MSDCHEM\2\DATA\093015\8M407750.D Vial: 6
Acq On : 30 Sep 2015 12:01 Operator: TMB
Sample : WG540912-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:02:58 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	20835	1.9046 ug/L		100
46)	Benzene	10.47	78	69691	2.0629 ug/L		98
47)	Trichloroethene	11.22	130	17472	1.9211 ug/L		95
48)	Methylcyclohexane	11.31	83	26751	1.9010 ug/L		97
49)	1,2-Dichloropropane	11.43	63	17329	1.9040 ug/L		100
50)	Bromodichloromethane	11.73	83	21972	1.8704 ug/L		98
51)	1,4-Dioxane	11.73	88	1992	47.5413 ug/L		73
52)	Dibromomethane	11.81	93	8300	1.9152 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	6643	1.7709 ug/L		100
54)	4-Methyl-2-Pentanone	12.06	58	3171	1.6478 ug/L	#	76
55)	cis-1,3-Dichloropropene	12.37	75	24382	1.8697 ug/L		98
56)	Dimethyl Disulfide	12.63	79	9241	1.3142 ug/L		100
59)	Toluene	12.79	91	75292	2.1303 ug/L		97
60)	Ethyl Methacrylate	12.89	69	12345	1.7519 ug/L		94
62)	trans-1,3-Dichloropropene	12.96	75	19728	1.8194 ug/L		100
63)	1,1,2-Trichloroethane	13.19	97	11042	1.9683 ug/L		95
64)	2-Hexanone	13.12	58	3024	1.7146 ug/L	#	92
65)	1,3-Dichloropropane	13.49	76	19190	1.9142 ug/L		97
66)	Tetrachloroethene	13.61	164	14596	1.9426 ug/L		96
67)	Dibromochloromethane	13.87	129	13023	1.7955 ug/L		100
68)	1,2-Dibromoethane	14.13	107	10033	1.7914 ug/L		93
69)	1-Chlorohexane	14.21	91	24696	1.9527 ug/L		99
70)	Chlorobenzene	14.63	112	47264	1.9957 ug/L		81
71)	1,1,1,2-Tetrachloroethane	14.66	131	16097	1.8383 ug/L		99
72)	Ethylbenzene	14.65	106	25517	1.8496 ug/L		99
73)	m-,p-Xylene	14.75	106	64368	4.0684 ug/L		99
74)	o-Xylene	15.30	106	30646	1.9155 ug/L		99
75)	Styrene	15.35	104	48909	1.9294 ug/L		99
76)	Bromoform	15.84	173	7198	1.6508 ug/L		99
77)	Isopropylbenzene	15.73	105	79109	2.0612 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	11848	1.9398 ug/L	#	95
81)	1,2,3-Trichloropropane	16.13	110	3207	1.8896 ug/L		68
82)	trans-1,4-Dichloro-2-Buten	16.18	53	3210	1.4302 ug/L	#	22
83)	n-Propylbenzene	16.24	91	96558	2.0145 ug/L		99
84)	Bromobenzene	16.37	156	19644	2.0190 ug/L		97
85)	1,3,5-Trimethylbenzene	16.42	105	67207	2.0394 ug/L		95
86)	2-Chlorotoluene	16.51	91	64870	2.0434 ug/L		98
87)	4-Chlorotoluene	16.56	91	58369	2.1259 ug/L		98
88)	a-Methylstyrene	16.83	118	31799	1.7701 ug/L		97
89)	tert-Butylbenzene	16.90	134	13942	1.9232 ug/L		92
90)	1,2,4-Trimethylbenzene	16.95	105	68650	2.0616 ug/L		98
91)	sec-Butylbenzene	17.17	105	82325	2.0111 ug/L		98
92)	p-Isopropyltoluene	17.32	119	68961	2.1070 ug/L		100
93)	1,3-Dichlorobenzene	17.51	146	37945	1.9539 ug/L		98
94)	1,4-Dichlorobenzene	17.64	146	37796	1.9544 ug/L		82
95)	n-Butylbenzene	17.85	91	60131	1.9708 ug/L		100
96)	1,2-Dichlorobenzene	18.14	146	34109	2.0073 ug/L		100
97)	1,2-Dibromo-3-Chloropropan	19.14	75	1806	1.6873 ug/L		98
98)	1,2,4-Trichlorobenzene	20.28	180	22341	1.9136 ug/L		97
99)	Hexachlorobutadiene	20.42	225	11201	2.0059 ug/L		99
100)	Naphthalene	20.64	128	34803	2.0620 ug/L		98
101)	1,2,3-Trichlorobenzene	20.95	180	19034	1.9119 ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407750.D Vial: 6
Acq On : 30 Sep 2015 12:01 Operator: TMB
Sample : WG540912-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 1 9:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration

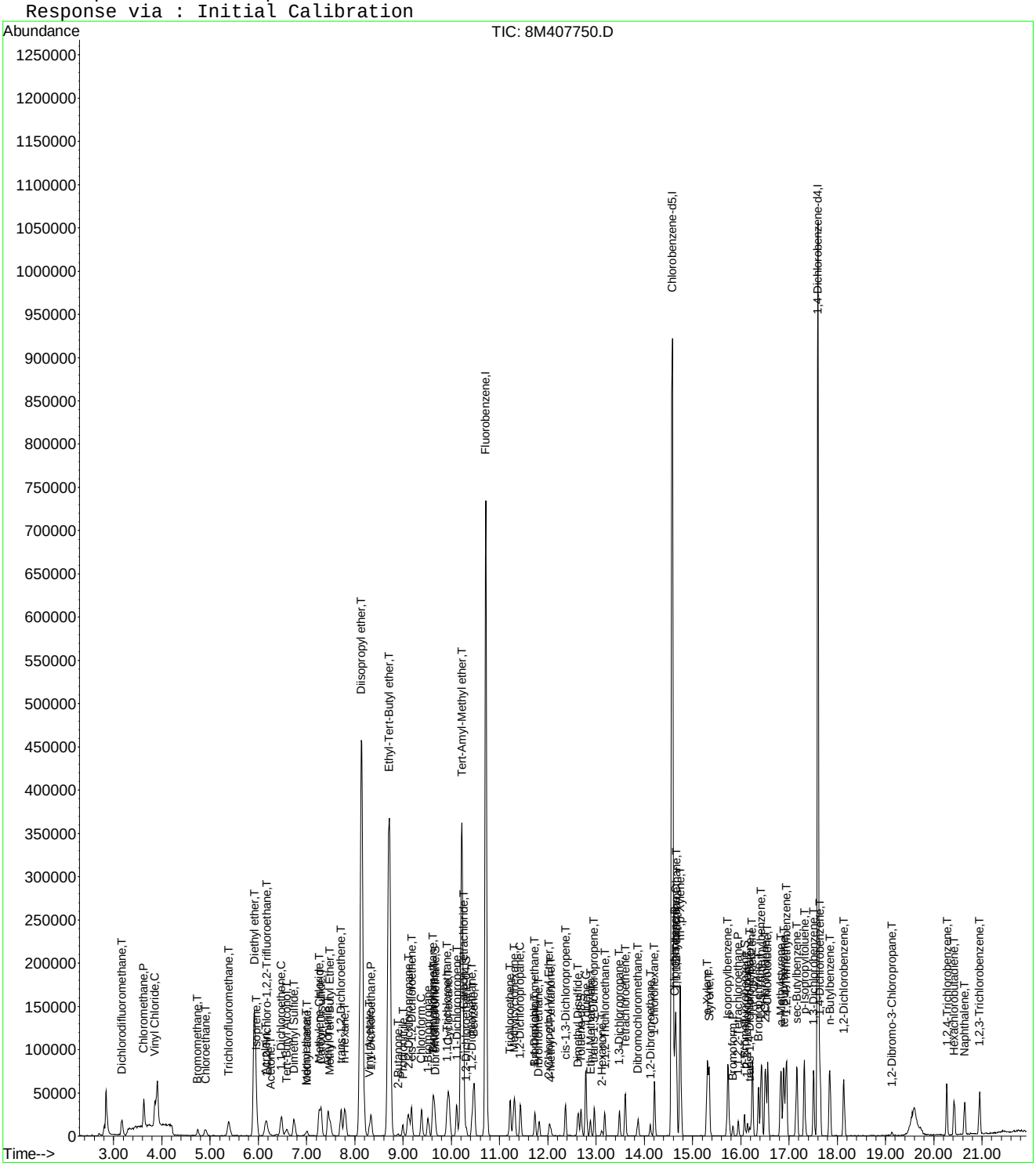

8M407750.D 8260WT.M Thu Oct 01 09:02:59 2015 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\093015\8M407750.D Vial: 6
Acq On : 30 Sep 2015 12:01 Operator: TMB
Sample : WG540912-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.8880	5.6	100	0.00
3	P	Chloromethane	2.0000	2.1401	-7.0	100	0.00
4	C	Vinyl Chloride	2.0000	2.0310	-1.5	100	0.00
5	T	1,3-Butadiene	-1.0000	-1.0000	0.0	0	0.02
6	T	Bromomethane	2.0000	1.9768	1.2	100	0.00
7	T	Chloroethane	2.0000	1.9733	1.3	100	0.00
8	T	Trichlorofluoromethane	2.0000	1.9000	5.0	100	0.00
9	T	Diethyl ether	25.0000	24.7287	1.1	100	0.00
10	T	Isoprene	2.0000	1.7426	12.9	100	0.00
11	T	Acrolein	12.5000	12.3146	1.5	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.9194	4.0	100	0.02
13	T	Acetone	-1.0000	1.8921	0.0	100	0.02
14	C	1,1-Dichloroethene	2.0000	1.8806	6.0	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	48.6497	2.7	100	0.00
16	T	Dimethyl Sulfide	2.0000	1.9232	3.8	100	0.00
17	T	Iodomethane	2.0000	2.4020	-20.1	100	0.00
18	T	Methyl acetate	-1.0000	2.0606	0.0	100	0.00
19	T	Methylene Chloride	2.0000	1.8825	5.9	100	0.00
20	T	Carbon Disulfide	2.0000	1.9303	3.5	100	0.00
21	T	Acrylonitrile	12.5000	11.2525	10.0	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.8163	9.2	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.8898	5.5	100	0.00
24	T	n-Hexane	-1.0000	1.9147	0.0	100	0.00
25	T	Diisopropyl ether	25.0000	25.8476	-3.4	100	0.00
26	T	Vinyl Acetate	2.0000	1.8782	6.1	100	0.00
27	P	1,1-Dichloroethane	2.0000	1.9704	1.5	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	25.2090	-0.8	100	0.00
29	T	2-Butanone	-1.0000	1.8368	0.0	100	0.00
30	T	Propionitrile	25.0000	25.1609	-0.6	100	0.00
31	T	2,2-Dichloropropane	2.0000	1.9099	4.5	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	1.9681	1.6	100	0.00
33	C	Chloroform	2.0000	1.9414	2.9	100	0.00
34		1-Bromopropane	2.0000	1.9711	1.4	100	0.00
35	T	Bromochloromethane	2.0000	1.8540	7.3	100	0.00
36	T	Tetrahydrofuran	25.0000	24.6915	1.2	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9640	3.6	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.8366	8.2	100	0.00
39	T	Cyclohexane	2.0000	1.9049	4.8	100	0.00
40	T	1,1-Dichloropropene	2.0000	1.7848	10.8	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	24.8880	0.4	100	0.00
42	T	Carbon Tetrachloride	2.0000	1.8349	8.3	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	0.9786	2.1	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	2.0000	1.9046	4.8	100	0.00
46	T	Benzene	2.0000	2.0629	-3.1	100	0.00
47	T	Trichloroethene	2.0000	1.9211	3.9	100	0.00
48	T	Methylcyclohexane	-1.0000	1.9010	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	1.9041	4.8	100	0.00
50	T	Bromodichloromethane	2.0000	1.8704	6.5	100	0.00
51	T	1,4-Dioxane	-1.0000	47.5413	0.0	100	0.01
52	T	Dibromomethane	2.0000	1.9152	4.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	1.7709	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.6478	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\093015\8M407750.D Vial: 6
Acq On : 30 Sep 2015 12:01 Operator: TMB
Sample : WG540912-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.8697	6.5	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.3142	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	0.9951	0.5	100	0.00
59	C	Toluene	2.0000	2.1303	-6.5	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.7519	12.4	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	2.0000	1.8194	9.0	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.9683	1.6	100	0.00
64	T	2-Hexanone	-1.0000	1.7146	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	1.9142	4.3	100	0.00
66	T	Tetrachloroethene	2.0000	1.9426	2.9	100	0.00
67	T	Dibromochloromethane	2.0000	1.7955	10.2	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.7914	10.4	100	0.00
69	T	1-Chlorohexane	2.0000	1.9527	2.4	100	0.00
70	P	Chlorobenzene	2.0000	1.9957	0.2	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.8383	8.1	100	0.00
72	C	Ethylbenzene	2.0000	1.8496	7.5	100	0.00
73	T	m-,p-Xylene	4.0000	4.0685	-1.7	100	0.00
74	T	o-Xylene	2.0000	1.9155	4.2	100	0.00
75	T	Styrene	2.0000	1.9294	3.5	100	0.00
76	P	Bromoform	2.0000	1.6508	17.5	100	0.00
77	T	Isopropylbenzene	2.0000	2.0612	-3.1	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	1.9399	3.0	100	0.00
80	S	p-Bromofluorobenzene	1.0000	0.9617	3.8	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	1.8896	5.5	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	1.4302	28.5#	100	0.00
83	T	n-Propylbenzene	2.0000	2.0145	-0.7	100	0.00
84	T	Bromobenzene	2.0000	2.0190	-1.0	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.0394	-2.0	100	0.00
86	T	2-Chlorotoluene	2.0000	2.0434	-2.2	100	0.00
87	T	4-Chlorotoluene	2.0000	2.1260	-6.3	100	0.00
88	T	a-Methylstyrene	-1.0000	1.7701	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	1.9232	3.8	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.0616	-3.1	100	0.00
91	T	sec-Butylbenzene	2.0000	2.0111	-0.6	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.1070	-5.3	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	1.9539	2.3	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	1.9544	2.3	100	0.00
95	T	n-Butylbenzene	2.0000	1.9708	1.5	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0073	-0.4	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.6873	15.6	100	0.01
98	T	1,2,4-Trichlorobenzene	2.0000	1.9137	4.3	100	0.00
99	T	Hexachlorobutadiene	2.0000	2.0059	-0.3	100	0.00
100	T	Naphthalene	2.0000	2.0620	-3.1	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9119	4.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M407750.D 8260WT.M Thu Oct 01 09:03:51 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407751.D Vial: 7
Acq On : 30 Sep 2015 12:29 Operator: TMB
Sample : WG540912-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:02:59 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	888090	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	648250	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	345626	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.68	111	20923	2.4754 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	9.92%#	
43) 1,2-Dichloroethane-d4	10.31	65	20861	2.4207 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	9.68%#	
58) Toluene-d8	12.69	98	74103	2.4637 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	9.84%#	
80) p-Bromofluorobenzene	16.08	95	29759	2.4677 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	9.88%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.18	85	61437	4.5504 ug/L	99
3) Chloromethane	3.62	50	104260	5.0607 ug/L	99
4) Vinyl Chloride	3.85	62	81501	5.0061 ug/L	99
5) 1,3-Butadiene	3.90	54	73714	3.6389 ug/L	95
6) Bromomethane	4.75	94	17849	3.9647 ug/L	99
7) Chloroethane	4.90	64	33514	5.0459 ug/L	97
8) Trichlorofluoromethane	5.39	101	77150	4.9031 ug/L	97
9) Diethyl ether	5.91	59	300564	49.6291 ug/L	100
10) Isoprene	5.96	67	53581	4.6382 ug/L	98
11) Acrolein	6.15	56	18363	24.4317 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	41910	4.9550 ug/L	97
13) Acetone	6.24	43	6790	5.1511 ug/L	97
14) 1,1-Dichloroethene	6.48	61	70653	4.9071 ug/L	98
15) Tert-Butyl Alcohol	6.59	59	39888	102.4118 ug/L	97
16) Dimethyl Sulfide	6.74	62	39764	4.8120 ug/L	98
17) Iodomethane	6.99	142	14332	4.3281 ug/L	92
18) Methyl acetate	7.01	43	26384	5.2931 ug/L	89
19) Methylene Chloride	7.26	84	43891	4.9083 ug/L	98
20) Carbon Disulfide	7.30	76	142074	4.8658 ug/L	100
21) Acrylonitrile	7.44	53	46132	23.3129 ug/L	95
22) Methyl Tert Butyl Ether	7.48	73	85068	5.0184 ug/L	96
23) trans-1,2-Dichloroethene	7.71	61	67170	4.9126 ug/L	98
24) n-Hexane	7.79	57	65873	4.8769 ug/L	97
25) Diisopropyl ether	8.14	45	1713583	50.8397 ug/L	99
26) Vinyl Acetate	8.30	43	46988	5.2454 ug/L	94
27) 1,1-Dichloroethane	8.33	63	86979	5.0094 ug/L	99
28) Ethyl-Tert-Butyl ether	8.71	59	1342420	50.5651 ug/L	97
29) 2-Butanone	8.90	43	10887	4.7939 ug/L	94
30) Propionitrile	8.99	54	33524	50.3101 ug/L	100
31) 2,2-Dichloropropane	9.11	77	70912	4.8868 ug/L	98
32) cis-1,2-Dichloroethene	9.18	96	48210	4.9417 ug/L	98
33) Chloroform	9.39	83	82654	5.0114 ug/L	100
34) 1-Bromopropane	9.52	122	8041	5.0194 ug/L	98
35) Bromochloromethane	9.61	130	24188	5.0366 ug/L	100
36) Tetrahydrofuran	9.63	42	73084	49.0254 ug/L	96
38) 1,1,1-Trichloroethane	9.91	97	73396	4.9576 ug/L	97
39) Cyclohexane	9.94	56	83438	4.7361 ug/L	98
40) 1,1-Dichloropropene	10.11	75	62637	4.9139 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	983884	49.9837 ug/L	99
42) Carbon Tetrachloride	10.25	117	62444	4.7194 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M407751.D 8260WT.M Thu Oct 01 09:03:00 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407751.D Vial: 7
Acq On : 30 Sep 2015 12:29 Operator: TMB
Sample : WG540912-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:02:59 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	56848	5.0193 ug/L		98
46)	Benzene	10.47	78	179728	5.1385 ug/L		99
47)	Trichloroethene	11.22	130	44015	4.6746 ug/L		94
48)	Methylcyclohexane	11.31	83	71852	4.9318 ug/L		97
49)	1,2-Dichloropropane	11.43	63	47121	5.0009 ug/L		94
50)	Bromodichloromethane	11.73	83	58514	4.8112 ug/L		100
51)	1,4-Dioxane	11.72	88	3839	88.4965 ug/L		92
52)	Dibromomethane	11.82	93	23054	5.1382 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	17693	4.5557 ug/L		96
54)	4-Methyl-2-Pentanone	12.06	58	9027	4.5309 ug/L		94
55)	cis-1,3-Dichloropropene	12.36	75	64722	4.7938 ug/L		99
56)	Dimethyl Disulfide	12.63	79	28062	3.8546 ug/L		100
59)	Toluene	12.79	91	189538	5.1455 ug/L		99
60)	Ethyl Methacrylate	12.88	69	35620	4.8502 ug/L		96
62)	trans-1,3-Dichloropropene	12.96	75	55720	4.9306 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	30150	5.1568 ug/L		98
64)	2-Hexanone	13.12	58	8027	4.3668 ug/L	#	80
65)	1,3-Dichloropropane	13.49	76	51742	4.9522 ug/L		96
66)	Tetrachloroethene	13.60	164	38521	4.9192 ug/L		98
67)	Dibromochloromethane	13.87	129	36922	4.8844 ug/L		98
68)	1,2-Dibromoethane	14.12	107	29112	4.9874 ug/L		100
69)	1-Chlorohexane	14.21	91	64380	4.8843 ug/L		97
70)	Chlorobenzene	14.63	112	122342	4.9567 ug/L		94
71)	1,1,1,2-Tetrachloroethane	14.66	131	43922	4.8127 ug/L		95
72)	Ethylbenzene	14.66	106	67237	4.6762 ug/L		100
73)	m-,p-Xylene	14.75	106	170940	10.3667 ug/L		99
74)	o-Xylene	15.31	106	78832	4.7276 ug/L		98
75)	Styrene	15.35	104	139834	5.2929 ug/L		98
76)	Bromoform	15.84	173	21291	4.6852 ug/L		96
77)	Isopropylbenzene	15.73	105	206201	5.1551 ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	33322	5.2257 ug/L		100
81)	1,2,3-Trichloropropane	16.14	110	8869	5.0053 ug/L		63
82)	trans-1,4-Dichloro-2-Buten	16.19	53	10961	4.6777 ug/L	#	1
83)	n-Propylbenzene	16.24	91	264651	5.2887 ug/L		97
84)	Bromobenzene	16.37	156	50669	4.9881 ug/L		97
85)	1,3,5-Trimethylbenzene	16.42	105	180896	5.2579 ug/L		99
86)	2-Chlorotoluene	16.51	91	181035	5.4620 ug/L		100
87)	4-Chlorotoluene	16.56	91	143482	5.0056 ug/L		100
88)	a-Methylstyrene	16.83	118	90467	4.8234 ug/L		99
89)	tert-Butylbenzene	16.89	134	36404	4.8098 ug/L		95
90)	1,2,4-Trimethylbenzene	16.94	105	186780	5.3725 ug/L		95
91)	sec-Butylbenzene	17.16	105	221368	5.1796 ug/L		99
92)	p-Isopropyltoluene	17.32	119	181903	5.3233 ug/L		97
93)	1,3-Dichlorobenzene	17.51	146	104992	5.1783 ug/L		99
94)	1,4-Dichlorobenzene	17.64	146	104006	5.1513 ug/L		96
95)	n-Butylbenzene	17.84	91	169482	5.3206 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	91565	5.1612 ug/L		100
97)	1,2-Dibromo-3-Chloropropan	19.13	75	5183	4.6382 ug/L		92
98)	1,2,4-Trichlorobenzene	20.27	180	62214	5.1043 ug/L		98
99)	Hexachlorobutadiene	20.42	225	29150	5.0001 ug/L		99
100)	Naphthalene	20.64	128	89499	5.0789 ug/L		97
101)	1,2,3-Trichlorobenzene	20.95	180	52799	5.0798 ug/L		95

(#) = qualifier out of range (m) = manual integration
8M407751.D 8260WT.M Thu Oct 01 09:03:00 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407751.D Vial: 7
Acq On : 30 Sep 2015 12:29 Operator: TMB
Sample : WG540912-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 1 9:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration

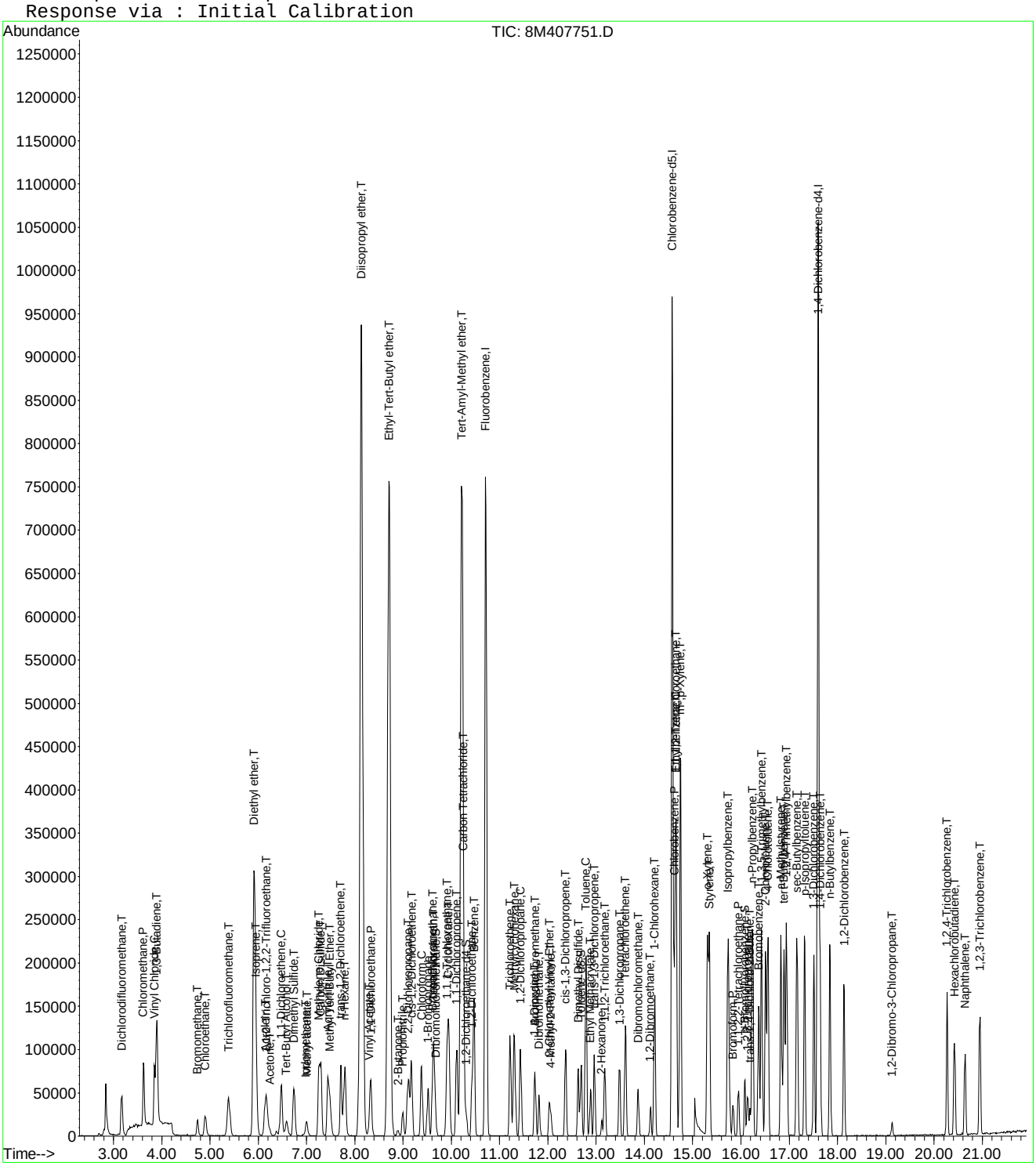

8M407751.D 8260WT.M Thu Oct 01 09:03:00 2015 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\093015\8M407751.D Vial: 7
Acq On : 30 Sep 2015 12:29 Operator: TMB
Sample : WG540912-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.5503	9.0	100	0.00
3	P	Chloromethane	5.0000	5.0607	-1.2	100	0.00
4	C	Vinyl Chloride	5.0000	5.0061	-0.1	100	0.00
5	T	1,3-Butadiene	5.0000	3.6389	27.2#	100	0.01
6	T	Bromomethane	5.0000	3.9647	20.7	100	0.01
7	T	Chloroethane	5.0000	5.0459	-0.9	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.9031	1.9	100	0.00
9	T	Diethyl ether	50.0000	49.6291	0.7	100	0.00
10	T	Isoprene	5.0000	4.6382	7.2	100	0.00
11	T	Acrolein	25.0000	24.4317	2.3	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.9550	0.9	100	0.01
13	T	Acetone	5.0000	5.1511	-3.0	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.9071	1.9	100	0.01
15	T	Tert-Butyl Alcohol	100.0000	102.4118	-2.4	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.8120	3.8	100	0.00
17	T	Iodomethane	5.0000	4.3281	13.4	100	0.00
18	T	Methyl acetate	5.0000	5.2931	-5.9	100	0.00
19	T	Methylene Chloride	5.0000	4.9083	1.8	100	0.00
20	T	Carbon Disulfide	5.0000	4.8658	2.7	100	0.00
21	T	Acrylonitrile	25.0000	23.3129	6.7	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	5.0184	-0.4	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.9126	1.7	100	0.00
24	T	n-Hexane	5.0000	4.8769	2.5	100	0.00
25	T	Diisopropyl ether	50.0000	50.8397	-1.7	100	0.00
26	T	Vinyl Acetate	5.0000	5.2454	-4.9	100	0.00
27	P	1,1-Dichloroethane	5.0000	5.0094	-0.2	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	50.5651	-1.1	100	0.00
29	T	2-Butanone	5.0000	4.7939	4.1	100	0.00
30	T	Propionitrile	50.0000	50.3101	-0.6	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.8868	2.3	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.9417	1.2	100	0.00
33	C	Chloroform	5.0000	5.0114	-0.2	100	0.00
34		1-Bromopropane	5.0000	5.0194	-0.4	100	0.00
35	T	Bromochloromethane	5.0000	5.0366	-0.7	100	0.00
36	T	Tetrahydrofuran	50.0000	49.0254	1.9	100	0.00
37	S	Dibromofluoromethane	2.5000	2.4754	1.0	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.9576	0.8	100	0.00
39	T	Cyclohexane	5.0000	4.7361	5.3	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.9139	1.7	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	49.9837	0.0	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.7194	5.6	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.4207	3.2	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	5.0000	5.0193	-0.4	100	0.00
46	T	Benzene	5.0000	5.1385	-2.8	100	0.00
47	T	Trichloroethene	5.0000	4.6746	6.5	100	0.00
48	T	Methylcyclohexane	5.0000	4.9318	1.4	100	0.00
49	C	1,2-Dichloropropane	5.0000	5.0009	-0.0	100	0.00
50	T	Bromodichloromethane	5.0000	4.8112	3.8	100	0.00
51	T	1,4-Dioxane	100.0000	88.4965	11.5	100	0.00
52	T	Dibromomethane	5.0000	5.1382	-2.8	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.5557	8.9	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.5309	9.4	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\093015\8M407751.D Vial: 7
Acq On : 30 Sep 2015 12:29 Operator: TMB
Sample : WG540912-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.7938	4.1	100	0.00
56	T	Dimethyl Disulfide	5.0000	3.8546	22.9	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.4637	1.5	100	0.00
59	C	Toluene	5.0000	5.1455	-2.9	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.8502	3.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	5.0000	4.9306	1.4	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	5.1568	-3.1	100	0.00
64	T	2-Hexanone	5.0000	4.3668	12.7	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.9522	1.0	100	0.00
66	T	Tetrachloroethene	5.0000	4.9192	1.6	100	0.00
67	T	Dibromochloromethane	5.0000	4.8844	2.3	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.9874	0.3	100	0.00
69	T	1-Chlorohexane	5.0000	4.8843	2.3	100	0.00
70	P	Chlorobenzene	5.0000	4.9566	0.9	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.8127	3.7	100	0.00
72	C	Ethylbenzene	5.0000	4.6762	6.5	100	0.00
73	T	m-,p-Xylene	10.0000	10.3668	-3.7	100	0.00
74	T	o-Xylene	5.0000	4.7276	5.4	100	0.00
75	T	Styrene	5.0000	5.2929	-5.9	100	0.00
76	P	Bromoform	5.0000	4.6852	6.3	100	0.00
77	T	Isopropylbenzene	5.0000	5.1551	-3.1	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	5.2257	-4.5	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.4677	1.3	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.0053	-0.1	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.6777	6.4	100	0.00
83	T	n-Propylbenzene	5.0000	5.2887	-5.8	100	0.00
84	T	Bromobenzene	5.0000	4.9881	0.2	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	5.2579	-5.2	100	0.00
86	T	2-Chlorotoluene	5.0000	5.4620	-9.2	100	0.00
87	T	4-Chlorotoluene	5.0000	5.0056	-0.1	100	0.00
88	T	a-Methylstyrene	5.0000	4.8234	3.5	100	0.00
89	T	tert-Butylbenzene	5.0000	4.8098	3.8	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.3725	-7.4	100	0.00
91	T	sec-Butylbenzene	5.0000	5.1796	-3.6	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.3233	-6.5	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	5.1783	-3.6	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	5.1513	-3.0	100	0.00
95	T	n-Butylbenzene	5.0000	5.3206	-6.4	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	5.1612	-3.2	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	4.6382	7.2	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	5.1043	-2.1	100	0.00
99	T	Hexachlorobutadiene	5.0000	5.0001	-0.0	100	0.00
100	T	Naphthalene	5.0000	5.0789	-1.6	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	5.0798	-1.6	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M407751.D 8260WT.M Thu Oct 01 09:04:04 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407752.D Vial: 8
Acq On : 30 Sep 2015 12:58 Operator: TMB
Sample : WG540912-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:03:00 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	900838	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	664231	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	361897	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	87806	10.2414 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 40.96%#		
43) 1,2-Dichloroethane-d4	10.30	65	90496	10.3525 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 41.40%#		
58) Toluene-d8	12.69	98	320320	10.3936 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 41.56%#		
80) p-Bromofluorobenzene	16.08	95	129852	10.2836 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 41.12%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	307188	22.4300 ug/L	99
3) Chloromethane	3.63	50	446213	21.3523 ug/L	99
4) Vinyl Chloride	3.86	62	351710	21.2978 ug/L	98
5) 1,3-Butadiene	3.90	54	312471	26.3405 ug/L	96
6) Bromomethane	4.74	94	92181	17.1959 ug/L	100
7) Chloroethane	4.90	64	145908	21.6572 ug/L	98
8) Trichlorofluoromethane	5.39	101	327782	20.5367 ug/L	97
9) Diethyl ether	5.91	59	471725	76.7890 ug/L	99
10) Isoprene	5.95	67	245212	20.9264 ug/L	96
11) Acrolein	6.15	56	28707	37.6537 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	175903	20.5024 ug/L	100
13) Acetone	6.24	43	26318	19.6832 ug/L	99
14) 1,1-Dichloroethene	6.48	61	293960	20.1277 ug/L	100
15) Tert-Butyl Alcohol	6.58	59	64085	162.2088 ug/L	99
16) Dimethyl Sulfide	6.74	62	171747	20.4896 ug/L	98
17) Iodomethane	6.99	142	91383	17.6102 ug/L	97
18) Methyl acetate	7.01	43	99926	19.7631 ug/L	96
19) Methylene Chloride	7.27	84	185506	20.4515 ug/L	98
20) Carbon Disulfide	7.30	76	617002	20.8324 ug/L	99
21) Acrylonitrile	7.44	53	77746	38.7331 ug/L	98
22) Methyl Tert Butyl Ether	7.48	73	349527	20.3278 ug/L	99
23) trans-1,2-Dichloroethene	7.71	61	284568	20.5178 ug/L	100
24) n-Hexane	7.79	57	277423	20.2485 ug/L	95
25) Diisopropyl ether	8.13	45	2727543	79.7774 ug/L	99
26) Vinyl Acetate	8.30	43	188420	20.7360 ug/L	99
27) 1,1-Dichloroethane	8.33	63	358235	20.3401 ug/L	98
28) Ethyl-Tert-Butyl ether	8.71	59	2135457	79.2983 ug/L	97
29) 2-Butanone	8.89	43	45574	19.7838 ug/L	99
30) Propionitrile	8.99	54	55835	82.6068 ug/L	99
31) 2,2-Dichloropropane	9.11	77	303356	20.6097 ug/L	100
32) cis-1,2-Dichloroethene	9.18	96	200218	20.2328 ug/L	99
33) Chloroform	9.38	83	343682	20.5429 ug/L	100
34) 1-Bromopropane	9.52	122	34243	21.0727 ug/L	96
35) Bromochloromethane	9.61	130	99523	20.4300 ug/L	98
36) Tetrahydrofuran	9.63	42	116173	76.8270 ug/L	97
38) 1,1,1-Trichloroethane	9.92	97	311675	20.7543 ug/L	99
39) Cyclohexane	9.94	56	363746	20.3546 ug/L	99
40) 1,1-Dichloropropene	10.11	75	271014	20.9603 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1584402	79.3524 ug/L	99
42) Carbon Tetrachloride	10.25	117	279951	20.8588 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M407752.D 8260WT.M Thu Oct 01 09:03:01 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407752.D Vial: 8
Acq On : 30 Sep 2015 12:58 Operator: TMB
Sample : WG540912-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:03:00 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	239119	20.8138 ug/L		99
46)	Benzene	10.47	78	760303	21.4300 ug/L		100
47)	Trichloroethene	11.21	130	195002	20.4169 ug/L		97
48)	Methylcyclohexane	11.31	83	303425	20.5318 ug/L		99
49)	1,2-Dichloropropane	11.43	63	197896	20.7051 ug/L		96
50)	Bromodichloromethane	11.73	83	257488	20.8717 ug/L		99
51)	1,4-Dioxane	11.72	88	7134	162.1255 ug/L		98
52)	Dibromomethane	11.81	93	95150	20.9065 ug/L		100
53)	2-Chloroethyl Vinyl Ether	12.03	63	78627	19.9589 ug/L		94
54)	4-Methyl-2-Pentanone	12.06	58	39837	19.7122 ug/L		96
55)	cis-1,3-Dichloropropene	12.37	75	286918	20.9506 ug/L		100
56)	Dimethyl Disulfide	12.63	79	136599	18.4979 ug/L		98
59)	Toluene	12.79	91	818164	21.6766 ug/L		99
60)	Ethyl Methacrylate	12.89	69	155537	20.6693 ug/L		93
62)	trans-1,3-Dichloropropene	12.96	75	241309	20.8394 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	122012	20.3666 ug/L		95
64)	2-Hexanone	13.12	58	38289	20.3287 ug/L	#	98
65)	1,3-Dichloropropane	13.49	76	218983	20.4545 ug/L		94
66)	Tetrachloroethene	13.61	164	161585	20.1380 ug/L		98
67)	Dibromochloromethane	13.87	129	161138	20.8040 ug/L		98
68)	1,2-Dibromoethane	14.13	107	123618	20.6684 ug/L		100
69)	1-Chlorohexane	14.21	91	275180	20.3748 ug/L		99
70)	Chlorobenzene	14.62	112	523989	20.7185 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.66	131	193093	20.6487 ug/L		100
72)	Ethylbenzene	14.66	106	298198	20.2403 ug/L		95
73)	m-,p-Xylene	14.75	106	719109	42.5615 ug/L		99
74)	o-Xylene	15.31	106	347392	20.3322 ug/L		98
75)	Styrene	15.35	104	579322	21.4006 ug/L		98
76)	Bromoform	15.83	173	95340	20.4754 ug/L		99
77)	Isopropylbenzene	15.73	105	903868	22.0533 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	141095	21.1321 ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	39490	21.2846 ug/L		63
82)	trans-1,4-Dichloro-2-Buten	16.19	53	50178	20.4511 ug/L	#	61
83)	n-Propylbenzene	16.24	91	1127416	21.5170 ug/L		100
84)	Bromobenzene	16.37	156	221432	20.8188 ug/L		99
85)	1,3,5-Trimethylbenzene	16.42	105	781503	21.6939 ug/L		99
86)	2-Chlorotoluene	16.52	91	761104	21.9308 ug/L		99
87)	4-Chlorotoluene	16.56	91	646199	21.5301 ug/L		100
88)	a-Methylstyrene	16.83	118	407468	20.7481 ug/L		99
89)	tert-Butylbenzene	16.89	134	159496	20.1257 ug/L		95
90)	1,2,4-Trimethylbenzene	16.94	105	796688	21.8854 ug/L		97
91)	sec-Butylbenzene	17.16	105	957105	21.3876 ug/L		98
92)	p-Isopropyltoluene	17.32	119	785233	21.9463 ug/L		97
93)	1,3-Dichlorobenzene	17.51	146	447916	21.0985 ug/L		99
94)	1,4-Dichlorobenzene	17.64	146	435999	20.6235 ug/L		100
95)	n-Butylbenzene	17.84	91	726378	21.7780 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	388938	20.9374 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	24405	20.8579 ug/L		95
98)	1,2,4-Trichlorobenzene	20.27	180	262199	20.5447 ug/L		99
99)	Hexachlorobutadiene	20.42	225	123628	20.2526 ug/L		97
100)	Naphthalene	20.64	128	366056	19.8392 ug/L		98
101)	1,2,3-Trichlorobenzene	20.95	180	225034	20.6772 ug/L		97

(#) = qualifier out of range (m) = manual integration
8M407752.D 8260WT.M Thu Oct 01 09:03:01 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407752.D Vial: 8
Acq On : 30 Sep 2015 12:58 Operator: TMB
Sample : WG540912-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 1 9:03 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration

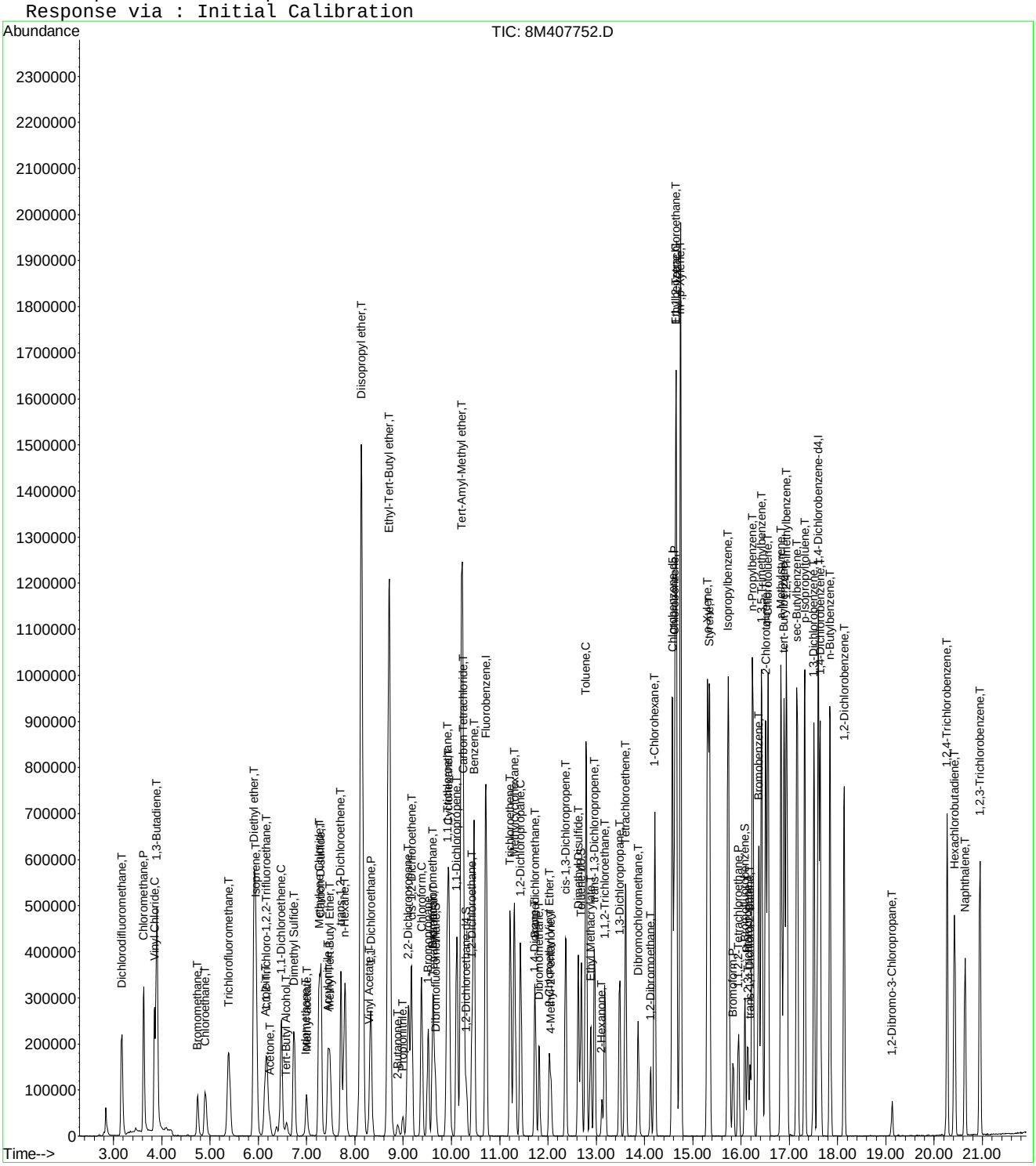

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407753.D Vial: 9
Acq On : 30 Sep 2015 13:27 Operator: TMB
Sample : WG540912-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:03:01 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	938292	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	687265	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	378981	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	224039	25.0881 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.36%		
43) 1,2-Dichloroethane-d4	10.31	65	227424	24.9781 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.92%		
58) Toluene-d8	12.69	98	816431	25.6033 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.40%		
80) p-Bromofluorobenzene	16.08	95	330422	24.9880 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.96%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	734220	51.4707 ug/L	99
3) Chloromethane	3.63	50	1087458	49.9602 ug/L	99
4) Vinyl Chloride	3.84	62	796347	46.2979 ug/L	100
5) 1,3-Butadiene	3.88	54	593404	53.0036 ug/L	96
6) Bromomethane	4.74	94	267289	45.6614 ug/L	98
7) Chloroethane	4.90	64	355876	50.7142 ug/L	98
8) Trichlorofluoromethane	5.38	101	803416	48.3275 ug/L	98
9) Diethyl ether	5.91	59	614294	96.0052 ug/L	99
10) Isoprene	5.95	67	649397	53.2074 ug/L	96
11) Acrolein	6.15	56	37091	46.7086 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	436438	48.8386 ug/L	100
13) Acetone	6.25	43	62565	44.9246 ug/L	98
14) 1,1-Dichloroethene	6.47	61	726859	47.7821 ug/L	100
15) Tert-Butyl Alcohol	6.59	59	74384	180.7617 ug/L	100
16) Dimethyl Sulfide	6.74	62	442407	50.6728 ug/L	100
17) Iodomethane	7.00	142	280116	48.2985 ug/L	94
18) Methyl acetate	7.01	43	238696	45.3243 ug/L	98
19) Methylene Chloride	7.26	84	457295	48.4030 ug/L	97
20) Carbon Disulfide	7.30	76	1581063	51.2521 ug/L	100
21) Acrylonitrile	7.44	53	103250	49.3859 ug/L	97
22) Methyl Tert Butyl Ether	7.48	73	870767	48.6206 ug/L	98
23) trans-1,2-Dichloroethene	7.71	61	720460	49.8727 ug/L	100
24) n-Hexane	7.79	57	728359	51.0392 ug/L	95
25) Diisopropyl ether	8.13	45	3555432	99.8411 ug/L	99
26) Vinyl Acetate	8.31	43	475013	50.1894 ug/L	99
27) 1,1-Dichloroethane	8.33	63	895300	48.8047 ug/L	98
28) Ethyl-Tert-Butyl ether	8.71	59	2771592	98.8123 ug/L	97
29) 2-Butanone	8.89	43	110691	46.1332 ug/L	100
30) Propionitrile	8.99	54	66254	94.1088 ug/L	99
31) 2,2-Dichloropropane	9.10	77	756513	49.3451 ug/L	100
32) cis-1,2-Dichloroethene	9.18	96	504047	48.9027 ug/L	99
33) Chloroform	9.38	83	862577	49.5006 ug/L	99
34) 1-Bromopropane	9.52	122	89544	52.9047 ug/L	98
35) Bromochloromethane	9.61	130	254810	50.2191 ug/L	97
36) Tetrahydrofuran	9.64	42	144978	92.0491 ug/L	97
38) 1,1,1-Trichloroethane	9.91	97	787445	50.3425 ug/L	98
39) Cyclohexane	9.94	56	942520	50.6365 ug/L	99
40) 1,1-Dichloropropene	10.11	75	670931	49.8186 ug/L	99
41) Tert-Amyl-Methyl ether	10.22	73	2024717	97.3571 ug/L	98
42) Carbon Tetrachloride	10.25	117	709220	50.7337 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M407753.D 8260WT.M Thu Oct 01 09:03:02 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407753.D Vial: 9
Acq On : 30 Sep 2015 13:27 Operator: TMB
Sample : WG540912-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:03:01 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	598223	49.9929 ug/L		99
46)	Benzene	10.47	78	1893240	51.2329 ug/L		100
47)	Trichloroethene	11.22	130	485477	48.8010 ug/L		96
48)	Methylcyclohexane	11.31	83	782615	50.8431 ug/L		98
49)	1,2-Dichloropropane	11.43	63	493718	49.5940 ug/L		96
50)	Bromodichloromethane	11.73	83	652718	50.7966 ug/L		100
51)	1,4-Dioxane	11.72	88	8670	189.1673 ug/L		94
52)	Dibromomethane	11.81	93	235258	49.6278 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.03	63	194118	47.3085 ug/L		95
54)	4-Methyl-2-Pentanone	12.06	58	96161	45.6831 ug/L		98
55)	cis-1,3-Dichloropropene	12.37	75	727126	50.9750 ug/L		100
56)	Dimethyl Disulfide	12.63	79	379036	49.2792 ug/L		99
59)	Toluene	12.78	91	1987253	50.8860 ug/L		100
60)	Ethyl Methacrylate	12.89	69	390916	50.2077 ug/L		94
62)	trans-1,3-Dichloropropene	12.96	75	608665	50.8025 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	299502	48.3182 ug/L		97
64)	2-Hexanone	13.11	58	89700	46.0281 ug/L	#	93
65)	1,3-Dichloropropane	13.49	76	534461	48.2492 ug/L		93
66)	Tetrachloroethene	13.61	164	405188	48.8054 ug/L		99
67)	Dibromochloromethane	13.87	129	402200	50.1864 ug/L		100
68)	1,2-Dibromoethane	14.13	107	302616	48.9002 ug/L		99
69)	1-Chlorohexane	14.21	91	715689	51.2148 ug/L		99
70)	Chlorobenzene	14.62	112	1313794	50.2063 ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.65	131	492148	50.8647 ug/L		98
72)	Ethylbenzene	14.65	106	747123	49.0115 ug/L		93
73)	m-,p-Xylene	14.75	106	1803271	103.1521 ug/L		96
74)	o-Xylene	15.31	106	874498	49.4673 ug/L		96
75)	Styrene	15.35	104	1468155	52.4170 ug/L		98
76)	Bromoform	15.83	173	239681	49.7493 ug/L		99
77)	Isopropylbenzene	15.73	105	2208758	52.0848 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	337508	48.2706 ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	93694	48.2234 ug/L		58
82)	trans-1,4-Dichloro-2-Buten	16.18	53	127917	49.7850 ug/L	#	74
83)	n-Propylbenzene	16.24	91	2732764	49.8043 ug/L		99
84)	Bromobenzene	16.37	156	550772	49.4486 ug/L		98
85)	1,3,5-Trimethylbenzene	16.43	105	1956096	51.8518 ug/L		100
86)	2-Chlorotoluene	16.51	91	1847698	50.8405 ug/L		100
87)	4-Chlorotoluene	16.56	91	1636735	52.0745 ug/L		99
88)	a-Methylstyrene	16.82	118	1062639	51.6698 ug/L		99
89)	tert-Butylbenzene	16.89	134	402620	48.5137 ug/L		95
90)	1,2,4-Trimethylbenzene	16.94	105	1998748	52.4314 ug/L		99
91)	sec-Butylbenzene	17.16	105	2351971	50.1881 ug/L		97
92)	p-Isopropyltoluene	17.32	119	1971230	52.6100 ug/L		96
93)	1,3-Dichlorobenzene	17.51	146	1112381	50.0352 ug/L		99
94)	1,4-Dichlorobenzene	17.64	146	1089923	49.2313 ug/L		99
95)	n-Butylbenzene	17.85	91	1881534	53.8685 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	962067	49.4555 ug/L		100
97)	1,2-Dibromo-3-Chloropropan	19.13	75	59325	48.4169 ug/L		96
98)	1,2,4-Trichlorobenzene	20.28	180	685856	51.3179 ug/L		99
99)	Hexachlorobutadiene	20.42	225	316117	49.4515 ug/L		99
100)	Naphthalene	20.64	128	945131	48.9144 ug/L		99
101)	1,2,3-Trichlorobenzene	20.95	180	577810	50.6987 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M407753.D 8260WT.M Thu Oct 01 09:03:02 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407753.D Vial: 9
Acq On : 30 Sep 2015 13:27 Operator: TMB
Sample : WG540912-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 1 9:03 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration

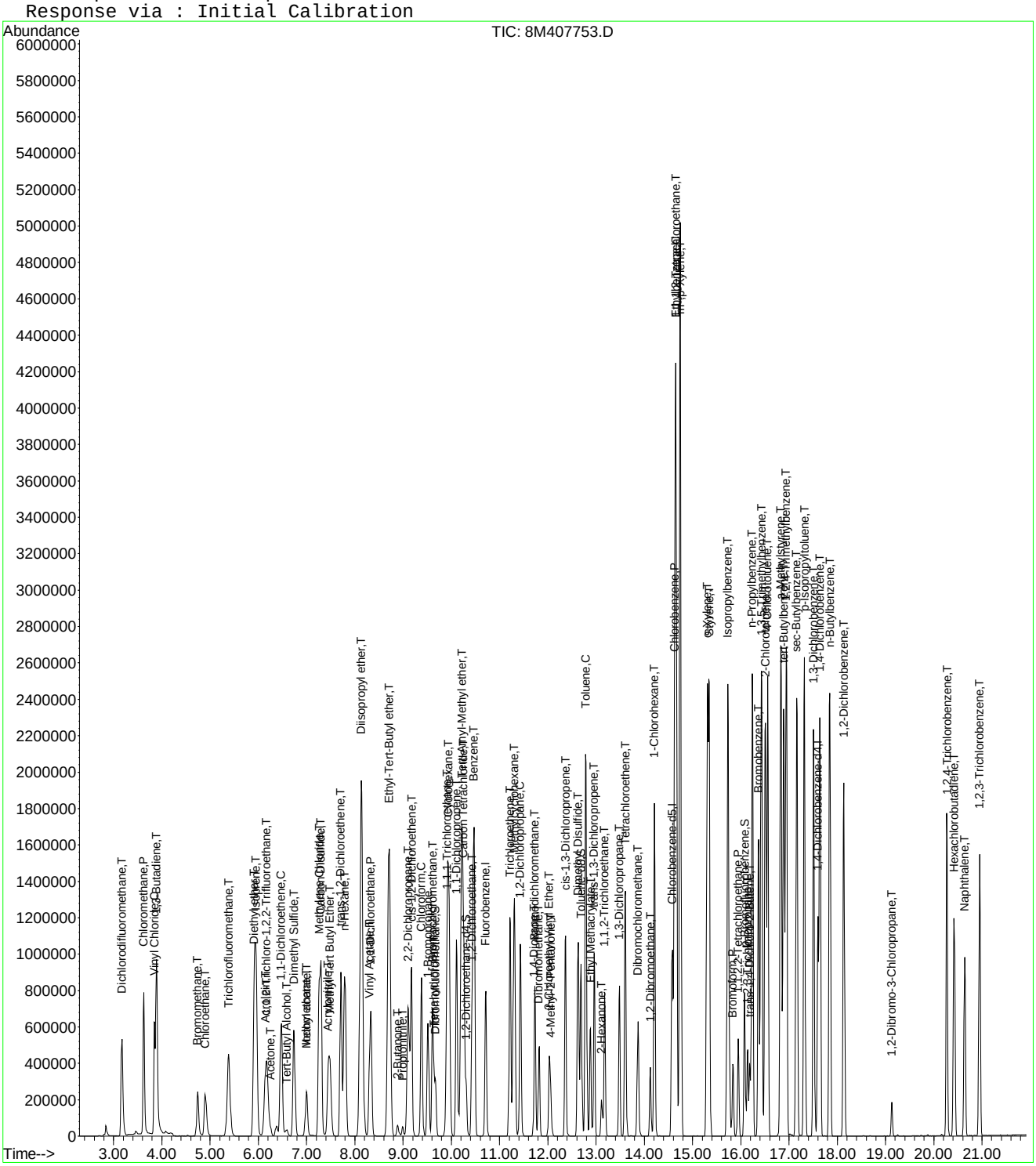
Abundance
TIC: 8M407753.D
Time-->
Dichlorodifluoromethane,T
Chloromethane,P
Vinyl Chloride,T
1,3-Butadiene,T
Bromomethane,T
Chloroethane,T
Trichlorofluoromethane,T
Diethyl ether,T
Acrolein,T
Acrylonitrile,T
Trichloro-1,2,2-Trifluoroethane,T
Acetone,T
1,1-Dichloroethene,C
Tert-Butyl Alcohol,T
Dimethyl Sulfide,T
Methylene Chloride,T
Methyl Acetate,T
Carbon Disulfide,T
Acrylonitrile,T
Methyl Tert Butyl Ether,T
Hexane,T
1,1-Dichloroethane,T
Diisopropyl ether,T
Vinyl Acetate,T
Chloroform,P
Ethyl-Tert-Butyl ether,T
2-Butanone,T
2,2-Dichloropropane,T
Propionitrile,T
Methacrylonitrile,T
Bromochloromethane,T
Tetrahydrofuran,T
Chloroform,C
1,1,1-Trichloroethane,T
Cyclohexane,T
Carbon Tetrachloride,T
1,1-Dichloropropene,T
1,2-Dichloroethane,T
Methyl-Methacrylate,T
Benzene,T
Dichloroethane,T
Fluorobenzene,I
Trichloroethene,T
1,2-Dichloropropane,T
Methyl Methacrylate,T
Dibromomethane,T
1,4-Dioxane,T
Trichloroethene,T
Methyl Methacrylate,T
Methylcyclohexane,T
Dibromomethane,T
Methyl Methacrylate,T
Methyl Methacrylate,T
Methyl Methacrylate

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407754.D Vial: 10
Acq On : 30 Sep 2015 13:56 Operator: TMB
Sample : WG540912-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:03:03 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	999044	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	721896	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	401543	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	492634	51.8109 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 207.24%#		
43) 1,2-Dichloroethane-d4	10.31	65	502331	51.8164 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 207.28%#		
58) Toluene-d8	12.69	98	1777410	53.0657 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 212.28%#		
80) p-Bromofluorobenzene	16.08	95	722720	51.5844 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 206.32%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	1648287	108.5226 ug/L	99
3) Chloromethane	3.63	50	2312431	99.7777 ug/L	98
4) Vinyl Chloride	3.84	62	1625053	88.7319 ug/L	99
5) 1,3-Butadiene	3.89	54	991629	90.8465 ug/L	91
6) Bromomethane	4.74	94	694277	105.6792 ug/L	99
7) Chloroethane	4.90	64	792001	106.0011 ug/L	98
8) Trichlorofluoromethane	5.38	101	1823452	103.0152 ug/L	99
9) Diethyl ether	5.91	59	1404955	206.2217 ug/L	99
10) Isoprene	5.95	67	1448354	111.4525 ug/L	95
11) Acrolein	6.15	56	85817	101.4974 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	1002514	105.3622 ug/L	99
13) Acetone	6.25	43	134519	90.7172 ug/L	96
14) 1,1-Dichloroethene	6.48	61	1674359	103.3754 ug/L	100
15) Tert-Butyl Alcohol	6.59	59	170829	389.8897 ug/L	98
16) Dimethyl Sulfide	6.74	62	987415	106.2200 ug/L	99
17) Iodomethane	7.00	142	688771	109.1615 ug/L	94
18) Methyl acetate	7.01	43	547190	97.5838 ug/L	98
19) Methylene Chloride	7.27	84	1012557	100.6582 ug/L	98
20) Carbon Disulfide	7.30	76	3453967	105.1559 ug/L	99
21) Acrylonitrile	7.44	53	233747	105.0056 ug/L	100
22) Methyl Tert Butyl Ether	7.47	73	1985878	104.1417 ug/L	99
23) trans-1,2-Dichloroethene	7.71	61	1633107	106.1748 ug/L	100
24) n-Hexane	7.79	57	1613498	106.1891 ug/L	96
25) Diisopropyl ether	8.13	45	7594269	200.2886 ug/L	96
26) Vinyl Acetate	8.31	43	1012138	100.4384 ug/L	99
27) 1,1-Dichloroethane	8.33	63	2013235	103.0722 ug/L	98
28) Ethyl-Tert-Butyl ether	8.71	59	6110510	204.6032 ug/L	99
29) 2-Butanone	8.89	43	258564	101.2099 ug/L	99
30) Propionitrile	8.99	54	152397	203.3049 ug/L	100
31) 2,2-Dichloropropane	9.11	77	1712102	104.8844 ug/L	100
32) cis-1,2-Dichloroethene	9.18	96	1120623	102.1115 ug/L	99
33) Chloroform	9.38	83	1894369	102.1012 ug/L	98
34) 1-Bromopropane	9.52	122	192894	107.0360 ug/L	100
35) Bromochloromethane	9.61	130	566755	104.9063 ug/L	99
36) Tetrahydrofuran	9.64	42	322938	192.5707 ug/L	97
38) 1,1,1-Trichloroethane	9.91	97	1794082	107.7235 ug/L	98
39) Cyclohexane	9.94	56	2109904	106.4606 ug/L	99
40) 1,1-Dichloropropene	10.11	75	1527222	106.5049 ug/L	99
41) Tert-Amyl-Methyl ether	10.22	73	4505369	203.4638 ug/L	97
42) Carbon Tetrachloride	10.25	117	1635708	109.8941 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407754.D Vial: 10
Acq On : 30 Sep 2015 13:56 Operator: TMB
Sample : WG540912-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:03:03 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	1351252	106.0560 ug/L		99
46)	Benzene	10.47	78	4063079	103.2647 ug/L		97
47)	Trichloroethene	11.22	130	1102366	104.0732 ug/L		97
48)	Methylcyclohexane	11.31	83	1719853	104.9371 ug/L		98
49)	1,2-Dichloropropane	11.43	63	1111363	104.8478 ug/L		95
50)	Bromodichloromethane	11.73	83	1456240	106.4376 ug/L		99
51)	1,4-Dioxane	11.72	88	18255	374.0781 ug/L		91
52)	Dibromomethane	11.81	93	520924	103.2069 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	448768	102.7186 ug/L		95
54)	4-Methyl-2-Pentanone	12.06	58	225734	100.7179 ug/L		97
55)	cis-1,3-Dichloropropene	12.37	75	1616749	106.4496 ug/L		98
56)	Dimethyl Disulfide	12.63	79	880541	107.5192 ug/L		97
59)	Toluene	12.78	91	4231266	103.1491 ug/L		97
60)	Ethyl Methacrylate	12.89	69	900291	110.0828 ug/L		96
62)	trans-1,3-Dichloropropene	12.96	75	1369595	108.8301 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	676060	103.8356 ug/L		97
64)	2-Hexanone	13.12	58	211271	103.2096 ug/L	#	95
65)	1,3-Dichloropropane	13.49	76	1205913	103.6429 ug/L		95
66)	Tetrachloroethene	13.61	164	922464	105.7816 ug/L		99
67)	Dibromochloromethane	13.87	129	918991	109.1703 ug/L		99
68)	1,2-Dibromoethane	14.13	107	679902	104.5960 ug/L		100
69)	1-Chlorohexane	14.21	91	1557671	106.1199 ug/L		97
70)	Chlorobenzene	14.62	112	2925423	106.4313 ug/L		94
71)	1,1,1,2-Tetrachloroethane	14.66	131	1162122	114.3464 ug/L		98
72)	Ethylbenzene	14.66	106	1738524	108.5766 ug/L		82
73)	m-,p-Xylene	14.75	106	3972122	216.3163 ug/L		80
74)	o-Xylene	15.31	106	1940782	104.5168 ug/L		92
75)	Styrene	15.35	104	3215522	109.2953 ug/L		94
76)	Bromoform	15.83	173	556496	109.9676 ug/L		98
77)	Isopropylbenzene	15.73	105	4665259	104.7341 ug/L		95
79)	1,1,2,2-Tetrachloroethane	15.95	83	740784	99.9945 ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	210912	102.4550 ug/L		61
82)	trans-1,4-Dichloro-2-Buten	16.18	53	295589	108.5784 ug/L	#	72
83)	n-Propylbenzene	16.24	91	5511450	94.8017 ug/L		93
84)	Bromobenzene	16.37	156	1216625	103.0918 ug/L		97
85)	1,3,5-Trimethylbenzene	16.42	105	4130512	103.3387 ug/L		97
86)	2-Chlorotoluene	16.52	91	3894393	101.1355 ug/L		97
87)	4-Chlorotoluene	16.56	91	3405729	102.2686 ug/L		96
88)	a-Methylstyrene	16.83	118	2308871	105.9586 ug/L		99
89)	tert-Butylbenzene	16.89	134	915158	104.0760 ug/L		89
90)	1,2,4-Trimethylbenzene	16.94	105	4211193	104.2614 ug/L		97
91)	sec-Butylbenzene	17.16	105	4897753	98.6396 ug/L		93
92)	p-Isopropyltoluene	17.32	119	4206090	105.9486 ug/L		92
93)	1,3-Dichlorobenzene	17.51	146	2401799	101.9634 ug/L		97
94)	1,4-Dichlorobenzene	17.64	146	2352221	100.2787 ug/L		99
95)	n-Butylbenzene	17.84	91	3998669	108.0497 ug/L		94
96)	1,2-Dichlorobenzene	18.14	146	2098195	101.7983 ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.13	75	133354	102.7190 ug/L		98
98)	1,2,4-Trichlorobenzene	20.27	180	1521471	107.4447 ug/L		99
99)	Hexachlorobutadiene	20.42	225	710580	104.9132 ug/L		99
100)	Naphthalene	20.64	128	2043864	99.8347 ug/L		100
101)	1,2,3-Trichlorobenzene	20.95	180	1268996	105.0890 ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407754.D Vial: 10
Acq On : 30 Sep 2015 13:56 Operator: TMB
Sample : WG540912-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 1 9:03 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration

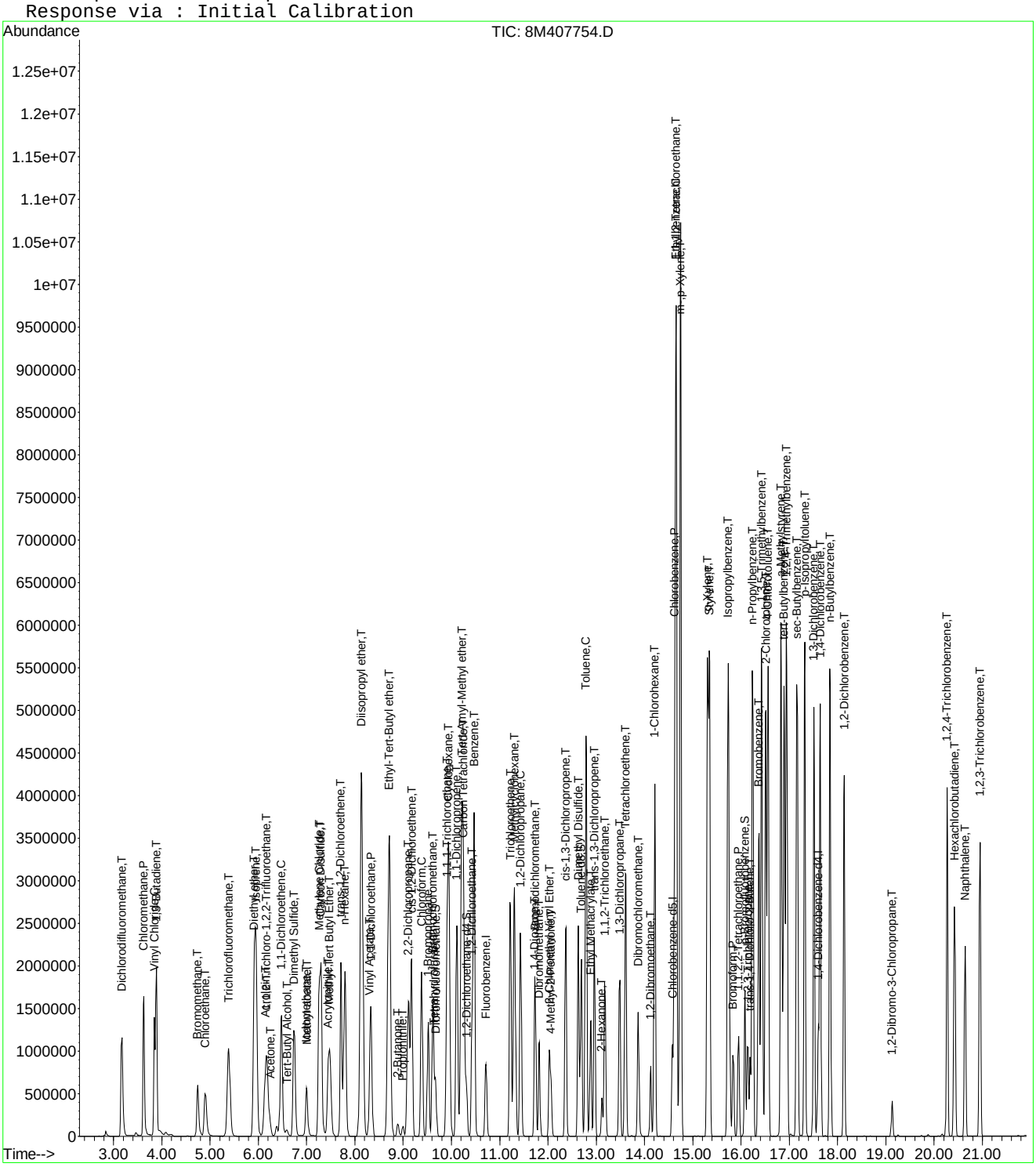

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407755.D Vial: 11
Acq On : 30 Sep 2015 14:24 Operator: TMB
Sample : WG540912-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:03:04 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	1019915	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	757249	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	423760	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.68	111	997322	102.7432 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 410.96%#		
43) 1,2-Dichloroethane-d4	10.31	65	1027552	103.8249 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 415.28%#		
58) Toluene-d8	12.69	98	3420899	97.3650 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 389.44%#		
80) p-Bromofluorobenzene	16.07	95	1495937	101.1751 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 404.72%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	3073735	198.2323 ug/L	96
3) Chloromethane	3.62	50	4198667	177.4585 ug/L	96
4) Vinyl Chloride	3.85	62	2900469	155.1319 ug/L	97
5) 1,3-Butadiene	3.89	54	1696169	185.8080 ug/L	90
6) Bromomethane	4.74	94	1490093	206.5308 ug/L	97
7) Chloroethane	4.90	64	1580424	207.1948 ug/L	98
8) Trichlorofluoromethane	5.39	101	3602432	199.3532 ug/L	99
9) Diethyl ether	5.90	59	1289	0.1853 ug/L #	45
10) Isoprene	5.94	67	2777274	209.3410 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	1952371	200.9914 ug/L	100
13) Acetone	6.24	43	341749	225.7531 ug/L	96
14) 1,1-Dichloroethene	6.47	61	3369596	203.7826 ug/L	100
16) Dimethyl Sulfide	6.74	62	2052730	216.3013 ug/L	100
17) Iodomethane	7.00	142	1342604	206.7806 ug/L	96
18) Methyl acetate	7.01	43	1189139	207.7270 ug/L	100
19) Methylene Chloride	7.26	84	2095681	204.0683 ug/L	97
20) Carbon Disulfide	7.30	76	6585198	196.3835 ug/L	97
21) Acrylonitrile	7.47	53	48336	21.2695 ug/L #	34
22) Methyl Tert Butyl Ether	7.47	73	4193880	215.4313 ug/L	100
23) trans-1,2-Dichloroethene	7.71	61	3271432	208.3365 ug/L	100
24) n-Hexane	7.79	57	3062998	197.4599 ug/L	95
26) Vinyl Acetate	8.30	43	2151883	209.1701 ug/L	100
27) 1,1-Dichloroethane	8.33	63	4045048	202.8576 ug/L	96
29) 2-Butanone	8.89	43	549079	210.5282 ug/L	99
30) Propionitrile	8.90	54	1482	1.9366 ug/L	86
31) 2,2-Dichloropropane	9.11	77	3379783	202.8106 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	2289136	204.3184 ug/L	99
33) Chloroform	9.39	83	3770537	199.0628 ug/L	97
34) 1-Bromopropane	9.52	122	377992	205.4540 ug/L	100
35) Bromochloromethane	9.61	130	1167712	211.7204 ug/L	99
36) Tetrahydrofuran	9.64	42	2035	1.1887 ug/L #	40
38) 1,1,1-Trichloroethane	9.91	97	3554199	209.0406 ug/L	100
39) Cyclohexane	9.94	56	4130086	204.1295 ug/L	98
40) 1,1-Dichloropropene	10.11	75	2986535	204.0119 ug/L	99
42) Carbon Tetrachloride	10.25	117	3135755	206.3629 ug/L	100
45) 1,2-Dichloroethane	10.43	62	2808454	215.9170 ug/L	98
46) Benzene	10.47	78	7375672	183.6195 ug/L	90
47) Trichloroethene	11.22	130	2161282	199.8689 ug/L	98
48) Methylcyclohexane	11.31	83	3284260	196.2889 ug/L	97
49) 1,2-Dichloropropane	11.43	63	2280795	210.7707 ug/L	95

(#) = qualifier out of range (m) = manual integration
8M407755.D 8260WT.M Thu Oct 01 09:03:04 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407755.D Vial: 11
Acq On : 30 Sep 2015 14:24 Operator: TMB
Sample : WG540912-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:03:04 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
50)	Bromodichloromethane	11.73	83	2976618	213.1111 ug/L		98
51)	1,4-Dioxane	11.72	88	4118	82.6585 ug/L	#	10
52)	Dibromomethane	11.81	93	1102889	214.0359 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.03	63	934357	209.4887 ug/L		96
54)	4-Methyl-2-Pentanone	12.06	58	490003	214.1554 ug/L		98
55)	cis-1,3-Dichloropropene	12.36	75	3292430	212.3433 ug/L		96
56)	Dimethyl Disulfide	12.63	79	1896563	226.8424 ug/L		92
59)	Toluene	12.79	91	7427590	172.6151 ug/L		89
60)	Ethyl Methacrylate	12.88	69	1925828	224.4865 ug/L		95
62)	trans-1,3-Dichloropropene	12.96	75	2848227	215.7582 ug/L		97
63)	1,1,2-Trichloroethane	13.18	97	1435328	210.1590 ug/L		97
64)	2-Hexanone	13.12	58	462088	215.1992 ug/L	#	97
65)	1,3-Dichloropropane	13.49	76	2491344	204.1236 ug/L		92
66)	Tetrachloroethene	13.61	164	1859849	203.3173 ug/L		98
67)	Dibromochloromethane	13.87	129	1962613	222.2613 ug/L		98
68)	1,2-Dibromoethane	14.13	107	1449499	212.5800 ug/L		100
69)	1-Chlorohexane	14.21	91	3025747	196.5123 ug/L		95
70)	Chlorobenzene	14.63	112	5662002	196.3752 ug/L		88
71)	1,1,1,2-Tetrachloroethane	14.66	131	2482321	232.8437 ug/L		97
72)	Ethylbenzene	14.66	106	3652304	217.4495 ug/L		54
73)	m-,p-Xylene	14.75	106	7200744	373.8350 ug/L		60
74)	o-Xylene	15.31	106	4011298	205.9350 ug/L		76
75)	Styrene	15.35	104	6146741	199.1732 ug/L		85
76)	Bromoform	15.84	173	1230396	231.7841 ug/L		99
77)	Isopropylbenzene	15.73	105	8074176	172.8010 ug/L		85
79)	1,1,2,2-Tetrachloroethane	15.95	83	1609027	205.8068 ug/L		98
81)	1,2,3-Trichloropropane	16.15	110	460163	211.8144 ug/L		66
82)	trans-1,4-Dichloro-2-Buten	16.19	53	659628	229.5972 ug/L	#	69
83)	n-Propylbenzene	16.24	91	8929204	145.5375 ug/L	#	79
84)	Bromobenzene	16.37	156	2526645	202.8727 ug/L		99
85)	1,3,5-Trimethylbenzene	16.42	105	7372697	174.7823 ug/L		87
86)	2-Chlorotoluene	16.51	91	7171461	176.4752 ug/L		88
87)	4-Chlorotoluene	16.56	91	5885379	167.4629 ug/L		84
88)	a-Methylstyrene	16.83	118	4628606	201.2793 ug/L		95
89)	tert-Butylbenzene	16.89	134	1937230	208.7602 ug/L		78
90)	1,2,4-Trimethylbenzene	16.94	105	7491629	175.7546 ug/L		84
91)	sec-Butylbenzene	17.16	105	8363908	159.6158 ug/L	#	82
92)	p-Isopropyltoluene	17.32	119	7394359	176.4937 ug/L		81
93)	1,3-Dichlorobenzene	17.51	146	4755218	191.2891 ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	4681127	189.1007 ug/L		94
95)	n-Butylbenzene	17.84	91	7035050	180.1306 ug/L		84
96)	1,2-Dichlorobenzene	18.14	146	4260447	195.8672 ug/L		93
97)	1,2-Dibromo-3-Chloropropan	19.13	75	303791	221.7336 ug/L		98
98)	1,2,4-Trichlorobenzene	20.27	180	3208659	214.7122 ug/L		98
99)	Hexachlorobutadiene	20.42	225	1464137	204.8382 ug/L		98
100)	Naphthalene	20.64	128	4269643	197.6211 ug/L		98
101)	1,2,3-Trichlorobenzene	20.95	180	2712907	212.8844 ug/L		97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407755.D Vial: 11
Acq On : 30 Sep 2015 14:24 Operator: TMB
Sample : WG540912-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 1 9:03 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration

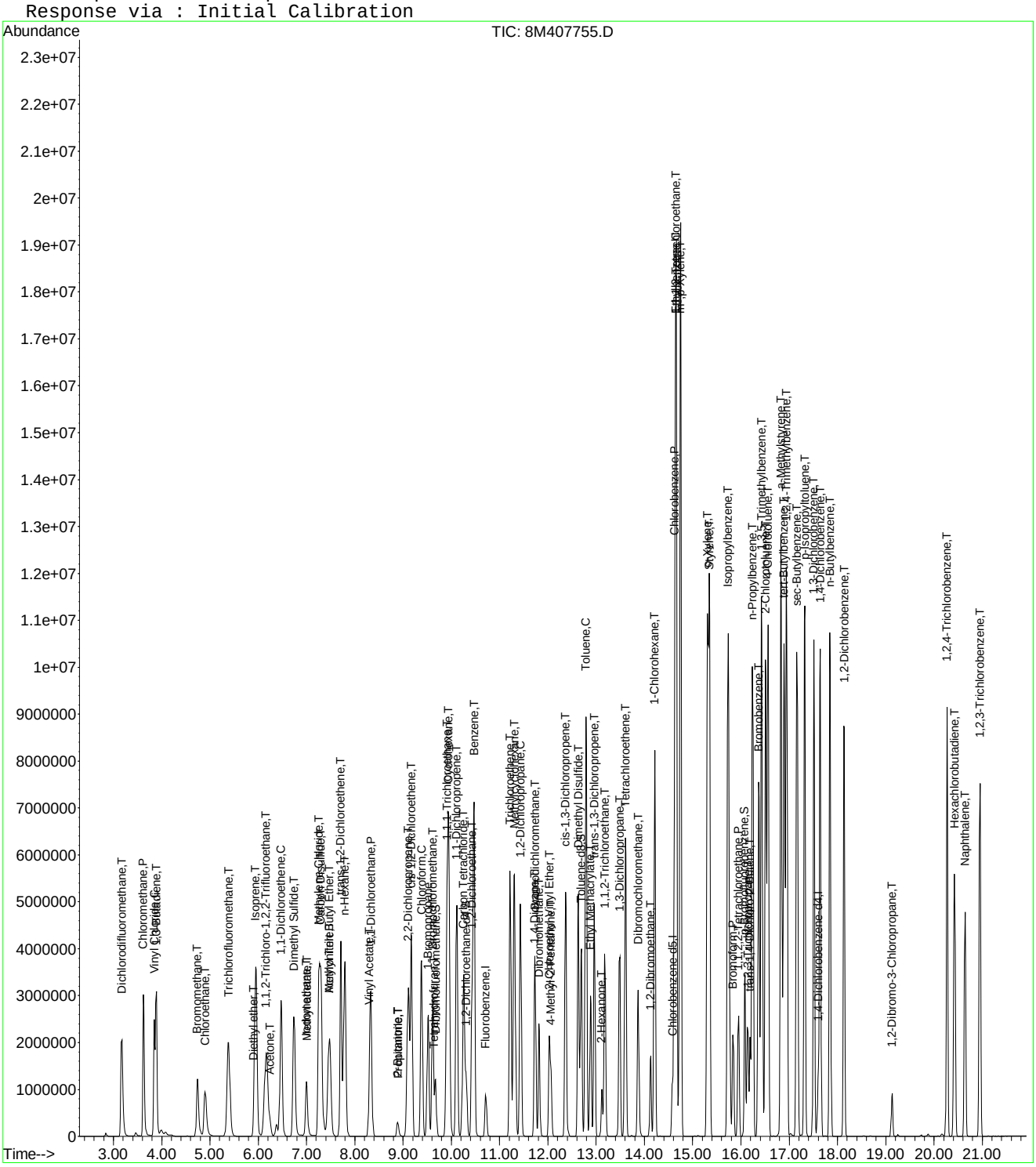

8M407755.D 8260WT.M Thu Oct 01 09:03:05 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407756.D Vial: 12
Acq On : 30 Sep 2015 14:52 Operator: TMB
Sample : WG540912-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:03:05 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	1065746	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	805472	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	452330	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	1515938	149.4546 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 597.80%#		
43) 1,2-Dichloroethane-d4	10.31	65	1566170	151.4422 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 605.76%#		
58) Toluene-d8	12.69	98	5005555	133.9377 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 535.76%#		
80) p-Bromofluorobenzene	16.08	95	2319893	146.9916 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 587.96%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	4453985	274.8952 ug/L	95
3) Chloromethane	3.62	50	5719893	231.3574 ug/L	92
4) Vinyl Chloride	3.84	62	3908072	200.0349 ug/L	95
5) 1,3-Butadiene	3.89	54	2229495	Below Cal	91
6) Bromomethane	4.73	94	2360356	295.2548 ug/L	99
7) Chloroethane	4.90	64	2372692	297.6849 ug/L	98
8) Trichlorofluoromethane	5.38	101	5511756	291.8957 ug/L	100
9) Diethyl ether	5.91	59	2348893	323.1961 ug/L	99
10) Isoprene	5.94	67	4265273	307.6753 ug/L	94
11) Acrolein	6.15	56	155193	172.0618 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	2917906	287.4727 ug/L	100
13) Acetone	6.25	43	498841	315.3544 ug/L	99
14) 1,1-Dichloroethene	6.47	61	4975754	287.9774 ug/L	99
15) Tert-Butyl Alcohol	6.60	59	311443	666.3305 ug/L	98
16) Dimethyl Sulfide	6.74	62	3151512	317.8019 ug/L	99
17) Iodomethane	7.00	142	1961731	288.4192 ug/L	96
18) Methyl acetate	7.01	43	1852436	309.6804 ug/L	99
19) Methylene Chloride	7.26	84	3173784	295.7590 ug/L	95
20) Carbon Disulfide	7.30	76	9459683	269.9747 ug/L	95
21) Acrylonitrile	7.44	53	453204	190.8495 ug/L	94
22) Methyl Tert Butyl Ether	7.47	73	6257021	307.5889 ug/L	99
23) trans-1,2-Dichloroethene	7.71	61	4791642	292.0263 ug/L	98
24) n-Hexane	7.79	57	4581735	282.6652 ug/L	94
25) Diisopropyl ether	8.13	45	11029782	272.6893 ug/L	92
26) Vinyl Acetate	8.30	43	3305041	307.4454 ug/L	100
27) 1,1-Dichloroethane	8.33	63	5933365	284.7599 ug/L	94
28) Ethyl-Tert-Butyl ether	8.71	59	9322882	292.6281 ug/L	98
29) 2-Butanone	8.89	43	870424	319.3865 ug/L	99
30) Propionitrile	9.00	54	267878	334.9959 ug/L	99
31) 2,2-Dichloropropane	9.11	77	4977286	285.8279 ug/L	97
32) cis-1,2-Dichloroethene	9.18	96	3400905	290.4964 ug/L	100
33) Chloroform	9.38	83	5463339	276.0294 ug/L	95
34) 1-Bromopropane	9.52	122	576665	299.9617 ug/L	98
35) Bromochloromethane	9.61	130	1746232	302.9975 ug/L	99
36) Tetrahydrofuran	9.64	42	580129	324.2847 ug/L	97
38) 1,1,1-Trichloroethane	9.91	97	5257764	295.9377 ug/L	99
39) Cyclohexane	9.94	56	6196433	293.0885 ug/L	98
40) 1,1-Dichloropropene	10.11	75	4405096	287.9742 ug/L	97
41) Tert-Amyl-Methyl ether	10.22	73	7256729	307.2053 ug/L	95
42) Carbon Tetrachloride	10.25	117	4725876	297.6336 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407756.D Vial: 12
Acq On : 30 Sep 2015 14:52 Operator: TMB
Sample : WG540912-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:03:05 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	4130044	303.8676 ug/L		98
46)	Benzene	10.47	78	9784739	233.1185 ug/L	#	82
47)	Trichloroethene	11.21	130	3245468	287.2244 ug/L		98
48)	Methylcyclohexane	11.31	83	4927101	281.8124 ug/L		97
49)	1,2-Dichloropropane	11.43	63	3420992	302.5424 ug/L		93
50)	Bromodichloromethane	11.73	83	4386556	300.5501 ug/L		96
51)	1,4-Dioxane	11.72	88	38129	732.4310 ug/L		87
52)	Dibromomethane	11.81	93	1677042	311.4648 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	1496210	321.0337 ug/L		96
54)	4-Methyl-2-Pentanone	12.06	58	800902	334.9808 ug/L		98
55)	cis-1,3-Dichloropropene	12.37	75	4810146	296.8866 ug/L		93
56)	Dimethyl Disulfide	12.63	79	2907112	332.7583 ug/L		89
59)	Toluene	12.79	91	9565632	208.9935 ug/L		81
60)	Ethyl Methacrylate	12.89	69	2969611	325.4322 ug/L		95
62)	trans-1,3-Dichloropropene	12.96	75	4220324	300.5569 ug/L		95
63)	1,1,2-Trichloroethane	13.18	97	2203723	303.3487 ug/L		96
64)	2-Hexanone	13.12	58	741076	324.4643 ug/L	#	97
65)	1,3-Dichloropropane	13.49	76	3741871	288.2282 ug/L		92
66)	Tetrachloroethene	13.61	164	2828983	290.7470 ug/L		99
67)	Dibromochloromethane	13.87	129	3001146	319.5247 ug/L		98
68)	1,2-Dibromoethane	14.13	107	2188511	301.7460 ug/L		99
69)	1-Chlorohexane	14.21	91	4484491	273.8158 ug/L		93
70)	Chlorobenzene	14.63	112	7602943	247.9058 ug/L		81
71)	1,1,1,2-Tetrachloroethane	14.67	131	3693596	325.7198 ug/L		97
72)	Ethylbenzene	14.66	106	5302756	296.8120 ug/L		39
73)	m-,p-Xylene	14.75	106	9232185	450.6043 ug/L		52
74)	o-Xylene	15.31	106	5865525	283.1004 ug/L		63
75)	Styrene	15.35	104	8250991	251.3508 ug/L		76
76)	Bromoform	15.83	173	1942351	343.9970 ug/L		98
77)	Isopropylbenzene	15.73	105	10265255	206.5409 ug/L	#	72
79)	1,1,2,2-Tetrachloroethane	15.95	83	2476655	296.7745 ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	715785	308.6675 ug/L		95
82)	trans-1,4-Dichloro-2-Buten	16.18	53	1036558	338.0069 ug/L		95
83)	n-Propylbenzene	16.24	91	10987624	167.7763 ug/L	#	65
84)	Bromobenzene	16.37	156	3802914	286.0623 ug/L		97
85)	1,3,5-Trimethylbenzene	16.43	105	9451191	209.9047 ug/L		77
86)	2-Chlorotoluene	16.52	91	8779258	202.3943 ug/L	#	76
87)	4-Chlorotoluene	16.56	91	7834256	208.8366 ug/L	#	71
88)	a-Methylstyrene	16.84	118	6616753	269.5618 ug/L		88
89)	tert-Butylbenzene	16.90	134	2982807	301.1315 ug/L		64
90)	1,2,4-Trimethylbenzene	16.95	105	9504140	208.8853 ug/L		71
91)	sec-Butylbenzene	17.17	105	10503392	187.7849 ug/L	#	70
92)	p-Isopropyltoluene	17.32	119	9416903	210.5723 ug/L	#	69
93)	1,3-Dichlorobenzene	17.52	146	6583121	248.0939 ug/L		85
94)	1,4-Dichlorobenzene	17.64	146	6449422	244.0777 ug/L		86
95)	n-Butylbenzene	17.85	91	8901534	213.5255 ug/L	#	74
96)	1,2-Dichlorobenzene	18.14	146	6027193	259.5890 ug/L		87
97)	1,2-Dibromo-3-Chloropropan	19.13	75	474533	324.4798 ug/L		99
98)	1,2,4-Trichlorobenzene	20.27	180	4574770	286.7920 ug/L		97
99)	Hexachlorobutadiene	20.42	225	2184179	286.2741 ug/L		98
100)	Naphthalene	20.64	128	5884557	255.1644 ug/L		94
101)	1,2,3-Trichlorobenzene	20.95	180	3909833	287.4298 ug/L		97

(#) = qualifier out of range (m) = manual integration
8M407756.D 8260WT.M Thu Oct 01 09:03:06 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407756.D Vial: 12
Acq On : 30 Sep 2015 14:52 Operator: TMB
Sample : WG540912-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 1 9:03 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration

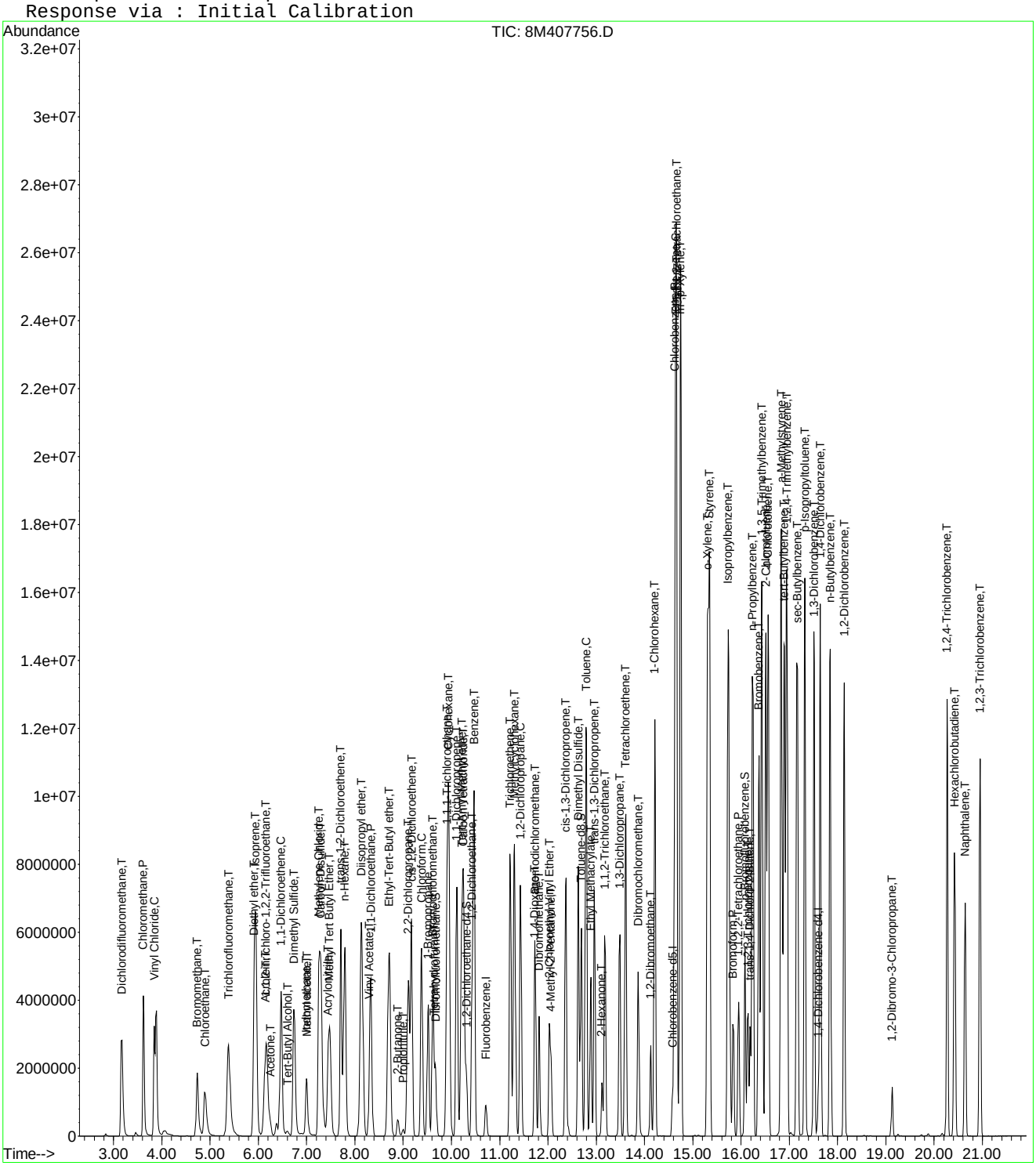

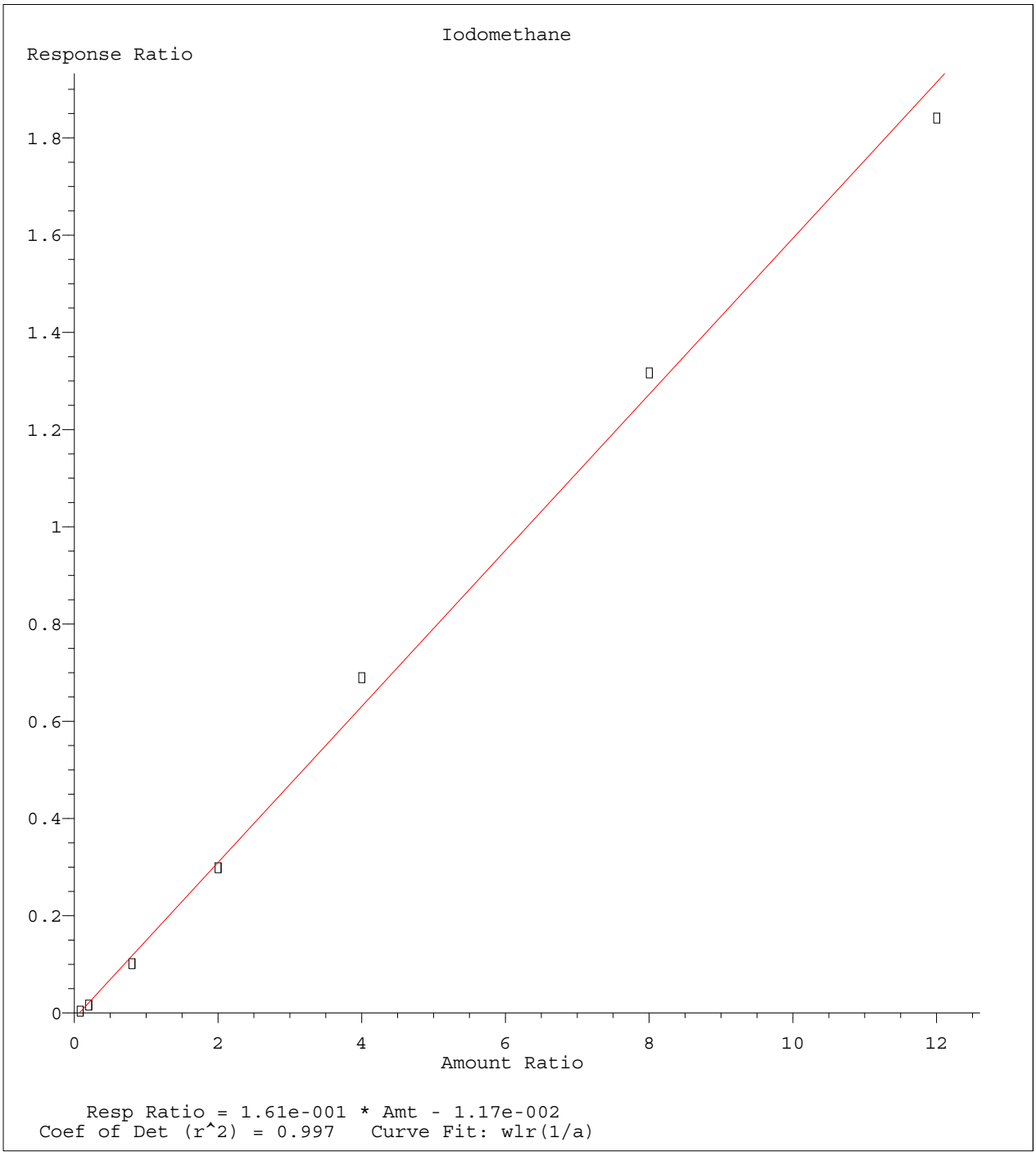

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Thu Oct 01 09:04:46 2015

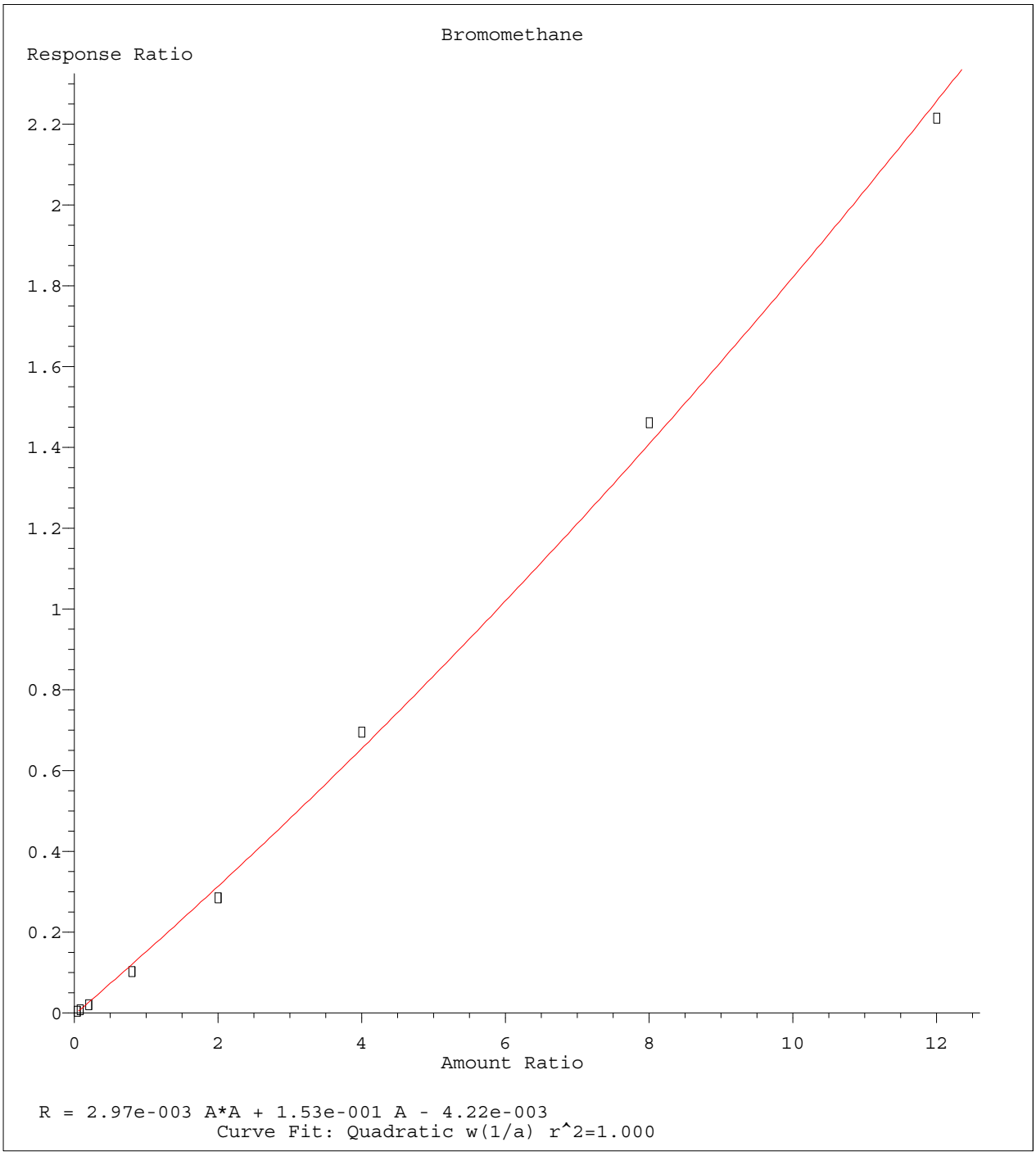

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Thu Oct 01 09:04:46 2015

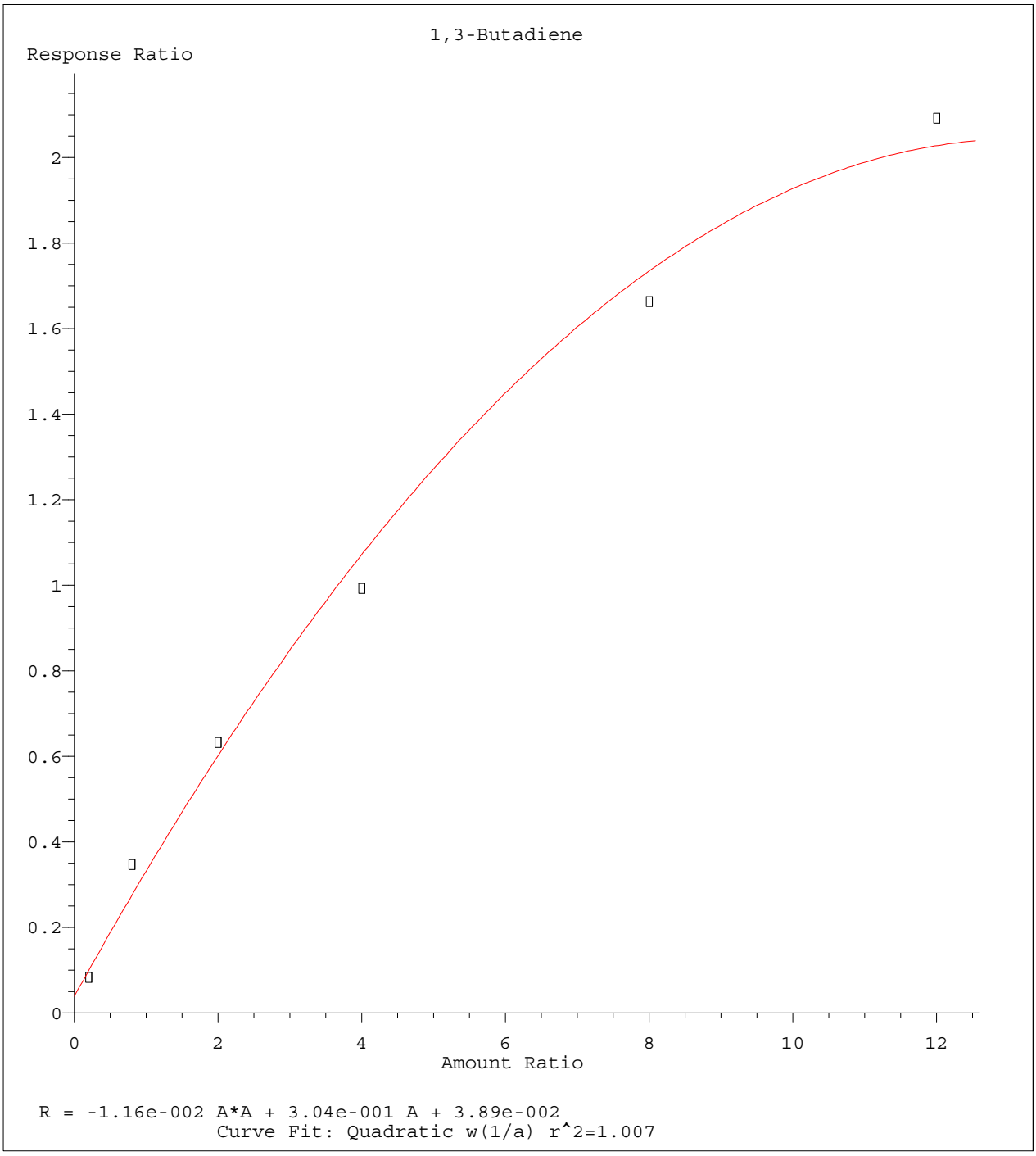

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Thu Oct 01 09:04:46 2015

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407761.D Vial: 17
Acq On : 30 Sep 2015 17:27 Operator: TMB
Sample : WG540912-12 50ug/L ALT SRC STD 8 Inst : HPMS8
Misc : 1,1 STD72747 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:03:07 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	973469	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	760814	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	418744	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	232214	25.0639 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.24%		
43) 1,2-Dichloroethane-d4	10.30	65	231666	24.5246 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.08%		
58) Toluene-d8	12.69	98	861595	24.4076 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.64%		
80) p-Bromofluorobenzene	16.08	95	366835	25.1074 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.44%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	868942	58.7139 ug/L	99
3) Chloromethane	3.62	50	1121121	49.6455 ug/L	100
4) Vinyl Chloride	3.84	62	785577	44.0214 ug/L	100
5) 1,3-Butadiene	3.89	54	349607	27.4376 ug/L	90
6) Bromomethane	4.73	94	274076	45.1539 ug/L	98
7) Chloroethane	4.89	64	406712	55.8643 ug/L	98
8) Trichlorofluoromethane	5.37	101	851761	49.3841 ug/L	98
9) Diethyl ether	5.91	59	681811	102.7066 ug/L	99
10) Isoprene	5.94	67	811140	64.0580 ug/L	96
11) Acrolein	6.15	56	80880	98.1714 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	494289	53.3136 ug/L	98
13) Acetone	6.25	43	85566	59.2202 ug/L	100
14) 1,1-Dichloroethene	6.47	61	782591	49.5868 ug/L	99
15) Tert-Butyl Alcohol	6.59	59	92214	215.9929 ug/L	99
16) Dimethyl Sulfide	6.74	62	585403	64.6285 ug/L	99
17) Iodomethane	6.99	142	218559	36.7730 ug/L	94
18) Methyl acetate	7.01	43	230990	42.2761 ug/L	97
19) Methylene Chloride	7.26	84	493851	50.3835 ug/L	97
20) Carbon Disulfide	7.30	76	1560781	48.7663 ug/L	100
21) Acrylonitrile	7.44	53	119847	55.2530 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	1039620	55.9512 ug/L	98
23) trans-1,2-Dichloroethene	7.71	61	774357	51.6667 ug/L	100
24) n-Hexane	7.79	57	795155	53.7064 ug/L	96
25) Diisopropyl ether	8.13	45	3847749	104.1453 ug/L	99
26) Vinyl Acetate	8.30	43	823818	83.8985 ug/L	99
27) 1,1-Dichloroethane	8.33	63	987280	51.8740 ug/L	99
28) Ethyl-Tert-Butyl ether	8.71	59	2933980	100.8218 ug/L	97
29) 2-Butanone	8.89	43	134931	54.2037 ug/L	99
30) Propionitrile	8.99	54	75739	103.6940 ug/L	97
31) 2,2-Dichloropropane	9.11	77	905546	56.9317 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	546221	51.0794 ug/L	98
33) Chloroform	9.38	83	967794	53.5318 ug/L	99
34) 1-Bromopropane	9.52	122	106430	60.6091 ug/L	99
35) Bromochloromethane	9.61	130	281529	53.4801 ug/L	98
36) Tetrahydrofuran	9.64	42	163322	99.9489 ug/L	98
38) 1,1,1-Trichloroethane	9.91	97	894608	55.1269 ug/L	98
39) Cyclohexane	9.94	56	1022711	52.9592 ug/L	99
40) 1,1-Dichloropropene	10.11	75	736268	52.6946 ug/L	100
41) Tert-Amyl-Methyl ether	10.21	73	2268375	105.1318 ug/L	99
42) Carbon Tetrachloride	10.25	117	790345	54.4939 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M407761.D 8260WT.M Thu Oct 01 09:03:08 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407761.D Vial: 17
Acq On : 30 Sep 2015 17:27 Operator: TMB
Sample : WG540912-12 50ug/L ALT SRC STD 8 Inst : HPMS8
Misc : 1,1 STD72747 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:03:07 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	652312	52.5432 ug/L		98
46)	Benzene	10.47	78	2027923	52.8945 ug/L		99
47)	Trichloroethene	11.21	130	525698	50.9345 ug/L		96
48)	Methylcyclohexane	11.31	83	858331	53.7471 ug/L		99
49)	1,2-Dichloropropane	11.43	63	531322	51.4427 ug/L		94
50)	Bromodichloromethane	11.73	83	695935	52.2028 ug/L		100
51)	1,4-Dioxane	11.72	88	10964	230.5749 ug/L		87
52)	Dibromomethane	11.81	93	254190	51.6839 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	220739	51.8524 ug/L		95
54)	4-Methyl-2-Pentanone	12.06	58	110611	50.6490 ug/L		96
55)	cis-1,3-Dichloropropene	12.36	75	817619	55.2478 ug/L		100
56)	Dimethyl Disulfide	12.63	79	433239	54.2908 ug/L		97
59)	Toluene	12.78	91	2168150	50.1511 ug/L		100
60)	Ethyl Methacrylate	12.89	69	467899	54.2856 ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	651098	49.0907 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	325095	47.3770 ug/L		97
64)	2-Hexanone	13.12	58	104133	48.2686 ug/L	#	94
65)	1,3-Dichloropropane	13.49	76	590786	48.1781 ug/L		94
66)	Tetrachloroethene	13.61	164	462809	50.3569 ug/L		99
67)	Dibromochloromethane	13.87	129	437204	49.2803 ug/L		98
68)	1,2-Dibromoethane	14.13	107	327494	47.8044 ug/L		99
69)	1-Chlorohexane	14.21	91	794949	51.3874 ug/L		99
70)	Chlorobenzene	14.62	112	1499530	51.7645 ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.66	131	530992	49.5741 ug/L		98
72)	Ethylbenzene	14.66	106	830493	49.2139 ug/L		93
73)	m-,p-Xylene	14.75	106	2033249	105.0639 ug/L		95
74)	o-Xylene	15.31	106	1009684	51.5930 ug/L		97
75)	Styrene	15.35	104	1628775	52.5300 ug/L		96
76)	Bromoform	15.83	173	273147	51.2148 ug/L		98
77)	Isopropylbenzene	15.73	105	2539990	54.1054 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	370394	47.9437 ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	105109	48.9615 ug/L		65
82)	trans-1,4-Dichloro-2-Buten	16.18	53	124572	43.8793 ug/L	#	51
83)	n-Propylbenzene	16.24	91	3088551	50.9435 ug/L		98
84)	Bromobenzene	16.37	156	606575	49.2873 ug/L		97
85)	1,3,5-Trimethylbenzene	16.42	105	2194366	52.6443 ug/L		100
86)	2-Chlorotoluene	16.52	91	2136948	53.2159 ug/L		100
87)	4-Chlorotoluene	16.56	91	1837561	52.9124 ug/L		99
88)	a-Methylstyrene	16.83	118	1243601	54.7270 ug/L		100
89)	tert-Butylbenzene	16.89	134	474225	51.7157 ug/L		91
90)	1,2,4-Trimethylbenzene	16.94	105	2170152	51.5219 ug/L		100
91)	sec-Butylbenzene	17.16	105	2683180	51.8189 ug/L		96
92)	p-Isopropyltoluene	17.32	119	2149600	51.9227 ug/L		96
93)	1,3-Dichlorobenzene	17.51	146	1240636	50.5051 ug/L		99
94)	1,4-Dichlorobenzene	17.64	146	1189152	48.6129 ug/L		99
95)	n-Butylbenzene	17.85	91	2040120	52.8625 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	1091732	50.7918 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	64091	47.3397 ug/L		98
98)	1,2,4-Trichlorobenzene	20.27	180	727823	49.2868 ug/L		98
99)	Hexachlorobutadiene	20.42	225	361689	51.2078 ug/L		99
100)	Naphthalene	20.64	128	946559	44.3364 ug/L		99
101)	1,2,3-Trichlorobenzene	20.95	180	612517	48.6406 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M407761.D 8260WT.M Thu Oct 01 09:03:08 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407761.D Vial: 17
Acq On : 30 Sep 2015 17:27 Operator: TMB
Sample : WG540912-12 50ug/L ALT SRC STD 8 Inst : HPMS8
Misc : 1,1 STD72747 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 1 9:03 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration

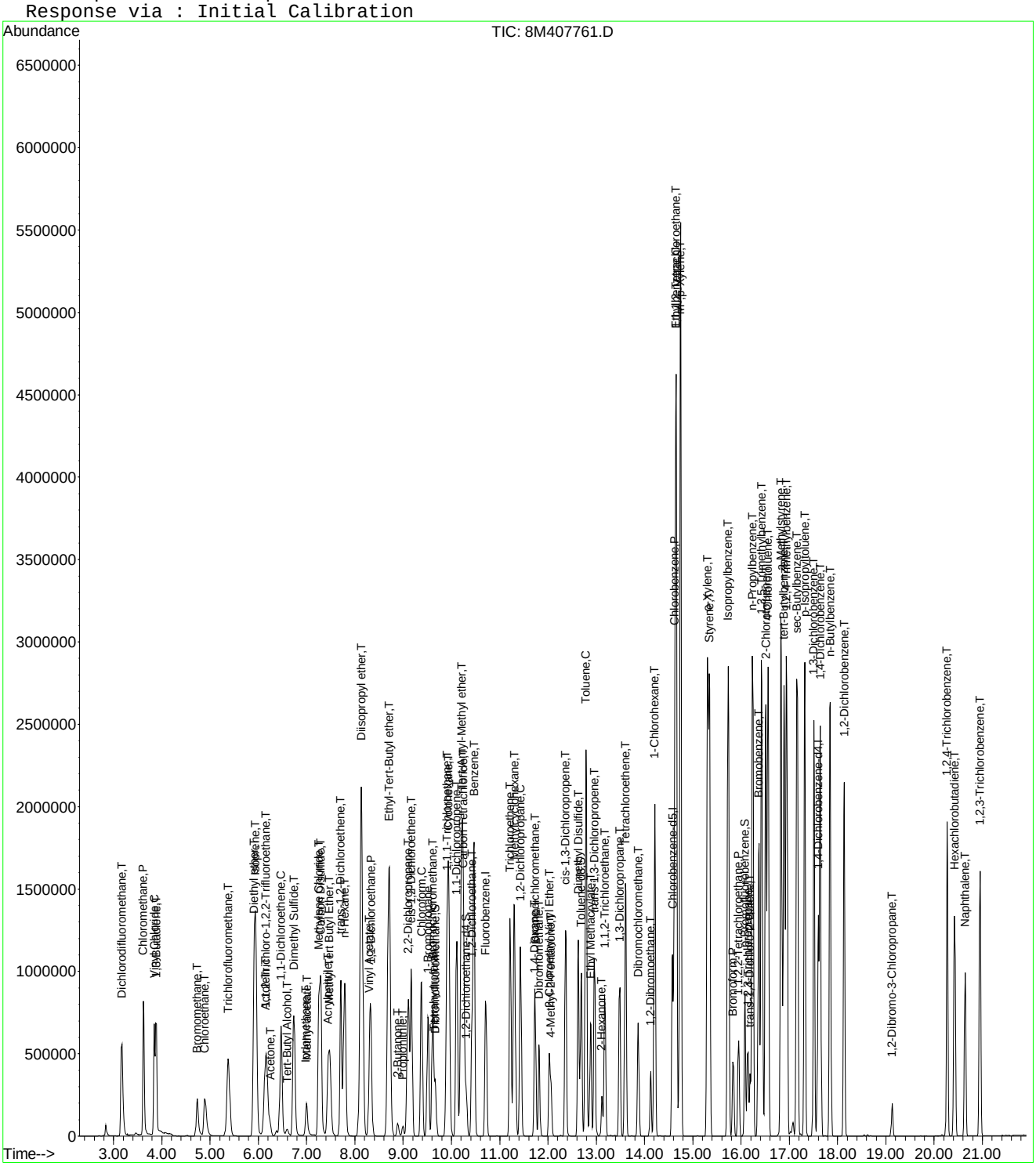

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\093015\8M407761.D Vial: 17
Acq On : 30 Sep 2015 17:27 Operator: TMB
Sample : WG540912-12 50ug/L ALT SRC STD 8 Inst : HPMS8
Misc : 1,1 STD72747 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	104	0.00
2	T	Dichlorodifluoromethane	50.0000	58.7139	-17.4	118	0.00
3	P	Chloromethane	50.0000	49.6455	0.7	103	0.00
4	C	Vinyl Chloride	50.0000	44.0214	12.0	99	0.00
5	T	1,3-Butadiene	50.0000	27.4376	45.1#	59	0.00
6	T	Bromomethane	50.0000	45.1538	9.7	103	0.00
7	T	Chloroethane	50.0000	55.8643	-11.7	114	-0.01
8	T	Trichlorofluoromethane	50.0000	49.3841	1.2	106	-0.01
9	T	Diethyl ether	100.0000	102.7066	-2.7	111	0.00
10	T	Isoprene	50.0000	64.0580	-28.1#	125	-0.01
11	T	Acrolein	50.0000	98.1714	-96.3#	218	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	53.3136	-6.6	113	0.00
13	T	Acetone	50.0000	59.2202	-18.4	137	0.00
14	C	1,1-Dichloroethene	50.0000	49.5868	0.8	108	0.00
15	T	Tert-Butyl Alcohol	200.0000	215.9929	-8.0	124	0.00
16	T	Dimethyl Sulfide	50.0000	64.6285	-29.3#	132	0.00
17	T	Iodomethane	50.0000	36.7730	26.5#	78	0.00
18	T	Methyl acetate	50.0000	42.2761	15.4	97	0.00
19	T	Methylene Chloride	50.0000	50.3835	-0.8	108	0.00
20	T	Carbon Disulfide	50.0000	48.7663	2.5	99	0.00
21	T	Acrylonitrile	50.0000	55.2530	-10.5	116	0.00
22	T	Methyl Tert Butyl Ether	50.0000	55.9512	-11.9	119	0.00
23	T	trans-1,2-Dichloroethene	50.0000	51.6667	-3.3	107	0.00
24	T	n-Hexane	50.0000	53.7064	-7.4	109	0.00
25	T	Diisopropyl ether	100.0000	104.1453	-4.1	108	0.00
26	T	Vinyl Acetate	50.0000	83.8985	-67.8#	173	0.00
27	P	1,1-Dichloroethane	50.0000	51.8740	-3.7	110	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	100.8218	-0.8	106	0.00
29	T	2-Butanone	50.0000	54.2037	-8.4	122	0.00
30	T	Propionitrile	100.0000	103.6940	-3.7	114	0.00
31	T	2,2-Dichloropropane	50.0000	56.9317	-13.9	120	0.00
32	T	cis-1,2-Dichloroethene	50.0000	51.0795	-2.2	108	0.00
33	C	Chloroform	50.0000	53.5318	-7.1	112	0.00
34		1-Bromopropane	50.0000	60.6091	-21.2	119	0.00
35	T	Bromochloromethane	50.0000	53.4801	-7.0	110	0.00
36	T	Tetrahydrofuran	100.0000	99.9489	0.1	113	0.00
37	S	Dibromofluoromethane	25.0000	25.0638	-0.3	104	0.00
38	T	1,1,1-Trichloroethane	50.0000	55.1269	-10.3	114	0.00
39	T	Cyclohexane	50.0000	52.9592	-5.9	109	0.00
40	T	1,1-Dichloropropene	50.0000	52.6946	-5.4	110	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	105.1318	-5.1	112	0.00
42	T	Carbon Tetrachloride	50.0000	54.4939	-9.0	111	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.5246	1.9	102	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	52.5432	-5.1	109	0.00
46	T	Benzene	50.0000	52.8945	-5.8	107	0.00
47	T	Trichloroethene	50.0000	50.9345	-1.9	108	0.00
48	T	Methylcyclohexane	50.0000	53.7471	-7.5	110	0.00
49	C	1,2-Dichloropropane	50.0000	51.4427	-2.9	108	0.00
50	T	Bromodichloromethane	50.0000	52.2028	-4.4	107	0.00
51	T	1,4-Dioxane	200.0000	230.5749	-15.3	126	0.00
52	T	Dibromomethane	50.0000	51.6839	-3.4	108	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	51.8524	-3.7	114	0.00
54	T	4-Methyl-2-Pentanone	50.0000	50.6489	-1.3	115	0.00

(#) = Out of Range

Data File : C:\MSDCHEM\2\DATA\093015\8M407761.D Vial: 17
Acq On : 30 Sep 2015 17:27 Operator: TMB
Sample : WG540912-12 50ug/L ALT SRC STD 8 Inst : HPMS8
Misc : 1,1 STD72747 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	55.2478	-10.5	112	0.00
56	T	Dimethyl Disulfide	50.0000	54.2908	-8.6	114	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	111	0.00
58	S	Toluene-d8	25.0000	24.4077	2.4	106	0.00
59	C	Toluene	50.0000	50.1511	-0.3	109	0.00
60	T	Ethyl Methacrylate	50.0000	54.2856	-8.6	120	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	49.0907	1.8	107	0.00
63	T	1,1,2-Trichloroethane	50.0000	47.3770	5.2	109	0.00
64	T	2-Hexanone	50.0000	48.2686	3.5	116	0.00
65	T	1,3-Dichloropropane	50.0000	48.1781	3.6	111	0.00
66	T	Tetrachloroethene	50.0000	50.3569	-0.7	114	0.00
67	T	Dibromochloromethane	50.0000	49.2803	1.4	109	0.00
68	T	1,2-Dibromoethane	50.0000	47.8044	4.4	108	0.00
69	T	1-Chlorohexane	50.0000	51.3874	-2.8	111	0.00
70	P	Chlorobenzene	50.0000	51.7645	-3.5	114	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	49.5741	0.9	108	0.00
72	C	Ethylbenzene	50.0000	49.2139	1.6	111	0.00
73	T	m-,p-Xylene	100.0000	105.0639	-5.1	113	0.00
74	T	o-Xylene	50.0000	51.5930	-3.2	115	0.00
75	T	Styrene	50.0000	52.5300	-5.1	111	0.00
76	P	Bromoform	50.0000	51.2148	-2.4	114	0.00
77	T	Isopropylbenzene	50.0000	54.1054	-8.2	115	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	110	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	47.9437	4.1	110	0.00
80	S	p-Bromofluorobenzene	25.0000	25.1074	-0.4	111	0.00
81	T	1,2,3-Trichloropropane	50.0000	48.9615	2.1	112	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	43.8792	12.2	97	0.00
83	T	n-Propylbenzene	50.0000	50.9435	-1.9	113	0.00
84	T	Bromobenzene	50.0000	49.2873	1.4	110	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	52.6443	-5.3	112	0.00
86	T	2-Chlorotoluene	50.0000	53.2159	-6.4	116	0.00
87	T	4-Chlorotoluene	50.0000	52.9124	-5.8	112	0.00
88	T	a-Methylstyrene	50.0000	54.7270	-9.5	117	0.00
89	T	tert-Butylbenzene	50.0000	51.7157	-3.4	118	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	51.5219	-3.0	109	0.00
91	T	sec-Butylbenzene	50.0000	51.8188	-3.6	114	0.00
92	T	p-Isopropyltoluene	50.0000	51.9227	-3.8	109	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.5051	-1.0	112	0.00
94	T	1,4-Dichlorobenzene	50.0000	48.6129	2.8	109	0.00
95	T	n-Butylbenzene	50.0000	52.8625	-5.7	108	0.00
96	T	1,2-Dichlorobenzene	50.0000	50.7918	-1.6	113	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	47.3396	5.3	108	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	49.2868	1.4	106	0.00
99	T	Hexachlorobutadiene	50.0000	51.2078	-2.4	114	0.00
100	T	Naphthalene	50.0000	44.3364	11.3	100	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	48.6406	2.7	106	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M407761.D 8260WT.M Thu Oct 01 09:04:55 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\111315\11M10250.D Vial: 3
Acq On : 13 Nov 2015 15:40 Operator: JDS
Sample : WG546879-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD73419 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 13 16:01:47 2015 Quant Results File: 8260_WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 10:32:15 2015
Response via : Initial Calibration
DataAcq Meth : 8260_WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	962543	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.28	117	810920	25.00 ug/L	-0.02
76) 1,4-Dichlorobenzene-d4	17.10	152	477870	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	273037	24.9401 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.76%		
43) 1,2-Dichloroethane-d4	10.27	65	250788	22.2740 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 89.08%		
57) Toluene-d8	12.51	98	971982	28.1171 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 112.48%#		
78) p-Bromofluorobenzene	15.69	95	371485	26.9805 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 107.92%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.24	85	744321	52.1955 ug/L	97
3) Chloromethane	3.70	50	611504	44.9242 ug/L	99
4) Vinyl Chloride	3.94	62	499350	45.5433 ug/L	99
5) 1,3-Butadiene	3.98	54	272659	57.8092 ug/L	98
6) Bromomethane	4.85	94	362828	49.4447 ug/L	97
7) Chloroethane	5.00	64	401383	50.3015 ug/L	99
8) Trichlorofluoromethane	5.50	101	854003	48.4900 ug/L	99
9) Diethyl ether	6.02	59	829060	101.4970 ug/L	98
10) Isoprene	6.06	67	652880	49.7168 ug/L	97
11) Acrolein	6.26	56	50915	44.0350 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.27	101	507830	51.4918 ug/L	98
13) Acetone	6.35	43	118032	47.6390 ug/L	96
14) 1,1-Dichloroethene	6.58	61	827969	47.1404 ug/L	96
15) Tert-Butyl Alcohol	6.68	59	133041	219.3997 ug/L	97
16) Dimethyl Sulfide	6.83	62	508472	47.7896 ug/L	95
17) Iodomethane	7.08	142	583987	51.4828 ug/L	97
18) Methyl acetate	7.09	43	356966	48.9897 ug/L	98
19) Methylene Chloride	7.34	84	520085	48.7759 ug/L	91
20) Carbon Disulfide	7.38	76	1615815	54.2890 ug/L	100
21) Acrylonitrile	7.52	53	176541	50.2208 ug/L	98
22) Methyl Tert Butyl Ether	7.55	73	1202336	47.1069 ug/L	99
23) trans-1,2-Dichloroethene	7.78	96	539663	48.7679 ug/L	93
24) n-Hexane	7.85	57	805023	53.8825 ug/L	99
25) Diisopropyl ether	8.18	45	4162750	94.2916 ug/L	98
26) Vinyl Acetate	8.34	43	719371	40.7251 ug/L	98
27) 1,1-Dichloroethane	8.38	63	983390	46.2725 ug/L	100
28) Ethyl-Tert-Butyl ether	8.73	59	3442877	94.1992 ug/L	98
29) 2-Butanone	8.90	43	188083	47.2034 ug/L	96
30) Propionitrile	9.01	54	120635	95.5615 ug/L	97
31) 2,2-Dichloropropane	9.12	77	651438	44.3028 ug/L	100
32) cis-1,2-Dichloroethene	9.18	96	606423	48.5437 ug/L	93
33) Chloroform	9.38	83	889997	47.3492 ug/L	99
34) 1-Bromopropane	9.51	122	106823	49.0982 ug/L	98
35) Bromochloromethane	9.61	130	383164	51.0099 ug/L	92
36) Tetrahydrofuran	9.63	42	255740	96.1206 ug/L	98
38) 1,1,1-Trichloroethane	9.88	97	804069	51.0380 ug/L	96
39) Cyclohexane	9.92	56	1046683	50.0408 ug/L	98
40) 1,1-Dichloropropene	10.07	75	693556	49.6322 ug/L	97
41) Carbon Tetrachloride	10.22	117	736622	56.0557 ug/L	99
42) Tert-Amyl-Methyl ether	10.17	73	2574445	95.5756 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M10250.D 8260_WTR.M Fri Nov 13 16:01:48 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\111315\11M10250.D Vial: 3
Acq On : 13 Nov 2015 15:40 Operator: JDS
Sample : WG546879-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD73419 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 13 16:01:47 2015 Quant Results File: 8260_WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 10:32:15 2015
Response via : Initial Calibration
DataAcq Meth : 8260_WTR

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
44)	1,2-Dichloroethane	10.37	62	692289	43.9715	ug/L	99
45)	Benzene	10.41	78	2043691	48.2773	ug/L	99
46)	Trichloroethene	11.13	130	622038	49.2738	ug/L	97
47)	Methylcyclohexane	11.21	83	781132	50.8568	ug/L	97
48)	1,2-Dichloropropane	11.32	63	562019	47.5804	ug/L	98
49)	1,4-Dioxane	11.59	88	14778	203.1462	ug/L	85
50)	Bromodichloromethane	11.61	83	691284	55.1908	ug/L	100
51)	Dibromomethane	11.69	93	301364	49.3634	ug/L	95
52)	2-Chloroethyl Vinyl Ether	11.88	63	276513	45.6780	ug/L	100
53)	4-Methyl-2-Pentanone	11.90	58	164598	48.8985	ug/L	98
54)	cis-1,3-Dichloropropene	12.20	75	804257	51.0609	ug/L	100
55)	Dimethyl Disulfide	12.46	79	432871	68.4013	ug/L	99
58)	Toluene	12.60	91	2274914	54.2919	ug/L	100
59)	Ethyl Methacrylate	12.68	69	547583	54.9530	ug/L	95
60)	trans-1,3-Dichloropropene	12.76	75	695254	55.2008	ug/L	97
61)	1,1,2-Trichloroethane	12.97	97	429208	54.9352	ug/L	99
62)	2-Hexanone	12.89	43	281715	50.8260	ug/L	97
63)	1,3-Dichloropropane	13.26	76	681954	50.9531	ug/L	94
64)	Tetrachloroethene	13.37	164	547045	56.3259	ug/L	97
65)	Dibromochloromethane	13.62	129	569404	61.4780	ug/L	100
66)	1,2-Dibromoethane	13.87	107	438393	58.1229	ug/L	98
67)	1-Chlorohexane	13.93	91	747823	57.0878	ug/L	93
68)	Chlorobenzene	14.33	112	1596936	52.4299	ug/L	98
69)	1,1,1,2-Tetrachloroethane	14.35	131	586833	58.4558	ug/L	100
70)	Ethylbenzene	14.35	106	817470	53.5638	ug/L	97
71)	m-,p-Xylene	14.43	106	1928809	108.1184	ug/L	97
72)	o-Xylene	14.96	106	997138	54.9758	ug/L	97
73)	Styrene	14.99	104	1693443	56.6610	ug/L	97
74)	Bromoform	15.47	173	377788	64.8853	ug/L	99
75)	Isopropylbenzene	15.35	105	2448682	55.8823	ug/L	99
77)	1,1,2,2-Tetrachloroethane	15.55	83	462002	58.1009	ug/L	100
79)	1,2,3-Trichloropropane	15.74	110	141913	53.5359	ug/L	100
80)	trans-1,4-Dichloro-2-Buten	15.77	53	158985	48.9644	ug/L	84
81)	n-Propylbenzene	15.83	91	2883315	57.1663	ug/L	99
82)	Bromobenzene	15.96	156	786900	55.4945	ug/L	92
83)	1,3,5-Trimethylbenzene	16.01	105	2039631	55.5813	ug/L	98
84)	2-Chlorotoluene	16.09	91	1881630	53.3488	ug/L	98
85)	4-Chlorotoluene	16.13	91	1670773	51.1137	ug/L	97
86)	a-Methylstyrene	16.38	118	1192516	57.1123	ug/L	99
87)	tert-Butylbenzene	16.83	134	660452	57.3154	ug/L	97
88)	1,2,4-Trimethylbenzene	16.48	105	2083989	55.8046	ug/L	99
89)	sec-Butylbenzene	16.69	105	2500967	56.9878	ug/L	99
90)	p-Isopropyltoluene	16.83	119	2285819	59.1252	ug/L	99
91)	1,3-Dichlorobenzene	17.02	146	1479243	55.5464	ug/L	98
92)	1,4-Dichlorobenzene	17.14	146	1453376	54.1345	ug/L	99
93)	n-Butylbenzene	17.32	91	1932551	58.0527	ug/L	98
94)	1,2-Dichlorobenzene	17.61	146	1379220	55.7620	ug/L	98
95)	1,2-Dibromo-3-Chloropropan	18.53	75	72177	46.1996	ug/L	85
96)	1,2,4-Trichlorobenzene	19.59	180	1015406	56.9290	ug/L	98
97)	Hexachlorobutadiene	19.74	225	353898	56.6884	ug/L	97
98)	Naphthalene	19.95	128	1878969	59.9924	ug/L	100
99)	1,2,3-Trichlorobenzene	20.24	180	924846	57.8718	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\111315\11M10250.D Vial: 3
Acq On : 13 Nov 2015 15:40 Operator: JDS
Sample : WG546879-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD73419 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 13 16:01 2015 Quant Results File: 8260_WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 10:32:15 2015
Response via : Initial Calibration

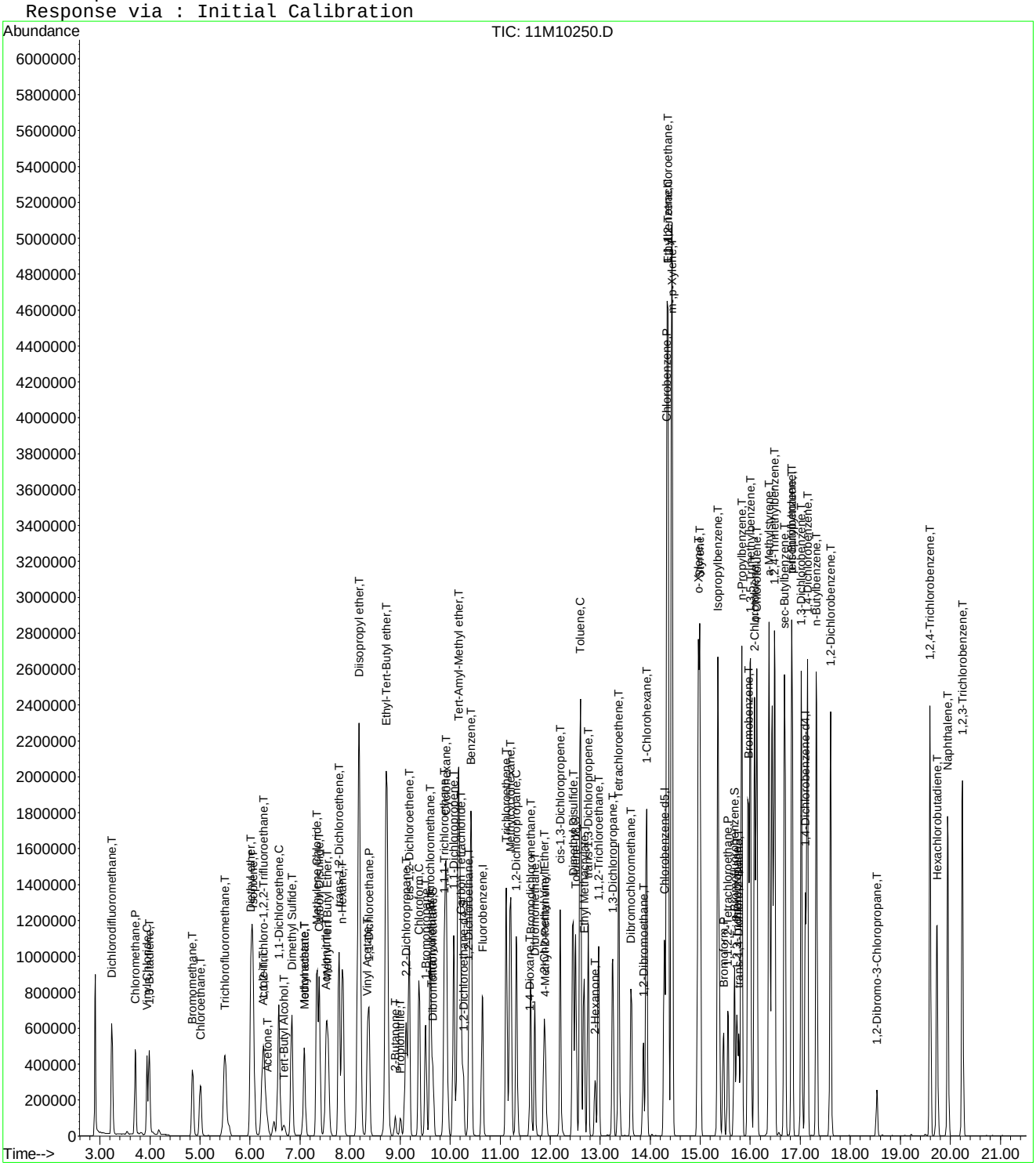

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\111315\11M10250.D Vial: 3
Acq On : 13 Nov 2015 15:40 Operator: JDS
Sample : WG546879-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD73419 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 10:32:15 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	138	-0.01
2	T	Dichlorodifluoromethane	0.3704	0.3866	-4.4	132	0.00
3	P	Chloromethane	0.3535	0.3176	10.2	132	-0.01
4	C	Vinyl Chloride	0.2848	0.2594	8.9	126	0.00
5	T	1,3-Butadiene	0.1265	0.1416	-12.0	160#	-0.01
6	T	Bromomethane	0.1906	0.1885	1.1	144	-0.01
7	T	Chloroethane	0.2072	0.2085	-0.6	139	-0.01
8	T	Trichlorofluoromethane	0.4574	0.4436	3.0	132	0.00
9	T	Diethyl ether	0.2122	0.2153	-1.5	139	-0.01
10	T	Isoprene	0.3411	0.3391	0.6	141	-0.01
11	T	Acrolein	0.0300	0.0265	11.9	122	-0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2561	0.2638	-3.0	140	-0.01
13	T	Acetone	0.0644	0.0613	4.7	132	-0.01
14	C	1,1-Dichloroethene	0.4562	0.4301	5.7	130	-0.01
15	T	Tert-Butyl Alcohol	0.0157	0.0173	-10.2	142	0.00
16	T	Dimethyl Sulfide	0.2763	0.2641	4.4	133	-0.01
17	T	Iodomethane	0.2291	0.3034	-32.4#	145	-0.01
18	T	Methyl acetate	0.1893	0.1854	2.0	136	-0.01
19	T	Methylene Chloride	0.2769	0.2702	2.4	137	0.00
20	T	Carbon Disulfide	0.7730	0.8394	-8.6	145	-0.01
21	T	Acrylonitrile	0.0913	0.0917	-0.4	133	-0.01
22	T	Methyl Tert Butyl Ether	0.6629	0.6246	5.8	127	-0.01
23	T	trans-1,2-Dichloroethene	0.2874	0.2803	2.5	137	-0.01
24	T	n-Hexane	0.3880	0.4182	-7.8	146	-0.01
25	T	Diisopropyl ether	1.1466	1.0812	5.7	129	-0.01
26	T	Vinyl Acetate	0.4158	0.3737	10.1	134	0.00
27	P	1,1-Dichloroethane	0.5520	0.5108	7.5	131	-0.01
28	T	Ethyl-Tert-Butyl ether	0.9493	0.8942	5.8	129	-0.01
29	T	2-Butanone	0.1035	0.0977	5.6	129	-0.01
30	T	Propionitrile	0.0328	0.0313	4.5	130	-0.01
31	T	2,2-Dichloropropane	0.3819	0.3384	11.4	123	-0.01
32	T	cis-1,2-Dichloroethene	0.3245	0.3150	2.9	138	-0.01
33	C	Chloroform	0.4882	0.4623	5.3	133	-0.01
34	T	1-Bromopropane	0.0565	0.0555	1.8	139	-0.01
35	T	Bromochloromethane	0.1951	0.1990	-2.0	140	-0.01
36	T	Tetrahydrofuran	0.0691	0.0664	3.9	130	-0.01
37	S	Dibromofluoromethane	0.2843	0.2837	0.2	139	-0.01
38	T	1,1,1-Trichloroethane	0.4092	0.4177	-2.1	138	-0.01
39	T	Cyclohexane	0.5433	0.5437	-0.1	137	-0.01
40	T	1,1-Dichloropropene	0.3629	0.3603	0.7	134	-0.01
41	T	Carbon Tetrachloride	0.3053	0.3826	-25.3#	158#	-0.01
42	T	Tert-Amyl-Methyl ether	0.6996	0.6687	4.4	129	0.00
43	S	1,2-Dichloroethane-d4	0.2924	0.2606	10.9	122	-0.01
44	T	1,2-Dichloroethane	0.4089	0.3596	12.1	124	-0.01
45	T	Benzene	1.0995	1.0616	3.4	134	-0.02
46	T	Trichloroethene	0.3279	0.3231	1.5	138	-0.01
47	T	Methylcyclohexane	0.3989	0.4058	-1.7	140	-0.01
48	C	1,2-Dichloropropane	0.3068	0.2919	4.8	135	-0.01
49	T	1,4-Dioxane	0.0019	0.0019	-1.6	134	-0.01
50	T	Bromodichloromethane	0.3253	0.3591	-10.4	144	-0.01
51	T	Dibromomethane	0.1586	0.1565	1.3	132	-0.01
52	T	2-Chloroethyl Vinyl Ether	0.1572	0.1436	8.6	123	-0.01
53	T	4-Methyl-2-Pentanone	0.0874	0.0855	2.2	129	-0.02
54	T	cis-1,3-Dichloropropene	0.4091	0.4178	-2.1	136	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\111315\11M10250.D Vial: 3
Acq On : 13 Nov 2015 15:40 Operator: JDS
Sample : WG546879-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD73419 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 10:32:15 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	0.1567	0.2249	-43.5#	219#	0.00
56	I	Chlorobenzene-d5	1.0000	1.0000	0.0	130	-0.02
57	S	Toluene-d8	1.0657	1.1986	-12.5	140	-0.01
58	C	Toluene	1.2918	1.4027	-8.6	135	-0.01
59	T	Ethyl Methacrylate	0.2647	0.3376	-27.6#	138	0.00
60	T	trans-1,3-Dichloropropene	0.3883	0.4287	-10.4	130	-0.01
61	T	1,1,2-Trichloroethane	0.2409	0.2646	-9.9	134	-0.01
62	T	2-Hexanone	0.1709	0.1737	-1.7	125	-0.01
63	T	1,3-Dichloropropane	0.4126	0.4205	-1.9	130	-0.01
64	T	Tetrachloroethene	0.2994	0.3373	-12.7	143	-0.01
65	T	Dibromochloromethane	0.2420	0.3511	-45.1#	157#	0.00
66	T	1,2-Dibromoethane	0.2325	0.2703	-16.2	135	-0.01
67	T	1-Chlorohexane	0.4038	0.4611	-14.2	139	-0.01
68	P	Chlorobenzene	0.9390	0.9846	-4.9	136	-0.01
69	T	1,1,1,2-Tetrachloroethane	0.2672	0.3618	-35.4#	149	0.00
70	C	Ethylbenzene	0.4705	0.5040	-7.1	135	-0.01
71	T	m-,p-Xylene	0.5500	0.5946	-8.1	133	-0.01
72	T	o-Xylene	0.5592	0.6148	-10.0	136	-0.01
73	T	Styrene	0.9214	1.0441	-13.3	134	-0.01
74	P	Bromoform	0.1491	0.2329	-56.3#	172#	0.00
75	T	Isopropylbenzene	1.3509	1.5098	-11.8	134	-0.01
76	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	125	-0.01
77	P	1,1,2,2-Tetrachloroethane	0.4160	0.4834	-16.2	135	-0.01
78	S	p-Bromofluorobenzene	0.7203	0.7774	-7.9	134	-0.01
79	T	1,2,3-Trichloropropane	0.1387	0.1485	-7.1	130	-0.01
80	T	trans-1,4-Dichloro-2-Butene	0.1468	0.1664	-13.3	119	-0.01
81	T	n-Propylbenzene	2.6387	3.0168	-14.3	134	-0.01
82	T	Bromobenzene	0.7418	0.8233	-11.0	139	-0.01
83	T	1,3,5-Trimethylbenzene	1.9198	2.1341	-11.2	133	-0.01
84	T	2-Chlorotoluene	1.8452	1.9688	-6.7	132	-0.01
85	T	4-Chlorotoluene	1.7101	1.7482	-2.2	131	-0.01
86	T	a-Methylstyrene	1.0924	1.2477	-14.2	132	-0.01
87	T	tert-Butylbenzene	0.6028	0.6910	-14.6	136	-0.01
88	T	1,2,4-Trimethylbenzene	1.9537	2.1805	-11.6	132	-0.01
89	T	sec-Butylbenzene	2.2959	2.6168	-14.0	134	-0.01
90	T	p-Isopropyltoluene	2.0225	2.3917	-18.3	134	-0.01
91	T	1,3-Dichlorobenzene	1.3932	1.5478	-11.1	139	-0.01
92	T	1,4-Dichlorobenzene	1.4045	1.5207	-8.3	136	-0.01
93	T	n-Butylbenzene	1.7416	2.0221	-16.1	135	-0.01
94	T	1,2-Dichlorobenzene	1.2940	1.4431	-11.5	137	-0.01
95	T	1,2-Dibromo-3-Chloropropane	0.0658	0.0755	-14.8	127	-0.01
96	T	1,2,4-Trichlorobenzene	0.9331	1.0624	-13.9	143	-0.01
97	T	Hexachlorobutadiene	0.3266	0.3703	-13.4	140	-0.01
98	T	Naphthalene	1.6385	1.9660	-20.0	138	-0.01
99	T	1,2,3-Trichlorobenzene	0.8360	0.9677	-15.7	144	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M10250.D 8260_WTR.M Mon Nov 16 09:21:52 2015 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\111315\11M10250.D Vial: 3
Acq On : 13 Nov 2015 15:40 Operator: JDS
Sample : WG546879-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD73419 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 10:32:15 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	138	-0.01
2	T	Dichlorodifluoromethane	50.0000	52.1955	-4.4	132	0.00
3	P	Chloromethane	50.0000	44.9242	10.2	132	-0.01
4	C	Vinyl Chloride	50.0000	45.5433	8.9	126	0.00
5	T	1,3-Butadiene	50.0000	57.8092	-15.6	160	-0.01
6	T	Bromomethane	50.0000	49.4447	1.1	144	-0.01
7	T	Chloroethane	50.0000	50.3015	-0.6	139	-0.01
8	T	Trichlorofluoromethane	50.0000	48.4900	3.0	132	0.00
9	T	Diethyl ether	100.0000	101.4970	-1.5	139	-0.01
10	T	Isoprene	50.0000	49.7168	0.6	141	-0.01
11	T	Acrolein	50.0000	44.0350	11.9	122	-0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	51.4918	-3.0	140	-0.01
13	T	Acetone	50.0000	47.6390	4.7	132	-0.01
14	C	1,1-Dichloroethene	50.0000	47.1404	5.7	130	-0.01
15	T	Tert-Butyl Alcohol	200.0000	219.3997	-9.7	142	0.00
16	T	Dimethyl Sulfide	50.0000	47.7896	4.4	133	-0.01
17	T	Iodomethane	50.0000	51.4828	-3.0	145	-0.01
18	T	Methyl acetate	50.0000	48.9897	2.0	136	-0.01
19	T	Methylene Chloride	50.0000	48.7759	2.4	137	0.00
20	T	Carbon Disulfide	50.0000	54.2890	-8.6	145	-0.01
21	T	Acrylonitrile	50.0000	50.2208	-0.4	133	-0.01
22	T	Methyl Tert Butyl Ether	50.0000	47.1069	5.8	127	-0.01
23	T	trans-1,2-Dichloroethene	50.0000	48.7679	2.5	137	-0.01
24	T	n-Hexane	50.0000	53.8825	-7.8	146	-0.01
25	T	Diisopropyl ether	100.0000	94.2916	5.7	129	-0.01
26	T	Vinyl Acetate	50.0000	40.7251	18.5	134	0.00
27	P	1,1-Dichloroethane	50.0000	46.2725	7.5	131	-0.01
28	T	Ethyl-Tert-Butyl ether	100.0000	94.1992	5.8	129	-0.01
29	T	2-Butanone	50.0000	47.2034	5.6	129	-0.01
30	T	Propionitrile	100.0000	95.5615	4.4	130	-0.01
31	T	2,2-Dichloropropane	50.0000	44.3028	11.4	123	-0.01
32	T	cis-1,2-Dichloroethene	50.0000	48.5437	2.9	138	-0.01
33	C	Chloroform	50.0000	47.3492	5.3	133	-0.01
34	T	1-Bromopropane	50.0000	49.0983	1.8	139	-0.01
35	T	Bromochloromethane	50.0000	51.0099	-2.0	140	-0.01
36	T	Tetrahydrofuran	100.0000	96.1206	3.9	130	-0.01
37	S	Dibromofluoromethane	25.0000	24.9401	0.2	139	-0.01
38	T	1,1,1-Trichloroethane	50.0000	51.0380	-2.1	138	-0.01
39	T	Cyclohexane	50.0000	50.0408	-0.1	137	-0.01
40	T	1,1-Dichloropropene	50.0000	49.6322	0.7	134	-0.01
41	T	Carbon Tetrachloride	50.0000	56.0557	-12.1	158	-0.01
42	T	Tert-Amyl-Methyl ether	100.0000	95.5756	4.4	129	0.00
43	S	1,2-Dichloroethane-d4	25.0000	22.2740	10.9	122	-0.01
44	T	1,2-Dichloroethane	50.0000	43.9715	12.1	124	-0.01
45	T	Benzene	50.0000	48.2773	3.4	134	-0.02
46	T	Trichloroethene	50.0000	49.2738	1.5	138	-0.01
47	T	Methylcyclohexane	50.0000	50.8567	-1.7	140	-0.01
48	C	1,2-Dichloropropane	50.0000	47.5804	4.8	135	-0.01
49	T	1,4-Dioxane	200.0000	203.1462	-1.6	134	-0.01
50	T	Bromodichloromethane	50.0000	55.1908	-10.4	144	-0.01
51	T	Dibromomethane	50.0000	49.3634	1.3	132	-0.01
52	T	2-Chloroethyl Vinyl Ether	50.0000	45.6780	8.6	123	-0.01
53	T	4-Methyl-2-Pentanone	50.0000	48.8985	2.2	129	-0.02
54	T	cis-1,3-Dichloropropene	50.0000	51.0609	-2.1	136	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\111315\11M10250.D Vial: 3
Acq On : 13 Nov 2015 15:40 Operator: JDS
Sample : WG546879-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD73419 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 10:32:15 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	50.0000	68.4013	-36.8#	219	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	130	-0.02
57	S	Toluene-d8	25.0000	28.1171	-12.5	140	-0.01
58	C	Toluene	50.0000	54.2919	-8.6	135	-0.01
59	T	Ethyl Methacrylate	50.0000	54.9530	-9.9	138	0.00
60	T	trans-1,3-Dichloropropene	50.0000	55.2008	-10.4	130	-0.01
61	T	1,1,2-Trichloroethane	50.0000	54.9352	-9.9	134	-0.01
62	T	2-Hexanone	50.0000	50.8260	-1.7	125	-0.01
63	T	1,3-Dichloropropane	50.0000	50.9531	-1.9	130	-0.01
64	T	Tetrachloroethene	50.0000	56.3259	-12.7	143	-0.01
65	T	Dibromochloromethane	50.0000	61.4780	-23.0	157	0.00
66	T	1,2-Dibromoethane	50.0000	58.1229	-16.2	135	-0.01
67	T	1-Chlorohexane	50.0000	57.0878	-14.2	139	-0.01
68	P	Chlorobenzene	50.0000	52.4299	-4.9	136	-0.01
69	T	1,1,1,2-Tetrachloroethane	50.0000	58.4558	-16.9	149	0.00
70	C	Ethylbenzene	50.0000	53.5638	-7.1	135	-0.01
71	T	m-,p-Xylene	100.0000	108.1184	-8.1	133	-0.01
72	T	o-Xylene	50.0000	54.9757	-10.0	136	-0.01
73	T	Styrene	50.0000	56.6610	-13.3	134	-0.01
74	P	Bromoform	50.0000	64.8853	-29.8#	172	0.00
75	T	Isopropylbenzene	50.0000	55.8823	-11.8	134	-0.01
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	125	-0.01
77	P	1,1,2,2-Tetrachloroethane	50.0000	58.1009	-16.2	135	-0.01
78	S	p-Bromofluorobenzene	25.0000	26.9805	-7.9	134	-0.01
79	T	1,2,3-Trichloropropane	50.0000	53.5359	-7.1	130	-0.01
80	T	trans-1,4-Dichloro-2-Butene	50.0000	48.9644	2.1	119	-0.01
81	T	n-Propylbenzene	50.0000	57.1663	-14.3	134	-0.01
82	T	Bromobenzene	50.0000	55.4945	-11.0	139	-0.01
83	T	1,3,5-Trimethylbenzene	50.0000	55.5813	-11.2	133	-0.01
84	T	2-Chlorotoluene	50.0000	53.3488	-6.7	132	-0.01
85	T	4-Chlorotoluene	50.0000	51.1137	-2.2	131	-0.01
86	T	a-Methylstyrene	50.0000	57.1123	-14.2	132	-0.01
87	T	tert-Butylbenzene	50.0000	57.3154	-14.6	136	-0.01
88	T	1,2,4-Trimethylbenzene	50.0000	55.8046	-11.6	132	-0.01
89	T	sec-Butylbenzene	50.0000	56.9878	-14.0	134	-0.01
90	T	p-Isopropyltoluene	50.0000	59.1252	-18.3	134	-0.01
91	T	1,3-Dichlorobenzene	50.0000	55.5463	-11.1	139	-0.01
92	T	1,4-Dichlorobenzene	50.0000	54.1345	-8.3	136	-0.01
93	T	n-Butylbenzene	50.0000	58.0527	-16.1	135	-0.01
94	T	1,2-Dichlorobenzene	50.0000	55.7620	-11.5	137	-0.01
95	T	1,2-Dibromo-3-Chloropropane	50.0000	46.1996	7.6	127	-0.01
96	T	1,2,4-Trichlorobenzene	50.0000	56.9290	-13.9	143	-0.01
97	T	Hexachlorobutadiene	50.0000	56.6884	-13.4	140	-0.01
98	T	Naphthalene	50.0000	59.9924	-20.0	138	-0.01
99	T	1,2,3-Trichlorobenzene	50.0000	57.8718	-15.7	144	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M10250.D 8260_WTR.M Mon Nov 16 09:21:54 2015 Page 2

Data Path : D:\MassHunter\GCMS\1\data\111315\
Data File : 17M016433.D
Acq On : 13 Nov 2015 13:50
Operator : ADC
Sample : WG546843-02 50ug/L CCV STD
Misc : 1,1 STD73185
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 13 14:02:24 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.141	96	406695	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.976	117	307144	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.305	152	169138	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.177	111	107580	25.7862 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.145%		
34) 1,2-Dichloroethane-d4	4.814	65	102185	25.5047 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.019%		
47) Toluene-d8	6.710	98	406632	25.6835 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.734%		
66) p-Bromofluorobenzene	8.723	95	150563	25.7514 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.006%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.038	85	311074	53.7852 ug/L	99
3) Chloromethane	1.148	50	275153	44.6630 ug/L	99
4) Vinyl Chloride	1.195	62	284759	51.7455 ug/L	100
5) 1,3-Butadiene	1.206	54	168676	47.6875 ug/L	100
6) Bromomethane	1.380	94	163518	56.3351 ug/L	99
7) Chloroethane	1.452	64	147850	52.6210 ug/L	94
8) Trichlorofluoromethane	1.536	101	372052	57.9759 ug/L	100
9) Diethyl ether	1.748	59	162927	50.1756 ug/L	99
10) 1,1-Dichloroethene	1.867	61	336606	52.7242 ug/L	99
11) Carbon Disulfide	1.881	76	688862	51.2300 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.895	101	212689	53.7252 ug/L	100
14) Acrolein	2.113	56	19887	45.7253 ug/L	98
15) Methylene Chloride	2.289	84	211558	44.7870 ug/L	99
16) Acetone	2.344	43	34474	42.1889 ug/L	99
17) trans-1,2-Dichloroethene	2.420	96	206505	49.4747 ug/L	98
18) Methyl acetate	2.448	43	113064	48.6893 ug/L #	100
19) Methyl Tert Butyl Ether	2.530	73	488385	45.9022 ug/L	100
20) 1,1-Dichloroethane	2.975	63	391415	48.9994 ug/L	100
21) Acrylonitrile	3.036	53	48571	43.9274 ug/L	98
22) Vinyl Acetate	3.277	86	23349	46.5604 ug/L	99
23) cis-1,2-Dichloroethene	3.566	96	230274	48.0504 ug/L	98
24) 2,2-Dichloropropane	3.693	77	329929	55.2197 ug/L	100
25) Cyclohexane	3.792	56	368227	47.8952 ug/L	98
26) Bromochloromethane	3.806	130	140913	49.7964 ug/L	99
27) Chloroform	3.937	83	378192	47.7864 ug/L	100
28) Carbon Tetrachloride	4.081	117	309648	50.3866 ug/L	99
30) 1,1,1-Trichloroethane	4.177	97	343017	49.4127 ug/L	100
31) 1,1-Dichloropropene	4.345	75	293102	49.8055 ug/L	99
32) 2-Butanone	4.368	43	57641	42.9704 ug/L	99
33) Benzene	4.649	78	844840	48.3345 ug/L	100
35) 1,2-Dichloroethane	4.892	62	255031	48.4902 ug/L	100
36) Methylcyclohexane	5.298	83	381421	46.6689 ug/L	99
37) Trichloroethene	5.324	130	237796	49.0261 ug/L	99
38) Dibromomethane	5.743	93	118877	45.8319 ug/L	100
39) 1,2-Dichloropropane	5.848	63	229818	47.8327 ug/L	98
40) Bromodichloromethane	5.937	83	292869	49.0289 ug/L	100
41) 1,4-Dioxane	6.149	88	3027	103.7279 ug/L	89
42) 2-Chloroethyl Vinyl Ether	6.528	63	108513	44.6844 ug/L	99
43) cis-1,3-Dichloropropene	6.545	75	344269	48.8839 ug/L	100
44) 4-Methyl-2-Pentanone	7.814	58	49804	41.7462 ug/L	98
45) trans-1,3-Dichloropropene	7.145	75	292746	48.5839 ug/L	99
48) Toluene	6.757	91	949396	48.7915 ug/L	100
49) Tetrachloroethene	7.087	166	263018	50.1506 ug/L	99
50) 1,1,2-Trichloroethane	7.275	97	160503	44.3404 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\111315\
Data File : 17M016433.D
Acq On : 13 Nov 2015 13:50
Operator : ADC
Sample : WG546843-02 50ug/L CCV STD
Misc : 1,1 STD73185
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 13 14:02:24 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
51)	Dibromochloromethane	7.417	129	225103	48.1704 ug/L	100
52)	1,3-Dichloropropane	7.498	76	264631	46.0922 ug/L	99
53)	1,2-Dibromoethane	7.585	107	161449	44.9462 ug/L	100
54)	2-Hexanone	7.814	43	96548	41.4862 ug/L	100
55)	Chlorobenzene	7.984	112	622168	49.6145 ug/L	99
56)	1-Chlorohexane	7.999	69	60228	46.7606 ug/L	86
57)	Ethylbenzene	8.022	106	338627	49.6101 ug/L	99
58)	1,1,1,2-Tetrachloroethane	8.039	131	231247	49.8103 ug/L	99
59)	m-,p-Xylene	8.123	106	839931	102.5701 ug/L	99
60)	o-Xylene	8.387	106	394839	48.8635 ug/L	99
61)	Styrene	8.419	104	666486	49.6314 ug/L	100
62)	Bromoform	8.422	173	152277	49.4244 ug/L	99
63)	Isopropylbenzene	8.575	105	1059898	50.3197 ug/L	100
65)	1,3,5-Trimethylbenzene	8.914	105	935704	50.5236 ug/L	100
67)	Bromobenzene	8.775	156	282157	48.7425 ug/L	99
68)	n-Propylbenzene	8.804	91	1247097	51.5899 ug/L	100
69)	1,1,2,2-Tetrachloroethane	8.847	83	189263	45.0761 ug/L	100
70)	2-Chlorotoluene	8.879	91	737965	49.9162 ug/L	99
71)	1,2,3-Trichloropropane	8.911	110	50526	43.2337 ug/L	99
72)	trans-1,4-Dichloro-2-B...	8.937	53	45166	46.4921 ug/L #	98
73)	1,2,4-Trimethylbenzene	9.111	105	934104	50.5248 ug/L	100
74)	4-Chlorotoluene	8.969	91	754666	49.6121 ug/L	98
75)	tert-Butylbenzene	9.076	134	171696	50.5560 ug/L	99
76)	sec-Butylbenzene	9.166	105	1169453	51.3873 ug/L	100
77)	p-Isopropyltoluene	9.238	119	1028322	52.2469 ug/L	100
78)	1,3-Dichlorobenzene	9.267	146	537336	50.5469 ug/L	100
79)	1,4-Dichlorobenzene	9.310	146	534503	49.2907 ug/L	99
80)	n-Butylbenzene	9.444	91	949993	52.4428 ug/L	100
81)	1,2-Dichlorobenzene	9.516	146	494085	48.8217 ug/L	99
82)	1,2-Dibromo-3-Chloropr...	9.890	75	35057	44.4885 ug/L	98
83)	Hexachlorobutadiene	10.188	225	239631	51.4417 ug/L	99
84)	1,2,4-Trichlorobenzene	10.202	180	405068	50.1541 ug/L	100
85)	Naphthalene	10.353	128	674021	45.0552 ug/L	100
86)	1,2,3-Trichlorobenzene	10.440	180	356721	47.8573 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\111315\
Data File : 17M016433.D
Acq On : 13 Nov 2015 13:50
Operator : ADC
Sample : WG546843-02 50ug/L CCV STD
Misc : 1,1 STD73185
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 13 14:02:24 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

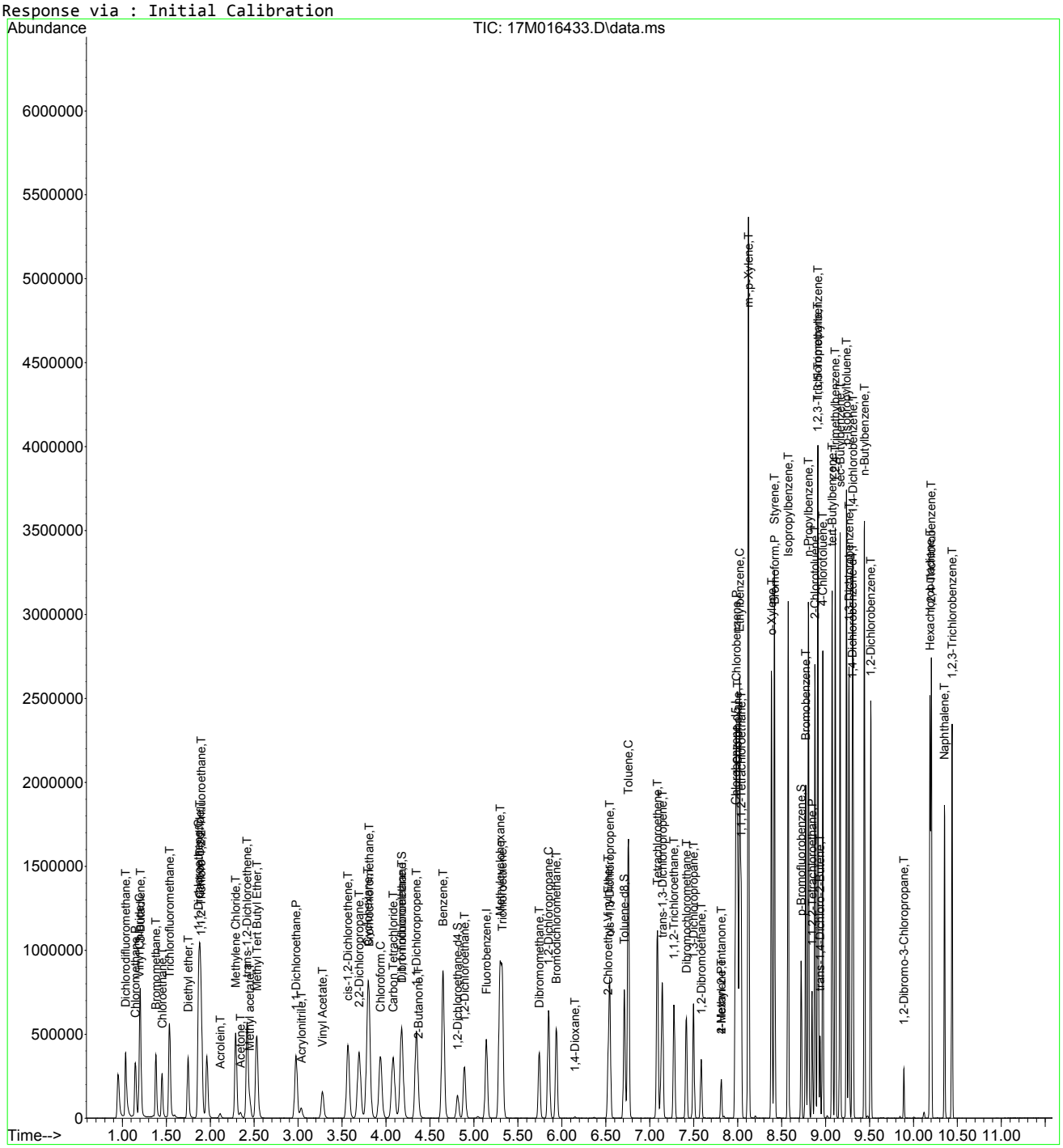

8260_VMS.M Fri Nov 13 14:02:25 2015 Page: 3

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\111315\
Data File : 17M016433.D
Acq On : 13 Nov 2015 13:50
Operator : ADC
Sample : WG546843-02 50ug/L CCV STD
Misc : 1,1 STD73185
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 13 14:02:24 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.000	1.000	0.0	89	0.000
2	T	Dichlorodifluoromethane	0.356	0.382	-7.3	93	0.000
3	P	Chloromethane	0.379	0.338	10.8	85	0.000
4	C	Vinyl Chloride	0.338	0.350	-3.6#	94	0.000
5	T	1,3-Butadiene	0.217	0.207	4.6	90	0.000
6	T	Bromomethane	0.178	0.201	-12.9	115	0.000
7	T	Chloroethane	0.173	0.182	-5.2	91	0.000
8	T	Trichlorofluoromethane	0.390	0.457	-17.2	100	0.000
9	T	Diethyl ether	0.200	0.200	0.0	102	0.000
10	C	1,1-Dichloroethene	0.392	0.414	-5.6#	96	0.000
11	T	Carbon Disulfide	0.827	0.847	-2.4	94	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.243	0.261	-7.4	96	0.000
13	T	Iodomethane	0.000	0.000	0.0	0#	0.000
14	T	Acrolein	0.027	0.024	11.1	103	0.000
15	T	Methylene Chloride	0.290	0.260	10.3	92	0.000
16	T	Acetone	0.051	0.042	17.6	94	0.000
17	T	trans-1,2-Dichloroethene	0.257	0.254	1.2	93	0.000
18	T	Methyl acetate	0.143	0.139	2.8	98	0.000
19	T	Methyl Tert Butyl Ether	0.654	0.600	8.3	94	0.000
20	P	1,1-Dichloroethane	0.491	0.481	2.0	90	0.000
21	T	Acrylonitrile	0.068	0.060	11.8	93	0.000
22	T	Vinyl Acetate	0.028	0.029	-3.6	98	0.000
23	T	cis-1,2-Dichloroethene	0.295	0.283	4.1	92	0.000
24	T	2,2-Dichloropropane	0.367	0.406	-10.6	93	0.000
25	T	Cyclohexane	0.473	0.453	4.2	86	0.000
26	T	Bromochloromethane	0.174	0.173	0.6	94	0.000
27	C	Chloroform	0.486	0.465	4.3#	93	0.000
28	T	Carbon Tetrachloride	0.378	0.381	-0.8	91	0.000
29	S	Dibromofluoromethane	0.256	0.265	-3.5	92	0.000
30	T	1,1,1-Trichloroethane	0.427	0.422	1.2	93	0.000
31	T	1,1-Dichloropropene	0.362	0.360	0.6	91	0.000
32	T	2-Butanone	0.082	0.071	13.4	92	0.000
33	T	Benzene	1.074	1.039	3.3	90	0.000
34	S	1,2-Dichloroethane-d4	0.246	0.251	-2.0	93	0.000
35	T	1,2-Dichloroethane	0.323	0.314	2.8	94	0.000
36	T	Methylcyclohexane	0.502	0.469	6.6	87	0.000
37	T	Trichloroethene	0.298	0.292	2.0	92	0.000
38	T	Dibromomethane	0.159	0.146	8.2	93	0.000
39	C	1,2-Dichloropropane	0.295	0.283	4.1#	90	0.000
40	T	Bromodichloromethane	0.367	0.360	1.9	92	0.000
41	T	1,4-Dioxane	0.002	0.002	0.0	94	0.000
42	T	2-Chloroethyl Vinyl Ether	0.149	0.133	10.7	89	0.000
43	T	cis-1,3-Dichloropropene	0.433	0.423	2.3	90	0.000
44	T	4-Methyl-2-Pentanone	0.073	0.061	16.4	94	0.000
45	T	trans-1,3-Dichloropropene	0.370	0.360	2.7	92	0.000
46	I	Chlorobenzene-d5	1.000	1.000	0.0	90	0.000
47	S	Toluene-d8	1.289	1.324	-2.7	90	0.000
48	C	Toluene	1.584	1.546	2.4#	91	0.000
49	T	Tetrachloroethene	0.427	0.428	-0.2	94	0.000
50	T	1,1,2-Trichloroethane	0.295	0.261	11.5	93	0.000
51	T	Dibromochloromethane	0.380	0.366	3.7	94	0.000
52	T	1,3-Dichloropropane	0.467	0.431	7.7	92	0.000
53	T	1,2-Dibromoethane	0.292	0.263	9.9	92	0.000
54	T	2-Hexanone	0.189	0.157	16.9	94	0.000
55	P	Chlorobenzene	1.021	1.013	0.8	92	0.000

Data Path : D:\MassHunter\GCMS\1\data\111315\
Data File : 17M016433.D
Acq On : 13 Nov 2015 13:50
Operator : ADC
Sample : WG546843-02 50ug/L CCV STD
Misc : 1,1 STD73185
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 13 14:02:24 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
56	T	1-Chlorohexane	0.105	0.098	6.7	86	0.000
57	C	Ethylbenzene	0.556	0.551	0.9#	92	0.000
58	T	1,1,1,2-Tetrachloroethane	0.378	0.376	0.5	93	0.000
59	T	m-,p-Xylene	0.667	0.684	-2.5	93	0.000
60	T	o-Xylene	0.658	0.643	2.3	91	0.000
61	T	Styrene	1.093	1.085	0.7	92	0.000
62	P	Bromoform	0.251	0.248	1.2	100	0.000
63	T	Isopropylbenzene	1.714	1.725	-0.6	93	0.000
64	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	91	0.000
65	T	1,3,5-Trimethylbenzene	2.737	2.766	-1.1	92	0.000
66	S	p-Bromofluorobenzene	0.864	0.890	-3.0	91	0.000
67	T	Bromobenzene	0.856	0.834	2.6	94	0.000
68	T	n-Propylbenzene	3.573	3.687	-3.2	92	0.000
69	P	1,1,2,2-Tetrachloroethane	0.621	0.559	10.0	95	0.000
70	T	2-Chlorotoluene	2.185	2.182	0.1	92	0.000
71	T	1,2,3-Trichloropropane	0.173	0.149	13.9	95	0.000
72	T	trans-1,4-Dichloro-2-Butene	0.144	0.134	6.9	101	0.000
73	T	1,2,4-Trimethylbenzene	2.733	2.761	-1.0	92	0.000
74	T	4-Chlorotoluene	2.248	2.231	0.8	90	0.000
75	T	tert-Butylbenzene	0.502	0.508	-1.2	93	0.000
76	T	sec-Butylbenzene	3.364	3.457	-2.8	93	0.000
77	T	p-Isopropyltoluene	2.909	3.040	-4.5	93	0.000
78	T	1,3-Dichlorobenzene	1.571	1.588	-1.1	94	0.000
79	T	1,4-Dichlorobenzene	1.603	1.580	1.4	94	0.000
80	T	n-Butylbenzene	2.678	2.808	-4.9	93	0.000
81	T	1,2-Dichlorobenzene	1.496	1.461	2.3	94	0.000
82	T	1,2-Dibromo-3-Chloropropane	0.116	0.104	10.3	96	0.000
83	T	Hexachlorobutadiene	0.689	0.708	-2.8	91	0.000
84	T	1,2,4-Trichlorobenzene	1.194	1.197	-0.3	93	0.000
85	T	Naphthalene	2.211	1.993	9.9	94	0.000
86	T	1,2,3-Trichlorobenzene	1.102	1.055	4.3	93	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\111315\
Data File : 17M016433.D
Acq On : 13 Nov 2015 13:50
Operator : ADC
Sample : WG546843-02 50ug/L CCV STD
Misc : 1,1 STD73185
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 13 14:02:24 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	89	0.000
2	T	Dichlorodifluoromethane	50.000	53.785	-7.6	93	0.000
3	P	Chloromethane	50.000	44.663	10.7	85	0.000
4	C	Vinyl Chloride	50.000	51.745	-3.5#	94	0.000
5	T	1,3-Butadiene	50.000	47.688	4.6	90	0.000
6	T	Bromomethane	50.000	56.335	-12.7	115	0.000
7	T	Chloroethane	50.000	52.621	-5.2	91	0.000
8	T	Trichlorofluoromethane	50.000	57.976	-16.0	100	0.000
9	T	Diethyl ether	50.000	50.176	-0.4	102	0.000
10	C	1,1-Dichloroethene	50.000	52.724	-5.4#	96	0.000
11	T	Carbon Disulfide	50.000	51.230	-2.5	94	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.000	53.725	-7.5	96	0.000
13	T	Iodomethane	-1.000	0.000	0.0	0	0.000
14	T	Acrolein	50.000	45.725	8.5	103	0.000
15	T	Methylene Chloride	50.000	44.787	10.4	92	0.000
16	T	Acetone	50.000	42.189	15.6	94	0.000
17	T	trans-1,2-Dichloroethene	50.000	49.475	1.0	93	0.000
18	T	Methyl acetate	50.000	48.689	2.6	98	0.000
19	T	Methyl Tert Butyl Ether	50.000	45.902	8.2	94	0.000
20	P	1,1-Dichloroethane	50.000	48.999	2.0	90	0.000
21	T	Acrylonitrile	50.000	43.927	12.1	93	0.000
22	T	Vinyl Acetate	50.000	46.560	6.9	98	0.000
23	T	cis-1,2-Dichloroethene	50.000	48.050	3.9	92	0.000
24	T	2,2-Dichloropropane	50.000	55.220	-10.4	93	0.000
25	T	Cyclohexane	50.000	47.895	4.2	86	0.000
26	T	Bromochloromethane	50.000	49.796	0.4	94	0.000
27	C	Chloroform	50.000	47.786	4.4#	93	0.000
28	T	Carbon Tetrachloride	50.000	50.387	-0.8	91	0.000
29	S	Dibromofluoromethane	25.000	25.786	-3.1	92	0.000
30	T	1,1,1-Trichloroethane	50.000	49.413	1.2	93	0.000
31	T	1,1-Dichloropropene	50.000	49.805	0.4	91	0.000
32	T	2-Butanone	50.000	42.970	14.1	92	0.000
33	T	Benzene	50.000	48.334	3.3	90	0.000
34	S	1,2-Dichloroethane-d4	25.000	25.505	-2.0	93	0.000
35	T	1,2-Dichloroethane	50.000	48.490	3.0	94	0.000
36	T	Methylcyclohexane	50.000	46.669	6.7	87	0.000
37	T	Trichloroethene	50.000	49.026	1.9	92	0.000
38	T	Dibromomethane	50.000	45.832	8.3	93	0.000
39	C	1,2-Dichloropropane	50.000	47.833	4.3#	90	0.000
40	T	Bromodichloromethane	50.000	49.029	1.9	92	0.000
41	T	1,4-Dioxane	100.000	103.728	-3.7	94	0.000
42	T	2-Chloroethyl Vinyl Ether	50.000	44.684	10.6	89	0.000
43	T	cis-1,3-Dichloropropene	50.000	48.884	2.2	90	0.000
44	T	4-Methyl-2-Pentanone	50.000	41.746	16.5	94	0.000
45	T	trans-1,3-Dichloropropene	50.000	48.584	2.8	92	0.000
46	I	Chlorobenzene-d5	25.000	25.000	0.0	90	0.000
47	S	Toluene-d8	25.000	25.683	-2.7	90	0.000
48	C	Toluene	50.000	48.792	2.4#	91	0.000
49	T	Tetrachloroethene	50.000	50.151	-0.3	94	0.000
50	T	1,1,2-Trichloroethane	50.000	44.340	11.3	93	0.000
51	T	Dibromochloromethane	50.000	48.170	3.7	94	0.000
52	T	1,3-Dichloropropane	50.000	46.092	7.8	92	0.000
53	T	1,2-Dibromoethane	50.000	44.946	10.1	92	0.000
54	T	2-Hexanone	50.000	41.486	17.0	94	0.000
55	P	Chlorobenzene	50.000	49.614	0.8	92	0.000

Data Path : D:\MassHunter\GCMS\1\data\111315\
Data File : 17M016433.D
Acq On : 13 Nov 2015 13:50
Operator : ADC
Sample : WG546843-02 50ug/L CCV STD
Misc : 1,1 STD73185
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 13 14:02:24 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	1-Chlorohexane	50.000	46.761	6.5	86	0.000
57	C	Ethylbenzene	50.000	49.610	0.8#	92	0.000
58	T	1,1,1,2-Tetrachloroethane	50.000	49.810	0.4	93	0.000
59	T	m-,p-Xylene	100.000	102.570	-2.6	93	0.000
60	T	o-Xylene	50.000	48.864	2.3	91	0.000
61	T	Styrene	50.000	49.631	0.7	92	0.000
62	P	Bromoform	50.000	49.424	1.2	100	0.000
63	T	Isopropylbenzene	50.000	50.320	-0.6	93	0.000
64	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	91	0.000
65	T	1,3,5-Trimethylbenzene	50.000	50.524	-1.0	92	0.000
66	S	p-Bromofluorobenzene	25.000	25.751	-3.0	91	0.000
67	T	Bromobenzene	50.000	48.742	2.5	94	0.000
68	T	n-Propylbenzene	50.000	51.590	-3.2	92	0.000
69	P	1,1,2,2-Tetrachloroethane	50.000	45.076	9.8	95	0.000
70	T	2-Chlorotoluene	50.000	49.916	0.2	92	0.000
71	T	1,2,3-Trichloropropane	50.000	43.234	13.5	95	0.000
72	T	trans-1,4-Dichloro-2-Butene	50.000	46.492	7.0	101	0.000
73	T	1,2,4-Trimethylbenzene	50.000	50.525	-1.0	92	0.000
74	T	4-Chlorotoluene	50.000	49.612	0.8	90	0.000
75	T	tert-Butylbenzene	50.000	50.556	-1.1	93	0.000
76	T	sec-Butylbenzene	50.000	51.387	-2.8	93	0.000
77	T	p-Isopropyltoluene	50.000	52.247	-4.5	93	0.000
78	T	1,3-Dichlorobenzene	50.000	50.547	-1.1	94	0.000
79	T	1,4-Dichlorobenzene	50.000	49.291	1.4	94	0.000
80	T	n-Butylbenzene	50.000	52.443	-4.9	93	0.000
81	T	1,2-Dichlorobenzene	50.000	48.822	2.4	94	0.000
82	T	1,2-Dibromo-3-Chloropropane	50.000	44.489	11.0	96	0.000
83	T	Hexachlorobutadiene	50.000	51.442	-2.9	91	0.000
84	T	1,2,4-Trichlorobenzene	50.000	50.154	-0.3	93	0.000
85	T	Naphthalene	50.000	45.055	9.9	94	0.000
86	T	1,2,3-Trichlorobenzene	50.000	47.857	4.3	93	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Data Path : D:\MassHunter\GCMS\1\data\112415\
Data File : 17M016666.D
Acq On : 24 Nov 2015 20:26
Operator : JDS/FJB
Sample : WG548398-02 50ug/L CCV STD
Misc : 1,1 STD73343
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 24 20:38:01 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.138	96	343108	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	251956	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.305	152	138372	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.177	111	96273	27.3525 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.410%		
34) 1,2-Dichloroethane-d4	4.811	65	93110	27.5465 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 110.186%		
47) Toluene-d8	6.710	98	363994	28.0262 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 112.105%#		
66) p-Bromofluorobenzene	8.723	95	131844	27.5636 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 110.254%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.038	85	261103	53.5117 ug/L	99
3) Chloromethane	1.149	50	214629	41.2953 ug/L	100
4) Vinyl Chloride	1.195	62	236728	50.9897 ug/L	100
5) 1,3-Butadiene	1.206	54	136360	45.6958 ug/L	99
6) Bromomethane	1.380	94	135995	55.5360 ug/L	99
7) Chloroethane	1.450	64	153539	64.7731 ug/L	91
8) Trichlorofluoromethane	1.534	101	336119	62.4238 ug/L	100
9) Diethyl ether	1.748	59	136386	49.7860 ug/L	100
10) 1,1-Dichloroethene	1.864	61	288385	53.5426 ug/L	100
11) Carbon Disulfide	1.878	76	532609	46.9503 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.893	101	172135	51.5395 ug/L	99
14) Acrolein	2.113	56	14839	40.4417 ug/L	97
15) Methylene Chloride	2.289	84	175017	43.9178 ug/L	99
16) Acetone	2.341	43	30379	44.0948 ug/L	97
17) trans-1,2-Dichloroethene	2.420	96	171539	48.7140 ug/L	98
18) Methyl acetate	2.449	43	102655	52.3995 ug/L #	100
19) Methyl Tert Butyl Ether	2.530	73	401324	44.7100 ug/L	99
20) 1,1-Dichloroethane	2.975	63	325946	48.3656 ug/L	100
21) Acrylonitrile	3.036	53	40333	43.2372 ug/L	96
22) Vinyl Acetate	3.274	86	17679	42.1519 ug/L	94
23) cis-1,2-Dichloroethene	3.563	96	191700	47.4146 ug/L	98
24) 2,2-Dichloropropane	3.693	77	268274	53.2219 ug/L	100
25) Cyclohexane	3.792	56	292302	45.0657 ug/L	97
26) Bromochloromethane	3.804	130	118021	49.4361 ug/L	100
27) Chloroform	3.934	83	318741	47.7384 ug/L	99
28) Carbon Tetrachloride	4.076	117	267935	51.6790 ug/L	100
30) 1,1,1-Trichloroethane	4.177	97	289100	49.3639 ug/L	99
31) 1,1-Dichloropropene	4.345	75	245082	49.3637 ug/L	99
32) 2-Butanone	4.365	43	47774	42.2150 ug/L	99
33) Benzene	4.646	78	701247	47.5545 ug/L	99
35) 1,2-Dichloroethane	4.889	62	215339	48.5312 ug/L	99
36) Methylcyclohexane	5.295	83	303540	44.0227 ug/L	98
37) Trichloroethene	5.324	130	201025	49.1259 ug/L	98
38) Dibromomethane	5.741	93	102137	46.6757 ug/L	100
39) 1,2-Dichloropropane	5.848	63	187672	46.2997 ug/L	97
40) Bromodichloromethane	5.937	83	244215	48.4606 ug/L	100
41) 1,4-Dioxane	6.149	88	2459	99.8803 ug/L	89
42) 2-Chloroethyl Vinyl Ether	6.528	63	84439	41.2150 ug/L	99
43) cis-1,3-Dichloropropene	6.545	75	283264	47.6757 ug/L	100
44) 4-Methyl-2-Pentanone	7.814	58	38079	37.8335 ug/L	98
45) trans-1,3-Dichloropropene	7.145	75	243521	47.9044 ug/L	99
48) Toluene	6.757	91	797347	49.9530 ug/L	99
49) Tetrachloroethene	7.087	166	220709	51.3012 ug/L	98
50) 1,1,2-Trichloroethane	7.275	97	134425	45.2703 ug/L	99

Data Path : D:\MassHunter\GCMS\1\data\112415\
Data File : 17M016666.D
Acq On : 24 Nov 2015 20:26
Operator : JDS/FJB
Sample : WG548398-02 50ug/L CCV STD
Misc : 1,1 STD73343
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 24 20:38:01 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
51)	Dibromochloromethane	7.414	129	189743	49.4973 ug/L	100
52)	1,3-Dichloropropane	7.498	76	221480	47.0261 ug/L	98
53)	1,2-Dibromoethane	7.585	107	139358	47.2941 ug/L	99
54)	2-Hexanone	7.814	43	75324	39.4558 ug/L	98
55)	Chlorobenzene	7.984	112	518101	50.3654 ug/L	99
56)	1-Chlorohexane	7.999	69	48867	46.2503 ug/L	79
57)	Ethylbenzene	8.022	106	283310	50.5974 ug/L	98
58)	1,1,1,2-Tetrachloroethane	8.037	131	192778	50.6195 ug/L	99
59)	m-,p-Xylene	8.123	106	705952	105.0921 ug/L	100
60)	o-Xylene	8.384	106	329556	49.7177 ug/L	99
61)	Styrene	8.419	104	557648	50.6224 ug/L	100
62)	Bromoform	8.419	173	134112	53.0630 ug/L	100
63)	Isopropylbenzene	8.575	105	897688	51.9537 ug/L	100
65)	1,3,5-Trimethylbenzene	8.911	105	791049	52.2098 ug/L	100
67)	Bromobenzene	8.775	156	236206	49.8771 ug/L	96
68)	n-Propylbenzene	8.804	91	1066429	53.9249 ug/L	100
69)	1,1,2,2-Tetrachloroethane	8.844	83	162850	47.4091 ug/L	100
70)	2-Chlorotoluene	8.879	91	620131	51.2723 ug/L	99
71)	1,2,3-Trichloropropane	8.908	110	44572	46.6189 ug/L	96
72)	trans-1,4-Dichloro-2-B...	8.937	53	34565	43.4907 ug/L #	98
73)	1,2,4-Trimethylbenzene	9.111	105	785355	51.9240 ug/L	100
74)	4-Chlorotoluene	8.969	91	635059	51.0317 ug/L	97
75)	tert-Butylbenzene	9.076	134	144360	51.9580 ug/L	100
76)	sec-Butylbenzene	9.166	105	1002719	53.8574 ug/L	100
77)	p-Isopropyltoluene	9.238	119	869913	54.0257 ug/L	100
78)	1,3-Dichlorobenzene	9.267	146	456363	52.4749 ug/L	98
79)	1,4-Dichlorobenzene	9.310	146	451866	50.9352 ug/L	99
80)	n-Butylbenzene	9.441	91	801614	54.0908 ug/L	100
81)	1,2-Dichlorobenzene	9.513	146	413354	49.9260 ug/L	98
82)	1,2-Dibromo-3-Chloropr...	9.890	75	29365	45.5508 ug/L	98
83)	Hexachlorobutadiene	10.188	225	188554	49.4767 ug/L	99
84)	1,2,4-Trichlorobenzene	10.202	180	323251	48.9228 ug/L	99
85)	Naphthalene	10.353	128	539832	44.1086 ug/L	100
86)	1,2,3-Trichlorobenzene	10.437	180	282583	46.3402 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\112415\
Data File : 17M016666.D
Acq On : 24 Nov 2015 20:26
Operator : JDS/FJB
Sample : WG548398-02 50ug/L CCV STD
Misc : 1,1 STD73343
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 24 20:38:01 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

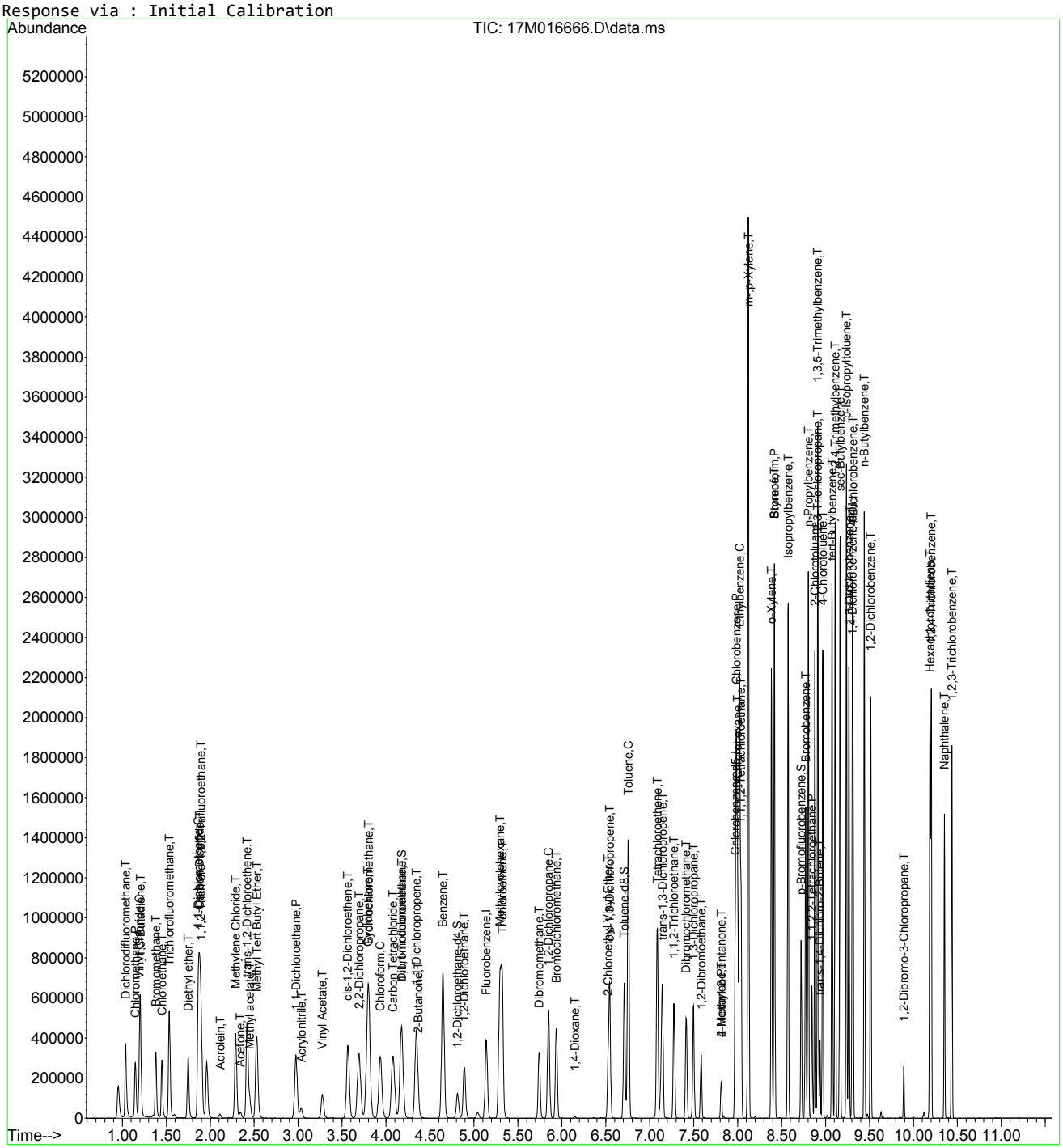

8260_VMS.M Tue Nov 24 20:38:02 2015 Page: 3

Data Path : D:\MassHunter\GCMS\1\data\112415\
Data File : 17M016666.D
Acq On : 24 Nov 2015 20:26
Operator : JDS/FJB
Sample : WG548398-02 50ug/L CCV STD
Misc : 1,1 STD73343
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 24 20:38:01 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.000	1.000	0.0	75	0.000
2	T	Dichlorodifluoromethane	0.356	0.380	-6.7	78	0.000
3	P	Chloromethane	0.379	0.313	17.4	66	0.000
4	C	Vinyl Chloride	0.338	0.345	-2.1#	78	0.000
5	T	1,3-Butadiene	0.217	0.199	8.3	73	0.000
6	T	Bromomethane	0.178	0.198	-11.2	95	0.000
7	T	Chloroethane	0.173	0.224	-29.5#	95	0.000
8	T	Trichlorofluoromethane	0.390	0.490	-25.6#	91	0.000
9	T	Diethyl ether	0.200	0.199	0.5	85	0.000
10	C	1,1-Dichloroethene	0.392	0.420	-7.1#	82	0.000
11	T	Carbon Disulfide	0.827	0.776	6.2	72	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.243	0.251	-3.3	78	0.000
13	T	Iodomethane	0.000	0.000	0.0	0#	0.000
14	T	Acrolein	0.027	0.022	18.5	77	0.000
15	T	Methylene Chloride	0.290	0.255	12.1	76	0.000
16	T	Acetone	0.051	0.044	13.7	83	0.000
17	T	trans-1,2-Dichloroethene	0.257	0.250	2.7	77	0.000
18	T	Methyl acetate	0.143	0.150	-4.9	89	0.000
19	T	Methyl Tert Butyl Ether	0.654	0.585	10.6	77	0.000
20	P	1,1-Dichloroethane	0.491	0.475	3.3	75	0.000
21	T	Acrylonitrile	0.068	0.059	13.2	77	0.000
22	T	Vinyl Acetate	0.028	0.026	7.1	74	0.000
23	T	cis-1,2-Dichloroethene	0.295	0.279	5.4	76	0.000
24	T	2,2-Dichloropropane	0.367	0.391	-6.5	75	0.000
25	T	Cyclohexane	0.473	0.426	9.9	68	0.000
26	T	Bromochloromethane	0.174	0.172	1.1	78	0.000
27	C	Chloroform	0.486	0.464	4.5#	78	0.000
28	T	Carbon Tetrachloride	0.378	0.390	-3.2	79	0.000
29	S	Dibromofluoromethane	0.256	0.281	-9.8	82	0.000
30	T	1,1,1-Trichloroethane	0.427	0.421	1.4	78	0.000
31	T	1,1-Dichloropropene	0.362	0.357	1.4	76	0.000
32	T	2-Butanone	0.082	0.070	14.6	76	0.000
33	T	Benzene	1.074	1.022	4.8	75	0.000
34	S	1,2-Dichloroethane-d4	0.246	0.271	-10.2	85	0.000
35	T	1,2-Dichloroethane	0.323	0.314	2.8	79	0.000
36	T	Methylcyclohexane	0.502	0.442	12.0	69	0.000
37	T	Trichloroethene	0.298	0.293	1.7	78	0.000
38	T	Dibromomethane	0.159	0.149	6.3	80	0.000
39	C	1,2-Dichloropropane	0.295	0.273	7.5#	73	0.000
40	T	Bromodichloromethane	0.367	0.356	3.0	77	0.000
41	T	1,4-Dioxane	0.002	0.002	0.0	76	0.000
42	T	2-Chloroethyl Vinyl Ether	0.149	0.123	17.4	70	0.000
43	T	cis-1,3-Dichloropropene	0.433	0.413	4.6	74	0.000
44	T	4-Methyl-2-Pentanone	0.073	0.055	24.7	72	0.000
45	T	trans-1,3-Dichloropropene	0.370	0.355	4.1	76	0.000
46	I	Chlorobenzene-d5	1.000	1.000	0.0	74	0.000
47	S	Toluene-d8	1.289	1.445	-12.1	81	0.000
48	C	Toluene	1.584	1.582	0.1#	76	0.000
49	T	Tetrachloroethene	0.427	0.438	-2.6	79	0.000
50	T	1,1,2-Trichloroethane	0.295	0.267	9.5	78	0.000
51	T	Dibromochloromethane	0.380	0.377	0.8	80	0.000
52	T	1,3-Dichloropropane	0.467	0.440	5.8	77	0.000
53	T	1,2-Dibromoethane	0.292	0.277	5.1	79	0.000
54	T	2-Hexanone	0.189	0.149	21.2	74	0.000
55	P	Chlorobenzene	1.021	1.028	-0.7	77	0.000

Data Path : D:\MassHunter\GCMS\1\data\112415\
Data File : 17M016666.D
Acq On : 24 Nov 2015 20:26
Operator : JDS/FJB
Sample : WG548398-02 50ug/L CCV STD
Misc : 1,1 STD73343
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 24 20:38:01 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
56	T	1-Chlorohexane	0.105	0.097	7.6	70	0.000
57	C	Ethylbenzene	0.556	0.562	-1.1#	77	0.000
58	T	1,1,1,2-Tetrachloroethane	0.378	0.383	-1.3	78	0.000
59	T	m-,p-Xylene	0.667	0.700	-4.9	79	0.000
60	T	o-Xylene	0.658	0.654	0.6	76	0.000
61	T	Styrene	1.093	1.107	-1.3	77	0.000
62	P	Bromoform	0.251	0.266	-6.0	88	0.000
63	T	Isopropylbenzene	1.714	1.781	-3.9	78	0.000
64	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	75	0.000
65	T	1,3,5-Trimethylbenzene	2.737	2.858	-4.4	78	0.000
66	S	p-Bromofluorobenzene	0.864	0.953	-10.3	79	0.000
67	T	Bromobenzene	0.856	0.854	0.2	79	0.000
68	T	n-Propylbenzene	3.573	3.853	-7.8	79	0.000
69	P	1,1,2,2-Tetrachloroethane	0.621	0.588	5.3	82	0.000
70	T	2-Chlorotoluene	2.185	2.241	-2.6	77	0.000
71	T	1,2,3-Trichloropropane	0.173	0.161	6.9	84	0.000
72	T	trans-1,4-Dichloro-2-Butene	0.144	0.125	13.2	77	0.000
73	T	1,2,4-Trimethylbenzene	2.733	2.838	-3.8	78	0.000
74	T	4-Chlorotoluene	2.248	2.295	-2.1	76	0.000
75	T	tert-Butylbenzene	0.502	0.522	-4.0	78	0.000
76	T	sec-Butylbenzene	3.364	3.623	-7.7	80	0.000
77	T	p-Isopropyltoluene	2.909	3.143	-8.0	79	0.000
78	T	1,3-Dichlorobenzene	1.571	1.649	-5.0	80	0.000
79	T	1,4-Dichlorobenzene	1.603	1.633	-1.9	80	0.000
80	T	n-Butylbenzene	2.678	2.897	-8.2	78	0.000
81	T	1,2-Dichlorobenzene	1.496	1.494	0.1	79	0.000
82	T	1,2-Dibromo-3-Chloropropane	0.116	0.106	8.6	80	0.000
83	T	Hexachlorobutadiene	0.689	0.681	1.2	72	0.000
84	T	1,2,4-Trichlorobenzene	1.194	1.168	2.2	75	0.000
85	T	Naphthalene	2.211	1.951	11.8	75	0.000
86	T	1,2,3-Trichlorobenzene	1.102	1.021	7.4	74	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\112415\
Data File : 17M016666.D
Acq On : 24 Nov 2015 20:26
Operator : JDS/FJB
Sample : WG548398-02 50ug/L CCV STD
Misc : 1,1 STD73343
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 24 20:38:01 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	75	0.000
2	T	Dichlorodifluoromethane	50.000	53.512	-7.0	78	0.000
3	P	Chloromethane	50.000	41.295	17.4	66	0.000
4	C	Vinyl Chloride	50.000	50.990	-2.0#	78	0.000
5	T	1,3-Butadiene	50.000	45.696	8.6	73	0.000
6	T	Bromomethane	50.000	55.536	-11.1	95	0.000
7	T	Chloroethane	50.000	64.773	-29.5#	95	0.000
8	T	Trichlorofluoromethane	50.000	62.424	-24.8	91	0.000
9	T	Diethyl ether	50.000	49.786	0.4	85	0.000
10	C	1,1-Dichloroethene	50.000	53.543	-7.1#	82	0.000
11	T	Carbon Disulfide	50.000	46.950	6.1	72	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.000	51.539	-3.1	78	0.000
13	T	Iodomethane	-1.000	0.000	0.0	0	0.000
14	T	Acrolein	50.000	40.442	19.1	77	0.000
15	T	Methylene Chloride	50.000	43.918	12.2	76	0.000
16	T	Acetone	50.000	44.095	11.8	83	0.000
17	T	trans-1,2-Dichloroethene	50.000	48.714	2.6	77	0.000
18	T	Methyl acetate	50.000	52.399	-4.8	89	0.000
19	T	Methyl Tert Butyl Ether	50.000	44.710	10.6	77	0.000
20	P	1,1-Dichloroethane	50.000	48.366	3.3	75	0.000
21	T	Acrylonitrile	50.000	43.237	13.5	77	0.000
22	T	Vinyl Acetate	50.000	42.152	15.7	74	0.000
23	T	cis-1,2-Dichloroethene	50.000	47.415	5.2	76	0.000
24	T	2,2-Dichloropropane	50.000	53.222	-6.4	75	0.000
25	T	Cyclohexane	50.000	45.066	9.9	68	0.000
26	T	Bromochloromethane	50.000	49.436	1.1	78	0.000
27	C	Chloroform	50.000	47.738	4.5#	78	0.000
28	T	Carbon Tetrachloride	50.000	51.679	-3.4	79	0.000
29	S	Dibromofluoromethane	25.000	27.353	-9.4	82	0.000
30	T	1,1,1-Trichloroethane	50.000	49.364	1.3	78	0.000
31	T	1,1-Dichloropropene	50.000	49.364	1.3	76	0.000
32	T	2-Butanone	50.000	42.215	15.6	76	0.000
33	T	Benzene	50.000	47.554	4.9	75	0.000
34	S	1,2-Dichloroethane-d4	25.000	27.547	-10.2	85	0.000
35	T	1,2-Dichloroethane	50.000	48.531	2.9	79	0.000
36	T	Methylcyclohexane	50.000	44.023	12.0	69	0.000
37	T	Trichloroethene	50.000	49.126	1.7	78	0.000
38	T	Dibromomethane	50.000	46.676	6.6	80	0.000
39	C	1,2-Dichloropropane	50.000	46.300	7.4#	73	0.000
40	T	Bromodichloromethane	50.000	48.461	3.1	77	0.000
41	T	1,4-Dioxane	100.000	99.880	0.1	76	0.000
42	T	2-Chloroethyl Vinyl Ether	50.000	41.215	17.6	70	0.000
43	T	cis-1,3-Dichloropropene	50.000	47.676	4.6	74	0.000
44	T	4-Methyl-2-Pentanone	50.000	37.833	24.3	72	0.000
45	T	trans-1,3-Dichloropropene	50.000	47.904	4.2	76	0.000
46	I	Chlorobenzene-d5	25.000	25.000	0.0	74	0.000
47	S	Toluene-d8	25.000	28.026	-12.1	81	0.000
48	C	Toluene	50.000	49.953	0.1#	76	0.000
49	T	Tetrachloroethene	50.000	51.301	-2.6	79	0.000
50	T	1,1,2-Trichloroethane	50.000	45.270	9.5	78	0.000
51	T	Dibromochloromethane	50.000	49.497	1.0	80	0.000
52	T	1,3-Dichloropropane	50.000	47.026	5.9	77	0.000
53	T	1,2-Dibromoethane	50.000	47.294	5.4	79	0.000
54	T	2-Hexanone	50.000	39.456	21.1	74	0.000
55	P	Chlorobenzene	50.000	50.365	-0.7	77	0.000

Data Path : D:\MassHunter\GCMS\1\data\112415\
Data File : 17M016666.D
Acq On : 24 Nov 2015 20:26
Operator : JDS/FJB
Sample : WG548398-02 50ug/L CCV STD
Misc : 1,1 STD73343
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 24 20:38:01 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	1-Chlorohexane	50.000	46.250	7.5	70	0.000
57	C	Ethylbenzene	50.000	50.597	-1.2#	77	0.000
58	T	1,1,1,2-Tetrachloroethane	50.000	50.620	-1.2	78	0.000
59	T	m-,p-Xylene	100.000	105.092	-5.1	79	0.000
60	T	o-Xylene	50.000	49.718	0.6	76	0.000
61	T	Styrene	50.000	50.622	-1.2	77	0.000
62	P	Bromoform	50.000	53.063	-6.1	88	0.000
63	T	Isopropylbenzene	50.000	51.954	-3.9	78	0.000
64	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	75	0.000
65	T	1,3,5-Trimethylbenzene	50.000	52.210	-4.4	78	0.000
66	S	p-Bromofluorobenzene	25.000	27.564	-10.3	79	0.000
67	T	Bromobenzene	50.000	49.877	0.2	79	0.000
68	T	n-Propylbenzene	50.000	53.925	-7.8	79	0.000
69	P	1,1,2,2-Tetrachloroethane	50.000	47.409	5.2	82	0.000
70	T	2-Chlorotoluene	50.000	51.272	-2.5	77	0.000
71	T	1,2,3-Trichloropropane	50.000	46.619	6.8	84	0.000
72	T	trans-1,4-Dichloro-2-Butene	50.000	43.491	13.0	77	0.000
73	T	1,2,4-Trimethylbenzene	50.000	51.924	-3.8	78	0.000
74	T	4-Chlorotoluene	50.000	51.032	-2.1	76	0.000
75	T	tert-Butylbenzene	50.000	51.958	-3.9	78	0.000
76	T	sec-Butylbenzene	50.000	53.857	-7.7	80	0.000
77	T	p-Isopropyltoluene	50.000	54.026	-8.1	79	0.000
78	T	1,3-Dichlorobenzene	50.000	52.475	-5.0	80	0.000
79	T	1,4-Dichlorobenzene	50.000	50.935	-1.9	80	0.000
80	T	n-Butylbenzene	50.000	54.091	-8.2	78	0.000
81	T	1,2-Dichlorobenzene	50.000	49.926	0.1	79	0.000
82	T	1,2-Dibromo-3-Chloropropane	50.000	45.551	8.9	80	0.000
83	T	Hexachlorobutadiene	50.000	49.477	1.0	72	0.000
84	T	1,2,4-Trichlorobenzene	50.000	48.923	2.2	75	0.000
85	T	Naphthalene	50.000	44.109	11.8	75	0.000
86	T	1,2,3-Trichlorobenzene	50.000	46.340	7.3	74	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\111615\8M408707.D Vial: 2
Acq On : 16 Nov 2015 11:39 Operator: TMB
Sample : WG547022-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD73419 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 16 12:01:50 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	1324109	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	984624	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	550847	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	325721	25.8466 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.40%		
43) 1,2-Dichloroethane-d4	10.30	65	318021	24.7511 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.00%		
58) Toluene-d8	12.69	98	1163061	25.4585 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.84%		
80) p-Bromofluorobenzene	16.08	95	462058	24.0406 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.16%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	1189130	59.0715 ug/L	98
3) Chloromethane	3.63	50	1771411	57.6693 ug/L	100
4) Vinyl Chloride	3.84	62	1405525	57.9044 ug/L	99
5) 1,3-Butadiene	3.89	54	1185919	80.0941 ug/L	99
6) Bromomethane	4.74	94	497050	59.3497 ug/L	98
7) Chloroethane	4.90	64	537299	54.2577 ug/L	97
8) Trichlorofluoromethane	5.38	101	1264768	53.9111 ug/L	98
9) Diethyl ether	5.91	59	828101	91.7099 ug/L	97
10) Isoprene	5.94	67	948677	55.0800 ug/L	95
11) Acrolein	6.14	56	40801	36.4094 ug/L	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	682594	54.1275 ug/L	99
13) Acetone	6.24	43	100172	50.9698 ug/L	98
14) 1,1-Dichloroethene	6.47	61	1160006	54.0368 ug/L	99
15) Tert-Butyl Alcohol	6.59	59	106753	183.8320 ug/L	94
16) Dimethyl Sulfide	6.74	62	622268	50.5062 ug/L	99
17) Iodomethane	7.00	142	184259	23.4825 ug/L	90
18) Methyl acetate	7.01	43	329027	44.2723 ug/L	97
19) Methylene Chloride	7.26	84	672466	50.4384 ug/L	100
20) Carbon Disulfide	7.30	76	2353228	54.0556 ug/L	99
21) Acrylonitrile	7.44	53	149707	50.7422 ug/L	100
22) Methyl Tert Butyl Ether	7.47	73	1228308	48.6004 ug/L	99
23) trans-1,2-Dichloroethene	7.71	61	1081389	53.0456 ug/L	98
24) n-Hexane	7.79	57	1110525	55.1443 ug/L	94
25) Diisopropyl ether	8.13	45	4935275	98.2070 ug/L	98
26) Vinyl Acetate	8.30	43	940603	70.4251 ug/L	99
27) 1,1-Dichloroethane	8.33	63	1355832	52.3737 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	3725577	94.1216 ug/L	98
29) 2-Butanone	8.89	43	162116	47.8786 ug/L	99
30) Propionitrile	8.99	54	96497	97.1284 ug/L	99
31) 2,2-Dichloropropane	9.11	77	1128479	52.1597 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	757099	52.0510 ug/L	99
33) Chloroform	9.38	83	1268426	51.5813 ug/L	100
34) 1-Bromopropane	9.52	122	130013	54.4326 ug/L	98
35) Bromochloromethane	9.61	130	374651	52.3232 ug/L	99
36) Tetrahydrofuran	9.63	42	466784	210.0138 ug/L	97
38) 1,1,1-Trichloroethane	9.91	97	1156574	52.3965 ug/L	97
39) Cyclohexane	9.94	56	1403462	53.4303 ug/L	98
40) 1,1-Dichloropropene	10.11	75	984423	51.7976 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	2680334	91.3286 ug/L	98
42) Carbon Tetrachloride	10.25	117	1064426	53.9567 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M408707.D 8260WT.M Mon Nov 16 12:01:51 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\111615\8M408707.D Vial: 2
Acq On : 16 Nov 2015 11:39 Operator: TMB
Sample : WG547022-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD73419 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 16 12:01:50 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.43	62	850694	50.3771 ug/L	100
46)	Benzene	10.47	78	2705333	51.8774 ug/L	99
47)	Trichloroethene	11.21	130	706798	50.3465 ug/L	97
48)	Methylcyclohexane	11.31	83	1127167	51.8904 ug/L	98
49)	1,2-Dichloropropane	11.43	63	708644	50.4420 ug/L	97
50)	Bromodichloromethane	11.73	83	921803	50.8348 ug/L	99
51)	1,4-Dioxane	11.72	88	15325	236.9419 ug/L	85
52)	Dibromomethane	11.81	93	328737	49.1410 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.03	63	267514	46.1992 ug/L	97
54)	4-Methyl-2-Pentanone	12.06	58	130747	44.0152 ug/L	98
55)	cis-1,3-Dichloropropene	12.36	75	1020096	50.6761 ug/L	99
56)	Dimethyl Disulfide	12.63	79	534148	49.2106 ug/L	96
59)	Toluene	12.78	91	2808120	50.1897 ug/L	99
60)	Ethyl Methacrylate	12.88	69	543481	48.7220 ug/L	94
62)	trans-1,3-Dichloropropene	12.96	75	842540	49.0853 ug/L	100
63)	1,1,2-Trichloroethane	13.18	97	424290	47.7780 ug/L	98
64)	2-Hexanone	13.12	58	115703	41.4409 ug/L #	89
65)	1,3-Dichloropropane	13.49	76	735261	46.3307 ug/L	94
66)	Tetrachloroethene	13.60	164	605364	50.8957 ug/L	98
67)	Dibromochloromethane	13.87	129	575592	50.1317 ug/L	100
68)	1,2-Dibromoethane	14.13	107	420629	47.4430 ug/L	99
69)	1-Chlorohexane	14.21	91	1015506	50.7233 ug/L	98
70)	Chlorobenzene	14.62	112	1864238	49.7263 ug/L	99
71)	1,1,1,2-Tetrachloroethane	14.66	131	709966	51.2168 ug/L	98
72)	Ethylbenzene	14.66	106	1076770	49.3041 ug/L	90
73)	m-,p-Xylene	14.75	106	2554919	102.0112 ug/L	91
74)	o-Xylene	15.31	106	1252024	49.4341 ug/L	94
75)	Styrene	15.35	104	2058218	51.2915 ug/L	99
76)	Bromoform	15.83	173	354211	51.3179 ug/L	99
77)	Isopropylbenzene	15.73	105	3149149	51.8334 ug/L	99
79)	1,1,2,2-Tetrachloroethane	15.95	83	459301	45.1942 ug/L	98
81)	1,2,3-Trichloropropane	16.14	110	129466	45.8446 ug/L	60
82)	trans-1,4-Dichloro-2-Buten	16.18	53	192972	51.6715 ug/L	78
83)	n-Propylbenzene	16.24	91	3854566	48.3311 ug/L	98
84)	Bromobenzene	16.37	156	789445	48.7630 ug/L	98
85)	1,3,5-Trimethylbenzene	16.42	105	2745311	50.0670 ug/L	99
86)	2-Chlorotoluene	16.51	91	2594592	49.1172 ug/L	97
87)	4-Chlorotoluene	16.56	91	2222611	48.6516 ug/L	97
88)	a-Methylstyrene	16.83	118	1536087	51.3870 ug/L	99
89)	tert-Butylbenzene	16.89	134	585978	48.5777 ug/L	91
90)	1,2,4-Trimethylbenzene	16.94	105	2855598	51.5367 ug/L	100
91)	sec-Butylbenzene	17.16	105	3358877	49.3117 ug/L	96
92)	p-Isopropyltoluene	17.32	119	2823537	51.8455 ug/L	95
93)	1,3-Dichlorobenzene	17.51	146	1626615	50.3377 ug/L	99
94)	1,4-Dichlorobenzene	17.64	146	1595780	49.5912 ug/L	97
95)	n-Butylbenzene	17.84	91	2779513	54.7492 ug/L	96
96)	1,2-Dichlorobenzene	18.14	146	1397342	49.4195 ug/L	98
97)	1,2-Dibromo-3-Chloropropan	19.13	75	76302	42.8432 ug/L	95
98)	1,2,4-Trichlorobenzene	20.27	180	1005533	51.7629 ug/L	99
99)	Hexachlorobutadiene	20.42	225	473771	50.9902 ug/L	99
100)	Naphthalene	20.64	128	1463229	52.1006 ug/L	99
101)	1,2,3-Trichlorobenzene	20.95	180	835543	50.4390 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M408707.D 8260WT.M Mon Nov 16 12:01:51 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\111615\8M408707.D Vial: 2
Acq On : 16 Nov 2015 11:39 Operator: TMB
Sample : WG547022-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD73419 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 16 12:01 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration

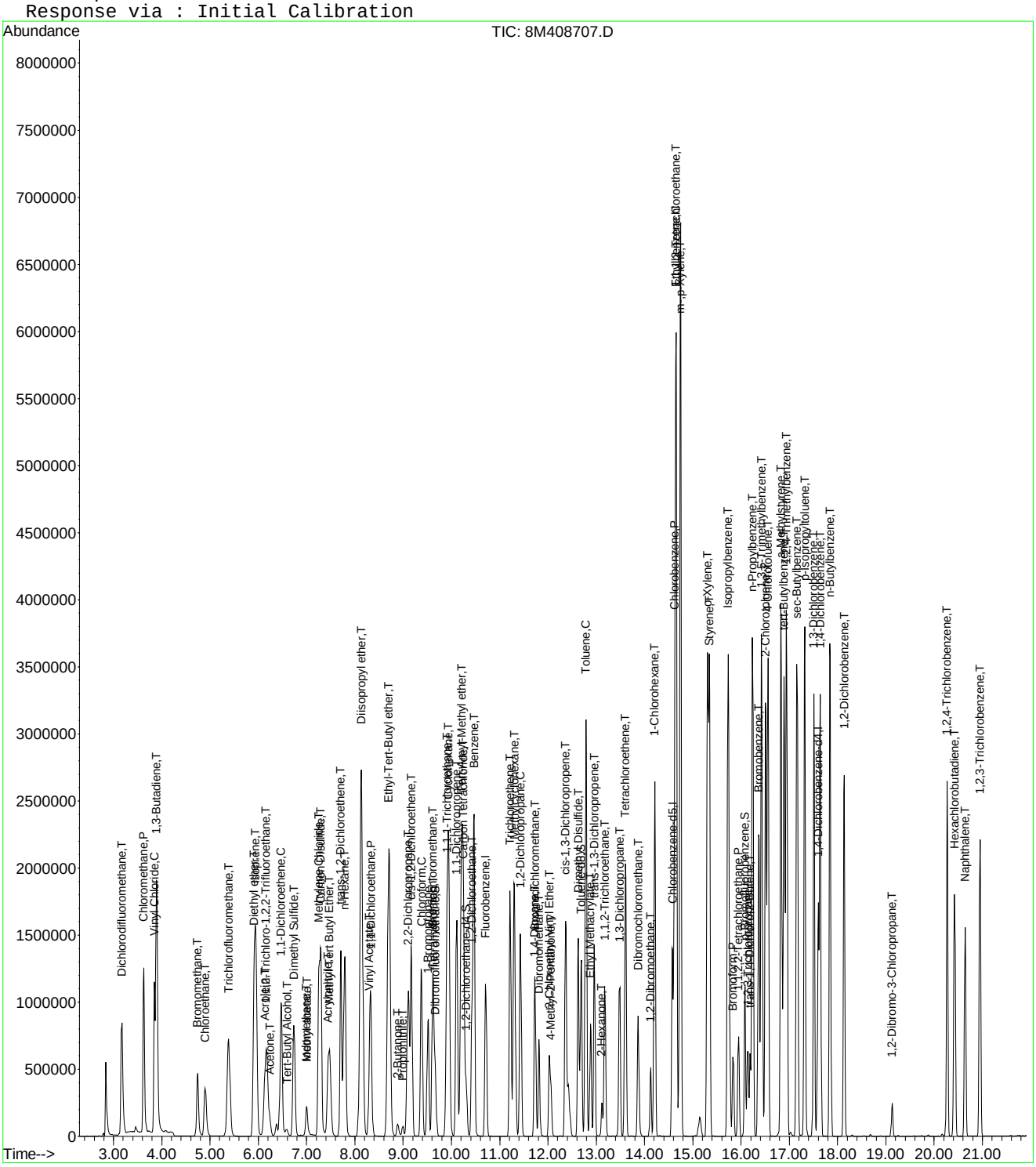

8M408707.D 8260WT.M Mon Nov 16 12:01:51 2015 Page 3

Continuing Calibration Area and RT check

Instrument: HPMS8
Initial cal date: 30 Sep 2015 13:27
CCV date: 16 Nov 2015 11:39
CCV Filename: 8M408707.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	938292	10.72	687265	14.58	378981	17.60
CCV	1324109	10.71	984624	14.58	550847	17.60

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\111615\8M408707.D Vial: 2
Acq On : 16 Nov 2015 11:39 Operator: TMB
Sample : WG547022-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD73419 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	141	0.00
2	T	Dichlorodifluoromethane	0.3801	0.4490	-18.1	162#	0.00
3	P	Chloromethane	0.5799	0.6689	-15.3	163#	0.00
4	C	Vinyl Chloride	0.4583	0.5307	-15.8	176#	0.00
5	T	1,3-Butadiene	0.2992	0.4478	-49.7#	200#	0.00
6	T	Bromomethane	0.1393	0.1877	-34.7#	186#	0.00
7	T	Chloroethane	0.1870	0.2029	-8.5	151#	0.00
8	T	Trichlorofluoromethane	0.4429	0.4776	-7.8	157#	0.00
9	T	Diethyl ether	0.1705	0.1563	8.3	135	0.00
10	T	Isoprene	0.3252	0.3582	-10.2	146	-0.01
11	T	Acrolein	0.0212	0.0154	27.2#	110	-0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2381	0.2578	-8.3	156#	0.00
13	T	Acetone	0.0371	0.0378	-1.9	160#	0.00
14	C	1,1-Dichloroethene	0.4053	0.4380	-8.1	160#	0.00
15	T	Tert-Butyl Alcohol	0.0110	0.0101	8.0	144	0.00
16	T	Dimethyl Sulfide	0.2326	0.2350	-1.0	141	0.00
17	T	Iodomethane	0.1277	0.0696	45.5#	66	0.00
18	T	Methyl acetate	0.1403	0.1242	11.5	138	0.00
19	T	Methylene Chloride	0.2517	0.2539	-0.9	147	0.00
20	T	Carbon Disulfide	0.8219	0.8886	-8.1	149	0.00
21	T	Acrylonitrile	0.0557	0.0565	-1.5	145	0.00
22	T	Methyl Tert Butyl Ether	0.4772	0.4638	2.8	141	0.00
23	T	trans-1,2-Dichloroethene	0.3849	0.4083	-6.1	150#	0.00
24	T	n-Hexane	0.3802	0.4194	-10.3	152#	0.00
25	T	Diisopropyl ether	0.9488	0.9318	1.8	139	0.00
26	T	Vinyl Acetate	0.2522	0.3552	-40.8#	198#	0.00
27	P	1,1-Dichloroethane	0.4888	0.5120	-4.7	151#	0.00
28	T	Ethyl-Tert-Butyl ether	0.7473	0.7034	5.9	134	0.00
29	T	2-Butanone	0.0639	0.0612	4.2	146	0.00
30	T	Propionitrile	0.0188	0.0182	2.9	146	0.00
31	T	2,2-Dichloropropane	0.4085	0.4261	-4.3	149	0.00
32	T	cis-1,2-Dichloroethene	0.2746	0.2859	-4.1	150#	0.00
33	C	Chloroform	0.4643	0.4790	-3.2	147	0.00
34		1-Bromopropane	0.0451	0.0491	-8.8	145	0.00
35	T	Bromochloromethane	0.1352	0.1415	-4.6	147	0.00
36	T	Tetrahydrofuran	0.0420	0.0881	-110.0#	322#	0.00
37	S	Dibromofluoromethane	0.2379	0.2460	-3.4	145	0.00
38	T	1,1,1-Trichloroethane	0.4168	0.4367	-4.8	147	0.00
39	T	Cyclohexane	0.4959	0.5300	-6.9	149	0.00
40	T	1,1-Dichloropropene	0.3588	0.3717	-3.6	147	0.00
41	T	Tert-Amyl-Methyl ether	0.5541	0.5061	8.7	132	0.00
42	T	Carbon Tetrachloride	0.3725	0.4019	-7.9	150#	0.00
43	S	1,2-Dichloroethane-d4	0.2426	0.2402	1.0	140	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.3188	0.3212	-0.8	142	0.00
46	T	Benzene	0.9846	1.0216	-3.8	143	0.00
47	T	Trichloroethene	0.2651	0.2669	-0.7	146	0.00
48	T	Methylcyclohexane	0.4101	0.4256	-3.8	144	0.00
49	C	1,2-Dichloropropane	0.2652	0.2676	-0.9	144	0.00
50	T	Bromodichloromethane	0.3424	0.3481	-1.7	141	0.00
51	T	1,4-Dioxane	0.0012	0.0014	-18.9	177#	0.00
52	T	Dibromomethane	0.1263	0.1241	1.7	140	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1093	0.1010	7.6	138	0.00
54	T	4-Methyl-2-Pentanone	0.0561	0.0494	12.0	136	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\111615\8M408707.D Vial: 2
Acq On : 16 Nov 2015 11:39 Operator: TMB
Sample : WG547022-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD73419 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.3801	0.3852	-1.4	140	0.00
56	T	Dimethyl Disulfide	0.2049	0.2017	1.6	141	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	143	0.00
58	S	Toluene-d8	1.1600	1.1812	-1.8	142	0.00
59	C	Toluene	1.4206	1.4260	-0.4	141	0.00
60	T	Ethyl Methacrylate	0.2832	0.2760	2.6	139	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.4358	0.4279	1.8	138	0.00
63	T	1,1,2-Trichloroethane	0.2255	0.2155	4.4	142	0.00
64	T	2-Hexanone	0.0709	0.0587	17.1	129	0.00
65	T	1,3-Dichloropropane	0.4029	0.3734	7.3	138	0.00
66	T	Tetrachloroethene	0.3020	0.3074	-1.8	149	0.00
67	T	Dibromochloromethane	0.2915	0.2923	-0.3	143	0.00
68	T	1,2-Dibromoethane	0.2251	0.2136	5.1	139	0.00
69	T	1-Chlorohexane	0.5083	0.5157	-1.4	142	0.00
70	P	Chlorobenzene	0.9519	0.9467	0.5	142	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3520	0.3605	-2.4	144	0.00
72	C	Ethylbenzene	0.5545	0.5468	1.4	144	0.00
73	T	m-,p-Xylene	0.6359	0.6487	-2.0	142	0.00
74	T	o-Xylene	0.6431	0.6358	1.1	143	0.00
75	T	Styrene	1.0189	1.0452	-2.6	140	0.00
76	P	Bromoform	0.1752	0.1799	-2.6	148	0.00
77	T	Isopropylbenzene	1.5426	1.5992	-3.7	143	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	145	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4612	0.4169	9.6	136	0.00
80	S	p-Bromofluorobenzene	0.8723	0.8388	3.8	140	0.00
81	T	1,2,3-Trichloropropane	0.1282	0.1175	8.3	138	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1695	0.1752	-3.3	151#	0.00
83	T	n-Propylbenzene	3.6196	3.4988	3.3	141	0.00
84	T	Bromobenzene	0.7348	0.7166	2.5	143	0.00
85	T	1,3,5-Trimethylbenzene	2.4886	2.4919	-0.1	140	0.00
86	T	2-Chlorotoluene	2.3974	2.3551	1.8	140	0.00
87	T	4-Chlorotoluene	2.0734	2.0175	2.7	136	0.00
88	T	a-Methylstyrene	1.3567	1.3943	-2.8	145	0.00
89	T	tert-Butylbenzene	0.5475	0.5319	2.8	146	0.00
90	T	1,2,4-Trimethylbenzene	2.5147	2.5920	-3.1	143	0.00
91	T	sec-Butylbenzene	3.0914	3.0488	1.4	143	0.00
92	T	p-Isopropyltoluene	2.4717	2.5629	-3.7	143	0.00
93	T	1,3-Dichlorobenzene	1.4666	1.4765	-0.7	146	0.00
94	T	1,4-Dichlorobenzene	1.4604	1.4485	0.8	146	0.00
95	T	n-Butylbenzene	2.3041	2.5229	-9.5	148	0.00
96	T	1,2-Dichlorobenzene	1.2833	1.2684	1.2	145	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.0808	0.0693	14.3	129	0.00
98	T	1,2,4-Trichlorobenzene	0.8816	0.9127	-3.5	147	0.00
99	T	Hexachlorobutadiene	0.4217	0.4300	-2.0	150	0.00
100	T	Naphthalene	1.2746	1.3282	-4.2	155#	0.00
101	T	1,2,3-Trichlorobenzene	0.7518	0.7584	-0.9	145	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M408707.D 8260WT.M Mon Nov 16 12:02:22 2015 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\111615\8M408707.D Vial: 2
Acq On : 16 Nov 2015 11:39 Operator: TMB
Sample : WG547022-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD73419 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	141	0.00
2	T	Dichlorodifluoromethane	50.0000	59.0714	-18.1	162	0.00
3	P	Chloromethane	50.0000	57.6693	-15.3	163	0.00
4	C	Vinyl Chloride	50.0000	57.9044	-15.8	176	0.00
5	T	1,3-Butadiene	50.0000	80.0941	-60.2#	200	0.00
6	T	Bromomethane	50.0000	59.3497	-18.7	186	0.00
7	T	Chloroethane	50.0000	54.2577	-8.5	151	0.00
8	T	Trichlorofluoromethane	50.0000	53.9111	-7.8	157	0.00
9	T	Diethyl ether	100.0000	91.7099	8.3	135	0.00
10	T	Isoprene	50.0000	55.0800	-10.2	146	-0.01
11	T	Acrolein	50.0000	36.4094	27.2#	110	-0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	54.1275	-8.3	156	0.00
13	T	Acetone	50.0000	50.9698	-1.9	160	0.00
14	C	1,1-Dichloroethene	50.0000	54.0368	-8.1	160	0.00
15	T	Tert-Butyl Alcohol	200.0000	183.8320	8.1	144	0.00
16	T	Dimethyl Sulfide	50.0000	50.5062	-1.0	141	0.00
17	T	Iodomethane	50.0000	23.4825	53.0#	66	0.00
18	T	Methyl acetate	50.0000	44.2723	11.5	138	0.00
19	T	Methylene Chloride	50.0000	50.4384	-0.9	147	0.00
20	T	Carbon Disulfide	50.0000	54.0556	-8.1	149	0.00
21	T	Acrylonitrile	50.0000	50.7422	-1.5	145	0.00
22	T	Methyl Tert Butyl Ether	50.0000	48.6005	2.8	141	0.00
23	T	trans-1,2-Dichloroethene	50.0000	53.0456	-6.1	150	0.00
24	T	n-Hexane	50.0000	55.1443	-10.3	152	0.00
25	T	Diisopropyl ether	100.0000	98.2070	1.8	139	0.00
26	T	Vinyl Acetate	50.0000	70.4251	-40.9#	198	0.00
27	P	1,1-Dichloroethane	50.0000	52.3738	-4.7	151	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	94.1216	5.9	134	0.00
29	T	2-Butanone	50.0000	47.8786	4.2	146	0.00
30	T	Propionitrile	100.0000	97.1284	2.9	146	0.00
31	T	2,2-Dichloropropane	50.0000	52.1598	-4.3	149	0.00
32	T	cis-1,2-Dichloroethene	50.0000	52.0510	-4.1	150	0.00
33	C	Chloroform	50.0000	51.5813	-3.2	147	0.00
34		1-Bromopropane	50.0000	54.4326	-8.9	145	0.00
35	T	Bromochloromethane	50.0000	52.3232	-4.6	147	0.00
36	T	Tetrahydrofuran	100.0000	210.0138	-110.0#	322	0.00
37	S	Dibromofluoromethane	25.0000	25.8466	-3.4	145	0.00
38	T	1,1,1-Trichloroethane	50.0000	52.3965	-4.8	147	0.00
39	T	Cyclohexane	50.0000	53.4303	-6.9	149	0.00
40	T	1,1-Dichloropropene	50.0000	51.7976	-3.6	147	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	91.3286	8.7	132	0.00
42	T	Carbon Tetrachloride	50.0000	53.9567	-7.9	150	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.7510	1.0	140	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	50.3771	-0.8	142	0.00
46	T	Benzene	50.0000	51.8774	-3.8	143	0.00
47	T	Trichloroethene	50.0000	50.3465	-0.7	146	0.00
48	T	Methylcyclohexane	50.0000	51.8904	-3.8	144	0.00
49	C	1,2-Dichloropropane	50.0000	50.4420	-0.9	144	0.00
50	T	Bromodichloromethane	50.0000	50.8348	-1.7	141	0.00
51	T	1,4-Dioxane	200.0000	236.9418	-18.5	177	0.00
52	T	Dibromomethane	50.0000	49.1410	1.7	140	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	46.1992	7.6	138	0.00
54	T	4-Methyl-2-Pentanone	50.0000	44.0152	12.0	136	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\111615\8M408707.D Vial: 2
Acq On : 16 Nov 2015 11:39 Operator: TMB
Sample : WG547022-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD73419 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	50.6761	-1.4	140	0.00
56	T	Dimethyl Disulfide	50.0000	49.2106	1.6	141	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	143	0.00
58	S	Toluene-d8	25.0000	25.4585	-1.8	142	0.00
59	C	Toluene	50.0000	50.1897	-0.4	141	0.00
60	T	Ethyl Methacrylate	50.0000	48.7220	2.6	139	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	49.0853	1.8	138	0.00
63	T	1,1,2-Trichloroethane	50.0000	47.7780	4.4	142	0.00
64	T	2-Hexanone	50.0000	41.4409	17.1	129	0.00
65	T	1,3-Dichloropropane	50.0000	46.3307	7.3	138	0.00
66	T	Tetrachloroethene	50.0000	50.8958	-1.8	149	0.00
67	T	Dibromochloromethane	50.0000	50.1317	-0.3	143	0.00
68	T	1,2-Dibromoethane	50.0000	47.4430	5.1	139	0.00
69	T	1-Chlorohexane	50.0000	50.7233	-1.4	142	0.00
70	P	Chlorobenzene	50.0000	49.7263	0.5	142	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	51.2168	-2.4	144	0.00
72	C	Ethylbenzene	50.0000	49.3041	1.4	144	0.00
73	T	m-,p-Xylene	100.0000	102.0112	-2.0	142	0.00
74	T	o-Xylene	50.0000	49.4340	1.1	143	0.00
75	T	Styrene	50.0000	51.2915	-2.6	140	0.00
76	P	Bromoform	50.0000	51.3179	-2.6	148	0.00
77	T	Isopropylbenzene	50.0000	51.8334	-3.7	143	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	145	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	45.1942	9.6	136	0.00
80	S	p-Bromofluorobenzene	25.0000	24.0406	3.8	140	0.00
81	T	1,2,3-Trichloropropane	50.0000	45.8446	8.3	138	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	51.6715	-3.3	151	0.00
83	T	n-Propylbenzene	50.0000	48.3311	3.3	141	0.00
84	T	Bromobenzene	50.0000	48.7630	2.5	143	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	50.0670	-0.1	140	0.00
86	T	2-Chlorotoluene	50.0000	49.1172	1.8	140	0.00
87	T	4-Chlorotoluene	50.0000	48.6516	2.7	136	0.00
88	T	a-Methylstyrene	50.0000	51.3870	-2.8	145	0.00
89	T	tert-Butylbenzene	50.0000	48.5777	2.8	146	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	51.5367	-3.1	143	0.00
91	T	sec-Butylbenzene	50.0000	49.3117	1.4	143	0.00
92	T	p-Isopropyltoluene	50.0000	51.8455	-3.7	143	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.3377	-0.7	146	0.00
94	T	1,4-Dichlorobenzene	50.0000	49.5912	0.8	146	0.00
95	T	n-Butylbenzene	50.0000	54.7492	-9.5	148	0.00
96	T	1,2-Dichlorobenzene	50.0000	49.4195	1.2	145	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	42.8432	14.3	129	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	51.7629	-3.5	147	0.00
99	T	Hexachlorobutadiene	50.0000	50.9902	-2.0	150	0.00
100	T	Naphthalene	50.0000	52.1006	-4.2	155	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	50.4390	-0.9	145	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M408707.D 8260WT.M Mon Nov 16 12:02:24 2015 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\1\DATA\061415\11M08234.D          Vial: 1
Acq On    : 14 Jun 2015   9:34                        Operator: TMB /DLW
Sample    : WG527475-01 50ng BFB STD                  Inst    : hpms11
Misc      : 1,1 STD70707                              Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title     : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
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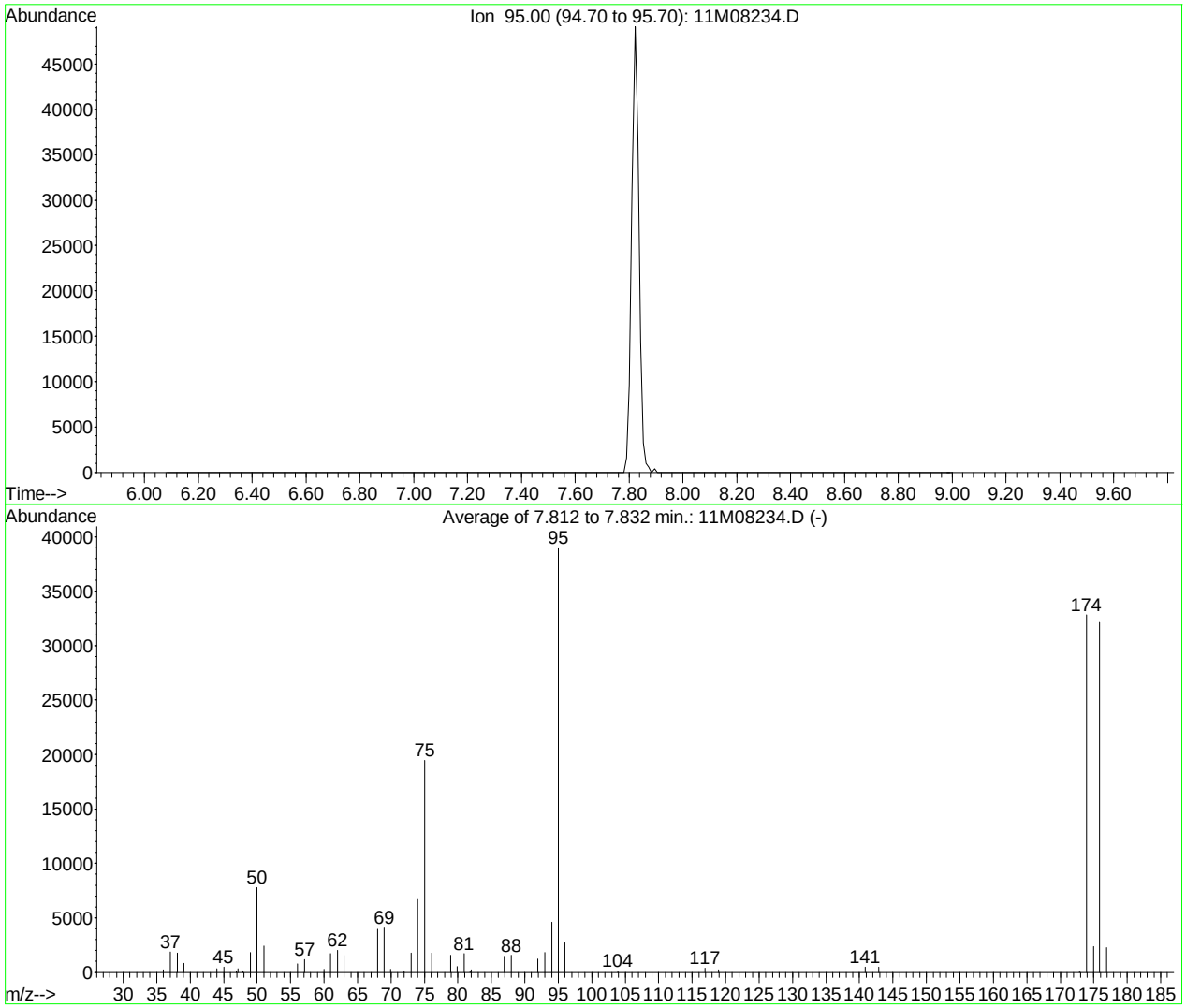

AutoFind: Scans 168, 169, 170; Background Corrected with Scan 163

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.9	7754	PASS
75	95	30	60	49.9	19472	PASS
95	95	100	100	100.0	38997	PASS
96	95	5	9	7.0	2731	PASS
173	174	0.00	2	0.3	111	PASS
174	95	50	100	84.2	32837	PASS
175	174	5	9	7.2	2357	PASS
176	174	95	101	97.9	32146	PASS
177	176	5	9	7.1	2284	PASS

11M08234.D 8260WTR.M Sun Jun 14 09:44:09 2015

BFB

Data File : C:\MSDCHEM\2\DATA\093015\8M407745.D Vial: 2
Acq On : 30 Sep 2015 9:38 Operator: TMB
Sample : WG540912-01 50ng BFB STD 8260 Inst : HPMS8
Misc : 1,1 STD72715 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title : SOP:OVL MSV01

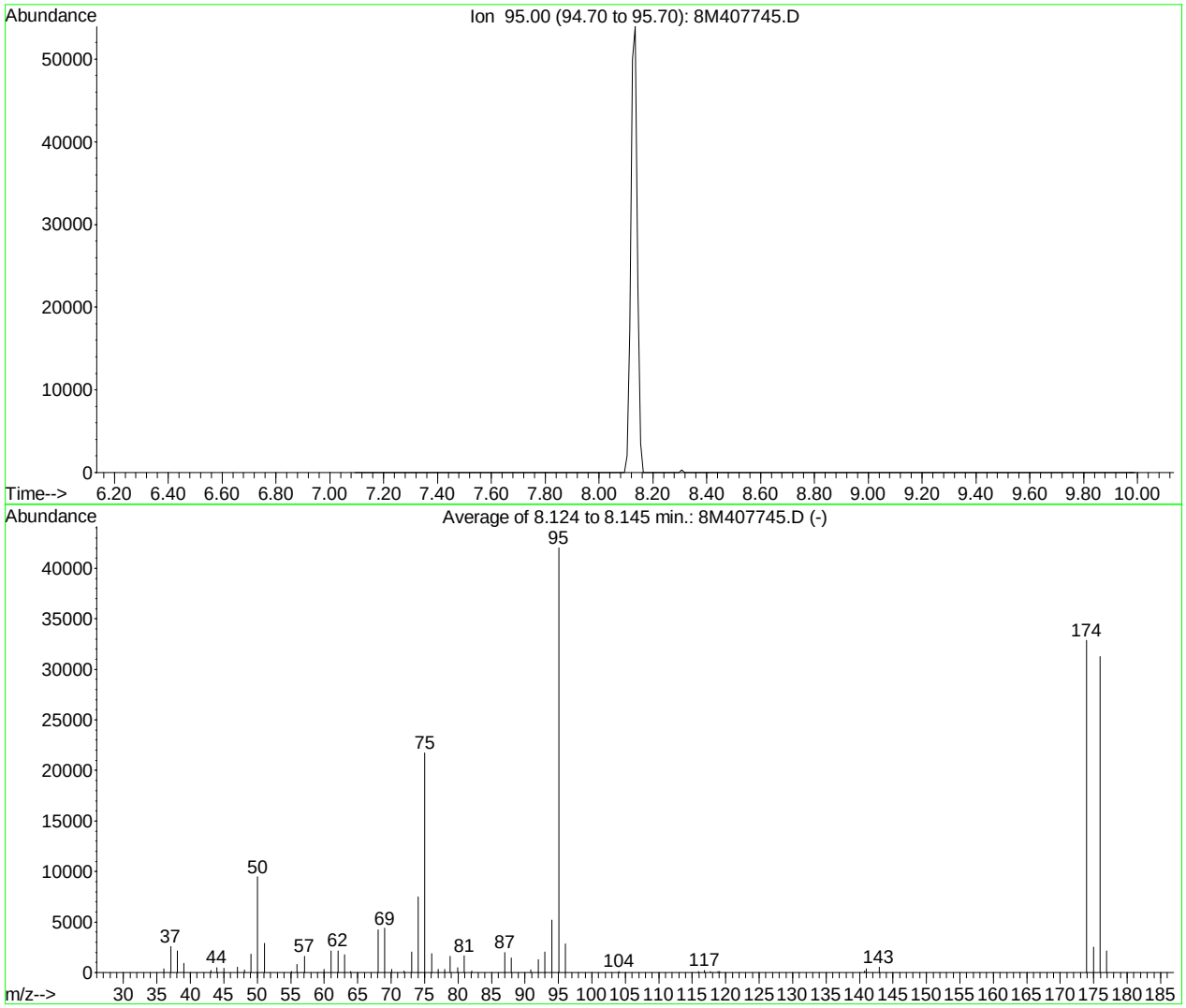

AutoFind: Scans 102, 103, 104; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.5	9471	PASS
75	95	30	60	51.7	21732	PASS
95	95	100	100	100.0	42018	PASS
96	95	5	9	6.7	2835	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	78.3	32893	PASS
175	174	5	9	7.6	2510	PASS
176	174	95	101	95.1	31272	PASS
177	176	5	9	6.8	2141	PASS

8M407745.D BFB.M Wed Sep 30 09:54:57 2015

BFB

```
Data File : C:\MSDCHEM\2\DATA\100515\8M407827.D          Vial: 1
Acq On    :  5 Oct 2015  11:26                       Operator: TMB
Sample    : WG540826-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD72715                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

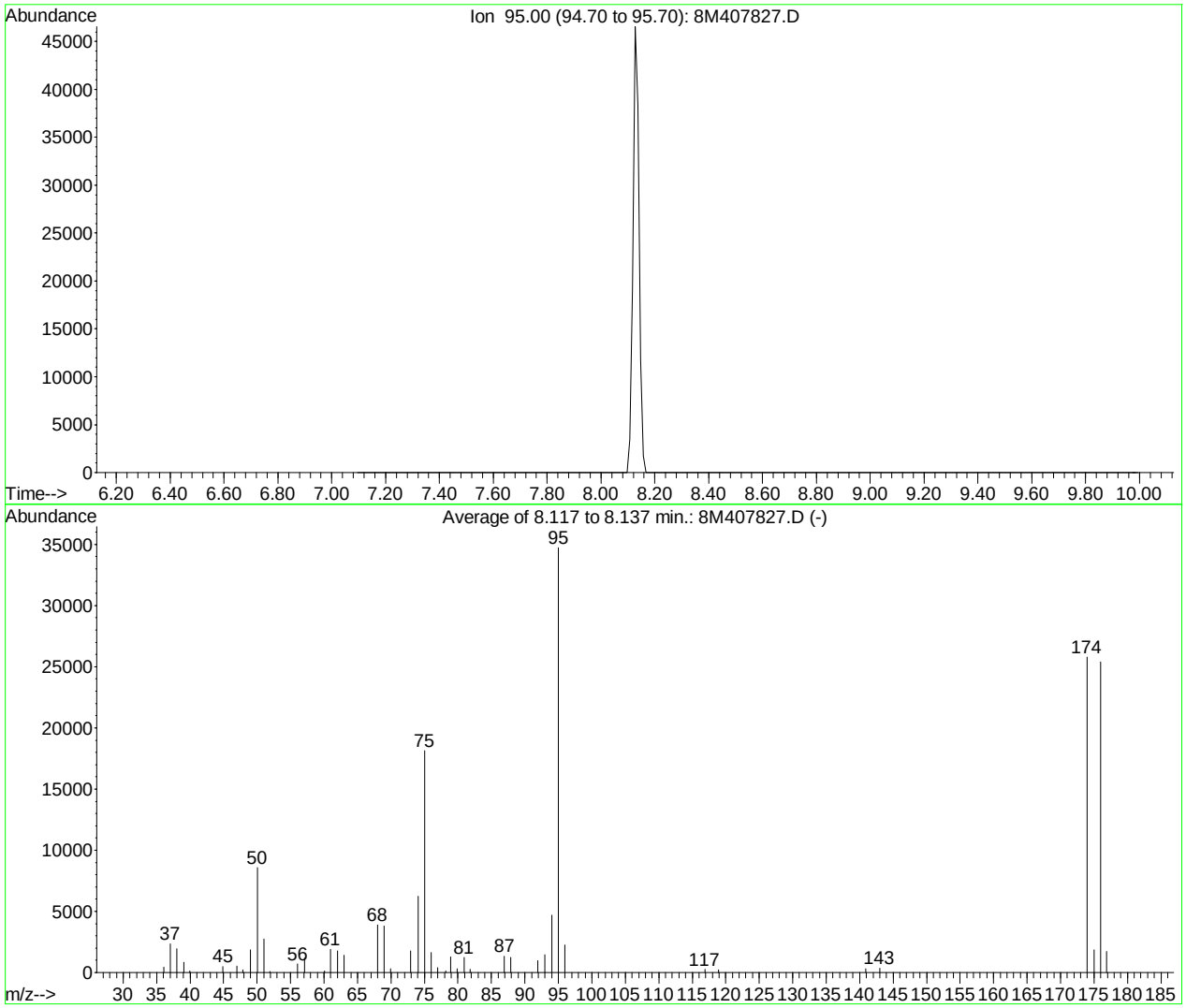

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	24.7	8565	PASS
75	95	30	60	52.2	18121	PASS
95	95	100	100	100.0	34714	PASS
96	95	5	9	6.5	2262	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	74.2	25773	PASS
175	174	5	9	7.2	1845	PASS
176	174	95	101	98.5	25378	PASS
177	176	5	9	6.9	1746	PASS

8M407827.D BFB.M Mon Oct 05 12:46:56 2015

BFB

```
Data File : C:\MSDCHEM\1\DATA\100915\11M09739.D          Vial: 1
Acq On    :  9 Oct 2015  15:59                        Operator: JDS
Sample    : WG542333-01 BFB 8260                      Inst    : hpms11
Misc      : 1,1 STD72715                              Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title     : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
```

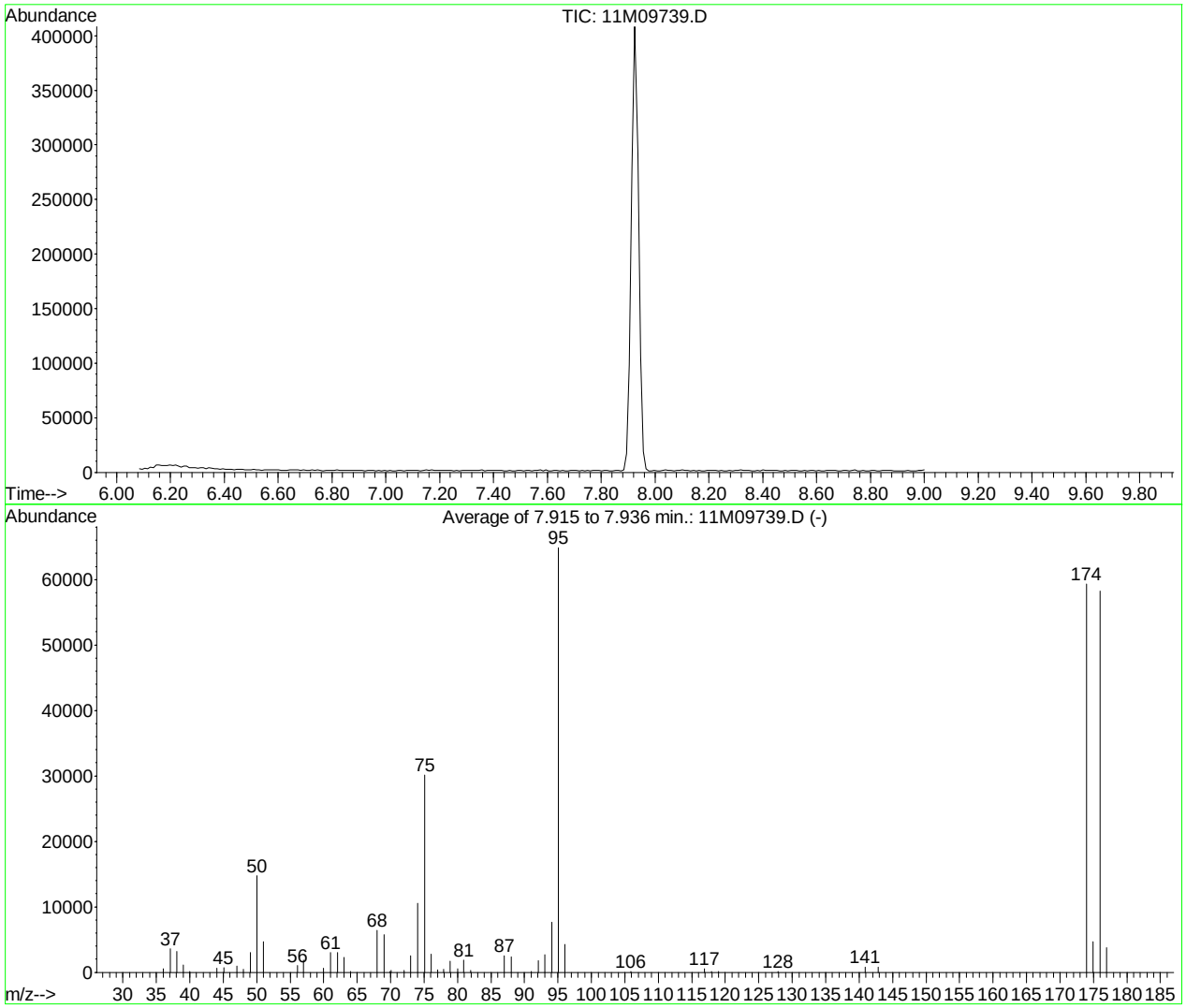

AutoFind: Scans 178, 179, 180; Background Corrected with Scan 172

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.8	14788	PASS
75	95	30	60	46.5	30144	PASS
95	95	100	100	100.0	64874	PASS
96	95	5	9	6.6	4259	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	91.4	59301	PASS
175	174	5	9	7.9	4658	PASS
176	174	95	101	98.2	58213	PASS
177	176	5	9	6.4	3751	PASS

11M09739.D 8260_WTR.M Thu Oct 22 13:14:28 2015

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016366.D
Acq On : 11 Nov 2015 14:17
Operator : ADC
Sample : WG546498-01 50ng BFB STD
Misc : 1,1 STD72715
ALS Vial : 1 Sample Multiplier: 1

Integration File: lscint.p

Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
Last Update : Mon Nov 02 12:09:40 2015

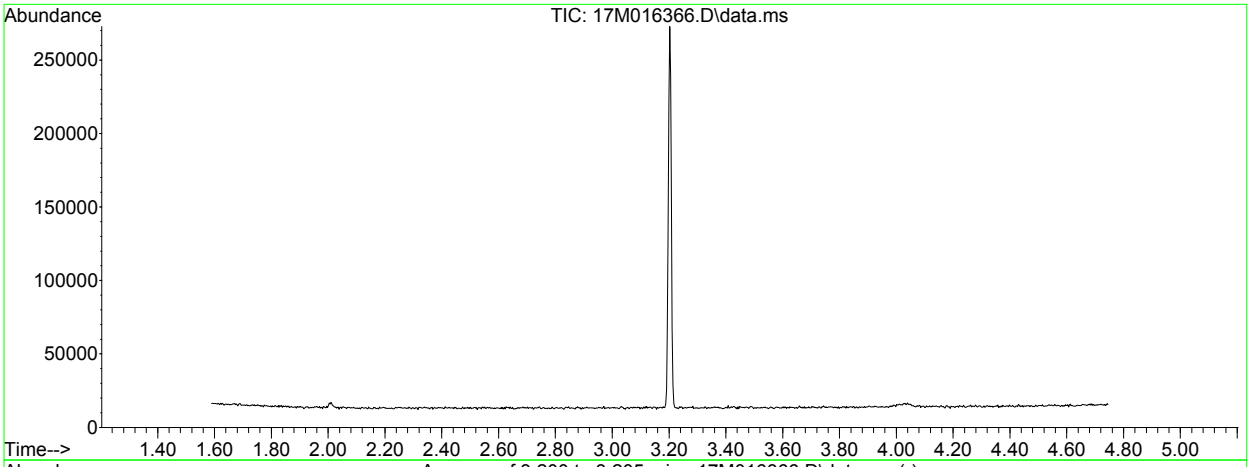

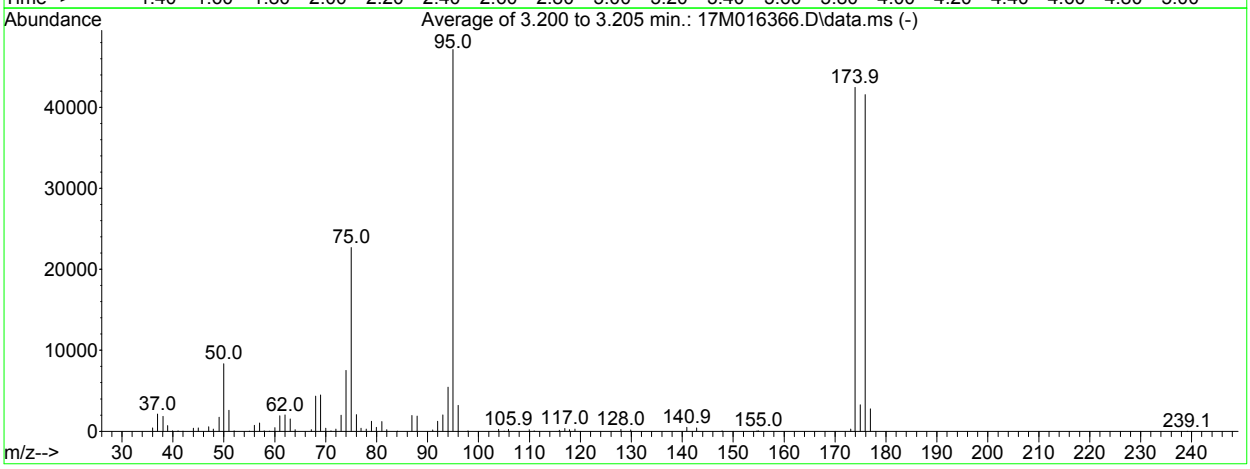

AutoFind: Scans 557, 558, 559; Background Corrected with Scan 548

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.7	8344	PASS
75	95	30	60	48.1	22677	PASS
95	95	100	100	100.0	47164	PASS
96	95	5	9	6.8	3185	PASS
173	174	0.00	2	0.6	273	PASS
174	95	50	100	90.1	42488	PASS
175	174	5	9	7.7	3275	PASS
176	174	95	101	97.8	41568	PASS
177	176	5	9	6.7	2779	PASS

Data Path : D:\MassHunter\GCMS\1\data\111315\
Data File : 17M016432.D
Acq On : 13 Nov 2015 13:32
Operator : ADC
Sample : WG546843-01 50ng BFB STD
Misc : 1,1 STD72715
ALS Vial : 1 Sample Multiplier: 1

Integration File: lscint.p

Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
Last Update : Thu Nov 12 09:48:27 2015

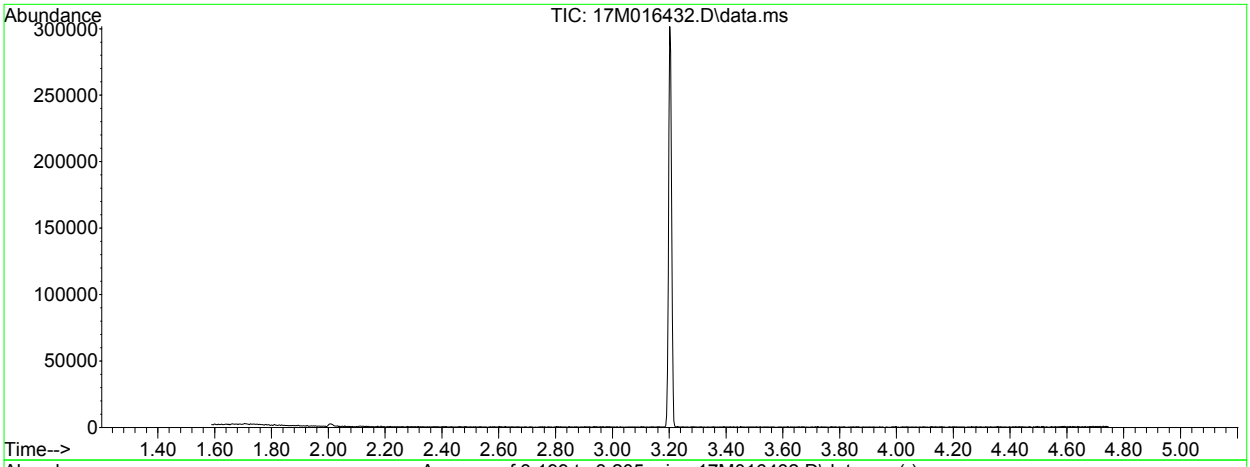

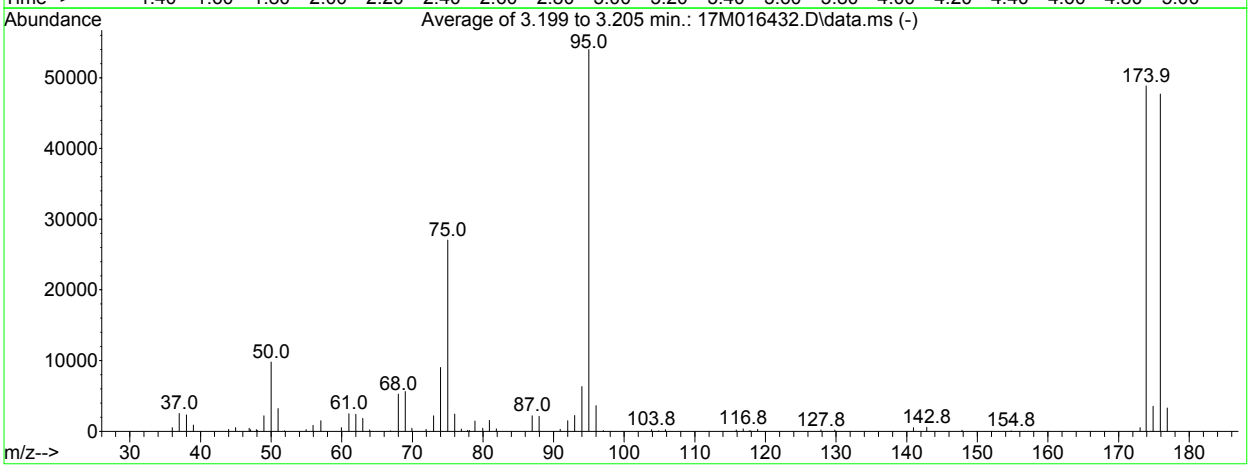

AutoFind: Scans 557, 558, 559; Background Corrected with Scan 548

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.1	9779	PASS
75	95	30	60	50.0	27035	PASS
95	95	100	100	100.0	54019	PASS
96	95	5	9	6.7	3629	PASS
173	174	0.00	2	1.1	521	PASS
174	95	50	100	90.4	48853	PASS
175	174	5	9	7.2	3539	PASS
176	174	95	101	97.6	47696	PASS
177	176	5	9	6.9	3307	PASS

BFB

```
Data File : C:\MSDCHEM\1\DATA\111315\11M10248.D          Vial: 1
Acq On    : 13 Nov 2015  14:42                       Operator: JDS
Sample    : WG546879-01 50ng BFB STD 8260            Inst    : hpms11
Misc      : 1,1 STD73273                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title     : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
```

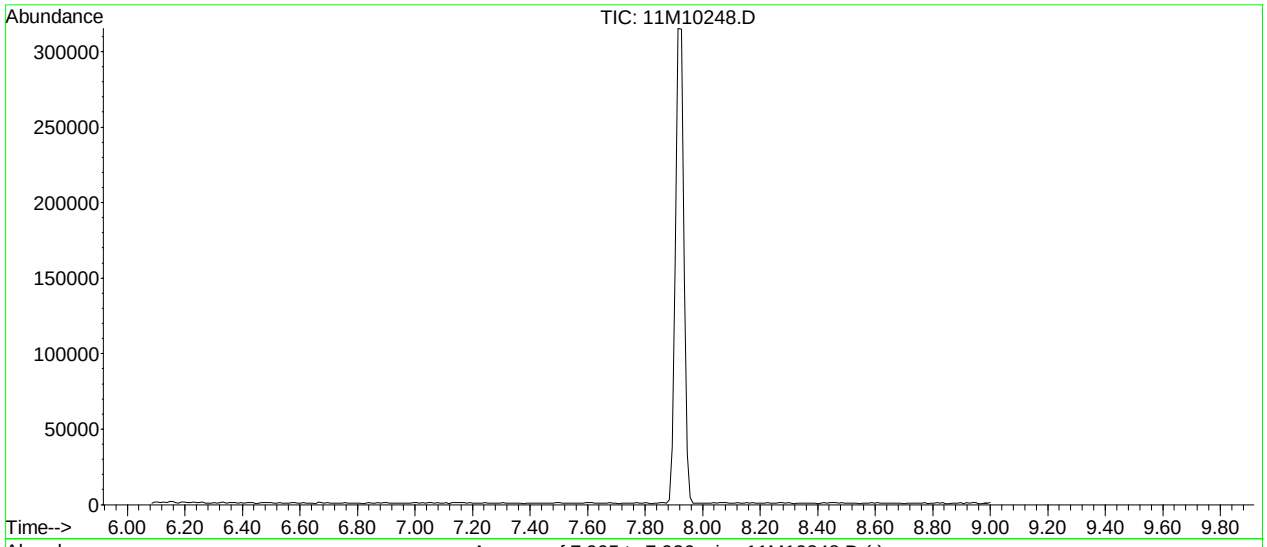

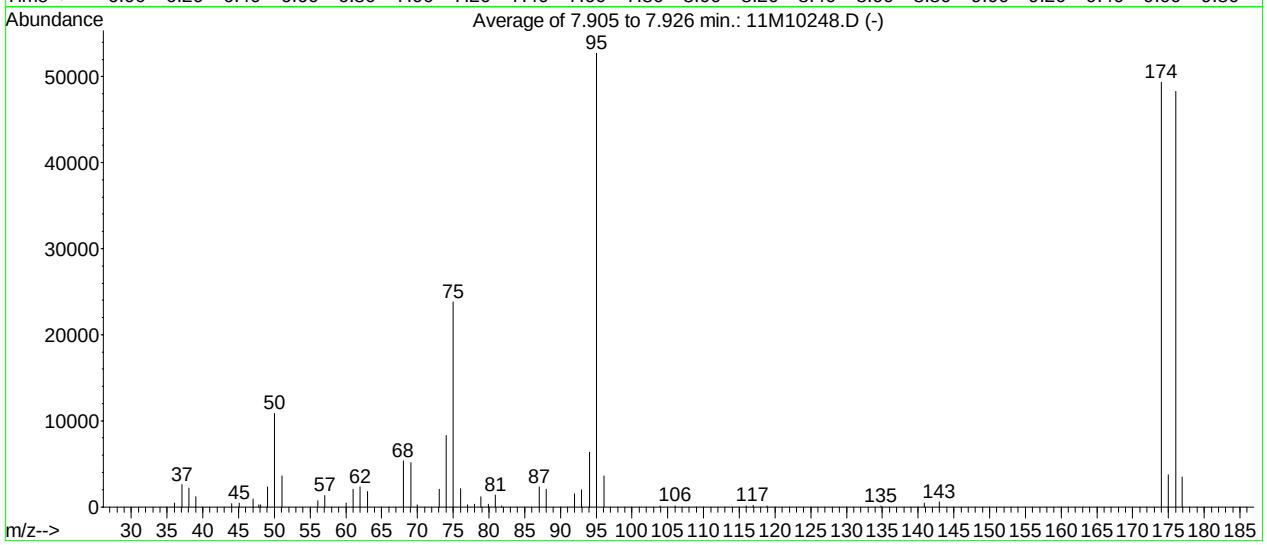

AutoFind: Scans 177, 178, 179; Background Corrected with Scan 172

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.6	10841	PASS
75	95	30	60	45.2	23808	PASS
95	95	100	100	100.0	52725	PASS
96	95	5	9	6.9	3628	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	93.6	49349	PASS
175	174	5	9	7.6	3729	PASS
176	174	95	101	97.8	48274	PASS
177	176	5	9	7.2	3477	PASS

11M10248.D 8260_WTR.M Mon Nov 16 09:21:41 2015

BFB

```
Data File : C:\MSDCHEM\2\DATA\111615\8M408706.D          Vial: 1
Acq On    : 16 Nov 2015  11:16                       Operator: TMB
Sample    : WG547022-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD73273                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

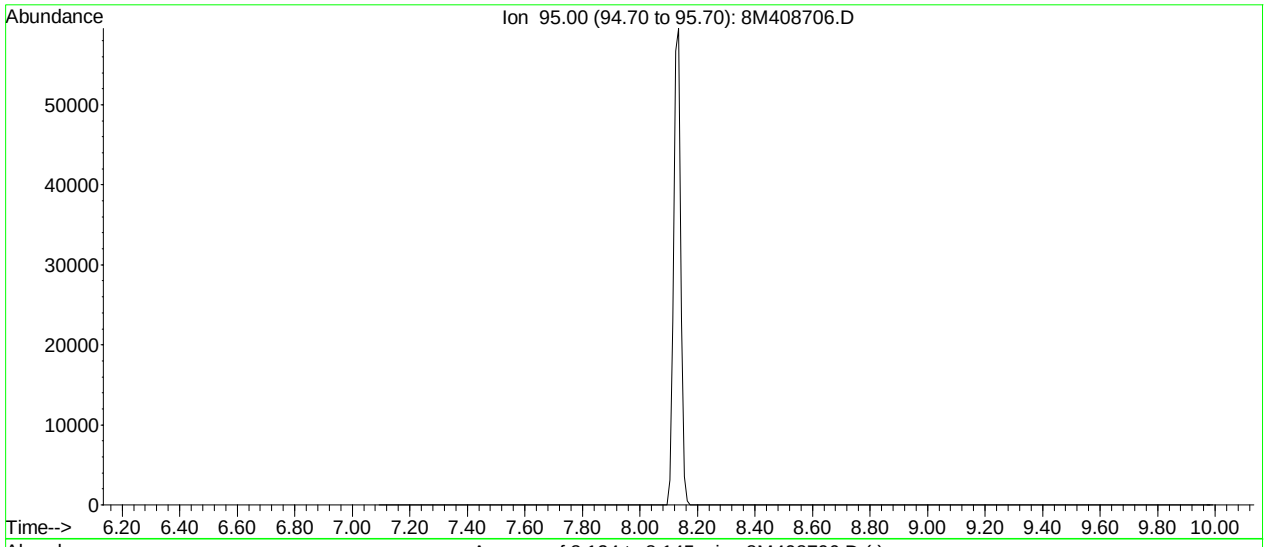

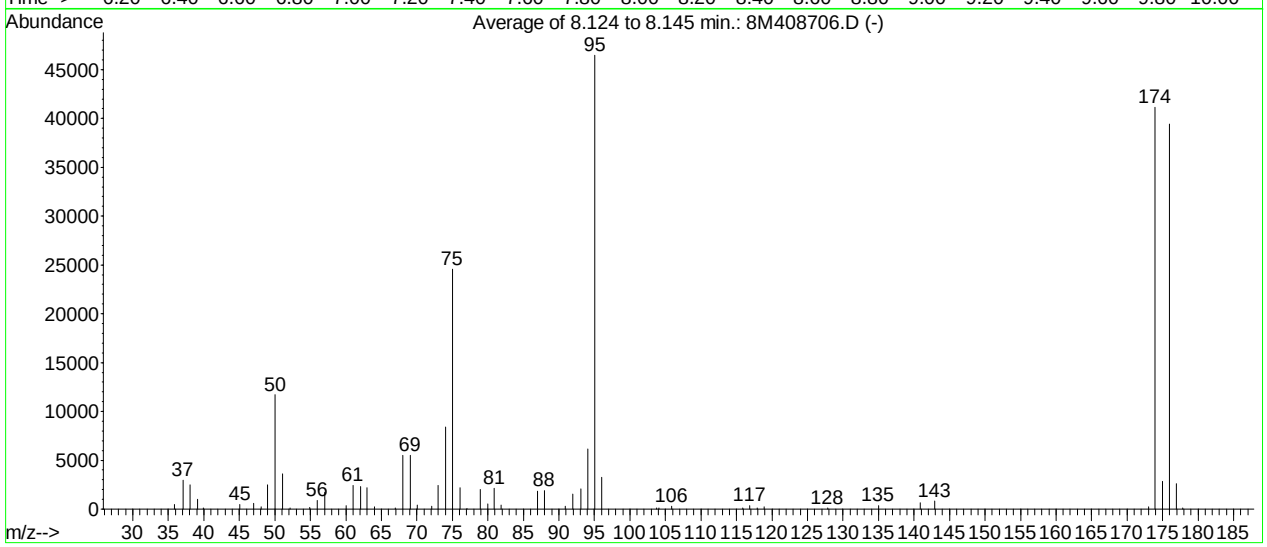

AutoFind: Scans 102, 103, 104; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	25.2	11716	PASS
75	95	30	60	52.9	24587	PASS
95	95	100	100	100.0	46456	PASS
96	95	5	9	7.0	3251	PASS
173	174	0.00	2	0.6	250	PASS
174	95	50	100	88.5	41114	PASS
175	174	5	9	6.9	2825	PASS
176	174	95	101	95.8	39405	PASS
177	176	5	9	6.5	2580	PASS

8M408706.D BFB.M Mon Nov 16 11:35:11 2015

Data Path : D:\MassHunter\GCMS\1\data\112415\
Data File : 17M016665.D
Acq On : 24 Nov 2015 20:08
Operator : JDS/FJB
Sample : WG548398-01 50ng BFB STD
Misc : 1,1 STD72715
ALS Vial : 1 Sample Multiplier: 1

Integration File: lscint.p

Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
Last Update : Thu Nov 12 09:48:27 2015

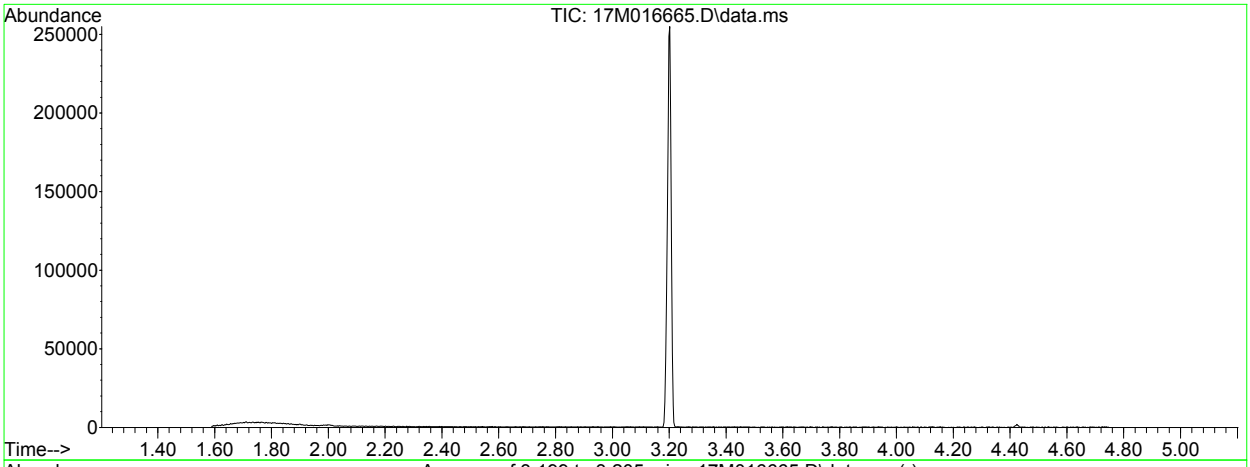

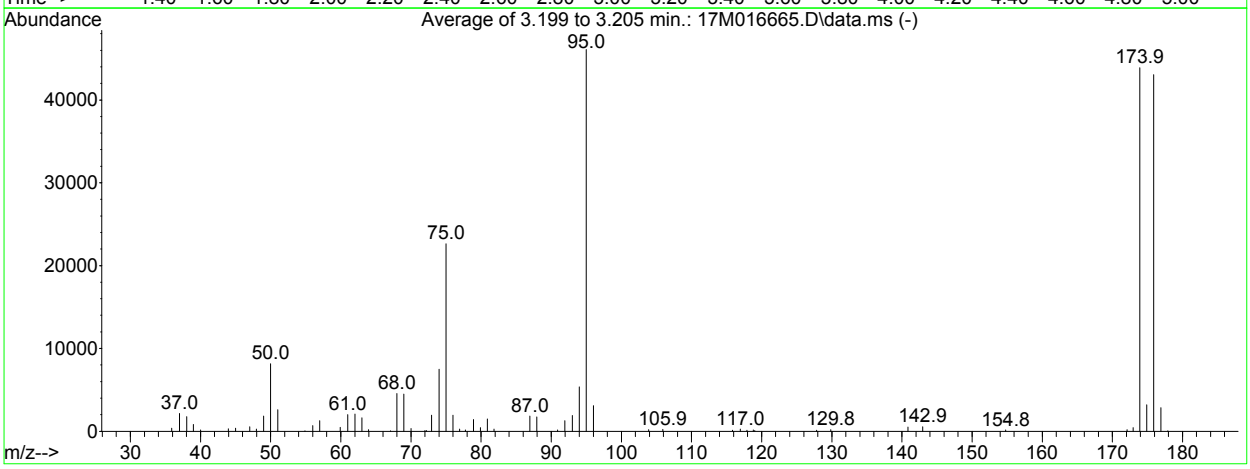

AutoFind: Scans 557, 558, 559; Background Corrected with Scan 546

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.7	8138	PASS
75	95	30	60	49.1	22627	PASS
95	95	100	100	100.0	46107	PASS
96	95	5	9	6.7	3090	PASS
173	174	0.00	2	1.0	451	PASS
174	95	50	100	95.2	43909	PASS
175	174	5	9	7.2	3179	PASS
176	174	95	101	98.1	43053	PASS
177	176	5	9	6.6	2861	PASS

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\111315\11M10252.D Vial: 5
Acq On : 13 Nov 2015 16:43 Operator: JDS
Sample : WG546880-01 BLANK STD 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 23 12:44:00 2015 Quant Results File: 8260_WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 10:32:15 2015
Response via : Initial Calibration
DataAcq Meth : 8260_WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	955796	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.28	117	778532	25.00 ug/L	-0.02
76) 1,4-Dichlorobenzene-d4	17.10	152	458272	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	258664	23.7940 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.16%		
43) 1,2-Dichloroethane-d4	10.27	65	242504	21.6903 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 86.76%		
57) Toluene-d8	12.51	98	943458	28.4274 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 113.72%#		
78) p-Bromofluorobenzene	15.69	95	353892	26.8019 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 107.20%		

Target Compounds					Qvalue
13) Acetone	6.37	43	383	0.1557 ug/L #	44
36) Tetrahydrofuran	9.63	42	922	0.3490 ug/L #	43

(#) = qualifier out of range (m) = manual integration
11M10252.D 8260_WTR.M Mon Nov 23 12:44:01 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\111315\11M10252.D Vial: 5
Acq On : 13 Nov 2015 16:43 Operator: JDS
Sample : WG546880-01 BLANK STD 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 23 12:44 2015 Quant Results File: 8260_WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 10:32:15 2015
Response via : Initial Calibration

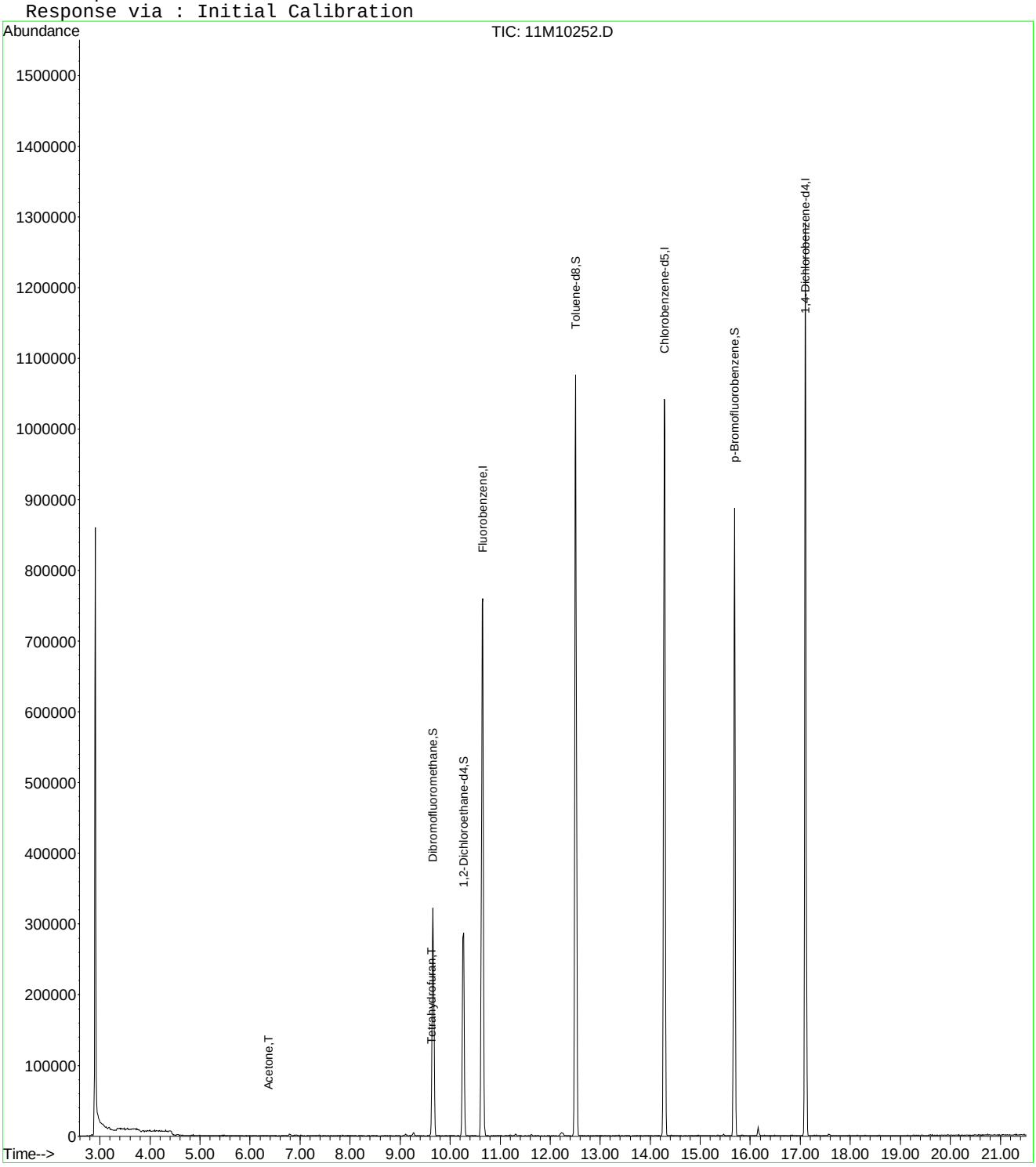

11M10252.D 8260_WTR.M Mon Nov 23 12:44:01 2015 Page 2

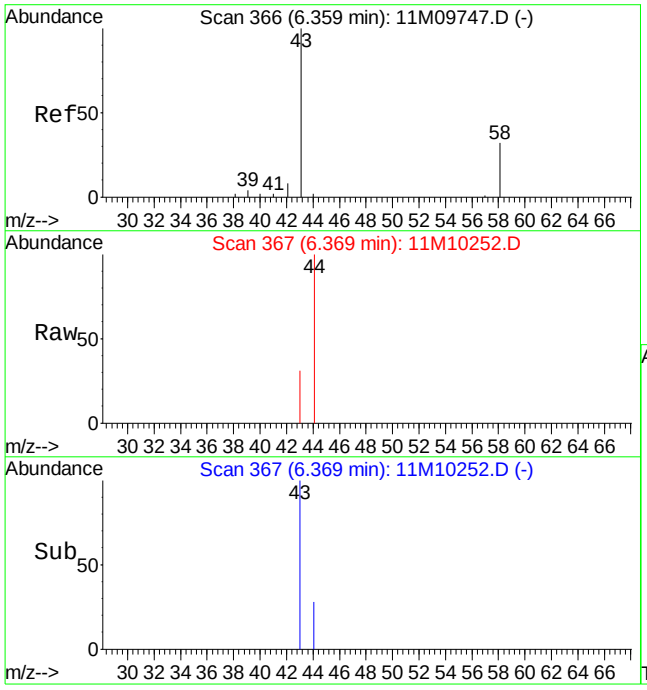

#13
Acetone
Concen: 0.16 ug/L
RT: 6.37 min Scan# 367
Delta R.T. 0.01 min
Lab File: 11M10252.D
Acq: 13 Nov 2015 16:43

Tgt Ion: 43 Resp: 383

Ion	Ratio	Lower	Upper
43	100		
58	0.0	18.1	42.3#

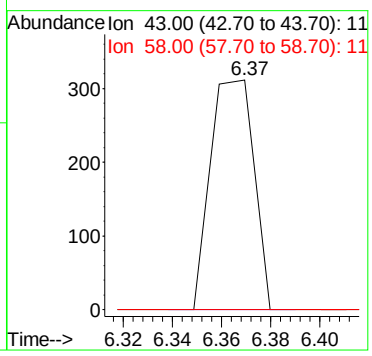

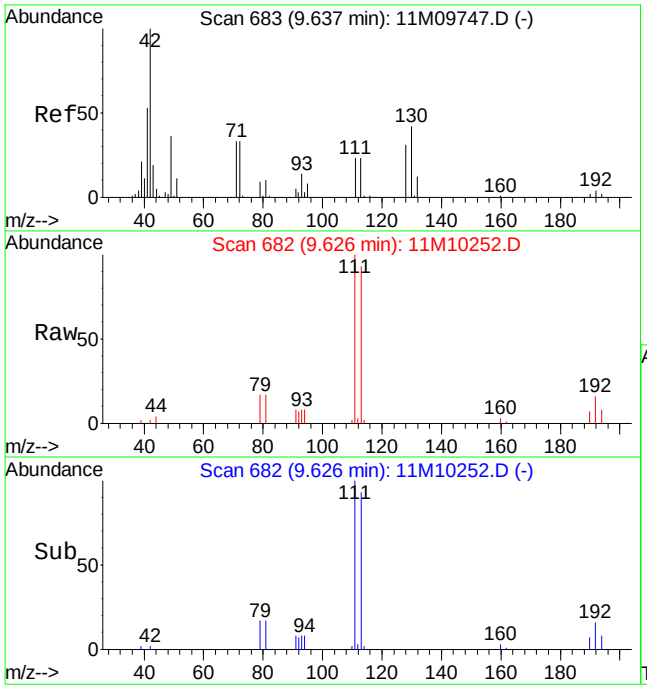

#36
Tetrahydrofuran
Concen: 0.35 ug/L
RT: 9.63 min Scan# 682
Delta R.T. -0.01 min
Lab File: 11M10252.D
Acq: 13 Nov 2015 16:43

Tgt Ion: 42 Resp: 922

Ion	Ratio	Lower	Upper
42	100		
71	0.0	18.6	43.4#
72	0.0	19.7	45.9#

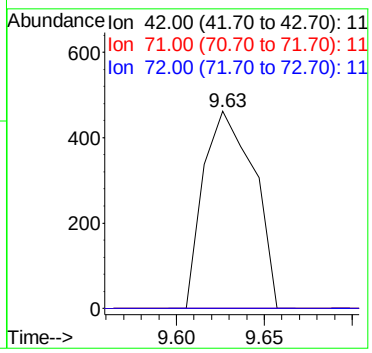

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111315\
Data File : 17M016435.D
Acq On : 13 Nov 2015 14:42
Operator : ADC
Sample : WG546844-01 BLK 8260
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 16 13:07:00 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.141	96	407991	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	308293	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.302	152	171439	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.180	111	102553	24.5031 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.012%		
34) 1,2-Dichloroethane-d4	4.811	65	107863	26.8364 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.346%		
47) Toluene-d8	6.710	98	412624	25.9648 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.859%		
66) p-Bromofluorobenzene	8.723	95	154825	26.1249 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.500%		
Target Compounds					Qvalue
6) Bromomethane	1.383	94	393	0.1350 ug/L	83
16) Acetone	2.359	43	346	Below Cal #	42
84) 1,2,4-Trichlorobenzene	10.202	180	988	0.1207 ug/L	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\111315\
Data File : 17M016435.D
Acq On : 13 Nov 2015 14:42
Operator : ADC
Sample : WG546844-01 BLK 8260
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 16 13:07:00 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

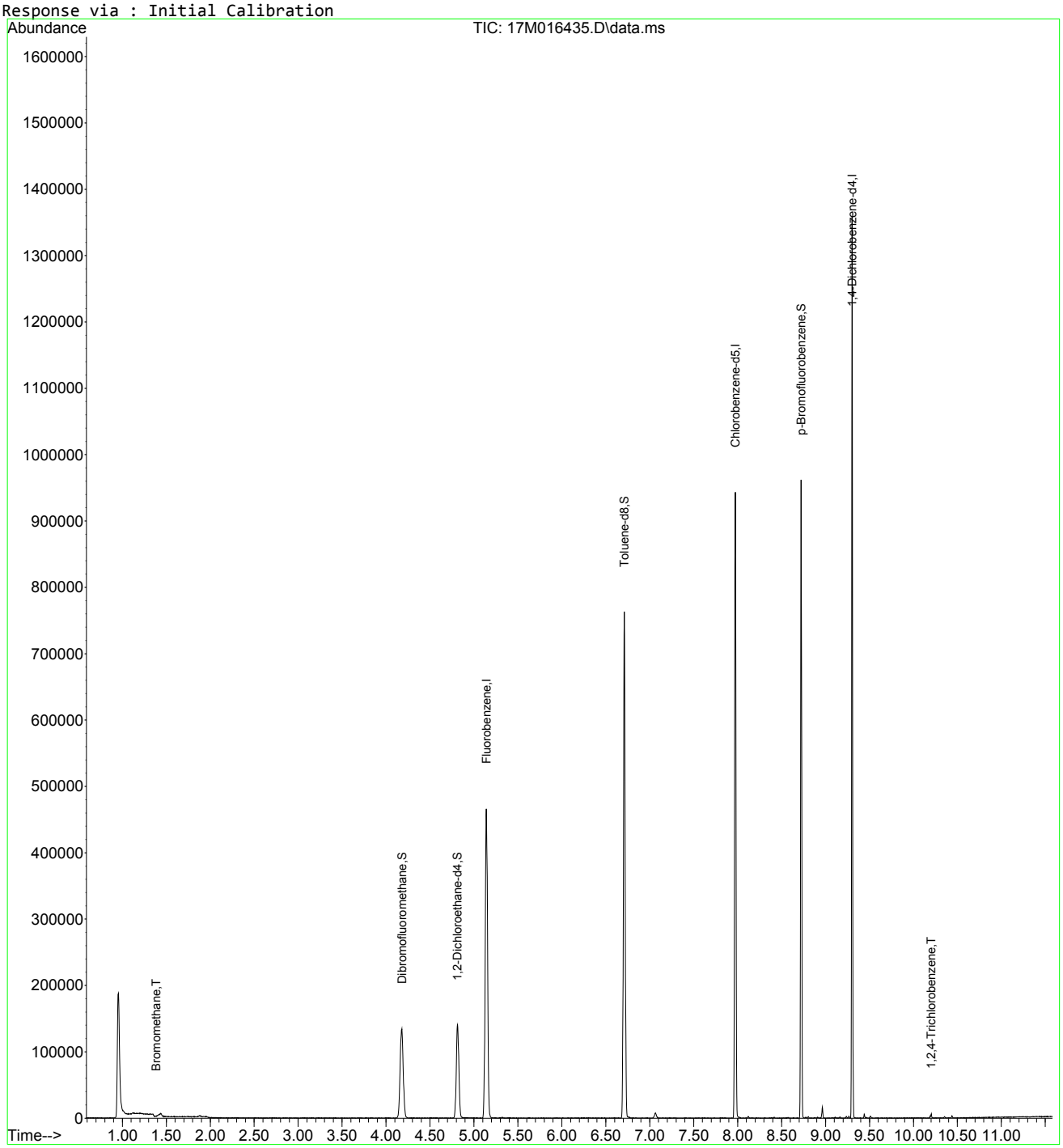

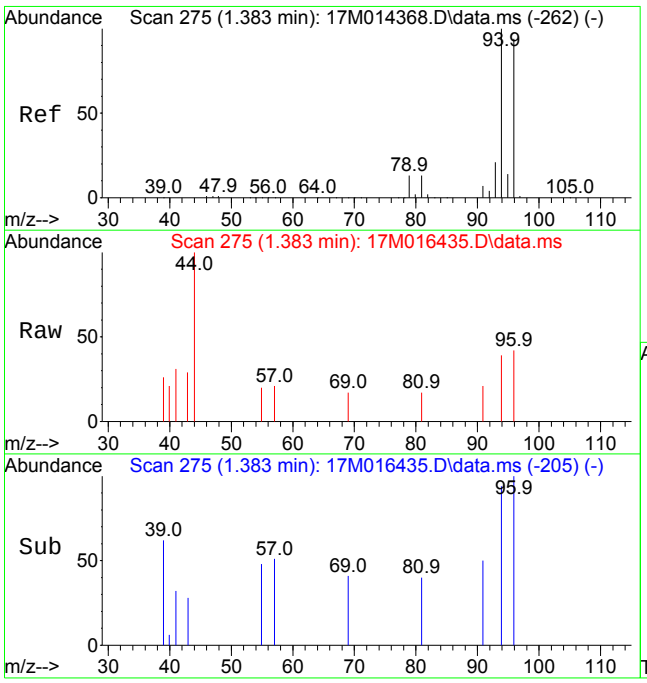

#6
Bromomethane
Concen: 0.1350 ug/L
RT: 1.383 min Scan# 275
Delta R.T. 0.003 min
Lab File: 17M016435.D
Acq: 13 Nov 2015 14:42

Tgt Ion: 94 Resp: 393

Ion	Ratio	Lower	Upper
94	100		
96	109.7	56.0	130.8

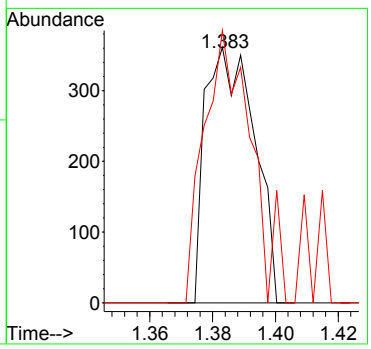

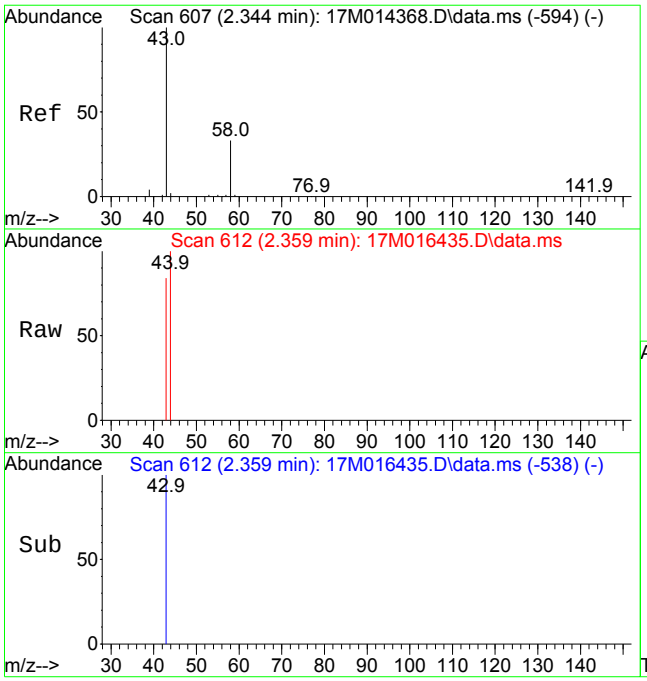

#16
Acetone
Concen: Below Cal
RT: 2.359 min Scan# 612
Delta R.T. 0.015 min
Lab File: 17M016435.D
Acq: 13 Nov 2015 14:42

Tgt Ion: 43 Resp: 346

Ion	Ratio	Lower	Upper
43	100		
58	0.0	19.4	45.4#

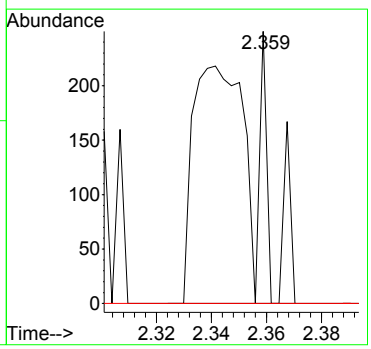

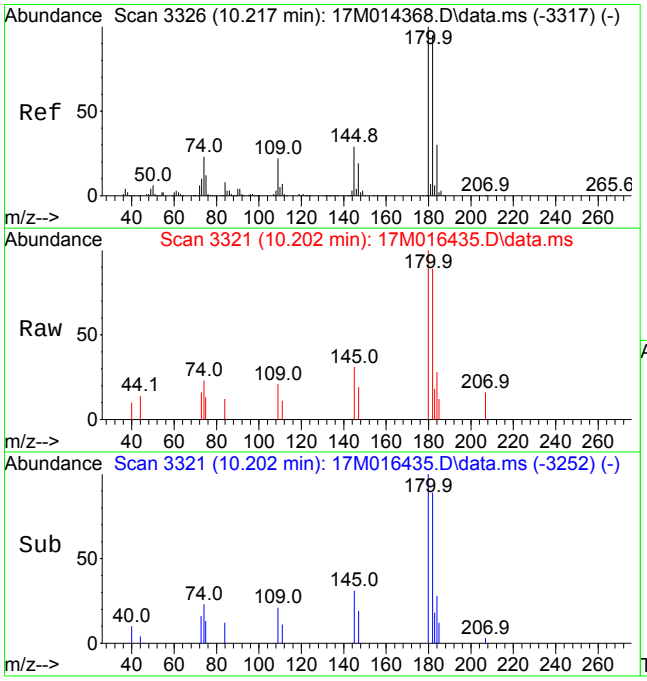

#84
1,2,4-Trichlorobenzene
Concen: 0.1207 ug/L
RT: 10.202 min Scan# 3321
Delta R.T. 0.000 min
Lab File: 17M016435.D
Acq: 13 Nov 2015 14:42

Tgt Ion:180 Resp: 988

Ion	Ratio	Lower	Upper
180	100		
182	94.0	57.5	134.3
145	27.3	19.9	46.3

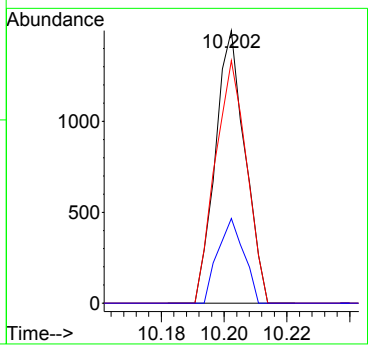

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\112415\
Data File : 17M016668.D
Acq On : 24 Nov 2015 21:07
Operator : JDS/FJB
Sample : WG548399-01 BLK 8260
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 01 11:09:21 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.138	96	329539	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	244149	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.302	152	132306	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.177	111	89611	26.5081 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.032%		
34) 1,2-Dichloroethane-d4	4.814	65	93123	28.6848 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 114.739%		
47) Toluene-d8	6.710	98	352913	28.0419 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 112.168%#		
66) p-Bromofluorobenzene	8.723	95	126730	27.7091 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 110.836%		
Target Compounds					Qvalue
6) Bromomethane	1.383	94	454	0.1930 ug/L	89
7) Chloroethane	1.528	64	400	0.1757 ug/L #	1

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\112415\
Data File : 17M016668.D
Acq On : 24 Nov 2015 21:07
Operator : JDS/FJB
Sample : WG548399-01 BLK 8260
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Dec 01 11:09:21 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

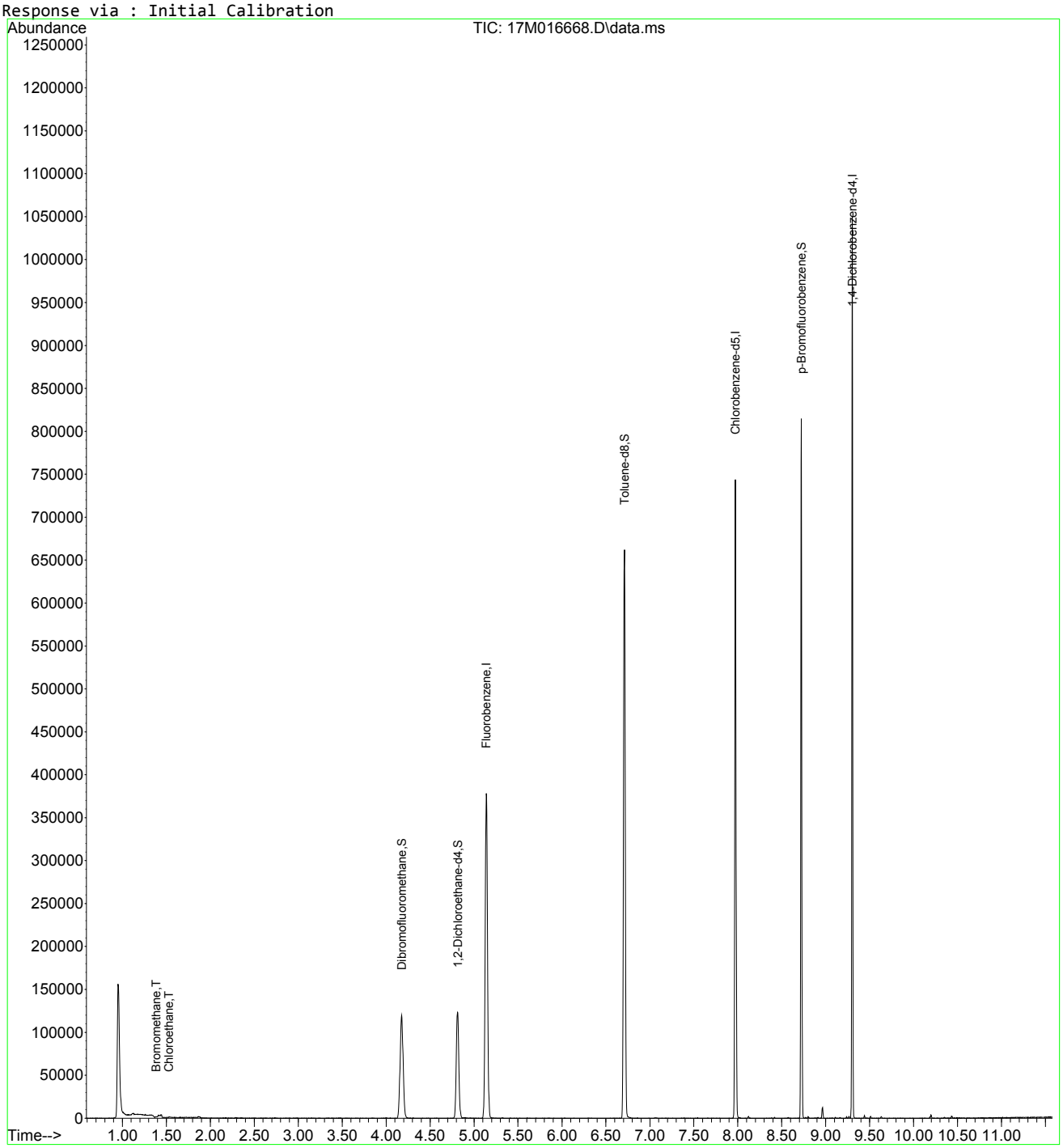

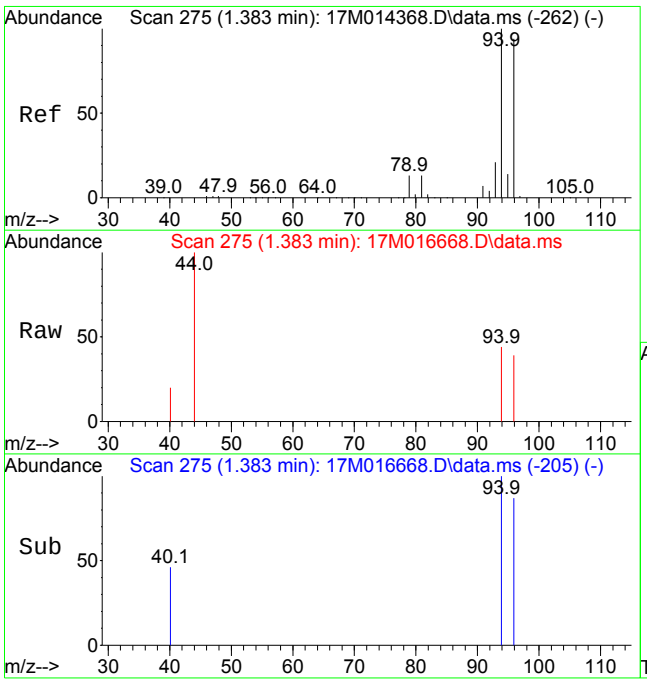

#6
Bromomethane
Concen: 0.1930 ug/L
RT: 1.383 min Scan# 275
Delta R.T. 0.003 min
Lab File: 17M016668.D
Acq: 24 Nov 2015 21:07

Tgt Ion: 94 Resp: 454

Ion	Ratio	Lower	Upper
94	100		
96	83.3	56.0	130.8

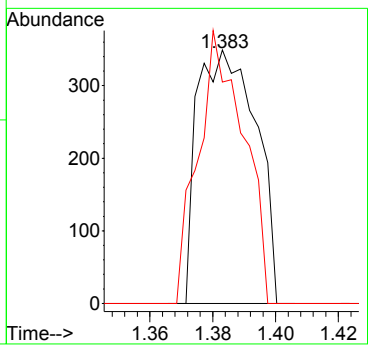

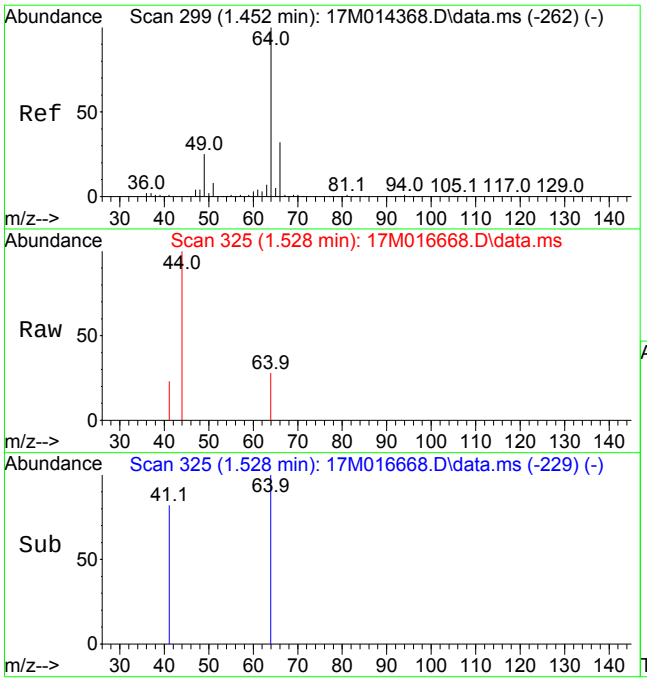

#7
Chloroethane
Concen: 0.1757 ug/L
RT: 1.528 min Scan# 325
Delta R.T. 0.078 min
Lab File: 17M016668.D
Acq: 24 Nov 2015 21:07

Tgt Ion: 64 Resp: 400

Ion	Ratio	Lower	Upper
64	100		
49	301.5	14.8	34.6#

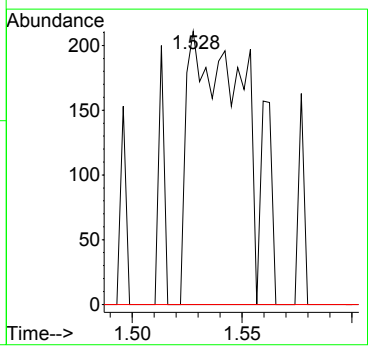

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\111615\8M408709.D Vial: 4
Acq On : 16 Nov 2015 12:39 Operator: TMB
Sample : WG547025-01 VBLK1116 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 17 07:31:56 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	1226109	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	911287	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	495063	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	311679	26.7091 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.84%		
43) 1,2-Dichloroethane-d4	10.31	65	300309	25.2407 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.96%		
58) Toluene-d8	12.69	98	1076655	25.4638 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.84%		
80) p-Bromofluorobenzene	16.08	95	419343	24.2767 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.12%		

Target Compounds					Qvalue
5) 1,3-Butadiene	3.87	54	255	Below Cal	# 1
36) Tetrahydrofuran	9.66	42	949	0.4611 ug/L	# 59

(#) = qualifier out of range (m) = manual integration
8M408709.D 8260WT.M Tue Nov 17 07:31:56 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\111615\8M408709.D Vial: 4
Acq On : 16 Nov 2015 12:39 Operator: TMB
Sample : WG547025-01 VBLK1116 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 17 7:31 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration

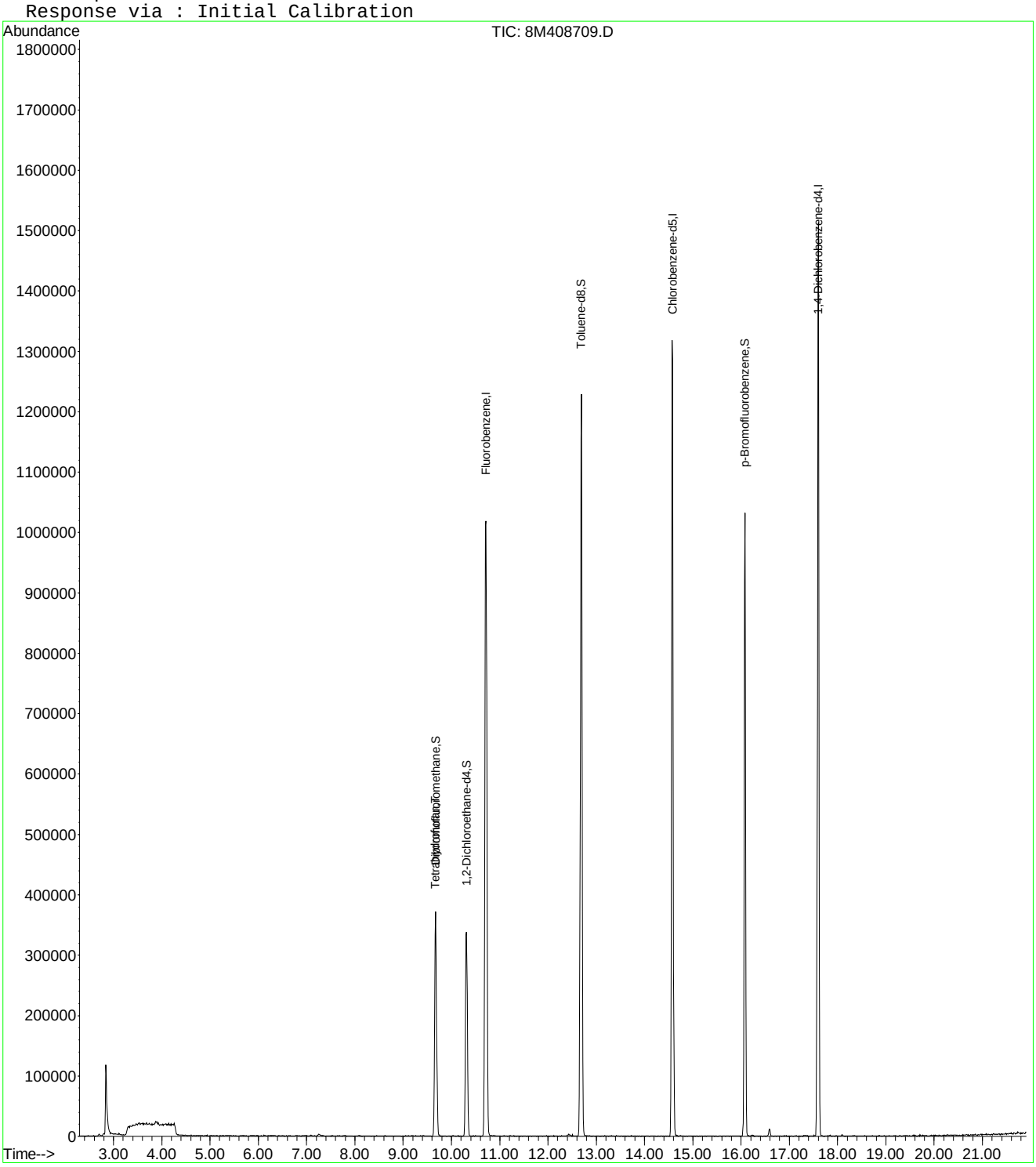

8M408709.D 8260WT.M Tue Nov 17 07:31:57 2015 Page 2

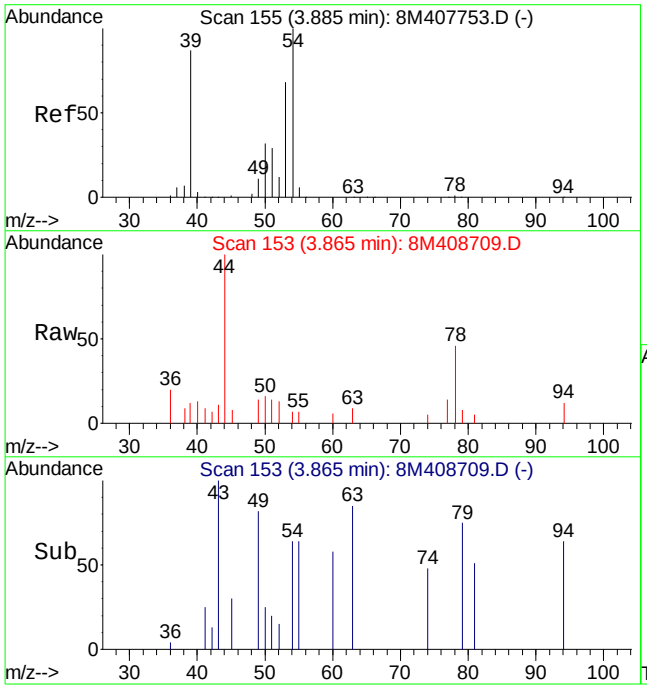

#5
1,3-Butadiene
Concen: Below Cal
RT: 3.87 min Scan# 153
Delta R.T. -0.02 min
Lab File: 8M408709.D
Acq: 16 Nov 2015 12:39

Tgt Ion: 54 Resp: 255

Ion	Ratio	Lower	Upper
54	100		
39	232.5	60.8	142.0#
53	0.0	42.4	99.0#

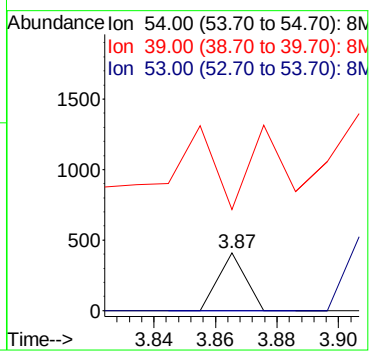

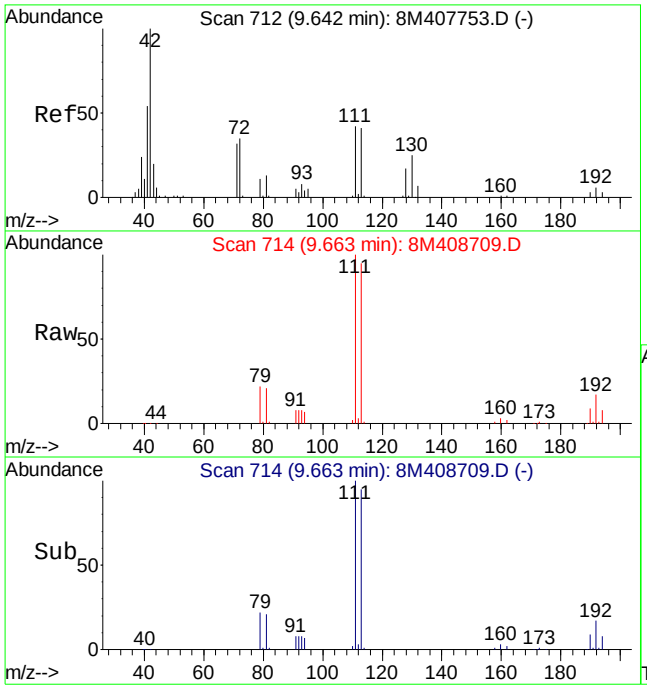

#36
Tetrahydrofuran
Concen: 0.46 ug/L
RT: 9.66 min Scan# 714
Delta R.T. 0.03 min
Lab File: 8M408709.D
Acq: 16 Nov 2015 12:39

Tgt Ion: 42 Resp: 949

Ion	Ratio	Lower	Upper
42	100		
72	21.4	22.4	52.4#
71	0.0	19.5	45.5#

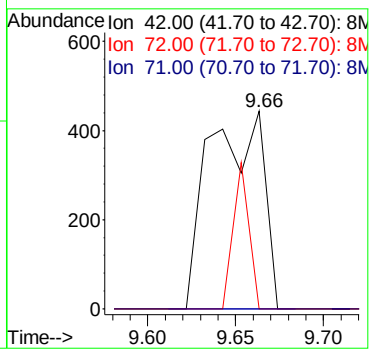

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\111315\11M10253.D Vial: 6
Acq On : 13 Nov 2015 17:15 Operator: JDS
Sample : WG546880-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD73459 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 13 17:37:24 2015 Quant Results File: 8260_WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 10:32:15 2015
Response via : Initial Calibration
DataAcq Meth : 8260_WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	931980	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.28	117	767443	25.00 ug/L	-0.02
76) 1,4-Dichlorobenzene-d4	17.10	152	459892	25.00 ug/L	-0.01
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	267265	25.2134 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.84%		
43) 1,2-Dichloroethane-d4	10.27	65	252282	23.1415 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 92.56%		
57) Toluene-d8	12.51	98	957591	29.2701 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 117.08%#		
78) p-Bromofluorobenzene	15.69	95	364641	27.5187 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 110.08%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.24	85	303578	21.9865 ug/L	98
3) Chloromethane	3.70	50	245968	18.6626 ug/L	100
4) Vinyl Chloride	3.94	62	201610	18.9909 ug/L	99
5) 1,3-Butadiene	3.98	54	87539	17.3383 ug/L	97
6) Bromomethane	4.85	94	142400	20.0421 ug/L	99
7) Chloroethane	5.00	64	160414	20.7624 ug/L	99
8) Trichlorofluoromethane	5.49	101	331251	19.4251 ug/L	100
9) Diethyl ether	6.02	59	860858	108.8459 ug/L	98
10) Isoprene	6.06	67	260000	20.4483 ug/L	98
11) Acrolein	6.26	56	124962	111.6205 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.27	101	206204	21.5939 ug/L	95
13) Acetone	6.36	43	52390	21.8386 ug/L	98
14) 1,1-Dichloroethene	6.58	61	309864	18.2206 ug/L	95
15) Tert-Butyl Alcohol	6.68	59	138216	232.7560 ug/L	97
16) Dimethyl Sulfide	6.83	62	255022	24.7547 ug/L	95
17) Iodomethane	7.08	142	235043	22.0235 ug/L	95
18) Methyl acetate	7.09	43	136450	19.3404 ug/L	99
19) Methylene Chloride	7.34	84	203232	19.6851 ug/L	91
20) Carbon Disulfide	7.38	76	498765	17.3073 ug/L	100
21) Acrylonitrile	7.52	53	71110	20.8921 ug/L	99
22) Methyl Tert Butyl Ether	7.55	73	493671	19.9761 ug/L	99
23) trans-1,2-Dichloroethene	7.78	96	210332	19.6305 ug/L	92
24) n-Hexane	7.85	57	265022	18.3204 ug/L	99
25) Diisopropyl ether	8.18	45	4075479	95.3421 ug/L	98
26) Vinyl Acetate	8.34	43	273296	18.1856 ug/L	99
27) 1,1-Dichloroethane	8.38	63	385444	18.7315 ug/L	100
28) Ethyl-Tert-Butyl ether	8.73	59	3244214	91.6746 ug/L	99
29) 2-Butanone	8.90	43	79749	20.6711 ug/L	99
30) Propionitrile	9.01	54	117595	96.2082 ug/L	96
31) 2,2-Dichloropropane	9.12	77	249915	17.5535 ug/L	98
32) cis-1,2-Dichloroethene	9.18	96	233103	19.2716 ug/L	93
33) Chloroform	9.38	83	359153	19.7341 ug/L	100
34) 1-Bromopropane	9.51	122	55194	26.2003 ug/L	96
35) Bromochloromethane	9.61	130	151409	20.8178 ug/L	93
36) Tetrahydrofuran	9.63	42	251366	97.5749 ug/L	97
38) 1,1,1-Trichloroethane	9.88	97	323951	21.2370 ug/L	97
39) Cyclohexane	9.92	56	391714	19.3416 ug/L	97
40) 1,1-Dichloropropene	10.07	75	268975	19.8796 ug/L	96
41) Carbon Tetrachloride	10.22	117	289175	23.3809 ug/L	99
42) Tert-Amyl-Methyl ether	10.16	73	2600906	99.7244 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M10253.D 8260_WTR.M Fri Nov 13 17:37:25 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\111315\11M10253.D Vial: 6
Acq On : 13 Nov 2015 17:15 Operator: JDS
Sample : WG546880-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD73459 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 13 17:37:24 2015 Quant Results File: 8260_WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 10:32:15 2015
Response via : Initial Calibration
DataAcq Meth : 8260_WTR

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
44) 1,2-Dichloroethane	10.38	62	271497	17.8099	ug/L	100
45) Benzene	10.41	78	813289	19.8420	ug/L	100
46) Trichloroethene	11.13	130	247630	20.2589	ug/L	97
47) Methylcyclohexane	11.21	83	299958	20.1696	ug/L	97
48) 1,2-Dichloropropane	11.32	63	217731	19.0376	ug/L	98
49) 1,4-Dioxane	11.59	88	14959	212.3778	ug/L	91
50) Bromodichloromethane	11.61	83	259514	21.3986	ug/L	100
51) Dibromomethane	11.69	93	121881	20.6188	ug/L	95
52) 2-Chloroethyl Vinyl Ether	11.88	63	113950	19.4410	ug/L	99
53) 4-Methyl-2-Pentanone	11.91	58	68229	20.9341	ug/L	98
54) cis-1,3-Dichloropropene	12.20	75	321139	21.0572	ug/L	100
55) Dimethyl Disulfide	12.46	79	168297	31.2383	ug/L	94
58) Toluene	12.60	91	903666	22.7882	ug/L	100
59) Ethyl Methacrylate	12.68	69	225060	24.2424	ug/L	93
60) trans-1,3-Dichloropropene	12.76	75	257225	21.5798	ug/L	97
61) 1,1,2-Trichloroethane	12.97	97	168948	22.8491	ug/L	98
62) 2-Hexanone	12.89	43	119540	22.7888	ug/L	97
63) 1,3-Dichloropropane	13.26	76	276622	21.8391	ug/L	92
64) Tetrachloroethene	13.37	164	222152	24.1695	ug/L	98
65) Dibromochloromethane	13.62	129	216257	25.7373	ug/L	99
66) 1,2-Dibromoethane	13.87	107	171709	24.0552	ug/L	98
67) 1-Chlorohexane	13.93	91	295171	23.8095	ug/L	94
68) Chlorobenzene	14.33	112	667599	23.1600	ug/L	100
69) 1,1,1,2-Tetrachloroethane	14.35	131	222011	23.8812	ug/L	99
70) Ethylbenzene	14.35	106	331109	22.9246	ug/L	99
71) m-,p-Xylene	14.43	106	804885	47.6734	ug/L	100
72) o-Xylene	14.96	106	400848	23.3522	ug/L	98
73) Styrene	14.99	104	668732	23.6427	ug/L	97
74) Bromoform	15.47	173	148384	28.1950	ug/L	99
75) Isopropylbenzene	15.35	105	1009682	24.3477	ug/L	100
77) 1,1,2,2-Tetrachloroethane	15.55	83	181181	23.6759	ug/L	98
79) 1,2,3-Trichloropropane	15.74	110	57077	22.3737	ug/L	98
80) trans-1,4-Dichloro-2-Buten	15.77	53	54322	18.1821	ug/L	78
81) n-Propylbenzene	15.83	91	1196320	24.6462	ug/L	99
82) Bromobenzene	15.96	156	305422	22.3813	ug/L	94
83) 1,3,5-Trimethylbenzene	16.00	105	831090	23.5331	ug/L	99
84) 2-Chlorotoluene	16.09	91	786883	23.1822	ug/L	98
85) 4-Chlorotoluene	16.13	91	682445	21.6941	ug/L	97
86) a-Methylstyrene	16.38	118	505256	25.1438	ug/L	98
87) tert-Butylbenzene	16.83	134	248215	22.3827	ug/L	97
88) 1,2,4-Trimethylbenzene	16.48	105	841584	23.4167	ug/L	99
89) sec-Butylbenzene	16.69	105	1017444	24.0901	ug/L	99
90) p-Isopropyltoluene	16.83	119	887108	23.8430	ug/L	99
91) 1,3-Dichlorobenzene	17.02	146	592043	23.1006	ug/L	98
92) 1,4-Dichlorobenzene	17.14	146	577988	22.3701	ug/L	99
93) n-Butylbenzene	17.32	91	742126	23.1645	ug/L	99
94) 1,2-Dichlorobenzene	17.61	146	556178	23.3654	ug/L	97
95) 1,2-Dibromo-3-Chloropropan	18.53	75	28886	20.4088	ug/L	90
96) 1,2,4-Trichlorobenzene	19.59	180	387909	22.5984	ug/L	98
97) Hexachlorobutadiene	19.74	225	132836	22.1099	ug/L	98
98) Naphthalene	19.95	128	761082	25.2500	ug/L	100
99) 1,2,3-Trichlorobenzene	20.25	180	363792	23.6540	ug/L	98

(#) = qualifier out of range (m) = manual integration
11M10253.D 8260_WTR.M Fri Nov 13 17:37:25 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\111315\11M10253.D Vial: 6
Acq On : 13 Nov 2015 17:15 Operator: JDS
Sample : WG546880-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD73459 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 13 17:37 2015 Quant Results File: 8260_WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 10:32:15 2015
Response via : Initial Calibration

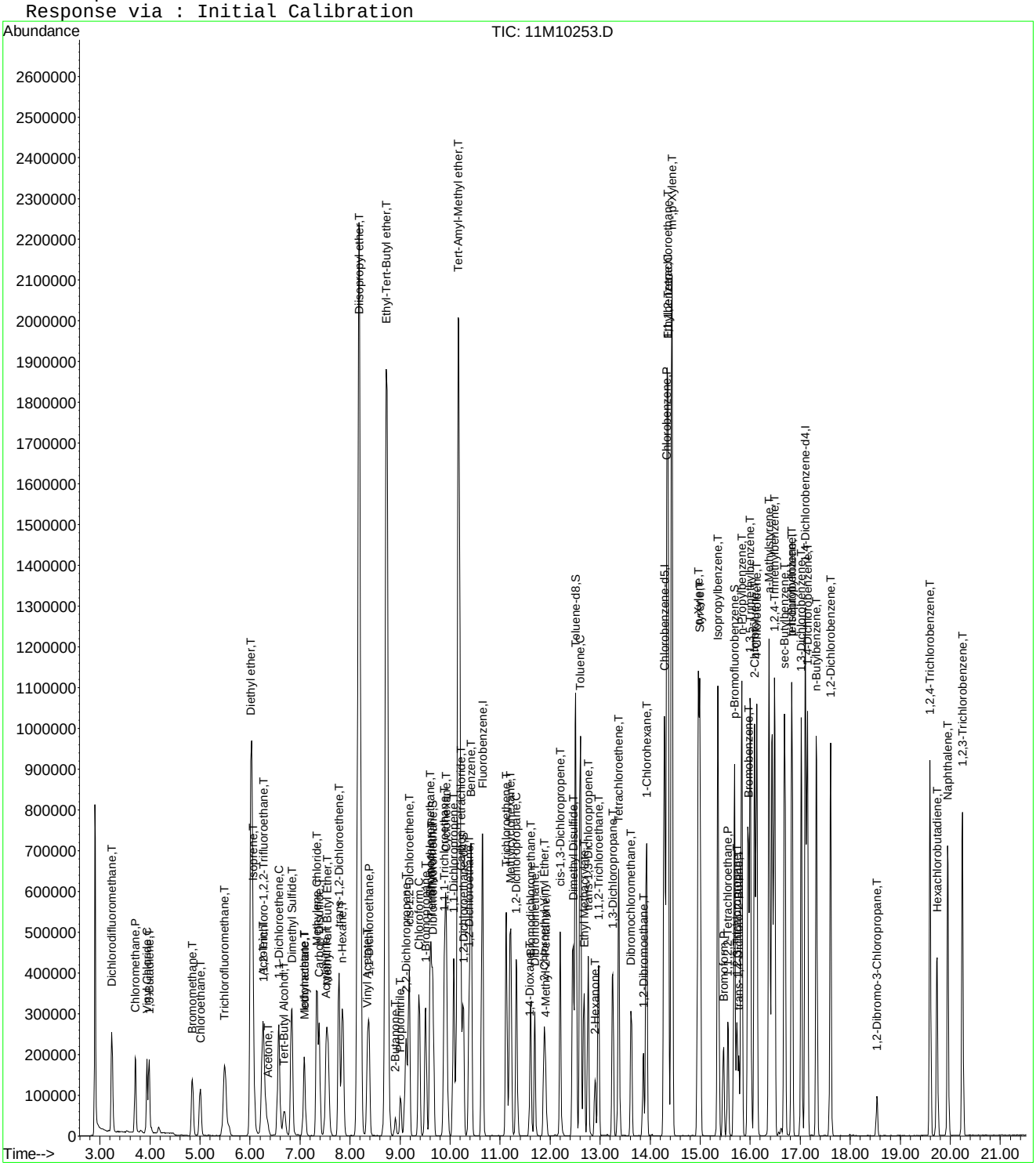

Data Path : D:\MassHunter\GCMS\1\data\111315\
Data File : 17M016436.D
Acq On : 13 Nov 2015 15:01
Operator : ADC
Sample : WG546844-02 20ug/L LCS 8260
Misc : 1,1 STD73387
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 13 15:13:36 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.138	96	392527	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	299327	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.305	152	170620	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.174	111	103671	25.7461 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.984%		
34) 1,2-Dichloroethane-d4	4.811	65	101953	26.3653 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 105.461%		
47) Toluene-d8	6.710	98	392186	25.4180 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.672%		
66) p-Bromofluorobenzene	8.723	95	146587	24.8536 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.414%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.036	85	127797	22.8939 ug/L	98
3) Chloromethane	1.146	50	108927	18.3193 ug/L	100
4) Vinyl Chloride	1.195	62	115556	21.7564 ug/L	100
5) 1,3-Butadiene	1.206	54	76053	22.2775 ug/L	99
6) Bromomethane	1.380	94	55571	19.8363 ug/L	99
7) Chloroethane	1.450	64	58923	21.7281 ug/L	85
8) Trichlorofluoromethane	1.522	101	112362	17.2671 ug/L	99
9) Diethyl ether	1.754	59	311669	99.4472 ug/L	99
10) 1,1-Dichloroethene	1.858	61	127436	20.6814 ug/L	100
11) Carbon Disulfide	1.869	76	81725	6.2972 ug/L #	94
12) 1,1,2-Trichloro-1,2,2-...	1.887	101	87072	22.7882 ug/L	99
14) Acrolein	2.115	56	41787	99.5468 ug/L	98
15) Methylene Chloride	2.286	84	84139	18.4552 ug/L	99
16) Acetone	2.350	43	17812	22.2996 ug/L	93
17) trans-1,2-Dichloroethene	2.414	96	79341	19.6947 ug/L	99
18) Methyl acetate	2.454	43	46858	20.9070 ug/L #	99
19) Methyl Tert Butyl Ether	2.532	73	212703	20.7130 ug/L	100
20) 1,1-Dichloroethane	2.973	63	155867	20.2165 ug/L	100
21) Acrylonitrile	3.036	53	18214	17.0672 ug/L	98
22) Vinyl Acetate	3.277	86	9683	22.0345 ug/L	99
23) cis-1,2-Dichloroethene	3.563	96	91082	19.6917 ug/L	99
24) 2,2-Dichloropropane	3.691	77	128897	22.3520 ug/L	97
25) Cyclohexane	3.792	56	141047	19.0081 ug/L	98
26) Bromochloromethane	3.803	130	58487	21.4144 ug/L	100
27) Chloroform	3.934	83	157006	20.5545 ug/L	100
28) Carbon Tetrachloride	4.079	117	122354	20.6283 ug/L	99
30) 1,1,1-Trichloroethane	4.174	97	141661	21.1433 ug/L	100
31) 1,1-Dichloropropene	4.342	75	114488	20.1566 ug/L	98
32) 2-Butanone	4.371	43	26752	20.6630 ug/L	95
33) Benzene	4.646	78	340281	20.1706 ug/L	100
35) 1,2-Dichloroethane	4.889	62	104876	20.6603 ug/L	99
36) Methylcyclohexane	5.295	83	147650	18.7178 ug/L	98
37) Trichloroethene	5.321	130	94710	20.2310 ug/L	99
38) Dibromomethane	5.740	93	50528	20.1837 ug/L	99
39) 1,2-Dichloropropane	5.848	63	93311	20.1221 ug/L	98
40) Bromodichloromethane	5.937	83	116753	20.2510 ug/L	100
41) 1,4-Dioxane	6.152	88	6370	226.1632 ug/L	92
42) 2-Chloroethyl Vinyl Ether	6.528	63	46569	19.8687 ug/L	98
43) cis-1,3-Dichloropropene	6.542	75	144921	21.3206 ug/L	100
44) 4-Methyl-2-Pentanone	7.814	58	22332	19.3945 ug/L	100
45) trans-1,3-Dichloropropene	7.142	75	116695	20.0656 ug/L	100
48) Toluene	6.754	91	381403	20.1130 ug/L	99
49) Tetrachloroethene	7.087	166	105769	20.6940 ug/L	99
50) 1,1,2-Trichloroethane	7.275	97	67192	19.0472 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\111315\
Data File : 17M016436.D
Acq On : 13 Nov 2015 15:01
Operator : ADC
Sample : WG546844-02 20ug/L LCS 8260
Misc : 1,1 STD73387
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 13 15:13:36 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
51) Dibromochloromethane	7.414	129	91194	20.0245 ug/L	100
52) 1,3-Dichloropropane	7.498	76	113253	20.2410 ug/L	99
53) 1,2-Dibromoethane	7.585	107	67738	19.3502 ug/L	100
54) 2-Hexanone	7.814	43	44435	19.5921 ug/L	98
55) Chlorobenzene	7.984	112	261301	21.3815 ug/L	100
56) 1-Chlorohexane	7.999	69	23626	18.8221 ug/L	81
57) Ethylbenzene	8.022	106	134777	20.2610 ug/L	99
58) 1,1,1,2-Tetrachloroethane	8.036	131	91068	20.1282 ug/L	100
59) m-,p-Xylene	8.120	106	336384	42.1511 ug/L	100
60) o-Xylene	8.384	106	166872	21.1907 ug/L	100
61) Styrene	8.419	104	264542	20.2142 ug/L	100
62) Bromoform	8.419	173	65669	21.8707 ug/L	100
63) Isopropylbenzene	8.575	105	436363	21.2578 ug/L	100
65) 1,3,5-Trimethylbenzene	8.914	105	373213	19.9767 ug/L	100
67) Bromobenzene	8.775	156	113399	19.4195 ug/L	99
68) n-Propylbenzene	8.804	91	508975	20.8724 ug/L	100
69) 1,1,2,2-Tetrachloroethane	8.847	83	82447	19.4656 ug/L	99
70) 2-Chlorotoluene	8.879	91	305623	20.4929 ug/L	99
71) 1,2,3-Trichloropropane	8.911	110	21579	18.3042 ug/L	99
72) trans-1,4-Dichloro-2-B...	8.937	53	16290	16.6226 ug/L #	89
73) 1,2,4-Trimethylbenzene	9.111	105	367450	19.7024 ug/L	100
74) 4-Chlorotoluene	8.969	91	307601	20.0462 ug/L	98
75) tert-Butylbenzene	9.076	134	71663	20.9180 ug/L	100
76) sec-Butylbenzene	9.166	105	478825	20.8574 ug/L	100
77) p-Isopropyltoluene	9.238	119	396456	19.9682 ug/L	99
78) 1,3-Dichlorobenzene	9.267	146	219727	20.4900 ug/L	99
79) 1,4-Dichlorobenzene	9.310	146	212445	19.4211 ug/L	99
80) n-Butylbenzene	9.441	91	368037	20.1404 ug/L	100
81) 1,2-Dichlorobenzene	9.513	146	211588	20.7259 ug/L	98
82) 1,2-Dibromo-3-Chloropr...	9.892	75	15771	19.8401 ug/L	99
83) Hexachlorobutadiene	10.188	225	97272	20.7000 ug/L	99
84) 1,2,4-Trichlorobenzene	10.202	180	169763	20.8369 ug/L	100
85) Naphthalene	10.356	128	305277	20.2291 ug/L	100
86) 1,2,3-Trichlorobenzene	10.440	180	156101	20.7604 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\111315\
Data File : 17M016436.D
Acq On : 13 Nov 2015 15:01
Operator : ADC
Sample : WG546844-02 20ug/L LCS 8260
Misc : 1,1 STD73387
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 13 15:13:36 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

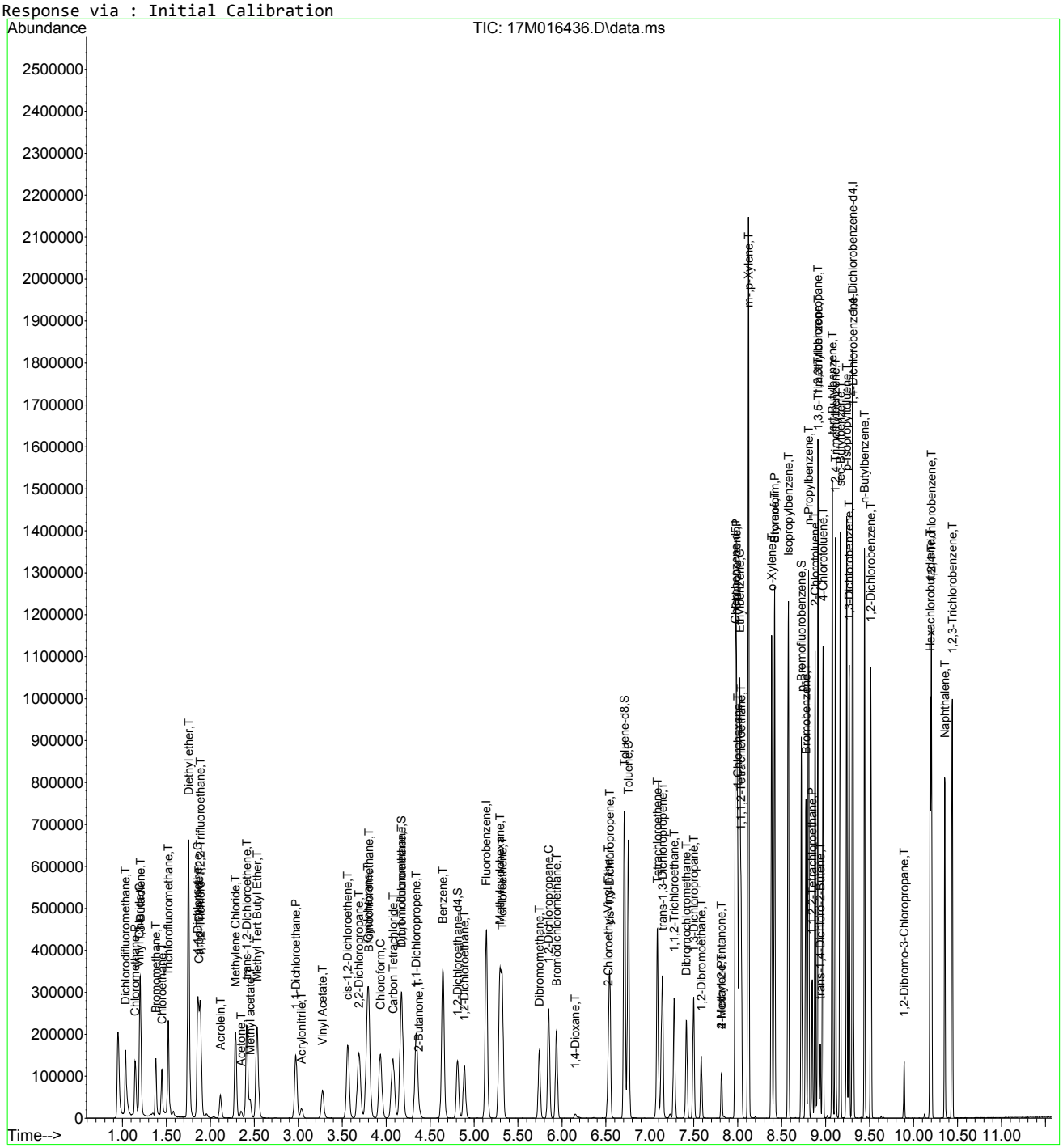

8260_VMS.M Fri Nov 13 15:13:38 2015 Page: 3

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\112415\
Data File : 17M016669.D
Acq On : 24 Nov 2015 21:26
Operator : JDS/FJB
Sample : WG548399-02 20ug/L LCS 8260
Misc : 1,1 STD73387
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 24 21:38:41 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.138	96	320627	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	240799	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.302	152	137777	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.177	111	89889	27.3294 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.318%		
34) 1,2-Dichloroethane-d4	4.811	65	89481	28.3291 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 113.316%		
47) Toluene-d8	6.710	98	342448	27.5889 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 110.356%#		
66) p-Bromofluorobenzene	8.723	95	124583	26.1580 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.632%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.036	85	101630	22.2890 ug/L	98
3) Chloromethane	1.146	50	80057	16.4832 ug/L	100
4) Vinyl Chloride	1.192	62	90986	20.9719 ug/L	99
5) 1,3-Butadiene	1.203	54	61750	22.1441 ug/L	99
6) Bromomethane	1.380	94	46699	20.4075 ug/L	100
7) Chloroethane	1.447	64	57837	26.1103 ug/L #	77
8) Trichlorofluoromethane	1.519	101	120125	22.7518 ug/L	100
9) Diethyl ether	1.754	59	264913	103.4836 ug/L	99
10) 1,1-Dichloroethene	1.855	61	95324	18.9391 ug/L	99
11) Carbon Disulfide	1.866	76	57821	5.4544 ug/L #	94
12) 1,1,2-Trichloro-1,2,2-...	1.884	101	65068	20.8482 ug/L	98
14) Acrolein	2.115	56	29227	85.2393 ug/L	100
15) Methylene Chloride	2.286	84	68966	18.5194 ug/L	98
16) Acetone	2.353	43	14404	22.0707 ug/L	96
17) trans-1,2-Dichloroethene	2.414	96	66251	20.1333 ug/L	96
18) Methyl acetate	2.454	43	37644	20.5624 ug/L #	100
19) Methyl Tert Butyl Ether	2.532	73	169040	20.1525 ug/L	99
20) 1,1-Dichloroethane	2.970	63	118351	18.7929 ug/L	100
21) Acrylonitrile	3.036	53	14932	17.1295 ug/L	96
22) Vinyl Acetate	3.274	86	8566	23.5686 ug/L	98
23) cis-1,2-Dichloroethene	3.566	96	76132	20.1506 ug/L	97
24) 2,2-Dichloropropane	3.691	77	99939	21.2167 ug/L	99
25) Cyclohexane	3.786	56	107356	17.7122 ug/L	96
26) Bromochloromethane	3.803	130	46151	20.6870 ug/L	99
27) Chloroform	3.934	83	123458	19.7870 ug/L	100
28) Carbon Tetrachloride	4.076	117	97234	20.0694 ug/L	99
30) 1,1,1-Trichloroethane	4.174	97	110834	20.2519 ug/L	100
31) 1,1-Dichloropropene	4.342	75	89615	19.3156 ug/L	98
32) 2-Butanone	4.374	43	22101	20.8987 ug/L	94
33) Benzene	4.643	78	274727	19.9367 ug/L	99
35) 1,2-Dichloroethane	4.892	62	88886	21.4369 ug/L	99
36) Methylcyclohexane	5.292	83	113824	17.6655 ug/L	98
37) Trichloroethene	5.318	130	80951	21.1697 ug/L	99
38) Dibromomethane	5.740	93	40409	19.7614 ug/L	99
39) 1,2-Dichloropropane	5.848	63	76924	20.3082 ug/L	98
40) Bromodichloromethane	5.937	83	95304	20.2376 ug/L	99
41) 1,4-Dioxane	6.149	88	4838	210.2896 ug/L	93
42) 2-Chloroethyl Vinyl Ether	6.525	63	33609	17.5549 ug/L	99
43) cis-1,3-Dichloropropene	6.542	75	120431	21.6908 ug/L	100
44) 4-Methyl-2-Pentanone	7.814	58	18023	19.1623 ug/L	97
45) trans-1,3-Dichloropropene	7.145	75	99573	20.9610 ug/L	99
48) Toluene	6.754	91	311933	20.4478 ug/L	99
49) Tetrachloroethene	7.087	166	84270	20.4951 ug/L	98
50) 1,1,2-Trichloroethane	7.275	97	57922	20.4102 ug/L	99

Data Path : D:\MassHunter\GCMS\1\data\112415\
Data File : 17M016669.D
Acq On : 24 Nov 2015 21:26
Operator : JDS/FJB
Sample : WG548399-02 20ug/L LCS 8260
Misc : 1,1 STD73387
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 24 21:38:41 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
51) Dibromochloromethane	7.414	129	76417	20.8582 ug/L	100
52) 1,3-Dichloropropane	7.498	76	98319	21.8430 ug/L	97
53) 1,2-Dibromoethane	7.585	107	57771	20.5142 ug/L	98
54) 2-Hexanone	7.814	43	36042	19.7541 ug/L	97
55) Chlorobenzene	7.984	112	210792	21.4409 ug/L	99
56) 1-Chlorohexane	7.996	69	18847	18.6643 ug/L	72
57) Ethylbenzene	8.022	106	110484	20.6460 ug/L	100
58) 1,1,1,2-Tetrachloroethane	8.036	131	76883	21.1233 ug/L	99
59) m-,p-Xylene	8.120	106	275411	42.8989 ug/L	100
60) o-Xylene	8.384	106	134746	21.2700 ug/L	100
61) Styrene	8.416	104	217519	20.6609 ug/L	99
62) Bromoform	8.419	173	52711	21.8220 ug/L	99
63) Isopropylbenzene	8.572	105	355308	21.5162 ug/L	100
65) 1,3,5-Trimethylbenzene	8.911	105	308572	20.4539 ug/L	100
67) Bromobenzene	8.775	156	94817	20.1079 ug/L	96
68) n-Propylbenzene	8.804	91	419816	21.3200 ug/L	100
69) 1,1,2,2-Tetrachloroethane	8.844	83	73427	21.4685 ug/L	100
70) 2-Chlorotoluene	8.879	91	246580	20.4752 ug/L	99
71) 1,2,3-Trichloropropane	8.908	110	19907	20.9111 ug/L	98
72) trans-1,4-Dichloro-2-B...	8.937	53	11488	14.5170 ug/L #	96
73) 1,2,4-Trimethylbenzene	9.111	105	303979	20.1845 ug/L	100
74) 4-Chlorotoluene	8.966	91	264505	21.3467 ug/L	98
75) tert-Butylbenzene	9.073	134	58831	21.2659 ug/L	100
76) sec-Butylbenzene	9.163	105	392592	21.1777 ug/L	100
77) p-Isopropyltoluene	9.238	119	329809	20.5712 ug/L	100
78) 1,3-Dichlorobenzene	9.264	146	184815	21.3427 ug/L	98
79) 1,4-Dichlorobenzene	9.310	146	187216	21.1945 ug/L	99
80) n-Butylbenzene	9.441	91	308551	20.9101 ug/L	99
81) 1,2-Dichlorobenzene	9.513	146	174866	21.2120 ug/L	98
82) 1,2-Dibromo-3-Chloropr...	9.889	75	13657	21.2761 ug/L	96
83) Hexachlorobutadiene	10.185	225	77476	20.4175 ug/L	100
84) 1,2,4-Trichlorobenzene	10.199	180	136392	20.7316 ug/L	100
85) Naphthalene	10.350	128	226076	18.5520 ug/L	100
86) 1,2,3-Trichlorobenzene	10.434	180	123269	20.3019 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\112415\
Data File : 17M016669.D
Acq On : 24 Nov 2015 21:26
Operator : JDS/FJB
Sample : WG548399-02 20ug/L LCS 8260
Misc : 1,1 STD73387
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 24 21:38:41 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

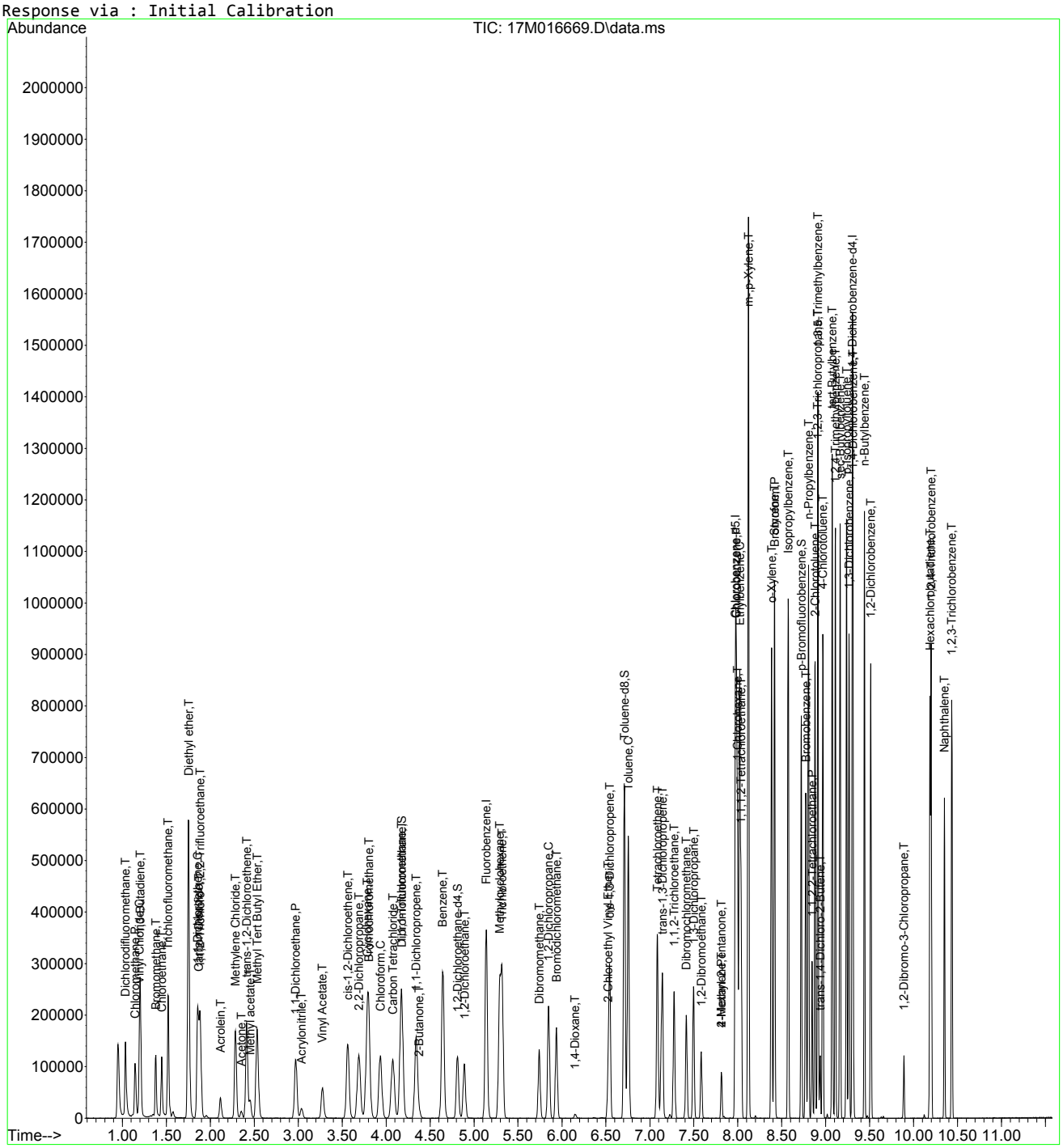

8260_VMS.M Tue Nov 24 21:38:43 2015 Page: 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\111615\8M408710.D Vial: 5
Acq On : 16 Nov 2015 13:09 Operator: TMB
Sample : WG547025-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD73459 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 16 13:31:12 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	1288290	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	958081	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	546215	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	321377	26.2109 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.84%		
43) 1,2-Dichloroethane-d4	10.31	65	324584	25.9642 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.84%		
58) Toluene-d8	12.69	98	1120358	25.2032 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.80%		
80) p-Bromofluorobenzene	16.08	95	456543	23.9551 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.84%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	458175	23.3932 ug/L	99
3) Chloromethane	3.63	50	707532	23.6745 ug/L	98
4) Vinyl Chloride	3.84	62	546646	23.1467 ug/L	99
5) 1,3-Butadiene	3.89	54	311708	17.1166 ug/L	93
6) Bromomethane	4.74	94	141716	18.4174 ug/L	97
7) Chloroethane	4.90	64	218224	22.6495 ug/L	97
8) Trichlorofluoromethane	5.38	101	481488	21.0942 ug/L	98
9) Diethyl ether	5.91	59	925327	105.3266 ug/L	99
10) Isoprene	5.95	67	287577	17.1609 ug/L	94
11) Acrolein	6.15	56	102122	93.6638 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	277392	22.6079 ug/L	99
13) Acetone	6.25	43	45173	23.6241 ug/L	97
14) 1,1-Dichloroethene	6.48	61	425811	20.3871 ug/L	100
15) Tert-Butyl Alcohol	6.58	59	117003	207.0848 ug/L	95
16) Dimethyl Sulfide	6.74	62	288498	24.0669 ug/L	99
17) Iodomethane	7.00	142	29111	5.3337 ug/L	96
18) Methyl acetate	7.01	43	132930	18.3837 ug/L	98
19) Methylene Chloride	7.27	84	263814	20.3375 ug/L	99
20) Carbon Disulfide	7.30	76	577268	13.6290 ug/L	100
21) Acrylonitrile	7.44	53	68149	23.7409 ug/L	95
22) Methyl Tert Butyl Ether	7.47	73	538703	21.9075 ug/L	99
23) trans-1,2-Dichloroethene	7.71	61	407326	20.5362 ug/L	97
24) n-Hexane	7.79	57	300729	15.3482 ug/L	95
25) Diisopropyl ether	8.13	45	4981376	101.8804 ug/L	98
26) Vinyl Acetate	8.30	43	435729	33.5311 ug/L	98
27) 1,1-Dichloroethane	8.33	63	523615	20.7888 ug/L	99
28) Ethyl-Tert-Butyl ether	8.71	59	3768333	97.8487 ug/L	98
29) 2-Butanone	8.89	43	75647	22.9624 ug/L	97
30) Propionitrile	8.99	54	103068	106.6268 ug/L	99
31) 2,2-Dichloropropane	9.11	77	435490	20.6886 ug/L	100
32) cis-1,2-Dichloroethene	9.18	96	292629	20.6778 ug/L	100
33) Chloroform	9.38	83	514254	21.4939 ug/L	99
34) 1-Bromopropane	9.52	122	60689	26.1151 ug/L	98
35) Bromochloromethane	9.61	130	159278	22.8630 ug/L	98
36) Tetrahydrofuran	9.63	42	228091	105.4751 ug/L	97
38) 1,1,1-Trichloroethane	9.91	97	464861	21.6452 ug/L	97
39) Cyclohexane	9.94	56	451789	17.6780 ug/L	100
40) 1,1-Dichloropropene	10.11	75	379665	20.5324 ug/L	99
41) Tert-Amyl-Methyl ether	10.22	73	2916194	102.1279 ug/L	97
42) Carbon Tetrachloride	10.25	117	412373	21.4847 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M408710.D 8260WT.M Mon Nov 16 13:31:13 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\111615\8M408710.D Vial: 5
Acq On : 16 Nov 2015 13:09 Operator: TMB
Sample : WG547025-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD73459 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 16 13:31:12 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	347181	21.1313 ug/L		98
46)	Benzene	10.47	78	1081668	21.3187 ug/L		99
47)	Trichloroethene	11.21	130	277033	20.2822 ug/L		97
48)	Methylcyclohexane	11.31	83	389873	18.4473 ug/L		99
49)	1,2-Dichloropropane	11.43	63	283860	20.7672 ug/L		98
50)	Bromodichloromethane	11.73	83	366630	20.7808 ug/L		99
51)	1,4-Dioxane	11.72	88	13295	211.2709 ug/L		83
52)	Dibromomethane	11.81	93	140347	21.5630 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.03	63	120862	21.4530 ug/L		95
54)	4-Methyl-2-Pentanone	12.06	58	59570	20.6114 ug/L		98
55)	cis-1,3-Dichloropropene	12.37	75	418774	21.3822 ug/L		99
56)	Dimethyl Disulfide	12.63	79	205240	19.4343 ug/L		95
59)	Toluene	12.78	91	1128279	20.7245 ug/L		98
60)	Ethyl Methacrylate	12.89	69	235756	21.7206 ug/L		96
62)	trans-1,3-Dichloropropene	12.96	75	332677	19.9183 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	176747	20.4543 ug/L		99
64)	2-Hexanone	13.12	58	52812	19.4395 ug/L	#	88
65)	1,3-Dichloropropane	13.49	76	310499	20.1074 ug/L		93
66)	Tetrachloroethene	13.61	164	233876	20.2078 ug/L		99
67)	Dibromochloromethane	13.87	129	228493	20.4521 ug/L		97
68)	1,2-Dibromoethane	14.13	107	173228	20.0798 ug/L		99
69)	1-Chlorohexane	14.21	91	373919	19.1942 ug/L		98
70)	Chlorobenzene	14.62	112	759543	20.8212 ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.66	131	268588	19.9127 ug/L		97
72)	Ethylbenzene	14.66	106	405003	19.0584 ug/L		96
73)	m-,p-Xylene	14.75	106	1005143	41.2446 ug/L		98
74)	o-Xylene	15.31	106	494008	20.0454 ug/L		96
75)	Styrene	15.35	104	802882	20.5624 ug/L		99
76)	Bromoform	15.83	173	142695	21.2463 ug/L		99
77)	Isopropylbenzene	15.73	105	1277019	21.6014 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	203664	20.2100 ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	56532	20.1881 ug/L	#	47
82)	trans-1,4-Dichloro-2-Buten	16.18	53	69828	18.8562 ug/L		77
83)	n-Propylbenzene	16.24	91	1565163	19.7915 ug/L		99
84)	Bromobenzene	16.37	156	320248	19.9491 ug/L		97
85)	1,3,5-Trimethylbenzene	16.42	105	1071769	19.7119 ug/L		99
86)	2-Chlorotoluene	16.51	91	1052272	20.0891 ug/L		98
87)	4-Chlorotoluene	16.56	91	884605	19.5277 ug/L		98
88)	a-Methylstyrene	16.83	118	614599	20.7347 ug/L		97
89)	tert-Butylbenzene	16.89	134	235163	19.6604 ug/L		89
90)	1,2,4-Trimethylbenzene	16.94	105	1094993	19.9296 ug/L		98
91)	sec-Butylbenzene	17.16	105	1352290	20.0213 ug/L		98
92)	p-Isopropyltoluene	17.32	119	1068915	19.7938 ug/L		97
93)	1,3-Dichlorobenzene	17.51	146	650461	20.3001 ug/L		97
94)	1,4-Dichlorobenzene	17.64	146	628268	19.6899 ug/L		97
95)	n-Butylbenzene	17.84	91	1069108	21.2372 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	579562	20.6711 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	32263	18.2691 ug/L		85
98)	1,2,4-Trichlorobenzene	20.27	180	399054	20.7167 ug/L		99
99)	Hexachlorobutadiene	20.42	225	176758	19.1851 ug/L		100
100)	Naphthalene	20.64	128	647746	23.2596 ug/L		98
101)	1,2,3-Trichlorobenzene	20.95	180	342798	20.8691 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M408710.D 8260WT.M Mon Nov 16 13:31:13 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\111615\8M408710.D Vial: 5
Acq On : 16 Nov 2015 13:09 Operator: TMB
Sample : WG547025-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD73459 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 16 13:31 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration

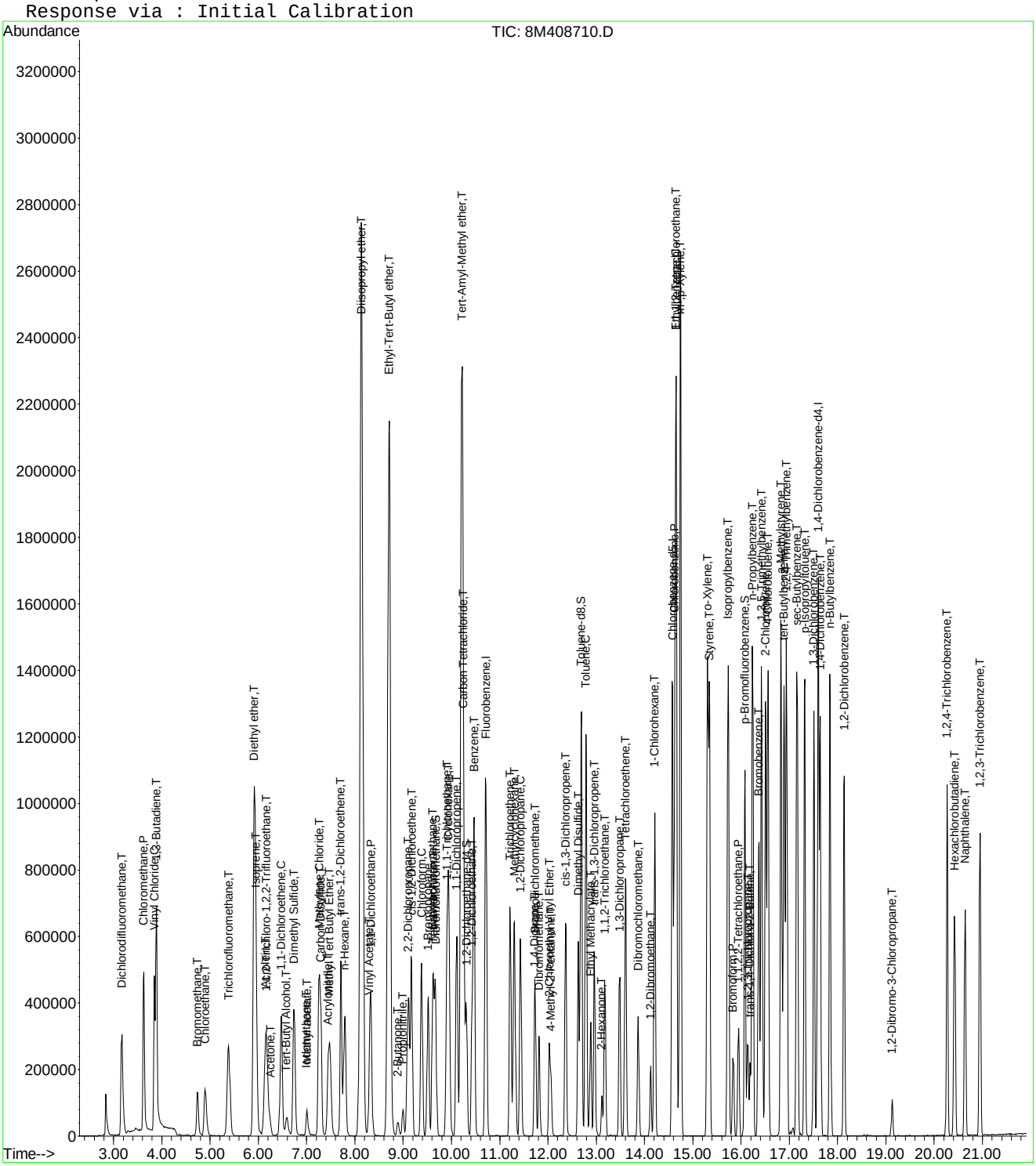

8M408710.D 8260WT.M Mon Nov 16 13:31:13 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\111315\11M10254.D Vial: 7
Acq On : 13 Nov 2015 17:47 Operator: JDS
Sample : WG546880-03 20ug/L LCS2 STD 8260 Inst : hpms11
Misc : 1,1 STD73459 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 13 18:09:05 2015 Quant Results File: 8260_WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 10:32:15 2015
Response via : Initial Calibration
DataAcq Meth : 8260_WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.65	96	931289	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.28	117	776307	25.00 ug/L	-0.02
76) 1,4-Dichlorobenzene-d4	17.10	152	460534	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	265655	25.0801 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.32%		
43) 1,2-Dichloroethane-d4	10.27	65	245303	22.5180 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 90.08%		
57) Toluene-d8	12.51	98	949266	28.6844 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 114.72%#		
78) p-Bromofluorobenzene	15.69	95	361763	27.2634 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 109.04%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.24	85	292323	21.1871 ug/L	98
3) Chloromethane	3.70	50	234142	17.7785 ug/L	98
4) Vinyl Chloride	3.94	62	199812	18.8355 ug/L	99
5) 1,3-Butadiene	3.98	54	84781	16.7348 ug/L	97
6) Bromomethane	4.85	94	146893	20.6898 ug/L	99
7) Chloroethane	5.00	64	159539	20.6645 ug/L	99
8) Trichlorofluoromethane	5.50	101	326695	19.1722 ug/L	99
9) Diethyl ether	6.02	59	832479	105.3358 ug/L	97
10) Isoprene	6.06	67	232955	18.3349 ug/L	97
11) Acrolein	6.26	56	116075	103.7593 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.27	101	203562	21.3330 ug/L	97
13) Acetone	6.36	43	48892	20.3956 ug/L	100
14) 1,1-Dichloroethene	6.58	61	306050	18.0097 ug/L	95
15) Tert-Butyl Alcohol	6.68	59	134617	227.8075 ug/L	96
16) Dimethyl Sulfide	6.83	62	243195	23.6242 ug/L	96
17) Iodomethane	7.08	142	237704	22.2765 ug/L	97
18) Methyl acetate	7.09	43	125394	17.7865 ug/L	99
19) Methylene Chloride	7.34	84	201424	19.5244 ug/L	90
20) Carbon Disulfide	7.38	76	462542	16.0623 ug/L	100
21) Acrylonitrile	7.52	53	65573	19.2796 ug/L	99
22) Methyl Tert Butyl Ether	7.55	73	466194	18.8782 ug/L	99
23) trans-1,2-Dichloroethene	7.78	96	206013	19.2416 ug/L	92
24) n-Hexane	7.85	57	238893	16.5264 ug/L	99
25) Diisopropyl ether	8.18	45	4024186	94.2120 ug/L	98
26) Vinyl Acetate	8.34	43	265296	17.7700 ug/L	99
27) 1,1-Dichloroethane	8.38	63	378542	18.4097 ug/L	99
28) Ethyl-Tert-Butyl ether	8.73	59	3172329	89.7098 ug/L	99
29) 2-Butanone	8.90	43	73782	19.1386 ug/L	99
30) Propionitrile	9.01	54	111970	91.6742 ug/L	94
31) 2,2-Dichloropropane	9.12	77	255252	17.9417 ug/L	99
32) cis-1,2-Dichloroethene	9.18	96	232211	19.2121 ug/L	93
33) Chloroform	9.38	83	358514	19.7136 ug/L	99
34) 1-Bromopropane	9.51	122	51204	24.3243 ug/L	98
35) Bromochloromethane	9.61	130	147985	20.3621 ug/L	92
36) Tetrahydrofuran	9.63	42	234970	91.2780 ug/L	97
38) 1,1,1-Trichloroethane	9.88	97	319414	20.9551 ug/L	97
39) Cyclohexane	9.92	56	355400	17.5615 ug/L	98
40) 1,1-Dichloropropene	10.07	75	267164	19.7604 ug/L	97
41) Carbon Tetrachloride	10.22	117	285128	23.0790 ug/L	99
42) Tert-Amyl-Methyl ether	10.16	73	2522238	96.7799 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\111315\11M10254.D Vial: 7
Acq On : 13 Nov 2015 17:47 Operator: JDS
Sample : WG546880-03 20ug/L LCS2 STD 8260 Inst : hpms11
Misc : 1,1 STD73459 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 13 18:09:05 2015 Quant Results File: 8260_WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 10:32:15 2015
Response via : Initial Calibration
DataAcq Meth : 8260_WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44)	1,2-Dichloroethane	10.38	62	266609	17.5023 ug/L	99
45)	Benzene	10.42	78	809696	19.7690 ug/L	100
46)	Trichloroethene	11.13	130	241539	19.7752 ug/L	97
47)	Methylcyclohexane	11.21	83	272411	18.3309 ug/L	96
48)	1,2-Dichloropropane	11.32	63	217561	19.0368 ug/L	97
49)	1,4-Dioxane	11.59	88	13874	197.1199 ug/L	97
50)	Bromodichloromethane	11.61	83	257300	21.2317 ug/L	99
51)	Dibromomethane	11.69	93	118738	20.1020 ug/L	96
52)	2-Chloroethyl Vinyl Ether	11.88	63	108608	18.5434 ug/L	98
53)	4-Methyl-2-Pentanone	11.91	58	64694	19.8642 ug/L	96
54)	cis-1,3-Dichloropropene	12.20	75	319221	20.9469 ug/L	100
55)	Dimethyl Disulfide	12.46	79	161292	30.1579 ug/L	92
58)	Toluene	12.60	91	903718	22.5293 ug/L	100
59)	Ethyl Methacrylate	12.68	69	211458	22.5646 ug/L	93
60)	trans-1,3-Dichloropropene	12.76	75	248614	20.6192 ug/L	97
61)	1,1,2-Trichloroethane	12.97	97	161354	21.5728 ug/L	100
62)	2-Hexanone	12.89	43	109836	20.6998 ug/L	97
63)	1,3-Dichloropropane	13.26	76	262218	20.4655 ug/L	95
64)	Tetrachloroethene	13.37	164	217671	23.4116 ug/L	96
65)	Dibromochloromethane	13.62	129	207690	24.4808 ug/L	100
66)	1,2-Dibromoethane	13.87	107	163982	22.7104 ug/L	99
67)	1-Chlorohexane	13.93	91	271070	21.6157 ug/L	94
68)	Chlorobenzene	14.33	112	655812	22.4914 ug/L	100
69)	1,1,1,2-Tetrachloroethane	14.35	131	220990	23.5079 ug/L	100
70)	Ethylbenzene	14.35	106	322261	22.0573 ug/L	99
71)	m-,p-Xylene	14.43	106	791881	46.3676 ug/L	98
72)	o-Xylene	14.96	106	400568	23.0694 ug/L	99
73)	Styrene	14.99	104	652828	22.8169 ug/L	98
74)	Bromoform	15.47	173	139159	26.2440 ug/L	97
75)	Isopropylbenzene	15.35	105	1006680	23.9982 ug/L	100
77)	1,1,2,2-Tetrachloroethane	15.55	83	173490	22.6392 ug/L	100
79)	1,2,3-Trichloropropane	15.74	110	54512	21.3384 ug/L	95
80)	trans-1,4-Dichloro-2-Buten	15.77	53	51807	17.3608 ug/L	72
81)	n-Propylbenzene	15.83	91	1163226	23.9310 ug/L	100
82)	Bromobenzene	15.96	156	302499	22.1362 ug/L	94
83)	1,3,5-Trimethylbenzene	16.01	105	814387	23.0280 ug/L	98
84)	2-Chlorotoluene	16.09	91	790074	23.2437 ug/L	99
85)	4-Chlorotoluene	16.13	91	682202	21.6561 ug/L	99
86)	a-Methylstyrene	16.38	118	483720	24.0385 ug/L	98
87)	tert-Butylbenzene	16.83	134	246565	22.2029 ug/L	99
88)	1,2,4-Trimethylbenzene	16.48	105	829310	23.0430 ug/L	100
89)	sec-Butylbenzene	16.69	105	999489	23.6320 ug/L	99
90)	p-Isopropyltoluene	16.83	119	868552	23.3117 ug/L	100
91)	1,3-Dichlorobenzene	17.02	146	586633	22.8576 ug/L	98
92)	1,4-Dichlorobenzene	17.14	146	570360	22.0441 ug/L	99
93)	n-Butylbenzene	17.32	91	728487	22.7071 ug/L	99
94)	1,2-Dichlorobenzene	17.61	146	553690	23.2284 ug/L	98
95)	1,2-Dibromo-3-Chloropropan	18.54	75	26170	18.6592 ug/L	87
96)	1,2,4-Trichlorobenzene	19.59	180	383699	22.3220 ug/L	98
97)	Hexachlorobutadiene	19.74	225	127448	21.1835 ug/L	98
98)	Naphthalene	19.95	128	717892	23.7839 ug/L	100
99)	1,2,3-Trichlorobenzene	20.25	180	352324	22.8764 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\111315\11M10254.D Vial: 7
Acq On : 13 Nov 2015 17:47 Operator: JDS
Sample : WG546880-03 20ug/L LCS2 STD 8260 Inst : hpms11
Misc : 1,1 STD73459 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Nov 13 18:09 2015 Quant Results File: 8260_WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260_WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 100915 HPMS11
Last Update : Sun Oct 11 10:32:15 2015
Response via : Initial Calibration

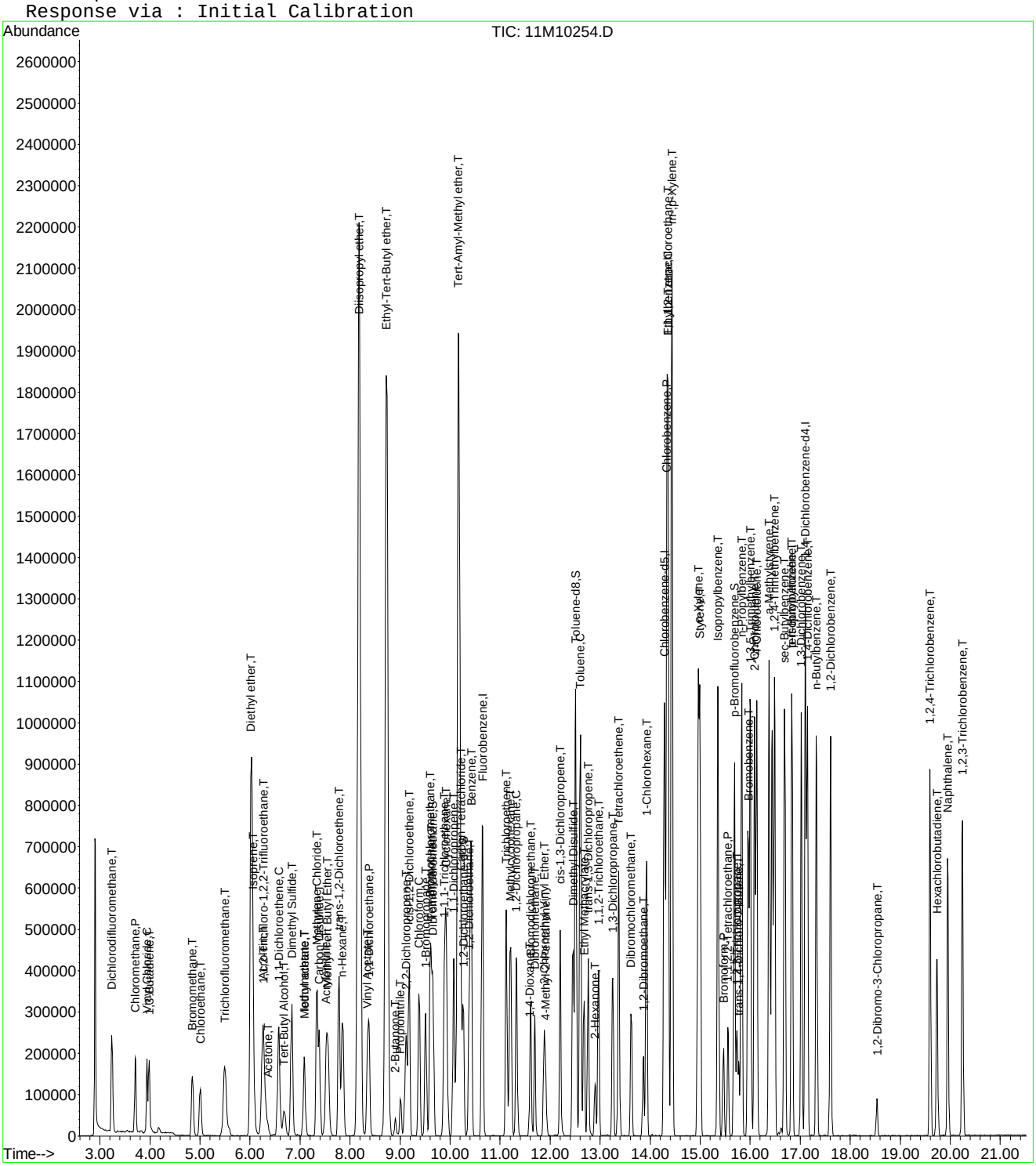

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\111615\8M408711.D Vial: 6
Acq On : 16 Nov 2015 13:38 Operator: TMB
Sample : WG547025-03 20ug/L LCSDUP STD 8260 Inst : HPMS8
Misc : 1,1 STD73459 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 16 14:00:25 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	1333102	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	984469	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	564844	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	331753	26.1477 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.60%		
43) 1,2-Dichloroethane-d4	10.31	65	324587	25.0917 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.36%		
58) Toluene-d8	12.69	98	1157554	25.3420 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.36%		
80) p-Bromofluorobenzene	16.08	95	468495	23.7715 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.08%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	484735	23.9173 ug/L	100
3) Chloromethane	3.63	50	733423	23.7159 ug/L	98
4) Vinyl Chloride	3.84	62	554377	22.6850 ug/L	99
5) 1,3-Butadiene	3.89	54	327279	17.4240 ug/L	90
6) Bromomethane	4.73	94	157115	19.6650 ug/L	100
7) Chloroethane	4.90	64	223397	22.4070 ug/L	97
8) Trichlorofluoromethane	5.38	101	491486	20.8084 ug/L	98
9) Diethyl ether	5.91	59	991936	109.1131 ug/L	98
10) Isoprene	5.95	67	312386	18.0147 ug/L	98
11) Acrolein	6.15	56	107605	95.3752 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	288393	22.7144 ug/L	98
13) Acetone	6.25	43	50575	25.5601 ug/L	98
14) 1,1-Dichloroethene	6.48	61	435436	20.1472 ug/L	98
15) Tert-Butyl Alcohol	6.59	59	120541	206.1751 ug/L	94
16) Dimethyl Sulfide	6.74	62	297406	23.9760 ug/L	100
17) Iodomethane	7.00	142	47328	7.3431 ug/L	94
18) Methyl acetate	7.01	43	138087	18.4550 ug/L	98
19) Methylene Chloride	7.27	84	272125	20.2731 ug/L	98
20) Carbon Disulfide	7.30	76	605945	13.8252 ug/L	99
21) Acrylonitrile	7.44	53	67913	22.8634 ug/L	99
22) Methyl Tert Butyl Ether	7.47	73	573637	22.5440 ug/L	97
23) trans-1,2-Dichloroethene	7.71	61	426607	20.7853 ug/L	98
24) n-Hexane	7.79	57	330692	16.3101 ug/L	95
25) Diisopropyl ether	8.13	45	5263678	104.0353 ug/L	98
26) Vinyl Acetate	8.30	43	452476	33.6494 ug/L	98
27) 1,1-Dichloroethane	8.33	63	542313	20.8074 ug/L	99
28) Ethyl-Tert-Butyl ether	8.71	59	4003406	100.4583 ug/L	98
29) 2-Butanone	8.89	43	77707	22.7948 ug/L	98
30) Propionitrile	8.99	54	110078	110.0508 ug/L	99
31) 2,2-Dichloropropane	9.10	77	458929	21.0692 ug/L	99
32) cis-1,2-Dichloroethene	9.18	96	297999	20.3494 ug/L	98
33) Chloroform	9.38	83	534048	21.5709 ug/L	99
34) 1-Bromopropane	9.52	122	65086	27.0658 ug/L	95
35) Bromochloromethane	9.61	130	163290	22.6510 ug/L	99
36) Tetrahydrofuran	9.64	42	242537	108.3853 ug/L	97
38) 1,1,1-Trichloroethane	9.91	97	474926	21.3705 ug/L	98
39) Cyclohexane	9.94	56	481803	18.2187 ug/L	98
40) 1,1-Dichloropropene	10.11	75	388419	20.2997 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	3106430	105.1331 ug/L	97
42) Carbon Tetrachloride	10.25	117	428585	21.5788 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\111615\8M408711.D Vial: 6
Acq On : 16 Nov 2015 13:38 Operator: TMB
Sample : WG547025-03 20ug/L LCSDUP STD 8260 Inst : HPMS8
Misc : 1,1 STD73459 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 16 14:00:25 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.43	62	356823	20.9881 ug/L	98
46)	Benzene	10.47	78	1113450	21.2075 ug/L	100
47)	Trichloroethene	11.22	130	285998	20.2347 ug/L	97
48)	Methylcyclohexane	11.30	83	415612	19.0041 ug/L	99
49)	1,2-Dichloropropane	11.43	63	285373	20.1761 ug/L	96
50)	Bromodichloromethane	11.73	83	372183	20.3864 ug/L	99
51)	1,4-Dioxane	11.73	88	14242	218.7120 ug/L	89
52)	Dibromomethane	11.81	93	144092	21.3942 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.03	63	123537	21.1907 ug/L	94
54)	4-Methyl-2-Pentanone	12.06	58	61985	20.7261 ug/L	98
55)	cis-1,3-Dichloropropene	12.37	75	433278	21.3791 ug/L	100
56)	Dimethyl Disulfide	12.63	79	213874	19.5711 ug/L	96
59)	Toluene	12.78	91	1155363	20.6531 ug/L	98
60)	Ethyl Methacrylate	12.89	69	241250	21.6310 ug/L	97
62)	trans-1,3-Dichloropropene	12.96	75	346642	20.1981 ug/L	100
63)	1,1,2-Trichloroethane	13.18	97	181130	20.3997 ug/L	95
64)	2-Hexanone	13.13	58	58097	20.8116 ug/L #	93
65)	1,3-Dichloropropane	13.49	76	323732	20.4024 ug/L	95
66)	Tetrachloroethene	13.61	164	245725	20.6625 ug/L	98
67)	Dibromochloromethane	13.87	129	235919	20.5508 ug/L	98
68)	1,2-Dibromoethane	14.13	107	178516	20.1381 ug/L	99
69)	1-Chlorohexane	14.21	91	401926	20.0789 ug/L	99
70)	Chlorobenzene	14.62	112	774398	20.6594 ug/L	99
71)	1,1,1,2-Tetrachloroethane	14.65	131	271576	19.5945 ug/L	97
72)	Ethylbenzene	14.65	106	418267	19.1550 ug/L	96
73)	m-,p-Xylene	14.75	106	1033427	41.2685 ug/L	99
74)	o-Xylene	15.31	106	507903	20.0568 ug/L	96
75)	Styrene	15.35	104	806092	20.0913 ug/L	99
76)	Bromoform	15.83	173	149979	21.7323 ug/L	98
77)	Isopropylbenzene	15.73	105	1306066	21.5006 ug/L	100
79)	1,1,2,2-Tetrachloroethane	15.95	83	206335	19.7998 ug/L	99
81)	1,2,3-Trichloropropane	16.14	110	57552	19.8745 ug/L	52
82)	trans-1,4-Dichloro-2-Buten	16.18	53	70110	18.3079 ug/L #	71
83)	n-Propylbenzene	16.24	91	1614951	19.7475 ug/L	99
84)	Bromobenzene	16.37	156	325875	19.6301 ug/L	97
85)	1,3,5-Trimethylbenzene	16.42	105	1113988	19.8127 ug/L	98
86)	2-Chlorotoluene	16.52	91	1070343	19.7602 ug/L	98
87)	4-Chlorotoluene	16.56	91	915971	19.5532 ug/L	98
88)	a-Methylstyrene	16.83	118	635049	20.7180 ug/L	97
89)	tert-Butylbenzene	16.89	134	241733	19.5431 ug/L	89
90)	1,2,4-Trimethylbenzene	16.94	105	1129680	19.8828 ug/L	97
91)	sec-Butylbenzene	17.16	105	1399955	20.0434 ug/L	98
92)	p-Isopropyltoluene	17.32	119	1100567	19.7077 ug/L	96
93)	1,3-Dichlorobenzene	17.51	146	668533	20.1759 ug/L	97
94)	1,4-Dichlorobenzene	17.64	146	646885	19.6047 ug/L	97
95)	n-Butylbenzene	17.84	91	1092458	20.9854 ug/L	97
96)	1,2-Dichlorobenzene	18.14	146	593644	20.4750 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	19.13	75	34280	18.7711 ug/L	95
98)	1,2,4-Trichlorobenzene	20.27	180	414422	20.8050 ug/L	99
99)	Hexachlorobutadiene	20.42	225	180730	18.9693 ug/L	99
100)	Naphthalene	20.64	128	656654	22.8018 ug/L	100
101)	1,2,3-Trichlorobenzene	20.95	180	354887	20.8925 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M408711.D 8260WT.M Mon Nov 16 14:00:26 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\111615\8M408711.D Vial: 6
Acq On : 16 Nov 2015 13:38 Operator: TMB
Sample : WG547025-03 20ug/L LCSDUP STD 8260 Inst : HPMS8
Misc : 1,1 STD73459 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 16 14:00 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration

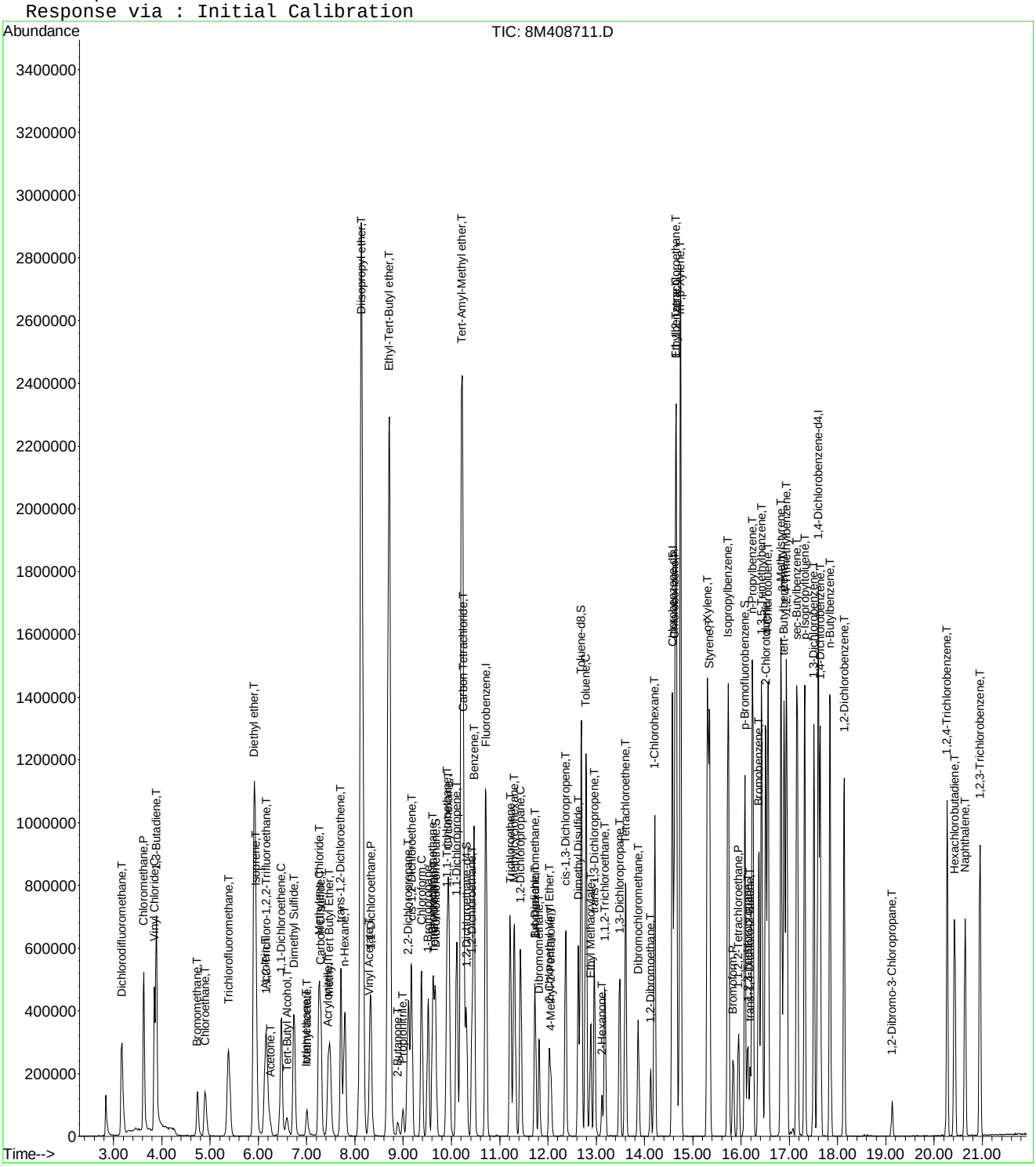

8M408711.D 8260WT.M Mon Nov 16 14:00:26 2015 Page 3

2.1.2 RSK 175

2.1.2.1 Summary Data

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-07	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW13-111215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG547086	**Analyst:**	JDS	**Run Date:**	11/16/2015 18:03
Collect Date:	11/12/2015 08:40	**Dilution:**	1	**File ID:**	16G49017
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	742000	J	10000	5000	2500
Methane	74-82-8	23.0		5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-07	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW13-111215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG547425	**Analyst:**	JDS	**Run Date:**	11/18/2015 15:25
Collect Date:	11/12/2015 08:40	**Dilution:**	10	**File ID:**	16G49029
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	464000		100000	50000	25000
Methane	74-82-8	20.0	U	50.0	20.0	10.0
ethene	74-85-1	20.0	U	50.0	20.0	10.0
ethane	74-84-0	20.0	U	50.0	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-09	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW14-111215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG547086	**Analyst:**	JDS	**Run Date:**	11/16/2015 18:15
Collect Date:	11/12/2015 09:50	**Dilution:**	1	**File ID:**	16G49018
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	430000	J	10000	5000	2500
Methane	74-82-8	11.3		5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-09	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW14-111215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG547425	**Analyst:**	JDS	**Run Date:**	11/18/2015 15:37
Collect Date:	11/12/2015 09:50	**Dilution:**	5	**File ID:**	16G49030
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	253000		50000	25000	12500
Methane	74-82-8	10.0	U	25.0	10.0	5.00
ethene	74-85-1	10.0	U	25.0	10.0	5.00
ethane	74-84-0	10.0	U	25.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-11	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW11-111215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG547086	**Analyst:**	JDS	**Run Date:**	11/16/2015 18:40
Collect Date:	11/12/2015 11:00	**Dilution:**	1	**File ID:**	16G49020
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	1120000	J	10000	5000	2500
Methane	74-82-8	8.84		5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-11	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW11-111215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG547425	**Analyst:**	JDS	**Run Date:**	11/18/2015 15:50
Collect Date:	11/12/2015 11:00	**Dilution:**	10	**File ID:**	16G49031
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	819000		100000	50000	25000
Methane	74-82-8	20.0	U	50.0	20.0	10.0
ethene	74-85-1	20.0	U	50.0	20.0	10.0
ethane	74-84-0	20.0	U	50.0	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-13	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW06-111215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG547086	**Analyst:**	JDS	**Run Date:**	11/16/2015 18:53
Collect Date:	11/12/2015 13:25	**Dilution:**	1	**File ID:**	16G49021
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	694000	J	10000	5000	2500
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-13	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW06-111215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG547425	**Analyst:**	JDS	**Run Date:**	11/18/2015 16:02
Collect Date:	11/12/2015 13:25	**Dilution:**	10	**File ID:**	16G49032
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	806000		100000	50000	25000
Methane	74-82-8	20.0	U	50.0	20.0	10.0
ethene	74-85-1	20.0	U	50.0	20.0	10.0
ethane	74-84-0	20.0	U	50.0	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-15	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW12-111215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG547086	**Analyst:**	JDS	**Run Date:**	11/16/2015 19:05
Collect Date:	11/12/2015 14:35	**Dilution:**	1	**File ID:**	16G49022
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	445000	J	10000	5000	2500
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-15	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW12-111215	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG547425	**Analyst:**	JDS	**Run Date:**	11/18/2015 16:14
Collect Date:	11/12/2015 14:35	**Dilution:**	5	**File ID:**	16G49033
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	309000		50000	25000	12500
Methane	74-82-8	10.0	U	25.0	10.0	5.00
ethene	74-85-1	10.0	U	25.0	10.0	5.00
ethane	74-84-0	10.0	U	25.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.2.2 QC Summary Data

RSK-175 - Example Calculation for Methane

1.0 Linear Calibration Models

Option A - Average RF Method

ICAL_x	ICAL_r		RF
1.67	19901		11917
6.67	69174		10371
16.7	176923		10594
66.7	685135		10272
133	1324853		9961
300	2845104		9484
		Average RF:	**10433**

Where:
ICAL_x = the ICAL concentration
ICAL_r = the ICAL response (area)
RF = calibration factor = ICAL_r / ICAL_x

Option B - Agilent Linear Regression Constant

ICAL_x	ICAL_r	[ICAL_r}^2	[ICAL-x][ICAL-r]
1.67	19901	396049801	33235
6.67	69174	4785042276	461391
16.7	176923	31301747929	2954614
66.7	685135	4.6941E+11	45698505
133	1324853	1.75524E+12	176205449
300	2845104	8.09462E+12	853531200
Summation:		**1.03557E+13**	**1078884393**

Agilent Linear Regression Constant : **9598.567853**
(1.03557E+13)/1078884393)

2.0 Calculate the concentration in extract, Cx

Where:	
y = area response of methane from quant report	**1157414**
a = average RF (or Agilent regression constant)	**10433.00**
Cx = y/a	**110.9377935**

3.0 Calculate the concentration in sample

Cs = Cx (MW/Tf) (HS/S) (DF)

Where:		
Cx = Concentration in extract	**110.9377935**	umol/mol
MW = molecular weight of analyte	**16.04**	ug/umol
TF = temperature factor = (22.4)(313/273)	**25.68**	L/mol
HS = headspace volume	**0.015**	L
S = sample volume remaining after headspace removal	**0.00547**	L
DF = dilution factor	**2**	
Cs = calculated sample concentration	**380.034301**	ug/L

RSK-175 - Example Calculation for Carbon Dioxide

ICAL Plot - Quadratic Regression (y = Ax^2 + Bx +C)

Ax^2 + Bx + (C - y) = 0

Step 1 - Calculate the concentration in extract, Cx

Data from quadratic regression plot:		
Value of A from plot:	**0.916**	
Value of B from plot:	**1540**	
Value of C from plot:	**0**	
Response for methane from quantitation report (y):	**8763828**	
Value of C - y	**-8763828**	
Solving for Cx using the quadratic formula:		
Root 1 - Computed Cx1:	**2364.716284**	umol/mol
Root 2 - Computed Cx2:	**-4045.938991**	

Step 2 - Calculate the concentration in sample

Cs = Cx (MW/Tf) (HS/S) (DF)

Where:

Cx = Concentration in extract :	**2364.716284**	umol/mol
MW = molecular weight of analyte:	**44.0**	ug/umol
TF = temperature factor = (22.4)(313/273):	**25.68**	L/mol
HS = initial headspace volume (extraction log):	**0.015**	L
S = final volume (extraction log):	**0.00547**	L
DF = dilution factor:	**10**	
Cs = calculated sample concentration:	**111106.798**	ug/L

Other Notes:

Temperature of headspace = 40 C = 313 K

Analyte	**MW (g/mol)**
Methane	16.04
Ethane	30.07
Ethene	28.05
Propane	44.1
Carbon Dioxide	44.0

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 030315
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG514119

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G46874	RINSE	NA	1	1		03/03/15 14:05
16G46875	WG514119-01 0.67umol/mol STD RSK175	NA	1	1	STD67276	03/03/15 14:17
16G46876	WG514119-02 1.67umol/mol STD RSK175	NA	1	1	STD67276	03/03/15 14:30
16G46877	WG514119-03 33.3umol/mol STD RSK175	NA	1	1	STD67276	03/03/15 14:42
16G46878	WG514119-04 66.7umol/mol STD RSK175	NA	1	1	STD67274	03/03/15 14:53
16G46879	WG514119-05 133umol/mol STD RSK175	NA	1	1	STD67274	03/03/15 15:05
16G46880	WG514119-06 333umol/mol STD RSK175	NA	1	1	STD67274	03/03/15 15:17
16G46881	WG514119-07 533umol/mol STD RSK175	NA	1	1	STD67274	03/03/15 15:29
16G46882	RINSE	NA	1	1		03/03/15 15:41
16G46883	WG514119-08 133umol/mol ALT SRC STD	NA	1	1	STD68250	03/03/15 16:14
16G46884	WG514119-08 133umol/mol ALT SRC STD	NA	1	1	STD68250	03/03/15 17:10

Comments

Seq.	Rerun	Dil.	Reason	Analytes
10	X			
File ID: 16G46883				
	Wrong vial taken up by HT3 autosampler			

Approved: March 11, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 111615
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID: 53550

Internal Standard: NA Surrogate Standard: NA
CCV: STD72628 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG547086

Comments: L15110793-07 through 15 required CO2 testing and should not have been preserved, possible bias in results.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G49008	WG547084-01 133umol/mol CCV STD RSK	NA	1	1	STD72628	11/16/15 15:20
16G49009	WG547086-01 BLANK STD RSK175	NA	1	1		11/16/15 16:25
16G49010	WG547086-02 67umol/mol LCS STD RSK17	NA	1	1	STD68250	11/16/15 16:38
16G49011	WG547086-03 67umol/mol LCS2 STD RSK1	NA	1	1	STD68250	11/16/15 16:49
16G49012	L15110666-03 B A1 RSK175	<2	1	1		11/16/15 17:02
16G49013	L15110756-01 B A1 RSK175	<2	1	1		11/16/15 17:14
16G49014	L15110666-01 B D1 20X RSK175	<2	1	20		11/16/15 17:26
16G49015	L15110666-02 B D1 50X RSK175	<2	1	50		11/16/15 17:38
16G49016	L15110666-07 B D1 50X RSK175	6	1	50		11/16/15 17:51
16G49017	L15110793-07 A RSK175	<2	1	1		11/16/15 18:03
16G49018	L15110793-09 A RSK175	3	1	1		11/16/15 18:15
16G49019	WG547084-02 133umol/mol CCV STD RSK	NA	1	1	STD72628	11/16/15 18:28
16G49020	L15110793-11 A RSK175	<2	1	1		11/16/15 18:40
16G49021	L15110793-13 A RSK175	<2	1	1		11/16/15 18:53
16G49022	L15110793-15 A RSK175	<2	1	1		11/16/15 19:05
16G49023	WG547084-03 133umol/mol CCV STD RSK	NA	1	1	STD72628	11/16/15 19:17

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
File ID: 16G49009				
WG547086-01 Blank took hit of methane above MDL. As per SOP instrctions, methane is allowed to go up to the RL in the blank.				
10	X	10	Over Calibration Range	CO2
File ID: 16G49017				
L15110793-07				
11	X	5	Over Calibration Range	CO2
File ID: 16G49018				
L15110793-09				
14	X	10	Over Calibration Range	CO2
File ID: 16G49021				
L15110793-13				
15	X	5	Over Calibration Range	CO2
File ID: 16G49022				
L15110793-15				

Approved: November 23, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 111815
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD72628 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG547425

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G49024	WG547424-01 133umol/mol CCV STD RSK1	NA	1	1	STD72628	11/18/15 12:35
16G49025	WG547424-01 133umol/mol CCV STD RSK1	NA	1	1	STD72628	11/18/15 12:55
16G49026	WG547425-01 BLANK STD RSK175	NA	1	1		11/18/15 14:48
16G49027	WG547425-02 67umol/mol LCS STD RSK17	NA	1	1	STD68250	11/18/15 15:00
16G49028	WG547425-03 67umol/mol LCS2 STD RSK1	NA	1	1	STD68250	11/18/15 15:13
16G49029	L15110793-07 B D1 10X RSK175	<2	1	10		11/18/15 15:25
16G49030	L15110793-09 B D1 5X RSK175	<2	1	5		11/18/15 15:37
16G49031	L15110793-11 B D1 10X RSK175	<2	1	10		11/18/15 15:50
16G49032	L15110793-13 B D1 10X RSK175	5	1	10		11/18/15 16:02
16G49033	L15110793-15 B D1 5X RSK175	4	1	5		11/18/15 16:14
16G49034	L15110943-01 A RSK175	7	1	1		11/18/15 16:26
16G49035	L15110943-03 A RSK175	7	1	1		11/18/15 16:39
16G49036	WG547424-02 133umol/mol CCV STD RSK1	NA	1	1	STD72628	11/18/15 16:51
16G49037	L15110943-05 A RSK175	7	1	1		11/18/15 17:03
16G49038	L15110943-07 A RSK175	7	1	1		11/18/15 17:15
16G49039	L15110943-09 A RSK175	7	1	1		11/18/15 17:28
16G49040	L15110943-11 A RSK175	7	1	1		11/18/15 17:40
16G49041	L15110903-01 A RSK175	<2	2	1		11/18/15 17:52
16G49042	L15110905-01 A RSK175	<2	2	1		11/18/15 18:04
16G49043	L15110907-01 A RSK175	<2	2	1		11/18/15 18:16
16G49044	L15110908-01 A RSK175	3	2	1		11/18/15 18:29
16G49045	L15111070-01 A RSK175	<2	2	1		11/18/15 18:40
16G49046	L15111071-01 A RSK175	<2	2	1		11/18/15 18:52
16G49047	WG547424-03 133umol/mol CCV STD RSK1	NA	1	1	STD72628	11/18/15 19:05

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1	X		Check Standard Failure	
File ID: 16G49024				
	CCV failed high for methane			
10	X	10	Over Calibration Range	CO2
File ID: 16G49034				
	L15110943-01			
13	X	10	Over Calibration Range	CO2

Approved: November 23, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 111815
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD72628 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG547425

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
File ID: 16G49037				
	L15110943-05			
14	X	5	Over Calibration Range	CO2
File ID: 16G49038				
	L15110943-07			
15	X	10	Over Calibration Range	CO2
File ID: 16G49039				
	L15110943-09			
16	X	10	Over Calibration Range	CO2
File ID: 16G49040				
	L15110943-11			
19	X	5	Over Calibration Range	m
File ID: 16G49044				
	L15110908-01			

Approved: November 23, 2015

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Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B202656

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG514119-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-04	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-05	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-06	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-07	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-08	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B215056

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG547084-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG547084-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG547084-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG547086-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15110793-07	15	mL	15	mL					5.47	mL	5.47	mL	40
WG547086-02	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L15110666-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15110793-15	15	mL	15	mL					5.47	mL	5.47	mL	40
L15110666-07	15	mL	15	mL					5.47	mL	5.47	mL	40
L15110666-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L15110793-13	15	mL	15	mL					5.47	mL	5.47	mL	40
L15110666-02	15	mL	15	mL					5.47	mL	5.47	mL	40
L15110793-09	15	mL	15	mL					5.47	mL	5.47	mL	40
WG547086-03	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L15110793-11	15	mL	15	mL					5.47	mL	5.47	mL	40
L15110756-01	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B215207

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG547424-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG547424-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG547424-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L15110943-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L15111071-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15110793-15	15	mL	15	mL					5.47	mL	5.47	mL	40
L15110908-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG547425-02	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
WG547425-03	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L15110793-13	15	mL	15	mL					5.47	mL	5.47	mL	40
L15110943-07	15	mL	15	mL					5.47	mL	5.47	mL	40
L15110943-09	15	mL	15	mL					5.47	mL	5.47	mL	40
L15110905-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15110907-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15110793-07	15	mL	15	mL					5.47	mL	5.47	mL	40
L15111070-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG547425-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15110943-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15110943-05	15	mL	15	mL					5.47	mL	5.47	mL	40
L15110793-09	15	mL	15	mL					5.47	mL	5.47	mL	40
L15110943-11	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAR-2015
Analyst: JDS
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 66688
Analytical Workgroups: WG514119

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	NA
Project/Client Specific Requirements	NA
Special Standards	NA
Blanks	NA
TCL's	NA
Surrogates	NA
LCS (Laboratory Control Sample)	NA
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	NA
Surrogates	NA
Calculations & Correct Factors	NA
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
06-MAR-2015

Secondary Reviewer:
11-MAR-2015

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-11-2015 12:34:12

Microbac Laboratories Inc.

Data Checklist

Date: 16-NOV-2015
Analyst: JDS
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 71770
Analytical Workgroups: WG547086

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	NA
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	X
Surrogates	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
22-NOV-2015

Secondary Reviewer:
23-NOV-2015

CHECKLIST1 - Modified 03/05/2008
Generated: NOV-23-2015 11:30:52

Microbac Laboratories Inc.

Data Checklist

Date: 18-NOV-2015
Analyst: JDS
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 71850
Analytical Workgroups: WG547425

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	NA
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	X
Surrogates	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
22-NOV-2015

Secondary Reviewer:
23-NOV-2015

CHECKLIST1 - Modified 03/05/2008
Generated: NOV-23-2015 11:58:46

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: RSK175 AAB#: WG547086

Login Number: L15110793

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW13-111215	07	11/12/15					11/16/2015	4.4	7		11/16/15	4.4	7	
50WW14-111215	09	11/12/15					11/16/2015	4.4	7		11/16/15	4.4	7	
50WW11-111215	11	11/12/15					11/16/2015	4.3	7		11/16/15	4.3	7	
50WW06-111215	13	11/12/15					11/16/2015	4.2	7		11/16/15	4.2	7	
50WW12-111215	15	11/12/15					11/16/2015	4.2	7		11/16/15	4.2	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4513728
Report generated 11/22/2015 14:38

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: RSK175 AAB#: WG547425

Login Number: L15110793

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW13-111215	07	11/12/15					11/18/2015	6.3	7		11/18/15	6.3	7	
50WW14-111215	09	11/12/15					11/18/2015	6.2	7		11/18/15	6.2	7	
50WW06-111215	13	11/12/15					11/18/2015	6.1	7		11/18/15	6.1	7	
50WW12-111215	15	11/12/15					11/18/2015	6.1	7		11/18/15	6.1	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4513728
Report generated 11/22/2015 14:38

METHOD BLANK SUMMARY

Login Number: L15110793
Blank File ID: 16G49009
Prep Date: 11/16/15 16:25
Analyzed Date: 11/16/15 16:25
Analyst: JDS

Work Group: WG547086
Blank Sample ID: WG547086-01
Instrument ID: HP16
Method: RSK175

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG547086-02	16G49010	11/16/15 16:38	01
LCS2	WG547086-03	16G49011	11/16/15 16:49	01
50WW13-111215	L15110793-07	16G49017	11/16/15 18:03	01
50WW14-111215	L15110793-09	16G49018	11/16/15 18:15	01
50WW11-111215	L15110793-11	16G49020	11/16/15 18:40	01
50WW06-111215	L15110793-13	16G49021	11/16/15 18:53	01
50WW12-111215	L15110793-15	16G49022	11/16/15 19:05	01

Report Name: BLANK_SUMMARY
PDF File ID: 4513729
Report generated 11/22/2015 14:38

METHOD BLANK SUMMARY

Login Number: L15110793
Blank File ID: 16G49026
Prep Date: 11/18/15 14:48
Analyzed Date: 11/18/15 14:48
Analyst: JDS

Work Group: WG547425
Blank Sample ID: WG547425-01
Instrument ID: HP16
Method: RSK175

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG547425-02	16G49027	11/18/15 15:00	01
LCS2	WG547425-03	16G49028	11/18/15 15:13	01
50WW13-111215	L15110793-07	16G49029	11/18/15 15:25	DL01
50WW14-111215	L15110793-09	16G49030	11/18/15 15:37	DL01
50WW06-111215	L15110793-13	16G49032	11/18/15 16:02	DL01
50WW12-111215	L15110793-15	16G49033	11/18/15 16:14	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4513729
Report generated 11/22/2015 14:38

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15110793 Prep Date: 11/16/15 16:25 Sample ID: WG547086-01
Instrument ID: HP16 Run Date: 11/16/15 16:25 Prep Method: 5030B/5030C/503
File ID: 16G49009 Analyst: JDS Method: RSK175
Workgroup (AAB#): WG547086 Matrix: Water Units: ug/L
Contract #: Cal ID: HP16-03-MAR-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Carbon Dioxide	2500	10000	2500	1	U
Methane	1.00	5.00	1.27	1	J
ethene	1.00	5.00	1.00	1	U
ethane	1.00	5.00	1.00	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4513730
22-NOV-2015 14:38

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15110793 Prep Date: 11/18/15 14:48 Sample ID: WG547425-01
Instrument ID: HP16 Run Date: 11/18/15 14:48 Prep Method: 5030B/5030C/503
File ID: 16G49026 Analyst: JDS Method: RSK175
Workgroup (AAB#): WG547425 Matrix: Water Units: ug/L
Contract #: Cal ID: HP16-03-MAR-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Carbon Dioxide	2500	10000	2500	1	U
Methane	1.00	5.00	1.00	1	U
ethene	1.00	5.00	1.00	1	U
ethane	1.00	5.00	1.00	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4513730
22-NOV-2015 14:38

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15110793 Analyst: JDS Prep Method: 5030B/5030C/503
Instrument ID: HP16 Matrix: Water Method: RSK175
Workgroup (AAB#): WG547425 Units: ug/L
QC Key: DOD4 Lot #: STD68250

Sample ID: WG547425-02 LCS File ID: 16G49027 Run Date: 11/18/2015 15:00
Sample ID: WG547425-03 LCS2 File ID: 16G49028 Run Date: 11/18/2015 15:13

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Methane	114	111	97.2	114	111	97.3	0.0771	85 - 115	20	
ethene	200	194	97.2	200	193	96.4	0.728	85 - 115	20	
ethane	214	202	94.6	214	201	93.7	0.908	85 - 115	20	
Carbon Dioxide	31300	30600	97.6	31300	28400	90.5	7.49	10 - 200	40	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4513731
Report generated: 11/22/2015 14:38

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15110793 Analyst: JDS Prep Method: 5030B/5030C/503
Instrument ID: HP16 Matrix: Water Method: RSK175
Workgroup (AAB#): WG547086 Units: ug/L
QC Key: DOD4 Lot #: STD68250

Sample ID: WG547086-02 LCS File ID: 16G49010 Run Date: 11/16/2015 16:38
Sample ID: WG547086-03 LCS2 File ID: 16G49011 Run Date: 11/16/2015 16:49

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Methane	114	113	99.3	114	112	98.1	1.23	85 - 115	20	
ethene	200	196	98.0	200	192	96.0	2.07	85 - 115	20	
ethane	214	204	95.2	214	200	93.6	1.78	85 - 115	20	
Carbon Dioxide	31300	31000	98.9	31300	29100	92.9	6.28	10 - 200	40	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4513731
Report generated: 11/22/2015 14:38

Calibration Table Report
Method: RSKEXT1.M
Title: RSK175 HP16 (SOP: OVL RSK01) 030315
Last Calibration: Fri Mar 06 11:52:33 2015
Curve:WG514119
Calibration Files

		0.67	1.67	33.3	66.7	133	333	533			
		16G46875.	16G46876.	16G46877.	16G46878.	16G46879.	16G46880.	16G46881.D			
	Compound								Avg	%RSD	Linear
T	methane		442542.3	201716.7	175611.6	187516.9	186065.3	188702.9	230359.0	45.3	0.999
T	ethene		322209.5	334124.6	295911.1	313430.8	319356.4	318282.1	317219.0	3.9	
T	acetylene		316851.9	343603.6	313507.6	354933.8	357109.5	344601.6	338435.0	5.6	
T	ethane	381661.4	339569.9	346403.4	312338.4	328333.4	335709.7	335266.3	339897.0	6.3	
T	propane	528069.3	481580.8	518227.1	469331.7	483950.9	500133.6	493547.4	496406.0	4.2	
T	n-butane	686564.3	616037.4	680754.9	613926.5	634552.4	659898.4	646188.9	648275.0	4.5	
	Signal #2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
T	carbon dioxide		3977.4	5604.2	5581.8	6054.5	6060.7	5810.7	5514.9	14.2	

Fri Mar 06 11:59:12 2015

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15110793 Run Date: 03/03/2015 Sample ID: WG514119-08
Instrument ID: HP16 Run Time: 17:10 Method: RSK175
File ID: 16G46884 Analyst: JDS QC Key: DOD4
ICal Workgroup: WG514119 Cal ID: HP16 - 03-MAR-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
carbon dioxide		62500	65100	ug/L	5740	4.10	15	
methane		228	236	ug/L	195000	3.50	15	
ethene		398	407	ug/L	324000	2.20	15	
ethane		427	423	ug/L	337000	0.900	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4513732
Report generated 11/22/2015 14:38

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110793
Run Date: 11/16/2015
Sample ID: WG547084-01
Instrument ID: HP16
Run Time: 15:20
Method: RSK175
File ID: 16G49008
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG547086
Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
methane		228	234	ug/L	193000	2.58	15	
ethene		398	416	ug/L	331000	4.40	15	
ethane		427	439	ug/L	350000	2.89	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4513733
Report generated 11/22/2015 14:38

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110793 Run Date: 11/16/2015 Sample ID: WG547084-02
Instrument ID: HP16 Run Time: 18:28 Method: RSK175
File ID: 16G49019 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG547086 Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
methane		228	216	ug/L	179000	5.32	15	
ethene		398	376	ug/L	300000	5.52	15	
ethane		427	399	ug/L	317000	6.60	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4513733
Report generated 11/22/2015 14:38

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110793 Run Date: 11/16/2015 Sample ID: WG547084-03
Instrument ID: HP16 Run Time: 19:17 Method: RSK175
File ID: 16G49023 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG547086 Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
methane		228	219	ug/L	181000	3.93	15	
ethene		398	382	ug/L	304000	4.05	15	
ethane		427	406	ug/L	323000	4.92	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4513733
Report generated 11/22/2015 14:38

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110793 Run Date: 11/18/2015 Sample ID: WG547424-01
Instrument ID: HP16 Run Time: 12:55 Method: RSK175
File ID: 16G49025 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG547425 Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62500	66200	ug/L	5840	5.98	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4513733
Report generated 11/22/2015 14:38

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110793
Run Date: 11/18/2015
Sample ID: WG547424-02
Instrument ID: HP16
Run Time: 16:51
Method: RSK175
File ID: 16G49036
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG547425
Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62500	62200	ug/L	5490	0.486	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4513733
Report generated 11/22/2015 14:38

2.1.2.3 Sample Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\111615\16G49017.D\FID1A.CH Vial: 10
Signal #2 : C:\MSDchem\1\DATA\111615\16G49017.D\TCD2B.CH
Acq On : 16 Nov 2015 18:03 Operator: JDS
Sample : L15110793-07 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 16 18:09:11 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	2900211	13.423	umol/
2) T	ethene	1.06	92820	0.293	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.39	48528	0.143	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.19	870287113	157807.195	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49017.D RSKEXT1.M Mon Nov 16 18:09:11 2015 Page 1

Signal #1 : C:\MSDchem\1\DATA\111615\16G49017.D\FID1A.CH Vial: 10
Signal #2 : C:\MSDchem\1\DATA\111615\16G49017.D\TCD2B.CH
Acq On : 16 Nov 2015 18:03 Operator: JDS
Sample : L15110793-07 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 16 18:09 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

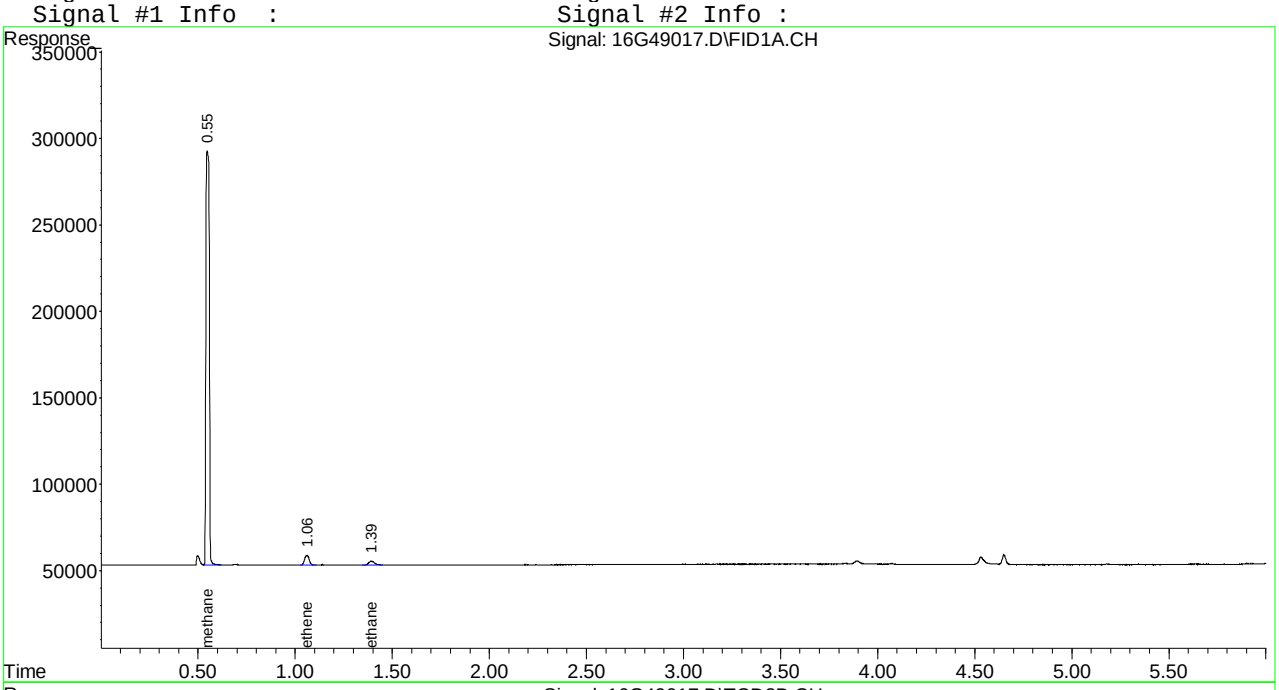

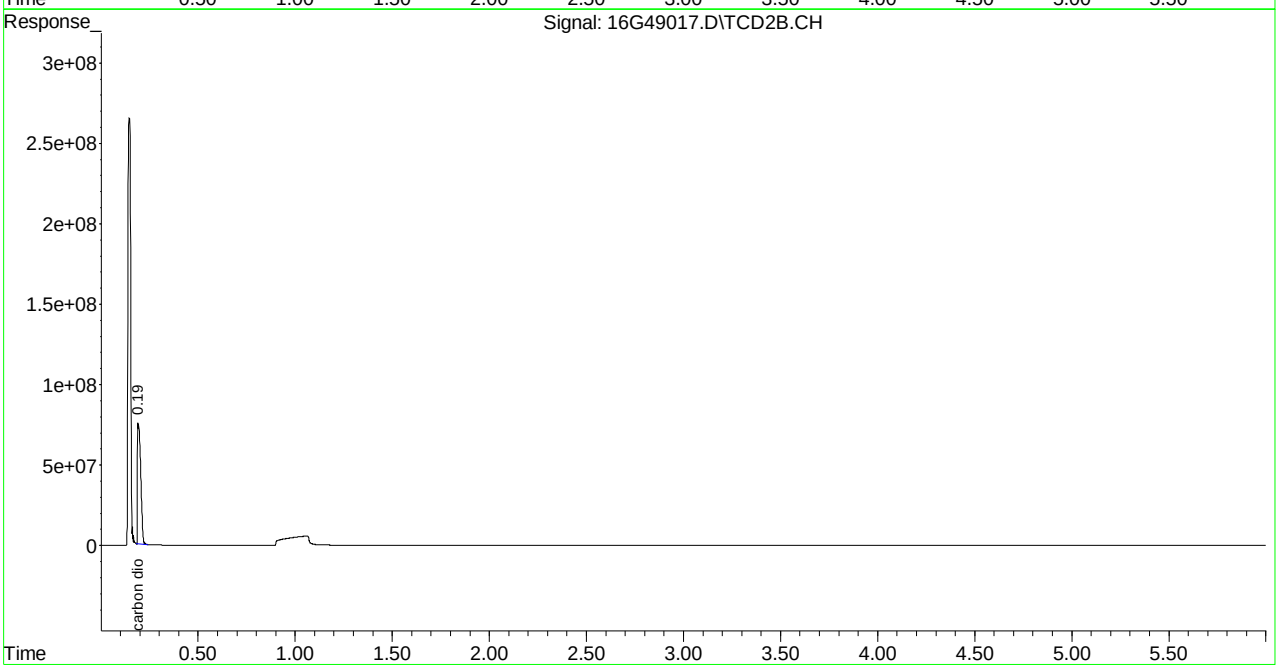

Quantitation Report (Not Reviewed)

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Signal #1 : C:\MSDchem\1\DATA\111815\16G49029.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDchem\1\DATA\111815\16G49029.D\TCD2B.CH
Acq On    : 18 Nov 2015  15:25                      Operator: JDS
Sample    : L15110793-07 B D1 10X  RSK175           Inst    : HP16
Misc      : 1,10                                    Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Nov 18 15:31:58 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                   Signal #2 Phase:
Signal #1 Info  :                   Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	403200	N.D.	umol/
2) T	ethene	1.06	11609	0.037	umol/
3) T	acetylene	1.13	8188	0.024	umol/
4) T	ethane	1.36	8980	0.026	umol/
5) T	propane	3.83	7440	0.015	umol/
6) T	n-butane	5.34	8598	0.013	umol/
8) T	carbon dioxide	0.20	54487496	9880.095	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

16G49029.D RSKEXT1.M Wed Nov 18 15:31:59 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\111815\16G49029.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDchem\1\DATA\111815\16G49029.D\TCD2B.CH
Acq On : 18 Nov 2015 15:25 Operator: JDS
Sample : L15110793-07 B D1 10X RSK175 Inst : HP16
Misc : 1,10 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 18 15:31 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

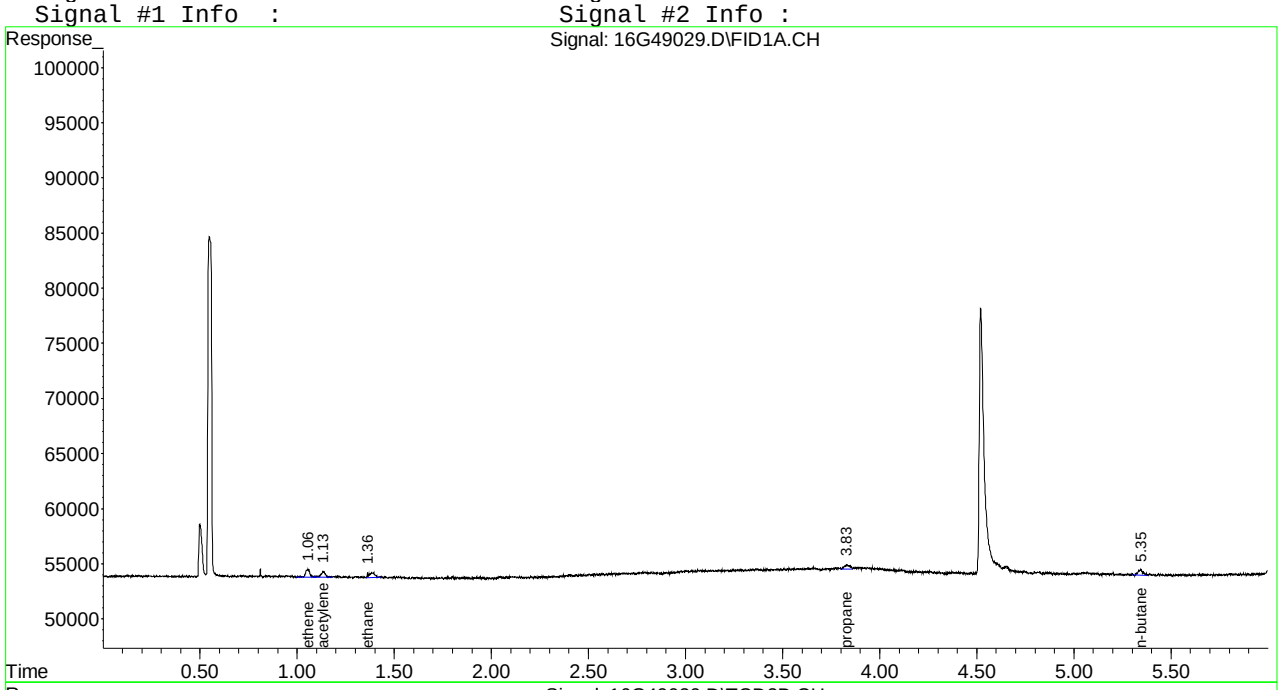

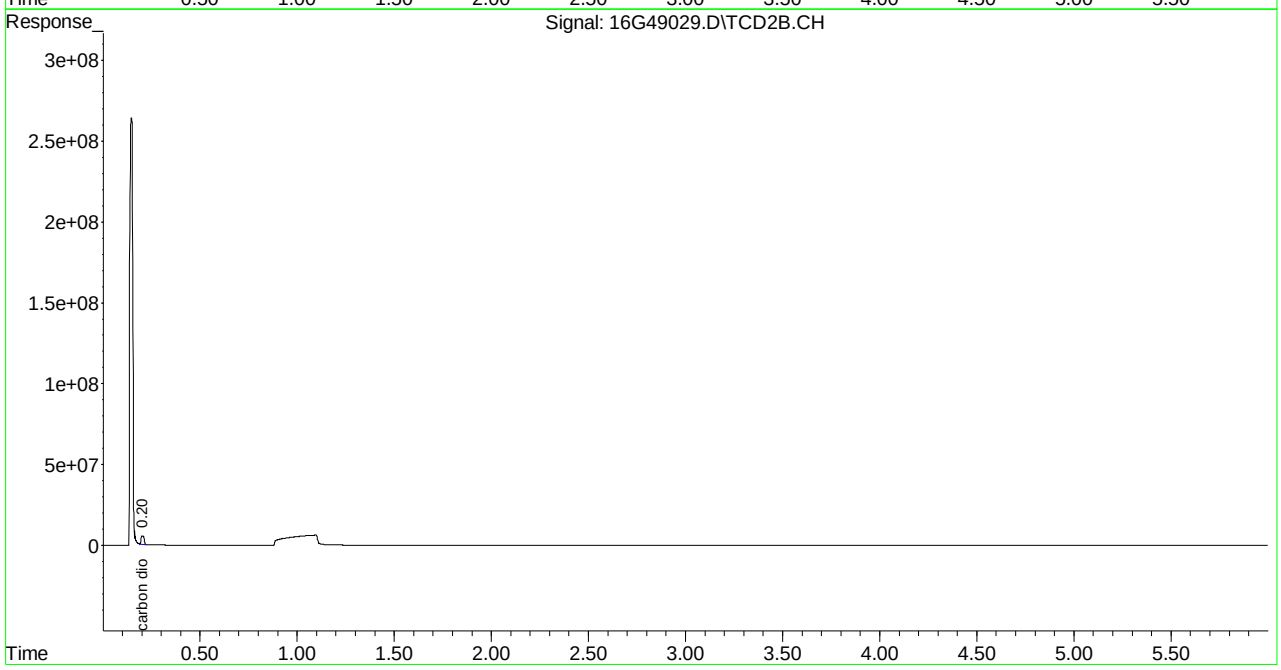

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\111615\16G49018.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDchem\1\DATA\111615\16G49018.D\TCD2B.CH
Acq On : 16 Nov 2015 18:15 Operator: JDS
Sample : L15110793-09 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 16 18:21:34 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	1633912	6.597	umol/
2) T	ethene	1.06	78929	0.249	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.39	31452	0.093	umol/
5) T	propane	3.83	12297	0.025	umol/
6) T	n-butane	5.34	20253	0.031	umol/
8) T	carbon dioxide	0.20	505179607	91603.076	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49018.D RSKEXT1.M Mon Nov 16 18:21:34 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\111615\16G49018.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDchem\1\DATA\111615\16G49018.D\TCD2B.CH
Acq On : 16 Nov 2015 18:15 Operator: JDS
Sample : L15110793-09 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 16 18:21 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

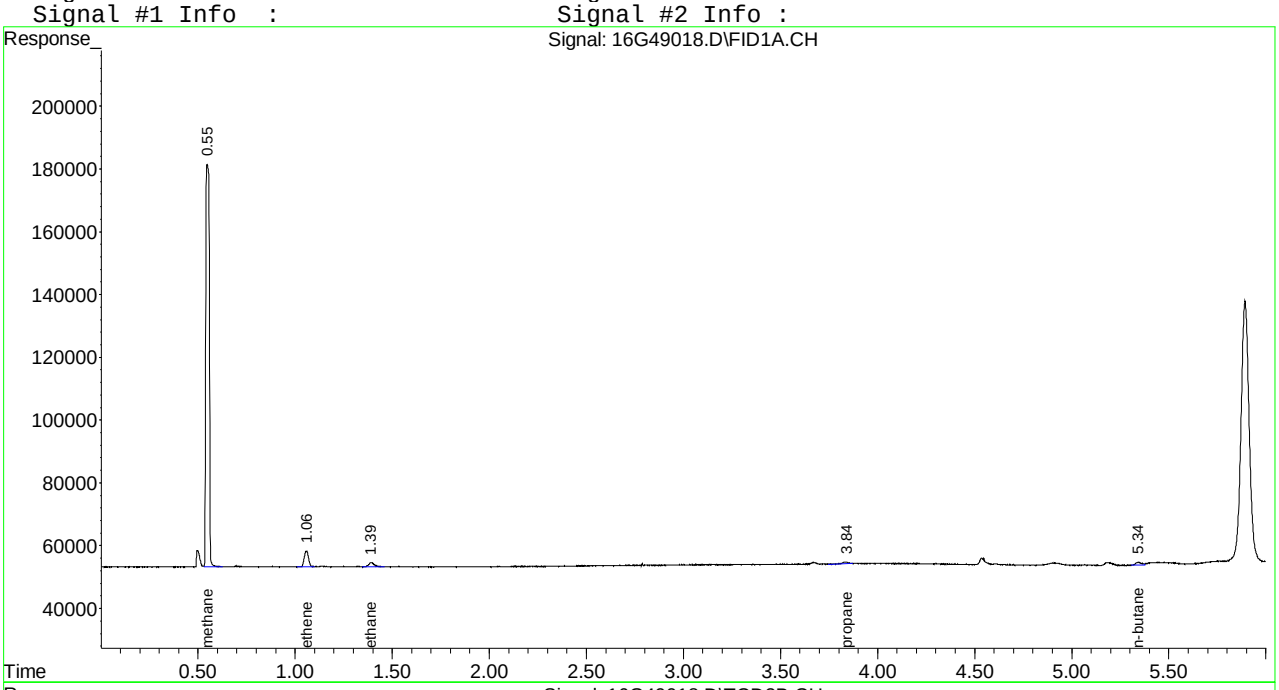

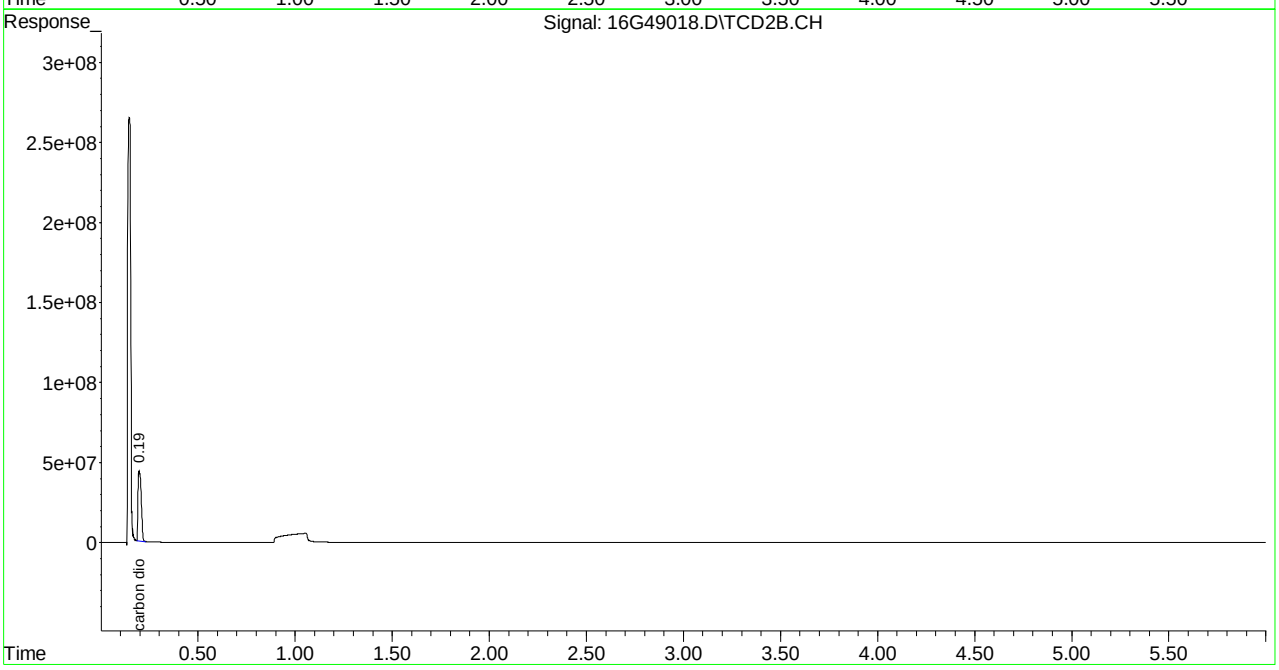

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\111815\16G49030.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDchem\1\DATA\111815\16G49030.D\TCD2B.CH
Acq On : 18 Nov 2015 15:37 Operator: JDS
Sample : L15110793-09 B D1 5X RSK175 Inst : HP16
Misc : 1,5 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 18 15:43:55 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	398463	N.D.	umol/
2) T	ethene	1.07	12623	0.040	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	59354451	10762.608	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49030.D RSKEXT1.M Wed Nov 18 15:43:56 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\111815\16G49030.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDchem\1\DATA\111815\16G49030.D\TCD2B.CH
Acq On : 18 Nov 2015 15:37 Operator: JDS
Sample : L15110793-09 B D1 5X RSK175 Inst : HP16
Misc : 1,5 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 18 15:43 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

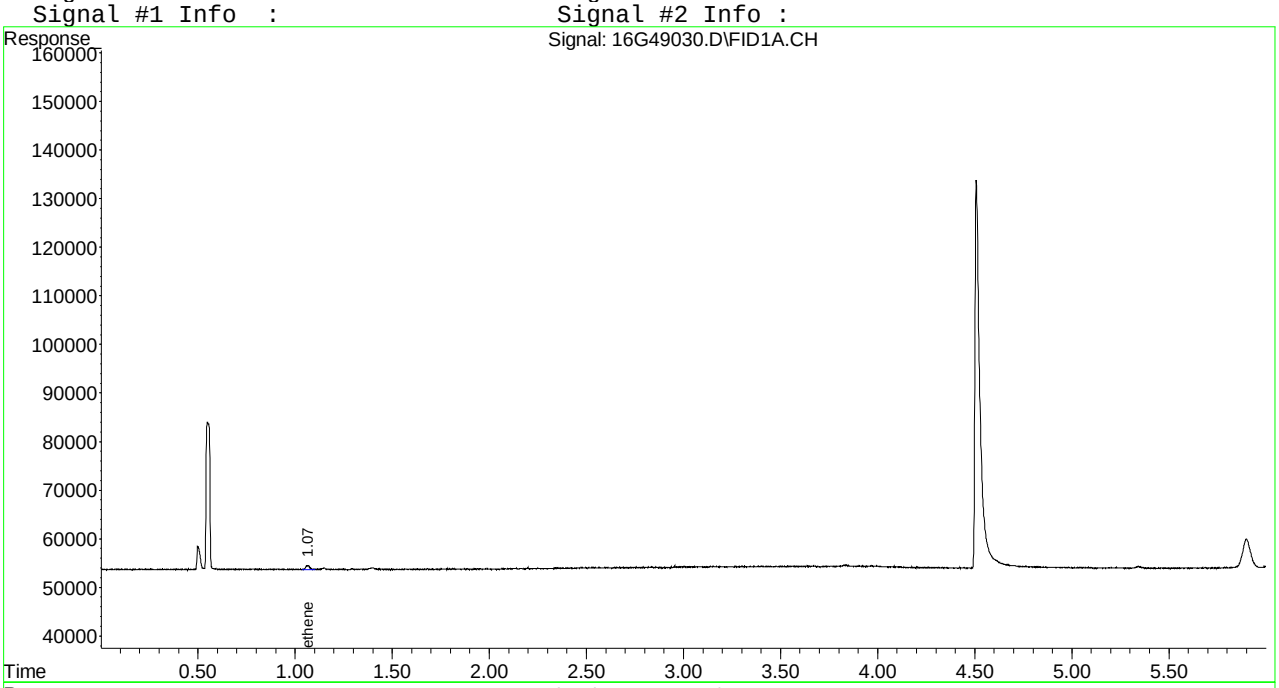

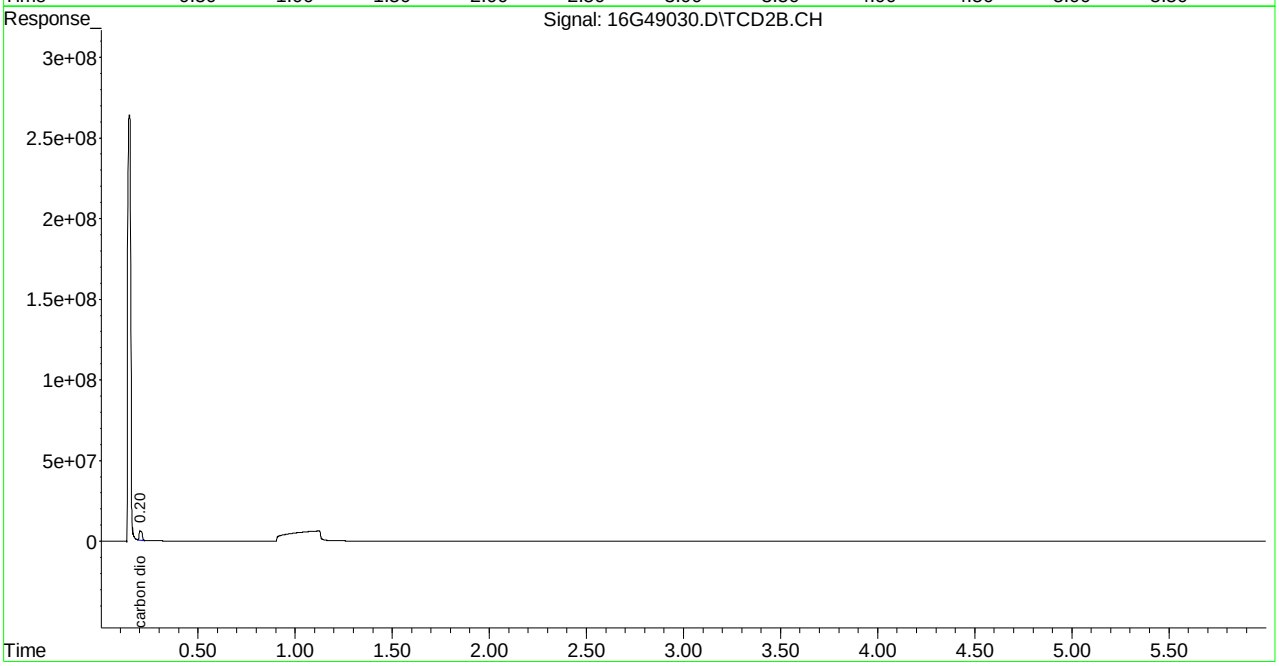

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDchem\1\DATA\111615\16G49020.D\FID1A.CH Vial: 13
Signal #2 : C:\MSDchem\1\DATA\111615\16G49020.D\TCD2B.CH
Acq On    : 16 Nov 2015  18:40                      Operator: JDS
Sample    : L15110793-11 A RSK175                   Inst    : HP16
Misc      : 1,1                                     Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Nov 16 18:46:57 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                   Signal #2 Phase:
Signal #1 Info  :                   Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	1367747	5.162	umol/
2) T	ethene	1.05	32225	0.102	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.39	48862	0.144	umol/
5) T	propane	3.83	9007	0.018	umol/
6) T	n-butane	5.34	12343	0.019	umol/
8) T	carbon dioxide	0.19	1310340000	237600.990	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

16G49020.D RSKEXT1.M Mon Nov 16 18:46:57 2015 Page 1

Signal #1 : C:\MSDchem\1\DATA\111615\16G49020.D\FID1A.CH Vial: 13
Signal #2 : C:\MSDchem\1\DATA\111615\16G49020.D\TCD2B.CH
Acq On : 16 Nov 2015 18:40 Operator: JDS
Sample : L15110793-11 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 16 18:46 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

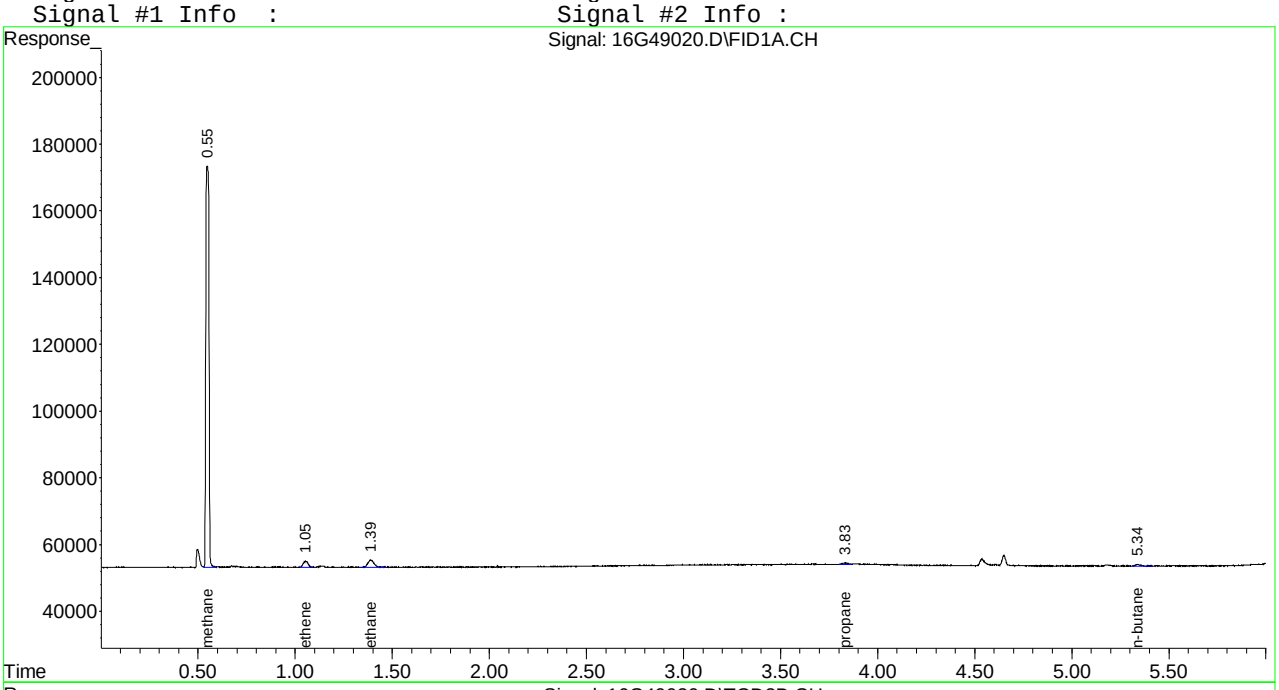

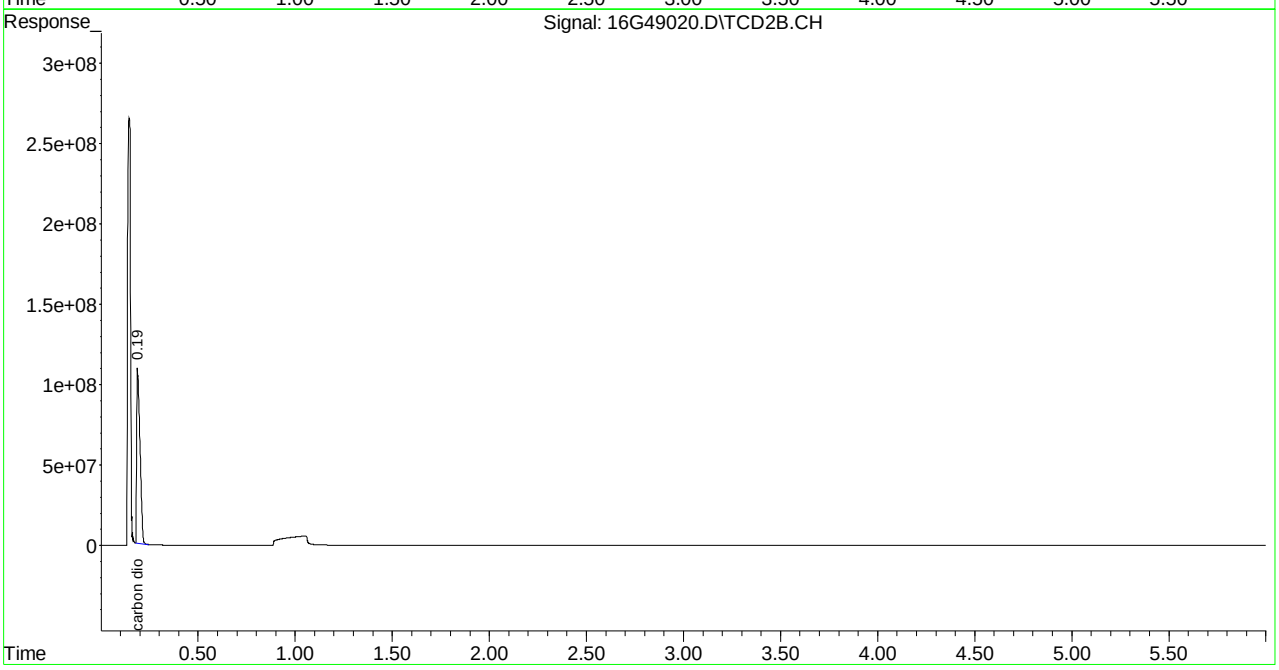

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\111815\16G49031.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\111815\16G49031.D\TCD2B.CH
Acq On    : 18 Nov 2015  15:50                      Operator: JDS
Sample    : L15110793-11 B D1 10X  RSK175           Inst    : HP16
Misc      : 1,10                                    Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Nov 18 15:56:51 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	365865	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	96061723	17418.655	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

16G49031.D RSKEXT1.M Sun Nov 22 15:10:14 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\111815\16G49031.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\111815\16G49031.D\TCD2B.CH
Acq On    : 18 Nov 2015  15:50                        Operator: JDS
Sample    : L15110793-11 B D1 10X  RSK175             Inst    : HP16
Misc      : 1,10                                      Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Nov 18 15:56 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

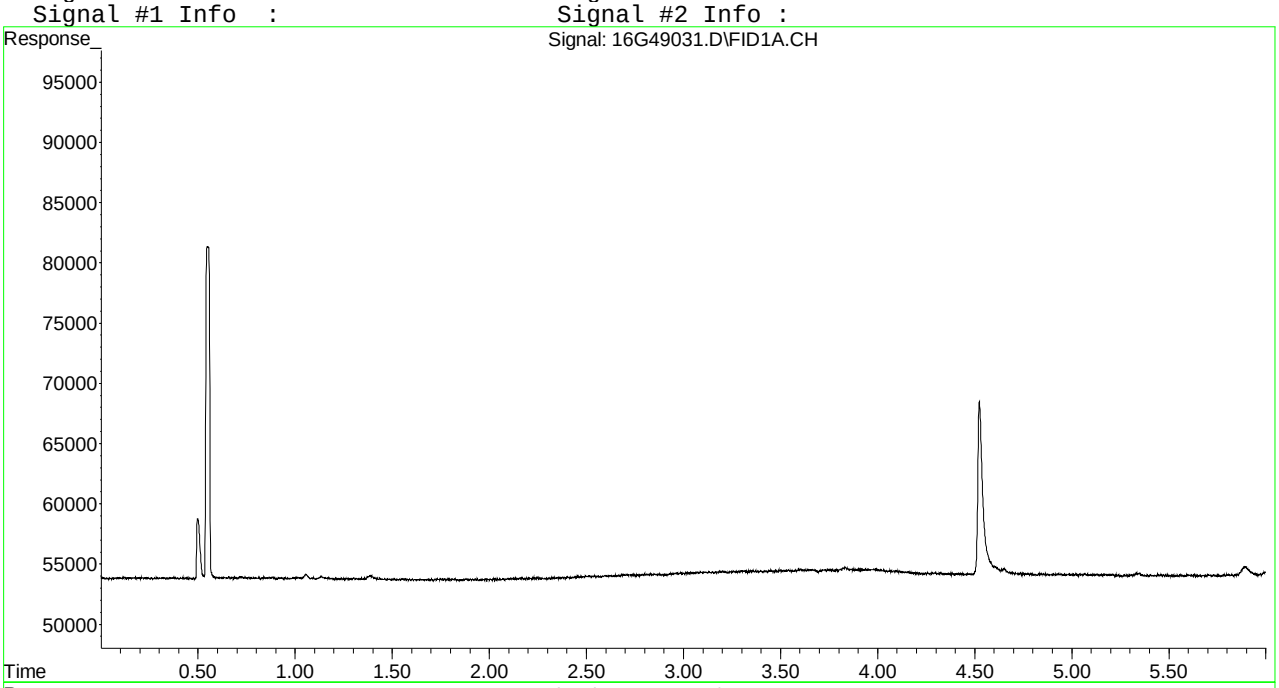

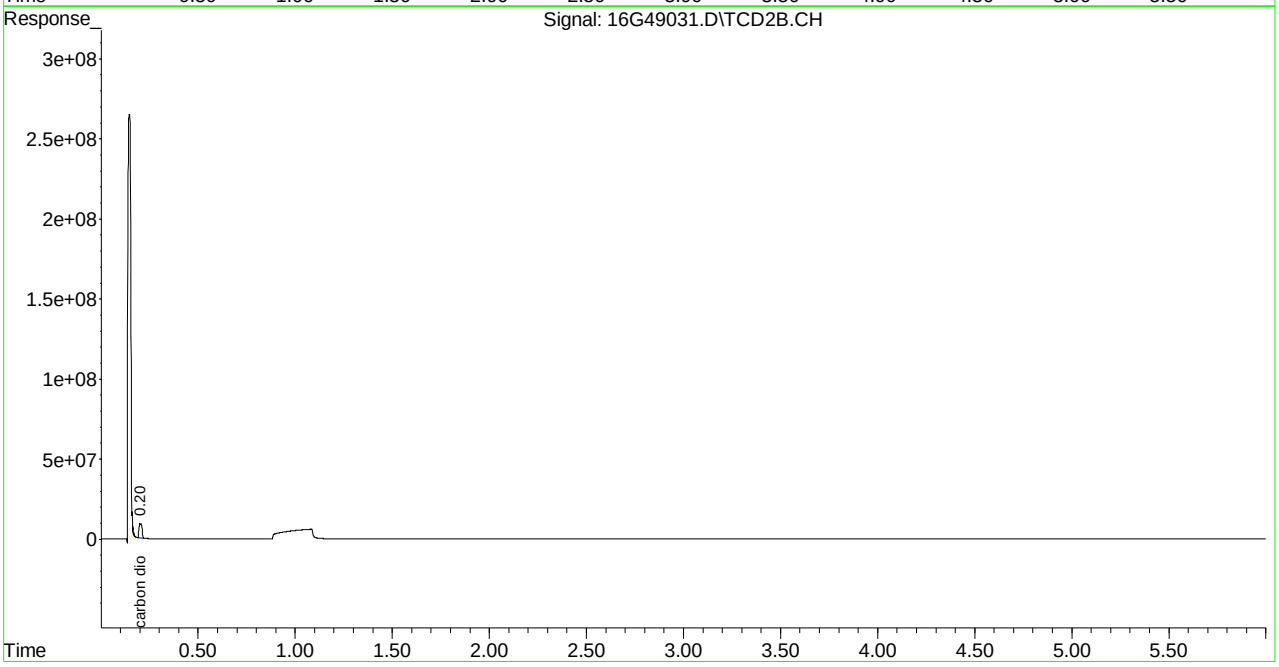

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\111615\16G49021.D\FID1A.CH Vial: 14
Signal #2 : C:\MSDchem\1\DATA\111615\16G49021.D\TCD2B.CH
Acq On : 16 Nov 2015 18:53 Operator: JDS
Sample : L15110793-13 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 16 18:59:38 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	372684	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.38	63236	0.186	umol/
5) T	propane	3.84	9744	0.020	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.19	814070214	147613.511	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49021.D RSKEXT1.M Mon Nov 16 18:59:38 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\111615\16G49021.D\FID1A.CH Vial: 14
Signal #2 : C:\MSDchem\1\DATA\111615\16G49021.D\TCD2B.CH
Acq On : 16 Nov 2015 18:53 Operator: JDS
Sample : L15110793-13 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 16 18:59 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

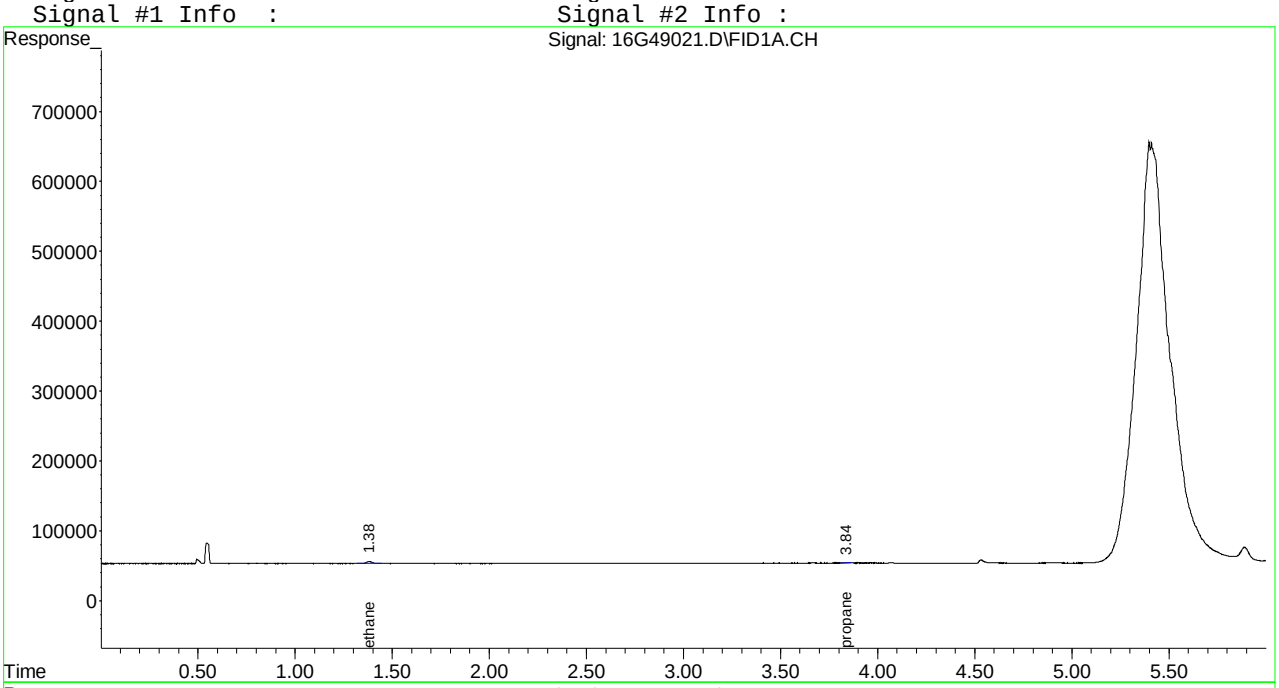

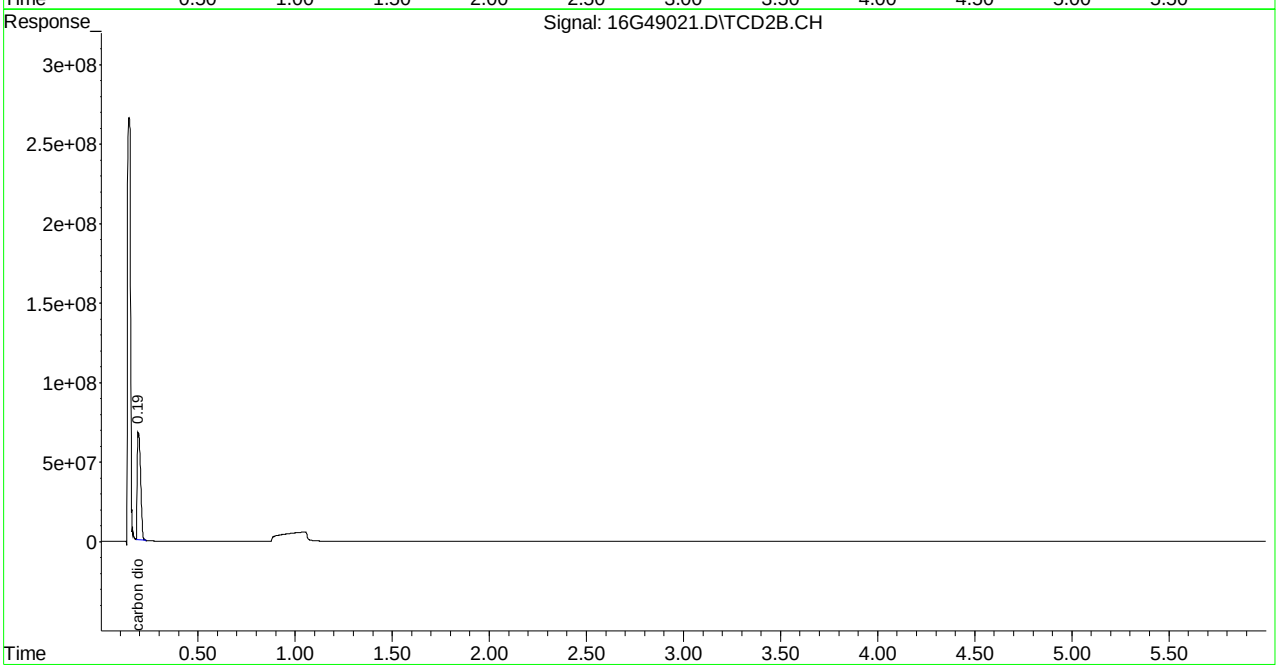

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\111815\16G49032.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\111815\16G49032.D\TCD2B.CH
Acq On    : 18 Nov 2015  16:02                      Operator: JDS
Sample    : L15110793-13 B D1 10X  RSK175           Inst    : HP16
Misc      : 1,10                                    Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Nov 18 16:08:31 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                   Signal #2 Phase:
Signal #1 Info  :                   Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	291799	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.39	8932	0.026	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	94612610	17155.891	umol/

```
---------------------------------------------------------------------------
(f)=RT Delta > 1/2 Window                          (m)=manual int.
16G49032.D  RSKEXT1.M      Thu Nov 19 09:28:33 2015                          Page 1
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\111815\16G49032.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\111815\16G49032.D\TCD2B.CH
Acq On : 18 Nov 2015 16:02 Operator: JDS
Sample : L15110793-13 B D1 10X RSK175 Inst : HP16
Misc : 1,10 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 18 16:08 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

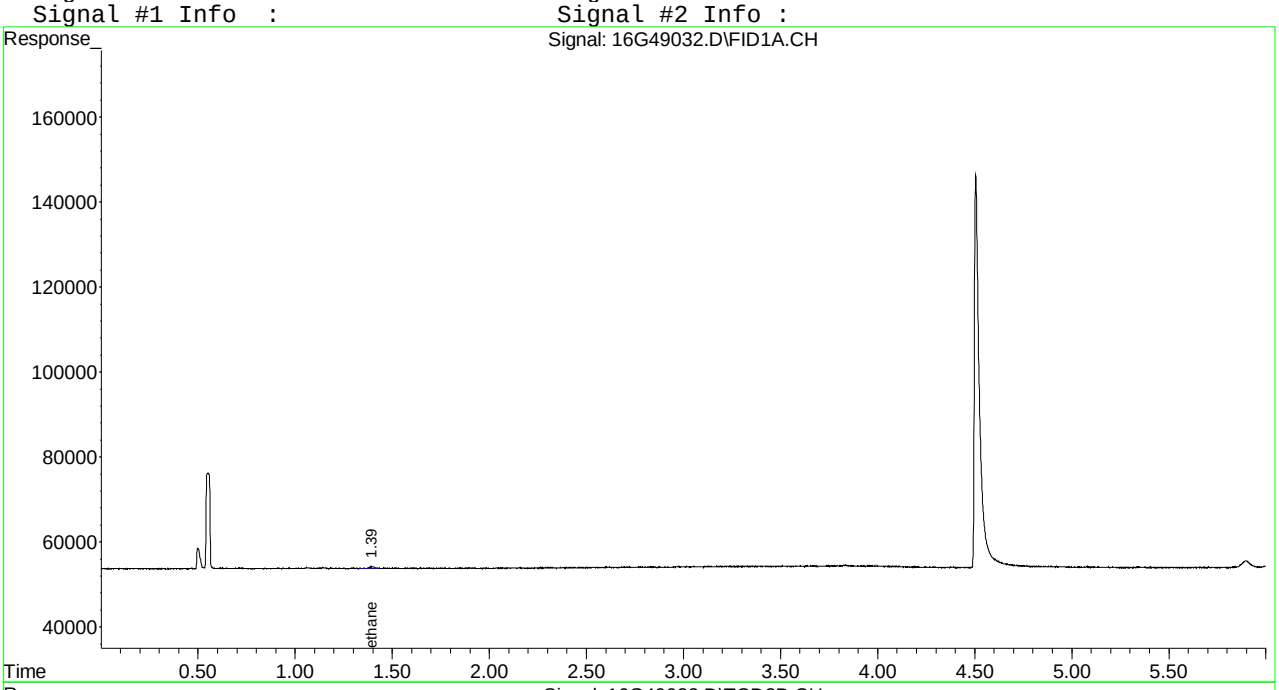

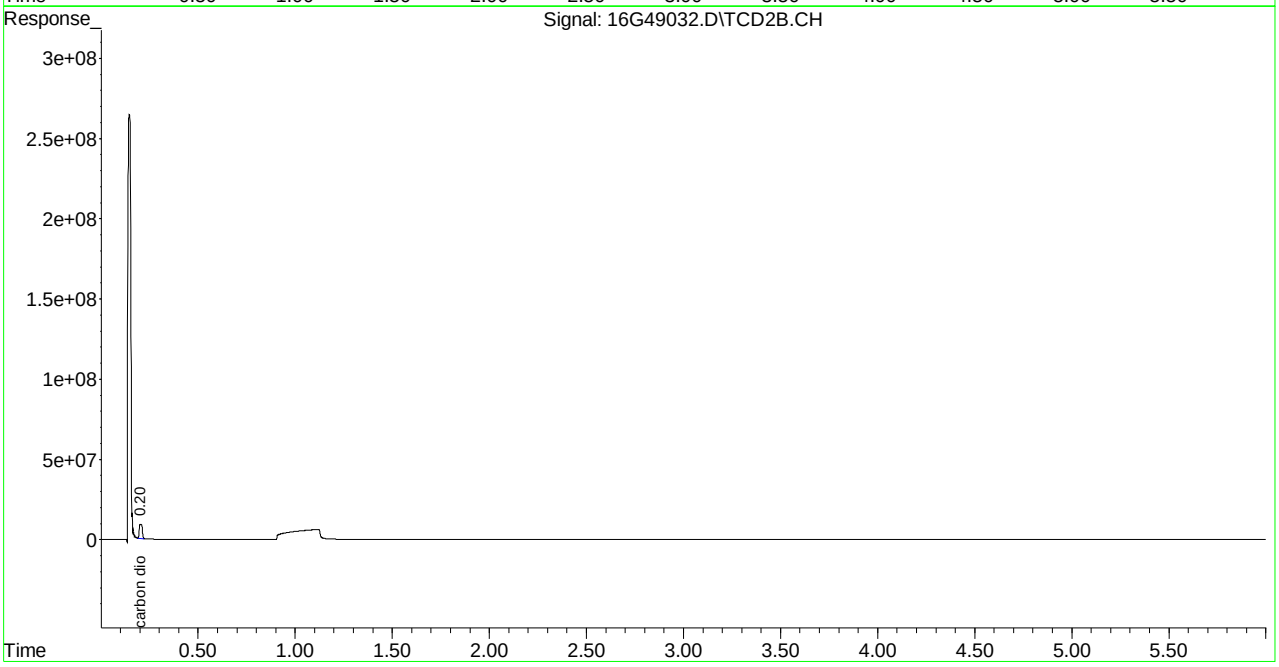

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\111615\16G49022.D\FID1A.CH Vial: 15
Signal #2 : C:\MSDchem\1\DATA\111615\16G49022.D\TCD2B.CH
Acq On : 16 Nov 2015 19:05 Operator: JDS
Sample : L15110793-15 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 16 19:11:18 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	474469	0.347	umol/
2) T	ethene	1.06	13257	0.042	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.39	10802	0.032	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	521931903	94640.732	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49022.D RSKEXT1.M Mon Nov 16 19:11:18 2015 Page 1

Signal #1 : C:\MSDchem\1\DATA\111615\16G49022.D\FID1A.CH Vial: 15
Signal #2 : C:\MSDchem\1\DATA\111615\16G49022.D\TCD2B.CH
Acq On : 16 Nov 2015 19:05 Operator: JDS
Sample : L15110793-15 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 16 19:11 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

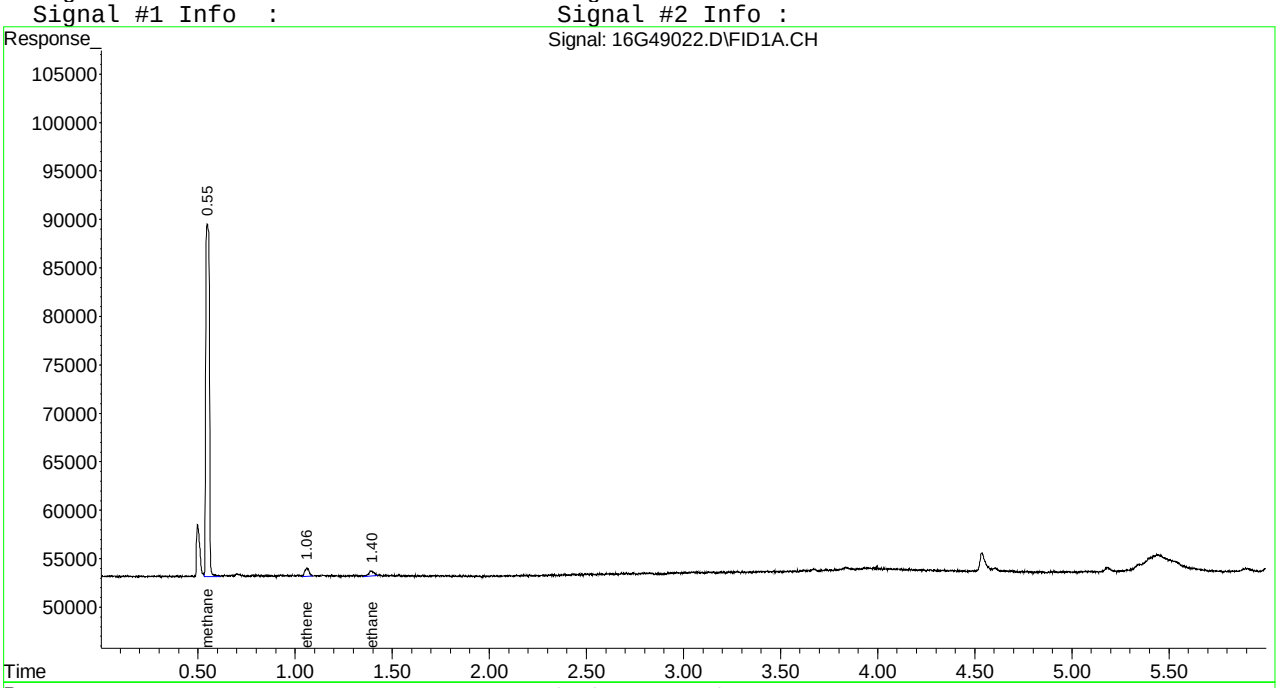

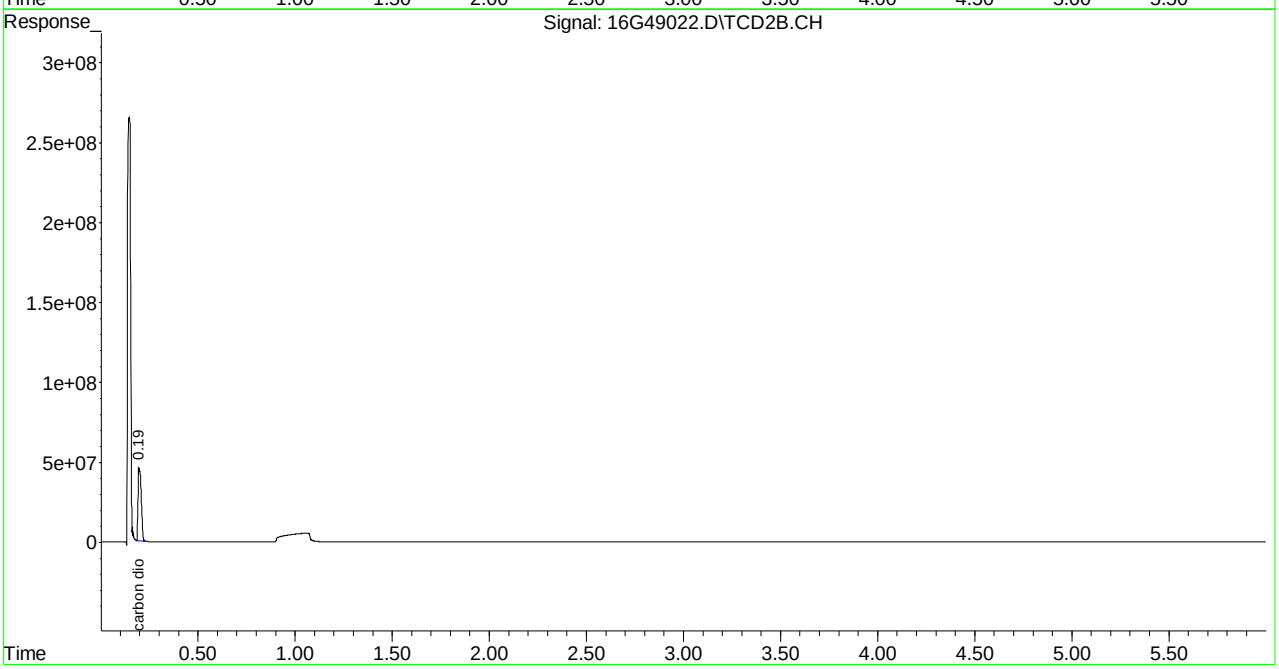

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\111815\16G49033.D\FID1A.CH Vial: 9
Signal #2 : C:\MSDCHEM\1\DATA\111815\16G49033.D\TCD2B.CH
Acq On    : 18 Nov 2015  16:14                        Operator: JDS
Sample    : L15110793-15 B D1 5X  RSK175              Inst    : HP16
Misc      : 1,5                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Nov 18 16:20:32 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	307538	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	72535684	13152.732	umol/

```
(f)=RT Delta > 1/2 Window                          (m)=manual int.
16G49033.D  RSKEXT1.M      Thu Nov 19 09:28:59 2015                          Page 1
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\111815\16G49033.D\FID1A.CH Vial: 9
Signal #2 : C:\MSDCHEM\1\DATA\111815\16G49033.D\TCD2B.CH
Acq On : 18 Nov 2015 16:14 Operator: JDS
Sample : L15110793-15 B D1 5X RSK175 Inst : HP16
Misc : 1,5 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 18 16:20 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

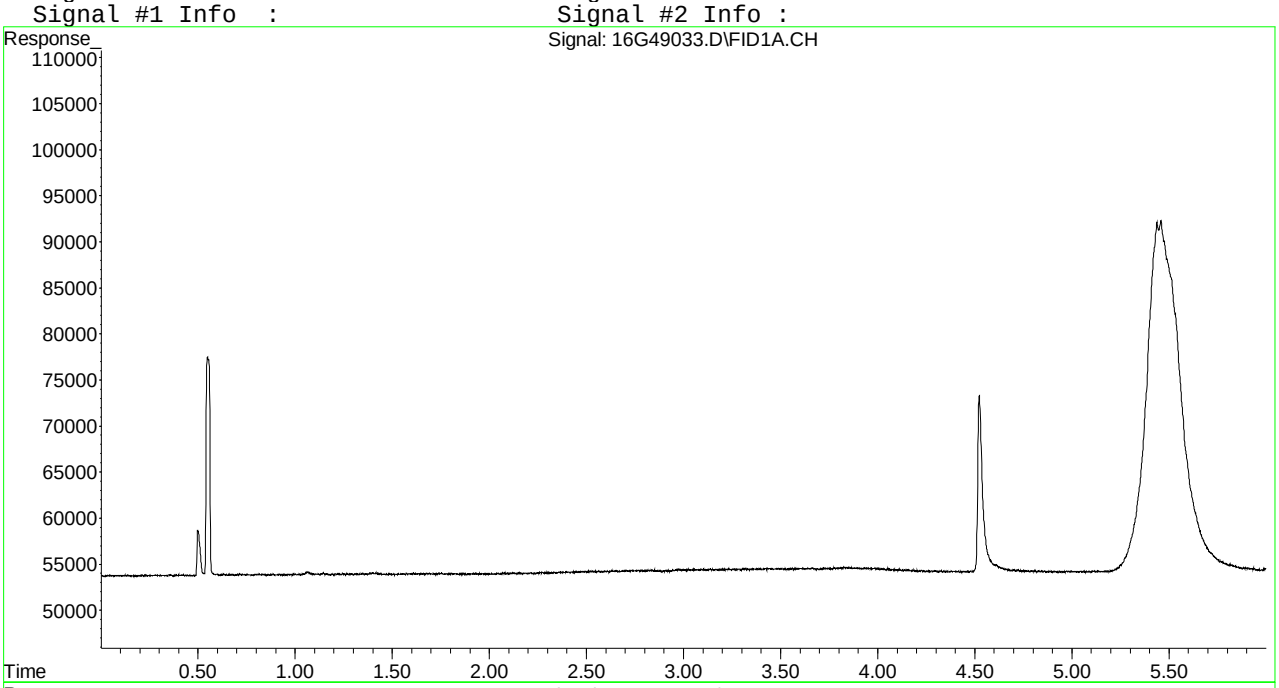

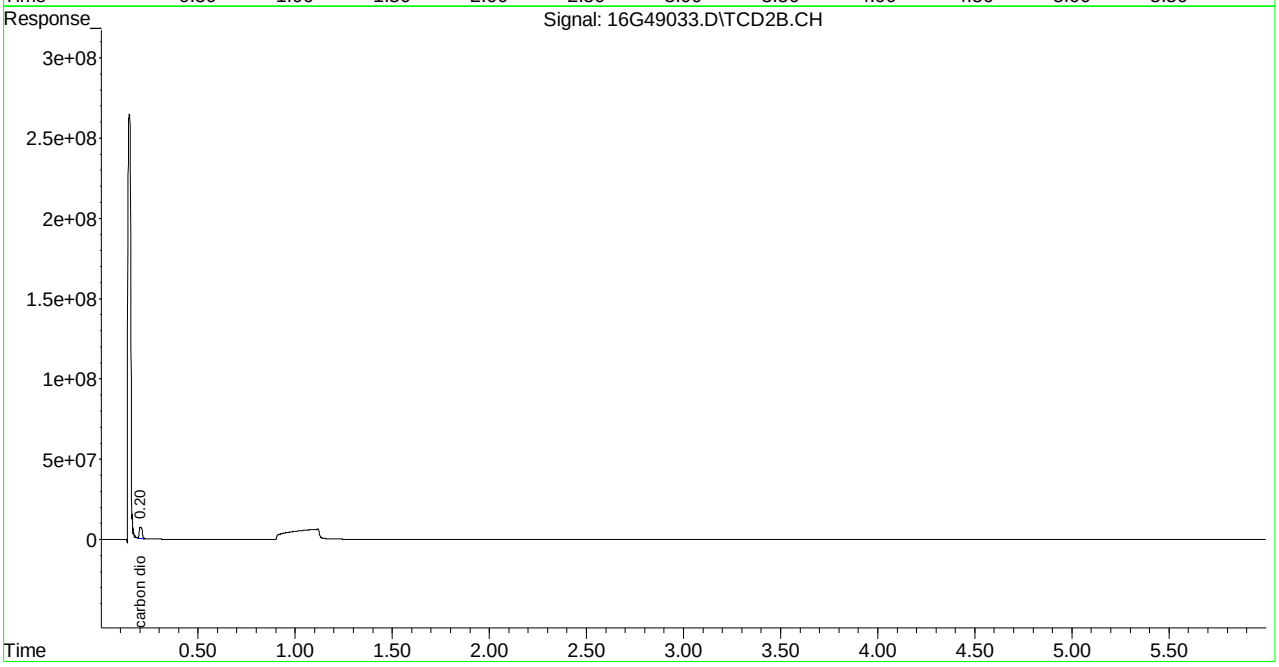

2.1.2.4 Standards Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46875.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46875.D\TCD2B.CH
Acq On : 03 Mar 2015 14:17 Operator: JDS
Sample : WG514119-01 0.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:54:08 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	566979	0.846	umol/
2) T	ethene	1.06	233416	0.736	umol/
3) T	acetylene	1.14	213812	0.632	umol/
4) T	ethane	1.39	254568	0.749	umol/
5) T	propane	3.83	352222	0.710	umol/
6) T	n-butane	5.34	457938	0.706	umol/
8) T	carbon dioxide	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46875.D RSKEXT1.M Fri Mar 06 11:56:43 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46875.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46875.D\TCD2B.CH
Acq On : 03 Mar 2015 14:17 Operator: JDS
Sample : WG514119-01 0.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:54 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

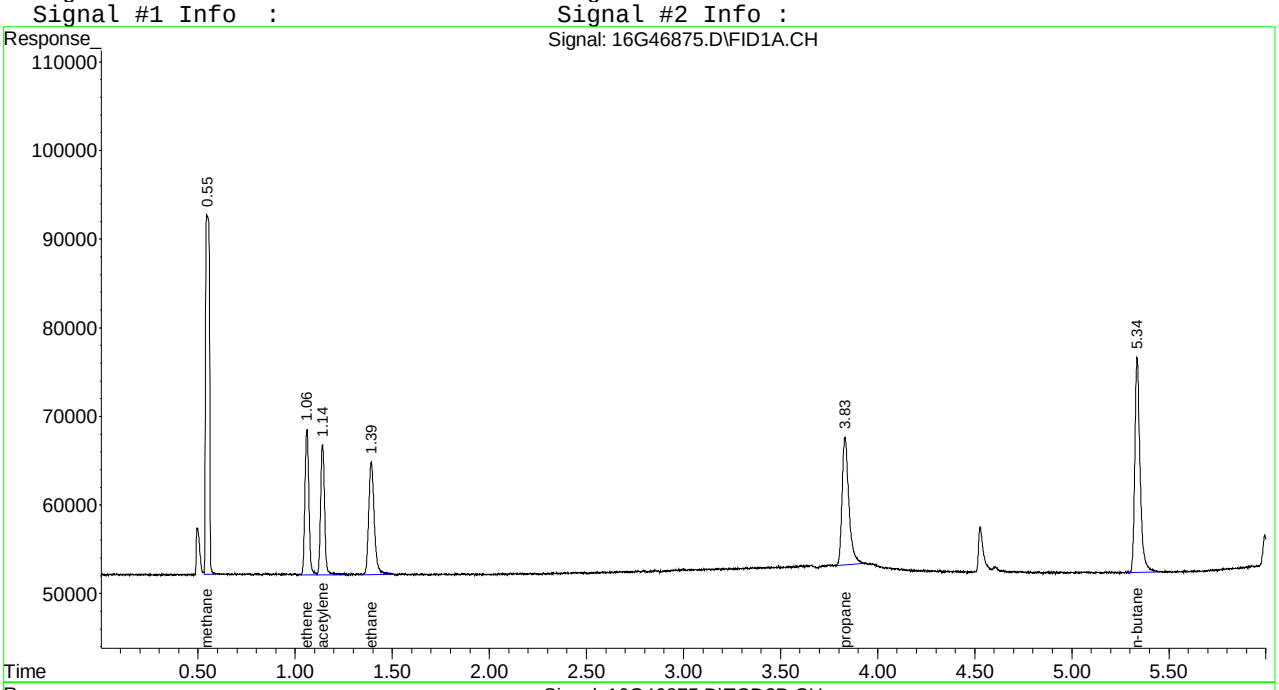

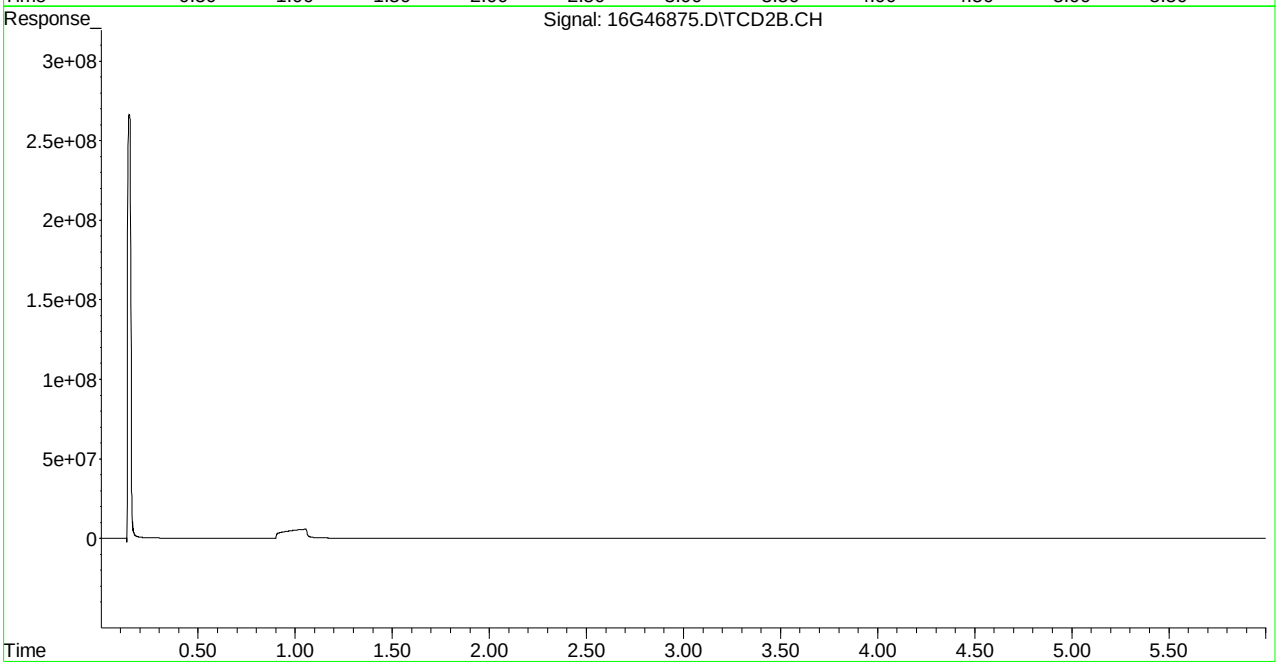

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46875.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46875.D\TCD2B.CH
Acq On : 03 Mar 2015 14:17 Operator: JDS
Sample : WG514119-01 0.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	-1.000	0.846	0.0	0	0.00
2	T	ethene	-1.000	0.736	0.0	100	0.00
3	T	acetylene	-1.000	0.632	0.0	100	0.00
4	T	ethane	0.667	0.749	-12.3	100	0.00
5	T	propane	0.667	0.710	-6.4	100	0.00
6	T	n-butane	0.667	0.706	-5.8	100	0.00

Signal #2

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46875.D RSKEXT1.M Fri Mar 06 11:55:53 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46875.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46875.D\TCD2B.CH
Acq On    : 03 Mar 2015  14:17                        Operator: JDS
Sample    : WG514119-01 0.67umol/mol STD RSK175       Inst    : HP16
Misc      : 1,1 STD67276                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
 ---------------------------------------------------------------------------


Signal #2
8 T   carbon dioxide               -1.000   0.000       0.0     0  -0.21
```

```
---------------------------------------------------------------------------
 (#) = Out of Range             SPCC's out = 0  CCC's out = 0
 16G46875.D  RSKEXT1.M      Fri Mar 06 11:55:53 2015                    Page 2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46876.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46876.D\TCD2B.CH
Acq On : 03 Mar 2015 14:30 Operator: JDS
Sample : WG514119-02 1.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:08 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	739046	1.773	umol/
2) T	ethene	1.06	538090	1.696	umol/
3) T	acetylene	1.14	529143	1.564	umol/
4) T	ethane	1.39	567082	1.668	umol/
5) T	propane	3.83	804240	1.620	umol/
6) T	n-butane	5.34	1028782	1.587	umol/
8) T	carbon dioxide	0.20	7954783	1442.423	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46876.D RSKEXT1.M Fri Mar 06 11:57:08 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46876.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46876.D\TCD2B.CH
Acq On : 03 Mar 2015 14:30 Operator: JDS
Sample : WG514119-02 1.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

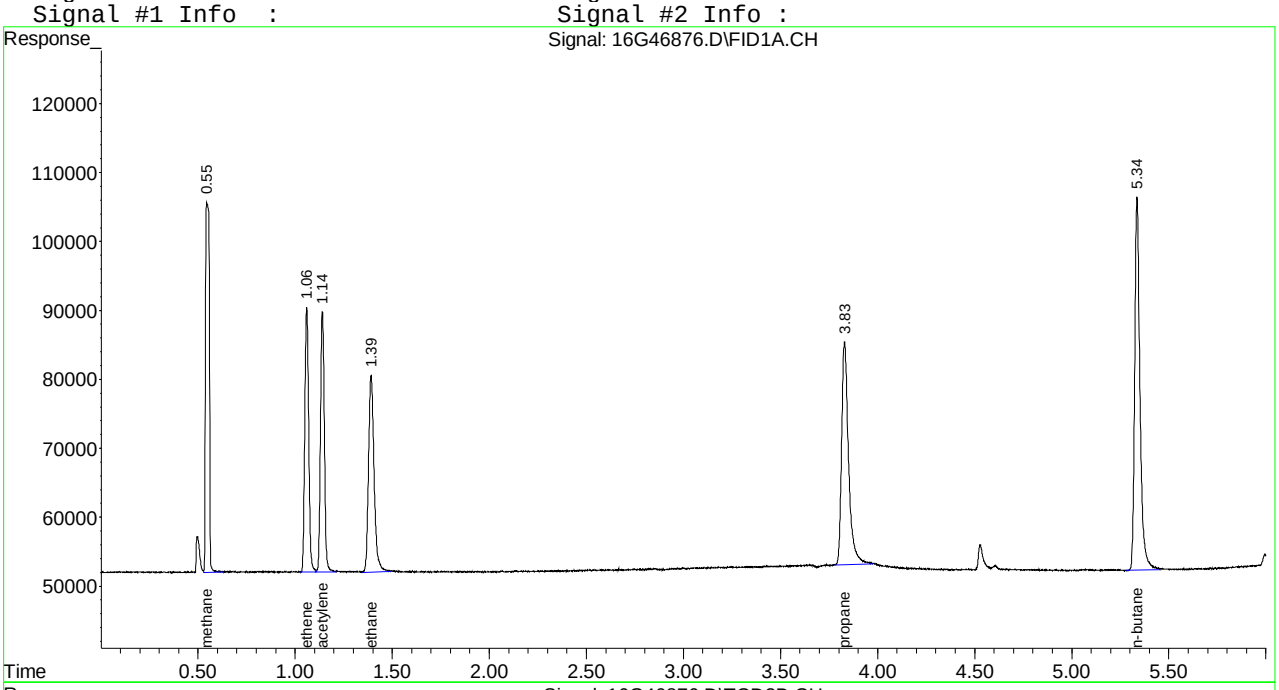

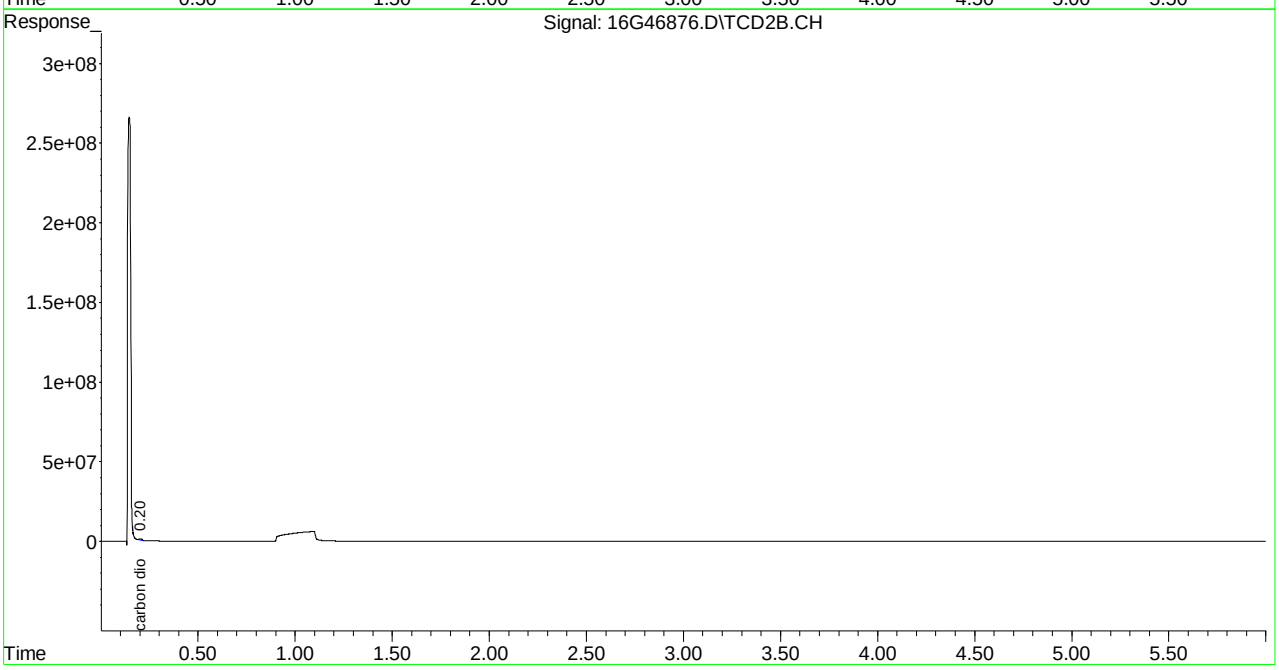

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46876.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46876.D\TCD2B.CH
Acq On : 03 Mar 2015 14:30 Operator: JDS
Sample : WG514119-02 1.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	1.670	1.773	-6.2	100	0.00
2	T	ethene	1.670	1.696	-1.6	100	0.00
3	T	acetylene	1.670	1.564	6.3	100	0.00
4	T	ethane	1.670	1.668	0.1	100	0.00
5	T	propane	1.670	1.620	3.0	100	0.00
6	T	n-butane	1.670	1.587	5.0	100	0.00

Signal #2

8	T	carbon dioxide	2000.000	1442.423	27.9#	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46876.D RSKEXT1.M Fri Mar 06 11:52:49 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46876.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46876.D\TCD2B.CH
Acq On    : 03 Mar 2015  14:30                        Operator: JDS
Sample    : WG514119-02 1.67umol/mol STD RSK175       Inst    : HP16
Misc      : 1,1 STD67276                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46877.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46877.D\TCD2B.CH
Acq On : 03 Mar 2015 14:42 Operator: JDS
Sample : WG514119-03 33.3umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:10 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	6717167	33.998	umol/
2) T	ethene	1.06	11126351	35.075	umol/
3) T	acetylene	1.14	11442001	33.809	umol/
4) T	ethane	1.39	11535235	33.937	umol/
5) T	propane	3.83	17256964	34.764	umol/
6) T	n-butane	5.34	22669140	34.968	umol/
8) T	carbon dioxide	0.20	18661832	3383.908	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46877.D RSKEXT1.M Fri Mar 06 11:57:10 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46877.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46877.D\TCD2B.CH
Acq On : 03 Mar 2015 14:42 Operator: JDS
Sample : WG514119-03 33.3umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

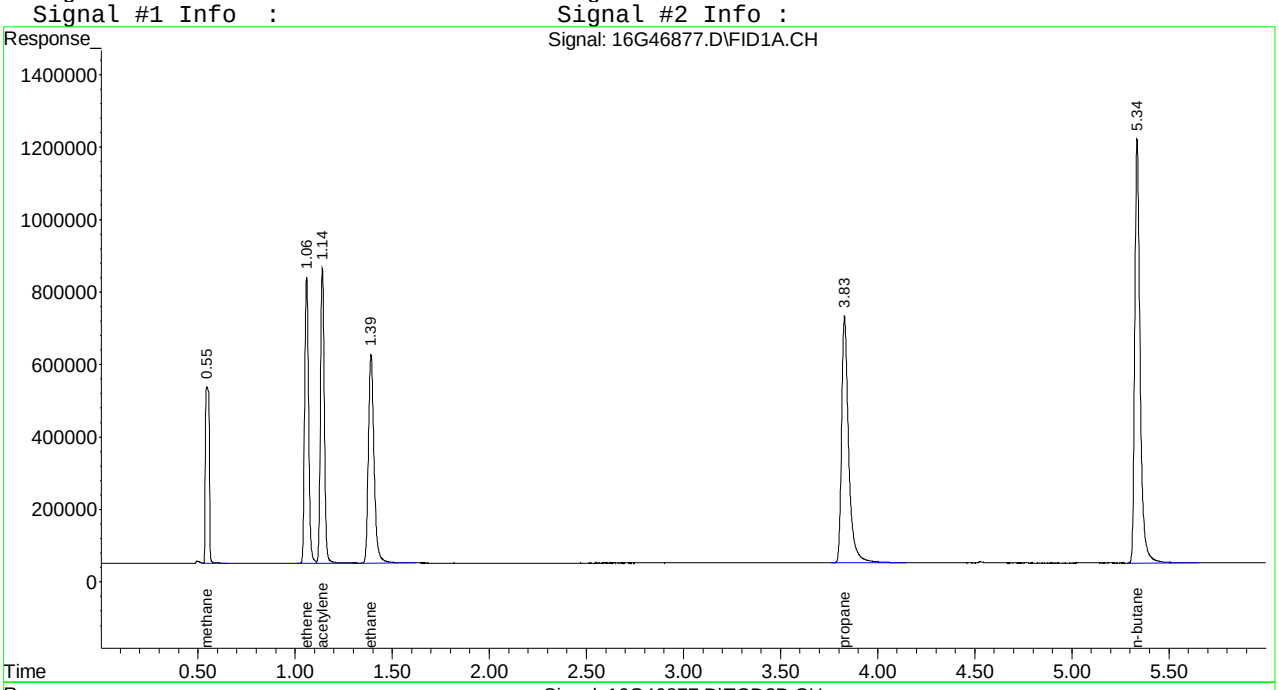

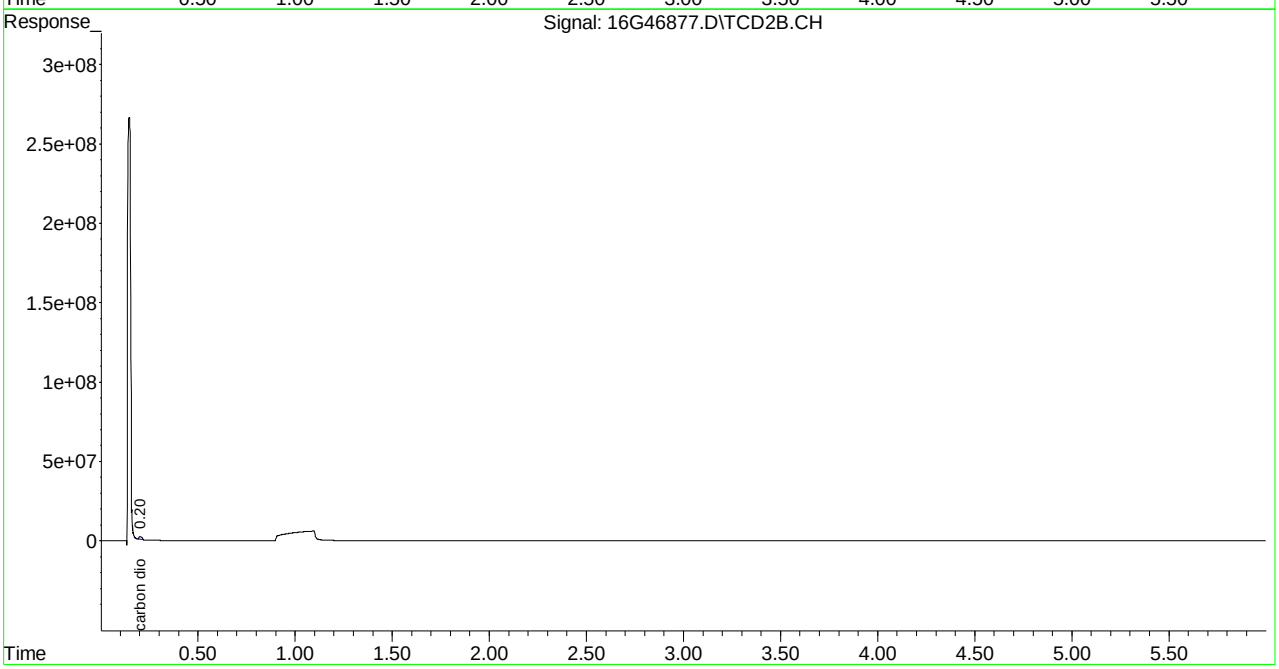

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46878.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46878.D\TCD2B.CH
Acq On : 03 Mar 2015 14:53 Operator: JDS
Sample : WG514119-04 66.7umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:11 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	11713293	60.930	umol/
2) T	ethene	1.06	19737271	62.220	umol/
3) T	acetylene	1.14	20910957	61.787	umol/
4) T	ethane	1.39	20832969	61.292	umol/
5) T	propane	3.83	31304425	63.062	umol/
6) T	n-butane	5.33	40948894	63.166	umol/
8) T	carbon dioxide	0.20	37230879	6750.991	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46878.D RSKEXT1.M Fri Mar 06 11:57:11 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46878.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46878.D\TCD2B.CH
Acq On : 03 Mar 2015 14:53 Operator: JDS
Sample : WG514119-04 66.7umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

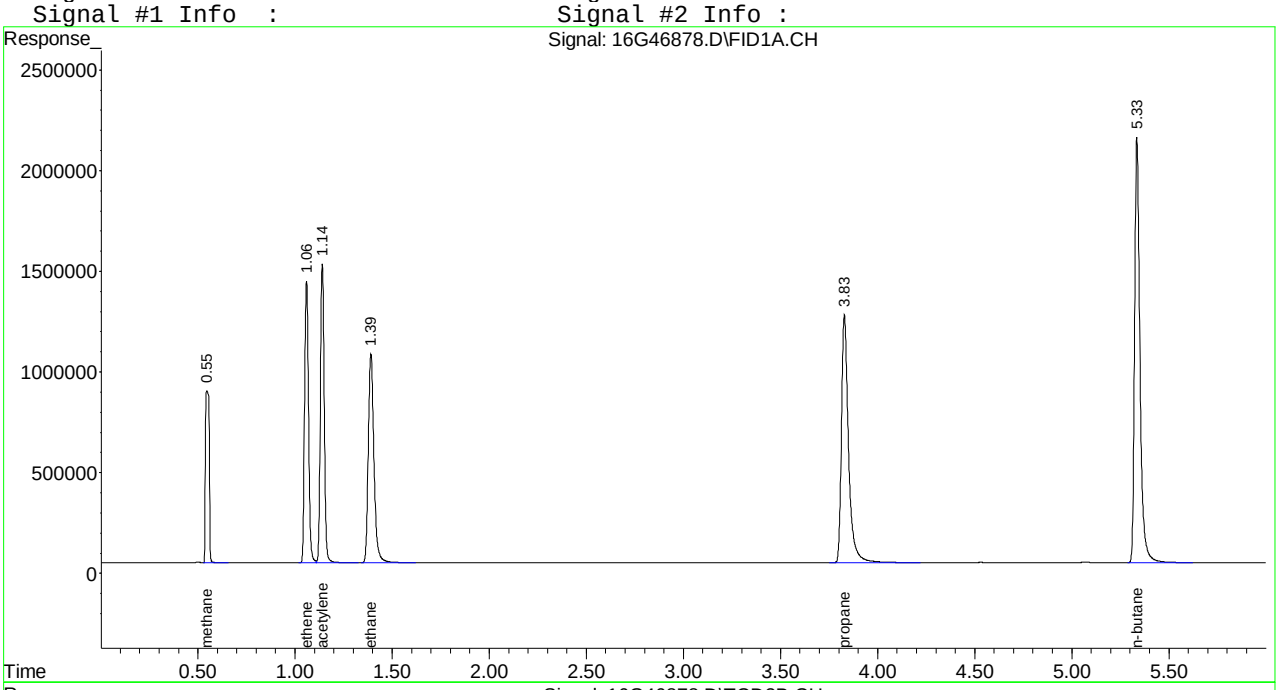

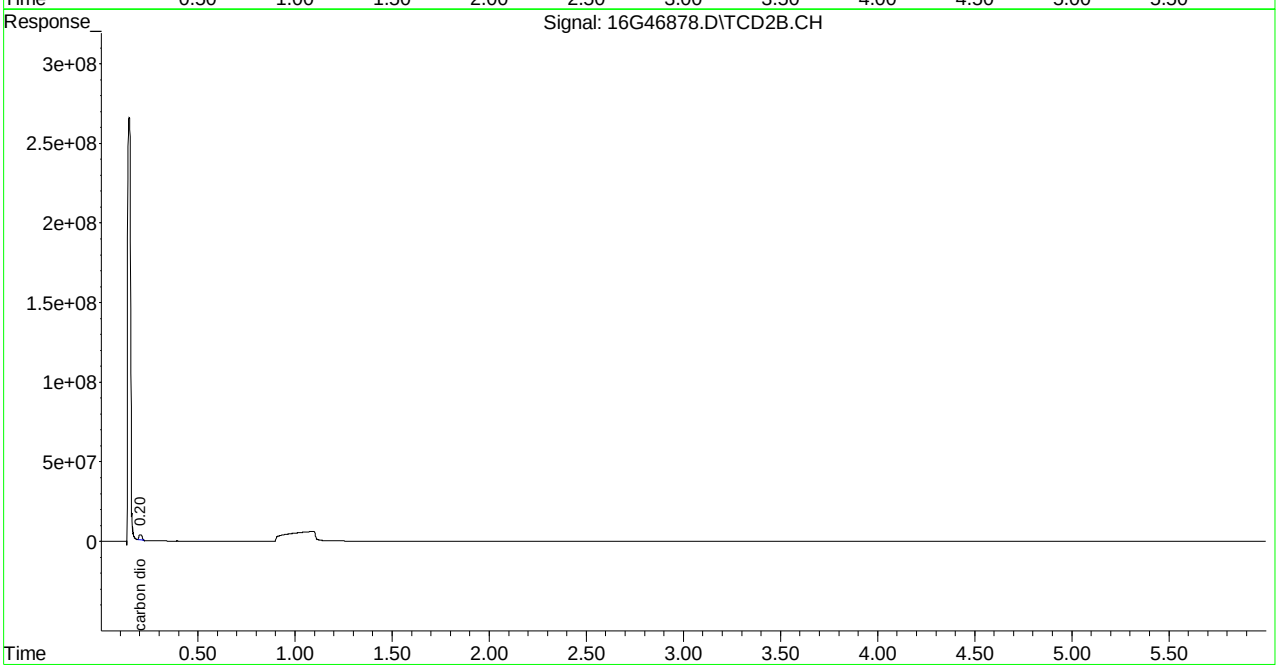

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46879.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46879.D\TCD2B.CH
Acq On : 03 Mar 2015 15:05 Operator: JDS
Sample : WG514119-05 133umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:11 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc Units
	Target Compounds			
1) T	methane	0.55	24939741	132.227 umol/
2) T	ethene	1.06	41686300	131.412 umol/
3) T	acetylene	1.14	47206199	139.484 umol/
4) T	ethane	1.39	43668346	128.475 umol/
5) T	propane	3.83	64365472	129.663 umol/
6) T	n-butane	5.33	84395468	130.185 umol/
8) T	carbon dioxide	0.20	80524699	14601.362 umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46879.D RSKEXT1.M Fri Mar 06 11:57:12 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46879.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46879.D\TCD2B.CH
Acq On : 03 Mar 2015 15:05 Operator: JDS
Sample : WG514119-05 133umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

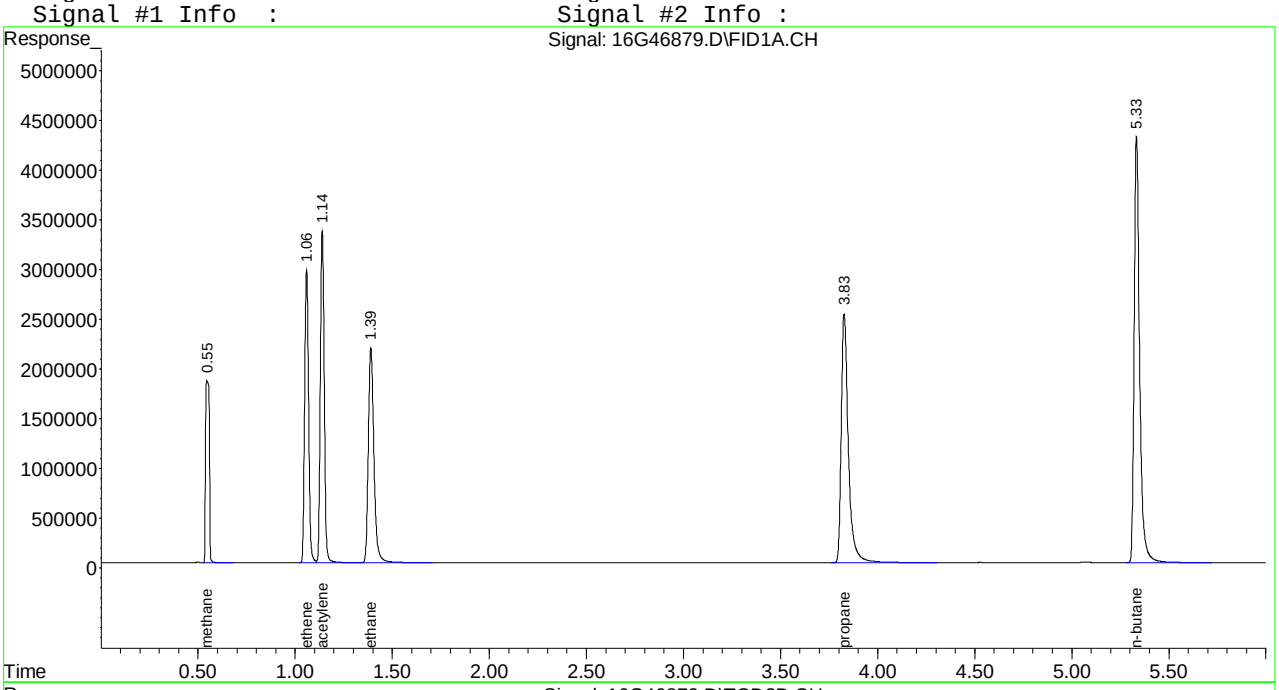

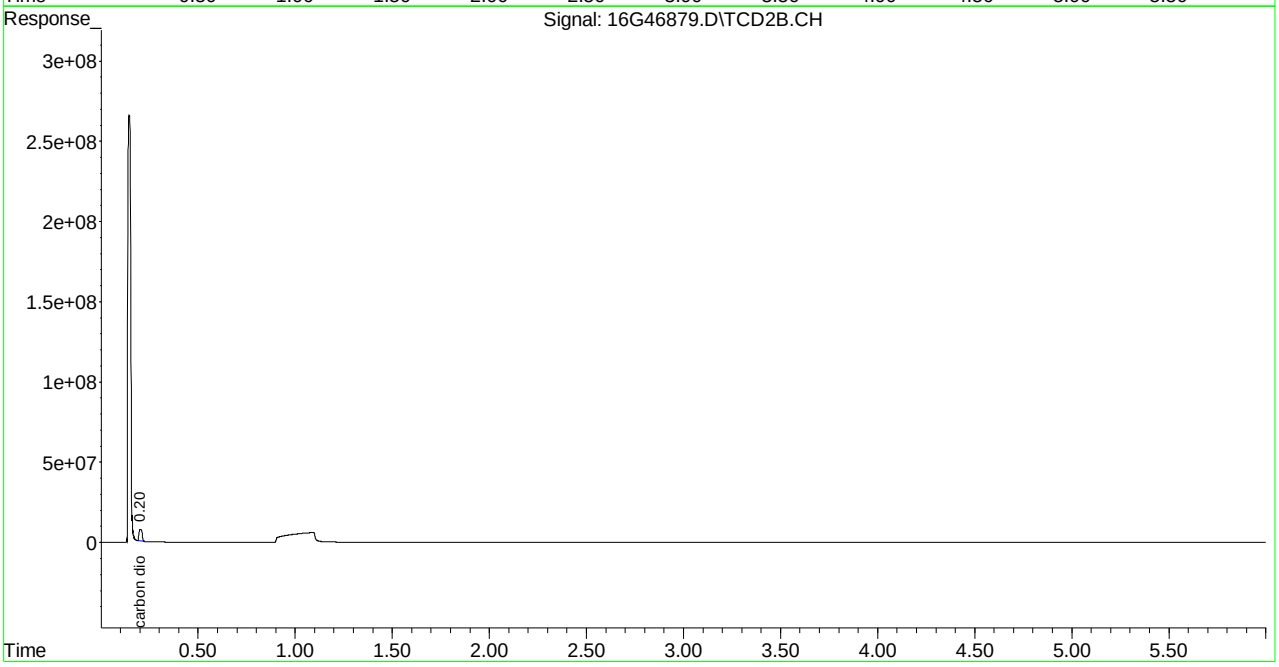

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46880.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46880.D\TCD2B.CH
Acq On    : 03 Mar 2015  15:17                        Operator: JDS
Sample    : WG514119-06 333umol/mol STD RSK175        Inst    : HP16
Misc      : 1,1 STD67274                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:12 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	61959752	331.783	umol/
2) T	ethene	1.06	106345688	335.244	umol/
3) T	acetylene	1.14	118917475	351.375	umol/
4) T	ethane	1.39	111791323	328.897	umol/
5) T	propane	3.83	166544491	335.501	umol/
6) T	n-butane	5.33	219746160	338.971	umol/
8) T	carbon dioxide	0.20	201820251	36595.610	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

16G46880.D RSKEXT1.M Fri Mar 06 11:57:12 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46880.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46880.D\TCD2B.CH
Acq On : 03 Mar 2015 15:17 Operator: JDS
Sample : WG514119-06 333umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

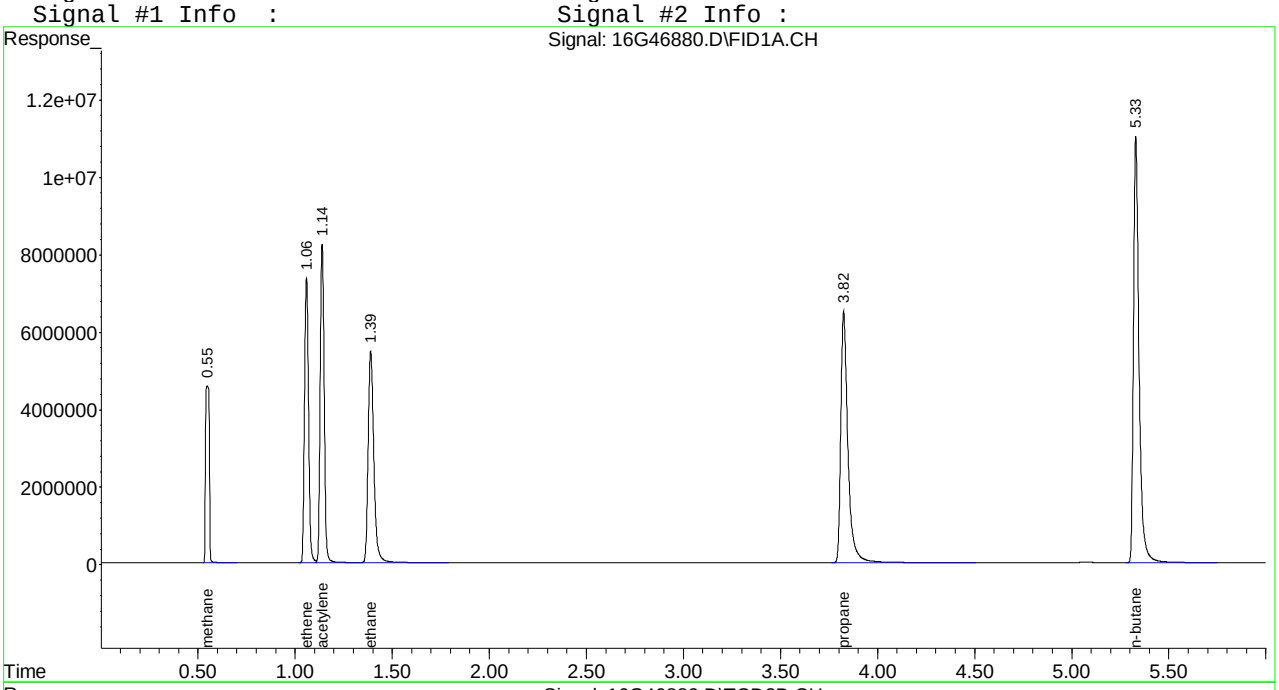

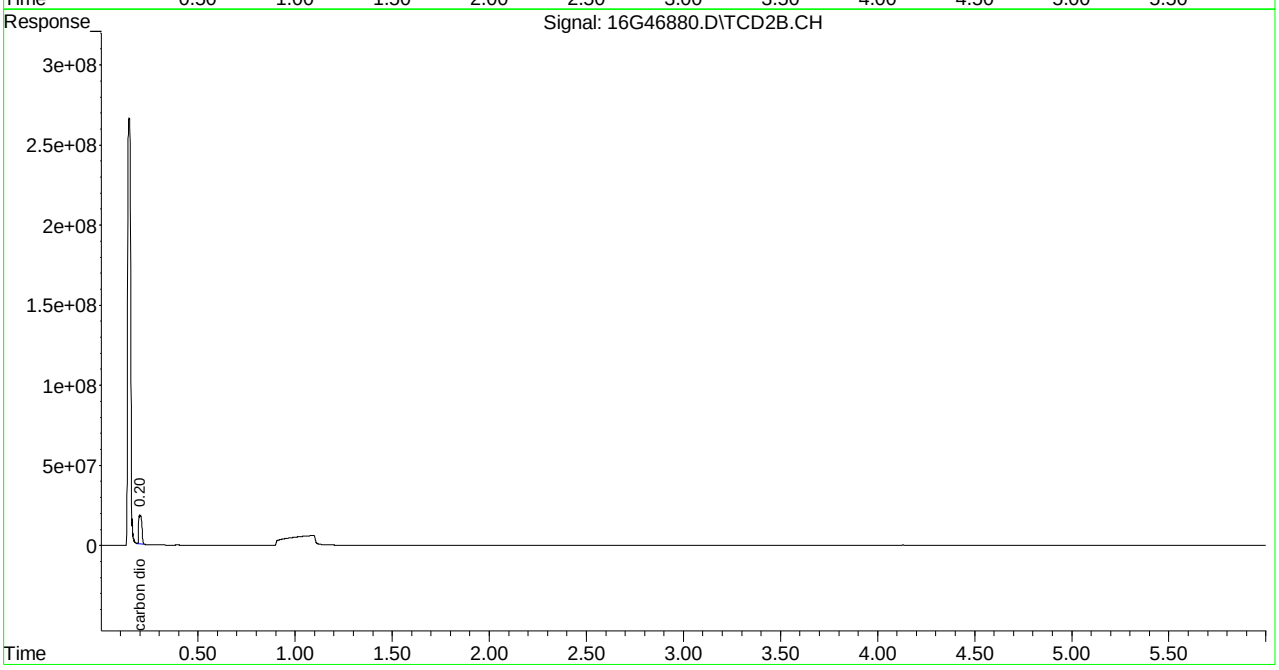

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46881.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46881.D\TCD2B.CH
Acq On    : 03 Mar 2015  15:29                        Operator: JDS
Sample    : WG514119-07 533umol/mol STD RSK175        Inst    : HP16
Misc      : 1,1 STD67274                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:13 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	100578633	539.958	umol/
2) T	ethene	1.06	169644372	534.786	umol/
3) T	acetylene	1.14	183672662	542.712	umol/
4) T	ethane	1.39	178696917	525.738	umol/
5) T	propane	3.82	263060772	529.931	umol/
6) T	n-butane	5.33	344418707	531.285	umol/
8) T	carbon dioxide	0.20	309711021	56159.199	umol/

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46881.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46881.D\TCD2B.CH
Acq On : 03 Mar 2015 15:29 Operator: JDS
Sample : WG514119-07 533umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

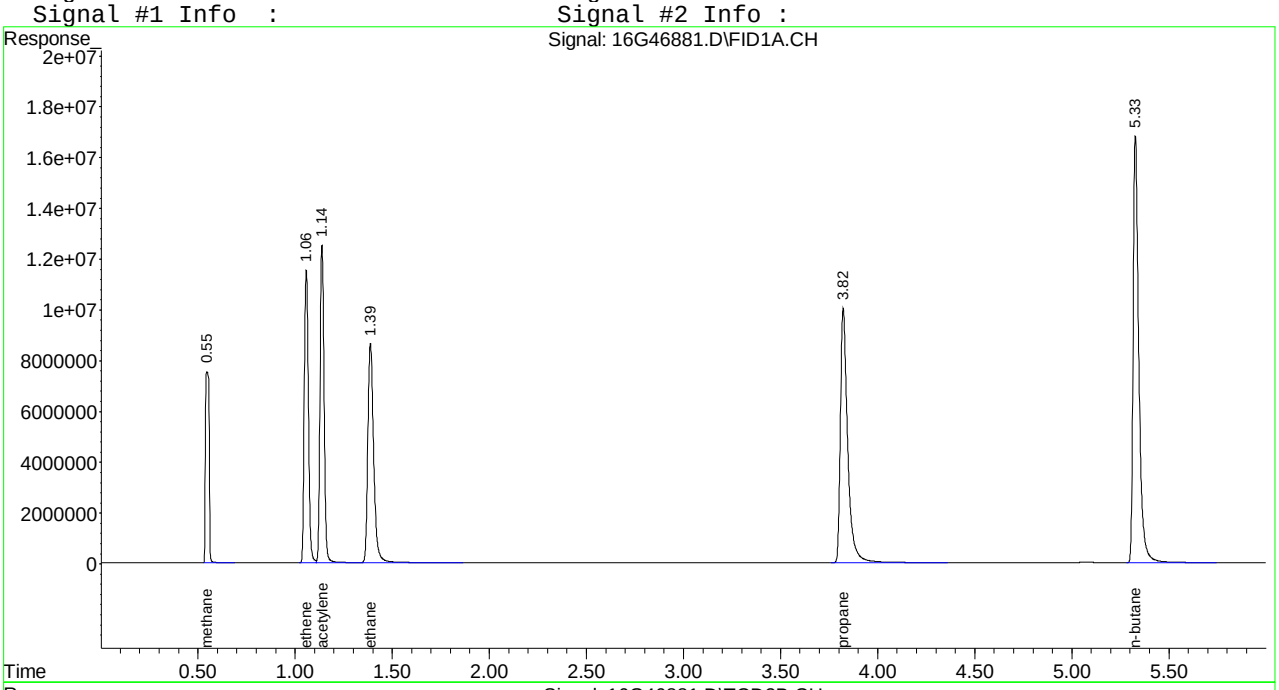

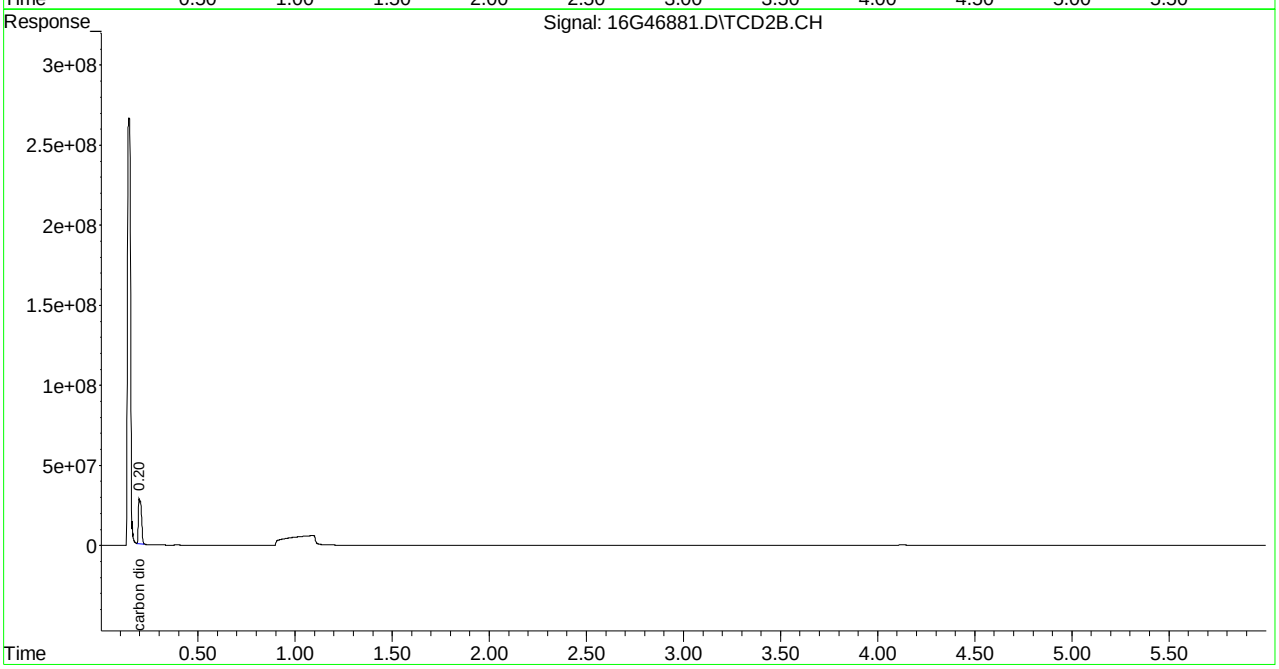

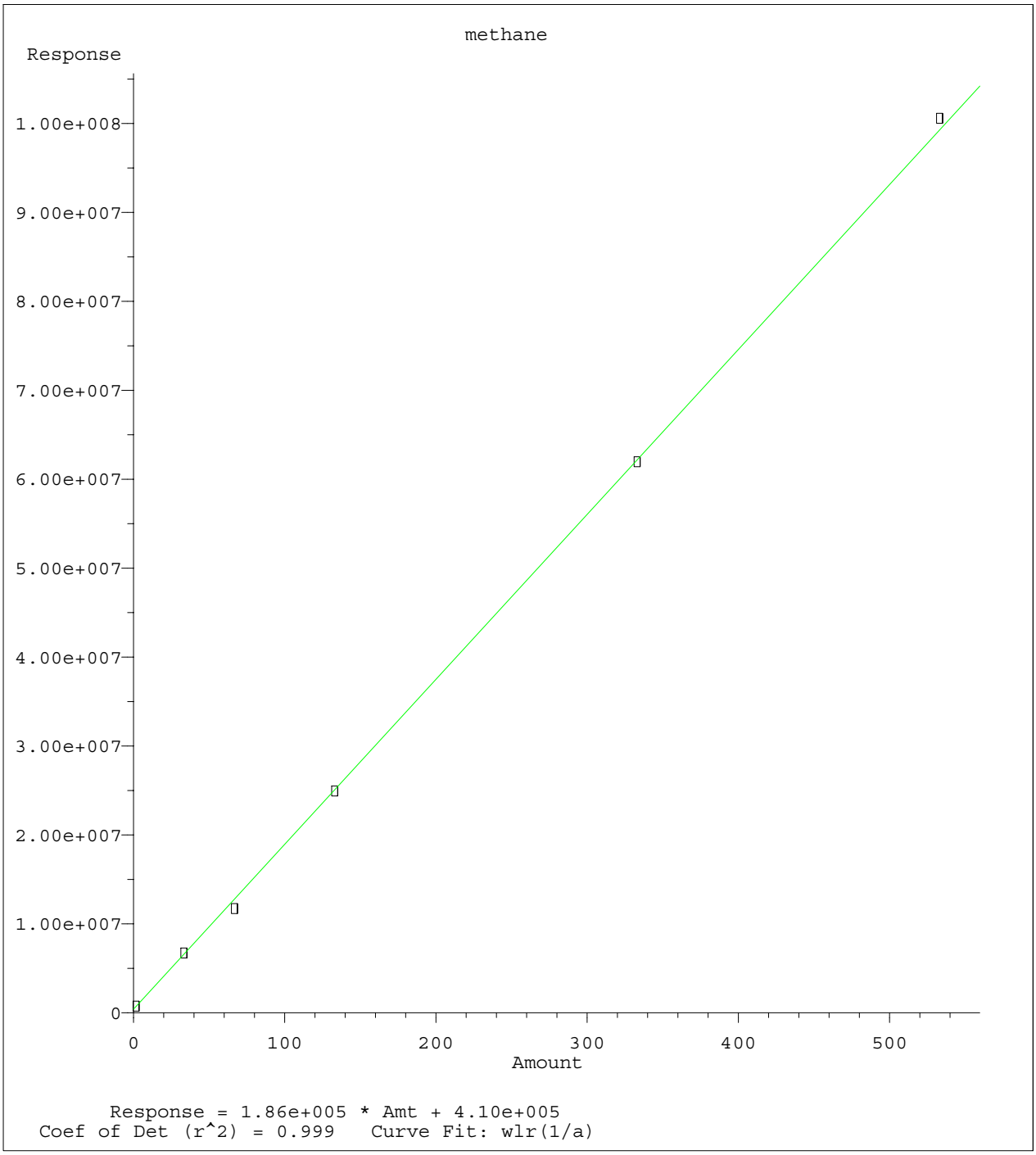

Method Name: C:\MSDCHEM\1\METHODS\RSKEXT1.M
Calibration Table Last Updated: Fri Mar 06 11:52:33 2015

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46884.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46884.D\TCD2B.CH
Acq On : 03 Mar 2015 17:10 Operator: JDS
Sample : WG514119-08 133umol/mol ALT SRC STD RSK1 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:58:49 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	25936090	137.598	umol/
2) T	ethene	1.06	43111404	135.904	umol/
3) T	acetylene	1.14	47098795	139.167	umol/
4) T	ethane	1.39	44778091	131.740	umol/
5) T	propane	3.83	64822008	130.583	umol/
6) T	n-butane	5.33	82856392	127.811	umol/
8) T	carbon dioxide	0.20	76359751	13846.141	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46884.D RSKEXT1.M Fri Mar 06 11:58:49 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46884.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46884.D\TCD2B.CH
Acq On : 03 Mar 2015 17:10 Operator: JDS
Sample : WG514119-08 133umol/mol ALT SRC STD RSK1 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:58 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

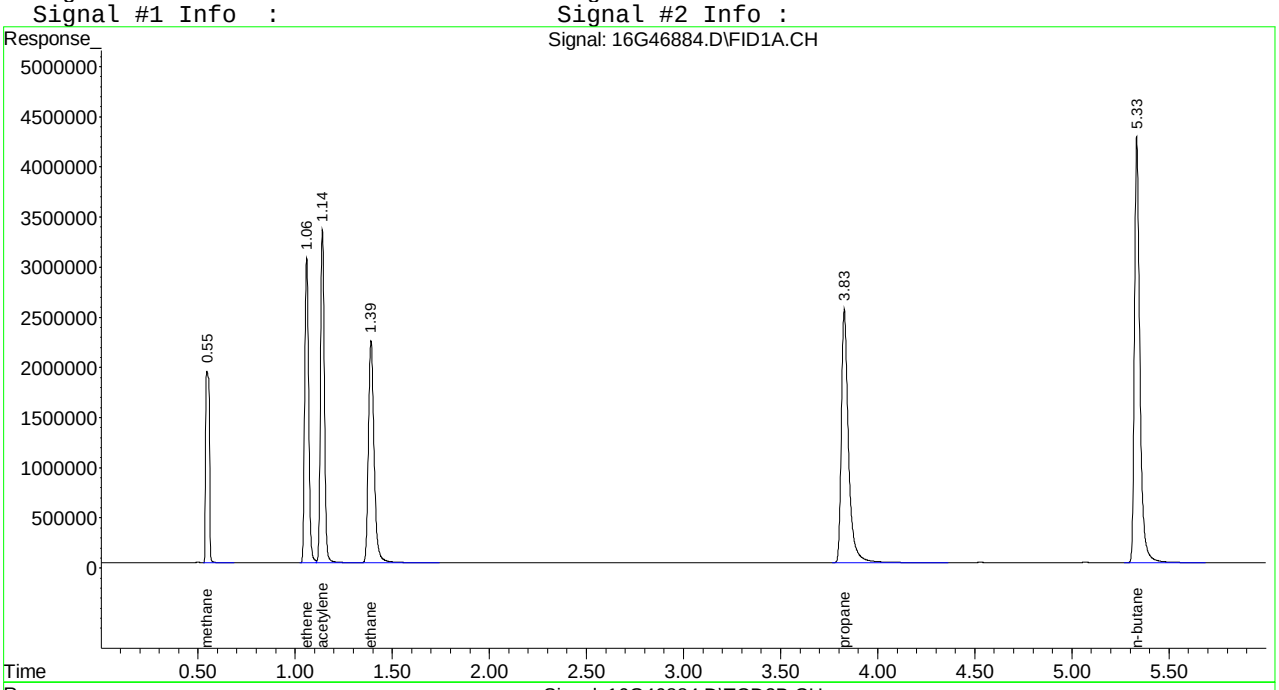

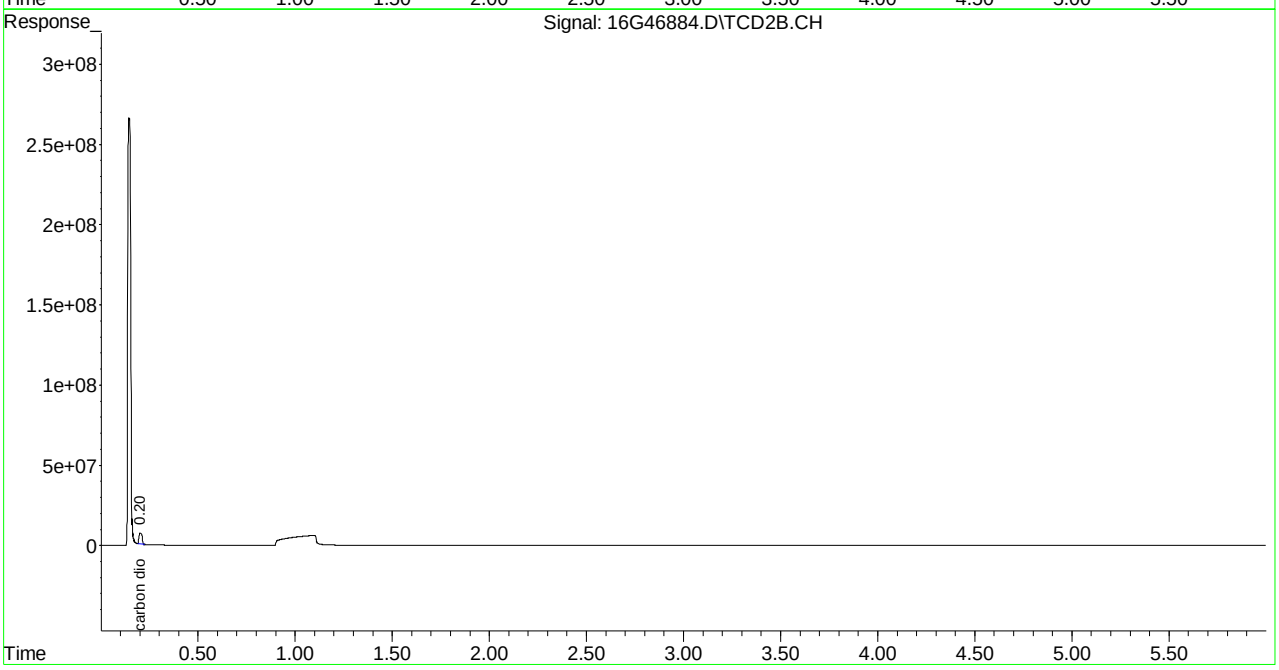

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46884.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46884.D\TCD2B.CH
Acq On : 03 Mar 2015 17:10 Operator: JDS
Sample : WG514119-08 133umol/mol ALT SRC STD RSK1 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	137.598	-3.5	104	0.00
2	T	ethene	133.000	135.904	-2.2	103	0.00
3	T	acetylene	133.000	139.167	-4.6	100	0.00
4	T	ethane	133.000	131.740	0.9	103	0.00
5	T	propane	133.000	130.583	1.8	101	0.00
6	T	n-butane	133.000	127.811	3.9	98	0.00

Signal #2

8	T	carbon dioxide	13300.000	13846.141	-4.1	95	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46884.D RSKEXT1.M Fri Mar 06 11:59:02 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46884.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46884.D\TCD2B.CH
Acq On    : 03 Mar 2015  17:10                        Operator: JDS
Sample    : WG514119-08 133umol/mol ALT SRC STD RSK1 Inst    : HP16
Misc      : 1,1 STD68250                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

```
---------------------------------------------------------------------------
 (#) = Out of Range            SPCC's out = 0  CCC's out = 0
 16G46884.D  RSKEXT1.M      Fri Mar 06 11:59:02 2015                    Page 2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\111615\16G49008.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDchem\1\DATA\111615\16G49008.D\TCD2B.CH
Acq On : 16 Nov 2015 15:20 Operator: JDS
Sample : WG547084-01 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD72628 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 16 15:26:03 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	25719876	136.432	umol/
2) T	ethene	1.06	44046315	138.851	umol/
3) T	acetylene	1.14	45861341	135.510	umol/
4) T	ethane	1.39	46514582	136.849	umol/
5) T	propane	3.83	68709403	138.414	umol/
6) T	n-butane	5.34	89407406	137.916	umol/
8) T	carbon dioxide	0.20	74004635	13419.093	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49008.D RSKEXT1.M Mon Nov 16 15:26:03 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\111615\16G49008.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDchem\1\DATA\111615\16G49008.D\TCD2B.CH
Acq On : 16 Nov 2015 15:20 Operator: JDS
Sample : WG547084-01 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD72628 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 16 15:26 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

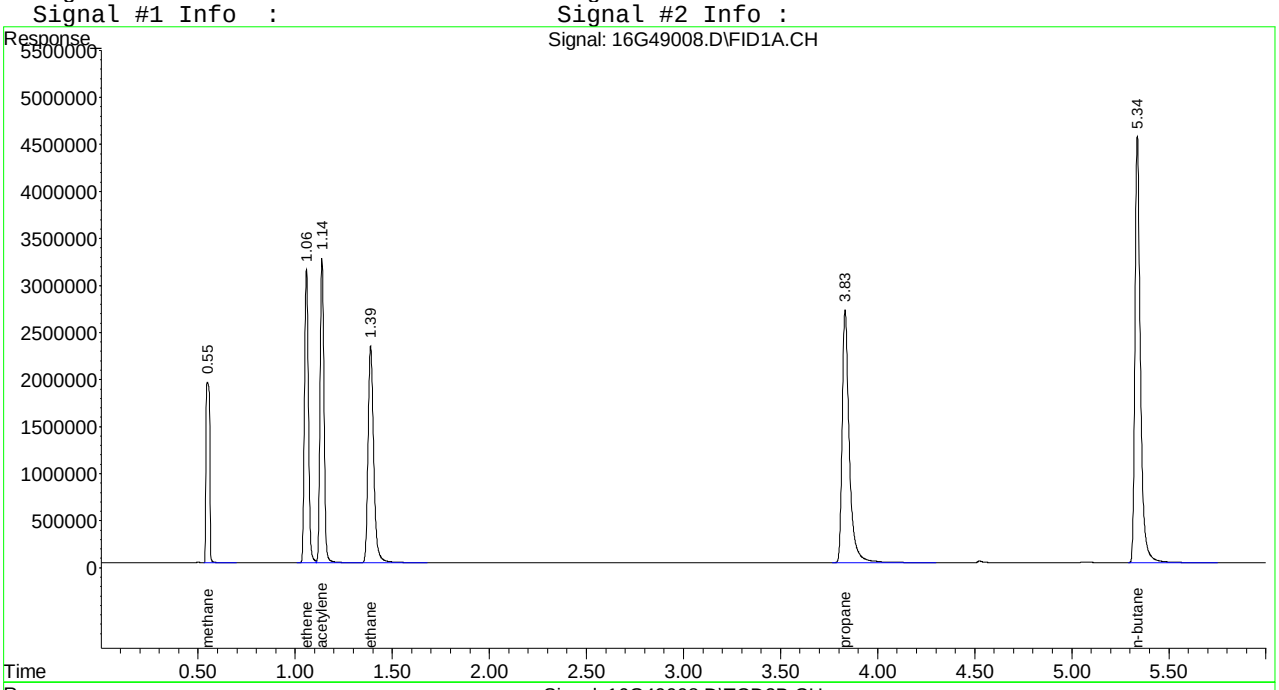

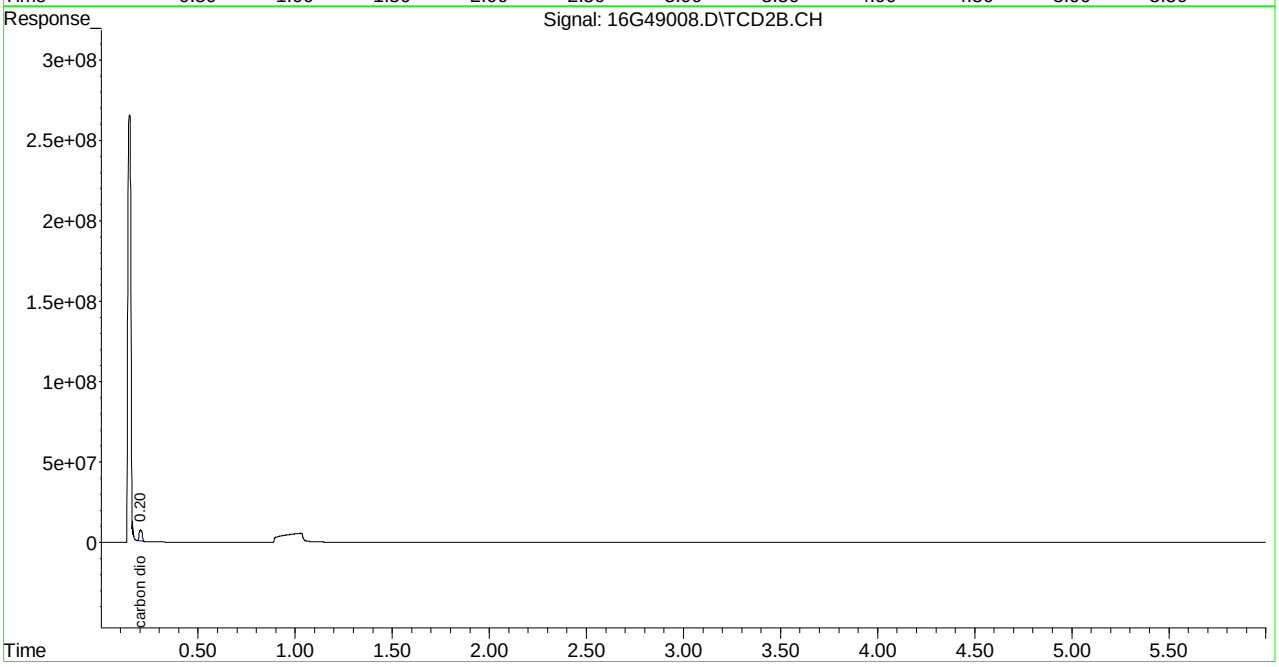

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\111615\16G49008.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\111615\16G49008.D\TCD2B.CH
Acq On : 16 Nov 2015 15:20 Operator: JDS
Sample : WG547084-01 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD72628 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	136.432	-2.6	103	0.00
2	T	ethene	133.000	138.851	-4.4	106	0.00
3	T	acetylene	133.000	135.510	-1.9	97	0.00
4	T	ethane	133.000	136.849	-2.9	107	0.00
5	T	propane	133.000	138.414	-4.1	107	0.00
6	T	n-butane	133.000	137.916	-3.7	106	0.00

Signal #2

8	T	carbon dioxide	13300.000	13419.093	-0.9	92	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G49008.D RSKEXT1.M Wed Nov 18 08:28:18 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\111615\16G49008.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\111615\16G49008.D\TCD2B.CH
Acq On    : 16 Nov 2015  15:20                        Operator: JDS
Sample    : WG547084-01 133umol/mol CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD72628                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDchem\1\DATA\111615\16G49019.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\111615\16G49019.D\TCD2B.CH
Acq On    : 16 Nov 2015  18:28                        Operator: JDS
Sample    : WG547084-02 133umol/mol CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD72628                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Nov 16 18:34:19 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc Units
	Target Compounds			
1) T	methane	0.55	23769340	125.918 umol/
2) T	ethene	1.06	39859630	125.653 umol/
3) T	acetylene	1.14	41250886	121.887 umol/
4) T	ethane	1.39	42221271	124.218 umol/
5) T	propane	3.83	61754555	124.403 umol/
6) T	n-butane	5.34	81161265	125.196 umol/
8) T	carbon dioxide	0.20	71040635	12881.638 umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

16G49019.D RSKEXT1.M Mon Nov 16 18:34:19 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\111615\16G49019.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\111615\16G49019.D\TCD2B.CH
Acq On : 16 Nov 2015 18:28 Operator: JDS
Sample : WG547084-02 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD72628 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 16 18:34 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

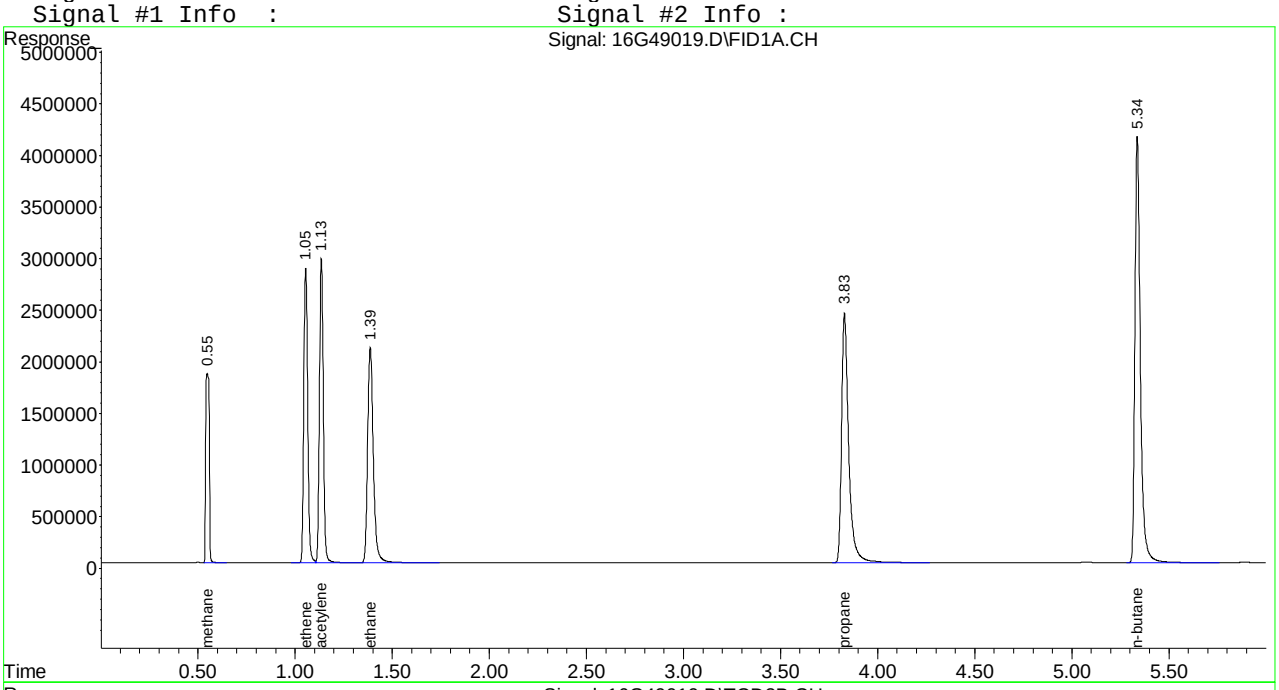

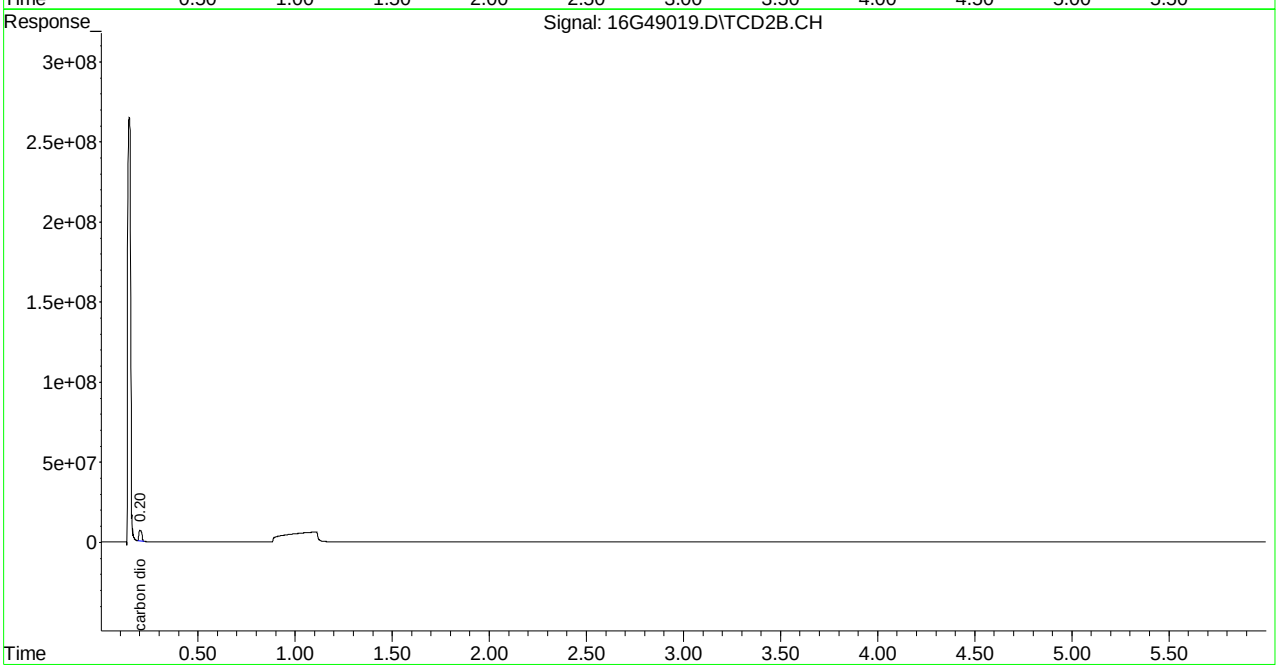

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\111615\16G49019.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\111615\16G49019.D\TCD2B.CH
Acq On : 16 Nov 2015 18:28 Operator: JDS
Sample : WG547084-02 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD72628 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	125.918	5.3	95	0.00
2	T	ethene	133.000	125.653	5.5	96	0.00
3	T	acetylene	133.000	121.887	8.4	87	0.00
4	T	ethane	133.000	124.218	6.6	97	0.00
5	T	propane	133.000	124.403	6.5	96	0.00
6	T	n-butane	133.000	125.196	5.9	96	0.00

Signal #2

8	T	carbon dioxide	13300.000	12881.638	3.1	88	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G49019.D RSKEXT1.M Wed Nov 18 08:28:26 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\111615\16G49019.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\111615\16G49019.D\TCD2B.CH
Acq On    : 16 Nov 2015  18:28                        Operator: JDS
Sample    : WG547084-02 133umol/mol CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD72628                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\111615\16G49023.D\FID1A.CH Vial: 16
Signal #2 : C:\MSDchem\1\DATA\111615\16G49023.D\TCD2B.CH
Acq On : 16 Nov 2015 19:17 Operator: JDS
Sample : WG547084-03 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD72628 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 16 19:23:44 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	24114637	127.779	umol/
2) T	ethene	1.06	40483301	127.619	umol/
3) T	acetylene	1.14	40495857	119.656	umol/
4) T	ethane	1.39	42982140	126.456	umol/
5) T	propane	3.83	62838293	126.587	umol/
6) T	n-butane	5.34	81726769	126.068	umol/
8) T	carbon dioxide	0.20	67889218	12310.198	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49023.D RSKEXT1.M Mon Nov 16 19:23:44 2015 Page 1

Signal #1 : C:\MSDchem\1\DATA\111615\16G49023.D\FID1A.CH Vial: 16
Signal #2 : C:\MSDchem\1\DATA\111615\16G49023.D\TCD2B.CH
Acq On : 16 Nov 2015 19:17 Operator: JDS
Sample : WG547084-03 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD72628 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 16 19:23 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

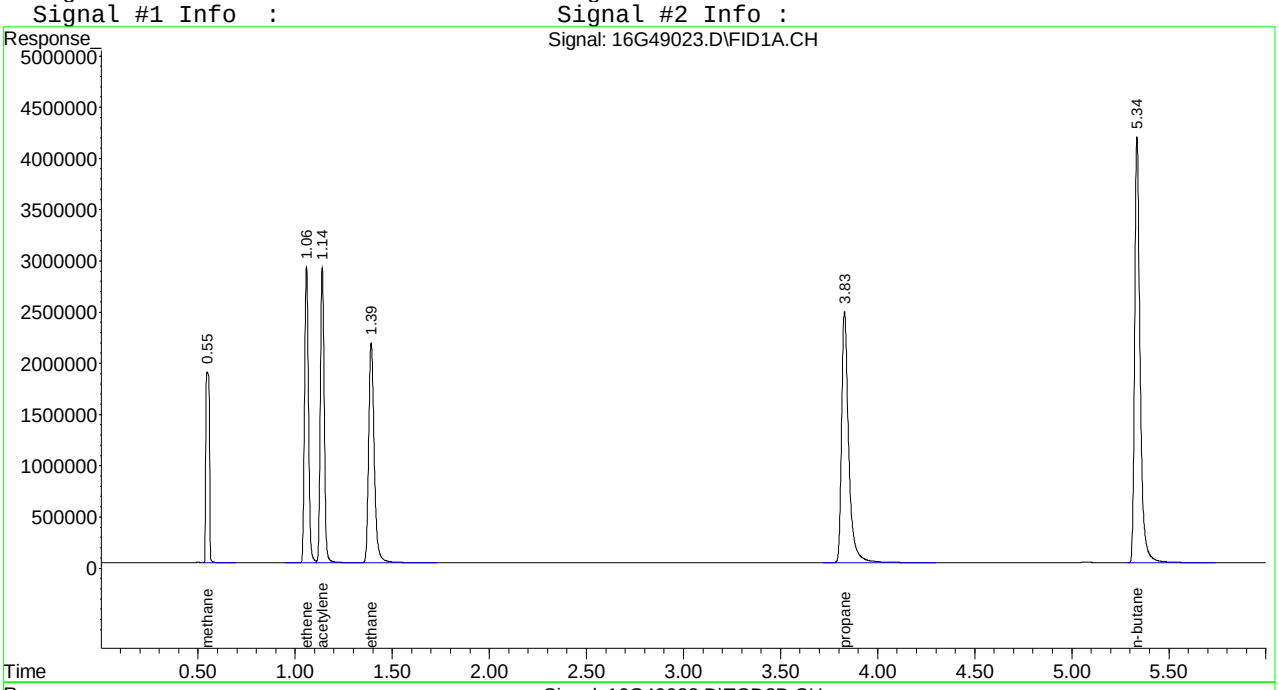

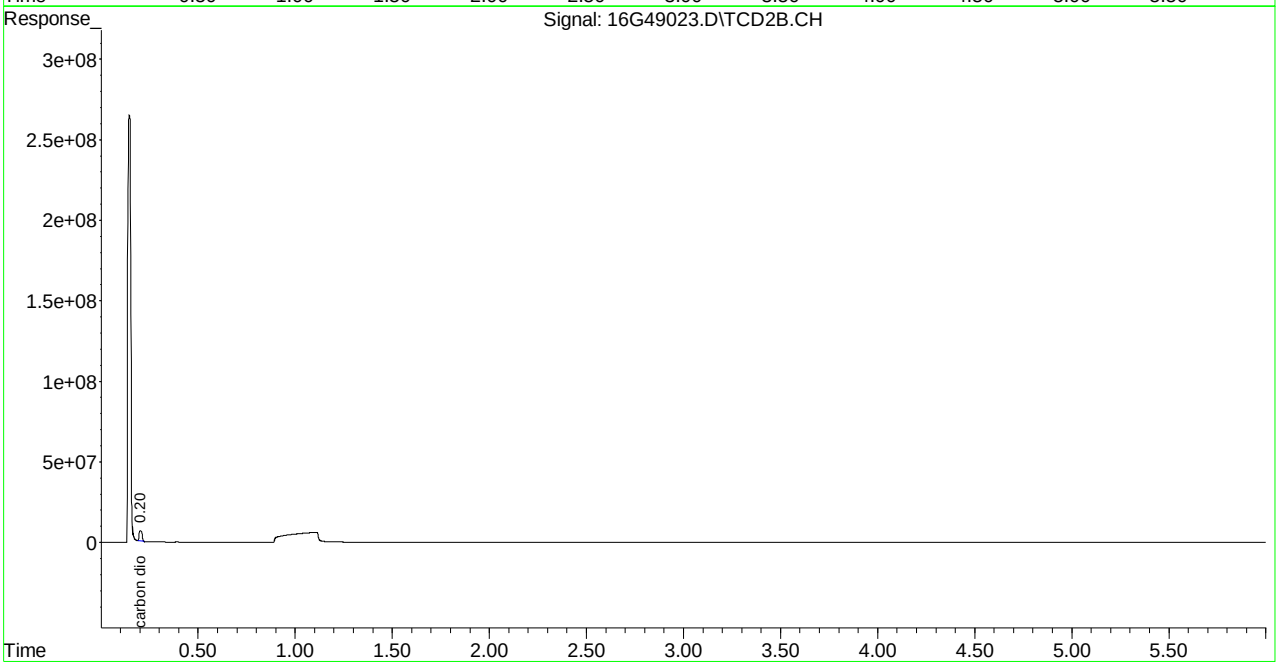

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\111615\16G49023.D\FID1A.CH Vial: 16
Signal #2 : C:\MSDCHEM\1\DATA\111615\16G49023.D\TCD2B.CH
Acq On : 16 Nov 2015 19:17 Operator: JDS
Sample : WG547084-03 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD72628 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	127.779	3.9	97	0.00
2	T	ethene	133.000	127.619	4.0	97	0.00
3	T	acetylene	133.000	119.656	10.0	86	0.00
4	T	ethane	133.000	126.456	4.9	98	0.00
5	T	propane	133.000	126.587	4.8	98	0.00
6	T	n-butane	133.000	126.068	5.2	97	0.00

Signal #2

8	T	carbon dioxide	13300.000	12310.198	7.4	84	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G49023.D RSKEXT1.M Wed Nov 18 08:28:33 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\111615\16G49023.D\FID1A.CH Vial: 16
Signal #2 : C:\MSDCHEM\1\DATA\111615\16G49023.D\TCD2B.CH
Acq On    : 16 Nov 2015  19:17                        Operator: JDS
Sample    : WG547084-03 133umol/mol CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD72628                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

```
---------------------------------------------------------------------------
 (#) = Out of Range            SPCC's out = 0  CCC's out = 0
 16G49023.D  RSKEXT1.M      Wed Nov 18 08:28:33 2015                    Page 2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\111815\16G49025.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDchem\1\DATA\111815\16G49025.D\TCD2B.CH
Acq On : 18 Nov 2015 12:55 Operator: JDS
Sample : WG547424-01 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD72628 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 18 13:01:25 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	24516517	129.946	umol/
2) T	ethene	1.06	41107163	129.586	umol/
3) T	acetylene	1.14	44261482	130.783	umol/
4) T	ethane	1.39	43489488	127.949	umol/
5) T	propane	3.83	63626806	128.175	umol/
6) T	n-butane	5.34	83998911	129.573	umol/
8) T	carbon dioxide	0.20	77733769	14095.289	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49025.D RSKEXT1.M Wed Nov 18 13:01:26 2015 Page 1

Signal #1 : C:\MSDchem\1\DATA\111815\16G49025.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDchem\1\DATA\111815\16G49025.D\TCD2B.CH
Acq On : 18 Nov 2015 12:55 Operator: JDS
Sample : WG547424-01 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD72628 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 18 13:01 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

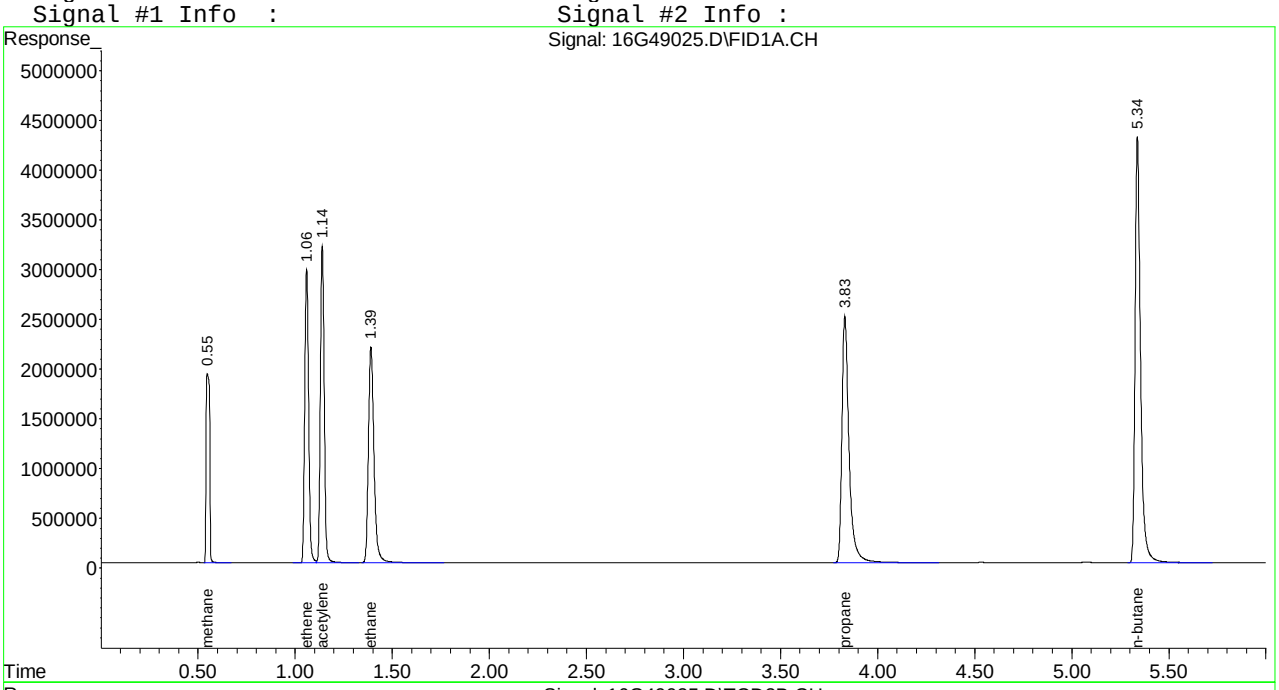

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\111815\16G49025.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\111815\16G49025.D\TCD2B.CH
Acq On : 18 Nov 2015 12:55 Operator: JDS
Sample : WG547424-01 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD72628 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	129.946	2.3	98	0.00
2	T	ethene	133.000	129.586	2.6	99	0.00
3	T	acetylene	133.000	130.783	1.7	94	0.00
4	T	ethane	133.000	127.949	3.8	100	0.00
5	T	propane	133.000	128.175	3.6	99	0.00
6	T	n-butane	133.000	129.573	2.6	100	0.00
		Signal #2					
8	T	carbon dioxide	13300.000	14095.289	-6.0	97	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G49025.D RSKEXT1.M Thu Nov 19 08:42:37 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\111815\16G49025.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\111815\16G49025.D\TCD2B.CH
Acq On    : 18 Nov 2015  12:55                        Operator: JDS
Sample    : WG547424-01 133umol/mol CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD72628                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

```
---------------------------------------------------------------------------
 (#) = Out of Range            SPCC's out = 0  CCC's out = 0
 16G49025.D  RSKEXT1.M      Thu Nov 19 08:42:37 2015                                Page 2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\111815\16G49036.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\111815\16G49036.D\TCD2B.CH
Acq On : 18 Nov 2015 16:51 Operator: JDS
Sample : WG547424-02 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD72628 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 18 16:57:04 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	24289988	128.725	umol/
2) T	ethene	1.06	41297087	130.185	umol/
3) T	acetylene	1.15	43924598	129.788	umol/
4) T	ethane	1.40	43552831	128.135	umol/
5) T	propane	3.83	64142012	129.213	umol/
6) T	n-butane	5.34	84538387	130.405	umol/
8) T	carbon dioxide	0.20	72991479	13235.380	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49036.D RSKEXT1.M Wed Nov 18 16:57:04 2015 Page 1

Signal #1 : C:\MSDchem\1\DATA\111815\16G49036.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\111815\16G49036.D\TCD2B.CH
Acq On : 18 Nov 2015 16:51 Operator: JDS
Sample : WG547424-02 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD72628 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 18 16:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

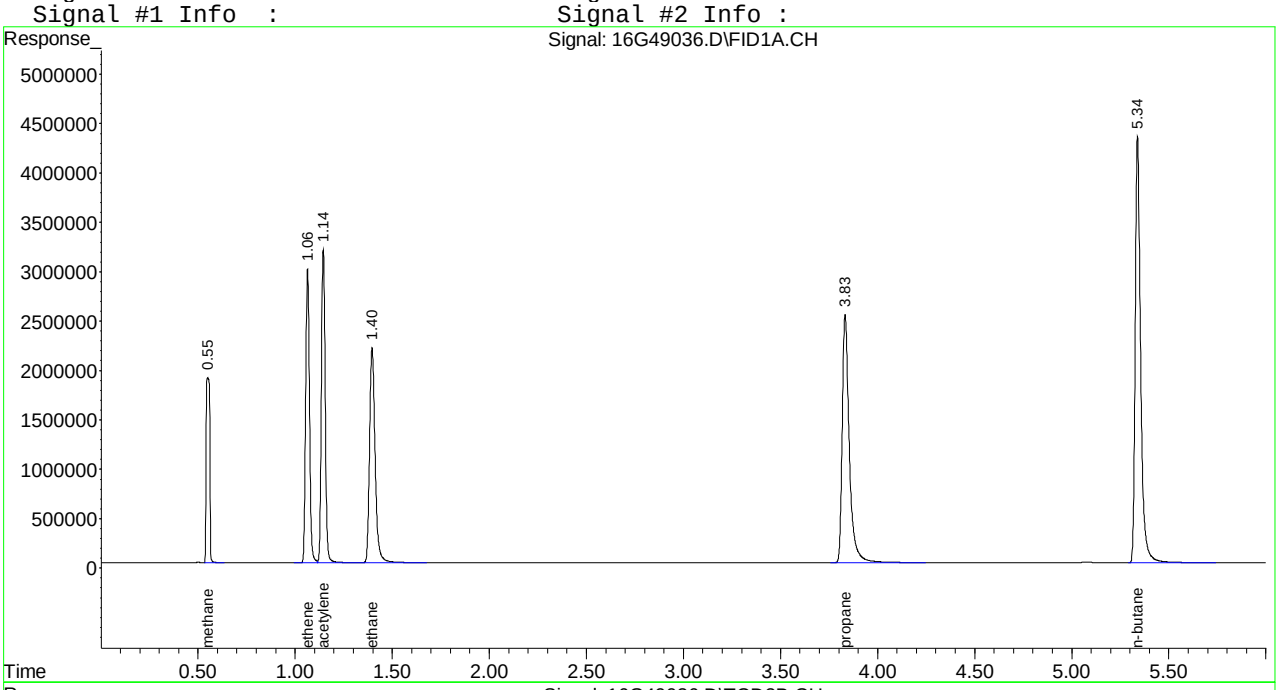

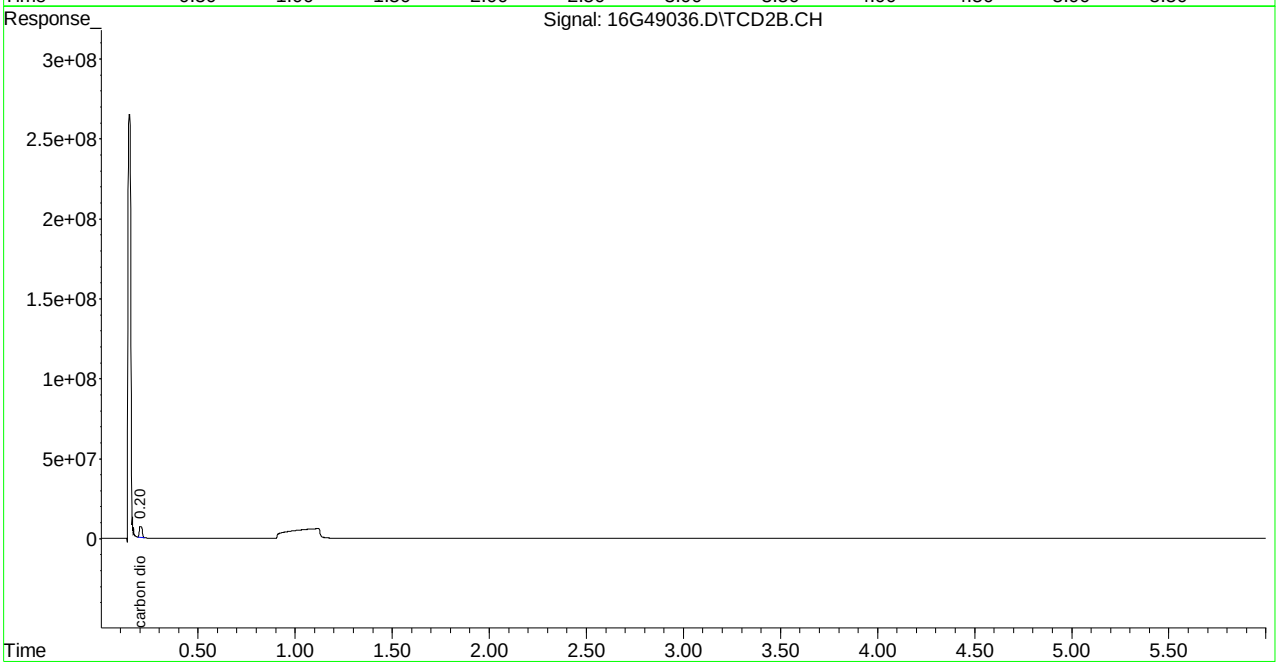

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\111815\16G49036.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\111815\16G49036.D\TCD2B.CH
Acq On : 18 Nov 2015 16:51 Operator: JDS
Sample : WG547424-02 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD72628 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	128.725	3.2	97	0.00
2	T	ethene	133.000	130.185	2.1	99	0.00
3	T	acetylene	133.000	129.788	2.4	93	0.00
4	T	ethane	133.000	128.135	3.7	100	0.00
5	T	propane	133.000	129.213	2.8	100	0.00
6	T	n-butane	133.000	130.405	2.0	100	0.00

Signal #2

8	T	carbon dioxide	13300.000	13235.380	0.5	91	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G49036.D RSKEXT1.M Thu Nov 19 08:42:45 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\111815\16G49036.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\111815\16G49036.D\TCD2B.CH
Acq On    : 18 Nov 2015  16:51                        Operator: JDS
Sample    : WG547424-02 133umol/mol CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD72628                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Microbac Laboratories Inc.
Daily Retention Time Window Determination

Login #: L15110793 **Run Date:** 11/16/2015 **Sample ID:** WG547084-01
Instrument: HP16 **Run Time:** 15:20 **Method:** RSK175
Workgroup (AAB#): WG547086 **File ID:** 16G49008

RT Standard	Analysis Date	File ID	Analyst
WG507817-01	01/13/2015	16G46159	JDS
WG507448-01	01/09/2015	16G46148	JDS
WG507013-01	01/06/2015	16G46125	JDS

Analyte	RT #1	RT #2	RT #3	STD	Lower	Upper
METHANE	.54	.55	.55	.55	0.520	0.580
ETHENE	1.06	1.06	1.06	1.06	1.030	1.090
ETHANE	1.39	1.39	1.39	1.39	1.360	1.420
PROPANE	3.82	3.83	3.83	3.83	3.800	3.860
N-BUTANE	5.33	5.34	5.34	5.34	5.310	5.370
CARBON DIOXIDE	.2	.2	.2	.2	0.170	0.230
ACETYLENE	1.14	1.14	1.14	1.14	1.110	1.170

RT_WIN - Modified 01/06/2010
PDF File ID: 4513734
Report generated 11/22/2015 14:38

Microbac Laboratories Inc.
Daily Retention Time Window Determination

Login #: L15110793 **Run Date:** 11/18/2015 **Sample ID:** WG547424-01
Instrument: HP16 **Run Time:** 12:55 **Method:** RSK175
Workgroup (AAB#): WG547425 **File ID:** 16G49025

RT Standard	Analysis Date	File ID	Analyst
WG507817-01	01/13/2015	16G46159	JDS
WG507448-01	01/09/2015	16G46148	JDS
WG507013-01	01/06/2015	16G46125	JDS

Analyte	RT #1	RT #2	RT #3	STD	Lower	Upper
METHANE	.54	.55	.55	.55	0.520	0.580
ETHENE	1.06	1.06	1.06	1.06	1.030	1.090
ETHANE	1.39	1.39	1.39	1.39	1.360	1.420
PROPANE	3.82	3.83	3.83	3.83	3.800	3.860
N-BUTANE	5.33	5.34	5.34	5.34	5.310	5.370
CARBON DIOXIDE	.2	.2	.2	.2	0.170	0.230
ACETYLENE	1.14	1.14	1.14	1.14	1.110	1.170

RT_WIN - Modified 01/06/2010
PDF File ID: 4513734
Report generated 11/22/2015 14:38

2.1.2.5 Raw QC Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\111615\16G49009.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\111615\16G49009.D\TCD2B.CH
Acq On : 16 Nov 2015 16:25 Operator: JDS
Sample : WG547086-01 BLANK STD RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 16 16:31:58 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	546835	0.737	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.39	26558	0.078	umol/
5) T	propane	3.83	17314	0.035	umol/
6) T	n-butane	5.34	8869	0.014	umol/
8) T	carbon dioxide	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49009.D RSKEXT1.M Wed Nov 18 08:28:52 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\111615\16G49009.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\111615\16G49009.D\TCD2B.CH
Acq On : 16 Nov 2015 16:25 Operator: JDS
Sample : WG547086-01 BLANK STD RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 16 16:31 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

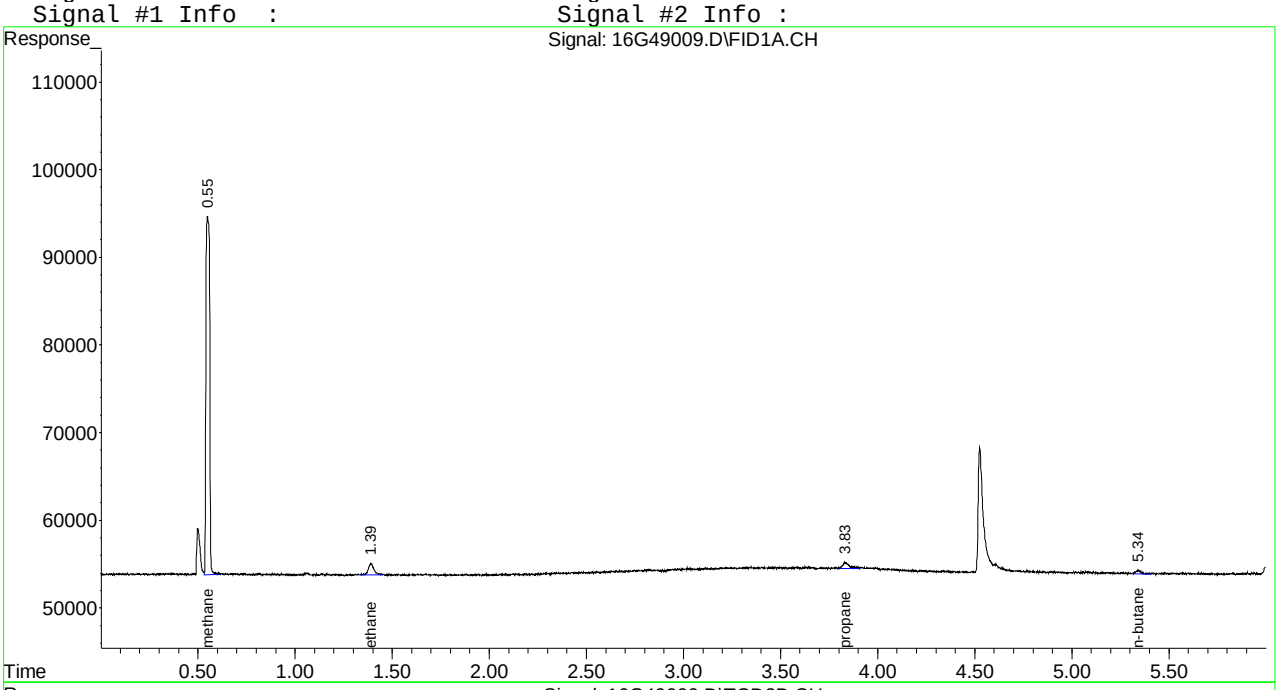

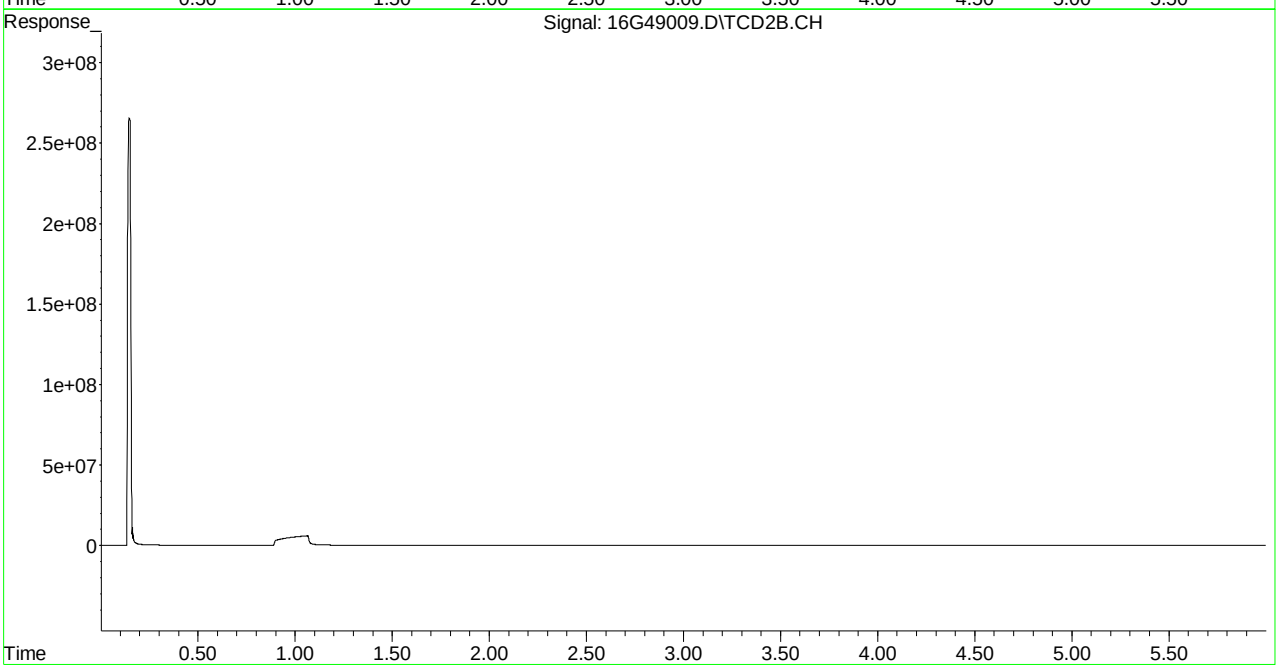

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\111815\16G49026.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\111815\16G49026.D\TCD2B.CH
Acq On : 18 Nov 2015 14:48 Operator: JDS
Sample : WG547425-01 BLANK STD RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 18 14:54:12 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	350589	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.39	8248	0.024	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49026.D RSKEXT1.M Wed Nov 18 14:57:06 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\111815\16G49026.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\111815\16G49026.D\TCD2B.CH
Acq On : 18 Nov 2015 14:48 Operator: JDS
Sample : WG547425-01 BLANK STD RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 18 14:54 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

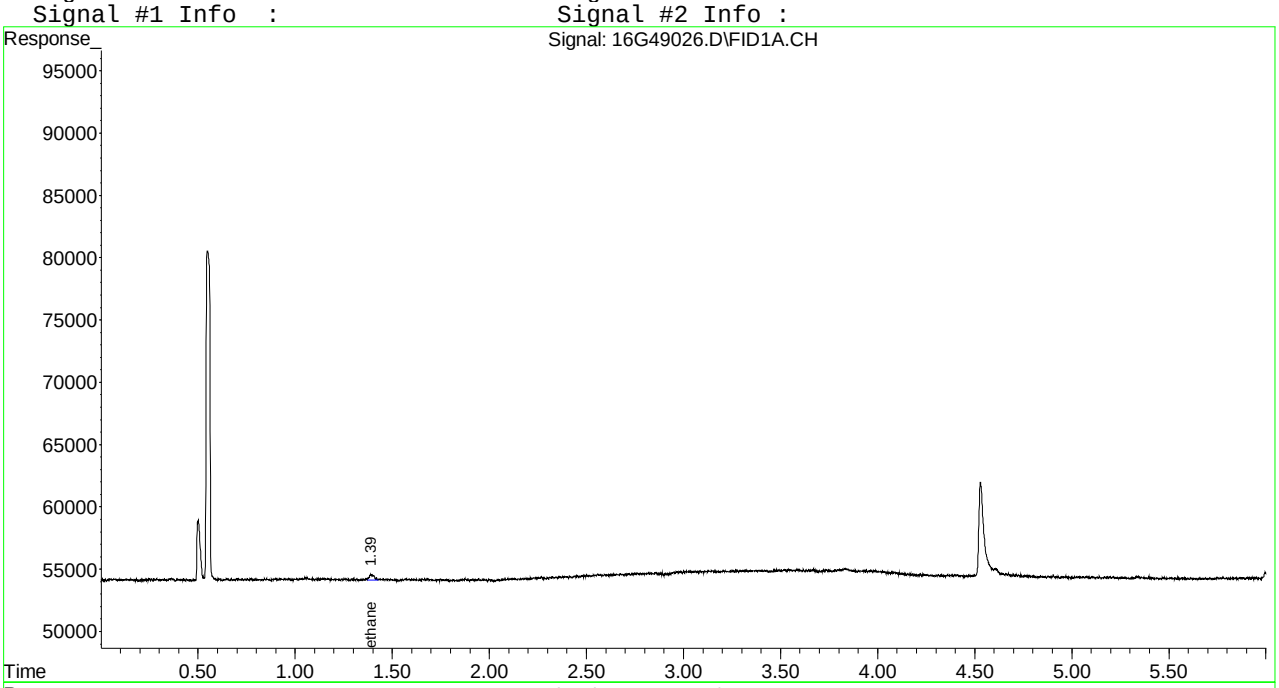

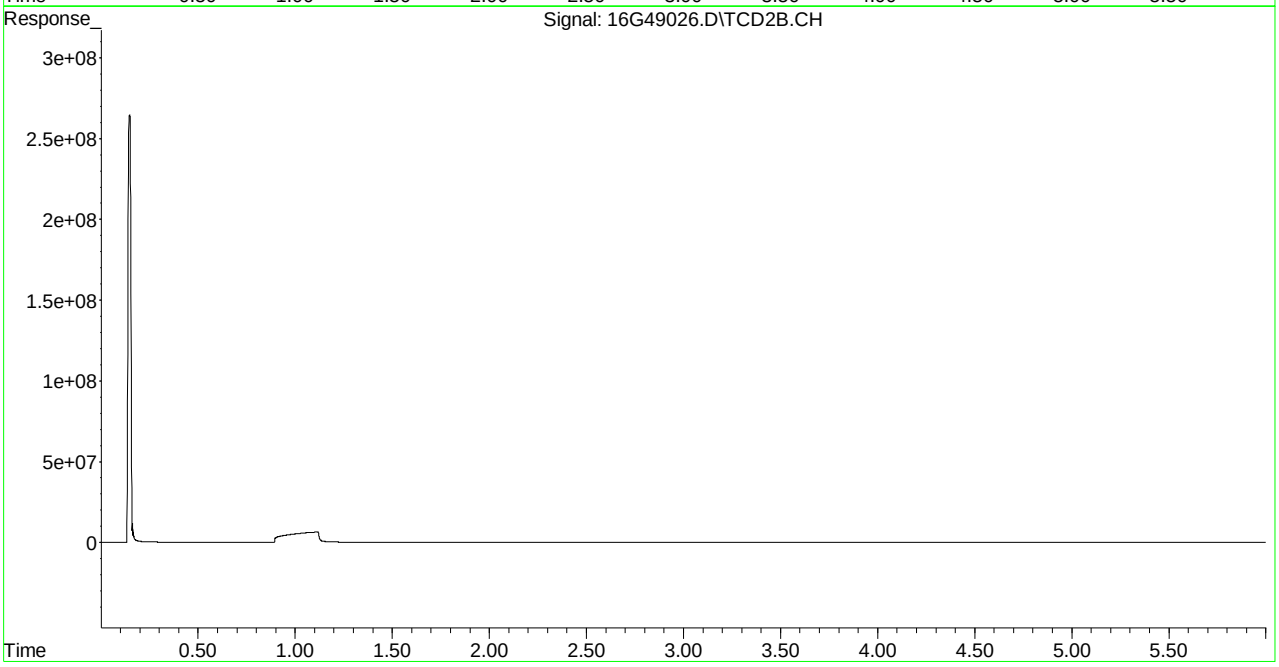

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\111615\16G49010.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDchem\1\DATA\111615\16G49010.D\TCD2B.CH
Acq On : 16 Nov 2015 16:38 Operator: JDS
Sample : WG547086-02 67umol/mol LCS STD RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 16 16:44:29 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	12691757	66.204	umol/
2) T	ethene	1.06	20726788	65.339	umol/
3) T	acetylene	1.14	21167694	62.546	umol/
4) T	ethane	1.39	21579961	63.490	umol/
5) T	propane	3.83	31293653	63.040	umol/
6) T	n-butane	5.34	40193050	62.000	umol/
8) T	carbon dioxide	0.20	36364995	6593.982	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49010.D RSKEXT1.M Mon Nov 16 16:44:29 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\111615\16G49010.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDchem\1\DATA\111615\16G49010.D\TCD2B.CH
Acq On : 16 Nov 2015 16:38 Operator: JDS
Sample : WG547086-02 67umol/mol LCS STD RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 16 16:44 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

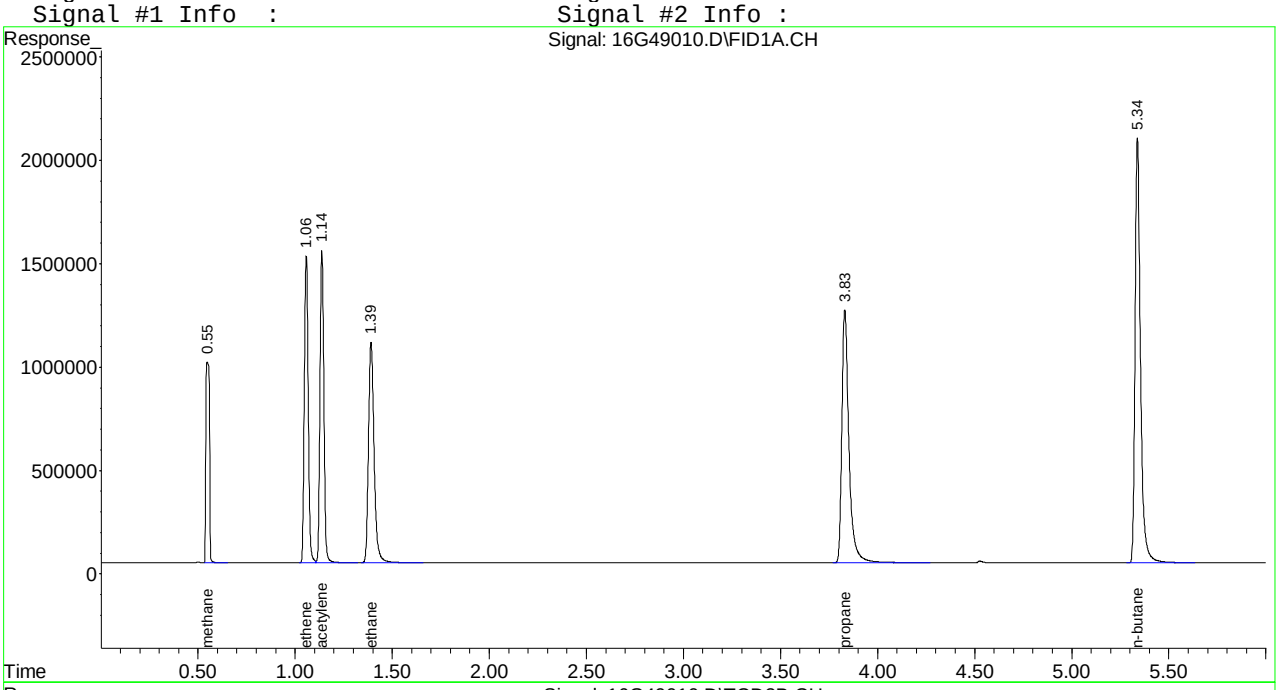

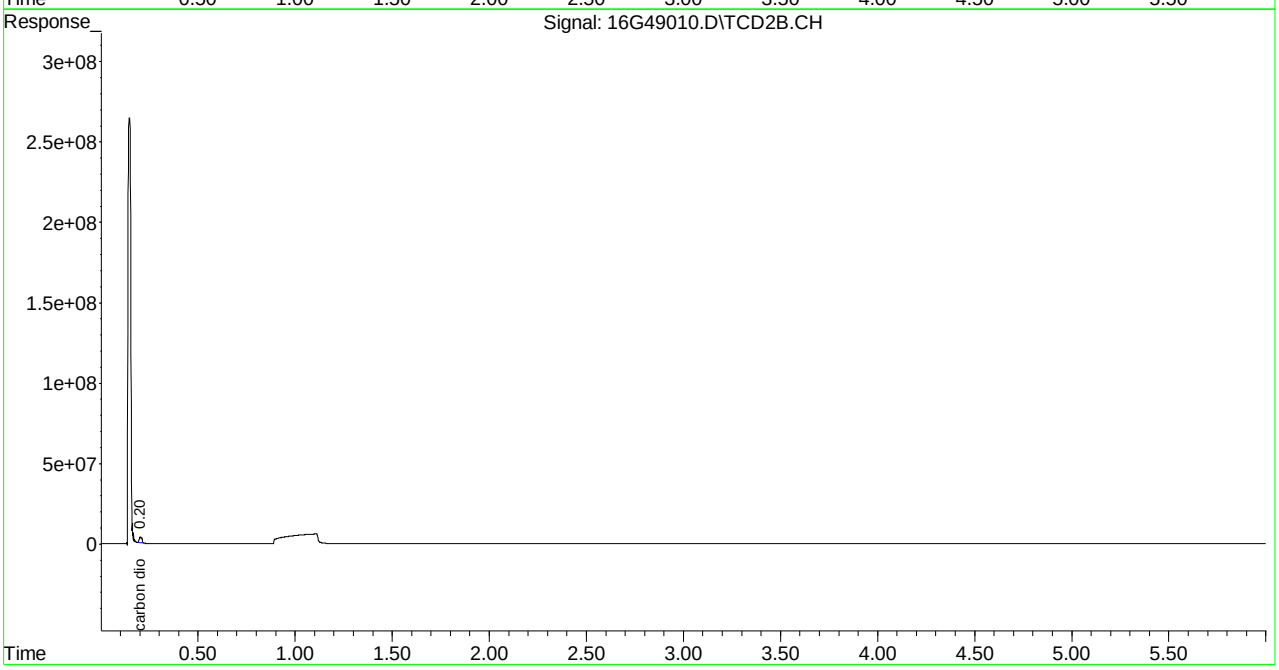

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\111815\16G49027.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDchem\1\DATA\111815\16G49027.D\TCD2B.CH
Acq On : 18 Nov 2015 15:00 Operator: JDS
Sample : WG547425-02 67umol/mol LCS STD RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 18 15:07:00 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	12429009	64.788	umol/
2) T	ethene	1.05	20545150	64.766	umol/
3) T	acetylene	1.13	21356618	63.104	umol/
4) T	ethane	1.38	21425851	63.036	umol/
5) T	propane	3.83	31241923	62.936	umol/
6) T	n-butane	5.34	40371472	62.275	umol/
8) T	carbon dioxide	0.20	35879965	6506.033	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49027.D RSKEXT1.M Wed Nov 18 15:07:00 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\111815\16G49027.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDchem\1\DATA\111815\16G49027.D\TCD2B.CH
Acq On : 18 Nov 2015 15:00 Operator: JDS
Sample : WG547425-02 67umol/mol LCS STD RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 18 15:07 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

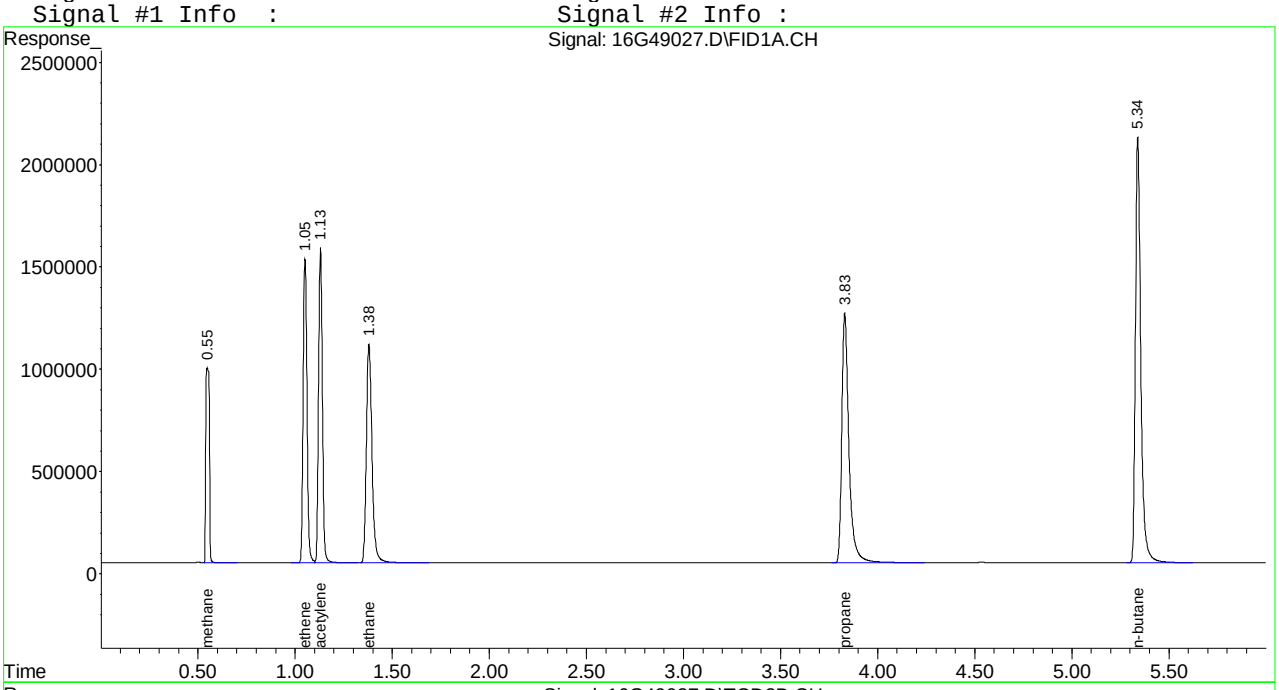

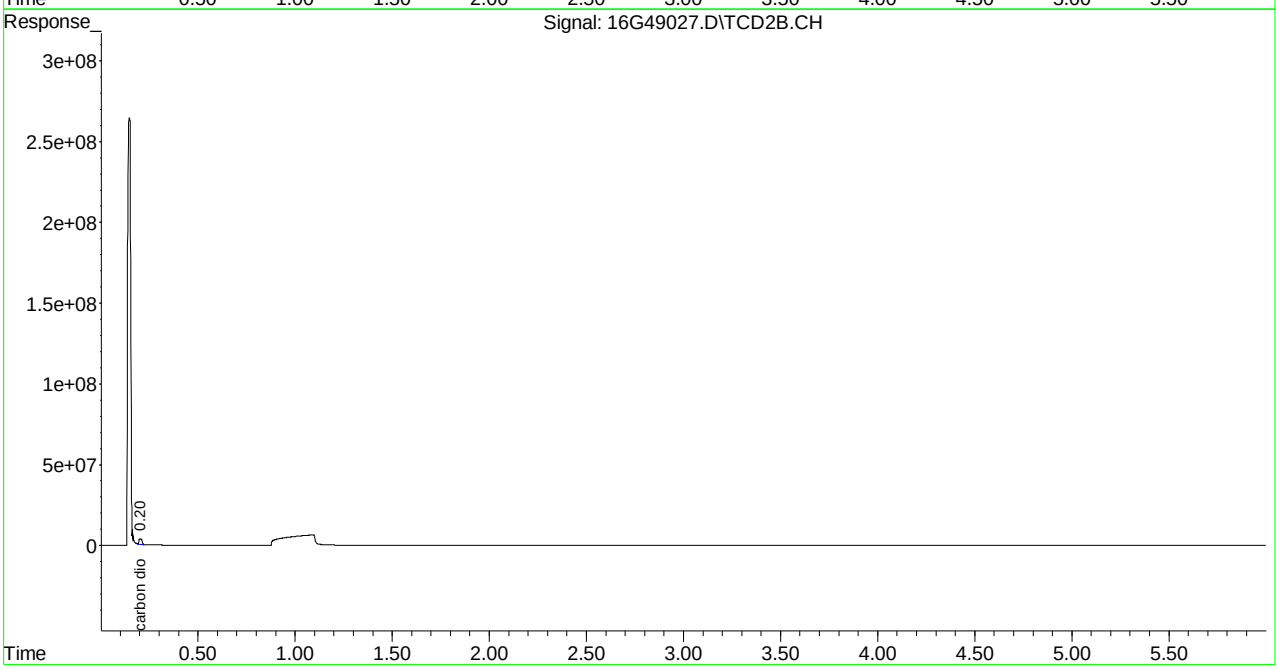

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\111615\16G49011.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDchem\1\DATA\111615\16G49011.D\TCD2B.CH
Acq On : 16 Nov 2015 16:49 Operator: JDS
Sample : WG547086-03 67umol/mol LCS2 STD RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 16 16:55:52 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	12540761	65.390	umol/
2) T	ethene	1.06	20300593	63.995	umol/
3) T	acetylene	1.15	20050470	59.245	umol/
4) T	ethane	1.40	21200180	62.372	umol/
5) T	propane	3.83	30640257	61.724	umol/
6) T	n-butane	5.34	39295987	60.616	umol/
8) T	carbon dioxide	0.20	34149700	6192.288	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49011.D RSKEXT1.M Mon Nov 16 16:55:53 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\111615\16G49011.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDchem\1\DATA\111615\16G49011.D\TCD2B.CH
Acq On : 16 Nov 2015 16:49 Operator: JDS
Sample : WG547086-03 67umol/mol LCS2 STD RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 16 16:55 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

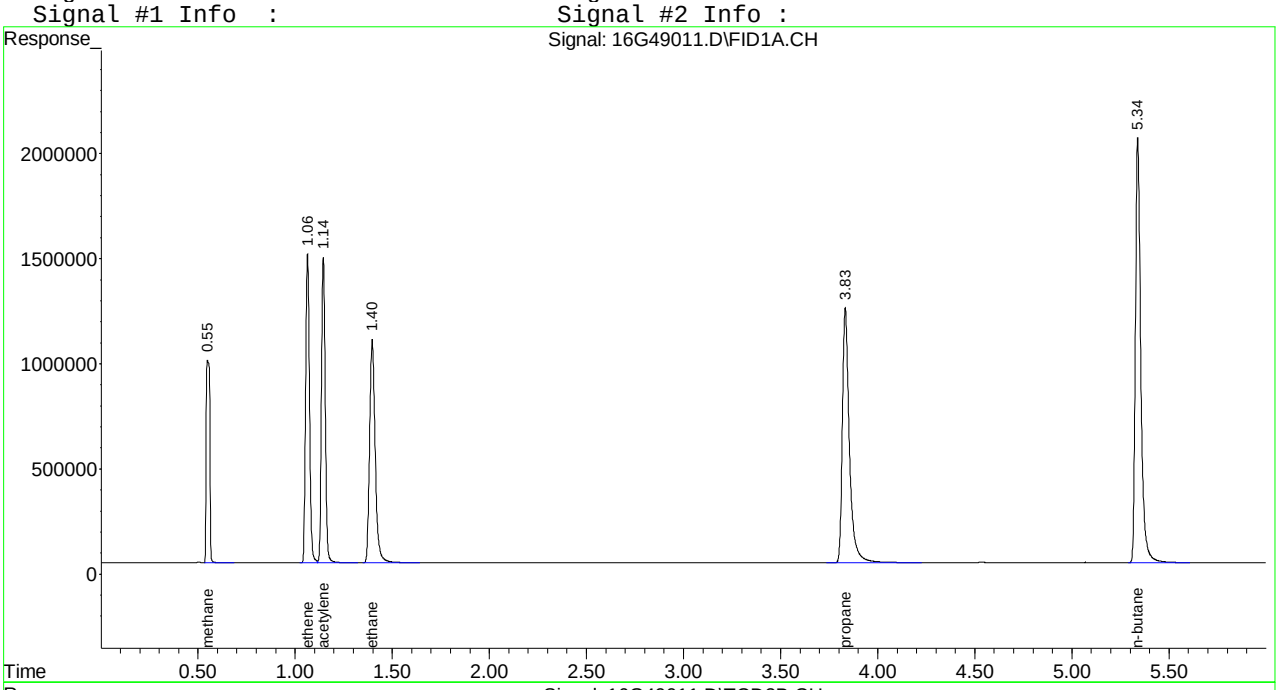

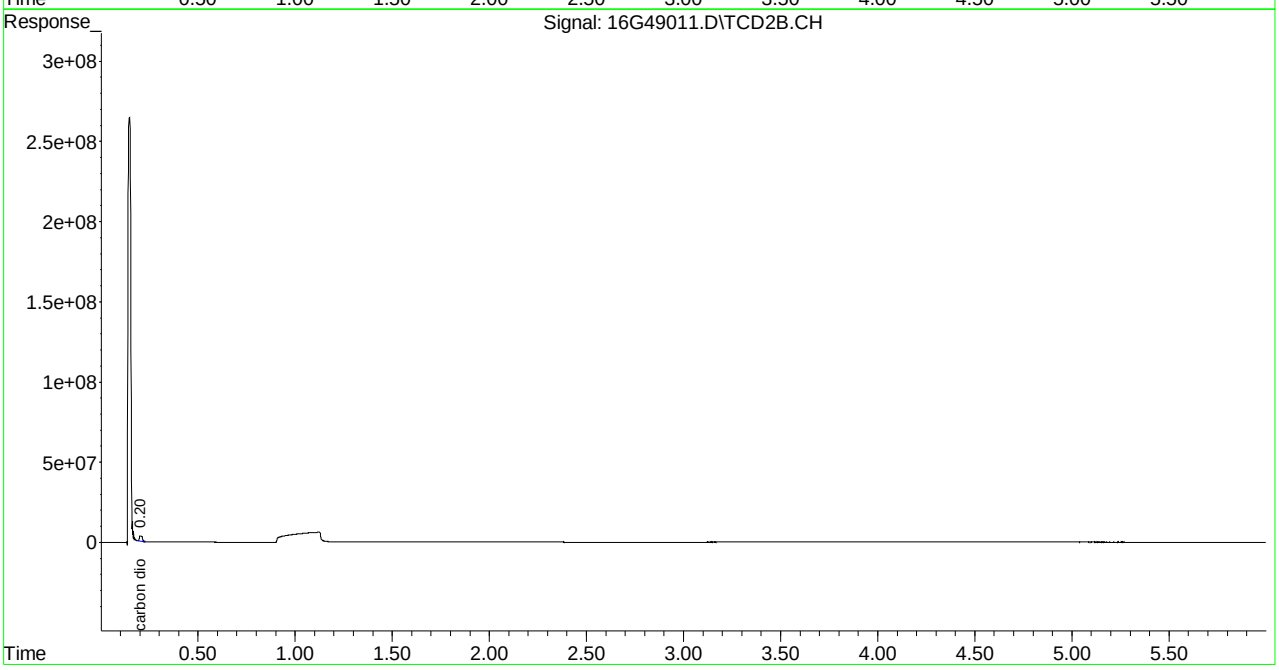

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\111815\16G49028.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDchem\1\DATA\111815\16G49028.D\TCD2B.CH
Acq On : 18 Nov 2015 15:13 Operator: JDS
Sample : WG547425-03 67umol/mol LCS2 STD RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 18 15:19:03 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	12438181	64.838	umol/
2) T	ethene	1.06	20396865	64.299	umol/
3) T	acetylene	1.15	21340330	63.056	umol/
4) T	ethane	1.40	21233430	62.470	umol/
5) T	propane	3.83	30800035	62.046	umol/
6) T	n-butane	5.34	39674200	61.200	umol/
8) T	carbon dioxide	0.20	33287925	6036.024	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49028.D RSKEXT1.M Wed Nov 18 15:19:04 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\111815\16G49028.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDchem\1\DATA\111815\16G49028.D\TCD2B.CH
Acq On : 18 Nov 2015 15:13 Operator: JDS
Sample : WG547425-03 67umol/mol LCS2 STD RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 18 15:19 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

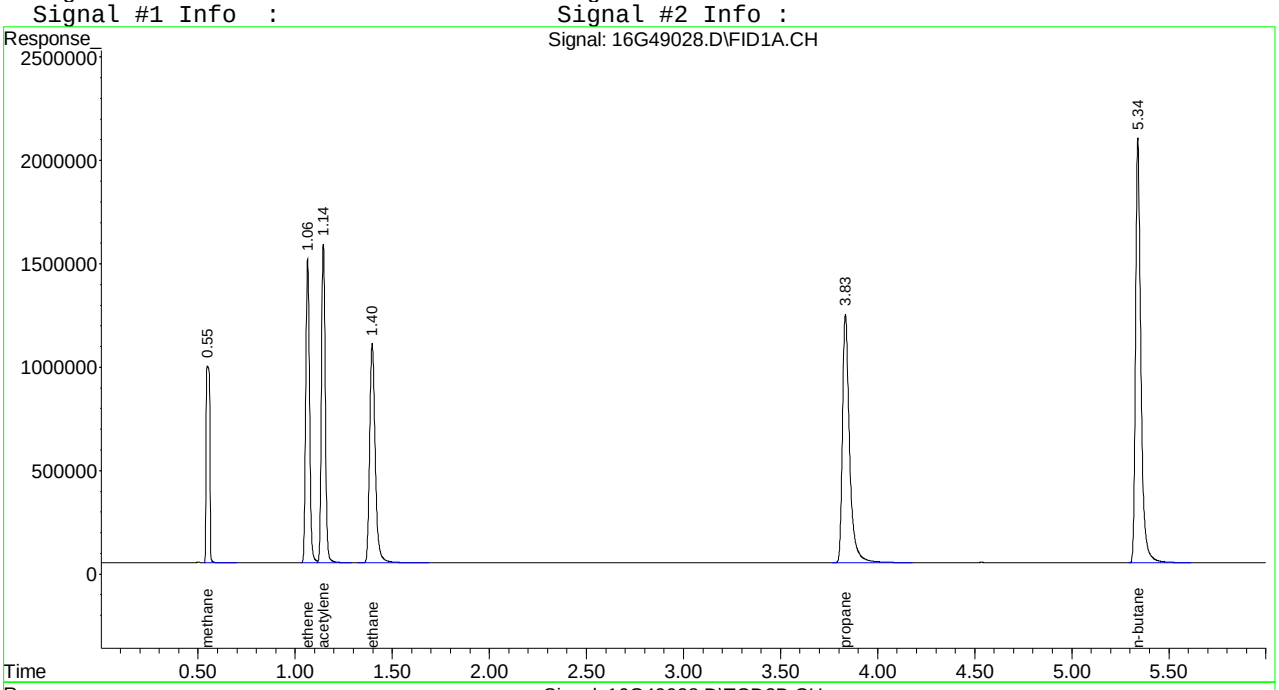

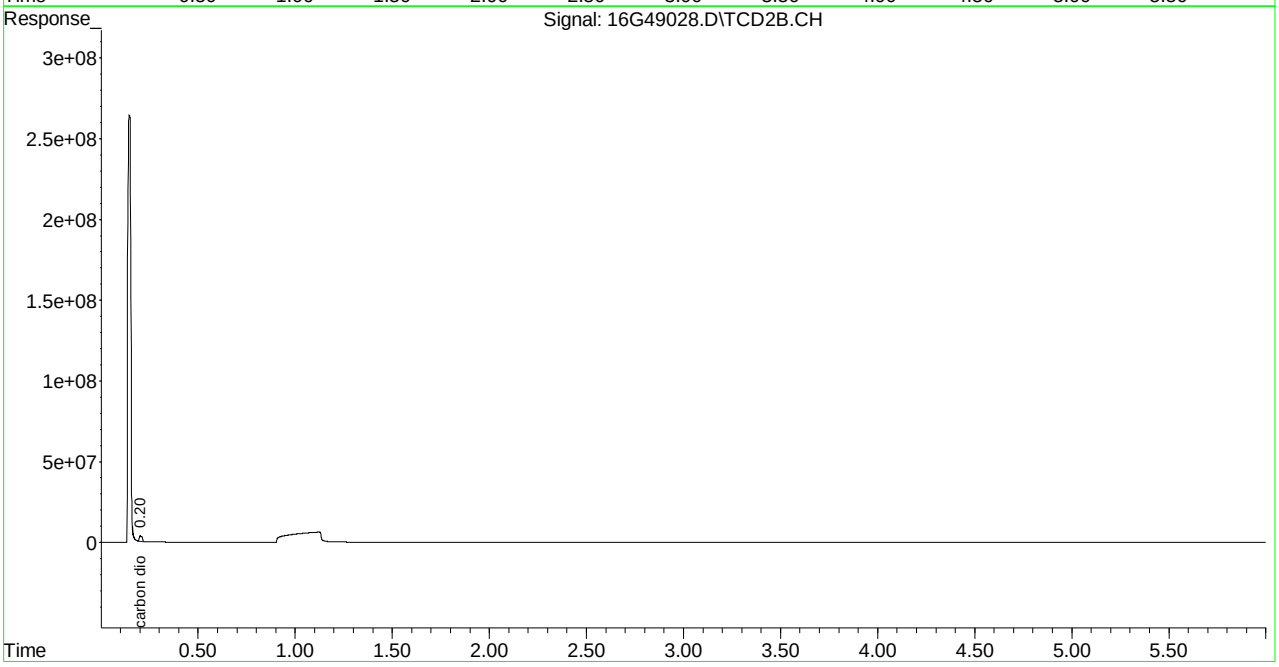

2.2 Metals Data

2.2.1 Metals I C P Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	50WW13FF-111215	**Prep Method:**	3015	**Prep Date:**	11/16/2015 08:43
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	11/17/2015 10:17
Workgroup #:	WG547108	**Analyst:**	JYH	**Run Date:**	11/17/2015 12:33
Collect Date:	11/12/2015 08:40	**Dilution:**	1	**File ID:**	T3.111715.123329
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.0904	J	0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-10	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	50WW14FF-111215	**Prep Method:**	3015	**Prep Date:**	11/16/2015 08:43
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	11/17/2015 10:17
Workgroup #:	WG547108	**Analyst:**	JYH	**Run Date:**	11/17/2015 12:37
Collect Date:	11/12/2015 09:50	**Dilution:**	1	**File ID:**	T3.111715.123728
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	7.43		0.200	0.100	0.0500

Certificate of Analysis

Sample #:	L15110793-12	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	50WW11FF-111215	**Prep Method:**	3015	**Prep Date:**	11/16/2015 08:43
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	11/17/2015 10:17
Workgroup #:	WG547108	**Analyst:**	JYH	**Run Date:**	11/17/2015 12:41
Collect Date:	11/12/2015 11:00	**Dilution:**	1	**File ID:**	T3.111715.124115
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.0610	J	0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-14	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	50WW06FF-111215	**Prep Method:**	3015	**Prep Date:**	11/16/2015 08:43
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	11/17/2015 10:17
Workgroup #:	WG547108	**Analyst:**	JYH	**Run Date:**	11/17/2015 12:45
Collect Date:	11/12/2015 13:25	**Dilution:**	1	**File ID:**	T3.111715.124513
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.100	U	0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-16	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	50WW12FF-111215	**Prep Method:**	3015	**Prep Date:**	11/16/2015 08:43
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	11/17/2015 10:17
Workgroup #:	WG547108	**Analyst:**	JYH	**Run Date:**	11/17/2015 12:49
Collect Date:	11/12/2015 14:35	**Dilution:**	1	**File ID:**	T3.111715.124911
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.100	U	0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.2.1.2 QC Summary Data

Example 6010 Calculations
Thermo Scientific iCAP

1.0 Initial Calibration (ICAL) Parameters
For a multi-point calibration, the system performs linear regression from data consisting of a blank and four standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG546952
Analyst: AC
Spike Analyst: AC
Run Date: 11/16/2015 08:43
Method: 3015
Balance: BAL019
Instrument: MW-4
Instrument Start: 11/16/2015 08:43

SOP: ME407 Revison 18
Spike Solution: STD73362
Spike Witness: VC
HNO3 Lot #: COA18442
HCL Lot #: COA18443
ICP Filters- fisher-Lot# RGT32945
40 & 50 ML. DIGESTION TU COA18558

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG546952-02	BLANK	1	40 mL	50 mL	206.11 g	206.111 g		
2	WG546952-03	LCS	1	40 mL	50 mL	211.438 g	211.457 g	5 mL	
3	L15110770-19	SAMP	1	40 mL	50 mL	203.184 g	203.176 g		11/26/15
4	L15110770-20	SAMP	1	40 mL	50 mL	205.152 g	205.169 g		11/26/15
5	L15110770-21	SAMP	1	40 mL	50 mL	206.022 g	206.016 g		11/26/15
6	L15110770-22	SAMP	1	40 mL	50 mL	203.83 g	203.829 g		11/26/15
7	L15110770-23	SAMP	1	40 mL	50 mL	205.89 g	205.894 g		11/26/15
8	L15110793-08	SAMP	1	40 mL	50 mL	203.881 g	203.884 g		11/24/15
9	L15110793-10	SAMP	1	40 mL	50 mL	207.091 g	207.1 g		11/24/15
10	L15110793-12	SAMP	1	40 mL	50 mL	205.562 g	205.566 g		11/24/15
11	L15110793-14	SAMP	1	40 mL	50 mL	206.281 g	206.289 g		11/24/15
12	L15110793-16	SAMP	1	40 mL	50 mL	205.772 g	205.782 g		11/24/15
13	L15110796-02	SAMP	1	40 mL	50 mL	206.78 g	206.771 g		11/27/15
14	WG546952-01	REF	1	40 mL	50 mL	204.909 g	204.917 g		
15	L15110796-07	RS02	1	40 mL	50 mL	204.909 g	204.917 g		11/27/15
16	WG546952-04	MS	1	40 mL	50 mL	212.926 g	212.928 g	5 mL	
17	L15110796-08	MS02	1	40 mL	50 mL	212.926 g	212.928 g	5 mL	11/27/15
18	WG546952-05	MSD	1	40 mL	50 mL	209.732 g	209.733 g	5 mL	
19	L15110796-09	SD02	1	40 mL	50 mL	209.732 g	209.733 g	5 mL	11/27/15
20	L15110796-14	SAMP	1	40 mL	50 mL	205.195 g	205.2 g		11/27/15
21	L15110796-17	SAMP	1	40 mL	50 mL	204.421 g	204.428 g		11/27/15
22	L15110796-20	SAMP	1	40 mL	50 mL	206.996 g	207.01 g		11/27/15
23	L15110796-23	SAMP	1	40 mL	50 mL	202.555 g	202.558 g		11/27/15
24	L15110799-01	SAMP	1	40 mL	50 mL	204.321 g	204.317 g		11/24/15
25	L15110799-02	SAMP	1	40 mL	50 mL	205.748 g	205.75 g		11/24/15
26	L15110799-03	SAMP	1	40 mL	50 mL	205.708 g	205.705 g		11/24/15
27	L15110823-01	SAMP	1	40 mL	50 mL	211.416 g	211.408 g		11/20/15

L15110770-19	FILTERED DIGESTATE
L15110823-01	FILTERED DIGESTATE

Analyst: [signature]

Reviewer: [signature]

MW_DIG - Modified 09/30/2009
PDF ID: 4500296
Report generated: 11/16/2015 09:38

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 111715T3.2R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 7
Maintenance Log ID:

Calibration Std: STD73151 ICV Std: STD73449 Post Spike: STD72999
ICSA: STD73488 ICSAB: STD73372 Int. Std: RGT35157
CCV: STD73291 LLCCV: STD72971 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 546507,547108,547254,547253,547280,547295

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.111715.100154	WG547311-01	Calibration Point		1		11/17/15 10:01
2	T3.111715.100556	WG547311-02	Calibration Point		1		11/17/15 10:05
3	T3.111715.100959	WG547311-03	Calibration Point		1		11/17/15 10:09
4	T3.111715.101402	WG547311-04	Calibration Point		1		11/17/15 10:14
5	T3.111715.101746	WG547311-05	Calibration Point		1		11/17/15 10:17
6	T3.111715.102128	WG547311-06	Initial Calibration Verification		1		11/17/15 10:21
7	T3.111715.102501	WG547311-07	Initial Calib Blank		1		11/17/15 10:25
8	T3.111715.102852	WG547311-08	Low Level Initial Calibration V		1		11/17/15 10:28
9	T3.111715.103254	WG547311-09	Low Level Initial Calibration V		1		11/17/15 10:32
10	T3.111715.103653	WG547311-10	Interference Check		1		11/17/15 10:36
11	T3.111715.104056	WG547311-11	Interference Check		1		11/17/15 10:40
12	T3.111715.104453	WG547311-12	CCV		1		11/17/15 10:44
13	T3.111715.104837	WG547311-13	CCB		1		11/17/15 10:48
14	T3.111715.105241	WG546387-02	Method/Prep Blank	40/50	1		11/17/15 10:52
15	T3.111715.105644	WG546387-03	Laboratory Control S	40/50	1		11/17/15 10:56
16	T3.111715.110029	WG546387-04	Matrix Spike	40/50	1	L15110514-05	11/17/15 11:00
17	T3.111715.110415	WG546387-05	Matrix Spike Duplica	40/50	1	L15110514-05	11/17/15 11:04
18	T3.111715.110759	WG546387-01	Reference Sample		1	L15110514-05	11/17/15 11:07
19	T3.111715.111158	L15110527-01	XX9044	40/50	1		11/17/15 11:11
20	T3.111715.111553	WG546507-03	Post Digestion Spike		1	L15110527-01	11/17/15 11:15
21	T3.111715.111935	WG546507-04	Serial Dilution		5	L15110527-01	11/17/15 11:19
22	T3.111715.112335	WG546507-04	Serial Dilution		25	L15110527-01	11/17/15 11:23
23	T3.111715.112737	WG547311-14	CCV		1		11/17/15 11:27
24	T3.111715.113122	WG547311-15	CCB		1		11/17/15 11:31
25	T3.111715.113524	WG547311-16	Low Level Continuing Calibra		1		11/17/15 11:35
26	T3.111715.113926	WG547311-17	Low Level Continuing Calibra		1		11/17/15 11:39
27	T3.111715.114326	WG546952-02	Method/Prep Blank	40/50	1		11/17/15 11:43
28	T3.111715.115048	WG546952-03	Laboratory Control S	40/50	1		11/17/15 11:50
29	T3.111715.115420	L15110796-02	SW1A-315-14	40/50	1		11/17/15 11:54
30	T3.111715.115821	WG546952-01	Reference Sample		1	L15110796-07	11/17/15 11:58
31	T3.111715.120223	WG546952-04	Matrix Spike	40/50	1	L15110796-07	11/17/15 12:02
32	T3.111715.120607	WG546952-05	Matrix Spike Duplica	40/50	1	L15110796-07	11/17/15 12:06
33	T3.111715.120952	L15110796-14	SW3A-315-14	40/50	1		11/17/15 12:09
34	T3.111715.121353	WG547108-01	Post Digestion Spike		1	L15110796-14	11/17/15 12:13

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Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 111715T3.2R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 7
Maintenance Log ID:

Calibration Std: STD73151 ICV Std: STD73449 Post Spike: STD72999
ICSA: STD73488 ICSAB: STD73372 Int. Std: RGT35157
CCV: STD73291 LLCCV: STD72971 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 546507,547108,547254,547253,547280,547295

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.111715.121737	WG547108-02	Serial Dilution		5	L15110796-14	11/17/15 12:17
36	T3.111715.122139	WG547108-02	Serial Dilution		25	L15110796-14	11/17/15 12:21
37	T3.111715.122540	WG547311-18	CCV		1		11/17/15 12:25
38	T3.111715.122924	WG547311-19	CCB		1		11/17/15 12:29
39	T3.111715.123329	L15110793-08	50WW13FF-111215	40/50	1		11/17/15 12:33
40	T3.111715.123728	L15110793-10	50WW14FF-111215	40/50	1		11/17/15 12:37
41	T3.111715.124115	L15110793-12	50WW11FF-111215	40/50	1		11/17/15 12:41
42	T3.111715.124513	L15110793-14	50WW06FF-111215	40/50	1		11/17/15 12:45
43	T3.111715.124911	L15110793-16	50WW12FF-111215	40/50	1		11/17/15 12:49
44	T3.111715.125311	L15110823-01	WV OIL	40/50	10		11/17/15 12:53
45	T3.111715.125727	L15110770-19	TW14S	40/50	1		11/17/15 12:57
46	T3.111715.130114	L15110770-20	TW15D	40/50	1		11/17/15 13:01
47	T3.111715.130511	L15110770-21	TW15D	40/50	1		11/17/15 13:05
48	T3.111715.130906	L15110770-22	SL22	40/50	1		11/17/15 13:09
49	T3.111715.131303	WG547311-20	CCV		1		11/17/15 13:13
50	T3.111715.131647	WG547311-21	CCB		1		11/17/15 13:16
51	T3.111715.132052	L15110770-23	SL22	40/50	1		11/17/15 13:20
52	T3.111715.132448	L15110796-17	SW3B-315-14	40/50	1		11/17/15 13:24
53	T3.111715.132850	L15110796-20	SW4A-315-14	40/50	1		11/17/15 13:28
54	T3.111715.133252	L15110796-23	SW5A-315-14	40/50	1		11/17/15 13:32
55	T3.111715.133653	L15110799-01	FT02PTS-EFFLUENT-12NOV	40/50	1		11/17/15 13:36
56	T3.111715.134053	L15110799-02	FT02PTS-INTERMEDIATE-1	40/50	1		11/17/15 13:40
57	T3.111715.134452	L15110799-03	FT02PTS-INFLUENT-12NOV	40/50	1		11/17/15 13:44
58	T3.111715.134854	WG547311-22	CCV		1		11/17/15 13:48
59	T3.111715.135227	WG547311-23	CCB		1		11/17/15 13:52
60	T3.111715.135631	WG547311-24	Low Level Continuing Calibra		1		11/17/15 13:56
61	T3.111715.140033	WG547311-25	Low Level Continuing Calibra		1		11/17/15 14:00
62	T3.111715.140435	WG547152-03	Method/Prep Blank	40/50	1		11/17/15 14:04
63	T3.111715.140838	WG547152-04	Laboratory Control S	40/50	1		11/17/15 14:08
64	T3.111715.141211	WG547152-01	Reference Sample		1	L15110885-05	11/17/15 14:12
65	T3.111715.141608	WG547152-05	Matrix Spike	40/50	1	L15110885-05	11/17/15 14:16
66	T3.111715.141951	WG547152-06	Matrix Spike Duplica	40/50	1	L15110885-05	11/17/15 14:19
67	T3.111715.142335	L15110885-01	PS-SW-104	40/50	1		11/17/15 14:23
68	T3.111715.142730	L15110885-02	PS-SW-104	40/50	1		11/17/15 14:27

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 111715T3.2R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 7
Maintenance Log ID:

Calibration Std: STD73151 ICV Std: STD73449 Post Spike: STD72999
ICSA: STD73488 ICSAB: STD73372 Int. Std: RGT35157
CCV: STD73291 LLCCV: STD72971 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 546507,547108,547254,547253,547280,547295

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.111715.143126	WG547254-01	Post Digestion Spike		1	L15110885-02	11/17/15 14:31
70	T3.111715.143509	WG547254-02	Serial Dilution		5	L15110885-02	11/17/15 14:35
71	T3.111715.143906	L15110823-01	WV OIL	40/50	1000		11/17/15 14:39
72	T3.111715.144257	WG547311-26	CCV		1		11/17/15 14:42
73	T3.111715.144642	WG547311-27	CCB		1		11/17/15 14:46
74	T3.111715.145044	L15110856-01	1801-145-W4	40/50	1		11/17/15 14:50
75	T3.111715.145441	L15110862-01	1801-141 RW2	40/50	1		11/17/15 14:54
76	T3.111715.145839	L15110862-02	1801-141 RW2	40/50	1		11/17/15 14:58
77	T3.111715.150238	WG547152-02	Reference Sample		1	L15110885-06	11/17/15 15:02
78	T3.111715.150634	WG547152-07	Matrix Spike	40/50	1	L15110885-06	11/17/15 15:06
79	T3.111715.151018	WG547152-08	Matrix Spike Duplica	40/50	1	L15110885-06	11/17/15 15:10
80	T3.111715.151402	L15110885-11	PS-SW-105	40/50	1		11/17/15 15:14
81	T3.111715.151759	L15110885-12	PS-SW-105	40/50	1		11/17/15 15:17
82	T3.111715.152156	L15110885-13	PS-SW-106	40/50	1		11/17/15 15:21
83	T3.111715.152549	L15110885-14	PS-SW-106	40/50	1		11/17/15 15:25
84	T3.111715.152942	WG547311-28	CCV		1		11/17/15 15:29
85	T3.111715.153315	WG547311-29	CCB		1		11/17/15 15:33
86	T3.111715.153717	L15110885-15	OT-SW-101	40/50	1		11/17/15 15:37
87	T3.111715.154117	L15110885-16	OT-SW-101	40/50	1		11/17/15 15:41
88	T3.111715.154516	L15110885-17	OT-SW-102	40/50	1		11/17/15 15:45
89	T3.111715.154910	L15110885-18	OT-SW-102	40/50	1		11/17/15 15:49
90	T3.111715.155303	L15110897-01	QUINTEL LATERAL-DEWAT	40/50	1		11/17/15 15:53
91	T3.111715.155702	L15110885-03	PS-SW-104 DUP	40/50	1		11/17/15 15:57
92	T3.111715.160057	L15110885-04	PS-SW-104 DUP	40/50	1		11/17/15 16:00
93	T3.111715.160452	WG547254-02	Serial Dilution		25	L15110885-02	11/17/15 16:04
94	T3.111715.160851	WG547311-30	CCV		1		11/17/15 16:08
95	T3.111715.161234	WG547311-31	CCB		1		11/17/15 16:12
96	T3.111715.161636	WG546852-02	Method/Prep Blank	40/50	1		11/17/15 16:16
97	T3.111715.162039	WG546852-03	Laboratory Control S	40/50	1		11/17/15 16:20
98	T3.111715.162412	WG546852-01	Reference Sample		1	L15110770-02	11/17/15 16:24
99	T3.111715.162808	WG546852-04	Matrix Spike	40/50	1	L15110770-02	11/17/15 16:28
100	T3.111715.163151	WG546852-05	Matrix Spike Duplica	40/50	1	L15110770-02	11/17/15 16:31
101	T3.111715.163533	WG547253-01	Post Digestion Spike		1	L15110770-02	11/17/15 16:35
102	T3.111715.163916	WG547253-02	Serial Dilution		5	L15110770-02	11/17/15 16:39

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Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 111715T3.2R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 7
Maintenance Log ID:

Calibration Std: STD73151 ICV Std: STD73449 Post Spike: STD72999
ICSA: STD73488 ICSAB: STD73372 Int. Std: RGT35157
CCV: STD73291 LLCCV: STD72971 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 546507,547108,547254,547253,547280,547295

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T3.111715.164315	WG547253-02	Serial Dilution		25	L15110770-02	11/17/15 16:43
104	T3.111715.164716	WG547311-32	CCV		1		11/17/15 16:47
105	T3.111715.165100	WG547311-33	CCB		1		11/17/15 16:51
106	T3.111715.165452	L15110746-01	1804-111A S1	40/50	1		11/17/15 16:54
107	T3.111715.165853	L15110750-01	27-3-25.15 W1	40/50	1		11/17/15 16:58
108	T3.111715.170253	L15110752-01	27-3-1.01 S1	40/50	1		11/17/15 17:02
109	T3.111715.170652	L15110754-01	27-3-S P1	40/50	1		11/17/15 17:06
110	T3.111715.171052	L15110756-01	GMW514	40/50	1		11/17/15 17:10
111	T3.111715.171440	L15110756-02	GMW606	40/50	1		11/17/15 17:14
112	T3.111715.171838	L15110756-03	GMW518	40/50	1		11/17/15 17:18
113	T3.111715.172237	L15110756-04	GMW601	40/50	1		11/17/15 17:22
114	T3.111715.172637	L15110756-06	GMW601-2	40/50	1		11/17/15 17:26
115	T3.111715.173037	L15110756-07	FB-01 (11-12-15)	40/50	1		11/17/15 17:30
116	T3.111715.173440	WG547311-34	CCV		1		11/17/15 17:34
117	T3.111715.173824	WG547311-35	CCB		1		11/17/15 17:38
118	T3.111715.174226	L15110756-08	EB-01 (11-12-15)	40/50	1		11/17/15 17:42
119	T3.111715.174629	L15110759-01	59-11-10.09 W1	40/50	1		11/17/15 17:46
120	T3.111715.175028	L15110761-01	59-10-1.07 W1	40/50	1		11/17/15 17:50
121	T3.111715.175426	L15110762-01	59-5-1-2-1 W1	40/50	1		11/17/15 17:54
122	T3.111715.175825	L15110764-01	59-5-2-1-6 W1	40/50	1		11/17/15 17:58
123	T3.111715.180211	WG547311-36	CCV		1		11/17/15 18:02
124	T3.111715.180544	WG547311-37	CCB		1		11/17/15 18:05
125	T3.111715.180933	WG546491-03	Method/Prep Blank	40/50	1		11/17/15 18:09
126	T3.111715.181337	WG546491-04	Laboratory Control S	40/50	1		11/17/15 18:13
127	T3.111715.181720	WG546491-01	Reference Sample		1	L15110605-14	11/17/15 18:17
128	T3.111715.182120	WG546491-05	Matrix Spike	40/50	1	L15110605-14	11/17/15 18:21
129	T3.111715.182503	WG546491-06	Matrix Spike Duplica	40/50	1	L15110605-14	11/17/15 18:25
130	T3.111715.182850	L15110605-02	TW25AD	40/50	1		11/17/15 18:28
131	T3.111715.183237	L15110605-03	TW25AD	40/50	1		11/17/15 18:32
132	T3.111715.183625	WG547280-01	Post Digestion Spike		1	L15110605-03	11/17/15 18:36
133	T3.111715.184009	WG547280-02	Serial Dilution		5	L15110605-03	11/17/15 18:40
134	T3.111715.184409	WG547280-02	Serial Dilution		25	L15110605-03	11/17/15 18:44
135	T3.111715.184812	WG547311-38	CCV		1		11/17/15 18:48
136	T3.111715.185157	WG547311-39	CCB		1		11/17/15 18:51

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 111715T3.2R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 7
Maintenance Log ID:

Calibration Std: STD73151 ICV Std: STD73449 Post Spike: STD72999
ICSA: STD73488 ICSAB: STD73372 Int. Std: RGT35157
CCV: STD73291 LLCCV: STD72971 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 546507,547108,547254,547253,547280,547295

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	T3.111715.185553	L15110605-04	TW8CD	40/50	1		11/17/15 18:55
138	T3.111715.185951	L15110605-05	TW8CD	40/50	1		11/17/15 18:59
139	T3.111715.190349	L15110605-06	SL20	40/50	1		11/17/15 19:03
140	T3.111715.190745	L15110605-07	SL20	40/50	1		11/17/15 19:07
141	T3.111715.191143	L15110605-08	TW8CS	40/50	1		11/17/15 19:11
142	T3.111715.191535	L15110605-09	TW8CS	40/50	1		11/17/15 19:15
143	T3.111715.191932	L15110605-10	TW65D	40/50	1		11/17/15 19:19
144	T3.111715.192326	L15110605-11	TW65D	40/50	1		11/17/15 19:23
145	T3.111715.192709	L15110605-12	TW65S	40/50	1		11/17/15 19:27
146	T3.111715.193102	L15110605-13	TW65S	40/50	1		11/17/15 19:31
147	T3.111715.193500	WG547311-40	CCV		1		11/17/15 19:35
148	T3.111715.193845	WG547311-41	CCB		1		11/17/15 19:38
149	T3.111715.194246	WG546491-02	Reference Sample		1	L15110605-15	11/17/15 19:42
150	T3.111715.194640	WG546491-07	Matrix Spike	40/50	1	L15110605-15	11/17/15 19:46
151	T3.111715.195024	WG546491-08	Matrix Spike Duplica	40/50	1	L15110605-15	11/17/15 19:50
152	T3.111715.195408	L15110605-20	TW57S	40/50	1		11/17/15 19:54
153	T3.111715.195804	L15110605-21	TW57S	40/50	1		11/17/15 19:58
154	T3.111715.200203	L15110605-02	TW25AD		100		11/17/15 20:02
155	T3.111715.200604	WG547311-42	CCV		1		11/17/15 20:06
156	T3.111715.200947	WG547311-43	CCB		1		11/17/15 20:09
157	T3.111715.201348	WG546997-02	Method/Prep Blank	40/50	1		11/17/15 20:13
158	T3.111715.201740	WG546997-03	Laboratory Control S	40/50	1		11/17/15 20:17
159	T3.111715.202123	L15110770-03	TW60D		1	WG546997-01	11/17/15 20:21
160	T3.111715.202519	L15110770-05	TW60D/MS	40/50	1	WG546997-04	11/17/15 20:25
161	T3.111715.202902	L15110770-07	TW60D/MSD	40/50	1	WG546997-05	11/17/15 20:29
162	T3.111715.203245	L15110770-08	TW60SR	40/50	1		11/17/15 20:32
163	T3.111715.203641	L15110770-09	TW60SR	40/50	1		11/17/15 20:36
164	T3.111715.204038	WG547295-01	Post Digestion Spike		1	L15110770-09	11/17/15 20:40
165	T3.111715.204421	WG547295-02	Serial Dilution		5	L15110770-09	11/17/15 20:44
166	T3.111715.204809	WG547295-02	Serial Dilution		25	L15110770-09	11/17/15 20:48
167	T3.111715.205210	WG547311-44	CCV		1		11/17/15 20:52
168	T3.111715.205555	WG547311-45	CCB		1		11/17/15 20:55
169	T3.111715.205957	L15110770-10	TW61D	40/50	1		11/17/15 20:59
170	T3.111715.210354	L15110770-11	TW61D	40/50	1		11/17/15 21:03

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 111715T3.2R.TXT

Analyst1: JYH Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 7

Maintenance Log ID:

Calibration Std: STD73151 ICV Std: STD73449 Post Spike: STD72999

ICSA: STD73488 ICSAB: STD73372 Int. Std: RGT35157

CCV: STD73291 LLCCV: STD72971 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 546507,547108,547254,547253,547280,547295

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
171	T3.111715.210750	L15110770-12	TW61S	40/50	1		11/17/15 21:07
172	T3.111715.211140	L15110770-13	TW61S	40/50	1		11/17/15 21:11
173	T3.111715.211534	L15110770-14	TW62D	40/50	1		11/17/15 21:15
174	T3.111715.211930	L15110770-15	TW62D	40/50	1		11/17/15 21:19
175	T3.111715.212327	L15110770-16	TW14D	40/50	1		11/17/15 21:23
176	T3.111715.212724	L15110770-17	TW14D	40/50	1		11/17/15 21:27
177	T3.111715.213119	L15110770-18	TW14S	40/50	1		11/17/15 21:31
178	T3.111715.213514	L15110863-01	27-1-8.01 W1	40/50	1		11/17/15 21:35
179	T3.111715.213904	WG547311-46	CCV		1		11/17/15 21:39
180	T3.111715.214248	WG547311-47	CCB		1		11/17/15 21:42
181	T3.111715.214651	L15110863-02	27-1-8.02 P1	40/50	1		11/17/15 21:46
182	T3.111715.215050	L15110863-03	27-1-8.02 W1	40/50	1		11/17/15 21:50
183	T3.111715.215447	L15110863-04	59-11-4 S1	40/50	1		11/17/15 21:54
184	T3.111715.215838	L15110863-05	59-11-4 S2	40/50	1		11/17/15 21:58
185	T3.111715.220237	L15110863-06	59-11-4 S4	40/50	1		11/17/15 22:02
186	T3.111715.220636	L15110863-07	59-11-4 S3	40/50	1		11/17/15 22:06
187	T3.111715.221036	L15110863-08	59-11-4 S5	40/50	1		11/17/15 22:10
188	T3.111715.221436	WG547311-48	CCV		1		11/17/15 22:14
189	T3.111715.221820	WG547311-49	CCB		1		11/17/15 22:18

Page: 6 Approved: November 20, 2015

Microbac Laboratories Inc.

Data Checklist

Date: 17-NOV-2015
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 547311
Runlog ID: 71743
Analytical Workgroups: 546507,547108,547254,547253,547280,547295

Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	
Client Forms	X
Level X	
Level 3	
Level 4	527,770,793,799,756,605
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	BKT
Comments	

Primary Reviewer:

Secondary Reviewer:
20-NOV-2015

CHECKLIST1 - Modified 03/05/2008
Generated: NOV-20-2015 10:53:53

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010C

AAB#: WG547108

Login Number: L15110793

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW13FF-111215	08	11/12/15					11/16/2015	4	180		11/17/15	5.2	180	
50WW14FF-111215	10	11/12/15					11/16/2015	4	180		11/17/15	5.1	180	
50WW11FF-111215	12	11/12/15					11/16/2015	3.9	180		11/17/15	5.1	180	
50WW06FF-111215	14	11/12/15					11/16/2015	3.8	180		11/17/15	5	180	
50WW12FF-111215	16	11/12/15					11/16/2015	3.8	180		11/17/15	4.9	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4504393
Report generated 11/17/2015 15:25

METHOD BLANK SUMMARY

Login Number: L15110793
Blank File ID: T3.111715.114326
Prep Date: 11/16/15 08:43
Analyzed Date: 11/17/15 11:43
Analyst: JYH

Work Group: WG547108
Blank Sample ID: WG546952-02
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG546952-03	T3.111715.115048	11/17/15 11:50	01
50WW13FF-111215	L15110793-08	T3.111715.123329	11/17/15 12:33	01
50WW14FF-111215	L15110793-10	T3.111715.123728	11/17/15 12:37	01
50WW11FF-111215	L15110793-12	T3.111715.124115	11/17/15 12:41	01
50WW06FF-111215	L15110793-14	T3.111715.124513	11/17/15 12:45	01
50WW12FF-111215	L15110793-16	T3.111715.124911	11/17/15 12:49	01

Report Name: BLANK_SUMMARY
PDF File ID: 4504394
Report generated 11/17/2015 15:25

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15110793 Prep Date: 11/16/15 08:43 Sample ID: WG546952-02
Instrument ID: ICP-THERMO3 Run Date: 11/17/15 11:43 Prep Method: 3015
File ID: T3.111715.114326 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG547108 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-17-NOV-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Iron, Dissolved	0.0500	0.200	0.0500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4504395
17-NOV-2015 15:26

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15110793 Run Date: 11/17/2015 Sample ID: WG546952-03
Instrument ID: ICP-THERMO3 Run Time: 11:50 Prep Method: 3015
File ID: T3.111715.115048 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG547108 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD73362 Cal ID: ICP-TH-17-NOV-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Iron, Dissolved	2.50	2.56	103	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4504396
Report generated: 11/17/2015 15:26

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L15110793 Cal ID: ICP-THERMO3 - Worknum: WG547108
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG546952-01 File ID: T3.111715.115821 Dil: 1 Matrix: WATER
Sample ID: WG546952-04 MS File ID: T3.111715.120223 Dil: 1 Units: mg/L
Sample ID: WG546952-05 MSD File ID: T3.111715.120607 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Iron	0.241	2.50	2.83	104	2.50	2.77	101	2.45	80 - 120	20	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4504397
Report generated 11/17/2015 15:26

Microbac Laboratories Inc.
Serial Dilution Report

Login: L15110793 **Worknum:** WG547108
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG547108-02 **File ID:** T3.111715.121737 **Dil:** 5 **Units:** ug/L
Sample: L15110796-14 **File ID:** T3.111715.120952 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Iron	281		365		30.00	E

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4504391
11/17/2015 15:25

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L15110793 **Worknum:** WG547108
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG547108-01 **File ID:** T3.111715.121353 **Dil:** 1 **Units:** ug/L
Sample ID: L15110796-14 **File ID:** T3.111715.120952 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
IRON	2320		281		2000	103.3	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4504392
Report generated: 11/17/2015 15:25

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L15110793	Workgroup (AAB#):	WG547108
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG547311	Initial Calibration Date:	17-NOV-2015 10:17

	WG547311-01		WG547311-02		WG547311-03		WG547311-04		WG547311-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
IRON	0	-0.000450	.04	0.000610	.08	0.00134	4	0.0831	8	0.166	.999223	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4504400
Report generated: 17-NOV-2015 15:26

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L15110793
Instrument ID: ICP-THERMO3
File ID: T3.111715.102501
Workgroup (AAB#): WG547108
Matrix: WATER

Run Date: 11/17/2015
Run Time: 10:25
Analyst: JYH
Cal ID: ICP-THERI - 17-NOV-15

Sample ID: WG547311-07
Method: 6010C
Units: mg/L

Analytes	MDL	RDL	Concentration	Qualifier
IRON	.04	.16	.04	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4504402
Report generated 11/17/2015 15:26

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15110793
Run Date: 11/17/2015
Sample ID: WG547311-13
Instrument ID: ICP-THERMO3
Run Time: 10:48
Method: 6010C
File ID: T3.111715.104837
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG547108
Cal ID: ICP-TH - 17-NOV-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4504405
Report generated 11/17/2015 15:26

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15110793
Run Date: 11/17/2015
Sample ID: WG547311-15
Instrument ID: ICP-THERMO3
Run Time: 11:31
Method: 6010C
File ID: T3.111715.113122
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG547108
Cal ID: ICP-TH - 17-NOV-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4504405
Report generated 11/17/2015 15:26

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15110793
Run Date: 11/17/2015
Sample ID: WG547311-19
Instrument ID: ICP-THERMO3
Run Time: 12:29
Method: 6010C
File ID: T3.111715.122924
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG547108
Cal ID: ICP-TH - 17-NOV-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4504405
Report generated 11/17/2015 15:26

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15110793
Run Date: 11/17/2015
Sample ID: WG547311-21
Instrument ID: ICP-THERMO3
Run Time: 13:16
Method: 6010C
File ID: T3.111715.131647
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG547108
Cal ID: ICP-TH - 17-NOV-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4504405
Report generated 11/17/2015 15:26

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L15110793
Run Date: 11/17/2015
Sample ID: WG547311-06
Instrument ID: ICP-THERMO3
Run Time: 10:21
Method: 6010C
File ID: T3.111715.102128
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG547108
Cal ID: ICP-TH - 17-NOV-15
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Iron		4	4.04	101	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4504401
Report generated 11/17/2015 15:26

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110793
Instrument ID: ICP-THERMO3
File ID: T3.111715.104453
Workgroup (AAB#): WG547108
Matrix: WATER

Run Date: 11/17/2015
Run Time: 10:44
Analyst: JYH
Cal ID: ICP-TH - 17-NOV-15

Sample ID: WG547311-12
Method: 6010C
QC Key: DOD4

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	3.99	mg/L	99.9	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4504404
Report generated 11/17/2015 15:26

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110793
Run Date: 11/17/2015
Sample ID: WG547311-14
Instrument ID: ICP-THERMO3
Run Time: 11:27
Method: 6010C
File ID: T3.111715.112737
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG547108
Cal ID: ICP-TH - 17-NOV-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	3.77	mg/L	94.3	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4504404
Report generated 11/17/2015 15:26

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110793
Run Date: 11/17/2015
Sample ID: WG547311-18
Instrument ID: ICP-THERMO3
Run Time: 12:25
Method: 6010C
File ID: T3.111715.122540
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG547108
Cal ID: ICP-TH - 17-NOV-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.05	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4504404
Report generated 11/17/2015 15:26

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110793
Run Date: 11/17/2015
Sample ID: WG547311-20
Instrument ID: ICP-THERMO3
Run Time: 13:13
Method: 6010C
File ID: T3.111715.131303
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG547108
Cal ID: ICP-TH - 17-NOV-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	3.97	mg/L	99.3	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4504404
Report generated 11/17/2015 15:26

Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15110793
Run Date: 11/17/2015
Sample ID: WG547311-09
Instrument ID: ICP-THERMO3
Run Time: 10:32
Method: 6010C
File ID: T3.111715.103254
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG547108
Cal ID: ICP-TH - 17-NOV-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		0.0800	0.0968	mg/L	121	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4504456
Report generated 11/17/2015 15:26

Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15110793
Run Date: 11/17/2015
Sample ID: WG547311-17
Instrument ID: ICP-THERMO3
Run Time: 11:39
Method: 6010C
File ID: T3.111715.113926
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG547108
Cal ID: ICP-TH - 17-NOV-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		0.0800	0.0947	mg/L	118	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4504456
Report generated 11/17/2015 15:26

Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15110793
Run Date: 11/17/2015
Sample ID: WG547311-25
Instrument ID: ICP-THERMO3
Run Time: 14:00
Method: 6010C
File ID: T3.111715.140033
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG547108
Cal ID: ICP-TH - 17-NOV-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		0.0800	0.0965	mg/L	121	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4504456
Report generated 11/17/2015 15:26

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L15110793
Instrument ID: ICP-THERMO3
Sol. A : WG547311-10 **File ID:** T3.111715.103653
Sol. AB : WG547311-11 **File ID:** T3.111715.104056

Workgroup (AAB#): WG547108
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Iron	100	97.8	97.8	100	95.8	95.8	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4504403
Report generated 11/17/2015 15:26

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15110793 **Date:** 01/02/2015
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	AG	AL	AS	B	BA
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000190	0	0	0
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0.00200	0	-0.0000800
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0.000290	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	-0.000289	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	-0.0000460	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.0000120	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0.00300	0	0	0
ZINC	206.20	0	0.00000200	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4504399
Report generated: 11/17/2015 15:26

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15110793 **Date:** 01/02/2015
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	BE	CA	CD	CO	CR
ALUMINUM	308.20	0	0	0	-0.000820	0
ANTIMONY	206.80	0	0	0	0	0.00650
ARSENIC	189.00	0	0	0	0	0.000490
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0.00343	0
CADMIUM	228.80	0	0	0	-0.00210	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	-0.000200
COPPER	224.70	0	0	0	0.0000770	0
IRON	261.10	0	0	0	0	-0.00100
LEAD	220.30	0	0	0	-0.0000130	-0.000132
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	-0.0000920
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	-0.000500	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0.00000500	0	0	0
THALLIUM	190.80	0	0	0	0.00297	0.000276
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	-0.00138
ZINC	206.20	0	0	0	0	-0.000800
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4504399
Report generated: 11/17/2015 15:26

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15110793 **Date:** 01/02/2015
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	CU	FE	K	LI	MG
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000560	0	0	0
ARSENIC	189.00	0	-0.0000440	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	-0.000619	0	0	0
CADMIUM	228.80	0	-0.0000250	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000500	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0.000800	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0.000609	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.00000300
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0.0000420	0	0	0
PHOSPHORUS	214.90	-0.323	0.00118	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000240	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0.0000300	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	-0.0000300	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4504399
Report generated: 11/17/2015 15:26

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15110793 **Date:** 01/02/2015
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	MN	MO	NA	NI	P
ALUMINUM	308.20	0	0.0163	0	0	0
ANTIMONY	206.80	0	0.000670	0	0	0
ARSENIC	189.00	0	0.00139	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	-0.00190	0	0	0
CADMIUM	228.80	0	0.0000320	0	-0.000128	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0.000330	0	0	0	0
COBALT	228.60	0	-0.000983	0	0.000175	0
COPPER	224.70	0	0.00200	0	-0.0120	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	-0.00280	0	0.000110	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	-0.00190	-0.0130	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0.00710	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0.000800	0.000156	0	0	0
SILICON	212.40	0	0.0187	0	0	0
SILVER	328.00	0	-0.0000440	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0.00100	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000153	0	0	0
VANADIUM	292.40	-0.000110	-0.00778	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15110793 **Date:** 01/02/2015
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	PB	SB	SE	SI	SN
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0	0	0	-0.00840
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0.00300	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	0.000112	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15110793 **Date:** 01/02/2015
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	SR	TI	TL	V	ZN
ALUMINUM	308.20	0	0	0	0.00300	0
ANTIMONY	206.80	0	-0.00199	0	-0.00438	0
ARSENIC	189.00	0	0	0	0.000107	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	-0.0000770	0	0.000220	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0.000102	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000550	0	0	0
COBALT	228.60	0	0.00158	0	0.0000200	0
COPPER	224.70	0	0.000269	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	-0.000126	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	-0.00290	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	-0.000110	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	-0.00100	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.00620	0	-0.00617	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.00170	0	-0.00710	0
TIN	189.90	0	-0.00190	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0.000600	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15110793 **Date:** 01/02/2015
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	ZR
ALUMINUM	308.20	0
ANTIMONY	206.80	0
ARSENIC	189.00	0
BARIUM	455.40	0
BERYLLIUM	313.10	0
BORON	249.60	0
CADMIUM	228.80	0
CALCIUM	422.60	0
CHROMIUM	267.70	0
COBALT	228.60	0
COPPER	224.70	0
IRON	261.10	0
LEAD	220.30	0
LITHIUM	670.70	0
MAGNESIUM	279.00	0
MANGANESE	257.60	0
MOLYBDENUM	202.00	0
NICKEL	231.60	0
PHOSPHORUS	214.90	0
POTASSIUM	766.40	0
SELENIUM	196.00	0
SILICON	212.40	0
SILVER	328.00	0
SODIUM	589.50	0
STRONTIUM	407.70	0
THALLIUM	190.80	0
TIN	189.90	0
TITANIUM	337.20	0
VANADIUM	292.40	0
ZINC	206.20	0
ZIRCONIUM	339.10	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4504399
Report generated: 11/17/2015 15:26

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L15110793 **Date:** 10/19/2015
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	900.0
Antimony	20.00	45.0
Arsenic	10.00	45.0
Barium	10.00	45.0
Beryllium	10.00	4.5
Boron	20.00	45.0
Cadmium	20.00	4.5
Calcium	5.00	270.0
Chromium	20.00	36.0
Cobalt	20.00	90.0
Copper	20.00	180.0
Iron	5.00	720.0
Lead	20.00	225.0
Lithium	5.00	45.0
Magnesium	5.00	900.0
Manganese	10.00	36.0
Molybdenum	20.00	27.0
Nickel	20.00	90.0
Phosphorus	20.00	180.0
Potassium	5.00	450.0
Selenium	20.00	90.0
Silicon	20.00	36.0
Silver	10.00	9.0
Sodium	5.00	270.0
Strontium	5.00	9.0
Thallium	20.00	18.0
Tin	20.00	45.0
Titanium	5.00	36.0
Vanadium	20.00	27.0
Zinc	20.00	45.0
Zirconium	10.00	45.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4504398
Report generated: 11/17/2015 15:26

2.2.1.3 Raw Data

Sample Name: S0 Acquired: 11/17/2015 10:01:54 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00034	.00064	.00007	.00023	.01979	.00029	.00092
Stddev	.00005	.00003	.00001	.00003	.00059	.00003	.00101
%RSD	14.339	4.2820	18.678	13.321	3.0006	9.5492	110.07
#1	-.00029	.00066	.00006	.00019	.01912	.00032	.00182
#2	-.00039	.00065	.00009	.00025	.01999	.00028	-.00017
#3	-.00033	.00061	.00007	.00024	.02025	.00027	.00111

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00011	-.00015	.00008	-.00024	-.00045	-.00712	.01491
Stddev	.00006	.00009	.00004	.00002	.00021	.00411	.00509
%RSD	50.905	61.072	42.886	8.1893	46.897	57.722	34.140
#1	.00018	-.00005	.00005	-.00023	-.00069	-.00922	.01800
#2	.00008	-.00023	.00008	-.00026	-.00028	-.00239	.01769
#3	.00008	-.00018	.00012	-.00022	-.00039	-.00977	.00903

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00019	.00124	.00000	-.00569	-.00047	-.00005	-.00080
Stddev	.00003	.00074	.00002	.00169	.00012	.00005	.00005
%RSD	17.104	59.886	1384.6	29.779	25.293	87.391	6.6670
#1	-.00020	.00151	.00003	-.00387	-.00057	-.00010	-.00085
#2	-.00015	.00040	-.00001	-.00598	-.00034	-.00001	-.00075
#3	-.00022	.00180	-.00002	-.00722	-.00050	-.00005	-.00081

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00044	-.00002	.00042	.00006	.00428	-.00235	-.00017
Stddev	.00005	.00002	.00000	.00004	.00058	.00077	.00000
%RSD	11.202	92.267	.79560	67.504	13.645	32.719	2.5579
#1	.00039	-.00004	.00042	.00002	.00493	-.00217	-.00018
#2	.00048	-.00000	.00042	.00009	.00411	-.00319	-.00017
#3	.00046	-.00002	.00042	.00006	.00381	-.00168	-.00018

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: S0 Acquired: 11/17/2015 10:01:54 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00008	.00008	-.00666
Stddev	.00005	.00005	.00091
%RSD	71.995	63.942	13.729
#1	.00013	.00010	-.00585
#2	.00002	.00012	-.00766
#3	.00007	.00002	-.00649
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16924.	106910.	3119.2
Stddev	25.	197.	16.0
%RSD	.15007	.18435	.51319
#1	16951.	106930.	3107.2
#2	16901.	107090.	3137.4
#3	16922.	106700.	3112.9

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: S1 Acquired: 11/17/2015 10:05:56 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00016	.00122	.03868	.00064	.00499	.00023	.00032
Stddev	.00005	.00004	.00052	.00004	.00047	.00005	.00005
%RSD	35.028	3.6416	1.3458	5.6416	9.4255	21.006	16.752
#1	-.00019	.00126	.03865	.00065	.00490	.00020	.00029
#2	-.00018	.00117	.03921	.00060	.00458	.00029	.00029
#3	-.00009	.00123	.03817	.00067	.00550	.00020	.00038

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00025	.00016	.00061	.01206	.00213	.00107	.06486
Stddev	.00003	.00007	.00028	.00198	.00005	.00003	.00543
%RSD	13.464	45.618	46.452	16.420	2.4864	2.8487	8.3765
#1	.00028	.00008	.00064	.01359	.00208	.00106	.05937
#2	.00021	.00018	.00031	.01276	.00219	.00110	.06498
#3	.00025	.00022	.00088	.00982	.00212	.00104	.07024

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00012	.00066	-.00058	.00065	.00162	.00045	.03374
Stddev	.00006	.00007	.00014	.00004	.00004	.00003	.00045
%RSD	50.055	10.058	24.189	6.5239	2.2860	7.1570	1.3238
#1	-.00018	.00069	-.00043	.00065	.00164	.00049	.03324
#2	-.00007	.00059	-.00072	.00069	.00165	.00043	.03409
#3	-.00009	.00071	-.00060	.00060	.00158	.00044	.03389

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00096	.00045	.00260	-.00483
Stddev	.00014	.00001	.00003	.00069
%RSD	14.699	3.1902	1.3022	14.259
#1	-.00083	.00045	.00261	-.00561
#2	-.00093	.00046	.00263	-.00431
#3	-.00111	.00043	.00257	-.00457

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: S1 Acquired: 11/17/2015 10:05:56 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**16873.**	**107460.**	**3137.0**
Stddev	24.	259.	9.5
%RSD	.13993	.24060	.30355
#1	16850.	107720.	3147.0
#2	16898.	107460.	3135.8
#3	16871.	107200.	3128.1

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: S2 Acquired: 11/17/2015 10:09:59 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00002	.00188	.00015	.00034	.05668	.00100	.00807
Stddev	.00003	.00003	.00003	.00003	.00131	.00003	.00085
%RSD	119.07	1.4966	20.469	8.4062	2.3166	3.1672	10.520
#1	-.00003	.00185	.00014	.00035	.05746	.00104	.00762
#2	-.00005	.00190	.00018	.00031	.05741	.00099	.00753
#3	.00001	.00188	.00012	.00036	.05516	.00099	.00904

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00036	.00071	.00047	.00047	.00134	.03861	.02718
Stddev	.00007	.00002	.00002	.00005	.00021	.00178	.00227
%RSD	18.398	2.2133	4.6510	11.113	15.503	4.6078	8.3481
#1	.00029	.00072	.00045	.00043	.00158	.03718	.02684
#2	.00039	.00069	.00047	.00045	.00118	.04060	.02961
#3	.00042	.00072	.00049	.00053	.00127	.03804	.02511

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00060	.00337	.00211	.13329	.00043	.00144	-.00043
Stddev	.00008	.00035	.00007	.00240	.00018	.00006	.00015
%RSD	13.721	10.255	3.3646	1.7982	42.695	4.1743	35.874
#1	.00057	.00319	.00206	.13509	.00041	.00151	-.00045
#2	.00054	.00377	.00220	.13421	.00062	.00140	-.00026
#3	.00070	.00315	.00208	.13057	.00025	.00141	-.00057

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00089	.00005	.00276	.00090	.06642	.00032	.00009
Stddev	.00004	.00002	.00004	.00005	.00127	.00090	.00002
%RSD	4.9715	42.222	1.4636	5.3776	1.9113	278.97	17.999
#1	.00084	.00003	.00279	.00096	.06578	.00112	.00007
#2	.00091	.00007	.00278	.00090	.06560	.00050	.00011
#3	.00092	.00006	.00271	.00086	.06788	-.00065	.00009

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: S2 Acquired: 11/17/2015 10:09:59 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00083	.00513	-.00499
Stddev	.00003	.00002	.00064
%RSD	3.0439	.37632	12.822
#1	.00086	.00515	-.00443
#2	.00081	.00514	-.00484
#3	.00082	.00511	-.00568
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16903.	106650.	3121.3
Stddev	26.	229.	20.1
%RSD	.15289	.21460	.64458
#1	16873.	106510.	3106.5
#2	16915.	106910.	3113.3
#3	16921.	106520.	3144.2

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: S3 Acquired: 11/17/2015 10:14:02 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.01812	.07541	.00722	.00863	2.2863	.04661	.51331
Stddev	.00015	.00007	.00001	.00003	.0084	.00013	.00147
%RSD	.82904	.09324	.19854	.38396	.36758	.28810	.28586
#1	.01816	.07537	.00722	.00859	2.2889	.04653	.51162
#2	.01825	.07549	.00723	.00866	2.2932	.04676	.51425
#3	.01796	.07537	.00720	.00862	2.2770	.04653	.51406

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.01864	.05250	.02584	.04591	.08307	2.4588	.93758
Stddev	.00011	.00021	.00009	.00022	.00070	.0052	.00569
%RSD	.57127	.39318	.33896	.48427	.84517	.21173	.60706
#1	.01866	.05273	.02574	.04602	.08388	2.4587	.94367
#2	.01872	.05243	.02590	.04605	.08269	2.4641	.93240
#3	.01852	.05234	.02589	.04565	.08264	2.4537	.93666

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.05181	.13861	.13608	8.2191	.05468	.09456	.02351
Stddev	.00055	.00058	.00066	.0171	.00015	.00024	.00005
%RSD	1.0594	.41587	.48614	.20811	.27211	.25732	.21576
#1	.05221	.13903	.13678	8.2246	.05485	.09466	.02353
#2	.05118	.13884	.13597	8.2328	.05463	.09474	.02345
#3	.05204	.13795	.13547	8.1999	.05456	.09428	.02354

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.02769	.00495	.14636	.05361	3.9010	.12830	.01326
Stddev	.00015	.00004	.00011	.00016	.0115	.00106	.00005
%RSD	.55339	.79759	.07444	.29525	.29588	.82739	.40542
#1	.02786	.00500	.14644	.05366	3.9138	.12952	.01332
#2	.02762	.00493	.14642	.05373	3.8978	.12763	.01326
#3	.02758	.00493	.14624	.05343	3.8914	.12774	.01321

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: S3 Acquired: 11/17/2015 10:14:02 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.05121	.31547	-.00070
Stddev	.00010	.00122	.00049
%RSD	.20244	.38684	70.081
#1	.05109	.31661	-.00100
#2	.05129	.31562	-.00097
#3	.05124	.31418	-.00013
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16784.	104830.	3131.0
Stddev	45.	70.	18.9
%RSD	.26950	.06701	.60379
#1	16759.	104850.	3132.3
#2	16758.	104890.	3111.4
#3	16837.	104750.	3149.2

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: S4 Acquired: 11/17/2015 10:17:46 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.03633	.15080	.01460	.01722	4.5571	.09350	1.0268	.03725
Stddev	.00004	.00023	.00008	.00003	.0079	.00022	.0024	.00006
%RSD	.11241	.15227	.54665	.17242	.17332	.22994	.22877	.15468
#1	.03628	.15066	.01462	.01720	4.5520	.09339	1.0290	.03726
#2	.03636	.15066	.01466	.01721	4.5532	.09336	1.0243	.03729
#3	.03635	.15106	.01451	.01726	4.5662	.09375	1.0270	.03718

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.10496	.05176	.09113	.16642	4.9271	1.8417	.10309	.27501
Stddev	.00025	.00013	.00033	.00030	.0117	.0038	.00010	.00267
%RSD	.23939	.25972	.36563	.18226	.23662	.20869	.10051	.97179
#1	.10516	.05168	.09145	.16617	4.9244	1.8419	.10297	.27286
#2	.10505	.05168	.09117	.16675	4.9171	1.8377	.10315	.27416
#3	.10468	.05191	.09078	.16633	4.9399	1.8454	.10316	.27800

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.27364	16.464	.10907	.18992	.04755	.05546	.01000	.29431
Stddev	.00087	.023	.00035	.00036	.00022	.00011	.00003	.00033
%RSD	.31963	.14110	.32283	.18782	.46309	.19272	.29417	.11372
#1	.27452	16.464	.10944	.19033	.04780	.05558	.00998	.29427
#2	.27364	16.441	.10902	.18973	.04748	.05543	.01003	.29400
#3	.27277	16.487	.10874	.18969	.04738	.05538	.00999	.29466

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.10757	7.8208	.26128	.02601	.10295	.62771	.00396
Stddev	.00027	.0096	.00093	.00011	.00018	.00085	.00101
%RSD	.25517	.12256	.35637	.43815	.17894	.13525	25.500
#1	.10762	7.8207	.26107	.02612	.10295	.62810	.00501
#2	.10782	7.8112	.26230	.02603	.10276	.62830	.00387
#3	.10728	7.8304	.26048	.02589	.10313	.62674	.00300

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: S4 Acquired: 11/17/2015 10:17:46 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**16457.**	**102490.**	**3106.8**
Stddev	30.	361.	8.0
%RSD	.18000	.35237	.25682
#1	16473.	102520.	3116.0
#2	16423.	102840.	3103.2
#3	16475.	102120.	3101.4

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: ICV Acquired: 11/17/2015 10:21:28 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39850	10.182	.40599	.50002	1.0330	.05084	10.179
Stddev	.00049	.037	.00069	.00422	.0027	.00021	.048
%RSD	.12385	.36585	.17032	.84347	.25625	.40664	.47105
#1	.39899	10.205	.40625	.50367	1.0324	.05104	10.180
#2	.39801	10.202	.40521	.50098	1.0306	.05084	10.131
#3	.39848	10.139	.40651	.49540	1.0358	.05063	10.227
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05093	.20630	.50718	.51127	4.0440	50.950	1.0213
Stddev	.00019	.00007	.00166	.00117	.0222	.265	.0017
%RSD	.36963	.03217	.32737	.22977	.54949	.51932	.17029
#1	.05108	.20625	.50811	.51223	4.0478	50.853	1.0214
#2	.05072	.20628	.50817	.51161	4.0641	50.747	1.0230
#3	.05098	.20638	.50527	.50996	4.0202	51.249	1.0195
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.255	.50934	.96321	50.864	.50857	9.9971	.51035
Stddev	.155	.00291	.00204	.070	.00119	.0140	.00319
%RSD	1.5077	.57142	.21171	.13664	.23342	.13978	.62521
#1	10.120	.50973	.96557	50.828	.50966	10.013	.50816
#2	10.222	.50626	.96200	50.819	.50730	9.9892	.50887
#3	10.424	.51204	.96207	50.944	.50873	9.9888	.51401
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: ICV Acquired: 11/17/2015 10:21:28 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.1934	.40254	5.1623	1.0363	1.0030	1.0055	.51358
Stddev	.0024	.00414	.0158	.0019	.0016	.0073	.00235
%RSD	.20030	1.0281	.30580	.18643	.16103	.72090	.45668
#1	1.1956	.40550	5.1453	1.0383	1.0028	1.0075	.51252
#2	1.1937	.39781	5.1652	1.0361	1.0015	.99751	.51627
#3	1.1908	.40430	5.1765	1.0345	1.0047	1.0116	.51196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0026	1.0163	F .65107
Stddev	.0031	.0014	.36261
%RSD	.30997	.13380	55.694
#1	1.0043	1.0175	.26782
#2	1.0045	1.0164	.69669
#3	.99901	1.0148	.98871
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-5.0000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16495.	103810.	3092.1
Stddev	17.	98.	15.8
%RSD	.10385	.09454	.51194
#1	16478.	103750.	3074.8
#2	16494.	103760.	3105.9
#3	16513.	103920.	3095.5

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: ICB Acquired: 11/17/2015 10:25:01 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	-.00735	-.00294	.00375	.00069	.00002	-.01211
Stddev	.00014	.00764	.00173	.00123	.00039	.00004	.01609
%RSD	42.281	103.93	58.857	32.718	56.045	238.16	132.78
#1	.00017	.00126	-.00494	.00384	.00073	.00006	-.00808
#2	.00043	-.01001	-.00206	.00493	.00106	.00001	-.02983
#3	.00038	-.01331	-.00183	.00248	.00029	-.00002	.00157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	-.00025	-.00022	.00071	.01015	.08813	-.00224
Stddev	.00008	.00032	.00031	.00034	.00484	.02064	.00180
%RSD	219.13	127.80	144.75	47.194	47.720	23.424	80.454
#1	-.00004	-.00051	-.00024	.00083	.01530	.11197	-.00214
#2	-.00012	-.00035	.00011	.00097	.00945	.07623	-.00049
#3	.00004	.00011	-.00051	.00033	.00569	.07620	-.00409
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.01693	-.00034	.00096	.03405	-.00060	-.00036	.00083
Stddev	.08360	.00179	.00028	.02478	.00033	.00641	.00310
%RSD	493.80	533.31	29.553	72.769	54.934	1792.8	375.22
#1	-.09574	.00161	.00128	.06266	-.00024	-.00716	.00163
#2	.07075	-.00191	.00080	.01942	-.00089	.00556	.00344
#3	-.02580	-.00070	.00079	.02007	-.00068	.00053	-.00260
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: ICB Acquired: 11/17/2015 10:25:01 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00600	-.00435	.00277	.00015	-.00012	.00487	.00063
Stddev	.00226	.00259	.00031	.00041	.00017	.00162	.00147
%RSD	37.721	59.448	11.011	275.05	139.50	33.230	234.09
#1	.00350	-.00655	.00243	.00046	-.00030	.00372	-.00101
#2	.00791	-.00500	.00289	-.00032	-.00010	.00418	.00108
#3	.00659	-.00150	.00300	.00031	.00004	.00672	.00181
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00001	.00036	F .35918
Stddev	.00009	.00014	.11260
%RSD	987.12	38.763	31.349
#1	.00011	.00052	.48124
#2	-.00002	.00030	.33694
#3	-.00006	.00026	.25936
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16920.	107000.	3113.0
Stddev	69.	205.	3.0
%RSD	.40886	.19172	.09737
#1	16931.	107160.	3113.8
#2	16984.	107060.	3115.5
#3	16846.	106770.	3109.6

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: LLICV Acquired: 11/17/2015 10:28:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00433	.08074	.00535	.03832	.00455	.00080	.18120	.00030
Stddev	.00029	.00317	.00066	.00158	.00047	.00005	.01674	.00005
%RSD	6.7786	3.9302	12.295	4.1129	10.230	6.6856	9.2378	15.733
#1	.00423	.08142	.00563	.03988	.00413	.00075	.17464	.00032
#2	.00411	.07728	.00582	.03833	.00447	.00086	.16873	.00025
#3	.00467	.08352	.00460	.03673	.00505	.00080	.20022	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00185	.00092	.00199	.06145	.50806	.03973	.17751	.00375
Stddev	.00014	.00060	.00089	.00485	.05877	.00712	.03166	.00246
%RSD	7.6721	65.875	45.010	7.8918	11.567	17.913	17.835	65.422
#1	.00177	.00053	.00233	.06248	.52399	.03909	.21342	.00107
#2	.00176	.00061	.00097	.05617	.44297	.04715	.16554	.00430
#3	.00201	.00161	.00266	.06571	.55722	.03296	.15359	.00589
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00401	.21213	.00819	.38538	.00525	.04047	.00266	.39638
Stddev	.00018	.01813	.00049	.00835	.00141	.00197	.00293	.00211
%RSD	4.4734	8.5462	5.9303	2.1658	26.902	4.8787	110.21	.53139
#1	.00419	.23165	.00776	.38758	.00634	.04091	.00605	.39787
#2	.00401	.19582	.00808	.39241	.00576	.04219	.00097	.39729
#3	.00383	.20893	.00872	.37615	.00365	.03832	.00097	.39397
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: LLICV Acquired: 11/17/2015 10:28:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20335	.01976	.01940	.08565	.00388	.00890	11.664
Stddev	.00216	.00032	.00478	.00122	.00033	.00009	.291
%RSD	1.0635	1.6215	24.670	1.4207	8.4468	.95628	2.4992
#1	.20448	.02008	.02105	.08435	.00423	.00887	11.794
#2	.20471	.01944	.02313	.08585	.00359	.00900	11.867
#3	.20085	.01975	.01400	.08676	.00380	.00884	11.330
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16950.	107170.	3119.0
Stddev	18.	219.	3.2
%RSD	.10799	.20415	.10255
#1	16942.	107400.	3122.3
#2	16971.	107160.	3115.9
#3	16937.	106960.	3119.0

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: LLICV Acquired: 11/17/2015 10:32:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00907	.16119	.00489	.07871	.00909	.00163	.40324	.00084
Stddev	.00116	.00409	.00066	.00060	.00039	.00003	.01595	.00015
%RSD	12.766	2.5367	13.563	.76160	4.2615	1.9928	3.9554	17.909
#1	.00995	.16313	.00525	.07895	.00953	.00161	.41777	.00068
#2	.00950	.16394	.00413	.07914	.00880	.00163	.38617	.00097
#3	.00775	.15649	.00530	.07802	.00894	.00167	.40578	.00087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00398	.00369	.00445	.09677	.79145	.08413	.44340	.00907
Stddev	.00031	.00017	.00036	.00507	.09558	.00148	.05331	.00120
%RSD	7.8589	4.6920	8.0976	5.2417	12.077	1.7544	12.022	13.213
#1	.00410	.00381	.00452	.09499	.82628	.08439	.46761	.01038
#2	.00363	.00377	.00477	.09283	.86474	.08545	.48030	.00803
#3	.00422	.00349	.00406	.10249	.68334	.08254	.38228	.00880
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00777	.41327	.01587	.76355	.00858	.07497	.01390	.77861
Stddev	.00016	.00961	.00049	.00601	.00214	.00148	.00430	.00511
%RSD	2.0210	2.3247	3.0937	.78707	24.889	1.9760	30.923	.65689
#1	.00778	.40618	.01538	.76594	.00713	.07341	.01117	.78142
#2	.00760	.42421	.01636	.76800	.00758	.07515	.01885	.78170
#3	.00792	.40943	.01586	.75671	.01103	.07635	.01167	.77270
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: LLICV Acquired: 11/17/2015 10:32:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40365	.03949	.02963	.16883	.00779	.01703	26.418
Stddev	.00308	.00011	.00349	.00085	.00049	.00012	.310
%RSD	.76388	.28993	11.777	.50395	6.2691	.68370	1.1743
#1	.40563	.03961	.03356	.16964	.00781	.01691	26.566
#2	.40523	.03947	.02843	.16891	.00729	.01714	26.627
#3	.40010	.03938	.02690	.16794	.00827	.01706	26.062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16982.	106790.	3090.5
Stddev	18.	327.	11.9
%RSD	.10866	.30613	.38618
#1	16977.	106610.	3076.8
#2	17002.	107170.	3095.7
#3	16965.	106590.	3098.9

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: ICSA Acquired: 11/17/2015 10:36:53 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00385	269.84	-.00433	-.04536	.00076	-.00002	239.23
Stddev	.00137	.37	.00286	.00157	.00023	.00005	.24
%RSD	35.705	.13786	65.980	3.4607	30.832	291.48	.10098
#1	-.00284	269.94	-.00134	-.04541	.00053	-.00004	239.00
#2	-.00541	269.42	-.00462	-.04377	.00100	-.00006	239.19
#3	-.00328	270.15	-.00704	-.04691	.00075	.00004	239.48
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	-.00126	-.00238	.00037	97.802	.06996	.01853
Stddev	.00030	.00032	.00059	.00218	.213	.13393	.00614
%RSD	76.786	25.431	24.905	592.41	.21765	191.43	33.144
#1	.00075	-.00111	-.00215	.00232	97.572	-.07115	.01947
#2	.00023	-.00163	-.00305	.00075	97.841	.19531	.01197
#3	.00021	-.00105	-.00194	-.00197	97.992	.08573	.02415
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	253.47	.00009	-.00097	.02980	.00065	.02761	-.00056
Stddev	.17	.00039	.00050	.01057	.00059	.00653	.00509
%RSD	.06761	452.30	51.717	35.474	90.367	23.663	903.41
#1	253.44	.00042	-.00153	.02556	.00131	.03494	.00160
#2	253.66	-.00035	-.00059	.02200	.00051	.02549	.00309
#3	253.32	.00019	-.00077	.04183	.00015	.02240	-.00637
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: ICSA Acquired: 11/17/2015 10:36:53 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01138	-.00646	.11336	-.00003	-.00061	.00705	.00363
Stddev	.00332	.00467	.00242	.00073	.00010	.00317	.00310
%RSD	29.198	72.280	2.1320	2745.8	16.080	44.908	85.422
#1	.01520	-.00195	.11209	-.00087	-.00068	.01070	.00047
#2	.00918	-.01127	.11185	.00030	-.00050	.00540	.00666
#3	.00975	-.00616	.11615	.00048	-.00065	.00506	.00375
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00041	-.00490	F -2.0775
Stddev	.00045	.00015	.1072
%RSD	109.48	3.1502	5.1604
#1	-.00087	-.00475	-2.1593
#2	.00003	-.00489	-2.1170
#3	-.00040	-.00506	-1.9561
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02000
Low Limit			-.02000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15530.	96251.	3014.2
Stddev	22.	165.	5.0
%RSD	.13944	.17113	.16454
#1	15512.	96342.	3008.6
#2	15523.	96349.	3018.0
#3	15554.	96060.	3016.1

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: ICSAB Acquired: 11/17/2015 10:40:56 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52269	264.44	.25021	-.05330	.25212	.25200	234.26
Stddev	.00226	1.53	.00261	.00160	.00169	.00027	.42
%RSD	.43298	.57928	1.0431	3.0095	.67079	.10526	.17958
#1	.52081	265.48	.25301	-.05506	.25061	.25188	234.02
#2	.52520	265.17	.24978	-.05293	.25180	.25181	234.01
#3	.52207	262.68	.24785	-.05191	.25394	.25230	234.74
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48765	.23792	.24797	.24560	95.820	5.2680	.02085
Stddev	.00187	.00181	.00132	.00440	.123	.1009	.00547
%RSD	.38316	.76197	.53275	1.7915	.12872	1.9157	26.217
#1	.48914	.23860	.24795	.24848	95.718	5.3745	.01705
#2	.48826	.23930	.24667	.24778	95.786	5.2556	.02711
#3	.48556	.23587	.24931	.24054	95.957	5.1738	.01838
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	247.46	.24717	-.00114	5.2691	.47440	.09304	.48183
Stddev	.44	.00166	.00029	.0050	.00221	.00956	.00583
%RSD	.17885	.67275	25.328	.09457	.46503	10.278	1.2101
#1	247.32	.24871	-.00081	5.2668	.47607	.10404	.48455
#2	247.10	.24739	-.00133	5.2748	.47522	.08668	.48580
#3	247.95	.24540	-.00128	5.2656	.47190	.08839	.47513
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: ICSAB Acquired: 11/17/2015 10:40:56 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51965	.25040	.01022	.00100	-.00047	.01647	.47606
Stddev	.00939	.00113	.00039	.00025	.00005	.00539	.00196
%RSD	1.8062	.45184	3.8138	25.328	10.972	32.725	.41259
#1	.52390	.25046	.01058	.00105	-.00041	.01531	.47824
#2	.52616	.24923	.00981	.00123	-.00049	.02235	.47444
#3	.50889	.25149	.01026	.00073	-.00051	.01176	.47548
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.24953	.47057	F -2.1828
Stddev	.00123	.00240	.2254
%RSD	.49429	.51012	10.325
#1	.24845	.47235	-2.4348
#2	.24927	.47152	-2.1132
#3	.25087	.46784	-2.0005
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02500
Low Limit			-.02500

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15716.	97574.	3042.0
Stddev	22.	264.	2.9
%RSD	.13870	.27029	.09460
#1	15726.	97615.	3044.0
#2	15731.	97292.	3043.3
#3	15691.	97815.	3038.7

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCV Acquired: 11/17/2015 10:44:53 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40841	10.206	.40372	.51026	1.0023	.05131	10.037
Stddev	.00203	.028	.00102	.00185	.0037	.00019	.040
%RSD	.49786	.27313	.25374	.36300	.37299	.36998	.39707
#1	.40800	10.185	.40263	.50812	.99951	.05137	9.9963
#2	.41062	10.238	.40387	.51147	1.0009	.05145	10.040
#3	.40662	10.196	.40467	.51117	1.0066	.05109	10.076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05100	.20642	.51518	.51597	3.9942	50.122	1.0158
Stddev	.00021	.00080	.00290	.00169	.0169	.154	.0019
%RSD	.41936	.38764	.56208	.32723	.42293	.30802	.18463
#1	.05077	.20627	.51218	.51654	3.9788	49.959	1.0136
#2	.05102	.20728	.51795	.51731	3.9914	50.142	1.0168
#3	.05120	.20571	.51541	.51407	4.0122	50.266	1.0170
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.014	.50319	1.0211	50.256	.51218	10.118	.51375
Stddev	.128	.00322	.0015	.178	.00153	.016	.00508
%RSD	1.2779	.63961	.14315	.35434	.29800	.16198	.98915
#1	10.093	.49963	1.0223	50.116	.51318	10.125	.50841
#2	10.083	.50407	1.0216	50.196	.51292	10.129	.51433
#3	9.8665	.50588	1.0195	50.456	.51042	10.099	.51852
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCV Acquired: 11/17/2015 10:44:53 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2177	.39995	5.0551	1.0250	1.0015	1.00000	.51565
Stddev	.0047	.00333	.0143	.0012	.0032	.00818	.00159
%RSD	.38866	.83295	.28365	.11296	.32189	.81773	.30790
#1	1.2155	.40048	5.0425	1.0255	.99958	.99131	.51673
#2	1.2231	.40298	5.0522	1.0259	.99976	1.0011	.51382
#3	1.2144	.39638	5.0707	1.0237	1.0052	1.0075	.51638
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0285	1.0225	F 1.8031
Stddev	.0014	.0013	.2017
%RSD	.13599	.12673	11.185
#1	1.0279	1.0225	1.6306
#2	1.0301	1.0237	1.7539
#3	1.0275	1.0211	2.0249
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16367.	101890.	3070.6
Stddev	19.	78.	1.1
%RSD	.11489	.07655	.03616
#1	16387.	101900.	3071.3
#2	16365.	101810.	3071.1
#3	16349.	101970.	3069.3

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCB Acquired: 11/17/2015 10:48:37 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.00780	-.00140	.00171	.00117	.00004	-.00133
Stddev	.00118	.00456	.00086	.00081	.00074	.00002	.02977
%RSD	1703.3	58.486	61.160	47.331	63.323	46.778	2242.6
#1	.00120	.01307	-.00077	.00078	.00124	.00004	.02292
#2	-.00112	.00530	-.00106	.00207	.00188	.00002	.00766
#3	-.00028	.00503	-.00237	.00227	.00040	.00006	-.03456
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.00017	-.00028	-.00086	.01693	-.01431	.00563
Stddev	.00023	.00011	.00034	.00058	.02005	.04100	.00556
%RSD	235.01	61.970	118.49	66.973	118.46	286.52	98.674
#1	.00011	.00019	-.00066	-.00042	.00457	-.05809	-.00070
#2	-.00006	.00028	-.00018	-.00066	.00615	-.00800	.00791
#3	-.00035	.00006	-.00001	-.00152	.04006	.02317	.00969
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.03868	-.00223	.00099	-.01853	.00034	-.00344	.00101
Stddev	.09172	.00113	.00011	.03469	.00062	.00492	.00121
%RSD	237.10	50.946	11.623	187.27	185.86	143.13	118.99
#1	.05793	-.00329	.00106	.02100	.00076	-.00439	-.00034
#2	-.12456	-.00236	.00104	-.03262	-.00038	-.00782	.00143
#3	-.04943	-.00103	.00085	-.04395	.00063	.00189	.00196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCB Acquired: 11/17/2015 10:48:37 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	-.00666	.00154	.00032	-.00037	.00749	.00054
Stddev	.00436	.00150	.00164	.00073	.00019	.00451	.00262
%RSD	819.61	22.464	106.66	229.26	50.450	60.192	488.78
#1	.00178	-.00734	-.00025	.00031	-.00041	.01236	.00355
#2	-.00432	-.00770	.00297	-.00040	-.00053	.00347	-.00118
#3	.00414	-.00494	.00189	.00105	-.00016	.00664	-.00077
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00000	.00003	F .25552
Stddev	.00066	.00010	.03617
%RSD	32266.	315.23	14.154
#1	.00050	.00008	.29366
#2	.00023	.00010	.25118
#3	-.00074	-.00008	.22172
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16703.	105230.	3066.4
Stddev	39.	216.	17.5
%RSD	.23271	.20545	.56951
#1	16658.	105270.	3060.3
#2	16725.	105420.	3052.8
#3	16725.	104990.	3086.1

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: PBW AB Acquired: 11/17/2015 10:52:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546387-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.00668	-.00293	.00170	-.00012	.00006	-.01438	.00022
Stddev	.00013	.00148	.00252	.00099	.00052	.00002	.01377	.00008
%RSD	93.914	22.200	86.055	58.007	422.68	32.084	95.818	34.866
#1	-.00001	.00788	-.00217	.00251	.00018	.00004	.00145	.00030
#2	.00019	.00502	-.00087	.00199	-.00072	.00008	-.02363	.00016
#3	.00023	.00712	-.00574	.00060	.00018	.00005	-.02096	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00031	-.00040	-.00026	.00594	-.06407	.00045	-.03998	-.00117
Stddev	.00035	.00049	.00088	.00671	.05690	.00520	.00780	.00079
%RSD	114.41	121.77	337.33	112.98	88.803	1161.0	19.501	67.537
#1	-.00057	-.00056	.00070	-.00099	-.10811	.00609	-.04303	-.00208
#2	-.00044	.00015	-.00104	.00640	.00017	-.00413	-.04579	-.00068
#3	.00009	-.00078	-.00044	.01241	-.08428	-.00062	-.03112	-.00076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.00253	.00035	.00209	-.00258	-.00018	-.00915	.01180
Stddev	.00034	.02298	.00033	.00857	.00073	.00249	.00194	.00146
%RSD	113.65	908.32	94.651	409.65	28.197	1388.5	21.173	12.380
#1	.00018	-.02401	-.00003	.01153	-.00252	-.00254	-.00721	.01243
#2	.00004	.01581	.00054	-.00006	-.00333	-.00042	-.01108	.01284
#3	.00068	.01579	.00054	-.00520	-.00188	.00242	-.00917	.01013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: PBW AB Acquired: 11/17/2015 10:52:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546387-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	-.00038	.00231	.00217	-.00030	.00126	.14703
Stddev	.00031	.00030	.01153	.00112	.00037	.00016	.06017
%RSD	1009.4	78.931	499.80	51.606	125.08	13.051	40.921
#1	.00037	-.00072	.01023	.00322	-.00066	.00117	.08349
#2	-.00003	-.00024	.00760	.00099	.00008	.00145	.15448
#3	-.00024	-.00017	-.01092	.00232	-.00030	.00115	.20312
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16670.	105080.	3065.5
Stddev	16.	228.	25.7
%RSD	.09428	.21728	.83787
#1	16675.	104820.	3085.8
#2	16682.	105200.	3036.6
#3	16652.	105230.	3074.0

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: LCSW AB Acquired: 11/17/2015 10:56:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546387-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20201	5.0169	.19498	.98903	.51979	.02510	5.1899	.02534
Stddev	.00118	.0019	.00126	.00087	.00094	.00006	.0197	.00009
%RSD	.58507	.03825	.64580	.08783	.18108	.23388	.37958	.36126
#1	.20183	5.0186	.19571	.98967	.52079	.02514	5.1882	.02526
#2	.20092	5.0173	.19352	.98804	.51966	.02512	5.2104	.02544
#3	.20327	5.0148	.19570	.98939	.51892	.02503	5.1711	.02531
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10367	.25791	.25907	2.0728	25.742	.51916	5.1301	.25855
Stddev	.00049	.00082	.00061	.0125	.023	.00307	.0816	.00117
%RSD	.47045	.31745	.23433	.60318	.08752	.59187	1.5906	.45422
#1	.10415	.25820	.25976	2.0845	25.725	.51594	5.0364	.25978
#2	.10369	.25855	.25876	2.0744	25.734	.52206	5.1684	.25745
#3	.10317	.25699	.25867	2.0596	25.768	.51949	5.1855	.25842
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52105	25.995	.25874	4.9375	.26038	.60308	.19210	2.5721
Stddev	.00071	.019	.00071	.0154	.00119	.00132	.00341	.0066
%RSD	.13718	.07131	.27350	.31269	.45699	.21814	1.7738	.25768
#1	.52094	26.015	.25876	4.9467	.26037	.60242	.18914	2.5650
#2	.52182	25.989	.25943	4.9460	.26157	.60459	.19133	2.5780
#3	.52040	25.980	.25802	4.9196	.25919	.60222	.19582	2.5734
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: LCSW AB Acquired: 11/17/2015 10:56:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546387-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51697	.51380	.51526	.25986	.51550	.50904	1.4094
Stddev	.00128	.00102	.00122	.00270	.00101	.00099	.1001
%RSD	.24666	.19810	.23655	1.0383	.19658	.19415	7.1038
#1	.51576	.51334	.51404	.26207	.51573	.50980	1.2954
#2	.51830	.51496	.51647	.26065	.51639	.50940	1.4495
#3	.51685	.51309	.51527	.25685	.51440	.50792	1.4832
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16565.	103720.	3047.3
Stddev	23.	291.	18.7
%RSD	.13992	.28034	.61241
#1	16583.	103880.	3030.5
#2	16539.	103390.	3044.0
#3	16574.	103900.	3067.4

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511051403S Acquired: 11/17/2015 11:00:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546387-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19944	6.6816	.19289	1.0444	.65499	.02478	73.975	.02495
Stddev	.00240	.0222	.00175	.0011	.00055	.00006	.087	.00002
%RSD	1.2029	.33286	.90799	.10354	.08337	.23807	.11726	.07723
#1	.20088	6.6789	.19281	1.0433	.65441	.02477	73.937	.02494
#2	.19667	6.6609	.19469	1.0444	.65505	.02473	73.914	.02493
#3	.20077	6.7051	.19119	1.0455	.65550	.02484	74.074	.02497
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10001	.25900	.25492	3.3003	28.179	.55907	27.782	.28388
Stddev	.00090	.00035	.00184	.0101	.079	.00271	.026	.00127
%RSD	.89949	.13659	.72282	.30516	.27932	.48545	.09433	.44892
#1	.10047	.25893	.25614	3.3099	28.230	.56130	27.797	.28318
#2	.10059	.25938	.25582	3.2898	28.088	.55986	27.797	.28535
#3	.09897	.25868	.25280	3.3011	28.218	.55605	27.752	.28310
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51157	46.470	.24759	4.9497	.25048	.59416	.18652	29.318
Stddev	.00193	.049	.00102	.0235	.00263	.00685	.00051	.116
%RSD	.37816	.10509	.41375	.47474	1.0482	1.1524	.27513	.39547
#1	.51134	46.413	.24781	4.9530	.25089	.59332	.18624	29.329
#2	.51361	46.497	.24850	4.9714	.25288	.60138	.18711	29.429
#3	.50976	46.499	.24648	4.9247	.24768	.58777	.18621	29.197
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511051403S Acquired: 11/17/2015 11:00:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546387-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50435	2.4971	.52201	.24696	.51914	.50005	3.2752
Stddev	.00178	.0027	.00259	.00064	.00052	.00221	.1764
%RSD	.35253	.10736	.49657	.25954	.09934	.44100	5.3871
#1	.50515	2.4973	.52473	.24623	.51859	.49975	3.4341
#2	.50558	2.4943	.52171	.24723	.51921	.50239	3.3061
#3	.50231	2.4997	.51958	.24742	.51961	.49801	3.0854
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16208.	102020.	3048.8
Stddev	40.	177.	10.6
%RSD	.24852	.17321	.34731
#1	16228.	101830.	3055.9
#2	16161.	102060.	3053.8
#3	16234.	102180.	3036.6

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511051404SD Acquired: 11/17/2015 11:04:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546387-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20207	6.5500	.19605	1.0582	.65542	.02511	73.668	.02521
Stddev	.00181	.0127	.00234	.0022	.00189	.00005	.285	.00011
%RSD	.89659	.19316	1.1956	.20646	.28866	.19443	.38749	.45338
#1	.20407	6.5359	.19598	1.0561	.65440	.02508	73.673	.02520
#2	.20055	6.5540	.19374	1.0581	.65760	.02509	73.951	.02510
#3	.20159	6.5602	.19842	1.0605	.65425	.02517	73.380	.02533
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09978	.26168	.25494	3.1919	28.213	.56223	27.780	.28025
Stddev	.00017	.00014	.00111	.0068	.111	.00428	.095	.00026
%RSD	.17124	.05306	.43570	.21230	.39405	.76187	.34357	.09373
#1	.09981	.26160	.25618	3.1877	28.208	.56597	27.764	.28001
#2	.09993	.26184	.25405	3.1998	28.327	.56317	27.882	.28053
#3	.09959	.26159	.25458	3.1883	28.105	.55756	27.693	.28021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51365	46.514	.24769	5.0039	.25210	.60378	.19498	28.706
Stddev	.00119	.125	.00085	.0041	.00204	.00269	.00430	.048
%RSD	.23244	.26820	.34313	.08117	.81106	.44617	2.2078	.16664
#1	.51428	46.487	.24789	5.0054	.25086	.60606	.19793	28.730
#2	.51440	46.650	.24843	5.0070	.25099	.60448	.19004	28.736
#3	.51227	46.405	.24676	4.9993	.25446	.60081	.19697	28.651
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511051404SD Acquired: 11/17/2015 11:04:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546387-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50608	2.4962	.51918	.25263	.52409	.49787	2.8887
Stddev	.00092	.0037	.01248	.00056	.00108	.00110	.2108
%RSD	.18148	.14614	2.4035	.22054	.20695	.22181	7.2965
#1	.50714	2.4962	.51979	.25279	.52457	.49868	2.9623
#2	.50551	2.4998	.53134	.25201	.52285	.49831	2.6510
#3	.50560	2.4925	.50640	.25309	.52485	.49661	3.0528
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16398.	102970.	3086.4
Stddev	27.	208.	19.7
%RSD	.16381	.20192	.63695
#1	16389.	103200.	3064.9
#2	16377.	102910.	3091.0
#3	16428.	102800.	3103.4

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511051405 Acquired: 11/17/2015 11:07:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546387-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	1.2125	-.00024	.06736	.16370	.00017	74.355	.00017
Stddev	.00126	.0094	.00250	.00162	.00089	.00004	.162	.00018
%RSD	1300.8	.77413	1042.1	2.4019	.54093	23.067	.21790	108.12
#1	-.00012	1.2062	.00215	.06630	.16386	.00015	74.516	-.00003
#2	.00117	1.2233	-.00003	.06656	.16450	.00021	74.192	.00020
#3	-.00134	1.2080	-.00284	.06922	.16275	.00014	74.357	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.00953	.00702	1.2280	3.2132	.05520	24.456	.02960
Stddev	.00020	.00057	.00115	.0073	.0489	.00306	.072	.00105
%RSD	105.84	5.9557	16.354	.59008	1.5222	5.5518	.29368	3.5537
#1	.00037	.01012	.00738	1.2254	3.1697	.05871	24.439	.02946
#2	-.00003	.00899	.00574	1.2362	3.2038	.05308	24.535	.03072
#3	.00023	.00949	.00795	1.2224	3.2661	.05380	24.395	.02863
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00137	23.188	.00043	.04477	.00209	.00311	-.00100	27.155
Stddev	.00017	.017	.00113	.01121	.00171	.00629	.00712	.083
%RSD	12.170	.07202	263.45	25.034	81.741	202.13	708.87	.30675
#1	.00119	23.201	.00142	.03364	.00266	-.00357	.00644	27.221
#2	.00152	23.194	-.00081	.04461	.00345	.00891	-.00170	27.183
#3	.00139	23.169	.00068	.05606	.00017	.00398	-.00774	27.062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511051405 Acquired: 11/17/2015 11:07:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546387-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	2.1583	.02362	-.00091	.01573	.01543	1.1529
Stddev	.00019	.0047	.00634	.00240	.00077	.00009	.1861
%RSD	34.498	.21715	26.835	264.16	4.8980	.55223	16.142
#1	-.00055	2.1637	.02282	.00043	.01566	.01536	1.1958
#2	-.00075	2.1550	.01772	.00052	.01653	.01553	1.3138
#3	-.00037	2.1563	.03032	-.00367	.01500	.01541	.94908
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15895.	99797.	2969.3
Stddev	19.	379.	5.8
%RSD	.12142	.38018	.19407
#1	15900.	99915.	2964.4
#2	15911.	99372.	2975.6
#3	15873.	100100.	2968.0

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511052701 Acquired: 11/17/2015 11:11:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00050	.27125	.00850	.17839	.05632	.00006	64.073	.00077
Stddev	.00108	.00163	.00357	.00095	.00041	.00002	.204	.00014
%RSD	214.74	.60096	41.985	.53510	.71989	39.308	.31803	18.225
#1	-.00121	.27313	.01244	.17731	.05661	.00009	63.843	.00071
#2	.00074	.27039	.00548	.17878	.05585	.00007	64.231	.00093
#3	-.00104	.27023	.00757	.17910	.05648	.00004	64.145	.00067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05230	.00157	.00785	2.6002	9.9794	.01517	27.427	1.1786
Stddev	.00023	.00042	.00110	.0049	.1493	.00060	.228	.0069
%RSD	.44141	26.939	13.986	.18694	1.4963	3.9303	.83091	.58139
#1	.05250	.00157	.00669	2.5946	9.8401	.01523	27.186	1.1707
#2	.05236	.00200	.00887	2.6024	10.137	.01572	27.455	1.1825
#3	.05205	.00115	.00800	2.6035	9.9611	.01454	27.639	1.1827
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00856	62.299	.11174	.45565	.01992	.00176	-.00300	4.8496
Stddev	.00017	.264	.00093	.00203	.00160	.00094	.00233	.0203
%RSD	2.0049	.42451	.83413	.44577	8.0358	53.118	77.662	.41931
#1	.00845	62.007	.11142	.45775	.01808	.00137	-.00563	4.8662
#2	.00875	62.522	.11279	.45550	.02100	.00109	-.00118	4.8558
#3	.00846	62.368	.11102	.45370	.02067	.00283	-.00219	4.8269
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511052701 Acquired: 11/17/2015 11:11:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	.19368	.00147	.00116	.00374	.05292	1.9905
Stddev	.00049	.00120	.00275	.00143	.00029	.00046	.0483
%RSD	198.39	.62051	187.36	123.27	7.7668	.86898	2.4289
#1	.00058	.19258	.00110	.00095	.00341	.05325	2.0045
#2	-.00032	.19496	-.00108	.00268	.00391	.05311	1.9367
#3	.00049	.19350	.00439	-.00016	.00392	.05239	2.0303
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15768.	98900.	2948.5
Stddev	13.	185.	17.5
%RSD	.08198	.18746	.59303
#1	15769.	99027.	2966.7
#2	15754.	98687.	2946.8
#3	15780.	98985.	2931.9

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511052701PS Acquired: 11/17/2015 11:15:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546507-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21516	5.5843	.22037	1.2328	.59621	.02692	63.649	.02778
Stddev	.00050	.0174	.00359	.0050	.00447	.00013	.086	.00008
%RSD	.23127	.31109	1.6296	.40606	.74983	.47404	.13534	.27522
#1	.21468	5.5643	.21623	1.2273	.59681	.02677	63.654	.02770
#2	.21511	5.5955	.22255	1.2372	.59147	.02701	63.560	.02777
#3	.21567	5.5931	.22234	1.2338	.60034	.02697	63.732	.02785
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.15658	.27280	.27876	4.4893	36.063	.55107	30.454	1.3402
Stddev	.00056	.00145	.00151	.0155	.167	.00232	.050	.0055
%RSD	.35459	.53294	.54199	.34624	.46265	.42169	.16439	.41103
#1	.15704	.27117	.27896	4.4768	35.998	.55067	30.511	1.3436
#2	.15673	.27396	.28016	4.5067	35.939	.54897	30.417	1.3339
#3	.15596	.27327	.27716	4.4844	36.253	.55357	30.433	1.3431
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.56449	83.196	.37073	5.8280	.28759	.65178	.21209	7.2318
Stddev	.00069	.323	.00091	.0154	.00208	.00250	.00500	.0119
%RSD	.12179	.38873	.24607	.26436	.72439	.38338	2.3552	.16493
#1	.56453	82.956	.36968	5.8166	.28669	.65330	.21239	7.2186
#2	.56516	83.068	.37127	5.8456	.28610	.64890	.20695	7.2417
#3	.56379	83.564	.37125	5.8219	.28997	.65315	.21693	7.2353
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511052701PS Acquired: 11/17/2015 11:15:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546507-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.54552	.71357	.54004	.26944	.55174	.58146	2.3513
Stddev	.00206	.00318	.00678	.00240	.00100	.00077	.1544
%RSD	.37678	.44599	1.2552	.89022	.18094	.13177	6.5669
#1	.54440	.71251	.54004	.26853	.55060	.58126	2.2257
#2	.54789	.71105	.53325	.26763	.55243	.58230	2.5237
#3	.54426	.71715	.54681	.27216	.55220	.58081	2.3045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15481.	97470.	2916.3
Stddev	17.	308.	2.1
%RSD	.10903	.31612	.07313
#1	15500.	97794.	2917.1
#2	15468.	97434.	2918.0
#3	15476.	97181.	2913.9

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511052701SDL Acquired: 11/17/2015 11:19:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG546507-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00042	.04576	.00254	.03401	.01040	.00001	12.063	.00014
Stddev	.00108	.00087	.00155	.00114	.00128	.00000	.017	.00011
%RSD	253.25	1.9106	61.125	3.3535	12.302	35.006	.14392	81.869
#1	-.00156	.04560	.00374	.03531	.00968	.00001	12.045	.00025
#2	-.00029	.04671	.00309	.03354	.01188	.00001	12.063	.00002
#3	.00058	.04498	.00079	.03317	.00964	.00001	12.080	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01003	-.00028	.00140	.49644	1.8275	-.00302	5.2017	.22142
Stddev	.00004	.00058	.00065	.01764	.0484	.00211	.1238	.00220
%RSD	.37075	203.96	46.166	3.5538	2.6484	70.033	2.3804	.99267
#1	.01001	-.00060	.00179	.50075	1.8799	-.00151	5.0601	.21925
#2	.01007	-.00064	.00065	.47704	1.7845	-.00211	5.2557	.22364
#3	.01001	.00038	.00176	.51153	1.8182	-.00543	5.2894	.22139
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00180	11.708	.02121	.08622	.00557	-.00049	-.00357	.89417
Stddev	.00011	.069	.00060	.00251	.00139	.00079	.00242	.00153
%RSD	6.1364	.58609	2.8238	2.9102	24.948	160.75	67.811	.17160
#1	.00190	11.631	.02106	.08519	.00710	.00031	-.00078	.89509
#2	.00181	11.763	.02188	.08908	.00523	-.00052	-.00503	.89502
#3	.00168	11.730	.02071	.08438	.00439	-.00127	-.00491	.89240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511052701SDL Acquired: 11/17/2015 11:19:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG546507-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00065	.03564	.00022	.00175	.00075	.01249	.56448
Stddev	.00068	.00041	.00294	.00183	.00036	.00021	.16144
%RSD	105.22	1.1589	1317.3	104.51	48.114	1.6495	28.600
#1	-.00078	.03517	-.00315	.00386	.00117	.01262	.61711
#2	.00009	.03596	.00157	.00070	.00050	.01226	.38330
#3	-.00125	.03579	.00225	.00069	.00059	.01261	.69304
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	18186.	113850.	3315.1
Stddev	15.	542.	21.8
%RSD	.08245	.47646	.65721
#1	18178.	114470.	3332.5
#2	18203.	113650.	3290.7
#3	18176.	113440.	3322.2

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511052701SDL Acquired: 11/17/2015 11:23:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG546507-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	.00019	-.00275	.00713	.00171	.00004	2.4184	-.00002
Stddev	.00087	.00936	.00066	.00118	.00092	.00001	.0245	.00017
%RSD	113.11	4856.4	24.166	16.572	53.753	41.352	1.0137	988.98
#1	-.00018	-.00915	-.00326	.00836	.00176	.00005	2.4173	.00018
#2	.00153	.00958	-.00200	.00601	.00076	.00002	2.3944	-.00013
#3	.00097	.00015	-.00299	.00701	.00260	.00004	2.4434	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00188	-.00110	.00020	.10592	.23996	-.00042	1.0737	.04301
Stddev	.00031	.00039	.00029	.01707	.01579	.00197	.0805	.00033
%RSD	16.699	35.634	149.50	16.119	6.5797	473.04	7.5010	.76653
#1	.00153	-.00135	.00033	.11702	.22293	-.00100	1.0696	.04280
#2	.00214	-.00065	.00040	.11448	.24283	.00178	.99521	.04284
#3	.00197	-.00130	-.00014	.08626	.25412	-.00202	1.1561	.04339
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	2.4029	.00375	.01764	.00277	-.00005	-.00581	.18219
Stddev	.00016	.0142	.00049	.00285	.00119	.00077	.00327	.00186
%RSD	72.805	.59054	13.024	16.174	43.086	1470.3	56.337	1.0235
#1	.00018	2.3869	.00411	.01439	.00203	.00042	-.00366	.18156
#2	.00040	2.4081	.00395	.01975	.00212	-.00094	-.00957	.18072
#3	.00009	2.4138	.00320	.01877	.00414	.00037	-.00419	.18429
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511052701SDL Acquired: 11/17/2015 11:23:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG546507-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00087	.00723	.00607	.00223	-.00032	.00269	.22270
Stddev	.00027	.00045	.00080	.00083	.00068	.00011	.13647
%RSD	31.320	6.1809	13.227	37.193	213.56	4.2594	61.281
#1	-.00066	.00690	.00544	.00228	-.00102	.00260	.22170
#2	-.00077	.00773	.00698	.00304	.00034	.00266	.35966
#3	-.00118	.00705	.00580	.00138	-.00027	.00282	.08673
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	18127.	113340.	3269.4
Stddev	11.	203.	15.4
%RSD	.06115	.17898	.47233
#1	18118.	113390.	3252.7
#2	18123.	113110.	3272.2
#3	18140.	113500.	3283.2

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCV Acquired: 11/17/2015 11:27:37 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.37974	9.4209	.37741	.47280	.95606	.04746	9.5113
Stddev	.00155	.0192	.00088	.00365	.00348	.00017	.0365
%RSD	.40755	.20359	.23259	.77246	.36367	.35136	.38391
#1	.37829	9.4155	.37678	.47307	.95798	.04750	9.4704
#2	.37954	9.4050	.37704	.46902	.95205	.04728	9.5228
#3	.38137	9.4422	.37841	.47631	.95815	.04760	9.5407
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04766	.19157	.47662	.48005	3.7715	47.926	.95867
Stddev	.00024	.00009	.00019	.00071	.0223	.016	.00207
%RSD	.49622	.04586	.03935	.14840	.59226	.03380	.21643
#1	.04783	.19167	.47683	.48048	3.7752	47.914	.96096
#2	.04776	.19150	.47647	.47923	3.7475	47.919	.95816
#3	.04739	.19154	.47656	.48044	3.7917	47.944	.95690
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.5510	.47807	.95214	48.061	.48012	9.4391	.48074
Stddev	.0147	.00269	.00078	.087	.00077	.0225	.00324
%RSD	.15437	.56288	.08215	.18186	.16057	.23876	.67311
#1	9.5618	.47797	.95300	48.056	.48017	9.4528	.48298
#2	9.5342	.47544	.95192	47.975	.47932	9.4515	.48221
#3	9.5570	.48081	.95148	48.150	.48086	9.4131	.47703
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCV Acquired: 11/17/2015 11:27:37 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.1298	.37574	4.7447	.95155	.95502	.94848	.48202
Stddev	.0025	.00489	.0136	.00162	.00256	.00848	.00312
%RSD	.22204	1.3021	.28641	.16980	.26843	.89426	.64660
#1	1.1314	.37935	4.7415	.95225	.95674	.95122	.48050
#2	1.1311	.37017	4.7329	.95270	.95207	.93897	.47996
#3	1.1269	.37769	4.7596	.94970	.95624	.95525	.48561
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.95019	.95450	F .85302
Stddev	.00266	.00046	.09287
%RSD	.27999	.04829	10.887
#1	.95178	.95406	.86355
#2	.94711	.95498	.94017
#3	.95167	.95446	.75534
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	17205.	106840.	3176.6
Stddev	11.	316.	13.6
%RSD	.06214	.29574	.42811
#1	17199.	106480.	3166.2
#2	17218.	107040.	3171.7
#3	17200.	107010.	3192.0

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCB Acquired: 11/17/2015 11:31:22 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	-.00246	-.00090	-.00015	-.00010	.00004	-.01738
Stddev	.00145	.00280	.00332	.00134	.00045	.00002	.00799
%RSD	533.31	113.90	367.55	912.31	465.96	41.462	45.966
#1	.00039	-.00350	-.00048	.00106	-.00055	.00002	-.01157
#2	-.00124	.00071	-.00442	-.00159	.00035	.00005	-.01408
#3	.00166	-.00460	.00219	.00009	-.00009	.00004	-.02650
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	.00000	-.00064	.00042	.03077	.02361	-.00271
Stddev	.00007	.00013	.00009	.00008	.01063	.09248	.00422
%RSD	25.775	2872.0	13.638	19.446	34.555	391.73	155.63
#1	-.00024	-.00010	-.00055	.00044	.04303	-.07782	.00099
#2	-.00021	-.00004	-.00064	.00050	.02426	.10324	-.00730
#3	-.00034	.00015	-.00073	.00033	.02500	.04540	-.00181
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.03619	.00008	.00073	.01492	.00022	.00199	.00211
Stddev	.03262	.00103	.00009	.03920	.00054	.00151	.00218
%RSD	90.122	1343.4	11.607	262.81	242.32	75.782	103.41
#1	-.05422	.00023	.00064	-.00969	-.00035	.00089	.00231
#2	.00146	-.00102	.00081	-.00568	.00029	.00138	-.00016
#3	-.05582	.00102	.00075	.06012	.00073	.00371	.00418
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCB Acquired: 11/17/2015 11:31:22 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00301	-.00444	.00182	-.00020	-.00074	.00107	.00176
Stddev	.00160	.00131	.00065	.00033	.00026	.00278	.00269
%RSD	53.040	29.538	35.860	164.24	34.883	260.68	152.90
#1	-.00239	-.00293	.00107	-.00004	-.00080	.00226	.00264
#2	-.00483	-.00512	.00225	.00001	-.00096	-.00211	.00391
#3	-.00182	-.00527	.00213	-.00058	-.00046	.00306	-.00126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00013	.00014	F .14918
Stddev	.00077	.00008	.09181
%RSD	595.34	59.154	61.539
#1	-.00095	.00013	.14524
#2	.00000	.00022	.05941
#3	.00056	.00006	.24289
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	17547.	110750.	3202.4
Stddev	28.	235.	17.1
%RSD	.15929	.21254	.53430
#1	17550.	110490.	3185.0
#2	17518.	110950.	3219.2
#3	17574.	110810.	3203.2

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: LLCCV Acquired: 11/17/2015 11:35:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00422	.07990	-.00042	.03969	.00472	.00080	.16799	.00037
Stddev	.00040	.01113	.00383	.00509	.00053	.00012	.01455	.00023
%RSD	9.5253	13.934	905.10	12.823	11.144	15.551	8.6590	60.990
#1	.00424	.07750	.00249	.03581	.00487	.00074	.16173	.00021
#2	.00461	.07017	.00101	.03782	.00413	.00071	.15762	.00027
#3	.00381	.09204	-.00476	.04546	.00515	.00094	.18462	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00191	.00078	.00264	.06601	.44911	.03804	.18357	.00306
Stddev	.00013	.00053	.00054	.00406	.05172	.00216	.10651	.00284
%RSD	6.9527	68.652	20.394	6.1475	11.516	5.6905	58.021	92.880
#1	.00181	.00027	.00301	.06965	.45228	.03554	.23372	-.00015
#2	.00187	.00073	.00289	.06674	.49917	.03927	.25575	.00524
#3	.00206	.00133	.00202	.06164	.39588	.03930	.06124	.00408
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00387	.21507	.00843	.38669	.00450	.03622	.00538	.39634
Stddev	.00009	.00543	.00059	.00823	.00210	.00099	.00368	.00401
%RSD	2.2047	2.5258	7.0033	2.1294	46.705	2.7320	68.443	1.0128
#1	.00377	.21641	.00826	.39358	.00398	.03686	.00419	.40081
#2	.00393	.20910	.00909	.38892	.00681	.03671	.00952	.39304
#3	.00390	.21971	.00794	.37757	.00270	.03508	.00244	.39518
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: LLCCV Acquired: 11/17/2015 11:35:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20418	.01892	.01700	.08569	.00371	.00886	11.620
Stddev	.00309	.00030	.00516	.00142	.00006	.00020	.369
%RSD	1.5134	1.5797	30.340	1.6535	1.6480	2.2498	3.1730
#1	.20733	.01900	.01911	.08672	.00373	.00908	11.653
#2	.20405	.01859	.02076	.08629	.00365	.00882	11.235
#3	.20115	.01917	.01112	.08408	.00377	.00869	11.970
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	17213.	108060.	3232.5
Stddev	115.	6989.	10.9
%RSD	.66932	6.4677	.33802
#1	17080.	112340.	3225.8
#2	17281.	111840.	3226.6
#3	17277.	99993.	3245.1

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: LLCCV Acquired: 11/17/2015 11:39:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00955	.15600	.00693	.07550	.00809	.00158	.41087	.00072
Stddev	.00054	.00337	.00190	.00060	.00015	.00002	.00553	.00018
%RSD	5.6895	2.1604	27.410	.79152	1.8784	1.4145	1.3456	24.891
#1	.00929	.15213	.00626	.07482	.00792	.00157	.41415	.00090
#2	.01017	.15830	.00545	.07592	.00812	.00160	.41398	.00073
#3	.00919	.15755	.00907	.07577	.00822	.00156	.40449	.00054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00380	.00308	.00468	.09467	.70818	.07778	.35411	.00699
Stddev	.00012	.00036	.00024	.01556	.10086	.00654	.11800	.00119
%RSD	3.1741	11.809	5.1080	16.432	14.242	8.4061	33.322	16.973
#1	.00394	.00339	.00446	.09530	.59694	.07186	.27841	.00631
#2	.00375	.00268	.00464	.10991	.79364	.08480	.49007	.00630
#3	.00371	.00316	.00494	.07881	.73397	.07669	.29384	.00836
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00748	.42218	.01618	.74977	.00947	.07223	.01002	.76443
Stddev	.00031	.02465	.00126	.00734	.00218	.00165	.00200	.00323
%RSD	4.1639	5.8397	7.7717	.97879	23.046	2.2826	19.942	.42225
#1	.00744	.42206	.01508	.75730	.01148	.07354	.01143	.76493
#2	.00781	.39759	.01755	.74938	.00979	.07276	.01090	.76737
#3	.00719	.44690	.01592	.74264	.00715	.07038	.00773	.76097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: LLCCV Acquired: 11/17/2015 11:39:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39319	.03895	.02799	.16571	.00746	.01713	25.703
Stddev	.00436	.00036	.00420	.00191	.00028	.00002	.244
%RSD	1.1088	.91429	15.012	1.1539	3.8214	.09216	.94978
#1	.39598	.03854	.02449	.16791	.00736	.01712	25.656
#2	.39543	.03914	.03265	.16448	.00778	.01713	25.486
#3	.38817	.03917	.02684	.16473	.00723	.01715	25.968
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	17465.	110010.	3203.1
Stddev	7.	141.	27.4
%RSD	.03851	.12838	.85592
#1	17473.	109870.	3230.6
#2	17462.	109990.	3203.0
#3	17461.	110160.	3175.8

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: PBW B4 Acquired: 11/17/2015 11:43:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546952-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	.00289	-.00265	-.00006	.00046	.00006	-.00838	.00012
Stddev	.00128	.00686	.00075	.00083	.00109	.00004	.01538	.00020
%RSD	175.91	236.85	28.184	1385.0	234.65	65.891	183.60	160.34
#1	.00035	.00947	-.00308	.00064	.00016	.00008	-.02264	.00004
#2	.00216	.00343	-.00308	.00015	-.00044	.00008	-.01042	-.00002
#3	-.00032	-.00421	-.00179	-.00097	.00167	.00001	.00792	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.00011	.00049	.02325	-.00551	-.00109	-.05695	-.00013
Stddev	.00024	.00025	.00036	.01639	.05900	.00346	.08493	.00069
%RSD	1867.5	234.87	73.472	70.513	1070.3	316.30	149.13	541.86
#1	-.00024	.00033	.00012	.03425	.06252	.00033	-.01070	-.00071
#2	.00003	.00014	.00049	.03108	-.04273	-.00504	-.15497	-.00031
#3	.00025	-.00016	.00084	.00441	-.03632	.00142	-.00518	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00038	.00427	.00030	.00343	.00124	.00002	-.00240	.00583
Stddev	.00024	.01062	.00043	.00297	.00266	.00069	.00187	.00219
%RSD	62.784	248.39	139.70	86.783	213.97	3013.3	77.736	37.649
#1	-.00011	.01575	-.00019	.00286	-.00149	.00022	-.00142	.00506
#2	-.00056	.00226	.00053	.00664	.00139	-.00074	-.00456	.00412
#3	-.00048	-.00519	.00057	.00078	.00382	.00059	-.00123	.00830
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: PBW B4 Acquired: 11/17/2015 11:43:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546952-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00059	-.00012	.00154	.00085	-.00009	.00104	.25659
Stddev	.00109	.00035	.00195	.00097	.00050	.00016	.30850
%RSD	184.77	289.16	127.04	114.45	559.75	15.755	120.23
#1	.00020	-.00003	.00115	-.00025	-.00063	.00118	.61233
#2	-.00014	.00017	.00366	.00122	.00002	.00086	.09474
#3	-.00184	-.00051	-.00019	.00158	.00035	.00108	.06269
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16514.	104610.	3035.0
Stddev	64.	306.	2.6
%RSD	.38678	.29274	.08429
#1	16587.	104850.	3036.6
#2	16475.	104720.	3036.4
#3	16479.	104260.	3032.1

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: LCSW B4 Acquired: 11/17/2015 11:50:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546952-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20254	5.0111	.19502	.98791	.51261	.02481	5.1222	.02507
Stddev	.00077	.0168	.00072	.00771	.00166	.00008	.0279	.00023
%RSD	.37888	.33603	.37144	.78054	.32333	.30449	.54379	.91050
#1	.20202	4.9917	.19574	.97904	.51431	.02474	5.1525	.02524
#2	.20217	5.0223	.19429	.99166	.51100	.02489	5.0977	.02517
#3	.20342	5.0193	.19503	.99303	.51251	.02480	5.1163	.02481
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10380	.25294	.25960	2.0506	25.328	.51501	5.0973	.25502
Stddev	.00062	.00096	.00116	.0107	.143	.00477	.0607	.00223
%RSD	.59744	.37995	.44840	.52058	.56435	.92689	1.1901	.87613
#1	.10346	.25241	.25961	2.0585	25.408	.51118	5.1093	.25746
#2	.10452	.25236	.26075	2.0385	25.163	.51350	5.1511	.25449
#3	.10343	.25405	.25842	2.0548	25.412	.52036	5.0316	.25309
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52235	25.528	.25940	4.9426	.25702	.60354	.19129	2.5460
Stddev	.00177	.066	.00122	.0104	.00186	.00525	.00541	.0007
%RSD	.33833	.25943	.47160	.20999	.72410	.86905	2.8264	.02736
#1	.52353	25.604	.26022	4.9537	.25912	.59917	.18508	2.5453
#2	.52320	25.492	.25999	4.9332	.25558	.60935	.19379	2.5461
#3	.52032	25.486	.25799	4.9408	.25637	.60209	.19499	2.5466
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: LCSW B4 Acquired: 11/17/2015 11:50:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546952-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51522	.50801	.50708	.25810	.50925	.50712	1.7293
Stddev	.00165	.00169	.00641	.00296	.00208	.00181	.1133
%RSD	.32122	.33191	1.2642	1.1477	.40873	.35734	6.5544
#1	.51550	.50955	.51248	.25946	.50688	.50887	1.6771
#2	.51671	.50621	.49999	.26014	.51007	.50725	1.6514
#3	.51344	.50829	.50877	.25471	.51079	.50525	1.8593
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16175.	102290.	3053.7
Stddev	67.	324.	11.2
%RSD	.41213	.31674	.36541
#1	16154.	102650.	3040.8
#2	16121.	102220.	3059.7
#3	16250.	102010.	3060.5

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511079602 Acquired: 11/17/2015 11:54:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00044	.11954	-.00391	.00542	.00864	.00003	1.4859	.00015
Stddev	.00069	.00403	.00197	.00032	.00049	.00002	.0258	.00012
%RSD	158.55	3.3677	50.235	5.9618	5.6596	63.607	1.7379	82.206
#1	.00017	.12097	-.00505	.00553	.00875	.00002	1.4589	.00001
#2	-.00008	.12265	-.00504	.00567	.00907	.00006	1.5104	.00020
#3	.00123	.11499	-.00164	.00505	.00811	.00002	1.4885	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	-.00002	.00073	.18902	.54571	-.00196	.68324	.00580
Stddev	.00012	.00006	.00037	.00722	.12167	.00203	.06855	.00163
%RSD	146.98	303.08	50.554	3.8219	22.296	103.70	10.033	28.047
#1	-.00004	-.00008	.00031	.19583	.43583	-.00274	.63281	.00728
#2	-.00022	-.00002	.00090	.18980	.52482	.00035	.76129	.00605
#3	.00001	.00004	.00100	.18144	.67647	-.00349	.65562	.00406
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	1.5525	.00049	.00294	.00112	-.00338	.00021	3.8539
Stddev	.00030	.0021	.00052	.00082	.00081	.00141	.00502	.0324
%RSD	73.018	.13588	105.46	27.957	72.498	41.672	2390.8	.84141
#1	.00023	1.5543	.00097	.00385	.00182	-.00180	-.00535	3.8747
#2	.00077	1.5502	-.00006	.00268	.00023	-.00386	.00156	3.8704
#3	.00025	1.5531	.00057	.00227	.00130	-.00449	.00441	3.8165
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511079602 Acquired: 11/17/2015 11:54:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00055	.01035	.00405	.00103	-.00019	.00304	.23262
Stddev	.00044	.00020	.00600	.00076	.00028	.00008	.11089
%RSD	79.521	1.9595	148.09	73.764	142.88	2.6654	47.670
#1	-.00041	.01021	.00982	.00036	.00007	.00295	.21650
#2	-.00103	.01058	.00448	.00185	-.00018	.00311	.35069
#3	-.00019	.01026	-.00215	.00088	-.00048	.00305	.13068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16691.	106190.	3083.5
Stddev	52.	248.	10.3
%RSD	.31065	.23386	.33373
#1	16750.	106470.	3094.7
#2	16653.	105990.	3081.4
#3	16670.	106100.	3074.4

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511079607 Acquired: 11/17/2015 11:58:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546952-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00083	.11154	-.00121	.00181	.00805	.00007	1.3341	.00004
Stddev	.00144	.00622	.00185	.00142	.00072	.00005	.0221	.00013
%RSD	174.67	5.5728	152.32	78.146	8.9163	78.002	1.6597	318.37
#1	.00120	.11857	.00083	.00298	.00874	.00011	1.3564	.00003
#2	-.00077	.10679	-.00276	.00223	.00810	.00001	1.3121	-.00008
#3	.00204	.10926	-.00171	.00023	.00730	.00008	1.3336	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	-.00002	.00063	.19268	.72362	-.00379	.69689	.00731
Stddev	.00026	.00029	.00131	.01242	.06293	.00339	.09160	.00100
%RSD	469.59	1432.7	209.33	6.4442	8.6966	89.322	13.144	13.704
#1	.00019	-.00035	.00199	.20051	.76827	-.00442	.67583	.00697
#2	-.00032	.00014	.00050	.17836	.75095	-.00682	.79718	.00652
#3	-.00003	.00015	-.00062	.19917	.65165	-.00014	.61765	.00844
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	1.6340	.00087	.00292	-.00037	.00109	-.00108	4.0556
Stddev	.00020	.0428	.00051	.00125	.00232	.00499	.00111	.0308
%RSD	281.57	2.6182	58.578	42.766	631.63	457.02	103.20	.76064
#1	-.00001	1.6433	.00113	.00359	-.00294	.00490	.00021	4.0712
#2	.00030	1.5874	.00028	.00148	.00156	.00293	-.00176	4.0755
#3	-.00007	1.6714	.00120	.00370	.00028	-.00455	-.00167	4.0201
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511079607 Acquired: 11/17/2015 11:58:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546952-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00312	.00992	.00469	.00078	-.00010	.00312	.38400
Stddev	.00017	.00011	.00149	.00189	.00076	.00014	.33937
%RSD	5.3410	1.0896	31.747	242.33	753.69	4.5948	88.378
#1	.00312	.01004	.00302	-.00081	-.00040	.00308	.51983
#2	.00328	.00983	.00587	.00288	.00076	.00299	.63442
#3	.00295	.00989	.00520	.00028	-.00066	.00327	-.00225
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16618.	105040.	3058.0
Stddev	6.	416.	3.2
%RSD	.03400	.39602	.10412
#1	16617.	105260.	3054.5
#2	16624.	105290.	3058.7
#3	16613.	104560.	3060.8

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511079608S Acquired: 11/17/2015 12:02:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546952-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20455	5.1879	.19695	1.0021	.53163	.02525	6.5272	.02554
Stddev	.00185	.0126	.00115	.0036	.00082	.00008	.0111	.00011
%RSD	.90299	.24357	.58553	.35929	.15468	.30363	.17048	.43605
#1	.20316	5.1785	.19574	.99939	.53220	.02516	6.5399	.02544
#2	.20384	5.1828	.19803	1.0007	.53069	.02529	6.5189	.02566
#3	.20665	5.2022	.19708	1.0062	.53200	.02530	6.5230	.02553
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10519	.25904	.26225	2.2673	26.232	.52447	5.8807	.26608
Stddev	.00042	.00073	.00142	.0209	.061	.00580	.0511	.00113
%RSD	.39803	.28000	.53961	.92134	.23097	1.1054	.86831	.42490
#1	.10545	.25988	.26243	2.2554	26.177	.51780	5.9291	.26661
#2	.10471	.25867	.26357	2.2550	26.297	.52827	5.8857	.26684
#3	.10543	.25858	.26075	2.2914	26.221	.52735	5.8273	.26478
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52716	27.627	.26242	4.9780	.26144	.60792	.19373	6.6880
Stddev	.00218	.083	.00009	.0045	.00496	.00242	.00269	.0120
%RSD	.41448	.30209	.03370	.08995	1.8974	.39792	1.3865	.17894
#1	.52854	27.537	.26248	4.9831	.26535	.60690	.19574	6.6969
#2	.52831	27.702	.26246	4.9757	.25586	.61068	.19068	6.6927
#3	.52464	27.643	.26232	4.9751	.26311	.60617	.19477	6.6744
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511079608S Acquired: 11/17/2015 12:02:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546952-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52102	.52822	.52181	.26240	.51828	.51475	.71126
Stddev	.00134	.00147	.00636	.00094	.00122	.00128	.31004
%RSD	.25687	.27811	1.2195	.35985	.23450	.24887	43.590
#1	.51980	.52697	.52786	.26289	.51688	.51592	.37155
#2	.52245	.52784	.52239	.26131	.51890	.51494	.78329
#3	.52081	.52984	.51518	.26299	.51906	.51338	.97895
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16125.	101980.	3020.3
Stddev	34.	186.	20.6
%RSD	.21006	.18235	.68159
#1	16095.	102070.	3030.8
#2	16162.	102110.	2996.5
#3	16119.	101770.	3033.4

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511079609SD Acquired: 11/17/2015 12:06:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546952-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20337	5.1377	.19559	.98874	.52383	.02497	6.4694	.02516
Stddev	.00033	.0072	.00142	.00051	.00129	.00010	.0421	.00032
%RSD	.16241	.13984	.72799	.05154	.24618	.40798	.65007	1.2643
#1	.20301	5.1348	.19397	.98890	.52383	.02502	6.4297	.02493
#2	.20344	5.1324	.19617	.98914	.52512	.02485	6.5135	.02503
#3	.20366	5.1459	.19664	.98817	.52254	.02504	6.4651	.02552
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10449	.25571	.25926	2.2124	25.930	.51905	5.8459	.26238
Stddev	.00071	.00120	.00131	.0086	.139	.00260	.0741	.00284
%RSD	.68228	.46996	.50522	.38891	.53719	.50138	1.2672	1.0823
#1	.10531	.25708	.25972	2.2224	26.085	.52141	5.8918	.26566
#2	.10413	.25517	.26028	2.2075	25.889	.51949	5.8854	.26075
#3	.10402	.25486	.25778	2.2075	25.816	.51626	5.7604	.26074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52193	27.180	.25851	4.9397	.25829	.60485	.19283	6.5483
Stddev	.00077	.084	.00035	.0016	.00078	.00210	.00420	.0113
%RSD	.14685	.30885	.13600	.03164	.30363	.34698	2.1771	.17225
#1	.52248	27.260	.25820	4.9412	.25913	.60726	.18909	6.5604
#2	.52106	27.187	.25845	4.9381	.25757	.60349	.19203	6.5464
#3	.52226	27.093	.25889	4.9399	.25819	.60378	.19737	6.5381
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511079609SD Acquired: 11/17/2015 12:06:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546952-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51773	.52156	.51185	.25805	.51185	.50795	.69051
Stddev	.00032	.00167	.00393	.00175	.00027	.00152	.06802
%RSD	.06156	.32114	.76802	.67783	.05198	.29917	9.8511
#1	.51789	.52332	.50814	.25627	.51204	.50902	.71521
#2	.51795	.52136	.51597	.25976	.51198	.50621	.61359
#3	.51737	.51999	.51144	.25813	.51155	.50863	.74274
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16140.	102040.	3026.6
Stddev	20.	305.	28.2
%RSD	.12462	.29927	.93038
#1	16117.	101840.	3001.4
#2	16154.	101900.	3021.3
#3	16149.	102400.	3057.0

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511079614 Acquired: 11/17/2015 12:09:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00109	.08359	-.00085	.00687	.01014	.00003	1.7846	.00007
Stddev	.00058	.00214	.00066	.00007	.00082	.00003	.0087	.00039
%RSD	53.506	2.5561	77.426	.95945	8.0508	102.20	.48813	561.56
#1	.00168	.08583	-.00148	.00694	.01050	.00000	1.7846	.00006
#2	.00108	.08157	-.00089	.00682	.01072	.00003	1.7933	-.00032
#3	.00051	.08337	-.00017	.00684	.00921	.00007	1.7758	.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	-.00022	.00110	.28079	.69435	.00070	.93363	.01237
Stddev	.00025	.00020	.00076	.00699	.07743	.00355	.04685	.00154
%RSD	240.46	86.917	69.555	2.4898	11.151	506.18	5.0176	12.421
#1	-.00018	-.00035	.00195	.27848	.73375	.00447	.88857	.01400
#2	.00023	-.00033	.00047	.27524	.74416	-.00259	.98208	.01094
#3	.00026	.00000	.00088	.28864	.60515	.00022	.93024	.01217
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	2.0376	-.00022	.00675	-.00085	-.00148	-.00285	4.6226
Stddev	.00023	.0126	.00075	.00404	.00120	.00274	.00501	.0467
%RSD	126.79	.61947	340.89	59.817	141.80	185.18	175.53	1.0099
#1	.00045	2.0261	-.00108	.01140	.00054	.00024	-.00857	4.6605
#2	.00003	2.0511	.00013	.00465	-.00159	-.00004	.00077	4.6369
#3	.00007	2.0355	.00029	.00419	-.00150	-.00464	-.00076	4.5705
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511079614 Acquired: 11/17/2015 12:09:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.01372	.01231	.00030	-.00019	.00197	.24684
Stddev	.00039	.00034	.00204	.00019	.00041	.00017	.14073
%RSD	301.18	2.4823	16.594	62.621	222.14	8.7935	57.011
#1	.00015	.01358	.01060	.00012	-.00042	.00209	.19838
#2	-.00027	.01411	.01457	.00029	.00029	.00205	.40539
#3	.00051	.01348	.01176	.00049	-.00043	.00177	.13675
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16573.	105100.	3062.3
Stddev	53.	124.	12.3
%RSD	.32266	.11798	.40111
#1	16523.	105000.	3062.1
#2	16568.	105070.	3050.2
#3	16630.	105240.	3074.7

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511079614PS Acquired: 11/17/2015 12:13:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG547108-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20625	5.1816	.19673	1.0056	.53121	.02537	6.8289	.02592
Stddev	.00096	.0096	.00123	.0071	.00028	.00009	.0147	.00016
%RSD	.46443	.18571	.62396	.70937	.05205	.35812	.21568	.60695
#1	.20580	5.1874	.19781	.99740	.53136	.02527	6.8384	.02588
#2	.20735	5.1869	.19540	1.0100	.53138	.02539	6.8363	.02579
#3	.20560	5.1705	.19700	1.0094	.53089	.02545	6.8119	.02609
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10584	.25952	.26396	2.3187	26.344	.52527	5.8945	.27123
Stddev	.00060	.00010	.00046	.0115	.044	.00610	.0878	.00065
%RSD	.56644	.03888	.17337	.49685	.16544	1.1607	1.4902	.23868
#1	.10652	.25962	.26442	2.3134	26.295	.53173	5.8120	.27182
#2	.10541	.25952	.26350	2.3107	26.378	.52447	5.9868	.27134
#3	.10558	.25941	.26396	2.3319	26.360	.51962	5.8846	.27053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52773	27.719	.26333	4.9923	.26362	.61072	.19787	6.7672
Stddev	.00118	.044	.00110	.0108	.00323	.00267	.00226	.0135
%RSD	.22290	.15821	.41656	.21664	1.2271	.43663	1.1434	.19896
#1	.52908	27.743	.26396	5.0016	.26393	.61210	.20048	6.7814
#2	.52714	27.745	.26206	4.9948	.26024	.60765	.19675	6.7546
#3	.52696	27.668	.26397	4.9805	.26668	.61242	.19639	6.7656
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511079614PS Acquired: 11/17/2015 12:13:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG547108-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52431	.52960	.52019	.26424	.51953	.51548	.56277
Stddev	.00211	.00115	.00395	.00148	.00104	.00088	.10487
%RSD	.40161	.21727	.75930	.56199	.19992	.16988	18.634
#1	.52659	.52904	.52408	.26589	.51903	.51626	.44803
#2	.52389	.53092	.51618	.26383	.52073	.51453	.58665
#3	.52245	.52884	.52030	.26300	.51884	.51566	.65364
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16235.	102920.	3061.2
Stddev	18.	268.	16.5
%RSD	.11032	.26002	.53869
#1	16222.	102800.	3064.6
#2	16255.	103220.	3043.3
#3	16227.	102720.	3075.7

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511079614SDL Acquired: 11/17/2015 12:17:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG547108-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.00862	-.00293	.00119	.00203	.00003	.32715	-.00016
Stddev	.00079	.00122	.00056	.00160	.00050	.00003	.02434	.00006
%RSD	328.84	14.115	19.122	134.68	24.405	97.085	7.4393	35.241
#1	-.00042	.00957	-.00278	.00301	.00146	.00002	.33014	-.00014
#2	.00112	.00905	-.00355	.00059	.00236	.00001	.34986	-.00011
#3	.00002	.00725	-.00246	-.00002	.00228	.00007	.30146	-.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	-.00039	.00051	.07298	.13214	-.00092	.14277	.00138
Stddev	.00016	.00054	.00040	.01324	.02658	.00293	.10607	.00145
%RSD	1411.2	138.16	78.694	18.148	20.118	318.21	74.296	105.14
#1	.00005	-.00029	.00048	.08125	.10167	-.00428	.05533	.00279
#2	-.00019	-.00098	.00013	.05770	.15061	.00116	.26076	-.00010
#3	.00011	.00009	.00094	.07998	.14414	.00035	.11221	.00144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.37760	.00060	.00369	-.00037	-.00306	-.00417	.87370
Stddev	.00020	.01248	.00023	.00445	.00210	.00229	.00164	.00389
%RSD	164.43	3.3063	38.079	120.69	564.45	74.758	39.387	.44497
#1	-.00004	.37483	.00080	-.00010	-.00279	-.00321	-.00585	.87362
#2	.00035	.36673	.00065	.00258	.00105	-.00528	-.00257	.87763
#3	.00006	.39123	.00035	.00858	.00062	-.00070	-.00410	.86985
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511079614SDL Acquired: 11/17/2015 12:17:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG547108-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00006	.00234	.00392	.00150	-.00008	.00160	.29025
Stddev	.00040	.00028	.00645	.00268	.00056	.00006	.12052
%RSD	693.35	11.928	164.30	178.25	726.62	3.8945	41.522
#1	.00023	.00207	.00647	-.00108	-.00044	.00159	.36570
#2	-.00051	.00234	.00871	.00428	-.00036	.00166	.15126
#3	.00010	.00263	-.00341	.00132	.00057	.00154	.35379
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	17732.	111670.	3231.3
Stddev	22.	479.	17.7
%RSD	.12332	.42859	.54868
#1	17757.	111890.	3246.0
#2	17716.	112000.	3211.6
#3	17724.	111120.	3236.3

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511079614SDL Acquired: 11/17/2015 12:21:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG547108-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00101	-.00007	-.00211	-.00030	.00079	.00003	.04158	.00010
Stddev	.00079	.00340	.00198	.00200	.00080	.00002	.01090	.00003
%RSD	78.277	4541.2	93.409	661.71	101.91	68.761	26.217	30.407
#1	.00128	.00316	-.00031	-.00248	.00137	.00005	.03161	.00007
#2	.00164	.00024	-.00181	.00143	.00111	.00002	.03992	.00011
#3	.00012	-.00362	-.00423	.00015	-.00013	.00002	.05322	.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	-.00070	.00152	.02936	-.02840	.00085	.02924	.00122
Stddev	.00025	.00025	.00041	.02309	.05858	.00412	.07697	.00138
%RSD	722.20	35.419	27.131	78.635	206.31	484.57	263.21	113.70
#1	.00003	-.00099	.00147	.00294	-.06608	-.00385	-.05963	.00149
#2	.00029	-.00061	.00114	.03947	-.05820	.00382	.07427	.00244
#3	-.00021	-.00051	.00196	.04568	.03910	.00258	.07309	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	.08570	-.00013	.00037	.00118	-.00292	-.00600	.17615
Stddev	.00013	.02125	.00040	.00346	.00223	.00083	.00485	.00053
%RSD	82.135	24.796	312.24	927.60	189.38	28.618	80.962	.30261
#1	-.00028	.07958	.00033	.00218	-.00119	-.00375	-.00043	.17630
#2	-.00016	.10933	-.00031	.00255	.00323	-.00292	-.00823	.17555
#3	-.00002	.06817	-.00040	-.00362	.00148	-.00208	-.00933	.17659
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511079614SDL Acquired: 11/17/2015 12:21:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG547108-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00116	.00021	.00610	.00196	-.00040	.00227	.04866
Stddev	.00068	.00014	.00776	.00115	.00040	.00019	.13955
%RSD	58.433	69.709	127.15	58.414	100.80	8.3627	286.77
#1	-.00095	.00007	-.00282	.00197	-.00007	.00210	.04862
#2	-.00191	.00020	.01126	.00081	-.00029	.00247	.18824
#3	-.00061	.00035	.00987	.00311	-.00085	.00224	-.09087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	17830.	112280.	3256.5
Stddev	24.	69.	20.2
%RSD	.13636	.06138	.61979
#1	17824.	112310.	3273.2
#2	17856.	112340.	3262.2
#3	17809.	112210.	3234.0

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCV Acquired: 11/17/2015 12:25:40 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39891	9.9642	.39955	.49927	1.0169	.05016	10.120
Stddev	.00027	.0092	.00262	.00168	.0053	.00004	.051
%RSD	.06809	.09242	.65464	.33553	.52563	.07591	.50829
#1	.39904	9.9746	.39653	.49921	1.0118	.05013	10.074
#2	.39860	9.9571	.40101	.50098	1.0164	.05015	10.176
#3	.39910	9.9609	.40110	.49763	1.0224	.05021	10.111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05080	.20546	.49973	.51077	4.0521	50.280	1.0113
Stddev	.00008	.00097	.00087	.00280	.0278	.173	.0057
%RSD	.16517	.47310	.17504	.54740	.68670	.34438	.56769
#1	.05072	.20434	.49925	.50812	4.0559	50.101	1.0072
#2	.05089	.20592	.50074	.51370	4.0779	50.295	1.0179
#3	.05079	.20612	.49921	.51049	4.0226	50.446	1.0089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.083	.50577	1.0126	50.672	.50848	10.038	.50859
Stddev	.140	.00084	.0024	.187	.00113	.021	.00307
%RSD	1.3907	.16696	.24089	.36921	.22154	.20718	.60288
#1	9.9235	.50582	1.0098	50.470	.50779	10.015	.51212
#2	10.140	.50490	1.0142	50.704	.50978	10.045	.50706
#3	10.186	.50659	1.0138	50.840	.50787	10.055	.50658
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCV Acquired: 11/17/2015 12:25:40 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2049	.39989	5.0182	1.0201	1.0174	1.0109	.50976
Stddev	.0050	.00199	.0173	.0030	.0060	.0082	.00150
%RSD	.41640	.49692	.34536	.29256	.59308	.80753	.29473
#1	1.1995	.39779	4.9982	1.0167	1.0108	1.0037	.50882
#2	1.2093	.40016	5.0267	1.0218	1.0186	1.0198	.50897
#3	1.2060	.40173	5.0296	1.0219	1.0227	1.0093	.51149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0056	1.0119	F .82285
Stddev	.0008	.0026	.12388
%RSD	.08161	.26128	15.055
#1	1.0052	1.0091	.85739
#2	1.0066	1.0143	.68537
#3	1.0051	1.0124	.92580
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16600.	104030.	3119.3
Stddev	38.	86.	10.8
%RSD	.22868	.08283	.34547
#1	16641.	103960.	3130.1
#2	16594.	104120.	3108.6
#3	16565.	104000.	3119.2

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCB Acquired: 11/17/2015 12:29:24 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00087	.00312	-.00324	.00095	.00077	.00005	-.01538
Stddev	.00073	.00304	.00160	.00026	.00021	.00003	.00922
%RSD	83.378	97.503	49.234	27.649	27.933	61.827	59.960
#1	-.00015	.00176	-.00170	.00070	.00101	.00005	-.00773
#2	-.00161	.00660	-.00489	.00092	.00061	.00008	-.01278
#3	-.00085	.00099	-.00314	.00122	.00068	.00002	-.02561
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	-.00002	-.00088	.00006	.02574	.00539	-.00603
Stddev	.00007	.00030	.00087	.00179	.00526	.03921	.00116
%RSD	101.94	1423.1	99.250	3056.0	20.456	727.36	19.323
#1	-.00007	-.00020	-.00177	-.00191	.01986	-.03951	-.00483
#2	-.00015	.00032	-.00002	.00052	.03003	.02279	-.00716
#3	-.00000	-.00019	-.00085	.00157	.02732	.03288	-.00609
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02392	-.00045	.00101	.01003	.00004	.00171	-.00146
Stddev	.06373	.00047	.00006	.01553	.00030	.00213	.00131
%RSD	266.48	103.93	6.1958	154.77	691.52	124.73	90.229
#1	.00943	-.00035	.00108	.00646	-.00024	-.00075	-.00239
#2	.09364	-.00005	.00096	.02704	.00001	.00285	.00005
#3	-.03133	-.00097	.00098	-.00339	.00036	.00302	-.00202
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCB Acquired: 11/17/2015 12:29:24 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	-.00023	.00214	.00012	-.00024	.00890	.00364
Stddev	.00180	.00304	.00074	.00059	.00013	.00300	.00177
%RSD	337.01	1307.0	34.393	509.33	53.401	33.732	48.652
#1	-.00111	-.00096	.00218	-.00040	-.00033	.01037	.00497
#2	.00247	.00311	.00286	-.00002	-.00031	.01088	.00431
#3	.00025	-.00285	.00139	.00076	-.00009	.00544	.00163
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00045	.00005	F .22409
Stddev	.00118	.00013	.36497
%RSD	265.27	251.82	162.87
#1	.00021	.00007	-.06178
#2	-.00181	.00017	.09886
#3	.00027	-.00008	.63519
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16718.	105370.	3070.3
Stddev	27.	50.	15.6
%RSD	.16423	.04731	.50676
#1	16698.	105320.	3088.2
#2	16706.	105360.	3062.6
#3	16749.	105420.	3060.1

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511079308 Acquired: 11/17/2015 12:33:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	.01325	-.00043	.02852	.03025	.00004	93.272	.00050
Stddev	.00137	.00183	.00087	.00077	.00030	.00002	.122	.00014
%RSD	249.27	13.824	201.21	2.7087	.98858	47.770	.13130	27.774
#1	-.00094	.01359	-.00091	.02938	.03040	.00004	93.134	.00062
#2	.00177	.01489	.00057	.02789	.03044	.00002	93.370	.00055
#3	.00082	.01128	-.00096	.02828	.02990	.00006	93.310	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00322	.00141	.00097	.07231	1.2534	.06711	47.900	.13013
Stddev	.00031	.00041	.00060	.01221	.0858	.00401	.442	.00170
%RSD	9.6873	29.238	61.942	16.879	6.8469	5.9753	.92340	1.3082
#1	.00297	.00177	.00035	.08521	1.1699	.06395	47.410	.13179
#2	.00314	.00151	.00102	.06094	1.2491	.06576	48.270	.12839
#3	.00357	.00096	.00154	.07078	1.3413	.07162	48.019	.13022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	239.40	.00199	.08639	-.00159	.00366	-.00500	18.376
Stddev	.00036	.30	.00052	.00429	.00286	.00287	.00414	.065
%RSD	85.963	.12477	26.221	4.9697	180.10	78.440	82.840	.35387
#1	.00084	239.06	.00158	.08421	-.00056	.00360	-.00952	18.407
#2	.00019	239.57	.00258	.08363	-.00482	.00656	-.00412	18.419
#3	.00023	239.58	.00183	.09134	.00062	.00082	-.00137	18.301
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511079308 Acquired: 11/17/2015 12:33:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00050	1.2741	-.00865	-.00082	.00011	.00347	.10087
Stddev	.00018	.0020	.00478	.00128	.00089	.00012	.13151
%RSD	35.699	.15860	55.179	156.41	806.11	3.3546	130.38
#1	-.00062	1.2729	-.01415	-.00013	-.00031	.00335	-.05086
#2	-.00059	1.2765	-.00552	-.00229	-.00048	.00359	.17128
#3	-.00030	1.2730	-.00629	-.00003	.00113	.00346	.18218
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15639.	98294.	3052.8
Stddev	1.	223.	5.1
%RSD	.00735	.22648	.16827
#1	15638.	98096.	3054.6
#2	15639.	98535.	3056.9
#3	15640.	98251.	3047.1

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511079310 Acquired: 11/17/2015 12:37:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	.01359	.00170	.02528	.04488	.00005	97.824	.00011
Stddev	.00144	.00256	.00197	.00330	.00098	.00003	.183	.00010
%RSD	492.33	18.809	116.03	13.041	2.1855	71.272	.18664	92.318
#1	.00029	.01182	.00150	.02485	.04476	.00008	97.881	.00003
#2	-.00115	.01652	-.00017	.02877	.04591	.00001	97.971	.00008
#3	.00173	.01242	.00376	.02222	.04396	.00004	97.619	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00336	.00060	.00132	5.9453	2.2110	.07225	49.798	.44788
Stddev	.00007	.00128	.00081	.0146	.0904	.00401	.201	.00131
%RSD	2.0556	214.49	61.076	.24556	4.0865	5.5442	.40335	.29255
#1	.00330	-.00034	.00221	5.9522	2.3152	.06951	49.690	.44809
#2	.00333	.00007	.00065	5.9551	2.1550	.07684	50.030	.44907
#3	.00343	.00206	.00109	5.9285	2.1627	.07039	49.674	.44648
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00099	215.68	.00152	.03502	.00143	.00061	-.00273	13.886
Stddev	.00040	.37	.00041	.00140	.00118	.00155	.00201	.044
%RSD	40.570	.17244	27.130	3.9835	82.378	253.56	73.765	.31930
#1	.00109	215.87	.00135	.03386	.00012	.00006	-.00358	13.924
#2	.00055	215.92	.00122	.03465	.00176	.00236	-.00418	13.895
#3	.00134	215.26	.00199	.03657	.00241	-.00058	-.00043	13.837
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511079310 Acquired: 11/17/2015 12:37:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00052	1.8336	-.00321	-.00016	-.00084	.00387	-.03849
Stddev	.00078	.0034	.00094	.00139	.00032	.00018	.17059
%RSD	149.59	.18456	29.388	854.66	38.546	4.5976	443.25
#1	-.00141	1.8322	-.00351	.00118	-.00109	.00393	-.04465
#2	-.00013	1.8375	-.00397	-.00007	-.00047	.00366	.13510
#3	-.00002	1.8312	-.00216	-.00160	-.00095	.00400	-.20591
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15682.	98468.	3014.3
Stddev	53.	341.	3.7
%RSD	.33761	.34656	.12195
#1	15623.	98265.	3015.0
#2	15699.	98862.	3010.3
#3	15725.	98277.	3017.6

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511079312 Acquired: 11/17/2015 12:41:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	.01810	.00002	.03107	.02759	.00008	104.61	.00041
Stddev	.00052	.00537	.00359	.00129	.00051	.00004	.22	.00027
%RSD	209.78	29.687	18001.	4.1654	1.8627	51.054	.20759	66.835
#1	-.00034	.01241	.00310	.02989	.02702	.00010	104.75	.00016
#2	.00042	.01882	.00088	.03086	.02801	.00011	104.72	.00036
#3	.00066	.02309	-.00392	.03245	.02774	.00003	104.36	.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00185	.00132	.00188	.04881	1.5397	.07625	52.664	.09734
Stddev	.00017	.00036	.00095	.01780	.1155	.00581	.205	.00160
%RSD	9.4419	27.550	50.337	36.466	7.5005	7.6219	.38967	1.6421
#1	.00176	.00159	.00146	.06916	1.4923	.07678	52.437	.09889
#2	.00174	.00145	.00121	.04118	1.6713	.08178	52.719	.09570
#3	.00205	.00091	.00296	.03611	1.4554	.07019	52.836	.09742
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	232.13	.00215	.06551	-.00178	.00008	.00054	18.594
Stddev	.00020	.33	.00031	.00150	.00168	.00527	.00740	.046
%RSD	140.29	.14245	14.615	2.2875	94.352	6648.4	1371.2	.24944
#1	.00003	232.32	.00247	.06440	-.00010	.00276	.00611	18.623
#2	.00037	232.32	.00214	.06722	-.00178	-.00599	.00337	18.618
#3	.00003	231.75	.00184	.06493	-.00346	.00347	-.00786	18.541
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511079312 Acquired: 11/17/2015 12:41:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00053	1.3752	-.01164	.00054	-.00052	.00338	.13736
Stddev	.00069	.0025	.00139	.00155	.00045	.00009	.07730
%RSD	130.58	.18080	11.906	286.88	86.068	2.5923	56.273
#1	-.00013	1.3776	-.01243	.00013	-.00099	.00333	.15192
#2	-.00013	1.3754	-.01246	-.00076	-.00009	.00348	.20634
#3	-.00132	1.3726	-.01004	.00225	-.00049	.00334	.05382
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15545.	98198.	3048.4
Stddev	44.	367.	22.2
%RSD	.28053	.37380	.72869
#1	15501.	98622.	3064.0
#2	15546.	98002.	3023.0
#3	15589.	97971.	3058.2

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511079314 Acquired: 11/17/2015 12:45:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.01170	-.00151	.03670	.15868	.00000	109.71	.00021
Stddev	.00080	.00312	.00074	.00075	.00122	.00005	.79	.00004
%RSD	157.07	26.660	49.081	2.0477	.77126	3910.9	.72132	21.140
#1	-.00007	.01525	-.00236	.03700	.15736	-.00005	108.98	.00017
#2	.00143	.00939	-.00112	.03726	.15977	.00005	110.55	.00025
#3	.00017	.01047	-.00105	.03585	.15892	.00000	109.60	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.03340	.00166	.02302	2.2611	.02948	5.9786	.01716
Stddev	.00036	.00030	.00020	.02483	.0842	.00653	.1278	.00170
%RSD	398.77	.89978	12.162	107.86	3.7222	22.135	2.1379	9.9232
#1	.00044	.03345	.00188	.02226	2.1923	.02196	5.9506	.01631
#2	-.00028	.03367	.00151	-.00142	2.2360	.03360	6.1181	.01912
#3	.00012	.03308	.00158	.04823	2.3549	.03289	5.8671	.01605
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01069	26.552	-.00007	.02993	.00282	-.00232	-.00154	12.964
Stddev	.00030	.204	.00057	.00270	.00143	.00163	.00259	.042
%RSD	2.8383	.76831	809.86	9.0241	50.662	70.270	168.65	.32185
#1	.01101	26.353	.00037	.02952	.00426	-.00048	-.00174	13.011
#2	.01063	26.761	.00014	.02746	.00141	-.00287	-.00403	12.944
#3	.01041	26.543	-.00071	.03281	.00278	-.00359	.00115	12.935
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511079314 Acquired: 11/17/2015 12:45:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00012	3.9281	-.00627	.00114	.00501	.01444	.15747
Stddev	.00068	.0238	.00478	.00211	.00048	.00016	.06614
%RSD	561.72	.60593	76.170	184.47	9.6176	1.0876	42.005
#1	.00004	3.9082	-.00590	-.00128	.00549	.01452	.18165
#2	-.00086	3.9545	-.00169	.00212	.00501	.01455	.08264
#3	.00046	3.9216	-.01122	.00259	.00453	.01426	.20812
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15994.	101240.	3038.7
Stddev	8.	20.	31.6
%RSD	.04762	.01955	1.0404
#1	15997.	101220.	3072.0
#2	16000.	101240.	3009.1
#3	15985.	101260.	3034.9

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511079316 Acquired: 11/17/2015 12:49:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	.01411	-.00336	.04615	.02724	-.00001	222.18
Stddev	.00120	.00302	.00030	.00132	.00044	.00004	.88
%RSD	1093.6	21.431	8.9880	2.8560	1.6150	302.45	.39509
#1	.00019	.01715	-.00360	.04614	.02756	-.00002	222.24
#2	-.00113	.01110	-.00302	.04747	.02742	.00003	223.03
#3	.00127	.01410	-.00346	.04484	.02674	-.00005	221.28
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	.00152	.00085	.00193	.01195	2.0311	.08991
Stddev	.00023	.00014	.00049	.00110	.00452	.0809	.00368
%RSD	33.531	9.1079	57.116	56.952	37.824	3.9804	4.0948
#1	.00078	.00144	.00034	.00230	.01243	1.9730	.09303
#2	.00042	.00168	.00131	.00069	.00721	2.1235	.09085
#3	.00084	.00143	.00091	.00279	.01620	1.9969	.08585
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	106.45	.05070	.00024	F 393.38	.00446	.08832	-.00144
Stddev	.44	.00169	.00006	1.79	.00054	.00425	.00320
%RSD	.41621	3.3397	25.083	.45564	12.207	4.8105	221.77
#1	106.85	.05034	.00017	393.73	.00439	.08451	.00105
#2	106.51	.05255	.00028	394.97	.00395	.09290	-.00032
#3	105.97	.04922	.00028	391.44	.00503	.08756	-.00505
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511079316 Acquired: 11/17/2015 12:49:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00103	.00144	18.846	-.00095	2.4722	-.02552	.00079
Stddev	.00451	.00207	.127	.00074	.0125	.00593	.00192
%RSD	435.91	143.68	.67402	77.590	.50441	23.250	241.81
#1	.00467	-.00081	18.727	-.00017	2.4744	-.01878	-.00073
#2	.00244	.00325	18.831	-.00104	2.4835	-.02783	.00295
#3	-.00401	.00187	18.980	-.00164	2.4589	-.02996	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00042	.00279	.26179
Stddev	.00054	.00013	.10920
%RSD	129.09	4.5632	41.715
#1	.00083	.00266	.13573
#2	-.00019	.00292	.32202
#3	.00062	.00280	.32761
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	14998.	95119.	3005.4
Stddev	51.	59.	10.4
%RSD	.34266	.06189	.34656
#1	15029.	95160.	2999.7
#2	15027.	95051.	2999.0
#3	14939.	95145.	3017.4

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511082301 Acquired: 11/17/2015 12:53:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00240	.04021	.05143	3.7688	F 76.473	.00000	F 765.68
Stddev	.00129	.00802	.00187	.0125	.161	.00002	5.92
%RSD	53.726	19.957	3.6413	.33223	.21002	638.13	.77286
#1	-.00169	.03416	.05229	3.7562	76.491	-.00001	772.00
#2	-.00162	.03716	.04928	3.7689	76.623	-.00001	760.27
#3	-.00389	.04931	.05272	3.7812	76.304	.00003	764.79
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Fail
High Limit					45.000		270.00
Low Limit					-.00500		-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00403	.00528	.00340	.00336	13.105	69.628	5.5442
Stddev	.00011	.00061	.00071	.00126	.079	.318	.0333
%RSD	2.8119	11.475	20.816	37.615	.59959	.45640	.60109
#1	.00400	.00597	.00260	.00384	13.193	69.932	5.5821
#2	.00394	.00505	.00365	.00431	13.080	69.298	5.5310
#3	.00416	.00482	.00394	.00192	13.042	69.652	5.5195
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	126.09	.77971	.00086	F 2138.0	-.00124	.78161	.00391
Stddev	.39	.00580	.00017	16.1	.00170	.01872	.00242
%RSD	.31107	.74376	19.388	.75216	137.29	2.3957	61.915
#1	126.53	.78641	.00088	2155.9	-.00310	.79975	.00232
#2	125.99	.77645	.00102	2124.9	.00021	.78273	.00271
#3	125.76	.77628	.00069	2133.1	-.00081	.76235	.00670
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511082301 Acquired: 11/17/2015 12:53:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00139	F -.01663	.97613	-.00185	F 175.91	F -.11202	.00304
Stddev	.00197	.00193	.01836	.00038	1.15	.00628	.00260
%RSD	141.76	11.619	1.8812	20.700	.65288	5.6042	85.629
#1	.00251	-.01538	.98672	-.00199	174.59	-.11534	.00363
#2	.00254	-.01565	.98674	-.00141	176.47	-.10478	.00019
#3	-.00088	-.01885	.95492	-.00213	176.67	-.11594	.00530
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Pass
High Limit		90.000			9.0000	36.000	
Low Limit		-.01000			-.01000	-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00149	.04254	F -.97344
Stddev	.00103	.00091	.30164
%RSD	68.880	2.1386	30.987
#1	-.00182	.04334	-.73444
#2	-.00232	.04273	-1.3124
#3	-.00034	.04155	-.87353
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	13694.	85664.	3006.7
Stddev	13.	181.	11.8
%RSD	.09847	.21096	.39126
#1	13710.	85766.	2993.7
#2	13687.	85772.	3016.7
#3	13686.	85456.	3009.7

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077019 Acquired: 11/17/2015 12:57:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00066	.83970	-.00374	.63735	.07411	.00006	130.14	.00016
Stddev	.00070	.00509	.00273	.00354	.00048	.00004	.41	.00017
%RSD	106.45	.60630	72.888	.55512	.64486	66.367	.31349	105.38
#1	-.00049	.84377	-.00617	.63931	.07446	.00009	130.54	-.00001
#2	-.00006	.83399	-.00079	.63326	.07357	.00002	130.16	.00033
#3	-.00143	.84135	-.00426	.63947	.07430	.00007	129.72	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00174	.90160	.00423	1.5055	3.0556	.04374	33.925	.14446
Stddev	.00017	.00566	.00043	.0237	.0827	.00469	.255	.00254
%RSD	9.9408	.62819	10.112	1.5758	2.7079	10.730	.75142	1.7586
#1	.00154	.90717	.00380	1.5120	3.1512	.03860	34.189	.14518
#2	.00182	.89585	.00424	1.5253	3.0086	.04482	33.680	.14656
#3	.00185	.90179	.00466	1.4793	3.0070	.04780	33.905	.14163
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00031	59.703	.00051	.05562	.00111	-.00230	-.00080	5.7050
Stddev	.00026	.114	.00061	.00333	.00316	.00167	.00512	.0107
%RSD	84.545	.19073	119.61	5.9915	285.31	72.428	639.07	.18682
#1	-.00034	59.802	.00117	.05717	.00184	-.00307	-.00479	5.7163
#2	-.00003	59.727	.00039	.05789	.00384	-.00345	-.00258	5.7035
#3	-.00055	59.578	-.00003	.05180	-.00235	-.00039	.00497	5.6951
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077019 Acquired: 11/17/2015 12:57:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	.32909	-.00353	.00112	.00187	.02589	.19187
Stddev	.00027	.00223	.00124	.00164	.00050	.00010	.11589
%RSD	138.46	.67615	35.102	146.89	26.629	.37401	60.401
#1	-.00027	.32673	-.00427	-.00060	.00133	.02597	.25679
#2	.00011	.32938	-.00421	.00128	.00230	.02593	.26075
#3	-.00042	.33115	-.00210	.00267	.00199	.02578	.05807
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15460.	97382.	2963.0
Stddev	66.	459.	6.1
%RSD	.42591	.47111	.20652
#1	15387.	96938.	2958.5
#2	15516.	97855.	2970.0
#3	15478.	97352.	2960.7

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077020 Acquired: 11/17/2015 13:01:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	.02848	-.00180	7.7229	.01796	.00003	F 281.24
Stddev	.00033	.00250	.00181	.0054	.00095	.00002	1.96
%RSD	295.05	8.7887	100.78	.06964	5.2815	60.817	.69837
#1	.00023	.02796	-.00349	7.7194	.01733	.00006	282.64
#2	.00037	.02627	.00012	7.7202	.01905	.00002	282.07
#3	-.00026	.03120	-.00203	7.7291	.01750	.00002	278.99
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.00732	.00101	.00204	.05549	30.488	.63230
Stddev	.00017	.00006	.00057	.00017	.02185	.218	.00222
%RSD	29.089	.85856	57.078	8.1910	39.384	.71620	.35062
#1	.00040	.00737	.00135	.00194	.03597	30.629	.63421
#2	.00072	.00725	.00133	.00195	.05139	30.598	.63281
#3	.00067	.00735	.00034	.00224	.07910	30.236	.62987
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	152.81	4.0671	.00059	136.35	.00359	.04512	-.00154
Stddev	1.06	.0387	.00030	.89	.00061	.00578	.00346
%RSD	.69055	.95191	51.044	.65459	16.978	12.803	224.62
#1	153.23	4.0958	.00025	136.94	.00295	.04917	-.00468
#2	153.59	4.0823	.00081	136.79	.00416	.03851	.00217
#3	151.61	4.0230	.00072	135.32	.00366	.04769	-.00210
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077020 Acquired: 11/17/2015 13:01:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00191	-.00408	7.2566	-.00065	.84260	F -.03138	.00038
Stddev	.00342	.00417	.0136	.00071	.00569	.00251	.00029
%RSD	179.45	102.05	.18702	109.09	.67557	7.9825	75.742
#1	.00193	-.00247	7.2476	-.00045	.84711	-.03181	.00009
#2	-.00301	-.00096	7.2722	-.00144	.84449	-.02869	.00038
#3	-.00464	-.00882	7.2501	-.00007	.83621	-.03365	.00066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00116	.00263	.25648
Stddev	.00056	.00016	.25937
%RSD	48.376	6.0749	101.13
#1	-.00068	.00272	.49972
#2	-.00178	.00272	-.01646
#3	-.00102	.00244	.28616
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	14774.	93469.	2932.7
Stddev	65.	375.	14.6
%RSD	.43670	.40146	.49642
#1	14842.	93478.	2919.7
#2	14767.	93089.	2929.9
#3	14713.	93839.	2948.4

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077021 Acquired: 11/17/2015 13:05:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	.01051	-.00186	7.5437	.01472	.00003	F 277.61
Stddev	.00044	.00551	.00203	.0067	.00075	.00005	2.89
%RSD	61.871	52.421	108.86	.08886	5.1065	172.54	1.0423
#1	.00119	.01684	-.00287	7.5442	.01415	.00009	280.82
#2	.00033	.00679	.00047	7.5502	.01443	.00000	276.78
#3	.00061	.00790	-.00318	7.5368	.01557	-.00000	275.22
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00044	.00665	-.00003	.00229	.01756	29.850	.61602
Stddev	.00023	.00027	.00090	.00102	.01713	.375	.00942
%RSD	52.768	4.0289	2849.2	44.547	97.551	1.2578	1.5294
#1	.00054	.00688	-.00015	.00182	-.00044	30.241	.62308
#2	.00018	.00671	-.00087	.00346	.01945	29.816	.61965
#3	.00061	.00636	.00093	.00159	.03367	29.492	.60532
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	150.18	3.6094	.00058	134.67	.00345	.04434	.00053
Stddev	1.90	.0451	.00022	1.61	.00050	.00276	.00233
%RSD	1.2664	1.2490	37.962	1.1953	14.570	6.2317	439.71
#1	152.34	3.6594	.00036	136.42	.00397	.04178	-.00101
#2	149.48	3.5966	.00080	134.33	.00341	.04398	.00321
#3	148.73	3.5720	.00059	133.25	.00297	.04727	-.00061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077021 Acquired: 11/17/2015 13:05:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00163	-.00062	7.0984	-.00035	.83218	F -.03815	.00265
Stddev	.00309	.00353	.0292	.00010	.00855	.00304	.00267
%RSD	190.14	566.67	.41086	29.323	1.0279	7.9713	100.55
#1	.00133	-.00458	7.0688	-.00047	.84146	-.03849	.00551
#2	-.00130	.00220	7.1271	-.00031	.83048	-.04100	.00220
#3	.00486	.00051	7.0994	-.00027	.82460	-.03495	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00105	.00413	.04975
Stddev	.00014	.00016	.08799
%RSD	13.474	3.7684	176.87
#1	-.00101	.00398	.11307
#2	-.00094	.00429	-.05072
#3	-.00121	.00413	.08690
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15029.	95229.	2971.5
Stddev	73.	92.	37.3
%RSD	.48389	.09660	1.2561
#1	15110.	95166.	2946.9
#2	15010.	95335.	2953.2
#3	14969.	95187.	3014.5

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077022 Acquired: 11/17/2015 13:09:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00094	.07744	-.00195	6.5098	.01544	.00006	F 293.90
Stddev	.00045	.00660	.00127	.0138	.00145	.00002	4.64
%RSD	48.160	8.5219	65.447	.21157	9.3965	26.846	1.5778
#1	-.00042	.07535	-.00250	6.5069	.01524	.00007	289.57
#2	-.00118	.08482	-.00285	6.4978	.01698	.00006	298.80
#3	-.00122	.07213	-.00049	6.5248	.01410	.00004	293.33
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.00303	.00060	.00371	.23148	2.4927	.55307
Stddev	.00009	.00070	.00088	.00077	.01758	.0434	.00548
%RSD	18.439	23.202	147.37	20.827	7.5964	1.7423	.99029
#1	.00059	.00222	.00112	.00376	.22383	2.4870	.54727
#2	.00049	.00336	.00109	.00291	.25159	2.4525	.55378
#3	.00041	.00351	-.00042	.00446	.21901	2.5388	.55815
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	119.75	1.8351	.00042	132.10	.00151	.04115	.00195
Stddev	1.80	.0237	.00008	2.23	.00075	.00751	.00118
%RSD	1.5027	1.2936	17.770	1.6862	49.419	18.262	60.531
#1	118.10	1.8176	.00035	129.96	.00163	.04843	.00184
#2	121.67	1.8621	.00050	134.40	.00071	.04160	.00082
#3	119.47	1.8256	.00042	131.93	.00219	.03342	.00317
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077022 Acquired: 11/17/2015 13:09:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00197	-.00265	6.6930	-.00077	.42234	F -.03748	.00122
Stddev	.00371	.00206	.0187	.00036	.00531	.00636	.00118
%RSD	188.58	77.856	.27954	46.547	1.2583	16.972	96.501
#1	-.00160	-.00174	6.6994	-.00118	.41867	-.03336	.00208
#2	.00581	-.00500	6.7077	-.00048	.42844	-.04481	.00170
#3	.00170	-.00119	6.6720	-.00066	.41992	-.03427	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00056	.00249	.20521
Stddev	.00055	.00003	.15157
%RSD	97.945	1.2076	73.861
#1	-.00107	.00251	.29035
#2	-.00065	.00246	.29506
#3	.00003	.00250	.03021
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15000.	94254.	2940.3
Stddev	65.	188.	29.9
%RSD	.43490	.19958	1.0171
#1	15074.	94470.	2965.2
#2	14950.	94122.	2907.1
#3	14976.	94171.	2948.5

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCV Acquired: 11/17/2015 13:13:03 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39745	9.9064	.39446	.51680	.99628	.04965	10.002
Stddev	.00235	.0639	.00108	.00192	.00317	.00021	.042
%RSD	.59211	.64473	.27463	.37100	.31794	.42135	.41581
#1	.39995	9.9696	.39329	.51710	.99791	.04985	9.9794
#2	.39528	9.8419	.39468	.51475	.99262	.04943	9.9773
#3	.39713	9.9079	.39542	.51854	.99829	.04968	10.050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05007	.20302	.49196	.50387	3.9703	48.660	1.0023
Stddev	.00026	.00088	.00193	.00420	.0230	.241	.0054
%RSD	.52800	.43131	.39181	.83258	.57963	.49435	.54231
#1	.05034	.20402	.49334	.50838	3.9959	48.917	1.0008
#2	.05005	.20244	.48976	.50009	3.9513	48.441	.99773
#3	.04982	.20259	.49280	.50313	3.9637	48.621	1.0083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.9611	.49857	.99862	49.151	.49892	9.8748	.50105
Stddev	.0456	.00075	.00632	.153	.00249	.0403	.00238
%RSD	.45737	.15012	.63253	.31128	.49995	.40786	.47442
#1	9.9099	.49858	1.0058	49.297	.50169	9.9189	.50322
#2	9.9971	.49782	.99410	48.992	.49685	9.8399	.50142
#3	9.9762	.49932	.99592	49.164	.49821	9.8656	.49851
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCV Acquired: 11/17/2015 13:13:03 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.1823	.39712	4.9186	1.0056	.99690	.99309	.49858
Stddev	.0041	.00656	.0178	.0060	.00436	.00604	.00232
%RSD	.34328	1.6512	.36142	.59334	.43763	.60842	.46567
#1	1.1866	.40163	4.9360	1.0124	.99971	.99341	.50123
#2	1.1785	.40012	4.9005	1.0013	.99187	.98690	.49687
#3	1.1819	.38960	4.9192	1.0030	.99912	.99897	.49765
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.99564	.99235	F .70357
Stddev	.00813	.00424	.15908
%RSD	.81661	.42720	22.611
#1	1.0044	.99702	.52070
#2	.98828	.98874	.77998
#3	.99427	.99129	.81003
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16796.	105270.	3146.4
Stddev	55.	584.	3.6
%RSD	.32971	.55505	.11561
#1	16742.	104740.	3145.2
#2	16853.	105900.	3143.6
#3	16793.	105170.	3150.5

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCB Acquired: 11/17/2015 13:16:47 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	-.00040	-.00148	.01926	.00058	.00006	-.01735
Stddev	.00083	.00110	.00199	.00078	.00038	.00005	.01056
%RSD	167.56	271.83	135.14	4.0724	65.317	84.092	60.908
#1	.00116	-.00154	.00032	.01916	.00038	.00001	-.02211
#2	-.00043	.00066	-.00112	.02009	.00034	.00011	-.02469
#3	.00076	-.00033	-.00362	.01853	.00102	.00006	-.00524
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.00004	-.00019	.00060	.02716	.09347	-.00300
Stddev	.00026	.00039	.00034	.00092	.02539	.06582	.00323
%RSD	325.47	933.80	182.39	153.62	93.477	70.417	107.89
#1	.00027	.00007	.00020	.00019	.04538	.05635	-.00436
#2	-.00022	.00041	-.00044	-.00005	.03795	.05459	.00070
#3	.00018	-.00036	-.00032	.00166	-.00184	.16946	-.00532
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.06096	-.00020	.00074	.10610	-.00025	.00206	.00063
Stddev	.06141	.00107	.00016	.01393	.00085	.00322	.00158
%RSD	100.73	528.44	20.969	13.126	344.92	155.81	252.22
#1	-.12903	.00077	.00057	.09011	-.00112	.00127	-.00007
#2	-.00970	-.00135	.00088	.11258	.00057	-.00068	-.00049
#3	-.04416	-.00003	.00077	.11560	-.00019	.00560	.00243
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCB Acquired: 11/17/2015 13:16:47 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00220	-.00609	.00335	-.00006	.00006	.00242	.00177
Stddev	.00201	.00689	.00070	.00018	.00014	.00298	.00083
%RSD	91.430	113.11	20.785	303.86	230.56	123.37	46.558
#1	-.00407	-.01142	.00415	.00014	.00004	.00212	.00159
#2	-.00007	.00169	.00298	-.00015	.00022	-.00040	.00268
#3	-.00247	-.00854	.00292	-.00017	-.00007	.00553	.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00007	-.00005	F .07466
Stddev	.00077	.00017	.23018
%RSD	1158.0	331.75	308.32
#1	.00076	.00011	-.00545
#2	-.00019	-.00024	.33419
#3	-.00076	-.00003	-.10477
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	17065.	108260.	3146.3
Stddev	75.	839.	15.4
%RSD	.44071	.77463	.48956
#1	17152.	108840.	3163.0
#2	17018.	108640.	3132.7
#3	17026.	107300.	3143.2

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077023 Acquired: 11/17/2015 13:20:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00093	.01349	-.00065	6.2015	.01097	.00003	F 279.89
Stddev	.00143	.00580	.00299	.0515	.00101	.00002	1.91
%RSD	153.41	42.978	458.58	.83045	9.2146	78.627	.68131
#1	-.00229	.01654	.00263	6.1914	.01124	.00002	278.74
#2	-.00107	.00680	-.00322	6.1558	.01182	.00006	278.85
#3	.00056	.01712	-.00137	6.2573	.00985	.00001	282.10
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	.00259	.00056	.00265	.01194	2.3522	.52961
Stddev	.00014	.00007	.00069	.00097	.02067	.1452	.00353
%RSD	35.427	2.8086	121.92	36.486	173.12	6.1728	.66627
#1	.00032	.00260	.00095	.00211	.01631	2.4357	.52720
#2	.00032	.00265	-.00023	.00376	.03008	2.1846	.52796
#3	.00056	.00251	.00097	.00206	-.01057	2.4364	.53366
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	113.94	1.6293	.00049	127.05	.00170	.03582	-.00061
Stddev	.93	.0169	.00043	.91	.00079	.00407	.00393
%RSD	.81995	1.0341	86.653	.71307	46.699	11.367	645.83
#1	113.29	1.6144	-.00000	126.61	.00108	.03860	.00213
#2	113.52	1.6259	.00074	126.44	.00143	.03771	.00115
#3	115.01	1.6476	.00074	128.09	.00259	.03115	-.00511
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077023 Acquired: 11/17/2015 13:20:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00042	-.00519	6.3644	-.00059	.40550	F -.03508	.00060
Stddev	.00250	.00168	.0387	.00036	.00297	.00312	.00199
%RSD	601.93	32.364	.60854	60.999	.73350	8.9044	330.86
#1	.00190	-.00364	6.3949	-.00017	.40348	-.03853	.00216
#2	-.00009	-.00698	6.3208	-.00078	.40409	-.03428	-.00163
#3	-.00306	-.00495	6.3774	-.00081	.40891	-.03243	.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00083	.00443	.24082
Stddev	.00061	.00016	.17953
%RSD	73.790	3.5994	74.549
#1	-.00027	.00426	.29295
#2	-.00149	.00458	.38851
#3	-.00073	.00443	.04100
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15117.	95171.	2944.5
Stddev	53.	581.	16.4
%RSD	.35306	.61046	.55752
#1	15116.	94641.	2952.3
#2	15171.	95792.	2955.6
#3	15064.	95081.	2925.6

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511079617 Acquired: 11/17/2015 13:24:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.07687	-.00321	.02825	.00999	.00007	1.8082	-.00008
Stddev	.00051	.00109	.00144	.00205	.00094	.00001	.0273	.00021
%RSD	727.30	1.4155	44.982	7.2602	9.4380	22.339	1.5086	261.82
#1	-.00043	.07812	-.00264	.03061	.00949	.00008	1.8178	-.00030
#2	-.00029	.07641	-.00485	.02701	.00941	.00006	1.7775	-.00007
#3	.00051	.07609	-.00214	.02711	.01108	.00006	1.8294	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	-.00041	.00026	.27194	.65161	-.00300	.86590	.01103
Stddev	.00014	.00021	.00198	.01039	.02233	.00309	.06611	.00019
%RSD	181.65	51.372	773.67	3.8214	3.4265	103.11	7.6353	1.7210
#1	.00023	-.00065	.00039	.27660	.65159	-.00244	.92436	.01125
#2	.00004	-.00029	-.00178	.27918	.62929	-.00022	.87920	.01089
#3	-.00004	-.00028	.00216	.26003	.67395	-.00633	.79415	.01096
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	2.0582	.00000	.00527	-.00105	.00003	-.00271	4.4885
Stddev	.00020	.0147	.00050	.00465	.00135	.00353	.00526	.0578
%RSD	240.86	.71613	81318.	88.307	128.98	11855.	194.44	1.2871
#1	.00014	2.0418	-.00028	.00820	-.00090	-.00262	.00143	4.5229
#2	-.00014	2.0702	.00058	-.00010	.00022	-.00133	-.00863	4.5208
#3	-.00025	2.0627	-.00030	.00771	-.00247	.00404	-.00092	4.4218
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511079617 Acquired: 11/17/2015 13:24:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	.01356	.00740	.00197	.00034	.00580	.25934
Stddev	.00107	.00023	.00198	.00335	.00045	.00001	.23116
%RSD	588.25	1.7107	26.768	170.30	134.61	.17901	89.131
#1	.00054	.01382	.00958	.00493	.00018	.00580	.29165
#2	.00032	.01339	.00572	.00264	.00085	.00578	.47265
#3	-.00141	.01347	.00690	-.00167	-.00002	.00580	.01374
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16507.	104350.	3015.5
Stddev	108.	602.	33.8
%RSD	.65423	.57722	1.1220
#1	16473.	104380.	3049.5
#2	16421.	104950.	3015.1
#3	16629.	103740.	2981.8

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511079620 Acquired: 11/17/2015 13:28:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00380	-.00154	.01519	.00138	.00006	.00998	-.00005
Stddev	.00081	.00305	.00113	.00062	.00009	.00002	.01482	.00015
%RSD	1408.7	80.291	73.271	4.1033	6.5157	35.173	148.55	278.75
#1	.00038	.00721	-.00094	.01542	.00135	.00003	.02683	.00005
#2	.00066	.00288	-.00084	.01566	.00148	.00007	-.00102	.00001
#3	-.00087	.00131	-.00284	.01448	.00130	.00007	.00412	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	-.00020	.00107	.00838	.04583	-.00335	-.00230	-.00108
Stddev	.00041	.00083	.00094	.00361	.05184	.00766	.00918	.00275
%RSD	460.75	405.44	87.993	43.019	113.12	229.11	398.74	254.91
#1	-.00032	.00069	.00160	.01111	.10065	-.00437	.00391	-.00425
#2	.00049	-.00035	-.00002	.00974	.03922	-.01044	.00204	.00051
#3	.00010	-.00095	.00164	.00429	-.00240	.00478	-.01285	.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	1.5611	.00003	.00348	.00173	-.00134	-.00690	.51883
Stddev	.00009	.0213	.00016	.00177	.00124	.00161	.00129	.00210
%RSD	178.87	1.3609	517.34	50.919	71.821	120.16	18.641	.40549
#1	-.00002	1.5422	.00022	.00294	.00075	-.00106	-.00751	.52060
#2	.00002	1.5571	-.00005	.00204	.00131	-.00307	-.00776	.51651
#3	-.00015	1.5841	-.00007	.00546	.00313	.00011	-.00542	.51939
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511079620 Acquired: 11/17/2015 13:28:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00110	.00017	.00129	-.00021	.00059	.00282	.27643
Stddev	.00029	.00008	.00295	.00054	.00022	.00012	.25705
%RSD	26.137	45.181	228.45	253.22	37.513	4.3566	92.991
#1	-.00083	.00020	.00455	.00018	.00067	.00295	.52790
#2	-.00140	.00008	-.00117	-.00083	.00034	.00278	.01414
#3	-.00106	.00022	.00049	.00001	.00076	.00272	.28725
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16486.	104810.	3038.7
Stddev	43.	103.	13.1
%RSD	.26262	.09781	.43062
#1	16439.	104690.	3040.9
#2	16524.	104840.	3024.7
#3	16496.	104880.	3050.6

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511079623 Acquired: 11/17/2015 13:32:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00812	-.00296	.01159	.00122	.00005	.01226	.00009
Stddev	.00084	.00480	.00140	.00099	.00063	.00004	.03243	.00015
%RSD	957.24	59.158	47.340	8.5538	51.732	73.245	264.57	158.55
#1	-.00068	.00544	-.00392	.01113	.00092	.00009	.00338	.00011
#2	-.00006	.00525	-.00135	.01273	.00194	.00001	.04821	-.00006
#3	.00100	.01366	-.00360	.01091	.00079	.00005	-.01481	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	-.00014	.00065	.01408	.00211	-.00092	-.03628	-.00175
Stddev	.00044	.00028	.00030	.01170	.10074	.00188	.05257	.00076
%RSD	3952.3	200.79	47.109	83.094	4782.3	204.19	144.87	43.691
#1	.00051	.00008	.00063	.01063	-.01901	.00004	.00602	-.00217
#2	-.00033	-.00004	.00096	.00449	-.08640	.00029	-.01974	-.00221
#3	-.00015	-.00046	.00035	.02711	.11174	-.00309	-.09513	-.00087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	1.5164	-.00034	.00467	.00152	-.00051	-.00596	.52849
Stddev	.00014	.0172	.00005	.00309	.00100	.00158	.00299	.00049
%RSD	125.03	1.1336	15.365	66.270	65.541	312.82	50.220	.09286
#1	-.00002	1.5309	-.00028	.00110	.00112	.00132	-.00786	.52804
#2	.00009	1.5208	-.00039	.00654	.00266	-.00133	-.00251	.52841
#3	.00026	1.4974	-.00035	.00636	.00079	-.00151	-.00751	.52902
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511079623 Acquired: 11/17/2015 13:32:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00035	-.00000	.00566	-.00023	-.00004	.00301	.13775
Stddev	.00036	.00023	.00298	.00015	.00049	.00019	.06504
%RSD	102.50	17460.	52.677	68.093	1349.4	6.1618	47.218
#1	.00005	.00014	.00631	-.00040	.00042	.00320	.18114
#2	-.00048	-.00026	.00826	-.00018	-.00055	.00299	.06297
#3	-.00064	.00012	.00241	-.00010	.00002	.00283	.16915
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16572.	105150.	3037.9
Stddev	38.	298.	16.3
%RSD	.23103	.28330	.53635
#1	16583.	104840.	3029.6
#2	16603.	105440.	3027.4
#3	16529.	105180.	3056.7

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511079901 Acquired: 11/17/2015 13:36:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00089	.02482	-.00125	.01590	.00844	.00003	35.050	-.00007
Stddev	.00135	.00103	.00150	.00103	.00008	.00002	.215	.00024
%RSD	151.57	4.1352	120.16	6.4533	.92089	67.130	.61468	325.41
#1	.00033	.02523	.00018	.01476	.00853	.00005	34.949	.00005
#2	-.00235	.02366	-.00280	.01620	.00839	.00003	35.297	-.00036
#3	-.00067	.02559	-.00111	.01675	.00842	.00001	34.904	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	.00093	.00229	.03063	.48410	-.00162	5.6966	.00099
Stddev	.00020	.00030	.00057	.01731	.01724	.00569	.0595	.00200
%RSD	1609.0	31.854	24.818	56.522	3.5603	350.37	1.0446	202.15
#1	.00006	.00059	.00268	.05061	.48122	-.00737	5.7183	.00021
#2	-.00024	.00112	.00255	.02136	.50259	.00400	5.7422	-.00050
#3	.00014	.00109	.00164	.01993	.46848	-.00149	5.6293	.00327
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	1.5997	-.00003	.00199	-.00089	.00061	-.00386	2.4513
Stddev	.00010	.0181	.00050	.00574	.00052	.00326	.00431	.0065
%RSD	16.426	1.1312	1863.2	287.80	58.507	533.45	111.66	.26649
#1	.00066	1.6204	-.00009	.00694	-.00102	-.00185	-.00129	2.4521
#2	.00052	1.5865	.00050	.00334	-.00132	.00431	-.00146	2.4573
#3	.00072	1.5923	-.00050	-.00430	-.00031	-.00062	-.00883	2.4444
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511079901 Acquired: 11/17/2015 13:36:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	.03597	.00204	.00149	.00026	.00293	.29511
Stddev	.00043	.00034	.00215	.00053	.00090	.00005	.18355
%RSD	109.14	.93365	105.19	35.682	349.24	1.6770	62.197
#1	-.00008	.03586	-.00039	.00154	.00012	.00298	.08367
#2	-.00088	.03635	.00368	.00094	.00122	.00295	.41346
#3	-.00021	.03571	.00284	.00200	-.00056	.00288	.38820
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16053.	102140.	3008.5
Stddev	10.	557.	1.8
%RSD	.06092	.54488	.05891
#1	16058.	102490.	3007.9
#2	16042.	101500.	3010.5
#3	16060.	102440.	3007.0

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511079902 Acquired: 11/17/2015 13:40:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00068	.01360	-.00213	.01485	.00741	.00006	34.550	.00011
Stddev	.00140	.00158	.00043	.00233	.00068	.00002	.169	.00023
%RSD	205.23	11.630	20.356	15.683	9.1164	31.357	.48842	205.36
#1	-.00003	.01352	-.00215	.01698	.00769	.00004	34.441	-.00015
#2	-.00229	.01522	-.00256	.01237	.00790	.00006	34.744	.00027
#3	.00027	.01206	-.00169	.01521	.00664	.00007	34.465	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	-.00023	.00144	.02449	.43177	-.00080	5.6632	-.00098
Stddev	.00021	.00071	.00175	.01254	.03811	.00500	.1156	.00097
%RSD	97.774	312.15	122.10	51.212	8.8275	625.64	2.0419	99.069
#1	-.00029	-.00077	.00173	.02375	.42615	-.00654	5.5320	-.00048
#2	.00002	-.00049	-.00045	.03739	.39679	.00259	5.7070	-.00036
#3	-.00039	.00058	.00303	.01234	.47239	.00155	5.7505	-.00211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	1.5326	.00031	.00035	.00084	.00133	-.00368	2.3465
Stddev	.00013	.0137	.00011	.00673	.00331	.00139	.00345	.0085
%RSD	34.112	.89216	35.615	1898.9	393.44	104.84	93.917	.36049
#1	.00031	1.5172	.00025	.00792	.00237	.00065	-.00766	2.3527
#2	.00052	1.5433	.00025	-.00499	.00311	.00040	-.00148	2.3500
#3	.00029	1.5372	.00044	-.00186	-.00296	.00293	-.00190	2.3369
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511079902 Acquired: 11/17/2015 13:40:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00121	.03524	.00242	.00251	-.00035	.01085	.28833
Stddev	.00053	.00029	.00430	.00276	.00047	.00014	.39732
%RSD	43.431	.82699	177.64	109.95	135.18	1.3230	137.80
#1	-.00101	.03548	-.00255	.00333	-.00063	.01101	-.09276
#2	-.00181	.03533	.00489	.00477	.00020	.01072	.25765
#3	-.00082	.03492	.00492	-.00057	-.00062	.01082	.70010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16366.	103510.	3041.1
Stddev	33.	203.	3.8
%RSD	.20181	.19646	.12386
#1	16382.	103280.	3044.7
#2	16328.	103680.	3037.2
#3	16387.	103560.	3041.4

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511079903 Acquired: 11/17/2015 13:44:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00100	.00268	.00007	.01167	.00692	.00006	35.140	-.00001
Stddev	.00082	.00334	.00226	.00053	.00050	.00006	.127	.00016
%RSD	82.206	124.88	3136.5	4.5149	7.2378	102.39	.36226	2031.6
#1	.00029	-.00117	.00209	.01202	.00647	-.00001	35.229	-.00017
#2	.00081	.00482	-.00237	.01193	.00683	.00008	35.196	.00015
#3	.00189	.00438	.00050	.01106	.00746	.00010	34.994	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	.00003	.00052	.10979	.46405	.00426	5.6764	.02434
Stddev	.00020	.00025	.00027	.00861	.08786	.00326	.0705	.00264
%RSD	131.79	898.59	52.839	7.8394	18.934	76.412	1.2415	10.850
#1	.00008	-.00006	.00031	.10442	.56377	.00068	5.6453	.02208
#2	-.00025	-.00017	.00083	.10523	.43037	.00507	5.7571	.02724
#3	-.00029	.00031	.00042	.11971	.39801	.00703	5.6268	.02371
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	1.5682	.00109	.00721	-.00010	-.00265	-.00439	2.3660
Stddev	.00036	.0020	.00064	.00323	.00331	.00070	.00183	.0124
%RSD	59.291	.12676	58.586	44.765	3205.2	26.491	41.602	.52184
#1	.00046	1.5684	.00172	.01088	-.00039	-.00200	-.00253	2.3755
#2	.00033	1.5701	.00044	.00596	.00334	-.00257	-.00619	2.3705
#3	.00100	1.5661	.00112	.00480	-.00326	-.00339	-.00445	2.3521
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511079903 Acquired: 11/17/2015 13:44:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00051	.03572	.00210	-.00088	.00094	.00265	.37029
Stddev	.00062	.00045	.00371	.00021	.00043	.00005	.19328
%RSD	122.78	1.2696	176.12	24.022	45.842	1.8888	52.197
#1	-.00123	.03608	-.00024	-.00069	.00076	.00267	.44263
#2	-.00020	.03521	.00018	-.00086	.00144	.00259	.15127
#3	-.00010	.03586	.00638	-.00111	.00063	.00268	.51695
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16356.	103620.	3027.1
Stddev	10.	209.	10.6
%RSD	.05987	.20146	.35020
#1	16353.	103850.	3021.6
#2	16348.	103440.	3020.4
#3	16367.	103560.	3039.3

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCV Acquired: 11/17/2015 13:48:54 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39336	9.7903	.38541	.49210	.98772	.04922	9.9198	.04914
Stddev	.00179	.0211	.00257	.00409	.00466	.00003	.0457	.00016
%RSD	.45410	.21607	.66744	.83148	.47129	.06448	.46087	.32046
#1	.39538	9.7835	.38367	.49462	.98920	.04918	9.9143	.04932
#2	.39271	9.8140	.38837	.49430	.98251	.04924	9.8771	.04904
#3	.39198	9.7734	.38420	.48738	.99146	.04923	9.9680	.04905
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19940	.48743	.49555	3.9428	48.816	1.0023	9.8543	.49366
Stddev	.00024	.00095	.00177	.0312	.122	.0061	.0481	.00313
%RSD	.11787	.19559	.35811	.79246	.25036	.60562	.48825	.63440
#1	.19947	.48636	.49758	3.9367	48.805	.99951	9.9045	.49651
#2	.19914	.48817	.49475	3.9150	48.699	.99822	9.8085	.49030
#3	.19960	.48778	.49431	3.9766	48.943	1.0093	9.8499	.49416
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98033	48.996	.48952	9.6958	.49145	1.1619	.38163	4.8152
Stddev	.00284	.175	.00077	.0238	.00218	.0018	.00216	.0123
%RSD	.28957	.35734	.15767	.24496	.44295	.15374	.56713	.25434
#1	.98289	48.984	.49040	9.7232	.49335	1.1624	.38372	4.8218
#2	.97728	48.827	.48918	9.6810	.48908	1.1634	.38177	4.8011
#3	.98082	49.177	.48897	9.6832	.49192	1.1599	.37940	4.8227
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCV Acquired: 11/17/2015 13:48:54 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98831	.98879	.98867	.49073	.98653	.97507	1.0525
Stddev	.00110	.00424	.00637	.00156	.00048	.00244	.1209
%RSD	.11109	.42869	.64430	.31892	.04850	.25063	11.483
#1	.98933	.98975	.98749	.48961	.98703	.97785	.97911
#2	.98715	.98416	.98297	.49005	.98608	.97327	.98642
#3	.98847	.99247	.99554	.49252	.98648	.97409	1.1920
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16927.	105530.	3141.6
Stddev	21.	292.	15.1
%RSD	.12446	.27643	.47999
#1	16937.	105310.	3124.6
#2	16941.	105420.	3146.7
#3	16903.	105860.	3153.5

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCB Acquired: 11/17/2015 13:52:27 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	-.00193	-.00242	.00086	.00038	.00003	-.00860
Stddev	.00063	.00331	.00237	.00065	.00058	.00005	.00561
%RSD	130.63	171.47	98.140	75.586	149.94	164.52	65.251
#1	.00107	.00181	-.00482	.00161	.00049	-.00002	-.00918
#2	.00058	-.00448	-.00236	.00048	.00090	.00003	-.00272
#3	-.00019	-.00313	-.00007	.00049	-.00024	.00008	-.01390
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.00012	-.00010	.00024	.01162	.03645	.00120
Stddev	.00022	.00007	.00031	.00031	.00436	.08373	.00579
%RSD	630.87	58.512	304.87	129.77	37.554	229.70	481.28
#1	-.00009	.00014	.00025	.00047	.00933	.07021	.00674
#2	-.00009	.00018	-.00033	-.00012	.01665	-.05889	-.00482
#3	.00029	.00004	-.00022	.00037	.00887	.09803	.00169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04647	.00009	.00105	.04461	.00033	.00116	.00120
Stddev	.08606	.00100	.00013	.01876	.00007	.00166	.00166
%RSD	185.17	1150.2	12.129	42.053	22.284	143.38	138.20
#1	.03583	.00099	.00120	.06624	.00028	.00003	.00002
#2	-.03376	-.00098	.00098	.03468	.00041	.00038	.00310
#3	.13736	.00025	.00097	.03290	.00030	.00307	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCB Acquired: 11/17/2015 13:52:27 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00226	-.00626	.00194	-.00005	-.00004	.00698	.00130
Stddev	.00396	.00577	.00122	.00045	.00019	.00121	.00096
%RSD	175.50	92.075	62.821	858.96	451.48	17.399	74.084
#1	.00015	-.00068	.00090	.00002	.00016	.00601	.00046
#2	-.00683	-.00592	.00328	.00036	-.00023	.00658	.00108
#3	-.00009	-.01219	.00164	-.00054	-.00006	.00834	.00235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00021	.00014	F .18891
Stddev	.00032	.00008	.22375
%RSD	155.86	55.855	118.44
#1	-.00011	.00014	.02918
#2	.00020	.00022	.09291
#3	.00053	.00006	.44464
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	17206.	108390.	3142.7
Stddev	20.	333.	33.7
%RSD	.11579	.30726	1.0715
#1	17202.	108710.	3166.1
#2	17188.	108410.	3157.8
#3	17227.	108040.	3104.1

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: LLCCV Acquired: 11/17/2015 13:56:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00469	.07179	.00216	.03887	.00525	.00084	.17822	.00039
Stddev	.00130	.00191	.00143	.00103	.00043	.00006	.01422	.00018
%RSD	27.838	2.6619	66.345	2.6514	8.1898	7.0926	7.9796	47.751
#1	.00605	.07399	.00090	.03818	.00475	.00082	.16685	.00045
#2	.00345	.07077	.00185	.03838	.00552	.00080	.17365	.00018
#3	.00456	.07061	.00371	.04006	.00547	.00091	.19417	.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00218	.00153	.00233	.04128	.41825	.04379	.09030	.00246
Stddev	.00026	.00033	.00052	.00533	.16246	.00369	.01364	.00202
%RSD	11.708	21.612	22.482	12.916	38.843	8.4201	15.102	81.955
#1	.00223	.00184	.00288	.03592	.60515	.04679	.09769	.00195
#2	.00190	.00156	.00227	.04659	.31077	.04491	.07456	.00075
#3	.00240	.00118	.00184	.04134	.33884	.03967	.09865	.00469
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00394	.22912	.00838	.37536	.00459	.03509	-.00077	.38389
Stddev	.00027	.01342	.00094	.00694	.00121	.00174	.00359	.00148
%RSD	6.9822	5.8575	11.243	1.8481	26.335	4.9675	467.53	.38505
#1	.00365	.22051	.00847	.38138	.00545	.03622	.00005	.38219
#2	.00419	.24458	.00928	.37693	.00321	.03308	.00234	.38471
#3	.00397	.22227	.00740	.36778	.00511	.03597	-.00470	.38479
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: LLCCV Acquired: 11/17/2015 13:56:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20184	.01949	.01884	.08451	.00357	.00900	11.710
Stddev	.00169	.00020	.00113	.00148	.00017	.00005	.101
%RSD	.83484	1.0205	6.0070	1.7466	4.6385	.54064	.86057
#1	.20193	.01928	.01754	.08498	.00354	.00906	11.736
#2	.20348	.01952	.01961	.08570	.00342	.00896	11.796
#3	.20011	.01968	.01936	.08286	.00374	.00899	11.599
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	17212.	108550.	3155.1
Stddev	32.	257.	14.7
%RSD	.18816	.23638	.46511
#1	17249.	108790.	3168.8
#2	17200.	108580.	3156.9
#3	17188.	108280.	3139.6

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: LLCCV Acquired: 11/17/2015 14:00:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00887	.15941	.00679	.07807	.00833	.00162	.40536	.00086
Stddev	.00062	.00239	.00087	.00272	.00019	.00003	.01098	.00017
%RSD	6.9816	1.5015	12.863	3.4888	2.3404	1.9005	2.7074	19.494
#1	.00882	.15981	.00775	.08081	.00839	.00163	.41176	.00069
#2	.00828	.15684	.00658	.07805	.00811	.00159	.41164	.00103
#3	.00951	.16158	.00604	.07536	.00848	.00164	.39269	.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00418	.00284	.00408	.09652	.83676	.07853	.40941	.00481
Stddev	.00031	.00039	.00134	.01573	.04005	.00569	.02028	.00192
%RSD	7.4528	13.613	32.944	16.293	4.7868	7.2495	4.9539	39.915
#1	.00393	.00242	.00406	.10391	.88286	.07931	.40858	.00271
#2	.00453	.00318	.00543	.07846	.81694	.08380	.38955	.00524
#3	.00409	.00292	.00275	.10719	.81049	.07249	.43009	.00648
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00739	.43159	.01607	.75549	.00904	.07373	.01403	.76422
Stddev	.00033	.00437	.00039	.01038	.00225	.00167	.00586	.00316
%RSD	4.4765	1.0115	2.4324	1.3742	24.936	2.2712	41.762	.41363
#1	.00776	.43638	.01571	.74654	.00690	.07279	.02004	.76368
#2	.00713	.43053	.01648	.76687	.00883	.07566	.01372	.76762
#3	.00728	.42784	.01602	.75306	.01139	.07273	.00834	.76136
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: LLCCV Acquired: 11/17/2015 14:00:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40014	.03930	.02538	.16396	.00795	.01760	26.156
Stddev	.00385	.00029	.00134	.00187	.00048	.00024	.191
%RSD	.96111	.72926	5.2983	1.1417	6.0429	1.3830	.73065
#1	.40262	.03955	.02443	.16347	.00744	.01768	26.082
#2	.40210	.03937	.02480	.16604	.00801	.01780	26.013
#3	.39571	.03899	.02692	.16239	.00839	.01733	26.373
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	17300.	108730.	3187.2
Stddev	29.	162.	13.1
%RSD	.16795	.14925	.41028
#1	17319.	108550.	3198.7
#2	17266.	108780.	3189.8
#3	17314.	108860.	3173.0

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: PBW 6P Acquired: 11/17/2015 14:04:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG547152-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00060	.00434	-.00215	.00390	.00057	.00007	-.01891	-.00003
Stddev	.00071	.00060	.00219	.00140	.00011	.00006	.01793	.00010
%RSD	117.76	13.907	101.92	35.874	19.167	79.466	94.812	308.77
#1	-.00140	.00496	.00030	.00532	.00044	.00011	-.01062	-.00014
#2	-.00002	.00376	-.00281	.00253	.00065	.00011	-.03949	.00003
#3	-.00040	.00430	-.00393	.00384	.00061	.00001	-.00663	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	-.00013	.00042	.01096	-.03950	.00087	-.03769	-.00009
Stddev	.00011	.00054	.00024	.01554	.07412	.00483	.13874	.00298
%RSD	60.880	404.44	57.074	141.69	187.64	553.59	368.08	3468.1
#1	-.00031	-.00032	.00070	.02487	.04201	.00118	-.12631	.00316
#2	-.00008	.00048	.00029	.01383	-.10287	.00555	-.10897	-.00071
#3	-.00017	-.00056	.00028	-.00581	-.05765	-.00410	.12220	-.00270
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	.01602	.00030	.00067	-.00031	.00174	-.00417	.00509
Stddev	.00017	.02585	.00036	.00233	.00303	.00395	.00722	.00062
%RSD	76.704	161.38	122.58	347.40	978.25	226.66	173.06	12.181
#1	-.00019	.02213	.00067	.00150	.00301	.00630	-.01243	.00571
#2	-.00041	.03827	-.00006	-.00196	-.00101	-.00062	.00095	.00447
#3	-.00007	-.01234	.00028	.00247	-.00292	-.00045	-.00104	.00509
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: PBW 6P Acquired: 11/17/2015 14:04:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG547152-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	-.00055	.00521	-.00056	.00002	.00452	.52591
Stddev	.00029	.00006	.00319	.00188	.00083	.00027	.24080
%RSD	321.47	10.400	61.184	336.30	3585.9	5.9399	45.787
#1	-.00009	-.00049	.00274	-.00077	-.00092	.00461	.67764
#2	.00043	-.00057	.00408	-.00233	.00059	.00474	.24826
#3	-.00007	-.00060	.00882	.00142	.00040	.00422	.65183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16313.	103340.	3027.5
Stddev	125.	271.	12.1
%RSD	.76731	.26265	.39956
#1	16351.	103540.	3027.3
#2	16173.	103030.	3039.7
#3	16415.	103450.	3015.5

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: LCSW 6P Acquired: 11/17/2015 14:08:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG547152-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20709	5.2093	.20080	1.0397	.53276	.02580	5.3055	.02595
Stddev	.00049	.0166	.00177	.0033	.00096	.00011	.0165	.00014
%RSD	.23778	.31858	.87985	.32151	.18014	.43949	.31185	.54832
#1	.20754	5.1936	.19985	1.0384	.53335	.02567	5.2876	.02584
#2	.20715	5.2267	.20284	1.0435	.53328	.02590	5.3088	.02611
#3	.20656	5.2076	.19971	1.0372	.53165	.02582	5.3202	.02589
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10806	.26231	.26745	2.1107	26.093	.53549	5.2728	.26695
Stddev	.00065	.00142	.00240	.0200	.112	.00376	.0837	.00261
%RSD	.60265	.54048	.89601	.94816	.43102	.70259	1.5880	.97691
#1	.10831	.26127	.26804	2.1265	26.205	.53968	5.2774	.26993
#2	.10855	.26393	.26950	2.0882	25.980	.53240	5.1868	.26582
#3	.10732	.26174	.26481	2.1175	26.094	.53438	5.3540	.26510
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53587	26.428	.26641	5.0819	.26732	.61953	.20089	2.6131
Stddev	.00270	.031	.00247	.0300	.00082	.00062	.00237	.0137
%RSD	.50470	.11807	.92697	.59019	.30860	.09956	1.1783	.52248
#1	.53544	26.458	.26659	5.0761	.26728	.62007	.20182	2.6053
#2	.53877	26.396	.26878	5.1144	.26652	.61885	.19820	2.6289
#3	.53342	26.431	.26385	5.0553	.26817	.61966	.20265	2.6051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: LCSW 6P Acquired: 11/17/2015 14:08:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG547152-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53618	.52792	.53040	.26328	.53005	.52605	1.7659
Stddev	.00430	.00131	.00477	.00225	.00139	.00281	.0257
%RSD	.80286	.24823	.89986	.85389	.26164	.53496	1.4544
#1	.53541	.52942	.53248	.26443	.53097	.52484	1.7405
#2	.54081	.52699	.53379	.26473	.53073	.52927	1.7654
#3	.53230	.52734	.52494	.26069	.52845	.52405	1.7919
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16013.	100840.	2980.2
Stddev	52.	79.	8.0
%RSD	.32208	.07839	.26937
#1	16023.	100880.	2979.4
#2	15957.	100750.	2988.6
#3	16059.	100900.	2972.7

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511088505 Acquired: 11/17/2015 14:12:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG547152-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00111	.49039	.00023	.11818	.02308	.00005	260.25	.11540
Stddev	.00116	.00532	.00368	.00154	.00098	.00003	2.16	.00026
%RSD	103.85	1.0842	1583.2	1.2998	4.2389	53.282	.83013	.22797
#1	-.00210	.49426	-.00017	.11641	.02234	.00007	262.73	.11529
#2	-.00141	.49258	-.00324	.11921	.02272	.00002	258.78	.11570
#3	.00016	.48433	.00410	.11892	.02419	.00007	259.24	.11520
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00311	.00200	.02432	.62514	4.0538	.07947	34.301	.65917
Stddev	.00030	.00026	.00090	.03247	.0782	.00188	.210	.00363
%RSD	9.7047	12.844	3.7153	5.1938	1.9299	2.3686	.61343	.55001
#1	.00343	.00190	.02369	.59176	4.1370	.07781	34.494	.66203
#2	.00283	.00229	.02535	.65661	3.9817	.07910	34.333	.65510
#3	.00307	.00180	.02390	.62705	4.0429	.08151	34.077	.66039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00737	9.9626	.01943	.02719	.10516	.01368	-.00322	9.7040
Stddev	.00006	.0575	.00036	.00189	.00141	.00196	.00465	.0796
%RSD	.87210	.57719	1.8564	6.9337	1.3430	14.319	144.36	.82004
#1	.00743	10.028	.01984	.02680	.10602	.01142	-.00380	9.7400
#2	.00730	9.9214	.01927	.02924	.10353	.01485	.00169	9.7591
#3	.00738	9.9382	.01917	.02553	.10592	.01477	-.00756	9.6127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511088505 Acquired: 11/17/2015 14:12:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG547152-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00073	.91662	-.01747	-.00014	.00007	20.014	.51412
Stddev	.00057	.00786	.00442	.00097	.00041	.108	.10684
%RSD	77.618	.85760	25.294	706.97	605.09	.53744	20.782
#1	-.00091	.92563	-.01237	.00068	.00001	20.050	.62676
#2	-.00118	.91116	-.02012	-.00121	-.00031	20.099	.50139
#3	-.00009	.91308	-.01991	.00012	.00051	19.893	.41421
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15472.	97930.	2967.4
Stddev	28.	216.	19.2
%RSD	.18317	.22034	.64567
#1	15473.	98081.	2945.3
#2	15444.	98025.	2978.1
#3	15500.	97683.	2978.7

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511088507S Acquired: 11/17/2015 14:16:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG547152-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21225	5.8974	.20971	1.1641	.55912	.02601	263.01	.14268
Stddev	.00268	.0094	.00242	.0033	.00179	.00005	.83	.00012
%RSD	1.2620	.15971	1.1529	.28335	.32094	.17584	.31479	.08405
#1	.20921	5.8958	.20789	1.1616	.55737	.02597	262.11	.14281
#2	.21428	5.8888	.21245	1.1678	.56096	.02600	263.73	.14263
#3	.21325	5.9075	.20879	1.1628	.55903	.02606	263.20	.14259
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10943	.26277	.29448	3.1057	30.340	.62491	39.216	.93040
Stddev	.00004	.00014	.00213	.0233	.161	.00596	.035	.00785
%RSD	.03798	.05154	.72260	.74908	.53131	.95312	.08831	.84352
#1	.10940	.26262	.29273	3.1225	30.163	.61817	39.182	.92173
#2	.10943	.26278	.29685	3.1154	30.478	.62945	39.251	.93702
#3	.10948	.26289	.29387	3.0792	30.380	.62712	39.216	.93245
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.55111	36.473	.27789	5.3497	.40103	.65045	.20578	12.585
Stddev	.00137	.133	.00164	.0148	.00446	.00200	.00590	.030
%RSD	.24920	.36582	.59195	.27652	1.1116	.30754	2.8670	.24063
#1	.55250	36.320	.27963	5.3652	.40087	.65107	.21254	12.618
#2	.54976	36.565	.27767	5.3483	.39665	.65206	.20319	12.579
#3	.55106	36.534	.27637	5.3357	.40556	.64821	.20163	12.559
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511088507S Acquired: 11/17/2015 14:16:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG547152-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53752	1.4414	.51256	.25575	.53827	20.578	1.0044
Stddev	.00083	.0031	.00859	.00139	.00159	.032	.1445
%RSD	.15454	.21506	1.6751	.54353	.29461	.15569	14.381
#1	.53696	1.4382	.50278	.25633	.53902	20.609	.90214
#2	.53714	1.4444	.51885	.25417	.53644	20.582	.94151
#3	.53848	1.4417	.51605	.25676	.53934	20.545	1.1697
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15191.	96435.	2935.8
Stddev	37.	270.	5.5
%RSD	.24076	.28015	.18901
#1	15210.	96722.	2934.8
#2	15213.	96185.	2941.7
#3	15148.	96398.	2930.7

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511088509SD Acquired: 11/17/2015 14:19:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG547152-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21258	5.4478	.20575	1.1687	.55268	.02596	267.13	.14428
Stddev	.00161	.0100	.00103	.0021	.00166	.00008	.39	.00041
%RSD	.75707	.18319	.49897	.18172	.30093	.29299	.14600	.28673
#1	.21409	5.4593	.20668	1.1695	.55258	.02599	267.00	.14461
#2	.21089	5.4424	.20465	1.1664	.55439	.02588	267.57	.14442
#3	.21278	5.4417	.20593	1.1704	.55107	.02602	266.82	.14382
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10882	.26156	.27927	2.3471	30.186	.62210	39.954	.93415
Stddev	.00030	.00046	.00183	.0390	.149	.00727	.096	.00483
%RSD	.27780	.17542	.65540	1.6615	.49429	1.1679	.23963	.51695
#1	.10864	.26103	.28039	2.3418	30.154	.61450	39.852	.92886
#2	.10917	.26176	.28026	2.3885	30.348	.62898	39.967	.93832
#3	.10865	.26188	.27716	2.3110	30.055	.62280	40.042	.93527
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.54804	36.600	.27548	5.3352	.32545	.64967	.20478	12.105
Stddev	.00131	.032	.00018	.0121	.00129	.00202	.00534	.026
%RSD	.23898	.08810	.06609	.22603	.39569	.31119	2.6072	.21877
#1	.54893	36.609	.27562	5.3275	.32692	.65200	.20249	12.109
#2	.54866	36.626	.27555	5.3491	.32496	.64866	.21088	12.129
#3	.54654	36.564	.27527	5.3290	.32449	.64836	.20096	12.076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511088509SD Acquired: 11/17/2015 14:19:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG547152-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53472	1.4587	.50186	.25334	.53712	20.557	.61045
Stddev	.00109	.0032	.00920	.00090	.00169	.057	.06846
%RSD	.20407	.21661	1.8333	.35393	.31400	.27549	11.214
#1	.53574	1.4577	.49345	.25231	.53626	20.582	.65948
#2	.53485	1.4622	.51169	.25395	.53602	20.597	.53224
#3	.53357	1.4561	.50045	.25376	.53906	20.492	.63964
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15182.	96197.	2939.5
Stddev	17.	170.	6.2
%RSD	.11048	.17666	.21105
#1	15175.	96369.	2940.6
#2	15170.	96194.	2945.0
#3	15201.	96029.	2932.8

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511088501 Acquired: 11/17/2015 14:23:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	.07088	-.00125	.12651	.01902	.00002	267.41
Stddev	.00034	.00079	.00098	.00317	.00035	.00003	.58
%RSD	176.78	1.1125	78.336	2.5036	1.8361	152.81	.21806
#1	-.00042	.07135	-.00148	.12346	.01868	.00001	267.18
#2	-.00036	.06997	-.00018	.12978	.01938	-.00000	268.07
#3	.00020	.07133	-.00210	.12630	.01900	.00005	266.97
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.11743	.00507	.00133	.48400	.16258	4.2336	.07905
Stddev	.00045	.00020	.00078	.00253	.01317	.0301	.00607
%RSD	.38549	3.8519	58.761	.52189	8.0990	.71111	7.6788
#1	.11775	.00485	.00215	.48646	.16955	4.2346	.07221
#2	.11763	.00522	.00060	.48415	.14739	4.2631	.08380
#3	.11691	.00514	.00124	.48141	.17080	4.2029	.08113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	36.272	.85845	.00558	11.311	.02597	.14826	.08137
Stddev	.098	.00383	.00021	.010	.00062	.00462	.00405
%RSD	.26975	.44610	3.8174	.08569	2.3730	3.1172	4.9827
#1	36.225	.86157	.00533	11.316	.02598	.15336	.08455
#2	36.385	.85960	.00571	11.318	.02658	.14435	.08276
#3	36.207	.85417	.00568	11.300	.02535	.14708	.07681
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511088501 Acquired: 11/17/2015 14:23:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01324	-.00117	9.4546	.00011	.95299	F -.03232	.00158
Stddev	.00165	.00363	.0296	.00032	.00326	.00351	.00249
%RSD	12.438	309.39	.31338	288.95	.34236	10.871	158.11
#1	.01480	-.00489	9.4772	.00003	.95213	-.03462	.00062
#2	.01152	-.00099	9.4655	.00046	.95659	-.03405	.00441
#3	.01340	.00236	9.4210	-.00016	.95023	-.02827	-.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00017	21.371	.32978
Stddev	.00008	.122	.13535
%RSD	45.206	.57189	41.042
#1	.00009	21.473	.48600
#2	.00025	21.404	.24773
#3	.00018	21.235	.25560
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15614.	98166.	3003.8
Stddev	86.	385.	4.5
%RSD	.55297	.39225	.14836
#1	15524.	97982.	3009.0
#2	15620.	97907.	3001.3
#3	15697.	98608.	3001.1

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511088502 Acquired: 11/17/2015 14:27:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	.01090	-.00367	.11625	.01800	.00000	252.51	.11088
Stddev	.00063	.00355	.00020	.00161	.00032	.00007	.77	.00045
%RSD	93.051	32.576	5.3273	1.3833	1.7832	2270.6	.30667	.40995
#1	-.00003	.01134	-.00360	.11440	.01819	.00005	252.45	.11107
#2	.00117	.01422	-.00389	.11730	.01763	-.00007	253.32	.11121
#3	.00089	.00715	-.00352	.11705	.01818	.00003	251.77	.11036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00458	.00104	.40541	.02967	3.8758	.07793	34.151	.81600
Stddev	.00011	.00029	.00234	.01702	.0646	.00339	.175	.00447
%RSD	2.3131	27.750	.57696	57.370	1.6656	4.3553	.51370	.54772
#1	.00451	.00131	.40684	.03593	3.9006	.08088	34.013	.81551
#2	.00453	.00108	.40667	.01040	3.9243	.07871	34.349	.82069
#3	.00470	.00074	.40271	.04267	3.8025	.07422	34.092	.81179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00459	10.730	.02525	.13018	.04189	.01368	-.00412	8.8452
Stddev	.00005	.057	.00064	.00270	.00160	.00191	.00715	.0275
%RSD	1.0261	.52759	2.5191	2.0760	3.8086	13.946	173.65	.31087
#1	.00461	10.700	.02598	.12743	.04148	.01358	-.00235	8.8707
#2	.00453	10.796	.02492	.13027	.04365	.01182	.00198	8.8488
#3	.00462	10.695	.02484	.13283	.04054	.01564	-.01198	8.8160
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511088502 Acquired: 11/17/2015 14:27:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00080	.89553	-.02864	.00056	-.00034	20.220	.13574
Stddev	.00075	.00356	.00332	.00103	.00036	.081	.27252
%RSD	94.878	.39707	11.609	184.93	104.56	.40288	200.77
#1	-.00116	.89409	-.02740	.00016	-.00064	20.275	-.08769
#2	-.00130	.89958	-.02612	-.00021	-.00044	20.258	.05555
#3	.00007	.89293	-.03241	.00173	.00006	20.126	.43936
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15417.	97868.	2972.1
Stddev	14.	84.	9.7
%RSD	.09265	.08542	.32681
#1	15412.	97781.	2972.8
#2	15405.	97876.	2962.1
#3	15433.	97947.	2981.5

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511088502PS Acquired: 11/17/2015 14:31:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG547254-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20675	5.1555	.20273	1.1289	.53509	.02550	226.50	.12395
Stddev	.00035	.0070	.00227	.0058	.00574	.00007	1.68	.00035
%RSD	.16795	.13494	1.1185	.51320	1.0732	.27840	.74382	.28404
#1	.20712	5.1553	.20534	1.1238	.54101	.02545	227.84	.12360
#2	.20668	5.1626	.20168	1.1276	.52954	.02546	224.61	.12394
#3	.20644	5.1487	.20119	1.1352	.53471	.02558	227.06	.12430
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10847	.25656	.61403	2.0377	29.028	.59319	35.033	.96938
Stddev	.00024	.00073	.00224	.0027	.112	.00850	.155	.00083
%RSD	.21694	.28606	.36528	.13172	.38740	1.4335	.44366	.08544
#1	.10833	.25619	.61152	2.0382	29.140	.60298	35.184	.96985
#2	.10874	.25608	.61586	2.0401	28.916	.58769	34.873	.96987
#3	.10833	.25740	.61469	2.0348	29.027	.58889	35.042	.96843
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53652	35.381	.27494	5.3386	.29670	.63763	.20070	10.456
Stddev	.00012	.204	.00169	.0068	.00172	.00122	.00421	.014
%RSD	.02247	.57743	.61435	.12706	.57854	.19064	2.0999	.13127
#1	.53639	35.551	.27486	5.3307	.29685	.63894	.20433	10.441
#2	.53663	35.154	.27666	5.3425	.29491	.63740	.20169	10.461
#3	.53653	35.436	.27329	5.3424	.29834	.63655	.19608	10.467
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511088502PS Acquired: 11/17/2015 14:31:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG547254-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52881	1.2990	.48568	.25054	.52408	18.336	.43535
Stddev	.00097	.0107	.00600	.00037	.00087	.023	.27403
%RSD	.18261	.82053	1.2363	.14828	.16646	.12693	62.944
#1	.52829	1.3076	.49204	.25069	.52333	18.314	.28239
#2	.52992	1.2871	.48011	.25011	.52504	18.360	.75171
#3	.52821	1.3023	.48489	.25081	.52386	18.333	.27195
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15479.	97733.	2978.6
Stddev	17.	131.	17.6
%RSD	.11279	.13397	.59195
#1	15460.	97588.	2977.8
#2	15483.	97766.	2996.7
#3	15494.	97844.	2961.5

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511088502SDL Acquired: 11/17/2015 14:35:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG547254-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	-.00089	-.00264	.02332	.00395	.00004	49.014	.02072
Stddev	.00126	.00087	.00152	.00140	.00038	.00002	.180	.00018
%RSD	190.36	97.727	57.742	5.9885	9.6176	60.526	.36691	.88684
#1	.00205	-.00187	-.00372	.02240	.00371	.00007	48.826	.02082
#2	.00034	-.00056	-.00329	.02264	.00439	.00002	49.185	.02084
#3	-.00041	-.00023	-.00090	.02493	.00375	.00004	49.031	.02051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00097	-.00044	.07872	.02926	.75039	.01122	6.5484	.15236
Stddev	.00006	.00043	.00116	.00414	.01904	.00073	.1143	.00270
%RSD	5.8787	99.361	1.4727	14.155	2.5375	6.4896	1.7455	1.7716
#1	.00091	.00006	.07831	.03159	.75434	.01203	6.6251	.15026
#2	.00103	-.00067	.07783	.02448	.72968	.01062	6.4171	.15140
#3	.00096	-.00070	.08003	.03171	.76715	.01100	6.6032	.15540
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00100	2.0202	.00452	.02979	.00693	.00208	-.00602	1.6318
Stddev	.00015	.0130	.00031	.00156	.00124	.00575	.00279	.0076
%RSD	15.468	.64092	6.9064	5.2290	17.870	276.91	46.346	.46840
#1	.00118	2.0307	.00444	.02799	.00703	.00630	-.00288	1.6404
#2	.00090	2.0058	.00486	.03077	.00812	.00439	-.00694	1.6293
#3	.00092	2.0242	.00425	.03060	.00565	-.00447	-.00823	1.6258
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511088502SDL Acquired: 11/17/2015 14:35:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG547254-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00037	.16789	-.00079	.00173	-.00006	3.9579	.19720
Stddev	.00087	.00058	.00352	.00262	.00059	.0201	.09515
%RSD	235.10	.34497	447.61	151.35	966.41	.50845	48.249
#1	-.00018	.16754	-.00078	-.00107	-.00055	3.9790	.08996
#2	.00039	.16856	-.00431	.00411	-.00023	3.9557	.27152
#3	-.00132	.16756	.00273	.00215	.00060	3.9389	.23011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	17247.	108580.	3207.6
Stddev	33.	578.	5.4
%RSD	.19142	.53192	.16752
#1	17219.	109230.	3213.3
#2	17239.	108390.	3202.6
#3	17284.	108120.	3206.8

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511082301 Acquired: 11/17/2015 14:39:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	-.00455	-.00066	.03483	.76662	.00007	12.432	.00008
Stddev	.00102	.00315	.00369	.00141	.00432	.00002	.107	.00013
%RSD	1196.1	69.311	558.37	4.0535	.56376	24.269	.86157	161.33
#1	.00108	-.00130	.00312	.03615	.76177	.00008	12.309	.00021
#2	-.00076	-.00476	-.00424	.03334	.76800	.00005	12.483	.00008
#3	-.00058	-.00759	-.00086	.03499	.77007	.00009	12.504	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	-.00068	.00057	.06012	.67791	.05538	1.2887	.00753
Stddev	.00018	.00058	.00103	.01977	.02523	.00245	.1054	.00052
%RSD	103.08	85.957	180.38	32.881	3.7213	4.4223	8.1801	6.8568
#1	.00003	-.00041	-.00035	.06272	.65294	.05713	1.3995	.00718
#2	-.00030	-.00135	.00038	.07847	.67738	.05644	1.1896	.00813
#3	-.00024	-.00028	.00168	.03918	.70339	.05258	1.2770	.00730
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	31.844	-.00050	.00695	.00024	-.00063	-.00639	.00915
Stddev	.00016	.138	.00033	.00561	.00284	.00430	.00094	.00073
%RSD	115.76	.43324	66.755	80.719	1189.0	688.27	14.699	8.0040
#1	-.00032	31.689	-.00061	.01333	-.00294	.00371	-.00674	.00841
#2	-.00006	31.952	-.00076	.00284	.00112	-.00490	-.00711	.00987
#3	-.00004	31.892	-.00012	.00466	.00254	-.00068	-.00533	.00918
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511082301 Acquired: 11/17/2015 14:39:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00066	2.0189	.00166	.00236	-.00050	.00156	.40777
Stddev	.00019	.0102	.00145	.00096	.00048	.00016	.07297
%RSD	29.270	.50414	87.291	40.528	96.802	10.053	17.895
#1	-.00086	2.0076	.00017	.00327	-.00045	.00168	.33209
#2	-.00047	2.0217	.00173	.00136	-.00004	.00162	.41354
#3	-.00067	2.0273	.00306	.00246	-.00100	.00138	.47769
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	17499.	109240.	3186.4
Stddev	44.	457.	29.1
%RSD	.24957	.41836	.91356
#1	17547.	109750.	3216.9
#2	17464.	108870.	3158.9
#3	17485.	109100.	3183.5

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCV Acquired: 11/17/2015 14:42:57 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39987	9.9620	.39300	.49655	.99890	.04992	9.9626
Stddev	.00168	.0094	.00280	.00357	.00188	.00002	.0284
%RSD	.42014	.09384	.71305	.71832	.18845	.04852	.28485
#1	.40181	9.9670	.38997	.49302	.99677	.04991	9.9299
#2	.39898	9.9512	.39551	.50015	1.0003	.04995	9.9801
#3	.39883	9.9678	.39351	.49648	.99957	.04991	9.9778
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05002	.20397	.49430	.50614	3.9891	49.109	1.0064
Stddev	.00003	.00046	.00101	.00105	.0361	.220	.0039
%RSD	.06185	.22455	.20495	.20816	.90508	.44824	.38678
#1	.05004	.20428	.49446	.50493	3.9749	49.088	1.0020
#2	.05004	.20419	.49322	.50683	3.9622	48.901	1.0092
#3	.04999	.20344	.49522	.50667	4.0301	49.339	1.0082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.9737	.49981	1.0032	49.483	.49974	9.8760	.50320
Stddev	.0992	.00459	.0013	.124	.00039	.0090	.00192
%RSD	.99411	.91860	.12442	.25112	.07856	.09098	.38155
#1	9.8895	.49460	1.0040	49.346	.49931	9.8668	.50224
#2	9.9487	.50153	1.0039	49.516	.50007	9.8847	.50541
#3	10.083	.50328	1.0018	49.588	.49984	9.8764	.50195
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCV Acquired: 11/17/2015 14:42:57 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.1825	.39500	4.9477	1.0126	.99917	.99446	.49945
Stddev	.0022	.00426	.0127	.0018	.00286	.00819	.00233
%RSD	.18974	1.0777	.25734	.17684	.28661	.82400	.46723
#1	1.1804	.39152	4.9623	1.0136	.99609	.99214	.50212
#2	1.1823	.39974	4.9415	1.0136	.99966	.98768	.49785
#3	1.1849	.39374	4.9393	1.0105	1.0018	1.0036	.49836
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.99922	.99653	F .62062
Stddev	.00186	.00162	.08459
%RSD	.18592	.16209	13.629
#1	1.0009	.99755	.61665
#2	.99955	.99736	.70712
#3	.99722	.99466	.53809
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16535.	103310.	3099.7
Stddev	28.	63.	7.7
%RSD	.16792	.06073	.24975
#1	16506.	103250.	3108.6
#2	16561.	103370.	3095.5
#3	16538.	103320.	3095.0

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCB Acquired: 11/17/2015 14:46:42 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	-.00268	-.00276	.00119	.00081	.00003	.00107
Stddev	.00049	.00310	.00090	.00134	.00044	.00003	.02127
%RSD	238.87	115.75	32.709	112.72	54.152	95.058	1991.4
#1	-.00033	-.00619	-.00309	.00263	.00131	.00002	-.01365
#2	.00033	-.00032	-.00174	-.00002	.00048	.00001	.02546
#3	-.00062	-.00153	-.00346	.00095	.00065	.00007	-.00861
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.00013	-.00034	.00041	.01340	.03433	-.00023
Stddev	.00031	.00010	.00068	.00066	.01800	.00259	.00388
%RSD	436.57	74.311	200.67	158.50	134.29	7.5433	1681.7
#1	-.00029	.00002	.00039	.00115	.02169	.03566	-.00001
#2	-.00021	.00020	-.00044	.00021	-.00725	.03597	-.00421
#3	.00028	.00017	-.00097	-.00011	.02577	.03134	.00353
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.02614	.00030	.00074	.01290	-.00002	-.00288	.00041
Stddev	.02240	.00109	.00013	.00528	.00012	.00534	.00101
%RSD	85.714	362.17	17.200	40.940	540.21	185.12	247.06
#1	-.02822	-.00093	.00073	.01778	-.00000	.00321	.00024
#2	-.00277	.00070	.00088	.00729	.00009	-.00672	.00149
#3	-.04742	.00113	.00062	.01363	-.00016	-.00515	-.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCB Acquired: 11/17/2015 14:46:42 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00220	-.00391	.00187	-.00059	.00004	.00781	.00178
Stddev	.00171	.00136	.00024	.00065	.00020	.00124	.00112
%RSD	77.871	34.916	12.884	110.86	439.14	15.880	63.066
#1	-.00043	-.00540	.00213	.00010	-.00018	.00782	.00246
#2	-.00385	-.00273	.00180	-.00068	.00018	.00905	.00048
#3	-.00231	-.00359	.00167	-.00119	.00013	.00657	.00239
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00024	.00010	F .23776
Stddev	.00044	.00004	.12509
%RSD	185.78	42.261	52.611
#1	.00009	.00006	.13457
#2	-.00074	.00015	.37688
#3	-.00007	.00011	.20183
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16851.	106270.	3089.9
Stddev	25.	509.	21.1
%RSD	.14715	.47898	.68287
#1	16865.	106660.	3112.1
#2	16865.	106460.	3070.1
#3	16822.	105690.	3087.6

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511085601 Acquired: 11/17/2015 14:50:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.83907	-.00096	.02270	.20102	.00006	150.24	.00164
Stddev	.00122	.00743	.00162	.00137	.00069	.00007	.41	.00012
%RSD	728.22	.88548	167.89	6.0359	.34084	130.15	.27199	7.4717
#1	-.00156	.83094	.00060	.02220	.20175	.00012	150.71	.00166
#2	.00070	.84075	-.00263	.02165	.20040	.00007	149.94	.00151
#3	.00035	.84552	-.00085	.02425	.20092	-.00002	150.08	.00175
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00131	.00208	.04053	.92014	3.0480	.02215	49.789	.14696
Stddev	.00021	.00024	.00208	.02461	.0579	.00322	.093	.00129
%RSD	15.779	11.452	5.1408	2.6743	1.9002	14.541	.18613	.88005
#1	.00155	.00188	.03895	.92445	3.0780	.02138	49.873	.14844
#2	.00118	.00202	.04289	.89367	3.0848	.02568	49.690	.14635
#3	.00121	.00235	.03975	.94231	2.9812	.01938	49.805	.14608
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	17.355	.00128	.06291	.02532	-.00006	-.00504	5.1155
Stddev	.00009	.044	.00023	.00548	.00207	.00064	.00303	.0236
%RSD	24.856	.25475	17.730	8.7048	8.1855	1103.8	60.118	.46128
#1	.00029	17.360	.00105	.06779	.02734	-.00074	-.00603	5.1176
#2	.00036	17.396	.00129	.05699	.02543	.00003	-.00744	5.1379
#3	.00048	17.308	.00150	.06396	.02320	.00054	-.00164	5.0909
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511085601 Acquired: 11/17/2015 14:50:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.58507	.00162	.00074	.00132	.50773	.48750
Stddev	.00086	.00179	.00291	.00052	.00071	.00228	.26347
%RSD	742.96	.30525	179.16	71.277	54.171	.44817	54.044
#1	-.00039	.58705	-.00170	.00090	.00080	.50914	.61826
#2	-.00038	.58357	.00289	.00116	.00213	.50894	.66002
#3	.00111	.58461	.00368	.00015	.00103	.50510	.18423
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15550.	98388.	2960.2
Stddev	20.	353.	18.3
%RSD	.12639	.35840	.61950
#1	15573.	98722.	2944.1
#2	15537.	98424.	2980.2
#3	15540.	98019.	2956.4

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511086201 Acquired: 11/17/2015 14:54:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	2.8622	.00505	.03861	.24527	.00021	47.950	.00022
Stddev	.00036	.0077	.00311	.00025	.00156	.00001	.107	.00019
%RSD	314.68	.26932	61.510	.63636	.63448	4.4546	.22233	85.547
#1	.00050	2.8536	.00856	.03832	.24654	.00020	48.007	.00015
#2	.00007	2.8646	.00394	.03877	.24575	.00022	48.016	.00007
#3	-.00022	2.8684	.00266	.03872	.24354	.00021	47.827	.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00179	.00569	.00567	3.1936	2.3826	.01603	9.5863	.08483
Stddev	.00009	.00080	.00074	.0311	.0144	.00079	.1623	.00153
%RSD	4.8542	13.980	12.985	.97215	.60619	4.9066	1.6926	1.8051
#1	.00189	.00652	.00493	3.1778	2.3711	.01694	9.7735	.08607
#2	.00172	.00562	.00640	3.2294	2.3780	.01561	9.4987	.08312
#3	.00176	.00493	.00568	3.1736	2.3988	.01554	9.4867	.08531
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00203	33.174	.00400	.12735	.00082	.00291	-.00359	9.4920
Stddev	.00021	.074	.00027	.00133	.00262	.00200	.00263	.3584
%RSD	10.330	.22441	6.8671	1.0463	321.79	68.848	73.250	3.7760
#1	.00188	33.172	.00383	.12837	-.00055	.00126	-.00220	9.7052
#2	.00193	33.250	.00432	.12784	.00384	.00513	-.00663	9.6927
#3	.00227	33.101	.00386	.12584	-.00085	.00232	-.00195	9.0782
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511086201 Acquired: 11/17/2015 14:54:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	.84565	.09633	.00182	.00388	.04492	1.7890
Stddev	.00062	.00207	.00291	.00074	.00029	.00061	.4867
%RSD	4919.8	.24447	3.0186	40.806	7.5958	1.3511	27.207
#1	.00064	.84746	.09309	.00137	.00414	.04509	1.6900
#2	-.00059	.84610	.09719	.00142	.00393	.04542	1.3593
#3	-.00009	.84339	.09871	.00268	.00356	.04424	2.3176
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15948.	100780.	2987.4
Stddev	14.	246.	6.3
%RSD	.08842	.24405	.21143
#1	15963.	100540.	2987.9
#2	15947.	101030.	2993.4
#3	15934.	100760.	2980.8

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511086202 Acquired: 11/17/2015 14:58:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.02606	.00259	.03844	.21662	.00001	46.426	-.00007
Stddev	.00110	.00307	.00076	.00116	.00037	.00001	.109	.00013
%RSD	2002.7	11.788	29.212	3.0274	.16949	67.823	.23456	180.65
#1	-.00112	.02330	.00321	.03973	.21628	.00000	46.358	-.00015
#2	.00023	.02937	.00282	.03747	.21701	.00002	46.552	-.00016
#3	.00105	.02550	.00175	.03812	.21658	.00002	46.369	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	.00064	.00102	.04642	1.5144	.01299	8.8982	.01922
Stddev	.00048	.00017	.00096	.00545	.0875	.00530	.1240	.00220
%RSD	424.18	26.737	94.323	11.731	5.7752	40.809	1.3930	11.451
#1	.00066	.00083	.00211	.04151	1.5180	.01828	8.8547	.01841
#2	-.00019	.00051	.00063	.04548	1.4253	.01299	9.0381	.02172
#3	-.00013	.00057	.00031	.05228	1.6001	.00769	8.8019	.01754
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00199	34.291	-.00031	.00261	.00006	-.00018	-.00583	5.6692
Stddev	.00033	.073	.00042	.00345	.00110	.00054	.00012	.0018
%RSD	16.390	.21165	132.38	131.93	1859.3	304.97	2.1273	.03104
#1	.00218	34.299	.00011	.00490	.00121	-.00079	-.00576	5.6672
#2	.00217	34.359	-.00033	-.00135	-.00004	.00010	-.00597	5.6702
#3	.00161	34.215	-.00072	.00429	-.00099	.00017	-.00576	5.6703
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511086202 Acquired: 11/17/2015 14:58:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.85416	-.00071	.00167	.00053	.04485	.22799
Stddev	.00025	.00134	.00482	.00194	.00026	.00006	.19264
%RSD	113.92	.15658	679.24	116.32	49.533	.13087	84.497
#1	.00021	.85467	-.00236	.00341	.00051	.04489	.21076
#2	-.00003	.85517	-.00449	.00201	.00080	.04478	.42866
#3	.00048	.85264	.00472	-.00042	.00028	.04488	.04454
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15923.	100530.	2988.6
Stddev	40.	121.	16.5
%RSD	.25323	.12041	.55257
#1	15968.	100670.	2969.9
#2	15908.	100500.	2994.7
#3	15892.	100440.	3001.1

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511088506 Acquired: 11/17/2015 15:02:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG547152-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.01733	.00017	.10911	.01702	.00003	250.77	.11015
Stddev	.00141	.00718	.00148	.00208	.00115	.00001	1.00	.00049
%RSD	401.55	41.438	850.77	1.9069	6.7439	42.119	.39767	.44356
#1	.00187	.02465	-.00038	.10920	.01775	.00003	251.84	.11059
#2	-.00093	.01029	.00186	.10699	.01762	.00001	250.60	.11023
#3	.00011	.01707	-.00096	.11114	.01570	.00003	249.87	.10962
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00283	-.00020	.01342	.08543	3.7636	.07533	32.998	.63652
Stddev	.00026	.00052	.00034	.01100	.0496	.00157	.121	.00051
%RSD	9.2880	263.96	2.5650	12.870	1.3176	2.0813	.36675	.07959
#1	.00261	-.00011	.01336	.07849	3.8057	.07639	32.986	.63632
#2	.00276	-.00075	.01310	.09811	3.7760	.07607	33.124	.63615
#3	.00312	.00027	.01378	.07969	3.7089	.07353	32.883	.63710
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00461	9.6136	.01781	.00554	.04378	.01131	-.00144	8.7037
Stddev	.00022	.0380	.00024	.00172	.00364	.00202	.00492	.0334
%RSD	4.8665	.39509	1.3323	30.954	8.3080	17.864	343.02	.38380
#1	.00435	9.6398	.01757	.00749	.04724	.01032	-.00269	8.7187
#2	.00477	9.6310	.01804	.00423	.03998	.01363	-.00561	8.7269
#3	.00471	9.5700	.01782	.00492	.04412	.00998	.00400	8.6654
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511088506 Acquired: 11/17/2015 15:02:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG547152-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00046	.88039	-.02917	.00054	.00017	19.141	.20454
Stddev	.00063	.00291	.00340	.00186	.00077	.097	.06359
%RSD	136.46	.33064	11.645	344.51	444.75	.50848	31.089
#1	.00014	.88339	-.03135	.00195	-.00048	19.212	.27409
#2	-.00111	.88022	-.03090	.00124	.00102	19.181	.14937
#3	-.00040	.87757	-.02526	-.00157	-.00003	19.030	.19017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15370.	97635.	2988.8
Stddev	45.	152.	16.7
%RSD	.29136	.15544	.55707
#1	15370.	97512.	2972.0
#2	15326.	97588.	3005.3
#3	15415.	97805.	2989.1

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511088508S Acquired: 11/17/2015 15:06:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG547152-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20893	5.2060	.20071	1.1401	.53822	.02536	252.70	.13681
Stddev	.00104	.0098	.00044	.0030	.00196	.00014	.11	.00062
%RSD	.49685	.18811	.21813	.26385	.36360	.57069	.04363	.45411
#1	.20857	5.2032	.20110	1.1392	.54042	.02523	252.78	.13751
#2	.20813	5.1980	.20023	1.1377	.53755	.02532	252.74	.13659
#3	.21010	5.2170	.20080	1.1435	.53669	.02552	252.57	.13632
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10623	.25760	.27138	2.1235	29.419	.60428	37.920	.88720
Stddev	.00089	.00113	.00097	.0113	.124	.00228	.168	.00083
%RSD	.83943	.43851	.35834	.53234	.42059	.37808	.44348	.09357
#1	.10725	.25650	.27241	2.1295	29.558	.60626	37.970	.88728
#2	.10581	.25755	.27048	2.1105	29.378	.60481	38.057	.88634
#3	.10563	.25875	.27125	2.1305	29.321	.60178	37.732	.88799
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53682	35.493	.27089	5.2522	.29701	.64101	.19795	11.323
Stddev	.00347	.046	.00221	.0324	.00270	.00617	.00525	.072
%RSD	.64628	.12884	.81565	.61763	.90742	.96295	2.6504	.63789
#1	.54081	35.542	.27336	5.2878	.29947	.64792	.20228	11.406
#2	.53517	35.488	.27022	5.2446	.29413	.63603	.19947	11.290
#3	.53449	35.451	.26909	5.2243	.29744	.63909	.19212	11.274
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

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Sample Name: L1511088508S Acquired: 11/17/2015 15:06:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG547152-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52449	1.3855	.48589	.25103	.52649	19.463	.79513
Stddev	.00343	.0013	.00387	.00137	.00089	.120	.32039
%RSD	.65320	.08986	.79636	.54607	.16907	.61699	40.295
#1	.52835	1.3870	.48516	.25223	.52583	19.600	1.1632
#2	.52332	1.3847	.48243	.25131	.52615	19.417	.57876
#3	.52180	1.3849	.49007	.24953	.52751	19.374	.64343
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15259.	96295.	2928.8
Stddev	57.	110.	15.7
%RSD	.37430	.11443	.53459
#1	15197.	96417.	2922.4
#2	15309.	96267.	2917.3
#3	15271.	96202.	2946.6

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511088510SD Acquired: 11/17/2015 15:10:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG547152-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21213	5.2888	.20764	1.1689	.54924	.02602	266.35	.14318
Stddev	.00252	.0191	.00143	.0017	.00074	.00009	.42	.00044
%RSD	1.1886	.36035	.68781	.14084	.13522	.34041	.15954	.31070
#1	.21270	5.2811	.20914	1.1670	.54891	.02597	266.23	.14268
#2	.21431	5.3105	.20751	1.1698	.55009	.02612	266.82	.14353
#3	.20937	5.2749	.20629	1.1700	.54873	.02596	266.00	.14334
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10854	.26331	.27561	2.1784	30.108	.62185	39.680	.93394
Stddev	.00045	.00182	.00080	.0344	.231	.00555	.281	.00076
%RSD	.41745	.69299	.29062	1.5781	.76700	.89212	.70719	.08087
#1	.10876	.26122	.27652	2.1972	30.302	.62216	39.369	.93309
#2	.10884	.26457	.27504	2.1993	30.170	.61615	39.914	.93422
#3	.10802	.26415	.27526	2.1388	29.853	.62723	39.757	.93452
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.54656	36.637	.27680	5.3549	.30566	.64982	.20202	11.932
Stddev	.00126	.031	.00155	.0089	.00113	.00019	.00106	.014
%RSD	.23007	.08433	.56053	.16641	.37062	.02966	.52406	.11831
#1	.54726	36.636	.27807	5.3476	.30665	.64965	.20092	11.930
#2	.54732	36.669	.27726	5.3649	.30442	.65003	.20303	11.947
#3	.54511	36.607	.27507	5.3523	.30590	.64978	.20212	11.919
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511088510SD Acquired: 11/17/2015 15:10:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG547152-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53530	1.4495	.49321	.25167	.53683	20.572	.41077
Stddev	.00233	.0026	.00581	.00220	.00134	.023	.14314
%RSD	.43619	.18016	1.1789	.87249	.24915	.10986	34.847
#1	.53583	1.4507	.48650	.24987	.53533	20.586	.52388
#2	.53733	1.4514	.49659	.25102	.53790	20.584	.24984
#3	.53275	1.4465	.49655	.25412	.53726	20.546	.45859
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15222.	95624.	2922.6
Stddev	22.	165.	19.6
%RSD	.14227	.17259	.67099
#1	15198.	95724.	2944.7
#2	15228.	95433.	2907.4
#3	15240.	95714.	2915.6

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511088511 Acquired: 11/17/2015 15:14:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	.10450	.00063	.11916	.01839	-.00000	249.50	.04720
Stddev	.00057	.00348	.00128	.00316	.00071	.00003	.84	.00009
%RSD	73.595	3.3337	204.34	2.6525	3.8564	925.65	.33493	.19060
#1	.00120	.10118	.00035	.11870	.01851	-.00002	249.30	.04725
#2	.00013	.10813	.00202	.12252	.01903	.00003	250.42	.04727
#3	.00099	.10420	-.00049	.11625	.01763	-.00001	248.79	.04710
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.00150	.00656	.13198	3.5812	.07223	34.150	.02313
Stddev	.00016	.00066	.00065	.01125	.0791	.00304	.132	.00148
%RSD	97.261	44.108	9.9304	8.5275	2.2101	4.2043	.38677	6.3830
#1	.00002	.00083	.00706	.14318	3.5013	.07564	34.078	.02336
#2	-.00028	.00215	.00681	.12067	3.5828	.06982	34.069	.02447
#3	-.00025	.00153	.00583	.13208	3.6595	.07123	34.302	.02155
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00141	7.5915	.01047	.01710	.02103	.00708	-.00176	9.4016
Stddev	.00041	.0357	.00026	.00798	.00221	.00309	.00271	.0376
%RSD	29.263	.46996	2.5088	46.661	10.496	43.606	153.65	.40012
#1	.00102	7.5835	.01056	.00887	.02294	.01041	.00115	9.4269
#2	.00136	7.6305	.01068	.01763	.01861	.00648	-.00225	9.4196
#3	.00184	7.5605	.01018	.02481	.02155	.00433	-.00420	9.3584
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511088511 Acquired: 11/17/2015 15:14:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00044	.94386	-.02877	.00199	.00045	8.9800	.34268
Stddev	.00014	.00466	.00529	.00398	.00064	.0313	.12473
%RSD	32.643	.49393	18.385	199.40	142.03	.34834	36.398
#1	-.00030	.94235	-.02673	.00329	.00061	8.9988	.32421
#2	-.00058	.94909	-.02481	.00516	-.00025	8.9972	.47562
#3	-.00043	.94014	-.03478	-.00247	.00101	8.9439	.22822
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15407.	97334.	2925.1
Stddev	28.	177.	10.2
%RSD	.18094	.18141	.35023
#1	15385.	97200.	2929.0
#2	15438.	97268.	2913.5
#3	15397.	97534.	2932.8

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511088512 Acquired: 11/17/2015 15:17:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00040	.01525	-.00193	.11757	.01730	.00001	253.40	.04728
Stddev	.00085	.00311	.00311	.00131	.00055	.00004	1.49	.00027
%RSD	210.85	20.412	161.31	1.1134	3.1705	760.96	.58912	.58045
#1	-.00104	.01272	-.00219	.11731	.01754	.00004	253.00	.04759
#2	-.00073	.01430	.00131	.11899	.01668	.00002	255.05	.04714
#3	.00056	.01872	-.00490	.11641	.01770	-.00004	252.14	.04710
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	.00062	.00473	.03875	3.6602	.07612	34.463	.01914
Stddev	.00008	.00017	.00031	.00680	.0368	.00295	.251	.00057
%RSD	32.073	28.019	6.5369	17.563	1.0058	3.8785	.72789	2.9856
#1	-.00026	.00070	.00438	.03150	3.6948	.07864	34.276	.01905
#2	-.00016	.00042	.00495	.04501	3.6643	.07287	34.748	.01863
#3	-.00032	.00074	.00487	.03973	3.6215	.07684	34.364	.01976
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	7.8030	.01070	.01495	.01312	.00446	-.00296	9.3309
Stddev	.00038	.0210	.00048	.00655	.00387	.00572	.00467	.0340
%RSD	59.774	.26885	4.4660	43.815	29.507	128.34	157.90	.36472
#1	.00076	7.7898	.01063	.01190	.01529	.00302	-.00501	9.3637
#2	.00021	7.8272	.01120	.01048	.00865	-.00041	-.00625	9.3331
#3	.00096	7.7920	.01025	.02247	.01543	.01077	.00239	9.2958
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511088512 Acquired: 11/17/2015 15:17:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.95793	-.02932	.00152	-.00048	8.9785	.21780
Stddev	.00037	.00597	.00159	.00057	.00071	.0561	.15508
%RSD	580.79	.62279	5.4066	37.601	149.46	.62451	71.201
#1	.00045	.95729	-.03016	.00086	-.00096	9.0308	.04924
#2	.00003	.96419	-.03031	.00184	-.00082	8.9855	.35441
#3	-.00029	.95231	-.02749	.00185	.00034	8.9193	.24976
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15385.	96633.	2922.6
Stddev	38.	269.	26.8
%RSD	.24983	.27830	.91645
#1	15346.	96574.	2939.8
#2	15422.	96398.	2891.7
#3	15387.	96926.	2936.3

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511088513 Acquired: 11/17/2015 15:21:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	7.6411	-.00139	.09534	.01458	.00114	157.11	.29164
Stddev	.00041	.0178	.00132	.00223	.00069	.00004	.65	.00067
%RSD	91.687	.23308	94.674	2.3387	4.7148	3.1311	.41657	.22858
#1	.00091	7.6381	.00001	.09280	.01491	.00112	156.85	.29203
#2	.00034	7.6603	-.00260	.09623	.01379	.00118	157.85	.29087
#3	.00011	7.6250	-.00159	.09699	.01505	.00112	156.62	.29201
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03292	.00098	.17404	.26238	3.1984	.08311	14.082	1.8343
Stddev	.00042	.00058	.00026	.00910	.0339	.00320	.191	.0071
%RSD	1.2904	59.484	.15191	3.4692	1.0603	3.8539	1.3575	.38867
#1	.03276	.00111	.17416	.27287	3.1617	.08505	13.972	1.8376
#2	.03259	.00034	.17422	.25775	3.2286	.07941	14.303	1.8392
#3	.03340	.00148	.17373	.25652	3.2048	.08486	13.972	1.8261
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00149	6.8801	.04095	.06059	.42687	.00214	.00123	18.225
Stddev	.00013	.0588	.00097	.00049	.00153	.00251	.00635	.052
%RSD	8.7827	.85514	2.3746	.81374	.35924	116.90	517.32	.28423
#1	.00150	6.8816	.03998	.06011	.42853	.00202	-.00374	18.229
#2	.00135	6.9382	.04094	.06110	.42550	.00471	.00839	18.171
#3	.00161	6.8205	.04192	.06057	.42659	-.00030	-.00097	18.274
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511088513 Acquired: 11/17/2015 15:21:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00034	.49339	-.00790	.00140	.00029	35.635	.36658
Stddev	.00036	.00222	.00439	.00165	.00076	.077	.32288
%RSD	106.42	.45031	55.615	117.98	261.08	.21645	88.079
#1	-.00072	.49223	-.01106	.00242	.00067	35.671	.48730
#2	-.00029	.49595	-.00976	-.00051	-.00058	35.546	.61171
#3	-.00001	.49199	-.00288	.00229	.00079	35.687	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15732.	99355.	2971.1
Stddev	34.	156.	20.5
%RSD	.21368	.15717	.68914
#1	15700.	99193.	2951.5
#2	15767.	99367.	2969.4
#3	15728.	99504.	2992.3

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511088514 Acquired: 11/17/2015 15:25:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00144	7.3936	-.00011	.09678	.01230	.00113	158.16	.29769
Stddev	.00113	.0268	.00325	.00184	.00051	.00003	1.15	.00034
%RSD	78.843	.36220	2992.7	1.9001	4.1517	2.7222	.72974	.11429
#1	.00208	7.3633	.00139	.09573	.01285	.00110	158.46	.29794
#2	.00013	7.4037	.00213	.09890	.01185	.00112	159.13	.29783
#3	.00211	7.4140	-.00384	.09570	.01219	.00116	156.88	.29731
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03319	.00134	.17456	.04822	3.1584	.08208	14.141	1.8485
Stddev	.00006	.00021	.00044	.00684	.0601	.00388	.078	.0085
%RSD	.19250	16.023	.25296	14.186	1.9019	4.7270	.55080	.46054
#1	.03324	.00116	.17505	.04273	3.1786	.08408	14.228	1.8460
#2	.03321	.00128	.17442	.04604	3.2058	.08455	14.118	1.8580
#3	.03312	.00158	.17420	.05588	3.0909	.07760	14.077	1.8416
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	7.0170	.04266	.05251	.40820	-.00115	-.00403	18.510
Stddev	.00029	.0519	.00035	.00530	.00401	.00189	.00173	.022
%RSD	555.17	.73975	.81576	10.101	.98134	163.72	42.921	.11856
#1	.00031	7.0396	.04238	.04988	.41095	-.00131	-.00326	18.522
#2	-.00026	7.0536	.04305	.04904	.41004	.00081	-.00282	18.522
#3	.00011	6.9576	.04254	.05862	.40360	-.00295	-.00601	18.484
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511088514 Acquired: 11/17/2015 15:25:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	.49673	-.01455	.00118	-.00037	36.368	.09256
Stddev	.00046	.00302	.00107	.00108	.00014	.060	.13253
%RSD	160.15	.60719	7.3201	91.288	38.927	.16553	143.18
#1	.00067	.49876	-.01362	.00068	-.00029	36.404	.06951
#2	.00040	.49817	-.01432	.00242	-.00053	36.403	.23510
#3	-.00022	.49327	-.01571	.00045	-.00028	36.299	-.02693
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15723.	100010.	3019.1
Stddev	50.	369.	12.8
%RSD	.31892	.36907	.42521
#1	15751.	100340.	3019.7
#2	15752.	100070.	3006.0
#3	15665.	99610.	3031.6

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCV Acquired: 11/17/2015 15:29:42 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40402	10.090	.39614	.50120	1.0125	.05050	10.098
Stddev	.00022	.002	.00131	.00427	.0021	.00011	.036
%RSD	.05350	.02355	.33048	.85254	.21120	.22736	.35339
#1	.40397	10.093	.39740	.49663	1.0140	.05038	10.130
#2	.40383	10.089	.39622	.50187	1.0100	.05060	10.059
#3	.40426	10.089	.39479	.50510	1.0133	.05051	10.104
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05032	.20402	.50287	.50866	4.0334	50.014	1.0162
Stddev	.00016	.00085	.00161	.00176	.0211	.013	.0051
%RSD	.32577	.41601	.32037	.34600	.52276	.02530	.50598
#1	.05049	.20495	.50173	.51067	4.0141	50.029	1.0125
#2	.05030	.20385	.50216	.50793	4.0559	50.005	1.0141
#3	.05017	.20328	.50471	.50738	4.0300	50.008	1.0221
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.116	.50635	1.0103	50.350	.50538	9.9608	.50602
Stddev	.055	.00110	.0056	.110	.00207	.0408	.00426
%RSD	.54293	.21822	.55099	.21853	.41050	.40912	.84242
#1	10.147	.50536	1.0149	50.424	.50716	10.005	.50614
#2	10.053	.50615	1.0118	50.223	.50588	9.9524	.51023
#3	10.149	.50754	1.0041	50.402	.50310	9.9250	.50171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCV Acquired: 11/17/2015 15:29:42 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.1913	.39711	4.9915	1.0148	1.0128	1.0060	.50455
Stddev	.0040	.00220	.0223	.0029	.0017	.0099	.00327
%RSD	.33219	.55395	.44653	.28338	.17216	.98745	.64874
#1	1.1951	.39691	5.0103	1.0175	1.0134	.99550	.50307
#2	1.1914	.39502	4.9973	1.0150	1.0108	1.0152	.50830
#3	1.1872	.39940	4.9669	1.0118	1.0141	1.0073	.50227
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0117	1.0093	F .72199
Stddev	.0010	.0042	.14719
%RSD	.10098	.41368	20.386
#1	1.0127	1.0134	.74204
#2	1.0107	1.0095	.85812
#3	1.0116	1.0050	.56580
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16522.	103370.	3101.4
Stddev	60.	210.	7.4
%RSD	.36215	.20273	.23930
#1	16487.	103600.	3094.6
#2	16487.	103290.	3109.4
#3	16591.	103210.	3100.3

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCB Acquired: 11/17/2015 15:33:15 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00059	-.00032	-.00211	.00246	-.00014	.00002	-.00279
Stddev	.00015	.00590	.00133	.00025	.00063	.00001	.00571
%RSD	26.047	1838.1	62.918	9.9796	436.57	58.326	204.58
#1	-.00058	-.00619	-.00330	.00227	-.00083	.00002	.00246
#2	-.00075	.00562	-.00236	.00237	.00041	.00001	-.00197
#3	-.00045	-.00039	-.00068	.00273	-.00002	.00003	-.00886
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00006	-.00004	-.00038	.00038	.01932	.01308	-.00368
Stddev	.00011	.00012	.00071	.00063	.01117	.07510	.00377
%RSD	191.04	299.20	186.08	167.35	57.809	573.98	102.31
#1	-.00018	.00002	-.00001	.00091	.02918	.00269	-.00508
#2	-.00001	-.00018	-.00120	-.00032	.00719	-.05627	-.00656
#3	.00002	.00004	.00006	.00055	.02158	.09284	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00340	-.00097	.00102	.02474	.00004	-.00059	-.00085
Stddev	.02008	.00187	.00013	.02252	.00062	.00376	.00217
%RSD	591.07	192.47	13.136	91.051	1429.5	637.85	254.94
#1	-.01711	-.00109	.00114	.04207	-.00047	-.00155	.00089
#2	-.01273	-.00278	.00087	.03286	-.00013	-.00378	-.00016
#3	.01965	.00096	.00105	-.00072	.00073	.00356	-.00329
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCB Acquired: 11/17/2015 15:33:15 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00268	-.00388	.00420	.00011	-.00022	.00800	.00198
Stddev	.00338	.00546	.00108	.00036	.00013	.00715	.00179
%RSD	126.09	140.83	25.792	315.85	57.326	89.456	90.295
#1	.00399	-.00659	.00308	.00035	-.00037	.01104	-.00008
#2	-.00116	.00241	.00426	.00029	-.00014	-.00018	.00290
#3	.00521	-.00745	.00525	-.00030	-.00016	.01312	.00313
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00031	.00045	F .22814
Stddev	.00035	.00010	.07063
%RSD	112.74	23.088	30.961
#1	.00030	.00038	.27539
#2	.00068	.00040	.14694
#3	-.00003	.00057	.26209
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16532.	104670.	3044.8
Stddev	51.	243.	7.4
%RSD	.30849	.23193	.24339
#1	16519.	104420.	3052.9
#2	16490.	104690.	3043.2
#3	16589.	104900.	3038.3

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511088515 Acquired: 11/17/2015 15:37:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00029	57.774	-.00205	.07373	.00670	.00470	F 310.66
Stddev	.00094	.265	.00185	.00111	.00025	.00009	.76
%RSD	323.77	.45838	90.131	1.5117	3.7095	1.9871	.24575
#1	.00067	58.012	-.00386	.07492	.00684	.00472	309.86
#2	-.00120	57.822	-.00215	.07355	.00641	.00460	310.76
#3	-.00034	57.488	-.00016	.07272	.00685	.00478	311.37
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.77791	.14679	.01606	.55599	28.931	3.3418	.18993
Stddev	.01389	.00328	.00025	.01113	.149	.0781	.00260
%RSD	1.7856	2.2364	1.5577	2.0015	.51574	2.3371	1.3678
#1	.77122	.14544	.01601	.55070	28.870	3.3890	.18982
#2	.76862	.14439	.01583	.54851	28.822	3.2516	.18739
#3	.79388	.15053	.01633	.56878	29.101	3.3847	.19258
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	36.648	5.7196	.00095	10.100	.15101	.15969	.87650
Stddev	.032	.0150	.00028	.018	.00239	.00288	.01671
%RSD	.08810	.26305	29.255	.17359	1.5845	1.8052	1.9061
#1	36.611	5.7026	.00118	10.081	.14965	.16113	.86791
#2	36.671	5.7250	.00101	10.107	.14961	.15637	.86583
#3	36.662	5.7312	.00064	10.114	.15377	.16157	.89575
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511088515 Acquired: 11/17/2015 15:37:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	-.00584	33.231	-.00048	.80016	-.01272	.00047
Stddev	.00420	.00542	.624	.00081	.00243	.00333	.00189
%RSD	7799.8	92.809	1.8773	169.02	.30339	26.177	400.65
#1	.00169	-.00611	32.947	-.00141	.79742	-.01429	.00158
#2	.00320	-.01112	32.800	-.00001	.80202	-.01497	.00154
#3	-.00472	-.00029	33.946	-.00001	.80105	-.00890	-.00171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00028	F 65.388	.08820
Stddev	.00070	1.508	.07761
%RSD	252.18	2.3060	88.002
#1	.00051	64.234	.16492
#2	-.00053	64.836	.08994
#3	-.00083	67.094	.00972
Check ?	Chk Pass	Chk Fail	Chk Pass
High Limit		45.000	
Low Limit		-.01000	

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15060.	96343.	2945.2
Stddev	336.	357.	13.7
%RSD	2.2338	.37032	.46351
#1	15299.	95940.	2953.2
#2	15205.	96620.	2953.0
#3	14675.	96467.	2929.4

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511088516 Acquired: 11/17/2015 15:41:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00063	57.933	-.00223	.07232	.00720	.00471	F 310.97
Stddev	.00136	.155	.00359	.00120	.00038	.00005	1.73
%RSD	215.95	.26686	160.73	1.6589	5.3006	.98479	.55560
#1	-.00062	57.968	-.00035	.07179	.00728	.00476	308.99
#2	-.00199	58.067	.00002	.07369	.00753	.00469	311.70
#3	.00073	57.764	-.00637	.07147	.00678	.00468	312.21
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.77498	.14585	.01587	.55371	29.127	3.3563	.18917
Stddev	.00224	.00053	.00043	.00121	.117	.0932	.00266
%RSD	.28914	.36052	2.7209	.21770	.40187	2.7768	1.4051
#1	.77689	.14591	.01545	.55445	28.996	3.2587	.18662
#2	.77554	.14634	.01631	.55437	29.161	3.3657	.19192
#3	.77252	.14530	.01584	.55232	29.223	3.4444	.18896
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	36.725	5.7440	.00089	10.120	.14991	.16645	.87567
Stddev	.117	.0305	.00016	.067	.00159	.00311	.00300
%RSD	.31742	.53046	18.051	.66696	1.0635	1.8711	.34208
#1	36.594	5.7330	.00107	10.049	.15167	.16656	.87423
#2	36.765	5.7206	.00076	10.128	.14948	.16328	.87912
#3	36.817	5.7785	.00084	10.183	.14857	.16951	.87367
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511088516 Acquired: 11/17/2015 15:41:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00539	-.00176	33.264	.00070	.80565	-.00903	.00108
Stddev	.00227	.00292	.068	.00026	.00253	.00395	.00169
%RSD	42.052	166.14	.20520	37.547	.31373	43.776	155.46
#1	-.00413	-.00194	33.325	.00061	.80319	-.00681	-.00031
#2	-.00801	-.00459	33.277	.00049	.80824	-.01359	.00296
#3	-.00404	.00125	33.191	.00099	.80552	-.00668	.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00062	F 64.728	.27475
Stddev	.00017	.256	.13992
%RSD	27.091	.39608	50.926
#1	.00043	64.815	.18043
#2	.00074	64.929	.20831
#3	.00070	64.439	.43551
Check ?	Chk Pass	Chk Fail	Chk Pass
High Limit		45.000	
Low Limit		-.01000	

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15886.	101630.	3082.3
Stddev	4.	625.	22.1
%RSD	.02232	.61541	.71565
#1	15890.	100940.	3107.2
#2	15886.	101810.	3074.8
#3	15883.	102150.	3065.0

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511088517 Acquired: 11/17/2015 15:45:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00169	5.2470	-.00068	.09473	.01360	.00060	198.26	.28301
Stddev	.00098	.0108	.00049	.00054	.00107	.00002	.91	.00071
%RSD	57.767	.20571	72.965	.56579	7.8572	4.0938	.45947	.25036
#1	.00165	5.2445	-.00072	.09520	.01423	.00063	197.28	.28382
#2	.00269	5.2588	-.00114	.09485	.01236	.00059	198.41	.28272
#3	.00074	5.2376	-.00016	.09415	.01420	.00058	199.08	.28250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01174	.00381	.06649	3.4399	3.0221	.08033	12.245	.71290
Stddev	.00036	.00084	.00032	.0354	.1173	.00301	.071	.00167
%RSD	3.0853	22.162	.47546	1.0284	3.8812	3.7466	.57862	.23362
#1	.01172	.00388	.06628	3.4211	2.8931	.07763	12.176	.71098
#2	.01139	.00293	.06634	3.4179	3.0508	.07980	12.240	.71386
#3	.01211	.00461	.06686	3.4808	3.1224	.08357	12.318	.71387
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00439	8.8819	.02468	.02774	.37471	.01495	.00410	19.445
Stddev	.00016	.0775	.00063	.00572	.00097	.00066	.00388	.037
%RSD	3.5633	.87212	2.5395	20.629	.25886	4.4450	94.659	.19178
#1	.00447	8.7930	.02540	.03390	.37582	.01452	.00616	19.488
#2	.00420	8.9349	.02435	.02259	.37429	.01463	-.00038	19.420
#3	.00448	8.9178	.02428	.02674	.37402	.01572	.00652	19.426
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511088517 Acquired: 11/17/2015 15:45:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	.54589	-.00738	.00283	.00050	22.307	.13406
Stddev	.00006	.00135	.00248	.00178	.00070	.054	.08927
%RSD	9.0991	.24770	33.658	62.778	137.69	.24238	66.586
#1	.00069	.54487	-.01016	.00118	.00054	22.367	.22691
#2	.00058	.54538	-.00661	.00260	.00118	22.291	.04888
#3	.00066	.54742	-.00537	.00471	-.00021	22.263	.12640
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15969.	101450.	3063.5
Stddev	16.	203.	8.1
%RSD	.10076	.19997	.26349
#1	15987.	101410.	3058.7
#2	15963.	101270.	3072.8
#3	15956.	101670.	3058.9

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511088518 Acquired: 11/17/2015 15:49:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00134	5.0912	-.00152	.09337	.01303	.00051	196.67	.27605
Stddev	.00105	.0104	.00065	.00194	.00089	.00003	.75	.00123
%RSD	78.703	.20367	43.048	2.0735	6.8305	4.9847	.38281	.44457
#1	.00252	5.0819	-.00225	.09524	.01200	.00050	196.77	.27727
#2	.00052	5.1023	-.00099	.09349	.01358	.00054	197.37	.27606
#3	.00097	5.0893	-.00131	.09137	.01351	.00049	195.87	.27482
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01127	.00373	.06328	2.8511	3.0755	.07649	12.135	.69520
Stddev	.00020	.00043	.00058	.0056	.0376	.00052	.104	.00138
%RSD	1.8097	11.516	.91090	.19729	1.2225	.67439	.86102	.19802
#1	.01127	.00371	.06339	2.8539	3.0914	.07665	12.028	.69679
#2	.01147	.00417	.06380	2.8446	3.1025	.07691	12.236	.69455
#3	.01107	.00331	.06266	2.8547	3.0326	.07592	12.142	.69428
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00209	8.9471	.02377	.02788	.35940	.01174	.00385	18.975
Stddev	.00028	.0357	.00059	.00456	.00423	.00433	.00567	.102
%RSD	13.358	.39944	2.4752	16.359	1.1764	36.853	147.08	.53599
#1	.00177	8.9367	.02426	.02395	.36228	.01666	.00968	19.089
#2	.00226	8.9869	.02312	.02681	.36138	.01003	.00354	18.942
#3	.00224	8.9177	.02393	.03288	.35455	.00853	-.00165	18.893
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511088518 Acquired: 11/17/2015 15:49:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.54252	-.01207	.00051	.00021	21.762	.29007
Stddev	.00040	.00120	.00276	.00096	.00042	.149	.03515
%RSD	116.99	.22071	22.858	188.29	198.77	.68434	12.119
#1	.00080	.54188	-.01236	-.00034	.00068	21.918	.29579
#2	.00015	.54390	-.01468	.00031	.00009	21.747	.32201
#3	.00008	.54177	-.00918	.00155	-.00013	21.622	.25240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16094.	101430.	3062.6
Stddev	84.	402.	15.3
%RSD	.52100	.39651	.49954
#1	16012.	101500.	3054.1
#2	16090.	101000.	3053.4
#3	16180.	101790.	3080.3

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511089701 Acquired: 11/17/2015 15:53:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.14570	-.00152	.09933	.04593	.00003	67.365	.00025
Stddev	.00115	.00101	.00150	.00073	.00088	.00004	.327	.00019
%RSD	680.29	.69226	98.865	.73347	1.9241	136.07	.48584	75.198
#1	-.00077	.14608	.00016	.09961	.04685	.00005	67.735	.00042
#2	-.00018	.14647	-.00275	.09987	.04508	.00004	67.245	.00027
#3	.00146	.14456	-.00197	.09850	.04587	-.00001	67.115	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	.00100	.00747	8.8691	3.3270	.01414	32.735	.16683
Stddev	.00022	.00036	.00055	.0846	.0799	.00275	.110	.00190
%RSD	36.853	36.164	7.4007	.95396	2.4027	19.476	.33701	1.1401
#1	.00042	.00078	.00714	8.9538	3.4174	.01106	32.816	.16573
#2	.00055	.00080	.00716	8.8689	3.2656	.01503	32.610	.16902
#3	.00085	.00142	.00811	8.7846	3.2981	.01635	32.780	.16572
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00314	94.277	.00985	.01607	-.00030	.00044	-.00386	1.7286
Stddev	.00038	.262	.00005	.00241	.00252	.00137	.00281	.0152
%RSD	12.275	.27824	.49605	15.022	850.29	315.07	72.785	.87966
#1	.00357	94.575	.00991	.01350	-.00274	-.00021	-.00427	1.7391
#2	.00298	94.175	.00984	.01644	.00229	.00201	-.00087	1.7355
#3	.00285	94.081	.00981	.01828	-.00043	-.00049	-.00644	1.7111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511089701 Acquired: 11/17/2015 15:53:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	.91136	.00428	.00125	.00070	.01535	.07261
Stddev	.00034	.00212	.00378	.00249	.00040	.00025	.17513
%RSD	59.926	.23258	88.328	200.21	56.716	1.6552	241.18
#1	-.00095	.91379	.00035	.00258	.00049	.01559	.24068
#2	-.00034	.90987	.00460	-.00163	.00116	.01538	.08597
#3	-.00039	.91042	.00789	.00279	.00045	.01508	-.10881
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16085.	101680.	3077.6
Stddev	47.	259.	28.1
%RSD	.29289	.25449	.91287
#1	16046.	101970.	3046.2
#2	16072.	101460.	3100.3
#3	16137.	101610.	3086.4

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511088503 Acquired: 11/17/2015 15:57:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.07947	-.00300	.11119	.01719	.00001	244.43	.10785
Stddev	.00137	.00376	.00067	.00147	.00007	.00002	1.74	.00025
%RSD	1028.3	4.7268	22.216	1.3264	.43444	224.00	.71050	.23635
#1	-.00135	.08170	-.00265	.11287	.01713	.00002	244.35	.10790
#2	.00135	.07513	-.00377	.11014	.01717	.00002	246.20	.10807
#3	.00040	.08157	-.00259	.11054	.01727	-.00001	242.73	.10757
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00464	.00050	.44362	.12609	3.7823	.07788	33.087	.78174
Stddev	.00017	.00034	.00168	.00210	.0744	.00142	.138	.00851
%RSD	3.7461	68.056	.37935	1.6626	1.9659	1.8259	.41704	1.0886
#1	.00456	.00019	.44551	.12476	3.8673	.07640	33.090	.78312
#2	.00483	.00045	.44307	.12850	3.7290	.07800	33.223	.78948
#3	.00451	.00087	.44228	.12500	3.7507	.07924	32.947	.77263
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00480	10.322	.02376	.13445	.07330	.01374	-.00023	8.7729
Stddev	.00055	.079	.00022	.00561	.00350	.00288	.00667	.0268
%RSD	11.394	.76464	.92562	4.1743	4.7685	20.958	2938.7	.30511
#1	.00543	10.330	.02402	.12886	.06936	.01576	.00479	8.7962
#2	.00443	10.396	.02363	.14008	.07451	.01044	.00232	8.7788
#3	.00454	10.239	.02364	.13441	.07604	.01502	-.00779	8.7437
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511088503 Acquired: 11/17/2015 15:57:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	.86737	-.02544	.00057	-.00051	19.784	.08177
Stddev	.00062	.00580	.00450	.00118	.00031	.060	.24852
%RSD	1409.5	.66828	17.681	206.98	61.935	.30287	303.93
#1	.00015	.86710	-.02541	.00155	-.00087	19.829	-.03811
#2	-.00074	.87330	-.02995	-.00074	-.00031	19.808	-.08409
#3	.00045	.86172	-.02095	.00089	-.00034	19.716	.36750
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15814.	100590.	3086.2
Stddev	32.	453.	6.5
%RSD	.20027	.45077	.21107
#1	15851.	100100.	3080.0
#2	15793.	100690.	3085.7
#3	15799.	100990.	3093.0

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511088504 Acquired: 11/17/2015 16:00:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00067	.01008	-.00277	.11535	.01732	-.00003	249.26
Stddev	.00015	.00278	.00194	.00234	.00030	.00002	.30
%RSD	22.768	27.546	70.059	2.0254	1.7516	66.105	.11951
#1	-.00081	.00747	-.00055	.11450	.01698	-.00005	249.26
#2	-.00068	.00976	-.00415	.11799	.01754	-.00002	249.55
#3	-.00051	.01300	-.00360	.11355	.01746	-.00002	248.96
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10939	.00491	.00151	.42108	.03703	3.8594	.07318
Stddev	.00031	.00026	.00075	.00225	.02012	.0102	.00496
%RSD	.28736	5.2966	49.319	.53355	54.346	.26462	6.7823
#1	.10974	.00521	.00195	.42307	.05832	3.8712	.07882
#2	.10929	.00476	.00065	.42152	.03443	3.8531	.07124
#3	.10914	.00477	.00194	.41864	.01833	3.8539	.06947
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	33.757	.80621	.00483	10.590	.02343	.12486	.04800
Stddev	.098	.00237	.00011	.011	.00061	.00316	.00146
%RSD	.28928	.29351	2.2008	.10420	2.6233	2.5344	3.0491
#1	33.722	.80661	.00471	10.592	.02402	.12549	.04822
#2	33.682	.80367	.00491	10.577	.02347	.12765	.04934
#3	33.867	.80835	.00486	10.599	.02279	.12142	.04644
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511088504 Acquired: 11/17/2015 16:00:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01150	.00074	8.7735	-.00025	.88530	F -.03014	.00253
Stddev	.00237	.00426	.0401	.00047	.00168	.00203	.00116
%RSD	20.564	572.86	.45673	189.11	.18928	6.7464	45.841
#1	.01388	.00126	8.8062	.00029	.88681	-.02799	.00306
#2	.01147	.00473	8.7854	-.00056	.88560	-.03204	.00333
#3	.00915	-.00375	8.7288	-.00047	.88349	-.03038	.00120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00050	20.064	.15885
Stddev	.00044	.104	.21440
%RSD	88.397	.51996	134.97
#1	-.00078	20.157	.36242
#2	.00001	20.082	.17909
#3	-.00072	19.951	-.06495
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15862.	99856.	3061.5
Stddev	48.	648.	18.6
%RSD	.30524	.64845	.60620
#1	15808.	99801.	3081.4
#2	15902.	99238.	3044.7
#3	15876.	100530.	3058.5

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511088502SDL Acquired: 11/17/2015 16:04:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG547254-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	-.00398	-.00373	.00469	.00132	.00006	10.360	.00430
Stddev	.00108	.00456	.00092	.00099	.00048	.00000	.073	.00016
%RSD	748.35	114.63	24.777	21.122	36.314	5.3627	.70080	3.6665
#1	.00135	-.00634	-.00340	.00476	.00138	.00006	10.289	.00420
#2	-.00015	.00128	-.00301	.00367	.00178	.00007	10.434	.00423
#3	-.00076	-.00686	-.00477	.00564	.00082	.00006	10.357	.00448
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	-.00100	.01578	.00963	.13961	-.00092	1.3710	.03035
Stddev	.00014	.00048	.00121	.00665	.05427	.00373	.0607	.00195
%RSD	60.156	47.528	7.6739	69.068	38.871	403.18	4.4315	6.4102
#1	.00010	-.00112	.01498	.00783	.12080	-.00514	1.4154	.02983
#2	.00037	-.00048	.01519	.01699	.20078	.00044	1.3958	.03250
#3	.00022	-.00140	.01718	.00406	.09725	.00193	1.3017	.02871
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.45045	.00107	.00582	.00192	-.00171	-.00289	.33825
Stddev	.00013	.02131	.00031	.00051	.00214	.00144	.00454	.00275
%RSD	440.22	4.7310	28.776	8.6938	111.32	84.178	157.21	.81328
#1	.00007	.45352	.00120	.00565	.00415	-.00164	-.00645	.33960
#2	.00002	.42776	.00072	.00542	-.00011	-.00031	-.00442	.34006
#3	-.00017	.47005	.00129	.00639	.00172	-.00318	.00222	.33508
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511088502SDL Acquired: 11/17/2015 16:04:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG547254-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00084	.03448	.00560	.00232	-.00029	.82910	.10214
Stddev	.00067	.00054	.00227	.00140	.00025	.00284	.12031
%RSD	79.427	1.5756	40.509	60.251	87.426	.34282	117.78
#1	-.00060	.03389	.00340	.00281	-.00035	.83238	.14479
#2	-.00033	.03458	.00793	.00075	-.00001	.82754	.19532
#3	-.00160	.03496	.00546	.00342	-.00051	.82739	-.03368
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	17324.	109410.	3183.7
Stddev	41.	758.	20.0
%RSD	.23487	.69252	.62715
#1	17277.	109830.	3206.5
#2	17348.	109860.	3169.7
#3	17347.	108530.	3174.8

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCV Acquired: 11/17/2015 16:08:51 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40605	10.166	.40289	.50677	1.0191	.05066	10.146	.05137
Stddev	.00227	.046	.00155	.00316	.0035	.00015	.025	.00018
%RSD	.55957	.45126	.38578	.62398	.34075	.30369	.24454	.35798
#1	.40357	10.141	.40349	.50642	1.0173	.05057	10.126	.05136
#2	.40657	10.137	.40113	.50379	1.0231	.05058	10.173	.05156
#3	.40803	10.218	.40406	.51009	1.0170	.05084	10.137	.05119
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20754	.50316	.51531	4.0778	50.279	1.0233	10.179	.50957
Stddev	.00059	.00100	.00121	.0256	.233	.0052	.068	.00156
%RSD	.28370	.19856	.23404	.62841	.46259	.50954	.66830	.30544
#1	.20748	.50253	.51640	4.0983	50.172	1.0238	10.130	.50843
#2	.20815	.50263	.51402	4.0491	50.546	1.0283	10.256	.51134
#3	.20698	.50431	.51550	4.0860	50.120	1.0179	10.149	.50894
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0257	50.521	.51233	10.156	.51518	1.2151	.40385	5.0781
Stddev	.0022	.147	.00122	.009	.00382	.0060	.00411	.0039
%RSD	.20975	.29010	.23841	.09313	.74104	.49757	1.0188	.07591
#1	1.0268	50.417	.51096	10.165	.51275	1.2218	.40848	5.0756
#2	1.0272	50.689	.51331	10.157	.51958	1.2132	.40245	5.0826
#3	1.0233	50.458	.51273	10.146	.51321	1.2102	.40062	5.0762
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCV Acquired: 11/17/2015 16:08:51 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0297	1.0188	1.0154	.51254	1.0142	1.0194	1.0235
Stddev	.0008	.0033	.0059	.00195	.0032	.0023	.1443
%RSD	.07403	.32338	.58239	.38004	.31458	.22659	14.096
#1	1.0298	1.0172	1.0088	.51110	1.0135	1.0203	1.1885
#2	1.0304	1.0226	1.0202	.51476	1.0114	1.0211	.92091
#3	1.0289	1.0166	1.0172	.51176	1.0176	1.0168	.96111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16463.	103390.	3127.5
Stddev	19.	166.	14.8
%RSD	.11282	.16096	.47176
#1	16474.	103310.	3140.1
#2	16442.	103580.	3111.3
#3	16474.	103280.	3131.2

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCB Acquired: 11/17/2015 16:12:34 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00044	-.00289	-.00080	-.00067	.00108	.00002	-.02270
Stddev	.00069	.00195	.00205	.00247	.00025	.00002	.01864
%RSD	156.65	67.309	255.14	366.12	23.493	67.161	82.138
#1	.00012	-.00506	-.00241	.00051	.00085	.00001	-.00530
#2	-.00003	-.00129	.00150	-.00351	.00136	.00004	-.04238
#3	.00123	-.00233	-.00150	.00098	.00104	.00003	-.02041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	-.00017	-.00139	.00055	.00952	.01343	-.00492
Stddev	.00009	.00013	.00080	.00094	.00686	.07451	.00783
%RSD	39.057	81.156	57.793	172.62	71.974	554.96	159.08
#1	-.00019	-.00006	-.00071	.00079	.01511	.06813	-.01339
#2	-.00033	-.00012	-.00227	.00134	.01159	-.07143	-.00343
#3	-.00017	-.00032	-.00117	-.00050	.00188	.04357	.00205
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03840	-.00337	.00110	.02839	-.00039	-.00016	-.00234
Stddev	.06675	.00309	.00010	.02044	.00018	.00519	.00141
%RSD	173.82	91.899	9.1967	71.975	45.955	3195.2	60.313
#1	.11433	-.00092	.00119	.01314	-.00060	-.00154	-.00357
#2	.01192	-.00234	.00111	.05161	-.00034	.00558	-.00080
#3	-.01104	-.00684	.00099	.02042	-.00025	-.00453	-.00267
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCB Acquired: 11/17/2015 16:12:34 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00040	-.00188	.00209	-.00046	-.00025	.00666	.00175
Stddev	.00215	.00078	.00230	.00018	.00010	.00302	.00061
%RSD	540.00	41.449	109.91	40.143	39.730	45.315	35.049
#1	.00023	-.00236	-.00054	-.00052	-.00014	.01012	.00197
#2	-.00279	-.00229	.00307	-.00025	-.00028	.00457	.00106
#3	.00137	-.00098	.00373	-.00060	-.00034	.00530	.00223
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00013	-.00006	F .13346
Stddev	.00054	.00007	.15916
%RSD	414.59	123.98	119.26
#1	-.00029	.00002	.12902
#2	-.00006	-.00012	.29480
#3	.00074	-.00007	-.02343
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16747.	106140.	3114.3
Stddev	68.	76.	16.2
%RSD	.40376	.07205	.52032
#1	16787.	106190.	3127.6
#2	16786.	106170.	3118.9
#3	16669.	106050.	3096.2

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: PBW 99A Acquired: 11/17/2015 16:16:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546852-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00000	.00139	.00003	-.00040	.00067	.00004	-.02123	-.00011
Stddev	.00119	.00079	.00293	.00127	.00079	.00005	.03783	.00012
%RSD	41007.	56.963	9192.5	317.20	117.60	137.00	178.19	108.45
#1	-.00008	.00174	.00340	-.00139	.00158	.00009	-.06348	-.00012
#2	.00123	.00196	-.00137	-.00083	.00032	-.00001	-.00972	.00001
#3	-.00114	.00049	-.00193	.00103	.00012	.00004	.00950	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00012	-.00007	.00093	.00899	.02150	-.00413	-.06163	-.00108
Stddev	.00024	.00068	.00093	.00812	.13149	.00315	.06450	.00058
%RSD	198.99	948.25	99.680	90.348	611.63	76.314	104.66	53.973
#1	.00015	-.00021	.00184	.01678	-.11386	-.00542	-.05409	-.00154
#2	-.00025	.00067	-.00002	.00057	.02960	-.00643	-.00123	-.00043
#3	-.00026	-.00068	.00098	.00964	.14875	-.00054	-.12957	-.00125
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	.02413	.00018	-.00648	-.00078	-.00048	-.00387	.00403
Stddev	.00007	.01934	.00019	.00540	.00285	.00235	.00268	.00051
%RSD	22.157	80.120	104.93	83.346	366.82	492.69	69.378	12.644
#1	.00022	.04645	.00027	-.00216	-.00049	.00215	-.00409	.00362
#2	.00032	.01228	-.00004	-.01253	-.00376	-.00241	-.00643	.00387
#3	.00035	.01367	.00032	-.00475	.00192	-.00117	-.00108	.00460
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: PBW 99A Acquired: 11/17/2015 16:16:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546852-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00035	-.00026	.00531	.00024	-.00008	.00348	.13918
Stddev	.00025	.00051	.00088	.00127	.00097	.00004	.15919
%RSD	72.261	194.32	16.548	528.95	1263.6	1.1973	114.38
#1	-.00024	-.00085	.00442	.00066	-.00004	.00343	.02272
#2	-.00017	-.00002	.00618	-.00118	.00088	.00351	.32057
#3	-.00063	.00008	.00534	.00124	-.00107	.00350	.07424
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16735.	106620.	3113.0
Stddev	49.	201.	9.9
%RSD	.29157	.18833	.31928
#1	16791.	106780.	3105.4
#2	16699.	106680.	3124.2
#3	16717.	106400.	3109.3

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: LCSW 99A Acquired: 11/17/2015 16:20:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546852-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20403	5.0098	.19752	.98169	.51311	.02465	5.0958	.02537
Stddev	.00286	.0126	.00146	.00478	.00419	.00008	.0482	.00020
%RSD	1.3995	.25227	.73894	.48687	.81707	.30512	.94512	.80353
#1	.20077	5.0020	.19644	.98442	.51361	.02456	5.1233	.02527
#2	.20610	5.0029	.19693	.97618	.50870	.02467	5.0402	.02525
#3	.20522	5.0243	.19918	.98449	.51704	.02471	5.1239	.02561
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10619	.25220	.26489	2.0066	25.117	.51027	5.0657	.25403
Stddev	.00066	.00083	.00240	.0438	.158	.00764	.1712	.00085
%RSD	.61790	.32779	.90636	2.1833	.62944	1.4964	3.3793	.33430
#1	.10556	.25152	.26224	2.0553	24.977	.50913	5.0784	.25409
#2	.10615	.25197	.26692	1.9703	25.087	.50327	4.8886	.25315
#3	.10687	.25312	.26551	1.9943	25.288	.51841	5.2302	.25485
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52948	25.423	.26179	5.0078	.26182	.61130	.19582	2.5862
Stddev	.00188	.181	.00215	.0189	.00323	.00400	.00266	.0135
%RSD	.35575	.71056	.82085	.37680	1.2348	.65433	1.3590	.52358
#1	.52730	25.458	.25933	4.9895	.26454	.60704	.19334	2.5724
#2	.53059	25.227	.26272	5.0066	.25825	.61498	.19548	2.5867
#3	.53054	25.583	.26332	5.0272	.26267	.61187	.19863	2.5995
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: LCSW 99A Acquired: 11/17/2015 16:20:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546852-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52490	.50713	.51121	.26193	.50966	.51480	.29657
Stddev	.00147	.00484	.00025	.00177	.00092	.00246	.18669
%RSD	.27931	.95348	.04882	.67630	.18007	.47780	62.950
#1	.52366	.50769	.51095	.26001	.50942	.51223	.12490
#2	.52451	.50204	.51123	.26227	.50889	.51503	.49532
#3	.52652	.51167	.51145	.26350	.51067	.51713	.26948
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16252.	104420.	3116.2
Stddev	92.	42.	16.3
%RSD	.56679	.04012	.52232
#1	16350.	104470.	3113.5
#2	16238.	104380.	3133.7
#3	16167.	104420.	3101.5

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077002 Acquired: 11/17/2015 16:24:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546852-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	.11474	-.00015	3.6202	.02475	.00000	234.36	.00018
Stddev	.00125	.00433	.00140	.0030	.00096	.00003	1.09	.00007
%RSD	235.23	3.7750	924.03	.08352	3.8981	736.02	.46408	40.039
#1	.00185	.10996	.00050	3.6230	.02583	.00004	235.60	.00011
#2	-.00064	.11841	.00080	3.6170	.02396	-.00002	233.55	.00026
#3	.00039	.11585	-.00175	3.6204	.02447	-.00001	233.94	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00113	.00057	.00303	.47152	2.2175	.32567	64.443	1.0251
Stddev	.00007	.00050	.00142	.02485	.0345	.00217	.354	.0069
%RSD	6.3353	87.644	46.694	5.2705	1.5533	.66668	.54995	.67354
#1	.00106	.00018	.00286	.48212	2.2137	.32643	64.677	1.0328
#2	.00121	.00039	.00453	.44312	2.2537	.32737	64.035	1.0231
#3	.00112	.00113	.00171	.48931	2.1851	.32323	64.617	1.0194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	185.74	.00061	.01691	.00171	-.00068	-.00756	7.7459
Stddev	.00016	.73	.00021	.00363	.00349	.00180	.00297	.0327
%RSD	20.601	.39482	35.403	21.459	203.89	264.51	39.300	.42206
#1	.00059	186.58	.00036	.02072	.00402	.00111	-.00420	7.7082
#2	.00077	185.23	.00070	.01349	-.00230	-.00250	-.00984	7.7659
#3	.00090	185.42	.00076	.01651	.00342	-.00065	-.00866	7.7636
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077002 Acquired: 11/17/2015 16:24:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546852-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00080	.52306	-.02534	.00059	-.00001	.00334	.21791
Stddev	.00077	.00331	.00233	.00113	.00098	.00010	.08202
%RSD	97.105	.63360	9.1870	193.35	7474.2	2.9760	37.639
#1	-.00163	.52670	-.02619	.00129	-.00058	.00345	.17952
#2	-.00065	.52227	-.02270	.00120	.00112	.00331	.31208
#3	-.00011	.52021	-.02711	-.00072	-.00058	.00326	.16213
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15187.	95969.	3013.4
Stddev	34.	239.	21.9
%RSD	.22541	.24892	.72773
#1	15211.	96232.	2992.2
#2	15202.	95910.	3035.9
#3	15147.	95765.	3012.0

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077004S Acquired: 11/17/2015 16:28:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546852-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21306	5.3395	.20790	4.6181	.54782	.02598	235.18	.02667
Stddev	.00116	.0248	.00224	.0176	.00470	.00017	1.70	.00024
%RSD	.54603	.46490	1.0768	.38070	.85819	.66229	.72152	.90934
#1	.21212	5.3647	.21041	4.6372	.55115	.02609	236.12	.02695
#2	.21436	5.3387	.20613	4.6147	.54986	.02607	236.21	.02653
#3	.21270	5.3151	.20715	4.6025	.54244	.02579	233.23	.02652
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10438	.25959	.25809	2.4337	28.239	.84629	68.203	1.2557
Stddev	.00050	.00163	.00219	.0173	.184	.00636	.132	.0092
%RSD	.47794	.62692	.85046	.71265	.65311	.75136	.19288	.72841
#1	.10496	.26146	.25991	2.4188	28.199	.85195	68.187	1.2624
#2	.10407	.25852	.25565	2.4528	28.441	.84750	68.342	1.2594
#3	.10412	.25878	.25871	2.4296	28.079	.83941	68.080	1.2453
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53846	207.77	.25396	5.3859	.25530	.63837	.20186	10.297
Stddev	.00263	1.51	.00146	.0174	.00468	.00367	.00319	.035
%RSD	.48817	.72680	.57473	.32334	1.8349	.57473	1.5799	.34066
#1	.54149	208.73	.25561	5.4059	.25996	.64248	.20521	10.337
#2	.53687	208.55	.25344	5.3752	.25059	.63544	.20149	10.274
#3	.53701	206.03	.25284	5.3764	.25536	.63719	.19887	10.279
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077004S Acquired: 11/17/2015 16:28:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546852-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52545	1.0319	.49083	.24782	.53345	.50624	.64557
Stddev	.00086	.0065	.00282	.00379	.00312	.00125	.03359
%RSD	.16281	.62520	.57377	1.5274	.58580	.24778	5.2035
#1	.52643	1.0352	.49347	.24673	.53569	.50761	.63294
#2	.52486	1.0360	.49115	.24470	.53477	.50596	.62013
#3	.52505	1.0245	.48787	.25203	.52988	.50515	.68365
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15057.	95144.	2973.2
Stddev	33.	283.	13.4
%RSD	.21610	.29745	.45077
#1	15046.	94818.	2969.0
#2	15093.	95286.	2962.5
#3	15030.	95327.	2988.2

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077006SD Acquired: 11/17/2015 16:31:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546852-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.22062	5.5093	.21422	4.7337	.55724	.02662	238.31	.02751
Stddev	.00118	.0283	.00307	.0227	.00020	.00015	.18	.00012
%RSD	.53493	.51308	1.4353	.48031	.03512	.58042	.07495	.42182
#1	.22138	5.5419	.21776	4.7597	.55720	.02680	238.52	.02755
#2	.21926	5.4911	.21267	4.7238	.55746	.02650	238.19	.02761
#3	.22123	5.4950	.21222	4.7176	.55708	.02657	238.23	.02738
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10667	.26473	.26563	2.5318	28.749	.85401	69.384	1.2802
Stddev	.00089	.00163	.00287	.0245	.150	.00202	.216	.0044
%RSD	.83448	.61639	1.0810	.96760	.52248	.23626	.31168	.34098
#1	.10757	.26624	.26894	2.5484	28.581	.85331	69.144	1.2759
#2	.10579	.26300	.26392	2.5037	28.870	.85628	69.447	1.2800
#3	.10664	.26495	.26402	2.5433	28.797	.85243	69.562	1.2846
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.55355	210.78	.25874	5.5332	.26032	.65675	.20829	10.695
Stddev	.00498	.07	.00113	.0402	.00276	.00907	.00109	.078
%RSD	.89995	.03347	.43509	.72701	1.0618	1.3805	.52461	.73078
#1	.55930	210.70	.25932	5.5787	.25961	.66658	.20807	10.782
#2	.55038	210.82	.25945	5.5025	.25798	.64872	.20948	10.631
#3	.55098	210.82	.25744	5.5183	.26337	.65496	.20733	10.672
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077006SD Acquired: 11/17/2015 16:31:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546852-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.54016	1.0491	.50787	.25578	.54727	.52261	.51945
Stddev	.00460	.0020	.00073	.00111	.00315	.00324	.18297
%RSD	.85092	.19487	.14333	.43362	.57584	.61934	35.223
#1	.54505	1.0502	.50707	.25705	.55090	.52609	.30945
#2	.53593	1.0467	.50850	.25533	.54527	.51969	.64454
#3	.53951	1.0503	.50803	.25497	.54563	.52204	.60434
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15101.	95568.	3015.5
Stddev	37.	348.	8.8
%RSD	.24362	.36407	.29055
#1	15061.	95166.	3024.1
#2	15134.	95785.	3006.6
#3	15108.	95752.	3015.7

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077006PS Acquired: 11/17/2015 16:35:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG547253-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21477	5.4420	.21157	4.3805	.55770	.02642	220.70	.02719
Stddev	.00084	.0171	.00262	.0223	.00309	.00007	.67	.00035
%RSD	.39030	.31479	1.2392	.50908	.55470	.25700	.30227	1.2975
#1	.21499	5.4595	.21343	4.4046	.55996	.02641	220.84	.02757
#2	.21547	5.4412	.20857	4.3763	.55896	.02649	221.28	.02713
#3	.21384	5.4253	.21271	4.3606	.55417	.02636	219.97	.02688
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10595	.26233	.26300	2.5250	28.690	.83230	64.204	1.2049
Stddev	.00071	.00084	.00198	.0292	.041	.00381	.221	.0014
%RSD	.67149	.31977	.75145	1.1565	.14185	.45791	.34471	.12013
#1	.10671	.26299	.26393	2.5329	28.653	.83004	64.266	1.2039
#2	.10582	.26261	.26435	2.4926	28.733	.83670	64.388	1.2043
#3	.10531	.26138	.26073	2.5493	28.684	.83015	63.958	1.2066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.54637	195.58	.25761	5.4638	.25837	.64567	.20511	9.7302
Stddev	.00384	.53	.00293	.0320	.00089	.00275	.00167	.0444
%RSD	.70239	.27207	1.1358	.58557	.34384	.42542	.81506	.45597
#1	.54993	195.70	.26007	5.4966	.25743	.64549	.20509	9.7720
#2	.54689	196.05	.25839	5.4621	.25848	.64850	.20680	9.7348
#3	.54230	195.00	.25438	5.4327	.25919	.64301	.20345	9.6836
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077006PS Acquired: 11/17/2015 16:35:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG547253-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53403	1.0086	.51103	.25338	.54163	.51485	.36970
Stddev	.00210	.0026	.00224	.00064	.00132	.00289	.03680
%RSD	.39328	.25948	.43740	.25136	.24394	.56182	9.9554
#1	.53480	1.0089	.50864	.25406	.54308	.51765	.33860
#2	.53564	1.0111	.51307	.25329	.54131	.51501	.36016
#3	.53166	1.0059	.51137	.25279	.54050	.51188	.41033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15113.	95330.	2968.2
Stddev	38.	247.	16.3
%RSD	.25156	.25890	.54928
#1	15072.	95541.	2960.2
#2	15121.	95059.	2957.5
#3	15147.	95390.	2987.0

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077006SDL Acquired: 11/17/2015 16:39:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG547253-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00093	.01820	-.00155	.67630	.00468	.00003	46.189	-.00002
Stddev	.00067	.00437	.00127	.00227	.00056	.00003	.089	.00026
%RSD	72.164	24.012	82.013	.33506	12.023	123.68	.19164	1691.9
#1	.00121	.01448	-.00292	.67391	.00493	.00006	46.223	-.00031
#2	.00142	.02301	-.00042	.67659	.00404	.00003	46.255	.00014
#3	.00016	.01709	-.00130	.67841	.00509	-.00001	46.088	.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.00001	.00080	.09625	.42158	.05863	12.288	.19179
Stddev	.00030	.00065	.00087	.01386	.06877	.00555	.013	.00189
%RSD	1023.5	5078.0	109.23	14.398	16.311	9.4712	.10513	.98713
#1	-.00029	-.00061	.00149	.10777	.42641	.06503	12.277	.18992
#2	.00007	-.00004	-.00018	.10012	.48780	.05578	12.284	.19175
#3	.00030	.00069	.00108	.08087	.35052	.05508	12.302	.19370
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	34.924	-.00077	.00387	.00239	.00061	-.00172	1.4063
Stddev	.00027	.027	.00092	.00425	.00327	.00071	.00161	.0012
%RSD	79.843	.07623	120.29	109.89	136.94	115.83	93.602	.08249
#1	.00006	34.948	-.00181	.00369	.00301	.00128	-.00136	1.4076
#2	.00037	34.895	-.00042	-.00029	-.00115	.00068	-.00348	1.4056
#3	.00060	34.928	-.00007	.00820	.00530	-.00013	-.00032	1.4056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077006SDL Acquired: 11/17/2015 16:39:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG547253-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00038	.09764	.00137	.00182	-.00012	.00412	.04745
Stddev	.00046	.00025	.00341	.00087	.00058	.00005	.15897
%RSD	122.64	.25708	249.15	47.594	473.97	1.2445	335.03
#1	-.00006	.09746	.00242	.00176	-.00031	.00413	.14800
#2	-.00091	.09754	-.00244	.00271	.00053	.00417	-.13582
#3	-.00016	.09793	.00413	.00098	-.00059	.00407	.13017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	17273.	108870.	3214.8
Stddev	7.	279.	7.2
%RSD	.04082	.25591	.22427
#1	17278.	109080.	3212.7
#2	17276.	108980.	3208.9
#3	17265.	108550.	3222.8

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077006SDL Acquired: 11/17/2015 16:43:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG547253-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00039	-.00100	-.00173	.14629	.00085	.00003	9.6335	.00010
Stddev	.00073	.00277	.00165	.00206	.00052	.00002	.0797	.00013
%RSD	187.54	277.86	94.990	1.4105	60.285	73.636	.82727	125.12
#1	-.00003	-.00148	-.00361	.14548	.00049	.00005	9.5668	.00020
#2	.00123	-.00349	-.00053	.14476	.00144	.00001	9.6119	-.00004
#3	-.00003	.00198	-.00105	.14864	.00063	.00002	9.7217	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	-.00025	.00081	.03404	.11962	.01074	2.5038	.03918
Stddev	.00021	.00096	.00095	.01129	.08900	.00642	.0708	.00152
%RSD	882.56	390.99	118.35	33.167	74.406	59.776	2.8292	3.8916
#1	-.00017	-.00032	.00112	.03498	.19688	.01059	2.5856	.03945
#2	-.00012	.00075	-.00027	.04483	.13967	.00439	2.4650	.03754
#3	.00022	-.00117	.00156	.02231	.02230	.01723	2.4609	.04055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	7.3224	.00021	-.00351	-.00024	-.00336	-.00655	.28787
Stddev	.00024	.0497	.00095	.00537	.00142	.00073	.00301	.00323
%RSD	721.06	.67928	447.86	152.85	599.92	21.644	46.054	1.1206
#1	-.00026	7.2712	.00056	-.00767	.00132	-.00387	-.00315	.28592
#2	-.00006	7.3252	-.00086	-.00543	-.00148	-.00367	-.00757	.29160
#3	.00022	7.3706	.00094	.00255	-.00055	-.00253	-.00891	.28611
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077006SDL Acquired: 11/17/2015 16:43:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG547253-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00043	.01945	.00795	.00307	-.00036	.00188	.21612
Stddev	.00030	.00064	.00779	.00169	.00035	.00002	.11523
%RSD	69.406	3.2855	98.027	55.058	96.946	1.0744	53.319
#1	-.00038	.01879	.00049	.00332	-.00042	.00188	.28800
#2	-.00075	.01950	.01604	.00127	-.00068	.00189	.27715
#3	-.00016	.02007	.00733	.00462	.00001	.00185	.08321
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	17387.	109490.	3209.9
Stddev	54.	162.	30.2
%RSD	.30950	.14822	.94183
#1	17441.	109370.	3242.8
#2	17333.	109440.	3203.3
#3	17386.	109670.	3183.5

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCV Acquired: 11/17/2015 16:47:16 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41078	10.231	.40682	.51962	1.0276	.05107	10.250
Stddev	.00075	.015	.00148	.00077	.0116	.00003	.093
%RSD	.18335	.14585	.36359	.14858	1.1274	.05177	.90582
#1	.41039	10.237	.40539	.51962	1.0145	.05104	10.149
#2	.41165	10.241	.40835	.51885	1.0365	.05108	10.331
#3	.41030	10.214	.40671	.52039	1.0319	.05108	10.269
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05136	.20833	.50765	.51797	4.0641	50.670	1.0343
Stddev	.00007	.00088	.00118	.00205	.0437	.527	.0117
%RSD	.14061	.42307	.23224	.39660	1.0743	1.0407	1.1315
#1	.05143	.20901	.50725	.51998	4.0137	50.116	1.0211
#2	.05134	.20734	.50898	.51806	4.0888	51.167	1.0431
#3	.05129	.20864	.50673	.51588	4.0899	50.726	1.0388
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.146	.51035	1.0274	50.895	.51358	10.171	.51722
Stddev	.090	.00499	.0016	.555	.00263	.024	.00319
%RSD	.88377	.97767	.15925	1.0906	.51177	.24038	.61770
#1	10.101	.50461	1.0292	50.266	.51659	10.199	.51601
#2	10.089	.51360	1.0272	51.314	.51173	10.154	.51481
#3	10.250	.51284	1.0259	51.106	.51242	10.160	.52084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCV Acquired: 11/17/2015 16:47:16 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2223	.40744	5.0907	1.0321	1.0268	1.0220	.51394
Stddev	.0018	.00379	.0045	.0015	.0091	.0049	.00227
%RSD	.15081	.93018	.08804	.14890	.88542	.47588	.44233
#1	1.2239	.40318	5.0931	1.0335	1.0163	1.0179	.51141
#2	1.2226	.41043	5.0856	1.0322	1.0324	1.0207	.51580
#3	1.2203	.40870	5.0936	1.0305	1.0318	1.0274	.51462
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0256	1.0181	F .88273
Stddev	.0004	.0006	.18515
%RSD	.04322	.05802	20.975
#1	1.0253	1.0188	.87534
#2	1.0261	1.0176	.70139
#3	1.0254	1.0179	1.0715
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16465.	103320.	3116.7
Stddev	18.	194.	16.7
%RSD	.11014	.18750	.53558
#1	16482.	103180.	3135.4
#2	16466.	103230.	3103.2
#3	16446.	103540.	3111.6

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCB Acquired: 11/17/2015 16:51:00 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	-.00230	-.00146	.00863	.00076	.00005	-.01315
Stddev	.00066	.00272	.00130	.00130	.00023	.00003	.01720
%RSD	123.13	118.08	89.263	15.061	30.187	64.743	130.82
#1	.00120	-.00281	-.00066	.01002	.00101	.00001	.00529
#2	.00050	-.00472	-.00297	.00744	.00056	.00007	-.01597
#3	-.00011	.00064	-.00076	.00844	.00072	.00006	-.02876
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	-.00002	-.00033	.00036	.00367	.02807	.00151
Stddev	.00003	.00013	.00015	.00036	.01429	.03818	.00422
%RSD	30.865	584.83	44.533	99.027	389.48	136.00	278.71
#1	-.00009	-.00011	-.00050	.00045	.01474	.03781	-.00011
#2	-.00015	.00013	-.00027	.00067	-.01247	.06045	.00631
#3	-.00009	-.00009	-.00022	-.00003	.00874	-.01403	-.00165
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.05157	-.00010	.00112	.02448	.00016	-.00170	-.00047
Stddev	.09714	.00045	.00022	.02387	.00046	.00519	.00186
%RSD	188.36	470.17	19.248	97.515	288.88	305.55	391.17
#1	-.05947	-.00062	.00118	.05113	.00042	.00223	.00006
#2	-.14452	.00017	.00131	.00506	-.00037	.00025	.00105
#3	.04928	.00016	.00089	.01725	.00042	-.00758	-.00254
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCB Acquired: 11/17/2015 16:51:00 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	-.00385	.00198	-.00022	-.00022	.00481	.00119
Stddev	.00295	.00236	.00032	.00015	.00015	.00237	.00106
%RSD	362.13	61.360	16.395	66.582	66.572	49.168	89.281
#1	-.00155	-.00549	.00229	-.00038	-.00011	.00736	.00092
#2	-.00013	-.00491	.00164	-.00008	-.00017	.00439	.00236
#3	.00412	-.00114	.00201	-.00021	-.00039	.00269	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00007	.00018	F .21468
Stddev	.00070	.00018	.26828
%RSD	1063.0	101.20	124.97
#1	-.00083	-.00002	.37831
#2	.00009	.00023	-.09493
#3	.00054	.00032	.36066
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16930.	106880.	3136.5
Stddev	32.	156.	11.7
%RSD	.18978	.14641	.37317
#1	16950.	106890.	3148.4
#2	16947.	107030.	3136.2
#3	16893.	106720.	3125.0

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511074601 Acquired: 11/17/2015 16:54:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.43234	-.00228	.01892	.06551	.00003	50.892	.00008
Stddev	.00211	.00112	.00213	.00480	.00029	.00003	.260	.00014
%RSD	402.43	.25991	93.406	25.391	.44323	102.20	.51084	165.64
#1	-.00165	.43362	-.00470	.02438	.06543	.00006	50.973	.00013
#2	.00257	.43187	-.00139	.01703	.06583	.00002	51.103	.00019
#3	.00065	.43153	-.00074	.01535	.06527	.00000	50.602	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	.00108	.00225	.32235	.87127	.00613	6.8850	.00585
Stddev	.00031	.00105	.00104	.01043	.14523	.00443	.0593	.00357
%RSD	1882.3	97.688	46.260	3.2361	16.669	72.293	.86126	61.064
#1	.00007	.00199	.00233	.31067	.72580	.00524	6.8503	.00680
#2	-.00036	-.00007	.00324	.33075	.87174	.00221	6.8512	.00884
#3	.00024	.00131	.00117	.32564	1.0163	.01093	6.9535	.00190
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00044	4.5617	.00030	.01698	-.00080	-.00085	-.00675	4.4477
Stddev	.00041	.0419	.00090	.00221	.00326	.00095	.00259	.0145
%RSD	92.304	.91917	295.42	12.986	406.40	111.41	38.348	.32606
#1	-.00003	4.5887	.00015	.01443	-.00457	-.00148	-.00945	4.4513
#2	.00064	4.5831	.00127	.01827	.00108	-.00131	-.00652	4.4600
#3	.00072	4.5134	-.00051	.01824	.00107	.00024	-.00429	4.4317
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511074601 Acquired: 11/17/2015 16:54:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00030	.19409	.00219	.00077	.00038	.00586	.27531
Stddev	.00029	.00078	.00711	.00020	.00072	.00002	.13545
%RSD	96.200	.40057	325.11	25.692	188.79	.35084	49.198
#1	-.00054	.19451	.00631	.00099	.00051	.00588	.38102
#2	.00002	.19456	.00628	.00061	.00104	.00587	.32228
#3	-.00040	.19319	-.00602	.00071	-.00039	.00584	.12263
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15941.	101330.	3012.5
Stddev	15.	271.	22.9
%RSD	.09540	.26777	.75902
#1	15945.	101370.	3003.7
#2	15924.	101580.	2995.3
#3	15954.	101050.	3038.5

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511075001 Acquired: 11/17/2015 16:58:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.06424	-.00410	.02862	.20571	.00001	67.765	.00022
Stddev	.00033	.00504	.00356	.00043	.00166	.00003	.103	.00008
%RSD	81.416	7.8435	86.679	1.5089	.80697	259.65	.15153	34.257
#1	.00037	.06130	-.00708	.02905	.20586	.00005	67.662	.00014
#2	.00010	.07006	-.00017	.02819	.20729	.00000	67.867	.00024
#3	.00076	.06137	-.00506	.02862	.20398	-.00001	67.766	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.00015	.00332	.07130	.85822	.01446	9.8867	.00237
Stddev	.00021	.00048	.00077	.00203	.03450	.00381	.0203	.00027
%RSD	486.38	312.58	23.145	2.8421	4.0195	26.357	.20539	11.483
#1	-.00015	-.00026	.00255	.07331	.86764	.01152	9.9095	.00222
#2	.00002	.00069	.00333	.06926	.81999	.01876	9.8706	.00221
#3	.00026	.00004	.00409	.07132	.88703	.01309	9.8800	.00269
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	13.041	.00013	.01073	.00172	.00027	-.00239	4.3644
Stddev	.00004	.029	.00050	.00847	.00145	.00234	.00259	.0197
%RSD	20.733	.22006	384.71	78.962	84.238	858.32	108.49	.45071
#1	.00016	13.008	-.00035	.00853	.00121	-.00107	.00049	4.3701
#2	.00021	13.052	.00064	.00357	.00336	.00297	-.00312	4.3806
#3	.00025	13.062	.00010	.02009	.00060	-.00109	-.00454	4.3425
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511075001 Acquired: 11/17/2015 16:58:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00086	.39368	-.00448	-.00108	.00054	.00346	.04304
Stddev	.00052	.00184	.00392	.00016	.00125	.00008	.09723
%RSD	60.055	.46644	87.428	15.020	232.71	2.2239	225.91
#1	-.00139	.39168	-.00041	-.00099	.00003	.00349	-.05587
#2	-.00036	.39530	-.00823	-.00127	.00197	.00352	.04648
#3	-.00084	.39407	-.00481	-.00098	-.00038	.00338	.13850
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15827.	101020.	3016.2
Stddev	11.	355.	7.9
%RSD	.06747	.35107	.26315
#1	15839.	100770.	3018.7
#2	15818.	101420.	3022.5
#3	15825.	100860.	3007.3

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511075201 Acquired: 11/17/2015 17:02:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	.75635	-.00242	.01720	.08253	.00005	42.289	.00012
Stddev	.00121	.00993	.00126	.00186	.00121	.00003	.042	.00002
%RSD	1137.7	1.3135	51.954	10.831	1.4714	65.478	.09835	19.079
#1	-.00115	.76560	-.00133	.01934	.08342	.00002	42.286	.00009
#2	-.00040	.75760	-.00214	.01635	.08301	.00008	42.249	.00013
#3	.00123	.74585	-.00380	.01591	.08114	.00005	42.332	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.00084	.00169	.64656	.76963	.00276	5.7895	.01017
Stddev	.00019	.00015	.00037	.01728	.08897	.00332	.0558	.00273
%RSD	189.33	17.840	21.801	2.6723	11.560	120.24	.96453	26.898
#1	-.00024	.00100	.00206	.65791	.87186	.00653	5.7871	.00797
#2	-.00018	.00080	.00132	.62667	.70971	.00148	5.8465	.01323
#3	.00012	.00071	.00169	.65509	.72732	.00027	5.7349	.00931
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	3.0115	.00039	.01599	.00128	-.00299	-.00329	4.7380
Stddev	.00030	.0278	.00040	.00451	.00232	.00068	.00430	.0217
%RSD	122.34	.92318	103.02	28.219	181.16	22.855	130.82	.45755
#1	-.00005	3.0321	-.00006	.01399	.00391	-.00261	-.00448	4.7553
#2	.00055	2.9798	.00053	.01283	-.00050	-.00377	.00148	4.7449
#3	.00023	3.0224	.00071	.02116	.00043	-.00257	-.00687	4.7137
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511075201 Acquired: 11/17/2015 17:02:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	.13432	.00918	-.00032	.00066	.00518	.19995
Stddev	.00094	.00061	.00869	.00195	.00012	.00003	.20025
%RSD	368.06	.45204	94.631	608.31	18.157	.60882	100.15
#1	.00030	.13363	.01511	-.00084	.00054	.00518	.28783
#2	-.00134	.13477	-.00079	-.00195	.00068	.00522	.34124
#3	.00027	.13456	.01322	.00184	.00078	.00516	-.02922
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16082.	102650.	3031.4
Stddev	21.	246.	9.6
%RSD	.13238	.23981	.31757
#1	16094.	102500.	3037.0
#2	16058.	102510.	3036.9
#3	16096.	102930.	3020.3

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511075401 Acquired: 11/17/2015 17:06:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	.79541	-.00327	.02067	.04410	.00010	21.563	.00026
Stddev	.00168	.00290	.00123	.00131	.00052	.00002	.049	.00021
%RSD	318.56	.36470	37.569	6.3410	1.1696	19.933	.22727	78.903
#1	.00210	.79445	-.00263	.02023	.04369	.00010	21.548	.00036
#2	-.00125	.79867	-.00468	.01965	.04468	.00012	21.618	.00002
#3	.00074	.79311	-.00249	.02215	.04393	.00008	21.523	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.00078	.00302	.93047	2.2565	.00136	3.3075	.11303
Stddev	.00004	.00059	.00030	.01893	.0239	.00289	.0658	.00048
%RSD	11.981	75.624	10.067	2.0341	1.0582	212.80	1.9887	.42431
#1	.00036	.00012	.00268	.93621	2.2685	.00316	3.2339	.11281
#2	.00035	.00096	.00314	.90934	2.2290	-.00197	3.3604	.11358
#3	.00029	.00126	.00325	.94586	2.2720	.00288	3.3283	.11271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	2.9747	.00111	.04552	.00224	-.00050	-.00321	4.8084
Stddev	.00018	.0209	.00025	.00703	.00017	.00321	.00208	.0199
%RSD	48.987	.70100	22.234	15.441	7.6487	643.64	64.848	.41290
#1	.00018	2.9615	.00082	.03741	.00243	-.00418	-.00094	4.8170
#2	.00053	2.9988	.00122	.04992	.00216	.00097	-.00366	4.8225
#3	.00038	2.9640	.00128	.04922	.00212	.00172	-.00502	4.7857
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511075401 Acquired: 11/17/2015 17:06:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	.06909	.01581	.00164	.00148	.00466	.38022
Stddev	.00041	.00042	.00488	.00104	.00053	.00005	.27252
%RSD	147.52	.61096	30.848	63.312	35.855	1.1411	71.673
#1	.00001	.06879	.01248	.00078	.00157	.00462	.59908
#2	.00076	.06957	.01354	.00136	.00195	.00472	.46660
#3	.00008	.06891	.02141	.00280	.00091	.00464	.07498
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16425.	104020.	3056.5
Stddev	17.	278.	15.9
%RSD	.10098	.26689	.51883
#1	16407.	103730.	3066.1
#2	16441.	104280.	3038.2
#3	16426.	104030.	3065.3

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511075601 Acquired: 11/17/2015 17:10:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00052	.02767	.00192	.06507	.16704	-.00001	86.174	.00022
Stddev	.00075	.00434	.00071	.00198	.00037	.00002	.046	.00019
%RSD	143.71	15.672	36.873	3.0429	.22420	225.18	.05367	86.280
#1	-.00002	.03194	.00114	.06732	.16680	.00001	86.140	.00004
#2	-.00016	.02779	.00252	.06358	.16747	-.00003	86.227	.00042
#3	-.00138	.02327	.00211	.06432	.16684	-.00001	86.155	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00000	.01027	.00197	.06641	1.2836	.04101	11.762	-.00012
Stddev	.00012	.00025	.00067	.01467	.0624	.00514	.109	.00201
%RSD	5665.4	2.4813	34.282	22.093	4.8644	12.538	.92823	1669.0
#1	-.00004	.01035	.00188	.08007	1.3416	.03946	11.661	.00180
#2	.00013	.01048	.00268	.05090	1.2175	.03682	11.746	-.00221
#3	-.00010	.00999	.00134	.06826	1.2917	.04675	11.878	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00112	37.207	-.00029	.02530	-.00058	-.00073	-.00198	12.002
Stddev	.00036	.063	.00085	.00224	.00387	.00248	.00437	.037
%RSD	32.312	.16869	289.64	8.8498	671.95	339.94	220.14	.30607
#1	.00075	37.176	.00062	.02573	-.00502	.00212	-.00463	12.031
#2	.00112	37.279	-.00105	.02730	.00207	-.00191	.00306	12.015
#3	.00148	37.165	-.00045	.02288	.00123	-.00239	-.00438	11.961
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511075601 Acquired: 11/17/2015 17:10:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00040	.92698	-.00500	.00160	.02283	.00421	.13535
Stddev	.00034	.00237	.00230	.00088	.00043	.00016	.13691
%RSD	84.788	.25574	46.026	55.170	1.8989	3.8321	101.16
#1	-.00060	.92568	-.00631	.00077	.02249	.00438	.00136
#2	-.00059	.92972	-.00234	.00253	.02332	.00406	.27501
#3	-.00001	.92554	-.00634	.00149	.02268	.00421	.12966
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16011.	101080.	3038.6
Stddev	23.	87.	16.8
%RSD	.14071	.08619	.55349
#1	16016.	101090.	3026.3
#2	16030.	100980.	3031.6
#3	15986.	101160.	3057.7

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511075602 Acquired: 11/17/2015 17:14:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	.34183	-.00045	.04053	.30501	.00005	88.874	.00019
Stddev	.00111	.00667	.00338	.00148	.00163	.00002	.403	.00025
%RSD	560.70	1.9523	743.34	3.6615	.53445	42.328	.45339	131.29
#1	-.00045	.34742	.00227	.04038	.30498	.00006	88.803	.00041
#2	-.00116	.33444	.00060	.04209	.30666	.00006	89.308	-.00009
#3	.00102	.34362	-.00423	.03913	.30340	.00002	88.511	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	.00780	.00201	.25285	1.5107	.03719	12.721	.00645
Stddev	.00012	.00094	.00102	.02879	.0626	.00303	.096	.00175
%RSD	236.52	12.111	50.882	11.385	4.1413	8.1561	.75396	27.109
#1	-.00007	.00726	.00255	.28407	1.5599	.04050	12.829	.00491
#2	.00008	.00725	.00083	.22736	1.4403	.03652	12.684	.00608
#3	-.00016	.00889	.00265	.24713	1.5319	.03455	12.648	.00835
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00085	31.853	.00034	.03447	-.00078	-.00150	-.00411	17.098
Stddev	.00035	.111	.00060	.00262	.00211	.00233	.01136	.051
%RSD	41.456	.34794	177.06	7.6073	269.03	155.39	276.52	.30099
#1	.00045	31.892	-.00033	.03746	-.00028	.00116	.00868	17.136
#2	.00105	31.939	.00081	.03256	.00103	-.00318	-.01303	17.117
#3	.00107	31.728	.00053	.03339	-.00310	-.00248	-.00798	17.039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511075602 Acquired: 11/17/2015 17:14:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	1.0627	-.00016	.00067	.01156	.00620	.30672
Stddev	.00029	.0024	.00230	.00104	.00091	.00008	.05303
%RSD	114.57	.22484	1404.3	153.61	7.8426	1.3236	17.290
#1	.00001	1.0623	.00050	-.00014	.01139	.00630	.32725
#2	-.00057	1.0652	.00173	.00033	.01254	.00616	.24650
#3	-.00021	1.0605	-.00272	.00184	.01076	.00615	.34643
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16013.	100930.	3023.8
Stddev	32.	217.	20.6
%RSD	.20022	.21493	.68195
#1	16015.	101060.	3012.4
#2	15980.	101060.	3011.3
#3	16044.	100680.	3047.6

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511075603 Acquired: 11/17/2015 17:18:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.13301	.00146	.06453	.19180	.00006	95.774	.00012
Stddev	.00058	.00263	.00317	.00079	.00032	.00003	.202	.00014
%RSD	242.96	1.9786	217.63	1.2193	.16799	52.439	.21086	113.33
#1	.00089	.13258	-.00208	.06498	.19205	.00010	95.656	.00009
#2	.00006	.13061	.00241	.06500	.19192	.00005	96.007	.00027
#3	-.00023	.13582	.00404	.06363	.19144	.00004	95.659	.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.00388	.00129	.10125	1.4814	.04452	15.267	.00378
Stddev	.00005	.00049	.00111	.01379	.0527	.00070	.118	.00133
%RSD	61.599	12.670	86.057	13.618	3.5543	1.5828	.77373	35.241
#1	-.00011	.00370	.00128	.09254	1.4918	.04484	15.403	.00424
#2	-.00008	.00443	.00241	.09406	1.5281	.04500	15.201	.00481
#3	-.00003	.00350	.00018	.11715	1.4243	.04371	15.197	.00227
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00109	42.207	.00008	.03305	.00063	-.00056	-.00570	13.048
Stddev	.00015	.122	.00044	.00115	.00220	.00079	.00094	.025
%RSD	13.879	.28839	573.26	3.4716	351.35	140.68	16.517	.18791
#1	.00099	42.087	-.00037	.03371	.00293	-.00147	-.00463	13.061
#2	.00100	42.330	.00052	.03371	.00042	-.00021	-.00639	13.063
#3	.00126	42.202	.00008	.03172	-.00146	-.00001	-.00608	13.020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511075603 Acquired: 11/17/2015 17:18:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	1.2455	-.00835	.00282	.01864	.00331	.28217
Stddev	.00032	.0013	.00044	.00068	.00048	.00011	.06152
%RSD	125.11	.10256	5.3141	24.212	2.5697	3.3041	21.803
#1	-.00045	1.2447	-.00869	.00229	.01859	.00343	.21251
#2	-.00044	1.2470	-.00785	.00359	.01914	.00330	.30495
#3	.00011	1.2448	-.00851	.00258	.01818	.00321	.32906
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15958.	100360.	3008.7
Stddev	23.	78.	18.4
%RSD	.14474	.07777	.61249
#1	15932.	100300.	3017.6
#2	15965.	100450.	2987.5
#3	15977.	100330.	3021.0

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511075604 Acquired: 11/17/2015 17:22:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.20390	.00138	.04488	.31163	.00003	101.75	.00030
Stddev	.00103	.00722	.00154	.00091	.00128	.00002	.36	.00004
%RSD	175.47	3.5421	111.28	2.0303	.41208	62.064	.35291	13.621
#1	.00080	.21182	.00316	.04402	.31310	.00001	101.98	.00026
#2	-.00053	.20220	.00059	.04583	.31103	.00004	101.93	.00034
#3	.00150	.19767	.00040	.04479	.31075	.00004	101.34	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.00280	.00294	.16562	1.7682	.03973	12.752	.01627
Stddev	.00024	.00096	.00122	.01661	.0742	.00464	.023	.00101
%RSD	723.56	34.449	41.464	10.030	4.1944	11.677	.18263	6.2148
#1	.00028	.00272	.00312	.14942	1.8502	.03569	12.739	.01562
#2	-.00020	.00187	.00406	.18261	1.7487	.04480	12.779	.01575
#3	.00002	.00380	.00164	.16481	1.7058	.03871	12.738	.01743
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	57.607	.00127	.05608	-.00198	-.00136	-.00170	12.518
Stddev	.00020	.230	.00044	.00378	.00268	.00208	.00288	.045
%RSD	33.037	.39864	34.857	6.7317	135.73	152.56	169.54	.36114
#1	.00043	57.816	.00157	.05175	-.00052	.00090	-.00385	12.558
#2	.00057	57.643	.00149	.05869	-.00507	-.00180	.00157	12.526
#3	.00083	57.361	.00076	.05780	-.00034	-.00319	-.00281	12.469
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511075604 Acquired: 11/17/2015 17:22:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00055	.96196	-.00397	-.00117	.01156	.01595	.44691
Stddev	.00034	.00388	.00246	.00247	.00054	.00013	.13173
%RSD	62.761	.40318	61.982	211.12	4.6391	.78961	29.475
#1	-.00088	.96431	-.00538	.00095	.01181	.01610	.32785
#2	-.00019	.96408	-.00541	-.00389	.01193	.01591	.42447
#3	-.00057	.95748	-.00113	-.00057	.01095	.01586	.58842
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15913.	100080.	3000.9
Stddev	49.	220.	13.5
%RSD	.31038	.22005	.45007
#1	15907.	100200.	2987.6
#2	15868.	99822.	3000.6
#3	15966.	100210.	3014.6

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511075606 Acquired: 11/17/2015 17:26:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00111	.36208	.00077	.04458	.32045	.00006	103.39	.00021
Stddev	.00039	.00112	.00224	.00133	.00133	.00003	.54	.00025
%RSD	35.167	.30959	291.18	2.9741	.41425	60.877	.52266	120.13
#1	-.00091	.36207	-.00180	.04402	.31907	.00002	103.05	.00014
#2	-.00155	.36321	.00183	.04609	.32171	.00006	104.01	-.00000
#3	-.00085	.36096	.00228	.04362	.32056	.00009	103.09	.00049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.00325	.00155	.27160	1.8059	.04089	13.118	.02568
Stddev	.00003	.00056	.00044	.00093	.0462	.00124	.090	.00108
%RSD	39.449	17.163	28.243	.34187	2.5593	3.0295	.68343	4.1970
#1	.00006	.00272	.00175	.27066	1.8505	.03968	13.167	.02549
#2	.00012	.00320	.00105	.27162	1.8089	.04084	13.172	.02683
#3	.00006	.00383	.00185	.27251	1.7582	.04215	13.014	.02470
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00082	58.597	.00055	.05347	.00212	-.00149	.00199	13.187
Stddev	.00017	.238	.00032	.00276	.00182	.00056	.00254	.035
%RSD	20.544	.40622	57.373	5.1572	85.734	37.400	127.54	.26264
#1	.00083	58.441	.00023	.05633	.00009	-.00179	-.00078	13.216
#2	.00065	58.871	.00056	.05083	.00359	-.00085	.00254	13.195
#3	.00099	58.480	.00087	.05326	.00268	-.00184	.00422	13.148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511075606 Acquired: 11/17/2015 17:26:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00055	.98046	-.00964	.00274	.01182	.01710	.33708
Stddev	.00046	.00376	.00147	.00034	.00043	.00018	.12199
%RSD	83.514	.38377	15.282	12.441	3.6544	1.0336	36.191
#1	-.00099	.97736	-.01061	.00256	.01226	.01705	.29960
#2	-.00060	.98464	-.00794	.00313	.01140	.01729	.23822
#3	-.00007	.97937	-.01035	.00253	.01180	.01695	.47342
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15916.	100370.	3028.8
Stddev	14.	238.	20.4
%RSD	.09023	.23704	.67372
#1	15907.	100140.	3044.2
#2	15932.	100350.	3005.7
#3	15908.	100610.	3036.6

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511075607 Acquired: 11/17/2015 17:30:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.00605	-.00254	.00188	.00108	.00006	.00947	.00013
Stddev	.00099	.00704	.00076	.00127	.00132	.00002	.02602	.00019
%RSD	17046.	116.39	29.865	67.582	121.85	29.433	274.66	151.07
#1	-.00100	-.00058	-.00318	.00244	.00103	.00006	-.01994	.00006
#2	.00099	.00529	-.00170	.00279	.00243	.00008	.01889	-.00002
#3	.00003	.01343	-.00274	.00043	-.00021	.00005	.02948	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.00037	-.00013	.02085	-.01241	.00105	-.06517	-.00183
Stddev	.00019	.00041	.00033	.01332	.07143	.00362	.06836	.00166
%RSD	540.61	111.65	255.06	63.895	575.41	343.90	104.90	90.728
#1	-.00016	.00011	-.00044	.01760	.05216	-.00290	-.06251	-.00178
#2	.00004	.00015	-.00016	.00945	-.08914	.00186	-.13481	-.00351
#3	.00023	.00085	.00021	.03550	-.00027	.00420	.00182	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	.06326	.00044	.00394	-.00101	.00065	-.00716	.00982
Stddev	.00028	.02375	.00033	.00344	.00092	.00307	.00239	.00146
%RSD	78.427	37.549	74.005	87.252	90.475	469.47	33.400	14.900
#1	-.00061	.08200	.00014	.00391	.00003	-.00140	-.00689	.00886
#2	-.00041	.03654	.00039	.00739	-.00167	.00419	-.00967	.00910
#3	-.00005	.07123	.00079	.00052	-.00140	-.00083	-.00491	.01151
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511075607 Acquired: 11/17/2015 17:30:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	-.00017	.00799	.00121	.00006	.00358	.04485
Stddev	.00038	.00019	.00424	.00046	.00072	.00014	.15288
%RSD	419.35	110.39	53.036	37.611	1209.9	3.9690	340.87
#1	.00005	-.00027	.00858	.00082	-.00077	.00349	-.12966
#2	.00019	.00005	.01190	.00110	.00046	.00350	.15516
#3	-.00052	-.00028	.00349	.00171	.00050	.00374	.10905
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16404.	103810.	3012.7
Stddev	37.	291.	11.3
%RSD	.22525	.27992	.37543
#1	16432.	103500.	3003.8
#2	16418.	104080.	3008.9
#3	16362.	103860.	3025.4

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCV Acquired: 11/17/2015 17:34:40 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40505	10.126	.40118	.50384	1.0213	.05085	10.228	.05070
Stddev	.00107	.014	.00295	.00140	.0040	.00004	.069	.00010
%RSD	.26327	.14013	.73631	.27833	.39499	.07704	.67039	.19233
#1	.40384	10.116	.40358	.50544	1.0168	.05081	10.149	.05074
#2	.40543	10.120	.40207	.50325	1.0248	.05086	10.265	.05059
#3	.40587	10.142	.39788	.50283	1.0222	.05089	10.270	.05078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20691	.50222	.51249	4.0660	49.883	1.0277	10.158	.51327
Stddev	.00047	.00278	.00263	.0350	.211	.0040	.136	.00259
%RSD	.22874	.55312	.51268	.86075	.42350	.39455	1.3388	.50498
#1	.20725	.49962	.51332	4.0290	49.640	1.0232	10.022	.51074
#2	.20712	.50189	.51459	4.0985	50.024	1.0291	10.157	.51315
#3	.20637	.50514	.50954	4.0704	49.984	1.0309	10.294	.51592
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0172	50.561	.50611	10.008	.50772	1.1967	.40130	4.9871
Stddev	.0032	.128	.00212	.006	.00213	.0040	.00021	.0048
%RSD	.31888	.25231	.41791	.06481	.41885	.33105	.05200	.09574
#1	1.0199	50.414	.50777	10.011	.50526	1.1983	.40145	4.9850
#2	1.0181	50.632	.50683	10.013	.50886	1.1997	.40139	4.9926
#3	1.0136	50.638	.50373	10.001	.50903	1.1922	.40106	4.9838
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCV Acquired: 11/17/2015 17:34:40 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0303	1.0227	1.0244	.50577	1.0196	1.0059	1.0376
Stddev	.0030	.0026	.0026	.00009	.0015	.0020	.0895
%RSD	.29247	.25465	.24903	.01759	.14883	.20201	8.6211
#1	1.0315	1.0198	1.0253	.50580	1.0181	1.0073	.99753
#2	1.0324	1.0248	1.0263	.50584	1.0195	1.0068	1.1400
#3	1.0268	1.0235	1.0215	.50567	1.0212	1.0035	.97511
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16625.	103810.	3111.4
Stddev	36.	182.	9.7
%RSD	.21517	.17544	.31131
#1	16658.	103940.	3121.0
#2	16587.	103600.	3101.6
#3	16631.	103890.	3111.5

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCB Acquired: 11/17/2015 17:38:24 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00062	-.00527	-.00158	.00182	.00044	.00005	.00173
Stddev	.00103	.00648	.00195	.00127	.00080	.00003	.02212
%RSD	166.82	122.94	124.02	69.740	182.52	51.762	1279.5
#1	.00022	-.01184	-.00028	.00324	.00134	.00007	.02725
#2	-.00177	.00113	-.00382	.00077	.00016	.00007	-.01032
#3	-.00031	-.00511	-.00063	.00146	-.00018	.00002	-.01174
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	.00014	-.00075	-.00004	.02705	.04196	.00115
Stddev	.00019	.00012	.00090	.00005	.00130	.04747	.00381
%RSD	427.52	83.197	120.33	138.68	4.8145	113.14	332.51
#1	.00011	.00008	-.00148	-.00009	.02566	.06731	-.00089
#2	-.00026	.00006	-.00102	.00001	.02824	.07136	-.00121
#3	.00002	.00028	.00026	-.00003	.02726	-.01281	.00554
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.05219	-.00036	.00126	.03936	.00012	-.00107	.00007
Stddev	.07433	.00093	.00039	.01297	.00030	.00449	.00102
%RSD	142.44	256.18	31.348	32.961	247.88	418.52	1531.3
#1	-.02038	-.00041	.00148	.05433	.00045	.00245	.00111
#2	-.13713	-.00127	.00080	.03133	-.00014	-.00613	.00002
#3	.00095	.00059	.00148	.03243	.00005	.00046	-.00093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCB Acquired: 11/17/2015 17:38:24 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00073	-.00534	.00167	.00019	-.00007	.00755	.00118
Stddev	.00217	.00175	.00097	.00058	.00035	.00577	.00169
%RSD	299.17	32.744	58.164	306.06	527.42	76.534	143.27
#1	-.00009	-.00674	.00062	-.00024	.00011	.00244	.00297
#2	.00106	-.00589	.00185	.00085	-.00047	.01381	-.00039
#3	-.00315	-.00338	.00255	-.00004	.00016	.00638	.00096
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00015	-.00005	F .14242
Stddev	.00045	.00026	.11973
%RSD	295.06	496.37	84.069
#1	.00055	.00021	.05783
#2	-.00033	-.00005	.09001
#3	.00023	-.00032	.27942
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16953.	106450.	3089.0
Stddev	42.	101.	9.4
%RSD	.25052	.09514	.30389
#1	16904.	106340.	3090.7
#2	16971.	106490.	3078.8
#3	16982.	106530.	3097.4

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511075608 Acquired: 11/17/2015 17:42:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00481	-.00138	.00085	.00068	.00009	.03609	-.00009
Stddev	.00089	.00795	.00127	.00234	.00049	.00002	.02453	.00006
%RSD	1043.7	165.17	92.482	275.27	72.302	25.934	67.978	68.476
#1	.00110	.01394	-.00200	-.00146	.00124	.00011	.00959	-.00003
#2	-.00030	-.00056	-.00222	.00080	.00052	.00007	.04067	-.00008
#3	-.00054	.00106	.00009	.00321	.00029	.00008	.05802	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	-.00042	.00071	.03597	-.09731	.00174	-.01583	-.00164
Stddev	.00018	.00090	.00049	.00826	.05946	.00132	.06892	.00157
%RSD	112.76	213.94	68.323	22.966	61.105	76.239	435.46	95.570
#1	-.00035	-.00051	.00121	.02863	-.03489	.00128	-.02934	-.00014
#2	-.00013	-.00126	.00067	.04492	-.10373	.00070	.05885	-.00152
#3	.00000	.00052	.00025	.03438	-.15329	.00323	-.07698	-.00327
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.08307	-.00004	.00051	-.00234	-.00423	-.00219	.00629
Stddev	.00013	.01406	.00041	.00537	.00121	.00141	.00080	.00102
%RSD	53.518	16.924	905.13	1058.1	51.777	33.262	36.457	16.253
#1	.00024	.07127	.00018	-.00292	-.00209	-.00544	-.00189	.00747
#2	.00012	.07932	.00020	.00670	-.00366	-.00456	-.00310	.00562
#3	.00038	.09863	-.00051	-.00226	-.00127	-.00269	-.00158	.00578
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511075608 Acquired: 11/17/2015 17:42:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00030	-.00012	.00400	.00078	-.00034	.00749	.16749
Stddev	.00068	.00013	.00252	.00133	.00036	.00013	.38554
%RSD	225.07	107.35	62.856	170.29	104.08	1.7270	230.18
#1	-.00107	.00002	.00182	.00132	.00004	.00764	.49398
#2	.00024	-.00014	.00343	-.00074	-.00040	.00740	.26636
#3	-.00008	-.00024	.00675	.00177	-.00067	.00743	-.25786
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16338.	103620.	3009.5
Stddev	22.	221.	3.3
%RSD	.13428	.21317	.10957
#1	16327.	103380.	3010.7
#2	16363.	103820.	3012.1
#3	16323.	103650.	3005.8

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511075901 Acquired: 11/17/2015 17:46:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	.01032	-.00334	.02866	.24008	.00006	163.18	.00022
Stddev	.00104	.00690	.00167	.00067	.00230	.00002	.92	.00017
%RSD	289.49	66.882	50.138	2.3237	.95974	32.610	.56527	75.043
#1	-.00137	.00249	-.00167	.02923	.24074	.00007	163.22	.00021
#2	.00071	.01296	-.00502	.02884	.24199	.00008	164.08	.00040
#3	-.00041	.01552	-.00332	.02793	.23752	.00004	162.23	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.00108	.00278	.12675	1.3776	.02662	18.607	.20160
Stddev	.00008	.00030	.00058	.01892	.0876	.00523	.118	.00292
%RSD	192.20	27.455	20.736	14.926	6.3603	19.634	.63653	1.4483
#1	.00009	.00105	.00331	.12170	1.4054	.03000	18.694	.20023
#2	-.00005	.00139	.00287	.11086	1.2794	.02925	18.656	.20495
#3	.00009	.00080	.00217	.14768	1.4479	.02060	18.472	.19961
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	85.840	.00119	.00380	.00099	-.00055	-.00295	5.2538
Stddev	.00004	.420	.00013	.00248	.00446	.00322	.00100	.0259
%RSD	21.478	.48952	10.862	65.274	450.65	589.39	33.734	.49291
#1	.00019	85.880	.00111	.00113	-.00136	-.00162	-.00386	5.2778
#2	.00025	86.239	.00111	.00603	-.00180	-.00310	-.00189	5.2572
#3	.00016	85.401	.00133	.00426	.00613	.00307	-.00311	5.2264
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511075901 Acquired: 11/17/2015 17:46:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00047	.70471	-.01729	.00102	-.00048	.00496	.32776
Stddev	.00011	.00365	.00280	.00121	.00059	.00019	.14209
%RSD	23.652	.51761	16.183	118.96	122.84	3.8886	43.350
#1	-.00059	.70520	-.01454	.00222	-.00024	.00505	.49173
#2	-.00044	.70809	-.01721	-.00020	-.00005	.00474	.25071
#3	-.00037	.70084	-.02013	.00104	-.00116	.00510	.24084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15648.	98242.	2998.8
Stddev	10.	425.	15.3
%RSD	.06689	.43275	.50907
#1	15639.	97860.	2984.3
#2	15644.	98700.	2997.5
#3	15659.	98166.	3014.7

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511076101 Acquired: 11/17/2015 17:50:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.02712	.00128	.06935	.04845	.00007	67.800	.00016
Stddev	.00153	.00211	.00267	.00244	.00076	.00005	.094	.00018
%RSD	1035.5	7.7666	208.94	3.5164	1.5634	76.594	.13913	112.83
#1	.00183	.02936	.00315	.07181	.04865	.00001	67.731	.00008
#2	-.00118	.02684	-.00178	.06693	.04761	.00011	67.908	.00003
#3	-.00020	.02517	.00245	.06932	.04908	.00008	67.761	.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.00080	.00126	.46400	2.2611	.01952	12.900	.00432
Stddev	.00030	.00077	.00034	.01216	.1439	.00400	.162	.00111
%RSD	1352.2	96.521	26.813	2.6214	6.3627	20.476	1.2549	25.660
#1	.00032	-.00009	.00087	.47599	2.4203	.01606	13.081	.00560
#2	.00001	.00127	.00145	.46435	2.1404	.01860	12.769	.00362
#3	-.00027	.00122	.00147	.45167	2.2227	.02389	12.849	.00374
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	46.217	.00025	.07842	-.00010	-.00440	-.00547	3.3028
Stddev	.00020	.097	.00017	.01104	.00127	.00203	.00632	.0046
%RSD	38.984	.20906	68.227	14.079	1269.7	46.253	115.42	.13839
#1	.00049	46.220	.00026	.06633	-.00090	-.00660	.00176	3.2983
#2	.00071	46.312	.00042	.08798	-.00076	-.00401	-.00826	3.3074
#3	.00032	46.118	.00008	.08094	.00136	-.00259	-.00991	3.3028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511076101 Acquired: 11/17/2015 17:50:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00043	.45952	-.00405	.00289	-.00068	.05418	.16052
Stddev	.00086	.00092	.00493	.00065	.00037	.00024	.13480
%RSD	200.97	.20073	121.66	22.466	54.436	.43765	83.975
#1	-.00074	.45953	-.00843	.00251	-.00066	.05393	.30056
#2	-.00108	.46043	-.00502	.00364	-.00106	.05422	.03167
#3	.00054	.45859	.00129	.00252	-.00032	.05440	.14932
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15841.	100080.	3004.5
Stddev	56.	441.	13.3
%RSD	.35059	.44108	.44251
#1	15895.	99570.	2999.9
#2	15843.	100310.	3019.5
#3	15784.	100360.	2994.1

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511076201 Acquired: 11/17/2015 17:54:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	.00905	-.00196	.04336	.10883	.00004	77.327	.00021
Stddev	.00118	.00687	.00179	.00177	.00142	.00004	.186	.00001
%RSD	154.82	75.945	91.156	4.0839	1.3068	94.852	.24034	4.5740
#1	-.00026	.01029	-.00129	.04306	.10971	.00003	77.360	.00021
#2	.00049	.01521	-.00399	.04176	.10959	.00009	77.494	.00021
#3	.00206	.00164	-.00060	.04526	.10719	.00001	77.127	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00051	.00063	.00858	.03946	1.1167	.01642	19.119	.12022
Stddev	.00016	.00028	.00044	.00623	.0412	.00063	.096	.00266
%RSD	31.080	44.349	5.0768	15.779	3.6910	3.8501	.50429	2.2138
#1	-.00050	.00075	.00854	.03240	1.0723	.01574	19.223	.12258
#2	-.00067	.00031	.00903	.04417	1.1240	.01653	19.103	.12074
#3	-.00036	.00083	.00816	.04181	1.1537	.01699	19.032	.11734
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	26.797	-.00010	.00685	.00106	.00005	-.00113	4.3778
Stddev	.00032	.080	.00117	.00523	.00028	.00175	.00539	.0222
%RSD	62.792	.30026	1202.0	76.419	26.774	3551.4	475.24	.50667
#1	.00086	26.845	.00113	.00100	.00078	.00198	-.00334	4.4014
#2	.00029	26.841	-.00120	.01108	.00105	-.00144	.00501	4.3747
#3	.00035	26.704	-.00022	.00847	.00134	-.00039	-.00506	4.3574
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511076201 Acquired: 11/17/2015 17:54:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00049	.64439	-.00649	.00081	-.00051	.00566	.13767
Stddev	.00074	.00230	.00507	.00147	.00022	.00011	.14826
%RSD	151.61	.35769	78.199	182.31	43.006	2.0261	107.69
#1	-.00045	.64503	-.00108	.00077	-.00056	.00578	-.03140
#2	-.00125	.64632	-.01115	.00229	-.00027	.00555	.19893
#3	.00023	.64184	-.00723	-.00065	-.00070	.00564	.24549
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15969.	100590.	3000.3
Stddev	47.	54.	8.0
%RSD	.29408	.05389	.26558
#1	15915.	100580.	2996.4
#2	15997.	100650.	3009.5
#3	15995.	100540.	2995.1

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511076401 Acquired: 11/17/2015 17:58:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.00450	-.00255	.02878	.14788	.00006	73.735	.00021
Stddev	.00080	.00714	.00195	.00202	.00049	.00003	.344	.00015
%RSD	1136.1	158.50	76.306	7.0308	.32847	45.211	.46704	72.943
#1	.00037	-.00155	-.00471	.02848	.14823	.00009	74.102	.00034
#2	.00041	.01237	-.00202	.03094	.14809	.00005	73.684	.00025
#3	-.00099	.00269	-.00093	.02692	.14732	.00004	73.418	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00079	.00037	.00610	2.0506	1.3574	.01471	15.247	.20256
Stddev	.00005	.00092	.00101	.0214	.0469	.00096	.080	.00089
%RSD	5.9509	249.70	16.545	1.0441	3.4543	6.4941	.52255	.44118
#1	.00081	-.00041	.00508	2.0748	1.3517	.01369	15.298	.20251
#2	.00074	.00013	.00611	2.0427	1.3136	.01558	15.155	.20169
#3	.00082	.00138	.00710	2.0342	1.4069	.01488	15.288	.20348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	10.569	-.00037	.00639	.00327	-.00014	-.00341	6.6773
Stddev	.00008	.021	.00049	.00675	.00105	.00204	.00188	.0108
%RSD	13.996	.19726	134.53	105.74	32.267	1484.5	55.180	.16165
#1	.00057	10.587	.00017	.01052	.00412	.00192	-.00291	6.6825
#2	.00045	10.546	-.00079	.01005	.00359	-.00214	-.00549	6.6845
#3	.00060	10.572	-.00048	-.00141	.00209	-.00019	-.00183	6.6649
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511076401 Acquired: 11/17/2015 17:58:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	.56239	-.00421	.00112	-.00055	.03526	.22299
Stddev	.00013	.00365	.00293	.00244	.00038	.00013	.09752
%RSD	80.667	.64886	69.658	218.02	68.744	.36886	43.734
#1	-.00001	.56649	-.00155	.00373	-.00074	.03527	.11298
#2	-.00025	.56121	-.00372	-.00111	-.00012	.03538	.29883
#3	-.00022	.55948	-.00735	.00074	-.00080	.03512	.25717
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16172.	101970.	3046.8
Stddev	21.	255.	18.6
%RSD	.12916	.25007	.60929
#1	16183.	101940.	3026.7
#2	16148.	102240.	3063.4
#3	16184.	101730.	3050.3

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCV Acquired: 11/17/2015 18:02:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39304	9.8061	.38703	.48848	1.0002	.04944	9.9805	.04903
Stddev	.00095	.0262	.00118	.00319	.0056	.00007	.0446	.00032
%RSD	.24113	.26762	.30524	.65339	.55682	.13373	.44711	.64306
#1	.39385	9.7787	.38776	.48568	1.0012	.04937	10.009	.04932
#2	.39328	9.8311	.38767	.49195	.99417	.04948	9.9290	.04870
#3	.39200	9.8086	.38567	.48780	1.0052	.04949	10.003	.04908
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20064	.48915	.49688	3.9258	49.067	1.0040	10.009	.50057
Stddev	.00056	.00237	.00167	.0279	.252	.0098	.100	.00027
%RSD	.28091	.48522	.33628	.71190	.51448	.97395	.99436	.05399
#1	.20121	.48655	.49874	3.9100	49.195	.99726	10.022	.50027
#2	.20065	.49120	.49553	3.9581	48.776	.99959	9.9039	.50078
#3	.20008	.48969	.49636	3.9093	49.230	1.0152	10.102	.50068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98366	49.540	.48987	9.7067	.49157	1.1626	.39046	4.8271
Stddev	.00258	.240	.00219	.0328	.00250	.0053	.00305	.0121
%RSD	.26227	.48358	.44688	.33807	.50951	.45836	.78152	.24973
#1	.98663	49.580	.49225	9.7429	.49342	1.1658	.39349	4.8398
#2	.98204	49.282	.48944	9.6982	.49258	1.1564	.39049	4.8157
#3	.98230	49.756	.48793	9.6789	.48872	1.1655	.38739	4.8259
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCV Acquired: 11/17/2015 18:02:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99687	1.0011	1.0044	.49083	.99173	.97483	1.0289
Stddev	.00372	.0057	.0037	.00251	.00229	.00268	.1411
%RSD	.37294	.56750	.37116	.51081	.23124	.27502	13.715
#1	1.0010	1.0015	1.0040	.49085	.98912	.97788	.87143
#2	.99582	.99528	1.0009	.49332	.99342	.97287	1.0715
#3	.99379	1.0066	1.0083	.48831	.99264	.97373	1.1439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	17054.	106000.	3166.5
Stddev	24.	189.	18.5
%RSD	.14200	.17833	.58324
#1	17052.	106190.	3151.5
#2	17079.	105810.	3187.2
#3	17030.	105990.	3160.9

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCB Acquired: 11/17/2015 18:05:44 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	-.00543	.00013	.00001	.00062	.00009	-.00358
Stddev	.00066	.00378	.00094	.00052	.00056	.00003	.01089
%RSD	99.000	69.739	704.12	5145.5	90.887	30.301	303.89
#1	-.00007	-.00943	.00059	-.00059	.00127	.00009	.00899
#2	.00120	-.00493	-.00095	.00029	.00026	.00006	-.00995
#3	.00086	-.00192	.00076	.00032	.00033	.00012	-.00979
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	-.00020	-.00027	-.00036	.00381	.07338	.00124
Stddev	.00003	.00025	.00032	.00053	.00701	.07097	.00092
%RSD	24.278	122.42	119.05	146.46	183.90	96.716	74.471
#1	-.00012	-.00034	-.00044	-.00028	.00837	.09600	.00079
#2	-.00010	.00008	-.00047	.00012	.00733	-.00614	.00230
#3	-.00016	-.00035	.00010	-.00093	-.00426	.13029	.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00912	.00052	.00120	.02139	.00020	.00225	-.00076
Stddev	.06471	.00258	.00020	.02741	.00058	.00527	.00290
%RSD	709.85	495.32	16.603	128.10	293.12	234.36	383.23
#1	.06904	.00136	.00130	.01940	-.00031	.00380	-.00033
#2	.01781	.00257	.00097	.04974	.00008	.00657	-.00385
#3	-.05950	-.00237	.00133	-.00496	.00083	-.00362	.00191
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCB Acquired: 11/17/2015 18:05:44 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00199	-.00436	.00204	.00024	-.00009	.00613	.00233
Stddev	.00190	.00199	.00113	.00013	.00022	.00332	.00022
%RSD	95.657	45.535	55.317	52.739	257.67	54.114	9.5223
#1	.00003	-.00278	.00083	.00010	-.00025	.00344	.00251
#2	.00382	-.00660	.00222	.00028	.00017	.00984	.00208
#3	.00211	-.00371	.00306	.00035	-.00018	.00512	.00240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00001	.00002	F .16082
Stddev	.00063	.00016	.16965
%RSD	5399.2	1050.2	105.49
#1	.00057	.00007	.27550
#2	.00007	.00014	-.03407
#3	-.00068	-.00016	.24101
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	17151.	108110.	3157.2
Stddev	108.	253.	16.3
%RSD	.62906	.23389	.51679
#1	17264.	108190.	3138.6
#2	17049.	108310.	3163.5
#3	17140.	107820.	3169.4

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: PBW B6 Acquired: 11/17/2015 18:09:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546491-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	.00318	-.00069	-.00027	.00106	.00006	.00885	.00024
Stddev	.00062	.00628	.00220	.00214	.00053	.00002	.03745	.00007
%RSD	85.024	197.50	318.06	802.40	50.494	33.979	423.11	29.060
#1	.00002	.01029	.00185	-.00227	.00136	.00005	.04123	.00025
#2	.00098	-.00161	-.00206	.00198	.00137	.00004	-.03216	.00016
#3	.00120	.00086	-.00186	-.00052	.00044	.00008	.01748	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	-.00000	.00095	.02485	.04231	.00253	.00435	-.00029
Stddev	.00016	.00089	.00059	.01735	.10179	.00511	.03964	.00523
%RSD	124.74	20152.	62.334	69.817	240.54	201.85	911.05	1825.4
#1	.00003	.00103	.00142	.01406	-.07362	.00796	.00945	-.00208
#2	-.00012	-.00058	.00113	.04485	.11699	-.00218	.04120	.00560
#3	-.00028	-.00046	.00029	.01562	.08357	.00182	-.03759	-.00438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.00698	.00021	-.00300	.00022	-.00045	-.00165	.01021
Stddev	.00030	.02084	.00065	.00077	.00193	.00166	.00324	.00014
%RSD	99.484	298.48	309.49	25.614	885.31	367.67	196.15	1.3373
#1	.00064	-.01444	.00096	-.00389	-.00200	-.00229	.00153	.01033
#2	.00018	.02718	-.00011	-.00252	.00120	.00096	-.00495	.01024
#3	.00008	.00821	-.00022	-.00260	.00146	-.00003	-.00153	.01006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: PBW B6 Acquired: 11/17/2015 18:09:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546491-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00012	-.00051	.00550	.00216	-.00030	.00113	.08419
Stddev	.00074	.00010	.00327	.00115	.00072	.00006	.22060
%RSD	607.21	20.088	59.468	53.352	242.85	4.9722	262.02
#1	.00061	-.00041	.00230	.00094	-.00103	.00117	-.13952
#2	-.00086	-.00061	.00884	.00323	.00041	.00115	.09054
#3	-.00012	-.00051	.00536	.00230	-.00028	.00107	.30154
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16402.	104230.	3003.8
Stddev	77.	251.	3.6
%RSD	.46798	.24097	.11923
#1	16391.	104060.	2999.7
#2	16332.	104110.	3006.3
#3	16484.	104520.	3005.5

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: LCSW B6 Acquired: 11/17/2015 18:13:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546491-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21191	5.3010	.20279	1.0337	.54041	.02638	5.3766	.02672
Stddev	.00090	.0039	.00385	.0006	.00442	.00003	.0362	.00014
%RSD	.42378	.07378	1.9000	.05646	.81768	.12371	.67374	.52122
#1	.21136	5.2970	.20294	1.0330	.54195	.02640	5.4112	.02682
#2	.21295	5.3011	.19887	1.0341	.53542	.02634	5.3390	.02656
#3	.21142	5.3048	.20657	1.0340	.54385	.02640	5.3796	.02677
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.11041	.26666	.27376	2.1270	26.240	.53689	5.3686	.27101
Stddev	.00052	.00058	.00085	.0256	.282	.00096	.0616	.00350
%RSD	.47373	.21632	.31146	1.2016	1.0748	.17902	1.1478	1.2911
#1	.11101	.26693	.27470	2.0999	26.186	.53654	5.4386	.26816
#2	.11011	.26705	.27354	2.1303	25.989	.53797	5.3449	.26996
#3	.11010	.26600	.27304	2.1507	26.545	.53615	5.3224	.27491
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.55196	26.648	.27070	5.2179	.27144	.63761	.20441	2.6776
Stddev	.00029	.148	.00154	.0069	.00188	.00384	.00217	.0033
%RSD	.05199	.55388	.56819	.13170	.69389	.60169	1.0629	.12287
#1	.55218	26.642	.27172	5.2188	.27086	.63411	.20658	2.6778
#2	.55163	26.504	.27144	5.2242	.26991	.64171	.20223	2.6742
#3	.55206	26.799	.26893	5.2106	.27354	.63702	.20442	2.6808
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: LCSW B6 Acquired: 11/17/2015 18:13:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546491-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.54939	.53573	.53712	.27012	.54212	.53026	.50721
Stddev	.00108	.00406	.00441	.00176	.00131	.00042	.06708
%RSD	.19664	.75864	.82062	.65046	.24124	.08000	13.225
#1	.55030	.53645	.53337	.27059	.54150	.52977	.45814
#2	.54968	.53135	.53602	.26818	.54125	.53050	.58364
#3	.54820	.53938	.54197	.27160	.54363	.53051	.47985
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16147.	102130.	3048.6
Stddev	54.	113.	23.0
%RSD	.33298	.11062	.75584
#1	16094.	102050.	3062.0
#2	16201.	102090.	3061.8
#3	16145.	102260.	3022.0

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511060514 Acquired: 11/17/2015 18:17:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546491-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00121	.09871	.00003	.60945	.11185	.00010	160.31	.00046
Stddev	.00088	.00152	.00103	.00222	.00061	.00005	.63	.00007
%RSD	72.799	1.5375	3285.6	.36480	.54304	53.343	.39601	16.242
#1	-.00077	.09740	-.00072	.60873	.11254	.00004	161.03	.00042
#2	-.00063	.10037	-.00039	.61194	.11159	.00012	159.81	.00041
#3	-.00222	.09836	.00120	.60768	.11141	.00013	160.11	.00054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	.00196	.00211	.25426	1.4068	.03020	32.126	.50261
Stddev	.00036	.00064	.00161	.01290	.0299	.00501	.273	.00175
%RSD	45.062	32.617	76.461	5.0729	2.1259	16.608	.84938	.34787
#1	.00104	.00214	.00264	.26354	1.4041	.02919	32.441	.50458
#2	.00039	.00248	.00030	.23953	1.4380	.03563	31.959	.50122
#3	.00096	.00125	.00338	.25970	1.3783	.02576	31.977	.50205
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00062	222.28	.00373	.01832	.00120	-.00017	-.00838	5.7903
Stddev	.00005	.98	.00104	.00295	.00124	.00182	.00243	.0309
%RSD	8.3032	.44060	27.790	16.101	103.01	1089.1	28.994	.53407
#1	.00064	223.41	.00488	.01868	.00215	-.00131	-.01027	5.8138
#2	.00066	221.66	.00286	.01520	-.00020	-.00112	-.00564	5.8018
#3	.00057	221.78	.00345	.02107	.00164	.00193	-.00922	5.7553
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511060514 Acquired: 11/17/2015 18:17:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546491-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	.67620	-.01758	.00081	.00022	.00685	.26254
Stddev	.00053	.00376	.00240	.00092	.00080	.00015	.10071
%RSD	146.98	.55579	13.658	113.83	361.01	2.1876	38.360
#1	-.00079	.68054	-.01658	.00081	-.00045	.00702	.15100
#2	.00023	.67399	-.01583	-.00011	.00112	.00681	.34680
#3	-.00052	.67406	-.02031	.00174	-.00000	.00672	.28982
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15134.	95824.	3007.2
Stddev	48.	99.	11.6
%RSD	.31615	.10368	.38714
#1	15099.	95762.	2993.7
#2	15115.	95938.	3013.4
#3	15188.	95770.	3014.4

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511060516S Acquired: 11/17/2015 18:21:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546491-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21927	5.5710	.21594	1.7216	.66725	.02746	169.61	.02759
Stddev	.00199	.0112	.00201	.0006	.00378	.00007	.76	.00020
%RSD	.90806	.20068	.92876	.03660	.56610	.23916	.44922	.72547
#1	.22067	5.5594	.21676	1.7214	.66948	.02740	170.00	.02778
#2	.21699	5.5817	.21366	1.7223	.66289	.02753	168.74	.02761
#3	.22014	5.5718	.21741	1.7210	.66938	.02746	170.11	.02739
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10922	.27316	.26951	2.6675	28.653	.58275	38.328	.91962
Stddev	.00037	.00205	.00098	.0274	.262	.00099	.195	.00239
%RSD	.33969	.75111	.36504	1.0267	.91592	.16992	.50996	.25948
#1	.10906	.27097	.27056	2.6847	28.803	.58382	38.387	.92237
#2	.10894	.27504	.26936	2.6359	28.350	.58187	38.109	.91821
#3	.10964	.27348	.26861	2.6818	28.806	.58255	38.486	.91827
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.55930	254.64	.26881	5.5757	.26069	.65866	.20753	8.6769
Stddev	.00043	1.29	.00061	.0150	.00099	.00528	.00532	.0120
%RSD	.07688	.50829	.22870	.26903	.38136	.80116	2.5614	.13848
#1	.55953	255.56	.26927	5.5880	.25955	.65477	.20506	8.6840
#2	.55957	253.16	.26812	5.5801	.26115	.66466	.20390	8.6836
#3	.55880	255.20	.26906	5.5590	.26137	.65653	.21363	8.6630
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511060516S Acquired: 11/17/2015 18:21:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546491-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.54937	1.2395	.53570	.25772	.56119	.53668	.38019
Stddev	.00081	.0077	.01084	.00299	.00134	.00110	.05844
%RSD	.14669	.62297	2.0239	1.1606	.23938	.20534	15.372
#1	.55025	1.2434	.53352	.26101	.55971	.53769	.33534
#2	.54918	1.2306	.52612	.25696	.56151	.53683	.35895
#3	.54867	1.2444	.54747	.25517	.56234	.53551	.44629
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15031.	93900.	2931.4
Stddev	12.	115.	9.6
%RSD	.08260	.12296	.32743
#1	15017.	94028.	2930.5
#2	15042.	93805.	2941.3
#3	15034.	93865.	2922.2

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511060518SD Acquired: 11/17/2015 18:25:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546491-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21959	5.5050	.21729	1.7113	.66156	.02740	168.04	.02767
Stddev	.00235	.0151	.00119	.0069	.00460	.00005	.86	.00024
%RSD	1.0708	.27450	.54703	.40458	.69543	.19036	.51025	.87813
#1	.21755	5.5204	.21686	1.7067	.66107	.02746	168.23	.02792
#2	.21904	5.5042	.21864	1.7193	.66639	.02740	168.79	.02764
#3	.22216	5.4902	.21638	1.7080	.65723	.02736	167.10	.02744
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10964	.27053	.27189	2.2660	28.789	.58335	38.090	.51049
Stddev	.00061	.00113	.00136	.0312	.129	.00114	.011	.00195
%RSD	.55663	.41712	.50087	1.3755	.44863	.19539	.02862	.38227
#1	.11032	.27180	.27346	2.2396	28.861	.58212	38.077	.50831
#2	.10942	.26966	.27109	2.2580	28.867	.58437	38.098	.51110
#3	.10916	.27013	.27112	2.3004	28.640	.58355	38.094	.51207
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.56170	251.64	.26737	5.5729	.26279	.66025	.21199	8.5029
Stddev	.00297	1.21	.00156	.0112	.00190	.00605	.00387	.0200
%RSD	.52896	.48105	.58394	.20056	.72216	.91583	1.8244	.23553
#1	.56464	251.94	.26841	5.5821	.26490	.66291	.21583	8.5165
#2	.56175	252.68	.26811	5.5762	.26124	.65333	.21203	8.5123
#3	.55870	250.31	.26557	5.5605	.26222	.66451	.20810	8.4799
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511060518SD Acquired: 11/17/2015 18:25:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546491-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.55202	1.2334	.53726	.25732	.55948	.53704	.50921
Stddev	.00326	.0053	.00081	.00116	.00100	.00170	.05078
%RSD	.58969	.43138	.15136	.45270	.17798	.31716	9.9720
#1	.55558	1.2337	.53769	.25848	.56052	.53878	.45217
#2	.55126	1.2386	.53632	.25615	.55938	.53695	.54949
#3	.54921	1.2280	.53776	.25734	.55854	.53538	.52597
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	14818.	92946.	2863.7
Stddev	15.	377.	16.4
%RSD	.09978	.40587	.57242
#1	14835.	92565.	2854.3
#2	14812.	92953.	2854.1
#3	14808.	93319.	2882.6

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511060502 Acquired: 11/17/2015 18:28:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -.00912	52.210	.03343	-.01928	1.1042	.00499	152.93
Stddev	.00053	.065	.00102	.00169	.0044	.00001	.77
%RSD	5.7732	.12514	3.0520	8.7825	.39546	.26419	.50234
#1	-.00874	52.153	.03293	-.02012	1.1072	.00498	153.54
#2	-.00890	52.196	.03460	-.01734	1.1062	.00500	153.18
#3	-.00972	52.281	.03276	-.02040	1.0992	.00500	152.07
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	9.0000						
Low Limit	-.00400						

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00405	.05260	.10969	.13540	144.27	47.860	.10612
Stddev	.00003	.00015	.00052	.00137	.56	.137	.00867
%RSD	.74471	.29080	.47586	1.0083	.38744	.28673	8.1703
#1	.00408	.05274	.10954	.13396	144.50	47.993	.10681
#2	.00402	.05243	.10927	.13668	144.68	47.868	.11442
#3	.00404	.05262	.11028	.13555	143.63	47.719	.09712
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	28.932	9.9719	.00748	30.149	.11822	2.5912	.09696
Stddev	.166	.0442	.00012	.126	.00212	.0073	.00211
%RSD	.57259	.44274	1.6384	.41633	1.7965	.28001	2.1724
#1	29.050	9.9997	.00736	30.217	.11582	2.5849	.09643
#2	29.003	9.9950	.00761	30.227	.11986	2.5991	.09517
#3	28.742	9.9210	.00746	30.004	.11898	2.5895	.09928
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511060502 Acquired: 11/17/2015 18:28:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00345	.00039	F 47.337	.33354	.93562	.39271	.00357
Stddev	.00319	.00013	.077	.00064	.00350	.00361	.00301
%RSD	92.530	32.909	.16354	.19323	.37423	.92038	84.354
#1	.00710	.00050	47.280	.33368	.93851	.38903	.00393
#2	.00205	.00025	47.425	.33410	.93663	.39285	.00638
#3	.00119	.00041	47.306	.33284	.93173	.39625	.00040
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-1.0000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.09267	.70391	.24853
Stddev	.00092	.00138	.11688
%RSD	.99678	.19616	47.029
#1	.09287	.70302	.32329
#2	.09166	.70550	.30846
#3	.09347	.70320	.11384
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15393.	96952.	2973.5
Stddev	46.	194.	19.3
%RSD	.29753	.20034	.64778
#1	15446.	96728.	2951.5
#2	15366.	97057.	2981.8
#3	15367.	97072.	2987.3

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511060503 Acquired: 11/17/2015 18:32:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00059	.21256	-.00008	.04489	.06842	.00004	55.626	.00010
Stddev	.00066	.00364	.00263	.00230	.00085	.00003	.315	.00022
%RSD	110.24	1.7147	3248.8	5.1243	1.2404	91.599	.56635	218.66
#1	.00003	.21631	-.00270	.04619	.06790	.00006	55.672	.00020
#2	-.00128	.21232	.00257	.04624	.06796	-.00000	55.915	-.00015
#3	-.00054	.20904	-.00012	.04223	.06940	.00005	55.290	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00137	.00833	.00289	.25247	31.737	.03776	8.4384	.12397
Stddev	.00013	.00100	.00120	.00825	.270	.00216	.1844	.00196
%RSD	9.7033	12.027	41.365	3.2688	.85068	5.7111	2.1848	1.5820
#1	.00127	.00936	.00400	.26188	31.772	.03529	8.2521	.12592
#2	.00131	.00825	.00307	.24910	31.989	.03924	8.6207	.12399
#3	.00152	.00736	.00162	.24644	31.452	.03877	8.4424	.12199
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00777	26.942	.00141	.09041	-.00160	.00137	-.00442	5.2904
Stddev	.00019	.184	.00094	.00116	.00165	.00176	.00726	.0273
%RSD	2.4571	.68138	66.612	1.2819	102.91	128.95	164.26	.51645
#1	.00768	26.961	.00033	.09034	-.00316	.00334	.00291	5.3033
#2	.00799	27.115	.00201	.08928	.00013	-.00007	-.01162	5.3089
#3	.00765	26.750	.00189	.09160	-.00178	.00083	-.00455	5.2590
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511060503 Acquired: 11/17/2015 18:32:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00697	.42003	.00014	.00183	.00057	.00273	.40585
Stddev	.00030	.00374	.00387	.00140	.00027	.00006	.24182
%RSD	4.3638	.88969	2680.9	76.163	47.478	2.2201	59.583
#1	.00663	.42117	.00075	.00221	.00071	.00267	.53695
#2	.00708	.42305	.00368	.00029	.00026	.00279	.55381
#3	.00721	.41585	-.00400	.00301	.00075	.00272	.12679
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15631.	98618.	2931.7
Stddev	30.	96.	24.9
%RSD	.19372	.09716	.85099
#1	15614.	98513.	2910.4
#2	15613.	98641.	2925.5
#3	15666.	98701.	2959.1

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511060503PS Acquired: 11/17/2015 18:36:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG547280-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.22030	5.6942	.21503	1.1292	.61637	.02754	55.253	.02740
Stddev	.00078	.0073	.00139	.0021	.00227	.00009	.040	.00022
%RSD	.35237	.12734	.64465	.18290	.36793	.33869	.07263	.80885
#1	.22019	5.6905	.21659	1.1292	.61854	.02747	55.207	.02727
#2	.22113	5.7026	.21394	1.1313	.61402	.02765	55.267	.02765
#3	.21959	5.6896	.21456	1.1272	.61655	.02750	55.284	.02726
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.11279	.28327	.27948	2.4320	55.623	.58524	13.063	.38584
Stddev	.00032	.00145	.00060	.0463	.081	.00427	.053	.00177
%RSD	.28667	.51037	.21638	1.9036	.14535	.72881	.40300	.45923
#1	.11300	.28207	.27983	2.3965	55.645	.58356	13.109	.38741
#2	.11296	.28487	.27878	2.4151	55.533	.58206	13.075	.38392
#3	.11242	.28287	.27982	2.4843	55.690	.59008	13.005	.38620
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.57261	51.407	.27525	5.5377	.27449	.66047	.20800	7.5863
Stddev	.00132	.055	.00144	.0091	.00066	.00209	.00391	.0176
%RSD	.22985	.10643	.52202	.16378	.24026	.31633	1.8790	.23238
#1	.57352	51.396	.27618	5.5437	.27513	.65918	.21094	7.5944
#2	.57321	51.358	.27598	5.5421	.27382	.65935	.20950	7.5985
#3	.57110	51.466	.27360	5.5272	.27453	.66288	.20356	7.5661
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511060503PS Acquired: 11/17/2015 18:36:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG547280-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.57096	.92551	.55163	.27001	.56429	.54400	.55831
Stddev	.00199	.00180	.00802	.00263	.00093	.00079	.29400
%RSD	.34782	.19494	1.4535	.97482	.16524	.14505	52.659
#1	.57307	.92597	.54345	.27162	.56322	.54450	.85297
#2	.57068	.92353	.55948	.27143	.56468	.54440	.55699
#3	.56913	.92705	.55194	.26697	.56496	.54309	.26497
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15442.	96720.	2923.2
Stddev	17.	281.	6.7
%RSD	.11020	.29049	.22749
#1	15424.	97025.	2915.8
#2	15445.	96472.	2928.7
#3	15458.	96662.	2925.1

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511060503SDL Acquired: 11/17/2015 18:40:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG547280-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	.03135	-.00292	.00877	.01257	.00006	9.8562	.00001
Stddev	.00092	.00385	.00109	.00095	.00036	.00005	.0097	.00017
%RSD	475.40	12.285	37.266	10.875	2.8448	93.606	.09843	1875.6
#1	.00049	.03426	-.00416	.00973	.01291	.00008	9.8673	.00020
#2	.00017	.03282	-.00216	.00782	.01260	.00009	9.8498	-.00013
#3	-.00124	.02699	-.00243	.00876	.01220	-.00000	9.8513	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	.00095	.00108	.06421	5.7510	.00335	1.5166	.02062
Stddev	.00020	.00041	.00089	.01571	.0058	.00778	.0810	.00023
%RSD	68.122	42.687	82.223	24.469	.10151	232.63	5.3402	1.1142
#1	.00023	.00108	.00016	.05123	5.7539	.00196	1.5544	.02062
#2	.00051	.00050	.00116	.08168	5.7548	-.00365	1.5718	.02085
#3	.00013	.00128	.00192	.05972	5.7443	.01173	1.4236	.02039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00157	4.8840	.00048	.01922	.00010	-.00010	-.00571	.92059
Stddev	.00008	.0440	.00051	.00540	.00030	.00286	.00145	.00302
%RSD	5.3575	.90072	106.06	28.108	316.56	2751.8	25.378	.32795
#1	.00148	4.9116	.00002	.02225	-.00013	-.00113	-.00409	.92232
#2	.00164	4.8333	.00039	.02242	-.00002	.00312	-.00615	.92235
#3	.00159	4.9071	.00103	.01298	.00044	-.00230	-.00688	.91710
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511060503SDL Acquired: 11/17/2015 18:40:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG547280-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	.07353	.00264	.00181	-.00033	.00101	.18919
Stddev	.00020	.00013	.00410	.00086	.00064	.00014	.14710
%RSD	27.810	.17619	154.98	47.324	191.31	13.778	77.754
#1	.00063	.07355	.00725	.00089	-.00013	.00116	.03081
#2	.00057	.07339	-.00059	.00259	-.00105	.00097	.32154
#3	.00094	.07365	.00127	.00194	.00018	.00089	.21522
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	17656.	110970.	3198.1
Stddev	48.	193.	1.8
%RSD	.27088	.17393	.05607
#1	17701.	111150.	3197.3
#2	17660.	110770.	3200.2
#3	17606.	110980.	3196.9

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511060503SDL Acquired: 11/17/2015 18:44:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG547280-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00096	-.00327	-.00044	.00140	.00296	.00005	1.9231	-.00014
Stddev	.00173	.00004	.00243	.00044	.00049	.00006	.0303	.00013
%RSD	180.67	1.1389	550.27	31.530	16.719	117.06	1.5769	89.965
#1	.00210	-.00326	.00136	.00163	.00330	.00003	1.9227	-.00008
#2	.00181	-.00324	-.00321	.00167	.00319	.00011	1.9536	-.00028
#3	-.00104	-.00331	.00052	.00089	.00239	.00000	1.8929	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	-.00044	-.00038	.01674	1.1435	.00317	.28599	.00425
Stddev	.00018	.00036	.00067	.02071	.0574	.00700	.02231	.00023
%RSD	94.624	81.184	178.88	123.70	5.0194	220.60	7.8007	5.4392
#1	.00020	-.00067	-.00109	.03103	1.0872	-.00069	.26478	.00449
#2	.00037	-.00063	.00025	.02621	1.1414	-.00104	.30926	.00403
#3	.00001	-.00003	-.00029	-.00701	1.2019	.01125	.28393	.00423
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.94861	-.00034	.00029	.00034	-.00208	-.00316	.18206
Stddev	.00013	.02301	.00010	.00269	.00161	.00233	.00320	.00164
%RSD	128.91	2.4260	30.871	939.49	476.53	112.12	101.49	.90230
#1	-.00005	.92204	-.00043	-.00146	-.00145	.00010	-.00098	.18389
#2	.00020	.96141	-.00036	.00338	.00168	-.00180	-.00684	.18159
#3	.00015	.96238	-.00022	-.00106	.00078	-.00453	-.00166	.18070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511060503SDL Acquired: 11/17/2015 18:44:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG547280-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00068	.01413	.00562	.00256	.00010	.00076	.40055
Stddev	.00028	.00046	.00587	.00041	.00017	.00007	.12282
%RSD	41.530	3.2242	104.53	15.921	174.99	9.6215	30.663
#1	-.00055	.01457	.00712	.00264	-.00002	.00069	.52724
#2	-.00048	.01366	-.00086	.00212	.00002	.00078	.39241
#3	-.00100	.01417	.01060	.00292	.00029	.00083	.28200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	17750.	111420.	3231.0
Stddev	65.	280.	4.5
%RSD	.36387	.25113	.14072
#1	17812.	111740.	3230.6
#2	17756.	111310.	3226.6
#3	17683.	111220.	3235.7

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCV Acquired: 11/17/2015 18:48:12 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41901	10.471	.41373	.52457	1.0461	.05245	10.463
Stddev	.00112	.005	.00188	.00347	.0066	.00009	.043
%RSD	.26713	.05109	.45324	.66148	.63193	.16984	.40946
#1	.41775	10.477	.41354	.52303	1.0391	.05239	10.414
#2	.41988	10.466	.41195	.52214	1.0523	.05241	10.494
#3	.41941	10.469	.41569	.52854	1.0467	.05255	10.480
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05254	.21323	.51722	.52997	4.1417	51.052	1.0493
Stddev	.00008	.00049	.00094	.00096	.0260	.300	.0102
%RSD	.15784	.22752	.18104	.18033	.62854	.58862	.97537
#1	.05256	.21333	.51759	.53103	4.1200	50.706	1.0397
#2	.05261	.21366	.51793	.52971	4.1706	51.244	1.0601
#3	.05245	.21271	.51616	.52918	4.1344	51.207	1.0481
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.397	.52246	1.0511	51.636	.52340	10.426	.52491
Stddev	.149	.00417	.0016	.266	.00162	.009	.00393
%RSD	1.4380	.79857	.15436	.51581	.30969	.08175	.74818
#1	10.422	.51765	1.0526	51.351	.52488	10.435	.52087
#2	10.532	.52456	1.0513	51.879	.52364	10.422	.52871
#3	10.236	.52516	1.0493	51.676	.52167	10.419	.52514
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCV Acquired: 11/17/2015 18:48:12 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2437	.41472	5.1562	1.0610	1.0477	1.0401	.52232
Stddev	.0028	.00392	.0020	.0012	.0058	.0058	.00293
%RSD	.22280	.94621	.03924	.10903	.55141	.55838	.56122
#1	1.2406	.41437	5.1560	1.0607	1.0420	1.0345	.52302
#2	1.2445	.41099	5.1583	1.0623	1.0536	1.0461	.52484
#3	1.2460	.41881	5.1542	1.0601	1.0474	1.0398	.51910
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0488	1.0428	F .85868
Stddev	.0003	.0016	.20667
%RSD	.02600	.15522	24.069
#1	1.0486	1.0442	.70670
#2	1.0487	1.0432	.77533
#3	1.0491	1.0410	1.0940
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16518.	103130.	3105.0
Stddev	34.	188.	17.8
%RSD	.20377	.18212	.57364
#1	16491.	102910.	3125.6
#2	16508.	103210.	3095.1
#3	16556.	103260.	3094.4

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCB Acquired: 11/17/2015 18:51:57 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	-.00266	-.00379	.00205	.00093	.00002	-.00924
Stddev	.00044	.00207	.00229	.00111	.00043	.00005	.01025
%RSD	79.905	77.735	60.313	54.398	46.282	221.88	110.87
#1	.00099	-.00456	-.00482	.00078	.00108	.00003	-.01285
#2	.00013	-.00297	-.00538	.00289	.00125	.00007	.00232
#3	.00051	-.00046	-.00117	.00247	.00044	-.00003	-.01720
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00000	.00018	-.00100	.00044	.01567	.02568	-.00203
Stddev	.00010	.00041	.00077	.00052	.00154	.02069	.00330
%RSD	2098.9	232.02	76.700	118.77	9.8439	80.571	162.46
#1	-.00003	-.00029	-.00138	-.00015	.01499	.03727	-.00003
#2	.00010	.00032	-.00151	.00083	.01744	.00179	-.00022
#3	-.00009	.00049	-.00012	.00064	.01459	.03797	-.00584
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.06961	-.00100	.00102	.00862	-.00013	-.00259	.00042
Stddev	.00783	.00178	.00006	.03017	.00025	.00619	.00480
%RSD	11.252	178.47	6.2400	349.78	188.65	238.40	1134.1
#1	-.06306	-.00287	.00096	-.01264	-.00042	-.00566	.00596
#2	-.06748	.00068	.00109	-.00464	.00002	-.00665	-.00260
#3	-.07829	-.00081	.00101	.04315	.00001	.00452	-.00208
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCB Acquired: 11/17/2015 18:51:57 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00300	-.00153	.00140	-.00048	-.00038	.00269	.00149
Stddev	.00273	.00173	.00193	.00035	.00047	.00079	.00161
%RSD	91.122	113.14	138.09	71.736	125.78	29.424	108.12
#1	.00014	.00009	.00351	-.00057	.00012	.00283	.00080
#2	-.00488	-.00132	.00099	-.00078	-.00042	.00340	.00334
#3	-.00426	-.00335	-.00030	-.00010	-.00083	.00183	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00058	-.00003	F .23234
Stddev	.00039	.00001	.15586
%RSD	66.314	35.795	67.085
#1	-.00023	-.00003	.15337
#2	-.00100	-.00002	.13176
#3	-.00052	-.00003	.41188
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	17389.	110210.	3227.4
Stddev	26.	231.	37.8
%RSD	.14803	.20965	1.1698
#1	17418.	110360.	3266.7
#2	17372.	110320.	3191.4
#3	17376.	109950.	3224.2

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511060504 Acquired: 11/17/2015 18:55:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	.11908	.03572	.00823	1.1554	.00006	81.953
Stddev	.00069	.00271	.00292	.00186	.0104	.00002	.738
%RSD	604.38	2.2778	8.1695	22.596	.90312	40.259	.90073
#1	-.00074	.11703	.03244	.00986	1.1639	.00003	82.365
#2	.00062	.12216	.03667	.00864	1.1586	.00008	82.395
#3	-.00022	.11806	.03804	.00620	1.1438	.00007	81.101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	-.00023	-.00031	.00176	5.5696	.69100	.00883
Stddev	.00039	.00007	.00088	.00118	.0485	.07051	.00249
%RSD	94.125	29.193	284.06	67.132	.87017	10.204	28.214
#1	.00077	-.00017	-.00033	.00129	5.5838	.66239	.00618
#2	.00049	-.00030	-.00118	.00310	5.6094	.77131	.00919
#3	-.00001	-.00021	.00058	.00088	5.5157	.63929	.01112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	19.987	.81521	.00113	15.877	.00073	.44017	.00315
Stddev	.033	.00548	.00003	.113	.00041	.00285	.00245
%RSD	.16472	.67279	2.5865	.71010	56.462	.64861	77.681
#1	20.023	.81931	.00114	15.958	.00030	.43800	.00488
#2	19.979	.81734	.00115	15.926	.00112	.44340	.00423
#3	19.959	.80898	.00110	15.748	.00076	.43910	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511060504 Acquired: 11/17/2015 18:55:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00060	-.00481	8.9772	.02804	.32714	-.00131	.00068
Stddev	.00299	.00629	.0281	.00043	.00253	.00428	.00058
%RSD	495.33	130.77	.31291	1.5195	.77348	325.64	85.497
#1	-.00226	-.00962	9.0006	.02793	.32881	.00276	.00113
#2	.00285	.00231	8.9850	.02851	.32839	-.00577	.00003
#3	-.00240	-.00713	8.9460	.02768	.32423	-.00093	.00087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00002	.00463	F -.06390
Stddev	.00060	.00009	.18679
%RSD	3846.3	1.9570	292.31
#1	.00015	.00455	.14707
#2	-.00068	.00473	-.13054
#3	.00048	.00461	-.20823
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16619.	104640.	3104.1
Stddev	19.	194.	7.9
%RSD	.11507	.18584	.25339
#1	16617.	104500.	3106.3
#2	16601.	104860.	3095.4
#3	16639.	104540.	3110.7

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511060505 Acquired: 11/17/2015 18:59:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00085	.11740	.02251	.00909	1.1721	.00004	87.455	.00029
Stddev	.00109	.00235	.00255	.00082	.0044	.00002	.504	.00021
%RSD	128.88	1.9976	11.336	8.9893	.37918	44.743	.57587	74.242
#1	.00010	.11837	.01981	.00825	1.1699	.00002	87.271	.00052
#2	-.00060	.11473	.02283	.00914	1.1772	.00005	88.025	.00024
#3	-.00204	.11911	.02488	.00988	1.1692	.00006	87.069	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.00015	.00089	3.3835	.65739	.01146	21.650	.86023
Stddev	.00015	.00065	.00068	.0186	.16288	.00301	.308	.00426
%RSD	289.49	446.92	76.211	.54858	24.776	26.244	1.4232	.49552
#1	.00022	-.00046	.00130	3.3748	.81395	.00820	21.607	.85848
#2	-.00004	.00006	.00011	3.4049	.66936	.01413	21.977	.86508
#3	-.00003	.00083	.00126	3.3710	.48886	.01205	21.365	.85711
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00129	17.264	.00031	.25559	.00008	-.00196	-.00633	9.6014
Stddev	.00031	.049	.00090	.00246	.00215	.00288	.00146	.0371
%RSD	23.727	.28157	288.73	.96191	2720.7	146.76	22.975	.38676
#1	.00153	17.238	.00060	.25643	.00247	-.00237	-.00760	9.6101
#2	.00095	17.320	-.00070	.25751	-.00053	.00110	-.00665	9.6334
#3	.00140	17.235	.00103	.25282	-.00170	-.00462	-.00475	9.5607
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511060505 Acquired: 11/17/2015 18:59:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00118	.35216	.00159	.00165	-.00014	.00215	.11600
Stddev	.00063	.00133	.00495	.00243	.00102	.00008	.56056
%RSD	53.485	.37755	311.81	147.49	739.57	3.8268	483.24
#1	.00189	.35127	-.00094	-.00058	-.00073	.00225	-.41045
#2	.00095	.35369	-.00158	.00128	.00104	.00211	.70537
#3	.00069	.35152	.00729	.00424	-.00073	.00211	.05309
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15786.	99759.	2960.4
Stddev	4.	346.	15.8
%RSD	.02850	.34694	.53371
#1	15787.	99908.	2965.9
#2	15781.	99364.	2942.6
#3	15790.	100010.	2972.8

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511060506 Acquired: 11/17/2015 19:03:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	.50829	.08340	.00590	1.4371	.00007	93.836	.00080
Stddev	.00075	.00117	.00197	.00090	.0040	.00001	.330	.00017
%RSD	84.121	.23021	2.3592	15.332	.27655	18.753	.35136	21.006
#1	.00018	.50812	.08381	.00606	1.4412	.00007	94.112	.00099
#2	.00168	.50720	.08126	.00672	1.4368	.00007	93.925	.00067
#3	.00082	.50953	.08513	.00493	1.4333	.00005	93.471	.00075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00039	.00067	.00334	12.899	.80500	.01313	22.577	.98228
Stddev	.00029	.00116	.00004	.045	.02978	.00496	.033	.00736
%RSD	75.112	174.33	1.2498	.35103	3.6993	37.805	.14760	.74883
#1	.00053	-.00066	.00338	12.893	.83350	.01614	22.596	.98262
#2	.00058	.00149	.00330	12.947	.77409	.00740	22.538	.98946
#3	.00005	.00117	.00334	12.857	.80739	.01585	22.596	.97476
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00102	17.403	.00033	1.0694	.00247	.00097	-.00403	11.134
Stddev	.00015	.046	.00096	.0006	.00203	.00254	.00485	.058
%RSD	14.327	.26554	295.88	.05827	82.354	262.99	120.25	.52062
#1	.00088	17.440	.00126	1.0690	.00373	-.00099	-.00699	11.172
#2	.00117	17.417	-.00066	1.0701	.00355	.00383	-.00668	11.163
#3	.00100	17.351	.00038	1.0691	.00012	.00005	.00156	11.068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511060506 Acquired: 11/17/2015 19:03:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02232	.36787	.00936	.00194	.00098	.00659	.02671
Stddev	.00046	.00044	.00107	.00174	.00040	.00018	.17860
%RSD	2.0826	.11866	11.454	89.798	41.220	2.7318	668.72
#1	.02178	.36826	.01060	.00393	.00122	.00644	-.16689
#2	.02261	.36796	.00876	.00068	.00051	.00653	.06196
#3	.02256	.36740	.00873	.00121	.00120	.00679	.18506
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15965.	100950.	3036.7
Stddev	54.	576.	20.6
%RSD	.33638	.57065	.67782
#1	15933.	100280.	3014.4
#2	15935.	101220.	3040.6
#3	16027.	101330.	3055.0

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511060507 Acquired: 11/17/2015 19:07:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	.00996	.02130	.00965	1.1921	.00004	88.822	.00031
Stddev	.00017	.00244	.00455	.00208	.0024	.00005	.089	.00026
%RSD	20.810	24.537	21.348	21.573	.19877	111.57	.10066	84.764
#1	.00070	.00719	.01859	.00795	1.1944	-.00001	88.891	.00059
#2	.00099	.01180	.02655	.01197	1.1923	.00007	88.853	.00009
#3	.00070	.01090	.01876	.00902	1.1896	.00006	88.721	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	.00020	.00093	3.4039	.62599	.01353	22.006	.87661
Stddev	.00042	.00035	.00035	.0145	.06982	.00798	.161	.00542
%RSD	168.97	178.79	38.291	.42684	11.154	58.979	.73318	.61835
#1	.00063	.00033	.00100	3.4112	.65863	.00452	21.834	.87888
#2	.00034	.00046	.00124	3.4133	.54582	.01634	22.029	.88052
#3	-.00021	-.00020	.00054	3.3872	.67352	.01972	22.155	.87042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	17.529	-.00022	.25961	-.00011	-.00017	-.00343	9.6606
Stddev	.00004	.037	.00063	.00570	.00085	.00247	.00819	.0151
%RSD	4.4301	.21041	283.99	2.1953	741.30	1422.2	238.76	.15647
#1	.00085	17.544	.00001	.25624	-.00109	.00127	.00570	9.6693
#2	.00093	17.555	.00026	.25639	.00044	.00123	-.00585	9.6695
#3	.00089	17.487	-.00093	.26619	.00030	-.00302	-.01015	9.6432
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511060507 Acquired: 11/17/2015 19:07:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	.35843	-.00872	.00117	-.00090	.00284	.00422
Stddev	.00013	.00033	.00439	.00181	.00073	.00013	.24637
%RSD	24.050	.09284	50.290	154.83	81.761	4.4254	5834.2
#1	.00064	.35850	-.00740	.00200	-.00018	.00284	.00585
#2	.00059	.35806	-.01362	-.00091	-.00165	.00296	.24978
#3	.00039	.35871	-.00515	.00242	-.00086	.00271	-.24296
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15841.	100200.	3024.6
Stddev	12.	64.	7.7
%RSD	.07405	.06417	.25550
#1	15828.	100230.	3020.4
#2	15851.	100240.	3033.5
#3	15845.	100120.	3019.7

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511060508 Acquired: 11/17/2015 19:11:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00108	8.1191	.00208	.04644	.14075	.00078	69.841	.00442
Stddev	.00102	.0106	.00093	.00118	.00197	.00002	.692	.00026
%RSD	94.452	.13084	44.708	2.5506	1.4020	3.1382	.99101	5.8174
#1	.00008	8.1145	.00208	.04692	.13856	.00076	69.386	.00450
#2	-.00151	8.1115	.00301	.04509	.14239	.00081	70.637	.00413
#3	-.00181	8.1312	.00115	.04730	.14130	.00078	69.500	.00462
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00820	.01023	.01812	13.536	1.9835	.01575	33.889	2.6082
Stddev	.00020	.00046	.00145	.132	.0333	.00200	.343	.0300
%RSD	2.4520	4.5230	8.0018	.97872	1.6769	12.671	1.0125	1.1487
#1	.00800	.00976	.01927	13.492	1.9778	.01374	33.588	2.5840
#2	.00840	.01068	.01861	13.685	1.9535	.01577	34.263	2.6417
#3	.00821	.01024	.01649	13.432	2.0192	.01773	33.817	2.5988
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	61.033	.02131	.33089	.01824	.00340	-.00522	15.036
Stddev	.00016	.642	.00126	.00417	.00313	.00274	.00278	.045
%RSD	68.501	1.0525	5.9071	1.2616	17.144	80.647	53.129	.29753
#1	.00028	60.641	.02122	.33566	.02065	.00412	-.00237	15.033
#2	.00036	61.774	.02261	.32790	.01937	.00037	-.00791	15.081
#3	.00005	60.682	.02010	.32911	.01471	.00572	-.00540	14.992
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511060508 Acquired: 11/17/2015 19:11:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	.24219	.10239	.00102	.01854	.13093	.72161
Stddev	.00038	.00321	.00108	.00141	.00079	.00027	.35743
%RSD	163.50	1.3268	1.0517	138.38	4.2349	.20691	49.532
#1	.00067	.24030	.10351	-.00061	.01944	.13096	1.1244
#2	-.00001	.24590	.10229	.00175	.01823	.13118	.59818
#3	.00003	.24037	.10136	.00192	.01796	.13064	.44225
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15891.	99628.	2985.7
Stddev	42.	128.	23.3
%RSD	.26398	.12832	.77915
#1	15940.	99483.	2991.7
#2	15869.	99724.	2960.0
#3	15866.	99677.	3005.4

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511060509 Acquired: 11/17/2015 19:15:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.05004	-.00218	.05280	.05122	.00006	71.975	.00060
Stddev	.00251	.00178	.00053	.00154	.00079	.00002	.278	.00005
%RSD	1160.6	3.5666	24.442	2.9223	1.5419	37.338	.38638	8.2567
#1	-.00250	.04966	-.00158	.05102	.05196	.00008	72.123	.00056
#2	.00245	.04848	-.00236	.05371	.05039	.00004	72.147	.00058
#3	.00070	.05198	-.00261	.05367	.05132	.00007	71.654	.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00200	-.00028	.00087	.13517	.43857	.00753	33.764	2.4731
Stddev	.00029	.00114	.00108	.00623	.08623	.00250	.172	.0110
%RSD	14.740	401.97	124.72	4.6064	19.660	33.175	.51085	.44629
#1	.00231	-.00026	.00205	.14069	.47814	.00702	33.924	2.4675
#2	.00194	-.00143	.00063	.12842	.49792	.00533	33.788	2.4858
#3	.00173	.00084	-.00008	.13640	.33967	.01025	33.581	2.4660
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	64.617	.00433	.00359	.00062	.00125	-.00230	5.5594
Stddev	.00013	.272	.00119	.00536	.00160	.00260	.00294	.0212
%RSD	50.283	.42100	27.537	149.29	260.12	208.51	128.00	.38092
#1	-.00018	64.824	.00343	.00879	.00232	.00057	-.00453	5.5755
#2	-.00017	64.719	.00569	.00390	.00038	-.00095	-.00341	5.5673
#3	-.00040	64.309	.00388	-.00192	-.00085	.00412	.00104	5.5354
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511060509 Acquired: 11/17/2015 19:15:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00031	.24308	-.00371	.00224	-.00078	.00590	.25593
Stddev	.00081	.00029	.00412	.00075	.00040	.00016	.07510
%RSD	263.40	.12097	111.08	33.570	51.638	2.7146	29.344
#1	.00020	.24314	-.00744	.00184	-.00033	.00601	.22673
#2	-.00125	.24335	.00071	.00311	-.00088	.00597	.34125
#3	.00012	.24277	-.00439	.00178	-.00111	.00572	.19981
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15756.	99450.	2994.2
Stddev	30.	196.	29.1
%RSD	.19008	.19723	.97242
#1	15738.	99518.	2967.5
#2	15790.	99229.	2990.0
#3	15738.	99603.	3025.3

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511060510 Acquired: 11/17/2015 19:19:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00279	.09811	.01992	6.3348	.07739	.00004	229.16
Stddev	.00157	.00710	.00144	.0457	.00070	.00004	.53
%RSD	56.445	7.2370	7.2522	.72130	.89872	92.204	.23215
#1	-.00219	.10594	.01829	6.2843	.07696	.00004	229.77
#2	-.00160	.09633	.02042	6.3469	.07701	.00008	228.79
#3	-.00457	.09208	.02105	6.3732	.07819	.00000	228.92
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	-.00032	-.00052	.00445	33.099	.88366	.29398
Stddev	.00021	.00024	.00012	.00034	.111	.03406	.00434
%RSD	40.264	76.518	23.365	7.7005	.33482	3.8543	1.4750
#1	.00028	-.00056	-.00052	.00406	33.118	.90221	.29098
#2	.00061	-.00032	-.00065	.00468	33.200	.90442	.29201
#3	.00066	-.00007	-.00040	.00461	32.980	.84436	.29895
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	88.424	1.4415	.00033	50.197	.00070	.54166	.00292
Stddev	.093	.0031	.00037	.094	.00029	.00236	.00228
%RSD	.10476	.21406	110.62	.18663	40.941	.43579	78.061
#1	88.471	1.4439	.00074	50.301	.00049	.54251	.00266
#2	88.484	1.4425	.00026	50.173	.00103	.53900	.00533
#3	88.317	1.4380	.00000	50.118	.00059	.54349	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511060510 Acquired: 11/17/2015 19:19:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00038	-.00733	9.7606	-.00072	.74296	-.01184	.00036
Stddev	.00169	.00359	.0221	.00050	.00211	.00257	.00106
%RSD	441.89	48.946	.22616	69.878	.28368	21.661	299.16
#1	-.00025	-.00807	9.7847	-.00083	.74518	-.01331	.00141
#2	.00123	-.00343	9.7414	-.00017	.74099	-.00888	-.00071
#3	-.00213	-.01048	9.7558	-.00115	.74272	-.01334	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00038	.00367	F -.42385
Stddev	.00118	.00017	.14774
%RSD	314.53	4.5855	34.857
#1	-.00098	.00382	-.28905
#2	.00121	.00349	-.58180
#3	.00089	.00369	-.40068
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15535.	98087.	3001.9
Stddev	30.	365.	12.4
%RSD	.19100	.37176	.41379
#1	15526.	98502.	2991.6
#2	15568.	97816.	3015.7
#3	15510.	97943.	2998.3

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511060511 Acquired: 11/17/2015 19:23:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00132	.01071	.01816	6.3807	.06559	.00002	229.16
Stddev	.00074	.00833	.00174	.0035	.00029	.00007	1.09
%RSD	56.251	77.821	9.5855	.05456	.43946	337.98	.47532
#1	-.00201	.01764	.01644	6.3767	.06586	.00002	230.12
#2	-.00054	.01301	.01992	6.3829	.06562	-.00005	229.38
#3	-.00141	.00146	.01813	6.3826	.06529	.00009	227.97
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	-.00008	-.00061	.00253	31.590	.65872	.29920
Stddev	.00017	.00019	.00064	.00096	.245	.03277	.00219
%RSD	36.574	235.00	105.06	38.163	.77493	4.9748	.73036
#1	.00042	-.00005	-.00099	.00237	31.756	.62412	.30121
#2	.00032	.00009	-.00095	.00356	31.705	.68928	.29687
#3	.00065	-.00028	.00013	.00165	31.308	.66276	.29952
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	89.073	1.4375	.00039	50.852	-.00041	.40394	.00226
Stddev	.652	.0100	.00007	.215	.00090	.00572	.00069
%RSD	.73166	.69216	18.893	.42268	219.30	1.4156	30.506
#1	89.610	1.4489	.00033	51.029	-.00064	.40999	.00259
#2	89.261	1.4329	.00047	50.914	.00058	.39863	.00273
#3	88.348	1.4307	.00037	50.613	-.00118	.40319	.00147
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511060511 Acquired: 11/17/2015 19:23:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00125	-.00470	9.5801	-.00027	.74691	-.01219	.00332
Stddev	.00148	.00177	.1203	.00062	.00312	.00436	.00127
%RSD	117.90	37.699	1.2553	230.04	.41821	35.803	38.203
#1	-.00098	-.00388	9.6924	-.00085	.74872	-.01476	.00459
#2	.00007	-.00349	9.5946	-.00034	.74871	-.00715	.00331
#3	-.00285	-.00673	9.4532	.00038	.74331	-.01466	.00206
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00089	.00310	F -.48827
Stddev	.00040	.00010	.17528
%RSD	45.046	3.0904	35.899
#1	-.00074	.00320	-.54324
#2	-.00058	.00307	-.29209
#3	-.00134	.00301	-.62949
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15553.	98144.	3014.0
Stddev	62.	195.	32.1
%RSD	.39910	.19896	1.0665
#1	15495.	98352.	2978.0
#2	15545.	97964.	3024.5
#3	15618.	98115.	3039.7

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511060512 Acquired: 11/17/2015 19:27:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00159	5.2454	.00287	.02946	.36827	.00058	100.99	.00071
Stddev	.00150	.0227	.00180	.00267	.00223	.00004	.60	.00020
%RSD	94.398	.43267	62.569	9.0506	.60560	6.2312	.59052	27.794
#1	-.00040	5.2537	.00423	.03217	.37074	.00058	101.61	.00093
#2	-.00327	5.2628	.00355	.02935	.36767	.00062	100.95	.00054
#3	-.00109	5.2197	.00083	.02685	.36640	.00055	100.42	.00066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00849	.00619	.01932	50.009	1.4763	.01772	23.940	2.9728
Stddev	.00034	.00020	.00107	.293	.0944	.00341	.159	.0060
%RSD	4.0475	3.2133	5.5226	.58571	6.3913	19.216	.66599	.20246
#1	.00811	.00639	.01812	50.312	1.3691	.01431	24.092	2.9727
#2	.00860	.00619	.01969	49.987	1.5127	.02112	23.956	2.9788
#3	.00877	.00599	.02015	49.727	1.5470	.01774	23.774	2.9668
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00102	11.897	.02233	.60952	.01736	-.00017	.00019	16.633
Stddev	.00027	.103	.00119	.00174	.00305	.00321	.00643	.036
%RSD	26.689	.86725	5.3262	.28495	17.561	1944.2	3376.4	.21751
#1	.00071	11.999	.02345	.60991	.01386	.00067	.00422	16.671
#2	.00122	11.899	.02245	.61103	.01940	.00254	.00358	16.628
#3	.00113	11.793	.02108	.60762	.01884	-.00371	-.00723	16.600
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511060512 Acquired: 11/17/2015 19:27:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	.17089	.08060	.00245	.01605	.08871	-.02102
Stddev	.00017	.00071	.00280	.00333	.00043	.00008	.18998
%RSD	38.665	.41473	3.4720	135.70	2.7091	.09258	903.76
#1	.00041	.17158	.07743	.00029	.01655	.08879	.08052
#2	.00064	.17092	.08164	.00078	.01585	.08863	-.24019
#3	.00030	.17016	.08272	.00629	.01575	.08871	.09660
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16113.	102150.	3035.0
Stddev	27.	573.	16.8
%RSD	.16864	.56051	.55298
#1	16112.	101520.	3019.3
#2	16141.	102290.	3033.0
#3	16087.	102640.	3052.7

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511060513 Acquired: 11/17/2015 19:31:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00100	.01130	-.00014	.03389	.21749	-.00001	77.935	.00019
Stddev	.00250	.00107	.00238	.00254	.00155	.00006	.194	.00008
%RSD	250.30	9.4272	1647.9	7.4953	.71191	540.68	.24879	42.535
#1	-.00091	.01031	-.00283	.03391	.21774	.00001	78.015	.00014
#2	-.00355	.01117	.00172	.03642	.21889	.00004	78.076	.00015
#3	.00146	.01243	.00067	.03134	.21583	-.00008	77.714	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	-.00078	.00215	17.764	.43650	.01417	18.367	1.4631
Stddev	.00011	.00071	.00064	.044	.06996	.00131	.031	.0047
%RSD	53.797	91.742	29.681	.24940	16.029	9.2197	.17087	.32182
#1	.00008	-.00139	.00273	17.713	.38316	.01273	18.370	1.4626
#2	.00025	.00000	.00226	17.789	.51571	.01451	18.397	1.4681
#3	.00030	-.00094	.00147	17.790	.41061	.01527	18.335	1.4587
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	11.577	.00183	.01041	.00225	-.00099	-.00275	9.3907
Stddev	.00015	.050	.00014	.00346	.00070	.00256	.00289	.0447
%RSD	50.787	.43267	7.6267	33.231	31.017	257.15	105.08	.47631
#1	.00040	11.634	.00197	.00783	.00193	-.00210	-.00438	9.4202
#2	.00012	11.559	.00169	.01435	.00176	.00193	.00059	9.4126
#3	.00034	11.539	.00185	.00906	.00305	-.00281	-.00446	9.3392
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511060513 Acquired: 11/17/2015 19:31:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00047	.13954	.00032	.00091	-.00007	.00226	.00731
Stddev	.00068	.00049	.00191	.00018	.00115	.00013	.11699
%RSD	145.53	.35354	600.49	19.474	1557.0	5.6209	1600.7
#1	.00023	.13967	-.00164	.00071	.00059	.00239	.06772
#2	-.00113	.13996	.00041	.00104	-.00141	.00214	.08174
#3	-.00051	.13900	.00218	.00099	.00060	.00224	-.12754
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16146.	102160.	3038.9
Stddev	24.	369.	1.0
%RSD	.14616	.36148	.03178
#1	16131.	102220.	3039.5
#2	16173.	101760.	3039.3
#3	16134.	102490.	3037.8

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCV Acquired: 11/17/2015 19:35:00 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41041	10.209	.40274	.51611	1.0207	.05115	10.224	.05123
Stddev	.00180	.007	.00078	.00275	.0039	.00016	.010	.00039
%RSD	.43948	.06991	.19305	.53215	.38018	.32038	.10057	.75157
#1	.41172	10.217	.40277	.51348	1.0207	.05134	10.226	.05142
#2	.40836	10.204	.40350	.51590	1.0168	.05103	10.233	.05149
#3	.41116	10.205	.40195	.51896	1.0246	.05109	10.213	.05079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20735	.50561	.51718	4.0668	50.162	1.0322	10.177	.51363
Stddev	.00064	.00325	.00128	.0144	.214	.0071	.080	.00429
%RSD	.31083	.64361	.24824	.35380	.42663	.68351	.78860	.83572
#1	.20721	.50847	.51842	4.0646	50.034	1.0290	10.240	.51478
#2	.20805	.50630	.51727	4.0536	50.043	1.0273	10.087	.50888
#3	.20678	.50207	.51586	4.0821	50.409	1.0403	10.206	.51723
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0240	50.615	.51238	10.179	.51335	1.2140	.40532	5.0333
Stddev	.0043	.185	.00260	.020	.00271	.0039	.00088	.0144
%RSD	.42054	.36524	.50739	.19867	.52791	.31846	.21624	.28662
#1	1.0264	50.555	.51447	10.196	.51250	1.2138	.40614	5.0384
#2	1.0265	50.468	.51321	10.185	.51639	1.2180	.40542	5.0445
#3	1.0190	50.823	.50947	10.157	.51117	1.2103	.40439	5.0170
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCV Acquired: 11/17/2015 19:35:00 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0295	1.0209	1.0167	.51635	1.0232	1.0205	.96834
Stddev	.0025	.0040	.0060	.00241	.0021	.0029	.04875
%RSD	.23914	.39027	.58670	.46618	.20539	.28155	5.0345
#1	1.0300	1.0190	1.0151	.51874	1.0252	1.0218	.92921
#2	1.0317	1.0184	1.0117	.51637	1.0210	1.0225	1.0230
#3	1.0268	1.0255	1.0233	.51393	1.0232	1.0172	.95286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16828.	104960.	3140.7
Stddev	36.	252.	11.4
%RSD	.21182	.23981	.36363
#1	16833.	104700.	3140.9
#2	16790.	104990.	3151.9
#3	16861.	105200.	3129.1

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCB Acquired: 11/17/2015 19:38:45 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00165	-.00521	-.00232	.00805	.00007	.00005	.00053
Stddev	.00038	.00191	.00132	.00211	.00052	.00001	.02541
%RSD	22.788	36.689	56.716	26.164	707.27	17.773	4828.1
#1	.00133	-.00415	-.00191	.00844	.00067	.00005	-.02271
#2	.00207	-.00406	-.00379	.00994	-.00013	.00006	-.00338
#3	.00157	-.00742	-.00126	.00578	-.00031	.00005	.02766
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00008	-.00061	.00060	.02211	.02036	-.00142
Stddev	.00027	.00022	.00080	.00056	.01096	.07809	.00264
%RSD	291.32	282.33	130.59	92.335	49.562	383.47	185.57
#1	.00020	.00021	-.00077	.00109	.03279	.05669	-.00142
#2	.00029	-.00017	.00025	-.00000	.02265	-.06928	-.00406
#3	-.00021	.00019	-.00131	.00072	.01089	.07368	.00121
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.01355	-.00035	.00105	-.01021	-.00007	-.00370	-.00024
Stddev	.09297	.00141	.00022	.00484	.00106	.00067	.00219
%RSD	686.39	406.08	21.032	47.394	1538.9	18.063	894.44
#1	.07920	-.00109	.00104	-.01055	.00115	-.00440	-.00019
#2	-.10675	-.00123	.00084	-.01488	-.00072	-.00306	.00192
#3	-.01308	.00128	.00128	-.00521	-.00063	-.00364	-.00246
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCB Acquired: 11/17/2015 19:38:45 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00297	-.00197	.00441	-.00042	-.00038	.00204	-.00093
Stddev	.00415	.00018	.00074	.00037	.00038	.00889	.00021
%RSD	139.39	8.8711	16.736	87.971	99.688	436.31	22.617
#1	.00079	-.00208	.00512	-.00085	-.00079	.00615	-.00115
#2	.00038	-.00207	.00448	-.00028	-.00033	.00813	-.00091
#3	.00776	-.00177	.00364	-.00015	-.00003	-.00817	-.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00001	.00011	F .07710
Stddev	.00090	.00008	.16760
%RSD	9559.5	71.957	217.39
#1	.00105	.00003	.26180
#2	-.00056	.00010	.03476
#3	-.00046	.00019	-.06528
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	17051.	107610.	3137.1
Stddev	51.	59.	27.2
%RSD	.29790	.05513	.86703
#1	17102.	107540.	3165.6
#2	17051.	107640.	3111.4
#3	17000.	107650.	3134.2

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511060515 Acquired: 11/17/2015 19:42:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546491-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00065	.04374	-.00343	.63838	.11031	.00001	166.54	.00046
Stddev	.00169	.00979	.00201	.00398	.00055	.00005	.66	.00012
%RSD	258.25	22.388	58.743	.62334	.49752	431.20	.39442	25.637
#1	-.00023	.03260	-.00435	.64286	.11061	-.00002	167.12	.00054
#2	.00079	.04763	-.00112	.63526	.11064	.00008	166.68	.00051
#3	-.00251	.05099	-.00481	.63701	.10967	-.00002	165.83	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00079	.00156	.00145	.16677	1.5845	.03484	33.559	.22770
Stddev	.00051	.00042	.00075	.03344	.0295	.00221	.246	.00299
%RSD	64.382	26.918	51.813	20.049	1.8604	6.3512	.73240	1.3119
#1	.00120	.00199	.00121	.18637	1.5623	.03539	33.779	.22972
#2	.00095	.00154	.00229	.18579	1.5731	.03673	33.605	.22911
#3	.00022	.00115	.00085	.12816	1.6179	.03241	33.294	.22427
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	233.27	.00298	.01806	.00116	-.00075	-.00425	5.8824
Stddev	.00021	.89	.00031	.00117	.00130	.00362	.00719	.0261
%RSD	88.685	.38050	10.412	6.4554	112.71	484.39	169.31	.44311
#1	.00040	234.14	.00320	.01709	.00266	.00036	.00203	5.8544
#2	.00000	233.32	.00313	.01935	.00041	.00219	-.00268	5.8868
#3	.00031	232.36	.00263	.01774	.00039	-.00479	-.01209	5.9060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511060515 Acquired: 11/17/2015 19:42:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546491-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00110	.69991	-.01810	.00185	-.00087	.00584	.17354
Stddev	.00018	.00530	.00732	.00278	.00020	.00020	.18321
%RSD	16.548	.75727	40.427	149.88	22.521	3.4558	105.58
#1	-.00131	.70578	-.01062	.00205	-.00071	.00560	.38506
#2	-.00104	.69848	-.01845	.00453	-.00082	.00595	.07106
#3	-.00096	.69547	-.02524	-.00102	-.00109	.00595	.06449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15435.	96599.	2977.2
Stddev	11.	84.	29.2
%RSD	.07273	.08741	.98160
#1	15445.	96519.	2954.0
#2	15437.	96590.	2967.5
#3	15423.	96687.	3010.0

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511060517S Acquired: 11/17/2015 19:46:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546491-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21201	5.3177	.20641	1.6575	.63771	.02619	164.08	.02671
Stddev	.00145	.0174	.00167	.0045	.00413	.00005	.60	.00009
%RSD	.68378	.32750	.80880	.27174	.64696	.18773	.36466	.33636
#1	.21345	5.3140	.20466	1.6531	.63666	.02617	163.90	.02661
#2	.21055	5.3367	.20799	1.6574	.64226	.02625	164.75	.02675
#3	.21203	5.3025	.20657	1.6621	.63421	.02616	163.59	.02677
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10507	.25940	.26053	2.3863	27.616	.55653	37.144	.83435
Stddev	.00041	.00088	.00085	.0319	.145	.00193	.287	.00536
%RSD	.38600	.34040	.32726	1.3379	.52613	.34751	.77279	.64264
#1	.10474	.26027	.26151	2.4003	27.496	.55744	36.847	.83395
#2	.10495	.25944	.26007	2.4089	27.777	.55785	37.420	.83990
#3	.10552	.25851	.25999	2.3498	27.575	.55431	37.167	.82920
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53891	245.85	.25854	5.3781	.25279	.63674	.20282	8.3186
Stddev	.00097	1.00	.00112	.0110	.00079	.00072	.00047	.0126
%RSD	.17961	.40833	.43295	.20382	.31305	.11254	.23252	.15186
#1	.53812	245.51	.25938	5.3668	.25189	.63719	.20296	8.3072
#2	.53999	246.98	.25727	5.3886	.25337	.63592	.20320	8.3322
#3	.53863	245.06	.25898	5.3789	.25311	.63713	.20229	8.3164
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511060517S Acquired: 11/17/2015 19:46:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546491-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52602	1.1889	.50266	.24472	.53462	.51727	.51649
Stddev	.00223	.0047	.00323	.00007	.00073	.00155	.14748
%RSD	.42367	.39556	.64278	.02742	.13588	.29942	28.555
#1	.52469	1.1875	.50526	.24478	.53534	.51637	.45538
#2	.52860	1.1941	.50368	.24465	.53465	.51906	.68471
#3	.52478	1.1851	.49905	.24473	.53389	.51639	.40938
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15232.	95418.	2948.3
Stddev	16.	82.	15.5
%RSD	.10275	.08589	.52714
#1	15249.	95354.	2940.5
#2	15227.	95510.	2938.2
#3	15219.	95390.	2966.2

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511060519SD Acquired: 11/17/2015 19:50:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546491-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20900	5.2196	.20659	1.6288	.62143	.02581	159.16	.02643
Stddev	.00057	.0156	.00373	.0068	.00301	.00012	.56	.00022
%RSD	.27151	.29807	1.8053	.41585	.48451	.47203	.35229	.84680
#1	.20835	5.2028	.20783	1.6271	.62461	.02573	159.20	.02629
#2	.20924	5.2335	.20240	1.6230	.62107	.02576	159.70	.02669
#3	.20940	5.2224	.20954	1.6362	.61862	.02595	158.58	.02631
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10334	.25551	.25771	2.1488	27.108	.55202	36.136	.48322
Stddev	.00034	.00099	.00074	.0232	.123	.00624	.098	.00275
%RSD	.32948	.38853	.28848	1.0794	.45465	1.1297	.27197	.56979
#1	.10366	.25545	.25764	2.1424	27.023	.54719	36.069	.48500
#2	.10298	.25455	.25849	2.1745	27.250	.55906	36.249	.48460
#3	.10339	.25653	.25701	2.1295	27.052	.54982	36.091	.48004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53452	238.18	.25406	5.3282	.25019	.62439	.19892	8.1228
Stddev	.00045	.77	.00047	.0156	.00177	.00404	.00601	.0146
%RSD	.08374	.32279	.18334	.29240	.70689	.64699	3.0227	.17963
#1	.53474	238.19	.25425	5.3185	.25096	.62552	.20167	8.1095
#2	.53401	238.95	.25353	5.3200	.25144	.61991	.19203	8.1205
#3	.53482	237.41	.25440	5.3462	.24817	.62775	.20308	8.1384
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511060519SD Acquired: 11/17/2015 19:50:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546491-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52203	1.1590	.49856	.24848	.52788	.51197	.39336
Stddev	.00063	.0039	.00675	.00145	.00311	.00070	.30446
%RSD	.12149	.33800	1.3530	.58265	.58917	.13634	77.399
#1	.52139	1.1592	.49109	.24872	.52470	.51116	.21786
#2	.52203	1.1628	.50420	.24693	.52805	.51240	.21731
#3	.52266	1.1550	.50039	.24980	.53091	.51234	.74492
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15408.	96583.	2987.0
Stddev	16.	108.	5.8
%RSD	.10154	.11150	.19445
#1	15393.	96646.	2980.7
#2	15424.	96458.	2988.1
#3	15407.	96644.	2992.2

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511060520 Acquired: 11/17/2015 19:54:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00166	2.6748	.00320	.71536	.11473	.00023	92.095	.00040
Stddev	.00135	.0036	.00061	.00316	.00188	.00005	1.498	.00021
%RSD	81.305	.13579	19.138	.44225	1.6415	20.374	1.6262	53.333
#1	-.00301	2.6786	.00390	.71200	.11668	.00022	93.807	.00060
#2	-.00167	2.6744	.00291	.71829	.11460	.00019	91.453	.00018
#3	-.00031	2.6713	.00279	.71578	.11292	.00028	91.026	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00267	.00411	.00906	5.8518	1.6129	.07637	31.320	.42433
Stddev	.00018	.00028	.00033	.0865	.1335	.00240	.363	.00625
%RSD	6.5965	6.7095	3.6879	1.4782	8.2754	3.1452	1.1587	1.4724
#1	.00280	.00426	.00883	5.9511	1.6460	.07874	31.739	.43143
#2	.00273	.00427	.00891	5.8114	1.7267	.07394	31.133	.42189
#3	.00247	.00379	.00944	5.7929	1.4660	.07644	31.089	.41967
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	72.255	.00620	.17445	.00505	-.00105	.00091	11.769
Stddev	.00006	1.159	.00077	.00144	.00072	.00296	.00321	.024
%RSD	8.1258	1.6041	12.482	.82664	14.316	281.32	350.77	.20230
#1	.00072	73.583	.00583	.17348	.00430	.00155	-.00150	11.766
#2	.00062	71.732	.00709	.17377	.00510	-.00044	.00455	11.795
#3	.00070	71.449	.00568	.17611	.00574	-.00428	-.00031	11.748
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511060520 Acquired: 11/17/2015 19:54:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.17884	.03628	.00011	.00616	.05448	.69252
Stddev	.00046	.00284	.00234	.00047	.00072	.00009	.08648
%RSD	268.52	1.5895	6.4537	419.05	11.699	.17185	12.488
#1	.00029	.18211	.03402	.00039	.00698	.05438	.78602
#2	-.00017	.17693	.03613	.00038	.00567	.05457	.61539
#3	-.00063	.17747	.03869	-.00043	.00582	.05449	.67616
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15990.	101050.	3044.4
Stddev	18.	331.	42.1
%RSD	.10984	.32780	1.3827
#1	15988.	101170.	2995.8
#2	16008.	101310.	3068.8
#3	15973.	100680.	3068.7

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511060521 Acquired: 11/17/2015 19:58:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.20203	-.00136	.70347	.08092	.00007	90.673	.00048
Stddev	.00203	.00549	.00045	.00206	.00094	.00004	.337	.00018
%RSD	1689.5	2.7174	32.880	.29346	1.1589	57.903	.37215	37.801
#1	-.00210	.20785	-.00129	.70119	.08012	.00012	90.446	.00030
#2	.00188	.19695	-.00095	.70520	.08195	.00007	91.061	.00066
#3	.00058	.20129	-.00184	.70404	.08068	.00003	90.513	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00087	.00060	.00226	.33867	.95709	.07411	30.270	.08543
Stddev	.00027	.00036	.00067	.00782	.05958	.00117	.275	.00337
%RSD	31.329	59.672	29.386	2.3100	6.2247	1.5752	.90756	3.9456
#1	.00117	.00027	.00188	.34762	.90746	.07546	30.036	.08160
#2	.00081	.00098	.00188	.33529	.94064	.07347	30.572	.08793
#3	.00064	.00055	.00303	.33311	1.0232	.07340	30.200	.08676
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	70.945	.00091	.03260	-.00152	-.00089	-.00901	8.3998
Stddev	.00019	.211	.00082	.00192	.00233	.00258	.00081	.0502
%RSD	23.989	.29675	89.650	5.8879	152.76	289.17	8.9967	.59720
#1	.00097	70.773	.00118	.03369	.00073	-.00381	-.00833	8.4459
#2	.00084	71.180	-.00001	.03373	-.00391	.00004	-.00990	8.4072
#3	.00059	70.883	.00156	.03039	-.00139	.00109	-.00880	8.3464
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511060521 Acquired: 11/17/2015 19:58:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00081	.17590	-.00068	.00182	-.00004	.02063	.43425
Stddev	.00022	.00039	.00326	.00164	.00098	.00037	.16144
%RSD	26.624	.22130	476.10	90.114	2209.1	1.7714	37.177
#1	-.00057	.17569	-.00208	.00263	-.00059	.02087	.57949
#2	-.00089	.17634	-.00301	.00291	.00108	.02081	.26043
#3	-.00098	.17565	.00304	-.00007	-.00063	.02021	.46283
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15909.	99094.	2967.2
Stddev	42.	446.	16.0
%RSD	.26516	.45057	.53950
#1	15865.	98818.	2979.3
#2	15911.	98855.	2949.0
#3	15950.	99609.	2973.3

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511060502 Acquired: 11/17/2015 20:02:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.47378	-.00180	.00259	.01040	.00007	1.4539	.00020
Stddev	.00165	.00182	.00138	.00133	.00040	.00004	.0196	.00016
%RSD	2132.4	.38321	76.691	51.411	3.8022	56.462	1.3485	80.929
#1	-.00137	.47324	-.00166	.00383	.01066	.00002	1.4338	.00030
#2	.00188	.47230	-.00049	.00118	.00994	.00008	1.4549	.00001
#3	-.00027	.47580	-.00324	.00275	.01058	.00010	1.4730	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	.00015	.00090	1.2939	.38130	.00239	.20499	.09304
Stddev	.00025	.00035	.00075	.0244	.10337	.00129	.02462	.00154
%RSD	44.403	235.18	83.168	1.8852	27.109	53.882	12.010	1.6571
#1	.00031	.00044	.00079	1.3037	.36160	.00330	.17827	.09287
#2	.00055	.00025	.00021	1.2661	.49310	.00296	.22676	.09465
#3	.00080	-.00024	.00169	1.3118	.28920	.00092	.20993	.09159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00050	.29174	.00110	.01821	.00005	.00032	-.00554	.41954
Stddev	.00019	.03544	.00055	.00504	.00017	.00096	.00230	.00037
%RSD	37.339	12.148	49.915	27.682	324.61	297.70	41.594	.08926
#1	-.00048	.26227	.00139	.02121	-.00015	-.00046	-.00656	.41994
#2	-.00069	.33107	.00047	.01239	.00016	.00004	-.00715	.41921
#3	-.00032	.28188	.00144	.02103	.00014	.00139	-.00290	.41946
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511060502 Acquired: 11/17/2015 20:02:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00104	.00816	.00562	.00138	.00061	.00723	.38988
Stddev	.00017	.00037	.00261	.00021	.00042	.00004	.28454
%RSD	16.057	4.5148	46.429	15.391	68.625	.50744	72.982
#1	.00091	.00785	.00386	.00156	.00094	.00723	.64779
#2	.00123	.00805	.00862	.00143	.00014	.00720	.43722
#3	.00099	.00856	.00438	.00115	.00076	.00727	.08464
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	17547.	109780.	3148.1
Stddev	17.	287.	28.9
%RSD	.09829	.26146	.91847
#1	17533.	110110.	3179.7
#2	17566.	109560.	3141.8
#3	17541.	109680.	3122.9

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCV Acquired: 11/17/2015 20:06:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41001	10.227	.40767	.50929	1.0240	.05112	10.203	.05123
Stddev	.00092	.022	.00234	.00477	.0015	.00003	.035	.00029
%RSD	.22380	.21769	.57350	.93632	.14961	.05778	.34001	.56156
#1	.41038	10.242	.40793	.50447	1.0255	.05109	10.199	.05147
#2	.40897	10.202	.40521	.50940	1.0225	.05113	10.170	.05130
#3	.41069	10.238	.40986	.51401	1.0241	.05115	10.239	.05091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20841	.50449	.51933	4.0848	50.225	1.0296	10.326	.51518
Stddev	.00029	.00065	.00271	.0040	.158	.0003	.201	.00207
%RSD	.13706	.12882	.52137	.09894	.31555	.03039	1.9433	.40274
#1	.20866	.50456	.51655	4.0829	50.268	1.0295	10.193	.51307
#2	.20810	.50380	.52196	4.0895	50.049	1.0294	10.557	.51524
#3	.20846	.50509	.51948	4.0822	50.357	1.0300	10.229	.51722
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0285	50.578	.51438	10.228	.51769	1.2208	.41036	5.0602
Stddev	.0012	.127	.00220	.019	.00285	.0044	.00289	.0091
%RSD	.11635	.25145	.42797	.18884	.54987	.35962	.70521	.18030
#1	1.0278	50.641	.51236	10.206	.51995	1.2184	.40804	5.0508
#2	1.0299	50.431	.51673	10.244	.51864	1.2181	.41360	5.0608
#3	1.0279	50.661	.51406	10.233	.51449	1.2259	.40944	5.0690
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCV Acquired: 11/17/2015 20:06:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0351	1.0230	1.0134	.51399	1.0212	1.0244	.94775
Stddev	.0024	.0021	.0042	.00166	.0026	.0010	.13392
%RSD	.23288	.20563	.41260	.32360	.25147	.09366	14.130
#1	1.0329	1.0235	1.0089	.51462	1.0227	1.0247	.89510
#2	1.0377	1.0207	1.0142	.51524	1.0182	1.0252	1.1000
#3	1.0346	1.0248	1.0171	.51210	1.0226	1.0233	.84815
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16711.	104970.	3136.6
Stddev	10.	268.	13.0
%RSD	.06175	.25566	.41497
#1	16722.	104700.	3128.4
#2	16710.	104990.	3151.6
#3	16701.	105230.	3129.8

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCB Acquired: 11/17/2015 20:09:47 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00021	-.00200	-.00229	.00259	.00086	.00004	-.01923
Stddev	.00075	.00161	.00040	.00159	.00034	.00006	.02206
%RSD	351.68	80.358	17.663	61.474	39.305	152.30	114.68
#1	-.00043	-.00261	-.00219	.00310	.00091	.00006	-.01347
#2	.00062	-.00321	-.00194	.00080	.00049	-.00003	-.00063
#3	-.00083	-.00018	-.00273	.00386	.00116	.00008	-.04360
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	-.00009	-.00035	-.00015	.02163	.05427	-.00177
Stddev	.00019	.00002	.00018	.00125	.01338	.05524	.00431
%RSD	1286.0	25.532	52.988	831.03	61.865	101.79	243.23
#1	-.00010	-.00007	-.00049	-.00145	.02083	.08586	-.00673
#2	-.00009	-.00010	-.00014	.00104	.03539	.08645	.00030
#3	.00024	-.00011	-.00040	-.00003	.00867	-.00951	.00111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.05359	.00176	.00096	.04607	-.00019	-.00158	-.00139
Stddev	.13705	.00143	.00010	.03869	.00015	.00085	.00148
%RSD	255.73	81.469	10.806	83.976	81.414	53.532	105.84
#1	-.16572	.00325	.00093	.02180	-.00035	-.00107	-.00083
#2	-.09423	.00039	.00088	.02572	-.00017	-.00111	-.00307
#3	.09918	.00164	.00108	.09068	-.00004	-.00256	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCB Acquired: 11/17/2015 20:09:47 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00122	-.00294	.00477	.00045	-.00024	.00818	.00147
Stddev	.00190	.00322	.00145	.00046	.00008	.00040	.00191
%RSD	156.61	109.68	30.429	101.72	32.344	4.8470	129.57
#1	-.00044	-.00040	.00396	.00080	-.00025	.00776	.00364
#2	.00079	-.00185	.00644	-.00007	-.00016	.00855	.00076
#3	.00330	-.00656	.00390	.00063	-.00032	.00823	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00049	.00017	F .49762
Stddev	.00018	.00006	.31147
%RSD	36.146	36.293	62.591
#1	-.00070	.00022	.28148
#2	-.00043	.00018	.85464
#3	-.00036	.00010	.35674
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16927.	106820.	3102.1
Stddev	22.	214.	23.2
%RSD	.12947	.19997	.74903
#1	16941.	106950.	3108.8
#2	16939.	106570.	3121.3
#3	16902.	106930.	3076.3

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: PBW 3A Acquired: 11/17/2015 20:13:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546997-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.00461	-.00233	.00233	.00048	.00007	.01332	.00011
Stddev	.00097	.00573	.00085	.00072	.00008	.00003	.01548	.00013
%RSD	2662.9	124.12	36.638	31.055	17.137	46.434	116.18	121.44
#1	.00107	.01123	-.00315	.00235	.00040	.00004	.02083	.00017
#2	-.00011	.00118	-.00238	.00159	.00048	.00006	.02362	-.00004
#3	-.00085	.00144	-.00145	.00304	.00057	.00010	-.00448	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.00056	.00062	.02509	-.03447	.00117	-.02042	-.00065
Stddev	.00045	.00071	.00034	.01799	.08700	.00279	.01492	.00157
%RSD	635.45	126.08	55.167	71.717	252.38	237.51	73.044	241.28
#1	-.00053	.00121	.00028	.01304	-.13246	.00427	-.02471	.00111
#2	-.00007	-.00020	.00096	.04577	-.00466	.00041	-.03272	-.00188
#3	.00038	.00068	.00063	.01645	.03370	-.00115	-.00383	-.00118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.00425	.00040	.00016	.00060	-.00051	-.00280	.00582
Stddev	.00017	.03703	.00041	.00562	.00204	.00081	.00107	.00237
%RSD	78.013	871.94	101.28	3571.6	342.97	159.97	38.080	40.763
#1	.00040	-.02879	.00054	-.00539	.00085	-.00142	-.00196	.00786
#2	.00007	.04427	-.00006	.00003	-.00156	-.00024	-.00400	.00322
#3	.00017	-.00274	.00073	.00584	.00250	.00014	-.00244	.00638
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: PBW 3A Acquired: 11/17/2015 20:13:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546997-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00055	-.00017	.00246	.00113	.00023	.00326	.10797
Stddev	.00057	.00021	.00449	.00044	.00036	.00017	.27730
%RSD	104.56	127.84	182.77	39.173	158.34	5.3075	256.83
#1	.00004	-.00025	.00089	.00095	.00063	.00331	.36103
#2	-.00057	.00008	-.00104	.00081	-.00006	.00340	-.18845
#3	-.00111	-.00033	.00752	.00164	.00011	.00306	.15133
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16439.	104020.	2989.6
Stddev	13.	108.	13.5
%RSD	.07628	.10363	.45012
#1	16442.	103950.	2991.2
#2	16426.	104150.	3002.3
#3	16450.	103970.	2975.5

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: LCSW 3A Acquired: 11/17/2015 20:17:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546997-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20744	5.1714	.19834	1.0141	.53218	.02574	5.2667	.02612
Stddev	.00159	.0132	.00312	.0004	.00202	.00004	.0078	.00008
%RSD	.76612	.25513	1.5734	.04305	.37988	.14845	.14795	.32312
#1	.20675	5.1787	.19722	1.0137	.52985	.02578	5.2749	.02621
#2	.20926	5.1562	.20187	1.0141	.53322	.02570	5.2595	.02612
#3	.20631	5.1794	.19594	1.0146	.53347	.02574	5.2655	.02604
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10711	.26017	.26713	2.1154	26.061	.53638	5.2023	.26452
Stddev	.00040	.00038	.00046	.0097	.133	.00203	.0340	.00285
%RSD	.37800	.14700	.17038	.46039	.51109	.37853	.65434	1.0767
#1	.10682	.25983	.26726	2.1258	25.913	.53520	5.2136	.26737
#2	.10757	.26010	.26751	2.1141	26.171	.53521	5.2292	.26452
#3	.10693	.26058	.26663	2.1065	26.100	.53872	5.1640	.26168
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53662	26.346	.26485	5.0768	.26358	.61838	.19811	2.5945
Stddev	.00186	.061	.00039	.0054	.00190	.00469	.00185	.0099
%RSD	.34683	.22978	.14724	.10661	.72053	.75831	.93539	.38053
#1	.53777	26.276	.26525	5.0728	.26353	.61821	.20023	2.6011
#2	.53761	26.380	.26447	5.0830	.26171	.62315	.19728	2.5993
#3	.53447	26.382	.26483	5.0746	.26551	.61378	.19681	2.5832
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: LCSW 3A Acquired: 11/17/2015 20:17:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546997-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53262	.52593	.52713	.26778	.52849	.51970	.44743
Stddev	.00379	.00064	.00724	.00322	.00008	.00086	.05096
%RSD	.71232	.12113	1.3738	1.2030	.01551	.16627	11.390
#1	.53470	.52544	.51961	.26999	.52852	.52024	.45927
#2	.53493	.52665	.53406	.26928	.52854	.52016	.39159
#3	.52825	.52570	.52771	.26409	.52839	.51870	.49143
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16192.	101860.	3006.3
Stddev	32.	27.	10.7
%RSD	.19474	.02663	.35711
#1	16172.	101870.	3018.5
#2	16176.	101870.	2998.3
#3	16228.	101820.	3002.1

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077003 Acquired: 11/17/2015 20:21:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546997-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00071	.01088	-.00084	3.4433	.01847	-.00003	224.44	.00028
Stddev	.00089	.00411	.00217	.0027	.00108	.00002	1.05	.00010
%RSD	125.29	37.756	258.51	.07847	5.8435	68.616	.46603	37.213
#1	-.00001	.00805	.00135	3.4403	.01971	-.00004	224.64	.00039
#2	-.00172	.00899	-.00088	3.4455	.01781	-.00005	225.38	.00025
#3	-.00041	.01559	-.00299	3.4441	.01789	-.00001	223.31	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00101	.00080	.00185	.19792	2.1653	.30788	62.013	.95339
Stddev	.00038	.00016	.00069	.02096	.0521	.00448	.398	.00751
%RSD	37.093	20.151	37.180	10.588	2.4075	1.4560	.64192	.78774
#1	.00140	.00072	.00196	.17828	2.1925	.31230	61.626	.95130
#2	.00065	.00071	.00111	.19550	2.1052	.30802	62.422	.96173
#3	.00099	.00099	.00247	.21998	2.1981	.30334	61.991	.94715
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00067	177.94	.00013	.00976	.00157	-.00046	-.00434	7.2284
Stddev	.00009	.87	.00033	.00011	.00079	.00160	.00262	.0169
%RSD	13.707	.48673	260.13	1.1555	50.610	349.05	60.341	.23388
#1	.00077	177.93	.00031	.00988	.00148	-.00013	-.00461	7.2096
#2	.00063	178.81	-.00025	.00973	.00082	.00095	-.00160	7.2423
#3	.00060	177.08	.00032	.00966	.00240	-.00219	-.00683	7.2333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077003 Acquired: 11/17/2015 20:21:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546997-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00076	.49888	-.02533	.00099	-.00071	.00172	.21256
Stddev	.00056	.00160	.00351	.00118	.00051	.00014	.15753
%RSD	73.840	.32070	13.862	118.94	72.426	8.0852	74.111
#1	-.00099	.49844	-.02277	-.00034	-.00035	.00156	.38800
#2	-.00012	.50065	-.02933	.00191	-.00129	.00180	.08322
#3	-.00117	.49754	-.02388	.00141	-.00048	.00181	.16647
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15553.	97652.	3032.8
Stddev	14.	331.	15.0
%RSD	.08896	.33941	.49357
#1	15568.	97882.	3036.3
#2	15544.	97272.	3016.4
#3	15545.	97802.	3045.8

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077005S Acquired: 11/17/2015 20:25:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546997-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21271	5.2696	.21112	4.6129	.54675	.02607	235.62	.02665
Stddev	.00078	.0203	.00094	.0075	.00389	.00018	2.20	.00008
%RSD	.36770	.38426	.44727	.16341	.71174	.69579	.93392	.30925
#1	.21224	5.2537	.21180	4.6067	.54232	.02589	233.11	.02672
#2	.21361	5.2924	.21152	4.6213	.54830	.02625	236.57	.02656
#3	.21227	5.2626	.21004	4.6107	.54963	.02607	237.19	.02667
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10441	.26062	.25957	2.2746	28.628	.84733	68.629	1.2478
Stddev	.00058	.00125	.00174	.0258	.252	.01019	.722	.0135
%RSD	.55842	.47994	.67090	1.1345	.87970	1.2031	1.0525	1.0820
#1	.10373	.25960	.26118	2.2455	28.357	.83556	67.795	1.2351
#2	.10477	.26202	.25772	2.2833	28.855	.85332	69.026	1.2464
#3	.10472	.26024	.25979	2.2949	28.673	.85311	69.066	1.2620
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.54088	209.17	.25534	5.4273	.25543	.64294	.20736	10.197
Stddev	.00218	1.87	.00142	.0135	.00196	.00472	.00632	.026
%RSD	.40220	.89188	.55468	.24806	.76648	.73458	3.0468	.25417
#1	.53947	207.01	.25503	5.4174	.25319	.63901	.21433	10.179
#2	.53979	210.23	.25411	5.4219	.25681	.64162	.20574	10.186
#3	.54339	210.26	.25689	5.4426	.25630	.64818	.20201	10.227
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077005S Acquired: 11/17/2015 20:25:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546997-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52801	1.0348	.49336	.24929	.53469	.51429	.44864
Stddev	.00243	.0080	.00736	.00180	.00197	.00055	.22690
%RSD	.46010	.76814	1.4915	.72056	.36769	.10699	50.575
#1	.52653	1.0257	.48498	.24832	.53254	.51425	.21010
#2	.52668	1.0397	.49630	.24818	.53639	.51377	.47406
#3	.53081	1.0391	.49879	.25136	.53514	.51487	.66176
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15050.	94804.	2956.8
Stddev	17.	383.	26.7
%RSD	.11065	.40416	.90300
#1	15058.	95246.	2987.6
#2	15031.	94598.	2942.7
#3	15061.	94567.	2940.1

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077007SD Acquired: 11/17/2015 20:29:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546997-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21395	5.2794	.21134	4.6380	.55040	.02623	237.73	.02693
Stddev	.00178	.0273	.00123	.0106	.00022	.00017	.46	.00017
%RSD	.83421	.51768	.58051	.22856	.04050	.66015	.19381	.64826
#1	.21203	5.2585	.20997	4.6322	.55058	.02605	237.82	.02679
#2	.21429	5.2694	.21233	4.6316	.55048	.02626	238.14	.02687
#3	.21555	5.3103	.21172	4.6503	.55015	.02639	237.23	.02712
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10608	.26037	.26145	2.2643	28.703	.85507	69.035	1.2540
Stddev	.00087	.00145	.00072	.0127	.119	.00303	.583	.0106
%RSD	.82448	.55606	.27622	.56310	.41407	.35465	.84397	.84517
#1	.10536	.25880	.26190	2.2498	28.687	.85281	69.517	1.2663
#2	.10705	.26067	.26184	2.2692	28.829	.85389	69.199	1.2476
#3	.10582	.26165	.26062	2.2738	28.592	.85852	68.387	1.2482
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.54641	210.34	.25679	5.4489	.25448	.64853	.20403	10.258
Stddev	.00135	.46	.00114	.0118	.00134	.00367	.00326	.013
%RSD	.24649	.21770	.44302	.21731	.52626	.56655	1.5985	.12436
#1	.54511	210.32	.25796	5.4361	.25341	.65024	.20461	10.245
#2	.54780	210.81	.25672	5.4594	.25598	.65103	.20696	10.270
#3	.54631	209.89	.25569	5.4511	.25406	.64431	.20052	10.260
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077007SD Acquired: 11/17/2015 20:29:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG546997-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53308	1.0398	.49943	.25204	.53728	.52103	.49802
Stddev	.00217	.0023	.00450	.00175	.00282	.00110	.10560
%RSD	.40791	.21692	.90200	.69506	.52486	.21047	21.204
#1	.53173	1.0378	.49499	.25065	.53542	.52044	.51236
#2	.53559	1.0423	.49928	.25146	.53590	.52230	.38598
#3	.53192	1.0394	.50400	.25401	.54053	.52036	.59571
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15097.	94942.	2963.4
Stddev	21.	390.	16.8
%RSD	.13629	.41082	.56614
#1	15119.	95270.	2963.9
#2	15078.	95045.	2946.4
#3	15095.	94511.	2980.0

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077008 Acquired: 11/17/2015 20:32:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00046	3.5927	.00077	.97677	.13319	.00042	104.18	.00069
Stddev	.00110	.0520	.00101	.01229	.00074	.00001	.66	.00014
%RSD	237.37	1.4487	131.99	1.2579	.55906	2.2159	.62955	20.786
#1	-.00167	3.5784	-.00040	.97543	.13351	.00041	104.37	.00058
#2	.00045	3.6504	.00142	.98967	.13372	.00043	104.72	.00085
#3	-.00016	3.5493	.00128	.96521	.13234	.00042	103.45	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00413	.00372	.01036	7.0333	3.2805	.15951	36.821	6.0640
Stddev	.00025	.00060	.00094	.0497	.1339	.00242	.189	.0236
%RSD	6.1344	16.253	9.0254	.70625	4.0825	1.5173	.51417	.38911
#1	.00388	.00319	.00942	7.0393	3.4062	.16200	36.701	6.0724
#2	.00412	.00438	.01129	7.0797	3.1397	.15936	37.040	6.0823
#3	.00438	.00359	.01038	6.9809	3.2955	.15717	36.723	6.0374
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00170	103.41	.01187	.24684	.00548	.00099	.00128	12.097
Stddev	.00035	.59	.00100	.00237	.00360	.00269	.00204	.029
%RSD	20.721	.56714	8.3935	.96144	65.672	271.97	159.26	.24349
#1	.00207	103.44	.01193	.24418	.00605	.00237	.00344	12.130
#2	.00166	103.98	.01085	.24760	.00163	.00272	.00102	12.083
#3	.00137	102.81	.01284	.24874	.00876	-.00211	-.00061	12.077
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077008 Acquired: 11/17/2015 20:32:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00053	.26169	.03253	.00209	.00724	.24918	.66532
Stddev	.00070	.00101	.00027	.00114	.00041	.00128	.09240
%RSD	132.32	.38668	.81522	54.851	5.6295	.51444	13.889
#1	-.00021	.26159	.03260	.00225	.00762	.25038	.63483
#2	-.00132	.26275	.03276	.00314	.00731	.24933	.59200
#3	-.00004	.26074	.03224	.00087	.00681	.24783	.76911
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15909.	98968.	3008.5
Stddev	30.	805.	18.8
%RSD	.18660	.81319	.62550
#1	15877.	99086.	3008.5
#2	15936.	98111.	2989.7
#3	15914.	99707.	3027.4

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077009 Acquired: 11/17/2015 20:36:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00029	.04975	-.00238	.88939	.02248	.00004	107.26	.00038
Stddev	.00038	.00382	.00210	.00731	.00130	.00006	.21	.00012
%RSD	132.22	7.6692	87.982	.82241	5.7834	147.28	.19944	31.466
#1	-.00050	.05025	-.00314	.88108	.02354	-.00002	107.31	.00027
#2	-.00053	.04571	-.00399	.89221	.02103	.00010	107.02	.00051
#3	.00015	.05329	-.00001	.89487	.02287	.00005	107.44	.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	.00088	.00146	.05162	2.5326	.15410	36.749	1.9083
Stddev	.00015	.00021	.00103	.02198	.1104	.00506	.157	.0077
%RSD	32.616	23.546	70.858	42.571	4.3575	3.2830	.42809	.40268
#1	.00044	.00072	.00261	.07669	2.4384	.15815	36.604	1.9047
#2	.00061	.00081	.00117	.03568	2.5055	.14843	36.727	1.9171
#3	.00031	.00111	.00060	.04250	2.6540	.15573	36.916	1.9031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00171	91.744	.00059	.02026	-.00065	.00135	-.00622	7.9076
Stddev	.00011	.142	.00095	.00100	.00207	.00210	.00460	.0807
%RSD	6.5593	.15487	160.48	4.9387	320.27	155.25	73.989	1.0202
#1	.00165	91.699	.00140	.02142	.00013	.00111	-.01027	7.8164
#2	.00165	91.631	-.00046	.01962	-.00299	.00356	-.00719	7.9696
#3	.00184	91.904	.00085	.01976	.00092	-.00061	-.00121	7.9368
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077009 Acquired: 11/17/2015 20:36:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	.25785	-.01256	.00352	-.00022	.00463	.20668
Stddev	.00027	.00075	.00772	.00218	.00034	.00017	.26088
%RSD	100.32	.29276	61.453	61.984	154.31	3.6769	126.22
#1	-.00058	.25701	-.00619	.00115	-.00027	.00472	.47202
#2	-.00017	.25810	-.02115	.00397	-.00053	.00473	-.04949
#3	-.00007	.25845	-.01036	.00544	.00014	.00443	.19752
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15783.	99524.	3040.6
Stddev	142.	422.	7.7
%RSD	.90237	.42426	.25314
#1	15947.	99641.	3038.4
#2	15703.	99875.	3049.2
#3	15698.	99055.	3034.3

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077009PS Acquired: 11/17/2015 20:40:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG547295-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21325	5.3264	.20925	1.8810	.55813	.02652	104.57	.02716
Stddev	.00115	.0119	.00151	.0045	.00108	.00012	.09	.00005
%RSD	.53986	.22405	.72364	.24089	.19376	.44867	.08687	.18596
#1	.21256	5.3154	.21094	1.8763	.55912	.02656	104.67	.02722
#2	.21262	5.3248	.20879	1.8813	.55829	.02638	104.50	.02715
#3	.21458	5.3391	.20802	1.8853	.55698	.02661	104.55	.02712
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10600	.26684	.26494	2.1498	29.042	.67784	39.024	2.0368
Stddev	.00075	.00092	.00213	.0106	.159	.00537	.226	.0039
%RSD	.70973	.34661	.80346	.49157	.54855	.79210	.57857	.19145
#1	.10686	.26736	.26608	2.1617	29.049	.67288	39.050	2.0361
#2	.10563	.26739	.26248	2.1414	28.878	.68354	39.236	2.0410
#3	.10550	.26577	.26625	2.1464	29.197	.67711	38.786	2.0333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.54919	111.44	.26328	5.3850	.26478	.64788	.19862	9.9611
Stddev	.00049	.12	.00146	.0163	.00276	.00354	.00409	.0172
%RSD	.08899	.10543	.55550	.30260	1.0435	.54659	2.0587	.17267
#1	.54955	111.57	.26161	5.3991	.26738	.65195	.19443	9.9807
#2	.54940	111.35	.26387	5.3886	.26510	.64623	.20260	9.9488
#3	.54864	111.40	.26436	5.3672	.26188	.64547	.19885	9.9538
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077009PS Acquired: 11/17/2015 20:40:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG547295-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.54126	.76912	.52601	.26004	.54541	.52294	.61879
Stddev	.00152	.00158	.00272	.00092	.00197	.00218	.13841
%RSD	.28138	.20520	.51757	.35204	.36128	.41678	22.368
#1	.54292	.77009	.52758	.26109	.54607	.52521	.54661
#2	.54094	.76997	.52286	.25953	.54319	.52276	.77837
#3	.53993	.76730	.52758	.25949	.54696	.52086	.53140
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15442.	96717.	2946.6
Stddev	49.	100.	7.6
%RSD	.31699	.10303	.25918
#1	15387.	96672.	2943.9
#2	15482.	96647.	2955.3
#3	15455.	96831.	2940.8

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077009SDL Acquired: 11/17/2015 20:44:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG547295-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	.00262	-.00279	.17114	.00505	-.00001	20.942	.00000
Stddev	.00089	.00133	.00301	.00059	.00047	.00002	.045	.00044
%RSD	121.52	50.969	107.86	.34745	9.3654	139.80	.21654	2386700.
#1	.00064	.00356	-.00503	.17183	.00558	-.00002	20.986	.00008
#2	.00167	.00109	.00063	.17084	.00468	.00001	20.896	-.00047
#3	-.00011	.00320	-.00397	.17076	.00489	-.00002	20.945	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	-.00000	.00093	.00537	.48140	.02895	7.0424	.36509
Stddev	.00016	.00059	.00113	.01327	.07879	.00336	.0643	.00230
%RSD	217.74	158000.	122.45	247.13	16.367	11.603	.91308	.63030
#1	-.00010	.00028	.00100	-.00584	.56399	.02774	7.0518	.36630
#2	.00011	-.00068	.00202	.02002	.40705	.03275	7.1015	.36244
#3	.00022	.00040	-.00024	.00193	.47316	.02636	6.9739	.36653
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	17.682	-.00037	.00463	-.00174	-.00304	-.00546	1.4543
Stddev	.00011	.035	.00018	.00777	.00133	.00040	.00198	.0040
%RSD	27.128	.19802	49.335	167.61	76.351	13.292	36.236	.27211
#1	.00054	17.710	-.00032	.00951	-.00326	-.00330	-.00611	1.4540
#2	.00032	17.694	-.00057	.00871	-.00120	-.00326	-.00324	1.4584
#3	.00039	17.643	-.00022	-.00432	-.00077	-.00258	-.00702	1.4505
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077009SDL Acquired: 11/17/2015 20:44:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG547295-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	.04851	-.00008	.00185	-.00014	.00170	.16398
Stddev	.00021	.00012	.00576	.00152	.00054	.00009	.18513
%RSD	79.419	.23730	6967.0	82.297	388.42	5.3094	112.90
#1	-.00032	.04843	-.00468	.00052	-.00040	.00163	.34830
#2	-.00043	.04865	-.00195	.00351	.00048	.00167	.16559
#3	-.00003	.04847	.00638	.00151	-.00051	.00180	-.02196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	17471.	109920.	3179.7
Stddev	45.	131.	3.4
%RSD	.25535	.11933	.10688
#1	17516.	109890.	3179.0
#2	17470.	110060.	3176.7
#3	17427.	109810.	3183.4

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077009SDL Acquired: 11/17/2015 20:48:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG547295-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00137	-.00898	-.00262	.03787	.00168	.00003	4.1651	.00005
Stddev	.00102	.00329	.00162	.00146	.00069	.00000	.0168	.00010
%RSD	73.994	36.609	61.765	3.8593	41.356	5.5744	.40326	187.72
#1	-.00103	-.01251	-.00142	.03908	.00118	.00003	4.1571	-.00006
#2	-.00058	-.00600	-.00445	.03624	.00138	.00003	4.1539	.00010
#3	-.00252	-.00843	-.00198	.03828	.00247	.00003	4.1844	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	-.00044	.00027	.02254	.08104	.00589	1.3982	.07177
Stddev	.00005	.00068	.00082	.01599	.06846	.00584	.0161	.00241
%RSD	26.066	152.95	303.00	70.909	84.480	99.250	1.1509	3.3585
#1	.00013	-.00123	.00113	.03551	.15143	.00538	1.3961	.07239
#2	.00018	-.00012	.00017	.02744	.01469	.00031	1.4153	.07381
#3	.00023	.00001	-.00049	.00468	.07700	.01196	1.3833	.06911
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	3.5587	.00013	.00325	.00270	-.00359	-.00320	.28933
Stddev	.00023	.0400	.00007	.00073	.00051	.00080	.00414	.00112
%RSD	102.09	1.1252	57.430	22.407	18.994	22.302	129.64	.38755
#1	.00002	3.5286	.00021	.00276	.00270	-.00448	-.00534	.29060
#2	-.00026	3.5433	.00009	.00290	.00218	-.00334	-.00583	.28847
#3	-.00044	3.6041	.00009	.00409	.00321	-.00294	.00158	.28892
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077009SDL Acquired: 11/17/2015 20:48:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG547295-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00094	.00952	.00534	-.00042	-.00013	.00090	.19910
Stddev	.00084	.00016	.00293	.00088	.00054	.00004	.19305
%RSD	89.386	1.6757	54.870	210.85	433.91	4.2692	96.960
#1	-.00005	.00970	.00849	.00039	.00044	.00088	.02498
#2	-.00173	.00939	.00271	-.00029	-.00065	.00088	.40670
#3	-.00106	.00947	.00481	-.00136	-.00017	.00094	.16562
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	17774.	111360.	3222.2
Stddev	39.	56.	15.1
%RSD	.22055	.05068	.46973
#1	17788.	111400.	3238.8
#2	17804.	111390.	3218.6
#3	17729.	111300.	3209.2

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCV Acquired: 11/17/2015 20:52:10 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41438	10.350	.41440	.52504	1.0351	.05185	10.291
Stddev	.00110	.012	.00243	.00221	.0055	.00005	.039
%RSD	.26640	.11437	.58693	.42084	.53129	.10110	.37984
#1	.41365	10.348	.41616	.52252	1.0295	.05181	10.277
#2	.41565	10.363	.41542	.52593	1.0405	.05183	10.336
#3	.41384	10.339	.41163	.52666	1.0353	.05191	10.262
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05192	.21014	.51706	.52470	4.1185	51.148	1.0301
Stddev	.00016	.00021	.00080	.00121	.0322	.100	.0018
%RSD	.30582	.09944	.15461	.23114	.78108	.19512	.16980
#1	.05184	.21002	.51694	.52333	4.0813	51.053	1.0281
#2	.05210	.21039	.51633	.52562	4.1369	51.252	1.0313
#3	.05182	.21003	.51792	.52516	4.1371	51.137	1.0309
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.262	.51279	1.0397	51.278	.52265	10.374	.52663
Stddev	.168	.00435	.0022	.160	.00121	.016	.00365
%RSD	1.6369	.84738	.21197	.31292	.23058	.15305	.69305
#1	10.151	.50851	1.0417	51.105	.52372	10.380	.52668
#2	10.455	.51720	1.0400	51.421	.52287	10.386	.53025
#3	10.179	.51266	1.0373	51.310	.52134	10.356	.52295
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCV Acquired: 11/17/2015 20:52:10 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2405	.41736	5.1702	1.0479	1.0329	1.0209	.52633
Stddev	.0058	.00331	.0027	.0043	.0056	.0047	.00066
%RSD	.46723	.79320	.05210	.40993	.54037	.46016	.12537
#1	1.2384	.41979	5.1721	1.0521	1.0277	1.0161	.52611
#2	1.2360	.41359	5.1671	1.0482	1.0388	1.0213	.52581
#3	1.2470	.41870	5.1714	1.0435	1.0322	1.0254	.52707
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0369	1.0397	F .81059
Stddev	.0009	.0023	.11404
%RSD	.08612	.21787	14.069
#1	1.0379	1.0412	.68531
#2	1.0369	1.0409	.83811
#3	1.0361	1.0371	.90836
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16526.	103690.	3150.4
Stddev	40.	291.	5.8
%RSD	.24231	.28090	.18464
#1	16572.	103550.	3151.3
#2	16500.	104020.	3144.2
#3	16506.	103490.	3155.7

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCB Acquired: 11/17/2015 20:55:55 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00041	-.00394	-.00205	.00607	.00041	.00005	-.01342
Stddev	.00016	.00399	.00153	.00100	.00056	.00003	.01148
%RSD	40.440	101.40	74.622	16.527	136.34	64.726	85.506
#1	-.00030	-.00028	-.00370	.00646	.00032	.00002	-.02506
#2	-.00032	-.00819	-.00180	.00682	-.00010	.00004	-.01308
#3	-.00060	-.00334	-.00066	.00493	.00101	.00008	-.00212
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.00009	-.00058	-.00017	.02420	-.01764	.00279
Stddev	.00010	.00026	.00042	.00058	.01056	.02412	.00373
%RSD	274.22	293.60	72.121	337.18	43.642	136.76	133.73
#1	.00013	-.00021	-.00105	.00007	.03092	-.04499	.00577
#2	-.00007	.00024	-.00044	-.00083	.02964	.00063	.00401
#3	.00006	.00023	-.00025	.00025	.01203	-.00856	-.00140
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.01573	-.00064	.00131	.05285	-.00025	-.00067	-.00079
Stddev	.06854	.00049	.00021	.01992	.00137	.00171	.00056
%RSD	435.83	75.751	15.799	37.687	537.17	254.02	70.752
#1	-.04504	-.00010	.00117	.03577	.00132	-.00256	-.00097
#2	.06259	-.00103	.00155	.07473	-.00096	.00077	-.00016
#3	-.06472	-.00080	.00121	.04805	-.00113	-.00023	-.00124
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCB Acquired: 11/17/2015 20:55:55 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00131	-.00069	.00388	.00005	-.00015	.00382	.00108
Stddev	.00192	.00350	.00154	.00054	.00046	.00384	.00123
%RSD	147.06	504.15	39.828	1208.8	306.97	100.45	113.67
#1	-.00081	.00251	.00525	.00051	.00037	.00287	.00236
#2	.00180	-.00016	.00418	.00018	-.00050	.00804	.00098
#3	.00294	-.00443	.00220	-.00056	-.00032	.00055	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00019	.00011	F .17697
Stddev	.00024	.00009	.09283
%RSD	127.34	83.893	52.457
#1	-.00002	.00020	.08789
#2	-.00047	.00004	.16988
#3	-.00008	.00008	.27314
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16701.	105110.	3064.1
Stddev	34.	190.	18.5
%RSD	.20209	.18033	.60399
#1	16667.	104890.	3052.3
#2	16701.	105200.	3085.4
#3	16735.	105240.	3054.6

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077010 Acquired: 11/17/2015 20:59:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.06097	-.00260	8.1533	.01405	.00004	F 425.16
Stddev	.00168	.00316	.00294	.0277	.00075	.00002	1.38
%RSD	1766.8	5.1785	113.10	.33976	5.3387	49.046	.32499
#1	.00190	.06357	-.00206	8.1792	.01374	.00002	423.69
#2	-.00019	.05746	.00004	8.1566	.01491	.00004	425.37
#3	-.00142	.06188	-.00576	8.1241	.01350	.00005	426.42
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	.00135	.00215	.00261	.13907	4.3859	.33907
Stddev	.00022	.00021	.00050	.00120	.01118	.0233	.00495
%RSD	34.656	15.164	23.242	45.956	8.0395	.53028	1.4594
#1	.00088	.00119	.00255	.00165	.14922	4.3654	.33376
#2	.00061	.00129	.00232	.00223	.14090	4.4112	.33990
#3	.00044	.00158	.00159	.00395	.12709	4.3811	.34355
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	116.55	3.2926	.00140	167.45	.00070	.02484	.00146
Stddev	.26	.0265	.00063	.53	.00052	.00691	.00167
%RSD	.22367	.80324	44.840	.31726	73.768	27.811	114.56
#1	116.37	3.2636	.00085	166.84	.00011	.01750	.00290
#2	116.85	3.2990	.00128	167.69	.00108	.02579	-.00037
#3	116.43	3.3153	.00209	167.82	.00091	.03122	.00185
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077010 Acquired: 11/17/2015 20:59:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	F -.01211	7.0780	.00218	.69082	F -.05523	.00086
Stddev	.00213	.00586	.1460	.00021	.00240	.00596	.00254
%RSD	235.04	48.404	2.0624	9.6075	.34671	10.786	293.98
#1	.00124	-.00942	6.9663	.00221	.68818	-.06169	-.00144
#2	.00285	-.01884	7.2432	.00238	.69285	-.04995	.00044
#3	-.00137	-.00808	7.0246	.00196	.69143	-.05406	.00359
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit		90.000				36.000	
Low Limit		-.01000				-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00108	.00227	.08805
Stddev	.00041	.00008	.13930
%RSD	38.252	3.4930	158.20
#1	-.00062	.00236	.21182
#2	-.00141	.00220	-.06280
#3	-.00120	.00224	.11513
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	14765.	94396.	2977.9
Stddev	299.	167.	8.2
%RSD	2.0268	.17664	.27406
#1	14992.	94448.	2977.0
#2	14426.	94530.	2986.4
#3	14878.	94209.	2970.2

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077011 Acquired: 11/17/2015 21:03:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00050	.01783	-.00331	8.1887	.01348	.00001	F 425.28
Stddev	.00153	.00148	.00298	.0049	.00051	.00001	1.72
%RSD	309.22	8.2805	90.089	.06015	3.7555	84.317	.40555
#1	-.00204	.01928	-.00661	8.1860	.01364	.00001	424.47
#2	-.00047	.01788	-.00252	8.1943	.01291	.00000	427.26
#3	.00102	.01633	-.00080	8.1856	.01389	.00002	424.11
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00090	.00161	.00052	.00182	.04535	4.2680	.32890
Stddev	.00011	.00022	.00076	.00093	.00621	.0275	.00675
%RSD	12.089	13.550	147.58	51.438	13.692	.64492	2.0533
#1	.00090	.00139	.00118	.00097	.04365	4.2769	.32155
#2	.00079	.00161	-.00032	.00282	.04018	4.2372	.33484
#3	.00100	.00183	.00070	.00165	.05224	4.2900	.33032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	117.25	3.2910	.00113	167.33	.00175	.01965	.00139
Stddev	.87	.0171	.00009	.70	.00119	.00351	.00297
%RSD	.74535	.52076	7.8534	.41631	67.917	17.876	213.43
#1	116.52	3.2794	.00104	166.93	.00158	.02298	-.00002
#2	118.22	3.3107	.00114	168.14	.00066	.01598	-.00061
#3	117.02	3.2829	.00122	166.94	.00301	.01999	.00481
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077011 Acquired: 11/17/2015 21:03:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00124	-.00331	6.9069	-.00112	.69171	F -.05317	.00162
Stddev	.00405	.00487	.0392	.00084	.00393	.00356	.00189
%RSD	325.83	146.94	.56776	75.318	.56751	6.6918	116.20
#1	.00040	-.00303	6.9496	-.00180	.69107	-.05415	-.00055
#2	-.00232	.00141	6.8985	-.00137	.69591	-.04922	.00287
#3	.00564	-.00832	6.8726	-.00018	.68814	-.05613	.00254
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00080	.00340	.18434
Stddev	.00066	.00008	.30670
%RSD	82.503	2.4667	166.37
#1	-.00033	.00338	.29205
#2	-.00156	.00349	-.16168
#3	-.00051	.00333	.42266
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	14974.	94824.	2963.1
Stddev	49.	212.	5.9
%RSD	.32772	.22359	.19908
#1	14979.	94634.	2969.8
#2	14923.	94786.	2958.7
#3	15021.	95053.	2960.8

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077012 Acquired: 11/17/2015 21:07:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	8.5473	.00438	9.1045	.08160	.00123	F 311.11
Stddev	.00042	.0119	.00170	.0139	.00201	.00006	1.83
%RSD	219.97	.13892	38.876	.15233	2.4629	5.2094	.58738
#1	-.00067	8.5597	.00533	9.1187	.08102	.00130	310.35
#2	.00014	8.5461	.00242	9.1036	.08384	.00121	313.19
#3	-.00005	8.5360	.00540	9.0910	.07995	.00118	309.78
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00244	.01518	1.3917	.01996	19.159	105.78	1.1772
Stddev	.00013	.00001	.0033	.00130	.145	.77	.0116
%RSD	5.3503	.06995	.23751	6.4963	.75824	.72976	.98128
#1	.00251	.01517	1.3949	.02054	19.181	105.31	1.1788
#2	.00252	.01519	1.3917	.02085	19.293	106.67	1.1878
#3	.00229	.01517	1.3883	.01847	19.005	105.36	1.1649
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	156.78	19.643	.00096	56.622	.03421	.54220	.02082
Stddev	.92	.140	.00005	.351	.00042	.00556	.00279
%RSD	.58598	.71250	5.5598	.62038	1.2290	1.0258	13.414
#1	156.88	19.581	.00092	56.502	.03464	.54096	.02366
#2	157.65	19.803	.00102	57.018	.03417	.54827	.01808
#3	155.82	19.545	.00095	56.347	.03380	.53736	.02070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077012 Acquired: 11/17/2015 21:07:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	.00184	23.540	.00101	2.2751	.09441	.00510
Stddev	.00106	.00301	.077	.00054	.0155	.00304	.00289
%RSD	264.18	163.36	.32722	53.459	.68271	3.2168	56.610
#1	-.00064	.00285	23.525	.00072	2.2699	.09104	.00691
#2	.00037	-.00154	23.623	.00068	2.2926	.09694	.00663
#3	.00148	.00421	23.471	.00163	2.2628	.09524	.00177
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.01400	.28507	2.1469
Stddev	.00069	.00132	.2081
%RSD	4.8924	.46340	9.6916
#1	.01323	.28502	2.3223
#2	.01423	.28641	2.2015
#3	.01455	.28377	1.9170
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15298.	96322.	2993.0
Stddev	22.	259.	10.2
%RSD	.14268	.26857	.34220
#1	15303.	96116.	2989.5
#2	15274.	96236.	2985.0
#3	15317.	96612.	3004.5

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077013 Acquired: 11/17/2015 21:11:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00155	1.1786	-.00588	9.3034	.02150	.00051	F 316.14
Stddev	.00115	.0039	.00284	.0166	.00132	.00002	.85
%RSD	74.253	.32992	48.280	.17795	6.1195	4.3058	.26932
#1	.00277	1.1830	-.00854	9.2847	.02046	.00050	316.83
#2	.00048	1.1758	-.00289	9.3163	.02107	.00050	316.40
#3	.00141	1.1770	-.00622	9.3093	.02298	.00054	315.19
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00210	.00639	1.3432	.00590	1.9043	106.13	1.1930
Stddev	.00012	.00019	.0015	.00067	.0013	.31	.0050
%RSD	5.9326	2.9553	.10919	11.400	.06577	.29322	.41577
#1	.00213	.00659	1.3429	.00662	1.9056	106.48	1.1884
#2	.00197	.00636	1.3448	.00529	1.9042	106.03	1.1983
#3	.00221	.00622	1.3419	.00579	1.9031	105.88	1.1924
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	158.99	18.852	-.00054	57.497	.02077	.16526	.00278
Stddev	.34	.044	.00020	.130	.00073	.00443	.00187
%RSD	.21468	.23100	38.149	.22696	3.5288	2.6809	67.043
#1	159.28	18.878	-.00035	57.603	.02002	.17035	.00494
#2	159.08	18.876	-.00050	57.538	.02081	.16226	.00179
#3	158.62	18.802	-.00076	57.351	.02149	.16317	.00163
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077013 Acquired: 11/17/2015 21:11:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00394	-.00248	13.804	-.00031	2.2923	-.02389	.00674
Stddev	.00216	.00508	.067	.00026	.0040	.00518	.00335
%RSD	54.865	205.03	.48362	83.055	.17610	21.670	49.753
#1	-.00494	.00184	13.880	-.00033	2.2934	-.01973	.01028
#2	-.00146	-.00119	13.757	-.00056	2.2957	-.02225	.00633
#3	-.00543	-.00808	13.773	-.00004	2.2879	-.02968	.00361
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00168	.08934	.76320
Stddev	.00008	.00028	.18819
%RSD	4.9025	.31337	24.659
#1	-.00164	.08954	.61643
#2	-.00177	.08902	.97536
#3	-.00162	.08946	.69780
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15153.	95258.	2936.1
Stddev	29.	437.	32.0
%RSD	.19107	.45871	1.0899
#1	15162.	95192.	2900.9
#2	15176.	94858.	2944.2
#3	15121.	95724.	2963.3

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077014 Acquired: 11/17/2015 21:15:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00081	1.1631	-.00124	5.2977	.06269	.00005	F 367.68
Stddev	.00107	.0060	.00223	.0045	.00091	.00005	3.72
%RSD	132.91	.51853	179.43	.08526	1.4531	104.62	1.0105
#1	-.00194	1.1698	-.00137	5.2925	.06361	.00010	371.45
#2	-.00067	1.1582	-.00340	5.2999	.06267	.00001	367.57
#3	.00019	1.1612	.00105	5.3006	.06179	.00003	364.02
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	.00304	.00263	.00503	1.7859	2.9775	.33037
Stddev	.00040	.00040	.00027	.00069	.0167	.0190	.00554
%RSD	57.402	13.017	10.174	13.694	.93328	.63871	1.6773
#1	.00083	.00311	.00275	.00516	1.7831	2.9903	.33644
#2	.00025	.00339	.00283	.00565	1.7708	2.9865	.32911
#3	.00103	.00261	.00233	.00429	1.8038	2.9556	.32557
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	103.73	2.8555	.00104	130.59	.00317	.04792	.00004
Stddev	.84	.0181	.00032	1.24	.00009	.00692	.00109
%RSD	.81201	.63235	30.898	.95168	2.7626	14.443	2560.9
#1	104.70	2.8762	.00081	131.88	.00307	.04278	-.00076
#2	103.29	2.8471	.00141	130.49	.00322	.04519	.00129
#3	103.19	2.8431	.00090	129.40	.00322	.05579	-.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077014 Acquired: 11/17/2015 21:15:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00142	-.00650	8.7592	-.00066	.29965	-.02203	.00085
Stddev	.00335	.00282	.0404	.00027	.00318	.00442	.00271
%RSD	235.15	43.464	.46088	40.877	1.0621	20.075	319.61
#1	.00171	-.00519	8.7963	-.00097	.30311	-.02157	.00029
#2	-.00104	-.00974	8.7651	-.00053	.29896	-.02666	.00380
#3	-.00495	-.00456	8.7162	-.00048	.29686	-.01785	-.00154
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00204	.00625	.44129
Stddev	.00058	.00007	.39215
%RSD	28.650	1.0813	88.863
#1	.00246	.00621	.69202
#2	.00227	.00622	.64248
#3	.00137	.00633	-.01062
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15115.	96146.	2945.8
Stddev	34.	133.	28.0
%RSD	.22515	.13846	.95159
#1	15149.	96202.	2916.5
#2	15113.	95995.	2948.6
#3	15081.	96243.	2972.3

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077015 Acquired: 11/17/2015 21:19:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	.03691	-.00261	5.2144	.01087	-.00005	F 350.69
Stddev	.00261	.00246	.00224	.0220	.00110	.00002	.54
%RSD	355.14	6.6544	85.826	.42239	10.076	36.150	.15385
#1	-.00224	.03793	-.00004	5.1944	.00978	-.00003	351.31
#2	.00264	.03869	-.00362	5.2380	.01087	-.00005	350.35
#3	.00180	.03411	-.00418	5.2107	.01197	-.00007	350.40
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	.00216	.00068	.00177	.03041	2.5418	.31711
Stddev	.00019	.00009	.00070	.00017	.00214	.0862	.00615
%RSD	30.074	4.1770	102.65	9.7536	7.0231	3.3911	1.9384
#1	.00076	.00206	.00039	.00158	.02796	2.5193	.31804
#2	.00041	.00223	.00017	.00183	.03140	2.4691	.32273
#3	.00070	.00219	.00147	.00191	.03187	2.6370	.31055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	99.171	2.6407	.00094	126.35	.00181	.02289	.00166
Stddev	.486	.0047	.00020	.14	.00052	.00223	.00152
%RSD	.48979	.17714	21.209	.11191	28.497	9.7489	91.604
#1	99.449	2.6461	.00082	126.44	.00215	.02156	.00223
#2	98.610	2.6375	.00084	126.43	.00208	.02164	.00280
#3	99.454	2.6386	.00117	126.19	.00122	.02547	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077015 Acquired: 11/17/2015 21:19:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00089	-.00516	6.9613	-.00156	.28392	F -.04324	.00063
Stddev	.00189	.00533	.0513	.00034	.00090	.00203	.00177
%RSD	212.26	103.30	.73723	21.779	.31827	4.6995	279.86
#1	-.00002	-.00187	6.9038	-.00128	.28408	-.04216	-.00137
#2	.00040	-.01131	6.9777	-.00193	.28473	-.04197	.00131
#3	-.00306	-.00230	7.0024	-.00146	.28295	-.04558	.00195
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00092	.01053	.15517
Stddev	.00098	.00024	.29953
%RSD	105.66	2.2567	193.03
#1	-.00157	.01065	.06157
#2	-.00140	.01026	-.08638
#3	.00020	.01069	.49032
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15130.	95908.	3017.9
Stddev	109.	57.	12.2
%RSD	.72023	.05940	.40551
#1	15252.	95909.	3005.2
#2	15097.	95964.	3029.7
#3	15042.	95850.	3018.7

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077016 Acquired: 11/17/2015 21:23:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.05167	-.00072	6.5654	.01443	.00002	F 294.37
Stddev	.00148	.00759	.00106	.0430	.00015	.00004	2.44
%RSD	756.48	14.685	146.31	.65525	1.0296	202.67	.83054
#1	.00190	.04299	-.00137	6.5320	.01460	.00006	296.49
#2	-.00078	.05706	-.00129	6.5503	.01433	.00001	294.94
#3	-.00054	.05497	.00050	6.6139	.01435	-.00002	291.70
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.00277	.00090	.00237	.08183	2.4889	.56025
Stddev	.00007	.00045	.00056	.00157	.01513	.0629	.00781
%RSD	18.976	16.421	62.530	66.063	18.488	2.5261	1.3938
#1	.00027	.00230	.00036	.00130	.09891	2.5231	.56317
#2	.00038	.00281	.00149	.00164	.07649	2.4164	.56619
#3	.00039	.00320	.00086	.00417	.07009	2.5273	.55141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	120.08	1.8261	.00052	134.05	.00115	.03935	.00243
Stddev	.84	.0234	.00018	1.17	.00131	.00351	.00096
%RSD	.70255	1.2803	35.391	.87537	114.32	8.9259	39.561
#1	120.37	1.8390	.00031	135.13	-.00006	.03734	.00234
#2	120.74	1.8401	.00058	134.20	.00254	.03730	.00344
#3	119.13	1.7991	.00067	132.80	.00097	.04341	.00152
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077016 Acquired: 11/17/2015 21:23:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00113	-.00442	6.8330	-.00006	.42342	F -.03977	.00199
Stddev	.00222	.00385	.0682	.00041	.00564	.00399	.00296
%RSD	196.69	87.005	.99857	636.30	1.3309	10.028	149.01
#1	-.00122	-.00452	6.7619	-.00033	.42971	-.04371	-.00005
#2	.00142	-.00823	6.8979	.00040	.42171	-.03574	.00063
#3	.00320	-.00053	6.8391	-.00027	.41884	-.03985	.00538
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00102	.00399	.00367
Stddev	.00033	.00005	.34318
%RSD	32.050	1.1836	9342.0
#1	-.00078	.00404	.39867
#2	-.00139	.00395	-.16638
#3	-.00089	.00399	-.22127
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	14859.	93648.	2888.9
Stddev	65.	334.	16.5
%RSD	.43841	.35640	.57227
#1	14890.	93841.	2870.0
#2	14784.	93840.	2896.0
#3	14903.	93263.	2900.7

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077017 Acquired: 11/17/2015 21:27:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	.01334	.00026	6.6814	.01248	.00005	F 299.02
Stddev	.00176	.00319	.00246	.0149	.00057	.00003	1.29
%RSD	280.52	23.935	942.65	.22282	4.5282	51.816	.43082
#1	.00074	.01422	-.00225	6.6725	.01186	.00003	300.24
#2	-.00119	.01600	.00036	6.6732	.01297	.00004	299.14
#3	.00233	.00980	.00267	6.6986	.01262	.00008	297.67
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	.00291	.00126	.00174	.02775	2.5674	.57428
Stddev	.00025	.00041	.00092	.00163	.00566	.1206	.00591
%RSD	40.696	14.090	73.006	93.629	20.412	4.6989	1.0285
#1	.00073	.00261	.00024	.00318	.02500	2.5925	.57651
#2	.00078	.00338	.00201	-.00003	.02398	2.6736	.56759
#3	.00033	.00274	.00152	.00206	.03426	2.4362	.57875
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	121.31	1.7177	.00025	135.66	.00136	.03790	-.00041
Stddev	.50	.0048	.00012	.60	.00056	.00181	.00236
%RSD	.40917	.27875	47.593	.44304	41.457	4.7722	581.10
#1	120.83	1.7227	.00030	136.30	.00165	.03965	-.00191
#2	121.82	1.7172	.00034	135.57	.00172	.03802	-.00163
#3	121.28	1.7132	.00012	135.10	.00071	.03603	.00232
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077017 Acquired: 11/17/2015 21:27:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00137	-.00501	6.8343	-.00093	.42886	F -.04372	.00035
Stddev	.00183	.00189	.0276	.00007	.00322	.00293	.00066
%RSD	133.84	37.755	.40323	7.9871	.75037	6.7010	188.48
#1	.00348	-.00284	6.8152	-.00098	.43257	-.04157	-.00011
#2	.00040	-.00635	6.8219	-.00096	.42689	-.04254	.00111
#3	.00023	-.00583	6.8659	-.00084	.42712	-.04706	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00083	.00462	.24867
Stddev	.00068	.00020	.06532
%RSD	81.814	4.2336	26.266
#1	-.00161	.00453	.18040
#2	-.00047	.00484	.31056
#3	-.00041	.00447	.25505
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	14808.	94185.	2907.2
Stddev	31.	317.	12.1
%RSD	.20928	.33636	.41501
#1	14773.	94513.	2897.5
#2	14821.	94162.	2903.3
#3	14830.	93881.	2920.7

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077018 Acquired: 11/17/2015 21:31:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00046	1.9539	-.00444	.67891	.10928	.00011	133.34	.00046
Stddev	.00156	.0149	.00339	.00166	.00146	.00005	1.34	.00007
%RSD	339.61	.76088	76.201	.24395	1.3399	46.198	1.0060	15.756
#1	-.00211	1.9709	-.00781	.67993	.11038	.00010	133.24	.00042
#2	.00099	1.9431	-.00448	.67980	.10984	.00006	134.73	.00054
#3	-.00026	1.9478	-.00104	.67700	.10762	.00016	132.05	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00272	.90779	.00758	4.6173	3.0637	.04184	35.190	.51065
Stddev	.00014	.00475	.00123	.0708	.0984	.00355	.276	.00408
%RSD	5.1500	.52379	16.186	1.5338	3.2106	8.4918	.78347	.79841
#1	.00288	.91326	.00811	4.6299	3.1769	.04460	34.947	.51196
#2	.00262	.90544	.00845	4.6809	2.9989	.04308	35.489	.51392
#3	.00266	.90466	.00618	4.5410	3.0154	.03783	35.134	.50608
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	61.205	.00421	.14372	.00533	-.00098	-.00169	7.1177
Stddev	.00012	.562	.00039	.00411	.00515	.00179	.00348	.0163
%RSD	65.813	.91800	9.2768	2.8621	96.773	182.17	205.69	.22870
#1	.00026	61.137	.00377	.14804	.01097	-.00210	-.00414	7.1272
#2	.00004	61.798	.00434	.14326	.00087	-.00192	-.00323	7.1271
#3	.00024	60.680	.00452	.13985	.00413	.00108	.00229	7.0989
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511077018 Acquired: 11/17/2015 21:31:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	.33014	.01452	-.00200	.00450	.07240	.29529
Stddev	.00037	.00301	.00486	.00111	.00058	.00033	.12624
%RSD	145.05	.91136	33.449	55.808	12.801	.46153	42.751
#1	-.00030	.33026	.01556	-.00255	.00427	.07235	.34778
#2	-.00061	.33308	.00923	-.00071	.00408	.07275	.38681
#3	.00014	.32707	.01877	-.00272	.00516	.07209	.15127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15505.	97902.	2954.1
Stddev	42.	284.	20.5
%RSD	.26913	.29034	.69346
#1	15510.	97580.	2959.2
#2	15461.	98005.	2931.5
#3	15544.	98120.	2971.5

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511086301 Acquired: 11/17/2015 21:35:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00125	.02061	-.00144	.05683	.13803	.00001	49.356	.00013
Stddev	.00097	.00315	.00197	.00094	.00120	.00005	.151	.00002
%RSD	77.629	15.298	136.35	1.6580	.86721	818.47	.30664	19.005
#1	-.00084	.01699	-.00214	.05786	.13871	.00005	49.495	.00010
#2	-.00236	.02273	.00078	.05661	.13874	-.00005	49.379	.00015
#3	-.00056	.02211	-.00297	.05602	.13665	.00002	49.195	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	.00051	.00261	.04959	1.0946	.00756	8.8332	.01644
Stddev	.00026	.00031	.00069	.00561	.0312	.00732	.0829	.00209
%RSD	578.37	60.889	26.327	11.303	2.8507	96.838	.93853	12.687
#1	-.00002	.00065	.00297	.05388	1.0853	.00502	8.9264	.01813
#2	-.00031	.00073	.00304	.05163	1.1294	.01582	8.7676	.01707
#3	.00020	.00016	.00182	.04325	1.0691	.00185	8.8057	.01411
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	14.056	.00095	.00217	.00107	.00071	-.00280	4.7604
Stddev	.00037	.027	.00089	.00393	.00080	.00163	.00734	.0152
%RSD	119.27	.18959	93.329	181.15	74.895	230.48	261.77	.31820
#1	.00074	14.066	.00191	-.00016	.00200	.00159	-.00991	4.7769
#2	.00004	14.077	.00079	.00670	.00057	.00171	-.00326	4.7572
#3	.00017	14.026	.00016	-.00003	.00065	-.00118	.00475	4.7472
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511086301 Acquired: 11/17/2015 21:35:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00024	.37995	-.00624	.00055	-.00046	.00557	.30089
Stddev	.00035	.00041	.00437	.00063	.00048	.00018	.13926
%RSD	146.84	.10677	70.106	115.08	104.19	3.1885	46.283
#1	.00004	.37984	-.00720	.00038	-.00011	.00560	.16442
#2	-.00013	.38039	-.01005	.00002	-.00027	.00573	.44278
#3	-.00064	.37960	-.00146	.00125	-.00100	.00538	.29546
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15873.	100310.	2962.7
Stddev	47.	218.	7.8
%RSD	.29542	.21702	.26435
#1	15920.	100240.	2954.4
#2	15873.	100140.	2969.9
#3	15826.	100550.	2963.9

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCV Acquired: 11/17/2015 21:39:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40611	10.145	.40187	.52272	1.0171	.05087	10.202
Stddev	.00092	.020	.00248	.00191	.0008	.00009	.036
%RSD	.22715	.19585	.61760	.36458	.07835	.17530	.35712
#1	.40706	10.156	.40457	.52395	1.0165	.05094	10.176
#2	.40522	10.122	.39969	.52053	1.0180	.05077	10.187
#3	.40606	10.157	.40135	.52369	1.0167	.05090	10.244
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05086	.20483	.50999	.51202	4.0593	50.696	1.0242
Stddev	.00022	.00050	.00151	.00139	.0160	.104	.0068
%RSD	.43364	.24425	.29578	.27092	.39480	.20428	.66670
#1	.05081	.20505	.51147	.51303	4.0423	50.615	1.0194
#2	.05110	.20519	.51004	.51260	4.0742	50.661	1.0212
#3	.05066	.20426	.50846	.51044	4.0613	50.813	1.0320
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.202	.50593	1.0150	50.767	.51011	10.065	.51039
Stddev	.155	.00287	.0022	.073	.00175	.014	.00254
%RSD	1.5220	.56805	.21731	.14400	.34289	.14005	.49761
#1	10.282	.50265	1.0172	50.689	.51200	10.077	.50852
#2	10.023	.50801	1.0151	50.778	.50854	10.068	.50936
#3	10.300	.50713	1.0128	50.833	.50980	10.050	.51328
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCV Acquired: 11/17/2015 21:39:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2068	.40102	5.0203	1.0210	1.0147	1.0068	.51470
Stddev	.0056	.00199	.0086	.0034	.0013	.0021	.00160
%RSD	.46002	.49563	.17234	.33126	.12301	.20989	.31039
#1	1.2124	.39970	5.0252	1.0235	1.0145	1.0079	.51361
#2	1.2066	.40005	5.0253	1.0224	1.0136	1.0082	.51653
#3	1.2013	.40330	5.0103	1.0172	1.0160	1.0044	.51395
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0193	1.0141	F 1.3104
Stddev	.0020	.0016	.2477
%RSD	.19746	.16204	18.900
#1	1.0197	1.0158	1.0482
#2	1.0172	1.0141	1.5403
#3	1.0211	1.0125	1.3426
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16566.	103050.	3055.0
Stddev	37.	268.	6.1
%RSD	.22262	.25983	.19861
#1	16524.	102760.	3048.1
#2	16581.	103090.	3059.7
#3	16592.	103290.	3057.1

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCB Acquired: 11/17/2015 21:42:48 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	-.00422	-.00059	.01465	-.00006	.00002	-.00512
Stddev	.00114	.00173	.00131	.00024	.00048	.00002	.01094
%RSD	294.63	41.014	221.61	1.6185	769.92	115.04	213.60
#1	-.00012	-.00500	.00013	.01481	.00049	-.00001	-.00918
#2	.00059	-.00542	-.00211	.01438	-.00029	.00004	.00727
#3	-.00163	-.00224	.00020	.01477	-.00039	.00003	-.01346
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.00012	-.00015	.00008	.02421	-.02608	.00120
Stddev	.00021	.00015	.00086	.00041	.00910	.01281	.00253
%RSD	285.85	125.06	552.37	529.65	37.595	49.122	209.95
#1	.00022	.00015	-.00075	-.00001	.01944	-.02416	-.00014
#2	.00017	-.00004	-.00054	.00053	.03471	-.01434	-.00037
#3	-.00017	.00025	.00083	-.00028	.01848	-.03975	.00412
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.06552	-.00139	.00112	.02728	.00033	.00088	.00106
Stddev	.05054	.00164	.00010	.01779	.00068	.00201	.00268
%RSD	77.130	118.14	8.8626	65.215	207.56	229.07	253.62
#1	-.00890	-.00171	.00100	.00676	-.00044	.00069	.00345
#2	-.10606	-.00286	.00117	.03839	.00086	.00298	-.00184
#3	-.08160	.00039	.00118	.03670	.00056	-.00103	.00156
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCB Acquired: 11/17/2015 21:42:48 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	-.00268	.00387	-.00027	-.00039	.00420	.00318
Stddev	.00285	.00690	.00117	.00054	.00024	.00237	.00159
%RSD	545.35	257.15	30.118	198.11	61.183	56.308	49.923
#1	.00331	-.00737	.00290	-.00090	-.00013	.00244	.00499
#2	-.00239	-.00591	.00355	-.00002	-.00060	.00689	.00201
#3	.00065	.00524	.00517	.00009	-.00044	.00328	.00255
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00010	.00015	F .28361
Stddev	.00084	.00008	.09866
%RSD	846.37	49.891	34.788
#1	-.00003	.00007	.24837
#2	.00100	.00021	.39506
#3	-.00067	.00018	.20741
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	17003.	107060.	3086.7
Stddev	38.	581.	27.7
%RSD	.22086	.54242	.89867
#1	17000.	106960.	3104.0
#2	16967.	106540.	3054.7
#3	17042.	107690.	3101.5

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511086302 Acquired: 11/17/2015 21:46:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00105	.18041	-.00159	.03710	.05736	.00004	53.564	-.00004
Stddev	.00024	.00265	.00141	.00267	.00041	.00003	.221	.00011
%RSD	22.982	1.4697	88.905	7.1843	.71202	66.821	.41261	321.23
#1	.00126	.18094	-.00035	.03903	.05703	.00004	53.810	-.00015
#2	.00078	.17754	-.00313	.03406	.05782	.00007	53.501	.00008
#3	.00112	.18276	-.00128	.03823	.05723	.00002	53.381	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	.00045	.00166	.59085	1.3163	.00210	6.9496	.12401
Stddev	.00015	.00064	.00089	.02392	.0293	.00224	.1206	.00186
%RSD	97.166	143.92	53.777	4.0492	2.2235	106.54	1.7361	1.5024
#1	-.00010	-.00025	.00262	.61321	1.3496	.00445	7.0817	.12533
#2	-.00031	.00056	.00085	.56562	1.3047	-.00001	6.8451	.12483
#3	-.00004	.00102	.00150	.59371	1.2947	.00186	6.9220	.12188
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00083	8.2491	.00065	.04497	-.00189	-.00044	-.00399	3.7186
Stddev	.00049	.0550	.00041	.00779	.00296	.00392	.00192	.0188
%RSD	59.440	.66674	62.473	17.318	156.89	889.62	48.029	.50557
#1	.00139	8.3126	.00090	.05279	.00129	-.00488	-.00178	3.7365
#2	.00047	8.2188	.00087	.03722	-.00458	.00255	-.00499	3.7202
#3	.00062	8.2159	.00018	.04489	-.00237	.00101	-.00521	3.6990
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511086302 Acquired: 11/17/2015 21:46:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.24426	-.00083	.00047	.00017	.00277	.32687
Stddev	.00070	.00067	.00195	.00272	.00040	.00010	.31455
%RSD	724.53	.27585	235.12	580.68	242.02	3.6594	96.231
#1	.00027	.24469	-.00149	.00302	.00058	.00270	-.03296
#2	.00034	.24460	.00136	-.00240	-.00022	.00289	.46398
#3	-.00090	.24348	-.00236	.00079	.00014	.00273	.54960
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16303.	103320.	3056.6
Stddev	18.	288.	25.7
%RSD	.10759	.27886	.84206
#1	16323.	103400.	3028.8
#2	16291.	103570.	3061.5
#3	16295.	103010.	3079.6

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511086303 Acquired: 11/17/2015 21:50:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00043	.03619	-.00136	.10331	.03998	-.00001	37.781	.00011
Stddev	.00075	.00400	.00268	.00321	.00094	.00004	.028	.00018
%RSD	174.58	11.050	197.10	3.1075	2.3599	796.49	.07388	155.77
#1	.00005	.03158	.00047	.10095	.04039	.00004	37.787	.00032
#2	-.00005	.03872	-.00443	.10200	.04064	-.00002	37.805	.00002
#3	-.00129	.03827	-.00011	.10696	.03890	-.00004	37.750	.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.00145	.00267	.02136	3.1858	.00848	10.140	.00007
Stddev	.00014	.00126	.00067	.02504	.0509	.00405	.073	.00183
%RSD	2047.1	87.057	25.138	117.19	1.5969	47.790	.72256	2760.7
#1	-.00008	.00165	.00307	-.00713	3.2346	.01045	10.219	.00214
#2	-.00007	.00010	.00303	.03982	3.1898	.01117	10.125	-.00060
#3	.00017	.00260	.00189	.03141	3.1331	.00382	10.075	-.00134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	59.145	.00159	.11345	.00106	-.00077	-.00234	1.5372
Stddev	.00020	.141	.00032	.00223	.00117	.00044	.00508	.0035
%RSD	23.427	.23864	20.287	1.9648	110.84	56.757	216.72	.22548
#1	.00096	59.242	.00145	.11153	.00053	-.00040	-.00313	1.5389
#2	.00063	59.210	.00195	.11589	.00024	-.00067	-.00698	1.5395
#3	.00099	58.983	.00135	.11293	.00240	-.00126	.00308	1.5332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511086303 Acquired: 11/17/2015 21:50:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00068	.31552	-.00170	.00158	.00032	.07348	.05939
Stddev	.00030	.00088	.00380	.00197	.00118	.00039	.27476
%RSD	44.453	.27818	223.47	124.36	368.03	.52427	462.63
#1	-.00048	.31496	.00035	.00355	-.00101	.07387	.10689
#2	-.00054	.31653	-.00608	.00160	.00122	.07346	-.23602
#3	-.00103	.31506	.00063	-.00039	.00075	.07310	.30731
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15988.	99961.	2992.6
Stddev	19.	215.	10.1
%RSD	.12143	.21475	.33676
#1	15974.	100170.	2997.8
#2	16010.	99744.	2980.9
#3	15980.	99966.	2998.9

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511086304 Acquired: 11/17/2015 21:54:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00044	.48356	-.00111	.02588	.12245	.00007	72.085	.00032
Stddev	.00084	.00640	.00153	.00041	.00161	.00001	.825	.00024
%RSD	189.34	1.3225	138.50	1.5660	1.3163	15.510	1.1438	74.574
#1	-.00036	.49079	.00066	.02635	.12113	.00005	71.483	.00021
#2	.00037	.47864	-.00211	.02567	.12424	.00007	73.025	.00016
#3	.00132	.48126	-.00186	.02563	.12197	.00007	71.748	.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.00128	.00224	.94009	5.2652	.01149	8.1921	.13533
Stddev	.00007	.00046	.00086	.00526	.1071	.00344	.0673	.00136
%RSD	24.135	35.953	38.236	.55903	2.0336	29.904	.82126	1.0055
#1	.00039	.00075	.00319	.94032	5.1593	.00771	8.1285	.13404
#2	.00027	.00157	.00153	.94523	5.3734	.01443	8.2625	.13675
#3	.00025	.00152	.00199	.93473	5.2629	.01233	8.1851	.13518
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	4.6368	.00112	.03559	-.00162	.00198	-.00039	5.1566
Stddev	.00012	.0382	.00049	.00321	.00180	.00329	.00235	.1063
%RSD	39.865	.82360	43.608	9.0190	110.96	165.91	596.82	2.0623
#1	.00017	4.6055	.00077	.03514	.00027	.00214	-.00137	5.2711
#2	.00040	4.6793	.00091	.03900	-.00331	.00520	-.00210	5.1377
#3	.00035	4.6255	.00168	.03263	-.00182	-.00138	.00229	5.0610
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511086304 Acquired: 11/17/2015 21:54:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00038	.21215	.00628	-.00008	.00107	.00413	.27121
Stddev	.00018	.00158	.00452	.00165	.00029	.00033	.19874
%RSD	45.970	.74583	71.958	1972.6	26.955	7.9016	73.281
#1	-.00018	.21196	.00117	.00009	.00097	.00451	.04177
#2	-.00051	.21382	.00794	.00147	.00085	.00395	.39012
#3	-.00046	.21067	.00975	-.00181	.00140	.00394	.38173
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15957.	100470.	2964.5
Stddev	190.	395.	30.8
%RSD	1.1889	.39294	1.0404
#1	15740.	100010.	2977.2
#2	16039.	100640.	2929.3
#3	16091.	100740.	2986.9

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511086305 Acquired: 11/17/2015 21:58:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	.76303	-.00020	.02167	.11800	.00000	80.555	-.00001
Stddev	.00081	.00495	.00154	.00064	.00113	.00005	.801	.00009
%RSD	530.53	.64836	781.71	2.9759	.96075	27108.	.99443	887.69
#1	-.00068	.76189	.00014	.02093	.11670	-.00001	79.732	-.00012
#2	-.00055	.76844	.00115	.02210	.11873	-.00004	81.332	.00003
#3	.00078	.75875	-.00188	.02197	.11858	.00005	80.603	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.00134	.00161	.74080	.90083	.01668	6.5367	.04546
Stddev	.00046	.00079	.00048	.00509	.14118	.00524	.2204	.00113
%RSD	360.45	59.290	29.848	.68704	15.672	31.382	3.3712	2.4784
#1	-.00037	.00078	.00190	.73830	.73797	.02253	6.2826	.04628
#2	.00022	.00225	.00106	.73745	.98849	.01243	6.6509	.04592
#3	.00054	.00099	.00187	.74666	.97604	.01509	6.6765	.04417
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	4.9792	.00065	.03112	.00172	-.00188	-.00774	5.5462
Stddev	.00030	.0599	.00017	.00338	.00183	.00277	.00212	.0230
%RSD	220.03	1.2036	25.457	10.866	106.67	147.75	27.384	.41383
#1	-.00018	4.9135	.00084	.03081	.00347	-.00466	-.00530	5.5523
#2	.00017	5.0310	.00057	.03464	-.00019	.00088	-.00884	5.5656
#3	.00041	4.9930	.00055	.02790	.00188	-.00185	-.00908	5.5209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511086305 Acquired: 11/17/2015 21:58:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00032	.23285	.00515	.00170	.00049	.00580	.13996
Stddev	.00111	.00235	.00626	.00058	.00063	.00018	.25917
%RSD	353.06	1.0107	121.70	33.919	127.88	3.0630	185.17
#1	-.00137	.23065	-.00112	.00111	.00068	.00601	.41547
#2	.00085	.23533	.01141	.00226	.00100	.00568	-.09897
#3	-.00042	.23256	.00515	.00172	-.00021	.00573	.10338
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16118.	102100.	3038.8
Stddev	6.	392.	22.4
%RSD	.03771	.38398	.73651
#1	16111.	101670.	3063.0
#2	16120.	102440.	3018.9
#3	16123.	102180.	3034.4

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511086306 Acquired: 11/17/2015 22:02:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	1.0044	-.00211	.02870	.10451	.00005	64.202	.00026
Stddev	.00138	.0034	.00290	.00067	.00085	.00001	.432	.00004
%RSD	146.65	.34343	137.32	2.3406	.81625	11.974	.67227	13.926
#1	.00086	1.0058	-.00333	.02845	.10451	.00006	64.202	.00028
#2	.00235	1.0070	.00120	.02947	.10536	.00004	64.633	.00022
#3	-.00040	1.0005	-.00422	.02819	.10365	.00005	63.770	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.00182	.00213	1.4225	3.6733	.00683	6.9367	.05015
Stddev	.00037	.00012	.00088	.0186	.0697	.00373	.0871	.00337
%RSD	109.08	6.5371	41.218	1.3040	1.8987	54.606	1.2550	6.7162
#1	.00026	.00182	.00130	1.4046	3.7098	.01031	6.8796	.05386
#2	.00074	.00170	.00204	1.4416	3.7173	.00289	7.0369	.04930
#3	.00002	.00194	.00305	1.4214	3.5929	.00730	6.8936	.04729
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	6.7054	.00131	.04986	.00111	.00117	.00065	5.6735
Stddev	.00032	.0234	.00063	.00565	.00178	.00047	.00768	.0121
%RSD	125.96	.34943	48.518	11.339	160.91	39.885	1173.7	.21354
#1	.00058	6.6899	.00163	.04717	.00065	.00110	.00952	5.6704
#2	.00022	6.7323	.00058	.04606	-.00040	.00168	-.00368	5.6869
#3	-.00005	6.6939	.00171	.05636	.00307	.00075	-.00387	5.6633
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511086306 Acquired: 11/17/2015 22:02:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00091	.30784	.00854	-.00020	.00129	.00466	.51279
Stddev	.00074	.00185	.00611	.00061	.00102	.00013	.25810
%RSD	81.485	.60080	71.522	296.18	78.841	2.7198	50.333
#1	-.00039	.30787	.00700	.00021	.00094	.00451	.43302
#2	-.00176	.30967	.00335	.00007	.00050	.00472	.30400
#3	-.00058	.30597	.01527	-.00090	.00244	.00474	.80136
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16140.	102560.	3065.7
Stddev	89.	204.	11.7
%RSD	.54920	.19866	.38248
#1	16217.	102720.	3062.2
#2	16161.	102620.	3056.1
#3	16043.	102330.	3078.8

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511086307 Acquired: 11/17/2015 22:06:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00108	.31487	-.00426	.04073	.10008	.00006	67.074	.00021
Stddev	.00127	.00389	.00260	.00128	.00072	.00001	.126	.00029
%RSD	117.65	1.2357	61.125	3.1375	.72390	17.616	.18729	136.09
#1	.00001	.31076	-.00561	.04080	.09928	.00008	66.984	.00054
#2	-.00077	.31535	-.00591	.03942	.10027	.00006	67.020	.00007
#3	-.00247	.31850	-.00126	.04197	.10069	.00006	67.217	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.00087	.00311	1.2615	5.2956	.01215	9.7898	.05997
Stddev	.00005	.00083	.00024	.0126	.0965	.00438	.0762	.00215
%RSD	15.301	94.970	7.7211	.99784	1.8221	36.059	.77882	3.5848
#1	.00036	.00183	.00339	1.2474	5.3341	.01708	9.7569	.05827
#2	.00028	.00043	.00295	1.2716	5.1857	.00869	9.7355	.05925
#3	.00027	.00036	.00299	1.2655	5.3668	.01069	9.8769	.06238
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	13.119	.00117	.09307	-.00066	-.00283	-.00351	5.5434
Stddev	.00056	.029	.00068	.00600	.00210	.00134	.00452	.0159
%RSD	125.68	.21786	57.889	6.4449	317.27	47.425	128.52	.28639
#1	.00058	13.101	.00090	.09910	-.00267	-.00333	-.00855	5.5578
#2	-.00017	13.152	.00067	.09301	-.00084	-.00131	-.00217	5.5460
#3	.00093	13.105	.00194	.08711	.00152	-.00385	.00018	5.5264
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511086307 Acquired: 11/17/2015 22:06:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00070	.60247	.00111	.00209	.00042	.02727	.35635
Stddev	.00044	.00052	.00563	.00099	.00009	.00027	.15898
%RSD	62.638	.08712	506.13	47.311	22.190	.98710	44.612
#1	-.00024	.60214	-.00009	.00178	.00051	.02757	.33010
#2	-.00074	.60220	.00725	.00319	.00032	.02718	.21214
#3	-.00111	.60308	-.00382	.00129	.00042	.02705	.52682
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16004.	101260.	2986.5
Stddev	40.	270.	12.9
%RSD	.25136	.26634	.43359
#1	15958.	100950.	2996.1
#2	16022.	101390.	2991.5
#3	16032.	101440.	2971.7

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511086308 Acquired: 11/17/2015 22:10:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	.19386	-.00420	.01900	.13908	.00003	68.823	.00018
Stddev	.00024	.00542	.00219	.00145	.00057	.00003	.194	.00017
%RSD	32.775	2.7952	51.982	7.6542	.41283	100.62	.28126	99.230
#1	.00059	.19719	-.00288	.01950	.13858	.00007	68.615	.00001
#2	.00100	.18760	-.00301	.02013	.13971	.00000	68.997	.00035
#3	.00059	.19677	-.00673	.01736	.13897	.00002	68.858	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.00116	.00181	.33993	1.0846	.00940	7.1060	.02355
Stddev	.00030	.00043	.00055	.00920	.0442	.00618	.0436	.00408
%RSD	717.65	36.959	30.461	2.7057	4.0796	65.707	.61310	17.347
#1	-.00006	.00164	.00244	.34731	1.0393	.01036	7.1438	.02708
#2	.00038	.00081	.00140	.32962	1.1278	.01504	7.0584	.01907
#3	-.00020	.00104	.00159	.34286	1.0866	.00280	7.1160	.02448
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	7.3157	.00041	.01774	.00040	.00021	-.00728	3.9631
Stddev	.00029	.0154	.00115	.00155	.00280	.00182	.00159	.0147
%RSD	81.128	.21002	278.08	8.7523	709.05	879.97	21.894	.37074
#1	.00069	7.3020	-.00026	.01942	-.00070	.00231	-.00567	3.9770
#2	.00025	7.3127	.00174	.01745	.00358	-.00084	-.00886	3.9646
#3	.00014	7.3323	-.00024	.01636	-.00169	-.00085	-.00731	3.9478
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: L1511086308 Acquired: 11/17/2015 22:10:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00062	.25729	-.00042	.00030	.00004	.00199	.17333
Stddev	.00026	.00091	.00212	.00058	.00028	.00012	.13414
%RSD	42.570	.35478	510.28	191.51	793.65	6.0514	77.386
#1	-.00083	.25626	-.00162	.00091	-.00014	.00213	.26652
#2	-.00032	.25797	.00204	.00026	-.00012	.00190	.01960
#3	-.00070	.25766	-.00167	-.00026	.00036	.00194	.23388
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16082.	101830.	3001.2
Stddev	39.	246.	6.4
%RSD	.24348	.24195	.21487
#1	16037.	101740.	3001.0
#2	16097.	101640.	2994.8
#3	16111.	102110.	3007.7

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCV Acquired: 11/17/2015 22:14:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41777	10.452	.41603	.52545	1.0429	.05231	10.419
Stddev	.00156	.028	.00176	.00226	.0029	.00014	.056
%RSD	.37258	.26416	.42332	.42982	.27864	.27073	.54066
#1	.41608	10.484	.41437	.52788	1.0397	.05247	10.355
#2	.41915	10.437	.41583	.52342	1.0453	.05219	10.463
#3	.41808	10.435	.41787	.52504	1.0438	.05227	10.438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05217	.21089	.52192	.52599	4.1654	51.440	1.0490
Stddev	.00031	.00058	.00156	.00243	.0315	.169	.0083
%RSD	.60280	.27448	.29806	.46145	.75524	.32786	.79385
#1	.05218	.21114	.52295	.52620	4.1291	51.245	1.0395
#2	.05185	.21023	.52268	.52347	4.1843	51.541	1.0524
#3	.05248	.21130	.52013	.52831	4.1828	51.533	1.0550
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.383	.52120	1.0437	51.774	.52414	10.389	.52619
Stddev	.048	.00653	.0023	.123	.00072	.022	.00084
%RSD	.46455	1.2530	.22191	.23666	.13789	.20803	.15919
#1	10.370	.51422	1.0463	51.634	.52431	10.387	.52534
#2	10.437	.52222	1.0419	51.865	.52477	10.369	.52619
#3	10.343	.52716	1.0429	51.822	.52335	10.412	.52702
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCV Acquired: 11/17/2015 22:14:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2471	.41286	5.1670	1.0506	1.0424	1.0376	.52918
Stddev	.0020	.00438	.0145	.0021	.0037	.0055	.00288
%RSD	.15973	1.0603	.27987	.19938	.35856	.53435	.54418
#1	1.2484	.41092	5.1690	1.0526	1.0381	1.0316	.52996
#2	1.2481	.40978	5.1516	1.0484	1.0442	1.0424	.53159
#3	1.2448	.41787	5.1803	1.0507	1.0449	1.0390	.52599
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0487	1.0433	F .60383
Stddev	.0038	.0017	.06209
%RSD	.36425	.15977	10.283
#1	1.0526	1.0446	.65304
#2	1.0449	1.0414	.53407
#3	1.0486	1.0440	.62437
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16512.	103290.	3109.5
Stddev	15.	462.	9.7
%RSD	.08881	.44682	.31283
#1	16498.	102790.	3120.2
#2	16527.	103700.	3107.3
#3	16511.	103370.	3101.1

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCB Acquired: 11/17/2015 22:18:20 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.00058	-.00127	.00535	-.00021	.00005	.00368
Stddev	.00068	.00221	.00172	.00188	.00107	.00004	.02849
%RSD	456.64	384.52	135.54	35.157	506.64	83.550	774.52
#1	-.00007	.00093	.00016	.00382	.00047	.00002	-.02039
#2	-.00040	-.00179	-.00318	.00745	.00035	.00010	.03513
#3	.00090	.00258	-.00078	.00479	-.00145	.00004	-.00371
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	-.00025	.00007	.00025	.02062	-.06489	-.00350
Stddev	.00016	.00024	.00067	.00093	.01101	.06372	.00519
%RSD	235.87	95.235	959.60	367.61	53.396	98.196	148.22
#1	-.00008	-.00048	.00084	.00008	.02958	-.03865	-.00827
#2	.00005	-.00000	-.00028	.00126	.02394	-.13754	.00203
#3	.00024	-.00027	-.00036	-.00058	.00833	-.01848	-.00426
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.09788	-.00141	.00119	.02416	-.00006	-.00597	-.00008
Stddev	.05200	.00137	.00010	.02118	.00016	.00238	.00034
%RSD	53.121	97.267	8.2483	87.694	253.63	39.974	440.80
#1	-.04194	-.00290	.00113	.03991	-.00018	-.00848	-.00046
#2	-.14474	-.00018	.00130	.00007	-.00014	-.00374	.00020
#3	-.10697	-.00116	.00113	.03248	.00012	-.00567	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 20, 2015

Approved: November 20, 2015

Sample Name: CCB Acquired: 11/17/2015 22:18:20 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v554) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00073	.00155	.00377	.00008	.00010	.00697	.00133
Stddev	.00361	.00351	.00050	.00070	.00037	.00392	.00077
%RSD	493.80	226.75	13.322	871.63	356.67	56.242	58.365
#1	-.00490	.00327	.00415	.00060	-.00025	.00907	.00057
#2	.00120	.00386	.00397	.00035	.00007	.00245	.00130
#3	.00151	-.00249	.00320	-.00071	.00049	.00940	.00212
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00024	-.00006	F .24059
Stddev	.00048	.00013	.13957
%RSD	199.21	217.41	58.013
#1	.00017	.00008	.10432
#2	-.00012	-.00016	.23420
#3	-.00077	-.00010	.38325
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16649.	104770.	3070.4
Stddev	36.	377.	17.9
%RSD	.21355	.36017	.58197
#1	16683.	105160.	3068.8
#2	16651.	104410.	3089.0
#3	16612.	104740.	3053.3

Approved: November 20, 2015

Approved: November 20, 2015

2.2.2 Metals ICP-MS Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW13FF-111215	**Prep Method:**	3015	**Prep Date:**	11/16/2015 09:00
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	11/16/2015 13:31
Workgroup #:	WG547044	**Analyst:**	BKT	**Run Date:**	11/16/2015 16:47
Collect Date:	11/12/2015 08:40	**Dilution:**	5	**File ID:**	NI.111615.164701
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.149		0.0200	0.0100	0.00500

Certificate of Analysis

Sample #:	L15110793-10	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW14FF-111215	**Prep Method:**	3015	**Prep Date:**	11/16/2015 09:00
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	11/16/2015 13:31
Workgroup #:	WG547044	**Analyst:**	BKT	**Run Date:**	11/16/2015 16:50
Collect Date:	11/12/2015 09:50	**Dilution:**	5	**File ID:**	NI.111615.165012
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.495		0.0200	0.0100	0.00500

Certificate of Analysis

Sample #:	L15110793-12	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW11FF-111215	**Prep Method:**	3015	**Prep Date:**	11/16/2015 09:00
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	11/16/2015 13:31
Workgroup #:	WG547044	**Analyst:**	BKT	**Run Date:**	11/16/2015 16:53
Collect Date:	11/12/2015 11:00	**Dilution:**	5	**File ID:**	NI.111615.165323
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.108		0.0200	0.0100	0.00500

Certificate of Analysis

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15110793-14	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW06FF-111215	**Prep Method:**	3015	**Prep Date:**	11/16/2015 09:00
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	11/16/2015 13:31
Workgroup #:	WG547044	**Analyst:**	BKT	**Run Date:**	11/16/2015 17:53
Collect Date:	11/12/2015 13:25	**Dilution:**	2	**File ID:**	NI.111615.175347
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0196		0.00800	0.00400	0.00200

Certificate of Analysis

Sample #:	L15110793-16	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW12FF-111215	**Prep Method:**	3015	**Prep Date:**	11/16/2015 09:00
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	11/16/2015 13:31
Workgroup #:	WG547044	**Analyst:**	BKT	**Run Date:**	11/16/2015 16:59
Collect Date:	11/12/2015 14:35	**Dilution:**	5	**File ID:**	NI.111615.165946
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0581		0.0200	0.0100	0.00500

2.2.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer NexION 300X

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	100
Vi = Initial volume	40
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/L)	0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	200
Vi = Initial volume	0.5
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/kg)	40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	40
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	50

50 ug/kg = 0.050 mg/kg

Perkin Elmer NexION ICP/MS

STANDARDS KEY

QC Std 1 - ICV
QC Std 2 - ICB
QC Std 3 - LLICV
QC Std 4 - ICSA
QC Std 5 - ICSAB
QC Std 6 - CCV
QC Std 7 - CCB
QC Std 8 - LLCCV

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.00005	0.05	0.1
Sb	10	0	0.00005	0.05	0.1
As	10	0	0.00005	0.05	0.1
Ba	10	0	0.00005	0.05	0.1
Be	10	0	0.00005	0.05	0.1
Ca	1000	0	0.005	5	10
Cd	10	0	0.0005	0.05	0.1
Cr	10	0	0.0005	0.05	0.1
Co	10	0	0.0005	0.05	0.1
Cu	10	0	0.0005	0.05	0.1
Fe	1000	0	0.005	5	10
Pb	10	0	0.00005	0.05	0.1
Mg	1000	0	0.005	5	10
Mn	10	0	0.00005	0.05	0.1
Ni	10	0	0.00005	0.05	0.1
K	1000	0	0.005	5	10
Se	10	0	0.00005	0.05	0.1
Ag	10	0	0.00005	0.05	0.1
Na	1000	0	0.005	5	10
Tl	10	0	0.00005	0.05	0.1
V	10	0	0.00005	0.05	0.1
U	1000	0	0.00005	0.05	0.1
Zn	10	0	0.00005	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG546949
Analyst: VC
Spike Analyst: VC
Run Date: 11/16/2015 09:00
Method: 3015
Balance: BAL016
Instrument: MW-3
Instrument Start: 11/16/2015 09:03

SOP: ME407 Revison 18
Spike Solution: STD71855
Spike Witness: ERP
HNO3 Lot #: COA18442
40 & 50 ML. DIGESTION TU COA18558
MS Filters- fisher-Lot#r RGT32947

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG546949-02	BLANK	1	20 mL	50 mL	180.684 g	180.679 g		
2	WG546939-01	FBLK1	18	20 mL	50 mL	181.726 g	181.707 g		
3	WG546949-03	LCS	1	20 mL	50 mL	184.423 g	184.412 g	.25 mL	
4	L15110789-02	SAMP	18	20 mL	50 mL	183.017 g	183.008 g		11/18/15
5	L15110793-08	SAMP	1	20 mL	50 mL	181.206 g	181.198 g		11/24/15
6	L15110793-10	SAMP	1	20 mL	50 mL	183.796 g	183.787 g		11/24/15
7	L15110793-12	SAMP	1	20 mL	50 mL	180.81 g	180.802 g		11/24/15
8	L15110793-14	SAMP	1	20 mL	50 mL	182.244 g	182.235 g		11/24/15
9	L15110793-16	SAMP	1	20 mL	50 mL	180.328 g	180.322 g		11/24/15
10	L15110796-02	SAMP	1	20 mL	50 mL	183.519 g	183.523 g		11/27/15
11	WG546949-01	REF	1	20 mL	50 mL	181.622 g	181.618 g		
12	L15110796-07	RS02	1	20 mL	50 mL	181.622 g	181.618 g		11/27/15
13	WG546949-04	MS	1	20 mL	50 mL	182.037 g	182.027 g	.25 mL	
14	L15110796-08	MS02	1	20 mL	50 mL	182.037 g	182.027 g	.25 mL	11/27/15
15	WG546949-05	MSD	1	20 mL	50 mL	181.927 g	181.908 g	.25 mL	
16	L15110796-09	SD02	1	20 mL	50 mL	181.927 g	181.908 g	.25 mL	11/27/15
17	L15110796-14	SAMP	1	20 mL	50 mL	184.083 g	184.054 g		11/27/15
18	L15110796-17	SAMP	1	20 mL	50 mL	182.589 g	182.584 g		11/27/15
19	L15110796-20	SAMP	1	20 mL	50 mL	183.007 g	182.99 g		11/27/15
20	L15110796-23	SAMP	1	20 mL	50 mL	182.667 g	182.659 g		11/27/15

Analyst: Vicki Collins

Reviewer: Erin Potter

MW_DIG - Modified 09/30/2009
PDF ID: 4500329
Report generated: 11/16/2015 09:53

TCLP Non-Volatile

Analyst(s): CPD
Date: 11/15/15
Filter Lot #: 4000094/9486030/9676955
Microbac SOP: Tclp 01 Rev #: 12

Analyst / Date		Analyst / Date	
CPD 11/15/15		BG 11/16/15	
Time On	Temp On °C	Time Off	Temp Off °C
1304	21.8	0710	21.8

Agitator Speed 30 ± 2 rpm ☑ BG 11-16-15

Jug #	Sample #	Tests	Method	Fluid #	Matrix *	% Solid	Pretest pH Initial	Pretest pH Final	Int. Wt. (g)	Fluid Vol. (mL)	Final extract pH
D	11-0789-01	ME, pH-L, ~~300~~ CPD 11-15-15	1311	FI-155	S	100	10.69	1.88	100.23	2005	6.73
↓	-02	↓ ↓	1312	~~FI-369~~	SF2-321	↓	NA	NA	100.28	2007	11.27
↓	11-0792-01	300	↓	SPFI-57	↓	↓	↓	↓	100.14	2003	7.50
↓	-02	↓	↓	↓	↓	↓	↓	↓	100.21	2004	5.90
↓	11-0795-01	6850	↓	↓	↓	↓	↓	↓	100.21	2004	6.90
G-15	11-0827-01	ME, SV	1311	FI-155	↓	↓	10.96	~~1.88~~ 1.91	100.36	~~2007~~ 2007	10.14
G-7	-02	↓ ↓	↓	↓	↓	↓	11.14	4.55	100.24	2005	7.76
G-32A	-03	↓ ↓	↓	↓	↓	↓	10.47	1.66	100.08	2002	7.50
G-4	-04	↓ ↓	↓	↓	↓	↓	10.10	1.64	100.02	~~2018~~ 2004	6.38
G-9	-05	↓ ↓	↓	↓	↓	↓	8.99	1.62	100.05	2001	6.42
G-2	-06	↓ ↓	↓	↓	↓	↓	9.53	1.82	100.36	2007	6.44
N/A	FBIK1	me, SV	1311	FI-55	W	NA	NA	NA	100	100	4.88
↓	~~FBIK 2~~	~~me~~	↓	~~FI-369~~	↓	↓	↓	↓	↓	↓	~~2.84~~ BG 11-16-15
↓	SPlp East	300, 6850	1312	SFI-57	↓	↓	↓	↓	↓	↓	4.16
↓	~~SFI-57~~	me	↓	SFI-57	↓	↓	↓	↓	↓	↓	~~4.16~~ 4.97
BG 11-16-15	SF2-321										

BG 11/16/15

*Matrix Code: (S = solid, sand, soil or sludge) (P = paint) (O = organic) (W = water or aqueous waste)
D = Disposable plastic jug
TCLP Pretest weight will be 5.0 g (± 0.1) unless otherwise noted.
Temperature shall be maintained at 23° ± 2 for 18 ± 2 hours unless otherwise noted.

Comments:

Peer Review By: Brenda Gregory

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 111615A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD73457 ICV Std: STD73456 Post Spike: STD69341
ICSA: STD73335 ICSAB: STD73336 Int. Std: RGT31676
CCV: STD73337 LLCCV: STD73228 Tuning Sol : STD73458
Stannous : Hydroxylamine :

Workgroups: 547041,547044,547127

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.111615.131905	Blank	Blank		1		11/16/15 13:19
2	NI.111615.132217	WG547094-01	Calibration Point		1		11/16/15 13:22
3	NI.111615.132528	WG547094-02	Calibration Point		1		11/16/15 13:25
4	NI.111615.132839	WG547094-03	Calibration Point		1		11/16/15 13:28
5	NI.111615.133150	WG547094-04	Calibration Point		1		11/16/15 13:31
6	NI.111615.133502	WG547094-05	Initial Calibration Verification		1		11/16/15 13:35
7	NI.111615.133815	WG547094-06	Initial Calib Blank		1		11/16/15 13:38
8	NI.111615.134127	WG547094-07	Low Level Initial Calibration V		1		11/16/15 13:41
9	NI.111615.134439	WG547094-08	Interference Check		1		11/16/15 13:44
10	NI.111615.134750	WG547094-09	Interference Check		1		11/16/15 13:47
11	NI.111615.135103	WG547094-10	CCV		1		11/16/15 13:51
12	NI.111615.135414	WG547094-11	CCB		1		11/16/15 13:54
13	NI.111615.135727	WG546715-02	Method/Prep Blank	.25/100	1		11/16/15 13:57
14	NI.111615.140038	WG546715-03	Laboratory Control S	.25/100	1		11/16/15 14:00
15	NI.111615.140349	WG546715-01	Reference Sample		1	L15110570-02	11/16/15 14:03
16	NI.111615.140700	WG546715-04	Matrix Spike	.253/100	1	L15110570-02	11/16/15 14:07
17	NI.111615.141011	WG546715-05	Matrix Spike Duplica	.25/100	1	L15110570-02	11/16/15 14:10
18	NI.111615.141322	L15110570-01	TCF-WS01-111015	.259/100	1		11/16/15 14:13
19	NI.111615.141633	L15110560-01	S5K0679-01	.252/100	1		11/16/15 14:16
20	NI.111615.141944	WG547041-01	Post Digestion Spike		1	L15110560-01	11/16/15 14:19
21	NI.111615.142255	WG547041-02	Serial Dilution		5	L15110560-01	11/16/15 14:22
22	NI.111615.142605	WG547041-02	Serial Dilution		25	L15110560-01	11/16/15 14:26
23	NI.111615.142919	WG547094-12	CCV		1		11/16/15 14:29
24	NI.111615.143229	WG547094-13	CCB		1		11/16/15 14:32
25	NI.111615.150655	WG547094-14	Interference Check		1		11/16/15 15:06
26	NI.111615.151222	WG547094-15	Interference Check		1		11/16/15 15:12
27	NI.111615.152853	WG547094-16	CCV		1		11/16/15 15:28
28	NI.111615.153225	WG547094-17	CCB		1		11/16/15 15:32
29	NI.111615.160846	WG546949-02	Method/Prep Blank	20/50	1		11/16/15 16:08
30	NI.111615.161157	WG546949-03	Laboratory Control S	20/50	1		11/16/15 16:11
31	NI.111615.161508	WG546949-01	Reference Sample		1	L15110796-07	11/16/15 16:15
32	NI.111615.161819	WG546949-04	Matrix Spike	20/50	1	L15110796-07	11/16/15 16:18
33	NI.111615.162130	WG546949-05	Matrix Spike Duplica	20/50	1	L15110796-07	11/16/15 16:21
34	NI.111615.162441	L15110789-02	60500-SSP0013-SPLP010	20/50	1		11/16/15 16:24

Page: 1 Approved: November 17, 2015

Marcu Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 111615A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD73457 ICV Std: STD73456 Post Spike: STD69341
ICSA: STD73335 ICSAB: STD73336 Int. Std: RGT31676
CCV: STD73337 LLCCV: STD73228 Tuning Sol : STD73458
Stannous : Hydroxylamine :

Workgroups: 547041,547044,547127

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.111615.162752	L15110789-02	60500-SSP0013-SPLP010	20/50	10		11/16/15 16:27
36	NI.111615.163103	L15110796-02	SW1A-315-14	20/50	1		11/16/15 16:31
37	NI.111615.163414	WG547044-01	Post Digestion Spike		1	L15110796-02	11/16/15 16:34
38	NI.111615.163725	WG547044-02	Serial Dilution		5	L15110796-02	11/16/15 16:37
39	NI.111615.164038	WG547094-18	CCV		1		11/16/15 16:40
40	NI.111615.164349	WG547094-19	CCB		1		11/16/15 16:43
41	NI.111615.164701	L15110793-08	50WW13FF-111215	20/50	5		11/16/15 16:47
42	NI.111615.165012	L15110793-10	50WW14FF-111215	20/50	5		11/16/15 16:50
43	NI.111615.165323	L15110793-12	50WW11FF-111215	20/50	5		11/16/15 16:53
44	NI.111615.165635	L15110793-14	50WW06FF-111215	20/50	5		11/16/15 16:56
45	NI.111615.165946	L15110793-16	50WW12FF-111215	20/50	5		11/16/15 16:59
46	NI.111615.170257	L15110796-14	SW3A-315-14	20/50	1		11/16/15 17:02
47	NI.111615.170608	L15110796-17	SW3B-315-14	20/50	1		11/16/15 17:06
48	NI.111615.170918	L15110796-20	SW4A-315-14	20/50	1		11/16/15 17:09
49	NI.111615.171229	L15110796-23	SW5A-315-14	20/50	1		11/16/15 17:12
50	NI.111615.171554	WG546939-01	Fluid Blank 1		1		11/16/15 17:15
51	NI.111615.171907	WG547094-20	CCV		1		11/16/15 17:19
52	NI.111615.172218	WG547094-21	CCB		1		11/16/15 17:22
53	NI.111615.175347	L15110793-14	50WW06FF-111215	20/50	2		11/16/15 17:53
54	NI.111615.175700	WG547094-22	CCV		1		11/16/15 17:57
55	NI.111615.180011	WG547094-23	CCB		1		11/16/15 18:00
56	NI.111615.180323	WG547094-24	Low Level Continuing Calibra		1		11/16/15 18:03
57	NI.111615.184644	WG546725-02	Method/Prep Blank	20/50	1		11/16/15 18:46
58	NI.111615.184955	WG546725-03	Laboratory Control S	20/50	1		11/16/15 18:49
59	NI.111615.185306	L15110673-06	NP1015-MWL17-Z		5	WG546725-01	11/16/15 18:53
60	NI.111615.185617	WG546725-04	Duplicate	20/50	5	L15110673-06	11/16/15 18:56
61	NI.111615.185928	WG546725-05	Matrix Spike	20/50	5	L15110673-06	11/16/15 18:59
62	NI.111615.190239	WG546725-06	Matrix Spike Duplica	20/50	5	L15110673-06	11/16/15 19:02
63	NI.111615.190550	L15110688-01	J5K0171-01	20/50	1		11/16/15 19:05
64	NI.111615.190902	WG547127-01	Post Digestion Spike		1	L15110688-01	11/16/15 19:09
65	NI.111615.191213	WG547127-02	Serial Dilution		5	L15110688-01	11/16/15 19:12
66	NI.111615.191524	WG547127-02	Serial Dilution		25	L15110688-01	11/16/15 19:15
67	NI.111615.191837	WG547094-25	CCV		1		11/16/15 19:18
68	NI.111615.192148	WG547094-26	CCB		1		11/16/15 19:21

Page: 2 Approved: November 17, 2015

Maren Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 111615A.REP

Analyst1: BKT Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD73457 ICV Std: STD73456 Post Spike: STD69341

ICSA: STD73335 ICSAB: STD73336 Int. Std: RGT31676

CCV: STD73337 LLCCV: STD73228 Tuning Sol : STD73458

Stannous : Hydroxylamine :

Workgroups: 547041,547044,547127

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.111615.192500	L15110688-02	J5K0171-02	20/50	1		11/16/15 19:25
70	NI.111615.192811	L15110688-03	J5K0171-03	20/50	1		11/16/15 19:28
71	NI.111615.193122	L15110688-04	J5K0171-04	20/50	1		11/16/15 19:31
72	NI.111615.193433	L15110688-05	J5K0171-05	20/50	1		11/16/15 19:34
73	NI.111615.193744	L15110707-01	T5K0485-01	20/50	1		11/16/15 19:37
74	NI.111615.194055	L15110713-01	T5K0488-03	20/50	1		11/16/15 19:40
75	NI.111615.194406	L15110739-01	LM2	20/50	1		11/16/15 19:44
76	NI.111615.194717	L15110739-01	LM2	20/50	50		11/16/15 19:47
77	NI.111615.195028	L15110666-01	GMW607	20/50	5		11/16/15 19:50
78	NI.111615.195339	L15110666-02	GMW803	20/50	5		11/16/15 19:53
79	NI.111615.195651	WG547094-27	CCV		1		11/16/15 19:56
80	NI.111615.200002	WG547094-28	CCB		1		11/16/15 20:00
81	NI.111615.200314	L15110666-03	GMW602	20/50	5		11/16/15 20:03
82	NI.111615.200625	L15110666-04	GMW604	20/50	5		11/16/15 20:06
83	NI.111615.200936	L15110666-05	GMW600	20/50	5		11/16/15 20:09
84	NI.111615.201247	L15110666-06	GMW512	20/50	5		11/16/15 20:12
85	NI.111615.201558	L15110666-07	GMW803-2	20/50	5		11/16/15 20:15
86	NI.111615.201909	L15110673-02	NP1015-MWL15-Z	20/50	5		11/16/15 20:19
87	NI.111615.202220	L15110673-04	NP1015-MWL16-Z	20/50	5		11/16/15 20:22
88	NI.111615.202531	L15110673-08	EB-111015-Z	20/50	5		11/16/15 20:25
89	NI.111615.202844	WG547094-29	CCV		1		11/16/15 20:28
90	NI.111615.203155	WG547094-30	CCB		1		11/16/15 20:31

Page: 3 Approved: November 17, 2015

Maren Berry

Microbac Laboratories Inc.

Data Checklist

Date: 16-NOV-2015
Analyst: BKT
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 547094
Runlog ID: 71704
Analytical Workgroups: 547041,547044,547127

Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	673
Level 4	570,666,789,793
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BKT
Secondary Reviewer	MMB
Comments	

Primary Reviewer:
17-NOV-2015

Secondary Reviewer:
17-NOV-2015

CHECKLIST1 - Modified 03/05/2008
Generated: NOV-17-2015 13:42:05

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG547044

Login Number: L15110793

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW13FF-111215	08	11/12/15					11/16/2015	4	180		11/16/15	4.3	180	
50WW14FF-111215	10	11/12/15					11/16/2015	4	180		11/16/15	4.3	180	
50WW11FF-111215	12	11/12/15					11/16/2015	3.9	180		11/16/15	4.2	180	
50WW06FF-111215	14	11/12/15					11/16/2015	3.8	180		11/16/15	4.2	180	
50WW12FF-111215	16	11/12/15					11/16/2015	3.8	180		11/16/15	4.1	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4501954
Report generated 11/16/2015 18:10

METHOD BLANK SUMMARY

Login Number: L15110793
Blank File ID: NI.111615.160846
Prep Date: 11/16/15 09:00
Analyzed Date: 11/16/15 16:08
Analyst: BKT

Work Group: WG547044
Blank Sample ID: WG546949-02
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG546949-03	NI.111615.161157	11/16/15 16:11	01
50WW13FF-111215	L15110793-08	NI.111615.164701	11/16/15 16:47	DL01
50WW14FF-111215	L15110793-10	NI.111615.165012	11/16/15 16:50	DL01
50WW11FF-111215	L15110793-12	NI.111615.165323	11/16/15 16:53	DL01
50WW12FF-111215	L15110793-16	NI.111615.165946	11/16/15 16:59	DL01
50WW06FF-111215	L15110793-14	NI.111615.175347	11/16/15 17:53	DL02

Report Name: BLANK_SUMMARY
PDF File ID: 4501955
Report generated 11/16/2015 18:10

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15110793 Prep Date: 11/16/15 09:00 Sample ID: WG546949-02
Instrument ID: ICP-MS2 Run Date: 11/16/15 16:08 Prep Method: 3015
File ID: NI.111615.160846 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG547044 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-16-NOV-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Manganese, Dissolved	0.00100	0.00400	0.00100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4501956
16-NOV-2015 18:10

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15110793 Run Date: 11/16/2015 Sample ID: WG546949-03
Instrument ID: ICP-MS2 Run Time: 16:11 Prep Method: 3015
File ID: NI.111615.161157 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG547044 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD71855 Cal ID: ICP-MS-16-NOV-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Manganese, Dissolved	0.125	0.121	97.1	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4501957
Report generated: 11/16/2015 18:10

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L15110793 Cal ID: ICP-MS2- Worknum: WG547044
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG546949-01 File ID: NI.111615.161508 Dil: 1 Matrix: WATER
Sample ID: WG546949-04 MS File ID: NI.111615.161819 Dil: 1 Units: mg/L
Sample ID: WG546949-05 MSD File ID: NI.111615.162130 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Manganese	0.00874	0.125	0.132	98.2	0.125	0.133	99.1	0.813	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4501958
Report generated 11/16/2015 18:10

Microbac Laboratories Inc.
Serial Dilution Report

Login: L15110793 **Worknum:** WG547044
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG547044-02 **File ID:** NI.111615.163725 **Dil:** 5 **Units:** ug/L
Sample: L15110796-02 **File ID:** NI.111615.163103 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Manganese	3.46	X	4.25	F	23.10	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4501952
11/16/2015 18:10

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L15110793 **Worknum:** WG547044
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG547044-01 **File ID:** NI.111615.163414 **Dil:** 1 **Units:** ug/L
Sample ID: L15110796-02 **File ID:** NI.111615.163103 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MANGANESE	51.3		3.46		50	95.8	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4501953
Report generated: 11/16/2015 18:10

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L15110793	Workgroup (AAB#):	WG547044
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG547094	Initial Calibration Date:	16-NOV-2015 13:31

	WG547094-01		WG547094-02		WG547094-03		WG547094-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
MANGANESE	0	807	.4	1130	50	166000	100	327000	.999719	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4501961
Report generated: 16-NOV-2015 18:10

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L15110793
Instrument ID: ICP-MS2
File ID: NI.111615.133815
Workgroup (AAB#): WG547044
Matrix: WATER

Run Date: 11/16/2015
Run Time: 13:38
Analyst: BKT
Cal ID: ICP-MS2 - 16-NOV-15

Sample ID: WG547094-06
Method: 6020A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
MANGANESE	.4	1.6	.4	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4501963
Report generated 11/16/2015 18:10

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15110793
Run Date: 11/16/2015
Sample ID: WG547094-11
Instrument ID: ICP-MS2
Run Time: 13:54
Method: 6020A
File ID: NI.111615.135414
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG547044
Cal ID: ICP-MS - 16-NOV-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4501966
Report generated 11/17/2015 11:45

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15110793
Run Date: 11/16/2015
Sample ID: WG547094-13
Instrument ID: ICP-MS2
Run Time: 14:32
Method: 6020A
File ID: NI.111615.143229
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG547044
Cal ID: ICP-MS - 16-NOV-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4501966
Report generated 11/17/2015 11:45

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15110793
Run Date: 11/16/2015
Sample ID: WG547094-17
Instrument ID: ICP-MS2
Run Time: 15:32
Method: 6020A
File ID: NI.111615.153225
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG547044
Cal ID: ICP-MS - 16-NOV-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4501966
Report generated 11/17/2015 11:45

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15110793
Run Date: 11/16/2015
Sample ID: WG547094-19
Instrument ID: ICP-MS2
Run Time: 16:43
Method: 6020A
File ID: NI.111615.164349
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG547044
Cal ID: ICP-MS - 16-NOV-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4501966
Report generated 11/17/2015 11:45

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15110793
Run Date: 11/16/2015
Sample ID: WG547094-21
Instrument ID: ICP-MS2
Run Time: 17:22
Method: 6020A
File ID: NI.111615.172218
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG547044
Cal ID: ICP-MS - 16-NOV-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4501966
Report generated 11/17/2015 11:45

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15110793
Run Date: 11/16/2015
Sample ID: WG547094-23
Instrument ID: ICP-MS2
Run Time: 18:00
Method: 6020A
File ID: NI.111615.180011
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG547044
Cal ID: ICP-MS - 16-NOV-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4501966
Report generated 11/17/2015 11:45

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L15110793
Run Date: 11/16/2015
Sample ID: WG547094-05
Instrument ID: ICP-MS2
Run Time: 13:35
Method: 6020A
File ID: NI.111615.133502
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG547044
Cal ID: ICP-MS - 16-NOV-15
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Manganese		50	51.5	103	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4501962
Report generated 11/16/2015 18:10

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110793
Run Date: 11/16/2015
Sample ID: WG547094-10
Instrument ID: ICP-MS2
Run Time: 13:51
Method: 6020A
File ID: NI.111615.135103
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG547044
Cal ID: ICP-MS - 16-NOV-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0488	mg/L	97.6	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4501965
Report generated 11/17/2015 11:45

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110793
Instrument ID: ICP-MS2
File ID: NI.111615.142919
Workgroup (AAB#): WG547044
Matrix: WATER

Run Date: 11/16/2015
Run Time: 14:29
Analyst: BKT
Cal ID: ICP-MS - 16-NOV-15

Sample ID: WG547094-12
Method: 6020A
QC Key: DOD4

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0472	mg/L	94.4	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4501965
Report generated 11/17/2015 11:45

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110793
Run Date: 11/16/2015
Sample ID: WG547094-16
Instrument ID: ICP-MS2
Run Time: 15:28
Method: 6020A
File ID: NI.111615.152853
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG547044
Cal ID: ICP-MS - 16-NOV-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0496	mg/L	99.2	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4501965
Report generated 11/17/2015 11:45

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110793
Run Date: 11/16/2015
Sample ID: WG547094-18
Instrument ID: ICP-MS2
Run Time: 16:40
Method: 6020A
File ID: NI.111615.164038
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG547044
Cal ID: ICP-MS - 16-NOV-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0480	mg/L	96.0	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4501965
Report generated 11/17/2015 11:45

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110793
Run Date: 11/16/2015
Sample ID: WG547094-20
Instrument ID: ICP-MS2
Run Time: 17:19
Method: 6020A
File ID: NI.111615.171907
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG547044
Cal ID: ICP-MS - 16-NOV-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0473	mg/L	94.5	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4501965
Report generated 11/17/2015 11:45

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110793
Run Date: 11/16/2015
Sample ID: WG547094-22
Instrument ID: ICP-MS2
Run Time: 17:57
Method: 6020A
File ID: NI.111615.175700
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG547044
Cal ID: ICP-MS - 16-NOV-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0489	mg/L	97.8	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4501965
Report generated 11/17/2015 11:45

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15110793
Run Date: 11/16/2015
Sample ID: WG547094-07
Instrument ID: ICP-MS2
Run Time: 13:41
Method: 6020A
File ID: NI.111615.134127
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG547044
Cal ID: ICP-MS - 16-NOV-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.500	0.411	ug/L	82.2	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4501967
Report generated 11/17/2015 11:45

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15110793
Run Date: 11/16/2015
Sample ID: WG547094-24
Instrument ID: ICP-MS2
Run Time: 18:03
Method: 6020A
File ID: NI.111615.180323
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG547044
Cal ID: ICP-MS - 16-NOV-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.500	0.361	ug/L	72.3	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4501967
Report generated 11/17/2015 11:45

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L15110793
Instrument ID: ICP-MS2
Sol. A : WG547094-08 **File ID:** NI.111615.134439
Sol. AB : WG547094-09 **File ID:** NI.111615.134750

Workgroup (AAB#): WG547044
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Manganese	NS	-0.00870	NS	100	97.8	97.8	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4501964
Report generated 11/16/2015 18:10

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L15110793
Instrument ID: ICP-MS2
Sol. A : WG547094-14 **File ID:** NI.111615.150655
Sol. AB : WG547094-15 **File ID:** NI.111615.151222

Workgroup (AAB#): WG547044
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Manganese	NS	-0.0410	NS	100	93.8	93.8	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4501964
Report generated 11/16/2015 18:10

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L15110793 **Analytical Method:** 6020
Analytical Workgroup: WG547044 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 16-NOV-2015 13:22

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L15110793-08	SAMP	16-NOV-2015 16:47	110.362	107.901	113.1
L15110793-10	SAMP	16-NOV-2015 16:50	112.318	109.767	114.653
L15110793-12	SAMP	16-NOV-2015 16:53	111.723	111.29	115.697
L15110793-14	SAMP	16-NOV-2015 17:53	107.568	105.877	110.122
L15110793-16	SAMP	16-NOV-2015 16:59	106.673	104.553	110.228
L15110796-02	SAMP	16-NOV-2015 16:31	112.639	108.808	113.836
WG546949-02	BLANK	16-NOV-2015 16:08	113.076	111.512	114.902
WG546949-03	LCS	16-NOV-2015 16:11	114.287	111.341	115.633
WG547044-01	PSPK	16-NOV-2015 16:34	118.948	113.529	119.865
WG547044-02	SERIAL	16-NOV-2015 16:37	110.833	106.439	113.098
WG547094-05	ICV	16-NOV-2015 13:35	102.37	104.613	103.811
WG547094-06	ICB	16-NOV-2015 13:38	102.654	103.766	103.299
WG547094-07	LLICV	16-NOV-2015 13:41	102.256	103.13	103.849
WG547094-08	ICS	16-NOV-2015 13:44	103.55	105.796	106.255
WG547094-09	ICS	16-NOV-2015 13:47	104.567	105.961	106.33
WG547094-10	CCV	16-NOV-2015 13:51	109.333	110.089	112.103
WG547094-11	CCB	16-NOV-2015 13:54	106.496	105.375	108.716
WG547094-12	CCV	16-NOV-2015 14:29	110.228	109.43	113.588
WG547094-13	CCB	16-NOV-2015 14:32	106.498	105.771	109.326
WG547094-14	ICS	16-NOV-2015 15:06	108.596	111.022	112.589
WG547094-15	ICS	16-NOV-2015 15:12	109.586	109.965	112.81
WG547094-16	CCV	16-NOV-2015 15:28	109.156	108.14	111.263
WG547094-17	CCB	16-NOV-2015 15:32	108.56	106.697	110.678
WG547094-18	CCV	16-NOV-2015 16:40	112.55	109.197	115.174
WG547094-19	CCB	16-NOV-2015 16:43	109.998	106.306	111.965
WG547094-20	CCV	16-NOV-2015 17:19	109.538	106.277	112.672
WG547094-21	CCB	16-NOV-2015 17:22	108.286	103.379	110.047
WG547094-22	CCV	16-NOV-2015 17:57	110.314	107.951	113.63
WG547094-23	CCB	16-NOV-2015 18:00	107.258	104.009	109.554
WG547094-24	LLCCV	16-NOV-2015 18:03	109.224	105.306	109.955

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4501960
Report generated: 11/17/2015 11:44

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L15110793 **Analytical Method:** 6020
Analytical Workgroup: WG547044 **Matrix:** 18
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 16-NOV-2015 13:22

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
WG546939-01	FBLK1	16-NOV-2015 17:15	111.064	107.524	113.053

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4501960
Report generated: 11/17/2015 11:44

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L15110793 **Date:** 10/12/2015
Insturment ID: ICP-MS2 **Method:** 6020A

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Uranium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4501959
Report generated: 11/16/2015 18:10

2.2.2.3 Raw Data

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Monday, November 16, 2015 12:53:04

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1352	2025	0.702	
Mg	23.985	23.975	4501	2019	0.704	
Co	58.933	58.925	11690	2021	0.700	
In	114.904	114.925	22863	2028	0.698	
U	238.050	238.025	47450	2042	0.712	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	5.399
5.575	2.673
5.625	6.459
5.675	4.271
5.725	1.510
5.775	3.948
5.825	5.169
5.875	4.690
5.925	4.307
5.975	2.080
6.025	3.976
6.075	5.445
6.125	11.226
6.175	24.845
6.225	55.902
6.275	79.057
6.325	69.722
6.375	30.901
6.425	9.251
6.475	2.682
6.525	1.452
6.575	4.415
6.625	2.470
6.675	2.763
6.725	0.744
6.775	3.465
6.825	2.283

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6.875	3.190
6.925	2.015
6.975	2.639
7.025	0.883
7.075	3.567
7.125	0.890
7.175	6.015
7.225	82.548
7.275	87.434
7.325	94.786
7.375	113.537
7.425	108.327
7.475	81.441
7.525	22.822
7.575	108.327
7.625	91.287
7.675	70.711
7.725	72.436
7.775	108.327
7.825	91.287
7.875	72.436
7.925	104.583
7.975	108.653
8.025	69.722
8.075	46.481
8.125	79.057
8.175	55.902
8.225	104.583
8.275	69.722
8.325	81.441
8.375	63.888
8.425	149.071
8.475	74.689
22.525	
22.575	67.711
22.625	50.000
22.675	46.351
22.725	55.902
22.775	68.180
22.825	48.247
22.875	24.786
22.925	40.000
22.975	62.630
23.025	53.351
23.075	40.161
23.125	65.617
23.175	50.990

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23.225	72.467
23.275	36.991
23.325	91.856
23.375	43.301
23.425	57.601
23.475	31.651
23.525	9.332
23.575	4.865
23.625	1.484
23.675	2.099
23.725	2.273
23.775	2.069
23.825	2.337
23.875	2.154
23.925	2.557
23.975	2.397
24.025	2.762
24.075	2.539
24.125	3.559
24.175	2.493
24.225	1.894
24.275	4.651
24.325	36.780
24.375	82.402
24.425	62.361
24.475	13.322
24.525	10.328
24.575	5.981
24.625	2.848
24.675	3.882
24.725	2.034
24.775	2.142
24.825	3.297
24.875	1.944
24.925	2.910
24.975	2.539
25.025	2.601
25.075	3.305
25.125	3.956
25.175	1.189
25.225	2.488
25.275	13.243
25.325	39.460
25.375	50.000
25.425	43.301
25.475	19.930
57.525	6.814

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57.575	8.020
57.625	4.002
57.675	3.156
57.725	3.239
57.775	1.784
57.825	1.445
57.875	3.961
57.925	2.420
57.975	2.259
58.025	2.195
58.075	3.312
58.125	2.258
58.175	2.047
58.225	3.630
58.275	12.165
58.325	42.127
58.375	50.619
58.425	35.109
58.475	11.749
58.525	3.791
58.575	5.858
58.625	2.493
58.675	1.777
58.725	3.296
58.775	2.860
58.825	1.688
58.875	2.099
58.925	3.105
58.975	2.284
59.025	3.850
59.075	2.581
59.125	2.081
59.175	1.641
59.225	9.002
59.275	17.973
59.325	60.990
59.375	51.349
59.425	22.480
59.475	20.847
59.525	8.085
59.575	7.218
59.625	6.045
59.675	4.499
59.725	6.521
59.775	3.037
59.825	4.096
59.875	4.018

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59.925	3.789
59.975	1.941
60.025	2.856
60.075	1.738
60.125	3.892
60.175	3.490
60.225	14.730
60.275	31.419
60.325	61.237
60.375	44.605
60.425	93.541
60.475	34.233
113.525	6.712
113.575	9.137
113.625	4.147
113.675	1.204
113.725	2.090
113.775	0.916
113.825	1.853
113.875	3.033
113.925	4.977
113.975	3.221
114.025	3.078
114.075	2.651
114.125	3.343
114.175	3.811
114.225	6.957
114.275	6.509
114.325	23.234
114.375	31.688
114.425	15.352
114.475	10.493
114.525	2.858
114.575	3.543
114.625	2.792
114.675	1.632
114.725	2.334
114.775	1.789
114.825	1.861
114.875	1.802
114.925	2.575
114.975	2.729
115.025	2.098
115.075	1.843
115.125	2.205
115.175	1.602
115.225	0.743

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115.275	7.432
115.325	24.657
115.375	67.711
115.425	31.672
115.475	28.004
115.525	22.533
115.575	13.349
115.625	4.836
115.675	6.243
115.725	6.823
115.775	1.063
115.825	0.976
115.875	4.897
115.925	4.552
115.975	4.826
116.025	5.450
116.075	4.919
116.125	5.443
116.175	5.726
116.225	7.442
116.275	8.870
116.325	64.359
116.375	84.711
116.425	62.361
116.475	34.468
236.525	
236.575	31.923
236.625	41.749
236.675	7.857
236.725	26.716
236.775	44.947
236.825	44.115
236.875	34.993
236.925	67.475
236.975	62.849
237.025	56.904
237.075	45.432
237.125	21.626
237.175	37.908
237.225	33.185
237.275	31.623
237.325	20.306
237.375	31.427
237.425	26.058
237.475	41.700
237.525	9.848
237.575	10.350

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237.625	4.711
237.675	2.141
237.725	4.320
237.775	2.248
237.825	1.612
237.875	1.127
237.925	2.296
237.975	2.585
238.025	2.589
238.075	2.042
238.125	3.189
238.175	1.806
238.225	3.537
238.275	0.893
238.325	3.052
238.375	4.413
238.425	3.574
238.475	4.591
238.525	24.697
238.575	37.908
238.625	30.822
238.675	53.978
238.725	53.429
238.775	33.185
238.825	17.635
238.875	25.476
238.925	52.047
238.975	39.510
239.025	41.458
239.075	33.303
239.125	42.406
239.175	15.601
239.225	51.073
239.275	53.765
239.325	10.726
239.375	18.130
239.425	42.906
239.475	7.857

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SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 11/16/2015 1:01:08 PM
End Time: 11/16/2015 1:03:15 PM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 3025.44
        Obtained Intensity (Mg 23.985): 70018.49
        Obtained Intensity (In 114.904): 44498.52
        Obtained Intensity (U 238.05): 45495.21
        Obtained Intensity (Bkgd 220): 2.33
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.019 (=3168.66 / 167817.48)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.003 (=471.34 / 167817.48)
```

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SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 11/16/2015 1:01:08 PM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 3025.44
                Obtained Intensity (Mg 23.985): 70018.49
                Obtained Intensity (In 114.904): 44498.52
                Obtained Intensity (U 238.05): 45495.21
                Obtained Intensity (Bkgd 220): 2.33
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.019 (=3168.66 / 167817.48)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.003 (=471.34 / 167817.48)
[Passed]  Optimum value(s): N/A

End Time: 11/16/2015 1:03:15 PM
```


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Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Monday, November 16, 2015 13:19:05
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	29271.6	4.3				ug/L		Standard
	Be	9	6.7	86.6				ug/L		Standard
	Al	27	318.3	12.7				ug/L		Standard
	Sc	45	15221.0	0.9				ug/L		Standard
	Ti	47	262.0	6.3				ug/L		Standard
	V	51	873.9	4.5				ug/L		Standard
	Cr	52	4334.6	0.5				ug/L		Standard
	Cr	53	200.0	9.0				ug/L		Standard
	Mn	55	830.0	4.5				ug/L		Standard
	Co	59	75.0	0.0				ug/L		Standard
	Ni	60	97.7	3.6				ug/L		Standard
	Cu	65	201.3	11.4				ug/L		Standard
	Zn	66	211.0	1.3				ug/L		Standard
>	**Ge**	72	201508.6	1.1				ug/L		Standard
	As	75	-71.7	19.9				ug/L		Standard
	Se	82	6.2	39.3				ug/L		Standard
	Se-1	77	42.0	11.9				ug/L		Standard
>	**Ga**	71	25.0	34.6				mg/L		Standard
	Rb	85	8.3	34.6				ug/L		Standard
	Y	89	207392.9	4.0				ug/L		Standard
>	**Rh**	103	6.7	86.6				ug/L		Standard
	Mo	98	9.3	49.4				ug/L		Standard
	Ag	107	78.7	5.7				ug/L		Standard
	Cd	111	7.6	52.9				mg/L		Standard
	Cd	114	7.9	36.1				ug/L		Standard
>	**In**	115	344752.9	1.1				ug/L		Standard
	Sn	118	326.7	27.1				ug/L		Standard
	Sb	123	63.6	12.1				ug/L		Standard
	Ba	135	21.7	14.1				ug/L		Standard
	Ce	140	63.3	16.4				ug/L		Standard
>	**Tb**	159	622049.1	0.3				ug/L		Standard
	Ho	165	11.7	65.5				ug/L		Standard
	Tl	203	4.3	58.1				ug/L		Standard
	Tl	205	5.0	100.0				ug/L		Standard
	Pb	206	162.7	11.4				ug/L		Standard
	Pb	207	139.0	3.1				ug/L		Standard
	Pb	208	519.3	6.7				ug/L		Standard
	U	238	3.7	56.8				ug/L		Standard
>	**Bi**	209	331049.5	1.1				ug/L		Standard

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	Na	23	0.0		mg/L	Standard
	Mg	24	6.7	114.6	mg/L	Standard
	K	39	33.3	45.8	mg/L	Standard
	Ca	43	80.0	16.5	mg/L	Standard
	Fe	54	80.8	25.6	mg/L	Standard
	Fe	57	93.3	11.2	mg/L	Standard
>	**Sc-1**	45	15221.0	0.9	mg/L	Standard
	Cl	35	40209.3	1.2	ug/L	Standard
	Kr	83	4.3	35.3	ug/L	Standard
	Br	81	303.3	30.6	ug/L	Standard
	P	31	14096.6	2.0	ug/L	Standard
	S	34	2990.3	3.9	ug/L	Standard
	Sr	88	50.0	52.0	ug/L	Standard
	C	12	166.7	6.9	mg/L	Standard
	N	14	0.0		mg/L	Standard
	Hg	202	0.0		mg/L	Standard
	Dy	164	3.0	200.7	mg/L	Standard
	Ho-1	165	11.7	65.5	mg/L	Standard
	Er	166	6.7	86.6	mg/L	Standard
	I	127	3957.2	3.4	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Blank
Report Date/Time: Monday, November 16, 2015 13:21:22
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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Monday, November 16, 2015 13:22:17
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	29968.0	6.0				ug/L	29272	Standard
	Be	9	3.3	173.2				ug/L	7	Standard
	Al	27	368.3	8.2				ug/L	318	Standard
	Sc	45	15935.0	3.5				ug/L	15221	Standard
	Ti	47	255.3	4.4				ug/L	262	Standard
	V	51	834.1	7.1				ug/L	874	Standard
	Cr	52	4386.6	2.1				ug/L	4335	Standard
	Cr	53	230.0	12.1				ug/L	200	Standard
	Mn	55	807.4	1.5				ug/L	830	Standard
	Co	59	90.7	1.3				ug/L	75	Standard
	Ni	60	128.7	7.2				ug/L	98	Standard
	Cu	65	188.7	3.6				ug/L	201	Standard
	Zn	66	215.3	5.5				ug/L	211	Standard
>	**Ge**	72	208073.3	3.8				ug/L	201509	Standard
	As	75	-59.3	7.6				ug/L	-72	Standard
	Se	82	12.0	11.7				ug/L	6	Standard
	Se-1	77	37.7	12.0				ug/L	42	Standard
>	**Ga**	71	10.0	86.6				mg/L	25	Standard
	Rb	85	15.0	57.7				ug/L	8	Standard
	Y	89	218399.9	2.1				ug/L	207393	Standard
>	**Rh**	103	8.3	34.6				ug/L	7	Standard
	Mo	98	8.8	26.1				ug/L	9	Standard
	Ag	107	75.3	8.8				ug/L	79	Standard
	Cd	111	5.3	28.8				mg/L	8	Standard
	Cd	114	11.6	97.1				ug/L	8	Standard
>	**In**	115	358057.4	3.2				ug/L	344753	Standard
	Sn	118	251.7	25.5				ug/L	327	Standard
	Sb	123	27.1	36.5				ug/L	64	Standard
	Ba	135	25.0	12.0				ug/L	22	Standard
	Ce	140	80.0	28.6				ug/L	63	Standard
>	**Tb**	159	638458.4	3.9				ug/L	622049	Standard
	Ho	165	5.0	173.2				ug/L	12	Standard
	Tl	203	7.3	41.7				ug/L	4	Standard
	Tl	205	3.3	86.6				ug/L	5	Standard
	Pb	206	192.0	9.0				ug/L	163	Standard
	Pb	207	152.7	3.9				ug/L	139	Standard
	Pb	208	539.3	2.9				ug/L	519	Standard
	U	238	3.0	0.0				ug/L	4	Standard
>	**Bi**	209	338602.8	2.7				ug/L	331049	Standard

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Na	23	1.7	173.2	mg/L	0	Standard
Mg	24	11.7	49.5	mg/L	7	Standard
K	39	35.0	24.7	mg/L	33	Standard
Ca	43	55.0	32.8	mg/L	80	Standard
Fe	54	84.3	10.6	mg/L	81	Standard
Fe	57	73.3	14.2	mg/L	93	Standard
Sc-1	45	15935.0	3.5	mg/L	15221	Standard
Cl	35	40367.0	0.5	ug/L	40209	Standard
Kr	83	4.0	0.0	ug/L	4	Standard
Br	81	283.3	11.3	ug/L	303	Standard
P	31	14325.1	3.6	ug/L	14097	Standard
S	34	3127.0	3.0	ug/L	2990	Standard
Sr	88	70.0	7.1	ug/L	50	Standard
C	12	183.3	6.3	mg/L	167	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	3.3	173.2	mg/L	0	Standard
Dy	164	6.3	179.8	mg/L	3	Standard
Ho-1	165	5.0	173.2	mg/L	12	Standard
Er	166	6.7	86.6	mg/L	7	Standard
I	127	3675.4	2.5	mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 1
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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Monday, November 16, 2015 13:25:28
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	30542.4	2.0				ug/L	29272	Standard
	Be	9	33.3	31.2				ug/L	7	Standard
	Al	27	3008.6	2.3				ug/L	318	Standard
	Sc	45	15511.3	2.9				ug/L	15221	Standard
	Ti	47	266.0	1.9				ug/L	262	Standard
	V	51	1005.9	5.2				ug/L	874	Standard
	Cr	52	4524.7	1.6				ug/L	4335	Standard
	Cr	53	223.3	7.9				ug/L	200	Standard
	Mn	55	1133.7	0.2				ug/L	830	Standard
	Co	59	249.3	6.0				ug/L	75	Standard
	Ni	60	166.0	8.9				ug/L	98	Standard
	Cu	65	238.3	2.1				ug/L	201	Standard
	Zn	66	295.0	3.5				ug/L	211	Standard
>	**Ge**	72	205765.0	1.5				ug/L	201509	Standard
	As	75	-35.3	8.9				ug/L	-72	Standard
	Se	82	15.3	46.8				ug/L	6	Standard
	Se-1	77	36.7	22.7				ug/L	42	Standard
>	**Ga**	71	31.7	36.5				mg/L	25	Standard
	Rb	85	11.7	65.5				ug/L	8	Standard
	Y	89	214536.9	1.9				ug/L	207393	Standard
>	**Rh**	103	5.0	100.0				ug/L	7	Standard
	Mo	98	146.5	5.1				ug/L	9	Standard
	Ag	107	277.3	4.4				ug/L	79	Standard
	Cd	111	72.3	14.0				mg/L	8	Standard
	Cd	114	180.2	15.2				ug/L	8	Standard
>	**In**	115	351058.2	0.8				ug/L	344753	Standard
	Sn	118	490.0	4.7				ug/L	327	Standard
	Sb	123	209.7	9.3				ug/L	64	Standard
	Ba	135	99.0	17.5				ug/L	22	Standard
	Ce	140	53.3	14.3				ug/L	63	Standard
>	**Tb**	159	623768.0	0.8				ug/L	622049	Standard
	Ho	165	5.0	100.0				ug/L	12	Standard
	Tl	203	284.7	6.5				ug/L	4	Standard
	Tl	205	208.3	13.2				ug/L	5	Standard
	Pb	206	420.0	2.7				ug/L	163	Standard
	Pb	207	338.0	1.8				ug/L	139	Standard
	Pb	208	1219.7	5.2				ug/L	519	Standard
	U	238	208.3	9.1				ug/L	4	Standard
>	**Bi**	209	338308.3	0.3				ug/L	331049	Standard

Sample ID: Standard 2
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Na	23	1.7	173.2	mg/L	0	Standard
Mg	24	13.3	94.4	mg/L	7	Standard
K	39	26.7	10.8	mg/L	33	Standard
Ca	43	63.3	18.2	mg/L	80	Standard
Fe	54	89.7	36.7	mg/L	81	Standard
Fe	57	96.7	14.9	mg/L	93	Standard
Sc-1	45	15511.3	2.9	mg/L	15221	Standard
Cl	35	40556.9	0.6	ug/L	40209	Standard
Kr	83	5.7	27.0	ug/L	4	Standard
Br	81	266.7	15.2	ug/L	303	Standard
P	31	15434.5	6.7	ug/L	14097	Standard
S	34	3152.0	8.1	ug/L	2990	Standard
Sr	88	51.7	24.4	ug/L	50	Standard
C	12	173.3	14.5	mg/L	167	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	0.0		mg/L	0	Standard
Dy	164	6.5	173.2	mg/L	3	Standard
Ho-1	165	5.0	100.0	mg/L	12	Standard
Er	166	3.3	173.2	mg/L	7	Standard
I	127	3570.4	0.7	mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: Standard 2
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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Monday, November 16, 2015 13:28:39
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	30494.0	3.4				ug/L	29272	Standard
	Be	9	27900.7	3.3	**50.0000**	2.815	5.6	ug/L	7	Standard
	Al	27	2342010.6	1.3	**50.0000**	2.356	4.7	ug/L	318	Standard
	Sc	45	15526.3	0.5				ug/L	15221	Standard
	Ti	47	13741.2	1.3	**100.0000**	3.979	4.0	ug/L	262	Standard
	V	51	176337.7	1.1	**50.0000**	1.367	2.7	ug/L	874	Standard
	Cr	52	163052.0	0.9	**50.0000**	1.517	3.0	ug/L	4335	Standard
	Cr	53	20989.5	1.9	**50.0000**	2.263	4.5	ug/L	200	Standard
	Mn	55	166071.7	1.8	**50.0000**	2.039	4.1	ug/L	830	Standard
	Co	59	167758.0	1.0	**50.0000**	2.042	4.1	ug/L	75	Standard
	Ni	60	46337.8	1.4	**50.0000**	2.255	4.5	ug/L	98	Standard
	Cu	65	46283.6	0.6	**50.0000**	1.336	2.7	ug/L	201	Standard
	Zn	66	27256.2	1.3	**50.0000**	2.148	4.3	ug/L	211	Standard
>	**Ge**	72	208425.0	3.2				ug/L	201509	Standard
	As	75	30559.6	1.2	**50.0000**	2.128	4.3	ug/L	-72	Standard
	Se	82	2728.4	1.4	**50.0000**	1.971	3.9	ug/L	6	Standard
	Se-1	77	1755.4	4.2	**50.0000**	2.487	5.0	ug/L	42	Standard
>	**Ga**	71	23.3	49.5				mg/L	25	Standard
	Rb	85	425.0	16.3				ug/L	8	Standard
	Y	89	217696.7	2.4				ug/L	207393	Standard
>	**Rh**	103	21.7	58.1				ug/L	7	Standard
	Mo	98	127486.6	0.6	**100.0000**	1.903	1.9	ug/L	9	Standard
	Ag	107	203194.0	1.6	**50.0000**	1.033	2.1	ug/L	79	Standard
	Cd	111	66896.2	1.4	**50.0000**	1.030	2.1	mg/L	8	Standard
	Cd	114	162464.4	1.6	**50.0000**	1.359	2.7	ug/L	8	Standard
>	**In**	115	355893.6	1.6				ug/L	344753	Standard
	Sn	118	189633.5	3.3	**50.0000**	1.770	3.5	ug/L	327	Standard
	Sb	123	184843.6	1.1	**50.0000**	0.863	1.7	ug/L	64	Standard
	Ba	135	71411.9	0.6	**50.0000**	0.844	1.7	ug/L	22	Standard
	Ce	140	83.3	28.4				ug/L	63	Standard
>	**Tb**	159	637224.1	4.3				ug/L	622049	Standard
	Ho	165	8.3	69.3				ug/L	12	Standard
	Tl	203	282995.7	1.3	**50.0000**	1.454	2.9	ug/L	4	Standard
	Tl	205	194714.0	3.2	**50.0000**	2.363	4.7	ug/L	5	Standard
	Pb	206	198554.3	2.3	**50.0000**	2.343	4.7	ug/L	163	Standard
	Pb	207	179392.4	0.4	**50.0000**	1.589	3.2	ug/L	139	Standard
	Pb	208	616846.8	1.5	**50.0000**	2.036	4.1	ug/L	519	Standard
	U	238	211657.6	1.4	**50.0000**	1.915	3.8	ug/L	4	Standard
>	**Bi**	209	338398.2	3.1				ug/L	331049	Standard

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Na	23	1.7	173.2	**5.0000**	298.179	5963.6	mg/L	0	Standard
Mg	24	2126.8	11.6	**5.0000**	0.574	11.5	mg/L	7	Standard
K	39	590.0	4.4	**5.0000**	0.255	5.1	mg/L	33	Standard
Ca	43	71.7	4.0	**5.0000**	1.972	39.4	mg/L	80	Standard
Fe	54	2566.4	5.8	**5.0000**	0.279	5.6	mg/L	81	Standard
Fe	57	681.7	3.1	**5.0000**	0.205	4.1	mg/L	93	Standard
Sc-1	45	15526.3	0.5				mg/L	15221	Standard
Cl	35	39738.0	0.9				ug/L	40209	Standard
Kr	83	5.0	40.0				ug/L	4	Standard
Br	81	383.3	4.0				ug/L	303	Standard
P	31	15511.3	0.7				ug/L	14097	Standard
S	34	3320.4	2.2				ug/L	2990	Standard
Sr	88	60.0	44.1				ug/L	50	Standard
C	12	196.7	7.8				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	12.9	44.9				mg/L	3	Standard
Ho-1	165	8.3	69.3				mg/L	12	Standard
Er	166	10.0					mg/L	7	Standard
I	127	2800.3	5.9				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Monday, November 16, 2015 13:31:50
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	31922.0	3.8				ug/L	29272	Standard
	Be	9	55093.4	3.3	**97.0340**	0.589	0.6	ug/L	7	Standard
	Al	27	4540019.3	1.8	**96.1773**	5.370	5.6	ug/L	318	Standard
	Sc	45	16949.5	5.2				ug/L	15221	Standard
	Ti	47	27004.0	0.5	**195.5505**	5.908	3.0	ug/L	262	Standard
	V	51	351917.9	0.9	**98.2303**	3.351	3.4	ug/L	874	Standard
	Cr	52	323733.0	0.5	**98.5085**	2.546	2.6	ug/L	4335	Standard
	Cr	53	40268.5	3.4	**96.3736**	5.670	5.9	ug/L	200	Standard
	Mn	55	327445.8	0.4	**97.6309**	2.293	2.3	ug/L	830	Standard
	Co	59	335600.9	0.9	**98.2240**	2.667	2.7	ug/L	75	Standard
	Ni	60	91926.0	1.1	**97.8451**	1.903	1.9	ug/L	98	Standard
	Cu	65	91571.9	0.4	**97.7727**	2.286	2.3	ug/L	201	Standard
	Zn	66	53905.4	0.9	**97.8858**	3.451	3.5	ug/L	211	Standard
>	**Ge**	72	215985.9	2.7				ug/L	201509	Standard
	As	75	61810.3	0.5	**98.7084**	2.812	2.8	ug/L	-72	Standard
	Se	82	5584.2	0.6	**99.4778**	3.174	3.2	ug/L	6	Standard
	Se-1	77	3456.7	1.5	**97.9368**	3.876	4.0	ug/L	42	Standard
>	**Ga**	71	21.7	35.3				mg/L	25	Standard
	Rb	85	810.0	12.9				ug/L	8	Standard
	Y	89	218762.2	3.0				ug/L	207393	Standard
>	**Rh**	103	35.0	51.5				ug/L	7	Standard
	Mo	98	253862.1	1.3	**198.2718**	5.364	2.7	ug/L	9	Standard
	Ag	107	396108.9	1.3	**98.0728**	1.423	1.5	ug/L	79	Standard
	Cd	111	133064.5	0.8	**99.0801**	2.335	2.4	mg/L	8	Standard
	Cd	114	322188.2	1.5	**98.9340**	3.397	3.4	ug/L	8	Standard
>	**In**	115	360633.5	2.6				ug/L	344753	Standard
	Sn	118	375285.2	1.9	**98.8538**	1.555	1.6	ug/L	327	Standard
	Sb	123	366935.6	0.4	**98.9815**	2.244	2.3	ug/L	64	Standard
	Ba	135	141754.4	0.0	**98.9873**	2.555	2.6	ug/L	22	Standard
	Ce	140	115.0	23.0				ug/L	63	Standard
>	**Tb**	159	637632.3	3.2				ug/L	622049	Standard
	Ho	165	0.0					ug/L	12	Standard
	Tl	203	557837.1	0.7	**98.9003**	1.387	1.4	ug/L	4	Standard
	Tl	205	386925.0	0.8	**99.2973**	1.622	1.6	ug/L	5	Standard
	Pb	206	392759.8	0.4	**99.0883**	1.737	1.8	ug/L	163	Standard
	Pb	207	356842.9	0.3	**99.3749**	1.992	2.0	ug/L	139	Standard
	Pb	208	1211827.6	0.3	**98.7485**	2.183	2.2	ug/L	519	Standard
	U	238	418278.7	0.4	**99.0210**	2.004	2.0	ug/L	4	Standard
>	**Bi**	209	340824.1	2.1				ug/L	331049	Standard

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Na	23	1.7	173.2	**14.8464**	132.200	890.5	mg/L	0	Standard
Mg	24	4275.6	1.4	**9.6094**	0.516	5.4	mg/L	7	Standard
K	39	1185.0	3.4	**9.6902**	0.199	2.1	mg/L	33	Standard
Ca	43	103.3	27.5	**13.0022**	8.845	68.0	mg/L	80	Standard
Fe	54	4851.4	2.5	**9.3617**	0.423	4.5	mg/L	81	Standard
Fe	57	1378.4	6.7	**9.9855**	0.800	8.0	mg/L	93	Standard
> **Sc-1**	45	16949.5	5.2				mg/L	15221	Standard
Cl	35	39252.8	2.1				ug/L	40209	Standard
Kr	83	4.7	44.6				ug/L	4	Standard
Br	81	316.7	9.6				ug/L	303	Standard
P	31	15988.4	1.7				ug/L	14097	Standard
S	34	3432.1	4.2				ug/L	2990	Standard
Sr	88	51.7	11.2				ug/L	50	Standard
C	12	233.3	27.6				mg/L	167	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.2	52.4				mg/L	3	Standard
Ho-1	165	0.0					mg/L	12	Standard
Er	166	23.3	99.0				mg/L	7	Standard
I	127	1858.4	5.2				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998
Corr. Coef.	Ca	43	Correlation coefficient < 0.998
Corr. Coef.	Fe	54	Correlation coefficient < 0.998

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Monday, November 16, 2015 13:35:02
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	30223.5	6.5				ug/L	29272	Standard
	Be	9	28039.3	7.3	**52.1481**	1.803	3.5	ug/L	7	Standard
	Al	27	2445967.2	0.0	**54.7909**	3.398	6.2	ug/L	318	Standard
	Sc	45	16218.7	2.8				ug/L	15221	Standard
	Ti	47	13700.2	1.6	**100.6824**	2.352	2.3	ug/L	262	Standard
	V	51	176589.2	2.6	**50.3576**	1.243	2.5	ug/L	874	Standard
	Cr	52	167968.8	3.0	**51.6800**	1.195	2.3	ug/L	4335	Standard
	Cr	53	20670.8	3.4	**50.4079**	2.116	4.2	ug/L	200	Standard
	Mn	55	169227.4	2.1	**51.5325**	0.674	1.3	ug/L	830	Standard
	Co	59	173809.4	1.7	**52.0920**	0.992	1.9	ug/L	75	Standard
	Ni	60	46924.2	1.5	**51.0950**	0.420	0.8	ug/L	98	Standard
	Cu	65	47416.8	1.5	**51.7513**	0.470	0.9	ug/L	201	Standard
	Zn	66	28767.0	2.5	**53.2575**	1.144	2.1	ug/L	211	Standard
>	**Ge**	72	210803.3	1.7				ug/L	201509	Standard
	As	75	31959.7	1.8	**52.3236**	0.927	1.8	ug/L	-72	Standard
	Se	82	2850.2	0.8	**51.8917**	1.157	2.2	ug/L	6	Standard
	Se-1	77	1834.1	5.3	**52.7028**	1.915	3.6	ug/L	42	Standard
>	**Ga**	71	45.0	22.2				mg/L	25	Standard
	Rb	85	416.7	8.0				ug/L	8	Standard
	Y	89	217838.6	4.6				ug/L	207393	Standard
>	**Rh**	103	23.3	53.9				ug/L	7	Standard
	Mo	98	131825.7	1.2	**103.6934**	0.553	0.5	ug/L	9	Standard
	Ag	107	204314.8	1.0	**50.9514**	0.209	0.4	ug/L	79	Standard
	Cd	111	67309.8	0.6	**50.4811**	0.219	0.4	mg/L	8	Standard
	Cd	114	166602.3	1.7	**51.5203**	0.949	1.8	ug/L	8	Standard
>	**In**	115	357890.9	0.7				ug/L	344753	Standard
	Sn	118	193454.2	2.2	**51.2990**	1.110	2.2	ug/L	327	Standard
	Sb	123	182909.3	1.5	**49.6925**	0.406	0.8	ug/L	64	Standard
	Ba	135	73256.7	1.0	**51.5131**	0.167	0.3	ug/L	22	Standard
	Ce	140	166.7	4.6				ug/L	63	Standard
>	**Tb**	159	642212.3	1.8				ug/L	622049	Standard
	Ho	165	6.7	86.6				ug/L	12	Standard
	Tl	203	288187.6	0.3	**51.3819**	0.787	1.5	ug/L	4	Standard
	Tl	205	197220.5	1.7	**50.9025**	1.515	3.0	ug/L	5	Standard
	Pb	206	201298.5	1.2	**51.0379**	0.569	1.1	ug/L	163	Standard
	Pb	207	181528.8	1.6	**50.8046**	0.288	0.6	ug/L	139	Standard
	Pb	208	621337.1	0.9	**50.8843**	0.574	1.1	ug/L	519	Standard
	U	238	213622.5	1.2	**50.8474**	0.142	0.3	ug/L	4	Standard
>	**Bi**	209	338894.3	1.5				ug/L	331049	Standard

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Na	23	0.0		**91.1719**	0.000	0.0	mg/L	0	Standard
Mg	24	2243.5	4.8	**5.2515**	0.334	6.4	mg/L	7	Standard
K	39	620.0	9.3	**5.1929**	0.574	11.0	mg/L	33	Standard
Ca	43	100.0	21.8	**13.9030**	9.600	69.0	mg/L	80	Standard
Fe	54	2751.2	3.8	**5.4707**	0.358	6.5	mg/L	81	Standard
Fe	57	756.7	5.5	**5.3697**	0.226	4.2	mg/L	93	Standard
> **Sc-1**	45	16218.7	2.8				mg/L	15221	Standard
Cl	35	38374.5	1.0				ug/L	40209	Standard
Kr	83	5.3	60.3				ug/L	4	Standard
Br	81	310.0	17.1				ug/L	303	Standard
P	31	16305.4	1.5				ug/L	14097	Standard
S	34	3430.4	5.2				ug/L	2990	Standard
Sr	88	58.3	17.8				ug/L	50	Standard
C	12	213.3	7.2				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.0	93.6				mg/L	3	Standard
Ho-1	165	6.7	86.6				mg/L	12	Standard
Er	166	13.3	43.3				mg/L	7	Standard
I	127	860.0	5.1				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	104.296		
Al	27	109.582		
Sc	45			
Ti	47	100.682		
V	51	100.715		
Cr	52	103.360		
Cr	53			
Mn	55	103.065		
Co	59	104.184		
Ni	60	102.190		
Cu	65	103.503		
Zn	66	106.515		
> Ge	72		104.613	
As	75	104.647		
Se	82	103.783		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	103.693		
Ag	107	101.903		
Cd	111	100.962		
Cd	114			
> In	115		103.811	
Sn	118	102.598		
Sb	123	99.385		
Ba	135	103.026		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	102.764		
Tl	205			
Pb	206	102.076		
Pb	207	101.609		
Pb	208	101.769		
U	238	101.695		
> Bi	209		102.370	
Na	23	1823.438		
Mg	24	105.031		
K	39	103.859		
Ca	43	278.060		
Fe	54	109.415		
Fe	57	107.394		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Monday, November 16, 2015 13:38:15
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	30661.0	3.6				ug/L	29272	Standard
	Be	9	8.3	34.6	**0.0037**	0.005	141.9	ug/L	7	Standard
	Al	27	786.7	34.0	**0.0007**	0.005	765.8	ug/L	318	Standard
	Sc	45	15985.1	5.0				ug/L	15221	Standard
	Ti	47	231.0	7.4	**-0.1978**	0.090	45.4	ug/L	262	Standard
	V	51	752.7	1.8	**-0.0277**	0.011	40.5	ug/L	874	Standard
	Cr	52	3824.5	0.9	**-0.1951**	0.056	28.6	ug/L	4335	Standard
	Cr	53	195.0	14.3	**-0.0308**	0.052	169.0	ug/L	200	Standard
	Mn	55	742.4	6.6	**-0.0767**	0.007	9.5	ug/L	830	Standard
	Co	59	109.3	8.6	**0.0064**	0.002	27.9	ug/L	75	Standard
	Ni	60	125.0	2.1	**0.0022**	0.007	332.8	ug/L	98	Standard
	Cu	65	187.3	2.5	**-0.0104**	0.011	102.2	ug/L	201	Standard
	Zn	66	222.0	3.0	**-0.0960**	0.026	26.9	ug/L	211	Standard
>	**Ge**	72	209097.2	3.6				ug/L	201509	Standard
	As	75	-45.1	53.6	**0.0350**	0.039	111.9	ug/L	-72	Standard
	Se	82	10.4	39.9	**-0.0454**	0.071	156.4	ug/L	6	Standard
	Se-1	77	41.7	6.0	**0.1798**	0.106	59.2	ug/L	42	Standard
>	**Ga**	71	16.7	17.3				mg/L	25	Standard
	Rb	85	6.7	43.3				ug/L	8	Standard
	Y	89	217851.8	4.2				ug/L	207393	Standard
>	**Rh**	103	11.7	89.2				ug/L	7	Standard
	Mo	98	206.9	30.9	**0.1448**	0.043	29.4	ug/L	9	Standard
	Ag	107	116.3	17.4	**0.0085**	0.004	47.3	ug/L	79	Standard
	Cd	111	16.8	61.4	**0.0072**	0.007	100.2	mg/L	8	Standard
	Cd	114	52.0	31.0	**0.0092**	0.005	50.4	ug/L	8	Standard
>	**In**	115	356126.7	4.7				ug/L	344753	Standard
	Sn	118	421.7	5.3	**0.0299**	0.005	17.0	ug/L	327	Standard
	Sb	123	713.5	18.5	**0.1881**	0.044	23.3	ug/L	64	Standard
	Ba	135	38.0	24.1	**0.0057**	0.005	91.6	ug/L	22	Standard
	Ce	140	33.3	8.7				ug/L	63	Standard
>	**Tb**	159	627678.6	3.4				ug/L	622049	Standard
	Ho	165	10.0	100.0				ug/L	12	Standard
	Tl	203	70.3	44.4	**0.0116**	0.005	44.6	ug/L	4	Standard
	Tl	205	51.7	64.4	**0.0093**	0.008	86.0	ug/L	5	Standard
	Pb	206	216.3	18.0	**-0.0022**	0.008	354.9	ug/L	163	Standard
	Pb	207	181.0	9.7	**0.0056**	0.003	54.9	ug/L	139	Standard
	Pb	208	674.0	16.4	**0.0048**	0.007	148.3	ug/L	519	Standard
	U	238	44.3	59.9	**0.0107**	0.006	54.5	ug/L	4	Standard
>	**Bi**	209	339837.0	3.6				ug/L	331049	Standard

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Na	23	1.7	173.2	**5.0596**	149.151	2947.9	mg/L	0	Standard
Mg	24	15.0	66.7	**0.0085**	0.025	299.9	mg/L	7	Standard
K	39	18.3	31.5	**-0.0758**	0.052	69.3	mg/L	33	Standard
Ca	43	61.7	4.7	**-1.4869**	1.793	120.6	mg/L	80	Standard
Fe	54	104.5	38.2	**0.0343**	0.095	276.2	mg/L	81	Standard
Fe	57	68.3	37.5	**-0.2449**	0.238	97.3	mg/L	93	Standard
Sc-1	45	15985.1	5.0				mg/L	15221	Standard
Cl	35	38794.9	0.4				ug/L	40209	Standard
Kr	83	5.3	21.7				ug/L	4	Standard
Br	81	323.3	28.6				ug/L	303	Standard
P	31	15746.5	4.2				ug/L	14097	Standard
S	34	3362.0	7.4				ug/L	2990	Standard
Sr	88	40.0	25.0				ug/L	50	Standard
C	12	160.0	41.0				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.4	47.9				mg/L	3	Standard
Ho-1	165	10.0	100.0				mg/L	12	Standard
Er	166	13.3	114.6				mg/L	7	Standard
I	127	3447.1	6.2				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.766	
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	103.299
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	102.654
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Na	23	
QC Std 2	Ca	43	
QC Std 2	Fe	57	

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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Monday, November 16, 2015 13:41:27
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	30016.5	7.8				ug/L	29272	Standard
	Be	9	106.7	21.1	**0.1905**	0.053	27.7	ug/L	7	Standard
	Al	27	428.3	12.9	**-0.0069**	0.001	20.2	ug/L	318	Standard
	Sc	45	16232.0	6.7				ug/L	15221	Standard
	Ti	47	231.0	7.2	**-0.1844**	0.120	64.9	ug/L	262	Standard
	V	51	2093.5	1.8	**0.3648**	0.044	12.0	ug/L	874	Standard
	Cr	52	6408.4	2.7	**0.6427**	0.086	13.3	ug/L	4335	Standard
	Cr	53	513.3	8.3	**0.7676**	0.035	4.6	ug/L	200	Standard
	Mn	55	2304.5	3.5	**0.4110**	0.019	4.6	ug/L	830	Standard
	Co	59	1375.7	5.1	**0.3920**	0.008	2.0	ug/L	75	Standard
	Ni	60	1525.1	6.6	**1.5531**	0.017	1.1	ug/L	98	Standard
	Cu	65	902.4	3.8	**0.7869**	0.045	5.8	ug/L	201	Standard
	Zn	66	6077.2	4.0	**11.0207**	0.422	3.8	ug/L	211	Standard
>	**Ge**	72	207816.2	6.1				ug/L	201509	Standard
	As	75	185.9	18.5	**0.4186**	0.064	15.4	ug/L	-72	Standard
	Se	82	32.6	12.7	**0.3726**	0.112	30.1	ug/L	6	Standard
	Se-1	77	56.3	3.7	**0.6247**	0.097	15.6	ug/L	42	Standard
>	**Ga**	71	30.0	16.7				mg/L	25	Standard
	Rb	85	11.7	24.7				ug/L	8	Standard
	Y	89	216812.2	6.0				ug/L	207393	Standard
>	**Rh**	103	5.0	100.0				ug/L	7	Standard
	Mo	98	78.5	19.7	**0.0439**	0.010	21.7	ug/L	9	Standard
	Ag	107	1606.8	3.4	**0.3804**	0.010	2.6	ug/L	79	Standard
	Cd	111	301.2	7.9	**0.2203**	0.009	4.0	mg/L	8	Standard
	Cd	114	786.8	17.2	**0.2360**	0.038	16.1	ug/L	8	Standard
>	**In**	115	358023.1	4.5				ug/L	344753	Standard
	Sn	118	306.7	27.5	**-0.0006**	0.025	4031.0	ug/L	327	Standard
	Sb	123	1605.9	1.9	**0.4287**	0.021	5.0	ug/L	64	Standard
	Ba	135	1042.4	7.4	**0.7114**	0.025	3.5	ug/L	22	Standard
	Ce	140	21.7	26.6				ug/L	63	Standard
>	**Tb**	159	625083.9	4.8				ug/L	622049	Standard
	Ho	165	5.0	100.0				ug/L	12	Standard
	Tl	203	433.0	9.8	**0.0765**	0.007	9.6	ug/L	4	Standard
	Tl	205	311.7	10.7	**0.0765**	0.005	6.9	ug/L	5	Standard
	Pb	206	989.0	3.1	**0.1948**	0.012	6.3	ug/L	163	Standard
	Pb	207	831.4	6.7	**0.1882**	0.008	4.3	ug/L	139	Standard
	Pb	208	2928.1	2.7	**0.1902**	0.004	2.3	ug/L	519	Standard
	U	238	1668.1	4.0	**0.3978**	0.001	0.2	ug/L	4	Standard
>	**Bi**	209	338517.0	4.2				ug/L	331049	Standard

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Na	23	1.7	173.2	**12.6988**	135.919	1070.3	mg/L	0	Standard
Mg	24	11.7	24.7	**-0.0005**	0.005	929.5	mg/L	7	Standard
K	39	51.7	20.1	**0.2106**	0.068	32.5	mg/L	33	Standard
Ca	43	80.0	25.0	**5.3132**	6.078	114.4	mg/L	80	Standard
Fe	54	82.3	6.9	**-0.0167**	0.021	128.4	mg/L	81	Standard
Fe	57	83.3	35.2	**-0.1407**	0.228	162.2	mg/L	93	Standard
> **Sc-1**	45	16232.0	6.7				mg/L	15221	Standard
Cl	35	39885.8	1.6				ug/L	40209	Standard
Kr	83	3.3	45.8				ug/L	4	Standard
Br	81	346.7	16.9				ug/L	303	Standard
P	31	15444.5	2.4				ug/L	14097	Standard
S	34	3280.4	6.0				ug/L	2990	Standard
Sr	88	38.3	19.9				ug/L	50	Standard
C	12	223.3	36.5				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	13.0	46.5				mg/L	3	Standard
Ho-1	165	5.0	100.0				mg/L	12	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	703.3	7.8				mg/L	3957	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	95.258		
	Al	27	-0.687		
	Sc	45			
	Ti	47			
	V	51	91.202		
	Cr	52	80.340		
	Cr	53			
	Mn	55	82.195		
	Co	59	98.007		
	Ni	60	97.066		
	Cu	65	98.366		
	Zn	66	176.331		
>	Ge	72		103.130	
	As	75	104.659		
	Se	82	93.158		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	95.089		
Cd	111	91.800		
Cd	114			
> In	115			103.849
Sn	118			
Sb	123	107.186		
Ba	135	94.851		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	95.576		
Tl	205			
Pb	206			
Pb	207			
Pb	208	95.123		
U	238	99.457		
> Bi	209			102.256
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	
QC Std 3	Zn	66	

Sample ID: QC Std 3
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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Monday, November 16, 2015 13:44:39
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	31222.1	1.9				ug/L	29272	Standard
	Be	9	20.0	50.0	**0.0245**	0.018	73.1	ug/L	7	Standard
	Al	27	2375063.3	1.9	**51.3644**	0.635	1.2	ug/L	318	Standard
	Sc	45	16225.4	5.6				ug/L	15221	Standard
	Ti	47	15214.3	2.1	**110.7303**	1.214	1.1	ug/L	262	Standard
	V	51	752.9	25.6	**-0.0325**	0.052	160.9	ug/L	874	Standard
	Cr	52	4533.0	2.3	**0.0016**	0.013	798.1	ug/L	4335	Standard
	Cr	53	1681.8	8.9	**3.5874**	0.447	12.5	ug/L	200	Standard
	Mn	55	980.7	4.7	**-0.0087**	0.015	171.5	ug/L	830	Standard
	Co	59	169.7	1.9	**0.0237**	0.000	0.6	ug/L	75	Standard
	Ni	60	346.7	3.9	**0.2388**	0.017	7.2	ug/L	98	Standard
	Cu	65	437.7	6.0	**0.2568**	0.031	12.0	ug/L	201	Standard
	Zn	66	842.0	4.6	**1.0408**	0.042	4.0	ug/L	211	Standard
>	**Ge**	72	213188.7	2.0				ug/L	201509	Standard
	As	75	-50.4	50.0	**0.0281**	0.040	141.6	ug/L	-72	Standard
	Se	82	12.6	16.9	**-0.0101**	0.035	342.8	ug/L	6	Standard
	Se-1	77	261.7	6.3	**6.5350**	0.503	7.7	ug/L	42	Standard
>	**Ga**	71	101.7	11.4				mg/L	25	Standard
	Rb	85	435.0	11.1				ug/L	8	Standard
	Y	89	221942.3	1.6				ug/L	207393	Standard
>	**Rh**	103	16.7	17.3				ug/L	7	Standard
	Mo	98	136962.5	1.2	**105.2608**	1.450	1.4	ug/L	9	Standard
	Ag	107	84.3	6.8	**0.0000**	0.001	11107.7	ug/L	79	Standard
	Cd	111	-124.9	8.8	**-0.0968**	0.008	8.2	mg/L	8	Standard
	Cd	114	356.2	14.5	**0.1008**	0.016	15.6	ug/L	8	Standard
>	**In**	115	366315.6	0.4				ug/L	344753	Standard
	Sn	118	390.0	16.8	**0.0185**	0.017	90.1	ug/L	327	Standard
	Sb	123	158.8	14.9	**0.0341**	0.006	18.3	ug/L	64	Standard
	Ba	135	98.7	5.1	**0.0468**	0.004	7.8	ug/L	22	Standard
	Ce	140	111.7	27.4				ug/L	63	Standard
>	**Tb**	159	655456.8	1.1				ug/L	622049	Standard
	Ho	165	1.7	173.2				ug/L	12	Standard
	Tl	203	112.0	10.3	**0.0189**	0.002	11.9	ug/L	4	Standard
	Tl	205	63.3	16.4	**0.0123**	0.003	20.7	ug/L	5	Standard
	Pb	206	245.7	9.8	**0.0048**	0.006	117.5	ug/L	163	Standard
	Pb	207	209.7	4.4	**0.0132**	0.003	22.9	ug/L	139	Standard
	Pb	208	736.7	5.8	**0.0096**	0.004	40.1	ug/L	519	Standard
	U	238	9.0	29.4	**0.0025**	0.001	24.7	ug/L	4	Standard
>	**Bi**	209	342801.8	1.1				ug/L	331049	Standard

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Na	23	1.7	173.2	**4.2656**	150.526	3528.8	mg/L	0	Standard
Mg	24	5262.6	7.0	**12.3350**	0.233	1.9	mg/L	7	Standard
K	39	533.3	2.4	**4.4321**	0.175	3.9	mg/L	33	Standard
Ca	43	140.0	12.9	**30.1380**	7.375	24.5	mg/L	80	Standard
Fe	54	6522.3	6.1	**13.2026**	0.105	0.8	mg/L	81	Standard
Fe	57	1606.8	3.6	**12.3479**	0.850	6.9	mg/L	93	Standard
> **Sc-1**	45	16225.4	5.6				mg/L	15221	Standard
Cl	35	40182.6	1.9				ug/L	40209	Standard
Kr	83	5.0	60.0				ug/L	4	Standard
Br	81	336.7	1.7				ug/L	303	Standard
P	31	14843.9	2.4				ug/L	14097	Standard
S	34	3098.7	6.6				ug/L	2990	Standard
Sr	88	66.7	17.3				ug/L	50	Standard
C	12	366.7	17.7				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	22.7	53.9				mg/L	3	Standard
Ho-1	165	1.7	173.2				mg/L	12	Standard
Er	166	13.3	114.6				mg/L	7	Standard
I	127	1170.0	3.7				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27	1.027		
Sc	45			
Ti	47	110.730		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.796	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	105.261		
Ag	107			
Cd	111			
Cd	114			
> In	115			106.255
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209			103.550
Na	23	34.125		
Mg	24	246.701		
K	39	88.643		
Ca	43	200.920		
Fe	54	105.621		
Fe	57	98.783		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	

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QC Std 4	Ca	43

Sample ID: QC Std 4
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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Monday, November 16, 2015 13:47:50
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	31928.6	2.1				ug/L	29272	Standard
	Be	9	56843.1	1.2	**100.1160**	2.699	2.7	ug/L	7	Standard
	Al	27	2517380.8	1.7	**53.2432**	0.853	1.6	ug/L	318	Standard
	Sc	45	16255.4	0.8				ug/L	15221	Standard
	Ti	47	15399.5	1.2	**111.9236**	0.379	0.3	ug/L	262	Standard
	V	51	340918.1	2.3	**96.1925**	1.444	1.5	ug/L	874	Standard
	Cr	52	318668.0	1.4	**98.0396**	0.893	0.9	ug/L	4335	Standard
	Cr	53	40569.2	1.3	**98.1493**	2.625	2.7	ug/L	200	Standard
	Mn	55	324410.4	1.0	**97.8097**	1.074	1.1	ug/L	830	Standard
	Co	59	330119.7	2.5	**97.6889**	1.959	2.0	ug/L	75	Standard
	Ni	60	90443.5	1.4	**97.3496**	0.908	0.9	ug/L	98	Standard
	Cu	65	90382.5	1.7	**97.5817**	1.547	1.6	ug/L	201	Standard
	Zn	66	54650.7	1.9	**100.3414**	1.876	1.9	ug/L	211	Standard
>	**Ge**	72	213521.2	1.4				ug/L	201509	Standard
	As	75	62549.0	0.8	**101.0054**	1.944	1.9	ug/L	-72	Standard
	Se	82	5506.3	2.1	**99.1740**	2.133	2.2	ug/L	6	Standard
	Se-1	77	3647.1	0.6	**104.5322**	0.988	0.9	ug/L	42	Standard
>	**Ga**	71	105.0	16.5				mg/L	25	Standard
	Rb	85	510.0	10.3				ug/L	8	Standard
	Y	89	224484.2	1.2				ug/L	207393	Standard
>	**Rh**	103	35.0	14.3				ug/L	7	Standard
	Mo	98	137680.5	1.0	**105.7631**	2.637	2.5	ug/L	9	Standard
	Ag	107	357603.9	2.3	**87.1128**	3.201	3.7	ug/L	79	Standard
	Cd	111	134270.7	1.0	**98.3426**	2.317	2.4	mg/L	8	Standard
	Cd	114	326706.0	2.3	**98.6818**	3.846	3.9	ug/L	8	Standard
>	**In**	115	366574.7	1.6				ug/L	344753	Standard
	Sn	118	693.3	17.4	**0.0975**	0.034	35.4	ug/L	327	Standard
	Sb	123	367209.6	2.4	**97.4468**	3.635	3.7	ug/L	64	Standard
	Ba	135	140423.2	1.6	**96.4580**	3.138	3.3	ug/L	22	Standard
	Ce	140	83.3	90.1				ug/L	63	Standard
>	**Tb**	159	628163.7	0.3				ug/L	622049	Standard
	Ho	165	11.7	65.5				ug/L	12	Standard
	Tl	203	558149.0	0.5	**97.4123**	0.600	0.6	ug/L	4	Standard
	Tl	205	397840.5	0.3	**100.5065**	0.980	1.0	ug/L	5	Standard
	Pb	206	390670.9	1.1	**97.0139**	0.369	0.4	ug/L	163	Standard
	Pb	207	352873.2	1.6	**96.7225**	1.130	1.2	ug/L	139	Standard
	Pb	208	1212407.6	1.4	**97.2378**	0.710	0.7	ug/L	519	Standard
	U	238	421906.8	0.9	**98.3108**	0.113	0.1	ug/L	4	Standard
>	**Bi**	209	346166.9	0.8				ug/L	331049	Standard

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Na	23	3.3	173.2	**-78.6982**	294.224	373.9	mg/L	0	Standard
Mg	24	5582.7	2.4	**13.0709**	0.407	3.1	mg/L	7	Standard
K	39	606.7	14.4	**5.0546**	0.730	14.4	mg/L	33	Standard
Ca	43	111.7	2.6	**18.4354**	1.042	5.7	mg/L	80	Standard
Fe	54	6516.5	4.6	**13.1660**	0.528	4.0	mg/L	81	Standard
Fe	57	1815.1	4.8	**13.9963**	0.622	4.4	mg/L	93	Standard
> **Sc-1**	45	16255.4	0.8				mg/L	15221	Standard
Cl	35	39822.9	2.0				ug/L	40209	Standard
Kr	83	3.3	86.6				ug/L	4	Standard
Br	81	303.3	24.3				ug/L	303	Standard
P	31	14415.2	3.5				ug/L	14097	Standard
S	34	3102.0	5.0				ug/L	2990	Standard
Sr	88	53.3	10.8				ug/L	50	Standard
C	12	416.7	10.0				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.8	177.4				mg/L	3	Standard
Ho-1	165	11.7	65.5				mg/L	12	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	3560.4	3.5				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	100.116		
Al	27	1.065		
Sc	45			
Ti	47	111.924		
V	51	96.193		
Cr	52	98.040		
Cr	53			
Mn	55	97.810		
Co	59	97.689		
Ni	60	97.350		
Cu	65	97.582		
Zn	66	100.341		
> Ge	72		105.961	
As	75	101.005		
Se	82	99.174		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	105.763		
Ag	107	87.113		
Cd	111	98.343		
Cd	114			
> In	115		106.330	
Sn	118			
Sb	123	97.447		
Ba	135	96.458		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	97.412		
Tl	205			
Pb	206			
Pb	207			
Pb	208	97.238		
U	238	98.311		
> Bi	209		104.567	
Na	23	-629.585		
Mg	24	261.419		
K	39	101.091		
Ca	43	122.903		
Fe	54	105.328		
Fe	57	111.971		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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QC Std 5	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, November 16, 2015 13:51:03
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	31674.8	2.2				ug/L	29272	Standard
	Be	9	28752.3	1.0	**51.0323**	0.630	1.2	ug/L	7	Standard
	Al	27	2428655.3	0.3	**51.7854**	1.011	2.0	ug/L	318	Standard
	Sc	45	16312.1	2.8				ug/L	15221	Standard
	Ti	47	13749.6	2.3	**95.9225**	2.756	2.9	ug/L	262	Standard
	V	51	180639.6	1.1	**48.9434**	0.779	1.6	ug/L	874	Standard
	Cr	52	166853.5	1.4	**48.7089**	0.886	1.8	ug/L	4335	Standard
	Cr	53	21338.4	3.2	**49.4237**	1.582	3.2	ug/L	200	Standard
	Mn	55	168770.7	1.9	**48.8244**	1.100	2.3	ug/L	830	Standard
	Co	59	174663.9	2.9	**49.7434**	1.686	3.4	ug/L	75	Standard
	Ni	60	47511.0	0.7	**49.1575**	0.677	1.4	ug/L	98	Standard
	Cu	65	48205.2	1.6	**49.9893**	1.000	2.0	ug/L	201	Standard
	Zn	66	28734.2	1.4	**50.5320**	1.297	2.6	ug/L	211	Standard
>	**Ge**	72	221839.4	1.2				ug/L	201509	Standard
	As	75	33057.6	0.6	**51.4310**	0.774	1.5	ug/L	-72	Standard
	Se	82	3042.4	1.7	**52.6374**	1.477	2.8	ug/L	6	Standard
	Se-1	77	1942.1	1.3	**53.0695**	1.324	2.5	ug/L	42	Standard
>	**Ga**	71	21.7	53.3				mg/L	25	Standard
	Rb	85	460.0	8.7				ug/L	8	Standard
	Y	89	228390.3	1.3				ug/L	207393	Standard
>	**Rh**	103	16.7	45.8				ug/L	7	Standard
	Mo	98	147418.0	1.1	**107.3835**	0.841	0.8	ug/L	9	Standard
	Ag	107	210405.8	1.8	**48.5863**	0.503	1.0	ug/L	79	Standard
	Cd	111	72217.4	0.6	**50.1566**	0.466	0.9	mg/L	8	Standard
	Cd	114	173211.6	2.0	**49.5983**	0.727	1.5	ug/L	8	Standard
>	**In**	115	386478.0	0.7				ug/L	344753	Standard
	Sn	118	201686.2	3.5	**49.5198**	1.542	3.1	ug/L	327	Standard
	Sb	123	199006.6	0.6	**50.0690**	0.143	0.3	ug/L	64	Standard
	Ba	135	72986.1	1.8	**47.5240**	0.635	1.3	ug/L	22	Standard
	Ce	140	55.0	15.7				ug/L	63	Standard
>	**Tb**	159	651336.6	1.2				ug/L	622049	Standard
	Ho	165	1.7	173.2				ug/L	12	Standard
	Tl	203	299972.2	1.7	**50.0716**	0.281	0.6	ug/L	4	Standard
	Tl	205	200660.1	1.3	**48.4859**	0.750	1.5	ug/L	5	Standard
	Pb	206	206666.0	0.9	**49.0638**	0.618	1.3	ug/L	163	Standard
	Pb	207	187288.1	0.9	**49.0846**	0.618	1.3	ug/L	139	Standard
	Pb	208	642997.9	1.3	**49.3027**	0.322	0.7	ug/L	519	Standard
	U	238	215786.6	1.5	**48.0936**	0.333	0.7	ug/L	4	Standard
>	**Bi**	209	361945.2	2.0				ug/L	331049	Standard

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Na	23	3.3	86.6	**-77.7131**	146.410	188.4	mg/L	0	Standard
Mg	24	2140.2	9.7	**4.9811**	0.547	11.0	mg/L	7	Standard
K	39	566.7	7.1	**4.6882**	0.240	5.1	mg/L	33	Standard
Ca	43	80.0	25.0	**5.3019**	7.497	141.4	mg/L	80	Standard
Fe	54	2687.0	1.9	**5.3057**	0.248	4.7	mg/L	81	Standard
Fe	57	815.0	2.8	**5.8108**	0.035	0.6	mg/L	93	Standard
> **Sc-1**	45	16312.1	2.8				mg/L	15221	Standard
Cl	35	38698.0	2.1				ug/L	40209	Standard
Kr	83	3.3	45.8				ug/L	4	Standard
Br	81	436.7	7.4				ug/L	303	Standard
P	31	14421.9	3.5				ug/L	14097	Standard
S	34	3233.7	3.3				ug/L	2990	Standard
Sr	88	40.0	90.1				ug/L	50	Standard
C	12	153.3	35.9				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	5.4	102.4				mg/L	3	Standard
Ho-1	165	1.7	173.2				mg/L	12	Standard
Er	166	26.7	43.3				mg/L	7	Standard
I	127	1655.1	10.1				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	102.065		
Al	27	103.571		
Sc	45			
Ti	47	95.922		
V	51	97.887		
Cr	52	97.418		
Cr	53			
Mn	55	97.649		
Co	59	99.487		
Ni	60	98.315		
Cu	65	99.979		
Zn	66	101.064		
> Ge	72		110.089	
As	75	102.862		
Se	82	105.275		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	107.384		
Ag	107	97.173		
Cd	111	100.313		
Cd	114			
> In	115			112.103
Sn	118	99.040		
Sb	123	100.138		
Ba	135	95.048		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.143		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.605		
U	238	96.187		
> Bi	209			109.333
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, November 16, 2015 13:54:14
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	30064.8	3.2				ug/L	29272	Standard
	Be	9	25.0	87.2	**0.0361**	0.043	119.3	ug/L	7	Standard
	Al	27	688.4	75.5	**-0.0008**	0.012	1541.8	ug/L	318	Standard
	Sc	45	15819.9	1.4				ug/L	15221	Standard
	Ti	47	217.3	9.0	**-0.3266**	0.106	32.5	ug/L	262	Standard
	V	51	706.2	12.6	**-0.0439**	0.032	72.0	ug/L	874	Standard
	Cr	52	3949.5	0.8	**-0.1751**	0.036	20.4	ug/L	4335	Standard
	Cr	53	303.3	11.6	**0.2265**	0.061	27.0	ug/L	200	Standard
	Mn	55	804.7	2.9	**-0.0608**	0.014	22.6	ug/L	830	Standard
	Co	59	112.0	31.4	**0.0070**	0.012	166.8	ug/L	75	Standard
	Ni	60	142.0	9.3	**0.0187**	0.019	101.9	ug/L	98	Standard
	Cu	65	212.0	8.7	**0.0132**	0.021	157.9	ug/L	201	Standard
	Zn	66	226.3	2.8	**-0.0946**	0.021	22.0	ug/L	211	Standard
>	**Ge**	72	212339.3	3.4				ug/L	201509	Standard
	As	75	-32.9	126.1	**0.0564**	0.067	119.7	ug/L	-72	Standard
	Se	82	10.2	71.1	**-0.0504**	0.138	272.7	ug/L	6	Standard
	Se-1	77	40.7	11.4	**0.1282**	0.102	79.3	ug/L	42	Standard
>	**Ga**	71	28.3	71.3				mg/L	25	Standard
	Rb	85	11.7	137.8				ug/L	8	Standard
	Y	89	219692.3	3.1				ug/L	207393	Standard
>	**Rh**	103	5.0	100.0				ug/L	7	Standard
	Mo	98	190.4	21.1	**0.1256**	0.030	24.0	ug/L	9	Standard
	Ag	107	104.0	39.8	**0.0044**	0.011	242.8	ug/L	79	Standard
	Cd	111	18.3	49.8	**0.0079**	0.007	88.4	mg/L	8	Standard
	Cd	114	27.2	55.7	**0.0013**	0.005	373.0	ug/L	8	Standard
>	**In**	115	374802.8	3.2				ug/L	344753	Standard
	Sn	118	413.3	1.8	**0.0222**	0.005	20.4	ug/L	327	Standard
	Sb	123	417.5	28.3	**0.1010**	0.034	34.1	ug/L	64	Standard
	Ba	135	27.3	37.4	**-0.0025**	0.008	298.8	ug/L	22	Standard
	Ce	140	18.3	31.5				ug/L	63	Standard
>	**Tb**	159	628805.0	5.2				ug/L	622049	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	50.3	77.1	**0.0080**	0.007	89.9	ug/L	4	Standard
	Tl	205	60.0	124.4	**0.0115**	0.020	170.0	ug/L	5	Standard
	Pb	206	191.7	11.4	**-0.0098**	0.007	73.4	ug/L	163	Standard
	Pb	207	187.7	12.7	**0.0059**	0.009	145.6	ug/L	139	Standard
	Pb	208	673.3	23.9	**0.0033**	0.015	456.0	ug/L	519	Standard
	U	238	43.7	119.7	**0.0107**	0.013	118.8	ug/L	4	Standard
>	**Bi**	209	352555.8	4.6				ug/L	331049	Standard

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Na	23	0.0		**91.1719**	0.000	0.0	mg/L	0	Standard
Mg	24	10.0	86.6	**-0.0035**	0.021	611.4	mg/L	7	Standard
K	39	20.0	50.0	**-0.0593**	0.091	154.0	mg/L	33	Standard
Ca	43	70.0	0.0	**2.2310**	0.404	18.1	mg/L	80	Standard
Fe	54	67.8	35.2	**-0.0437**	0.050	115.1	mg/L	81	Standard
Fe	57	80.0	22.5	**-0.1504**	0.141	94.0	mg/L	93	Standard
> **Sc-1**	45	15819.9	1.4				mg/L	15221	Standard
Cl	35	38921.3	2.1				ug/L	40209	Standard
Kr	83	2.7	57.3				ug/L	4	Standard
Br	81	420.0	19.5				ug/L	303	Standard
P	31	13876.4	1.9				ug/L	14097	Standard
S	34	3020.3	1.6				ug/L	2990	Standard
Sr	88	38.3	15.1				ug/L	50	Standard
C	12	203.3	19.9				mg/L	167	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	9.4	191.0				mg/L	3	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	13.3	114.6				mg/L	7	Standard
I	127	3682.1	6.1				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.375	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.716
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.496
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBS M5 WG546715-02
Sample Date/Time: Monday, November 16, 2015 13:57:27
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	31187.2	7.2				ug/L	29272	Standard
	Be	9	8.3	124.9	**0.0030**	0.018	605.7	ug/L	7	Standard
	Al	27	1271.7	3.3	**0.0111**	0.003	23.7	ug/L	318	Standard
	Sc	45	16535.7	1.5				ug/L	15221	Standard
	Ti	47	216.3	2.7	**-0.3713**	0.021	5.6	ug/L	262	Standard
	V	51	811.7	5.7	**-0.0199**	0.015	76.6	ug/L	874	Standard
	Cr	52	4173.6	3.3	**-0.1372**	0.026	19.0	ug/L	4335	Standard
	Cr	53	290.0	14.1	**0.1779**	0.093	52.5	ug/L	200	Standard
	Mn	55	1131.7	7.2	**0.0299**	0.020	65.9	ug/L	830	Standard
	Co	59	94.7	3.2	**0.0009**	0.001	97.3	ug/L	75	Standard
	Ni	60	139.3	10.1	**0.0120**	0.017	140.2	ug/L	98	Standard
	Cu	65	243.3	7.2	**0.0407**	0.016	39.8	ug/L	201	Standard
	Zn	66	1094.0	2.4	**1.4667**	0.053	3.6	ug/L	211	Standard
>	**Ge**	72	217560.4	1.4				ug/L	201509	Standard
	As	75	-26.8	32.8	**0.0666**	0.014	21.1	ug/L	-72	Standard
	Se	82	13.6	23.7	**0.0037**	0.058	1542.7	ug/L	6	Standard
	Se-1	77	41.0	7.3	**0.1113**	0.093	83.7	ug/L	42	Standard
>	**Ga**	71	18.3	83.3				mg/L	25	Standard
	Rb	85	31.7	24.1				ug/L	8	Standard
	Y	89	229755.7	1.0				ug/L	207393	Standard
>	**Rh**	103	5.0	100.0				ug/L	7	Standard
	Mo	98	81.1	16.6	**0.0426**	0.010	23.2	ug/L	9	Standard
	Ag	107	97.0	7.2	**0.0023**	0.001	58.3	ug/L	79	Standard
	Cd	111	9.5	22.0	**0.0014**	0.002	104.4	mg/L	8	Standard
	Cd	114	34.2	33.2	**0.0031**	0.003	104.0	ug/L	8	Standard
>	**In**	115	379673.8	1.7				ug/L	344753	Standard
	Sn	118	403.3	13.4	**0.0183**	0.014	75.4	ug/L	327	Standard
	Sb	123	271.4	24.8	**0.0617**	0.018	29.8	ug/L	64	Standard
	Ba	135	169.7	4.9	**0.0915**	0.006	6.5	ug/L	22	Standard
	Ce	140	85.0	17.6				ug/L	63	Standard
>	**Tb**	159	650622.3	2.8				ug/L	622049	Standard
	Ho	165	11.7	99.0				ug/L	12	Standard
	Tl	203	29.3	53.1	**0.0041**	0.003	62.1	ug/L	4	Standard
	Tl	205	21.7	26.6	**0.0014**	0.001	94.3	ug/L	5	Standard
	Pb	206	254.3	7.3	**0.0040**	0.004	95.3	ug/L	163	Standard
	Pb	207	232.7	6.7	**0.0165**	0.003	18.3	ug/L	139	Standard
	Pb	208	721.0	2.7	**0.0055**	0.001	23.1	ug/L	519	Standard
	U	238	18.7	20.3	**0.0045**	0.001	17.1	ug/L	4	Standard
>	**Bi**	209	360031.8	2.1				ug/L	331049	Standard

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Na	23	3.3	86.6	**-74.1874**	143.252	193.1	mg/L	0	Standard
Mg	24	23.3	53.9	**0.0259**	0.029	111.3	mg/L	7	Standard
K	39	16.7	45.8	**-0.0964**	0.064	65.9	mg/L	33	Standard
Ca	43	60.0	36.3	**-3.1228**	8.364	267.8	mg/L	80	Standard
Fe	54	89.3	16.2	**-0.0068**	0.026	388.2	mg/L	81	Standard
Fe	57	86.7	17.6	**-0.1252**	0.118	94.3	mg/L	93	Standard
> **Sc-1**	45	16535.7	1.5				mg/L	15221	Standard
Cl	35	38928.6	0.3				ug/L	40209	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	576.7	6.1				ug/L	303	Standard
P	31	14810.6	1.1				ug/L	14097	Standard
S	34	3007.0	3.7				ug/L	2990	Standard
Sr	88	43.3	48.0				ug/L	50	Standard
C	12	216.7	29.7				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.7	235.5				mg/L	3	Standard
Ho-1	165	11.7	99.0				mg/L	12	Standard
Er	166	13.3	114.6				mg/L	7	Standard
I	127	2925.3	7.2				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.544	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.966	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.129
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.755
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: November 17, 2015

Method 6020 - Summary Report

Sample ID: LCSS M5 WG546715-03
Sample Date/Time: Monday, November 16, 2015 14:00:38
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	29939.6	4.2				ug/L	29272	Standard
	Be	9	13906.4	4.1	**26.1195**	1.096	4.2	ug/L	7	Standard
	Al	27	3315.4	51.0	**0.0594**	0.042	70.7	ug/L	318	Standard
	Sc	45	16270.4	2.0				ug/L	15221	Standard
	Ti	47	217.0	7.7	**-0.3506**	0.138	39.4	ug/L	262	Standard
	V	51	89691.2	1.6	**24.8888**	0.260	1.0	ug/L	874	Standard
	Cr	52	85753.7	1.9	**25.0950**	0.283	1.1	ug/L	4335	Standard
	Cr	53	10527.0	4.0	**24.8362**	0.756	3.0	ug/L	200	Standard
	Mn	55	83456.3	3.0	**24.6956**	0.643	2.6	ug/L	830	Standard
	Co	59	86006.1	1.4	**25.1929**	0.221	0.9	ug/L	75	Standard
	Ni	60	23969.0	3.3	**25.4544**	0.671	2.6	ug/L	98	Standard
	Cu	65	24724.2	1.8	**26.2825**	0.331	1.3	ug/L	201	Standard
	Zn	66	15193.3	1.1	**27.2604**	0.307	1.1	ug/L	211	Standard
>	**Ge**	72	215542.1	1.1				ug/L	201509	Standard
	As	75	16428.5	1.5	**26.3561**	0.201	0.8	ug/L	-72	Standard
	Se	82	1497.1	2.0	**26.5347**	0.363	1.4	ug/L	6	Standard
	Se-1	77	959.0	3.6	**26.4478**	0.933	3.5	ug/L	42	Standard
>	**Ga**	71	20.0	66.1				mg/L	25	Standard
	Rb	85	35.0	14.3				ug/L	8	Standard
	Y	89	229302.3	1.4				ug/L	207393	Standard
>	**Rh**	103	6.7	43.3				ug/L	7	Standard
	Mo	98	90.5	19.9	**0.0493**	0.014	29.2	ug/L	9	Standard
	Ag	107	103966.5	1.3	**24.2657**	0.225	0.9	ug/L	79	Standard
	Cd	111	35789.7	1.6	**25.1289**	0.155	0.6	mg/L	8	Standard
	Cd	114	86625.1	3.0	**25.0730**	0.317	1.3	ug/L	8	Standard
>	**In**	115	382261.0	2.0				ug/L	344753	Standard
	Sn	118	448.3	26.0	**0.0292**	0.031	106.5	ug/L	327	Standard
	Sb	123	97572.9	1.5	**24.8168**	0.121	0.5	ug/L	64	Standard
	Ba	135	36317.8	2.6	**23.8972**	0.190	0.8	ug/L	22	Standard
	Ce	140	78.3	13.3				ug/L	63	Standard
>	**Tb**	159	647357.7	4.1				ug/L	622049	Standard
	Ho	165	11.7	65.5				ug/L	12	Standard
	Tl	203	148627.7	2.4	**24.9614**	0.421	1.7	ug/L	4	Standard
	Tl	205	99488.9	1.0	**24.1852**	0.143	0.6	ug/L	5	Standard
	Pb	206	104715.4	2.4	**24.9815**	0.283	1.1	ug/L	163	Standard
	Pb	207	90518.0	2.0	**23.8439**	0.290	1.2	ug/L	139	Standard
	Pb	208	320856.9	1.7	**24.7281**	0.146	0.6	ug/L	519	Standard
	U	238	104874.4	1.8	**23.5178**	0.195	0.8	ug/L	4	Standard
>	**Bi**	209	359706.1	1.5				ug/L	331049	Standard

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Na	23	0.0		**91.1719**	0.000	0.0	mg/L	0	Standard
Mg	24	20.0	75.0	**0.0192**	0.036	185.7	mg/L	7	Standard
K	39	26.7	65.8	**-0.0065**	0.155	2388.0	mg/L	33	Standard
Ca	43	51.7	27.9	**-5.9756**	6.222	104.1	mg/L	80	Standard
Fe	54	102.2	15.4	**0.0232**	0.036	154.4	mg/L	81	Standard
Fe	57	96.7	31.6	**-0.0347**	0.232	669.9	mg/L	93	Standard
> **Sc-1**	45	16270.4	2.0				mg/L	15221	Standard
Cl	35	38859.1	0.6				ug/L	40209	Standard
Kr	83	3.3	69.3				ug/L	4	Standard
Br	81	463.3	7.6				ug/L	303	Standard
P	31	14742.2	5.3				ug/L	14097	Standard
S	34	3117.0	4.4				ug/L	2990	Standard
Sr	88	36.7	55.1				ug/L	50	Standard
C	12	213.3	30.5				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.7	105.8				mg/L	3	Standard
Ho-1	165	11.7	65.5				mg/L	12	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	2855.3	3.4				mg/L	3957	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		102.282	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		106.964	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.880
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.656
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSS M5 WG546715-03
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Method 6020 - Summary Report

Sample ID: L1511057002 WG546715-01
Sample Date/Time: Monday, November 16, 2015 14:03:49
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	32673.5	2.4				ug/L	29272	Standard
	Be	9	710.0	10.6	**1.2086**	0.100	8.2	ug/L	7	Standard
	Al	27	1407858.9	2.3	**29.0883**	0.369	1.3	ug/L	318	Standard
	Sc	45	19277.3	4.0				ug/L	15221	Standard
	Ti	47	2378.5	7.2	**14.6287**	1.012	6.9	ug/L	262	Standard
	V	51	66124.9	1.8	**17.3853**	0.043	0.2	ug/L	874	Standard
	Cr	52	56254.9	1.5	**15.1336**	0.228	1.5	ug/L	4335	Standard
	Cr	53	6703.2	3.1	**14.8471**	0.374	2.5	ug/L	200	Standard
	Mn	55	2444790.2	1.9	**696.5455**	0.511	0.1	ug/L	830	Standard
	Co	59	47044.9	1.8	**13.0990**	0.110	0.8	ug/L	75	Standard
	Ni	60	17454.4	1.2	**17.5972**	0.110	0.6	ug/L	98	Standard
	Cu	65	21720.6	1.0	**21.9357**	0.235	1.1	ug/L	201	Standard
	Zn	66	30558.8	0.9	**52.6414**	0.480	0.9	ug/L	211	Standard
>	**Ge**	72	226542.8	1.8				ug/L	201509	Standard
	As	75	3601.5	1.0	**5.5856**	0.155	2.8	ug/L	-72	Standard
	Se	82	50.9	8.0	**0.6289**	0.077	12.2	ug/L	6	Standard
	Se-1	77	78.7	2.6	**1.0930**	0.073	6.7	ug/L	42	Standard
>	**Ga**	71	8429.0	2.4				mg/L	25	Standard
	Rb	85	79548.3	1.4				ug/L	8	Standard
	Y	89	346726.1	1.3				ug/L	207393	Standard
>	**Rh**	103	20.0	66.1				ug/L	7	Standard
	Mo	98	1157.6	2.8	**0.8153**	0.018	2.3	ug/L	9	Standard
	Ag	107	395.0	2.9	**0.0696**	0.002	3.3	ug/L	79	Standard
	Cd	111	333.7	2.1	**0.2236**	0.006	2.7	mg/L	8	Standard
	Cd	114	798.4	16.1	**0.2190**	0.037	16.7	ug/L	8	Standard
>	**In**	115	391325.6	0.6				ug/L	344753	Standard
	Sn	118	991.7	4.2	**0.1582**	0.009	5.6	ug/L	327	Standard
	Sb	123	338.4	13.9	**0.0760**	0.012	15.4	ug/L	64	Standard
	Ba	135	203773.7	1.5	**131.0794**	1.537	1.2	ug/L	22	Standard
	Ce	140	632555.0	1.0				ug/L	63	Standard
>	**Tb**	159	685302.7	1.6				ug/L	622049	Standard
	Ho	165	12606.9	2.6				ug/L	12	Standard
	Tl	203	785.0	0.4	**0.1270**	0.002	1.7	ug/L	4	Standard
	Tl	205	440.0	15.7	**0.0998**	0.016	16.4	ug/L	5	Standard
	Pb	206	98832.0	0.9	**22.8504**	0.174	0.8	ug/L	163	Standard
	Pb	207	81158.2	2.0	**20.7134**	0.116	0.6	ug/L	139	Standard
	Pb	208	292637.6	1.2	**21.8541**	0.070	0.3	ug/L	519	Standard
	U	238	6022.5	3.1	**1.3091**	0.025	1.9	ug/L	4	Standard
>	**Bi**	209	371129.3	1.5				ug/L	331049	Standard

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Na	23	0.0		**91.1719**	0.000	0.0	mg/L	0	Standard
Mg	24	66.7	33.8	**0.1043**	0.046	44.1	mg/L	7	Standard
K	39	145.0	10.3	**0.8322**	0.147	17.7	mg/L	33	Standard
Ca	43	111.7	33.6	**11.5152**	13.911	120.8	mg/L	80	Standard
Fe	54	14553.8	0.2	**24.9908**	0.990	4.0	mg/L	81	Standard
Fe	57	4038.9	3.2	**27.0006**	0.938	3.5	mg/L	93	Standard
> **Sc-1**	45	19277.3	4.0				mg/L	15221	Standard
Cl	35	37105.4	1.8				ug/L	40209	Standard
Kr	83	4.3	13.3				ug/L	4	Standard
Br	81	463.3	5.4				ug/L	303	Standard
P	31	14682.1	1.4				ug/L	14097	Standard
S	34	3093.6	5.1				ug/L	2990	Standard
Sr	88	41.7	27.7				ug/L	50	Standard
C	12	360.0	10.0				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	103.3	20.1				mg/L	0	Standard
Dy	164	19751.8	2.5				mg/L	3	Standard
Ho-1	165	12606.9	2.6				mg/L	12	Standard
Er	166	11030.7	1.4				mg/L	7	Standard
I	127	5451.0	5.3				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.622	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		112.423	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1511057002 WG546715-01
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.509
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		112.107
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Approved: November 17, 2015

Method 6020 - Summary Report

Sample ID: L1511057002S WG546715-04
Sample Date/Time: Monday, November 16, 2015 14:07:00
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	33350.0	1.6				ug/L	29272	Standard
	Be	9	15528.0	4.5	**26.1775**	1.446	5.5	ug/L	7	Standard
	Al	27	1571268.4	2.4	**31.8192**	1.278	4.0	ug/L	318	Standard
	Sc	45	19384.1	5.2				ug/L	15221	Standard
	Ti	47	2790.9	1.8	**17.5134**	0.469	2.7	ug/L	262	Standard
	V	51	162443.6	0.9	**43.0774**	0.859	2.0	ug/L	874	Standard
	Cr	52	146846.0	1.8	**41.7812**	0.174	0.4	ug/L	4335	Standard
	Cr	53	18479.6	1.8	**41.8452**	1.055	2.5	ug/L	200	Standard
	Mn	55	2273369.3	1.9	**647.7123**	2.179	0.3	ug/L	830	Standard
	Co	59	138636.5	1.7	**38.6552**	0.429	1.1	ug/L	75	Standard
	Ni	60	43595.0	1.5	**44.1555**	0.306	0.7	ug/L	98	Standard
	Cu	65	50642.5	1.0	**51.4370**	0.675	1.3	ug/L	201	Standard
	Zn	66	47817.7	1.1	**82.6658**	0.890	1.1	ug/L	211	Standard
>	Ge	72	226543.9	2.2				ug/L	201509	Standard
	As	75	17126.9	2.2	**26.1435**	0.044	0.2	ug/L	-72	Standard
	Se	82	1258.7	1.6	**21.1813**	0.143	0.7	ug/L	6	Standard
	Se-1	77	820.7	2.7	**21.3405**	0.546	2.6	ug/L	42	Standard
>	Ga	71	8770.9	1.3				mg/L	25	Standard
	Rb	85	96855.3	0.9				ug/L	8	Standard
	Y	89	368308.1	2.7				ug/L	207393	Standard
>	Rh	103	25.0	0.0				ug/L	7	Standard
	Mo	98	1217.2	2.3	**0.8490**	0.032	3.8	ug/L	9	Standard
	Ag	107	104233.0	1.2	**23.5015**	0.224	1.0	ug/L	79	Standard
	Cd	111	36671.6	0.9	**24.8762**	0.310	1.2	mg/L	8	Standard
	Cd	114	88342.7	2.4	**24.7031**	0.092	0.4	ug/L	8	Standard
>	In	115	395706.6	2.1				ug/L	344753	Standard
	Sn	118	968.4	6.2	**0.1502**	0.019	13.0	ug/L	327	Standard
	Sb	123	23444.0	1.0	**5.7546**	0.064	1.1	ug/L	64	Standard
	Ba	135	267402.7	1.4	**170.1409**	2.407	1.4	ug/L	22	Standard
	Ce	140	740917.7	1.0				ug/L	63	Standard
>	Tb	159	686067.3	2.3				ug/L	622049	Standard
	Ho	165	14206.7	3.5				ug/L	12	Standard
	Tl	203	149672.8	1.6	**24.1576**	0.172	0.7	ug/L	4	Standard
	Tl	205	99861.4	1.6	**23.3367**	0.785	3.4	ug/L	5	Standard
	Pb	206	202218.3	1.3	**46.4167**	0.579	1.2	ug/L	163	Standard
	Pb	207	171973.9	0.9	**43.5793**	0.832	1.9	ug/L	139	Standard
	Pb	208	613143.0	1.1	**45.4586**	0.580	1.3	ug/L	519	Standard
	U	238	113973.1	1.3	**24.5632**	0.239	1.0	ug/L	4	Standard
>	Bi	209	374334.3	2.3				ug/L	331049	Standard

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Na	23	1.7	173.2	**24.4113**	115.633	473.7	mg/L	0	Standard
Mg	24	86.7	24.0	**0.1439**	0.048	33.2	mg/L	7	Standard
K	39	138.3	16.3	**0.7813**	0.216	27.6	mg/L	33	Standard
Ca	43	88.3	13.1	**3.1330**	4.042	129.0	mg/L	80	Standard
Fe	54	15037.3	3.2	**25.6776**	0.692	2.7	mg/L	81	Standard
Fe	57	4150.6	0.9	**27.6406**	1.273	4.6	mg/L	93	Standard
Sc-1	45	19384.1	5.2				mg/L	15221	Standard
Cl	35	36056.9	1.1				ug/L	40209	Standard
Kr	83	3.0	57.7				ug/L	4	Standard
Br	81	476.7	10.3				ug/L	303	Standard
P	31	15105.9	4.2				ug/L	14097	Standard
S	34	2970.3	1.7				ug/L	2990	Standard
Sr	88	66.7	26.3				ug/L	50	Standard
C	12	393.3	21.3				mg/L	167	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	113.3	58.8				mg/L	0	Standard
Dy	164	23897.3	1.4				mg/L	3	Standard
Ho-1	165	14206.7	3.5				mg/L	12	Standard
Er	166	12298.3	5.9				mg/L	7	Standard
I	127	5137.5	2.7				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		113.933	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		112.424	
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	114.780
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	113.075
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1511057002SD WG546715-05
Sample Date/Time: Monday, November 16, 2015 14:10:11
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	32892.3	0.7				ug/L	29272	Standard
	Be	9	16275.4	3.4	**27.8117**	1.081	3.9	ug/L	7	Standard
	Al	27	1930874.7	2.7	**39.6368**	1.259	3.2	ug/L	318	Standard
	Sc	45	19636.1	2.0				ug/L	15221	Standard
	Ti	47	5034.8	1.3	**33.4924**	0.672	2.0	ug/L	262	Standard
	V	51	189416.5	0.4	**50.7543**	0.516	1.0	ug/L	874	Standard
	Cr	52	163314.2	1.1	**47.0957**	0.767	1.6	ug/L	4335	Standard
	Cr	53	20278.6	1.7	**46.4155**	1.062	2.3	ug/L	200	Standard
	Mn	55	2031458.2	1.4	**584.4068**	8.086	1.4	ug/L	830	Standard
	Co	59	150693.6	2.1	**42.4286**	0.996	2.3	ug/L	75	Standard
	Ni	60	49084.7	1.0	**50.2183**	0.702	1.4	ug/L	98	Standard
	Cu	65	50687.3	0.4	**51.9813**	0.517	1.0	ug/L	201	Standard
	Zn	66	54086.4	1.4	**94.4811**	1.606	1.7	ug/L	211	Standard
>	**Ge**	72	224348.1	0.7				ug/L	201509	Standard
	As	75	19438.9	0.2	**29.9478**	0.188	0.6	ug/L	-72	Standard
	Se	82	1404.0	0.8	**23.8874**	0.275	1.2	ug/L	6	Standard
	Se-1	77	898.4	5.4	**23.7034**	1.485	6.3	ug/L	42	Standard
>	**Ga**	71	11656.1	1.6				mg/L	25	Standard
	Rb	85	120188.4	3.1				ug/L	8	Standard
	Y	89	375657.1	1.3				ug/L	207393	Standard
>	**Rh**	103	18.3	15.7				ug/L	7	Standard
	Mo	98	1510.4	6.4	**1.0729**	0.059	5.5	ug/L	9	Standard
	Ag	107	107330.5	1.5	**24.5625**	0.495	2.0	ug/L	79	Standard
	Cd	111	37838.6	1.0	**26.0510**	0.478	1.8	mg/L	8	Standard
	Cd	114	92125.9	1.4	**26.1521**	0.598	2.3	ug/L	8	Standard
>	**In**	115	389863.4	1.0				ug/L	344753	Standard
	Sn	118	875.0	7.4	**0.1306**	0.014	10.7	ug/L	327	Standard
	Sb	123	15842.9	0.9	**3.9442**	0.056	1.4	ug/L	64	Standard
	Ba	135	309341.0	0.7	**199.7626**	2.548	1.3	ug/L	22	Standard
	Ce	140	816924.0	2.3				ug/L	63	Standard
>	**Tb**	159	676989.0	0.4				ug/L	622049	Standard
	Ho	165	15916.7	0.7				ug/L	12	Standard
	Tl	203	155404.5	2.2	**25.5416**	0.576	2.3	ug/L	4	Standard
	Tl	205	103943.7	1.1	**24.7260**	0.310	1.3	ug/L	5	Standard
	Pb	206	227103.4	0.9	**53.0865**	0.488	0.9	ug/L	163	Standard
	Pb	207	191347.4	0.9	**49.3731**	0.503	1.0	ug/L	139	Standard
	Pb	208	683452.2	1.3	**51.6004**	0.717	1.4	ug/L	519	Standard
	U	238	118506.4	2.0	**26.0062**	0.536	2.1	ug/L	4	Standard
>	**Bi**	209	367576.3	0.1				ug/L	331049	Standard

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Na	23	0.0		**91.1719**	0.000	0.0	mg/L	0	Standard
Mg	24	76.7	21.0	**0.1211**	0.030	24.8	mg/L	7	Standard
K	39	165.0	21.2	**0.9505**	0.232	24.4	mg/L	33	Standard
Ca	43	91.7	25.8	**3.7436**	7.449	199.0	mg/L	80	Standard
Fe	54	16616.9	2.1	**28.0049**	0.080	0.3	mg/L	81	Standard
Fe	57	4434.0	0.9	**29.1568**	0.721	2.5	mg/L	93	Standard
> **Sc-1**	45	19636.1	2.0				mg/L	15221	Standard
Cl	35	36323.5	0.4				ug/L	40209	Standard
Kr	83	3.7	56.8				ug/L	4	Standard
Br	81	440.0	22.4				ug/L	303	Standard
P	31	15691.5	4.1				ug/L	14097	Standard
S	34	2985.3	4.8				ug/L	2990	Standard
Sr	88	76.7	37.1				ug/L	50	Standard
C	12	513.3	15.7				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	166.7	40.0				mg/L	0	Standard
Dy	164	25941.9	1.6				mg/L	3	Standard
Ho-1	165	15916.7	0.7				mg/L	12	Standard
Er	166	14086.6	3.8				mg/L	7	Standard
I	127	5759.4	2.5				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.369	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.334	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	113.085
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	111.034
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1511057001
Sample Date/Time: Monday, November 16, 2015 14:13:22
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	34928.6	2.6				ug/L	29272	Standard
	Be	9	1081.7	13.4	**1.7285**	0.213	12.3	ug/L	7	Standard
	Al	27	2849322.9	1.8	**55.0890**	0.528	1.0	ug/L	318	Standard
	Sc	45	20103.3	1.1				ug/L	15221	Standard
	Ti	47	4188.2	0.9	**26.6965**	0.098	0.4	ug/L	262	Standard
	V	51	86993.8	1.1	**22.5128**	0.232	1.0	ug/L	874	Standard
	Cr	52	88656.0	2.1	**24.1688**	0.270	1.1	ug/L	4335	Standard
	Cr	53	10855.6	1.7	**23.8931**	0.185	0.8	ug/L	200	Standard
	Mn	55	3317972.5	2.0	**927.5625**	10.611	1.1	ug/L	830	Standard
	Co	59	63915.5	1.1	**17.4693**	0.133	0.8	ug/L	75	Standard
	Ni	60	26481.8	1.9	**26.2582**	0.277	1.1	ug/L	98	Standard
	Cu	65	18801.3	1.8	**18.5945**	0.275	1.5	ug/L	201	Standard
	Zn	66	48667.1	1.8	**82.5308**	0.578	0.7	ug/L	211	Standard
>	**Ge**	72	230897.2	1.1				ug/L	201509	Standard
	As	75	6100.8	0.6	**9.2083**	0.050	0.5	ug/L	-72	Standard
	Se	82	50.5	8.4	**0.6057**	0.062	10.3	ug/L	6	Standard
	Se-1	77	80.3	8.1	**1.0955**	0.151	13.8	ug/L	42	Standard
>	**Ga**	71	12543.5	1.9				mg/L	25	Standard
	Rb	85	103213.7	1.4				ug/L	8	Standard
	Y	89	395917.3	1.9				ug/L	207393	Standard
>	**Rh**	103	10.0	50.0				ug/L	7	Standard
	Mo	98	2323.5	8.3	**1.6200**	0.132	8.2	ug/L	9	Standard
	Ag	107	453.0	4.0	**0.0807**	0.004	4.7	ug/L	79	Standard
	Cd	111	298.3	1.1	**0.1952**	0.002	1.0	mg/L	8	Standard
	Cd	114	659.2	3.7	**0.1758**	0.006	3.6	ug/L	8	Standard
>	**In**	115	399464.7	0.3				ug/L	344753	Standard
	Sn	118	900.0	9.4	**0.1315**	0.020	15.2	ug/L	327	Standard
	Sb	123	212.7	17.3	**0.0437**	0.009	20.6	ug/L	64	Standard
	Ba	135	289902.9	1.4	**182.6922**	2.168	1.2	ug/L	22	Standard
	Ce	140	1042992.6	2.5				ug/L	63	Standard
>	**Tb**	159	698766.8	1.9				ug/L	622049	Standard
	Ho	165	16999.6	6.5				ug/L	12	Standard
	Tl	203	901.7	4.1	**0.1442**	0.005	3.2	ug/L	4	Standard
	Tl	205	693.3	24.9	**0.1573**	0.038	24.4	ug/L	5	Standard
	Pb	206	96693.0	2.2	**22.0842**	0.265	1.2	ug/L	163	Standard
	Pb	207	79059.8	2.0	**19.9355**	0.236	1.2	ug/L	139	Standard
	Pb	208	288847.9	0.9	**21.3128**	0.222	1.0	ug/L	519	Standard
	U	238	4698.1	4.3	**1.0091**	0.037	3.7	ug/L	4	Standard
>	**Bi**	209	375615.0	1.2				ug/L	331049	Standard

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Na	23	5.0	0.0	**-113.0161**	2.188	1.9	mg/L	0	Standard
Mg	24	170.0	20.6	**0.2952**	0.069	23.4	mg/L	7	Standard
K	39	218.3	35.5	**1.3024**	0.551	42.3	mg/L	33	Standard
Ca	43	105.0	46.9	**7.5530**	16.430	217.5	mg/L	80	Standard
Fe	54	29532.8	1.3	**48.7605**	1.104	2.3	mg/L	81	Standard
Fe	57	8060.5	6.6	**52.3987**	3.658	7.0	mg/L	93	Standard
Sc-1	45	20103.3	1.1				mg/L	15221	Standard
Cl	35	35735.4	1.4				ug/L	40209	Standard
Kr	83	3.7	68.6				ug/L	4	Standard
Br	81	443.3	36.0				ug/L	303	Standard
P	31	15209.3	4.7				ug/L	14097	Standard
S	34	2836.9	2.0				ug/L	2990	Standard
Sr	88	83.3	17.3				ug/L	50	Standard
C	12	363.3	11.1				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	323.3	18.9				mg/L	0	Standard
Dy	164	27874.0	6.1				mg/L	3	Standard
Ho-1	165	16999.6	6.5				mg/L	12	Standard
Er	166	15024.1	3.7				mg/L	7	Standard
I	127	4827.4	4.9				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		119.326	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		114.584	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	115.870
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	113.462
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1511056001
Sample Date/Time: Monday, November 16, 2015 14:16:33
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	33630.6	3.2				ug/L	29272	Standard
	Be	9	15.0	33.3	**0.0137**	0.009	64.9	ug/L	7	Standard
	Al	27	139062.5	3.7	**2.7760**	0.015	0.5	ug/L	318	Standard
	Sc	45	16724.2	4.1				ug/L	15221	Standard
	Ti	47	682.3	3.3	**2.8644**	0.290	10.1	ug/L	262	Standard
	V	51	2757.8	4.5	**0.4966**	0.011	2.3	ug/L	874	Standard
	Cr	52	16102.9	0.9	**3.3677**	0.101	3.0	ug/L	4335	Standard
	Cr	53	1840.1	10.3	**3.7369**	0.317	8.5	ug/L	200	Standard
	Mn	55	70443.0	5.5	**19.9523**	0.546	2.7	ug/L	830	Standard
	Co	59	987.7	6.8	**0.2514**	0.011	4.3	ug/L	75	Standard
	Ni	60	1502.1	1.7	**1.4051**	0.021	1.5	ug/L	98	Standard
	Cu	65	60372.7	2.1	**61.9577**	1.915	3.1	ug/L	201	Standard
	Zn	66	64360.4	2.1	**112.5001**	1.499	1.3	ug/L	211	Standard
>	**Ge**	72	224434.3	2.9				ug/L	201509	Standard
	As	75	227.5	14.6	**0.4589**	0.057	12.5	ug/L	-72	Standard
	Se	82	48.2	5.7	**0.5914**	0.067	11.3	ug/L	6	Standard
	Se-1	77	68.3	8.4	**0.8260**	0.102	12.4	ug/L	42	Standard
>	**Ga**	71	533.3	19.8				mg/L	25	Standard
	Rb	85	1918.5	3.3				ug/L	8	Standard
	Y	89	239313.6	1.2				ug/L	207393	Standard
>	**Rh**	103	10.0	50.0				ug/L	7	Standard
	Mo	98	865.5	1.9	**0.5986**	0.028	4.7	ug/L	9	Standard
	Ag	107	1113.4	2.6	**0.2308**	0.012	5.0	ug/L	79	Standard
	Cd	111	295.0	5.0	**0.1948**	0.010	5.2	mg/L	8	Standard
	Cd	114	675.4	6.8	**0.1819**	0.009	5.0	ug/L	8	Standard
>	**In**	115	395938.0	3.5				ug/L	344753	Standard
	Sn	118	3342.0	3.9	**0.7205**	0.047	6.6	ug/L	327	Standard
	Sb	123	790.1	3.8	**0.1862**	0.012	6.4	ug/L	64	Standard
	Ba	135	56491.2	2.3	**35.9133**	0.654	1.8	ug/L	22	Standard
	Ce	140	10165.1	6.0				ug/L	63	Standard
>	**Tb**	159	672843.2	2.6				ug/L	622049	Standard
	Ho	165	205.0	20.8				ug/L	12	Standard
	Tl	203	59.7	24.4	**0.0072**	0.002	29.3	ug/L	4	Standard
	Tl	205	25.0	52.9	**0.0010**	0.003	261.5	ug/L	5	Standard
	Pb	206	20552.3	1.7	**3.8509**	0.068	1.8	ug/L	163	Standard
	Pb	207	17045.6	1.7	**3.5320**	0.050	1.4	ug/L	139	Standard
	Pb	208	61556.5	1.7	**3.7297**	0.056	1.5	ug/L	519	Standard
	U	238	582.7	6.5	**0.1043**	0.008	7.9	ug/L	4	Standard
>	**Bi**	209	452529.0	3.1				ug/L	331049	Standard

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Na	23	1.7	173.2	**13.0129**	135.375	1040.3	mg/L	0	Standard
Mg	24	118.3	12.2	**0.2415**	0.022	9.0	mg/L	7	Standard
K	39	41.7	18.3	**0.1166**	0.078	66.9	mg/L	33	Standard
Ca	43	61.7	36.6	**-2.6780**	9.015	336.6	mg/L	80	Standard
Fe	54	536.8	12.8	**0.8837**	0.143	16.2	mg/L	81	Standard
Fe	57	218.3	15.6	**0.9105**	0.248	27.2	mg/L	93	Standard
> **Sc-1**	45	16724.2	4.1				mg/L	15221	Standard
Cl	35	34924.2	1.5				ug/L	40209	Standard
Kr	83	3.0	57.7				ug/L	4	Standard
Br	81	700.0	2.9				ug/L	303	Standard
P	31	14423.5	4.2				ug/L	14097	Standard
S	34	2553.5	4.7				ug/L	2990	Standard
Sr	88	65.0	7.7				ug/L	50	Standard
C	12	863.4	12.4				mg/L	167	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	180.0	30.9				mg/L	0	Standard
Dy	164	339.5	13.9				mg/L	3	Standard
Ho-1	165	205.0	20.8				mg/L	12	Standard
Er	166	220.0	29.8				mg/L	7	Standard
I	127	10697.1	1.0				mg/L	3957	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		114.892	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		111.377	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	114.847	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	136.695	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Zn 66 Upper, S, EEE	Zn	66	
Bi 209 Int Std for sample	Bi	209	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1511056001PS WG547041-01
Sample Date/Time: Monday, November 16, 2015 14:19:44
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	33482.0	2.1				ug/L	29272	Standard
	Be	9	30996.7	0.6	**52.0522**	1.119	2.2	ug/L	7	Standard
	Al	27	138724.5	4.0	**2.7813**	0.059	2.1	ug/L	318	Standard
	Sc	45	17266.5	2.6				ug/L	15221	Standard
	Ti	47	705.0	2.8	**2.9845**	0.229	7.7	ug/L	262	Standard
	V	51	192870.8	2.8	**51.2732**	0.567	1.1	ug/L	874	Standard
	Cr	52	189377.6	1.0	**54.4084**	1.028	1.9	ug/L	4335	Standard
	Cr	53	24015.7	2.3	**54.6337**	1.259	2.3	ug/L	200	Standard
	Mn	55	242766.3	2.1	**69.0262**	0.729	1.1	ug/L	830	Standard
	Co	59	187508.8	2.2	**52.3921**	1.004	1.9	ug/L	75	Standard
	Ni	60	52177.7	1.7	**52.9838**	1.232	2.3	ug/L	98	Standard
	Cu	65	112806.1	0.7	**115.0720**	2.306	2.0	ug/L	201	Standard
	Zn	66	94610.2	2.0	**164.3620**	1.860	1.1	ug/L	211	Standard
>	Ge	72	226104.6	1.9				ug/L	201509	Standard
	As	75	35734.9	1.3	**54.5395**	0.501	0.9	ug/L	-72	Standard
	Se	82	3238.8	3.0	**54.9739**	0.902	1.6	ug/L	6	Standard
	Se-1	77	2009.5	0.8	**53.8971**	1.438	2.7	ug/L	42	Standard
>	Ga	71	550.0	11.1				mg/L	25	Standard
	Rb	85	1960.1	7.1				ug/L	8	Standard
	Y	89	242382.3	2.2				ug/L	207393	Standard
>	Rh	103	26.7	54.1				ug/L	7	Standard
	Mo	98	855.5	2.5	**0.5784**	0.015	2.5	ug/L	9	Standard
	Ag	107	220253.5	1.4	**48.6287**	0.069	0.1	ug/L	79	Standard
	Cd	111	78519.0	2.3	**52.1339**	0.719	1.4	mg/L	8	Standard
	Cd	114	188669.6	2.6	**51.6520**	0.977	1.9	ug/L	8	Standard
>	In	115	404238.3	1.5				ug/L	344753	Standard
	Sn	118	2955.3	3.5	**0.6122**	0.018	3.0	ug/L	327	Standard
	Sb	123	207227.2	1.9	**49.8446**	0.256	0.5	ug/L	64	Standard
	Ba	135	135366.4	1.6	**84.2929**	1.123	1.3	ug/L	22	Standard
	Ce	140	9531.3	2.8				ug/L	63	Standard
>	Tb	159	671415.1	2.2				ug/L	622049	Standard
	Ho	165	183.3	16.4				ug/L	12	Standard
	Tl	203	318038.7	1.5	**41.8070**	0.520	1.2	ug/L	4	Standard
	Tl	205	213492.0	1.0	**40.6206**	0.288	0.7	ug/L	5	Standard
	Pb	206	240786.1	1.3	**45.0074**	0.325	0.7	ug/L	163	Standard
	Pb	207	216024.0	1.5	**44.5766**	0.537	1.2	ug/L	139	Standard
	Pb	208	746501.1	1.8	**45.0718**	0.820	1.8	ug/L	519	Standard
	U	238	230400.4	1.3	**40.4388**	0.424	1.0	ug/L	4	Standard
>	Bi	209	459589.4	1.1				ug/L	331049	Standard

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Na	23	0.0		**91.1719**	0.000	0.0	mg/L	0	Standard
Mg	24	161.7	22.4	**0.3296**	0.081	24.7	mg/L	7	Standard
K	39	61.7	16.9	**0.2669**	0.076	28.5	mg/L	33	Standard
Ca	43	73.3	3.9	**1.0439**	0.496	47.6	mg/L	80	Standard
Fe	54	552.7	12.9	**0.8801**	0.135	15.3	mg/L	81	Standard
Fe	57	223.3	16.8	**0.8924**	0.251	28.1	mg/L	93	Standard
> **Sc-1**	45	17266.5	2.6				mg/L	15221	Standard
Cl	35	34228.0	1.1				ug/L	40209	Standard
Kr	83	2.3	89.2				ug/L	4	Standard
Br	81	730.0	10.9				ug/L	303	Standard
P	31	14196.7	4.9				ug/L	14097	Standard
S	34	2435.2	8.5				ug/L	2990	Standard
Sr	88	46.7	50.6				ug/L	50	Standard
C	12	823.4	9.3				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	173.3	23.3				mg/L	0	Standard
Dy	164	307.1	29.6				mg/L	3	Standard
Ho-1	165	183.3	16.4				mg/L	12	Standard
Er	166	200.0	8.7				mg/L	7	Standard
I	127	10798.8	2.0				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.384	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		112.206	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	117.254	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	138.828	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cu 65 Upper, S, EEE	Cu	65	
Zn 66 Upper, S, EEE	Zn	66	
Bi 209 Int Std for sample	Bi	209	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1511056001SDL WG547041-02
Sample Date/Time: Monday, November 16, 2015 14:22:55
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	31925.3	4.3				ug/L	29272	Standard
	Be	9	16.7	45.8	**0.0179**	0.014	76.5	ug/L	7	Standard
	Al	27	27605.2	5.7	**0.5676**	0.028	4.9	ug/L	318	Standard
	Sc	45	16358.8	1.0				ug/L	15221	Standard
	Ti	47	264.7	7.9	**-0.0243**	0.094	385.6	ug/L	262	Standard
	V	51	1054.4	15.8	**0.0467**	0.042	90.5	ug/L	874	Standard
	Cr	52	6105.2	4.9	**0.4522**	0.045	9.9	ug/L	4335	Standard
	Cr	53	518.3	9.9	**0.7242**	0.147	20.3	ug/L	200	Standard
	Mn	55	14563.4	9.3	**4.0107**	0.353	8.8	ug/L	830	Standard
	Co	59	356.3	36.9	**0.0767**	0.037	48.6	ug/L	75	Standard
	Ni	60	406.3	11.9	**0.2936**	0.047	16.0	ug/L	98	Standard
	Cu	65	11820.9	3.7	**12.3212**	0.167	1.4	ug/L	201	Standard
	Zn	66	13878.4	1.9	**24.6006**	0.307	1.2	ug/L	211	Standard
>	**Ge**	72	217783.0	3.1				ug/L	201509	Standard
	As	75	47.1	58.2	**0.1835**	0.043	23.3	ug/L	-72	Standard
	Se	82	23.7	19.3	**0.1826**	0.083	45.5	ug/L	6	Standard
	Se-1	77	41.0	24.0	**0.1132**	0.301	265.6	ug/L	42	Standard
>	**Ga**	71	143.3	8.8				mg/L	25	Standard
	Rb	85	401.7	11.8				ug/L	8	Standard
	Y	89	230901.1	3.8				ug/L	207393	Standard
>	**Rh**	103	11.7	49.5				ug/L	7	Standard
	Mo	98	181.9	7.3	**0.1135**	0.006	5.6	ug/L	9	Standard
	Ag	107	304.7	16.7	**0.0490**	0.011	21.8	ug/L	79	Standard
	Cd	111	87.3	17.2	**0.0547**	0.010	18.6	mg/L	8	Standard
	Cd	114	181.9	8.1	**0.0447**	0.004	8.6	ug/L	8	Standard
>	**In**	115	390743.0	2.8				ug/L	344753	Standard
	Sn	118	800.0	3.8	**0.1119**	0.003	2.5	ug/L	327	Standard
	Sb	123	922.8	16.9	**0.2221**	0.042	18.9	ug/L	64	Standard
	Ba	135	10944.3	1.3	**7.0331**	0.131	1.9	ug/L	22	Standard
	Ce	140	2031.8	12.0				ug/L	63	Standard
>	**Tb**	159	657253.6	2.9				ug/L	622049	Standard
	Ho	165	55.0	32.8				ug/L	12	Standard
	Tl	203	71.7	60.4	**0.0106**	0.007	65.9	ug/L	4	Standard
	Tl	205	80.0	103.3	**0.0147**	0.019	131.2	ug/L	5	Standard
	Pb	206	4232.3	4.6	**0.9048**	0.045	5.0	ug/L	163	Standard
	Pb	207	3547.7	5.5	**0.8448**	0.049	5.8	ug/L	139	Standard
	Pb	208	12750.1	4.6	**0.8854**	0.042	4.7	ug/L	519	Standard
	U	238	181.3	51.5	**0.0391**	0.020	51.8	ug/L	4	Standard
>	**Bi**	209	378645.7	2.5				ug/L	331049	Standard

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Na	23	0.0		**91.1719**	0.000	0.0	mg/L	0	Standard
Mg	24	33.3	45.8	**0.0499**	0.035	70.6	mg/L	7	Standard
K	39	16.7	17.3	**-0.0945**	0.024	25.6	mg/L	33	Standard
Ca	43	50.0	34.6	**-6.8641**	6.918	100.8	mg/L	80	Standard
Fe	54	171.1	28.5	**0.1619**	0.098	60.7	mg/L	81	Standard
Fe	57	78.3	3.7	**-0.1846**	0.027	14.4	mg/L	93	Standard
> **Sc-1**	45	16358.8	1.0				mg/L	15221	Standard
Cl	35	33568.5	0.9				ug/L	40209	Standard
Kr	83	2.7	78.1				ug/L	4	Standard
Br	81	446.7	30.4				ug/L	303	Standard
P	31	12818.8	1.4				ug/L	14097	Standard
S	34	2441.9	4.7				ug/L	2990	Standard
Sr	88	40.0	50.0				ug/L	50	Standard
C	12	313.3	4.9				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	34.6				mg/L	0	Standard
Dy	164	91.4	22.4				mg/L	3	Standard
Ho-1	165	55.0	32.8				mg/L	12	Standard
Er	166	40.0	25.0				mg/L	7	Standard
I	127	4514.0	1.7				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.066	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.076	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		113.340
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		114.377
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1511056001SDL WG547041-02
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Method 6020 - Summary Report

Sample ID: L1511056001SDL WG547041-02
Sample Date/Time: Monday, November 16, 2015 14:26:05
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	31397.6	7.0				ug/L	29272	Standard
	Be	9	8.3	91.7	**0.0032**	0.013	412.6	ug/L	7	Standard
	Al	27	5664.4	3.3	**0.1056**	0.005	5.1	ug/L	318	Standard
	Sc	45	16453.9	5.4				ug/L	15221	Standard
	Ti	47	167.0	8.1	**-0.7264**	0.081	11.1	ug/L	262	Standard
	V	51	768.8	9.7	**-0.0315**	0.018	57.6	ug/L	874	Standard
	Cr	52	4151.6	3.1	**-0.1403**	0.020	14.6	ug/L	4335	Standard
	Cr	53	261.7	1.1	**0.1126**	0.017	14.7	ug/L	200	Standard
	Mn	55	3298.7	6.0	**0.6757**	0.046	6.8	ug/L	830	Standard
	Co	59	136.7	15.2	**0.0132**	0.006	42.7	ug/L	75	Standard
	Ni	60	167.3	2.4	**0.0419**	0.002	3.6	ug/L	98	Standard
	Cu	65	2502.9	4.6	**2.4473**	0.096	3.9	ug/L	201	Standard
	Zn	66	3280.4	5.8	**5.4410**	0.270	5.0	ug/L	211	Standard
>	**Ge**	72	216957.1	2.2				ug/L	201509	Standard
	As	75	-23.6	31.7	**0.0717**	0.011	15.3	ug/L	-72	Standard
	Se	82	11.8	46.0	**-0.0257**	0.099	385.8	ug/L	6	Standard
	Se-1	77	42.7	12.9	**0.1598**	0.131	82.2	ug/L	42	Standard
>	**Ga**	71	40.0	21.7				mg/L	25	Standard
	Rb	85	76.7	7.5				ug/L	8	Standard
	Y	89	226729.6	2.6				ug/L	207393	Standard
>	**Rh**	103	3.3	86.6				ug/L	7	Standard
	Mo	98	54.7	14.8	**0.0224**	0.005	22.8	ug/L	9	Standard
	Ag	107	112.7	11.4	**0.0055**	0.003	45.9	ug/L	79	Standard
	Cd	111	14.9	20.1	**0.0051**	0.002	44.8	mg/L	8	Standard
	Cd	114	62.1	10.8	**0.0110**	0.002	20.7	ug/L	8	Standard
>	**In**	115	385229.8	2.0				ug/L	344753	Standard
	Sn	118	603.3	6.2	**0.0663**	0.012	18.1	ug/L	327	Standard
	Sb	123	268.4	22.3	**0.0598**	0.016	26.4	ug/L	64	Standard
	Ba	135	2169.8	3.3	**1.3969**	0.024	1.7	ug/L	22	Standard
	Ce	140	365.0	8.3				ug/L	63	Standard
>	**Tb**	159	654952.5	3.0				ug/L	622049	Standard
	Ho	165	15.0	88.2				ug/L	12	Standard
	Tl	203	16.0	33.1	**0.0018**	0.001	45.3	ug/L	4	Standard
	Tl	205	13.3	21.7	**-0.0006**	0.001	117.5	ug/L	5	Standard
	Pb	206	983.0	7.2	**0.1748**	0.012	6.9	ug/L	163	Standard
	Pb	207	785.0	4.7	**0.1594**	0.011	6.7	ug/L	139	Standard
	Pb	208	2883.4	4.4	**0.1693**	0.005	3.2	ug/L	519	Standard
	U	238	29.0	15.0	**0.0067**	0.001	12.3	ug/L	4	Standard
>	**Bi**	209	364937.8	2.0				ug/L	331049	Standard

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Na	23	0.0		**91.1719**	0.000	0.0	mg/L	0	Standard
Mg	24	13.3	57.3	**0.0037**	0.019	497.4	mg/L	7	Standard
K	39	25.0	20.0	**-0.0219**	0.050	230.4	mg/L	33	Standard
Ca	43	61.7	16.9	**-2.2780**	3.826	168.0	mg/L	80	Standard
Fe	54	97.8	16.6	**0.0111**	0.028	254.3	mg/L	81	Standard
Fe	57	66.7	37.7	**-0.2760**	0.220	79.7	mg/L	93	Standard
> **Sc-1**	45	16453.9	5.4				mg/L	15221	Standard
Cl	35	33683.4	0.6				ug/L	40209	Standard
Kr	83	2.3	89.2				ug/L	4	Standard
Br	81	423.3	24.2				ug/L	303	Standard
P	31	12990.6	0.8				ug/L	14097	Standard
S	34	2378.5	5.6				ug/L	2990	Standard
Sr	88	53.3	51.6				ug/L	50	Standard
C	12	193.3	15.8				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	22.5	110.7				mg/L	3	Standard
Ho-1	165	15.0	88.2				mg/L	12	Standard
Er	166	16.7	34.6				mg/L	7	Standard
I	127	3437.1	1.6				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.263	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.666	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.741
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.237
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Lower	Ti	47	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, November 16, 2015 14:29:19
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	31613.0	6.3				ug/L	29272	Standard
	Be	9	28333.2	3.2	**50.4439**	1.587	3.1	ug/L	7	Standard
	Al	27	2354962.7	4.0	**50.3585**	1.791	3.6	ug/L	318	Standard
	Sc	45	16819.3	3.9				ug/L	15221	Standard
	Ti	47	13570.4	1.6	**95.2329**	1.091	1.1	ug/L	262	Standard
	V	51	178845.3	1.4	**48.7548**	0.772	1.6	ug/L	874	Standard
	Cr	52	164749.1	2.1	**48.3739**	0.189	0.4	ug/L	4335	Standard
	Cr	53	20211.8	1.8	**47.0794**	0.714	1.5	ug/L	200	Standard
	Mn	55	162144.8	2.9	**47.1756**	0.669	1.4	ug/L	830	Standard
	Co	59	169267.5	2.1	**48.4947**	0.662	1.4	ug/L	75	Standard
	Ni	60	47206.4	1.6	**49.1390**	0.452	0.9	ug/L	98	Standard
	Cu	65	47282.3	1.1	**49.3320**	0.752	1.5	ug/L	201	Standard
	Zn	66	28108.1	1.2	**49.7220**	0.756	1.5	ug/L	211	Standard
>	**Ge**	72	220510.3	2.5				ug/L	201509	Standard
	As	75	32719.0	1.8	**51.2160**	0.894	1.7	ug/L	-72	Standard
	Se	82	2953.2	1.7	**51.3999**	1.127	2.2	ug/L	6	Standard
	Se-1	77	1857.4	2.1	**51.0264**	1.340	2.6	ug/L	42	Standard
>	**Ga**	71	43.3	17.6				mg/L	25	Standard
	Rb	85	493.3	8.6				ug/L	8	Standard
	Y	89	228279.4	2.8				ug/L	207393	Standard
>	**Rh**	103	16.7	45.8				ug/L	7	Standard
	Mo	98	146897.6	2.1	**105.6380**	2.513	2.4	ug/L	9	Standard
	Ag	107	207118.7	2.8	**47.2072**	0.695	1.5	ug/L	79	Standard
	Cd	111	71648.0	1.4	**49.1264**	1.063	2.2	mg/L	8	Standard
	Cd	114	176258.9	0.9	**49.8417**	1.591	3.2	ug/L	8	Standard
>	**In**	115	391598.1	2.8				ug/L	344753	Standard
	Sn	118	197977.3	2.5	**47.9771**	0.375	0.8	ug/L	327	Standard
	Sb	123	195006.5	2.6	**48.4237**	0.469	1.0	ug/L	64	Standard
	Ba	135	72422.1	2.3	**46.5478**	0.567	1.2	ug/L	22	Standard
	Ce	140	65.0	27.7				ug/L	63	Standard
>	**Tb**	159	664848.8	2.7				ug/L	622049	Standard
	Ho	165	11.7	65.5				ug/L	12	Standard
	Tl	203	294081.0	1.6	**48.7030**	0.751	1.5	ug/L	4	Standard
	Tl	205	195419.4	2.6	**46.8342**	0.294	0.6	ug/L	5	Standard
	Pb	206	202500.2	1.8	**47.6890**	0.679	1.4	ug/L	163	Standard
	Pb	207	183331.1	1.9	**47.6642**	0.874	1.8	ug/L	139	Standard
	Pb	208	637942.5	1.7	**48.5288**	0.828	1.7	ug/L	519	Standard
	U	238	212549.5	1.9	**46.9965**	0.600	1.3	ug/L	4	Standard
>	**Bi**	209	364909.8	3.2				ug/L	331049	Standard

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Na	23	3.3	86.6	**-70.1323**	139.947	199.5	mg/L	0	Standard
Mg	24	1996.8	2.8	**4.5071**	0.292	6.5	mg/L	7	Standard
K	39	623.3	4.0	**5.0242**	0.240	4.8	mg/L	33	Standard
Ca	43	71.7	14.5	**1.1480**	4.115	358.4	mg/L	80	Standard
Fe	54	2641.5	3.9	**5.0458**	0.045	0.9	mg/L	81	Standard
Fe	57	843.4	14.0	**5.8172**	0.661	11.4	mg/L	93	Standard
Sc-1	45	16819.3	3.9				mg/L	15221	Standard
Cl	35	35815.6	1.4				ug/L	40209	Standard
Kr	83	3.3	62.4				ug/L	4	Standard
Br	81	383.3	15.1				ug/L	303	Standard
P	31	13436.0	3.1				ug/L	14097	Standard
S	34	2878.6	3.1				ug/L	2990	Standard
Sr	88	58.3	9.9				ug/L	50	Standard
C	12	243.3	21.1				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	2.5	255.2				mg/L	3	Standard
Ho-1	165	11.7	65.5				mg/L	12	Standard
Er	166	16.7	91.7				mg/L	7	Standard
I	127	1446.7	8.9				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	100.888		
Al	27	100.717		
Sc	45			
Ti	47	95.233		
V	51	97.510		
Cr	52	96.748		
Cr	53			
Mn	55	94.351		
Co	59	96.989		
Ni	60	98.278		
Cu	65	98.664		
Zn	66	99.444		
Ge	72		109.430	
As	75	102.432		
Se	82	102.800		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	105.638		
Ag	107	94.414		
Cd	111	98.253		
Cd	114			
In	115			113.588
Sn	118	95.954		
Sb	123	96.847		
Ba	135	93.096		
Ce	140			
Tb	159			
Ho	165			
Tl	203	97.406		
Tl	205			
Pb	206			
Pb	207			
Pb	208	97.058		
U	238	93.993		
Bi	209			110.228
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, November 16, 2015 14:32:29
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	29906.2	6.1				ug/L	29272	Standard
	Be	9	60.0	137.2	**0.0975**	0.147	150.6	ug/L	7	Standard
	Al	27	3936.1	129.1	**0.0695**	0.109	156.5	ug/L	318	Standard
	Sc	45	16111.9	4.9				ug/L	15221	Standard
	Ti	47	176.0	23.5	**-0.6450**	0.238	36.9	ug/L	262	Standard
	V	51	856.9	32.8	**-0.0044**	0.067	1520.6	ug/L	874	Standard
	Cr	52	4047.9	8.8	**-0.1508**	0.063	41.8	ug/L	4335	Standard
	Cr	53	266.7	21.9	**0.1338**	0.120	89.4	ug/L	200	Standard
	Mn	55	982.4	30.6	**-0.0099**	0.078	790.4	ug/L	830	Standard
	Co	59	342.3	88.8	**0.0726**	0.084	115.1	ug/L	75	Standard
	Ni	60	188.3	51.8	**0.0653**	0.094	144.6	ug/L	98	Standard
	Cu	65	246.7	53.2	**0.0458**	0.127	276.6	ug/L	201	Standard
	Zn	66	247.3	24.5	**-0.0601**	0.090	150.0	ug/L	211	Standard
>	**Ge**	72	213137.9	5.2				ug/L	201509	Standard
	As	75	3.6	1477.3	**0.1122**	0.084	74.8	ug/L	-72	Standard
	Se	82	17.7	8.4	**0.0826**	0.011	13.7	ug/L	6	Standard
	Se-1	77	39.0	14.3	**0.0736**	0.106	144.5	ug/L	42	Standard
>	**Ga**	71	38.3	32.8				mg/L	25	Standard
	Rb	85	11.7	24.7				ug/L	8	Standard
	Y	89	220123.3	6.3				ug/L	207393	Standard
>	**Rh**	103	6.7	43.3				ug/L	7	Standard
	Mo	98	334.2	79.8	**0.2253**	0.180	79.8	ug/L	9	Standard
	Ag	107	253.0	95.5	**0.0374**	0.052	139.8	ug/L	79	Standard
	Cd	111	98.6	143.3	**0.0613**	0.094	153.2	mg/L	8	Standard
	Cd	114	221.5	149.7	**0.0548**	0.091	166.0	ug/L	8	Standard
>	**In**	115	376905.6	6.3				ug/L	344753	Standard
	Sn	118	628.4	71.1	**0.0718**	0.101	140.3	ug/L	327	Standard
	Sb	123	389.3	84.0	**0.0896**	0.076	85.3	ug/L	64	Standard
	Ba	135	122.3	117.3	**0.0574**	0.089	154.4	ug/L	22	Standard
	Ce	140	11.7	89.2				ug/L	63	Standard
>	**Tb**	159	633107.7	8.4				ug/L	622049	Standard
	Ho	165	3.3	173.2				ug/L	12	Standard
	Tl	203	241.7	139.9	**0.0386**	0.054	140.1	ug/L	4	Standard
	Tl	205	166.7	111.2	**0.0361**	0.042	117.5	ug/L	5	Standard
	Pb	206	421.0	88.0	**0.0428**	0.082	192.2	ug/L	163	Standard
	Pb	207	368.0	83.5	**0.0515**	0.075	145.5	ug/L	139	Standard
	Pb	208	1318.4	76.1	**0.0514**	0.071	138.7	ug/L	519	Standard
	U	238	298.3	132.9	**0.0655**	0.084	128.7	ug/L	4	Standard
>	**Bi**	209	352561.4	6.9				ug/L	331049	Standard

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Na	23	0.0		**91.1719**	0.000	0.0	mg/L	0	Standard
Mg	24	21.7	26.6	**0.0232**	0.012	49.9	mg/L	7	Standard
K	39	28.3	20.4	**0.0104**	0.047	453.0	mg/L	33	Standard
Ca	43	56.7	18.4	**-3.8848**	3.362	86.5	mg/L	80	Standard
Fe	54	82.9	17.6	**-0.0152**	0.028	183.5	mg/L	81	Standard
Fe	57	85.0	15.6	**-0.1162**	0.137	118.2	mg/L	93	Standard
> **Sc-1**	45	16111.9	4.9				mg/L	15221	Standard
Cl	35	37323.3	1.4				ug/L	40209	Standard
Kr	83	6.0	16.7				ug/L	4	Standard
Br	81	453.3	2.5				ug/L	303	Standard
P	31	14118.2	3.0				ug/L	14097	Standard
S	34	2938.6	4.9				ug/L	2990	Standard
Sr	88	51.7	40.3				ug/L	50	Standard
C	12	226.7	24.3				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	13.2	44.9				mg/L	3	Standard
Ho-1	165	3.3	173.2				mg/L	12	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	3502.1	2.4				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.771	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.326
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.498
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Ti	47	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Monday, November 16, 2015 15:06:55
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	31472.7	3.0				ug/L	29272	Standard
	Be	9	3.3	173.2	**-0.0056**	0.010	187.2	ug/L	7	Standard
	Al	27	2320041.6	4.5	**49.7956**	2.560	5.1	ug/L	318	Standard
	Sc	45	16512.3	0.6				ug/L	15221	Standard
	Ti	47	14773.5	3.8	**102.3232**	4.181	4.1	ug/L	262	Standard
	V	51	663.7	29.2	**-0.0663**	0.052	77.8	ug/L	874	Standard
	Cr	52	4527.3	1.7	**-0.0667**	0.023	35.0	ug/L	4335	Standard
	Cr	53	1261.7	7.9	**2.4151**	0.246	10.2	ug/L	200	Standard
	Mn	55	917.4	1.5	**-0.0410**	0.003	7.8	ug/L	830	Standard
	Co	59	184.0	2.0	**0.0254**	0.002	6.0	ug/L	75	Standard
	Ni	60	343.3	2.5	**0.2176**	0.010	4.4	ug/L	98	Standard
	Cu	65	435.7	3.1	**0.2324**	0.018	7.7	ug/L	201	Standard
	Zn	66	836.4	3.6	**0.9582**	0.055	5.8	ug/L	211	Standard
>	**Ge**	72	223719.0	1.0				ug/L	201509	Standard
	As	75	-48.0	38.1	**0.0351**	0.029	82.8	ug/L	-72	Standard
	Se	82	5.7	27.8	**-0.1385**	0.027	19.5	ug/L	6	Standard
	Se-1	77	225.7	6.5	**5.1786**	0.341	6.6	ug/L	42	Standard
>	**Ga**	71	68.3	51.4				mg/L	25	Standard
	Rb	85	408.3	7.2				ug/L	8	Standard
	Y	89	232401.0	2.2				ug/L	207393	Standard
>	**Rh**	103	8.3	34.6				ug/L	7	Standard
	Mo	98	149876.1	0.9	**108.7130**	1.562	1.4	ug/L	9	Standard
	Ag	107	70.7	14.2	**-0.0043**	0.002	58.4	ug/L	79	Standard
	Cd	111	-138.5	8.4	**-0.1011**	0.009	8.7	mg/L	8	Standard
	Cd	114	313.8	4.7	**0.0826**	0.005	5.9	ug/L	8	Standard
>	**In**	115	388152.3	1.1				ug/L	344753	Standard
	Sn	118	418.3	15.6	**0.0197**	0.015	77.7	ug/L	327	Standard
	Sb	123	219.1	26.5	**0.0468**	0.014	30.2	ug/L	64	Standard
	Ba	135	96.3	19.6	**0.0415**	0.012	30.0	ug/L	22	Standard
	Ce	140	83.3	24.2				ug/L	63	Standard
>	**Tb**	159	660629.3	1.1				ug/L	622049	Standard
	Ho	165	13.3	78.1				ug/L	12	Standard
	Tl	203	102.0	10.2	**0.0163**	0.002	10.7	ug/L	4	Standard
	Tl	205	41.7	30.2	**0.0063**	0.003	48.2	ug/L	5	Standard
	Pb	206	245.0	0.8	**0.0018**	0.001	33.4	ug/L	163	Standard
	Pb	207	211.7	5.5	**0.0110**	0.003	26.0	ug/L	139	Standard
	Pb	208	727.3	5.3	**0.0061**	0.003	48.9	ug/L	519	Standard
	U	238	3.7	103.3	**0.0012**	0.001	73.4	ug/L	4	Standard
>	**Bi**	209	359507.5	0.4				ug/L	331049	Standard

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Na	23	1.7	173.2	**7.7150**	144.552	1873.6	mg/L	0	Standard
Mg	24	5077.5	1.0	**11.6991**	0.163	1.4	mg/L	7	Standard
K	39	571.7	7.3	**4.6755**	0.377	8.1	mg/L	33	Standard
Ca	43	115.0	7.5	**19.0763**	3.652	19.1	mg/L	80	Standard
Fe	54	6204.0	1.0	**12.3304**	0.121	1.0	mg/L	81	Standard
Fe	57	1785.1	3.4	**13.5295**	0.583	4.3	mg/L	93	Standard
> **Sc-1**	45	16512.3	0.6				mg/L	15221	Standard
Cl	35	37084.7	1.4				ug/L	40209	Standard
Kr	83	2.7	21.7				ug/L	4	Standard
Br	81	336.7	8.6				ug/L	303	Standard
P	31	13474.3	3.8				ug/L	14097	Standard
S	34	2820.3	5.4				ug/L	2990	Standard
Sr	88	51.7	27.9				ug/L	50	Standard
C	12	380.0	12.1				mg/L	167	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	0	Standard
Dy	164	12.9	44.9				mg/L	3	Standard
Ho-1	165	13.3	78.1				mg/L	12	Standard
Er	166	10.0					mg/L	7	Standard
I	127	1075.0	2.8				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27	0.996		
Sc	45			
Ti	47	102.323		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.022	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	108.713		
Ag	107			
Cd	111			
Cd	114			
In	115			112.589
Sn	118			
Sb	123			
Ba	135			
Ce	140			
Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
Bi	209			108.596
Na	23	61.720		
Mg	24	233.982		
K	39	93.511		
Ca	43	127.175		
Fe	54	98.643		
Fe	57	108.236		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	

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QC Std 4	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Monday, November 16, 2015 15:12:22
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	30559.1	0.9				ug/L	29272	Standard
	Be	9	55340.9	3.0	**101.7906**	2.130	2.1	ug/L	7	Standard
	Al	27	2415873.1	3.9	**53.3771**	1.990	3.7	ug/L	318	Standard
	Sc	45	16842.7	2.0				ug/L	15221	Standard
	Ti	47	15070.5	2.4	**105.4304**	0.548	0.5	ug/L	262	Standard
	V	51	348607.7	2.5	**94.7762**	0.278	0.3	ug/L	874	Standard
	Cr	52	314385.1	1.2	**93.1421**	1.055	1.1	ug/L	4335	Standard
	Cr	53	40201.6	1.7	**93.6849**	1.365	1.5	ug/L	200	Standard
	Mn	55	323079.4	2.6	**93.8371**	0.368	0.4	ug/L	830	Standard
	Co	59	332608.3	3.1	**94.8315**	0.975	1.0	ug/L	75	Standard
	Ni	60	89931.8	2.0	**93.2741**	1.202	1.3	ug/L	98	Standard
	Cu	65	91646.4	1.6	**95.3480**	1.509	1.6	ug/L	201	Standard
	Zn	66	56312.1	1.9	**99.6250**	1.029	1.0	ug/L	211	Standard
>	**Ge**	72	221589.8	2.2				ug/L	201509	Standard
	As	75	65173.2	1.2	**101.4101**	1.257	1.2	ug/L	-72	Standard
	Se	82	5815.2	1.0	**100.9497**	2.263	2.2	ug/L	6	Standard
	Se-1	77	3827.2	2.7	**105.7151**	2.626	2.5	ug/L	42	Standard
>	**Ga**	71	81.7	46.0				mg/L	25	Standard
	Rb	85	563.3	5.9				ug/L	8	Standard
	Y	89	229069.1	2.1				ug/L	207393	Standard
>	**Rh**	103	25.0	72.1				ug/L	7	Standard
	Mo	98	155642.5	0.7	**112.6743**	0.943	0.8	ug/L	9	Standard
	Ag	107	356611.6	3.4	**81.8380**	1.793	2.2	ug/L	79	Standard
	Cd	111	141304.4	2.0	**97.5317**	1.809	1.9	mg/L	8	Standard
	Cd	114	343515.3	2.0	**97.7572**	1.275	1.3	ug/L	8	Standard
>	**In**	115	388915.3	1.5				ug/L	344753	Standard
	Sn	118	555.0	9.7	**0.0529**	0.011	21.2	ug/L	327	Standard
	Sb	123	380955.7	2.2	**95.2523**	1.525	1.6	ug/L	64	Standard
	Ba	135	144120.3	1.5	**93.2841**	1.411	1.5	ug/L	22	Standard
	Ce	140	56.7	28.4				ug/L	63	Standard
>	**Tb**	159	659849.1	1.5				ug/L	622049	Standard
	Ho	165	0.0					ug/L	12	Standard
	Tl	203	577132.8	1.3	**96.1112**	0.434	0.5	ug/L	4	Standard
	Tl	205	379439.7	1.5	**91.4635**	0.584	0.6	ug/L	5	Standard
	Pb	206	394150.3	1.8	**93.3921**	0.675	0.7	ug/L	163	Standard
	Pb	207	354682.6	1.9	**92.7624**	0.450	0.5	ug/L	139	Standard
	Pb	208	1236917.2	1.7	**94.6589**	0.471	0.5	ug/L	519	Standard
	U	238	421799.3	1.3	**93.7854**	0.210	0.2	ug/L	4	Standard
>	**Bi**	209	362783.7	1.4				ug/L	331049	Standard

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Na	23	1.7	173.2	**9.7535**	141.021	1445.9	mg/L	0	Standard
Mg	24	5265.9	6.1	**11.8903**	0.535	4.5	mg/L	7	Standard
K	39	578.3	16.5	**4.6259**	0.723	15.6	mg/L	33	Standard
Ca	43	90.0	19.2	**8.4020**	7.467	88.9	mg/L	80	Standard
Fe	54	6699.6	4.4	**13.0738**	0.787	6.0	mg/L	81	Standard
Fe	57	1878.5	9.7	**13.9750**	1.313	9.4	mg/L	93	Standard
> **Sc-1**	45	16842.7	2.0				mg/L	15221	Standard
Cl	35	38742.8	2.3				ug/L	40209	Standard
Kr	83	4.0	25.0				ug/L	4	Standard
Br	81	400.0	11.5				ug/L	303	Standard
P	31	12875.5	4.4				ug/L	14097	Standard
S	34	2923.6	5.7				ug/L	2990	Standard
Sr	88	45.0	29.4				ug/L	50	Standard
C	12	400.0	25.4				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	6.2	193.4				mg/L	3	Standard
Ho-1	165	0.0					mg/L	12	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	3008.6	2.8				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	101.791		
Al	27	1.068		
Sc	45			
Ti	47	105.430		
V	51	94.776		
Cr	52	93.142		
Cr	53			
Mn	55	93.837		
Co	59	94.831		
Ni	60	93.274		
Cu	65	95.348		
Zn	66	99.625		
> Ge	72		109.965	
As	75	101.410		
Se	82	100.950		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	112.674		
Ag	107	81.838		
Cd	111	97.532		
Cd	114			
In	115		112.810	
Sn	118			
Sb	123	95.252		
Ba	135	93.284		
Ce	140			
Tb	159			
Ho	165			
Tl	203	96.111		
Tl	205			
Pb	206			
Pb	207			
Pb	208	94.659		
U	238	93.785		
Bi	209		109.586	
Na	23	78.028		
Mg	24	237.805		
K	39	92.519		
Ca	43	56.013		
Fe	54	104.591		
Fe	57	111.800		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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QC Std 5	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, November 16, 2015 15:28:53
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	31691.4	0.4				ug/L	29272	Standard
	Be	9	28199.6	2.1	**50.0142**	0.894	1.8	ug/L	7	Standard
	Al	27	2435322.5	1.6	**51.8866**	0.906	1.7	ug/L	318	Standard
	Sc	45	16524.0	1.2				ug/L	15221	Standard
	Ti	47	13797.3	1.1	**98.0258**	0.632	0.6	ug/L	262	Standard
	V	51	181594.6	1.9	**50.0909**	0.550	1.1	ug/L	874	Standard
	Cr	52	165211.9	1.2	**49.1108**	0.623	1.3	ug/L	4335	Standard
	Cr	53	20799.3	2.9	**49.0316**	0.607	1.2	ug/L	200	Standard
	Mn	55	168467.6	1.8	**49.6147**	0.147	0.3	ug/L	830	Standard
	Co	59	173235.0	2.0	**50.2195**	0.674	1.3	ug/L	75	Standard
	Ni	60	47670.2	0.5	**50.2175**	0.786	1.6	ug/L	98	Standard
	Cu	65	48084.5	1.5	**50.7626**	0.184	0.4	ug/L	201	Standard
	Zn	66	28152.5	1.4	**50.3917**	0.389	0.8	ug/L	211	Standard
>	**Ge**	72	217911.4	1.6				ug/L	201509	Standard
	As	75	32587.8	1.4	**51.6094**	0.260	0.5	ug/L	-72	Standard
	Se	82	2968.2	3.6	**52.2568**	1.106	2.1	ug/L	6	Standard
	Se-1	77	1860.8	3.4	**51.7177**	1.001	1.9	ug/L	42	Standard
>	**Ga**	71	18.3	95.8				mg/L	25	Standard
	Rb	85	421.7	15.1				ug/L	8	Standard
	Y	89	227840.7	2.0				ug/L	207393	Standard
>	**Rh**	103	23.3	44.6				ug/L	7	Standard
	Mo	98	145938.0	0.2	**107.1132**	1.014	0.9	ug/L	9	Standard
	Ag	107	208177.0	1.9	**48.4342**	0.537	1.1	ug/L	79	Standard
	Cd	111	72180.3	1.2	**50.5066**	0.193	0.4	mg/L	8	Standard
	Cd	114	174466.1	1.4	**50.3360**	0.485	1.0	ug/L	8	Standard
>	**In**	115	383582.8	0.8				ug/L	344753	Standard
	Sn	118	197411.1	0.2	**48.8398**	0.411	0.8	ug/L	327	Standard
	Sb	123	199164.3	1.3	**50.4869**	0.551	1.1	ug/L	64	Standard
	Ba	135	73217.2	0.9	**48.0360**	0.202	0.4	ug/L	22	Standard
	Ce	140	53.3	37.9				ug/L	63	Standard
>	**Tb**	159	658150.4	1.3				ug/L	622049	Standard
	Ho	165	5.0	100.0				ug/L	12	Standard
	Tl	203	297427.2	1.8	**49.7238**	0.659	1.3	ug/L	4	Standard
	Tl	205	201913.4	1.8	**48.8592**	0.668	1.4	ug/L	5	Standard
	Pb	206	204788.9	2.5	**48.6858**	0.918	1.9	ug/L	163	Standard
	Pb	207	185246.0	1.3	**48.6222**	0.779	1.6	ug/L	139	Standard
	Pb	208	649553.1	1.5	**49.8825**	0.664	1.3	ug/L	519	Standard
	U	238	216077.2	2.0	**48.2304**	0.614	1.3	ug/L	4	Standard
>	**Bi**	209	361360.6	0.8				ug/L	331049	Standard

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Na	23	1.7	173.2	**8.0955**	143.893	1777.4	mg/L	0	Standard
Mg	24	2095.1	6.8	**4.8054**	0.272	5.7	mg/L	7	Standard
K	39	506.7	6.4	**4.1146**	0.314	7.6	mg/L	33	Standard
Ca	43	70.0	14.3	**0.9495**	3.690	388.6	mg/L	80	Standard
Fe	54	2569.0	4.9	**4.9953**	0.313	6.3	mg/L	81	Standard
Fe	57	788.4	8.3	**5.5099**	0.492	8.9	mg/L	93	Standard
Sc-1	45	16524.0	1.2				mg/L	15221	Standard
Cl	35	37607.3	0.3				ug/L	40209	Standard
Kr	83	3.0	57.7				ug/L	4	Standard
Br	81	430.0	9.3				ug/L	303	Standard
P	31	13461.0	2.9				ug/L	14097	Standard
S	34	3105.3	8.1				ug/L	2990	Standard
Sr	88	38.3	39.8				ug/L	50	Standard
C	12	253.3	18.7				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.7	105.8				mg/L	3	Standard
Ho-1	165	5.0	100.0				mg/L	12	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	1275.1	12.6				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	100.028		
Al	27	103.773		
Sc	45			
Ti	47	98.026		
V	51	100.182		
Cr	52	98.222		
Cr	53			
Mn	55	99.229		
Co	59	100.439		
Ni	60	100.435		
Cu	65	101.525		
Zn	66	100.783		
Ge	72		108.140	
As	75	103.219		
Se	82	104.514		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	107.113		
Ag	107	96.868		
Cd	111	101.013		
Cd	114			
In	115			111.263
Sn	118	97.680		
Sb	123	100.974		
Ba	135	96.072		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.448		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.765		
U	238	96.461		
Bi	209			109.156
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, November 16, 2015 15:32:25
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	31128.7	8.1				ug/L	29272	Standard
	Be	9	8.3	124.9	**0.0027**	0.017	637.5	ug/L	7	Standard
	Al	27	361.7	45.0	**-0.0088**	0.003	33.5	ug/L	318	Standard
	Sc	45	16253.7	6.7				ug/L	15221	Standard
	Ti	47	157.3	5.9	**-0.7863**	0.032	4.1	ug/L	262	Standard
	V	51	778.5	4.0	**-0.0265**	0.011	41.1	ug/L	874	Standard
	Cr	52	3901.2	1.2	**-0.2056**	0.028	13.5	ug/L	4335	Standard
	Cr	53	266.7	12.5	**0.1320**	0.098	74.6	ug/L	200	Standard
	Mn	55	734.7	5.5	**-0.0853**	0.005	5.8	ug/L	830	Standard
	Co	59	97.3	8.7	**0.0020**	0.002	76.5	ug/L	75	Standard
	Ni	60	128.0	10.2	**0.0013**	0.011	864.8	ug/L	98	Standard
	Cu	65	173.7	3.0	**-0.0308**	0.012	37.6	ug/L	201	Standard
	Zn	66	207.7	9.6	**-0.1334**	0.047	35.5	ug/L	211	Standard
>	**Ge**	72	215004.5	3.3				ug/L	201509	Standard
	As	75	-51.4	10.6	**0.0266**	0.010	38.7	ug/L	-72	Standard
	Se	82	10.0	23.4	**-0.0560**	0.047	83.8	ug/L	6	Standard
	Se-1	77	35.3	11.8	**-0.0360**	0.143	395.5	ug/L	42	Standard
>	**Ga**	71	11.7	107.9				mg/L	25	Standard
	Rb	85	10.0	86.6				ug/L	8	Standard
	Y	89	225644.6	4.1				ug/L	207393	Standard
>	**Rh**	103	5.0	100.0				ug/L	7	Standard
	Mo	98	108.3	29.0	**0.0618**	0.019	30.1	ug/L	9	Standard
	Ag	107	94.0	9.5	**0.0014**	0.001	89.2	ug/L	79	Standard
	Cd	111	7.1	17.1	**-0.0002**	0.001	443.7	mg/L	8	Standard
	Cd	114	21.1	90.1	**-0.0009**	0.005	602.4	ug/L	8	Standard
>	**In**	115	381566.9	5.2				ug/L	344753	Standard
	Sn	118	395.0	5.8	**0.0158**	0.005	34.2	ug/L	327	Standard
	Sb	123	233.5	33.2	**0.0522**	0.023	43.2	ug/L	64	Standard
	Ba	135	26.0	26.9	**-0.0039**	0.005	116.6	ug/L	22	Standard
	Ce	140	10.0	86.6				ug/L	63	Standard
>	**Tb**	159	637947.3	5.9				ug/L	622049	Standard
	Ho	165	10.0	100.0				ug/L	12	Standard
	Tl	203	19.7	77.0	**0.0024**	0.002	97.2	ug/L	4	Standard
	Tl	205	20.0	129.9	**0.0008**	0.006	713.4	ug/L	5	Standard
	Pb	206	186.3	9.9	**-0.0123**	0.002	19.1	ug/L	163	Standard
	Pb	207	170.0	8.7	**0.0000**	0.002	9188.9	ug/L	139	Standard
	Pb	208	609.0	8.4	**-0.0031**	0.002	52.5	ug/L	519	Standard
	U	238	20.3	46.7	**0.0048**	0.002	39.2	ug/L	4	Standard
>	**Bi**	209	359388.1	5.1				ug/L	331049	Standard

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Na	23	0.0		**91.1719**	0.000	0.0	mg/L	0	Standard
Mg	24	13.3	57.3	**0.0029**	0.017	575.5	mg/L	7	Standard
K	39	13.3	43.3	**-0.1233**	0.046	37.6	mg/L	33	Standard
Ca	43	75.0	30.6	**3.6854**	9.788	265.6	mg/L	80	Standard
Fe	54	87.7	29.1	**-0.0040**	0.065	1623.2	mg/L	81	Standard
Fe	57	85.0	11.8	**-0.1274**	0.044	34.8	mg/L	93	Standard
> **Sc-1**	45	16253.7	6.7				mg/L	15221	Standard
Cl	35	39645.1	0.5				ug/L	40209	Standard
Kr	83	5.0	34.6				ug/L	4	Standard
Br	81	423.3	13.0				ug/L	303	Standard
P	31	14353.5	3.8				ug/L	14097	Standard
S	34	3157.0	1.7				ug/L	2990	Standard
Sr	88	60.0	8.3				ug/L	50	Standard
C	12	140.0	31.1				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.3	186.3				mg/L	3	Standard
Ho-1	165	10.0	100.0				mg/L	12	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	3108.7	5.0				mg/L	3957	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		106.697	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	110.678
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	108.560
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Ti	47	

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Method 6020 - Summary Report

Sample ID: PBW 48 WG546949-02
Sample Date/Time: Monday, November 16, 2015 16:08:46
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	32187.6	6.9				ug/L	29272	Standard
	Be	9	8.3	124.9	**0.0037**	0.019	521.3	ug/L	7	Standard
	Al	27	1548.4	6.9	**0.0161**	0.004	24.5	ug/L	318	Standard
	Sc	45	16966.2	3.9				ug/L	15221	Standard
	Ti	47	181.3	2.3	**-0.6650**	0.057	8.6	ug/L	262	Standard
	V	51	867.0	2.5	**-0.0117**	0.018	155.2	ug/L	874	Standard
	Cr	52	4227.6	1.7	**-0.1590**	0.074	46.3	ug/L	4335	Standard
	Cr	53	271.7	5.9	**0.1153**	0.052	45.1	ug/L	200	Standard
	Mn	55	1276.7	2.8	**0.0614**	0.010	17.1	ug/L	830	Standard
	Co	59	100.7	8.4	**0.0018**	0.002	128.3	ug/L	75	Standard
	Ni	60	270.3	3.7	**0.1421**	0.022	15.5	ug/L	98	Standard
	Cu	65	323.0	1.9	**0.1154**	0.025	21.5	ug/L	201	Standard
	Zn	66	2022.8	1.7	**3.0417**	0.259	8.5	ug/L	211	Standard
>	**Ge**	72	224705.4	5.6				ug/L	201509	Standard
	As	75	-24.8	134.1	**0.0705**	0.051	71.6	ug/L	-72	Standard
	Se	82	11.2	69.0	**-0.0474**	0.122	257.6	ug/L	6	Standard
	Se-1	77	43.3	5.3	**0.1427**	0.129	90.5	ug/L	42	Standard
>	**Ga**	71	20.0	50.0				mg/L	25	Standard
	Rb	85	178.3	5.8				ug/L	8	Standard
	Y	89	238470.7	4.1				ug/L	207393	Standard
>	**Rh**	103	10.0	86.6				ug/L	7	Standard
	Mo	98	32.7	26.4	**0.0059**	0.007	113.4	ug/L	9	Standard
	Ag	107	72.3	4.2	**-0.0042**	0.001	32.5	ug/L	79	Standard
	Cd	111	14.9	29.2	**0.0048**	0.002	51.0	mg/L	8	Standard
	Cd	114	52.9	15.9	**0.0080**	0.003	38.5	ug/L	8	Standard
>	**In**	115	396127.4	5.0				ug/L	344753	Standard
	Sn	118	513.3	8.8	**0.0406**	0.010	25.3	ug/L	327	Standard
	Sb	123	264.2	30.9	**0.0576**	0.023	39.7	ug/L	64	Standard
	Ba	135	192.7	7.9	**0.1016**	0.011	10.8	ug/L	22	Standard
	Ce	140	146.7	3.9				ug/L	63	Standard
>	**Tb**	159	670515.1	6.7				ug/L	622049	Standard
	Ho	165	18.3	41.7				ug/L	12	Standard
	Tl	203	31.7	31.2	**0.0043**	0.002	37.6	ug/L	4	Standard
	Tl	205	23.3	12.4	**0.0016**	0.000	28.9	ug/L	5	Standard
	Pb	206	368.3	5.3	**0.0280**	0.006	22.1	ug/L	163	Standard
	Pb	207	310.7	10.5	**0.0339**	0.007	19.6	ug/L	139	Standard
	Pb	208	1075.3	6.0	**0.0297**	0.004	13.1	ug/L	519	Standard
	U	238	11.3	28.4	**0.0028**	0.001	25.0	ug/L	4	Standard
>	**Bi**	209	374338.4	5.9				ug/L	331049	Standard

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Na	23	0.0		**91.1719**	0.000	0.0	mg/L	0	Standard
Mg	24	23.3	49.5	**0.0249**	0.026	106.2	mg/L	7	Standard
K	39	15.0	33.3	**-0.1126**	0.046	41.1	mg/L	33	Standard
Ca	43	55.0	27.3	**-5.7459**	5.067	88.2	mg/L	80	Standard
Fe	54	82.9	19.5	**-0.0232**	0.035	151.0	mg/L	81	Standard
Fe	57	91.7	36.3	**-0.1082**	0.243	224.5	mg/L	93	Standard
Sc-1	45	16966.2	3.9				mg/L	15221	Standard
Cl	35	37982.2	1.2				ug/L	40209	Standard
Kr	83	2.3	65.5				ug/L	4	Standard
Br	81	416.7	18.0				ug/L	303	Standard
P	31	14109.9	0.9				ug/L	14097	Standard
S	34	2998.6	1.1				ug/L	2990	Standard
Sr	88	63.3	22.8				ug/L	50	Standard
C	12	203.3	41.8				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.4	243.1				mg/L	3	Standard
Ho-1	165	18.3	41.7				mg/L	12	Standard
Er	166	20.0	0.0				mg/L	7	Standard
I	127	3368.7	2.6				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.962	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.512	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	114.902
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	113.076
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Lower	Ti	47	

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Method 6020 - Summary Report

Sample ID: LCSW 48 WG546949-03
Sample Date/Time: Monday, November 16, 2015 16:11:57
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	33226.4	3.2				ug/L	29272	Standard
	Be	9	28019.2	3.3	**47.4326**	2.182	4.6	ug/L	7	Standard
	Al	27	975.0	9.4	**0.0033**	0.001	39.6	ug/L	318	Standard
	Sc	45	17216.4	0.9				ug/L	15221	Standard
	Ti	47	154.0	9.8	**-0.8576**	0.102	11.9	ug/L	262	Standard
	V	51	182523.6	3.3	**48.9089**	2.127	4.3	ug/L	874	Standard
	Cr	52	166083.6	2.3	**47.9226**	1.521	3.2	ug/L	4335	Standard
	Cr	53	20465.5	0.7	**46.8456**	0.522	1.1	ug/L	200	Standard
	Mn	55	169701.0	2.0	**48.5446**	1.360	2.8	ug/L	830	Standard
	Co	59	173994.4	2.3	**48.9939**	1.281	2.6	ug/L	75	Standard
	Ni	60	47753.8	2.7	**48.8525**	1.415	2.9	ug/L	98	Standard
	Cu	65	49649.6	2.3	**50.9192**	1.639	3.2	ug/L	201	Standard
	Zn	66	29373.4	1.4	**51.0836**	1.415	2.8	ug/L	211	Standard
>	**Ge**	72	224361.2	1.4				ug/L	201509	Standard
	As	75	32316.9	1.9	**49.7166**	1.069	2.2	ug/L	-72	Standard
	Se	82	2961.8	2.1	**50.6526**	1.120	2.2	ug/L	6	Standard
	Se-1	77	1864.4	1.7	**50.3257**	1.577	3.1	ug/L	42	Standard
>	**Ga**	71	26.7	43.3				mg/L	25	Standard
	Rb	85	26.7	78.1				ug/L	8	Standard
	Y	89	233473.9	1.9				ug/L	207393	Standard
>	**Rh**	103	18.3	31.5				ug/L	7	Standard
	Mo	98	21.2	8.6	**-0.0025**	0.002	60.4	ug/L	9	Standard
	Ag	107	209318.1	1.1	**46.8809**	1.375	2.9	ug/L	79	Standard
	Cd	111	72944.8	1.5	**49.1362**	1.627	3.3	mg/L	8	Standard
	Cd	114	174188.7	1.3	**48.3837**	1.735	3.6	ug/L	8	Standard
>	**In**	115	398648.1	2.3				ug/L	344753	Standard
	Sn	118	388.3	20.5	**0.0098**	0.018	185.1	ug/L	327	Standard
	Sb	123	194688.6	1.8	**47.5150**	1.909	4.0	ug/L	64	Standard
	Ba	135	73223.2	0.5	**46.2436**	1.286	2.8	ug/L	22	Standard
	Ce	140	48.3	21.5				ug/L	63	Standard
>	**Tb**	159	669996.5	4.3				ug/L	622049	Standard
	Ho	165	5.0	100.0				ug/L	12	Standard
	Tl	203	300726.8	1.5	**48.0431**	1.552	3.2	ug/L	4	Standard
	Tl	205	200966.0	2.0	**46.4692**	1.565	3.4	ug/L	5	Standard
	Pb	206	211837.2	1.5	**48.1333**	1.850	3.8	ug/L	163	Standard
	Pb	207	184473.7	1.3	**46.2660**	1.543	3.3	ug/L	139	Standard
	Pb	208	651289.5	1.7	**47.7935**	1.686	3.5	ug/L	519	Standard
	U	238	215863.4	1.4	**46.0464**	1.559	3.4	ug/L	4	Standard
>	**Bi**	209	378347.7	2.6				ug/L	331049	Standard

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Na	23	1.7	173.2	**12.1771**	136.823	1123.6	mg/L	0	Standard
Mg	24	11.7	49.5	**-0.0020**	0.013	642.4	mg/L	7	Standard
K	39	38.3	41.9	**0.0775**	0.134	173.0	mg/L	33	Standard
Ca	43	61.7	49.5	**-3.2965**	12.012	364.4	mg/L	80	Standard
Fe	54	87.0	12.9	**-0.0181**	0.022	119.4	mg/L	81	Standard
Fe	57	95.0	10.5	**-0.0883**	0.071	80.8	mg/L	93	Standard
> **Sc-1**	45	17216.4	0.9				mg/L	15221	Standard
Cl	35	37506.4	1.2				ug/L	40209	Standard
Kr	83	2.7	86.6				ug/L	4	Standard
Br	81	430.0	8.4				ug/L	303	Standard
P	31	14538.6	0.8				ug/L	14097	Standard
S	34	2915.3	4.5				ug/L	2990	Standard
Sr	88	58.3	4.9				ug/L	50	Standard
C	12	180.0	14.7				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.5	107.6				mg/L	3	Standard
Ho-1	165	5.0	100.0				mg/L	12	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	3275.4	1.6				mg/L	3957	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		113.511	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		111.341	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		115.633
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		114.287
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Lower	Ti	47	

Sample ID: LCSW 48 WG546949-03
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Method 6020 - Summary Report

Sample ID: L1511079607 WG546949-01
Sample Date/Time: Monday, November 16, 2015 16:15:08
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	31111.9	3.3				ug/L	29272	Standard
	Be	9	145.0	131.4	**0.2468**	0.337	136.7	ug/L	7	Standard
	Al	27	183192.7	1.8	**3.9640**	0.174	4.4	ug/L	318	Standard
	Sc	45	16223.7	7.8				ug/L	15221	Standard
	Ti	47	297.0	6.8	**0.2535**	0.150	59.3	ug/L	262	Standard
	V	51	1807.1	56.7	**0.2667**	0.293	110.0	ug/L	874	Standard
	Cr	52	5205.2	17.3	**0.2092**	0.292	139.4	ug/L	4335	Standard
	Cr	53	340.0	37.0	**0.3133**	0.310	99.1	ug/L	200	Standard
	Mn	55	12561.6	10.0	**3.4952**	0.441	12.6	ug/L	830	Standard
	Co	59	831.4	108.8	**0.2202**	0.270	122.4	ug/L	75	Standard
	Ni	60	502.7	43.1	**0.4064**	0.236	58.1	ug/L	98	Standard
	Cu	65	488.0	58.0	**0.3107**	0.309	99.4	ug/L	201	Standard
	Zn	66	3156.0	3.6	**5.3133**	0.428	8.0	ug/L	211	Standard
>	**Ge**	72	213883.4	5.6				ug/L	201509	Standard
	As	75	114.0	120.3	**0.2944**	0.222	75.4	ug/L	-72	Standard
	Se	82	23.4	42.2	**0.1853**	0.181	97.6	ug/L	6	Standard
	Se-1	77	39.7	8.9	**0.0970**	0.146	150.9	ug/L	42	Standard
>	**Ga**	71	60.0	33.3				mg/L	25	Standard
	Rb	85	2090.1	2.3				ug/L	8	Standard
	Y	89	223672.0	3.8				ug/L	207393	Standard
>	**Rh**	103	3.3	86.6				ug/L	7	Standard
	Mo	98	29.9	9.3	**0.0048**	0.003	60.8	ug/L	9	Standard
	Ag	107	594.4	135.7	**0.1192**	0.189	158.3	ug/L	79	Standard
	Cd	111	270.6	141.6	**0.1857**	0.270	145.3	mg/L	8	Standard
	Cd	114	659.5	147.6	**0.1853**	0.282	152.4	ug/L	8	Standard
>	**In**	115	378232.6	4.6				ug/L	344753	Standard
	Sn	118	456.7	0.6	**0.0322**	0.005	16.4	ug/L	327	Standard
	Sb	123	1470.8	50.8	**0.3702**	0.190	51.3	ug/L	64	Standard
	Ba	135	5540.0	7.8	**3.6707**	0.309	8.4	ug/L	22	Standard
	Ce	140	3818.8	5.1				ug/L	63	Standard
>	**Tb**	159	637448.6	3.8				ug/L	622049	Standard
	Ho	165	56.7	5.1				ug/L	12	Standard
	Tl	203	792.7	143.3	**0.1342**	0.193	143.8	ug/L	4	Standard
	Tl	205	515.0	150.5	**0.1228**	0.191	155.4	ug/L	5	Standard
	Pb	206	1081.7	93.3	**0.2048**	0.245	119.4	ug/L	163	Standard
	Pb	207	933.4	99.8	**0.2044**	0.249	121.9	ug/L	139	Standard
	Pb	208	3292.2	100.1	**0.2070**	0.258	124.6	ug/L	519	Standard
	U	238	799.1	147.3	**0.1815**	0.267	147.3	ug/L	4	Standard
>	**Bi**	209	356286.0	5.5				ug/L	331049	Standard

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Na	23	1.7	173.2	**13.7655**	134.072	974.0	mg/L	0	Standard
Mg	24	308.3	15.3	**0.6960**	0.087	12.4	mg/L	7	Standard
K	39	36.7	31.5	**0.0856**	0.117	137.1	mg/L	33	Standard
Ca	43	51.7	11.2	**-5.7971**	3.840	66.2	mg/L	80	Standard
Fe	54	134.5	3.9	**0.0903**	0.013	14.7	mg/L	81	Standard
Fe	57	78.3	22.4	**-0.1706**	0.184	107.6	mg/L	93	Standard
Sc-1	45	16223.7	7.8				mg/L	15221	Standard
Cl	35	35498.9	1.8				ug/L	40209	Standard
Kr	83	2.3	65.5				ug/L	4	Standard
Br	81	540.0	14.8				ug/L	303	Standard
P	31	16132.0	12.8				ug/L	14097	Standard
S	34	2536.9	8.7				ug/L	2990	Standard
Sr	88	41.7	6.9				ug/L	50	Standard
C	12	236.7	20.8				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	123.3	32.6				mg/L	3	Standard
Ho-1	165	56.7	5.1				mg/L	12	Standard
Er	166	70.0	14.3				mg/L	7	Standard
I	127	7461.8	3.8				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.287	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.141	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.711
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.623
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1511079608S WG546949-04
Sample Date/Time: Monday, November 16, 2015 16:18:19
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	31978.7	3.4				ug/L	29272	Standard
	Be	9	29146.3	1.7	**51.2521**	1.003	2.0	ug/L	7	Standard
	Al	27	179254.4	2.1	**3.7705**	0.049	1.3	ug/L	318	Standard
	Sc	45	16285.4	3.4				ug/L	15221	Standard
	Ti	47	275.7	4.3	**0.0525**	0.079	151.1	ug/L	262	Standard
	V	51	179517.6	2.6	**49.4201**	0.887	1.8	ug/L	874	Standard
	Cr	52	169045.3	1.9	**50.1825**	0.600	1.2	ug/L	4335	Standard
	Cr	53	20629.0	3.6	**48.5367**	1.350	2.8	ug/L	200	Standard
	Mn	55	178883.8	3.1	**52.6011**	1.274	2.4	ug/L	830	Standard
	Co	59	172937.2	1.5	**50.0402**	0.357	0.7	ug/L	75	Standard
	Ni	60	48038.7	1.7	**50.5049**	0.432	0.9	ug/L	98	Standard
	Cu	65	49963.9	2.0	**52.6558**	0.700	1.3	ug/L	201	Standard
	Zn	66	29437.6	1.6	**52.6168**	0.588	1.1	ug/L	211	Standard
>	**Ge**	72	218304.5	0.8				ug/L	201509	Standard
	As	75	33755.2	1.3	**53.3552**	0.233	0.4	ug/L	-72	Standard
	Se	82	3018.8	1.2	**53.0651**	0.217	0.4	ug/L	6	Standard
	Se-1	77	1867.4	3.1	**51.8197**	1.499	2.9	ug/L	42	Standard
>	**Ga**	71	58.3	43.1				mg/L	25	Standard
	Rb	85	2098.5	6.5				ug/L	8	Standard
	Y	89	230979.0	0.6				ug/L	207393	Standard
>	**Rh**	103	26.7	78.1				ug/L	7	Standard
	Mo	98	30.6	14.4	**0.0045**	0.003	70.7	ug/L	9	Standard
	Ag	107	211124.2	1.0	**48.1227**	0.643	1.3	ug/L	79	Standard
	Cd	111	73461.3	1.9	**50.3588**	1.134	2.3	mg/L	8	Standard
	Cd	114	175968.1	0.5	**49.7350**	0.119	0.2	ug/L	8	Standard
>	**In**	115	391563.3	0.4				ug/L	344753	Standard
	Sn	118	421.7	6.0	**0.0197**	0.006	30.7	ug/L	327	Standard
	Sb	123	196464.5	2.4	**48.7900**	1.355	2.8	ug/L	64	Standard
	Ba	135	77829.1	2.5	**50.0254**	1.418	2.8	ug/L	22	Standard
	Ce	140	3563.8	0.5				ug/L	63	Standard
>	**Tb**	159	653870.6	1.8				ug/L	622049	Standard
	Ho	165	58.3	13.1				ug/L	12	Standard
	Tl	203	303570.8	0.9	**49.7507**	0.394	0.8	ug/L	4	Standard
	Tl	205	201764.6	1.2	**47.8598**	0.297	0.6	ug/L	5	Standard
	Pb	206	212641.2	1.3	**49.5572**	0.124	0.2	ug/L	163	Standard
	Pb	207	184218.8	2.0	**47.3903**	0.390	0.8	ug/L	139	Standard
	Pb	208	660003.1	1.9	**49.6800**	0.396	0.8	ug/L	519	Standard
	U	238	216507.5	1.4	**47.3726**	0.110	0.2	ug/L	4	Standard
>	**Bi**	209	368647.9	1.2				ug/L	331049	Standard

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Na	23	3.3	86.6	**-77.3709**	146.209	189.0	mg/L	0	Standard
Mg	24	351.7	3.6	**0.7957**	0.006	0.8	mg/L	7	Standard
K	39	50.0	45.8	**0.1981**	0.201	101.3	mg/L	33	Standard
Ca	43	61.7	12.4	**-2.0157**	2.862	142.0	mg/L	80	Standard
Fe	54	123.4	17.4	**0.0663**	0.046	68.8	mg/L	81	Standard
Fe	57	105.0	17.2	**0.0367**	0.152	415.1	mg/L	93	Standard
Sc-1	45	16285.4	3.4				mg/L	15221	Standard
Cl	35	34508.6	1.8				ug/L	40209	Standard
Kr	83	4.0	66.1				ug/L	4	Standard
Br	81	640.0	8.7				ug/L	303	Standard
P	31	14123.3	4.3				ug/L	14097	Standard
S	34	2323.5	1.6				ug/L	2990	Standard
Sr	88	65.0	13.3				ug/L	50	Standard
C	12	190.0	29.3				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	89.3	11.4				mg/L	3	Standard
Ho-1	165	58.3	13.1				mg/L	12	Standard
Er	166	83.3	34.6				mg/L	7	Standard
I	127	7813.7	4.1				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.248	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.335	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.578
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		111.357
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1511079609SD WG546949-05
Sample Date/Time: Monday, November 16, 2015 16:21:30
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	32805.5	3.2				ug/L	29272	Standard
	Be	9	29956.3	1.7	**51.3457**	0.914	1.8	ug/L	7	Standard
	Al	27	176603.8	2.7	**3.6200**	0.043	1.2	ug/L	318	Standard
	Sc	45	16901.1	2.9				ug/L	15221	Standard
	Ti	47	350.0	25.8	**0.5535**	0.678	122.5	ug/L	262	Standard
	V	51	180599.0	1.4	**48.8873**	0.626	1.3	ug/L	874	Standard
	Cr	52	167496.1	1.2	**48.8546**	0.287	0.6	ug/L	4335	Standard
	Cr	53	20599.0	2.2	**47.6647**	1.672	3.5	ug/L	200	Standard
	Mn	55	183383.2	1.0	**53.0307**	0.671	1.3	ug/L	830	Standard
	Co	59	171509.1	1.5	**48.7947**	0.413	0.8	ug/L	75	Standard
	Ni	60	47312.4	2.2	**48.8996**	0.333	0.7	ug/L	98	Standard
	Cu	65	49655.3	1.8	**51.4473**	0.244	0.5	ug/L	201	Standard
	Zn	66	30974.3	1.2	**54.4543**	0.512	0.9	ug/L	211	Standard
>	**Ge**	72	222039.0	1.5				ug/L	201509	Standard
	As	75	33232.4	0.9	**51.6554**	0.644	1.2	ug/L	-72	Standard
	Se	82	3010.4	1.1	**52.0272**	0.367	0.7	ug/L	6	Standard
	Se-1	77	1851.1	3.5	**50.4989**	2.454	4.9	ug/L	42	Standard
>	**Ga**	71	70.0	32.7				mg/L	25	Standard
	Rb	85	2001.8	4.2				ug/L	8	Standard
	Y	89	237358.7	2.3				ug/L	207393	Standard
>	**Rh**	103	20.0	66.1				ug/L	7	Standard
	Mo	98	31.1	16.0	**0.0045**	0.003	72.4	ug/L	9	Standard
	Ag	107	211616.4	1.3	**47.6292**	0.650	1.4	ug/L	79	Standard
	Cd	111	73193.3	1.0	**49.5453**	0.670	1.4	mg/L	8	Standard
	Cd	114	176272.4	0.7	**49.2046**	1.117	2.3	ug/L	8	Standard
>	**In**	115	396603.3	2.3				ug/L	344753	Standard
	Sn	118	455.0	12.5	**0.0264**	0.014	53.6	ug/L	327	Standard
	Sb	123	196821.5	1.9	**48.2598**	0.598	1.2	ug/L	64	Standard
	Ba	135	77571.5	2.2	**49.2304**	0.993	2.0	ug/L	22	Standard
	Ce	140	3667.1	6.5				ug/L	63	Standard
>	**Tb**	159	667755.3	2.9				ug/L	622049	Standard
	Ho	165	78.3	19.5				ug/L	12	Standard
	Tl	203	300785.1	0.9	**48.3826**	0.365	0.8	ug/L	4	Standard
	Tl	205	198893.8	1.5	**46.3063**	0.493	1.1	ug/L	5	Standard
	Pb	206	214371.4	1.2	**49.0367**	0.317	0.6	ug/L	163	Standard
	Pb	207	183886.0	1.8	**46.4297**	0.155	0.3	ug/L	139	Standard
	Pb	208	652981.6	1.1	**48.2453**	0.407	0.8	ug/L	519	Standard
	U	238	216795.4	1.0	**46.5606**	0.282	0.6	ug/L	4	Standard
>	**Bi**	209	375606.4	1.6				ug/L	331049	Standard

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Na	23	0.0		**91.1719**	0.000	0.0	mg/L	0	Standard
Mg	24	266.7	30.4	**0.5778**	0.203	35.1	mg/L	7	Standard
K	39	56.7	45.3	**0.2334**	0.202	86.7	mg/L	33	Standard
Ca	43	56.7	13.5	**-4.8620**	3.084	63.4	mg/L	80	Standard
Fe	54	126.1	25.5	**0.0616**	0.058	94.9	mg/L	81	Standard
Fe	57	86.7	23.3	**-0.1380**	0.165	119.9	mg/L	93	Standard
> **Sc-1**	45	16901.1	2.9				mg/L	15221	Standard
Cl	35	34465.8	1.4				ug/L	40209	Standard
Kr	83	5.0	52.9				ug/L	4	Standard
Br	81	516.7	8.7				ug/L	303	Standard
P	31	14520.3	1.3				ug/L	14097	Standard
S	34	2301.8	5.2				ug/L	2990	Standard
Sr	88	63.3	56.0				ug/L	50	Standard
C	12	240.0	8.3				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	117.4	21.2				mg/L	3	Standard
Ho-1	165	78.3	19.5				mg/L	12	Standard
Er	166	123.3	4.7				mg/L	7	Standard
I	127	7118.3	3.2				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.073	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.188	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1511079609SD WG546949-05
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		115.040
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		113.459
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: November 17, 2015

Method 6020 - Summary Report

Sample ID: L1511078902
Sample Date/Time: Monday, November 16, 2015 16:24:41
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	35536.7	4.4				ug/L	29272	Standard
	Be	9	18.3	56.8	**0.0173**	0.016	90.6	ug/L	7	Standard
	Al	27	25621.6	1.4	**0.4713**	0.029	6.2	ug/L	318	Standard
	Sc	45	17521.8	6.1				ug/L	15221	Standard
	Ti	47	186.7	3.9	**-0.6687**	0.029	4.3	ug/L	262	Standard
	V	51	28525.9	0.2	**7.2031**	0.408	5.7	ug/L	874	Standard
	Cr	52	9276.8	1.3	**1.2574**	0.158	12.6	ug/L	4335	Standard
	Cr	53	703.3	3.9	**1.0642**	0.096	9.0	ug/L	200	Standard
	Mn	55	1432.7	4.0	**0.0935**	0.007	7.5	ug/L	830	Standard
	Co	59	913.0	3.0	**0.2228**	0.013	5.8	ug/L	75	Standard
	Ni	60	2251.2	4.5	**2.1080**	0.226	10.7	ug/L	98	Standard
	Cu	65	81102.8	0.3	**80.7898**	4.667	5.8	ug/L	201	Standard
	Zn	66	3156.3	3.4	**4.8671**	0.456	9.4	ug/L	211	Standard
>	**Ge**	72	231818.9	5.8				ug/L	201509	Standard
	As	75	479.7	3.6	**0.8235**	0.053	6.4	ug/L	-72	Standard
	Se	82	84.3	10.0	**1.1670**	0.163	14.0	ug/L	6	Standard
	Se-1	77	67.3	2.3	**0.7453**	0.109	14.6	ug/L	42	Standard
>	**Ga**	71	558.3	16.9				mg/L	25	Standard
	Rb	85	6721.5	1.7				ug/L	8	Standard
	Y	89	242124.5	6.5				ug/L	207393	Standard
>	**Rh**	103	88.3	31.2				ug/L	7	Standard
	Mo	98	16095.5	2.3	**10.9735**	0.801	7.3	ug/L	9	Standard
	Ag	107	169.0	19.0	**0.0159**	0.007	41.2	ug/L	79	Standard
	Cd	111	42.6	40.0	**0.0226**	0.012	52.8	mg/L	8	Standard
	Cd	114	138.2	20.3	**0.0301**	0.007	24.6	ug/L	8	Standard
>	**In**	115	413383.5	5.2				ug/L	344753	Standard
	Sn	118	565.0	8.4	**0.0473**	0.010	20.9	ug/L	327	Standard
	Sb	123	3653.0	8.2	**0.8552**	0.112	13.1	ug/L	64	Standard
	Ba	135	21137.7	2.3	**12.8848**	0.924	7.2	ug/L	22	Standard
	Ce	140	70.0	43.4				ug/L	63	Standard
>	**Tb**	159	691029.9	4.8				ug/L	622049	Standard
	Ho	165	15.0	88.2				ug/L	12	Standard
	Tl	203	205.3	27.6	**0.0318**	0.010	30.7	ug/L	4	Standard
	Tl	205	111.7	37.6	**0.0220**	0.011	48.1	ug/L	5	Standard
	Pb	206	361.7	7.7	**0.0248**	0.004	16.9	ug/L	163	Standard
	Pb	207	305.0	6.1	**0.0311**	0.001	4.4	ug/L	139	Standard
	Pb	208	1095.3	5.7	**0.0297**	0.001	2.7	ug/L	519	Standard
	U	238	113.7	51.6	**0.0245**	0.013	53.1	ug/L	4	Standard
>	**Bi**	209	381201.5	6.2				ug/L	331049	Standard

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Na	23	3.3	86.6	**-70.6428**	140.154	198.4	mg/L	0	Standard
Mg	24	2281.8	5.4	**4.9495**	0.385	7.8	mg/L	7	Standard
K	39	398.3	8.0	**3.0017**	0.410	13.6	mg/L	33	Standard
Ca	43	528.3	10.6	**174.0061**	31.851	18.3	mg/L	80	Standard
Fe	54	97.4	22.9	**-0.0023**	0.033	1437.3	mg/L	81	Standard
Fe	57	268.3	7.5	**1.2112**	0.044	3.7	mg/L	93	Standard
> **Sc-1**	45	17521.8	6.1				mg/L	15221	Standard
Cl	35	76653.6	3.9				ug/L	40209	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	1966.8	5.2				ug/L	303	Standard
P	31	15407.8	3.3				ug/L	14097	Standard
S	34	2800.3	3.3				ug/L	2990	Standard
Sr	88	170.0	5.9				ug/L	50	Standard
C	12	366.7	27.3				mg/L	167	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	0	Standard
Dy	164	2.5	222.5				mg/L	3	Standard
Ho-1	165	15.0	88.2				mg/L	12	Standard
Er	166	16.7	34.6				mg/L	7	Standard
I	127	14653.8	3.4				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		121.403	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		115.042	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		119.907
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		115.149
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Lower	Ti	47	

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Method 6020 - Summary Report

Sample ID: L1511078902
Sample Date/Time: Monday, November 16, 2015 16:27:52
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	32389.6	5.0				ug/L	29272	Standard
	Be	9	13.3	43.3	**0.0117**	0.011	89.9	ug/L	7	Standard
	Al	27	2957.0	3.2	**0.0452**	0.001	3.1	ug/L	318	Standard
	Sc	45	16479.0	1.9				ug/L	15221	Standard
	Ti	47	143.7	2.2	**-0.9155**	0.013	1.4	ug/L	262	Standard
	V	51	4004.7	5.1	**0.8481**	0.045	5.3	ug/L	874	Standard
	Cr	52	6131.9	2.7	**0.4320**	0.023	5.3	ug/L	4335	Standard
	Cr	53	273.3	20.1	**0.1268**	0.121	95.6	ug/L	200	Standard
	Mn	55	1177.7	4.5	**0.0380**	0.014	35.8	ug/L	830	Standard
	Co	59	180.3	7.8	**0.0249**	0.003	13.3	ug/L	75	Standard
	Ni	60	367.0	4.0	**0.2463**	0.012	4.7	ug/L	98	Standard
	Cu	65	8822.9	7.0	**8.9948**	0.534	5.9	ug/L	201	Standard
	Zn	66	1258.1	4.0	**1.7258**	0.057	3.3	ug/L	211	Standard
>	**Ge**	72	221168.7	1.4				ug/L	201509	Standard
	As	75	8.4	277.1	**0.1224**	0.037	29.9	ug/L	-72	Standard
	Se	82	16.3	33.8	**0.0470**	0.094	200.2	ug/L	6	Standard
	Se-1	77	37.0	32.8	**-0.0190**	0.341	1794.3	ug/L	42	Standard
>	**Ga**	71	73.3	23.9				mg/L	25	Standard
	Rb	85	673.3	10.6				ug/L	8	Standard
	Y	89	231072.2	1.3				ug/L	207393	Standard
>	**Rh**	103	11.7	65.5				ug/L	7	Standard
	Mo	98	1637.2	4.0	**1.1458**	0.032	2.8	ug/L	9	Standard
	Ag	107	76.3	3.3	**-0.0033**	0.000	13.5	ug/L	79	Standard
	Cd	111	5.9	64.0	**-0.0013**	0.003	193.9	mg/L	8	Standard
	Cd	114	14.5	17.0	**-0.0028**	0.001	22.7	ug/L	8	Standard
>	**In**	115	396166.0	1.5				ug/L	344753	Standard
	Sn	118	328.3	5.3	**-0.0039**	0.003	87.2	ug/L	327	Standard
	Sb	123	616.6	11.7	**0.1434**	0.020	13.6	ug/L	64	Standard
	Ba	135	2204.8	6.8	**1.3803**	0.096	7.0	ug/L	22	Standard
	Ce	140	38.3	19.9				ug/L	63	Standard
>	**Tb**	159	658867.4	0.4				ug/L	622049	Standard
	Ho	165	3.3	86.6				ug/L	12	Standard
	Tl	203	15.0	40.6	**0.0016**	0.001	62.9	ug/L	4	Standard
	Tl	205	11.7	24.7	**-0.0011**	0.001	64.9	ug/L	5	Standard
	Pb	206	238.3	7.8	**-0.0015**	0.004	260.7	ug/L	163	Standard
	Pb	207	192.0	3.6	**0.0043**	0.002	41.4	ug/L	139	Standard
	Pb	208	660.0	2.3	**-0.0007**	0.002	223.3	ug/L	519	Standard
	U	238	6.3	55.5	**0.0017**	0.001	44.0	ug/L	4	Standard
>	**Bi**	209	370709.4	0.8				ug/L	331049	Standard

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Na	23	0.0		**91.1719**	0.000	0.0	mg/L	0	Standard
Mg	24	251.7	14.6	**0.5544**	0.083	15.0	mg/L	7	Standard
K	39	61.7	18.7	**0.2928**	0.105	35.9	mg/L	33	Standard
Ca	43	120.0	11.0	**21.1603**	5.136	24.3	mg/L	80	Standard
Fe	54	97.8	23.1	**0.0113**	0.046	406.5	mg/L	81	Standard
Fe	57	105.0	25.2	**0.0230**	0.196	849.1	mg/L	93	Standard
> **Sc-1**	45	16479.0	1.9				mg/L	15221	Standard
Cl	35	54173.3	1.0				ug/L	40209	Standard
Kr	83	4.0	43.3				ug/L	4	Standard
Br	81	603.3	17.3				ug/L	303	Standard
P	31	13692.9	3.1				ug/L	14097	Standard
S	34	2993.6	6.6				ug/L	2990	Standard
Sr	88	51.7	11.2				ug/L	50	Standard
C	12	216.7	23.7				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.0	100.7				mg/L	3	Standard
Ho-1	165	3.3	86.6				mg/L	12	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	4085.6	6.6				mg/L	3957	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		110.652	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		109.756	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.913
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		111.980
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Lower	Ti	47	

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Method 6020 - Summary Report

Sample ID: L1511079602
Sample Date/Time: Monday, November 16, 2015 16:31:03
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	33505.4	5.4				ug/L	29272	Standard
	Be	9	21.7	113.8	**0.0264**	0.045	169.8	ug/L	7	Standard
	Al	27	184365.6	3.1	**3.7032**	0.091	2.5	ug/L	318	Standard
	Sc	45	16684.2	1.8				ug/L	15221	Standard
	Ti	47	369.3	19.1	**0.7148**	0.476	66.6	ug/L	262	Standard
	V	51	1466.3	3.6	**0.1585**	0.010	6.1	ug/L	874	Standard
	Cr	52	5232.9	6.6	**0.1744**	0.086	49.4	ug/L	4335	Standard
	Cr	53	328.3	16.3	**0.2630**	0.121	46.0	ug/L	200	Standard
	Mn	55	12772.0	2.4	**3.4553**	0.047	1.4	ug/L	830	Standard
	Co	59	284.0	9.9	**0.0552**	0.007	12.9	ug/L	75	Standard
	Ni	60	413.3	7.0	**0.2981**	0.025	8.5	ug/L	98	Standard
	Cu	65	456.3	4.9	**0.2632**	0.023	8.9	ug/L	201	Standard
	Zn	66	2002.1	2.5	**3.0827**	0.053	1.7	ug/L	211	Standard
>	**Ge**	72	219257.9	1.2				ug/L	201509	Standard
	As	75	18.0	11.8	**0.1373**	0.003	2.2	ug/L	-72	Standard
	Se	82	20.5	11.5	**0.1232**	0.040	32.6	ug/L	6	Standard
	Se-1	77	37.7	34.2	**0.0086**	0.365	4259.6	ug/L	42	Standard
>	**Ga**	71	58.3	47.2				mg/L	25	Standard
	Rb	85	2326.8	3.2				ug/L	8	Standard
	Y	89	230554.2	0.3				ug/L	207393	Standard
>	**Rh**	103	10.0	100.0				ug/L	7	Standard
	Mo	98	41.0	10.1	**0.0119**	0.003	27.4	ug/L	9	Standard
	Ag	107	90.3	15.7	**-0.0000**	0.003	32340.7	ug/L	79	Standard
	Cd	111	15.6	32.9	**0.0054**	0.003	64.1	mg/L	8	Standard
	Cd	114	29.4	23.4	**0.0014**	0.002	134.0	ug/L	8	Standard
>	**In**	115	392454.3	1.0				ug/L	344753	Standard
	Sn	118	396.7	19.3	**0.0135**	0.020	144.7	ug/L	327	Standard
	Sb	123	284.0	14.4	**0.0622**	0.009	15.2	ug/L	64	Standard
	Ba	135	5821.5	0.7	**3.7140**	0.061	1.6	ug/L	22	Standard
	Ce	140	4947.5	5.4				ug/L	63	Standard
>	**Tb**	159	647583.0	0.5				ug/L	622049	Standard
	Ho	165	98.3	47.2				ug/L	12	Standard
	Tl	203	47.0	55.3	**0.0068**	0.004	61.3	ug/L	4	Standard
	Tl	205	36.7	43.8	**0.0047**	0.004	78.1	ug/L	5	Standard
	Pb	206	578.7	2.4	**0.0767**	0.002	3.2	ug/L	163	Standard
	Pb	207	514.0	2.9	**0.0860**	0.004	5.2	ug/L	139	Standard
	Pb	208	1786.4	2.7	**0.0829**	0.003	3.4	ug/L	519	Standard
	U	238	47.3	30.6	**0.0106**	0.003	28.9	ug/L	4	Standard
>	**Bi**	209	372890.6	0.8				ug/L	331049	Standard

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Na	23	0.0		**91.1719**	0.000	0.0	mg/L	0	Standard
Mg	24	350.0	20.3	**0.7744**	0.178	23.0	mg/L	7	Standard
K	39	26.7	39.0	**-0.0116**	0.090	776.1	mg/L	33	Standard
Ca	43	80.0	10.8	**4.6601**	3.048	65.4	mg/L	80	Standard
Fe	54	114.4	19.9	**0.0423**	0.048	113.8	mg/L	81	Standard
Fe	57	103.3	34.0	**0.0024**	0.279	11541.3	mg/L	93	Standard
> **Sc-1**	45	16684.2	1.8				mg/L	15221	Standard
Cl	35	45709.6	3.9				ug/L	40209	Standard
Kr	83	3.0	66.7				ug/L	4	Standard
Br	81	653.3	10.4				ug/L	303	Standard
P	31	15055.8	5.2				ug/L	14097	Standard
S	34	2953.6	3.3				ug/L	2990	Standard
Sr	88	55.0	41.7				ug/L	50	Standard
C	12	313.3	24.8				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	126.0	14.6				mg/L	3	Standard
Ho-1	165	98.3	47.2				mg/L	12	Standard
Er	166	83.3	36.7				mg/L	7	Standard
I	127	6931.6	6.3				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.464	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.808	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.836
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		112.639
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1511079602PS WG547044-01
Sample Date/Time: Monday, November 16, 2015 16:34:14
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	35020.5	3.1				ug/L	29272	Standard
	Be	9	30438.9	3.9	**48.8936**	2.622	5.4	ug/L	7	Standard
	Al	27	180558.9	4.0	**3.4672**	0.150	4.3	ug/L	318	Standard
	Sc	45	17251.5	3.4				ug/L	15221	Standard
	Ti	47	321.7	7.7	**0.2794**	0.171	61.1	ug/L	262	Standard
	V	51	185785.9	3.6	**48.8274**	1.960	4.0	ug/L	874	Standard
	Cr	52	172665.9	3.2	**48.9130**	2.335	4.8	ug/L	4335	Standard
	Cr	53	21393.4	2.9	**48.0420**	0.951	2.0	ug/L	200	Standard
	Mn	55	182780.0	5.0	**51.3301**	3.316	6.5	ug/L	830	Standard
	Co	59	179325.7	4.6	**49.5446**	2.674	5.4	ug/L	75	Standard
	Ni	60	48961.8	4.4	**49.1506**	2.693	5.5	ug/L	98	Standard
	Cu	65	50524.8	2.2	**50.8421**	2.091	4.1	ug/L	201	Standard
	Zn	66	31238.2	3.6	**53.3229**	2.584	4.8	ug/L	211	Standard
>	**Ge**	72	228771.6	3.1				ug/L	201509	Standard
	As	75	34563.1	3.1	**52.1628**	2.045	3.9	ug/L	-72	Standard
	Se	82	3128.9	3.4	**52.5039**	2.064	3.9	ug/L	6	Standard
	Se-1	77	1950.8	3.2	**51.6965**	2.650	5.1	ug/L	42	Standard
>	**Ga**	71	61.7	18.7				mg/L	25	Standard
	Rb	85	2260.2	2.1				ug/L	8	Standard
	Y	89	240389.8	3.0				ug/L	207393	Standard
>	**Rh**	103	20.0	50.0				ug/L	7	Standard
	Mo	98	31.9	6.9	**0.0042**	0.001	20.7	ug/L	9	Standard
	Ag	107	216427.5	2.6	**46.7862**	2.265	4.8	ug/L	79	Standard
	Cd	111	76287.2	2.6	**49.5937**	2.279	4.6	mg/L	8	Standard
	Cd	114	185439.1	2.5	**49.6914**	1.713	3.4	ug/L	8	Standard
>	**In**	115	413237.9	3.4				ug/L	344753	Standard
	Sn	118	475.0	13.8	**0.0269**	0.017	65.0	ug/L	327	Standard
	Sb	123	203907.4	3.0	**48.0226**	2.377	4.9	ug/L	64	Standard
	Ba	135	81941.8	3.2	**49.9447**	2.422	4.9	ug/L	22	Standard
	Ce	140	4775.8	5.1				ug/L	63	Standard
>	**Tb**	159	687611.8	3.2				ug/L	622049	Standard
	Ho	165	71.7	31.5				ug/L	12	Standard
	Tl	203	319479.2	2.9	**49.0384**	2.118	4.3	ug/L	4	Standard
	Tl	205	210889.6	2.2	**46.8497**	1.645	3.5	ug/L	5	Standard
	Pb	206	216153.6	3.6	**47.1866**	2.452	5.2	ug/L	163	Standard
	Pb	207	197499.1	2.7	**47.5884**	1.913	4.0	ug/L	139	Standard
	Pb	208	680848.9	3.8	**48.0049**	2.479	5.2	ug/L	519	Standard
	U	238	227778.8	3.2	**46.6784**	2.002	4.3	ug/L	4	Standard
>	**Bi**	209	393778.2	2.1				ug/L	331049	Standard

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Na	23	1.7	173.2	**10.7122**	139.360	1301.0	mg/L	0	Standard
Mg	24	310.0	5.8	**0.6577**	0.038	5.8	mg/L	7	Standard
K	39	46.7	12.4	**0.1448**	0.045	31.1	mg/L	33	Standard
Ca	43	53.3	54.9	**-6.6462**	11.307	170.1	mg/L	80	Standard
Fe	54	143.6	2.0	**0.0911**	0.013	13.8	mg/L	81	Standard
Fe	57	95.0	19.0	**-0.0900**	0.134	148.8	mg/L	93	Standard
> **Sc-1**	45	17251.5	3.4				mg/L	15221	Standard
Cl	35	42874.6	3.4				ug/L	40209	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	586.7	26.4				ug/L	303	Standard
P	31	15232.7	0.1				ug/L	14097	Standard
S	34	2793.6	7.0				ug/L	2990	Standard
Sr	88	33.3	34.6				ug/L	50	Standard
C	12	273.3	27.9				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	156.5	48.0				mg/L	3	Standard
Ho-1	165	71.7	31.5				mg/L	12	Standard
Er	166	73.3	34.3				mg/L	7	Standard
I	127	6818.2	2.9				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.640	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		113.529	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		119.865
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		118.948
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: November 17, 2015

Method 6020 - Summary Report

Sample ID: L1511079602SDL WG547044-02
Sample Date/Time: Monday, November 16, 2015 16:37:25
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	32631.8	1.8				ug/L	29272	Standard
	Be	9	120.0	144.3	**0.1932**	0.295	152.5	ug/L	7	Standard
	Al	27	36550.9	8.1	**0.7401**	0.060	8.1	ug/L	318	Standard
	Sc	45	16457.3	1.6				ug/L	15221	Standard
	Ti	47	182.7	12.1	**-0.5971**	0.156	26.1	ug/L	262	Standard
	V	51	1659.5	64.1	**0.2209**	0.296	134.1	ug/L	874	Standard
	Cr	52	5094.2	17.3	**0.1665**	0.265	159.4	ug/L	4335	Standard
	Cr	53	351.7	52.7	**0.3359**	0.443	131.8	ug/L	200	Standard
	Mn	55	3844.8	28.8	**0.8506**	0.326	38.3	ug/L	830	Standard
	Co	59	767.4	128.0	**0.1985**	0.287	144.7	ug/L	75	Standard
	Ni	60	342.7	73.1	**0.2312**	0.266	115.0	ug/L	98	Standard
	Cu	65	431.7	67.3	**0.2463**	0.310	125.7	ug/L	201	Standard
	Zn	66	2938.3	8.6	**4.8814**	0.436	8.9	ug/L	211	Standard
>	**Ge**	72	214484.5	0.6				ug/L	201509	Standard
	As	75	48.8	347.2	**0.1865**	0.271	145.3	ug/L	-72	Standard
	Se	82	14.8	118.4	**0.0285**	0.313	1101.1	ug/L	6	Standard
	Se-1	77	47.7	23.0	**0.3187**	0.308	96.8	ug/L	42	Standard
>	**Ga**	71	26.7	10.8				mg/L	25	Standard
	Rb	85	455.0	9.4				ug/L	8	Standard
	Y	89	225979.6	1.5				ug/L	207393	Standard
>	**Rh**	103	3.3	86.6				ug/L	7	Standard
	Mo	98	22.1	33.7	**-0.0016**	0.005	339.0	ug/L	9	Standard
	Ag	107	596.7	137.2	**0.1157**	0.186	161.2	ug/L	79	Standard
	Cd	111	290.0	153.8	**0.1937**	0.305	157.6	mg/L	8	Standard
	Cd	114	595.2	153.1	**0.1616**	0.257	159.2	ug/L	8	Standard
>	**In**	115	389909.9	1.6				ug/L	344753	Standard
	Sn	118	305.0	17.7	**-0.0084**	0.013	150.9	ug/L	327	Standard
	Sb	123	1540.5	50.3	**0.3757**	0.191	50.9	ug/L	64	Standard
	Ba	135	1447.7	29.4	**0.9136**	0.272	29.8	ug/L	22	Standard
	Ce	140	1003.4	15.6				ug/L	63	Standard
>	**Tb**	159	647377.2	1.8				ug/L	622049	Standard
	Ho	165	26.7	10.8				ug/L	12	Standard
	Tl	203	769.0	152.6	**0.1258**	0.193	153.5	ug/L	4	Standard
	Tl	205	493.4	149.8	**0.1137**	0.176	154.7	ug/L	5	Standard
	Pb	206	965.7	113.2	**0.1696**	0.256	151.0	ug/L	163	Standard
	Pb	207	848.7	115.4	**0.1747**	0.253	144.9	ug/L	139	Standard
	Pb	208	3038.6	112.5	**0.1799**	0.258	143.7	ug/L	519	Standard
	U	238	841.4	149.8	**0.1853**	0.277	149.4	ug/L	4	Standard
>	**Bi**	209	366912.6	0.6				ug/L	331049	Standard

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Na	23	1.7	173.2	**6.8656**	146.023	2126.9	mg/L	0	Standard
Mg	24	81.7	24.7	**0.1619**	0.049	30.1	mg/L	7	Standard
K	39	25.0	34.6	**-0.0241**	0.071	293.5	mg/L	33	Standard
Ca	43	53.3	35.5	**-5.6933**	7.248	127.3	mg/L	80	Standard
Fe	54	104.6	14.5	**0.0251**	0.028	113.2	mg/L	81	Standard
Fe	57	88.3	6.5	**-0.1082**	0.035	32.8	mg/L	93	Standard
> **Sc-1**	45	16457.3	1.6				mg/L	15221	Standard
Cl	35	42904.0	1.3				ug/L	40209	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	510.0	15.7				ug/L	303	Standard
P	31	13879.7	0.4				ug/L	14097	Standard
S	34	2937.0	7.6				ug/L	2990	Standard
Sr	88	55.0	9.1				ug/L	50	Standard
C	12	196.7	28.9				mg/L	167	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	21.9	58.5				mg/L	3	Standard
Ho-1	165	26.7	10.8				mg/L	12	Standard
Er	166	30.0	100.0				mg/L	7	Standard
I	127	3530.4	4.2				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.479	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.439	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.098
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.833
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Lower	Ti	47	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, November 16, 2015 16:40:38
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	31918.6	3.4				ug/L	29272	Standard
	Be	9	29423.6	2.4	**51.8278**	0.537	1.0	ug/L	7	Standard
	Al	27	2427565.3	5.2	**51.4343**	4.131	8.0	ug/L	318	Standard
	Sc	45	16363.8	2.9				ug/L	15221	Standard
	Ti	47	14058.9	1.1	**98.9993**	2.943	3.0	ug/L	262	Standard
	V	51	181264.5	1.9	**49.5378**	1.161	2.3	ug/L	874	Standard
	Cr	52	167376.9	1.5	**49.3019**	1.230	2.5	ug/L	4335	Standard
	Cr	53	20522.2	3.0	**47.9184**	0.977	2.0	ug/L	200	Standard
	Mn	55	164579.5	1.4	**48.0194**	1.157	2.4	ug/L	830	Standard
	Co	59	173157.5	0.4	**49.7503**	1.644	3.3	ug/L	75	Standard
	Ni	60	47975.2	0.7	**50.0802**	1.618	3.2	ug/L	98	Standard
	Cu	65	48384.1	0.9	**50.6252**	1.787	3.5	ug/L	201	Standard
	Zn	66	28797.0	0.7	**51.1067**	2.267	4.4	ug/L	211	Standard
>	**Ge**	72	220041.7	3.7				ug/L	201509	Standard
	As	75	33298.1	0.3	**52.2649**	1.789	3.4	ug/L	-72	Standard
	Se	82	3098.2	1.4	**54.0738**	1.649	3.0	ug/L	6	Standard
	Se-1	77	1898.5	1.9	**52.3458**	2.921	5.6	ug/L	42	Standard
>	**Ga**	71	31.7	77.9				mg/L	25	Standard
	Rb	85	461.7	22.5				ug/L	8	Standard
	Y	89	234352.4	4.3				ug/L	207393	Standard
>	**Rh**	103	15.0	57.7				ug/L	7	Standard
	Mo	98	154681.1	1.0	**109.8519**	5.430	4.9	ug/L	9	Standard
	Ag	107	214353.0	0.7	**48.2527**	2.140	4.4	ug/L	79	Standard
	Cd	111	74666.7	1.5	**50.5352**	1.833	3.6	mg/L	8	Standard
	Cd	114	183447.2	0.3	**51.2132**	2.435	4.8	ug/L	8	Standard
>	**In**	115	397065.2	5.1				ug/L	344753	Standard
	Sn	118	203463.7	0.9	**48.7232**	2.898	5.9	ug/L	327	Standard
	Sb	123	202854.7	0.8	**49.7520**	2.267	4.6	ug/L	64	Standard
	Ba	135	74265.2	1.0	**47.1381**	2.077	4.4	ug/L	22	Standard
	Ce	140	53.3	44.3				ug/L	63	Standard
>	**Tb**	159	667755.6	4.0				ug/L	622049	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	307243.9	1.2	**49.8831**	1.949	3.9	ug/L	4	Standard
	Tl	205	202350.6	0.4	**47.5774**	2.597	5.5	ug/L	5	Standard
	Pb	206	211637.9	0.6	**48.8827**	2.465	5.0	ug/L	163	Standard
	Pb	207	190002.0	0.9	**48.4394**	2.255	4.7	ug/L	139	Standard
	Pb	208	662300.1	0.4	**49.4108**	2.486	5.0	ug/L	519	Standard
	U	238	221471.4	1.2	**48.0144**	2.053	4.3	ug/L	4	Standard
>	**Bi**	209	372594.9	5.1				ug/L	331049	Standard

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Na	23	0.0		**91.1719**	0.000	0.0	mg/L	0	Standard
Mg	24	2118.5	5.1	**4.9155**	0.374	7.6	mg/L	7	Standard
K	39	540.0	8.2	**4.4545**	0.527	11.8	mg/L	33	Standard
Ca	43	75.0	11.5	**3.2542**	3.021	92.8	mg/L	80	Standard
Fe	54	2643.2	3.8	**5.2011**	0.355	6.8	mg/L	81	Standard
Fe	57	816.7	1.5	**5.8088**	0.293	5.0	mg/L	93	Standard
Sc-1	45	16363.8	2.9				mg/L	15221	Standard
Cl	35	43524.5	2.5				ug/L	40209	Standard
Kr	83	2.3	24.7				ug/L	4	Standard
Br	81	406.7	33.4				ug/L	303	Standard
P	31	14842.3	1.3				ug/L	14097	Standard
S	34	3257.0	1.9				ug/L	2990	Standard
Sr	88	43.3	17.6				ug/L	50	Standard
C	12	270.0	17.0				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	19.4	51.7				mg/L	3	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	13.3	43.3				mg/L	7	Standard
I	127	1188.4	11.4				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	103.656		
Al	27	102.869		
Sc	45			
Ti	47	98.999		
V	51	99.076		
Cr	52	98.604		
Cr	53			
Mn	55	96.039		
Co	59	99.501		
Ni	60	100.160		
Cu	65	101.250		
Zn	66	102.213		
Ge	72		109.197	
As	75	104.530		
Se	82	108.148		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	109.852		
Ag	107	96.505		
Cd	111	101.070		
Cd	114			
In	115			115.174
Sn	118	97.446		
Sb	123	99.504		
Ba	135	94.276		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.766		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.822		
U	238	96.029		
Bi	209			112.550
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, November 16, 2015 16:43:49
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	31439.3	4.3				ug/L	29272	Standard
	Be	9	21.7	53.3	**0.0278**	0.023	81.9	ug/L	7	Standard
	Al	27	735.0	37.5	**-0.0006**	0.007	1213.3	ug/L	318	Standard
	Sc	45	16362.2	4.0				ug/L	15221	Standard
	Ti	47	123.3	8.2	**-1.0316**	0.076	7.3	ug/L	262	Standard
	V	51	792.6	5.3	**-0.0215**	0.019	87.4	ug/L	874	Standard
	Cr	52	3961.9	0.7	**-0.1822**	0.033	18.3	ug/L	4335	Standard
	Cr	53	235.0	20.3	**0.0574**	0.124	215.7	ug/L	200	Standard
	Mn	55	732.0	1.2	**-0.0850**	0.008	9.1	ug/L	830	Standard
	Co	59	143.7	10.2	**0.0159**	0.006	35.6	ug/L	75	Standard
	Ni	60	126.0	12.5	**-0.0002**	0.016	8068.7	ug/L	98	Standard
	Cu	65	207.7	13.4	**0.0067**	0.034	500.8	ug/L	201	Standard
	Zn	66	185.0	2.7	**-0.1742**	0.020	11.7	ug/L	211	Standard
>	**Ge**	72	214216.4	3.3				ug/L	201509	Standard
	As	75	-28.1	110.8	**0.0646**	0.050	77.5	ug/L	-72	Standard
	Se	82	14.0	22.2	**0.0161**	0.063	390.1	ug/L	6	Standard
	Se-1	77	35.0	24.7	**-0.0384**	0.285	742.6	ug/L	42	Standard
>	**Ga**	71	10.0	100.0				mg/L	25	Standard
	Rb	85	18.3	56.8				ug/L	8	Standard
	Y	89	225085.0	4.4				ug/L	207393	Standard
>	**Rh**	103	8.3	124.9				ug/L	7	Standard
	Mo	98	171.1	14.2	**0.1071**	0.015	13.9	ug/L	9	Standard
	Ag	107	122.3	19.6	**0.0078**	0.006	79.2	ug/L	79	Standard
	Cd	111	18.7	65.1	**0.0078**	0.009	113.7	mg/L	8	Standard
	Cd	114	53.4	78.1	**0.0087**	0.013	145.1	ug/L	8	Standard
>	**In**	115	386001.9	3.3				ug/L	344753	Standard
	Sn	118	431.7	14.3	**0.0240**	0.019	78.4	ug/L	327	Standard
	Sb	123	257.1	30.0	**0.0572**	0.022	38.0	ug/L	64	Standard
	Ba	135	43.7	29.0	**0.0075**	0.009	117.1	ug/L	22	Standard
	Ce	140	13.3	57.3				ug/L	63	Standard
>	**Tb**	159	637079.0	3.4				ug/L	622049	Standard
	Ho	165	18.3	41.7				ug/L	12	Standard
	Tl	203	94.7	60.4	**0.0150**	0.010	65.9	ug/L	4	Standard
	Tl	205	48.3	6.0	**0.0078**	0.001	12.6	ug/L	5	Standard
	Pb	206	226.0	11.6	**-0.0033**	0.007	222.5	ug/L	163	Standard
	Pb	207	195.7	11.4	**0.0062**	0.007	108.0	ug/L	139	Standard
	Pb	208	749.0	4.9	**0.0070**	0.003	47.9	ug/L	519	Standard
	U	238	68.0	24.7	**0.0154**	0.004	26.2	ug/L	4	Standard
>	**Bi**	209	364149.4	2.7				ug/L	331049	Standard

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Na	23	0.0		**91.1719**	0.000	0.0	mg/L	0	Standard
Mg	24	23.3	49.5	**0.0261**	0.026	98.1	mg/L	7	Standard
K	39	18.3	41.7	**-0.0815**	0.061	74.4	mg/L	33	Standard
Ca	43	50.0	10.0	**-6.8518**	1.791	26.1	mg/L	80	Standard
Fe	54	89.5	37.0	**-0.0034**	0.069	2039.3	mg/L	81	Standard
Fe	57	96.7	7.9	**-0.0341**	0.088	259.3	mg/L	93	Standard
> **Sc-1**	45	16362.2	4.0				mg/L	15221	Standard
Cl	35	42837.1	0.6				ug/L	40209	Standard
Kr	83	2.7	43.3				ug/L	4	Standard
Br	81	440.0	16.4				ug/L	303	Standard
P	31	14565.3	1.4				ug/L	14097	Standard
S	34	3245.3	1.2				ug/L	2990	Standard
Sr	88	60.0	14.4				ug/L	50	Standard
C	12	233.3	13.1				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	-0.5	0.0				mg/L	3	Standard
Ho-1	165	18.3	41.7				mg/L	12	Standard
Er	166	10.0					mg/L	7	Standard
I	127	2755.3	2.2				mg/L	3957	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		106.306	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	111.965	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	109.998	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Ti	47	

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Method 6020 - Summary Report

Sample ID: L1511079308
Sample Date/Time: Monday, November 16, 2015 16:47:01
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	32673.6	4.6				ug/L	29272	Standard
	Be	9	8.3	91.7	**0.0026**	0.013	502.1	ug/L	7	Standard
	Al	27	2196338.3	2.2	**45.4183**	1.116	2.5	ug/L	318	Standard
	Sc	45	16158.6	2.9				ug/L	15221	Standard
	Ti	47	161.0	9.7	**-0.7722**	0.109	14.1	ug/L	262	Standard
	V	51	1200.6	10.3	**0.0885**	0.039	44.4	ug/L	874	Standard
	Cr	52	4566.0	6.4	**-0.0146**	0.113	770.2	ug/L	4335	Standard
	Cr	53	830.0	19.2	**1.4730**	0.414	28.1	ug/L	200	Standard
	Mn	55	41290.9	2.4	**11.9570**	0.201	1.7	ug/L	830	Standard
	Co	59	1171.7	8.2	**0.3138**	0.023	7.4	ug/L	75	Standard
	Ni	60	603.3	5.4	**0.5028**	0.026	5.1	ug/L	98	Standard
	Cu	65	349.3	3.7	**0.1537**	0.018	11.8	ug/L	201	Standard
	Zn	66	2721.2	2.6	**4.4162**	0.063	1.4	ug/L	211	Standard
>	**Ge**	72	217430.7	1.8				ug/L	201509	Standard
	As	75	97.1	43.3	**0.2621**	0.064	24.3	ug/L	-72	Standard
	Se	82	48.1	9.3	**0.6152**	0.076	12.3	ug/L	6	Standard
	Se-1	77	99.7	10.5	**1.7827**	0.337	18.9	ug/L	42	Standard
>	**Ga**	71	20.0	25.0				mg/L	25	Standard
	Rb	85	501.7	12.6				ug/L	8	Standard
	Y	89	226544.7	1.5				ug/L	207393	Standard
>	**Rh**	103	23.3	32.7				ug/L	7	Standard
	Mo	98	86.1	12.3	**0.0446**	0.007	14.7	ug/L	9	Standard
	Ag	107	86.3	9.4	**-0.0008**	0.002	207.8	ug/L	79	Standard
	Cd	111	44.2	13.3	**0.0251**	0.004	14.0	mg/L	8	Standard
	Cd	114	80.5	27.4	**0.0161**	0.007	41.5	ug/L	8	Standard
>	**In**	115	389916.9	1.7				ug/L	344753	Standard
	Sn	118	355.0	12.2	**0.0040**	0.012	296.7	ug/L	327	Standard
	Sb	123	199.0	18.2	**0.0417**	0.010	23.6	ug/L	64	Standard
	Ba	135	4054.2	2.3	**2.5971**	0.061	2.4	ug/L	22	Standard
	Ce	140	40.0	12.5				ug/L	63	Standard
>	**Tb**	159	660786.9	1.5				ug/L	622049	Standard
	Ho	165	8.3	124.9				ug/L	12	Standard
	Tl	203	176.3	6.5	**0.0283**	0.002	7.2	ug/L	4	Standard
	Tl	205	126.7	14.9	**0.0264**	0.004	15.0	ug/L	5	Standard
	Pb	206	245.3	6.2	**0.0010**	0.003	314.4	ug/L	163	Standard
	Pb	207	201.7	1.5	**0.0076**	0.001	7.7	ug/L	139	Standard
	Pb	208	764.0	5.4	**0.0079**	0.002	27.6	ug/L	519	Standard
	U	238	2764.9	2.7	**0.6107**	0.008	1.4	ug/L	4	Standard
>	**Bi**	209	365354.3	2.0				ug/L	331049	Standard

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Na	23	1.7	173.2	**3.6255**	151.635	4182.5	mg/L	0	Standard
Mg	24	9608.0	3.8	**22.6476**	0.560	2.5	mg/L	7	Standard
K	39	41.7	38.6	**0.1268**	0.139	109.3	mg/L	33	Standard
Ca	43	103.3	7.4	**15.3124**	3.309	21.6	mg/L	80	Standard
Fe	54	94.4	28.0	**0.0081**	0.054	658.0	mg/L	81	Standard
Fe	57	116.7	17.3	**0.1359**	0.146	107.4	mg/L	93	Standard
> **Sc-1**	45	16158.6	2.9				mg/L	15221	Standard
Cl	35	45001.4	0.1				ug/L	40209	Standard
Kr	83	1.7	34.6				ug/L	4	Standard
Br	81	4700.7	1.9				ug/L	303	Standard
P	31	14885.7	4.6				ug/L	14097	Standard
S	34	2850.3	6.0				ug/L	2990	Standard
Sr	88	113.3	9.2				ug/L	50	Standard
C	12	310.0	16.8				mg/L	167	Standard
N	14	6.7	86.6				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.2	33.4				mg/L	3	Standard
Ho-1	165	8.3	124.9				mg/L	12	Standard
Er	166	10.0	173.2				mg/L	7	Standard
I	127	204261.0	0.1				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.622	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.901	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	113.100
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	110.362
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Lower	Ti	47	

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Method 6020 - Summary Report

Sample ID: L1511079310
Sample Date/Time: Monday, November 16, 2015 16:50:12
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	32005.5	4.6				ug/L	29272	Standard
	Be	9	20.0	90.1	**0.0228**	0.030	129.8	ug/L	7	Standard
	Al	27	2331210.1	2.3	**49.2470**	2.478	5.0	ug/L	318	Standard
	Sc	45	16914.4	0.4				ug/L	15221	Standard
	Ti	47	155.7	17.5	**-0.8290**	0.200	24.2	ug/L	262	Standard
	V	51	1102.1	26.3	**0.0562**	0.082	145.6	ug/L	874	Standard
	Cr	52	4780.1	2.6	**0.0249**	0.033	133.7	ug/L	4335	Standard
	Cr	53	1040.0	1.3	**1.9284**	0.082	4.3	ug/L	200	Standard
	Mn	55	136634.9	2.6	**39.5903**	1.131	2.9	ug/L	830	Standard
	Co	59	1267.4	4.4	**0.3357**	0.017	5.0	ug/L	75	Standard
	Ni	60	514.7	7.6	**0.4003**	0.046	11.5	ug/L	98	Standard
	Cu	65	369.3	8.4	**0.1680**	0.030	17.8	ug/L	201	Standard
	Zn	66	1607.4	2.8	**2.3492**	0.096	4.1	ug/L	211	Standard
>	**Ge**	72	221189.6	2.1				ug/L	201509	Standard
	As	75	226.2	12.1	**0.4611**	0.041	8.9	ug/L	-72	Standard
	Se	82	56.3	26.7	**0.7423**	0.252	34.0	ug/L	6	Standard
	Se-1	77	122.0	6.5	**2.3588**	0.285	12.1	ug/L	42	Standard
>	**Ga**	71	26.7	10.8				mg/L	25	Standard
	Rb	85	941.7	10.1				ug/L	8	Standard
	Y	89	233873.2	1.9				ug/L	207393	Standard
>	**Rh**	103	45.0	38.5				ug/L	7	Standard
	Mo	98	210.8	9.9	**0.1327**	0.016	12.0	ug/L	9	Standard
	Ag	107	125.7	84.7	**0.0079**	0.024	306.6	ug/L	79	Standard
	Cd	111	24.9	118.1	**0.0117**	0.020	172.1	mg/L	8	Standard
	Cd	114	56.0	163.5	**0.0089**	0.026	289.5	ug/L	8	Standard
>	**In**	115	395269.1	1.0				ug/L	344753	Standard
	Sn	118	460.0	13.2	**0.0279**	0.014	50.9	ug/L	327	Standard
	Sb	123	197.2	31.5	**0.0405**	0.016	38.5	ug/L	64	Standard
	Ba	135	6207.9	0.5	**3.9333**	0.032	0.8	ug/L	22	Standard
	Ce	140	455.0	7.2				ug/L	63	Standard
>	**Tb**	159	658633.8	1.2				ug/L	622049	Standard
	Ho	165	10.0	173.2				ug/L	12	Standard
	Tl	203	255.0	52.0	**0.0405**	0.021	52.6	ug/L	4	Standard
	Tl	205	151.7	54.8	**0.0319**	0.019	61.1	ug/L	5	Standard
	Pb	206	302.0	33.3	**0.0130**	0.023	175.7	ug/L	163	Standard
	Pb	207	266.0	29.2	**0.0230**	0.020	85.1	ug/L	139	Standard
	Pb	208	878.7	17.2	**0.0155**	0.011	70.6	ug/L	519	Standard
	U	238	226.3	36.5	**0.0494**	0.018	35.8	ug/L	4	Standard
>	**Bi**	209	371828.8	1.5				ug/L	331049	Standard

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Na	23	0.0		**91.1719**	0.000	0.0	mg/L	0	Standard
Mg	24	8495.7	2.3	**19.1277**	0.522	2.7	mg/L	7	Standard
K	39	40.0	33.1	**0.0966**	0.111	114.5	mg/L	33	Standard
Ca	43	121.7	23.4	**20.5870**	11.192	54.4	mg/L	80	Standard
Fe	54	373.0	14.7	**0.5483**	0.110	20.1	mg/L	81	Standard
Fe	57	173.3	16.9	**0.5399**	0.230	42.7	mg/L	93	Standard
Sc-1	45	16914.4	0.4				mg/L	15221	Standard
Cl	35	46235.8	0.7				ug/L	40209	Standard
Kr	83	3.0	33.3				ug/L	4	Standard
Br	81	5681.1	2.9				ug/L	303	Standard
P	31	14366.8	0.2				ug/L	14097	Standard
S	34	3022.0	0.7				ug/L	2990	Standard
Sr	88	165.0	10.9				ug/L	50	Standard
C	12	260.0	27.7				mg/L	167	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	5.7	202.3				mg/L	3	Standard
Ho-1	165	10.0	173.2				mg/L	12	Standard
Er	166	20.0	0.0				mg/L	7	Standard
I	127	110117.1	0.9				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		109.340	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		109.767	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.653
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		112.318
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Lower	Ti	47	

Approved: November 17, 2015

Method 6020 - Summary Report

Sample ID: L1511079312
Sample Date/Time: Monday, November 16, 2015 16:53:23
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	33381.8	2.7				ug/L	29272	Standard
	Be	9	10.0	100.0	**0.0055**	0.017	309.0	ug/L	7	Standard
	Al	27	2468233.6	1.7	**49.9462**	1.527	3.1	ug/L	318	Standard
	Sc	45	16799.3	3.3				ug/L	15221	Standard
	Ti	47	154.0	7.9	**-0.8565**	0.091	10.7	ug/L	262	Standard
	V	51	1222.7	14.2	**0.0840**	0.047	56.3	ug/L	874	Standard
	Cr	52	5059.2	3.3	**0.0880**	0.050	56.4	ug/L	4335	Standard
	Cr	53	1245.1	5.4	**2.3686**	0.158	6.7	ug/L	200	Standard
	Mn	55	31154.3	1.7	**8.6646**	0.127	1.5	ug/L	830	Standard
	Co	59	681.7	4.2	**0.1656**	0.009	5.2	ug/L	75	Standard
	Ni	60	621.7	7.4	**0.5023**	0.045	8.9	ug/L	98	Standard
	Cu	65	397.7	4.8	**0.1920**	0.017	9.0	ug/L	201	Standard
	Zn	66	1256.7	2.1	**1.6932**	0.049	2.9	ug/L	211	Standard
>	**Ge**	72	224258.5	0.6				ug/L	201509	Standard
	As	75	75.8	15.2	**0.2255**	0.018	8.1	ug/L	-72	Standard
	Se	82	56.3	6.5	**0.7313**	0.061	8.4	ug/L	6	Standard
	Se-1	77	129.3	12.4	**2.5096**	0.427	17.0	ug/L	42	Standard
>	**Ga**	71	13.3	57.3				mg/L	25	Standard
	Rb	85	351.7	10.1				ug/L	8	Standard
	Y	89	232227.3	3.2				ug/L	207393	Standard
>	**Rh**	103	41.7	18.3				ug/L	7	Standard
	Mo	98	62.6	10.1	**0.0267**	0.005	18.3	ug/L	9	Standard
	Ag	107	97.7	32.6	**0.0013**	0.007	540.3	ug/L	79	Standard
	Cd	111	46.9	27.9	**0.0262**	0.008	32.1	mg/L	8	Standard
	Cd	114	102.4	10.9	**0.0215**	0.003	14.1	ug/L	8	Standard
>	**In**	115	398868.0	1.2				ug/L	344753	Standard
	Sn	118	346.7	19.2	**-0.0002**	0.015	9587.4	ug/L	327	Standard
	Sb	123	157.0	14.8	**0.0302**	0.005	17.2	ug/L	64	Standard
	Ba	135	3835.8	0.6	**2.4003**	0.016	0.7	ug/L	22	Standard
	Ce	140	276.7	4.2				ug/L	63	Standard
>	**Tb**	159	659889.9	1.1				ug/L	622049	Standard
	Ho	165	6.7	173.2				ug/L	12	Standard
	Tl	203	207.7	21.4	**0.0331**	0.007	21.2	ug/L	4	Standard
	Tl	205	126.7	16.4	**0.0261**	0.005	17.7	ug/L	5	Standard
	Pb	206	244.7	5.4	**0.0001**	0.003	2485.9	ug/L	163	Standard
	Pb	207	214.0	4.6	**0.0101**	0.002	18.4	ug/L	139	Standard
	Pb	208	720.0	5.7	**0.0039**	0.003	75.0	ug/L	519	Standard
	U	238	1680.8	3.1	**0.3669**	0.009	2.4	ug/L	4	Standard
>	**Bi**	209	369858.3	1.3				ug/L	331049	Standard

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Na	23	0.0		**91.1719**	0.000	0.0	mg/L	0	Standard
Mg	24	9644.7	2.0	**21.8721**	0.290	1.3	mg/L	7	Standard
K	39	33.3	8.7	**0.0428**	0.025	58.9	mg/L	33	Standard
Ca	43	96.7	23.3	**10.9425**	8.013	73.2	mg/L	80	Standard
Fe	54	72.9	14.6	**-0.0415**	0.025	59.7	mg/L	81	Standard
Fe	57	115.0	4.3	**0.0898**	0.069	76.7	mg/L	93	Standard
> **Sc-1**	45	16799.3	3.3				mg/L	15221	Standard
Cl	35	49903.4	2.4				ug/L	40209	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	5127.5	7.0				ug/L	303	Standard
P	31	15130.9	1.9				ug/L	14097	Standard
S	34	3067.0	3.4				ug/L	2990	Standard
Sr	88	105.0	0.0				ug/L	50	Standard
C	12	370.0	14.3				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	5.5	109.0				mg/L	3	Standard
Ho-1	165	6.7	173.2				mg/L	12	Standard
Er	166	23.3	24.7				mg/L	7	Standard
I	127	79432.8	3.3				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.041	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.290	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		115.697
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		111.723
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Lower	Ti	47	

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Method 6020 - Summary Report

Sample ID: L1511079314
Sample Date/Time: Monday, November 16, 2015 16:56:35
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	35012.1	3.2				ug/L	29272	Standard
	Be	9	11.7	49.5	**0.0072**	0.009	130.1	ug/L	7	Standard
	Al	27	298698.8	5.1	**5.7440**	0.157	2.7	ug/L	318	Standard
	Sc	45	17565.2	6.3				ug/L	15221	Standard
	Ti	47	159.0	9.3	**-0.8407**	0.152	18.1	ug/L	262	Standard
	V	51	2580.0	2.1	**0.4356**	0.033	7.6	ug/L	874	Standard
	Cr	52	14968.7	2.2	**2.9417**	0.152	5.2	ug/L	4335	Standard
	Cr	53	1751.8	7.1	**3.4519**	0.111	3.2	ug/L	200	Standard
	Mn	55	6084.2	2.4	**1.4102**	0.059	4.2	ug/L	830	Standard
	Co	59	211.0	7.6	**0.0317**	0.005	16.9	ug/L	75	Standard
	Ni	60	391.0	12.5	**0.2561**	0.028	11.1	ug/L	98	Standard
	Cu	65	567.3	3.1	**0.3558**	0.046	12.8	ug/L	201	Standard
	Zn	66	1120.4	4.2	**1.4130**	0.086	6.1	ug/L	211	Standard
>	**Ge**	72	229189.3	5.1				ug/L	201509	Standard
	As	75	55.9	70.1	**0.1914**	0.053	27.9	ug/L	-72	Standard
	Se	82	37.9	27.2	**0.3956**	0.137	34.7	ug/L	6	Standard
	Se-1	77	67.0	13.0	**0.7609**	0.305	40.1	ug/L	42	Standard
>	**Ga**	71	11.7	24.7				mg/L	25	Standard
	Rb	85	1896.8	6.0				ug/L	8	Standard
	Y	89	237028.3	6.6				ug/L	207393	Standard
>	**Rh**	103	101.7	22.2				ug/L	7	Standard
	Mo	98	1676.1	1.2	**1.1324**	0.077	6.8	ug/L	9	Standard
	Ag	107	78.0	1.3	**-0.0036**	0.001	28.8	ug/L	79	Standard
	Cd	111	23.2	25.6	**0.0098**	0.003	31.8	mg/L	8	Standard
	Cd	114	98.8	32.8	**0.0195**	0.008	40.3	ug/L	8	Standard
>	**In**	115	411382.2	5.4				ug/L	344753	Standard
	Sn	118	291.7	23.1	**-0.0154**	0.014	91.5	ug/L	327	Standard
	Sb	123	204.4	5.2	**0.0403**	0.002	5.0	ug/L	64	Standard
	Ba	135	21341.7	1.0	**13.0617**	0.591	4.5	ug/L	22	Standard
	Ce	140	220.0	20.8				ug/L	63	Standard
>	**Tb**	159	679600.4	5.5				ug/L	622049	Standard
	Ho	165	16.7	69.3				ug/L	12	Standard
	Tl	203	143.0	5.6	**0.0213**	0.001	2.7	ug/L	4	Standard
	Tl	205	96.7	26.5	**0.0178**	0.006	32.2	ug/L	5	Standard
	Pb	206	234.0	7.9	**-0.0052**	0.002	46.8	ug/L	163	Standard
	Pb	207	178.3	9.5	**-0.0015**	0.003	173.4	ug/L	139	Standard
	Pb	208	709.7	5.4	**0.0004**	0.002	527.6	ug/L	519	Standard
	U	238	339.7	4.8	**0.0707**	0.005	7.4	ug/L	4	Standard
>	**Bi**	209	390144.3	4.6				ug/L	331049	Standard

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Na	23	1.7	173.2	**7.2281**	145.395	2011.5	mg/L	0	Standard
Mg	24	1103.4	2.5	**2.3733**	0.143	6.0	mg/L	7	Standard
K	39	31.7	18.2	**0.0187**	0.057	305.3	mg/L	33	Standard
Ca	43	100.0	13.2	**10.5287**	2.854	27.1	mg/L	80	Standard
Fe	54	89.9	8.4	**-0.0156**	0.015	97.5	mg/L	81	Standard
Fe	57	111.7	22.5	**0.0263**	0.196	743.7	mg/L	93	Standard
> **Sc-1**	45	17565.2	6.3				mg/L	15221	Standard
Cl	35	46988.8	2.7				ug/L	40209	Standard
Kr	83	3.3	62.4				ug/L	4	Standard
Br	81	2243.5	10.6				ug/L	303	Standard
P	31	14562.0	3.0				ug/L	14097	Standard
S	34	3062.0	7.7				ug/L	2990	Standard
Sr	88	221.7	16.9				ug/L	50	Standard
C	12	300.0	29.6				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	22.1	58.7				mg/L	3	Standard
Ho-1	165	16.7	69.3				mg/L	12	Standard
Er	166	26.7	114.6				mg/L	7	Standard
I	127	24059.1	1.4				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.611	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		113.737	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		119.327
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		117.851
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Lower	Ti	47	

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Method 6020 - Summary Report

Sample ID: L1511079316
Sample Date/Time: Monday, November 16, 2015 16:59:46
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	31935.3	4.1				ug/L	29272	Standard
	Be	9	6.7	86.6	**0.0002**	0.010	4271.2	ug/L	7	Standard
	Al	27	4944464.9	0.7	**104.6931**	4.996	4.8	ug/L	318	Standard
	Sc	45	16298.8	4.5				ug/L	15221	Standard
	Ti	47	166.3	2.8	**-0.6934**	0.047	6.7	ug/L	262	Standard
	V	51	1248.9	14.1	**0.1126**	0.048	42.7	ug/L	874	Standard
	Cr	52	5017.2	3.2	**0.1756**	0.124	70.7	ug/L	4335	Standard
	Cr	53	2801.9	7.1	**6.4111**	0.748	11.7	ug/L	200	Standard
	Mn	55	16136.3	1.5	**4.6479**	0.262	5.6	ug/L	830	Standard
	Co	59	544.7	5.1	**0.1373**	0.015	10.9	ug/L	75	Standard
	Ni	60	1041.7	1.6	**1.0035**	0.036	3.6	ug/L	98	Standard
	Cu	65	447.3	0.3	**0.2737**	0.023	8.5	ug/L	201	Standard
	Zn	66	1199.4	1.8	**1.7321**	0.128	7.4	ug/L	211	Standard
>	**Ge**	72	210683.9	4.8				ug/L	201509	Standard
	As	75	214.7	7.9	**0.4599**	0.015	3.4	ug/L	-72	Standard
	Se	82	106.7	8.3	**1.7136**	0.069	4.0	ug/L	6	Standard
	Se-1	77	327.0	6.9	**8.5724**	1.069	12.5	ug/L	42	Standard
>	**Ga**	71	23.3	24.7				mg/L	25	Standard
	Rb	85	436.7	19.4				ug/L	8	Standard
	Y	89	224332.3	5.9				ug/L	207393	Standard
>	**Rh**	103	66.7	35.4				ug/L	7	Standard
	Mo	98	44.9	4.9	**0.0159**	0.003	20.2	ug/L	9	Standard
	Ag	107	127.3	4.6	**0.0095**	0.003	29.9	ug/L	79	Standard
	Cd	111	48.9	28.1	**0.0298**	0.012	38.8	mg/L	8	Standard
	Cd	114	137.9	34.5	**0.0330**	0.012	36.9	ug/L	8	Standard
>	**In**	115	380013.3	6.3				ug/L	344753	Standard
	Sn	118	325.0	8.1	**-0.0015**	0.002	110.4	ug/L	327	Standard
	Sb	123	119.1	13.1	**0.0227**	0.006	25.2	ug/L	64	Standard
	Ba	135	3827.5	1.6	**2.5228**	0.192	7.6	ug/L	22	Standard
	Ce	140	55.0	55.3				ug/L	63	Standard
>	**Tb**	159	639210.5	4.1				ug/L	622049	Standard
	Ho	165	11.7	89.2				ug/L	12	Standard
	Tl	203	140.3	8.2	**0.0232**	0.002	7.0	ug/L	4	Standard
	Tl	205	98.3	25.6	**0.0203**	0.005	24.2	ug/L	5	Standard
	Pb	206	231.0	9.9	**-0.0006**	0.003	460.6	ug/L	163	Standard
	Pb	207	186.0	6.6	**0.0052**	0.002	46.0	ug/L	139	Standard
	Pb	208	687.3	4.9	**0.0039**	0.001	18.6	ug/L	519	Standard
	U	238	2953.0	1.2	**0.6763**	0.042	6.2	ug/L	4	Standard
>	**Bi**	209	353139.3	5.4				ug/L	331049	Standard

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Na	23	1.7	173.2	**6.3160**	146.975	2327.0	mg/L	0	Standard
Mg	24	16602.4	4.6	**38.8702**	2.510	6.5	mg/L	7	Standard
K	39	35.0	28.6	**0.0671**	0.095	141.4	mg/L	33	Standard
Ca	43	161.7	30.0	**39.0266**	21.080	54.0	mg/L	80	Standard
Fe	54	81.0	21.8	**-0.0203**	0.041	199.7	mg/L	81	Standard
Fe	57	118.3	20.8	**0.1501**	0.236	157.1	mg/L	93	Standard
> **Sc-1**	45	16298.8	4.5				mg/L	15221	Standard
Cl	35	50180.3	1.4				ug/L	40209	Standard
Kr	83	5.0	87.2				ug/L	4	Standard
Br	81	11414.3	6.4				ug/L	303	Standard
P	31	14663.8	2.9				ug/L	14097	Standard
S	34	3072.0	7.5				ug/L	2990	Standard
Sr	88	180.0	7.3				ug/L	50	Standard
C	12	226.7	25.1				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.2	100.1				mg/L	3	Standard
Ho-1	165	11.7	89.2				mg/L	12	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	40073.1	7.4				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.100	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.553	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	110.228
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	106.673
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ti 47 Lower	Ti	47	

Approved: November 17, 2015

Method 6020 - Summary Report

Sample ID: L1511079614
Sample Date/Time: Monday, November 16, 2015 17:02:57
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	33533.8	3.3				ug/L	29272	Standard
	Be	9	18.3	56.8	**0.0193**	0.018	93.1	ug/L	7	Standard
	Al	27	235201.9	1.9	**4.7223**	0.080	1.7	ug/L	318	Standard
	Sc	45	17171.4	4.0				ug/L	15221	Standard
	Ti	47	363.0	6.7	**0.6338**	0.121	19.2	ug/L	262	Standard
	V	51	1437.5	5.2	**0.1448**	0.012	8.4	ug/L	874	Standard
	Cr	52	5269.9	5.3	**0.1626**	0.045	27.9	ug/L	4335	Standard
	Cr	53	445.0	13.6	**0.5229**	0.118	22.5	ug/L	200	Standard
	Mn	55	19812.3	1.5	**5.4461**	0.066	1.2	ug/L	830	Standard
	Co	59	282.3	0.8	**0.0537**	0.002	3.8	ug/L	75	Standard
	Ni	60	352.0	6.2	**0.2288**	0.025	11.0	ug/L	98	Standard
	Cu	65	407.7	2.4	**0.2059**	0.014	6.7	ug/L	201	Standard
	Zn	66	1438.1	1.8	**2.0327**	0.046	2.2	ug/L	211	Standard
>	**Ge**	72	222454.7	2.4				ug/L	201509	Standard
	As	75	27.8	140.1	**0.1512**	0.059	38.8	ug/L	-72	Standard
	Se	82	23.0	23.2	**0.1602**	0.083	51.7	ug/L	6	Standard
	Se-1	77	54.3	19.5	**0.4609**	0.329	71.4	ug/L	42	Standard
>	**Ga**	71	46.7	53.9				mg/L	25	Standard
	Rb	85	2153.5	6.3				ug/L	8	Standard
	Y	89	233917.7	4.6				ug/L	207393	Standard
>	**Rh**	103	6.7	43.3				ug/L	7	Standard
	Mo	98	38.7	13.1	**0.0097**	0.003	33.1	ug/L	9	Standard
	Ag	107	75.3	17.7	**-0.0037**	0.003	74.9	ug/L	79	Standard
	Cd	111	11.9	14.7	**0.0027**	0.001	47.8	mg/L	8	Standard
	Cd	114	38.7	34.2	**0.0039**	0.004	95.9	ug/L	8	Standard
>	**In**	115	399887.2	1.9				ug/L	344753	Standard
	Sn	118	483.3	12.3	**0.0321**	0.012	38.1	ug/L	327	Standard
	Sb	123	114.5	18.2	**0.0198**	0.006	27.8	ug/L	64	Standard
	Ba	135	6923.6	1.7	**4.3384**	0.056	1.3	ug/L	22	Standard
	Ce	140	3337.0	5.9				ug/L	63	Standard
>	**Tb**	159	671023.8	2.7				ug/L	622049	Standard
	Ho	165	83.3	34.1				ug/L	12	Standard
	Tl	203	52.7	25.3	**0.0075**	0.002	24.1	ug/L	4	Standard
	Tl	205	35.0	24.7	**0.0042**	0.002	43.1	ug/L	5	Standard
	Pb	206	426.3	3.1	**0.0398**	0.003	7.9	ug/L	163	Standard
	Pb	207	357.7	1.6	**0.0446**	0.004	8.7	ug/L	139	Standard
	Pb	208	1309.4	6.9	**0.0456**	0.006	12.3	ug/L	519	Standard
	U	238	29.0	18.2	**0.0065**	0.001	19.7	ug/L	4	Standard
>	**Bi**	209	379943.0	3.6				ug/L	331049	Standard

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Na	23	0.0		**91.1719**	0.000	0.0	mg/L	0	Standard
Mg	24	463.3	5.5	**1.0029**	0.080	8.0	mg/L	7	Standard
K	39	46.7	59.0	**0.1475**	0.224	151.8	mg/L	33	Standard
Ca	43	53.3	23.6	**-6.6214**	4.131	62.4	mg/L	80	Standard
Fe	54	154.4	16.3	**0.1136**	0.050	44.3	mg/L	81	Standard
Fe	57	93.3	18.8	**-0.0953**	0.161	169.2	mg/L	93	Standard
> **Sc-1**	45	17171.4	4.0				mg/L	15221	Standard
Cl	35	44802.9	3.8				ug/L	40209	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	1780.1	9.8				ug/L	303	Standard
P	31	15574.7	2.2				ug/L	14097	Standard
S	34	2850.3	1.8				ug/L	2990	Standard
Sr	88	61.7	9.4				ug/L	50	Standard
C	12	240.0	19.1				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	133.0	31.4				mg/L	3	Standard
Ho-1	165	83.3	34.1				mg/L	12	Standard
Er	166	76.7	39.8				mg/L	7	Standard
I	127	11769.6	3.6				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.561	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.395	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		115.992
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		114.769
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1511079617
Sample Date/Time: Monday, November 16, 2015 17:06:08
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	32322.8	1.0				ug/L	29272	Standard
	Be	9	10.0	100.0	**0.0058**	0.017	301.9	ug/L	7	Standard
	Al	27	222561.3	1.7	**4.6345**	0.099	2.1	ug/L	318	Standard
	Sc	45	16489.0	1.2				ug/L	15221	Standard
	Ti	47	387.7	29.7	**0.8869**	0.816	92.1	ug/L	262	Standard
	V	51	1267.1	6.2	**0.1087**	0.018	16.8	ug/L	874	Standard
	Cr	52	4820.4	2.6	**0.0713**	0.032	44.5	ug/L	4335	Standard
	Cr	53	395.0	15.4	**0.4366**	0.159	36.3	ug/L	200	Standard
	Mn	55	19170.5	3.2	**5.4227**	0.122	2.3	ug/L	830	Standard
	Co	59	281.7	2.5	**0.0558**	0.002	4.3	ug/L	75	Standard
	Ni	60	319.0	4.0	**0.2043**	0.015	7.4	ug/L	98	Standard
	Cu	65	411.0	1.5	**0.2219**	0.011	5.0	ug/L	201	Standard
	Zn	66	1914.1	5.3	**2.9746**	0.144	4.9	ug/L	211	Standard
>	**Ge**	72	216062.8	1.2				ug/L	201509	Standard
	As	75	9.1	85.0	**0.1237**	0.013	10.2	ug/L	-72	Standard
	Se	82	16.1	9.1	**0.0511**	0.029	57.5	ug/L	6	Standard
	Se-1	77	42.7	11.8	**0.1658**	0.133	80.3	ug/L	42	Standard
>	**Ga**	71	43.3	17.6				mg/L	25	Standard
	Rb	85	2075.1	5.8				ug/L	8	Standard
	Y	89	228877.8	1.8				ug/L	207393	Standard
>	**Rh**	103	1.7	173.2				ug/L	7	Standard
	Mo	98	32.3	23.4	**0.0055**	0.005	98.0	ug/L	9	Standard
	Ag	107	67.7	13.7	**-0.0053**	0.002	39.6	ug/L	79	Standard
	Cd	111	8.9	51.3	**0.0008**	0.003	392.5	mg/L	8	Standard
	Cd	114	8.6	158.9	**-0.0045**	0.004	85.8	ug/L	8	Standard
>	**In**	115	395087.3	0.2				ug/L	344753	Standard
	Sn	118	425.0	5.1	**0.0196**	0.005	28.0	ug/L	327	Standard
	Sb	123	113.3	17.0	**0.0198**	0.005	24.2	ug/L	64	Standard
	Ba	135	6632.1	3.5	**4.2051**	0.139	3.3	ug/L	22	Standard
	Ce	140	2972.0	2.5				ug/L	63	Standard
>	**Tb**	159	648513.8	1.0				ug/L	622049	Standard
	Ho	165	58.3	27.6				ug/L	12	Standard
	Tl	203	35.3	17.3	**0.0049**	0.001	19.7	ug/L	4	Standard
	Tl	205	30.0	33.3	**0.0032**	0.002	70.6	ug/L	5	Standard
	Pb	206	370.0	8.1	**0.0284**	0.006	19.6	ug/L	163	Standard
	Pb	207	317.7	5.6	**0.0359**	0.005	13.0	ug/L	139	Standard
	Pb	208	1146.7	5.9	**0.0351**	0.004	10.5	ug/L	519	Standard
	U	238	26.3	4.4	**0.0060**	0.000	5.4	ug/L	4	Standard
>	**Bi**	209	373567.9	1.6				ug/L	331049	Standard

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Na	23	1.7	173.2	**8.3723**	143.413	1712.9	mg/L	0	Standard
Mg	24	378.3	12.8	**0.8479**	0.118	13.9	mg/L	7	Standard
K	39	60.0	8.3	**0.2771**	0.037	13.3	mg/L	33	Standard
Ca	43	53.3	21.7	**-5.6987**	4.427	77.7	mg/L	80	Standard
Fe	54	147.7	20.4	**0.1117**	0.059	53.1	mg/L	81	Standard
Fe	57	133.3	13.2	**0.2537**	0.150	59.1	mg/L	93	Standard
> **Sc-1**	45	16489.0	1.2				mg/L	15221	Standard
Cl	35	43888.1	0.6				ug/L	40209	Standard
Kr	83	5.0	34.6				ug/L	4	Standard
Br	81	656.7	7.5				ug/L	303	Standard
P	31	15598.0	0.4				ug/L	14097	Standard
S	34	2968.6	4.0				ug/L	2990	Standard
Sr	88	63.3	63.3				ug/L	50	Standard
C	12	203.3	25.2				mg/L	167	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	96.8	18.5				mg/L	3	Standard
Ho-1	165	58.3	27.6				mg/L	12	Standard
Er	166	66.7	22.9				mg/L	7	Standard
I	127	10685.4	2.9				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.424	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.223	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.600
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		112.844
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1511079620
Sample Date/Time: Monday, November 16, 2015 17:09:18
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	33082.8	4.1				ug/L	29272	Standard
	Be	9	5.0	173.2	**-0.0032**	0.015	457.8	ug/L	7	Standard
	Al	27	4238.9	4.6	**0.0700**	0.002	3.0	ug/L	318	Standard
	Sc	45	17166.4	1.6				ug/L	15221	Standard
	Ti	47	127.0	11.7	**-1.0424**	0.090	8.6	ug/L	262	Standard
	V	51	969.0	4.2	**0.0175**	0.018	101.0	ug/L	874	Standard
	Cr	52	4450.3	1.7	**-0.0841**	0.040	47.1	ug/L	4335	Standard
	Cr	53	305.0	9.8	**0.1958**	0.051	26.3	ug/L	200	Standard
	Mn	55	1317.4	4.2	**0.0760**	0.018	23.3	ug/L	830	Standard
	Co	59	116.3	4.7	**0.0064**	0.002	29.5	ug/L	75	Standard
	Ni	60	150.0	5.7	**0.0194**	0.010	53.8	ug/L	98	Standard
	Cu	65	624.3	5.5	**0.4299**	0.041	9.5	ug/L	201	Standard
	Zn	66	1997.1	2.9	**3.0170**	0.118	3.9	ug/L	211	Standard
>	**Ge**	72	222954.1	4.3				ug/L	201509	Standard
	As	75	-23.6	38.7	**0.0729**	0.013	17.3	ug/L	-72	Standard
	Se	82	15.2	16.7	**0.0269**	0.053	198.3	ug/L	6	Standard
	Se-1	77	44.3	1.3	**0.1762**	0.037	21.0	ug/L	42	Standard
>	**Ga**	71	21.7	81.0				mg/L	25	Standard
	Rb	85	261.7	7.2				ug/L	8	Standard
	Y	89	231964.8	4.8				ug/L	207393	Standard
>	**Rh**	103	5.0	173.2				ug/L	7	Standard
	Mo	98	18.6	30.5	**-0.0043**	0.004	100.0	ug/L	9	Standard
	Ag	107	84.3	22.4	**-0.0018**	0.004	204.6	ug/L	79	Standard
	Cd	111	20.6	17.0	**0.0086**	0.003	32.7	mg/L	8	Standard
	Cd	114	51.2	20.2	**0.0074**	0.003	46.3	ug/L	8	Standard
>	**In**	115	399707.1	4.5				ug/L	344753	Standard
	Sn	118	388.3	3.2	**0.0098**	0.005	54.0	ug/L	327	Standard
	Sb	123	201.5	6.7	**0.0409**	0.001	2.7	ug/L	64	Standard
	Ba	135	610.3	6.1	**0.3635**	0.020	5.5	ug/L	22	Standard
	Ce	140	271.7	91.9				ug/L	63	Standard
>	**Tb**	159	661906.7	6.0				ug/L	622049	Standard
	Ho	165	5.0	173.2				ug/L	12	Standard
	Tl	203	65.3	15.5	**0.0096**	0.002	19.9	ug/L	4	Standard
	Tl	205	38.3	27.2	**0.0050**	0.003	52.2	ug/L	5	Standard
	Pb	206	256.3	2.1	**0.0014**	0.003	198.8	ug/L	163	Standard
	Pb	207	217.7	9.7	**0.0096**	0.004	45.2	ug/L	139	Standard
	Pb	208	767.3	5.2	**0.0061**	0.001	21.9	ug/L	519	Standard
	U	238	16.7	28.4	**0.0039**	0.001	28.8	ug/L	4	Standard
>	**Bi**	209	379261.4	3.8				ug/L	331049	Standard

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Na	23	3.3	86.6	**-67.7248**	137.654	203.3	mg/L	0	Standard
Mg	24	308.3	13.2	**0.6578**	0.096	14.6	mg/L	7	Standard
K	39	23.3	75.3	**-0.0446**	0.147	330.9	mg/L	33	Standard
Ca	43	60.0	30.0	**-3.9772**	6.738	169.4	mg/L	80	Standard
Fe	54	96.2	8.0	**0.0005**	0.018	3556.7	mg/L	81	Standard
Fe	57	91.7	13.7	**-0.1107**	0.105	95.0	mg/L	93	Standard
Sc-1	45	17166.4	1.6				mg/L	15221	Standard
Cl	35	44699.8	0.4				ug/L	40209	Standard
Kr	83	2.7	94.4				ug/L	4	Standard
Br	81	513.3	10.7				ug/L	303	Standard
P	31	14747.2	1.3				ug/L	14097	Standard
S	34	3152.0	2.0				ug/L	2990	Standard
Sr	88	45.0	50.9				ug/L	50	Standard
C	12	260.0	23.1				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	29.2	66.1				mg/L	3	Standard
Ho-1	165	5.0	173.2				mg/L	12	Standard
Er	166	16.7	124.9				mg/L	7	Standard
I	127	4712.4	4.1				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		113.020	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		110.642	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		115.940
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		114.563
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Lower	Ti	47	

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Method 6020 - Summary Report

Sample ID: L1511079623
Sample Date/Time: Monday, November 16, 2015 17:12:29
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	32514.9	0.8				ug/L	29272	Standard
	Be	9	5.0	100.0	**-0.0029**	0.009	302.9	ug/L	7	Standard
	Al	27	1938.5	19.1	**0.0237**	0.008	32.0	ug/L	318	Standard
	Sc	45	15853.3	1.3				ug/L	15221	Standard
	Ti	47	113.0	16.1	**-1.0990**	0.145	13.2	ug/L	262	Standard
	V	51	860.3	8.6	**-0.0006**	0.018	3050.8	ug/L	874	Standard
	Cr	52	4601.7	4.1	**0.0308**	0.073	237.3	ug/L	4335	Standard
	Cr	53	290.0	14.9	**0.1957**	0.103	52.6	ug/L	200	Standard
	Mn	55	1336.7	2.1	**0.1011**	0.005	4.8	ug/L	830	Standard
	Co	59	96.3	4.3	**0.0021**	0.002	72.0	ug/L	75	Standard
	Ni	60	145.3	7.6	**0.0220**	0.009	42.4	ug/L	98	Standard
	Cu	65	728.0	2.0	**0.5752**	0.005	0.9	ug/L	201	Standard
	Zn	66	1150.7	4.0	**1.6231**	0.099	6.1	ug/L	211	Standard
>	**Ge**	72	212127.5	1.6				ug/L	201509	Standard
	As	75	-15.3	245.1	**0.0846**	0.061	72.4	ug/L	-72	Standard
	Se	82	15.0	83.1	**0.0362**	0.230	635.0	ug/L	6	Standard
	Se-1	77	47.0	22.2	**0.3126**	0.280	89.7	ug/L	42	Standard
>	**Ga**	71	10.0	50.0				mg/L	25	Standard
	Rb	85	51.7	34.0				ug/L	8	Standard
	Y	89	223736.8	1.6				ug/L	207393	Standard
>	**Rh**	103	5.0	0.0				ug/L	7	Standard
	Mo	98	20.3	19.3	**-0.0027**	0.003	97.3	ug/L	9	Standard
	Ag	107	84.0	18.7	**-0.0009**	0.004	436.8	ug/L	79	Standard
	Cd	111	7.3	15.8	**-0.0002**	0.001	516.9	mg/L	8	Standard
	Cd	114	14.8	86.8	**-0.0026**	0.004	144.5	ug/L	8	Standard
>	**In**	115	382766.2	2.3				ug/L	344753	Standard
	Sn	118	380.0	6.0	**0.0118**	0.007	62.3	ug/L	327	Standard
	Sb	123	96.8	7.3	**0.0165**	0.002	11.9	ug/L	64	Standard
	Ba	135	476.0	3.2	**0.2922**	0.015	5.1	ug/L	22	Standard
	Ce	140	45.0	11.1				ug/L	63	Standard
>	**Tb**	159	632712.9	2.6				ug/L	622049	Standard
	Ho	165	5.0	0.0				ug/L	12	Standard
	Tl	203	8.3	30.2	**0.0005**	0.000	70.4	ug/L	4	Standard
	Tl	205	3.3	173.2	**-0.0030**	0.001	46.8	ug/L	5	Standard
	Pb	206	188.0	7.4	**-0.0122**	0.002	19.3	ug/L	163	Standard
	Pb	207	178.7	14.9	**0.0019**	0.007	371.4	ug/L	139	Standard
	Pb	208	629.7	1.4	**-0.0019**	0.001	45.1	ug/L	519	Standard
	U	238	4.0	50.0	**0.0012**	0.000	37.0	ug/L	4	Standard
>	**Bi**	209	362738.5	2.5				ug/L	331049	Standard

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Na	23	1.7	173.2	**4.9237**	149.386	3034.0	mg/L	0	Standard
Mg	24	291.7	12.4	**0.6746**	0.095	14.0	mg/L	7	Standard
K	39	13.3	108.3	**-0.1205**	0.127	105.5	mg/L	33	Standard
Ca	43	63.3	46.3	**-0.6326**	12.185	1926.2	mg/L	80	Standard
Fe	54	114.5	14.9	**0.0539**	0.033	61.2	mg/L	81	Standard
Fe	57	81.7	27.6	**-0.1358**	0.191	140.8	mg/L	93	Standard
> **Sc-1**	45	15853.3	1.3				mg/L	15221	Standard
Cl	35	44621.6	2.5				ug/L	40209	Standard
Kr	83	2.3	65.5				ug/L	4	Standard
Br	81	503.3	11.3				ug/L	303	Standard
P	31	15392.8	3.7				ug/L	14097	Standard
S	34	3045.3	3.1				ug/L	2990	Standard
Sr	88	50.0	26.5				ug/L	50	Standard
C	12	216.7	21.8				mg/L	167	Standard
N	14	6.7	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	22.5	23.3				mg/L	3	Standard
Ho-1	165	5.0	0.0				mg/L	12	Standard
Er	166	16.7	91.7				mg/L	7	Standard
I	127	2967.0	6.0				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.080	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.270	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	111.026
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	109.572
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Lower	Ti	47	

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Method 6020 - Summary Report

Sample ID: FBLANK 48 WG546939-01
Sample Date/Time: Monday, November 16, 2015 17:15:54
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	33175.0	12.2				ug/L	29272	Standard
	Be	9	10.0	86.6	**0.0067**	0.016	237.1	ug/L	7	Standard
	Al	27	866.7	8.2	**0.0012**	0.001	117.5	ug/L	318	Standard
	Sc	45	16388.9	7.3				ug/L	15221	Standard
	Ti	47	112.0	11.2	**-1.1234**	0.095	8.5	ug/L	262	Standard
	V	51	837.6	7.0	**-0.0112**	0.022	198.2	ug/L	874	Standard
	Cr	52	4458.7	0.7	**-0.0392**	0.098	248.9	ug/L	4335	Standard
	Cr	53	276.7	21.6	**0.1558**	0.178	114.2	ug/L	200	Standard
	Mn	55	998.7	3.8	**-0.0077**	0.011	148.7	ug/L	830	Standard
	Co	59	96.3	9.6	**0.0017**	0.004	245.2	ug/L	75	Standard
	Ni	60	157.7	6.6	**0.0321**	0.010	30.7	ug/L	98	Standard
	Cu	65	280.3	1.3	**0.0823**	0.022	26.5	ug/L	201	Standard
	Zn	66	2795.3	2.2	**4.5823**	0.295	6.4	ug/L	211	Standard
>	**Ge**	72	216669.4	7.4				ug/L	201509	Standard
	As	75	-30.6	41.4	**0.0594**	0.023	38.3	ug/L	-72	Standard
	Se	82	13.2	50.2	**-0.0039**	0.115	2909.2	ug/L	6	Standard
	Se-1	77	40.0	34.7	**0.0987**	0.444	450.0	ug/L	42	Standard
>	**Ga**	71	15.0	33.3				mg/L	25	Standard
	Rb	85	45.0	29.4				ug/L	8	Standard
	Y	89	226167.5	6.9				ug/L	207393	Standard
>	**Rh**	103	5.0	100.0				ug/L	7	Standard
	Mo	98	17.3	14.9	**-0.0051**	0.001	27.0	ug/L	9	Standard
	Ag	107	81.3	7.4	**-0.0019**	0.001	46.6	ug/L	79	Standard
	Cd	111	9.6	6.0	**0.0014**	0.001	57.3	mg/L	8	Standard
	Cd	114	17.9	127.7	**-0.0020**	0.006	292.4	ug/L	8	Standard
>	**In**	115	389753.5	6.4				ug/L	344753	Standard
	Sn	118	451.7	9.2	**0.0282**	0.017	58.7	ug/L	327	Standard
	Sb	123	101.7	1.8	**0.0174**	0.001	6.6	ug/L	64	Standard
	Ba	135	77.0	12.8	**0.0286**	0.005	17.4	ug/L	22	Standard
	Ce	140	63.3	16.4				ug/L	63	Standard
>	**Tb**	159	649189.0	8.7				ug/L	622049	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	9.7	41.8	**0.0008**	0.001	96.8	ug/L	4	Standard
	Tl	205	11.7	24.7	**-0.0010**	0.001	78.4	ug/L	5	Standard
	Pb	206	231.7	9.2	**-0.0024**	0.006	229.0	ug/L	163	Standard
	Pb	207	209.0	5.2	**0.0094**	0.005	57.6	ug/L	139	Standard
	Pb	208	784.7	4.0	**0.0093**	0.003	34.3	ug/L	519	Standard
	U	238	4.7	44.6	**0.0014**	0.001	37.5	ug/L	4	Standard
>	**Bi**	209	367676.9	7.8				ug/L	331049	Standard

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Na	23	1.7	173.2	**5.9987**	147.524	2459.3	mg/L	0	Standard
Mg	24	116.7	25.8	**0.2415**	0.053	21.8	mg/L	7	Standard
K	39	28.3	20.4	**0.0050**	0.032	643.2	mg/L	33	Standard
Ca	43	41.7	48.5	**-10.4103**	7.474	71.8	mg/L	80	Standard
Fe	54	98.1	43.6	**0.0121**	0.087	713.6	mg/L	81	Standard
Fe	57	83.3	24.2	**-0.1488**	0.138	92.9	mg/L	93	Standard
Sc-1	45	16388.9	7.3				mg/L	15221	Standard
Cl	35	43947.0	1.3				ug/L	40209	Standard
Kr	83	4.0	75.0				ug/L	4	Standard
Br	81	396.7	22.6				ug/L	303	Standard
P	31	14867.3	4.6				ug/L	14097	Standard
S	34	3003.6	1.4				ug/L	2990	Standard
Sr	88	60.0	52.0				ug/L	50	Standard
C	12	236.7	9.8				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.3	126.2				mg/L	3	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	2746.9	7.1				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.335	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.524	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.053
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		111.064
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Lower	Ti	47	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, November 16, 2015 17:19:07
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	31123.6	2.3				ug/L	29272	Standard
	Be	9	28294.8	3.8	**51.1316**	2.696	5.3	ug/L	7	Standard
	Al	27	2389360.2	2.8	**51.8419**	1.311	2.5	ug/L	318	Standard
	Sc	45	16490.6	2.4				ug/L	15221	Standard
	Ti	47	13587.1	1.2	**98.2227**	0.035	0.0	ug/L	262	Standard
	V	51	178664.9	2.9	**50.1400**	0.917	1.8	ug/L	874	Standard
	Cr	52	163435.5	0.9	**49.4408**	0.332	0.7	ug/L	4335	Standard
	Cr	53	20650.7	0.8	**49.5533**	0.880	1.8	ug/L	200	Standard
	Mn	55	157767.6	1.7	**47.2628**	0.267	0.6	ug/L	830	Standard
	Co	59	166950.9	1.4	**49.2441**	0.119	0.2	ug/L	75	Standard
	Ni	60	46404.3	1.2	**49.7366**	0.848	1.7	ug/L	98	Standard
	Cu	65	47044.3	1.6	**50.5316**	0.197	0.4	ug/L	201	Standard
	Zn	66	28144.8	1.5	**51.2684**	0.510	1.0	ug/L	211	Standard
>	**Ge**	72	214156.7	1.2				ug/L	201509	Standard
	As	75	32520.6	1.3	**52.4025**	0.213	0.4	ug/L	-72	Standard
	Se	82	2972.9	2.2	**53.2679**	0.558	1.0	ug/L	6	Standard
	Se-1	77	1885.5	1.5	**53.3745**	1.380	2.6	ug/L	42	Standard
>	**Ga**	71	28.3	20.4				mg/L	25	Standard
	Rb	85	421.7	21.5				ug/L	8	Standard
	Y	89	228248.4	1.8				ug/L	207393	Standard
>	**Rh**	103	15.0	100.0				ug/L	7	Standard
	Mo	98	150555.6	0.5	**109.1220**	0.904	0.8	ug/L	9	Standard
	Ag	107	208283.0	1.3	**47.8556**	0.377	0.8	ug/L	79	Standard
	Cd	111	72283.2	1.4	**49.9478**	0.528	1.1	mg/L	8	Standard
	Cd	114	175284.7	2.2	**49.9405**	0.957	1.9	ug/L	8	Standard
>	**In**	115	388439.7	1.1				ug/L	344753	Standard
	Sn	118	198088.4	1.7	**48.3915**	0.620	1.3	ug/L	327	Standard
	Sb	123	197750.2	1.9	**49.4995**	0.588	1.2	ug/L	64	Standard
	Ba	135	72180.9	0.9	**46.7645**	0.205	0.4	ug/L	22	Standard
	Ce	140	50.0	20.0				ug/L	63	Standard
>	**Tb**	159	647886.7	1.9				ug/L	622049	Standard
	Ho	165	13.3	114.6				ug/L	12	Standard
	Tl	203	300221.1	2.2	**50.0154**	0.348	0.7	ug/L	4	Standard
	Tl	205	201337.3	0.9	**48.5651**	1.205	2.5	ug/L	5	Standard
	Pb	206	206746.4	0.8	**48.9891**	0.496	1.0	ug/L	163	Standard
	Pb	207	186267.0	1.0	**48.7226**	0.441	0.9	ug/L	139	Standard
	Pb	208	643548.3	1.2	**49.2527**	0.485	1.0	ug/L	519	Standard
	U	238	215792.8	1.7	**48.0025**	0.350	0.7	ug/L	4	Standard
>	**Bi**	209	362625.7	1.8				ug/L	331049	Standard

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Na	23	3.3	173.2	**-74.4775**	286.913	385.2	mg/L	0	Standard
Mg	24	2141.8	3.9	**4.9284**	0.261	5.3	mg/L	7	Standard
K	39	528.3	6.7	**4.3064**	0.247	5.7	mg/L	33	Standard
Ca	43	58.3	21.6	**-3.7008**	4.775	129.0	mg/L	80	Standard
Fe	54	2702.2	0.9	**5.2753**	0.175	3.3	mg/L	81	Standard
Fe	57	813.4	4.7	**5.7234**	0.167	2.9	mg/L	93	Standard
> **Sc-1**	45	16490.6	2.4				mg/L	15221	Standard
Cl	35	41700.0	1.6				ug/L	40209	Standard
Kr	83	5.3	21.7				ug/L	4	Standard
Br	81	376.7	16.9				ug/L	303	Standard
P	31	14872.3	5.2				ug/L	14097	Standard
S	34	3212.0	5.2				ug/L	2990	Standard
Sr	88	50.0	0.0				ug/L	50	Standard
C	12	186.7	17.2				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	-0.2	173.2				mg/L	3	Standard
Ho-1	165	13.3	114.6				mg/L	12	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	1420.1	10.5				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	102.263		
Al	27	103.684		
Sc	45			
Ti	47	98.223		
V	51	100.280		
Cr	52	98.882		
Cr	53			
Mn	55	94.526		
Co	59	98.488		
Ni	60	99.473		
Cu	65	101.063		
Zn	66	102.537		
> Ge	72		106.277	
As	75	104.805		
Se	82	106.536		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	109.122		
Ag	107	95.711		
Cd	111	99.896		
Cd	114			
In	115			112.672
Sn	118	96.783		
Sb	123	98.999		
Ba	135	93.529		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.031		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.505		
U	238	96.005		
Bi	209			109.538
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, November 16, 2015 17:22:18
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	30814.7	6.0				ug/L	29272	Standard
	Be	9	28.3	53.9	**0.0394**	0.025	63.1	ug/L	7	Standard
	Al	27	2258.6	79.7	**0.0338**	0.042	124.9	ug/L	318	Standard
	Sc	45	16138.6	2.4				ug/L	15221	Standard
	Ti	47	107.3	13.1	**-1.1248**	0.133	11.9	ug/L	262	Standard
	V	51	780.4	2.2	**-0.0188**	0.014	72.3	ug/L	874	Standard
	Cr	52	3913.5	2.5	**-0.1624**	0.052	31.9	ug/L	4335	Standard
	Cr	53	265.0	17.3	**0.1449**	0.097	67.0	ug/L	200	Standard
	Mn	55	691.0	6.8	**-0.0917**	0.010	10.6	ug/L	830	Standard
	Co	59	116.3	19.3	**0.0086**	0.006	66.3	ug/L	75	Standard
	Ni	60	144.0	4.3	**0.0238**	0.013	54.7	ug/L	98	Standard
	Cu	65	210.7	10.6	**0.0157**	0.018	113.0	ug/L	201	Standard
	Zn	66	196.3	7.9	**-0.1429**	0.039	27.1	ug/L	211	Standard
>	**Ge**	72	208316.6	3.7				ug/L	201509	Standard
	As	75	-43.6	53.9	**0.0361**	0.041	113.4	ug/L	-72	Standard
	Se	82	10.9	69.9	**-0.0394**	0.135	341.5	ug/L	6	Standard
	Se-1	77	44.3	15.8	**0.2677**	0.257	96.0	ug/L	42	Standard
>	**Ga**	71	13.3	57.3				mg/L	25	Standard
	Rb	85	13.3	108.3				ug/L	8	Standard
	Y	89	219782.1	5.3				ug/L	207393	Standard
>	**Rh**	103	6.7	114.6				ug/L	7	Standard
	Mo	98	161.5	42.5	**0.1009**	0.045	44.4	ug/L	9	Standard
	Ag	107	88.0	18.0	**0.0001**	0.003	3340.6	ug/L	79	Standard
	Cd	111	17.7	34.0	**0.0071**	0.004	54.1	mg/L	8	Standard
	Cd	114	33.1	69.6	**0.0027**	0.006	236.3	ug/L	8	Standard
>	**In**	115	379391.6	4.7				ug/L	344753	Standard
	Sn	118	381.7	9.2	**0.0133**	0.013	98.8	ug/L	327	Standard
	Sb	123	137.4	8.7	**0.0272**	0.004	14.4	ug/L	64	Standard
	Ba	135	28.0	6.2	**-0.0025**	0.001	27.9	ug/L	22	Standard
	Ce	140	10.0	100.0				ug/L	63	Standard
>	**Tb**	159	631043.5	4.6				ug/L	622049	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	40.0	23.8	**0.0059**	0.002	25.7	ug/L	4	Standard
	Tl	205	65.0	35.3	**0.0120**	0.005	45.0	ug/L	5	Standard
	Pb	206	202.7	7.5	**-0.0081**	0.004	43.4	ug/L	163	Standard
	Pb	207	168.0	13.8	**-0.0004**	0.005	1293.8	ug/L	139	Standard
	Pb	208	741.7	19.4	**0.0072**	0.010	135.2	ug/L	519	Standard
	U	238	76.0	63.1	**0.0174**	0.011	61.5	ug/L	4	Standard
>	**Bi**	209	358481.0	3.4				ug/L	331049	Standard

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Na	23	0.0		**91.1719**	0.000	0.0	mg/L	0	Standard
Mg	24	25.0	52.9	**0.0316**	0.032	100.7	mg/L	7	Standard
K	39	20.0	66.1	**-0.0623**	0.118	189.2	mg/L	33	Standard
Ca	43	40.0	12.5	**-10.7030**	1.665	15.6	mg/L	80	Standard
Fe	54	94.7	29.5	**0.0099**	0.062	626.9	mg/L	81	Standard
Fe	57	90.0	0.0	**-0.0798**	0.018	22.4	mg/L	93	Standard
> **Sc-1**	45	16138.6	2.4				mg/L	15221	Standard
Cl	35	43579.9	0.6				ug/L	40209	Standard
Kr	83	2.0	100.0				ug/L	4	Standard
Br	81	403.3	18.8				ug/L	303	Standard
P	31	15254.3	3.5				ug/L	14097	Standard
S	34	3410.4	5.4				ug/L	2990	Standard
Sr	88	48.3	15.8				ug/L	50	Standard
C	12	256.7	4.5				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	6.2	186.8				mg/L	3	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	2670.2	5.2				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.379	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.047
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.286
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Ti	47	

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Method 6020 - Summary Report

Sample ID: L1511079314
Sample Date/Time: Monday, November 16, 2015 17:53:47
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	32140.8	6.1				ug/L	29272	Standard
	Be	9	10.0	50.0	**0.0062**	0.009	150.8	ug/L	7	Standard
	Al	27	706950.6	1.5	**14.8693**	0.746	5.0	ug/L	318	Standard
	Sc	45	16649.2	6.8				ug/L	15221	Standard
	Ti	47	163.0	8.4	**-0.7345**	0.088	12.0	ug/L	262	Standard
	V	51	5003.0	1.5	**1.1744**	0.094	8.0	ug/L	874	Standard
	Cr	52	28779.6	2.1	**7.5883**	0.440	5.8	ug/L	4335	Standard
	Cr	53	3455.4	6.5	**7.9100**	0.694	8.8	ug/L	200	Standard
	Mn	55	13915.4	1.4	**3.9130**	0.202	5.2	ug/L	830	Standard
	Co	59	339.7	3.6	**0.0741**	0.002	2.5	ug/L	75	Standard
	Ni	60	732.0	3.5	**0.6552**	0.040	6.1	ug/L	98	Standard
	Cu	65	418.3	7.8	**0.2351**	0.016	6.7	ug/L	201	Standard
	Zn	66	886.0	2.1	**1.1238**	0.072	6.4	ug/L	211	Standard
>	**Ge**	72	213351.9	5.4				ug/L	201509	Standard
	As	75	135.2	20.3	**0.3294**	0.056	17.0	ug/L	-72	Standard
	Se	82	52.0	7.4	**0.7052**	0.105	14.9	ug/L	6	Standard
	Se-1	77	86.3	8.2	**1.4505**	0.221	15.2	ug/L	42	Standard
>	**Ga**	71	11.7	107.9				mg/L	25	Standard
	Rb	85	4329.0	0.9				ug/L	8	Standard
	Y	89	223979.0	4.6				ug/L	207393	Standard
>	**Rh**	103	210.0	22.7				ug/L	7	Standard
	Mo	98	3790.5	1.6	**2.7980**	0.116	4.1	ug/L	9	Standard
	Ag	107	77.7	21.2	**-0.0024**	0.003	121.1	ug/L	79	Standard
	Cd	111	52.6	11.6	**0.0318**	0.003	9.4	mg/L	8	Standard
	Cd	114	119.1	19.2	**0.0281**	0.008	29.4	ug/L	8	Standard
>	**In**	115	379647.9	5.6				ug/L	344753	Standard
	Sn	118	345.0	11.3	**0.0038**	0.011	279.2	ug/L	327	Standard
	Sb	123	362.3	5.5	**0.0849**	0.007	8.7	ug/L	64	Standard
	Ba	135	51775.3	2.3	**34.3664**	1.482	4.3	ug/L	22	Standard
	Ce	140	521.7	6.4				ug/L	63	Standard
>	**Tb**	159	638697.1	5.6				ug/L	622049	Standard
	Ho	165	33.3	31.2				ug/L	12	Standard
	Tl	203	144.0	12.0	**0.0236**	0.002	9.0	ug/L	4	Standard
	Tl	205	91.7	31.5	**0.0188**	0.007	39.7	ug/L	5	Standard
	Pb	206	250.0	6.8	**0.0036**	0.001	34.1	ug/L	163	Standard
	Pb	207	213.7	4.6	**0.0122**	0.001	12.2	ug/L	139	Standard
	Pb	208	737.7	1.0	**0.0075**	0.003	41.2	ug/L	519	Standard
	U	238	792.4	4.8	**0.1799**	0.003	1.8	ug/L	4	Standard
>	**Bi**	209	356103.8	6.4				ug/L	331049	Standard

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Na	23	8.3	34.6	**-315.0882**	123.167	39.1	mg/L	0	Standard
Mg	24	2535.2	5.9	**5.8054**	0.664	11.4	mg/L	7	Standard
K	39	75.0	41.6	**0.3904**	0.231	59.1	mg/L	33	Standard
Ca	43	150.0	18.6	**33.0963**	13.411	40.5	mg/L	80	Standard
Fe	54	74.5	13.2	**-0.0379**	0.010	27.0	mg/L	81	Standard
Fe	57	130.0	23.4	**0.2097**	0.177	84.5	mg/L	93	Standard
> **Sc-1**	45	16649.2	6.8				mg/L	15221	Standard
Cl	35	43583.3	1.7				ug/L	40209	Standard
Kr	83	2.7	21.7				ug/L	4	Standard
Br	81	4374.0	3.6				ug/L	303	Standard
P	31	16172.0	1.8				ug/L	14097	Standard
S	34	3098.7	8.8				ug/L	2990	Standard
Sr	88	463.3	14.7				ug/L	50	Standard
C	12	533.3	5.7				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	40.0	63.4				mg/L	3	Standard
Ho-1	165	33.3	31.2				mg/L	12	Standard
Er	166	70.0	14.3				mg/L	7	Standard
I	127	48057.8	2.5				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.802	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.877	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.122
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.568
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Lower	Ti	47	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, November 16, 2015 17:57:00
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	30814.7	5.5				ug/L	29272	Standard
	Be	9	29483.8	7.6	**53.7438**	1.319	2.5	ug/L	7	Standard
	Al	27	2428811.0	0.8	**53.3262**	2.936	5.5	ug/L	318	Standard
	Sc	45	16487.3	1.8				ug/L	15221	Standard
	Ti	47	13987.8	2.4	**99.5869**	2.120	2.1	ug/L	262	Standard
	V	51	181310.5	1.9	**50.1041**	0.748	1.5	ug/L	874	Standard
	Cr	52	166354.7	1.3	**49.5536**	0.874	1.8	ug/L	4335	Standard
	Cr	53	20522.2	2.0	**48.4671**	0.691	1.4	ug/L	200	Standard
	Mn	55	165677.4	1.7	**48.8778**	0.303	0.6	ug/L	830	Standard
	Co	59	173257.0	1.0	**50.3210**	0.661	1.3	ug/L	75	Standard
	Ni	60	47390.0	0.7	**50.0168**	1.209	2.4	ug/L	98	Standard
	Cu	65	48178.5	1.5	**50.9580**	0.792	1.6	ug/L	201	Standard
	Zn	66	28670.1	0.5	**51.4289**	0.941	1.8	ug/L	211	Standard
>	Ge	72	217530.2	2.0				ug/L	201509	Standard
	As	75	33101.6	0.3	**52.5240**	0.953	1.8	ug/L	-72	Standard
	Se	82	3028.6	0.9	**53.4369**	0.633	1.2	ug/L	6	Standard
	Se-1	77	1871.4	3.4	**52.1343**	1.980	3.8	ug/L	42	Standard
>	Ga	71	16.7	45.8				mg/L	25	Standard
	Rb	85	411.7	1.9				ug/L	8	Standard
	Y	89	228495.3	1.6				ug/L	207393	Standard
>	Rh	103	15.0	88.2				ug/L	7	Standard
	Mo	98	149837.3	0.5	**107.6948**	1.507	1.4	ug/L	9	Standard
	Ag	107	209585.0	1.0	**47.7544**	0.701	1.5	ug/L	79	Standard
	Cd	111	73903.5	1.2	**50.6428**	0.824	1.6	mg/L	8	Standard
	Cd	114	179825.5	1.4	**50.8042**	0.367	0.7	ug/L	8	Standard
>	In	115	391741.9	1.6				ug/L	344753	Standard
	Sn	118	198591.8	2.2	**48.1021**	0.315	0.7	ug/L	327	Standard
	Sb	123	200058.4	1.2	**49.6597**	0.362	0.7	ug/L	64	Standard
	Ba	135	74335.2	0.9	**47.7579**	0.431	0.9	ug/L	22	Standard
	Ce	140	83.3	33.0				ug/L	63	Standard
>	Tb	159	651255.7	1.6				ug/L	622049	Standard
	Ho	165	11.7	24.7				ug/L	12	Standard
	Tl	203	305241.2	1.0	**50.5016**	0.681	1.3	ug/L	4	Standard
	Tl	205	202671.5	0.4	**48.5388**	0.926	1.9	ug/L	5	Standard
	Pb	206	208675.7	1.6	**49.0989**	0.949	1.9	ug/L	163	Standard
	Pb	207	191110.1	0.9	**49.6406**	0.799	1.6	ug/L	139	Standard
	Pb	208	663529.6	0.9	**50.4252**	0.352	0.7	ug/L	519	Standard
	U	238	221425.9	0.6	**48.9139**	0.592	1.2	ug/L	4	Standard
>	Bi	209	365192.4	1.6				ug/L	331049	Standard

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Na	23	0.0		**91.1719**	0.000	0.0	mg/L	0	Standard
Mg	24	2198.5	9.4	**5.0561**	0.456	9.0	mg/L	7	Standard
K	39	568.3	4.2	**4.6524**	0.141	3.0	mg/L	33	Standard
Ca	43	83.3	12.5	**6.3592**	3.561	56.0	mg/L	80	Standard
Fe	54	2596.2	2.8	**5.0598**	0.141	2.8	mg/L	81	Standard
Fe	57	788.4	4.2	**5.5242**	0.181	3.3	mg/L	93	Standard
> **Sc-1**	45	16487.3	1.8				mg/L	15221	Standard
Cl	35	43057.1	0.6				ug/L	40209	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	386.7	18.3				ug/L	303	Standard
P	31	15427.9	4.6				ug/L	14097	Standard
S	34	3562.1	1.9				ug/L	2990	Standard
Sr	88	60.0	14.4				ug/L	50	Standard
C	12	240.0	4.2				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.3	86.6				mg/L	3	Standard
Ho-1	165	11.7	24.7				mg/L	12	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	1603.4	26.0				mg/L	3957	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	107.488		
	Al	27	106.652		
	Sc	45			
	Ti	47	99.587		
	V	51	100.208		
	Cr	52	99.107		
	Cr	53			
	Mn	55	97.756		
	Co	59	100.642		
	Ni	60	100.034		
	Cu	65	101.916		
	Zn	66	102.858		
>	Ge	72		107.951	
	As	75	105.048		
	Se	82	106.874		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	107.695		
Ag	107	95.509		
Cd	111	101.286		
Cd	114			
In	115			113.630
Sn	118	96.204		
Sb	123	99.319		
Ba	135	95.516		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.003		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.850		
U	238	97.828		
Bi	209			110.314
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, November 16, 2015 18:00:11
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	30256.9	3.8				ug/L	29272	Standard
	Be	9	10.0	100.0	**0.0066**	0.018	274.7	ug/L	7	Standard
	Al	27	560.0	42.0	**-0.0041**	0.005	118.9	ug/L	318	Standard
	Sc	45	15639.7	2.1				ug/L	15221	Standard
	Ti	47	106.3	8.2	**-1.1400**	0.062	5.4	ug/L	262	Standard
	V	51	699.1	7.3	**-0.0441**	0.010	23.6	ug/L	874	Standard
	Cr	52	3733.8	2.0	**-0.2280**	0.011	4.9	ug/L	4335	Standard
	Cr	53	218.3	17.3	**0.0257**	0.081	315.8	ug/L	200	Standard
	Mn	55	672.3	6.5	**-0.0986**	0.013	13.2	ug/L	830	Standard
	Co	59	130.0	25.8	**0.0125**	0.009	74.3	ug/L	75	Standard
	Ni	60	118.7	4.6	**-0.0053**	0.005	88.5	ug/L	98	Standard
	Cu	65	183.0	5.3	**-0.0159**	0.010	64.2	ug/L	201	Standard
	Zn	66	177.0	17.9	**-0.1829**	0.053	29.1	ug/L	211	Standard
>	**Ge**	72	209586.6	2.6				ug/L	201509	Standard
	As	75	-20.4	63.0	**0.0754**	0.021	28.3	ug/L	-72	Standard
	Se	82	16.5	24.1	**0.0658**	0.067	102.6	ug/L	6	Standard
	Se-1	77	39.0	2.6	**0.0963**	0.017	17.5	ug/L	42	Standard
>	**Ga**	71	21.7	35.3				mg/L	25	Standard
	Rb	85	23.3	44.6				ug/L	8	Standard
	Y	89	217000.3	2.8				ug/L	207393	Standard
>	**Rh**	103	8.3	69.3				ug/L	7	Standard
	Mo	98	136.2	32.7	**0.0835**	0.031	37.3	ug/L	9	Standard
	Ag	107	110.0	20.7	**0.0054**	0.005	89.9	ug/L	79	Standard
	Cd	111	12.4	56.6	**0.0035**	0.005	139.5	mg/L	8	Standard
	Cd	114	45.0	34.9	**0.0063**	0.004	70.1	ug/L	8	Standard
>	**In**	115	377690.1	2.3				ug/L	344753	Standard
	Sn	118	435.0	5.7	**0.0269**	0.009	32.3	ug/L	327	Standard
	Sb	123	133.9	7.0	**0.0264**	0.002	9.0	ug/L	64	Standard
	Ba	135	37.0	19.5	**0.0036**	0.004	121.1	ug/L	22	Standard
	Ce	140	11.7	24.7				ug/L	63	Standard
>	**Tb**	159	639338.9	2.9				ug/L	622049	Standard
	Ho	165	0.0					ug/L	12	Standard
	Tl	203	56.3	55.0	**0.0086**	0.005	58.6	ug/L	4	Standard
	Tl	205	35.0	79.5	**0.0047**	0.007	141.7	ug/L	5	Standard
	Pb	206	213.0	16.9	**-0.0053**	0.007	137.3	ug/L	163	Standard
	Pb	207	181.0	8.0	**0.0035**	0.002	70.0	ug/L	139	Standard
	Pb	208	664.7	16.4	**0.0017**	0.007	407.5	ug/L	519	Standard
	U	238	43.7	69.2	**0.0101**	0.007	64.7	ug/L	4	Standard
>	**Bi**	209	355075.5	3.0				ug/L	331049	Standard

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Na	23	3.3	173.2	**-80.6738**	297.646	368.9	mg/L	0	Standard
Mg	24	28.3	10.2	**0.0414**	0.007	18.1	mg/L	7	Standard
K	39	30.0	28.9	**0.0342**	0.082	240.9	mg/L	33	Standard
Ca	43	53.3	19.5	**-4.5283**	4.113	90.8	mg/L	80	Standard
Fe	54	76.0	18.9	**-0.0244**	0.031	128.9	mg/L	81	Standard
Fe	57	100.0	13.2	**0.0272**	0.098	360.5	mg/L	93	Standard
Sc-1	45	15639.7	2.1				mg/L	15221	Standard
Cl	35	42046.9	1.6				ug/L	40209	Standard
Kr	83	3.3	34.6				ug/L	4	Standard
Br	81	403.3	3.8				ug/L	303	Standard
P	31	15768.2	3.1				ug/L	14097	Standard
S	34	3217.0	7.5				ug/L	2990	Standard
Sr	88	66.7	35.4				ug/L	50	Standard
C	12	166.7	22.7				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.7	204.8				mg/L	3	Standard
Ho-1	165	0.0					mg/L	12	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	2548.5	1.8				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		104.009	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.554
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.258
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Ti	47	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Monday, November 16, 2015 18:03:23
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	30512.4	2.7				ug/L	29272	Standard
	Be	9	108.3	23.2	**0.1873**	0.041	21.7	ug/L	7	Standard
	Al	27	858.4	86.4	**0.0022**	0.016	704.1	ug/L	318	Standard
	Sc	45	16108.6	3.7				ug/L	15221	Standard
	Ti	47	105.3	10.5	**-1.1583**	0.063	5.4	ug/L	262	Standard
	V	51	2086.3	2.1	**0.3485**	0.004	1.1	ug/L	874	Standard
	Cr	52	6188.9	3.7	**0.5278**	0.025	4.8	ug/L	4335	Standard
	Cr	53	551.7	4.1	**0.8364**	0.063	7.6	ug/L	200	Standard
	Mn	55	2191.8	1.9	**0.3613**	0.013	3.7	ug/L	830	Standard
	Co	59	1344.1	1.9	**0.3738**	0.005	1.2	ug/L	75	Standard
	Ni	60	1521.7	2.2	**1.5152**	0.039	2.6	ug/L	98	Standard
	Cu	65	884.0	4.4	**0.7447**	0.028	3.7	ug/L	201	Standard
	Zn	66	9707.8	1.0	**17.5153**	0.280	1.6	ug/L	211	Standard
>	**Ge**	72	212200.5	2.4				ug/L	201509	Standard
	As	75	198.1	5.8	**0.4309**	0.024	5.5	ug/L	-72	Standard
	Se	82	31.3	22.2	**0.3325**	0.136	40.9	ug/L	6	Standard
	Se-1	77	49.7	17.4	**0.3897**	0.218	55.9	ug/L	42	Standard
>	**Ga**	71	13.3	43.3				mg/L	25	Standard
	Rb	85	15.0	115.5				ug/L	8	Standard
	Y	89	218545.3	2.0				ug/L	207393	Standard
>	**Rh**	103	3.3	86.6				ug/L	7	Standard
	Mo	98	48.9	22.3	**0.0188**	0.008	43.5	ug/L	9	Standard
	Ag	107	1628.1	0.4	**0.3630**	0.005	1.4	ug/L	79	Standard
	Cd	111	345.6	3.7	**0.2394**	0.006	2.6	mg/L	8	Standard
	Cd	114	794.6	9.6	**0.2250**	0.020	8.8	ug/L	8	Standard
>	**In**	115	379074.0	1.1				ug/L	344753	Standard
	Sn	118	325.0	13.8	**-0.0011**	0.012	1108.3	ug/L	327	Standard
	Sb	123	1546.2	3.1	**0.3886**	0.010	2.6	ug/L	64	Standard
	Ba	135	1071.0	2.8	**0.6902**	0.012	1.7	ug/L	22	Standard
	Ce	140	20.0	66.1				ug/L	63	Standard
>	**Tb**	159	632403.0	1.4				ug/L	622049	Standard
	Ho	165	5.0	100.0				ug/L	12	Standard
	Tl	203	475.3	10.9	**0.0787**	0.010	12.5	ug/L	4	Standard
	Tl	205	330.0	12.0	**0.0759**	0.009	12.1	ug/L	5	Standard
	Pb	206	965.0	2.7	**0.1729**	0.008	4.8	ug/L	163	Standard
	Pb	207	847.7	1.2	**0.1778**	0.006	3.1	ug/L	139	Standard
	Pb	208	3064.5	4.5	**0.1853**	0.008	4.4	ug/L	519	Standard
	U	238	1699.8	7.4	**0.3793**	0.021	5.5	ug/L	4	Standard
>	**Bi**	209	361586.3	2.4				ug/L	331049	Standard

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Na	23	0.0		**91.1719**	0.000	0.0	mg/L	0	Standard
Mg	24	15.0	57.7	**0.0073**	0.019	257.1	mg/L	7	Standard
K	39	28.3	27.0	**0.0095**	0.060	631.7	mg/L	33	Standard
Ca	43	46.7	16.4	**-7.8619**	3.486	44.3	mg/L	80	Standard
Fe	54	92.9	33.1	**0.0074**	0.069	943.0	mg/L	81	Standard
Fe	57	96.7	46.6	**-0.0225**	0.382	1697.8	mg/L	93	Standard
Sc-1	45	16108.6	3.7				mg/L	15221	Standard
Cl	35	42079.7	1.0				ug/L	40209	Standard
Kr	83	1.3	173.2				ug/L	4	Standard
Br	81	393.3	7.8				ug/L	303	Standard
P	31	14702.1	0.5				ug/L	14097	Standard
S	34	3293.7	8.9				ug/L	2990	Standard
Sr	88	45.0	22.2				ug/L	50	Standard
C	12	246.7	22.3				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	2.4	243.9				mg/L	3	Standard
Ho-1	165	5.0	100.0				mg/L	12	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	720.0	13.9				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	93.652		
Al	27			
Sc	45			
Ti	47			
V	51	87.124		
Cr	52	65.974		
Cr	53			
Mn	55	72.256		
Co	59	93.450		
Ni	60	94.700		
Cu	65	93.083		
Zn	66	280.244		
Ge	72		105.306	
As	75	107.729		
Se	82	83.117		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	90.742		
Cd	111	99.742		
Cd	114			
> In	115			109.955
Sn	118			
Sb	123	97.150		
Ba	135	92.029		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.362		
Tl	205			
Pb	206			
Pb	207			
Pb	208	92.631		
U	238	94.821		
> Bi	209			109.224
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 8	Cr	52	
QC Std 8	Zn	66	

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Method 6020 - Summary Report

Sample ID: PBW 81 WG546725-02
Sample Date/Time: Monday, November 16, 2015 18:46:44
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	30993.4	7.2				ug/L	29272	Standard
	Be	9	10.0	86.6	**0.0059**	0.015	257.2	ug/L	7	Standard
	Al	27	831.7	12.7	**0.0016**	0.002	98.4	ug/L	318	Standard
	Sc	45	15778.2	7.1				ug/L	15221	Standard
	Ti	47	114.3	7.1	**-1.0597**	0.090	8.5	ug/L	262	Standard
	V	51	824.5	0.5	**-0.0024**	0.014	585.8	ug/L	874	Standard
	Cr	52	4290.6	1.4	**-0.0206**	0.083	403.8	ug/L	4335	Standard
	Cr	53	238.3	7.4	**0.0887**	0.034	38.2	ug/L	200	Standard
	Mn	55	895.0	2.4	**-0.0238**	0.019	79.7	ug/L	830	Standard
	Co	59	97.3	3.6	**0.0035**	0.003	84.4	ug/L	75	Standard
	Ni	60	176.0	5.0	**0.0624**	0.021	33.7	ug/L	98	Standard
	Cu	65	191.7	3.9	**-0.0019**	0.006	328.7	ug/L	201	Standard
	Zn	66	3226.7	2.1	**5.6875**	0.396	7.0	ug/L	211	Standard
>	**Ge**	72	205478.3	6.1				ug/L	201509	Standard
	As	75	-29.7	92.7	**0.0573**	0.051	88.1	ug/L	-72	Standard
	Se	82	19.2	36.7	**0.1198**	0.120	100.0	ug/L	6	Standard
	Se-1	77	32.0	25.0	**-0.0950**	0.216	227.2	ug/L	42	Standard
>	**Ga**	71	21.7	13.3				mg/L	25	Standard
	Rb	85	40.0	57.3				ug/L	8	Standard
	Y	89	217235.1	6.2				ug/L	207393	Standard
>	**Rh**	103	8.3	91.7				ug/L	7	Standard
	Mo	98	28.9	37.0	**0.0047**	0.008	178.2	ug/L	9	Standard
	Ag	107	64.0	13.4	**-0.0050**	0.002	35.8	ug/L	79	Standard
	Cd	111	3.6	16.0	**-0.0026**	0.000	17.7	mg/L	8	Standard
	Cd	114	14.2	106.0	**-0.0026**	0.004	174.0	ug/L	8	Standard
>	**In**	115	368437.9	5.4				ug/L	344753	Standard
	Sn	118	463.3	11.0	**0.0374**	0.018	48.2	ug/L	327	Standard
	Sb	123	120.4	24.1	**0.0238**	0.008	32.1	ug/L	64	Standard
	Ba	135	97.3	9.5	**0.0454**	0.004	8.5	ug/L	22	Standard
	Ce	140	83.3	36.7				ug/L	63	Standard
>	**Tb**	159	612906.9	6.0				ug/L	622049	Standard
	Ho	165	6.7	43.3				ug/L	12	Standard
	Tl	203	5.3	60.3	**0.0001**	0.001	606.0	ug/L	4	Standard
	Tl	205	0.0		**-0.0038**	0.000	0.0	ug/L	5	Standard
	Pb	206	202.7	3.0	**-0.0068**	0.004	53.4	ug/L	163	Standard
	Pb	207	180.7	6.2	**0.0043**	0.004	96.1	ug/L	139	Standard
	Pb	208	598.3	7.4	**-0.0026**	0.003	103.0	ug/L	519	Standard
	U	238	5.0	91.7	**0.0015**	0.001	72.2	ug/L	4	Standard
>	**Bi**	209	349460.9	5.4				ug/L	331049	Standard

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Na	23	0.0		**91.1719**	0.000	0.0	mg/L	0	Standard
Mg	24	33.3	31.2	**0.0538**	0.030	55.3	mg/L	7	Standard
K	39	13.3	114.6	**-0.1250**	0.127	101.4	mg/L	33	Standard
Ca	43	53.3	28.6	**-4.3509**	7.936	182.4	mg/L	80	Standard
Fe	54	72.7	32.7	**-0.0345**	0.040	115.2	mg/L	81	Standard
Fe	57	88.3	6.5	**-0.0769**	0.016	21.3	mg/L	93	Standard
Sc-1	45	15778.2	7.1				mg/L	15221	Standard
Cl	35	43846.7	0.7				ug/L	40209	Standard
Kr	83	2.3	24.7				ug/L	4	Standard
Br	81	433.3	19.2				ug/L	303	Standard
P	31	14987.4	1.8				ug/L	14097	Standard
S	34	3218.7	3.7				ug/L	2990	Standard
Sr	88	46.7	22.3				ug/L	50	Standard
C	12	223.3	20.2				mg/L	167	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.3	67.3				mg/L	3	Standard
Ho-1	165	6.7	43.3				mg/L	12	Standard
Er	166	6.7	173.2				mg/L	7	Standard
I	127	2601.9	6.1				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.882	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.970	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	106.870
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	105.562
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Lower	Ti	47	

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Method 6020 - Summary Report

Sample ID: LCSW 81 WG546725-03
Sample Date/Time: Monday, November 16, 2015 18:49:55
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	30564.1	3.0				ug/L	29272	Standard
	Be	9	27932.4	3.6	**51.4321**	3.231	6.3	ug/L	7	Standard
	Al	27	1008.4	8.4	**0.0057**	0.001	25.4	ug/L	318	Standard
	Sc	45	16362.2	4.1				ug/L	15221	Standard
	Ti	47	102.3	7.2	**-1.1824**	0.064	5.4	ug/L	262	Standard
	V	51	177542.4	3.3	**50.0681**	0.930	1.9	ug/L	874	Standard
	Cr	52	164799.2	1.3	**50.1168**	0.115	0.2	ug/L	4335	Standard
	Cr	53	20278.6	3.6	**48.8796**	1.214	2.5	ug/L	200	Standard
	Mn	55	167176.7	2.7	**50.3445**	0.712	1.4	ug/L	830	Standard
	Co	59	167645.9	2.9	**49.6875**	0.755	1.5	ug/L	75	Standard
	Ni	60	46543.1	2.2	**50.1238**	0.439	0.9	ug/L	98	Standard
	Cu	65	48034.7	2.2	**51.8532**	0.444	0.9	ug/L	201	Standard
	Zn	66	28734.9	2.0	**52.6119**	0.440	0.8	ug/L	211	Standard
>	**Ge**	72	213106.1	1.4				ug/L	201509	Standard
	As	75	32679.6	1.6	**52.9164**	0.109	0.2	ug/L	-72	Standard
	Se	82	2971.5	0.5	**53.5159**	0.506	0.9	ug/L	6	Standard
	Se-1	77	1861.4	1.9	**52.9345**	0.424	0.8	ug/L	42	Standard
>	**Ga**	71	15.0	57.7				mg/L	25	Standard
	Rb	85	41.7	69.3				ug/L	8	Standard
	Y	89	222722.2	2.2				ug/L	207393	Standard
>	**Rh**	103	10.0	86.6				ug/L	7	Standard
	Mo	98	22.9	25.2	**-0.0005**	0.004	824.4	ug/L	9	Standard
	Ag	107	208096.8	3.0	**49.2071**	0.852	1.7	ug/L	79	Standard
	Cd	111	72076.0	1.8	**51.2616**	0.343	0.7	mg/L	8	Standard
	Cd	114	172895.2	1.2	**50.7038**	0.099	0.2	ug/L	8	Standard
>	**In**	115	377383.0	1.4				ug/L	344753	Standard
	Sn	118	405.0	11.1	**0.0193**	0.010	54.2	ug/L	327	Standard
	Sb	123	194059.9	2.6	**49.9954**	0.617	1.2	ug/L	64	Standard
	Ba	135	71944.4	1.3	**47.9771**	0.089	0.2	ug/L	22	Standard
	Ce	140	226.7	12.5				ug/L	63	Standard
>	**Tb**	159	648716.3	3.1				ug/L	622049	Standard
	Ho	165	3.3	86.6				ug/L	12	Standard
	Tl	203	300620.2	2.8	**49.3686**	0.494	1.0	ug/L	4	Standard
	Tl	205	199202.7	0.7	**47.3714**	1.242	2.6	ug/L	5	Standard
	Pb	206	209840.8	2.1	**49.0122**	0.456	0.9	ug/L	163	Standard
	Pb	207	181385.2	2.1	**46.7661**	0.253	0.5	ug/L	139	Standard
	Pb	208	646935.8	1.6	**48.8085**	0.442	0.9	ug/L	519	Standard
	U	238	214555.3	1.5	**47.0542**	0.566	1.2	ug/L	4	Standard
>	**Bi**	209	367870.8	2.5				ug/L	331049	Standard

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Na	23	1.7	173.2	**10.7595**	139.278	1294.5	mg/L	0	Standard
Mg	24	25.0	100.0	**0.0322**	0.061	189.0	mg/L	7	Standard
K	39	21.7	26.6	**-0.0497**	0.056	112.3	mg/L	33	Standard
Ca	43	58.3	17.8	**-3.4823**	4.043	116.1	mg/L	80	Standard
Fe	54	89.2	4.2	**-0.0046**	0.013	272.7	mg/L	81	Standard
Fe	57	75.0	24.0	**-0.2120**	0.142	66.9	mg/L	93	Standard
> **Sc-1**	45	16362.2	4.1				mg/L	15221	Standard
Cl	35	44449.1	0.9				ug/L	40209	Standard
Kr	83	3.7	41.7				ug/L	4	Standard
Br	81	383.3	7.5				ug/L	303	Standard
P	31	14828.9	2.9				ug/L	14097	Standard
S	34	3290.4	2.4				ug/L	2990	Standard
Sr	88	48.3	31.6				ug/L	50	Standard
C	12	193.3	15.8				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	8.9	115.5				mg/L	3	Standard
Ho-1	165	3.3	86.6				mg/L	12	Standard
Er	166	23.3	65.5				mg/L	7	Standard
I	127	2498.5	5.8				mg/L	3957	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		104.416	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		105.755	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.465
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		111.123
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Lower	Ti	47	

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Method 6020 - Summary Report

Sample ID: L1511067306 WG546725-01
Sample Date/Time: Monday, November 16, 2015 18:53:06
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	30914.8	1.4				ug/L	29272	Standard
	Be	9	15.0	33.3	**0.0157**	0.009	57.2	ug/L	7	Standard
	Al	27	1213963.0	3.7	**26.5119**	1.142	4.3	ug/L	318	Standard
	Sc	45	16590.8	4.9				ug/L	15221	Standard
	Ti	47	120.0	16.9	**-1.0724**	0.151	14.0	ug/L	262	Standard
	V	51	893.1	8.1	**0.0016**	0.014	906.5	ug/L	874	Standard
	Cr	52	4406.0	4.6	**-0.0698**	0.057	81.5	ug/L	4335	Standard
	Cr	53	311.7	6.7	**0.2272**	0.034	15.1	ug/L	200	Standard
	Mn	55	960.4	5.9	**-0.0218**	0.010	46.1	ug/L	830	Standard
	Co	59	201.7	10.5	**0.0318**	0.005	14.7	ug/L	75	Standard
	Ni	60	306.7	8.7	**0.1884**	0.035	18.7	ug/L	98	Standard
	Cu	65	244.3	6.5	**0.0409**	0.010	25.5	ug/L	201	Standard
	Zn	66	3147.7	1.3	**5.1704**	0.155	3.0	ug/L	211	Standard
>	**Ge**	72	218234.7	2.5				ug/L	201509	Standard
	As	75	22.7	83.4	**0.1454**	0.031	21.0	ug/L	-72	Standard
	Se	82	28.5	19.3	**0.2685**	0.109	40.4	ug/L	6	Standard
	Se-1	77	47.3	23.2	**0.2908**	0.338	116.1	ug/L	42	Standard
>	**Ga**	71	15.0	57.7				mg/L	25	Standard
	Rb	85	90.0	9.6				ug/L	8	Standard
	Y	89	222899.6	1.8				ug/L	207393	Standard
>	**Rh**	103	30.0	28.9				ug/L	7	Standard
	Mo	98	235.9	4.9	**0.1541**	0.011	7.0	ug/L	9	Standard
	Ag	107	100.3	19.0	**0.0026**	0.004	159.1	ug/L	79	Standard
	Cd	111	21.5	54.7	**0.0096**	0.008	82.8	mg/L	8	Standard
	Cd	114	38.5	77.3	**0.0041**	0.008	205.3	ug/L	8	Standard
>	**In**	115	387202.7	1.6				ug/L	344753	Standard
	Sn	118	305.0	10.0	**-0.0079**	0.006	82.3	ug/L	327	Standard
	Sb	123	719.5	13.9	**0.1728**	0.027	15.4	ug/L	64	Standard
	Ba	135	10531.3	2.9	**6.8277**	0.216	3.2	ug/L	22	Standard
	Ce	140	26.7	21.7				ug/L	63	Standard
>	**Tb**	159	649346.7	2.6				ug/L	622049	Standard
	Ho	165	8.3	34.6				ug/L	12	Standard
	Tl	203	130.0	34.0	**0.0204**	0.007	32.6	ug/L	4	Standard
	Tl	205	85.0	46.7	**0.0163**	0.009	56.4	ug/L	5	Standard
	Pb	206	244.0	10.2	**0.0003**	0.005	1471.1	ug/L	163	Standard
	Pb	207	216.7	10.6	**0.0111**	0.005	44.5	ug/L	139	Standard
	Pb	208	768.7	11.5	**0.0079**	0.005	66.0	ug/L	519	Standard
	U	238	606.7	8.7	**0.1335**	0.010	7.3	ug/L	4	Standard
>	**Bi**	209	367140.2	2.4				ug/L	331049	Standard

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Na	23	3.3	86.6	**-75.6416**	144.928	191.6	mg/L	0	Standard
Mg	24	1921.8	8.3	**4.3888**	0.280	6.4	mg/L	7	Standard
K	39	35.0	24.7	**0.0625**	0.083	133.5	mg/L	33	Standard
Ca	43	90.0	24.2	**9.0439**	9.673	107.0	mg/L	80	Standard
Fe	54	87.8	35.8	**-0.0078**	0.074	950.1	mg/L	81	Standard
Fe	57	96.7	23.9	**-0.0417**	0.209	501.0	mg/L	93	Standard
Sc-1	45	16590.8	4.9				mg/L	15221	Standard
Cl	35	43894.8	1.4				ug/L	40209	Standard
Kr	83	2.7	94.4				ug/L	4	Standard
Br	81	1110.0	10.4				ug/L	303	Standard
P	31	14054.9	2.4				ug/L	14097	Standard
S	34	3138.7	5.8				ug/L	2990	Standard
Sr	88	101.7	27.1				ug/L	50	Standard
C	12	193.3	23.3				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.0	94.2				mg/L	3	Standard
Ho-1	165	8.3	34.6				mg/L	12	Standard
Er	166	13.3	114.6				mg/L	7	Standard
I	127	7793.7	1.9				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.614	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.300	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	112.313	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	110.902	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Lower	Ti	47	

Approved: November 17, 2015

Method 6020 - Summary Report

Sample ID: L1511067306DP WG546725-04
Sample Date/Time: Monday, November 16, 2015 18:56:17
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	32488.1	3.0				ug/L	29272	Standard
	Be	9	3.3	86.6	**-0.0058**	0.005	85.9	ug/L	7	Standard
	Al	27	1167663.5	2.5	**24.2616**	0.235	1.0	ug/L	318	Standard
	Sc	45	16193.7	3.9				ug/L	15221	Standard
	Ti	47	123.0	17.1	**-1.0490**	0.140	13.4	ug/L	262	Standard
	V	51	1010.1	1.5	**0.0354**	0.008	22.0	ug/L	874	Standard
	Cr	52	4828.8	1.7	**0.0659**	0.056	84.7	ug/L	4335	Standard
	Cr	53	286.7	2.7	**0.1714**	0.033	19.3	ug/L	200	Standard
	Mn	55	856.4	3.6	**-0.0515**	0.005	10.2	ug/L	830	Standard
	Co	59	173.7	6.9	**0.0239**	0.003	10.6	ug/L	75	Standard
	Ni	60	355.0	9.6	**0.2401**	0.032	13.3	ug/L	98	Standard
	Cu	65	247.0	5.7	**0.0452**	0.020	44.2	ug/L	201	Standard
	Zn	66	1655.4	5.6	**2.4845**	0.104	4.2	ug/L	211	Standard
>	**Ge**	72	217356.7	2.1				ug/L	201509	Standard
	As	75	-14.7	37.4	**0.0858**	0.009	10.3	ug/L	-72	Standard
	Se	82	19.2	7.3	**0.1045**	0.032	30.3	ug/L	6	Standard
	Se-1	77	53.7	10.8	**0.4743**	0.187	39.5	ug/L	42	Standard
>	**Ga**	71	10.0	100.0				mg/L	25	Standard
	Rb	85	100.0	30.4				ug/L	8	Standard
	Y	89	227929.8	5.3				ug/L	207393	Standard
>	**Rh**	103	15.0	0.0				ug/L	7	Standard
	Mo	98	200.0	6.0	**0.1287**	0.009	7.3	ug/L	9	Standard
	Ag	107	79.0	21.9	**-0.0023**	0.004	160.2	ug/L	79	Standard
	Cd	111	13.9	58.1	**0.0044**	0.005	124.6	mg/L	8	Standard
	Cd	114	27.3	133.4	**0.0009**	0.010	1149.1	ug/L	8	Standard
>	**In**	115	385151.4	2.5				ug/L	344753	Standard
	Sn	118	785.0	12.2	**0.1112**	0.025	22.8	ug/L	327	Standard
	Sb	123	246.8	22.0	**0.0545**	0.015	28.2	ug/L	64	Standard
	Ba	135	10034.0	0.8	**6.5400**	0.115	1.8	ug/L	22	Standard
	Ce	140	88.3	32.2				ug/L	63	Standard
>	**Tb**	159	660950.3	3.3				ug/L	622049	Standard
	Ho	165	8.3	34.6				ug/L	12	Standard
	Tl	203	111.7	26.1	**0.0176**	0.004	25.2	ug/L	4	Standard
	Tl	205	110.0	55.3	**0.0223**	0.014	62.5	ug/L	5	Standard
	Pb	206	226.3	11.9	**-0.0036**	0.005	148.0	ug/L	163	Standard
	Pb	207	187.3	16.5	**0.0037**	0.007	186.2	ug/L	139	Standard
	Pb	208	725.0	22.1	**0.0049**	0.011	228.3	ug/L	519	Standard
	U	238	608.7	12.2	**0.1346**	0.014	10.5	ug/L	4	Standard
>	**Bi**	209	365331.8	2.6				ug/L	331049	Standard

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Na	23	0.0		**91.1719**	0.000	0.0	mg/L	0	Standard
Mg	24	1785.1	9.2	**4.1705**	0.223	5.4	mg/L	7	Standard
K	39	41.7	18.3	**0.1249**	0.052	41.8	mg/L	33	Standard
Ca	43	81.7	39.4	**6.6852**	14.125	211.3	mg/L	80	Standard
Fe	54	69.7	7.0	**-0.0427**	0.015	35.6	mg/L	81	Standard
Fe	57	96.7	21.5	**-0.0312**	0.139	446.2	mg/L	93	Standard
Sc-1	45	16193.7	3.9				mg/L	15221	Standard
Cl	35	44191.0	1.3				ug/L	40209	Standard
Kr	83	1.3	114.6				ug/L	4	Standard
Br	81	1416.7	3.9				ug/L	303	Standard
P	31	14338.4	0.3				ug/L	14097	Standard
S	34	3198.7	6.4				ug/L	2990	Standard
Sr	88	91.7	13.7				ug/L	50	Standard
C	12	243.3	27.4				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	23.2	66.2				mg/L	3	Standard
Ho-1	165	8.3	34.6				mg/L	12	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	6969.9	4.2				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.989	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.865	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.718
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.356
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Lower	Ti	47	

Sample ID: L1511067306DP WG546725-04
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Method 6020 - Summary Report

Sample ID: L1511067306S WG546725-05
Sample Date/Time: Monday, November 16, 2015 18:59:28
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	32114.0	2.4				ug/L	29272	Standard
	Be	9	5501.0	3.6	**9.6175**	0.146	1.5	ug/L	7	Standard
	Al	27	1173698.1	1.9	**24.6721**	0.408	1.7	ug/L	318	Standard
	Sc	45	16916.1	2.0				ug/L	15221	Standard
	Ti	47	112.7	5.1	**-1.1259**	0.037	3.3	ug/L	262	Standard
	V	51	35029.9	1.5	**9.4520**	0.128	1.4	ug/L	874	Standard
	Cr	52	35713.7	2.1	**9.4913**	0.182	1.9	ug/L	4335	Standard
	Cr	53	4013.9	2.8	**9.0380**	0.331	3.7	ug/L	200	Standard
	Mn	55	31724.9	3.1	**9.0828**	0.273	3.0	ug/L	830	Standard
	Co	59	32226.6	1.8	**9.3083**	0.142	1.5	ug/L	75	Standard
	Ni	60	9065.4	2.5	**9.4258**	0.203	2.2	ug/L	98	Standard
	Cu	65	9184.1	1.7	**9.5066**	0.137	1.4	ug/L	201	Standard
	Zn	66	7309.8	2.1	**12.6848**	0.213	1.7	ug/L	211	Standard
>	**Ge**	72	218193.2	0.8				ug/L	201509	Standard
	As	75	6362.7	2.4	**10.1506**	0.184	1.8	ug/L	-72	Standard
	Se	82	601.4	4.1	**10.3884**	0.464	4.5	ug/L	6	Standard
	Se-1	77	409.3	3.1	**10.5425**	0.378	3.6	ug/L	42	Standard
>	**Ga**	71	10.0					mg/L	25	Standard
	Rb	85	106.7	16.5				ug/L	8	Standard
	Y	89	226167.4	1.4				ug/L	207393	Standard
>	**Rh**	103	35.0	14.3				ug/L	7	Standard
	Mo	98	210.7	11.0	**0.1351**	0.014	10.6	ug/L	9	Standard
	Ag	107	39321.6	1.7	**9.0224**	0.173	1.9	ug/L	79	Standard
	Cd	111	13890.9	1.9	**9.6008**	0.302	3.1	mg/L	8	Standard
	Cd	114	33199.7	0.9	**9.4580**	0.105	1.1	ug/L	8	Standard
>	**In**	115	388301.6	1.9				ug/L	344753	Standard
	Sn	118	310.0	9.0	**-0.0069**	0.006	83.1	ug/L	327	Standard
	Sb	123	38593.0	1.3	**9.6599**	0.220	2.3	ug/L	64	Standard
	Ba	135	23569.3	3.2	**15.2652**	0.588	3.9	ug/L	22	Standard
	Ce	140	38.3	30.1				ug/L	63	Standard
>	**Tb**	159	653901.0	1.5				ug/L	622049	Standard
	Ho	165	8.3	34.6				ug/L	12	Standard
	Tl	203	57976.7	1.5	**9.5158**	0.226	2.4	ug/L	4	Standard
	Tl	205	38707.7	2.2	**9.1925**	0.228	2.5	ug/L	5	Standard
	Pb	206	40467.7	2.4	**9.4008**	0.306	3.3	ug/L	163	Standard
	Pb	207	34939.6	1.0	**8.9665**	0.161	1.8	ug/L	139	Standard
	Pb	208	123444.6	1.9	**9.2664**	0.226	2.4	ug/L	519	Standard
	U	238	42006.2	2.8	**9.2065**	0.314	3.4	ug/L	4	Standard
>	**Bi**	209	368109.6	1.0				ug/L	331049	Standard

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Na	23	3.3	173.2	**-68.4321**	276.442	404.0	mg/L	0	Standard
Mg	24	1721.8	4.4	**3.8560**	0.224	5.8	mg/L	7	Standard
K	39	30.0	44.1	**0.0117**	0.107	915.0	mg/L	33	Standard
Ca	43	81.7	9.4	**4.9448**	3.630	73.4	mg/L	80	Standard
Fe	54	102.2	19.4	**0.0153**	0.043	279.3	mg/L	81	Standard
Fe	57	81.7	46.4	**-0.1805**	0.291	161.3	mg/L	93	Standard
> **Sc-1**	45	16916.1	2.0				mg/L	15221	Standard
Cl	35	44554.7	0.6				ug/L	40209	Standard
Kr	83	3.3	17.3				ug/L	4	Standard
Br	81	1183.4	11.5				ug/L	303	Standard
P	31	14261.7	2.5				ug/L	14097	Standard
S	34	3185.3	3.6				ug/L	2990	Standard
Sr	88	90.0	24.2				ug/L	50	Standard
C	12	270.0	9.8				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	13.2	44.9				mg/L	3	Standard
Ho-1	165	8.3	34.6				mg/L	12	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	8772.5	6.6				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.710	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.280	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	112.632	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	111.195	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Lower	Ti	47	

Sample ID: L1511067306S WG546725-05
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Method 6020 - Summary Report

Sample ID: L1511067306SD WG546725-06
Sample Date/Time: Monday, November 16, 2015 19:02:39
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	31440.9	1.0				ug/L	29272	Standard
	Be	9	5974.5	3.3	**10.6745**	0.438	4.1	ug/L	7	Standard
	Al	27	1236695.1	4.6	**26.5595**	1.475	5.6	ug/L	318	Standard
	Sc	45	16133.6	4.3				ug/L	15221	Standard
	Ti	47	114.7	8.5	**-1.0876**	0.086	7.9	ug/L	262	Standard
	V	51	36670.6	3.1	**10.1894**	0.485	4.8	ug/L	874	Standard
	Cr	52	37167.2	1.9	**10.2512**	0.409	4.0	ug/L	4335	Standard
	Cr	53	4270.6	3.2	**9.9317**	0.521	5.2	ug/L	200	Standard
	Mn	55	33184.7	3.5	**9.7903**	0.533	5.4	ug/L	830	Standard
	Co	59	33717.2	1.9	**10.0119**	0.366	3.7	ug/L	75	Standard
	Ni	60	9404.3	2.8	**10.0609**	0.472	4.7	ug/L	98	Standard
	Cu	65	9655.7	2.8	**10.2927**	0.508	4.9	ug/L	201	Standard
	Zn	66	7499.2	1.8	**13.4025**	0.420	3.1	ug/L	211	Standard
>	**Ge**	72	212392.2	2.4				ug/L	201509	Standard
	As	75	6657.4	0.7	**10.9083**	0.321	2.9	ug/L	-72	Standard
	Se	82	619.8	2.9	**11.0217**	0.595	5.4	ug/L	6	Standard
	Se-1	77	432.0	3.0	**11.5225**	0.466	4.0	ug/L	42	Standard
>	**Ga**	71	13.3	57.3				mg/L	25	Standard
	Rb	85	75.0	29.1				ug/L	8	Standard
	Y	89	218259.9	2.7				ug/L	207393	Standard
>	**Rh**	103	30.0	16.7				ug/L	7	Standard
	Mo	98	223.8	8.2	**0.1500**	0.009	6.3	ug/L	9	Standard
	Ag	107	41390.2	2.7	**9.8249**	0.483	4.9	ug/L	79	Standard
	Cd	111	14484.5	2.2	**10.3527**	0.463	4.5	mg/L	8	Standard
	Cd	114	35014.5	0.7	**10.3139**	0.222	2.2	ug/L	8	Standard
>	**In**	115	375653.0	2.6				ug/L	344753	Standard
	Sn	118	285.0	11.5	**-0.0106**	0.007	69.2	ug/L	327	Standard
	Sb	123	40290.3	2.3	**10.4315**	0.518	5.0	ug/L	64	Standard
	Ba	135	24821.7	1.1	**16.6241**	0.546	3.3	ug/L	22	Standard
	Ce	140	25.0	40.0				ug/L	63	Standard
>	**Tb**	159	632985.8	3.3				ug/L	622049	Standard
	Ho	165	6.7	43.3				ug/L	12	Standard
	Tl	203	60247.6	2.0	**10.1630**	0.397	3.9	ug/L	4	Standard
	Tl	205	39755.4	1.2	**9.7015**	0.189	1.9	ug/L	5	Standard
	Pb	206	42146.9	1.4	**10.0661**	0.364	3.6	ug/L	163	Standard
	Pb	207	36823.0	1.7	**9.7162**	0.365	3.8	ug/L	139	Standard
	Pb	208	129519.7	2.1	**9.9965**	0.400	4.0	ug/L	519	Standard
	U	238	43996.8	2.3	**9.9100**	0.396	4.0	ug/L	4	Standard
>	**Bi**	209	358307.1	2.2				ug/L	331049	Standard

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Na	23	1.7	173.2	**2.2007**	154.103	7002.3	mg/L	0	Standard
Mg	24	1815.1	5.5	**4.2713**	0.372	8.7	mg/L	7	Standard
K	39	45.0	22.2	**0.1556**	0.079	50.7	mg/L	33	Standard
Ca	43	83.3	42.6	**7.4095**	15.664	211.4	mg/L	80	Standard
Fe	54	70.4	29.1	**-0.0406**	0.044	108.8	mg/L	81	Standard
Fe	57	98.3	11.7	**-0.0097**	0.109	1117.7	mg/L	93	Standard
> **Sc-1**	45	16133.6	4.3				mg/L	15221	Standard
Cl	35	47343.2	2.1				ug/L	40209	Standard
Kr	83	3.3	86.6				ug/L	4	Standard
Br	81	1090.0	8.8				ug/L	303	Standard
P	31	14802.2	5.1				ug/L	14097	Standard
S	34	3383.7	2.4				ug/L	2990	Standard
Sr	88	115.0	7.5				ug/L	50	Standard
C	12	223.3	18.6				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.0	9.2				mg/L	3	Standard
Ho-1	165	6.7	43.3				mg/L	12	Standard
Er	166	20.0	86.6				mg/L	7	Standard
I	127	9207.8	2.3				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.411	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.401	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.963
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.234
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Lower	Ti	47	

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Method 6020 - Summary Report

Sample ID: L1511068801
Sample Date/Time: Monday, November 16, 2015 19:05:50
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	32474.8	5.5				ug/L	29272	Standard
	Be	9	18.3	31.5	**0.0205**	0.011	55.9	ug/L	7	Standard
	Al	27	1199050.3	0.7	**24.9692**	1.322	5.3	ug/L	318	Standard
	Sc	45	16474.0	1.3				ug/L	15221	Standard
	Ti	47	447.7	14.8	**1.3069**	0.479	36.7	ug/L	262	Standard
	V	51	2316.2	5.2	**0.3982**	0.047	11.7	ug/L	874	Standard
	Cr	52	6096.6	3.5	**0.4531**	0.102	22.4	ug/L	4335	Standard
	Cr	53	430.0	7.3	**0.5127**	0.083	16.3	ug/L	200	Standard
	Mn	55	52337.3	1.9	**15.2338**	0.588	3.9	ug/L	830	Standard
	Co	59	800.7	5.5	**0.2062**	0.016	7.8	ug/L	75	Standard
	Ni	60	903.4	7.7	**0.8199**	0.072	8.8	ug/L	98	Standard
	Cu	65	1471.7	2.8	**1.3454**	0.054	4.0	ug/L	201	Standard
	Zn	66	3075.3	1.7	**5.0569**	0.212	4.2	ug/L	211	Standard
>	**Ge**	72	217594.5	2.2				ug/L	201509	Standard
	As	75	211.8	13.0	**0.4438**	0.037	8.2	ug/L	-72	Standard
	Se	82	17.3	27.0	**0.0695**	0.082	117.4	ug/L	6	Standard
	Se-1	77	36.0	12.1	**-0.0317**	0.119	375.0	ug/L	42	Standard
>	**Ga**	71	121.7	23.7				mg/L	25	Standard
	Rb	85	4005.5	2.2				ug/L	8	Standard
	Y	89	233038.8	1.8				ug/L	207393	Standard
>	**Rh**	103	18.3	83.3				ug/L	7	Standard
	Mo	98	521.7	3.4	**0.3566**	0.016	4.5	ug/L	9	Standard
	Ag	107	81.0	22.5	**-0.0021**	0.005	223.0	ug/L	79	Standard
	Cd	111	14.7	54.8	**0.0049**	0.006	119.3	mg/L	8	Standard
	Cd	114	35.0	44.8	**0.0030**	0.004	144.2	ug/L	8	Standard
>	**In**	115	392749.2	2.6				ug/L	344753	Standard
	Sn	118	436.7	5.4	**0.0231**	0.008	36.3	ug/L	327	Standard
	Sb	123	335.5	4.8	**0.0751**	0.005	7.0	ug/L	64	Standard
	Ba	135	19528.9	1.3	**12.5054**	0.446	3.6	ug/L	22	Standard
	Ce	140	4522.3	4.6				ug/L	63	Standard
>	**Tb**	159	658976.6	1.8				ug/L	622049	Standard
	Ho	165	101.7	10.2				ug/L	12	Standard
	Tl	203	64.3	25.7	**0.0096**	0.003	30.1	ug/L	4	Standard
	Tl	205	65.0	93.6	**0.0115**	0.015	126.5	ug/L	5	Standard
	Pb	206	1883.5	2.7	**0.3761**	0.021	5.5	ug/L	163	Standard
	Pb	207	1603.8	2.5	**0.3620**	0.019	5.1	ug/L	139	Standard
	Pb	208	5968.8	4.3	**0.3929**	0.026	6.7	ug/L	519	Standard
	U	238	1284.1	5.2	**0.2772**	0.020	7.2	ug/L	4	Standard
>	**Bi**	209	374487.1	2.4				ug/L	331049	Standard

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Na	23	1.7	173.2	**7.3824**	145.128	1965.8	mg/L	0	Standard
Mg	24	606.7	6.7	**1.3764**	0.088	6.4	mg/L	7	Standard
K	39	80.0	50.0	**0.4527**	0.350	77.4	mg/L	33	Standard
Ca	43	105.0	29.0	**15.2227**	12.644	83.1	mg/L	80	Standard
Fe	54	229.3	11.7	**0.2774**	0.056	20.2	mg/L	81	Standard
Fe	57	193.3	4.0	**0.7374**	0.064	8.6	mg/L	93	Standard
> **Sc-1**	45	16474.0	1.3				mg/L	15221	Standard
Cl	35	48774.4	1.2				ug/L	40209	Standard
Kr	83	3.0	33.3				ug/L	4	Standard
Br	81	673.3	4.5				ug/L	303	Standard
P	31	15359.5	2.6				ug/L	14097	Standard
S	34	3260.4	4.8				ug/L	2990	Standard
Sr	88	86.7	13.3				ug/L	50	Standard
C	12	350.0	2.9				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	743.0	135.7				mg/L	3	Standard
Ho-1	165	101.7	10.2				mg/L	12	Standard
Er	166	76.7	49.4				mg/L	7	Standard
I	127	4394.0	0.9				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.943	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.983	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.922
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		113.121
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1511068801PS WG547127-01
Sample Date/Time: Monday, November 16, 2015 19:09:02
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	32428.1	4.9				ug/L	29272	Standard
	Be	9	28478.4	3.1	**49.4793**	3.677	7.4	ug/L	7	Standard
	Al	27	1159834.8	1.5	**24.1782**	1.208	5.0	ug/L	318	Standard
	Sc	45	16412.2	1.8				ug/L	15221	Standard
	Ti	47	325.0	15.8	**0.3841**	0.296	76.9	ug/L	262	Standard
	V	51	175455.4	1.4	**47.9512**	1.633	3.4	ug/L	874	Standard
	Cr	52	162882.5	0.5	**47.9554**	1.962	4.1	ug/L	4335	Standard
	Cr	53	19671.1	3.6	**45.9683**	3.245	7.1	ug/L	200	Standard
	Mn	55	212552.9	1.9	**62.1094**	2.082	3.4	ug/L	830	Standard
	Co	59	169712.3	1.5	**48.7541**	1.666	3.4	ug/L	75	Standard
	Ni	60	46507.3	1.3	**48.5407**	1.682	3.5	ug/L	98	Standard
	Cu	65	47916.0	0.5	**50.1327**	1.879	3.7	ug/L	201	Standard
	Zn	66	31351.4	1.5	**55.6699**	2.162	3.9	ug/L	211	Standard
>	**Ge**	72	220047.3	3.5				ug/L	201509	Standard
	As	75	33434.7	0.7	**52.4691**	1.571	3.0	ug/L	-72	Standard
	Se	82	2976.5	0.8	**51.9391**	1.626	3.1	ug/L	6	Standard
	Se-1	77	1906.5	2.6	**52.5275**	1.793	3.4	ug/L	42	Standard
>	**Ga**	71	135.0	14.8				mg/L	25	Standard
	Rb	85	3790.5	3.8				ug/L	8	Standard
	Y	89	235615.1	2.2				ug/L	207393	Standard
>	**Rh**	103	16.7	69.3				ug/L	7	Standard
	Mo	98	524.2	6.0	**0.3561**	0.011	3.1	ug/L	9	Standard
	Ag	107	199459.7	1.2	**45.1215**	1.515	3.4	ug/L	79	Standard
	Cd	111	72920.4	1.2	**49.6209**	2.044	4.1	mg/L	8	Standard
	Cd	114	175248.5	2.2	**49.1600**	1.826	3.7	ug/L	8	Standard
>	**In**	115	394770.4	3.1				ug/L	344753	Standard
	Sn	118	546.7	15.2	**0.0488**	0.018	36.7	ug/L	327	Standard
	Sb	123	197011.0	1.4	**48.5578**	1.700	3.5	ug/L	64	Standard
	Ba	135	91799.6	1.6	**58.5628**	2.026	3.5	ug/L	22	Standard
	Ce	140	4714.1	4.9				ug/L	63	Standard
>	**Tb**	159	662809.9	3.5				ug/L	622049	Standard
	Ho	165	106.7	7.2				ug/L	12	Standard
	Tl	203	302628.8	1.5	**48.8381**	2.056	4.2	ug/L	4	Standard
	Tl	205	202486.0	1.9	**47.2859**	1.621	3.4	ug/L	5	Standard
	Pb	206	208159.0	1.4	**47.7680**	1.889	4.0	ug/L	163	Standard
	Pb	207	187681.7	1.2	**47.5452**	1.842	3.9	ug/L	139	Standard
	Pb	208	650595.6	0.6	**48.2202**	1.683	3.5	ug/L	519	Standard
	U	238	219916.2	1.0	**47.3680**	1.103	2.3	ug/L	4	Standard
>	**Bi**	209	374682.6	3.2				ug/L	331049	Standard

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Na	23	0.0		**91.1719**	0.000	0.0	mg/L	0	Standard
Mg	24	531.7	14.1	**1.2080**	0.177	14.6	mg/L	7	Standard
K	39	80.0	27.2	**0.4510**	0.176	39.1	mg/L	33	Standard
Ca	43	133.3	28.6	**26.8170**	15.618	58.2	mg/L	80	Standard
Fe	54	261.6	17.9	**0.3455**	0.100	29.0	mg/L	81	Standard
Fe	57	188.3	28.4	**0.7049**	0.446	63.2	mg/L	93	Standard
> **Sc-1**	45	16412.2	1.8				mg/L	15221	Standard
Cl	35	46522.7	0.8				ug/L	40209	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	653.3	10.4				ug/L	303	Standard
P	31	14984.1	2.2				ug/L	14097	Standard
S	34	3127.0	1.8				ug/L	2990	Standard
Sr	88	66.7	38.5				ug/L	50	Standard
C	12	256.7	19.2				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	156.2	23.8				mg/L	3	Standard
Ho-1	165	106.7	7.2				mg/L	12	Standard
Er	166	80.0	33.1				mg/L	7	Standard
I	127	4048.9	1.3				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.783	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.200	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.508
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		113.180
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: November 17, 2015

Method 6020 - Summary Report

Sample ID: L1511068801SDL WG547127-02
Sample Date/Time: Monday, November 16, 2015 19:12:13
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	31435.9	3.0				ug/L	29272	Standard
	Be	9	20.0	86.6	**0.0236**	0.029	124.6	ug/L	7	Standard
	Al	27	237581.4	3.6	**5.0880**	0.104	2.0	ug/L	318	Standard
	Sc	45	15936.7	2.2				ug/L	15221	Standard
	Ti	47	162.0	31.5	**-0.7370**	0.368	49.9	ug/L	262	Standard
	V	51	1206.8	1.1	**0.0984**	0.003	2.9	ug/L	874	Standard
	Cr	52	4823.4	2.3	**0.1003**	0.008	8.1	ug/L	4335	Standard
	Cr	53	250.0	22.5	**0.0967**	0.128	132.7	ug/L	200	Standard
	Mn	55	11000.3	3.4	**3.0432**	0.070	2.3	ug/L	830	Standard
	Co	59	272.3	18.0	**0.0545**	0.014	25.1	ug/L	75	Standard
	Ni	60	273.3	10.9	**0.1610**	0.031	19.0	ug/L	98	Standard
	Cu	65	448.0	4.5	**0.2703**	0.013	4.9	ug/L	201	Standard
	Zn	66	1821.1	3.3	**2.8681**	0.055	1.9	ug/L	211	Standard
>	**Ge**	72	212067.1	1.8				ug/L	201509	Standard
	As	75	22.8	6.9	**0.1461**	0.002	1.3	ug/L	-72	Standard
	Se	82	11.4	49.5	**-0.0300**	0.100	333.7	ug/L	6	Standard
	Se-1	77	29.3	7.1	**-0.1995**	0.046	23.2	ug/L	42	Standard
>	**Ga**	71	36.7	20.8				mg/L	25	Standard
	Rb	85	740.0	2.7				ug/L	8	Standard
	Y	89	216024.3	1.5				ug/L	207393	Standard
>	**Rh**	103	10.0	86.6				ug/L	7	Standard
	Mo	98	118.3	13.1	**0.0709**	0.010	13.7	ug/L	9	Standard
	Ag	107	117.3	17.5	**0.0073**	0.004	60.7	ug/L	79	Standard
	Cd	111	32.4	52.4	**0.0179**	0.012	66.9	mg/L	8	Standard
	Cd	114	54.7	63.5	**0.0093**	0.010	110.2	ug/L	8	Standard
>	**In**	115	376194.2	2.3				ug/L	344753	Standard
	Sn	118	320.0	14.3	**-0.0020**	0.010	505.4	ug/L	327	Standard
	Sb	123	928.3	7.3	**0.2322**	0.022	9.5	ug/L	64	Standard
	Ba	135	3924.5	3.0	**2.6056**	0.057	2.2	ug/L	22	Standard
	Ce	140	1630.1	43.8				ug/L	63	Standard
>	**Tb**	159	628597.2	3.1				ug/L	622049	Standard
	Ho	165	23.3	61.9				ug/L	12	Standard
	Tl	203	107.0	49.5	**0.0170**	0.008	49.6	ug/L	4	Standard
	Tl	205	58.3	76.8	**0.0102**	0.011	102.9	ug/L	5	Standard
	Pb	206	576.7	12.5	**0.0812**	0.014	17.6	ug/L	163	Standard
	Pb	207	518.0	6.7	**0.0922**	0.010	10.7	ug/L	139	Standard
	Pb	208	1832.4	10.1	**0.0915**	0.012	12.7	ug/L	519	Standard
	U	238	317.3	18.8	**0.0715**	0.012	16.8	ug/L	4	Standard
>	**Bi**	209	359126.1	3.1				ug/L	331049	Standard

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Na	23	0.0		**91.1719**	0.000	0.0	mg/L	0	Standard
Mg	24	128.3	8.1	**0.2794**	0.026	9.3	mg/L	7	Standard
K	39	26.7	28.6	**-0.0022**	0.063	2848.3	mg/L	33	Standard
Ca	43	71.7	4.0	**2.6984**	0.600	22.2	mg/L	80	Standard
Fe	54	109.4	4.9	**0.0423**	0.009	21.0	mg/L	81	Standard
Fe	57	116.7	21.1	**0.1489**	0.184	123.4	mg/L	93	Standard
Sc-1	45	15936.7	2.2				mg/L	15221	Standard
Cl	35	44813.5	1.5				ug/L	40209	Standard
Kr	83	2.7	57.3				ug/L	4	Standard
Br	81	403.3	25.3				ug/L	303	Standard
P	31	13794.6	4.7				ug/L	14097	Standard
S	34	3118.7	7.1				ug/L	2990	Standard
Sr	88	70.0	24.7				ug/L	50	Standard
C	12	180.0	16.7				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	38.2	26.8				mg/L	3	Standard
Ho-1	165	23.3	61.9				mg/L	12	Standard
Er	166	36.7	15.7				mg/L	7	Standard
I	127	3055.3	0.5				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.394	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.240	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	109.120
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	108.481
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Lower	Ti	47	

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Method 6020 - Summary Report

Sample ID: L1511068801SDL WG547127-02
Sample Date/Time: Monday, November 16, 2015 19:15:24
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	29532.2	9.0				ug/L	29272	Standard
	Be	9	20.0	66.1	**0.0256**	0.024	94.7	ug/L	7	Standard
	Al	27	46571.6	5.8	**1.0506**	0.034	3.2	ug/L	318	Standard
	Sc	45	15536.3	5.5				ug/L	15221	Standard
	Ti	47	96.3	0.6	**-1.1988**	0.037	3.1	ug/L	262	Standard
	V	51	1012.3	4.4	**0.0533**	0.025	47.4	ug/L	874	Standard
	Cr	52	4531.3	3.3	**0.0568**	0.027	47.3	ug/L	4335	Standard
	Cr	53	191.7	14.4	**-0.0303**	0.048	157.2	ug/L	200	Standard
	Mn	55	2702.9	5.7	**0.5444**	0.010	1.9	ug/L	830	Standard
	Co	59	143.7	12.4	**0.0176**	0.004	20.1	ug/L	75	Standard
	Ni	60	149.0	12.8	**0.0312**	0.015	46.6	ug/L	98	Standard
	Cu	65	225.7	12.0	**0.0359**	0.020	54.6	ug/L	201	Standard
	Zn	66	1186.0	4.2	**1.7648**	0.126	7.1	ug/L	211	Standard
>	**Ge**	72	205208.5	4.5				ug/L	201509	Standard
	As	75	8.3	43.9	**0.1230**	0.006	4.9	ug/L	-72	Standard
	Se	82	20.0	29.7	**0.1390**	0.114	81.8	ug/L	6	Standard
	Se-1	77	35.7	38.7	**0.0103**	0.379	3686.2	ug/L	42	Standard
>	**Ga**	71	10.0	50.0				mg/L	25	Standard
	Rb	85	150.0	15.3				ug/L	8	Standard
	Y	89	210280.1	3.2				ug/L	207393	Standard
>	**Rh**	103	11.7	49.5				ug/L	7	Standard
	Mo	98	38.1	8.9	**0.0114**	0.002	13.7	ug/L	9	Standard
	Ag	107	114.0	23.7	**0.0071**	0.007	97.8	ug/L	79	Standard
	Cd	111	10.9	65.9	**0.0026**	0.005	192.5	mg/L	8	Standard
	Cd	114	40.5	47.3	**0.0052**	0.006	107.1	ug/L	8	Standard
>	**In**	115	369651.6	3.5				ug/L	344753	Standard
	Sn	118	231.7	3.3	**-0.0230**	0.004	16.1	ug/L	327	Standard
	Sb	123	293.0	23.2	**0.0695**	0.020	29.0	ug/L	64	Standard
	Ba	135	790.0	1.5	**0.5177**	0.027	5.2	ug/L	22	Standard
	Ce	140	203.3	22.2				ug/L	63	Standard
>	**Tb**	159	612634.2	4.5				ug/L	622049	Standard
	Ho	165	16.7	34.6				ug/L	12	Standard
	Tl	203	71.7	25.9	**0.0116**	0.004	30.7	ug/L	4	Standard
	Tl	205	33.3	48.2	**0.0044**	0.004	86.1	ug/L	5	Standard
	Pb	206	311.0	5.3	**0.0198**	0.007	35.8	ug/L	163	Standard
	Pb	207	259.0	5.7	**0.0253**	0.002	9.7	ug/L	139	Standard
	Pb	208	907.0	9.9	**0.0217**	0.004	20.5	ug/L	519	Standard
	U	238	89.3	30.3	**0.0208**	0.005	26.2	ug/L	4	Standard
>	**Bi**	209	350314.4	4.2				ug/L	331049	Standard

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Na	23	3.3	86.6	**-90.6072**	157.453	173.8	mg/L	0	Standard
Mg	24	36.7	61.5	**0.0630**	0.059	93.1	mg/L	7	Standard
K	39	26.7	28.6	**0.0026**	0.056	2118.8	mg/L	33	Standard
Ca	43	48.3	26.0	**-6.5699**	4.675	71.2	mg/L	80	Standard
Fe	54	79.7	33.4	**-0.0142**	0.062	434.7	mg/L	81	Standard
Fe	57	95.0	13.9	**-0.0090**	0.101	1116.4	mg/L	93	Standard
Sc-1	45	15536.3	5.5				mg/L	15221	Standard
Cl	35	44988.1	2.6				ug/L	40209	Standard
Kr	83	2.3	24.7				ug/L	4	Standard
Br	81	460.0	22.1				ug/L	303	Standard
P	31	13105.7	2.3				ug/L	14097	Standard
S	34	3153.7	1.7				ug/L	2990	Standard
Sr	88	48.3	11.9				ug/L	50	Standard
C	12	173.3	23.3				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	23.0	109.7				mg/L	3	Standard
Ho-1	165	16.7	34.6				mg/L	12	Standard
Er	166	6.7	173.2				mg/L	7	Standard
I	127	2745.2	6.7				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		100.890	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.836	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	107.222
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	105.819
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Lower	Ti	47	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, November 16, 2015 19:18:37
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	30362.1	4.3				ug/L	29272	Standard
	Be	9	28076.0	3.9	**51.9985**	1.598	3.1	ug/L	7	Standard
	Al	27	2307004.5	4.1	**51.3056**	0.078	0.2	ug/L	318	Standard
	Sc	45	16642.5	3.6				ug/L	15221	Standard
	Ti	47	13455.0	2.1	**98.4075**	2.828	2.9	ug/L	262	Standard
	V	51	173838.6	1.9	**49.3504**	0.772	1.6	ug/L	874	Standard
	Cr	52	157295.4	1.5	**48.0995**	1.131	2.4	ug/L	4335	Standard
	Cr	53	19771.2	4.3	**47.9641**	1.885	3.9	ug/L	200	Standard
	Mn	55	155390.9	3.1	**47.0921**	1.552	3.3	ug/L	830	Standard
	Co	59	161192.5	2.0	**48.0966**	1.041	2.2	ug/L	75	Standard
	Ni	60	45035.8	1.2	**48.8254**	1.009	2.1	ug/L	98	Standard
	Cu	65	45417.6	1.2	**49.3506**	1.100	2.2	ug/L	201	Standard
	Zn	66	27166.3	1.6	**50.0510**	1.203	2.4	ug/L	211	Standard
>	**Ge**	72	211741.4	2.2				ug/L	201509	Standard
	As	75	31391.0	1.8	**51.1769**	1.355	2.6	ug/L	-72	Standard
	Se	82	2847.5	1.4	**51.6136**	1.159	2.2	ug/L	6	Standard
	Se-1	77	1846.1	0.9	**52.8556**	1.389	2.6	ug/L	42	Standard
>	**Ga**	71	16.7	17.3				mg/L	25	Standard
	Rb	85	443.3	6.6				ug/L	8	Standard
	Y	89	219811.4	1.1				ug/L	207393	Standard
>	**Rh**	103	11.7	65.5				ug/L	7	Standard
	Mo	98	144271.3	1.5	**107.0724**	3.229	3.0	ug/L	9	Standard
	Ag	107	200719.9	2.2	**47.2344**	1.965	4.2	ug/L	79	Standard
	Cd	111	70467.3	1.7	**49.8677**	1.812	3.6	mg/L	8	Standard
	Cd	114	171534.5	1.0	**50.0546**	1.801	3.6	ug/L	8	Standard
>	**In**	115	379530.2	3.0				ug/L	344753	Standard
	Sn	118	193980.6	1.2	**48.5225**	1.154	2.4	ug/L	327	Standard
	Sb	123	193879.6	1.9	**49.6958**	1.496	3.0	ug/L	64	Standard
	Ba	135	70612.9	1.8	**46.8474**	1.505	3.2	ug/L	22	Standard
	Ce	140	61.7	12.4				ug/L	63	Standard
>	**Tb**	159	638622.1	2.3				ug/L	622049	Standard
	Ho	165	1.7	173.2				ug/L	12	Standard
	Tl	203	292581.3	1.4	**49.3144**	1.651	3.3	ug/L	4	Standard
	Tl	205	195694.3	2.0	**47.7324**	1.280	2.7	ug/L	5	Standard
	Pb	206	203175.7	1.5	**48.6912**	1.227	2.5	ug/L	163	Standard
	Pb	207	183708.1	1.0	**48.6013**	1.074	2.2	ug/L	139	Standard
	Pb	208	632816.5	2.2	**48.9843**	1.442	2.9	ug/L	519	Standard
	U	238	212567.6	2.4	**47.8342**	1.752	3.7	ug/L	4	Standard
>	**Bi**	209	358617.4	2.5				ug/L	331049	Standard

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Na	23	0.0		**91.1719**	0.000	0.0	mg/L	0	Standard
Mg	24	2085.1	1.7	**4.7531**	0.141	3.0	mg/L	7	Standard
K	39	520.0	12.7	**4.1870**	0.436	10.4	mg/L	33	Standard
Ca	43	70.0	18.9	**0.7303**	4.677	640.4	mg/L	80	Standard
Fe	54	2583.9	3.4	**4.9868**	0.108	2.2	mg/L	81	Standard
Fe	57	746.7	3.0	**5.1380**	0.233	4.5	mg/L	93	Standard
Sc-1	45	16642.5	3.6				mg/L	15221	Standard
Cl	35	43188.1	2.0				ug/L	40209	Standard
Kr	83	3.3	45.8				ug/L	4	Standard
Br	81	416.7	16.0				ug/L	303	Standard
P	31	15354.4	3.1				ug/L	14097	Standard
S	34	3495.4	2.1				ug/L	2990	Standard
Sr	88	61.7	4.7				ug/L	50	Standard
C	12	136.7	21.1				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	9.7	98.4				mg/L	3	Standard
Ho-1	165	1.7	173.2				mg/L	12	Standard
Er	166	6.7	173.2				mg/L	7	Standard
I	127	1228.4	8.8				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	103.997		
Al	27	102.611		
Sc	45			
Ti	47	98.407		
V	51	98.701		
Cr	52	96.199		
Cr	53			
Mn	55	94.184		
Co	59	96.193		
Ni	60	97.651		
Cu	65	98.701		
Zn	66	100.102		
Ge	72		105.078	
As	75	102.354		
Se	82	103.227		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	107.072		
Ag	107	94.469		
Cd	111	99.735		
Cd	114			
> In	115			110.088
Sn	118	97.045		
Sb	123	99.392		
Ba	135	93.695		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.629		
Tl	205			
Pb	206			
Pb	207			
Pb	208	97.969		
U	238	95.668		
> Bi	209			108.327
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, November 16, 2015 19:21:48
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	29473.6	1.7				ug/L	29272	Standard
	Be	9	30.0	101.4	**0.0461**	0.059	128.3	ug/L	7	Standard
	Al	27	1015.1	108.4	**0.0069**	0.026	370.3	ug/L	318	Standard
	Sc	45	15099.2	4.2				ug/L	15221	Standard
	Ti	47	104.7	12.3	**-1.1253**	0.093	8.2	ug/L	262	Standard
	V	51	762.1	10.6	**-0.0181**	0.023	126.8	ug/L	874	Standard
	Cr	52	3751.1	3.6	**-0.1804**	0.047	25.9	ug/L	4335	Standard
	Cr	53	186.7	7.7	**-0.0349**	0.039	111.2	ug/L	200	Standard
	Mn	55	667.3	8.4	**-0.0930**	0.016	17.5	ug/L	830	Standard
	Co	59	155.7	51.5	**0.0219**	0.025	112.4	ug/L	75	Standard
	Ni	60	134.0	10.6	**0.0167**	0.015	92.0	ug/L	98	Standard
	Cu	65	177.3	8.8	**-0.0152**	0.018	115.7	ug/L	201	Standard
	Zn	66	184.7	3.8	**-0.1554**	0.016	10.5	ug/L	211	Standard
>	**Ge**	72	202431.1	1.0				ug/L	201509	Standard
	As	75	-28.4	61.7	**0.0610**	0.029	48.2	ug/L	-72	Standard
	Se	82	6.7	36.8	**-0.1086**	0.047	43.3	ug/L	6	Standard
	Se-1	77	33.0	8.0	**-0.0467**	0.073	156.9	ug/L	42	Standard
>	**Ga**	71	23.3	49.5				mg/L	25	Standard
	Rb	85	18.3	31.5				ug/L	8	Standard
	Y	89	210159.8	2.7				ug/L	207393	Standard
>	**Rh**	103	6.7	86.6				ug/L	7	Standard
	Mo	98	167.3	49.7	**0.1103**	0.063	57.2	ug/L	9	Standard
	Ag	107	141.3	65.9	**0.0137**	0.022	164.2	ug/L	79	Standard
	Cd	111	23.0	96.4	**0.0115**	0.016	140.6	mg/L	8	Standard
	Cd	114	49.1	115.4	**0.0079**	0.017	216.1	ug/L	8	Standard
>	**In**	115	367680.3	1.8				ug/L	344753	Standard
	Sn	118	466.7	25.6	**0.0380**	0.031	81.4	ug/L	327	Standard
	Sb	123	198.9	25.8	**0.0446**	0.014	30.6	ug/L	64	Standard
	Ba	135	43.3	49.8	**0.0086**	0.015	170.4	ug/L	22	Standard
	Ce	140	5.0	100.0				ug/L	63	Standard
>	**Tb**	159	610180.8	3.3				ug/L	622049	Standard
	Ho	165	3.3	173.2				ug/L	12	Standard
	Tl	203	95.7	110.0	**0.0157**	0.018	115.7	ug/L	4	Standard
	Tl	205	65.0	134.1	**0.0124**	0.022	175.7	ug/L	5	Standard
	Pb	206	227.0	36.4	**-0.0007**	0.020	2800.5	ug/L	163	Standard
	Pb	207	191.7	36.1	**0.0074**	0.019	251.9	ug/L	139	Standard
	Pb	208	746.7	45.8	**0.0094**	0.027	287.8	ug/L	519	Standard
	U	238	83.0	130.6	**0.0195**	0.025	128.2	ug/L	4	Standard
>	**Bi**	209	347916.0	1.4				ug/L	331049	Standard

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Na	23	1.7	173.2	**4.5410**	150.049	3304.3	mg/L	0	Standard
Mg	24	18.3	15.7	**0.0186**	0.007	39.0	mg/L	7	Standard
K	39	20.0	25.0	**-0.0495**	0.054	109.9	mg/L	33	Standard
Ca	43	38.3	7.5	**-10.2255**	1.912	18.7	mg/L	80	Standard
Fe	54	61.1	4.9	**-0.0512**	0.011	22.1	mg/L	81	Standard
Fe	57	76.7	10.0	**-0.1446**	0.086	59.4	mg/L	93	Standard
Sc-1	45	15099.2	4.2				mg/L	15221	Standard
Cl	35	43541.1	0.5				ug/L	40209	Standard
Kr	83	4.3	58.1				ug/L	4	Standard
Br	81	340.0	28.1				ug/L	303	Standard
P	31	15112.5	5.2				ug/L	14097	Standard
S	34	3533.7	3.0				ug/L	2990	Standard
Sr	88	43.3	24.0				ug/L	50	Standard
C	12	220.0	35.5				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	-0.8	34.6				mg/L	3	Standard
Ho-1	165	3.3	173.2				mg/L	12	Standard
Er	166	16.7	34.6				mg/L	7	Standard
I	127	2968.6	3.2				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.458	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.650
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.095
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Ti	47	

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Method 6020 - Summary Report

Sample ID: L1511068802
Sample Date/Time: Monday, November 16, 2015 19:25:00
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	31937.0	5.9				ug/L	29272	Standard
	Be	9	51.7	20.1	**0.0789**	0.014	17.8	ug/L	7	Standard
	Al	27	1125130.9	3.0	**23.8231**	1.319	5.5	ug/L	318	Standard
	Sc	45	17299.9	6.9				ug/L	15221	Standard
	Ti	47	1419.4	7.4	**8.1309**	1.118	13.7	ug/L	262	Standard
	V	51	7936.2	2.6	**1.9083**	0.177	9.3	ug/L	874	Standard
	Cr	52	8184.5	0.8	**1.0333**	0.154	14.9	ug/L	4335	Standard
	Cr	53	811.7	8.7	**1.3715**	0.064	4.7	ug/L	200	Standard
	Mn	55	44768.1	2.2	**12.6633**	0.594	4.7	ug/L	830	Standard
	Co	59	1365.7	2.0	**0.3607**	0.017	4.7	ug/L	75	Standard
	Ni	60	1178.4	3.7	**1.0828**	0.103	9.5	ug/L	98	Standard
	Cu	65	2307.2	1.4	**2.1765**	0.177	8.1	ug/L	201	Standard
	Zn	66	6012.9	1.3	**10.1163**	0.525	5.2	ug/L	211	Standard
>	**Ge**	72	223275.0	5.8				ug/L	201509	Standard
	As	75	409.4	4.0	**0.7411**	0.017	2.3	ug/L	-72	Standard
	Se	82	33.1	14.4	**0.3373**	0.104	30.7	ug/L	6	Standard
	Se-1	77	57.3	11.6	**0.5318**	0.131	24.7	ug/L	42	Standard
>	**Ga**	71	671.7	4.3				mg/L	25	Standard
	Rb	85	15693.1	2.0				ug/L	8	Standard
	Y	89	232245.3	5.8				ug/L	207393	Standard
>	**Rh**	103	11.7	89.2				ug/L	7	Standard
	Mo	98	321.4	5.7	**0.2104**	0.004	2.0	ug/L	9	Standard
	Ag	107	105.0	19.0	**0.0030**	0.004	118.0	ug/L	79	Standard
	Cd	111	25.3	31.4	**0.0117**	0.005	40.7	mg/L	8	Standard
	Cd	114	60.9	46.8	**0.0101**	0.008	74.9	ug/L	8	Standard
>	**In**	115	396890.0	4.6				ug/L	344753	Standard
	Sn	118	835.0	11.2	**0.1169**	0.015	12.5	ug/L	327	Standard
	Sb	123	600.2	3.7	**0.1394**	0.012	8.8	ug/L	64	Standard
	Ba	135	31822.4	1.1	**20.1940**	0.950	4.7	ug/L	22	Standard
	Ce	140	17253.2	6.0				ug/L	63	Standard
>	**Tb**	159	674984.0	5.7				ug/L	622049	Standard
	Ho	165	271.7	9.1				ug/L	12	Standard
	Tl	203	217.3	8.5	**0.0339**	0.001	4.3	ug/L	4	Standard
	Tl	205	170.0	17.6	**0.0353**	0.005	15.3	ug/L	5	Standard
	Pb	206	3287.4	1.5	**0.6921**	0.035	5.0	ug/L	163	Standard
	Pb	207	2759.9	2.5	**0.6494**	0.045	6.9	ug/L	139	Standard
	Pb	208	9883.6	2.5	**0.6767**	0.023	3.4	ug/L	519	Standard
	U	238	1021.4	2.9	**0.2184**	0.008	3.5	ug/L	4	Standard
>	**Bi**	209	378139.5	5.1				ug/L	331049	Standard

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Na	23	1.7	173.2	**5.2490**	148.823	2835.2	mg/L	0	Standard
Mg	24	303.3	19.2	**0.6477**	0.170	26.3	mg/L	7	Standard
K	39	130.0	21.4	**0.8332**	0.247	29.7	mg/L	33	Standard
Ca	43	110.0	36.1	**14.6881**	13.166	89.6	mg/L	80	Standard
Fe	54	497.2	7.1	**0.7740**	0.092	11.9	mg/L	81	Standard
Fe	57	231.7	6.9	**0.9606**	0.134	13.9	mg/L	93	Standard
> **Sc-1**	45	17299.9	6.9				mg/L	15221	Standard
Cl	35	44896.4	2.0				ug/L	40209	Standard
Kr	83	3.7	15.7				ug/L	4	Standard
Br	81	1903.5	8.4				ug/L	303	Standard
P	31	15883.3	2.9				ug/L	14097	Standard
S	34	3172.0	4.0				ug/L	2990	Standard
Sr	88	75.0	6.7				ug/L	50	Standard
C	12	256.7	11.2				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	69.3				mg/L	0	Standard
Dy	164	571.4	27.2				mg/L	3	Standard
Ho-1	165	271.7	9.1				mg/L	12	Standard
Er	166	250.0	17.4				mg/L	7	Standard
I	127	5424.3	5.1				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.106	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.802	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		115.123
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		114.224
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1511068803
Sample Date/Time: Monday, November 16, 2015 19:28:11
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	30223.5	1.4				ug/L	29272	Standard
	Be	9	15.0	66.7	**0.0165**	0.019	114.6	ug/L	7	Standard
	Al	27	178100.7	5.1	**3.9657**	0.252	6.3	ug/L	318	Standard
	Sc	45	16197.0	1.1				ug/L	15221	Standard
	Ti	47	149.7	9.8	**-0.8242**	0.097	11.8	ug/L	262	Standard
	V	51	1331.0	5.5	**0.1346**	0.011	8.4	ug/L	874	Standard
	Cr	52	4678.1	4.7	**0.0594**	0.074	125.1	ug/L	4335	Standard
	Cr	53	316.7	4.0	**0.2635**	0.008	2.9	ug/L	200	Standard
	Mn	55	30422.9	2.5	**8.9867**	0.249	2.8	ug/L	830	Standard
	Co	59	338.0	13.5	**0.0743**	0.012	16.0	ug/L	75	Standard
	Ni	60	426.0	6.8	**0.3280**	0.029	8.8	ug/L	98	Standard
	Cu	65	2030.8	2.6	**2.0024**	0.093	4.7	ug/L	201	Standard
	Zn	66	8992.3	1.2	**16.2456**	0.301	1.9	ug/L	211	Standard
>	**Ge**	72	211475.1	3.0				ug/L	201509	Standard
	As	75	92.4	17.9	**0.2591**	0.023	8.9	ug/L	-72	Standard
	Se	82	22.9	19.7	**0.1805**	0.075	41.6	ug/L	6	Standard
	Se-1	77	47.0	16.9	**0.3169**	0.197	62.1	ug/L	42	Standard
>	**Ga**	71	40.0	50.0				mg/L	25	Standard
	Rb	85	2413.5	6.3				ug/L	8	Standard
	Y	89	223579.3	1.2				ug/L	207393	Standard
>	**Rh**	103	5.0	100.0				ug/L	7	Standard
	Mo	98	51.6	18.9	**0.0208**	0.007	32.0	ug/L	9	Standard
	Ag	107	76.3	8.5	**-0.0025**	0.002	69.3	ug/L	79	Standard
	Cd	111	18.9	37.0	**0.0081**	0.005	61.5	mg/L	8	Standard
	Cd	114	33.9	31.6	**0.0030**	0.003	100.0	ug/L	8	Standard
>	**In**	115	378535.3	1.4				ug/L	344753	Standard
	Sn	118	476.7	6.3	**0.0371**	0.009	24.6	ug/L	327	Standard
	Sb	123	198.7	3.5	**0.0430**	0.001	2.4	ug/L	64	Standard
	Ba	135	8353.3	3.3	**5.5362**	0.222	4.0	ug/L	22	Standard
	Ce	140	980.0	15.8				ug/L	63	Standard
>	**Tb**	159	633070.2	1.5				ug/L	622049	Standard
	Ho	165	53.3	23.6				ug/L	12	Standard
	Tl	203	49.7	37.4	**0.0075**	0.003	41.1	ug/L	4	Standard
	Tl	205	111.7	97.3	**0.0232**	0.026	113.3	ug/L	5	Standard
	Pb	206	2067.8	1.6	**0.4378**	0.009	2.0	ug/L	163	Standard
	Pb	207	1757.8	4.8	**0.4190**	0.015	3.7	ug/L	139	Standard
	Pb	208	6503.9	8.2	**0.4521**	0.037	8.3	ug/L	519	Standard
	U	238	121.7	99.9	**0.0275**	0.027	98.7	ug/L	4	Standard
>	**Bi**	209	359640.6	1.6				ug/L	331049	Standard

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Na	23	1.7	173.2	**5.6790**	148.078	2607.5	mg/L	0	Standard
Mg	24	291.7	22.8	**0.6579**	0.150	22.9	mg/L	7	Standard
K	39	58.3	17.8	**0.2716**	0.086	31.6	mg/L	33	Standard
Ca	43	66.7	22.9	**0.1740**	6.180	3552.6	mg/L	80	Standard
Fe	54	201.0	26.4	**0.2263**	0.106	46.7	mg/L	81	Standard
Fe	57	96.7	31.2	**-0.0299**	0.239	798.6	mg/L	93	Standard
> **Sc-1**	45	16197.0	1.1				mg/L	15221	Standard
Cl	35	43160.1	1.3				ug/L	40209	Standard
Kr	83	2.0	100.0				ug/L	4	Standard
Br	81	806.7	8.8				ug/L	303	Standard
P	31	14024.8	6.5				ug/L	14097	Standard
S	34	3012.0	5.7				ug/L	2990	Standard
Sr	88	61.7	40.0				ug/L	50	Standard
C	12	403.3	39.5				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	85.1	28.1				mg/L	3	Standard
Ho-1	165	53.3	23.6				mg/L	12	Standard
Er	166	33.3	86.6				mg/L	7	Standard
I	127	4980.8	1.1				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.252	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.946	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.799
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.636
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Lower	Ti	47	

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Method 6020 - Summary Report

Sample ID: L1511068804
Sample Date/Time: Monday, November 16, 2015 19:31:22
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	30584.2	0.5				ug/L	29272	Standard
	Be	9	16.7	45.8	**0.0191**	0.014	74.2	ug/L	7	Standard
	Al	27	243776.5	2.9	**5.3666**	0.133	2.5	ug/L	318	Standard
	Sc	45	16514.0	2.9				ug/L	15221	Standard
	Ti	47	265.3	14.7	**0.0323**	0.313	968.4	ug/L	262	Standard
	V	51	1693.3	6.0	**0.2361**	0.033	14.2	ug/L	874	Standard
	Cr	52	4872.1	1.3	**0.1126**	0.040	35.8	ug/L	4335	Standard
	Cr	53	396.7	1.9	**0.4554**	0.032	6.9	ug/L	200	Standard
	Mn	55	54882.6	3.5	**16.3750**	0.792	4.8	ug/L	830	Standard
	Co	59	394.0	16.7	**0.0908**	0.021	23.5	ug/L	75	Standard
	Ni	60	408.3	3.1	**0.3067**	0.019	6.1	ug/L	98	Standard
	Cu	65	803.4	3.7	**0.6556**	0.029	4.5	ug/L	201	Standard
	Zn	66	2219.8	2.0	**3.6011**	0.117	3.3	ug/L	211	Standard
>	**Ge**	72	212542.2	1.3				ug/L	201509	Standard
	As	75	117.7	21.7	**0.2999**	0.042	13.9	ug/L	-72	Standard
	Se	82	26.3	19.3	**0.2404**	0.097	40.5	ug/L	6	Standard
	Se-1	77	48.3	15.0	**0.3531**	0.223	63.2	ug/L	42	Standard
>	**Ga**	71	88.3	16.3				mg/L	25	Standard
	Rb	85	3363.7	8.4				ug/L	8	Standard
	Y	89	221830.5	0.7				ug/L	207393	Standard
>	**Rh**	103	10.0	86.6				ug/L	7	Standard
	Mo	98	77.0	29.9	**0.0393**	0.018	46.1	ug/L	9	Standard
	Ag	107	84.3	20.2	**-0.0008**	0.004	530.0	ug/L	79	Standard
	Cd	111	19.2	46.6	**0.0082**	0.006	77.3	mg/L	8	Standard
	Cd	114	48.0	60.6	**0.0071**	0.009	122.7	ug/L	8	Standard
>	**In**	115	382810.0	1.8				ug/L	344753	Standard
	Sn	118	508.3	11.4	**0.0435**	0.013	31.0	ug/L	327	Standard
	Sb	123	171.2	10.8	**0.0355**	0.006	15.5	ug/L	64	Standard
	Ba	135	9286.2	4.2	**6.0908**	0.369	6.1	ug/L	22	Standard
	Ce	140	3185.3	8.8				ug/L	63	Standard
>	**Tb**	159	637222.1	2.0				ug/L	622049	Standard
	Ho	165	66.7	28.4				ug/L	12	Standard
	Tl	203	110.3	25.4	**0.0177**	0.005	27.4	ug/L	4	Standard
	Tl	205	80.0	76.0	**0.0156**	0.015	95.6	ug/L	5	Standard
	Pb	206	1298.1	4.1	**0.2527**	0.014	5.4	ug/L	163	Standard
	Pb	207	1127.4	8.3	**0.2519**	0.027	10.6	ug/L	139	Standard
	Pb	208	3989.9	6.8	**0.2571**	0.023	9.0	ug/L	519	Standard
	U	238	90.7	65.4	**0.0207**	0.013	65.1	ug/L	4	Standard
>	**Bi**	209	360806.9	0.7				ug/L	331049	Standard

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Na	23	6.7	43.3	**-243.2019**	155.640	64.0	mg/L	0	Standard
Mg	24	331.7	9.2	**0.7386**	0.073	9.9	mg/L	7	Standard
K	39	48.3	23.9	**0.1747**	0.089	50.9	mg/L	33	Standard
Ca	43	71.7	17.6	**1.6487**	4.770	289.3	mg/L	80	Standard
Fe	54	259.5	23.8	**0.3360**	0.115	34.2	mg/L	81	Standard
Fe	57	158.3	25.7	**0.4517**	0.319	70.6	mg/L	93	Standard
> **Sc-1**	45	16514.0	2.9				mg/L	15221	Standard
Cl	35	42655.3	1.6				ug/L	40209	Standard
Kr	83	3.0	33.3				ug/L	4	Standard
Br	81	1810.1	12.1				ug/L	303	Standard
P	31	14568.7	6.2				ug/L	14097	Standard
S	34	3192.0	6.6				ug/L	2990	Standard
Sr	88	61.7	38.3				ug/L	50	Standard
C	12	333.3	28.8				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	137.1	21.0				mg/L	3	Standard
Ho-1	165	66.7	28.4				mg/L	12	Standard
Er	166	60.0	44.1				mg/L	7	Standard
I	127	8839.2	4.8				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.484	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.476	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.039
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.989
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1511068805
Sample Date/Time: Monday, November 16, 2015 19:34:33
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	30828.0	0.6				ug/L	29272	Standard
	Be	9	15.0	57.7	**0.0158**	0.016	100.2	ug/L	7	Standard
	Al	27	663469.7	2.6	**14.5188**	0.328	2.3	ug/L	318	Standard
	Sc	45	16727.6	1.6				ug/L	15221	Standard
	Ti	47	945.0	7.9	**5.0254**	0.431	8.6	ug/L	262	Standard
	V	51	5555.9	4.2	**1.3228**	0.066	5.0	ug/L	874	Standard
	Cr	52	7249.4	2.4	**0.8418**	0.035	4.2	ug/L	4335	Standard
	Cr	53	660.0	9.8	**1.0889**	0.178	16.4	ug/L	200	Standard
	Mn	55	1463534.6	2.3	**441.3122**	10.328	2.3	ug/L	830	Standard
	Co	59	6957.9	2.8	**2.0281**	0.042	2.0	ug/L	75	Standard
	Ni	60	1620.1	1.6	**1.6066**	0.008	0.5	ug/L	98	Standard
	Cu	65	1571.4	3.6	**1.4788**	0.056	3.8	ug/L	201	Standard
	Zn	66	10482.3	1.6	**18.7844**	0.185	1.0	ug/L	211	Standard
>	**Ge**	72	214020.6	1.7				ug/L	201509	Standard
	As	75	968.5	3.9	**1.6674**	0.054	3.2	ug/L	-72	Standard
	Se	82	22.2	36.5	**0.1604**	0.139	86.7	ug/L	6	Standard
	Se-1	77	46.3	8.7	**0.2835**	0.102	36.1	ug/L	42	Standard
>	**Ga**	71	591.7	14.8				mg/L	25	Standard
	Rb	85	15601.4	0.6				ug/L	8	Standard
	Y	89	226749.2	0.8				ug/L	207393	Standard
>	**Rh**	103	11.7	24.7				ug/L	7	Standard
	Mo	98	127.7	2.5	**0.0766**	0.002	3.1	ug/L	9	Standard
	Ag	107	120.3	4.3	**0.0076**	0.001	9.9	ug/L	79	Standard
	Cd	111	89.1	8.0	**0.0573**	0.006	10.2	mg/L	8	Standard
	Cd	114	222.4	10.5	**0.0576**	0.007	11.8	ug/L	8	Standard
>	**In**	115	382200.4	1.7				ug/L	344753	Standard
	Sn	118	655.0	2.0	**0.0803**	0.005	5.9	ug/L	327	Standard
	Sb	123	292.7	2.3	**0.0664**	0.002	3.3	ug/L	64	Standard
	Ba	135	35431.4	2.6	**23.3169**	0.245	1.1	ug/L	22	Standard
	Ce	140	13587.8	0.3				ug/L	63	Standard
>	**Tb**	159	636652.7	2.1				ug/L	622049	Standard
	Ho	165	416.7	11.4				ug/L	12	Standard
	Tl	203	145.3	8.0	**0.0232**	0.002	7.3	ug/L	4	Standard
	Tl	205	93.3	25.3	**0.0186**	0.006	30.8	ug/L	5	Standard
	Pb	206	11728.2	3.1	**2.7111**	0.060	2.2	ug/L	163	Standard
	Pb	207	9732.1	2.0	**2.4902**	0.025	1.0	ug/L	139	Standard
	Pb	208	35278.2	1.7	**2.6390**	0.039	1.5	ug/L	519	Standard
	U	238	197.0	11.8	**0.0439**	0.005	11.3	ug/L	4	Standard
>	**Bi**	209	364443.2	1.8				ug/L	331049	Standard

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Na	23	0.0		**91.1719**	0.000	0.0	mg/L	0	Standard
Mg	24	205.0	20.8	**0.4394**	0.095	21.6	mg/L	7	Standard
K	39	76.7	13.6	**0.4107**	0.079	19.2	mg/L	33	Standard
Ca	43	75.0	17.6	**2.6505**	5.506	207.7	mg/L	80	Standard
Fe	54	2047.6	3.2	**3.8907**	0.069	1.8	mg/L	81	Standard
Fe	57	583.3	7.7	**3.8124**	0.430	11.3	mg/L	93	Standard
> **Sc-1**	45	16727.6	1.6				mg/L	15221	Standard
Cl	35	42237.5	1.0				ug/L	40209	Standard
Kr	83	2.3	107.9				ug/L	4	Standard
Br	81	960.0	12.0				ug/L	303	Standard
P	31	16013.5	0.8				ug/L	14097	Standard
S	34	3097.0	7.0				ug/L	2990	Standard
Sr	88	63.3	19.9				ug/L	50	Standard
C	12	700.0	11.4				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	65.5				mg/L	0	Standard
Dy	164	673.9	16.9				mg/L	3	Standard
Ho-1	165	416.7	11.4				mg/L	12	Standard
Er	166	336.7	13.4				mg/L	7	Standard
I	127	14859.0	3.3				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.317	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.209	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.862
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.087
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1511070701
Sample Date/Time: Monday, November 16, 2015 19:37:44
Number of Replicates: 3
Autosampler Position: 346
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	33229.7	2.3				ug/L	29272	Standard
	Be	9	3.3	86.6	**-0.0059**	0.005	82.5	ug/L	7	Standard
	Al	27	261661.4	3.0	**5.3014**	0.055	1.0	ug/L	318	Standard
	Sc	45	17453.4	1.9				ug/L	15221	Standard
	Ti	47	156.7	2.9	**-0.8286**	0.048	5.8	ug/L	262	Standard
	V	51	843.4	11.8	**-0.0166**	0.024	143.6	ug/L	874	Standard
	Cr	52	15149.2	2.1	**3.1236**	0.105	3.4	ug/L	4335	Standard
	Cr	53	1831.8	3.9	**3.7606**	0.112	3.0	ug/L	200	Standard
	Mn	55	6418.0	7.1	**1.5565**	0.110	7.1	ug/L	830	Standard
	Co	59	203.0	9.4	**0.0311**	0.005	14.7	ug/L	75	Standard
	Ni	60	706.0	1.7	**0.5949**	0.006	1.0	ug/L	98	Standard
	Cu	65	2826.6	4.7	**2.7182**	0.131	4.8	ug/L	201	Standard
	Zn	66	20072.6	1.3	**35.0421**	0.070	0.2	ug/L	211	Standard
>	**Ge**	72	222437.1	1.5				ug/L	201509	Standard
	As	75	64.2	34.3	**0.2087**	0.035	16.8	ug/L	-72	Standard
	Se	82	26.8	15.6	**0.2285**	0.078	34.2	ug/L	6	Standard
	Se-1	77	58.3	17.8	**0.5654**	0.272	48.1	ug/L	42	Standard
>	**Ga**	71	38.3	27.2				mg/L	25	Standard
	Rb	85	3585.4	3.0				ug/L	8	Standard
	Y	89	232678.0	0.6				ug/L	207393	Standard
>	**Rh**	103	10.0	50.0				ug/L	7	Standard
	Mo	98	83.6	9.6	**0.0419**	0.005	13.0	ug/L	9	Standard
	Ag	107	186.3	10.4	**0.0214**	0.004	19.2	ug/L	79	Standard
	Cd	111	16.5	45.4	**0.0059**	0.005	86.8	mg/L	8	Standard
	Cd	114	46.8	45.3	**0.0062**	0.006	96.3	ug/L	8	Standard
>	**In**	115	396279.0	1.3				ug/L	344753	Standard
	Sn	118	553.3	10.5	**0.0501**	0.015	30.0	ug/L	327	Standard
	Sb	123	302.4	7.6	**0.0661**	0.005	7.8	ug/L	64	Standard
	Ba	135	9472.3	1.9	**5.9971**	0.084	1.4	ug/L	22	Standard
	Ce	140	378.3	8.0				ug/L	63	Standard
>	**Tb**	159	663371.7	0.9				ug/L	622049	Standard
	Ho	165	18.3	41.7				ug/L	12	Standard
	Tl	203	81.0	22.2	**0.0121**	0.003	21.9	ug/L	4	Standard
	Tl	205	35.0	37.8	**0.0043**	0.003	71.0	ug/L	5	Standard
	Pb	206	418.3	1.6	**0.0386**	0.003	7.9	ug/L	163	Standard
	Pb	207	327.7	5.9	**0.0375**	0.003	8.9	ug/L	139	Standard
	Pb	208	1226.4	6.2	**0.0401**	0.004	9.7	ug/L	519	Standard
	U	238	14.3	14.5	**0.0034**	0.000	12.4	ug/L	4	Standard
>	**Bi**	209	377385.1	1.8				ug/L	331049	Standard

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Na	23	1.7	173.2	**13.7875**	134.034	972.1	mg/L	0	Standard
Mg	24	2175.2	5.4	**4.7228**	0.172	3.6	mg/L	7	Standard
K	39	268.3	7.1	**1.9455**	0.198	10.2	mg/L	33	Standard
Ca	43	55.0	15.7	**-6.2364**	3.048	48.9	mg/L	80	Standard
Fe	54	87.2	17.3	**-0.0200**	0.028	142.2	mg/L	81	Standard
Fe	57	100.0	26.0	**-0.0611**	0.188	307.7	mg/L	93	Standard
> **Sc-1**	45	17453.4	1.9				mg/L	15221	Standard
Cl	35	45019.5	0.8				ug/L	40209	Standard
Kr	83	2.0	0.0				ug/L	4	Standard
Br	81	1916.8	12.5				ug/L	303	Standard
P	31	16425.6	1.8				ug/L	14097	Standard
S	34	3290.4	6.2				ug/L	2990	Standard
Sr	88	68.3	11.2				ug/L	50	Standard
C	12	623.3	9.4				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	15.5	77.9				mg/L	3	Standard
Ho-1	165	18.3	41.7				mg/L	12	Standard
Er	166	23.3	65.5				mg/L	7	Standard
I	127	10890.6	3.2				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.522	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.386	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.946
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		113.997
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Lower	Ti	47	

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Method 6020 - Summary Report

Sample ID: L1511071301
Sample Date/Time: Monday, November 16, 2015 19:40:55
Number of Replicates: 3
Autosampler Position: 347
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	32742.2	9.8				ug/L	29272	Standard
	Be	9	6.7	114.6	**-0.0008**	0.012	1540.5	ug/L	7	Standard
	Al	27	361660.9	3.7	**7.4725**	0.438	5.9	ug/L	318	Standard
	Sc	45	17026.2	2.7				ug/L	15221	Standard
	Ti	47	488.3	8.3	**1.6047**	0.336	20.9	ug/L	262	Standard
	V	51	4352.0	6.8	**0.9637**	0.101	10.5	ug/L	874	Standard
	Cr	52	37912.8	3.8	**10.1929**	0.293	2.9	ug/L	4335	Standard
	Cr	53	3547.1	1.6	**7.9537**	0.344	4.3	ug/L	200	Standard
	Mn	55	92197.8	3.1	**27.0484**	0.186	0.7	ug/L	830	Standard
	Co	59	1046.7	3.6	**0.2774**	0.007	2.4	ug/L	75	Standard
	Ni	60	6711.5	3.5	**6.9606**	0.054	0.8	ug/L	98	Standard
	Cu	65	33579.9	2.5	**35.4310**	0.107	0.3	ug/L	201	Standard
	Zn	66	53115.3	2.2	**95.6611**	0.825	0.9	ug/L	211	Standard
>	**Ge**	72	217633.3	2.8				ug/L	201509	Standard
	As	75	69.8	8.4	**0.2198**	0.012	5.6	ug/L	-72	Standard
	Se	82	17.8	32.5	**0.0770**	0.094	121.6	ug/L	6	Standard
	Se-1	77	57.0	17.8	**0.5669**	0.305	53.9	ug/L	42	Standard
>	**Ga**	71	65.0	20.4				mg/L	25	Standard
	Rb	85	40311.9	3.3				ug/L	8	Standard
	Y	89	228393.8	4.1				ug/L	207393	Standard
>	**Rh**	103	10.0	50.0				ug/L	7	Standard
	Mo	98	638.0	3.1	**0.4447**	0.008	1.7	ug/L	9	Standard
	Ag	107	102.7	34.6	**0.0030**	0.008	268.0	ug/L	79	Standard
	Cd	111	86.1	23.8	**0.0542**	0.014	25.9	mg/L	8	Standard
	Cd	114	210.6	30.1	**0.0529**	0.017	32.4	ug/L	8	Standard
>	**In**	115	388574.6	1.9				ug/L	344753	Standard
	Sn	118	9047.7	2.8	**2.1304**	0.022	1.0	ug/L	327	Standard
	Sb	123	568.6	10.5	**0.1343**	0.015	11.5	ug/L	64	Standard
	Ba	135	16661.2	2.4	**10.7737**	0.084	0.8	ug/L	22	Standard
	Ce	140	1988.5	5.0				ug/L	63	Standard
>	**Tb**	159	650248.6	2.8				ug/L	622049	Standard
	Ho	165	61.7	33.8				ug/L	12	Standard
	Tl	203	82.7	81.1	**0.0127**	0.011	86.0	ug/L	4	Standard
	Tl	205	28.3	10.2	**0.0029**	0.001	25.3	ug/L	5	Standard
	Pb	206	14397.8	2.1	**3.3173**	0.016	0.5	ug/L	163	Standard
	Pb	207	12067.5	2.1	**3.0767**	0.062	2.0	ug/L	139	Standard
	Pb	208	43218.3	3.1	**3.2203**	0.022	0.7	ug/L	519	Standard
	U	238	36.0	15.5	**0.0083**	0.001	15.9	ug/L	4	Standard
>	**Bi**	209	367060.8	2.5				ug/L	331049	Standard

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Na	23	1.7	173.2	**13.1468**	135.143	1028.0	mg/L	0	Standard
Mg	24	2618.6	7.1	**5.8330**	0.271	4.6	mg/L	7	Standard
K	39	376.7	4.7	**2.9018**	0.157	5.4	mg/L	33	Standard
Ca	43	95.0	32.0	**9.6963**	10.723	110.6	mg/L	80	Standard
Fe	54	745.5	13.0	**1.2757**	0.222	17.4	mg/L	81	Standard
Fe	57	255.0	2.0	**1.1679**	0.037	3.2	mg/L	93	Standard
Sc-1	45	17026.2	2.7				mg/L	15221	Standard
Cl	35	45214.7	1.4				ug/L	40209	Standard
Kr	83	1.7	34.6				ug/L	4	Standard
Br	81	1190.0	4.7				ug/L	303	Standard
P	31	16010.1	3.4				ug/L	14097	Standard
S	34	3248.7	4.5				ug/L	2990	Standard
Sr	88	55.0	32.8				ug/L	50	Standard
C	12	11397.6	10.2				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	80.3	7.9				mg/L	3	Standard
Ho-1	165	61.7	33.8				mg/L	12	Standard
Er	166	63.3	24.1				mg/L	7	Standard
I	127	17600.2	6.6				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.857	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.002	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.711
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.878
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1511073901
Sample Date/Time: Monday, November 16, 2015 19:44:06
Number of Replicates: 3
Autosampler Position: 348
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	29363.5	5.3				ug/L	29272	Standard
	Be	9	11.7	24.7	**0.0106**	0.004	39.7	ug/L	7	Standard
	Al	27	3206008.4	1.9	**73.8999**	4.945	6.7	ug/L	318	Standard
	Sc	45	16705.9	6.4				ug/L	15221	Standard
	Ti	47	418.7	7.6	**1.2562**	0.379	30.2	ug/L	262	Standard
	V	51	1548.3	3.9	**0.2066**	0.040	19.3	ug/L	874	Standard
	Cr	52	4808.8	3.6	**0.1304**	0.066	50.2	ug/L	4335	Standard
	Cr	53	316.7	9.0	**0.2791**	0.073	26.0	ug/L	200	Standard
	Mn	55	4765657.9	1.6	**1485.6074**	90.104	6.1	ug/L	830	Standard
	Co	59	8774.9	2.8	**2.6508**	0.163	6.1	ug/L	75	Standard
	Ni	60	3635.4	3.3	**3.9028**	0.238	6.1	ug/L	98	Standard
	Cu	65	870.7	2.9	**0.7541**	0.072	9.5	ug/L	201	Standard
	Zn	66	4139.6	0.8	**7.3609**	0.466	6.3	ug/L	211	Standard
>	**Ge**	72	207532.9	5.3				ug/L	201509	Standard
	As	75	1526.6	1.3	**2.6458**	0.100	3.8	ug/L	-72	Standard
	Se	82	22.3	23.4	**0.1806**	0.115	63.5	ug/L	6	Standard
	Se-1	77	39.3	1.5	**0.1191**	0.044	36.8	ug/L	42	Standard
>	**Ga**	71	116.7	25.8				mg/L	25	Standard
	Rb	85	4020.5	2.2				ug/L	8	Standard
	Y	89	222761.4	6.2				ug/L	207393	Standard
>	**Rh**	103	63.3	12.1				ug/L	7	Standard
	Mo	98	251.8	5.0	**0.1737**	0.020	11.5	ug/L	9	Standard
	Ag	107	101.0	26.4	**0.0039**	0.007	190.0	ug/L	79	Standard
	Cd	111	17.5	25.1	**0.0075**	0.004	51.0	mg/L	8	Standard
	Cd	114	39.0	74.3	**0.0049**	0.009	187.7	ug/L	8	Standard
>	**In**	115	372109.6	6.1				ug/L	344753	Standard
	Sn	118	408.3	11.3	**0.0216**	0.010	45.1	ug/L	327	Standard
	Sb	123	238.6	17.1	**0.0548**	0.014	25.0	ug/L	64	Standard
	Ba	135	261400.2	1.4	**177.3529**	12.571	7.1	ug/L	22	Standard
	Ce	140	5100.9	6.8				ug/L	63	Standard
>	**Tb**	159	620634.2	5.8				ug/L	622049	Standard
	Ho	165	105.0	43.6				ug/L	12	Standard
	Tl	203	69.3	75.9	**0.0115**	0.010	86.5	ug/L	4	Standard
	Tl	205	43.3	46.6	**0.0070**	0.005	71.3	ug/L	5	Standard
	Pb	206	638.3	8.4	**0.1016**	0.022	21.6	ug/L	163	Standard
	Pb	207	517.3	8.2	**0.0966**	0.017	18.1	ug/L	139	Standard
	Pb	208	1779.0	3.5	**0.0922**	0.014	14.9	ug/L	519	Standard
	U	238	405.0	8.5	**0.0945**	0.013	13.4	ug/L	4	Standard
>	**Bi**	209	348694.4	7.2				ug/L	331049	Standard

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Na	23	1.7	173.2	**14.9315**	132.052	884.4	mg/L	0	Standard
Mg	24	1921.8	4.7	**4.3685**	0.302	6.9	mg/L	7	Standard
K	39	166.7	15.4	**1.1720**	0.131	11.2	mg/L	33	Standard
Ca	43	251.7	9.0	**72.7071**	4.417	6.1	mg/L	80	Standard
Fe	54	4423.6	1.8	**8.6517**	0.395	4.6	mg/L	81	Standard
Fe	57	1408.4	2.4	**10.3947**	0.673	6.5	mg/L	93	Standard
> **Sc-1**	45	16705.9	6.4				mg/L	15221	Standard
Cl	35	44144.9	2.0				ug/L	40209	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	1266.7	9.4				ug/L	303	Standard
P	31	17880.5	2.1				ug/L	14097	Standard
S	34	3447.1	2.9				ug/L	2990	Standard
Sr	88	185.0	11.8				ug/L	50	Standard
C	12	756.7	7.5				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	202.5	25.2				mg/L	3	Standard
Ho-1	165	105.0	43.6				mg/L	12	Standard
Er	166	156.7	16.1				mg/L	7	Standard
I	127	47573.8	13.8				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.314	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.990	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	107.935
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	105.330
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1511073901
Sample Date/Time: Monday, November 16, 2015 19:47:17
Number of Replicates: 3
Autosampler Position: 349
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	32266.2	9.0				ug/L	29272	Standard
	Be	9	8.3	34.6	**0.0030**	0.005	174.7	ug/L	7	Standard
	Al	27	69239.8	5.1	**1.4362**	0.057	4.0	ug/L	318	Standard
	Sc	45	16230.4	5.8				ug/L	15221	Standard
	Ti	47	84.0	6.0	**-1.3204**	0.013	1.0	ug/L	262	Standard
	V	51	789.2	6.3	**-0.0219**	0.018	82.5	ug/L	874	Standard
	Cr	52	3906.8	1.6	**-0.1951**	0.053	27.0	ug/L	4335	Standard
	Cr	53	181.7	20.3	**-0.0700**	0.101	144.7	ug/L	200	Standard
	Mn	55	100667.1	2.5	**30.1418**	0.443	1.5	ug/L	830	Standard
	Co	59	292.0	9.1	**0.0598**	0.006	10.1	ug/L	75	Standard
	Ni	60	188.0	1.4	**0.0672**	0.008	12.0	ug/L	98	Standard
	Cu	65	201.3	0.3	**0.0004**	0.009	2290.4	ug/L	201	Standard
	Zn	66	1000.4	1.5	**1.3319**	0.050	3.8	ug/L	211	Standard
>	**Ge**	72	213576.3	3.9				ug/L	201509	Standard
	As	75	-3.2	731.4	**0.1041**	0.037	35.5	ug/L	-72	Standard
	Se	82	9.7	88.3	**-0.0604**	0.155	256.1	ug/L	6	Standard
	Se-1	77	32.0	32.9	**-0.1223**	0.334	273.4	ug/L	42	Standard
>	**Ga**	71	21.7	13.3				mg/L	25	Standard
	Rb	85	95.0	18.2				ug/L	8	Standard
	Y	89	225360.7	7.1				ug/L	207393	Standard
>	**Rh**	103	11.7	65.5				ug/L	7	Standard
	Mo	98	20.6	21.0	**-0.0025**	0.003	112.7	ug/L	9	Standard
	Ag	107	68.3	8.1	**-0.0047**	0.002	39.7	ug/L	79	Standard
	Cd	111	4.3	35.5	**-0.0023**	0.001	38.7	mg/L	8	Standard
	Cd	114	21.4	34.9	**-0.0007**	0.002	349.4	ug/L	8	Standard
>	**In**	115	386064.5	5.2				ug/L	344753	Standard
	Sn	118	260.0	16.4	**-0.0188**	0.009	50.4	ug/L	327	Standard
	Sb	123	77.3	8.3	**0.0115**	0.002	17.9	ug/L	64	Standard
	Ba	135	5174.9	0.8	**3.3597**	0.177	5.3	ug/L	22	Standard
	Ce	140	138.3	9.1				ug/L	63	Standard
>	**Tb**	159	640784.2	5.0				ug/L	622049	Standard
	Ho	165	16.7	91.7				ug/L	12	Standard
	Tl	203	4.3	35.3	**-0.0001**	0.000	257.0	ug/L	4	Standard
	Tl	205	6.7	114.6	**-0.0022**	0.002	88.5	ug/L	5	Standard
	Pb	206	209.3	2.5	**-0.0072**	0.002	27.0	ug/L	163	Standard
	Pb	207	198.3	7.3	**0.0071**	0.007	92.4	ug/L	139	Standard
	Pb	208	678.0	1.1	**0.0017**	0.002	133.2	ug/L	519	Standard
	U	238	8.7	6.7	**0.0023**	0.000	3.7	ug/L	4	Standard
>	**Bi**	209	363919.2	5.5				ug/L	331049	Standard

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Na	23	1.7	173.2	**2.6617**	153.304	5759.7	mg/L	0	Standard
Mg	24	65.0	27.7	**0.1253**	0.044	34.9	mg/L	7	Standard
K	39	26.7	43.3	**-0.0044**	0.106	2410.6	mg/L	33	Standard
Ca	43	46.7	16.4	**-7.9499**	3.850	48.4	mg/L	80	Standard
Fe	54	179.3	26.8	**0.1794**	0.085	47.2	mg/L	81	Standard
Fe	57	118.3	16.0	**0.1502**	0.171	113.8	mg/L	93	Standard
Sc-1	45	16230.4	5.8				mg/L	15221	Standard
Cl	35	43325.2	1.7				ug/L	40209	Standard
Kr	83	3.0	0.0				ug/L	4	Standard
Br	81	393.3	33.6				ug/L	303	Standard
P	31	15100.9	3.4				ug/L	14097	Standard
S	34	3175.3	4.5				ug/L	2990	Standard
Sr	88	51.7	29.6				ug/L	50	Standard
C	12	246.7	24.4				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	19.2	54.6				mg/L	3	Standard
Ho-1	165	16.7	91.7				mg/L	12	Standard
Er	166	16.7	69.3				mg/L	7	Standard
I	127	4615.7	10.7				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.230	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.989	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	111.983	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	109.929	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Lower	Ti	47	

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Method 6020 - Summary Report

Sample ID: L1511066601
Sample Date/Time: Monday, November 16, 2015 19:50:28
Number of Replicates: 3
Autosampler Position: 350
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	31364.1	1.6				ug/L	29272	Standard
	Be	9	8.3	69.3	**0.0035**	0.011	307.0	ug/L	7	Standard
	Al	27	859493.4	3.3	**18.4988**	0.802	4.3	ug/L	318	Standard
	Sc	45	16705.9	2.8				ug/L	15221	Standard
	Ti	47	1204.4	5.6	**6.9184**	0.517	7.5	ug/L	262	Standard
	V	51	2656.6	5.0	**0.5022**	0.037	7.4	ug/L	874	Standard
	Cr	52	4931.1	2.1	**0.1155**	0.022	19.1	ug/L	4335	Standard
	Cr	53	413.3	14.4	**0.4862**	0.146	30.1	ug/L	200	Standard
	Mn	55	186153.8	1.7	**55.6955**	0.783	1.4	ug/L	830	Standard
	Co	59	559.3	1.3	**0.1381**	0.002	1.7	ug/L	75	Standard
	Ni	60	412.0	5.8	**0.3061**	0.023	7.4	ug/L	98	Standard
	Cu	65	353.3	3.1	**0.1626**	0.010	5.9	ug/L	201	Standard
	Zn	66	2867.6	1.8	**4.7493**	0.105	2.2	ug/L	211	Standard
>	**Ge**	72	214643.4	0.6				ug/L	201509	Standard
	As	75	173.9	18.8	**0.3880**	0.052	13.5	ug/L	-72	Standard
	Se	82	15.5	40.7	**0.0414**	0.114	274.9	ug/L	6	Standard
	Se-1	77	49.7	15.1	**0.3765**	0.218	57.9	ug/L	42	Standard
>	**Ga**	71	233.3	29.2				mg/L	25	Standard
	Rb	85	4460.7	1.1				ug/L	8	Standard
	Y	89	228751.0	2.1				ug/L	207393	Standard
>	**Rh**	103	43.3	56.9				ug/L	7	Standard
	Mo	98	208.9	1.2	**0.1363**	0.003	2.1	ug/L	9	Standard
	Ag	107	69.0	1.4	**-0.0044**	0.000	7.3	ug/L	79	Standard
	Cd	111	6.3	66.2	**-0.0009**	0.003	325.4	mg/L	8	Standard
	Cd	114	18.8	65.7	**-0.0014**	0.004	259.6	ug/L	8	Standard
>	**In**	115	382474.8	0.9				ug/L	344753	Standard
	Sn	118	540.0	6.5	**0.0515**	0.008	15.1	ug/L	327	Standard
	Sb	123	100.9	13.0	**0.0176**	0.003	19.4	ug/L	64	Standard
	Ba	135	34762.2	0.3	**22.8631**	0.238	1.0	ug/L	22	Standard
	Ce	140	12606.9	3.4				ug/L	63	Standard
>	**Tb**	159	640664.0	1.2				ug/L	622049	Standard
	Ho	165	176.7	15.6				ug/L	12	Standard
	Tl	203	133.3	1.9	**0.0213**	0.000	2.1	ug/L	4	Standard
	Tl	205	91.7	19.2	**0.0182**	0.004	22.6	ug/L	5	Standard
	Pb	206	749.7	3.6	**0.1204**	0.007	5.9	ug/L	163	Standard
	Pb	207	638.3	2.0	**0.1217**	0.004	3.1	ug/L	139	Standard
	Pb	208	2388.4	1.9	**0.1322**	0.004	3.0	ug/L	519	Standard
	U	238	866.7	0.5	**0.1924**	0.002	1.0	ug/L	4	Standard
>	**Bi**	209	363941.8	0.5				ug/L	331049	Standard

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Na	23	0.0		**91.1719**	0.000	0.0	mg/L	0	Standard
Mg	24	1431.7	4.8	**3.2450**	0.248	7.6	mg/L	7	Standard
K	39	38.3	27.2	**0.0857**	0.081	94.4	mg/L	33	Standard
Ca	43	86.7	20.3	**7.2334**	6.398	88.4	mg/L	80	Standard
Fe	54	289.2	14.9	**0.3911**	0.092	23.5	mg/L	81	Standard
Fe	57	135.0	3.7	**0.2536**	0.070	27.6	mg/L	93	Standard
> **Sc-1**	45	16705.9	2.8				mg/L	15221	Standard
Cl	35	43168.1	1.1				ug/L	40209	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	1713.4	4.9				ug/L	303	Standard
P	31	16290.4	1.3				ug/L	14097	Standard
S	34	3227.0	1.1				ug/L	2990	Standard
Sr	88	121.7	33.0				ug/L	50	Standard
C	12	333.3	17.6				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	321.2	27.7				mg/L	3	Standard
Ho-1	165	176.7	15.6				mg/L	12	Standard
Er	166	183.3	28.0				mg/L	7	Standard
I	127	32215.9	1.1				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.149	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.518	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.942
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.936
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1511066602
Sample Date/Time: Monday, November 16, 2015 19:53:39
Number of Replicates: 3
Autosampler Position: 351
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	33117.9	6.3				ug/L	29272	Standard
	Be	9	21.7	58.1	**0.0248**	0.021	83.2	ug/L	7	Standard
	Al	27	1306860.4	4.0	**26.6654**	0.825	3.1	ug/L	318	Standard
	Sc	45	17301.5	1.1				ug/L	15221	Standard
	Ti	47	200.3	5.5	**-0.4946**	0.102	20.7	ug/L	262	Standard
	V	51	1221.3	1.6	**0.0919**	0.012	12.9	ug/L	874	Standard
	Cr	52	4279.9	2.0	**-0.1119**	0.020	17.7	ug/L	4335	Standard
	Cr	53	346.7	8.7	**0.3098**	0.088	28.3	ug/L	200	Standard
	Mn	55	1549934.5	1.9	**457.0593**	0.464	0.1	ug/L	830	Standard
	Co	59	4344.6	3.5	**1.2281**	0.024	1.9	ug/L	75	Standard
	Ni	60	1396.4	5.2	**1.3324**	0.050	3.7	ug/L	98	Standard
	Cu	65	340.3	3.7	**0.1417**	0.011	7.8	ug/L	201	Standard
	Zn	66	5043.8	1.8	**8.5674**	0.085	1.0	ug/L	211	Standard
>	**Ge**	72	218830.3	2.0				ug/L	201509	Standard
	As	75	627.9	5.6	**1.0973**	0.055	5.0	ug/L	-72	Standard
	Se	82	21.3	13.6	**0.1391**	0.059	42.4	ug/L	6	Standard
	Se-1	77	52.7	9.6	**0.4347**	0.153	35.2	ug/L	42	Standard
>	**Ga**	71	85.0	20.4				mg/L	25	Standard
	Rb	85	936.7	9.7				ug/L	8	Standard
	Y	89	224995.2	1.5				ug/L	207393	Standard
>	**Rh**	103	66.7	26.3				ug/L	7	Standard
	Mo	98	619.7	2.5	**0.4292**	0.020	4.6	ug/L	9	Standard
	Ag	107	72.3	16.1	**-0.0040**	0.003	64.4	ug/L	79	Standard
	Cd	111	11.5	18.3	**0.0026**	0.001	56.5	mg/L	8	Standard
	Cd	114	26.0	17.2	**0.0005**	0.001	271.6	ug/L	8	Standard
>	**In**	115	390799.8	2.0				ug/L	344753	Standard
	Sn	118	336.7	6.9	**-0.0008**	0.006	755.3	ug/L	327	Standard
	Sb	123	120.1	12.0	**0.0219**	0.004	17.3	ug/L	64	Standard
	Ba	135	64124.5	2.7	**41.2868**	0.293	0.7	ug/L	22	Standard
	Ce	140	3722.1	4.3				ug/L	63	Standard
>	**Tb**	159	654808.0	2.2				ug/L	622049	Standard
	Ho	165	43.3	46.6				ug/L	12	Standard
	Tl	203	134.3	10.6	**0.0210**	0.002	11.8	ug/L	4	Standard
	Tl	205	123.3	16.4	**0.0252**	0.005	19.4	ug/L	5	Standard
	Pb	206	434.3	0.7	**0.0436**	0.000	0.8	ug/L	163	Standard
	Pb	207	359.7	4.6	**0.0469**	0.005	9.8	ug/L	139	Standard
	Pb	208	1367.7	9.8	**0.0520**	0.010	19.6	ug/L	519	Standard
	U	238	192.3	10.2	**0.0420**	0.004	10.3	ug/L	4	Standard
>	**Bi**	209	372090.5	1.0				ug/L	331049	Standard

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Na	23	3.3	173.2	**-68.1066**	275.878	405.1	mg/L	0	Standard
Mg	24	1483.4	4.5	**3.2426**	0.167	5.1	mg/L	7	Standard
K	39	43.3	48.0	**0.1162**	0.171	147.0	mg/L	33	Standard
Ca	43	105.0	33.3	**13.0357**	12.903	99.0	mg/L	80	Standard
Fe	54	442.7	3.4	**0.6661**	0.036	5.5	mg/L	81	Standard
Fe	57	196.7	19.3	**0.6892**	0.297	43.1	mg/L	93	Standard
> **Sc-1**	45	17301.5	1.1				mg/L	15221	Standard
Cl	35	44655.7	1.2				ug/L	40209	Standard
Kr	83	4.0	25.0				ug/L	4	Standard
Br	81	933.4	4.5				ug/L	303	Standard
P	31	15993.4	3.8				ug/L	14097	Standard
S	34	3392.0	2.1				ug/L	2990	Standard
Sr	88	138.3	27.6				ug/L	50	Standard
C	12	340.0	20.6				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	81.3	25.7				mg/L	3	Standard
Ho-1	165	43.3	46.6				mg/L	12	Standard
Er	166	43.3	35.3				mg/L	7	Standard
I	127	85449.1	5.8				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.140	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.596	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.357
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		112.397
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Lower	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, November 16, 2015 19:56:51
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	31833.4	0.7				ug/L	29272	Standard
	Be	9	29436.9	3.2	**51.9784**	1.644	3.2	ug/L	7	Standard
	Al	27	2359336.7	1.4	**50.0465**	1.060	2.1	ug/L	318	Standard
	Sc	45	16881.1	2.3				ug/L	15221	Standard
	Ti	47	14056.2	1.3	**100.8308**	2.001	2.0	ug/L	262	Standard
	V	51	181905.2	2.7	**50.6269**	0.693	1.4	ug/L	874	Standard
	Cr	52	164309.8	2.3	**49.2841**	0.859	1.7	ug/L	4335	Standard
	Cr	53	20006.5	3.2	**47.5682**	0.436	0.9	ug/L	200	Standard
	Mn	55	161581.9	3.1	**47.9968**	0.124	0.3	ug/L	830	Standard
	Co	59	169576.9	2.9	**49.5924**	0.360	0.7	ug/L	75	Standard
	Ni	60	47064.0	3.2	**50.0090**	0.763	1.5	ug/L	98	Standard
	Cu	65	47524.8	2.5	**50.6223**	0.933	1.8	ug/L	201	Standard
	Zn	66	28475.4	2.6	**51.4335**	0.594	1.2	ug/L	211	Standard
>	**Ge**	72	215999.9	2.8				ug/L	201509	Standard
	As	75	33038.7	1.4	**52.7977**	0.900	1.7	ug/L	-72	Standard
	Se	82	3031.9	1.8	**53.8852**	1.162	2.2	ug/L	6	Standard
	Se-1	77	1915.8	3.3	**53.7645**	0.491	0.9	ug/L	42	Standard
>	**Ga**	71	31.7	24.1				mg/L	25	Standard
	Rb	85	403.3	4.4				ug/L	8	Standard
	Y	89	222729.2	2.7				ug/L	207393	Standard
>	**Rh**	103	21.7	35.3				ug/L	7	Standard
	Mo	98	150049.5	1.4	**108.6579**	0.969	0.9	ug/L	9	Standard
	Ag	107	208228.2	2.3	**47.7981**	0.522	1.1	ug/L	79	Standard
	Cd	111	73972.0	1.3	**51.0708**	0.229	0.4	mg/L	8	Standard
	Cd	114	181121.6	3.2	**51.5506**	0.952	1.8	ug/L	8	Standard
>	**In**	115	388784.4	1.6				ug/L	344753	Standard
	Sn	118	198098.5	1.5	**48.3526**	0.283	0.6	ug/L	327	Standard
	Sb	123	200222.9	1.7	**50.0763**	0.351	0.7	ug/L	64	Standard
	Ba	135	73561.2	1.8	**47.6160**	0.316	0.7	ug/L	22	Standard
	Ce	140	43.3	33.3				ug/L	63	Standard
>	**Tb**	159	652735.8	0.8				ug/L	622049	Standard
	Ho	165	5.0	173.2				ug/L	12	Standard
	Tl	203	304139.7	1.6	**50.2628**	0.308	0.6	ug/L	4	Standard
	Tl	205	202351.4	3.0	**48.3988**	0.906	1.9	ug/L	5	Standard
	Pb	206	208452.9	2.2	**48.9892**	0.601	1.2	ug/L	163	Standard
	Pb	207	188831.7	1.8	**48.9914**	0.444	0.9	ug/L	139	Standard
	Pb	208	656479.0	2.2	**49.8310**	0.276	0.6	ug/L	519	Standard
	U	238	220306.0	2.3	**48.6102**	0.730	1.5	ug/L	4	Standard
>	**Bi**	209	365582.7	2.0				ug/L	331049	Standard

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Na	23	0.0		**91.1719**	0.000	0.0	mg/L	0	Standard
Mg	24	2255.2	6.0	**5.0654**	0.236	4.7	mg/L	7	Standard
K	39	570.0	9.3	**4.5509**	0.386	8.5	mg/L	33	Standard
Ca	43	76.7	26.4	**2.9135**	7.481	256.8	mg/L	80	Standard
Fe	54	2676.1	3.2	**5.0989**	0.287	5.6	mg/L	81	Standard
Fe	57	828.4	1.9	**5.6953**	0.235	4.1	mg/L	93	Standard
> **Sc-1**	45	16881.1	2.3				mg/L	15221	Standard
Cl	35	44802.2	1.9				ug/L	40209	Standard
Kr	83	4.0	50.0				ug/L	4	Standard
Br	81	433.3	11.8				ug/L	303	Standard
P	31	16410.6	1.6				ug/L	14097	Standard
S	34	3633.8	6.9				ug/L	2990	Standard
Sr	88	46.7	32.7				ug/L	50	Standard
C	12	283.3	10.8				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	-0.5	0.0				mg/L	3	Standard
Ho-1	165	5.0	173.2				mg/L	12	Standard
Er	166	10.0					mg/L	7	Standard
I	127	2821.9	33.0				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	103.957		
Al	27	100.093		
Sc	45			
Ti	47	100.831		
V	51	101.254		
Cr	52	98.568		
Cr	53			
Mn	55	95.994		
Co	59	99.185		
Ni	60	100.018		
Cu	65	101.245		
Zn	66	102.867		
> Ge	72		107.191	
As	75	105.595		
Se	82	107.770		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	108.658		
Ag	107	95.596		
Cd	111	102.142		
Cd	114			
> In	115			112.772
Sn	118	96.705		
Sb	123	100.153		
Ba	135	95.232		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.526		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.662		
U	238	97.220		
> Bi	209			110.431
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, November 16, 2015 20:00:02
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	30666.0	4.6				ug/L	29272	Standard
	Be	9	8.3	91.7	**0.0041**	0.015	359.0	ug/L	7	Standard
	Al	27	1143.4	39.0	**0.0085**	0.009	107.0	ug/L	318	Standard
	Sc	45	16010.1	4.5				ug/L	15221	Standard
	Ti	47	81.0	21.5	**-1.3368**	0.121	9.1	ug/L	262	Standard
	V	51	810.7	2.2	**-0.0134**	0.012	87.3	ug/L	874	Standard
	Cr	52	3918.5	4.0	**-0.1798**	0.016	8.9	ug/L	4335	Standard
	Cr	53	230.0	5.8	**0.0519**	0.042	80.2	ug/L	200	Standard
	Mn	55	744.0	3.6	**-0.0785**	0.002	2.7	ug/L	830	Standard
	Co	59	169.3	24.5	**0.0239**	0.011	46.6	ug/L	75	Standard
	Ni	60	133.7	4.3	**0.0101**	0.006	61.5	ug/L	98	Standard
	Cu	65	186.3	11.5	**-0.0142**	0.018	129.2	ug/L	201	Standard
	Zn	66	201.7	11.0	**-0.1395**	0.032	22.6	ug/L	211	Standard
>	**Ge**	72	211304.4	2.9				ug/L	201509	Standard
	As	75	-23.8	103.1	**0.0704**	0.039	55.9	ug/L	-72	Standard
	Se	82	12.0	43.7	**-0.0168**	0.100	593.1	ug/L	6	Standard
	Se-1	77	31.7	12.8	**-0.1291**	0.097	75.1	ug/L	42	Standard
>	**Ga**	71	11.7	24.7				mg/L	25	Standard
	Rb	85	11.7	65.5				ug/L	8	Standard
	Y	89	219521.2	4.8				ug/L	207393	Standard
>	**Rh**	103	11.7	65.5				ug/L	7	Standard
	Mo	98	159.7	24.9	**0.1010**	0.027	26.6	ug/L	9	Standard
	Ag	107	144.0	23.7	**0.0134**	0.007	54.8	ug/L	79	Standard
	Cd	111	27.7	64.9	**0.0142**	0.012	86.7	mg/L	8	Standard
	Cd	114	76.8	51.5	**0.0155**	0.011	71.8	ug/L	8	Standard
>	**In**	115	377733.6	2.7				ug/L	344753	Standard
	Sn	118	428.3	10.6	**0.0252**	0.012	46.7	ug/L	327	Standard
	Sb	123	171.4	12.9	**0.0361**	0.005	14.5	ug/L	64	Standard
	Ba	135	47.0	33.0	**0.0101**	0.010	95.2	ug/L	22	Standard
	Ce	140	11.7	89.2				ug/L	63	Standard
>	**Tb**	159	647043.5	3.9				ug/L	622049	Standard
	Ho	165	5.0	0.0				ug/L	12	Standard
	Tl	203	108.7	53.1	**0.0172**	0.009	54.1	ug/L	4	Standard
	Tl	205	73.3	41.1	**0.0138**	0.007	50.1	ug/L	5	Standard
	Pb	206	252.0	14.3	**0.0031**	0.006	206.5	ug/L	163	Standard
	Pb	207	210.0	17.4	**0.0102**	0.008	78.8	ug/L	139	Standard
	Pb	208	748.7	13.0	**0.0074**	0.006	86.5	ug/L	519	Standard
	U	238	75.3	51.6	**0.0170**	0.008	49.1	ug/L	4	Standard
>	**Bi**	209	360864.7	4.5				ug/L	331049	Standard

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Na	23	0.0		**91.1719**	0.000	0.0	mg/L	0	Standard
Mg	24	16.7	75.5	**0.0124**	0.030	244.0	mg/L	7	Standard
K	39	18.3	31.5	**-0.0750**	0.058	77.8	mg/L	33	Standard
Ca	43	43.3	40.5	**-9.2485**	6.800	73.5	mg/L	80	Standard
Fe	54	71.0	21.6	**-0.0394**	0.026	65.7	mg/L	81	Standard
Fe	57	115.0	45.4	**0.1441**	0.476	330.5	mg/L	93	Standard
> **Sc-1**	45	16010.1	4.5				mg/L	15221	Standard
Cl	35	44783.4	2.6				ug/L	40209	Standard
Kr	83	2.7	57.3				ug/L	4	Standard
Br	81	370.0	9.7				ug/L	303	Standard
P	31	15487.9	6.7				ug/L	14097	Standard
S	34	3537.1	3.1				ug/L	2990	Standard
Sr	88	68.3	23.5				ug/L	50	Standard
C	12	246.7	25.7				mg/L	167	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.3	86.9				mg/L	3	Standard
Ho-1	165	5.0	0.0				mg/L	12	Standard
Er	166	6.7	173.2				mg/L	7	Standard
I	127	3177.0	6.5				mg/L	3957	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		104.861	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.566
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.006
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Ti	47	

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Method 6020 - Summary Report

Sample ID: L1511066603
Sample Date/Time: Monday, November 16, 2015 20:03:14
Number of Replicates: 3
Autosampler Position: 352
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	30899.9	6.0				ug/L	29272	Standard
	Be	9	10.0	50.0	**0.0070**	0.010	146.9	ug/L	7	Standard
	Al	27	689348.1	4.7	**15.0604**	0.289	1.9	ug/L	318	Standard
	Sc	45	16934.5	3.4				ug/L	15221	Standard
	Ti	47	328.3	9.1	**0.4847**	0.188	38.8	ug/L	262	Standard
	V	51	4962.2	2.3	**1.1581**	0.014	1.2	ug/L	874	Standard
	Cr	52	5753.8	1.8	**0.3806**	0.048	12.5	ug/L	4335	Standard
	Cr	53	491.7	6.2	**0.6824**	0.091	13.3	ug/L	200	Standard
	Mn	55	5909.2	11.8	**1.4798**	0.193	13.0	ug/L	830	Standard
	Co	59	325.7	10.1	**0.0698**	0.009	12.5	ug/L	75	Standard
	Ni	60	404.7	5.9	**0.3006**	0.025	8.5	ug/L	98	Standard
	Cu	65	347.7	3.0	**0.1585**	0.007	4.6	ug/L	201	Standard
	Zn	66	3162.3	2.5	**5.3200**	0.104	2.0	ug/L	211	Standard
>	**Ge**	72	213539.8	1.4				ug/L	201509	Standard
	As	75	116.9	11.4	**0.2975**	0.019	6.4	ug/L	-72	Standard
	Se	82	36.3	10.9	**0.4177**	0.067	15.9	ug/L	6	Standard
	Se-1	77	71.0	10.2	**0.9995**	0.181	18.2	ug/L	42	Standard
>	**Ga**	71	60.0	22.0				mg/L	25	Standard
	Rb	85	1278.4	8.8				ug/L	8	Standard
	Y	89	222089.3	0.9				ug/L	207393	Standard
>	**Rh**	103	30.0	101.4				ug/L	7	Standard
	Mo	98	162.9	16.1	**0.1027**	0.019	18.2	ug/L	9	Standard
	Ag	107	112.0	39.9	**0.0057**	0.010	184.3	ug/L	79	Standard
	Cd	111	20.0	80.6	**0.0088**	0.011	128.9	mg/L	8	Standard
	Cd	114	39.5	68.9	**0.0046**	0.008	172.4	ug/L	8	Standard
>	**In**	115	381388.4	2.0				ug/L	344753	Standard
	Sn	118	453.3	22.1	**0.0305**	0.026	84.9	ug/L	327	Standard
	Sb	123	170.8	28.7	**0.0355**	0.012	35.1	ug/L	64	Standard
	Ba	135	65416.3	2.0	**43.1631**	0.105	0.2	ug/L	22	Standard
	Ce	140	8007.1	3.0				ug/L	63	Standard
>	**Tb**	159	640223.0	2.0				ug/L	622049	Standard
	Ho	165	93.3	34.9				ug/L	12	Standard
	Tl	203	249.3	27.7	**0.0407**	0.012	28.7	ug/L	4	Standard
	Tl	205	135.0	43.7	**0.0288**	0.014	50.2	ug/L	5	Standard
	Pb	206	612.3	9.7	**0.0882**	0.013	14.4	ug/L	163	Standard
	Pb	207	519.7	12.6	**0.0910**	0.017	18.7	ug/L	139	Standard
	Pb	208	1752.0	8.5	**0.0839**	0.011	12.7	ug/L	519	Standard
	U	238	991.0	3.3	**0.2206**	0.011	4.9	ug/L	4	Standard
>	**Bi**	209	363054.4	1.7				ug/L	331049	Standard

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Na	23	1.7	173.2	**8.9205**	142.464	1597.0	mg/L	0	Standard
Mg	24	1963.5	1.9	**4.3952**	0.070	1.6	mg/L	7	Standard
K	39	35.0	37.8	**0.0552**	0.115	209.1	mg/L	33	Standard
Ca	43	73.3	37.6	**1.7109**	11.290	659.9	mg/L	80	Standard
Fe	54	119.3	18.5	**0.0475**	0.035	73.6	mg/L	81	Standard
Fe	57	126.7	30.1	**0.1680**	0.274	163.3	mg/L	93	Standard
> **Sc-1**	45	16934.5	3.4				mg/L	15221	Standard
Cl	35	43861.4	0.8				ug/L	40209	Standard
Kr	83	3.0	57.7				ug/L	4	Standard
Br	81	950.0	6.4				ug/L	303	Standard
P	31	15915.0	2.7				ug/L	14097	Standard
S	34	3268.7	6.7				ug/L	2990	Standard
Sr	88	116.7	30.4				ug/L	50	Standard
C	12	293.3	16.8				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	156.0	17.0				mg/L	3	Standard
Ho-1	165	93.3	34.9				mg/L	12	Standard
Er	166	83.3	6.9				mg/L	7	Standard
I	127	66777.3	6.8				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.563	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.971	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	110.627
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	109.668
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1511066604
Sample Date/Time: Monday, November 16, 2015 20:06:25
Number of Replicates: 3
Autosampler Position: 353
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	31594.6	5.0				ug/L	29272	Standard
	Be	9	10.0	100.0	**0.0063**	0.018	292.0	ug/L	7	Standard
	Al	27	715251.8	5.1	**15.2855**	0.764	5.0	ug/L	318	Standard
	Sc	45	16999.5	5.3				ug/L	15221	Standard
	Ti	47	224.3	9.6	**-0.2810**	0.154	54.8	ug/L	262	Standard
	V	51	4107.1	4.9	**0.9177**	0.061	6.7	ug/L	874	Standard
	Cr	52	5330.6	3.4	**0.2500**	0.062	25.0	ug/L	4335	Standard
	Cr	53	456.7	2.3	**0.5976**	0.028	4.7	ug/L	200	Standard
	Mn	55	3935.8	3.0	**0.8856**	0.037	4.2	ug/L	830	Standard
	Co	59	198.0	9.6	**0.0321**	0.005	17.1	ug/L	75	Standard
	Ni	60	333.0	4.8	**0.2237**	0.018	8.2	ug/L	98	Standard
	Cu	65	431.3	5.3	**0.2494**	0.023	9.2	ug/L	201	Standard
	Zn	66	5234.9	3.0	**9.1537**	0.260	2.8	ug/L	211	Standard
>	**Ge**	72	213326.0	0.4				ug/L	201509	Standard
	As	75	74.4	58.0	**0.2291**	0.069	30.3	ug/L	-72	Standard
	Se	82	40.0	26.8	**0.4866**	0.193	39.7	ug/L	6	Standard
	Se-1	77	65.3	5.8	**0.8387**	0.101	12.1	ug/L	42	Standard
>	**Ga**	71	36.7	47.9				mg/L	25	Standard
	Rb	85	1558.4	10.3				ug/L	8	Standard
	Y	89	225927.4	2.0				ug/L	207393	Standard
>	**Rh**	103	18.3	41.7				ug/L	7	Standard
	Mo	98	234.9	5.4	**0.1547**	0.008	5.2	ug/L	9	Standard
	Ag	107	70.3	11.5	**-0.0042**	0.002	46.9	ug/L	79	Standard
	Cd	111	8.5	0.4	**0.0007**	0.000	9.9	mg/L	8	Standard
	Cd	114	8.9	62.7	**-0.0043**	0.002	36.7	ug/L	8	Standard
>	**In**	115	384017.9	0.8				ug/L	344753	Standard
	Sn	118	353.3	8.3	**0.0047**	0.007	140.9	ug/L	327	Standard
	Sb	123	116.2	11.7	**0.0214**	0.004	16.4	ug/L	64	Standard
	Ba	135	34779.9	2.3	**22.7808**	0.439	1.9	ug/L	22	Standard
	Ce	140	2481.9	6.2				ug/L	63	Standard
>	**Tb**	159	632193.9	1.1				ug/L	622049	Standard
	Ho	165	38.3	32.8				ug/L	12	Standard
	Tl	203	155.3	4.9	**0.0249**	0.001	5.9	ug/L	4	Standard
	Tl	205	111.7	11.3	**0.0229**	0.003	14.0	ug/L	5	Standard
	Pb	206	371.7	1.5	**0.0308**	0.001	4.9	ug/L	163	Standard
	Pb	207	318.3	5.9	**0.0380**	0.005	13.9	ug/L	139	Standard
	Pb	208	1169.0	2.7	**0.0388**	0.003	7.5	ug/L	519	Standard
	U	238	1235.1	1.0	**0.2732**	0.003	1.1	ug/L	4	Standard
>	**Bi**	209	365056.0	0.9				ug/L	331049	Standard

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Na	23	0.0		**91.1719**	0.000	0.0	mg/L	0	Standard
Mg	24	1018.4	6.3	**2.2654**	0.253	11.2	mg/L	7	Standard
K	39	50.0	17.3	**0.1768**	0.054	30.7	mg/L	33	Standard
Ca	43	56.7	35.7	**-4.7027**	9.242	196.5	mg/L	80	Standard
Fe	54	79.3	18.9	**-0.0296**	0.038	128.1	mg/L	81	Standard
Fe	57	130.0	7.7	**0.1939**	0.025	12.9	mg/L	93	Standard
> **Sc-1**	45	16999.5	5.3				mg/L	15221	Standard
Cl	35	44070.7	1.3				ug/L	40209	Standard
Kr	83	4.3	13.3				ug/L	4	Standard
Br	81	920.0	11.8				ug/L	303	Standard
P	31	15516.3	3.1				ug/L	14097	Standard
S	34	3187.0	4.4				ug/L	2990	Standard
Sr	88	121.7	25.1				ug/L	50	Standard
C	12	290.0	11.9				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	58.1	34.9				mg/L	3	Standard
Ho-1	165	38.3	32.8				mg/L	12	Standard
Er	166	40.0	25.0				mg/L	7	Standard
I	127	98864.9	2.2				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.936	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.864	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.389
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.272
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1511066605
Sample Date/Time: Monday, November 16, 2015 20:09:36
Number of Replicates: 3
Autosampler Position: 354
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	31985.4	2.2				ug/L	29272	Standard
	Be	9	6.7	43.3	**0.0002**	0.005	2408.4	ug/L	7	Standard
	Al	27	690598.7	1.6	**14.5676**	0.086	0.6	ug/L	318	Standard
	Sc	45	17403.3	4.3				ug/L	15221	Standard
	Ti	47	246.0	9.8	**-0.1144**	0.165	144.5	ug/L	262	Standard
	V	51	7435.2	1.7	**1.8677**	0.027	1.5	ug/L	874	Standard
	Cr	52	5110.9	2.2	**0.1872**	0.030	16.3	ug/L	4335	Standard
	Cr	53	413.3	13.3	**0.4957**	0.131	26.5	ug/L	200	Standard
	Mn	55	6582.8	3.3	**1.6943**	0.069	4.1	ug/L	830	Standard
	Co	59	234.3	6.4	**0.0431**	0.004	9.4	ug/L	75	Standard
	Ni	60	357.0	2.0	**0.2510**	0.007	2.6	ug/L	98	Standard
	Cu	65	283.7	5.2	**0.0907**	0.014	15.8	ug/L	201	Standard
	Zn	66	1981.8	4.0	**3.1587**	0.120	3.8	ug/L	211	Standard
>	**Ge**	72	212527.2	0.8				ug/L	201509	Standard
	As	75	142.1	5.0	**0.3393**	0.011	3.2	ug/L	-72	Standard
	Se	82	22.7	20.4	**0.1749**	0.081	46.3	ug/L	6	Standard
	Se-1	77	57.0	17.3	**0.6027**	0.277	45.9	ug/L	42	Standard
>	**Ga**	71	50.0	43.6				mg/L	25	Standard
	Rb	85	880.0	7.6				ug/L	8	Standard
	Y	89	223863.4	0.5				ug/L	207393	Standard
>	**Rh**	103	30.0	66.7				ug/L	7	Standard
	Mo	98	81.5	9.9	**0.0424**	0.006	14.2	ug/L	9	Standard
	Ag	107	69.7	11.5	**-0.0043**	0.002	42.0	ug/L	79	Standard
	Cd	111	7.5	20.3	**-0.0000**	0.001	3757.3	mg/L	8	Standard
	Cd	114	17.3	46.1	**-0.0019**	0.002	121.6	ug/L	8	Standard
>	**In**	115	383140.7	0.3				ug/L	344753	Standard
	Sn	118	350.0	11.2	**0.0042**	0.010	238.3	ug/L	327	Standard
	Sb	123	110.2	10.5	**0.0199**	0.003	15.0	ug/L	64	Standard
	Ba	135	31123.3	0.8	**20.4305**	0.105	0.5	ug/L	22	Standard
	Ce	140	3195.3	1.3				ug/L	63	Standard
>	**Tb**	159	636818.3	1.1				ug/L	622049	Standard
	Ho	165	45.0	11.1				ug/L	12	Standard
	Tl	203	136.7	9.1	**0.0218**	0.002	9.9	ug/L	4	Standard
	Tl	205	86.7	29.0	**0.0169**	0.006	35.4	ug/L	5	Standard
	Pb	206	367.0	2.1	**0.0297**	0.002	7.8	ug/L	163	Standard
	Pb	207	321.0	13.3	**0.0386**	0.011	29.2	ug/L	139	Standard
	Pb	208	1157.0	3.7	**0.0379**	0.004	9.8	ug/L	519	Standard
	U	238	2039.1	2.1	**0.4509**	0.011	2.3	ug/L	4	Standard
>	**Bi**	209	365080.8	0.6				ug/L	331049	Standard

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Na	23	3.3	86.6	**-65.0455**	135.621	208.5	mg/L	0	Standard
Mg	24	1705.1	4.2	**3.7166**	0.298	8.0	mg/L	7	Standard
K	39	41.7	36.7	**0.1042**	0.134	129.0	mg/L	33	Standard
Ca	43	103.3	19.6	**12.4455**	8.772	70.5	mg/L	80	Standard
Fe	54	92.7	17.0	**-0.0097**	0.022	230.7	mg/L	81	Standard
Fe	57	115.0	4.3	**0.0568**	0.013	22.5	mg/L	93	Standard
Sc-1	45	17403.3	4.3				mg/L	15221	Standard
Cl	35	45859.3	1.0				ug/L	40209	Standard
Kr	83	4.0	66.1				ug/L	4	Standard
Br	81	860.0	9.3				ug/L	303	Standard
P	31	15150.9	4.6				ug/L	14097	Standard
S	34	3192.0	1.0				ug/L	2990	Standard
Sr	88	130.0	16.8				ug/L	50	Standard
C	12	260.0	30.8				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	77.4	34.2				mg/L	3	Standard
Ho-1	165	45.0	11.1				mg/L	12	Standard
Er	166	53.3	28.6				mg/L	7	Standard
I	127	55667.1	3.0				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		109.271	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		105.468	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.135
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.280
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1511066606
Sample Date/Time: Monday, November 16, 2015 20:12:47
Number of Replicates: 3
Autosampler Position: 355
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	30676.1	5.5				ug/L	29272	Standard
	Be	9	1.7	173.2	**-0.0087**	0.005	57.9	ug/L	7	Standard
	Al	27	602783.6	4.5	**13.2611**	0.240	1.8	ug/L	318	Standard
	Sc	45	16709.2	1.7				ug/L	15221	Standard
	Ti	47	109.0	3.2	**-1.1254**	0.026	2.3	ug/L	262	Standard
	V	51	7387.7	4.2	**1.8686**	0.048	2.6	ug/L	874	Standard
	Cr	52	5898.8	3.8	**0.4472**	0.050	11.1	ug/L	4335	Standard
	Cr	53	523.3	12.3	**0.7729**	0.146	18.9	ug/L	200	Standard
	Mn	55	1019.0	8.0	**0.0059**	0.022	376.0	ug/L	830	Standard
	Co	59	170.3	3.0	**0.0244**	0.001	5.9	ug/L	75	Standard
	Ni	60	295.3	12.4	**0.1861**	0.035	18.6	ug/L	98	Standard
	Cu	65	238.7	7.9	**0.0439**	0.024	53.7	ug/L	201	Standard
	Zn	66	2525.5	2.5	**4.2016**	0.133	3.2	ug/L	211	Standard
>	**Ge**	72	211027.8	2.0				ug/L	201509	Standard
	As	75	132.3	15.5	**0.3246**	0.030	9.1	ug/L	-72	Standard
	Se	82	23.0	27.0	**0.1848**	0.119	64.3	ug/L	6	Standard
	Se-1	77	52.7	11.1	**0.4903**	0.189	38.4	ug/L	42	Standard
>	**Ga**	71	20.0	25.0				mg/L	25	Standard
	Rb	85	280.0	17.2				ug/L	8	Standard
	Y	89	221117.1	1.8				ug/L	207393	Standard
>	**Rh**	103	23.3	61.9				ug/L	7	Standard
	Mo	98	93.2	4.4	**0.0518**	0.004	7.1	ug/L	9	Standard
	Ag	107	69.3	22.4	**-0.0042**	0.004	83.7	ug/L	79	Standard
	Cd	111	6.2	33.7	**-0.0009**	0.002	174.9	mg/L	8	Standard
	Cd	114	20.7	50.3	**-0.0008**	0.003	363.5	ug/L	8	Standard
>	**In**	115	378592.9	1.9				ug/L	344753	Standard
	Sn	118	345.0	8.7	**0.0039**	0.007	185.4	ug/L	327	Standard
	Sb	123	98.1	2.6	**0.0172**	0.001	6.4	ug/L	64	Standard
	Ba	135	29876.1	3.2	**19.8454**	0.421	2.1	ug/L	22	Standard
	Ce	140	118.3	20.0				ug/L	63	Standard
>	**Tb**	159	633506.6	2.2				ug/L	622049	Standard
	Ho	165	13.3	21.7				ug/L	12	Standard
	Tl	203	128.3	2.0	**0.0206**	0.001	2.9	ug/L	4	Standard
	Tl	205	83.3	15.1	**0.0162**	0.003	15.9	ug/L	5	Standard
	Pb	206	220.3	8.4	**-0.0045**	0.003	69.9	ug/L	163	Standard
	Pb	207	193.0	4.2	**0.0058**	0.002	40.8	ug/L	139	Standard
	Pb	208	673.0	6.0	**0.0015**	0.003	177.5	ug/L	519	Standard
	U	238	929.0	0.3	**0.2073**	0.005	2.6	ug/L	4	Standard
>	**Bi**	209	362167.0	2.5				ug/L	331049	Standard

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Na	23	3.3	173.2	**-71.5196**	281.790	394.0	mg/L	0	Standard
Mg	24	1301.7	4.6	**2.9430**	0.121	4.1	mg/L	7	Standard
K	39	36.7	55.1	**0.0745**	0.179	240.0	mg/L	33	Standard
Ca	43	80.0	22.5	**4.5655**	6.727	147.4	mg/L	80	Standard
Fe	54	72.7	17.6	**-0.0413**	0.027	66.4	mg/L	81	Standard
Fe	57	98.3	14.7	**-0.0395**	0.110	279.7	mg/L	93	Standard
Sc-1	45	16709.2	1.7				mg/L	15221	Standard
Cl	35	45133.8	0.8				ug/L	40209	Standard
Kr	83	3.0	57.7				ug/L	4	Standard
Br	81	756.7	20.3				ug/L	303	Standard
P	31	15621.4	2.3				ug/L	14097	Standard
S	34	3288.7	1.9				ug/L	2990	Standard
Sr	88	100.0	35.0				ug/L	50	Standard
C	12	216.7	37.3				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.0	100.4				mg/L	3	Standard
Ho-1	165	13.3	21.7				mg/L	12	Standard
Er	166	13.3	43.3				mg/L	7	Standard
I	127	10857.2	5.9				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		104.798	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		104.724	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.816
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.400
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Lower	Ti	47	

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Method 6020 - Summary Report

Sample ID: L1511066607
Sample Date/Time: Monday, November 16, 2015 20:15:58
Number of Replicates: 3
Autosampler Position: 356
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	30764.6	3.1				ug/L	29272	Standard
	Be	9	13.3	108.3	**0.0124**	0.025	205.3	ug/L	7	Standard
	Al	27	1218722.0	1.2	**26.7510**	0.557	2.1	ug/L	318	Standard
	Sc	45	16839.4	3.3				ug/L	15221	Standard
	Ti	47	176.3	14.4	**-0.6213**	0.176	28.3	ug/L	262	Standard
	V	51	1203.3	5.9	**0.0994**	0.018	18.4	ug/L	874	Standard
	Cr	52	4171.2	3.5	**-0.0964**	0.044	45.9	ug/L	4335	Standard
	Cr	53	435.0	9.0	**0.5575**	0.090	16.1	ug/L	200	Standard
	Mn	55	1462985.3	2.6	**448.0017**	12.701	2.8	ug/L	830	Standard
	Co	59	4051.5	2.0	**1.1886**	0.025	2.1	ug/L	75	Standard
	Ni	60	1288.4	3.5	**1.2712**	0.037	2.9	ug/L	98	Standard
	Cu	65	303.0	7.1	**0.1147**	0.026	22.9	ug/L	201	Standard
	Zn	66	2813.3	1.4	**4.7448**	0.020	0.4	ug/L	211	Standard
>	**Ge**	72	210743.6	1.1				ug/L	201509	Standard
	As	75	592.9	4.7	**1.0782**	0.050	4.7	ug/L	-72	Standard
	Se	82	12.3	45.4	**-0.0122**	0.103	848.4	ug/L	6	Standard
	Se-1	77	62.0	10.6	**0.7648**	0.197	25.7	ug/L	42	Standard
>	**Ga**	71	63.3	35.6				mg/L	25	Standard
	Rb	85	951.7	7.1				ug/L	8	Standard
	Y	89	221320.2	2.2				ug/L	207393	Standard
>	**Rh**	103	55.0	24.1				ug/L	7	Standard
	Mo	98	572.1	2.0	**0.4048**	0.018	4.4	ug/L	9	Standard
	Ag	107	83.3	54.3	**-0.0012**	0.010	819.0	ug/L	79	Standard
	Cd	111	7.9	111.9	**0.0002**	0.006	3282.9	mg/L	8	Standard
	Cd	114	32.0	50.4	**0.0024**	0.004	187.4	ug/L	8	Standard
>	**In**	115	381669.0	2.5				ug/L	344753	Standard
	Sn	118	360.0	10.5	**0.0070**	0.009	131.5	ug/L	327	Standard
	Sb	123	100.8	31.0	**0.0175**	0.007	41.3	ug/L	64	Standard
	Ba	135	62285.4	1.6	**41.0754**	0.742	1.8	ug/L	22	Standard
	Ce	140	3585.4	2.4				ug/L	63	Standard
>	**Tb**	159	635722.4	1.3				ug/L	622049	Standard
	Ho	165	60.0	22.0				ug/L	12	Standard
	Tl	203	176.7	25.1	**0.0285**	0.007	24.5	ug/L	4	Standard
	Tl	205	116.7	19.3	**0.0243**	0.006	24.4	ug/L	5	Standard
	Pb	206	436.7	5.1	**0.0467**	0.003	7.1	ug/L	163	Standard
	Pb	207	351.0	2.0	**0.0470**	0.003	6.0	ug/L	139	Standard
	Pb	208	1301.0	3.3	**0.0495**	0.003	5.7	ug/L	519	Standard
	U	238	165.0	22.9	**0.0369**	0.008	21.2	ug/L	4	Standard
>	**Bi**	209	362804.3	2.2				ug/L	331049	Standard

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Na	23	0.0		**91.1719**	0.000	0.0	mg/L	0	Standard
Mg	24	1371.7	2.8	**3.0803**	0.111	3.6	mg/L	7	Standard
K	39	36.7	15.7	**0.0692**	0.039	56.9	mg/L	33	Standard
Ca	43	88.3	14.2	**7.7139**	5.195	67.3	mg/L	80	Standard
Fe	54	417.9	7.7	**0.6404**	0.060	9.4	mg/L	81	Standard
Fe	57	210.0	33.3	**0.8442**	0.588	69.6	mg/L	93	Standard
> **Sc-1**	45	16839.4	3.3				mg/L	15221	Standard
Cl	35	43876.1	1.1				ug/L	40209	Standard
Kr	83	1.0	0.0				ug/L	4	Standard
Br	81	943.4	16.2				ug/L	303	Standard
P	31	15492.9	3.5				ug/L	14097	Standard
S	34	3268.7	7.9				ug/L	2990	Standard
Sr	88	141.7	30.8				ug/L	50	Standard
C	12	286.7	8.8				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	60.5	19.8				mg/L	3	Standard
Ho-1	165	60.0	22.0				mg/L	12	Standard
Er	166	60.0	16.7				mg/L	7	Standard
I	127	81703.2	3.0				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.100	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.583	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	110.708
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	109.592
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Lower	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1511067302
Sample Date/Time: Monday, November 16, 2015 20:19:09
Number of Replicates: 3
Autosampler Position: 357
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	31295.7	4.2				ug/L	29272	Standard
	Be	9	3.3	173.2	**-0.0058**	0.010	173.6	ug/L	7	Standard
	Al	27	778493.9	5.5	**16.8118**	1.289	7.7	ug/L	318	Standard
	Sc	45	16762.6	5.4				ug/L	15221	Standard
	Ti	47	84.3	15.2	**-1.3133**	0.109	8.3	ug/L	262	Standard
	V	51	879.3	10.7	**0.0047**	0.030	635.5	ug/L	874	Standard
	Cr	52	4446.3	1.4	**-0.0208**	0.047	226.1	ug/L	4335	Standard
	Cr	53	303.3	15.3	**0.2258**	0.101	44.6	ug/L	200	Standard
	Mn	55	1629.4	16.2	**0.1895**	0.082	43.2	ug/L	830	Standard
	Co	59	152.0	10.5	**0.0186**	0.005	26.7	ug/L	75	Standard
	Ni	60	272.0	13.5	**0.1595**	0.045	28.5	ug/L	98	Standard
	Cu	65	258.0	6.3	**0.0631**	0.024	37.4	ug/L	201	Standard
	Zn	66	2408.5	1.5	**3.9512**	0.131	3.3	ug/L	211	Standard
>	**Ge**	72	212564.4	2.0				ug/L	201509	Standard
	As	75	-8.0	298.8	**0.0958**	0.039	40.3	ug/L	-72	Standard
	Se	82	13.1	50.0	**-0.0005**	0.115	20933.3	ug/L	6	Standard
	Se-1	77	36.3	16.6	**0.0009**	0.160	17276.4	ug/L	42	Standard
>	**Ga**	71	30.0	28.9				mg/L	25	Standard
	Rb	85	323.3	3.6				ug/L	8	Standard
	Y	89	222192.9	2.3				ug/L	207393	Standard
>	**Rh**	103	15.0	33.3				ug/L	7	Standard
	Mo	98	4315.6	3.0	**3.1394**	0.175	5.6	ug/L	9	Standard
	Ag	107	65.3	9.2	**-0.0054**	0.001	18.4	ug/L	79	Standard
	Cd	111	8.0	59.6	**0.0002**	0.003	1292.8	mg/L	8	Standard
	Cd	114	34.3	85.7	**0.0029**	0.008	286.6	ug/L	8	Standard
>	**In**	115	385276.9	2.7				ug/L	344753	Standard
	Sn	118	338.3	10.1	**0.0009**	0.010	1078.2	ug/L	327	Standard
	Sb	123	160.3	9.0	**0.0324**	0.003	8.0	ug/L	64	Standard
	Ba	135	10972.0	1.6	**7.1532**	0.264	3.7	ug/L	22	Standard
	Ce	140	48.3	52.1				ug/L	63	Standard
>	**Tb**	159	642952.6	3.0				ug/L	622049	Standard
	Ho	165	6.7	43.3				ug/L	12	Standard
	Tl	203	12.7	12.1	**0.0013**	0.000	15.0	ug/L	4	Standard
	Tl	205	3.3	86.6	**-0.0031**	0.001	22.4	ug/L	5	Standard
	Pb	206	230.3	3.9	**-0.0021**	0.003	148.3	ug/L	163	Standard
	Pb	207	190.7	2.9	**0.0051**	0.002	41.7	ug/L	139	Standard
	Pb	208	698.7	2.7	**0.0034**	0.002	57.4	ug/L	519	Standard
	U	238	912.0	3.7	**0.2035**	0.014	7.0	ug/L	4	Standard
>	**Bi**	209	362723.0	3.3				ug/L	331049	Standard

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Na	23	3.3	86.6	**-72.3520**	142.223	196.6	mg/L	0	Standard
Mg	24	1003.4	5.5	**2.2556**	0.078	3.5	mg/L	7	Standard
K	39	40.0	25.0	**0.0988**	0.079	80.4	mg/L	33	Standard
Ca	43	68.3	34.6	**0.0426**	9.631	22580.7	mg/L	80	Standard
Fe	54	74.3	24.7	**-0.0397**	0.028	71.3	mg/L	81	Standard
Fe	57	115.0	15.7	**0.0956**	0.185	193.1	mg/L	93	Standard
> **Sc-1**	45	16762.6	5.4				mg/L	15221	Standard
Cl	35	44645.7	0.5				ug/L	40209	Standard
Kr	83	4.7	12.4				ug/L	4	Standard
Br	81	606.7	8.1				ug/L	303	Standard
P	31	14428.5	1.7				ug/L	14097	Standard
S	34	3285.4	1.7				ug/L	2990	Standard
Sr	88	71.7	8.1				ug/L	50	Standard
C	12	246.7	25.7				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	2.5	239.4				mg/L	3	Standard
Ho-1	165	6.7	43.3				mg/L	12	Standard
Er	166	16.7	69.3				mg/L	7	Standard
I	127	4839.1	16.2				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.915	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.487	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.755
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.568
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Lower	Ti	47	

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Method 6020 - Summary Report

Sample ID: L1511067304
Sample Date/Time: Monday, November 16, 2015 20:22:20
Number of Replicates: 3
Autosampler Position: 358
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	32189.2	3.3				ug/L	29272	Standard
	Be	9	3.3	86.6	**-0.0058**	0.005	87.6	ug/L	7	Standard
	Al	27	1406267.6	2.6	**29.5010**	0.775	2.6	ug/L	318	Standard
	Sc	45	16742.6	3.5				ug/L	15221	Standard
	Ti	47	91.7	2.7	**-1.2618**	0.018	1.4	ug/L	262	Standard
	V	51	957.7	5.3	**0.0262**	0.016	59.9	ug/L	874	Standard
	Cr	52	4609.7	1.8	**0.0263**	0.023	88.0	ug/L	4335	Standard
	Cr	53	375.0	10.7	**0.3999**	0.097	24.3	ug/L	200	Standard
	Mn	55	38323.8	2.5	**11.3087**	0.297	2.6	ug/L	830	Standard
	Co	59	191.0	4.7	**0.0301**	0.003	9.5	ug/L	75	Standard
	Ni	60	290.3	10.2	**0.1780**	0.031	17.3	ug/L	98	Standard
	Cu	65	256.3	9.6	**0.0604**	0.028	45.8	ug/L	201	Standard
	Zn	66	1891.5	2.1	**2.9831**	0.091	3.1	ug/L	211	Standard
>	**Ge**	72	213071.4	0.5				ug/L	201509	Standard
	As	75	-6.3	93.3	**0.0988**	0.010	9.7	ug/L	-72	Standard
	Se	82	19.9	18.6	**0.1229**	0.069	55.7	ug/L	6	Standard
	Se-1	77	53.7	5.7	**0.5026**	0.081	16.0	ug/L	42	Standard
>	**Ga**	71	11.7	65.5				mg/L	25	Standard
	Rb	85	233.3	17.5				ug/L	8	Standard
	Y	89	223912.7	1.7				ug/L	207393	Standard
>	**Rh**	103	43.3	53.3				ug/L	7	Standard
	Mo	98	336.9	2.5	**0.2330**	0.006	2.7	ug/L	9	Standard
	Ag	107	72.0	15.5	**-0.0036**	0.003	74.0	ug/L	79	Standard
	Cd	111	9.0	35.4	**0.0011**	0.002	200.4	mg/L	8	Standard
	Cd	114	13.4	108.3	**-0.0029**	0.004	145.1	ug/L	8	Standard
>	**In**	115	378739.7	1.0				ug/L	344753	Standard
	Sn	118	306.7	13.1	**-0.0056**	0.011	191.9	ug/L	327	Standard
	Sb	123	91.5	14.5	**0.0155**	0.003	22.2	ug/L	64	Standard
	Ba	135	30236.5	2.2	**20.0777**	0.278	1.4	ug/L	22	Standard
	Ce	140	28.3	27.0				ug/L	63	Standard
>	**Tb**	159	640996.6	0.5				ug/L	622049	Standard
	Ho	165	6.7	43.3				ug/L	12	Standard
	Tl	203	145.3	7.2	**0.0234**	0.002	7.7	ug/L	4	Standard
	Tl	205	111.7	11.3	**0.0232**	0.003	14.0	ug/L	5	Standard
	Pb	206	236.3	11.0	**-0.0007**	0.006	872.0	ug/L	163	Standard
	Pb	207	188.7	4.4	**0.0046**	0.002	43.3	ug/L	139	Standard
	Pb	208	661.0	0.7	**0.0006**	0.001	125.2	ug/L	519	Standard
	U	238	1031.7	5.1	**0.2302**	0.010	4.5	ug/L	4	Standard
>	**Bi**	209	361980.8	0.9				ug/L	331049	Standard

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Na	23	0.0		**91.1719**	0.000	0.0	mg/L	0	Standard
Mg	24	3608.8	3.8	**8.1954**	0.322	3.9	mg/L	7	Standard
K	39	36.7	20.8	**0.0709**	0.055	77.9	mg/L	33	Standard
Ca	43	78.3	22.4	**4.0559**	7.676	189.3	mg/L	80	Standard
Fe	54	72.9	17.5	**-0.0416**	0.022	53.9	mg/L	81	Standard
Fe	57	76.7	16.4	**-0.2124**	0.100	47.1	mg/L	93	Standard
> **Sc-1**	45	16742.6	3.5				mg/L	15221	Standard
Cl	35	46892.5	0.8				ug/L	40209	Standard
Kr	83	4.0	43.3				ug/L	4	Standard
Br	81	1330.1	1.5				ug/L	303	Standard
P	31	14897.3	5.5				ug/L	14097	Standard
S	34	3375.4	6.1				ug/L	2990	Standard
Sr	88	108.3	11.6				ug/L	50	Standard
C	12	236.7	21.3				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.8	104.1				mg/L	3	Standard
Ho-1	165	6.7	43.3				mg/L	12	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	53693.4	2.7				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.967	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.738	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.858
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.343
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Lower	Ti	47	

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Method 6020 - Summary Report

Sample ID: L1511067308
Sample Date/Time: Monday, November 16, 2015 20:25:31
Number of Replicates: 3
Autosampler Position: 359
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	31569.7	9.1				ug/L	29272	Standard
	Be	9	5.0	100.0	**-0.0027**	0.009	337.5	ug/L	7	Standard
	Al	27	2303.5	44.4	**0.0331**	0.023	70.5	ug/L	318	Standard
	Sc	45	16113.6	5.5				ug/L	15221	Standard
	Ti	47	80.0	12.1	**-1.3250**	0.045	3.4	ug/L	262	Standard
	V	51	997.9	1.8	**0.0498**	0.019	37.9	ug/L	874	Standard
	Cr	52	4820.8	2.6	**0.1561**	0.044	28.0	ug/L	4335	Standard
	Cr	53	215.0	26.8	**0.0276**	0.121	439.2	ug/L	200	Standard
	Mn	55	1129.4	30.2	**0.0506**	0.106	210.1	ug/L	830	Standard
	Co	59	122.7	5.2	**0.0114**	0.002	21.7	ug/L	75	Standard
	Ni	60	128.7	9.3	**0.0090**	0.007	77.4	ug/L	98	Standard
	Cu	65	345.7	7.7	**0.1723**	0.011	6.4	ug/L	201	Standard
	Zn	66	986.7	2.0	**1.3872**	0.064	4.6	ug/L	211	Standard
>	**Ge**	72	204635.2	5.4				ug/L	201509	Standard
	As	75	-8.7	356.4	**0.0959**	0.050	52.5	ug/L	-72	Standard
	Se	82	19.5	26.8	**0.1346**	0.120	89.1	ug/L	6	Standard
	Se-1	77	39.7	13.9	**0.1405**	0.103	73.4	ug/L	42	Standard
>	**Ga**	71	10.0	50.0				mg/L	25	Standard
	Rb	85	43.3	26.6				ug/L	8	Standard
	Y	89	219568.2	6.0				ug/L	207393	Standard
>	**Rh**	103	5.0	0.0				ug/L	7	Standard
	Mo	98	15.2	23.6	**-0.0059**	0.003	59.0	ug/L	9	Standard
	Ag	107	68.0	10.6	**-0.0040**	0.003	65.9	ug/L	79	Standard
	Cd	111	8.0	25.2	**0.0006**	0.002	307.0	mg/L	8	Standard
	Cd	114	16.5	52.3	**-0.0019**	0.003	146.5	ug/L	8	Standard
>	**In**	115	369260.5	5.7				ug/L	344753	Standard
	Sn	118	315.0	16.7	**-0.0019**	0.009	468.2	ug/L	327	Standard
	Sb	123	75.0	12.1	**0.0117**	0.002	17.5	ug/L	64	Standard
	Ba	135	145.7	21.2	**0.0777**	0.017	21.5	ug/L	22	Standard
	Ce	140	25.0	20.0				ug/L	63	Standard
>	**Tb**	159	626473.7	5.5				ug/L	622049	Standard
	Ho	165	5.0	173.2				ug/L	12	Standard
	Tl	203	11.3	27.0	**0.0011**	0.001	53.9	ug/L	4	Standard
	Tl	205	5.0	100.0	**-0.0026**	0.001	46.8	ug/L	5	Standard
	Pb	206	198.0	7.3	**-0.0082**	0.004	48.5	ug/L	163	Standard
	Pb	207	180.0	10.4	**0.0037**	0.003	73.6	ug/L	139	Standard
	Pb	208	635.0	5.4	**0.0001**	0.001	893.1	ug/L	519	Standard
	U	238	10.7	100.2	**0.0028**	0.002	86.9	ug/L	4	Standard
>	**Bi**	209	351284.3	5.9				ug/L	331049	Standard

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Na	23	0.0		**91.1719**	0.000	0.0	mg/L	0	Standard
Mg	24	43.3	26.6	**0.0754**	0.030	39.3	mg/L	7	Standard
K	39	35.0	37.8	**0.0677**	0.105	155.6	mg/L	33	Standard
Ca	43	46.7	37.6	**-7.8363**	7.221	92.1	mg/L	80	Standard
Fe	54	97.3	12.3	**0.0158**	0.033	210.9	mg/L	81	Standard
Fe	57	101.7	5.7	**0.0194**	0.077	397.5	mg/L	93	Standard
Sc-1	45	16113.6	5.5				mg/L	15221	Standard
Cl	35	47509.7	2.8				ug/L	40209	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	456.7	13.9				ug/L	303	Standard
P	31	14456.9	1.4				ug/L	14097	Standard
S	34	3247.0	5.6				ug/L	2990	Standard
Sr	88	53.3	5.4				ug/L	50	Standard
C	12	246.7	35.4				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.2	106.7				mg/L	3	Standard
Ho-1	165	5.0	173.2				mg/L	12	Standard
Er	166	10.0	173.2				mg/L	7	Standard
I	127	3708.8	9.6				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		107.851	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.552	
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	107.109
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	106.112
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Lower	Ti	47	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, November 16, 2015 20:28:44
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	30552.4	1.8				ug/L	29272	Standard
	Be	9	28513.5	3.7	**52.4565**	1.610	3.1	ug/L	7	Standard
	Al	27	2306933.8	2.3	**50.9989**	1.748	3.4	ug/L	318	Standard
	Sc	45	15828.3	2.2				ug/L	15221	Standard
	Ti	47	13722.9	2.6	**102.0747**	4.581	4.5	ug/L	262	Standard
	V	51	177293.9	1.4	**51.1616**	1.608	3.1	ug/L	874	Standard
	Cr	52	162690.6	1.5	**50.6333**	1.953	3.9	ug/L	4335	Standard
	Cr	53	20333.6	1.7	**50.1515**	1.222	2.4	ug/L	200	Standard
	Mn	55	156189.2	2.5	**48.1217**	2.278	4.7	ug/L	830	Standard
	Co	59	166675.6	1.7	**50.5478**	1.891	3.7	ug/L	75	Standard
	Ni	60	46197.0	2.5	**50.9104**	2.284	4.5	ug/L	98	Standard
	Cu	65	46994.4	1.5	**51.9065**	1.928	3.7	ug/L	201	Standard
	Zn	66	27722.4	2.8	**51.9363**	2.607	5.0	ug/L	211	Standard
>	Ge	72	208408.0	2.3				ug/L	201509	Standard
	As	75	32283.6	0.9	**53.4784**	1.650	3.1	ug/L	-72	Standard
	Se	82	2959.8	2.1	**54.5386**	2.219	4.1	ug/L	6	Standard
	Se-1	77	1847.1	1.6	**53.7422**	1.180	2.2	ug/L	42	Standard
>	Ga	71	28.3	44.4				mg/L	25	Standard
	Rb	85	470.0	15.3				ug/L	8	Standard
	Y	89	218978.4	2.5				ug/L	207393	Standard
>	Rh	103	11.7	89.2				ug/L	7	Standard
	Mo	98	146629.6	0.9	**110.6816**	3.700	3.3	ug/L	9	Standard
	Ag	107	205629.8	1.4	**49.2173**	2.125	4.3	ug/L	79	Standard
	Cd	111	71762.9	1.4	**51.6427**	1.664	3.2	mg/L	8	Standard
	Cd	114	174069.0	0.4	**51.6514**	1.623	3.1	ug/L	8	Standard
>	In	115	373203.6	3.0				ug/L	344753	Standard
	Sn	118	195864.7	1.5	**49.8399**	1.886	3.8	ug/L	327	Standard
	Sb	123	196201.6	1.1	**51.1610**	2.098	4.1	ug/L	64	Standard
	Ba	135	71529.5	1.0	**48.2681**	1.730	3.6	ug/L	22	Standard
	Ce	140	63.3	9.1				ug/L	63	Standard
>	Tb	159	627985.7	4.2				ug/L	622049	Standard
	Ho	165	13.3	57.3				ug/L	12	Standard
	Tl	203	297472.9	1.6	**50.7119**	1.706	3.4	ug/L	4	Standard
	Tl	205	201038.7	2.2	**49.6041**	1.730	3.5	ug/L	5	Standard
	Pb	206	206241.6	0.6	**49.9953**	1.183	2.4	ug/L	163	Standard
	Pb	207	187390.4	1.1	**50.1498**	1.443	2.9	ug/L	139	Standard
	Pb	208	642539.2	1.9	**50.3183**	1.878	3.7	ug/L	519	Standard
	U	238	213346.9	0.7	**48.5572**	1.279	2.6	ug/L	4	Standard
>	Bi	209	354528.4	1.9				ug/L	331049	Standard

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Na	23	1.7	173.2	**2.6330**	153.354	5824.3	mg/L	0	Standard
Mg	24	2208.5	9.0	**5.2967**	0.523	9.9	mg/L	7	Standard
K	39	601.7	6.3	**5.1625**	0.460	8.9	mg/L	33	Standard
Ca	43	73.3	35.0	**3.7044**	11.001	297.0	mg/L	80	Standard
Fe	54	2628.4	7.2	**5.3447**	0.357	6.7	mg/L	81	Standard
Fe	57	815.0	10.7	**6.0230**	0.853	14.2	mg/L	93	Standard
> **Sc-1**	45	15828.3	2.2				mg/L	15221	Standard
Cl	35	44390.9	1.6				ug/L	40209	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	390.0	9.2				ug/L	303	Standard
P	31	16000.1	2.6				ug/L	14097	Standard
S	34	3465.4	2.9				ug/L	2990	Standard
Sr	88	73.3	23.9				ug/L	50	Standard
C	12	243.3	16.6				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.5	182.0				mg/L	3	Standard
Ho-1	165	13.3	57.3				mg/L	12	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	1438.4	2.4				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	104.913		
Al	27	101.998		
Sc	45			
Ti	47	102.075		
V	51	102.323		
Cr	52	101.267		
Cr	53			
Mn	55	96.243		
Co	59	101.096		
Ni	60	101.821		
Cu	65	103.813		
Zn	66	103.873		
> Ge	72		103.424	
As	75	106.957		
Se	82	109.077		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
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Rb	85			
Y	89			
Rh	103			
Mo	98	110.682		
Ag	107	98.435		
Cd	111	103.285		
Cd	114			
In	115		108.252	
Sn	118	99.680		
Sb	123	102.322		
Ba	135	96.536		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.424		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.637		
U	238	97.114		
Bi	209		107.092	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Mo	98	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, November 16, 2015 20:31:55
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	30180.1	4.2				ug/L	29272	Standard
	Be	9	11.7	24.7	**0.0103**	0.006	62.4	ug/L	7	Standard
	Al	27	425.0	59.4	**-0.0070**	0.005	77.9	ug/L	318	Standard
	Sc	45	15714.8	3.2				ug/L	15221	Standard
	Ti	47	72.0	7.7	**-1.3783**	0.036	2.6	ug/L	262	Standard
	V	51	700.3	0.9	**-0.0358**	0.005	13.8	ug/L	874	Standard
	Cr	52	3663.1	1.5	**-0.2062**	0.009	4.3	ug/L	4335	Standard
	Cr	53	205.0	12.9	**0.0145**	0.080	551.5	ug/L	200	Standard
	Mn	55	673.7	2.6	**-0.0902**	0.010	11.1	ug/L	830	Standard
	Co	59	119.0	5.9	**0.0107**	0.003	25.7	ug/L	75	Standard
	Ni	60	104.7	7.7	**-0.0161**	0.011	70.5	ug/L	98	Standard
	Cu	65	188.0	2.7	**-0.0024**	0.007	291.3	ug/L	201	Standard
	Zn	66	170.0	1.6	**-0.1831**	0.010	5.3	ug/L	211	Standard
>	**Ge**	72	201897.0	2.1				ug/L	201509	Standard
	As	75	-27.0	17.7	**0.0630**	0.009	14.3	ug/L	-72	Standard
	Se	82	15.1	24.0	**0.0508**	0.064	126.3	ug/L	6	Standard
	Se-1	77	34.0	28.1	**-0.0165**	0.274	1661.7	ug/L	42	Standard
>	**Ga**	71	13.3	57.3				mg/L	25	Standard
	Rb	85	13.3	78.1				ug/L	8	Standard
	Y	89	214599.2	1.0				ug/L	207393	Standard
>	**Rh**	103	8.3	69.3				ug/L	7	Standard
	Mo	98	103.7	5.4	**0.0625**	0.003	4.8	ug/L	9	Standard
	Ag	107	103.0	34.7	**0.0047**	0.009	186.4	ug/L	79	Standard
	Cd	111	12.8	58.6	**0.0041**	0.005	130.9	mg/L	8	Standard
	Cd	114	19.5	109.3	**-0.0010**	0.006	646.6	ug/L	8	Standard
>	**In**	115	364547.5	1.7				ug/L	344753	Standard
	Sn	118	390.0	16.8	**0.0189**	0.016	84.0	ug/L	327	Standard
	Sb	123	109.2	30.3	**0.0212**	0.009	44.1	ug/L	64	Standard
	Ba	135	31.7	22.8	**0.0009**	0.005	613.6	ug/L	22	Standard
	Ce	140	18.3	63.0				ug/L	63	Standard
>	**Tb**	159	619467.6	3.5				ug/L	622049	Standard
	Ho	165	1.7	173.2				ug/L	12	Standard
	Tl	203	48.7	74.3	**0.0076**	0.006	82.8	ug/L	4	Standard
	Tl	205	31.7	32.9	**0.0041**	0.002	59.8	ug/L	5	Standard
	Pb	206	190.0	8.3	**-0.0097**	0.005	51.0	ug/L	163	Standard
	Pb	207	178.3	15.5	**0.0038**	0.007	186.1	ug/L	139	Standard
	Pb	208	553.7	1.9	**-0.0059**	0.001	17.3	ug/L	519	Standard
	U	238	24.3	45.1	**0.0060**	0.002	41.8	ug/L	4	Standard
>	**Bi**	209	347499.8	2.6				ug/L	331049	Standard

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Na	23	0.0		**91.1719**	0.000	0.0	mg/L	0	Standard
Mg	24	13.3	21.7	**0.0047**	0.007	154.8	mg/L	7	Standard
K	39	26.7	28.6	**0.0023**	0.070	3038.6	mg/L	33	Standard
Ca	43	53.3	56.5	**-4.3237**	13.518	312.6	mg/L	80	Standard
Fe	54	79.3	21.7	**-0.0183**	0.036	196.0	mg/L	81	Standard
Fe	57	101.7	2.8	**0.0386**	0.017	43.2	mg/L	93	Standard
Sc-1	45	15714.8	3.2				mg/L	15221	Standard
Cl	35	43073.1	1.5				ug/L	40209	Standard
Kr	83	2.7	21.7				ug/L	4	Standard
Br	81	406.7	9.3				ug/L	303	Standard
P	31	15855.0	3.3				ug/L	14097	Standard
S	34	3278.7	3.1				ug/L	2990	Standard
Sr	88	70.0	12.4				ug/L	50	Standard
C	12	210.0	4.8				mg/L	167	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	9.5	102.6				mg/L	3	Standard
Ho-1	165	1.7	173.2				mg/L	12	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	2715.2	3.6				mg/L	3957	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.193	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	105.742	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	104.969	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Ti	47	

Sample ID: QC Std 7
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2.3 General Chemistry Data

2.3.1 Method 9056

2.3.1.1 Summary Data

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-07	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW13-111215	**Prep Method:**	9056	**Prep Date:**	11/13/2015 12:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/29/2015 17:57
Workgroup #:	WG546860	**Analyst:**	ALS	**Run Date:**	11/13/2015 19:26
Collect Date:	11/12/2015 08:40	**Dilution:**	5	**File ID:**	I1_111315-22
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	428	J	2.00	1.00	0.500
Nitrate	14797-55-8	1.00	U	2.00	1.00	0.500
Nitrite	14797-65-0	0.615	J	2.00	1.00	0.500
Sulfate	14808-79-8	367		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-07	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW13-111215	**Prep Method:**	9056	**Prep Date:**	11/13/2015 12:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/29/2015 17:57
Workgroup #:	WG546860	**Analyst:**	ALS	**Run Date:**	11/13/2015 19:44
Collect Date:	11/12/2015 08:40	**Dilution:**	25	**File ID:**	I1_111315-23
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	336		10.0	5.00	2.50
Nitrate	14797-55-8	5.00	U	10.0	5.00	2.50
Nitrite	14797-65-0	5.00	U	10.0	5.00	2.50
Sulfate	14808-79-8	318		50.0	25.0	12.5

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-09	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW14-111215	**Prep Method:**	9056	**Prep Date:**	11/13/2015 12:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/29/2015 17:57
Workgroup #:	WG546860	**Analyst:**	ALS	**Run Date:**	11/13/2015 20:01
Collect Date:	11/12/2015 09:50	**Dilution:**	5	**File ID:**	I1_111315-24
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	507	J	2.00	1.00	0.500
Nitrate	14797-55-8	1.00	U	2.00	1.00	0.500
Nitrite	14797-65-0	0.805	J	2.00	1.00	0.500
Sulfate	14808-79-8	385		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-09	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW14-111215	**Prep Method:**	9056	**Prep Date:**	11/13/2015 12:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/29/2015 17:57
Workgroup #:	WG546860	**Analyst:**	ALS	**Run Date:**	11/13/2015 20:19
Collect Date:	11/12/2015 09:50	**Dilution:**	25	**File ID:**	I1_111315-25
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	392		10.0	5.00	2.50
Nitrate	14797-55-8	5.00	U	10.0	5.00	2.50
Nitrite	14797-65-0	5.00	U	10.0	5.00	2.50
Sulfate	14808-79-8	327		50.0	25.0	12.5

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-11	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW11-111215	**Prep Method:**	9056	**Prep Date:**	11/13/2015 12:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/29/2015 17:57
Workgroup #:	WG546860	**Analyst:**	ALS	**Run Date:**	11/13/2015 20:37
Collect Date:	11/12/2015 11:00	**Dilution:**	5	**File ID:**	I1_111315-26
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	473	J	2.00	1.00	0.500
Nitrate	14797-55-8	1.00	U	2.00	1.00	0.500
Nitrite	14797-65-0	0.640	J	2.00	1.00	0.500
Sulfate	14808-79-8	439		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-11	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW11-111215	**Prep Method:**	9056	**Prep Date:**	11/13/2015 12:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/29/2015 17:57
Workgroup #:	WG546860	**Analyst:**	ALS	**Run Date:**	11/13/2015 21:30
Collect Date:	11/12/2015 11:00	**Dilution:**	25	**File ID:**	I1_111315-29
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	377		10.0	5.00	2.50
Nitrate	14797-55-8	5.00	U	10.0	5.00	2.50
Nitrite	14797-65-0	5.00	U	10.0	5.00	2.50
Sulfate	14808-79-8	382		50.0	25.0	12.5

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-13	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW06-111215	**Prep Method:**	9056	**Prep Date:**	11/13/2015 12:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/29/2015 17:57
Workgroup #:	WG546860	**Analyst:**	ALS	**Run Date:**	11/13/2015 21:48
Collect Date:	11/12/2015 13:25	**Dilution:**	1	**File ID:**	I1_111315-30
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	104	J	0.400	0.200	0.100
Nitrate	14797-55-8	0.196	J	0.400	0.200	0.100
Nitrite	14797-65-0	0.200	U	0.400	0.200	0.100
Sulfate	14808-79-8	39.8		2.00	1.00	0.500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-13	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW06-111215	**Prep Method:**	9056	**Prep Date:**	11/13/2015 12:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/29/2015 17:57
Workgroup #:	WG546860	**Analyst:**	ALS	**Run Date:**	11/13/2015 22:05
Collect Date:	11/12/2015 13:25	**Dilution:**	5	**File ID:**	I1_111315-31
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	97.9		2.00	1.00	0.500
Nitrate	14797-55-8	1.00	U	2.00	1.00	0.500
Nitrite	14797-65-0	1.00	U	2.00	1.00	0.500
Sulfate	14808-79-8	37.2		10.0	5.00	2.50

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-15	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW12-111215	**Prep Method:**	9056	**Prep Date:**	11/13/2015 12:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/29/2015 17:57
Workgroup #:	WG546860	**Analyst:**	ALS	**Run Date:**	11/13/2015 22:23
Collect Date:	11/12/2015 14:35	**Dilution:**	10	**File ID:**	I1_111315-32
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1540	J	4.00	2.00	1.00
Nitrate	14797-55-8	2.00	U	4.00	2.00	1.00
Nitrite	14797-65-0	1.93	J	4.00	2.00	1.00
Sulfate	14808-79-8	574		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-15	**PrePrep Method:**	N/A	**Instrument:**	IC1
Client ID:	50WW12-111215	**Prep Method:**	9056	**Prep Date:**	11/13/2015 12:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	10/29/2015 17:57
Workgroup #:	WG546860	**Analyst:**	ALS	**Run Date:**	11/13/2015 22:41
Collect Date:	11/12/2015 14:35	**Dilution:**	100	**File ID:**	I1_111315-33
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1110		40.0	20.0	10.0
Nitrate	14797-55-8	20.0	U	40.0	20.0	10.0
Nitrite	14797-65-0	20.0	U	40.0	20.0	10.0
Sulfate	14808-79-8	497		200	100	50.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.3.1.2 QC Summary Data

Example Calculations - Ion Chromatography

A. Methods 9056/300.0 (Quadratic with Offset)

1. Retrieve Curve Data from the ICAL Curve

c2 = the value of curve constant
c1= the curve slope
c0 = the curve offset

2. Obtain the area, y , from the instrument raw data

3. Calculate the concentration of the analyte, f(y), where:

$$f(y) = \frac{1}{2 * c_2} * \left(-c_1 \pm \sqrt{c_1^2 - 4 * c_2 * (c_0 - y)}\right)$$

Example Calculation:

Value of constant, c2, (curve):	0.0003
Value of curve constant, c1, (slope):	0.0869
Value of curve constant, c0, (offset):	-0.0103
Area of target analyte, y, (uS*min):	2.993
Calculated concentration, f(y), (mg/L):	31.1998864
or:	-40.1161215 *
Dilution factor (D):	1.00
Concentration of analyte in sample (mg/L):	31.200

* There are two possible solutions, but only one is valid.

B. Method 314.0 - Perchlorate (Linear)

Retrieve Curve Data from Linear Plot

c1 = the curve slope

Obtain the area, y , from the quantitation report

Calculate the concentration of the analyte, f(y), where:

f (y) = y / c1

Example Calculation:

Value of c1, slope:	0.0034
Area of target analyte, y:	0.083
Calculated concentration:	24.4117647
Dilution Factor:	1
Concentration in sample:	24.4117647

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 102915 ICAL IC1.SEQ

Analyst1: ALS Analyst2: NA

Method: 300/9056 SOP: IC01 Rev: 17

Maintenance Log ID: Syringe Filter Lot#: 150514254

Eluent ID#: RGT35199

Workgroups: Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM

Internal STD: NA Surrogate STD: NA Calibration STD STD71545

CCV STD: STD71545 LCS STD: STD71546 MS/MSD STD: STD71546

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I1_102915-01	ELUENT	1	1		10/29/15 15:53
2	I1_102915-02	DI WATER	1	1		10/29/15 16:11
3	I1_102915-03	WG544886-01 STD \#6	1	1		10/29/15 16:28
4	I1_102915-04	WG544886-02 STD \#5	1	1		10/29/15 16:46
5	I1_102915-05	WG544886-03 STD \#4	1	1		10/29/15 17:04
6	I1_102915-06	WG544886-04 STD \#3	1	1		10/29/15 17:21
7	I1_102915-07	WG544886-05 STD \#2	1	1		10/29/15 17:39
8	I1_102915-08	WG544886-06 STD \#1	1	1		10/29/15 17:57
9	I1_102915-09	WG544886-07 SSCV	1	1		10/29/15 18:15
10	I1_102915-10	LCR LEVEL 6	1	1		10/29/15 18:32
11	I1_102915-11	LCR LEVEL 2	1	1		10/29/15 18:50
12	I1_102915-12	LCR LEVEL 0	1	1		10/29/15 19:08
13	I1_102915-13	END	1	1		10/29/15 19:25

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 05-NOV-15

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 111315 IC1.SEQ
Analyst1: ALS Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 17

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#: RGT35331

Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM

Workgroups: WG54860

Internal STD: NA Surrogate STD: NA Calibration STD STD71545 (10/29/15)

CCV STD: STD71545 LCS STD: STD71546 MS/MSD STD: STD71546

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I1_111315-01	ELUENT	1	1		11/13/15 13:14
2	I1_111315-02	DI WATER	1	1		11/13/15 13:32
3	I1_111315-03	WG546950-01 ANION CCV	1	1		11/13/15 13:50
4	I1_111315-04	WG546950-02 ANION CCB	1	1		11/13/15 14:07
5	I1_111315-05	WG546860-01 ANION BLANK	1	1		11/13/15 14:25
6	I1_111315-06	WG546860-02 ANION LCS	1	1		11/13/15 14:43
7	I1_111315-07	L15110756-01 (NO2,NO3,SO4)	1	1		11/13/15 15:00
8	I1_111315-08	L15110756-02 (NO2,NO3,SO4)	1	1		11/13/15 15:18
9	I1_111315-09	L15110756-03 (NO2,NO3,SO4)	1	1		11/13/15 15:36
10	I1_111315-10	L15110756-04 (NO2,NO3,SO4)	1	1		11/13/15 15:54
11	I1_111315-11	L15110756-06 (NO2,NO3,SO4)	1	1		11/13/15 16:11
12	I1_111315-12	L15110756-07 (NO2,NO3,SO4)	1	1		11/13/15 16:29
13	I1_111315-13	L15110756-08 (NO2,NO3,SO4)	1	1		11/13/15 16:47
14	I1_111315-14	L15110684-01 (CL,BR,SO4)	2	1		11/13/15 17:04
15	I1_111315-15	WG546950-03 ANION CCV	1	1		11/13/15 17:22
16	I1_111315-16	WG546950-04 ANION CCB	1	1		11/13/15 17:40
17	I1_111315-17	L15110685-01 (CL,BR,SO4) REF	1	1		11/13/15 17:58
18	I1_111315-18	WG546860-04 DUP 0685-01	2	1		11/13/15 18:15
19	I1_111315-19	WG546860-05 MS	2	1		11/13/15 18:33
20	I1_111315-20	WG546860-06 MSD	2	1		11/13/15 18:51
21	I1_111315-21	L15110686-01 (CL,BR,SO4)	2	1		11/13/15 19:08
22	I1_111315-22	L15110793-07 1/5 (CL,NO2,NO3,SO4)	1	5		11/13/15 19:26
23	I1_111315-23	L15110793-07 1/25 (CL,NO2,NO3,SO4)	1	25		11/13/15 19:44
24	I1_111315-24	L15110793-09 1/5 (CL,NO2,NO3,SO4)	1	5		11/13/15 20:01
25	I1_111315-25	L15110793-09 1/25 (CL,NO2,NO3,SO4)	1	25		11/13/15 20:19
26	I1_111315-26	L15110793-11 1/5 (CL,NO2,NO3,SO4)	1	5		11/13/15 20:37
27	I1_111315-27	WG546950-05 ANION CCV	1	1		11/13/15 20:55
28	I1_111315-28	WG546950-06 ANION CCB	1	1		11/13/15 21:12
29	I1_111315-29	L15110793-11 1/25 (CL,NO2,NO3,SO4)	1	25		11/13/15 21:30
30	I1_111315-30	L15110793-13 (CL,NO2,NO3,SO4)	1	1		11/13/15 21:48
31	I1_111315-31	L15110793-13 1/5 (CL,NO2,NO3,SO4)	1	5		11/13/15 22:05
32	I1_111315-32	L15110793-15 1/10 (CL,NO2,NO3,SO4)	1	10		11/13/15 22:23
33	I1_111315-33	L15110793-15 1/100 (CL,NO2,NO3,SO4)	1	100		11/13/15 22:41

Page: 1 Approved: 16-NOV-15

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC1 Dataset: 111315 IC1.SEQ
Analyst1: ALS Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 17

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#: RGT35331
Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
Workgroups: WG54860
Internal STD: NA Surrogate STD: NA STD71545 (10/29/15)
CCV STD: STD71545 LCS STD: STD71546 STD71546

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	I1_111315-34	WG546950-07 ANION CCV	1	1		11/13/15 22:58
35	I1_111315-35	WG546950-08 ANION CCB	1	1		11/13/15 23:16
36	I1_111315-36	END	1	1		11/13/15 23:34

Comments

Seq.	Rerun	Dil.	Reason	Analytes
22	X	25		
	L15110793-07 1/5 (CL,NO2,NO3,SO4) was analyzed at a dilution due to CL and SO4 exceeding 200ppm.			
23				
	L15110793-07 1/25 (CL,NO2,NO3,SO4) was analyzed at a dilution due to CL exceeding the ICAL.			
24	X	25		
	L15110793-09 1/5 (CL,NO2,NO3,SO4) was analyzed at a dilution due to CL and SO4 exceeding 200ppm.			
25				
	L15110793-09 1/25 (CL,NO2,NO3,SO4) was analyzed at a dilution due to CL exceeding the ICAL.			
26	X	25		
	L15110793-11 1/5 (CL,NO2,NO3,SO4) was analyzed at a dilution due to CL and SO4 exceeding 200ppm.			
29				
	L15110793-11 1/25 (CL,NO2,NO3,SO4) was analyzed at a dilution due to CL exceeding the ICAL.			
30	X	5	Over Calibration Range	cl
	L15110793-13 (CL,NO2,NO3,SO4)			
31				
	L15110793-13 1/5 (CL,NO2,NO3,SO4) was analyzed at a dilution due to Cl exceeding the ICAL.			
32	X	25		
	L15110793-15 1/10 (CL,NO2,NO3,SO4) was analyzed at a dilution due to CL and SO4 exceeding 200ppm.			
33				
	L15110793-15 1/100 (CL,NO2,NO3,SO4) was analyzed at a dilution due to CL exceeding the ICAL.			

Page: 2 Approved: 16-NOV-15

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 29-OCT-2015
Analyst: ALS
Analyst: NA
Method: 300/9056
Instrument: IC1
Curve Workgroup: NA
Runlog ID: 71427
Analytical Workgroups: ICAL ONLY

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	NA
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	NA
Recoveries	NA
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	NA
TCL hits	NA
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual Integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	ALS
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 02-NOV-2015

Secondary Reviewer: 05-NOV-2015

CHECKLIST1 - Modified 03/05/2008

Generated: NOV-05-2015 09:23:50

Microbac Laboratories Inc.

Data Checklist

Date: 13-NOV-2015
Analyst: ALS
Analyst: NA
Method: 300/9056
Instrument: IC1
Curve Workgroup: NA
Runlog ID: 71689
Analytical Workgroups: 11-0684,0685,0686,0756,0793

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	X
Special standards	NA
Blanks	X
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual Integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	X
Check for completeness	X
Primary Reviewer	ALS
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 16-NOV-2015

Secondary Reviewer: 16-NOV-2015

CHECKLIST1 - Modified 03/05/2008

Generated: NOV-16-2015 15:02:20

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 9056 AAB#: WG546860

Login Number: L15110793

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW13-111215	07	11/12/15					11/13/2015	1.1	2		11/13/15	1.5	2	
50WW13-111215	07	11/12/15					11/13/2015	1.1	2		11/13/15	1.4	2	
50WW14-111215	09	11/12/15					11/13/2015	1.1	2		11/13/15	1.4	2	
50WW14-111215	09	11/12/15					11/13/2015	1.1	2		11/13/15	1.4	2	
50WW11-111215	11	11/12/15					11/13/2015	1	2		11/13/15	1.4	2	
50WW11-111215	11	11/12/15					11/13/2015	1	2		11/13/15	1.4	2	
50WW06-111215	13	11/12/15					11/13/2015	.9	2		11/13/15	1.4	2	
50WW06-111215	13	11/12/15					11/13/2015	.9	2		11/13/15	1.3	2	
50WW12-111215	15	11/12/15					11/13/2015	.9	2		11/13/15	1.3	2	
50WW12-111215	15	11/12/15					11/13/2015	.9	2		11/13/15	1.3	2	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4499975
Report generated 11/16/2015 15:12

METHOD BLANK SUMMARY

Login Number: L15110793
Blank File ID: I1_111315-05
Prep Date: 11/13/15 12:00
Analyzed Date: 11/13/15 14:25
Analyst: ALS

Work Group: WG546860
Blank Sample ID: WG546860-01
Instrument ID: IC1
Method: 9056

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG546860-02	I1_111315-06	11/13/15 14:43	01
DUP	WG546860-04	I1_111315-18	11/13/15 18:15	01
50WW13-111215	L15110793-07	I1_111315-22	11/13/15 19:26	DL01
50WW13-111215	L15110793-07	I1_111315-23	11/13/15 19:44	DL02
50WW14-111215	L15110793-09	I1_111315-24	11/13/15 20:01	DL01
50WW14-111215	L15110793-09	I1_111315-25	11/13/15 20:19	DL02
50WW11-111215	L15110793-11	I1_111315-26	11/13/15 20:37	DL01
50WW11-111215	L15110793-11	I1_111315-29	11/13/15 21:30	DL02
50WW06-111215	L15110793-13	I1_111315-30	11/13/15 21:48	01
50WW06-111215	L15110793-13	I1_111315-31	11/13/15 22:05	DL01
50WW12-111215	L15110793-15	I1_111315-32	11/13/15 22:23	DL01
50WW12-111215	L15110793-15	I1_111315-33	11/13/15 22:41	DL02

Report Name: BLANK_SUMMARY
PDF File ID: 4499976
Report generated 11/16/2015 15:12

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15110793 Prep Date: 11/13/15 12:00 Sample ID: WG546860-01
Instrument ID: IC1 Run Date: 11/13/15 14:25 Prep Method: 9056
File ID: I1 111315-05 Analyst: ALS Method: 9056
Workgroup (AAB#): WG546860 Matrix: Water Units: mg/L
Contract #: Cal ID: IC1-29-OCT-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Chloride	0.100	0.400	0.100	1	U
Nitrate	0.100	0.400	0.100	1	U
Nitrite	0.100	0.400	0.100	1	U
Sulfate	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4499977
16-NOV-2015 15:12

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15110793 Run Date: 11/13/2015 Sample ID: WG546860-02
Instrument ID: IC1 Run Time: 14:43 Prep Method: 9056
File ID: I1 111315-06 Analyst: ALS Method: 9056
Workgroup (AAB#): WG546860 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD71546 Cal ID: IC1-29-OCT-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Chloride	8.00	7.85	98.1	90 - 110	
Nitrate	5.42	5.36	99.0	90 - 110	
Nitrite	4.87	4.90	101	90 - 110	
Sulfate	40.0	39.1	97.7	90 - 110	

LCS - Modified 03/06/2008
PDF File ID: 4499978
Report generated: 11/16/2015 15:12

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L15110793
Analytical Method: 9056
ICAL Workgroup: WG544886

Instrument ID: IC1
Initial Calibration Date: 29-OCT-15 17:57
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Chloride		5.663	5.31	0.99900	
Nitrate		2.324	8.67	0.99700	
Nitrite		2.800	6.08	0.99900	
Sulfate		7.615	12.5	0.99700	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4499979
Report generated 11/16/2015 15:12

Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number: L15110793
Analytical Method: 9056

Instrument ID: IC1
Initial Calibration Date: 29-OCT-15 17:57
Column ID: F

Analyte	WG544886-01			WG544886-02			WG544886-03		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	24.0	4.56000000	5.263	12.0	2.14900000	5.584	8.00	1.32700000	6.029
Nitrate	16.3	8.10900000	2.006	8.13	3.68000000	2.210	5.42	2.32400000	2.333
Nitrite	14.6	5.37500000	2.719	7.31	2.65100000	2.756	4.87	1.68800000	2.886
Sulfate	120	18.9060000	6.347	60.0	8.66000000	6.928	40.0	5.38700000	7.425

INT_CAL - Modified 03/06/2008
PDF File ID: 4499979
Report generated 11/16/2015 15:12

Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number: L15110793
Analytical Method: 9056
Instrument ID: IC1
Initial Calibration Date: 29-OCT-15 17:57
Column ID: F

Analyte	WG544886-04			WG544886-05			WG544886-06		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	4.00	0.676000000	5.917	1.00	0.173000000	5.780	0.200	0.0370000000	5.405
Nitrate	2.71	1.11800000	2.425	0.678	0.271000000	2.500	0.134	0.0540000000	2.473
Nitrite	2.44	0.844000000	2.886	0.609	0.202000000	3.014	0.122	0.0480000000	2.538
Sulfate	20.0	2.59300000	7.713	5.00	0.611000000	8.183	1.00	0.110000000	9.091

INT_CAL - Modified 03/06/2008
PDF File ID: 4499979
Report generated 11/16/2015 15:12

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15110793 Run Date: 10/29/2015 Sample ID: WG544886-07
Instrument ID: IC1 Run Time: 18:15 Method: 9056
File ID: I1 102915-09 Analyst: ALS QC Key: DOD4
ICal Workgroup: WG544886 Cal ID: IC1 - 29-OCT-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloride		8.00	7.87	mg/L	5.83	1.60	10	
Nitrate		5.42	5.53	mg/L	2.31	1.90	10	
Nitrite		4.87	4.97	mg/L	2.80	2.10	10	
Sulfate		40.0	39.9	mg/L	7.29	0.200	10	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4499980
Report generated 11/16/2015 15:12

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15110793
Run Date: 11/13/2015
Sample ID: WG546950-02
Instrument ID: IC1
Run Time: 14:07
Method: 9056
File ID: I1 111315-04
Analyst: ALS
Units: mg/L
Workgroup (AAB#): WG546860
Cal ID: IC1 - 29-OCT-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4499982
Report generated 11/16/2015 15:12

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15110793
Run Date: 11/13/2015
Sample ID: WG546950-04
Instrument ID: IC1
Run Time: 17:40
Method: 9056
File ID: I1 111315-16
Analyst: ALS
Units: mg/L
Workgroup (AAB#): WG546860
Cal ID: IC1 - 29-OCT-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4499982
Report generated 11/16/2015 15:12

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15110793
Run Date: 11/13/2015
Sample ID: WG546950-06
Instrument ID: IC1
Run Time: 21:12
Method: 9056
File ID: I1 111315-28
Analyst: ALS
Units: mg/L
Workgroup (AAB#): WG546860
Cal ID: IC1 - 29-OCT-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4499982
Report generated 11/16/2015 15:12

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15110793
Run Date: 11/13/2015
Sample ID: WG546950-08
Instrument ID: IC1
Run Time: 23:16
Method: 9056
File ID: I1 111315-35
Analyst: ALS
Units: mg/L
Workgroup (AAB#): WG546860
Cal ID: IC1 - 29-OCT-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4499982
Report generated 11/16/2015 15:12

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110793
Run Date: 11/13/2015
Sample ID: WG546950-01
Instrument ID: IC1
Run Time: 13:50
Method: 9056
File ID: I1 111315-03
Analyst: ALS
QC Key: DOD4
Workgroup (AAB#): WG546860
Cal ID: IC1 - 29-OCT-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.08	mg/L	5.68	1.01	10	
Nitrate		5.42	5.48	mg/L	2.33	0.985	10	
Nitrite		4.87	5.00	mg/L	2.79	2.66	10	
Sulfate		40.0	40.3	mg/L	7.23	0.625	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4499981
Report generated 11/16/2015 15:12

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110793
Run Date: 11/13/2015
Sample ID: WG546950-03
Instrument ID: IC1
Run Time: 17:22
Method: 9056
File ID: I1 111315-15
Analyst: ALS
QC Key: DOD4
Workgroup (AAB#): WG546860
Cal ID: IC1 - 29-OCT-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.87	mg/L	5.83	1.64	10	
Nitrate		5.42	5.33	mg/L	2.39	1.76	10	
Nitrite		4.87	4.92	mg/L	2.83	0.977	10	
Sulfate		40.0	39.0	mg/L	7.46	2.57	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4499981
Report generated 11/16/2015 15:12

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110793
Run Date: 11/13/2015
Sample ID: WG546950-05
Instrument ID: IC1
Run Time: 20:55
Method: 9056
File ID: I1 111315-27
Analyst: ALS
QC Key: DOD4
Workgroup (AAB#): WG546860
Cal ID: IC1 - 29-OCT-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.86	mg/L	5.84	1.73	10	
Nitrate		5.42	5.29	mg/L	2.41	2.48	10	
Nitrite		4.87	4.93	mg/L	2.83	1.16	10	
Sulfate		40.0	38.9	mg/L	7.49	2.84	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4499981
Report generated 11/16/2015 15:12

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110793
Run Date: 11/13/2015
Sample ID: WG546950-07
Instrument ID: IC1
Run Time: 22:58
Method: 9056
File ID: I1 111315-34
Analyst: ALS
QC Key: DOD4
Workgroup (AAB#): WG546860
Cal ID: IC1 - 29-OCT-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	7.85	mg/L	5.85	1.94	10	
Nitrate		5.42	5.24	mg/L	2.43	3.29	10	
Nitrite		4.87	4.93	mg/L	2.83	1.22	10	
Sulfate		40.0	39.3	mg/L	7.41	1.84	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4499981
Report generated 11/16/2015 15:12

2.3.1.3 Sample Data

22 L15110793-07 1/5 (CL,NO2,NO3,SO4)

1,5 ALS

Sample Name:	**L15110793-07 1/5 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**22**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**102915_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/13/2015 19:26**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

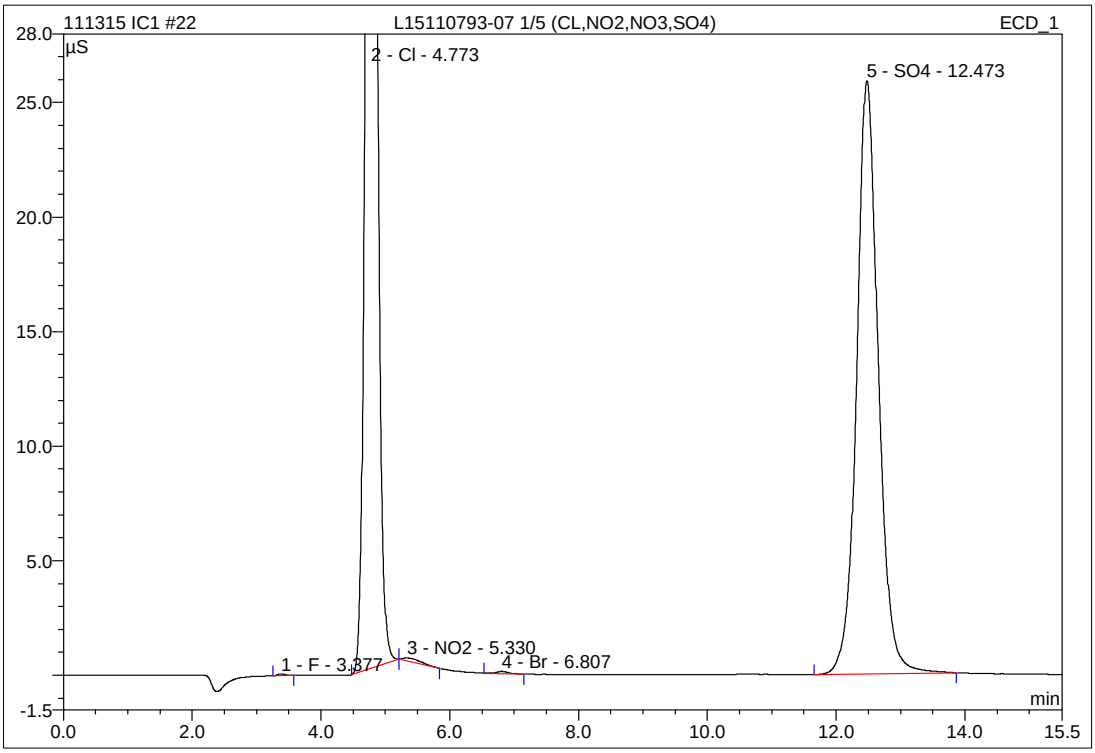

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.38	F	0.080	0.011	0.04	0.085	BMB
2	4.77	Cl	91.262	14.914	59.39	85.631	BMb
3	5.33	NO2	0.128	0.048	0.19	0.123	bMB
4	6.81	Br	0.097	0.022	0.09	0.336	BMB
5	12.47	SO4	25.901	10.117	40.29	73.385	BMB
Total:			117.468	25.112	100.00	159.561	

23 L15110793-07 1/25 (CL,NO2,NO3,SO4)

1,25 ALS

Sample Name:	**L15110793-07 1/25 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**23**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**102915_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/13/2015 19:44**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

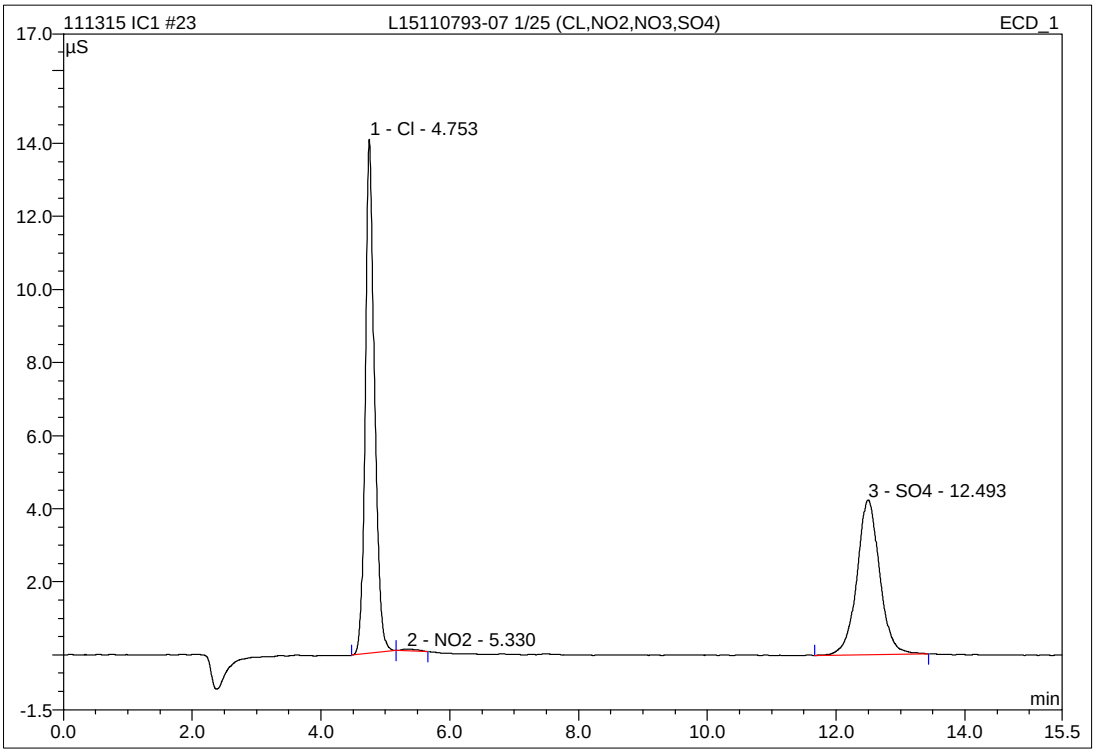

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	4.75	Cl	14.076	2.343	57.31	13.444	BMb
2	5.33	NO2	0.051	0.015	0.37	0.029	bMB
3	12.49	SO4	4.237	1.730	42.32	12.731	BMB
Total:			18.365	4.089	100.00	26.204	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

24 L15110793-09 1/5 (CL,NO2,NO3,SO4)

1,5 ALS

Sample Name:	**L15110793-09 1/5 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**24**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**102915_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/13/2015 20:01**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

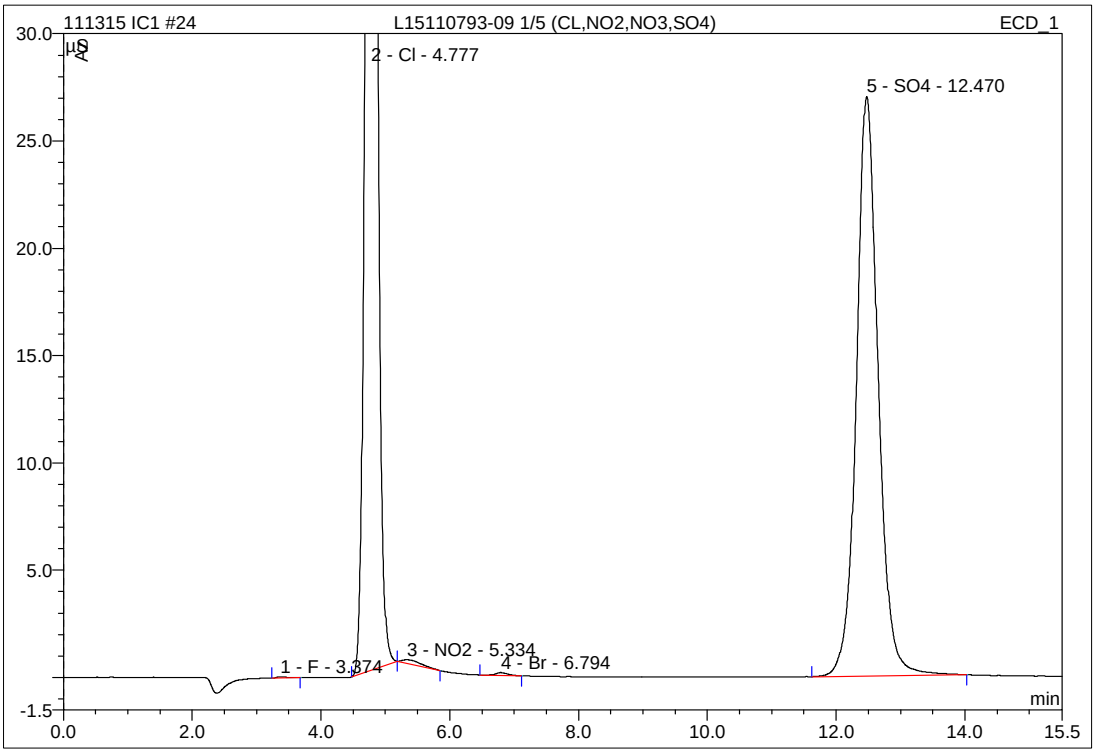

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.37	F	0.062	0.011	0.04	0.087	BMB
2	4.78	Cl	109.368	17.655	62.24	101.372	BMb
3	5.33	NO2	0.161	0.061	0.22	0.161	bMB
4	6.79	Br	0.137	0.032	0.11	0.477	BMB
5	12.47	SO4	27.000	10.608	37.39	76.933	BMB
Total:			136.727	28.366	100.00	179.029	

25 L15110793-09 1/25 (CL,NO2,NO3,SO4)

1,25 ALS

Sample Name:	**L15110793-09 1/25 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**25**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**102915_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/13/2015 20:19**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

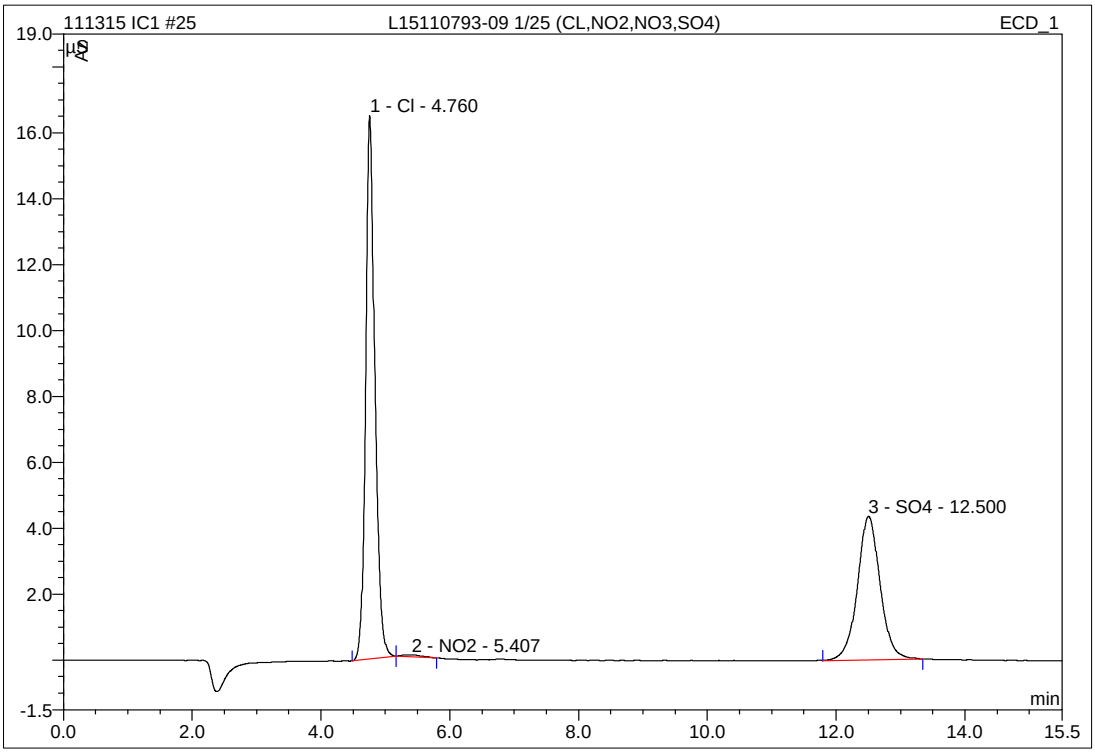

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	4.76	Cl	16.478	2.734	60.32	15.691	BMb
2	5.41	NO2	0.063	0.022	0.48	0.047	bMB
3	12.50	SO4	4.353	1.777	39.20	13.071	BMB
Total:			20.894	4.533	100.00	28.809	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

26 L15110793-11 1/5 (CL,NO2,NO3,SO4)

1,5 ALS

Sample Name:	**L15110793-11 1/5 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**26**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**102915_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/13/2015 20:37**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

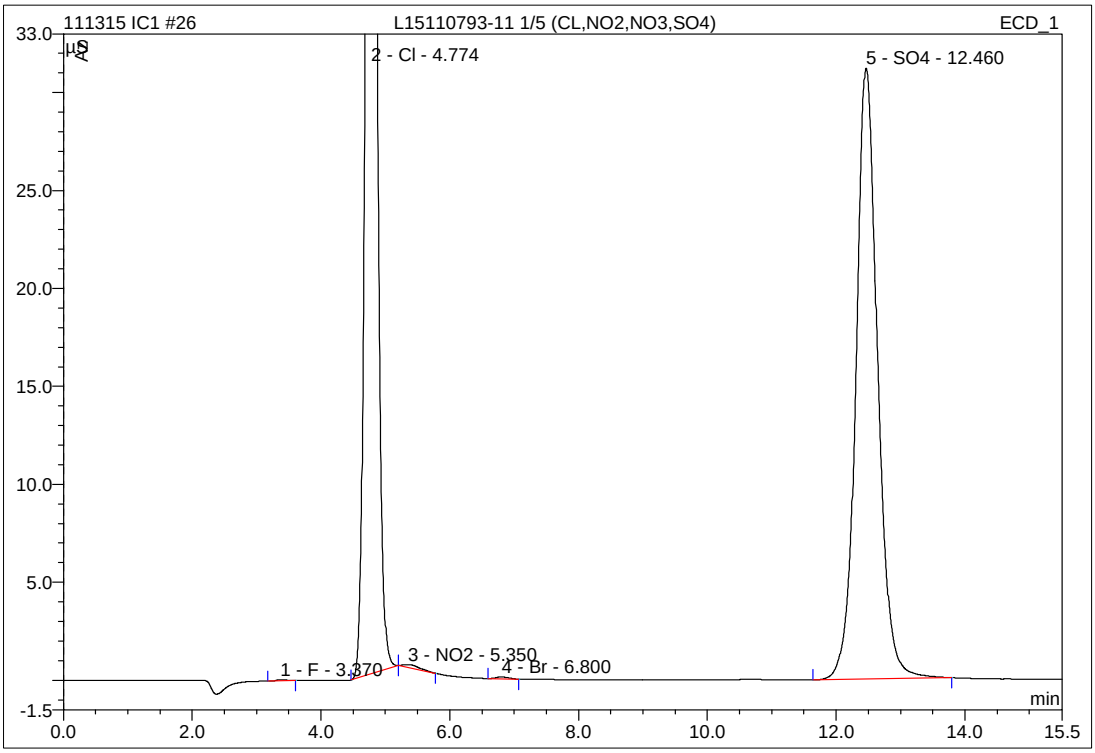

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.37	F	0.061	0.011	0.04	0.085	BMB
2	4.77	Cl	101.210	16.468	57.43	94.559	BMb
3	5.35	NO2	0.152	0.050	0.17	0.128	bMB
4	6.80	Br	0.102	0.023	0.08	0.351	BMB
5	12.46	SO4	31.188	12.123	42.28	87.893	BMB
Total:			132.714	28.675	100.00	183.016	

29 L15110793-11 1/25 (CL,NO2,NO3,SO4)

1,25 ALS

Sample Name:	**L15110793-11 1/25 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**19**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**102915_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/13/2015 21:30**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

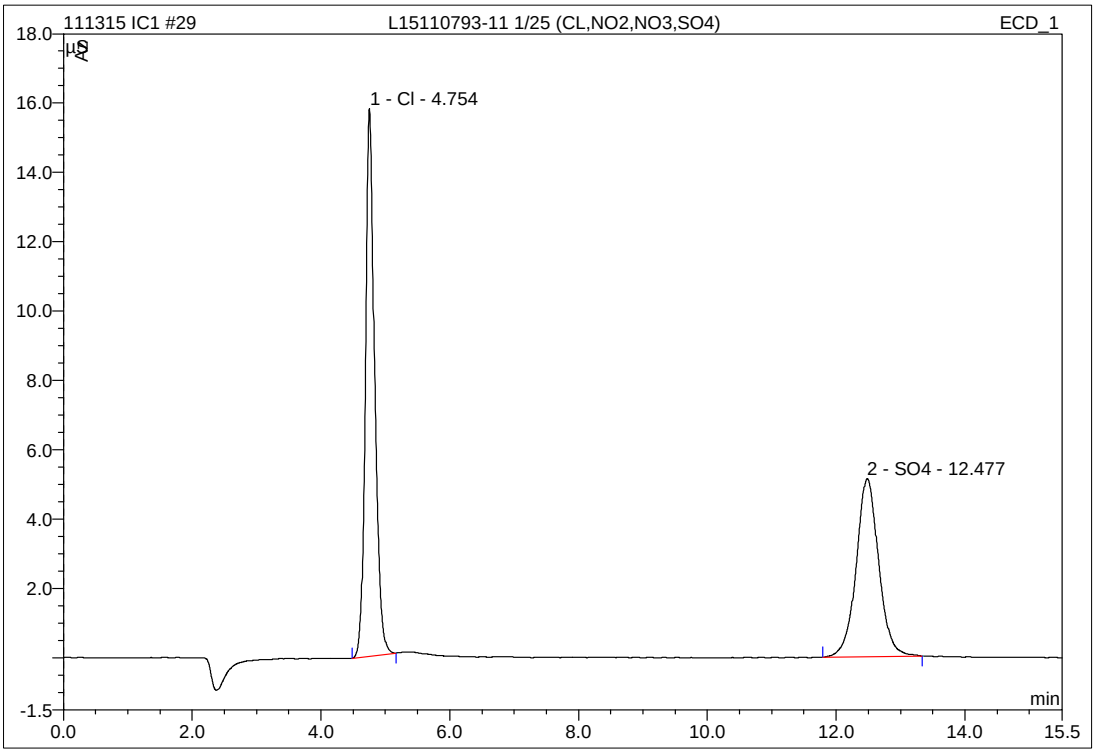

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	4.75	Cl	15.807	2.626	55.81	15.071	BMB
2	12.48	SO4	5.132	2.080	44.19	15.261	BMB
Total:			20.939	4.706	100.00	30.332	

30 L15110793-13 (CL,NO2,NO3,SO4)

1,1 ALS

Sample Name:	**L15110793-13 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**20**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**102915_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/13/2015 21:48**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

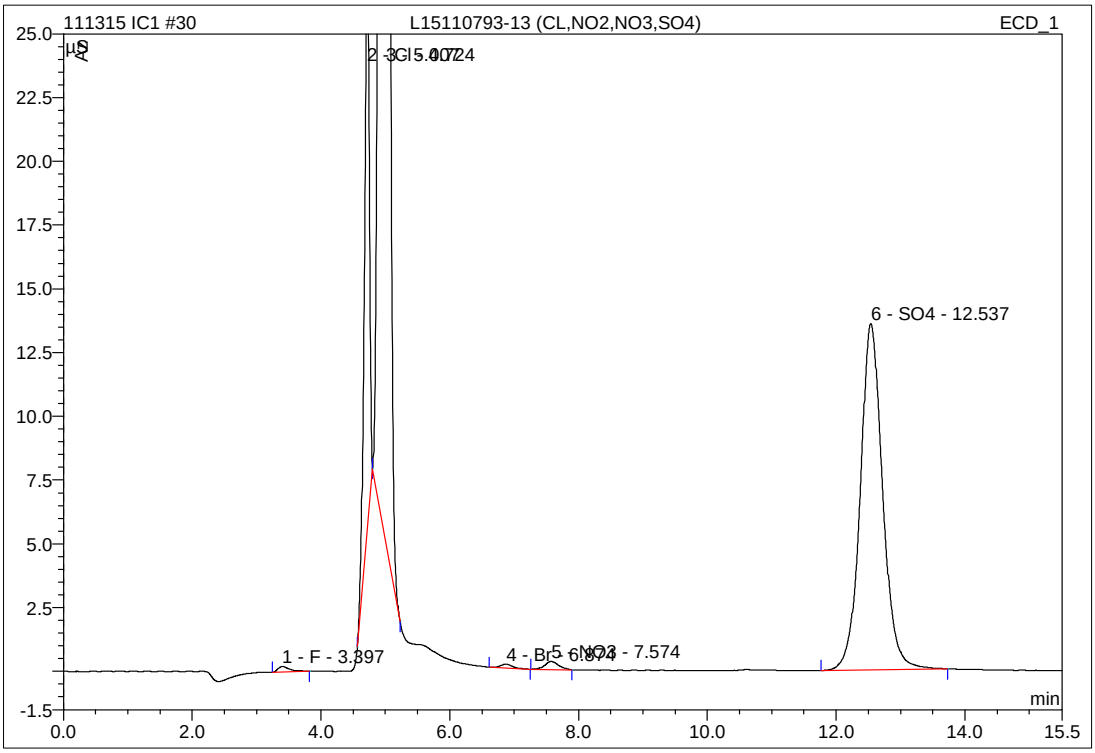

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.40	F	0.216	0.045	0.19	0.217	BMB
2	4.72	Cl	22.331	2.072	8.68	11.889	BMb
3	5.01	n.a.	114.414	16.188	67.77	n.a.	bMB
4	6.87	Br	0.150	0.033	0.14	0.487	BMB
5	7.57	NO3	0.315	0.079	0.33	0.196	BMB
6	12.54	SO4	13.585	5.470	22.90	39.774	BMB
Total:			151.012	23.887	100.00	52.563	

30 L15110793-13 (CL,NO2,NO3,SO4)

1,1 ALS

Sample Name:	**L15110793-13 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**20**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**102915_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/13/2015 21:48**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

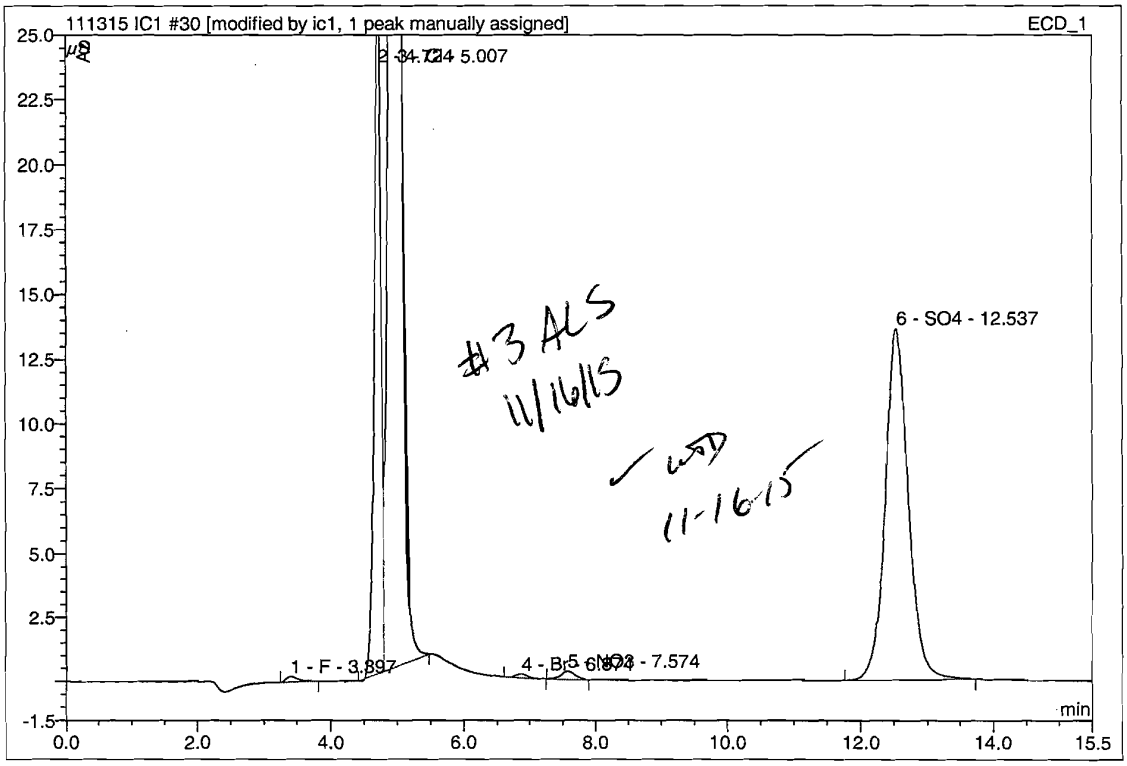

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.40	F	0.216	0.045	0.17	0.217	BMB
2	4.72	n.a.	27.544	3.090	11.52	n.a.	BM *
3	5.01	Cl	118.923	18.101	67.50	103.938	MB*^
4	6.87	Br	0.150	0.033	0.12	0.487	BMB
5	7.57	NO3	0.315	0.079	0.29	0.196	BMB
6	12.54	SO4	13.585	5.470	20.40	39.774	BMB
Total:			160.734	26.818	100.00	144.612	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

31 L15110793-13 1/5 (CL,NO2,NO3,SO4)

1,5 ALS

Sample Name:	**L15110793-13 1/5 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**21**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**102915_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/13/2015 22:05**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

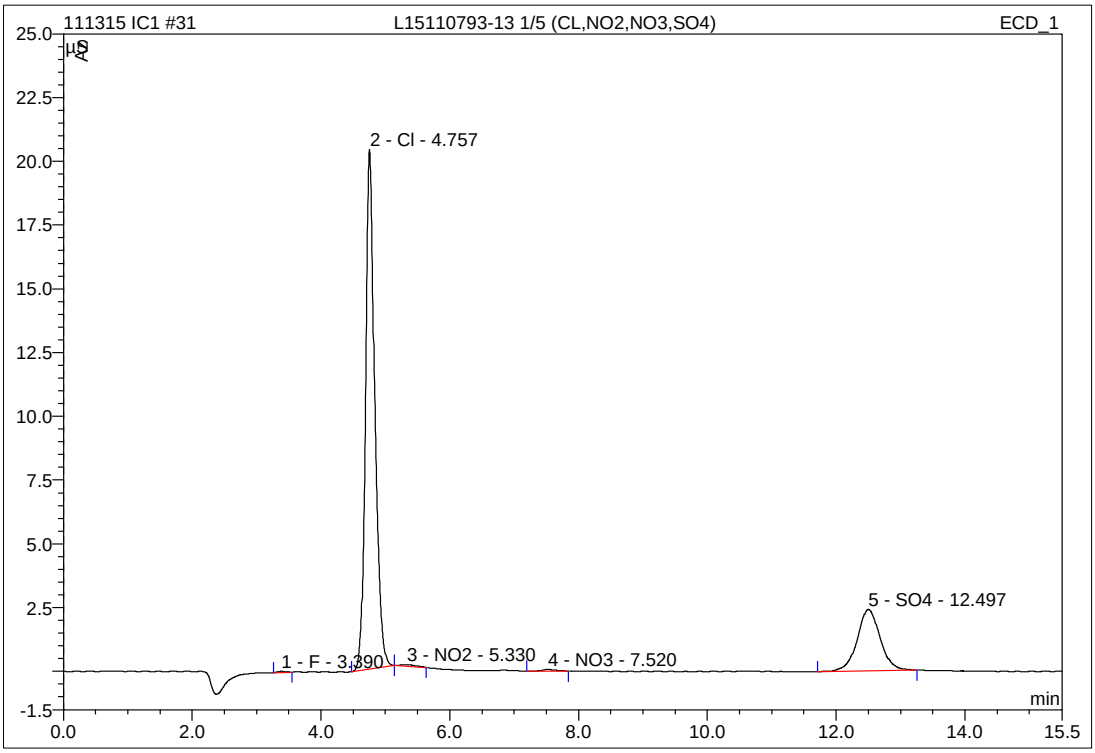

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.39	F	0.041	0.006	0.13	0.066	BMB
2	4.76	Cl	20.366	3.411	76.63	19.575	BMb
3	5.33	NO2	0.062	0.018	0.40	0.036	bMB
4	7.52	NO3	0.069	0.018	0.41	0.053	BMB
5	12.50	SO4	2.412	0.998	22.43	7.438	BMB
Total:			22.950	4.451	100.00	27.168	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

32 L15110793-15 1/10 (CL,NO2,NO3,SO4)

1,10 ALS

Sample Name:	**L15110793-15 1/10 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**17**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**102915_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/13/2015 22:23**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

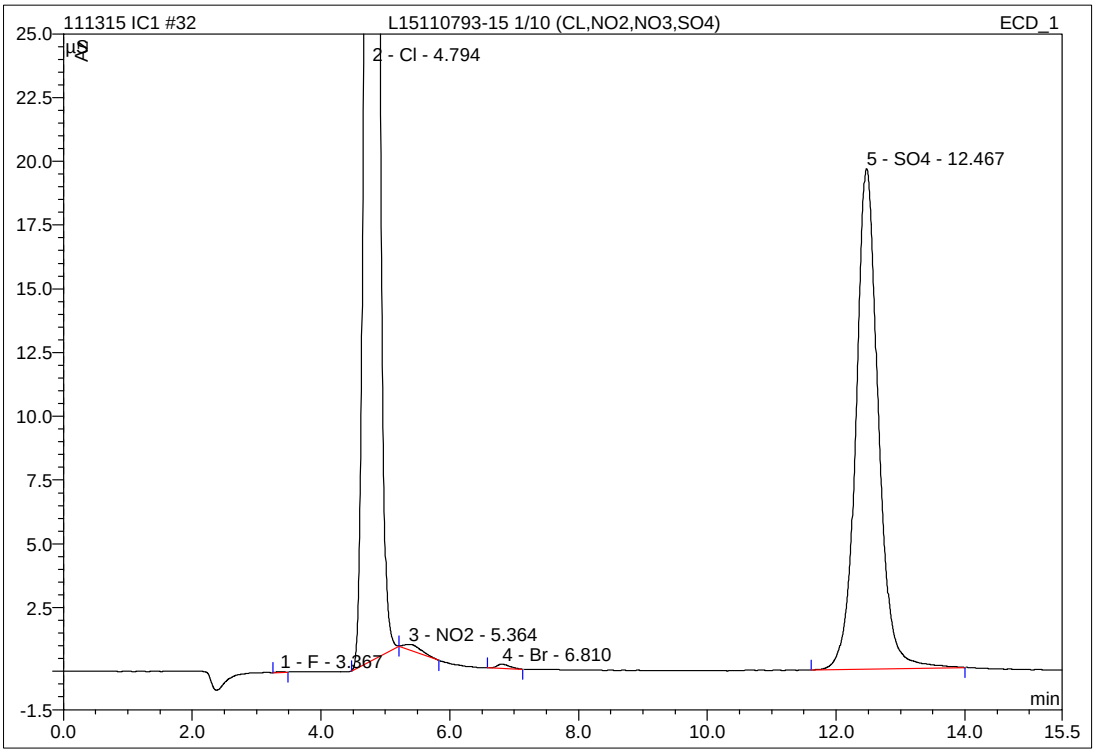

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.37	F	0.029	0.003	0.01	0.056	BMB
2	4.79	Cl	165.368	26.785	76.97	153.805	BMb
3	5.36	NO2	0.205	0.073	0.21	0.193	bMB
4	6.81	Br	0.169	0.038	0.11	0.565	BMB
5	12.47	SO4	19.631	7.900	22.70	57.352	BMB
Total:			185.402	34.799	100.00	211.972	

33 L15110793-15 1/100 (CL,NO2,NO3,SO4)

1,100 ALS

Sample Name:	**L15110793-15 1/100 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**20.0**
Vial Number:	**18**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**102915_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/13/2015 22:41**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

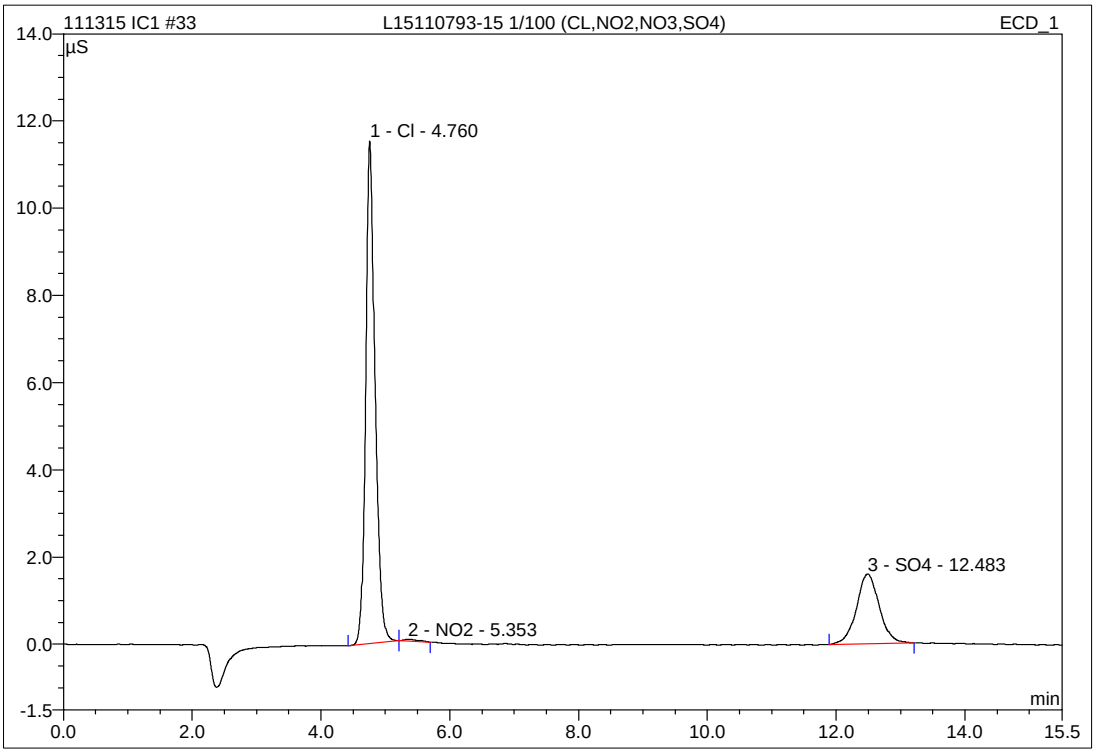

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	4.76	Cl	11.519	1.939	74.38	11.124	BMb
2	5.35	NO2	0.040	0.011	0.43	0.017	bMB
3	12.48	SO4	1.605	0.657	25.20	4.969	BMB
Total:			13.164	2.607	100.00	16.110	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

2.3.1.4 Standards Data

3 WG544886-01 STD #6

1,1 ALS STD71545 (_____psi @___:___)

Sample Name:	**WG544886-01 STD #6**	*Injection Volume:*	**20.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/29/2015 16:28**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

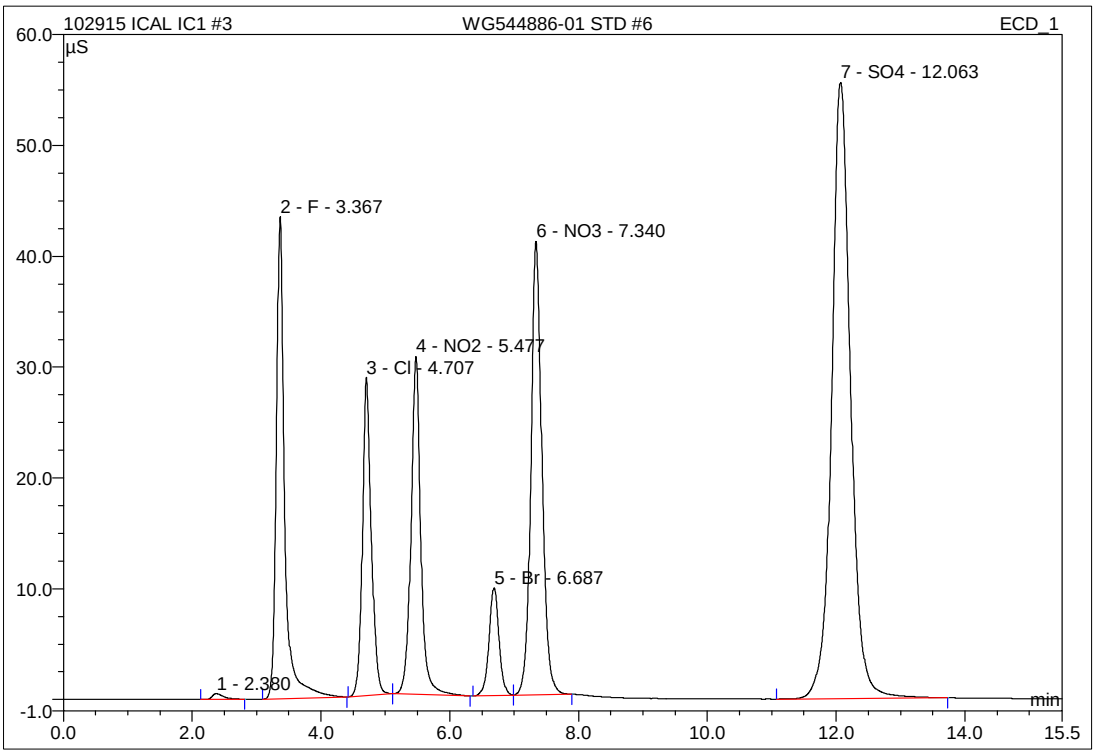

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.38	n.a.	0.518	0.105	0.23	n.a.	BMB
2	3.37	F	43.523	6.488	14.33	24.965	BMB
3	4.71	Cl	28.723	4.560	10.07	26.173	BMb
4	5.48	NO2	30.486	5.375	11.87	15.414	bMB
5	6.69	Br	9.717	1.744	3.85	25.294	BMB
6	7.34	NO3	40.882	8.109	17.91	19.027	BMB
7	12.06	SO4	55.601	18.906	41.75	136.945	BMB
Total:			209.450	45.286	100.00	247.819	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

4 WG544886-02 STD #5

1,1 ALS

Sample Name:	**WG544886-02 STD #5**	*Injection Volume:*	**20.0**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/29/2015 16:46**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

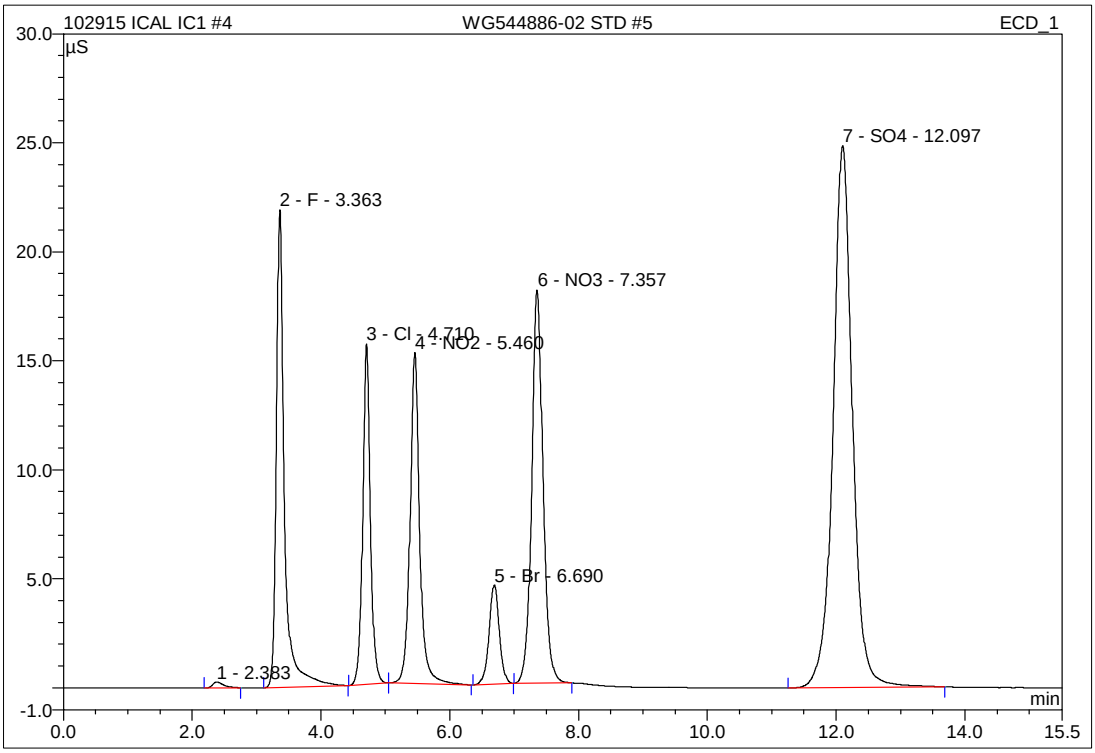

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.38	n.a.	0.269	0.053	0.25	n.a.	BMB
2	3.36	F	21.918	3.152	14.88	12.150	BMB
3	4.71	Cl	15.622	2.149	10.15	12.332	BMB
4	5.46	NO2	15.184	2.651	12.51	7.594	bMB
5	6.69	Br	4.555	0.840	3.96	12.186	BMB
6	7.36	NO3	18.039	3.680	17.37	8.640	BMB
7	12.10	SO4	24.852	8.660	40.88	62.850	BMB
Total:			100.438	21.185	100.00	115.752	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

5 WG544886-03 STD #4

1,1 ALS

Sample Name:	**WG544886-03 STD #4**	*Injection Volume:*	**20.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/29/2015 17:04**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

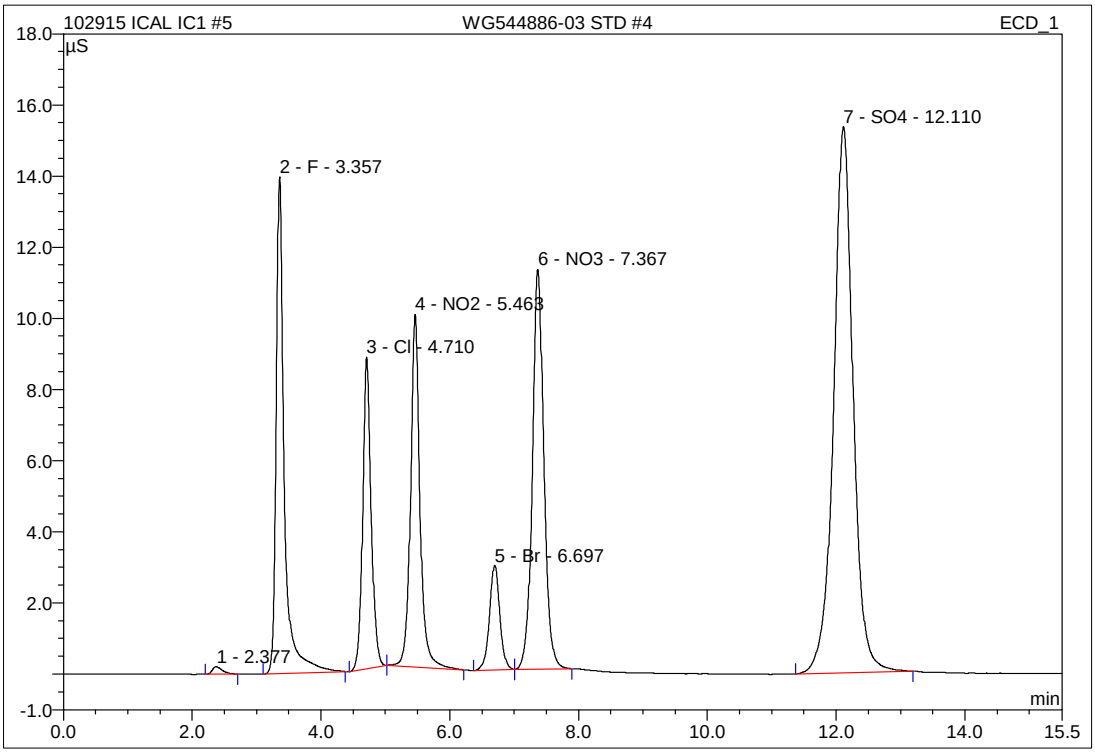

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.38	n.a.	0.210	0.038	0.29	n.a.	BMB
2	3.36	F	13.962	2.018	15.14	7.795	BMB
3	4.71	Cl	8.755	1.327	9.95	7.607	BMb
4	5.46	NO2	9.909	1.688	12.67	4.832	bMB
5	6.70	Br	2.941	0.547	4.10	7.937	BMB
6	7.37	NO3	11.231	2.324	17.43	5.460	BMB
7	12.11	SO4	15.355	5.387	40.41	39.174	BMB
Total:			62.363	13.328	100.00	72.806	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

5 WG544886-03 STD #4

1,1 ALS

Sample Name:	**WG544886-03 STD #4**	*Injection Volume:*	**20.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**102915_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/29/2015 17:04**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

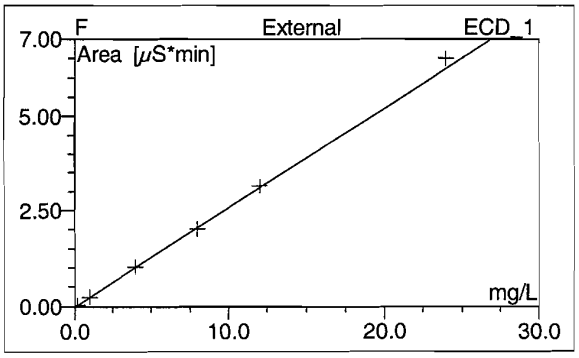

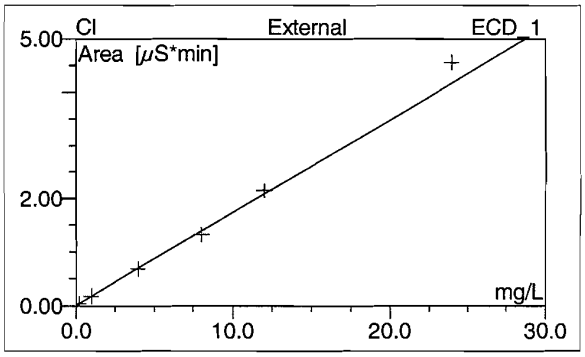

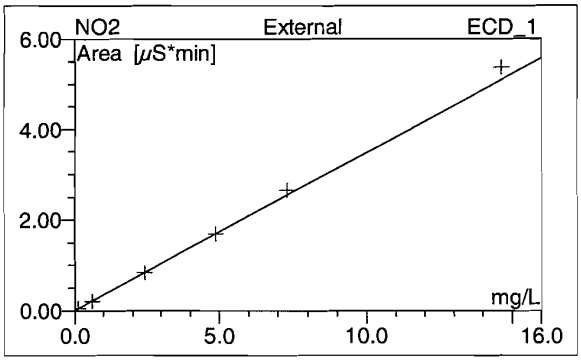

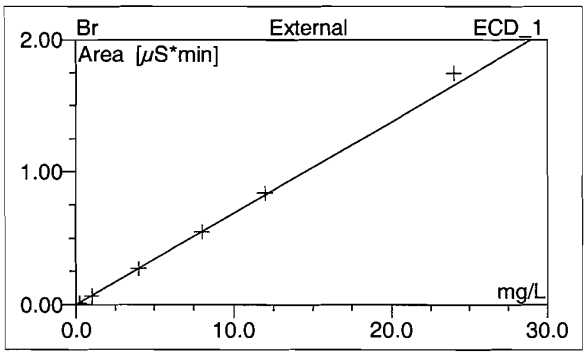

No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	2.38	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	3.36	F	YYLOff	6	99.9702	-0.0113	0.2604	0.0000
3	4.71	Cl	YYLOff	6	99.8637	0.0021	0.1741	0.0000
4	5.46	NO2	YYLOff	6	99.8744	0.0051	0.3484	0.0000
5	6.70	Br	YYLOff	6	99.9333	-0.0009	0.0690	0.0000
6	7.37	NO3	YYLOff	6	99.6838	-0.0045	0.4264	0.0000
7	12.11	SO4	YYLOff	6	99.6878	-0.0302	0.1383	0.0000
Average:					99.8355	-0.0066	0.2361	0.0000

IC/Calibration(Batch)

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

5 WG544886-03 STD #4

1,1 ALS

Sample Name:	**WG544886-03 STD #4**	*Injection Volume:*	**20.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**102915_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/29/2015 17:04**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

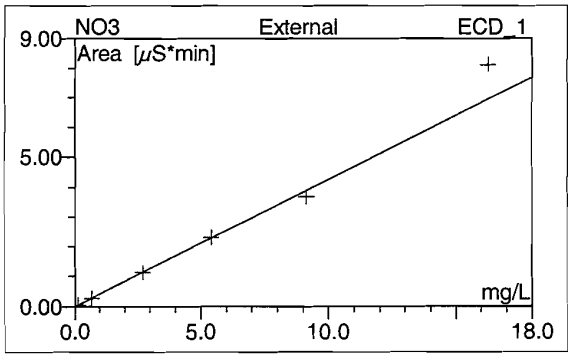

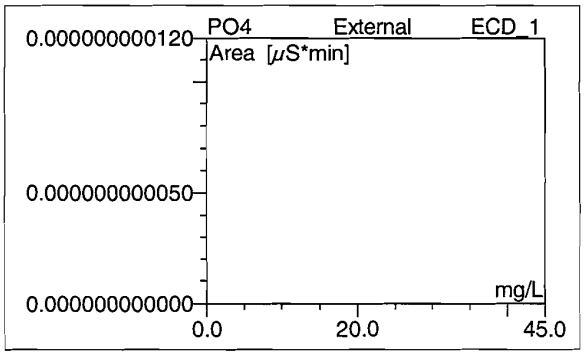

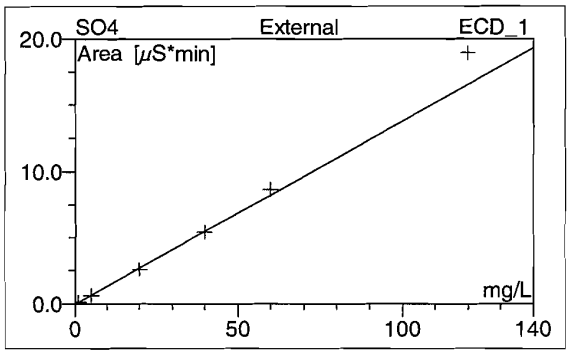

No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	2.38	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	3.36	F	YYLOff	6	99.9702	-0.0113	0.2604	0.0000
3	4.71	Cl	YYLOff	6	99.8637	0.0021	0.1741	0.0000
4	5.46	NO2	YYLOff	6	99.8744	0.0051	0.3484	0.0000
5	6.70	Br	YYLOff	6	99.9333	-0.0009	0.0690	0.0000
6	7.37	NO3	YYLOff	6	99.6838	-0.0045	0.4264	0.0000
7	12.11	SO4	YYLOff	6	99.6878	-0.0302	0.1383	0.0000
Average:					99.8355	-0.0066	0.2361	0.0000

6 WG544886-04 STD #3

1,1 ALS

Sample Name:	**WG544886-04 STD #3**	*Injection Volume:*	**20.0**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/29/2015 17:21**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

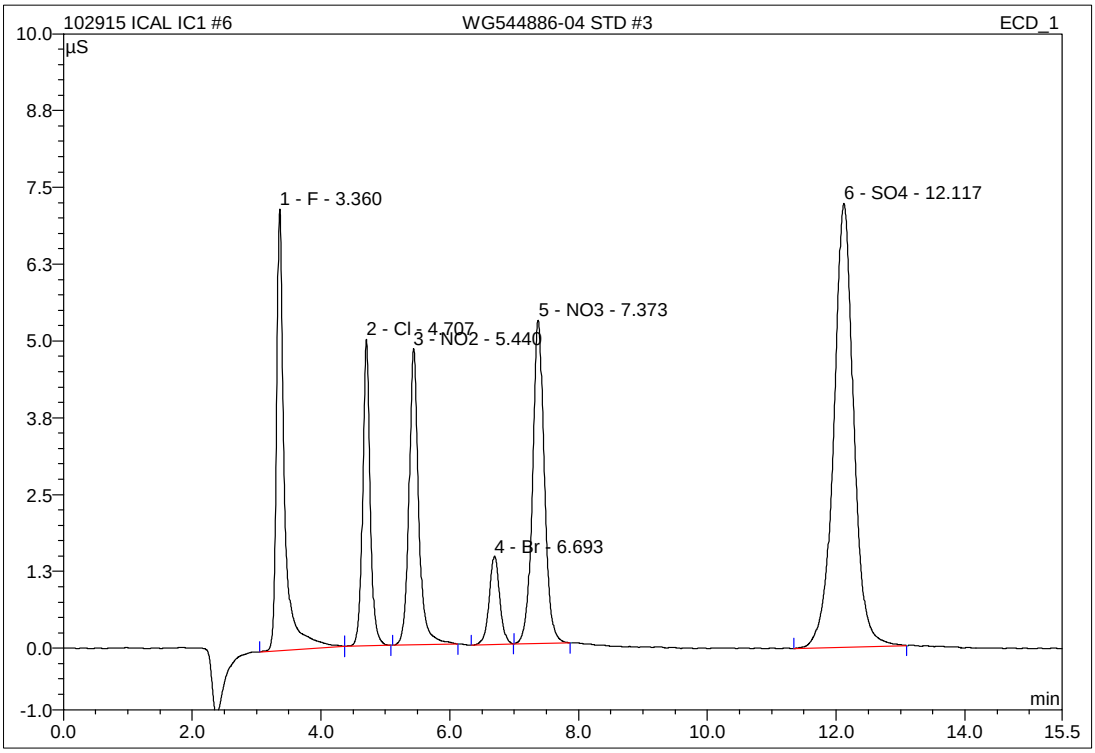

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.36	F	7.182	1.019	15.63	3.959	BMB
2	4.71	Cl	4.989	0.676	10.36	3.869	bMB
3	5.44	NO2	4.819	0.844	12.94	2.408	BMB
4	6.69	Br	1.437	0.272	4.17	3.956	BMB
5	7.37	NO3	5.261	1.118	17.15	2.633	BMB
6	12.12	SO4	7.220	2.593	39.75	18.971	BMB
Total:			30.909	6.522	100.00	35.796	

7 WG544886-05 STD #2

1,1 ALS

Sample Name:	**WG544886-05 STD #2**	*Injection Volume:*	**20.0**
Vial Number:	**7**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/29/2015 17:39**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

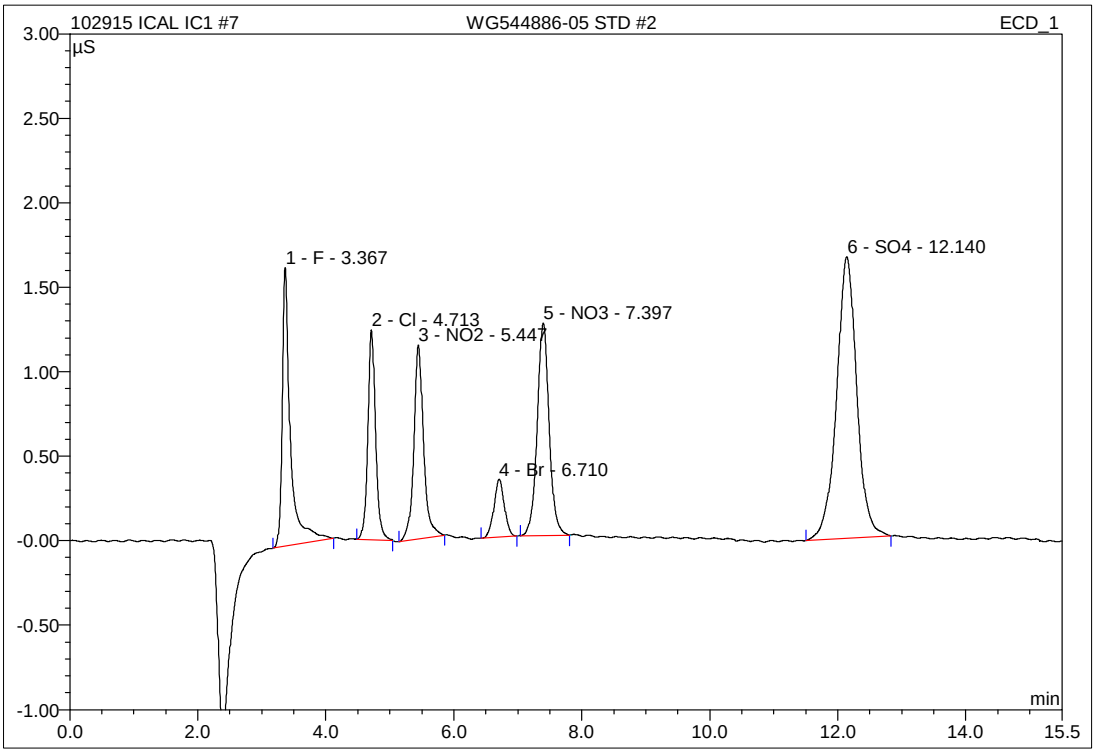

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.37	F	1.649	0.246	15.67	0.986	BMB
2	4.71	Cl	1.240	0.173	11.03	0.981	BMB
3	5.45	NO2	1.148	0.202	12.86	0.564	BMB
4	6.71	Br	0.342	0.065	4.13	0.951	BMB
5	7.40	NO3	1.258	0.271	17.30	0.646	BMB
6	12.14	SO4	1.666	0.611	39.01	4.639	BMB
Total:			7.302	1.567	100.00	8.768	

8 WG544886-06 STD #1

1,1 ALS

Sample Name:	**WG544886-06 STD #1**	*Injection Volume:*	**20.0**
Vial Number:	**8**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/29/2015 17:57**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

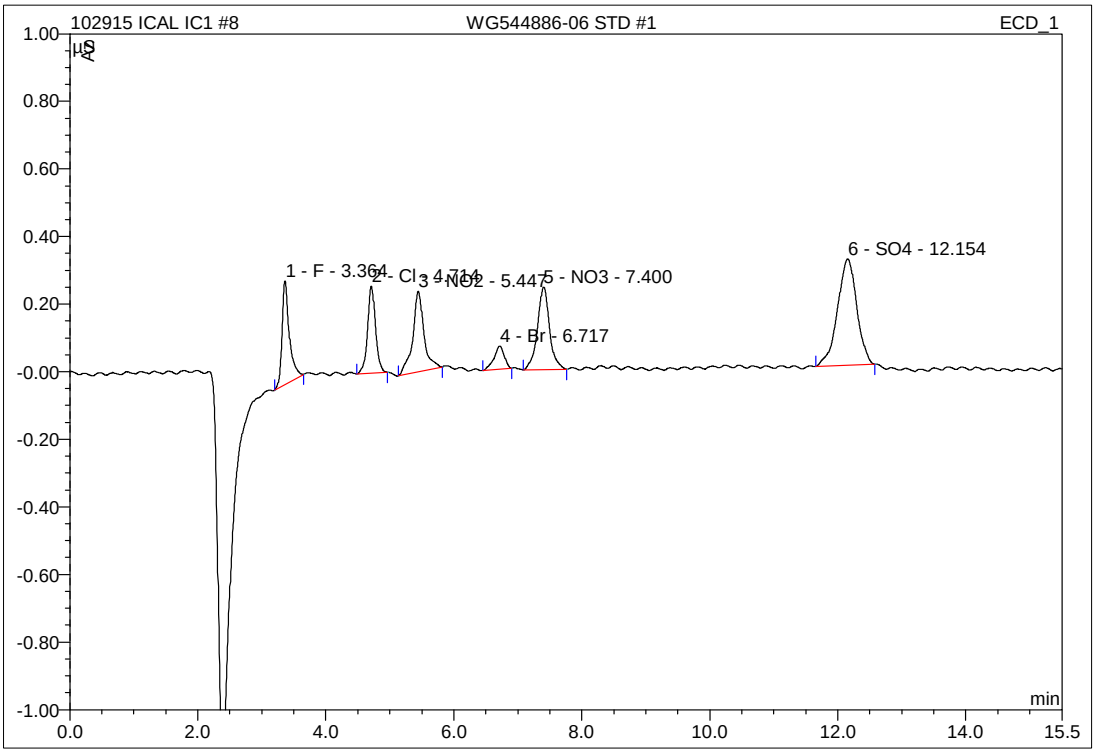

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.36	F	0.307	0.041	13.49	0.200	BMB
2	4.71	Cl	0.258	0.037	12.24	0.201	BMB
3	5.45	NO2	0.238	0.048	15.99	0.124	BMB
4	6.72	Br	0.069	0.013	4.29	0.202	BMB
5	7.40	NO3	0.245	0.054	17.76	0.137	BMB
6	12.15	SO4	0.315	0.110	36.24	1.013	BMB
Total:			1.432	0.303	100.00	1.878	

9 WG544886-07 SSCV

1,1 ALS

Sample Name:	**WG544886-07 SSCV**	*Injection Volume:*	**20.0**
Vial Number:	**9**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/29/2015 18:15**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG544886-07 SSCV	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	7.9233	-0.96	PASS
Cl	8.00	7.8710	-1.61	PASS
NO2-N	4.8714	4.9721	2.07	PASS
Br	8.00	8.0561	0.70	PASS
NO3-N	5.4216	5.5250	1.91	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	39.9043	-0.24	PASS

9 WG544886-07 SSCV

1,1 ALS

Sample Name:	**WG544886-07 SSCV**	*Injection Volume:*	**20.0**
Vial Number:	**9**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**042115_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**10/29/2015 18:15**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

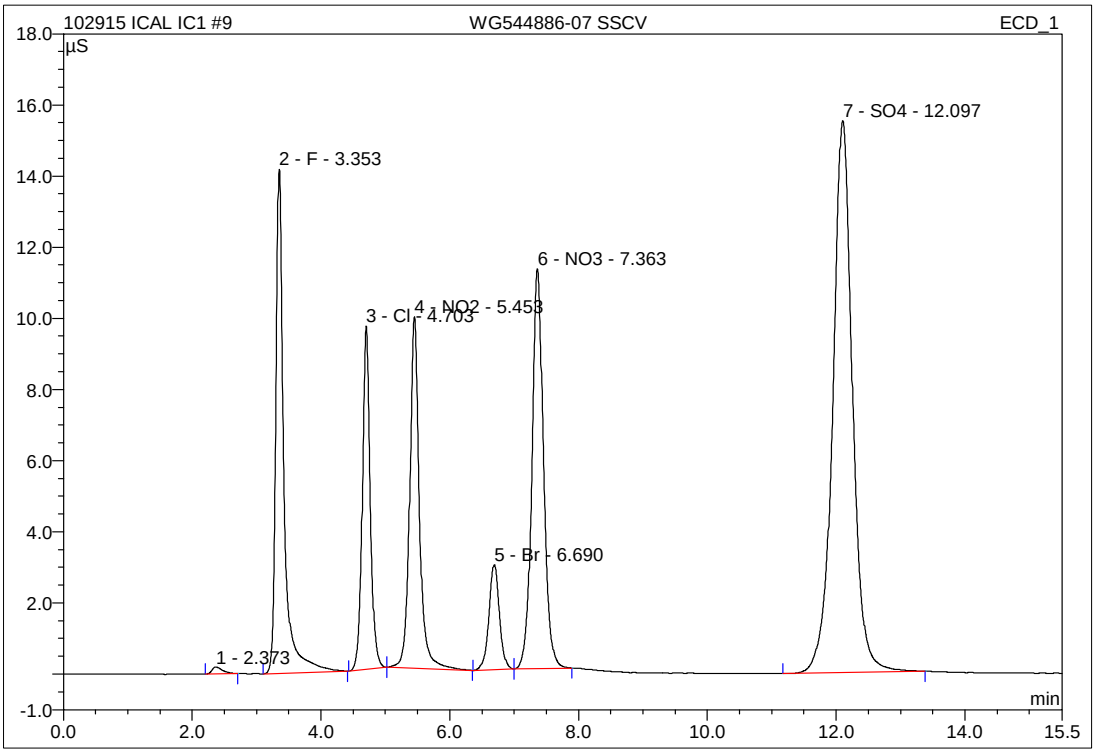

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.37	n.a.	0.193	0.036	0.26	n.a.	BMB
2	3.35	F	14.173	2.052	15.09	7.923	BMB
3	4.70	Cl	9.659	1.373	10.10	7.871	BMb
4	5.45	NO2	9.887	1.737	12.78	4.972	bMB
5	6.69	Br	2.952	0.555	4.08	8.056	BMB
6	7.36	NO3	11.237	2.351	17.30	5.525	BMB
7	12.10	SO4	15.520	5.487	40.38	39.904	BMB
Total:			63.620	13.591	100.00	74.252	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

3 WG546950-01 ANION CCV

1,1 ALS STD71545 (_____psi @___:___)

Sample Name:	**WG546950-01 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**102915_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/13/2015 13:50**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG546950-01 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	7.8340	-2.07	PASS
Cl	8.00	8.0809	1.01	PASS
NO2-N	4.8714	5.0014	2.67	PASS
Br	8.00	8.0386	0.48	PASS
NO3-N	5.4216	5.4754	0.99	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	40.2495	0.62	PASS

3 WG546950-01 ANION CCV

1,1 ALS STD71545 (_____psi @___:___)

Sample Name:	**WG546950-01 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**102915_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/13/2015 13:50**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

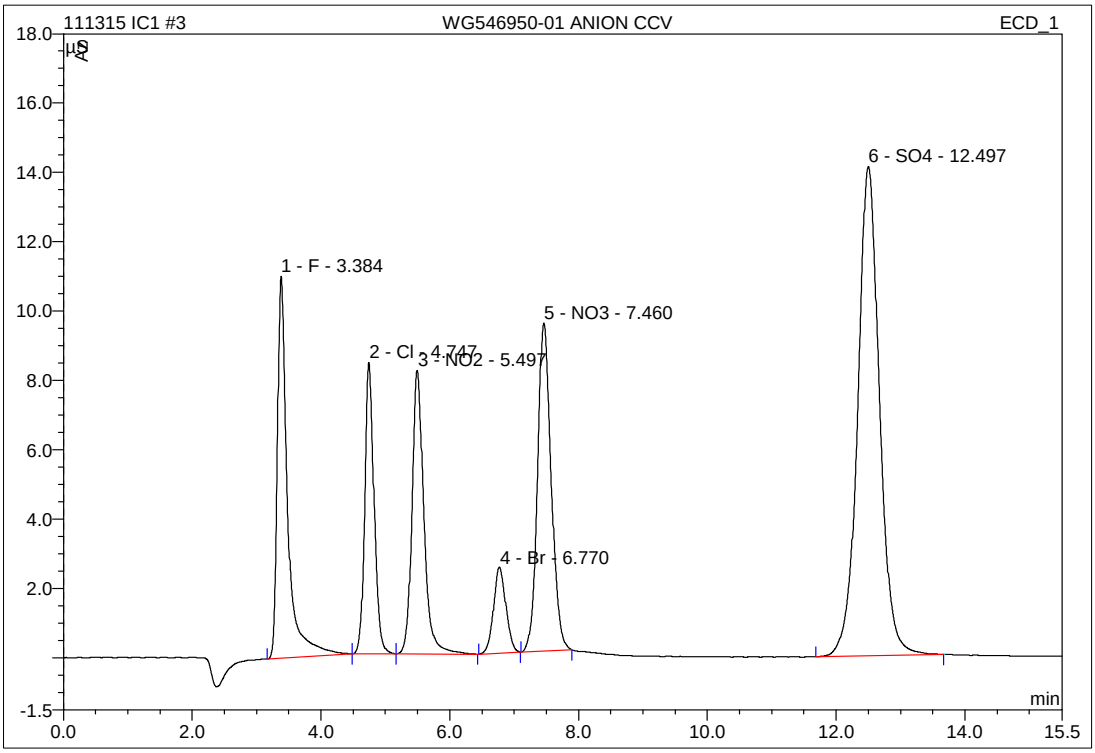

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.38	F	11.023	2.028	14.91	7.834	BMB
2	4.75	Cl	8.412	1.409	10.36	8.081	BMB
3	5.50	NO2	8.176	1.747	12.85	5.001	BMB
4	6.77	Br	2.484	0.554	4.07	8.039	BMB
5	7.46	NO3	9.463	2.330	17.13	5.475	BMB
6	12.50	SO4	14.122	5.535	40.69	40.250	BMB
Total:			53.679	13.604	100.00	74.680	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

15 WG546950-03 ANION CCV

1,1 ALS STD71545

Sample Name:	**WG546950-03 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**102915_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/13/2015 17:22**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG546950-03 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	7.5564	-5.54	PASS
Cl	8.00	7.8688	-1.64	PASS
NO2-N	4.8714	4.9187	0.97	PASS
Br	8.00	7.8494	-1.88	PASS
NO3-N	5.4216	5.3255	-1.77	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	38.9736	-2.57	PASS

15 WG546950-03 ANION CCV

1,1 ALS STD71545

Sample Name:	**WG546950-03 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**102915_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/13/2015 17:22**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

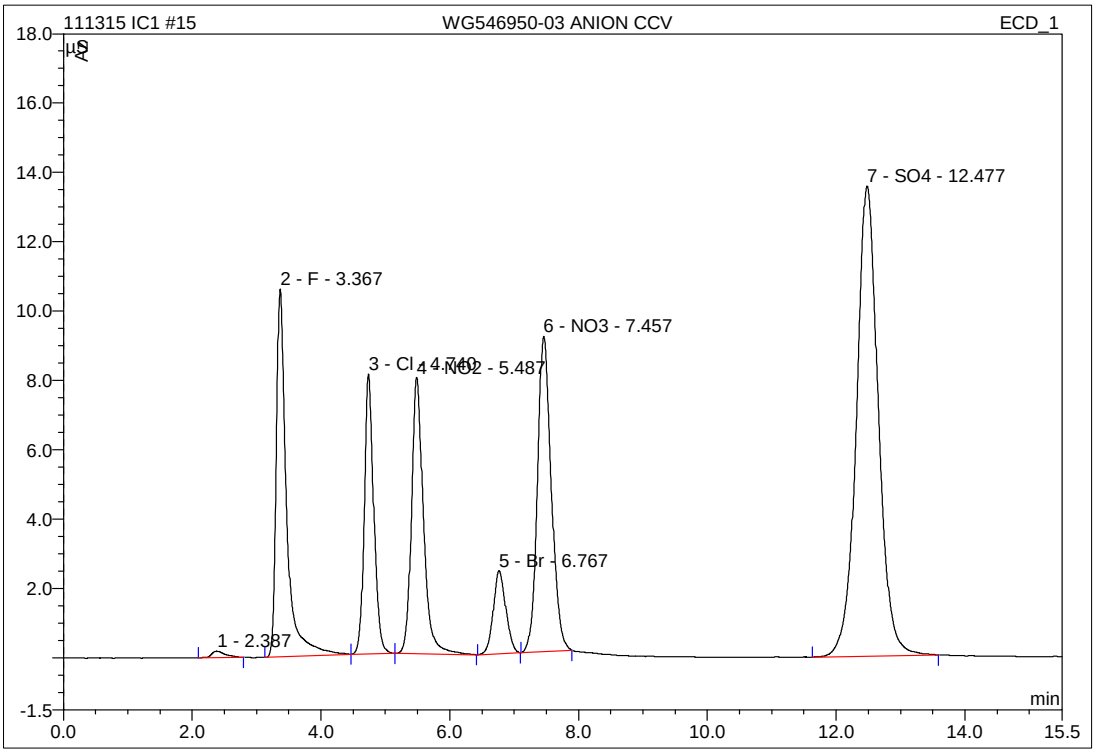

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.39	n.a.	0.183	0.045	0.34	n.a.	BMB
2	3.37	F	10.624	1.956	14.75	7.556	BMB
3	4.74	Cl	8.078	1.372	10.35	7.869	BMB
4	5.49	NO2	7.974	1.719	12.96	4.919	BMB
5	6.77	Br	2.393	0.541	4.08	7.849	BMB
6	7.46	NO3	9.097	2.266	17.09	5.326	BMB
7	12.48	SO4	13.562	5.359	40.42	38.974	BMB
Total:			51.910	13.257	100.00	72.493	

27 WG546950-05 ANION CCV

1,1 ALS STD71545

Sample Name:	**WG546950-05 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**17**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**102915_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/13/2015 20:55**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG546950-05 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	7.6279	-4.65	PASS
Cl	8.00	7.8623	-1.72	PASS
NO2-N	4.8714	4.9280	1.16	PASS
Br	8.00	7.8400	-2.00	PASS
NO3-N	5.4216	5.2872	-2.48	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	38.8652	-2.84	PASS

27 WG546950-05 ANION CCV

1,1 ALS STD71545

Sample Name:	**WG546950-05 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**17**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**102915_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/13/2015 20:55**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

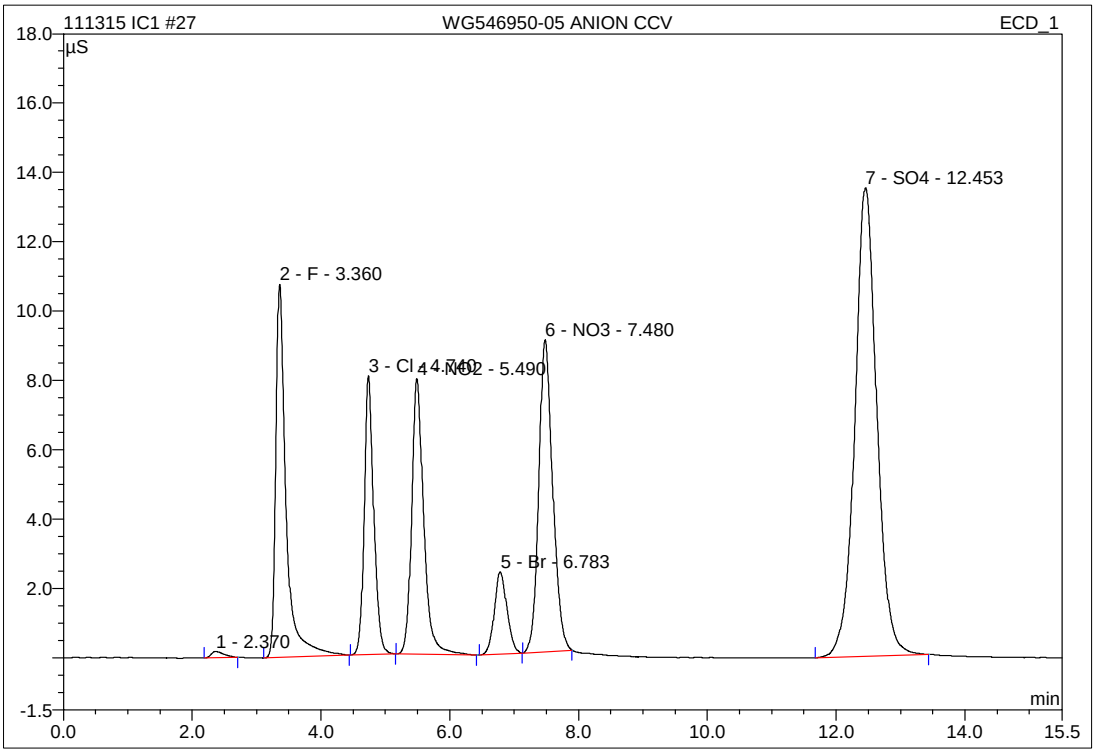

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.37	n.a.	0.178	0.040	0.30	n.a.	BMB
2	3.36	F	10.773	1.975	14.91	7.628	BMB
3	4.74	Cl	8.048	1.371	10.35	7.862	BMB
4	5.49	NO2	7.943	1.722	13.00	4.928	BMB
5	6.78	Br	2.374	0.540	4.08	7.840	BMB
6	7.48	NO3	8.992	2.250	16.99	5.287	BMB
7	12.45	SO4	13.521	5.344	40.36	38.865	BMB
Total:			51.828	13.242	100.00	72.411	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

34 WG546950-07 ANION CCV

1,1 ALS STD71545

Sample Name:	**WG546950-07 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**22**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**102915_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/13/2015 22:58**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

WG546950-07 ANIOI	Actual mg/L	Recoved mg/L	%Difference	
F	8.00	7.6093	-4.88	PASS
Cl	8.00	7.8447	-1.94	PASS
NO2-N	4.8714	4.9309	1.22	PASS
Br	8.00	7.7942	-2.57	PASS
NO3-N	5.4216	5.2434	-3.29	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!
SO4	40	39.2627	-1.84	PASS

34 WG546950-07 ANION CCV

1,1 ALS STD71545

Sample Name:	**WG546950-07 ANION CCV**	*Injection Volume:*	**20.0**
Vial Number:	**22**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**102915_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/13/2015 22:58**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

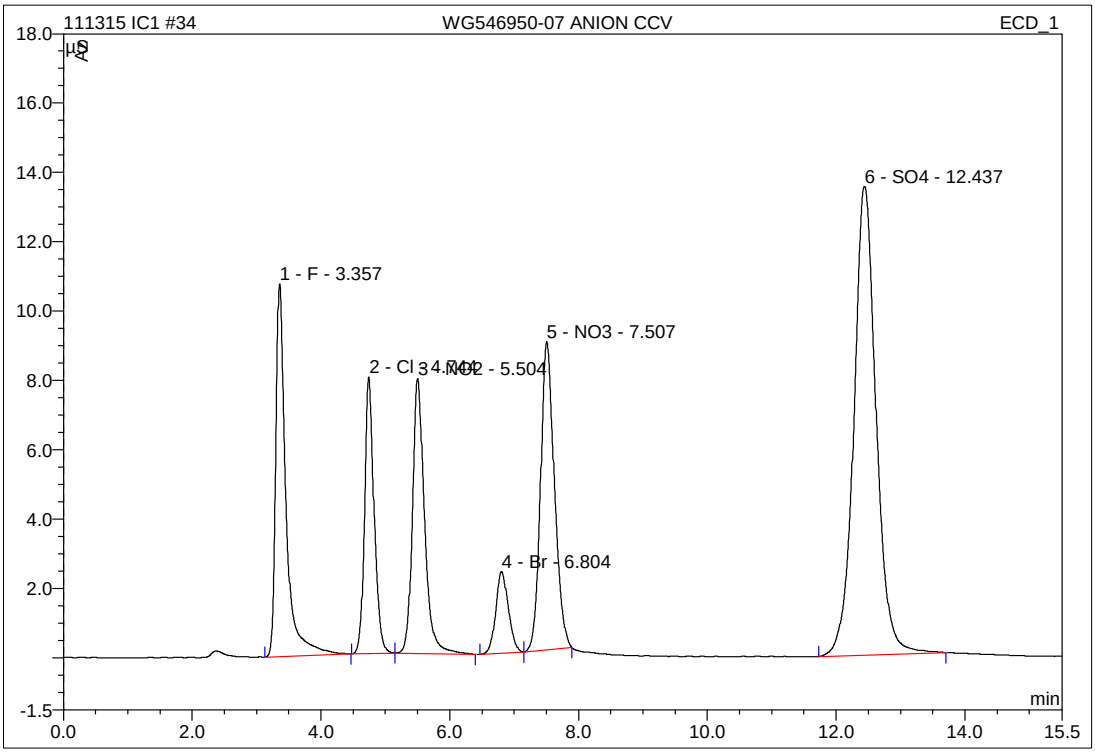

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.36	F	10.761	1.970	14.89	7.609	BMB
2	4.74	Cl	7.989	1.368	10.34	7.845	BMb
3	5.50	NO2	7.935	1.723	13.03	4.931	bMB
4	6.80	Br	2.352	0.537	4.06	7.794	BMB
5	7.51	NO3	8.891	2.231	16.87	5.243	BMB
6	12.44	SO4	13.518	5.399	40.81	39.263	BMB
Total:			51.447	13.228	100.00	72.685	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

4 WG546950-02 ANION CCB

1,1 ALS

Sample Name:	**WG546950-02 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**102915_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/13/2015 14:07**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

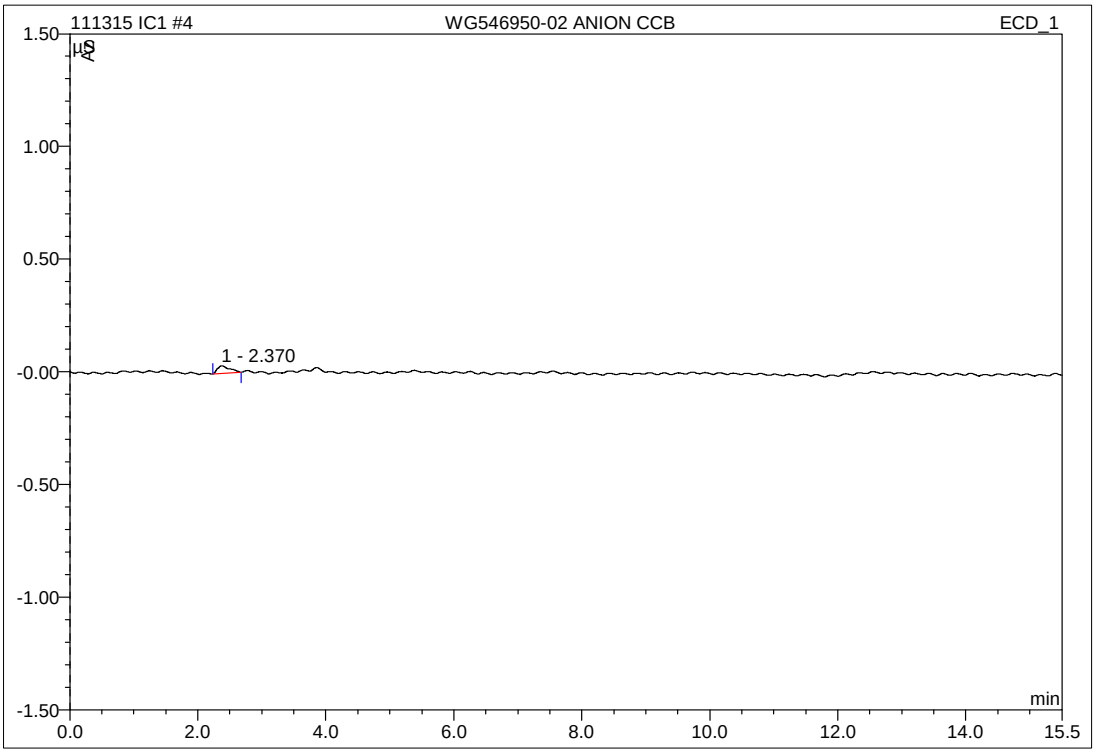

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.37	n.a.	0.034	0.008	100.00	n.a.	BMB
Total:			0.034	0.008	100.00	0.000	

16 WG546950-04 ANION CCB

1,1 ALS

Sample Name:	**WG546950-04 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**16**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**102915_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/13/2015 17:40**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

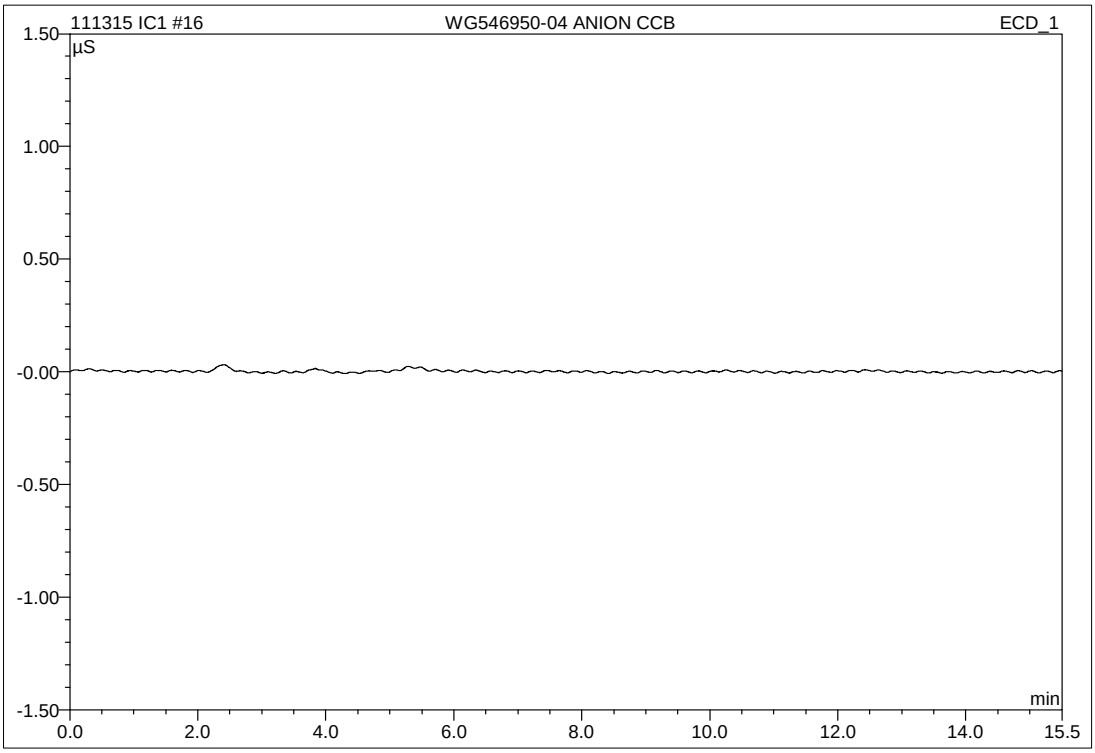

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

28 WG546950-06 ANION CCB

1,1 ALS

Sample Name:	**WG546950-06 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**18**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**102915_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/13/2015 21:12**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

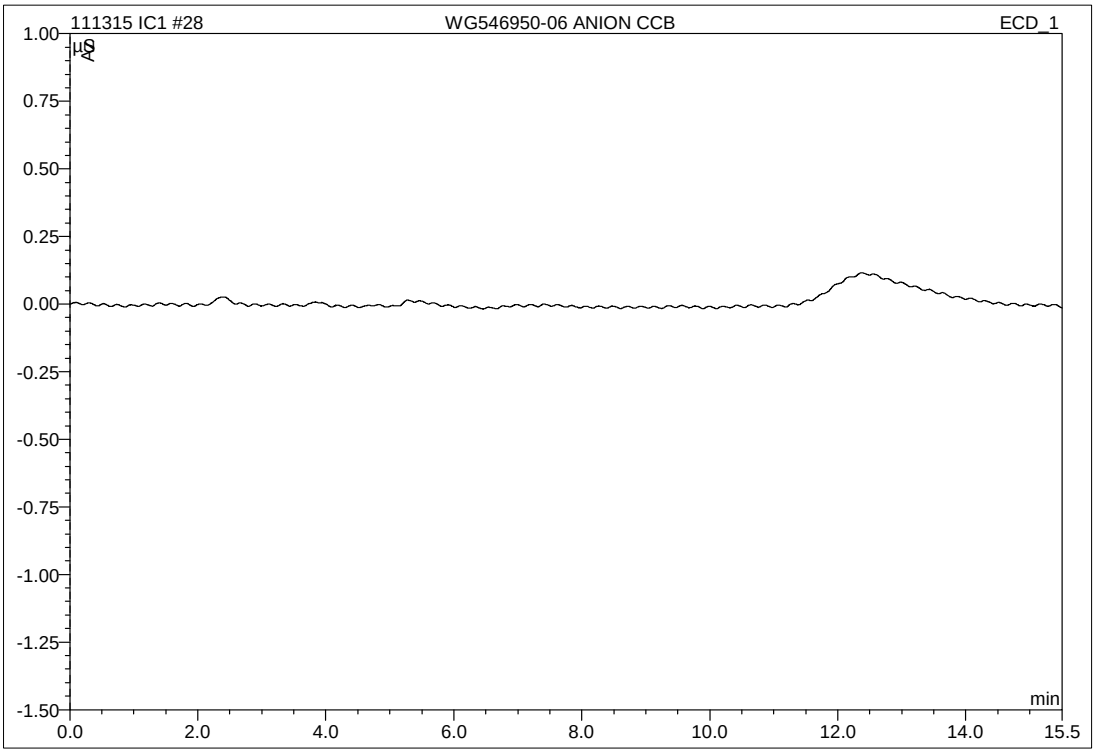

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

35 WG546950-08 ANION CCB

1,1 ALS

Sample Name:	**WG546950-08 ANION CCB**	*Injection Volume:*	**20.0**
Vial Number:	**12**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**102915_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/13/2015 23:16**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

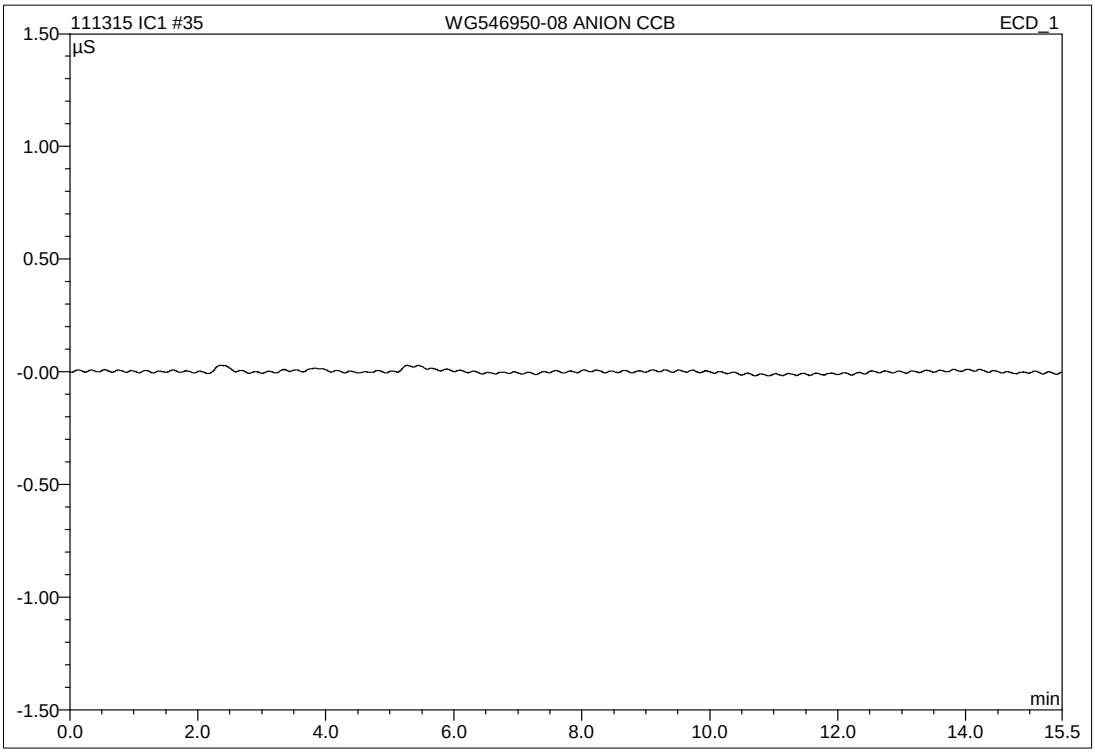

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

RETENTION TIME WINDOWS

Lab Name: MICROBAC Laboratories, Inc.

Instrument ID: IC1

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	6/5/2013	6/5/2013	6/6/2013
File #	WG432976-05	WG432976-07	WG433275-01
Time	16:16	18:25	16:50

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.41	3.40	3.41	0.017
Cl	4.87	4.87	4.88	0.017
NO2-N	5.67	5.66	5.67	0.017
Br	7.01	6.99	7.02	0.046
NO3-N	7.76	7.74	7.77	0.046
SO4	13.35	13.35	13.35	0.000

Instrument ID: IC2

IC Column: AS14A-4mm

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	3/2/2015	3/4/2015	3/5/2015
File #	WG514023-02	WG514341-02	WG514431-02
Time	23:15	18:47	17:41

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.33	3.33	3.32	0.017
Cl	4.75	4.78	4.76	0.043
NO2-N	5.54	5.59	5.56	0.082
Br	6.86	6.98	6.93	0.180
NO3-N	7.59	7.73	7.67	0.222
SO4	12.42	12.38	12.34	0.116

Instrument ID: IC3

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	5/20/2014	5/21/2014	5/21/2014
File #	WG476910-05	WG476934-01	WG476934-03
Time	12:41	9:54	13:59

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.41	3.41	3.41	0.000
Cl	5.11	5.09	5.07	0.050
NO2-N	6.14	6.11	6.07	0.101
Br	7.90	7.84	7.75	0.220
NO3-N	8.94	8.86	8.76	0.271
SO4	13.35	13.39	13.42	0.101

2.3.1.5 Raw QC Data

5 WG546860-01 ANION BLANK

1,1 ALS

Sample Name:	**WG546860-01 ANION BLANK**	*Injection Volume:*	**20.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**102915_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/13/2015 14:25**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

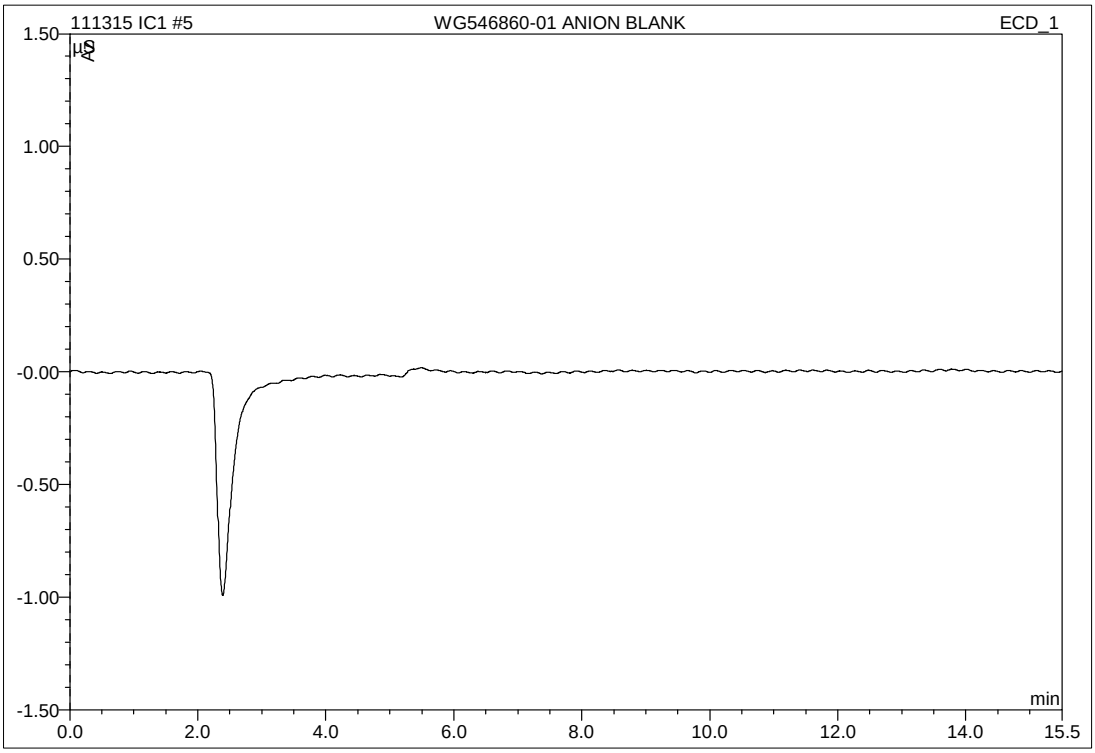

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

6 WG546860-02 ANION LCS

1,1 ALS

Sample Name:	**WG546860-02 ANION LCS**	*Injection Volume:*	**20.0**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**102915_9056**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/13/2015 14:43**	*Sample Weight:*	**1.0000**
Run Time (min):	**15.50**	*Sample Amount:*	**1.0000**

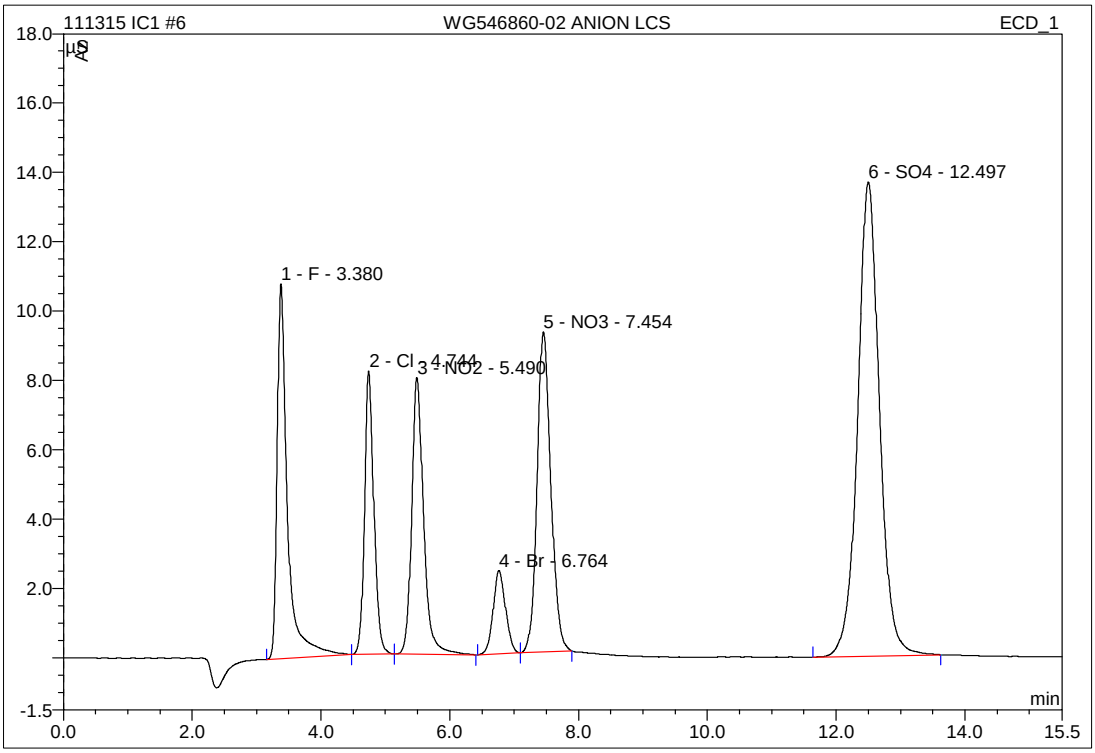

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.38	F	10.819	1.989	15.00	7.685	BMB
2	4.74	Cl	8.175	1.369	10.32	7.849	BMB
3	5.49	NO2	7.982	1.713	12.92	4.903	BMB
4	6.76	Br	2.404	0.537	4.05	7.800	BMB
5	7.45	NO3	9.240	2.282	17.21	5.363	BMB
6	12.50	SO4	13.682	5.373	40.51	39.074	BMB
Total:			52.303	13.263	100.00	72.673	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

2.3.2 Alkalinity Data

2.3.2.1 Summary Data

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-07	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW13-111215	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	11/16/2015 12:07
Workgroup #:	WG547028	**Analyst:**	DCM	**Run Date:**	11/16/2015 12:17
Collect Date:	11/12/2015 08:40	**Dilution:**	2	**File ID:**	SC151116003.026
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	368		80.0	40.0	20.0

Certificate of Analysis

Sample #:	L15110793-09	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW14-111215	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	11/16/2015 12:07
Workgroup #:	WG547028	**Analyst:**	DCM	**Run Date:**	11/16/2015 12:18
Collect Date:	11/12/2015 09:50	**Dilution:**	1	**File ID:**	SC151116003.027
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	254		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L15110793-11	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW11-111215	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	11/16/2015 12:07
Workgroup #:	WG547028	**Analyst:**	DCM	**Run Date:**	11/16/2015 12:19
Collect Date:	11/12/2015 11:00	**Dilution:**	2	**File ID:**	SC151116003.028
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	296		80.0	40.0	20.0

Certificate of Analysis

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15110793-13	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW06-111215	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	11/16/2015 12:07
Workgroup #:	WG547028	**Analyst:**	DCM	**Run Date:**	11/16/2015 12:19
Collect Date:	11/12/2015 13:25	**Dilution:**	1	**File ID:**	SC151116003.029
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	275		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L15110793-15	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW12-111215	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	11/16/2015 12:07
Workgroup #:	WG547028	**Analyst:**	DCM	**Run Date:**	11/16/2015 12:20
Collect Date:	11/12/2015 14:35	**Dilution:**	2	**File ID:**	SC151116003.030
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	282		80.0	40.0	20.0

2.3.2.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809
Value of b from plot:	0.0004135
Absorbance of unknown from quantitation report (y):	0.31
Calculated concentration (x):	0.03964483
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	0.0396 mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796
Value of B from plot:	318.9056
Value of C from plot:	-2.2712
Absorbance of unknown from quantitation report (x):	0.1583
Calculated concentration (y):	50.7495108
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	50.75 mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 16-NOV-2015
Analyst: DCM
Analyst: NA
Method: ALK
Instrument: SC
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG546936 WG547003 WG547028

Calibration/Linearity	11-16-2015
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DCM
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
17-NOV-2015

Secondary Reviewer:
18-NOV-2015

CHECKLIST1 - Modified 03/05/2008
Generated: NOV-18-2015 11:39:24

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 310.2 AAB#: WG547028

Login Number: L15110793

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW13-111215	07	11/12/15					11/16/2015	4.2	14		11/16/15	4.2	14	
50WW14-111215	09	11/12/15					11/16/2015	4.1	14		11/16/15	4.1	14	
50WW11-111215	11	11/12/15					11/16/2015	4.1	14		11/16/15	4.1	14	
50WW06-111215	13	11/12/15					11/16/2015	4	14		11/16/15	4	14	
50WW12-111215	15	11/12/15					11/16/2015	3.9	14		11/16/15	3.9	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4504111
Report generated 11/17/2015 14:16

METHOD BLANK SUMMARY

Login Number: L15110793
Blank File ID: SC151116003.012
Prep Date: 11/16/15 12:09
Analyzed Date: 11/16/15 12:09
Analyst: DCM

Work Group: WG547028
Blank Sample ID: WG547028-01
Instrument ID: SMARTCHEM
Method: 310.2

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG547028-02	SC151116003.013	11/16/15 12:09	01
LCS2	WG547028-03	SC151116003.014	11/16/15 12:10	01
50WW13-111215	L15110793-07	SC151116003.026	11/16/15 12:17	DL01
50WW14-111215	L15110793-09	SC151116003.027	11/16/15 12:18	01
50WW11-111215	L15110793-11	SC151116003.028	11/16/15 12:19	DL01
50WW06-111215	L15110793-13	SC151116003.029	11/16/15 12:19	01
50WW12-111215	L15110793-15	SC151116003.030	11/16/15 12:20	DL01
DUP	WG547028-05	SC151116003.031	11/16/15 12:20	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4504112
Report generated 11/17/2015 14:16

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15110793 Prep Date: 11/16/15 12:09 Sample ID: WG547028-01
Instrument ID: SMARTCHEM Run Date: 11/16/15 12:09 Prep Method: 310.2
File ID: SC151116003.012 Analyst: DCM Method: 310.2
Workgroup (AAB#): WG547028 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-16-NOV-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Alkalinity, Total (as CaCO3)	10.0	40.0	10.0	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4504113
17-NOV-2015 14:16

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15110793 Analyst: DCM Prep Method: 310.2
Instrument ID: SMARTCHEM Matrix: Water Method: 310.2
Workgroup (AAB#): WG547028 Units: mg/L
QC Key: DOD4 Lot #: STD73049

Sample ID: WG547028-02 LCS File ID: SC151116003.013 Run Date: 11/16/2015 12:09
Sample ID: WG547028-03 LCS2 File ID: SC151116003.014 Run Date: 11/16/2015 12:10

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Alkalinity, Total (as CaCO3)	200	196	98.1	200	194	97.0	1.06	85 - 115	20	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4504114
Report generated: 11/17/2015 14:17

2.3.2.3 Raw Data

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

WORKGROUP: WG546936

547003
547028

Daily Check

- [x] Lamp On
- [x] Probe Rinse Full
- [x] DI Water > ½ Full
- [x] Wash Solution > ½ Full
- [ ] NO3 Reagent bottle connected / purged
- [ ] NO3 pH adj to pH 5-9

Syringe filter lot # _____

- [x] WBL Run
- [x] Reagents Full
- [x] Dilution H_2O Full
- [x] Waste Container Check

1) **Workgroup** _____
Plan # 20151116001
2) **Workgroup** _____
Plan # 20151116002
3) **Workgroup** _____
Plan # 20151116003

Instrument: SC1 [x] SC2 [ ]

	Analyte	1	2	3
		Alk		
		Dilution		
SC Prepared Curve				
Position				
1-1	ICV			
1-2	Blk			
1-3	LCS			
1-4	LCSDUP			
1-5	11-514-C1			
1-6	C2			
1-7	C5			
1-8	MS C3			
1-9	MSD C4			
1-10	DUP 11-514-C5			
1-11	11-537-C2	1/4		color
1-12	C3	1/4		color
1-13	C5	1/4		color
1-14	C6	1/4		color
1-15	11-632-C1			
1-16	C2			
1-17	C3			
1-18	C4			
1-19	C5			
1-20	11-666-C1			
1-21	C2			
1-22	C3			
2-1	C4			
2-2	C5			
2-3	C6			

	Analyte	1	2	3
Position				
2-4	11-666-C7			
2-5				
2-6 1	ICV			
2-7 2	Blk			
2-8 3	LCS			
2-9 4	LCSDUP			
2-10 5	11-484-C2			
2-11 6	C3	1/2		
2-12 7	11-603-C2	1/2		
2-13 8	C3	1/2		
2-14 9	MS C4	1/2		
2-15 10	MSD C5	1/2		
2-16 11	C6	1/2		
2-17 12	C7	1/2		
2-18 13	C8	1/2		
2-19 14	11-670-C2	1/2		
2-20 15	C3	1/2		
2-21 16	C4			
2-22 17	MS C5			
2-23 18	MSD C6			
2-24 19	C7	1/2		
2-25 20	C8	1/2		
2-26 21	11-756-C1	1/2		
3-1 22	C2	1/2		
2 3-2 1	C3	1/2		
2 2	C4	1/2		
2 3	C5	1/2		

NOTES:
* Run NO2 std on NO3 runs
* LCSD must be run if no MS or Duplicate
*MS(10% sample): NO3, TKN, NH3, PHOS

DCN#114752

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

WORKGROUP: WG546936

Position	Analyte	1	2	3
3-3 4	11-756-c7	1/2		
3-4 5	c8	1/2		
3-5 6	DUP 11-756-c8	1/2		
3-6				
3-7 1	ICV			
3-8 2	Blk			
3-9 3	LCS			
3-10 4	LCSDUP			
3-11 5	11-794-c2	1/4		
3-12 6	c3	1/4		
3-13 7	c5	1/4		
3-14 8	c6	1/4		
3-15 9	c8	1/4		

Position	Analyte	1	2	3
3-16 10	11-794-c9	1/4		
3-17 11	11-735-c2	1/2		
3-18 12	c3	1/2		
3-19 13	c4			
3-20 14	11-793-c7	1/2		
3-21 15	c9			
3-22 16	11	1/2		
3-23 17	13			
3-24 18	15	1/2		
3-25 19	DUP 15	1/2		
3-26 20	11-756-c7			
3-27 21	c8			
3-28 22				

	Chloride	EPA 325.2/SM 4500-CI E-2000
	Nitrate-Nitrite	EPA 353.2/SM 4500-NO3 F-2000
✓	Alkalinity	EPA 310.2
	Sulfate	EPA 375.4/SM 426C (15th)/ SM4500-504 E-1997

	Ammonia	EPA 350.1/SM 4500-NH3 B-1997
	TKN	EPA 351.2
	Phos	EPA 365.4

Analyte	Alk		Reagents
SOP & Revision	IC 3102 R17		RGT 35353
Curve Stock (SC made)	Std 70552		
NO2 STD			
ICV	Std 73277		
CCV	Std 73048		
LCS	Std 73049		
MS	Std 72182 0.4(250)/10 = 100 Dilution		

Comments: _____

Analyst: David Merfield Date: 11/16/15

DCN#114752

MICROBAC (OVD)

SMARTCHEM200 INST1 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.0	0.8266	0.00	R	8:29:43 AM
DIL-1	RBL	0.0	0.7712	0.00		8:30:00 AM
DIL-1	RBL	0.0	0.7547	0.00		8:30:54 AM
DIL-1	Std-1	0.0	-0.0021	0.00		8:31:13 AM
SR5-1	Std-2	10.0	-0.0299	0.00		8:32:07 AM
SR5-2	Std-3	20.0	-0.0411	0.00		8:32:25 AM
SR5-3	Std-4	50.0	-0.0932	0.00		8:33:19 AM
SR5-4	Std-5	100.0	-0.1816	0.00		8:33:37 AM
SR5-5	Std-6	200.0	-0.3712	0.00		8:34:32 AM
SR5-6	Std-7	250.0	-0.4677	0.00		8:34:49 AM
SR5-7	Std-8	300.0	-0.5412	0.00		8:35:43 AM
ST-3	1CCV (150 mg/L)	144.5	-0.2690	96.36		8:36:01 AM
ST-2	2CCB (0 mg/L)	-9.2	0.0131	0.00	INV,><,LL	8:36:55 AM
1	ICV	253.2	-0.4645	0.00		8:37:13 AM
2	WG546936-01 BLK	-10.0	0.0145	0.00	INV,><,LL	8:38:07 AM
3	WG546936-02 LCS	196.1	-0.3621	0.00		8:38:25 AM
4	WG546936-03 LCSDUP	191.5	-0.3539	0.00		8:39:19 AM
5	L15110514-01	X 306.2	-0.5590	0.00	><,LH	8:39:37 AM
6	L15110514-02	298.1	-0.5445	0.00	><	8:40:31 AM
7	L15110514-05	X 317.2	-0.5784	0.00	><,LH	8:40:49 AM
8	L15110514-03 MS	X 342.3	-0.6228	0.00	><,LH	8:41:43 AM
9	L15110514-04 MSD	X 343.1	-0.6242	0.00	><,LH	8:42:01 AM
10	WG546936-07 DUP	X 314.0	-0.5728	0.00	><,LH	8:42:55 AM
ST-3	1CCV (150 mg/L)	146.9	-0.2732	97.90		8:43:13 AM
ST-2	2CCB (0 mg/L)	-11.3	0.0168	0.00	INV,><,LL	8:44:07 AM
11	L15110537-02 (4)	153.3	-0.2848	0.00		8:44:25 AM
12	L15110537-03 (4)	102.7	-0.1929	0.00		8:45:19 AM
13	L15110537-05 (4)	168.5	-0.3124	0.00		8:45:37 AM
14	L15110537-06 (4)	96.5	-0.1816	0.00		8:46:31 AM
15	L15110632-01	X 321.2	-0.5855	0.00	><,LH	8:46:49 AM
16	L15110632-02	298.4	-0.5450	0.00	><	8:47:43 AM
17	L15110632-03	295.5	-0.5400	0.00		8:48:01 AM

Report Date :11/16/2015 **Run Date :11/16/2015** **Operator : WESTCO** **Plan # :20151116001**

Plan Description : ALK-A1-DCM/11/16/2015

MICROBAC (OVD)

SMARTCHEM200 INST1 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
18	L15110632-04	319.4	-0.5823	0.00	><,LH	8:48:55 AM
19	L15110632-05	296.6	-0.5419	0.00	><	8:49:13 AM
20	L15110666-01	329.6	-0.6004	0.00	><,LH	8:50:07 AM
ST-3	1CCV (150 mg/L)	149.4	-0.2778	99.59		8:50:25 AM
ST-2	2CCB (0 mg/L)	-8.3	0.0113	0.00	INV,><,LL	8:51:19 AM
21	L15110666-02	347.0	-0.6311	0.00	><,LH	8:51:37 AM
22	L15110666-03	286.4	-0.5237	0.00		8:52:31 AM
23	L15110666-04	286.3	-0.5235	0.00		8:52:49 AM
24	L15110666-05	335.8	-0.6113	0.00	><,LH	8:53:43 AM
25	L15110666-06	310.3	-0.5661	0.00	><,LH	8:54:01 AM
26	L15110666-07	347.0	-0.6310	0.00	><,LH	8:54:55 AM
27	ID 27	20.6	-0.0422	0.00		8:55:13 AM
ST-3	1CCV (150 mg/L)	150.4	-0.2797	100.29		8:56:07 AM
ST-2	2CCB (0 mg/L)	-3.8	0.0030	0.00	INV,><,LL	8:56:25 AM
5-[1/2]	L15110514-01	344.4	-0.3191	0.00	LH	9:04:06 AM
7-[1/2]	L15110514-05	371.5	-0.3435	0.00	LH	9:05:17 AM
8-[1/2]	L15110514-03 MS	451.4	-0.4154	0.00	LH	9:06:30 AM
ST-3	1CCV (150 mg/L)	161.9	-0.3005	107.95		9:06:30 AM
ST-2	2CCB (0 mg/L)	12.5	-0.0272	0.00		9:07:23 AM
9-[1/2]	L15110514-04 MSD	461.4	-0.4243	0.00	LH	9:08:54 AM
10-[1/2]	WG546936-07 DUP	365.4	-0.3380	0.00	LH	9:10:06 AM
15-[1/2]	L15110632-01	381.9	-0.3529	0.00	LH	9:11:18 AM
18-[1/2]	L15110632-04	367.9	-0.3403	0.00	LH	9:12:30 AM
20-[1/2]	L15110666-01	409.3	-0.3776	0.00	LH	9:13:42 AM
21-[1/2]	L15110666-02	511.3	-0.4690	0.00	LH	9:14:53 AM
24-[1/2]	L15110666-05	425.9	-0.3925	0.00	LH	9:16:06 AM
25-[1/2]	L15110666-06	353.0	-0.3268	0.00	LH	9:17:17 AM
26-[1/2]	L15110666-07	524.7	-0.4809	0.00	LH	9:18:30 AM
ST-3	1CCV (150 mg/L)	162.2	-0.3010	108.14		9:18:30 AM
ST-2	2CCB (0 mg/L)	17.5	-0.0364	0.00		9:19:24 AM

Report Date :11/16/2015 **Run Date :11/16/2015** **Operator : WESTCO** **Plan # :20151116001**

Plan Description : ALK-A1-DCM/11/16/2015

Calibrant Report - WALK -

Calib Lot #:010104 Exp Date:6/21/2020 User:MICROBAC

Plan # : 20151116001 Description : [ALK-A1-DCM/11/16/2015] Unit

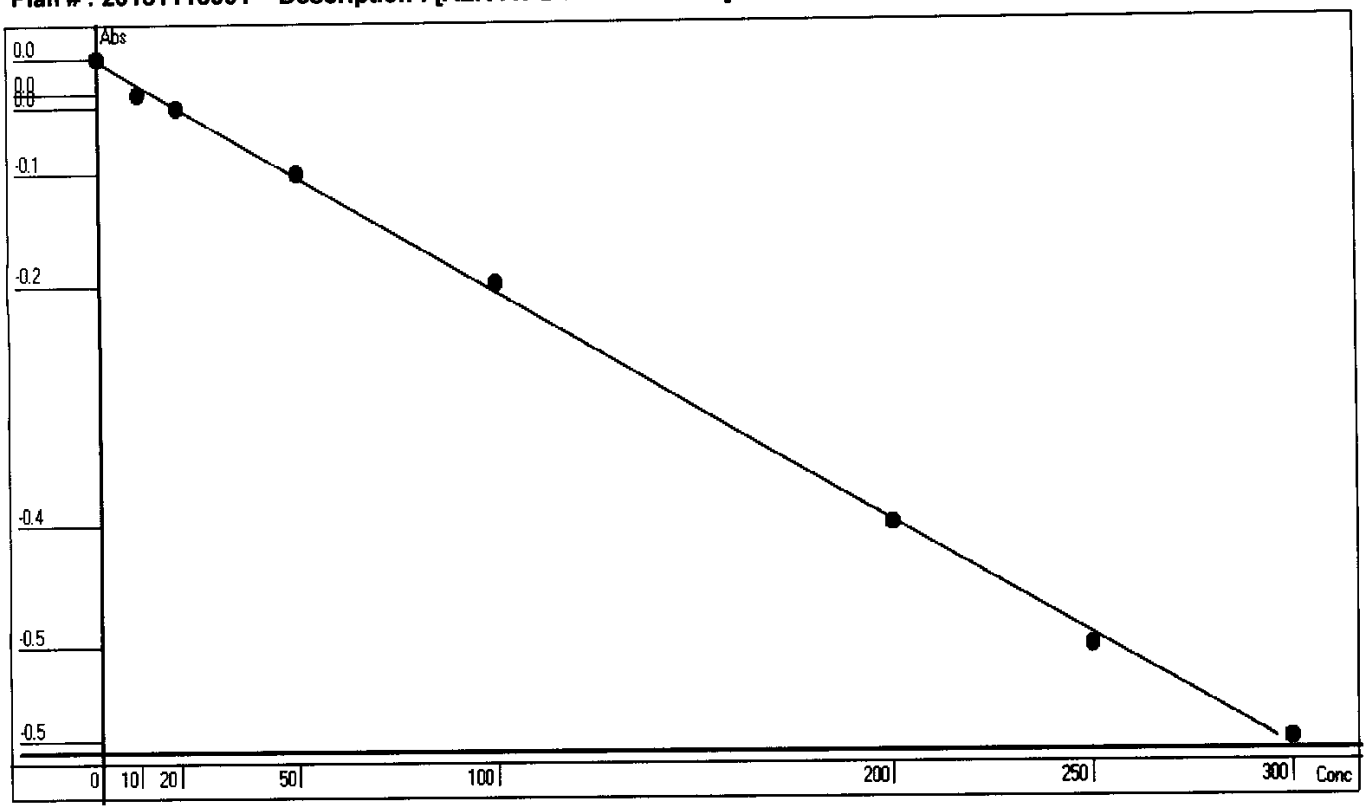

Point	OD	Conc	Recalc Conc	% Error
1	-0.0021	0	-1.0493	-104.93
2	-0.0299	10	13.9741	39.74
3	-0.0411	20	20.0361	0.18
4	-0.0932	50	48.3066	-3.39
5	-0.1815	100	96.4880	-3.51
6	-0.3711	200	201.0835	0.54
7	-0.4676	250	254.9160	1.97
8	-0.5411	300	296.1880	-1.27

Conc= +21.6196*Abso^2 -539.717*Abso -2.1828 R^2=0.9993

RBL
0.763
0

Report Date 11/16/2015 Run Date 11/16/2015

MICROBAC (OVD)

SMARTCHEM200 INST1 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.0	0.5471	0.00		11:10:20 AM
DIL-1	RBL	0.0	0.5505	0.00		11:10:38 AM
DIL-1	RBL	0.0	0.5480	0.00		11:11:32 AM
DIL-1	Std-1	0.0	-0.0119	0.00		11:11:50 AM
SR5-1	Std-2	10.0	-0.0093	0.00		11:12:45 AM
SR5-2	Std-3	20.0	-0.0289	0.00		11:13:03 AM
SR5-3	Std-4	50.0	-0.0602	0.00		11:13:56 AM
SR5-4	Std-5	100.0	-0.1345	0.00		11:14:14 AM
SR5-5	Std-6	200.0	-0.2692	0.00		11:15:08 AM
SR5-6	Std-7	250.0	-0.3515	0.00		11:15:26 AM
SR5-7	Std-8	300.0	-0.3985	0.00		11:16:20 AM
ST-3	1CCV (150 mg/L)	144.1	-0.1950	96.09		11:16:38 AM
ST-2	2CCB (0 mg/L)	-10.9	0.0134	0.00	INV,><,LL	11:17:33 AM
1	ICV	251.9	-0.3415	0.00		11:17:51 AM
2	WG547003-01 BLK	-1.1	0.0004	0.00	INV,><,LL	11:18:45 AM
3	WG547003-02 LCS	196.1	-0.2655	0.00		11:19:03 AM
4	WG547003-03 LCSDUP	198.7	-0.2690	0.00		11:19:57 AM
5	L15110484-02	230.5	-0.3123	0.00		11:20:15 AM
6	L15110484-03 (2)	248.5	-0.3368	0.00		11:21:09 AM
7	L15110603-02 (2)	254.5	-0.3451	0.00		11:21:27 AM
8	L15110603-03 (2)	215.2	-0.2914	0.00		11:22:21 AM
9	L15110603-04 (2) MS	252.9	-0.3428	0.00		11:22:39 AM
10	L15110603-05 (2) MSD	250.5	-0.3396	0.00		11:23:33 AM
ST-3	1CCV (150 mg/L)	142.2	-0.1924	94.81		11:23:51 AM
ST-2	2CCB (0 mg/L)	-2.9	0.0027	0.00	INV,><,LL	11:24:45 AM
11	L15110603-06 (2)	216.1	-0.2927	0.00		11:25:03 AM
12	L15110603-07 (2)	199.7	-0.2704	0.00		11:25:57 AM
13	L15110603-08 (2)	199.1	-0.2695	0.00		11:26:15 AM
14	L15110670-02 (2)	229.0	-0.3102	0.00		11:27:09 AM
15	L15110670-03 (2)	175.1	-0.2370	0.00		11:27:27 AM
16	L15110670-04	212.4	-0.2876	0.00		11:28:21 AM
17	L15110670-05 MS	286.2	-0.3884	0.00		11:28:39 AM

Report Date :11/16/2015 **Run Date :11/16/2015** **Operator : WESTCO** **Plan # :20151116002**

Plan Description : ALK-B1-DCM/11/16/2015

MICROBAC (OVD)
SMARTCHEM200 INST1 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
18	L15110670-06 MSD	282.0	-0.3826	0.00		11:29:33 AM
19	L15110670-07 (2)	114.4	-0.1548	0.00		11:29:51 AM
20	L15110670-08 (2)	137.0	-0.1854	0.00		11:30:45 AM
ST-3	1CCV (150 mg/L)	155.7	-0.2106	103.78		11:31:03 AM
ST-2	2CCB (0 mg/L)	5.0	-0.0078	0.00		11:31:57 AM
21	L15110756-01 (2)	159.3	-0.2155	0.00		11:32:15 AM
22	L15110756-02 (2)	156.4	-0.2116	0.00		11:33:09 AM
23	L15110756-03 (2)	173.6	-0.2349	0.00		11:33:27 AM
24	L15110756-04 (2)	146.9	-0.1987	0.00		11:34:21 AM
25	L15110756-06 (2)	144.9	-0.1960	0.00		11:34:39 AM
26	L15110756-07 (2)	X24.1	-0.0334	0.00		11:35:33 AM
27	L15110756-08 (2) WG-10 REF	23.7	-0.0328	0.00		11:35:51 AM
28	WG547003-11 (2) DUP	23.1	-0.0321	0.00		11:36:45 AM
29	ID 29	23.7	-0.0328	0.00		11:37:03 AM
ST-3	1CCV (150 mg/L)	150.5	-0.2036	100.33		11:37:57 AM
ST-2	2CCB (0 mg/L)	12.5	-0.0178	0.00		11:38:15 AM

Report Date :11/16/2015 Run Date :11/16/2015 Operator : WESTCO Plan # :20151116002

Plan Description : ALK-B1-DCM/11/16/2015

Calibrant Report - WALK -

Calib Lot #:010104 Exp Date:6/21/2020 User:MICROBAC

Plan # : 20151116002 Description : [ALK-B1-DCM/11/16/2015] Unit

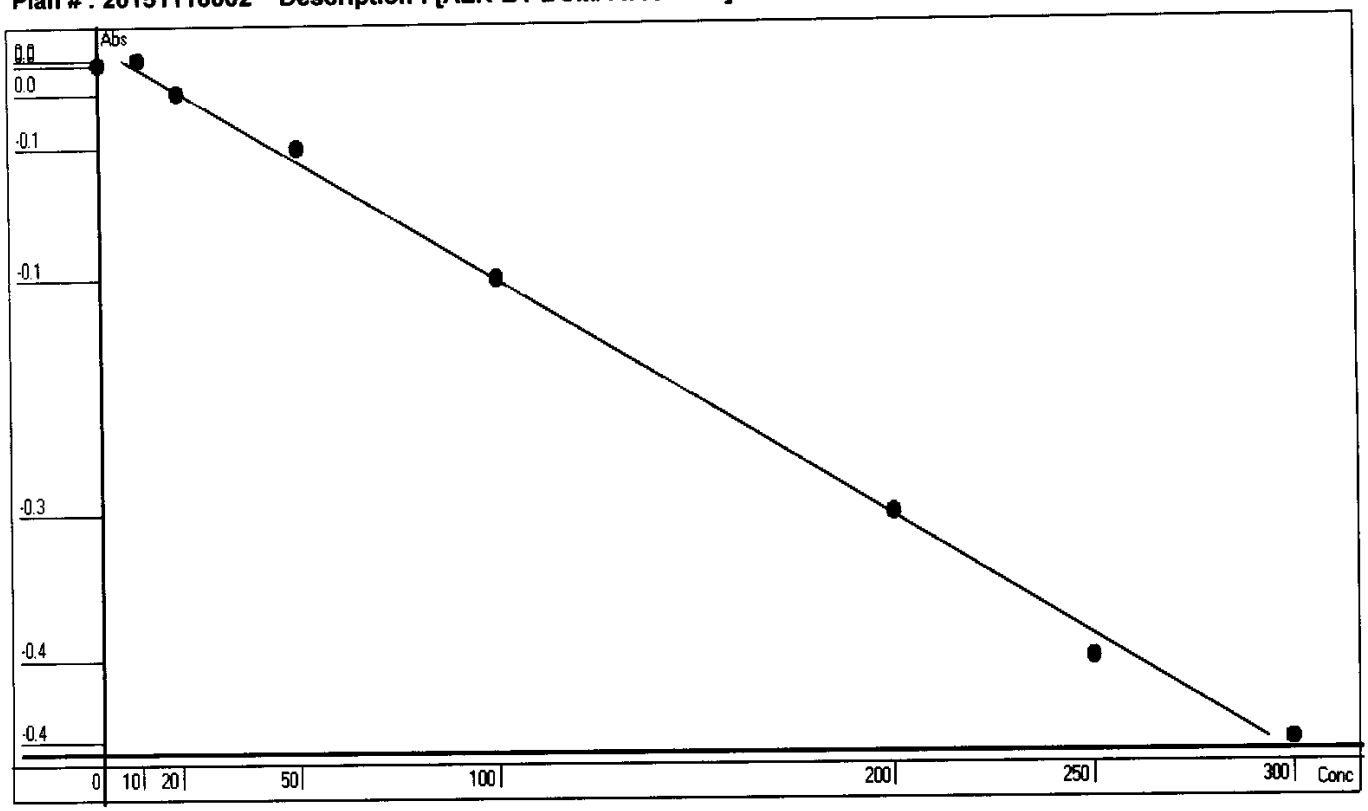

Point	OD	Conc	Recalc Conc	% Error
1	-0.0119	0	8.0941	809.41
2	-0.0093	10	6.1505	-38.50
3	-0.0289	20	20.7947	3.97
4	-0.0602	50	44.1436	-11.71
5	-0.1345	100	99.3862	-0.61
6	-0.2691	200	198.8074	-0.60
7	-0.3514	250	259.1816	3.67
8	-0.3984	300	293.5187	-2.16

Conc= -23.2989*Abso^2 -748.0448*Abso -0.8043 R^2=0.9975

RBL
0.5476
0

Report Date 11/16/2015 Run Date 11/16/2015

MICROBAC (OVD)

SMARTCHEM200 INST1 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.0	0.5157	0.00		12:01:05 PM
DIL-1	RBL	0.0	0.5063	0.00		12:01:23 PM
DIL-1	RBL	0.0	0.5091	0.00		12:02:17 PM
DIL-1	Std-1	0.0	-0.0037	0.00		12:02:35 PM
SR5-1	Std-2	10.0	-0.0095	0.00		12:03:30 PM
SR5-2	Std-3	20.0	-0.0228	0.00		12:03:48 PM
SR5-3	Std-4	50.0	-0.0534	0.00		12:04:41 PM
SR5-4	Std-5	100.0	-0.1208	0.00		12:04:59 PM
SR5-5	Std-6	200.0	-0.2507	0.00	EPL	12:05:54 PM
SR5-6	Std-7	250.0	-0.3221	0.00		12:06:11 PM
SR5-7	Std-8	300.0	-0.3669	0.00		12:07:05 PM
ST-3	1CCV (150 mg/L)	141.4	-0.1756	94.29		12:07:23 PM
ST-2	2CCB (0 mg/L)	-4.5	0.0084	0.00	INV,><,LL	12:08:17 PM
1	ICV	247.4	-0.3088	0.00		12:08:36 PM
2	WG547028-01 BLK	-0.6	0.0034	0.00	INV,><,LL	12:09:29 PM
3	WG547028-02 LCS	196.1	-0.2444	0.00		12:09:48 PM
4	WG547028-03 LCSDUP	194.1	-0.2418	0.00		12:10:42 PM
5	L15110794-02 (4)	222.6	-0.2777	0.00		12:11:00 PM
6	L15110794-03 (4)	90.2	-0.1111	0.00		12:11:54 PM
7	L15110794-05 (4)	144.4	-0.1793	0.00		12:12:12 PM
8	L15110794-06 (4)	115.5	-0.1429	0.00		12:13:06 PM
9	L15110794-08 (4)	168.7	-0.2099	0.00		12:13:24 PM
10	L15110794-09 (4)	117.3	-0.1452	0.00		12:14:18 PM
ST-3	1CCV (150 mg/L)	142.1	-0.1765	94.76		12:14:36 PM
ST-2	2CCB (0 mg/L)	-3.6	0.0072	0.00	INV,><,LL	12:15:30 PM
11	L15110735-02 (2)	210.2	-0.2621	0.00		12:15:48 PM
12	L15110735-03 (2)	226.2	-0.2822	0.00		12:16:42 PM
13	L15110735-04	8.9	-0.0086	0.00		12:17:00 PM
14	L15110793-07 (2)	183.9	-0.2290	0.00		12:17:54 PM
15	L15110793-09	254.3	-0.3175	0.00		12:18:12 PM
16	L15110793-11 (2)	147.9	-0.1838	0.00		12:19:06 PM
17	L15110793-13	274.8	-0.3432	0.00		12:19:24 PM

Report Date :11/16/2015 **Run Date :11/16/2015** **Operator : WESTCO** **Plan # :20151116003**

Plan Description : ALK-C1-DCM/11/16/2015

MICROBAC (OVD)

SMARTCHEM200 INST1 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
18	L15110793-15 (2)	140.9	-0.1749	0.00		12:20:18 PM
19 dcm 11/17/15	WG547025-05 (2) DUP	144.5	-0.1795	0.00		12:20:36 PM
20	L15110756-07	13.0	-0.0138	0.00		12:21:30 PM
ST-3	1CCV (150 mg/L)	143.7	-0.1785	95.82		12:21:48 PM
ST-2	2CCB (0 mg/L)	-0.4	0.0032	0.00	INV,><,LL	12:22:42 PM
21	L15110756-08	15.7	-0.0172	0.00		12:23:00 PM
22	ID 22	13.7	-0.0146	0.00		12:23:54 PM
ST-3	1CCV (150 mg/L)	150.5	-0.1870	100.33		12:24:12 PM
ST-2	2CCB (0 mg/L)	4.7	-0.0033	0.00		12:25:06 PM

Report Date :11/16/2015 **Run Date :11/16/2015** **Operator : WESTCO** **Plan # :20151116003**

Plan Description : ALK-C1-DCM/11/16/2015

Calibrant Report - WALK -

Calib Lot #:010104 Exp Date:6/21/2020 User:MICROBAC

Plan # : 20151116003 Description : [ALK-C1-DCM/11/16/2015] Unit

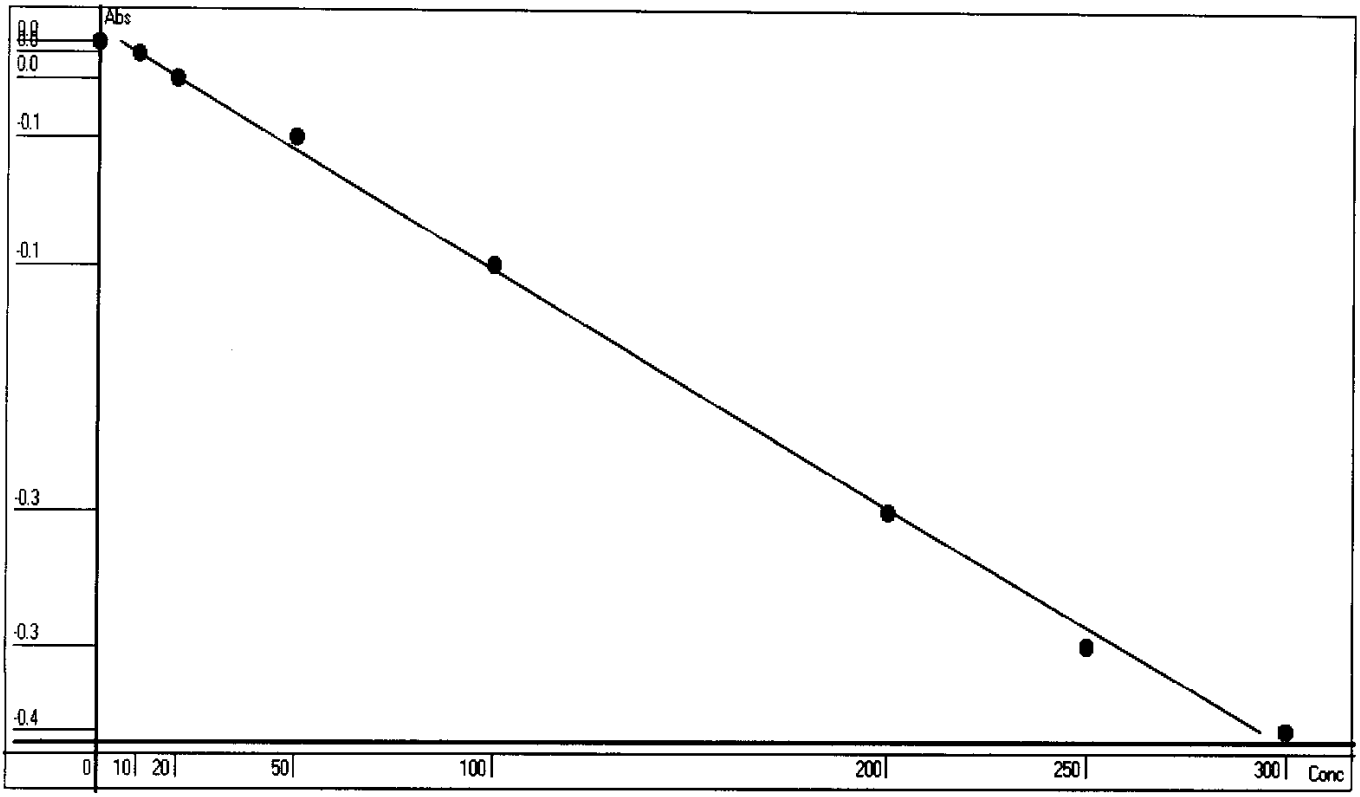

Point	OD	Conc	Recalc Conc	% Error
1	-0.0037	0	5.0474	504.74
2	-0.0095	10	9.6427	-3.57
3	-0.0228	20	20.1819	0.91
4	-0.0534	50	44.4388	-11.12
5	-0.1208	100	97.9113	-2.09
6	-0.2507	200	201.1382	0.57
7	-0.3221	250	257.9724	3.19
8	-0.3669	300	293.6675	-2.11

Conc= +6.6166*Abso^2 -792.207*Abso +2.1161 R^2=0.9983

RBL
0.5077
0

Report Date 11/16/2015 Run Date 11/16/2015

2.3.3 Phosphorus Data

2.3.3.1 Summary Data

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-07	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW13-111215	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	11/19/2015 12:01
Workgroup #:	WG547563	**Analyst:**	DCM	**Run Date:**	11/19/2015 12:15
Collect Date:	11/12/2015 08:40	**Dilution:**	2	**File ID:**	SC151119003.030
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	2.05		0.800	0.400	0.200

Certificate of Analysis

Sample #:	L15110793-09	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW14-111215	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	11/19/2015 12:01
Workgroup #:	WG547563	**Analyst:**	DCM	**Run Date:**	11/19/2015 12:10
Collect Date:	11/12/2015 09:50	**Dilution:**	1	**File ID:**	SC151119003.021
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.719		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15110793-11	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW11-111215	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	11/19/2015 12:01
Workgroup #:	WG547563	**Analyst:**	DCM	**Run Date:**	11/19/2015 12:11
Collect Date:	11/12/2015 11:00	**Dilution:**	1	**File ID:**	SC151119003.022
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.321	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-13	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW06-111215	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	11/19/2015 12:01
Workgroup #:	WG547563	**Analyst:**	DCM	**Run Date:**	11/19/2015 12:11
Collect Date:	11/12/2015 13:25	**Dilution:**	1	**File ID:**	SC151119003.023
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.408		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L15110793-15	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW12-111215	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	11/19/2015 12:01
Workgroup #:	WG547563	**Analyst:**	DCM	**Run Date:**	11/19/2015 12:12
Collect Date:	11/12/2015 14:35	**Dilution:**	1	**File ID:**	SC151119003.024
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.3.3.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809	
Value of b from plot:	0.0004135	
Absorbance of unknown from quantitation report (y):	0.31	
Calculated concentration (x):	0.03964483	
Dilution factor (D):	1.00	
Concentration of analyte in sample, Cy:	0.0396	mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796	
Value of B from plot:	318.9056	
Value of C from plot:	-2.2712	
Absorbance of unknown from quantitation report (x):	0.1583	
Calculated concentration (y):	50.7495108	
Dilution factor (D):	1.00	
Concentration of analyte in sample, Cy:	50.75	mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 19-NOV-2015
Analyst: DCM
Analyst: NA
Method: PHOS
Instrument: SC
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG547563

Calibration/Linearity	11-19-2015
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DCM
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
20-NOV-2015

Secondary Reviewer:
20-NOV-2015

CHECKLIST1 - Modified 03/05/2008
Generated: NOV-20-2015 16:25:35

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 365.4 AAB#: WG547563

Login Number: L15110793

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW13-111215	07	11/12/15					11/19/2015	7.1	28		11/19/15	7.1	28	
50WW14-111215	09	11/12/15					11/19/2015	7.1	28		11/19/15	7.1	28	
50WW11-111215	11	11/12/15					11/19/2015	7	28		11/19/15	7	28	
50WW06-111215	13	11/12/15					11/19/2015	6.9	28		11/19/15	6.9	28	
50WW12-111215	15	11/12/15					11/19/2015	6.9	28		11/19/15	6.9	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4513029
Report generated 11/20/2015 15:24

METHOD BLANK SUMMARY

Login Number: L15110793
Blank File ID: SC151119003.010
Prep Date: 11/19/15 12:03
Analyzed Date: 11/19/15 12:03
Analyst: DCM

Work Group: WG547563
Blank Sample ID: WG547563-01
Instrument ID: SMARTCHEM
Method: 365.4

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG547563-02	SC151119003.011	11/19/15 12:04	01
50WW14-111215	L15110793-09	SC151119003.021	11/19/15 12:10	01
50WW11-111215	L15110793-11	SC151119003.022	11/19/15 12:11	01
50WW06-111215	L15110793-13	SC151119003.023	11/19/15 12:11	01
50WW12-111215	L15110793-15	SC151119003.024	11/19/15 12:12	01
DUP	WG547563-04	SC151119003.026	11/19/15 12:13	01
50WW13-111215	L15110793-07	SC151119003.030	11/19/15 12:15	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4513030
Report generated 11/20/2015 15:24

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15110793 Prep Date: 11/19/15 12:03 Sample ID: WG547563-01
Instrument ID: SMARTCHEM Run Date: 11/19/15 12:03 Prep Method: 365.4
File ID: SC151119003.010 Analyst: DCM Method: 365.4
Workgroup (AAB#): WG547563 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-19-NOV-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Phosphorus, Total	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4513031
20-NOV-2015 15:24

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15110793 Run Date: 11/19/2015 Sample ID: WG547563-02
Instrument ID: SMARTCHEM Run Time: 12:04 Prep Method: 365.4
File ID: SC151119003.011 Analyst: DCM Method: 365.4
Workgroup (AAB#): WG547563 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD73418 Cal ID: SMARTC-19-NOV-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Phosphorus, Total	1.00	0.978	97.8	70 - 130	

LCS - Modified 03/06/2008
PDF File ID: 4513032
Report generated: 11/20/2015 15:24

2.3.3.3 Raw Data

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

WORKGROUP: WG547563

Daily Check

- [x] Lamp On
- [x] Probe Rinse Full
- [x] DI Water > ½ Full
- [x] Wash Solution > ½ Full
- [ ] NO3 Reagent bottle connected / purged
- [ ] NO3 pH adj to pH 5-9

Syringe filter lot # _____

- [x] WBL Run
- [x] Reagents Full
- [x] Dilution H_2O Full
- [x] Waste Container Check

1) **Workgroup** _____
Plan # 2015119003
2) **Workgroup** _____
Plan # _____
3) **Workgroup** _____
Plan # _____

Instrument: SC1 [x] SC2 [ ]

	Analyte	1	2	3
		PHOS		
		Dilution		
SC Prepared Curve				
Position				
1-1	JCV			
1-2	BLK			
1-3	LCS			
1-4	11-800-01			
1-5	11-672-01			
1-6	02			
1-7	03			
1-8	04			
1-9	11-798-01	1/25		
1-10	11-793-07			
1-11	09			
1-12	11			
1-13	13			
1-14	15			
1-15	11-943-01			
1-16	DUP 11-672-01			
1-17	MS 11-672-01			
1-18	MS 11-672-02			
1-19				
1-20	11-793-07	1/2		
1-21				
1-22				
2-1				
2-2				
2-3				

	Analyte	1	2	3
Position				
2-4				
2-5				
2-6				
2-7				
2-8				
2-9				
2-10				
2-11				
2-12				
2-13				
2-14				
2-15				
2-16				
2-17				
2-18				
2-19				
2-20				
2-21				
2-22				
2-23				
2-24				
2-25				
2-26				
3-1				
3-2				

NOTES:
* Run NO2 std on NO3 runs
* LCSD must be run if no MS or Duplicate
*MS(10% sample): NO3, TKN, NH3, PHOS

DCN#114853

SMARTCHEM RUN LOG
(smartchem2, smartchem3)

WORKGROUP: WG547563

Position	Analyte	1	2	3
3-3				
3-4				
3-5				
3-6				
3-7				
3-8				
3-9				
3-10				
3-11				
3-12				
3-13				
3-14				
3-15				

Position	Analyte	1	2	3
3-16				
3-17				
3-18				
3-19				
3-20				
3-21				
3-22				
3-23				
3-24				
3-25				
3-26				
3-27				
3-28				

	Chloride	EPA 325.2/SM 4500-CI E-2000
	Nitrate-Nitrite	EPA 353.2/SM 4500-NO3 F-2000
	Alkalinity	EPA 310.2
	Sulfate	EPA 375.4/SM 426C (15th)/ SM4500-504 E-1997

	Ammonia	EPA 350.1/SM 4500-NH3 B-1997
	TKN	EPA 351.2
✓	Phos	EPA 365.4

Analyte	DPHOS		Reagents
SOP & Revision	K 3654 R 17		RGT 35121
Curve Stock (SC made)			RGT 34471
NO2 STD			RGT 35393
ICV	Does		
CCV	see log		
LCS			
MS	Dilution		

Comments: _____

Analyst: David Merchel Date: 11/19/15

DCN#114853

TKN/Phosphorus Digestion Log

TKN WG:
TKN Std: Std 73492
TKN CCV: 1/2 (Std 73492)
TKN ICV: Std 73251
TKN LCS: Std 73464

Phos WG:
Phos Std: Std 73492
Phos CCV: 1/2 (Std 73492)
Phos ICV: Std 73454
Phos LCS: Std 73418

MS/MSD: Std 72041
Daily Dilution: 1(25)/25=1

Block Digester Temperature: 380 °C
Digest Reagent: RGT 35113

	Sample	Volume	TKN Dilution	Phos Dilution		Sample	Volume	TKN Dilution	Phos Dilution
1	Std				26	11-894-C7		✓	
2	Std				27	11-793-C1			✓
3	ICV T				28	11-793-C7			✓
4	ICV P				29	C9			✓
5	LCST				30	11			✓
6	LCSP				31	13			✓
7	11-794-C2	1/50	✓		32	15			✓
8	C5	1/50	✓		33	11-943-C1			✓
9	C8	1/50	✓		34	DUP 11-672-C1		✓	✓
10	11-800-C1	1/10	✓	✓	35	MS 11-672-C1		✓	✓
11	11-848-C1		✓		36	MS 11-672-C2		✓	✓
12	11-672-C1		✓	✓	37	Blk			
13	C2		✓	✓	38	Blk			
14	C3		✓	✓	39	Blk			
15	C4		✓	✓	40	Blk			
16	11-735-C2		✓		41				
17	C3		✓		42				
18	C4		✓		43				
19	11-889-C2		✓		44				
20	11-894-C1		✓		45				
21	C2		✓		46				
22	C3		✓		47				
23	C4		✓		48				
24	C5		✓		49				
25	C6		✓		50				

Analyst: David Merkle
Date: 11/18/15

MICROBAC (OVD)

SMARTCHEM200 INST1 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WTPH -Unit [mg/L] - EPA 365.4 TOTAL PHOSPHORUS

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.000	0.0512	0.00	R	11:56:45 AM
DIL-1	RBL	0.000	0.0514	0.00	R	11:57:03 AM
DIL-1	RBL	0.000	0.0530	0.00	R	11:57:57 AM
SR5-1	Std-1	0.010	-0.0009	0.00	INV	11:58:15 AM
SR5-2	Std-2	0.200	0.0311	0.00		11:59:09 AM
SR5-3	Std-3	0.500	0.0648	0.00		11:59:27 AM
SR5-4	Std-4	1.000	0.1320	0.00		12:00:22 PM
SR5-5	Std-5	1.500	0.1940	0.00		12:00:39 PM
ST-1	Std-6	2.000	0.2656	0.00		12:01:34 PM
ST-3	1CCV (1 mg/L)	0.965	0.1271	96.46		12:01:51 PM
ST-2	2CCB (0 mg/L)	0.004	0.0007	0.00		12:02:46 PM
1	ICV	1.565	0.2061	0.00		12:03:03 PM
2	WG547563-01 BLK	0.038	0.0051	0.00		12:03:58 PM
3	WG547563-02 LCS	0.978	0.1288	0.00		12:04:15 PM
4	L15110800-01	0.480	0.0633	0.00		12:05:10 PM
5	L15110672-01	0.015	0.0021	0.00		12:05:27 PM
6	L15110672-02	-0.025	-0.0031	0.00	INV,><,LL	12:06:22 PM
7	L15110672-03	0.190	0.0251	0.00		12:06:39 PM
8	L15110672-04	0.192	0.0254	0.00		12:07:34 PM
9	L15110798-01 (25)	1.697	0.2235	0.00		12:07:52 PM
10	L15110793-07	2.204	0.2902	0.00	EPL,><,LH	12:08:46 PM
ST-3	1CCV (1 mg/L)	0.975	0.1284	97.45		12:09:04 PM
ST-2	2CCB (0 mg/L)	0.012	0.0017	0.00		12:09:58 PM
11	L15110793-09	0.719	0.0948	0.00	EPL	12:10:16 PM
12	L15110793-11	0.321	0.0424	0.00	EPL	12:11:10 PM
13	L15110793-13	0.408	0.0539	0.00		12:11:28 PM
14	L15110793-15	0.000	0.0001	0.00	LL	12:12:22 PM
15	L15110943-01	-0.013	-0.0015	0.00	INV,><,LL	12:12:39 PM
16	WG547563-04 DUP	0.087	0.0116	0.00		12:13:34 PM
17	WG547563-05 MS	1.042	0.1373	0.00		12:13:52 PM
18	WG547563-07 MS	1.037	0.1366	0.00		12:14:46 PM
19	ID 19	2.287	0.3011	0.00	EPL,><,LH	12:15:04 PM

Report Date :11/19/2015 **Run Date :11/19/2015** **Operator : SMARTCHEM1** **Plan # :20151119003**

Plan Description : PHOS-A1-DCM/11/19/2015

MICROBAC (OVD)
SMARTCHEM200 INST1 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WTPH -Unit [mg/L] - EPA 365.4 TOTAL PHOSPHORUS

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
20	ID 20 L15110793-07 (2)	1.023	0.1348	0.00		12:15:58 PM
ST-3	1CCV (1 mg/L)	0.967	0.1274	96.69		12:16:16 PM
ST-2	2CCB (0 mg/L)	0.026	0.0035	0.00		12:17:10 PM
10-[1/2]	L15110793-07	0.173	0.0115	0.00		12:24:50 PM
19-[1/2]	ID 19	0.472	0.0312	0.00		12:26:02 PM
ST-3	1CCV (1 mg/L)	0.971	0.1280	97.14		12:26:02 PM
ST-2	2CCB (0 mg/L)	-0.011	-0.0013	0.00	INV,><,LL	12:26:56 PM

Report Date :11/19/2015 Run Date :11/19/2015 Operator : SMARTCHEM1 Plan # :20151119003

Plan Description : PHOS-A1-DCM/11/19/2015

Calibrant Report - WTPH -

Calib Lot #:010104 Exp Date:6/18/2020 User:MICROBAC

Plan # : 20151119003 Description : [PHOS-A1-DCM/11/19/2015] Unit

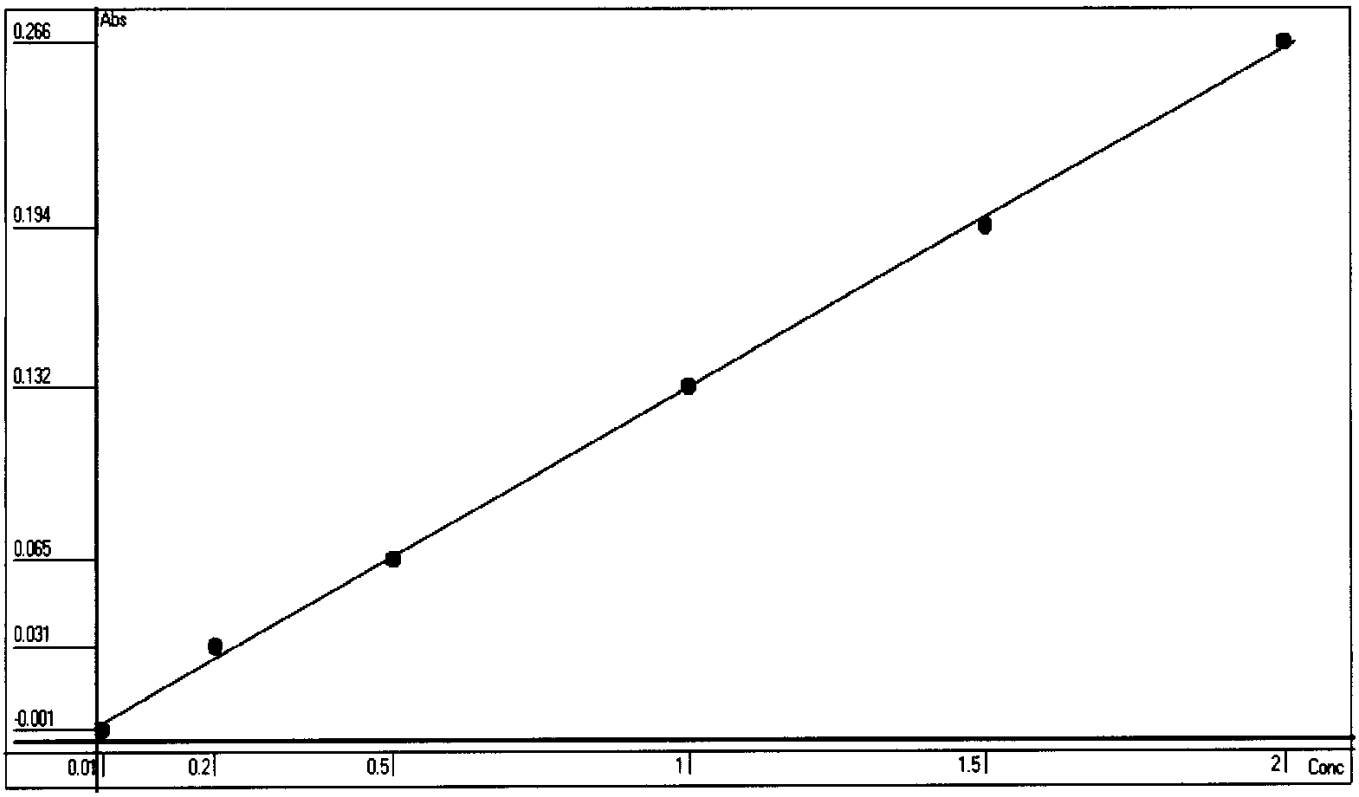

Point	OD	Conc	Recalc Conc	% Error
1	-0.0009	0.01	-0.0079	-179.00
2	0.0311	0.2	0.2352	17.60
3	0.0648	0.5	0.4912	-1.76
4	0.1320	1	1.0018	0.18
5	0.1940	1.5	1.4729	-1.81
6	0.2656	2	2.0169	0.85

Conc= +7.5979*Abso -0.0011 **R^2=0.9991**

RBL
0.0513
0

Report Date 11/19/2015 Run Date 11/19/2015

2.3.4 Sulfide Data

2.3.4.1 Summary Data

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-07	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW13-111215	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG547058	**Analyst:**	TB	**Run Date:**	11/16/2015 17:00
Collect Date:	11/12/2015 08:40	**Dilution:**	1	**File ID:**	ET.1511161700-18
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-09	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW14-111215	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG547058	**Analyst:**	TB	**Run Date:**	11/16/2015 17:00
Collect Date:	11/12/2015 09:50	**Dilution:**	1	**File ID:**	ET.1511161700-19
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-11	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW11-111215	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG547058	**Analyst:**	TB	**Run Date:**	11/16/2015 17:00
Collect Date:	11/12/2015 11:00	**Dilution:**	1	**File ID:**	ET.1511161700-20
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-13	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW06-111215	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG547058	**Analyst:**	TB	**Run Date:**	11/16/2015 17:00
Collect Date:	11/12/2015 13:25	**Dilution:**	1	**File ID:**	ET.1511161700-21
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-15	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW12-111215	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG547058	**Analyst:**	TB	**Run Date:**	11/16/2015 17:00
Collect Date:	11/12/2015 14:35	**Dilution:**	1	**File ID:**	ET.1511161700-22
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.3.4.2 QC Summary Data

Example Total Sulfide(Liquid) Calculations

[mL Iodine * N Iodide) - (mL titrant * N titrant)] * 16000/(volume * dilution) = mg/L Sulfide

where:

mL Iodine = mL of Iodine used
N Iodine = normality of Iodine
mL titrant = mL of titrant used
N titrant = normality of titrant
16000 = factor: 1mL of 0.025 N iodine reacts with 0.4mg sulfide
volume = mL filtered of mL titrated(if not filtered)
dilution = dilution in decimal form (1/5 = 0.2)

Example Total Sulfide(Soil) Calculations

[(mL Iodine * N Iodine) - (mL titrant * N titrant)] * 16.03/weight = mg/kg sulfide

where:

mL Iodine = mL of Iodine used
N Iodine = normality of Iodine
mL titrant = normality of titrant
16.03 = 32.06 grams per 2 equivalents
weight = kg of sample used

Microbac Laboratories Inc.

Data Checklist

Date: 16-NOV-2015
Analyst: TB
Analyst: NA
Method:
Instrument: BURET
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG547058

Calibration/Linearity	11/17/2015
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	TB
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
17-NOV-2015

Secondary Reviewer:
18-NOV-2015

CHECKLIST1 - Modified 03/05/2008
Generated: NOV-18-2015 11:30:12

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: SM4500-S-(-2)-F-

AAB#: WG547058

Login Number: L15110793

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW13-111215	07	11/12/15					11/16/2015	4.3	7		11/16/15	4.3	7	
50WW14-111215	09	11/12/15					11/16/2015	4.3	7		11/16/15	4.3	7	
50WW11-111215	11	11/12/15					11/16/2015	4.3	7		11/16/15	4.3	7	
50WW06-111215	13	11/12/15					11/16/2015	4.1	7		11/16/15	4.1	7	
50WW12-111215	15	11/12/15					11/16/2015	4.1	7		11/16/15	4.1	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4505811
Report generated 11/18/2015 09:36

METHOD BLANK SUMMARY

Login Number: L15110793
Blank File ID: ET.1511161700-01
Prep Date: 11/16/15 17:00
Analyzed Date: 11/16/15 17:00
Analyst: TB

Work Group: WG547058
Blank Sample ID: WG547058-01
Instrument ID: BURET
Method: SM4500-S-(-2)-F-

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG547058-02	ET.1511161700-02	11/16/15 17:00	
LCS2	WG547058-03	ET.1511161700-03	11/16/15 17:00	
50WW13-111215	L15110793-07	ET.1511161700-18	11/16/15 17:00	
50WW14-111215	L15110793-09	ET.1511161700-19	11/16/15 17:00	
50WW11-111215	L15110793-11	ET.1511161700-20	11/16/15 17:00	
50WW06-111215	L15110793-13	ET.1511161700-21	11/16/15 17:00	
50WW12-111215	L15110793-15	ET.1511161700-22	11/16/15 17:00	

Report Name: BLANK_SUMMARY
PDF File ID: 4505812
Report generated 11/18/2015 09:36

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15110793 Prep Date: 11/16/15 17:00 Sample ID: WG547058-01
Instrument ID: BURET Run Date: 11/16/15 17:00 Prep Method: SM4500-S-(-2)-F
File ID: ET.1511161700-01 Analyst: TB Method: SM4500-S-(-2)-F
Workgroup (AAB#): WG547058 Matrix: Water Units: mg/L
Contract #: Cal ID: BURET-

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Sulfide	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4505813
18-NOV-2015 09:36

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15110793 Analyst: TB Prep Method: SM4500-S-(-2)-F
Instrument ID: BURET Matrix: Water Method: SM4500-S-(-2)-F
Workgroup (AAB#): WG547058 Units: mg/L
QC Key: DOD4 Lot #: STD73494

Sample ID: WG547058-02 LCS File ID: ET.1511161700-02 Run Date: 11/16/2015 17:00
Sample ID: WG547058-03 LCS2 File ID: ET.1511161700-03 Run Date: 11/16/2015 17:00

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Sulfide	19.3	19.1	98.8	19.3	19.1	98.8	0.00	85 - 115	10	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4505814
Report generated: 11/18/2015 09:36

2.3.4.3 Raw Data

SULFIDE
(sulfide1)

WORKGROUP: WG547058

Water:
EPA 376.1 / SM4500-S(-2)-F
SOP K3761 Revision #: 17

Soil:
SM846 9030B/9034
SOP K9030 Revision #: _____

Instrument: Buret

LCS: 511 73494

Iodine standardization (0.025N) COA: 18311
mL 0.025N titrant: 10.0
Volume I: 10.0 mL
Normality I: 0.025

(0.1 N I) COA: 18450
mL 0.025 N titrant: 8.0
Volume I: 2.0 mL
Normality I: 0.099 N

Stock standardization (in duplicate) 5.0 mL stock
mL I 1) 10.0 2) 10.0
N I 1) 0.099 2) 0.099
mL 0.025 titrant 1) 23.5 2) 23.5
LCS daily dilution: 3(1288)/200 = 19.32 mg/L

1288 = stock conc (mg/L)

Titrant: T- 1689-01-03

SAMPLE	Volume Filtered mL	mL Iodine	N Iodine	0.0248 N Sodium Thiosulfate (mL)
BLANK	200	15.0	0.025	15.0
LCS (mL)	200	15.0	0.025	5.5
LCSDUP (mL)	200	15.0	0.025	5.5
11-666-01	520	15.0	0.025	14.5
02	520	15.0	0.025	>15.1
03	540	15.0	0.025	14.9
04	530	15.0	0.025	14.9
05	510	15.0	0.025	14.5
06	520	15.0	0.025	15.0
07	520	15.0	0.025	>15.1
756-01	540	15.0	0.025	15.0
02	520	15.0	0.025	15.0
03	520	15.0	0.025	14.9
04	510	15.0	0.025	14.7
06	520	15.0	0.025	14.9
07	530	15.0	0.025	15.1
08	530	15.0	0.025	15.1
793-07	490	15.0	0.025	14.8
09	450	15.0	0.025	14.6
11	500	15.0	0.025	14.8
13	450	15.0	0.025	15.1
15	460	15.0	0.025	14.7

Analyst: Tom Bark Date/Time: 1700 11/16/15

DCN#114770

Microbac Laboratories Inc.
TITRAMETRIC REPORT

Workgroup (AAB#): WG547058
Product: EPA 376.1\9034
Analyte: Sulfide

Analyst: TB
Run Date: 11/16/2015 17:00

SAMPLE NUMBER	Volume	Vol I	Nor I	Vol T	Nor T	Dil	Analytical	Reported	Units
WG547058-01	200.0	15	.025	15	.0248	1	0.240	0.2400	mg/L
WG547058-02	200.0	15	.025	5.5	.0248	1	19.1	19.09	mg/L
WG547058-03	200.0	15	.025	5.5	.0248	1	19.1	19.09	mg/L
L15110666-01	520.0	15	.025	14.5	.0248	1	0.474	ND	mg/L
L15110666-02	520.0	15	.025	15.1	.0248	1	0.0160	ND	mg/L
L15110666-03	540.0	15	.025	14.9	.0248	1	0.162	ND	mg/L
L15110666-04	530.0	15	.025	14.9	.0248	1	0.165	ND	mg/L
L15110666-05	510.0	15	.025	14.8	.0248	1	0.250	ND	mg/L
L15110666-06	520.0	15	.025	15	.0248	1	0.0923	ND	mg/L
L15110666-07	520.0	15	.025	15.1	.0248	1	0.0160	ND	mg/L
L15110756-01	540.0	15	.025	15	.0248	1	0.0889	ND	mg/L
L15110756-02	520.0	15	.025	15	.0248	1	0.0923	ND	mg/L
L15110756-03	520.0	15	.025	14.9	.0248	1	0.169	ND	mg/L
L15110756-04	510.0	15	.025	14.7	.0248	1	0.328	ND	mg/L
L15110756-06	530.0	15	.025	14.9	.0248	1	0.165	ND	mg/L
L15110756-07	530.0	15	.025	15.1	.0248	1	0.0157	ND	mg/L
L15110756-08	530.0	15	.025	15.1	.0248	1	0.0157	ND	mg/L
L15110793-07	490.0	15	.025	14.8	.0248	1	0.260	ND	mg/L
L15110793-09	450.0	15	.025	14.6	.0248	1	0.459	ND	mg/L
L15110793-11	500.0	15	.025	14.8	.0248	1	0.255	ND	mg/L
L15110793-13	450.0	15	.025	15.1	.0248	1	0.0185	ND	mg/L
L15110793-15	460.0	15	.025	14.7	.0248	1	0.363	ND	mg/L

SULFIDE_REPORT - Modified 03/06/2008

Report generated 11/17/2015 11:33

[redacted]

2.3.5 Total Organic Carbon Data

2.3.5.1 Summary Data

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110793-07	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW13-111215	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	10/30/2015 17:00
Workgroup #:	WG547552	**Analyst:**	DIH	**Run Date:**	11/19/2015 09:13
Collect Date:	11/12/2015 08:40	**Dilution:**	10	**File ID:**	TC11192015.009
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	79.0		20.0	10.0	5.00

Certificate of Analysis

Sample #:	L15110793-09	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW14-111215	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	10/30/2015 17:00
Workgroup #:	WG546976	**Analyst:**	DIH	**Run Date:**	11/16/2015 23:14
Collect Date:	11/12/2015 09:50	**Dilution:**	3	**File ID:**	TC11152015.049
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	16.1		6.00	3.00	1.50

Certificate of Analysis

Sample #:	L15110793-11	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW11-111215	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	10/30/2015 17:00
Workgroup #:	WG546976	**Analyst:**	DIH	**Run Date:**	11/16/2015 23:27
Collect Date:	11/12/2015 11:00	**Dilution:**	4	**File ID:**	TC11152015.050
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	13.0		8.00	4.00	2.00

Certificate of Analysis

Microbac

Lab Report #: L15110793
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15110793-13	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW06-111215	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	10/30/2015 17:00
Workgroup #:	WG547552	**Analyst:**	DIH	**Run Date:**	11/19/2015 09:25
Collect Date:	11/12/2015 13:25	**Dilution:**	10	**File ID:**	TC11192015.010
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	149		20.0	10.0	5.00

Certificate of Analysis

Sample #:	L15110793-15	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW12-111215	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	10/30/2015 17:00
Workgroup #:	WG546976	**Analyst:**	DIH	**Run Date:**	11/17/2015 00:15
Collect Date:	11/12/2015 14:35	**Dilution:**	4	**File ID:**	TC11152015.054
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	67.2		8.00	4.00	2.00

2.3.5.2 QC Summary Data

Total Organic Carbon Example Calculations
(Direct Readout Parameter)

(Readout)/(dilution) = mg/L

where:

Readout = direct readout from the instrument
dilution = dilution in decimal form (ex. 1/5 dilution = 0.2)

Microbac Laboratories Inc.

Data Checklist

Date: 16-NOV-2015
Analyst: DIH
Analyst: NA
Method: TOC
Instrument: TOC
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG546978 WG546976 WG546974

Calibration/Linearity	10/31/15
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DIH
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
19-NOV-2015

Secondary Reviewer:
19-NOV-2015

CHECKLIST1 - Modified 03/05/2008
Generated: NOV-19-2015 10:01:09

Microbac Laboratories Inc.

Data Checklist

Date: 19-NOV-2015
Analyst: DIH
Analyst: NA
Method: TOC
Instrument: TOC
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG547552

Calibration/Linearity	10/31/15
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DIH
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
19-NOV-2015

Secondary Reviewer:
19-NOV-2015

CHECKLIST1 - Modified 03/05/2008
Generated: NOV-19-2015 12:54:07

Microbac Laboratories Inc.

00651414

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 415.1 AAB#: WG546976

Login Number: L15110793

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW14-111215	09	11/12/15					11/16/2015	4.6	28		11/16/15	4.6	28	
50WW11-111215	11	11/12/15					11/16/2015	4.5	28		11/16/15	4.5	28	
50WW12-111215	15	11/12/15					11/17/2015	4.4	28		11/17/15	4.4	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4508150
Report generated 11/19/2015 12:50

Microbac Laboratories Inc.

00651415

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 415.1 AAB#: WG547552

Login Number: L15110793

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW13-111215	07	11/12/15					11/19/2015	7	28		11/19/15	7	28	
50WW06-111215	13	11/12/15					11/19/2015	6.8	28		11/19/15	6.8	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4508150
Report generated 11/19/2015 12:50

METHOD BLANK SUMMARY

Login Number: L15110793
Blank File ID: TC11152015.035
Prep Date: 11/16/15 20:24
Analyzed Date: 11/16/15 20:24
Analyst: DIH

Work Group: WG546976
Blank Sample ID: WG546976-01
Instrument ID: TOC-VWP
Method: 415.1

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG546976-02	TC11152015.036	11/16/15 20:36	01
LCS2	WG546976-03	TC11152015.037	11/16/15 20:48	01
50WW14-111215	L15110793-09	TC11152015.049	11/16/15 23:14	DL01
50WW11-111215	L15110793-11	TC11152015.050	11/16/15 23:27	DL01
50WW12-111215	L15110793-15	TC11152015.054	11/17/15 00:15	DL01
DUP	WG546976-05	TC11152015.055	11/17/15 00:28	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4508151
Report generated 11/19/2015 12:50

METHOD BLANK SUMMARY

Login Number: L15110793
Blank File ID: TC11192015.004
Prep Date: 11/19/15 08:06
Analyzed Date: 11/19/15 08:06
Analyst: DIH

Work Group: WG547552
Blank Sample ID: WG547552-01
Instrument ID: TOC-VWP
Method: 415.1

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG547552-02	TC11192015.006	11/19/15 08:36	01
LCS2	WG547552-03	TC11192015.007	11/19/15 08:48	01
50WW13-111215	L15110793-07	TC11192015.009	11/19/15 09:13	DL01
50WW06-111215	L15110793-13	TC11192015.010	11/19/15 09:25	DL01
DUP	WG547552-05	TC11192015.014	11/19/15 10:15	01

Report Name: BLANK_SUMMARY
PDF File ID: 4508151
Report generated 11/19/2015 12:50

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15110793 Prep Date: 11/16/15 20:24 Sample ID: WG546976-01
Instrument ID: TOC-VWP Run Date: 11/16/15 20:24 Prep Method: 415.1
File ID: TC11152015.035 Analyst: DIH Method: 415.1
Workgroup (AAB#): WG546976 Matrix: Water Units: mg/L
Contract #: Cal ID: TOC-VW-30-OCT-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Total Organic Carbon	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4508152
19-NOV-2015 12:50

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15110793 Prep Date: 11/19/15 08:06 Sample ID: WG547552-01
Instrument ID: TOC-VWP Run Date: 11/19/15 08:06 Prep Method: 415.1
File ID: TC11192015.004 Analyst: DIH Method: 415.1
Workgroup (AAB#): WG547552 Matrix: Water Units: mg/L
Contract #: Cal ID: TOC-VW-30-OCT-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Total Organic Carbon	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4508152
19-NOV-2015 12:50

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15110793 Analyst: DIH Prep Method: 415.1
Instrument ID: TOC-VWP Matrix: Water Method: 415.1
Workgroup (AAB#): WG547552 Units: mg/L
QC Key: DOD4 Lot #: STD72270

Sample ID: WG547552-02 LCS File ID: TC11192015.006 Run Date: 11/19/2015 08:36
Sample ID: WG547552-03 LCS2 File ID: TC11192015.007 Run Date: 11/19/2015 08:48

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Total Organic Carbon	25.0	27.7	111	25.0	27.7	111	0.108	85 - 115	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4508153
Report generated: 11/19/2015 12:50

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15110793 Analyst: DIH Prep Method: 415.1
Instrument ID: TOC-VWP Matrix: Water Method: 415.1
Workgroup (AAB#): WG546976 Units: mg/L
QC Key: DOD4 Lot #: STD72270

Sample ID: WG546976-02 LCS File ID: TC11152015.036 Run Date: 11/16/2015 20:36
Sample ID: WG546976-03 LCS2 File ID: TC11152015.037 Run Date: 11/16/2015 20:48

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Total Organic Carbon	25.0	26.9	107	25.0	27.1	108	0.852	85 - 115	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4508153
Report generated: 11/19/2015 12:50

2.3.5.3 Raw Data

Curve

wg545145

Total Organic Carbon

MAKE DAILY

CCV (TOC): _____ (5/200)(1000) = 25mg/L

LCS (TOC): _____ (5/200)(1000) = 25mg/L

CCV (TIC): _____ (5/200)(1000) = 25mg/L

See Below

MS (TOC): _____

Calibration Curve Date: _____

Reagent: RGT 34567 / RGT 34459

☑ SM5310-C : Matrix 2 WG_____

☐ EPA 415.1/9060A(mod): Matrix 1 WG_____ SOP: K 4151 Rev. 18

WG_____ Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

- ☑ drain reservoir filled
- ☑ ASI water bottle full
- ☑ dilution water bottle full
- ☑ 3rd bottle full
- ☑ sufficient gas
- ☑ sufficient persulfate
- ☑ sufficient acid
- ☑ waste container

Position	Sample ID	Dilution	Position	Sample ID	Dilution	Position	Sample ID	Dilution
1	TC Curve		26	TC Curve		51		
2	TIC Curve		27	Std 72153		52	See SOP	
3	TC ICV		28			53		
4	TIC ICV		29	TIC Curve		54	for point	
5			30	Std 72165		55	preparation	
6			31			56		
7			32			57		
8			33	TOC (TC)		58		
9			34	ICV		59		
10			35	Std 72270		60	5/200 (1000) = 25	
11			36			61		
12			37	TIC ICV		62		
13	All points		38	Std 72654		63		
14	analyzed		39			64		
15	in duplicate		40			65		
16			41			66		
17			42			67		
18			43			68		
19			44			69		
20			45			70		
21			46			71		
22			47			72		
23			48			73		
24			49			74		
25			50			75		

Analyst: David Merkle Date/Time: 10/31/15

DCN#114406

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Cal. Curve

Sample Name: TCCURVE
Sample ID:
Cal. Curve: TCCURVE-10-30-2015.2015_10_30_16_06_37.cal
Status Completed

Type	Anal.
Standard	TC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	4.764	500uL	1	*******		10/30/2015 4:10:07 PM
2	3.607	500uL	1	*******		10/30/2015 4:13:33 PM

Acid Add. 0.000%
Mean Area 4.186

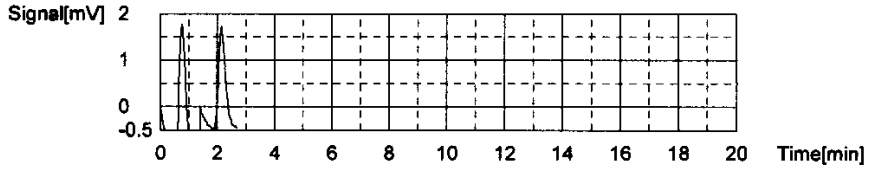

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	46.19	500uL	1	*******		10/30/2015 4:19:03 PM
2	46.28	500uL	1	*******		10/30/2015 4:22:56 PM

Acid Add. 0.000%
Mean Area 46.23

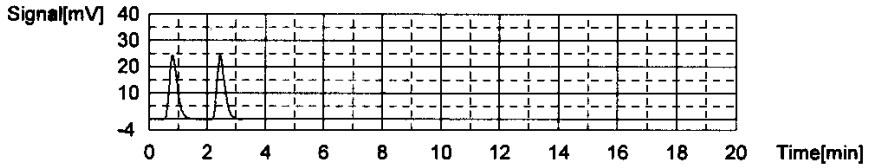

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	194.3	500uL	1	*******		10/30/2015 4:28:42 PM
2	193.1	500uL	1	*******		10/30/2015 4:32:47 PM

Acid Add. 0.000%
Mean Area 193.7

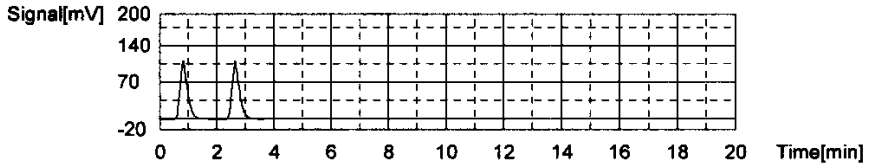

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	390.8	500uL	1	*******		10/30/2015 4:38:42 PM
2	391.3	500uL	1	*******		10/30/2015 4:42:54 PM

Acid Add. 0.000%
Mean Area 391.1

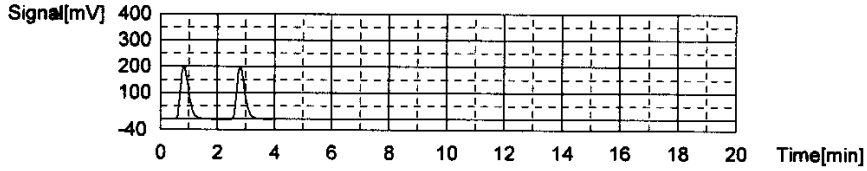

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	989.0	500uL	1	*******		10/30/2015 4:49:06 PM
2	994.6	500uL	1	*******		10/30/2015 4:53:33 PM

Acid Add. 0.000%
Mean Area 991.8

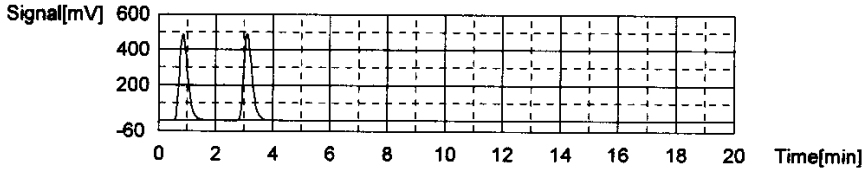

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1946	500uL	1	*******		10/30/2015 5:00:24 PM
2	1948	500uL	1	*******		10/30/2015 5:05:23 PM

Acid Add. 0.000%
Mean Area 1947

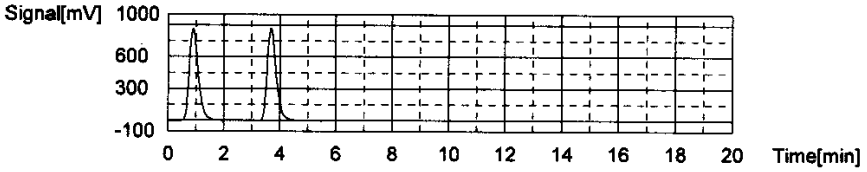

Slope: 38.95
Intercept 4.952
r^2 0.999910 ✓
Zero Shift No

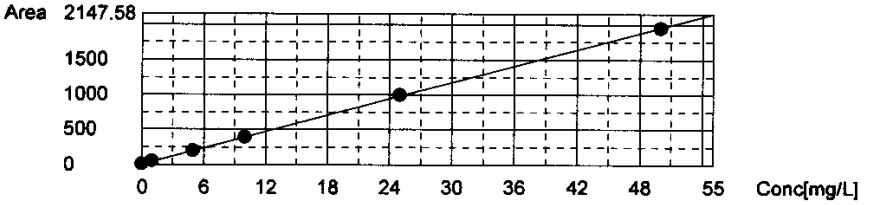

Sample

Sample Name: TC ICV
Sample ID:
Origin: TCCURVE-10-30-2015.2015_10_30_16_06_37.cal
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TC	1.000	TC:25.93mg/L

= 103.7%

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1020	26.06mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	10/31/2015 9:56:57 AM
2	1010	25.80mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	10/31/2015 10:02:17 AM

Mean Area 1015
Mean Conc. 25.93mg/L

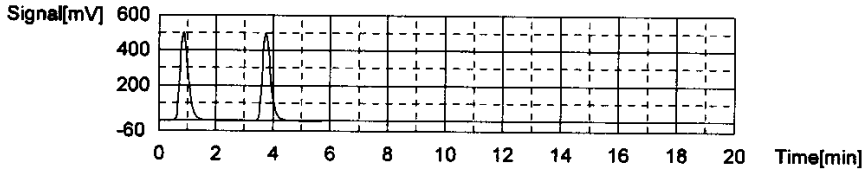

Cal. Curve

Sample Name: TICCURVE
Sample ID: Untitled
Cal. Curve: TICCURVE-10-30-2015.2015_10_31_11_55_05.cal
Status Completed

Type	Anal.
Standard	IC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	2.732	500uL	1	*******		10/31/2015 12:00:21 PM
2	5.011	500uL	1	*******		10/31/2015 12:04:52 PM

Acid Add. 10.00%
Mean Area 3.872

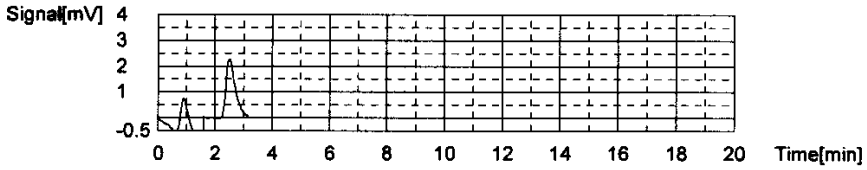

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	35.96	500uL	1	*******		10/31/2015 12:12:47 PM
2	37.13	500uL	1	*******		10/31/2015 12:17:43 PM

Acid Add. 10.00%
Mean Area 36.55

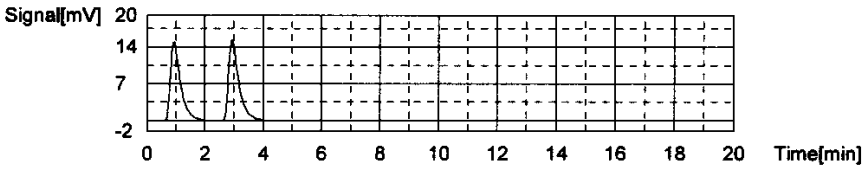

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	173.6	500uL	1	*******		10/31/2015 12:26:14 PM
2	175.6	500uL	1	*******		10/31/2015 12:31:38 PM

Acid Add. 10.00%
Mean Area 174.6

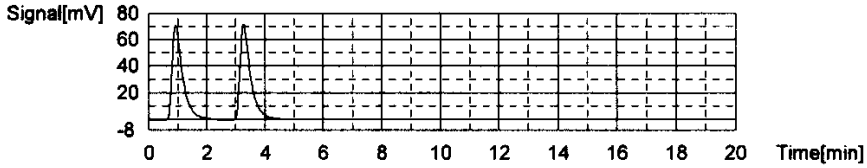

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	344.8	500uL	1	*******		10/31/2015 12:40:18 PM
2	345.1	500uL	1	*******		10/31/2015 12:45:49 PM

Acid Add. 10.00%
Mean Area 345.0

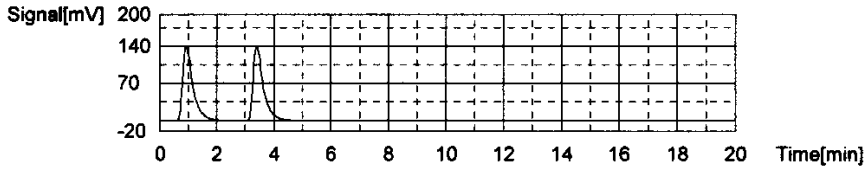

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	835.5	500uL	1	*******		10/31/2015 12:54:43 PM
2	845.9	500uL	1	*******		10/31/2015 1:00:42 PM

Acid Add. 10.00%
Mean Area 840.7

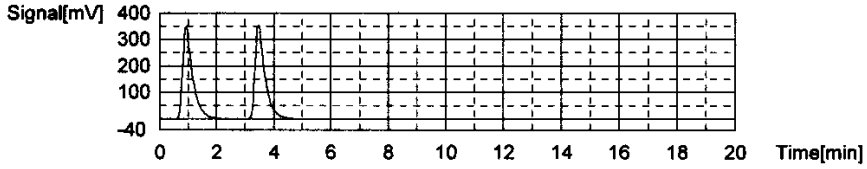

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1676	500uL	1	*******		10/31/2015 1:09:51 PM
2	1677	500uL	1	*******		10/31/2015 1:15:54 PM

Acid Add. 10.00%
Mean Area 1677

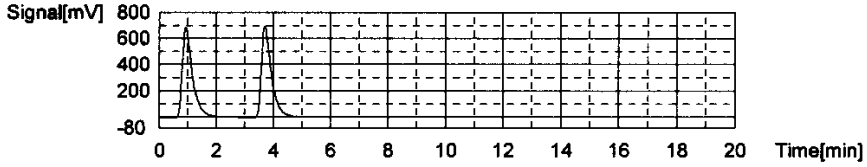

Slope: 33.42
Intercept 5.927
r^2 0.999982
Zero Shift No

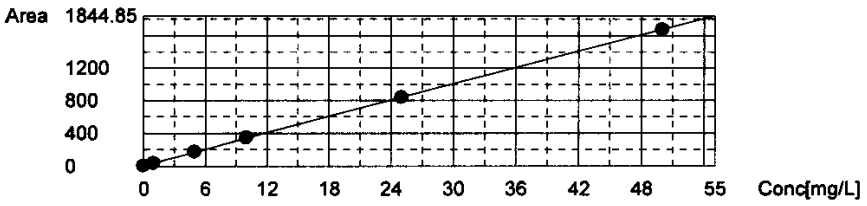

Sample

Sample Name: TIC ICV
Sample ID: Untitled
Origin: TICCURVE-10-30-2015.cal
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	IC	1.000	IC:25.37mg/L

= 101.5%

1. Det

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	854.5	25.39mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	10/31/2015 1:25:27 PM
2	853.1	25.35mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	10/31/2015 1:31:33 PM

Mean Area 853.8
Mean Conc. 25.37mg/L

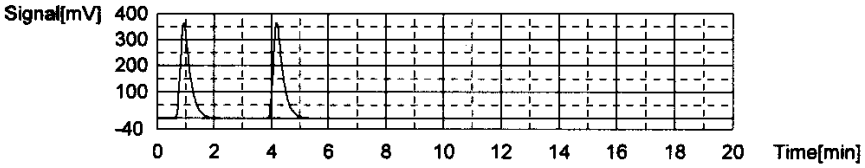

WORKGROUP: WG546974

546976

546978

Total Organic Carbon

MAKE DAILY

CCV (TOC): std 72133
(5/200)(1000) = 25mg/L

LCS (TOC): std 72270
(5/200)(1000) = 25mg/L

CCV (TIC): std 72654
(5/200)(1000) = 25mg/L

MS (TOC): 0.4/40 (1000) = 10

Calibration Curve Date: 10/31/15

Reagent: RGT 35313
RGT 34459

☑ SM5310-C : Matrix 2 WG 546978

☑ EPA 415.1/9060A(mod): Matrix 1 WG 546974 SOP: K 4151 Rev. 18

WG 546974 Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

☑ drain reservoir filled
☑ ASI water bottle full
☑ dilution water bottle full
☑ 3rd bottle full
☑ sufficient gas
☑ sufficient persulfate
☑ sufficient acid
☑ waste container

Position	Sample ID	Dilution
1	TIC 25	
2	TOC/TIC	
3	CCV 25	
4	BLK	
5	LCS 25	
6	LCSDUP	
7	11-666-01	1/3
8	02	1/4
9	03	1/3
10	04	1/3
11	05	1/3
12	06	1/2
13	07	
14	CCV	
15	CCB	
16	11-696-02	
17	11-702-01	
18	02	
19	03	
20	11-670-02	1/3
21	03	1/2
22	04	1/2
23	DUP 04	1/2
24	MS 05	1/2
25	MSD 06	1/2

Position	Sample ID	Dilution
26	CCV	
27	CCB	
28	11-670-07	1/2
29	08	1/2
30	11-756-01	1/2
31	02	
32	03	1/3
33	04	
34	BLK	
35	LCS 25	
36	LCSDUP	
37	11-756-06	
38	CCV	
39	CCB	
40	11-756-07 BLK	
41	08 BLK	
42	11-800-01	1/3
43	11-823-01	1/25
44	11-753-02	1/2
45	35 03	1/2
46	04 BLK	
47	11-793 07	1/4
48	09	1/3
49	11	1/4
50	CCV	

Position	Sample ID	Dilution
51	CCB	
52	11-793-13	1/3
53	15	1/4
54	DUP	1/4
55	MS	1/4
56	BLK	
57	LCS	
58	LCSDUP	
59	11-797-01	
60	02	
61	04	
62	CCV	
63	CCB	
64	11-739-01	
65	DUP	
66	MS	
67	11-823-01	1/10
68	11-696-02	1/2
69	15	
70	3 CCV	
71	0 CCB	
72		
73		
74		
75		

Analyst: Joanne Hasson

Date/Time: ~~11/15/15~~ 11/16/15
dm 11/18/15

saved as 11/15

DCN#114762

C:\TOC3201\Data\11-15-2015-dih-toc.t32

	Analysis	Sample Name	Result	Status	Date / Time	Vial
1	TOC	TIC 25	TOC:3.555mg/L TC:28.89mg/L IC:25.33mg/L	Complete	11/16/2015 11:45:42 AM	1
2	TOC		TOC:28.94mg/L TC:35.87mg/L IC:6.928mg/L	Complete	11/16/2015 11:58:10 AM	2
3	TOC	CCV 25	TOC:27.51mg/L TC:27.58mg/L IC:0.06257mg/L	Complete	11/16/2015 12:10:18 PM	3
4	TOC	WG546974-01 BLK	TOC:0.05164mg/L TC:0.1650mg/L IC:0.1134mg/L	Complete	11/16/2015 12:19:16 PM	0
5	TOC	WG546974-02 LCS	TOC:27.46mg/L TC:27.50mg/L IC:0.03720mg/L	Complete	11/16/2015 12:31:23 PM	5
6	TOC	WG546974-03 LCS	TOC:26.82mg/L TC:26.86mg/L IC:0.03615mg/L	Complete	11/16/2015 12:43:27 PM	6
7	TOC	TOC/TIC	TOC:27.78mg/L TC:36.15mg/L IC:8.370mg/L	Complete	11/16/2015 1:28:08 PM	2
8	TOC	L15110666-01 (3)	TOC:7.269mg/L TC:27.81mg/L IC:20.54mg/L	Complete	11/16/2015 2:58:38 PM	7
9	TOC	L15110666-02 (4)	TOC:6.625mg/L TC:43.37mg/L IC:36.74mg/L	Complete	11/16/2015 3:11:28 PM	8
10	TOC	L15110666-03 (3)	TOC:3.234mg/L TC:20.42mg/L IC:17.18mg/L	Complete	11/16/2015 3:23:48 PM	9
11	TOC	L15110666-04 (3)	TOC:3.773mg/L TC:19.49mg/L IC:15.72mg/L	Complete	11/16/2015 3:36:11 PM	10
12	TOC	L15110666-05 (3)	TOC:5.846mg/L TC:39.03mg/L IC:33.18mg/L	Complete	11/16/2015 3:48:48 PM	11
13	TOC	L15110666-06 (3)	TOC:5.968mg/L TC:44.09mg/L IC:38.12mg/L	Complete	11/16/2015 4:01:32 PM	12
14	TOC	~~L15110666-07~~	!!Error!! TOC:-9.087mg/L TC:81.78mg/L IC:90.86mg/L	Complete	11/16/2015 4:16:04 PM	13
15	TOC	CCV	TOC:27.47mg/L TC:28.01mg/L IC:0.5479mg/L	Complete	11/16/2015 4:28:27 PM	14
16	TOC	CCB	TOC:0.02587mg/L TC:0.2064mg/L IC:0.1805mg/L	Complete	11/16/2015 4:37:27 PM	0
17	TOC		TOC:29.54mg/L TC:53.46mg/L IC:23.92mg/L	Complete	11/16/2015 4:52:16 PM	16
18	TOC	L15110702-01	TOC:3.844mg/L TC:14.19mg/L IC:10.34mg/L	Complete	11/16/2015 5:04:26 PM	17
19	TOC	L15110702-02	TOC:20.11mg/L TC:43.16mg/L IC:23.05mg/L	Complete	11/16/2015 5:17:15 PM	18
20	TOC	L15110702-03	TOC:3.481mg/L TC:13.51mg/L IC:10.03mg/L	Complete	11/16/2015 5:29:19 PM	19
21	TOC	L15110670-02 (3)	TOC:10.79mg/L TC:49.50mg/L IC:38.72mg/L	Complete	11/16/2015 5:42:10 PM	20
22	TOC	L15110670-03 (2)	TOC:11.14mg/L TC:24.44mg/L IC:13.29mg/L	Complete	11/16/2015 5:55:16 PM	21
23	TOC	L15110670-04 (2)	TOC:7.898mg/L TC:20.17mg/L IC:12.27mg/L	Complete	11/16/2015 6:07:37 PM	22
24	TOC	WG546974-05 (2) DUP	TOC:7.402mg/L TC:19.47mg/L IC:12.07mg/L	Complete	11/16/2015 6:20:02 PM	23
25	TOC	L15110670-05 (2) MS	TOC:12.56mg/L TC:21.05mg/L IC:8.493mg/L	Complete	11/16/2015 6:32:23 PM	24
26	TOC	L15110670-06 (2) MSD	TOC:12.65mg/L TC:21.56mg/L IC:8.915mg/L	Complete	11/16/2015 6:44:39 PM	25
27	TOC	CCV	TOC:28.06mg/L TC:28.19mg/L IC:0.1281mg/L	Complete	11/16/2015 6:56:47 PM	26
28	TOC	CCB	TOC:0.02452mg/L TC:0.1476mg/L IC:0.1231mg/L	Complete	11/16/2015 7:05:43 PM	0
29	TOC	L15110670-07 (2)	TOC:7.048mg/L TC:16.07mg/L IC:9.026mg/L	Complete	11/16/2015 7:17:56 PM	28
30	TOC	L15110670-08 (2)	TOC:6.988mg/L TC:18.16mg/L IC:11.17mg/L	Complete	11/16/2015 7:30:20 PM	29
31	TOC	L15110756-01 (2)	TOC:4.304mg/L TC:14.18mg/L IC:9.875mg/L	Complete	11/16/2015 7:42:33 PM	30
32	TOC	L15110756-02	TOC:6.105mg/L TC:37.82mg/L IC:31.72mg/L	Complete	11/16/2015 7:55:04 PM	31
33	TOC	L15110756-03 (3)	TOC:2.529mg/L TC:11.76mg/L IC:9.226mg/L	Complete	11/16/2015 8:07:05 PM	32
34	TOC	L15110756-04	TOC:6.536mg/L TC:34.33mg/L IC:27.79mg/L	Complete	11/16/2015 8:19:44 PM	33
35	TOC	WG546976-01 BLK	!!Error!! TOC:-0.01468mg/L TC:0.1766mg/L IC:0.1913m	Complete	11/16/2015 8:28:49 PM	0
36	TOC	WG546976-02 LCS	TOC:26.87mg/L TC:26.99mg/L IC:0.1194mg/L	Complete	11/16/2015 8:40:54 PM	35
37	TOC	WG546976-03 LCSDUP	TOC:27.10mg/L TC:27.19mg/L IC:0.09386mg/L	Complete	11/16/2015 8:52:59 PM	36
38	TOC	L15110756-06	TOC:6.634mg/L TC:33.79mg/L IC:27.16mg/L	Complete	11/16/2015 9:05:45 PM	37
39	TOC	CCV	TOC:27.97mg/L TC:28.14mg/L IC:0.1733mg/L	Complete	11/16/2015 9:17:55 PM	38
40	TOC	CCB	TOC:0.01699mg/L TC:0.1442mg/L IC:0.1273mg/L	Complete	11/16/2015 9:26:48 PM	0
41	TOC	L15110756-07	TOC:0.6401mg/L TC:0.7622mg/L IC:0.1222mg/L	Complete	11/16/2015 9:38:11 PM	40
42	TOC	L15110756-08	TOC:0.6352mg/L TC:0.7494mg/L IC:0.1142mg/L	Complete	11/16/2015 9:49:29 PM	41
43	TOC	L15110800-01 (3)	TOC:10.53mg/L TC:17.40mg/L IC:6.862mg/L	Complete	11/16/2015 10:02:53 PM	42
44	TOC		TOC:18.29mg/L TC:18.56mg/L IC:0.2712mg/L	Complete	11/16/2015 10:17:34 PM	43
45	TOC	L15110735-02 (2)	TOC:10.73mg/L TC:19.84mg/L IC:9.112mg/L	Complete	11/16/2015 10:29:57 PM	44
46	TOC	L15110735-03 (2)	TOC:6.846mg/L TC:20.05mg/L IC:13.20mg/L	Complete	11/16/2015 10:42:14 PM	45
47	TOC	L15110735-04	TOC:3.151mg/L TC:15.36mg/L IC:12.21mg/L	Complete	11/16/2015 10:54:18 PM	46
48	TOC		TOC:29.97mg/L TC:50.84mg/L IC:20.87mg/L	Complete	11/16/2015 11:06:49 PM	47
49	TOC	L15110793-09 (3)	TOC:5.353mg/L TC:37.85mg/L IC:32.49mg/L	Complete	11/16/2015 11:19:45 PM	48
50	TOC	L15110793-11 (4)	TOC:3.248mg/L TC:15.08mg/L IC:11.83mg/L	Complete	11/16/2015 11:31:52 PM	49
51	TOC	CCV	TOC:28.59mg/L TC:28.73mg/L IC:0.1389mg/L	Complete	11/16/2015 11:44:25 PM	50
52	TOC	CCB	TOC:0.02054mg/L TC:0.1445mg/L IC:0.1240mg/L	Complete	11/16/2015 11:53:15 PM	0
53	TOC		!!Error!! TOC:-7.225mg/L TC:80.47mg/L IC:87.69mg/L	Complete	11/17/2015 12:07:50 AM	52
54	TOC	L15110793-15 (4)	TOC:16.79mg/L TC:32.10mg/L IC:15.31mg/L	Complete	11/17/2015 12:20:46 AM	53
55	TOC	WG546976-05 (4) DUP	TOC:3.528mg/L TC:24.49mg/L IC:20.96mg/L	Complete	11/17/2015 12:33:44 AM	54
56	TOC	WG546976-06 (4) MS	TOC:4.333mg/L TC:10.28mg/L IC:5.944mg/L	Complete	11/17/2015 12:46:20 AM	55
57	TOC	WG546978-01 BLK	TOC:0.01703mg/L TC:0.1540mg/L IC:0.1370mg/L	Complete	11/17/2015 1:02:37 AM	0
58	TOC	WG546978-02 LCS	TOC:28.81mg/L TC:28.90mg/L IC:0.09121mg/L	Complete	11/17/2015 1:23:36 AM	57
59	TOC	WG546978-03 LCSDUP	TOC:28.50mg/L TC:28.59mg/L IC:0.08729mg/L	Complete	11/17/2015 1:45:26 AM	58
60	TOC	L15110797-01	TOC:3.537mg/L TC:8.235mg/L IC:4.698mg/L	Complete	11/17/2015 2:05:53 AM	59
61	TOC	L15110797-02	TOC:4.085mg/L TC:6.605mg/L IC:2.520mg/L	Complete	11/17/2015 2:26:01 AM	60
62	TOC	L15110797-04	TOC:4.484mg/L TC:6.466mg/L IC:1.982mg/L	Complete	11/17/2015 2:46:36 AM	61
63	TOC	CCV	TOC:28.78mg/L TC:28.89mg/L IC:0.1010mg/L	Complete	11/17/2015 2:58:55 AM	62
64	TOC	CCB	TOC:0.02126mg/L TC:0.1365mg/L IC:0.1153mg/L	Complete	11/17/2015 3:07:41 AM	0
65	TOC	L15110739-01	TOC:12.84mg/L TC:33.76mg/L IC:20.93mg/L	Complete	11/17/2015 3:30:49 AM	64
66	TOC	WG546978-05 DUP	TOC:12.53mg/L TC:32.74mg/L IC:20.21mg/L	Complete	11/17/2015 3:54:05 AM	65
67	TOC	WG546978-016 MS	TOC:25.41mg/L TC:28.94mg/L IC:3.530mg/L	Complete	11/17/2015 4:16:46 AM	66

11/17/2015 7:27:23 AM 1/2

C:\TOC3201\Data\11-15-2015-dih-toc.t32

	Analysis	Sample Name	Result	Status	Date / Time	Vial
68	TOC	L15110823-01 (10)	TOC:31.64mg/L TC:33.02mg/L IC:1.383mg/L	Complete	11/17/2015 4:31:29 AM	67
69	TOC	L15110696-02 (2)	TOC:14.10mg/L TC:17.05mg/L IC:2.946mg/L	Complete	11/17/2015 4:45:15 AM	68
70	TOC		TOC:0.4116mg/L TC:0.5805mg/L IC:0.1688mg/L	Complete	11/17/2015 4:56:38 AM	15
71	TOC	CCV	TOC:27.97mg/L TC:28.06mg/L IC:0.08994mg/L	Complete	11/17/2015 5:08:56 AM	3
72	TOC	CCB	TOC:0.4058mg/L TC:0.5204mg/L IC:0.1146mg/L	Complete	11/17/2015 5:17:43 AM	0

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Sample

Sample Name: TIC 25
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.555mg/L TC:28.89mg/L IC:25.33mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1130	28.89mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 11:40:13 AM

Mean Area 1130
Mean Conc. 28.89mg/L

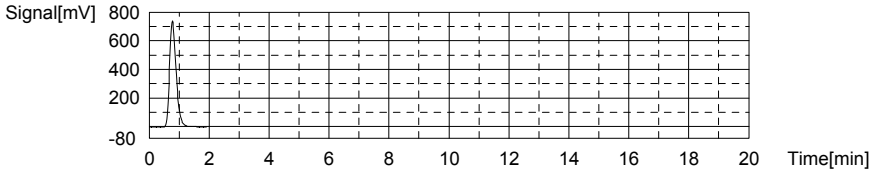

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	852.6	25.33mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 11:45:42 AM

Mean Area 852.6
Mean Conc. 25.33mg/L

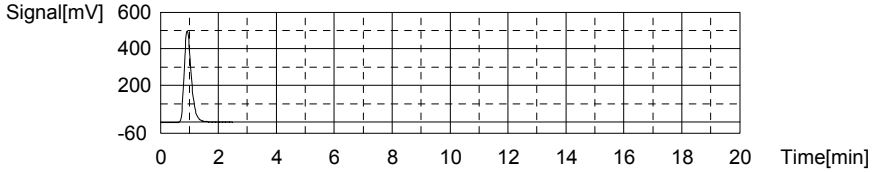

Sample

Sample Name:
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:28.94mg/L TC:35.87mg/L IC:6.928mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1402	35.87mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 11:53:26 AM

Mean Area 1402
Mean Conc. 35.87mg/L

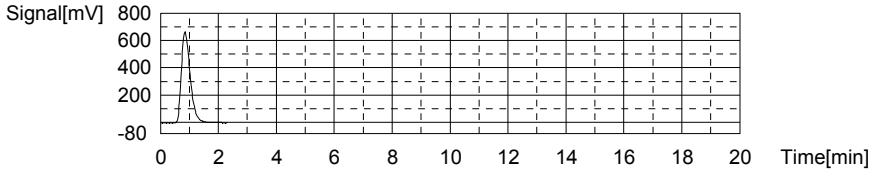

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	237.5	6.928mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 11:58:10 AM

Mean Area 237.5
Mean Conc. 6.928mg/L

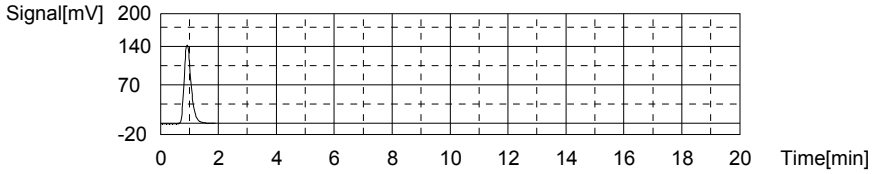

Sample

Sample Name: CCV 25
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:27.51mg/L TC:27.58mg/L IC:0.06257mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1079	27.58mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 12:05:55 PM

Mean Area 1079
Mean Conc. 27.58mg/L

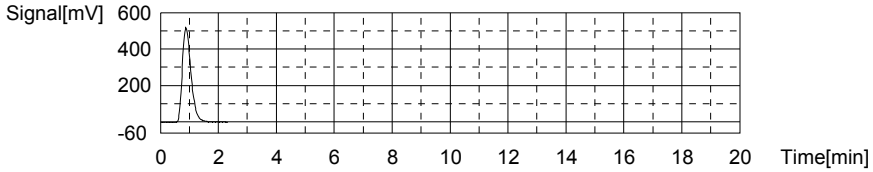

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.018	0.06257mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 12:10:18 PM

Mean Area 8.018
Mean Conc. 0.06257mg/L

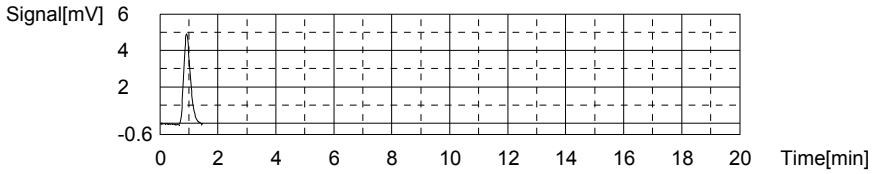

Sample

Sample Name: WG546974-01 BLK
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.05164mg/L TC:0.1650mg/L IC:0.1134mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.38	0.1650mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 12:15:18 PM

Mean Area 11.38
Mean Conc. 0.1650mg/L

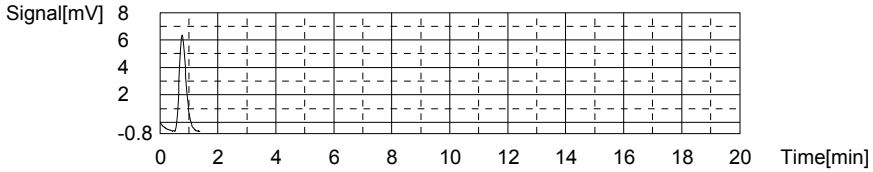

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.717	0.1134mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 12:19:16 PM

Mean Area 9.717
Mean Conc. 0.1134mg/L

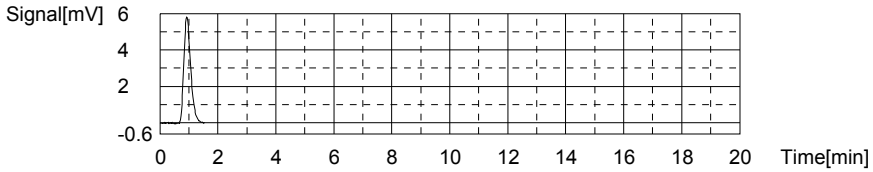

Sample

Sample Name: WG546974-02 LCS
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:27.46mg/L TC:27.50mg/L IC:0.03720mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1076	27.50mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 12:27:02 PM

Mean Area 1076
Mean Conc. 27.50mg/L

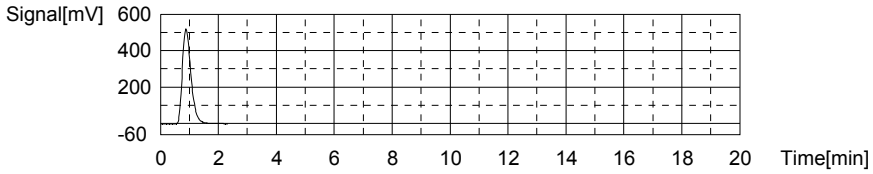

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.170	0.03720mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 12:31:23 PM

Mean Area 7.170
Mean Conc. 0.03720mg/L

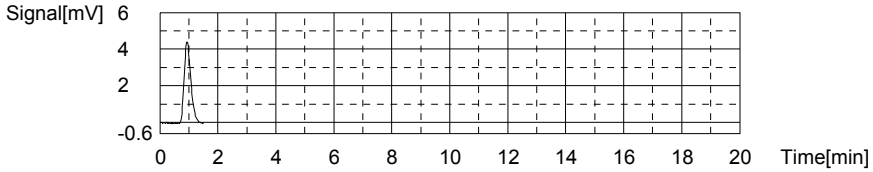

Sample

Sample Name: WG546974-03 LCS
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:26.82mg/L TC:26.86mg/L IC:0.03615mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1051	26.86mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 12:39:11 PM

Mean Area 1051
Mean Conc. 26.86mg/L

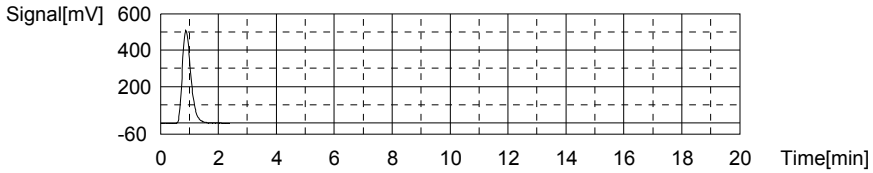

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.135	0.03615mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 12:43:27 PM

Mean Area 7.135
Mean Conc. 0.03615mg/L

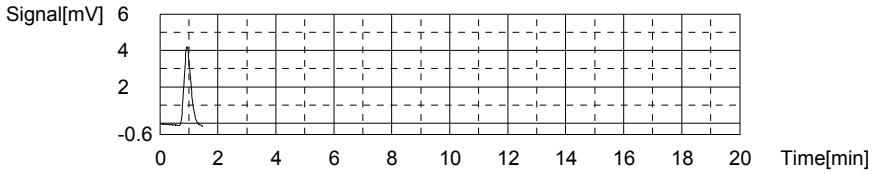

Sample

Sample Name: TOC/TIC
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:27.78mg/L TC:36.15mg/L IC:8.370mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1413	36.15mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 1:23:20 PM

Mean Area 1413
Mean Conc. 36.15mg/L

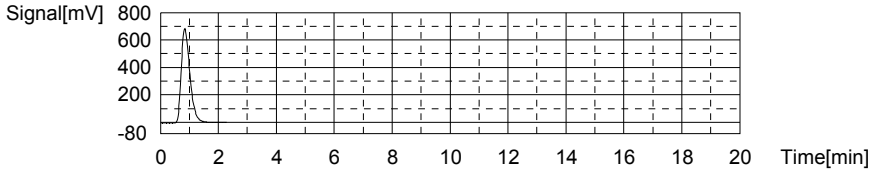

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	285.7	8.370mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 1:28:08 PM

Mean Area 285.7
Mean Conc. 8.370mg/L

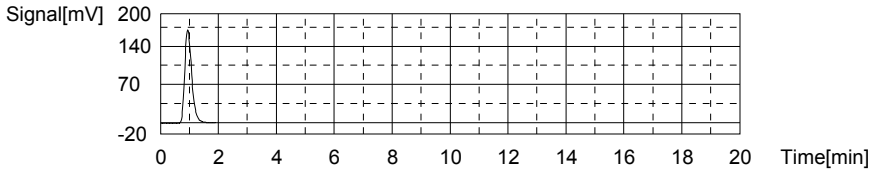

Sample

Sample Name: L15110666-01 (3)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.269mg/L TC:27.81mg/L IC:20.54mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1088	27.81mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 2:53:29 PM

Mean Area 1088
Mean Conc. 27.81mg/L

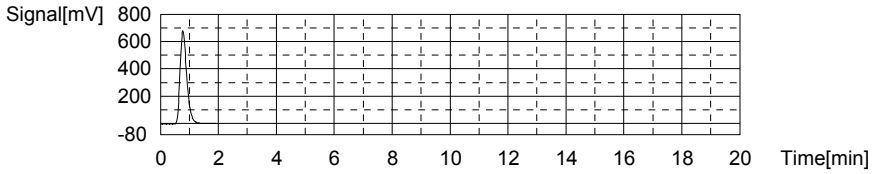

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	692.4	20.54mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 2:58:38 PM

Mean Area 692.4
Mean Conc. 20.54mg/L

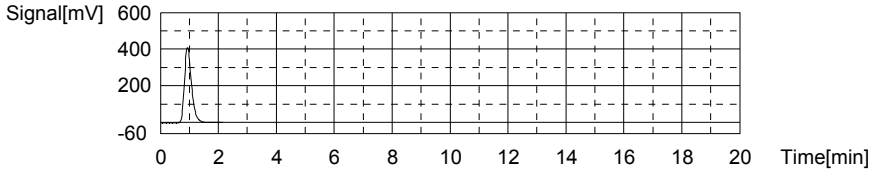

Sample

Sample Name: L15110666-02 (4)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.625mg/L TC:43.37mg/L IC:36.74mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1694	43.37mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 3:06:23 PM

Mean Area 1694
Mean Conc. 43.37mg/L

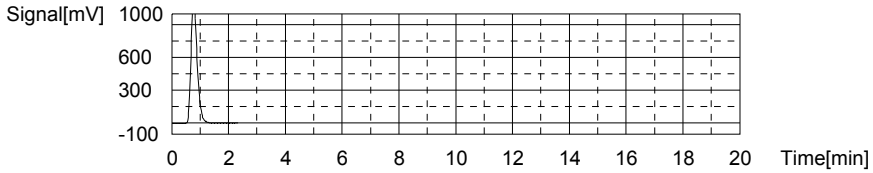

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1234	36.74mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 3:11:28 PM

Mean Area 1234
Mean Conc. 36.74mg/L

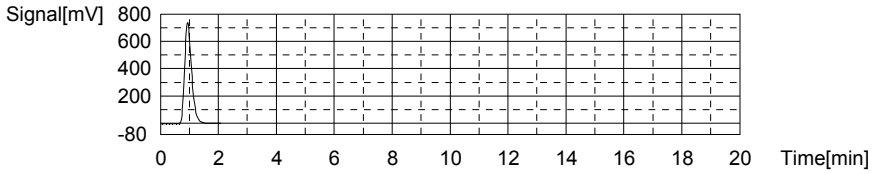

Sample

Sample Name: L15110666-03 (3)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.234mg/L TC:20.42mg/L IC:17.18mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	800.1	20.42mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 3:18:47 PM

Mean Area 800.1
Mean Conc. 20.42mg/L

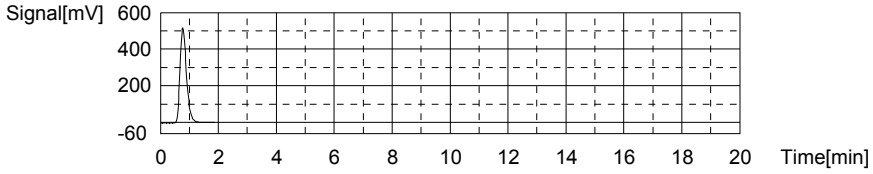

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	580.2	17.18mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 3:23:48 PM

Mean Area 580.2
Mean Conc. 17.18mg/L

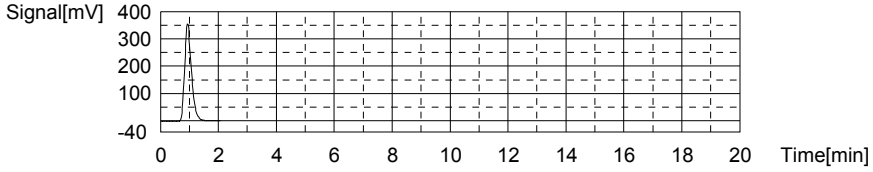

Sample

Sample Name: L15110666-04 (3)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.773mg/L TC:19.49mg/L IC:15.72mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	764.0	19.49mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 3:31:23 PM

Mean Area 764.0
Mean Conc. 19.49mg/L

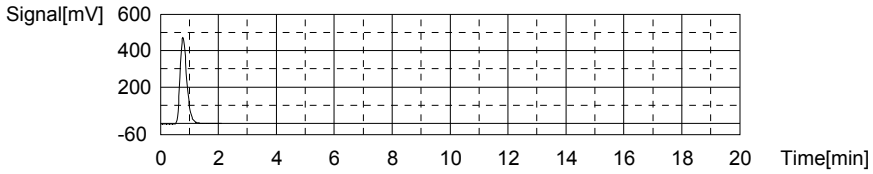

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	531.2	15.72mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 3:36:11 PM

Mean Area 531.2
Mean Conc. 15.72mg/L

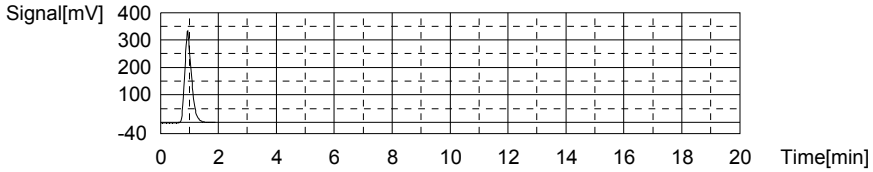

Sample

Sample Name: L15110666-05 (3)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.846mg/L TC:39.03mg/L IC:33.18mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1525	39.03mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 3:43:41 PM

Mean Area 1525
Mean Conc. 39.03mg/L

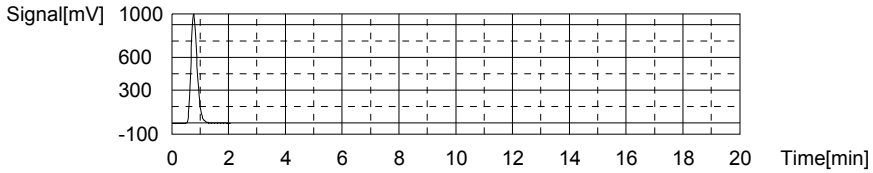

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1115	33.18mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 3:48:48 PM

Mean Area 1115
Mean Conc. 33.18mg/L

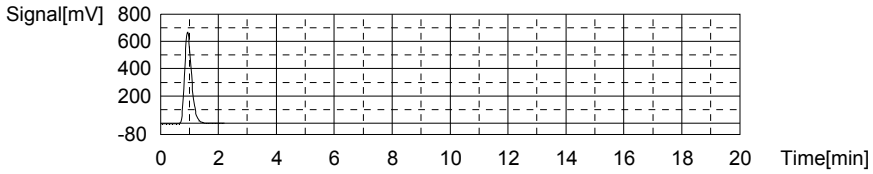

Sample

Sample Name: L15110666-05 (3)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.968mg/L TC:44.09mg/L IC:38.12mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1722	44.09mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 3:56:20 PM

Mean Area 1722
Mean Conc. 44.09mg/L

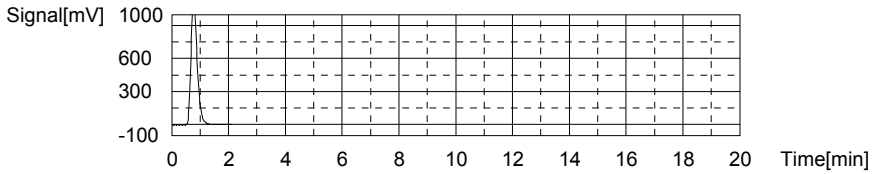

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1280	38.12mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 4:01:32 PM

Mean Area 1280
Mean Conc. 38.12mg/L

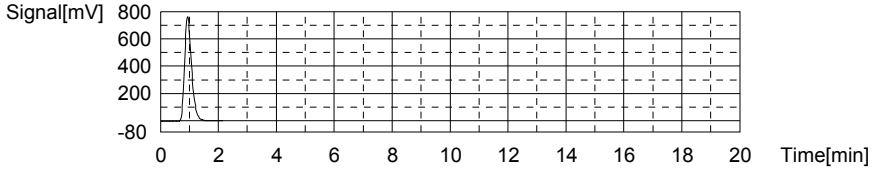

Sample

Sample Name: L15110666-07
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-9.087mg/L TC:81.78mg/L IC:90.86mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3190	81.78mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 4:10:15 PM

Mean Area 3190
Mean Conc. 81.78mg/L

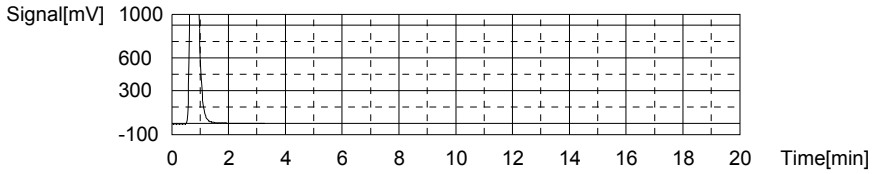

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3043	90.86mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 4:16:04 PM

Mean Area 3043
Mean Conc. 90.86mg/L

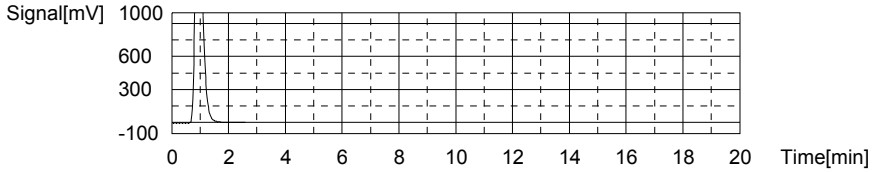

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:27.47mg/L TC:28.01mg/L IC:0.5479mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1096	28.01mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 4:23:50 PM

Mean Area 1096
Mean Conc. 28.01mg/L

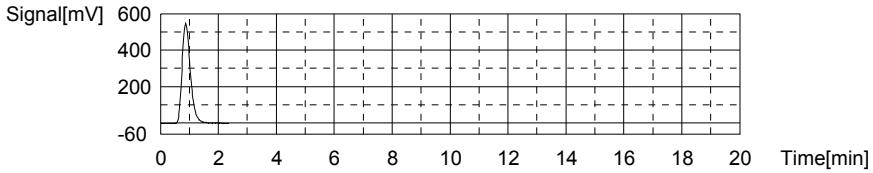

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	24.24	0.5479mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 4:28:27 PM

Mean Area 24.24
Mean Conc. 0.5479mg/L

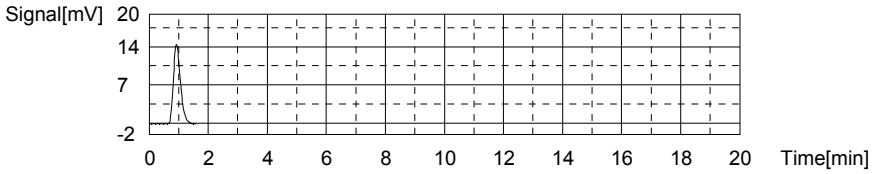

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.02587mg/L TC:0.2064mg/L IC:0.1805mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	12.99	0.2064mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 4:33:30 PM

Mean Area 12.99
Mean Conc. 0.2064mg/L

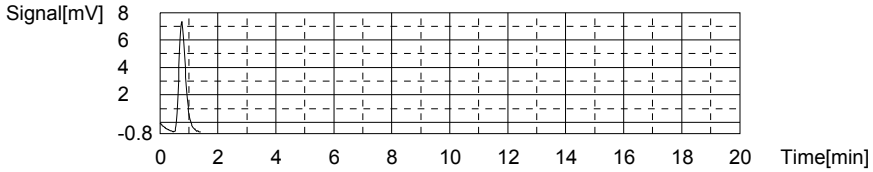

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.96	0.1805mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 4:37:27 PM

Mean Area 11.96
Mean Conc. 0.1805mg/L

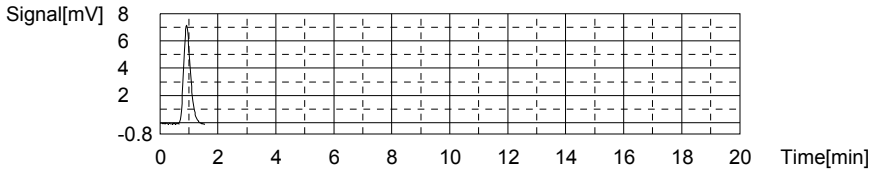

Sample

Sample Name:
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:29.54mg/L TC:53.46mg/L IC:23.92mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2087	53.46mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 4:47:09 PM

Mean Area 2087
Mean Conc. 53.46mg/L

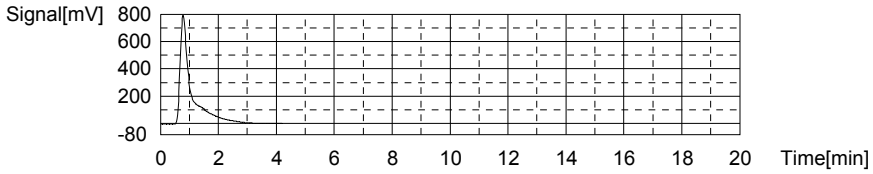

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	805.4	23.92mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 4:52:16 PM

Mean Area 805.4
Mean Conc. 23.92mg/L

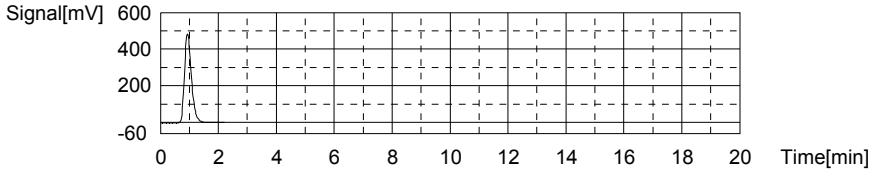

Sample

Sample Name: L15110702-01
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.844mg/L TC:14.19mg/L IC:10.34mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	557.6	14.19mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 4:59:41 PM

Mean Area 557.6
Mean Conc. 14.19mg/L

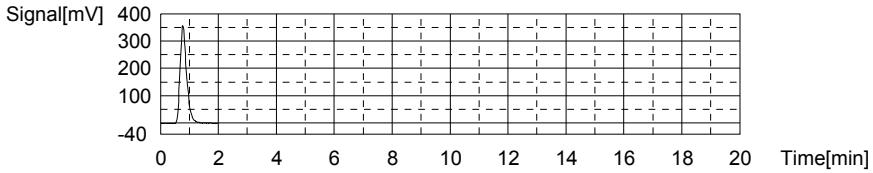

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	351.7	10.34mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 5:04:26 PM

Mean Area 351.7
Mean Conc. 10.34mg/L

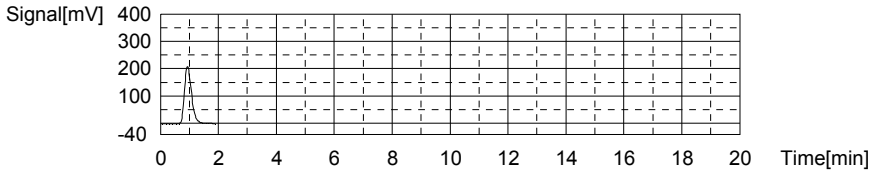

Sample

Sample Name: L15110702-02
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:20.11mg/L TC:43.16mg/L IC:23.05mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1686	43.16mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 5:12:11 PM

Mean Area 1686
Mean Conc. 43.16mg/L

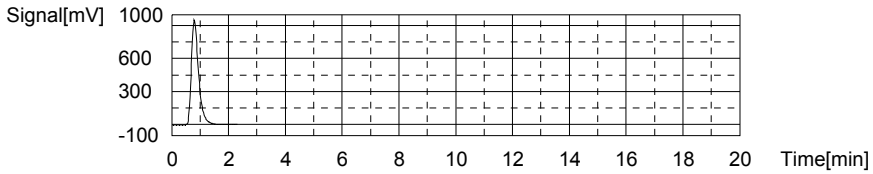

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	776.5	23.05mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 5:17:15 PM

Mean Area 776.5
Mean Conc. 23.05mg/L

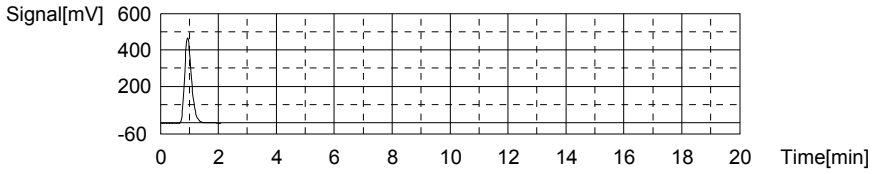

Sample

Sample Name: L15110702-03
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.481mg/L TC:13.51mg/L IC:10.03mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	531.1	13.51mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 5:24:35 PM

Mean Area 531.1
Mean Conc. 13.51mg/L

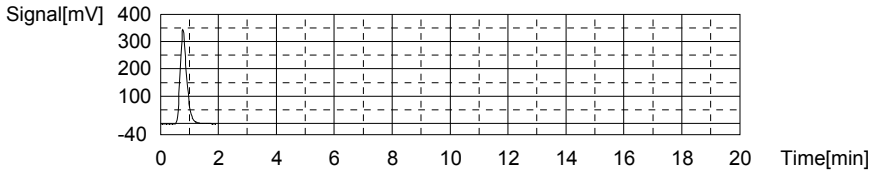

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	341.1	10.03mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 5:29:19 PM

Mean Area 341.1
Mean Conc. 10.03mg/L

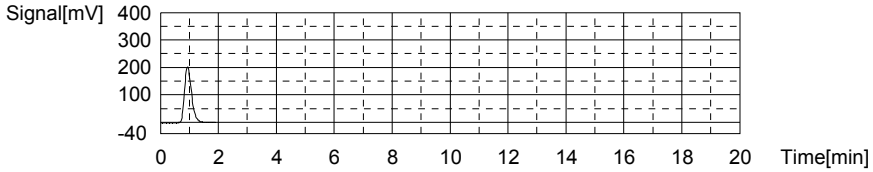

Sample

Sample Name: L15110670-02 (3)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:10.79mg/L TC:49.50mg/L IC:38.72mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1933	49.50mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 5:37:06 PM

Mean Area 1933
Mean Conc. 49.50mg/L

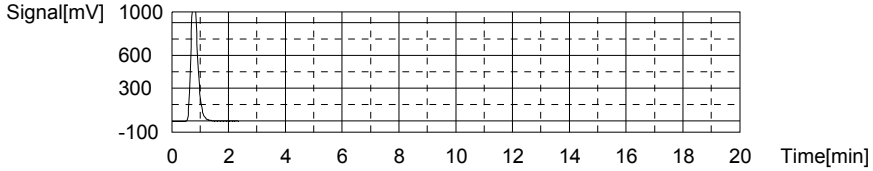

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1300	38.72mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 5:42:10 PM

Mean Area 1300
Mean Conc. 38.72mg/L

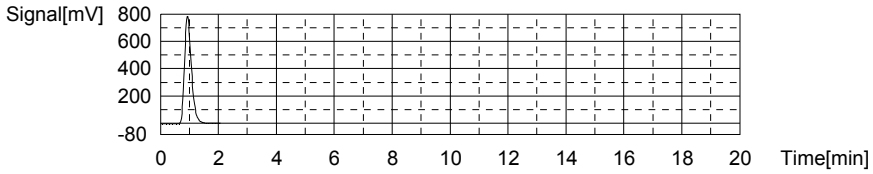

Sample

Sample Name: L15110670-03 (2)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:11.14mg/L TC:24.44mg/L IC:13.29mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	956.7	24.44mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 5:50:28 PM

Mean Area 956.7
Mean Conc. 24.44mg/L

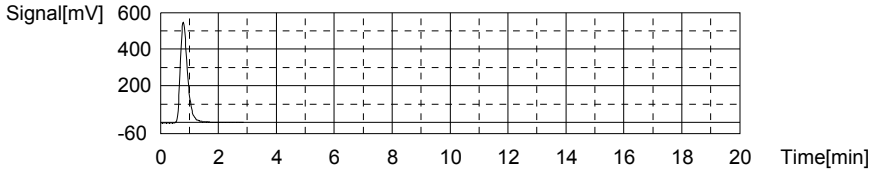

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	450.3	13.29mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 5:55:16 PM

Mean Area 450.3
Mean Conc. 13.29mg/L

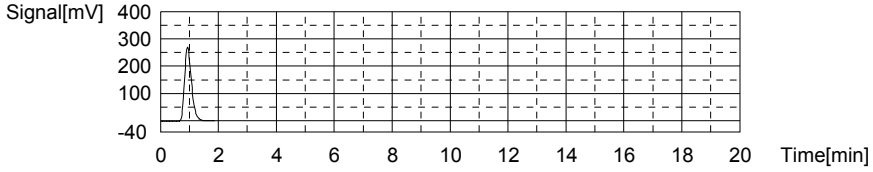

Sample

Sample Name: L15110670-04 (2)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.898mg/L TC:20.17mg/L IC:12.27mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	790.4	20.17mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 6:02:42 PM

Mean Area 790.4
Mean Conc. 20.17mg/L

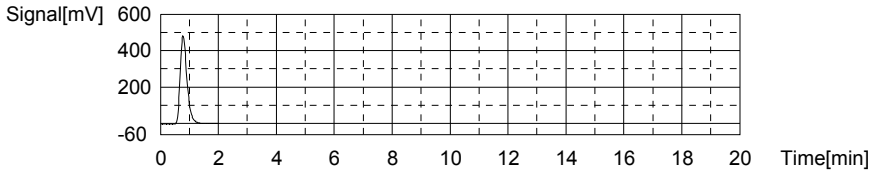

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	416.0	12.27mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 6:07:37 PM

Mean Area 416.0
Mean Conc. 12.27mg/L

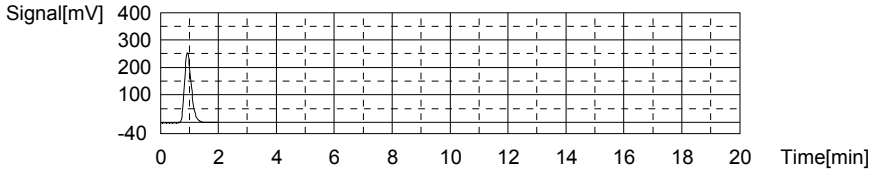

Sample

Sample Name: WG546974-05 (2) DUP
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.402mg/L TC:19.47mg/L IC:12.07mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	763.4	19.47mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 6:15:11 PM

Mean Area 763.4
Mean Conc. 19.47mg/L

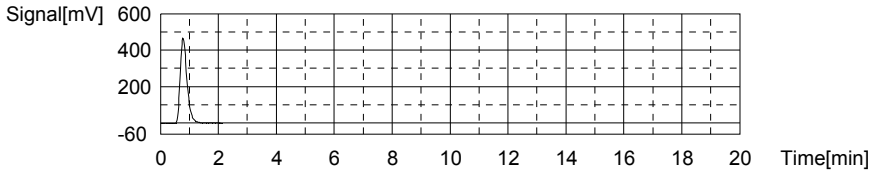

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	409.4	12.07mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 6:20:02 PM

Mean Area 409.4
Mean Conc. 12.07mg/L

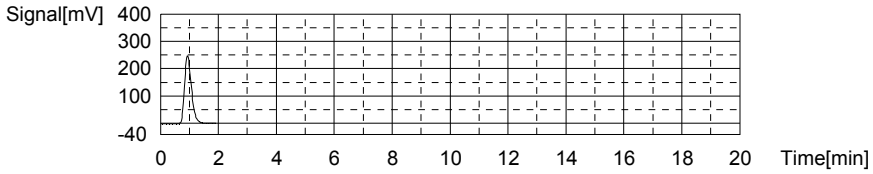

Sample

Sample Name: L15110670-05 (2) MS
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:12.56mg/L TC:21.05mg/L IC:8.493mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	824.8	21.05mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 6:27:38 PM

Mean Area 824.8
Mean Conc. 21.05mg/L

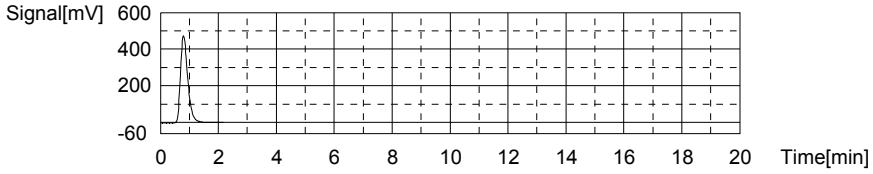

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	289.8	8.493mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 6:32:23 PM

Mean Area 289.8
Mean Conc. 8.493mg/L

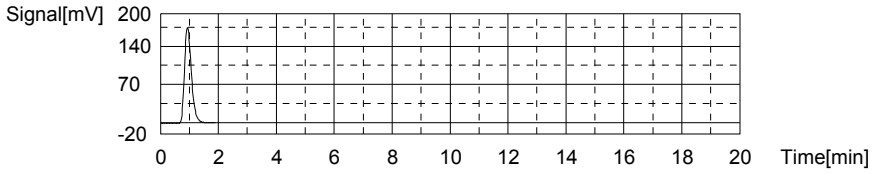

Sample

Sample Name: L15110670-06 (2) MSD
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:12.65mg/L TC:21.56mg/L IC:8.915mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	844.7	21.56mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 6:39:57 PM

Mean Area 844.7
Mean Conc. 21.56mg/L

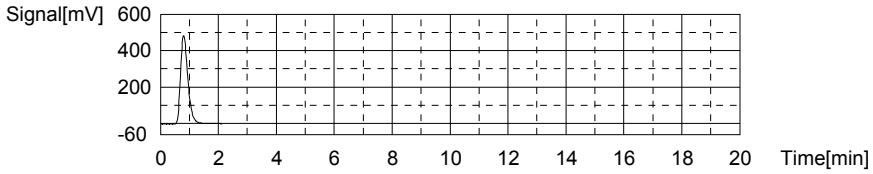

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	303.9	8.915mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 6:44:39 PM

Mean Area 303.9
Mean Conc. 8.915mg/L

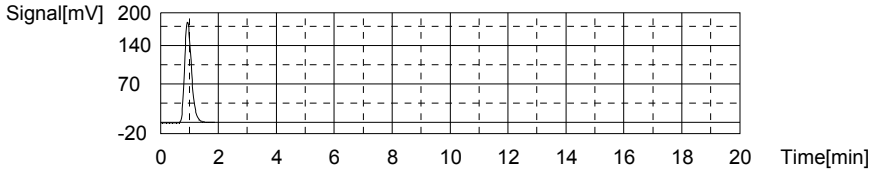

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:28.06mg/L TC:28.19mg/L IC:0.1281mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1103	28.19mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 6:52:29 PM

Mean Area 1103
Mean Conc. 28.19mg/L

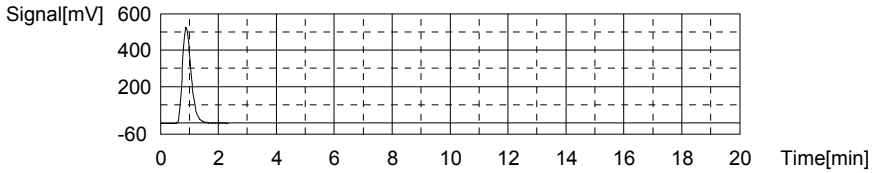

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.21	0.1281mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 6:56:47 PM

Mean Area 10.21
Mean Conc. 0.1281mg/L

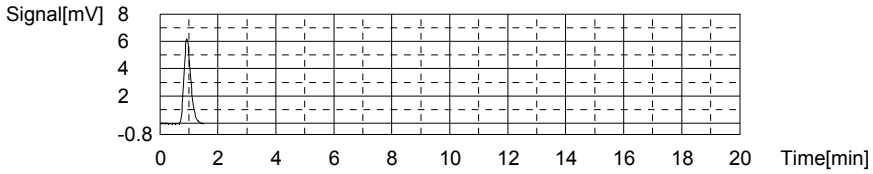

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.02452mg/L TC:0.1476mg/L IC:0.1231mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.70	0.1476mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 7:01:47 PM

Mean Area 10.70
Mean Conc. 0.1476mg/L

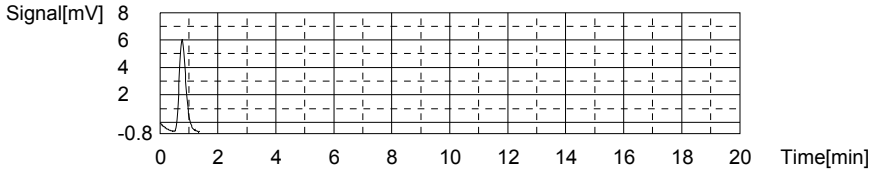

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.04	0.1231mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 7:05:43 PM

Mean Area 10.04
Mean Conc. 0.1231mg/L

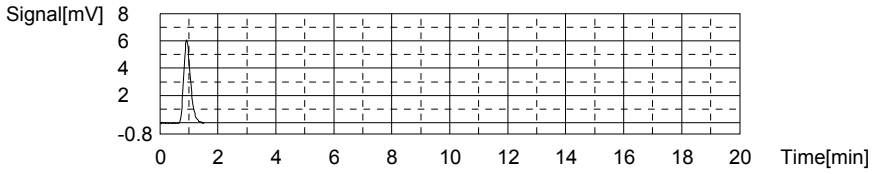

Sample

Sample Name: L15110670-07 (2)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.048mg/L TC:16.07mg/L IC:9.026mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	631.0	16.07mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 7:13:10 PM

Mean Area 631.0
Mean Conc. 16.07mg/L

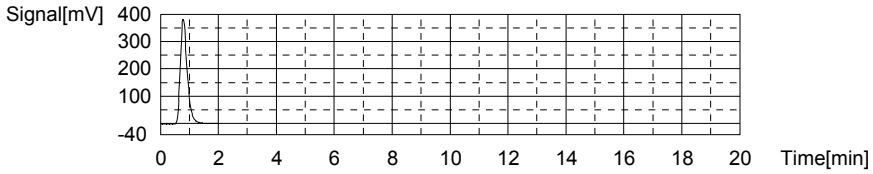

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	307.6	9.026mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 7:17:56 PM

Mean Area 307.6
Mean Conc. 9.026mg/L

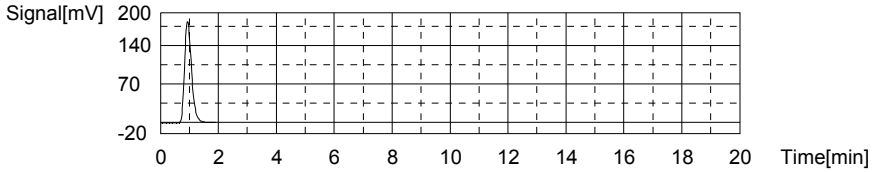

Sample

Sample Name: L15110670-08 (2)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.988mg/L TC:18.16mg/L IC:11.17mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	712.3	18.16mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 7:25:34 PM

Mean Area 712.3
Mean Conc. 18.16mg/L

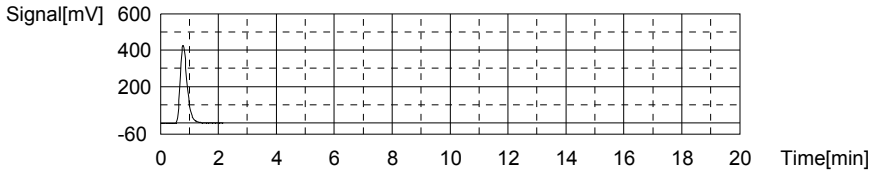

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	379.4	11.17mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 7:30:20 PM

Mean Area 379.4
Mean Conc. 11.17mg/L

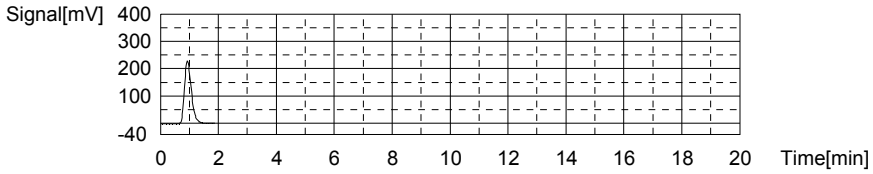

Sample

Sample Name: L15110756-01 (2)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.304mg/L TC:14.18mg/L IC:9.875mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	557.2	14.18mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 7:37:44 PM

Mean Area 557.2
Mean Conc. 14.18mg/L

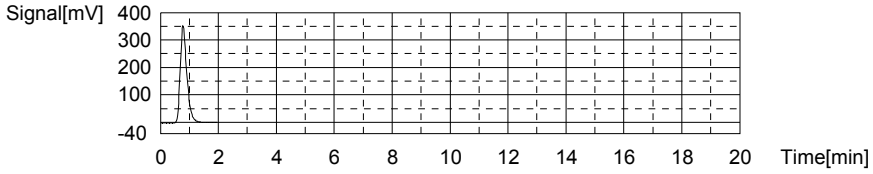

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	336.0	9.875mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 7:42:33 PM

Mean Area 336.0
Mean Conc. 9.875mg/L

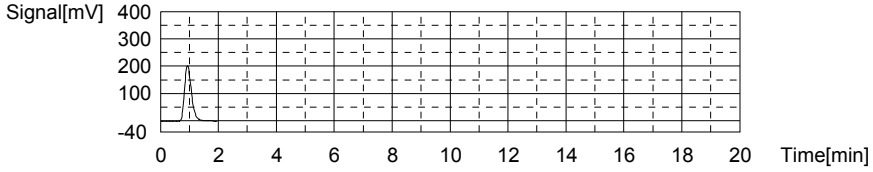

Sample

Sample Name: L15110756-02
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.105mg/L TC:37.82mg/L IC:31.72mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1478	37.82mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 7:49:56 PM

Mean Area 1478
Mean Conc. 37.82mg/L

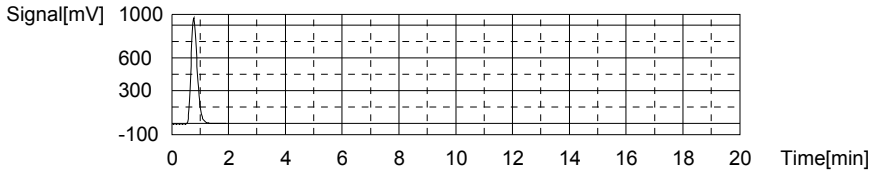

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1066	31.72mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 7:55:04 PM

Mean Area 1066
Mean Conc. 31.72mg/L

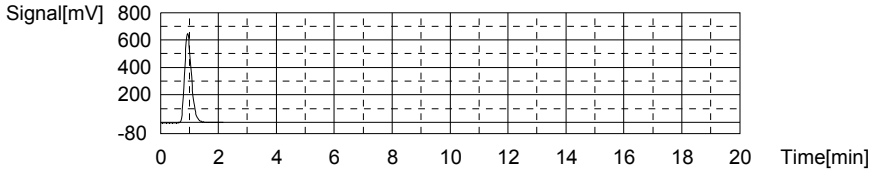

Sample

Sample Name: L15110756-03 (3)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.529mg/L TC:11.76mg/L IC:9.226mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	462.8	11.76mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 8:02:20 PM

Mean Area 462.8
Mean Conc. 11.76mg/L

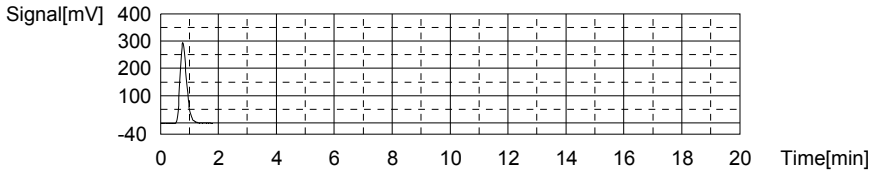

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	314.3	9.226mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 8:07:05 PM

Mean Area 314.3
Mean Conc. 9.226mg/L

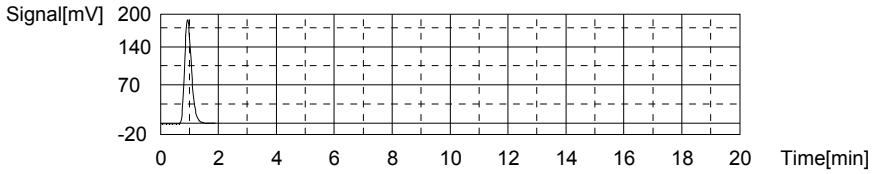

Sample

Sample Name: L15110756-04
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.536mg/L TC:34.33mg/L IC:27.79mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1342	34.33mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 8:14:46 PM

Mean Area 1342
Mean Conc. 34.33mg/L

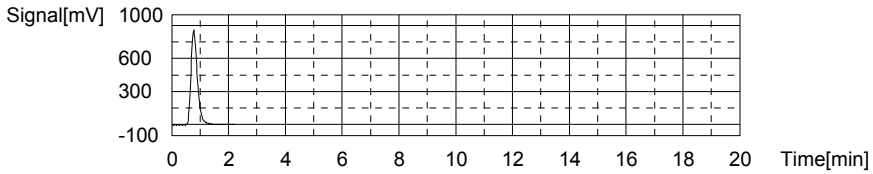

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	934.9	27.79mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 8:19:44 PM

Mean Area 934.9
Mean Conc. 27.79mg/L

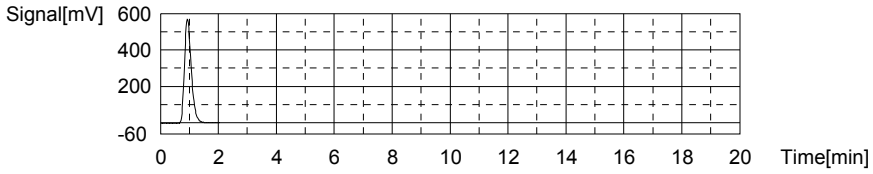

Sample

Sample Name: WG546976-01 BLK
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-0.01468mg/L TC:0.1766mg/L IC:0.1913mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.83	0.1766mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 8:24:51 PM

Mean Area 11.83
Mean Conc. 0.1766mg/L

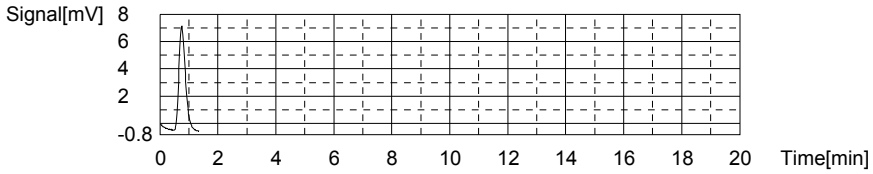

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	12.32	0.1913mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 8:28:49 PM

Mean Area 12.32
Mean Conc. 0.1913mg/L

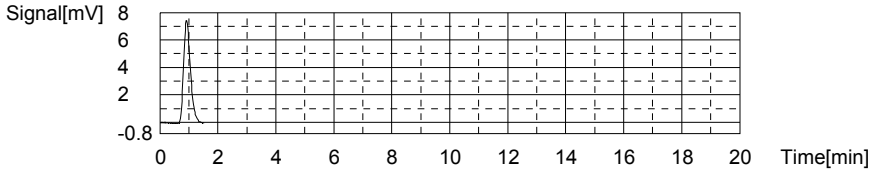

Sample

Sample Name: WG546976-02 LCS
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:26.87mg/L TC:26.99mg/L IC:0.1194mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1056	26.99mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 8:36:36 PM

Mean Area 1056
Mean Conc. 26.99mg/L

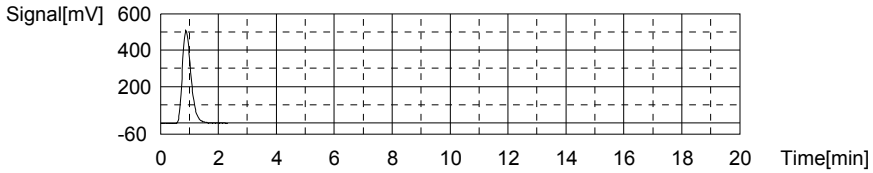

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.919	0.1194mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 8:40:54 PM

Mean Area 9.919
Mean Conc. 0.1194mg/L

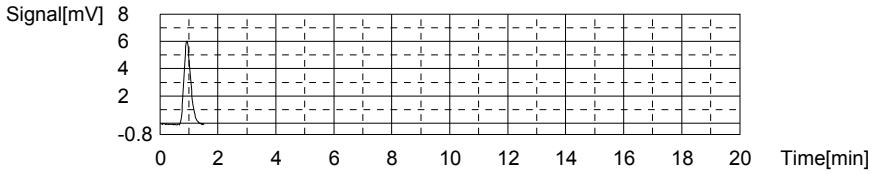

Sample

Sample Name: WG546976-03 LCSDUP
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:27.10mg/L TC:27.19mg/L IC:0.09386mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1064	27.19mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 8:48:43 PM

Mean Area 1064
Mean Conc. 27.19mg/L

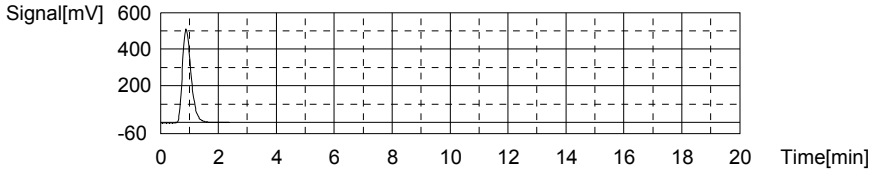

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.064	0.09386mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 8:52:59 PM

Mean Area 9.064
Mean Conc. 0.09386mg/L

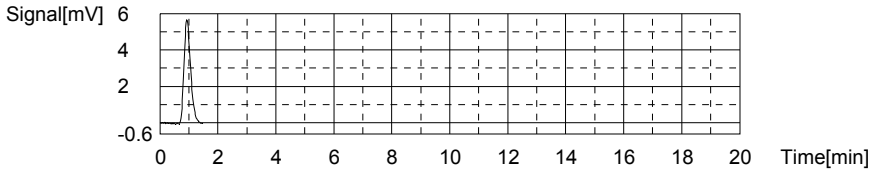

Sample

Sample Name: L15110756-06
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.634mg/L TC:33.79mg/L IC:27.16mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1321	33.79mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 9:00:41 PM

Mean Area 1321
Mean Conc. 33.79mg/L

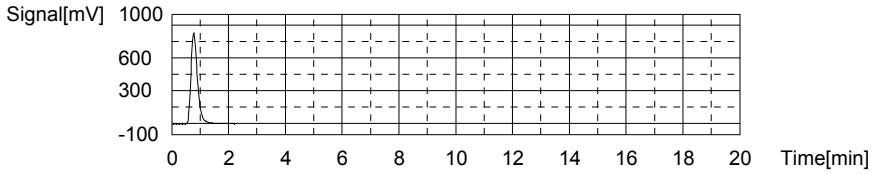

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	913.6	27.16mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 9:05:45 PM

Mean Area 913.6
Mean Conc. 27.16mg/L

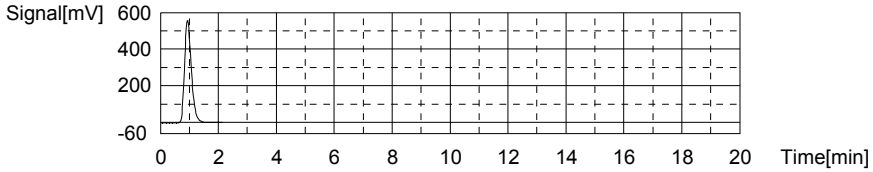

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:27.97mg/L TC:28.14mg/L IC:0.1733mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1101	28.14mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 9:13:34 PM

Mean Area 1101
Mean Conc. 28.14mg/L

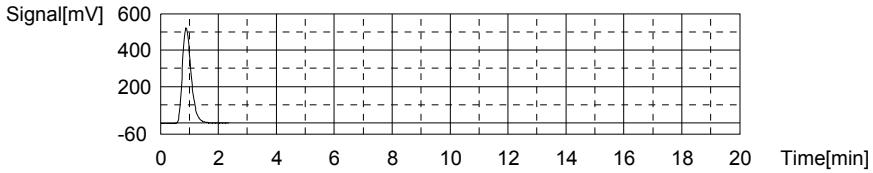

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.72	0.1733mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 9:17:55 PM

Mean Area 11.72
Mean Conc. 0.1733mg/L

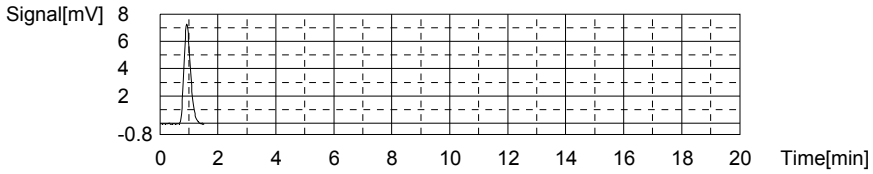

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.01699mg/L TC:0.1442mg/L IC:0.1273mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.57	0.1442mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 9:22:53 PM

Mean Area 10.57
Mean Conc. 0.1442mg/L

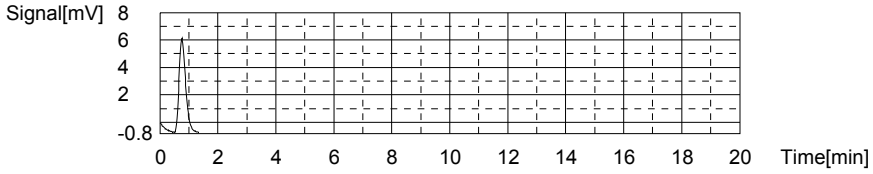

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.18	0.1273mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 9:26:48 PM

Mean Area 10.18
Mean Conc. 0.1273mg/L

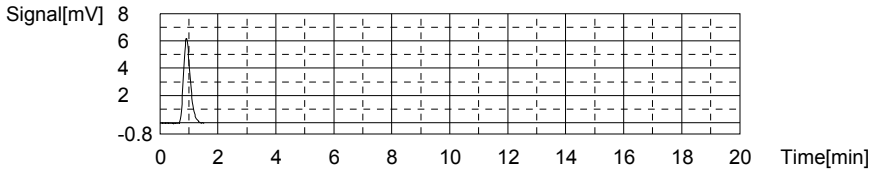

Sample

Sample Name: L15110756-07
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.6401mg/L TC:0.7622mg/L IC:0.1222mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	34.64	0.7622mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 9:33:49 PM

Mean Area 34.64
Mean Conc. 0.7622mg/L

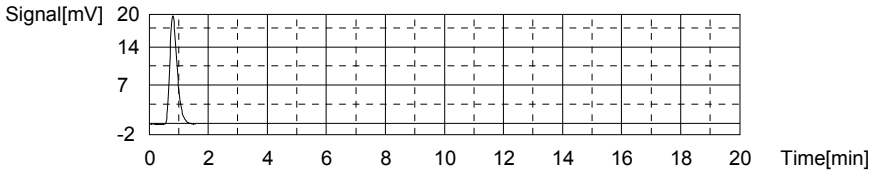

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.01	0.1222mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 9:38:11 PM

Mean Area 10.01
Mean Conc. 0.1222mg/L

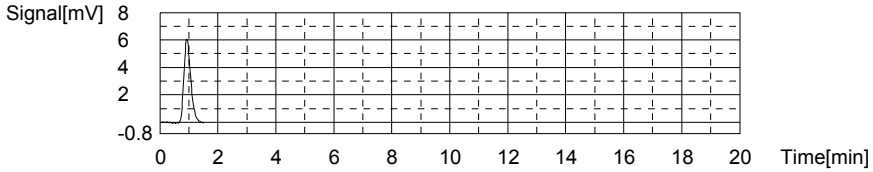

Sample

Sample Name: L15110756-08
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.6352mg/L TC:0.7494mg/L IC:0.1142mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	34.14	0.7494mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 9:45:11 PM

Mean Area 34.14
Mean Conc. 0.7494mg/L

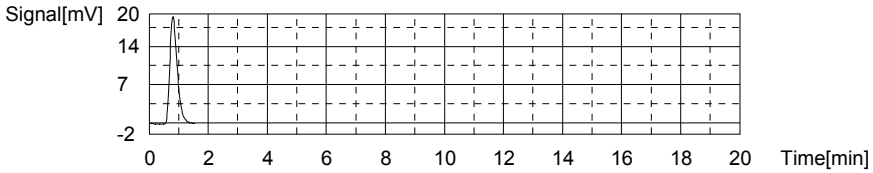

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.745	0.1142mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 9:49:29 PM

Mean Area 9.745
Mean Conc. 0.1142mg/L

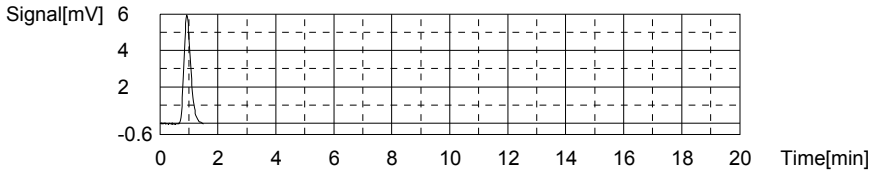

Sample

Sample Name: L15110800-01 (3)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:10.53mg/L TC:17.40mg/L IC:6.862mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	682.5	17.40mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 9:58:07 PM

Mean Area 682.5
Mean Conc. 17.40mg/L

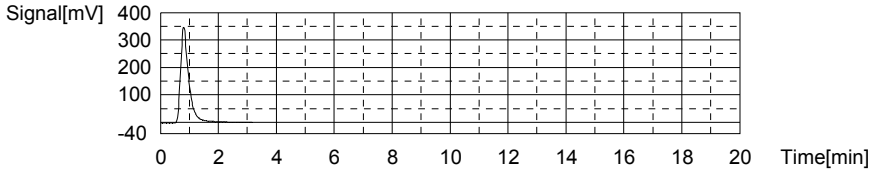

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	235.3	6.862mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 10:02:53 PM

Mean Area 235.3
Mean Conc. 6.862mg/L

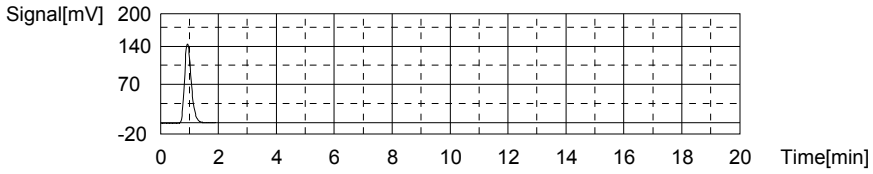

Sample

Sample Name:
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:18.29mg/L TC:18.56mg/L IC:0.2712mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	728.0	18.56mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 10:13:14 PM

Mean Area 728.0
Mean Conc. 18.56mg/L

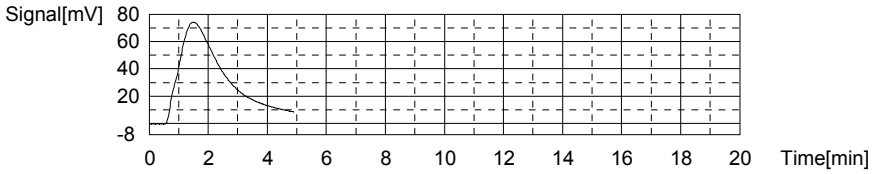

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	14.99	0.2712mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 10:17:34 PM

Mean Area 14.99
Mean Conc. 0.2712mg/L

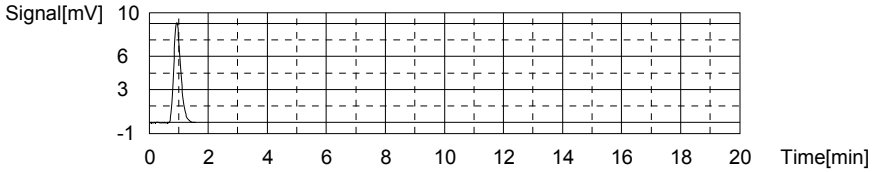

Sample

Sample Name: L15110735-02 (2)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:10.73mg/L TC:19.84mg/L IC:9.112mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	777.8	19.84mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 10:25:20 PM

Mean Area 777.8
Mean Conc. 19.84mg/L

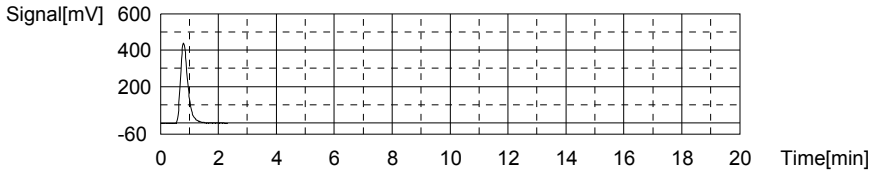

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	310.5	9.112mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 10:29:57 PM

Mean Area 310.5
Mean Conc. 9.112mg/L

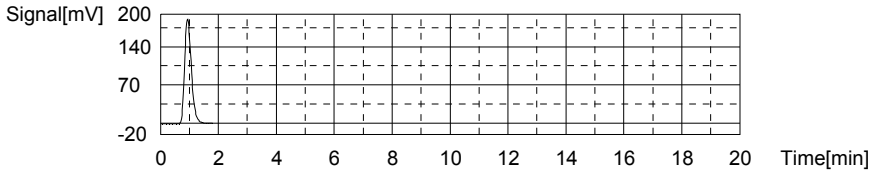

Sample

Sample Name: L15110735-03 (2)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:6.846mg/L TC:20.05mg/L IC:13.20mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	785.8	20.05mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 10:37:22 PM

Mean Area 785.8
Mean Conc. 20.05mg/L

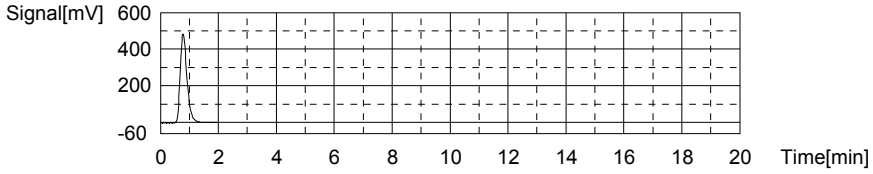

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	447.2	13.20mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 10:42:14 PM

Mean Area 447.2
Mean Conc. 13.20mg/L

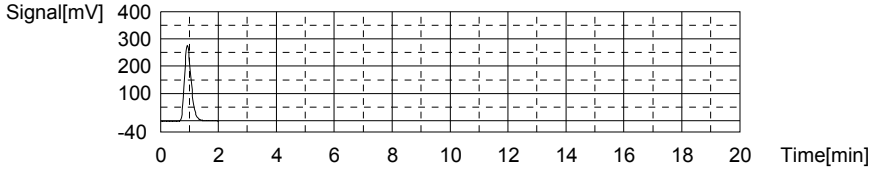

Sample

Sample Name: L15110735-04
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.151mg/L TC:15.36mg/L IC:12.21mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	603.2	15.36mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 10:49:29 PM

Mean Area 603.2
Mean Conc. 15.36mg/L

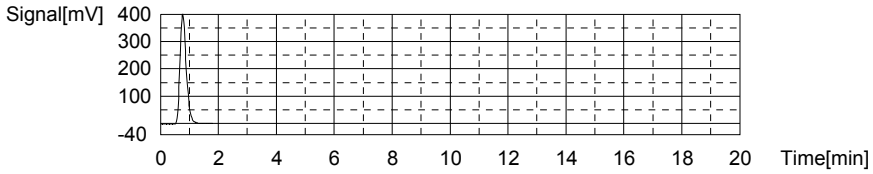

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	414.0	12.21mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 10:54:18 PM

Mean Area 414.0
Mean Conc. 12.21mg/L

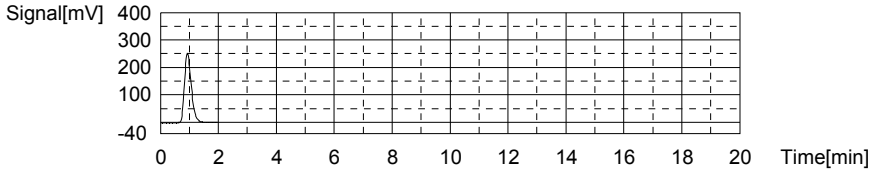

Sample

Sample Name:
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:29.97mg/L TC:50.84mg/L IC:20.87mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1985	50.84mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 11:01:50 PM

Mean Area 1985
Mean Conc. 50.84mg/L

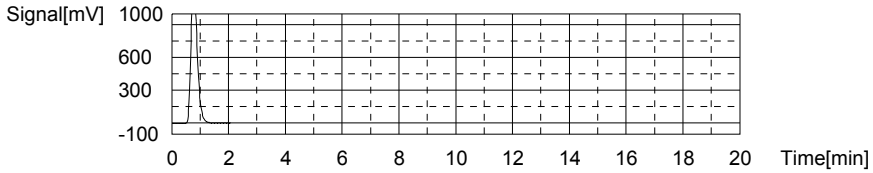

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	703.5	20.87mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 11:06:49 PM

Mean Area 703.5
Mean Conc. 20.87mg/L

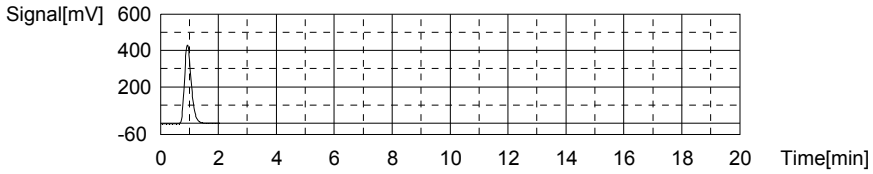

Sample

Sample Name: L15110793-09 (3)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.353mg/L TC:37.85mg/L IC:32.49mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1479	37.85mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 11:14:27 PM

Mean Area 1479
Mean Conc. 37.85mg/L

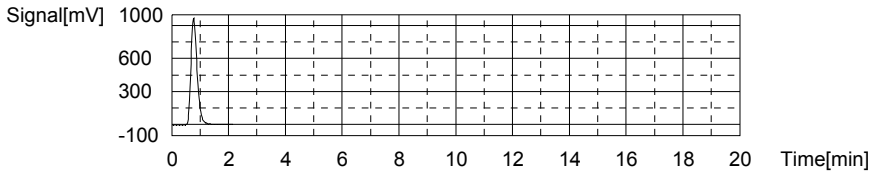

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1092	32.49mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 11:19:45 PM

Mean Area 1092
Mean Conc. 32.49mg/L

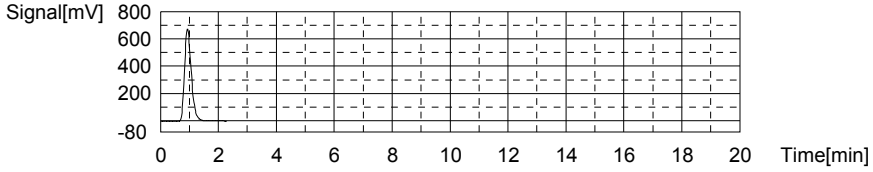

Sample

Sample Name: L15110793-11 (4)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.248mg/L TC:15.08mg/L IC:11.83mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	592.3	15.08mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 11:27:08 PM

Mean Area 592.3
Mean Conc. 15.08mg/L

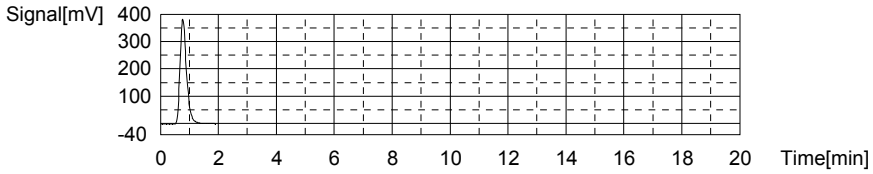

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	401.4	11.83mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 11:31:52 PM

Mean Area 401.4
Mean Conc. 11.83mg/L

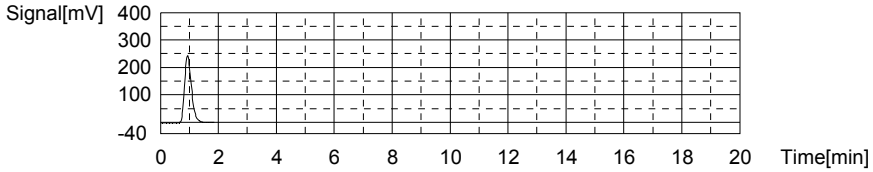

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:28.59mg/L TC:28.73mg/L IC:0.1389mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1124	28.73mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 11:40:06 PM

Mean Area 1124
Mean Conc. 28.73mg/L

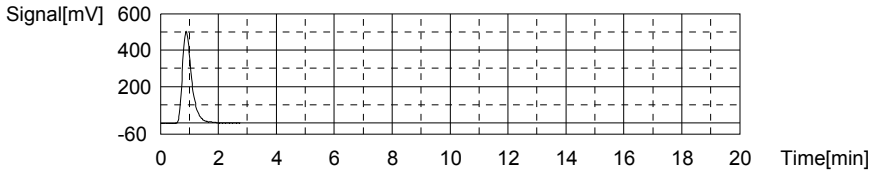

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.57	0.1389mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 11:44:25 PM

Mean Area 10.57
Mean Conc. 0.1389mg/L

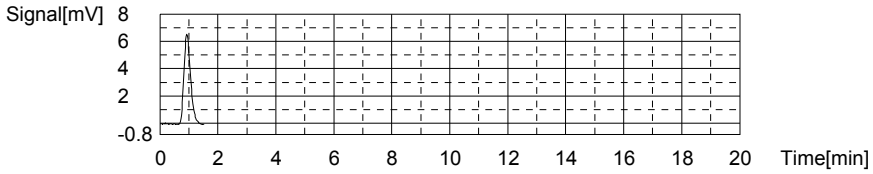

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.02054mg/L TC:0.1445mg/L IC:0.1240mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.58	0.1445mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/16/2015 11:49:24 PM

Mean Area 10.58
Mean Conc. 0.1445mg/L

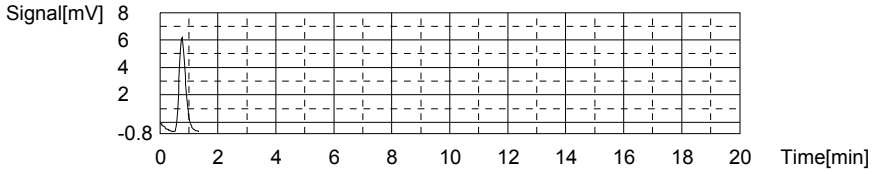

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.07	0.1240mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/16/2015 11:53:15 PM

Mean Area 10.07
Mean Conc. 0.1240mg/L

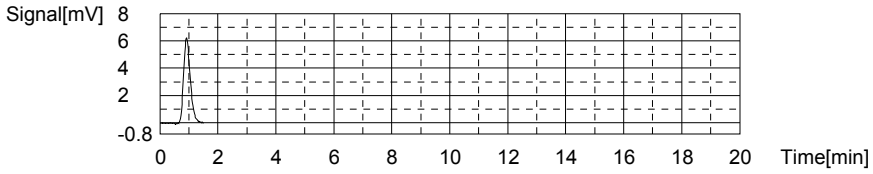

Sample

Sample Name:
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-7.225mg/L TC:80.47mg/L IC:87.69mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	3139	80.47mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/17/2015 12:01:58 AM

Mean Area 3139
Mean Conc. 80.47mg/L

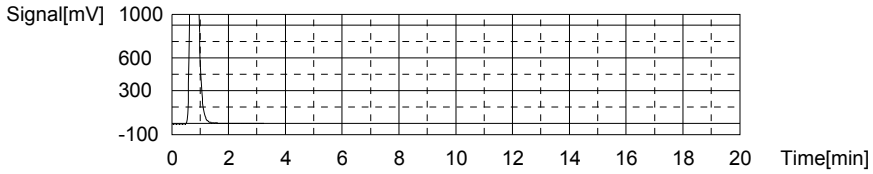

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2937	87.69mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/17/2015 12:07:50 AM

Mean Area 2937
Mean Conc. 87.69mg/L

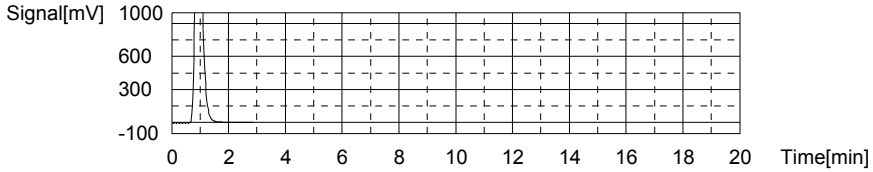

Sample

Sample Name: L15110793-15 (4)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:16.79mg/L TC:32.10mg/L IC:15.31mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1255	32.10mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/17/2015 12:15:46 AM

Mean Area 1255
Mean Conc. 32.10mg/L

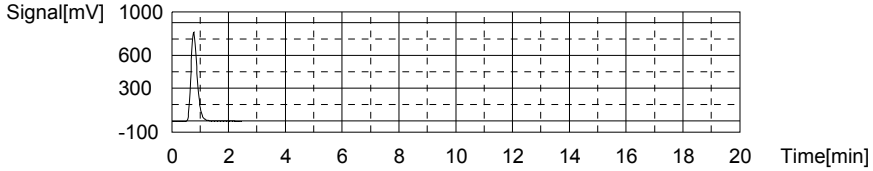

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	517.5	15.31mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/17/2015 12:20:46 AM

Mean Area 517.5
Mean Conc. 15.31mg/L

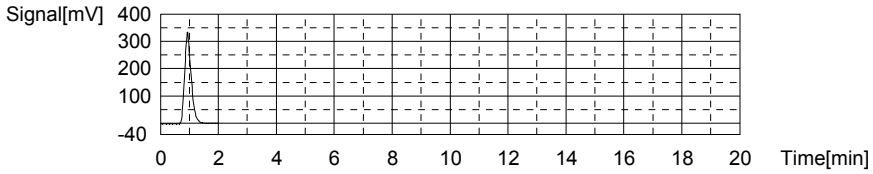

Sample

Sample Name: WG546976-05 (4) DUP
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.528mg/L TC:24.49mg/L IC:20.96mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	958.7	24.49mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/17/2015 12:28:43 AM

Mean Area 958.7
Mean Conc. 24.49mg/L

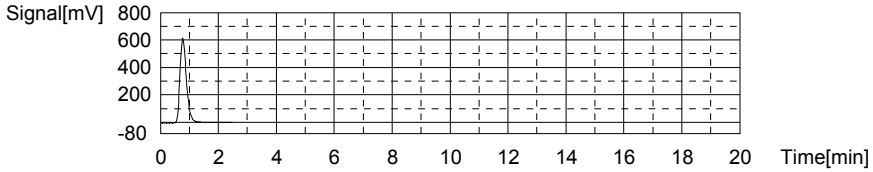

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	706.5	20.96mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/17/2015 12:33:44 AM

Mean Area 706.5
Mean Conc. 20.96mg/L

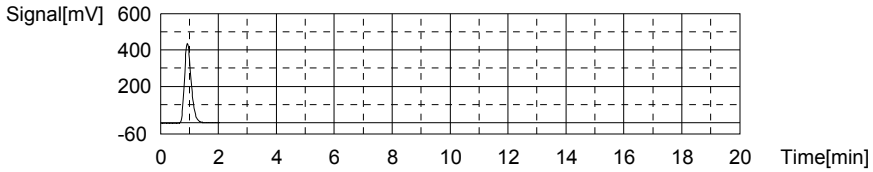

Sample

Sample Name: WG546976-06 (4) MS
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.333mg/L TC:10.28mg/L IC:5.944mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	405.2	10.28mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/17/2015 12:41:44 AM

Mean Area 405.2
Mean Conc. 10.28mg/L

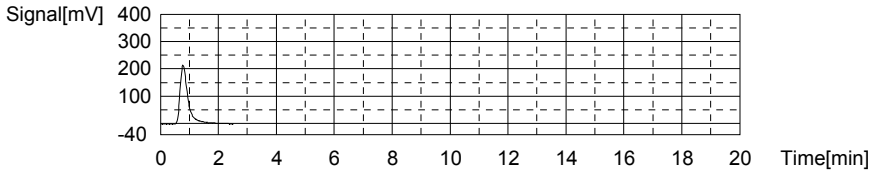

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	204.6	5.944mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/17/2015 12:46:20 AM

Mean Area 204.6
Mean Conc. 5.944mg/L

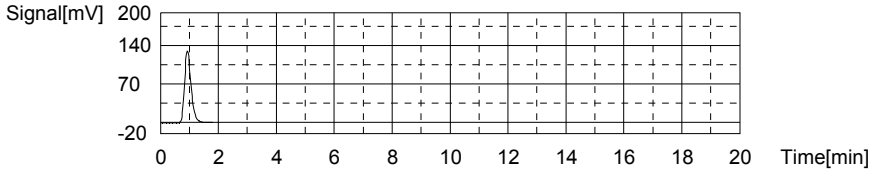

Sample

Sample Name: WG546978-01 BLK
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.01703mg/L TC:0.1540mg/L IC:0.1370mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.16	0.1594mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/17/2015 12:51:21 AM
2	10.74	0.1486mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/17/2015 12:54:51 AM

Mean Area 10.95
Mean Conc. 0.1540mg/L

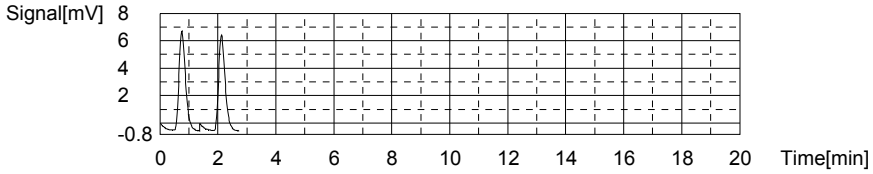

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.66	0.1416mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/17/2015 12:58:45 AM
2	10.35	0.1323mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/17/2015 1:02:37 AM

Mean Area 10.50
Mean Conc. 0.1370mg/L

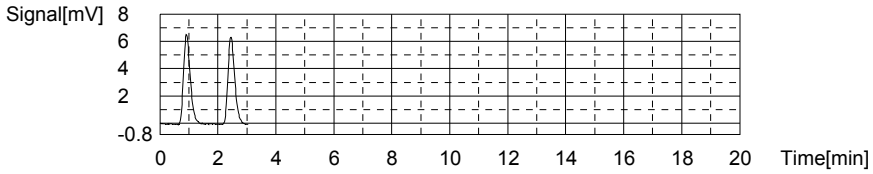

Sample

Sample Name: WG546978-02 LCS
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:28.81mg/L TC:28.90mg/L IC:0.09121mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1131	28.91mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/17/2015 1:10:36 AM
2	1130	28.89mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/17/2015 1:15:22 AM

Mean Area 1131
Mean Conc. 28.90mg/L

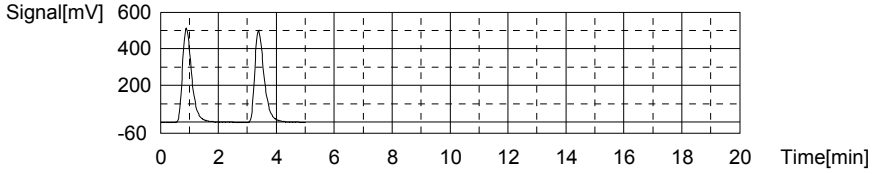

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.956	0.09063mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/17/2015 1:19:31 AM
2	8.995	0.09180mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/17/2015 1:23:36 AM

Mean Area 8.976
Mean Conc. 0.09121mg/L

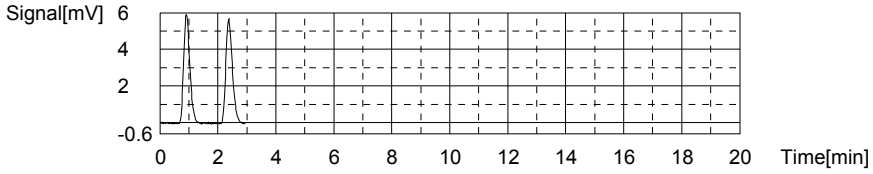

Sample

Sample Name: WG546978-03 LCSDUP
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:28.50mg/L TC:28.59mg/L IC:0.08729mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1121	28.65mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/17/2015 1:31:36 AM
2	1116	28.53mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/17/2015 1:37:17 AM

Mean Area 1119
Mean Conc. 28.59mg/L

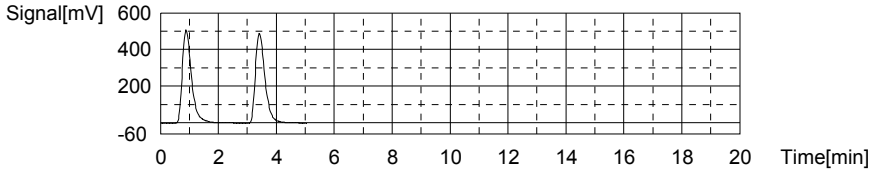

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.697	0.08288mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/17/2015 1:41:26 AM
2	8.992	0.09171mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/17/2015 1:45:26 AM

Mean Area 8.845
Mean Conc. 0.08729mg/L

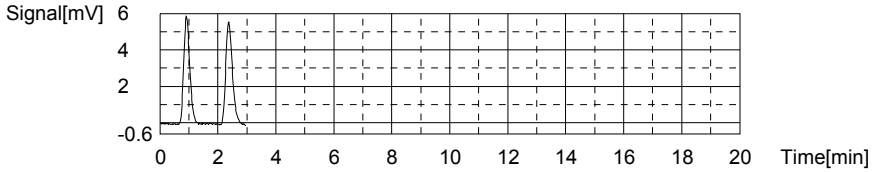

Sample

Sample Name: L15110797-01
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.537mg/L TC:8.235mg/L IC:4.698mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	325.9	8.240mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/17/2015 1:52:51 AM
2	325.5	8.230mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/17/2015 1:57:11 AM

Mean Area 325.7
Mean Conc. 8.235mg/L

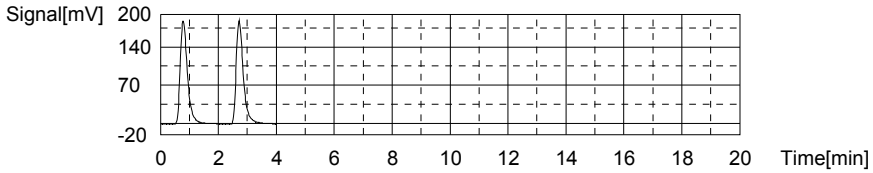

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	163.7	4.720mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/17/2015 2:01:37 AM
2	162.2	4.675mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/17/2015 2:05:53 AM

Mean Area 163.0
Mean Conc. 4.698mg/L

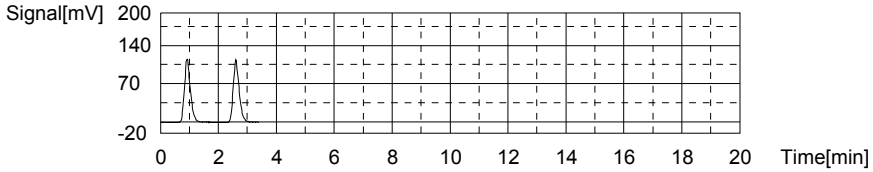

Sample

Sample Name: L15110797-02
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.085mg/L TC:6.605mg/L IC:2.520mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	263.6	6.641mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/17/2015 2:13:23 AM
2	260.8	6.569mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/17/2015 2:17:30 AM

Mean Area 262.2
Mean Conc. 6.605mg/L

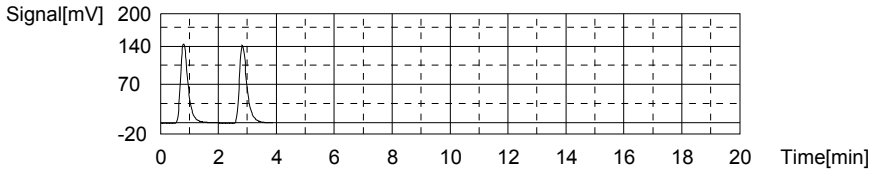

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	90.46	2.529mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/17/2015 2:21:51 AM
2	89.82	2.510mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/17/2015 2:26:01 AM

Mean Area 90.14
Mean Conc. 2.520mg/L

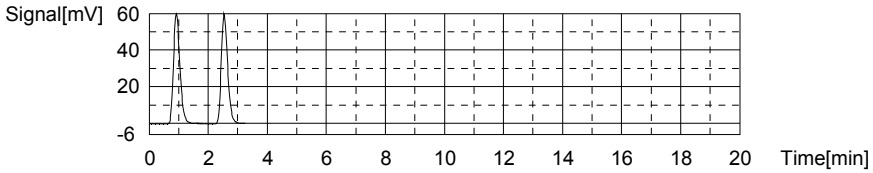

Sample

Sample Name: L15110797-04
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.484mg/L TC:6.466mg/L IC:1.982mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	257.2	6.477mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/17/2015 2:33:33 AM
2	256.4	6.456mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/17/2015 2:38:02 AM

Mean Area 256.8
Mean Conc. 6.466mg/L

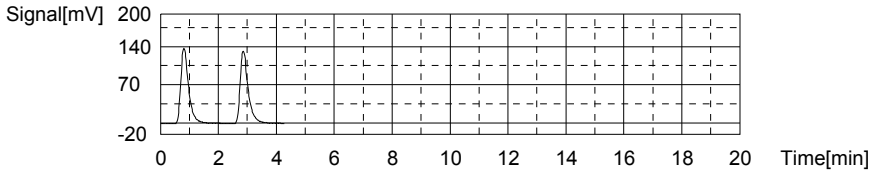

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	71.67	1.967mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/17/2015 2:42:26 AM
2	72.71	1.998mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/17/2015 2:46:36 AM

Mean Area 72.19
Mean Conc. 1.982mg/L

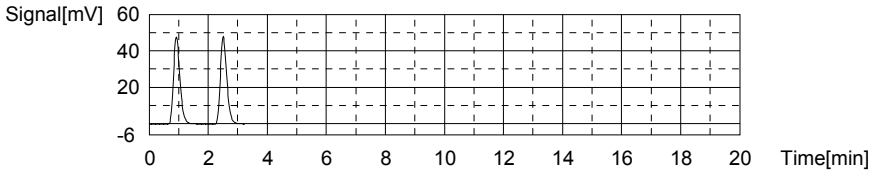

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:28.78mg/L TC:28.89mg/L IC:0.1010mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1130	28.89mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/17/2015 2:54:40 AM

Mean Area 1130
Mean Conc. 28.89mg/L

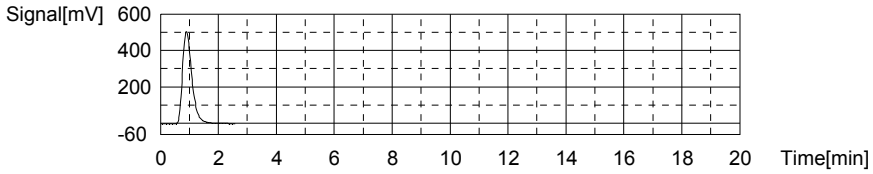

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.303	0.1010mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/17/2015 2:58:55 AM

Mean Area 9.303
Mean Conc. 0.1010mg/L

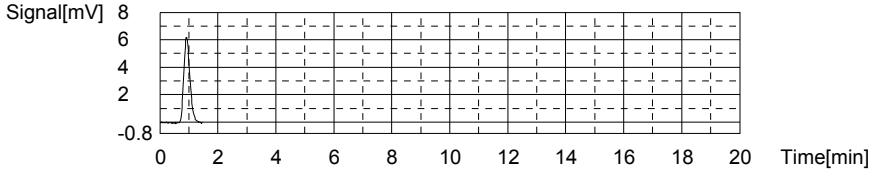

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.02126mg/L TC:0.1365mg/L IC:0.1153mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.27	0.1365mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/17/2015 3:03:56 AM

Mean Area 10.27
Mean Conc. 0.1365mg/L

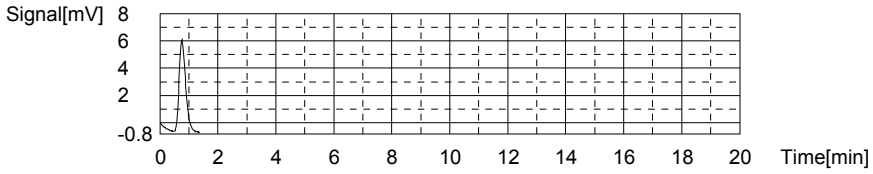

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.780	0.1153mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/17/2015 3:07:41 AM

Mean Area 9.780
Mean Conc. 0.1153mg/L

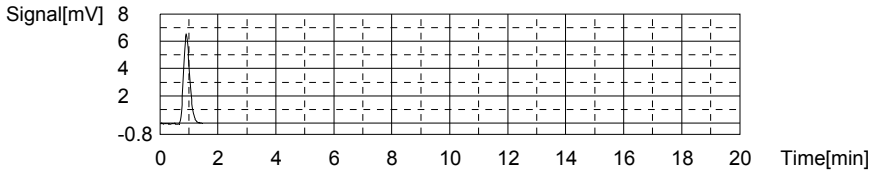

Sample

Sample Name: L15110739-01
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:12.84mg/L TC:33.76mg/L IC:20.93mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1321	33.79mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/17/2015 3:16:06 AM
2	1319	33.74mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/17/2015 3:21:26 AM

Mean Area 1320
Mean Conc. 33.76mg/L

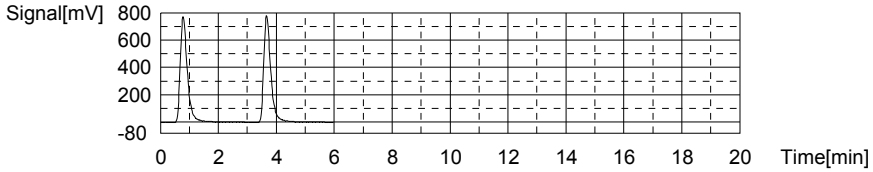

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	703.8	20.88mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/17/2015 3:26:15 AM
2	707.0	20.97mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/17/2015 3:30:49 AM

Mean Area 705.4
Mean Conc. 20.93mg/L

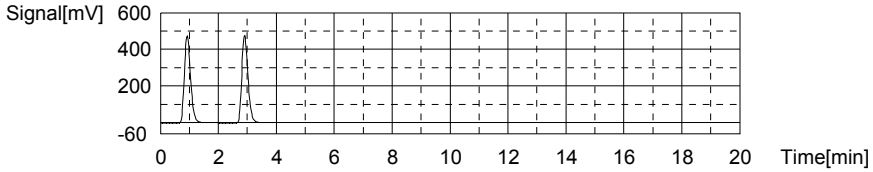

Sample

Sample Name: WG546978-05 DUP
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:12.53mg/L TC:32.74mg/L IC:20.21mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1299	33.23mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/17/2015 3:39:25 AM
2	1261	32.25mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/17/2015 3:44:35 AM

Mean Area 1280
Mean Conc. 32.74mg/L

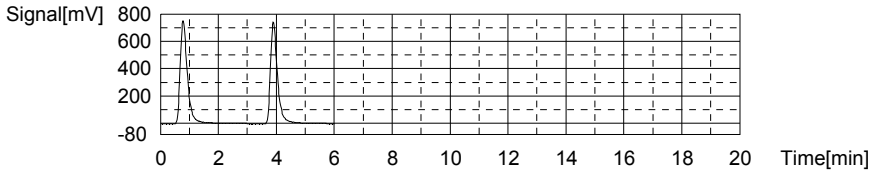

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	678.6	20.13mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/17/2015 3:49:27 AM
2	684.2	20.29mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/17/2015 3:54:05 AM

Mean Area 681.4
Mean Conc. 20.21mg/L

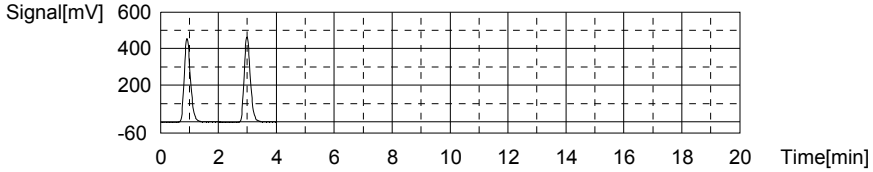

Sample

Sample Name: WG546978-016 MS
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:25.41mg/L TC:28.94mg/L IC:3.530mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1140	29.14mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/17/2015 4:02:51 AM
2	1124	28.73mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/17/2015 4:08:06 AM

Mean Area 1132
Mean Conc. 28.94mg/L

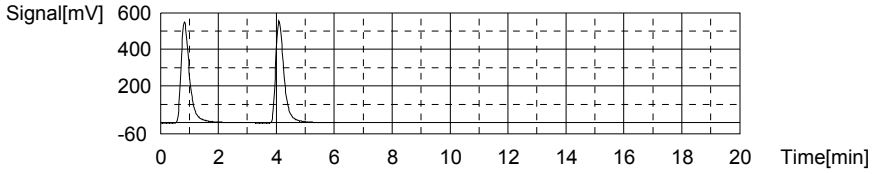

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	215.9	6.282mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/17/2015 4:12:40 AM
2	31.93	0.7780mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/17/2015 4:16:46 AM

Mean Area 123.9
Mean Conc. 3.530mg/L

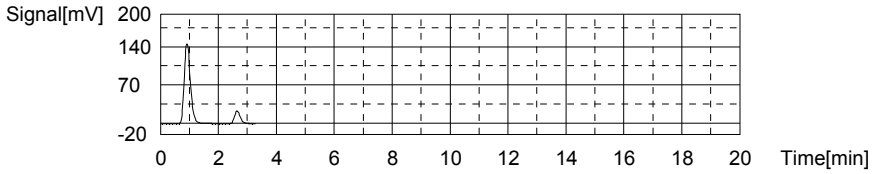

Sample

Sample Name: L15110823-01 (10)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:31.64mg/L TC:33.02mg/L IC:1.383mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1291	33.02mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/17/2015 4:27:09 AM

Mean Area 1291
Mean Conc. 33.02mg/L

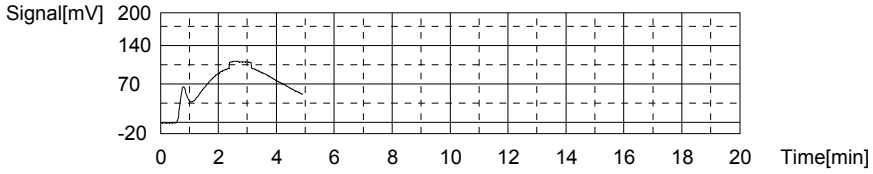

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	52.14	1.383mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/17/2015 4:31:29 AM

Mean Area 52.14
Mean Conc. 1.383mg/L

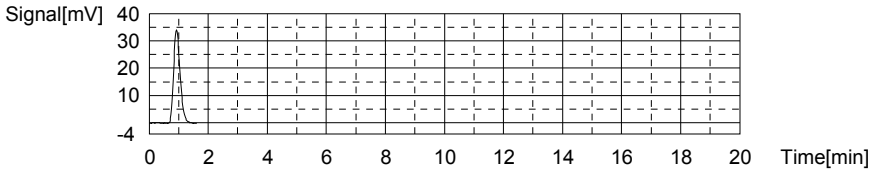

Sample

Sample Name: L15110696-02 (2)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:14.10mg/L TC:17.05mg/L IC:2.946mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	668.9	17.05mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/17/2015 4:40:49 AM

Mean Area 668.9
Mean Conc. 17.05mg/L

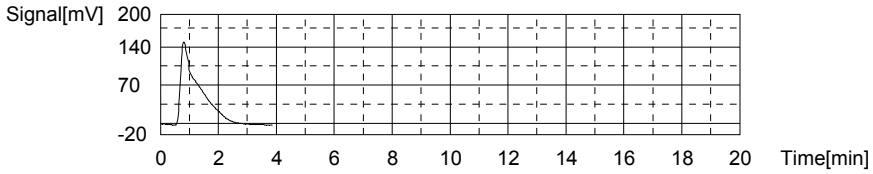

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	104.4	2.946mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/17/2015 4:45:15 AM

Mean Area 104.4
Mean Conc. 2.946mg/L

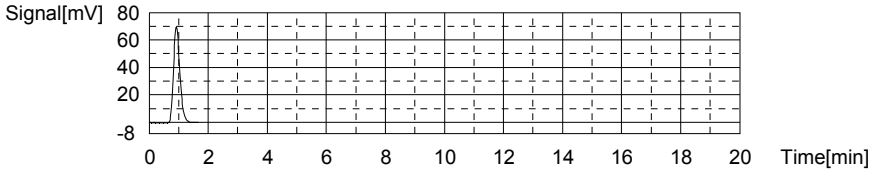

Sample

Sample Name:
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.4116mg/L TC:0.5805mg/L IC:0.1688mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	27.56	0.5805mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/17/2015 4:52:25 AM

Mean Area 27.56
Mean Conc. 0.5805mg/L

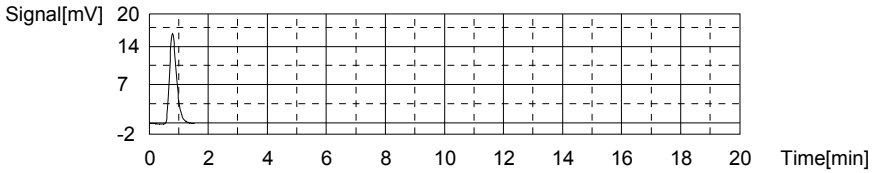

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.57	0.1688mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/17/2015 4:56:38 AM

Mean Area 11.57
Mean Conc. 0.1688mg/L

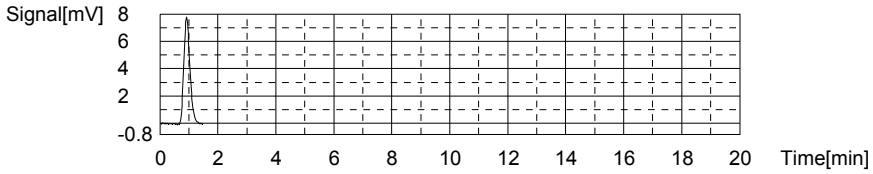

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:27.97mg/L TC:28.06mg/L IC:0.08994mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1098	28.06mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/17/2015 5:04:44 AM

Mean Area 1098
Mean Conc. 28.06mg/L

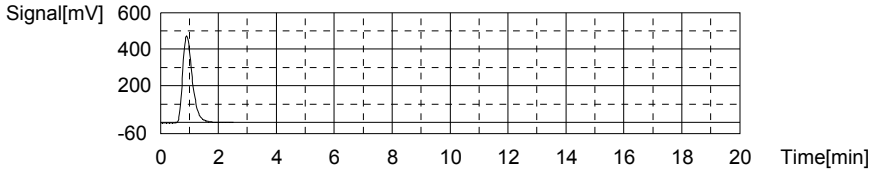

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.933	0.08994mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/17/2015 5:08:56 AM

Mean Area 8.933
Mean Conc. 0.08994mg/L

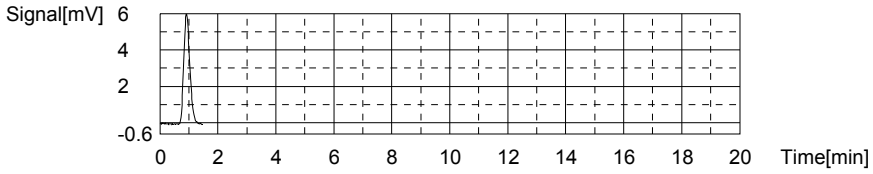

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.4058mg/L TC:0.5204mg/L IC:0.1146mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	25.22	0.5204mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/17/2015 5:14:00 AM

Mean Area 25.22
Mean Conc. 0.5204mg/L

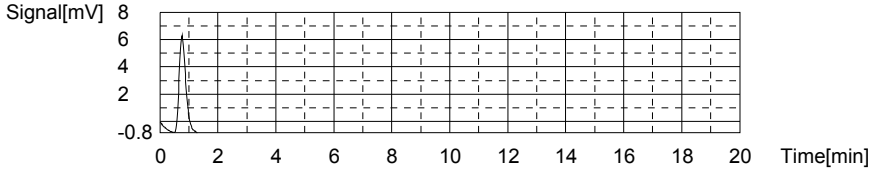

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.758	0.1146mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/17/2015 5:17:43 AM

Mean Area 9.758
Mean Conc. 0.1146mg/L

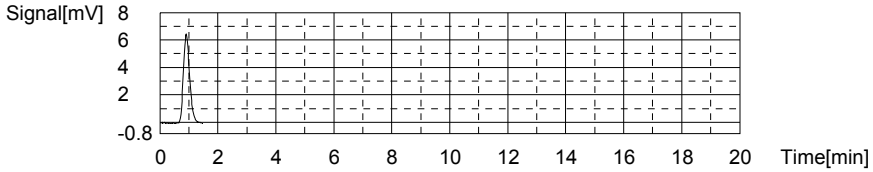

WORKGROUP: WG547552

Total Organic Carbon

MAKE DAILY

CCV (TOC): std 72133
(5/200)(1000) = 25mg/L

LCS (TOC): STD72270
(5/200)(1000) = 25mg/L

CCV (TIC): STD72654
(5/200)(1000) = 25mg/L

MS (TOC): 0.4/40(1000)=10

Calibration Curve Date: 10/31/15

Reagent: RGT 35313
RGT 34459

☐ SM5310-C : Matrix 2 WG_____

☑ EPA 415.1/9060A(mod): Matrix 1 WG_____ SOP: K 4151 Rev. 18

WG_____ Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

☑ drain reservoir filled
☑ ASI water bottle full
☑ dilution water bottle full

☑ 3rd bottle full
☑ sufficient gas
☑ sufficient persulfate

☑ sufficient acid
☑ waste container

Position	Sample ID	Dilution
1	TIC 25	
2	TOC/TIC	
3	R CCV25	
4	BLK	
5	LCS 25	
6	LCSDUP	
7	11-6666-07	1/4
8	11-793-07	1/10
9	13	1/10
10	11-1047-01	
11	02	
12	03	
13	DUP	
14	MS	
15	CCV	
16	CCB	
17		
18		
19		
20		
21		
22		
23		
24		
25		

RR TOC/TIC

Position	Sample ID	Dilution
26		
27		
28		
29		
30		
31		
32		
33		
34		
35		
36		
37		
38		
39		
40		
41		
42		
43		
44		
45		
46		
47		
48		
49		
50		

Position	Sample ID	Dilution
51		
52		
53		
54		
55		
56		
57		
58		
59		
60		
61		
62		
63		
64		
65		
66		
67		
68		
69		
70		
71		
72		
73		
74		
75		

Analyst: [signature] Date/Time: 11/19/15

DCN#114850

C:\TOC3201\Data\11-19-2015-DIH-TOC.t32

	Analysis	Sample Name	Result	Status	Date / Time	Vial
1	TOC	TIC 25	TOC:3.863mg/L TC:29.19mg/L IC:25.33mg/L	Complete	11/19/2015 7:37:17 AM	1
2	TOC		TOC:29.25mg/L TC:37.38mg/L IC:8.131mg/L	Complete	11/19/2015 7:49:45 AM	2
3	TOC	CCV	TOC:26.21mg/L TC:26.24mg/L IC:0.02822mg/L	Complete	11/19/2015 8:01:47 AM	3
4	TOC	WG547552-01 BLK	TOC:0.08251mg/L TC:0.1733mg/L IC:0.09075mg/L	Complete	11/19/2015 8:10:40 AM	0
5	TOC	TOC/TIC	TOC:27.78mg/L TC:35.84mg/L IC:8.059mg/L	Complete	11/19/2015 8:29:05 AM	4
6	TOC	WG547552-02 LCS	TOC:27.71mg/L TC:27.73mg/L IC:0.01757mg/L	Complete	11/19/2015 8:41:06 AM	5
7	TOC	WG547552-03 LCSDUP	!!Error!! TOC:27.68mg/L TC:27.68mg/L IC:-0.00421mg/	Complete	11/19/2015 8:53:08 AM	6
8	TOC	L15110666-07 (4)	TOC:4.333mg/L TC:28.40mg/L IC:24.07mg/L	Complete	11/19/2015 9:05:50 AM	7
9	TOC	L15110793-07 (10)	TOC:7.898mg/L TC:24.04mg/L IC:16.14mg/L	Complete	11/19/2015 9:17:55 AM	8
10	TOC	L15110793-13 (10)	TOC:14.89mg/L TC:36.90mg/L IC:22.00mg/L	Complete	11/19/2015 9:30:47 AM	9
11	TOC	L15111047-01	TOC:3.261mg/L TC:21.12mg/L IC:17.86mg/L	Complete	11/19/2015 9:42:59 AM	10
12	TOC	L15111047-02	TOC:3.292mg/L TC:21.08mg/L IC:17.79mg/L	Complete	11/19/2015 9:55:21 AM	11
13	TOC	L15111047-03	TOC:3.464mg/L TC:19.75mg/L IC:16.28mg/L	Complete	11/19/2015 10:07:37 AM	12
14	TOC	WG547552-05 DUP	TOC:4.097mg/L TC:19.85mg/L IC:15.75mg/L	Complete	11/19/2015 10:19:52 AM	13
15	TOC	WG547552-06 MS	TOC:14.29mg/L TC:28.60mg/L IC:14.31mg/L	Complete	11/19/2015 10:32:14 AM	14
16	TOC	CCV	TOC:27.21mg/L TC:27.29mg/L IC:0.08160mg/L	Complete	11/19/2015 10:44:20 AM	15
17	TOC	CCB	TOC:0.03197mg/L TC:0.1195mg/L IC:0.08755mg/L	Complete	11/19/2015 10:53:11 AM	0
18	TOC			Defined		18
19	TOC			Defined		19
20	TOC			Defined		20

793-07

11/19/2015 11:32:32 AM

1/1

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Sample

Sample Name: TIC 25
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.863mg/L TC:29.19mg/L IC:25.33mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1142	29.19mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/19/2015 7:32:21 AM

Mean Area 1142
Mean Conc. 29.19mg/L

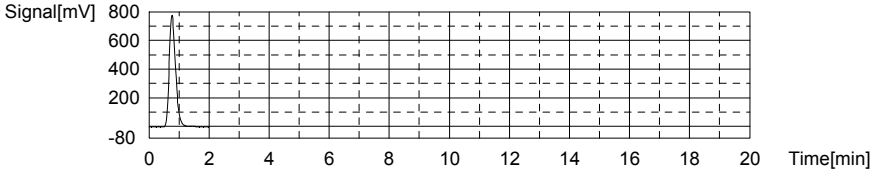

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	852.6	25.33mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/19/2015 7:37:17 AM

Mean Area 852.6
Mean Conc. 25.33mg/L

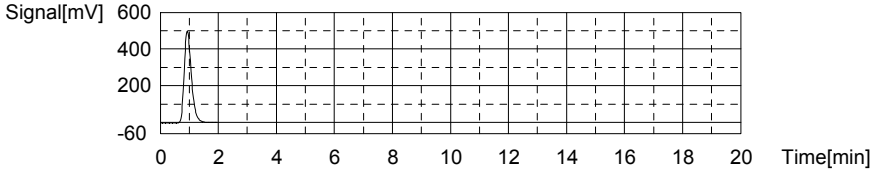

Sample

Sample Name:
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:29.25mg/L TC:37.38mg/L IC:8.131mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1461	37.38mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/19/2015 7:45:04 AM

Mean Area 1461
Mean Conc. 37.38mg/L

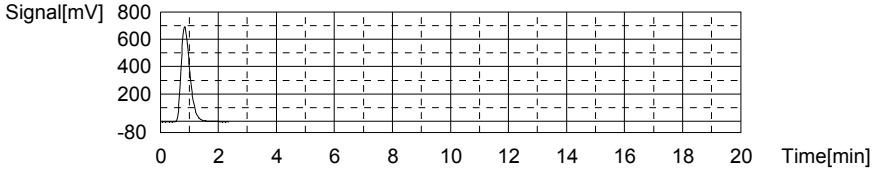

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	277.7	8.131mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/19/2015 7:49:45 AM

Mean Area 277.7
Mean Conc. 8.131mg/L

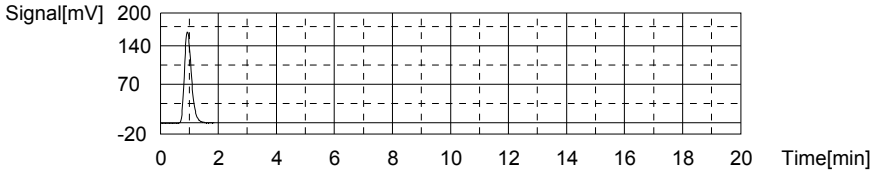

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:26.21mg/L TC:26.24mg/L IC:0.02822mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1027	26.24mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/19/2015 7:57:30 AM

Mean Area 1027
Mean Conc. 26.24mg/L

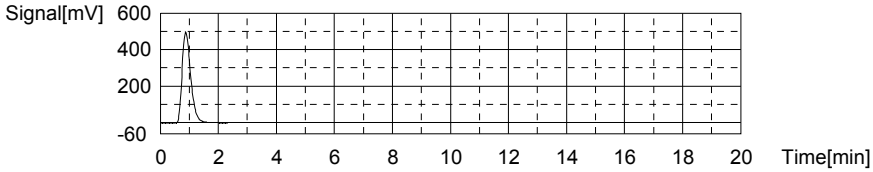

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.870	0.02822mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/19/2015 8:01:47 AM

Mean Area 6.870
Mean Conc. 0.02822mg/L

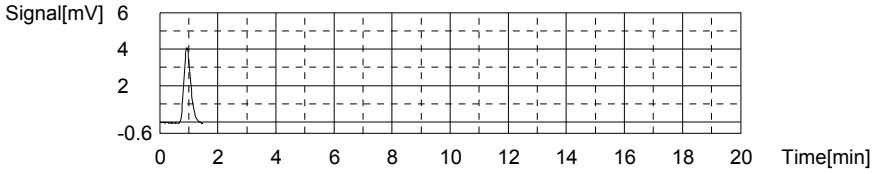

Sample

Sample Name: WG547552-01 BLK
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.08251mg/L TC:0.1733mg/L IC:0.09075mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.70	0.1733mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/19/2015 8:06:50 AM

Mean Area 11.70
Mean Conc. 0.1733mg/L

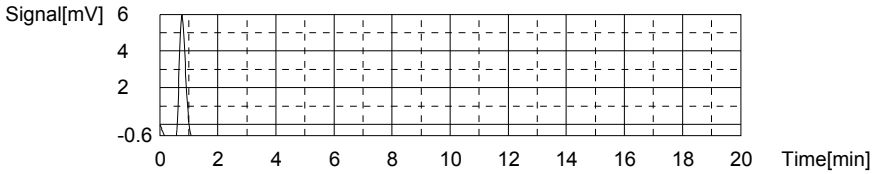

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.960	0.09075mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/19/2015 8:10:40 AM

Mean Area 8.960
Mean Conc. 0.09075mg/L

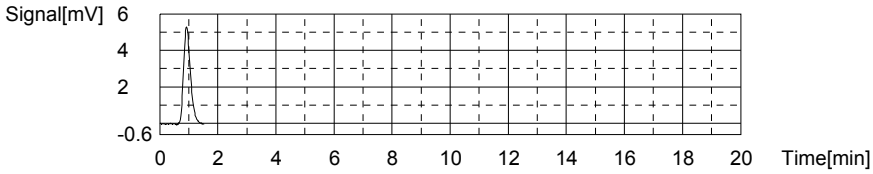

Sample

Sample Name: TOC/TIC
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:27.78mg/L TC:35.84mg/L IC:8.059mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1401	35.84mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/19/2015 8:24:20 AM

Mean Area 1401
Mean Conc. 35.84mg/L

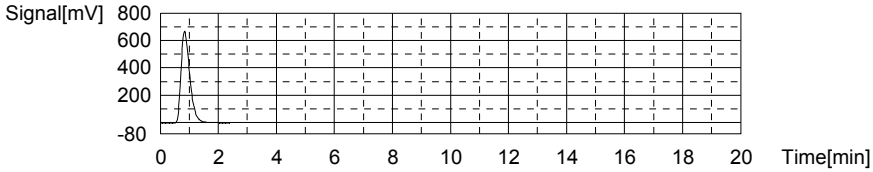

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	275.3	8.059mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/19/2015 8:29:05 AM

Mean Area 275.3
Mean Conc. 8.059mg/L

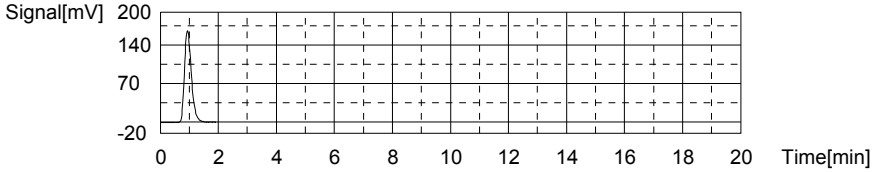

Sample

Sample Name: WG547552-02 LCS
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:27.71mg/L TC:27.73mg/L IC:0.01757mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1085	27.73mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/19/2015 8:36:50 AM

Mean Area 1085
Mean Conc. 27.73mg/L

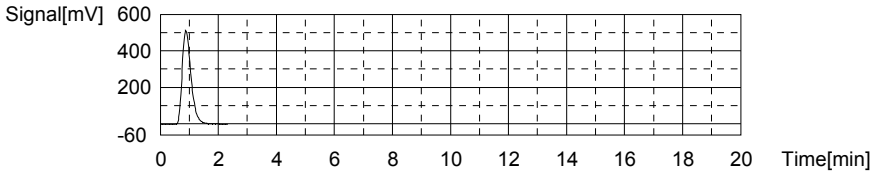

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	6.514	0.01757mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/19/2015 8:41:06 AM

Mean Area 6.514
Mean Conc. 0.01757mg/L

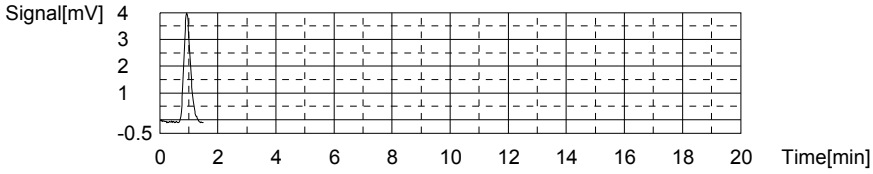

Sample

Sample Name: WG547552-03 LCSDUP
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:27.68mg/L TC:27.68mg/L IC:-0.00421mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1083	27.68mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/19/2015 8:48:53 AM

Mean Area 1083
Mean Conc. 27.68mg/L

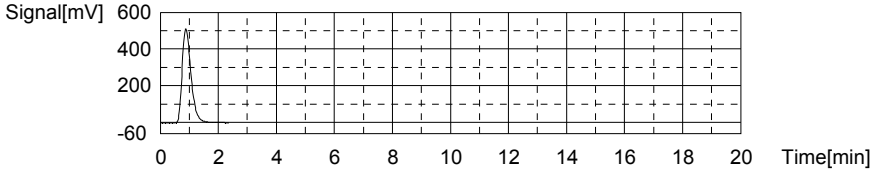

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	5.786	-0.00421mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/19/2015 8:53:08 AM

Mean Area 5.786
Mean Conc. -0.00421mg/L

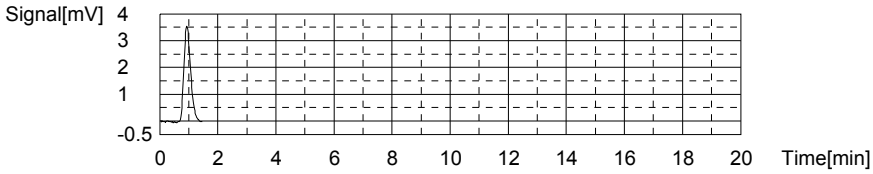

Sample

Sample Name: L15110666-07 (4)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.333mg/L TC:28.40mg/L IC:24.07mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1111	28.40mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/19/2015 9:00:41 AM

Mean Area 1111
Mean Conc. 28.40mg/L

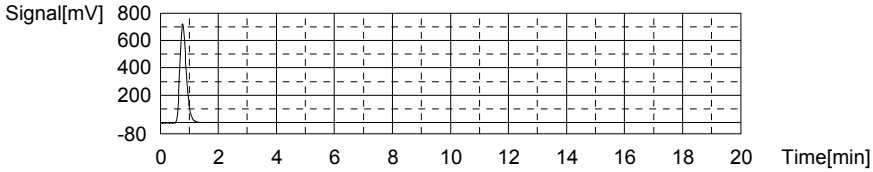

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	810.3	24.07mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/19/2015 9:05:50 AM

Mean Area 810.3
Mean Conc. 24.07mg/L

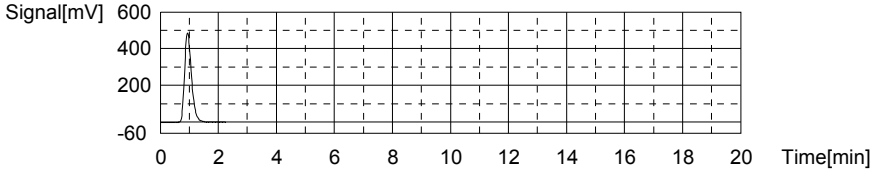

Sample

Sample Name: L15110797-07 (10)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.898mg/L TC:24.04mg/L IC:16.14mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	941.2	24.04mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/19/2015 9:13:03 AM

Mean Area 941.2
Mean Conc. 24.04mg/L

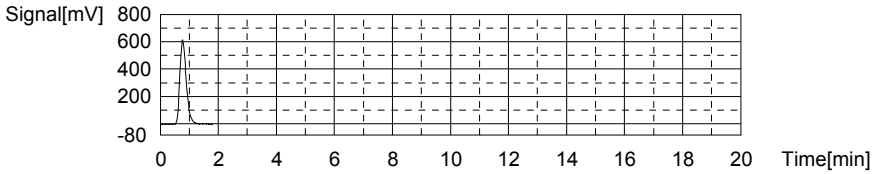

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	545.4	16.14mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/19/2015 9:17:55 AM

Mean Area 545.4
Mean Conc. 16.14mg/L

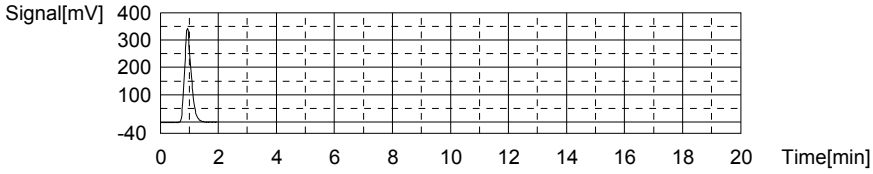

Sample

Sample Name: L15110793-13 (10)
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:14.89mg/L TC:36.90mg/L IC:22.00mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1442	36.90mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/19/2015 9:25:25 AM

Mean Area 1442
Mean Conc. 36.90mg/L

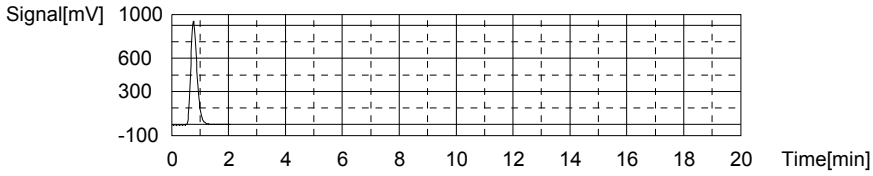

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	741.4	22.00mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/19/2015 9:30:47 AM

Mean Area 741.4
Mean Conc. 22.00mg/L

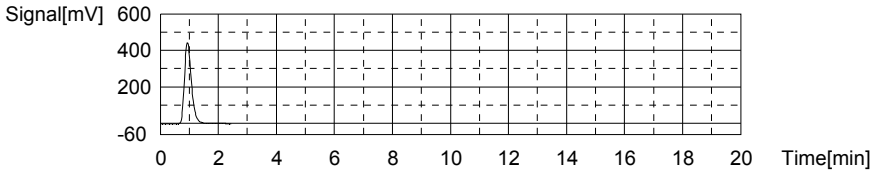

Sample

Sample Name: L15111047-01
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.261mg/L TC:21.12mg/L IC:17.86mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	827.6	21.12mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/19/2015 9:38:06 AM

Mean Area 827.6
Mean Conc. 21.12mg/L

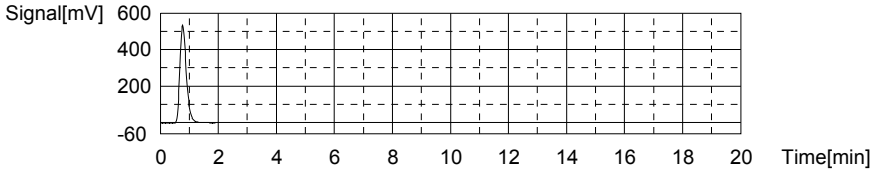

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	602.9	17.86mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/19/2015 9:42:59 AM

Mean Area 602.9
Mean Conc. 17.86mg/L

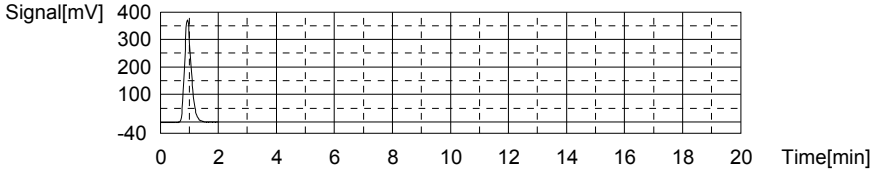

Sample

Sample Name: L15111047-02
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.292mg/L TC:21.08mg/L IC:17.79mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	825.9	21.08mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/19/2015 9:50:23 AM

Mean Area 825.9
Mean Conc. 21.08mg/L

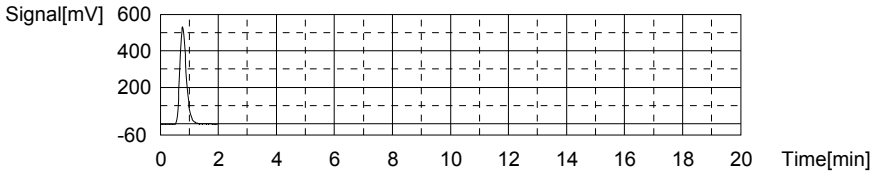

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	600.4	17.79mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/19/2015 9:55:21 AM

Mean Area 600.4
Mean Conc. 17.79mg/L

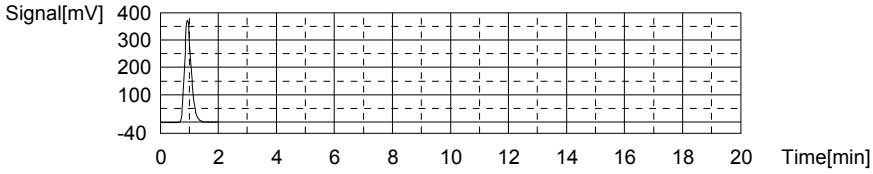

Sample

Sample Name: L15111047-03
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.464mg/L TC:19.75mg/L IC:16.28mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	774.1	19.75mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/19/2015 10:02:46 AM

Mean Area 774.1
Mean Conc. 19.75mg/L

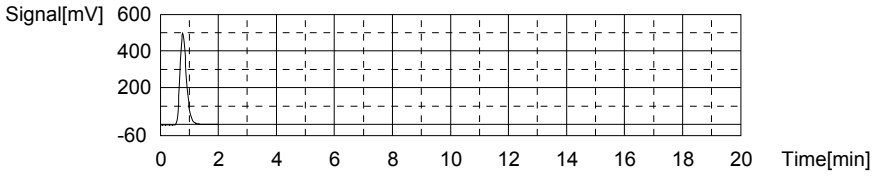

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	550.2	16.28mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/19/2015 10:07:37 AM

Mean Area 550.2
Mean Conc. 16.28mg/L

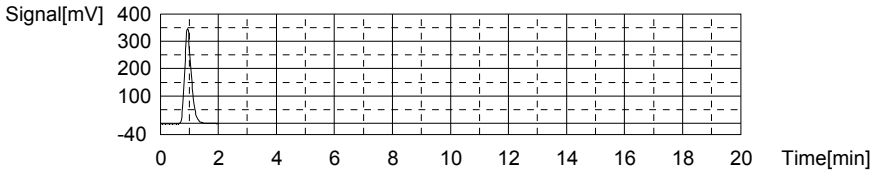

Sample

Sample Name: WG547552-05 DUP
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.097mg/L TC:19.85mg/L IC:15.75mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	778.1	19.85mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/19/2015 10:15:04 AM

Mean Area 778.1
Mean Conc. 19.85mg/L

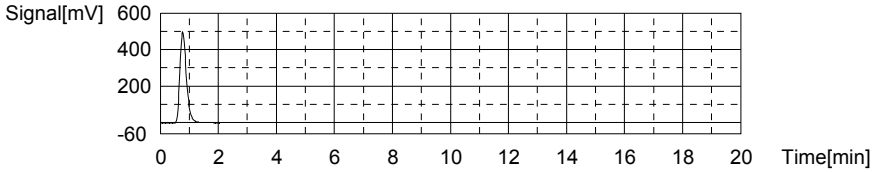

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	532.5	15.75mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/19/2015 10:19:52 AM

Mean Area 532.5
Mean Conc. 15.75mg/L

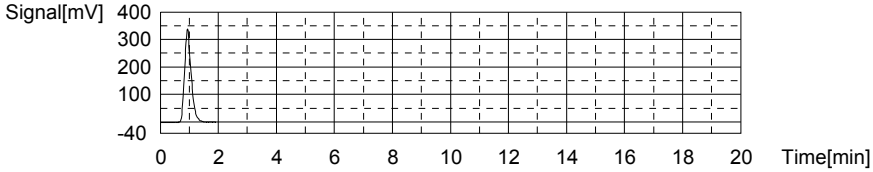

Sample

Sample Name: WG547552-06 MS
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:14.29mg/L TC:28.60mg/L IC:14.31mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1119	28.60mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/19/2015 10:27:27 AM

Mean Area 1119
Mean Conc. 28.60mg/L

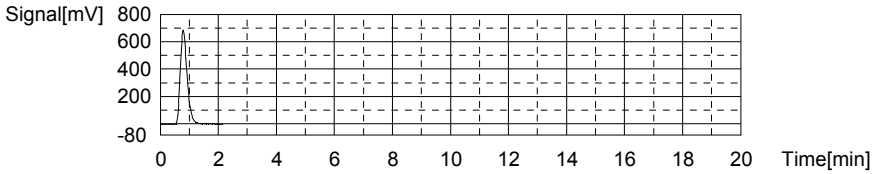

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	484.3	14.31mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/19/2015 10:32:14 AM

Mean Area 484.3
Mean Conc. 14.31mg/L

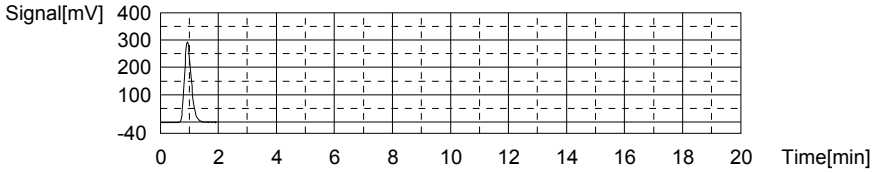

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:27.21mg/L TC:27.29mg/L IC:0.08160mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1068	27.29mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/19/2015 10:40:03 AM

Mean Area 1068
Mean Conc. 27.29mg/L

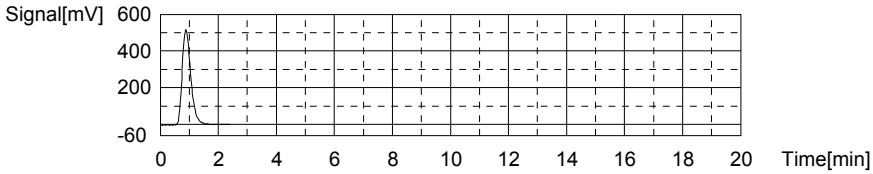

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.654	0.08160mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/19/2015 10:44:20 AM

Mean Area 8.654
Mean Conc. 0.08160mg/L

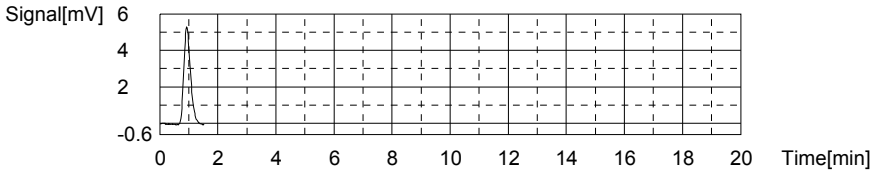

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.03197mg/L TC:0.1195mg/L IC:0.08755mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.607	0.1195mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/19/2015 10:49:21 AM

Mean Area 9.607
Mean Conc. 0.1195mg/L

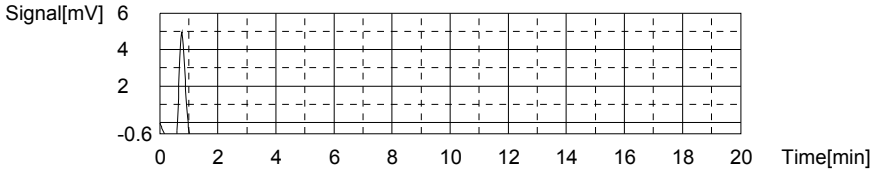

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.853	0.08755mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/19/2015 10:53:11 AM

Mean Area 8.853
Mean Conc. 0.08755mg/L

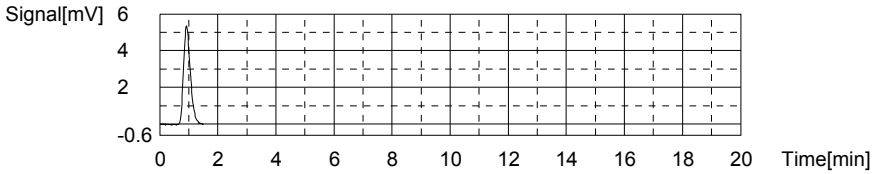

Sample

Sample Name:
Sample ID:
Origin: TOC-10-31-2015.met
Status Defined
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.000mg/L TC:0.000mg/L IC:0.000mg/L

1. Det

Sample

Sample Name:
Sample ID:
Origin: TOC-10-31-2015.met
Status Defined
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.000mg/L TC:0.000mg/L IC:0.000mg/L

1. Det

Sample

Sample Name:
Sample ID:
Origin: TOC-10-31-2015.met
Status Defined
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.000mg/L TC:0.000mg/L IC:0.000mg/L

1. Det

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
December 8, 2015

001 - BIO-CHEM TESTING WVDEP 220	002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental	004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES	006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES	008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND	AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER	ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS	ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG	AZH - AFTER HOURS
BJO - BRIAN J. OGDEN	BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT	BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN	CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES	CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD	CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS	CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL	DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE	DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON	DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE	DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR	ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK	EPT - ETHAN P. TIDD
ERP - ERIN R. PORTER	FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY	JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH	JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS	JLD - JESSICA L. DELONG
JLL - JOHN L. LENT	JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON	JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES	JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON	KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH	KEB - KATIE E. BARNES
KHR - KIM H. RHODES	KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON	KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS	LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF	LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA	MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON	MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING	MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY	MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON	PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE	PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB	QX - QIN XU
RAH - ROY A. HALSTEAD	REK - BOB E. KYER
RLB - BOB BUCHANAN	RM - RAYMOND MALEKE
RNP - RICK N. PETTY	RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG	SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY	SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF	TB - TODD BOYLE
TGF - TIM G. FELTON	TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS	VC - VICKI COLLIER
WJB - WILL J. BEASLEY	WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG	XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
December 08, 2015

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
December 08, 2015

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Stephanie Mossburg	Project Manager: Mark Heaston	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): Scott Beesinger	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205			
Turn Around Time: STANDARD	pH:	Program:	
Project Name/Location: Longhorn			
Project Number: 60256135.0002GA		ERPIMS REQUIRED FIELDS	

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Dissolved Gases / Carbon Dioxide	Alkalinity	Sulfide	Chloride / Sulfate Nitrate / Nitrite	TOC / Total Phosphorous	Dissolved Iron / Dissolved Manganese	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 50	50WW27-111115			11/11/15	0815		✓	W	4	✓	✓											
	50WW15-111115			11/11/15	0915		✓	W	4	✓	✓											
	50WW15FD-111115			11/11/15	0915		✓	W	4	✓	✓											
	50WW09-111115			11/11/15	1035		✓	W	4	✓	✓											
	50WW09FD-111115			11/11/15	1035		✓	W	4	✓	✓											
	50WW10-111115			11/11/15	1435		✓	W	4	✓	✓											
	50WW13-111215			11/12/15	0840		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW13FF-111215			11/12/15	0840		✓	W	1								✓					
	50WW14-111215			11/12/15	0950		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW14FF-111215			11/12/15	0950		✓	W	1								✓					
	50WW11-111215			11/12/15	1100		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW11FF-111215			11/12/15	1100		✓	W	1								✓					
	50WW06-111215			11/12/15	1325		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW06FF-111215			11/12/15	1325		✓	W	1								✓					

Comments: **STANDARD TAT**

	Date	Time	Receive		Time	Relinquished by: (Signature)
Relinquished by: (Signature) Scott Beesinger	11/12/15	1545				
Relinquished by: (Signature)	Date	Time	Receive (Signat		Time	Remarks:

Microbac OVD
Received: 11/13/2015 09:48
By: BRENDA GREENWALT 221000078352
Brenda Greenwalt

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Stephanie Mossburg	Project Manager: Mark Heaston	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): Scott Beesinger	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205		Program:	
Turn Around Time: STANDARD			
Project Name/Location: Longhorn			
Project Number: 60256135.0002GA			

pH:

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Dissolved Gases / Carbon Dioxide	Alkalinity	Sulfide	Chloride / Sulfate Nitrate / Nitrite	TOC / Total Phosphorous	Dissolved Iron / Dissolved Manganese	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 50	50WW12-111215			11/12/15	1435		✓	W	11	✓	✓	✓	✓	✓	✓	✓	✓					
	50WW12FF-111215			11/12/15	1435		✓	W	1								✓					
	TRIPBLANK			11/12/15			✓	W	2	✓												

ERPIMS REQUIRED FIELDS

Comments: **STANDARD TAT**

Microbac OVD
Received: 11/13/2015 09:48
By: BRENDA GREENWALT 221000078352
Brenda Greenwalt

	Date	Time			Time	Relinquished by: (Signature)
Relinquished by: (Signature) Scott Beesinger	11/12/15	1545	Recei			
Relinquished by: (Signature)	Date	Time	Recei (Signa		Time	Remarks:

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15110793
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 24-NOV-2015

Samplenum	Container ID	Products
L15110793-01	661845	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-NOV-2015 13:07	BRG		
2	ANALYZ	V1	ORG4	13-NOV-2015 14:44	ADC	CLS	
3	STORE	ORG4	A1	01-DEC-2015 07:38	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-NOV-2015 13:07	BRG		
2	ANALYZ	V1	ORG4	13-NOV-2015 14:44	ADC	CLS	
3	STORE	ORG4	A1	01-DEC-2015 07:38	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-NOV-2015 13:07	BRG		
2	ANALYZ	V1	ORG4	13-NOV-2015 14:44	ADC	CLS	
3	STORE	ORG4	A1	01-DEC-2015 07:38	CLS	AWE	

Samplenum	Container ID	Products
L15110793-01	661846	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-NOV-2015 13:07	BRG		

Samplenum	Container ID	Products
L15110793-02	661847	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-NOV-2015 13:07	BRG		
2	ANALYZ	V1	ORG4	13-NOV-2015 14:44	ADC	CLS	
3	STORE	ORG4	A1	01-DEC-2015 07:38	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-NOV-2015 13:07	BRG		
2	ANALYZ	V1	ORG4	13-NOV-2015 14:44	ADC	CLS	
3	STORE	ORG4	A1	01-DEC-2015 07:38	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	ORG4	13-NOV-2015 13:07	BRG		
2	STORE	ORG4	A1	01-DEC-2015 07:38	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15110793
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 24-NOV-2015

Samplenum	Container ID	Products
L15110793-02	661848	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-NOV-2015 13:07	BRG		

Samplenum	Container ID	Products
L15110793-03	661849	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-NOV-2015 13:07	BRG		
2	ANALYZ	V1	ORG4	13-NOV-2015 14:44	ADC	CLS	
3	STORE	ORG4	A1	01-DEC-2015 07:38	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-NOV-2015 13:07	BRG		
2	ANALYZ	V1	ORG4	13-NOV-2015 14:44	ADC	CLS	
3	STORE	ORG4	A1	01-DEC-2015 07:38	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-NOV-2015 13:07	BRG		
2	ANALYZ	V1	ORG4	13-NOV-2015 14:44	ADC	CLS	
3	STORE	ORG4	A1	01-DEC-2015 07:38	CLS	AWE	

Samplenum	Container ID	Products
L15110793-03	661850	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-NOV-2015 13:07	BRG		

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15110793
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 24-NOV-2015

Samplenum	Container ID	Products
L15110793-04	661851	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-NOV-2015 13:07	BRG		
2	ANALYZ	V1	ORG4	13-NOV-2015 14:44	ADC	CLS	
3	STORE	ORG4	A1	01-DEC-2015 07:38	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-NOV-2015 13:07	BRG		
2	ANALYZ	V1	ORG4	13-NOV-2015 14:44	ADC	CLS	
3	STORE	ORG4	A1	01-DEC-2015 07:38	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-NOV-2015 13:07	BRG		
2	ANALYZ	V1	ORG4	13-NOV-2015 14:44	ADC	CLS	
3	STORE	ORG4	A1	01-DEC-2015 07:38	CLS	AWE	

Samplenum	Container ID	Products
L15110793-04	661852	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-NOV-2015 13:07	BRG		

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15110793
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 24-NOV-2015

Samplenum	Container ID	Products
L15110793-05	661853	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-NOV-2015 13:07	BRG		
2	ANALYZ	V1	ORG4	13-NOV-2015 14:44	ADC	CLS	
3	STORE	ORG4	A1	01-DEC-2015 07:38	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-NOV-2015 13:07	BRG		
2	ANALYZ	V1	ORG4	13-NOV-2015 14:44	ADC	CLS	
3	STORE	ORG4	A1	01-DEC-2015 07:38	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-NOV-2015 13:07	BRG		
2	ANALYZ	V1	ORG4	13-NOV-2015 14:44	ADC	CLS	
3	STORE	ORG4	A1	01-DEC-2015 07:38	CLS	AWE	

Samplenum	Container ID	Products
L15110793-05	661854	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-NOV-2015 13:07	BRG		

Samplenum	Container ID	Products
L15110793-06	661855	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-NOV-2015 13:07	BRG		
2	ANALYZ	V1	ORG4	13-NOV-2015 14:44	ADC	CLS	
3	STORE	ORG4	A1	01-DEC-2015 07:38	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-NOV-2015 13:07	BRG		
2	ANALYZ	V1	ORG4	13-NOV-2015 14:44	ADC	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-NOV-2015 13:07	BRG		
2	ANALYZ	V1	ORG4	13-NOV-2015 14:44	ADC	CLS	
3	STORE	ORG4	A1	01-DEC-2015 07:38	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15110793
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 24-NOV-2015

Samplenum	Container ID	Products
L15110793-06	661856	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-NOV-2015 13:07	BRG		

Samplenum	Container ID	Products
L15110793-07	661857	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-NOV-2015 13:07	BRG		
2	ANALYZ	V1	ORG4	13-NOV-2015 14:44	ADC	CLS	
3	STORE	ORG4	A1	01-DEC-2015 07:38	CLS	AWE	

Comments:Products cancelled.

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-NOV-2015 13:07	BRG		
2	ANALYZ	V1	ORG4	13-NOV-2015 14:44	ADC	CLS	
3	STORE	ORG4	A1	01-DEC-2015 07:38	CLS	AWE	

Comments:Products cancelled.

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	ORG4	13-NOV-2015 13:07	BRG		
2	STORE	ORG4	A1	01-DEC-2015 07:38	CLS	AWE	

Comments:Products cancelled.

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15110793
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 24-NOV-2015

Samplenum	Container ID	Products
L15110793-07	661858	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-NOV-2015 13:07	BRG		
2	ANALYZ	V1	ORG1	13-NOV-2015 15:42	TMB	BRG	
3	STORE	ORG1	A1	01-DEC-2015 07:37	CLS	AWE	

Comments:Products cancelled.

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-NOV-2015 13:07	BRG		
2	ANALYZ	V1	ORG1	13-NOV-2015 15:42	TMB	BRG	
3	STORE	ORG1	A1	01-DEC-2015 07:37	CLS	AWE	

Comments:Products cancelled.

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-NOV-2015 13:07	BRG		
2	ANALYZ	V1	ORG1	13-NOV-2015 15:42	TMB	BRG	
3	STORE	ORG1	A1	01-DEC-2015 07:37	CLS	AWE	

Comments:Products cancelled.

Samplenum	Container ID	Products
L15110793-07	661859	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	13-NOV-2015 13:07	BRG		
2	PREP	L1	SEM	13-NOV-2015 13:28	ALS	BRG	
3	STORE	SEM	A1	18-NOV-2015 09:45	BRG	ALS	

Samplenum	Container ID	Products
L15110793-07	661860	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-NOV-2015 13:07	BRG		
2	ANALYZ	W1	WET	16-NOV-2015 07:41	DCM	CLS	
3	STORE	WET	A1	16-NOV-2015 16:54	CLS	DCM	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15110793
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 24-NOV-2015

Samplenum	Container ID	Products
L15110793-07	661861	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-NOV-2015 13:07	BRG		

Samplenum	Container ID	Products
L15110793-07	661862	PHOS TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-NOV-2015 13:07	BRG		<2
2	ANALYZ	W1	WET	16-NOV-2015 09:57	DIH	CLS	
3	STORE	WET	A1	24-NOV-2015 15:14	CLS	DCM	

Samplenum	Container ID	Products
L15110793-07	661863	826-LOW 9056 RSK175EXT S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-NOV-2015 13:07	BRG		
2	ANALYZ	W1	WET	16-NOV-2015 10:48	TB	BRG	
3	STORE	WET	A1	17-NOV-2015 09:31	CLS	TB	

Samplenum	Container ID	Products
L15110793-08	661864	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-NOV-2015 13:07	BRG		
2	PREP	W1	DIG	13-NOV-2015 14:55	ERP	BRG	
3	STORE	DIG	A1	16-NOV-2015 13:10	CLS	VC	
4	ANALYZ*	DIG	METALS	16-NOV-2015 14:58	JYH	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15110793
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 24-NOV-2015

Samplenum	Container ID	Products
L15110793-09	661865	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-NOV-2015 13:07	BRG		
2	ANALYZ	V1	ORG4	13-NOV-2015 14:44	ADC	CLS	
3	STORE	ORG4	A1	01-DEC-2015 07:38	CLS	AWE	

Comments:Products cancelled.

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-NOV-2015 13:07	BRG		
2	ANALYZ	V1	ORG4	13-NOV-2015 14:44	ADC	CLS	
3	STORE	ORG4	A1	01-DEC-2015 07:38	CLS	AWE	

Comments:Products cancelled.

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-NOV-2015 13:07	BRG		
2	ANALYZ	V1	ORG4	13-NOV-2015 14:44	ADC	CLS	
3	STORE	ORG4	A1	01-DEC-2015 07:38	CLS	AWE	

Comments:Products cancelled.

Samplenum	Container ID	Products
L15110793-09	661866	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-NOV-2015 13:07	BRG		
2	ANALYZ	V1	ORG1	13-NOV-2015 15:42	TMB	BRG	
3	STORE	ORG1	A1	01-DEC-2015 07:37	CLS	AWE	

Comments:Products cancelled.

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-NOV-2015 13:07	BRG		
2	ANALYZ	V1	ORG1	13-NOV-2015 15:42	TMB	BRG	
3	STORE	ORG1	A1	01-DEC-2015 07:37	CLS	AWE	

Comments:Products cancelled.

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-NOV-2015 13:07	BRG		
2	ANALYZ	V1	ORG1	13-NOV-2015 15:42	TMB	BRG	
3	STORE	ORG1	A1	01-DEC-2015 07:37	CLS	AWE	

Comments:Products cancelled.

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15110793
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 24-NOV-2015

Samplenum	Container ID	Products
L15110793-09	661867	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	13-NOV-2015 13:07	BRG		
2	PREP	L1	SEM	13-NOV-2015 13:28	ALS	BRG	

Samplenum	Container ID	Products
L15110793-09	661868	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-NOV-2015 13:07	BRG		
2	ANALYZ	W1	WET	16-NOV-2015 07:41	DCM	CLS	
3	STORE	WET	A1	16-NOV-2015 16:54	CLS	DCM	

Samplenum	Container ID	Products
L15110793-09	661869	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-NOV-2015 13:07	BRG		

Samplenum	Container ID	Products
L15110793-09	661870	PHOS TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-NOV-2015 13:07	BRG		<2
2	ANALYZ	W1	WET	16-NOV-2015 09:58	DIH	CLS	
3	STORE	WET	A1	24-NOV-2015 15:14	CLS	DCM	

Samplenum	Container ID	Products
L15110793-09	661871	826-LOW 9056 RSK175EXT S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-NOV-2015 13:07	BRG		
2	ANALYZ	W1	WET	16-NOV-2015 10:48	TB	BRG	
3	STORE	WET	A1	17-NOV-2015 09:31	CLS	TB	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15110793
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 24-NOV-2015

Samplenum	Container ID	Products
L15110793-10	661872	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-NOV-2015 13:07	BRG		
2	PREP	W1	DIG	13-NOV-2015 14:55	ERP	BRG	
3	STORE	DIG	A1	16-NOV-2015 13:10	CLS	VC	
4	ANALYZ*	DIG	METALS	16-NOV-2015 14:58	JYH	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L15110793-11	661873	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-NOV-2015 13:07	BRG		
2	ANALYZ	V1	ORG4	13-NOV-2015 14:44	ADC	CLS	
3	STORE	ORG4	A1	01-DEC-2015 07:38	CLS	AWE	

Comments:Products cancelled.

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-NOV-2015 13:07	BRG		
2	ANALYZ	V1	ORG4	13-NOV-2015 14:44	ADC	CLS	
3	STORE	ORG4	A1	01-DEC-2015 07:38	CLS	AWE	

Comments:Products cancelled.

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-NOV-2015 13:07	BRG		
2	ANALYZ	V1	ORG4	13-NOV-2015 14:44	ADC	CLS	
3	STORE	ORG4	A1	01-DEC-2015 07:38	CLS	AWE	

Comments:Products cancelled.

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15110793
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 24-NOV-2015

Samplenum	Container ID	Products
L15110793-11	661874	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-NOV-2015 13:07	BRG		
2	ANALYZ	V1	ORG1	13-NOV-2015 15:42	TMB	BRG	
3	STORE	ORG1	A1	01-DEC-2015 07:37	CLS	AWE	

Comments:Products cancelled.

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-NOV-2015 13:07	BRG		
2	ANALYZ	V1	ORG1	13-NOV-2015 15:42	TMB	BRG	
3	STORE	ORG1	A1	01-DEC-2015 07:37	CLS	AWE	

Comments:Products cancelled.

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-NOV-2015 13:07	BRG		
2	ANALYZ	V1	ORG1	13-NOV-2015 15:42	TMB	BRG	
3	STORE	ORG1	A1	01-DEC-2015 07:37	CLS	AWE	

Comments:Products cancelled.

Samplenum	Container ID	Products
L15110793-11	661875	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	13-NOV-2015 13:07	BRG		
2	PREP	L1	SEM	13-NOV-2015 13:28	ALS	BRG	
3	STORE	SEM	A1	18-NOV-2015 09:44	BRG	ALS	

Samplenum	Container ID	Products
L15110793-11	661876	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-NOV-2015 13:07	BRG		
2	ANALYZ	W1	WET	16-NOV-2015 07:41	DCM	CLS	
3	STORE	WET	A1	16-NOV-2015 16:54	CLS	DCM	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15110793
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 24-NOV-2015

Samplenum	Container ID	Products
L15110793-11	661877	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-NOV-2015 13:07	BRG		

Samplenum	Container ID	Products
L15110793-11	661878	PHOS TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-NOV-2015 13:07	BRG		<2
2	ANALYZ	W1	WET	16-NOV-2015 09:57	DIH	CLS	
3	STORE	WET	A1	24-NOV-2015 15:14	CLS	DCM	

Samplenum	Container ID	Products
L15110793-11	661879	826-LOW 9056 RSK175EXT S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-NOV-2015 13:07	BRG		
2	ANALYZ	W1	WET	16-NOV-2015 10:49	TB	BRG	
3	STORE	WET	A1	17-NOV-2015 09:31	CLS	TB	

Samplenum	Container ID	Products
L15110793-12	661880	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-NOV-2015 13:07	BRG		
2	PREP	W1	DIG	13-NOV-2015 14:55	ERP	BRG	
3	STORE	DIG	A1	16-NOV-2015 13:10	CLS	VC	
4	ANALYZ*	DIG	METALS	16-NOV-2015 14:58	JYH	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15110793
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 24-NOV-2015

Samplenum	Container ID	Products
L15110793-13	661881	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-NOV-2015 13:07	BRG		
2	ANALYZ	V1	ORG4	13-NOV-2015 14:44	ADC	CLS	
3	STORE	ORG4	A1	01-DEC-2015 07:38	CLS	AWE	

Comments:Products cancelled.

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-NOV-2015 13:07	BRG		
2	ANALYZ	V1	ORG4	13-NOV-2015 14:44	ADC	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-NOV-2015 13:07	BRG		
2	ANALYZ	V1	ORG4	13-NOV-2015 14:44	ADC	CLS	
3	STORE	ORG4	A1	01-DEC-2015 07:38	CLS	AWE	

Comments:Products cancelled.

Samplenum	Container ID	Products
L15110793-13	661882	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-NOV-2015 13:07	BRG		
2	ANALYZ	V1	ORG1	13-NOV-2015 15:42	TMB	BRG	
3	STORE	ORG1	A1	01-DEC-2015 07:37	CLS	AWE	

Comments:Products cancelled.

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-NOV-2015 13:07	BRG		
2	ANALYZ	V1	ORG1	13-NOV-2015 15:42	TMB	BRG	
3	STORE	ORG1	A1	01-DEC-2015 07:37	CLS	AWE	

Comments:Products cancelled.

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-NOV-2015 13:07	BRG		
2	ANALYZ	V1	ORG1	13-NOV-2015 15:42	TMB	BRG	
3	STORE	ORG1	A1	01-DEC-2015 07:37	CLS	AWE	

Comments:Products cancelled.

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15110793
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 24-NOV-2015

Samplenum	Container ID	Products
L15110793-13	661883	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	13-NOV-2015 13:07	BRG		
2	PREP	L1	SEM	13-NOV-2015 13:28	ALS	BRG	
3	STORE	SEM	A1	18-NOV-2015 09:45	BRG	ALS	

Samplenum	Container ID	Products
L15110793-13	661884	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-NOV-2015 13:07	BRG		
2	ANALYZ	W1	WET	16-NOV-2015 07:41	DCM	CLS	
3	STORE	WET	A1	16-NOV-2015 16:54	CLS	DCM	

Samplenum	Container ID	Products
L15110793-13	661885	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-NOV-2015 13:07	BRG		

Samplenum	Container ID	Products
L15110793-13	661886	PHOS TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-NOV-2015 13:07	BRG		<2
2	ANALYZ	W1	WET	16-NOV-2015 09:57	DIH	CLS	
3	STORE	WET	A1	24-NOV-2015 15:13	CLS	DCM	

Samplenum	Container ID	Products
L15110793-13	661887	826-LOW 9056 RSK175EXT S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-NOV-2015 13:07	BRG		
2	ANALYZ	W1	WET	16-NOV-2015 10:48	TB	BRG	
3	STORE	WET	A1	17-NOV-2015 09:31	CLS	TB	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15110793
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 24-NOV-2015

Samplenum	Container ID	Products
L15110793-14	661888	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-NOV-2015 13:07	BRG		
2	PREP	W1	DIG	13-NOV-2015 14:55	ERP	BRG	
3	STORE	DIG	A1	16-NOV-2015 13:10	CLS	VC	
4	ANALYZ*	DIG	METALS	16-NOV-2015 14:58	JYH	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L15110793-15	661889	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-NOV-2015 13:07	BRG		
2	ANALYZ	V1	ORG4	13-NOV-2015 14:44	ADC	CLS	
3	STORE	ORG4	A1	01-DEC-2015 07:38	CLS	AWE	

Comments:Products cancelled.

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-NOV-2015 13:07	BRG		
2	ANALYZ	V1	ORG4	13-NOV-2015 14:44	ADC	CLS	
3	STORE	ORG4	A1	01-DEC-2015 07:38	CLS	AWE	

Comments:Products cancelled.

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-NOV-2015 13:07	BRG		
2	ANALYZ	V1	ORG4	13-NOV-2015 14:44	ADC	CLS	
3	STORE	ORG4	A1	01-DEC-2015 07:38	CLS	AWE	

Comments:Products cancelled.

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15110793
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 24-NOV-2015

Samplenum	Container ID	Products
L15110793-15	661890	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-NOV-2015 13:07	BRG		
2	ANALYZ	V1	ORG1	13-NOV-2015 15:42	TMB	BRG	
3	STORE	ORG1	A1	01-DEC-2015 07:37	CLS	AWE	

Comments:Products cancelled.

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-NOV-2015 13:07	BRG		
2	ANALYZ	V1	ORG1	13-NOV-2015 15:42	TMB	BRG	
3	STORE	ORG1	A1	01-DEC-2015 07:37	CLS	AWE	

Comments:Products cancelled.Products cancelled.

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-NOV-2015 13:07	BRG		
2	ANALYZ	V1	ORG1	13-NOV-2015 15:42	TMB	BRG	
3	STORE	ORG1	A1	01-DEC-2015 07:37	CLS	AWE	

Comments:Products cancelled.

Samplenum	Container ID	Products
L15110793-15	661891	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	13-NOV-2015 13:07	BRG		
2	PREP	L1	SEM	13-NOV-2015 13:28	ALS	BRG	
3	STORE	SEM	A1	18-NOV-2015 09:45	BRG	ALS	

Samplenum	Container ID	Products
L15110793-15	661892	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-NOV-2015 13:07	BRG		
2	ANALYZ	W1	WET	16-NOV-2015 07:41	DCM	CLS	
3	STORE	WET	A1	16-NOV-2015 16:54	CLS	DCM	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15110793
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 24-NOV-2015

Samplenum	Container ID	Products
L15110793-15	661893	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-NOV-2015 13:07	BRG		

Samplenum	Container ID	Products
L15110793-15	661894	PHOS TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-NOV-2015 13:07	BRG		<2
2	ANALYZ	W1	WET	16-NOV-2015 09:57	DIH	CLS	
3	STORE	WET	A1	24-NOV-2015 15:14	CLS	DCM	

Samplenum	Container ID	Products
L15110793-15	661895	826-LOW 9056 RSK175EXT S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-NOV-2015 13:07	BRG		
2	ANALYZ	W1	WET	16-NOV-2015 10:48	TB	BRG	
3	STORE	WET	A1	17-NOV-2015 09:31	CLS	TB	

Samplenum	Container ID	Products
L15110793-16	661896	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-NOV-2015 13:07	BRG		
2	PREP	W1	DIG	13-NOV-2015 14:55	ERP	BRG	
3	STORE	DIG	A1	16-NOV-2015 13:10	CLS	VC	
4	ANALYZ*	DIG	METALS	16-NOV-2015 14:58	JYH	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15110793
Account: 2551
Project: 2551.096
Samples: 17
Due Date: 24-NOV-2015

Samplenum	Container ID	Products
L15110793-17	661897	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-NOV-2015 13:07	BRG		
2	ANALYZ	V1	ORG4	13-NOV-2015 14:45	ADC	CLS	
3	STORE	ORG4	A1	01-DEC-2015 07:38	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-NOV-2015 13:07	BRG		
2	ANALYZ	V1	ORG4	13-NOV-2015 14:45	ADC	CLS	
3	STORE	ORG4	A1	01-DEC-2015 07:38	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - November 30, 2015

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Non-DoD LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD DoD Scope of Accreditation:

SOLID AND HAZARDOUS CHEMICALS

Fluoride by EPA 300.0/9056/9056A
Bromide by EPA 9056/9056A
Nitrate as N by EPA 9056/9056A

Microbac

Laboratory Report Number: L15110943

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on December 01 2015

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00113252	H	0.0		J4599413224	X
0019770	H	0.0		J4599413233	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
50WW08-111615	L15110943-01	11/16/2015 08:20	11/17/2015 09:55
50WW08FF-111615	L15110943-02	11/16/2015 08:20	11/17/2015 09:55
50WW22-111615	L15110943-03	11/16/2015 09:25	11/17/2015 09:55
50WW22FF-111615	L15110943-04	11/16/2015 09:25	11/17/2015 09:55
50WW24-111615	L15110943-05	11/16/2015 10:30	11/17/2015 09:55
50WW24FF-111615	L15110943-06	11/16/2015 10:30	11/17/2015 09:55
50WW23-111615	L15110943-07	11/16/2015 11:35	11/17/2015 09:55
50WW23FF-111615	L15110943-08	11/16/2015 11:35	11/17/2015 09:55
50WW18-111615	L15110943-09	11/16/2015 13:45	11/17/2015 09:55
50WW18FF-111615	L15110943-10	11/16/2015 13:45	11/17/2015 09:55
50WW25-111615	L15110943-11	11/16/2015 14:55	11/17/2015 09:55
50WW25FF-111615	L15110943-12	11/16/2015 14:55	11/17/2015 09:55
TRIP BLANK	L15110943-13	11/16/2015 00:01	11/17/2015 09:55

Microbac Laboratories ● Ohio Valley Division
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www.microbac.com

Microbac REPORT L15110943
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.0 Summary Data

1.1 Narratives

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	8260
Prep Batch Number(s):	547466, 547622	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-11-30 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden	Franci Bolden	Analyst I	2015-11-30 21:35:18

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	8260
Prep Batch Number(s):	547466, 547622	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-11-30 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	8260
Prep Batch Number(s):	547466, 547622	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-11-30 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		X			1
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	8260
Prep Batch Number(s):	547466, 547622	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-11-30 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			3
Was the ICAL curve verified for each analyte?		X			2
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	8260
Prep Batch Number(s):	547466, 547622	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-11-30 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	8260
Prep Batch Number(s):	547466, 547622	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-11-30 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) Carbon disulfide was below the LCL in the LCS analyzed 11/18/15 on HPMS17.

2) Carbon disulfide and trichlorofluoromethane were below the LCL in the ICV analyzed 11/11/15 on HPMS17.

3) Acetone, 2-hexanone and 4-methyl-2-butanone were below the LCL in the CCV analyzed 11/18/15 on HPMS17. Chloromethane and dichlorodifluoromethane exceeded the UCL in the CCV analyzed 11/19/15 on HPMS8.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	547425, 547710	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-11-23 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden	Franci Bolden	Analyst I	2015-11-23 19:22:21

RG-366/TRRP-13 May 2010 **ID:** 6860

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	547425, 547710	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-11-23 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	547425, 547710	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-11-23 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	547425, 547710	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-11-23 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	547425, 547710	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-11-23 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	RSK175
Prep Batch Number(s):	547425, 547710	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-11-23 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There were no exceptions.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG547294	**Reviewer Name:**	Maren Beery
LRC Date:	2015-11-25 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Maren Beery	Maren Beery	Metals Supervisor	2015-11-25 22:05:46

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG547294	**Reviewer Name:**	Maren Beery
LRC Date:	2015-11-25 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?			X		
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG547294	**Reviewer Name:**	Maren Beery
LRC Date:	2015-11-25 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG547294	**Reviewer Name:**	Maren Beery
LRC Date:	2015-11-25 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG547294	**Reviewer Name:**	Maren Beery
LRC Date:	2015-11-25 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG547294	**Reviewer Name:**	Maren Beery
LRC Date:	2015-11-25 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG547429	**Reviewer Name:**	Maren Beery
LRC Date:	2015-11-25 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Maren Beery	Maren Beery	Metals Supervisor	2015-11-25 21:55:12

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG547429	**Reviewer Name:**	Maren Beery
LRC Date:	2015-11-25 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG547429	**Reviewer Name:**	Maren Beery
LRC Date:	2015-11-25 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				ER#1
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG547429	**Reviewer Name:**	Maren Beery
LRC Date:	2015-11-25 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG547429	**Reviewer Name:**	Maren Beery
LRC Date:	2015-11-25 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG547429	**Reviewer Name:**	Maren Beery
LRC Date:	2015-11-25 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - Due to high levels of target analyte, client samples 02, 08, 10 and 12 were analyzed at dilutions for manganese.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG547299	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-11-18 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Adriane Steed	Adriane Steed		2015-11-18 13:38:19

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG547299	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-11-18 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?	X				
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG547299	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-11-18 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG547299	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-11-18 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG547299	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-11-18 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	9056
Prep Batch Number(s):	WG547299	**Reviewer Name:**	Adriane Steed
LRC Date:	2015-11-18 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. Fractions -01,03,05,07, and -09 were analyzed at dilutions only due to their high analyte concentrations (Cl and/or SO4) which were over 200 ppm. Any sample that has a single anion load greater than 200 ppm (or a total anion load greater than 400 ppm) will be diluted in order to prevent damage to the IC from repeated overloading of the analytical column and oversaturation of the suppressor membranes.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG548010	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-11-25 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-11-25 18:46:08

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG548010	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-11-25 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG548010	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-11-25 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG548010	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-11-25 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG548010	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-11-25 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	ALK-COLOR
Prep Batch Number(s):	WG548010	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-11-25 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG547563, WG548015	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-11-25 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-11-25 18:47:28

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG547563, WG548015	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-11-25 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG547563, WG548015	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-11-25 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG547563, WG548015	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-11-25 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG547563, WG548015	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-11-25 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	PHOS
Prep Batch Number(s):	WG547563, WG548015	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-11-25 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	S
Prep Batch Number(s):	WG547574	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-11-25 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-11-25 18:40:52

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	S
Prep Batch Number(s):	WG547574	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-11-25 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	S
Prep Batch Number(s):	WG547574	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-11-25 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	S
Prep Batch Number(s):	WG547574	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-11-25 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	S
Prep Batch Number(s):	WG547574	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-11-25 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	S
Prep Batch Number(s):	WG547574	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-11-25 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG547789	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-11-25 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2015-11-25 18:54:33

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG547789	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-11-25 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG547789	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-11-25 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG547789	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-11-25 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG547789	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-11-25 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

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Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110943
Project Name:		**Method:**	TOC
Prep Batch Number(s):	WG547789	**Reviewer Name:**	Deanna Hesson
LRC Date:	2015-11-25 00:00:00		

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Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW08-111615	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	11/11/2015 17:53
Workgroup #:	WG547466	**Analyst:**	ADC	**Run Date:**	11/18/2015 23:02
Collect Date:	11/16/2015 08:20	**Dilution:**	1	**File ID:**	17M016563
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.334	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.26		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	17.7		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	1.21		1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	288		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	113	70	120	
Toluene-d8	106	85	120	
4-Bromofluorobenzene	106	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-01	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW08-111615	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG547425	**Analyst:**	JDS	**Run Date:**	11/18/2015 16:26
Collect Date:	11/16/2015 08:20	**Dilution:**	1	**File ID:**	16G49034
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	1.87	J	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-01	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW08-111615	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG547710	**Analyst:**	JDS	**Run Date:**	11/19/2015 17:55
Collect Date:	11/16/2015 08:20	**Dilution:**	10	**File ID:**	16G49052
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	609000		100000	50000	25000

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-01	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW08-111615	**Prep Method:**	9056	**Prep Date:**	11/17/2015 13:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG547299	**Analyst:**	ALS	**Run Date:**	11/17/2015 18:34
Collect Date:	11/16/2015 08:20	**Dilution:**	5	**File ID:**	I2_111715-17
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	1.00	U	2.00	1.00	0.500
Nitrite	14797-65-0	1.00	U	2.00	1.00	0.500
Sulfate	14808-79-8	311		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-01	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW08-111615	**Prep Method:**	9056	**Prep Date:**	11/17/2015 13:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG547299	**Analyst:**	ALS	**Run Date:**	11/17/2015 18:52
Collect Date:	11/16/2015 08:20	**Dilution:**	25	**File ID:**	I2_111715-18
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	390		10.0	5.00	2.50

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW08-111615	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	11/23/2015 09:16
Workgroup #:	WG548010	**Analyst:**	DCM	**Run Date:**	11/23/2015 09:26
Collect Date:	11/16/2015 08:20	**Dilution:**	2	**File ID:**	S2151123001.024
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	412		80.0	40.0	20.0

Certificate of Analysis

Sample #:	L15110943-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW08-111615	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	11/19/2015 12:01
Workgroup #:	WG547563	**Analyst:**	DCM	**Run Date:**	11/19/2015 12:12
Collect Date:	11/16/2015 08:20	**Dilution:**	1	**File ID:**	SC151119003.025
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-01	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW08-111615	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG547574	**Analyst:**	TB	**Run Date:**	11/19/2015 18:00
Collect Date:	11/16/2015 08:20	**Dilution:**	1	**File ID:**	ET.1511191800-07
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-01	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW08-111615	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	10/30/2015 17:00
Workgroup #:	WG547789	**Analyst:**	EPT	**Run Date:**	11/22/2015 13:02
Collect Date:	11/16/2015 08:20	**Dilution:**	5	**File ID:**	TC11202015.038
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	61.1		10.0	5.00	2.50

Certificate of Analysis

Sample #:	L15110943-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	50WW08FF-111615	**Prep Method:**	3015	**Prep Date:**	11/17/2015 14:26
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	11/23/2015 14:29
Workgroup #:	WG547398	**Analyst:**	PDM	**Run Date:**	11/23/2015 15:24
Collect Date:	11/16/2015 08:20	**Dilution:**	1	**File ID:**	T3.112315.152449
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.100	U	0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW08FF-111615	**Prep Method:**	3015	**Prep Date:**	11/18/2015 12:37
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	11/20/2015 09:58
Workgroup #:	WG547469	**Analyst:**	JYH	**Run Date:**	11/20/2015 12:39
Collect Date:	11/16/2015 08:20	**Dilution:**	5	**File ID:**	NI.112015.123903
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0581		0.0200	0.0100	0.00500

Certificate of Analysis

Sample #:	L15110943-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW22-111615	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	11/11/2015 17:53
Workgroup #:	WG547466	**Analyst:**	ADC	**Run Date:**	11/18/2015 19:43
Collect Date:	11/16/2015 09:25	**Dilution:**	1	**File ID:**	17M016553
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.454	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	85	115	
1,2-Dichloroethane-d4	113	70	120	
Toluene-d8	111	85	120	
4-Bromofluorobenzene	111	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-03	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW22-111615	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG547425	**Analyst:**	JDS	**Run Date:**	11/18/2015 16:39
Collect Date:	11/16/2015 09:25	**Dilution:**	1	**File ID:**	16G49035
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	79400		10000	5000	2500
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-03	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW22-111615	**Prep Method:**	9056	**Prep Date:**	11/17/2015 13:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG547299	**Analyst:**	ALS	**Run Date:**	11/17/2015 19:10
Collect Date:	11/16/2015 09:25	**Dilution:**	5	**File ID:**	I2_111715-19
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	1.00	U	2.00	1.00	0.500
Nitrite	14797-65-0	1.00	U	2.00	1.00	0.500

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-03	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW22-111615	**Prep Method:**	9056	**Prep Date:**	11/17/2015 13:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG547299	**Analyst:**	ALS	**Run Date:**	11/17/2015 19:28
Collect Date:	11/16/2015 09:25	**Dilution:**	50	**File ID:**	I2_111715-20
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1070		20.0	10.0	5.00
Sulfate	14808-79-8	636		100	50.0	25.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW22-111615	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	11/23/2015 09:16
Workgroup #:	WG548010	**Analyst:**	DCM	**Run Date:**	11/23/2015 09:26
Collect Date:	11/16/2015 09:25	**Dilution:**	2	**File ID:**	S2151123001.025
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	395		80.0	40.0	20.0

Certificate of Analysis

Sample #:	L15110943-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW22-111615	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	11/23/2015 11:00
Workgroup #:	WG548015	**Analyst:**	DCM	**Run Date:**	11/23/2015 11:11
Collect Date:	11/16/2015 09:25	**Dilution:**	1	**File ID:**	SC151123002.025
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-03	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW22-111615	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG547574	**Analyst:**	TB	**Run Date:**	11/19/2015 18:00
Collect Date:	11/16/2015 09:25	**Dilution:**	1	**File ID:**	ET.1511191800-08
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-03	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW22-111615	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	10/30/2015 17:00
Workgroup #:	WG547789	**Analyst:**	EPT	**Run Date:**	11/20/2015 17:12
Collect Date:	11/16/2015 09:25	**Dilution:**	3	**File ID:**	TC11202015.008
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	49.6		6.00	3.00	1.50

Certificate of Analysis

Sample #:	L15110943-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	50WW22FF-111615	**Prep Method:**	3015	**Prep Date:**	11/17/2015 14:26
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	11/23/2015 14:29
Workgroup #:	WG547398	**Analyst:**	PDM	**Run Date:**	11/23/2015 15:28
Collect Date:	11/16/2015 09:25	**Dilution:**	1	**File ID:**	T3.112315.152849
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.100	U	0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW22FF-111615	**Prep Method:**	3015	**Prep Date:**	11/18/2015 12:37
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	11/20/2015 09:58
Workgroup #:	WG547469	**Analyst:**	JYH	**Run Date:**	11/20/2015 13:27
Collect Date:	11/16/2015 09:25	**Dilution:**	1	**File ID:**	NI.112015.132754
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.00361	J	0.00400	0.00200	0.00100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW24-111615	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	11/11/2015 17:53
Workgroup #:	WG547466	**Analyst:**	ADC	**Run Date:**	11/18/2015 20:03
Collect Date:	11/16/2015 10:30	**Dilution:**	1	**File ID:**	17M016554
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	113	70	120	
Toluene-d8	109	85	120	
4-Bromofluorobenzene	109	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-05	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW24-111615	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG547425	**Analyst:**	JDS	**Run Date:**	11/18/2015 17:03
Collect Date:	11/16/2015 10:30	**Dilution:**	1	**File ID:**	16G49037
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-05	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW24-111615	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG547710	**Analyst:**	JDS	**Run Date:**	11/19/2015 18:07
Collect Date:	11/16/2015 10:30	**Dilution:**	10	**File ID:**	16G49053
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	736000		100000	50000	25000

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-05	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW24-111615	**Prep Method:**	9056	**Prep Date:**	11/17/2015 13:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG547299	**Analyst:**	ALS	**Run Date:**	11/17/2015 19:47
Collect Date:	11/16/2015 10:30	**Dilution:**	2	**File ID:**	I2_111715-21
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	0.400	U	0.800	0.400	0.200
Nitrite	14797-65-0	0.400	U	0.800	0.400	0.200
Sulfate	14808-79-8	108		4.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-05	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW24-111615	**Prep Method:**	9056	**Prep Date:**	11/17/2015 13:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG547299	**Analyst:**	ALS	**Run Date:**	11/17/2015 20:05
Collect Date:	11/16/2015 10:30	**Dilution:**	25	**File ID:**	I2_111715-22
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	386		10.0	5.00	2.50

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-05	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW24-111615	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	11/23/2015 09:16
Workgroup #:	WG548010	**Analyst:**	DCM	**Run Date:**	11/23/2015 09:27
Collect Date:	11/16/2015 10:30	**Dilution:**	1	**File ID:**	S2151123001.026
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	291		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L15110943-05	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW24-111615	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	11/23/2015 11:00
Workgroup #:	WG548015	**Analyst:**	DCM	**Run Date:**	11/23/2015 11:12
Collect Date:	11/16/2015 10:30	**Dilution:**	1	**File ID:**	SC151123002.026
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-05	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW24-111615	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG547574	**Analyst:**	TB	**Run Date:**	11/19/2015 18:00
Collect Date:	11/16/2015 10:30	**Dilution:**	1	**File ID:**	ET.1511191800-09
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-05	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW24-111615	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	10/30/2015 17:00
Workgroup #:	WG547789	**Analyst:**	EPT	**Run Date:**	11/22/2015 13:24
Collect Date:	11/16/2015 10:30	**Dilution:**	5	**File ID:**	TC11202015.039
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	77.1		10.0	5.00	2.50

Certificate of Analysis

Sample #:	L15110943-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	50WW24FF-111615	**Prep Method:**	3015	**Prep Date:**	11/17/2015 14:26
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	11/23/2015 14:29
Workgroup #:	WG547398	**Analyst:**	PDM	**Run Date:**	11/23/2015 15:32
Collect Date:	11/16/2015 10:30	**Dilution:**	1	**File ID:**	T3.112315.153248
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.100	U	0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW24FF-111615	**Prep Method:**	3015	**Prep Date:**	11/18/2015 12:37
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	11/20/2015 09:58
Workgroup #:	WG547469	**Analyst:**	JYH	**Run Date:**	11/20/2015 13:31
Collect Date:	11/16/2015 10:30	**Dilution:**	1	**File ID:**	NI.112015.133105
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0126		0.00400	0.00200	0.00100

Certificate of Analysis

Sample #:	L15110943-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW23-111615	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	11/11/2015 17:53
Workgroup #:	WG547466	**Analyst:**	ADC	**Run Date:**	11/18/2015 20:23
Collect Date:	11/16/2015 11:35	**Dilution:**	1	**File ID:**	17M016555
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	114	70	120	
Toluene-d8	110	85	120	
4-Bromofluorobenzene	111	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-07	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW23-111615	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG547425	**Analyst:**	JDS	**Run Date:**	11/18/2015 17:15
Collect Date:	11/16/2015 11:35	**Dilution:**	1	**File ID:**	16G49038
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-07	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW23-111615	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG547710	**Analyst:**	JDS	**Run Date:**	11/19/2015 18:19
Collect Date:	11/16/2015 11:35	**Dilution:**	5	**File ID:**	16G49054
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	230000		50000	25000	12500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-07	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW23-111615	**Prep Method:**	9056	**Prep Date:**	11/17/2015 13:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG547299	**Analyst:**	ALS	**Run Date:**	11/17/2015 20:23
Collect Date:	11/16/2015 11:35	**Dilution:**	10	**File ID:**	I2_111715-23
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	2.00	U	4.00	2.00	1.00
Nitrite	14797-65-0	2.00	U	4.00	2.00	1.00
Sulfate	14808-79-8	80.5		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-07	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW23-111615	**Prep Method:**	9056	**Prep Date:**	11/17/2015 13:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG547299	**Analyst:**	ALS	**Run Date:**	11/17/2015 20:41
Collect Date:	11/16/2015 11:35	**Dilution:**	100	**File ID:**	I2_111715-24
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	2030		40.0	20.0	10.0

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-07	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW23-111615	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	11/23/2015 09:16
Workgroup #:	WG548010	**Analyst:**	DCM	**Run Date:**	11/23/2015 09:28
Collect Date:	11/16/2015 11:35	**Dilution:**	1	**File ID:**	S2151123001.027
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	263		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L15110943-07	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW23-111615	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	11/23/2015 11:00
Workgroup #:	WG548015	**Analyst:**	DCM	**Run Date:**	11/23/2015 11:12
Collect Date:	11/16/2015 11:35	**Dilution:**	1	**File ID:**	SC151123002.027
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-07	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW23-111615	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG547574	**Analyst:**	TB	**Run Date:**	11/19/2015 18:00
Collect Date:	11/16/2015 11:35	**Dilution:**	1	**File ID:**	ET.1511191800-10
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-07	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW23-111615	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	10/30/2015 17:00
Workgroup #:	WG547789	**Analyst:**	EPT	**Run Date:**	11/20/2015 17:57
Collect Date:	11/16/2015 11:35	**Dilution:**	3	**File ID:**	TC11202015.010
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	39.2		6.00	3.00	1.50

Certificate of Analysis

Sample #:	L15110943-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	50WW23FF-111615	**Prep Method:**	3015	**Prep Date:**	11/17/2015 14:26
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	11/23/2015 14:29
Workgroup #:	WG547398	**Analyst:**	PDM	**Run Date:**	11/23/2015 15:52
Collect Date:	11/16/2015 11:35	**Dilution:**	1	**File ID:**	T3.112315.155229
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.100	U	0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW23FF-111615	**Prep Method:**	3015	**Prep Date:**	11/18/2015 12:37
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	11/20/2015 09:58
Workgroup #:	WG547469	**Analyst:**	JYH	**Run Date:**	11/20/2015 13:01
Collect Date:	11/16/2015 11:35	**Dilution:**	5	**File ID:**	NI.112015.130146
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0425		0.0200	0.0100	0.00500

Certificate of Analysis

Sample #:	L15110943-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW18-111615	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	11/11/2015 17:53
Workgroup #:	WG547466	**Analyst:**	ADC	**Run Date:**	11/18/2015 20:43
Collect Date:	11/16/2015 13:45	**Dilution:**	1	**File ID:**	17M016556
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	112	70	120	
Toluene-d8	109	85	120	
4-Bromofluorobenzene	108	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-09	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW18-111615	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG547425	**Analyst:**	JDS	**Run Date:**	11/18/2015 17:28
Collect Date:	11/16/2015 13:45	**Dilution:**	1	**File ID:**	16G49039
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-09	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW18-111615	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG547710	**Analyst:**	JDS	**Run Date:**	11/19/2015 18:31
Collect Date:	11/16/2015 13:45	**Dilution:**	10	**File ID:**	16G49055
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	528000		100000	50000	25000

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-09	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW18-111615	**Prep Method:**	9056	**Prep Date:**	11/17/2015 13:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG547299	**Analyst:**	ALS	**Run Date:**	11/17/2015 20:59
Collect Date:	11/16/2015 13:45	**Dilution:**	5	**File ID:**	I2_111715-25
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	1.00	U	2.00	1.00	0.500
Nitrite	14797-65-0	1.00	U	2.00	1.00	0.500
Sulfate	14808-79-8	160		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-09	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW18-111615	**Prep Method:**	9056	**Prep Date:**	11/17/2015 13:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG547299	**Analyst:**	ALS	**Run Date:**	11/17/2015 21:18
Collect Date:	11/16/2015 13:45	**Dilution:**	50	**File ID:**	I2_111715-26
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	799		20.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-09	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW18-111615	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	11/23/2015 09:16
Workgroup #:	WG548010	**Analyst:**	DCM	**Run Date:**	11/23/2015 09:28
Collect Date:	11/16/2015 13:45	**Dilution:**	2	**File ID:**	S2151123001.028
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	342		80.0	40.0	20.0

Certificate of Analysis

Sample #:	L15110943-09	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW18-111615	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	11/23/2015 11:00
Workgroup #:	WG548015	**Analyst:**	DCM	**Run Date:**	11/23/2015 11:13
Collect Date:	11/16/2015 13:45	**Dilution:**	1	**File ID:**	SC151123002.028
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-09	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW18-111615	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG547574	**Analyst:**	TB	**Run Date:**	11/19/2015 18:00
Collect Date:	11/16/2015 13:45	**Dilution:**	1	**File ID:**	ET.1511191800-11
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-09	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW18-111615	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	10/30/2015 17:00
Workgroup #:	WG547789	**Analyst:**	EPT	**Run Date:**	11/22/2015 13:46
Collect Date:	11/16/2015 13:45	**Dilution:**	5	**File ID:**	TC11202015.040
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	56.1		10.0	5.00	2.50

Certificate of Analysis

Sample #:	L15110943-10	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	50WW18FF-111615	**Prep Method:**	3015	**Prep Date:**	11/17/2015 14:26
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	11/23/2015 14:29
Workgroup #:	WG547398	**Analyst:**	PDM	**Run Date:**	11/23/2015 15:56
Collect Date:	11/16/2015 13:45	**Dilution:**	1	**File ID:**	T3.112315.155628
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.0978	J	0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-10	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW18FF-111615	**Prep Method:**	3015	**Prep Date:**	11/18/2015 12:37
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	11/20/2015 09:58
Workgroup #:	WG547469	**Analyst:**	JYH	**Run Date:**	11/20/2015 13:04
Collect Date:	11/16/2015 13:45	**Dilution:**	5	**File ID:**	NI.112015.130457
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0521		0.0200	0.0100	0.00500

Certificate of Analysis

Sample #:	L15110943-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW25-111615	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	09/30/2015 14:52
Workgroup #:	WG547622	**Analyst:**	TMB	**Run Date:**	11/19/2015 20:55
Collect Date:	11/16/2015 14:55	**Dilution:**	1	**File ID:**	8M408814
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	102	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-11	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW25-111615	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG547425	**Analyst:**	JDS	**Run Date:**	11/18/2015 17:40
Collect Date:	11/16/2015 14:55	**Dilution:**	1	**File ID:**	16G49040
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Methane	74-82-8	88.8		5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-11	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW25-111615	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG547710	**Analyst:**	JDS	**Run Date:**	11/19/2015 18:44
Collect Date:	11/16/2015 14:55	**Dilution:**	10	**File ID:**	16G49056
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	632000		100000	50000	25000

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-11	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW25-111615	**Prep Method:**	9056	**Prep Date:**	11/17/2015 13:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG547299	**Analyst:**	ALS	**Run Date:**	11/17/2015 22:12
Collect Date:	11/16/2015 14:55	**Dilution:**	1	**File ID:**	I2_111715-29
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nitrate	14797-55-8	0.200	U	0.400	0.200	0.100
Nitrite	14797-65-0	0.200	U	0.400	0.200	0.100
Sulfate	14808-79-8	67.6		2.00	1.00	0.500

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-11	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW25-111615	**Prep Method:**	9056	**Prep Date:**	11/17/2015 13:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG547299	**Analyst:**	ALS	**Run Date:**	11/17/2015 22:30
Collect Date:	11/16/2015 14:55	**Dilution:**	2	**File ID:**	I2_111715-30
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	31.7		0.800	0.400	0.200

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-11	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW25-111615	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	11/23/2015 09:16
Workgroup #:	WG548010	**Analyst:**	DCM	**Run Date:**	11/23/2015 09:46
Collect Date:	11/16/2015 14:55	**Dilution:**	2	**File ID:**	S2151123001.045
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	425		80.0	40.0	20.0

Certificate of Analysis

Sample #:	L15110943-11	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW25-111615	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	11/23/2015 11:00
Workgroup #:	WG548015	**Analyst:**	DCM	**Run Date:**	11/23/2015 11:13
Collect Date:	11/16/2015 14:55	**Dilution:**	1	**File ID:**	SC151123002.029
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-11	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW25-111615	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG547574	**Analyst:**	TB	**Run Date:**	11/19/2015 18:00
Collect Date:	11/16/2015 14:55	**Dilution:**	1	**File ID:**	ET.1511191800-12
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-11	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW25-111615	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	10/30/2015 17:00
Workgroup #:	WG547789	**Analyst:**	EPT	**Run Date:**	11/22/2015 14:08
Collect Date:	11/16/2015 14:55	**Dilution:**	5	**File ID:**	TC11202015.041
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	107		10.0	5.00	2.50

Certificate of Analysis

Sample #:	L15110943-12	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	50WW25FF-111615	**Prep Method:**	3015	**Prep Date:**	11/17/2015 14:26
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	11/23/2015 14:29
Workgroup #:	WG547398	**Analyst:**	PDM	**Run Date:**	11/23/2015 16:00
Collect Date:	11/16/2015 14:55	**Dilution:**	1	**File ID:**	T3.112315.160027
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	1.10		0.200	0.100	0.0500

Certificate of Analysis

Sample #:	L15110943-12	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW25FF-111615	**Prep Method:**	3015	**Prep Date:**	11/18/2015 12:37
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	11/20/2015 09:58
Workgroup #:	WG547469	**Analyst:**	JYH	**Run Date:**	11/20/2015 12:29
Collect Date:	11/16/2015 14:55	**Dilution:**	5	**File ID:**	NI.112015.122929
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0688		0.0200	0.0100	0.00500

Certificate of Analysis

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15110943-13	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	09/30/2015 14:52
Workgroup #:	WG547622	**Analyst:**	TMB	**Run Date:**	11/19/2015 15:59
Collect Date:	11/16/2015 00:01	**Dilution:**	1	**File ID:**	8M408804
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	85	115	
1,2-Dichloroethane-d4	102	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	102	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW08-111615	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	11/11/2015 17:53
Workgroup #:	WG547466	**Analyst:**	ADC	**Run Date:**	11/18/2015 23:02
Collect Date:	11/16/2015 08:20	**Dilution:**	1	**File ID:**	17M016563
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.334	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.26		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	17.7		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	1.21		1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	288		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	113	70	120	
Toluene-d8	106	85	120	
4-Bromofluorobenzene	106	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW22-111615	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	11/11/2015 17:53
Workgroup #:	WG547466	**Analyst:**	ADC	**Run Date:**	11/18/2015 19:43
Collect Date:	11/16/2015 09:25	**Dilution:**	1	**File ID:**	17M016553
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.454	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	85	115	
1,2-Dichloroethane-d4	113	70	120	
Toluene-d8	111	85	120	
4-Bromofluorobenzene	111	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW24-111615	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	11/11/2015 17:53
Workgroup #:	WG547466	**Analyst:**	ADC	**Run Date:**	11/18/2015 20:03
Collect Date:	11/16/2015 10:30	**Dilution:**	1	**File ID:**	17M016554
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	113	70	120	
Toluene-d8	109	85	120	
4-Bromofluorobenzene	109	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW23-111615	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	11/11/2015 17:53
Workgroup #:	WG547466	**Analyst:**	ADC	**Run Date:**	11/18/2015 20:23
Collect Date:	11/16/2015 11:35	**Dilution:**	1	**File ID:**	17M016555
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	114	70	120	
Toluene-d8	110	85	120	
4-Bromofluorobenzene	111	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW18-111615	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	11/11/2015 17:53
Workgroup #:	WG547466	**Analyst:**	ADC	**Run Date:**	11/18/2015 20:43
Collect Date:	11/16/2015 13:45	**Dilution:**	1	**File ID:**	17M016556
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	112	70	120	
Toluene-d8	109	85	120	
4-Bromofluorobenzene	108	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	50WW25-111615	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	09/30/2015 14:52
Workgroup #:	WG547622	**Analyst:**	TMB	**Run Date:**	11/19/2015 20:55
Collect Date:	11/16/2015 14:55	**Dilution:**	1	**File ID:**	8M408814
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	102	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-13	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	09/30/2015 14:52
Workgroup #:	WG547622	**Analyst:**	TMB	**Run Date:**	11/19/2015 15:59
Collect Date:	11/16/2015 00:01	**Dilution:**	1	**File ID:**	8M408804
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	85	115	
1,2-Dichloroethane-d4	102	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	102	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 093015
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 22
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53451

Internal Standard: STD72206 Surrogate Standard: STD72206
CCV: STD72739 LCS: STD72747 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG540912

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M407744	WG540912-01 50ng BFB STD 8260	NA	1	1	STD72715	09/30/15 09:14
8M407745	WG540912-01 50ng BFB STD 8260	NA	1	1	STD72715	09/30/15 09:38
8M407746	RINSE	NA	1	1		09/30/15 10:01
8M407747	WG540912-02 0.3ug/L STD 8260	NA	1	1	STD72739	09/30/15 10:30
8M407748	WG540912-03 0.4ug/L STD 8260	NA	1	1	STD72739	09/30/15 10:59
8M407749	WG540912-04 1ug/L STD 8260	NA	1	1	STD72739	09/30/15 11:32
8M407750	WG540912-05 2ug/L STD 8260	NA	1	1	STD72739	09/30/15 12:01
8M407751	WG540912-06 5ug/L STD 8260	NA	1	1	STD72739	09/30/15 12:29
8M407752	WG540912-07 20ug/L STD 8260	NA	1	1	STD72739	09/30/15 12:58
8M407753	WG540912-08 50ug/L STD 8260	NA	1	1	STD72739	09/30/15 13:27
8M407754	WG540912-09 100ug/L STD 8260	NA	1	1	STD72739	09/30/15 13:56
8M407755	WG540912-10 200ug/L STD 8260	NA	1	1	STD72739	09/30/15 14:24
8M407756	WG540912-11 300ug/L STD 8260	NA	1	1	STD72739	09/30/15 14:52
8M407757	RINSE	NA	1	1		09/30/15 15:25
8M407758	RINSE	NA	1	1		09/30/15 15:54
8M407759	WG540912-12 50ug/L ALT SRC STD 8260	NA	1	1	STD727747	09/30/15 16:22
8M407760	RINSE	NA	1	1		09/30/15 16:52
8M407761	WG540912-12 50ug/L ALT SRC STD 8260	NA	1	1	STD72747	09/30/15 17:27
8M407762	CCV	NA	1	1	STD72739	09/30/15 17:56
8M407763	RINSE	NA	1	1		09/30/15 18:24

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1	X			
File ID: 8M407744				
			Tune failed, DNR.	
16	X			
File ID: 8M407759				
			Carbon disulfide was low, DNR. Made a new lcs adds mix.	

Approved: October 01, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 100515
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 22
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53462

Internal Standard: STD72767 Surrogate Standard: STD72767
CCV: STD72810 LCS: STD72811 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG540826

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M407827	WG540826-01 50ng BFB STD 8260	NA	1	1	STD72715	10/05/15 11:26
8M407828	WG540826-02 5ug/L STD A9FOO	NA	1	1	STD72810	10/05/15 11:49
8M407829	WG540826-03 20ug/L STD A9FOO	NA	1	1	STD72810	10/05/15 12:17
8M407830	WG540826-04 50ug/L STD A9FOO	NA	1	1	STD72810	10/05/15 12:51
8M407831	WG540826-05 100ug/L STD A9FOO	NA	1	1	STD72810	10/05/15 13:20
8M407832	WG540826-06 200ug/L STD A9FOO	NA	1	1	STD72810	10/05/15 13:49
8M407833	WG540826-07 300ug/L STD A9FOO	NA	1	1	STD72810	10/05/15 14:17
8M407834	WG540826-08 400ug/L STD A9FOO	NA	1	1	STD72810	10/05/15 14:47
8M407835	WG540826-09 500ug/L STD A9FOO	NA	1	1	STD72810	10/05/15 15:15
8M407836	RINSE	NA	1	1		10/05/15 15:50
8M407837	RINSE	NA	1	1		10/05/15 16:19
8M407838	WG540826-10 100ug/L ALT SRC STD A9/F	NA	1	1	STD72811	10/05/15 16:48

Approved: October 09, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS17 Dataset: 111115

Analyst1: ADC Analyst2: NA

Method: 8260B SOP: MSV01 Rev: 23

Method: 5035/5030B/ 5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD72995 Surrogate Standard: STD72996

CCV: STD73343 LCS: STD73034 MS/MSD: STD73034

Column 1 ID: RTX-VMS Column 2 ID: NA

Workgroups: WG546498 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
17M016364	TEST BFB	NA	1	1	STD72715	11/11/15 13:32
17M016366	WG546498-01 50ng BFB STD	NA	1	1	STD72715	11/11/15 14:17
17M016367	WG546498-02 50ug/L CCV STD	NA	1	1	STD73185	11/11/15 14:34
17M016368	RINSE	NA	1	1	STD73185	11/11/15 14:54
17M016369	WG546498-03 0.3ug/L STD	NA	1	1	STD73185	11/11/15 15:14
17M016370	WG546498-04 0.4ug/L STD	NA	1	1	STD73185	11/11/15 15:34
17M016371	WG546498-05 1.0ug/L STD	NA	1	1	STD73185	11/11/15 15:54
17M016372	WG546498-06 2.0ug/L STD 8260	NA	1	1	STD73185	11/11/15 16:14
17M016373	WG546498-07 5.0ug/L STD 8260	NA	1	1	STD73185	11/11/15 16:33
17M016374	WG546498-08 20.0ug/L STD 8260	NA	1	1	STD73185	11/11/15 16:53
17M016375	WG546498-09 100.0ug/L STD 8260	NA	1	1	STD73185	11/11/15 17:13
17M016376	WG546498-10 200.0ug/L STD 8260	NA	1	1	STD73185	11/11/15 17:33
17M016377	WG546498-11 300.0ug/L STD 8260	NA	1	1	STD73185	11/11/15 17:53
17M016378	RINSE	NA	1	1		11/11/15 18:13
17M016379	WG546498-12 50.0ug/L ALT 8260	NA	1	1	STD73387	11/11/15 18:33

Approved: November 16, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS17 Dataset: 111815
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 22
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD73495 Surrogate Standard: STD73496
CCV: STD73185 LCS: STD73387 MS/MSD: NA

Column 1 ID: RTX-VMS Column 2 ID: NA
Workgroups: WG547466

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
17M016537	WG547460-01 50ng BFB STD	NA	1	1	STD72715	11/18/15 14:26
17M016538	WG547460-02 50ug/L CCV STD	NA	1	1	STD73185	11/18/15 14:45
17M016539	RINSE	NA	1	1		11/18/15 15:05
17M016540	WG547466-01 BLK 8260	NA	1	1		11/18/15 15:25
17M016541	WG547466-02 20ug/L LCS 8260	NA	1	1	STD73387	11/18/15 15:45
17M016542	L15110946-02 A MS 826-SPE	NA	1	1	STD73387	11/18/15 16:05
17M016543	L15110946-03 A MSD 826-SPE	NA	1	1	STD73387	11/18/15 16:25
17M016544	L15110950-02 A MS 826-LOW	NA	1	1	STD73387	11/18/15 16:45
17M016545	L15110950-03 A MSD 826-LOW	NA	1	1	STD73387	11/18/15 17:04
17M016546	L15110405-01 5,000,000X 8260 0.00g	NA	11	500000		11/18/15 17:24
17M016547	RINSE	NA	1	1		11/18/15 17:44
17M016548	L15110950-10 A 826-LOW	<2	1	1		11/18/15 18:04
17M016549	L15110946-04 A 826-SPE	5	1	1		11/18/15 18:24
17M016550	L15110693-01 B 8260	11	1	1		11/18/15 18:44
17M016551	L15110946-01 A 826-SPE	NA	1	1		11/18/15 19:04
17M016552	L15110950-01 A 826-LOW	NA	1	1		11/18/15 19:23
17M016553	L15110943-03 A 826-LOW	<2	1	1		11/18/15 19:43
17M016554	L15110943-05 A 826-LOW	<2	1	1		11/18/15 20:03
17M016555	L15110943-07 A 826-LOW	<2	1	1		11/18/15 20:23
17M016556	L15110943-09 A 826-LOW	<2	1	1		11/18/15 20:43
17M016557	L15110950-04 826-LOW	<2	1	1		11/18/15 21:03
17M016558	L15110950-05 826-LOW	<2	1	1		11/18/15 21:23
17M016559	L15110950-06 826-LOW	<2	1	1		11/18/15 21:43
17M016560	L15110950-07 826-LOW	<2	1	1		11/18/15 22:02
17M016561	L15110950-08 826-LOW	<2	1	1		11/18/15 22:22
17M016562	L15110950-09 826-LOW	<2	1	1		11/18/15 22:42
17M016563	L15110943-01 826-LOW	<2	1	1		11/18/15 23:02
17M016564	RINSE	NA	1	1		11/18/15 23:22
17M016565	RINSE	NA	1	1		11/18/15 23:42
17M016566	RINSE	NA	1	1		11/19/15 00:02

Approved: November 30, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 111915
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 22
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Method: 624 SOP: MSV10 Rev: 13
Maintenance Log ID: 53557

Internal Standard: STD73295 Surrogate Standard: STD73295
CCV: STD73419 LCS: STD73459 MS/MSD: STD73459

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG547622

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M408795	WG547619-01 50ng BFB STD 8260	NA	1	1	STD73273	11/19/15 11:35
8M408796	WG547619-02 50ug/L CCV STD 8260	NA	1	1	STD73419	11/19/15 11:59
8M408797	WG547619-02 50ug/L CCV STD 8260	NA	1	1	STD73419	11/19/15 12:31
8M408798	WG000000-01 100ug/L A9CCV STD 8260	NA	1	1	STD73389	11/19/15 13:01
8M408799	WG547622-01 VBLK1119 BLANK STD 826	NA	1	1		11/19/15 13:31
8M408800	WG547622-02 20ug/L LCS STD 8260	NA	1	1	STD73459	11/19/15 14:00
8M408801	L15111050-09 A MS 826-LOW	<2	1	1	STD73459	11/19/15 14:30
8M408802	L15111050-11 A MSD 826-LOW	<2	1	1	STD73459	11/19/15 15:00
8M408803	L15110814-06 A 10X 826-TC	NA	17	10		11/19/15 15:30
8M408804	L15110943-13 A TB 826-LOW	<2	1	1		11/19/15 15:59
8M408805	L15111050-01 A TB 826-LOW	<2	1	1		11/19/15 16:29
8M408806	L15111088-04 A TB 826-SPE	<2	1	1		11/19/15 16:58
8M408807	L15111050-07 A REF 826-LOW	<2	1	1		11/19/15 17:28
8M408808	L15111050-02 A 826-LOW	<2	1	1		11/19/15 17:57
8M408809	L15111050-04 A 826-LOW	<2	1	1		11/19/15 18:27
8M408810	L15111050-06 A 826-LOW	<2	1	1		11/19/15 18:56
8M408811	L15111050-13 A 826-LOW	<2	1	1		11/19/15 19:26
8M408812	L15111050-15 A 826-LOW	<2	1	1		11/19/15 19:55
8M408813	L15111050-17 A 826-LOW	<2	1	1		11/19/15 20:25
8M408814	L15110943-11 A 826-LOW	<2	1	1		11/19/15 20:55
8M408815	L15111060-16 B 826-LOW	<2	1	1		11/19/15 21:24
8M408816	L15111088-01 A 826-SPE	<2	1	1		11/19/15 21:53
8M408817	L15111088-02 A 826-SPE	<2	1	1		11/19/15 22:22
8M408818	L15111088-03 A 826-SPE	<2	1	1		11/19/15 22:52
8M408819	L15111005-02 A 10X 826-TC	NA	17	10		11/19/15 23:21
8M408820	CCV	NA	1	1		11/19/15 23:50
8M408821	RINSE	NA	1	1		11/20/15 00:19
8M408822	RINSE	NA	1	1		11/20/15 00:48

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 8M408796				

Approved: November 23, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS8	Dataset:	111915		
Analyst1:	TMB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	22
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Method:	624	SOP:	MSV10	Rev:	13
Maintenance Log ID:	53557				

Internal Standard: STD73295 Surrogate Standard: STD73295

CCV: STD73419 LCS: STD73459 MS/MSD: STD73459

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG547622

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			VC was high, DNR.	
4 File ID: 8M408798				
			Not needed. DNR.	

Approved: November 23, 2015

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Microbac Laboratories Inc.

Data Checklist

Date: 30-SEP-2015
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 70802
Analytical Workgroups: WG540912

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
01-OCT-2015
Tiffany Bailey

Secondary Reviewer:
01-OCT-2015

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-01-2015 16:52:52

Microbac Laboratories Inc.

Data Checklist

Date: 05-OCT-2015
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 70874
Analytical Workgroups: WG540826

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
06-OCT-2015
Tiffany Bailey

Secondary Reviewer:
09-OCT-2015

CHECKLIST1 - Modified 03/05/2008
Generated: OCT-09-2015 12:12:03

Microbac Laboratories Inc.

Data Checklist

Date: 11-NOV-2015
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS17
Curve Workgroup: WG546498
Runlog ID: 71668
Analytical Workgroups:

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
13-NOV-2015

Secondary Reviewer:
16-NOV-2015

CHECKLIST1 - Modified 03/05/2008
Generated: NOV-16-2015 09:59:26

Microbac Laboratories Inc.

Data Checklist

Date: 18-NOV-2015
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS17
Curve Workgroup: NA
Runlog ID: 71963
Analytical Workgroups: WG547466

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
30-NOV-2015

Secondary Reviewer:
30-NOV-2015

CHECKLIST1 - Modified 03/05/2008
Generated: NOV-30-2015 15:34:47

Microbac Laboratories Inc.

Data Checklist

Date: 19-NOV-2015
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 71843
Analytical Workgroups: WG547622

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	TMB
Spectra of TCL Hits	X
Surrogates	X
Internal Standards Criteria	X
Library Searches	X
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
20-NOV-2015
Tiffany Bailey

Secondary Reviewer:
23-NOV-2015
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: NOV-23-2015 18:40:27

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG547466

Login Number: L15110943

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW08-111615	01	11/16/15					11/18/2015	2.6	14		11/18/15	2.6	14	
50WW22-111615	03	11/16/15					11/18/2015	2.4	14		11/18/15	2.4	14	
50WW24-111615	05	11/16/15					11/18/2015	2.4	14		11/18/15	2.4	14	
50WW23-111615	07	11/16/15					11/18/2015	2.4	14		11/18/15	2.4	14	
50WW18-111615	09	11/16/15					11/18/2015	2.3	14		11/18/15	2.3	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4513440
Report generated 11/30/2015 15:33

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG547622

Login Number: L15110943

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW25-111615	11	11/16/15					11/19/2015	3.3	14		11/19/15	3.3	14	
TRIP BLANK	13	11/16/15					11/19/2015	3.7	14		11/19/15	3.7	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4513440
Report generated 11/30/2015 15:33

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L15110943
Instrument Id: HPMS17
Workgroup (AAB#): WG547466

Method: 8260
CAL ID: HPMS17-11-NOV-15
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L15110943-01	1.00	01	113	103	106	106
L15110943-03	1.00	01	113	105	111	111
L15110943-05	1.00	01	113	104	109	109
L15110943-07	1.00	01	114	104	111	110
L15110943-09	1.00	01	112	104	108	109
WG547466-01	1.00	01	110	103	111	110
WG547466-02	1.00	01	110	108	106	109

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4513445
Report generated: 11/30/2015 15:33

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L15110943
Instrument Id: HPMS8
Workgroup (AAB#): WG547622

Method: 8260
CAL ID: HPMS8-30-SEP-15
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L15110943-11	1.00	01	103	105	102	100
L15110943-13	1.00	01	102	105	102	101
WG547622-01	1.00	01	103	106	98.4	99.7
WG547622-02	1.00	01	103	107	97.2	101

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4513445
Report generated: 11/30/2015 15:33

METHOD BLANK SUMMARY

Login Number: L15110943
Blank File ID: 17M016540
Prep Date: 11/18/15 15:25
Analyzed Date: 11/18/15 15:25
Analyst: ADC

Work Group: WG547466
Blank Sample ID: WG547466-01
Instrument ID: HPMS17
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG547466-02	17M016541	11/18/15 15:45	01
50WW22-111615	L15110943-03	17M016553	11/18/15 19:43	01
50WW24-111615	L15110943-05	17M016554	11/18/15 20:03	01
50WW23-111615	L15110943-07	17M016555	11/18/15 20:23	01
50WW18-111615	L15110943-09	17M016556	11/18/15 20:43	01
50WW08-111615	L15110943-01	17M016563	11/18/15 23:02	01

Report Name: BLANK_SUMMARY
PDF File ID: 4522926
Report generated 11/30/2015 15:33

METHOD BLANK SUMMARY

Login Number: L15110943
Blank File ID: 8M408799
Prep Date: 11/19/15 13:31
Analyzed Date: 11/19/15 13:31
Analyst: TMB

Work Group: WG547622
Blank Sample ID: WG547622-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG547622-02	8M408800	11/19/15 14:00	01
TRIP BLANK	L15110943-13	8M408804	11/19/15 15:59	01
50WW25-111615	L15110943-11	8M408814	11/19/15 20:55	01

Report Name: BLANK_SUMMARY
PDF File ID: 4522926
Report generated 11/30/2015 15:33

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L15110943 Prep Date: 11/18/15 15:25 Sample ID: WG547466-01
Instrument ID: HPMS17 Run Date: 11/18/15 15:25 Prep Method: 5030B/5030C/503
File ID: 17M016540 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG547466 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS17-11-NOV-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 4522927
30-NOV-2015 15:33

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15110943 Prep Date: 11/18/15 15:25 Sample ID: WG547466-01
Instrument ID: HPMS17 Run Date: 11/18/15 15:25 Prep Method: 5030B/5030C/503
File ID: 17M016540 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG547466 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS17-11-NOV-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	103	85 - 115	PASS
1,2-Dichloroethane-d4	110	70 - 120	PASS
Toluene-d8	110	85 - 120	PASS
4-Bromofluorobenzene	111	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4522927
30-NOV-2015 15:33

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L15110943 Prep Date: 11/19/15 13:31 Sample ID: WG547622-01
Instrument ID: HPMS8 Run Date: 11/19/15 13:31 Prep Method: 5030B/5030C/503
File ID: 8M408799 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG547622 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-30-SEP-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4522927
30-NOV-2015 15:33

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L15110943 Prep Date: 11/19/15 13:31 Sample ID: WG547622-01
Instrument ID: HPMS8 Run Date: 11/19/15 13:31 Prep Method: 5030B/5030C/503
File ID: 8M408799 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG547622 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-30-SEP-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	106	85 - 115	PASS
1,2-Dichloroethane-d4	103	70 - 120	PASS
Toluene-d8	99.7	85 - 120	PASS
4-Bromofluorobenzene	98.4	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4522927
30-NOV-2015 15:33

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15110943 | Run Date: 11/18/2015 | Sample ID: WG547466-02
Instrument ID: HPMS17 | Run Time: 15:45 | Prep Method: 5030B/5030C/503
File ID: 17M016541 | Analyst: ADC | Method: 8260B
Workgroup (AAB#): WG547466 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD73387 | Cal ID: HPMS17-11-NOV-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	20.0	100	40 - 140	
Benzene	20.0	19.5	97.3	80 - 120	
Bromobenzene	20.0	19.4	97.2	75 - 125	
Bromochloromethane	20.0	20.5	102	65 - 130	
Bromodichloromethane	20.0	19.4	97.1	75 - 120	
Bromoform	20.0	20.9	104	70 - 130	
Bromomethane	20.0	22.2	111	30 - 145	
2-Butanone	20.0	19.4	97.1	30 - 150	
n-Butylbenzene	20.0	20.2	101	70 - 135	
sec-Butylbenzene	20.0	20.9	104	70 - 125	
tert-Butylbenzene	20.0	20.7	104	70 - 130	
Carbon disulfide	20.0	6.63	33.2	35 - 160	*
Carbon tetrachloride	20.0	19.9	99.5	65 - 140	
Chlorobenzene	20.0	21.1	106	80 - 120	
Chlorodibromomethane	20.0	19.1	95.5	60 - 135	
Chloroethane	20.0	24.3	121	60 - 135	
Chloroform	20.0	19.9	99.4	65 - 135	
Chloromethane	20.0	16.4	82.2	40 - 125	
2-Chlorotoluene	20.0	20.4	102	75 - 125	
4-Chlorotoluene	20.0	20.5	102	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	17.9	89.5	50 - 130	
1,2-Dibromoethane	20.0	18.6	93.0	80 - 120	
Dibromomethane	20.0	19.1	95.7	75 - 125	
1,2-Dichlorobenzene	20.0	20.3	102	70 - 120	
1,3-Dichlorobenzene	20.0	20.8	104	75 - 125	
1,4-Dichlorobenzene	20.0	19.7	98.7	75 - 125	
Dichlorodifluoromethane	20.0	19.6	98.0	30 - 155	
1,1-Dichloroethane	20.0	19.2	96.2	70 - 135	
1,2-Dichloroethane	20.0	19.7	98.5	70 - 130	
1,1-Dichloroethene	20.0	20.4	102	70 - 130	
cis-1,2-Dichloroethene	20.0	18.9	94.7	70 - 125	
trans-1,2-Dichloroethene	20.0	18.9	94.3	60 - 140	
1,2-Dichloropropane	20.0	19.3	96.4	75 - 125	
1,3-Dichloropropane	20.0	19.5	97.5	75 - 125	
2,2-Dichloropropane	20.0	21.2	106	70 - 135	
cis-1,3-Dichloropropene	20.0	19.9	99.7	70 - 130	
trans-1,3-Dichloropropene	20.0	18.8	93.9	55 - 140	
1,1-Dichloropropene	20.0	19.3	96.6	75 - 130	
Ethylbenzene	20.0	20.1	100	75 - 125	
2-Hexanone	20.0	18.3	91.3	55 - 130	
Hexachlorobutadiene	20.0	18.7	93.3	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4513441
Report generated: 11/30/2015 15:33

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15110943 Run Date: 11/18/2015 Sample ID: WG547466-02
Instrument ID: HPMS17 Run Time: 15:45 Prep Method: 5030B/5030C/503
File ID: 17M016541 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG547466 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD73387 Cal ID: HPMS17 - 11-NOV-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	21.2	106	75 - 125	
p-Isopropyltoluene	20.0	19.8	98.8	75 - 130	
4-Methyl-2-pentanone	20.0	17.9	89.6	60 - 135	
Methylene chloride	20.0	17.6	87.9	55 - 140	
Naphthalene	20.0	17.0	85.1	55 - 140	
n-Propylbenzene	20.0	20.9	105	70 - 130	
Styrene	20.0	20.0	100	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	19.7	98.7	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	18.3	91.4	65 - 130	
Tetrachloroethene	20.0	20.4	102	45 - 150	
Toluene	20.0	19.9	99.4	75 - 120	
1,2,3-Trichlorobenzene	20.0	17.7	88.7	55 - 140	
1,2,4-Trichlorobenzene	20.0	19.3	96.4	65 - 135	
1,1,1-Trichloroethane	20.0	20.3	101	65 - 130	
1,1,2-Trichloroethane	20.0	18.3	91.4	75 - 125	
Trichloroethene	20.0	19.6	98.0	70 - 125	
Trichlorofluoromethane	20.0	21.8	109	60 - 145	
1,2,3-Trichloropropane	20.0	17.5	87.6	75 - 125	
1,2,4-Trimethylbenzene	20.0	19.6	97.8	75 - 130	
1,3,5-Trimethylbenzene	20.0	19.9	99.5	75 - 130	
Vinyl chloride	20.0	20.1	101	50 - 145	
o-Xylene	20.0	20.9	104	80 - 120	
m-,p-Xylene	40.0	41.6	104	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	108	85 - 115	PASS
1,2-Dichloroethane-d4	110	70 - 120	PASS
Toluene-d8	109	85 - 120	PASS
4-Bromofluorobenzene	106	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4513441
Report generated: 11/30/2015 15:33

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15110943 | Run Date: 11/19/2015 | Sample ID: WG547622-02
Instrument ID: HPMS8 | Run Time: 14:00 | Prep Method: 5030B/5030C/503
File ID: 8M408800 | Analyst: TMB | Method: 8260B
Workgroup (AAB#): WG547622 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD73459 | Cal ID: HPMS8-30-SEP-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	25.8	129	40 - 140	
Benzene	20.0	21.7	108	80 - 120	
Bromobenzene	20.0	19.8	98.9	75 - 125	
Bromochloromethane	20.0	22.8	114	65 - 130	
Bromodichloromethane	20.0	21.1	105	75 - 120	
Bromoform	20.0	21.3	106	70 - 130	
Bromomethane	20.0	23.4	117	30 - 145	
2-Butanone	20.0	24.3	121	30 - 150	
n-Butylbenzene	20.0	21.1	105	70 - 135	
sec-Butylbenzene	20.0	20.1	101	70 - 125	
tert-Butylbenzene	20.0	19.8	99.0	70 - 130	
Carbon disulfide	20.0	16.2	81.1	35 - 160	
Carbon tetrachloride	20.0	21.9	110	65 - 140	
Chlorobenzene	20.0	21.0	105	80 - 120	
Chlorodibromomethane	20.0	21.2	106	60 - 135	
Chloroethane	20.0	23.1	115	60 - 135	
Chloroform	20.0	22.3	112	65 - 135	
Chloromethane	20.0	25.0	125	40 - 125	
2-Chlorotoluene	20.0	20.1	100	75 - 125	
4-Chlorotoluene	20.0	20.4	102	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	19.6	97.8	50 - 130	
1,2-Dibromoethane	20.0	20.3	101	80 - 120	
Dibromomethane	20.0	21.6	108	75 - 125	
1,2-Dichlorobenzene	20.0	20.9	105	70 - 120	
1,3-Dichlorobenzene	20.0	20.2	101	75 - 125	
1,4-Dichlorobenzene	20.0	19.6	98.2	75 - 125	
Dichlorodifluoromethane	20.0	23.5	117	30 - 155	
1,1-Dichloroethane	20.0	21.0	105	70 - 135	
1,2-Dichloroethane	20.0	21.7	108	70 - 130	
1,1-Dichloroethene	20.0	20.7	103	70 - 130	
cis-1,2-Dichloroethene	20.0	21.0	105	70 - 125	
trans-1,2-Dichloroethene	20.0	21.0	105	60 - 140	
1,2-Dichloropropane	20.0	21.2	106	75 - 125	
1,3-Dichloropropane	20.0	20.7	103	75 - 125	
2,2-Dichloropropane	20.0	20.5	102	70 - 135	
cis-1,3-Dichloropropene	20.0	22.0	110	70 - 130	
trans-1,3-Dichloropropene	20.0	20.0	99.9	55 - 140	
1,1-Dichloropropene	20.0	20.3	102	75 - 130	
Ethylbenzene	20.0	19.1	95.3	75 - 125	
2-Hexanone	20.0	20.5	103	55 - 130	
Hexachlorobutadiene	20.0	18.5	92.4	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4513441
Report generated: 11/30/2015 15:33

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15110943 Run Date: 11/19/2015 Sample ID: WG547622-02
Instrument ID: HPMS8 Run Time: 14:00 Prep Method: 5030B/5030C/503
File ID: 8M408800 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG547622 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD73459 Cal ID: HPMS8-30-SEP-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	21.4	107	75 - 125	
p-Isopropyltoluene	20.0	19.7	98.5	75 - 130	
4-Methyl-2-pentanone	20.0	20.6	103	60 - 135	
Methylene chloride	20.0	20.9	105	55 - 140	
Naphthalene	20.0	23.2	116	55 - 140	
n-Propylbenzene	20.0	20.1	100	70 - 130	
Styrene	20.0	20.5	103	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	19.9	99.6	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	20.2	101	65 - 130	
Tetrachloroethene	20.0	20.1	101	45 - 150	
Toluene	20.0	20.6	103	75 - 120	
1,2,3-Trichlorobenzene	20.0	21.0	105	55 - 140	
1,2,4-Trichlorobenzene	20.0	20.8	104	65 - 135	
1,1,1-Trichloroethane	20.0	21.8	109	65 - 130	
1,1,2-Trichloroethane	20.0	20.8	104	75 - 125	
Trichloroethene	20.0	20.4	102	70 - 125	
Trichlorofluoromethane	20.0	21.4	107	60 - 145	
1,2,3-Trichloropropane	20.0	20.0	99.8	75 - 125	
1,2,4-Trimethylbenzene	20.0	20.0	99.8	75 - 130	
1,3,5-Trimethylbenzene	20.0	19.8	99.1	75 - 130	
Vinyl chloride	20.0	24.4	122	50 - 145	
o-Xylene	20.0	20.1	101	80 - 120	
m-,p-Xylene	40.0	41.5	104	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	107	85 - 115	PASS
1,2-Dichloroethane-d4	103	70 - 120	PASS
Toluene-d8	101	85 - 120	PASS
4-Bromofluorobenzene	97.2	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4513441
Report generated: 11/30/2015 15:33

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15110943
Instrument: HPMS17
Analyst: ADC
Workgroup: WG546498

Tune ID: WG546498-01
Run Date: 11/11/2015
Run Time: 14:17
File ID: 17M016366
Cal ID: HPMS17 - 11-NOV-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	17.7	8344	PASS
75.0	95.0	30.0	60.0	48.1	22677	PASS
95.0	95.0	100	100	100	47164	PASS
96.0	95.0	5.00	9.00	6.75	3185	PASS
173	174	0	2.00	0.643	273	PASS
174	95.0	50.0	100	90.1	42488	PASS
175	174	5.00	9.00	7.71	3275	PASS
176	174	95.0	101	97.8	41568	PASS
177	176	5.00	9.00	6.69	2779	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG546498-02	STD-CCV	01	11/11/2015 14:34	
WG546498-03	STD	01	11/11/2015 15:14	
WG546498-04	STD	01	11/11/2015 15:34	
WG546498-05	STD	01	11/11/2015 15:54	
WG546498-06	STD	01	11/11/2015 16:14	
WG546498-07	STD	01	11/11/2015 16:33	
WG546498-08	STD	01	11/11/2015 16:53	
WG546498-09	STD	01	11/11/2015 17:13	
WG546498-10	STD	01	11/11/2015 17:33	
WG546498-11	STD	01	11/11/2015 17:53	
WG546498-12	SSCV	01	11/11/2015 18:33	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4513443
Report generated 11/30/2015 15:33

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15110943
Instrument: HPMS17
Analyst: ADC
Workgroup: WG547460

Tune ID: WG547460-01
Run Date: 11/18/2015
Run Time: 14:26
File ID: 17M016537
Cal ID: HPMS17 - 11-NOV-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	18.0	7173	PASS
75.0	95.0	30.0	60.0	49.5	19685	PASS
95.0	95.0	100	100	100	39752	PASS
96.0	95.0	5.00	9.00	6.51	2587	PASS
173	174	0	2.00	0.827	308	PASS
174	95.0	50.0	100	93.7	37237	PASS
175	174	5.00	9.00	7.31	2721	PASS
176	174	95.0	101	96.2	35824	PASS
177	176	5.00	9.00	6.50	2328	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG547460-02	CCV	01	11/18/2015 14:45	
WG547466-01	BLANK	01	11/18/2015 15:25	
WG547466-02	LCS	01	11/18/2015 15:45	
L15110943-03	50WW22-111615	01	11/18/2015 19:43	
L15110943-05	50WW24-111615	01	11/18/2015 20:03	
L15110943-07	50WW23-111615	01	11/18/2015 20:23	
L15110943-09	50WW18-111615	01	11/18/2015 20:43	
L15110943-01	50WW08-111615	01	11/18/2015 23:02	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4513443
Report generated 11/30/2015 15:33

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15110943
Instrument: HPMS8
Analyst: TMB
Workgroup: WG540912

Tune ID: WG540912-01
Run Date: 09/30/2015
Run Time: 09:38
File ID: 8M407745
Cal ID: HPMS8 - 30-SEP-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.5	9471	PASS
75.0	95.0	30.0	60.0	51.7	21732	PASS
95.0	95.0	100	100	100	42018	PASS
96.0	95.0	5.00	9.00	6.75	2835	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	78.3	32893	PASS
175	174	5.00	9.00	7.63	2510	PASS
176	174	95.0	101	95.1	31272	PASS
177	176	5.00	9.00	6.85	2141	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG540912-02	STD	01	09/30/2015 10:30	
WG540912-03	STD	01	09/30/2015 10:59	
WG540912-04	STD	01	09/30/2015 11:32	
WG540912-05	STD	01	09/30/2015 12:01	
WG540912-06	STD	01	09/30/2015 12:29	
WG540912-07	STD	01	09/30/2015 12:58	
WG540912-08	STD-CCV	01	09/30/2015 13:27	
WG540912-09	STD	01	09/30/2015 13:56	
WG540912-10	STD	01	09/30/2015 14:24	
WG540912-11	STD	01	09/30/2015 14:52	
WG540912-12	SSCV	01	09/30/2015 17:27	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4513443
Report generated 11/30/2015 15:33

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15110943
Instrument: HPMS8
Analyst: TMB
Workgroup: WG540826

Tune ID: WG540826-01
Run Date: 10/05/2015
Run Time: 11:26
File ID: 8M407827
Cal ID: HPMS8 - 05-OCT-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	24.7	8565	PASS
75.0	95.0	30.0	60.0	52.2	18121	PASS
95.0	95.0	100	100	100	34714	PASS
96.0	95.0	5.00	9.00	6.52	2262	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	74.2	25773	PASS
175	174	5.00	9.00	7.16	1845	PASS
176	174	95.0	101	98.5	25378	PASS
177	176	5.00	9.00	6.88	1746	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG540826-02	STD	01	10/05/2015 11:49	
WG540826-03	STD	01	10/05/2015 12:17	
WG540826-04	STD	01	10/05/2015 12:51	
WG540826-05	STD-CCV	01	10/05/2015 13:20	
WG540826-06	STD	01	10/05/2015 13:49	
WG540826-07	STD	01	10/05/2015 14:17	
WG540826-08	STD	01	10/05/2015 14:47	
WG540826-09	STD	01	10/05/2015 15:15	
WG540826-10	SSCV	01	10/05/2015 16:48	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4513443
Report generated 11/30/2015 15:33

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15110943
Instrument: HPMS8
Analyst: TMB
Workgroup: WG547619

Tune ID: WG547619-01
Run Date: 11/19/2015
Run Time: 11:35
File ID: 8M408795
Cal ID: HPMS8 - 30-SEP-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	25.5	14674	PASS
75.0	95.0	30.0	60.0	52.4	30197	PASS
95.0	95.0	100	100	100	57589	PASS
96.0	95.0	5.00	9.00	6.42	3698	PASS
173	174	0	2.00	0.773	327	PASS
174	95.0	50.0	100	73.5	42317	PASS
175	174	5.00	9.00	7.69	3254	PASS
176	174	95.0	101	96.1	40649	PASS
177	176	5.00	9.00	6.73	2737	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG547619-02	CCV	01	11/19/2015 12:31	
WG547622-01	BLANK	01	11/19/2015 13:31	
WG547622-02	LCS	01	11/19/2015 14:00	
L15110943-13	TRIP BLANK	01	11/19/2015 15:59	
L15110943-11	50WW25-111615	01	11/19/2015 20:55	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4513443
Report generated 11/30/2015 15:33

Response Factor Report HPMS17

Method Path : D:\MassHunter\GCMS\1\methods\
Method File : 8260_VMS.M
Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
Last Update : Thu Nov 12 09:48:27 2015
Response Via : Initial Calibration
Curve: WG546498
Calibration Files
0.3 =17M016369.D 0.4 =17M016370.D 1 =17M016371.D 2 =17M016372.D 5 =17M016373.D 20 =17M016374.D 50 =17M016367.D
100 =17M016375.D 200 =17M016376.D 300 =17M016377.D

		Compound	0.3	0.4	1	2	5	20	50	100	200	300	Avg	%RSD	Linear	Quadratic
															R^2	
1)	I	Fluorobenzene	----------ISTD----------													
2)	T	Dichlorodifluo...			0.304	0.313	0.357	0.359	0.367	0.386	0.374	0.385	0.356	8.72		
3)	P	Chloromethane			0.416	0.390	0.413	0.367	0.354	0.370	0.356	0.364	0.379	6.53		
4)	C	Vinyl Chloride		0.347	0.309	0.317	0.362	0.333	0.331	0.350	0.343	0.352	0.338	5.08#		
5)	T	1,3-Butadiene			0.255	0.224	0.215	0.204	0.205	0.209	0.210	0.217	0.217	7.55		
6)	T	Bromomethane			0.195	0.195	0.194	0.164	0.156	0.169	0.172	0.183	0.178	8.61		
7)	T	Chloroethane			0.205	0.184	0.201	0.172	0.178	0.151	0.145	0.147	0.173	13.74		
8)	T	Trichlorofluor...		0.446	0.403	0.411	0.454	0.406	0.405	0.412	0.284	0.292	0.390	15.58		0.992
9)	T	Diethyl ether			0.194	0.218	0.215	0.200	0.175	0.194	0.196	0.205	0.200	6.77		
10)	C	1,1-Dichloroet...		0.386	0.369	0.381	0.434	0.387	0.385	0.401	0.384	0.406	0.392	4.85#		
11)	T	Carbon Disulfide		0.997	0.810	0.781	0.811	0.782	0.803	0.808	0.805	0.843	0.827	8.04		
12)	T	1,1,2-Trichlor...		0.233	0.230	0.238	0.272	0.237	0.242	0.250	0.237	0.252	0.243	5.36		
13)	T	Iodomethane											0.000	-1.00		
14)	T	Acrolein					0.032	0.026	0.021	0.026	0.027	0.028	0.027	12.92		
15)	T	Methylene Chlo...			0.355	0.317	0.329	0.268	0.252	0.267	0.262	0.273	0.290	13.00		
16)	T	Acetone					0.064	0.054	0.040	0.047	0.049	0.053	0.051	15.38	0.993	
17)	T	trans-1,2-Dich...		0.270	0.254	0.248	0.278	0.251	0.242	0.254	0.252	0.261	0.257	4.33		
18)	T	Methyl acetate	0.172	0.111	0.153	0.118	0.144	0.143	0.126	0.146	0.153	0.163	0.143	13.64		
19)	T	Methyl Tert Bu...		0.643	0.635	0.653	0.758	0.648	0.570	0.651	0.646	0.682	0.654	7.52		
20)	P	1,1-Dichloroet...		0.489	0.465	0.479	0.547	0.484	0.474	0.494	0.485	0.501	0.491	4.81		
21)	T	Acrylonitrile				0.075	0.075	0.068	0.057	0.064	0.067	0.070	0.068	9.16		
22)	T	Vinyl Acetate					0.018	0.025	0.026	0.030	0.032	0.035	0.028	21.73	0.993	
23)	T	cis-1,2-Dichlo...		0.347	0.275	0.285	0.321	0.285	0.274	0.286	0.284	0.295	0.295	8.21		
24)	T	2,2-Dichloropr...		0.392	0.314	0.325	0.376	0.354	0.389	0.390	0.379	0.387	0.367	8.09		
25)	T	Cyclohexane		0.471	0.474	0.483	0.483	0.451	0.467	0.469	0.469	0.487	0.473	2.32		
26)	T	Bromochloromet...			0.155	0.163	0.192	0.172	0.165	0.179	0.178	0.186	0.174	7.21		
27)	C	Chloroform	0.563	0.544	0.449	0.466	0.526	0.461	0.447	0.470	0.462	0.476	0.486	8.59#		
28)	T	Carbon Tetrach...		0.344	0.346	0.370	0.418	0.372	0.371	0.393	0.385	0.401	0.378	6.46		
29)	S	Dibromofluorom...					0.269	0.248	0.257	0.261	0.248		0.256	3.37		
30)	T	1,1,1-Trichlor...		0.447	0.402	0.422	0.480	0.410	0.405	0.426	0.418	0.431	0.427	5.68		
31)	T	1,1-Dichloropr...		0.360	0.339	0.354	0.404	0.349	0.351	0.366	0.359	0.373	0.362	5.11		
32)	T	2-Butanone					0.086	0.084	0.068	0.081	0.084	0.091	0.082	9.16		
33)	T	Benzene		1.123	1.044	1.052	1.185	1.047	1.027	1.066	1.052	1.075	1.074	4.61		
34)	S	1,2-Dichloroet...					0.265	0.239	0.239	0.248	0.240		0.246	4.59		
35)	T	1,2-Dichloroet...		0.311	0.303	0.323	0.369	0.323	0.298	0.326	0.322	0.335	0.323	6.44		
36)	T	Methylcyclohexane	0.633	0.558	0.479	0.486	0.486	0.450	0.478	0.476	0.479	0.499	0.502	10.67		
37)	T	Trichloroethene		0.313	0.290	0.289	0.325	0.287	0.283	0.298	0.294	0.305	0.298	4.64		
38)	T	Dibromomethane		0.177	0.151	0.156	0.178	0.154	0.140	0.157	0.157	0.165	0.159	7.63		
39)	C	1,2-Dichloropr...		0.289	0.282	0.293	0.332	0.290	0.281	0.297	0.293	0.302	0.295	5.19#		

40)	T	Bromodichlorom...		0.365	0.338	0.361	0.408	0.361	0.347	0.372	0.370	0.382	0.367	5.53
41)	T	1,4-Dioxane						0.001	0.002	0.002	0.002	0.002	0.002	14.12
42)	T	2-Chloroethyl ...			0.144	0.146	0.157	0.152	0.133	0.147	0.152	0.162	0.149	5.95
43)	T	cis-1,3-Dichlo...		0.407	0.400	0.415	0.484	0.432	0.416	0.444	0.442	0.456	0.433	6.17
44)	T	4-Methyl-2-Pen...					0.082	0.074	0.058	0.071	0.076	0.080	0.073	11.50
45)	T	trans-1,3-Dich...		0.344	0.340	0.356	0.414	0.370	0.348	0.383	0.384	0.396	0.370	6.91
46)	I	Chlorobenzene-d5	----------ISTD----------											
47)	S	Toluene-d8					1.349	1.225	1.331	1.300	1.238		1.289	4.28
48)	C	Toluene		1.641	1.494	1.580	1.811	1.538	1.544	1.579	1.529	1.538	1.584	5.98#
49)	T	Tetrachloroethene		0.450	0.402	0.416	0.471	0.403	0.414	0.426	0.422	0.438	0.427	5.32
50)	T	1,1,2-Trichlor...		0.352	0.286	0.290	0.334	0.279	0.254	0.282	0.282	0.292	0.295	10.17
51)	T	Dibromochlorom...		0.363	0.356	0.366	0.425	0.372	0.351	0.389	0.393	0.408	0.380	6.59
52)	T	1,3-Dichloropr...		0.460	0.454	0.472	0.539	0.457	0.423	0.464	0.463	0.475	0.467	6.58
53)	T	1,2-Dibromoethane		0.294	0.287	0.296	0.333	0.283	0.260	0.289	0.289	0.301	0.292	6.56
54)	T	2-Hexanone				0.212	0.203	0.188	0.151	0.179	0.190	0.202	0.189	10.69
55)	P	Chlorobenzene		1.044	0.969	1.007	1.137	0.988	0.993	1.028	1.015	1.006	1.021	4.78
56)	T	1-Chlorohexane			0.124	0.110	0.104	0.095	0.103	0.100	0.101	0.102	0.105	8.37
57)	C	Ethylbenzene		0.576	0.532	0.535	0.614	0.535	0.542	0.561	0.552	0.554	0.556	4.68#
58)	T	1,1,1,2-Tetrac...		0.363	0.353	0.373	0.425	0.371	0.364	0.383	0.383	0.384	0.378	5.49
59)	T	m-,p-Xylene		0.672	0.629	0.657	0.754	0.655	0.662	0.681	0.657	0.632	0.667	5.52
60)	T	o-Xylene		0.655	0.625	0.637	0.741	0.637	0.642	0.667	0.662	0.654	0.658	5.15
61)	T	Styrene		1.087	1.036	1.079	1.220	1.064	1.063	1.110	1.105	1.073	1.093	4.81
62)	P	Bromoform		0.220	0.219	0.242	0.283	0.248	0.225	0.263	0.274	0.281	0.251	10.31
63)	T	Isopropylbenzene		1.787	1.651	1.716	1.956	1.683	1.687	1.735	1.660	1.555	1.714	6.46
64)	I	1,4-Dichlorobenzen...	----------ISTD----------											
65)	T	1,3,5-Trimethy...		2.902	2.679	2.778	3.133	2.629	2.726	2.724	2.598	2.469	2.737	6.97
66)	S	p-Bromofluorob...					0.871	0.809	0.896	0.887	0.859		0.864	3.95
67)	T	Bromobenzene	0.938	0.870	0.817	0.818	0.951	0.806	0.806	0.838			0.856	6.88
68)	T	n-Propylbenzene		3.686	3.447	3.602	4.131	3.513	3.654	3.611	3.354	3.160	3.573	7.48
69)	P	1,1,2,2-Tetrac...		0.678	0.590	0.605	0.717	0.595	0.534	0.609	0.613	0.643	0.621	8.57
70)	T	2-Chlorotoluene		2.275	2.115	2.156	2.497	2.102	2.157	2.191	2.115	2.058	2.185	6.05
71)	T	1,2,3-Trichlor...			0.197	0.184	0.202	0.158	0.143	0.164	0.164	0.170	0.173	11.67
72)	T	trans-1,4-Dich...		0.186	0.136	0.151	0.148	0.131	0.120	0.136	0.140	0.144	0.144	12.70
73)	T	1,2,4-Trimethy...		2.899	2.683	2.733	3.139	2.641	2.725	2.723	2.603	2.448	2.733	7.10
74)	T	4-Chlorotoluene		2.395	2.117	2.258	2.567	2.133	2.256	2.238	2.167	2.105	2.248	6.70
75)	T	tert-Butylbenzene		0.485	0.479	0.492	0.561	0.477	0.498	0.508	0.507	0.510	0.502	5.07
76)	T	sec-Butylbenzene		3.569	3.291	3.426	3.890	3.252	3.390	3.382	3.152	2.921	3.364	8.02
77)	T	p-Isopropyltol...		2.965	2.848	2.901	3.367	2.820	2.976	2.947	2.789	2.570	2.909	7.29
78)	T	1,3-Dichlorobe...		1.618	1.522	1.552	1.750	1.507	1.543	1.573	1.554	1.522	1.571	4.76
79)	T	1,4-Dichlorobe...	1.968	1.586	1.531	1.540	1.762	1.488	1.525	1.566	1.547	1.516	1.603	9.28
80)	T	n-Butylbenzene		2.805	2.560	2.658	3.036	2.571	2.765	2.711	2.590	2.402	2.678	6.76
81)	T	1,2-Dichlorobe...	1.695	1.467	1.426	1.445	1.691	1.421	1.416	1.484	1.463	1.451	1.496	7.10
82)	T	1,2-Dibromo-3-...				0.114	0.133	0.111	0.099	0.117	0.117	0.124	0.116	9.10
83)	T	Hexachlorobuta...		0.696	0.634	0.665	0.758	0.655	0.706	0.682	0.705	0.695	0.689	5.16
84)	T	1,2,4-Trichlor...		1.229	1.131	1.145	1.349	1.158	1.168	1.175	1.192	1.198	1.194	5.45
85)	T	Naphthalene		2.380	2.183	2.277	2.624	2.160	1.937	2.124	2.113	2.102	2.211	8.92
86)	T	1,2,3-Trichlor...		1.132	1.062	1.083	1.275	1.067	1.029	1.066	1.092	1.109	1.102	6.48

(#) = Out of Range

8260_VMS.M Thu Nov 12 09:59:47 2015

Calibration Table Report
Method: A9FOOWTR.M
Title: A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Calibration: Tue Oct 06 11:55:21 2015
Curve: WG540826
Calibration Files

	Compound	5 8M407828.D	20 8M407829.D	50 8M407830.D	100 8M407831.D	200 8M407832.D	300 8M407833.D	400 8M407834.D	500 8M407835.D	Avg	%RSD
I	Fluorobenzene	ISTD									
T	Acetonitrile	0.020	0.019	0.020	0.019	0.019	0.019	0.019	0.019	0.019	3.019
T	3-Chloro-1-propene	0.474	0.484	0.476	0.471	0.484	0.465	0.458	0.432	0.468	3.632
T	2-Chloro-1,3-butadiene	0.448	0.481	0.482	0.486	0.514	0.495	0.486	0.460	0.481	4.206
T	Ethyl Acetate	0.104	0.129	0.132	0.131	0.132	0.128	0.128	0.133	0.127	7.528
T	Methacrylonitrile	0.046	0.055	0.058	0.057	0.057	0.056	0.057	0.060	0.056	7.551
T	Isobutyl Alcohol			0.005	0.005	0.005	0.005	0.005	0.006	0.005	4.964
T	1-Butanol			0.002	0.002	0.003	0.003	0.003	0.003	0.003	10.874
T	Methyl methacrylate	0.120	0.147	0.158	0.162	0.162	0.158	0.160	0.165	0.154	9.638
T	2-Nitropropane			0.021	0.022	0.025	0.026	0.029	0.031	0.026	14.916
I	Chlorobenzene-d5	ISTD									
I	1,4-Dichlorobenzene-d4	ISTD									
T	Cyclohexanone			0.057	0.052	0.054	0.051	0.052	0.054	0.053	3.733

Tue Oct 06 11:57:17 2015

Calibration Table Report
Method: 8260WT.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Calibration: Wed Sep 30 15:45:31 2015
Curve: WG540912
Calibration Files

	Compound	0.3 8M407747.D	0.4 8M407748.D	1 8M407749.D	2 8M407750.D	5 8M407751.D	20 8M407752.D	50 8M407753.D	100 8M407754.D	200 8M407755.D	300 8M407756.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane		0.380	0.381	0.359	0.346	0.426	0.391	0.412	0.377	0.348	0.380	7.176		
P	Chloromethane			0.693	0.621	0.587	0.619	0.579	0.579	0.515	0.447	0.580	12.684		
C	Vinyl Chloride		0.547	0.520	0.465	0.459	0.488	0.424	0.407	0.355		0.458	13.571		
T	1,3-Butadiene					0.415	0.434	0.316	0.248	0.208	0.174	0.299	36.091		1.007
T	Bromomethane			0.104	0.099	0.100	0.128	0.142	0.174	0.183	0.185	0.139	26.623		1.000
T	Chloroethane		0.143	0.197	0.184	0.189	0.202	0.190	0.198	0.194	0.186	0.187	9.444		
T	Trichlorofluoromethane		0.452	0.468	0.421	0.434	0.455	0.428	0.456	0.442	0.431	0.443	3.518		
T	Diethyl ether			0.169	0.169	0.169	0.164	0.164	0.176		0.184	0.170	4.169		
T	Isoprene		0.296	0.323	0.283	0.302	0.340	0.346	0.362	0.340	0.334	0.325	8.057		
T	Acrolein				0.021	0.021	0.020	0.020	0.021		0.024	0.021	7.793		
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.245	0.229	0.236	0.244	0.233	0.251	0.239	0.228	0.238	3.475		
T	Acetone					0.038	0.037	0.033	0.034	0.042	0.039	0.037	8.864		
C	1,1-Dichloroethene		0.427	0.426	0.381	0.398	0.408	0.387	0.419	0.413	0.389	0.405	4.243		
T	Tert-Butyl Alcohol				0.011	0.011	0.011	0.010	0.011		0.012	0.011	6.872		
T	Dimethyl Sulfide		0.193	0.233	0.224	0.224	0.238	0.236	0.247	0.252	0.246	0.233	7.587		
T	Iodomethane				0.047	0.081	0.127	0.149	0.172	0.165	0.153	0.128	36.698	0.997	
T	Methyl acetate					0.149	0.139	0.127	0.137	0.146	0.145	0.140	5.557		
T	Methylene Chloride			0.270	0.237	0.247	0.257	0.244	0.253	0.257	0.248	0.252	4.037		
T	Carbon Disulfide			0.873	0.793	0.800	0.856	0.843	0.864	0.807	0.740	0.822	5.489		
T	Acrylonitrile			0.050	0.050	0.052	0.054	0.055	0.058		0.071	0.056	13.209		
T	Methyl Tert Butyl Ether			0.456	0.433	0.479	0.485	0.464	0.497	0.514	0.489	0.477	5.314		
T	trans-1,2-Dichloroethene		0.375	0.384	0.364	0.378	0.395	0.384	0.409	0.401	0.375	0.385	3.701		
T	n-Hexane					0.371	0.385	0.388	0.404	0.375	0.358	0.380	4.129		
T	Diisopropyl ether			0.990	0.981	0.965	0.946	0.947	0.950		0.862	0.949	4.398		
T	Vinyl Acetate		0.248	0.230	0.237	0.265	0.261	0.253	0.253	0.264	0.258	0.252	4.767		
P	1,1-Dichloroethane		0.482	0.508	0.482	0.490	0.497	0.477	0.504	0.496	0.464	0.489	2.856		
T	Ethyl-Tert-Butyl ether			0.749	0.754	0.756	0.741	0.738	0.765		0.729	0.747	1.610		
T	2-Butanone					0.061	0.063	0.059	0.065	0.067	0.068	0.064	5.457		
T	Propionitrile			0.017	0.019	0.019	0.019	0.018	0.019		0.021	0.019	7.390		
T	2,2-Dichloropropane		0.393	0.438	0.390	0.399	0.421	0.403	0.428	0.414	0.389	0.408	4.343		
T	cis-1,2-Dichloroethene		0.265	0.291	0.270	0.271	0.278	0.269	0.280	0.281	0.266	0.275	3.128		
C	Chloroform	0.453	0.499	0.475	0.451	0.465	0.477	0.460	0.474	0.462	0.427	0.464	4.130		
T	1-Bromopropane			0.036	0.044	0.045	0.048	0.048	0.048	0.046	0.045	0.045	8.589		
T	Bromochloromethane		0.117	0.143	0.125	0.136	0.138	0.136	0.142	0.143	0.137	0.135	6.408		
T	Tetrahydrofuran			0.046	0.041	0.041	0.040	0.039	0.040		0.045	0.042	6.813		
S	Dibromofluoromethane			0.228	0.229	0.236	0.244	0.239	0.247	0.244	0.237	0.238	2.882		
T	1,1,1-Trichloroethane		0.396	0.411	0.383	0.413	0.432	0.420	0.449	0.436	0.411	0.417	4.879		
T	Cyclohexane			0.500	0.472	0.470	0.505	0.502	0.528	0.506	0.485	0.496	3.912		
T	1,1-Dichloropropene			0.372	0.320	0.353	0.376	0.358	0.382	0.366	0.344	0.359	5.566		
T	Tert-Amyl-Methyl ether			0.553	0.552	0.554	0.550	0.539	0.564		0.567	0.554	1.666		
T	Carbon Tetrachloride		0.342	0.387	0.342	0.352	0.388	0.378	0.409	0.384	0.37	0.3725	6.23053		
S	1,2-Dichloroethane-d4			0.227	0.237	0.235	0.251	0.242	0.251	0.252	0.245	0.2426	3.75472		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.282	0.308	0.304	0.32	0.332	0.319	0.338	0.344	0.323	0.3188	5.97586		
T	Benzene	0.948	1.053	1.068	1.016	1.012	1.055	1.009	1.017	0.904	0.765	0.9846	9.33012		
T	Trichloroethene		0.296	0.263	0.255	0.248	0.271	0.259	0.276	0.265	0.254	0.2651	5.51495		
T	Methylcyclohexane					0.405	0.421	0.417	0.43	0.403	0.385	0.4101	3.90762		
C	1,2-Dichloropropane		0.238	0.269	0.253	0.265	0.275	0.263	0.278	0.28	0.267	0.2652	4.99091		
T	Bromodichloromethane		0.331	0.324	0.32	0.329	0.357	0.348	0.364	0.365	0.343	0.3424	5.04612		
T	1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.0012	13.1586		
T	Dibromomethane		0.113	0.119	0.121	0.13	0.132	0.125	0.13	0.135	0.131	0.1263	5.73877		
T	2-Chloroethyl Vinyl Ether					0.1	0.109	0.103	0.112	0.115	0.117	0.1093	6.11607		
T	4-Methyl-2-Pentanone					0.051	0.055	0.051	0.056	0.06	0.063	0.0561	8.3812		
T	cis-1,3-Dichloropropene		0.36	0.371	0.355	0.364	0.398	0.387	0.405	0.404	0.376	0.3801	5.00621		

T	Dimethyl Disulfide					0.158	0.19	0.202	0.22	0.232	0.227	0.2049	13.705
I	Chlorobenzene-d5	ISTD											
S	Toluene-d8			1.192	1.154	1.143	1.206	1.188	1.231	1.129	1.036	1.16	5.2193
C	Toluene		1.586	1.558	1.513	1.462	1.54	1.446	1.465	1.226	0.99	1.4206	13.5587
T	Ethyl Methacrylate			0.229	0.248	0.275	0.293	0.284	0.312	0.318	0.307	0.2832	11.1162
T	Paraldehyde											0	0
T	trans-1,3-Dichloropropene			0.382	0.396	0.43	0.454	0.443	0.474	0.47	0.437	0.4358	7.50736
T	1,1,2-Trichloroethane		0.215	0.213	0.222	0.233	0.23	0.218	0.234	0.237	0.228	0.2255	3.87257
T	2-Hexanone					0.062	0.072	0.065	0.073	0.076	0.077	0.0709	8.49385
T	1,3-Dichloropropane		0.409	0.416	0.386	0.399	0.412	0.389	0.418	0.411	0.387	0.4029	3.20744
T	Tetrachloroethene		0.274	0.335	0.293	0.297	0.304	0.295	0.319	0.307	0.293	0.302	5.77936
T	Dibromochloromethane		0.265	0.264	0.262	0.285	0.303	0.293	0.318	0.324	0.31	0.2915	8.29724
T	1,2-Dibromoethane		0.235	0.211	0.202	0.225	0.233	0.22	0.235	0.239	0.226	0.2251	5.51845
T	1-Chlorohexane		0.511	0.53	0.496	0.497	0.518	0.521	0.539	0.499	0.464	0.5083	4.39894
P	Chlorobenzene		1.019	0.978	0.95	0.944	0.986	0.956	1.013	0.935	0.787	0.9519	7.22423
T	1,1,1,2-Tetrachloroethane		0.265	0.325	0.323	0.339	0.363	0.358	0.402	0.41	0.382	0.352	12.8056
C	Ethylbenzene		0.553	0.548	0.513	0.519	0.561	0.544	0.602	0.603	0.549	0.5545	5.65783
T	m-,p-Xylene		0.653	0.672	0.647	0.659	0.677	0.656	0.688	0.594	0.478	0.6359	10.2214
T	o-Xylene			0.69	0.616	0.608	0.654	0.636	0.672	0.662	0.607	0.6431	4.84917
T	Styrene		0.957	1.011	0.983	1.079	1.09	1.068	1.114	1.015	0.854	1.0189	7.95219
P	Bromoform			0.143	0.145	0.164	0.179	0.174	0.193	0.203	0.201	0.1753	13.4432
T	Isopropylbenzene		1.674	1.711	1.59	1.59	1.701	1.607	1.616	1.333	1.062	1.5426	13.7434
I	1,4-Dichlorobenzene-d4	ISTD											
P	1,1,2,2-Tetrachloroethane		0.466	0.431	0.447	0.482	0.487	0.445	0.461	0.475	0.456	0.4612	3.98563
S	p-Bromofluorobenzene				0.839	0.861	0.897	0.872	0.9	0.883	0.855	0.8723	2.5773
T	1,2,3-Trichloropropane			0.117	0.121	0.128	0.136	0.124	0.131	0.136	0.132	0.1282	5.47011
T	trans-1,4-Dichloro-2-Butene			0.165	0.121	0.159	0.173	0.169	0.184	0.195	0.191	0.1695	13.7331
T	n-Propylbenzene		3.853	4.064	3.646	3.829	3.894	3.605	3.431	2.634		3.6196	12.2626
T	Bromobenzene	0.716	0.667	0.795	0.742	0.733	0.765	0.727	0.757	0.745	0.701	0.7348	4.83527
T	1,3,5-Trimethylbenzene		2.694	2.781	2.538	2.617	2.699	2.581	2.572	2.175	1.741	2.4886	13.2002
T	2-Chlorotoluene		2.572	2.712	2.449	2.619	2.629	2.438	2.425	2.115	1.617	2.3974	14.1849
T	4-Chlorotoluene		2.301	2.388	2.204	2.076	2.232	2.159	2.12	1.736	1.443	2.0734	14.4053
T	a-Methylstyrene					1.309	1.407	1.402	1.437	1.365	1.219	1.3567	5.94098
T	tert-Butylbenzene			0.554	0.526	0.527	0.551	0.531	0.57	0.571	0.55	0.5475	3.2892
T	1,2,4-Trimethylbenzene		2.628	2.739	2.592	2.702	2.752	2.637	2.622	2.21	1.751	2.5147	13.0606
T	sec-Butylbenzene			3.403	3.108	3.202	3.306	3.103	3.049	2.467		3.0914	9.77187
T	p-Isopropyltoluene			2.69	2.604	2.632	2.712	2.601	2.619	2.181	1.735	2.4717	13.7983
T	1,3-Dichlorobenzene		1.534	1.588	1.433	1.519	1.547	1.468	1.495	1.403	1.213	1.4666	7.58144
T	1,4-Dichlorobenzene	1.487	1.624	1.584	1.427	1.505	1.506	1.438	1.464	1.381	1.188	1.4604	8.193
T	n-Butylbenzene			2.514	2.27	2.452	2.509	2.482	2.49	2.075	1.64	2.3041	13.4157
T	1,2-Dichlorobenzene	1.241	1.291	1.402	1.288	1.325	1.343	1.269	1.306	1.257	1.11	1.2833	5.96211
T	1,2-Dibromo-3-Chloropropane				0.068	0.075	0.084	0.078	0.083	0.09	0.087	0.0808	9.2848
T	1,2,4-Trichlorobenzene		0.786	0.858	0.844	0.9	0.906	0.905	0.947	0.946	0.843	0.8816	6.03392
T	Hexachlorobutadiene		0.419	0.411	0.423	0.422	0.427	0.417	0.442	0.432	0.402	0.4217	2.75284
T	Naphthalene		1.416	1.32	1.314	1.295	1.264	1.247	1.273	1.259	1.084	1.2746	6.86659
T	1,2,3-Trichlorobenzene	0.681	0.712	0.793	0.719	0.764	0.777	0.762	0.79	0.8	0.72	0.7518	5.44426

Thu Oct 01 09:11:48 2015

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15110943 Run Date: 11/11/2015 Sample ID: WG546498-12
Instrument ID: HPMS17 Run Time: 18:33 Method: 8260B
File ID: 17M016379 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG546498 Cal ID: HPMS17 - 11-NOV-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.9	ug/L	0.496	1.90	20	
1,1-Dichloroethene	CCC	50.0	48.4	ug/L	0.380	3.30	20	
1,2-Dichloropropane	CCC	50.0	51.7	ug/L	0.306	3.50	20	
Ethylbenzene	CCC	50.0	51.4	ug/L	0.571	2.90	20	
Toluene	CCC	50.0	51.1	ug/L	1.62	2.10	20	
Vinyl Chloride	CCC	50.0	55.3	ug/L	0.374	10.6	20	
Bromoform	SPCC	50.0	56.3	ug/L	0.283	12.7	20	
Chlorobenzene	SPCC	50.0	53.9	ug/L	1.10	7.70	20	
Chloromethane	SPCC	50.0	50.3	ug/L	0.381	0.600	20	
1,1-Dichloroethane	SPCC	50.0	50.8	ug/L	0.498	1.50	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	51.8	ug/L	0.643	3.50	20	
Acetone		50.0	56.9	ug/L	0.0569	13.7	20	
Benzene		50.0	50.9	ug/L	1.09	1.80	20	
Bromobenzene		50.0	49.8	ug/L	0.853	0.300	20	
Bromochloromethane		50.0	54.7	ug/L	0.190	9.40	20	
Bromodichloromethane		50.0	51.3	ug/L	0.377	2.50	20	
Bromomethane		50.0	48.8	ug/L	0.174	2.40	20	
2-Butanone		50.0	55.4	ug/L	0.0913	10.7	20	
n-Butylbenzene		50.0	50.8	ug/L	2.72	1.60	20	
sec-Butylbenzene		50.0	52.8	ug/L	3.55	5.50	20	
tert-Butylbenzene		50.0	53.1	ug/L	0.533	6.20	20	
Carbon Disulfide		50.0	15.9	ug/L	0.263	68.1	20	*
Carbon Tetrachloride		50.0	52.5	ug/L	0.396	4.90	20	
Dibromochloromethane		50.0	52.2	ug/L	0.397	4.30	20	
Chloroethane		50.0	45.5	ug/L	0.157	8.90	20	
2-Chlorotoluene		50.0	52.6	ug/L	2.30	5.10	20	
4-Chlorotoluene		50.0	51.7	ug/L	2.32	3.40	20	
1,2-Dibromo-3-Chloropropane		50.0	53.9	ug/L	0.126	7.70	20	
1,2-Dibromoethane		50.0	51.2	ug/L	0.300	2.50	20	
Dibromomethane		50.0	52.4	ug/L	0.167	4.70	20	
1,2-Dichlorobenzene		50.0	53.0	ug/L	1.59	6.00	20	
1,3-Dichlorobenzene		50.0	52.2	ug/L	1.64	4.50	20	
1,4-Dichlorobenzene		50.0	49.5	ug/L	1.59	0.900	20	
Dichlorodifluoromethane		50.0	57.1	ug/L	0.406	14.2	20	
1,2-Dichloroethane		50.0	52.0	ug/L	0.337	4.10	20	
cis-1,2-Dichloroethene		50.0	49.6	ug/L	0.292	0.800	20	
trans-1,2-Dichloroethene		50.0	49.9	ug/L	0.256	0.300	20	
1,3-Dichloropropane		50.0	52.4	ug/L	0.490	4.90	20	
2,2-Dichloropropane		50.0	52.8	ug/L	0.388	5.60	20	
cis-1,3-Dichloropropene		50.0	54.7	ug/L	0.473	9.40	20	
trans-1,3-Dichloropropene		50.0	51.8	ug/L	0.384	3.60	20	
1,1-Dichloropropene		50.0	50.7	ug/L	0.367	1.40	20	

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Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15110943 Run Date: 11/11/2015 Sample ID: WG546498-12
Instrument ID: HPMS17 Run Time: 18:33 Method: 8260B
File ID: 17M016379 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG546498 Cal ID: HPMS17 - 11-NOV-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	53.0	ug/L	0.201	6.00	20	
Hexachlorobutadiene		50.0	51.9	ug/L	0.715	3.90	20	
Isopropylbenzene		50.0	53.1	ug/L	1.82	6.20	20	
p-Isopropyltoluene		50.0	50.5	ug/L	2.94	0.900	20	
4-Methyl-2-Pentanone		50.0	53.5	ug/L	0.0785	7.00	20	
Methylene Chloride		50.0	46.9	ug/L	0.272	6.30	20	
Naphthalene		50.0	53.4	ug/L	2.36	6.70	20	
n-Propylbenzene		50.0	53.5	ug/L	3.83	7.10	20	
Styrene		50.0	51.3	ug/L	1.12	2.70	20	
1,1,1,2-Tetrachloroethane		50.0	50.7	ug/L	0.383	1.30	20	
Tetrachloroethene		50.0	51.7	ug/L	0.441	3.30	20	
1,2,3-Trichlorobenzene		50.0	53.3	ug/L	1.17	6.60	20	
1,2,4-Trichlorobenzene		50.0	53.3	ug/L	1.27	6.60	20	
1,1,1-Trichloroethane		50.0	52.3	ug/L	0.446	4.50	20	
1,1,2-Trichloroethane		50.0	49.6	ug/L	0.292	0.800	20	
Trichloroethene		50.0	50.7	ug/L	0.302	1.40	20	
Trichlorofluoromethane		50.0	35.2	ug/L	0.286	29.5	20	*
1,2,3-Trichloropropane		50.0	49.5	ug/L	0.171	1.00	20	
1,2,4-Trimethylbenzene		50.0	50.0	ug/L	2.74	0.100	20	
1,3,5-Trimethylbenzene		50.0	51.3	ug/L	2.81	2.70	20	
o-Xylene		50.0	53.1	ug/L	0.699	6.20	20	
m-,p-Xylene		100	107	ug/L	0.710	6.60	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

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Version 1.5 PDF File ID: 4513442
Report generated 11/30/2015 15:33

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15110943 Run Date: 09/30/2015 Sample ID: WG540912-12
Instrument ID: HPMS8 Run Time: 17:27 Method: 8260B
File ID: 8M407761 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG540912 Cal ID: HPMS8 - 30-SEP-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	53.5	ug/L	0.497	7.10	20	
1,1-Dichloroethene	CCC	50.0	49.6	ug/L	0.402	0.800	20	
1,2-Dichloropropane	CCC	50.0	51.4	ug/L	0.273	2.90	20	
Ethylbenzene	CCC	50.0	49.2	ug/L	0.546	1.60	20	
Toluene	CCC	50.0	50.2	ug/L	1.42	0.300	20	
Vinyl Chloride	CCC	50.0	44.0	ug/L	0.404	12.0	20	
Bromoform	SPCC	50.0	51.2	ug/L	0.180	2.40	20	
Chlorobenzene	SPCC	50.0	51.8	ug/L	0.986	3.50	20	
Chloromethane	SPCC	50.0	49.6	ug/L	0.576	0.700	20	
1,1-Dichloroethane	SPCC	50.0	51.9	ug/L	0.507	3.70	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	47.9	ug/L	0.442	4.10	20	
Acetone		50.0	59.2	ug/L	0.0439	18.4	20	
Benzene		50.0	52.9	ug/L	1.04	5.80	20	
Bromobenzene		50.0	49.3	ug/L	0.724	1.40	20	
Bromochloromethane		50.0	53.5	ug/L	0.145	7.00	20	
Bromodichloromethane		50.0	52.2	ug/L	0.358	4.40	20	
Bromomethane		50.0	45.2	ug/L	0.141	9.70	20	
2-Butanone		50.0	54.2	ug/L	0.0693	8.40	20	
n-Butylbenzene		50.0	52.9	ug/L	2.44	5.70	20	
sec-Butylbenzene		50.0	51.8	ug/L	3.20	3.60	20	
tert-Butylbenzene		50.0	51.7	ug/L	0.566	3.40	20	
Carbon Disulfide		50.0	48.8	ug/L	0.802	2.50	20	
Carbon Tetrachloride		50.0	54.5	ug/L	0.406	9.00	20	
Dibromochloromethane		50.0	49.3	ug/L	0.287	1.40	20	
Chloroethane		50.0	55.9	ug/L	0.209	11.7	20	
2-Chlorotoluene		50.0	53.2	ug/L	2.55	6.40	20	
4-Chlorotoluene		50.0	52.9	ug/L	2.19	5.80	20	
1,2-Dibromo-3-Chloropropane		50.0	47.3	ug/L	0.0765	5.30	20	
1,2-Dibromoethane		50.0	47.8	ug/L	0.215	4.40	20	
Dibromomethane		50.0	51.7	ug/L	0.131	3.40	20	
1,2-Dichlorobenzene		50.0	50.8	ug/L	1.30	1.60	20	
1,3-Dichlorobenzene		50.0	50.5	ug/L	1.48	1.00	20	
1,4-Dichlorobenzene		50.0	48.6	ug/L	1.42	2.80	20	
Dichlorodifluoromethane		50.0	58.7	ug/L	0.446	17.4	20	
1,2-Dichloroethane		50.0	52.5	ug/L	0.335	5.10	20	
cis-1,2-Dichloroethene		50.0	51.1	ug/L	0.281	2.20	20	
trans-1,2-Dichloroethene		50.0	51.7	ug/L	0.398	3.30	20	
1,3-Dichloropropane		50.0	48.2	ug/L	0.388	3.60	20	
2,2-Dichloropropane		50.0	56.9	ug/L	0.465	13.9	20	
cis-1,3-Dichloropropene		50.0	55.2	ug/L	0.420	10.5	20	
trans-1,3-Dichloropropene		50.0	49.1	ug/L	0.428	1.80	20	
1,1-Dichloropropene		50.0	52.7	ug/L	0.378	5.40	20	

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Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15110943 Run Date: 09/30/2015 Sample ID: WG540912-12
Instrument ID: HPMS8 Run Time: 17:27 Method: 8260B
File ID: 8M407761 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG540912 Cal ID: HPMS8 - 30-SEP-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	48.3	ug/L	0.0684	3.50	20	
Hexachlorobutadiene		50.0	51.2	ug/L	0.432	2.40	20	
Isopropylbenzene		50.0	54.1	ug/L	1.67	8.20	20	
p-Isopropyltoluene		50.0	51.9	ug/L	2.57	3.80	20	
4-Methyl-2-Pentanone		50.0	50.6	ug/L	0.0568	1.30	20	
Methylene Chloride		50.0	50.4	ug/L	0.254	0.800	20	
Naphthalene		50.0	44.3	ug/L	1.13	11.3	20	
n-Propylbenzene		50.0	50.9	ug/L	3.69	1.90	20	
Styrene		50.0	52.5	ug/L	1.07	5.10	20	
1,1,1,2-Tetrachloroethane		50.0	49.6	ug/L	0.349	0.900	20	
Tetrachloroethene		50.0	50.4	ug/L	0.304	0.700	20	
1,2,3-Trichlorobenzene		50.0	48.6	ug/L	0.731	2.70	20	
1,2,4-Trichlorobenzene		50.0	49.3	ug/L	0.869	1.40	20	
1,1,1-Trichloroethane		50.0	55.1	ug/L	0.460	10.3	20	
1,1,2-Trichloroethane		50.0	47.4	ug/L	0.214	5.20	20	
Trichloroethene		50.0	50.9	ug/L	0.270	1.90	20	
Trichlorofluoromethane		50.0	49.4	ug/L	0.438	1.20	20	
1,2,3-Trichloropropane		50.0	49.0	ug/L	0.126	2.10	20	
1,2,4-Trimethylbenzene		50.0	51.5	ug/L	2.59	3.00	20	
1,3,5-Trimethylbenzene		50.0	52.6	ug/L	2.62	5.30	20	
o-Xylene		50.0	51.6	ug/L	0.664	3.20	20	
m-,p-Xylene		100	105	ug/L	0.668	5.10	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4513442
Report generated 11/30/2015 15:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110943 Run Date: 11/18/2015 Sample ID: WG547460-02
Instrument ID: HPMS17 Run Time: 14:45 Method: 8260B
File ID: 17M016538 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG547466 Cal ID: HPMS17 - 11-NOV-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.7	ug/L	0.464	4.54	20	
1,1-Dichloroethene	CCC	50.0	54.0	ug/L	0.424	8.00	20	
1,2-Dichloropropane	CCC	50.0	47.4	ug/L	0.280	5.18	20	
Ethylbenzene	CCC	50.0	51.1	ug/L	0.568	2.22	20	
Toluene	CCC	50.0	49.9	ug/L	1.58	0.161	20	
Vinyl Chloride	CCC	50.0	50.4	ug/L	0.341	0.829	20	
Bromoform	SPCC	50.0	52.4	ug/L	0.263	4.85	20	
Chlorobenzene	SPCC	50.0	51.6	ug/L	1.05	3.24	20	
Chloromethane	SPCC	50.0	42.6	ug/L	0.323	14.8	20	
1,1-Dichloroethane	SPCC	50.0	48.4	ug/L	0.475	3.26	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	47.5	ug/L	0.590	4.91	20	
Xylenes		150	157	ug/L	0.688	4.70	20	
Acetone		50.0	40.0	ug/L	0.0402	20.1	20	*
Benzene		50.0	47.9	ug/L	1.03	4.18	20	
Bromobenzene		50.0	51.1	ug/L	0.875	2.24	20	
Bromochloromethane		50.0	49.0	ug/L	0.170	2.09	20	
Bromodichloromethane		50.0	49.3	ug/L	0.362	1.34	20	
Bromomethane		50.0	59.3	ug/L	0.212	18.7	20	
2-Butanone		50.0	40.9	ug/L	0.0675	18.2	20	
n-Butylbenzene		50.0	55.2	ug/L	2.96	10.4	20	
sec-Butylbenzene		50.0	54.3	ug/L	3.65	8.59	20	
tert-Butylbenzene		50.0	52.9	ug/L	0.532	5.88	20	
Carbon Disulfide		50.0	53.3	ug/L	0.881	6.56	20	
Carbon Tetrachloride		50.0	50.7	ug/L	0.383	1.31	20	
Dibromochloromethane		50.0	49.8	ug/L	0.379	0.429	20	
Chloroethane		50.0	59.7	ug/L	0.206	19.4	20	
2-Chlorotoluene		50.0	52.8	ug/L	2.31	5.57	20	
4-Chlorotoluene		50.0	52.9	ug/L	2.38	5.72	20	
1,2-Dibromo-3-Chloropropane		50.0	44.7	ug/L	0.104	10.6	20	
1,2-Dibromoethane		50.0	45.6	ug/L	0.267	8.74	20	
Dibromomethane		50.0	45.8	ug/L	0.146	8.47	20	
1,2-Dichlorobenzene		50.0	51.8	ug/L	1.55	3.60	20	
1,3-Dichlorobenzene		50.0	54.8	ug/L	1.72	9.68	20	
1,4-Dichlorobenzene		50.0	53.3	ug/L	1.71	6.70	20	
Dichlorodifluoromethane		50.0	53.4	ug/L	0.380	6.77	20	
1,2-Dichloroethane		50.0	47.9	ug/L	0.310	4.14	20	
cis-1,2-Dichloroethene		50.0	47.3	ug/L	0.279	5.37	20	
trans-1,2-Dichloroethene		50.0	48.2	ug/L	0.248	3.54	20	
1,3-Dichloropropane		50.0	46.6	ug/L	0.436	6.71	20	
2,2-Dichloropropane		50.0	54.8	ug/L	0.403	9.70	20	
cis-1,3-Dichloropropene		50.0	48.5	ug/L	0.420	3.02	20	
trans-1,3-Dichloropropene		50.0	48.6	ug/L	0.360	2.82	20	

CCV - Modified 03/05/2008
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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110943 Run Date: 11/18/2015 Sample ID: WG547460-02
Instrument ID: HPMS17 Run Time: 14:45 Method: 8260B
File ID: 17M016538 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG547466 Cal ID: HPMS17 - 11-NOV-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	49.7	ug/L	0.360	0.604	20	
2-Hexanone		50.0	38.4	ug/L	0.146	23.2	20	*
Hexachlorobutadiene		50.0	47.4	ug/L	0.653	5.10	20	
Isopropylbenzene		50.0	52.8	ug/L	1.81	5.57	20	
p-Isopropyltoluene		50.0	54.9	ug/L	3.19	9.82	20	
4-Methyl-2-Pentanone		50.0	37.1	ug/L	0.0545	25.7	20	*
Methylene Chloride		50.0	43.3	ug/L	0.252	13.3	20	
Naphthalene		50.0	40.7	ug/L	1.80	18.5	20	
n-Propylbenzene		50.0	54.9	ug/L	3.92	9.75	20	
Styrene		50.0	51.9	ug/L	1.13	3.79	20	
1,1,1,2-Tetrachloroethane		50.0	52.4	ug/L	0.396	4.79	20	
Tetrachloroethene		50.0	51.3	ug/L	0.438	2.57	20	
1,2,3-Trichlorobenzene		50.0	42.7	ug/L	0.941	14.6	20	
1,2,4-Trichlorobenzene		50.0	48.8	ug/L	1.16	2.48	20	
1,1,1-Trichloroethane		50.0	49.4	ug/L	0.421	1.30	20	
1,1,2-Trichloroethane		50.0	45.0	ug/L	0.265	10.0	20	
Trichloroethene		50.0	49.3	ug/L	0.294	1.31	20	
Trichlorofluoromethane		50.0	59.8	ug/L	0.471	19.7	20	
1,2,3-Trichloropropane		50.0	46.0	ug/L	0.159	8.09	20	
1,2,4-Trimethylbenzene		50.0	53.7	ug/L	2.94	7.43	20	
1,3,5-Trimethylbenzene		50.0	53.5	ug/L	2.93	6.97	20	
o-Xylene		50.0	50.8	ug/L	0.669	1.69	20	
m-,p-Xylene		100	106	ug/L	0.708	6.20	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4513444
Report generated 11/30/2015 15:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110943 Run Date: 11/19/2015 Sample ID: WG547619-02
Instrument ID: HPMS8 Run Time: 12:31 Method: 8260B
File ID: 8M408797 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG547622 Cal ID: HPMS8 - 30-SEP-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	52.6	ug/L	0.489	5.21	20	
1,1-Dichloroethene	CCC	50.0	54.5	ug/L	0.442	9.05	20	
1,2-Dichloropropane	CCC	50.0	52.3	ug/L	0.277	4.59	20	
Ethylbenzene	CCC	50.0	48.0	ug/L	0.533	3.90	20	
Toluene	CCC	50.0	49.7	ug/L	1.41	0.567	20	
Vinyl Chloride	CCC	50.0	58.3	ug/L	0.534	16.6	20	
Bromoform	SPCC	50.0	54.7	ug/L	0.192	9.31	20	
Chlorobenzene	SPCC	50.0	49.4	ug/L	0.941	1.15	20	
Chloromethane	SPCC	50.0	61.8	ug/L	0.717	23.6	20	*
1,1-Dichloroethane	SPCC	50.0	53.2	ug/L	0.520	6.33	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	51.8	ug/L	0.478	3.57	20	
Xylenes		150	148	ug/L	0.625	1.56	20	
Acetone		50.0	51.5	ug/L	0.0382	2.99	20	
Benzene		50.0	52.5	ug/L	1.03	4.96	20	
Bromobenzene		50.0	50.4	ug/L	0.741	0.840	20	
Bromochloromethane		50.0	54.3	ug/L	0.147	8.66	20	
Bromodichloromethane		50.0	53.5	ug/L	0.366	6.99	20	
Bromomethane		50.0	58.8	ug/L	0.186	17.6	20	
2-Butanone		50.0	53.7	ug/L	0.0687	7.40	20	
n-Butylbenzene		50.0	54.4	ug/L	2.51	8.90	20	
sec-Butylbenzene		50.0	49.2	ug/L	3.04	1.68	20	
tert-Butylbenzene		50.0	48.0	ug/L	0.525	4.10	20	
Carbon Disulfide		50.0	53.6	ug/L	0.881	7.17	20	
Carbon Tetrachloride		50.0	55.1	ug/L	0.410	10.2	20	
Dibromochloromethane		50.0	53.3	ug/L	0.311	6.65	20	
Chloroethane		50.0	55.1	ug/L	0.206	10.2	20	
2-Chlorotoluene		50.0	48.8	ug/L	2.34	2.34	20	
4-Chlorotoluene		50.0	48.9	ug/L	2.03	2.19	20	
1,2-Dibromo-3-Chloropropane		50.0	52.2	ug/L	0.0843	4.36	20	
1,2-Dibromoethane		50.0	49.9	ug/L	0.225	0.233	20	
Dibromomethane		50.0	53.5	ug/L	0.135	6.96	20	
1,2-Dichlorobenzene		50.0	50.8	ug/L	1.30	1.55	20	
1,3-Dichlorobenzene		50.0	50.0	ug/L	1.47	0.00220	20	
1,4-Dichlorobenzene		50.0	49.4	ug/L	1.44	1.23	20	
Dichlorodifluoromethane		50.0	60.1	ug/L	0.457	20.2	20	*
1,2-Dichloroethane		50.0	53.4	ug/L	0.341	6.81	20	
cis-1,2-Dichloroethene		50.0	53.0	ug/L	0.291	5.92	20	
trans-1,2-Dichloroethene		50.0	54.1	ug/L	0.416	8.14	20	
1,3-Dichloropropane		50.0	49.3	ug/L	0.397	1.38	20	
2,2-Dichloropropane		50.0	53.2	ug/L	0.435	6.49	20	
cis-1,3-Dichloropropene		50.0	53.2	ug/L	0.404	6.35	20	
trans-1,3-Dichloropropene		50.0	51.7	ug/L	0.451	3.38	20	

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110943 Run Date: 11/19/2015 Sample ID: WG547619-02
Instrument ID: HPMS8 Run Time: 12:31 Method: 8260B
File ID: 8M408797 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG547622 Cal ID: HPMS8 - 30-SEP-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	52.8	ug/L	0.379	5.67	20	
2-Hexanone		50.0	47.9	ug/L	0.0680	4.11	20	
Hexachlorobutadiene		50.0	49.5	ug/L	0.417	1.07	20	
Isopropylbenzene		50.0	50.5	ug/L	1.56	0.939	20	
p-Isopropyltoluene		50.0	51.2	ug/L	2.53	2.46	20	
4-Methyl-2-Pentanone		50.0	49.9	ug/L	0.0559	0.254	20	
Methylene Chloride		50.0	51.4	ug/L	0.259	2.76	20	
Naphthalene		50.0	58.4	ug/L	1.49	16.7	20	
n-Propylbenzene		50.0	48.2	ug/L	3.49	3.53	20	
Styrene		50.0	50.7	ug/L	1.03	1.47	20	
1,1,1,2-Tetrachloroethane		50.0	51.9	ug/L	0.366	3.89	20	
Tetrachloroethene		50.0	49.7	ug/L	0.300	0.673	20	
1,2,3-Trichlorobenzene		50.0	53.9	ug/L	0.810	7.70	20	
1,2,4-Trichlorobenzene		50.0	54.0	ug/L	0.952	7.96	20	
1,1,1-Trichloroethane		50.0	53.1	ug/L	0.443	6.20	20	
1,1,2-Trichloroethane		50.0	50.7	ug/L	0.229	1.44	20	
Trichloroethene		50.0	51.2	ug/L	0.271	2.39	20	
Trichlorofluoromethane		50.0	55.2	ug/L	0.489	10.4	20	
1,2,3-Trichloropropane		50.0	51.6	ug/L	0.132	3.28	20	
1,2,4-Trimethylbenzene		50.0	50.8	ug/L	2.55	1.58	20	
1,3,5-Trimethylbenzene		50.0	49.5	ug/L	2.46	1.10	20	
o-Xylene		50.0	47.8	ug/L	0.615	4.40	20	
m-,p-Xylene		100	99.9	ug/L	0.635	0.139	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4513444
Report generated 11/30/2015 15:33

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15110943
Instrument ID: HPMS17
Workgroup (AAB#): WG547466

ICAL CCV Number: WG546498-02
CAL ID: HPMS17 - 11-NOV-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG546498-02	NA	NA	185646	339437	458822
Upper Limit	NA	NA	371292	678874	917644
Lower Limit	NA	NA	92823	169719	229411
L15110943-01	1.00	01	145287	261846	348649
L15110943-03	1.00	01	143009	263847	352502
L15110943-05	1.00	01	146149	266544	354985
L15110943-07	1.00	01	145371	264433	355599
L15110943-09	1.00	01	145922	266036	354963
WG547466-01	1.00	01	146327	270869	367570
WG547466-02	1.00	01	152992	267591	357828

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4522930
Report generated 11/30/2015 15:33

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15110943
Instrument ID: HPMS8
Workgroup (AAB#): WG547622

ICAL CCV Number: WG540912-08
CAL ID: HPMS8 - 30-SEP-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG540912-08	NA	NA	378981	687265	938292
Upper Limit	NA	NA	757962	1374530	1876584
Lower Limit	NA	NA	189491	343633	469146
L15110943-11	1.00	01	386746	745816	983166
L15110943-13	1.00	01	463885	875578	1156210
WG547622-01	1.00	01	476168	902351	1179482
WG547622-02	1.00	01	521679	921413	1224228

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4522930
Report generated 11/30/2015 15:33

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15110943
Instrument ID: HPMS8
Workgroup (AAB#): WG547622

ICAL CCV Number: WG540912-08
CAL ID: HPMS8 - 30-SEP-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG540912-08	NA	NA	17.6	14.58	10.72
Upper Limit	NA	NA	18.1	15.08	11.22
Lower Limit	NA	NA	17.1	14.08	10.22
L15110943-11	1.00	01	17.6	14.57	10.71
L15110943-13	1.00	01	17.6	14.58	10.72
WG547622-01	1.00	01	17.6	14.58	10.72
WG547622-02	1.00	01	17.6	14.58	10.72

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4522932
Report generated: 11/30/2015 15:33

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15110943
Instrument ID: HPMS17
Workgroup (AAB#): WG547466

ICAL CCV Number: WG546498-02
CAL ID: HPMS17 - 11-NOV-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG546498-02	NA	NA	9.305	7.976	5.141
Upper Limit	NA	NA	9.805	8.476	5.641
Lower Limit	NA	NA	8.805	7.476	4.641
L15110943-01	1.00	01	9.3	7.97	5.14
L15110943-03	1.00	01	9.3	7.97	5.14
L15110943-05	1.00	01	9.3	7.97	5.14
L15110943-07	1.00	01	9.3	7.97	5.14
L15110943-09	1.00	01	9.3	7.97	5.14
WG547466-01	1.00	01	9.3	7.97	5.14
WG547466-02	1.00	01	9.3	7.97	5.14

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4522932
Report generated: 11/30/2015 15:33

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016563.D
Acq On : 18 Nov 2015 23:02
Operator : ADC
Sample : L15110943-01 826-LOW
Misc : 1,1
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Nov 30 09:37:32 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.141	96	348649	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	261846	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.302	152	145287	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.177	111	92097	25.7502 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.001%		
34) 1,2-Dichloroethane-d4	4.811	65	96652	28.1400 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.560%		
47) Toluene-d8	6.710	98	358958	26.5945 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 106.378%		
66) p-Bromofluorobenzene	8.723	95	133012	26.4842 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.937%		
Target Compounds					Qvalue
4) Vinyl Chloride	1.198	62	571	0.1210 ug/L	98
10) 1,1-Dichloroethene	1.869	61	2034	0.3716 ug/L	98
12) 1,1,2-Trichloro-1,2,2-...	1.895	101	1290	0.3801 ug/L	95
16) Acetone	2.353	43	222	Below Cal #	42
20) 1,1-Dichloroethane	2.978	63	2289	0.3343 ug/L	89
23) cis-1,2-Dichloroethene	3.566	96	72709	17.6979 ug/L	98
35) 1,2-Dichloroethane	4.892	62	5672	1.2580 ug/L	98
36) Methylcyclohexane	5.323	83	13866	1.9790 ug/L #	1
37) Trichloroethene	5.323	130	1196310	287.7047 ug/L	98
49) Tetrachloroethene	7.087	166	5416	1.2113 ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016563.D
Acq On : 18 Nov 2015 23:02
Operator : ADC
Sample : L15110943-01 826-LOW
Misc : 1,1
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Nov 30 09:37:32 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

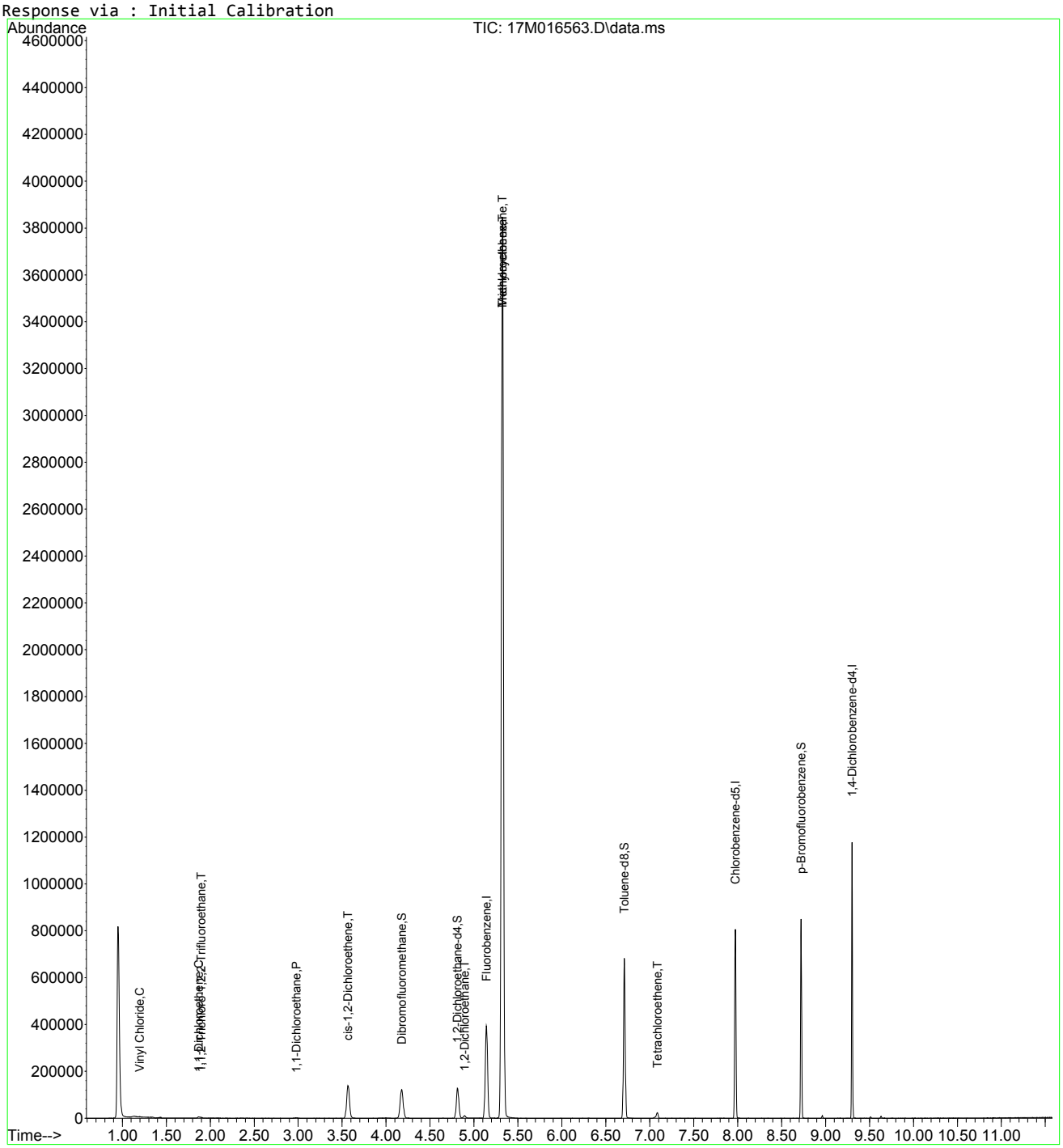

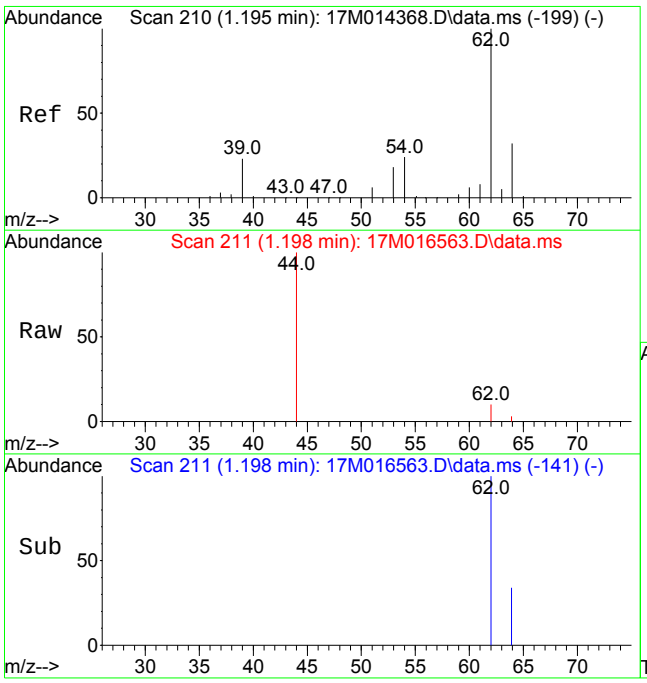

#4
Vinyl Chloride
Concen: 0.1210 ug/L
RT: 1.198 min Scan# 211
Delta R.T. 0.003 min
Lab File: 17M016563.D
Acq: 18 Nov 2015 23:02

Tgt Ion: 62 Resp: 571

Ion	Ratio	Lower	Upper
62	100		
64	33.1	19.2	44.8

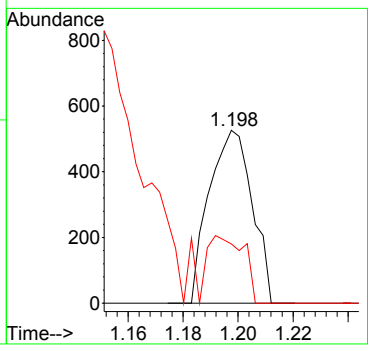

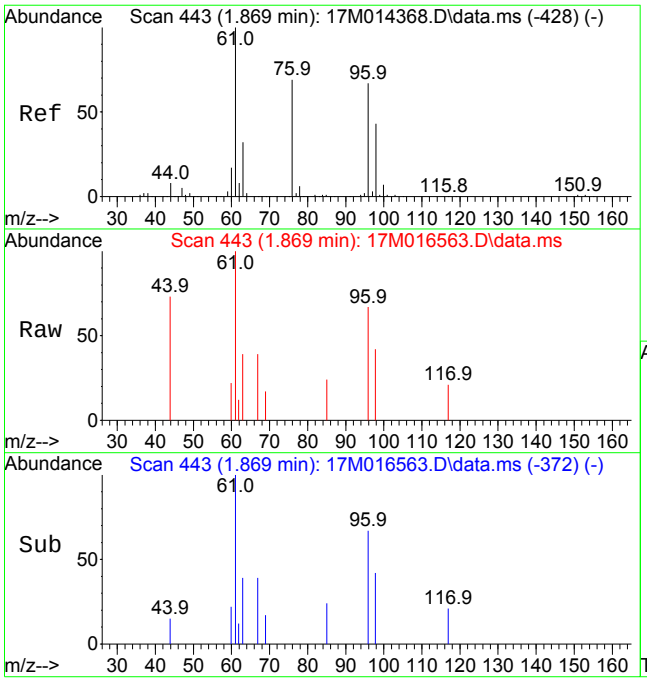

#10
1,1-Dichloroethene
Concen: 0.3716 ug/L
RT: 1.869 min Scan# 443
Delta R.T. 0.005 min
Lab File: 17M016563.D
Acq: 18 Nov 2015 23:02

Tgt Ion: 61 Resp: 2034

Ion	Ratio	Lower	Upper
61	100		
96	62.0	48.4	72.6

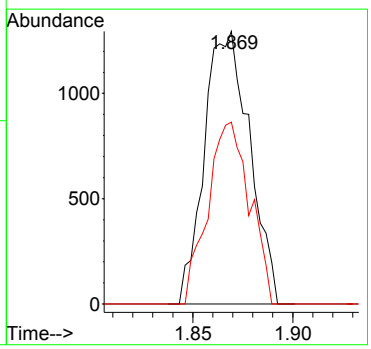

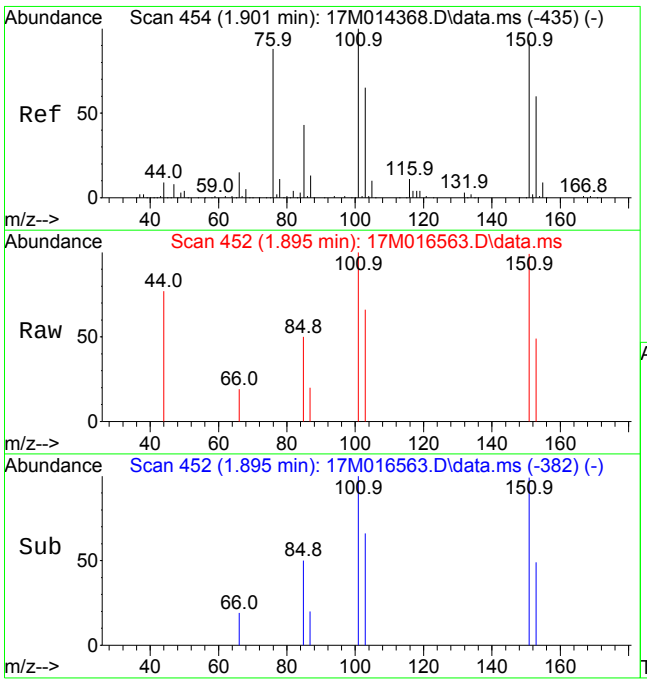

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 0.3801 ug/L
RT: 1.895 min Scan# 452
Delta R.T. 0.002 min
Lab File: 17M016563.D
Acq: 18 Nov 2015 23:02

Tgt Ion:101 Resp: 1290

Ion	Ratio	Lower	Upper
101	100		
151	82.9	71.4	107.0
103	63.0	51.6	77.4

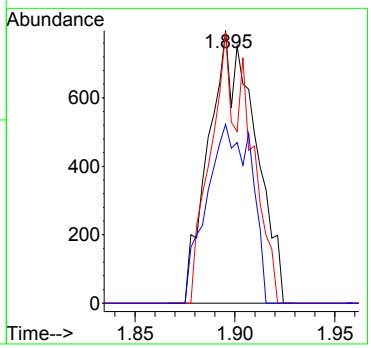

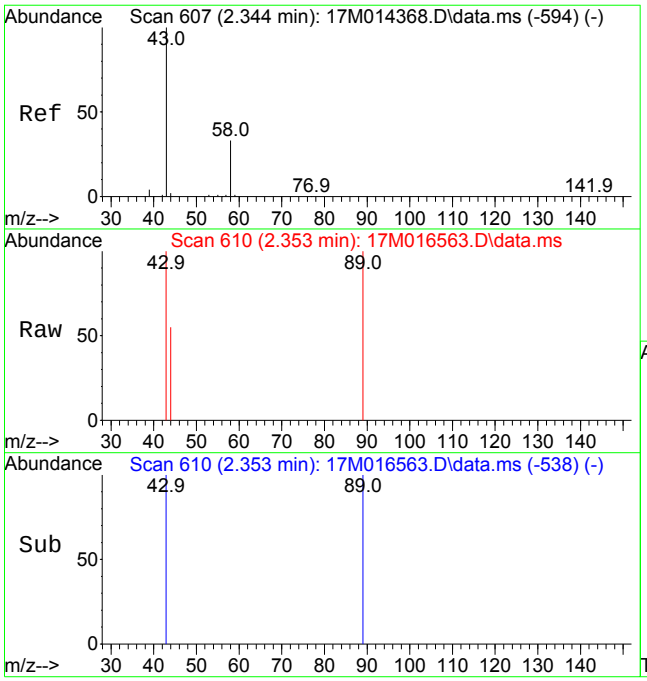

#16
Acetone
Concen: Below Cal
RT: 2.353 min Scan# 610
Delta R.T. 0.009 min
Lab File: 17M016563.D
Acq: 18 Nov 2015 23:02

Tgt Ion: 43 Resp: 222

Ion	Ratio	Lower	Upper
43	100		
58	0.0	19.4	45.4#

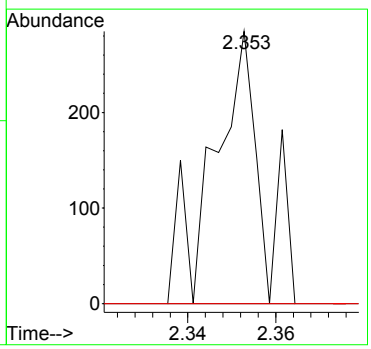

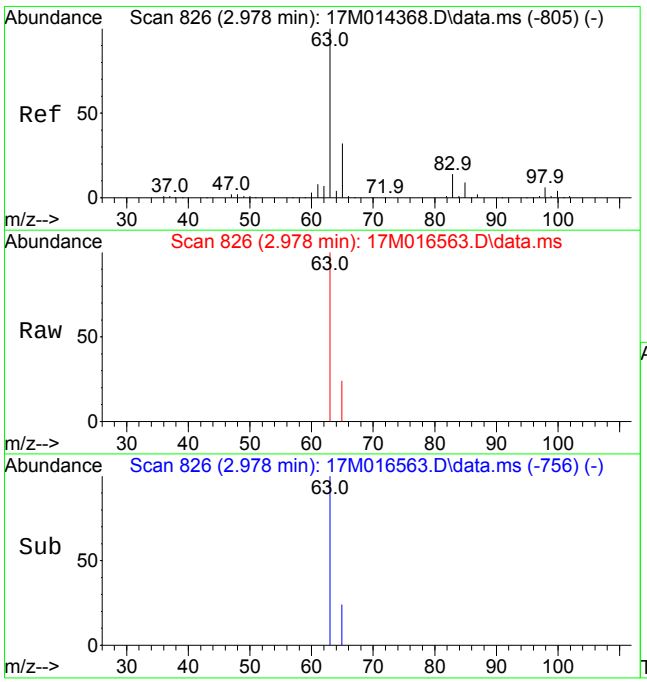

#20
1,1-Dichloroethane
Concen: 0.3343 ug/L
RT: 2.978 min Scan# 826
Delta R.T. 0.003 min
Lab File: 17M016563.D
Acq: 18 Nov 2015 23:02

Tgt Ion: 63 Resp: 2289

Ion	Ratio	Lower	Upper
63	100		
65	25.4	25.4	38.0

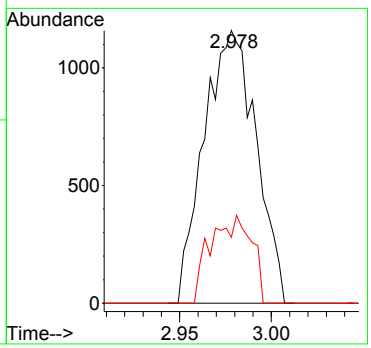

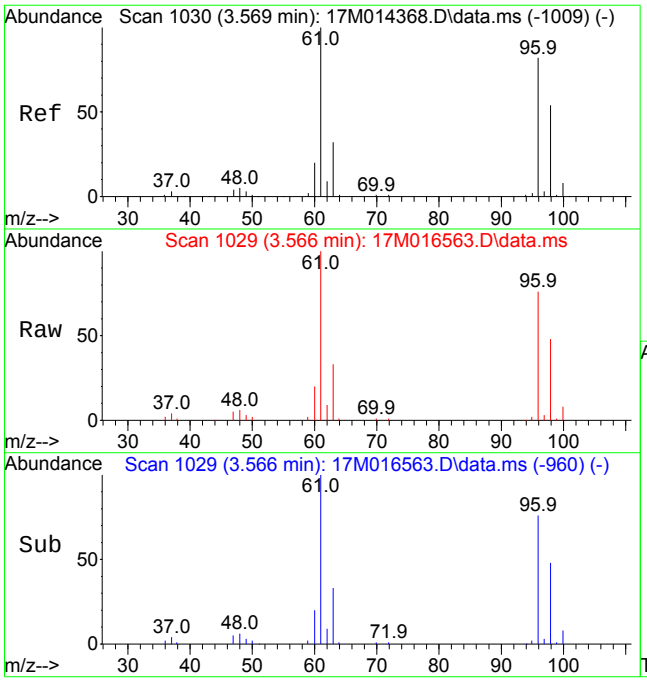

#23
cis-1,2-Dichloroethene
Concen: 17.6979 ug/L
RT: 3.566 min Scan# 1029
Delta R.T. -0.000 min
Lab File: 17M016563.D
Acq: 18 Nov 2015 23:02

Tgt Ion: 96 Resp: 72709

Ion	Ratio	Lower	Upper
96	100		
61	131.8	107.0	160.4

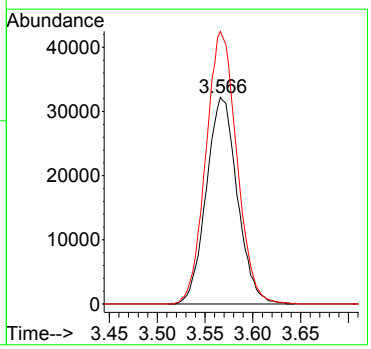

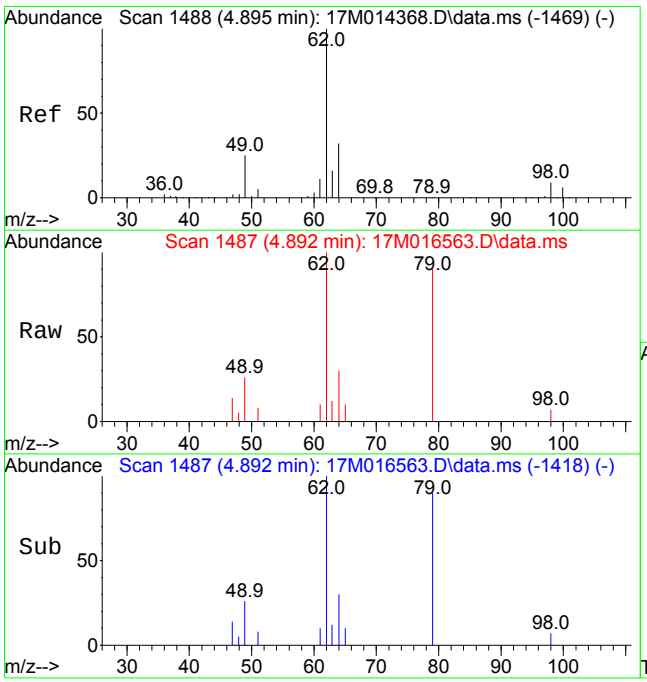

#35
1,2-Dichloroethane
Concen: 1.2580 ug/L
RT: 4.892 min Scan# 1487
Delta R.T. 0.000 min
Lab File: 17M016563.D
Acq: 18 Nov 2015 23:02

Tgt Ion: 62 Resp: 5672

Ion	Ratio	Lower	Upper
62	100		
49	28.3	16.9	39.3
98	6.2	4.9	11.5

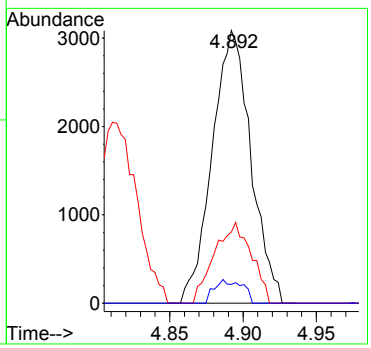

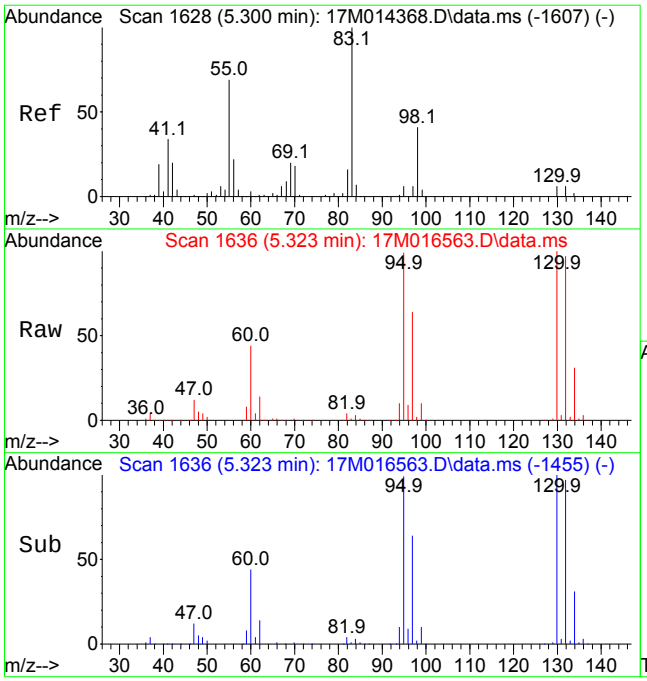

#36
Methylcyclohexane
Concen: 1.9790 ug/L
RT: 5.323 min Scan# 1636
Delta R.T. 0.025 min
Lab File: 17M016563.D
Acq: 18 Nov 2015 23:02

Tgt Ion: 83 Resp: 13866

Ion	Ratio	Lower	Upper
83	100		
55	0.0	63.0	94.4#
98	211.4	32.8	49.2#

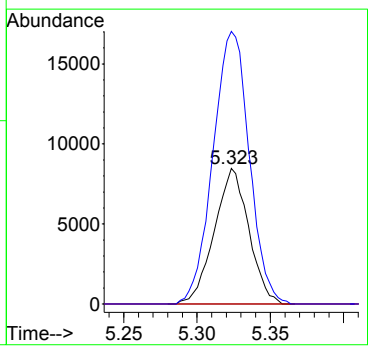

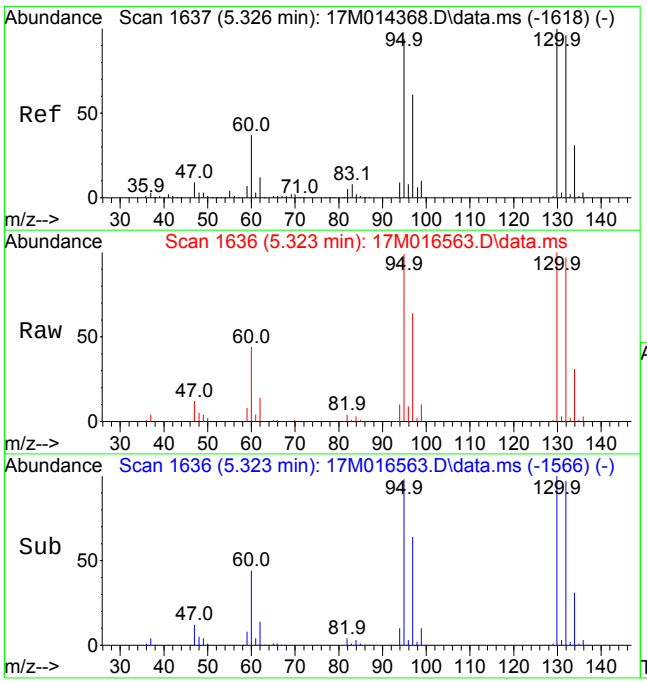

#37
Trichloroethene
Concen: 287.7047 ug/L
RT: 5.323 min Scan# 1636
Delta R.T. 0.002 min
Lab File: 17M016563.D
Acq: 18 Nov 2015 23:02

Tgt Ion:130 Resp: 1196310

Ion	Ratio	Lower	Upper
130	100		
60	43.4	25.3	58.9

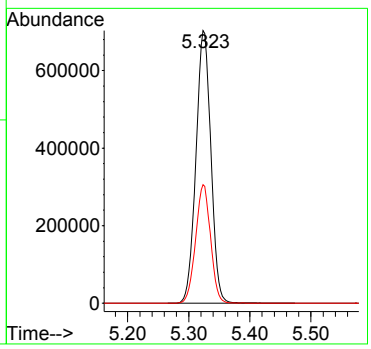

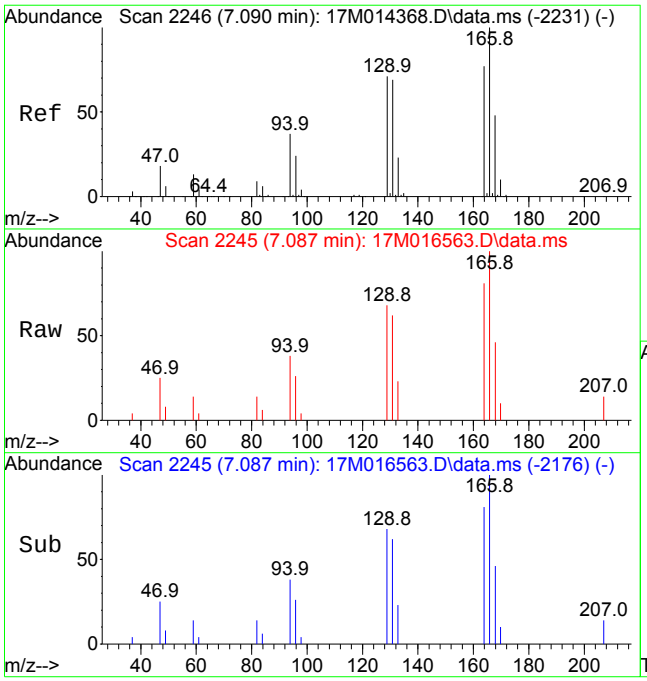

#49
Tetrachloroethene
Concen: 1.2113 ug/L
RT: 7.087 min Scan# 2245
Delta R.T. -0.000 min
Lab File: 17M016563.D
Acq: 18 Nov 2015 23:02

Tgt Ion:166 Resp: 5416

Ion	Ratio	Lower	Upper
166	100		
129	72.3	59.4	89.2
94	40.3	31.9	47.9

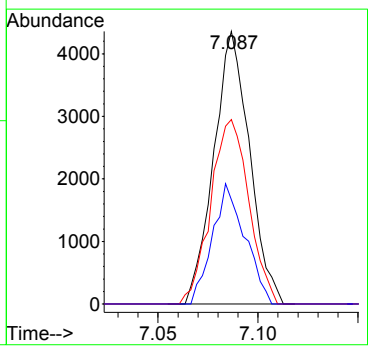

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016553.D
Acq On : 18 Nov 2015 19:43
Operator : ADC
Sample : L15110943-03 A 826-LOW
Misc : 1,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Nov 30 09:37:01 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.141	96	352502	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	263847	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.302	152	143009	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.174	111	94748	26.2019 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.808%		
34) 1,2-Dichloroethane-d4	4.814	65	98020	28.2264 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.906%		
47) Toluene-d8	6.710	98	375812	27.6321 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 110.528%#		
66) p-Bromofluorobenzene	8.723	95	137242	27.7617 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 111.047%		
Target Compounds					Qvalue
12) 1,1,2-Trichloro-1,2,2-...	1.895	101	1493	0.4351 ug/L	99
37) Trichloroethene	5.321	130	1910	0.4543 ug/L	97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016553.D
Acq On : 18 Nov 2015 19:43
Operator : ADC
Sample : L15110943-03 A 826-LOW
Misc : 1,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Nov 30 09:37:01 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

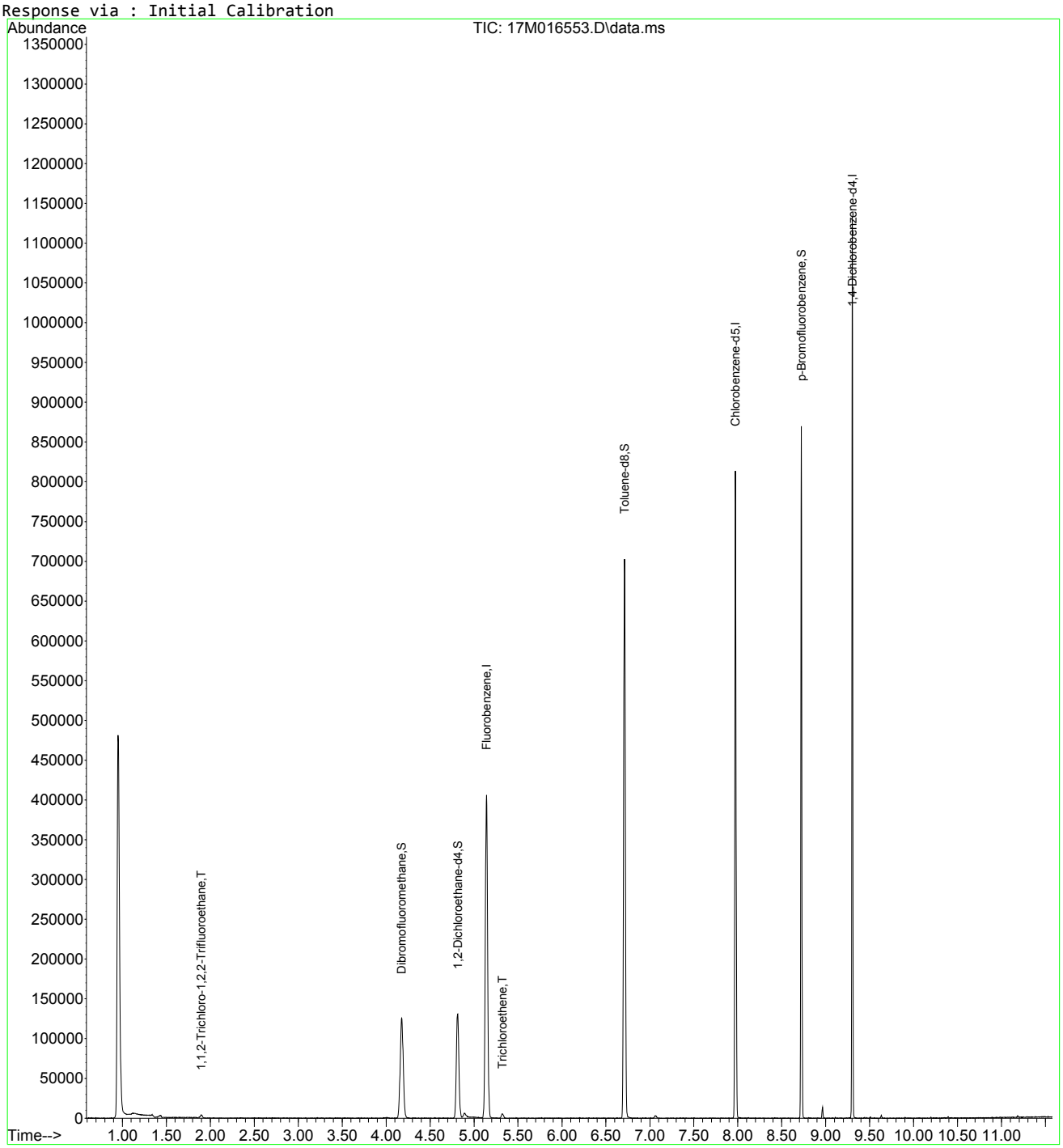

8260_VMS.M Mon Nov 30 09:37:02 2015 Page: 2

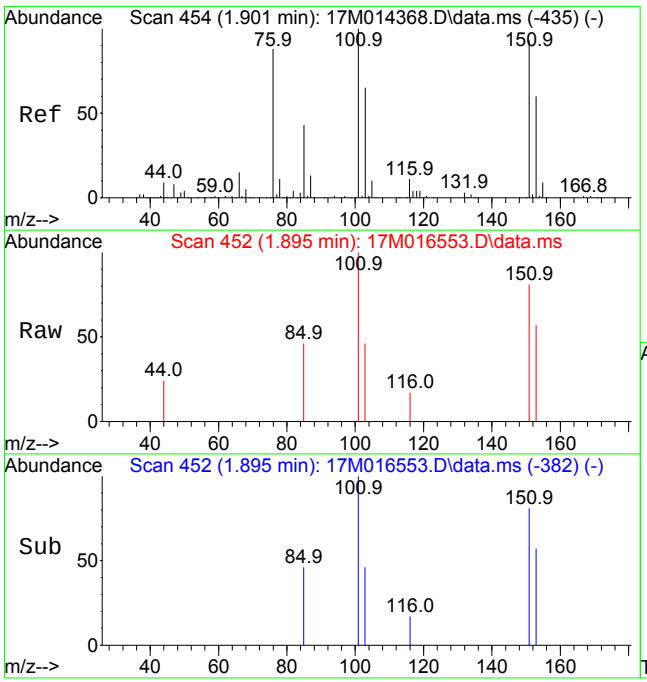

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 0.4351 ug/L
RT: 1.895 min Scan# 452
Delta R.T. 0.002 min
Lab File: 17M016553.D
Acq: 18 Nov 2015 19:43

Tgt Ion:101 Resp: 1493

Ion	Ratio	Lower	Upper
101	100		
151	90.4	71.4	107.0
103	65.0	51.6	77.4

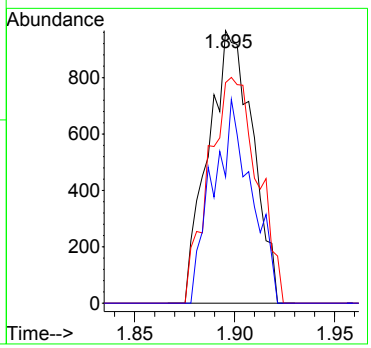

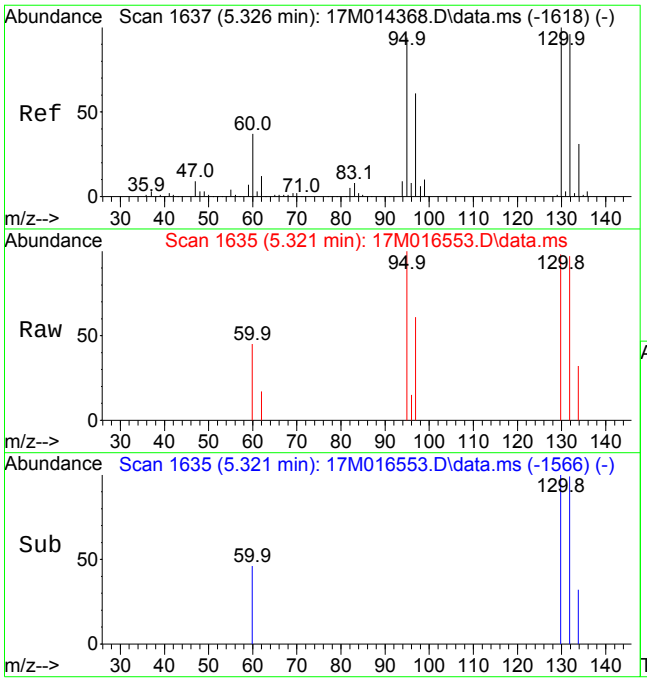

#37
Trichloroethene
Concen: 0.4543 ug/L
RT: 5.321 min Scan# 1635
Delta R.T. -0.000 min
Lab File: 17M016553.D
Acq: 18 Nov 2015 19:43

Tgt Ion:130 Resp: 1910

Ion	Ratio	Lower	Upper
130	100		
60	44.1	25.3	58.9

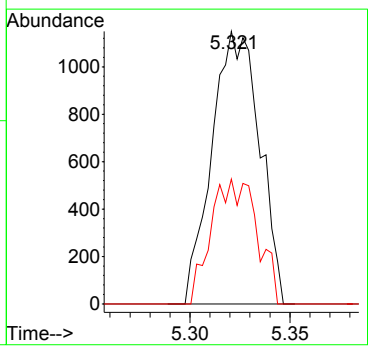

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016554.D
Acq On : 18 Nov 2015 20:03
Operator : ADC
Sample : L15110943-05 A 826-LOW
Misc : 1,1
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Nov 30 09:37:04 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.141	96	354985	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	266544	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.302	152	146149	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.177	111	94270	25.8873 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.549%		
34) 1,2-Dichloroethane-d4	4.811	65	98864	28.2703 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 113.081%		
47) Toluene-d8	6.710	98	375674	27.3424 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 109.370%		
66) p-Bromofluorobenzene	8.723	95	137780	27.2718 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 109.087%		
Target Compounds					Qvalue
16) Acetone	2.338	43	242	Below Cal #	42
37) Trichloroethene	5.321	130	964	0.2277 ug/L	92

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016554.D
Acq On : 18 Nov 2015 20:03
Operator : ADC
Sample : L15110943-05 A 826-LOW
Misc : 1,1
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Nov 30 09:37:04 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

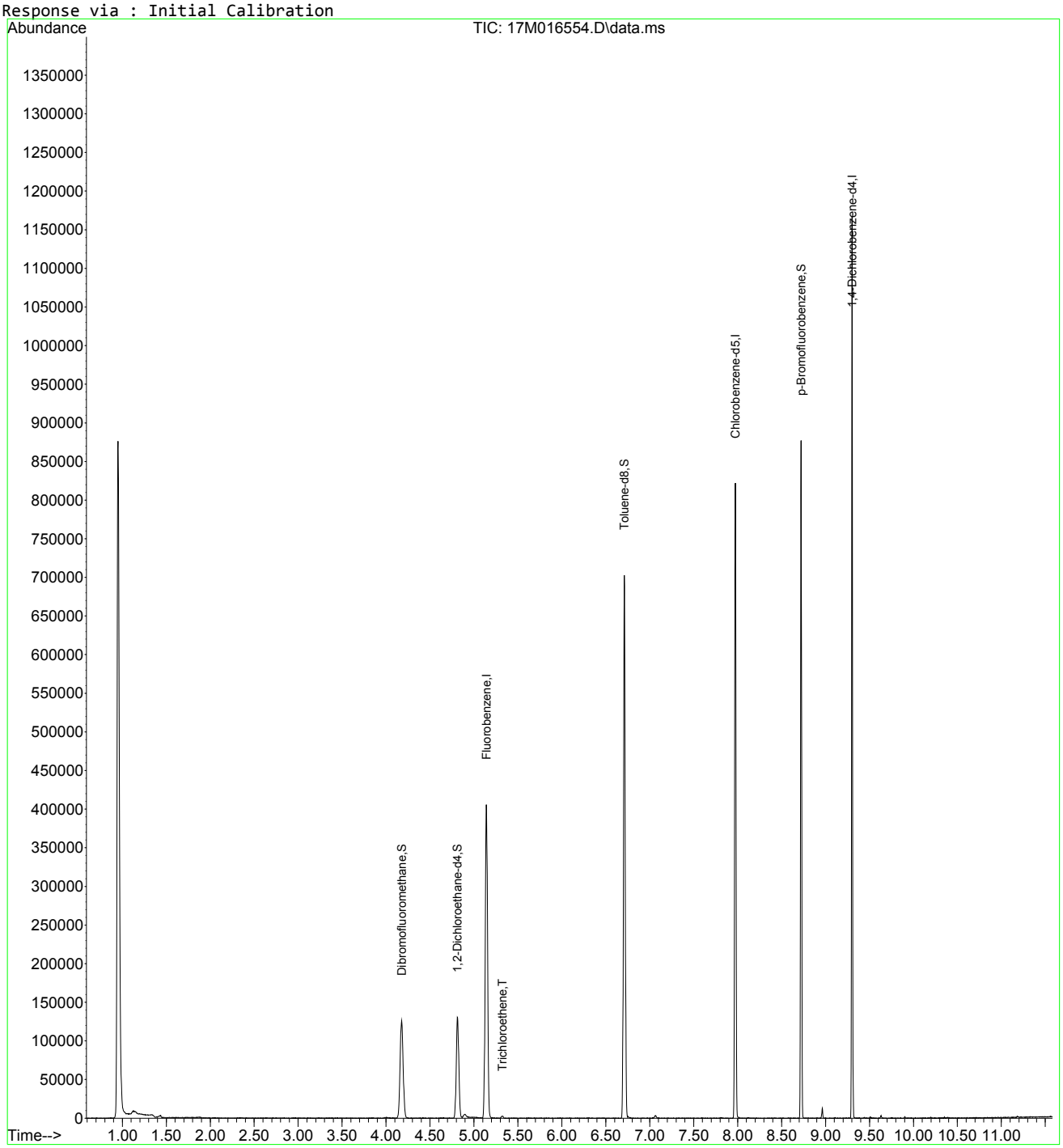

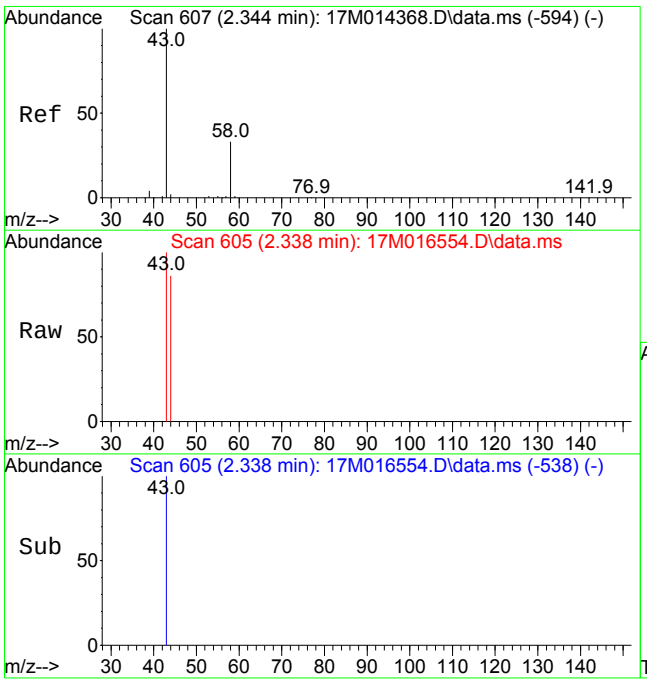

#16
Acetone
Concen: Below Cal
RT: 2.338 min Scan# 605
Delta R.T. -0.006 min
Lab File: 17M016554.D
Acq: 18 Nov 2015 20:03

Tgt Ion: 43 Resp: 242

Ion	Ratio	Lower	Upper
43	100		
58	0.0	19.4	45.4#

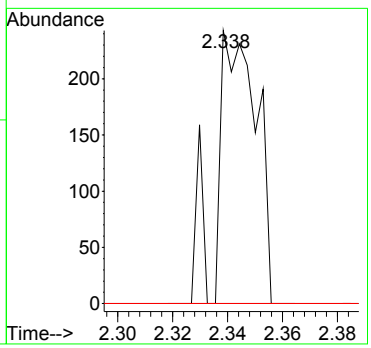

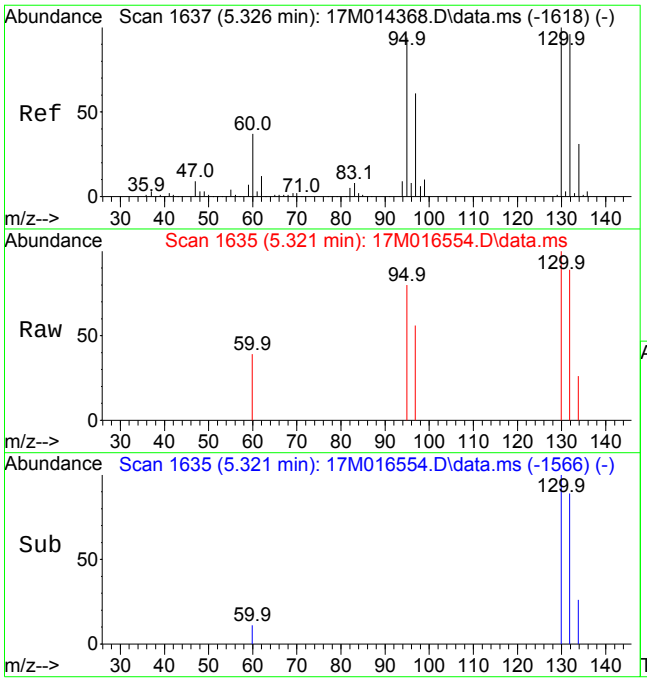

#37
Trichloroethene
Concen: 0.2277 ug/L
RT: 5.321 min Scan# 1635
Delta R.T. -0.000 min
Lab File: 17M016554.D
Acq: 18 Nov 2015 20:03

Tgt Ion:130 Resp: 964

Ion	Ratio	Lower	Upper
130	100		
60	36.7	25.3	58.9

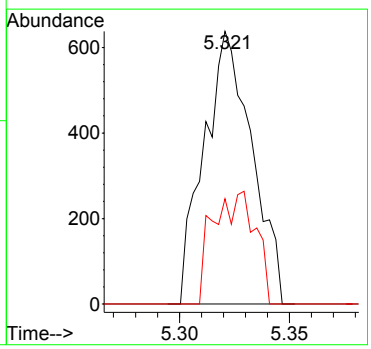

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016555.D
Acq On : 18 Nov 2015 20:23
Operator : ADC
Sample : L15110943-07 A 826-LOW
Misc : 1,1
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Nov 30 09:37:07 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.141	96	355599	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	264433	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.302	152	145371	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.177	111	95069	26.0617 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.247%		
34) 1,2-Dichloroethane-d4	4.814	65	99734	28.4698 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 113.879%		
47) Toluene-d8	6.710	98	375843	27.5731 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 110.292%#		
66) p-Bromofluorobenzene	8.723	95	139798	27.8193 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 111.277%		
Target Compounds					Qvalue
16) Acetone	2.356	43	152	Below Cal #	42
37) Trichloroethene	5.318	130	575	0.1356 ug/L #	34

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016555.D
Acq On : 18 Nov 2015 20:23
Operator : ADC
Sample : L15110943-07 A 826-LOW
Misc : 1,1
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Nov 30 09:37:07 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

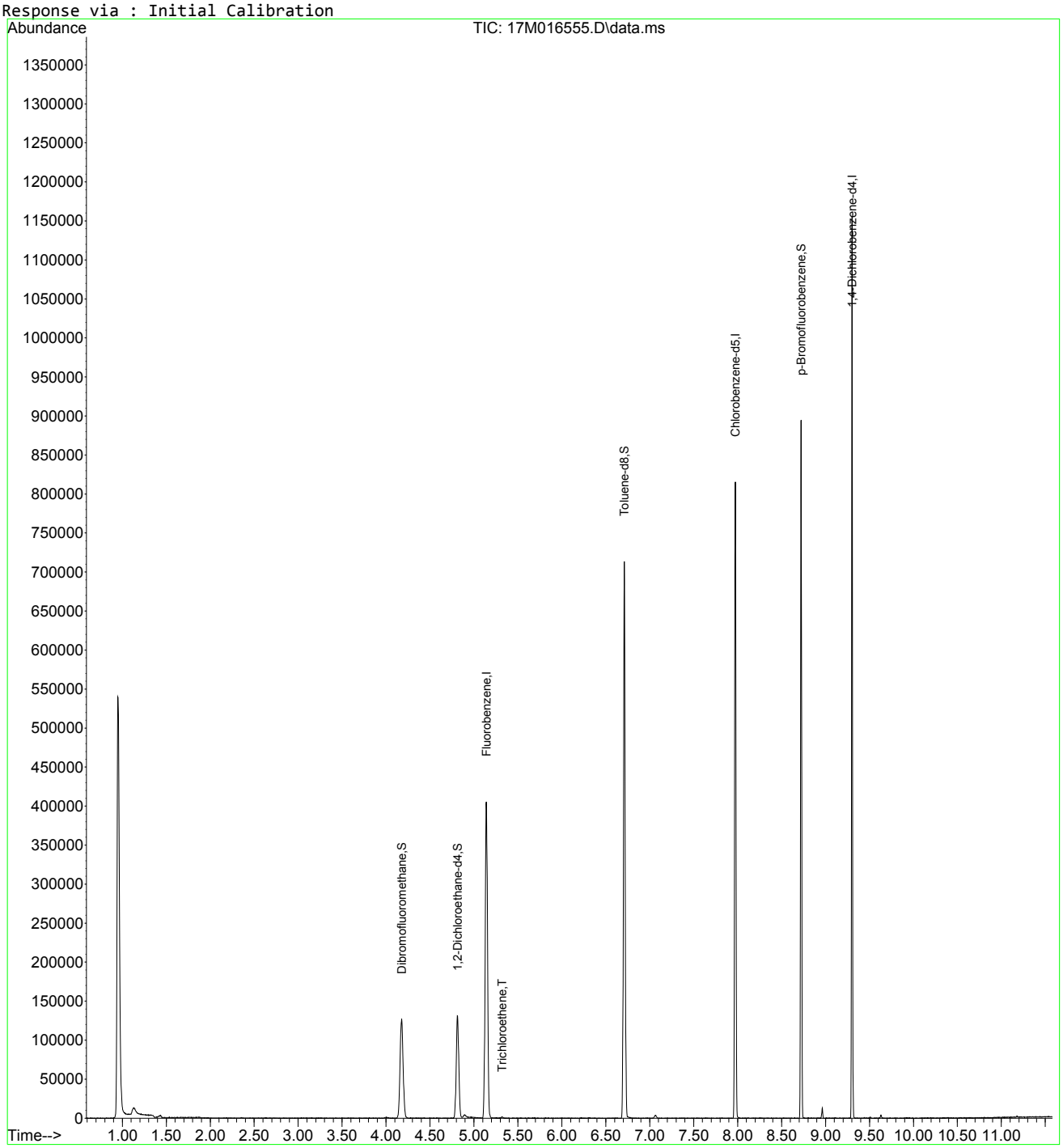

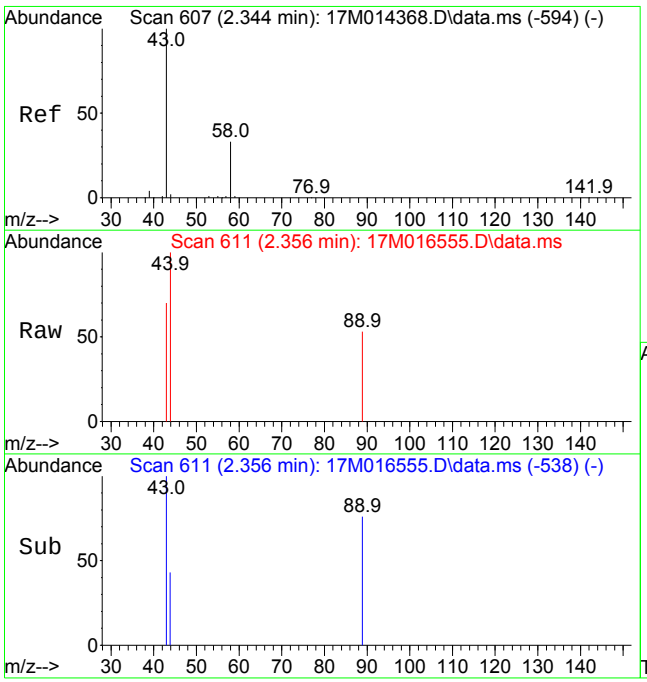

#16
Acetone
Concen: Below Cal
RT: 2.356 min Scan# 611
Delta R.T. 0.012 min
Lab File: 17M016555.D
Acq: 18 Nov 2015 20:23

Tgt Ion: 43 Resp: 152

Ion	Ratio	Lower	Upper
43	100		
58	0.0	19.4	45.4#

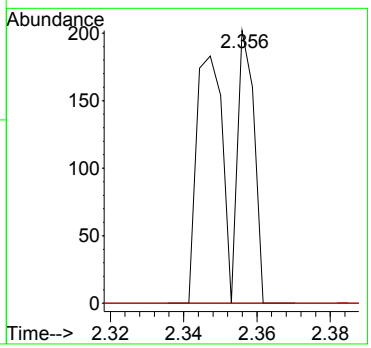

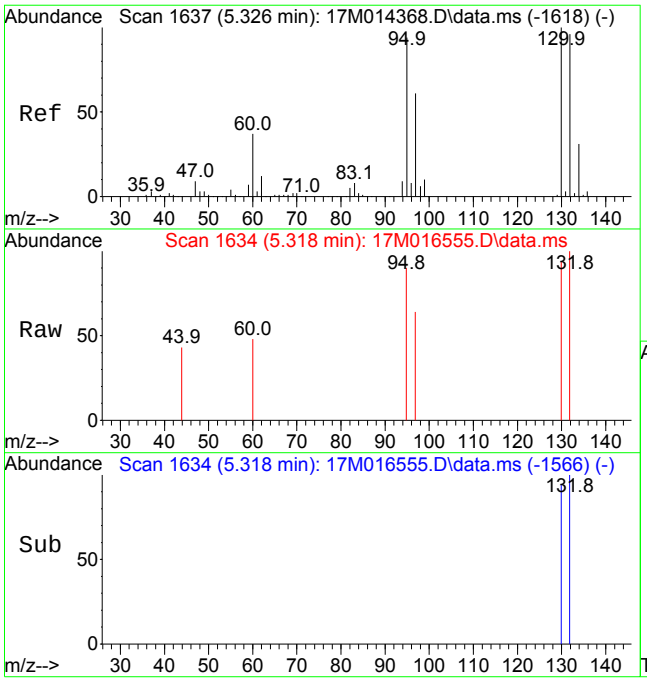

#37
Trichloroethene
Concen: 0.1356 ug/L
RT: 5.318 min Scan# 1634
Delta R.T. -0.003 min
Lab File: 17M016555.D
Acq: 18 Nov 2015 20:23

Tgt Ion:130 Resp: 575

Ion	Ratio	Lower	Upper
130	100		
60	0.0	25.3	58.9#

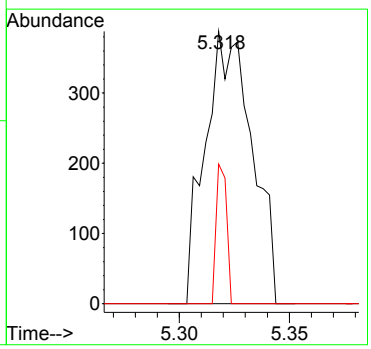

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016556.D
Acq On : 18 Nov 2015 20:43
Operator : ADC
Sample : L15110943-09 A 826-LOW
Misc : 1,1
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Nov 30 09:37:10 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.141	96	354963	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	266036	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.302	152	145922	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.174	111	94229	25.8777 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.511%		
34) 1,2-Dichloroethane-d4	4.814	65	98270	28.1021 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.408%		
47) Toluene-d8	6.710	98	373531	27.2384 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 108.954%		
66) p-Bromofluorobenzene	8.723	95	136178	26.9966 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 107.986%		
Target Compounds					Qvalue
7) Chloroethane	1.435	64	885	0.3609 ug/L #	1
16) Acetone	2.347	43	195	Below Cal #	42

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016556.D
Acq On : 18 Nov 2015 20:43
Operator : ADC
Sample : L15110943-09 A 826-LOW
Misc : 1,1
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Nov 30 09:37:10 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

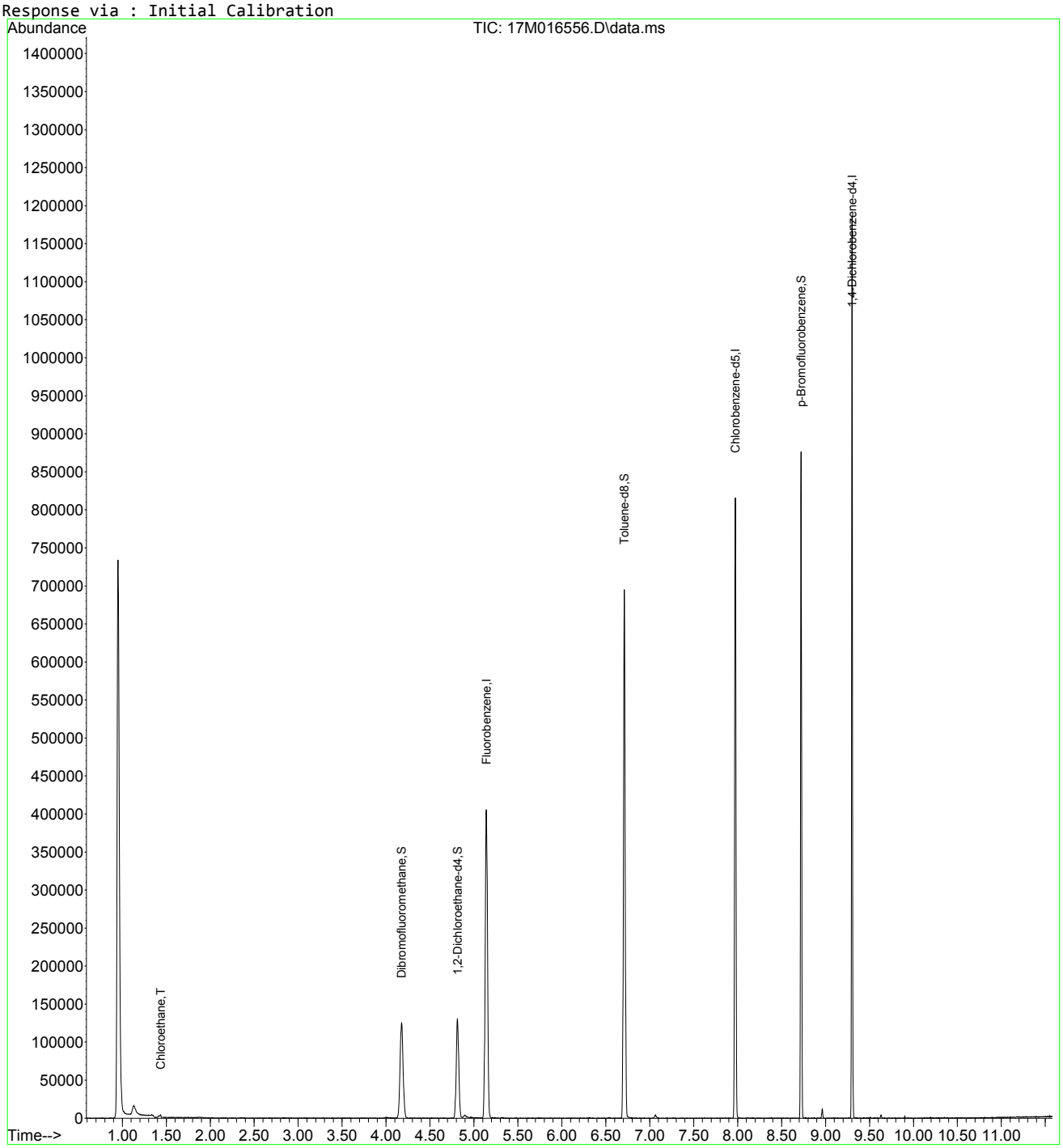

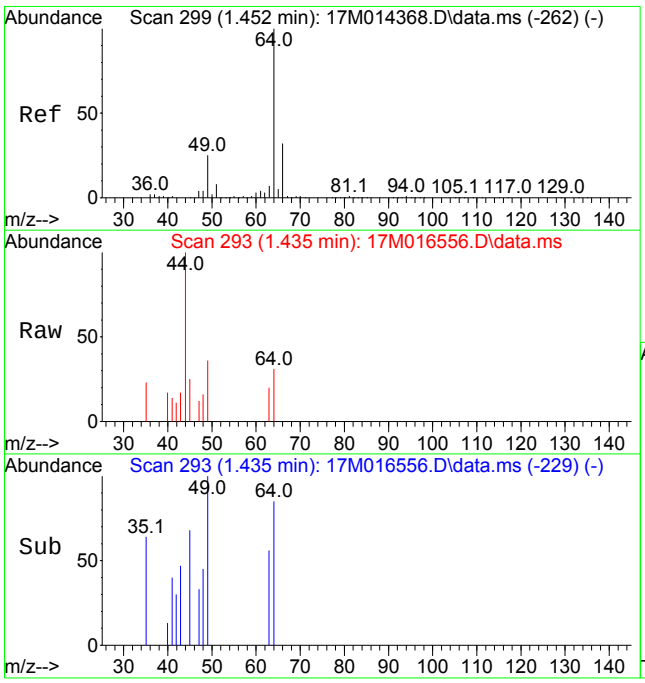

#7
Chloroethane
Concen: 0.3609 ug/L
RT: 1.435 min Scan# 293
Delta R.T. -0.015 min
Lab File: 17M016556.D
Acq: 18 Nov 2015 20:43

Tgt Ion: 64 Resp: 885

Ion	Ratio	Lower	Upper
64	100		
49	101.2	14.8	34.6#

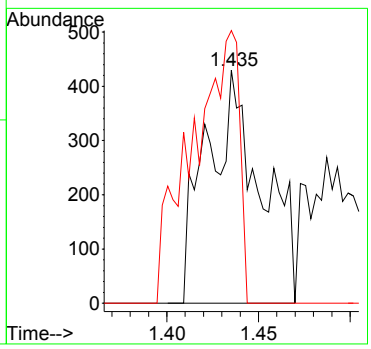

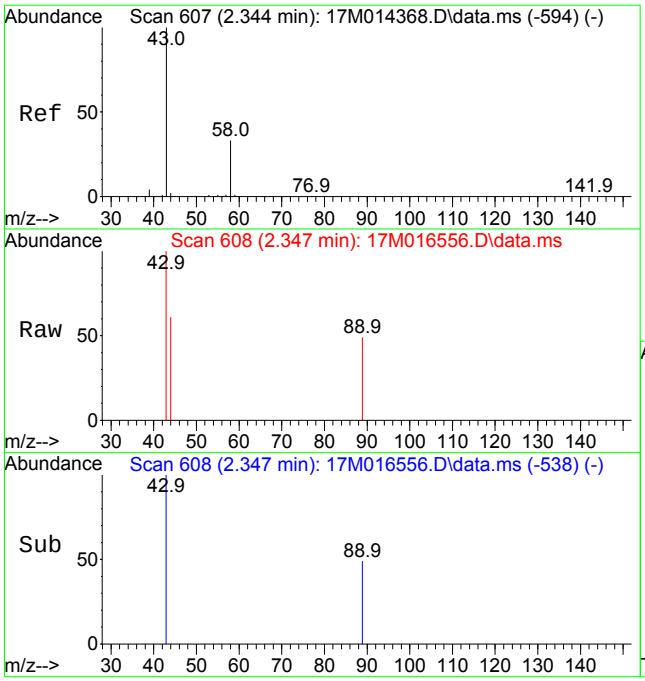

#16
Acetone
Concen: Below Cal
RT: 2.347 min Scan# 608
Delta R.T. 0.003 min
Lab File: 17M016556.D
Acq: 18 Nov 2015 20:43

Tgt Ion: 43 Resp: 195

Ion	Ratio	Lower	Upper
43	100		
58	0.0	19.4	45.4#

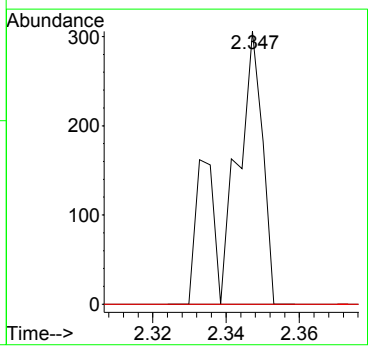

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\111915\8M408814.D Vial: 20
Acq On : 19 Nov 2015 20:55 Operator: TMB
Sample : L15110943-11 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 20 11:44:16 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	983166	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	745816	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	386746	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.68	111	245468	26.2331 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.92%		
43) 1,2-Dichloroethane-d4	10.31	65	246115	25.7972 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.20%		
58) Toluene-d8	12.69	98	868884	25.1091 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.44%		
80) p-Bromofluorobenzene	16.07	95	343023	25.4201 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.68%		

Target Compounds					Qvalue
13) Acetone	6.25	43	508	0.3481 ug/L #	48
28) Ethyl-Tert-Butyl ether	8.63	59	4380	0.1490 ug/L #	47

(#) = qualifier out of range (m) = manual integration
8M408814.D 8260WT.M Fri Nov 20 11:44:16 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\111915\8M408814.D Vial: 20
Acq On : 19 Nov 2015 20:55 Operator: TMB
Sample : L15110943-11 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 20 11:44 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration

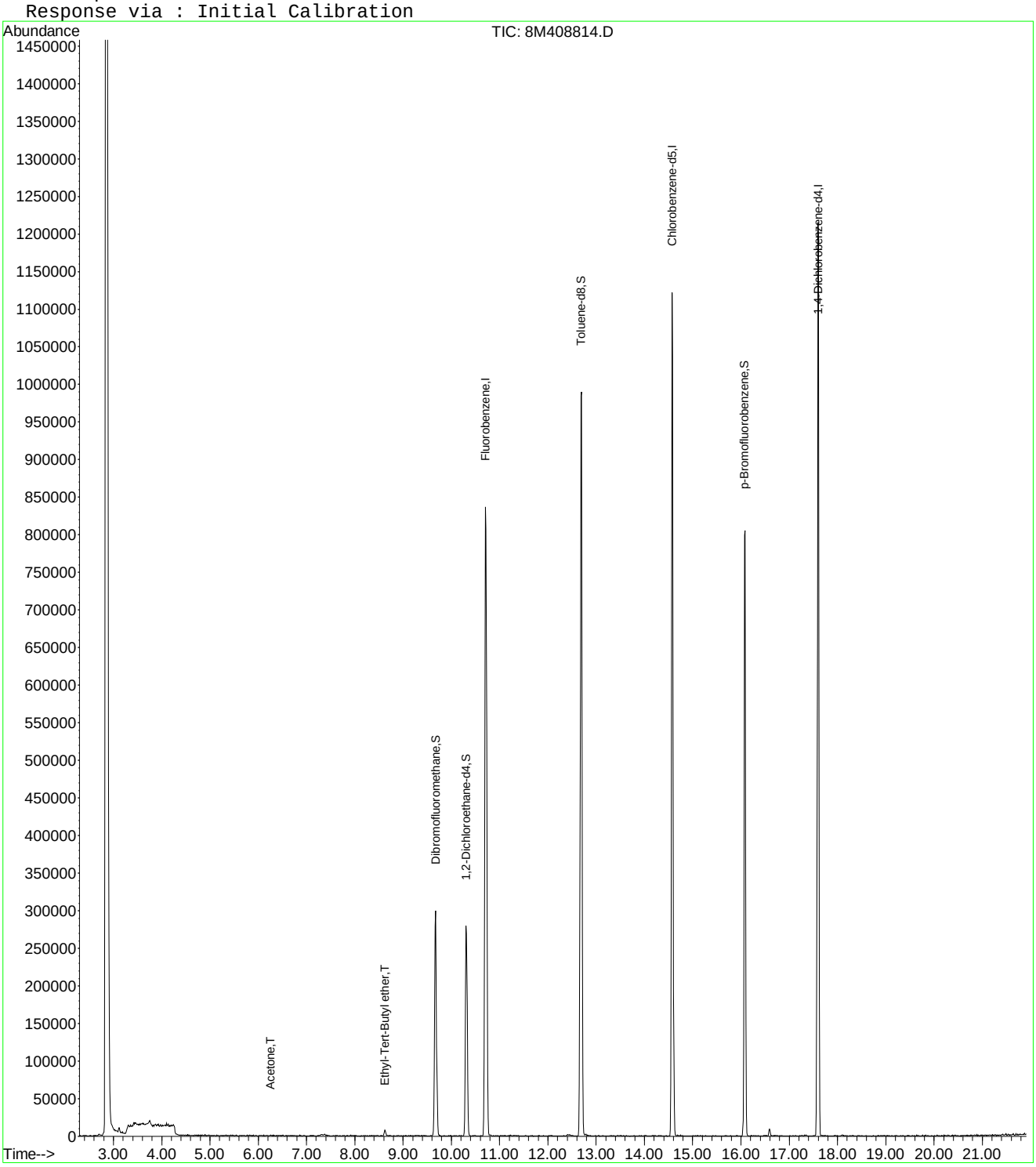

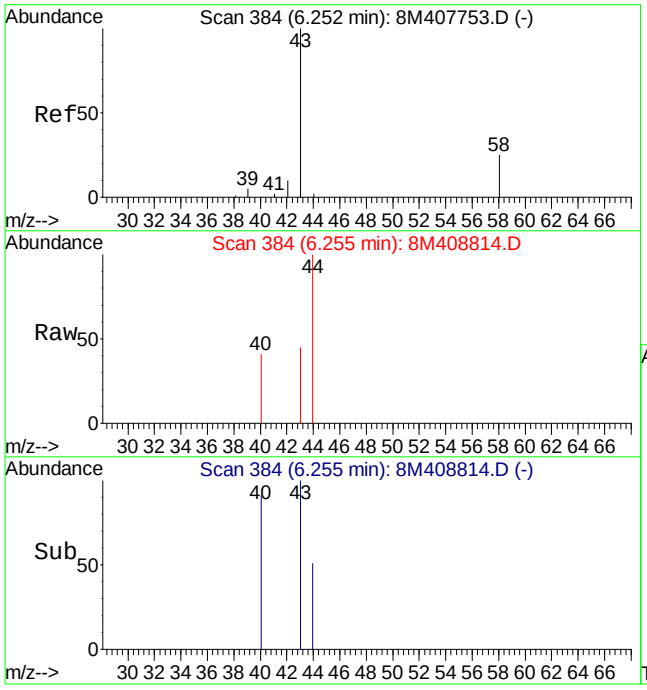

#13
Acetone
Concen: 0.35 ug/L
RT: 6.25 min Scan# 384
Delta R.T. 0.01 min
Lab File: 8M408814.D
Acq: 19 Nov 2015 20:55

Tgt Ion: 43 Resp: 508

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

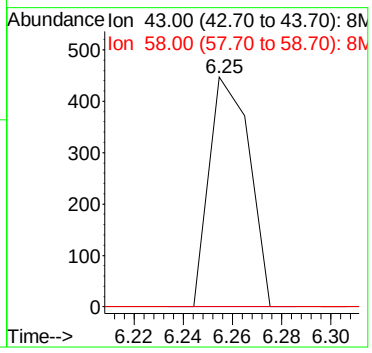

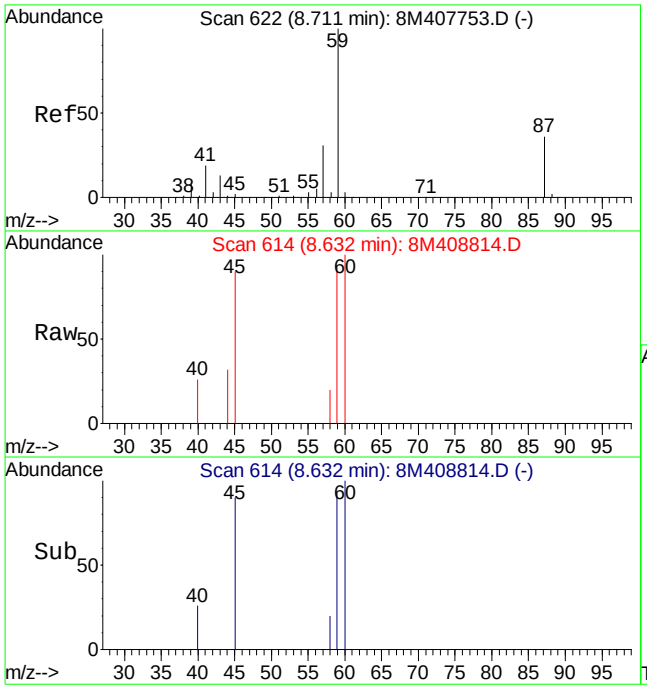

#28
Ethyl-Tert-Butyl ether
Concen: 0.15 ug/L
RT: 8.63 min Scan# 614
Delta R.T. -0.07 min
Lab File: 8M408814.D
Acq: 19 Nov 2015 20:55

Tgt Ion: 59 Resp: 4380

Ion	Ratio	Lower	Upper
59	100		
87	0.0	22.5	52.5#
57	9.2	20.0	46.6#

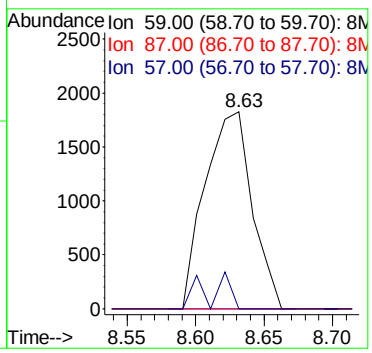

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\111915\8M408804.D Vial: 10
Acq On : 19 Nov 2015 15:59 Operator: TMB
Sample : L15110943-13 A TB 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 20 11:44:04 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	1156210	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	875578	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	463885	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	289164	26.2778 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 105.12%		
43) 1,2-Dichloroethane-d4	10.31	65	285174	25.4176 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.68%		
58) Toluene-d8	12.69	98	1029141	25.3327 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.32%		
80) p-Bromofluorobenzene	16.08	95	411399	25.4175 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.68%		

Target Compounds					Qvalue
13) Acetone	6.23	43	217	0.1264 ug/L #	48
19) Methylene Chloride	7.26	84	2403	0.2064 ug/L	84
36) Tetrahydrofuran	9.65	42	1248	0.6430 ug/L #	40

(#) = qualifier out of range (m) = manual integration
8M408804.D 8260WT.M Fri Nov 20 11:44:05 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\111915\8M408804.D Vial: 10
Acq On : 19 Nov 2015 15:59 Operator: TMB
Sample : L15110943-13 A TB 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 20 11:44 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration

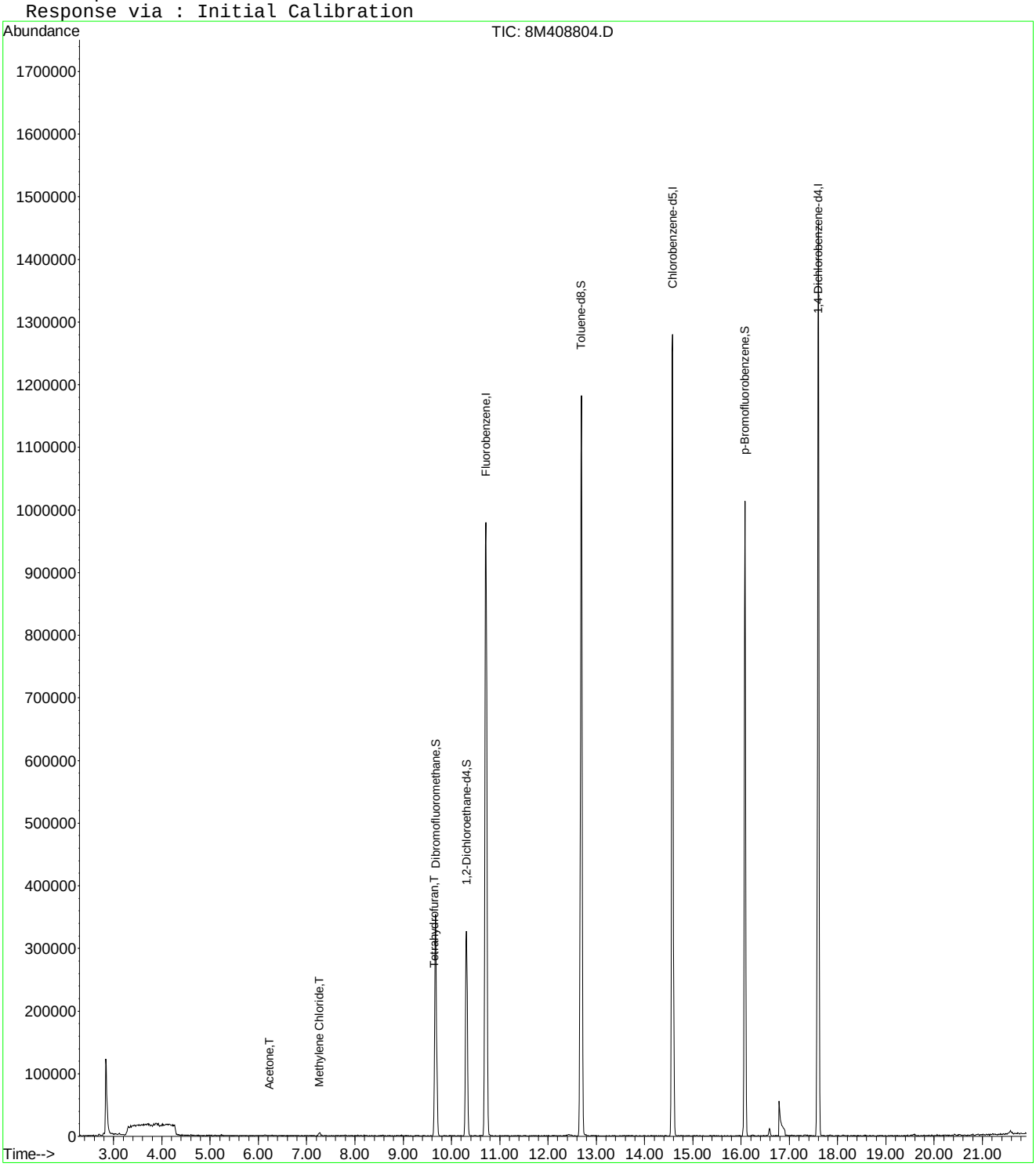

8M408804.D 8260WT.M Fri Nov 20 11:44:05 2015 Page 2

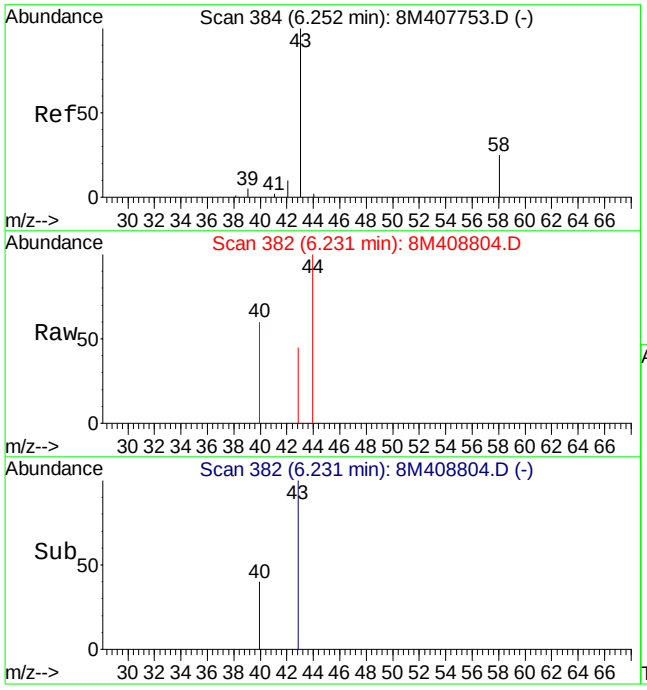

#13
Acetone
Concen: 0.13 ug/L
RT: 6.23 min Scan# 382
Delta R.T. -0.01 min
Lab File: 8M408804.D
Acq: 19 Nov 2015 15:59

Tgt Ion: 43 Resp: 217

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

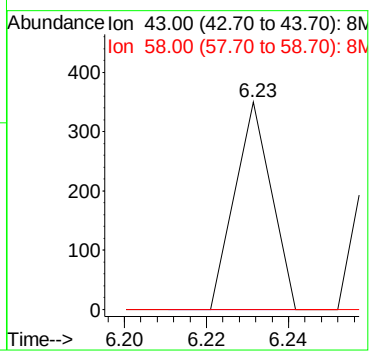

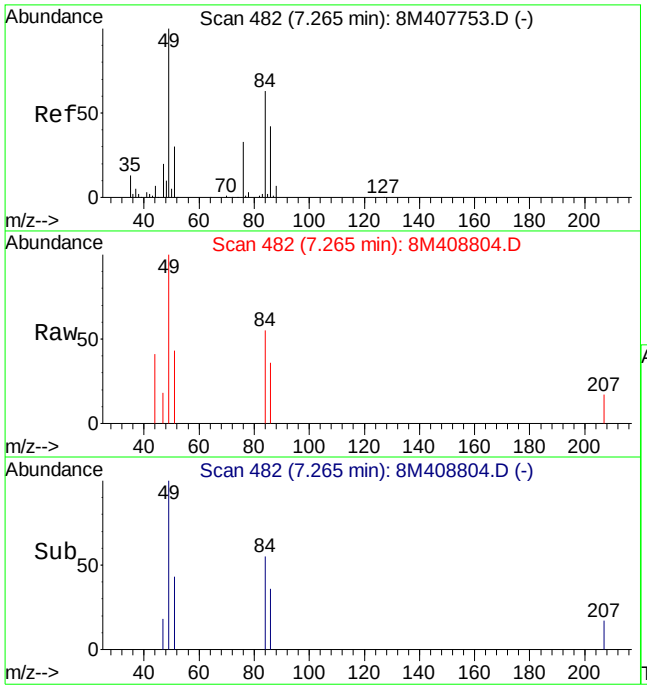

#19
Methylene Chloride
Concen: 0.21 ug/L
RT: 7.26 min Scan# 482
Delta R.T. 0.01 min
Lab File: 8M408804.D
Acq: 19 Nov 2015 15:59

Tgt Ion: 84 Resp: 2403

Ion	Ratio	Lower	Upper
84	100		
49	185.6	98.6	230.2

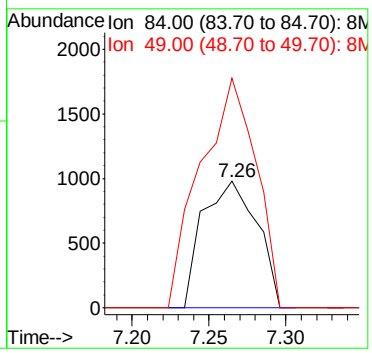

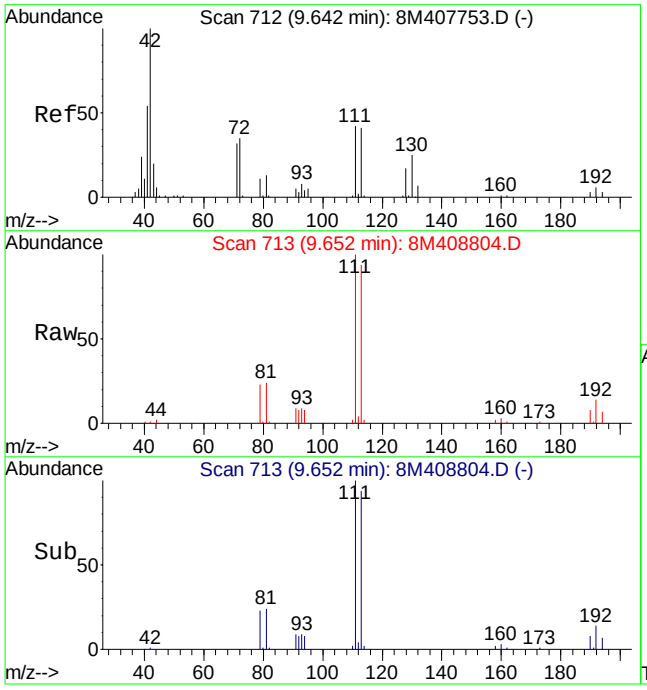

#36
Tetrahydrofuran
Concen: 0.64 ug/L
RT: 9.65 min Scan# 713
Delta R.T. 0.02 min
Lab File: 8M408804.D
Acq: 19 Nov 2015 15:59

Tgt Ion: 42 Resp: 1248

Ion	Ratio	Lower	Upper
42	100		
72	0.0	22.4	52.4#
71	0.0	19.5	45.5#

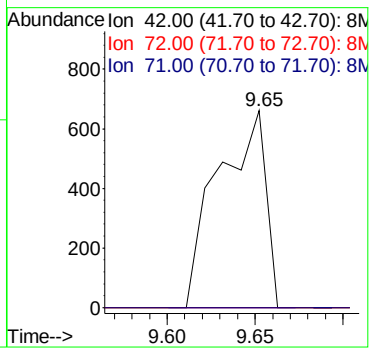

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016367.D
Acq On : 11 Nov 2015 14:34
Operator : ADC
Sample : WG546498-02 50ug/L CCV STD
Misc : 1,1 STD73185
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 12 09:55:23 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.141	96	458822	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.976	117	339437	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.305	152	185646	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.174	111	117230	24.9068 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.627%		
34) 1,2-Dichloroethane-d4	4.814	65	109219	24.1633 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.653%		
47) Toluene-d8	6.713	98	451841	25.8239 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.296%		
66) p-Bromofluorobenzene	8.723	95	166533	25.9500 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.800%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.039	85	335655	51.4419 ug/L	100
3) Chloromethane	1.149	50	324623	46.7065 ug/L	100
4) Vinyl Chloride	1.195	62	302744	48.7635 ug/L	100
5) 1,3-Butadiene	1.204	54	187905	47.0884 ug/L	99
6) Bromomethane	1.380	94	144179	44.0291 ug/L	99
7) Chloroethane	1.450	64	162615	51.3007 ug/L	100
8) Trichlorofluoromethane	1.531	101	371160	50.8195 ug/L	100
9) Diethyl ether	1.748	59	160210	43.7335 ug/L	100
10) 1,1-Dichloroethene	1.864	61	352128	48.8893 ug/L	100
11) Carbon Disulfide	1.875	76	735227	48.4661 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.893	101	221329	49.5559 ug/L	100
14) Acrolein	2.113	56	19271	39.2750 ug/L	100
15) Methylene Chloride	2.289	84	231020	43.3508 ug/L	100
16) Acetone	2.344	43	36680	39.7538 ug/L	100
17) trans-1,2-Dichloroethene	2.417	96	221824	47.1071 ug/L	100
18) Methyl acetate	2.449	43	114978	43.8882 ug/L #	100
19) Methyl Tert Butyl Ether	2.530	73	521300	43.4294 ug/L	100
20) 1,1-Dichloroethane	2.975	63	432976	48.0443 ug/L	100
21) Acrylonitrile	3.033	53	52338	41.9566 ug/L	100
22) Vinyl Acetate	3.274	86	23768	42.3588 ug/L	100
23) cis-1,2-Dichloroethene	3.566	96	250754	46.3794 ug/L	100
24) 2,2-Dichloropropane	3.694	77	356884	52.9451 ug/L	100
25) Cyclohexane	3.795	56	427191	49.2519 ug/L	100
26) Bromochloromethane	3.806	130	150619	47.1793 ug/L	100
27) Chloroform	3.934	83	408941	45.8012 ug/L	100
28) Carbon Tetrachloride	4.079	117	339341	48.9449 ug/L	100
30) 1,1,1-Trichloroethane	4.177	97	368726	47.0816 ug/L	100
31) 1,1-Dichloropropene	4.345	75	321276	48.3906 ug/L	100
32) 2-Butanone	4.365	43	62587	41.3567 ug/L	100
33) Benzene	4.646	78	939455	47.6412 ug/L	100
35) 1,2-Dichloroethane	4.892	62	272253	45.8836 ug/L	100
36) Methylcyclohexane	5.298	83	436849	47.3782 ug/L	100
37) Trichloroethene	5.321	130	258556	47.2500 ug/L	100
38) Dibromomethane	5.741	93	128239	43.8243 ug/L	100
39) 1,2-Dichloropropane	5.851	63	256757	47.3682 ug/L	100
40) Bromodichloromethane	5.937	83	316920	47.0276 ug/L	100
41) 1,4-Dioxane	6.149	88	3229	98.0789 ug/L	99
42) 2-Chloroethyl Vinyl Ether	6.528	63	121436	44.3247 ug/L	100
43) cis-1,3-Dichloropropene	6.545	75	380601	47.9030 ug/L	100
44) 4-Methyl-2-Pentanone	7.814	58	53208	39.5325 ug/L	99
45) trans-1,3-Dichloropropene	7.145	75	318685	46.8800 ug/L	100
48) Toluene	6.757	91	1047176	48.6967 ug/L	100
49) Tetrachloroethene	7.087	166	281120	48.5026 ug/L	100
50) 1,1,2-Trichloroethane	7.275	97	172931	43.2287 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016367.D
Acq On : 11 Nov 2015 14:34
Operator : ADC
Sample : WG546498-02 50ug/L CCV STD
Misc : 1,1 STD73185
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 12 09:55:23 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
51)	Dibromochloromethane	7.417	129	238478	46.1774 ug/L	100
52)	1,3-Dichloropropane	7.498	76	287243	45.2709 ug/L	100
53)	1,2-Dibromoethane	7.585	107	176507	44.4634 ug/L	100
54)	2-Hexanone	7.814	43	103462	40.2276 ug/L	99
55)	Chlorobenzene	7.984	112	674203	48.6490 ug/L	100
56)	1-Chlorohexane	7.999	69	69305	48.6888 ug/L	98
57)	Ethylbenzene	8.022	106	367709	48.7457 ug/L	100
58)	1,1,1,2-Tetrachloroethane	8.039	131	247369	48.2138 ug/L	100
59)	m-,p-Xylene	8.123	106	899052	99.3448 ug/L	100
60)	o-Xylene	8.384	106	435980	48.8219 ug/L	100
61)	Styrene	8.419	104	720887	48.5753 ug/L	100
62)	Bromoform	8.422	173	152687	44.8427 ug/L	100
63)	Isopropylbenzene	8.575	105	1145537	49.2114 ug/L	100
65)	1,3,5-Trimethylbenzene	8.914	105	1011949	49.7817 ug/L	100
67)	Bromobenzene	8.775	156	299300	47.1063 ug/L	99
68)	n-Propylbenzene	8.804	91	1356725	51.1343 ug/L	100
69)	1,1,2,2-Tetrachloroethane	8.844	83	198425	43.0559 ug/L	100
70)	2-Chlorotoluene	8.879	91	800522	49.3327 ug/L	100
71)	1,2,3-Trichloropropane	8.911	110	52918	41.2540 ug/L	100
72)	trans-1,4-Dichloro-2-B...	8.937	53	45281	42.4657 ug/L #	99
73)	1,2,4-Trimethylbenzene	9.111	105	1011612	49.8516 ug/L	100
74)	4-Chlorotoluene	8.969	91	823222	49.3067 ug/L	99
75)	tert-Butylbenzene	9.076	134	184752	49.5630 ug/L	100
76)	sec-Butylbenzene	9.166	105	1259196	50.4106 ug/L	100
77)	p-Isopropyltoluene	9.238	119	1105207	51.1600 ug/L	100
78)	1,3-Dichlorobenzene	9.267	146	573087	49.1162 ug/L	100
79)	1,4-Dichlorobenzene	9.310	146	565458	47.5085 ug/L	100
80)	n-Butylbenzene	9.441	91	1026625	51.6336 ug/L	100
81)	1,2-Dichlorobenzene	9.513	146	525641	47.3213 ug/L	100
82)	1,2-Dibromo-3-Chloropr...	9.890	75	36703	42.4356 ug/L	100
83)	Hexachlorobutadiene	10.188	225	262150	51.2717 ug/L	100
84)	1,2,4-Trichlorobenzene	10.202	180	433827	48.9385 ug/L	100
85)	Naphthalene	10.353	128	719141	43.7967 ug/L	100
86)	1,2,3-Trichlorobenzene	10.437	180	382234	46.7201 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016367.D
Acq On : 11 Nov 2015 14:34
Operator : ADC
Sample : WG546498-02 50ug/L CCV STD
Misc : 1,1 STD73185
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 12 09:55:23 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

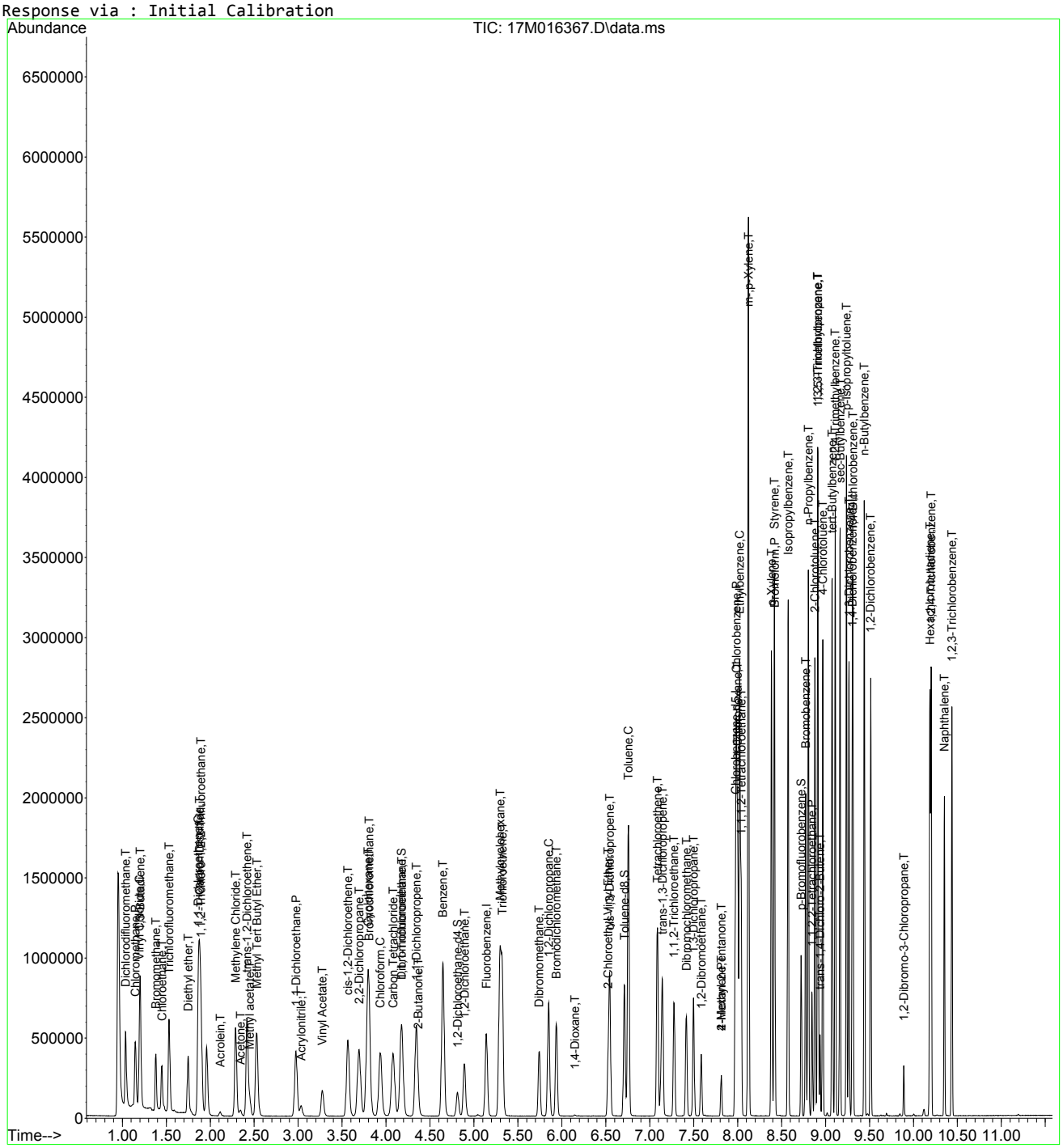

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016369.D
Acq On : 11 Nov 2015 15:14
Operator : ADC
Sample : WG546498-03 0.3ug/L STD
Misc : 1,1 STD73185
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 12 09:49:10 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	5.141	96	439106	25.00000	ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	325410	25.00000	ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.302	152	177701	25.00000	ug/L	0.0000
System Monitoring Compounds						
29) Dibromofluoromethane	4.180	111	805	0.1787	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 0.715%#			
34) 1,2-Dichloroethane-d4	4.811	65	993	0.2296	ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 0.918%#			
47) Toluene-d8	6.710	98	2790	0.1663	ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 0.665%#			
66) p-Bromofluorobenzene	8.723	95	1579	0.2570	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 1.028%#			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.038	85	2307	0.3694	ug/L	95
3) Chloromethane	1.148	50	3131	0.4707	ug/L	98
4) Vinyl Chloride	1.195	62	1967	0.3311	ug/L	97
5) 1,3-Butadiene	1.206	54	2510	0.6572	ug/L	92
6) Bromomethane	1.383	94	1901	0.6066	ug/L	75
7) Chloroethane	1.426	64	13916	4.5872	ug/L #	58
8) Trichlorofluoromethane	1.545	101	2531	0.3193	ug/L #	77
9) Diethyl ether	1.745	59	2180	0.6218	ug/L #	65
10) 1,1-Dichloroethene	1.867	61	2371	0.3440	ug/L #	69
11) Carbon Disulfide	1.881	76	5882	0.4052	ug/L #	68
12) 1,1,2-Trichloro-1,2,2-...	1.895	101	1495	0.3498	ug/L #	91
14) Acrolein	2.118	56	410	0.8731	ug/L	80
15) Methylene Chloride	2.286	84	3861	0.7570	ug/L #	66
16) Acetone	2.344	43	1441	1.0431	ug/L	93
17) trans-1,2-Dichloroethene	2.417	96	1871	0.4152	ug/L #	75
18) Methyl acetate	2.446	43	906	0.3614	ug/L #	57
19) Methyl Tert Butyl Ether	2.532	73	3666	0.3191	ug/L #	62
20) 1,1-Dichloroethane	2.975	63	2707	0.3139	ug/L #	74
21) Acrylonitrile	3.033	53	314	0.2630	ug/L #	54
23) cis-1,2-Dichloroethene	3.572	96	2030	0.3923	ug/L	78
24) 2,2-Dichloropropane	3.702	77	2489	0.3858	ug/L	97
25) Cyclohexane	3.798	56	2908	0.3503	ug/L #	67
26) Bromochloromethane	3.801	130	869	0.2844	ug/L	99
27) Chloroform	3.931	83	2965	0.3470	ug/L #	91
28) Carbon Tetrachloride	4.087	117	2090	0.3150	ug/L #	94
30) 1,1,1-Trichloroethane	4.189	97	2828	0.3773	ug/L	90
31) 1,1-Dichloropropene	4.342	75	2168	0.3412	ug/L #	66
32) 2-Butanone	4.362	43	768	0.5303	ug/L #	28
33) Benzene	4.646	78	6827	0.3618	ug/L	97
35) 1,2-Dichloroethane	4.892	62	1698	0.2990	ug/L	88
36) Methylcyclohexane	5.292	83	3337	0.3782	ug/L #	80
37) Trichloroethene	5.324	130	1957	0.3737	ug/L	98
38) Dibromomethane	5.743	93	1009	0.3603	ug/L	89
39) 1,2-Dichloropropane	5.851	63	1623	0.3129	ug/L	94
40) Bromodichloromethane	5.937	83	2224	0.3448	ug/L	98
42) 2-Chloroethyl Vinyl Ether	6.525	63	864	0.3295	ug/L	100
43) cis-1,3-Dichloropropene	6.545	75	2413	0.3173	ug/L #	74
44) 4-Methyl-2-Pentanone	7.816	58	692	0.5372	ug/L #	1
45) trans-1,3-Dichloropropene	7.148	75	1977	0.3039	ug/L #	75
48) Toluene	6.757	91	7140	0.3463	ug/L	98
49) Tetrachloroethene	7.087	166	1943	0.3497	ug/L	96
50) 1,1,2-Trichloroethane	7.275	97	1612	0.4203	ug/L	83
51) Dibromochloromethane	7.420	129	1509	0.3048	ug/L	98
52) 1,3-Dichloropropane	7.495	76	1902	0.3127	ug/L #	59

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016369.D
Acq On : 11 Nov 2015 15:14
Operator : ADC
Sample : WG546498-03 0.3ug/L STD
Misc : 1,1 STD73185
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 12 09:49:10 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) 1,2-Dibromoethane	7.585	107	1289	0.3387 ug/L	71
54) 2-Hexanone	7.814	43	1273	0.5163 ug/L	96
55) Chlorobenzene	7.984	112	4633	0.3487 ug/L #	1
56) 1-Chlorohexane	7.999	69	849	0.6222 ug/L #	1
57) Ethylbenzene	8.019	106	2418	0.3344 ug/L	100
58) 1,1,1,2-Tetrachloroethane	8.039	131	1431	0.2909 ug/L #	66
59) m-,p-Xylene	8.120	106	5961	0.6871 ug/L	97
60) o-Xylene	8.387	106	2794	0.3264 ug/L	99
61) Styrene	8.419	104	4886	0.3434 ug/L	97
62) Bromoform	8.422	173	887	0.2717 ug/L #	91
63) Isopropylbenzene	8.575	105	8316	0.3726 ug/L	93
65) 1,3,5-Trimethylbenzene	8.911	105	6999	0.3597 ug/L	95
67) Bromobenzene	8.775	156	2001	0.3290 ug/L	86
68) n-Propylbenzene	8.804	91	9056	0.3566 ug/L #	98
69) 1,1,2,2-Tetrachloroethane	8.844	83	1383	0.3135 ug/L	93
70) 2-Chlorotoluene	8.879	91	5492	0.3536 ug/L	99
71) 1,2,3-Trichloropropane	8.911	110	821	0.6687 ug/L #	18
72) trans-1,4-Dichloro-2-B...	8.937	53	553	0.5418 ug/L #	44
73) 1,2,4-Trimethylbenzene	9.111	105	7227	0.3721 ug/L	94
74) 4-Chlorotoluene	8.966	91	6024	0.3769 ug/L	99
75) tert-Butylbenzene	9.076	134	1256	0.3520 ug/L	93
76) sec-Butylbenzene	9.163	105	8905	0.3724 ug/L	96
77) p-Isopropyltoluene	9.235	119	7255	0.3508 ug/L	98
78) 1,3-Dichlorobenzene	9.264	146	3977	0.3561 ug/L	82
79) 1,4-Dichlorobenzene	9.310	146	4196	0.3683 ug/L	86
80) n-Butylbenzene	9.441	91	7271	0.3820 ug/L	99
81) 1,2-Dichlorobenzene	9.513	146	3615	0.3400 ug/L	83
82) 1,2-Dibromo-3-Chloropr...	9.890	75	220	0.2657 ug/L	86
83) Hexachlorobutadiene	10.188	225	1776	0.3629 ug/L	97
84) 1,2,4-Trichlorobenzene	10.199	180	3287	0.3874 ug/L	97
85) Naphthalene	10.350	128	5757	0.3663 ug/L	99
86) 1,2,3-Trichlorobenzene	10.437	180	2990	0.3818 ug/L	95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016369.D
Acq On : 11 Nov 2015 15:14
Operator : ADC
Sample : WG546498-03 0.3ug/L STD
Misc : 1,1 STD73185
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 12 09:49:10 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

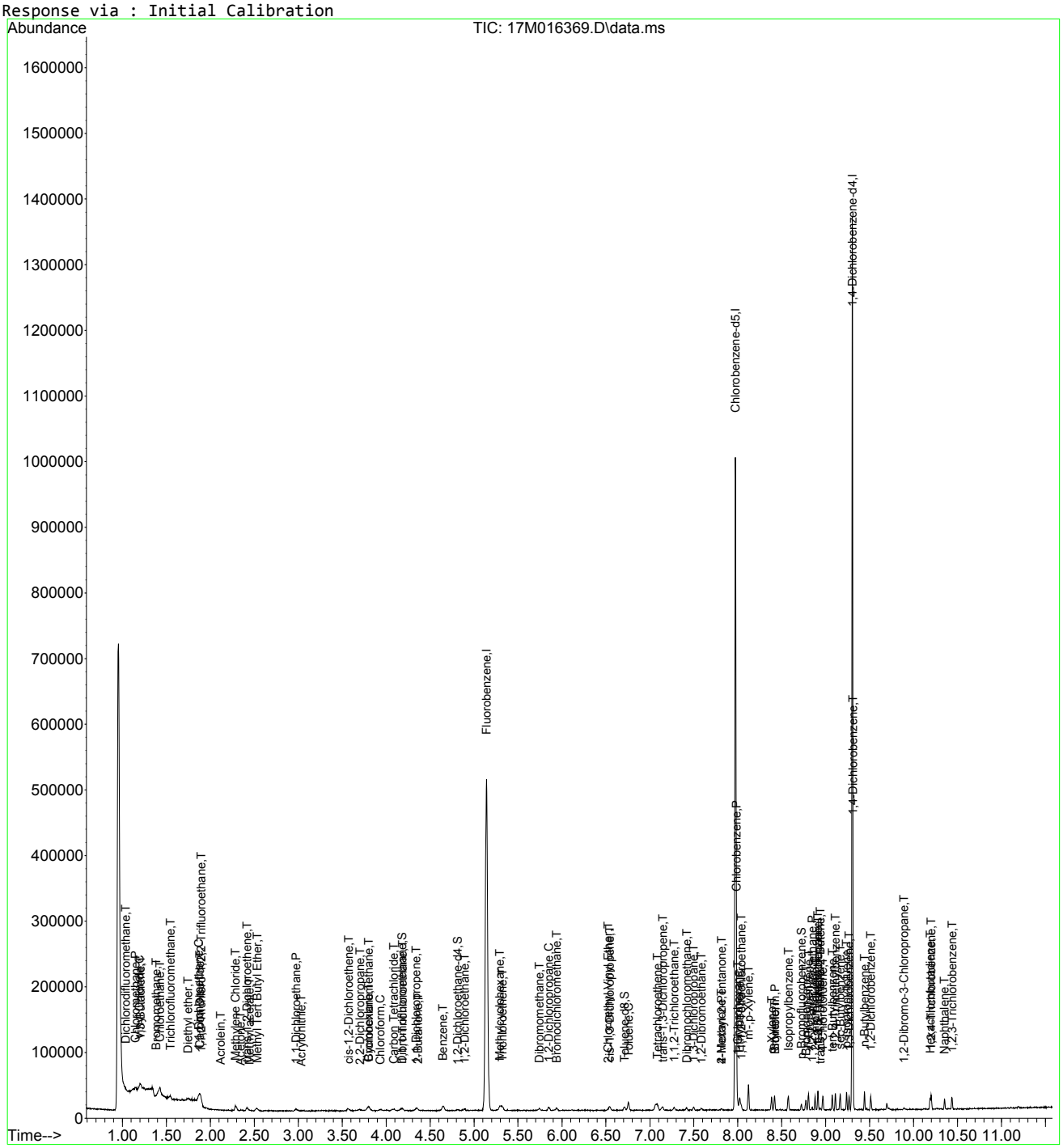

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016369.D
Acq On : 11 Nov 2015 15:14
Operator : ADC
Sample : WG546498-03 0.3ug/L STD
Misc : 1,1 STD73185
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 12 09:49:10 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	100	0.000
2	T	Dichlorodifluoromethane	-1.000	0.369	0.0	0	0.000
3	P	Chloromethane	-1.000	0.471	0.0	0	0.000
4	C	Vinyl Chloride	-1.000	0.331	0.0	0	0.000
5	T	1,3-Butadiene	-1.000	0.657	0.0	0	0.000
6	T	Bromomethane	-1.000	0.607	0.0	0	0.000
7	T	Chloroethane	-1.000	4.587	0.0	0	-0.024
8	T	Trichlorofluoromethane	-1.000	0.319	0.0	0	0.014
9	T	Diethyl ether	-1.000	0.622	0.0	0	0.000
10	C	1,1-Dichloroethene	-1.000	0.344	0.0	0	0.000
11	T	Carbon Disulfide	-1.000	0.405	0.0	0	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.000	0.350	0.0	0	0.000
13	T	Iodomethane	-1.000	0.000	0.0	0	0.000
14	T	Acrolein	-1.000	0.873	0.0	0	0.000
15	T	Methylene Chloride	-1.000	0.757	0.0	0	0.000
16	T	Acetone	-1.000	1.043	0.0	0	0.000
17	T	trans-1,2-Dichloroethene	-1.000	0.415	0.0	0	0.000
18	T	Methyl acetate	0.300	0.361	-20.3	100	0.000
19	T	Methyl Tert Butyl Ether	-1.000	0.319	0.0	0	0.000
20	P	1,1-Dichloroethane	-1.000	0.314	0.0	0	0.000
21	T	Acrylonitrile	-1.000	0.263	0.0	0	0.000
22	T	Vinyl Acetate	-1.000	0.000	0.0	0	-3.274#
23	T	cis-1,2-Dichloroethene	-1.000	0.392	0.0	0	0.000
24	T	2,2-Dichloropropane	-1.000	0.386	0.0	0	0.000
25	T	Cyclohexane	-1.000	0.350	0.0	0	0.000
26	T	Bromochloromethane	-1.000	0.284	0.0	0	0.000
27	C	Chloroform	0.300	0.347	-15.7#	100	0.000
28	T	Carbon Tetrachloride	-1.000	0.315	0.0	0	0.000
29	S	Dibromofluoromethane	-1.000	0.179	0.0	0	0.000
30	T	1,1,1-Trichloroethane	-1.000	0.377	0.0	0	0.012
31	T	1,1-Dichloropropene	-1.000	0.341	0.0	0	0.000
32	T	2-Butanone	-1.000	0.530	0.0	0	0.000
33	T	Benzene	-1.000	0.362	0.0	0	0.000
34	S	1,2-Dichloroethane-d4	-1.000	0.230	0.0	0	0.000
35	T	1,2-Dichloroethane	-1.000	0.299	0.0	0	0.000
36	T	Methylcyclohexane	0.300	0.378	-26.0#	100	0.000
37	T	Trichloroethene	-1.000	0.374	0.0	0	0.000
38	T	Dibromomethane	-1.000	0.360	0.0	0	0.000
39	C	1,2-Dichloropropane	-1.000	0.313	0.0	0	0.000
40	T	Bromodichloromethane	-1.000	0.345	0.0	0	0.000
41	T	1,4-Dioxane	-1.000	0.000	0.0	0	-6.149#
42	T	2-Chloroethyl Vinyl Ether	-1.000	0.330	0.0	0	0.000
43	T	cis-1,3-Dichloropropene	-1.000	0.317	0.0	0	0.000
44	T	4-Methyl-2-Pentanone	-1.000	0.537	0.0	0	0.000
45	T	trans-1,3-Dichloropropene	-1.000	0.304	0.0	0	0.000
46	I	Chlorobenzene-d5	25.000	25.000	0.0	100	0.000
47	S	Toluene-d8	-1.000	0.166	0.0	0	0.000
48	C	Toluene	-1.000	0.346	0.0	0	0.000
49	T	Tetrachloroethene	-1.000	0.350	0.0	0	0.000
50	T	1,1,2-Trichloroethane	-1.000	0.420	0.0	0	0.000
51	T	Dibromochloromethane	-1.000	0.305	0.0	0	0.000
52	T	1,3-Dichloropropane	-1.000	0.313	0.0	0	0.000
53	T	1,2-Dibromoethane	-1.000	0.339	0.0	0	0.000
54	T	2-Hexanone	-1.000	0.516	0.0	0	0.000
55	P	Chlorobenzene	-1.000	0.349	0.0	0	0.000

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016369.D
Acq On : 11 Nov 2015 15:14
Operator : ADC
Sample : WG546498-03 0.3ug/L STD
Misc : 1,1 STD73185
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 12 09:49:10 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	1-Chlorohexane	-1.000	0.622	0.0	0	0.000
57	C	Ethylbenzene	-1.000	0.334	0.0	0	0.000
58	T	1,1,1,2-Tetrachloroethane	-1.000	0.291	0.0	0	0.000
59	T	m-,p-Xylene	-1.000	0.687	0.0	0	0.000
60	T	o-Xylene	-1.000	0.326	0.0	0	0.000
61	T	Styrene	-1.000	0.343	0.0	0	0.000
62	P	Bromoform	-1.000	0.272	0.0	0	0.000
63	T	Isopropylbenzene	-1.000	0.373	0.0	0	0.000
64	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	100	0.000
65	T	1,3,5-Trimethylbenzene	-1.000	0.360	0.0	0	0.000
66	S	p-Bromofluorobenzene	-1.000	0.257	0.0	0	0.000
67	T	Bromobenzene	0.300	0.329	-9.7	100	0.000
68	T	n-Propylbenzene	-1.000	0.357	0.0	0	0.000
69	P	1,1,2,2-Tetrachloroethane	-1.000	0.314	0.0	0	0.000
70	T	2-Chlorotoluene	-1.000	0.354	0.0	0	0.000
71	T	1,2,3-Trichloropropane	-1.000	0.669	0.0	0	0.000
72	T	trans-1,4-Dichloro-2-Butene	-1.000	0.542	0.0	0	0.000
73	T	1,2,4-Trimethylbenzene	-1.000	0.372	0.0	0	0.000
74	T	4-Chlorotoluene	-1.000	0.377	0.0	0	0.000
75	T	tert-Butylbenzene	-1.000	0.352	0.0	0	0.000
76	T	sec-Butylbenzene	-1.000	0.372	0.0	0	0.000
77	T	p-Isopropyltoluene	-1.000	0.351	0.0	0	0.000
78	T	1,3-Dichlorobenzene	-1.000	0.356	0.0	0	0.000
79	T	1,4-Dichlorobenzene	0.300	0.368	-22.7	100	0.000
80	T	n-Butylbenzene	-1.000	0.382	0.0	0	0.000
81	T	1,2-Dichlorobenzene	0.300	0.340	-13.3	100	0.000
82	T	1,2-Dibromo-3-Chloropropane	-1.000	0.266	0.0	0	0.000
83	T	Hexachlorobutadiene	-1.000	0.363	0.0	0	0.000
84	T	1,2,4-Trichlorobenzene	-1.000	0.387	0.0	0	0.000
85	T	Naphthalene	-1.000	0.366	0.0	0	0.000
86	T	1,2,3-Trichlorobenzene	-1.000	0.382	0.0	0	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 1

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016370.D
Acq On : 11 Nov 2015 15:34
Operator : ADC
Sample : WG546498-04 0.4ug/L STD
Misc : 1,1 STD73185
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 12 09:49:12 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	5.141	96	441960	25.00000	ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	330272	25.00000	ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.302	152	179952	25.00000	ug/L	0.0000
System Monitoring Compounds						
29) Dibromofluoromethane	4.183	111	716	0.1579	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.632%#		
34) 1,2-Dichloroethane-d4	4.805	65	795	0.1826	ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.730%#		
47) Toluene-d8	6.713	98	2899	0.1703	ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.681%#		
66) p-Bromofluorobenzene	8.723	95	1391	0.2236	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.894%#		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.038	85	2219	0.3531	ug/L	91
3) Chloromethane	1.148	50	3970	0.5930	ug/L	96
4) Vinyl Chloride	1.195	62	2454	0.4104	ug/L	93
5) 1,3-Butadiene	1.206	54	2446	0.6363	ug/L	90
6) Bromomethane	1.380	94	2302	0.7298	ug/L	80
7) Chloroethane	1.461	64	3782	1.2386	ug/L #	69
8) Trichlorofluoromethane	1.548	101	3151	0.4003	ug/L #	89
9) Diethyl ether	1.748	59	2054	0.5821	ug/L	76
10) 1,1-Dichloroethene	1.867	61	2730	0.3935	ug/L	90
11) Carbon Disulfide	1.887	76	7051	0.4825	ug/L #	61
12) 1,1,2-Trichloro-1,2,2-...	1.895	101	1648	0.3831	ug/L #	86
14) Acrolein	2.040	56	209	0.4422	ug/L	85
15) Methylene Chloride	2.289	84	3898	0.7594	ug/L #	71
16) Acetone	2.269	43	352	Below Cal		97
17) trans-1,2-Dichloroethene	2.422	96	1909	0.4209	ug/L	94
18) Methyl acetate	2.451	43	783	0.3103	ug/L #	51
19) Methyl Tert Butyl Ether	2.530	73	4547	0.3933	ug/L #	81
20) 1,1-Dichloroethane	2.978	63	3455	0.3980	ug/L	93
21) Acrylonitrile	3.045	53	813	0.6766	ug/L #	57
23) cis-1,2-Dichloroethene	3.566	96	2457	0.4718	ug/L	78
24) 2,2-Dichloropropane	3.688	77	2771	0.4268	ug/L	98
25) Cyclohexane	3.801	56	3331	0.3987	ug/L #	76
26) Bromochloromethane	3.806	130	1045	0.3398	ug/L	90
27) Chloroform	3.928	83	3848	0.4474	ug/L	94
28) Carbon Tetrachloride	4.084	117	2434	0.3645	ug/L #	94
30) 1,1,1-Trichloroethane	4.171	97	3164	0.4194	ug/L	97
31) 1,1-Dichloropropene	4.342	75	2548	0.3984	ug/L #	83
32) 2-Butanone	4.374	43	1298	0.8904	ug/L #	41
33) Benzene	4.652	78	7938	0.4179	ug/L	99
35) 1,2-Dichloroethane	4.892	62	2197	0.3844	ug/L #	87
36) Methylcyclohexane	5.295	83	3944	0.4441	ug/L #	90
37) Trichloroethene	5.324	130	2213	0.4198	ug/L	96
38) Dibromomethane	5.738	93	1249	0.4431	ug/L	98
39) 1,2-Dichloropropane	5.848	63	2044	0.3915	ug/L	92
40) Bromodichloromethane	5.934	83	2582	0.3978	ug/L	99
42) 2-Chloroethyl Vinyl Ether	6.528	63	1041	0.3945	ug/L	96
43) cis-1,3-Dichloropropene	6.545	75	2878	0.3760	ug/L #	67
44) 4-Methyl-2-Pentanone	7.816	58	659	0.5083	ug/L #	68
45) trans-1,3-Dichloropropene	7.145	75	2430	0.3711	ug/L #	72
48) Toluene	6.757	91	8674	0.4146	ug/L	100
49) Tetrachloroethene	7.084	166	2376	0.4213	ug/L	96
50) 1,1,2-Trichloroethane	7.275	97	1862	0.4784	ug/L	92
51) Dibromochloromethane	7.417	129	1919	0.3819	ug/L	96
52) 1,3-Dichloropropane	7.498	76	2429	0.3934	ug/L	77

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016370.D
Acq On : 11 Nov 2015 15:34
Operator : ADC
Sample : WG546498-04 0.4ug/L STD
Misc : 1,1 STD73185
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 12 09:49:12 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) 1,2-Dibromoethane	7.588	107	1554	0.4023 ug/L	65
55) Chlorobenzene	7.984	112	5515	0.4090 ug/L #	15
56) 1-Chlorohexane	7.996	69	783	0.5653 ug/L #	1
57) Ethylbenzene	8.019	106	3043	0.4146 ug/L	90
58) 1,1,1,2-Tetrachloroethane	8.037	131	1919	0.3844 ug/L	78
59) m-,p-Xylene	8.120	106	7103	0.8067 ug/L	95
60) o-Xylene	8.384	106	3462	0.3984 ug/L	99
61) Styrene	8.419	104	5746	0.3979 ug/L	94
62) Bromoform	8.419	173	1165	0.3516 ug/L #	90
63) Isopropylbenzene	8.572	105	9444	0.4170 ug/L	96
65) 1,3,5-Trimethylbenzene	8.911	105	8355	0.4240 ug/L	95
67) Bromobenzene	8.775	156	2505	0.4067 ug/L	95
68) n-Propylbenzene	8.804	91	10612	0.4126 ug/L #	96
69) 1,1,2,2-Tetrachloroethane	8.844	83	1952	0.4370 ug/L	86
70) 2-Chlorotoluene	8.879	91	6551	0.4165 ug/L	98
71) 1,2,3-Trichloropropane	8.911	110	844	0.6788 ug/L #	36
72) trans-1,4-Dichloro-2-B...	8.937	53	535	0.5176 ug/L #	60
73) 1,2,4-Trimethylbenzene	9.111	105	8347	0.4244 ug/L	97
74) 4-Chlorotoluene	8.966	91	6896	0.4261 ug/L	100
75) tert-Butylbenzene	9.076	134	1397	0.3866 ug/L	95
76) sec-Butylbenzene	9.163	105	10277	0.4244 ug/L	97
77) p-Isopropyltoluene	9.238	119	8537	0.4077 ug/L	99
78) 1,3-Dichlorobenzene	9.264	146	4658	0.4118 ug/L	86
79) 1,4-Dichlorobenzene	9.310	146	4566	0.3958 ug/L #	78
80) n-Butylbenzene	9.441	91	8075	0.4190 ug/L	99
81) 1,2-Dichlorobenzene	9.513	146	4223	0.3922 ug/L	74
82) 1,2-Dibromo-3-Chloropr...	9.892	75	280	0.3340 ug/L	98
83) Hexachlorobutadiene	10.188	225	2004	0.4043 ug/L	97
84) 1,2,4-Trichlorobenzene	10.202	180	3538	0.4117 ug/L	96
85) Naphthalene	10.353	128	6853	0.4306 ug/L	100
86) 1,2,3-Trichlorobenzene	10.437	180	3258	0.4108 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016370.D
Acq On : 11 Nov 2015 15:34
Operator : ADC
Sample : WG546498-04 0.4ug/L STD
Misc : 1,1 STD73185
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 12 09:49:12 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

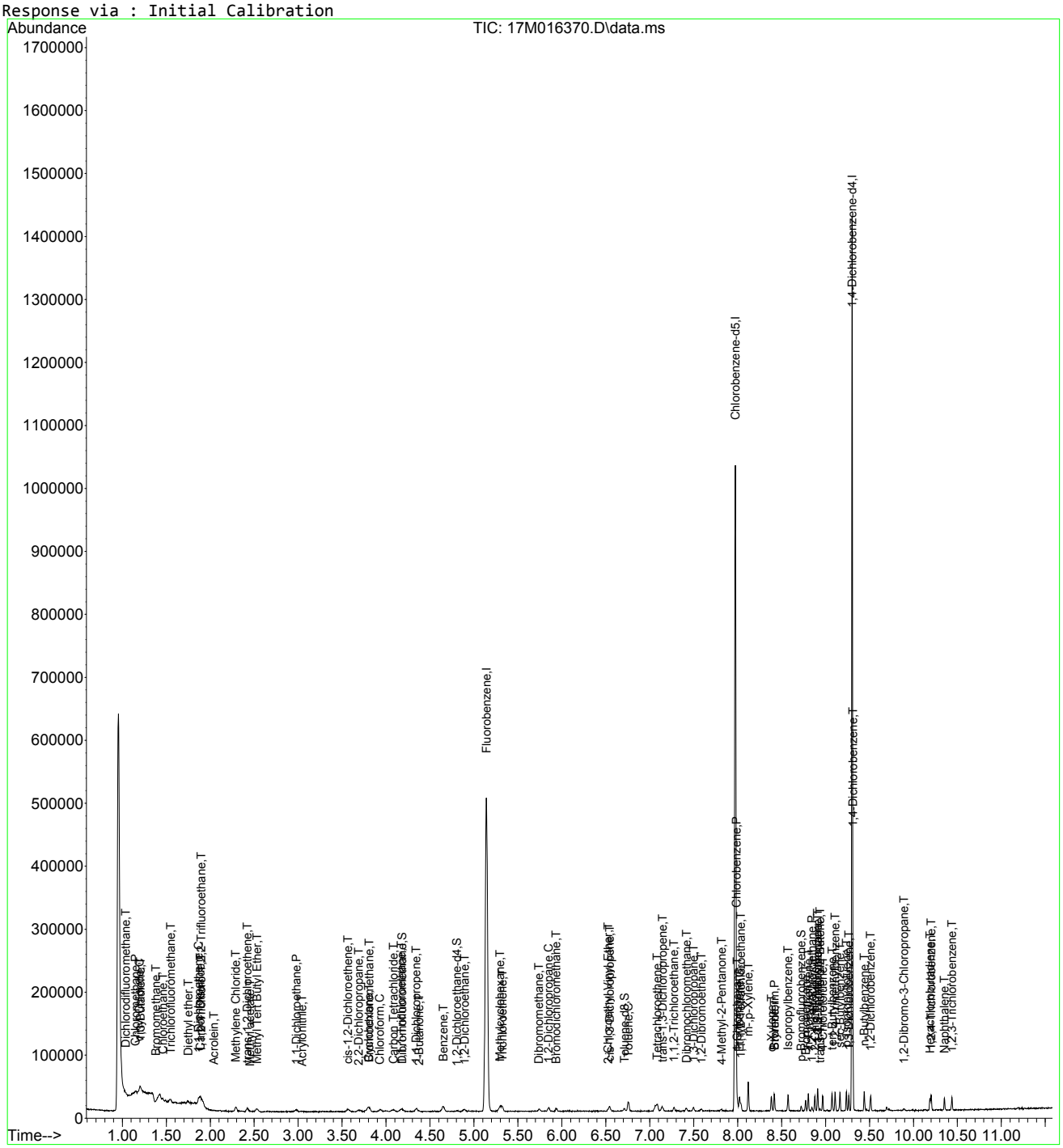

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016370.D
Acq On : 11 Nov 2015 15:34
Operator : ADC
Sample : WG546498-04 0.4ug/L STD
Misc : 1,1 STD73185
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 12 09:49:12 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	100	0.000
2	T	Dichlorodifluoromethane	-1.000	0.353	0.0	0	0.000
3	P	Chloromethane	-1.000	0.593	0.0	0	0.000
4	C	Vinyl Chloride	0.400	0.410	-2.5#	100	0.000
5	T	1,3-Butadiene	-1.000	0.636	0.0	0	0.000
6	T	Bromomethane	-1.000	0.730	0.0	0	0.000
7	T	Chloroethane	-1.000	1.239	0.0	0	0.011
8	T	Trichlorofluoromethane	0.400	0.400	0.0	100	0.017
9	T	Diethyl ether	-1.000	0.582	0.0	0	0.000
10	C	1,1-Dichloroethene	0.400	0.393	1.8#	100	0.000
11	T	Carbon Disulfide	0.400	0.483	-20.7	100	0.012
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.400	0.383	4.3	100	0.000
13	T	Iodomethane	-1.000	0.000	0.0	0	0.000
14	T	Acrolein	-1.000	0.442	0.0	0	-0.073
15	T	Methylene Chloride	-1.000	0.759	0.0	0	0.000
16	T	Acetone	-1.000	-0.212	0.0	0	-0.075
17	T	trans-1,2-Dichloroethene	0.400	0.421	-5.2	100	0.000
18	T	Methyl acetate	0.400	0.310	22.5	100	0.000
19	T	Methyl Tert Butyl Ether	0.400	0.393	1.8	100	0.000
20	P	1,1-Dichloroethane	0.400	0.398	0.5	100	0.000
21	T	Acrylonitrile	-1.000	0.677	0.0	0	0.012
22	T	Vinyl Acetate	-1.000	0.000	0.0	0	-3.274#
23	T	cis-1,2-Dichloroethene	0.400	0.472	-18.0	100	0.000
24	T	2,2-Dichloropropane	0.400	0.427	-6.7	100	0.000
25	T	Cyclohexane	0.400	0.399	0.3	100	0.000
26	T	Bromochloromethane	-1.000	0.340	0.0	0	0.000
27	C	Chloroform	0.400	0.447	-11.7#	100	0.000
28	T	Carbon Tetrachloride	0.400	0.364	9.0	100	0.000
29	S	Dibromofluoromethane	-1.000	0.158	0.0	0	0.000
30	T	1,1,1-Trichloroethane	0.400	0.419	-4.7	100	0.000
31	T	1,1-Dichloropropene	0.400	0.398	0.5	100	0.000
32	T	2-Butanone	-1.000	0.890	0.0	0	0.000
33	T	Benzene	0.400	0.418	-4.5	100	0.000
34	S	1,2-Dichloroethane-d4	-1.000	0.183	0.0	0	0.000
35	T	1,2-Dichloroethane	0.400	0.384	4.0	100	0.000
36	T	Methylcyclohexane	0.400	0.444	-11.0	100	0.000
37	T	Trichloroethene	0.400	0.420	-5.0	100	0.000
38	T	Dibromomethane	0.400	0.443	-10.7	100	0.000
39	C	1,2-Dichloropropane	0.400	0.391	2.3#	100	0.000
40	T	Bromodichloromethane	0.400	0.398	0.5	100	0.000
41	T	1,4-Dioxane	-1.000	0.000	0.0	0	-6.149#
42	T	2-Chloroethyl Vinyl Ether	-1.000	0.394	0.0	0	0.000
43	T	cis-1,3-Dichloropropene	0.400	0.376	6.0	100	0.000
44	T	4-Methyl-2-Pentanone	-1.000	0.508	0.0	0	0.000
45	T	trans-1,3-Dichloropropene	0.400	0.371	7.3	100	0.000
46	I	Chlorobenzene-d5	25.000	25.000	0.0	100	0.000
47	S	Toluene-d8	-1.000	0.170	0.0	0	0.000
48	C	Toluene	0.400	0.415	-3.7#	100	0.000
49	T	Tetrachloroethene	0.400	0.421	-5.2	100	0.000
50	T	1,1,2-Trichloroethane	0.400	0.478	-19.5	100	0.000
51	T	Dibromochloromethane	0.400	0.382	4.5	100	0.000
52	T	1,3-Dichloropropane	0.400	0.393	1.8	100	0.000
53	T	1,2-Dibromoethane	0.400	0.402	-0.5	100	0.000
54	T	2-Hexanone	-1.000	0.101	0.0	0	-0.061
55	P	Chlorobenzene	0.400	0.409	-2.2	100	0.000

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016370.D
Acq On : 11 Nov 2015 15:34
Operator : ADC
Sample : WG546498-04 0.4ug/L STD
Misc : 1,1 STD73185
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 12 09:49:12 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	1-Chlorohexane	-1.000	0.565	0.0	0	0.000
57	C	Ethylbenzene	0.400	0.415	-3.7#	100	0.000
58	T	1,1,1,2-Tetrachloroethane	0.400	0.384	4.0	100	0.000
59	T	m-,p-Xylene	0.800	0.807	-0.9	100	0.000
60	T	o-Xylene	0.400	0.398	0.5	100	0.000
61	T	Styrene	0.400	0.398	0.5	100	0.000
62	P	Bromoform	0.400	0.352	12.0	100	0.000
63	T	Isopropylbenzene	0.400	0.417	-4.2	100	0.000
64	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	100	0.000
65	T	1,3,5-Trimethylbenzene	0.400	0.424	-6.0	100	0.000
66	S	p-Bromofluorobenzene	-1.000	0.224	0.0	0	0.000
67	T	Bromobenzene	0.400	0.407	-1.7	100	0.000
68	T	n-Propylbenzene	0.400	0.413	-3.2	100	0.000
69	P	1,1,2,2-Tetrachloroethane	0.400	0.437	-9.2	100	0.000
70	T	2-Chlorotoluene	0.400	0.416	-4.0	100	0.000
71	T	1,2,3-Trichloropropane	-1.000	0.679	0.0	0	0.000
72	T	trans-1,4-Dichloro-2-Butene	0.400	0.518	-29.5#	100	0.000
73	T	1,2,4-Trimethylbenzene	0.400	0.424	-6.0	100	0.000
74	T	4-Chlorotoluene	0.400	0.426	-6.5	100	0.000
75	T	tert-Butylbenzene	0.400	0.387	3.3	100	0.000
76	T	sec-Butylbenzene	0.400	0.424	-6.0	100	0.000
77	T	p-Isopropyltoluene	0.400	0.408	-2.0	100	0.000
78	T	1,3-Dichlorobenzene	0.400	0.412	-3.0	100	0.000
79	T	1,4-Dichlorobenzene	0.400	0.396	1.0	100	0.000
80	T	n-Butylbenzene	0.400	0.419	-4.7	100	0.000
81	T	1,2-Dichlorobenzene	0.400	0.392	2.0	100	0.000
82	T	1,2-Dibromo-3-Chloropropane	-1.000	0.334	0.0	0	0.000
83	T	Hexachlorobutadiene	0.400	0.404	-1.0	100	0.000
84	T	1,2,4-Trichlorobenzene	0.400	0.412	-3.0	100	0.000
85	T	Naphthalene	0.400	0.431	-7.7	100	0.000
86	T	1,2,3-Trichlorobenzene	0.400	0.411	-2.7	100	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016371.D
Acq On : 11 Nov 2015 15:54
Operator : ADC
Sample : WG546498-05 1.0ug/L STD
Misc : 1,1 STD73185
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 12 09:49:14 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	5.141	96	445058	25.00000	ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	332322	25.00000	ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.302	152	180826	25.00000	ug/L	0.0000
System Monitoring Compounds						
29) Dibromofluoromethane	4.168	111	618	0.1354	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.542%#		
34) 1,2-Dichloroethane-d4	4.811	65	856	0.1952	ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.781%#		
47) Toluene-d8	6.713	98	3321	0.1939	ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.776%#		
66) p-Bromofluorobenzene	8.723	95	994	0.1590	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.636%#		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.041	85	5409	0.8546	ug/L	99
3) Chloromethane	1.148	50	7399	1.0975	ug/L	99
4) Vinyl Chloride	1.195	62	5503	0.9138	ug/L	98
5) 1,3-Butadiene	1.209	54	4534	1.1713	ug/L	92
6) Bromomethane	1.383	94	3471	1.0927	ug/L	90
7) Chloroethane	1.458	64	3649	1.1868	ug/L	100
8) Trichlorofluoromethane	1.545	101	7176	0.9336	ug/L #	93
9) Diethyl ether	1.748	59	3461	0.9740	ug/L	91
10) 1,1-Dichloroethene	1.869	61	6561	0.9391	ug/L	94
11) Carbon Disulfide	1.884	76	14418	0.9798	ug/L #	93
12) 1,1,2-Trichloro-1,2,2-...	1.898	101	4094	0.9450	ug/L	97
14) Acrolein	2.113	56	698	1.4665	ug/L #	63
15) Methylene Chloride	2.292	84	6316	1.2218	ug/L	83
16) Acetone	2.347	43	2407	2.1169	ug/L	83
17) trans-1,2-Dichloroethene	2.419	96	4523	0.9902	ug/L	93
18) Methyl acetate	2.448	43	2044	0.8043	ug/L #	82
19) Methyl Tert Butyl Ether	2.532	73	11296	0.9702	ug/L	93
20) 1,1-Dichloroethane	2.981	63	8285	0.9478	ug/L	95
21) Acrylonitrile	3.039	53	1509	1.2471	ug/L	76
23) cis-1,2-Dichloroethene	3.566	96	4887	0.9319	ug/L	97
24) 2,2-Dichloropropane	3.693	77	5589	0.8548	ug/L	92
25) Cyclohexane	3.798	56	8433	1.0023	ug/L	95
26) Bromochloromethane	3.806	130	2760	0.8913	ug/L	99
27) Chloroform	3.940	83	8002	0.9239	ug/L	95
28) Carbon Tetrachloride	4.081	117	6155	0.9152	ug/L	99
30) 1,1,1-Trichloroethane	4.180	97	7156	0.9420	ug/L	97
31) 1,1-Dichloropropene	4.345	75	6043	0.9383	ug/L	91
32) 2-Butanone	4.383	43	2111	1.4381	ug/L #	64
33) Benzene	4.649	78	18589	0.9718	ug/L	99
35) 1,2-Dichloroethane	4.895	62	5395	0.9374	ug/L #	86
36) Methylcyclohexane	5.297	83	8495	0.9498	ug/L #	92
37) Trichloroethene	5.321	130	5165	0.9731	ug/L	98
38) Dibromomethane	5.740	93	2682	0.9449	ug/L #	53
39) 1,2-Dichloropropane	5.850	63	5018	0.9544	ug/L	99
40) Bromodichloromethane	5.937	83	6016	0.9203	ug/L	99
42) 2-Chloroethyl Vinyl Ether	6.528	63	2565	0.9652	ug/L	94
43) cis-1,3-Dichloropropene	6.542	75	7125	0.9245	ug/L #	87
44) 4-Methyl-2-Pentanone	7.813	58	1421	1.0884	ug/L	92
45) trans-1,3-Dichloropropene	7.145	75	6054	0.9181	ug/L	93
48) Toluene	6.757	91	19859	0.9433	ug/L	98
49) Tetrachloroethene	7.084	166	5340	0.9411	ug/L	97
50) 1,1,2-Trichloroethane	7.272	97	3805	0.9715	ug/L	97
51) Dibromochloromethane	7.414	129	4728	0.9351	ug/L	99
52) 1,3-Dichloropropane	7.495	76	6040	0.9723	ug/L	88

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016371.D
Acq On : 11 Nov 2015 15:54
Operator : ADC
Sample : WG546498-05 1.0ug/L STD
Misc : 1,1 STD73185
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 12 09:49:14 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) 1,2-Dibromoethane	7.585	107	3809	0.9801 ug/L	96
54) 2-Hexanone	7.816	43	2683	1.0655 ug/L	98
55) Chlorobenzene	7.984	112	12879	0.9492 ug/L #	64
56) 1-Chlorohexane	7.996	69	1649	1.1833 ug/L #	1
57) Ethylbenzene	8.019	106	7075	0.9580 ug/L	99
58) 1,1,1,2-Tetrachloroethane	8.036	131	4693	0.9343 ug/L	95
59) m-,p-Xylene	8.120	106	16718	1.8869 ug/L	97
60) o-Xylene	8.384	106	8304	0.9498 ug/L	100
61) Styrene	8.416	104	13773	0.9479 ug/L	97
62) Bromoform	8.419	173	2916	0.8747 ug/L	96
63) Isopropylbenzene	8.572	105	21951	0.9632 ug/L	98
65) 1,3,5-Trimethylbenzene	8.911	105	19374	0.9785 ug/L	98
67) Bromobenzene	8.775	156	5908	0.9546 ug/L	97
68) n-Propylbenzene	8.804	91	24929	0.9646 ug/L #	98
69) 1,1,2,2-Tetrachloroethane	8.844	83	4271	0.9515 ug/L	97
70) 2-Chlorotoluene	8.879	91	15301	0.9681 ug/L	99
71) 1,2,3-Trichloropropane	8.908	110	1422	1.1381 ug/L	78
72) trans-1,4-Dichloro-2-B...	8.937	53	987	0.9503 ug/L #	79
73) 1,2,4-Trimethylbenzene	9.108	105	19409	0.9820 ug/L	99
74) 4-Chlorotoluene	8.966	91	15311	0.9415 ug/L	96
75) tert-Butylbenzene	9.073	134	3468	0.9552 ug/L	99
76) sec-Butylbenzene	9.163	105	23806	0.9785 ug/L	99
77) p-Isopropyltoluene	9.238	119	20603	0.9791 ug/L	100
78) 1,3-Dichlorobenzene	9.264	146	11012	0.9689 ug/L	96
79) 1,4-Dichlorobenzene	9.310	146	11073	0.9551 ug/L	93
80) n-Butylbenzene	9.441	91	18519	0.9562 ug/L	100
81) 1,2-Dichlorobenzene	9.513	146	10314	0.9533 ug/L	93
82) 1,2-Dibromo-3-Chloropr...	9.889	75	842	0.9995 ug/L	93
83) Hexachlorobutadiene	10.188	225	4589	0.9214 ug/L	97
84) 1,2,4-Trichlorobenzene	10.202	180	8177	0.9470 ug/L	99
85) Naphthalene	10.353	128	15793	0.9875 ug/L	99
86) 1,2,3-Trichlorobenzene	10.437	180	7685	0.9644 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016371.D
Acq On : 11 Nov 2015 15:54
Operator : ADC
Sample : WG546498-05 1.0ug/L STD
Misc : 1,1 STD73185
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 12 09:49:14 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

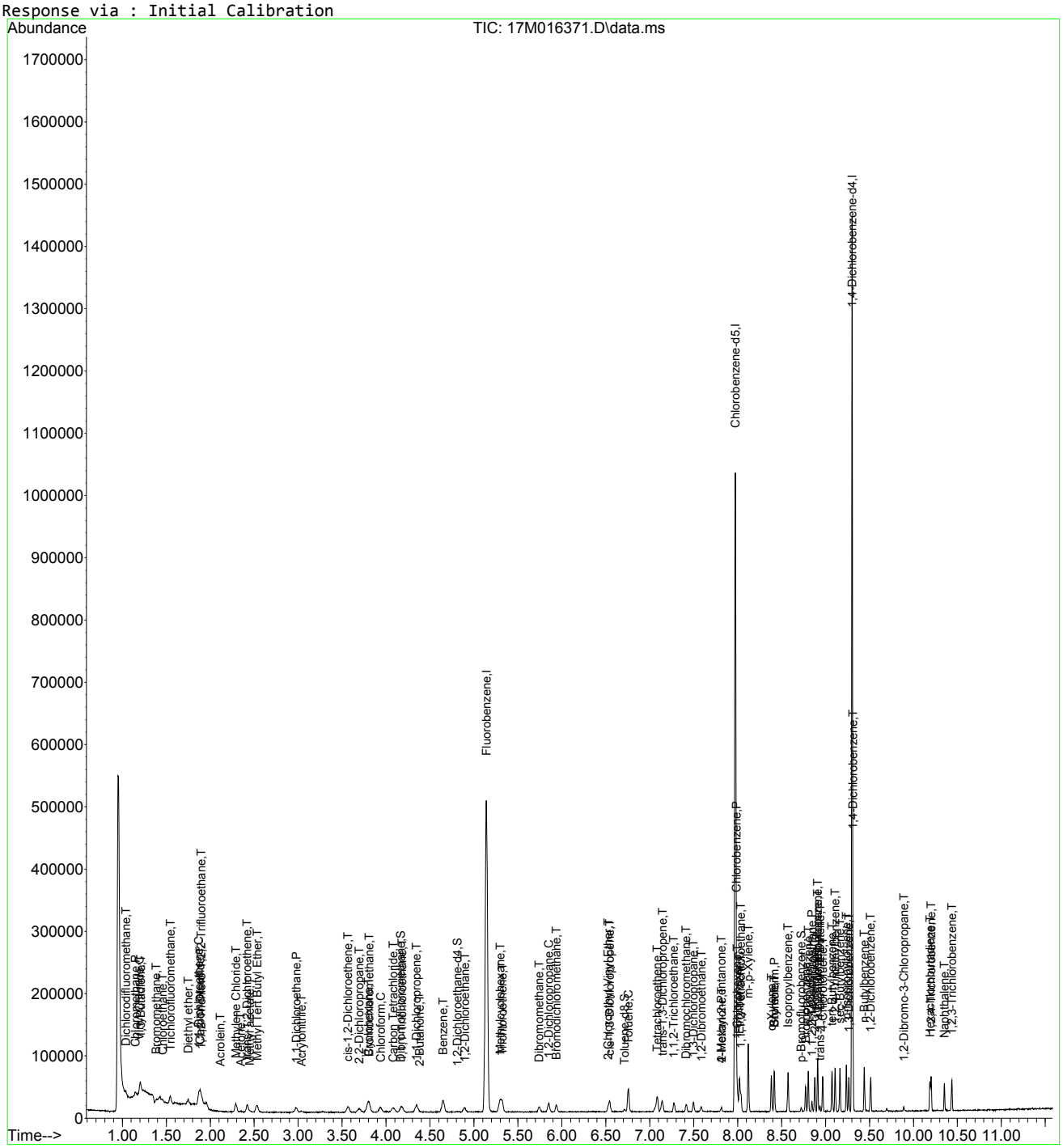

8260_VMS.M Thu Nov 12 09:53:38 2015 Page: 3

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016371.D
Acq On : 11 Nov 2015 15:54
Operator : ADC
Sample : WG546498-05 1.0ug/L STD
Misc : 1,1 STD73185
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 12 09:49:14 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	100	0.000
2	T	Dichlorodifluoromethane	1.000	0.855	14.5	100	0.000
3	P	Chloromethane	1.000	1.097	-9.7	100	0.000
4	C	Vinyl Chloride	1.000	0.914	8.6#	100	0.000
5	T	1,3-Butadiene	1.000	1.171	-17.1	100	0.000
6	T	Bromomethane	1.000	1.093	-9.3	100	0.000
7	T	Chloroethane	1.000	1.187	-18.7	100	0.000
8	T	Trichlorofluoromethane	1.000	0.934	6.6	100	0.014
9	T	Diethyl ether	1.000	0.974	2.6	100	0.000
10	C	1,1-Dichloroethene	1.000	0.939	6.1#	100	0.000
11	T	Carbon Disulfide	1.000	0.980	2.0	100	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.000	0.945	5.5	100	0.000
13	T	Iodomethane	-1.000	0.000	0.0	0	0.000
14	T	Acrolein	-1.000	1.467	0.0	0	0.000
15	T	Methylene Chloride	1.000	1.222	-22.2	100	0.000
16	T	Acetone	-1.000	2.117	0.0	0	0.000
17	T	trans-1,2-Dichloroethene	1.000	0.990	1.0	100	0.000
18	T	Methyl acetate	1.000	0.804	19.6	75	0.000
19	T	Methyl Tert Butyl Ether	1.000	0.970	3.0	100	0.000
20	P	1,1-Dichloroethane	1.000	0.948	5.2	100	0.000
21	T	Acrylonitrile	-1.000	1.247	0.0	0	0.000
22	T	Vinyl Acetate	-1.000	0.000	0.0	0	-3.274#
23	T	cis-1,2-Dichloroethene	1.000	0.932	6.8	100	0.000
24	T	2,2-Dichloropropane	1.000	0.855	14.5	100	0.000
25	T	Cyclohexane	1.000	1.002	-0.2	100	0.000
26	T	Bromochloromethane	1.000	0.891	10.9	100	0.000
27	C	Chloroform	1.000	0.924	7.6#	100	0.000
28	T	Carbon Tetrachloride	1.000	0.915	8.5	100	0.000
29	S	Dibromofluoromethane	-1.000	0.135	0.0	0	0.000
30	T	1,1,1-Trichloroethane	1.000	0.942	5.8	100	0.000
31	T	1,1-Dichloropropene	1.000	0.938	6.2	100	0.000
32	T	2-Butanone	-1.000	1.438	0.0	0	0.018
33	T	Benzene	1.000	0.972	2.8	100	0.000
34	S	1,2-Dichloroethane-d4	-1.000	0.195	0.0	0	0.000
35	T	1,2-Dichloroethane	1.000	0.937	6.3	100	0.000
36	T	Methylcyclohexane	1.000	0.950	5.0	100	0.000
37	T	Trichloroethene	1.000	0.973	2.7	100	0.000
38	T	Dibromomethane	1.000	0.945	5.5	100	0.000
39	C	1,2-Dichloropropane	1.000	0.954	4.6#	100	0.000
40	T	Bromodichloromethane	1.000	0.920	8.0	100	0.000
41	T	1,4-Dioxane	-1.000	0.000	0.0	0	-6.149#
42	T	2-Chloroethyl Vinyl Ether	1.000	0.965	3.5	100	0.000
43	T	cis-1,3-Dichloropropene	1.000	0.924	7.6	100	0.000
44	T	4-Methyl-2-Pentanone	-1.000	1.088	0.0	0	0.000
45	T	trans-1,3-Dichloropropene	1.000	0.918	8.2	100	0.000
46	I	Chlorobenzene-d5	25.000	25.000	0.0	100	0.000
47	S	Toluene-d8	-1.000	0.194	0.0	0	0.000
48	C	Toluene	1.000	0.943	5.7#	100	0.000
49	T	Tetrachloroethene	1.000	0.941	5.9	100	0.000
50	T	1,1,2-Trichloroethane	1.000	0.972	2.8	100	0.000
51	T	Dibromochloromethane	1.000	0.935	6.5	100	0.000
52	T	1,3-Dichloropropane	1.000	0.972	2.8	100	0.000
53	T	1,2-Dibromoethane	1.000	0.980	2.0	100	0.000
54	T	2-Hexanone	-1.000	1.066	0.0	0	0.000
55	P	Chlorobenzene	1.000	0.949	5.1	100	0.000

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016371.D
Acq On : 11 Nov 2015 15:54
Operator : ADC
Sample : WG546498-05 1.0ug/L STD
Misc : 1,1 STD73185
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 12 09:49:14 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	1-Chlorohexane	1.000	1.183	-18.3	100	0.000
57	C	Ethylbenzene	1.000	0.958	4.2#	100	0.000
58	T	1,1,1,2-Tetrachloroethane	1.000	0.934	6.6	100	0.000
59	T	m-,p-Xylene	2.000	1.887	5.6	100	0.000
60	T	o-Xylene	1.000	0.950	5.0	100	0.000
61	T	Styrene	1.000	0.948	5.2	100	0.000
62	P	Bromoform	1.000	0.875	12.5	100	0.000
63	T	Isopropylbenzene	1.000	0.963	3.7	100	0.000
64	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	100	0.000
65	T	1,3,5-Trimethylbenzene	1.000	0.978	2.2	100	0.000
66	S	p-Bromofluorobenzene	-1.000	0.159	0.0	0	0.000
67	T	Bromobenzene	1.000	0.955	4.5	100	0.000
68	T	n-Propylbenzene	1.000	0.965	3.5	100	0.000
69	P	1,1,2,2-Tetrachloroethane	1.000	0.951	4.9	100	0.000
70	T	2-Chlorotoluene	1.000	0.968	3.2	100	0.000
71	T	1,2,3-Trichloropropane	1.000	1.138	-13.8	100	0.000
72	T	trans-1,4-Dichloro-2-Butene	1.000	0.950	5.0	100	0.000
73	T	1,2,4-Trimethylbenzene	1.000	0.982	1.8	100	0.000
74	T	4-Chlorotoluene	1.000	0.941	5.9	100	0.000
75	T	tert-Butylbenzene	1.000	0.955	4.5	100	0.000
76	T	sec-Butylbenzene	1.000	0.978	2.2	100	0.000
77	T	p-Isopropyltoluene	1.000	0.979	2.1	100	0.000
78	T	1,3-Dichlorobenzene	1.000	0.969	3.1	100	0.000
79	T	1,4-Dichlorobenzene	1.000	0.955	4.5	100	0.000
80	T	n-Butylbenzene	1.000	0.956	4.4	100	0.000
81	T	1,2-Dichlorobenzene	1.000	0.953	4.7	100	0.000
82	T	1,2-Dibromo-3-Chloropropane	-1.000	0.999	0.0	0	0.000
83	T	Hexachlorobutadiene	1.000	0.921	7.9	100	0.000
84	T	1,2,4-Trichlorobenzene	1.000	0.947	5.3	100	0.000
85	T	Naphthalene	1.000	0.987	1.3	100	0.000
86	T	1,2,3-Trichlorobenzene	1.000	0.964	3.6	100	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016372.D
Acq On : 11 Nov 2015 16:14
Operator : ADC
Sample : WG546498-06 2.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 12 09:49:16 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	5.141	96	441729	25.00000	ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	328196	25.00000	ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.302	152	179770	25.00000	ug/L	0.0000
System Monitoring Compounds						
29) Dibromofluoromethane	4.171	111	953	0.2103	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.841%#		
34) 1,2-Dichloroethane-d4	4.814	65	759	0.1744	ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.698%#		
47) Toluene-d8	6.710	98	2962	0.1751	ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.700%#		
66) p-Bromofluorobenzene	8.723	95	1652	0.2658	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery =	1.063%#		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.038	85	11070	1.7622	ug/L	99
3) Chloromethane	1.151	50	13794	2.0615	ug/L	99
4) Vinyl Chloride	1.195	62	11207	1.8750	ug/L	98
5) 1,3-Butadiene	1.206	54	7924	2.0626	ug/L	99
6) Bromomethane	1.383	94	6882	2.1829	ug/L	83
7) Chloroethane	1.455	64	6503	2.1309	ug/L #	74
8) Trichlorofluoromethane	1.542	101	14507	1.9268	ug/L	97
9) Diethyl ether	1.748	59	7718	2.1884	ug/L	93
10) 1,1-Dichloroethene	1.869	61	13450	1.9397	ug/L	98
11) Carbon Disulfide	1.884	76	27593	1.8893	ug/L #	90
12) 1,1,2-Trichloro-1,2,2-...	1.898	101	8397	1.9529	ug/L	99
14) Acrolein	2.115	56	1360	2.8790	ug/L	85
15) Methylene Chloride	2.289	84	11187	2.1805	ug/L	90
16) Acetone	2.344	43	2472	2.2118	ug/L	96
17) trans-1,2-Dichloroethene	2.419	96	8767	1.9338	ug/L	98
18) Methyl acetate	2.448	43	4481	1.7766	ug/L #	91
19) Methyl Tert Butyl Ether	2.532	73	23088	1.9979	ug/L	95
20) 1,1-Dichloroethane	2.975	63	16937	1.9521	ug/L	98
21) Acrylonitrile	3.042	53	2643	2.2007	ug/L	91
22) Vinyl Acetate	3.282	86	272	4.0182	ug/L #	1
23) cis-1,2-Dichloroethene	3.566	96	10057	1.9321	ug/L	97
24) 2,2-Dichloropropane	3.693	77	11469	1.7673	ug/L	94
25) Cyclohexane	3.792	56	17078	2.0452	ug/L	98
26) Bromochloromethane	3.812	130	5776	1.8793	ug/L	100
27) Chloroform	3.937	83	16478	1.9169	ug/L	98
28) Carbon Tetrachloride	4.079	117	13065	1.9574	ug/L	97
30) 1,1,1-Trichloroethane	4.174	97	14902	1.9764	ug/L	100
31) 1,1-Dichloropropene	4.345	75	12522	1.9590	ug/L	94
32) 2-Butanone	4.374	43	3362	2.3075	ug/L #	40
33) Benzene	4.649	78	37184	1.9586	ug/L	100
35) 1,2-Dichloroethane	4.889	62	11420	1.9991	ug/L #	95
36) Methylcyclohexane	5.295	83	17144	1.9313	ug/L	96
37) Trichloroethene	5.324	130	10227	1.9413	ug/L	97
38) Dibromomethane	5.743	93	5519	1.9590	ug/L	98
39) 1,2-Dichloropropane	5.850	63	10340	1.9814	ug/L	100
40) Bromodichloromethane	5.937	83	12772	1.9686	ug/L	99
42) 2-Chloroethyl Vinyl Ether	6.525	63	5173	1.9612	ug/L	97
43) cis-1,3-Dichloropropene	6.545	75	14648	1.9150	ug/L	95
44) 4-Methyl-2-Pentanone	7.811	58	2934	2.2643	ug/L	89
45) trans-1,3-Dichloropropene	7.145	75	12566	1.9200	ug/L	96
48) Toluene	6.757	91	41495	1.9957	ug/L	99
49) Tetrachloroethene	7.084	166	10927	1.9498	ug/L	99
50) 1,1,2-Trichloroethane	7.275	97	7614	1.9685	ug/L	96
51) Dibromochloromethane	7.414	129	9610	1.9246	ug/L	99

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016372.D
Acq On : 11 Nov 2015 16:14
Operator : ADC
Sample : WG546498-06 2.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 12 09:49:16 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
52)	1,3-Dichloropropane	7.495	76	12384	2.0186 ug/L	97
53)	1,2-Dibromoethane	7.588	107	7777	2.0262 ug/L	100
54)	2-Hexanone	7.814	43	5573	2.2411 ug/L	99
55)	Chlorobenzene	7.984	112	26437	1.9730 ug/L	85
56)	1-Chlorohexane	7.999	69	2876	2.0897 ug/L #	83
57)	Ethylbenzene	8.019	106	14041	1.9251 ug/L	94
58)	1,1,1,2-Tetrachloroethane	8.036	131	9797	1.9749 ug/L	97
59)	m-,p-Xylene	8.120	106	34517	3.9447 ug/L	100
60)	o-Xylene	8.384	106	16733	1.9380 ug/L	97
61)	Styrene	8.416	104	28327	1.9741 ug/L	99
62)	Bromoform	8.419	173	6362	1.9325 ug/L	98
63)	Isopropylbenzene	8.575	105	45060	2.0020 ug/L	99
65)	1,3,5-Trimethylbenzene	8.911	105	39947	2.0294 ug/L	98
67)	Bromobenzene	8.775	156	11767	1.9125 ug/L	97
68)	n-Propylbenzene	8.804	91	51807	2.0164 ug/L	99
69)	1,1,2,2-Tetrachloroethane	8.844	83	8705	1.9506 ug/L	100
70)	2-Chlorotoluene	8.879	91	31003	1.9730 ug/L	99
71)	1,2,3-Trichloropropane	8.911	110	2646	2.1302 ug/L	90
72)	trans-1,4-Dichloro-2-B...	8.937	53	2166	2.0977 ug/L #	81
73)	1,2,4-Trimethylbenzene	9.108	105	39303	2.0001 ug/L	99
74)	4-Chlorotoluene	8.966	91	32473	2.0085 ug/L	100
75)	tert-Butylbenzene	9.073	134	7070	1.9586 ug/L	97
76)	sec-Butylbenzene	9.163	105	49271	2.0370 ug/L	99
77)	p-Isopropyltoluene	9.238	119	41728	1.9947 ug/L	99
78)	1,3-Dichlorobenzene	9.264	146	22316	1.9751 ug/L	98
79)	1,4-Dichlorobenzene	9.310	146	22145	1.9214 ug/L	97
80)	n-Butylbenzene	9.441	91	38221	1.9851 ug/L	99
81)	1,2-Dichlorobenzene	9.513	146	20783	1.9322 ug/L	95
82)	1,2-Dibromo-3-Chloropr...	9.889	75	1645	1.9641 ug/L	95
83)	Hexachlorobutadiene	10.185	225	9564	1.9317 ug/L	99
84)	1,2,4-Trichlorobenzene	10.199	180	16464	1.9180 ug/L	99
85)	Naphthalene	10.353	128	32754	2.0600 ug/L	98
86)	1,2,3-Trichlorobenzene	10.434	180	15576	1.9661 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016372.D
Acq On : 11 Nov 2015 16:14
Operator : ADC
Sample : WG546498-06 2.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 12 09:49:16 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

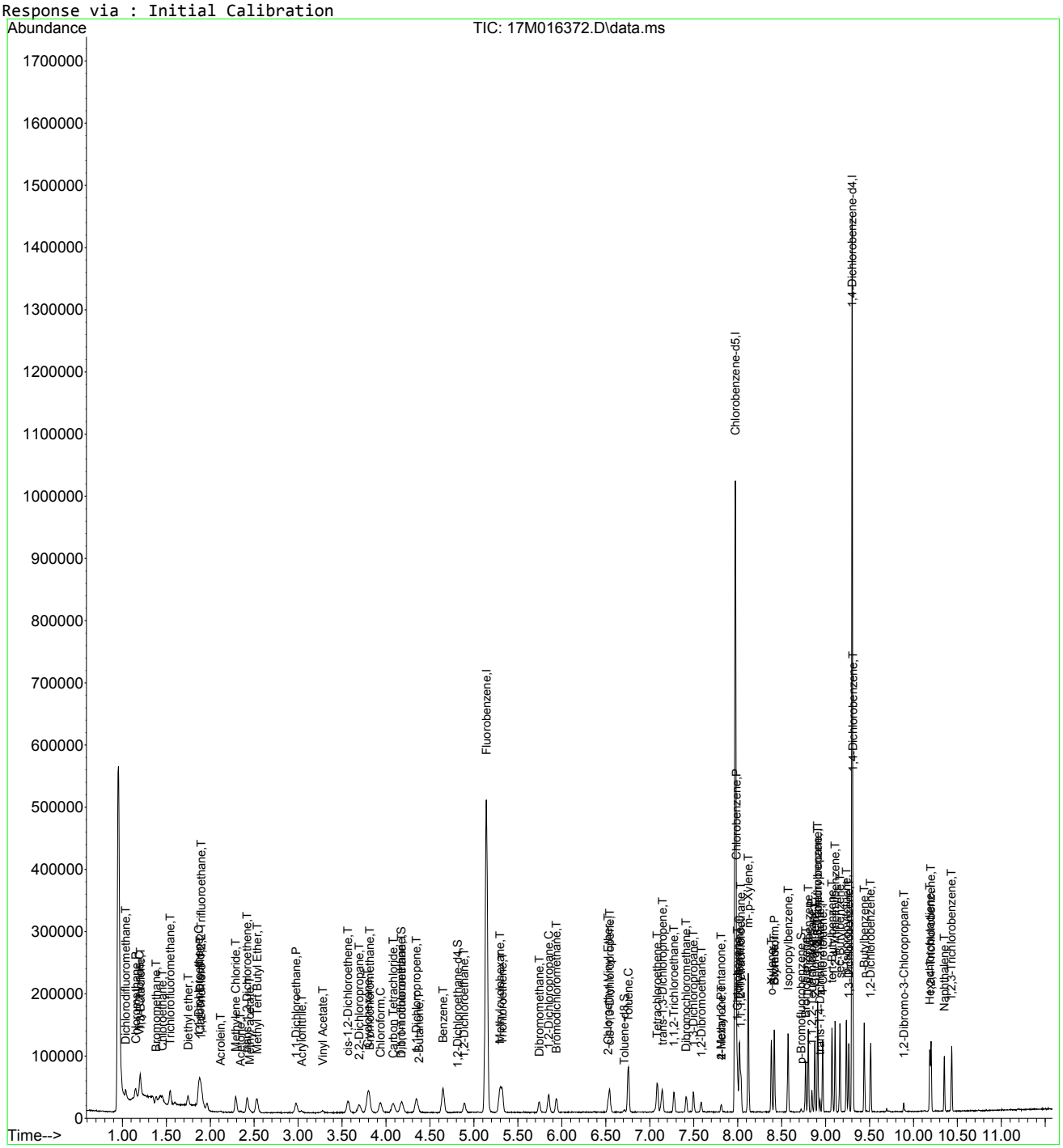

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016372.D
Acq On : 11 Nov 2015 16:14
Operator : ADC
Sample : WG546498-06 2.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 12 09:49:16 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	100	0.000
2	T	Dichlorodifluoromethane	2.000	1.762	11.9	100	0.000
3	P	Chloromethane	2.000	2.061	-3.0	100	0.000
4	C	Vinyl Chloride	2.000	1.875	6.3#	100	0.000
5	T	1,3-Butadiene	2.000	2.063	-3.2	100	0.000
6	T	Bromomethane	2.000	2.183	-9.1	100	0.000
7	T	Chloroethane	2.000	2.131	-6.5	100	0.000
8	T	Trichlorofluoromethane	2.000	1.927	3.6	100	0.011
9	T	Diethyl ether	2.000	2.188	-9.4	100	0.000
10	C	1,1-Dichloroethene	2.000	1.940	3.0#	100	0.000
11	T	Carbon Disulfide	2.000	1.889	5.5	100	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.000	1.953	2.3	100	0.000
13	T	Iodomethane	-1.000	0.000	0.0	0	0.000
14	T	Acrolein	-1.000	2.879	0.0	0	0.000
15	T	Methylene Chloride	2.000	2.180	-9.0	100	0.000
16	T	Acetone	-1.000	2.212	0.0	0	0.000
17	T	trans-1,2-Dichloroethene	2.000	1.934	3.3	100	0.000
18	T	Methyl acetate	2.000	1.777	11.2	108	0.000
19	T	Methyl Tert Butyl Ether	2.000	1.998	0.1	100	0.000
20	P	1,1-Dichloroethane	2.000	1.952	2.4	100	0.000
21	T	Acrylonitrile	2.000	2.201	-10.1	100	0.000
22	T	Vinyl Acetate	-1.000	4.018	0.0	0	0.000
23	T	cis-1,2-Dichloroethene	2.000	1.932	3.4	100	0.000
24	T	2,2-Dichloropropane	2.000	1.767	11.7	100	0.000
25	T	Cyclohexane	2.000	2.045	-2.2	100	0.000
26	T	Bromochloromethane	2.000	1.879	6.0	100	0.000
27	C	Chloroform	2.000	1.917	4.1#	100	0.000
28	T	Carbon Tetrachloride	2.000	1.957	2.1	100	0.000
29	S	Dibromofluoromethane	-1.000	0.210	0.0	0	0.000
30	T	1,1,1-Trichloroethane	2.000	1.976	1.2	100	0.000
31	T	1,1-Dichloropropene	2.000	1.959	2.0	100	0.000
32	T	2-Butanone	-1.000	2.308	0.0	0	0.000
33	T	Benzene	2.000	1.959	2.0	100	0.000
34	S	1,2-Dichloroethane-d4	-1.000	0.174	0.0	0	0.000
35	T	1,2-Dichloroethane	2.000	1.999	0.0	100	0.000
36	T	Methylcyclohexane	2.000	1.931	3.4	100	0.000
37	T	Trichloroethene	2.000	1.941	2.9	100	0.000
38	T	Dibromomethane	2.000	1.959	2.0	100	0.000
39	C	1,2-Dichloropropane	2.000	1.981	0.9#	100	0.000
40	T	Bromodichloromethane	2.000	1.969	1.5	100	0.000
41	T	1,4-Dioxane	-1.000	0.000	0.0	0	-6.149#
42	T	2-Chloroethyl Vinyl Ether	2.000	1.961	1.9	100	0.000
43	T	cis-1,3-Dichloropropene	2.000	1.915	4.2	100	0.000
44	T	4-Methyl-2-Pentanone	-1.000	2.264	0.0	0	0.000
45	T	trans-1,3-Dichloropropene	2.000	1.920	4.0	100	0.000
46	I	Chlorobenzene-d5	25.000	25.000	0.0	100	0.000
47	S	Toluene-d8	-1.000	0.175	0.0	0	0.000
48	C	Toluene	2.000	1.996	0.2#	100	0.000
49	T	Tetrachloroethene	2.000	1.950	2.5	100	0.000
50	T	1,1,2-Trichloroethane	2.000	1.969	1.5	100	0.000
51	T	Dibromochloromethane	2.000	1.925	3.7	100	0.000
52	T	1,3-Dichloropropane	2.000	2.019	-1.0	100	0.000
53	T	1,2-Dibromoethane	2.000	2.026	-1.3	100	0.000
54	T	2-Hexanone	2.000	2.241	-12.1	100	0.000
55	P	Chlorobenzene	2.000	1.973	1.3	100	0.000

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016372.D
Acq On : 11 Nov 2015 16:14
Operator : ADC
Sample : WG546498-06 2.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 12 09:49:16 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	1-Chlorohexane	2.000	2.090	-4.5	100	0.000
57	C	Ethylbenzene	2.000	1.925	3.7#	100	0.000
58	T	1,1,1,2-Tetrachloroethane	2.000	1.975	1.2	100	0.000
59	T	m-,p-Xylene	4.000	3.945	1.4	100	0.000
60	T	o-Xylene	2.000	1.938	3.1	100	0.000
61	T	Styrene	2.000	1.974	1.3	100	0.000
62	P	Bromoform	2.000	1.932	3.4	100	0.000
63	T	Isopropylbenzene	2.000	2.002	-0.1	100	0.000
64	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	100	0.000
65	T	1,3,5-Trimethylbenzene	2.000	2.029	-1.4	100	0.000
66	S	p-Bromofluorobenzene	-1.000	0.266	0.0	0	0.000
67	T	Bromobenzene	2.000	1.913	4.3	100	0.000
68	T	n-Propylbenzene	2.000	2.016	-0.8	100	0.000
69	P	1,1,2,2-Tetrachloroethane	2.000	1.951	2.4	100	0.000
70	T	2-Chlorotoluene	2.000	1.973	1.3	100	0.000
71	T	1,2,3-Trichloropropane	2.000	2.130	-6.5	100	0.000
72	T	trans-1,4-Dichloro-2-Butene	2.000	2.098	-4.9	100	0.000
73	T	1,2,4-Trimethylbenzene	2.000	2.000	0.0	100	0.000
74	T	4-Chlorotoluene	2.000	2.009	-0.4	100	0.000
75	T	tert-Butylbenzene	2.000	1.959	2.0	100	0.000
76	T	sec-Butylbenzene	2.000	2.037	-1.8	100	0.000
77	T	p-Isopropyltoluene	2.000	1.995	0.2	100	0.000
78	T	1,3-Dichlorobenzene	2.000	1.975	1.2	100	0.000
79	T	1,4-Dichlorobenzene	2.000	1.921	3.9	100	0.000
80	T	n-Butylbenzene	2.000	1.985	0.7	100	0.000
81	T	1,2-Dichlorobenzene	2.000	1.932	3.4	100	0.000
82	T	1,2-Dibromo-3-Chloropropane	2.000	1.964	1.8	100	0.000
83	T	Hexachlorobutadiene	2.000	1.932	3.4	100	0.000
84	T	1,2,4-Trichlorobenzene	2.000	1.918	4.1	100	0.000
85	T	Naphthalene	2.000	2.060	-3.0	100	0.000
86	T	1,2,3-Trichlorobenzene	2.000	1.966	1.7	100	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016373.D
Acq On : 11 Nov 2015 16:33
Operator : ADC
Sample : WG546498-07 5.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 12 09:55:30 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.141	96	432623	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	320606	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.302	152	175287	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.180	111	23235	5.2355 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 20.942%#		
34) 1,2-Dichloroethane-d4	4.814	65	22950	5.3849 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 21.540%#		
47) Toluene-d8	6.710	98	86498	5.2339 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 20.936%#		
66) p-Bromofluorobenzene	8.723	95	30541	5.0403 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 20.161%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.038	85	30889	5.0207 ug/L	99
3) Chloromethane	1.148	50	35766	5.4576 ug/L	99
4) Vinyl Chloride	1.195	62	31301	5.3470 ug/L	98
5) 1,3-Butadiene	1.206	54	18569	4.9351 ug/L	98
6) Bromomethane	1.383	94	16788	5.4372 ug/L	100
7) Chloroethane	1.452	64	17410	5.8250 ug/L	83
8) Trichlorofluoromethane	1.539	101	39315	5.3920 ug/L	98
9) Diethyl ether	1.748	59	18562	5.3738 ug/L	99
10) 1,1-Dichloroethene	1.866	61	37561	5.5308 ug/L	99
11) Carbon Disulfide	1.881	76	70129	4.9029 ug/L	99
12) 1,1,2-Trichloro-1,2,2-...	1.898	101	23545	5.5910 ug/L	100
14) Acrolein	2.113	56	2740	5.9224 ug/L	91
15) Methylene Chloride	2.292	84	28500	5.6719 ug/L	95
16) Acetone	2.347	43	5507	5.8137 ug/L #	72
17) trans-1,2-Dichloroethene	2.422	96	24016	5.4089 ug/L	100
18) Methyl acetate	2.451	43	12641	5.1174 ug/L #	98
19) Methyl Tert Butyl Ether	2.529	73	65593	5.7955 ug/L	99
20) 1,1-Dichloroethane	2.978	63	47350	5.5723 ug/L	100
21) Acrylonitrile	3.036	53	6503	5.5288 ug/L	96
22) Vinyl Acetate	3.276	86	1562	6.2614 ug/L #	76
23) cis-1,2-Dichloroethene	3.566	96	27739	5.4413 ug/L	100
24) 2,2-Dichloropropane	3.693	77	32509	5.1149 ug/L	99
25) Cyclohexane	3.792	56	41807	5.1119 ug/L	97
26) Bromochloromethane	3.803	130	16652	5.5319 ug/L	100
27) Chloroform	3.934	83	45552	5.4108 ug/L	99
28) Carbon Tetrachloride	4.081	117	36188	5.5357 ug/L	99
30) 1,1,1-Trichloroethane	4.180	97	41493	5.6190 ug/L	99
31) 1,1-Dichloropropene	4.345	75	34916	5.5775 ug/L	99
32) 2-Butanone	4.374	43	7475	5.2385 ug/L #	95
33) Benzene	4.646	78	102565	5.5162 ug/L	99
35) 1,2-Dichloroethane	4.892	62	31926	5.7064 ug/L	98
36) Methylcyclohexane	5.297	83	41963	4.8267 ug/L	98
37) Trichloroethene	5.323	130	28145	5.4549 ug/L	98
38) Dibromomethane	5.743	93	15419	5.5884 ug/L	99
39) 1,2-Dichloropropane	5.850	63	28726	5.6205 ug/L	99
40) Bromodichloromethane	5.937	83	35304	5.5560 ug/L	96
41) 1,4-Dioxane	6.157	88	236	7.6025 ug/L #	1
42) 2-Chloroethyl Vinyl Ether	6.528	63	13598	5.2639 ug/L	100
43) cis-1,3-Dichloropropene	6.545	75	41870	5.5889 ug/L	99
44) 4-Methyl-2-Pentanone	7.813	58	7057	5.5607 ug/L	100
45) trans-1,3-Dichloropropene	7.145	75	35851	5.5932 ug/L	98
48) Toluene	6.754	91	116097	5.7160 ug/L	99
49) Tetrachloroethene	7.087	166	30215	5.5193 ug/L	100
50) 1,1,2-Trichloroethane	7.275	97	21414	5.6674 ug/L	99

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016373.D
Acq On : 11 Nov 2015 16:33
Operator : ADC
Sample : WG546498-07 5.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 12 09:55:30 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
51) Dibromochloromethane	7.417	129	27260	5.5885 ug/L	98
52) 1,3-Dichloropropane	7.498	76	34573	5.7689 ug/L	98
53) 1,2-Dibromoethane	7.585	107	21349	5.6938 ug/L	100
54) 2-Hexanone	7.813	43	12998	5.3507 ug/L	97
55) Chlorobenzene	7.984	112	72910	5.5700 ug/L	94
56) 1-Chlorohexane	7.999	69	6646	4.9432 ug/L	70
57) Ethylbenzene	8.019	106	39341	5.5216 ug/L	99
58) 1,1,1,2-Tetrachloroethane	8.036	131	27278	5.6289 ug/L	97
59) m-,p-Xylene	8.120	106	96707	11.3137 ug/L	100
60) o-Xylene	8.384	106	47483	5.6295 ug/L	98
61) Styrene	8.416	104	78212	5.5797 ug/L	99
62) Bromoform	8.419	173	18171	5.6501 ug/L	99
63) Isopropylbenzene	8.572	105	125413	5.7041 ug/L	99
65) 1,3,5-Trimethylbenzene	8.911	105	109819	5.7217 ug/L	99
67) Bromobenzene	8.772	156	33338	5.5571 ug/L	99
68) n-Propylbenzene	8.804	91	144838	5.7815 ug/L	99
69) 1,1,2,2-Tetrachloroethane	8.844	83	25151	5.7800 ug/L	99
70) 2-Chlorotoluene	8.879	91	87536	5.7133 ug/L	99
71) 1,2,3-Trichloropropane	8.908	110	7088	5.8522 ug/L	95
72) trans-1,4-Dichloro-2-B...	8.937	53	5177	5.1421 ug/L #	94
73) 1,2,4-Trimethylbenzene	9.108	105	110041	5.7432 ug/L	99
74) 4-Chlorotoluene	8.966	91	89996	5.7088 ug/L	99
75) tert-Butylbenzene	9.073	134	19681	5.5918 ug/L	96
76) sec-Butylbenzene	9.163	105	136371	5.7821 ug/L	99
77) p-Isopropyltoluene	9.238	119	118047	5.7873 ug/L	99
78) 1,3-Dichlorobenzene	9.264	146	61365	5.5701 ug/L	99
79) 1,4-Dichlorobenzene	9.310	146	61766	5.4961 ug/L	99
80) n-Butylbenzene	9.441	91	106426	5.6690 ug/L	100
81) 1,2-Dichlorobenzene	9.513	146	59292	5.6533 ug/L	100
82) 1,2-Dibromo-3-Chloropr...	9.889	75	4656	5.7013 ug/L	96
83) Hexachlorobutadiene	10.185	225	26568	5.5033 ug/L	99
84) 1,2,4-Trichlorobenzene	10.199	180	47276	5.6482 ug/L	100
85) Naphthalene	10.350	128	91986	5.9331 ug/L	100
86) 1,2,3-Trichlorobenzene	10.434	180	44703	5.7869 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016373.D
Acq On : 11 Nov 2015 16:33
Operator : ADC
Sample : WG546498-07 5.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 12 09:55:30 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

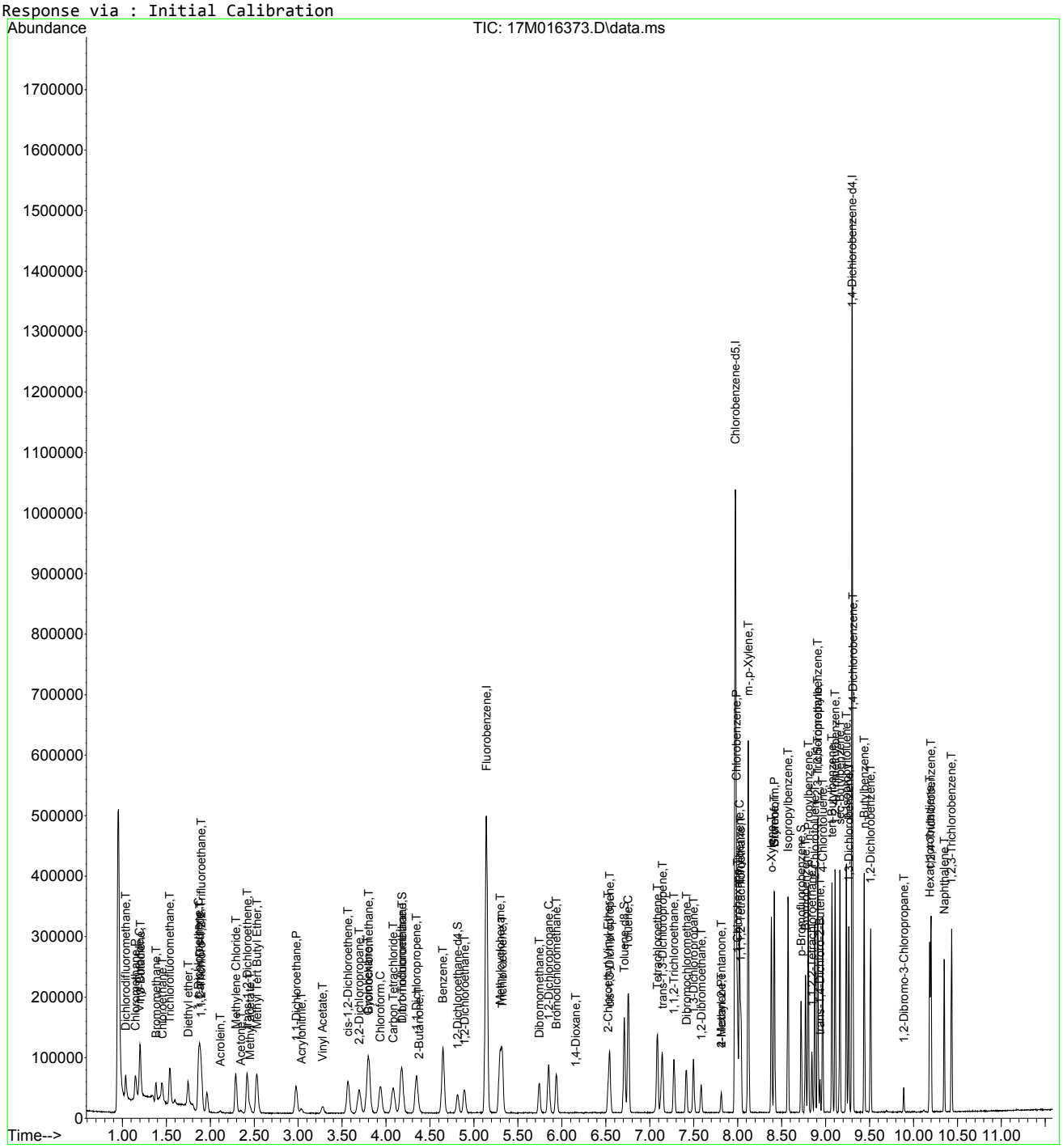

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016373.D
Acq On : 11 Nov 2015 16:33
Operator : ADC
Sample : WG546498-07 5.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 12 09:49:18 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	100	0.000
2	T	Dichlorodifluoromethane	5.000	5.021	-0.4	100	0.000
3	P	Chloromethane	5.000	5.458	-9.2	100	0.000
4	C	Vinyl Chloride	5.000	5.347	-6.9#	100	0.000
5	T	1,3-Butadiene	5.000	4.935	1.3	100	0.000
6	T	Bromomethane	5.000	5.437	-8.7	100	0.000
7	T	Chloroethane	5.000	5.825	-16.5	100	0.000
8	T	Trichlorofluoromethane	5.000	5.392	-7.8	100	0.000
9	T	Diethyl ether	5.000	5.374	-7.5	100	0.000
10	C	1,1-Dichloroethene	5.000	5.531	-10.6#	100	0.000
11	T	Carbon Disulfide	5.000	4.903	1.9	100	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.000	5.591	-11.8	100	0.000
13	T	Iodomethane	-1.000	0.000	0.0	0	0.000
14	T	Acrolein	5.000	5.922	-18.4	100	0.000
15	T	Methylene Chloride	5.000	5.672	-13.4	100	0.000
16	T	Acetone	5.000	5.814	-16.3	100	0.000
17	T	trans-1,2-Dichloroethene	5.000	5.409	-8.2	100	0.000
18	T	Methyl acetate	5.000	5.117	-2.3	102	0.000
19	T	Methyl Tert Butyl Ether	5.000	5.795	-15.9	100	0.000
20	P	1,1-Dichloroethane	5.000	5.572	-11.4	100	0.000
21	T	Acrylonitrile	5.000	5.529	-10.6	100	0.000
22	T	Vinyl Acetate	5.000	6.261	-25.2#	100	0.000
23	T	cis-1,2-Dichloroethene	5.000	5.441	-8.8	100	0.000
24	T	2,2-Dichloropropane	5.000	5.115	-2.3	100	0.000
25	T	Cyclohexane	5.000	5.112	-2.2	100	0.000
26	T	Bromochloromethane	5.000	5.532	-10.6	100	0.000
27	C	Chloroform	5.000	5.411	-8.2#	100	0.000
28	T	Carbon Tetrachloride	5.000	5.536	-10.7	100	0.000
29	S	Dibromofluoromethane	5.000	5.235	-4.7	100	0.000
30	T	1,1,1-Trichloroethane	5.000	5.619	-12.4	100	0.000
31	T	1,1-Dichloropropene	5.000	5.578	-11.6	100	0.000
32	T	2-Butanone	5.000	5.239	-4.8	100	0.000
33	T	Benzene	5.000	5.516	-10.3	100	0.000
34	S	1,2-Dichloroethane-d4	5.000	5.385	-7.7	100	0.000
35	T	1,2-Dichloroethane	5.000	5.706	-14.1	100	0.000
36	T	Methylcyclohexane	5.000	4.827	3.5	100	0.000
37	T	Trichloroethene	5.000	5.455	-9.1	100	0.000
38	T	Dibromomethane	5.000	5.588	-11.8	100	0.000
39	C	1,2-Dichloropropane	5.000	5.620	-12.4#	100	0.000
40	T	Bromodichloromethane	5.000	5.556	-11.1	100	0.000
41	T	1,4-Dioxane	-1.000	7.602	0.0	0	0.000
42	T	2-Chloroethyl Vinyl Ether	5.000	5.264	-5.3	100	0.000
43	T	cis-1,3-Dichloropropene	5.000	5.589	-11.8	100	0.000
44	T	4-Methyl-2-Pentanone	5.000	5.561	-11.2	100	0.000
45	T	trans-1,3-Dichloropropene	5.000	5.593	-11.9	100	0.000
46	I	Chlorobenzene-d5	25.000	25.000	0.0	100	0.000
47	S	Toluene-d8	5.000	5.234	-4.7	100	0.000
48	C	Toluene	5.000	5.716	-14.3#	100	0.000
49	T	Tetrachloroethene	5.000	5.519	-10.4	100	0.000
50	T	1,1,2-Trichloroethane	5.000	5.667	-13.3	100	0.000
51	T	Dibromochloromethane	5.000	5.588	-11.8	100	0.000
52	T	1,3-Dichloropropane	5.000	5.769	-15.4	100	0.000
53	T	1,2-Dibromoethane	5.000	5.694	-13.9	100	0.000
54	T	2-Hexanone	5.000	5.351	-7.0	100	0.000
55	P	Chlorobenzene	5.000	5.570	-11.4	100	0.000

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016373.D
Acq On : 11 Nov 2015 16:33
Operator : ADC
Sample : WG546498-07 5.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 12 09:49:18 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	1-Chlorohexane	5.000	4.943	1.1	100	0.000
57	C	Ethylbenzene	5.000	5.522	-10.4#	100	0.000
58	T	1,1,1,2-Tetrachloroethane	5.000	5.629	-12.6	100	0.000
59	T	m-,p-Xylene	10.000	11.314	-13.1	100	0.000
60	T	o-Xylene	5.000	5.630	-12.6	100	0.000
61	T	Styrene	5.000	5.580	-11.6	100	0.000
62	P	Bromoform	5.000	5.650	-13.0	100	0.000
63	T	Isopropylbenzene	5.000	5.704	-14.1	100	0.000
64	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	100	0.000
65	T	1,3,5-Trimethylbenzene	5.000	5.722	-14.4	100	0.000
66	S	p-Bromofluorobenzene	5.000	5.040	-0.8	100	0.000
67	T	Bromobenzene	5.000	5.557	-11.1	100	0.000
68	T	n-Propylbenzene	5.000	5.781	-15.6	100	0.000
69	P	1,1,2,2-Tetrachloroethane	5.000	5.780	-15.6	100	0.000
70	T	2-Chlorotoluene	5.000	5.713	-14.3	100	0.000
71	T	1,2,3-Trichloropropane	5.000	5.852	-17.0	100	0.000
72	T	trans-1,4-Dichloro-2-Butene	5.000	5.142	-2.8	100	0.000
73	T	1,2,4-Trimethylbenzene	5.000	5.743	-14.9	100	0.000
74	T	4-Chlorotoluene	5.000	5.709	-14.2	100	0.000
75	T	tert-Butylbenzene	5.000	5.592	-11.8	100	0.000
76	T	sec-Butylbenzene	5.000	5.782	-15.6	100	0.000
77	T	p-Isopropyltoluene	5.000	5.787	-15.7	100	0.000
78	T	1,3-Dichlorobenzene	5.000	5.570	-11.4	100	0.000
79	T	1,4-Dichlorobenzene	5.000	5.496	-9.9	100	0.000
80	T	n-Butylbenzene	5.000	5.669	-13.4	100	0.000
81	T	1,2-Dichlorobenzene	5.000	5.653	-13.1	100	0.000
82	T	1,2-Dibromo-3-Chloropropane	5.000	5.701	-14.0	100	0.000
83	T	Hexachlorobutadiene	5.000	5.503	-10.1	100	0.000
84	T	1,2,4-Trichlorobenzene	5.000	5.648	-13.0	100	0.000
85	T	Naphthalene	5.000	5.933	-18.7	100	0.000
86	T	1,2,3-Trichlorobenzene	5.000	5.787	-15.7	100	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016374.D
Acq On : 11 Nov 2015 16:53
Operator : ADC
Sample : WG546498-08 20.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 12 09:55:33 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.141	96	432020	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	326915	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.302	152	182702	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.177	111	42853	9.6694 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 38.678%#		
34) 1,2-Dichloroethane-d4	4.814	65	41338	9.7129 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 38.852%#		
47) Toluene-d8	6.710	98	160163	9.5043 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 38.017%#		
66) p-Bromofluorobenzene	8.723	95	59106	9.3586 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 37.434%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.038	85	123979	20.1796 ug/L	99
3) Chloromethane	1.148	50	126802	19.3760 ug/L	100
4) Vinyl Chloride	1.195	62	115155	19.6989 ug/L	100
5) 1,3-Butadiene	1.206	54	70591	18.7874 ug/L	99
6) Bromomethane	1.380	94	56601	18.3570 ug/L	100
7) Chloroethane	1.452	64	59359	19.8879 ug/L	90
8) Trichlorofluoromethane	1.539	101	140439	19.6669 ug/L	99
9) Diethyl ether	1.748	59	68959	19.9920 ug/L	100
10) 1,1-Dichloroethene	1.867	61	133678	19.7112 ug/L	100
11) Carbon Disulfide	1.881	76	270202	18.9167 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.895	101	81830	19.4585 ug/L	99
14) Acrolein	2.113	56	9085	19.6642 ug/L	95
15) Methylene Chloride	2.289	84	92582	18.4508 ug/L	99
16) Acetone	2.344	43	18531	21.0453 ug/L	97
17) trans-1,2-Dichloroethene	2.420	96	86627	19.5376 ug/L	97
18) Methyl acetate	2.448	43	49421	20.0348 ug/L #	100
19) Methyl Tert Butyl Ether	2.530	73	224023	19.8211 ug/L	100
20) 1,1-Dichloroethane	2.975	63	167386	19.7259 ug/L	100
21) Acrylonitrile	3.036	53	23363	19.8908 ug/L	98
22) Vinyl Acetate	3.277	86	8716	18.6688 ug/L #	98
23) cis-1,2-Dichloroethene	3.566	96	98647	19.3777 ug/L	98
24) 2,2-Dichloropropane	3.693	77	122341	19.2757 ug/L	100
25) Cyclohexane	3.792	56	155883	19.0871 ug/L	99
26) Bromochloromethane	3.806	130	59579	19.8201 ug/L	100
27) Chloroform	3.934	83	159418	18.9624 ug/L	100
28) Carbon Tetrachloride	4.081	117	128615	19.7017 ug/L	100
30) 1,1,1-Trichloroethane	4.180	97	141801	19.2295 ug/L	100
31) 1,1-Dichloropropene	4.345	75	120635	19.2973 ug/L	99
32) 2-Butanone	4.365	43	28955	20.3201 ug/L	95
33) Benzene	4.649	78	361894	19.4908 ug/L	100
35) 1,2-Dichloroethane	4.892	62	111640	19.9823 ug/L	99
36) Methylcyclohexane	5.297	83	155527	17.9140 ug/L	99
37) Trichloroethene	5.324	130	99096	19.2329 ug/L	100
38) Dibromomethane	5.743	93	53396	19.3796 ug/L	100
39) 1,2-Dichloropropane	5.851	63	100181	19.6287 ug/L	99
40) Bromodichloromethane	5.937	83	124598	19.6361 ug/L	100
41) 1,4-Dioxane	6.152	88	996	32.1298 ug/L	83
42) 2-Chloroethyl Vinyl Ether	6.528	63	52665	20.4156 ug/L	100
43) cis-1,3-Dichloropropene	6.545	75	149360	19.9649 ug/L	100
44) 4-Methyl-2-Pentanone	7.814	58	25486	20.1103 ug/L	100
45) trans-1,3-Dichloropropene	7.145	75	127855	19.9749 ug/L	100
48) Toluene	6.757	91	402334	19.4263 ug/L	100
49) Tetrachloroethene	7.087	166	105353	18.8732 ug/L	100
50) 1,1,2-Trichloroethane	7.278	97	72898	18.9208 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016374.D
Acq On : 11 Nov 2015 16:53
Operator : ADC
Sample : WG546498-08 20.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 12 09:55:33 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
51) Dibromochloromethane	7.414	129	97313	19.5649 ug/L	100
52) 1,3-Dichloropropane	7.498	76	119400	19.5388 ug/L	98
53) 1,2-Dibromoethane	7.585	107	73953	19.3429 ug/L	100
54) 2-Hexanone	7.814	43	49286	19.8972 ug/L	100
55) Chlorobenzene	7.984	112	258377	19.3581 ug/L	100
56) 1-Chlorohexane	7.999	69	24751	18.0543 ug/L	82
57) Ethylbenzene	8.022	106	139900	19.2563 ug/L	100
58) 1,1,1,2-Tetrachloroethane	8.036	131	97056	19.6414 ug/L	99
59) m-,p-Xylene	8.120	106	342429	39.2876 ug/L	100
60) o-Xylene	8.384	106	166521	19.3616 ug/L	99
61) Styrene	8.419	104	278369	19.4757 ug/L	100
62) Bromoform	8.419	173	64836	19.7711 ug/L	100
63) Isopropylbenzene	8.575	105	440028	19.6273 ug/L	100
65) 1,3,5-Trimethylbenzene	8.911	105	384226	19.2062 ug/L	100
67) Bromobenzene	8.775	156	117847	18.8466 ug/L	99
68) n-Propylbenzene	8.804	91	513406	19.6618 ug/L	100
69) 1,1,2,2-Tetrachloroethane	8.844	83	86968	19.1751 ug/L	100
70) 2-Chlorotoluene	8.879	91	307191	19.2359 ug/L	100
71) 1,2,3-Trichloropropane	8.911	110	23108	18.3049 ug/L	97
72) trans-1,4-Dichloro-2-B...	8.937	53	19213	18.3088 ug/L #	97
73) 1,2,4-Trimethylbenzene	9.111	105	385956	19.3261 ug/L	100
74) 4-Chlorotoluene	8.966	91	311813	18.9769 ug/L	99
75) tert-Butylbenzene	9.073	134	69746	19.0121 ug/L	99
76) sec-Butylbenzene	9.163	105	475309	19.3351 ug/L	100
77) p-Isopropyltoluene	9.238	119	412112	19.3841 ug/L	99
78) 1,3-Dichlorobenzene	9.264	146	220206	19.1768 ug/L	99
79) 1,4-Dichlorobenzene	9.310	146	217507	18.5689 ug/L	100
80) n-Butylbenzene	9.441	91	375849	19.2078 ug/L	100
81) 1,2-Dichlorobenzene	9.513	146	207637	18.9939 ug/L	99
82) 1,2-Dibromo-3-Chloropr...	9.890	75	16258	19.1002 ug/L	99
83) Hexachlorobutadiene	10.185	225	95794	19.0374 ug/L	100
84) 1,2,4-Trichlorobenzene	10.199	180	169274	19.4029 ug/L	99
85) Naphthalene	10.350	128	315706	19.5368 ug/L	100
86) 1,2,3-Trichlorobenzene	10.434	180	155899	19.3625 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016374.D
Acq On : 11 Nov 2015 16:53
Operator : ADC
Sample : WG546498-08 20.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 12 09:55:33 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

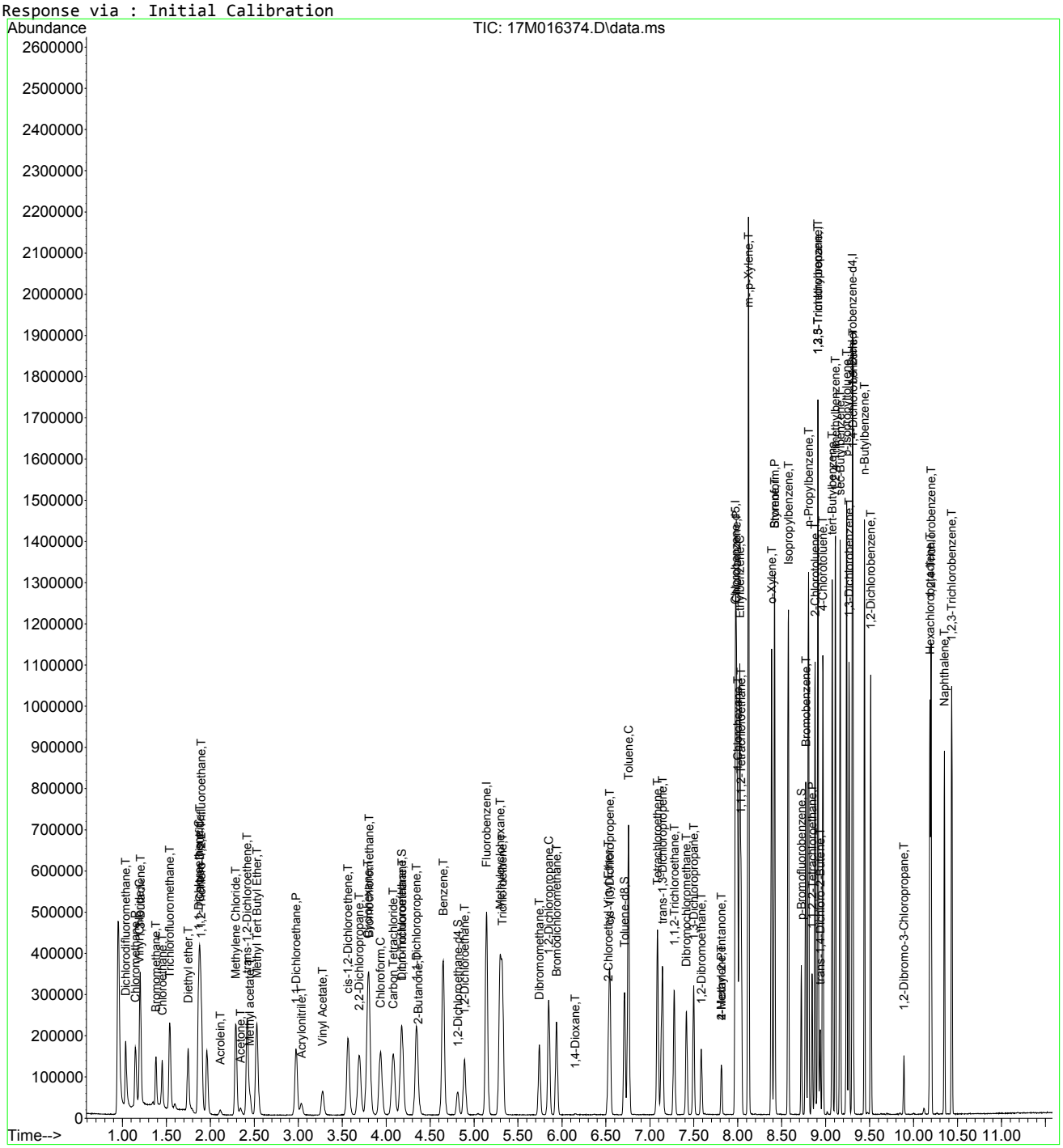

8260_VMS.M Thu Nov 12 09:55:34 2015 Page: 3

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016375.D
Acq On : 11 Nov 2015 17:13
Operator : ADC
Sample : WG546498-09 100.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 12 09:55:36 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.141	96	435819	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.976	117	329330	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.305	152	183512	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.177	111	227102	50.7971 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 203.188%#		
34) 1,2-Dichloroethane-d4	4.814	65	216427	50.4089 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 201.636%#		
47) Toluene-d8	6.713	98	856306	50.4420 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 201.768%#		
66) p-Bromofluorobenzene	8.723	95	325380	51.2920 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 205.168%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.036	85	672429	108.4947 ug/L	100
3) Chloromethane	1.146	50	645008	97.7016 ug/L	100
4) Vinyl Chloride	1.195	62	610828	103.5801 ug/L	100
5) 1,3-Butadiene	1.204	54	364239	96.0949 ug/L	99
6) Bromomethane	1.380	94	294852	94.7939 ug/L	99
7) Chloroethane	1.447	64	263145	87.3968 ug/L	93
8) Trichlorofluoromethane	1.525	101	718507	111.8531 ug/L	99
9) Diethyl ether	1.751	59	337490	96.9892 ug/L	100
10) 1,1-Dichloroethene	1.858	61	699242	102.2065 ug/L	100
11) Carbon Disulfide	1.872	76	1408250	97.7315 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.890	101	435206	102.5865 ug/L	100
14) Acrolein	2.116	56	45618	97.8782 ug/L	98
15) Methylene Chloride	2.286	84	465653	91.9915 ug/L	99
16) Acetone	2.347	43	82674	95.1744 ug/L	100
17) trans-1,2-Dichloroethene	2.417	96	442162	98.8546 ug/L	100
18) Methyl acetate	2.451	43	254121	102.1203 ug/L #	100
19) Methyl Tert Butyl Ether	2.533	73	1134395	99.4943 ug/L	100
20) 1,1-Dichloroethane	2.973	63	861653	100.6580 ug/L	100
21) Acrylonitrile	3.036	53	112295	94.7724 ug/L	97
22) Vinyl Acetate	3.277	86	51476	92.0281 ug/L	100
23) cis-1,2-Dichloroethene	3.563	96	498482	97.0654 ug/L	99
24) 2,2-Dichloropropane	3.691	77	680182	106.2335 ug/L	100
25) Cyclohexane	3.795	56	816785	99.1396 ug/L	100
26) Bromochloromethane	3.804	130	312915	103.1896 ug/L	99
27) Chloroform	3.937	83	818816	96.5474 ug/L	100
28) Carbon Tetrachloride	4.079	117	685171	104.0420 ug/L	100
30) 1,1,1-Trichloroethane	4.177	97	743102	99.8928 ug/L	100
31) 1,1-Dichloropropene	4.345	75	637540	101.0947 ug/L	100
32) 2-Butanone	4.368	43	141619	98.5194 ug/L	96
33) Benzene	4.649	78	1857716	99.1801 ug/L	100
35) 1,2-Dichloroethane	4.892	62	568138	100.8038 ug/L	100
36) Methylcyclohexane	5.298	83	830648	94.8424 ug/L	99
37) Trichloroethene	5.324	130	518925	99.8367 ug/L	100
38) Dibromomethane	5.743	93	273038	98.2326 ug/L	100
39) 1,2-Dichloropropane	5.851	63	517749	100.5593 ug/L	100
40) Bromodichloromethane	5.937	83	649100	101.4034 ug/L	100
41) 1,4-Dioxane	6.149	88	6000	191.8656 ug/L	98
42) 2-Chloroethyl Vinyl Ether	6.528	63	256923	98.7279 ug/L	99
43) cis-1,3-Dichloropropene	6.545	75	774345	102.6042 ug/L	100
44) 4-Methyl-2-Pentanone	7.814	58	124090	97.0627 ug/L	99
45) trans-1,3-Dichloropropene	7.148	75	666807	103.2676 ug/L	100
48) Toluene	6.760	91	2080036	99.6962 ug/L	100
49) Tetrachloroethene	7.087	166	561598	99.8681 ug/L	100
50) 1,1,2-Trichloroethane	7.278	97	371905	95.8206 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016375.D
Acq On : 11 Nov 2015 17:13
Operator : ADC
Sample : WG546498-09 100.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 12 09:55:36 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
51) Dibromochloromethane	7.417	129	512307	102.2445 ug/L	100
52) 1,3-Dichloropropane	7.498	76	610983	99.2491 ug/L	99
53) 1,2-Dibromoethane	7.585	107	380846	98.8822 ug/L	100
54) 2-Hexanone	7.814	43	236286	94.6911 ug/L	99
55) Chlorobenzene	7.987	112	1353581	100.6690 ug/L	99
56) 1-Chlorohexane	8.002	69	132271	95.7760 ug/L	91
57) Ethylbenzene	8.025	106	739094	100.9856 ug/L	97
58) 1,1,1,2-Tetrachloroethane	8.039	131	504662	101.3805 ug/L	99
59) m-,p-Xylene	8.123	106	1793260	204.2356 ug/L	97
60) o-Xylene	8.387	106	878654	101.4130 ug/L	100
61) Styrene	8.419	104	1461980	101.5355 ug/L	99
62) Bromoform	8.422	173	346760	104.9655 ug/L	99
63) Isopropylbenzene	8.575	105	2285181	101.1825 ug/L	99
65) 1,3,5-Trimethylbenzene	8.914	105	1999382	99.5012 ug/L	99
67) Bromobenzene	8.775	156	615182	97.9484 ug/L	100
68) n-Propylbenzene	8.807	91	2650686	101.0647 ug/L	99
69) 1,1,2,2-Tetrachloroethane	8.847	83	447119	98.1479 ug/L	100
70) 2-Chlorotoluene	8.882	91	1608621	100.2851 ug/L	100
71) 1,2,3-Trichloropropane	8.911	110	120391	94.9462 ug/L	99
72) trans-1,4-Dichloro-2-B...	8.937	53	100016	94.8885 ug/L #	95
73) 1,2,4-Trimethylbenzene	9.111	105	1998749	99.6424 ug/L	99
74) 4-Chlorotoluene	8.969	91	1642797	99.5391 ug/L	99
75) tert-Butylbenzene	9.076	134	373097	101.2538 ug/L	98
76) sec-Butylbenzene	9.166	105	2482748	100.5500 ug/L	100
77) p-Isopropyltoluene	9.241	119	2163497	101.3129 ug/L	99
78) 1,3-Dichlorobenzene	9.267	146	1154638	100.1085 ug/L	100
79) 1,4-Dichlorobenzene	9.313	146	1149692	97.7177 ug/L	99
80) n-Butylbenzene	9.444	91	1990054	101.2528 ug/L	99
81) 1,2-Dichlorobenzene	9.516	146	1089096	99.1869 ug/L	100
82) 1,2-Dibromo-3-Chloropr...	9.890	75	85646	100.1744 ug/L	99
83) Hexachlorobutadiene	10.185	225	500717	99.0697 ug/L	100
84) 1,2,4-Trichlorobenzene	10.202	180	862453	98.4217 ug/L	99
85) Naphthalene	10.350	128	1559335	96.0701 ug/L	100
86) 1,2,3-Trichlorobenzene	10.437	180	782232	96.7234 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016375.D
Acq On : 11 Nov 2015 17:13
Operator : ADC
Sample : WG546498-09 100.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 12 09:55:36 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

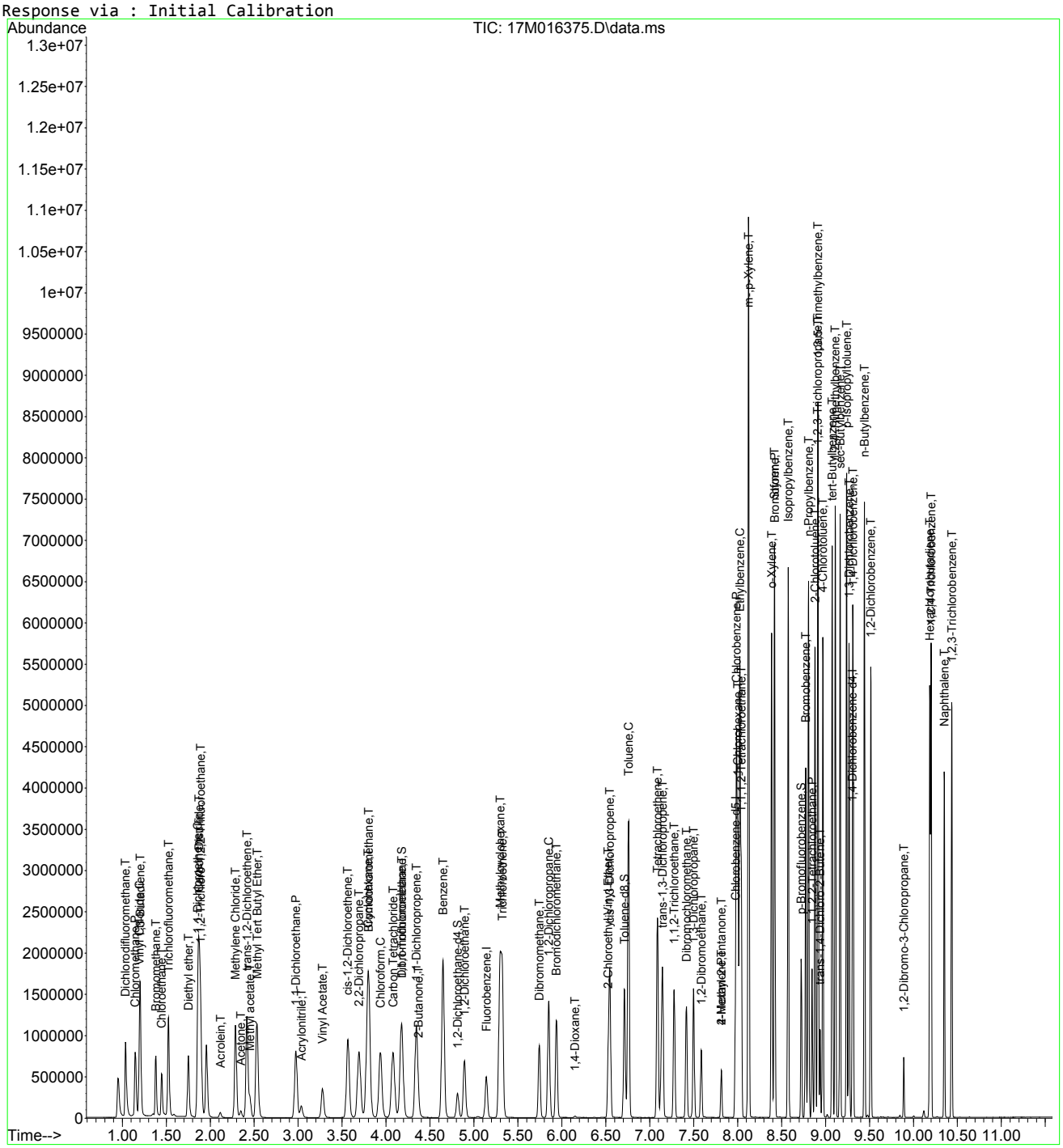

8260_VMS.M Thu Nov 12 09:55:37 2015 Page: 3

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016376.D
Acq On : 11 Nov 2015 17:33
Operator : ADC
Sample : WG546498-10 200.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Nov 12 09:55:39 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	5.141	96	423136	25.00000	ug/L	0.0000
46) Chlorobenzene-d5	7.976	117	320833	25.00000	ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.308	152	183130	25.00000	ug/L	# 0.0000
System Monitoring Compounds						
29) Dibromofluoromethane	4.177	111	420579	96.8928	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 387.571%#			
34) 1,2-Dichloroethane-d4	4.814	65	405549	97.2893	ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 389.157%#			
47) Toluene-d8	6.713	98	1589278	96.0983	ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 384.393%#			
66) p-Bromofluorobenzene	8.726	95	628947	99.3522	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 397.409%#			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.036	85	1264469	210.1340	ug/L	100
3) Chloromethane	1.146	50	1204363	187.8971	ug/L	100
4) Vinyl Chloride	1.192	62	1161924	202.9371	ug/L	100
5) 1,3-Butadiene	1.204	54	712072	193.4925	ug/L	99
6) Bromomethane	1.380	94	582345	192.8336	ug/L	99
7) Chloroethane	1.447	64	489582	167.4758	ug/L	95
8) Trichlorofluoromethane	1.519	101	962068	166.0101	ug/L	99
9) Diethyl ether	1.754	59	664790	196.7764	ug/L	99
10) 1,1-Dichloroethene	1.852	61	1300715	195.8211	ug/L	99
11) Carbon Disulfide	1.864	76	2724227	194.7261	ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.881	101	800798	194.4217	ug/L	100
14) Acrolein	2.119	56	90976	201.0493	ug/L	97
15) Methylene Chloride	2.286	84	887378	180.5595	ug/L	99
16) Acetone	2.356	43	164198	195.3327	ug/L	100
17) trans-1,2-Dichloroethene	2.414	96	851904	196.1699	ug/L	99
18) Methyl acetate	2.454	43	519405	214.9829	ug/L #	100
19) Methyl Tert Butyl Ether	2.535	73	2188063	197.6605	ug/L	100
20) 1,1-Dichloroethane	2.973	63	1641677	197.5284	ug/L	100
21) Acrylonitrile	3.042	53	225747	196.2319	ug/L	97
22) Vinyl Acetate	3.280	86	108500	195.6239	ug/L	99
23) cis-1,2-Dichloroethene	3.563	96	960093	192.5549	ug/L	100
24) 2,2-Dichloropropane	3.694	77	1283660	206.4964	ug/L	100
25) Cyclohexane	3.792	56	1586635	198.3547	ug/L	99
26) Bromochloromethane	3.806	130	602274	204.5643	ug/L	100
27) Chloroform	3.937	83	1564805	190.0381	ug/L	99
28) Carbon Tetrachloride	4.079	117	1303376	203.8475	ug/L	99
30) 1,1,1-Trichloroethane	4.174	97	1414455	195.8398	ug/L	100
31) 1,1-Dichloropropene	4.345	75	1215152	198.4622	ug/L	100
32) 2-Butanone	4.377	43	285771	204.7598	ug/L	95
33) Benzene	4.649	78	3559886	195.7526	ug/L	100
35) 1,2-Dichloroethane	4.892	62	1090735	199.3282	ug/L	100
36) Methylcyclohexane	5.298	83	1621652	190.7083	ug/L	99
37) Trichloroethene	5.324	130	995167	197.2003	ug/L	99
38) Dibromomethane	5.743	93	530177	196.4626	ug/L	100
39) 1,2-Dichloropropane	5.851	63	991101	198.2655	ug/L	100
40) Bromodichloromethane	5.940	83	1254068	201.7847	ug/L	100
41) 1,4-Dioxane	6.160	88	12975	427.3457	ug/L	98
42) 2-Chloroethyl Vinyl Ether	6.531	63	515167	203.8971	ug/L	99
43) cis-1,3-Dichloropropene	6.548	75	1497163	204.3271	ug/L	100
44) 4-Methyl-2-Pentanone	7.819	58	255733	206.0290	ug/L	99
45) trans-1,3-Dichloropropene	7.148	75	1298472	207.1204	ug/L	100
48) Toluene	6.760	91	3923514	193.0347	ug/L	99
49) Tetrachloroethene	7.090	166	1081912	197.4901	ug/L	100
50) 1,1,2-Trichloroethane	7.278	97	722575	191.1007	ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016376.D
Acq On : 11 Nov 2015 17:33
Operator : ADC
Sample : WG546498-10 200.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Nov 12 09:55:39 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
51) Dibromochloromethane	7.420	129	1009082	206.7227 ug/L	100
52) 1,3-Dichloropropane	7.501	76	1187193	197.9571 ug/L	99
53) 1,2-Dibromoethane	7.588	107	742133	197.7892 ug/L	100
54) 2-Hexanone	7.819	43	487942	200.7205 ug/L	99
55) Chlorobenzene	7.987	112	2606043	198.9506 ug/L	100
56) 1-Chlorohexane	8.005	69	259970	193.2269 ug/L	99
57) Ethylbenzene	8.028	106	1416629	198.6864 ug/L	94
58) 1,1,1,2-Tetrachloroethane	8.045	131	983720	202.8513 ug/L	99
59) m-,p-Xylene	8.129	106	3371507	394.1526 ug/L	91
60) o-Xylene	8.390	106	1697857	201.1541 ug/L	97
61) Styrene	8.422	104	2836707	202.2289 ug/L	99
62) Bromoform	8.425	173	703885	218.7114 ug/L	99
63) Isopropylbenzene	8.578	105	4261510	193.6870 ug/L	97
65) 1,3,5-Trimethylbenzene	8.917	105	3806148	189.8118 ug/L	97
67) Bromobenzene	8.778	156	1229913	196.2334 ug/L	99
68) n-Propylbenzene	8.810	91	4913490	187.7312 ug/L	96
69) 1,1,2,2-Tetrachloroethane	8.847	83	897807	197.4902 ug/L	100
70) 2-Chlorotoluene	8.882	91	3098585	193.5759 ug/L	99
71) 1,2,3-Trichloropropane	8.914	110	240327	189.9290 ug/L	99
72) trans-1,4-Dichloro-2-B...	8.940	53	204813	194.7181 ug/L #	99
73) 1,2,4-Trimethylbenzene	9.114	105	3814185	190.5429 ug/L	97
74) 4-Chlorotoluene	8.972	91	3174219	192.7311 ug/L	97
75) tert-Butylbenzene	9.079	134	742569	201.9442 ug/L	93
76) sec-Butylbenzene	9.169	105	4617155	187.3825 ug/L	97
77) p-Isopropyltoluene	9.241	119	4086031	191.7410 ug/L	96
78) 1,3-Dichlorobenzene	9.270	146	2276647	197.7997 ug/L	99
79) 1,4-Dichlorobenzene	9.313	146	2266056	193.0044 ug/L	99
80) n-Butylbenzene	9.444	91	3793868	193.4324 ug/L	97
81) 1,2-Dichlorobenzene	9.516	146	2143436	195.6157 ug/L	99
82) 1,2-Dibromo-3-Chloropr...	9.890	75	171231	200.6953 ug/L	98
83) Hexachlorobutadiene	10.188	225	1033545	204.9194 ug/L	99
84) 1,2,4-Trichlorobenzene	10.202	180	1746090	199.6766 ug/L	99
85) Naphthalene	10.353	128	3095323	191.0995 ug/L	99
86) 1,2,3-Trichlorobenzene	10.437	180	1600471	198.3119 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016376.D
Acq On : 11 Nov 2015 17:33
Operator : ADC
Sample : WG546498-10 200.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Nov 12 09:55:39 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

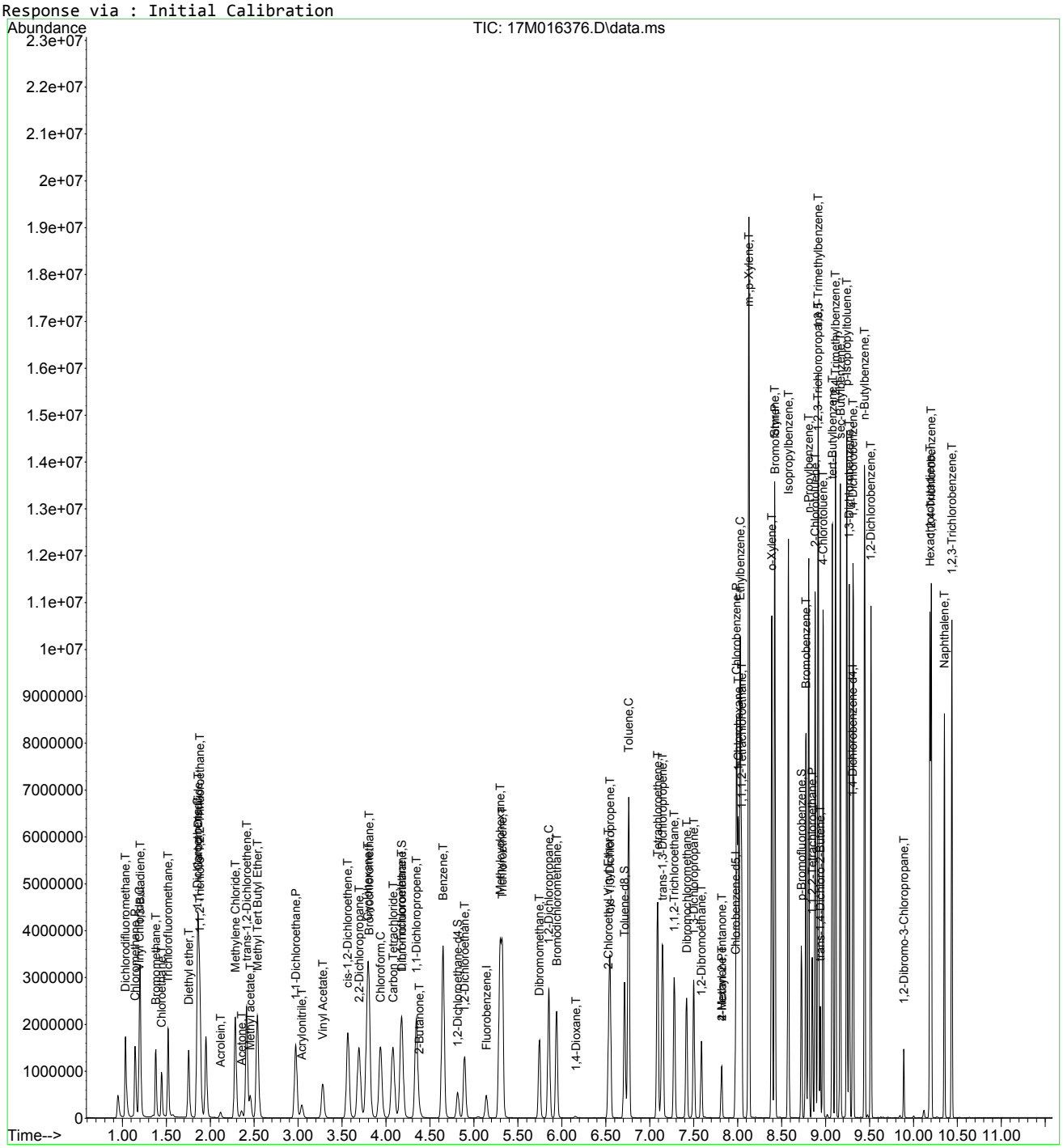

8260_VMS.M Thu Nov 12 09:55:40 2015 Page: 3

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016377.D
Acq On : 11 Nov 2015 17:53
Operator : ADC
Sample : WG546498-11 300.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Nov 12 09:55:42 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	5.141	96	420818	25.00000	ug/L	0.0000
46) Chlorobenzene-d5	7.979	117	319267	25.00000	ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.308	152	178164	25.00000	ug/L	# 0.0000
System Monitoring Compounds						
29) Dibromofluoromethane	4.174	111	2005	0.4645	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 1.858%#			
34) 1,2-Dichloroethane-d4	4.895	65	75388	18.1848	ug/L	0.0811
Spiked Amount 25.000	Range 80 - 120		Recovery = 72.739%#			
47) Toluene-d8	6.713	98	7696	0.4676	ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 1.870%#			
66) p-Bromofluorobenzene	8.726	95	4059	0.6591	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 2.636%#			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.036	85	1945784	325.1385	ug/L	100
3) Chloromethane	1.146	50	1837720	288.2887	ug/L	100
4) Vinyl Chloride	1.192	62	1776531	311.9911	ug/L	100
5) 1,3-Butadiene	1.201	54	1096278	299.5343	ug/L	99
6) Bromomethane	1.377	94	923135	307.3642	ug/L	99
7) Chloroethane	1.447	64	740775	254.7995	ug/L	96
8) Trichlorofluoromethane	1.519	101	1475110	336.7949	ug/L	99
9) Diethyl ether	1.754	59	1034731	307.9652	ug/L	99
10) 1,1-Dichloroethene	1.849	61	2048985	310.1714	ug/L	99
11) Carbon Disulfide	1.861	76	4256834	305.9520	ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.878	101	1274995	311.2546	ug/L	100
14) Acrolein	2.118	56	143184	318.1676	ug/L	99
15) Methylene Chloride	2.284	84	1378330	282.0009	ug/L	98
16) Acetone	2.359	43	265332	317.7657	ug/L	99
17) trans-1,2-Dichloroethene	2.411	96	1318765	305.3478	ug/L	99
18) Methyl acetate	2.457	43	821397	341.8507	ug/L #	100
19) Methyl Tert Butyl Ether	2.538	73	3445729	312.9873	ug/L	99
20) 1,1-Dichloroethane	2.970	63	2532008	306.3322	ug/L	100
21) Acrylonitrile	3.045	53	353163	308.6800	ug/L	98
22) Vinyl Acetate	3.282	86	177753	319.9490	ug/L	97
23) cis-1,2-Dichloroethene	3.566	96	1490170	300.5126	ug/L	100
24) 2,2-Dichloropropane	3.694	77	1953259	315.9425	ug/L	99
25) Cyclohexane	3.792	56	2458451	309.0386	ug/L	99
26) Bromochloromethane	3.809	130	940915	321.3451	ug/L	100
27) Chloroform	3.937	83	2402887	293.4265	ug/L	99
28) Carbon Tetrachloride	4.079	117	2024773	318.4181	ug/L	99
30) 1,1,1-Trichloroethane	4.174	97	2174917	302.7891	ug/L	100
31) 1,1-Dichloropropene	4.345	75	1885045	309.5670	ug/L	100
32) 2-Butanone	4.377	43	457131	329.3463	ug/L	94
33) Benzene	4.649	78	5427000	300.0661	ug/L	99
35) 1,2-Dichloroethane	4.895	62	1692616	311.0238	ug/L	99
36) Methylcyclohexane	5.300	83	2521219	298.1316	ug/L	99
37) Trichloroethene	5.327	130	1538806	306.6064	ug/L	99
38) Dibromomethane	5.746	93	835373	311.2612	ug/L	100
39) 1,2-Dichloropropane	5.853	63	1527247	307.2021	ug/L	100
40) Bromodichloromethane	5.940	83	1930467	312.3311	ug/L	100
41) 1,4-Dioxane	6.160	88	21478	711.2978	ug/L	95
42) 2-Chloroethyl Vinyl Ether	6.534	63	817699	325.4185	ug/L	100
43) cis-1,3-Dichloropropene	6.551	75	2302818	316.0110	ug/L	100
44) 4-Methyl-2-Pentanone	7.819	58	403770	327.0855	ug/L	98
45) trans-1,3-Dichloropropene	7.151	75	1998087	320.4722	ug/L	100
48) Toluene	6.763	91	5891973	291.3037	ug/L	97
49) Tetrachloroethene	7.090	166	1679502	308.0767	ug/L	100
50) 1,1,2-Trichloroethane	7.281	97	1120163	297.7046	ug/L	99

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016377.D
Acq On : 11 Nov 2015 17:53
Operator : ADC
Sample : WG546498-11 300.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Nov 12 09:55:42 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
51)	Dibromochloromethane	7.420	129	1562657	321.6995 ug/L	100
52)	1,3-Dichloropropane	7.504	76	1819636	304.9014 ug/L	99
53)	1,2-Dibromoethane	7.591	107	1152224	308.5906 ug/L	99
54)	2-Hexanone	7.819	43	775083	320.4031 ug/L	100
55)	Chlorobenzene	7.990	112	3853710	295.6431 ug/L	99
56)	1-Chlorohexane	8.011	69	392578	293.2211 ug/L #	1
57)	Ethylbenzene	8.034	106	2123533	299.2926 ug/L	90
58)	1,1,1,2-Tetrachloroethane	8.048	131	1472443	305.1193 ug/L	99
59)	m-,p-Xylene	8.132	106	4844404	569.1225 ug/L	84
60)	o-Xylene	8.390	106	2506623	298.4296 ug/L	95
61)	Styrene	8.425	104	4111228	294.5271 ug/L	97
62)	Bromoform	8.427	173	1077319	336.3869 ug/L	99
63)	Isopropylbenzene	8.578	105	5955931	272.0268 ug/L	94
65)	1,3,5-Trimethylbenzene	8.920	105	5279568	270.6297 ug/L	94
67)	Bromobenzene	8.778	156	1836436	301.1715 ug/L	99
68)	n-Propylbenzene	8.810	91	6755527	265.3048 ug/L	93
69)	1,1,2,2-Tetrachloroethane	8.850	83	1375069	310.9043 ug/L	100
70)	2-Chlorotoluene	8.885	91	4400883	282.5968 ug/L	97
71)	1,2,3-Trichloropropane	8.914	110	364474	296.0703 ug/L	98
72)	trans-1,4-Dichloro-2-B...	8.943	53	307861	300.8452 ug/L #	98
73)	1,2,4-Trimethylbenzene	9.117	105	5234243	268.7723 ug/L	93
74)	4-Chlorotoluene	8.975	91	4499465	280.8118 ug/L	96
75)	tert-Butylbenzene	9.079	134	1090615	304.8636 ug/L	87
76)	sec-Butylbenzene	9.169	105	6245857	260.5470 ug/L	93
77)	p-Isopropyltoluene	9.244	119	5493886	264.9919 ug/L	93
78)	1,3-Dichlorobenzene	9.273	146	3254851	290.6703 ug/L	97
79)	1,4-Dichlorobenzene	9.316	146	3240905	283.7282 ug/L	98
80)	n-Butylbenzene	9.447	91	5136023	269.1618 ug/L	93
81)	1,2-Dichlorobenzene	9.519	146	3102408	291.0259 ug/L	98
82)	1,2-Dibromo-3-Chloropr...	9.890	75	266133	320.6218 ug/L	98
83)	Hexachlorobutadiene	10.188	225	1484949	302.6249 ug/L	99
84)	1,2,4-Trichlorobenzene	10.205	180	2561526	301.0917 ug/L	99
85)	Naphthalene	10.353	128	4493705	285.1660 ug/L	97
86)	1,2,3-Trichlorobenzene	10.440	180	2371583	302.0500 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016377.D
Acq On : 11 Nov 2015 17:53
Operator : ADC
Sample : WG546498-11 300.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Nov 12 09:55:42 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

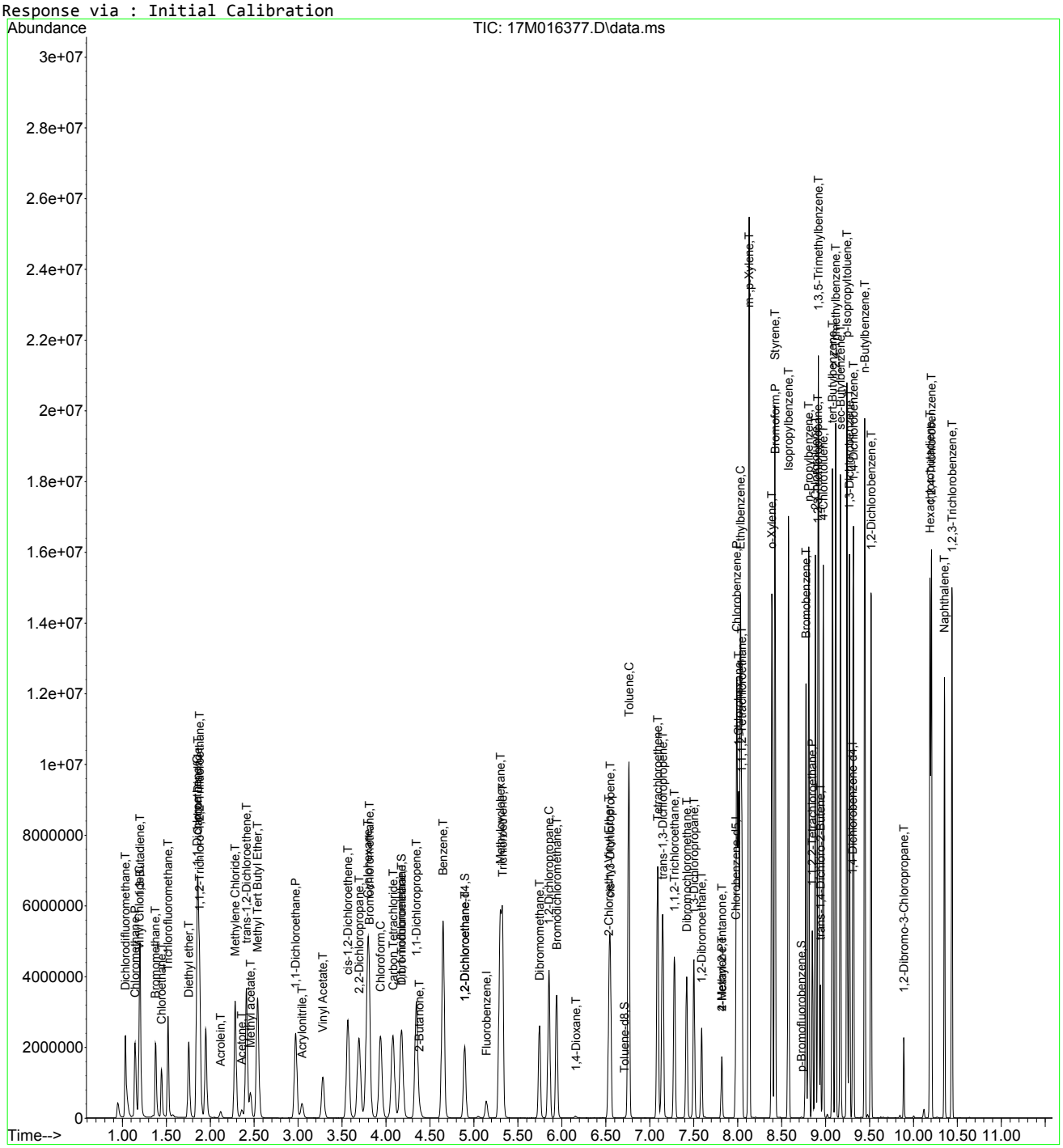

Trichlorofluoromethane

00651791

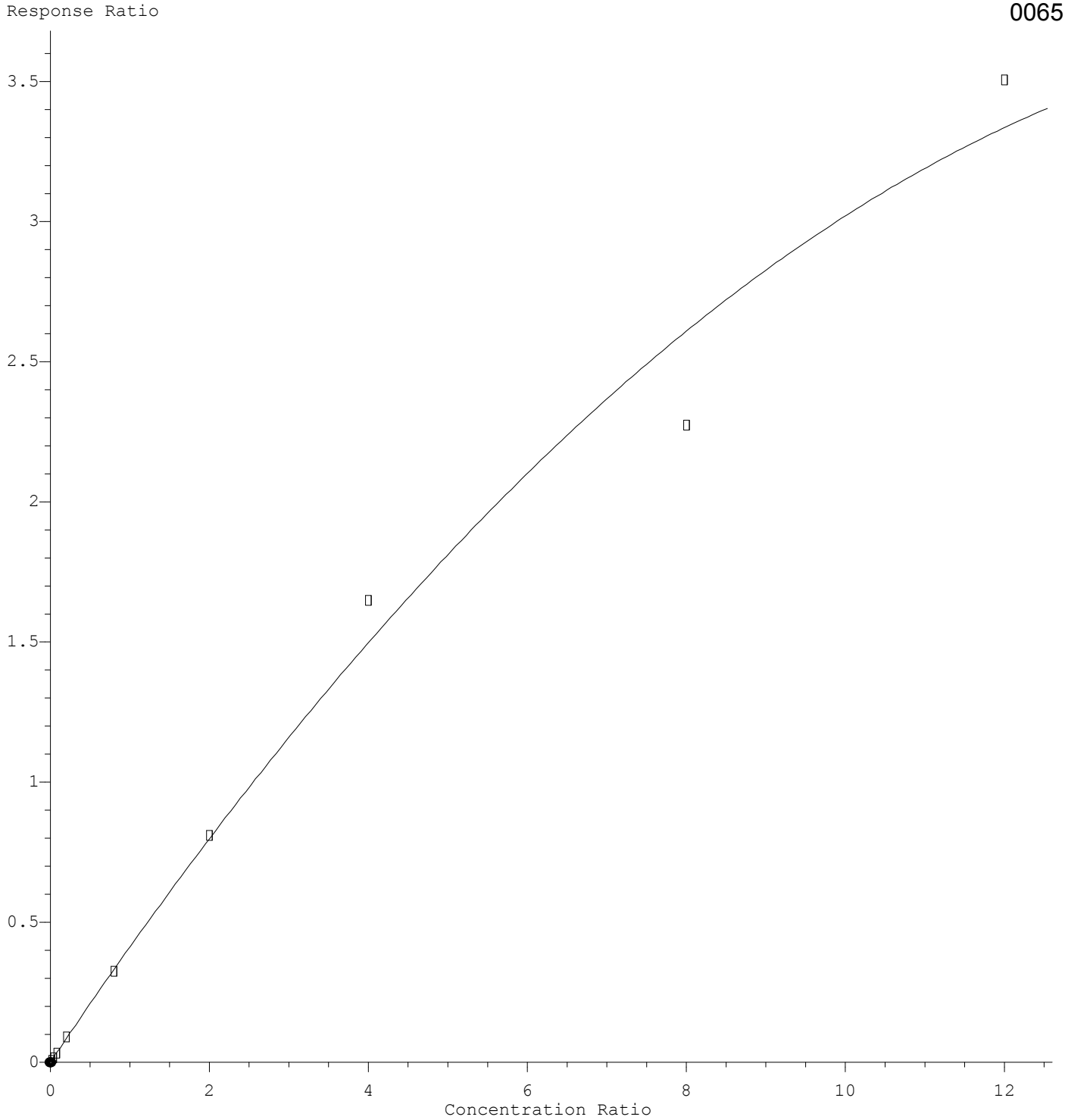

R = -1.203e-002 A*A + 4.222e-001 A + 3.726e-004
Coef of Det (r^2) = 0.991819 Curve Fit: Quadratic w(1/a)
Method Name: D:\MassHunter\GCMS\1\methods\8260_VMS.M
Calibration Table Last Updated: Thu Nov 12 09:48:27 2015

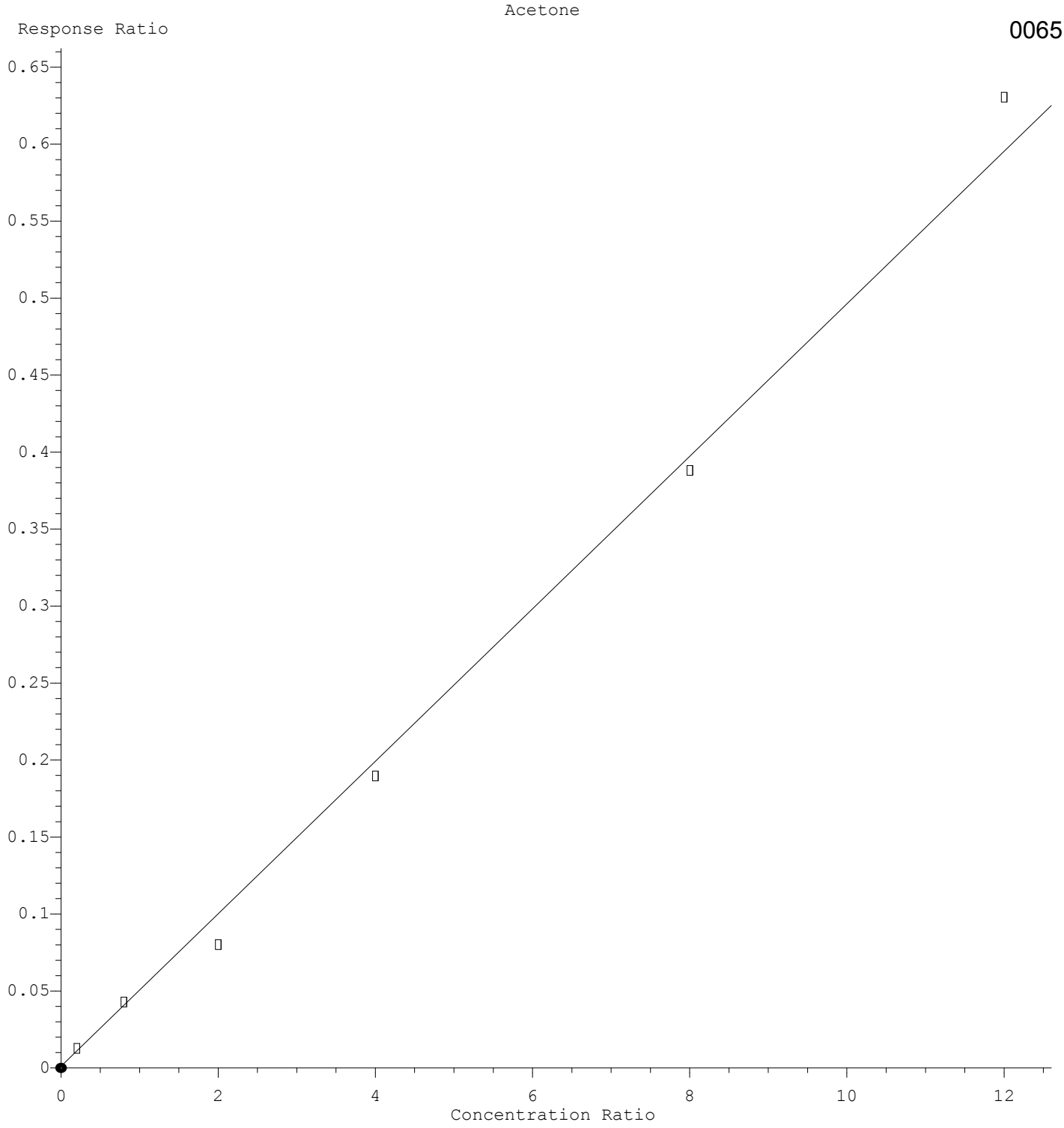

Response = 4.951e-002 * Amt + 1.216e-003
Coef of Det (r^2) = 0.993438 Curve Fit: wlr(1/a)
Method Name: D:\MassHunter\GCMS\1\methods\8260_VMS.M
Calibration Table Last Updated: Thu Nov 12 09:48:27 2015

Vinyl Acetate

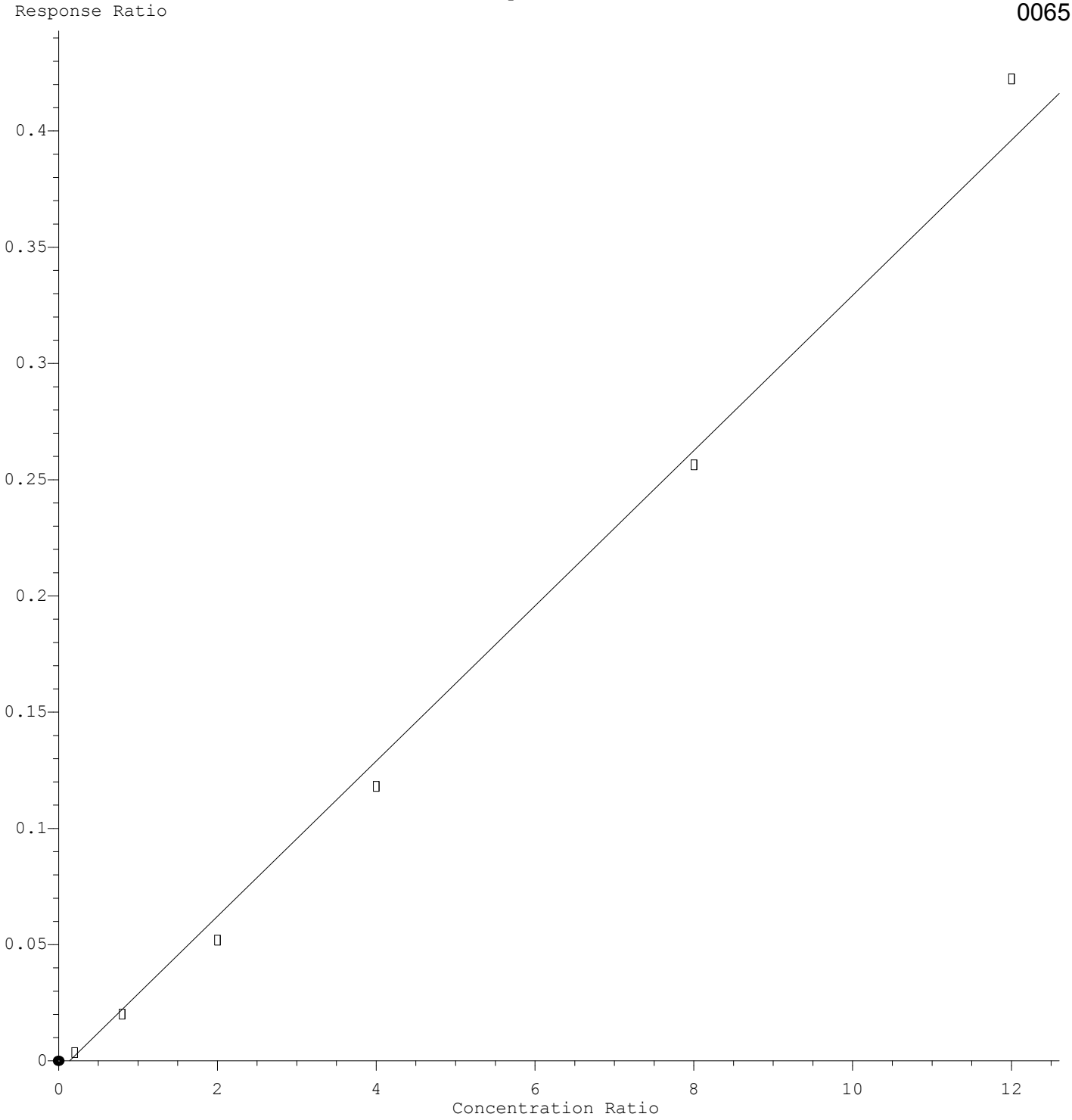

Response = 3.338e-002 * Amt - 4.749e-003
Coef of Det (r^2) = 0.993500 Curve Fit: wlr(1/a)
Method Name: D:\MassHunter\GCMS\1\methods\8260_VMS.M
Calibration Table Last Updated: Thu Nov 12 09:48:27 2015

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016379.D
Acq On : 11 Nov 2015 18:33
Operator : ADC
Sample : WG546498-12 50.0ug/L ALT 8260
Misc : 1,1 STD73387
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Nov 12 09:55:48 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.135	96	439844	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.976	117	330854	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.305	152	182862	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.177	111	117314	26.0001 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.000%		
34) 1,2-Dichloroethane-d4	4.811	65	114324	26.3840 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 105.536%		
47) Toluene-d8	6.711	98	441253	25.8730 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.492%		
66) p-Bromofluorobenzene	8.723	95	162405	25.6921 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.768%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.030	85	357156	57.0989 ug/L	100
3) Chloromethane	1.143	50	335169	50.3046 ug/L	100
4) Vinyl Chloride	1.189	62	329215	55.3152 ug/L	100
5) 1,3-Butadiene	1.201	54	220256	57.5770 ug/L	100
6) Bromomethane	1.374	94	153126	48.7790 ug/L	100
7) Chloroethane	1.444	64	138377	45.5378 ug/L	93
8) Trichlorofluoromethane	1.516	101	251328	35.2255 ug/L	100
9) Diethyl ether	1.757	59	839605	239.0809 ug/L	100
10) 1,1-Dichloroethene	1.838	61	333854	48.3521 ug/L	100
11) Carbon Disulfide	1.849	76	231598	15.9256 ug/L	95
12) 1,1,2-Trichloro-1,2,2-...	1.867	101	223754	52.2605 ug/L	99
14) Acrolein	2.119	56	51908	110.3548 ug/L	97
15) Methylene Chloride	2.278	84	239345	46.8508 ug/L	99
16) Acetone	2.368	43	50068	56.8653 ug/L	98
17) trans-1,2-Dichloroethene	2.405	96	225050	49.8542 ug/L	99
18) Methyl acetate	2.460	43	137709	54.8329 ug/L #	100
19) Methyl Tert Butyl Ether	2.541	73	619677	53.8526 ug/L	100
20) 1,1-Dichloroethane	2.967	63	438476	50.7539 ug/L	100
21) Acrylonitrile	3.045	53	56047	46.8685 ug/L	99
22) Vinyl Acetate	3.280	86	27714	50.7528 ug/L	99
23) cis-1,2-Dichloroethene	3.560	96	256956	49.5771 ug/L	100
24) 2,2-Dichloropropane	3.682	77	341133	52.7919 ug/L	100
25) Cyclohexane	3.775	56	400484	48.1650 ug/L	100
26) Bromochloromethane	3.801	130	167330	54.6753 ug/L	100
27) Chloroform	3.934	83	435896	50.9266 ug/L	100
28) Carbon Tetrachloride	4.070	117	348721	52.4681 ug/L	99
30) 1,1,1-Trichloroethane	4.168	97	392404	52.2669 ug/L	100
31) 1,1-Dichloropropene	4.333	75	322773	50.7138 ug/L	100
32) 2-Butanone	4.383	43	80321	55.3652 ug/L #	73
33) Benzene	4.640	78	962221	50.9011 ug/L	100
35) 1,2-Dichloroethane	4.889	62	296059	52.0486 ug/L	100
36) Methylcyclohexane	5.289	83	405489	45.8746 ug/L	99
37) Trichloroethene	5.318	130	265903	50.6893 ug/L	100
38) Dibromomethane	5.741	93	146903	52.3686 ug/L	99
39) 1,2-Dichloropropane	5.848	63	268793	51.7283 ug/L	100
40) Bromodichloromethane	5.937	83	331206	51.2680 ug/L	100
41) 1,4-Dioxane	6.158	88	18832	596.6913 ug/L	92
42) 2-Chloroethyl Vinyl Ether	6.528	63	142411	54.2235 ug/L	99
43) cis-1,3-Dichloropropene	6.546	75	416471	54.6793 ug/L	100
44) 4-Methyl-2-Pentanone	7.817	58	69050	53.5164 ug/L	98
45) trans-1,3-Dichloropropene	7.145	75	337676	51.8169 ug/L	100
48) Toluene	6.754	91	1070197	51.0583 ug/L	100
49) Tetrachloroethene	7.087	166	291797	51.6508 ug/L	100
50) 1,1,2-Trichloroethane	7.278	97	193335	49.5830 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016379.D
Acq On : 11 Nov 2015 18:33
Operator : ADC
Sample : WG546498-12 50.0ug/L ALT 8260
Misc : 1,1 STD73387
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Nov 12 09:55:48 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

	Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
51)	Dibromochloromethane	7.417	129	262533	52.1541 ug/L	99
52)	1,3-Dichloropropane	7.498	76	324341	52.4438 ug/L	100
53)	1,2-Dibromoethane	7.585	107	198274	51.2424 ug/L	100
54)	2-Hexanone	7.817	43	132872	53.0029 ug/L	100
55)	Chlorobenzene	7.984	112	727708	53.8720 ug/L	99
56)	1-Chlorohexane	7.999	69	65457	47.1784 ug/L	81
57)	Ethylbenzene	8.022	106	378118	51.4259 ug/L	97
58)	1,1,1,2-Tetrachloroethane	8.040	131	253352	50.6609 ug/L	100
59)	m-,p-Xylene	8.123	106	940133	106.5792 ug/L	99
60)	o-Xylene	8.387	106	462189	53.0995 ug/L	99
61)	Styrene	8.419	104	742734	51.3458 ug/L	100
62)	Bromoform	8.422	173	186982	56.3394 ug/L	99
63)	Isopropylbenzene	8.575	105	1205164	53.1161 ug/L	100
65)	1,3,5-Trimethylbenzene	8.914	105	1027919	51.3372 ug/L	100
67)	Bromobenzene	8.775	156	311835	49.8264 ug/L	100
68)	n-Propylbenzene	8.804	91	1399192	53.5377 ug/L	100
69)	1,1,2,2-Tetrachloroethane	8.847	83	235015	51.7719 ug/L	100
70)	2-Chlorotoluene	8.879	91	840062	52.5576 ug/L	100
71)	1,2,3-Trichloropropane	8.911	110	62512	49.4753 ug/L	100
72)	trans-1,4-Dichloro-2-B...	8.937	53	45129	42.9676 ug/L #	96
73)	1,2,4-Trimethylbenzene	9.111	105	1000330	50.0461 ug/L	99
74)	4-Chlorotoluene	8.969	91	849980	51.6844 ug/L	98
75)	tert-Butylbenzene	9.076	134	194975	53.1018 ug/L	100
76)	sec-Butylbenzene	9.166	105	1298213	52.7639 ug/L	100
77)	p-Isopropyltoluene	9.238	119	1073778	50.4619 ug/L	100
78)	1,3-Dichlorobenzene	9.267	146	600361	52.2370 ug/L	99
79)	1,4-Dichlorobenzene	9.311	146	580802	49.5405 ug/L	100
80)	n-Butylbenzene	9.444	91	995390	50.8249 ug/L	100
81)	1,2-Dichlorobenzene	9.513	146	579966	53.0068 ug/L	99
82)	1,2-Dibromo-3-Chloropr...	9.890	75	45888	53.8629 ug/L	99
83)	Hexachlorobutadiene	10.188	225	261520	51.9272 ug/L	100
84)	1,2,4-Trichlorobenzene	10.202	180	465537	53.3152 ug/L	100
85)	Naphthalene	10.353	128	863260	53.3742 ug/L	100
86)	1,2,3-Trichlorobenzene	10.437	180	429354	53.2786 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016379.D
Acq On : 11 Nov 2015 18:33
Operator : ADC
Sample : WG546498-12 50.0ug/L ALT 8260
Misc : 1,1 STD73387
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Nov 12 09:55:48 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

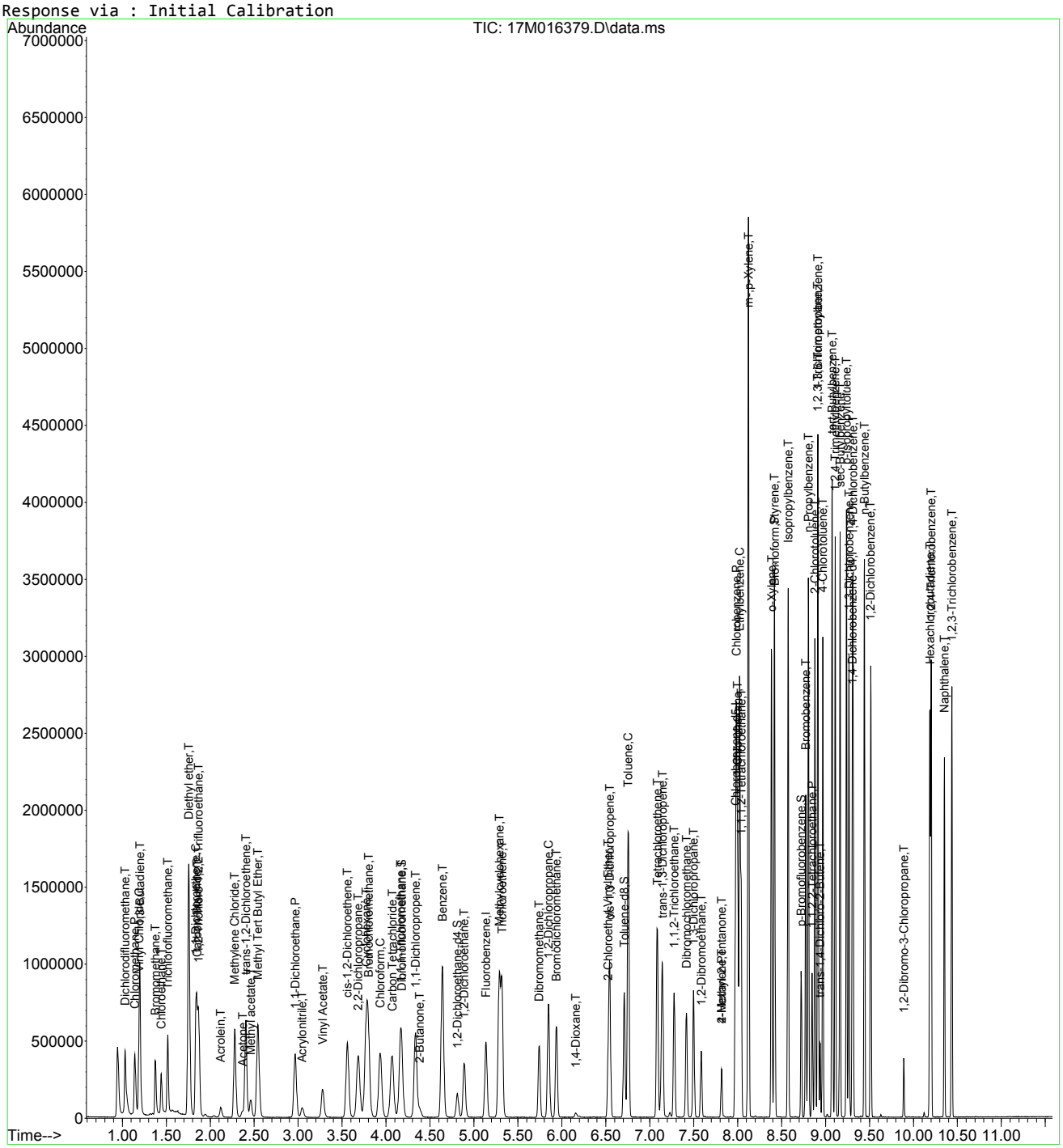

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016379.D
Acq On : 11 Nov 2015 18:33
Operator : ADC
Sample : WG546498-12 50.0ug/L ALT 8260
Misc : 1,1 STD73387
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Nov 12 09:55:48 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	96	0.000
2	T	Dichlorodifluoromethane	50.000	57.099	-14.2	106	0.000
3	P	Chloromethane	50.000	50.305	-0.6	104	0.000
4	C	Vinyl Chloride	50.000	55.315	-10.6#	109	0.000
5	T	1,3-Butadiene	50.000	57.577	-15.2	117	0.000
6	T	Bromomethane	50.000	48.779	2.4	107	0.000
7	T	Chloroethane	50.000	45.538	8.9	85	0.000
8	T	Trichlorofluoromethane	50.000	35.225	29.5#	68	-0.015
9	T	Diethyl ether	50.000	239.081	-378.2#	524	0.000
10	C	1,1-Dichloroethene	50.000	48.352	3.3#	95	-0.026
11	T	Carbon Disulfide	50.000	15.926	68.1#	32	-0.026
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.000	52.261	-4.5	101	-0.026
13	T	Iodomethane	-1.000	0.000	0.0	0	-0.014
14	T	Acrolein	50.000	110.355	-120.7#	269	0.000
15	T	Methylene Chloride	50.000	46.851	6.3	104	-0.011
16	T	Acetone	50.000	56.865	-13.7	136	0.024
17	T	trans-1,2-Dichloroethene	50.000	49.854	0.3	101	-0.012
18	T	Methyl acetate	50.000	54.833	-9.7	120	0.011
19	T	Methyl Tert Butyl Ether	50.000	53.853	-7.7	119	0.011
20	P	1,1-Dichloroethane	50.000	50.754	-1.5	101	0.000
21	T	Acrylonitrile	50.000	46.869	6.3	107	0.012
22	T	Vinyl Acetate	50.000	50.753	-1.5	117	0.000
23	T	cis-1,2-Dichloroethene	50.000	49.577	0.8	102	0.000
24	T	2,2-Dichloropropane	50.000	52.792	-5.6	96	-0.012
25	T	Cyclohexane	50.000	48.165	3.7	94	-0.020
26	T	Bromochloromethane	50.000	54.675	-9.3	111	0.000
27	C	Chloroform	50.000	50.927	-1.9#	107	0.000
28	T	Carbon Tetrachloride	50.000	52.468	-4.9	103	0.000
29	S	Dibromofluoromethane	25.000	26.000	-4.0	100	0.000
30	T	1,1,1-Trichloroethane	50.000	52.267	-4.5	106	0.000
31	T	1,1-Dichloropropene	50.000	50.714	-1.4	100	-0.012
32	T	2-Butanone	50.000	55.365	-10.7	128	0.018
33	T	Benzene	50.000	50.901	-1.8	102	0.000
34	S	1,2-Dichloroethane-d4	25.000	26.384	-5.5	105	0.000
35	T	1,2-Dichloroethane	50.000	52.049	-4.1	109	0.000
36	T	Methylcyclohexane	50.000	45.875	8.3	93	0.000
37	T	Trichloroethene	50.000	50.689	-1.4	103	0.000
38	T	Dibromomethane	50.000	52.369	-4.7	115	0.000
39	C	1,2-Dichloropropane	50.000	51.728	-3.5#	105	0.000
40	T	Bromodichloromethane	50.000	51.268	-2.5	104	0.000
41	T	1,4-Dioxane	100.000	596.691	-496.7#	583	0.000
42	T	2-Chloroethyl Vinyl Ether	50.000	54.224	-8.4	117	0.000
43	T	cis-1,3-Dichloropropene	50.000	54.679	-9.4	109	0.000
44	T	4-Methyl-2-Pentanone	50.000	53.516	-7.0	130	0.000
45	T	trans-1,3-Dichloropropene	50.000	51.817	-3.6	106	0.000
46	I	Chlorobenzene-d5	25.000	25.000	0.0	97	0.000
47	S	Toluene-d8	25.000	25.873	-3.5	98	0.000
48	C	Toluene	50.000	51.058	-2.1#	102	0.000
49	T	Tetrachloroethene	50.000	51.651	-3.3	104	0.000
50	T	1,1,2-Trichloroethane	50.000	49.583	0.8	112	0.000
51	T	Dibromochloromethane	50.000	52.154	-4.3	110	0.000
52	T	1,3-Dichloropropane	50.000	52.444	-4.9	113	0.000
53	T	1,2-Dibromoethane	50.000	51.242	-2.5	112	0.000
54	T	2-Hexanone	50.000	53.003	-6.0	130	0.000
55	P	Chlorobenzene	50.000	53.872	-7.7	108	0.000

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016379.D
Acq On : 11 Nov 2015 18:33
Operator : ADC
Sample : WG546498-12 50.0ug/L ALT 8260
Misc : 1,1 STD73387
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Nov 12 09:55:48 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	1-Chlorohexane	50.000	47.178	5.6	94	0.000
57	C	Ethylbenzene	50.000	51.426	-2.9#	103	0.000
58	T	1,1,1,2-Tetrachloroethane	50.000	50.661	-1.3	102	0.000
59	T	m-,p-Xylene	100.000	106.579	-6.6	105	0.000
60	T	o-Xylene	50.000	53.099	-6.2	106	0.000
61	T	Styrene	50.000	51.346	-2.7	103	0.000
62	P	Bromoform	50.000	56.339	-12.7	122	0.000
63	T	Isopropylbenzene	50.000	53.116	-6.2	105	0.000
64	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	99	0.000
65	T	1,3,5-Trimethylbenzene	50.000	51.337	-2.7	102	0.000
66	S	p-Bromofluorobenzene	25.000	25.692	-2.8	98	0.000
67	T	Bromobenzene	50.000	49.826	0.3	104	0.000
68	T	n-Propylbenzene	50.000	53.538	-7.1	103	0.000
69	P	1,1,2,2-Tetrachloroethane	50.000	51.772	-3.5	118	0.000
70	T	2-Chlorotoluene	50.000	52.558	-5.1	105	0.000
71	T	1,2,3-Trichloropropane	50.000	49.475	1.0	118	0.000
72	T	trans-1,4-Dichloro-2-Butene	50.000	42.968	14.1	101	0.000
73	T	1,2,4-Trimethylbenzene	50.000	50.046	-0.1	99	0.000
74	T	4-Chlorotoluene	50.000	51.684	-3.4	101	0.000
75	T	tert-Butylbenzene	50.000	53.102	-6.2	106	0.000
76	T	sec-Butylbenzene	50.000	52.764	-5.5	103	0.000
77	T	p-Isopropyltoluene	50.000	50.462	-0.9	97	0.000
78	T	1,3-Dichlorobenzene	50.000	52.237	-4.5	105	0.000
79	T	1,4-Dichlorobenzene	50.000	49.541	0.9	103	0.000
80	T	n-Butylbenzene	50.000	50.825	-1.7	97	0.000
81	T	1,2-Dichlorobenzene	50.000	53.007	-6.0	110	0.000
82	T	1,2-Dibromo-3-Chloropropane	50.000	53.863	-7.7	125	0.000
83	T	Hexachlorobutadiene	50.000	51.927	-3.9	100	0.000
84	T	1,2,4-Trichlorobenzene	50.000	53.315	-6.6	107	0.000
85	T	Naphthalene	50.000	53.374	-6.7	120	0.000
86	T	1,2,3-Trichlorobenzene	50.000	53.279	-6.6	112	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407828.D Vial: 2
Acq On : 5 Oct 2015 11:49 Operator: TMB
Sample : WG540826-02 5ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 11:56:55 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	928093	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	670481	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	347120	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.71	41	3724	5.2139 ug/L	81
3) 3-Chloro-1-propene	7.08	41	87895	5.0600 ug/L	95
4) 2-Chloro-1,3-butadiene	8.46	53	83096	4.6491 ug/L	97
5) Ethyl Acetate	9.11	43	19297	4.0869 ug/L	95
6) Methacrylonitrile	9.27	67	8508	4.1055 ug/L	97
7) Isobutyl Alcohol	9.26	43	1318	6.8122 ug/L #	56
8) 1-Butanol	10.19	56	1930	20.2377 ug/L #	64
9) Methyl methacrylate	11.43	41	22250	3.8908 ug/L	96
10) 2-Nitropropane	11.75	43	2454	2.5566 ug/L	66
13) Cyclohexanone	15.83	55	2773	3.7471 ug/L #	43

(#) = qualifier out of range (m) = manual integration
8M407828.D A9FOOWTR.M Tue Oct 06 11:56:56 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407828.D Vial: 2
Acq On : 5 Oct 2015 11:49 Operator: TMB
Sample : WG540826-02 5ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 11:56 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

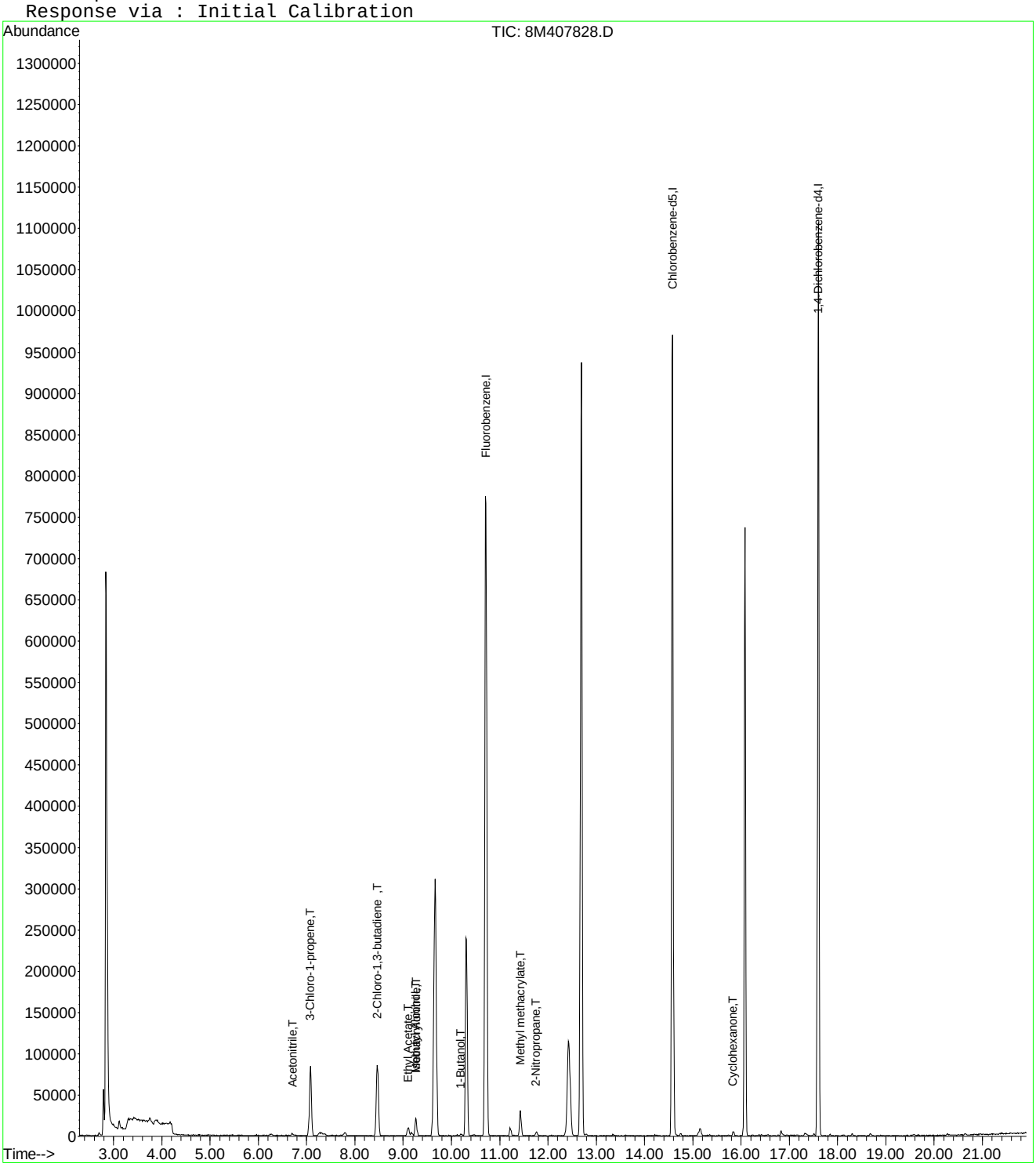

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\100515\8M407828.D Vial: 2
Acq On : 5 Oct 2015 11:49 Operator: TMB
Sample : WG540826-02 5ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:54:01 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	5.0000	5.2139	-4.3	100	0.01
3	T	3-Chloro-1-propene	5.0000	5.0600	-1.2	100	0.00
4	T	2-Chloro-1,3-butadiene	5.0000	4.6491	7.0	100	0.00
5	T	Ethyl Acetate	5.0000	4.0869	18.3	100	0.01
6	T	Methacrylonitrile	5.0000	4.1055	17.9	100	0.01
7	T	Isobutyl Alcohol	-1.0000	6.8122	0.0	100	-0.01
8	T	1-Butanol	-1.0000	20.2377	0.0	100	0.00
9	T	Methyl methacrylate	5.0000	3.8908	22.2	100	0.00
10	T	2-Nitropropane	-1.0000	2.5566	0.0	0	-0.01
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	3.7471	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M407828.D A9FOOWTR.M Tue Oct 06 11:54:24 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407829.D Vial: 3
Acq On : 5 Oct 2015 12:17 Operator: TMB
Sample : WG540826-03 20ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 11:56:56 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	903673	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	657140	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	345767	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.71	41	14085	20.2529 ug/L	98
3) 3-Chloro-1-propene	7.08	41	349549	20.6667 ug/L	100
4) 2-Chloro-1,3-butadiene	8.46	53	347796	19.9846 ug/L	100
5) Ethyl Acetate	9.10	43	93237	20.2805 ug/L	97
6) Methacrylonitrile	9.26	67	40077	19.8617 ug/L	100
7) Isobutyl Alcohol	9.27	43	6436	34.1640 ug/L #	94
9) Methyl methacrylate	11.43	41	106029	19.0419 ug/L	97
10) 2-Nitropropane	11.76	43	12836	13.7339 ug/L	86
13) Cyclohexanone	15.84	55	14620	19.8329 ug/L	92

(#) = qualifier out of range (m) = manual integration
8M407829.D A9FOOWTR.M Tue Oct 06 11:56:56 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407829.D Vial: 3
Acq On : 5 Oct 2015 12:17 Operator: TMB
Sample : WG540826-03 20ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 11:56 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

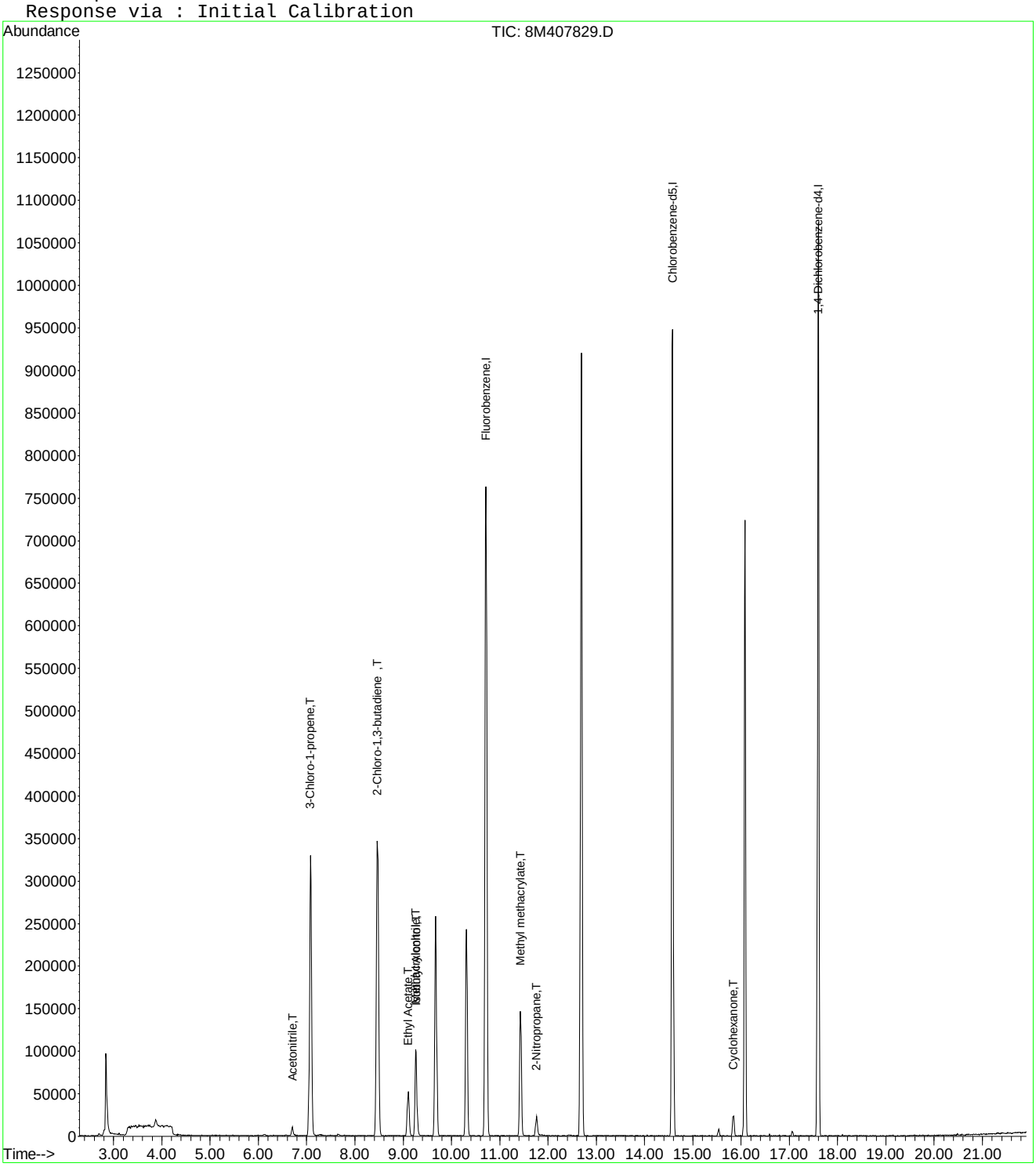

8M407829.D A9FOOWTR.M Tue Oct 06 11:56:57 2015 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\100515\8M407829.D Vial: 3
Acq On : 5 Oct 2015 12:17 Operator: TMB
Sample : WG540826-03 20ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:54:01 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	20.2529	-1.3	100	0.00
3	T	3-Chloro-1-propene	20.0000	20.6667	-3.3	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	19.9846	0.1	100	0.00
5	T	Ethyl Acetate	20.0000	20.2805	-1.4	100	0.00
6	T	Methacrylonitrile	20.0000	19.8618	0.7	100	0.00
7	T	Isobutyl Alcohol	-1.0000	34.1640	0.0	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.19#
9	T	Methyl methacrylate	20.0000	19.0419	4.8	100	0.00
10	T	2-Nitropropane	-1.0000	13.7339	0.0	0	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	19.8329	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M407829.D A9FOOWTR.M Tue Oct 06 11:54:38 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407830.D Vial: 4
Acq On : 5 Oct 2015 12:51 Operator: TMB
Sample : WG540826-04 50ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 05 13:13:37 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	883897	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	665815	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	354078	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.68	111	212038	25.2054 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.84%		
43) 1,2-Dichloroethane-d4	10.31	65	214919	25.0573 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.24%		
58) Toluene-d8	12.69	98	784209	25.3851 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.56%		
80) p-Bromofluorobenzene	16.07	95	309869	25.0818 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.32%		

Target Compounds					Qvalue
13) Acetone	6.26	43	674	0.5137 ug/L #	48
19) Methylene Chloride	7.26	84	1894	0.2128 ug/L	67
24) n-Hexane	7.79	57	2250	0.1674 ug/L	96
36) Tetrahydrofuran	9.64	42	735	0.4954 ug/L #	40
79) 1,1,2,2-Tetrachloroethane	15.85	83	3323	0.5087 ug/L #	26

(#) = qualifier out of range (m) = manual integration
8M407830.D 8260WT.M Mon Oct 05 13:13:38 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407830.D Vial: 4
Acq On : 5 Oct 2015 12:51 Operator: TMB
Sample : WG540826-04 50ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 5 13:13 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration

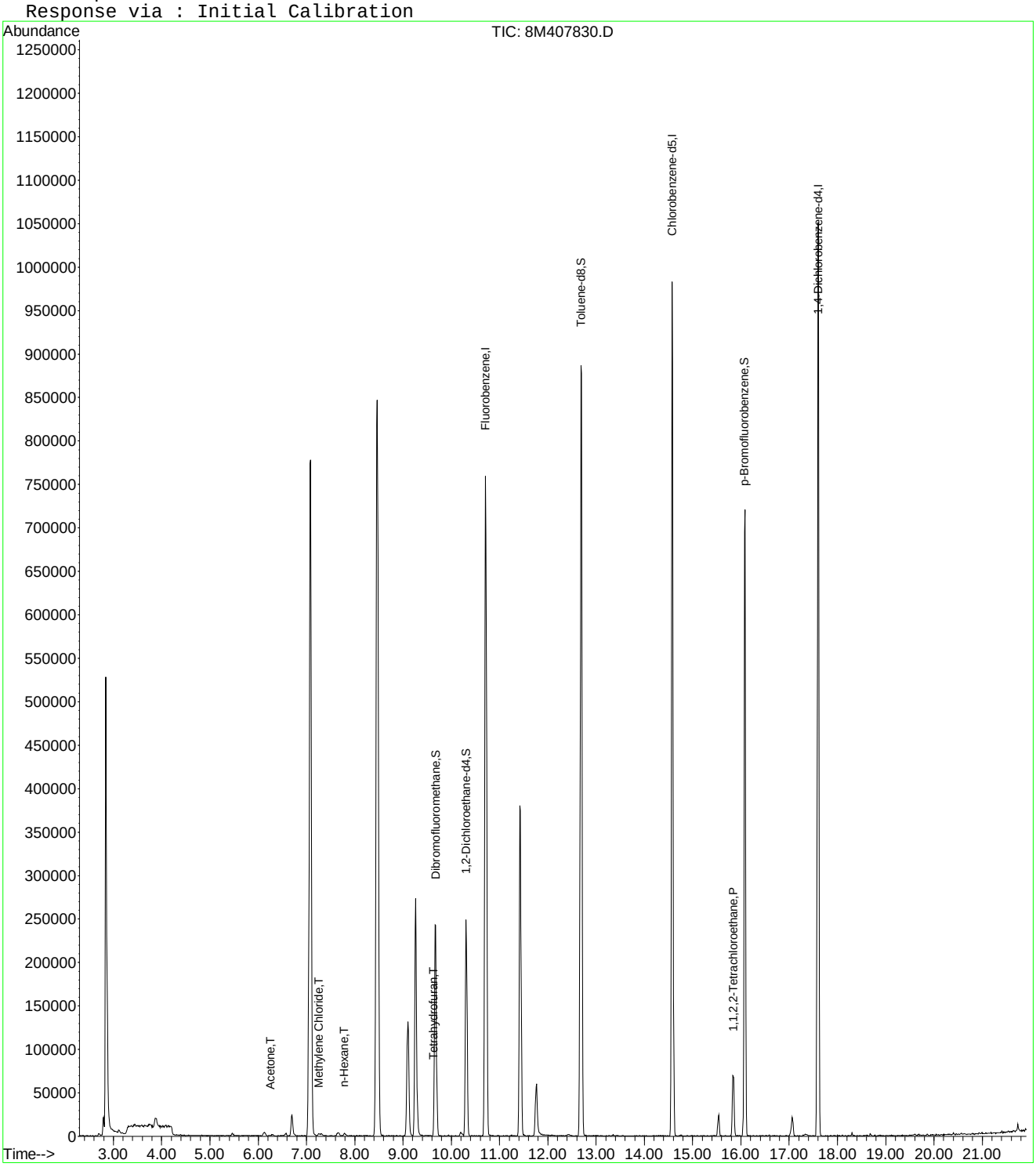

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407830.D Vial: 4
Acq On : 5 Oct 2015 12:51 Operator: TMB
Sample : WG540826-04 50ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 11:56:57 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	883897	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	665815	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	354078	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	35080	51.5703 ug/L	99
3) 3-Chloro-1-propene	7.07	41	841804	50.8844 ug/L	100
4) 2-Chloro-1,3-butadiene	8.47	53	851495	50.0222 ug/L	100
5) Ethyl Acetate	9.10	43	233139	51.8459 ug/L	97
6) Methacrylonitrile	9.26	67	101702	51.5301 ug/L	97
7) Isobutyl Alcohol	9.26	43	17567	95.3366 ug/L	98
8) 1-Butanol	10.19	56	3729	41.0570 ug/L	92
9) Methyl methacrylate	11.42	41	280126	51.4337 ug/L	98
10) 2-Nitropropane	11.76	43	37061	40.5407 ug/L	95
13) Cyclohexanone	15.84	55	40139	53.1730 ug/L	88

(#) = qualifier out of range (m) = manual integration
8M407830.D A9FOOWTR.M Tue Oct 06 11:56:57 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407830.D Vial: 4
Acq On : 5 Oct 2015 12:51 Operator: TMB
Sample : WG540826-04 50ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 11:56 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

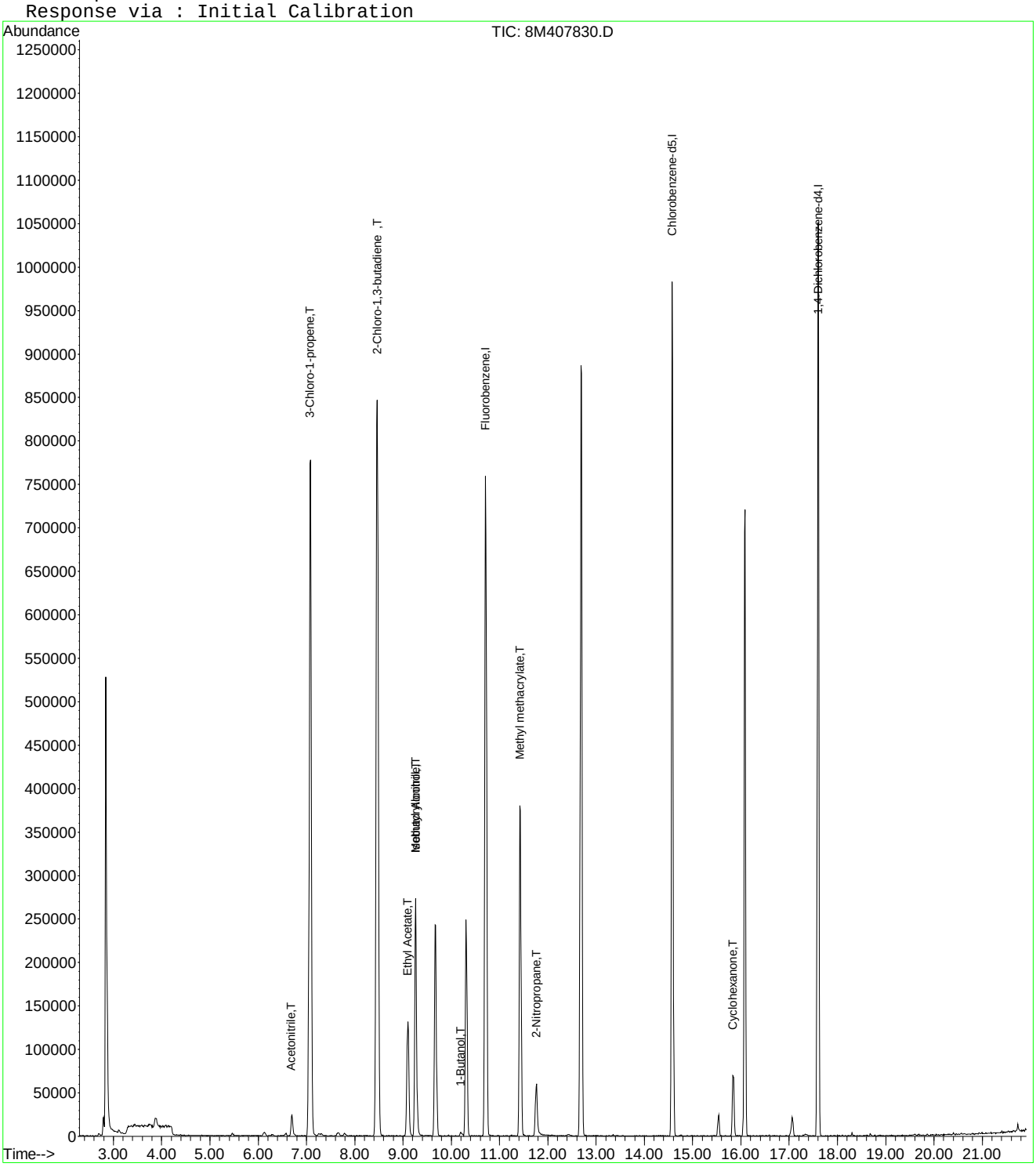

8M407830.D A9FOOWTR.M Tue Oct 06 11:56:57 2015 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\100515\8M407830.D Vial: 4
Acq On : 5 Oct 2015 12:51 Operator: TMB
Sample : WG540826-04 50ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:54:01 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	51.5703	-3.1	100	0.00
3	T	3-Chloro-1-propene	50.0000	50.8844	-1.8	100	0.00
4	T	2-Chloro-1,3-butadiene	50.0000	50.0222	-0.0	100	0.00
5	T	Ethyl Acetate	50.0000	51.8459	-3.7	100	0.00
6	T	Methacrylonitrile	50.0000	51.5301	-3.1	100	0.00
7	T	Isobutyl Alcohol	100.0000	95.3366	4.7	100	0.00
8	T	1-Butanol	50.0000	41.0570	17.9	100	0.00
9	T	Methyl methacrylate	50.0000	51.4337	-2.9	100	0.00
10	T	2-Nitropropane	50.0000	40.5407	18.9	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	50.0000	53.1730	-6.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M407830.D A9FOOWTR.M Tue Oct 06 11:54:56 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407831.D Vial: 5
Acq On : 5 Oct 2015 13:20 Operator: TMB
Sample : WG540826-05 100ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 05 13:42:04 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	866178	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	661111	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	356230	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	202803	24.6008 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.40%		
43) 1,2-Dichloroethane-d4	10.31	65	203632	24.2270 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.92%		
58) Toluene-d8	12.69	98	789106	25.7254 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.92%		
80) p-Bromofluorobenzene	16.08	95	308907	24.8529 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.40%		

Target Compounds

					Qvalue
24) n-Hexane	7.79	57	3351	0.2544 ug/L	79
36) Tetrahydrofuran	9.64	42	639	0.4395 ug/L #	40
39) Cyclohexane	9.94	56	2379	0.1385 ug/L #	66

(#) = qualifier out of range (m) = manual integration
8M407831.D 8260WT.M Mon Oct 05 13:42:05 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407831.D Vial: 5
Acq On : 5 Oct 2015 13:20 Operator: TMB
Sample : WG540826-05 100ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 5 13:42 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration

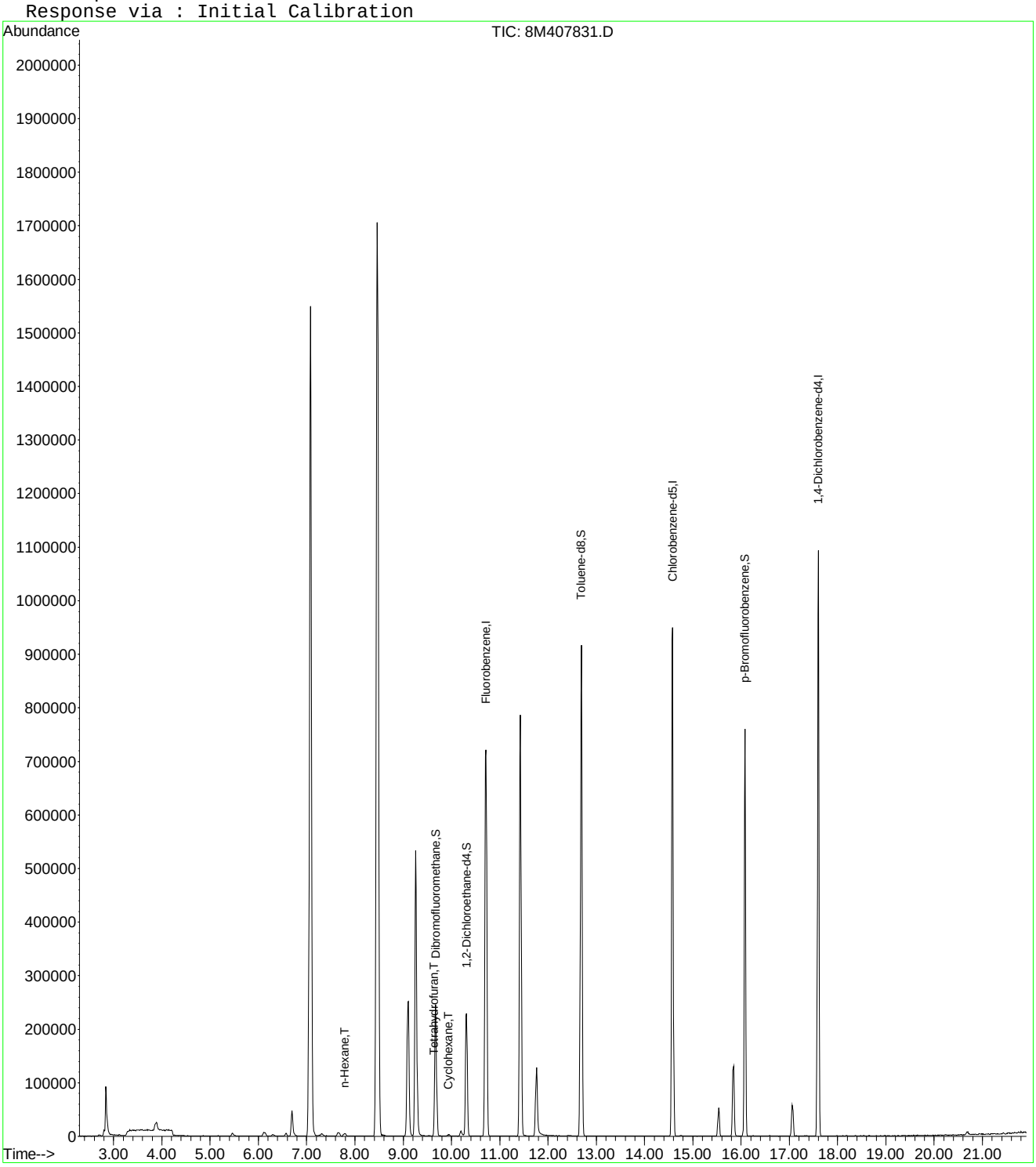

8M407831.D 8260WT.M Mon Oct 05 13:42:06 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407831.D Vial: 5
Acq On : 5 Oct 2015 13:20 Operator: TMB
Sample : WG540826-05 100ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 11:56:58 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	866178	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	661111	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	356230	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	67393	101.0995 ug/L	100
3) 3-Chloro-1-propene	7.08	41	1633129	100.7368 ug/L	100
4) 2-Chloro-1,3-butadiene	8.46	53	1684207	100.9649 ug/L	99
5) Ethyl Acetate	9.10	43	453445	102.9007 ug/L	99
6) Methacrylonitrile	9.26	67	196843	101.7762 ug/L	95
7) Isobutyl Alcohol	9.27	43	37534	207.8650 ug/L	92
8) 1-Butanol	10.20	56	8253	92.7258 ug/L	78
9) Methyl methacrylate	11.43	41	562497	105.3924 ug/L	98
10) 2-Nitropropane	11.76	43	77739	86.7776 ug/L	89
13) Cyclohexanone	15.84	55	74077	97.5385 ug/L	84

(#) = qualifier out of range (m) = manual integration
8M407831.D A9FOOWTR.M Tue Oct 06 11:56:58 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407831.D Vial: 5
Acq On : 5 Oct 2015 13:20 Operator: TMB
Sample : WG540826-05 100ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 11:56 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

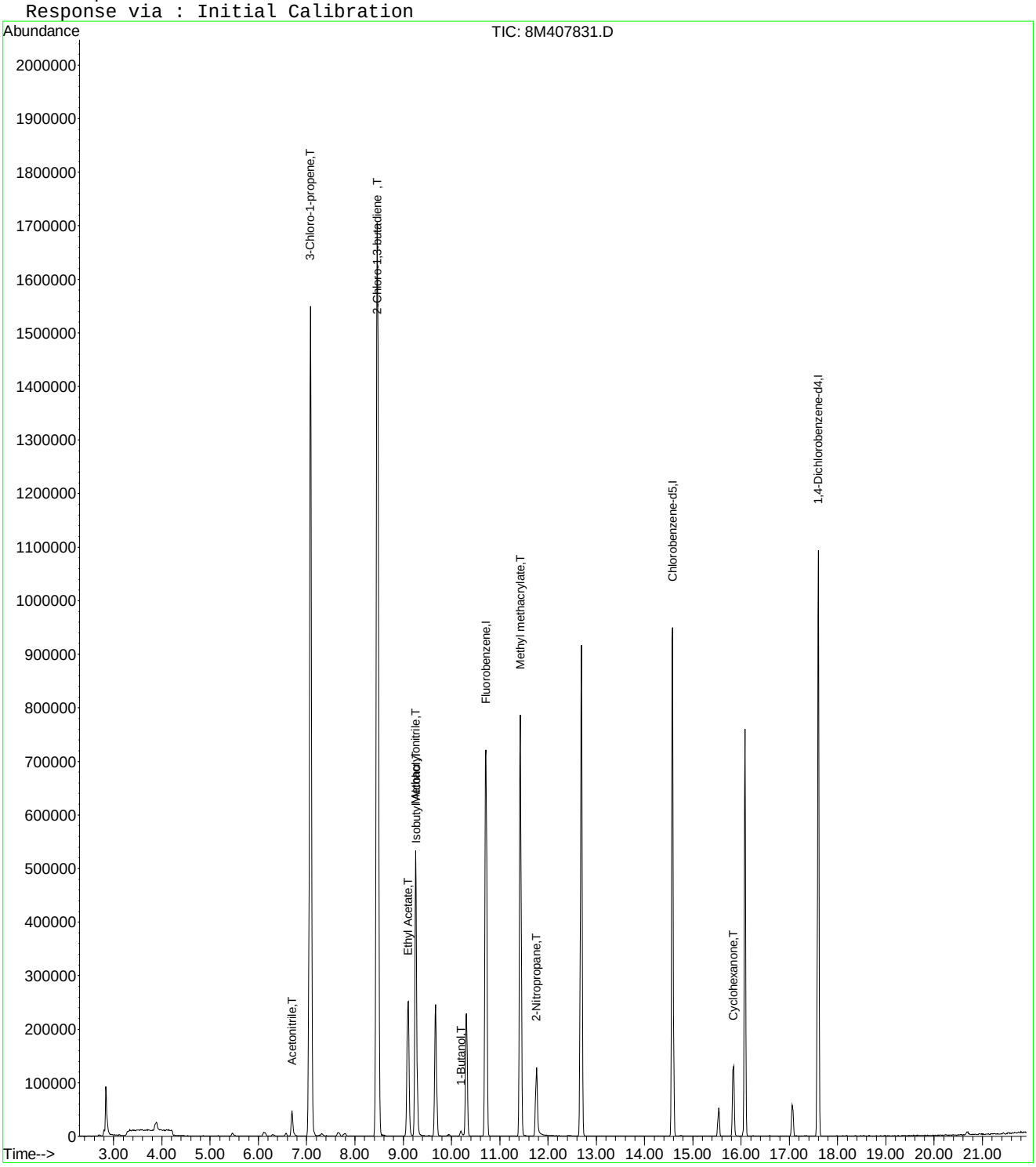

8M407831.D A9FOOWTR.M Tue Oct 06 11:56:58 2015 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\100515\8M407831.D Vial: 5
Acq On : 5 Oct 2015 13:20 Operator: TMB
Sample : WG540826-05 100ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:54:01 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	101.0995	-1.1	100	0.00
3	T	3-Chloro-1-propene	100.0000	100.7368	-0.7	100	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	100.9649	-1.0	100	0.00
5	T	Ethyl Acetate	100.0000	102.9007	-2.9	100	0.00
6	T	Methacrylonitrile	100.0000	101.7762	-1.8	100	0.00
7	T	Isobutyl Alcohol	200.0000	207.8650	-3.9	100	0.00
8	T	1-Butanol	100.0000	92.7258	7.3	100	0.00
9	T	Methyl methacrylate	100.0000	105.3924	-5.4	100	0.00
10	T	2-Nitropropane	100.0000	86.7776	13.2	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	100.0000	97.5386	2.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M407831.D A9FOOWTR.M Tue Oct 06 11:55:12 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407832.D Vial: 6
Acq On : 5 Oct 2015 13:49 Operator: TMB
Sample : WG540826-06 200ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 05 14:10:58 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	897754	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	673480	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	363907	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	208738	24.4301 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.72%		
43) 1,2-Dichloroethane-d4	10.30	65	213605	24.5197 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.08%		
58) Toluene-d8	12.69	98	807841	25.8525 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.40%		
80) p-Bromofluorobenzene	16.08	95	324104	25.5255 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.12%		

Target Compounds

					Qvalue
13) Acetone	6.25	43	677	0.5081 ug/L #	48
18) Methyl acetate	7.08	43	1823	0.3618 ug/L #	1
20) Carbon Disulfide	7.30	76	5054	0.1712 ug/L #	78
24) n-Hexane	7.78	57	7743	0.5671 ug/L	88
36) Tetrahydrofuran	9.64	42	1466	0.9728 ug/L #	40
39) Cyclohexane	9.95	56	4715	0.2647 ug/L	84

(#) = qualifier out of range (m) = manual integration
8M407832.D 8260WT.M Mon Oct 05 14:10:59 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407832.D Vial: 6
Acq On : 5 Oct 2015 13:49 Operator: TMB
Sample : WG540826-06 200ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 5 14:10 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration

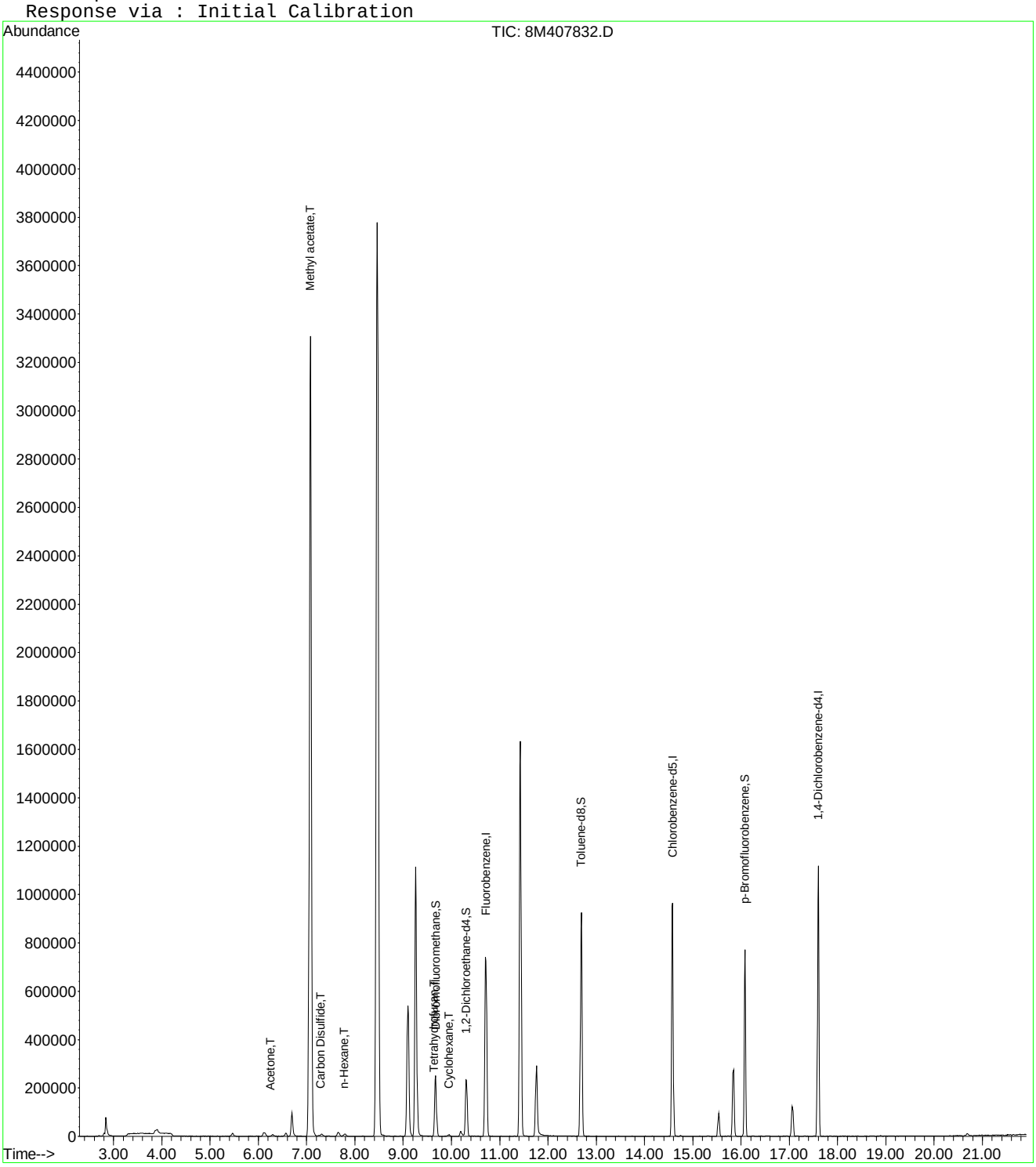

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407832.D Vial: 6
Acq On : 5 Oct 2015 13:49 Operator: TMB
Sample : WG540826-06 200ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 11:56:58 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	897754	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	673480	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	363907	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	138277	200.1400 ug/L	97
3) 3-Chloro-1-propene	7.08	41	3475078	206.8151 ug/L	99
4) 2-Chloro-1,3-butadiene	8.46	53	3691199	213.4973 ug/L	98
5) Ethyl Acetate	9.09	43	949825	207.9635 ug/L	98
6) Methacrylonitrile	9.26	67	412747	205.9018 ug/L	95
7) Isobutyl Alcohol	9.27	43	71985	384.6346 ug/L	94
8) 1-Butanol	10.20	56	18764	203.4062 ug/L	78
9) Methyl methacrylate	11.43	41	1165248	210.6479 ug/L	99
10) 2-Nitropropane	11.76	43	181242	195.1989 ug/L	92
13) Cyclohexanone	15.84	55	156208	201.3429 ug/L	89

(#) = qualifier out of range (m) = manual integration
8M407832.D A9FOOWTR.M Tue Oct 06 11:56:59 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407832.D Vial: 6
Acq On : 5 Oct 2015 13:49 Operator: TMB
Sample : WG540826-06 200ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 11:56 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

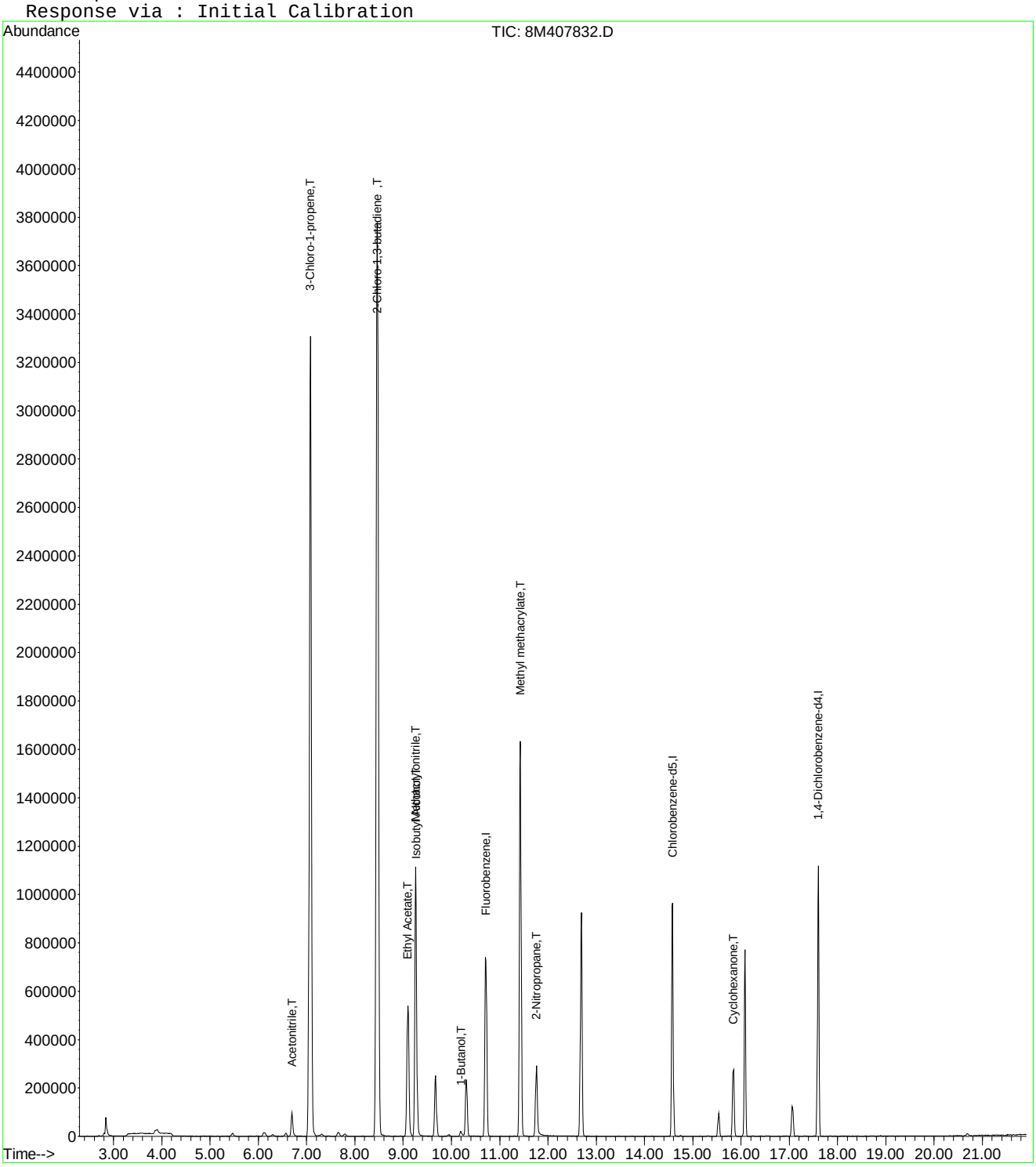

8M407832.D A9FOOWTR.M Tue Oct 06 11:56:59 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407833.D Vial: 7
Acq On : 5 Oct 2015 14:17 Operator: TMB
Sample : WG540826-07 300ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 05 14:39:56 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	914795	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	689423	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	367388	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	213426	24.5135 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.04%		
43) 1,2-Dichloroethane-d4	10.30	65	216408	24.3787 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.52%		
58) Toluene-d8	12.69	98	818846	25.5987 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.40%		
80) p-Bromofluorobenzene	16.08	95	327784	25.5707 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.28%		

Target Compounds

					Qvalue
13) Acetone	6.25	43	1107	0.8153 ug/L #	48
18) Methyl acetate	7.07	43	3926	0.7646 ug/L #	1
19) Methylene Chloride	7.26	84	1197	0.1300 ug/L	55
20) Carbon Disulfide	7.31	76	6659	0.2214 ug/L #	86
24) n-Hexane	7.78	57	11874	0.8534 ug/L	97
30) Propionitrile	9.05	54	208	0.3030 ug/L #	1
31) 2,2-Dichloropropane	9.09	77	2023	0.1353 ug/L #	42
36) Tetrahydrofuran	9.64	42	1301	0.8472 ug/L #	40
39) Cyclohexane	9.94	56	6598	0.3636 ug/L	94
72) Ethylbenzene	14.75	106	2422	0.1584 ug/L	54
73) m-,p-Xylene	14.75	106	2422	0.1381 ug/L	82

(#) = qualifier out of range (m) = manual integration
8M407833.D 8260WT.M Mon Oct 05 14:39:57 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407833.D Vial: 7
Acq On : 5 Oct 2015 14:17 Operator: TMB
Sample : WG540826-07 300ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 5 14:39 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration

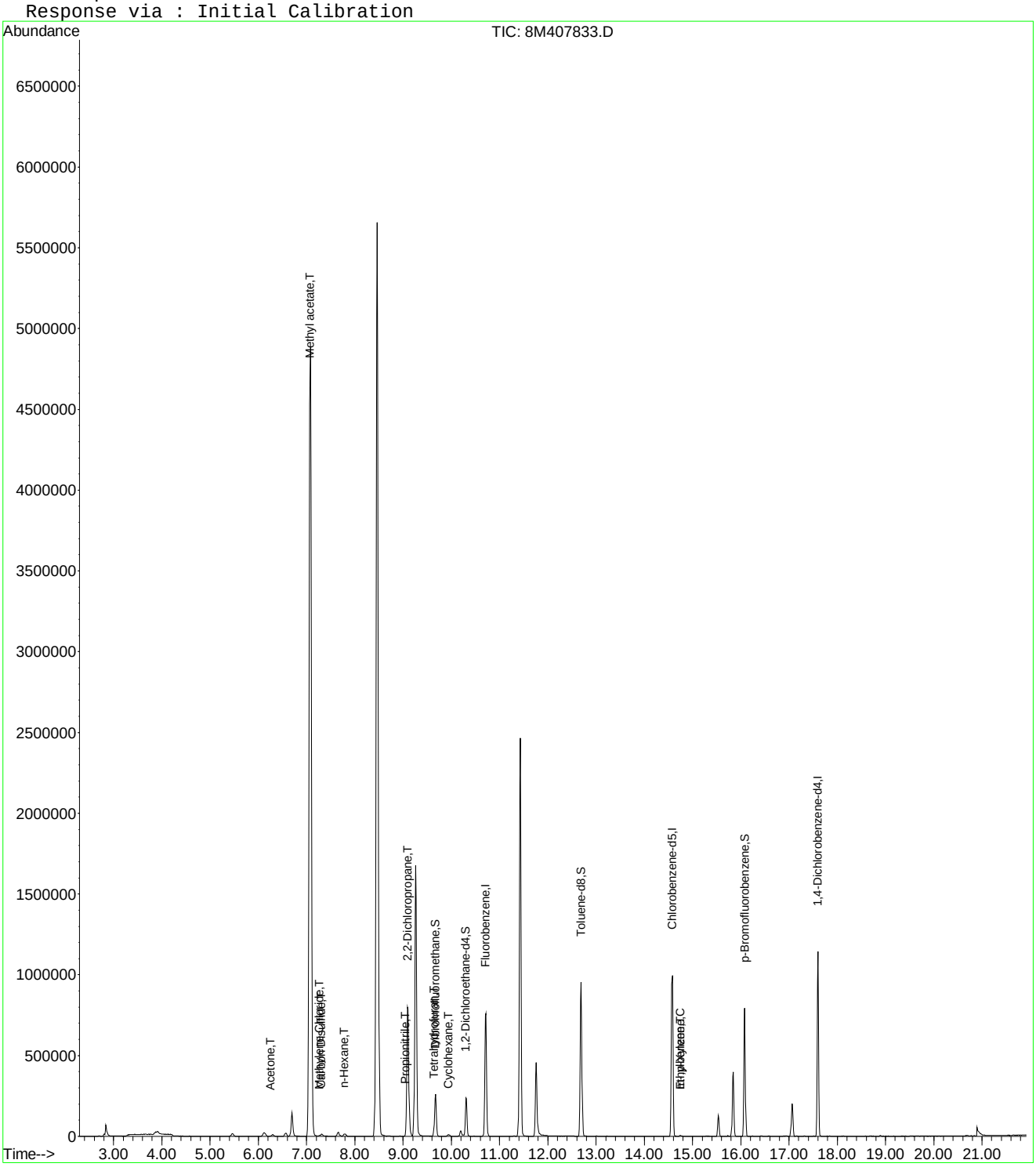

8M407833.D 8260WT.M Mon Oct 05 14:39:58 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407833.D Vial: 7
Acq On : 5 Oct 2015 14:17 Operator: TMB
Sample : WG540826-07 300ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 11:56:59 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	914795	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	689423	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	367388	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	204679	290.7307 ug/L	99
3) 3-Chloro-1-propene	7.08	41	5107808	298.3223 ug/L	99
4) 2-Chloro-1,3-butadiene	8.46	53	5432917	308.3838 ug/L	97
5) Ethyl Acetate	9.09	43	1404245	301.7310 ug/L	99
6) Methacrylonitrile	9.26	67	619787	303.4256 ug/L	96
7) Isobutyl Alcohol	9.27	43	113276	593.9881 ug/L	97
8) 1-Butanol	10.19	56	30662	326.1916 ug/L	85
9) Methyl methacrylate	11.43	41	1738162	308.3633 ug/L	98
10) 2-Nitropropane	11.76	43	289289	305.7623 ug/L	92
13) Cyclohexanone	15.84	55	224807	287.0174 ug/L	90

(#) = qualifier out of range (m) = manual integration
8M407833.D A9FOOWTR.M Tue Oct 06 11:56:59 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407833.D Vial: 7
Acq On : 5 Oct 2015 14:17 Operator: TMB
Sample : WG540826-07 300ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 11:56 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

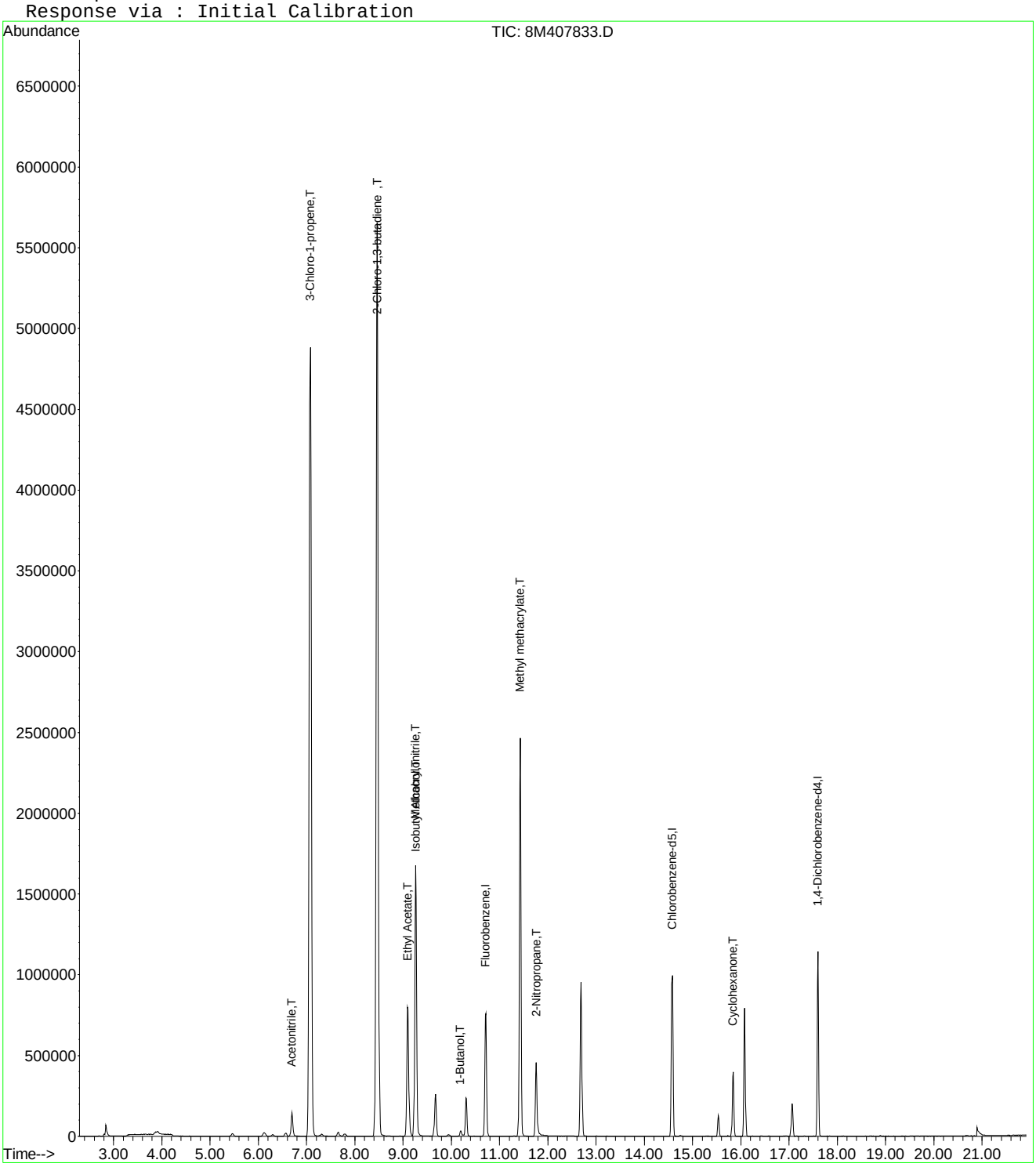

8M407833.D A9FOOWTR.M Tue Oct 06 11:57:00 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407834.D Vial: 8
Acq On : 5 Oct 2015 14:47 Operator: TMB
Sample : WG540826-08 400ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 05 15:09:02 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	933879	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	691340	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	373332	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	222232	25.0033 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.00%		
43) 1,2-Dichloroethane-d4	10.31	65	222556	24.5590 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.24%		
58) Toluene-d8	12.69	98	831940	25.9359 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.76%		
80) p-Bromofluorobenzene	16.08	95	329799	25.3183 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.28%		

Target Compounds

					Qvalue
13) Acetone	6.25	43	2307	1.6644 ug/L #	48
18) Methyl acetate	7.07	43	5300	1.0111 ug/L #	1
19) Methylene Chloride	7.26	84	1631	0.1735 ug/L #	6
20) Carbon Disulfide	7.30	76	9227	0.3005 ug/L #	79
24) n-Hexane	7.79	57	16005	1.1268 ug/L	89
29) 2-Butanone	8.89	43	1241	0.5197 ug/L #	57
30) Propionitrile	9.07	54	773	1.1032 ug/L #	1
31) 2,2-Dichloropropane	9.11	77	2811	0.1842 ug/L #	42
36) Tetrahydrofuran	9.65	42	1879	1.1986 ug/L #	40
39) Cyclohexane	9.95	56	9653	0.5211 ug/L	94
73) m-,p-Xylene	14.75	106	3655	0.2078 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M407834.D 8260WT.M Mon Oct 05 15:09:03 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407834.D Vial: 8
Acq On : 5 Oct 2015 14:47 Operator: TMB
Sample : WG540826-08 400ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 5 15:09 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration

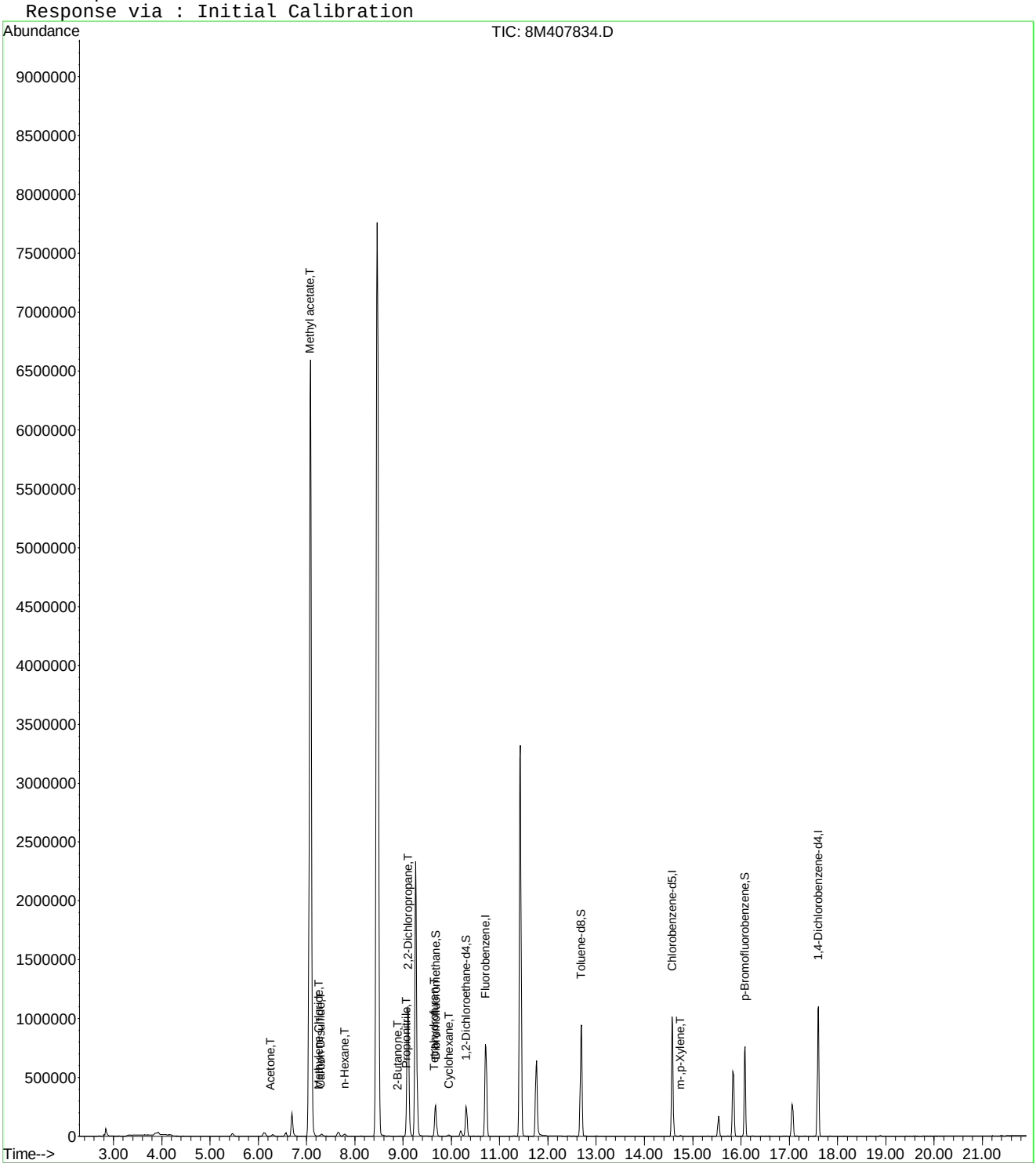

8M407834.D 8260WT.M Mon Oct 05 15:09:03 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407834.D Vial: 8
Acq On : 5 Oct 2015 14:47 Operator: TMB
Sample : WG540826-08 400ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 11:57:00 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	933879	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	691340	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	373332	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	276454	384.6570 ug/L	96
3) 3-Chloro-1-propene	7.08	41	6839307	391.2880 ug/L	97
4) 2-Chloro-1,3-butadiene	8.47	53	7261886	403.7765 ug/L	94
5) Ethyl Acetate	9.10	43	1919647	404.0467 ug/L	99
6) Methacrylonitrile	9.26	67	856150	410.5753 ug/L	97
7) Isobutyl Alcohol	9.27	43	151941	780.4553 ug/L	92
8) 1-Butanol	10.19	56	39703	413.7412 ug/L	80
9) Methyl methacrylate	11.43	41	2385524	414.5619 ug/L	99
10) 2-Nitropropane	11.76	43	432493	447.7796 ug/L	93
13) Cyclohexanone	15.83	55	313432	393.7962 ug/L	87

(#) = qualifier out of range (m) = manual integration
8M407834.D A9FOOWTR.M Tue Oct 06 11:57:00 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407834.D Vial: 8
Acq On : 5 Oct 2015 14:47 Operator: TMB
Sample : WG540826-08 400ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 11:57 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

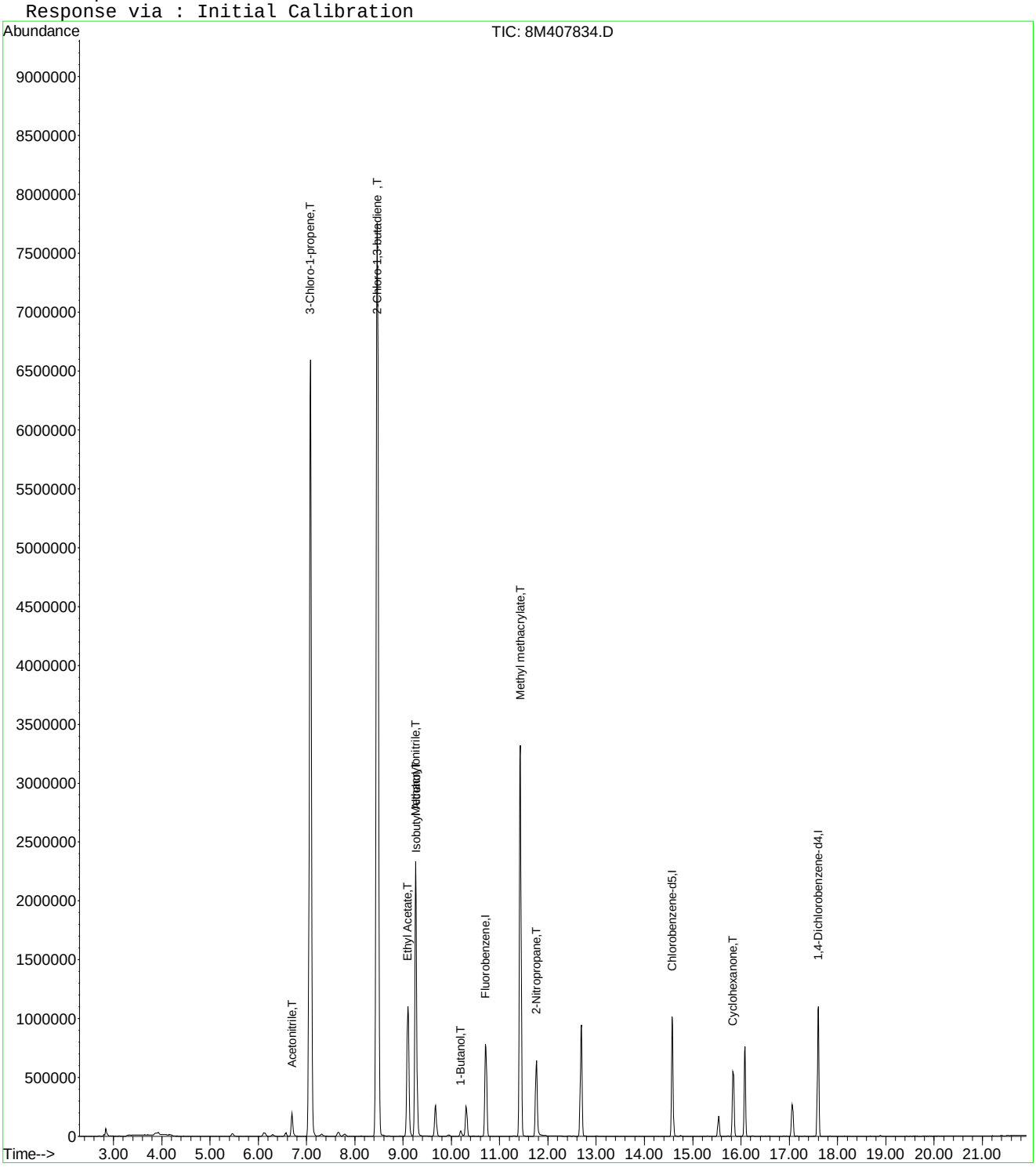

8M407834.D A9FOOWTR.M Tue Oct 06 11:57:00 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407835.D Vial: 9
Acq On : 5 Oct 2015 15:15 Operator: TMB
Sample : WG540826-09 500ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 05 15:37:56 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	952136	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	712384	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	381907	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	222948	24.6029 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.40%		
43) 1,2-Dichloroethane-d4	10.30	65	229612	24.8518 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.40%		
58) Toluene-d8	12.69	98	849027	25.6867 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.76%		
80) p-Bromofluorobenzene	16.08	95	340742	25.5710 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.28%		

Target Compounds

					Qvalue
13) Acetone	6.26	43	2624	1.8568 ug/L #	48
17) Iodomethane	6.98	142	414	1.8830 ug/L #	28
18) Methyl acetate	7.00	43	818	0.1531 ug/L #	64
19) Methylene Chloride	7.27	84	2206	0.2301 ug/L	69
20) Carbon Disulfide	7.30	76	12486	0.3989 ug/L #	78
24) n-Hexane	7.79	57	21760	1.5026 ug/L	96
29) 2-Butanone	8.90	43	1797	0.7381 ug/L #	57
30) Propionitrile	9.07	54	1629	2.2802 ug/L #	1
31) 2,2-Dichloropropane	9.11	77	3861	0.2482 ug/L #	52
36) Tetrahydrofuran	9.65	42	2063	1.2908 ug/L #	40
39) Cyclohexane	9.94	56	13508	0.7152 ug/L	88
48) Methylcyclohexane	11.31	83	2456	0.1572 ug/L #	73
73) m-,p-Xylene	14.75	106	3865	0.2133 ug/L	76

(#) = qualifier out of range (m) = manual integration
8M407835.D 8260WT.M Mon Oct 05 15:37:57 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407835.D Vial: 9
Acq On : 5 Oct 2015 15:15 Operator: TMB
Sample : WG540826-09 500ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 5 15:37 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration

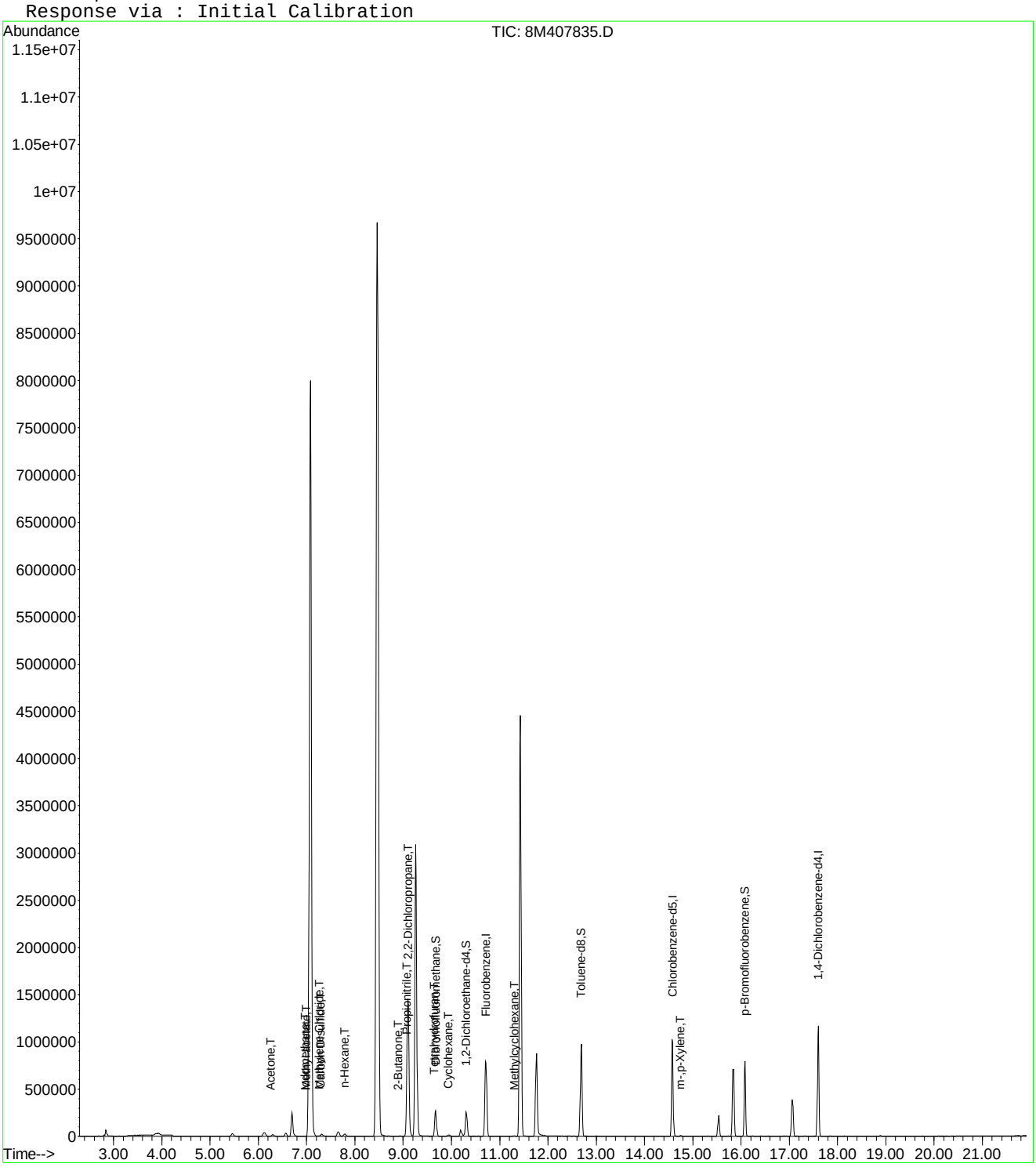

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407835.D Vial: 9
Acq On : 5 Oct 2015 15:15 Operator: TMB
Sample : WG540826-09 500ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 11:57:01 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	952136	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	712384	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	381907	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	355656	485.3695 ug/L	97
3) 3-Chloro-1-propene	7.08	41	8223448	461.4556 ug/L	95
4) 2-Chloro-1,3-butadiene	8.46	53	8764656	477.9893 ug/L	90
5) Ethyl Acetate	9.09	43	2535700	523.4795 ug/L	100
6) Methacrylonitrile	9.26	67	1137496	535.0377 ug/L	97
7) Isobutyl Alcohol	9.27	43	214402	1080.1734 ug/L	98
8) 1-Butanol	10.19	56	54442	556.4564 ug/L	87
9) Methyl methacrylate	11.43	41	3137676	534.8171 ug/L	99
10) 2-Nitropropane	11.76	43	594174	603.3794 ug/L	94
13) Cyclohexanone	15.83	55	412487	506.6127 ug/L	87

(#) = qualifier out of range (m) = manual integration
8M407835.D A9FOOWTR.M Tue Oct 06 11:57:01 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407835.D Vial: 9
Acq On : 5 Oct 2015 15:15 Operator: TMB
Sample : WG540826-09 500ug/L STD A9FOO Inst : HPMS8
Misc : 1,1 STD72810 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 11:57 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

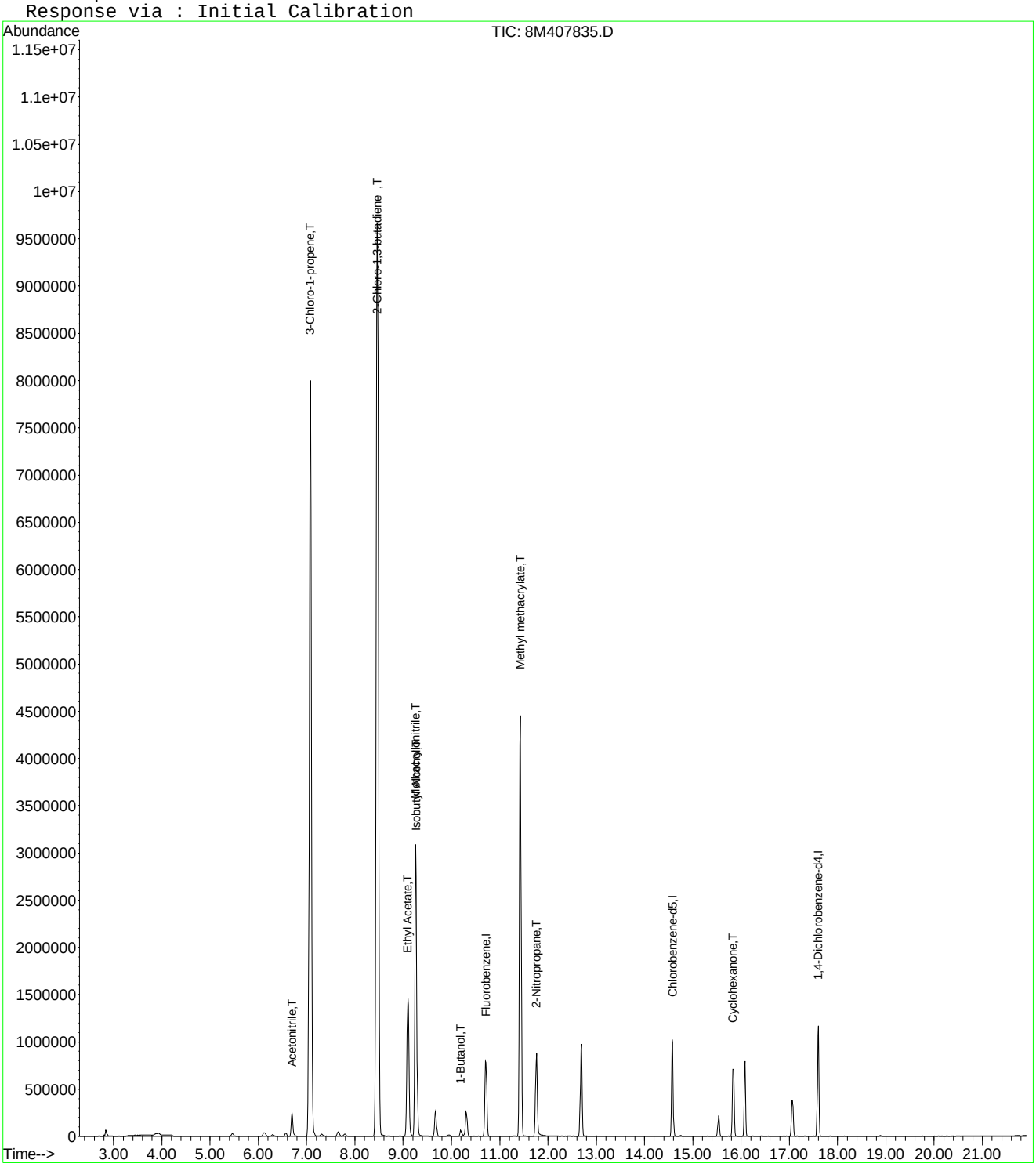

8M407835.D A9FOOWTR.M Tue Oct 06 11:57:01 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407838.D Vial: 12
Acq On : 5 Oct 2015 16:48 Operator: TMB
Sample : WG541826-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD72811 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 05 17:10:31 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	910348	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	672710	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	361469	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	216028	24.9336 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.72%		
43) 1,2-Dichloroethane-d4	10.31	65	220386	24.9481 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.80%		
58) Toluene-d8	12.68	98	805489	25.8067 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.24%		
80) p-Bromofluorobenzene	16.07	95	318985	25.2918 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.16%		

Target Compounds

					Qvalue
5) 1,3-Butadiene	3.90	54	680860	64.5479 ug/L	96
9) Diethyl ether	5.91	59	636031	102.4537 ug/L	99
18) Methyl acetate	7.09	43	861	0.1685 ug/L #	1
29) 2-Butanone	8.90	43	1914	0.8222 ug/L	83
30) Propionitrile	8.99	54	68619	100.4600 ug/L	99
36) Tetrahydrofuran	9.65	42	849	0.5556 ug/L #	40
39) Cyclohexane	9.96	56	4155	0.2301 ug/L #	88
51) 1,4-Dioxane	11.71	88	8398	188.8572 ug/L	85

(#) = qualifier out of range (m) = manual integration
8M407838.D 8260WT.M Mon Oct 05 17:10:32 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\100515\8M407838.D Vial: 12
Acq On : 5 Oct 2015 16:48 Operator: TMB
Sample : WG541826-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD72811 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 5 17:10 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Thu Oct 01 09:30:44 2015
Response via : Initial Calibration

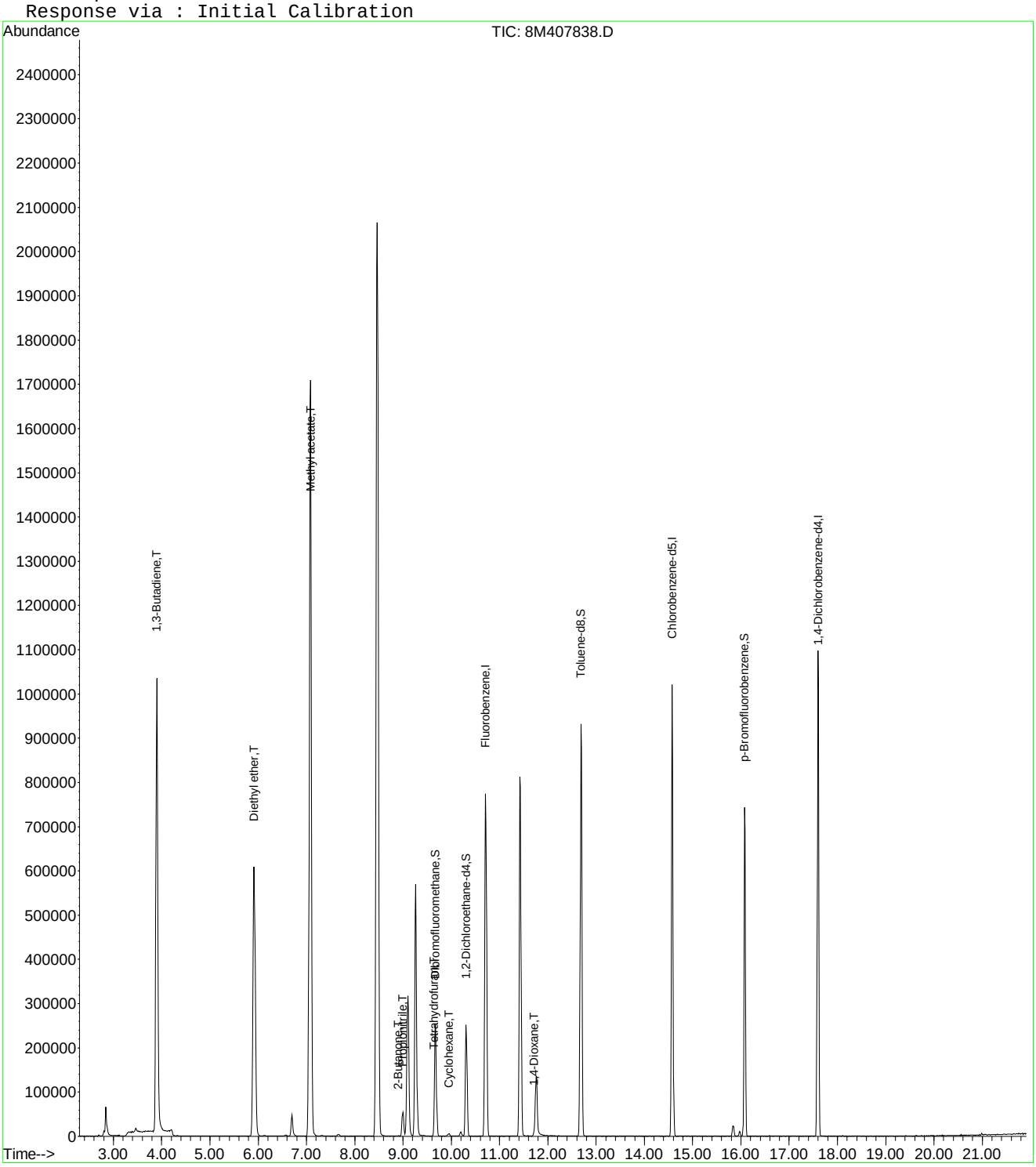

8M407838.D 8260WT.M Mon Oct 05 17:10:33 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407838.D Vial: 12
Acq On : 5 Oct 2015 16:48 Operator: TMB
Sample : WG541826-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD72811 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 11:57:03 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	910348	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	672710	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	361469	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	68331	97.5330 ug/L	99
3) 3-Chloro-1-propene	7.08	41	1823769	107.0379 ug/L	100
4) 2-Chloro-1,3-butadiene	8.47	53	2081638	118.7353 ug/L	100
5) Ethyl Acetate	9.10	43	556798	120.2240 ug/L	97
6) Methacrylonitrile	9.26	67	209938	103.2802 ug/L	94
7) Isobutyl Alcohol	9.27	43	38987	205.4358 ug/L	96
8) 1-Butanol	10.20	56	7758	82.9351 ug/L	93
9) Methyl methacrylate	11.42	41	590033	105.1877 ug/L	99
10) 2-Nitropropane	11.75	43	94685	100.5656 ug/L	93
13) Cyclohexanone	15.84	55	13964	18.1202 ug/L	94

(#) = qualifier out of range (m) = manual integration
8M407838.D A9FOOWTR.M Tue Oct 06 11:57:03 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407838.D Vial: 12
Acq On : 5 Oct 2015 16:48 Operator: TMB
Sample : WG541826-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD72811 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 11:57 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

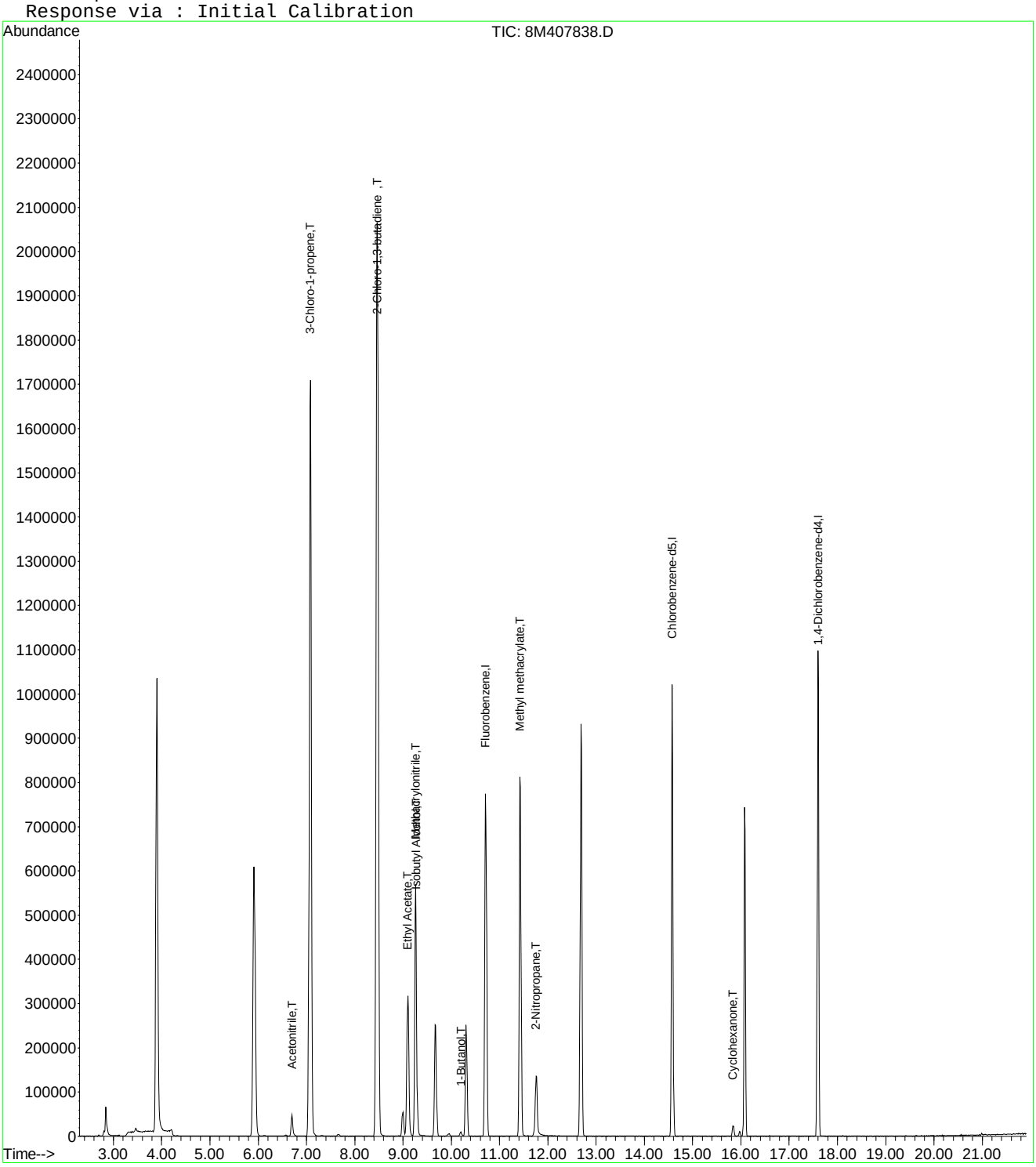

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407838.D Vial: 12
Acq On : 5 Oct 2015 16:48 Operator: TMB
Sample : WG540826-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD72811 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 06 12:32:35 2015 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	910348	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	672710	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	361469	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	68331	97.5330 ug/L	99
3) 3-Chloro-1-propene	7.08	41	1823769	107.0379 ug/L	100
4) 2-Chloro-1,3-butadiene	8.47	53	2081638	118.7353 ug/L	100
5) Ethyl Acetate	9.10	43	556798	120.2240 ug/L	97
6) Methacrylonitrile	9.26	67	209938	103.2802 ug/L	94
7) Isobutyl Alcohol	9.27	43	38987	205.4358 ug/L	96
8) 1-Butanol	10.20	56	7758	82.9351 ug/L	93
9) Methyl methacrylate	11.42	41	590033	105.1877 ug/L	99
10) 2-Nitropropane	11.75	43	94685	100.5656 ug/L	93
13) Cyclohexanone	15.84	55	13964	18.1202 ug/L	94

(#) = qualifier out of range (m) = manual integration
8M407838.D A9FOOWTR.M Tue Oct 06 12:32:36 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\100515\8M407838.D Vial: 12
Acq On : 5 Oct 2015 16:48 Operator: TMB
Sample : WG540826-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD72811 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Oct 6 12:32 2015 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration

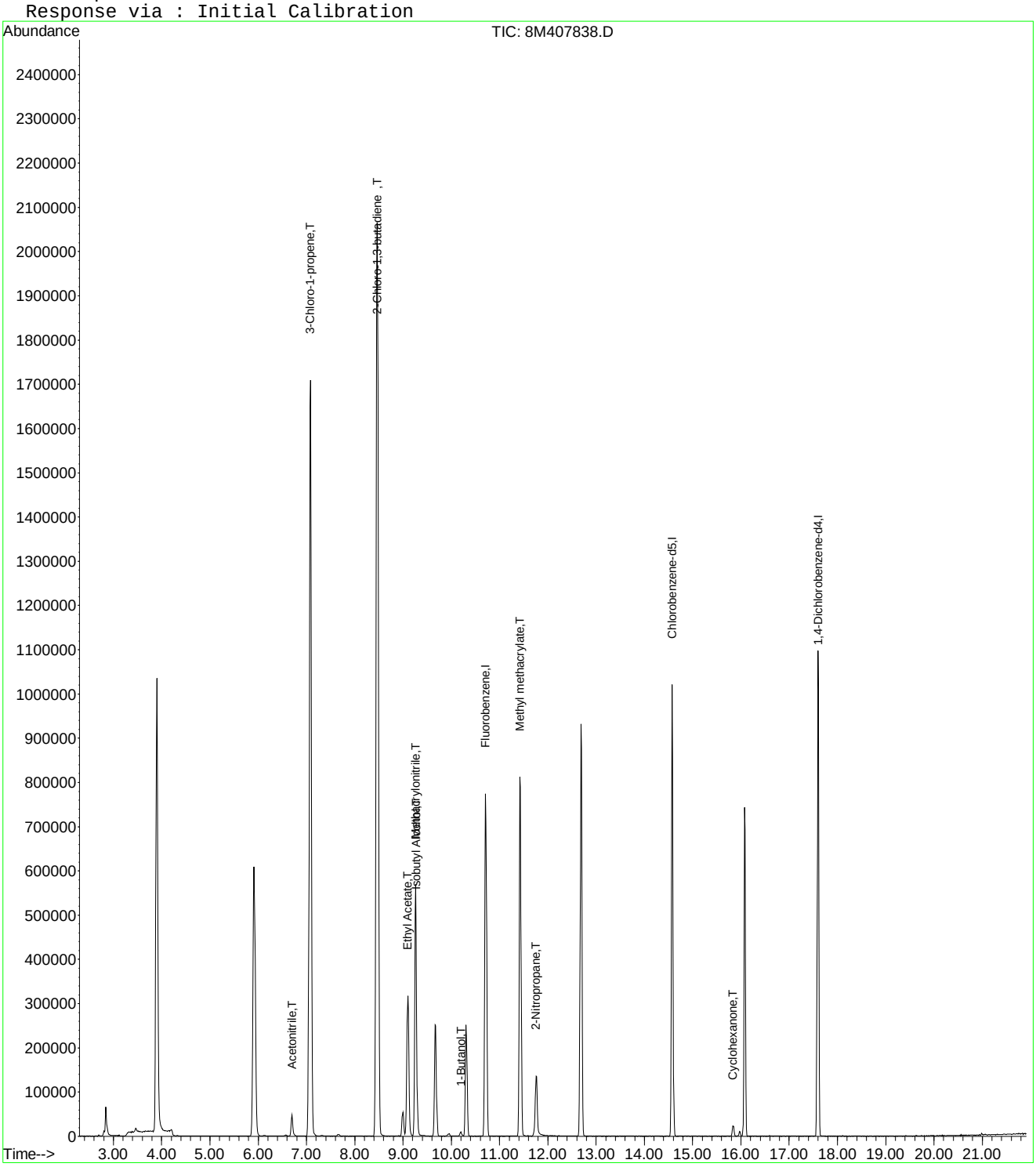

8M407838.D A9FOOWTR.M Tue Oct 06 12:32:36 2015 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\100515\8M407838.D Vial: 12
Acq On : 5 Oct 2015 16:48 Operator: TMB
Sample : WG540826-10 100ug/L ALT SRC STD A9/FOO Inst : HPMS8
Misc : 1,1 STD72811 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	105	0.00
2	T	Acetonitrile	100.0000	97.5330	2.5	101	0.00
3	T	3-Chloro-1-propene	100.0000	107.0379	-7.0	112	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	118.7354	-18.7	124	0.00
5	T	Ethyl Acetate	100.0000	120.2240	-20.2	123	0.00
6	T	Methacrylonitrile	100.0000	103.2802	-3.3	107	0.00
7	T	Isobutyl Alcohol	200.0000	205.4358	-2.7	104	0.00
8	T	1-Butanol	100.0000	82.9351	17.1	94	0.01
9	T	Methyl methacrylate	100.0000	105.1877	-5.2	105	0.00
10	T	2-Nitropropane	100.0000	100.5656	-0.6	122	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	102	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	101	0.00
13	T	Cyclohexanone	100.0000	18.1202	81.9#	19	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M407838.D A9FOOWTR.M Tue Oct 06 12:32:39 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407747.D Vial: 3
Acq On : 30 Sep 2015 10:30 Operator: TMB
Sample : WG540912-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:02:55 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	842533	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	629942	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	326399	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
80) p-Bromofluorobenzene	16.07	95	245	0.0215 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.08%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	3460	0.2701 ug/L	81
3) Chloromethane	3.63	50	5818	0.2977 ug/L	95
4) Vinyl Chloride	3.86	62	5033	0.3259 ug/L	85
5) 1,3-Butadiene	3.90	54	3968	Below Cal #	58
6) Bromomethane	4.74	94	879	0.8599 ug/L #	61
7) Chloroethane	4.90	64	1584	0.2514 ug/L #	43
8) Trichlorofluoromethane	5.37	101	3597	0.2410 ug/L #	92
10) Isoprene	5.95	67	2731	0.2492 ug/L	79
12) 1,1,2-Trichloro-1,2,2-Trif	6.18	101	1287	0.1604 ug/L #	49
14) 1,1-Dichloroethene	6.47	61	4105	0.3005 ug/L	98
16) Dimethyl Sulfide	6.75	62	1886	0.2406 ug/L	92
18) Methyl acetate	7.02	43	897	0.1897 ug/L #	64
19) Methylene Chloride	7.27	84	2727	0.3214 ug/L	93
20) Carbon Disulfide	7.30	76	7953	0.2871 ug/L	93
22) Methyl Tert Butyl Ether	7.49	73	4097	0.2548 ug/L #	50
23) trans-1,2-Dichloroethene	7.70	61	3282	0.2530 ug/L	98
24) n-Hexane	7.79	57	3786	0.2955 ug/L	89
26) Vinyl Acetate	8.31	43	2197	0.2585 ug/L #	77
27) 1,1-Dichloroethane	8.33	63	4345	0.2638 ug/L #	89
31) 2,2-Dichloropropane	9.11	77	4023	0.2922 ug/L #	62
32) cis-1,2-Dichloroethene	9.18	96	2188	0.2364 ug/L	88
33) Chloroform	9.38	83	4576	0.2924 ug/L	85
35) Bromochloromethane	9.62	130	1136	0.2493 ug/L	83
36) Tetrahydrofuran	9.63	42	248	0.1754 ug/L #	40
38) 1,1,1-Trichloroethane	9.90	97	3114	0.2217 ug/L	98
39) Cyclohexane	9.94	56	3908	0.2338 ug/L #	92
40) 1,1-Dichloropropene	10.12	75	3184	0.2633 ug/L	86
42) Carbon Tetrachloride	10.26	117	2506	0.1996 ug/L	93
45) 1,2-Dichloroethane	10.44	62	2693	0.2506 ug/L #	69
46) Benzene	10.47	78	9583	0.2888 ug/L	94
47) Trichloroethene	11.22	130	2701	0.3024 ug/L	94
48) Methylcyclohexane	11.30	83	3801	0.2750 ug/L	90
49) 1,2-Dichloropropane	11.43	63	1944	0.2175 ug/L	86
50) Bromodichloromethane	11.73	83	2933	0.2542 ug/L #	91
53) 2-Chloroethyl Vinyl Ether	12.03	63	715	0.1941 ug/L #	53
55) cis-1,3-Dichloropropene	12.36	75	3481	0.2718 ug/L	98
56) Dimethyl Disulfide	12.63	79	1238	0.1792 ug/L	71
59) Toluene	12.79	91	10440	0.2917 ug/L	93
60) Ethyl Methacrylate	12.89	69	1527	0.2140 ug/L	91
62) trans-1,3-Dichloropropene	12.96	75	2685	0.2445 ug/L	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407747.D Vial: 3
Acq On : 30 Sep 2015 10:30 Operator: TMB
Sample : WG540912-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:02:55 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
63)	1,1,2-Trichloroethane	13.18	97	1180	0.2077 ug/L		69
65)	1,3-Dichloropropane	13.48	76	2279	0.2245 ug/L	#	62
66)	Tetrachloroethene	13.61	164	1978	0.2599 ug/L		83
67)	Dibromochloromethane	13.87	129	1603	0.2182 ug/L		80
68)	1,2-Dibromoethane	14.13	107	1502	0.2648 ug/L		82
69)	1-Chlorohexane	14.21	91	3124	0.2439 ug/L		89
70)	Chlorobenzene	14.64	112	6537	0.2725 ug/L		79
71)	1,1,1,2-Tetrachloroethane	14.66	131	2228	0.2512 ug/L		90
72)	Ethylbenzene	14.66	106	3689	0.2640 ug/L		97
73)	m-,p-Xylene	14.75	106	8556	0.5340 ug/L		90
74)	o-Xylene	15.31	106	3959	0.2443 ug/L		89
75)	Styrene	15.35	104	6791	0.2645 ug/L		89
76)	Bromoform	15.83	173	752	0.1703 ug/L	#	27
77)	Isopropylbenzene	15.73	105	10790	0.2776 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	1111	0.1845 ug/L	#	53
83)	n-Propylbenzene	16.25	91	13425	0.2841 ug/L		94
84)	Bromobenzene	16.36	156	2804	0.2923 ug/L		86
85)	1,3,5-Trimethylbenzene	16.42	105	9334	0.2873 ug/L		97
86)	2-Chlorotoluene	16.51	91	9080	0.2901 ug/L		94
87)	4-Chlorotoluene	16.56	91	8463	0.3126 ug/L		91
88)	a-Methylstyrene	16.83	118	4105	0.2318 ug/L		90
89)	tert-Butylbenzene	16.90	134	1912	0.2675 ug/L		87
90)	1,2,4-Trimethylbenzene	16.94	105	8960	0.2729 ug/L		92
91)	sec-Butylbenzene	17.17	105	10929	0.2708 ug/L		99
92)	p-Isopropyltoluene	17.32	119	8859	0.2745 ug/L		100
93)	1,3-Dichlorobenzene	17.51	146	5736	0.2996 ug/L		97
94)	1,4-Dichlorobenzene	17.64	146	5824	0.3054 ug/L	#	38
95)	n-Butylbenzene	17.85	91	8274	0.2750 ug/L	#	92
96)	1,2-Dichlorobenzene	18.13	146	4859	0.2900 ug/L		84
98)	1,2,4-Trichlorobenzene	20.28	180	3220	0.2797 ug/L		94
99)	Hexachlorobutadiene	20.43	225	1169	0.2123 ug/L	#	84
100)	Naphthalene	20.64	128	4792	0.2880 ug/L	#	67
101)	1,2,3-Trichlorobenzene	20.95	180	2667	0.2717 ug/L		93

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407747.D Vial: 3
Acq On : 30 Sep 2015 10:30 Operator: TMB
Sample : WG540912-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 1 9:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration

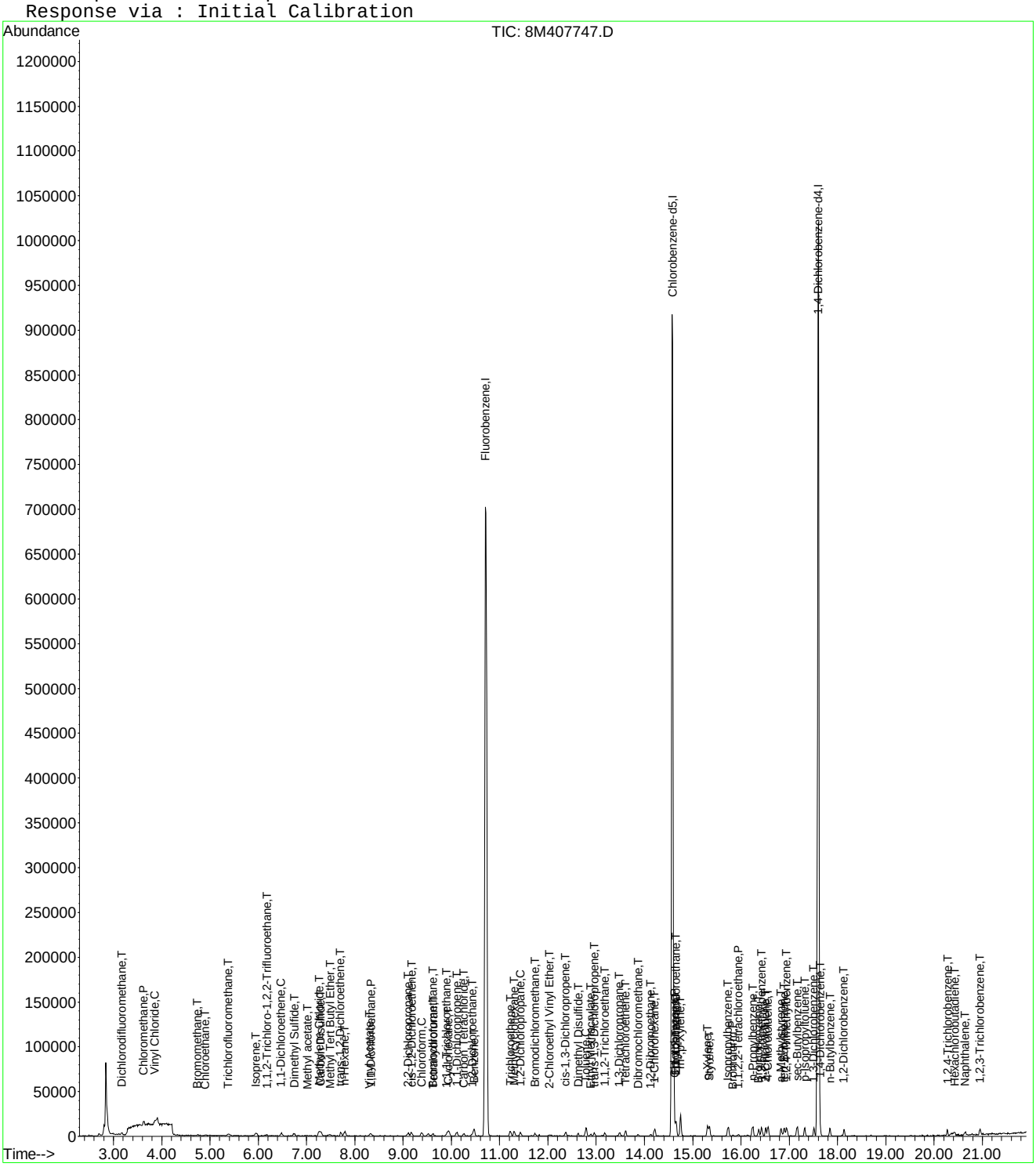

8M407747.D 8260WT.M Thu Oct 01 09:02:55 2015 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\093015\8M407747.D Vial: 3
Acq On : 30 Sep 2015 10:30 Operator: TMB
Sample : WG540912-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2701	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.2977	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.3259	0.0	0	0.01
5	T	1,3-Butadiene	-1.0000	-1.0000	0.0	0	0.00
6	T	Bromomethane	-1.0000	0.8599	0.0	100	0.00
7	T	Chloroethane	-1.0000	0.2514	0.0	100	0.00
8	T	Trichlorofluoromethane	-1.0000	0.2410	0.0	100	-0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.91#
10	T	Isoprene	-1.0000	0.2492	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.15#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.1604	0.0	100	0.02
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.24#
14	C	1,1-Dichloroethene	-1.0000	0.3005	0.0	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.59#
16	T	Dimethyl Sulfide	-1.0000	0.2406	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.99#
18	T	Methyl acetate	-1.0000	0.1897	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.3214	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.2871	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.44#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2548	0.0	100	0.02
23	T	trans-1,2-Dichloroethene	-1.0000	0.2530	0.0	100	-0.01
24	T	n-Hexane	-1.0000	0.2955	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.14#
26	T	Vinyl Acetate	-1.0000	0.2585	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.2638	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0970	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.00#
31	T	2,2-Dichloropropane	-1.0000	0.2922	0.0	100	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.2364	0.0	100	0.00
33	C	Chloroform	0.3000	0.2924	2.5	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.52#
35	T	Bromochloromethane	-1.0000	0.2493	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.1754	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	-1.0000	0.2217	0.0	100	-0.01
39	T	Cyclohexane	-1.0000	0.2338	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.2633	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.22#
42	T	Carbon Tetrachloride	-1.0000	0.1996	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	-1.0000	0.2506	0.0	100	0.00
46	T	Benzene	0.3000	0.2888	3.7	100	0.00
47	T	Trichloroethene	-1.0000	0.3024	0.0	100	0.00
48	T	Methylcyclohexane	-1.0000	0.2750	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2175	0.0	100	0.00
50	T	Bromodichloromethane	-1.0000	0.2542	0.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	-1.0000	0.1149	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1941	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.07#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\093015\8M407747.D Vial: 3
Acq On : 30 Sep 2015 10:30 Operator: TMB
Sample : WG540912-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.2718	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.1792	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0000	0.0	0	-12.69#
59	C	Toluene	-1.0000	0.2917	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2140	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.2445	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.2077	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	-1.0000	0.2245	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.2599	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.2182	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.2648	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.2439	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.2725	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.2512	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.2640	0.0	100	0.00
73	T	m-,p-Xylene	-1.0000	0.5340	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.2443	0.0	100	0.00
75	T	Styrene	-1.0000	0.2645	0.0	100	0.00
76	P	Bromoform	-1.0000	0.1703	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.2776	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.1845	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0215	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.14#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	-1.0000	0.2841	0.0	0	0.00
84	T	Bromobenzene	0.3000	0.2923	2.6	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.2873	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.2901	0.0	100	0.00
87	T	4-Chlorotoluene	-1.0000	0.3126	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2318	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.2675	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.2729	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.2708	0.0	0	0.00
92	T	p-Isopropyltoluene	-1.0000	0.2745	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.2996	0.0	100	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.3055	-1.8	100	0.00
95	T	n-Butylbenzene	-1.0000	0.2750	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.2900	3.3	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.2797	0.0	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.2123	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.2880	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.2717	9.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M407747.D 8260WT.M Thu Oct 01 09:03:21 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407748.D Vial: 4
Acq On : 30 Sep 2015 10:59 Operator: TMB
Sample : WG540912-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:02:56 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	843843	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	621698	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	327803	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	12.69	98	242	0.0084 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.04%#	
80) p-Bromofluorobenzene	0.00	95	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	5134	0.4002 ug/L	83
3) Chloromethane	3.63	50	10943	0.5590 ug/L	98
4) Vinyl Chloride	3.87	62	7387	0.4775 ug/L	99
5) 1,3-Butadiene	3.91	54	7288	Below Cal	88
6) Bromomethane	4.74	94	1106	0.9036 ug/L	82
7) Chloroethane	4.90	64	1927	0.3053 ug/L #	53
8) Trichlorofluoromethane	5.38	101	6101	0.4081 ug/L #	91
10) Isoprene	5.96	67	4001	0.3645 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	2348	0.2922 ug/L	66
13) Acetone	6.23	43	210	0.1677 ug/L #	48
14) 1,1-Dichloroethene	6.48	61	5765	0.4214 ug/L	100
16) Dimethyl Sulfide	6.74	62	2612	0.3327 ug/L	95
18) Methyl acetate	7.01	43	1748	0.3691 ug/L #	64
19) Methylene Chloride	7.27	84	3457	0.4069 ug/L	90
20) Carbon Disulfide	7.31	76	12436	0.4482 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	6170	0.3831 ug/L #	75
23) trans-1,2-Dichloroethene	7.71	61	5061	0.3896 ug/L	87
24) n-Hexane	7.80	57	5793	0.4514 ug/L	92
26) Vinyl Acetate	8.30	43	3350	0.3936 ug/L #	77
27) 1,1-Dichloroethane	8.34	63	6510	0.3946 ug/L #	90
29) 2-Butanone	8.90	43	383	0.1775 ug/L #	57
31) 2,2-Dichloropropane	9.12	77	5308	0.3850 ug/L	93
32) cis-1,2-Dichloroethene	9.17	96	3581	0.3863 ug/L	92
33) Chloroform	9.37	83	6738	0.4300 ug/L	94
35) Bromochloromethane	9.61	130	1581	0.3465 ug/L	79
38) 1,1,1-Trichloroethane	9.91	97	5349	0.3802 ug/L	88
39) Cyclohexane	9.94	56	6694	0.3999 ug/L	97
40) 1,1-Dichloropropene	10.11	75	4735	0.3909 ug/L	98
42) Carbon Tetrachloride	10.26	117	4620	0.3675 ug/L	96
45) 1,2-Dichloroethane	10.43	62	3809	0.3539 ug/L	87
46) Benzene	10.47	78	14221	0.4279 ug/L	100
47) Trichloroethene	11.22	130	4002	0.4473 ug/L	91
48) Methylcyclohexane	11.31	83	5900	0.4262 ug/L	94
49) 1,2-Dichloropropane	11.43	63	3209	0.3584 ug/L	98
50) Bromodichloromethane	11.74	83	4465	0.3864 ug/L #	90
52) Dibromomethane	11.81	93	1530	0.3589 ug/L	88
53) 2-Chloroethyl Vinyl Ether	12.03	63	992	0.2688 ug/L #	53
54) 4-Methyl-2-Pentanone	12.06	58	712	0.3761 ug/L #	40
55) cis-1,3-Dichloropropene	12.37	75	4857	0.3786 ug/L	99
56) Dimethyl Disulfide	12.63	79	1384	0.2001 ug/L	64

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407748.D Vial: 4
Acq On : 30 Sep 2015 10:59 Operator: TMB
Sample : WG540912-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:02:56 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
59)	Toluene	12.79	91	15773	0.4465 ug/L		96
60)	Ethyl Methacrylate	12.89	69	2057	0.2921 ug/L	#	62
62)	trans-1,3-Dichloropropene	12.96	75	4017	0.3706 ug/L		93
63)	1,1,2-Trichloroethane	13.19	97	2143	0.3822 ug/L		95
64)	2-Hexanone	13.13	58	381	0.2161 ug/L	#	4
65)	1,3-Dichloropropane	13.49	76	4066	0.4058 ug/L		94
66)	Tetrachloroethene	13.60	164	2729	0.3634 ug/L		96
67)	Dibromochloromethane	13.87	129	2633	0.3632 ug/L		91
68)	1,2-Dibromoethane	14.13	107	2336	0.4173 ug/L		97
69)	1-Chlorohexane	14.21	91	5084	0.4022 ug/L		98
70)	Chlorobenzene	14.62	112	10137	0.4282 ug/L		92
71)	1,1,1,2-Tetrachloroethane	14.66	131	2637	0.3013 ug/L		89
72)	Ethylbenzene	14.66	106	5499	0.3988 ug/L		92
73)	m-,p-Xylene	14.75	106	12993	0.8216 ug/L		94
74)	o-Xylene	15.31	106	5938	0.3713 ug/L		82
75)	Styrene	15.35	104	9522	0.3758 ug/L		94
76)	Bromoform	15.84	173	1354	0.3107 ug/L	#	71
77)	Isopropylbenzene	15.73	105	16651	0.4341 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.94	83	2444	0.4041 ug/L	#	84
81)	1,2,3-Trichloropropane	16.14	110	444	0.2642 ug/L	#	34
82)	trans-1,4-Dichloro-2-Buten	16.18	53	458	0.2061 ug/L	#	1
83)	n-Propylbenzene	16.24	91	20209	0.4258 ug/L		97
84)	Bromobenzene	16.37	156	3499	0.3632 ug/L		77
85)	1,3,5-Trimethylbenzene	16.43	105	14131	0.4331 ug/L		95
86)	2-Chlorotoluene	16.52	91	13492	0.4292 ug/L		89
87)	4-Chlorotoluene	16.56	91	12070	0.4440 ug/L		99
88)	a-Methylstyrene	16.84	118	5722	0.3217 ug/L		89
89)	tert-Butylbenzene	16.90	134	2905	0.4047 ug/L		93
90)	1,2,4-Trimethylbenzene	16.95	105	13785	0.4181 ug/L		99
91)	sec-Butylbenzene	17.16	105	16834	0.4153 ug/L		95
92)	p-Isopropyltoluene	17.32	119	13597	0.4195 ug/L		98
93)	1,3-Dichlorobenzene	17.51	146	8047	0.4185 ug/L		97
94)	1,4-Dichlorobenzene	17.64	146	8517	0.4448 ug/L	#	72
95)	n-Butylbenzene	17.85	91	13596	0.4500 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	6772	0.4025 ug/L		98
98)	1,2,4-Trichlorobenzene	20.28	180	4122	0.3566 ug/L		82
99)	Hexachlorobutadiene	20.43	225	2196	0.3972 ug/L	#	81
100)	Naphthalene	20.64	128	7425	0.4443 ug/L		89
101)	1,2,3-Trichlorobenzene	20.95	180	3734	0.3788 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M407748.D 8260WT.M Thu Oct 01 09:02:56 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407748.D Vial: 4
Acq On : 30 Sep 2015 10:59 Operator: TMB
Sample : WG540912-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 1 9:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration

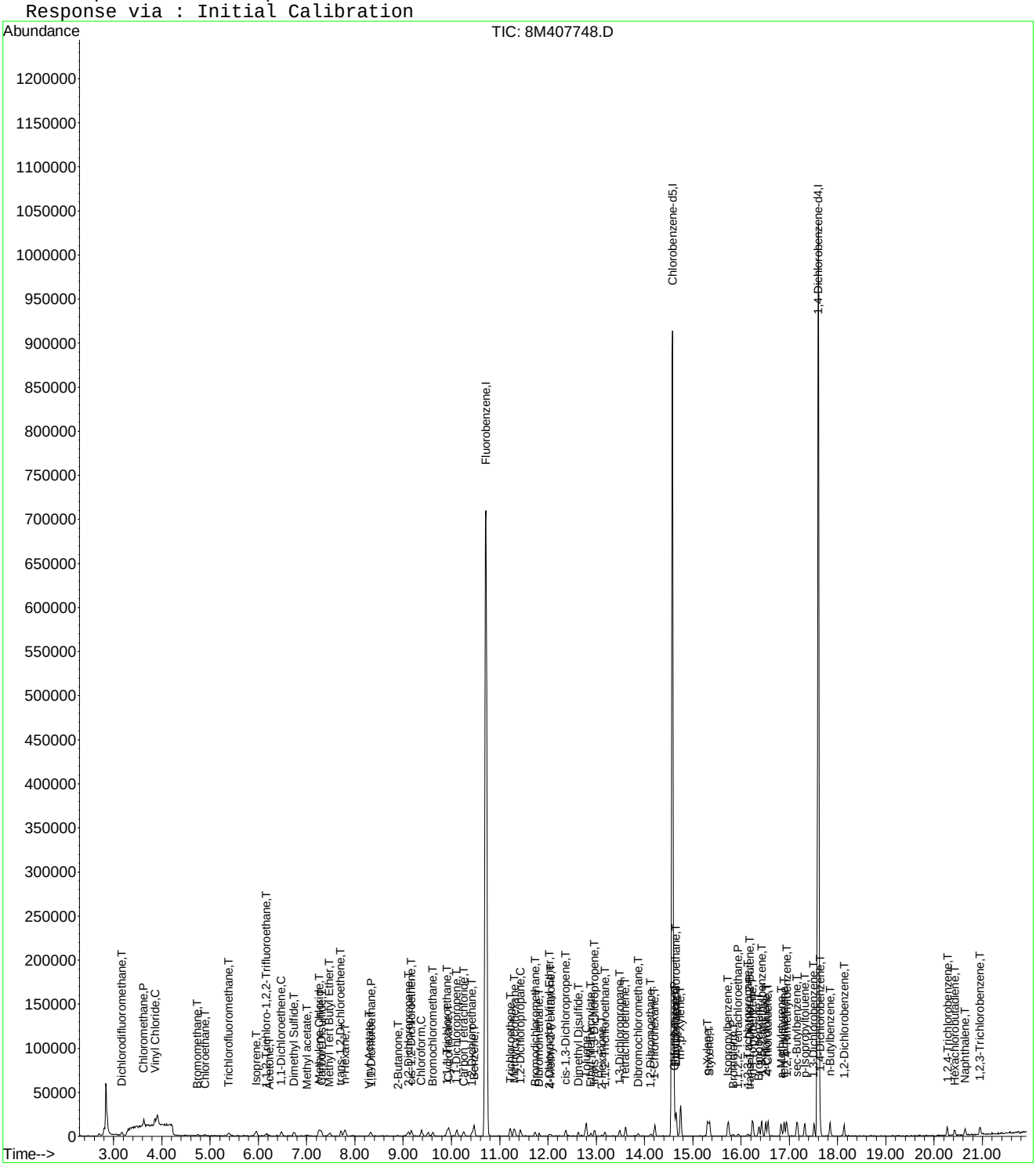

8M407748.D 8260WT.M Thu Oct 01 09:02:57 2015 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\093015\8M407748.D Vial: 4
Acq On : 30 Sep 2015 10:59 Operator: TMB
Sample : WG540912-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	0.4000	0.4002	-0.0	100	0.00
3	P	Chloromethane	-1.0000	0.5590	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.4775	-19.4	100	0.02
5	T	1,3-Butadiene	-1.0000	-1.0000	0.0	0	0.02
6	T	Bromomethane	-1.0000	0.9036	0.0	100	0.00
7	T	Chloroethane	0.4000	0.3053	23.7	100	0.00
8	T	Trichlorofluoromethane	0.4000	0.4081	-2.0	100	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.91#
10	T	Isoprene	0.4000	0.3645	8.9	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.15#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2922	0.0	100	0.00
13	T	Acetone	-1.0000	0.1677	0.0	100	-0.01
14	C	1,1-Dichloroethene	0.4000	0.4214	-5.3	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.59#
16	T	Dimethyl Sulfide	0.4000	0.3327	16.8	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.99#
18	T	Methyl acetate	-1.0000	0.3691	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4069	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4482	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.44#
22	T	Methyl Tert Butyl Ether	-1.0000	0.3831	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.3896	2.6	100	0.00
24	T	n-Hexane	-1.0000	0.4514	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.14#
26	T	Vinyl Acetate	0.4000	0.3936	1.6	100	0.00
27	P	1,1-Dichloroethane	0.4000	0.3946	1.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.1775	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.00#
31	T	2,2-Dichloropropane	0.4000	0.3850	3.8	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.3863	3.4	100	0.00
33	C	Chloroform	0.4000	0.4300	-7.5	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.52#
35	T	Bromochloromethane	0.4000	0.3465	13.4	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.0000	0.0	0	-9.64#
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	0.4000	0.3802	4.9	100	0.00
39	T	Cyclohexane	-1.0000	0.3999	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.3909	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.22#
42	T	Carbon Tetrachloride	0.4000	0.3675	8.1	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	0.4000	0.3539	11.5	100	0.00
46	T	Benzene	0.4000	0.4279	-7.0	100	0.00
47	T	Trichloroethene	0.4000	0.4473	-11.8	100	0.00
48	T	Methylcyclohexane	-1.0000	0.4262	0.0	100	0.00
49	C	1,2-Dichloropropane	0.4000	0.3584	10.4	100	0.00
50	T	Bromodichloromethane	0.4000	0.3864	3.4	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	0.4000	0.3589	10.3	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2688	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.3761	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\093015\8M407748.D Vial: 4
Acq On : 30 Sep 2015 10:59 Operator: TMB
Sample : WG540912-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3786	5.3	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2001	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0084	0.0	100	0.00
59	C	Toluene	0.4000	0.4465	-11.6	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2921	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3706	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.3822	4.5	100	0.00
64	T	2-Hexanone	-1.0000	0.2161	0.0	100	0.00
65	T	1,3-Dichloropropane	0.4000	0.4058	-1.4	100	0.00
66	T	Tetrachloroethene	0.4000	0.3634	9.2	100	0.00
67	T	Dibromochloromethane	0.4000	0.3632	9.2	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.4173	-4.3	100	0.00
69	T	1-Chlorohexane	0.4000	0.4022	-0.5	100	0.00
70	P	Chlorobenzene	0.4000	0.4282	-7.1	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3013	24.7	100	0.00
72	C	Ethylbenzene	0.4000	0.3988	0.3	100	0.00
73	T	m-,p-Xylene	0.8000	0.8216	-2.7	100	0.00
74	T	o-Xylene	-1.0000	0.3713	0.0	100	0.00
75	T	Styrene	0.4000	0.3758	6.0	100	0.00
76	P	Bromoform	-1.0000	0.3107	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.4341	-8.5	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.4041	-1.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0000	0.0	0	-16.08#
81	T	1,2,3-Trichloropropane	-1.0000	0.2642	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.2061	0.0	100	0.00
83	T	n-Propylbenzene	0.4000	0.4258	-6.5	100	0.00
84	T	Bromobenzene	0.4000	0.3632	9.2	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.4331	-8.3	100	0.00
86	T	2-Chlorotoluene	0.4000	0.4292	-7.3	100	0.00
87	T	4-Chlorotoluene	0.4000	0.4440	-11.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.3217	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.4047	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	0.4000	0.4181	-4.5	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.4153	0.0	0	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4195	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.4185	-4.6	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.4448	-11.2	100	0.00
95	T	n-Butylbenzene	-1.0000	0.4500	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.4025	-0.6	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	0.4000	0.3566	10.9	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.3972	0.7	100	0.00
100	T	Naphthalene	0.4000	0.4443	-11.1	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.3788	5.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M407748.D 8260WT.M Thu Oct 01 09:03:30 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407749.D Vial: 5
Acq On : 30 Sep 2015 11:32 Operator: TMB
Sample : WG540912-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:02:57 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	824629	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	595142	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	310452	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	3760	0.4791 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.92%#	
43) 1,2-Dichloroethane-d4	10.31	65	3739	0.4673 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	1.88%#	
58) Toluene-d8	12.69	98	14193	0.5140 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.04%#	
80) p-Bromofluorobenzene	16.08	95	5646	0.5212 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.08%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	12560	1.0019 ug/L	91
3) Chloromethane	3.63	50	22855	1.1947 ug/L	98
4) Vinyl Chloride	3.86	62	17167	1.1356 ug/L	98
5) 1,3-Butadiene	3.91	54	17031	Below Cal	87
6) Bromomethane	4.74	94	3443	1.3712 ug/L	94
7) Chloroethane	4.90	64	6509	1.0554 ug/L	95
8) Trichlorofluoromethane	5.37	101	15428	1.0559 ug/L	99
9) Diethyl ether	5.92	59	27834	4.9496 ug/L	94
10) Isoprene	5.95	67	10646	0.9925 ug/L	94
11) Acrolein	6.15	56	1375	1.9702 ug/L #	63
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	8094	1.0306 ug/L	87
13) Acetone	6.26	43	1007	0.8227 ug/L #	48
14) 1,1-Dichloroethene	6.47	61	14040	1.0502 ug/L	100
15) Tert-Butyl Alcohol	6.58	59	3663	10.1285 ug/L #	58
16) Dimethyl Sulfide	6.74	62	7699	1.0034 ug/L	94
17) Iodomethane	7.00	142	1516	2.1016 ug/L #	28
18) Methyl acetate	7.01	43	4667	1.0083 ug/L #	64
19) Methylene Chloride	7.27	84	8915	1.0737 ug/L	98
20) Carbon Disulfide	7.31	76	28782	1.0616 ug/L	96
21) Acrylonitrile	7.43	53	4083	2.2221 ug/L	96
22) Methyl Tert Butyl Ether	7.47	73	15039	0.9555 ug/L	96
23) trans-1,2-Dichloroethene	7.71	61	12677	0.9985 ug/L	89
24) n-Hexane	7.79	57	12774	1.0185 ug/L	90
25) Diisopropyl ether	8.13	45	163256	5.2163 ug/L	99
26) Vinyl Acetate	8.31	43	7588	0.9122 ug/L #	77
27) 1,1-Dichloroethane	8.33	63	16753	1.0391 ug/L	98
28) Ethyl-Tert-Butyl ether	8.71	59	123570	5.0127 ug/L	96
29) 2-Butanone	8.89	43	1526	0.7237 ug/L #	57
30) Propionitrile	9.00	54	2724	4.4026 ug/L #	56
31) 2,2-Dichloropropane	9.12	77	14447	1.0722 ug/L	97
32) cis-1,2-Dichloroethene	9.18	96	9612	1.0611 ug/L	96
33) Chloroform	9.38	83	15678	1.0237 ug/L	98
34) 1-Bromopropane	9.51	122	1192	0.8013 ug/L	86
35) Bromochloromethane	9.61	130	4709	1.0560 ug/L	97
36) Tetrahydrofuran	9.64	42	7663	5.5360 ug/L	91
38) 1,1,1-Trichloroethane	9.91	97	13556	0.9861 ug/L	98
39) Cyclohexane	9.94	56	16484	1.0077 ug/L	98
40) 1,1-Dichloropropene	10.11	75	12255	1.0354 ug/L	100
41) Tert-Amyl-Methyl ether	10.21	73	91204	4.9900 ug/L	98
42) Carbon Tetrachloride	10.25	117	12771	1.0395 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M407749.D 8260WT.M Thu Oct 01 09:02:57 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407749.D Vial: 5
Acq On : 30 Sep 2015 11:32 Operator: TMB
Sample : WG540912-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:02:57 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	10153	0.9654 ug/L		97
46)	Benzene	10.47	78	35220	1.0845 ug/L		97
47)	Trichloroethene	11.21	130	8672	0.9919 ug/L		96
48)	Methylcyclohexane	11.30	83	14046	1.0383 ug/L		95
49)	1,2-Dichloropropane	11.43	63	8870	1.0138 ug/L		99
50)	Bromodichloromethane	11.73	83	10676	0.9454 ug/L		94
52)	Dibromomethane	11.81	93	3913	0.9392 ug/L		94
53)	2-Chloroethyl Vinyl Ether	12.03	63	2929	0.8122 ug/L	#	53
54)	4-Methyl-2-Pentanone	12.07	58	1715	0.9270 ug/L	#	40
55)	cis-1,3-Dichloropropene	12.37	75	12248	0.9770 ug/L		96
56)	Dimethyl Disulfide	12.63	79	4694	0.6944 ug/L		86
59)	Toluene	12.79	91	37092	1.0968 ug/L		98
60)	Ethyl Methacrylate	12.89	69	5450	0.8083 ug/L		89
62)	trans-1,3-Dichloropropene	12.96	75	9101	0.8772 ug/L		89
63)	1,1,2-Trichloroethane	13.19	97	5067	0.9440 ug/L		92
64)	2-Hexanone	13.12	58	1227	0.7271 ug/L	#	74
65)	1,3-Dichloropropane	13.49	76	9904	1.0325 ug/L		97
66)	Tetrachloroethene	13.60	164	7979	1.1098 ug/L		91
67)	Dibromochloromethane	13.87	129	6283	0.9053 ug/L		98
68)	1,2-Dibromoethane	14.13	107	5024	0.9375 ug/L		94
69)	1-Chlorohexane	14.21	91	12607	1.0418 ug/L		100
70)	Chlorobenzene	14.62	112	23286	1.0276 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.66	131	7725	0.9220 ug/L		91
72)	Ethylbenzene	14.66	106	13047	0.9884 ug/L		100
73)	m-,p-Xylene	14.75	106	31986	2.1129 ug/L		94
74)	o-Xylene	15.31	106	16415	1.0723 ug/L		86
75)	Styrene	15.35	104	24064	0.9921 ug/L		99
76)	Bromoform	15.84	173	3394	0.8135 ug/L		88
77)	Isopropylbenzene	15.73	105	40727	1.1090 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	5352	0.9344 ug/L	#	90
81)	1,2,3-Trichloropropane	16.15	110	1453	0.9129 ug/L		87
82)	trans-1,4-Dichloro-2-Buten	16.18	53	2043	0.9706 ug/L	#	38
83)	n-Propylbenzene	16.24	91	50469	1.1228 ug/L		97
84)	Bromobenzene	16.37	156	9871	1.0818 ug/L		98
85)	1,3,5-Trimethylbenzene	16.43	105	34529	1.1173 ug/L		96
86)	2-Chlorotoluene	16.52	91	33677	1.1312 ug/L		96
87)	4-Chlorotoluene	16.56	91	29657	1.1519 ug/L		97
88)	a-Methylstyrene	16.83	118	15521	0.9213 ug/L		94
89)	tert-Butylbenzene	16.90	134	6877	1.0116 ug/L		92
90)	1,2,4-Trimethylbenzene	16.94	105	34007	1.0890 ug/L		99
91)	sec-Butylbenzene	17.16	105	42264	1.1009 ug/L		100
92)	p-Isopropyltoluene	17.32	119	33409	1.0885 ug/L		95
93)	1,3-Dichlorobenzene	17.51	146	19715	1.0825 ug/L		99
94)	1,4-Dichlorobenzene	17.64	146	19673	1.0848 ug/L	#	69
95)	n-Butylbenzene	17.85	91	31225	1.0913 ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	17412	1.0926 ug/L		95
97)	1,2-Dibromo-3-Chloropropan	19.13	75	677	0.6745 ug/L		68
98)	1,2,4-Trichlorobenzene	20.27	180	10656	0.9733 ug/L		97
99)	Hexachlorobutadiene	20.43	225	5105	0.9749 ug/L		88
100)	Naphthalene	20.64	128	16387	1.0353 ug/L		95
101)	1,2,3-Trichlorobenzene	20.95	180	9842	1.0542 ug/L		93

(#) = qualifier out of range (m) = manual integration
8M407749.D 8260WT.M Thu Oct 01 09:02:57 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407749.D Vial: 5
Acq On : 30 Sep 2015 11:32 Operator: TMB
Sample : WG540912-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 1 9:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration

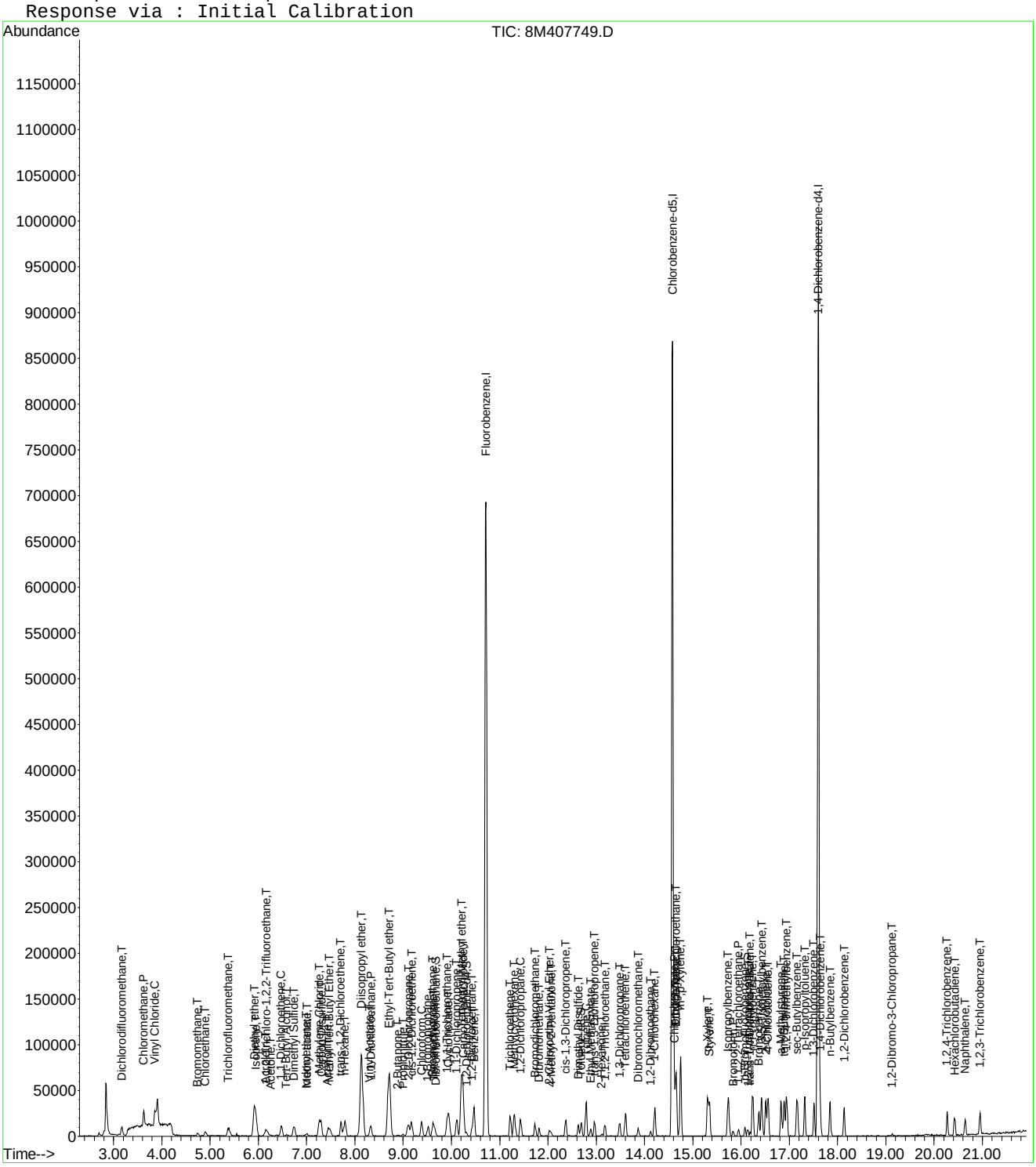

8M407749.D 8260WT.M Thu Oct 01 09:02:58 2015 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\093015\8M407749.D Vial: 5
Acq On : 30 Sep 2015 11:32 Operator: TMB
Sample : WG540912-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	1.0018	-0.2	100	0.00
3	P	Chloromethane	1.0000	1.1947	-19.5	100	0.00
4	C	Vinyl Chloride	1.0000	1.1356	-13.6	100	0.01
5	T	1,3-Butadiene	-1.0000	-1.0000	0.0	0	0.02
6	T	Bromomethane	1.0000	1.3712	-37.1#	100	0.00
7	T	Chloroethane	1.0000	1.0554	-5.5	100	0.00
8	T	Trichlorofluoromethane	1.0000	1.0559	-5.6	100	-0.01
9	T	Diethyl ether	5.0000	4.9496	1.0	100	0.00
10	T	Isoprene	1.0000	0.9925	0.8	100	0.00
11	T	Acrolein	-1.0000	1.9702	0.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0306	-3.1	100	0.00
13	T	Acetone	-1.0000	0.8227	0.0	100	0.02
14	C	1,1-Dichloroethene	1.0000	1.0502	-5.0	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	10.1285	0.0	100	0.00
16	T	Dimethyl Sulfide	1.0000	1.0034	-0.3	100	0.00
17	T	Iodomethane	-1.0000	2.1016	0.0	0	0.00
18	T	Methyl acetate	-1.0000	1.0083	0.0	100	0.00
19	T	Methylene Chloride	1.0000	1.0737	-7.4	100	0.00
20	T	Carbon Disulfide	1.0000	1.0616	-6.2	100	0.00
21	T	Acrylonitrile	2.5000	2.2221	11.1	100	-0.01
22	T	Methyl Tert Butyl Ether	1.0000	0.9555	4.5	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	0.9985	0.1	100	0.00
24	T	n-Hexane	-1.0000	1.0185	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	5.2163	-4.3	100	0.00
26	T	Vinyl Acetate	1.0000	0.9123	8.8	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0391	-3.9	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	5.0127	-0.3	100	0.00
29	T	2-Butanone	-1.0000	0.7237	0.0	100	0.00
30	T	Propionitrile	5.0000	4.4025	11.9	100	0.00
31	T	2,2-Dichloropropane	1.0000	1.0722	-7.2	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	1.0611	-6.1	100	0.00
33	C	Chloroform	1.0000	1.0237	-2.4	100	0.00
34		1-Bromopropane	1.0000	0.8013	19.9	100	-0.01
35	T	Bromochloromethane	1.0000	1.0560	-5.6	100	0.00
36	T	Tetrahydrofuran	5.0000	5.5360	-10.7	100	0.00
37	S	Dibromofluoromethane	0.5000	0.4791	4.2	100	0.00
38	T	1,1,1-Trichloroethane	1.0000	0.9861	1.4	100	0.00
39	T	Cyclohexane	1.0000	1.0077	-0.8	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0354	-3.5	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	4.9900	0.2	100	0.00
42	T	Carbon Tetrachloride	1.0000	1.0395	-3.9	100	0.00
43	S	1,2-Dichloroethane-d4	0.5000	0.4673	6.5	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	1.0000	0.9654	3.5	100	0.00
46	T	Benzene	1.0000	1.0845	-8.4	100	0.00
47	T	Trichloroethene	1.0000	0.9919	0.8	100	0.00
48	T	Methylcyclohexane	-1.0000	1.0383	0.0	100	0.00
49	C	1,2-Dichloropropane	1.0000	1.0138	-1.4	100	0.00
50	T	Bromodichloromethane	1.0000	0.9454	5.5	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	1.0000	0.9392	6.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.8122	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.9270	0.0	100	0.00

(#) = Out of Range
8M407749.D 8260WT.M Thu Oct 01 09:03:41 2015 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\093015\8M407749.D Vial: 5
Acq On : 30 Sep 2015 11:32 Operator: TMB
Sample : WG540912-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9770	2.3	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.6944	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	0.5000	0.5140	-2.8	100	0.00
59	C	Toluene	1.0000	1.0968	-9.7	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.8083	19.2	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	1.0000	0.8772	12.3	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.9440	5.6	100	0.00
64	T	2-Hexanone	-1.0000	0.7271	0.0	100	0.00
65	T	1,3-Dichloropropane	1.0000	1.0325	-3.2	100	0.00
66	T	Tetrachloroethene	1.0000	1.1099	-11.0	100	0.00
67	T	Dibromochloromethane	1.0000	0.9053	9.5	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.9375	6.3	100	0.00
69	T	1-Chlorohexane	1.0000	1.0418	-4.2	100	0.00
70	P	Chlorobenzene	1.0000	1.0276	-2.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.9220	7.8	100	0.00
72	C	Ethylbenzene	1.0000	0.9884	1.2	100	0.00
73	T	m-,p-Xylene	2.0000	2.1129	-5.6	100	0.00
74	T	o-Xylene	1.0000	1.0723	-7.2	100	0.00
75	T	Styrene	1.0000	0.9921	0.8	100	0.00
76	P	Bromoform	1.0000	0.8135	18.6	100	0.00
77	T	Isopropylbenzene	1.0000	1.1090	-10.9	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	0.9344	6.6	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5212	0.0	100	0.00
81	T	1,2,3-Trichloropropane	1.0000	0.9129	8.7	100	0.01
82	T	trans-1,4-Dichloro-2-Butene	1.0000	0.9707	2.9	100	0.00
83	T	n-Propylbenzene	1.0000	1.1228	-12.3	100	0.00
84	T	Bromobenzene	1.0000	1.0819	-8.2	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	1.1173	-11.7	100	0.00
86	T	2-Chlorotoluene	1.0000	1.1312	-13.1	100	0.00
87	T	4-Chlorotoluene	1.0000	1.1519	-15.2	100	0.00
88	T	a-Methylstyrene	-1.0000	0.9213	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	1.0116	-1.2	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	1.0890	-8.9	100	0.00
91	T	sec-Butylbenzene	1.0000	1.1009	-10.1	100	0.00
92	T	p-Isopropyltoluene	1.0000	1.0885	-8.8	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0825	-8.3	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	1.0848	-8.5	100	0.00
95	T	n-Butylbenzene	1.0000	1.0913	-9.1	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0926	-9.3	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.6745	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	1.0000	0.9733	2.7	100	0.00
99	T	Hexachlorobutadiene	1.0000	0.9749	2.5	100	0.00
100	T	Naphthalene	1.0000	1.0353	-3.5	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	1.0542	-5.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M407749.D 8260WT.M Thu Oct 01 09:03:41 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407750.D Vial: 6
Acq On : 30 Sep 2015 12:01 Operator: TMB
Sample : WG540912-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:02:58 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	857795	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	621989	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	331050	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	7870	0.9640 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.84%#	
43) 1,2-Dichloroethane-d4	10.31	65	8146	0.9786 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.92%#	
58) Toluene-d8	12.69	98	28719	0.9951 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.00%#	
80) p-Bromofluorobenzene	16.08	95	11108	0.9617 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	3.84%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	24621	1.8880 ug/L	100
3) Chloromethane	3.63	50	42586	2.1401 ug/L	97
4) Vinyl Chloride	3.85	62	31937	2.0310 ug/L	99
5) 1,3-Butadiene	3.91	54	30141	Below Cal	88
6) Bromomethane	4.74	94	6766	1.9768 ug/L	94
7) Chloroethane	4.91	64	12659	1.9733 ug/L	96
8) Trichlorofluoromethane	5.38	101	28876	1.9000 ug/L	97
9) Diethyl ether	5.92	59	144653	24.7287 ug/L	99
10) Isoprene	5.96	67	19444	1.7426 ug/L	93
11) Acrolein	6.16	56	8940	12.3146 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.18	101	15681	1.9194 ug/L	94
13) Acetone	6.26	43	2409	1.8921 ug/L #	64
14) 1,1-Dichloroethene	6.48	61	26153	1.8806 ug/L	99
15) Tert-Butyl Alcohol	6.59	59	18302	48.6497 ug/L	92
16) Dimethyl Sulfide	6.74	62	15350	1.9232 ug/L	95
17) Iodomethane	7.00	142	3232	2.4020 ug/L	84
18) Methyl acetate	7.02	43	9921	2.0606 ug/L #	85
19) Methylene Chloride	7.26	84	16259	1.8825 ug/L	97
20) Carbon Disulfide	7.31	76	54440	1.9303 ug/L	99
21) Acrylonitrile	7.44	53	21507	11.2525 ug/L	94
22) Methyl Tert Butyl Ether	7.48	73	29739	1.8164 ug/L	97
23) trans-1,2-Dichloroethene	7.72	61	24958	1.8898 ug/L	96
24) n-Hexane	7.79	57	24980	1.9147 ug/L	97
25) Diisopropyl ether	8.13	45	841489	25.8476 ug/L	99
26) Vinyl Acetate	8.31	43	16251	1.8782 ug/L	100
27) 1,1-Dichloroethane	8.34	63	33045	1.9704 ug/L	98
28) Ethyl-Tert-Butyl ether	8.71	59	646426	25.2090 ug/L	97
29) 2-Butanone	8.90	43	4029	1.8368 ug/L #	78
30) Propionitrile	9.00	54	16194	25.1609 ug/L	94
31) 2,2-Dichloropropane	9.11	77	26768	1.9098 ug/L	99
32) cis-1,2-Dichloroethene	9.18	96	18545	1.9681 ug/L	95
33) Chloroform	9.38	83	30928	1.9414 ug/L	97
34) 1-Bromopropane	9.52	122	3050	1.9711 ug/L	88
35) Bromochloromethane	9.62	130	8600	1.8540 ug/L	95
36) Tetrahydrofuran	9.64	42	35553	24.6915 ug/L	97
38) 1,1,1-Trichloroethane	9.91	97	26263	1.8366 ug/L	99
39) Cyclohexane	9.94	56	32415	1.9049 ug/L	94
40) 1,1-Dichloropropene	10.12	75	21975	1.7848 ug/L	99
41) Tert-Amyl-Methyl ether	10.22	73	473187	24.8880 ug/L	98
42) Carbon Tetrachloride	10.26	117	23450	1.8349 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M407750.D 8260WT.M Thu Oct 01 09:02:59 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407750.D Vial: 6
Acq On : 30 Sep 2015 12:01 Operator: TMB
Sample : WG540912-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:02:58 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45) 1,2-Dichloroethane	10.43	62	20835	1.9046 ug/L	100
46) Benzene	10.47	78	69691	2.0629 ug/L	98
47) Trichloroethene	11.22	130	17472	1.9211 ug/L	95
48) Methylcyclohexane	11.31	83	26751	1.9010 ug/L	97
49) 1,2-Dichloropropane	11.43	63	17329	1.9040 ug/L	100
50) Bromodichloromethane	11.73	83	21972	1.8704 ug/L	98
51) 1,4-Dioxane	11.73	88	1992	47.5413 ug/L	73
52) Dibromomethane	11.81	93	8300	1.9152 ug/L	98
53) 2-Chloroethyl Vinyl Ether	12.03	63	6643	1.7709 ug/L	100
54) 4-Methyl-2-Pentanone	12.06	58	3171	1.6478 ug/L #	76
55) cis-1,3-Dichloropropene	12.37	75	24382	1.8697 ug/L	98
56) Dimethyl Disulfide	12.63	79	9241	1.3142 ug/L	100
59) Toluene	12.79	91	75292	2.1303 ug/L	97
60) Ethyl Methacrylate	12.89	69	12345	1.7519 ug/L	94
62) trans-1,3-Dichloropropene	12.96	75	19728	1.8194 ug/L	100
63) 1,1,2-Trichloroethane	13.19	97	11042	1.9683 ug/L	95
64) 2-Hexanone	13.12	58	3024	1.7146 ug/L #	92
65) 1,3-Dichloropropane	13.49	76	19190	1.9142 ug/L	97
66) Tetrachloroethene	13.61	164	14596	1.9426 ug/L	96
67) Dibromochloromethane	13.87	129	13023	1.7955 ug/L	100
68) 1,2-Dibromoethane	14.13	107	10033	1.7914 ug/L	93
69) 1-Chlorohexane	14.21	91	24696	1.9527 ug/L	99
70) Chlorobenzene	14.63	112	47264	1.9957 ug/L	81
71) 1,1,1,2-Tetrachloroethane	14.66	131	16097	1.8383 ug/L	99
72) Ethylbenzene	14.65	106	25517	1.8496 ug/L	99
73) m-,p-Xylene	14.75	106	64368	4.0684 ug/L	99
74) o-Xylene	15.30	106	30646	1.9155 ug/L	99
75) Styrene	15.35	104	48909	1.9294 ug/L	99
76) Bromoform	15.84	173	7198	1.6508 ug/L	99
77) Isopropylbenzene	15.73	105	79109	2.0612 ug/L	99
79) 1,1,2,2-Tetrachloroethane	15.95	83	11848	1.9398 ug/L #	95
81) 1,2,3-Trichloropropane	16.13	110	3207	1.8896 ug/L	68
82) trans-1,4-Dichloro-2-Buten	16.18	53	3210	1.4302 ug/L #	22
83) n-Propylbenzene	16.24	91	96558	2.0145 ug/L	99
84) Bromobenzene	16.37	156	19644	2.0190 ug/L	97
85) 1,3,5-Trimethylbenzene	16.42	105	67207	2.0394 ug/L	95
86) 2-Chlorotoluene	16.51	91	64870	2.0434 ug/L	98
87) 4-Chlorotoluene	16.56	91	58369	2.1259 ug/L	98
88) a-Methylstyrene	16.83	118	31799	1.7701 ug/L	97
89) tert-Butylbenzene	16.90	134	13942	1.9232 ug/L	92
90) 1,2,4-Trimethylbenzene	16.95	105	68650	2.0616 ug/L	98
91) sec-Butylbenzene	17.17	105	82325	2.0111 ug/L	98
92) p-Isopropyltoluene	17.32	119	68961	2.1070 ug/L	100
93) 1,3-Dichlorobenzene	17.51	146	37945	1.9539 ug/L	98
94) 1,4-Dichlorobenzene	17.64	146	37796	1.9544 ug/L	82
95) n-Butylbenzene	17.85	91	60131	1.9708 ug/L	100
96) 1,2-Dichlorobenzene	18.14	146	34109	2.0073 ug/L	100
97) 1,2-Dibromo-3-Chloropropan	19.14	75	1806	1.6873 ug/L	98
98) 1,2,4-Trichlorobenzene	20.28	180	22341	1.9136 ug/L	97
99) Hexachlorobutadiene	20.42	225	11201	2.0059 ug/L	99
100) Naphthalene	20.64	128	34803	2.0620 ug/L	98
101) 1,2,3-Trichlorobenzene	20.95	180	19034	1.9119 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M407750.D 8260WT.M Thu Oct 01 09:02:59 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407750.D Vial: 6
Acq On : 30 Sep 2015 12:01 Operator: TMB
Sample : WG540912-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 1 9:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration

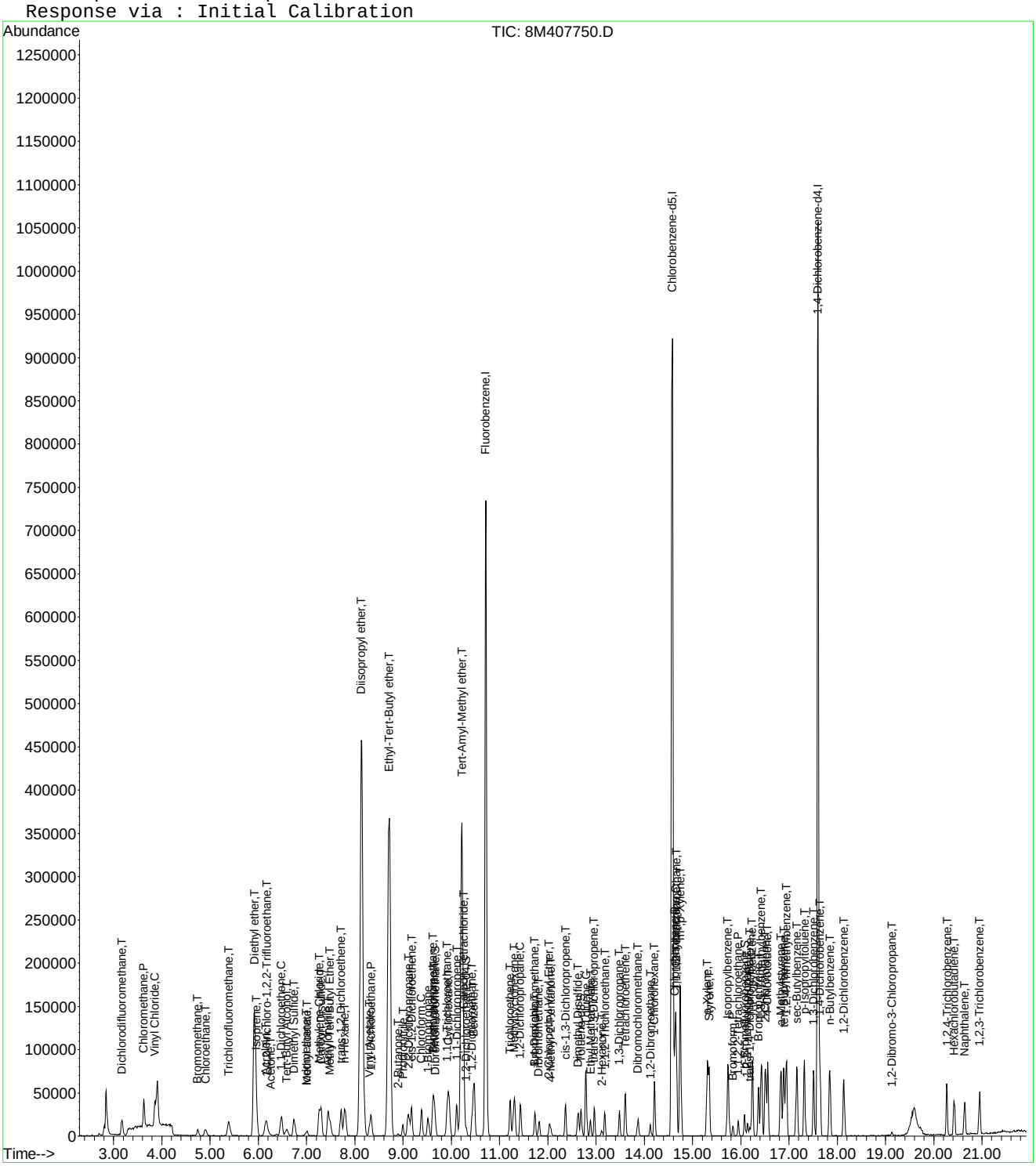

8M407750.D 8260WT.M Thu Oct 01 09:02:59 2015 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\093015\8M407750.D Vial: 6
Acq On : 30 Sep 2015 12:01 Operator: TMB
Sample : WG540912-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.8880	5.6	100	0.00
3	P	Chloromethane	2.0000	2.1401	-7.0	100	0.00
4	C	Vinyl Chloride	2.0000	2.0310	-1.5	100	0.00
5	T	1,3-Butadiene	-1.0000	-1.0000	0.0	0	0.02
6	T	Bromomethane	2.0000	1.9768	1.2	100	0.00
7	T	Chloroethane	2.0000	1.9733	1.3	100	0.00
8	T	Trichlorofluoromethane	2.0000	1.9000	5.0	100	0.00
9	T	Diethyl ether	25.0000	24.7287	1.1	100	0.00
10	T	Isoprene	2.0000	1.7426	12.9	100	0.00
11	T	Acrolein	12.5000	12.3146	1.5	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.9194	4.0	100	0.02
13	T	Acetone	-1.0000	1.8921	0.0	100	0.02
14	C	1,1-Dichloroethene	2.0000	1.8806	6.0	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	48.6497	2.7	100	0.00
16	T	Dimethyl Sulfide	2.0000	1.9232	3.8	100	0.00
17	T	Iodomethane	2.0000	2.4020	-20.1	100	0.00
18	T	Methyl acetate	-1.0000	2.0606	0.0	100	0.00
19	T	Methylene Chloride	2.0000	1.8825	5.9	100	0.00
20	T	Carbon Disulfide	2.0000	1.9303	3.5	100	0.00
21	T	Acrylonitrile	12.5000	11.2525	10.0	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.8163	9.2	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.8898	5.5	100	0.00
24	T	n-Hexane	-1.0000	1.9147	0.0	100	0.00
25	T	Diisopropyl ether	25.0000	25.8476	-3.4	100	0.00
26	T	Vinyl Acetate	2.0000	1.8782	6.1	100	0.00
27	P	1,1-Dichloroethane	2.0000	1.9704	1.5	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	25.2090	-0.8	100	0.00
29	T	2-Butanone	-1.0000	1.8368	0.0	100	0.00
30	T	Propionitrile	25.0000	25.1609	-0.6	100	0.00
31	T	2,2-Dichloropropane	2.0000	1.9099	4.5	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	1.9681	1.6	100	0.00
33	C	Chloroform	2.0000	1.9414	2.9	100	0.00
34		1-Bromopropane	2.0000	1.9711	1.4	100	0.00
35	T	Bromochloromethane	2.0000	1.8540	7.3	100	0.00
36	T	Tetrahydrofuran	25.0000	24.6915	1.2	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9640	3.6	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.8366	8.2	100	0.00
39	T	Cyclohexane	2.0000	1.9049	4.8	100	0.00
40	T	1,1-Dichloropropene	2.0000	1.7848	10.8	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	24.8880	0.4	100	0.00
42	T	Carbon Tetrachloride	2.0000	1.8349	8.3	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	0.9786	2.1	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	2.0000	1.9046	4.8	100	0.00
46	T	Benzene	2.0000	2.0629	-3.1	100	0.00
47	T	Trichloroethene	2.0000	1.9211	3.9	100	0.00
48	T	Methylcyclohexane	-1.0000	1.9010	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	1.9041	4.8	100	0.00
50	T	Bromodichloromethane	2.0000	1.8704	6.5	100	0.00
51	T	1,4-Dioxane	-1.0000	47.5413	0.0	100	0.01
52	T	Dibromomethane	2.0000	1.9152	4.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	1.7709	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.6478	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\093015\8M407750.D Vial: 6
Acq On : 30 Sep 2015 12:01 Operator: TMB
Sample : WG540912-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.8697	6.5	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.3142	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	0.9951	0.5	100	0.00
59	C	Toluene	2.0000	2.1303	-6.5	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.7519	12.4	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	2.0000	1.8194	9.0	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.9683	1.6	100	0.00
64	T	2-Hexanone	-1.0000	1.7146	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	1.9142	4.3	100	0.00
66	T	Tetrachloroethene	2.0000	1.9426	2.9	100	0.00
67	T	Dibromochloromethane	2.0000	1.7955	10.2	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.7914	10.4	100	0.00
69	T	1-Chlorohexane	2.0000	1.9527	2.4	100	0.00
70	P	Chlorobenzene	2.0000	1.9957	0.2	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.8383	8.1	100	0.00
72	C	Ethylbenzene	2.0000	1.8496	7.5	100	0.00
73	T	m-,p-Xylene	4.0000	4.0685	-1.7	100	0.00
74	T	o-Xylene	2.0000	1.9155	4.2	100	0.00
75	T	Styrene	2.0000	1.9294	3.5	100	0.00
76	P	Bromoform	2.0000	1.6508	17.5	100	0.00
77	T	Isopropylbenzene	2.0000	2.0612	-3.1	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	1.9399	3.0	100	0.00
80	S	p-Bromofluorobenzene	1.0000	0.9617	3.8	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	1.8896	5.5	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	1.4302	28.5#	100	0.00
83	T	n-Propylbenzene	2.0000	2.0145	-0.7	100	0.00
84	T	Bromobenzene	2.0000	2.0190	-1.0	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.0394	-2.0	100	0.00
86	T	2-Chlorotoluene	2.0000	2.0434	-2.2	100	0.00
87	T	4-Chlorotoluene	2.0000	2.1260	-6.3	100	0.00
88	T	a-Methylstyrene	-1.0000	1.7701	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	1.9232	3.8	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.0616	-3.1	100	0.00
91	T	sec-Butylbenzene	2.0000	2.0111	-0.6	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.1070	-5.3	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	1.9539	2.3	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	1.9544	2.3	100	0.00
95	T	n-Butylbenzene	2.0000	1.9708	1.5	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0073	-0.4	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.6873	15.6	100	0.01
98	T	1,2,4-Trichlorobenzene	2.0000	1.9137	4.3	100	0.00
99	T	Hexachlorobutadiene	2.0000	2.0059	-0.3	100	0.00
100	T	Naphthalene	2.0000	2.0620	-3.1	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9119	4.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M407750.D 8260WT.M Thu Oct 01 09:03:51 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407751.D Vial: 7
Acq On : 30 Sep 2015 12:29 Operator: TMB
Sample : WG540912-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:02:59 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	888090	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	648250	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	345626	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.68	111	20923	2.4754 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	9.92%#	
43) 1,2-Dichloroethane-d4	10.31	65	20861	2.4207 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	9.68%#	
58) Toluene-d8	12.69	98	74103	2.4637 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	9.84%#	
80) p-Bromofluorobenzene	16.08	95	29759	2.4677 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	9.88%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.18	85	61437	4.5504 ug/L	99
3) Chloromethane	3.62	50	104260	5.0607 ug/L	99
4) Vinyl Chloride	3.85	62	81501	5.0061 ug/L	99
5) 1,3-Butadiene	3.90	54	73714	3.6389 ug/L	95
6) Bromomethane	4.75	94	17849	3.9647 ug/L	99
7) Chloroethane	4.90	64	33514	5.0459 ug/L	97
8) Trichlorofluoromethane	5.39	101	77150	4.9031 ug/L	97
9) Diethyl ether	5.91	59	300564	49.6291 ug/L	100
10) Isoprene	5.96	67	53581	4.6382 ug/L	98
11) Acrolein	6.15	56	18363	24.4317 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	41910	4.9550 ug/L	97
13) Acetone	6.24	43	6790	5.1511 ug/L	97
14) 1,1-Dichloroethene	6.48	61	70653	4.9071 ug/L	98
15) Tert-Butyl Alcohol	6.59	59	39888	102.4118 ug/L	97
16) Dimethyl Sulfide	6.74	62	39764	4.8120 ug/L	98
17) Iodomethane	6.99	142	14332	4.3281 ug/L	92
18) Methyl acetate	7.01	43	26384	5.2931 ug/L	89
19) Methylene Chloride	7.26	84	43891	4.9083 ug/L	98
20) Carbon Disulfide	7.30	76	142074	4.8658 ug/L	100
21) Acrylonitrile	7.44	53	46132	23.3129 ug/L	95
22) Methyl Tert Butyl Ether	7.48	73	85068	5.0184 ug/L	96
23) trans-1,2-Dichloroethene	7.71	61	67170	4.9126 ug/L	98
24) n-Hexane	7.79	57	65873	4.8769 ug/L	97
25) Diisopropyl ether	8.14	45	1713583	50.8397 ug/L	99
26) Vinyl Acetate	8.30	43	46988	5.2454 ug/L	94
27) 1,1-Dichloroethane	8.33	63	86979	5.0094 ug/L	99
28) Ethyl-Tert-Butyl ether	8.71	59	1342420	50.5651 ug/L	97
29) 2-Butanone	8.90	43	10887	4.7939 ug/L	94
30) Propionitrile	8.99	54	33524	50.3101 ug/L	100
31) 2,2-Dichloropropane	9.11	77	70912	4.8868 ug/L	98
32) cis-1,2-Dichloroethene	9.18	96	48210	4.9417 ug/L	98
33) Chloroform	9.39	83	82654	5.0114 ug/L	100
34) 1-Bromopropane	9.52	122	8041	5.0194 ug/L	98
35) Bromochloromethane	9.61	130	24188	5.0366 ug/L	100
36) Tetrahydrofuran	9.63	42	73084	49.0254 ug/L	96
38) 1,1,1-Trichloroethane	9.91	97	73396	4.9576 ug/L	97
39) Cyclohexane	9.94	56	83438	4.7361 ug/L	98
40) 1,1-Dichloropropene	10.11	75	62637	4.9139 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	983884	49.9837 ug/L	99
42) Carbon Tetrachloride	10.25	117	62444	4.7194 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M407751.D 8260WT.M Thu Oct 01 09:03:00 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407751.D Vial: 7
Acq On : 30 Sep 2015 12:29 Operator: TMB
Sample : WG540912-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:02:59 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	56848	5.0193 ug/L		98
46)	Benzene	10.47	78	179728	5.1385 ug/L		99
47)	Trichloroethene	11.22	130	44015	4.6746 ug/L		94
48)	Methylcyclohexane	11.31	83	71852	4.9318 ug/L		97
49)	1,2-Dichloropropane	11.43	63	47121	5.0009 ug/L		94
50)	Bromodichloromethane	11.73	83	58514	4.8112 ug/L		100
51)	1,4-Dioxane	11.72	88	3839	88.4965 ug/L		92
52)	Dibromomethane	11.82	93	23054	5.1382 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	17693	4.5557 ug/L		96
54)	4-Methyl-2-Pentanone	12.06	58	9027	4.5309 ug/L		94
55)	cis-1,3-Dichloropropene	12.36	75	64722	4.7938 ug/L		99
56)	Dimethyl Disulfide	12.63	79	28062	3.8546 ug/L		100
59)	Toluene	12.79	91	189538	5.1455 ug/L		99
60)	Ethyl Methacrylate	12.88	69	35620	4.8502 ug/L		96
62)	trans-1,3-Dichloropropene	12.96	75	55720	4.9306 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	30150	5.1568 ug/L		98
64)	2-Hexanone	13.12	58	8027	4.3668 ug/L	#	80
65)	1,3-Dichloropropane	13.49	76	51742	4.9522 ug/L		96
66)	Tetrachloroethene	13.60	164	38521	4.9192 ug/L		98
67)	Dibromochloromethane	13.87	129	36922	4.8844 ug/L		98
68)	1,2-Dibromoethane	14.12	107	29112	4.9874 ug/L		100
69)	1-Chlorohexane	14.21	91	64380	4.8843 ug/L		97
70)	Chlorobenzene	14.63	112	122342	4.9567 ug/L		94
71)	1,1,1,2-Tetrachloroethane	14.66	131	43922	4.8127 ug/L		95
72)	Ethylbenzene	14.66	106	67237	4.6762 ug/L		100
73)	m-,p-Xylene	14.75	106	170940	10.3667 ug/L		99
74)	o-Xylene	15.31	106	78832	4.7276 ug/L		98
75)	Styrene	15.35	104	139834	5.2929 ug/L		98
76)	Bromoform	15.84	173	21291	4.6852 ug/L		96
77)	Isopropylbenzene	15.73	105	206201	5.1551 ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	33322	5.2257 ug/L		100
81)	1,2,3-Trichloropropane	16.14	110	8869	5.0053 ug/L		63
82)	trans-1,4-Dichloro-2-Buten	16.19	53	10961	4.6777 ug/L	#	1
83)	n-Propylbenzene	16.24	91	264651	5.2887 ug/L		97
84)	Bromobenzene	16.37	156	50669	4.9881 ug/L		97
85)	1,3,5-Trimethylbenzene	16.42	105	180896	5.2579 ug/L		99
86)	2-Chlorotoluene	16.51	91	181035	5.4620 ug/L		100
87)	4-Chlorotoluene	16.56	91	143482	5.0056 ug/L		100
88)	a-Methylstyrene	16.83	118	90467	4.8234 ug/L		99
89)	tert-Butylbenzene	16.89	134	36404	4.8098 ug/L		95
90)	1,2,4-Trimethylbenzene	16.94	105	186780	5.3725 ug/L		95
91)	sec-Butylbenzene	17.16	105	221368	5.1796 ug/L		99
92)	p-Isopropyltoluene	17.32	119	181903	5.3233 ug/L		97
93)	1,3-Dichlorobenzene	17.51	146	104992	5.1783 ug/L		99
94)	1,4-Dichlorobenzene	17.64	146	104006	5.1513 ug/L		96
95)	n-Butylbenzene	17.84	91	169482	5.3206 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	91565	5.1612 ug/L		100
97)	1,2-Dibromo-3-Chloropropan	19.13	75	5183	4.6382 ug/L		92
98)	1,2,4-Trichlorobenzene	20.27	180	62214	5.1043 ug/L		98
99)	Hexachlorobutadiene	20.42	225	29150	5.0001 ug/L		99
100)	Naphthalene	20.64	128	89499	5.0789 ug/L		97
101)	1,2,3-Trichlorobenzene	20.95	180	52799	5.0798 ug/L		95

(#) = qualifier out of range (m) = manual integration
8M407751.D 8260WT.M Thu Oct 01 09:03:00 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407751.D Vial: 7
Acq On : 30 Sep 2015 12:29 Operator: TMB
Sample : WG540912-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 1 9:02 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration

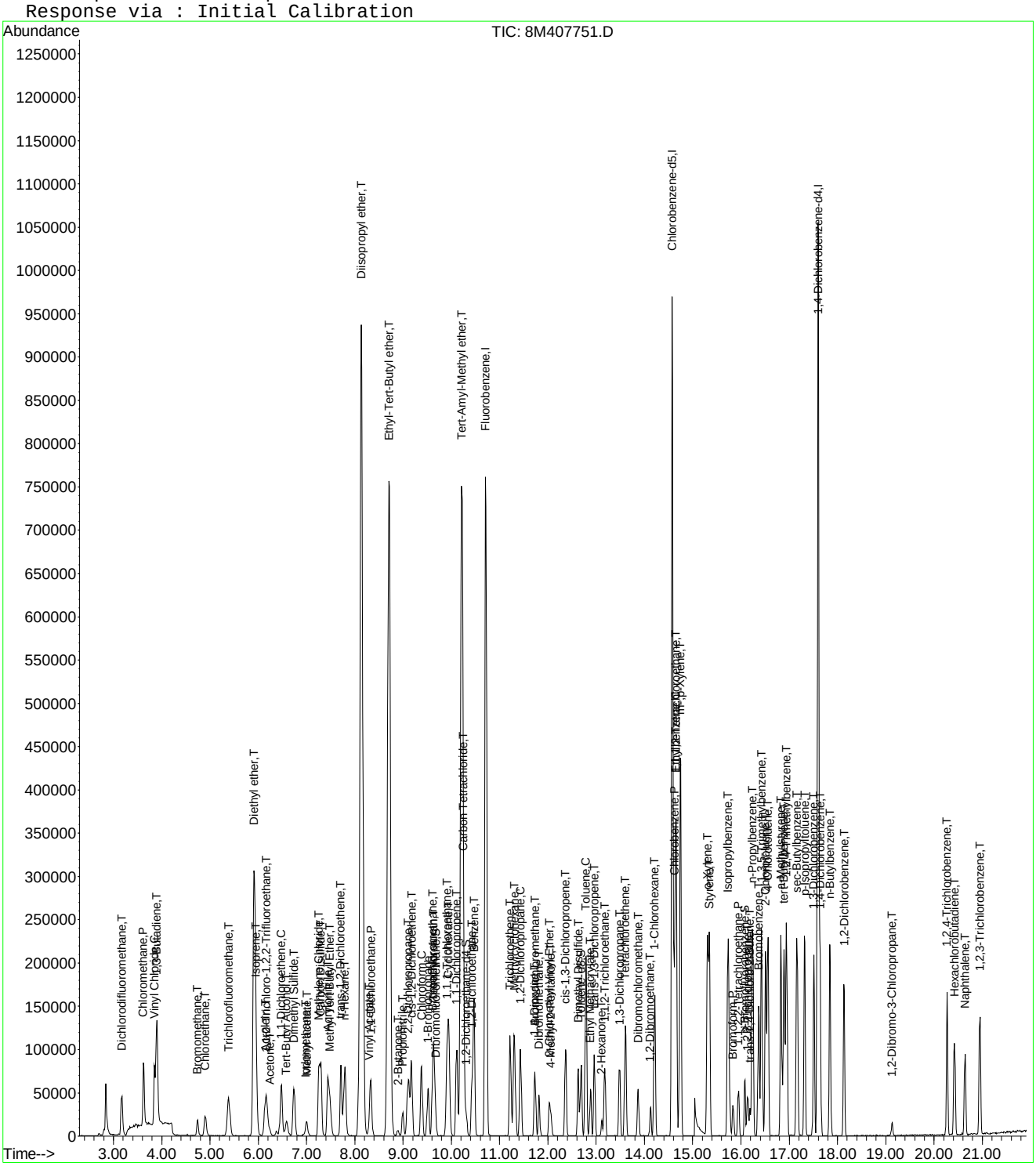

8M407751.D 8260WT.M Thu Oct 01 09:03:00 2015 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\093015\8M407751.D Vial: 7
Acq On : 30 Sep 2015 12:29 Operator: TMB
Sample : WG540912-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.5503	9.0	100	0.00
3	P	Chloromethane	5.0000	5.0607	-1.2	100	0.00
4	C	Vinyl Chloride	5.0000	5.0061	-0.1	100	0.00
5	T	1,3-Butadiene	5.0000	3.6389	27.2#	100	0.01
6	T	Bromomethane	5.0000	3.9647	20.7	100	0.01
7	T	Chloroethane	5.0000	5.0459	-0.9	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.9031	1.9	100	0.00
9	T	Diethyl ether	50.0000	49.6291	0.7	100	0.00
10	T	Isoprene	5.0000	4.6382	7.2	100	0.00
11	T	Acrolein	25.0000	24.4317	2.3	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.9550	0.9	100	0.01
13	T	Acetone	5.0000	5.1511	-3.0	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.9071	1.9	100	0.01
15	T	Tert-Butyl Alcohol	100.0000	102.4118	-2.4	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.8120	3.8	100	0.00
17	T	Iodomethane	5.0000	4.3281	13.4	100	0.00
18	T	Methyl acetate	5.0000	5.2931	-5.9	100	0.00
19	T	Methylene Chloride	5.0000	4.9083	1.8	100	0.00
20	T	Carbon Disulfide	5.0000	4.8658	2.7	100	0.00
21	T	Acrylonitrile	25.0000	23.3129	6.7	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	5.0184	-0.4	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.9126	1.7	100	0.00
24	T	n-Hexane	5.0000	4.8769	2.5	100	0.00
25	T	Diisopropyl ether	50.0000	50.8397	-1.7	100	0.00
26	T	Vinyl Acetate	5.0000	5.2454	-4.9	100	0.00
27	P	1,1-Dichloroethane	5.0000	5.0094	-0.2	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	50.5651	-1.1	100	0.00
29	T	2-Butanone	5.0000	4.7939	4.1	100	0.00
30	T	Propionitrile	50.0000	50.3101	-0.6	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.8868	2.3	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.9417	1.2	100	0.00
33	C	Chloroform	5.0000	5.0114	-0.2	100	0.00
34		1-Bromopropane	5.0000	5.0194	-0.4	100	0.00
35	T	Bromochloromethane	5.0000	5.0366	-0.7	100	0.00
36	T	Tetrahydrofuran	50.0000	49.0254	1.9	100	0.00
37	S	Dibromofluoromethane	2.5000	2.4754	1.0	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.9576	0.8	100	0.00
39	T	Cyclohexane	5.0000	4.7361	5.3	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.9139	1.7	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	49.9837	0.0	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.7194	5.6	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.4207	3.2	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	5.0000	5.0193	-0.4	100	0.00
46	T	Benzene	5.0000	5.1385	-2.8	100	0.00
47	T	Trichloroethene	5.0000	4.6746	6.5	100	0.00
48	T	Methylcyclohexane	5.0000	4.9318	1.4	100	0.00
49	C	1,2-Dichloropropane	5.0000	5.0009	-0.0	100	0.00
50	T	Bromodichloromethane	5.0000	4.8112	3.8	100	0.00
51	T	1,4-Dioxane	100.0000	88.4965	11.5	100	0.00
52	T	Dibromomethane	5.0000	5.1382	-2.8	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.5557	8.9	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.5309	9.4	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\093015\8M407751.D Vial: 7
Acq On : 30 Sep 2015 12:29 Operator: TMB
Sample : WG540912-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.7938	4.1	100	0.00
56	T	Dimethyl Disulfide	5.0000	3.8546	22.9	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.4637	1.5	100	0.00
59	C	Toluene	5.0000	5.1455	-2.9	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.8502	3.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	5.0000	4.9306	1.4	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	5.1568	-3.1	100	0.00
64	T	2-Hexanone	5.0000	4.3668	12.7	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.9522	1.0	100	0.00
66	T	Tetrachloroethene	5.0000	4.9192	1.6	100	0.00
67	T	Dibromochloromethane	5.0000	4.8844	2.3	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.9874	0.3	100	0.00
69	T	1-Chlorohexane	5.0000	4.8843	2.3	100	0.00
70	P	Chlorobenzene	5.0000	4.9566	0.9	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.8127	3.7	100	0.00
72	C	Ethylbenzene	5.0000	4.6762	6.5	100	0.00
73	T	m-,p-Xylene	10.0000	10.3668	-3.7	100	0.00
74	T	o-Xylene	5.0000	4.7276	5.4	100	0.00
75	T	Styrene	5.0000	5.2929	-5.9	100	0.00
76	P	Bromoform	5.0000	4.6852	6.3	100	0.00
77	T	Isopropylbenzene	5.0000	5.1551	-3.1	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	5.2257	-4.5	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.4677	1.3	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.0053	-0.1	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.6777	6.4	100	0.00
83	T	n-Propylbenzene	5.0000	5.2887	-5.8	100	0.00
84	T	Bromobenzene	5.0000	4.9881	0.2	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	5.2579	-5.2	100	0.00
86	T	2-Chlorotoluene	5.0000	5.4620	-9.2	100	0.00
87	T	4-Chlorotoluene	5.0000	5.0056	-0.1	100	0.00
88	T	a-Methylstyrene	5.0000	4.8234	3.5	100	0.00
89	T	tert-Butylbenzene	5.0000	4.8098	3.8	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.3725	-7.4	100	0.00
91	T	sec-Butylbenzene	5.0000	5.1796	-3.6	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.3233	-6.5	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	5.1783	-3.6	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	5.1513	-3.0	100	0.00
95	T	n-Butylbenzene	5.0000	5.3206	-6.4	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	5.1612	-3.2	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	4.6382	7.2	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	5.1043	-2.1	100	0.00
99	T	Hexachlorobutadiene	5.0000	5.0001	-0.0	100	0.00
100	T	Naphthalene	5.0000	5.0789	-1.6	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	5.0798	-1.6	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M407751.D 8260WT.M Thu Oct 01 09:04:04 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407752.D Vial: 8
Acq On : 30 Sep 2015 12:58 Operator: TMB
Sample : WG540912-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:03:00 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	900838	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	664231	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	361897	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	87806	10.2414 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 40.96%#		
43) 1,2-Dichloroethane-d4	10.30	65	90496	10.3525 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 41.40%#		
58) Toluene-d8	12.69	98	320320	10.3936 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 41.56%#		
80) p-Bromofluorobenzene	16.08	95	129852	10.2836 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 41.12%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	307188	22.4300 ug/L	99
3) Chloromethane	3.63	50	446213	21.3523 ug/L	99
4) Vinyl Chloride	3.86	62	351710	21.2978 ug/L	98
5) 1,3-Butadiene	3.90	54	312471	26.3405 ug/L	96
6) Bromomethane	4.74	94	92181	17.1959 ug/L	100
7) Chloroethane	4.90	64	145908	21.6572 ug/L	98
8) Trichlorofluoromethane	5.39	101	327782	20.5367 ug/L	97
9) Diethyl ether	5.91	59	471725	76.7890 ug/L	99
10) Isoprene	5.95	67	245212	20.9264 ug/L	96
11) Acrolein	6.15	56	28707	37.6537 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	175903	20.5024 ug/L	100
13) Acetone	6.24	43	26318	19.6832 ug/L	99
14) 1,1-Dichloroethene	6.48	61	293960	20.1277 ug/L	100
15) Tert-Butyl Alcohol	6.58	59	64085	162.2088 ug/L	99
16) Dimethyl Sulfide	6.74	62	171747	20.4896 ug/L	98
17) Iodomethane	6.99	142	91383	17.6102 ug/L	97
18) Methyl acetate	7.01	43	99926	19.7631 ug/L	96
19) Methylene Chloride	7.27	84	185506	20.4515 ug/L	98
20) Carbon Disulfide	7.30	76	617002	20.8324 ug/L	99
21) Acrylonitrile	7.44	53	77746	38.7331 ug/L	98
22) Methyl Tert Butyl Ether	7.48	73	349527	20.3278 ug/L	99
23) trans-1,2-Dichloroethene	7.71	61	284568	20.5178 ug/L	100
24) n-Hexane	7.79	57	277423	20.2485 ug/L	95
25) Diisopropyl ether	8.13	45	2727543	79.7774 ug/L	99
26) Vinyl Acetate	8.30	43	188420	20.7360 ug/L	99
27) 1,1-Dichloroethane	8.33	63	358235	20.3401 ug/L	98
28) Ethyl-Tert-Butyl ether	8.71	59	2135457	79.2983 ug/L	97
29) 2-Butanone	8.89	43	45574	19.7838 ug/L	99
30) Propionitrile	8.99	54	55835	82.6068 ug/L	99
31) 2,2-Dichloropropane	9.11	77	303356	20.6097 ug/L	100
32) cis-1,2-Dichloroethene	9.18	96	200218	20.2328 ug/L	99
33) Chloroform	9.38	83	343682	20.5429 ug/L	100
34) 1-Bromopropane	9.52	122	34243	21.0727 ug/L	96
35) Bromochloromethane	9.61	130	99523	20.4300 ug/L	98
36) Tetrahydrofuran	9.63	42	116173	76.8270 ug/L	97
38) 1,1,1-Trichloroethane	9.92	97	311675	20.7543 ug/L	99
39) Cyclohexane	9.94	56	363746	20.3546 ug/L	99
40) 1,1-Dichloropropene	10.11	75	271014	20.9603 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1584402	79.3524 ug/L	99
42) Carbon Tetrachloride	10.25	117	279951	20.8588 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M407752.D 8260WT.M Thu Oct 01 09:03:01 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407752.D Vial: 8
Acq On : 30 Sep 2015 12:58 Operator: TMB
Sample : WG540912-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:03:00 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	239119	20.8138 ug/L		99
46)	Benzene	10.47	78	760303	21.4300 ug/L		100
47)	Trichloroethene	11.21	130	195002	20.4169 ug/L		97
48)	Methylcyclohexane	11.31	83	303425	20.5318 ug/L		99
49)	1,2-Dichloropropane	11.43	63	197896	20.7051 ug/L		96
50)	Bromodichloromethane	11.73	83	257488	20.8717 ug/L		99
51)	1,4-Dioxane	11.72	88	7134	162.1255 ug/L		98
52)	Dibromomethane	11.81	93	95150	20.9065 ug/L		100
53)	2-Chloroethyl Vinyl Ether	12.03	63	78627	19.9589 ug/L		94
54)	4-Methyl-2-Pentanone	12.06	58	39837	19.7122 ug/L		96
55)	cis-1,3-Dichloropropene	12.37	75	286918	20.9506 ug/L		100
56)	Dimethyl Disulfide	12.63	79	136599	18.4979 ug/L		98
59)	Toluene	12.79	91	818164	21.6766 ug/L		99
60)	Ethyl Methacrylate	12.89	69	155537	20.6693 ug/L		93
62)	trans-1,3-Dichloropropene	12.96	75	241309	20.8394 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	122012	20.3666 ug/L		95
64)	2-Hexanone	13.12	58	38289	20.3287 ug/L	#	98
65)	1,3-Dichloropropane	13.49	76	218983	20.4545 ug/L		94
66)	Tetrachloroethene	13.61	164	161585	20.1380 ug/L		98
67)	Dibromochloromethane	13.87	129	161138	20.8040 ug/L		98
68)	1,2-Dibromoethane	14.13	107	123618	20.6684 ug/L		100
69)	1-Chlorohexane	14.21	91	275180	20.3748 ug/L		99
70)	Chlorobenzene	14.62	112	523989	20.7185 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.66	131	193093	20.6487 ug/L		100
72)	Ethylbenzene	14.66	106	298198	20.2403 ug/L		95
73)	m-,p-Xylene	14.75	106	719109	42.5615 ug/L		99
74)	o-Xylene	15.31	106	347392	20.3322 ug/L		98
75)	Styrene	15.35	104	579322	21.4006 ug/L		98
76)	Bromoform	15.83	173	95340	20.4754 ug/L		99
77)	Isopropylbenzene	15.73	105	903868	22.0533 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	141095	21.1321 ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	39490	21.2846 ug/L		63
82)	trans-1,4-Dichloro-2-Buten	16.19	53	50178	20.4511 ug/L	#	61
83)	n-Propylbenzene	16.24	91	1127416	21.5170 ug/L		100
84)	Bromobenzene	16.37	156	221432	20.8188 ug/L		99
85)	1,3,5-Trimethylbenzene	16.42	105	781503	21.6939 ug/L		99
86)	2-Chlorotoluene	16.52	91	761104	21.9308 ug/L		99
87)	4-Chlorotoluene	16.56	91	646199	21.5301 ug/L		100
88)	a-Methylstyrene	16.83	118	407468	20.7481 ug/L		99
89)	tert-Butylbenzene	16.89	134	159496	20.1257 ug/L		95
90)	1,2,4-Trimethylbenzene	16.94	105	796688	21.8854 ug/L		97
91)	sec-Butylbenzene	17.16	105	957105	21.3876 ug/L		98
92)	p-Isopropyltoluene	17.32	119	785233	21.9463 ug/L		97
93)	1,3-Dichlorobenzene	17.51	146	447916	21.0985 ug/L		99
94)	1,4-Dichlorobenzene	17.64	146	435999	20.6235 ug/L		100
95)	n-Butylbenzene	17.84	91	726378	21.7780 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	388938	20.9374 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	24405	20.8579 ug/L		95
98)	1,2,4-Trichlorobenzene	20.27	180	262199	20.5447 ug/L		99
99)	Hexachlorobutadiene	20.42	225	123628	20.2526 ug/L		97
100)	Naphthalene	20.64	128	366056	19.8392 ug/L		98
101)	1,2,3-Trichlorobenzene	20.95	180	225034	20.6772 ug/L		97

(#) = qualifier out of range (m) = manual integration
8M407752.D 8260WT.M Thu Oct 01 09:03:01 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407752.D Vial: 8
Acq On : 30 Sep 2015 12:58 Operator: TMB
Sample : WG540912-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 1 9:03 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration

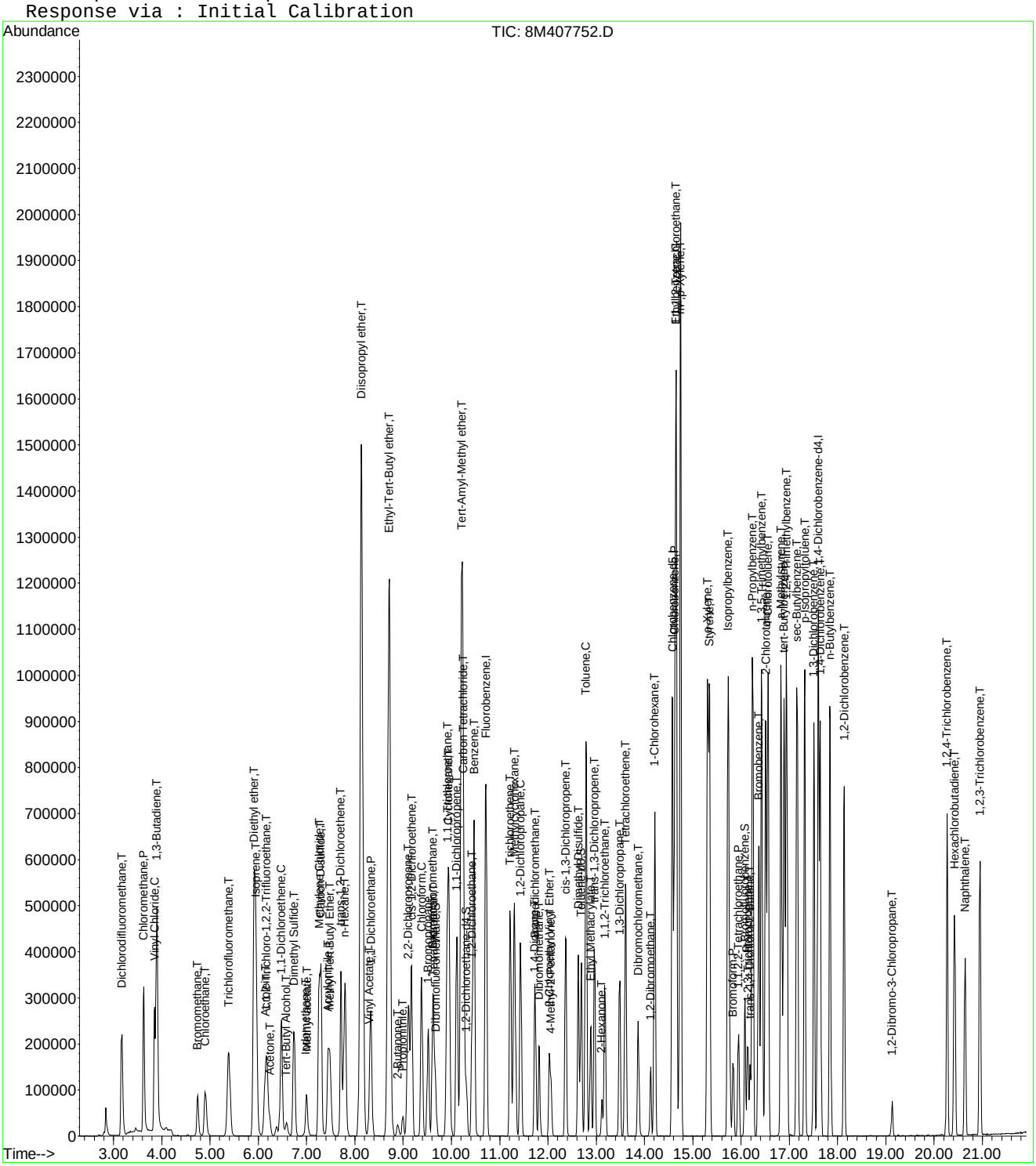

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407753.D Vial: 9
Acq On : 30 Sep 2015 13:27 Operator: TMB
Sample : WG540912-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:03:01 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	938292	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	687265	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	378981	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	224039	25.0881 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.36%		
43) 1,2-Dichloroethane-d4	10.31	65	227424	24.9781 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.92%		
58) Toluene-d8	12.69	98	816431	25.6033 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.40%		
80) p-Bromofluorobenzene	16.08	95	330422	24.9880 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.96%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	734220	51.4707 ug/L	99
3) Chloromethane	3.63	50	1087458	49.9602 ug/L	99
4) Vinyl Chloride	3.84	62	796347	46.2979 ug/L	100
5) 1,3-Butadiene	3.88	54	593404	53.0036 ug/L	96
6) Bromomethane	4.74	94	267289	45.6614 ug/L	98
7) Chloroethane	4.90	64	355876	50.7142 ug/L	98
8) Trichlorofluoromethane	5.38	101	803416	48.3275 ug/L	98
9) Diethyl ether	5.91	59	614294	96.0052 ug/L	99
10) Isoprene	5.95	67	649397	53.2074 ug/L	96
11) Acrolein	6.15	56	37091	46.7086 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	436438	48.8386 ug/L	100
13) Acetone	6.25	43	62565	44.9246 ug/L	98
14) 1,1-Dichloroethene	6.47	61	726859	47.7821 ug/L	100
15) Tert-Butyl Alcohol	6.59	59	74384	180.7617 ug/L	100
16) Dimethyl Sulfide	6.74	62	442407	50.6728 ug/L	100
17) Iodomethane	7.00	142	280116	48.2985 ug/L	94
18) Methyl acetate	7.01	43	238696	45.3243 ug/L	98
19) Methylene Chloride	7.26	84	457295	48.4030 ug/L	97
20) Carbon Disulfide	7.30	76	1581063	51.2521 ug/L	100
21) Acrylonitrile	7.44	53	103250	49.3859 ug/L	97
22) Methyl Tert Butyl Ether	7.48	73	870767	48.6206 ug/L	98
23) trans-1,2-Dichloroethene	7.71	61	720460	49.8727 ug/L	100
24) n-Hexane	7.79	57	728359	51.0392 ug/L	95
25) Diisopropyl ether	8.13	45	3555432	99.8411 ug/L	99
26) Vinyl Acetate	8.31	43	475013	50.1894 ug/L	99
27) 1,1-Dichloroethane	8.33	63	895300	48.8047 ug/L	98
28) Ethyl-Tert-Butyl ether	8.71	59	2771592	98.8123 ug/L	97
29) 2-Butanone	8.89	43	110691	46.1332 ug/L	100
30) Propionitrile	8.99	54	66254	94.1088 ug/L	99
31) 2,2-Dichloropropane	9.10	77	756513	49.3451 ug/L	100
32) cis-1,2-Dichloroethene	9.18	96	504047	48.9027 ug/L	99
33) Chloroform	9.38	83	862577	49.5006 ug/L	99
34) 1-Bromopropane	9.52	122	89544	52.9047 ug/L	98
35) Bromochloromethane	9.61	130	254810	50.2191 ug/L	97
36) Tetrahydrofuran	9.64	42	144978	92.0491 ug/L	97
38) 1,1,1-Trichloroethane	9.91	97	787445	50.3425 ug/L	98
39) Cyclohexane	9.94	56	942520	50.6365 ug/L	99
40) 1,1-Dichloropropene	10.11	75	670931	49.8186 ug/L	99
41) Tert-Amyl-Methyl ether	10.22	73	2024717	97.3571 ug/L	98
42) Carbon Tetrachloride	10.25	117	709220	50.7337 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M407753.D 8260WT.M Thu Oct 01 09:03:02 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407753.D Vial: 9
Acq On : 30 Sep 2015 13:27 Operator: TMB
Sample : WG540912-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:03:01 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	598223	49.9929 ug/L		99
46)	Benzene	10.47	78	1893240	51.2329 ug/L		100
47)	Trichloroethene	11.22	130	485477	48.8010 ug/L		96
48)	Methylcyclohexane	11.31	83	782615	50.8431 ug/L		98
49)	1,2-Dichloropropane	11.43	63	493718	49.5940 ug/L		96
50)	Bromodichloromethane	11.73	83	652718	50.7966 ug/L		100
51)	1,4-Dioxane	11.72	88	8670	189.1673 ug/L		94
52)	Dibromomethane	11.81	93	235258	49.6278 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.03	63	194118	47.3085 ug/L		95
54)	4-Methyl-2-Pentanone	12.06	58	96161	45.6831 ug/L		98
55)	cis-1,3-Dichloropropene	12.37	75	727126	50.9750 ug/L		100
56)	Dimethyl Disulfide	12.63	79	379036	49.2792 ug/L		99
59)	Toluene	12.78	91	1987253	50.8860 ug/L		100
60)	Ethyl Methacrylate	12.89	69	390916	50.2077 ug/L		94
62)	trans-1,3-Dichloropropene	12.96	75	608665	50.8025 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	299502	48.3182 ug/L		97
64)	2-Hexanone	13.11	58	89700	46.0281 ug/L	#	93
65)	1,3-Dichloropropane	13.49	76	534461	48.2492 ug/L		93
66)	Tetrachloroethene	13.61	164	405188	48.8054 ug/L		99
67)	Dibromochloromethane	13.87	129	402200	50.1864 ug/L		100
68)	1,2-Dibromoethane	14.13	107	302616	48.9002 ug/L		99
69)	1-Chlorohexane	14.21	91	715689	51.2148 ug/L		99
70)	Chlorobenzene	14.62	112	1313794	50.2063 ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.65	131	492148	50.8647 ug/L		98
72)	Ethylbenzene	14.65	106	747123	49.0115 ug/L		93
73)	m-,p-Xylene	14.75	106	1803271	103.1521 ug/L		96
74)	o-Xylene	15.31	106	874498	49.4673 ug/L		96
75)	Styrene	15.35	104	1468155	52.4170 ug/L		98
76)	Bromoform	15.83	173	239681	49.7493 ug/L		99
77)	Isopropylbenzene	15.73	105	2208758	52.0848 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	337508	48.2706 ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	93694	48.2234 ug/L		58
82)	trans-1,4-Dichloro-2-Buten	16.18	53	127917	49.7850 ug/L	#	74
83)	n-Propylbenzene	16.24	91	2732764	49.8043 ug/L		99
84)	Bromobenzene	16.37	156	550772	49.4486 ug/L		98
85)	1,3,5-Trimethylbenzene	16.43	105	1956096	51.8518 ug/L		100
86)	2-Chlorotoluene	16.51	91	1847698	50.8405 ug/L		100
87)	4-Chlorotoluene	16.56	91	1636735	52.0745 ug/L		99
88)	a-Methylstyrene	16.82	118	1062639	51.6698 ug/L		99
89)	tert-Butylbenzene	16.89	134	402620	48.5137 ug/L		95
90)	1,2,4-Trimethylbenzene	16.94	105	1998748	52.4314 ug/L		99
91)	sec-Butylbenzene	17.16	105	2351971	50.1881 ug/L		97
92)	p-Isopropyltoluene	17.32	119	1971230	52.6100 ug/L		96
93)	1,3-Dichlorobenzene	17.51	146	1112381	50.0352 ug/L		99
94)	1,4-Dichlorobenzene	17.64	146	1089923	49.2313 ug/L		99
95)	n-Butylbenzene	17.85	91	1881534	53.8685 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	962067	49.4555 ug/L		100
97)	1,2-Dibromo-3-Chloropropan	19.13	75	59325	48.4169 ug/L		96
98)	1,2,4-Trichlorobenzene	20.28	180	685856	51.3179 ug/L		99
99)	Hexachlorobutadiene	20.42	225	316117	49.4515 ug/L		99
100)	Naphthalene	20.64	128	945131	48.9144 ug/L		99
101)	1,2,3-Trichlorobenzene	20.95	180	577810	50.6987 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M407753.D 8260WT.M Thu Oct 01 09:03:02 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407753.D Vial: 9
Acq On : 30 Sep 2015 13:27 Operator: TMB
Sample : WG540912-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 1 9:03 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration

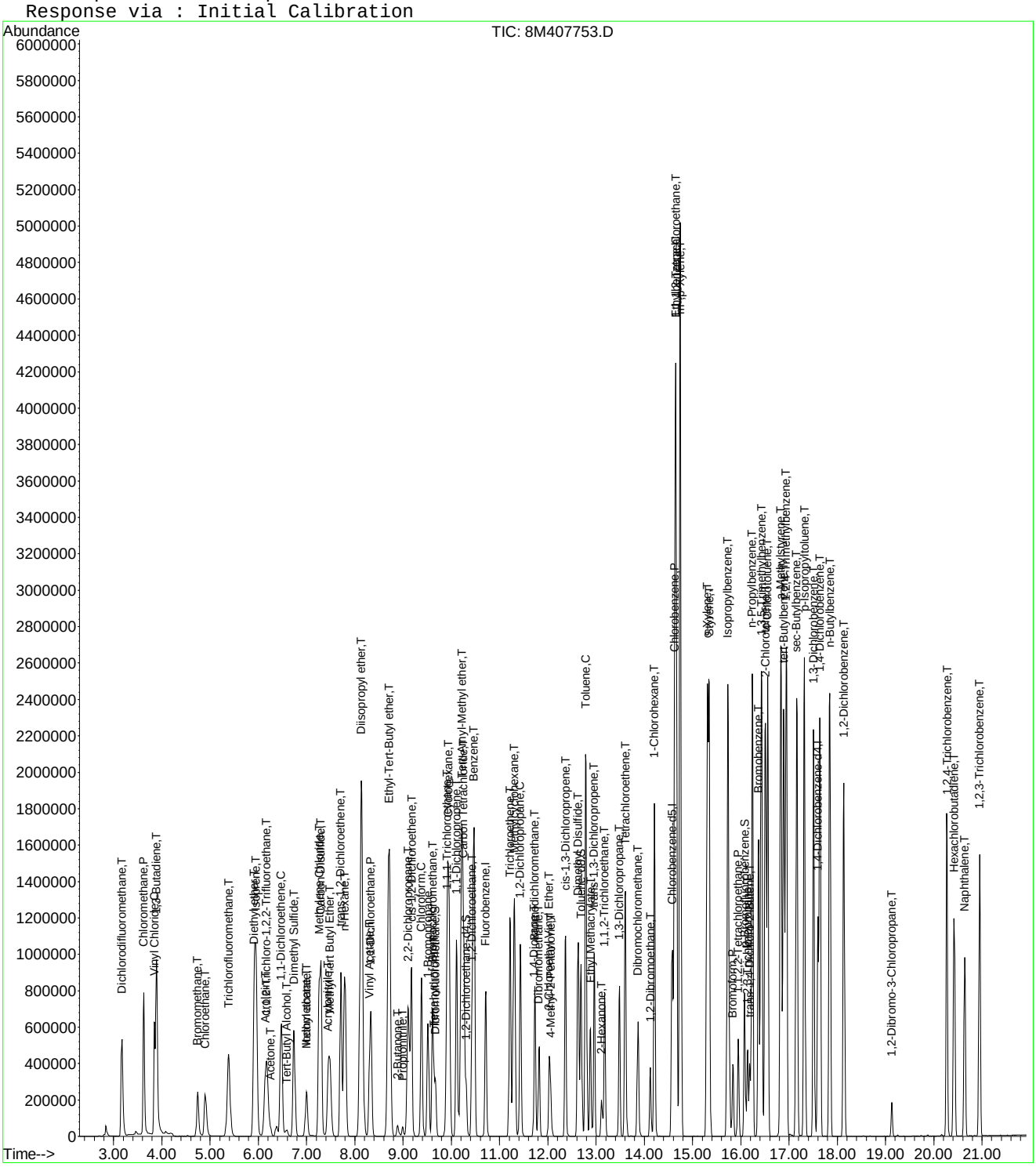

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407754.D Vial: 10
Acq On : 30 Sep 2015 13:56 Operator: TMB
Sample : WG540912-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:03:03 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	999044	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	721896	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	401543	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	492634	51.8109 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 207.24%#		
43) 1,2-Dichloroethane-d4	10.31	65	502331	51.8164 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 207.28%#		
58) Toluene-d8	12.69	98	1777410	53.0657 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 212.28%#		
80) p-Bromofluorobenzene	16.08	95	722720	51.5844 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 206.32%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	1648287	108.5226 ug/L	99
3) Chloromethane	3.63	50	2312431	99.7777 ug/L	98
4) Vinyl Chloride	3.84	62	1625053	88.7319 ug/L	99
5) 1,3-Butadiene	3.89	54	991629	90.8465 ug/L	91
6) Bromomethane	4.74	94	694277	105.6792 ug/L	99
7) Chloroethane	4.90	64	792001	106.0011 ug/L	98
8) Trichlorofluoromethane	5.38	101	1823452	103.0152 ug/L	99
9) Diethyl ether	5.91	59	1404955	206.2217 ug/L	99
10) Isoprene	5.95	67	1448354	111.4525 ug/L	95
11) Acrolein	6.15	56	85817	101.4974 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	1002514	105.3622 ug/L	99
13) Acetone	6.25	43	134519	90.7172 ug/L	96
14) 1,1-Dichloroethene	6.48	61	1674359	103.3754 ug/L	100
15) Tert-Butyl Alcohol	6.59	59	170829	389.8897 ug/L	98
16) Dimethyl Sulfide	6.74	62	987415	106.2200 ug/L	99
17) Iodomethane	7.00	142	688771	109.1615 ug/L	94
18) Methyl acetate	7.01	43	547190	97.5838 ug/L	98
19) Methylene Chloride	7.27	84	1012557	100.6582 ug/L	98
20) Carbon Disulfide	7.30	76	3453967	105.1559 ug/L	99
21) Acrylonitrile	7.44	53	233747	105.0056 ug/L	100
22) Methyl Tert Butyl Ether	7.47	73	1985878	104.1417 ug/L	99
23) trans-1,2-Dichloroethene	7.71	61	1633107	106.1748 ug/L	100
24) n-Hexane	7.79	57	1613498	106.1891 ug/L	96
25) Diisopropyl ether	8.13	45	7594269	200.2886 ug/L	96
26) Vinyl Acetate	8.31	43	1012138	100.4384 ug/L	99
27) 1,1-Dichloroethane	8.33	63	2013235	103.0722 ug/L	98
28) Ethyl-Tert-Butyl ether	8.71	59	6110510	204.6032 ug/L	99
29) 2-Butanone	8.89	43	258564	101.2099 ug/L	99
30) Propionitrile	8.99	54	152397	203.3049 ug/L	100
31) 2,2-Dichloropropane	9.11	77	1712102	104.8844 ug/L	100
32) cis-1,2-Dichloroethene	9.18	96	1120623	102.1115 ug/L	99
33) Chloroform	9.38	83	1894369	102.1012 ug/L	98
34) 1-Bromopropane	9.52	122	192894	107.0360 ug/L	100
35) Bromochloromethane	9.61	130	566755	104.9063 ug/L	99
36) Tetrahydrofuran	9.64	42	322938	192.5707 ug/L	97
38) 1,1,1-Trichloroethane	9.91	97	1794082	107.7235 ug/L	98
39) Cyclohexane	9.94	56	2109904	106.4606 ug/L	99
40) 1,1-Dichloropropene	10.11	75	1527222	106.5049 ug/L	99
41) Tert-Amyl-Methyl ether	10.22	73	4505369	203.4638 ug/L	97
42) Carbon Tetrachloride	10.25	117	1635708	109.8941 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407754.D Vial: 10
Acq On : 30 Sep 2015 13:56 Operator: TMB
Sample : WG540912-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:03:03 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	1351252	106.0560 ug/L		99
46)	Benzene	10.47	78	4063079	103.2647 ug/L		97
47)	Trichloroethene	11.22	130	1102366	104.0732 ug/L		97
48)	Methylcyclohexane	11.31	83	1719853	104.9371 ug/L		98
49)	1,2-Dichloropropane	11.43	63	1111363	104.8478 ug/L		95
50)	Bromodichloromethane	11.73	83	1456240	106.4376 ug/L		99
51)	1,4-Dioxane	11.72	88	18255	374.0781 ug/L		91
52)	Dibromomethane	11.81	93	520924	103.2069 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	448768	102.7186 ug/L		95
54)	4-Methyl-2-Pentanone	12.06	58	225734	100.7179 ug/L		97
55)	cis-1,3-Dichloropropene	12.37	75	1616749	106.4496 ug/L		98
56)	Dimethyl Disulfide	12.63	79	880541	107.5192 ug/L		97
59)	Toluene	12.78	91	4231266	103.1491 ug/L		97
60)	Ethyl Methacrylate	12.89	69	900291	110.0828 ug/L		96
62)	trans-1,3-Dichloropropene	12.96	75	1369595	108.8301 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	676060	103.8356 ug/L		97
64)	2-Hexanone	13.12	58	211271	103.2096 ug/L	#	95
65)	1,3-Dichloropropane	13.49	76	1205913	103.6429 ug/L		95
66)	Tetrachloroethene	13.61	164	922464	105.7816 ug/L		99
67)	Dibromochloromethane	13.87	129	918991	109.1703 ug/L		99
68)	1,2-Dibromoethane	14.13	107	679902	104.5960 ug/L		100
69)	1-Chlorohexane	14.21	91	1557671	106.1199 ug/L		97
70)	Chlorobenzene	14.62	112	2925423	106.4313 ug/L		94
71)	1,1,1,2-Tetrachloroethane	14.66	131	1162122	114.3464 ug/L		98
72)	Ethylbenzene	14.66	106	1738524	108.5766 ug/L		82
73)	m-,p-Xylene	14.75	106	3972122	216.3163 ug/L		80
74)	o-Xylene	15.31	106	1940782	104.5168 ug/L		92
75)	Styrene	15.35	104	3215522	109.2953 ug/L		94
76)	Bromoform	15.83	173	556496	109.9676 ug/L		98
77)	Isopropylbenzene	15.73	105	4665259	104.7341 ug/L		95
79)	1,1,2,2-Tetrachloroethane	15.95	83	740784	99.9945 ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	210912	102.4550 ug/L		61
82)	trans-1,4-Dichloro-2-Buten	16.18	53	295589	108.5784 ug/L	#	72
83)	n-Propylbenzene	16.24	91	5511450	94.8017 ug/L		93
84)	Bromobenzene	16.37	156	1216625	103.0918 ug/L		97
85)	1,3,5-Trimethylbenzene	16.42	105	4130512	103.3387 ug/L		97
86)	2-Chlorotoluene	16.52	91	3894393	101.1355 ug/L		97
87)	4-Chlorotoluene	16.56	91	3405729	102.2686 ug/L		96
88)	a-Methylstyrene	16.83	118	2308871	105.9586 ug/L		99
89)	tert-Butylbenzene	16.89	134	915158	104.0760 ug/L		89
90)	1,2,4-Trimethylbenzene	16.94	105	4211193	104.2614 ug/L		97
91)	sec-Butylbenzene	17.16	105	4897753	98.6396 ug/L		93
92)	p-Isopropyltoluene	17.32	119	4206090	105.9486 ug/L		92
93)	1,3-Dichlorobenzene	17.51	146	2401799	101.9634 ug/L		97
94)	1,4-Dichlorobenzene	17.64	146	2352221	100.2787 ug/L		99
95)	n-Butylbenzene	17.84	91	3998669	108.0497 ug/L		94
96)	1,2-Dichlorobenzene	18.14	146	2098195	101.7983 ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.13	75	133354	102.7190 ug/L		98
98)	1,2,4-Trichlorobenzene	20.27	180	1521471	107.4447 ug/L		99
99)	Hexachlorobutadiene	20.42	225	710580	104.9132 ug/L		99
100)	Naphthalene	20.64	128	2043864	99.8347 ug/L		100
101)	1,2,3-Trichlorobenzene	20.95	180	1268996	105.0890 ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407754.D Vial: 10
Acq On : 30 Sep 2015 13:56 Operator: TMB
Sample : WG540912-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 1 9:03 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration

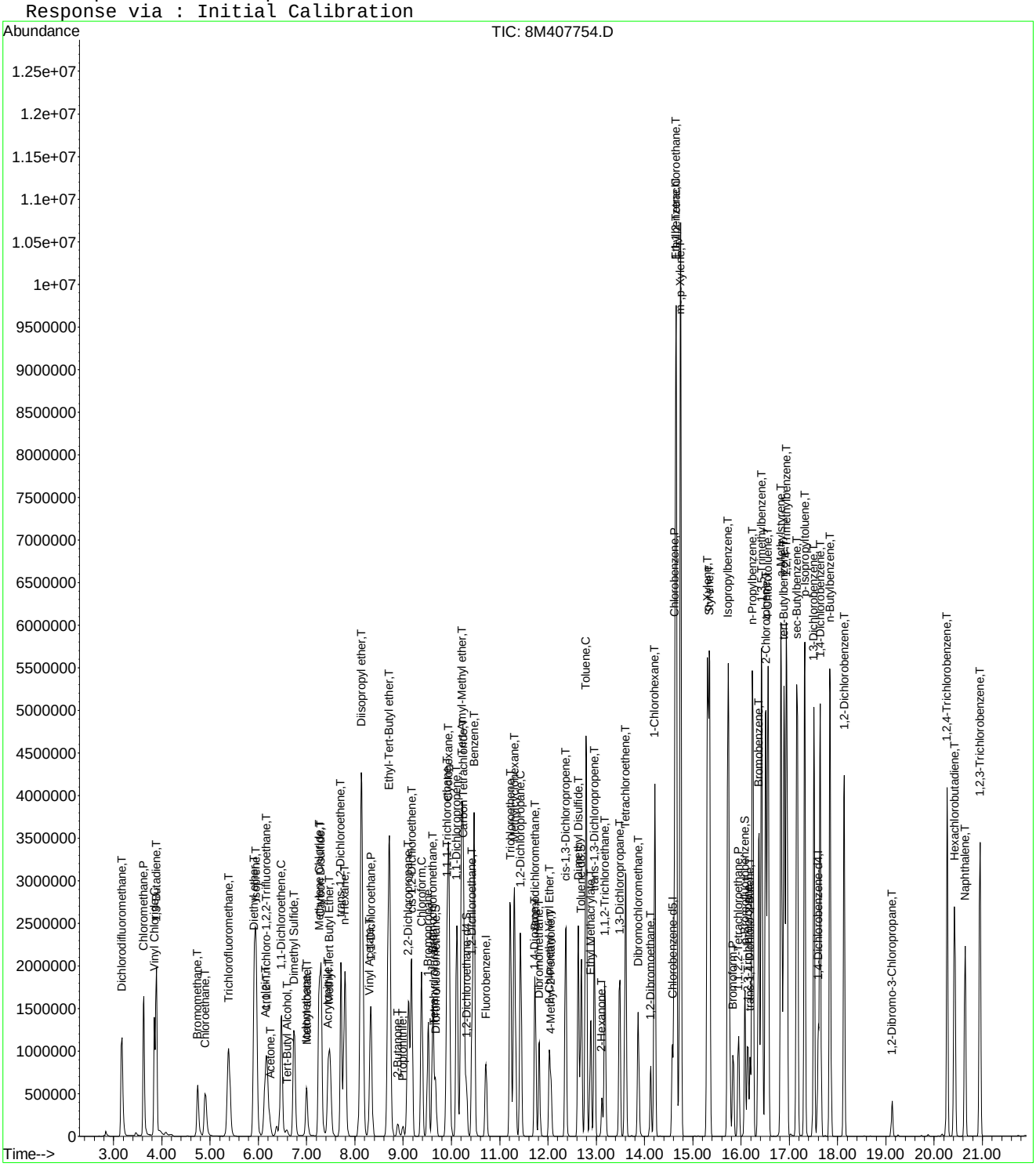

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407755.D Vial: 11
Acq On : 30 Sep 2015 14:24 Operator: TMB
Sample : WG540912-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:03:04 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	1019915	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	757249	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	423760	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.68	111	997322	102.7432 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 410.96%#		
43) 1,2-Dichloroethane-d4	10.31	65	1027552	103.8249 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 415.28%#		
58) Toluene-d8	12.69	98	3420899	97.3650 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 389.44%#		
80) p-Bromofluorobenzene	16.07	95	1495937	101.1751 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 404.72%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	3073735	198.2323 ug/L	96
3) Chloromethane	3.62	50	4198667	177.4585 ug/L	96
4) Vinyl Chloride	3.85	62	2900469	155.1319 ug/L	97
5) 1,3-Butadiene	3.89	54	1696169	185.8080 ug/L	90
6) Bromomethane	4.74	94	1490093	206.5308 ug/L	97
7) Chloroethane	4.90	64	1580424	207.1948 ug/L	98
8) Trichlorofluoromethane	5.39	101	3602432	199.3532 ug/L	99
9) Diethyl ether	5.90	59	1289	0.1853 ug/L #	45
10) Isoprene	5.94	67	2777274	209.3410 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	1952371	200.9914 ug/L	100
13) Acetone	6.24	43	341749	225.7531 ug/L	96
14) 1,1-Dichloroethene	6.47	61	3369596	203.7826 ug/L	100
16) Dimethyl Sulfide	6.74	62	2052730	216.3013 ug/L	100
17) Iodomethane	7.00	142	1342604	206.7806 ug/L	96
18) Methyl acetate	7.01	43	1189139	207.7270 ug/L	100
19) Methylene Chloride	7.26	84	2095681	204.0683 ug/L	97
20) Carbon Disulfide	7.30	76	6585198	196.3835 ug/L	97
21) Acrylonitrile	7.47	53	48336	21.2695 ug/L #	34
22) Methyl Tert Butyl Ether	7.47	73	4193880	215.4313 ug/L	100
23) trans-1,2-Dichloroethene	7.71	61	3271432	208.3365 ug/L	100
24) n-Hexane	7.79	57	3062998	197.4599 ug/L	95
26) Vinyl Acetate	8.30	43	2151883	209.1701 ug/L	100
27) 1,1-Dichloroethane	8.33	63	4045048	202.8576 ug/L	96
29) 2-Butanone	8.89	43	549079	210.5282 ug/L	99
30) Propionitrile	8.90	54	1482	1.9366 ug/L	86
31) 2,2-Dichloropropane	9.11	77	3379783	202.8106 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	2289136	204.3184 ug/L	99
33) Chloroform	9.39	83	3770537	199.0628 ug/L	97
34) 1-Bromopropane	9.52	122	377992	205.4540 ug/L	100
35) Bromochloromethane	9.61	130	1167712	211.7204 ug/L	99
36) Tetrahydrofuran	9.64	42	2035	1.1887 ug/L #	40
38) 1,1,1-Trichloroethane	9.91	97	3554199	209.0406 ug/L	100
39) Cyclohexane	9.94	56	4130086	204.1295 ug/L	98
40) 1,1-Dichloropropene	10.11	75	2986535	204.0119 ug/L	99
42) Carbon Tetrachloride	10.25	117	3135755	206.3629 ug/L	100
45) 1,2-Dichloroethane	10.43	62	2808454	215.9170 ug/L	98
46) Benzene	10.47	78	7375672	183.6195 ug/L	90
47) Trichloroethene	11.22	130	2161282	199.8689 ug/L	98
48) Methylcyclohexane	11.31	83	3284260	196.2889 ug/L	97
49) 1,2-Dichloropropane	11.43	63	2280795	210.7707 ug/L	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407755.D Vial: 11
Acq On : 30 Sep 2015 14:24 Operator: TMB
Sample : WG540912-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:03:04 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
50)	Bromodichloromethane	11.73	83	2976618	213.1111 ug/L		98
51)	1,4-Dioxane	11.72	88	4118	82.6585 ug/L	#	10
52)	Dibromomethane	11.81	93	1102889	214.0359 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.03	63	934357	209.4887 ug/L		96
54)	4-Methyl-2-Pentanone	12.06	58	490003	214.1554 ug/L		98
55)	cis-1,3-Dichloropropene	12.36	75	3292430	212.3433 ug/L		96
56)	Dimethyl Disulfide	12.63	79	1896563	226.8424 ug/L		92
59)	Toluene	12.79	91	7427590	172.6151 ug/L		89
60)	Ethyl Methacrylate	12.88	69	1925828	224.4865 ug/L		95
62)	trans-1,3-Dichloropropene	12.96	75	2848227	215.7582 ug/L		97
63)	1,1,2-Trichloroethane	13.18	97	1435328	210.1590 ug/L		97
64)	2-Hexanone	13.12	58	462088	215.1992 ug/L	#	97
65)	1,3-Dichloropropane	13.49	76	2491344	204.1236 ug/L		92
66)	Tetrachloroethene	13.61	164	1859849	203.3173 ug/L		98
67)	Dibromochloromethane	13.87	129	1962613	222.2613 ug/L		98
68)	1,2-Dibromoethane	14.13	107	1449499	212.5800 ug/L		100
69)	1-Chlorohexane	14.21	91	3025747	196.5123 ug/L		95
70)	Chlorobenzene	14.63	112	5662002	196.3752 ug/L		88
71)	1,1,1,2-Tetrachloroethane	14.66	131	2482321	232.8437 ug/L		97
72)	Ethylbenzene	14.66	106	3652304	217.4495 ug/L		54
73)	m-,p-Xylene	14.75	106	7200744	373.8350 ug/L		60
74)	o-Xylene	15.31	106	4011298	205.9350 ug/L		76
75)	Styrene	15.35	104	6146741	199.1732 ug/L		85
76)	Bromoform	15.84	173	1230396	231.7841 ug/L		99
77)	Isopropylbenzene	15.73	105	8074176	172.8010 ug/L		85
79)	1,1,2,2-Tetrachloroethane	15.95	83	1609027	205.8068 ug/L		98
81)	1,2,3-Trichloropropane	16.15	110	460163	211.8144 ug/L		66
82)	trans-1,4-Dichloro-2-Buten	16.19	53	659628	229.5972 ug/L	#	69
83)	n-Propylbenzene	16.24	91	8929204	145.5375 ug/L	#	79
84)	Bromobenzene	16.37	156	2526645	202.8727 ug/L		99
85)	1,3,5-Trimethylbenzene	16.42	105	7372697	174.7823 ug/L		87
86)	2-Chlorotoluene	16.51	91	7171461	176.4752 ug/L		88
87)	4-Chlorotoluene	16.56	91	5885379	167.4629 ug/L		84
88)	a-Methylstyrene	16.83	118	4628606	201.2793 ug/L		95
89)	tert-Butylbenzene	16.89	134	1937230	208.7602 ug/L		78
90)	1,2,4-Trimethylbenzene	16.94	105	7491629	175.7546 ug/L		84
91)	sec-Butylbenzene	17.16	105	8363908	159.6158 ug/L	#	82
92)	p-Isopropyltoluene	17.32	119	7394359	176.4937 ug/L		81
93)	1,3-Dichlorobenzene	17.51	146	4755218	191.2891 ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	4681127	189.1007 ug/L		94
95)	n-Butylbenzene	17.84	91	7035050	180.1306 ug/L		84
96)	1,2-Dichlorobenzene	18.14	146	4260447	195.8672 ug/L		93
97)	1,2-Dibromo-3-Chloropropan	19.13	75	303791	221.7336 ug/L		98
98)	1,2,4-Trichlorobenzene	20.27	180	3208659	214.7122 ug/L		98
99)	Hexachlorobutadiene	20.42	225	1464137	204.8382 ug/L		98
100)	Naphthalene	20.64	128	4269643	197.6211 ug/L		98
101)	1,2,3-Trichlorobenzene	20.95	180	2712907	212.8844 ug/L		97

(#) = qualifier out of range (m) = manual integration
8M407755.D 8260WT.M Thu Oct 01 09:03:04 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407755.D Vial: 11
Acq On : 30 Sep 2015 14:24 Operator: TMB
Sample : WG540912-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 1 9:03 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration

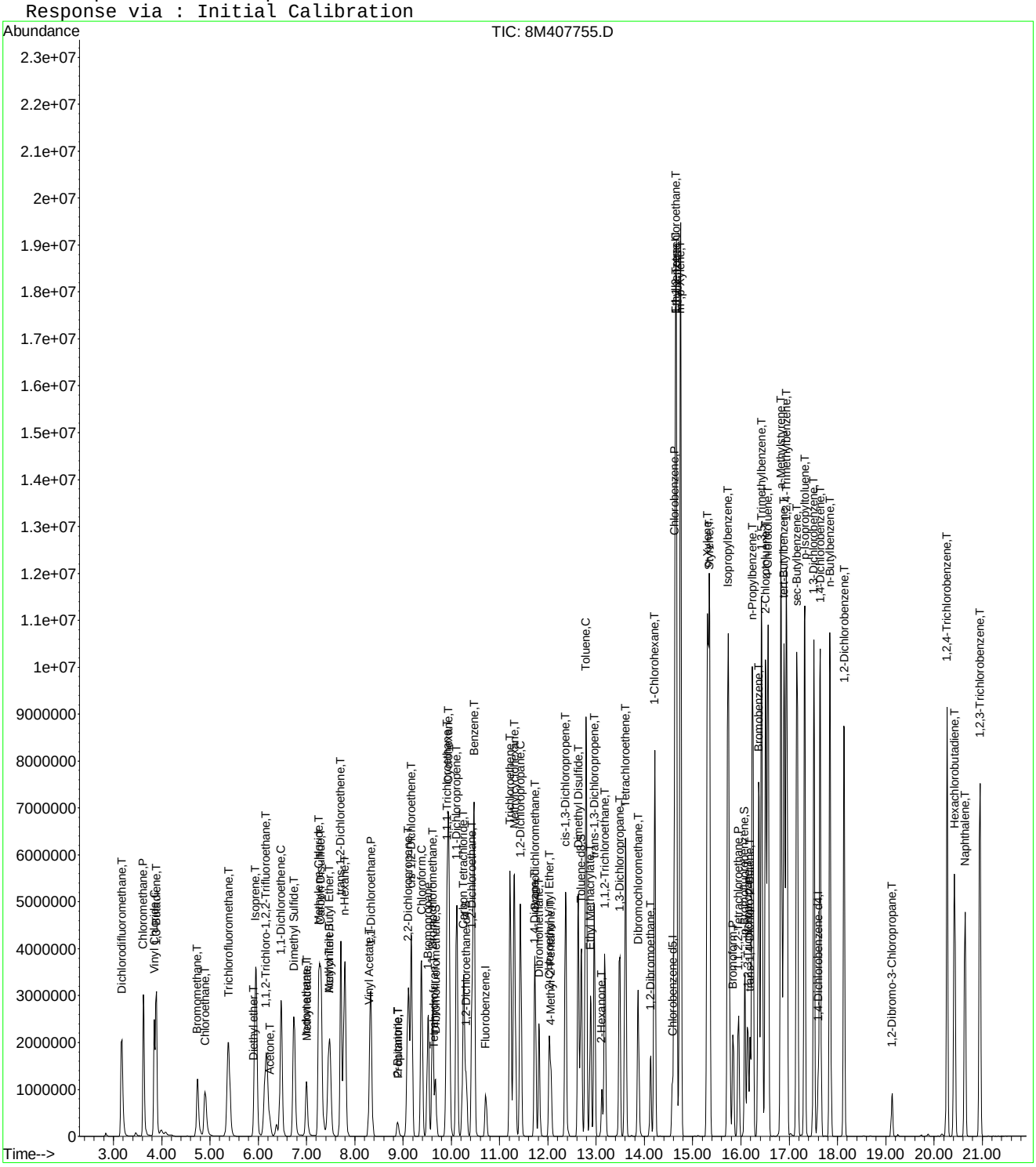

8M407755.D 8260WT.M Thu Oct 01 09:03:05 2015 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407756.D Vial: 12
Acq On : 30 Sep 2015 14:52 Operator: TMB
Sample : WG540912-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:03:05 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	1065746	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	805472	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	452330	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	1515938	149.4546 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 597.80%#		
43) 1,2-Dichloroethane-d4	10.31	65	1566170	151.4422 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 605.76%#		
58) Toluene-d8	12.69	98	5005555	133.9377 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 535.76%#		
80) p-Bromofluorobenzene	16.08	95	2319893	146.9916 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 587.96%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	4453985	274.8952 ug/L	95
3) Chloromethane	3.62	50	5719893	231.3574 ug/L	92
4) Vinyl Chloride	3.84	62	3908072	200.0349 ug/L	95
5) 1,3-Butadiene	3.89	54	2229495	Below Cal	91
6) Bromomethane	4.73	94	2360356	295.2548 ug/L	99
7) Chloroethane	4.90	64	2372692	297.6849 ug/L	98
8) Trichlorofluoromethane	5.38	101	5511756	291.8957 ug/L	100
9) Diethyl ether	5.91	59	2348893	323.1961 ug/L	99
10) Isoprene	5.94	67	4265273	307.6753 ug/L	94
11) Acrolein	6.15	56	155193	172.0618 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	2917906	287.4727 ug/L	100
13) Acetone	6.25	43	498841	315.3544 ug/L	99
14) 1,1-Dichloroethene	6.47	61	4975754	287.9774 ug/L	99
15) Tert-Butyl Alcohol	6.60	59	311443	666.3305 ug/L	98
16) Dimethyl Sulfide	6.74	62	3151512	317.8019 ug/L	99
17) Iodomethane	7.00	142	1961731	288.4192 ug/L	96
18) Methyl acetate	7.01	43	1852436	309.6804 ug/L	99
19) Methylene Chloride	7.26	84	3173784	295.7590 ug/L	95
20) Carbon Disulfide	7.30	76	9459683	269.9747 ug/L	95
21) Acrylonitrile	7.44	53	453204	190.8495 ug/L	94
22) Methyl Tert Butyl Ether	7.47	73	6257021	307.5889 ug/L	99
23) trans-1,2-Dichloroethene	7.71	61	4791642	292.0263 ug/L	98
24) n-Hexane	7.79	57	4581735	282.6652 ug/L	94
25) Diisopropyl ether	8.13	45	11029782	272.6893 ug/L	92
26) Vinyl Acetate	8.30	43	3305041	307.4454 ug/L	100
27) 1,1-Dichloroethane	8.33	63	5933365	284.7599 ug/L	94
28) Ethyl-Tert-Butyl ether	8.71	59	9322882	292.6281 ug/L	98
29) 2-Butanone	8.89	43	870424	319.3865 ug/L	99
30) Propionitrile	9.00	54	267878	334.9959 ug/L	99
31) 2,2-Dichloropropane	9.11	77	4977286	285.8279 ug/L	97
32) cis-1,2-Dichloroethene	9.18	96	3400905	290.4964 ug/L	100
33) Chloroform	9.38	83	5463339	276.0294 ug/L	95
34) 1-Bromopropane	9.52	122	576665	299.9617 ug/L	98
35) Bromochloromethane	9.61	130	1746232	302.9975 ug/L	99
36) Tetrahydrofuran	9.64	42	580129	324.2847 ug/L	97
38) 1,1,1-Trichloroethane	9.91	97	5257764	295.9377 ug/L	99
39) Cyclohexane	9.94	56	6196433	293.0885 ug/L	98
40) 1,1-Dichloropropene	10.11	75	4405096	287.9742 ug/L	97
41) Tert-Amyl-Methyl ether	10.22	73	7256729	307.2053 ug/L	95
42) Carbon Tetrachloride	10.25	117	4725876	297.6336 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407756.D Vial: 12
Acq On : 30 Sep 2015 14:52 Operator: TMB
Sample : WG540912-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:03:05 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	4130044	303.8676 ug/L		98
46)	Benzene	10.47	78	9784739	233.1185 ug/L	#	82
47)	Trichloroethene	11.21	130	3245468	287.2244 ug/L		98
48)	Methylcyclohexane	11.31	83	4927101	281.8124 ug/L		97
49)	1,2-Dichloropropane	11.43	63	3420992	302.5424 ug/L		93
50)	Bromodichloromethane	11.73	83	4386556	300.5501 ug/L		96
51)	1,4-Dioxane	11.72	88	38129	732.4310 ug/L		87
52)	Dibromomethane	11.81	93	1677042	311.4648 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	1496210	321.0337 ug/L		96
54)	4-Methyl-2-Pentanone	12.06	58	800902	334.9808 ug/L		98
55)	cis-1,3-Dichloropropene	12.37	75	4810146	296.8866 ug/L		93
56)	Dimethyl Disulfide	12.63	79	2907112	332.7583 ug/L		89
59)	Toluene	12.79	91	9565632	208.9935 ug/L		81
60)	Ethyl Methacrylate	12.89	69	2969611	325.4322 ug/L		95
62)	trans-1,3-Dichloropropene	12.96	75	4220324	300.5569 ug/L		95
63)	1,1,2-Trichloroethane	13.18	97	2203723	303.3487 ug/L		96
64)	2-Hexanone	13.12	58	741076	324.4643 ug/L	#	97
65)	1,3-Dichloropropane	13.49	76	3741871	288.2282 ug/L		92
66)	Tetrachloroethene	13.61	164	2828983	290.7470 ug/L		99
67)	Dibromochloromethane	13.87	129	3001146	319.5247 ug/L		98
68)	1,2-Dibromoethane	14.13	107	2188511	301.7460 ug/L		99
69)	1-Chlorohexane	14.21	91	4484491	273.8158 ug/L		93
70)	Chlorobenzene	14.63	112	7602943	247.9058 ug/L		81
71)	1,1,1,2-Tetrachloroethane	14.67	131	3693596	325.7198 ug/L		97
72)	Ethylbenzene	14.66	106	5302756	296.8120 ug/L		39
73)	m-,p-Xylene	14.75	106	9232185	450.6043 ug/L		52
74)	o-Xylene	15.31	106	5865525	283.1004 ug/L		63
75)	Styrene	15.35	104	8250991	251.3508 ug/L		76
76)	Bromoform	15.83	173	1942351	343.9970 ug/L		98
77)	Isopropylbenzene	15.73	105	10265255	206.5409 ug/L	#	72
79)	1,1,2,2-Tetrachloroethane	15.95	83	2476655	296.7745 ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	715785	308.6675 ug/L		95
82)	trans-1,4-Dichloro-2-Buten	16.18	53	1036558	338.0069 ug/L		95
83)	n-Propylbenzene	16.24	91	10987624	167.7763 ug/L	#	65
84)	Bromobenzene	16.37	156	3802914	286.0623 ug/L		97
85)	1,3,5-Trimethylbenzene	16.43	105	9451191	209.9047 ug/L		77
86)	2-Chlorotoluene	16.52	91	8779258	202.3943 ug/L	#	76
87)	4-Chlorotoluene	16.56	91	7834256	208.8366 ug/L	#	71
88)	a-Methylstyrene	16.84	118	6616753	269.5618 ug/L		88
89)	tert-Butylbenzene	16.90	134	2982807	301.1315 ug/L		64
90)	1,2,4-Trimethylbenzene	16.95	105	9504140	208.8853 ug/L		71
91)	sec-Butylbenzene	17.17	105	10503392	187.7849 ug/L	#	70
92)	p-Isopropyltoluene	17.32	119	9416903	210.5723 ug/L	#	69
93)	1,3-Dichlorobenzene	17.52	146	6583121	248.0939 ug/L		85
94)	1,4-Dichlorobenzene	17.64	146	6449422	244.0777 ug/L		86
95)	n-Butylbenzene	17.85	91	8901534	213.5255 ug/L	#	74
96)	1,2-Dichlorobenzene	18.14	146	6027193	259.5890 ug/L		87
97)	1,2-Dibromo-3-Chloropropan	19.13	75	474533	324.4798 ug/L		99
98)	1,2,4-Trichlorobenzene	20.27	180	4574770	286.7920 ug/L		97
99)	Hexachlorobutadiene	20.42	225	2184179	286.2741 ug/L		98
100)	Naphthalene	20.64	128	5884557	255.1644 ug/L		94
101)	1,2,3-Trichlorobenzene	20.95	180	3909833	287.4298 ug/L		97

(#) = qualifier out of range (m) = manual integration
8M407756.D 8260WT.M Thu Oct 01 09:03:06 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407756.D Vial: 12
Acq On : 30 Sep 2015 14:52 Operator: TMB
Sample : WG540912-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD72739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 1 9:03 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration

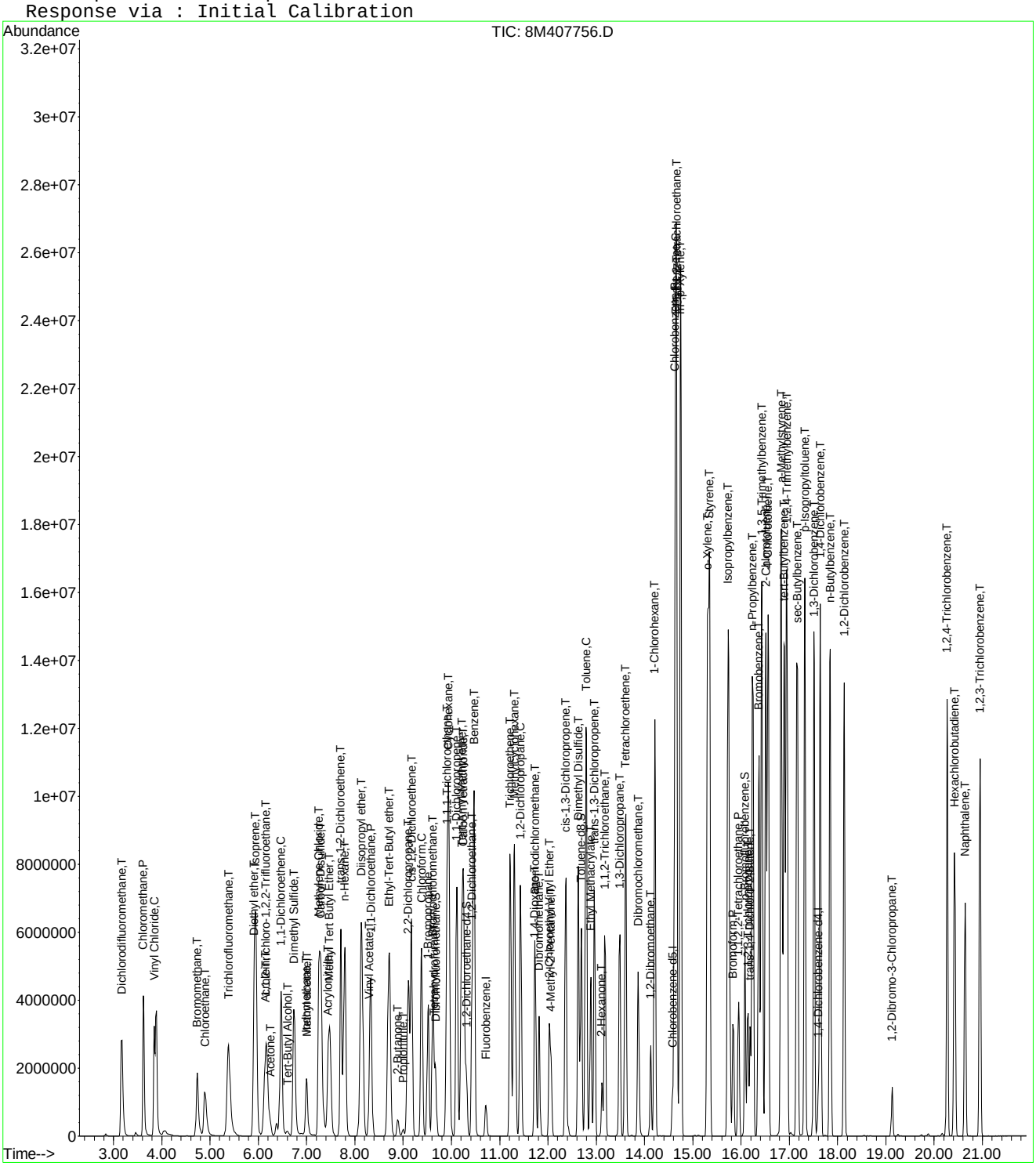

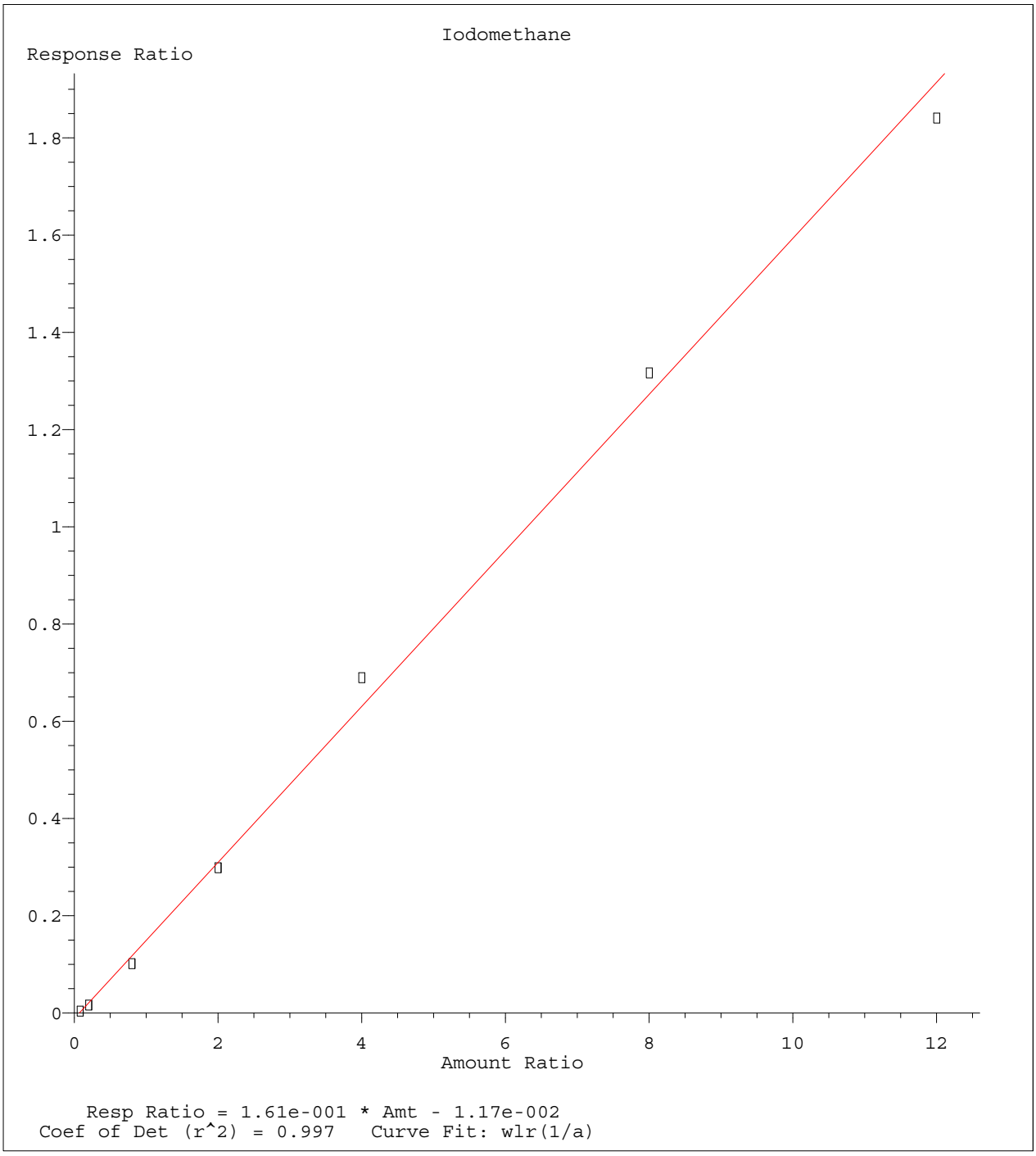

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Thu Oct 01 09:04:46 2015

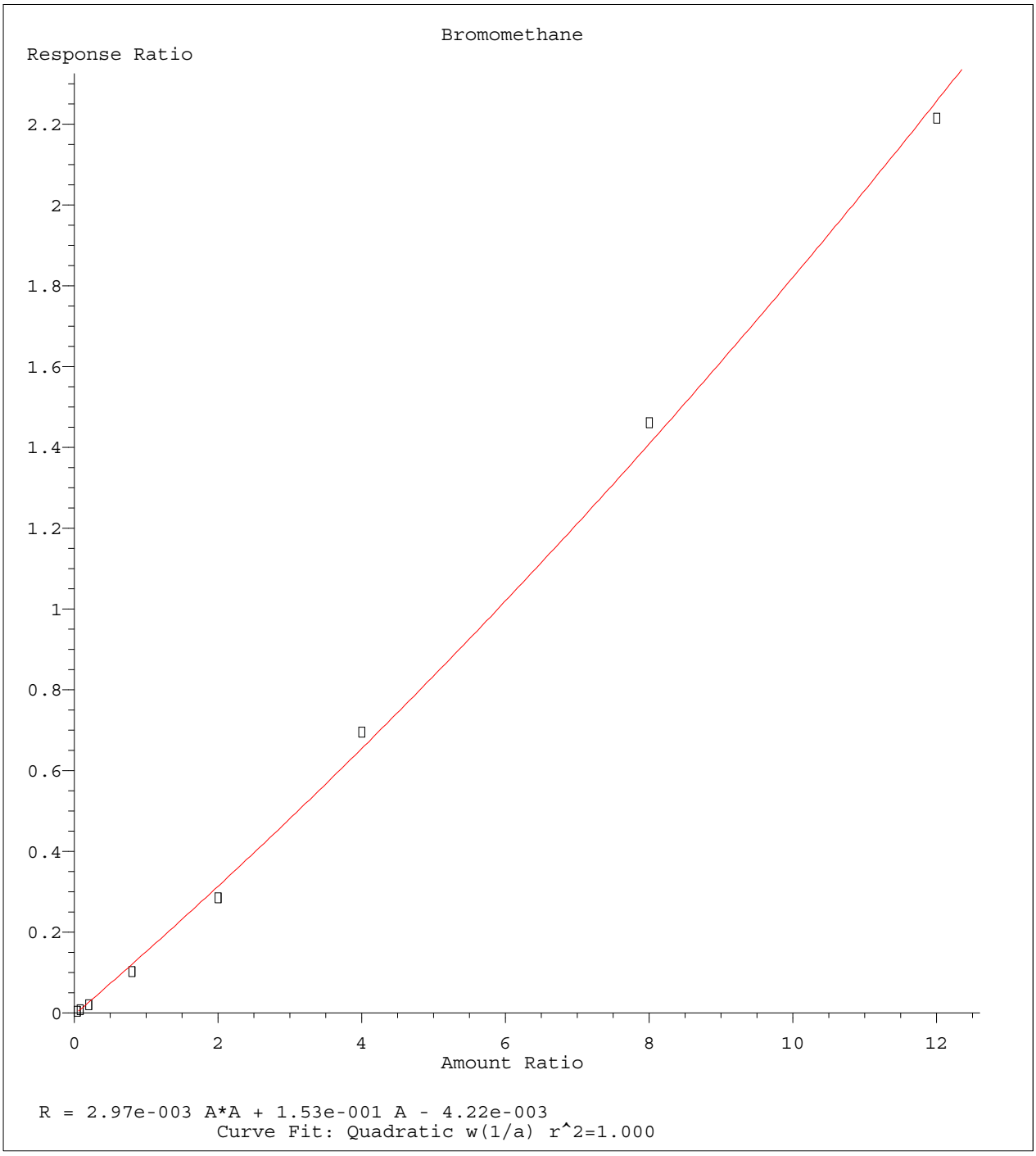

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Thu Oct 01 09:04:46 2015

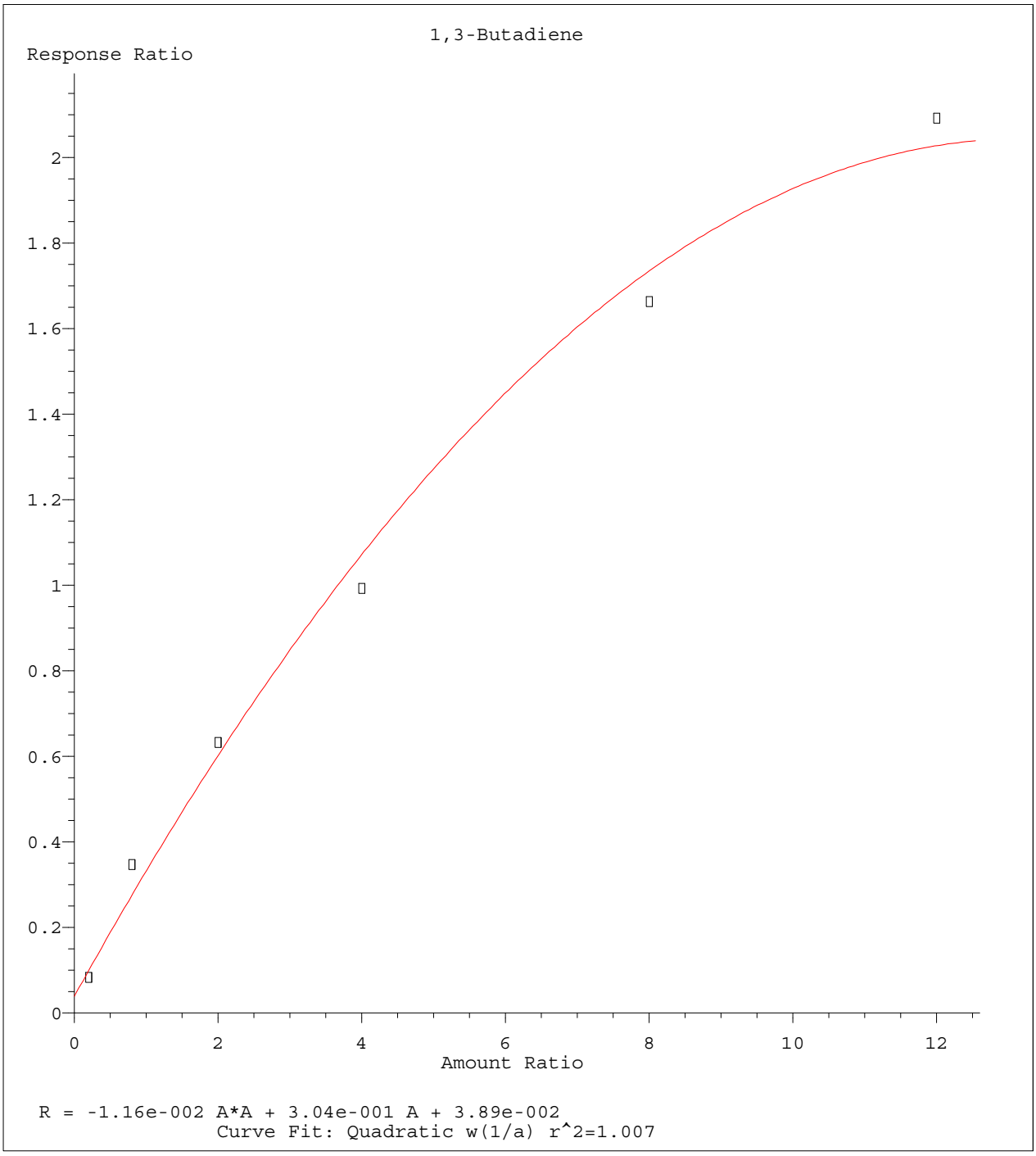

Method Name: C:\MSDCHEM\2\METHODS\8260WT.M
Calibration Table Last Updated: Thu Oct 01 09:04:46 2015

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407761.D Vial: 17
Acq On : 30 Sep 2015 17:27 Operator: TMB
Sample : WG540912-12 50ug/L ALT SRC STD 8 Inst : HPMS8
Misc : 1,1 STD72747 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:03:07 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	973469	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	760814	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	418744	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	232214	25.0639 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.24%		
43) 1,2-Dichloroethane-d4	10.30	65	231666	24.5246 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.08%		
58) Toluene-d8	12.69	98	861595	24.4076 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.64%		
80) p-Bromofluorobenzene	16.08	95	366835	25.1074 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.44%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	868942	58.7139 ug/L	99
3) Chloromethane	3.62	50	1121121	49.6455 ug/L	100
4) Vinyl Chloride	3.84	62	785577	44.0214 ug/L	100
5) 1,3-Butadiene	3.89	54	349607	27.4376 ug/L	90
6) Bromomethane	4.73	94	274076	45.1539 ug/L	98
7) Chloroethane	4.89	64	406712	55.8643 ug/L	98
8) Trichlorofluoromethane	5.37	101	851761	49.3841 ug/L	98
9) Diethyl ether	5.91	59	681811	102.7066 ug/L	99
10) Isoprene	5.94	67	811140	64.0580 ug/L	96
11) Acrolein	6.15	56	80880	98.1714 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	494289	53.3136 ug/L	98
13) Acetone	6.25	43	85566	59.2202 ug/L	100
14) 1,1-Dichloroethene	6.47	61	782591	49.5868 ug/L	99
15) Tert-Butyl Alcohol	6.59	59	92214	215.9929 ug/L	99
16) Dimethyl Sulfide	6.74	62	585403	64.6285 ug/L	99
17) Iodomethane	6.99	142	218559	36.7730 ug/L	94
18) Methyl acetate	7.01	43	230990	42.2761 ug/L	97
19) Methylene Chloride	7.26	84	493851	50.3835 ug/L	97
20) Carbon Disulfide	7.30	76	1560781	48.7663 ug/L	100
21) Acrylonitrile	7.44	53	119847	55.2530 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	1039620	55.9512 ug/L	98
23) trans-1,2-Dichloroethene	7.71	61	774357	51.6667 ug/L	100
24) n-Hexane	7.79	57	795155	53.7064 ug/L	96
25) Diisopropyl ether	8.13	45	3847749	104.1453 ug/L	99
26) Vinyl Acetate	8.30	43	823818	83.8985 ug/L	99
27) 1,1-Dichloroethane	8.33	63	987280	51.8740 ug/L	99
28) Ethyl-Tert-Butyl ether	8.71	59	2933980	100.8218 ug/L	97
29) 2-Butanone	8.89	43	134931	54.2037 ug/L	99
30) Propionitrile	8.99	54	75739	103.6940 ug/L	97
31) 2,2-Dichloropropane	9.11	77	905546	56.9317 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	546221	51.0794 ug/L	98
33) Chloroform	9.38	83	967794	53.5318 ug/L	99
34) 1-Bromopropane	9.52	122	106430	60.6091 ug/L	99
35) Bromochloromethane	9.61	130	281529	53.4801 ug/L	98
36) Tetrahydrofuran	9.64	42	163322	99.9489 ug/L	98
38) 1,1,1-Trichloroethane	9.91	97	894608	55.1269 ug/L	98
39) Cyclohexane	9.94	56	1022711	52.9592 ug/L	99
40) 1,1-Dichloropropene	10.11	75	736268	52.6946 ug/L	100
41) Tert-Amyl-Methyl ether	10.21	73	2268375	105.1318 ug/L	99
42) Carbon Tetrachloride	10.25	117	790345	54.4939 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M407761.D 8260WT.M Thu Oct 01 09:03:08 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407761.D Vial: 17
Acq On : 30 Sep 2015 17:27 Operator: TMB
Sample : WG540912-12 50ug/L ALT SRC STD 8 Inst : HPMS8
Misc : 1,1 STD72747 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 01 09:03:07 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	652312	52.5432 ug/L		98
46)	Benzene	10.47	78	2027923	52.8945 ug/L		99
47)	Trichloroethene	11.21	130	525698	50.9345 ug/L		96
48)	Methylcyclohexane	11.31	83	858331	53.7471 ug/L		99
49)	1,2-Dichloropropane	11.43	63	531322	51.4427 ug/L		94
50)	Bromodichloromethane	11.73	83	695935	52.2028 ug/L		100
51)	1,4-Dioxane	11.72	88	10964	230.5749 ug/L		87
52)	Dibromomethane	11.81	93	254190	51.6839 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	220739	51.8524 ug/L		95
54)	4-Methyl-2-Pentanone	12.06	58	110611	50.6490 ug/L		96
55)	cis-1,3-Dichloropropene	12.36	75	817619	55.2478 ug/L		100
56)	Dimethyl Disulfide	12.63	79	433239	54.2908 ug/L		97
59)	Toluene	12.78	91	2168150	50.1511 ug/L		100
60)	Ethyl Methacrylate	12.89	69	467899	54.2856 ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	651098	49.0907 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	325095	47.3770 ug/L		97
64)	2-Hexanone	13.12	58	104133	48.2686 ug/L	#	94
65)	1,3-Dichloropropane	13.49	76	590786	48.1781 ug/L		94
66)	Tetrachloroethene	13.61	164	462809	50.3569 ug/L		99
67)	Dibromochloromethane	13.87	129	437204	49.2803 ug/L		98
68)	1,2-Dibromoethane	14.13	107	327494	47.8044 ug/L		99
69)	1-Chlorohexane	14.21	91	794949	51.3874 ug/L		99
70)	Chlorobenzene	14.62	112	1499530	51.7645 ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.66	131	530992	49.5741 ug/L		98
72)	Ethylbenzene	14.66	106	830493	49.2139 ug/L		93
73)	m-,p-Xylene	14.75	106	2033249	105.0639 ug/L		95
74)	o-Xylene	15.31	106	1009684	51.5930 ug/L		97
75)	Styrene	15.35	104	1628775	52.5300 ug/L		96
76)	Bromoform	15.83	173	273147	51.2148 ug/L		98
77)	Isopropylbenzene	15.73	105	2539990	54.1054 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	370394	47.9437 ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	105109	48.9615 ug/L		65
82)	trans-1,4-Dichloro-2-Buten	16.18	53	124572	43.8793 ug/L	#	51
83)	n-Propylbenzene	16.24	91	3088551	50.9435 ug/L		98
84)	Bromobenzene	16.37	156	606575	49.2873 ug/L		97
85)	1,3,5-Trimethylbenzene	16.42	105	2194366	52.6443 ug/L		100
86)	2-Chlorotoluene	16.52	91	2136948	53.2159 ug/L		100
87)	4-Chlorotoluene	16.56	91	1837561	52.9124 ug/L		99
88)	a-Methylstyrene	16.83	118	1243601	54.7270 ug/L		100
89)	tert-Butylbenzene	16.89	134	474225	51.7157 ug/L		91
90)	1,2,4-Trimethylbenzene	16.94	105	2170152	51.5219 ug/L		100
91)	sec-Butylbenzene	17.16	105	2683180	51.8189 ug/L		96
92)	p-Isopropyltoluene	17.32	119	2149600	51.9227 ug/L		96
93)	1,3-Dichlorobenzene	17.51	146	1240636	50.5051 ug/L		99
94)	1,4-Dichlorobenzene	17.64	146	1189152	48.6129 ug/L		99
95)	n-Butylbenzene	17.85	91	2040120	52.8625 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	1091732	50.7918 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	64091	47.3397 ug/L		98
98)	1,2,4-Trichlorobenzene	20.27	180	727823	49.2868 ug/L		98
99)	Hexachlorobutadiene	20.42	225	361689	51.2078 ug/L		99
100)	Naphthalene	20.64	128	946559	44.3364 ug/L		99
101)	1,2,3-Trichlorobenzene	20.95	180	612517	48.6406 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M407761.D 8260WT.M Thu Oct 01 09:03:08 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\093015\8M407761.D Vial: 17
Acq On : 30 Sep 2015 17:27 Operator: TMB
Sample : WG540912-12 50ug/L ALT SRC STD 8 Inst : HPMS8
Misc : 1,1 STD72747 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Oct 1 9:03 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Initial Calibration

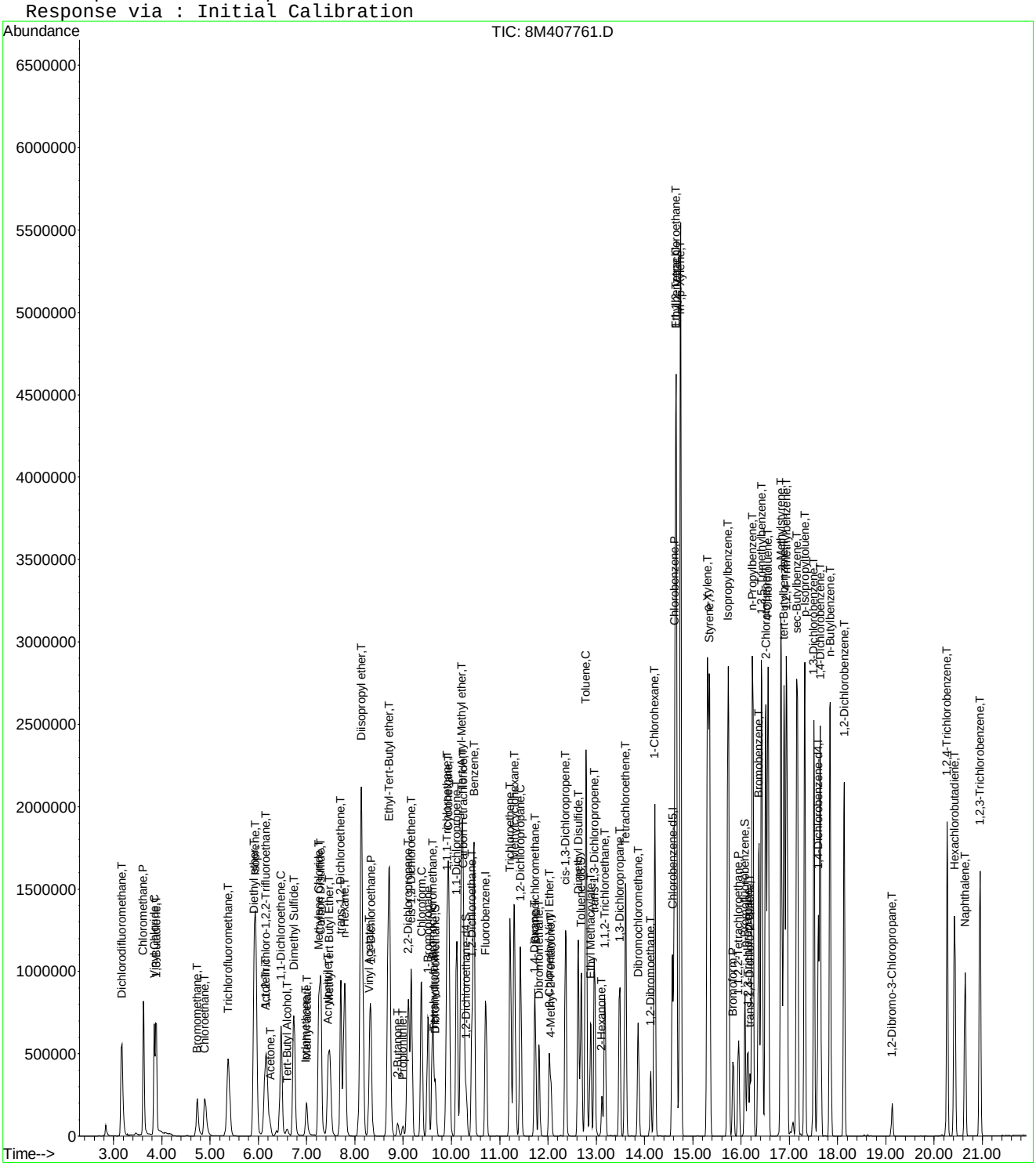

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\093015\8M407761.D Vial: 17
Acq On : 30 Sep 2015 17:27 Operator: TMB
Sample : WG540912-12 50ug/L ALT SRC STD 8 Inst : HPMS8
Misc : 1,1 STD72747 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	104	0.00
2	T	Dichlorodifluoromethane	50.0000	58.7139	-17.4	118	0.00
3	P	Chloromethane	50.0000	49.6455	0.7	103	0.00
4	C	Vinyl Chloride	50.0000	44.0214	12.0	99	0.00
5	T	1,3-Butadiene	50.0000	27.4376	45.1#	59	0.00
6	T	Bromomethane	50.0000	45.1538	9.7	103	0.00
7	T	Chloroethane	50.0000	55.8643	-11.7	114	-0.01
8	T	Trichlorofluoromethane	50.0000	49.3841	1.2	106	-0.01
9	T	Diethyl ether	100.0000	102.7066	-2.7	111	0.00
10	T	Isoprene	50.0000	64.0580	-28.1#	125	-0.01
11	T	Acrolein	50.0000	98.1714	-96.3#	218	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	53.3136	-6.6	113	0.00
13	T	Acetone	50.0000	59.2202	-18.4	137	0.00
14	C	1,1-Dichloroethene	50.0000	49.5868	0.8	108	0.00
15	T	Tert-Butyl Alcohol	200.0000	215.9929	-8.0	124	0.00
16	T	Dimethyl Sulfide	50.0000	64.6285	-29.3#	132	0.00
17	T	Iodomethane	50.0000	36.7730	26.5#	78	0.00
18	T	Methyl acetate	50.0000	42.2761	15.4	97	0.00
19	T	Methylene Chloride	50.0000	50.3835	-0.8	108	0.00
20	T	Carbon Disulfide	50.0000	48.7663	2.5	99	0.00
21	T	Acrylonitrile	50.0000	55.2530	-10.5	116	0.00
22	T	Methyl Tert Butyl Ether	50.0000	55.9512	-11.9	119	0.00
23	T	trans-1,2-Dichloroethene	50.0000	51.6667	-3.3	107	0.00
24	T	n-Hexane	50.0000	53.7064	-7.4	109	0.00
25	T	Diisopropyl ether	100.0000	104.1453	-4.1	108	0.00
26	T	Vinyl Acetate	50.0000	83.8985	-67.8#	173	0.00
27	P	1,1-Dichloroethane	50.0000	51.8740	-3.7	110	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	100.8218	-0.8	106	0.00
29	T	2-Butanone	50.0000	54.2037	-8.4	122	0.00
30	T	Propionitrile	100.0000	103.6940	-3.7	114	0.00
31	T	2,2-Dichloropropane	50.0000	56.9317	-13.9	120	0.00
32	T	cis-1,2-Dichloroethene	50.0000	51.0795	-2.2	108	0.00
33	C	Chloroform	50.0000	53.5318	-7.1	112	0.00
34		1-Bromopropane	50.0000	60.6091	-21.2	119	0.00
35	T	Bromochloromethane	50.0000	53.4801	-7.0	110	0.00
36	T	Tetrahydrofuran	100.0000	99.9489	0.1	113	0.00
37	S	Dibromofluoromethane	25.0000	25.0638	-0.3	104	0.00
38	T	1,1,1-Trichloroethane	50.0000	55.1269	-10.3	114	0.00
39	T	Cyclohexane	50.0000	52.9592	-5.9	109	0.00
40	T	1,1-Dichloropropene	50.0000	52.6946	-5.4	110	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	105.1318	-5.1	112	0.00
42	T	Carbon Tetrachloride	50.0000	54.4939	-9.0	111	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.5246	1.9	102	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	52.5432	-5.1	109	0.00
46	T	Benzene	50.0000	52.8945	-5.8	107	0.00
47	T	Trichloroethene	50.0000	50.9345	-1.9	108	0.00
48	T	Methylcyclohexane	50.0000	53.7471	-7.5	110	0.00
49	C	1,2-Dichloropropane	50.0000	51.4427	-2.9	108	0.00
50	T	Bromodichloromethane	50.0000	52.2028	-4.4	107	0.00
51	T	1,4-Dioxane	200.0000	230.5749	-15.3	126	0.00
52	T	Dibromomethane	50.0000	51.6839	-3.4	108	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	51.8524	-3.7	114	0.00
54	T	4-Methyl-2-Pentanone	50.0000	50.6489	-1.3	115	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\093015\8M407761.D Vial: 17
Acq On : 30 Sep 2015 17:27 Operator: TMB
Sample : WG540912-12 50ug/L ALT SRC STD 8 Inst : HPMS8
Misc : 1,1 STD72747 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Wed Sep 30 15:45:31 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	55.2478	-10.5	112	0.00
56	T	Dimethyl Disulfide	50.0000	54.2908	-8.6	114	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	111	0.00
58	S	Toluene-d8	25.0000	24.4077	2.4	106	0.00
59	C	Toluene	50.0000	50.1511	-0.3	109	0.00
60	T	Ethyl Methacrylate	50.0000	54.2856	-8.6	120	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	49.0907	1.8	107	0.00
63	T	1,1,2-Trichloroethane	50.0000	47.3770	5.2	109	0.00
64	T	2-Hexanone	50.0000	48.2686	3.5	116	0.00
65	T	1,3-Dichloropropane	50.0000	48.1781	3.6	111	0.00
66	T	Tetrachloroethene	50.0000	50.3569	-0.7	114	0.00
67	T	Dibromochloromethane	50.0000	49.2803	1.4	109	0.00
68	T	1,2-Dibromoethane	50.0000	47.8044	4.4	108	0.00
69	T	1-Chlorohexane	50.0000	51.3874	-2.8	111	0.00
70	P	Chlorobenzene	50.0000	51.7645	-3.5	114	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	49.5741	0.9	108	0.00
72	C	Ethylbenzene	50.0000	49.2139	1.6	111	0.00
73	T	m-,p-Xylene	100.0000	105.0639	-5.1	113	0.00
74	T	o-Xylene	50.0000	51.5930	-3.2	115	0.00
75	T	Styrene	50.0000	52.5300	-5.1	111	0.00
76	P	Bromoform	50.0000	51.2148	-2.4	114	0.00
77	T	Isopropylbenzene	50.0000	54.1054	-8.2	115	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	110	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	47.9437	4.1	110	0.00
80	S	p-Bromofluorobenzene	25.0000	25.1074	-0.4	111	0.00
81	T	1,2,3-Trichloropropane	50.0000	48.9615	2.1	112	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	43.8792	12.2	97	0.00
83	T	n-Propylbenzene	50.0000	50.9435	-1.9	113	0.00
84	T	Bromobenzene	50.0000	49.2873	1.4	110	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	52.6443	-5.3	112	0.00
86	T	2-Chlorotoluene	50.0000	53.2159	-6.4	116	0.00
87	T	4-Chlorotoluene	50.0000	52.9124	-5.8	112	0.00
88	T	a-Methylstyrene	50.0000	54.7270	-9.5	117	0.00
89	T	tert-Butylbenzene	50.0000	51.7157	-3.4	118	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	51.5219	-3.0	109	0.00
91	T	sec-Butylbenzene	50.0000	51.8188	-3.6	114	0.00
92	T	p-Isopropyltoluene	50.0000	51.9227	-3.8	109	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.5051	-1.0	112	0.00
94	T	1,4-Dichlorobenzene	50.0000	48.6129	2.8	109	0.00
95	T	n-Butylbenzene	50.0000	52.8625	-5.7	108	0.00
96	T	1,2-Dichlorobenzene	50.0000	50.7918	-1.6	113	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	47.3396	5.3	108	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	49.2868	1.4	106	0.00
99	T	Hexachlorobutadiene	50.0000	51.2078	-2.4	114	0.00
100	T	Naphthalene	50.0000	44.3364	11.3	100	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	48.6406	2.7	106	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M407761.D 8260WT.M Thu Oct 01 09:04:55 2015 Page 2

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016538.D
Acq On : 18 Nov 2015 14:45
Operator : ADC
Sample : WG547460-02 50ug/L CCV STD
Misc : 1,1 STD73185
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 18 14:57:14 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.141	96	373671	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.976	117	277950	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.305	152	152944	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.177	111	103276	26.9423 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.769%		
34) 1,2-Dichloroethane-d4	4.814	65	97758	26.5561 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 106.224%		
47) Toluene-d8	6.710	98	391251	27.3076 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 109.230%		
66) p-Bromofluorobenzene	8.723	95	142426	26.9389 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 107.756%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.038	85	283685	53.3845 ug/L	98
3) Chloromethane	1.148	50	241028	42.5815 ug/L	100
4) Vinyl Chloride	1.195	62	254906	50.4144 ug/L	100
5) 1,3-Butadiene	1.206	54	158466	48.7604 ug/L	98
6) Bromomethane	1.383	94	158253	59.3396 ug/L	99
7) Chloroethane	1.452	64	154077	59.6836 ug/L	92
8) Trichlorofluoromethane	1.536	101	352010	59.8371 ug/L	100
9) Diethyl ether	1.748	59	141349	47.3775 ug/L	99
10) 1,1-Dichloroethene	1.866	61	316771	54.0024 ug/L	99
11) Carbon Disulfide	1.881	76	658262	53.2807 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.898	101	198444	54.5570 ug/L	100
14) Acrolein	2.113	56	14979	37.4843 ug/L	95
15) Methylene Chloride	2.289	84	188137	43.3487 ug/L	100
16) Acetone	2.344	43	30036	39.9745 ug/L	97
17) trans-1,2-Dichloroethene	2.419	96	184955	48.2279 ug/L	98
18) Methyl acetate	2.448	43	101159	47.4125 ug/L #	99
19) Methyl Tert Butyl Ether	2.529	73	420960	43.0617 ug/L	100
20) 1,1-Dichloroethane	2.975	63	355009	48.3695 ug/L	100
21) Acrylonitrile	3.036	53	41275	40.6280 ug/L	97
22) Vinyl Acetate	3.276	86	19474	42.5933 ug/L	98
23) cis-1,2-Dichloroethene	3.566	96	208334	47.3143 ug/L	99
24) 2,2-Dichloropropane	3.693	77	301098	54.8480 ug/L	99
25) Cyclohexane	3.795	56	351064	49.6984 ug/L	98
26) Bromochloromethane	3.806	130	127288	48.9569 ug/L	99
27) Chloroform	3.937	83	347066	47.7291 ug/L	100
28) Carbon Tetrachloride	4.079	117	286018	50.6547 ug/L	99
30) 1,1,1-Trichloroethane	4.177	97	314780	49.3525 ug/L	99
31) 1,1-Dichloropropene	4.345	75	268722	49.6982 ug/L	99
32) 2-Butanone	4.371	43	50412	40.9026 ug/L	99
33) Benzene	4.649	78	769441	47.9112 ug/L	100
35) 1,2-Dichloroethane	4.892	62	231627	47.9324 ug/L	100
36) Methylcyclohexane	5.295	83	362429	48.2642 ug/L	98
37) Trichloroethene	5.323	130	219917	49.3470 ug/L	98
38) Dibromomethane	5.743	93	109068	45.7664 ug/L	99
39) 1,2-Dichloropropane	5.848	63	209294	47.4107 ug/L	97
40) Bromodichloromethane	5.937	83	270735	49.3290 ug/L	100
41) 1,4-Dioxane	6.154	88	2564	95.6270 ug/L	93
42) 2-Chloroethyl Vinyl Ether	6.528	63	96178	43.1052 ug/L	99
43) cis-1,3-Dichloropropene	6.545	75	313760	48.4892 ug/L	100
44) 4-Methyl-2-Pentanone	7.813	58	40713	37.1420 ug/L	97
45) trans-1,3-Dichloropropene	7.145	75	268995	48.5876 ug/L	99
48) Toluene	6.757	91	879014	49.9193 ug/L	99
49) Tetrachloroethene	7.087	166	243394	51.2833 ug/L	98
50) 1,1,2-Trichloroethane	7.275	97	147367	44.9875 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016538.D
Acq On : 18 Nov 2015 14:45
Operator : ADC
Sample : WG547460-02 50ug/L CCV STD
Misc : 1,1 STD73185
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 18 14:57:14 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
51) Dibromochloromethane	7.417	129	210537	49.7855 ug/L	99
52) 1,3-Dichloropropane	7.498	76	242359	46.6467 ug/L	98
53) 1,2-Dibromoethane	7.585	107	148327	45.6303 ug/L	100
54) 2-Hexanone	7.813	43	80912	38.4192 ug/L	98
55) Chlorobenzene	7.984	112	585807	51.6215 ug/L	99
56) 1-Chlorohexane	7.999	69	58291	50.0101 ug/L	92
57) Ethylbenzene	8.022	106	315710	51.1108 ug/L	99
58) 1,1,1,2-Tetrachloroethane	8.039	131	220126	52.3950 ug/L	100
59) m-,p-Xylene	8.123	106	787022	106.2037 ug/L	100
60) o-Xylene	8.384	106	371814	50.8471 ug/L	99
61) Styrene	8.419	104	630659	51.8962 ug/L	100
62) Bromoform	8.422	173	146168	52.4245 ug/L	100
63) Isopropylbenzene	8.575	105	1006119	52.7836 ug/L	100
65) 1,3,5-Trimethylbenzene	8.914	105	895732	53.4863 ug/L	100
67) Bromobenzene	8.775	156	267595	51.1215 ug/L	98
68) n-Propylbenzene	8.804	91	1199473	54.8737 ug/L	100
69) 1,1,2,2-Tetrachloroethane	8.847	83	180514	47.5445 ug/L	99
70) 2-Chlorotoluene	8.879	91	705675	52.7861 ug/L	99
71) 1,2,3-Trichloropropane	8.911	110	48566	45.9566 ug/L	98
72) trans-1,4-Dichloro-2-B...	8.937	53	37550	42.7451 ug/L #	97
73) 1,2,4-Trimethylbenzene	9.111	105	897991	53.7143 ug/L	100
74) 4-Chlorotoluene	8.969	91	727068	52.8588 ug/L	97
75) tert-Butylbenzene	9.076	134	162576	52.9393 ug/L	100
76) sec-Butylbenzene	9.166	105	1117333	54.2955 ug/L	100
77) p-Isopropyltoluene	9.238	119	977276	54.9108 ug/L	100
78) 1,3-Dichlorobenzene	9.267	146	527181	54.8424 ug/L	99
79) 1,4-Dichlorobenzene	9.310	146	523118	53.3486 ug/L	99
80) n-Butylbenzene	9.441	91	904341	55.2085 ug/L	100
81) 1,2-Dichlorobenzene	9.513	146	474051	51.8019 ug/L	99
82) 1,2-Dibromo-3-Chloropr...	9.889	75	31859	44.7110 ug/L	98
83) Hexachlorobutadiene	10.188	225	199866	47.4482 ug/L	100
84) 1,2,4-Trichlorobenzene	10.202	180	356118	48.7620 ug/L	100
85) Naphthalene	10.353	128	551084	40.7379 ug/L	100
86) 1,2,3-Trichlorobenzene	10.440	180	287900	42.7139 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016538.D
Acq On : 18 Nov 2015 14:45
Operator : ADC
Sample : WG547460-02 50ug/L CCV STD
Misc : 1,1 STD73185
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 18 14:57:14 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

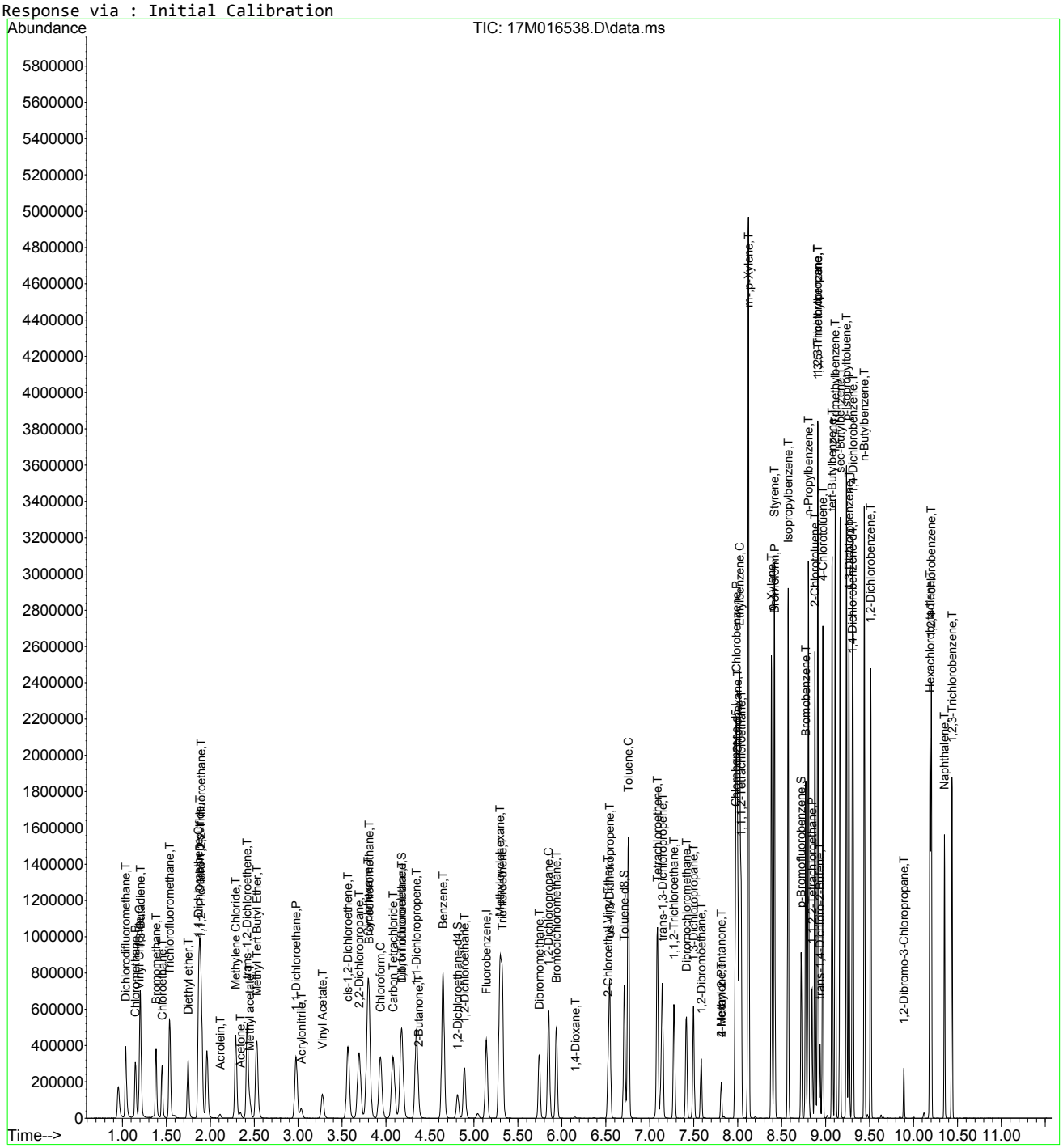

8260_VMS.M Wed Nov 18 14:57:15 2015 Page: 3

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016538.D
Acq On : 18 Nov 2015 14:45
Operator : ADC
Sample : WG547460-02 50ug/L CCV STD
Misc : 1,1 STD73185
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 18 14:57:14 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.000	1.000	0.0	82	0.000
2	T	Dichlorodifluoromethane	0.356	0.380	-6.7	85	0.000
3	P	Chloromethane	0.379	0.323	14.8	74	0.000
4	C	Vinyl Chloride	0.338	0.341	-0.9#	84	0.000
5	T	1,3-Butadiene	0.217	0.212	2.3	84	0.000
6	T	Bromomethane	0.178	0.212	-19.1	111	0.000
7	T	Chloroethane	0.173	0.206	-19.1	95	0.000
8	T	Trichlorofluoromethane	0.390	0.471	-20.8	95	0.000
9	T	Diethyl ether	0.200	0.189	5.5	88	0.000
10	C	1,1-Dichloroethene	0.392	0.424	-8.2#	90	0.000
11	T	Carbon Disulfide	0.827	0.881	-6.5	90	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.243	0.266	-9.5	90	0.000
13	T	Iodomethane	0.000	0.000	0.0	0#	0.000
14	T	Acrolein	0.027	0.020	25.9#	78	0.000
15	T	Methylene Chloride	0.290	0.252	13.1	82	0.000
16	T	Acetone	0.051	0.040	21.6	82	0.000
17	T	trans-1,2-Dichloroethene	0.257	0.247	3.9	83	0.000
18	T	Methyl acetate	0.143	0.135	5.6	88	0.000
19	T	Methyl Tert Butyl Ether	0.654	0.563	13.9	81	0.000
20	P	1,1-Dichloroethane	0.491	0.475	3.3	82	0.000
21	T	Acrylonitrile	0.068	0.055	19.1	79	0.000
22	T	Vinyl Acetate	0.028	0.026	7.1	82	0.000
23	T	cis-1,2-Dichloroethene	0.295	0.279	5.4	83	0.000
24	T	2,2-Dichloropropane	0.367	0.403	-9.8	85	0.000
25	T	Cyclohexane	0.473	0.470	0.6	82	0.000
26	T	Bromochloromethane	0.174	0.170	2.3	85	0.000
27	C	Chloroform	0.486	0.464	4.5#	85	0.000
28	T	Carbon Tetrachloride	0.378	0.383	-1.3	84	0.000
29	S	Dibromofluoromethane	0.256	0.276	-7.8	88	0.000
30	T	1,1,1-Trichloroethane	0.427	0.421	1.4	85	0.000
31	T	1,1-Dichloropropene	0.362	0.360	0.6	84	0.000
32	T	2-Butanone	0.082	0.067	18.3	81	0.000
33	T	Benzene	1.074	1.030	4.1	82	0.000
34	S	1,2-Dichloroethane-d4	0.246	0.262	-6.5	89	0.000
35	T	1,2-Dichloroethane	0.323	0.310	4.0	85	0.000
36	T	Methylcyclohexane	0.502	0.485	3.4	83	0.000
37	T	Trichloroethene	0.298	0.294	1.3	85	0.000
38	T	Dibromomethane	0.159	0.146	8.2	85	0.000
39	C	1,2-Dichloropropane	0.295	0.280	5.1#	82	0.000
40	T	Bromodichloromethane	0.367	0.362	1.4	85	0.000
41	T	1,4-Dioxane	0.002	0.002	0.0	79	0.000
42	T	2-Chloroethyl Vinyl Ether	0.149	0.129	13.4	79	0.000
43	T	cis-1,3-Dichloropropene	0.433	0.420	3.0	82	0.000
44	T	4-Methyl-2-Pentanone	0.073	0.054	26.0#	77	0.000
45	T	trans-1,3-Dichloropropene	0.370	0.360	2.7	84	0.000
46	I	Chlorobenzene-d5	1.000	1.000	0.0	82	0.000
47	S	Toluene-d8	1.289	1.408	-9.2	87	0.000
48	C	Toluene	1.584	1.581	0.2#	84	0.000
49	T	Tetrachloroethene	0.427	0.438	-2.6	87	0.000
50	T	1,1,2-Trichloroethane	0.295	0.265	10.2	85	0.000
51	T	Dibromochloromethane	0.380	0.379	0.3	88	0.000
52	T	1,3-Dichloropropane	0.467	0.436	6.6	84	0.000
53	T	1,2-Dibromoethane	0.292	0.267	8.6	84	0.000
54	T	2-Hexanone	0.189	0.146	22.8	79	0.000
55	P	Chlorobenzene	1.021	1.054	-3.2	87	0.000

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016538.D
Acq On : 18 Nov 2015 14:45
Operator : ADC
Sample : WG547460-02 50ug/L CCV STD
Misc : 1,1 STD73185
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 18 14:57:14 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
56	T	1-Chlorohexane	0.105	0.105	0.0	84	0.000
57	C	Ethylbenzene	0.556	0.568	-2.2#	86	0.000
58	T	1,1,1,2-Tetrachloroethane	0.378	0.396	-4.8	89	0.000
59	T	m-,p-Xylene	0.667	0.708	-6.1	88	0.000
60	T	o-Xylene	0.658	0.669	-1.7	85	0.000
61	T	Styrene	1.093	1.134	-3.8	87	0.000
62	P	Bromoform	0.251	0.263	-4.8	96	0.000
63	T	Isopropylbenzene	1.714	1.810	-5.6	88	0.000
64	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	82	0.000
65	T	1,3,5-Trimethylbenzene	2.737	2.928	-7.0	88	0.000
66	S	p-Bromofluorobenzene	0.864	0.931	-7.8	86	0.000
67	T	Bromobenzene	0.856	0.875	-2.2	89	0.000
68	T	n-Propylbenzene	3.573	3.921	-9.7	88	0.000
69	P	1,1,2,2-Tetrachloroethane	0.621	0.590	5.0	91	0.000
70	T	2-Chlorotoluene	2.185	2.307	-5.6	88	0.000
71	T	1,2,3-Trichloropropane	0.173	0.159	8.1	92	0.000
72	T	trans-1,4-Dichloro-2-Butene	0.144	0.123	14.6	84	0.000
73	T	1,2,4-Trimethylbenzene	2.733	2.936	-7.4	89	0.000
74	T	4-Chlorotoluene	2.248	2.377	-5.7	87	0.000
75	T	tert-Butylbenzene	0.502	0.531	-5.8	88	0.000
76	T	sec-Butylbenzene	3.364	3.653	-8.6	89	0.000
77	T	p-Isopropyltoluene	2.909	3.195	-9.8	88	0.000
78	T	1,3-Dichlorobenzene	1.571	1.723	-9.7	92	0.000
79	T	1,4-Dichlorobenzene	1.603	1.710	-6.7	92	0.000
80	T	n-Butylbenzene	2.678	2.956	-10.4	88	0.000
81	T	1,2-Dichlorobenzene	1.496	1.550	-3.6	90	0.000
82	T	1,2-Dibromo-3-Chloropropane	0.116	0.104	10.3	87	0.000
83	T	Hexachlorobutadiene	0.689	0.653	5.2	76	0.000
84	T	1,2,4-Trichlorobenzene	1.194	1.164	2.5	82	0.000
85	T	Naphthalene	2.211	1.802	18.5	77	0.000
86	T	1,2,3-Trichlorobenzene	1.102	0.941	14.6	75	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016538.D
Acq On : 18 Nov 2015 14:45
Operator : ADC
Sample : WG547460-02 50ug/L CCV STD
Misc : 1,1 STD73185
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 18 14:57:14 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	82	0.000
2	T	Dichlorodifluoromethane	50.000	53.384	-6.8	85	0.000
3	P	Chloromethane	50.000	42.581	14.8	74	0.000
4	C	Vinyl Chloride	50.000	50.414	-0.8#	84	0.000
5	T	1,3-Butadiene	50.000	48.760	2.5	84	0.000
6	T	Bromomethane	50.000	59.340	-18.7	111	0.000
7	T	Chloroethane	50.000	59.684	-19.4	95	0.000
8	T	Trichlorofluoromethane	50.000	59.837	-19.7	95	0.000
9	T	Diethyl ether	50.000	47.377	5.2	88	0.000
10	C	1,1-Dichloroethene	50.000	54.002	-8.0#	90	0.000
11	T	Carbon Disulfide	50.000	53.281	-6.6	90	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.000	54.557	-9.1	90	0.000
13	T	Iodomethane	-1.000	0.000	0.0	0	0.000
14	T	Acrolein	50.000	37.484	25.0#	78	0.000
15	T	Methylene Chloride	50.000	43.349	13.3	82	0.000
16	T	Acetone	50.000	39.974	20.1	82	0.000
17	T	trans-1,2-Dichloroethene	50.000	48.228	3.5	83	0.000
18	T	Methyl acetate	50.000	47.412	5.2	88	0.000
19	T	Methyl Tert Butyl Ether	50.000	43.062	13.9	81	0.000
20	P	1,1-Dichloroethane	50.000	48.370	3.3	82	0.000
21	T	Acrylonitrile	50.000	40.628	18.7	79	0.000
22	T	Vinyl Acetate	50.000	42.593	14.8	82	0.000
23	T	cis-1,2-Dichloroethene	50.000	47.314	5.4	83	0.000
24	T	2,2-Dichloropropane	50.000	54.848	-9.7	85	0.000
25	T	Cyclohexane	50.000	49.698	0.6	82	0.000
26	T	Bromochloromethane	50.000	48.957	2.1	85	0.000
27	C	Chloroform	50.000	47.729	4.5#	85	0.000
28	T	Carbon Tetrachloride	50.000	50.655	-1.3	84	0.000
29	S	Dibromofluoromethane	25.000	26.942	-7.8	88	0.000
30	T	1,1,1-Trichloroethane	50.000	49.353	1.3	85	0.000
31	T	1,1-Dichloropropene	50.000	49.698	0.6	84	0.000
32	T	2-Butanone	50.000	40.903	18.2	81	0.000
33	T	Benzene	50.000	47.911	4.2	82	0.000
34	S	1,2-Dichloroethane-d4	25.000	26.556	-6.2	89	0.000
35	T	1,2-Dichloroethane	50.000	47.932	4.1	85	0.000
36	T	Methylcyclohexane	50.000	48.264	3.5	83	0.000
37	T	Trichloroethene	50.000	49.347	1.3	85	0.000
38	T	Dibromomethane	50.000	45.766	8.5	85	0.000
39	C	1,2-Dichloropropane	50.000	47.411	5.2#	82	0.000
40	T	Bromodichloromethane	50.000	49.329	1.3	85	0.000
41	T	1,4-Dioxane	100.000	95.627	4.4	79	0.000
42	T	2-Chloroethyl Vinyl Ether	50.000	43.105	13.8	79	0.000
43	T	cis-1,3-Dichloropropene	50.000	48.489	3.0	82	0.000
44	T	4-Methyl-2-Pentanone	50.000	37.142	25.7#	77	0.000
45	T	trans-1,3-Dichloropropene	50.000	48.588	2.8	84	0.000
46	I	Chlorobenzene-d5	25.000	25.000	0.0	82	0.000
47	S	Toluene-d8	25.000	27.308	-9.2	87	0.000
48	C	Toluene	50.000	49.919	0.2#	84	0.000
49	T	Tetrachloroethene	50.000	51.283	-2.6	87	0.000
50	T	1,1,2-Trichloroethane	50.000	44.988	10.0	85	0.000
51	T	Dibromochloromethane	50.000	49.785	0.4	88	0.000
52	T	1,3-Dichloropropane	50.000	46.647	6.7	84	0.000
53	T	1,2-Dibromoethane	50.000	45.630	8.7	84	0.000
54	T	2-Hexanone	50.000	38.419	23.2	79	0.000
55	P	Chlorobenzene	50.000	51.621	-3.2	87	0.000

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016538.D
Acq On : 18 Nov 2015 14:45
Operator : ADC
Sample : WG547460-02 50ug/L CCV STD
Misc : 1,1 STD73185
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 18 14:57:14 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	1-Chlorohexane	50.000	50.010	-0.0	84	0.000
57	C	Ethylbenzene	50.000	51.111	-2.2#	86	0.000
58	T	1,1,1,2-Tetrachloroethane	50.000	52.395	-4.8	89	0.000
59	T	m-,p-Xylene	100.000	106.204	-6.2	88	0.000
60	T	o-Xylene	50.000	50.847	-1.7	85	0.000
61	T	Styrene	50.000	51.896	-3.8	87	0.000
62	P	Bromoform	50.000	52.425	-4.8	96	0.000
63	T	Isopropylbenzene	50.000	52.784	-5.6	88	0.000
64	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	82	0.000
65	T	1,3,5-Trimethylbenzene	50.000	53.486	-7.0	88	0.000
66	S	p-Bromofluorobenzene	25.000	26.939	-7.8	86	0.000
67	T	Bromobenzene	50.000	51.122	-2.2	89	0.000
68	T	n-Propylbenzene	50.000	54.874	-9.7	88	0.000
69	P	1,1,2,2-Tetrachloroethane	50.000	47.545	4.9	91	0.000
70	T	2-Chlorotoluene	50.000	52.786	-5.6	88	0.000
71	T	1,2,3-Trichloropropane	50.000	45.957	8.1	92	0.000
72	T	trans-1,4-Dichloro-2-Butene	50.000	42.745	14.5	84	0.000
73	T	1,2,4-Trimethylbenzene	50.000	53.714	-7.4	89	0.000
74	T	4-Chlorotoluene	50.000	52.859	-5.7	87	0.000
75	T	tert-Butylbenzene	50.000	52.939	-5.9	88	0.000
76	T	sec-Butylbenzene	50.000	54.296	-8.6	89	0.000
77	T	p-Isopropyltoluene	50.000	54.911	-9.8	88	0.000
78	T	1,3-Dichlorobenzene	50.000	54.842	-9.7	92	0.000
79	T	1,4-Dichlorobenzene	50.000	53.349	-6.7	92	0.000
80	T	n-Butylbenzene	50.000	55.209	-10.4	88	0.000
81	T	1,2-Dichlorobenzene	50.000	51.802	-3.6	90	0.000
82	T	1,2-Dibromo-3-Chloropropane	50.000	44.711	10.6	87	0.000
83	T	Hexachlorobutadiene	50.000	47.448	5.1	76	0.000
84	T	1,2,4-Trichlorobenzene	50.000	48.762	2.5	82	0.000
85	T	Naphthalene	50.000	40.738	18.5	77	0.000
86	T	1,2,3-Trichlorobenzene	50.000	42.714	14.6	75	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\111915\8M408797.D Vial: 3
Acq On : 19 Nov 2015 12:31 Operator: TMB
Sample : WG547619-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD73419 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 19 12:53:59 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	1262007	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	965608	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	528641	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	313954	26.1388 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.56%		
43) 1,2-Dichloroethane-d4	10.30	65	306915	25.0621 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.24%		
58) Toluene-d8	12.69	98	1108635	24.7451 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.00%		
80) p-Bromofluorobenzene	16.08	95	451368	24.4709 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.88%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	1153166	60.1038 ug/L	98
3) Chloromethane	3.63	50	1809032	61.7922 ug/L	99
4) Vinyl Chloride	3.85	62	1348903	58.3063 ug/L	100
5) 1,3-Butadiene	3.89	54	1105790	77.9954 ug/L	99
6) Bromomethane	4.74	94	469287	58.8214 ug/L	98
7) Chloroethane	4.90	64	520207	55.1167 ug/L	97
8) Trichlorofluoromethane	5.39	101	1234142	55.1944 ug/L	98
9) Diethyl ether	5.91	59	857291	99.6146 ug/L	97
10) Isoprene	5.95	67	879713	53.5894 ug/L	95
11) Acrolein	6.15	56	40293	37.7254 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	668223	55.5954 ug/L	100
13) Acetone	6.25	43	96453	51.4926 ug/L	93
14) 1,1-Dichloroethene	6.47	61	1115622	54.5266 ug/L	99
15) Tert-Butyl Alcohol	6.58	59	111304	201.1008 ug/L	94
16) Dimethyl Sulfide	6.74	62	614888	52.3631 ug/L	100
17) Iodomethane	7.00	142	404013	51.6613 ug/L	93
18) Methyl acetate	7.01	43	362960	51.2414 ug/L	98
19) Methylene Chloride	7.26	84	652870	51.3782 ug/L	100
20) Carbon Disulfide	7.30	76	2223327	53.5848 ug/L	100
21) Acrylonitrile	7.44	53	161133	57.3025 ug/L	98
22) Methyl Tert Butyl Ether	7.47	73	1307146	54.2649 ug/L	98
23) trans-1,2-Dichloroethene	7.71	61	1050584	54.0705 ug/L	99
24) n-Hexane	7.79	57	1052462	54.8328 ug/L	94
25) Diisopropyl ether	8.13	45	4915222	102.6210 ug/L	98
26) Vinyl Acetate	8.30	43	971623	76.3275 ug/L	99
27) 1,1-Dichloroethane	8.33	63	1311742	53.1641 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	3853637	102.1477 ug/L	98
29) 2-Butanone	8.89	43	173300	53.7002 ug/L	98
30) Propionitrile	8.99	54	103366	109.1621 ug/L	100
31) 2,2-Dichloropropane	9.11	77	1097917	53.2443 ug/L	100
32) cis-1,2-Dichloroethene	9.18	96	734187	52.9596 ug/L	100
33) Chloroform	9.38	83	1232881	52.6030 ug/L	99
34) 1-Bromopropane	9.52	122	122770	53.9295 ug/L	99
35) Bromochloromethane	9.61	130	370771	54.3294 ug/L	98
36) Tetrahydrofuran	9.64	42	226090	106.7272 ug/L	97
38) 1,1,1-Trichloroethane	9.91	97	1117180	53.1024 ug/L	99
39) Cyclohexane	9.94	56	1340855	53.5588 ug/L	98
40) 1,1-Dichloropropene	10.11	75	957033	52.8344 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	2841471	101.5834 ug/L	98
42) Carbon Tetrachloride	10.25	117	1035932	55.0964 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M408797.D 8260WT.M Thu Nov 19 12:54:00 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\111915\8M408797.D Vial: 3
Acq On : 19 Nov 2015 12:31 Operator: TMB
Sample : WG547619-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD73419 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 19 12:53:59 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.43	62	859513	53.4040 ug/L	100
46)	Benzene	10.47	78	2608395	52.4799 ug/L	99
47)	Trichloroethene	11.21	130	684988	51.1940 ug/L	97
48)	Methylcyclohexane	11.31	83	1085171	52.4154 ug/L	98
49)	1,2-Dichloropropane	11.43	63	700195	52.2932 ug/L	97
50)	Bromodichloromethane	11.73	83	924568	53.4963 ug/L	99
51)	1,4-Dioxane	11.72	88	12255	198.8001 ug/L	91
52)	Dibromomethane	11.81	93	340979	53.4792 ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.03	63	269890	48.9031 ug/L	97
54)	4-Methyl-2-Pentanone	12.06	58	141199	49.8728 ug/L	98
55)	cis-1,3-Dichloropropene	12.36	75	1020202	53.1754 ug/L	99
56)	Dimethyl Disulfide	12.63	79	535483	51.7613 ug/L	97
59)	Toluene	12.79	91	2727927	49.7166 ug/L	99
60)	Ethyl Methacrylate	12.89	69	563808	51.5397 ug/L	94
62)	trans-1,3-Dichloropropene	12.96	75	870125	51.6907 ug/L	100
63)	1,1,2-Trichloroethane	13.18	97	441701	50.7181 ug/L	98
64)	2-Hexanone	13.12	58	131279	47.9456 ug/L #	95
65)	1,3-Dichloropropane	13.49	76	767463	49.3122 ug/L	95
66)	Tetrachloroethene	13.61	164	579300	49.6636 ug/L	99
67)	Dibromochloromethane	13.87	129	600411	53.3231 ug/L	99
68)	1,2-Dibromoethane	14.13	107	433724	49.8834 ug/L	99
69)	1-Chlorohexane	14.21	91	974776	49.6478 ug/L	99
70)	Chlorobenzene	14.62	112	1817249	49.4275 ug/L	99
71)	1,1,1,2-Tetrachloroethane	14.66	131	706121	51.9426 ug/L	99
72)	Ethylbenzene	14.66	106	1029064	48.0476 ug/L	91
73)	m-,p-Xylene	14.75	106	2452766	99.8611 ug/L	93
74)	o-Xylene	15.31	106	1187244	47.7995 ug/L	94
75)	Styrene	15.35	104	1996591	50.7356 ug/L	99
76)	Bromoform	15.83	173	369964	54.6558 ug/L	98
77)	Isopropylbenzene	15.73	105	3007081	50.4697 ug/L	99
79)	1,1,2,2-Tetrachloroethane	15.95	83	505061	51.7845 ug/L	99
81)	1,2,3-Trichloropropane	16.14	110	139949	51.6384 ug/L	59
82)	trans-1,4-Dichloro-2-Buten	16.19	53	190768	53.2270 ug/L #	72
83)	n-Propylbenzene	16.24	91	3691710	48.2335 ug/L	98
84)	Bromobenzene	16.37	156	783366	50.4201 ug/L	98
85)	1,3,5-Trimethylbenzene	16.42	105	2602253	49.4515 ug/L	100
86)	2-Chlorotoluene	16.52	91	2475333	48.8280 ug/L	98
87)	4-Chlorotoluene	16.56	91	2144200	48.9067 ug/L	97
88)	a-Methylstyrene	16.83	118	1403470	48.9228 ug/L	99
89)	tert-Butylbenzene	16.89	134	555104	47.9512 ug/L	91
90)	1,2,4-Trimethylbenzene	16.94	105	2700875	50.7919 ug/L	99
91)	sec-Butylbenzene	17.16	105	3213514	49.1593 ug/L	97
92)	p-Isopropyltoluene	17.32	119	2677428	51.2278 ug/L	95
93)	1,3-Dichlorobenzene	17.51	146	1550605	50.0011 ug/L	99
94)	1,4-Dichlorobenzene	17.64	146	1525041	49.3837 ug/L	97
95)	n-Butylbenzene	17.85	91	2652853	54.4493 ug/L	96
96)	1,2-Dichlorobenzene	18.14	146	1377858	50.7774 ug/L	98
97)	1,2-Dibromo-3-Chloropropan	19.13	75	89180	52.1775 ug/L	99
98)	1,2,4-Trichlorobenzene	20.27	180	1006302	53.9785 ug/L	100
99)	Hexachlorobutadiene	20.42	225	441083	49.4662 ug/L	99
100)	Naphthalene	20.64	128	1573020	58.3627 ug/L	99
101)	1,2,3-Trichlorobenzene	20.95	180	856113	53.8517 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M408797.D 8260WT.M Thu Nov 19 12:54:00 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\111915\8M408797.D Vial: 3
Acq On : 19 Nov 2015 12:31 Operator: TMB
Sample : WG547619-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD73419 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 19 12:53 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration

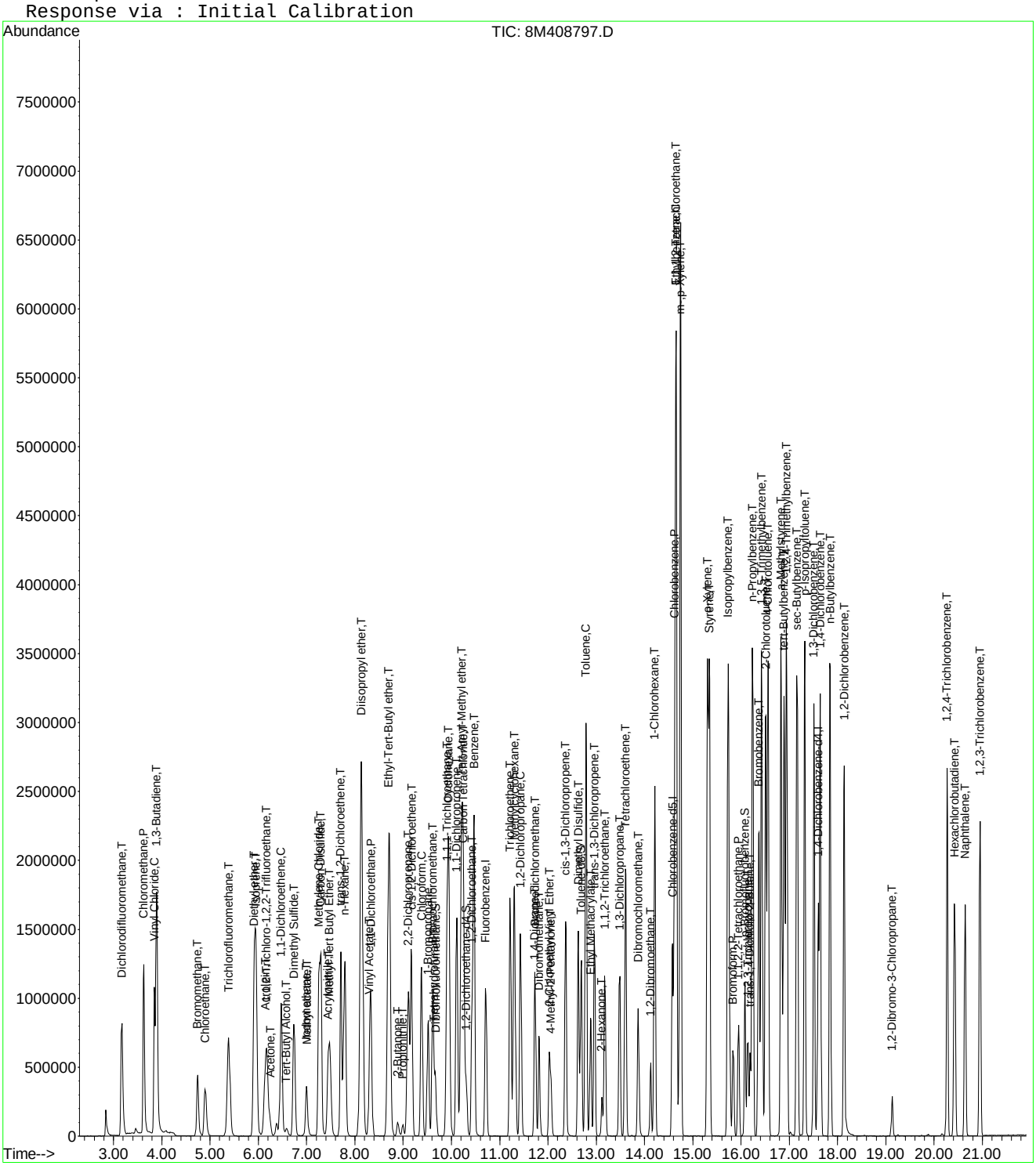

Continuing Calibration Area and RT check

Instrument: HPMS8
Initial cal date: 30 Sep 2015 13:27
CCV date: 19 Nov 2015 12:31
CCV Filename: 8M408797.D

	Fluorobenzene		**Chlorobenzene-d5**		**1,4-Dichlorobenzene-d4**	
	Amount	RT	Amount	RT	Amount	RT
InitCal	938292	10.72	687265	14.58	378981	17.60
CCV	1262007	10.71	965608	14.58	528641	17.60

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\111915\8M408797.D Vial: 3
Acq On : 19 Nov 2015 12:31 Operator: TMB
Sample : WG547619-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD73419 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	135	0.00
2	T	Dichlorodifluoromethane	0.3801	0.4569	-20.2	157#	0.00
3	P	Chloromethane	0.5799	0.7167	-23.6	166#	0.00
4	C	Vinyl Chloride	0.4583	0.5344	-16.6	169#	0.00
5	T	1,3-Butadiene	0.2992	0.4381	-46.4#	186#	0.00
6	T	Bromomethane	0.1393	0.1859	-33.4#	176#	0.00
7	T	Chloroethane	0.1870	0.2061	-10.2	146	0.00
8	T	Trichlorofluoromethane	0.4429	0.4890	-10.4	154#	0.00
9	T	Diethyl ether	0.1705	0.1698	0.4	140	0.00
10	T	Isoprene	0.3252	0.3485	-7.2	135	0.00
11	T	Acrolein	0.0212	0.0160	24.6	109	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2381	0.2647	-11.2	153#	0.00
13	T	Acetone	0.0371	0.0382	-3.0	154#	0.00
14	C	1,1-Dichloroethene	0.4053	0.4420	-9.1	153#	0.00
15	T	Tert-Butyl Alcohol	0.0110	0.0110	-0.5	150	0.00
16	T	Dimethyl Sulfide	0.2326	0.2436	-4.7	139	0.00
17	T	Iodomethane	0.1277	0.1601	-25.3#	144	0.00
18	T	Methyl acetate	0.1403	0.1438	-2.5	152#	0.00
19	T	Methylene Chloride	0.2517	0.2587	-2.8	143	0.00
20	T	Carbon Disulfide	0.8219	0.8809	-7.2	141	0.00
21	T	Acrylonitrile	0.0557	0.0638	-14.6	156#	0.00
22	T	Methyl Tert Butyl Ether	0.4772	0.5179	-8.5	150#	0.00
23	T	trans-1,2-Dichloroethene	0.3849	0.4162	-8.1	146	0.00
24	T	n-Hexane	0.3802	0.4170	-9.7	144	0.00
25	T	Diisopropyl ether	0.9488	0.9737	-2.6	138	0.00
26	T	Vinyl Acetate	0.2522	0.3850	-52.7#	205#	0.00
27	P	1,1-Dichloroethane	0.4888	0.5197	-6.3	147	0.00
28	T	Ethyl-Tert-Butyl ether	0.7473	0.7634	-2.1	139	0.00
29	T	2-Butanone	0.0639	0.0687	-7.4	157#	0.00
30	T	Propionitrile	0.0188	0.0205	-9.2	156#	0.00
31	T	2,2-Dichloropropane	0.4085	0.4350	-6.5	145	0.00
32	T	cis-1,2-Dichloroethene	0.2746	0.2909	-5.9	146	0.00
33	C	Chloroform	0.4643	0.4885	-5.2	143	0.00
34		1-Bromopropane	0.0451	0.0486	-7.8	137	0.00
35	T	Bromochloromethane	0.1352	0.1469	-8.7	146	0.00
36	T	Tetrahydrofuran	0.0420	0.0448	-6.7	156#	0.00
37	S	Dibromofluoromethane	0.2379	0.2488	-4.6	140	0.00
38	T	1,1,1-Trichloroethane	0.4168	0.4426	-6.2	142	0.00
39	T	Cyclohexane	0.4959	0.5312	-7.1	142	0.00
40	T	1,1-Dichloropropene	0.3588	0.3792	-5.7	143	0.00
41	T	Tert-Amyl-Methyl ether	0.5541	0.5629	-1.6	140	0.00
42	T	Carbon Tetrachloride	0.3725	0.4104	-10.2	146	0.00
43	S	1,2-Dichloroethane-d4	0.2426	0.2432	-0.3	135	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.3188	0.3405	-6.8	144	0.00
46	T	Benzene	0.9846	1.0334	-5.0	138	0.00
47	T	Trichloroethene	0.2651	0.2714	-2.4	141	0.00
48	T	Methylcyclohexane	0.4101	0.4299	-4.8	139	0.00
49	C	1,2-Dichloropropane	0.2652	0.2774	-4.6	142	0.00
50	T	Bromodichloromethane	0.3424	0.3663	-7.0	142	0.00
51	T	1,4-Dioxane	0.0012	0.0012	0.8	141	0.00
52	T	Dibromomethane	0.1263	0.1351	-7.0	145	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1093	0.1069	2.2	139	0.00
54	T	4-Methyl-2-Pentanone	0.0561	0.0559	0.2	147	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\111915\8M408797.D Vial: 3
Acq On : 19 Nov 2015 12:31 Operator: TMB
Sample : WG547619-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD73419 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.3801	0.4042	-6.4	140	0.00
56	T	Dimethyl Disulfide	0.2049	0.2122	-3.5	141	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	141	0.00
58	S	Toluene-d8	1.1600	1.1481	1.0	136	0.00
59	C	Toluene	1.4206	1.4125	0.6	137	0.00
60	T	Ethyl Methacrylate	0.2832	0.2919	-3.1	144	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.4358	0.4506	-3.4	143	0.00
63	T	1,1,2-Trichloroethane	0.2255	0.2287	-1.4	147	0.00
64	T	2-Hexanone	0.0709	0.0680	4.1	146	0.00
65	T	1,3-Dichloropropane	0.4029	0.3974	1.4	144	0.00
66	T	Tetrachloroethene	0.3020	0.3000	0.7	143	0.00
67	T	Dibromochloromethane	0.2915	0.3109	-6.6	149	0.00
68	T	1,2-Dibromoethane	0.2251	0.2246	0.2	143	0.00
69	T	1-Chlorohexane	0.5083	0.5048	0.7	136	0.00
70	P	Chlorobenzene	0.9519	0.9410	1.1	138	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3520	0.3656	-3.9	143	0.00
72	C	Ethylbenzene	0.5545	0.5329	3.9	138	0.00
73	T	m-,p-Xylene	0.6359	0.6350	0.1	136	0.00
74	T	o-Xylene	0.6431	0.6148	4.4	136	0.00
75	T	Styrene	1.0189	1.0338	-1.5	136	0.00
76	P	Bromoform	0.1752	0.1916	-9.3	154#	0.00
77	T	Isopropylbenzene	1.5426	1.5571	-0.9	136	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	139	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4612	0.4777	-3.6	150	0.00
80	S	p-Bromofluorobenzene	0.8723	0.8538	2.1	137	0.00
81	T	1,2,3-Trichloropropane	0.1282	0.1324	-3.3	149	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1695	0.1804	-6.5	149	0.00
83	T	n-Propylbenzene	3.6196	3.4917	3.5	135	0.00
84	T	Bromobenzene	0.7348	0.7409	-0.8	142	0.00
85	T	1,3,5-Trimethylbenzene	2.4886	2.4613	1.1	133	0.00
86	T	2-Chlorotoluene	2.3974	2.3412	2.3	134	0.00
87	T	4-Chlorotoluene	2.0734	2.0280	2.2	131	0.00
88	T	a-Methylstyrene	1.3567	1.3274	2.2	132	0.00
89	T	tert-Butylbenzene	0.5475	0.5250	4.1	138	0.00
90	T	1,2,4-Trimethylbenzene	2.5147	2.5545	-1.6	135	0.00
91	T	sec-Butylbenzene	3.0914	3.0394	1.7	137	0.00
92	T	p-Isopropyltoluene	2.4717	2.5324	-2.5	136	0.00
93	T	1,3-Dichlorobenzene	1.4666	1.4666	-0.0	139	0.00
94	T	1,4-Dichlorobenzene	1.4604	1.4424	1.2	140	0.00
95	T	n-Butylbenzene	2.3041	2.5091	-8.9	141	0.00
96	T	1,2-Dichlorobenzene	1.2833	1.3032	-1.6	143	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.0808	0.0843	-4.4	150#	0.00
98	T	1,2,4-Trichlorobenzene	0.8816	0.9518	-8.0	147	0.00
99	T	Hexachlorobutadiene	0.4217	0.4172	1.1	140	0.00
100	T	Naphthalene	1.2746	1.4878	-16.7	166#	0.00
101	T	1,2,3-Trichlorobenzene	0.7518	0.8097	-7.7	148	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M408797.D 8260WT.M Thu Nov 19 12:58:04 2015 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\111915\8M408797.D Vial: 3
Acq On : 19 Nov 2015 12:31 Operator: TMB
Sample : WG547619-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD73419 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	135	0.00
2	T	Dichlorodifluoromethane	50.0000	60.1038	-20.2	157	0.00
3	P	Chloromethane	50.0000	61.7922	-23.6	166	0.00
4	C	Vinyl Chloride	50.0000	58.3064	-16.6	169	0.00
5	T	1,3-Butadiene	50.0000	77.9954	-56.0#	186	0.00
6	T	Bromomethane	50.0000	58.8214	-17.6	176	0.00
7	T	Chloroethane	50.0000	55.1168	-10.2	146	0.00
8	T	Trichlorofluoromethane	50.0000	55.1944	-10.4	154	0.00
9	T	Diethyl ether	100.0000	99.6146	0.4	140	0.00
10	T	Isoprene	50.0000	53.5894	-7.2	135	0.00
11	T	Acrolein	50.0000	37.7254	24.5	109	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	55.5954	-11.2	153	0.00
13	T	Acetone	50.0000	51.4926	-3.0	154	0.00
14	C	1,1-Dichloroethene	50.0000	54.5266	-9.1	153	0.00
15	T	Tert-Butyl Alcohol	200.0000	201.1008	-0.6	150	0.00
16	T	Dimethyl Sulfide	50.0000	52.3631	-4.7	139	0.00
17	T	Iodomethane	50.0000	51.6613	-3.3	144	0.00
18	T	Methyl acetate	50.0000	51.2414	-2.5	152	0.00
19	T	Methylene Chloride	50.0000	51.3782	-2.8	143	0.00
20	T	Carbon Disulfide	50.0000	53.5848	-7.2	141	0.00
21	T	Acrylonitrile	50.0000	57.3025	-14.6	156	0.00
22	T	Methyl Tert Butyl Ether	50.0000	54.2649	-8.5	150	0.00
23	T	trans-1,2-Dichloroethene	50.0000	54.0705	-8.1	146	0.00
24	T	n-Hexane	50.0000	54.8328	-9.7	144	0.00
25	T	Diisopropyl ether	100.0000	102.6210	-2.6	138	0.00
26	T	Vinyl Acetate	50.0000	76.3275	-52.7#	205	0.00
27	P	1,1-Dichloroethane	50.0000	53.1641	-6.3	147	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	102.1477	-2.1	139	0.00
29	T	2-Butanone	50.0000	53.7002	-7.4	157	0.00
30	T	Propionitrile	100.0000	109.1621	-9.2	156	0.00
31	T	2,2-Dichloropropane	50.0000	53.2443	-6.5	145	0.00
32	T	cis-1,2-Dichloroethene	50.0000	52.9596	-5.9	146	0.00
33	C	Chloroform	50.0000	52.6030	-5.2	143	0.00
34		1-Bromopropane	50.0000	53.9295	-7.9	137	0.00
35	T	Bromochloromethane	50.0000	54.3294	-8.7	146	0.00
36	T	Tetrahydrofuran	100.0000	106.7272	-6.7	156	0.00
37	S	Dibromofluoromethane	25.0000	26.1388	-4.6	140	0.00
38	T	1,1,1-Trichloroethane	50.0000	53.1024	-6.2	142	0.00
39	T	Cyclohexane	50.0000	53.5588	-7.1	142	0.00
40	T	1,1-Dichloropropene	50.0000	52.8344	-5.7	143	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	101.5834	-1.6	140	0.00
42	T	Carbon Tetrachloride	50.0000	55.0964	-10.2	146	0.00
43	S	1,2-Dichloroethane-d4	25.0000	25.0621	-0.2	135	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	53.4040	-6.8	144	0.00
46	T	Benzene	50.0000	52.4799	-5.0	138	0.00
47	T	Trichloroethene	50.0000	51.1940	-2.4	141	0.00
48	T	Methylcyclohexane	50.0000	52.4154	-4.8	139	0.00
49	C	1,2-Dichloropropane	50.0000	52.2932	-4.6	142	0.00
50	T	Bromodichloromethane	50.0000	53.4963	-7.0	142	0.00
51	T	1,4-Dioxane	200.0000	198.8001	0.6	141	0.00
52	T	Dibromomethane	50.0000	53.4792	-7.0	145	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	48.9031	2.2	139	0.00
54	T	4-Methyl-2-Pentanone	50.0000	49.8728	0.3	147	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\111915\8M408797.D Vial: 3
Acq On : 19 Nov 2015 12:31 Operator: TMB
Sample : WG547619-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD73419 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.1754	-6.4	140	0.00
56	T	Dimethyl Disulfide	50.0000	51.7612	-3.5	141	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	141	0.00
58	S	Toluene-d8	25.0000	24.7451	1.0	136	0.00
59	C	Toluene	50.0000	49.7166	0.6	137	0.00
60	T	Ethyl Methacrylate	50.0000	51.5397	-3.1	144	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	51.6907	-3.4	143	0.00
63	T	1,1,2-Trichloroethane	50.0000	50.7181	-1.4	147	0.00
64	T	2-Hexanone	50.0000	47.9456	4.1	146	0.00
65	T	1,3-Dichloropropane	50.0000	49.3122	1.4	144	0.00
66	T	Tetrachloroethene	50.0000	49.6636	0.7	143	0.00
67	T	Dibromochloromethane	50.0000	53.3231	-6.6	149	0.00
68	T	1,2-Dibromoethane	50.0000	49.8834	0.2	143	0.00
69	T	1-Chlorohexane	50.0000	49.6478	0.7	136	0.00
70	P	Chlorobenzene	50.0000	49.4275	1.1	138	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	51.9426	-3.9	143	0.00
72	C	Ethylbenzene	50.0000	48.0476	3.9	138	0.00
73	T	m-,p-Xylene	100.0000	99.8611	0.1	136	0.00
74	T	o-Xylene	50.0000	47.7995	4.4	136	0.00
75	T	Styrene	50.0000	50.7356	-1.5	136	0.00
76	P	Bromoform	50.0000	54.6558	-9.3	154	0.00
77	T	Isopropylbenzene	50.0000	50.4697	-0.9	136	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	139	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	51.7845	-3.6	150	0.00
80	S	p-Bromofluorobenzene	25.0000	24.4709	2.1	137	0.00
81	T	1,2,3-Trichloropropane	50.0000	51.6384	-3.3	149	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	53.2270	-6.5	149	0.00
83	T	n-Propylbenzene	50.0000	48.2335	3.5	135	0.00
84	T	Bromobenzene	50.0000	50.4201	-0.8	142	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	49.4515	1.1	133	0.00
86	T	2-Chlorotoluene	50.0000	48.8280	2.3	134	0.00
87	T	4-Chlorotoluene	50.0000	48.9067	2.2	131	0.00
88	T	a-Methylstyrene	50.0000	48.9228	2.2	132	0.00
89	T	tert-Butylbenzene	50.0000	47.9513	4.1	138	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	50.7919	-1.6	135	0.00
91	T	sec-Butylbenzene	50.0000	49.1593	1.7	137	0.00
92	T	p-Isopropyltoluene	50.0000	51.2278	-2.5	136	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.0012	-0.0	139	0.00
94	T	1,4-Dichlorobenzene	50.0000	49.3837	1.2	140	0.00
95	T	n-Butylbenzene	50.0000	54.4493	-8.9	141	0.00
96	T	1,2-Dichlorobenzene	50.0000	50.7774	-1.6	143	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	52.1775	-4.4	150	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	53.9785	-8.0	147	0.00
99	T	Hexachlorobutadiene	50.0000	49.4662	1.1	140	0.00
100	T	Naphthalene	50.0000	58.3627	-16.7	166	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	53.8517	-7.7	148	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M408797.D 8260WT.M Thu Nov 19 12:58:08 2015 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\2\DATA\093015\8M407745.D          Vial: 2
Acq On    : 30 Sep 2015   9:38                        Operator: TMB
Sample    : WG540912-01 50ng BFB STD 8260             Inst    : HPMS8
Misc      : 1,1 STD72715                              Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

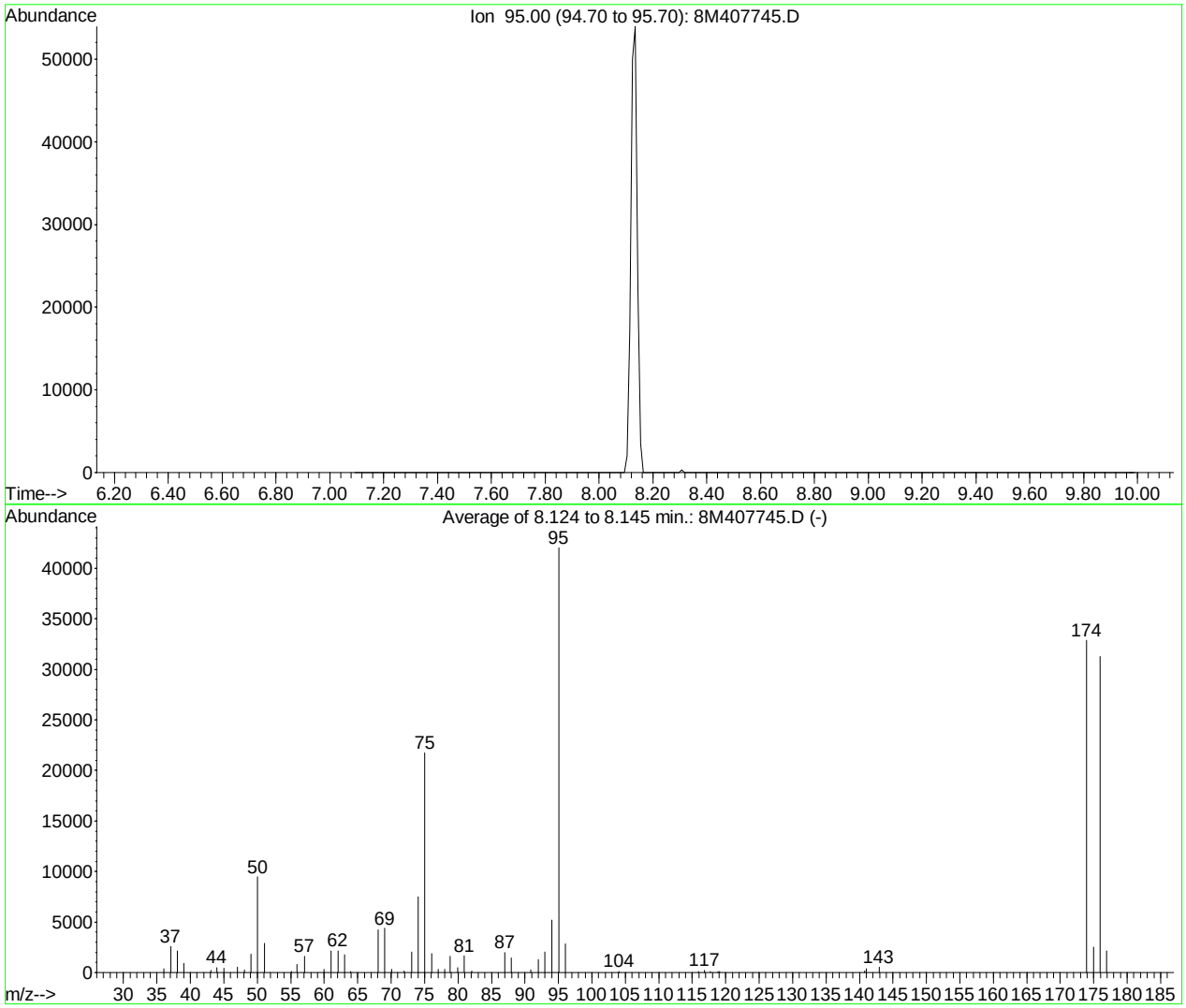

AutoFind: Scans 102, 103, 104; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.5	9471	PASS
75	95	30	60	51.7	21732	PASS
95	95	100	100	100.0	42018	PASS
96	95	5	9	6.7	2835	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	78.3	32893	PASS
175	174	5	9	7.6	2510	PASS
176	174	95	101	95.1	31272	PASS
177	176	5	9	6.8	2141	PASS

8M407745.D BFB.M Wed Sep 30 09:54:57 2015

BFB

```
Data File : C:\MSDCHEM\2\DATA\100515\8M407827.D          Vial: 1
Acq On    :  5 Oct 2015  11:26                       Operator: TMB
Sample    : WG540826-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD72715                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

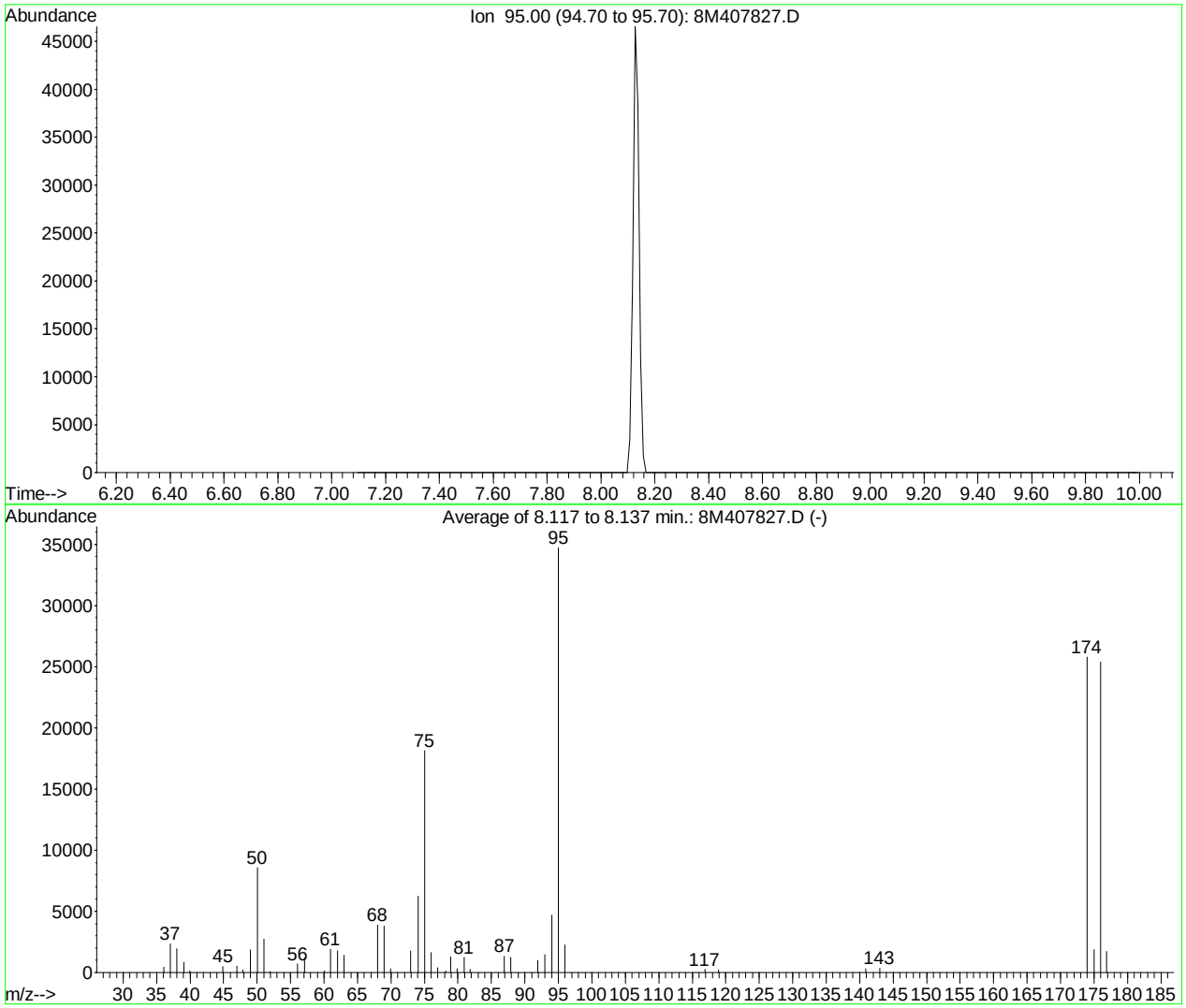

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	24.7	8565	PASS
75	95	30	60	52.2	18121	PASS
95	95	100	100	100.0	34714	PASS
96	95	5	9	6.5	2262	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	74.2	25773	PASS
175	174	5	9	7.2	1845	PASS
176	174	95	101	98.5	25378	PASS
177	176	5	9	6.9	1746	PASS

8M407827.D BFB.M Mon Oct 05 12:46:56 2015

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016366.D
Acq On : 11 Nov 2015 14:17
Operator : ADC
Sample : WG546498-01 50ng BFB STD
Misc : 1,1 STD72715
ALS Vial : 1 Sample Multiplier: 1

Integration File: lscint.p

Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
Last Update : Mon Nov 02 12:09:40 2015

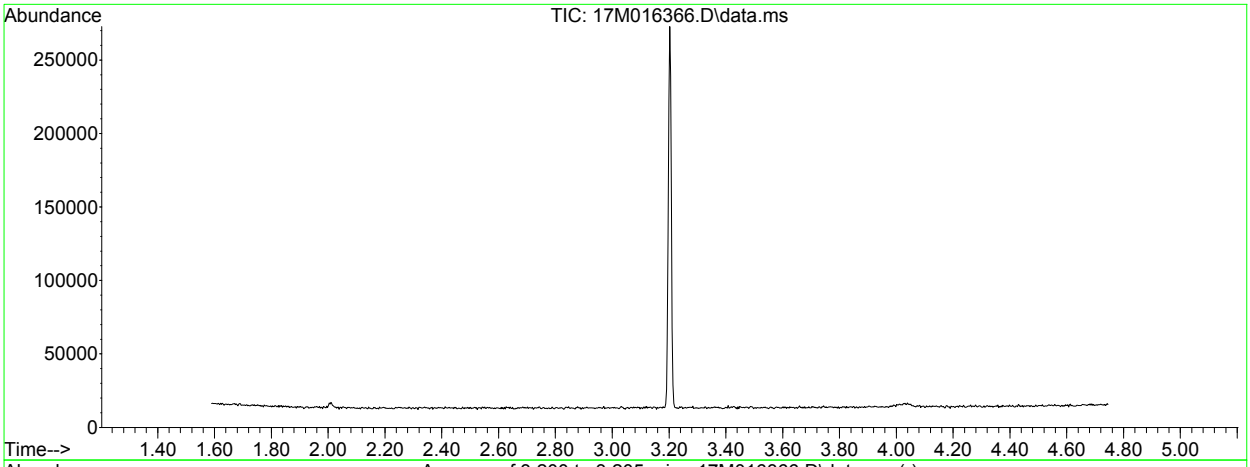

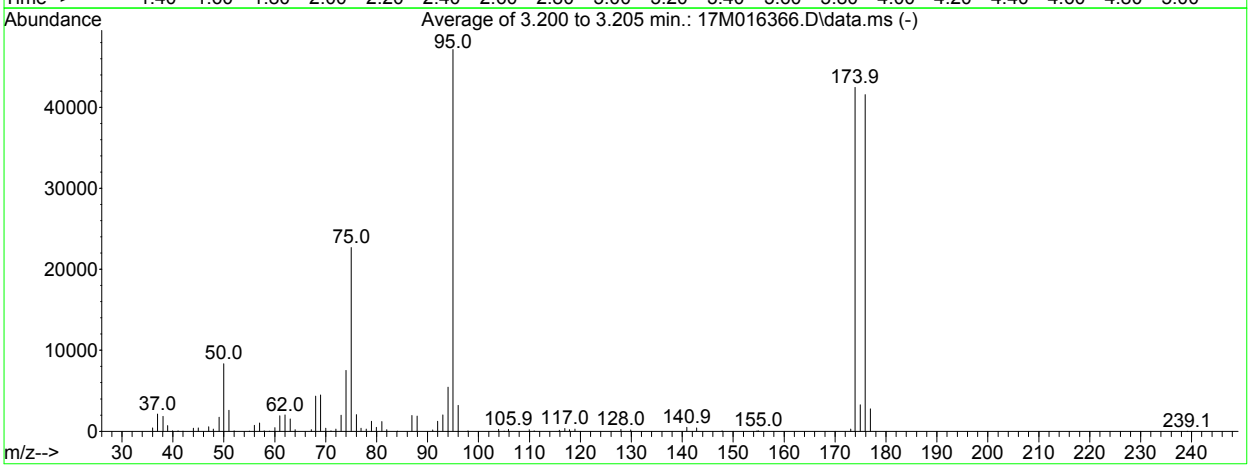

AutoFind: Scans 557, 558, 559; Background Corrected with Scan 548

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.7	8344	PASS
75	95	30	60	48.1	22677	PASS
95	95	100	100	100.0	47164	PASS
96	95	5	9	6.8	3185	PASS
173	174	0.00	2	0.6	273	PASS
174	95	50	100	90.1	42488	PASS
175	174	5	9	7.7	3275	PASS
176	174	95	101	97.8	41568	PASS
177	176	5	9	6.7	2779	PASS

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016537.D
Acq On : 18 Nov 2015 14:26
Operator : ADC
Sample : WG547460-01 50ng BFB STD
Misc : 1,1 STD72715
ALS Vial : 1 Sample Multiplier: 1

Integration File: lscint.p

Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
Last Update : Thu Nov 12 09:48:27 2015

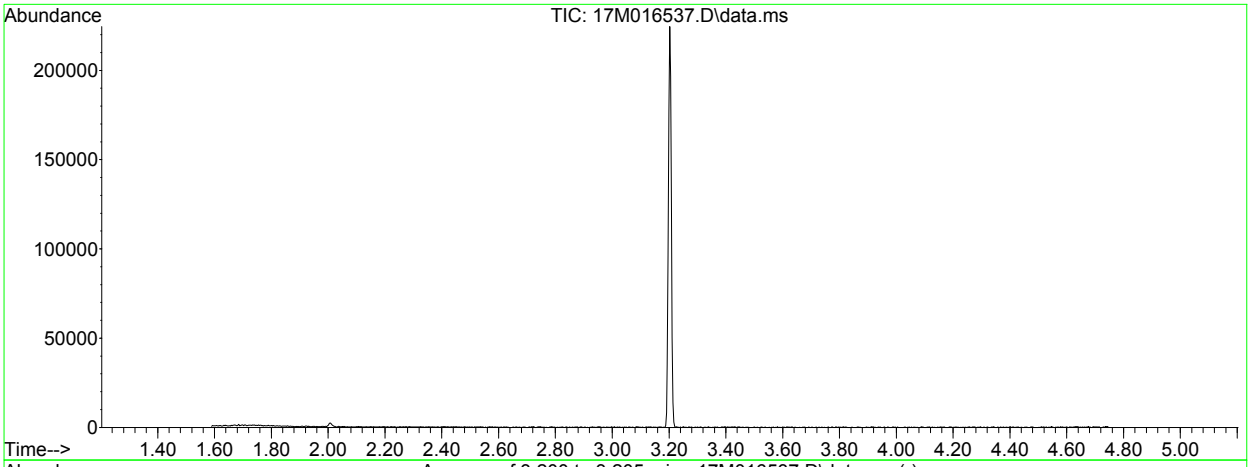

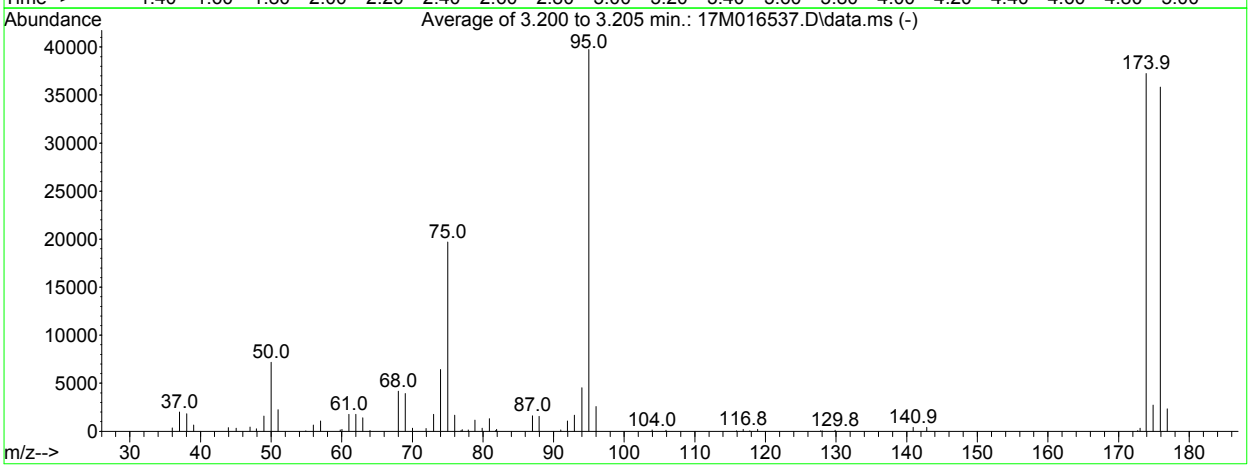

AutoFind: Scans 557, 558, 559; Background Corrected with Scan 548

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.0	7173	PASS
75	95	30	60	49.5	19685	PASS
95	95	100	100	100.0	39752	PASS
96	95	5	9	6.5	2587	PASS
173	174	0.00	2	0.8	308	PASS
174	95	50	100	93.7	37237	PASS
175	174	5	9	7.3	2721	PASS
176	174	95	101	96.2	35824	PASS
177	176	5	9	6.5	2328	PASS

BFB

```
Data File : C:\MSDCHEM\2\DATA\111915\8M408795.D          Vial: 1
Acq On    : 19 Nov 2015  11:35                       Operator: TMB
Sample    : WG547619-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD73273                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

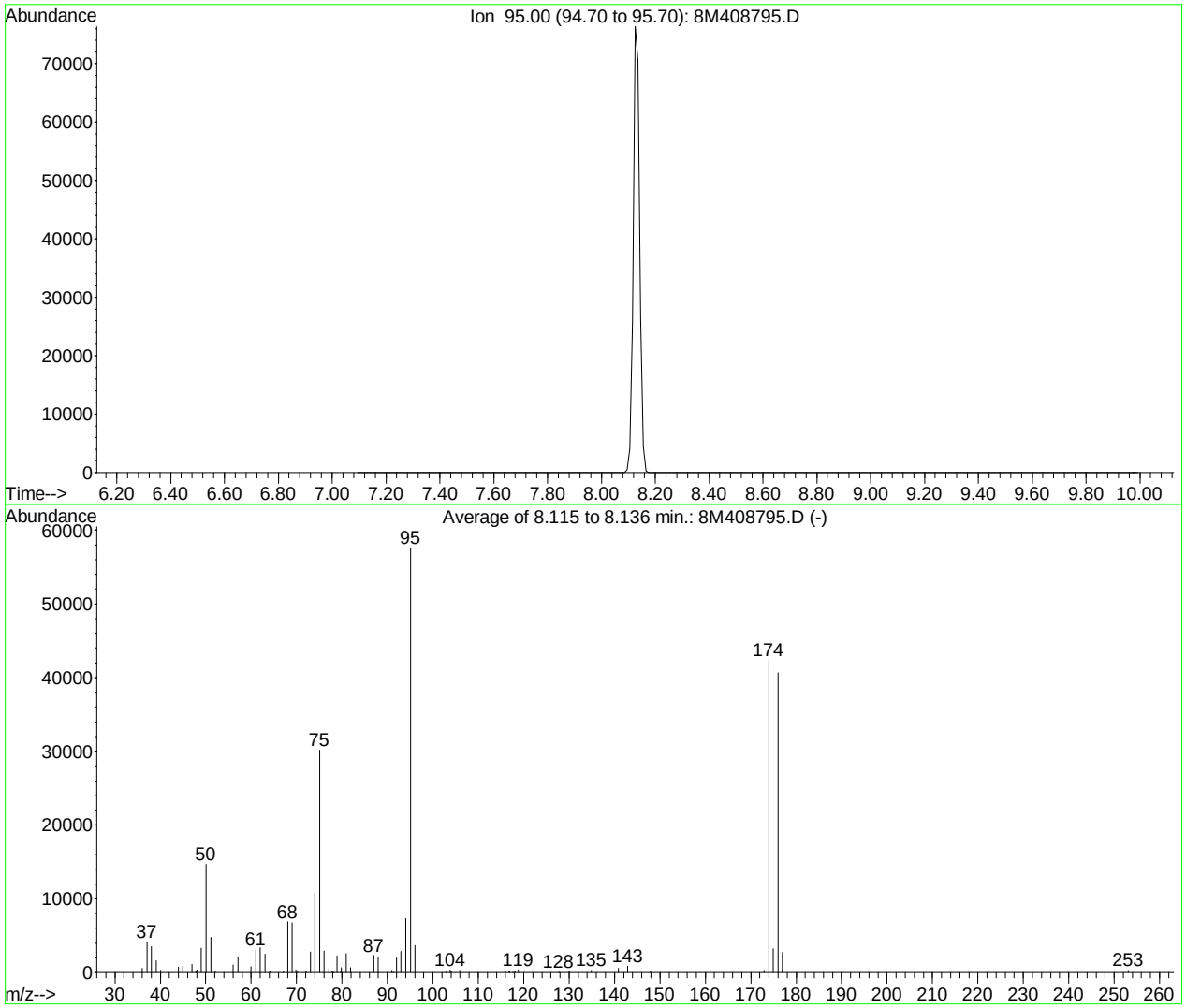

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 96

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	25.5	14674	PASS
75	95	30	60	52.4	30197	PASS
95	95	100	100	100.0	57589	PASS
96	95	5	9	6.4	3698	PASS
173	174	0.00	2	0.8	327	PASS
174	95	50	100	73.5	42317	PASS
175	174	5	9	7.7	3254	PASS
176	174	95	101	96.1	40649	PASS
177	176	5	9	6.7	2737	PASS

8M408795.D BFB.M Thu Nov 19 12:01:03 2015

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016540.D
Acq On : 18 Nov 2015 15:25
Operator : ADC
Sample : WG547466-01 BLK 8260
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 30 09:36:35 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.141	96	367570	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	270869	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.302	152	146327	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.177	111	96917	25.7030 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.812%		
34) 1,2-Dichloroethane-d4	4.814	65	99869	27.5799 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 110.320%		
47) Toluene-d8	6.711	98	384543	27.5410 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 110.164%#		
66) p-Bromofluorobenzene	8.723	95	140230	27.7230 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 110.892%		
Target Compounds					Qvalue
6) Bromomethane	1.386	94	388	0.1479 ug/L	99
16) Acetone	2.353	43	119	Below Cal #	42
83) Hexachlorobutadiene	10.185	225	512	0.1270 ug/L	90

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016540.D
Acq On : 18 Nov 2015 15:25
Operator : ADC
Sample : WG547466-01 BLK 8260
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 30 09:36:35 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

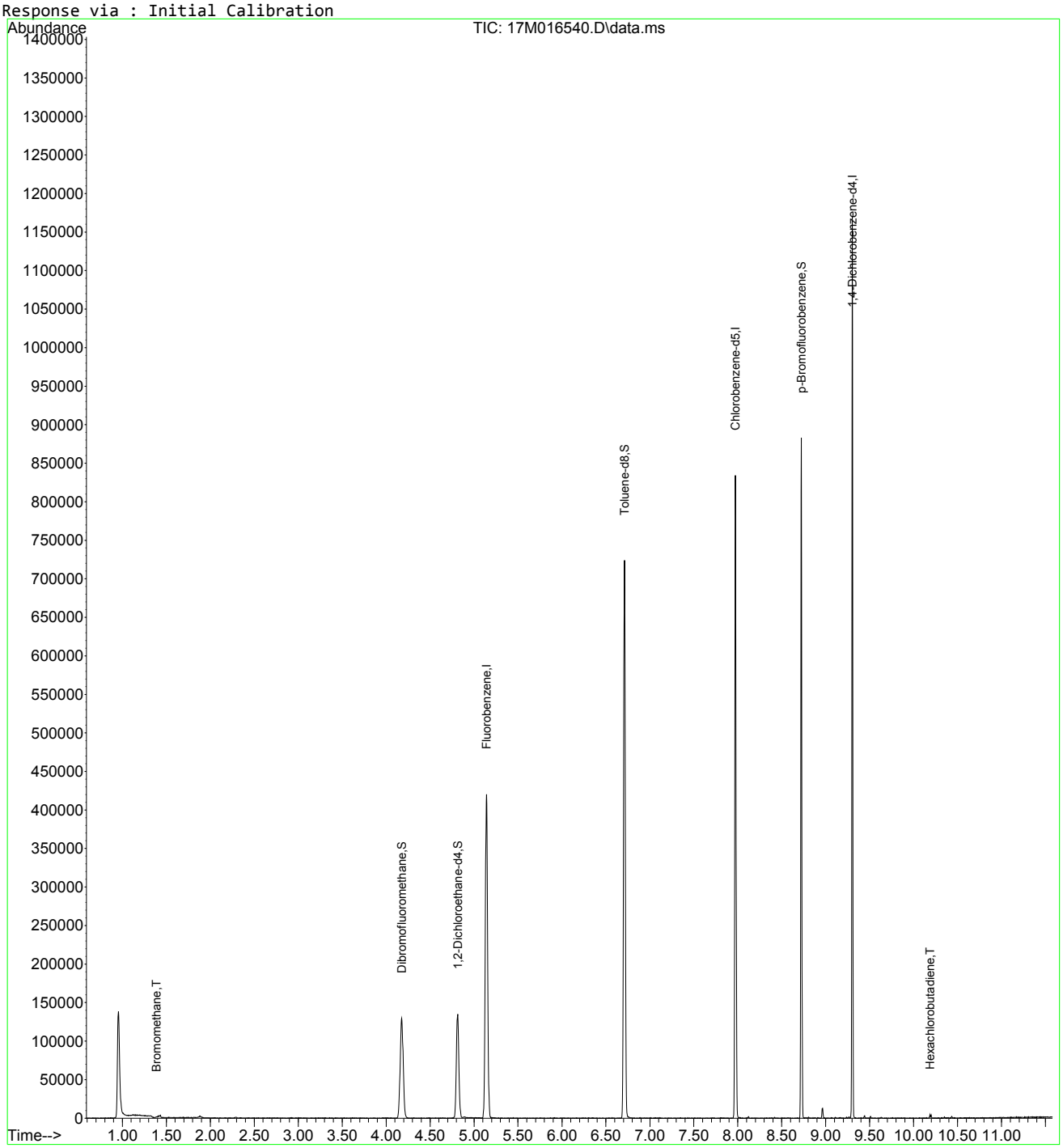

8260_VMS.M Mon Nov 30 09:36:36 2015 Page: 2

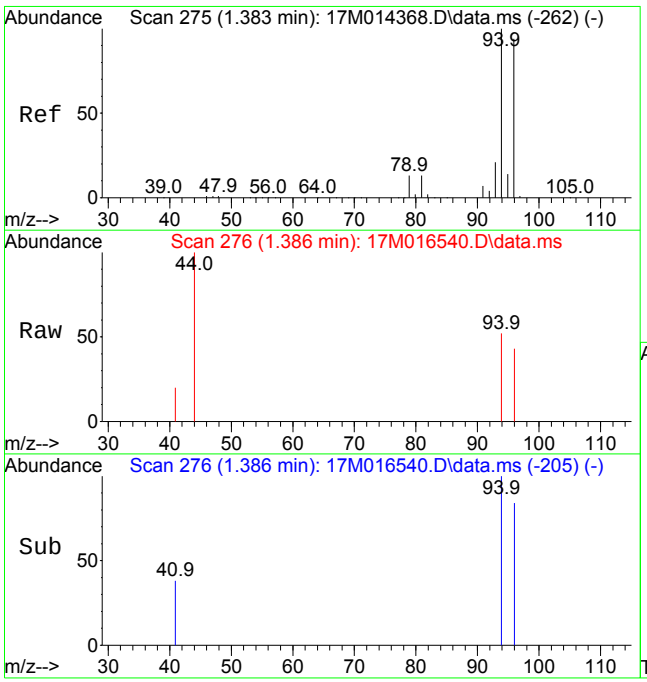

#6
Bromomethane
Concen: 0.1479 ug/L
RT: 1.386 min Scan# 276
Delta R.T. 0.006 min
Lab File: 17M016540.D
Acq: 18 Nov 2015 15:25

Tgt Ion: 94 Resp: 388

Ion	Ratio	Lower	Upper
94	100		
96	94.6	56.0	130.8

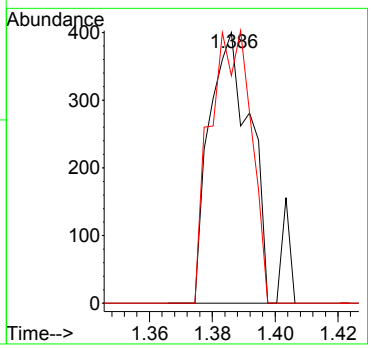

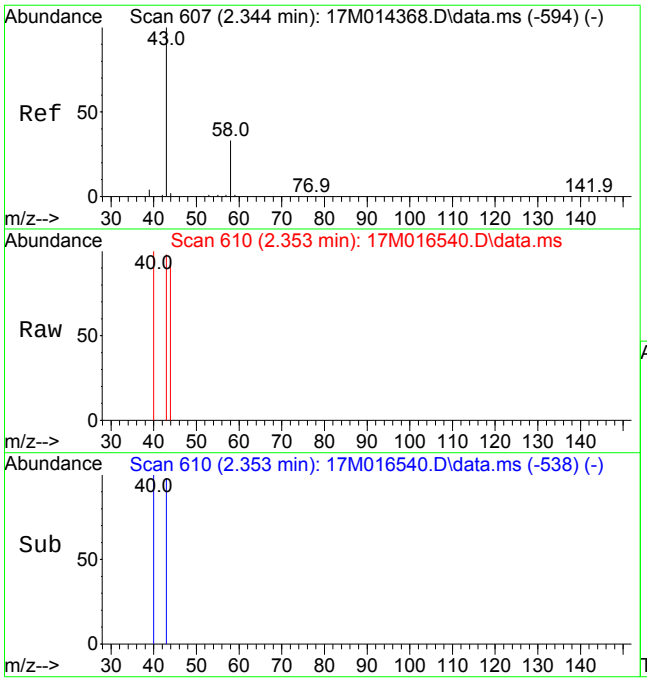

#16
Acetone
Concen: Below Cal
RT: 2.353 min Scan# 610
Delta R.T. 0.009 min
Lab File: 17M016540.D
Acq: 18 Nov 2015 15:25

Tgt Ion: 43 Resp: 119

Ion	Ratio	Lower	Upper
43	100		
58	0.0	19.4	45.4#

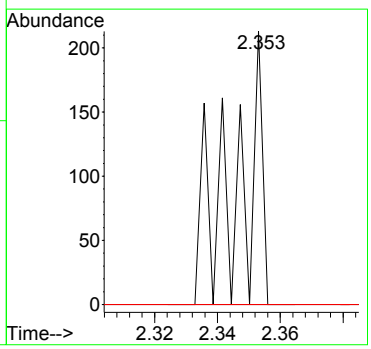

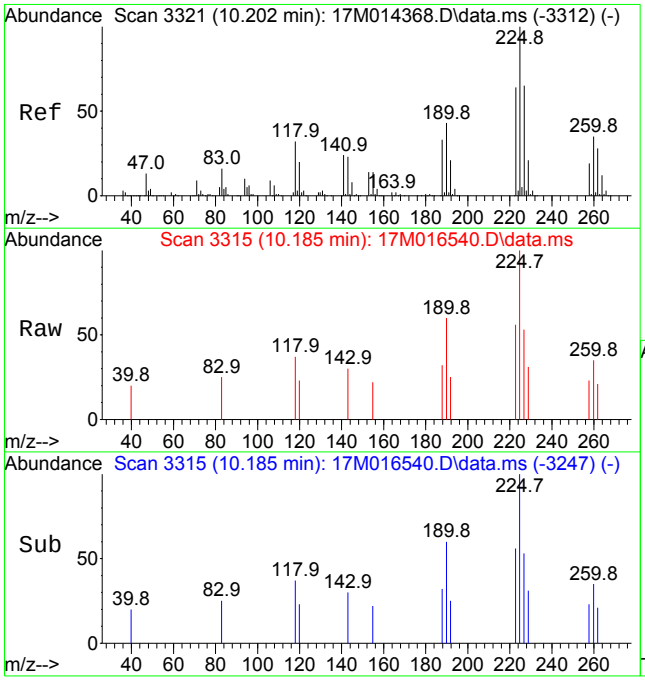

#83
Hexachlorobutadiene
Concen: 0.1270 ug/L
RT: 10.185 min Scan# 3315
Delta R.T. -0.003 min
Lab File: 17M016540.D
Acq: 18 Nov 2015 15:25

Tgt Ion:225 Resp: 512

Ion	Ratio	Lower	Upper
225	100		
223	58.6	50.0	75.0
227	52.5	51.1	76.7

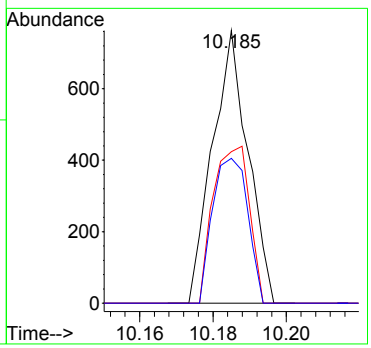

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\111915\8M408799.D Vial: 5
Acq On : 19 Nov 2015 13:31 Operator: TMB
Sample : WG547622-01 VBLK1119 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 20 11:44:02 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	1179482	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	902351	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	476168	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	297286	26.4828 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 105.92%		
43) 1,2-Dichloroethane-d4	10.31	65	295026	25.7769 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.12%		
58) Toluene-d8	12.69	98	1043552	24.9253 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.72%		
80) p-Bromofluorobenzene	16.08	95	408524	24.5888 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.36%		

Target Compounds					Qvalue
5) 1,3-Butadiene	3.91	54	243	Below Cal	# 1
36) Tetrahydrofuran	9.65	42	1315	0.6642 ug/L	# 40

(#) = qualifier out of range (m) = manual integration
8M408799.D 8260WT.M Fri Nov 20 11:44:02 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\111915\8M408799.D Vial: 5
Acq On : 19 Nov 2015 13:31 Operator: TMB
Sample : WG547622-01 VBLK1119 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 20 11:44 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration

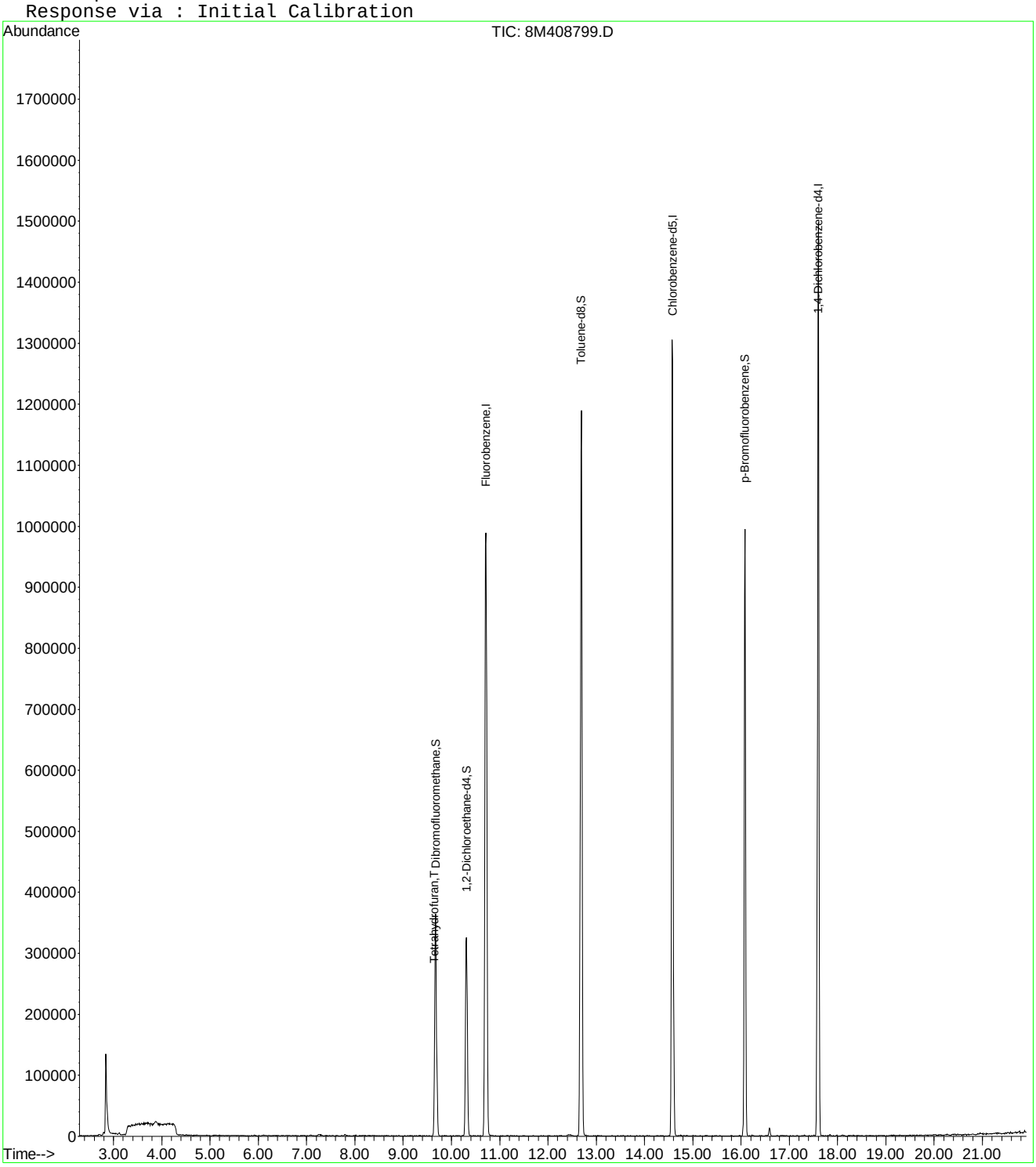

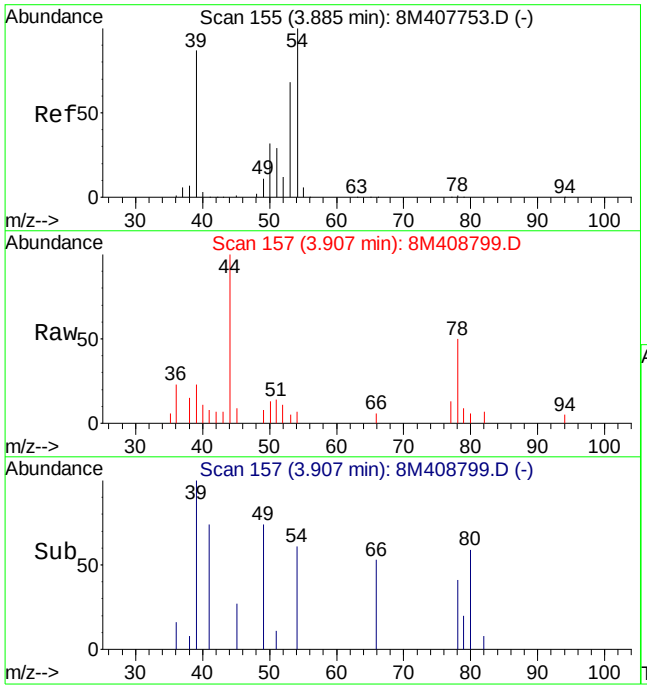

#5
1,3-Butadiene
Concen: Below Cal
RT: 3.91 min Scan# 157
Delta R.T. 0.02 min
Lab File: 8M408799.D
Acq: 19 Nov 2015 13:31

Tgt Ion: 54 Resp: 243

Ion	Ratio	Lower	Upper
54	100		
39	579.0	60.8	142.0#
53	366.3	42.4	99.0#

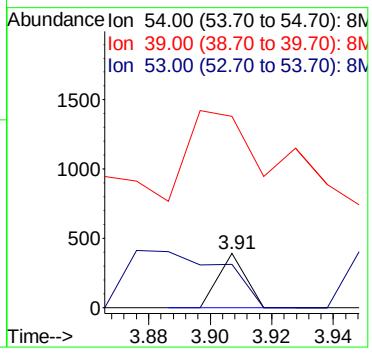

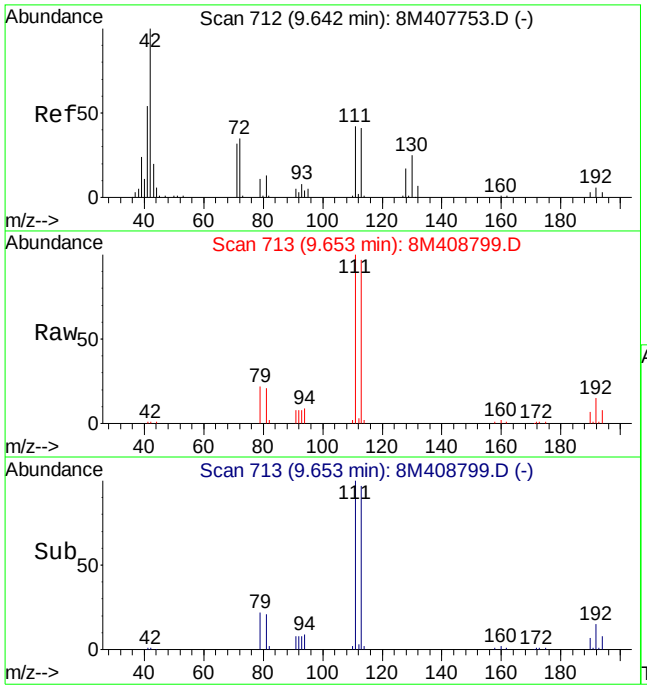

#36
Tetrahydrofuran
Concen: 0.66 ug/L
RT: 9.65 min Scan# 713
Delta R.T. 0.02 min
Lab File: 8M408799.D
Acq: 19 Nov 2015 13:31

Tgt Ion: 42 Resp: 1315

Ion	Ratio	Lower	Upper
42	100		
72	0.0	22.4	52.4#
71	0.0	19.5	45.5#

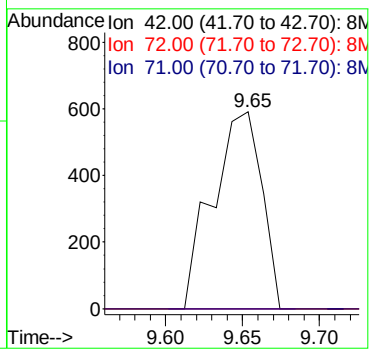

LSC Area Percent Report

Data File : C:\MSDCHEM\2\DATA\111915\8M408799.D Vial: 5
Acq On : 19 Nov 2015 13:31 Operator: TMB
Sample : WG547622-01 VBLK1119 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 200 Area counts
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Signal : TIC

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	4.434	206	208	212	rVB	1299	1482	0.05%	0.009%
2	4.672	228	231	233	rBV2	944	1801	0.06%	0.011%
3	5.085	266	271	273	rBV2	1483	3781	0.12%	0.024%
4	5.261	284	288	292	rBV2	976	3313	0.11%	0.021%
5	5.323	292	294	297	rBV2	843	1526	0.05%	0.010%
6	5.385	297	300	303	rVB	858	1786	0.06%	0.011%
7	5.922	349	352	354	rVB	1145	1902	0.06%	0.012%
8	6.119	364	371	378	rBV3	1390	5676	0.18%	0.036%
9	6.212	378	380	383	rVB2	613	1420	0.05%	0.009%
10	6.295	383	388	394	rBV	970	3058	0.10%	0.019%
11	6.408	398	399	404	rBV	834	2089	0.07%	0.013%
12	6.594	413	417	419	rBV	838	1789	0.06%	0.011%
13	6.625	419	420	426	rVB2	856	1901	0.06%	0.012%
14	6.904	441	447	448	rVB2	658	1740	0.06%	0.011%
15	6.925	448	449	454	rBV2	797	2026	0.06%	0.013%
16	7.090	459	465	470	rBV2	1460	4695	0.15%	0.029%
17	7.276	477	483	491	rBV3	2250	9604	0.31%	0.060%
18	7.473	499	502	506	rBV2	906	2505	0.08%	0.016%
19	7.524	506	507	512	rVB2	612	1410	0.05%	0.009%
20	7.721	522	526	530	rVB	819	2416	0.08%	0.015%
21	7.793	530	533	540	rBV3	2642	7681	0.25%	0.048%
22	7.886	540	542	547	rBV2	851	1810	0.06%	0.011%
23	8.165	566	569	572	rVB2	1021	1970	0.06%	0.012%
24	8.372	586	589	591	rBV2	883	2083	0.07%	0.013%
25	8.475	595	599	601	rVB	1155	1854	0.06%	0.012%
26	8.610	610	612	616	rVB	620	1388	0.04%	0.009%
27	9.033	650	653	657	rBV	757	1755	0.06%	0.011%
28	9.343	682	683	687	rBV	908	1755	0.06%	0.011%
29	9.674	704	715	724	rBV	363817	981172	31.47%	6.164%
30	10.315	769	777	789	rVB	325188	828163	26.57%	5.203%
31	10.491	792	794	797	rVV	854	1389	0.04%	0.009%
32	10.718	807	816	832	rVB	988319	2660320	85.34%	16.714%
33	11.028	842	846	847	rVB	994	1676	0.05%	0.011%
34	11.173	855	860	864	rBV	1282	2887	0.09%	0.018%
35	11.224	864	865	872	rBV2	1029	2556	0.08%	0.016%
36	11.483	888	890	896	rBV	871	2227	0.07%	0.014%
37	11.627	899	904	907	rVB	607	1637	0.05%	0.010%
38	11.700	907	911	914	rBV2	733	1774	0.06%	0.011%
39	11.762	914	917	922	rBV2	561	1548	0.05%	0.010%
40	11.907	928	931	937	rVV2	518	1689	0.05%	0.011%
41	12.434	976	982	983	rBV2	2123	5857	0.19%	0.037%
42	12.692	997	1007	1019	rVV	1188822	2919427	93.65%	18.341%

43	13.560	1089	1091	1096	rVB	711	1383	0.04%	0.009%
44	14.067	1135	1140	1141	rVB	607	1506	0.05%	0.009%
45	14.098	1141	1143	1148	rVB	758	1751	0.06%	0.011%
46	14.573	1176	1189	1198	rBV	1305130	3012225	96.62%	18.924%
47	14.749	1202	1206	1211	rVB	1469	3114	0.10%	0.020%
48	14.997	1228	1230	1234	rBV2	847	1999	0.06%	0.013%
49	15.296	1258	1259	1265	rBV	611	1643	0.05%	0.010%
50	15.410	1265	1270	1271	rVB	733	1499	0.05%	0.009%
51	15.493	1275	1278	1281	rBV	639	1728	0.06%	0.011%
52	15.958	1321	1323	1328	rVV	753	1776	0.06%	0.011%
53	16.082	1328	1335	1342	rVV	994792	2112898	67.78%	13.274%
54	16.227	1347	1349	1354	rVB2	1331	2657	0.09%	0.017%
55	16.423	1367	1368	1371	rVB	1228	1484	0.05%	0.009%
56	16.526	1374	1378	1379	rBV2	1004	1890	0.06%	0.012%
57	16.588	1379	1384	1390	rVV2	12249	27406	0.88%	0.172%
58	16.754	1394	1400	1402	rBV2	841	2574	0.08%	0.016%
59	16.950	1417	1419	1423	rVB2	1035	1626	0.05%	0.010%
60	17.157	1436	1439	1443	rBV	1195	1993	0.06%	0.013%
61	17.312	1448	1454	1459	rBV3	1290	3556	0.11%	0.022%
62	17.415	1462	1464	1467	rVB	826	1500	0.05%	0.009%
63	17.508	1470	1473	1476	rVV	1320	2058	0.07%	0.013%
64	17.601	1476	1482	1493	rVB	1497065	3117444	100.00%	19.585%
65	17.839	1499	1505	1510	rVB2	2463	6333	0.20%	0.040%
66	17.911	1510	1512	1516	rBV	989	1488	0.05%	0.009%
67	17.984	1516	1519	1522	rVB2	1487	1404	0.05%	0.009%
68	18.108	1525	1531	1533	rVB2	1932	4567	0.15%	0.029%
69	18.139	1533	1534	1538	rVB	1229	1815	0.06%	0.011%
70	18.221	1538	1542	1545	rBV	1081	2606	0.08%	0.016%
71	18.387	1557	1558	1561	rVB2	1069	1482	0.05%	0.009%
72	18.438	1561	1563	1566	rVB2	1028	1968	0.06%	0.012%
73	18.511	1566	1570	1574	rBV3	820	3065	0.10%	0.019%
74	18.841	1599	1602	1603	rVB	1146	1414	0.05%	0.009%
75	18.862	1603	1604	1606	rBV	1196	1714	0.05%	0.011%
76	19.110	1621	1628	1629	rVB2	1300	3656	0.12%	0.023%
77	19.151	1629	1632	1636	rBV2	1563	3752	0.12%	0.024%
78	19.286	1644	1645	1649	rVB2	1129	2006	0.06%	0.013%
79	19.369	1652	1653	1656	rBV	900	1855	0.06%	0.012%
80	19.493	1663	1665	1668	rVB	1223	2460	0.08%	0.015%
81	19.834	1695	1698	1702	rVB2	1490	4117	0.13%	0.026%
82	19.916	1702	1706	1708	rBV2	1398	3591	0.12%	0.023%
83	19.999	1712	1714	1715	rBV	1050	1477	0.05%	0.009%
84	20.133	1723	1727	1728	rBV3	1154	2309	0.07%	0.015%
85	20.268	1734	1740	1743	rBV5	1901	5964	0.19%	0.037%
86	20.392	1748	1752	1754	rBV2	2107	5508	0.18%	0.035%
87	20.423	1754	1755	1759	rVV2	1853	3050	0.10%	0.019%
88	20.485	1759	1761	1764	rVB3	1399	2009	0.06%	0.013%
89	20.640	1774	1776	1779	rVB2	2118	3741	0.12%	0.024%
90	20.712	1779	1783	1784	rBV2	1775	3600	0.12%	0.023%
91	20.805	1785	1792	1797	rVB3	1344	5270	0.17%	0.033%
92	20.898	1799	1801	1803	rVV2	1435	2148	0.07%	0.013%
93	20.950	1803	1806	1813	rVB5	2825	9479	0.30%	0.060%
94	21.084	1818	1819	1824	rBV4	2345	5212	0.17%	0.033%
95	21.146	1824	1825	1827	rBV2	1245	1489	0.05%	0.009%
96	21.312	1840	1841	1844	rBV2	2184	3642	0.12%	0.023%
97	21.467	1855	1856	1859	rBV2	2311	4207	0.13%	0.026%
98	21.529	1859	1862	1865	rVV4	2517	6187	0.20%	0.039%
99	21.580	1865	1867	1871	rVV3	2767	5181	0.17%	0.033%
100	21.766	1882	1885	1888	rBV3	3312	3115	0.10%	0.020%

Sum of corrected areas: 15917129

8M408799.D 8260WT.M Fri Nov 20 16:26:19 2015 Page 2

LSC Report - Integrated Chromatogram

File : C:\MSDCHEM\2\DATA\111915\8M408799.D
Operator : TMB
Acquired : 19 Nov 2015 13:31 using AcqMethod 8260WT
Instrument : HPMS8
Sample Name: WG547622-01 VBLK1119 BLANK STD 8260
Misc Info : 1,1
Vial Number: 5
Quant File :8260WT.RES (RTE Integrator)

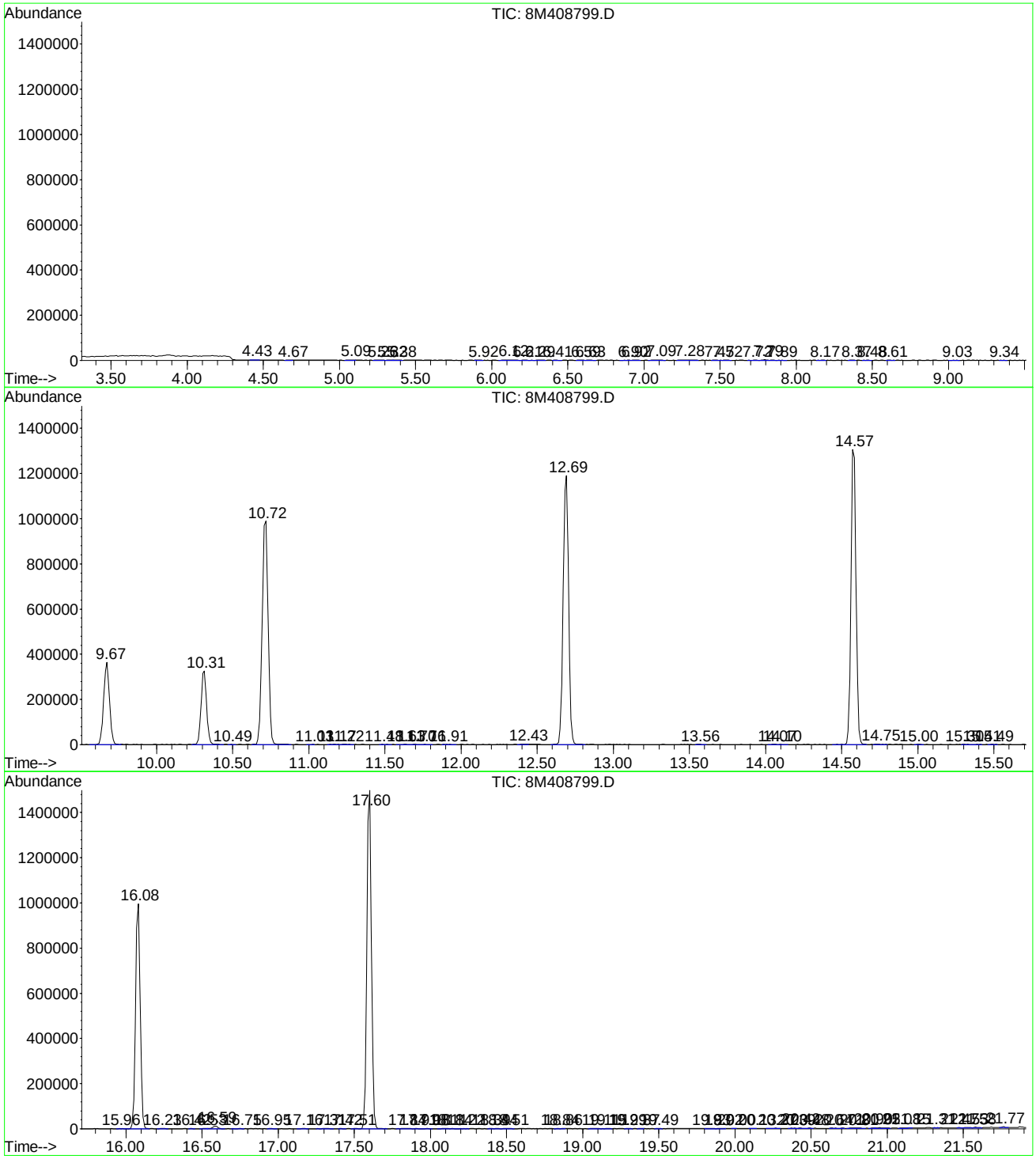

8M408799.D 8260WT.M Fri Nov 20 16:26:22 2015 Page 3

Tentatively Identified Compound (LSC) summary

Operator ID: TMB Date Acquired: 19 Nov 2015 13:31
Data File: C:\MSDCHEM\2\DATA\111915\8M408799.D
Name: WG547622-01 VBLK1119 BLANK STD 8260
Misc: 1,1
Method: C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title: Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Library Searched: C:\DATABASE\NIST02.L

						Internal Standard		
TIC	Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016541.D
Acq On : 18 Nov 2015 15:45
Operator : ADC
Sample : WG547466-02 20ug/L LCS 8260
Misc : 1,1 STD73387
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 18 15:57:16 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.141	96	357828	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	267591	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.302	152	152992	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.177	111	99448	27.0923 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 108.369%		
34) 1,2-Dichloroethane-d4	4.811	65	97102	27.5458 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 110.183%		
47) Toluene-d8	6.710	98	377051	27.3353 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 109.341%		
66) p-Bromofluorobenzene	8.723	95	139915	26.4557 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.823%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.036	85	99711	19.5946 ug/L	99
3) Chloromethane	1.149	50	89126	16.4427 ug/L	100
4) Vinyl Chloride	1.195	62	97521	20.1413 ug/L	99
5) 1,3-Butadiene	1.206	54	60089	19.3082 ug/L	98
6) Bromomethane	1.380	94	56798	22.2403 ug/L	98
7) Chloroethane	1.450	64	60033	24.2841 ug/L	84
8) Trichlorofluoromethane	1.522	101	128615	21.8021 ug/L	100
9) Diethyl ether	1.751	59	283630	99.2765 ug/L	99
10) 1,1-Dichloroethene	1.861	61	114627	20.4066 ug/L	99
11) Carbon Disulfide	1.872	76	78479	6.6335 ug/L #	94
12) 1,1,2-Trichloro-1,2,2-...	1.890	101	77342	22.2046 ug/L	100
14) Acrolein	2.113	56	34133	89.1982 ug/L	99
15) Methylene Chloride	2.289	84	73092	17.5868 ug/L	99
16) Acetone	2.347	43	14625	20.0242 ug/L	93
17) trans-1,2-Dichloroethene	2.417	96	69294	18.8687 ug/L	97
18) Methyl acetate	2.451	43	41532	20.3276 ug/L #	99
19) Methyl Tert Butyl Ether	2.533	73	183695	19.6229 ug/L	100
20) 1,1-Dichloroethane	2.973	63	135225	19.2400 ug/L	100
21) Acrylonitrile	3.036	53	16170	16.6212 ug/L	99
22) Vinyl Acetate	3.277	86	7406	19.0599 ug/L	90
23) cis-1,2-Dichloroethene	3.563	96	79835	18.9339 ug/L	98
24) 2,2-Dichloropropane	3.688	77	111287	21.1696 ug/L	98
25) Cyclohexane	3.792	56	126014	18.6290 ug/L	97
26) Bromochloromethane	3.806	130	51020	20.4919 ug/L	100
27) Chloroform	3.934	83	138480	19.8872 ug/L	100
28) Carbon Tetrachloride	4.076	117	107634	19.9063 ug/L	99
30) 1,1,1-Trichloroethane	4.174	97	123861	20.2793 ug/L	99
31) 1,1-Dichloropropene	4.345	75	99999	19.3129 ug/L	99
32) 2-Butanone	4.371	43	22925	19.4241 ug/L	94
33) Benzene	4.646	78	299147	19.4519 ug/L	99
35) 1,2-Dichloroethane	4.892	62	91157	19.6990 ug/L	99
36) Methylcyclohexane	5.295	83	130859	18.1979 ug/L	99
37) Trichloroethene	5.321	130	83657	19.6029 ug/L	98
38) Dibromomethane	5.743	93	43671	19.1363 ug/L	100
39) 1,2-Dichloropropane	5.848	63	81505	19.2805 ug/L	97
40) Bromodichloromethane	5.937	83	102065	19.4200 ug/L	100
41) 1,4-Dioxane	6.149	88	4119	160.4240 ug/L	90
42) 2-Chloroethyl Vinyl Ether	6.525	63	39692	18.5768 ug/L	100
43) cis-1,3-Dichloropropene	6.543	75	123587	19.9451 ug/L	100
44) 4-Methyl-2-Pentanone	7.814	58	18808	17.9180 ug/L	98
45) trans-1,3-Dichloropropene	7.145	75	99601	18.7871 ug/L	100
48) Toluene	6.754	91	336969	19.8773 ug/L	99
49) Tetrachloroethene	7.087	166	93407	20.4428 ug/L	98
50) 1,1,2-Trichloroethane	7.275	97	57644	18.2785 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016541.D
Acq On : 18 Nov 2015 15:45
Operator : ADC
Sample : WG547466-02 20ug/L LCS 8260
Misc : 1,1 STD73387
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 18 15:57:16 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
51) Dibromochloromethane	7.414	129	77792	19.1075 ug/L	100
52) 1,3-Dichloropropane	7.498	76	97507	19.4936 ug/L	98
53) 1,2-Dibromoethane	7.585	107	58217	18.6028 ug/L	100
54) 2-Hexanone	7.814	43	37017	18.2571 ug/L	98
55) Chlorobenzene	7.984	112	230790	21.1246 ug/L	99
56) 1-Chlorohexane	7.999	69	21453	19.1179 ug/L	85
57) Ethylbenzene	8.022	106	119393	20.0770 ug/L	99
58) 1,1,1,2-Tetrachloroethane	8.037	131	79859	19.7441 ug/L	99
59) m-,p-Xylene	8.121	106	297000	41.6298 ug/L	99
60) o-Xylene	8.384	106	146951	20.8741 ug/L	99
61) Styrene	8.416	104	233960	19.9976 ug/L	100
62) Bromoform	8.419	173	56092	20.8967 ug/L	100
63) Isopropylbenzene	8.572	105	389474	21.2238 ug/L	100
65) 1,3,5-Trimethylbenzene	8.911	105	333523	19.9092 ug/L	100
67) Bromobenzene	8.775	156	101838	19.4491 ug/L	97
68) n-Propylbenzene	8.804	91	457147	20.9071 ug/L	99
69) 1,1,2,2-Tetrachloroethane	8.844	83	69422	18.2789 ug/L	100
70) 2-Chlorotoluene	8.879	91	273290	20.4363 ug/L	99
71) 1,2,3-Trichloropropane	8.908	110	18524	17.5232 ug/L	96
72) trans-1,4-Dichloro-2-B...	8.937	53	12285	13.9802 ug/L #	96
73) 1,2,4-Trimethylbenzene	9.111	105	327094	19.5594 ug/L	99
74) 4-Chlorotoluene	8.966	91	282001	20.4954 ug/L	98
75) tert-Butylbenzene	9.073	134	63669	20.7259 ug/L	100
76) sec-Butylbenzene	9.163	105	430066	20.8920 ug/L	99
77) p-Isopropyltoluene	9.238	119	351945	19.7687 ug/L	100
78) 1,3-Dichlorobenzene	9.264	146	199871	20.7860 ug/L	98
79) 1,4-Dichlorobenzene	9.311	146	193634	19.7410 ug/L	99
80) n-Butylbenzene	9.441	91	331728	20.2451 ug/L	99
81) 1,2-Dichlorobenzene	9.513	146	186022	20.3212 ug/L	98
82) 1,2-Dibromo-3-Chloropr...	9.890	75	12765	17.9088 ug/L	99
83) Hexachlorobutadiene	10.185	225	78595	18.6526 ug/L	100
84) 1,2,4-Trichlorobenzene	10.199	180	140916	19.2891 ug/L	99
85) Naphthalene	10.350	128	230216	17.0130 ug/L	100
86) 1,2,3-Trichlorobenzene	10.434	180	119656	17.7471 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016541.D
Acq On : 18 Nov 2015 15:45
Operator : ADC
Sample : WG547466-02 20ug/L LCS 8260
Misc : 1,1 STD73387
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 18 15:57:16 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

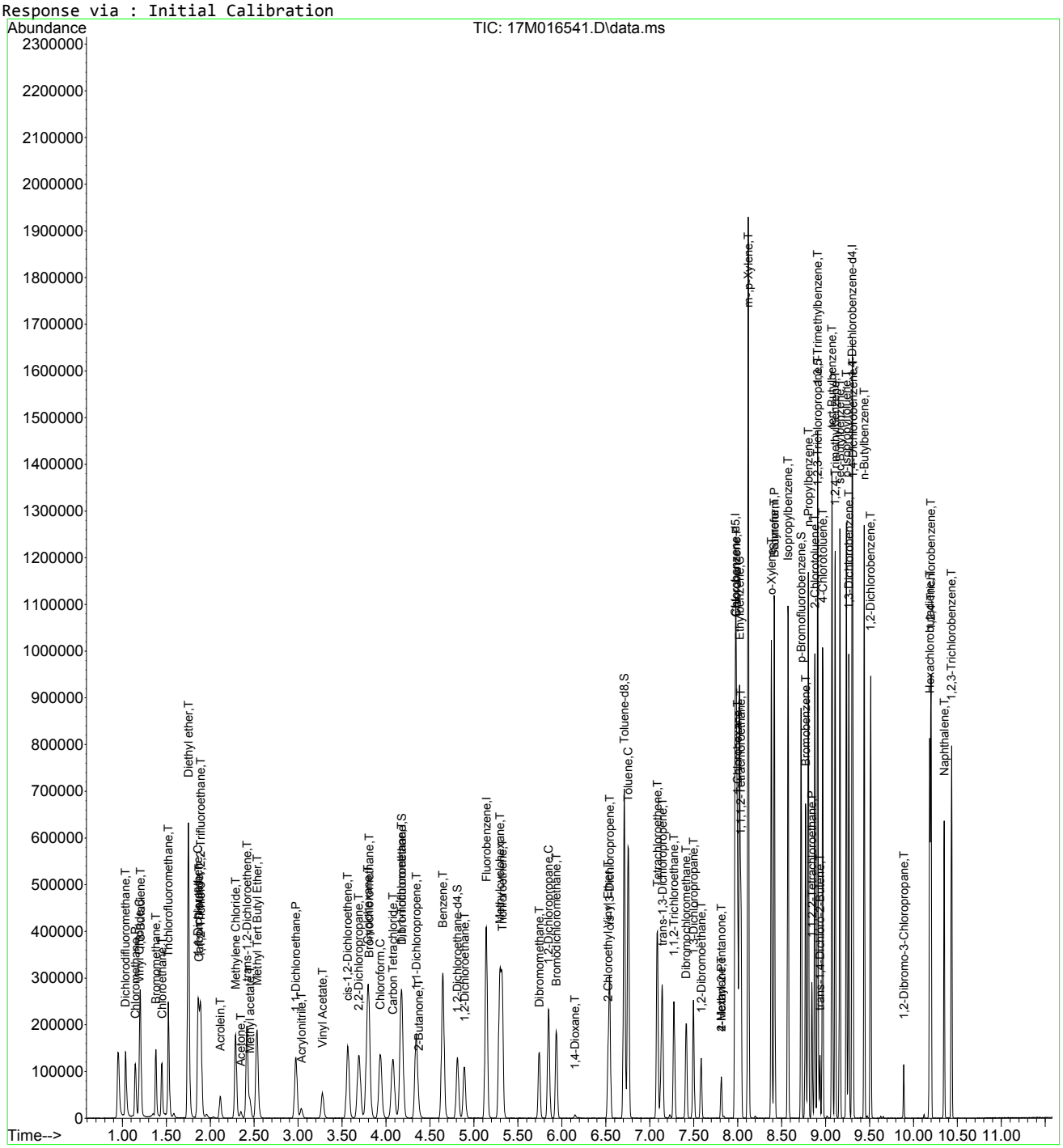

8260_VMS.M Wed Nov 18 15:57:18 2015 Page: 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\111915\8M408800.D Vial: 6
Acq On : 19 Nov 2015 14:00 Operator: TMB
Sample : WG547622-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD73459 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 19 14:22:52 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	1224228	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	921413	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	521679	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	311624	26.7455 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.00%		
43) 1,2-Dichloroethane-d4	10.31	65	304760	25.6541 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.60%		
58) Toluene-d8	12.69	98	1078411	25.2250 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.92%		
80) p-Bromofluorobenzene	16.08	95	442476	24.3090 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.24%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	436840	23.4710 ug/L	100
3) Chloromethane	3.63	50	711180	25.0419 ug/L	100
4) Vinyl Chloride	3.84	62	548339	24.4334 ug/L	100
5) 1,3-Butadiene	3.89	54	304024	17.6701 ug/L	92
6) Bromomethane	4.74	94	173253	23.4099 ug/L	98
7) Chloroethane	4.90	64	211447	23.0945 ug/L	98
8) Trichlorofluoromethane	5.38	101	464753	21.4265 ug/L	97
9) Diethyl ether	5.91	59	906063	108.5307 ug/L	98
10) Isoprene	5.94	67	329190	20.6721 ug/L	95
11) Acrolein	6.15	56	104167	100.5389 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.18	101	262368	22.5023 ug/L	97
13) Acetone	6.25	43	46814	25.7634 ug/L	99
14) 1,1-Dichloroethene	6.47	61	410138	20.6643 ug/L	99
15) Tert-Butyl Alcohol	6.59	59	119714	222.9705 ug/L	95
16) Dimethyl Sulfide	6.74	62	301986	26.5104 ug/L	99
17) Iodomethane	7.00	142	123388	17.5084 ug/L	96
18) Methyl acetate	7.01	43	137982	20.0810 ug/L	98
19) Methylene Chloride	7.25	84	258179	20.9446 ug/L	100
20) Carbon Disulfide	7.30	76	653058	16.2252 ug/L	100
21) Acrylonitrile	7.45	53	67129	24.6093 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	534507	22.8743 ug/L	100
23) trans-1,2-Dichloroethene	7.71	61	396752	21.0498 ug/L	98
24) n-Hexane	7.79	57	320630	17.2202 ug/L	93
25) Diisopropyl ether	8.13	45	4881684	105.0660 ug/L	98
26) Vinyl Acetate	8.31	43	393926	31.9005 ug/L	98
27) 1,1-Dichloroethane	8.33	63	502902	21.0113 ug/L	98
28) Ethyl-Tert-Butyl ether	8.71	59	3680629	100.5725 ug/L	98
29) 2-Butanone	8.89	43	76006	24.2787 ug/L	95
30) Propionitrile	8.99	54	101197	110.1695 ug/L	97
31) 2,2-Dichloropropane	9.10	77	409108	20.4523 ug/L	99
32) cis-1,2-Dichloroethene	9.18	96	281846	20.9580 ug/L	99
33) Chloroform	9.38	83	507051	22.3018 ug/L	99
34) 1-Bromopropane	9.52	122	60945	27.5976 ug/L	99
35) Bromochloromethane	9.61	130	150610	22.7501 ug/L	99
36) Tetrahydrofuran	9.64	42	233628	113.6889 ug/L	98
38) 1,1,1-Trichloroethane	9.91	97	445533	21.8308 ug/L	98
39) Cyclohexane	9.94	56	478384	19.6981 ug/L	98
40) 1,1-Dichloropropene	10.11	75	356843	20.3080 ug/L	97
41) Tert-Amyl-Methyl ether	10.22	73	2828181	104.2285 ug/L	97
42) Carbon Tetrachloride	10.25	117	400295	21.9468 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M408800.D 8260WT.M Thu Nov 19 14:22:52 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\111915\8M408800.D Vial: 6
Acq On : 19 Nov 2015 14:00 Operator: TMB
Sample : WG547622-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD73459 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 19 14:22:52 2015 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.43	62	338771	21.6984 ug/L	100
46)	Benzene	10.47	78	1043871	21.6504 ug/L	100
47)	Trichloroethene	11.21	130	265335	20.4423 ug/L	97
48)	Methylcyclohexane	11.31	83	395082	19.6719 ug/L	98
49)	1,2-Dichloropropane	11.43	63	275350	21.1988 ug/L	98
50)	Bromodichloromethane	11.73	83	353641	21.0934 ug/L	99
51)	1,4-Dioxane	11.72	88	13161	220.0856 ug/L	93
52)	Dibromomethane	11.81	93	133544	21.5914 ug/L	95
53)	2-Chloroethyl Vinyl Ether	12.03	63	118451	22.1252 ug/L	95
54)	4-Methyl-2-Pentanone	12.06	58	56486	20.5671 ug/L	98
55)	cis-1,3-Dichloropropene	12.37	75	408972	21.9744 ug/L	99
56)	Dimethyl Disulfide	12.63	79	201939	20.1224 ug/L	94
59)	Toluene	12.78	91	1081186	20.6498 ug/L	100
60)	Ethyl Methacrylate	12.89	69	232320	22.2558 ug/L	98
62)	trans-1,3-Dichloropropene	12.96	75	320912	19.9785 ug/L	99
63)	1,1,2-Trichloroethane	13.18	97	172984	20.8155 ug/L	99
64)	2-Hexanone	13.11	58	53604	20.5162 ug/L #	92
65)	1,3-Dichloropropane	13.49	76	306769	20.6564 ug/L	96
66)	Tetrachloroethene	13.61	164	224206	20.1432 ug/L	99
67)	Dibromochloromethane	13.87	129	227409	21.1651 ug/L	98
68)	1,2-Dibromoethane	14.13	107	168364	20.2926 ug/L	97
69)	1-Chlorohexane	14.21	91	373106	19.9147 ug/L	100
70)	Chlorobenzene	14.62	112	737554	21.0230 ug/L	100
71)	1,1,1,2-Tetrachloroethane	14.67	131	258382	19.9183 ug/L	99
72)	Ethylbenzene	14.65	106	389396	19.0532 ug/L	96
73)	m-,p-Xylene	14.75	106	972813	41.5065 ug/L	98
74)	o-Xylene	15.31	106	477516	20.1473 ug/L	97
75)	Styrene	15.35	104	771479	20.5444 ug/L	99
76)	Bromoform	15.84	173	137294	21.2557 ug/L	99
77)	Isopropylbenzene	15.73	105	1215306	21.3756 ug/L	100
79)	1,1,2,2-Tetrachloroethane	15.95	83	194771	20.2366 ug/L	99
81)	1,2,3-Trichloropropane	16.14	110	53362	19.9523 ug/L	54
82)	trans-1,4-Dichloro-2-Buten	16.18	53	59962	16.9535 ug/L #	58
83)	n-Propylbenzene	16.24	91	1514699	20.0542 ug/L	99
84)	Bromobenzene	16.37	156	303202	19.7755 ug/L	98
85)	1,3,5-Trimethylbenzene	16.42	105	1029135	19.8180 ug/L	99
86)	2-Chlorotoluene	16.52	91	1005279	20.0946 ug/L	99
87)	4-Chlorotoluene	16.56	91	881486	20.3740 ug/L	98
88)	a-Methylstyrene	16.83	118	587359	20.7477 ug/L	98
89)	tert-Butylbenzene	16.89	134	226209	19.8013 ug/L	88
90)	1,2,4-Trimethylbenzene	16.94	105	1047807	19.9677 ug/L	98
91)	sec-Butylbenzene	17.16	105	1297904	20.1199 ug/L	98
92)	p-Isopropyltoluene	17.32	119	1015992	19.6986 ug/L	96
93)	1,3-Dichlorobenzene	17.51	146	618059	20.1960 ug/L	98
94)	1,4-Dichlorobenzene	17.64	146	598713	19.6462 ug/L	97
95)	n-Butylbenzene	17.85	91	1012918	21.0674 ug/L	98
96)	1,2-Dichlorobenzene	18.14	146	559714	20.9021 ug/L	98
97)	1,2-Dibromo-3-Chloropropan	19.13	75	33000	19.5653 ug/L	93
98)	1,2,4-Trichlorobenzene	20.27	180	383372	20.8387 ug/L	99
99)	Hexachlorobutadiene	20.42	225	162599	18.4784 ug/L	98
100)	Naphthalene	20.64	128	617594	23.2200 ug/L	97
101)	1,2,3-Trichlorobenzene	20.95	180	329384	20.9956 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M408800.D 8260WT.M Thu Nov 19 14:22:53 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\111915\8M408800.D Vial: 6
Acq On : 19 Nov 2015 14:00 Operator: TMB
Sample : WG547622-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD73459 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Nov 19 14:22 2015 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 09-30-15 HPMS 8
Last Update : Fri Oct 16 10:20:27 2015
Response via : Initial Calibration

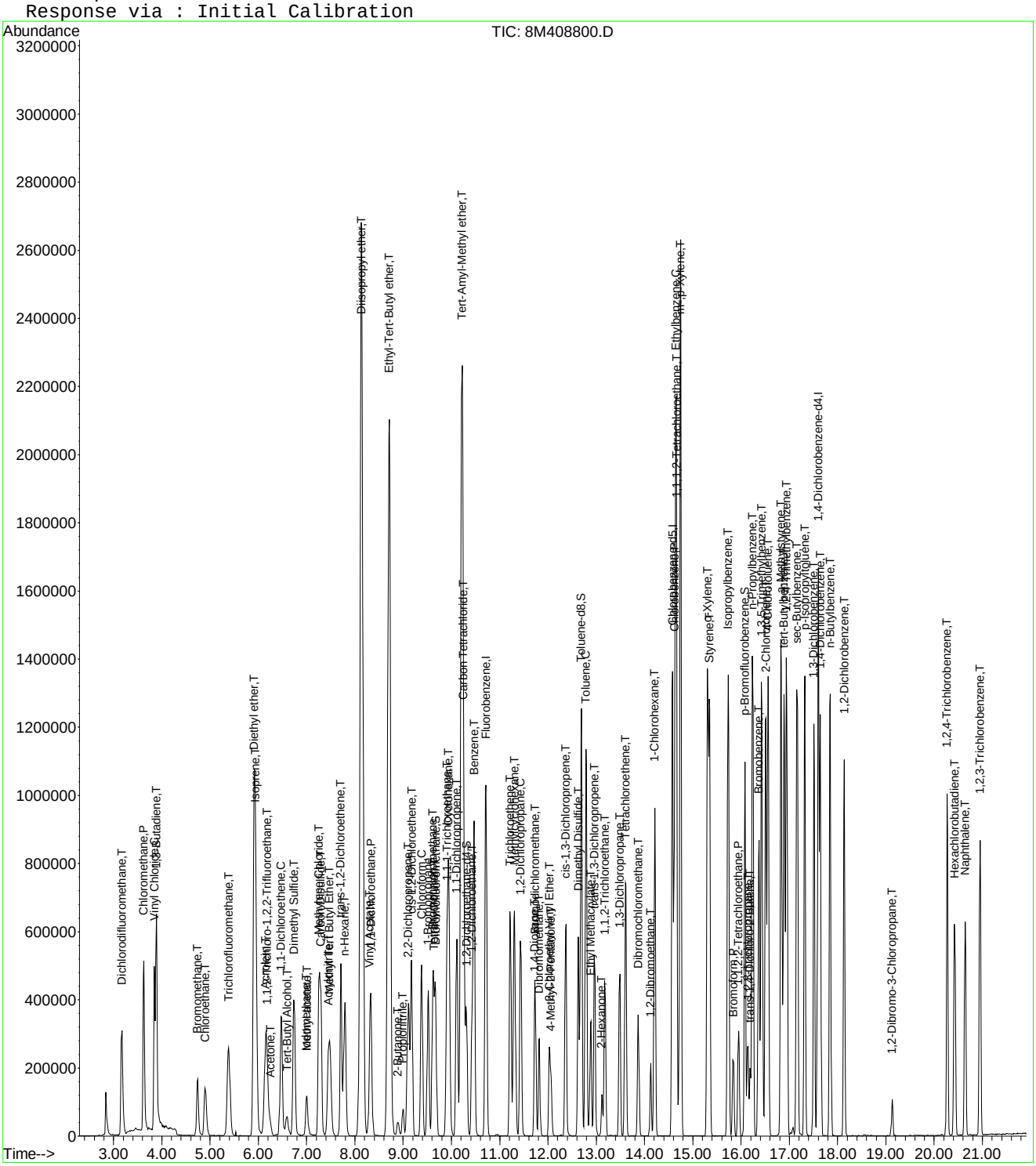

2.1.2 RSK 175

2.1.2.1 Summary Data

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-01	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW08-111615	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG547425	**Analyst:**	JDS	**Run Date:**	11/18/2015 16:26
Collect Date:	11/16/2015 08:20	**Dilution:**	1	**File ID:**	16G49034
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	805000	J	10000	5000	2500
Methane	74-82-8	1.87	J	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-01	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW08-111615	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG547710	**Analyst:**	JDS	**Run Date:**	11/19/2015 17:55
Collect Date:	11/16/2015 08:20	**Dilution:**	10	**File ID:**	16G49052
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	609000		100000	50000	25000
Methane	74-82-8	20.0	U	50.0	20.0	10.0
ethene	74-85-1	20.0	U	50.0	20.0	10.0
ethane	74-84-0	20.0	U	50.0	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-03	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW22-111615	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG547425	**Analyst:**	JDS	**Run Date:**	11/18/2015 16:39
Collect Date:	11/16/2015 09:25	**Dilution:**	1	**File ID:**	16G49035
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	79400		10000	5000	2500
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-05	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW24-111615	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG547425	**Analyst:**	JDS	**Run Date:**	11/18/2015 17:03
Collect Date:	11/16/2015 10:30	**Dilution:**	1	**File ID:**	16G49037
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	964000	J	10000	5000	2500
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-05	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW24-111615	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG547710	**Analyst:**	JDS	**Run Date:**	11/19/2015 18:07
Collect Date:	11/16/2015 10:30	**Dilution:**	10	**File ID:**	16G49053
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	736000		100000	50000	25000
Methane	74-82-8	20.0	U	50.0	20.0	10.0
ethene	74-85-1	20.0	U	50.0	20.0	10.0
ethane	74-84-0	20.0	U	50.0	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-07	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW23-111615	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG547425	**Analyst:**	JDS	**Run Date:**	11/18/2015 17:15
Collect Date:	11/16/2015 11:35	**Dilution:**	1	**File ID:**	16G49038
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	277000	J	10000	5000	2500
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-07	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW23-111615	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG547710	**Analyst:**	JDS	**Run Date:**	11/19/2015 18:19
Collect Date:	11/16/2015 11:35	**Dilution:**	5	**File ID:**	16G49054
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	230000		50000	25000	12500
Methane	74-82-8	10.0	U	25.0	10.0	5.00
ethene	74-85-1	10.0	U	25.0	10.0	5.00
ethane	74-84-0	10.0	U	25.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-09	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW18-111615	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG547425	**Analyst:**	JDS	**Run Date:**	11/18/2015 17:28
Collect Date:	11/16/2015 13:45	**Dilution:**	1	**File ID:**	16G49039
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	742000	J	10000	5000	2500
Methane	74-82-8	2.00	U	5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-09	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW18-111615	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG547710	**Analyst:**	JDS	**Run Date:**	11/19/2015 18:31
Collect Date:	11/16/2015 13:45	**Dilution:**	10	**File ID:**	16G49055
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	528000		100000	50000	25000
Methane	74-82-8	20.0	U	50.0	20.0	10.0
ethene	74-85-1	20.0	U	50.0	20.0	10.0
ethane	74-84-0	20.0	U	50.0	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-11	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW25-111615	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG547425	**Analyst:**	JDS	**Run Date:**	11/18/2015 17:40
Collect Date:	11/16/2015 14:55	**Dilution:**	1	**File ID:**	16G49040
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	679000	J	10000	5000	2500
Methane	74-82-8	88.8		5.00	2.00	1.00
ethene	74-85-1	2.00	U	5.00	2.00	1.00
ethane	74-84-0	2.00	U	5.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-11	**PrePrep Method:**	N/A	**Instrument:**	HP16
Client ID:	50WW25-111615	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	RSK175	**Cal Date:**	03/03/2015 15:29
Workgroup #:	WG547710	**Analyst:**	JDS	**Run Date:**	11/19/2015 18:44
Collect Date:	11/16/2015 14:55	**Dilution:**	10	**File ID:**	16G49056
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Carbon Dioxide	124-38-9	632000		100000	50000	25000
Methane	74-82-8	56.5		50.0	20.0	10.0
ethene	74-85-1	20.0	U	50.0	20.0	10.0
ethane	74-84-0	20.0	U	50.0	20.0	10.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.2.2 QC Summary Data

RSK-175 - Example Calculation for Methane

1.0 Linear Calibration Models

Option A - Average RF Method

ICAL_x	ICAL_r		RF
1.67	19901		11917
6.67	69174		10371
16.7	176923		10594
66.7	685135		10272
133	1324853		9961
300	2845104		9484
		Average RF:	**10433**

Where:
ICAL_x = the ICAL concentration
ICAL_r = the ICAL response (area)
RF = calibration factor = ICAL_r / ICAL_x

Option B - Agilent Linear Regression Constant

ICAL_x	ICAL_r	[ICAL_r}^2	[ICAL-x][ICAL-r]
1.67	19901	396049801	33235
6.67	69174	4785042276	461391
16.7	176923	31301747929	2954614
66.7	685135	4.6941E+11	45698505
133	1324853	1.75524E+12	176205449
300	2845104	8.09462E+12	853531200
Summation:		**1.03557E+13**	**1078884393**

Agilent Linear Regression Constant : **9598.567853**
(1.03557E+13)/1078884393)

2.0 Calculate the concentration in extract, Cx

Where:

y = area response of methane from quant report	**1157414**
a = average RF (or Agilent regression constant)	**10433.00**
Cx = y/a	**110.9377935**

3.0 Calculate the concentration in sample

Cs = Cx (MW/Tf) (HS/S) (DF)

Where:

Cx = Concentration in extract	**110.9377935**	umol/mol
MW = molecular weight of analyte	**16.04**	ug/umol
TF = temperature factor = (22.4)(313/273)	**25.68**	L/mol
HS = headspace volume	**0.015**	L
S = sample volume remaining after headspace removal	**0.00547**	L
DF = dilution factor	**2**	
Cs = calculated sample concentration	**380.034301**	ug/L

RSK-175 - Example Calculation for Carbon Dioxide

ICAL Plot - Quadratic Regression (y = Ax^2 + Bx +C)

Ax^2 + Bx + (C - y) = 0

Step 1 - Calculate the concentration in extract, Cx

Data from quadratic regression plot:		
Value of A from plot:	**0.916**	
Value of B from plot:	**1540**	
Value of C from plot:	**0**	
Response for methane from quantitation report (y):	**8763828**	
Value of C - y	**-8763828**	
Solving for Cx using the quadratic formula:		
Root 1 - Computed Cx1:	**2364.716284**	umol/mol
Root 2 - Computed Cx2:	**-4045.938991**	

Step 2 - Calculate the concentration in sample

Cs = Cx (MW/Tf) (HS/S) (DF)

Where:

Cx = Concentration in extract :	**2364.716284**	umol/mol
MW = molecular weight of analyte:	**44.0**	ug/umol
TF = temperature factor = (22.4)(313/273):	**25.68**	L/mol
HS = initial headspace volume (extraction log):	**0.015**	L
S = final volume (extraction log):	**0.00547**	L
DF = dilution factor:	**10**	
Cs = calculated sample concentration:	**111106.798**	ug/L

Other Notes:

Temperature of headspace = 40 C = 313 K

Analyte	**MW (g/mol)**
Methane	16.04
Ethane	30.07
Ethene	28.05
Propane	44.1
Carbon Dioxide	44.0

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 030315
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD67274 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG514119

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G46874	RINSE	NA	1	1		03/03/15 14:05
16G46875	WG514119-01 0.67umol/mol STD RSK175	NA	1	1	STD67276	03/03/15 14:17
16G46876	WG514119-02 1.67umol/mol STD RSK175	NA	1	1	STD67276	03/03/15 14:30
16G46877	WG514119-03 33.3umol/mol STD RSK175	NA	1	1	STD67276	03/03/15 14:42
16G46878	WG514119-04 66.7umol/mol STD RSK175	NA	1	1	STD67274	03/03/15 14:53
16G46879	WG514119-05 133umol/mol STD RSK175	NA	1	1	STD67274	03/03/15 15:05
16G46880	WG514119-06 333umol/mol STD RSK175	NA	1	1	STD67274	03/03/15 15:17
16G46881	WG514119-07 533umol/mol STD RSK175	NA	1	1	STD67274	03/03/15 15:29
16G46882	RINSE	NA	1	1		03/03/15 15:41
16G46883	WG514119-08 133umol/mol ALT SRC STD	NA	1	1	STD68250	03/03/15 16:14
16G46884	WG514119-08 133umol/mol ALT SRC STD	NA	1	1	STD68250	03/03/15 17:10

Comments

Seq.	Rerun	Dil.	Reason	Analytes
10	X			
File ID: 16G46883				
	Wrong vial taken up by HT3 autosampler			

Approved: March 11, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 111815
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD72628 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG547425

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G49024	WG547424-01 133umol/mol CCV STD RSK1	NA	1	1	STD72628	11/18/15 12:35
16G49025	WG547424-01 133umol/mol CCV STD RSK1	NA	1	1	STD72628	11/18/15 12:55
16G49026	WG547425-01 BLANK STD RSK175	NA	1	1		11/18/15 14:48
16G49027	WG547425-02 67umol/mol LCS STD RSK17	NA	1	1	STD68250	11/18/15 15:00
16G49028	WG547425-03 67umol/mol LCS2 STD RSK1	NA	1	1	STD68250	11/18/15 15:13
16G49029	L15110793-07 B D1 10X RSK175	<2	1	10		11/18/15 15:25
16G49030	L15110793-09 B D1 5X RSK175	<2	1	5		11/18/15 15:37
16G49031	L15110793-11 B D1 10X RSK175	<2	1	10		11/18/15 15:50
16G49032	L15110793-13 B D1 10X RSK175	5	1	10		11/18/15 16:02
16G49033	L15110793-15 B D1 5X RSK175	4	1	5		11/18/15 16:14
16G49034	L15110943-01 A RSK175	7	1	1		11/18/15 16:26
16G49035	L15110943-03 A RSK175	7	1	1		11/18/15 16:39
16G49036	WG547424-02 133umol/mol CCV STD RSK1	NA	1	1	STD72628	11/18/15 16:51
16G49037	L15110943-05 A RSK175	7	1	1		11/18/15 17:03
16G49038	L15110943-07 A RSK175	7	1	1		11/18/15 17:15
16G49039	L15110943-09 A RSK175	7	1	1		11/18/15 17:28
16G49040	L15110943-11 A RSK175	7	1	1		11/18/15 17:40
16G49041	L15110903-01 A RSK175	<2	2	1		11/18/15 17:52
16G49042	L15110905-01 A RSK175	<2	2	1		11/18/15 18:04
16G49043	L15110907-01 A RSK175	<2	2	1		11/18/15 18:16
16G49044	L15110908-01 A RSK175	3	2	1		11/18/15 18:29
16G49045	L15111070-01 A RSK175	<2	2	1		11/18/15 18:40
16G49046	L15111071-01 A RSK175	<2	2	1		11/18/15 18:52
16G49047	WG547424-03 133umol/mol CCV STD RSK1	NA	1	1	STD72628	11/18/15 19:05

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1	X		Check Standard Failure	
File ID: 16G49024				
	CCV failed high for methane			
10	X	10	Over Calibration Range	CO2
File ID: 16G49034				
	L15110943-01			
13	X	10	Over Calibration Range	CO2

Approved: November 23, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 111815
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD72628 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG547425

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
File ID: 16G49037				
	L15110943-05			
14	X	5	Over Calibration Range	CO2
File ID: 16G49038				
	L15110943-07			
15	X	10	Over Calibration Range	CO2
File ID: 16G49039				
	L15110943-09			
16	X	10	Over Calibration Range	CO2
File ID: 16G49040				
	L15110943-11			
19	X	5	Over Calibration Range	m
File ID: 16G49044				
	L15110908-01			

Approved: November 23, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HP16 Dataset: 111915
Analyst1: JDS Analyst2: NA
Method: RSK175 SOP: RSK01 Rev: 18
Method: 5021 SOP: RSK01 Rev: 18

Maintenance Log ID:

Internal Standard: NA Surrogate Standard: NA
CCV: STD72628 LCS: STD68250 MS/MSD: NA

Column 1 ID: RTQBOND Column 2 ID: RTQBOND
Workgroups: WG547710

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
16G49048	WG547709-01 133umol/mol CCV STD RSK1	NA	1	1	STD72628	11/19/15 15:50
16G49049	WG547710-01 BLANK STD RSK175	NA	1	1		11/19/15 17:17
16G49050	WG547710-02 67umol/mol LCS STD RSK17	NA	1	1	STD68250	11/19/15 17:30
16G49051	WG547710-03 67umol/mol LCS2 STD RSK1	NA	1	1	STD68250	11/19/15 17:42
16G49052	L15110943-01 B D1 10X RSK175	6	1	10		11/19/15 17:55
16G49053	L15110943-05 B D1 10X RSK175	6	1	10		11/19/15 18:07
16G49054	L15110943-07 B D1 5X RSK175	6	1	5		11/19/15 18:19
16G49055	L15110943-09 B D1 10X RSK175	6	1	10		11/19/15 18:31
16G49056	L15110943-11 B D1 10X RSK175	6	1	10		11/19/15 18:44
16G49057	L15110903-01 B D1 5X RSK175	<2	1	5		11/19/15 18:56
16G49058	L15110908-01 B D1 5X RSK175	<2	2	5		11/19/15 19:09
16G49059	WG547709-03 133umol/mol CCV STD RSK1	NA	1	1	STD72628	11/19/15 19:21
16G49060	L15111109-01 A RSK175	5	1	1		11/19/15 19:34
16G49061	WG547709-03 133umol/mol CCV STD RSK1	NA	1	1	STD72628	11/19/15 19:45

Comments

Seq.	Rerun	Dil.	Reason	Analytes
10				
File ID: 16G49057				
L15110903-01 Do not report. did not need RR.				

Approved: November 23, 2015

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Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B202656

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG514119-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-04	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-05	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-06	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-07	15	mL	15	mL					5.47	mL	5.47	mL	40
WG514119-08	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B215207

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG547424-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG547424-02	15	mL	15	mL					5.47	mL	5.47	mL	40
WG547424-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L15110943-03	15	mL	15	mL					5.47	mL	5.47	mL	40
L15111071-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15110793-15	15	mL	15	mL					5.47	mL	5.47	mL	40
L15110908-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG547425-02	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
WG547425-03	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L15110793-13	15	mL	15	mL					5.47	mL	5.47	mL	40
L15110943-07	15	mL	15	mL					5.47	mL	5.47	mL	40
L15110943-09	15	mL	15	mL					5.47	mL	5.47	mL	40
L15110905-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15110907-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15110793-07	15	mL	15	mL					5.47	mL	5.47	mL	40
L15111070-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG547425-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15110943-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15110943-05	15	mL	15	mL					5.47	mL	5.47	mL	40
L15110793-09	15	mL	15	mL					5.47	mL	5.47	mL	40
L15110943-11	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.
UPLOAD BATCH EXTRACTION INFORMATION

Batch #: B215211

	Initial Amount		Nominal Amount		Spike Amount		Surrogate Spike Amount		Final Amount		Final Nominal Amount		Temp (C)
WG547709-01	15	mL	15	mL					5.47	mL	5.47	mL	40
WG547709-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG547709-03	15	mL	15	mL					5.47	mL	5.47	mL	40
WG547710-02	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L15110943-11	15	mL	15	mL					5.47	mL	5.47	mL	40
L15110943-05	15	mL	15	mL					5.47	mL	5.47	mL	40
L15110943-09	15	mL	15	mL					5.47	mL	5.47	mL	40
WG547710-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15110943-07	15	mL	15	mL					5.47	mL	5.47	mL	40
WG547710-03	15	mL	15	mL	.1	mL			5.47	mL	5.47	mL	40
L15111109-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15110943-01	15	mL	15	mL					5.47	mL	5.47	mL	40
L15110908-01	15	mL	15	mL					5.47	mL	5.47	mL	40

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAR-2015
Analyst: JDS
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 66688
Analytical Workgroups: WG514119

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	NA
Project/Client Specific Requirements	NA
Special Standards	NA
Blanks	NA
TCL's	NA
Surrogates	NA
LCS (Laboratory Control Sample)	NA
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	NA
Surrogates	NA
Calculations & Correct Factors	NA
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
06-MAR-2015

Secondary Reviewer:
11-MAR-2015

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-11-2015 12:34:12

Microbac Laboratories Inc.

Data Checklist

Date: 18-NOV-2015
Analyst: JDS
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 71850
Analytical Workgroups: WG547425

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	NA
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	X
Surrogates	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
22-NOV-2015

Secondary Reviewer:
23-NOV-2015

CHECKLIST1 - Modified 03/05/2008
Generated: NOV-23-2015 11:58:46

Microbac Laboratories Inc.

Data Checklist

Date: 19-NOV-2015
Analyst: JDS
Analyst: NA
Method: RSK175
Instrument: HP16
Curve Workgroup: NA
Runlog ID: 71853
Analytical Workgroups: WG547710

Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	NA
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	NA
MS/MSD/Duplicates	NA
Samples	X
Surrogates	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the resonableness of the results	X

Primary Reviewer:
22-NOV-2015

Secondary Reviewer:
23-NOV-2015

CHECKLIST1 - Modified 03/05/2008
Generated: NOV-23-2015 12:14:49

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: RSK175 AAB#: WG547425

Login Number: L15110943

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW08-111615	01	11/16/15					11/18/2015	2.3	7		11/18/15	2.3	7	
50WW22-111615	03	11/16/15					11/18/2015	2.3	7		11/18/15	2.3	7	
50WW24-111615	05	11/16/15					11/18/2015	2.3	7		11/18/15	2.3	7	
50WW23-111615	07	11/16/15					11/18/2015	2.2	7		11/18/15	2.2	7	
50WW18-111615	09	11/16/15					11/18/2015	2.2	7		11/18/15	2.2	7	
50WW25-111615	11	11/16/15					11/18/2015	2.1	7		11/18/15	2.1	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4513896
Report generated 11/22/2015 15:56

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: RSK175 AAB#: WG547710

Login Number: L15110943

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW08-111615	01	11/16/15					11/19/2015	3.4	7		11/19/15	3.4	7	
50WW24-111615	05	11/16/15					11/19/2015	3.3	7		11/19/15	3.3	7	
50WW23-111615	07	11/16/15					11/19/2015	3.3	7		11/19/15	3.3	7	
50WW18-111615	09	11/16/15					11/19/2015	3.2	7		11/19/15	3.2	7	
50WW25-111615	11	11/16/15					11/19/2015	3.2	7		11/19/15	3.2	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4513896
Report generated 11/22/2015 15:56

METHOD BLANK SUMMARY

Login Number: L15110943
Blank File ID: 16G49026
Prep Date: 11/18/15 14:48
Analyzed Date: 11/18/15 14:48
Analyst: JDS

Work Group: WG547425
Blank Sample ID: WG547425-01
Instrument ID: HP16
Method: RSK175

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG547425-02	16G49027	11/18/15 15:00	01
LCS2	WG547425-03	16G49028	11/18/15 15:13	01
50WW08-111615	L15110943-01	16G49034	11/18/15 16:26	01
50WW22-111615	L15110943-03	16G49035	11/18/15 16:39	01
50WW24-111615	L15110943-05	16G49037	11/18/15 17:03	01
50WW23-111615	L15110943-07	16G49038	11/18/15 17:15	01
50WW18-111615	L15110943-09	16G49039	11/18/15 17:28	01
50WW25-111615	L15110943-11	16G49040	11/18/15 17:40	01

Report Name: BLANK_SUMMARY
PDF File ID: 4513897
Report generated 11/22/2015 15:56

METHOD BLANK SUMMARY

Login Number: L15110943
Blank File ID: 16G49049
Prep Date: 11/19/15 17:17
Analyzed Date: 11/19/15 17:17
Analyst: JDS

Work Group: WG547710
Blank Sample ID: WG547710-01
Instrument ID: HP16
Method: RSK175

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG547710-02	16G49050	11/19/15 17:30	01
LCS2	WG547710-03	16G49051	11/19/15 17:42	01
50WW08-111615	L15110943-01	16G49052	11/19/15 17:55	DL01
50WW24-111615	L15110943-05	16G49053	11/19/15 18:07	DL01
50WW23-111615	L15110943-07	16G49054	11/19/15 18:19	DL01
50WW18-111615	L15110943-09	16G49055	11/19/15 18:31	DL01
50WW25-111615	L15110943-11	16G49056	11/19/15 18:44	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4513897
Report generated 11/22/2015 15:56

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15110943 Prep Date: 11/18/15 14:48 Sample ID: WG547425-01
Instrument ID: HP16 Run Date: 11/18/15 14:48 Prep Method: 5030B/5030C/503
File ID: 16G49026 Analyst: JDS Method: RSK175
Workgroup (AAB#): WG547425 Matrix: Water Units: ug/L
Contract #: Cal ID: HP16-03-MAR-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Carbon Dioxide	2500	10000	2500	1	U
Methane	1.00	5.00	1.00	1	U
ethene	1.00	5.00	1.00	1	U
ethane	1.00	5.00	1.00	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4513898
22-NOV-2015 15:56

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15110943 Prep Date: 11/19/15 17:17 Sample ID: WG547710-01
Instrument ID: HP16 Run Date: 11/19/15 17:17 Prep Method: 5030B/5030C/503
File ID: 16G49049 Analyst: JDS Method: RSK175
Workgroup (AAB#): WG547710 Matrix: Water Units: ug/L
Contract #: Cal ID: HP16-03-MAR-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Carbon Dioxide	2500	10000	2500	1	U
Methane	1.00	5.00	1.00	1	U
ethene	1.00	5.00	1.00	1	U
ethane	1.00	5.00	1.00	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4513898
22-NOV-2015 15:56

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15110943 Analyst: JDS Prep Method: 5030B/5030C/503
Instrument ID: HP16 Matrix: Water Method: RSK175
Workgroup (AAB#): WG547425 Units: ug/L
QC Key: DOD4 Lot #: STD68250

Sample ID: WG547425-02 LCS File ID: 16G49027 Run Date: 11/18/2015 15:00
Sample ID: WG547425-03 LCS2 File ID: 16G49028 Run Date: 11/18/2015 15:13

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Methane	114	111	97.2	114	111	97.3	0.0771	85 - 115	20	
ethene	200	194	97.2	200	193	96.4	0.728	85 - 115	20	
ethane	214	202	94.6	214	201	93.7	0.908	85 - 115	20	
Carbon Dioxide	31300	30600	97.6	31300	28400	90.5	7.49	10 - 200	40	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4513899
Report generated: 11/22/2015 15:56

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15110943 Analyst: JDS Prep Method: 5030B/5030C/503
Instrument ID: HP16 Matrix: Water Method: RSK175
Workgroup (AAB#): WG547710 Units: ug/L
QC Key: DOD4 Lot #: STD68250

Sample ID: WG547710-02 LCS File ID: 16G49050 Run Date: 11/19/2015 17:30
Sample ID: WG547710-03 LCS2 File ID: 16G49051 Run Date: 11/19/2015 17:42

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Methane	114	113	98.6	114	115	101	2.18	85 - 115	20	
ethene	200	198	99.2	200	204	102	2.92	85 - 115	20	
ethane	214	206	96.3	214	212	99.2	3.05	85 - 115	20	
Carbon Dioxide	31300	28500	91.0	31300	29900	95.6	4.87	10 - 200	40	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4513899
Report generated: 11/22/2015 15:56

Calibration Table Report
Method: RSKEXT1.M
Title: RSK175 HP16 (SOP: OVL RSK01) 030315
Last Calibration: Fri Mar 06 11:52:33 2015
Curve:WG514119
Calibration Files

		0.67	1.67	33.3	66.7	133	333	533			
		16G46875.	16G46876.	16G46877.	16G46878.	16G46879.	16G46880.	16G46881.D			
	Compound								Avg	%RSD	Linear
T	methane		442542.3	201716.7	175611.6	187516.9	186065.3	188702.9	230359.0	45.3	0.999
T	ethene		322209.5	334124.6	295911.1	313430.8	319356.4	318282.1	317219.0	3.9	
T	acetylene		316851.9	343603.6	313507.6	354933.8	357109.5	344601.6	338435.0	5.6	
T	ethane	381661.4	339569.9	346403.4	312338.4	328333.4	335709.7	335266.3	339897.0	6.3	
T	propane	528069.3	481580.8	518227.1	469331.7	483950.9	500133.6	493547.4	496406.0	4.2	
T	n-butane	686564.3	616037.4	680754.9	613926.5	634552.4	659898.4	646188.9	648275.0	4.5	
	Signal #2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
T	carbon dioxide		3977.4	5604.2	5581.8	6054.5	6060.7	5810.7	5514.9	14.2	

Fri Mar 06 11:59:12 2015

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15110943 Run Date: 03/03/2015 Sample ID: WG514119-08
Instrument ID: HP16 Run Time: 17:10 Method: RSK175
File ID: 16G46884 Analyst: JDS QC Key: DOD4
ICal Workgroup: WG514119 Cal ID: HP16 - 03-MAR-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
carbon dioxide		62500	65100	ug/L	5740	4.10	15	
methane		228	236	ug/L	195000	3.50	15	
ethene		398	407	ug/L	324000	2.20	15	
ethane		427	423	ug/L	337000	0.900	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4513900
Report generated 11/22/2015 15:56

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110943 Run Date: 11/18/2015 Sample ID: WG547424-01
Instrument ID: HP16 Run Time: 12:55 Method: RSK175
File ID: 16G49025 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG547425 Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62500	66200	ug/L	5840	5.98	15	
methane		228	223	ug/L	184000	2.30	15	
ethene		398	388	ug/L	309000	2.57	15	
ethane		427	411	ug/L	327000	3.80	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4513901
Report generated 11/22/2015 15:56

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110943 Run Date: 11/18/2015 Sample ID: WG547424-02
Instrument ID: HP16 Run Time: 16:51 Method: RSK175
File ID: 16G49036 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG547425 Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62500	62200	ug/L	5490	0.486	15	
methane		228	220	ug/L	183000	3.21	15	
ethene		398	390	ug/L	311000	2.12	15	
ethane		427	411	ug/L	327000	3.66	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4513901
Report generated 11/22/2015 15:56

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110943 Run Date: 11/18/2015 Sample ID: WG547424-03
Instrument ID: HP16 Run Time: 19:05 Method: RSK175
File ID: 16G49047 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG547425 Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62500	54600	ug/L	4820	12.6	15	
methane		228	214	ug/L	178000	5.94	15	
ethene		398	371	ug/L	295000	6.92	15	
ethane		427	393	ug/L	313000	7.86	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4513901
Report generated 11/22/2015 15:56

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110943
Run Date: 11/19/2015
Sample ID: WG547709-01
Instrument ID: HP16
Run Time: 15:50
Method: RSK175
File ID: 16G49048
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG547710
Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62500	64400	ug/L	5680	3.01	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4513901
Report generated 11/22/2015 15:56

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110943
Run Date: 11/19/2015
Sample ID: WG547709-03
Instrument ID: HP16
Run Time: 19:21
Method: RSK175
File ID: 16G49059
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG547710
Cal ID: HP16 - 03-MAR-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
carbon dioxide		62500	60700	ug/L	5350	2.91	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4513901
Report generated 11/22/2015 15:56

2.1.2.3 Sample Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\111815\16G49034.D\FID1A.CH Vial: 10
Signal #2 : C:\MSDchem\1\DATA\111815\16G49034.D\TCD2B.CH
Acq On : 18 Nov 2015 16:26 Operator: JDS
Sample : L15110943-01 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 18 16:32:32 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	612062	1.089	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.40	19280	0.057	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.19	944751619	171309.675	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49034.D RSKEXT1.M Wed Nov 18 16:32:32 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\111815\16G49034.D\FID1A.CH Vial: 10
Signal #2 : C:\MSDchem\1\DATA\111815\16G49034.D\TCD2B.CH
Acq On : 18 Nov 2015 16:26 Operator: JDS
Sample : L15110943-01 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 18 16:32 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

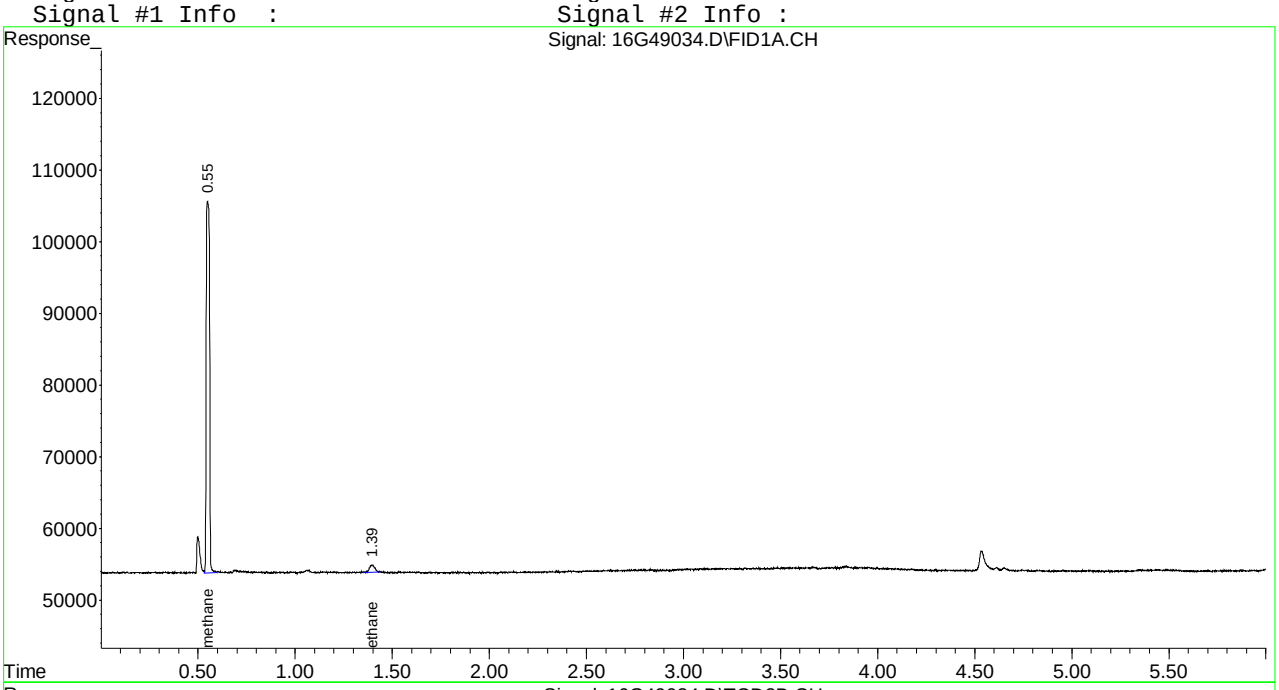

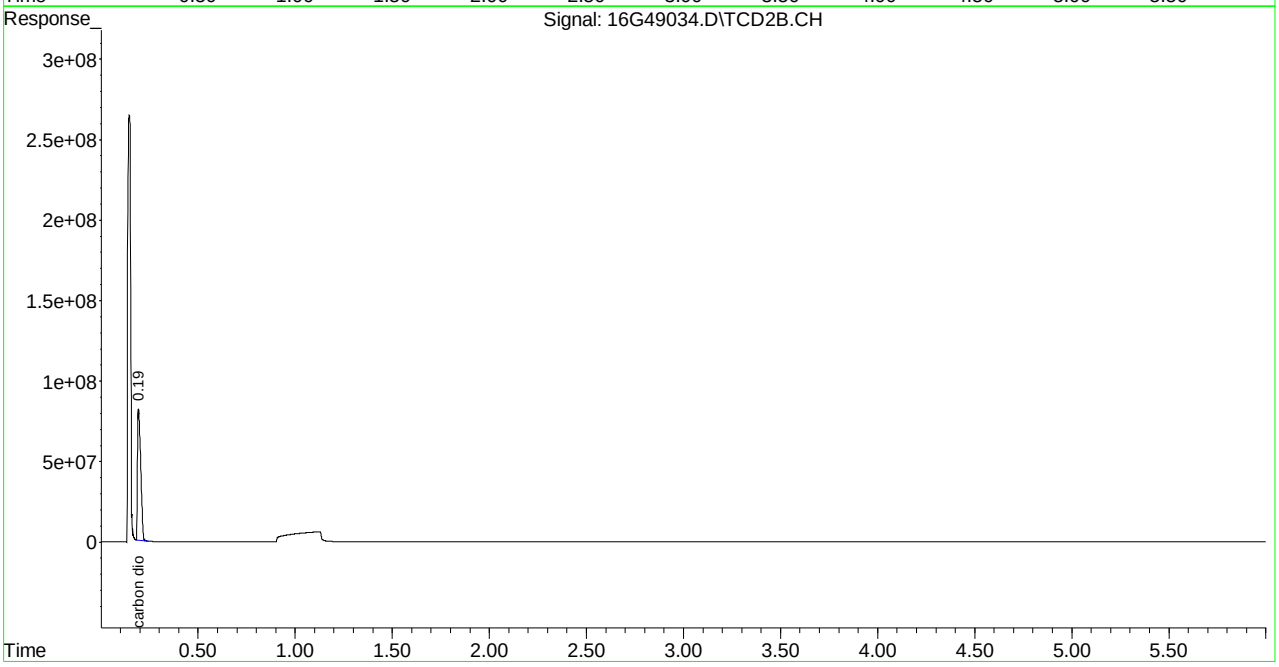

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\111915\16G49052.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\111915\16G49052.D\TCD2B.CH
Acq On : 19 Nov 2015 17:55 Operator: JDS
Sample : L15110943-01 B D1 10X RSK175 Inst : HP16
Misc : 1,10 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 19 18:01:35 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	314072	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	71496490	12964.297	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49052.D RSKEXT1.M Sun Nov 22 14:58:49 2015 Page 1

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\111915\16G49052.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\111915\16G49052.D\TCD2B.CH
Acq On    : 19 Nov 2015  17:55                        Operator: JDS
Sample    : L15110943-01 B D1 10X RSK175              Inst    : HP16
Misc      : 1,10                                      Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Nov 19 18:01 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

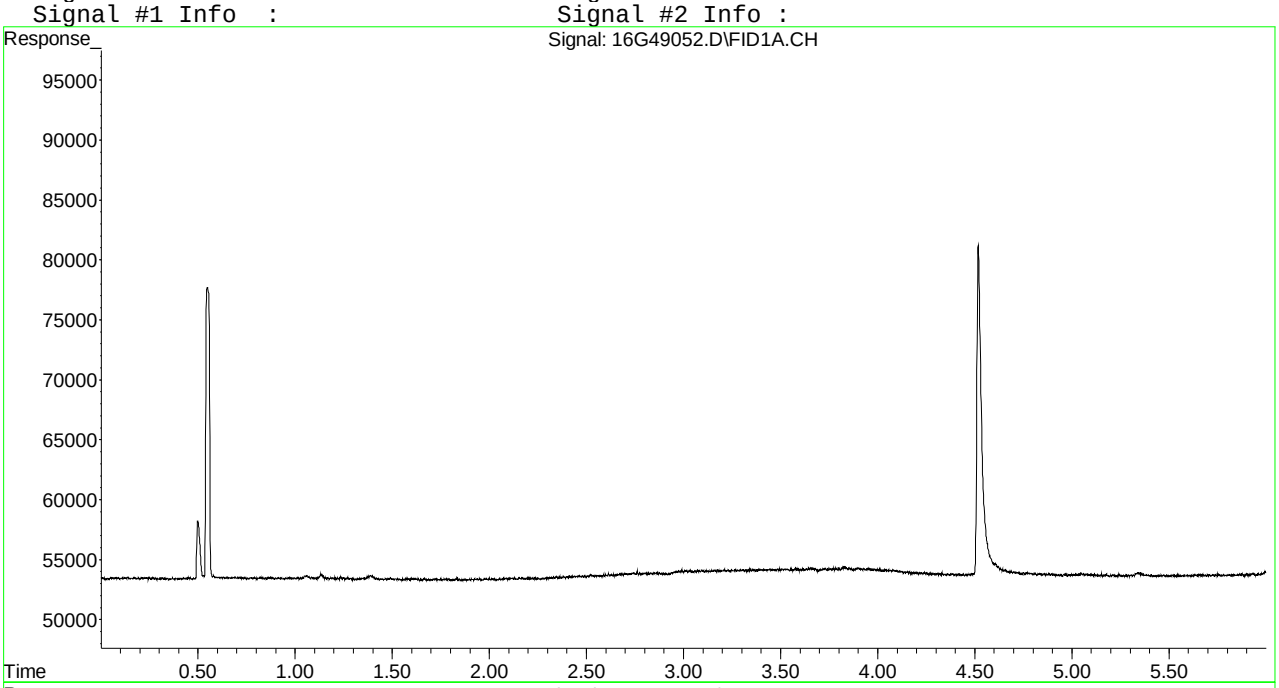

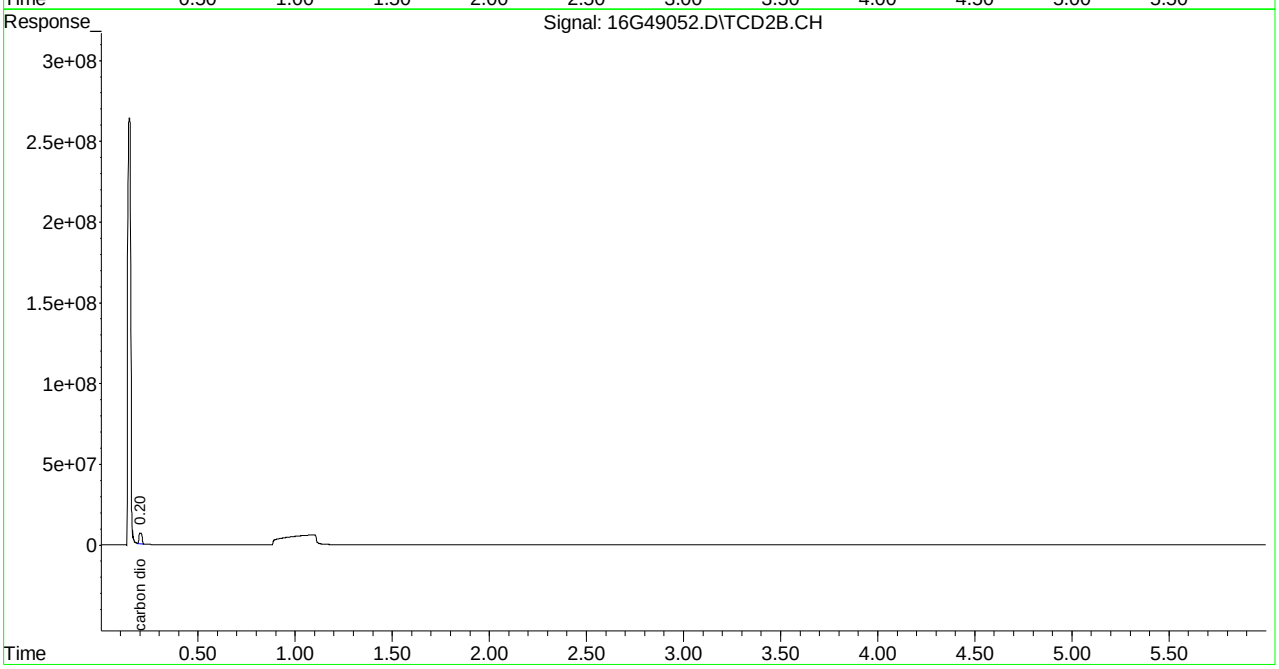

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\111815\16G49035.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\111815\16G49035.D\TCD2B.CH
Acq On : 18 Nov 2015 16:39 Operator: JDS
Sample : L15110943-03 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 18 16:45:10 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	263308	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	93162275	16892.905	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49035.D RSKEXT1.M Thu Nov 19 09:29:49 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\111815\16G49035.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\111815\16G49035.D\TCD2B.CH
Acq On : 18 Nov 2015 16:39 Operator: JDS
Sample : L15110943-03 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 18 16:45 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

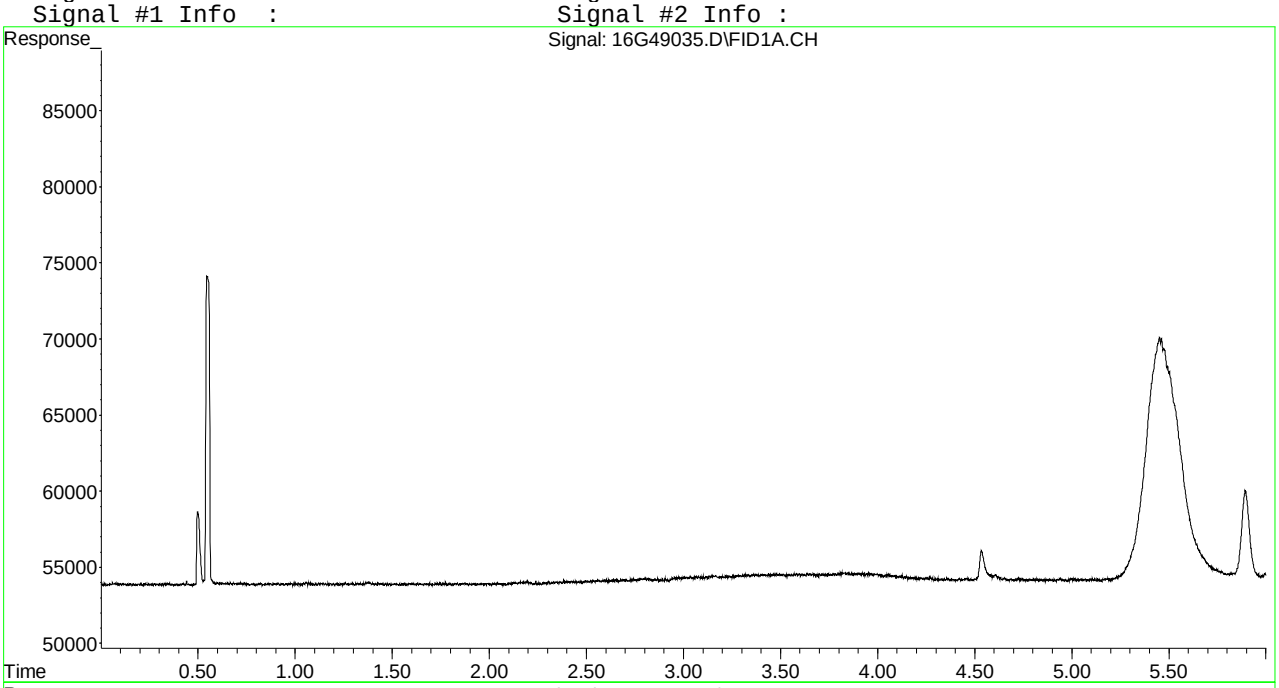

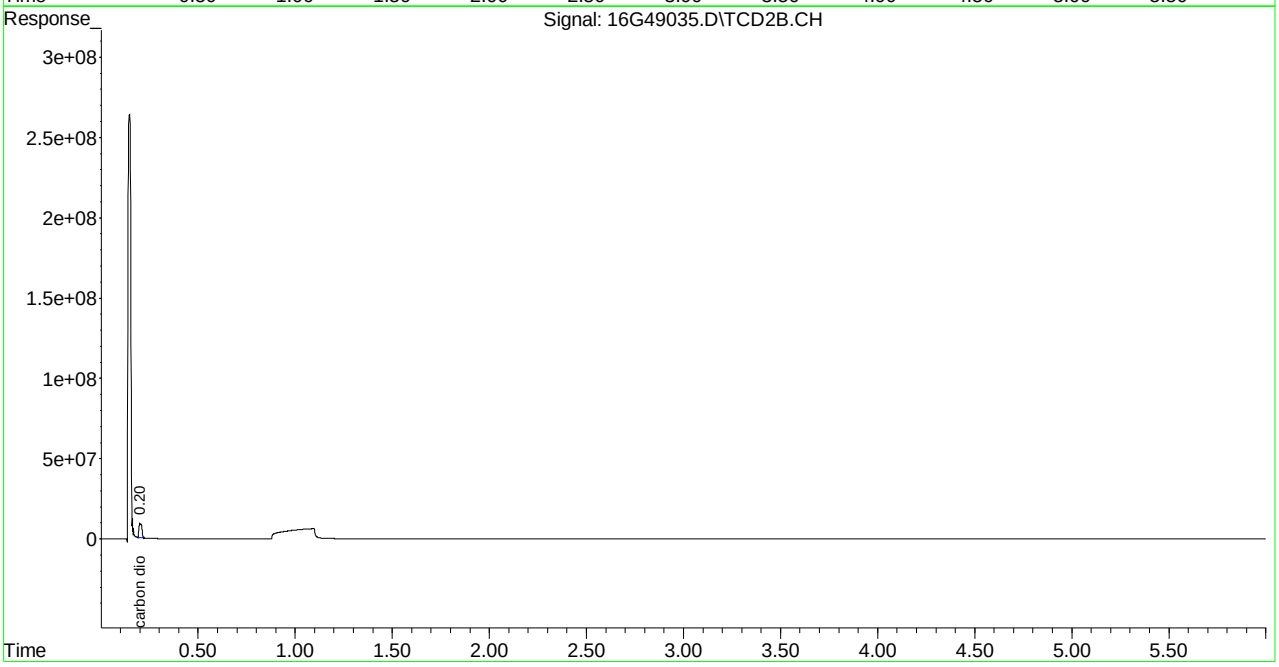

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDchem\1\DATA\111815\16G49037.D\FID1A.CH Vial: 13
Signal #2 : C:\MSDchem\1\DATA\111815\16G49037.D\TCD2B.CH
Acq On    : 18 Nov 2015  17:03                        Operator: JDS
Sample    : L15110943-05 A RSK175                     Inst    : HP16
Misc      : 1,1                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Nov 18 17:10:05 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                   Signal #2 Phase:
Signal #1 Info  :                   Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	278939	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	1.14	7382	0.022	umol/
4) T	ethane	1.39	28620	0.084	umol/
5) T	propane	3.84	9138	0.018	umol/
6) T	n-butane	5.34	6544	0.010	umol/
8) T	carbon dioxide	0.19	1131270926	205130.799	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\111815\16G49037.D\FID1A.CH Vial: 13
Signal #2 : C:\MSDchem\1\DATA\111815\16G49037.D\TCD2B.CH
Acq On : 18 Nov 2015 17:03 Operator: JDS
Sample : L15110943-05 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 18 17:10 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

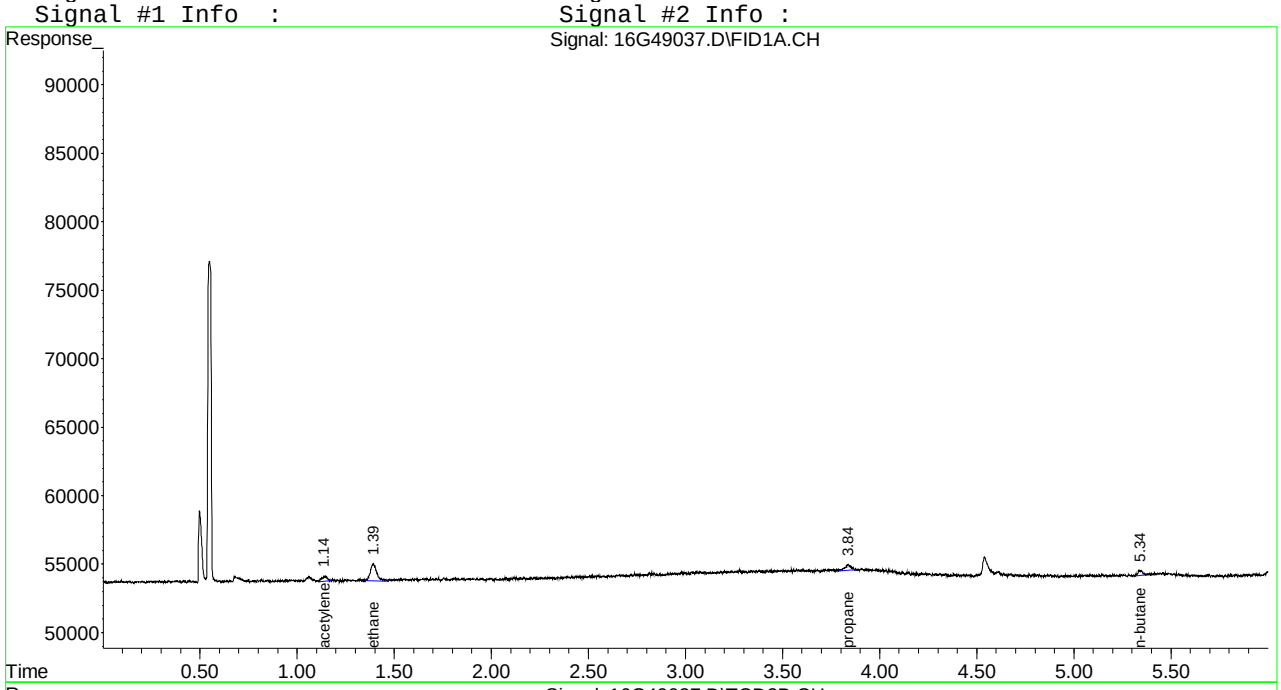

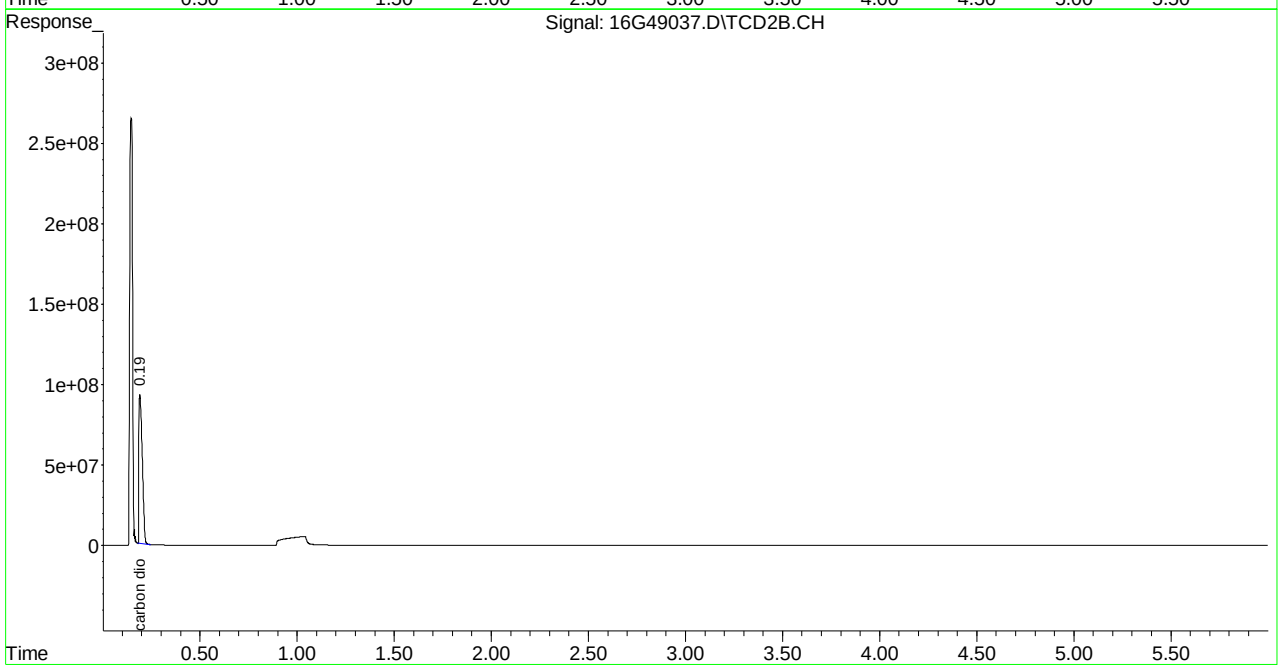

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDchem\1\DATA\111915\16G49053.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDchem\1\DATA\111915\16G49053.D\TCD2B.CH
Acq On    : 19 Nov 2015  18:07                        Operator: JDS
Sample    : L15110943-05 B D1 10X RSK175              Inst    : HP16
Misc      : 1,10                                      Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Nov 19 18:13:08 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	306089	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.40	6097	0.018	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	5.34	7674	0.012	umol/
8) T	carbon dioxide	0.21	86334977	15654.926	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

16G49053.D RSKEXT1.M Thu Nov 19 18:13:08 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\111915\16G49053.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDchem\1\DATA\111915\16G49053.D\TCD2B.CH
Acq On : 19 Nov 2015 18:07 Operator: JDS
Sample : L15110943-05 B D1 10X RSK175 Inst : HP16
Misc : 1,10 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 19 18:13 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

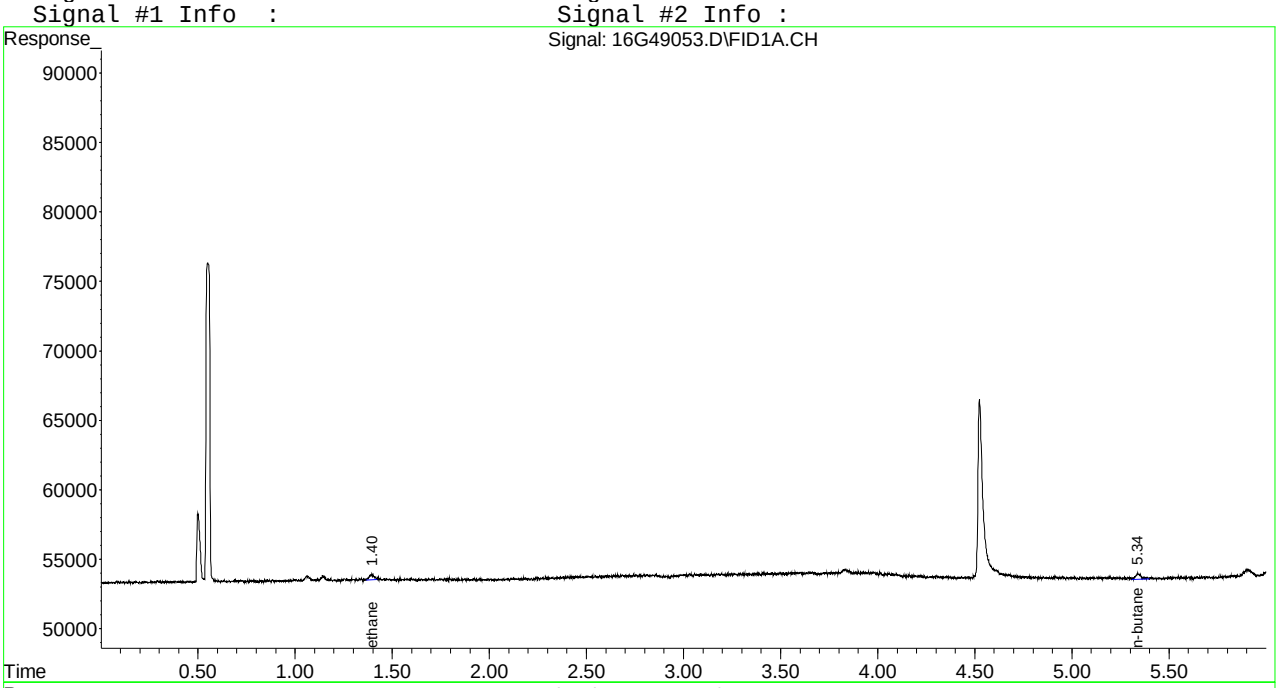

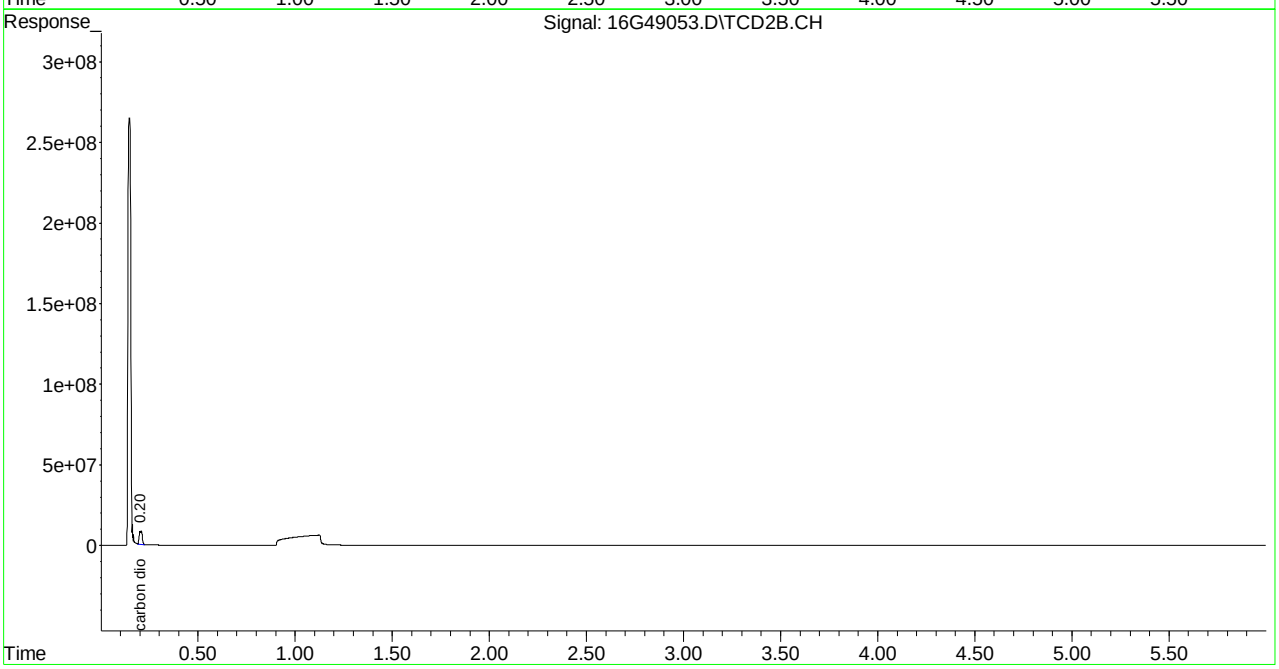

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\111815\16G49038.D\FID1A.CH Vial: 14
Signal #2 : C:\MSDchem\1\DATA\111815\16G49038.D\TCD2B.CH
Acq On : 18 Nov 2015 17:15 Operator: JDS
Sample : L15110943-07 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 18 17:21:51 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	267284	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.40	6578	0.019	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	325154105	58959.459	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49038.D RSKEXT1.M Wed Nov 18 17:21:52 2015 Page 1

Signal #1 : C:\MSDchem\1\DATA\111815\16G49038.D\FID1A.CH Vial: 14
Signal #2 : C:\MSDchem\1\DATA\111815\16G49038.D\TCD2B.CH
Acq On : 18 Nov 2015 17:15 Operator: JDS
Sample : L15110943-07 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 18 17:21 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

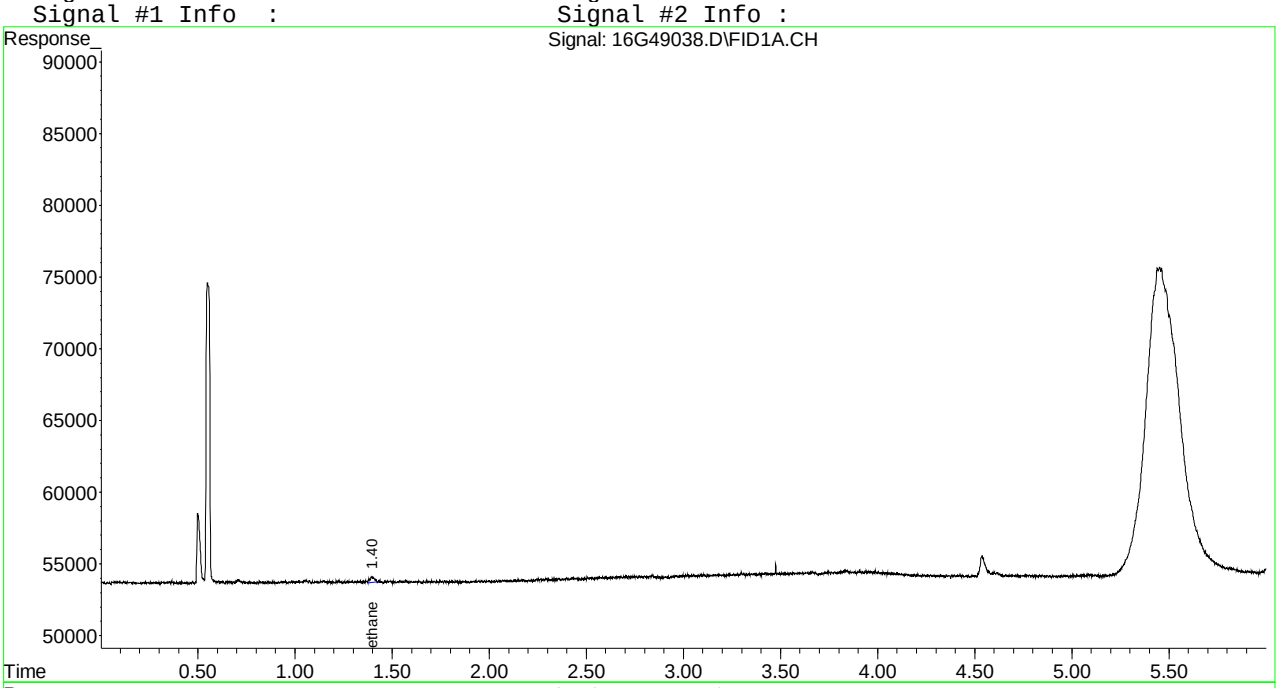

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\111915\16G49054.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\111915\16G49054.D\TCD2B.CH
Acq On    : 19 Nov 2015  18:19                        Operator: JDS
Sample    : L15110943-07 B D1 5X RSK175               Inst    : HP16
Misc      : 1,5                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Nov 19 18:25:57 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	300281	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	54018045	9794.970	umol/

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\111915\16G49054.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\111915\16G49054.D\TCD2B.CH
Acq On    : 19 Nov 2015  18:19                        Operator: JDS
Sample    : L15110943-07 B D1 5X RSK175               Inst    : HP16
Misc      : 1,5                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Nov 19 18:25 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

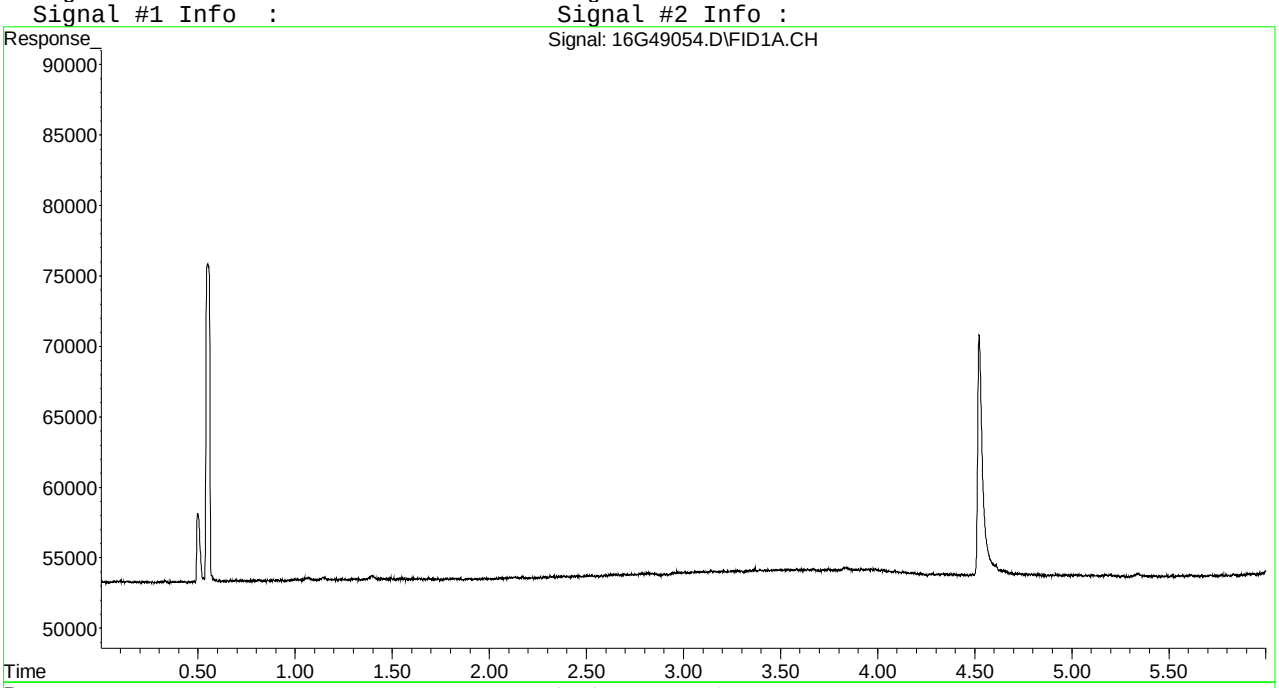

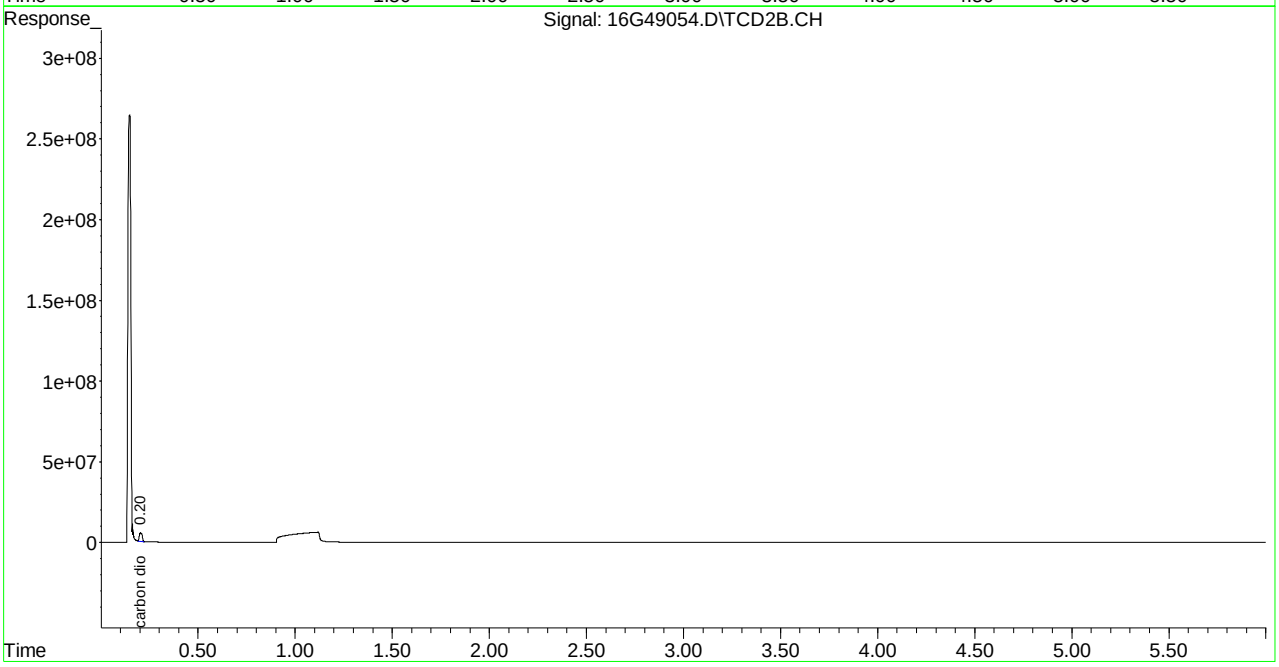

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDchem\1\DATA\111815\16G49039.D\FID1A.CH Vial: 15
Signal #2 : C:\MSDchem\1\DATA\111815\16G49039.D\TCD2B.CH
Acq On    : 18 Nov 2015  17:28                      Operator: JDS
Sample    : L15110943-09 A RSK175                   Inst    : HP16
Misc      : 1,1                                     Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Nov 18 17:34:23 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                   Signal #2 Phase:
Signal #1 Info  :                   Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	406122	N.D.	umol/
2) T	ethene	1.06	11422	0.036	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.39	21575	0.063	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.19	870782605	157897.041	umol/

Signal #1 : C:\MSDchem\1\DATA\111815\16G49039.D\FID1A.CH Vial: 15
Signal #2 : C:\MSDchem\1\DATA\111815\16G49039.D\TCD2B.CH
Acq On : 18 Nov 2015 17:28 Operator: JDS
Sample : L15110943-09 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 18 17:34 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

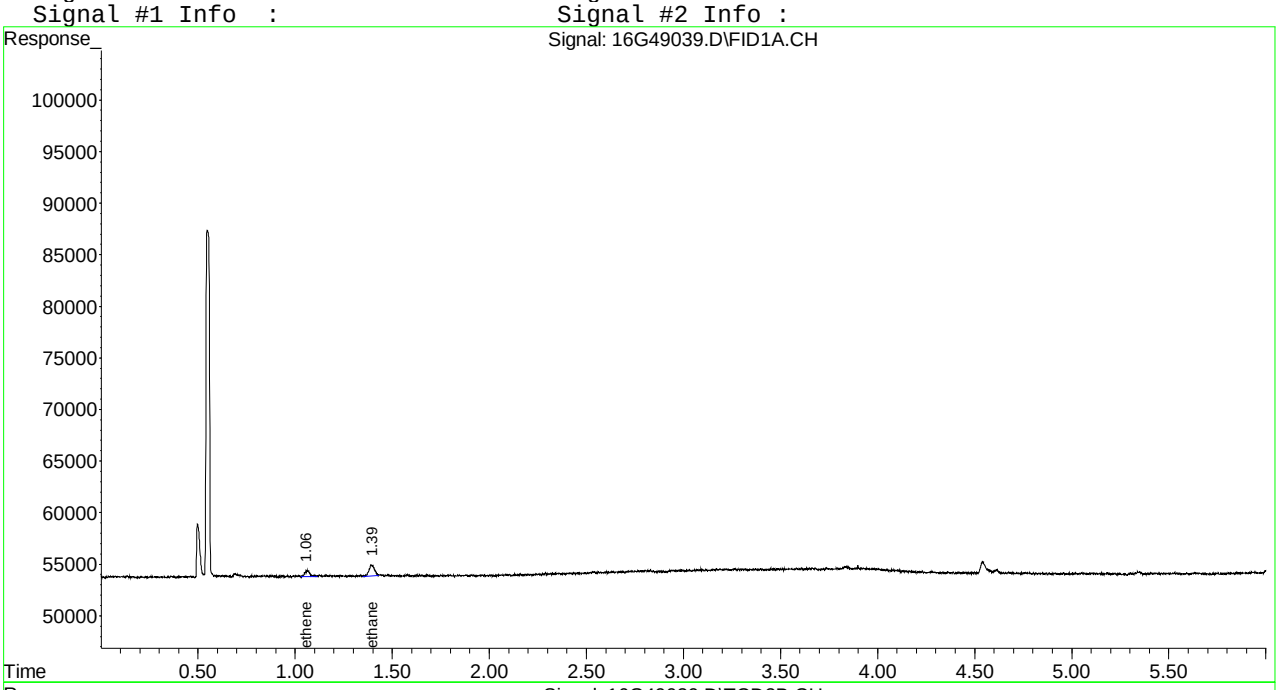

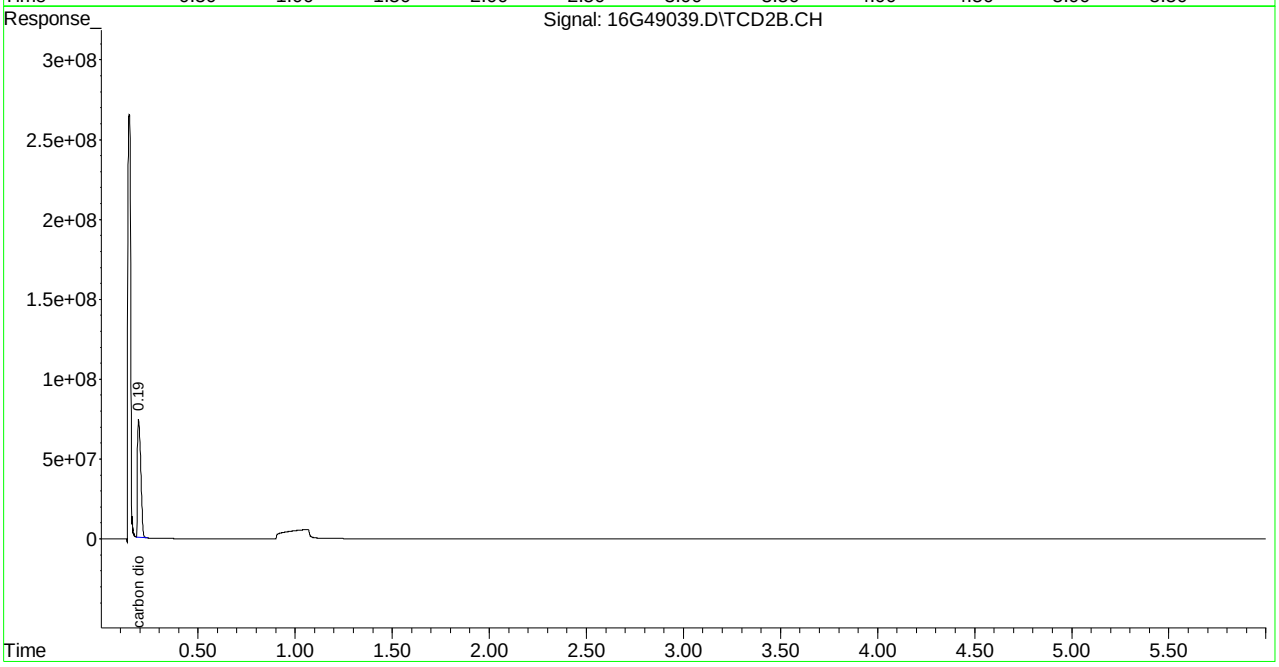

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\111915\16G49055.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\111915\16G49055.D\TCD2B.CH
Acq On    : 19 Nov 2015  18:31                        Operator: JDS
Sample    : L15110943-09 B D1 10X RSK175              Inst    : HP16
Misc      : 1,10                                      Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Nov 19 18:37:51 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	303943	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	61917871	11227.428	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\111915\16G49055.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\111915\16G49055.D\TCD2B.CH
Acq On    : 19 Nov 2015  18:31                        Operator: JDS
Sample    : L15110943-09 B D1 10X RSK175              Inst    : HP16
Misc      : 1,10                                      Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Nov 19 18:37 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

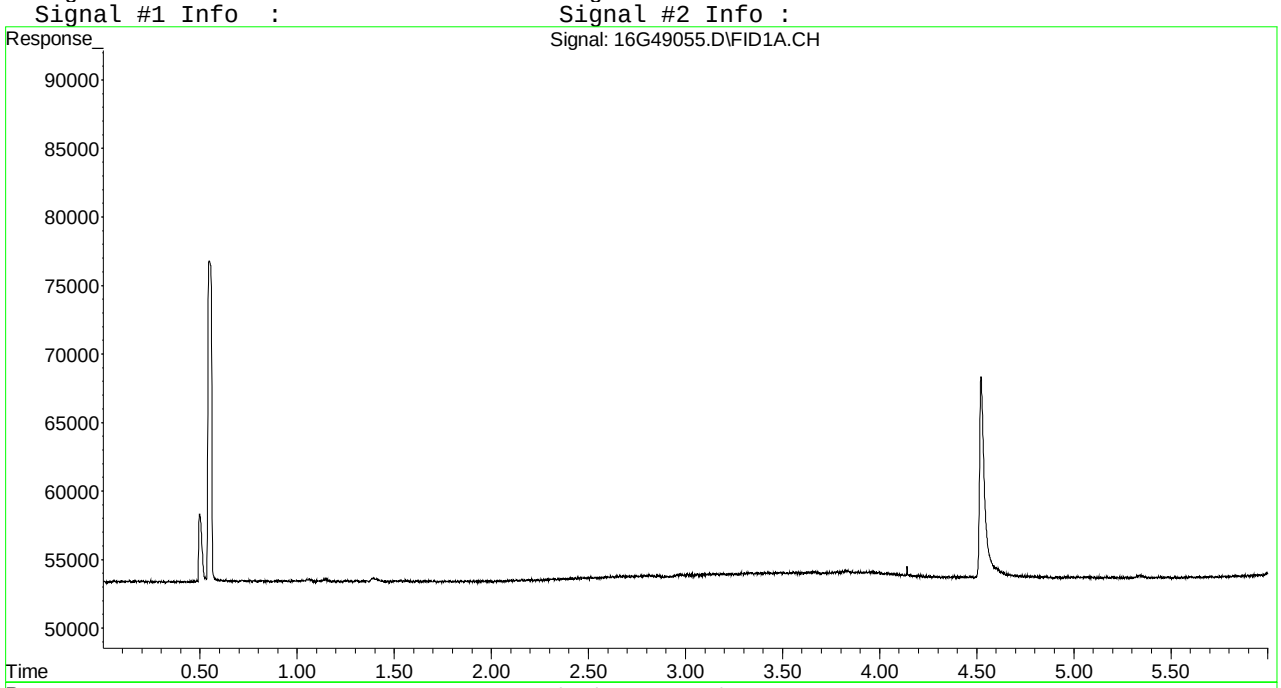

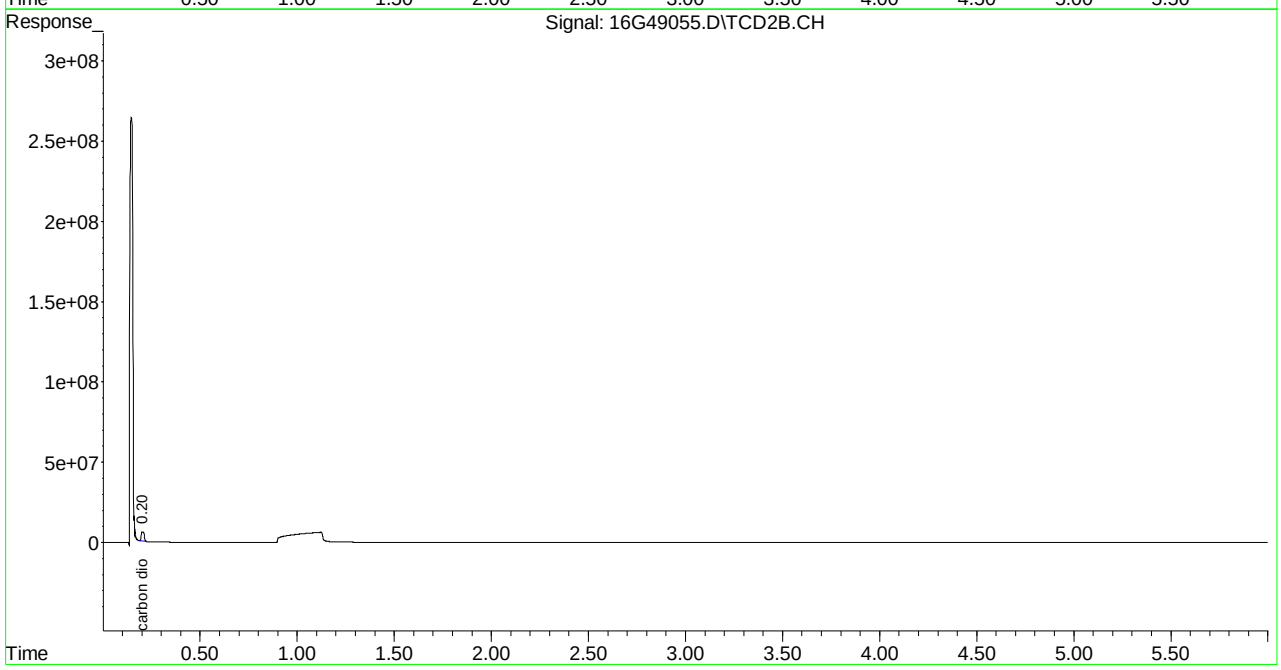

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\111815\16G49040.D\FID1A.CH Vial: 16
Signal #2 : C:\MSDchem\1\DATA\111815\16G49040.D\TCD2B.CH
Acq On : 18 Nov 2015 17:40 Operator: JDS
Sample : L15110943-11 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 18 17:46:23 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	10022568	51.816	umol/
2) T	ethene	1.06	67030	0.211	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.39	52394	0.154	umol/
5) T	propane	3.83	14894	0.030	umol/
6) T	n-butane	5.34	9146	0.014	umol/
8) T	carbon dioxide	0.19	796287935	144389.091	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49040.D RSKEXT1.M Wed Nov 18 17:46:23 2015 Page 1

Signal #1 : C:\MSDchem\1\DATA\111815\16G49040.D\FID1A.CH Vial: 16
Signal #2 : C:\MSDchem\1\DATA\111815\16G49040.D\TCD2B.CH
Acq On : 18 Nov 2015 17:40 Operator: JDS
Sample : L15110943-11 A RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 18 17:46 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

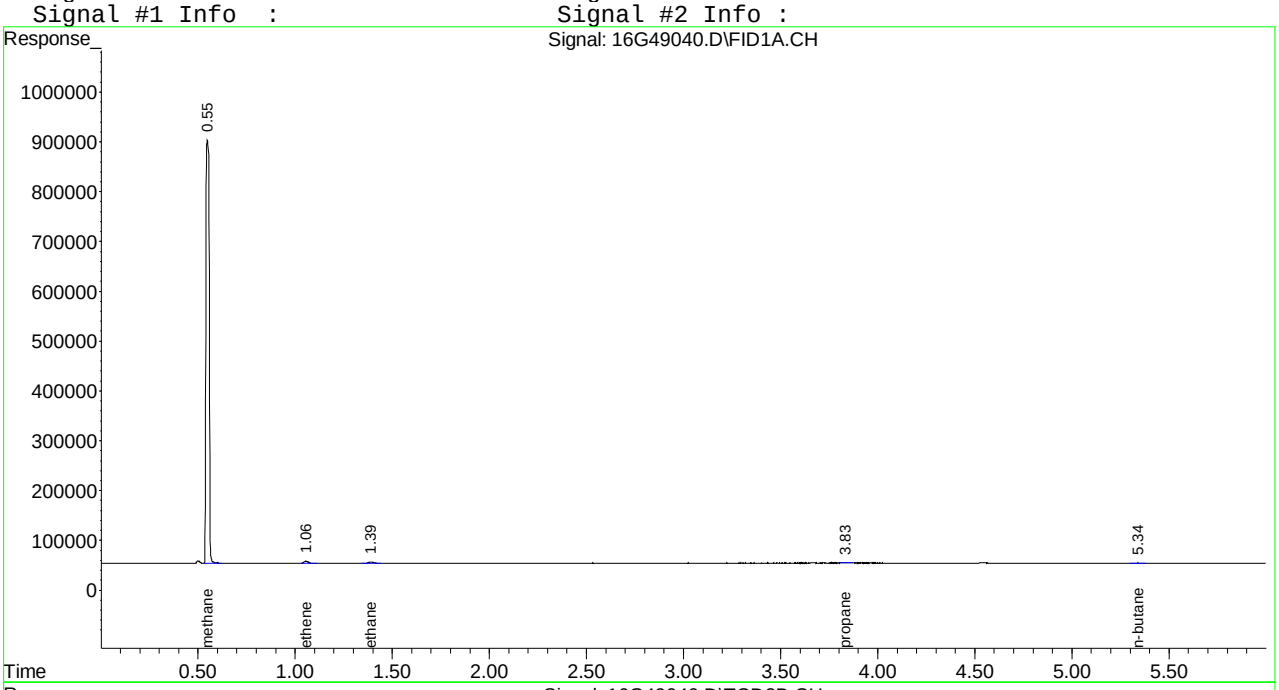

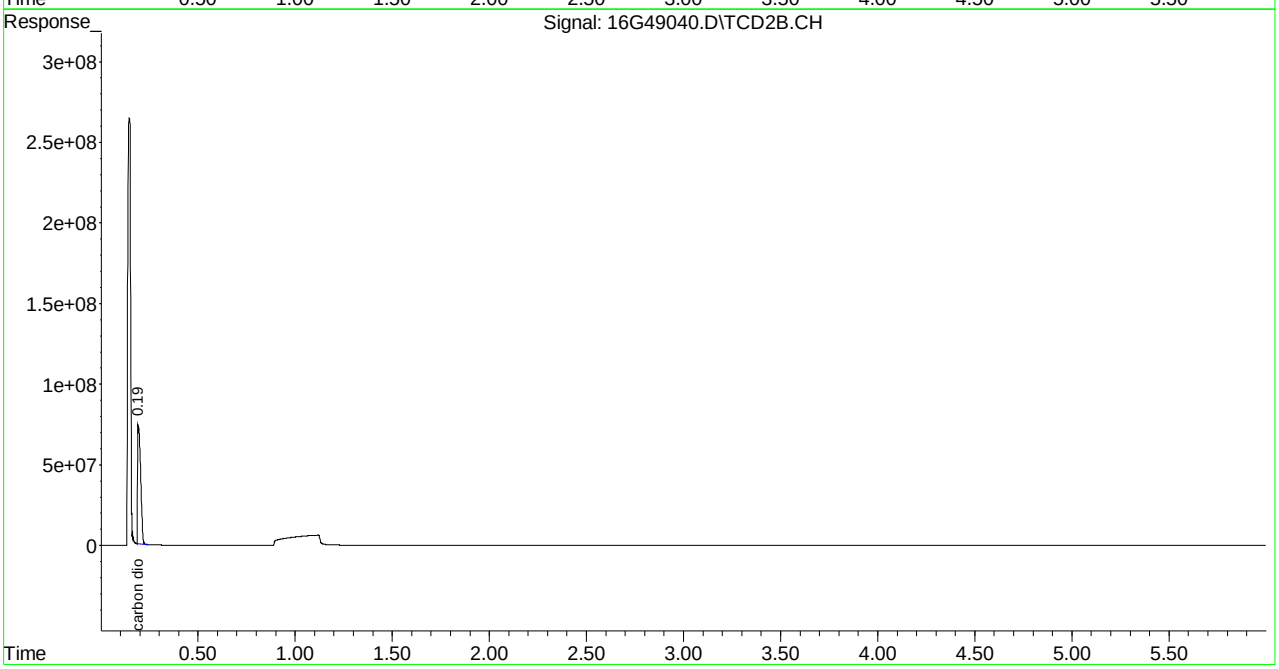

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\111915\16G49056.D\FID1A.CH Vial: 9
Signal #2 : C:\MSDchem\1\DATA\111915\16G49056.D\TCD2B.CH
Acq On : 19 Nov 2015 18:44 Operator: JDS
Sample : L15110943-11 B D1 10X RSK175 Inst : HP16
Misc : 1,10 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 19 18:50:26 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	1022805	3.303	umol/
2) T	ethene	1.06	8564	0.027	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.40	8300	0.024	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.20	74185036	13451.805	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49056.D RSKEXT1.M Thu Nov 19 18:50:26 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\111915\16G49056.D\FID1A.CH Vial: 9
Signal #2 : C:\MSDchem\1\DATA\111915\16G49056.D\TCD2B.CH
Acq On : 19 Nov 2015 18:44 Operator: JDS
Sample : L15110943-11 B D1 10X RSK175 Inst : HP16
Misc : 1,10 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 19 18:50 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

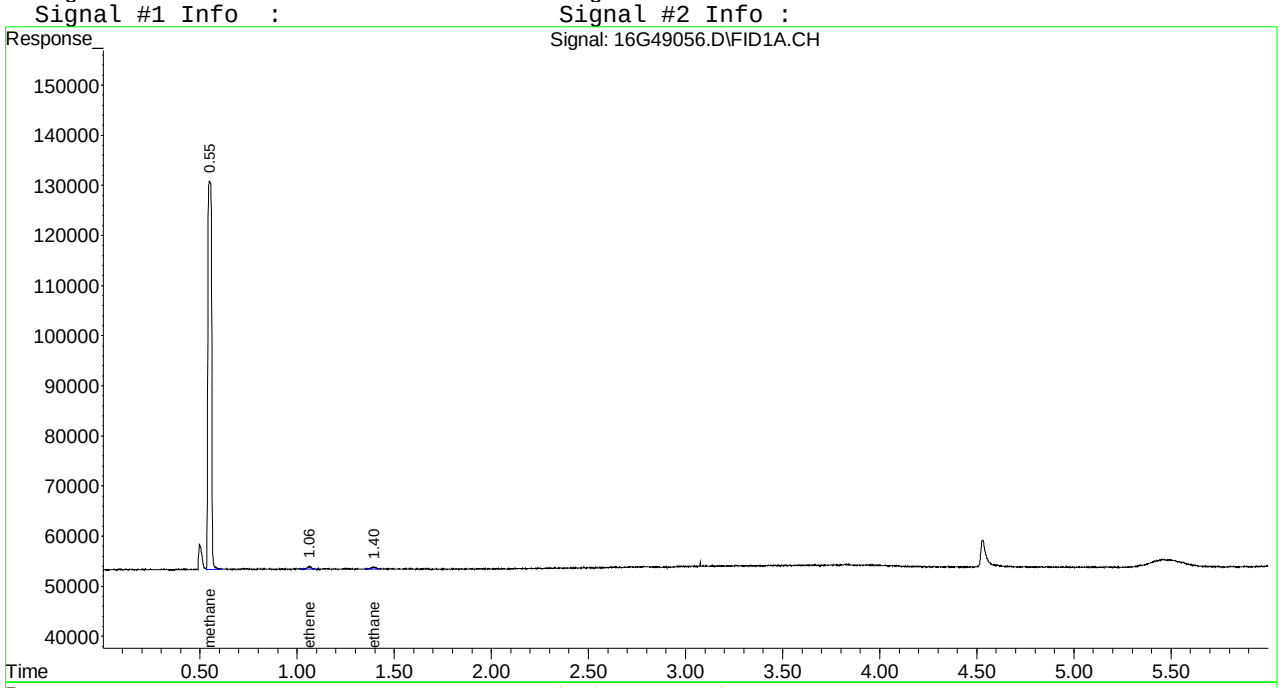

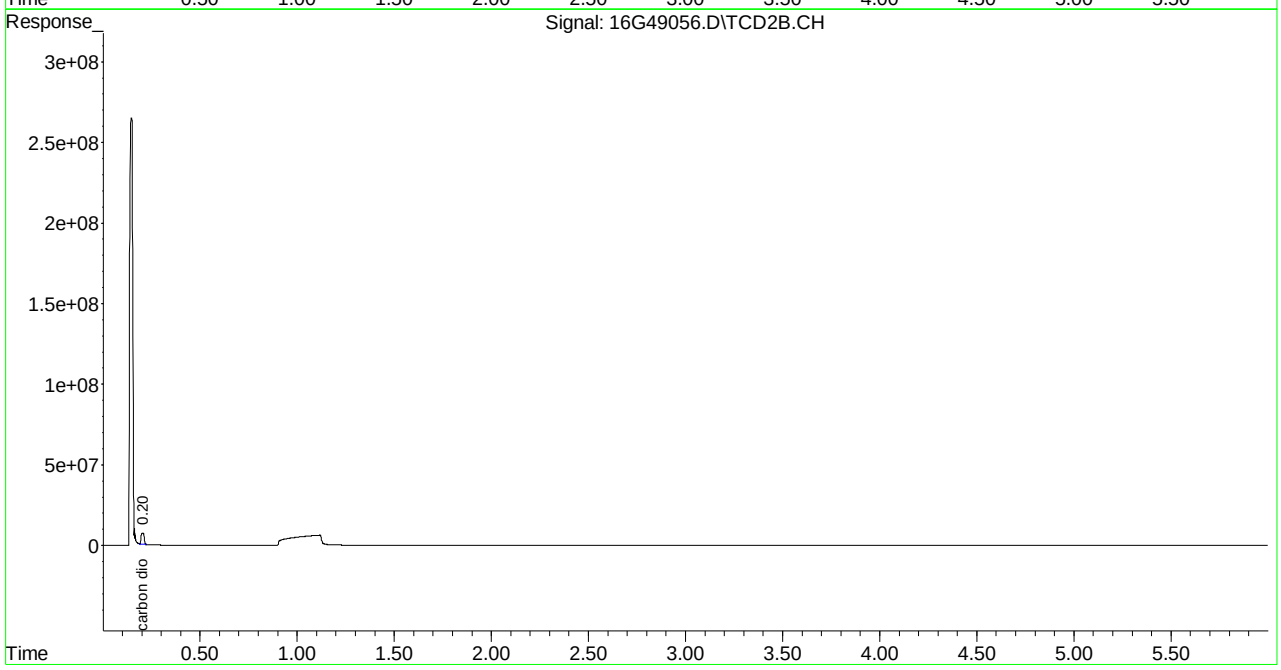

2.1.2.4 Standards Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46875.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46875.D\TCD2B.CH
Acq On : 03 Mar 2015 14:17 Operator: JDS
Sample : WG514119-01 0.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:54:08 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	566979	0.846	umol/
2) T	ethene	1.06	233416	0.736	umol/
3) T	acetylene	1.14	213812	0.632	umol/
4) T	ethane	1.39	254568	0.749	umol/
5) T	propane	3.83	352222	0.710	umol/
6) T	n-butane	5.34	457938	0.706	umol/
8) T	carbon dioxide	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46875.D RSKEXT1.M Fri Mar 06 11:56:43 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46875.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46875.D\TCD2B.CH
Acq On : 03 Mar 2015 14:17 Operator: JDS
Sample : WG514119-01 0.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:54 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

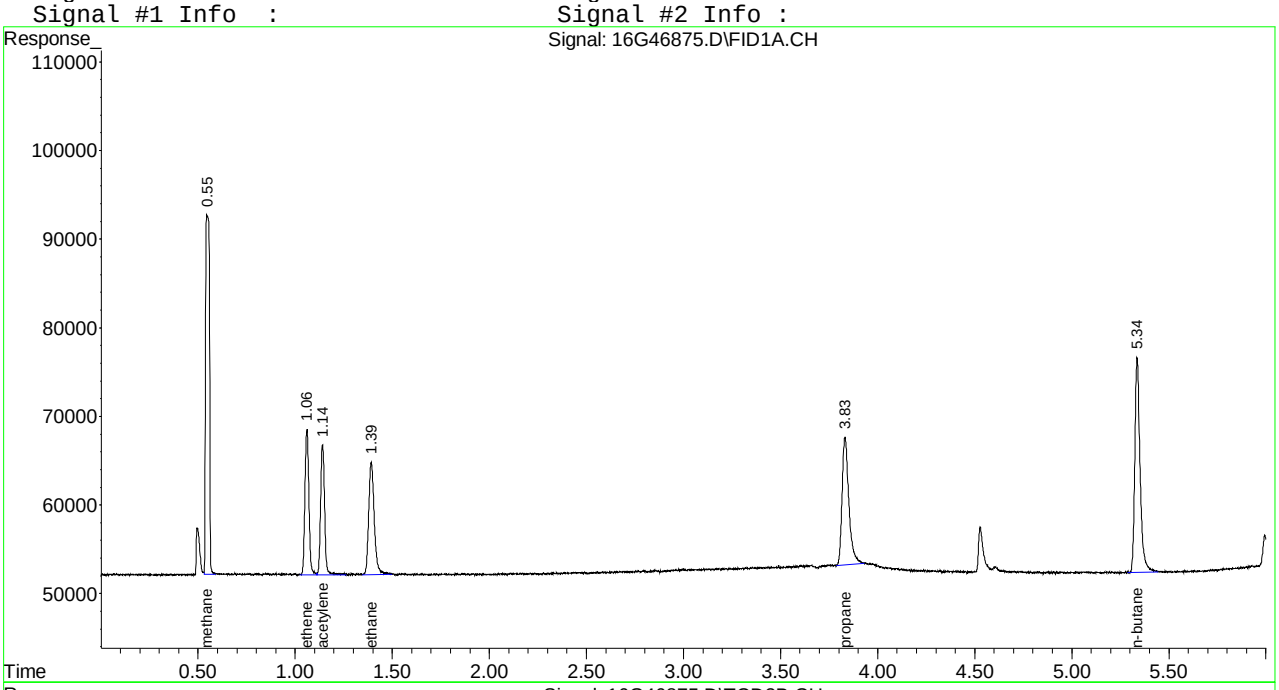

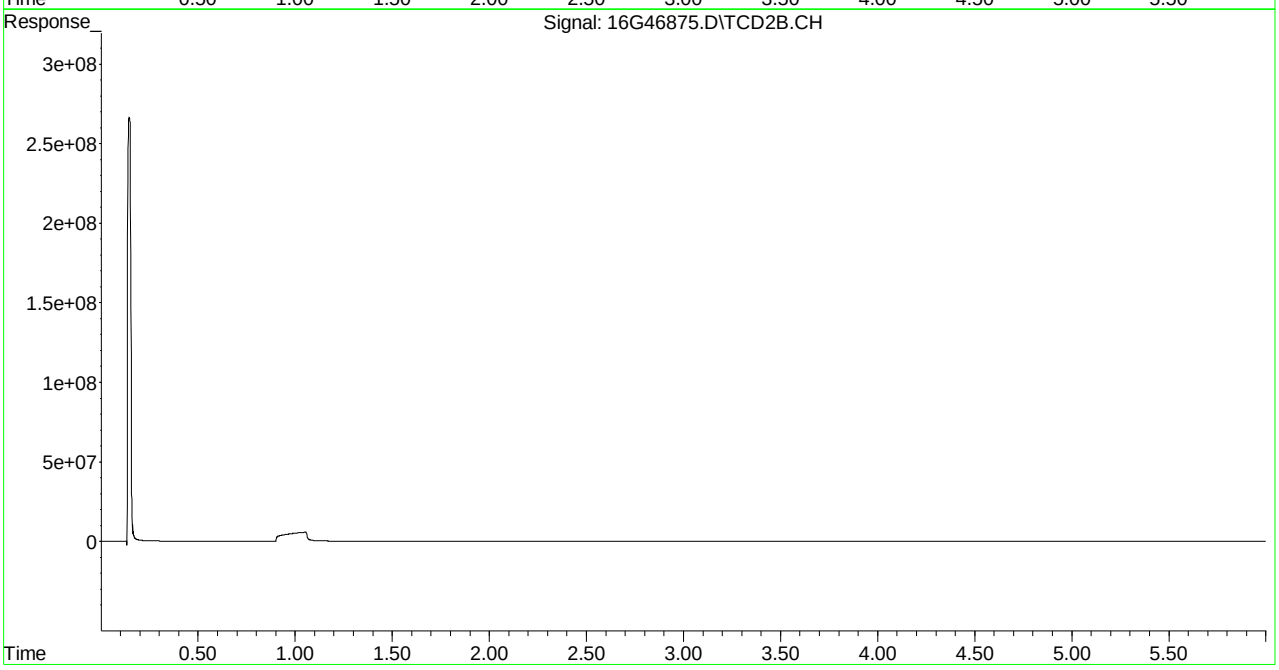

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46875.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46875.D\TCD2B.CH
Acq On : 03 Mar 2015 14:17 Operator: JDS
Sample : WG514119-01 0.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	-1.000	0.846	0.0	0	0.00
2	T	ethene	-1.000	0.736	0.0	100	0.00
3	T	acetylene	-1.000	0.632	0.0	100	0.00
4	T	ethane	0.667	0.749	-12.3	100	0.00
5	T	propane	0.667	0.710	-6.4	100	0.00
6	T	n-butane	0.667	0.706	-5.8	100	0.00

Signal #2

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46875.D RSKEXT1.M Fri Mar 06 11:55:53 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46875.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46875.D\TCD2B.CH
Acq On    : 03 Mar 2015  14:17                        Operator: JDS
Sample    : WG514119-01 0.67umol/mol STD RSK175       Inst    : HP16
Misc      : 1,1 STD67276                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%
```

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
	Signal #2					
8 T	carbon dioxide	-1.000	0.000	0.0	0	-0.21

```
---------------------------------------------------------------------------
(#) = Out of Range            SPCC's out = 0  CCC's out = 0
16G46875.D  RSKEXT1.M      Fri Mar 06 11:55:53 2015                    Page 2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46876.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46876.D\TCD2B.CH
Acq On : 03 Mar 2015 14:30 Operator: JDS
Sample : WG514119-02 1.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:08 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	739046	1.773	umol/
2) T	ethene	1.06	538090	1.696	umol/
3) T	acetylene	1.14	529143	1.564	umol/
4) T	ethane	1.39	567082	1.668	umol/
5) T	propane	3.83	804240	1.620	umol/
6) T	n-butane	5.34	1028782	1.587	umol/
8) T	carbon dioxide	0.20	7954783	1442.423	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46876.D RSKEXT1.M Fri Mar 06 11:57:08 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46876.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46876.D\TCD2B.CH
Acq On : 03 Mar 2015 14:30 Operator: JDS
Sample : WG514119-02 1.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

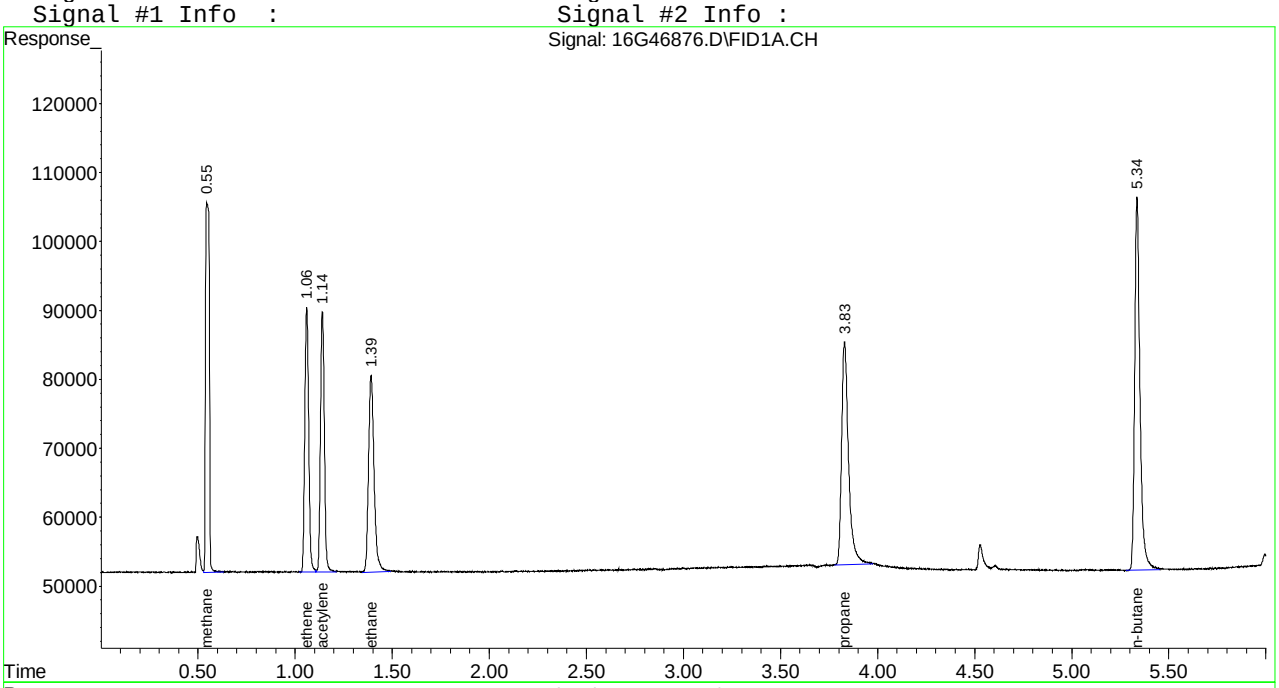

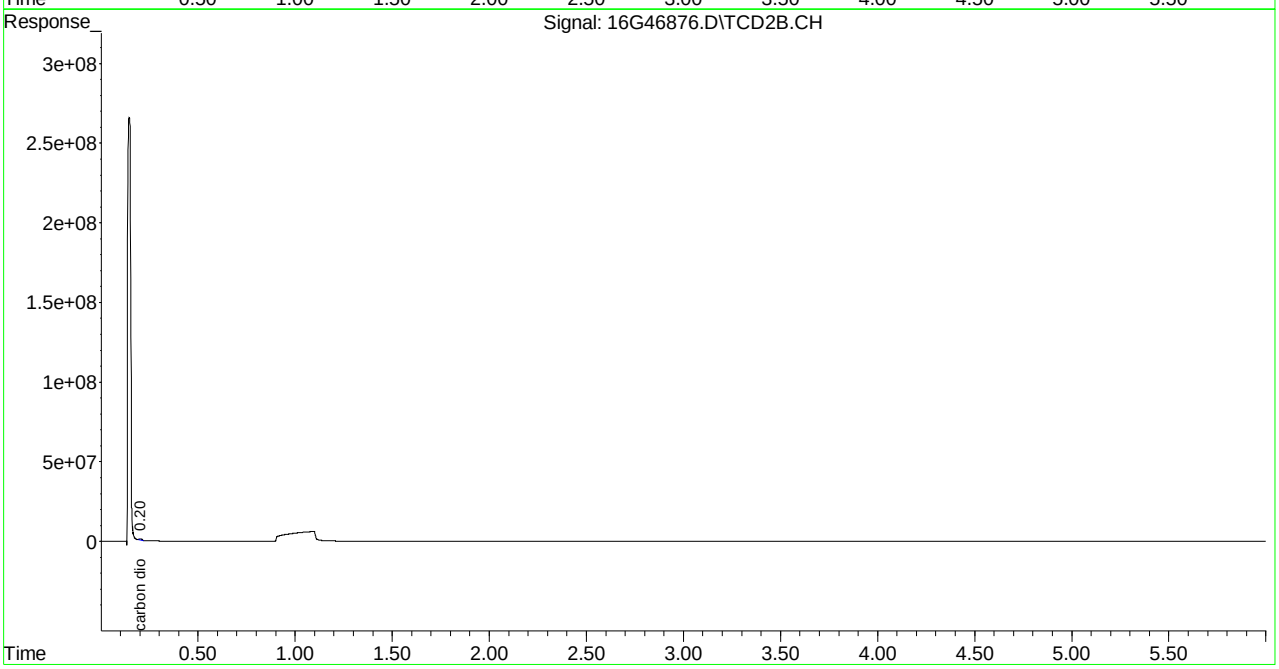

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46876.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46876.D\TCD2B.CH
Acq On : 03 Mar 2015 14:30 Operator: JDS
Sample : WG514119-02 1.67umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	1.670	1.773	-6.2	100	0.00
2	T	ethene	1.670	1.696	-1.6	100	0.00
3	T	acetylene	1.670	1.564	6.3	100	0.00
4	T	ethane	1.670	1.668	0.1	100	0.00
5	T	propane	1.670	1.620	3.0	100	0.00
6	T	n-butane	1.670	1.587	5.0	100	0.00

Signal #2

8	T	carbon dioxide	2000.000	1442.423	27.9#	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G46876.D RSKEXT1.M Fri Mar 06 11:52:49 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46876.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46876.D\TCD2B.CH
Acq On    : 03 Mar 2015  14:30                        Operator: JDS
Sample    : WG514119-02 1.67umol/mol STD RSK175       Inst    : HP16
Misc      : 1,1 STD67276                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46877.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46877.D\TCD2B.CH
Acq On : 03 Mar 2015 14:42 Operator: JDS
Sample : WG514119-03 33.3umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:10 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	6717167	33.998	umol/
2) T	ethene	1.06	11126351	35.075	umol/
3) T	acetylene	1.14	11442001	33.809	umol/
4) T	ethane	1.39	11535235	33.937	umol/
5) T	propane	3.83	17256964	34.764	umol/
6) T	n-butane	5.34	22669140	34.968	umol/
8) T	carbon dioxide	0.20	18661832	3383.908	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46877.D RSKEXT1.M Fri Mar 06 11:57:10 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46877.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46877.D\TCD2B.CH
Acq On : 03 Mar 2015 14:42 Operator: JDS
Sample : WG514119-03 33.3umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67276 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

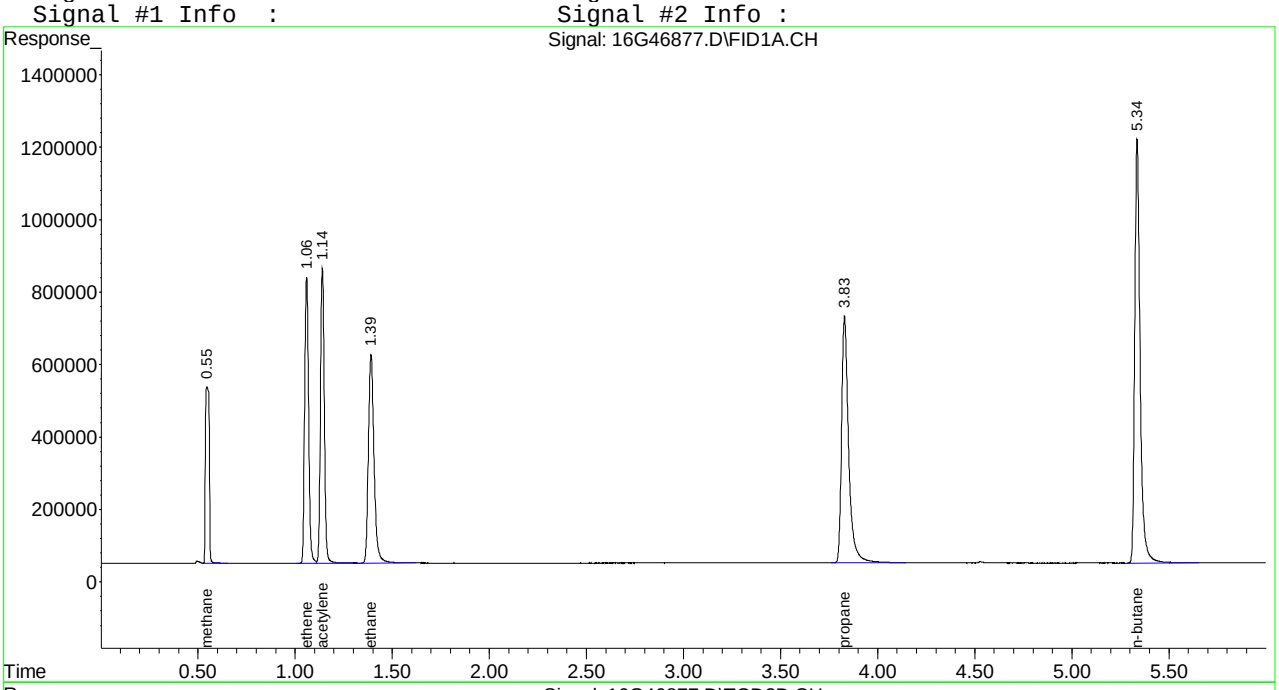

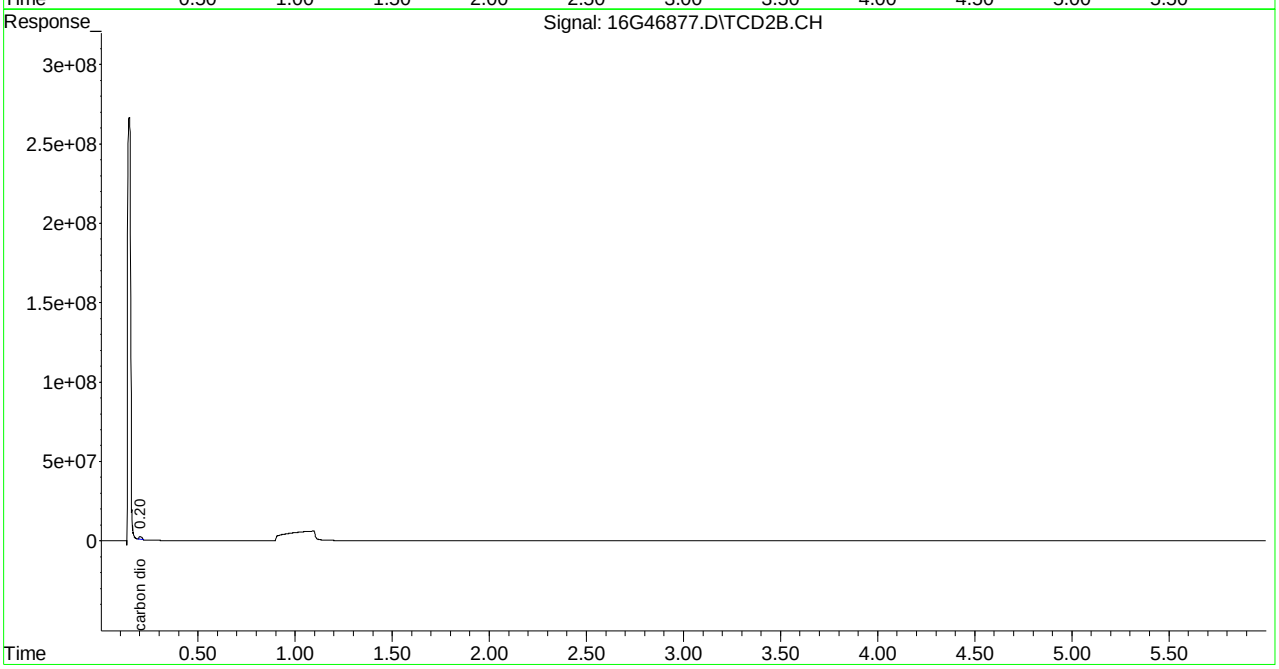

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46878.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46878.D\TCD2B.CH
Acq On : 03 Mar 2015 14:53 Operator: JDS
Sample : WG514119-04 66.7umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:11 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	11713293	60.930	umol/
2) T	ethene	1.06	19737271	62.220	umol/
3) T	acetylene	1.14	20910957	61.787	umol/
4) T	ethane	1.39	20832969	61.292	umol/
5) T	propane	3.83	31304425	63.062	umol/
6) T	n-butane	5.33	40948894	63.166	umol/
8) T	carbon dioxide	0.20	37230879	6750.991	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46878.D RSKEXT1.M Fri Mar 06 11:57:11 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46878.D\FID1A.CH Vial: 5
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46878.D\TCD2B.CH
Acq On : 03 Mar 2015 14:53 Operator: JDS
Sample : WG514119-04 66.7umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

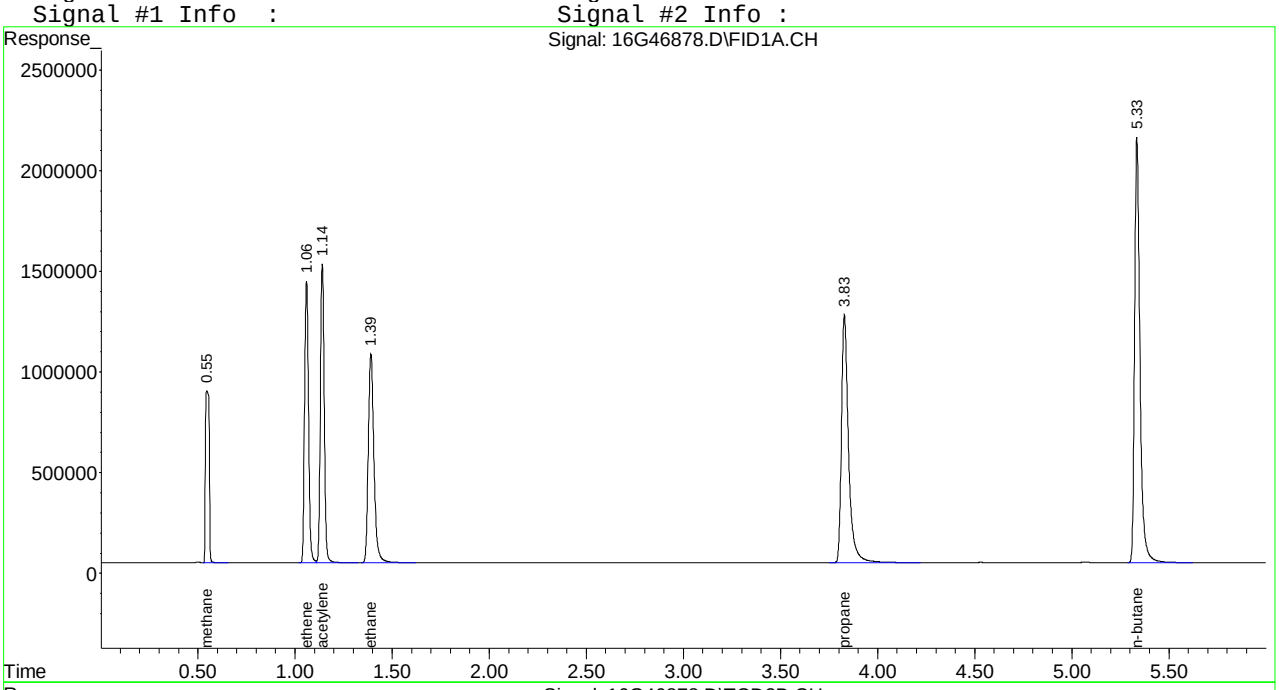

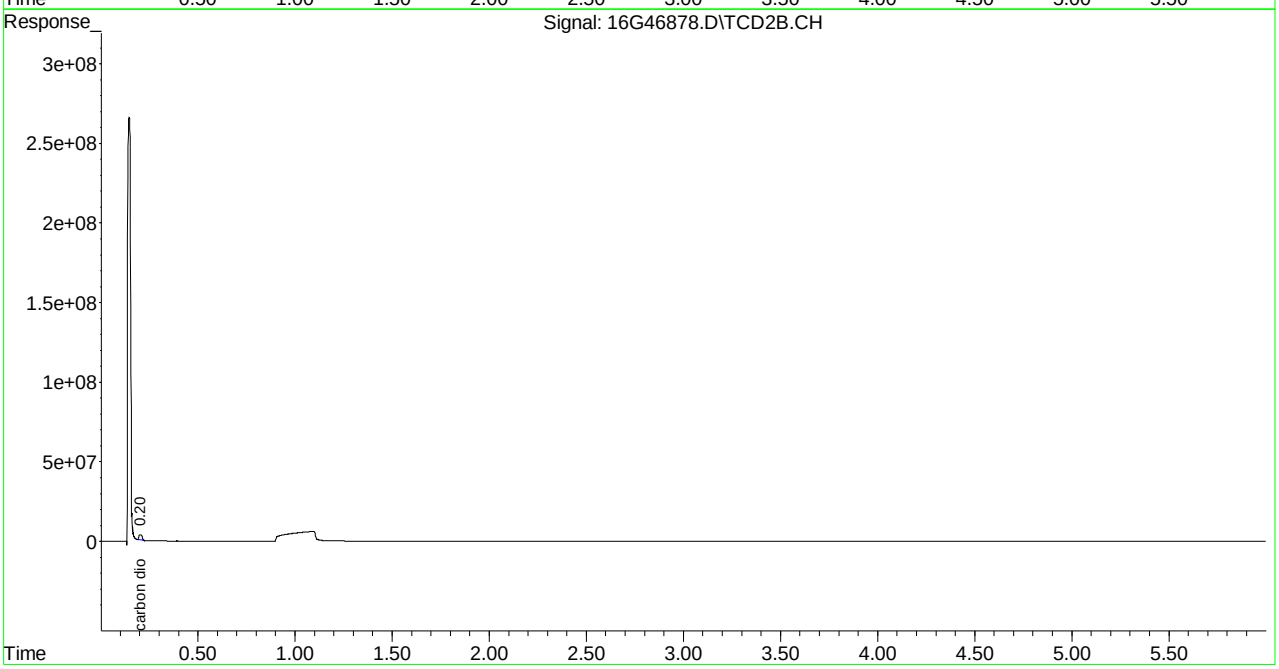

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46879.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46879.D\TCD2B.CH
Acq On : 03 Mar 2015 15:05 Operator: JDS
Sample : WG514119-05 133umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:11 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	24939741	132.227	umol/
2) T	ethene	1.06	41686300	131.412	umol/
3) T	acetylene	1.14	47206199	139.484	umol/
4) T	ethane	1.39	43668346	128.475	umol/
5) T	propane	3.83	64365472	129.663	umol/
6) T	n-butane	5.33	84395468	130.185	umol/
8) T	carbon dioxide	0.20	80524699	14601.362	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46879.D RSKEXT1.M Fri Mar 06 11:57:12 2015 Page 1

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46879.D\FID1A.CH Vial: 6
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46879.D\TCD2B.CH
Acq On : 03 Mar 2015 15:05 Operator: JDS
Sample : WG514119-05 133umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

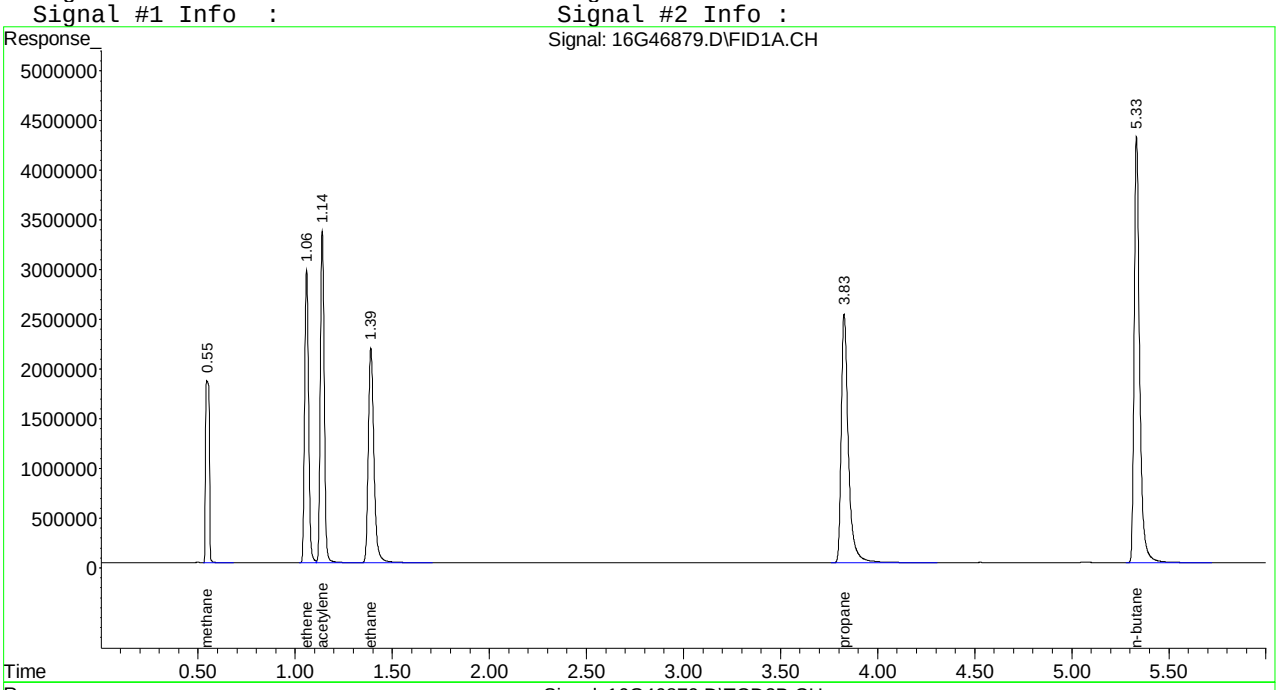

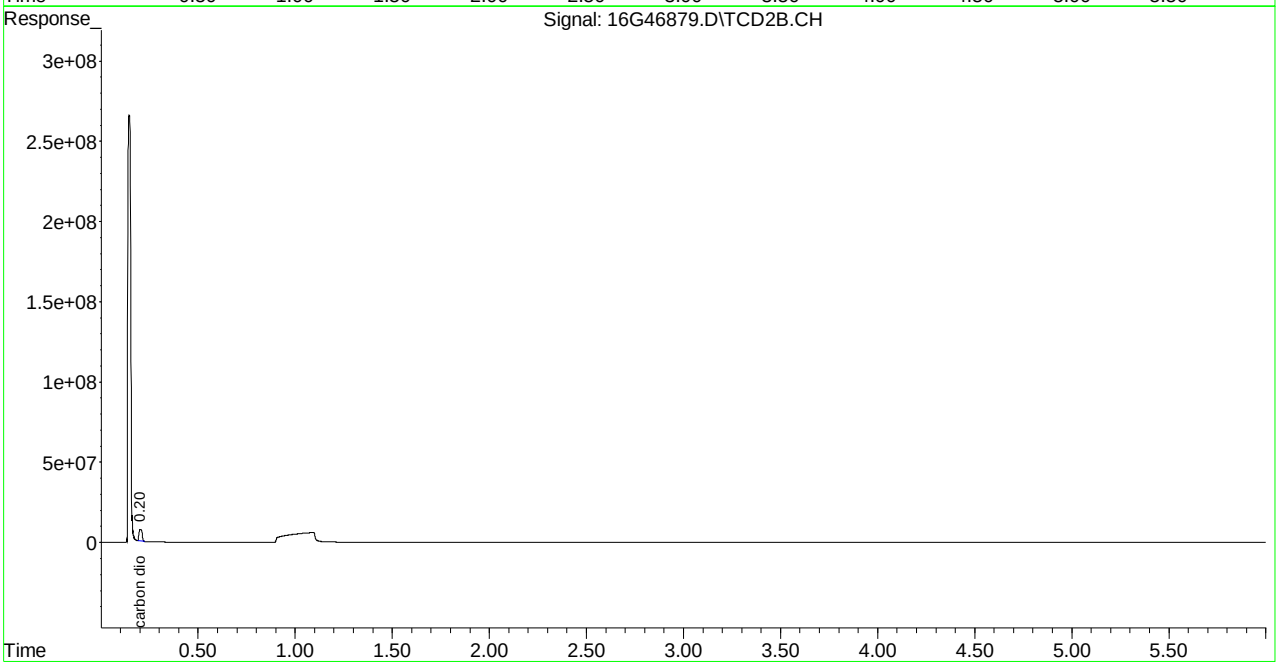

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46880.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46880.D\TCD2B.CH
Acq On : 03 Mar 2015 15:17 Operator: JDS
Sample : WG514119-06 333umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:12 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	61959752	331.783	umol/
2) T	ethene	1.06	106345688	335.244	umol/
3) T	acetylene	1.14	118917475	351.375	umol/
4) T	ethane	1.39	111791323	328.897	umol/
5) T	propane	3.83	166544491	335.501	umol/
6) T	n-butane	5.33	219746160	338.971	umol/
8) T	carbon dioxide	0.20	201820251	36595.610	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46880.D RSKEXT1.M Fri Mar 06 11:57:12 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46880.D\FID1A.CH Vial: 7
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46880.D\TCD2B.CH
Acq On : 03 Mar 2015 15:17 Operator: JDS
Sample : WG514119-06 333umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

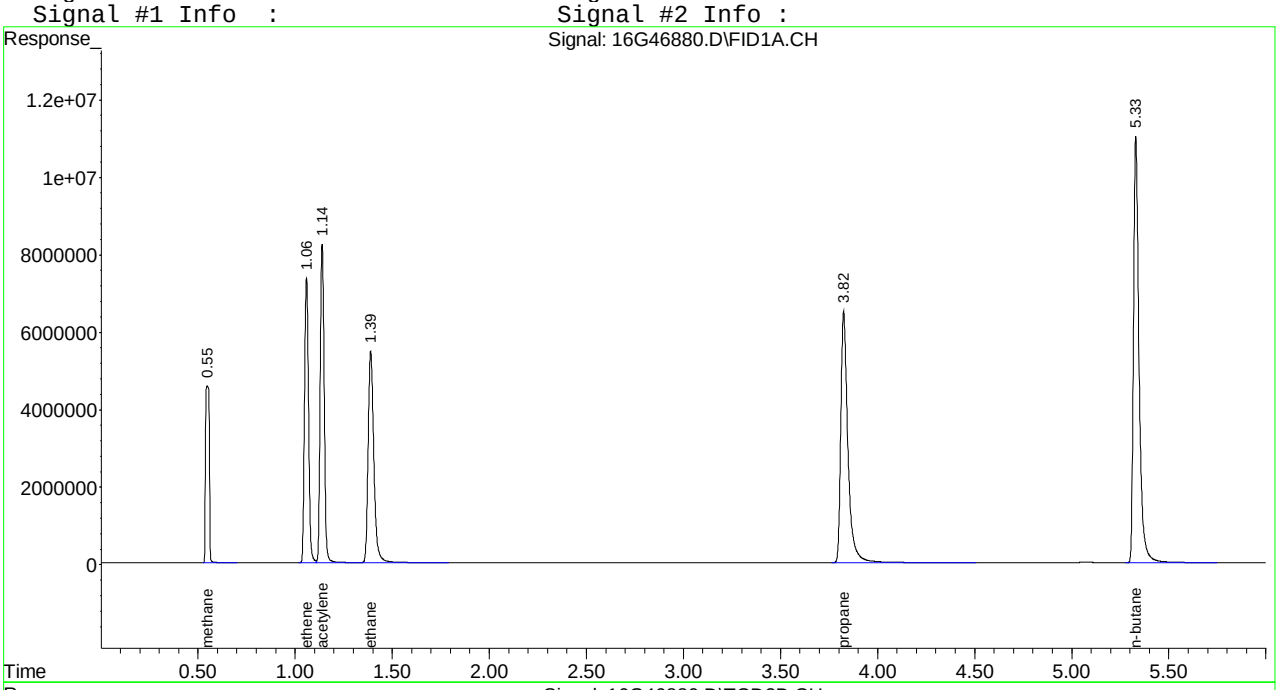

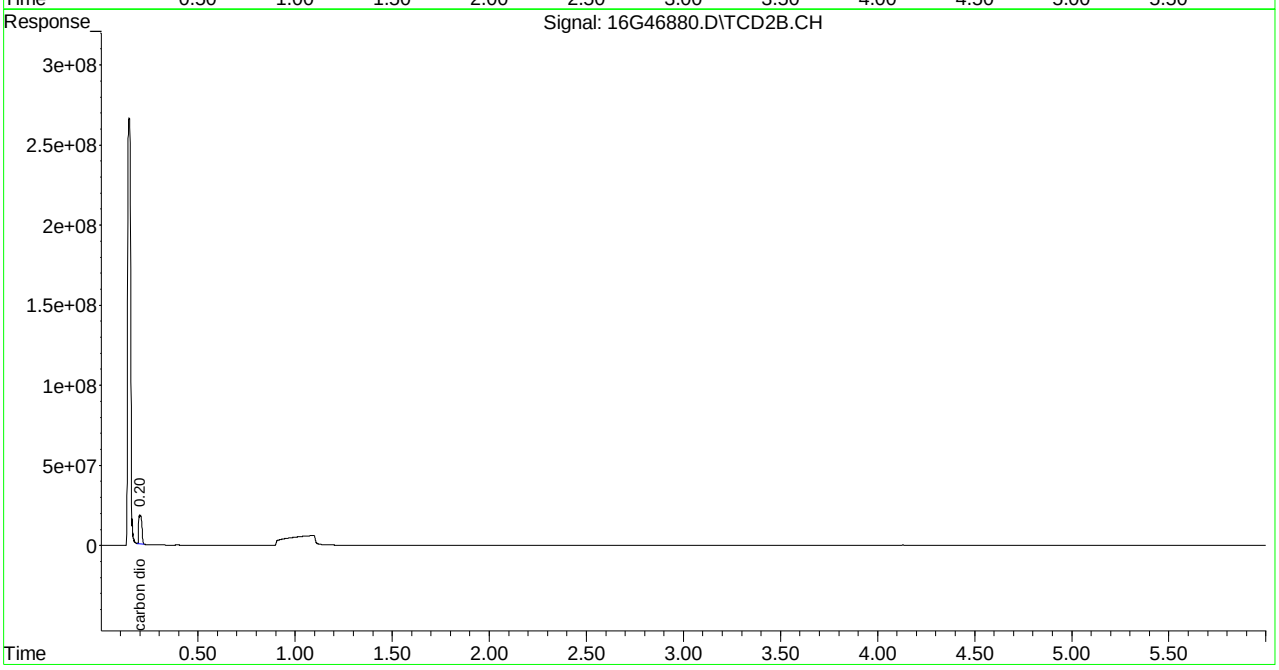

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46881.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46881.D\TCD2B.CH
Acq On    : 03 Mar 2015  15:29                        Operator: JDS
Sample    : WG514119-07 533umol/mol STD RSK175        Inst    : HP16
Misc      : 1,1 STD67274                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:57:13 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	100578633	539.958	umol/
2) T	ethene	1.06	169644372	534.786	umol/
3) T	acetylene	1.14	183672662	542.712	umol/
4) T	ethane	1.39	178696917	525.738	umol/
5) T	propane	3.82	263060772	529.931	umol/
6) T	n-butane	5.33	344418707	531.285	umol/
8) T	carbon dioxide	0.20	309711021	56159.199	umol/

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46881.D\FID1A.CH Vial: 8
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46881.D\TCD2B.CH
Acq On : 03 Mar 2015 15:29 Operator: JDS
Sample : WG514119-07 533umol/mol STD RSK175 Inst : HP16
Misc : 1,1 STD67274 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

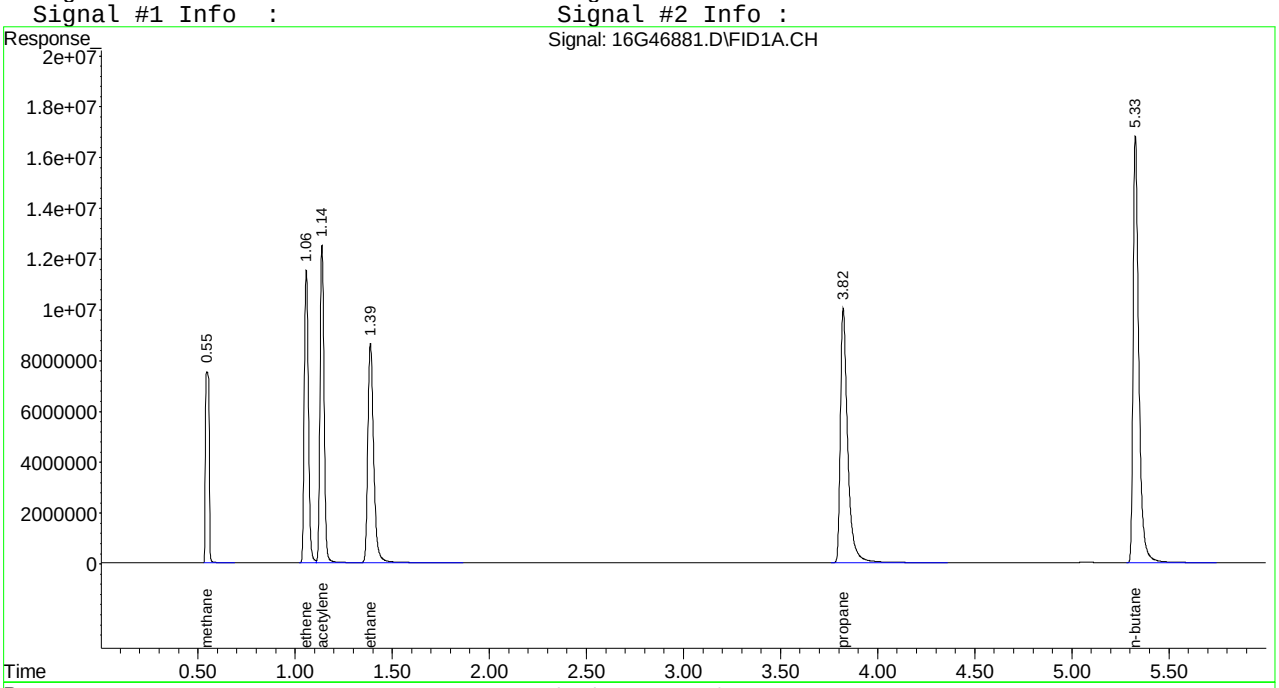

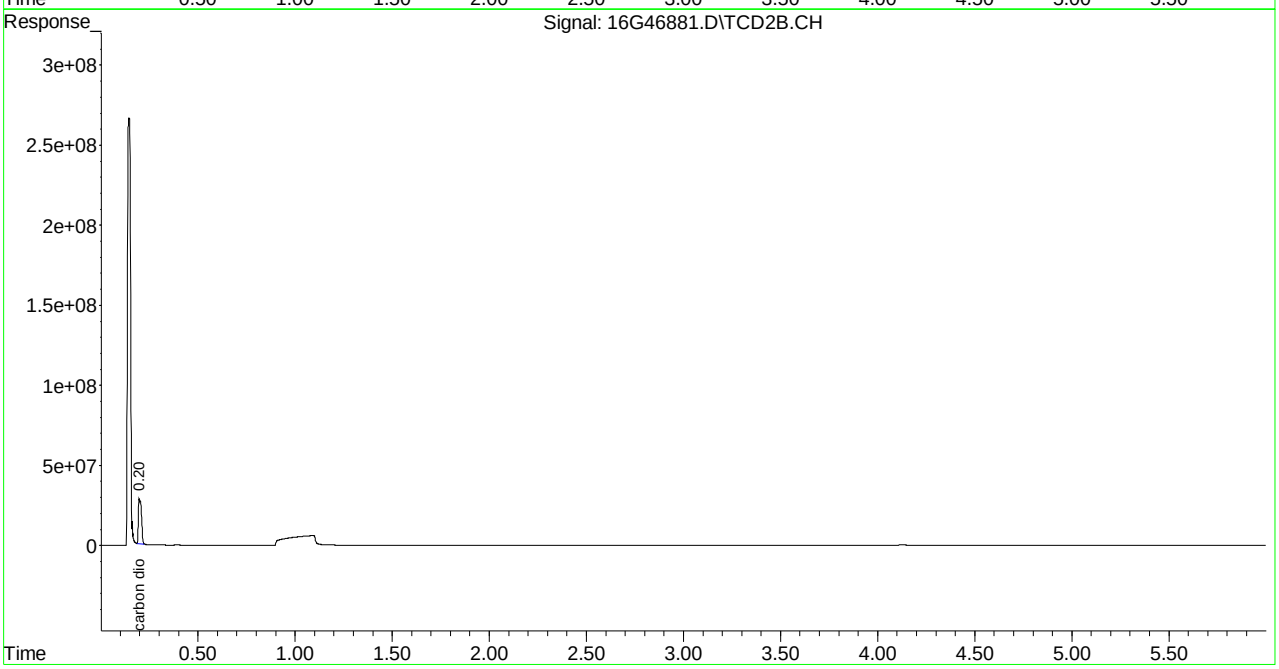

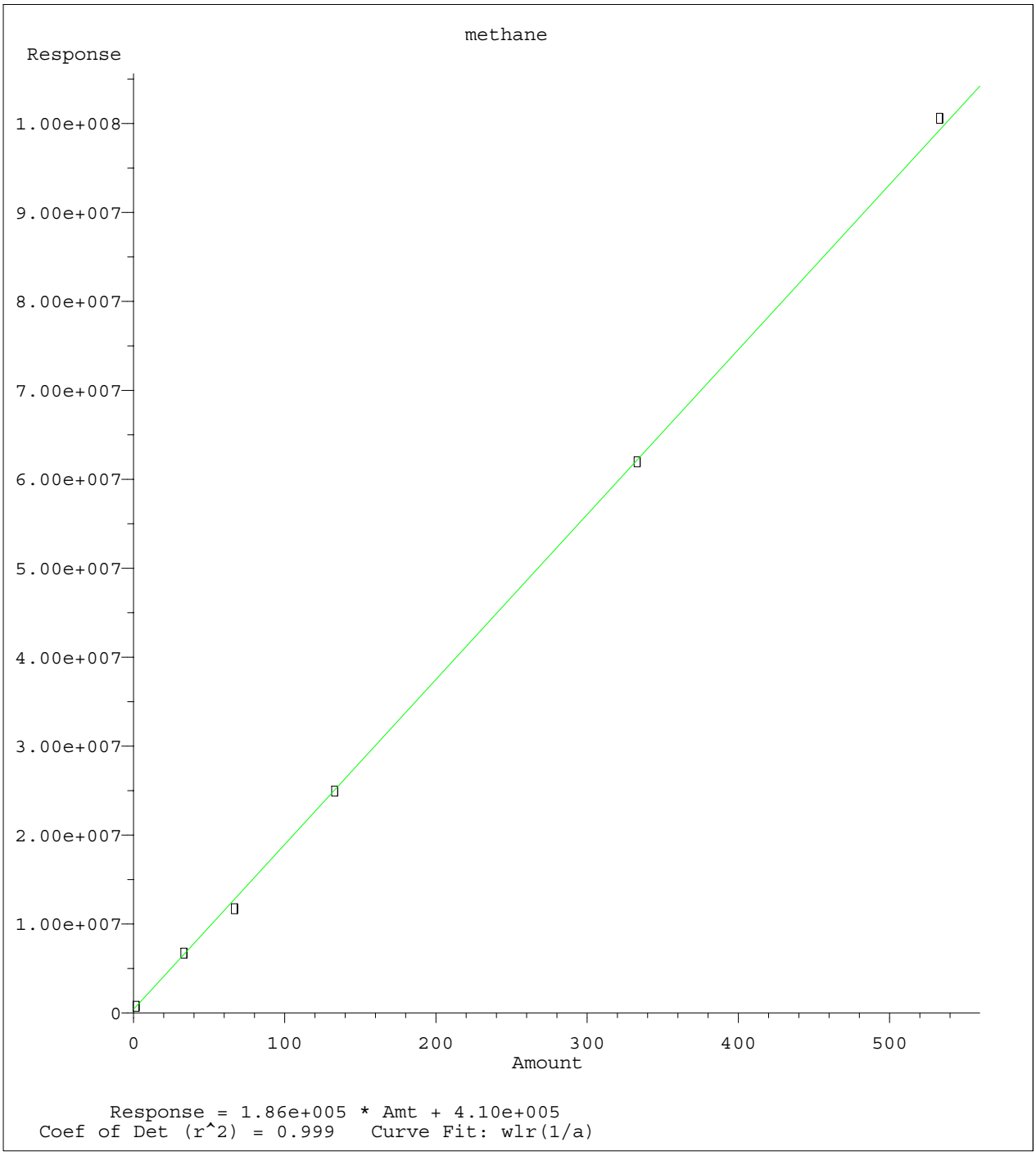

Method Name: C:\MSDCHEM\1\METHODS\RSKEXT1.M
Calibration Table Last Updated: Fri Mar 06 11:52:33 2015

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46884.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46884.D\TCD2B.CH
Acq On : 03 Mar 2015 17:10 Operator: JDS
Sample : WG514119-08 133umol/mol ALT SRC STD RSK1 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 06 11:58:49 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc Units
	Target Compounds			
1) T	methane	0.55	25936090	137.598 umol/
2) T	ethene	1.06	43111404	135.904 umol/
3) T	acetylene	1.14	47098795	139.167 umol/
4) T	ethane	1.39	44778091	131.740 umol/
5) T	propane	3.83	64822008	130.583 umol/
6) T	n-butane	5.33	82856392	127.811 umol/
8) T	carbon dioxide	0.20	76359751	13846.141 umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G46884.D RSKEXT1.M Fri Mar 06 11:58:49 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46884.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46884.D\TCD2B.CH
Acq On : 03 Mar 2015 17:10 Operator: JDS
Sample : WG514119-08 133umol/mol ALT SRC STD RSK1 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Mar 6 11:58 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

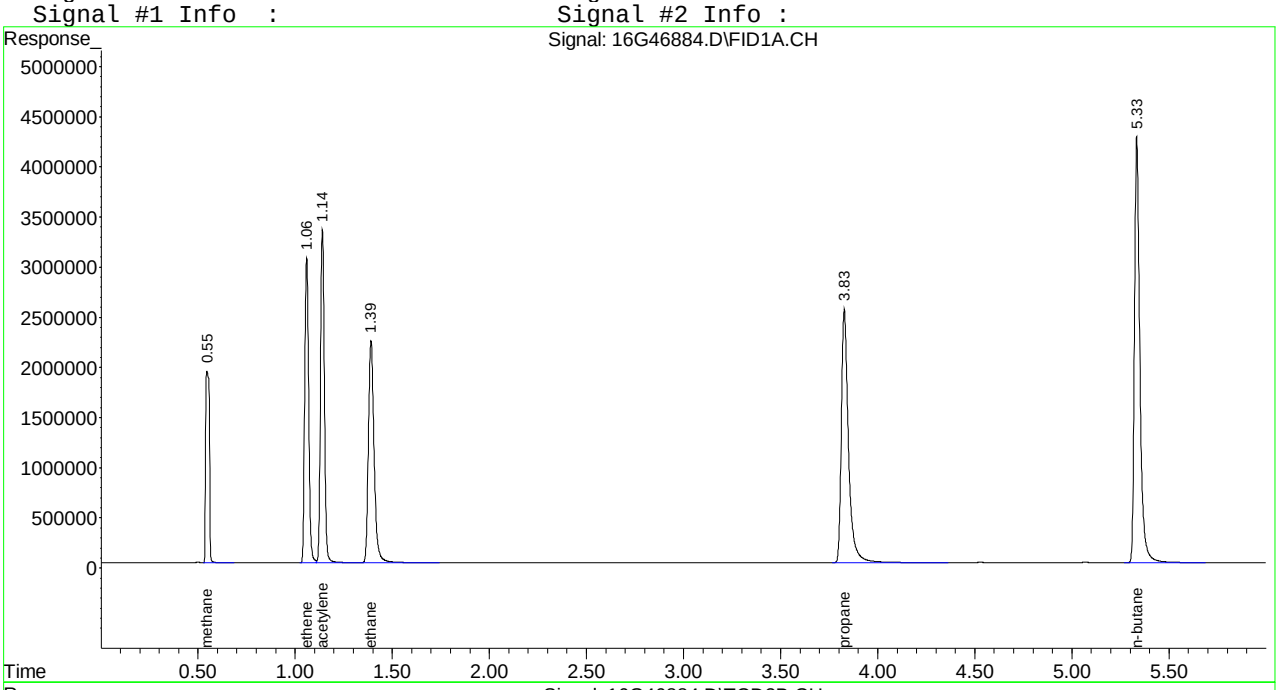

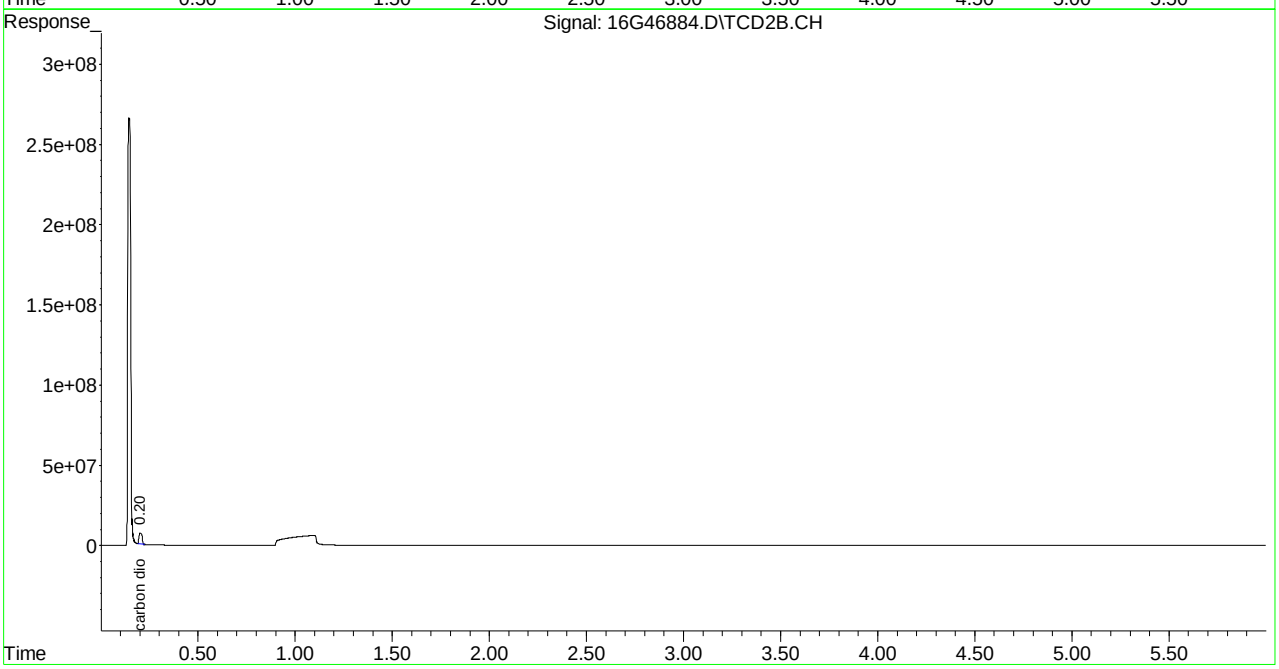

Evaluate Continuing Calibration Report

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46884.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46884.D\TCD2B.CH
Acq On    : 03 Mar 2015  17:10                        Operator: JDS
Sample    : WG514119-08 133umol/mol ALT SRC STD RSK1 Inst    : HP16
Misc      : 1,1 STD68250                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%
```

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	137.598	-3.5	104	0.00
2	T	ethene	133.000	135.904	-2.2	103	0.00
3	T	acetylene	133.000	139.167	-4.6	100	0.00
4	T	ethane	133.000	131.740	0.9	103	0.00
5	T	propane	133.000	130.583	1.8	101	0.00
6	T	n-butane	133.000	127.811	3.9	98	0.00
		Signal #2					
8	T	carbon dioxide	13300.000	13846.141	-4.1	95	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

16G46884.D RSKEXT1.M Fri Mar 06 11:59:02 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\030315\16G46884.D\FID1A.CH Vial: 11
Signal #2 : C:\MSDCHEM\1\DATA\030315\16G46884.D\TCD2B.CH
Acq On    : 03 Mar 2015  17:10                        Operator: JDS
Sample    : WG514119-08 133umol/mol ALT SRC STD RSK1 Inst    : HP16
Misc      : 1,1 STD68250                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\111815\16G49025.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDchem\1\DATA\111815\16G49025.D\TCD2B.CH
Acq On : 18 Nov 2015 12:55 Operator: JDS
Sample : WG547424-01 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD72628 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 18 13:01:25 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	24516517	129.946	umol/
2) T	ethene	1.06	41107163	129.586	umol/
3) T	acetylene	1.14	44261482	130.783	umol/
4) T	ethane	1.39	43489488	127.949	umol/
5) T	propane	3.83	63626806	128.175	umol/
6) T	n-butane	5.34	83998911	129.573	umol/
8) T	carbon dioxide	0.20	77733769	14095.289	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49025.D RSKEXT1.M Wed Nov 18 13:01:26 2015 Page 1

Signal #1 : C:\MSDchem\1\DATA\111815\16G49025.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDchem\1\DATA\111815\16G49025.D\TCD2B.CH
Acq On : 18 Nov 2015 12:55 Operator: JDS
Sample : WG547424-01 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD72628 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 18 13:01 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

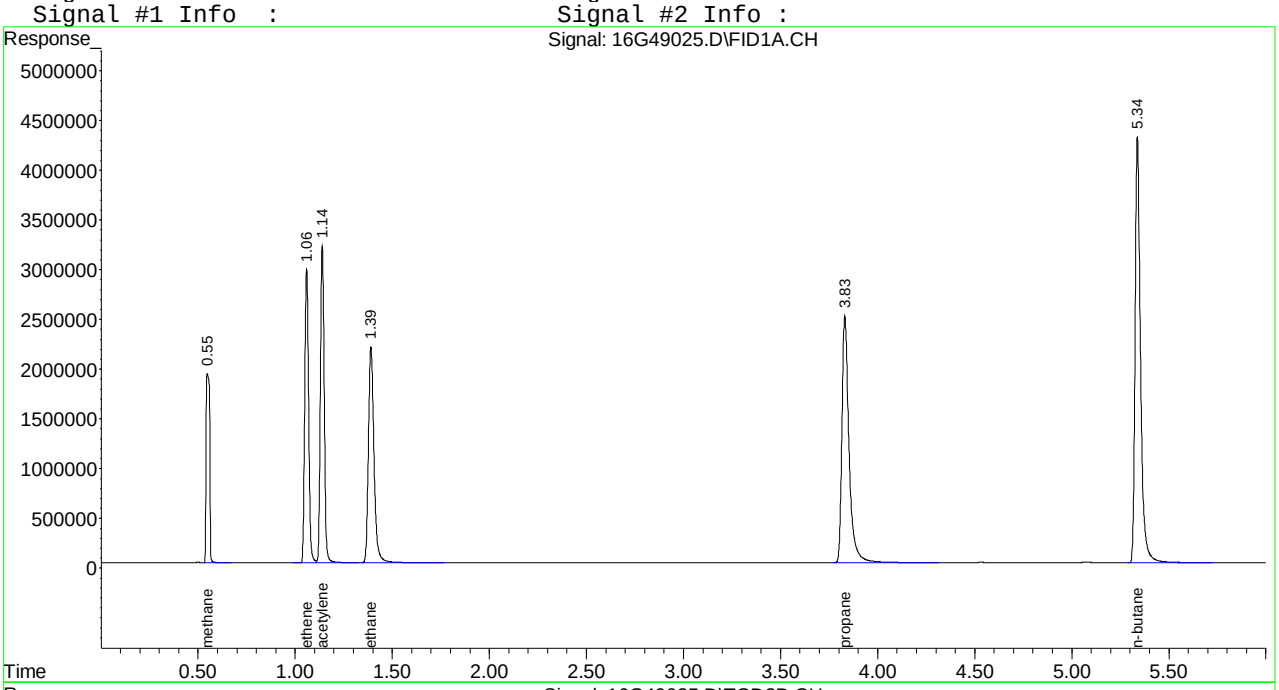

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\111815\16G49025.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\111815\16G49025.D\TCD2B.CH
Acq On : 18 Nov 2015 12:55 Operator: JDS
Sample : WG547424-01 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD72628 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	129.946	2.3	98	0.00
2	T	ethene	133.000	129.586	2.6	99	0.00
3	T	acetylene	133.000	130.783	1.7	94	0.00
4	T	ethane	133.000	127.949	3.8	100	0.00
5	T	propane	133.000	128.175	3.6	99	0.00
6	T	n-butane	133.000	129.573	2.6	100	0.00

Signal #2

8	T	carbon dioxide	13300.000	14095.289	-6.0	97	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G49025.D RSKEXT1.M Thu Nov 19 08:42:37 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\111815\16G49025.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\111815\16G49025.D\TCD2B.CH
Acq On    : 18 Nov 2015  12:55                        Operator: JDS
Sample    : WG547424-01 133umol/mol CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD72628                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\111815\16G49036.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\111815\16G49036.D\TCD2B.CH
Acq On : 18 Nov 2015 16:51 Operator: JDS
Sample : WG547424-02 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD72628 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 18 16:57:04 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	24289988	128.725	umol/
2) T	ethene	1.06	41297087	130.185	umol/
3) T	acetylene	1.15	43924598	129.788	umol/
4) T	ethane	1.40	43552831	128.135	umol/
5) T	propane	3.83	64142012	129.213	umol/
6) T	n-butane	5.34	84538387	130.405	umol/
8) T	carbon dioxide	0.20	72991479	13235.380	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49036.D RSKEXT1.M Wed Nov 18 16:57:04 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\111815\16G49036.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\111815\16G49036.D\TCD2B.CH
Acq On : 18 Nov 2015 16:51 Operator: JDS
Sample : WG547424-02 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD72628 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 18 16:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

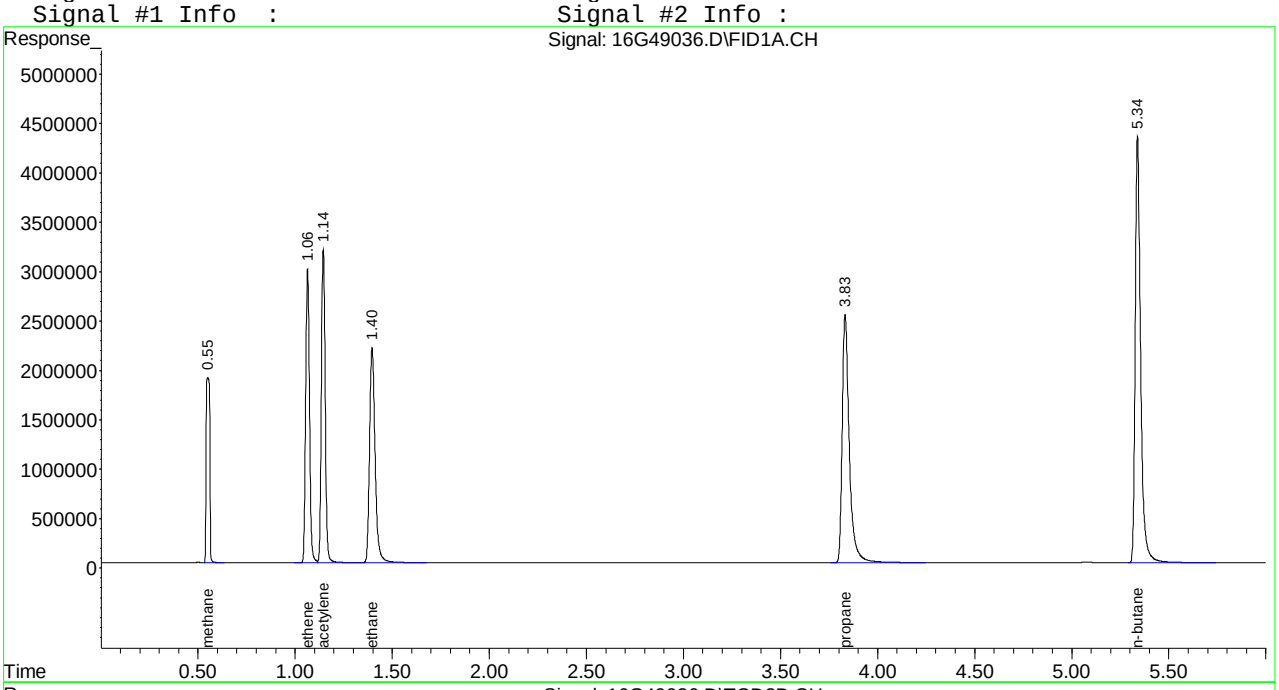

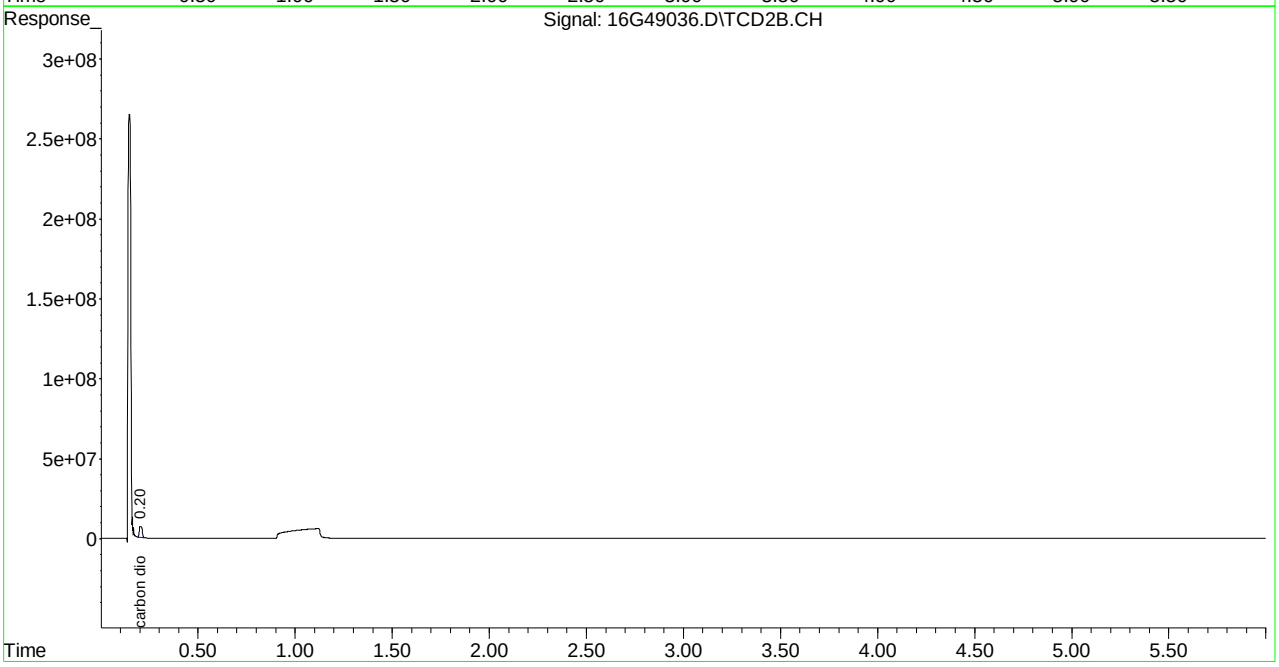

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\111815\16G49036.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\111815\16G49036.D\TCD2B.CH
Acq On : 18 Nov 2015 16:51 Operator: JDS
Sample : WG547424-02 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD72628 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	128.725	3.2	97	0.00
2	T	ethene	133.000	130.185	2.1	99	0.00
3	T	acetylene	133.000	129.788	2.4	93	0.00
4	T	ethane	133.000	128.135	3.7	100	0.00
5	T	propane	133.000	129.213	2.8	100	0.00
6	T	n-butane	133.000	130.405	2.0	100	0.00
		Signal #2					
8	T	carbon dioxide	13300.000	13235.380	0.5	91	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G49036.D RSKEXT1.M Thu Nov 19 08:42:45 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\111815\16G49036.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\111815\16G49036.D\TCD2B.CH
Acq On    : 18 Nov 2015  16:51                        Operator: JDS
Sample    : WG547424-02 133umol/mol CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD72628                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\111815\16G49047.D\FID1A.CH Vial: 23
Signal #2 : C:\MSDchem\1\DATA\111815\16G49047.D\TCD2B.CH
Acq On : 18 Nov 2015 19:05 Operator: JDS
Sample : WG547424-03 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD72628 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 18 19:11:17 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	23618550	125.105	umol/
2) T	ethene	1.06	39268725	123.791	umol/
3) T	acetylene	1.14	39011985	115.272	umol/
4) T	ethane	1.39	41650941	122.540	umol/
5) T	propane	3.83	60385497	121.645	umol/
6) T	n-butane	5.34	77829455	120.056	umol/
8) T	carbon dioxide	0.20	64095139	11622.227	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49047.D RSKEXT1.M Wed Nov 18 19:11:17 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\111815\16G49047.D\FID1A.CH Vial: 23
Signal #2 : C:\MSDchem\1\DATA\111815\16G49047.D\TCD2B.CH
Acq On : 18 Nov 2015 19:05 Operator: JDS
Sample : WG547424-03 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD72628 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 18 19:11 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

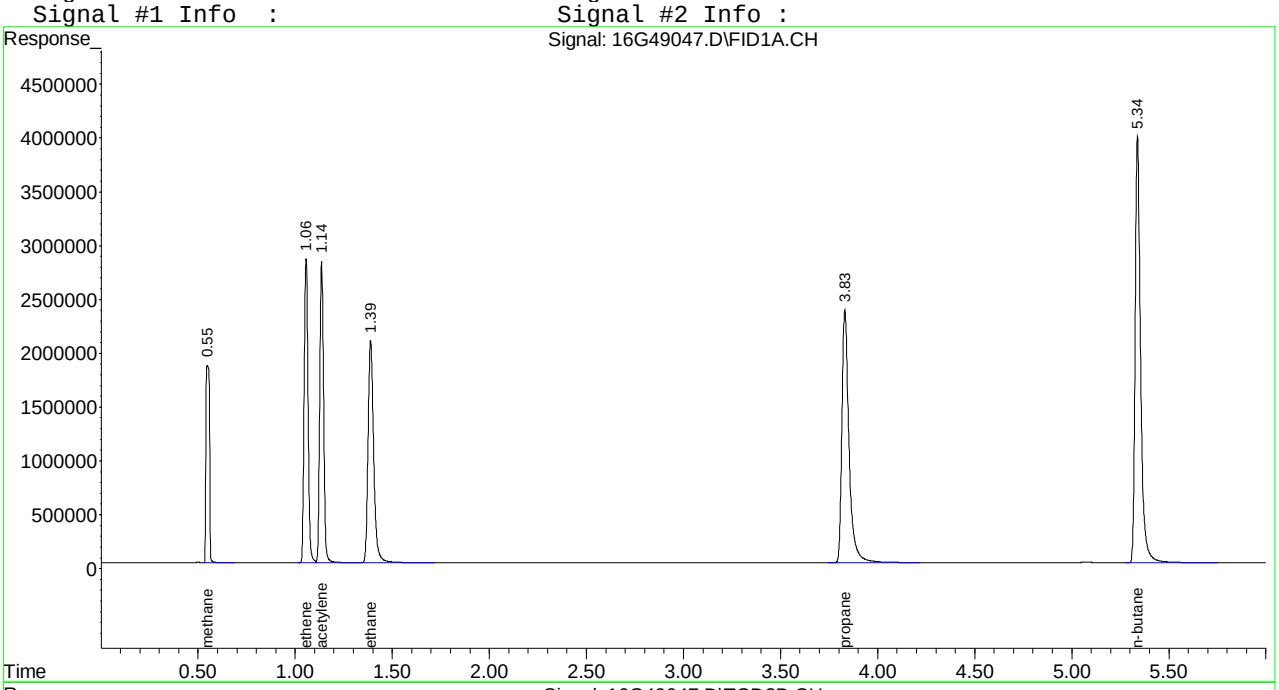

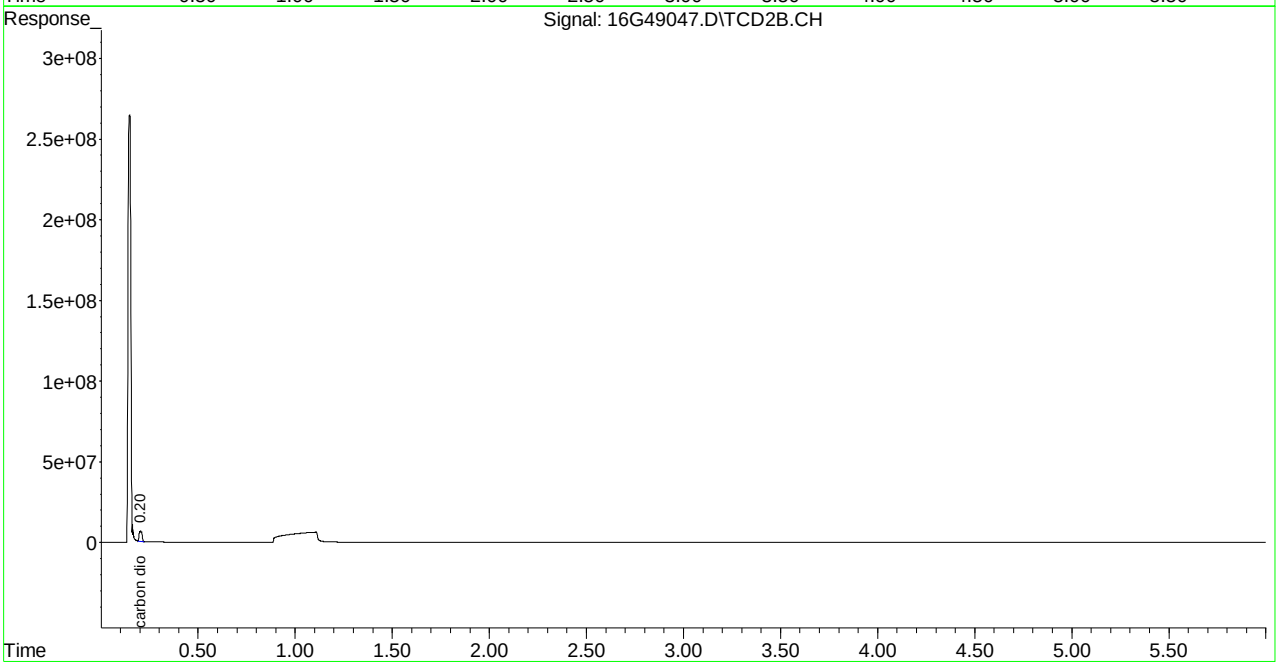

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\111815\16G49047.D\FID1A.CH Vial: 23
Signal #2 : C:\MSDCHEM\1\DATA\111815\16G49047.D\TCD2B.CH
Acq On : 18 Nov 2015 19:05 Operator: JDS
Sample : WG547424-03 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD72628 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	125.105	5.9	95	0.00
2	T	ethene	133.000	123.791	6.9	94	0.00
3	T	acetylene	133.000	115.272	13.3	83	0.00
4	T	ethane	133.000	122.540	7.9	95	0.00
5	T	propane	133.000	121.645	8.5	94	0.00
6	T	n-butane	133.000	120.056	9.7	92	0.00

Signal #2

8	T	carbon dioxide	13300.000	11622.227	12.6	80	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G49047.D RSKEXT1.M Thu Nov 19 08:42:55 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\111815\16G49047.D\FID1A.CH Vial: 23
Signal #2 : C:\MSDCHEM\1\DATA\111815\16G49047.D\TCD2B.CH
Acq On    : 18 Nov 2015  19:05                        Operator: JDS
Sample    : WG547424-03 133umol/mol CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD72628                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

```
---------------------------------------------------------------------------
 (#) = Out of Range            SPCC's out = 0  CCC's out = 0
 16G49047.D  RSKEXT1.M      Thu Nov 19 08:42:55 2015                          Page 2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\111915\16G49048.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDchem\1\DATA\111915\16G49048.D\TCD2B.CH
Acq On : 19 Nov 2015 15:50 Operator: JDS
Sample : WG547709-01 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 19 15:56:35 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	24948928	132.277	umol/
2) T	ethene	1.06	42329852	133.440	umol/
3) T	acetylene	1.14	46564782	137.589	umol/
4) T	ethane	1.39	44534850	131.024	umol/
5) T	propane	3.83	65073910	131.090	umol/
6) T	n-butane	5.34	85019184	131.147	umol/
8) T	carbon dioxide	0.20	75557639	13700.696	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49048.D RSKEXT1.M Thu Nov 19 15:56:36 2015 Page 1

Signal #1 : C:\MSDchem\1\DATA\111915\16G49048.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDchem\1\DATA\111915\16G49048.D\TCD2B.CH
Acq On : 19 Nov 2015 15:50 Operator: JDS
Sample : WG547709-01 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 19 15:56 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

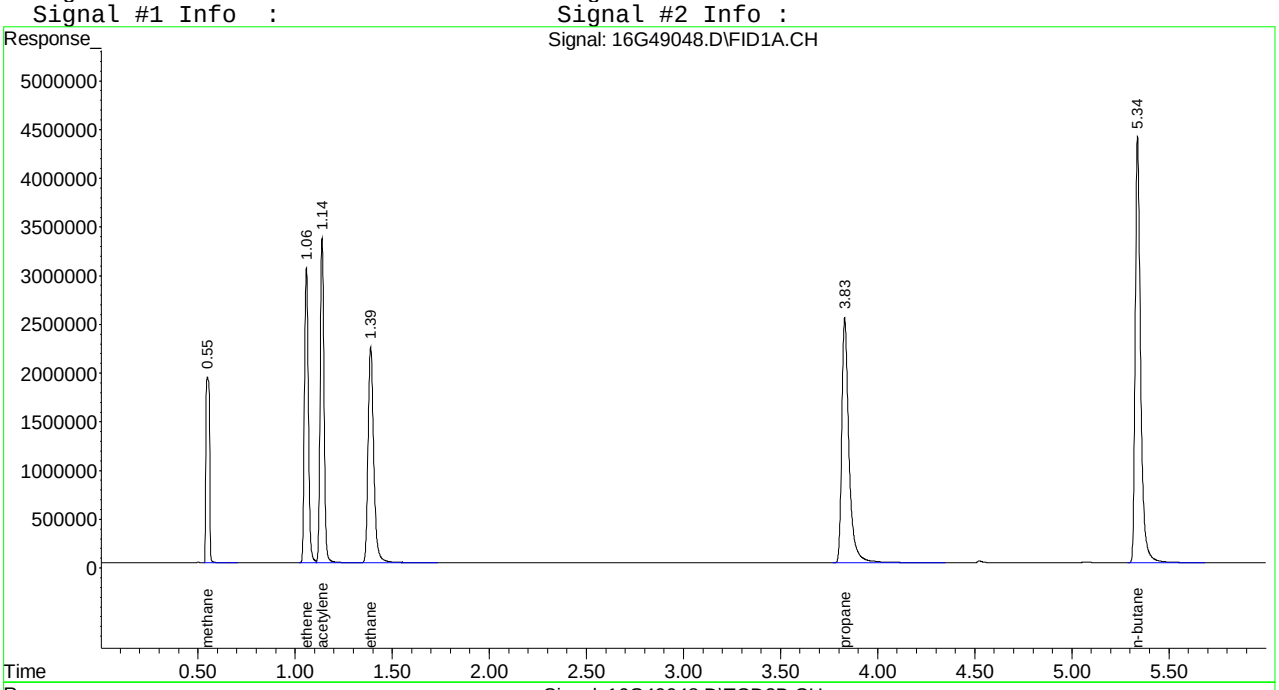

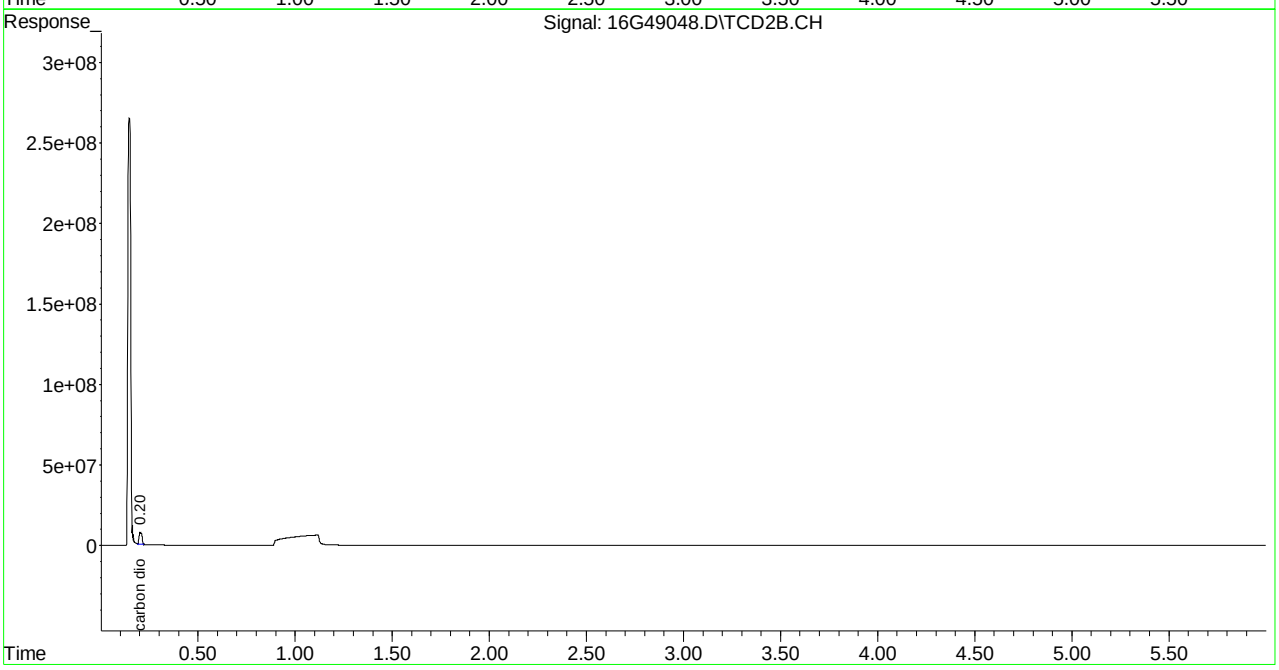

Evaluate Continuing Calibration Report

```
Signal #1 : C:\MSDCHEM\1\DATA\111915\16G49048.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\111915\16G49048.D\TCD2B.CH
Acq On    : 19 Nov 2015  15:50                        Operator: JDS
Sample    : WG547709-01 133umol/mol CCV STD RSK175    Inst    : HP16
Misc      : 1,1                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%
```

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	132.277	0.5	100	0.00
2	T	ethene	133.000	133.440	-0.3	102	0.00
3	T	acetylene	133.000	137.589	-3.5	99	0.00
4	T	ethane	133.000	131.024	1.5	102	0.00
5	T	propane	133.000	131.090	1.4	101	0.00
6	T	n-butane	133.000	131.147	1.4	101	0.00
		Signal #2					
8	T	carbon dioxide	13300.000	13700.696	-3.0	94	0.00

```
(#) = Out of Range            SPCC's out = 0  CCC's out = 0
16G49048.D  RSKEXT1.M      Sun Nov 22 14:56:15 2015                    Page 1
```

```
Signal #1 : C:\MSDCHEM\1\DATA\111915\16G49048.D\FID1A.CH Vial: 1
Signal #2 : C:\MSDCHEM\1\DATA\111915\16G49048.D\TCD2B.CH
Acq On    : 19 Nov 2015  15:50                        Operator: JDS
Sample    : WG547709-01 133umol/mol CCV STD RSK175   Inst    : HP16
Misc      : 1,1                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\111915\16G49059.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\111915\16G49059.D\TCD2B.CH
Acq On : 19 Nov 2015 19:21 Operator: JDS
Sample : WG547709-03 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD72628 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 19 19:27:32 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	25070187	132.930	umol/
2) T	ethene	1.06	43141984	136.001	umol/
3) T	acetylene	1.14	43230054	127.735	umol/
4) T	ethane	1.39	45870461	134.954	umol/
5) T	propane	3.83	68204063	137.396	umol/
6) T	n-butane	5.34	89135579	137.497	umol/
8) T	carbon dioxide	0.20	71213719	12913.023	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49059.D RSKEXT1.M Thu Nov 19 19:27:32 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\111915\16G49059.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDchem\1\DATA\111915\16G49059.D\TCD2B.CH
Acq On : 19 Nov 2015 19:21 Operator: JDS
Sample : WG547709-03 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD72628 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 19 19:27 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

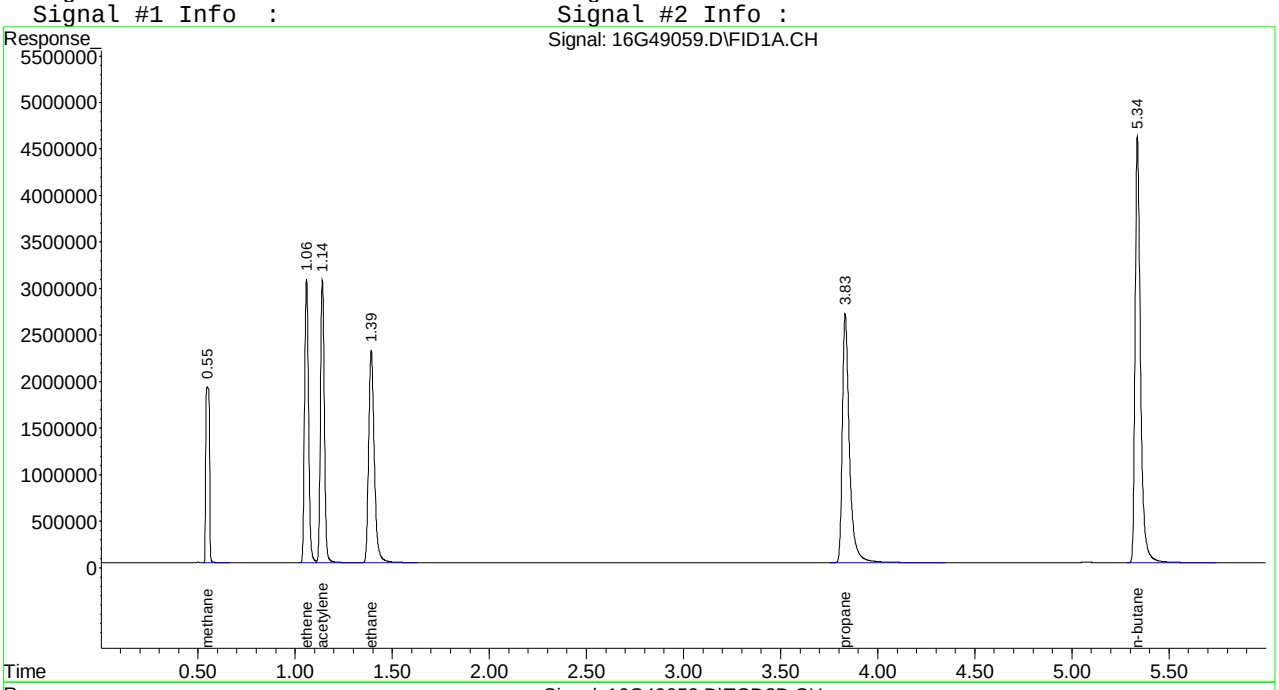

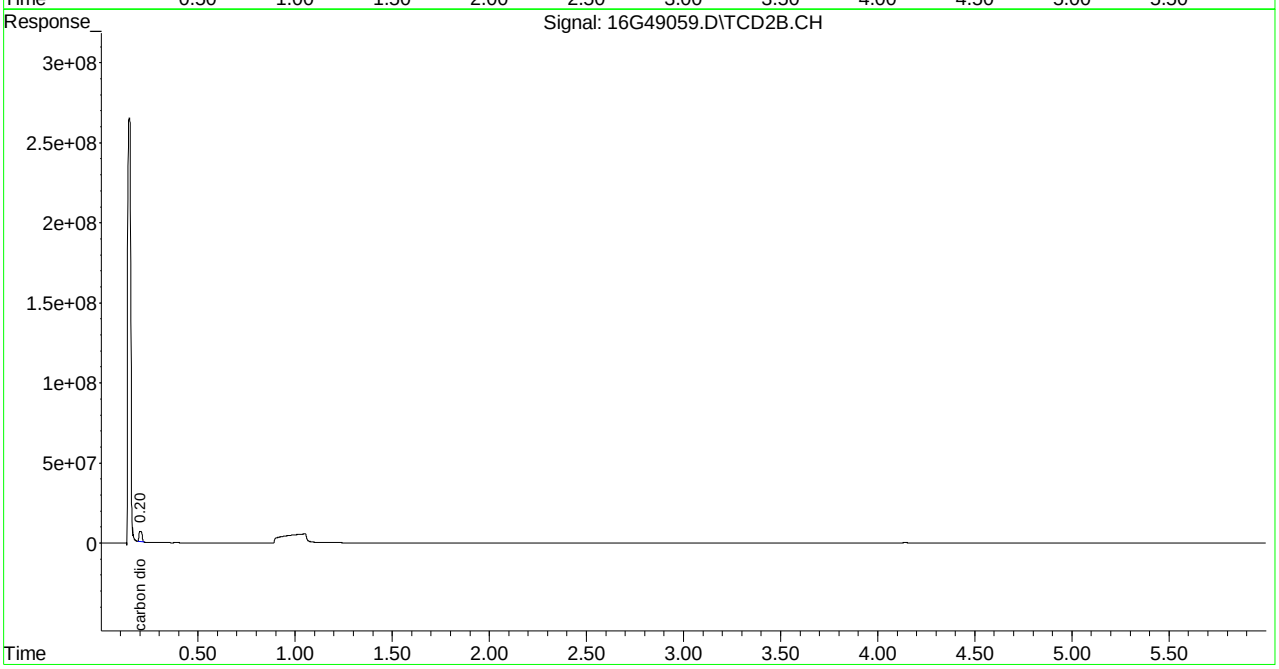

Evaluate Continuing Calibration Report

Signal #1 : C:\MSDCHEM\1\DATA\111915\16G49059.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\111915\16G49059.D\TCD2B.CH
Acq On : 19 Nov 2015 19:21 Operator: JDS
Sample : WG547709-03 133umol/mol CCV STD RSK175 Inst : HP16
Misc : 1,1 STD72628 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E

Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 15% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	T	methane	133.000	132.930	0.1	101	0.00
2	T	ethene	133.000	136.001	-2.3	103	0.00
3	T	acetylene	133.000	127.735	4.0	92	0.00
4	T	ethane	133.000	134.954	-1.5	105	0.00
5	T	propane	133.000	137.396	-3.3	106	0.00
6	T	n-butane	133.000	137.497	-3.4	106	0.00

Signal #2

8	T	carbon dioxide	13300.000	12913.023	2.9	88	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
16G49059.D RSKEXT1.M Sun Nov 22 14:56:25 2015 Page 1

```
Signal #1 : C:\MSDCHEM\1\DATA\111915\16G49059.D\FID1A.CH Vial: 12
Signal #2 : C:\MSDCHEM\1\DATA\111915\16G49059.D\TCD2B.CH
Acq On    : 19 Nov 2015  19:21                        Operator: JDS
Sample    : WG547709-03 133umol/mol CCV STD RSK175   Inst    : HP16
Misc      : 1,1 STD72628                              Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E

Method       : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration

Min. RRF     :   0.000  Min. Rel. Area :  50%  Max. R.T. Dev  0.50min
Max. RRF Dev :  15%     Max. Rel. Area : 150%

    Compound                      Amount  Calc.      %Dev  Area% Dev(min)
---------------------------------------------------------------------------


Signal #2
```

```
---------------------------------------------------------------------------
 (#) = Out of Range            SPCC's out = 0  CCC's out = 0
 16G49059.D  RSKEXT1.M      Sun Nov 22 14:56:25 2015                                Page 2
```

2.1.2.5 Raw QC Data

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\111815\16G49026.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\111815\16G49026.D\TCD2B.CH
Acq On : 18 Nov 2015 14:48 Operator: JDS
Sample : WG547425-01 BLANK STD RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 18 14:54:12 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	350589	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	1.39	8248	0.024	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49026.D RSKEXT1.M Wed Nov 18 14:57:06 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\111815\16G49026.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\111815\16G49026.D\TCD2B.CH
Acq On : 18 Nov 2015 14:48 Operator: JDS
Sample : WG547425-01 BLANK STD RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 18 14:54 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

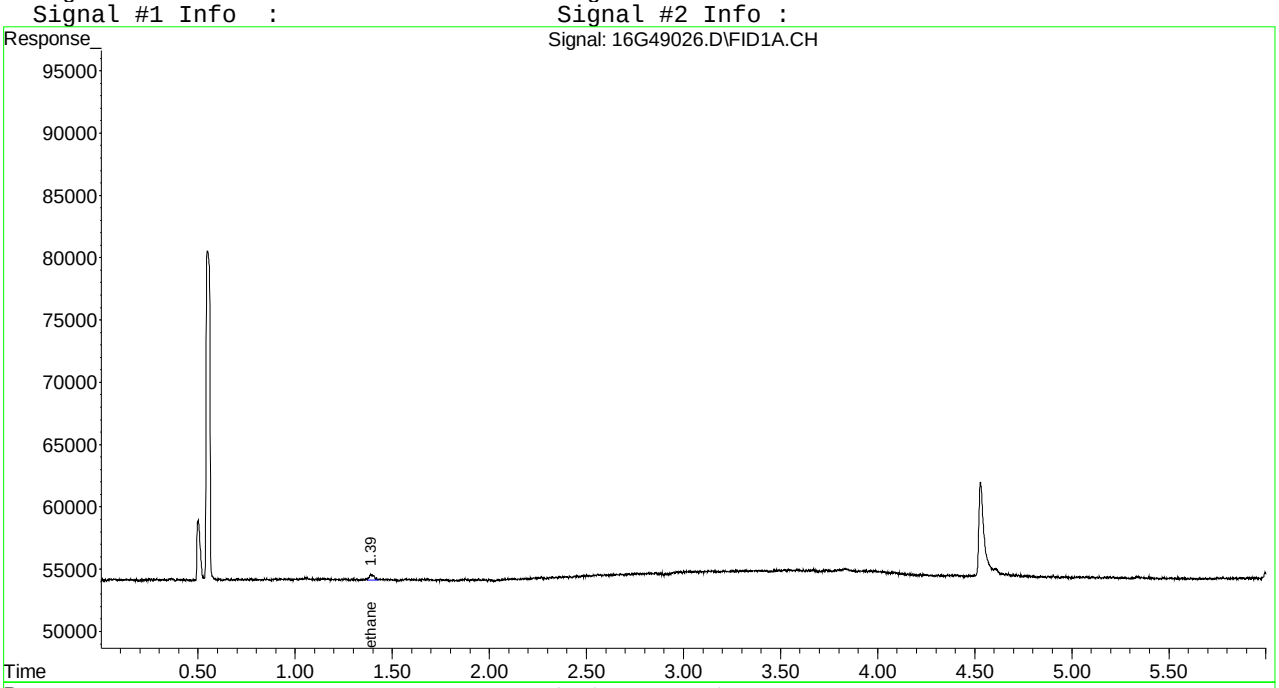

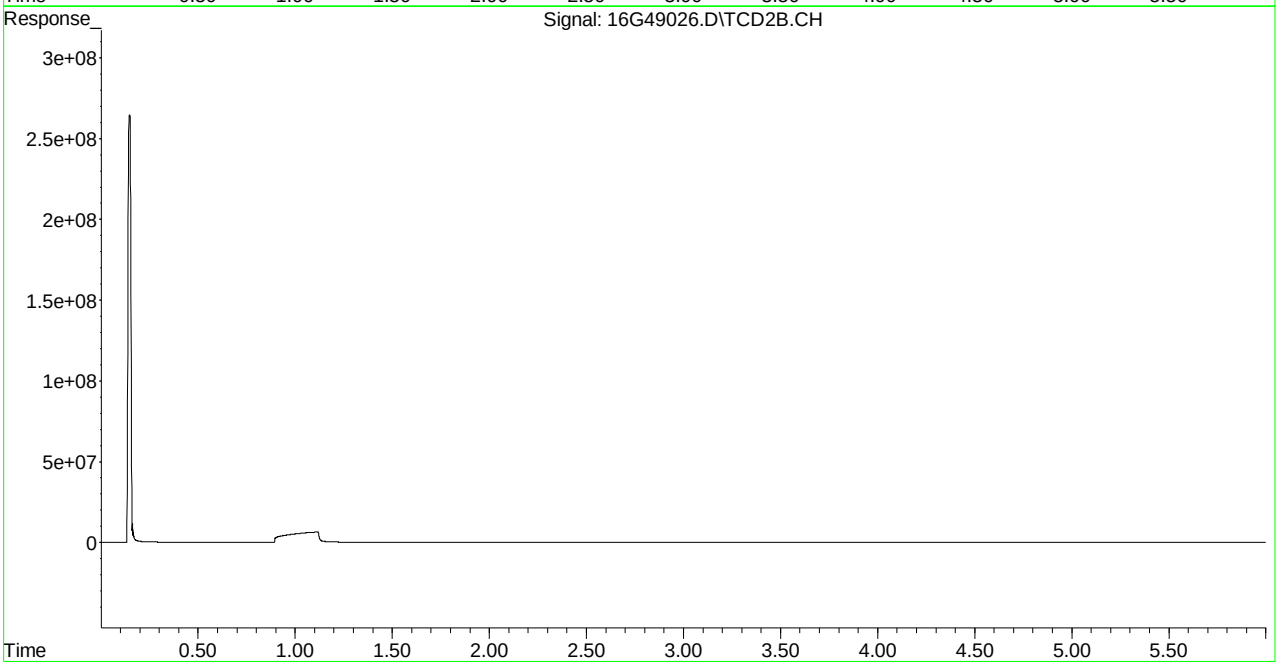

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDCHEM\1\DATA\111915\16G49049.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\111915\16G49049.D\TCD2B.CH
Acq On : 19 Nov 2015 17:17 Operator: JDS
Sample : WG547710-01 BLANK STD RSK175 Inst : HP16
Misc : 1,1 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 19 17:23:57 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	327160	N.D.	umol/
2) T	ethene	0.00	0	N.D.	umol/
3) T	acetylene	0.00	0	N.D.	umol/
4) T	ethane	0.00	0	N.D.	umol/
5) T	propane	0.00	0	N.D.	umol/
6) T	n-butane	0.00	0	N.D.	umol/
8) T	carbon dioxide	0.00	0	N.D.	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49049.D RSKEXT1.M Sun Nov 22 14:56:45 2015 Page 1

Quantitation Report (Not Reviewed)

```
Signal #1 : C:\MSDCHEM\1\DATA\111915\16G49049.D\FID1A.CH Vial: 2
Signal #2 : C:\MSDCHEM\1\DATA\111915\16G49049.D\TCD2B.CH
Acq On    : 19 Nov 2015  17:17                        Operator: JDS
Sample    : WG547710-01 BLANK STD RSK175              Inst    : HP16
Misc      : 1,1                                       Multiplr: 1.00
IntFile Signal #1: EVENTS.E     IntFile Signal #2: EVENTS2.E
Quant Time: Nov 19 17:23 2015  Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title        : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update  : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj.     :
Signal #1 Phase :                    Signal #2 Phase:
Signal #1 Info  :                    Signal #2 Info :
```

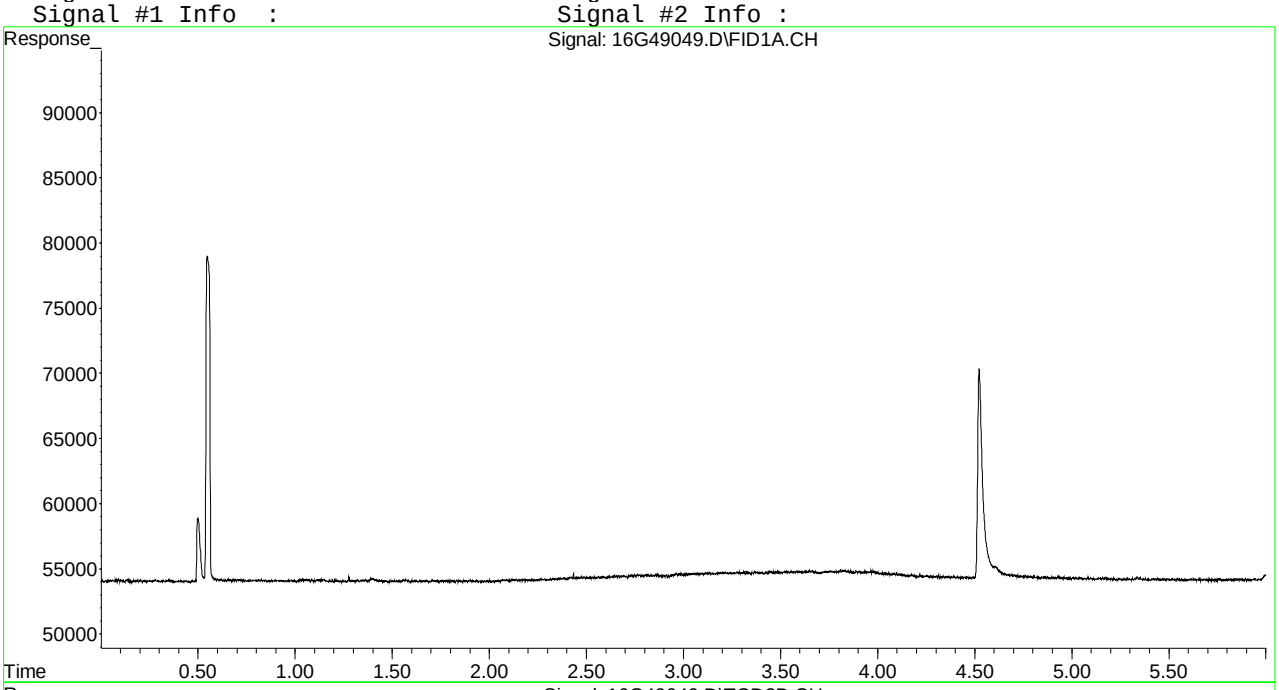

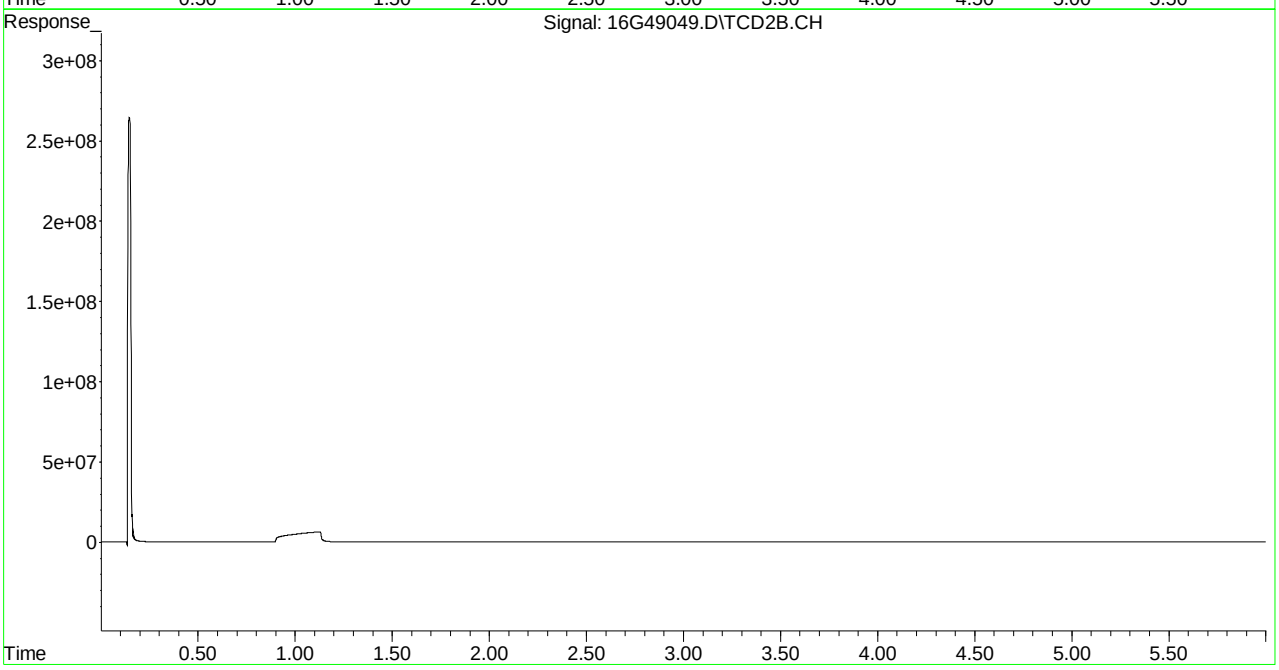

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\111815\16G49027.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDchem\1\DATA\111815\16G49027.D\TCD2B.CH
Acq On : 18 Nov 2015 15:00 Operator: JDS
Sample : WG547425-02 67umol/mol LCS STD RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 18 15:07:00 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	12429009	64.788	umol/
2) T	ethene	1.05	20545150	64.766	umol/
3) T	acetylene	1.13	21356618	63.104	umol/
4) T	ethane	1.38	21425851	63.036	umol/
5) T	propane	3.83	31241923	62.936	umol/
6) T	n-butane	5.34	40371472	62.275	umol/
8) T	carbon dioxide	0.20	35879965	6506.033	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49027.D RSKEXT1.M Wed Nov 18 15:07:00 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\111815\16G49027.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDchem\1\DATA\111815\16G49027.D\TCD2B.CH
Acq On : 18 Nov 2015 15:00 Operator: JDS
Sample : WG547425-02 67umol/mol LCS STD RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 18 15:07 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

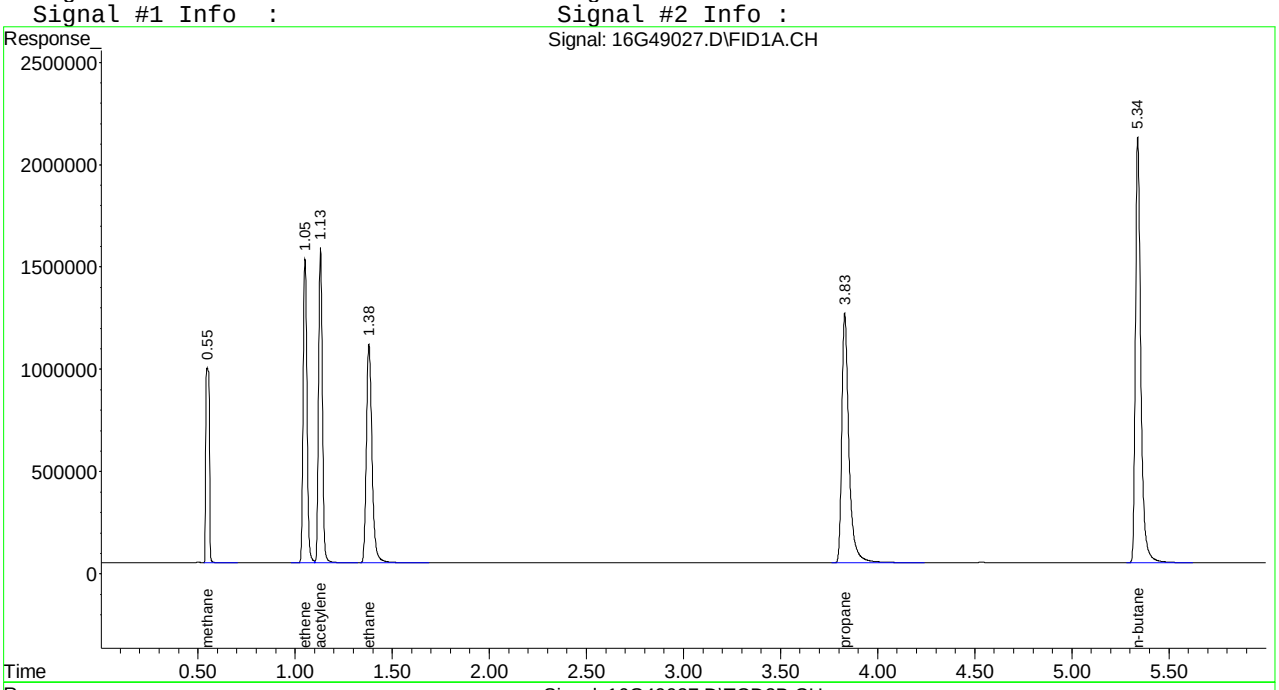

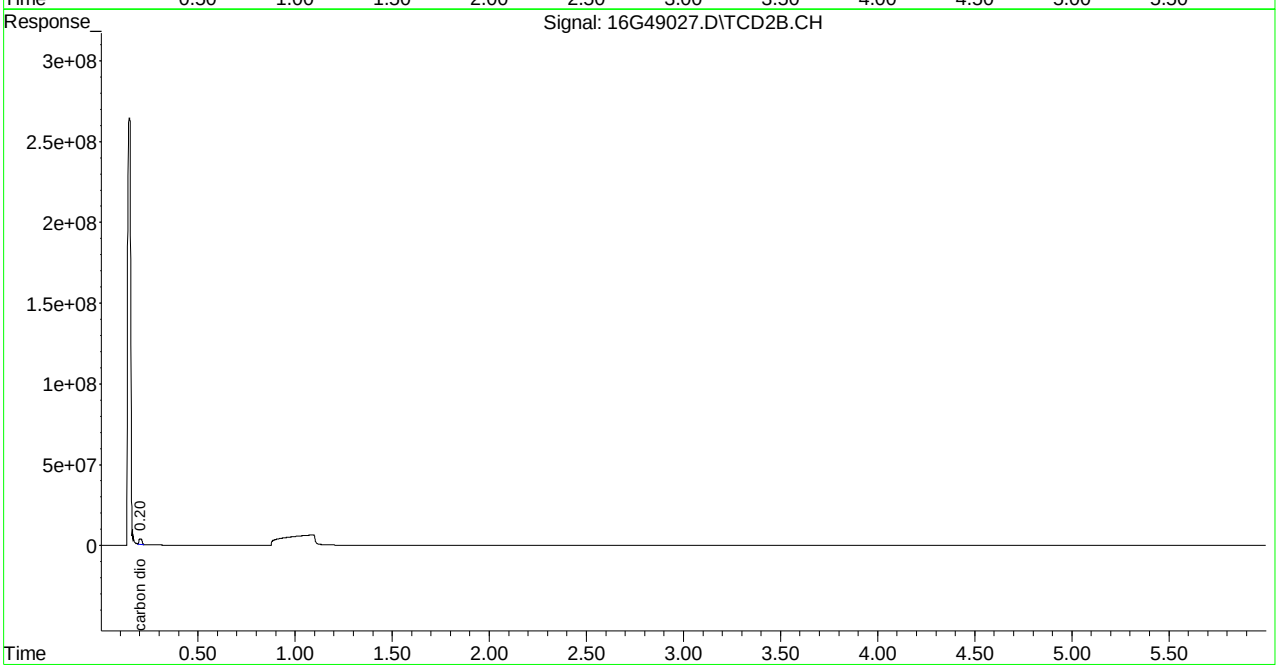

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\111915\16G49050.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDchem\1\DATA\111915\16G49050.D\TCD2B.CH
Acq On : 19 Nov 2015 17:30 Operator: JDS
Sample : WG547710-02 67umol/mol LCS STD RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 19 17:37:00 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	12598261	65.700	umol/
2) T	ethene	1.05	20973735	66.118	umol/
3) T	acetylene	1.13	22190702	65.569	umol/
4) T	ethane	1.38	21810038	64.167	umol/
5) T	propane	3.83	31800818	64.062	umol/
6) T	n-butane	5.34	41302719	63.712	umol/
8) T	carbon dioxide	0.20	33467273	6068.545	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49050.D RSKEXT1.M Thu Nov 19 17:37:01 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\111915\16G49050.D\FID1A.CH Vial: 3
Signal #2 : C:\MSDchem\1\DATA\111915\16G49050.D\TCD2B.CH
Acq On : 19 Nov 2015 17:30 Operator: JDS
Sample : WG547710-02 67umol/mol LCS STD RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 19 17:37 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

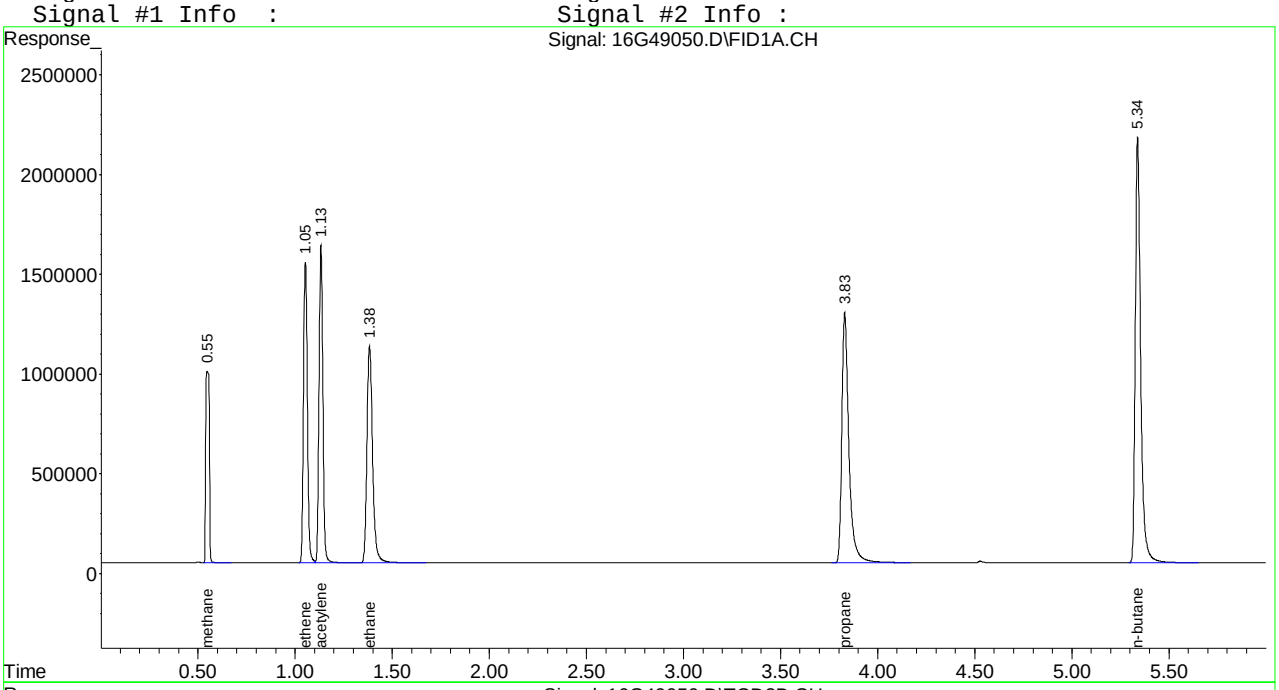

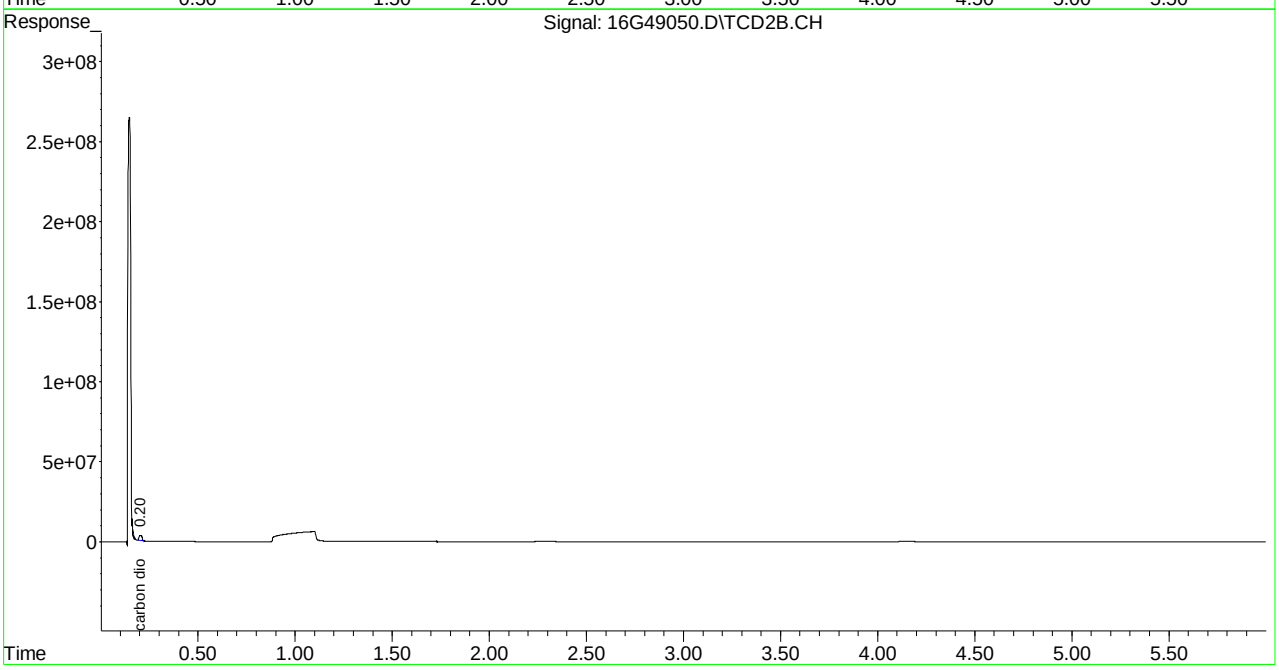

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\111815\16G49028.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDchem\1\DATA\111815\16G49028.D\TCD2B.CH
Acq On : 18 Nov 2015 15:13 Operator: JDS
Sample : WG547425-03 67umol/mol LCS2 STD RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 18 15:19:03 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	12438181	64.838	umol/
2) T	ethene	1.06	20396865	64.299	umol/
3) T	acetylene	1.15	21340330	63.056	umol/
4) T	ethane	1.40	21233430	62.470	umol/
5) T	propane	3.83	30800035	62.046	umol/
6) T	n-butane	5.34	39674200	61.200	umol/
8) T	carbon dioxide	0.20	33287925	6036.024	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49028.D RSKEXT1.M Wed Nov 18 15:19:04 2015 Page 1

Signal #1 : C:\MSDchem\1\DATA\111815\16G49028.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDchem\1\DATA\111815\16G49028.D\TCD2B.CH
Acq On : 18 Nov 2015 15:13 Operator: JDS
Sample : WG547425-03 67umol/mol LCS2 STD RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 18 15:19 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

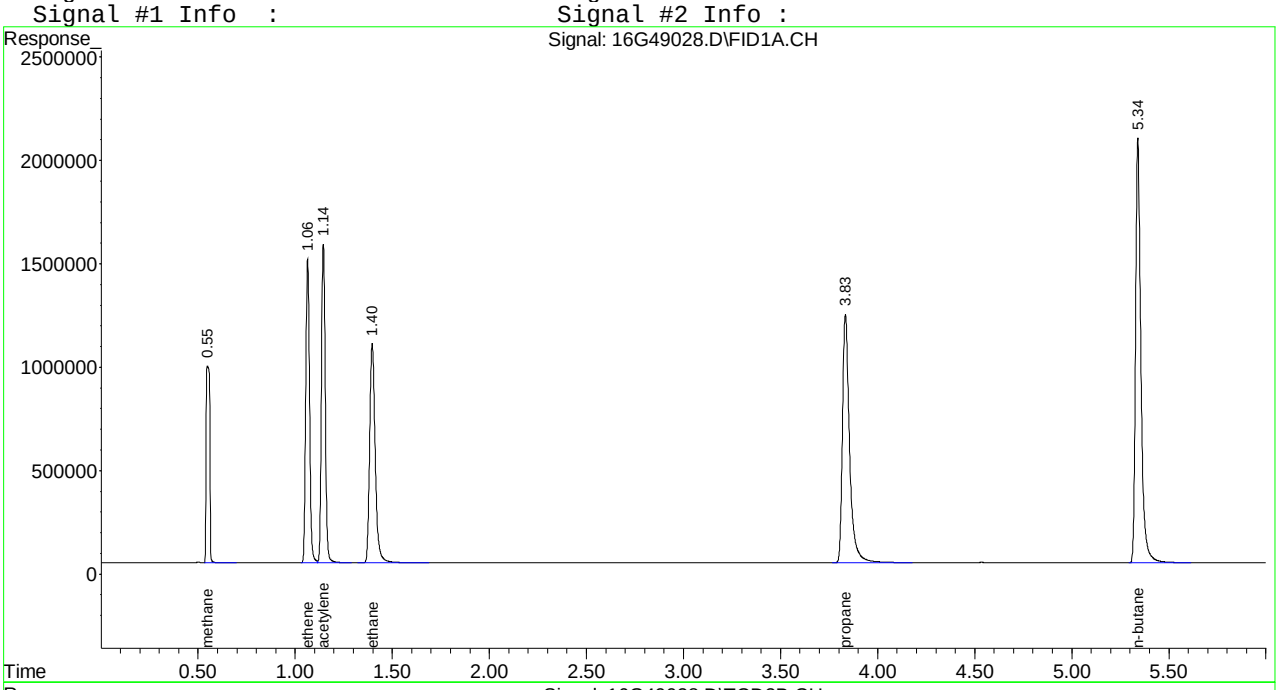

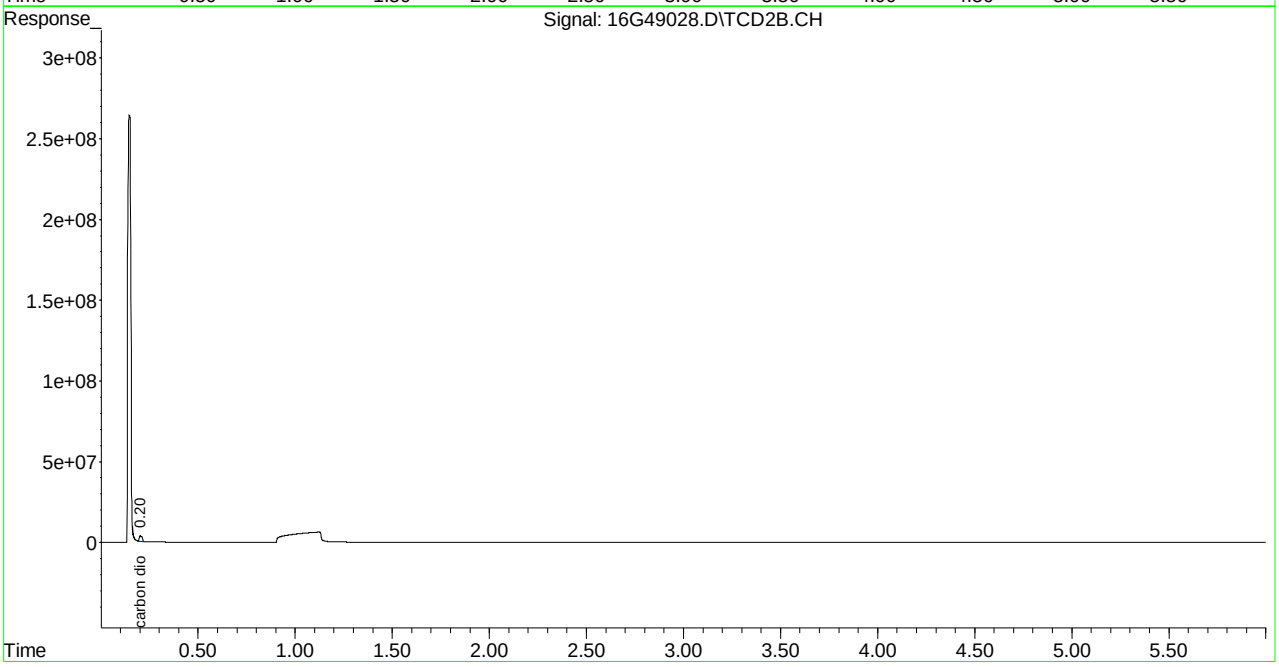

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\111915\16G49051.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDchem\1\DATA\111915\16G49051.D\TCD2B.CH
Acq On : 19 Nov 2015 17:42 Operator: JDS
Sample : WG547710-03 67umol/mol LCS2 STD RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 19 17:48:49 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Initial Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

	Compound	R.T.	Response	Conc	Units
	Target Compounds				
1) T	methane	0.55	12867854	67.154	umol/
2) T	ethene	1.06	21597394	68.084	umol/
3) T	acetylene	1.14	22394529	66.171	umol/
4) T	ethane	1.40	22486432	66.157	umol/
5) T	propane	3.83	33135078	66.750	umol/
6) T	n-butane	5.34	43013930	66.351	umol/
8) T	carbon dioxide	0.20	35139222	6371.716	umol/

(f)=RT Delta > 1/2 Window (m)=manual int.
16G49051.D RSKEXT1.M Thu Nov 19 17:48:49 2015 Page 1

Quantitation Report (Not Reviewed)

Signal #1 : C:\MSDchem\1\DATA\111915\16G49051.D\FID1A.CH Vial: 4
Signal #2 : C:\MSDchem\1\DATA\111915\16G49051.D\TCD2B.CH
Acq On : 19 Nov 2015 17:42 Operator: JDS
Sample : WG547710-03 67umol/mol LCS2 STD RSK175 Inst : HP16
Misc : 1,1 STD68250 Multiplr: 1.00
IntFile Signal #1: EVENTS.E IntFile Signal #2: EVENTS2.E
Quant Time: Nov 19 17:48 2015 Quant Results File: RSKEXT1.RES

Quant Method : C:\MSDCHEM\1\METHODS\RSKEXT1.M (Chemstation Integrator)
Title : RSK175 HP16 (SOP: OVL RSK01) 030315
Last Update : Fri Mar 06 11:52:33 2015
Response via : Multiple Level Calibration
DataAcq Meth : RSKEXT1.M

Volume Inj. :
Signal #1 Phase : Signal #2 Phase:
Signal #1 Info : Signal #2 Info :

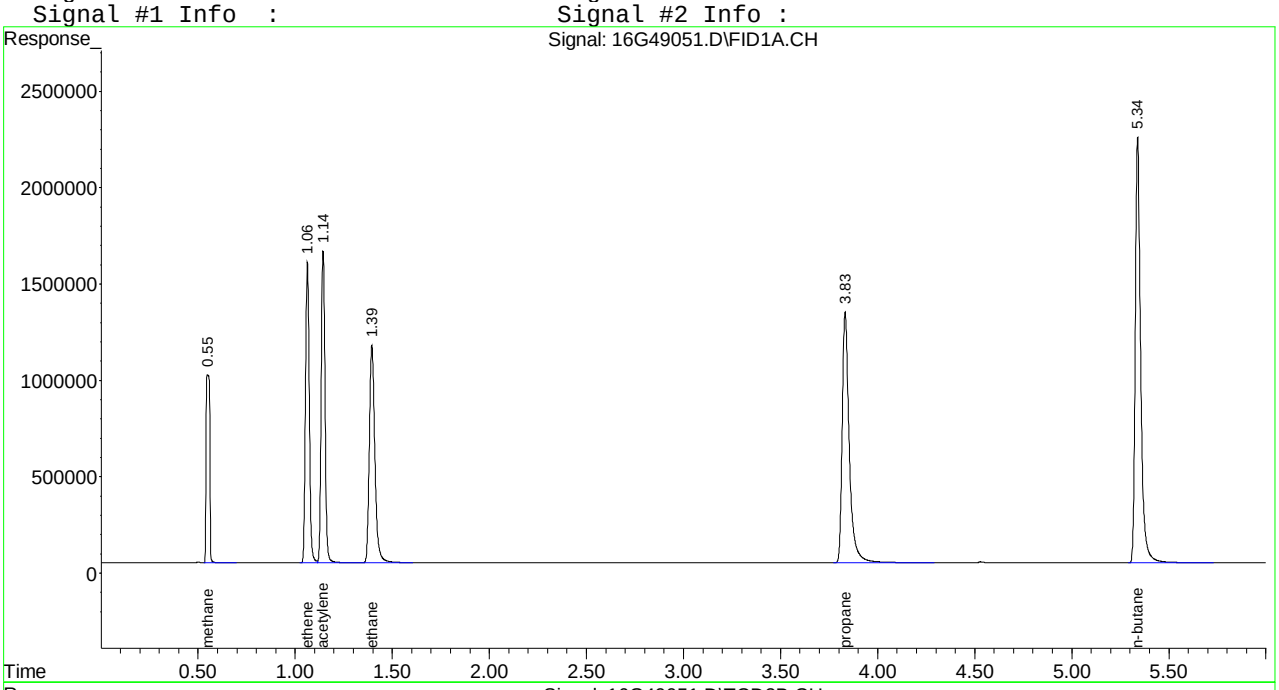

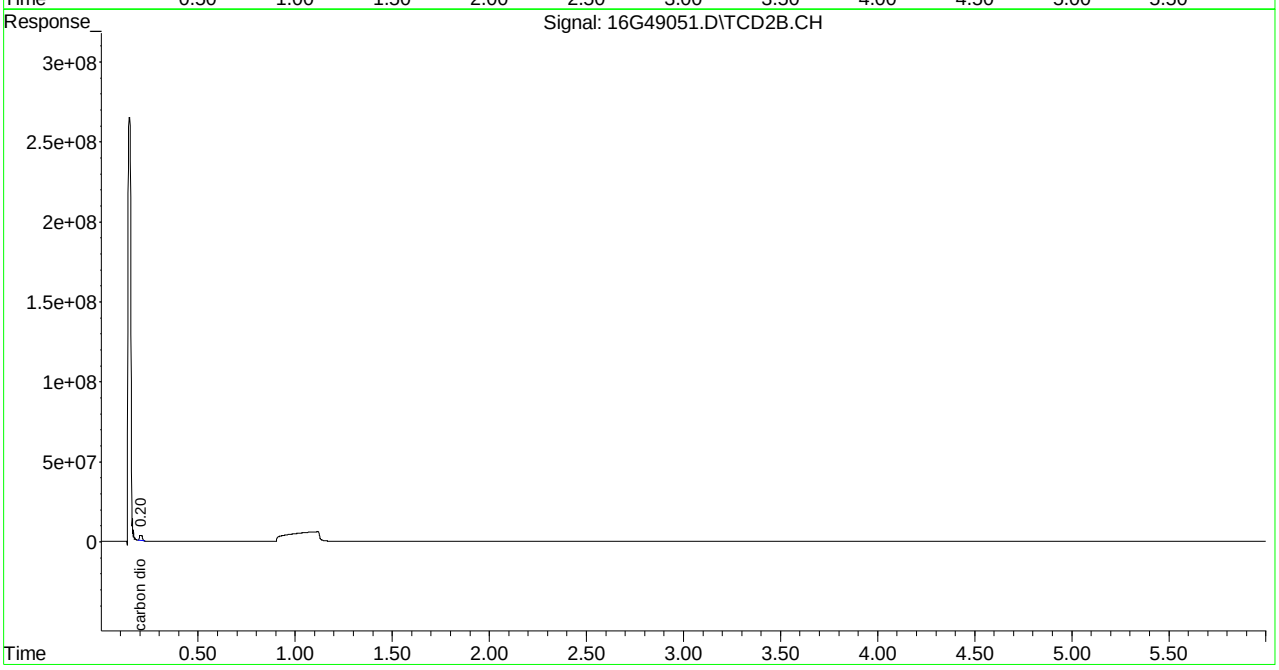

2.2 Metals Data

2.2.1 Metals I C P Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	50WW08FF-111615	**Prep Method:**	3015	**Prep Date:**	11/17/2015 14:26
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	11/23/2015 14:29
Workgroup #:	WG547398	**Analyst:**	PDM	**Run Date:**	11/23/2015 15:24
Collect Date:	11/16/2015 08:20	**Dilution:**	1	**File ID:**	T3.112315.152449
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.100	U	0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	50WW22FF-111615	**Prep Method:**	3015	**Prep Date:**	11/17/2015 14:26
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	11/23/2015 14:29
Workgroup #:	WG547398	**Analyst:**	PDM	**Run Date:**	11/23/2015 15:28
Collect Date:	11/16/2015 09:25	**Dilution:**	1	**File ID:**	T3.112315.152849
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.100	U	0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	50WW24FF-111615	**Prep Method:**	3015	**Prep Date:**	11/17/2015 14:26
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	11/23/2015 14:29
Workgroup #:	WG547398	**Analyst:**	PDM	**Run Date:**	11/23/2015 15:32
Collect Date:	11/16/2015 10:30	**Dilution:**	1	**File ID:**	T3.112315.153248
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.100	U	0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	50WW23FF-111615	**Prep Method:**	3015	**Prep Date:**	11/17/2015 14:26
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	11/23/2015 14:29
Workgroup #:	WG547398	**Analyst:**	PDM	**Run Date:**	11/23/2015 15:52
Collect Date:	11/16/2015 11:35	**Dilution:**	1	**File ID:**	T3.112315.155229
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.100	U	0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-10	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	50WW18FF-111615	**Prep Method:**	3015	**Prep Date:**	11/17/2015 14:26
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	11/23/2015 14:29
Workgroup #:	WG547398	**Analyst:**	PDM	**Run Date:**	11/23/2015 15:56
Collect Date:	11/16/2015 13:45	**Dilution:**	1	**File ID:**	T3.112315.155628
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	0.0978	J	0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-12	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	50WW25FF-111615	**Prep Method:**	3015	**Prep Date:**	11/17/2015 14:26
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	11/23/2015 14:29
Workgroup #:	WG547398	**Analyst:**	PDM	**Run Date:**	11/23/2015 16:00
Collect Date:	11/16/2015 14:55	**Dilution:**	1	**File ID:**	T3.112315.160027
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Dissolved	7439-89-6	1.10		0.200	0.100	0.0500

2.2.1.2 QC Summary Data

Example 6010 Calculations
Thermo Scientific iCAP

1.0 Initial Calibration (ICAL) Parameters
For a multi-point calibration, the system performs linear regression from data consisting of a blank and four standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG547294
Analyst: ERP
Spike Analyst: ERP
Run Date: 11/17/2015 14:26
Method: 3015
Balance: BAL019
Instrument: MW-1
Instrument Start: 11/17/2015 14:43

SOP: ME407 Revison 18
Spike Solution: STD73362
Spike Witness: VC
HNO3 Lot #: COA18442
HCL Lot #: COA18588
40 & 50 ML. DIGESTION TU COA18558
ICP Filters- fisher-Lot# RGT32945

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG547294-02	BLANK	1	40 mL	50 mL	205.043 g	205.024 g		
2	WG547294-03	LCS	1	40 mL	50 mL	211.521 g	211.498 g	5 mL	
3	L15110927-01	SAMP	1	40 mL	50 mL	206.438 g	206.397 g		11/24/15
4	L15110927-02	SAMP	1	40 mL	50 mL	205.75 g	205.722 g		11/24/15
5	L15110927-03	SAMP	1	40 mL	50 mL	207.426 g	207.407 g		11/24/15
6	L15110927-04	SAMP	1	40 mL	50 mL	206.775 g	206.734 g		11/24/15
7	L15110927-05	SAMP	1	40 mL	50 mL	207.597 g	207.566 g		11/24/15
8	L15110927-06	SAMP	1	40 mL	50 mL	207.804 g	207.769 g		11/24/15
9	L15110941-03	SAMP	1	40 mL	50 mL	206.146 g	206.104 g		11/27/15
10	L15110941-05	SAMP	1	40 mL	50 mL	205.51 g	205.476 g		11/27/15
11	L15110941-06	SAMP	1	40 mL	50 mL	207.46 g	207.427 g		11/27/15
12	L15110943-02	SAMP	1	40 mL	50 mL	204.255 g	204.229 g		11/27/15
13	L15110943-04	SAMP	1	40 mL	50 mL	207.292 g	207.261 g		11/27/15
14	L15110943-06	SAMP	1	40 mL	50 mL	208.736 g	208.7 g		11/27/15
15	L15110943-08	SAMP	1	40 mL	50 mL	205.787 g	205.736 g		11/27/15
16	L15110943-10	SAMP	1	40 mL	50 mL	205.195 g	205.155 g		11/27/15
17	L15110943-12	SAMP	1	40 mL	50 mL	206.884 g	206.851 g		11/27/15
18	WG547294-01	REF	1	40 mL	50 mL	206.418 g	206.386 g		
19	L15110946-01	RS01	1	40 mL	50 mL	206.418 g	206.386 g		11/27/15
20	WG547294-04	MS	1	40 mL	50 mL	209.978 g	209.954 g	5 mL	
21	L15110946-02	MS01	1	40 mL	50 mL	209.978 g	209.954 g	5 mL	11/27/15
22	WG547294-05	MSD	1	40 mL	50 mL	209.98 g	209.946 g	5 mL	
23	L15110946-03	SD01	1	40 mL	50 mL	209.98 g	209.946 g	5 mL	11/27/15

Analyst: Erin Potter

Reviewer: Vicki Collins

MW_DIG - Modified 09/30/2009
PDF ID: 4504593
Report generated: 11/17/2015 15:49

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 112315T3.1
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 7
Maintenance Log ID:

Calibration Std: STD73151 ICV Std: STD73449 Post Spike: STD72999
ICSA: STD73488 ICSAB: STD73372 Int. Std: RGT35157
CCV: STD73291 LLCCV: STD73629 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 547398,548028,548023

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.112315.141407	WG548248-01	Calibration Point		1		11/23/15 14:14
2	T3.112315.141810	WG548248-02	Calibration Point		1		11/23/15 14:18
3	T3.112315.142214	WG548248-03	Calibration Point		1		11/23/15 14:22
4	T3.112315.142605	WG548248-04	Calibration Point		1		11/23/15 14:26
5	T3.112315.142949	WG548248-05	Calibration Point		1		11/23/15 14:29
6	T3.112315.143331	WG548248-06	Initial Calibration Verification		1		11/23/15 14:33
7	T3.112315.143736	WG548248-07	Initial Calib Blank		1		11/23/15 14:37
8	T3.112315.144140	WG548248-08	Low Level Initial Calibration V		1		11/23/15 14:41
9	T3.112315.144538	WG548248-09	Low Level Initial Calibration V		1		11/23/15 14:45
10	T3.112315.144935	WG548248-10	Interference Check		1		11/23/15 14:49
11	T3.112315.145339	WG548248-11	Interference Check		1		11/23/15 14:53
12	T3.112315.145736	WG548248-12	CCV		1		11/23/15 14:57
13	T3.112315.150120	WG548248-13	CCB		1		11/23/15 15:01
14	T3.112315.150523	WG547294-02	Method/Prep Blank	40/50	1		11/23/15 15:05
15	T3.112315.150927	WG547294-03	Laboratory Control S	40/50	1		11/23/15 15:09
16	T3.112315.151311	WG547294-01	Reference Sample		1	L15110946-01	11/23/15 15:13
17	T3.112315.151721	WG547294-04	Matrix Spike	40/50	1	L15110946-01	11/23/15 15:17
18	T3.112315.152104	WG547294-05	Matrix Spike Duplica	40/50	1	L15110946-01	11/23/15 15:21
19	T3.112315.152449	L15110943-02	50WW08FF-111615	40/50	1		11/23/15 15:24
20	T3.112315.152849	L15110943-04	50WW22FF-111615	40/50	1		11/23/15 15:28
21	T3.112315.153248	L15110943-06	50WW24FF-111615	40/50	1		11/23/15 15:32
22	T3.112315.153646	WG547398-03	Post Digestion Spike		1	L15110943-06	11/23/15 15:36
23	T3.112315.154030	WG547398-04	Serial Dilution		5	L15110943-06	11/23/15 15:40
24	T3.112315.154440	WG548248-14	CCV		1		11/23/15 15:44
25	T3.112315.154823	WG548248-15	CCB		1		11/23/15 15:48
26	T3.112315.155229	L15110943-08	50WW23FF-111615	40/50	1		11/23/15 15:52
27	T3.112315.155628	L15110943-10	50WW18FF-111615	40/50	1		11/23/15 15:56
28	T3.112315.160027	L15110943-12	50WW25FF-111615	40/50	1		11/23/15 16:00
29	T3.112315.160427	WG548248-16	CCV		1		11/23/15 16:04
30	T3.112315.160800	WG548248-17	CCB		1		11/23/15 16:08
31	T3.112315.161205	WG548248-18	Low Level Continuing Calibra		1		11/23/15 16:12
32	T3.112315.161604	WG548248-19	Low Level Continuing Calibra		1		11/23/15 16:16
33	T3.112315.161949	WG547790-03	Method/Prep Blank	40/50	1		11/23/15 16:19
34	T3.112315.162352	WG547790-04	Laboratory Control S	40/50	1		11/23/15 16:23

Page: 1 Approved: November 24, 2015

Marcu Berry

Microbac

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Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 112315T3.1
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 7
Maintenance Log ID:

Calibration Std: STD73151 ICV Std: STD73449 Post Spike: STD72999
ICSA: STD73488 ICSAB: STD73372 Int. Std: RGT35157
CCV: STD73291 LLCCV: STD73629 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 547398,548028,548023

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.112315.162732	WG547691-01	Fluid Blank 1		1		11/23/15 16:27
36	T3.112315.163136	L15111069-01	MW33-111715	40/50	1		11/23/15 16:31
37	T3.112315.163532	L15111069-02	MW33-111715	40/50	1		11/23/15 16:35
38	T3.112315.163929	L15111069-03	MW33-111715	40/50	1		11/23/15 16:39
39	T3.112315.164326	WG547790-01	Reference Sample		1	L15111069-04	11/23/15 16:43
40	T3.112315.164720	WG547790-02	Reference Sample		1	L15111069-05	11/23/15 16:47
41	T3.112315.165120	WG548028-01	Post Digestion Spike		1	L15111069-05	11/23/15 16:51
42	T3.112315.165502	WG548028-02	Serial Dilution		5	L15111069-05	11/23/15 16:55
43	T3.112315.165850	WG548248-20	CCV		1		11/23/15 16:58
44	T3.112315.170234	WG548248-21	CCB		1		11/23/15 17:02
45	T3.112315.170640	L15111069-06	MW03-111715	40/50	1		11/23/15 17:06
46	T3.112315.171033	WG547790-05	Matrix Spike	40/50	1	L15111069-04	11/23/15 17:10
47	T3.112315.171424	WG547790-07	Matrix Spike	40/50	1	L15111069-05	11/23/15 17:14
48	T3.112315.171815	WG547790-06	Matrix Spike Duplica	40/50	1	L15111069-04	11/23/15 17:18
49	T3.112315.172206	WG547790-08	Matrix Spike Duplica	40/50	1	L15111069-05	11/23/15 17:22
50	T3.112315.172557	L15111080-02	S5K1104-02	5/50	1		11/23/15 17:25
51	T3.112315.173000	L15111096-01	1803-106 S6	40/50	1		11/23/15 17:30
52	T3.112315.173400	L15111096-02	1803-106 S7	40/50	1		11/23/15 17:34
53	T3.112315.173800	L15111096-03	1803-106 S20	40/50	1		11/23/15 17:38
54	T3.112315.174201	L15111096-04	1803-106 S13	40/50	1		11/23/15 17:42
55	T3.112315.174601	WG548248-22	CCV		1		11/23/15 17:46
56	T3.112315.174935	WG548248-23	CCB		1		11/23/15 17:49
57	T3.112315.175338	L15111174-01	111815M CAT\#697 METAL		1		11/23/15 17:53
58	T3.112315.175733	L15111175-01	220815 QC METALS IN WAT		1		11/23/15 17:57
59	T3.112315.180128	L15111096-05	1803-106 S11	40/50	1		11/23/15 18:01
60	T3.112315.180528	L15111109-01	A05-MW11D-Y1S1	40/50	1		11/23/15 18:05
61	T3.112315.180914	L15111141-01	H5K0726-01	40/50	1		11/23/15 18:09
62	T3.112315.181309	L15111179-01	FT02PTS-EFFLUENT-18NOV	40/50	1		11/23/15 18:13
63	T3.112315.181708	L15111179-02	FT02PTS-INTERMEDIATE-1	40/50	1		11/23/15 18:17
64	T3.112315.182108	L15111179-03	FT02PTS-INFLUENT-18NOV	40/50	1		11/23/15 18:21
65	T3.112315.182508	L15111109-01	A05-MW11D-Y1S1	40/50	10		11/23/15 18:25
66	T3.112315.182911	L15111109-01	A05-MW11D-Y1S1		100		11/23/15 18:29
67	T3.112315.183316	WG548248-24	CCV		1		11/23/15 18:33
68	T3.112315.183700	WG548248-25	CCB		1		11/23/15 18:37

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Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 112315T3.1
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 7
Maintenance Log ID:

Calibration Std: STD73151 ICV Std: STD73449 Post Spike: STD72999
ICSA: STD73488 ICSAB: STD73372 Int. Std: RGT35157
CCV: STD73291 LLCCV: STD73629 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 547398,548028,548023

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.112315.184104	WG547943-02	Method/Prep Blank	40/50	1		11/23/15 18:41
70	T3.112315.184507	WG547943-03	Laboratory Control S	40/50	1		11/23/15 18:45
71	T3.112315.184851	L15111191-01	NV60_CONSOLIDATION C(		1	WG547943-01	11/23/15 18:48
72	T3.112315.185247	WG547943-04	Matrix Spike	40/50	1	L15111191-01	11/23/15 18:52
73	T3.112315.185631	WG547943-05	Matrix Spike Duplica	40/50	1	L15111191-01	11/23/15 18:56
74	T3.112315.190004	WG548023-01	Post Digestion Spike		1	L15111191-01	11/23/15 19:00
75	T3.112315.190348	WG548023-02	Serial Dilution		5	L15111191-01	11/23/15 19:03
76	T3.112315.190747	WG548023-02	Serial Dilution		25	L15111191-01	11/23/15 19:07
77	T3.112315.191150	WG548248-26	CCV		1		11/23/15 19:11
78	T3.112315.191534	WG548248-27	CCB		1		11/23/15 19:15
79	T3.112315.191937	L15111143-01	PZ06-111815	40/50	1		11/23/15 19:19
80	T3.112315.192327	L15111143-02	PZ06-111815	40/50	1		11/23/15 19:23
81	T3.112315.192726	L15111143-03	PZ06-111815	40/50	1		11/23/15 19:27
82	T3.112315.193124	L15111143-04	PZ04-111815	40/50	1		11/23/15 19:31
83	T3.112315.193530	L15111176-01	1803-117 W2	40/50	1		11/23/15 19:35
84	T3.112315.193929	L15111176-02	1803-117 S1	40/50	1		11/23/15 19:39
85	T3.112315.194329	L15111176-03	1803-117 W3	40/50	1		11/23/15 19:43
86	T3.112315.194729	L15111176-04	1803-117 S2	40/50	1		11/23/15 19:47
87	T3.112315.195129	L15111176-05	1803-117 S3	40/50	1		11/23/15 19:51
88	T3.112315.195529	L15111177-01	1803-114 S1	40/50	1		11/23/15 19:55
89	T3.112315.195930	WG548248-28	CCV		1		11/23/15 19:59
90	T3.112315.200313	WG548248-29	CCB		1		11/23/15 20:03
91	T3.112315.200717	WG548248-30	Interference Check		1		11/23/15 20:07
92	T3.112315.201109	WG548248-31	Interference Check		1		11/23/15 20:11
93	T3.112315.201507	WG548248-32	CCV		1		11/23/15 20:15
94	T3.112315.201850	WG548248-33	CCB		1		11/23/15 20:18
95	T3.112315.202253	WG548248-34	Low Level Continuing Calibra		1		11/23/15 20:22
96	T3.112315.202653	WG548248-35	Low Level Continuing Calibra		1		11/23/15 20:26
97	T3.112315.203050	L15111177-02	1803-114 S2		1		11/23/15 20:30
98	T3.112315.203449	L15111177-03	1803-114 S3		1		11/23/15 20:34
99	T3.112315.203848	L15111177-04	1803-114 S4		1		11/23/15 20:38
100	T3.112315.204247	L15111177-05	1803-114 S5		1		11/23/15 20:42
101	T3.112315.204648	L15111182-01	LF30/31-EWTS-EFFLUENT-1		1		11/23/15 20:46
102	T3.112315.205048	L15111182-02	LF30/31-EWTS-MH3-18NOV		1		11/23/15 20:50

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Maren Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 112315T3.1

Analyst1: JYH Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 7

Maintenance Log ID:

Calibration Std: STD73151 ICV Std: STD73449 Post Spike: STD72999

ICSA: STD73488 ICSAB: STD73372 Int. Std: RGT35157

CCV: STD73291 LLCCV: STD73629 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 547398,548028,548023

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T3.112315.205448	L15111182-03	LF30/31-EWTS-MH2-18NOV		1		11/23/15 20:54
104	T3.112315.205848	L15111182-04	LF30/31-EWTS-MH1-18NOV		1		11/23/15 20:58
105	T3.112315.210250	L15111182-05	LF30/31-EWTS-INFLUENT-1		1		11/23/15 21:02
106	T3.112315.210650	WG548248-36	CCV		1		11/23/15 21:06
107	T3.112315.211033	WG548248-37	CCB		1		11/23/15 21:10

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Microbac Laboratories Inc.

Data Checklist

Date: 23-NOV-2015
Analyst: PDM
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 548248
Runlog ID: 71892
Analytical Workgroups: 547398,548028,548023

Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	943,1069,1109,1179,1143
Level 4	
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	MMB
Comments	

Primary Reviewer:
24-NOV-2015

Secondary Reviewer:
24-NOV-2015

CHECKLIST1 - Modified 03/05/2008
Generated: NOV-24-2015 15:06:50

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010C

AAB#: WG547398

Login Number: L15110943

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW08FF-111615	02	11/16/15					11/17/2015	1.3	180		11/23/15	7.3	180	
50WW22FF-111615	04	11/16/15					11/17/2015	1.2	180		11/23/15	7.3	180	
50WW24FF-111615	06	11/16/15					11/17/2015	1.2	180		11/23/15	7.2	180	
50WW23FF-111615	08	11/16/15					11/17/2015	1.1	180		11/23/15	7.2	180	
50WW18FF-111615	10	11/16/15					11/17/2015	1	180		11/23/15	7.1	180	
50WW25FF-111615	12	11/16/15					11/17/2015	1	180		11/23/15	7	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4508738
Report generated 11/24/2015 09:59

METHOD BLANK SUMMARY

Login Number: L15110943
Blank File ID: T3.112315.150523
Prep Date: 11/17/15 14:26
Analyzed Date: 11/23/15 15:05
Analyst: PDM

Work Group: WG547398
Blank Sample ID: WG547294-02
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG547294-03	T3.111815.145858	11/18/15 14:58	01
LCS	WG547294-03	T3.112315.150927	11/23/15 15:09	02
50WW08FF-111615	L15110943-02	T3.112315.152449	11/23/15 15:24	01
50WW22FF-111615	L15110943-04	T3.112315.152849	11/23/15 15:28	01
50WW24FF-111615	L15110943-06	T3.112315.153248	11/23/15 15:32	01
50WW23FF-111615	L15110943-08	T3.112315.155229	11/23/15 15:52	01
50WW18FF-111615	L15110943-10	T3.112315.155628	11/23/15 15:56	01
50WW25FF-111615	L15110943-12	T3.112315.160027	11/23/15 16:00	01

Report Name: BLANK_SUMMARY
PDF File ID: 4508739
Report generated 11/24/2015 09:59

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15110943 Prep Date: 11/17/15 14:26 Sample ID: WG547294-02
Instrument ID: ICP-THERMO3 Run Date: 11/23/15 15:05 Prep Method: 3015
File ID: T3.112315.150523 Analyst: PDM Method: 6010C
Workgroup (AAB#): WG547398 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-23-NOV-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Iron, Dissolved	0.0500	0.200	0.0500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4508740
24-NOV-2015 09:59

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15110943 Run Date: 11/23/2015 Sample ID: WG547294-03
Instrument ID: ICP-THERMO3 Run Time: 15:09 Prep Method: 3015
File ID: T3.112315.150927 Analyst: PDM Method: 6010C
Workgroup (AAB#): WG547398 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD73362 Cal ID: ICP-TH-23-NOV-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Iron, Dissolved	2.50	2.66	106	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4508741
Report generated: 11/24/2015 09:59

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L15110943 Cal ID: ICP-THERMO3 - Worknum: WG547398
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG547294-01 File ID: T3.112315.151311 Dil: 1 Matrix: WATER
Sample ID: WG547294-04 MS File ID: T3.112315.151721 Dil: 1 Units: mg/L
Sample ID: WG547294-05 MSD File ID: T3.112315.152104 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Iron	0.479	2.50	3.20	109	2.50	3.16	107	1.32	80 - 120	20	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4508742
Report generated 11/24/2015 09:59

Microbac Laboratories Inc.
Serial Dilution Report

Login: L15110943 **Worknum:** WG547398
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG547398-04 **File ID:** T3.112315.154030 **Dil:** 5 **Units:** ug/L
Sample: L15110943-06 **File ID:** T3.112315.153248 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Iron	13.3		94.0		604.00	E

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4508736
11/24/2015 09:59

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L15110943 **Worknum:** WG547398
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG547398-03 **File ID:** T3.112315.153646 **Dil:** 1 **Units:** ug/L
Sample ID: L15110943-06 **File ID:** T3.112315.153248 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
IRON	2090		0	U	2000	104.6	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4508737
Report generated: 11/24/2015 09:59

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L15110943	Workgroup (AAB#):	WG547398
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG548248	Initial Calibration Date:	23-NOV-2015 14:29

	WG548248-01		WG548248-02		WG548248-03		WG548248-04		WG548248-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
IRON	0	0.0000600	.04	0.000410	.08	0.00117	4	0.0784	8	0.157	.999691	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4508745
Report generated: 24-NOV-2015 09:59

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L15110943
Instrument ID: ICP-THERMO3
File ID: T3.112315.143736
Workgroup (AAB#): WG547398
Matrix: WATER

Run Date: 11/23/2015
Run Time: 14:37
Analyst: PDM
Cal ID: ICP-THERI - 23-NOV-15

Sample ID: WG548248-07
Method: 6010C
Units: mg/L

Analytes	MDL	RDL	Concentration	Qualifier
IRON	.04	.16	.04	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4508747
Report generated 11/24/2015 09:59

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15110943
Run Date: 11/23/2015
Sample ID: WG548248-13
Instrument ID: ICP-THERMO3
Run Time: 15:01
Method: 6010C
File ID: T3.112315.150120
Analyst: PDM
Units: mg/L
Workgroup (AAB#): WG547398
Cal ID: ICP-TH - 23-NOV-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4508750
Report generated 11/24/2015 09:59

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15110943
Run Date: 11/23/2015
Sample ID: WG548248-15
Instrument ID: ICP-THERMO3
Run Time: 15:48
Method: 6010C
File ID: T3.112315.154823
Analyst: PDM
Units: mg/L
Workgroup (AAB#): WG547398
Cal ID: ICP-TH - 23-NOV-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4508750
Report generated 11/24/2015 09:59

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15110943
Run Date: 11/23/2015
Sample ID: WG548248-17
Instrument ID: ICP-THERMO3
Run Time: 16:08
Method: 6010C
File ID: T3.112315.160800
Analyst: PDM
Units: mg/L
Workgroup (AAB#): WG547398
Cal ID: ICP-TH - 23-NOV-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4508750
Report generated 11/24/2015 09:59

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15110943
Run Date: 11/23/2015
Sample ID: WG548248-29
Instrument ID: ICP-THERMO3
Run Time: 20:03
Method: 6010C
File ID: T3.112315.200313
Analyst: PDM
Units: mg/L
Workgroup (AAB#): WG547398
Cal ID: ICP-TH - 23-NOV-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4508750
Report generated 11/24/2015 09:59

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15110943
Run Date: 11/23/2015
Sample ID: WG548248-33
Instrument ID: ICP-THERMO3
Run Time: 20:18
Method: 6010C
File ID: T3.112315.201850
Analyst: PDM
Units: mg/L
Workgroup (AAB#): WG547398
Cal ID: ICP-TH - 23-NOV-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Iron	0.0400	0.160	0.0400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4508750
Report generated 11/24/2015 09:59

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L15110943 Run Date: 11/23/2015 Sample ID: WG548248-06
Instrument ID: ICP-THERMO3 Run Time: 14:33 Method: 6010C
File ID: T3.112315.143331 Analyst: PDM Units: mg/L
Workgroup (AAB#): WG547398 Cal ID: ICP-TH - 23-NOV-15
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Iron		4	3.99	99.7	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4508746
Report generated 11/24/2015 09:59

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110943
Run Date: 11/23/2015
Sample ID: WG548248-12
Instrument ID: ICP-THERMO3
Run Time: 14:57
Method: 6010C
File ID: T3.112315.145736
Analyst: PDM
QC Key: DOD4
Workgroup (AAB#): WG547398
Cal ID: ICP-TH - 23-NOV-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.05	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4508749
Report generated 11/24/2015 09:59

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110943
Run Date: 11/23/2015
Sample ID: WG548248-14
Instrument ID: ICP-THERMO3
Run Time: 15:44
Method: 6010C
File ID: T3.112315.154440
Analyst: PDM
QC Key: DOD4
Workgroup (AAB#): WG547398
Cal ID: ICP-TH - 23-NOV-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.04	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4508749
Report generated 11/24/2015 09:59

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110943
Run Date: 11/23/2015
Sample ID: WG548248-16
Instrument ID: ICP-THERMO3
Run Time: 16:04
Method: 6010C
File ID: T3.112315.160427
Analyst: PDM
QC Key: DOD4
Workgroup (AAB#): WG547398
Cal ID: ICP-TH - 23-NOV-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.04	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4508749
Report generated 11/24/2015 09:59

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110943
Run Date: 11/23/2015
Sample ID: WG548248-28
Instrument ID: ICP-THERMO3
Run Time: 19:59
Method: 6010C
File ID: T3.112315.195930
Analyst: PDM
QC Key: DOD4
Workgroup (AAB#): WG547398
Cal ID: ICP-TH - 23-NOV-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.26	mg/L	107	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4508749
Report generated 11/24/2015 09:59

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110943
Run Date: 11/23/2015
Sample ID: WG548248-32
Instrument ID: ICP-THERMO3
Run Time: 20:15
Method: 6010C
File ID: T3.112315.201507
Analyst: PDM
QC Key: DOD4
Workgroup (AAB#): WG547398
Cal ID: ICP-TH - 23-NOV-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		4.00	4.55	mg/L	114	90 - 110		*

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4508749
Report generated 11/24/2015 09:59

Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15110943
Run Date: 11/23/2015
Sample ID: WG548248-08
Instrument ID: ICP-THERMO3
Run Time: 14:41
Method: 6010C
File ID: T3.112315.144140
Analyst: PDM
QC Key: DOD4
Workgroup (AAB#): WG547398
Cal ID: ICP-TH - 23-NOV-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		0.0800	0.0616	mg/L	77.0	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4517244
Report generated 11/24/2015 09:59

Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15110943
Run Date: 11/23/2015
Sample ID: WG548248-18
Instrument ID: ICP-THERMO3
Run Time: 16:12
Method: 6010C
File ID: T3.112315.161205
Analyst: PDM
QC Key: DOD4
Workgroup (AAB#): WG547398
Cal ID: ICP-TH - 23-NOV-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		0.0800	0.0763	mg/L	95.4	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4517244
Report generated 11/24/2015 09:59

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L15110943
Instrument ID: ICP-THERMO3
Sol. A : WG548248-10 **File ID:** T3.112315.144935
Sol. AB : WG548248-11 **File ID:** T3.112315.145339

Workgroup (AAB#): WG547398
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Iron	100	96.4	96.4	100	96.9	96.9	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4508748
Report generated 11/24/2015 09:59

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15110943 **Date:** 01/02/2015
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	AG	AL	AS	B	BA
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000190	0	0	0
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0.00200	0	-0.0000800
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0.000290	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	-0.000289	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	-0.0000460	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.0000120	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0.00300	0	0	0
ZINC	206.20	0	0.00000200	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4508744
Report generated: 11/24/2015 09:59

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15110943 **Date:** 01/02/2015
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	BE	CA	CD	CO	CR
ALUMINUM	308.20	0	0	0	-0.000820	0
ANTIMONY	206.80	0	0	0	0	0.00650
ARSENIC	189.00	0	0	0	0	0.000490
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0.00343	0
CADMIUM	228.80	0	0	0	-0.00210	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	-0.000200
COPPER	224.70	0	0	0	0.0000770	0
IRON	261.10	0	0	0	0	-0.00100
LEAD	220.30	0	0	0	-0.0000130	-0.000132
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	-0.0000920
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	-0.000500	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0.00000500	0	0	0
THALLIUM	190.80	0	0	0	0.00297	0.000276
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	-0.00138
ZINC	206.20	0	0	0	0	-0.000800
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15110943 **Date:** 01/02/2015
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	CU	FE	K	LI	MG
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000560	0	0	0
ARSENIC	189.00	0	-0.0000440	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	-0.000619	0	0	0
CADMIUM	228.80	0	-0.0000250	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000500	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0.000800	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0.000609	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.00000300
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0.0000420	0	0	0
PHOSPHORUS	214.90	-0.323	0.00118	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000240	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0.0000300	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	-0.0000300	0	0	0

CORR_FACTORS - Modified 03/05/2008
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Report generated: 11/24/2015 09:59

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15110943 **Date:** 01/02/2015
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	MN	MO	NA	NI	P
ALUMINUM	308.20	0	0.0163	0	0	0
ANTIMONY	206.80	0	0.000670	0	0	0
ARSENIC	189.00	0	0.00139	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	-0.00190	0	0	0
CADMIUM	228.80	0	0.0000320	0	-0.000128	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0.000330	0	0	0	0
COBALT	228.60	0	-0.000983	0	0.000175	0
COPPER	224.70	0	0.00200	0	-0.0120	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	-0.00280	0	0.000110	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	-0.00190	-0.0130	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0.00710	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0.000800	0.000156	0	0	0
SILICON	212.40	0	0.0187	0	0	0
SILVER	328.00	0	-0.0000440	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0.00100	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000153	0	0	0
VANADIUM	292.40	-0.000110	-0.00778	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15110943 **Date:** 01/02/2015
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	PB	SB	SE	SI	SN
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0	0	0	-0.00840
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0.00300	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	0.000112	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
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Report generated: 11/24/2015 09:59

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15110943 **Date:** 01/02/2015
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	SR	TI	TL	V	ZN
ALUMINUM	308.20	0	0	0	0.00300	0
ANTIMONY	206.80	0	-0.00199	0	-0.00438	0
ARSENIC	189.00	0	0	0	0.000107	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	-0.0000770	0	0.000220	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0.000102	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000550	0	0	0
COBALT	228.60	0	0.00158	0	0.0000200	0
COPPER	224.70	0	0.000269	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	-0.000126	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	-0.00290	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	-0.000110	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	-0.00100	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.00620	0	-0.00617	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.00170	0	-0.00710	0
TIN	189.90	0	-0.00190	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0.000600	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
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Report generated: 11/24/2015 09:59

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L15110943 **Date:** 01/02/2015
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	ZR
ALUMINUM	308.20	0
ANTIMONY	206.80	0
ARSENIC	189.00	0
BARIUM	455.40	0
BERYLLIUM	313.10	0
BORON	249.60	0
CADMIUM	228.80	0
CALCIUM	422.60	0
CHROMIUM	267.70	0
COBALT	228.60	0
COPPER	224.70	0
IRON	261.10	0
LEAD	220.30	0
LITHIUM	670.70	0
MAGNESIUM	279.00	0
MANGANESE	257.60	0
MOLYBDENUM	202.00	0
NICKEL	231.60	0
PHOSPHORUS	214.90	0
POTASSIUM	766.40	0
SELENIUM	196.00	0
SILICON	212.40	0
SILVER	328.00	0
SODIUM	589.50	0
STRONTIUM	407.70	0
THALLIUM	190.80	0
TIN	189.90	0
TITANIUM	337.20	0
VANADIUM	292.40	0
ZINC	206.20	0
ZIRCONIUM	339.10	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4508744
Report generated: 11/24/2015 09:59

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L15110943 **Date:** 10/19/2015
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	900.0
Antimony	20.00	45.0
Arsenic	10.00	45.0
Barium	10.00	45.0
Beryllium	10.00	4.5
Boron	20.00	45.0
Cadmium	20.00	4.5
Calcium	5.00	270.0
Chromium	20.00	36.0
Cobalt	20.00	90.0
Copper	20.00	180.0
Iron	5.00	720.0
Lead	20.00	225.0
Lithium	5.00	45.0
Magnesium	5.00	900.0
Manganese	10.00	36.0
Molybdenum	20.00	27.0
Nickel	20.00	90.0
Phosphorus	20.00	180.0
Potassium	5.00	450.0
Selenium	20.00	90.0
Silicon	20.00	36.0
Silver	10.00	9.0
Sodium	5.00	270.0
Strontium	5.00	9.0
Thallium	20.00	18.0
Tin	20.00	45.0
Titanium	5.00	36.0
Vanadium	20.00	27.0
Zinc	20.00	45.0
Zirconium	10.00	45.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4508743
Report generated: 11/24/2015 09:59

2.2.1.3 Raw Data

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	11/23/2015 14:33:26	11/23/2015 14:33:26	Linear	1/Conc	-0.000358	0.044145	0.000000	1.000000
Al 308.215 {109}	11/23/2015 14:33:26	11/23/2015 14:33:26	Linear	1/Conc	0.000613	0.007087	0.000000	1.000000
As 189.042 {478}	11/23/2015 14:33:26	11/23/2015 14:33:26	Linear	1/Conc	0.000046	0.017181	0.000000	1.000000
B 249.678 {135}	11/23/2015 14:33:26	11/23/2015 14:33:26	Linear	1/Conc	0.000161	0.016101	0.000000	1.000000
Ba 455.403 { 74}	11/23/2015 14:33:26	11/23/2015 14:33:26	Linear	1/Conc	0.019042	2.181840	0.000000	1.000000
Be 313.107 {108}	11/23/2015 14:33:26	11/23/2015 14:33:26	Linear	1/Conc	0.000321	0.871706	0.000000	1.000000
Ca 422.673 { 80}	11/23/2015 14:33:26	11/23/2015 14:33:26	Linear	1/Conc	0.001665	0.049114	0.000000	1.000000
Cd 228.802 {447}	11/23/2015 14:33:26	11/23/2015 14:33:26	Linear	1/Conc	0.000155	0.329876	0.000000	1.000000
Co 228.616 {447}	11/23/2015 14:33:26	11/23/2015 14:33:26	Linear	1/Conc	-0.000172	0.252495	0.000000	1.000000
Cr 267.716 {126}	11/23/2015 14:33:26	11/23/2015 14:33:26	Linear	1/Conc	0.000037	0.049020	0.000000	1.000000
Cu 224.700 {450}	11/23/2015 14:33:26	11/23/2015 14:33:26	Linear	1/Conc	-0.000211	0.086856	0.000000	1.000000
Fe 261.187 {129}	11/23/2015 14:33:26	11/23/2015 14:33:26	Linear	1/Conc	0.000061	0.019599	0.000000	1.000000
K 766.490 { 44}	11/23/2015 14:33:26	11/23/2015 14:33:26	Linear	1/Conc	-0.014688	0.047775	0.000000	1.000000
Li 670.784 { 50}	11/23/2015 14:33:26	11/23/2015 14:33:26	Linear	1/Conc	0.005971	0.894448	0.000000	1.000000
Mg 279.079 {121}	11/23/2015 14:33:26	11/23/2015 14:33:26	Linear	1/Conc	-0.000378	0.004913	0.000000	1.000000
Mn 257.610 {131}	11/23/2015 14:33:27	11/23/2015 14:33:27	Linear	1/Conc	0.001011	0.260129	0.000000	1.000000
Mo 202.030 {467}	11/23/2015 14:33:27	11/23/2015 14:33:27	Linear	1/Conc	0.000060	0.130696	0.000000	1.000000
Na 589.592 { 57}	11/23/2015 14:33:27	11/23/2015 14:33:27	Linear	1/Conc	-0.001195	0.160481	0.000000	1.000000
Ni 231.604 {446}	11/23/2015 14:33:27	11/23/2015 14:33:27	Linear	1/Conc	-0.000484	0.104365	0.000000	1.000000
P 214.914 {457}	11/23/2015 14:33:27	11/23/2015 14:33:27	Linear	1/Conc	-0.000099	0.009125	0.000000	1.000000
Pb 220.353 {453}	11/23/2015 14:33:27	11/23/2015 14:33:27	Linear	1/Conc	-0.000924	0.046357	0.000000	1.000000
Sb 206.833 {463}	11/23/2015 14:33:27	11/23/2015 14:33:27	Linear	1/Conc	0.000496	0.021997	0.000000	1.000000
Se 196.090 {472}	11/23/2015 14:33:27	11/23/2015 14:33:27	Linear	1/Conc	-0.000046	0.011807	0.000000	1.000000
Si 212.412 {459}	11/23/2015 14:33:27	11/23/2015 14:33:27	Linear	1/Conc	0.000502	0.027468	0.000000	1.000000
Sn 189.989 {477}	11/23/2015 14:33:27	11/23/2015 14:33:27	Linear	1/Conc	0.000044	0.051693	0.000000	1.000000
Sr 407.771 { 83}	11/23/2015 14:33:27	11/23/2015 14:33:27	Linear	1/Conc	0.004117	3.751722	0.000000	1.000000
Ti 337.280 {100}	11/23/2015 14:33:27	11/23/2015 14:33:27	Linear	1/Conc	-0.001488	0.125170	0.000000	1.000000
Tl 190.856 {477}	11/23/2015 14:33:27	11/23/2015 14:33:27	Linear	1/Conc	-0.000161	0.025489	0.000000	1.000000
V 292.402 {115}	11/23/2015 14:33:27	11/23/2015 14:33:27	Linear	1/Conc	0.000094	0.049371	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	11/23/2015 14:33:27	11/23/2015 14:33:27	Linear	1/Conc	0.000085	0.299065	0.000000	1.000000
Zr 339.198 { 99}	11/23/2015 14:33:27	11/23/2015 14:33:27	Linear	1/Conc	-0.005934	0.004177	0.000000	1.000000

Approved: November 24, 2015

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999495	0.000004	0.001588	0.005294	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999972	0.000003	0.006890	0.022966	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999949	0.000001	0.002897	0.009655	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999903	0.000001	0.002439	0.008131	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999998	0.000024	0.000903	0.003010	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999975	0.000002	0.000057	0.000190	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999651	0.000082	0.030078	0.100260	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999481	0.000004	0.000260	0.000866	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999995	0.000001	0.000387	0.001289	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999964	0.000001	0.000977	0.003255	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999957	0.000003	0.001306	0.004354	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999691	0.000012	0.022877	0.076255	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999865	0.000249	0.104940	0.349800	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999842	0.000156	0.005525	0.018415	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999946	0.000005	0.097698	0.325662	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999981	0.000005	0.002403	0.008010	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999976	0.000006	0.000386	0.001287	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999988	0.000245	0.028237	0.094122	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999995	0.000001	0.001009	0.003365	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999960	0.000005	0.006943	0.023144	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999552	0.000004	0.003238	0.010795	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999878	0.000003	0.003963	0.013209	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.998914	0.000002	0.006138	0.020461	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999987	0.000004	0.002210	0.007367	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999986	0.000002	0.000793	0.002643	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999995	0.000072	0.000390	0.001301	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999693	0.000020	0.006309	0.021030	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999746	0.000003	0.002450	0.008166	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999983	0.000002	0.000884	0.002947	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	1.000000	0.000001	0.000185	0.000617	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.913903	0.000012	0.399133	1.330443	OK.	1.000000	0.000000	1	0

Approved: November 24, 2015

Sample Name: S0 Acquired: 11/23/2015 14:14:07 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: IR Corr. Factor: 1.000000
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00036**	**.00061**	**.00005**	**.00016**	**.01904**	**.00032**	**.00167**
Stddev	.00004	.00003	.00002	.00003	.00127	.00005	.00065
%RSD	10.865	5.1488	51.069	19.667	6.6815	16.490	38.771
#1	-.00040	.00060	.00006	.00019	.01757	.00031	.00160
#2	-.00035	.00065	.00002	.00016	.01975	.00027	.00235
#3	-.00032	.00059	.00006	.00013	.01980	.00038	.00106

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00015**	**-.00017**	**.00004**	**-.00021**	**.00006**	**-.01469**	**.00597**
Stddev	.00008	.00007	.00003	.00005	.00046	.00508	.00079
%RSD	54.697	41.577	91.607	22.658	740.05	34.588	13.185
#1	.00010	-.00016	.00001	-.00017	.00030	-.00889	.00510
#2	.00011	-.00025	.00007	-.00026	-.00047	-.01835	.00664
#3	.00025	-.00011	.00003	-.00020	.00035	-.01685	.00616

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00038**	**.00101**	**.00006**	**-.00120**	**-.00048**	**-.00010**	**-.00092**
Stddev	.00023	.00072	.00002	.00653	.00005	.00001	.00016
%RSD	60.619	71.090	27.117	543.88	10.787	9.5099	16.913
#1	-.00055	.00020	.00007	.00475	-.00049	-.00011	-.00080
#2	-.00012	.00127	.00004	-.00016	-.00053	-.00009	-.00110
#3	-.00047	.00157	.00007	-.00819	-.00043	-.00009	-.00087

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00050**	**-.00005**	**.00050**	**.00004**	**.00412**	**-.00149**	**-.00016**
Stddev	.00008	.00007	.00004	.00004	.00070	.00044	.00003
%RSD	15.463	140.78	7.8986	83.596	16.995	29.499	20.531
#1	.00058	-.00012	.00048	.00000	.00332	-.00162	-.00019
#2	.00049	-.00000	.00048	.00007	.00463	-.00185	-.00013
#3	.00043	-.00002	.00055	.00006	.00440	-.00100	-.00016

Approved: November 24, 2015

Sample Name: S0 Acquired: 11/23/2015 14:14:07 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: IR Corr. Factor: 1.000000
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00009	.00008	-.00593
Stddev	.00003	.00002	.00251
%RSD	34.754	26.139	42.367
#1	.00009	.00011	-.00725
#2	.00013	.00007	-.00304
#3	.00006	.00008	-.00752
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16341.	102830.	2913.4
Stddev	17.	125.	16.8
%RSD	.10512	.12128	.57572
#1	16350.	102730.	2923.1
#2	16352.	102790.	2894.1
#3	16322.	102970.	2923.2

Approved: November 24, 2015

Sample Name: S1 Acquired: 11/23/2015 14:18:10 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: IR Corr. Factor: 1.000000
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00014	.00122	.03686	.00070	.00387	.00021	.00022
Stddev	.00003	.00003	.00034	.00004	.00059	.00003	.00006
%RSD	18.914	2.1969	.92414	5.1303	15.266	12.652	26.090
#1	-.00013	.00120	.03710	.00068	.00336	.00023	.00022
#2	-.00013	.00125	.03700	.00074	.00372	.00018	.00016
#3	-.00018	.00120	.03647	.00067	.00451	.00021	.00028

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00026	.00019	.00041	.01029	.00212	.00101	.06572
Stddev	.00002	.00008	.00015	.00289	.00089	.00004	.00275
%RSD	6.9577	44.420	37.904	28.128	41.814	3.9281	4.1911
#1	.00025	.00011	.00033	.01286	.00219	.00104	.06397
#2	.00026	.00017	.00031	.01084	.00120	.00096	.06429
#3	.00028	.00028	.00058	.00716	.00297	.00102	.06889

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00009	.00067	-.00068	.00065	.00159	.00043	.03267
Stddev	.00008	.00003	.00009	.00004	.00003	.00002	.00010
%RSD	89.939	4.9455	13.123	6.1467	1.8488	4.1111	.30513
#1	-.00014	.00069	-.00058	.00067	.00157	.00045	.03269
#2	.00000	.00063	-.00076	.00068	.00162	.00042	.03257
#3	-.00013	.00068	-.00069	.00061	.00157	.00042	.03277

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00088	.00047	.00246	-.00577
Stddev	.00039	.00001	.00002	.00155
%RSD	44.136	1.7266	.84136	26.863
#1	-.00054	.00048	.00244	-.00398
#2	-.00080	.00046	.00248	-.00659
#3	-.00130	.00047	.00245	-.00673

Approved: November 24, 2015

Sample Name: S1 Acquired: 11/23/2015 14:18:10 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: IR Corr. Factor: 1.000000
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	17241.	107200.	3054.6
Stddev	16.	100.	8.7
%RSD	.09188	.09364	.28441
#1	17246.	107270.	3060.6
#2	17254.	107090.	3058.5
#3	17223.	107250.	3044.6

Approved: November 24, 2015

Sample Name: S2 Acquired: 11/23/2015 14:22:14 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: IR Corr. Factor: 1.000000
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00002	.00179	.00016	.00031	.05431	.00100	.00807
Stddev	.00004	.00005	.00001	.00003	.00220	.00002	.00022
%RSD	259.62	2.8855	9.1914	11.011	4.0449	1.8119	2.7376
#1	-.00006	.00181	.00018	.00031	.05618	.00100	.00827
#2	.00001	.00182	.00016	.00028	.05189	.00098	.00783
#3	.00001	.00173	.00015	.00035	.05485	.00102	.00812

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00038	.00067	.00042	.00044	.00117	.02556	.02366
Stddev	.00002	.00007	.00003	.00004	.00016	.00426	.00026
%RSD	4.1348	10.577	7.4759	9.5973	13.809	16.674	1.0928
#1	.00040	.00075	.00046	.00042	.00100	.03043	.02396
#2	.00037	.00062	.00041	.00048	.00132	.02255	.02354
#3	.00038	.00064	.00040	.00040	.00118	.02368	.02349

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00030	.00297	.00203	.13396	.00036	.00130	-.00043
Stddev	.00021	.00040	.00004	.00170	.00013	.00003	.00005
%RSD	70.626	13.599	1.7619	1.2676	36.638	2.5628	10.997
#1	.00054	.00276	.00205	.13443	.00049	.00129	-.00047
#2	.00020	.00271	.00205	.13538	.00036	.00128	-.00038
#3	.00015	.00343	.00199	.13208	.00023	.00134	-.00044

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00091	-.00002	.00265	.00084	.06310	.00016	.00010
Stddev	.00004	.00004	.00006	.00002	.00091	.00073	.00002
%RSD	4.7420	230.12	2.3791	2.4870	1.4363	471.49	22.469
#1	.00094	-.00006	.00271	.00085	.06350	-.00057	.00011
#2	.00092	-.00002	.00265	.00085	.06374	.00090	.00011
#3	.00086	.00002	.00258	.00082	.06206	.00014	.00007

Approved: November 24, 2015

Sample Name: S2 Acquired: 11/23/2015 14:22:14 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: IR Corr. Factor: 1.000000
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00085	.00488	-.00551
Stddev	.00001	.00004	.00095
%RSD	1.5864	.88386	17.171
#1	.00087	.00491	-.00442
#2	.00086	.00490	-.00605
#3	.00084	.00483	-.00606
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	17141.	107650.	3040.1
Stddev	13.	215.	5.0
%RSD	.07643	.19980	.16353
#1	17137.	107470.	3044.9
#2	17130.	107600.	3040.3
#3	17156.	107890.	3035.0

Approved: November 24, 2015

Sample Name: S3 Acquired: 11/23/2015 14:26:05 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: IR Corr. Factor: 1.000000
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.01705	.07157	.00683	.00812	2.1970	.04441	.49393
Stddev	.00006	.00010	.00007	.00003	.0085	.00011	.00263
%RSD	.34683	.13744	.95274	.39558	.38556	.24558	.53243
#1	.01709	.07147	.00686	.00809	2.1980	.04436	.49472
#2	.01698	.07158	.00687	.00811	2.1881	.04433	.49100
#3	.01707	.07167	.00676	.00816	2.2050	.04453	.49607

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.01767	.05037	.02447	.04373	.07835	2.3782	.90461
Stddev	.00005	.00009	.00003	.00008	.00049	.0079	.00651
%RSD	.27102	.17675	.12506	.17933	.62459	.33314	.71914
#1	.01771	.05047	.02444	.04367	.07865	2.3828	.90924
#2	.01768	.05035	.02449	.04371	.07862	2.3691	.89717
#3	.01762	.05029	.02449	.04382	.07778	2.3828	.90741

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.04855	.13059	.13031	8.0408	.05178	.08870	.02237
Stddev	.00049	.00019	.00012	.0299	.00013	.00006	.00004
%RSD	1.0185	.14662	.09269	.37196	.25643	.06812	.18029
#1	.04810	.13078	.13043	8.0509	.05193	.08874	.02241
#2	.04908	.13039	.13030	8.0071	.05172	.08863	.02233
#3	.04848	.13060	.13019	8.0643	.05168	.08874	.02238

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.02618	.00463	.13748	.05143	3.7507	.12262	.01257
Stddev	.00003	.00005	.00013	.00003	.0144	.00098	.00004
%RSD	.11993	1.0228	.09333	.05034	.38259	.79865	.29808
#1	.02617	.00464	.13754	.05146	3.7553	.12341	.01259
#2	.02622	.00467	.13733	.05142	3.7346	.12152	.01253
#3	.02616	.00458	.13756	.05142	3.7621	.12291	.01260

Approved: November 24, 2015

Sample Name: S3 Acquired: 11/23/2015 14:26:05 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: IR Corr. Factor: 1.000000
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.04865	.29872	-.00173
Stddev	.00010	.00006	.00071
%RSD	.20685	.02125	41.082
#1	.04855	.29880	-.00247
#2	.04867	.29869	-.00105
#3	.04875	.29868	-.00167

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16824.	104800.	3020.1
Stddev	9.	358.	13.7
%RSD	.05581	.34165	.45370
#1	16825.	104550.	3004.4
#2	16833.	105210.	3027.0
#3	16814.	104650.	3029.0

Approved: November 24, 2015

Sample Name: S4 Acquired: 11/23/2015 14:29:49 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: IR Corr. Factor: 1.000000
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.03482	.14457	.01389	.01633	4.3859	.08957	.98600	.03566
Stddev	.00007	.00012	.00001	.00005	.0225	.00005	.00267	.00012
%RSD	.19630	.08278	.10567	.27577	.51206	.05396	.27122	.34807
#1	.03474	.14469	.01388	.01637	4.4024	.08951	.98775	.03554
#2	.03488	.14445	.01390	.01634	4.3603	.08958	.98293	.03564
#3	.03484	.14458	.01390	.01628	4.3948	.08961	.98733	.03579

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.10081	.04917	.08729	.15736	4.7508	1.7873	.09778	.26175
Stddev	.00009	.00004	.00020	.00019	.0269	.0073	.00012	.00187
%RSD	.08623	.08224	.22661	.12195	.56625	.40719	.12477	.71610
#1	.10085	.04917	.08706	.15717	4.7676	1.7942	.09779	.26203
#2	.10071	.04913	.08740	.15737	4.7198	1.7797	.09766	.25976
#3	.10088	.04922	.08740	.15755	4.7650	1.7881	.09790	.26348

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.26208	16.019	.10381	.18060	.04525	.05281	.00951	.27717
Stddev	.00041	.081	.00004	.00019	.00003	.00015	.00004	.00051
%RSD	.15700	.50284	.03502	.10664	.07268	.27853	.40245	.18322
#1	.26255	16.070	.10380	.18038	.04524	.05272	.00948	.27659
#2	.26187	15.927	.10378	.18073	.04523	.05273	.00949	.27738
#3	.26181	16.062	.10385	.18070	.04529	.05298	.00955	.27755

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.10350	7.5158	.25001	.02492	.09825	.59811	.00190
Stddev	.00010	.0358	.00106	.00003	.00021	.00020	.00192
%RSD	.09613	.47623	.42543	.11176	.21528	.03311	100.81
#1	.10343	7.5400	.25047	.02489	.09800	.59802	-.00002
#2	.10361	7.4747	.24879	.02495	.09837	.59796	.00381
#3	.10345	7.5326	.25076	.02493	.09837	.59833	.00191

Approved: November 24, 2015

Sample Name: S4 Acquired: 11/23/2015 14:29:49 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: IR Corr. Factor: 1.000000
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16587.	102930.	3033.5
Stddev	23.	120.	13.2
%RSD	.13814	.11641	.43644
#1	16606.	102820.	3024.5
#2	16595.	102910.	3048.7
#3	16562.	103060.	3027.3

Approved: November 24, 2015

Sample Name: ICV Acquired: 11/23/2015 14:33:31 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39476	10.102	.40567	.49905	1.0200	.05051	9.9817
Stddev	.00220	.005	.00137	.00232	.0052	.00005	.0709
%RSD	.55670	.04661	.33872	.46581	.51415	.10323	.71052
#1	.39668	10.096	.40648	.49885	1.0181	.05056	10.011
#2	.39236	10.105	.40408	.50146	1.0159	.05046	9.9009
#3	.39523	10.104	.40645	.49683	1.0259	.05050	10.033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05062	.20369	.50734	.50685	3.9878	50.411	.99774
Stddev	.00020	.00011	.00052	.00191	.0466	.264	.00522
%RSD	.39298	.05596	.10310	.37692	1.1679	.52425	.52274
#1	.05050	.20382	.50780	.50886	3.9524	50.241	.99556
#2	.05051	.20363	.50677	.50663	3.9706	50.276	.99397
#3	.05085	.20362	.50745	.50505	4.0406	50.716	1.0037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.238	.50051	.95433	50.409	.50635	9.9636	.50615
Stddev	.150	.00455	.00181	.244	.00080	.0010	.00347
%RSD	1.4608	.90880	.18926	.48429	.15790	.00985	.68620
#1	10.115	.49779	.95576	50.320	.50692	9.9647	.51001
#2	10.196	.49797	.95494	50.222	.50670	9.9628	.50328
#3	10.405	.50576	.95230	50.685	.50544	9.9635	.50517
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: November 24, 2015

Sample Name: ICV Acquired: 11/23/2015 14:33:31 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2049	.41034	5.1207	1.0272	.99248	.98492	.51172
Stddev	.0052	.00531	.0080	.0007	.00599	.00709	.00209
%RSD	.43141	1.2936	.15701	.06857	.60377	.71971	.40906
#1	1.2038	.41645	5.1119	1.0275	.98869	.99262	.51221
#2	1.2004	.40692	5.1228	1.0264	.98936	.97866	.50943
#3	1.2106	.40763	5.1275	1.0277	.99939	.98347	.51353
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.99947	1.0102	F .93564
Stddev	.00112	.0011	.17913
%RSD	.11235	.10856	19.145
#1	.99889	1.0100	.72922
#2	1.0008	1.0092	1.0274
#3	.99876	1.0113	1.0503
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-5.0000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16803.	104480.	3044.5
Stddev	22.	199.	7.2
%RSD	.13236	.19016	.23556
#1	16795.	104670.	3041.2
#2	16828.	104490.	3052.7
#3	16786.	104280.	3039.5

Approved: November 24, 2015

Sample Name: ICB Acquired: 11/23/2015 14:37:36 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00161	.00061	-.00039	.00472	.00047	.00002	-.01745
Stddev	.00090	.00219	.00124	.00166	.00048	.00003	.02132
%RSD	56.170	357.06	319.12	35.252	101.43	176.80	122.20
#1	.00112	-.00006	.00000	.00394	-.00006	-.00001	.00527
#2	.00265	-.00116	.00061	.00663	.00086	.00006	-.02059
#3	.00105	.00306	-.00178	.00358	.00062	.00001	-.03702
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	-.00000	.00073	.00016	.00288	.12763	.00082
Stddev	.00010	.00014	.00051	.00076	.00278	.11610	.00110
%RSD	97.741	6154.7	69.382	484.41	96.743	90.972	133.51
#1	-.00014	-.00016	.00015	-.00043	.00175	.08727	.00026
#2	-.00017	.00003	.00108	-.00012	.00605	.25852	.00209
#3	.00001	.00012	.00097	.00102	.00083	.03708	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.01379	-.00047	.00026	.02451	.00012	.00645	.00127
Stddev	.06808	.00266	.00026	.01028	.00030	.00704	.00164
%RSD	493.68	565.12	98.414	41.951	247.89	109.22	129.33
#1	.05785	.00095	-.00001	.02938	-.00004	.00468	.00186
#2	-.02158	-.00354	.00050	.01270	.00047	.00046	-.00059
#3	-.07764	.00118	.00029	.03145	-.00007	.01421	.00253
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 24, 2015

Sample Name: ICB Acquired: 11/23/2015 14:37:36 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00033	-.00585	-.00069	.00036	.00007	-.00147	.00082
Stddev	.00105	.00309	.00159	.00088	.00032	.00343	.00033
%RSD	316.47	52.917	231.54	248.71	489.39	233.37	39.685
#1	-.00124	-.00505	-.00217	.00092	.00033	.00190	.00119
#2	.00081	-.00323	.00099	-.00066	-.00029	-.00136	.00058
#3	-.00056	-.00926	-.00088	.00081	.00015	-.00495	.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00023	.00085	F .05747
Stddev	.00032	.00012	.54049
%RSD	140.54	14.387	940.48
#1	-.00000	.00078	-.07329
#2	-.00008	.00079	-.40565
#3	-.00060	.00099	.65134
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	17208.	108000.	3043.5
Stddev	59.	414.	7.0
%RSD	.34197	.38355	.22909
#1	17270.	108420.	3046.2
#2	17153.	108000.	3048.6
#3	17202.	107590.	3035.5

Approved: November 24, 2015

Sample Name: LLICV Acquired: 11/23/2015 14:41:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01006	.17963	.00758	.08721	.00956	.00172	.44134	.00082
Stddev	.00069	.00349	.00187	.00089	.00012	.00000	.00456	.00015
%RSD	6.8358	1.9420	24.721	1.0177	1.2800	.27707	1.0328	18.879
#1	.01053	.18342	.00974	.08823	.00966	.00172	.44062	.00086
#2	.01038	.17892	.00637	.08661	.00943	.00172	.44621	.00065
#3	.00927	.17655	.00663	.08678	.00960	.00172	.43718	.00095
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00432	.00414	.00510	.06159	.95537	.08781	.48750	.00941
Stddev	.00036	.00096	.00088	.04437	.04839	.00546	.06600	.00171
%RSD	8.3344	23.248	17.173	72.033	5.0652	6.2231	13.538	18.163
#1	.00433	.00303	.00600	.10725	1.0111	.08203	.42055	.00755
#2	.00468	.00467	.00426	.01864	.92406	.08850	.48945	.00976
#3	.00396	.00473	.00503	.05890	.93095	.09289	.55250	.01091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00789	.45823	.01874	.83174	.01215	.07893	.01530	.85222
Stddev	.00020	.00789	.00104	.00539	.00152	.00270	.00228	.00153
%RSD	2.5968	1.7226	5.5316	.64754	12.491	3.4206	14.898	.17989
#1	.00809	.45779	.01797	.83712	.01105	.08185	.01298	.85396
#2	.00768	.46633	.01992	.82635	.01388	.07843	.01754	.85163
#3	.00790	.45056	.01832	.83176	.01151	.07651	.01540	.85108
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 24, 2015

Sample Name: LLICV Acquired: 11/23/2015 14:41:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.43793	.04340	.02699	.18162	.00793	.01923	41.310
Stddev	.00165	.00027	.00336	.00114	.00094	.00012	.319
%RSD	.37690	.62500	12.461	.62890	11.853	.61446	.77285
#1	.43954	.04309	.02908	.18290	.00733	.01919	41.322
#2	.43802	.04348	.02311	.18071	.00901	.01914	41.623
#3	.43624	.04362	.02876	.18124	.00744	.01936	40.984
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	17221.	107950.	3041.7
Stddev	30.	159.	12.7
%RSD	.17568	.14704	.41888
#1	17193.	108130.	3052.7
#2	17217.	107890.	3027.8
#3	17253.	107830.	3044.7

Approved: November 24, 2015

Sample Name: LLICV Acquired: 11/23/2015 14:45:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01854	.36260	.01792	.17311	.01899	.00350	.85370
Stddev	.00073	.00531	.00208	.00207	.00065	.00002	.02138
%RSD	3.9300	1.4635	11.620	1.1957	3.4255	.70862	2.5049
#1	.01861	.35647	.01901	.17431	.01831	.00348	.83123
#2	.01922	.36569	.01923	.17072	.01905	.00349	.85607
#3	.01777	.36563	.01552	.17431	.01961	.00353	.87380
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00157	.00895	.00893	.00931	.16974	1.8699	.18366
Stddev	.00003	.00027	.00019	.00048	.01112	.0705	.00056
%RSD	2.1305	3.0434	2.1458	5.1245	6.5523	3.7715	.30377
#1	.00155	.00912	.00876	.00956	.15862	1.8087	.18323
#2	.00160	.00864	.00914	.00962	.18087	1.8540	.18345
#3	.00154	.00910	.00889	.00876	.16972	1.9470	.18429
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.92839	.01752	.01650	.91715	.03666	1.6943	.02105
Stddev	.07152	.00136	.00029	.02182	.00024	.0121	.00043
%RSD	7.7042	7.7658	1.7285	2.3787	.65267	.71123	2.0438
#1	.88120	.01643	.01628	.90164	.03639	1.6990	.02126
#2	1.0107	.01905	.01640	.90772	.03675	1.7033	.02134
#3	.89328	.01709	.01683	.94210	.03685	1.6806	.02056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 24, 2015

Sample Name: LLICV Acquired: 11/23/2015 14:45:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.16174	.02627	1.7190	.88846	.08720	.05818	.36862
Stddev	.00053	.00464	.0077	.00389	.00022	.00562	.00292
%RSD	.32957	17.679	.44925	.43794	.25071	9.6680	.79180
#1	.16208	.03067	1.7229	.89178	.08745	.05992	.37138
#2	.16113	.02673	1.7241	.88942	.08706	.06272	.36556
#3	.16202	.02142	1.7101	.88418	.08708	.05189	.36892
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.01679	.03743	F 90.654
Stddev	.00094	.00026	.637
%RSD	5.5869	.70100	.70281
#1	.01785	.03759	89.973
#2	.01607	.03756	91.236
#3	.01646	.03712	90.751
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	17311.	108230.	3047.1
Stddev	3.	251.	11.6
%RSD	.01738	.23230	.37973
#1	17314.	108440.	3058.0
#2	17308.	108310.	3035.0
#3	17312.	107950.	3048.3

Approved: November 24, 2015

Sample Name: ICSA Acquired: 11/23/2015 14:49:35 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	262.85	-.00206	-.03184	.00055	-.00009	233.30
Stddev	.00190	1.37	.00090	.00275	.00028	.00003	.97
%RSD	9090.5	.51961	43.800	8.6222	50.928	37.566	.41541
#1	.00013	263.91	-.00112	-.03375	.00043	-.00013	232.68
#2	.00180	263.33	-.00214	-.02869	.00035	-.00009	232.81
#3	-.00199	261.31	-.00293	-.03308	.00087	-.00006	234.42
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	-.00117	-.00093	F .00534	96.423	-.00617	.02116
Stddev	.00005	.00030	.00109	.00167	.525	.02146	.00377
%RSD	32.756	25.925	116.75	31.273	.54461	347.71	17.839
#1	-.00011	-.00114	-.00189	.00570	96.803	-.01448	.02520
#2	-.00014	-.00089	-.00115	.00679	95.824	-.02223	.01773
#3	-.00021	-.00149	.00025	.00352	96.643	.01820	.02055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				.00400			
Low Limit				-.00400			

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	247.25	.00106	-.00138	.02026	.00109	.03522	.00112
Stddev	1.31	.00129	.00030	.00855	.00105	.00174	.00078
%RSD	.53147	121.93	22.137	42.219	95.651	4.9529	69.599
#1	246.49	.00123	-.00158	.02949	.00227	.03373	.00192
#2	246.50	.00225	-.00152	.01868	.00025	.03714	.00107
#3	248.77	-.00031	-.00103	.01260	.00076	.03480	.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 24, 2015

Sample Name: ICSA Acquired: 11/23/2015 14:49:35 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00925	-.00000	.23399	.00112	-.00043	.00504	.00162
Stddev	.00607	.00816	.00029	.00070	.00009	.00134	.00159
%RSD	65.613	770310.	.12237	62.440	22.054	26.613	98.155
#1	.00224	-.00732	.23405	.00032	-.00050	.00601	.00034
#2	.01258	.00880	.23425	.00146	-.00032	.00351	.00341
#3	.01292	-.00148	.23368	.00159	-.00047	.00561	.00113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00095	-.00618	F -2.9493
Stddev	.00059	.00016	.0509
%RSD	61.800	2.5994	1.7254
#1	-.00162	-.00625	-3.0078
#2	-.00068	-.00630	-2.9152
#3	-.00054	-.00600	-2.9250
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02000
Low Limit			-.02000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15829.	98149.	2991.6
Stddev	7.	144.	10.9
%RSD	.04107	.14625	.36415
#1	15832.	97988.	2987.7
#2	15822.	98262.	3003.9
#3	15834.	98197.	2983.2

Approved: November 24, 2015

Sample Name: ICSAB Acquired: 11/23/2015 14:53:39 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52851	265.32	.25271	-.04934	.25372	.25304	234.96
Stddev	.00144	.99	.00160	.00085	.00198	.00005	1.34
%RSD	.27207	.37379	.63214	1.7263	.78184	.01792	.57125
#1	.52742	266.34	.25396	-.04836	.25290	.25306	234.23
#2	.53014	264.36	.25325	-.04988	.25228	.25308	234.15
#3	.52798	265.26	.25091	-.04978	.25599	.25299	236.51
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49132	.23832	.25064	.25202	96.887	5.3119	.01979
Stddev	.00104	.00073	.00074	.00222	.459	.1101	.00406
%RSD	.21149	.30573	.29486	.88039	.47416	2.0717	20.531
#1	.49192	.23906	.25074	.25103	96.880	5.2525	.02251
#2	.49193	.23830	.24986	.25456	96.432	5.2444	.02173
#3	.49012	.23760	.25133	.25047	97.350	5.4389	.01512
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	248.12	.24426	-.00174	5.2890	.48149	.10723	.49061
Stddev	1.87	.00088	.00045	.0367	.00155	.00444	.00257
%RSD	.75365	.35887	26.023	.69320	.32277	4.1378	.52316
#1	247.29	.24367	-.00185	5.2515	.48279	.10301	.48982
#2	246.82	.24386	-.00124	5.2908	.48192	.11186	.49348
#3	250.26	.24527	-.00213	5.3247	.47977	.10683	.48853
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 24, 2015

Sample Name: ICSAB Acquired: 11/23/2015 14:53:39 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51895	.25809	.00834	-.00050	-.00058	.00124	.48281
Stddev	.00916	.00345	.00124	.00066	.00031	.00522	.00308
%RSD	1.7643	1.3362	14.921	132.86	54.449	419.98	.63707
#1	.52946	.25411	.00746	-.00008	-.00094	.00540	.48634
#2	.51270	.26000	.00779	-.00126	-.00039	.00296	.48077
#3	.51469	.26016	.00976	-.00015	-.00040	-.00462	.48131
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.25115	.47565	F -3.7452
Stddev	.00104	.00159	.3432
%RSD	.41463	.33520	9.1633
#1	.25108	.47711	-4.0830
#2	.25014	.47590	-3.3969
#3	.25222	.47395	-3.7556
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02500
Low Limit			-.02500

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15862.	97766.	2970.9
Stddev	14.	228.	23.2
%RSD	.08650	.23285	.78202
#1	15847.	97605.	2987.8
#2	15873.	98027.	2980.6
#3	15867.	97667.	2944.4

Approved: November 24, 2015

Sample Name: CCV Acquired: 11/23/2015 14:57:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39529	9.9021	.39746	.49658	1.0051	.04973	10.023
Stddev	.00104	.0241	.00092	.00424	.0063	.00010	.028
%RSD	.26343	.24334	.23111	.85358	.63124	.19987	.28243
#1	.39496	9.9292	.39829	.50147	1.0073	.04985	10.050
#2	.39645	9.8939	.39647	.49408	.99791	.04966	9.9938
#3	.39445	9.8832	.39761	.49418	1.0100	.04970	10.024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05006	.20005	.50308	.50382	4.0543	50.546	.99268
Stddev	.00017	.00012	.00193	.00156	.0348	.229	.00500
%RSD	.33554	.05858	.38401	.30907	.85835	.45396	.50391
#1	.04997	.19992	.50495	.50473	4.0379	50.683	.99006
#2	.04995	.20012	.50109	.50471	4.0308	50.281	.98953
#3	.05025	.20012	.50320	.50202	4.0943	50.674	.99845
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.006	.49783	1.0023	50.490	.50607	9.9769	.50452
Stddev	.062	.00060	.0014	.186	.00068	.0193	.00045
%RSD	.61974	.12004	.13803	.36839	.13507	.19322	.09002
#1	10.077	.49842	1.0039	50.607	.50562	9.9721	.50402
#2	9.9712	.49784	1.0020	50.276	.50685	9.9981	.50491
#3	9.9684	.49722	1.0011	50.588	.50572	9.9604	.50462
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: November 24, 2015

Sample Name: CCV Acquired: 11/23/2015 14:57:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.1960	.40493	5.0465	.99839	1.0049	1.0064	.51062
Stddev	.0024	.00302	.0048	.00081	.0029	.0047	.00108
%RSD	.20273	.74538	.09539	.08161	.28463	.46443	.21066
#1	1.1937	.40429	5.0420	.99856	1.0048	1.0011	.51026
#2	1.1985	.40228	5.0515	.99911	1.0021	1.0088	.51182
#3	1.1959	.40822	5.0461	.99750	1.0078	1.0095	.50976
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0015	1.0062	F 2.7594
Stddev	.0019	.0013	.4868
%RSD	.19226	.12800	17.643
#1	1.0027	1.0075	2.2669
#2	1.0025	1.0060	2.7709
#3	.99931	1.0049	3.2404
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16703.	103970.	3021.4
Stddev	17.	249.	16.1
%RSD	.09905	.23926	.53325
#1	16685.	104080.	3031.4
#2	16709.	103690.	3002.8
#3	16716.	104150.	3030.0

Approved: November 24, 2015

Sample Name: CCB Acquired: 11/23/2015 15:01:20 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00111	.00786	-.00178	.00465	.00094	.00004	-.01356
Stddev	.00131	.00454	.00118	.00065	.00030	.00005	.01273
%RSD	117.44	57.810	66.278	13.979	31.595	137.16	93.860
#1	.00093	.00964	-.00299	.00470	.00125	.00010	-.00694
#2	-.00009	.01123	-.00064	.00397	.00092	.00001	-.02824
#3	.00250	.00269	-.00170	.00526	.00065	.00001	-.00551
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	-.00009	.00029	-.00029	.00921	.07606	.00353
Stddev	.00026	.00029	.00066	.00088	.01260	.05144	.00541
%RSD	156.37	311.47	224.73	304.32	136.90	67.629	153.26
#1	.00013	-.00028	-.00036	.00046	.00939	.05630	-.00264
#2	-.00026	.00024	.00097	-.00007	-.00349	.03743	.00746
#3	-.00037	-.00024	.00027	-.00126	.02172	.13444	.00578
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.06517	-.00053	.00031	.01213	.00110	.00149	.00397
Stddev	.08596	.00151	.00014	.02066	.00039	.00470	.00115
%RSD	131.91	283.95	43.841	170.30	34.967	314.66	28.937
#1	.15646	-.00122	.00022	-.01157	.00143	.00495	.00413
#2	.05328	.00120	.00025	.02163	.00068	.00338	.00502
#3	-.01423	-.00158	.00047	.02635	.00120	-.00385	.00275
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 24, 2015

Sample Name: CCB Acquired: 11/23/2015 15:01:20 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00372	-.00327	-.00160	.00028	-.00050	-.00239	.00170
Stddev	.00058	.00704	.00070	.00038	.00038	.00439	.00249
%RSD	15.732	215.36	43.433	135.21	76.233	183.50	146.67
#1	-.00439	-.00502	-.00235	.00006	-.00006	-.00422	.00025
#2	-.00335	-.00927	-.00098	.00072	-.00074	-.00556	.00027
#3	-.00341	.00448	-.00148	.00006	-.00070	.00262	.00458
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00090	.00011	F .15752
Stddev	.00051	.00020	.21317
%RSD	55.957	182.26	135.33
#1	-.00035	-.00011	.30468
#2	-.00103	.00015	.25483
#3	-.00134	.00029	-.08694
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	17166.	106970.	3009.4
Stddev	52.	254.	11.0
%RSD	.30458	.23707	.36466
#1	17106.	106950.	2999.3
#2	17205.	106720.	3021.1
#3	17186.	107230.	3007.9

Approved: November 24, 2015

Sample Name: PBS 6R Acquired: 11/23/2015 15:05:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment: WG547294-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	.00454	-.00120	.00276	.00162	.00001	-.02394
Stddev	.00050	.00872	.00327	.00039	.00030	.00002	.00261
%RSD	223.98	191.92	271.97	14.163	18.227	289.36	10.925
#1	-.00071	.00674	.00254	.00301	.00129	-.00000	-.02198
#2	-.00024	-.00506	-.00268	.00297	.00173	-.00000	-.02691
#3	.00028	.01195	-.00347	.00231	.00185	.00002	-.02292
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	.00001	.00072	.00082	-.01435	.02168	.00148
Stddev	.00010	.00018	.00100	.00052	.00615	.08673	.00175
%RSD	81.923	1559.4	139.04	62.659	42.877	400.12	118.34
#1	-.00003	-.00020	.00042	.00023	-.00872	-.01539	.00012
#2	-.00011	.00012	.00183	.00114	-.02091	-.04036	.00087
#3	-.00024	.00012	-.00010	.00110	-.01340	.12079	.00346
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.02171	.00053	-.00053	.00944	.00021	.00705	.00248
Stddev	.00694	.00126	.00025	.02165	.00005	.00181	.00127
%RSD	31.979	235.49	47.726	229.38	24.714	25.712	51.267
#1	-.02384	.00131	-.00029	.03227	.00018	.00754	.00276
#2	-.02733	-.00092	-.00080	.00682	.00018	.00857	.00109
#3	-.01395	.00121	-.00051	-.01078	.00027	.00504	.00359
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 24, 2015

Sample Name: PBS 6R Acquired: 11/23/2015 15:05:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment: WG547294-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00447	-.00483	.00287	-.00011	-.00022	-.00650	.00016
Stddev	.00134	.00327	.00165	.00026	.00023	.00452	.00113
%RSD	30.007	67.671	57.596	240.13	104.63	69.524	704.27
#1	-.00428	-.00494	.00159	.00017	-.00014	-.01145	.00094
#2	-.00324	-.00150	.00473	-.00035	-.00048	-.00544	-.00114
#3	-.00590	-.00803	.00227	-.00014	-.00005	-.00260	.00069
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00022	.00198	F -.21201
Stddev	.00015	.00001	.10302
%RSD	68.015	.32017	48.591
#1	.00009	.00199	-.10976
#2	.00019	.00197	-.31579
#3	.00038	.00198	-.21049
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16395.	103660.	2920.5
Stddev	25.	441.	12.6
%RSD	.15005	.42581	.43152
#1	16389.	103270.	2917.7
#2	16422.	104140.	2909.6
#3	16374.	103570.	2934.3

Approved: November 24, 2015

Sample Name: LCSS 6R Acquired: 11/23/2015 15:09:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment: WG547294-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20986	5.2507	.20658	1.0341	.54141	.02605	5.3426	.02635
Stddev	.00101	.0170	.00149	.0017	.00347	.00010	.0726	.00001
%RSD	.48233	.32418	.71886	.16452	.64030	.37887	1.3587	.04781
#1	.21007	5.2311	.20692	1.0342	.54521	.02606	5.4240	.02635
#2	.20876	5.2604	.20496	1.0323	.54057	.02614	5.3192	.02635
#3	.21075	5.2607	.20787	1.0357	.53843	.02594	5.2846	.02637
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10783	.26949	.26857	2.1246	26.813	.53644	5.3440	.26970
Stddev	.00034	.00139	.00047	.0108	.210	.00109	.0401	.00360
%RSD	.31111	.51619	.17348	.50793	.78205	.20273	.75080	1.3346
#1	.10820	.26795	.26805	2.1275	27.053	.53653	5.3723	.27206
#2	.10755	.27065	.26873	2.1336	26.721	.53530	5.2980	.27148
#3	.10773	.26986	.26894	2.1126	26.666	.53747	5.3615	.26556
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.54151	26.915	.27229	5.1986	.27043	.63324	.20719	2.6894
Stddev	.00110	.121	.00015	.0066	.00221	.00466	.00301	.0034
%RSD	.20348	.45062	.05471	.12684	.81879	.73528	1.4530	.12636
#1	.54277	27.055	.27231	5.1940	.27274	.62873	.20853	2.6888
#2	.54104	26.851	.27214	5.2062	.27024	.63803	.20930	2.6864
#3	.54072	26.839	.27243	5.1957	.26832	.63298	.20374	2.6931
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 24, 2015

Sample Name: LCSS 6R Acquired: 11/23/2015 15:09:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment: WG547294-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53771	.53539	.53791	.27028	.53699	.53176	1.9527
Stddev	.00040	.00345	.00646	.00194	.00151	.00117	.1005
%RSD	.07362	.64505	1.2006	.71853	.28144	.22077	5.1486
#1	.53781	.53927	.54331	.26968	.53776	.53266	1.8819
#2	.53805	.53428	.53076	.26871	.53795	.53219	1.9084
#3	.53727	.53264	.53965	.27245	.53525	.53043	2.0678
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15974.	99781.	2883.5
Stddev	12.	248.	24.5
%RSD	.07466	.24842	.84926
#1	15974.	99969.	2855.6
#2	15961.	99500.	2893.6
#3	15985.	99875.	2901.4

Approved: November 24, 2015

Sample Name: WG547294-01 Acquired: 11/23/2015 15:13:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00033	.04043	.00204	.02826	.02219	.00003	44.138	-.00014
Stddev	.00049	.00346	.00158	.00345	.00152	.00004	.034	.00009
%RSD	151.40	8.5580	77.549	12.211	6.8422	151.05	.07812	68.922
#1	.00024	.03755	.00239	.02972	.02216	-.00000	44.139	-.00022
#2	-.00062	.04427	.00031	.03075	.02069	.00007	44.172	-.00016
#3	-.00060	.03947	.00342	.02432	.02372	.00001	44.103	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.00131	.00098	.38304	2.7180	.00175	7.3194	.03678
Stddev	.00016	.00063	.00048	.00797	.0710	.00440	.0294	.00268
%RSD	229.84	48.232	49.003	2.0806	2.6111	251.07	.40228	7.2931
#1	-.00007	.00059	.00069	.38816	2.7987	.00130	7.3119	.03437
#2	.00025	.00161	.00072	.38710	2.6654	-.00240	7.2944	.03967
#3	.00004	.00174	.00154	.37386	2.6899	.00636	7.3519	.03630
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	6.4995	.00009	.01458	.00380	-.00476	-.00047	3.3084
Stddev	.00014	.0167	.00037	.00575	.00192	.00192	.00378	.0126
%RSD	466.59	.25739	428.80	39.440	50.375	40.369	809.70	.38053
#1	.00015	6.5171	-.00034	.00817	.00574	-.00695	.00144	3.3211
#2	-.00012	6.4838	.00033	.01927	.00376	-.00391	-.00482	3.3082
#3	.00005	6.4977	.00026	.01632	.00191	-.00341	.00198	3.2959
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 24, 2015

Sample Name: WG547294-01 Acquired: 11/23/2015 15:13:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.15281	-.00674	.00152	-.00116	.00476	.21635
Stddev	.00040	.00027	.00692	.00223	.00065	.00015	.35837
%RSD	334.77	.17829	102.63	146.20	56.192	3.0525	165.64
#1	.00037	.15281	-.00151	.00121	-.00049	.00479	.44926
#2	.00033	.15253	-.00412	-.00053	-.00178	.00489	.39612
#3	-.00034	.15308	-.01459	.00389	-.00120	.00461	-.19632
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16193.	101960.	2916.2
Stddev	14.	408.	13.3
%RSD	.08832	.40022	.45474
#1	16209.	102390.	2928.0
#2	16182.	101580.	2901.8
#3	16187.	101910.	2918.7

Approved: November 24, 2015

Sample Name: WG547294-04 Acquired: 11/23/2015 15:17:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21294	5.2779	.20719	1.0667	.56818	.02641	50.895	.02675
Stddev	.00064	.0137	.00268	.0022	.00118	.00004	.056	.00026
%RSD	.30067	.25948	1.2957	.20269	.20845	.16652	.10925	.97541
#1	.21338	5.2652	.20560	1.0677	.56900	.02640	50.940	.02653
#2	.21323	5.2762	.20568	1.0682	.56683	.02646	50.833	.02704
#3	.21221	5.2924	.21029	1.0642	.56873	.02638	50.911	.02668
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10798	.27119	.26989	2.5586	30.004	.54542	12.926	.30615
Stddev	.00024	.00130	.00120	.0325	.058	.00074	.043	.00180
%RSD	.21958	.47941	.44546	1.2713	.19270	.13549	.33312	.58660
#1	.10794	.27076	.26948	2.5766	30.060	.54457	12.951	.30759
#2	.10776	.27016	.27124	2.5210	30.008	.54590	12.876	.30673
#3	.10823	.27265	.26895	2.5781	29.945	.54579	12.951	.30414
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.55060	33.908	.26946	5.3004	.27129	.64206	.20705	6.1643
Stddev	.00174	.041	.00097	.0126	.00079	.00224	.00663	.0183
%RSD	.31529	.12200	.36074	.23740	.29132	.34948	3.2009	.29715
#1	.55232	33.950	.26860	5.3134	.27063	.64036	.21266	6.1824
#2	.55062	33.868	.27052	5.2995	.27216	.64460	.19974	6.1647
#3	.54885	33.907	.26927	5.2883	.27108	.64122	.20874	6.1457
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 24, 2015

Sample Name: WG547294-04 Acquired: 11/23/2015 15:17:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.54317	.69558	.53646	.27082	.54305	.53243	.51119
Stddev	.00102	.00084	.00824	.00266	.00106	.00033	.37819
%RSD	.18794	.12138	1.5356	.98243	.19602	.06257	73.983
#1	.54236	.69631	.52713	.27138	.54182	.53281	.65604
#2	.54282	.69576	.54273	.27316	.54371	.53223	.79554
#3	.54431	.69465	.53953	.26793	.54361	.53224	.08198
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15575.	97528.	2779.5
Stddev	21.	175.	11.2
%RSD	.13465	.17922	.40269
#1	15563.	97498.	2777.2
#2	15563.	97716.	2791.6
#3	15599.	97370.	2769.5

Approved: November 24, 2015

Sample Name: WG547294-05 Acquired: 11/23/2015 15:21:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21204	5.2657	.20708	1.0605	.56093	.02629	50.598	.02665
Stddev	.00063	.0163	.00127	.0018	.00169	.00003	.270	.00033
%RSD	.29651	.30973	.61287	.17026	.30212	.09515	.53403	1.2493
#1	.21276	5.2533	.20563	1.0626	.56176	.02629	50.551	.02652
#2	.21175	5.2842	.20799	1.0595	.56205	.02632	50.889	.02703
#3	.21160	5.2596	.20762	1.0594	.55898	.02627	50.355	.02640
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10690	.26898	.26536	2.5250	29.165	.54156	12.902	.30233
Stddev	.00037	.00096	.00032	.0266	.135	.01034	.080	.00146
%RSD	.34805	.35764	.11900	1.0514	.46425	1.9091	.61814	.48375
#1	.10716	.26803	.26517	2.5115	29.053	.54167	12.814	.30351
#2	.10707	.26898	.26572	2.5079	29.316	.55185	12.924	.30277
#3	.10647	.26995	.26518	2.5556	29.126	.53117	12.969	.30069
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.54428	33.242	.26449	5.2761	.26532	.63616	.20383	6.0998
Stddev	.00093	.152	.00093	.0135	.00086	.00245	.00918	.0039
%RSD	.16997	.45671	.35128	.25578	.32346	.38509	4.5032	.06347
#1	.54450	33.211	.26341	5.2621	.26625	.63416	.20265	6.0954
#2	.54508	33.407	.26506	5.2771	.26455	.63542	.19530	6.1021
#3	.54327	33.109	.26499	5.2890	.26516	.63889	.21355	6.1020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 24, 2015

Sample Name: WG547294-05 Acquired: 11/23/2015 15:21:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53922	.68896	.52596	.26717	.53953	.52678	.73619
Stddev	.00028	.00190	.00486	.00089	.00138	.00096	.31295
%RSD	.05259	.27645	.92362	.33497	.25493	.18142	42.509
#1	.53952	.68918	.52106	.26630	.53953	.52719	.39095
#2	.53896	.69075	.52602	.26711	.53816	.52745	1.0013
#3	.53916	.68696	.53078	.26809	.54091	.52568	.81638
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15732.	98370.	2849.3
Stddev	45.	196.	13.0
%RSD	.28807	.19909	.45615
#1	15717.	98480.	2838.4
#2	15696.	98144.	2845.7
#3	15783.	98487.	2863.7

Approved: November 24, 2015

Sample Name: L1511094302 Acquired: 11/23/2015 15:24:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00122	.02675	.00164	.03051	.02852	.00006	77.056
Stddev	.00053	.00357	.00248	.00043	.00107	.00002	.196
%RSD	43.413	13.342	150.99	1.4038	3.7681	31.550	.25461
#1	-.00105	.02562	.00170	.03066	.02848	.00006	77.210
#2	-.00080	.03075	.00409	.03085	.02961	.00007	77.123
#3	-.00181	.02388	-.00087	.03003	.02746	.00004	76.835
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.00062	.00129	.00206	F -.02099	.82337	.06995
Stddev	.00029	.00038	.00072	.00087	.00938	.15082	.00386
%RSD	285.36	61.040	55.972	42.205	44.691	18.318	5.5219
#1	.00043	.00019	.00167	.00162	-.01714	.97744	.06969
#2	-.00013	.00089	.00046	.00150	-.01415	.81665	.07393
#3	.00001	.00076	.00175	.00306	-.03169	.67602	.06622
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	45.850	.04293	.00003	F 270.96	.00107	.09804	-.00066
Stddev	.270	.00090	.00017	.71	.00096	.00614	.00323
%RSD	.58935	2.1043	525.35	.26071	90.071	6.2667	488.18
#1	45.602	.04383	-.00015	271.34	.00119	.09687	-.00306
#2	46.138	.04294	.00020	271.39	.00005	.10468	-.00193
#3	45.810	.04202	.00005	270.14	.00196	.09256	.00301
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: November 24, 2015

Sample Name: L1511094302 Acquired: 11/23/2015 15:24:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00163	-.00768	17.293	-.00016	1.1994	-.01247	-.00017
Stddev	.00479	.00093	.016	.00063	.0034	.00718	.00075
%RSD	294.33	12.157	.09048	386.54	.28444	57.576	440.45
#1	-.00701	-.00872	17.305	.00021	1.2028	-.01522	-.00104
#2	.00216	-.00690	17.298	-.00089	1.1995	-.00432	.00032
#3	-.00003	-.00743	17.275	.00019	1.1959	-.01788	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00068	.00345	.13829
Stddev	.00061	.00012	.66714
%RSD	90.482	3.4874	482.44
#1	.00116	.00348	.46002
#2	-.00001	.00354	.58360
#3	.00089	.00331	-.62875
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15497.	95977.	2860.4
Stddev	20.	86.	4.7
%RSD	.13191	.08952	.16484
#1	15509.	95965.	2858.1
#2	15473.	96068.	2857.3
#3	15508.	95898.	2865.8

Approved: November 24, 2015

Sample Name: L1511094304 Acquired: 11/23/2015 15:28:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	.02494	-.00016	.11824	.02710	-.00001	227.60
Stddev	.00086	.00576	.00104	.00176	.00052	.00003	.38
%RSD	370.13	23.088	630.43	1.4843	1.9190	361.65	.16854
#1	-.00067	.01888	.00042	.11721	.02711	-.00000	227.71
#2	.00105	.02558	-.00136	.11724	.02657	-.00005	227.18
#3	.00031	.03034	.00045	.12026	.02761	.00002	227.92
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00080	.00307	.00220	.02872	2.4531	.10022
Stddev	.00021	.00031	.00022	.00128	.00384	.0769	.00669
%RSD	75.900	38.641	7.1464	58.300	13.379	3.1356	6.6800
#1	.00013	.00049	.00333	.00362	.03156	2.3948	.10700
#2	.00051	.00110	.00297	.00113	.02435	2.4242	.09362
#3	.00018	.00079	.00293	.00185	.03025	2.5403	.10003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	98.300	.00319	-.00017	F 457.92	.00081	.08611	.00262
Stddev	.338	.00032	.00038	.55	.00074	.00216	.00165
%RSD	.34350	10.064	228.07	.11947	90.480	2.5056	62.789
#1	98.153	.00283	-.00060	458.07	.00010	.08419	.00072
#2	98.061	.00342	.00010	457.32	.00076	.08844	.00347
#3	98.686	.00333	-.00000	458.38	.00157	.08570	.00367
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: November 24, 2015

Sample Name: L1511094304 Acquired: 11/23/2015 15:28:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00266	-.00591	15.759	-.00054	2.7320	F -.03588	-.00113
Stddev	.00539	.00434	.030	.00062	.0030	.00114	.00140
%RSD	202.73	73.522	.18758	114.43	.10958	3.1835	123.95
#1	-.00781	-.00449	15.781	-.00087	2.7332	-.03586	-.00226
#2	.00295	-.00245	15.771	-.00091	2.7286	-.03476	-.00156
#3	-.00312	-.01078	15.726	.00017	2.7342	-.03704	.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00093	.00380	.24432
Stddev	.00018	.00004	.33618
%RSD	19.259	1.0104	137.60
#1	-.00098	.00384	.53345
#2	-.00073	.00378	.32406
#3	-.00108	.00377	-.12456
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	14899.	91974.	2818.3
Stddev	26.	34.	11.2
%RSD	.17569	.03670	.39671
#1	14871.	91974.	2811.5
#2	14922.	91940.	2831.2
#3	14905.	92008.	2812.3

Approved: November 24, 2015

Sample Name: L1511094306 Acquired: 11/23/2015 15:32:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.02908	.00263	.01978	.05553	.00007	79.212	-.00001
Stddev	.00116	.00362	.00050	.00229	.00060	.00005	.003	.00015
%RSD	167.46	12.457	19.133	11.581	1.0891	70.815	.00405	1008.3
#1	-.00052	.03234	.00284	.01716	.05573	.00005	79.214	-.00018
#2	.00081	.02518	.00206	.02137	.05602	.00013	79.208	.00008
#3	.00178	.02972	.00300	.02082	.05486	.00004	79.213	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.00336	.00089	.01334	1.2712	.03602	32.491	.00806
Stddev	.00038	.00016	.00054	.01448	.0555	.00236	.039	.00080
%RSD	204.25	4.8221	59.958	108.60	4.3687	6.5595	.12128	9.9394
#1	-.00025	.00354	.00030	.02133	1.2791	.03850	32.532	.00811
#2	.00040	.00323	.00106	-.00338	1.3224	.03575	32.489	.00883
#3	.00040	.00330	.00133	.02206	1.2122	.03380	32.453	.00723
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00064	206.59	.00108	.17828	.00259	-.00182	-.00055	17.498
Stddev	.00015	.20	.00046	.00733	.00326	.00159	.00083	.042
%RSD	23.777	.09879	42.878	4.1124	125.68	87.413	150.66	.23795
#1	-.00081	206.81	.00083	.18673	-.00110	-.00026	.00026	17.533
#2	-.00060	206.52	.00161	.17361	.00508	-.00176	-.00051	17.510
#3	-.00052	206.42	.00079	.17451	.00379	-.00343	-.00139	17.452
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 24, 2015

Sample Name: L1511094306 Acquired: 11/23/2015 15:32:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00031	.74001	-.01159	.00096	.00016	.00260	.14239
Stddev	.00037	.00066	.00391	.00060	.00022	.00001	.05736
%RSD	120.94	.08865	33.716	62.771	139.21	.43806	40.288
#1	.00000	.74016	-.00787	.00113	.00017	.00260	.13538
#2	-.00020	.73928	-.01123	.00029	.00037	.00259	.20293
#3	-.00072	.74057	-.01566	.00146	-.00007	.00262	.08885
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15430.	96050.	2832.2
Stddev	15.	251.	19.6
%RSD	.09579	.26097	.69235
#1	15437.	95869.	2815.7
#2	15441.	96336.	2827.1
#3	15413.	95944.	2853.9

Approved: November 24, 2015

Sample Name: L1511094306PS Acquired: 11/23/2015 15:36:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment: WG547398-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21009	5.1848	.20737	1.0594	.57744	.02652	76.807	.02614
Stddev	.00141	.0077	.00161	.0083	.00082	.00015	.050	.00026
%RSD	.67323	.14830	.77722	.78518	.14198	.55602	.06462	.99230
#1	.21089	5.1890	.20580	1.0509	.57694	.02637	76.797	.02641
#2	.20845	5.1759	.20728	1.0596	.57839	.02654	76.764	.02589
#3	.21091	5.1894	.20902	1.0676	.57700	.02666	76.861	.02612
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10433	.26884	.26042	2.0916	27.747	.55751	34.452	.26955
Stddev	.00036	.00035	.00129	.0286	.111	.00216	.011	.00223
%RSD	.34891	.12905	.49356	1.3689	.39934	.38662	.03072	.82756
#1	.10454	.26856	.26130	2.0597	27.855	.55572	34.448	.26880
#2	.10391	.26923	.25894	2.1002	27.633	.55990	34.464	.27206
#3	.10455	.26875	.26101	2.1150	27.753	.55691	34.444	.26779
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53406	211.29	.25941	5.4287	.25930	.62746	.21352	18.416
Stddev	.00041	.12	.00057	.0042	.00264	.00507	.00666	.008
%RSD	.07651	.05697	.21907	.07662	1.0181	.80729	3.1180	.04581
#1	.53388	211.19	.26001	5.4308	.25894	.62541	.21206	18.419
#2	.53453	211.42	.25934	5.4315	.26210	.62374	.22079	18.421
#3	.53377	211.25	.25887	5.4240	.25686	.63322	.20772	18.406
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 24, 2015

Sample Name: L1511094306PS Acquired: 11/23/2015 15:36:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment: WG547398-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52912	1.1883	.51956	.25110	.53844	.52038	.32569
Stddev	.00161	.0022	.00302	.00291	.00113	.00066	.03701
%RSD	.30501	.18738	.58055	1.1573	.20901	.12706	11.364
#1	.52757	1.1859	.52238	.25440	.53715	.51988	.30457
#2	.53079	1.1888	.51991	.24892	.53923	.52113	.30407
#3	.52901	1.1903	.51638	.24999	.53894	.52013	.36842
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15491.	95605.	2824.4
Stddev	20.	68.	7.8
%RSD	.13210	.07114	.27635
#1	15477.	95584.	2823.6
#2	15483.	95549.	2832.6
#3	15515.	95681.	2817.0

Approved: November 24, 2015

Sample Name: L1511094306DL Acquired: 11/23/2015 15:40:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG547398-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00177	.00056	.00005	.00961	.01068	.00003	15.115	-.00022
Stddev	.00109	.00178	.00100	.00126	.00066	.00005	.052	.00029
%RSD	61.756	315.63	2153.0	13.156	6.1381	151.77	.34492	132.71
#1	.00289	-.00096	-.00082	.01022	.01136	-.00001	15.076	-.00024
#2	.00173	.00252	-.00019	.00815	.01006	.00002	15.093	.00008
#3	.00070	.00013	.00114	.01045	.01061	.00008	15.174	-.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.00036	.00143	.01879	.36621	.00800	6.2861	.00232
Stddev	.00025	.00074	.00042	.00881	.06268	.00367	.0335	.00147
%RSD	535.48	207.90	29.573	46.883	17.116	45.867	.53276	63.567
#1	-.00015	-.00013	.00109	.02892	.37615	.00897	6.2805	.00397
#2	-.00004	.00121	.00190	.01299	.42333	.01109	6.3220	.00188
#3	.00033	-.00001	.00129	.01445	.29916	.00394	6.2557	.00112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	39.182	.00049	.04427	.00093	-.00044	-.00146	3.3006
Stddev	.00034	.088	.00040	.00663	.00038	.00235	.00375	.0077
%RSD	397.61	.22397	81.103	14.968	41.169	535.36	257.03	.23273
#1	.00037	39.264	.00087	.04045	.00122	-.00136	-.00556	3.2924
#2	.00018	39.089	.00051	.05192	.00109	.00224	-.00062	3.3015
#3	-.00029	39.193	.00008	.04043	.00050	-.00219	.00180	3.3077
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 24, 2015

Sample Name: L1511094306DL Acquired: 11/23/2015 15:40:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG547398-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.13909	-.00382	.00107	.00009	.00250	.19170
Stddev	.00035	.00031	.00557	.00133	.00040	.00011	.11315
%RSD	187.34	.21973	145.90	124.44	466.12	4.5756	59.025
#1	-.00007	.13874	-.00518	.00221	-.00016	.00247	.23935
#2	.00059	.13928	.00231	-.00040	.00055	.00241	.27323
#3	.00005	.13926	-.00857	.00140	-.00013	.00263	.06252
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	17523.	108750.	3110.3
Stddev	36.	198.	10.9
%RSD	.20565	.18227	.35195
#1	17533.	108980.	3097.7
#2	17554.	108650.	3117.5
#3	17484.	108630.	3115.6

Approved: November 24, 2015

Sample Name: CCV Acquired: 11/23/2015 15:44:40 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39789	9.9803	.40169	.50126	1.0121	.05037	10.108	.05048
Stddev	.00127	.0049	.00054	.00208	.0041	.00011	.027	.00016
%RSD	.31907	.04897	.13321	.41489	.40534	.21563	.26389	.31973
#1	.39886	9.9779	.40227	.49941	1.0103	.05033	10.121	.05033
#2	.39836	9.9770	.40121	.50351	1.0093	.05050	10.078	.05046
#3	.39646	9.9859	.40159	.50085	1.0168	.05029	10.127	.05066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20264	.50936	.50678	4.0369	50.766	1.0059	10.131	.50432
Stddev	.00049	.00123	.00097	.0313	.198	.0082	.031	.00628
%RSD	.24062	.24122	.19057	.77594	.38938	.81109	.30577	1.2446
#1	.20216	.50998	.50587	4.0100	50.869	.99941	10.105	.50031
#2	.20313	.50795	.50668	4.0295	50.538	1.0033	10.166	.50109
#3	.20263	.51017	.50779	4.0713	50.892	1.0151	10.124	.51155
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0077	50.729	.50871	10.038	.50616	1.2089	.41132	5.0825
Stddev	.0013	.239	.00144	.017	.00266	.0018	.01005	.0127
%RSD	.13106	.47199	.28378	.17159	.52648	.14911	2.4430	.24910
#1	1.0087	50.677	.50783	10.022	.50316	1.2097	.39988	5.0862
#2	1.0081	50.520	.50794	10.036	.50823	1.2068	.41536	5.0684
#3	1.0062	50.990	.51038	10.056	.50710	1.2102	.41873	5.0929
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: November 24, 2015

Sample Name: CCV Acquired: 11/23/2015 15:44:40 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0140	1.0136	1.0104	.50761	1.0138	1.0113	.97833
Stddev	.0021	.0059	.0089	.00099	.0026	.0008	.23237
%RSD	.20379	.58649	.88061	.19478	.25537	.07678	23.751
#1	1.0156	1.0105	1.0149	.50814	1.0162	1.0108	.71816
#2	1.0117	1.0097	1.0002	.50647	1.0110	1.0108	1.1652
#3	1.0148	1.0204	1.0162	.50822	1.0143	1.0122	1.0516
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16777.	103520.	3001.3
Stddev	10.	262.	3.1
%RSD	.06161	.25334	.10173
#1	16774.	103260.	3004.2
#2	16768.	103510.	3001.5
#3	16788.	103790.	2998.1

Approved: November 24, 2015

Sample Name: CCB Acquired: 11/23/2015 15:48:23 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.00104	.00031	.00571	.00079	.00005	-.01161
Stddev	.00089	.00163	.00182	.00148	.00049	.00002	.02271
%RSD	510.46	156.40	581.71	26.002	62.258	39.118	195.61
#1	.00018	-.00026	.00241	.00690	.00130	.00008	-.03663
#2	-.00072	.00288	-.00064	.00618	.00032	.00004	.00770
#3	.00106	.00052	-.00084	.00405	.00074	.00004	-.00590
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	.00020	.00060	-.00059	-.00796	.02804	-.00356
Stddev	.00016	.00031	.00048	.00077	.00616	.04479	.00445
%RSD	43.762	153.58	79.926	130.06	77.353	159.72	124.92
#1	-.00037	-.00003	.00076	.00007	-.00184	.06042	.00157
#2	-.00051	.00056	.00006	-.00144	-.01416	-.02307	-.00585
#3	-.00019	.00008	.00098	-.00041	-.00789	.04678	-.00639
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04301	.00122	.00042	.06762	-.00008	.00278	.00329
Stddev	.05996	.00173	.00026	.00570	.00068	.00297	.00139
%RSD	139.41	141.74	62.938	8.4359	847.65	106.91	42.142
#1	-.02620	-.00048	.00014	.06824	-.00084	.00317	.00282
#2	.07608	.00297	.00045	.07298	.00011	.00554	.00220
#3	.07914	.00117	.00067	.06163	.00049	-.00037	.00485
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 24, 2015

Sample Name: CCB Acquired: 11/23/2015 15:48:23 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00257	-.00359	.00100	.00028	-.00029	.00139	.00086
Stddev	.00225	.00264	.00062	.00051	.00014	.00331	.00080
%RSD	87.805	73.656	62.067	181.61	49.567	238.26	93.409
#1	-.00326	-.00260	.00077	-.00023	-.00026	.00314	.00072
#2	-.00439	-.00659	.00052	.00029	-.00044	-.00243	.00172
#3	-.00005	-.00158	.00170	.00078	-.00016	.00344	.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00023	-.00005	F .10217
Stddev	.00020	.00006	.20376
%RSD	90.250	111.44	199.43
#1	.00013	.00001	-.05593
#2	.00008	-.00011	.03032
#3	.00046	-.00006	.33212
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	17067.	106620.	3003.2
Stddev	36.	232.	21.8
%RSD	.21183	.21801	.72666
#1	17109.	106820.	3009.2
#2	17046.	106360.	3021.3
#3	17047.	106690.	2979.0

Approved: November 24, 2015

Sample Name: L1511094308 Acquired: 11/23/2015 15:52:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00113	.02752	.00025	.02786	.32400	.00008	F 320.59
Stddev	.00120	.00063	.00185	.00189	.00126	.00004	.67
%RSD	106.55	2.2926	739.46	6.7825	.38907	53.240	.20929
#1	.00022	.02679	.00230	.02830	.32336	.00004	320.15
#2	-.00207	.02788	-.00026	.02579	.32545	.00007	321.36
#3	-.00153	.02788	-.00128	.02949	.32319	.00012	320.25
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.00072	.00350	.00274	-.00154	3.2799	.10760
Stddev	.00016	.00028	.00012	.00072	.01646	.0348	.00153
%RSD	23.143	39.010	3.4445	26.211	1071.2	1.0605	1.4185
#1	.00053	.00096	.00363	.00196	.01622	3.2478	.10723
#2	.00085	.00078	.00339	.00337	-.01628	3.2752	.10629
#3	.00067	.00041	.00347	.00289	-.00455	3.3168	.10927
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	141.00	.03677	-.00031	F 432.39	.00866	.08220	.00319
Stddev	.53	.00254	.00035	.77	.00059	.00710	.00382
%RSD	.37859	6.9132	111.66	.17920	6.8093	8.6378	119.71
#1	140.39	.03833	.00003	431.98	.00874	.08966	.00014
#2	141.38	.03383	-.00066	433.28	.00804	.07552	.00196
#3	141.24	.03813	-.00031	431.91	.00921	.08141	.00748
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: November 24, 2015

Sample Name: L1511094308 Acquired: 11/23/2015 15:52:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00168	-.00251	18.443	.00042	3.4739	F -.04823	-.00001
Stddev	.00229	.00168	.038	.00037	.0084	.00253	.00125
%RSD	136.32	66.836	.20799	88.149	.24300	5.2383	12145.
#1	.00084	-.00360	18.479	.00000	3.4666	-.04807	-.00112
#2	-.00225	-.00337	18.446	.00055	3.4831	-.05083	.00134
#3	-.00364	-.00058	18.403	.00070	3.4720	-.04578	-.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00023	.00475	.29925
Stddev	.00063	.00014	.14050
%RSD	271.73	2.9176	46.949
#1	.00003	.00486	.25159
#2	.00023	.00480	.45738
#3	-.00095	.00460	.18878
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	14650.	90381.	2752.0
Stddev	11.	255.	6.7
%RSD	.07397	.28232	.24253
#1	14650.	90590.	2759.7
#2	14661.	90457.	2747.6
#3	14639.	90097.	2748.8

Approved: November 24, 2015

Sample Name: L1511094310 Acquired: 11/23/2015 15:56:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00059	.02678	-.00054	.01797	.06760	.00005	125.86
Stddev	.00156	.00250	.00213	.00113	.00048	.00003	.24
%RSD	265.60	9.3430	390.38	6.3152	.70474	51.884	.19019
#1	-.00039	.02456	-.00296	.01716	.06716	.00007	126.05
#2	-.00225	.02949	.00105	.01747	.06811	.00002	125.93
#3	.00086	.02628	.00028	.01927	.06753	.00006	125.59
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.00062	.00284	.00110	.07823	1.3555	.05990
Stddev	.00008	.00032	.00031	.00113	.01884	.0356	.00359
%RSD	24.416	51.990	10.981	103.16	24.079	2.6266	5.9909
#1	.00028	.00099	.00314	.00131	.09937	1.3696	.05605
#2	.00031	.00044	.00287	.00210	.07209	1.3819	.06049
#3	.00044	.00043	.00252	-.00013	.06323	1.3150	.06316
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	64.751	.04765	-.00013	F 309.25	.00294	.12890	-.00112
Stddev	.289	.00209	.00004	.40	.00096	.00404	.00042
%RSD	.44677	4.3886	30.858	.12852	32.565	3.1316	37.153
#1	64.712	.04794	-.00009	309.49	.00348	.13273	-.00083
#2	65.058	.04958	-.00014	309.46	.00183	.12928	-.00160
#3	64.483	.04543	-.00016	308.79	.00350	.12468	-.00093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: November 24, 2015

Sample Name: L1511094310 Acquired: 11/23/2015 15:56:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00055	-.00284	18.657	.00028	1.3586	-.01991	.00103
Stddev	.00331	.00349	.014	.00039	.0028	.00156	.00112
%RSD	599.14	122.82	.07375	141.94	.20315	7.8425	109.18
#1	-.00008	-.00329	18.668	.00068	1.3603	-.02058	.00156
#2	-.00407	.00085	18.660	.00025	1.3601	-.01812	-.00026
#3	.00250	-.00608	18.641	-.00010	1.3554	-.02101	.00178
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00012	.00282	.24415
Stddev	.00074	.00030	.19982
%RSD	630.79	10.702	81.842
#1	-.00028	.00288	.29407
#2	.00069	.00308	.02411
#3	-.00077	.00249	.41428
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15258.	94266.	2837.8
Stddev	10.	181.	7.2
%RSD	.06538	.19210	.25205
#1	15248.	94262.	2837.4
#2	15268.	94449.	2830.8
#3	15257.	94087.	2845.1

Approved: November 24, 2015

Sample Name: L1511094312 Acquired: 11/23/2015 16:00:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	.02021	.00627	.04842	.09023	.00005	35.200	.00010
Stddev	.00126	.00613	.00330	.00223	.00042	.00001	.058	.00014
%RSD	172.81	30.348	52.582	4.6002	.46468	21.119	.16524	140.29
#1	.00196	.01685	.00264	.04642	.09050	.00004	35.230	.00008
#2	-.00056	.01649	.00709	.04803	.09044	.00004	35.236	.00025
#3	.00080	.02728	.00908	.05082	.08975	.00006	35.133	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	.00311	.00151	.87925	3.7655	.05890	11.715	.05755
Stddev	.00003	.00057	.00131	.01231	.0867	.00350	.031	.00270
%RSD	7.0679	18.357	86.938	1.4002	2.3031	5.9469	.26805	4.6918
#1	.00043	.00261	.00256	.87931	3.8073	.06098	11.693	.05708
#2	.00037	.00373	.00004	.89153	3.6657	.06087	11.702	.06046
#3	.00039	.00299	.00192	.86691	3.8233	.05486	11.751	.05512
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00163	101.05	.00079	.05025	.00143	-.00049	-.00303	15.402
Stddev	.00029	.27	.00066	.00590	.00480	.00103	.00453	.018
%RSD	17.545	.26281	83.603	11.740	336.29	210.13	149.49	.11556
#1	.00171	101.00	.00155	.05677	.00679	.00021	-.00825	15.419
#2	.00187	101.34	.00050	.04871	-.00247	-.00001	-.00082	15.403
#3	.00131	100.81	.00033	.04527	-.00004	-.00167	-.00003	15.384
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 24, 2015

Sample Name: L1511094312 Acquired: 11/23/2015 16:00:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	1.2774	-.00590	-.00116	-.00086	.00317	.07274
Stddev	.00031	.0038	.00309	.00061	.00013	.00020	.23051
%RSD	116.02	.29918	52.429	52.942	15.671	6.3360	316.90
#1	-.00004	1.2755	-.00267	-.00152	-.00070	.00308	.08862
#2	.00027	1.2818	-.00884	-.00151	-.00095	.00304	.29490
#3	.00058	1.2748	-.00618	-.00045	-.00092	.00340	-.16530
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15926.	98976.	2874.0
Stddev	13.	139.	11.0
%RSD	.07860	.14090	.38370
#1	15920.	99137.	2862.9
#2	15941.	98889.	2874.0
#3	15918.	98903.	2885.0

Approved: November 24, 2015

Sample Name: CCV Acquired: 11/23/2015 16:04:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39773	9.9913	.40332	.50405	1.0158	.05059	10.119
Stddev	.00152	.0183	.00235	.00435	.0024	.00004	.040
%RSD	.38138	.18295	.58169	.86353	.23178	.08429	.39697
#1	.39598	9.9752	.40172	.50099	1.0153	.05058	10.081
#2	.39864	9.9874	.40222	.50214	1.0137	.05064	10.116
#3	.39858	10.011	.40601	.50904	1.0183	.05056	10.161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05047	.20292	.51422	.50826	4.0445	51.164	1.0052
Stddev	.00025	.00027	.00193	.00203	.0182	.054	.0069
%RSD	.49409	.13290	.37458	.40017	.44927	.10595	.68494
#1	.05030	.20319	.51275	.51037	4.0447	51.161	.99888
#2	.05076	.20291	.51351	.50810	4.0626	51.220	1.0042
#3	.05036	.20265	.51640	.50631	4.0263	51.112	1.0125
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.103	.50544	1.0065	51.083	.50899	10.058	.50757
Stddev	.105	.00140	.0003	.083	.00198	.005	.00324
%RSD	1.0354	.27665	.03082	.16229	.38997	.04968	.63854
#1	10.196	.50465	1.0069	51.044	.51122	10.057	.50424
#2	9.9895	.50706	1.0063	51.027	.50835	10.064	.50776
#3	10.124	.50463	1.0064	51.178	.50741	10.054	.51071
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: November 24, 2015

Sample Name: CCV Acquired: 11/23/2015 16:04:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2136**	**.40874**	**5.0943**	**1.0153**	**1.0180**	**1.0181**	**.51490**
Stddev	.0047	.00138	.0126	.0017	.0027	.0063	.00109
%RSD	.38560	.33789	.24660	.17057	.27058	.62118	.21263
#1	1.2134	.40819	5.0971	1.0173	1.0186	1.0111	.51499
#2	1.2091	.40771	5.0806	1.0141	1.0150	1.0232	.51594
#3	1.2184	.41031	5.1052	1.0145	1.0204	1.0201	.51376
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0198**	**1.0146**	F **.85038**
Stddev	.0022	.0004	.39581
%RSD	.21306	.04030	46.546
#1	1.0191	1.0148	.43140
#2	1.0180	1.0149	.90172
#3	1.0222	1.0142	1.2180
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**16782.**	**103280.**	**2987.3**
Stddev	2.	273.	8.3
%RSD	.01208	.26404	.27945
#1	16784.	103570.	2978.2
#2	16782.	103030.	2989.2
#3	16780.	103240.	2994.5

Approved: November 24, 2015

Sample Name: CCB Acquired: 11/23/2015 16:08:00 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00044	-.00062	-.00036	.00609	.00047	.00005	-.03830
Stddev	.00076	.00590	.00123	.00208	.00060	.00004	.01165
%RSD	174.01	957.34	342.31	34.067	127.02	85.157	30.414
#1	.00002	.00477	-.00100	.00430	-.00015	.00009	-.02753
#2	.00132	-.00693	-.00113	.00837	.00053	.00001	-.05066
#3	-.00003	.00031	.00106	.00561	.00104	.00005	-.03669
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	.00015	.00110	.00014	-.02753	-.01087	-.00047
Stddev	.00015	.00022	.00054	.00083	.01756	.07490	.00167
%RSD	65.180	150.04	49.560	610.15	63.798	688.91	351.34
#1	-.00020	.00033	.00173	-.00035	-.03969	-.09252	.00065
#2	-.00009	.00021	.00081	-.00034	-.00739	.00524	.00032
#3	-.00038	-.00010	.00076	.00109	-.03550	.05466	-.00239
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00399	-.00159	.00049	.05564	.00032	.00598	.00300
Stddev	.04769	.00090	.00029	.03157	.00012	.00289	.00158
%RSD	1194.6	56.554	59.513	56.735	36.346	48.235	52.497
#1	.04209	-.00196	.00074	.02790	.00045	.00658	.00136
#2	-.00093	-.00225	.00056	.08998	.00025	.00852	.00451
#3	-.05314	-.00057	.00017	.04902	.00025	.00285	.00314
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 24, 2015

Sample Name: CCB Acquired: 11/23/2015 16:08:00 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00320**	**-.00455**	**.00113**	**.00038**	**-.00028**	**-.00261**	**.00018**
Stddev	.00065	.00351	.00038	.00029	.00013	.00552	.00272
%RSD	20.218	77.298	33.437	77.029	46.069	211.71	1478.2
#1	-.00252	-.00422	.00150	.00014	-.00019	-.00076	-.00259
#2	-.00327	-.00821	.00115	.00071	-.00023	-.00881	.00284
#3	-.00381	-.00120	.00075	.00030	-.00043	.00175	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00042**	**.00013**	F **-.07577**
Stddev	.00083	.00015	.20231
%RSD	197.10	120.60	267.03
#1	-.00135	.00018	.09977
#2	-.00017	.00024	-.03003
#3	.00026	-.00005	-.29703
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**17111.**	**106540.**	**2993.3**
Stddev	124.	69.	3.8
%RSD	.72328	.06434	.12653
#1	17054.	106460.	2995.4
#2	17025.	106550.	2995.6
#3	17253.	106600.	2989.0

Approved: November 24, 2015

Sample Name: LLCCV Acquired: 11/23/2015 16:12:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00991	.18089	.00658	.08883	.00977	.00175	.44122	.00068
Stddev	.00037	.00371	.00089	.00092	.00059	.00005	.02623	.00015
%RSD	3.7704	2.0490	13.583	1.0332	6.0865	3.0404	5.9442	21.603
#1	.00988	.18455	.00561	.08943	.00952	.00174	.45797	.00077
#2	.00955	.17714	.00675	.08928	.01044	.00171	.41100	.00076
#3	.01029	.18100	.00738	.08777	.00934	.00181	.45471	.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00452	.00455	.00472	.07631	.95813	.08810	.51387	.00813
Stddev	.00010	.00029	.00075	.01711	.06623	.00429	.03178	.00116
%RSD	2.1754	6.3165	15.837	22.420	6.9124	4.8739	6.1851	14.257
#1	.00459	.00469	.00492	.09066	.88194	.08696	.48484	.00920
#2	.00440	.00422	.00389	.05738	.99042	.08449	.54783	.00690
#3	.00456	.00474	.00534	.08088	1.0020	.09285	.50894	.00829
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00805	.48341	.01870	.86181	.01229	.08090	.00824	.87211
Stddev	.00018	.00778	.00066	.00499	.00103	.00266	.00247	.00481
%RSD	2.2205	1.6091	3.5469	.57956	8.4046	3.2916	29.965	.55153
#1	.00821	.49236	.01793	.86636	.01269	.07914	.00549	.87725
#2	.00786	.47830	.01904	.86260	.01111	.07960	.01027	.87136
#3	.00810	.47956	.01912	.85646	.01305	.08396	.00896	.86772
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 24, 2015

Sample Name: LLCCV Acquired: 11/23/2015 16:12:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.44982	.04456	.02538	.18752	.00810	.01955	43.261
Stddev	.00129	.00049	.00234	.00087	.00054	.00017	.783
%RSD	.28647	1.0999	9.2050	.46591	6.7190	.85539	1.8095
#1	.45107	.04491	.02532	.18672	.00774	.01947	43.118
#2	.44990	.04400	.02308	.18738	.00873	.01975	42.559
#3	.44849	.04476	.02775	.18845	.00783	.01944	44.105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	17166.	107220.	3010.6
Stddev	52.	218.	28.7
%RSD	.30017	.20290	.95420
#1	17113.	107470.	3010.9
#2	17168.	107050.	3039.2
#3	17216.	107160.	2981.8

Approved: November 24, 2015

Sample Name: LLCCV Acquired: 11/23/2015 16:16:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02013	.36024	.01546	.17210	.01839	.00350	.87630
Stddev	.00079	.00081	.00149	.00072	.00050	.00007	.02143
%RSD	3.9342	.22533	9.6692	.41652	2.7163	2.0567	2.4457
#1	.02056	.36055	.01459	.17249	.01782	.00356	.88298
#2	.02062	.36085	.01459	.17254	.01872	.00342	.85232
#3	.01922	.35932	.01718	.17128	.01864	.00353	.89359
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00150	.00890	.00857	.00958	.17490	1.9786	.18319
Stddev	.00019	.00018	.00032	.00031	.01463	.0803	.00309
%RSD	12.907	2.0512	3.7546	3.2241	8.3661	4.0601	1.6886
#1	.00128	.00889	.00822	.00992	.18848	1.8939	.17965
#2	.00164	.00873	.00863	.00931	.17681	2.0537	.18536
#3	.00158	.00909	.00885	.00952	.15940	1.9884	.18457
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.94760	.01679	.01622	.94836	.03764	1.7093	.01983
Stddev	.01309	.00106	.00015	.01768	.00094	.0056	.00248
%RSD	1.3816	6.3129	.90888	1.8640	2.4880	.32541	12.500
#1	.93588	.01557	.01621	.93499	.03743	1.7052	.02172
#2	.96173	.01735	.01637	.94168	.03866	1.7156	.01702
#3	.94520	.01745	.01608	.96840	.03682	1.7072	.02075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 24, 2015

Sample Name: LLCCV Acquired: 11/23/2015 16:16:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.16319	.03576	1.7450	.90085	.08909	.05490	.37159
Stddev	.00237	.00544	.0021	.00127	.00038	.00235	.00250
%RSD	1.4526	15.206	.12100	.14086	.43213	4.2866	.67230
#1	.16592	.03011	1.7443	.90207	.08934	.05505	.37424
#2	.16187	.04095	1.7473	.90093	.08865	.05248	.37127
#3	.16177	.03621	1.7433	.89954	.08929	.05718	.36927
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.01752	.03749	F 90.878
Stddev	.00029	.00016	1.037
%RSD	1.6516	.43027	1.1406
#1	.01781	.03766	90.089
#2	.01723	.03747	90.493
#3	.01752	.03734	92.052
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	17258.	107600.	3048.5
Stddev	13.	162.	13.8
%RSD	.07727	.15082	.45430
#1	17243.	107640.	3056.8
#2	17269.	107730.	3056.1
#3	17262.	107420.	3032.5

Approved: November 24, 2015

Sample Name: PBS 87 Acquired: 11/23/2015 16:19:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment: WG547790-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00032	.01269	.00060	.00341	.00061	.00001	-.00108	-.00002
Stddev	.00090	.00617	.00259	.00080	.00062	.00007	.01684	.00020
%RSD	287.10	48.578	433.85	23.413	101.48	660.41	1559.2	837.37
#1	-.00072	.01936	-.00117	.00254	.00071	.00002	.00143	-.00022
#2	-.00094	.00721	.00356	.00357	.00118	-.00006	.01436	.00018
#3	.00072	.01151	-.00061	.00411	-.00005	.00007	-.01903	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	-.00000	-.00056	-.00242	-.02216	-.00239	-.02028	.00127
Stddev	.00007	.00065	.00068	.01604	.06448	.00464	.06340	.00223
%RSD	98.123	14372.	123.04	661.85	290.95	194.44	312.61	175.23
#1	-.00011	-.00038	-.00133	.01166	.03283	-.00244	.04864	.00031
#2	.00001	-.00038	-.00030	.00094	-.00618	.00228	-.07612	.00383
#3	-.00012	.00075	-.00004	-.01988	-.09314	-.00700	-.03336	-.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00049	.08157	.00046	.00088	.00037	-.00483	-.00588	.00335
Stddev	.00040	.03183	.00033	.00528	.00117	.00195	.00450	.00238
%RSD	81.646	39.025	72.748	597.28	314.97	40.391	76.629	71.019
#1	-.00034	.09332	.00023	.00419	.00109	-.00295	-.00849	.00061
#2	-.00094	.04553	.00030	-.00520	.00100	-.00469	-.00846	.00490
#3	-.00018	.10586	.00085	.00367	-.00098	-.00685	-.00068	.00453
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 24, 2015

Sample Name: PBS 87 Acquired: 11/23/2015 16:19:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment: WG547790-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	-.00006	-.00284	.00055	-.00027	.00137	.72363
Stddev	.00052	.00013	.00096	.00094	.00123	.00002	.16176
%RSD	163.00	200.08	33.850	169.92	461.15	1.4358	22.354
#1	-.00026	.00003	-.00174	-.00027	-.00019	.00139	.67488
#2	.00047	-.00002	-.00322	.00035	-.00154	.00137	.59186
#3	.00074	-.00020	-.00355	.00157	.00092	.00135	.90416
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16252.	102150.	2879.2
Stddev	9.	149.	17.8
%RSD	.05756	.14571	.61995
#1	16263.	102320.	2873.1
#2	16249.	102080.	2865.2
#3	16245.	102050.	2899.3

Approved: November 24, 2015

Sample Name: LCSS 87 Acquired: 11/23/2015 16:23:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment: WG547790-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21900	5.4718	.21410	1.0772	.56828	.02729	5.6020	.02763
Stddev	.00053	.0025	.00258	.0048	.00166	.00002	.0548	.00027
%RSD	.24302	.04509	1.2063	.44366	.29173	.06401	.97779	.97012
#1	.21916	5.4690	.21461	1.0733	.56813	.02730	5.6447	.02780
#2	.21944	5.4730	.21130	1.0758	.57000	.02727	5.6212	.02732
#3	.21841	5.4735	.21639	1.0826	.56670	.02729	5.5403	.02777
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.11270	.28371	.28134	2.2389	28.167	.55440	5.6487	.28206
Stddev	.00016	.00155	.00115	.0170	.109	.00413	.1386	.00033
%RSD	.13918	.54507	.41037	.75821	.38581	.74542	2.4535	.11645
#1	.11264	.28360	.28181	2.2274	28.292	.54968	5.5020	.28185
#2	.11288	.28221	.28218	2.2310	28.118	.55738	5.6667	.28189
#3	.11259	.28530	.28002	2.2584	28.092	.55613	5.7774	.28243
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.56508	28.371	.28458	5.4210	.28250	.66014	.21485	2.8110
Stddev	.00187	.121	.00087	.0079	.00118	.00530	.00768	.0063
%RSD	.33170	.42708	.30405	.14543	.41907	.80326	3.5743	.22234
#1	.56492	28.399	.28490	5.4295	.28347	.65842	.22276	2.8138
#2	.56703	28.476	.28524	5.4140	.28118	.66610	.20742	2.8154
#3	.56329	28.238	.28360	5.4194	.28286	.65592	.21437	2.8039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 24, 2015

Sample Name: LCSS 87 Acquired: 11/23/2015 16:23:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment: WG547790-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.56156	.56091	.55522	.28557	.56412	.55469	2.5949
Stddev	.00150	.00143	.00153	.00200	.00051	.00101	.3453
%RSD	.26716	.25556	.27630	.69914	.09091	.18203	13.306
#1	.56080	.56085	.55601	.28786	.56357	.55554	2.1982
#2	.56328	.56237	.55619	.28463	.56420	.55497	2.8275
#3	.56058	.55951	.55345	.28422	.56459	.55357	2.7590
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15790.	98354.	2816.4
Stddev	20.	64.	20.9
%RSD	.12784	.06489	.74067
#1	15787.	98304.	2793.6
#2	15811.	98426.	2821.1
#3	15771.	98331.	2834.6

Approved: November 24, 2015

Sample Name: FBLK Acquired: 11/23/2015 16:27:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment: WG547691-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00123	.01732	-.00030	.00748	.00112	.00003	-.01965
Stddev	.00191	.00552	.00038	.00069	.00055	.00003	.03592
%RSD	154.41	31.872	128.75	9.2361	48.692	81.655	182.76
#1	.00332	.02271	-.00052	.00684	.00170	.00006	.00652
#2	.00080	.01168	-.00051	.00821	.00062	.00001	-.06061
#3	-.00042	.01758	.00014	.00739	.00104	.00003	-.00487
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	.00055	.00070	-.00061	-.01615	.02725	-.00027
Stddev	.00008	.00006	.00028	.00072	.01241	.09706	.00373
%RSD	110.36	11.324	39.438	117.27	76.820	356.14	1366.1
#1	-.00001	.00057	.00051	-.00034	-.00375	.05408	-.00186
#2	-.00004	.00061	.00057	-.00007	-.02857	.10808	.00399
#3	-.00017	.00049	.00101	-.00142	-.01614	-.08040	-.00294
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.01877	-.00127	-.00035	146.00	.00062	.00226	.00383
Stddev	.04107	.00126	.00011	.09	.00079	.00014	.00135
%RSD	218.77	99.866	32.539	.06069	125.86	6.3243	35.164
#1	-.04351	.00016	-.00024	146.06	.00060	.00214	.00423
#2	.02863	-.00225	-.00033	146.04	-.00015	.00242	.00233
#3	-.04144	-.00171	-.00047	145.90	.00142	.00222	.00493
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 24, 2015

Sample Name: FBLK Acquired: 11/23/2015 16:27:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment: WG547691-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	.00040	.00353	-.00007	-.00030	-.00167	-.00001
Stddev	.00107	.00319	.00167	.00042	.00034	.00288	.00060
%RSD	277.20	803.81	47.273	616.06	111.70	172.06	6594.6
#1	-.00014	.00076	.00161	-.00051	.00007	-.00373	.00068
#2	.00054	.00339	.00434	-.00001	-.00059	-.00292	-.00039
#3	-.00156	-.00296	.00465	.00032	-.00038	.00162	-.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00098	.00424	F -.06350
Stddev	.00029	.00000	.37906
%RSD	29.595	.10810	596.98
#1	-.00078	.00425	.07471
#2	-.00131	.00424	-.49226
#3	-.00084	.00425	.22706
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16026.	98801.	2874.4
Stddev	23.	221.	6.4
%RSD	.14433	.22391	.22136
#1	16052.	98888.	2873.0
#2	16020.	98965.	2868.9
#3	16007.	98549.	2881.4

Approved: November 24, 2015

Sample Name: L1511106901 Acquired: 11/23/2015 16:31:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	.05978	-.00190	.15925	.56639	-.00004	F 309.87
Stddev	.00064	.00484	.00054	.00117	.00249	.00004	1.21
%RSD	1527.3	8.0977	28.125	.73751	.43918	95.622	.39109
#1	-.00074	.05986	-.00172	.15976	.56727	-.00005	309.99
#2	.00051	.06458	-.00149	.15790	.56832	-.00007	311.02
#3	.00010	.05490	-.00251	.16007	.56358	.00000	308.61
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00070	.00387	5.9500	.00916	.02267	17.098	.04829
Stddev	.00019	.00035	.0083	.00109	.00600	.087	.00387
%RSD	27.024	9.1163	.13943	11.850	26.480	.51166	8.0129
#1	.00092	.00402	5.9579	.00793	.02767	17.043	.04613
#2	.00060	.00347	5.9414	.00998	.01601	17.199	.04599
#3	.00059	.00413	5.9508	.00956	.02434	17.052	.05276
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	78.662	.83335	.00247	F 376.46	.02527	.15168	.00421
Stddev	.283	.00538	.00014	1.80	.00114	.00465	.00372
%RSD	.35978	.64598	5.6978	.47817	4.5012	3.0644	88.476
#1	78.663	.82724	.00247	377.10	.02432	.14677	.00847
#2	78.945	.83738	.00260	377.85	.02653	.15601	.00256
#3	78.379	.83543	.00232	374.43	.02495	.15225	.00159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: November 24, 2015

Sample Name: L1511106901 Acquired: 11/23/2015 16:31:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00116	.00009	12.469	.00175	2.8565	F -.03516	-.00144
Stddev	.00252	.00220	.033	.00046	.0123	.00613	.00127
%RSD	217.38	2441.1	.26065	26.482	.42924	17.425	88.486
#1	-.00073	-.00219	12.462	.00157	2.8613	-.02841	.00002
#2	.00019	.00027	12.504	.00140	2.8656	-.04038	-.00235
#3	.00402	.00219	12.441	.00228	2.8425	-.03670	-.00198
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.02071	.00630	44.744
Stddev	.00053	.00015	.990
%RSD	2.5602	2.3445	2.2132
#1	.02057	.00613	45.132
#2	.02026	.00641	45.481
#3	.02129	.00636	43.618
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	14848.	93134.	2831.6
Stddev	9.	366.	18.9
%RSD	.05785	.39256	.66760
#1	14858.	92784.	2835.2
#2	14841.	93513.	2811.2
#3	14845.	93104.	2848.5

Approved: November 24, 2015

Sample Name: L1511106902 Acquired: 11/23/2015 16:35:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.05884	.00006	.16236	.56381	-.00004	F 317.28
Stddev	.00076	.00109	.00164	.00445	.00313	.00004	1.51
%RSD	796.93	1.8605	2637.9	2.7401	.55496	103.70	.47674
#1	-.00061	.05813	-.00087	.15774	.56741	.00001	318.99
#2	.00001	.05829	-.00090	.16270	.56222	-.00008	316.74
#3	.00089	.06010	.00195	.16662	.56179	-.00005	316.11
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.00392	6.2977	.00879	.02337	17.250	.04542
Stddev	.00017	.00014	.0131	.00128	.01523	.120	.00329
%RSD	29.339	3.4511	.20863	14.615	65.183	.69697	7.2439
#1	.00068	.00380	6.2903	.00761	.00654	17.380	.04921
#2	.00069	.00389	6.2900	.00860	.03621	17.229	.04372
#3	.00039	.00407	6.3129	.01016	.02737	17.142	.04333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	81.197	.83674	.00194	F 383.91	.02489	.15386	.00112
Stddev	.457	.00675	.00026	1.80	.00060	.00623	.00195
%RSD	.56234	.80693	13.310	.46806	2.4205	4.0467	174.37
#1	81.609	.84429	.00213	385.92	.02540	.15986	-.00041
#2	81.275	.83463	.00164	383.34	.02422	.14743	.00332
#3	80.706	.83129	.00203	382.46	.02504	.15430	.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: November 24, 2015

Sample Name: L1511106902 Acquired: 11/23/2015 16:35:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00156	-.00248	12.738	.00064	3.0076	F -.03503	-.00076
Stddev	.00250	.00041	.005	.00019	.0126	.00075	.00108
%RSD	159.80	16.335	.04055	30.671	.41737	2.1474	141.42
#1	.00371	-.00283	12.744	.00042	3.0219	-.03436	.00042
#2	.00215	-.00204	12.735	.00071	3.0025	-.03584	-.00168
#3	-.00118	-.00258	12.734	.00079	2.9985	-.03488	-.00103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.02100	.00548	F 50.514
Stddev	.00081	.00032	.496
%RSD	3.8564	5.8497	.98122
#1	.02151	.00542	50.864
#2	.02007	.00519	50.731
#3	.02142	.00582	49.947
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	14894.	93431.	2850.2
Stddev	35.	238.	19.0
%RSD	.23491	.25518	.66779
#1	14867.	93503.	2829.0
#2	14881.	93625.	2856.1
#3	14934.	93165.	2865.6

Approved: November 24, 2015

Sample Name: L1511106903 Acquired: 11/23/2015 16:39:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00064	.05922	.00039	.15773	.56782	-.00004	F 306.93
Stddev	.00155	.00440	.00104	.00090	.00317	.00007	1.83
%RSD	242.15	7.4354	263.67	.56766	.55813	173.43	.59666
#1	-.00140	.06281	.00123	.15733	.56982	-.00005	308.84
#2	.00114	.06055	-.00076	.15711	.56947	.00003	306.75
#3	-.00166	.05431	.00071	.15876	.56416	-.00010	305.19
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00039	.00350	5.2504	.00755	.01623	17.227	.04738
Stddev	.00023	.00030	.0121	.00073	.00967	.051	.00484
%RSD	58.473	8.6036	.23026	9.7166	59.550	.29842	10.214
#1	.00062	.00320	5.2376	.00839	.01776	17.174	.04493
#2	.00040	.00348	5.2517	.00719	.02504	17.230	.05295
#3	.00016	.00381	5.2617	.00705	.00589	17.277	.04425
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	77.769	.80374	.00206	F 373.85	.02464	.15752	.00524
Stddev	.361	.00276	.00041	2.40	.00047	.00487	.00320
%RSD	.46468	.34385	19.776	.64237	1.8929	3.0946	61.121
#1	77.970	.80532	.00191	376.35	.02465	.16258	.00892
#2	77.986	.80536	.00252	373.64	.02417	.15714	.00373
#3	77.352	.80055	.00175	371.56	.02510	.15285	.00307
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: November 24, 2015

Sample Name: L1511106903 Acquired: 11/23/2015 16:39:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00251	.00284	12.616	.00022	2.8860	F -.03521	-.00120
Stddev	.00391	.00091	.007	.00039	.0183	.00084	.00241
%RSD	155.86	32.040	.05212	175.14	.63256	2.3844	200.36
#1	.00278	.00295	12.620	-.00023	2.9059	-.03426	.00021
#2	.00627	.00188	12.608	.00047	2.8817	-.03584	-.00398
#3	-.00153	.00369	12.619	.00043	2.8702	-.03554	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.02005	.00472	F 51.040
Stddev	.00019	.00015	.212
%RSD	.94216	3.1734	.41561
#1	.01998	.00455	51.284
#2	.01992	.00475	50.904
#3	.02027	.00485	50.931
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	14940.	93488.	2895.1
Stddev	21.	271.	19.8
%RSD	.14358	.28961	.68539
#1	14943.	93797.	2874.3
#2	14917.	93293.	2897.0
#3	14960.	93373.	2913.9

Approved: November 24, 2015

Sample Name: L1511106904 Acquired: 11/23/2015 16:43:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment: WG547790-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00078	.34325	.25806	.43120	1.7990	-.00001	F 429.19
Stddev	.00073	.00112	.00179	.00135	.0076	.00006	1.86
%RSD	93.277	.32771	.69418	.31221	.42018	1016.9	.43360
#1	-.00005	.34202	.25629	.43233	1.8068	.00007	431.30
#2	.00109	.34351	.25801	.43155	1.7986	-.00003	428.45
#3	.00130	.34422	.25987	.42971	1.7917	-.00005	427.80
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00254	.00864	.41234	.00356	.28095	86.430	.32031
Stddev	.00019	.00005	.00097	.00104	.00418	.393	.00834
%RSD	7.4611	.56667	.23629	29.214	1.4864	.45521	2.6049
#1	.00255	.00863	.41143	.00357	.28575	86.856	.32906
#2	.00234	.00869	.41223	.00459	.27817	86.355	.31942
#3	.00272	.00860	.41337	.00251	.27893	86.081	.31244
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	140.37	.75179	.01217	F 461.70	.06287	.29147	.00465
Stddev	.88	.00271	.00030	1.75	.00064	.00405	.00533
%RSD	.62773	.36109	2.5045	.37850	1.0236	1.3908	114.75
#1	141.36	.75392	.01183	463.62	.06356	.29020	.00976
#2	139.67	.75273	.01225	461.28	.06277	.29601	.00507
#3	140.08	.74873	.01242	460.20	.06229	.28821	-.00088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: November 24, 2015

Sample Name: L1511106904 Acquired: 11/23/2015 16:43:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment: WG547790-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00576	.00385	14.020	.00694	3.5328	F -.04867	-.00258
Stddev	.00423	.00531	.004	.00054	.0144	.00391	.00128
%RSD	73.339	137.92	.02918	7.8116	.40636	8.0295	49.732
#1	.00945	.00600	14.020	.00753	3.5488	-.04416	-.00268
#2	.00115	.00776	14.024	.00646	3.5285	-.05108	-.00381
#3	.00669	-.00220	14.015	.00682	3.5210	-.05076	-.00125
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.02754	.08669	23.622
Stddev	.00084	.00020	.445
%RSD	3.0643	.22877	1.8850
#1	.02791	.08650	23.146
#2	.02814	.08690	23.693
#3	.02658	.08666	24.028
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	14786.	92144.	2893.0
Stddev	24.	299.	14.8
%RSD	.16405	.32434	.51114
#1	14778.	91947.	2876.0
#2	14766.	91996.	2902.2
#3	14813.	92487.	2900.9

Approved: November 24, 2015

Sample Name: L1511106905 Acquired: 11/23/2015 16:47:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment: WG547790-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00096	.06348	.27360	.51984	2.2167	-.00006	F 520.49
Stddev	.00022	.00588	.00271	.00106	.0092	.00001	2.60
%RSD	23.110	9.2577	.98984	.20473	.41616	23.304	.49964
#1	.00111	.06641	.27200	.51862	2.2273	-.00006	523.41
#2	.00071	.06732	.27672	.52052	2.2104	-.00005	518.42
#3	.00107	.05671	.27206	.52040	2.2125	-.00008	519.65
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00219	.01129	.76868	.00339	.03807	106.06	.32875
Stddev	.00016	.00043	.00089	.00093	.01988	.58	.00461
%RSD	7.4122	3.8227	.11570	27.405	52.214	.54634	1.4015
#1	.00227	.01166	.76798	.00300	.01797	106.58	.33400
#2	.00230	.01081	.76838	.00273	.03854	105.43	.32684
#3	.00201	.01140	.76968	.00445	.05772	106.16	.32540
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	143.16	.87624	.01148	F 478.29	.08558	.28201	.00414
Stddev	1.09	.00884	.00029	4.17	.00073	.00823	.00079
%RSD	.75793	1.0086	2.5647	.87104	.85471	2.9199	19.054
#1	144.32	.88617	.01130	480.30	.08624	.29066	.00446
#2	142.17	.86925	.01132	473.50	.08571	.28112	.00473
#3	142.98	.87329	.01182	481.07	.08479	.27426	.00324
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: November 24, 2015

Sample Name: L1511106905 Acquired: 11/23/2015 16:47:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment: WG547790-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00842	-.00182	14.369	.00141	3.9660	F -.04922	-.00158
Stddev	.00156	.00154	.040	.00078	.0216	.00231	.00129
%RSD	18.486	85.074	.27699	55.212	.54336	4.7008	81.568
#1	.00982	-.00006	14.410	.00230	3.9906	-.04928	-.00016
#2	.00868	-.00240	14.365	.00103	3.9506	-.04688	-.00190
#3	.00675	-.00298	14.331	.00089	3.9568	-.05151	-.00268
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.03729	.03358	26.835
Stddev	.00026	.00037	.207
%RSD	.68884	1.1088	.77132
#1	.03757	.03400	26.852
#2	.03708	.03341	26.620
#3	.03721	.03332	27.033
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	14726.	91811.	2899.7
Stddev	10.	75.	9.1
%RSD	.07001	.08129	.31251
#1	14732.	91807.	2891.9
#2	14732.	91738.	2909.6
#3	14714.	91887.	2897.6

Approved: November 24, 2015

Sample Name: L1511106905PS Acquired: 11/23/2015 16:51:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment: WG548028-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21687	5.3156	.46771	1.5376	2.5527	.02631	F 495.12
Stddev	.00084	.0066	.00400	.0037	.0061	.00000	1.11
%RSD	.38773	.12322	.85529	.24387	.23868	.01723	.22335
#1	.21621	5.3218	.46326	1.5393	2.5589	.02632	496.40
#2	.21658	5.3087	.47101	1.5402	2.5526	.02631	494.59
#3	.21782	5.3161	.46886	1.5333	2.5467	.02632	494.38
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02877	.11341	.95027	.26178	2.1398	123.11	.84024
Stddev	.00012	.00029	.00131	.00161	.0162	.42	.00522
%RSD	.39982	.25891	.13744	.61330	.75625	.34043	.62149
#1	.02880	.11316	.94880	.26059	2.1338	123.59	.83452
#2	.02887	.11373	.95070	.26360	2.1582	122.92	.84476
#3	.02865	.11335	.95131	.26114	2.1275	122.82	.84144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	135.88	1.0571	.55039	F 460.74	.33396	5.7835	.25106
Stddev	.20	.0119	.00097	1.07	.00144	.0127	.00483
%RSD	.14619	1.1237	.17618	.23198	.43204	.22033	1.9248
#1	135.83	1.0652	.54931	461.94	.33544	5.7693	.25129
#2	136.09	1.0625	.55118	460.40	.33256	5.7938	.24612
#3	135.70	1.0434	.55069	459.88	.33387	5.7876	.25578
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: November 24, 2015

Sample Name: L1511106905PS Acquired: 11/23/2015 16:51:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment: WG548028-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.66779	.22496	15.948	.51679	4.1376	.49056	.24305
Stddev	.00288	.00245	.021	.00301	.0083	.00121	.00069
%RSD	.43100	1.0882	.13214	.58232	.20127	.24589	.28507
#1	.67048	.22779	15.943	.51336	4.1462	.48940	.24248
#2	.66814	.22350	15.971	.51896	4.1371	.49180	.24284
#3	.66476	.22360	15.930	.51807	4.1296	.49047	.24382
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.57419	.53713	26.931
Stddev	.00169	.00123	.071
%RSD	.29397	.22820	.26388
#1	.57435	.53591	26.861
#2	.57242	.53836	26.931
#3	.57579	.53712	27.003
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	14622.	91569.	2849.1
Stddev	35.	163.	10.1
%RSD	.23729	.17777	.35445
#1	14662.	91695.	2837.6
#2	14605.	91626.	2853.0
#3	14599.	91385.	2856.7

Approved: November 24, 2015

Sample Name: L1511106905DL Acquired: 11/23/2015 16:55:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG548028-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	.00880	.05016	.10155	.41076	-.00002	117.71	.00026
Stddev	.00169	.00233	.00134	.00157	.00177	.00006	.41	.00015
%RSD	192.09	26.432	2.6673	1.5449	.43109	255.82	.35088	54.890
#1	-.00107	.00612	.04945	.10260	.40910	-.00009	117.38	.00018
#2	.00191	.01011	.05171	.09974	.41054	-.00000	117.58	.00043
#3	.00181	.01019	.04933	.10230	.41263	.00002	118.17	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00224	.14300	.00164	.00066	19.802	.06260	27.677	.16587
Stddev	.00020	.00041	.00072	.01432	.083	.00168	.134	.00412
%RSD	8.9054	.28594	43.967	2169.3	.41666	2.6883	.48324	2.4837
#1	.00217	.14347	.00082	-.01002	19.877	.06087	27.623	.16259
#2	.00246	.14274	.00193	.01693	19.817	.06268	27.578	.17049
#3	.00208	.14278	.00217	-.00493	19.714	.06424	27.829	.16452
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00199	91.177	.01729	.05481	.00423	-.00213	.00155	2.6228
Stddev	.00059	.316	.00094	.00225	.00236	.00394	.00083	.0139
%RSD	29.716	.34628	5.4605	4.1133	55.762	184.55	53.416	.53099
#1	.00157	90.898	.01663	.05737	.00488	-.00251	.00159	2.6079
#2	.00266	91.114	.01837	.05396	.00161	.00198	.00236	2.6248
#3	.00172	91.520	.01688	.05311	.00618	-.00586	.00070	2.6356
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 24, 2015

Sample Name: L1511106905DL Acquired: 11/23/2015 16:55:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG548028-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	.72990	-.01232	.00164	.00635	.00739	4.7470
Stddev	.00005	.00315	.00205	.00271	.00043	.00007	.3807
%RSD	276.27	.43214	16.612	165.41	6.7449	.92024	8.0197
#1	-.00005	.72743	-.00996	.00471	.00648	.00732	5.0658
#2	-.00003	.72881	-.01362	.00062	.00587	.00745	4.3255
#3	.00003	.73345	-.01339	-.00042	.00669	.00738	4.8498
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16971.	106260.	3115.3
Stddev	61.	127.	14.7
%RSD	.35951	.11993	.47048
#1	17012.	106120.	3126.6
#2	17001.	106340.	3120.7
#3	16901.	106330.	3098.8

Approved: November 24, 2015

Sample Name: CCV Acquired: 11/23/2015 16:58:50 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40565	10.148	.40825	.51138	1.0233	.05115	10.224
Stddev	.00093	.012	.00311	.00115	.0055	.00013	.021
%RSD	.22910	.11727	.76298	.22529	.53733	.26207	.20880
#1	.40464	10.135	.41033	.51156	1.0234	.05129	10.219
#2	.40646	10.152	.40975	.51014	1.0177	.05102	10.205
#3	.40586	10.158	.40467	.51243	1.0287	.05114	10.247
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05117	.20495	.51723	.51444	4.0838	51.330	1.0224
Stddev	.00024	.00035	.00112	.00051	.0462	.315	.0068
%RSD	.46603	.17285	.21655	.09821	1.1312	.61427	.66420
#1	.05142	.20529	.51801	.51417	4.0852	51.113	1.0151
#2	.05114	.20498	.51595	.51502	4.0369	51.185	1.0237
#3	.05095	.20458	.51774	.51412	4.1293	51.692	1.0285
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.221	.50599	1.0221	51.263	.51672	10.219	.51253
Stddev	.123	.00751	.0014	.177	.00207	.008	.00206
%RSD	1.2020	1.4843	.13994	.34447	.40135	.08141	.40267
#1	10.080	.50178	1.0237	51.143	.51868	10.223	.51049
#2	10.306	.50152	1.0214	51.180	.51693	10.223	.51462
#3	10.276	.51466	1.0211	51.466	.51455	10.209	.51248
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: November 24, 2015

Sample Name: CCV Acquired: 11/23/2015 16:58:50 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2287	.41678	5.1638	1.0233	1.0212	1.0179	.52126
Stddev	.0013	.00152	.0160	.0006	.0055	.0155	.00165
%RSD	.10649	.36366	.31019	.05501	.53886	1.5201	.31701
#1	1.2302	.41849	5.1691	1.0237	1.0187	1.0113	.51950
#2	1.2282	.41559	5.1765	1.0236	1.0175	1.0068	.52277
#3	1.2277	.41626	5.1458	1.0227	1.0275	1.0355	.52152
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0313	1.0257	F 2.5038
Stddev	.0010	.0012	.1920
%RSD	.09957	.11981	7.6684
#1	1.0303	1.0260	2.3262
#2	1.0312	1.0268	2.7076
#3	1.0324	1.0244	2.4778
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16562.	102740.	2994.0
Stddev	20.	29.	8.0
%RSD	.12157	.02784	.26690
#1	16544.	102760.	2985.0
#2	16557.	102750.	3000.3
#3	16584.	102710.	2996.8

Approved: November 24, 2015

Sample Name: CCB Acquired: 11/23/2015 17:02:34 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00118	-.00104	-.00167	.00584	.00044	.00004	-.00417
Stddev	.00096	.00897	.00154	.00154	.00080	.00003	.01927
%RSD	81.147	864.82	92.028	26.412	180.98	73.897	461.48
#1	.00055	-.00726	-.00342	.00762	.00137	.00001	.01776
#2	.00071	.00924	-.00055	.00490	-.00000	.00005	-.01836
#3	.00228	-.00509	-.00104	.00499	-.00004	.00006	-.01193
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	-.00013	.00058	-.00013	.00417	.03733	.00415
Stddev	.00028	.00017	.00073	.00063	.00305	.08673	.00351
%RSD	106.25	135.31	124.82	481.45	73.155	232.36	84.637
#1	.00005	.00005	-.00025	.00009	.00115	.02353	.00014
#2	-.00049	-.00030	.00088	-.00084	.00726	-.04168	.00563
#3	-.00035	-.00014	.00111	.00036	.00412	.13013	.00668
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02094	-.00072	.00055	.07236	.00039	.00493	.00206
Stddev	.07299	.00302	.00025	.01426	.00017	.00070	.00161
%RSD	348.50	421.91	44.746	19.713	44.054	14.233	78.168
#1	-.06172	-.00299	.00027	.05863	.00047	.00460	.00111
#2	.04806	-.00186	.00068	.07135	.00019	.00574	.00391
#3	.07649	.00271	.00070	.08710	.00051	.00446	.00115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 24, 2015

Sample Name: CCB Acquired: 11/23/2015 17:02:34 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00526	-.00553	.00112	.00044	.00018	.00113	.00143
Stddev	.00254	.00347	.00091	.00015	.00008	.00360	.00283
%RSD	48.278	62.803	80.885	33.678	42.384	318.78	198.08
#1	-.00820	-.00255	.00140	.00056	.00012	.00523	.00005
#2	-.00386	-.00469	.00011	.00027	.00027	-.00148	.00469
#3	-.00373	-.00934	.00186	.00049	.00016	-.00037	-.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00038	.00006	F .04849
Stddev	.00070	.00003	.36054
%RSD	182.21	42.888	743.47
#1	.00042	.00003	-.31171
#2	-.00081	.00008	.40936
#3	-.00076	.00006	.04783
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	17012.	105850.	2985.9
Stddev	20.	200.	13.1
%RSD	.11958	.18880	.43937
#1	16992.	105930.	2977.6
#2	17012.	106010.	3001.0
#3	17033.	105630.	2979.1

Approved: November 24, 2015

Sample Name: L1511106906 Acquired: 11/23/2015 17:06:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00081	.27270	.26525	.44664	1.8970	-.00004	F 441.88
Stddev	.00103	.00282	.00448	.00174	.0067	.00004	1.18
%RSD	127.87	1.0342	1.6895	.38852	.35537	94.147	.26686
#1	-.00058	.27055	.26526	.44463	1.9043	-.00001	443.05
#2	-.00193	.27165	.26076	.44767	1.8955	-.00009	441.89
#3	.00009	.27589	.26972	.44761	1.8911	-.00003	440.69
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00263	.00878	.43761	.00417	.26709	89.630	.32703
Stddev	.00021	.00028	.00216	.00163	.01615	.139	.00303
%RSD	8.0392	3.1839	.49380	38.998	6.0479	.15544	.92710
#1	.00245	.00858	.43961	.00376	.27781	89.774	.32962
#2	.00286	.00866	.43789	.00596	.27496	89.496	.32777
#3	.00258	.00910	.43532	.00279	.24851	89.620	.32369
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	142.33	.76591	.01191	F 472.71	.06588	.31612	.00627
Stddev	.36	.00194	.00030	1.25	.00145	.00159	.00226
%RSD	.25063	.25359	2.4872	.26514	2.1977	.50145	36.084
#1	142.73	.76596	.01181	474.04	.06672	.31794	.00373
#2	142.19	.76394	.01224	472.54	.06672	.31544	.00700
#3	142.06	.76782	.01167	471.56	.06421	.31499	.00807
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: November 24, 2015

Sample Name: L1511106906 Acquired: 11/23/2015 17:06:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01046	.00143	14.229	.00675	3.6489	F -.04899	-.00198
Stddev	.00240	.00704	.010	.00084	.0103	.00382	.00119
%RSD	22.993	492.96	.06773	12.381	.28308	7.8001	60.071
#1	.01055	.00854	14.239	.00768	3.6607	-.05324	-.00091
#2	.01282	-.00554	14.221	.00648	3.6448	-.04786	-.00326
#3	.00801	.00128	14.226	.00608	3.6413	-.04586	-.00178
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.02870	.08045	19.844
Stddev	.00046	.00029	.096
%RSD	1.5984	.35946	.48318
#1	.02860	.08078	19.844
#2	.02920	.08031	19.940
#3	.02830	.08025	19.749
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	14711.	91059.	2851.8
Stddev	21.	102.	6.0
%RSD	.14101	.11244	.21040
#1	14698.	90943.	2855.7
#2	14735.	91101.	2854.8
#3	14700.	91134.	2844.9

Approved: November 24, 2015

Sample Name: L1511106907S Acquired: 11/23/2015 17:10:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment: WG547790-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.23082	6.0007	.53245	1.6589	2.8232	.02792	F 528.05
Stddev	.00190	.0155	.00951	.0050	.0139	.00006	1.80
%RSD	.82122	.25796	1.7866	.30357	.49315	.23131	.34055
#1	.22881	6.0031	.53841	1.6547	2.8329	.02793	529.04
#2	.23107	5.9841	.53746	1.6644	2.8294	.02798	529.13
#3	.23257	6.0148	.52148	1.6574	2.8072	.02785	525.97
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03231	.11939	.90976	.27773	2.6038	134.96	.93150
Stddev	.00013	.00026	.00173	.00173	.0078	.65	.00558
%RSD	.38750	.22052	.18990	.62433	.29870	.48235	.59856
#1	.03234	.11959	.91089	.27932	2.5952	135.30	.93537
#2	.03242	.11949	.90777	.27798	2.6060	135.37	.93403
#3	.03218	.11909	.91062	.27588	2.6103	134.21	.92511
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	162.04	1.1635	.58567	F 543.99	.35389	6.2345	.27122
Stddev	.52	.0086	.00281	5.64	.00110	.0288	.00136
%RSD	.32064	.74218	.47905	1.0375	.30992	.46107	.50079
#1	162.12	1.1697	.58873	548.43	.35415	6.2655	.27057
#2	162.51	1.1672	.58506	545.90	.35484	6.2293	.27278
#3	161.49	1.1536	.58322	537.63	.35269	6.2088	.27030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: November 24, 2015

Sample Name: L1511106907S Acquired: 11/23/2015 17:10:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment: WG547790-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.70767	.23944	18.958	.55404	4.7420	.51906	.25395
Stddev	.00185	.00222	.085	.00312	.0195	.00735	.00211
%RSD	.26200	.92666	.44639	.56322	.41130	1.4158	.82903
#1	.70651	.24189	19.044	.55753	4.7546	.52407	.25621
#2	.70669	.23757	18.955	.55308	4.7519	.52249	.25205
#3	.70981	.23886	18.875	.55152	4.7196	.51062	.25357
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.61488	.66212	28.284
Stddev	.00131	.00296	.189
%RSD	.21313	.44655	.66987
#1	.61524	.66524	28.453
#2	.61598	.66175	28.321
#3	.61343	.65937	28.079
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	14162.	88625.	2766.7
Stddev	30.	233.	17.6
%RSD	.20889	.26292	.63724
#1	14131.	88587.	2753.1
#2	14164.	88875.	2760.3
#3	14190.	88414.	2786.6

Approved: November 24, 2015

Sample Name: L1511106908S Acquired: 11/23/2015 17:14:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment: WG547790-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.23202	5.6408	.53664	1.6820	2.9403	.02778	F 565.80
Stddev	.00256	.0363	.00543	.0083	.0085	.00018	2.32
%RSD	1.1028	.64348	1.0122	.49278	.29012	.66441	.41088
#1	.22919	5.6120	.53557	1.6762	2.9500	.02765	568.47
#2	.23271	5.6289	.53181	1.6783	2.9339	.02769	564.73
#3	.23417	5.6816	.54252	1.6915	2.9369	.02799	564.21
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03101	.12140	1.0705	.27812	2.2324	140.33	.91943
Stddev	.00020	.00005	.0058	.00224	.0080	.29	.00508
%RSD	.64456	.04309	.54568	.80690	.35763	.20596	.55299
#1	.03090	.12142	1.0650	.27822	2.2398	140.66	.92145
#2	.03088	.12134	1.0698	.27583	2.2333	140.18	.92319
#3	.03124	.12144	1.0766	.28032	2.2240	140.14	.91364
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	160.39	1.2053	.58612	F 530.80	.36110	6.2156	.27046
Stddev	.55	.0021	.00146	2.04	.00030	.0148	.00174
%RSD	.34518	.17560	.24976	.38474	.08204	.23853	.64342
#1	161.02	1.2077	.58591	528.44	.36139	6.2166	.26949
#2	159.98	1.2035	.58478	531.99	.36112	6.2003	.27247
#3	160.17	1.2047	.58769	531.97	.36080	6.2300	.26943
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: November 24, 2015

Sample Name: L1511106908S Acquired: 11/23/2015 17:14:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment: WG547790-07

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.71234	.24152	18.739	.54541	4.8236	.51001	.25567
Stddev	.00499	.00215	.084	.00143	.0128	.00182	.00426
%RSD	.70116	.88901	.44680	.26303	.26546	.35698	1.6675
#1	.71787	.23915	18.692	.54513	4.8380	.51028	.25704
#2	.70817	.24206	18.688	.54414	4.8192	.50807	.25089
#3	.71096	.24334	18.835	.54696	4.8136	.51168	.25907
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.61341	.57205	29.945
Stddev	.00306	.00098	.533
%RSD	.49880	.17182	1.7794
#1	.61156	.57202	29.332
#2	.61172	.57108	30.196
#3	.61694	.57305	30.305
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	14243.	89708.	2821.1
Stddev	29.	153.	16.7
%RSD	.20633	.17074	.59322
#1	14238.	89609.	2802.1
#2	14275.	89885.	2827.4
#3	14217.	89631.	2833.7

Approved: November 24, 2015

Sample Name: L1511106909SD Acquired: 11/23/2015 17:18:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment: WG547790-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.22392	5.9591	.50584	1.5620	2.5187	.02714	F 463.00
Stddev	.00230	.0029	.00329	.0047	.0197	.00008	3.61
%RSD	1.0256	.04921	.65123	.29865	.78330	.27768	.77888
#1	.22471	5.9591	.50397	1.5653	2.5354	.02721	465.92
#2	.22572	5.9620	.50390	1.5641	2.5239	.02716	464.12
#3	.22134	5.9561	.50964	1.5567	2.4969	.02706	458.97
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03163	.11503	.72457	.26979	2.6595	119.38	.89239
Stddev	.00033	.00039	.00111	.00129	.0516	.76	.00379
%RSD	1.0422	.33910	.15379	.47852	1.9415	.63849	.42502
#1	.03187	.11510	.72586	.26887	2.7077	119.90	.89040
#2	.03177	.11461	.72390	.26923	2.6658	119.73	.89676
#3	.03126	.11538	.72396	.27126	2.6050	118.51	.89000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	154.23	1.0662	.56764	F 504.48	.33034	6.0681	.26386
Stddev	1.50	.0029	.00171	7.44	.00130	.0118	.00467
%RSD	.97274	.27702	.30081	1.4742	.39480	.19503	1.7717
#1	155.47	1.0682	.56659	510.47	.33025	6.0611	.26862
#2	154.66	1.0675	.56673	506.81	.32908	6.0615	.26367
#3	152.57	1.0628	.56961	496.15	.33168	6.0818	.25928
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: November 24, 2015

Sample Name: L1511106909SD Acquired: 11/23/2015 17:18:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment: WG547790-06

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.69062	.23701	17.770	.54235	4.3294	.50096	.24853
Stddev	.00565	.00230	.041	.00119	.0314	.00641	.00331
%RSD	.81874	.97005	.22952	.22032	.72645	1.2794	1.3303
#1	.68447	.23488	17.744	.54122	4.3560	.50500	.24570
#2	.69180	.23945	17.748	.54221	4.3375	.49357	.24772
#3	.69559	.23670	17.817	.54360	4.2947	.50431	.25217
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.58932	.68668	23.635
Stddev	.00047	.00251	.536
%RSD	.08019	.36596	2.2666
#1	.58967	.68503	23.910
#2	.58878	.68545	23.017
#3	.58950	.68958	23.976
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	14471.	90292.	2827.6
Stddev	33.	121.	19.2
%RSD	.22720	.13403	.67976
#1	14475.	90293.	2809.8
#2	14502.	90412.	2825.0
#3	14437.	90170.	2848.0

Approved: November 24, 2015

Sample Name: L1511106910SD Acquired: 11/23/2015 17:22:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment: WG547790-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.23387	5.7300	.53888	1.7116	2.9436	.02819	F 562.64
Stddev	.00097	.0187	.00069	.0050	.0080	.00010	1.88
%RSD	.41346	.32574	.12741	.29409	.27017	.36536	.33374
#1	.23310	5.7086	.53941	1.7062	2.9445	.02817	563.77
#2	.23356	5.7382	.53912	1.7126	2.9352	.02810	560.47
#3	.23496	5.7432	.53810	1.7161	2.9511	.02830	563.68
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03117	.12099	1.0548	.28072	2.2699	141.24	.93686
Stddev	.00035	.00089	.0003	.00253	.0208	.64	.00558
%RSD	1.1224	.73638	.02763	.90232	.91745	.45050	.59560
#1	.03120	.12139	1.0550	.28222	2.2629	141.04	.93233
#2	.03080	.12162	1.0549	.28214	2.2535	140.73	.93517
#3	.03150	.11997	1.0545	.27779	2.2933	141.95	.94309
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	161.83	1.2104	.58788	F 535.42	.36082	6.4483	.27153
Stddev	.85	.0103	.00402	6.77	.00133	.0153	.00213
%RSD	.52707	.84816	.68447	1.2639	.36732	.23648	.78517
#1	162.54	1.2220	.59024	542.22	.36223	6.4547	.27298
#2	160.88	1.2068	.59017	528.69	.36062	6.4593	.27253
#3	162.06	1.2024	.58323	535.35	.35960	6.4309	.26908
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: November 24, 2015

Sample Name: L1511106910SD Acquired: 11/23/2015 17:22:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment: WG547790-08

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.71976	.24885	18.823	.55017	4.8721	.52626	.25683
Stddev	.00508	.00796	.084	.00328	.0193	.00323	.00143
%RSD	.70544	3.1978	.44469	.59583	.39703	.61419	.55655
#1	.72419	.24193	18.879	.55185	4.8731	.52519	.25534
#2	.72087	.25755	18.864	.55226	4.8524	.52370	.25819
#3	.71422	.24706	18.727	.54639	4.8910	.52989	.25695
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.62490	.57055	29.729
Stddev	.00085	.00267	.169
%RSD	.13662	.46719	.57006
#1	.62559	.57205	29.894
#2	.62394	.57214	29.556
#3	.62515	.56748	29.737
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	14313.	89223.	2832.3
Stddev	33.	44.	12.4
%RSD	.22759	.04883	.43609
#1	14308.	89176.	2830.2
#2	14283.	89262.	2845.5
#3	14347.	89232.	2821.1

Approved: November 24, 2015

Sample Name: L1511108002 Acquired: 11/23/2015 17:25:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.02899	-.00095	.02549	.33794	.00006	1.0436	-.00001
Stddev	.00105	.00275	.00332	.00242	.00164	.00007	.0193	.00020
%RSD	4563.2	9.4780	348.50	9.4823	.48557	126.28	1.8524	1637.0
#1	.00060	.02789	.00259	.02466	.33713	.00012	1.0652	-.00016
#2	.00066	.02697	-.00146	.02360	.33982	-.00002	1.0377	-.00008
#3	-.00119	.03212	-.00400	.02822	.33686	.00008	1.0280	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.00306	.00286	.65704	.30937	.00720	.07472	.01714
Stddev	.00039	.00072	.00122	.01965	.05459	.00208	.03122	.00197
%RSD	66.549	23.395	42.715	2.9900	17.647	28.893	41.780	11.472
#1	.00104	.00270	.00364	.67967	.35300	.00492	.03890	.01489
#2	.00030	.00388	.00350	.64705	.32695	.00771	.09612	.01856
#3	.00044	.00259	.00145	.64439	.24815	.00898	.08912	.01797
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	144.74	.00117	.00552	.00235	-.00019	-.00038	.05173
Stddev	.00010	.38	.00061	.00307	.00206	.00255	.00228	.00129
%RSD	39.693	.26589	51.896	55.527	87.369	1324.7	596.87	2.4986
#1	.00026	145.00	.00048	.00876	.00147	.00118	.00124	.05103
#2	.00015	144.92	.00141	.00516	.00470	-.00313	.00060	.05323
#3	.00034	144.30	.00163	.00265	.00089	.00137	-.00299	.05095
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 24, 2015

Sample Name: L1511108002 Acquired: 11/23/2015 17:25:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00083	.12048	-.00344	-.00118	-.00040	.01778	.00297
Stddev	.00052	.00084	.00436	.00105	.00027	.00006	.39763
%RSD	62.335	.69999	126.84	89.619	66.619	.32006	13382.
#1	.00130	.12112	-.00668	-.00218	-.00068	.01775	-.39743
#2	.00027	.12079	.00152	-.00008	-.00039	.01785	.00857
#3	.00093	.11953	-.00516	-.00127	-.00014	.01775	.39777
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16115.	99462.	2915.7
Stddev	17.	337.	16.7
%RSD	.10791	.33902	.57344
#1	16095.	99850.	2914.0
#2	16124.	99249.	2933.3
#3	16126.	99286.	2900.0

Approved: November 24, 2015

Sample Name: L1511109601 Acquired: 11/23/2015 17:30:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.03160	-.00045	.01888	.06595	.00000	48.741	-.00009
Stddev	.00068	.00082	.00247	.00313	.00062	.00000	.124	.00009
%RSD	165.74	2.6040	554.57	16.599	.93845	170.31	.25498	99.999
#1	-.00014	.03214	.00126	.01586	.06650	.00000	48.831	-.00013
#2	.00117	.03201	.00069	.01865	.06528	-.00000	48.793	.00001
#3	.00020	.03066	-.00328	.02212	.06607	.00001	48.600	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.00181	.00065	.01394	.79533	.00629	6.5664	.00131
Stddev	.00011	.00028	.00097	.00352	.07225	.00697	.0597	.00219
%RSD	65.074	15.235	150.35	25.230	9.0837	110.79	.90877	166.88
#1	-.00005	.00186	-.00034	.01255	.79626	.01434	6.6104	.00134
#2	-.00026	.00151	.00069	.01794	.72263	.00264	6.4985	.00349
#3	-.00020	.00205	.00159	.01132	.86711	.00191	6.5904	-.00089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00051	4.6240	.00066	.01266	.00374	-.00365	-.00303	4.0553
Stddev	.00031	.0142	.00085	.00434	.00255	.00322	.00509	.0083
%RSD	60.375	.30618	129.01	34.245	68.280	87.989	168.06	.20476
#1	-.00059	4.6172	.00155	.01029	.00138	-.00631	-.00244	4.0615
#2	-.00078	4.6402	-.00014	.01003	.00338	-.00458	-.00839	4.0585
#3	-.00017	4.6145	.00056	.01767	.00645	-.00008	.00174	4.0459
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 24, 2015

Sample Name: L1511109601 Acquired: 11/23/2015 17:30:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00035	.16353	-.00763	.00014	-.00076	.00202	.45366
Stddev	.00027	.00042	.00289	.00138	.00073	.00006	.09985
%RSD	76.069	.25527	37.859	964.72	96.870	2.8952	22.009
#1	-.00005	.16339	-.00729	-.00116	-.00160	.00203	.35494
#2	-.00046	.16400	-.01067	.00000	-.00036	.00207	.55460
#3	-.00054	.16320	-.00493	.00159	-.00031	.00195	.45144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15978.	100270.	2852.0
Stddev	16.	336.	15.1
%RSD	.10099	.33515	.53053
#1	15964.	99953.	2861.4
#2	15974.	100240.	2834.6
#3	15995.	100620.	2860.2

Approved: November 24, 2015

Sample Name: L1511109602 Acquired: 11/23/2015 17:34:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00012	.03402	-.00086	.02045	.06188	-.00002	49.299	-.00001
Stddev	.00022	.00264	.00196	.00067	.00069	.00001	.157	.00031
%RSD	183.22	7.7643	227.39	3.2627	1.1190	53.212	.31892	4310.4
#1	.00004	.03545	-.00305	.01990	.06260	-.00001	49.480	-.00036
#2	-.00003	.03097	.00075	.02025	.06122	-.00003	49.197	.00009
#3	-.00036	.03564	-.00030	.02119	.06183	-.00002	49.220	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.00158	.00115	.01847	.62343	.01436	6.6375	.00338
Stddev	.00002	.00043	.00101	.02264	.01946	.00504	.0783	.00228
%RSD	16.275	27.033	88.383	122.58	3.1207	35.119	1.1802	67.577
#1	-.00011	.00110	.00162	.00812	.64150	.00863	6.7201	.00097
#2	-.00010	.00192	.00184	.04444	.62596	.01633	6.5643	.00551
#3	-.00008	.00172	-.00002	.00286	.60283	.01811	6.6281	.00364
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	5.5174	.00002	.00999	.00118	-.00289	-.00386	2.3258
Stddev	.00009	.0062	.00037	.00374	.00232	.00204	.00667	.0048
%RSD	57.554	.11201	2290.8	37.384	195.89	70.647	172.72	.20472
#1	-.00014	5.5214	-.00028	.00627	.00044	-.00382	-.01143	2.3289
#2	-.00027	5.5206	-.00009	.00996	.00378	-.00431	.00115	2.3282
#3	-.00009	5.5103	.00043	.01375	-.00067	-.00055	-.00130	2.3203
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 24, 2015

Sample Name: L1511109602 Acquired: 11/23/2015 17:34:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.18081	-.00763	.00008	-.00035	.00236	.38795
Stddev	.00060	.00123	.00412	.00139	.00028	.00007	.24446
%RSD	192.78	.67880	54.034	1693.9	79.271	2.9648	63.013
#1	-.00036	.18223	-.00695	-.00017	-.00020	.00230	.35900
#2	.00082	.18007	-.00388	.00158	-.00018	.00244	.15925
#3	.00048	.18014	-.01204	-.00117	-.00067	.00235	.64560
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16110.	101260.	2871.4
Stddev	31.	184.	17.4
%RSD	.18939	.18157	.60758
#1	16145.	101110.	2858.2
#2	16091.	101460.	2864.9
#3	16092.	101200.	2891.2

Approved: November 24, 2015

Sample Name: L1511109603 Acquired: 11/23/2015 17:38:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00046	.02216	-.00148	.02121	.10117	.00003	62.932	-.00002
Stddev	.00090	.00052	.00256	.00056	.00070	.00004	.178	.00032
%RSD	196.11	2.3394	173.50	2.6611	.69053	140.61	.28273	1734.1
#1	-.00149	.02211	.00061	.02097	.10082	.00006	63.109	-.00012
#2	.00013	.02270	-.00070	.02185	.10072	.00004	62.932	.00034
#3	-.00001	.02167	-.00434	.02080	.10198	-.00001	62.754	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.00150	.00169	.01285	1.2237	.00901	9.2880	.00362
Stddev	.00029	.00040	.00034	.01324	.0776	.00174	.1768	.00362
%RSD	92.898	26.759	20.066	103.02	6.3421	19.323	1.9040	99.982
#1	.00011	.00181	.00183	-.00143	1.1493	.00833	9.3489	.00026
#2	.00018	.00105	.00131	.02472	1.2177	.00771	9.0887	.00746
#3	.00065	.00166	.00194	.01527	1.3042	.01099	9.4263	.00315
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	10.331	.00009	.00701	.00028	-.00491	.00243	4.2522
Stddev	.00011	.042	.00077	.00805	.00198	.00351	.00558	.0057
%RSD	235.86	.40443	857.02	114.80	694.00	71.413	229.38	.13513
#1	-.00017	10.338	.00032	.00067	-.00157	-.00796	-.00235	4.2560
#2	.00005	10.369	-.00077	.01606	.00006	-.00569	.00856	4.2549
#3	-.00003	10.286	.00072	.00430	.00236	-.00108	.00109	4.2456
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 24, 2015

Sample Name: L1511109603 Acquired: 11/23/2015 17:38:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00071	.21131	-.00995	-.00022	-.00026	.00140	.09262
Stddev	.00009	.00082	.00223	.00085	.00058	.00010	.44856
%RSD	12.486	.38679	22.407	394.68	223.82	7.0262	484.28
#1	-.00079	.21183	-.00808	-.00004	.00020	.00142	.09773
#2	-.00072	.21037	-.01242	.00053	-.00090	.00130	.53861
#3	-.00062	.21173	-.00936	-.00114	-.00007	.00150	-.35847
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16083.	100880.	2894.7
Stddev	13.	631.	11.7
%RSD	.07793	.62593	.40543
#1	16089.	100560.	2907.3
#2	16068.	100470.	2892.5
#3	16090.	101600.	2884.2

Approved: November 24, 2015

Sample Name: L1511109604 Acquired: 11/23/2015 17:42:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.11320	-.00190	.01799	.06932	-.00001	50.461	-.00016
Stddev	.00163	.00901	.00197	.00112	.00060	.00005	.088	.00029
%RSD	6303.0	7.9596	103.85	6.2370	.86378	441.24	.17378	186.59
#1	-.00185	.12175	-.00414	.01743	.06991	-.00007	50.562	-.00004
#2	.00098	.10379	-.00114	.01726	.06934	.00000	50.415	.00006
#3	.00095	.11407	-.00042	.01929	.06871	.00003	50.406	-.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	.00177	.00077	.15789	1.0393	.01204	4.7586	.01012
Stddev	.00011	.00059	.00069	.00793	.0535	.00279	.0494	.00040
%RSD	43.628	33.645	89.456	5.0194	5.1498	23.163	1.0387	3.9449
#1	.00031	.00173	.00154	.14876	1.1006	.01323	4.7611	.01034
#2	.00033	.00238	.00018	.16201	1.0159	.00886	4.7079	.00966
#3	.00013	.00119	.00060	.16291	1.0015	.01404	4.8067	.01037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	3.3181	.00069	.03411	.00211	-.00491	-.00770	1.8609
Stddev	.00017	.0305	.00028	.00758	.00073	.00643	.00257	.0070
%RSD	262.10	.91829	39.966	22.208	34.898	130.88	33.342	.37666
#1	-.00005	3.3398	.00093	.04281	.00217	.00251	-.00729	1.8676
#2	-.00025	3.2833	.00076	.02898	.00134	-.00879	-.00536	1.8614
#3	.00010	3.3312	.00039	.03054	.00281	-.00847	-.01045	1.8536
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 24, 2015

Sample Name: L1511109604 Acquired: 11/23/2015 17:42:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00085	.13927	-.00873	-.00098	-.00035	.00439	.08345
Stddev	.00029	.00075	.00212	.00256	.00093	.00007	.07182
%RSD	34.479	.53650	24.241	262.27	265.56	1.5991	86.065
#1	-.00060	.13901	-.01079	.00063	.00070	.00435	.09460
#2	-.00077	.14012	-.00656	-.00393	-.00107	.00436	.00671
#3	-.00117	.13870	-.00886	.00037	-.00067	.00447	.14904
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16185.	101340.	2890.4
Stddev	30.	414.	5.3
%RSD	.18269	.40866	.18245
#1	16165.	101450.	2888.2
#2	16219.	100880.	2896.4
#3	16172.	101680.	2886.5

Approved: November 24, 2015

Sample Name: CCV Acquired: 11/23/2015 17:46:01 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40978	10.284	.41398	.52069	1.0377	.05183	10.342
Stddev	.00076	.018	.00101	.00199	.0007	.00012	.025
%RSD	.18641	.17913	.24352	.38224	.06792	.23085	.24255
#1	.41065	10.264	.41290	.52175	1.0369	.05170	10.324
#2	.40945	10.285	.41490	.52193	1.0377	.05194	10.332
#3	.40923	10.301	.41413	.51839	1.0383	.05183	10.371
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05173	.20711	.52864	.51880	4.1050	52.587	1.0354
Stddev	.00006	.00025	.00008	.00096	.0257	.205	.0062
%RSD	.12553	.11881	.01596	.18455	.62709	.38971	.60234
#1	.05167	.20739	.52873	.51816	4.1106	52.499	1.0297
#2	.05173	.20698	.52862	.51833	4.0770	52.440	1.0345
#3	.05180	.20695	.52857	.51990	4.1275	52.821	1.0421
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.222	.51369	1.0333	52.209	.52447	10.340	.52255
Stddev	.051	.00341	.0007	.044	.00176	.006	.00212
%RSD	.49980	.66289	.06826	.08414	.33490	.06104	.40560
#1	10.216	.51521	1.0334	52.176	.52316	10.334	.52418
#2	10.174	.51606	1.0339	52.192	.52378	10.338	.52330
#3	10.276	.50978	1.0325	52.259	.52646	10.346	.52015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: November 24, 2015

Sample Name: CCV Acquired: 11/23/2015 17:46:01 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2492	.42072	5.2347	1.0362	1.0366	1.0338	.53083
Stddev	.0053	.00228	.0049	.0021	.0009	.0091	.00298
%RSD	.42483	.54183	.09356	.20023	.08766	.88380	.56171
#1	1.2431	.41931	5.2292	1.0346	1.0357	1.0238	.53261
#2	1.2521	.42335	5.2386	1.0386	1.0366	1.0417	.52739
#3	1.2524	.41949	5.2364	1.0355	1.0375	1.0360	.53250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0452	1.0408	F 1.4489
Stddev	.0025	.0011	.2706
%RSD	.23649	.10595	18.679
#1	1.0428	1.0396	1.5684
#2	1.0451	1.0417	1.6392
#3	1.0477	1.0411	1.1391
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16680.	102530.	2976.2
Stddev	41.	97.	4.2
%RSD	.24483	.09469	.14261
#1	16726.	102500.	2980.1
#2	16651.	102630.	2971.7
#3	16662.	102440.	2976.6

Approved: November 24, 2015

Sample Name: CCB Acquired: 11/23/2015 17:49:35 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.00288	-.00032	.00580	.00023	.00001	-.02666
Stddev	.00191	.00447	.00143	.00111	.00042	.00001	.01624
%RSD	278.09	154.87	454.16	19.202	183.20	116.45	60.945
#1	.00265	.00248	.00052	.00555	.00049	.00001	-.00794
#2	.00057	-.00136	.00050	.00484	.00045	.00003	-.03707
#3	-.00116	.00754	-.00197	.00702	-.00026	-.00000	-.03495
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	.00018	.00015	.00041	.00407	.03540	-.00393
Stddev	.00012	.00009	.00061	.00092	.00914	.08856	.00467
%RSD	246.51	52.824	400.29	222.89	224.67	250.22	118.72
#1	.00009	.00023	.00070	.00048	-.00648	.12657	-.00837
#2	-.00011	.00024	-.00050	.00131	.00926	-.05031	-.00436
#3	-.00012	.00007	.00026	-.00054	.00942	.02992	.00094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.07801	-.00164	.00063	.05981	-.00004	.00963	.00108
Stddev	.04695	.00115	.00021	.01155	.00096	.00117	.00174
%RSD	60.186	70.235	33.783	19.316	2338.1	12.187	160.49
#1	-.06750	-.00032	.00052	.04922	.00105	.01083	.00011
#2	-.12932	-.00244	.00087	.07213	-.00077	.00958	.00005
#3	-.03720	-.00216	.00049	.05807	-.00041	.00849	.00309
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 24, 2015

Sample Name: CCB Acquired: 11/23/2015 17:49:35 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00336	.00009	-.00092	.00004	.00011	.00199	.00085
Stddev	.00228	.00028	.00191	.00063	.00032	.00229	.00049
%RSD	67.897	314.91	208.20	1447.6	303.94	114.82	57.559
#1	-.00092	-.00023	.00109	-.00055	.00044	.00102	.00056
#2	-.00374	.00022	-.00272	-.00002	.00008	.00035	.00142
#3	-.00544	.00028	-.00112	.00070	-.00020	.00460	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00059	.00006	F .25925
Stddev	.00041	.00012	.08233
%RSD	69.213	195.74	31.757
#1	-.00026	-.00000	.35173
#2	-.00105	-.00001	.19393
#3	-.00046	.00021	.23210
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	17005.	105440.	2956.0
Stddev	24.	262.	11.0
%RSD	.14401	.24863	.37148
#1	16990.	105410.	2962.2
#2	17034.	105190.	2943.3
#3	16992.	105710.	2962.5

Approved: November 24, 2015

Sample Name: L1511117401 Acquired: 11/23/2015 17:53:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.08817	.72130	.02719	1.1298	1.7959	.00348	-.03576	.02848
Stddev	.00161	.00394	.00138	.0043	.0099	.00003	.02493	.00022
%RSD	1.8205	.54656	5.0744	.38291	.55299	.93753	69.713	.77319
#1	.08665	.71867	.02589	1.1259	1.8021	.00348	-.02388	.02833
#2	.08800	.72584	.02704	1.1290	1.7845	.00344	-.01899	.02836
#3	.08985	.71941	.02863	1.1344	1.8012	.00351	-.06441	.02873
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.20486	.85389	.06447	.12273	.00647	.03348	.15515
Stddev	.00014	.00096	.00605	.01841	.13198	.00083	.03741	.00123
%RSD	27.696	.46854	.70827	28.550	107.54	12.846	111.74	.79273
#1	.00036	.20376	.85707	.07012	-.02814	.00659	.05343	.15374
#2	.00063	.20551	.85768	.07940	.21678	.00558	.05668	.15602
#3	.00053	.20532	.84691	.04391	.17954	.00723	-.00968	.15569
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02071	.00005	.35978	.24151	.04343	.02208	.07972	.03647
Stddev	.00070	.03443	.00251	.00178	.00312	.00361	.00119	.00106
%RSD	3.3965	68419.	.69708	.73773	7.1791	16.330	1.4952	2.9028
#1	.02147	-.00364	.35818	.24348	.04680	.02269	.07932	.03764
#2	.02061	.03618	.35848	.24000	.04284	.02534	.08106	.03620
#3	.02007	-.03238	.36267	.24105	.04065	.01821	.07878	.03557
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 24, 2015

Sample Name: L1511117401 Acquired: 11/23/2015 17:53:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00067	.00702	-.00246	.00592	.18462	1.3536	.01079
Stddev	.00039	.00037	.00445	.00038	.00067	.0094	.15537
%RSD	57.806	5.2851	180.79	6.4409	.36448	.69731	1440.6
#1	-.00067	.00715	-.00248	.00555	.18517	1.3453	-.16862
#2	-.00105	.00660	.00200	.00631	.18481	1.3515	.10055
#3	-.00028	.00731	-.00691	.00591	.18387	1.3639	.10043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	17629.	110040.	3068.7
Stddev	17.	245.	6.3
%RSD	.09529	.22283	.20520
#1	17648.	110280.	3069.7
#2	17616.	110060.	3074.4
#3	17623.	109790.	3061.9

Approved: November 24, 2015

Sample Name: L1511117501 Acquired: 11/23/2015 17:57:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.12689	.45480	.02479	1.1141	.92805	.00957	-.00965	.02639
Stddev	.00073	.01093	.00216	.0075	.00509	.00003	.04934	.00032
%RSD	.57592	2.4040	8.7131	.67163	.54840	.29982	511.47	1.2181
#1	.12753	.44748	.02341	1.1055	.93287	.00956	-.05690	.02617
#2	.12609	.46737	.02367	1.1177	.92273	.00955	.04155	.02624
#3	.12706	.44955	.02727	1.1192	.92855	.00961	-.01359	.02676
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	.08082	.98391	.61604	.08339	.00671	-.04044	.53744
Stddev	.00005	.00015	.00536	.07621	.01373	.00180	.02845	.00232
%RSD	23.495	.18001	.54476	12.371	16.463	26.775	70.353	.43194
#1	.00026	.08073	.98080	.67775	.07412	.00544	-.01326	.53753
#2	.00016	.08099	.99010	.63950	.07689	.00593	-.03806	.53971
#3	.00022	.08074	.98083	.53085	.09916	.00877	-.07001	.53507
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05869	.01142	.27937	.27460	.08364	.02541	.05303	.02755
Stddev	.00167	.02292	.00299	.00161	.00461	.00202	.00119	.00241
%RSD	2.8453	200.66	1.0691	.58692	5.5110	7.9530	2.2395	8.7552
#1	.06038	.03616	.27665	.27358	.08872	.02435	.05372	.02505
#2	.05863	-.00909	.27888	.27646	.08247	.02413	.05166	.02986
#3	.05705	.00719	.28257	.27377	.07973	.02774	.05372	.02775
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 24, 2015

Sample Name: L1511117501 Acquired: 11/23/2015 17:57:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	.00425	-.00407	.01032	.49549	1.1292	-.00168
Stddev	.00075	.00021	.00362	.00109	.00102	.0113	.26245
%RSD	421.28	4.8401	89.097	10.547	.20613	1.0040	15592.
#1	-.00020	.00448	-.00052	.01157	.49650	1.1189	-.28457
#2	-.00091	.00409	-.00392	.00968	.49446	1.1272	.23389
#3	.00058	.00418	-.00776	.00970	.49551	1.1413	.04564
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	17790.	111100.	3101.1
Stddev	50.	60.	13.0
%RSD	.27905	.05422	.41982
#1	17847.	111050.	3086.9
#2	17755.	111090.	3112.4
#3	17769.	111170.	3104.0

Approved: November 24, 2015

Sample Name: L1511109605 Acquired: 11/23/2015 18:01:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00044	.04758	.00098	.02539	.06082	.00001	53.301	-.00016
Stddev	.00137	.00513	.00259	.00274	.00109	.00004	.261	.00008
%RSD	311.20	10.785	265.65	10.807	1.7859	255.64	.48881	50.798
#1	-.00084	.05238	.00377	.02523	.06173	.00004	53.471	-.00014
#2	.00189	.04819	.00051	.02273	.06110	-.00003	53.431	-.00009
#3	.00028	.04217	-.00135	.02821	.05962	.00002	53.001	-.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00150	.00231	.11804	1.4645	.01005	5.2587	.00531
Stddev	.00007	.00095	.00077	.01550	.0655	.00637	.1285	.00207
%RSD	40.970	63.517	33.270	13.133	4.4740	63.336	2.4439	38.944
#1	.00024	.00250	.00212	.10138	1.5199	.00399	5.3168	.00382
#2	.00021	.00138	.00165	.12071	1.3922	.01669	5.3479	.00444
#3	.00010	.00061	.00315	.13204	1.4815	.00948	5.1114	.00767
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00254	2.5761	.00081	.01411	.00539	-.00335	-.00146	3.4473
Stddev	.00020	.0092	.00053	.00671	.00198	.00245	.00405	.0072
%RSD	7.7128	.35681	66.363	47.579	36.702	72.969	277.44	.20750
#1	.00248	2.5837	.00019	.01151	.00446	-.00595	.00285	3.4552
#2	.00238	2.5788	.00118	.00908	.00766	-.00301	-.00519	3.4454
#3	.00276	2.5659	.00104	.02173	.00405	-.00110	-.00204	3.4413
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 24, 2015

Sample Name: L1511109605 Acquired: 11/23/2015 18:01:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.14161	-.00588	-.00054	.00162	.00370	.22870
Stddev	.00030	.00053	.00685	.00119	.00050	.00009	.28444
%RSD	884.92	.37508	116.47	221.04	30.818	2.5621	124.37
#1	-.00034	.14221	-.01138	.00036	.00176	.00376	.04403
#2	-.00001	.14121	-.00805	-.00189	.00203	.00375	.55626
#3	.00025	.14142	.00179	-.00009	.00106	.00359	.08582
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16184.	101400.	2915.3
Stddev	40.	211.	12.0
%RSD	.24506	.20828	.41094
#1	16144.	101270.	2925.7
#2	16185.	101640.	2902.2
#3	16224.	101280.	2917.9

Approved: November 24, 2015

Sample Name: L1511110901 Acquired: 11/23/2015 18:05:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00058	.06349	-.00106	.04642	.08192	.00032	21.727	.00015
Stddev	.00089	.00582	.00213	.00075	.00159	.00001	.040	.00014
%RSD	154.13	9.1633	201.35	1.6096	1.9368	1.5719	.18393	92.412
#1	-.00045	.05803	-.00136	.04728	.08046	.00032	21.713	.00024
#2	.00109	.06961	.00121	.04600	.08361	.00032	21.772	-.00001
#3	.00110	.06283	-.00301	.04597	.08171	.00033	21.695	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00876	.00106	.00209	1.4116	4.6738	.00513	7.0523	.43643
Stddev	.00037	.00074	.00155	.0357	.1122	.00054	.0528	.00601
%RSD	4.2009	69.782	74.189	2.5257	2.3999	10.464	.74927	1.3765
#1	.00902	.00022	.00041	1.3983	4.7373	.00559	7.0098	.44193
#2	.00893	.00163	.00347	1.4520	4.7398	.00454	7.0357	.43736
#3	.00834	.00133	.00238	1.3845	4.5443	.00526	7.1115	.43002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00043	69.376	.00872	.01055	.00159	-.00017	-.00397	2.8402
Stddev	.00015	.305	.00075	.00012	.00167	.00181	.00183	.0024
%RSD	34.665	.43991	8.5886	1.1622	105.02	1054.7	46.030	.08261
#1	-.00055	69.439	.00922	.01042	.00058	-.00123	-.00605	2.8384
#2	-.00026	69.644	.00907	.01058	.00067	-.00120	-.00263	2.8394
#3	-.00047	69.044	.00786	.01066	.00352	.00192	-.00322	2.8428
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 24, 2015

Sample Name: L1511110901 Acquired: 11/23/2015 18:05:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00033	.11315	.00210	.00000	-.00012	.26075	.18616
Stddev	.00046	.00057	.00582	.00047	.00053	.00091	.24991
%RSD	139.25	.50016	277.52	24949.	432.92	.34921	134.24
#1	-.00086	.11371	.00509	-.00051	-.00008	.26170	-.01562
#2	.00002	.11317	.00582	.00009	.00038	.26065	.10840
#3	-.00016	.11258	-.00461	.00043	-.00067	.25989	.46571
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16074.	99700.	2890.8
Stddev	21.	333.	11.2
%RSD	.13283	.33425	.38658
#1	16058.	99430.	2888.3
#2	16098.	100070.	2881.0
#3	16065.	99597.	2903.0

Approved: November 24, 2015

Sample Name: L1511114101 Acquired: 11/23/2015 18:09:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00155	.21078	.00745	.25026	.22324	.00002	64.077
Stddev	.00093	.00332	.00158	.00083	.00147	.00009	.066
%RSD	59.801	1.5760	21.187	.33144	.65890	560.25	.10242
#1	.00262	.21329	.00732	.25057	.22439	-.00008	64.152
#2	.00108	.20701	.00594	.25089	.22159	.00004	64.029
#3	.00095	.21204	.00908	.24932	.22375	.00008	64.051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.00128	.00097	.01789	42.577	18.218	.01310
Stddev	.00009	.00016	.00029	.00094	.116	.082	.00259
%RSD	89.237	12.561	29.496	5.2302	.27334	.45213	19.785
#1	.00012	.00144	.00093	.01894	42.644	18.163	.01125
#2	.00018	.00127	.00070	.01758	42.443	18.313	.01606
#3	.00000	.00112	.00127	.01715	42.645	18.179	.01199
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	22.448	2.4460	-.00032	47.618	.00561	.63629	.00498
Stddev	.194	.0056	.00026	.074	.00018	.00391	.00088
%RSD	.86287	.23019	81.379	.15518	3.2345	.61406	17.665
#1	22.585	2.4443	-.00011	47.678	.00546	.63551	.00413
#2	22.532	2.4523	-.00024	47.640	.00581	.64053	.00588
#3	22.226	2.4414	-.00061	47.535	.00557	.63283	.00492
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 24, 2015

Sample Name: L1511114101 Acquired: 11/23/2015 18:09:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00237	.00270	7.5187	.00048	.31309	.00967	.00091
Stddev	.00234	.00145	.0059	.00107	.00054	.00307	.00301
%RSD	98.843	53.669	.07828	224.55	.17333	31.745	332.64
#1	-.00258	.00144	7.5211	.00171	.31355	.01316	.00103
#2	.00007	.00428	7.5229	-.00025	.31249	.00847	.00386
#3	-.00459	.00238	7.5119	-.00003	.31323	.00738	-.00217
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00005	.03235	F -1.3638
Stddev	.00021	.00014	.4196
%RSD	383.25	.43163	30.770
#1	-.00018	.03240	-1.7172
#2	.00012	.03220	-1.4742
#3	.00022	.03246	-.89998
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15948.	98908.	2881.6
Stddev	7.	205.	10.5
%RSD	.04213	.20757	.36318
#1	15955.	99014.	2869.5
#2	15942.	98671.	2888.3
#3	15947.	99038.	2886.9

Approved: November 24, 2015

Sample Name: L1511117901 Acquired: 11/23/2015 18:13:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.02644	-.00105	.01641	.00777	.00003	36.464	-.00005
Stddev	.00128	.00374	.00139	.00059	.00019	.00001	.145	.00008
%RSD	472.54	14.150	132.51	3.6206	2.3861	45.535	.39834	154.11
#1	.00058	.02212	-.00265	.01683	.00757	.00004	36.619	.00004
#2	.00136	.02868	-.00022	.01667	.00794	.00003	36.442	-.00011
#3	-.00113	.02851	-.00027	.01573	.00781	.00001	36.331	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.00185	.00023	-.00958	.46305	.00575	5.8513	.00040
Stddev	.00005	.00068	.00120	.00345	.05028	.00368	.0261	.00111
%RSD	74.799	36.742	525.33	36.035	10.859	64.060	.44568	278.01
#1	.00011	.00109	.00019	-.01354	.50280	.00248	5.8271	.00151
#2	.00001	.00205	-.00095	-.00719	.40652	.00974	5.8479	.00039
#3	.00008	.00240	.00145	-.00802	.47983	.00502	5.8789	-.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	1.6998	-.00037	.00899	.00451	-.00307	-.00524	2.5616
Stddev	.00005	.0277	.00079	.00565	.00037	.00255	.00816	.0064
%RSD	14.055	1.6301	215.55	62.805	8.1783	83.045	155.74	.25114
#1	.00037	1.7165	.00005	.00681	.00409	-.00264	-.00448	2.5678
#2	.00037	1.6678	.00013	.00476	.00479	-.00076	-.01375	2.5620
#3	.00029	1.7151	-.00128	.01541	.00464	-.00581	.00252	2.5550
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 24, 2015

Sample Name: L1511117901 Acquired: 11/23/2015 18:13:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	.03725	-.00510	-.00002	-.00043	.00283	-.00980
Stddev	.00027	.00018	.00609	.00084	.00058	.00011	.21270
%RSD	37.854	.49522	119.46	4907.1	135.66	3.8741	2169.5
#1	.00049	.03730	-.01214	.00051	-.00091	.00271	.11633
#2	.00103	.03741	-.00147	-.00098	-.00057	.00287	-.25538
#3	.00067	.03705	-.00170	.00043	.00021	.00292	.10964
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16290.	101140.	2878.2
Stddev	17.	136.	20.2
%RSD	.10558	.13413	.70335
#1	16270.	101150.	2855.9
#2	16297.	101000.	2883.3
#3	16302.	101270.	2895.4

Approved: November 24, 2015

Sample Name: L1511117902 Acquired: 11/23/2015 18:17:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00047	.04157	.00059	.01690	.00675	-.00001	36.806	.00015
Stddev	.00018	.00584	.00343	.00011	.00094	.00004	.181	.00031
%RSD	37.991	14.055	582.98	.65697	13.968	296.38	.49247	209.26
#1	-.00067	.04074	.00200	.01683	.00777	-.00002	37.009	.00046
#2	-.00040	.03619	.00309	.01684	.00592	.00003	36.658	-.00016
#3	-.00034	.04778	-.00332	.01703	.00656	-.00005	36.753	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	.00112	.00136	.01242	.43226	.00422	5.9463	-.00032
Stddev	.00014	.00153	.00054	.01386	.14362	.00855	.0269	.00287
%RSD	73.223	136.31	39.524	111.63	33.225	202.62	.45255	904.05
#1	-.00035	.00193	.00125	.01527	.34595	.00440	5.9227	.00290
#2	-.00014	-.00064	.00089	.02463	.59805	.01267	5.9406	-.00258
#3	-.00009	.00209	.00194	-.00265	.35278	-.00442	5.9756	-.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	1.7060	-.00007	.00722	.00225	-.00318	-.00532	2.5606
Stddev	.00015	.0258	.00051	.00672	.00096	.00272	.00587	.0030
%RSD	354.42	1.5101	713.31	93.101	42.550	85.730	110.37	.11572
#1	-.00004	1.7190	-.00040	.00317	.00194	-.00466	-.00776	2.5624
#2	.00021	1.7227	.00052	.00351	.00149	-.00484	.00138	2.5571
#3	-.00004	1.6763	-.00033	.01498	.00333	-.00003	-.00956	2.5621
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 24, 2015

Sample Name: L1511117902 Acquired: 11/23/2015 18:17:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00033	.03792	-.00699	.00031	.00044	.00965	.18780
Stddev	.00047	.00037	.00080	.00136	.00028	.00018	.24847
%RSD	140.51	.97481	11.516	442.44	63.745	1.8201	132.30
#1	-.00054	.03818	-.00787	.00149	.00042	.00949	.23918
#2	-.00065	.03749	-.00680	-.00117	.00072	.00984	-.08234
#3	.00020	.03807	-.00630	.00060	.00016	.00961	.40656
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16264.	101690.	2893.9
Stddev	14.	108.	25.4
%RSD	.08628	.10624	.87751
#1	16271.	101650.	2865.4
#2	16274.	101620.	2902.3
#3	16248.	101820.	2914.0

Approved: November 24, 2015

Sample Name: L1511117903 Acquired: 11/23/2015 18:21:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00006	.01309	.00248	.01462	.00810	.00000	36.093	-.00004
Stddev	.00092	.00355	.00291	.00155	.00025	.00003	.208	.00025
%RSD	1557.6	27.083	117.01	10.583	3.1172	944.49	.57546	579.01
#1	.00093	.00971	.00237	.01464	.00818	-.00003	36.206	-.00008
#2	-.00020	.01278	.00545	.01616	.00830	.00003	36.219	-.00028
#3	-.00090	.01678	-.00036	.01307	.00781	.00001	35.853	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	.00172	.00017	.07170	.51995	.00522	5.7946	.02660
Stddev	.00020	.00036	.00117	.01986	.08261	.00780	.1020	.00082
%RSD	375.53	20.673	700.62	27.698	15.887	149.50	1.7608	3.0839
#1	.00018	.00168	-.00042	.09411	.55152	.01082	5.8451	.02566
#2	-.00020	.00209	.00151	.05629	.58210	-.00369	5.8615	.02696
#3	-.00014	.00138	-.00060	.06469	.42621	.00853	5.6772	.02718
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	1.6269	-.00002	.01082	.00165	-.00272	-.00354	2.4994
Stddev	.00014	.0313	.00051	.00622	.00292	.00043	.00422	.0044
%RSD	73.541	1.9245	2043.9	57.438	177.44	15.689	119.41	.17674
#1	.00031	1.6580	.00052	.00478	.00253	-.00316	-.00087	2.4983
#2	.00003	1.5954	-.00011	.01050	.00403	-.00231	-.00133	2.5042
#3	.00025	1.6275	-.00049	.01720	-.00161	-.00270	-.00840	2.4956
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 24, 2015

Sample Name: L1511117903 Acquired: 11/23/2015 18:21:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.03646	-.00566	.00097	.00007	.00221	.47499
Stddev	.00087	.00029	.00447	.00140	.00065	.00017	.16401
%RSD	602.56	.80046	78.887	143.77	998.87	7.6020	34.529
#1	.00075	.03612	-.00558	.00106	-.00064	.00235	.34393
#2	-.00085	.03663	-.01017	.00233	.00064	.00202	.65891
#3	.00054	.03662	-.00124	-.00047	.00019	.00225	.42212
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16292.	102740.	2906.0
Stddev	21.	53.	10.5
%RSD	.12887	.05110	.36071
#1	16268.	102710.	2896.7
#2	16306.	102810.	2903.9
#3	16302.	102720.	2917.3

Approved: November 24, 2015

Sample Name: L1511110901 Acquired: 11/23/2015 18:25:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00067	.00541	.00001	.00807	.00784	.00003	2.0364	-.00009
Stddev	.00169	.00308	.00181	.00190	.00067	.00005	.0615	.00023
%RSD	251.34	56.994	13659.	23.503	8.4964	167.51	3.0205	260.54
#1	-.00055	.00732	.00177	.00820	.00771	-.00001	1.9747	-.00027
#2	.00261	.00185	.00012	.00612	.00725	.00008	2.0368	-.00016
#3	-.00004	.00705	-.00184	.00990	.00857	.00001	2.0977	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00104	.00058	.00023	.13790	.53196	.00714	.67692	.04160
Stddev	.00005	.00052	.00051	.00872	.02364	.00286	.08880	.00210
%RSD	4.6344	89.926	223.56	6.3225	4.4447	40.020	13.118	5.0455
#1	.00109	.00085	.00077	.14176	.54924	.00818	.59454	.03919
#2	.00103	-.00002	-.00024	.14401	.54163	.00391	.66525	.04306
#3	.00099	.00092	.00016	.12791	.50502	.00933	.77097	.04254
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	6.6211	.00143	.00283	.00306	-.00696	-.00128	.28719
Stddev	.00033	.0994	.00075	.00803	.00309	.00263	.00072	.00640
%RSD	92.460	1.5017	52.587	283.83	101.00	37.737	56.131	2.2299
#1	-.00052	6.5386	.00133	.00525	.00037	-.00732	-.00149	.28096
#2	.00002	6.5931	.00222	-.00614	.00643	-.00417	-.00187	.28684
#3	-.00057	6.7315	.00073	.00938	.00238	-.00938	-.00048	.29376
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 24, 2015

Sample Name: L1511110901 Acquired: 11/23/2015 18:25:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00006	.01013	-.00376	.00070	-.00042	.02834	.20818
Stddev	.00028	.00005	.00477	.00149	.00022	.00055	.25500
%RSD	476.45	.49793	126.88	212.04	52.763	1.9306	122.49
#1	.00022	.01013	-.00201	-.00032	-.00017	.02774	.35354
#2	-.00034	.01018	-.00011	.00002	-.00060	.02847	.35727
#3	-.00006	.01008	-.00916	.00241	-.00048	.02881	-.08626
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	17668.	109820.	3103.4
Stddev	33.	107.	10.9
%RSD	.18668	.09717	.35247
#1	17696.	109790.	3098.3
#2	17676.	109940.	3115.9
#3	17632.	109730.	3095.9

Approved: November 24, 2015

Sample Name: L1511110901 Acquired: 11/23/2015 18:29:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	-.00337	-.00236	.00323	.00167	.00003	.18325	-.00001
Stddev	.00090	.00431	.00055	.00041	.00073	.00004	.01783	.00006
%RSD	112.77	127.91	23.339	12.825	43.419	157.97	9.7301	401.58
#1	.00172	.00160	-.00173	.00370	.00250	.00002	.18446	.00003
#2	.00077	-.00610	-.00272	.00307	.00114	-.00001	.20045	-.00008
#3	-.00009	-.00561	-.00263	.00291	.00137	.00007	.16485	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.00020	-.00019	-.01287	.10161	.00275	.10246	.00388
Stddev	.00016	.00039	.00037	.02316	.14930	.00324	.04451	.00217
%RSD	476.09	195.61	192.06	179.87	146.94	118.06	43.445	55.907
#1	-.00009	.00063	.00023	-.01899	.08014	-.00084	.05225	.00622
#2	-.00016	.00010	-.00043	.01272	.26048	.00361	.13707	.00193
#3	.00015	-.00013	-.00038	-.03236	-.03579	.00547	.11806	.00350
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00065	.95404	.00046	.00853	.00187	-.00404	-.00394	.02307
Stddev	.00008	.01258	.00050	.00246	.00102	.00276	.00144	.00067
%RSD	11.803	1.3189	108.17	28.873	54.475	68.136	36.534	2.8955
#1	-.00073	.96267	-.00009	.00954	.00096	-.00652	-.00474	.02231
#2	-.00063	.95986	.00060	.00572	.00297	-.00453	-.00481	.02336
#3	-.00057	.93960	.00088	.01032	.00168	-.00108	-.00228	.02354
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 24, 2015

Sample Name: L1511110901 Acquired: 11/23/2015 18:29:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.00082	-.00309	.00188	-.00069	.00382	.11846
Stddev	.00076	.00024	.00177	.00088	.00057	.00020	.34612
%RSD	1112.6	29.526	57.227	46.929	82.366	5.1375	292.19
#1	-.00079	.00067	-.00499	.00268	-.00135	.00398	.51787
#2	.00064	.00069	-.00150	.00202	-.00031	.00388	-.09361
#3	.00035	.00109	-.00278	.00094	-.00042	.00360	-.06888
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	17727.	109590.	3082.3
Stddev	27.	217.	2.6
%RSD	.15109	.19787	.08451
#1	17706.	109770.	3084.8
#2	17717.	109640.	3082.5
#3	17757.	109350.	3079.6

Approved: November 24, 2015

Sample Name: CCV Acquired: 11/23/2015 18:33:16 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41245	10.351	.41604	.52412	1.0507	.05219	10.410
Stddev	.00028	.003	.00142	.00319	.0027	.00006	.073
%RSD	.06883	.02462	.34122	.60798	.25700	.11293	.69976
#1	.41221	10.354	.41662	.52742	1.0519	.05225	10.443
#2	.41276	10.349	.41442	.52389	1.0476	.05218	10.327
#3	.41238	10.350	.41707	.52106	1.0526	.05213	10.462
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05234	.20752	.53214	.52362	4.2030	53.391	1.0488
Stddev	.00009	.00057	.00078	.00116	.0391	.228	.0037
%RSD	.17136	.27635	.14713	.22068	.93098	.42790	.35256
#1	.05223	.20788	.53304	.52405	4.2064	53.623	1.0530
#2	.05237	.20781	.53165	.52231	4.1622	53.166	1.0465
#3	.05241	.20685	.53172	.52450	4.2403	53.384	1.0468
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.385	.51804	1.0403	52.757	.52894	10.429	.52549
Stddev	.096	.00220	.0015	.206	.00137	.007	.00189
%RSD	.92082	.42375	.14769	.38981	.25926	.07125	.35965
#1	10.286	.51728	1.0402	52.862	.53044	10.430	.52609
#2	10.391	.51632	1.0419	52.520	.52862	10.435	.52338
#3	10.477	.52051	1.0389	52.890	.52776	10.421	.52701
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: November 24, 2015

Sample Name: CCV Acquired: 11/23/2015 18:33:16 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2551	.42217	5.2738	1.0397	1.0478	1.0402	.53046
Stddev	.0043	.00521	.0138	.0013	.0030	.0037	.00506
%RSD	.34634	1.2340	.26102	.12762	.29015	.35139	.95478
#1	1.2508	.41632	5.2876	1.0412	1.0487	1.0412	.53124
#2	1.2551	.42384	5.2738	1.0388	1.0445	1.0362	.53509
#3	1.2595	.42633	5.2601	1.0390	1.0504	1.0433	.52505
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0522	1.0475	F 1.1184
Stddev	.0027	.0010	.2874
%RSD	.26160	.09884	25.701
#1	1.0553	1.0485	1.0580
#2	1.0515	1.0476	.86596
#3	1.0500	1.0464	1.4312
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16551.	101670.	2947.3
Stddev	18.	321.	13.0
%RSD	.11042	.31568	.43987
#1	16536.	101400.	2933.3
#2	16571.	101590.	2958.9
#3	16546.	102030.	2949.7

Approved: November 24, 2015

Sample Name: CCB Acquired: 11/23/2015 18:37:00 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00124	-.00089	-.00059	.00576	.00043	.00006	-.02872
Stddev	.00033	.00778	.00132	.00177	.00053	.00005	.01625
%RSD	26.538	869.67	224.48	30.672	123.13	85.530	56.568
#1	.00140	.00723	.00059	.00620	-.00000	.00003	-.04164
#2	.00086	-.00163	-.00201	.00726	.00027	.00003	-.01048
#3	.00145	-.00828	-.00034	.00381	.00103	.00011	-.03405
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.00021	.00062	.00054	.00555	.15255	.00669
Stddev	.00015	.00013	.00054	.00049	.00607	.06804	.00302
%RSD	2000.7	60.623	86.299	90.925	109.20	44.600	45.074
#1	.00014	.00012	.00124	.00057	.00156	.08786	.00432
#2	.00004	.00036	.00032	.00003	.00257	.22350	.00567
#3	-.00016	.00016	.00031	.00100	.01253	.14629	.01008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.06031	.00019	.00054	.04850	.00025	.00602	.00133
Stddev	.12402	.00072	.00031	.01008	.00075	.00865	.00063
%RSD	205.63	383.83	56.698	20.783	297.99	143.52	46.963
#1	-.20311	.00047	.00068	.03700	-.00024	.00751	.00198
#2	.00163	-.00063	.00076	.05580	-.00012	-.00327	.00073
#3	.02054	.00073	.00019	.05270	.00111	.01384	.00129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 24, 2015

Sample Name: CCB Acquired: 11/23/2015 18:37:00 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00155	-.00425	.00035	-.00025	-.00016	-.00310	.00072
Stddev	.00056	.00218	.00112	.00047	.00038	.00362	.00123
%RSD	36.284	51.382	320.70	188.43	237.33	116.56	169.34
#1	-.00091	-.00573	.00159	-.00016	-.00060	-.00725	.00099
#2	-.00198	-.00527	.00002	-.00076	.00006	-.00145	-.00061
#3	-.00176	-.00174	-.00057	.00017	.00006	-.00060	.00180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00110	-.00010	F .28492
Stddev	.00074	.00002	.43729
%RSD	67.526	20.793	153.48
#1	-.00181	-.00011	.03200
#2	-.00033	-.00008	.03290
#3	-.00117	-.00012	.78986
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16938.	104800.	2962.4
Stddev	18.	277.	19.4
%RSD	.10671	.26410	.65606
#1	16938.	104500.	2943.1
#2	16919.	105050.	2982.0
#3	16956.	104830.	2962.1

Approved: November 24, 2015

Sample Name: PBW 08 Acquired: 11/23/2015 18:41:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment: WG547943-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.01061	-.00106	.00548	.00091	-.00000	-.03064
Stddev	.00136	.00306	.00027	.00058	.00103	.00005	.01759
%RSD	10633.	28.825	25.231	10.657	114.09	1397.3	57.417
#1	-.00115	.01095	-.00091	.00603	.00045	-.00000	-.03120
#2	.00150	.01348	-.00137	.00487	.00209	-.00006	-.04795
#3	-.00031	.00740	-.00090	.00554	.00018	.00005	-.01278
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	.00013	.00088	-.00022	.00190	.06904	.00221
Stddev	.00007	.00009	.00059	.00083	.01566	.09295	.00280
%RSD	47.733	65.800	66.502	381.34	825.51	134.63	126.45
#1	-.00020	.00014	.00077	.00028	-.01276	-.01751	.00541
#2	-.00007	.00022	.00036	.00025	.01840	.16729	.00106
#3	-.00019	.00004	.00152	-.00118	.00004	.05735	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.07840	.00136	-.00034	.01278	.00042	.00667	.00423
Stddev	.05967	.00185	.00023	.02148	.00049	.00292	.00154
%RSD	76.113	135.99	68.482	168.03	116.56	43.745	36.500
#1	-.01050	.00068	-.00027	.03721	.00020	.00929	.00410
#2	-.12249	.00346	-.00059	-.00317	.00097	.00719	.00584
#3	-.10221	-.00006	-.00015	.00431	.00008	.00352	.00276
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 24, 2015

Sample Name: PBW 08 Acquired: 11/23/2015 18:41:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment: WG547943-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00462	.00173	.00207	.00049	-.00031	-.00036	.00040
Stddev	.00582	.00675	.00221	.00008	.00023	.00265	.00313
%RSD	125.94	390.47	106.65	15.938	74.141	742.36	782.34
#1	-.00698	.00228	-.00039	.00044	-.00036	-.00174	-.00019
#2	-.00890	-.00528	.00271	.00044	-.00006	.00270	.00379
#3	.00201	.00819	.00390	.00058	-.00051	-.00203	-.00239
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00047	.00370	F -.06093
Stddev	.00061	.00003	.42575
%RSD	130.47	.93598	698.71
#1	-.00097	.00374	-.55212
#2	-.00066	.00370	.16685
#3	.00022	.00367	.20246
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16426.	102620.	2883.2
Stddev	21.	232.	13.1
%RSD	.12970	.22624	.45382
#1	16438.	102640.	2872.7
#2	16401.	102380.	2879.1
#3	16438.	102850.	2897.9

Approved: November 24, 2015

Sample Name: LCSW 08 Acquired: 11/23/2015 18:45:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment: WG547943-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21178	5.3312	.20901	1.0810	.54788	.02630	5.4204	.02684
Stddev	.00220	.0214	.00277	.0043	.00156	.00008	.0232	.00006
%RSD	1.0399	.40220	1.3233	.39423	.28562	.28668	.42743	.21902
#1	.21309	5.3069	.21188	1.0766	.54783	.02627	5.3937	.02689
#2	.20923	5.3474	.20878	1.0814	.54946	.02638	5.4343	.02686
#3	.21300	5.3392	.20636	1.0851	.54633	.02623	5.4334	.02678
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10798	.27751	.27151	2.1817	27.627	.54943	5.4615	.27017
Stddev	.00028	.00171	.00183	.0161	.080	.00137	.0915	.00320
%RSD	.26294	.61790	.67293	.73630	.29006	.24979	1.6744	1.1830
#1	.10825	.27891	.27221	2.1900	27.675	.55098	5.4869	.26734
#2	.10800	.27803	.26943	2.1631	27.671	.54896	5.3601	.26954
#3	.10768	.27560	.27288	2.1918	27.534	.54836	5.5376	.27363
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.54666	27.628	.27478	5.2478	.27545	.64168	.20857	2.7362
Stddev	.00115	.103	.00122	.0097	.00193	.00306	.00456	.0046
%RSD	.21039	.37283	.44293	.18542	.70049	.47638	2.1863	.16622
#1	.54685	27.644	.27612	5.2563	.27458	.64074	.21165	2.7396
#2	.54770	27.722	.27447	5.2500	.27766	.63920	.21073	2.7379
#3	.54543	27.518	.27374	5.2372	.27411	.64509	.20333	2.7310
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 24, 2015

Sample Name: LCSW 08 Acquired: 11/23/2015 18:45:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment: WG547943-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53964	.54053	.53837	.27957	.54519	.53995	1.3792
Stddev	.00095	.00111	.00491	.00070	.00057	.00024	.4576
%RSD	.17648	.20524	.91271	.25026	.10470	.04426	33.176
#1	.54034	.54083	.53334	.27877	.54507	.53967	1.5876
#2	.54004	.54146	.53860	.27991	.54468	.54006	.85453
#3	.53856	.53930	.54316	.28004	.54580	.54011	1.6955
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15895.	99355.	2843.5
Stddev	26.	423.	10.1
%RSD	.16051	.42608	.35454
#1	15893.	99324.	2839.3
#2	15921.	98949.	2836.2
#3	15870.	99794.	2855.0

Approved: November 24, 2015

Sample Name: L1511119101 Acquired: 11/23/2015 18:48:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment: WG547943-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.02960	-.00208	.08593	.05410	.00003	38.743	-.00015
Stddev	.00115	.00229	.00158	.00168	.00017	.00004	.099	.00025
%RSD	13170.	7.7200	75.737	1.9584	.31851	143.09	.25620	174.02
#1	.00108	.03169	-.00035	.08423	.05400	-.00002	38.736	-.00008
#2	.00014	.02716	-.00343	.08598	.05400	.00005	38.845	.00007
#3	-.00120	.02995	-.00248	.08759	.05430	.00006	38.647	-.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.00195	.31719	.07907	2.6124	.01813	10.732	.85373
Stddev	.00029	.00090	.00016	.01256	.0914	.00453	.119	.00329
%RSD	60.925	46.215	.04887	15.879	3.4987	24.988	1.1076	.38500
#1	.00074	.00136	.31710	.08238	2.5253	.02033	10.608	.85625
#2	.00053	.00299	.31737	.08964	2.6044	.02113	10.845	.85492
#3	.00016	.00150	.31710	.06519	2.7076	.01292	10.744	.85001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	43.482	.00230	.21040	.00402	-.00433	.00052	1.5573
Stddev	.00025	.043	.00097	.00184	.00296	.00234	.00185	.0022
%RSD	53.321	.09983	42.014	.87568	73.678	53.971	355.64	.13882
#1	.00073	43.505	.00285	.21060	.00309	-.00550	-.00075	1.5549
#2	.00038	43.509	.00119	.20846	.00733	-.00164	.00265	1.5581
#3	.00026	43.432	.00288	.21213	.00163	-.00585	-.00034	1.5590
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 24, 2015

Sample Name: L1511119101 Acquired: 11/23/2015 18:48:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment: WG547943-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.31839	-.00541	-.00046	-.00063	.19133	.35677
Stddev	.00049	.00088	.00688	.00073	.00076	.00056	.21662
%RSD	317.49	.27656	127.13	157.15	122.29	.29287	60.716
#1	-.00041	.31926	-.01012	-.00065	-.00018	.19174	.18882
#2	.00037	.31841	.00248	.00034	-.00151	.19157	.60126
#3	.00050	.31750	-.00860	-.00107	-.00019	.19069	.28021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16150.	100990.	2889.2
Stddev	11.	159.	4.2
%RSD	.06646	.15702	.14504
#1	16162.	100810.	2884.8
#2	16146.	101120.	2889.6
#3	16142.	101040.	2893.2

Approved: November 24, 2015

Sample Name: L1511119101S Acquired: 11/23/2015 18:52:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment: WG547943-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20967	5.2576	.21133	1.1330	.59546	.02624	45.988	.02642
Stddev	.00131	.0210	.00189	.0008	.00181	.00004	.083	.00027
%RSD	.62601	.40038	.89250	.07078	.30440	.16877	.17959	1.0316
#1	.20832	5.2372	.21061	1.1323	.59521	.02628	46.055	.02663
#2	.21094	5.2792	.21347	1.1339	.59739	.02623	46.014	.02651
#3	.20976	5.2566	.20991	1.1329	.59379	.02620	45.896	.02611
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10601	.26940	.59914	2.2004	29.876	.54833	16.556	1.2138
Stddev	.00030	.00095	.00405	.0215	.284	.00200	.149	.0067
%RSD	.28404	.35392	.67592	.97797	.95170	.36475	.89727	.55166
#1	.10592	.26914	.60334	2.2244	30.159	.54622	16.712	1.2213
#2	.10635	.27046	.59526	2.1830	29.878	.54857	16.540	1.2085
#3	.10576	.26860	.59882	2.1937	29.591	.55020	16.416	1.2116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.54164	72.380	.27093	5.5536	.26779	.64085	.20991	4.3955
Stddev	.00127	.149	.00066	.0104	.00263	.00221	.00245	.0113
%RSD	.23368	.20541	.24457	.18628	.98250	.34453	1.1695	.25717
#1	.54309	72.546	.27089	5.5620	.27040	.63830	.21151	4.4082
#2	.54077	72.331	.27161	5.5421	.26782	.64228	.20708	4.3919
#3	.54106	72.261	.27029	5.5569	.26514	.64196	.21113	4.3865
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 24, 2015

Sample Name: L1511119101S Acquired: 11/23/2015 18:52:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment: WG547943-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53627	.86465	.52366	.26955	.54192	.72713	.89208
Stddev	.00114	.00184	.00227	.00046	.00158	.00106	.44430
%RSD	.21271	.21245	.43329	.17073	.29209	.14521	49.805
#1	.53757	.86674	.52569	.26993	.54245	.72824	.39566
#2	.53579	.86389	.52121	.26904	.54316	.72703	1.0281
#3	.53545	.86331	.52409	.26969	.54013	.72614	1.2525
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15727.	98273.	2853.1
Stddev	41.	118.	13.7
%RSD	.25953	.12011	.48173
#1	15687.	98405.	2839.2
#2	15725.	98177.	2853.2
#3	15769.	98237.	2866.7

Approved: November 24, 2015

Sample Name: L1511119101SD Acquired: 11/23/2015 18:56:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment: WG547943-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21592	5.3960	.21441	1.1676	.61321	.02702	47.775	.02716
Stddev	.00109	.0112	.00390	.0049	.00147	.00008	.202	.00006
%RSD	.50400	.20818	1.8167	.42108	.23998	.28299	.42267	.20655
#1	.21713	5.4070	.21003	1.1649	.61381	.02708	47.806	.02722
#2	.21565	5.3846	.21571	1.1645	.61154	.02693	47.560	.02715
#3	.21500	5.3962	.21749	1.1733	.61429	.02705	47.960	.02711
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10883	.27854	.62265	2.2952	30.643	.56500	17.258	1.4997
Stddev	.00032	.00070	.00028	.0263	.040	.00435	.205	.0098
%RSD	.29340	.25217	.04549	1.1453	.13108	.77053	1.1895	.65614
#1	.10918	.27862	.62246	2.2652	30.679	.56817	17.291	1.5031
#2	.10874	.27780	.62297	2.3139	30.600	.56003	17.039	1.4885
#3	.10856	.27920	.62250	2.3065	30.648	.56678	17.445	1.5073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.55804	75.101	.27739	5.7040	.27492	.65990	.21178	4.5334
Stddev	.00150	.143	.00035	.0102	.00280	.00238	.00280	.0082
%RSD	.26810	.19058	.12513	.17910	1.0186	.36096	1.3204	.18055
#1	.55869	75.253	.27778	5.7139	.27617	.66251	.21139	4.5271
#2	.55910	74.969	.27711	5.7047	.27687	.65935	.20920	4.5427
#3	.55633	75.083	.27729	5.6935	.27171	.65784	.21476	4.5306
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 24, 2015

Sample Name: L1511119101SD Acquired: 11/23/2015 18:56:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment: WG547943-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.54979	.89375	.54342	.27565	.55826	.74964	1.1510
Stddev	.00130	.00308	.00470	.00317	.00116	.00058	.1116
%RSD	.23668	.34516	.86413	1.1497	.20739	.07794	9.6943
#1	.54906	.89720	.54551	.27200	.55752	.75027	1.0246
#2	.55129	.89126	.53804	.27769	.55767	.74955	1.1925
#3	.54901	.89279	.54672	.27727	.55960	.74911	1.2359
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15718.	97853.	2845.2
Stddev	34.	227.	13.8
%RSD	.21669	.23154	.48638
#1	15680.	97592.	2839.8
#2	15746.	97961.	2860.9
#3	15728.	98005.	2834.8

Approved: November 24, 2015

Sample Name: L1511119101PS Acquired: 11/23/2015 19:00:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment: WG548023-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20834	5.2028	.20813	1.1140	.57661	.02602	39.890	.02603
Stddev	.00031	.0106	.00183	.0026	.00395	.00010	.204	.00023
%RSD	.14967	.20452	.88122	.23476	.68431	.37468	.51021	.86611
#1	.20804	5.2068	.21022	1.1115	.57638	.02592	39.761	.02590
#2	.20866	5.1908	.20739	1.1136	.58067	.02604	40.125	.02629
#3	.20833	5.2109	.20678	1.1167	.57278	.02611	39.784	.02590
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10461	.26885	.54512	2.1554	29.047	.54002	14.685	1.0226
Stddev	.00013	.00106	.00148	.0124	.090	.00358	.119	.0041
%RSD	.12105	.39522	.27078	.57693	.30863	.66287	.80891	.39893
#1	.10470	.26837	.54435	2.1481	28.987	.53949	14.621	1.0190
#2	.10465	.27007	.54683	2.1697	29.150	.54384	14.822	1.0270
#3	.10446	.26811	.54420	2.1483	29.005	.53674	14.612	1.0217
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53634	65.398	.26635	5.4561	.26804	.63876	.20657	4.1198
Stddev	.00143	.371	.00141	.0103	.00147	.00690	.00691	.0072
%RSD	.26581	.56679	.52791	.18804	.54809	1.0807	3.3453	.17493
#1	.53795	65.214	.26770	5.4536	.26662	.64572	.20303	4.1234
#2	.53581	65.824	.26647	5.4472	.26794	.63192	.20214	4.1115
#3	.53525	65.154	.26489	5.4673	.26956	.63863	.21453	4.1244
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 24, 2015

Sample Name: L1511119101PS Acquired: 11/23/2015 19:00:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment: WG548023-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52953	.80757	.51574	.26614	.53830	.69412	.85732
Stddev	.00184	.00375	.00541	.00083	.00116	.00019	.54897
%RSD	.34726	.46489	1.0487	.31322	.21565	.02706	64.033
#1	.53163	.80588	.51745	.26628	.53876	.69390	1.4893
#2	.52873	.81187	.50968	.26525	.53698	.69424	.49861
#3	.52822	.80496	.52008	.26690	.53916	.69421	.58405
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16049.	99521.	2909.7
Stddev	12.	235.	9.1
%RSD	.07573	.23608	.31382
#1	16034.	99762.	2904.5
#2	16055.	99506.	2904.4
#3	16056.	99293.	2920.3

Approved: November 24, 2015

Sample Name: L1511119101SDL Acquired: 11/23/2015 19:03:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG548023-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00100	-.00006	.00039	.02171	.01094	-.00001	7.3609	-.00009
Stddev	.00176	.00117	.00210	.00121	.00039	.00006	.0601	.00011
%RSD	176.89	1927.4	533.03	5.5809	3.5782	1071.7	.81631	126.52
#1	.00017	-.00026	-.00089	.02262	.01112	.00001	7.3641	.00004
#2	-.00021	-.00112	.00282	.02033	.01049	.00004	7.4193	-.00013
#3	.00302	.00119	-.00075	.02216	.01121	-.00007	7.2993	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.00070	.06084	.00270	.58017	.00641	2.0396	.16404
Stddev	.00015	.00026	.00024	.01217	.12229	.00567	.0476	.00015
%RSD	2049.0	37.596	.39429	451.00	21.078	88.433	2.3326	.09187
#1	.00014	.00099	.06095	-.00233	.61894	.00008	2.0904	.16396
#2	.00003	.00049	.06101	-.00615	.67836	.00812	2.0323	.16395
#3	-.00015	.00060	.06057	.01658	.44319	.01102	1.9961	.16421
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	8.4153	.00104	.03974	.00216	-.00305	-.00400	.29352
Stddev	.00035	.0307	.00039	.00202	.00107	.00170	.00374	.00370
%RSD	98.178	.36524	37.455	5.0934	49.321	55.652	93.308	1.2613
#1	-.00062	8.4206	.00079	.03885	.00233	-.00353	-.00665	.29564
#2	.00004	8.4431	.00149	.03833	.00313	-.00445	.00027	.29569
#3	-.00051	8.3823	.00083	.04206	.00102	-.00116	-.00563	.28925
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 24, 2015

Sample Name: L1511119101SDL Acquired: 11/23/2015 19:03:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG548023-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.05981	.00043	.00050	-.00031	.03783	-.03757
Stddev	.00064	.00057	.00692	.00084	.00026	.00016	.27952
%RSD	1940.7	.95848	1598.7	169.76	83.033	.43614	744.05
#1	.00066	.05969	-.00434	.00146	-.00008	.03777	-.19532
#2	-.00062	.06043	-.00273	.00010	-.00027	.03770	-.20255
#3	.00006	.05931	.00837	-.00008	-.00059	.03801	.28517
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	17562.	108490.	3065.6
Stddev	10.	165.	19.5
%RSD	.05560	.15239	.63671
#1	17566.	108460.	3081.7
#2	17570.	108670.	3043.9
#3	17551.	108340.	3071.1

Approved: November 24, 2015

Sample Name: L1511119101SDL Acquired: 11/23/2015 19:07:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG548023-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	-.00457	-.00010	.00987	.00246	.00004	1.4341
Stddev	.00048	.00172	.00086	.00044	.00066	.00001	.0063
%RSD	238.61	37.638	838.87	4.4497	26.663	17.916	.43779
#1	-.00056	-.00363	.00056	.00937	.00193	.00003	1.4413
#2	-.00039	-.00353	-.00108	.01021	.00320	.00004	1.4305
#3	.00034	-.00656	.00021	.01003	.00226	.00004	1.4304
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	.00019	.00101	.01199	-.00397	.10229	.00666
Stddev	.00008	.00035	.00057	.00045	.00629	.06637	.00593
%RSD	35.584	179.37	56.073	3.7898	158.40	64.884	89.018
#1	-.00014	.00002	.00097	.01173	-.01054	.17687	.01040
#2	-.00023	.00059	.00047	.01172	.00199	.04975	.00976
#3	-.00029	-.00004	.00160	.01251	-.00337	.08023	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.33479	.03109	-.00061	1.6621	-.00039	.01869	.00244
Stddev	.01992	.00092	.00031	.0170	.00061	.00466	.00129
%RSD	5.9488	2.9729	50.512	1.0238	155.38	24.921	52.925
#1	.32710	.03190	-.00096	1.6451	-.00073	.02041	.00149
#2	.31987	.03128	-.00036	1.6792	-.00077	.01342	.00193
#3	.35741	.03008	-.00051	1.6619	.00031	.02225	.00391
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 24, 2015

Sample Name: L1511119101SDL Acquired: 11/23/2015 19:07:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG548023-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00516	.00073	.05520	-.00009	.01171	-.00020	.00120
Stddev	.00053	.00479	.00176	.00046	.00037	.00619	.00283
%RSD	10.198	653.12	3.1844	515.28	3.1970	3159.9	236.22
#1	-.00577	-.00432	.05537	-.00053	.01202	.00336	.00067
#2	-.00489	.00133	.05686	-.00013	.01182	.00340	.00425
#3	-.00483	.00520	.05336	.00039	.01129	-.00735	-.00133
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00035	.00782	F -.07728
Stddev	.00036	.00008	.36647
%RSD	103.95	.97465	474.19
#1	-.00005	.00789	.13406
#2	-.00025	.00774	-.50045
#3	-.00075	.00782	.13453
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	17667.	109110.	3052.0
Stddev	12.	394.	11.5
%RSD	.06622	.36079	.37549
#1	17654.	108970.	3061.4
#2	17676.	108810.	3039.2
#3	17671.	109560.	3055.4

Approved: November 24, 2015

Sample Name: CCV Acquired: 11/23/2015 19:11:50 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.42146	10.564	.42610	.53962	1.0707	.05316	10.629
Stddev	.00082	.013	.00253	.00075	.0050	.00004	.063
%RSD	.19397	.12739	.59397	.13816	.47188	.07059	.59443
#1	.42051	10.579	.42731	.53906	1.0692	.05315	10.592
#2	.42193	10.559	.42779	.53933	1.0665	.05313	10.594
#3	.42193	10.553	.42319	.54047	1.0763	.05321	10.702
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05314	.21153	.54469	.53272	4.2675	54.351	1.0662
Stddev	.00037	.00035	.00055	.00135	.0093	.230	.0066
%RSD	.69679	.16579	.10071	.25379	.21757	.42322	.61877
#1	.05351	.21116	.54408	.53290	4.2678	54.348	1.0610
#2	.05277	.21185	.54485	.53397	4.2766	54.122	1.0641
#3	.05315	.21158	.54514	.53129	4.2581	54.582	1.0736
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.556	.52914	1.0623	53.931	.54008	10.654	.53937
Stddev	.072	.00219	.0024	.158	.00096	.003	.00215
%RSD	.68493	.41425	.22458	.29300	.17784	.02676	.39801
#1	10.513	.53012	1.0649	53.845	.54047	10.653	.53882
#2	10.516	.53067	1.0601	53.835	.54077	10.657	.54174
#3	10.640	.52663	1.0619	54.114	.53898	10.651	.53756
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: November 24, 2015

Sample Name: CCV Acquired: 11/23/2015 19:11:50 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2827	.43213	5.3807	1.0603	1.0669	1.0611	.54535
Stddev	.0059	.00497	.0036	.0014	.0056	.0061	.00200
%RSD	.46275	1.1491	.06709	.13591	.52054	.57747	.36696
#1	1.2829	.42681	5.3824	1.0616	1.0654	1.0680	.54764
#2	1.2767	.43664	5.3830	1.0605	1.0622	1.0563	.54391
#3	1.2885	.43293	5.3765	1.0587	1.0730	1.0590	.54451
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0724	1.0698	F 1.2572
Stddev	.0007	.0003	.0206
%RSD	.06809	.03201	1.6413
#1	1.0727	1.0699	1.2587
#2	1.0716	1.0702	1.2359
#3	1.0729	1.0695	1.2770
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16496.	101550.	2941.1
Stddev	29.	130.	16.3
%RSD	.17388	.12786	.55367
#1	16522.	101430.	2925.2
#2	16465.	101690.	2940.3
#3	16502.	101540.	2957.8

Approved: November 24, 2015

Sample Name: CCB Acquired: 11/23/2015 19:15:34 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	-.00051	.00033	.00782	.00060	.00003	-.00988
Stddev	.00065	.00516	.00069	.00141	.00097	.00001	.01761
%RSD	137.10	1014.1	208.99	18.018	160.94	37.738	178.34
#1	.00122	-.00166	.00082	.00944	.00165	.00004	-.00022
#2	.00020	-.00499	-.00046	.00692	-.00025	.00004	-.03021
#3	.00001	.00513	.00062	.00709	.00040	.00002	.00080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00006	.00002	.00067	-.00063	-.01554	-.00992	.00101
Stddev	.00016	.00016	.00015	.00094	.02044	.04857	.00658
%RSD	266.26	708.12	22.772	150.02	131.55	489.80	652.49
#1	-.00015	.00005	.00061	.00031	-.02618	-.04413	.00119
#2	.00013	.00017	.00056	-.00156	.00803	-.03129	-.00567
#3	-.00016	-.00015	.00085	-.00063	-.02846	.04568	.00750
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00075	-.00049	.00073	.01588	.00001	.00447	.00388
Stddev	.04660	.00111	.00025	.01711	.00021	.00399	.00242
%RSD	6223.1	226.82	33.769	107.69	1884.3	89.243	62.383
#1	.02411	-.00151	.00083	.03287	-.00019	.00875	.00192
#2	-.05451	-.00063	.00045	.01612	-.00001	.00084	.00313
#3	.02815	.00068	.00091	-.00134	.00023	.00383	.00658
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 24, 2015

Sample Name: CCB Acquired: 11/23/2015 19:15:34 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	-.00178	.00089	-.00014	-.00011	-.00573	-.00008
Stddev	.00099	.00500	.00063	.00023	.00026	.00484	.00084
%RSD	9940.3	280.30	70.008	158.09	238.06	84.475	1031.8
#1	.00001	.00334	.00115	.00011	-.00000	-.00843	-.00053
#2	.00097	-.00205	.00018	-.00020	-.00040	-.00014	.00089
#3	-.00101	-.00665	.00135	-.00034	.00008	-.00861	-.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00044	-.00008	F -.18376
Stddev	.00046	.00001	.47115
%RSD	104.27	9.9868	256.39
#1	.00030	-.00009	-.25065
#2	.00095	-.00007	-.61790
#3	.00007	-.00008	.31726
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16873.	104810.	2972.7
Stddev	18.	267.	9.9
%RSD	.10509	.25482	.33180
#1	16853.	104910.	2967.7
#2	16882.	105010.	2984.1
#3	16885.	104510.	2966.4

Approved: November 24, 2015

Sample Name: L1511114301 Acquired: 11/23/2015 19:19:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	10.347	.01544	.06769	.35945	.00084	F 326.65
Stddev	.00113	.025	.00165	.00040	.00178	.00004	.60
%RSD	1501.9	.24552	10.701	.58447	.49394	5.2672	.18316
#1	.00095	10.350	.01411	.06815	.36150	.00087	327.33
#2	-.00121	10.320	.01729	.06742	.35842	.00079	326.39
#3	.00048	10.371	.01492	.06751	.35843	.00085	326.21
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00777	.01719	.04161	.08109	22.924	6.8077	.09426
Stddev	.00015	.00051	.00083	.00077	.085	.0998	.00636
%RSD	1.8934	2.9665	1.9916	.95064	.36870	1.4661	6.7465
#1	.00791	.01722	.04126	.08188	22.914	6.9054	.09235
#2	.00762	.01667	.04255	.08034	22.845	6.8118	.10136
#3	.00779	.01769	.04101	.08104	23.013	6.7059	.08908
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	75.865	.92995	.01568	F 365.81	.03406	1.7296	.10680
Stddev	.243	.00524	.00041	.87	.00027	.0047	.00115
%RSD	.32058	.56377	2.6104	.23765	.77820	.26965	1.0812
#1	76.141	.93390	.01574	366.70	.03431	1.7261	.10806
#2	75.682	.93195	.01525	365.78	.03409	1.7276	.10579
#3	75.773	.92400	.01606	364.96	.03378	1.7349	.10656
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: November 24, 2015

Sample Name: L1511114301 Acquired: 11/23/2015 19:19:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00337	.00019	19.872	.03915	1.6011	.12315	-.00134
Stddev	.00288	.00846	.018	.00107	.0036	.00548	.00299
%RSD	85.390	4494.2	.09270	2.7260	.22309	4.4484	222.07
#1	.00441	.00994	19.876	.04037	1.6052	.11897	.00162
#2	.00558	-.00518	19.889	.03869	1.5997	.12935	-.00130
#3	.00012	-.00419	19.852	.03838	1.5985	.12113	-.00435
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.03613	1.1648	5.5802
Stddev	.00088	.0004	.2202
%RSD	2.4412	.03443	3.9465
#1	.03514	1.1653	5.5946
#2	.03643	1.1645	5.7929
#3	.03683	1.1648	5.3531
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15088.	93132.	2849.4
Stddev	13.	86.	8.0
%RSD	.08383	.09186	.28220
#1	15077.	93049.	2840.9
#2	15102.	93220.	2856.9
#3	15086.	93129.	2850.4

Approved: November 24, 2015

Sample Name: L1511114302 Acquired: 11/23/2015 19:23:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	.23789	.00159	.06117	.07614	.00002	53.548
Stddev	.00087	.00389	.00250	.00185	.00038	.00003	.107
%RSD	97.692	1.6340	157.24	3.0305	.50332	130.02	.20000
#1	.00050	.23775	.00089	.06094	.07578	.00004	53.658
#2	.00188	.24185	-.00049	.05943	.07654	.00002	53.541
#3	.00029	.23408	.00437	.06312	.07611	-.00001	53.444
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	.00131	.00346	.00321	.38801	4.9644	.05269
Stddev	.00019	.00007	.00063	.00093	.02024	.0341	.00293
%RSD	181.39	5.4190	18.251	29.042	5.2152	.68656	5.5579
#1	.00021	.00138	.00370	.00327	.39139	4.9952	.05204
#2	.00022	.00132	.00394	.00225	.36630	4.9703	.05589
#3	-.00012	.00124	.00275	.00411	.40634	4.9278	.05014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.123	.02684	.01137	F 324.82	.00243	.09184	.00430
Stddev	.109	.00251	.00019	.98	.00084	.00357	.00204
%RSD	.89539	9.3424	1.6362	.30070	34.530	3.8870	47.391
#1	12.243	.02561	.01154	325.84	.00152	.09024	.00393
#2	12.031	.02972	.01138	324.73	.00317	.09593	.00247
#3	12.095	.02518	.01117	323.90	.00262	.08935	.00650
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: November 24, 2015

Sample Name: L1511114302 Acquired: 11/23/2015 19:23:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	.00173	7.7496	.00167	.64668	-.00114	-.00042
Stddev	.00060	.00477	.0169	.00044	.00059	.00426	.00368
%RSD	50.923	275.60	.21818	26.324	.09153	372.19	879.01
#1	.00166	-.00029	7.7461	.00188	.64737	.00113	.00329
#2	.00051	.00718	7.7680	.00116	.64632	.00149	-.00408
#3	.00135	-.00170	7.7347	.00195	.64636	-.00606	-.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.01002	.05266	1.2042
Stddev	.00060	.00003	.3003
%RSD	5.9677	.04835	24.934
#1	.01020	.05263	.94417
#2	.00936	.05267	1.5328
#3	.01051	.05268	1.1355
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15613.	96046.	2895.3
Stddev	2.	132.	16.2
%RSD	.01104	.13743	.56068
#1	15613.	95900.	2877.6
#2	15611.	96157.	2909.4
#3	15615.	96082.	2898.9

Approved: November 24, 2015

Sample Name: L1511114303 Acquired: 11/23/2015 19:27:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00032	2.6344	.00547	.05892	.12277	.00016	99.991
Stddev	.00118	.0090	.00505	.00104	.00080	.00001	.379
%RSD	374.70	.34154	92.166	1.7612	.64961	8.9876	.37870
#1	-.00165	2.6253	.00974	.05783	.12193	.00017	100.22
#2	.00010	2.6346	-.00009	.05989	.12351	.00015	100.20
#3	.00061	2.6433	.00678	.05904	.12288	.00016	99.554
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00168	.00492	.01165	.02718	5.4206	5.1144	.05679
Stddev	.00016	.00030	.00132	.00067	.0079	.0273	.00205
%RSD	9.3896	6.0156	11.338	2.4702	.14498	.53363	3.6077
#1	.00164	.00525	.01088	.02777	5.4119	5.1111	.05484
#2	.00186	.00467	.01318	.02733	5.4271	5.0889	.05661
#3	.00155	.00484	.01089	.02645	5.4228	5.1432	.05893
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	25.013	.21254	.01221	F 322.81	.00874	.42659	.02724
Stddev	.134	.00081	.00021	.52	.00086	.00305	.00133
%RSD	.53525	.38096	1.6796	.16075	9.8090	.71611	4.8774
#1	25.147	.21347	.01245	323.24	.00807	.42332	.02730
#2	24.880	.21196	.01213	322.96	.00971	.42938	.02588
#3	25.012	.21219	.01206	322.23	.00845	.42706	.02854
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: November 24, 2015

Sample Name: L1511114303 Acquired: 11/23/2015 19:27:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00190	.00305	10.489	.01067	.74024	.03082	.00014
Stddev	.00242	.00540	.028	.00043	.00072	.00291	.00366
%RSD	127.32	177.33	.26282	3.9905	.09748	9.4466	2593.8
#1	-.00053	.00860	10.521	.01105	.74096	.03298	-.00174
#2	-.00048	.00273	10.470	.01021	.73951	.03197	-.00219
#3	-.00470	-.00219	10.476	.01074	.74024	.02751	.00435
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.01624	.27954	2.2478
Stddev	.00115	.00050	.1861
%RSD	7.0672	.17967	8.2787
#1	.01715	.27995	2.1873
#2	.01662	.27898	2.4566
#3	.01495	.27969	2.0995
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15561.	95813.	2868.6
Stddev	19.	297.	14.4
%RSD	.12312	.31020	.50240
#1	15547.	96155.	2861.5
#2	15583.	95614.	2859.1
#3	15554.	95671.	2885.2

Approved: November 24, 2015

Sample Name: L1511114304 Acquired: 11/23/2015 19:31:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00070	.16505	.00339	.32612	.09985	.00005	103.82
Stddev	.00033	.00913	.00164	.00150	.00081	.00006	.27
%RSD	47.617	5.5289	48.264	.46051	.81137	134.60	.26006
#1	-.00034	.15655	.00397	.32469	.10044	-.00001	104.02
#2	-.00077	.16390	.00154	.32599	.09892	.00011	103.92
#3	-.00099	.17470	.00465	.32769	.10018	.00003	103.51
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.00175	.02346	.00119	.18891	20.851	.12873
Stddev	.00005	.00041	.00045	.00096	.02649	.212	.00461
%RSD	174.35	23.490	1.9194	80.357	14.024	1.0179	3.5824
#1	.00007	.00131	.02396	.00217	.19715	21.093	.12426
#2	-.00003	.00181	.02310	.00026	.21031	20.698	.12847
#3	.00005	.00212	.02332	.00114	.15928	20.763	.13347
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	19.610	.01643	.00219	F 1302.0	.00124	1.4758	.00223
Stddev	.119	.00183	.00010	5.5	.00054	.0041	.00236
%RSD	.60814	11.155	4.7710	.42507	43.778	.27740	106.21
#1	19.493	.01637	.00223	1297.7	.00137	1.4716	.00032
#2	19.732	.01463	.00207	1308.3	.00171	1.4798	.00149
#3	19.606	.01830	.00226	1300.1	.00065	1.4761	.00487
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: November 24, 2015

Sample Name: L1511114304 Acquired: 11/23/2015 19:31:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00110	-.00702	32.415	.03896	.81097	.11264	-.00092
Stddev	.00069	.00383	.049	.00090	.00428	.00375	.00386
%RSD	62.045	54.545	.15116	2.3073	.52769	3.3266	419.92
#1	-.00037	-.00848	32.429	.03996	.81441	.11624	.00318
#2	-.00173	-.00268	32.455	.03822	.81233	.10876	-.00449
#3	-.00122	-.00991	32.360	.03869	.80618	.11294	-.00145
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.01960	.03425	6.5854
Stddev	.00046	.00027	.0919
%RSD	2.3670	.78139	1.3948
#1	.01943	.03446	6.5821
#2	.01925	.03433	6.4953
#3	.02013	.03395	6.6789
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	14623.	88868.	2844.1
Stddev	32.	292.	10.0
%RSD	.21794	.32868	.35299
#1	14659.	89193.	2838.1
#2	14609.	88627.	2838.5
#3	14600.	88785.	2855.7

Approved: November 24, 2015

Sample Name: L1511117601 Acquired: 11/23/2015 19:35:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00044	.09308	-.00219	.01189	.07479	.00001	44.013	-.00004
Stddev	.00083	.00549	.00140	.00108	.00013	.00001	.017	.00017
%RSD	186.94	5.8960	64.049	9.1261	.17656	71.068	.03931	457.04
#1	.00137	.09252	-.00354	.01294	.07465	.00002	44.030	-.00020
#2	-.00023	.09882	-.00074	.01195	.07484	.00002	43.996	.00013
#3	.00020	.08789	-.00230	.01077	.07490	.00000	44.014	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.00101	.01144	.85680	2.0193	.01510	7.2523	.11870
Stddev	.00009	.00079	.00051	.00389	.0635	.00676	.0669	.00353
%RSD	436.85	78.555	4.4888	.45459	3.1428	44.740	.92265	2.9740
#1	.00012	.00181	.01194	.85699	2.0545	.01081	7.2673	.12144
#2	-.00004	.00023	.01092	.85281	1.9460	.02289	7.3104	.11994
#3	-.00001	.00098	.01147	.86059	2.0573	.01160	7.1792	.11472
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00035	9.4259	.00056	.57074	.00195	-.00351	-.00491	3.0012
Stddev	.00033	.0952	.00038	.00965	.00092	.00368	.00712	.0036
%RSD	95.061	1.0104	68.547	1.6907	47.383	104.86	145.05	.11986
#1	-.00013	9.5059	.00100	.56008	.00299	-.00140	-.00452	3.0052
#2	-.00018	9.4512	.00029	.57327	.00123	-.00137	.00201	2.9982
#3	-.00073	9.3206	.00039	.57887	.00162	-.00776	-.01222	3.0002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 24, 2015

Sample Name: L1511117601 Acquired: 11/23/2015 19:35:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	.26464	-.00588	-.00009	-.00040	.01010	.09993
Stddev	.00047	.00091	.00423	.00054	.00062	.00019	.16170
%RSD	161.99	.34390	71.888	582.66	153.76	1.9248	161.81
#1	-.00004	.26569	-.01039	.00052	-.00052	.00988	.21664
#2	.00084	.26404	-.00526	-.00051	.00027	.01015	.16779
#3	.00008	.26420	-.00200	-.00029	-.00096	.01026	-.08464
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16148.	100920.	2867.7
Stddev	36.	96.	10.2
%RSD	.22282	.09508	.35551
#1	16109.	100810.	2857.7
#2	16179.	100970.	2867.3
#3	16157.	100990.	2878.1

Approved: November 24, 2015

Sample Name: L1511117602 Acquired: 11/23/2015 19:39:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00101	.03975	-.00177	.01652	.04956	.00002	49.976	-.00001
Stddev	.00166	.00332	.00057	.00010	.00058	.00004	.119	.00010
%RSD	164.69	8.3560	32.065	.58747	1.1635	215.18	.23867	675.33
#1	-.00011	.03780	-.00224	.01642	.04996	-.00001	50.113	-.00007
#2	.00291	.03786	-.00114	.01662	.04982	.00001	49.919	-.00008
#3	.00022	.04358	-.00193	.01653	.04890	.00006	49.895	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.00130	.00129	.03030	1.2282	.01260	9.2136	.00719
Stddev	.00028	.00113	.00050	.01075	.0699	.00068	.0556	.00078
%RSD	932.71	87.562	39.270	35.475	5.6913	5.4172	.60400	10.850
#1	.00002	.00004	.00086	.03076	1.2929	.01183	9.2666	.00671
#2	-.00033	.00225	.00184	.01933	1.2377	.01313	9.2185	.00809
#3	.00022	.00160	.00116	.04081	1.1541	.01284	9.1556	.00677
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00058	3.9127	.00094	.01766	.00212	-.00231	-.00166	3.3890
Stddev	.00018	.0351	.00116	.00390	.00112	.00036	.00547	.0101
%RSD	30.625	.89597	123.17	22.107	52.713	15.612	330.55	.29682
#1	.00064	3.9502	.00122	.01338	.00249	-.00272	.00302	3.3911
#2	.00071	3.8807	.00194	.01857	.00301	-.00220	-.00031	3.3978
#3	.00038	3.9072	-.00033	.02102	.00087	-.00202	-.00768	3.3780
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 24, 2015

Sample Name: L1511117602 Acquired: 11/23/2015 19:39:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00034	.17893	-.00648	.00052	.00022	.00340	.09907
Stddev	.00073	.00104	.00625	.00248	.00049	.00006	.53264
%RSD	214.96	.58034	96.476	477.16	223.76	1.7402	537.64
#1	-.00102	.17981	-.00161	-.00218	-.00012	.00346	.06020
#2	.00043	.17778	-.01353	.00103	.00079	.00336	-.41307
#3	-.00043	.17919	-.00430	.00270	-.00000	.00336	.65008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16158.	101300.	2904.8
Stddev	13.	484.	15.1
%RSD	.08264	.47730	.52015
#1	16170.	101330.	2887.7
#2	16160.	100810.	2910.5
#3	16144.	101770.	2916.2

Approved: November 24, 2015

Sample Name: L1511117603 Acquired: 11/23/2015 19:43:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00147	.00492	.00070	.02155	.04820	-.00002	47.378
Stddev	.00075	.00140	.00059	.00253	.00052	.00003	.225
%RSD	50.833	28.527	84.695	11.753	1.0709	197.61	.47550
#1	.00125	.00582	.00056	.02436	.04791	-.00005	47.602
#2	.00085	.00331	.00019	.02088	.04879	.00001	47.381
#3	.00230	.00565	.00135	.01943	.04789	-.00000	47.151
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	.00006	.00103	.00473	.00051	1.1288	.01329
Stddev	.00013	.00043	.00084	.00130	.02490	.0616	.00118
%RSD	49.991	703.03	81.502	27.555	4849.0	5.4595	8.8519
#1	-.00023	.00048	.00017	.00416	.01681	1.0603	.01195
#2	-.00015	-.00038	.00184	.00623	.01288	1.1463	.01413
#3	-.00041	.00009	.00107	.00381	-.02815	1.1798	.01380
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.464	.00213	.00158	7.7815	.00045	.00849	.00397
Stddev	.063	.00121	.00031	.0563	.00033	.00442	.00241
%RSD	.54760	56.867	19.829	.72340	74.874	52.069	60.531
#1	11.392	.00316	.00125	7.8451	.00013	.00814	.00670
#2	11.501	.00079	.00163	7.7617	.00080	.00426	.00214
#3	11.500	.00245	.00187	7.7378	.00041	.01307	.00309
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 24, 2015

Sample Name: L1511117603 Acquired: 11/23/2015 19:43:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00281	-.00280	4.4966	.00054	.33002	-.01061	.00075
Stddev	.00184	.00376	.0060	.00074	.00113	.00331	.00136
%RSD	65.555	134.46	.13447	137.37	.34388	31.174	182.01
#1	-.00396	-.00703	4.4977	-.00030	.33100	-.01149	.00050
#2	-.00069	.00015	4.5021	.00111	.33028	-.00696	.00221
#3	-.00378	-.00151	4.4901	.00080	.32877	-.01340	-.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00040	.02156	F -.10466
Stddev	.00065	.00002	.28287
%RSD	164.35	.07081	270.28
#1	-.00110	.02154	.03107
#2	.00019	.02156	.08476
#3	-.00028	.02157	-.42981
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16174.	101580.	2905.6
Stddev	13.	366.	11.5
%RSD	.08128	.35989	.39447
#1	16179.	101290.	2892.4
#2	16159.	101460.	2911.5
#3	16183.	101990.	2913.0

Approved: November 24, 2015

Sample Name: L1511117604 Acquired: 11/23/2015 19:47:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.03106	-.00066	.02960	.07841	-.00006	56.548	-.00017
Stddev	.00035	.00545	.00226	.00143	.00043	.00003	.179	.00023
%RSD	386.72	17.554	342.98	4.8203	.54284	63.002	.31638	135.90
#1	.00050	.02592	-.00296	.02930	.07875	-.00010	56.732	.00009
#2	-.00012	.03678	.00156	.03116	.07856	-.00004	56.538	-.00033
#3	-.00011	.03048	-.00057	.02835	.07793	-.00003	56.374	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	.00175	.00243	.01844	3.6996	.01284	8.8877	.00124
Stddev	.00025	.00061	.00065	.01748	.0675	.00333	.1178	.00209
%RSD	188.87	34.802	26.688	94.748	1.8258	25.943	1.3257	168.95
#1	.00009	.00138	.00265	-.00130	3.7715	.01622	9.0216	-.00078
#2	-.00009	.00141	.00294	.02471	3.6900	.01273	8.8412	.00111
#3	-.00039	.00245	.00170	.03192	3.6375	.00956	8.8002	.00340
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	5.7552	.00076	.03470	.00183	-.00539	-.00023	3.7220
Stddev	.00006	.0154	.00050	.00194	.00314	.00092	.00702	.0050
%RSD	13.150	.26670	66.203	5.5913	171.74	16.986	3072.3	.13505
#1	.00055	5.7599	.00133	.03528	.00245	-.00543	.00721	3.7210
#2	.00042	5.7677	.00038	.03628	-.00158	-.00446	-.00117	3.7275
#3	.00049	5.7381	.00057	.03253	.00462	-.00629	-.00673	3.7175
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 24, 2015

Sample Name: L1511117604 Acquired: 11/23/2015 19:47:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	.22273	-.01149	-.00072	-.00015	.00233	.32235
Stddev	.00053	.00053	.00579	.00162	.00027	.00012	.28091
%RSD	137.99	.23827	50.404	223.48	173.75	4.9997	87.144
#1	-.00053	.22332	-.01072	-.00222	-.00043	.00246	.09866
#2	.00020	.22229	-.01764	-.00095	-.00014	.00224	.23077
#3	-.00084	.22259	-.00613	.00100	.00010	.00229	.63762
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16176.	100930.	2903.6
Stddev	28.	165.	11.7
%RSD	.17526	.16350	.40154
#1	16185.	100980.	2891.2
#2	16145.	101080.	2905.2
#3	16199.	100750.	2914.3

Approved: November 24, 2015

Sample Name: L1511117605 Acquired: 11/23/2015 19:51:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.01902	-.00164	.02200	.05047	-.00001	51.849	.00014
Stddev	.00205	.00749	.00208	.00019	.00110	.00003	.142	.00005
%RSD	854.23	39.377	126.77	.86249	2.1818	286.96	.27479	37.951
#1	-.00104	.01640	.00075	.02211	.05172	-.00004	52.004	.00020
#2	-.00084	.01319	-.00303	.02212	.05001	.00003	51.723	.00010
#3	.00260	.02747	-.00265	.02179	.04966	-.00002	51.820	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	.00123	.00048	.01271	1.8360	.01339	9.1223	.05293
Stddev	.00036	.00128	.00113	.00937	.0671	.00550	.0196	.00275
%RSD	715.23	103.77	236.44	73.753	3.6565	41.069	.21459	5.1957
#1	.00024	.00039	.00179	.01937	1.8590	.00730	9.1012	.05598
#2	-.00045	.00060	-.00013	.01676	1.7604	.01487	9.1399	.05063
#3	.00006	.00271	-.00022	.00199	1.8887	.01800	9.1257	.05219
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	6.2446	.00076	.01748	.00331	-.00437	-.00554	1.4775
Stddev	.00013	.0249	.00142	.00450	.00131	.00211	.00213	.0066
%RSD	85.640	.39863	187.90	25.734	39.634	48.249	38.356	.44789
#1	.00018	6.2234	.00142	.02222	.00429	-.00669	-.00359	1.4792
#2	.00001	6.2720	.00173	.01695	.00382	-.00259	-.00781	1.4830
#3	.00027	6.2383	-.00087	.01327	.00182	-.00382	-.00524	1.4702
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 24, 2015

Sample Name: L1511117605 Acquired: 11/23/2015 19:51:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.23280	-.00988	.00111	-.00049	.00462	.08526
Stddev	.00032	.00063	.00277	.00363	.00101	.00010	.37775
%RSD	164.10	.26955	28.065	325.77	207.11	2.1707	443.07
#1	.00022	.23212	-.01131	.00365	.00051	.00471	-.32249
#2	-.00014	.23292	-.00669	-.00304	-.00046	.00463	.42330
#3	.00051	.23336	-.01165	.00274	-.00150	.00451	.15496
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16250.	100910.	2896.7
Stddev	21.	64.	17.6
%RSD	.12653	.06325	.60672
#1	16229.	100980.	2877.4
#2	16270.	100850.	2911.7
#3	16252.	100910.	2901.1

Approved: November 24, 2015

Sample Name: L1511117701 Acquired: 11/23/2015 19:55:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00041	1.2061	.00014	.01621	.04349	.00009	50.791	-.00022
Stddev	.00148	.0053	.00361	.00126	.00095	.00003	.165	.00018
%RSD	358.54	.44272	2499.3	7.7777	2.1832	27.473	.32458	78.201
#1	-.00007	1.2119	.00404	.01476	.04382	.00012	50.794	-.00034
#2	.00087	1.2014	-.00050	.01679	.04241	.00007	50.624	-.00031
#3	-.00203	1.2049	-.00311	.01707	.04422	.00008	50.954	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00104	.00283	.00688	2.1111	1.5004	.00998	10.076	.04985
Stddev	.00010	.00023	.00038	.0053	.0760	.00444	.132	.00223
%RSD	9.7487	8.2873	5.5757	.25244	5.0635	44.444	1.3092	4.4680
#1	.00114	.00272	.00710	2.1136	1.5341	.01510	10.024	.04977
#2	.00094	.00310	.00644	2.1147	1.5538	.00762	9.9785	.05212
#3	.00104	.00267	.00711	2.1050	1.4134	.00722	10.226	.04767
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	3.6068	.00339	.09896	.00580	.00014	-.00025	5.0270
Stddev	.00034	.0073	.00031	.00460	.00133	.00229	.00471	.0113
%RSD	416.73	.20232	9.0371	4.6495	23.004	1667.9	1873.6	.22500
#1	-.00012	3.6011	.00310	.09550	.00468	.00263	.00164	5.0390
#2	.00028	3.6043	.00371	.09719	.00543	-.00188	.00322	5.0257
#3	-.00041	3.6150	.00335	.10418	.00728	-.00034	-.00561	5.0165
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 24, 2015

Sample Name: L1511117701 Acquired: 11/23/2015 19:55:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	.11887	.00716	.00081	.00106	.01288	.26954
Stddev	.00044	.00064	.00981	.00097	.00072	.00011	.40888
%RSD	344.83	.53430	136.93	120.51	68.012	.82952	151.70
#1	-.00004	.11897	.01638	.00014	.00162	.01288	.67874
#2	-.00060	.11819	-.00314	.00192	.00025	.01299	-.13902
#3	.00026	.11945	.00824	.00036	.00132	.01278	.26889
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16271.	101930.	2891.5
Stddev	28.	112.	2.8
%RSD	.17408	.11032	.09602
#1	16250.	101890.	2894.2
#2	16303.	102050.	2891.6
#3	16260.	101840.	2888.6

Approved: November 24, 2015

Sample Name: CCV Acquired: 11/23/2015 19:59:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.42045	10.544	.42900	.53436	1.0700	.05328	10.695
Stddev	.00070	.011	.00155	.00117	.0063	.00023	.079
%RSD	.16646	.10590	.36094	.21839	.59384	.43742	.73397
#1	.42030	10.545	.42820	.53352	1.0666	.05332	10.652
#2	.41984	10.533	.42802	.53388	1.0661	.05303	10.648
#3	.42121	10.555	.43079	.53569	1.0774	.05349	10.786
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05337	.21065	.54658	.53438	4.2619	54.811	1.0699
Stddev	.00026	.00049	.00085	.00139	.0440	.251	.0097
%RSD	.48087	.23223	.15568	.26013	1.0315	.45852	.90540
#1	.05366	.21108	.54651	.53570	4.2191	54.685	1.0609
#2	.05317	.21076	.54577	.53450	4.2595	54.647	1.0686
#3	.05329	.21012	.54746	.53293	4.3070	55.100	1.0801
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.745	.52905	1.0639	54.098	.54243	10.673	.53700
Stddev	.227	.00629	.0011	.313	.00118	.011	.00468
%RSD	2.1155	1.1880	.10760	.57883	.21693	.10415	.87095
#1	10.673	.52755	1.0641	53.925	.54318	10.670	.53184
#2	10.562	.52365	1.0649	53.910	.54303	10.685	.54096
#3	10.999	.53595	1.0626	54.459	.54107	10.663	.53819
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: November 24, 2015

Sample Name: CCV Acquired: 11/23/2015 19:59:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2836	.42981	5.3968	1.0592	1.0676	1.0641	.54980
Stddev	.0043	.00466	.0084	.0015	.0051	.0069	.00204
%RSD	.33536	1.0853	.15549	.13917	.47915	.64519	.37070
#1	1.2821	.43314	5.4044	1.0608	1.0657	1.0568	.55136
#2	1.2885	.42448	5.3982	1.0590	1.0636	1.0651	.55056
#3	1.2803	.43181	5.3878	1.0579	1.0733	1.0704	.54750
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0734	1.0741	F 1.2123
Stddev	.0019	.0010	.2375
%RSD	.17922	.09739	19.589
#1	1.0753	1.0745	1.4864
#2	1.0715	1.0749	1.0715
#3	1.0736	1.0729	1.0788
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16537.	101840.	2949.0
Stddev	2.	224.	14.3
%RSD	.01411	.22020	.48601
#1	16538.	102040.	2962.0
#2	16535.	101890.	2951.4
#3	16539.	101600.	2933.6

Approved: November 24, 2015

Sample Name: CCB Acquired: 11/23/2015 20:03:13 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	.00416	.00186	.00464	.00090	.00001	-.01998
Stddev	.00025	.00512	.00160	.00105	.00043	.00004	.00807
%RSD	92.322	123.02	85.910	22.560	47.293	303.35	40.397
#1	-.00007	.00074	.00252	.00553	.00124	.00002	-.02727
#2	-.00055	.00170	.00004	.00349	.00104	.00004	-.02138
#3	-.00019	.01005	.00302	.00491	.00042	-.00003	-.01131
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00030	.00018	.00077	-.00051	-.02118	.08914	.00422
Stddev	.00007	.00021	.00042	.00091	.01165	.06580	.00188
%RSD	24.589	117.72	53.853	178.48	55.001	73.814	44.542
#1	-.00038	-.00004	.00044	.00053	-.01133	.01360	.00537
#2	-.00024	.00019	.00124	-.00088	-.01817	.11989	.00524
#3	-.00027	.00039	.00064	-.00118	-.03403	.13393	.00205
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00356	.00042	.00047	.05243	.00002	.00735	.00267
Stddev	.08089	.00275	.00031	.04071	.00066	.00106	.00245
%RSD	2272.5	650.23	66.043	77.641	3098.7	14.410	91.667
#1	-.09409	.00119	.00057	.04218	-.00019	.00617	.00377
#2	.06163	-.00263	.00012	.01782	-.00051	.00822	-.00013
#3	.02178	.00271	.00071	.09728	.00077	.00767	.00438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 24, 2015

Sample Name: CCB Acquired: 11/23/2015 20:03:13 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00472	.00053	-.00018	.00022	.00006	-.00107	.00013
Stddev	.00202	.00249	.00200	.00020	.00038	.00469	.00116
%RSD	42.796	469.06	1102.3	92.393	626.63	437.53	872.41
#1	-.00470	-.00214	-.00088	.00023	.00049	-.00331	-.00120
#2	-.00674	.00278	.00208	.00042	-.00024	-.00423	.00068
#3	-.00270	.00096	-.00174	.00001	-.00006	.00432	.00092
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00023	.00008	F .06715
Stddev	.00031	.00016	.19871
%RSD	138.06	191.85	295.91
#1	-.00021	.00025	-.05035
#2	-.00054	.00008	.29658
#3	.00008	-.00008	-.04477
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16970.	105150.	2966.7
Stddev	24.	216.	18.9
%RSD	.13977	.20537	.63842
#1	16970.	105180.	2984.8
#2	16994.	104920.	2968.3
#3	16946.	105350.	2947.1

Approved: November 24, 2015

Sample Name: ICSA Acquired: 11/23/2015 20:07:17 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00143	277.41	-.00013	-.02911	.00040	-.00004	247.50
Stddev	.00093	1.60	.00339	.00105	.00055	.00004	.40
%RSD	65.140	.57508	2538.4	3.5987	136.22	87.021	.16261
#1	.00157	275.78	-.00055	-.02940	.00104	-.00000	247.28
#2	.00044	278.96	-.00330	-.02999	.00015	-.00006	247.25
#3	.00229	277.50	.00344	-.02795	.00003	-.00007	247.96
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00028	-.00139	-.00128	-.00017	101.92	.06725	.02734
Stddev	.00015	.00014	.00012	.00113	.32	.09926	.00275
%RSD	52.204	10.355	9.4089	678.52	.31030	147.58	10.054
#1	-.00044	-.00128	-.00142	-.00049	101.76	.03502	.02748
#2	-.00014	-.00156	-.00120	.00109	101.71	.17862	.02452
#3	-.00028	-.00134	-.00123	-.00110	102.28	-.01187	.03001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	260.19	.00080	-.00135	.06476	.00104	.04066	F .00583
Stddev	1.43	.00075	.00025	.01943	.00042	.00698	.00551
%RSD	.55141	93.646	18.759	30.010	40.793	17.160	94.546
#1	260.20	-.00002	-.00106	.07364	.00080	.03656	-.00049
#2	258.74	.00146	-.00153	.07816	.00078	.03671	.00833
#3	261.61	.00096	-.00146	.04247	.00153	.04872	.00965
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							.00400
Low Limit							-.00400

Approved: November 24, 2015

Sample Name: ICSA Acquired: 11/23/2015 20:07:17 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01259	-.00087	.25486	-.00042	-.00027	.00209	.00149
Stddev	.00478	.00533	.00185	.00059	.00029	.00263	.00120
%RSD	37.942	610.57	.72706	141.48	107.90	125.84	80.450
#1	.00830	-.00668	.25318	-.00015	-.00008	-.00023	.00285
#2	.01172	.00028	.25456	-.00001	-.00061	.00155	.00099
#3	.01773	.00378	.25685	-.00109	-.00012	.00495	.00061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00269	-.00665	F -3.7933
Stddev	.00061	.00012	.0345
%RSD	22.648	1.7865	.90819
#1	-.00268	-.00666	-3.7543
#2	-.00330	-.00677	-3.8198
#3	-.00209	-.00653	-3.8057
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02000
Low Limit			-.02000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15383.	94423.	2873.2
Stddev	34.	86.	12.3
%RSD	.22333	.09092	.42971
#1	15347.	94522.	2885.2
#2	15416.	94382.	2874.0
#3	15386.	94366.	2860.5

Approved: November 24, 2015

Sample Name: ICSAB Acquired: 11/23/2015 20:11:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.58026	288.99	.27724	-.05003	.27894	.27820	258.23
Stddev	.00160	1.86	.00200	.00085	.00064	.00047	.74
%RSD	.27626	.64533	.72110	1.7002	.22965	.16739	.28471
#1	.58210	288.55	.27951	-.05101	.27821	.27768	257.80
#2	.57917	291.04	.27575	-.04961	.27922	.27859	259.08
#3	.57950	287.39	.27647	-.04948	.27939	.27831	257.82
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53839	.25770	.28133	.26868	106.86	F 6.0192	.02842
Stddev	.00106	.00037	.00032	.00062	.34	.1277	.00221
%RSD	.19757	.14226	.11415	.22940	.32049	2.1216	7.7838
#1	.53858	.25812	.28156	.26829	106.81	5.9693	.02590
#2	.53934	.25745	.28145	.26939	107.22	6.1644	.03004
#3	.53724	.25753	.28096	.26835	106.54	5.9241	.02933
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						6.0000	
Low Limit						4.0000	

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	270.76	.26983	-.00179	5.8852	.53133	.10759	.53700
Stddev	1.03	.00144	.00023	.0236	.00094	.00382	.00183
%RSD	.37984	.53452	12.959	.40092	.17631	3.5491	.33998
#1	270.48	.27124	-.00203	5.8782	.53221	.10600	.53650
#2	271.91	.26990	-.00157	5.9114	.53035	.11194	.53903
#3	269.91	.26836	-.00175	5.8658	.53143	.10482	.53548
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 24, 2015

Sample Name: ICSAB Acquired: 11/23/2015 20:11:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.57686	.27574	.00873	-.00031	-.00021	.00056	.53806
Stddev	.00594	.00204	.00324	.00044	.00047	.00888	.00248
%RSD	1.0296	.74042	37.103	142.37	216.57	1577.4	.46104
#1	.57692	.27402	.01202	.00005	-.00037	.00705	.53759
#2	.58277	.27799	.00554	-.00080	.00031	.00420	.54075
#3	.57089	.27520	.00862	-.00018	-.00058	-.00956	.53586
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.27781	.52300	F -4.4803
Stddev	.00038	.00052	.3519
%RSD	.13646	.09935	7.8534
#1	.27750	.52335	-4.4841
#2	.27769	.52325	-4.8302
#3	.27823	.52241	-4.1265
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02500
Low Limit			-.02500

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15008.	91860.	2772.4
Stddev	18.	367.	10.8
%RSD	.12053	.39982	.38956
#1	14987.	92088.	2776.7
#2	15020.	91436.	2760.1
#3	15016.	92055.	2780.4

Approved: November 24, 2015

Sample Name: CCV Acquired: 11/23/2015 20:15:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .44727	F 11.246	F .45209	F .56423	F 1.1303	F .05658	F 11.367
Stddev	.00093	.003	.00554	.00165	.0033	.00006	.013
%RSD	.20894	.02323	1.2252	.29225	.28900	.10667	.11190
#1	.44834	11.245	.44580	.56267	1.1297	.05660	11.363
#2	.44662	11.243	.45626	.56406	1.1338	.05652	11.357
#3	.44685	11.249	.45419	.56596	1.1273	.05663	11.382
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.40000	10.000	.40000	.50000	1.0000	.05000	10.000
Range	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .05657	F .22379	F .58074	F .56819	F 4.5507	F 57.601	F 1.1336
Stddev	.00039	.00039	.00055	.00075	.0055	.107	.0079
%RSD	.69380	.17294	.09479	.13173	.12152	.18557	.69724
#1	.05643	.22404	.58012	.56732	4.5473	57.478	1.1275
#2	.05627	.22398	.58113	.56864	4.5571	57.675	1.1425
#3	.05702	.22335	.58099	.56860	4.5478	57.649	1.1307
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.05000	.20000	.50000	.50000	4.0000	50.000	1.0000
Range	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 11.221	F .56051	F 1.1283	F 56.998	F .57418	F 11.324	F .56787
Stddev	.066	.00175	.0021	.149	.00045	.009	.00334
%RSD	.58827	.31190	.18548	.26085	.07793	.07987	.58858
#1	11.252	.55905	1.1262	56.957	.57367	11.320	.56884
#2	11.265	.56002	1.1303	57.163	.57451	11.335	.56415
#3	11.145	.56245	1.1283	56.875	.57435	11.318	.57062
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	10.000	.50000	1.0000	50.000	.50000	10.000	.50000
Range	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%

Approved: November 24, 2015

Sample Name: CCV Acquired: 11/23/2015 20:15:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 1.3678	F .46211	F 5.7190	F 1.1234	F 1.1288	F 1.1255	F .58120
Stddev	.0005	.00405	.0119	.0019	.0031	.0073	.00159
%RSD	.03964	.87665	.20806	.17316	.27294	.64483	.27397
#1	1.3672	.45884	5.7058	1.1230	1.1281	1.1306	.57941
#2	1.3683	.46665	5.7289	1.1255	1.1322	1.1287	.58173
#3	1.3677	.46085	5.7223	1.1217	1.1261	1.1172	.58246
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	1.2000	.40000	5.0000	1.0000	1.0000	1.0000	.50000
Range	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	F 1.1372	F 1.1375	F .75417
Stddev	.0013	.0004	.30223
%RSD	.11189	.03215	40.075
#1	1.1369	1.1375	.92663
#2	1.1361	1.1378	.40519
#3	1.1386	1.1371	.93068
Check ?	Chk Fail	Chk Fail	Chk Fail
Value	1.0000	1.0000	1.0000
Range	10.000%	10.000%	-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	15885.	97744.	2838.0
Stddev	17.	57.	10.7
%RSD	.10956	.05878	.37681
#1	15905.	97798.	2846.4
#2	15874.	97750.	2826.0
#3	15876.	97684.	2841.7

Approved: November 24, 2015

Sample Name: CCB Acquired: 11/23/2015 20:18:50 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00138	.01268	-.00095	.00479	.00051	.00001	-.01719
Stddev	.00011	.00155	.00087	.00048	.00040	.00002	.01273
%RSD	8.1525	12.221	91.339	10.048	78.432	195.13	74.086
#1	.00147	.01197	-.00105	.00474	.00006	.00002	-.03057
#2	.00140	.01161	-.00176	.00434	.00064	.00002	-.00522
#3	.00125	.01446	-.00004	.00530	.00083	-.00001	-.01576
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	.00012	.00088	-.00019	.00075	.15530	.00460
Stddev	.00024	.00019	.00033	.00072	.01910	.06289	.00529
%RSD	123.84	154.77	37.050	374.19	2550.8	40.492	115.10
#1	.00001	.00027	.00123	.00015	.02281	.08907	.00999
#2	-.00046	-.00009	.00082	.00029	-.01010	.21420	.00439
#3	-.00014	.00019	.00059	-.00102	-.01046	.16264	-.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.07604	.00069	.00057	.02742	.00036	.00204	.00223
Stddev	.01593	.00110	.00027	.00713	.00053	.00168	.00274
%RSD	20.946	159.74	46.784	25.989	145.47	82.621	122.82
#1	-.09253	.00085	.00028	.02508	-.00012	.00270	.00494
#2	-.07484	.00170	.00063	.02175	.00092	.00329	-.00054
#3	-.06074	-.00048	.00081	.03542	.00028	.00012	.00229
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 24, 2015

Sample Name: CCB Acquired: 11/23/2015 20:18:50 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00339	-.00276	-.00015	-.00005	-.00013	-.00236	.00162
Stddev	.00340	.00291	.00254	.00030	.00029	.00655	.00105
%RSD	100.39	105.44	1738.7	654.02	214.08	277.15	64.758
#1	-.00219	.00043	.00246	-.00038	.00015	.00279	.00254
#2	-.00723	-.00528	-.00262	.00004	-.00042	-.00015	.00048
#3	-.00075	-.00344	-.00027	.00020	-.00012	-.00973	.00184
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00054	.00014	F -.27762
Stddev	.00038	.00020	.31924
%RSD	69.737	144.41	114.99
#1	-.00078	-.00008	.08886
#2	-.00011	.00030	-.42640
#3	-.00074	.00018	-.49530
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16185.	100720.	2847.8
Stddev	11.	192.	6.2
%RSD	.06500	.19032	.21597
#1	16178.	100930.	2840.9
#2	16197.	100690.	2849.6
#3	16180.	100550.	2852.8

Approved: November 24, 2015

Sample Name: LLCCV Acquired: 11/23/2015 20:22:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00977	.18984	.00811	.08860	.00969	.00174	.41552	.00059
Stddev	.00093	.00791	.00355	.00220	.00026	.00001	.00849	.00008
%RSD	9.5392	4.1670	43.741	2.4845	2.6801	.48204	2.0431	13.092
#1	.00891	.19251	.01121	.09007	.00943	.00175	.42343	.00051
#2	.00963	.19607	.00888	.08607	.00971	.00174	.40655	.00061
#3	.01076	.18094	.00424	.08967	.00995	.00173	.41658	.00066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00422	.00538	.00448	.07486	1.0250	.09436	.41793	.00841
Stddev	.00013	.00079	.00019	.00419	.0865	.00780	.03117	.00148
%RSD	3.0837	14.700	4.1863	5.5941	8.4376	8.2617	7.4589	17.654
#1	.00428	.00609	.00469	.07396	1.0754	.09589	.40608	.00866
#2	.00431	.00553	.00442	.07120	1.0745	.08591	.39442	.00975
#3	.00407	.00453	.00433	.07943	.92513	.10127	.45329	.00681
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00783	.49687	.01812	.83149	.00895	.07667	.01512	.85482
Stddev	.00008	.03707	.00058	.00503	.00043	.00145	.00388	.00218
%RSD	1.0098	7.4605	3.1829	.60496	4.8191	1.8970	25.662	.25527
#1	.00789	.47609	.01763	.83724	.00853	.07580	.01920	.85633
#2	.00774	.47484	.01876	.82794	.00894	.07585	.01469	.85581
#3	.00787	.53966	.01798	.82928	.00939	.07835	.01147	.85232
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 24, 2015

Sample Name: LLCCV Acquired: 11/23/2015 20:22:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.42938	.04323	.02253	.18511	.00850	.01911	41.546
Stddev	.00137	.00056	.00549	.00164	.00077	.00022	.371
%RSD	.31795	1.3033	24.368	.88635	9.0296	1.1287	.89321
#1	.43037	.04380	.02872	.18691	.00888	.01916	41.203
#2	.42996	.04320	.02061	.18370	.00900	.01930	41.940
#3	.42782	.04267	.01825	.18471	.00762	.01887	41.497
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16356.	100870.	2854.5
Stddev	31.	142.	4.1
%RSD	.19219	.14108	.14526
#1	16330.	100800.	2858.9
#2	16347.	101030.	2850.6
#3	16391.	100770.	2854.0

Approved: November 24, 2015

Sample Name: LLCCV Acquired: 11/23/2015 20:26:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01850	.35790	.01723	.17351	.01897	.00341	.87581
Stddev	.00068	.00086	.00236	.00173	.00003	.00011	.02967
%RSD	3.6824	.24019	13.672	.99840	.13722	3.0835	3.3876
#1	.01927	.35864	.01584	.17443	.01900	.00352	.89791
#2	.01825	.35810	.01995	.17151	.01896	.00331	.88742
#3	.01798	.35696	.01590	.17458	.01896	.00339	.84209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00169	.00862	.00948	.00942	.17296	1.8032	.18310
Stddev	.00015	.00013	.00090	.00086	.02382	.0360	.00582
%RSD	8.6216	1.5209	9.5417	9.1569	13.770	1.9964	3.1759
#1	.00168	.00858	.00897	.01002	.15325	1.7709	.17639
#2	.00155	.00877	.01052	.00981	.19942	1.7967	.18641
#3	.00184	.00852	.00894	.00843	.16620	1.8420	.18651
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.90741	.01724	.01598	.91684	.03618	1.6835	.01902
Stddev	.11574	.00205	.00043	.00861	.00073	.0033	.00408
%RSD	12.755	11.870	2.6601	.93880	2.0294	.19476	21.466
#1	1.0410	.01758	.01625	.91180	.03693	1.6853	.01465
#2	.83657	.01910	.01621	.91195	.03615	1.6855	.02274
#3	.84470	.01505	.01549	.92678	.03546	1.6797	.01966
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 24, 2015

Sample Name: LLCCV Acquired: 11/23/2015 20:26:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.16424	.03420	1.7246	.86849	.08618	.04972	.37131
Stddev	.00369	.00635	.0031	.00231	.00041	.00365	.00084
%RSD	2.2464	18.575	.18234	.26602	.47909	7.3474	.22745
#1	.16034	.03874	1.7210	.86814	.08665	.05124	.37038
#2	.16768	.02694	1.7262	.87096	.08588	.05236	.37204
#3	.16471	.03692	1.7266	.86637	.08602	.04555	.37150
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.01662	.03587	F 89.192
Stddev	.00043	.00003	.190
%RSD	2.5801	.07433	.21291
#1	.01710	.03587	89.018
#2	.01646	.03589	89.164
#3	.01629	.03584	89.395
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			45.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16314.	101420.	2860.5
Stddev	36.	221.	12.8
%RSD	.21862	.21744	.44801
#1	16327.	101200.	2855.0
#2	16274.	101410.	2851.4
#3	16342.	101650.	2875.2

Approved: November 24, 2015

Sample Name: L1511117702 Acquired: 11/23/2015 20:30:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	.02435	-.00172	.01680	.03841	-.00006	52.286	-.00024
Stddev	.00071	.00913	.00171	.00214	.00044	.00005	.048	.00016
%RSD	281.23	37.502	99.311	12.744	1.1564	82.486	.09207	64.823
#1	.00048	.02118	-.00282	.01925	.03809	-.00003	52.240	-.00023
#2	-.00030	.01722	-.00259	.01578	.03891	-.00004	52.282	-.00009
#3	-.00093	.03464	.00025	.01536	.03822	-.00012	52.336	-.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.00176	.00151	.01267	1.1372	.01542	10.276	.00127
Stddev	.00006	.00116	.00078	.00651	.0796	.00189	.216	.00090
%RSD	38.168	65.871	51.361	51.414	7.0032	12.265	2.1056	70.798
#1	.00009	.00193	.00212	.00783	1.0828	.01326	10.453	.00136
#2	.00019	.00052	.00178	.01011	1.2286	.01673	10.035	.00033
#3	.00021	.00282	.00064	.02007	1.1002	.01628	10.341	.00212
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	4.0662	.00014	.01825	.00211	-.00367	-.00603	3.6894
Stddev	.00031	.0145	.00022	.00028	.00160	.00274	.00557	.0134
%RSD	951.31	.35631	153.36	1.5459	75.617	74.826	92.281	.36304
#1	.00031	4.0672	-.00011	.01792	.00284	-.00682	-.00531	3.6957
#2	-.00030	4.0512	.00029	.01838	.00321	-.00182	-.00086	3.6985
#3	.00008	4.0801	.00025	.01844	.00028	-.00236	-.01193	3.6740
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 24, 2015

Sample Name: L1511117702 Acquired: 11/23/2015 20:30:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.15766	-.01109	-.00003	-.00072	.00344	.57125
Stddev	.00045	.00015	.00404	.00123	.00031	.00006	.04072
%RSD	142.39	.09426	36.445	4297.3	42.548	1.8685	7.1275
#1	.00079	.15759	-.01284	-.00130	-.00038	.00337	.60264
#2	-.00009	.15757	-.00647	.00007	-.00097	.00350	.52524
#3	.00024	.15784	-.01396	.00115	-.00082	.00344	.58586
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16241.	101350.	2911.5
Stddev	38.	121.	3.9
%RSD	.23430	.11903	.13532
#1	16232.	101470.	2907.0
#2	16208.	101230.	2913.7
#3	16282.	101350.	2913.9

Approved: November 24, 2015

Sample Name: L1511117703 Acquired: 11/23/2015 20:34:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	.19017	.00040	.01835	.05225	-.00003	42.571	-.00007
Stddev	.00112	.00408	.00202	.00140	.00035	.00003	.084	.00015
%RSD	1052.7	2.1437	510.43	7.6267	.66832	92.887	.19712	233.57
#1	.00122	.19350	-.00138	.01771	.05231	-.00006	42.524	-.00023
#2	-.00101	.19138	-.00003	.01996	.05187	.00000	42.668	-.00005
#3	.00010	.18562	.00260	.01739	.05256	-.00005	42.521	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.00249	.00110	.09986	.79279	.01092	4.6591	.00768
Stddev	.00003	.00015	.00050	.00451	.07122	.00370	.0854	.00139
%RSD	19.437	6.1867	45.086	4.5192	8.9838	33.883	1.8338	18.069
#1	.00015	.00264	.00151	.09808	.71323	.00686	4.6788	.00660
#2	.00011	.00248	.00126	.09650	.85060	.01180	4.5655	.00925
#3	.00016	.00234	.00055	.10499	.81454	.01410	4.7330	.00720
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	6.8167	.00066	.02284	.00270	-.00202	-.00019	4.0616
Stddev	.00048	.0462	.00053	.00237	.00170	.00210	.00530	.0082
%RSD	270.79	.67848	81.254	10.380	63.126	103.82	2748.3	.20100
#1	-.00048	6.7807	.00005	.02109	.00401	-.00438	-.00042	4.0694
#2	.00037	6.8005	.00106	.02190	.00331	-.00133	-.00537	4.0624
#3	-.00043	6.8689	.00086	.02554	.00077	-.00035	.00521	4.0531
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 24, 2015

Sample Name: L1511117703 Acquired: 11/23/2015 20:34:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00042	.12294	-.00831	.00169	-.00007	.00193	.61948
Stddev	.00055	.00025	.00289	.00144	.00052	.00015	.11842
%RSD	130.58	.20549	34.780	85.587	735.44	7.8541	19.116
#1	-.00086	.12291	-.00706	.00067	.00010	.00189	.59249
#2	-.00060	.12320	-.00625	.00105	-.00066	.00210	.74907
#3	.00020	.12270	-.01161	.00334	.00034	.00181	.51688
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16310.	101500.	2896.6
Stddev	41.	198.	8.7
%RSD	.25081	.19480	.29931
#1	16325.	101290.	2895.8
#2	16341.	101680.	2888.4
#3	16264.	101540.	2905.7

Approved: November 24, 2015

Sample Name: L1511117704 Acquired: 11/23/2015 20:38:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.03478	-.00191	.02078	.06954	-.00005	56.487	-.00015
Stddev	.00082	.00661	.00252	.00270	.00040	.00002	.105	.00008
%RSD	160.91	18.997	131.65	12.986	.57483	32.844	.18531	57.721
#1	.00039	.03163	.00092	.02116	.06978	-.00004	56.387	-.00024
#2	.00137	.04238	-.00389	.01791	.06975	-.00004	56.596	-.00007
#3	-.00025	.03034	-.00276	.02326	.06908	-.00007	56.478	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.00142	.00058	.01048	1.2105	.01392	9.9905	.00276
Stddev	.00018	.00094	.00060	.00248	.1118	.00508	.0614	.00318
%RSD	254.26	65.997	103.47	23.671	9.2341	36.477	.61421	115.03
#1	-.00001	.00247	.00014	.00806	1.2844	.00986	9.9342	.00341
#2	-.00005	.00068	.00127	.01302	1.2652	.01229	10.056	.00556
#3	.00028	.00111	.00033	.01037	1.0819	.01961	9.9815	-.00069
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	5.3247	.00096	.01982	.00361	-.00409	-.00168	4.2020
Stddev	.00018	.0301	.00066	.00470	.00238	.00176	.00345	.0053
%RSD	445.93	.56431	69.328	23.729	65.809	43.094	206.06	.12492
#1	.00020	5.2903	.00028	.01727	.00109	-.00378	.00145	4.1980
#2	-.00016	5.3379	.00161	.01694	.00393	-.00251	-.00538	4.2079
#3	.00009	5.3459	.00098	.02524	.00581	-.00599	-.00110	4.2000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 24, 2015

Sample Name: L1511117704 Acquired: 11/23/2015 20:38:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	.25621	-.00911	-.00125	-.00048	.00182	.28372
Stddev	.00077	.00056	.00202	.00329	.00030	.00027	.43541
%RSD	492.18	.21980	22.219	262.99	62.462	15.031	153.47
#1	.00002	.25609	-.00809	.00224	-.00016	.00205	-.17969
#2	.00051	.25572	-.00779	-.00429	-.00051	.00152	.68432
#3	-.00100	.25682	-.01144	-.00170	-.00075	.00190	.34652
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16273.	101330.	2902.4
Stddev	23.	214.	8.0
%RSD	.14215	.21131	.27483
#1	16270.	101530.	2908.8
#2	16297.	101350.	2893.5
#3	16251.	101110.	2905.1

Approved: November 24, 2015

Sample Name: L1511117705 Acquired: 11/23/2015 20:42:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00079	.03269	.00001	.01525	.05327	-.00001	62.133	-.00000
Stddev	.00032	.00104	.00330	.00179	.00038	.00004	.127	.00016
%RSD	39.800	3.1702	25684.	11.741	.70561	369.61	.20418	8490.5
#1	.00081	.03195	-.00001	.01360	.05284	-.00005	62.273	.00011
#2	.00047	.03224	-.00328	.01500	.05356	.00002	62.097	-.00018
#3	.00110	.03387	.00332	.01715	.05339	-.00001	62.027	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	.00174	.00091	.00500	1.0713	.01519	10.186	.00271
Stddev	.00011	.00025	.00035	.00137	.0654	.00318	.098	.00240
%RSD	104.47	14.154	38.425	27.344	6.1078	20.961	.96236	88.491
#1	-.00022	.00202	.00128	.00404	1.0684	.01725	10.294	.00004
#2	-.00011	.00164	.00087	.00439	1.0073	.01152	10.103	.00468
#3	.00001	.00156	.00059	.00656	1.1381	.01678	10.162	.00342
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	3.8223	.00021	.01843	.00221	-.00327	.00183	4.3015
Stddev	.00021	.0176	.00071	.00336	.00201	.00484	.00372	.0111
%RSD	121.10	.46018	342.41	18.256	90.850	147.98	203.42	.25739
#1	.00005	3.8399	-.00044	.02203	.00372	-.00021	-.00009	4.3126
#2	-.00038	3.8224	.00096	.01789	.00298	-.00885	.00611	4.3013
#3	-.00021	3.8047	.00010	.01536	-.00007	-.00076	-.00054	4.2905
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 24, 2015

Sample Name: L1511117705 Acquired: 11/23/2015 20:42:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00059	.22115	-.00456	.00148	-.00085	.00228	.27717
Stddev	.00046	.00080	.00466	.00147	.00031	.00009	.12428
%RSD	77.860	.36305	102.14	99.406	35.941	3.7617	44.837
#1	-.00067	.22128	-.00911	.00303	-.00058	.00224	.26372
#2	-.00010	.22188	.00019	.00010	-.00119	.00238	.16017
#3	-.00101	.22029	-.00476	.00131	-.00079	.00223	.40762
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16245.	101420.	2911.9
Stddev	40.	98.	2.1
%RSD	.24522	.09697	.07054
#1	16206.	101430.	2911.9
#2	16285.	101320.	2909.8
#3	16243.	101520.	2913.9

Approved: November 24, 2015

Sample Name: L1511118201 Acquired: 11/23/2015 20:46:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	.02049	-.00017	.01436	.01076	-.00000	50.473	-.00001
Stddev	.00135	.00684	.00106	.00211	.00111	.00004	.174	.00009
%RSD	334.15	33.383	608.28	14.721	10.340	1064.0	.34568	812.83
#1	-.00113	.01466	-.00065	.01490	.00971	.00001	50.297	.00008
#2	.00143	.02802	-.00091	.01615	.01193	-.00005	50.645	-.00003
#3	.00091	.01879	.00104	.01203	.01066	.00002	50.478	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.00235	.00074	.03015	.65111	.00563	7.0467	.00563
Stddev	.00005	.00058	.00030	.01855	.04654	.00158	.0437	.00181
%RSD	16.362	24.773	40.748	61.514	7.1474	28.003	.62031	32.175
#1	.00031	.00244	.00040	.04302	.59741	.00393	6.9965	.00385
#2	.00025	.00173	.00086	.00889	.67646	.00705	7.0763	.00557
#3	.00035	.00288	.00096	.03854	.67947	.00590	7.0672	.00747
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	2.7480	.00229	.01205	.00213	-.00268	.00050	3.0016
Stddev	.00005	.0451	.00044	.00258	.00027	.00354	.00209	.0033
%RSD	43.864	1.6417	19.147	21.458	12.551	132.23	415.41	.10915
#1	.00005	2.7556	.00178	.01463	.00227	-.00624	-.00014	3.0009
#2	.00014	2.7888	.00257	.00946	.00183	.00085	.00284	3.0051
#3	.00012	2.6995	.00251	.01206	.00231	-.00265	-.00119	2.9987
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 24, 2015

Sample Name: L1511118201 Acquired: 11/23/2015 20:46:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.05316	-.00478	-.00061	-.00011	.00758	.47972
Stddev	.00045	.00037	.00560	.00041	.00035	.00017	.15980
%RSD	745.05	.69445	117.05	68.234	316.34	2.1921	33.311
#1	-.00019	.05284	-.01061	-.00058	-.00052	.00753	.50788
#2	.00057	.05308	.00055	-.00104	.00008	.00744	.30772
#3	-.00020	.05357	-.00429	-.00021	.00011	.00776	.62357
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16291.	101690.	2907.9
Stddev	8.	60.	11.2
%RSD	.04897	.05883	.38573
#1	16300.	101660.	2916.6
#2	16284.	101760.	2911.9
#3	16289.	101660.	2895.2

Approved: November 24, 2015

Sample Name: L1511118202 Acquired: 11/23/2015 20:50:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00158	.03793	-.00107	.01417	.00954	-.00003	48.932	-.00031
Stddev	.00133	.00412	.00189	.00107	.00020	.00000	.183	.00026
%RSD	84.414	10.855	176.78	7.5728	2.0599	7.2500	.37319	83.167
#1	.00140	.03413	.00109	.01480	.00967	-.00003	49.136	-.00020
#2	.00299	.04230	-.00239	.01477	.00932	-.00003	48.877	-.00060
#3	.00034	.03734	-.00190	.01293	.00964	-.00003	48.783	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.00204	.00125	.04259	.57871	.00391	6.9004	.00382
Stddev	.00020	.00054	.00122	.01355	.03740	.00448	.1318	.00204
%RSD	272.74	26.323	96.843	31.810	6.4631	114.45	1.9094	53.245
#1	.00004	.00184	.00082	.04949	.56230	.00493	6.9239	.00505
#2	.00029	.00163	.00263	.05129	.62152	.00779	6.7585	.00147
#3	-.00011	.00265	.00032	.02698	.55232	-.00099	7.0189	.00495
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	2.6916	.00078	.00562	.00192	-.00552	-.00076	2.9751
Stddev	.00029	.0227	.00061	.00607	.00160	.00304	.00166	.0049
%RSD	106.51	.84532	78.086	108.14	83.308	55.084	217.79	.16537
#1	.00003	2.7167	.00116	.01139	.00274	-.00904	.00115	2.9703
#2	-.00054	2.6724	.00110	-.00072	.00008	-.00379	-.00184	2.9801
#3	-.00030	2.6857	.00008	.00618	.00296	-.00375	-.00161	2.9748
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 24, 2015

Sample Name: L1511118202 Acquired: 11/23/2015 20:50:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	.05251	-.01120	-.00164	-.00056	.00414	.11777
Stddev	.00017	.00025	.00100	.00283	.00041	.00007	.25974
%RSD	84.884	.47742	8.9591	172.89	73.307	1.5773	220.55
#1	-.00022	.05278	-.01211	.00006	-.00009	.00418	-.15295
#2	-.00036	.05228	-.01136	-.00007	-.00079	.00417	.14132
#3	-.00002	.05246	-.01012	-.00491	-.00082	.00406	.36493
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16327.	101930.	2912.0
Stddev	29.	94.	19.6
%RSD	.17749	.09222	.67355
#1	16335.	101990.	2890.3
#2	16351.	101820.	2928.3
#3	16295.	101990.	2917.6

Approved: November 24, 2015

Sample Name: L1511118203 Acquired: 11/23/2015 20:54:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00067	.01691	-.00068	.01629	.01040	-.00007	48.354	-.00000
Stddev	.00066	.00293	.00109	.00150	.00047	.00003	.103	.00007
%RSD	97.906	17.356	160.00	9.2223	4.4711	44.824	.21375	2652.5
#1	.00105	.01528	-.00189	.01711	.00991	-.00003	48.457	.00002
#2	-.00009	.02030	-.00037	.01719	.01047	-.00009	48.250	-.00008
#3	.00106	.01515	.00022	.01455	.01083	-.00007	48.354	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.00149	.00189	.25482	.67959	.00341	6.8509	.01633
Stddev	.00015	.00069	.00102	.00897	.12207	.00353	.1272	.00054
%RSD	68.104	46.305	54.190	3.5219	17.962	103.72	1.8571	3.3066
#1	.00005	.00208	.00306	.26404	.60107	.00489	6.7292	.01585
#2	.00030	.00073	.00143	.24611	.82022	-.00063	6.9830	.01621
#3	.00031	.00166	.00117	.25430	.61748	.00596	6.8405	.01692
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	2.7008	.00151	.00716	.00468	-.00222	-.00481	2.9617
Stddev	.00014	.0137	.00074	.00352	.00335	.00227	.00759	.0076
%RSD	74.818	.50764	48.969	49.157	71.507	102.23	157.75	.25592
#1	-.00030	2.7153	.00111	.00348	.00801	-.00284	-.00437	2.9657
#2	-.00022	2.6989	.00237	.00750	.00472	-.00413	.00255	2.9664
#3	-.00003	2.6880	.00106	.01050	.00131	.00029	-.01262	2.9529
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 24, 2015

Sample Name: L1511118203 Acquired: 11/23/2015 20:54:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00000	.05174	-.00946	.00032	.00011	.00425	.35363
Stddev	.00087	.00014	.00341	.00166	.00020	.00017	.70772
%RSD	419130.	.27102	36.081	525.06	173.41	4.0625	200.13
#1	-.00090	.05162	-.00723	.00072	-.00011	.00438	-.19970
#2	.00085	.05171	-.01339	.00174	.00019	.00406	1.1511
#3	.00005	.05189	-.00776	-.00151	.00026	.00432	.10950
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16332.	102080.	2915.8
Stddev	7.	116.	6.7
%RSD	.04012	.11407	.22888
#1	16324.	102170.	2910.4
#2	16337.	101950.	2913.7
#3	16334.	102130.	2923.3

Approved: November 24, 2015

Sample Name: L1511118204 Acquired: 11/23/2015 20:58:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.01358	-.00097	.01417	.01169	.00001	50.026	-.00014
Stddev	.00086	.00434	.00181	.00238	.00046	.00002	.234	.00016
%RSD	179.77	31.986	187.41	16.787	3.9270	154.28	.46679	120.65
#1	.00119	.00900	-.00303	.01383	.01210	-.00001	49.877	.00003
#2	.00073	.01409	.00038	.01198	.01178	.00003	49.906	-.00014
#3	-.00048	.01764	-.00025	.01670	.01119	.00001	50.295	-.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.00209	.00162	.62093	.69737	.00978	7.1221	.06313
Stddev	.00014	.00111	.00182	.04460	.09388	.00423	.0291	.00321
%RSD	324.67	52.987	112.47	7.1830	13.462	43.287	.40838	5.0883
#1	.00019	.00198	.00180	.67002	.64690	.01461	7.1545	.05943
#2	.00001	.00104	.00334	.58288	.80569	.00806	7.0982	.06486
#3	-.00008	.00324	-.00029	.60990	.63952	.00668	7.1136	.06511
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	2.7562	.00016	.01105	.00290	-.00368	-.00318	3.0665
Stddev	.00016	.0085	.00017	.00335	.00139	.00221	.00468	.0080
%RSD	2708.5	.30814	101.80	30.360	48.089	59.895	147.22	.26190
#1	-.00019	2.7470	.00035	.01471	.00137	-.00124	-.00235	3.0655
#2	.00006	2.7579	.00010	.00812	.00410	-.00428	.00103	3.0749
#3	.00011	2.7637	.00003	.01031	.00322	-.00553	-.00821	3.0589
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 24, 2015

Sample Name: L1511118204 Acquired: 11/23/2015 20:58:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00040	.05311	-.00429	.00065	-.00002	.00444	.49057
Stddev	.00094	.00070	.00688	.00169	.00038	.00004	.06097
%RSD	237.39	1.3206	160.23	261.34	1702.9	.94434	12.428
#1	-.00136	.05319	.00345	.00253	.00012	.00444	.43642
#2	.00052	.05237	-.00971	.00014	-.00045	.00448	.55661
#3	-.00035	.05376	-.00662	-.00073	.00027	.00439	.47867
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16322.	101790.	2898.9
Stddev	42.	287.	5.9
%RSD	.25880	.28242	.20238
#1	16294.	102080.	2905.7
#2	16301.	101500.	2895.1
#3	16370.	101800.	2895.9

Approved: November 24, 2015

Sample Name: L1511118205 Acquired: 11/23/2015 21:02:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00106	.01001	.00203	.01241	.01226	-.00001	48.748	-.00016
Stddev	.00073	.00721	.00207	.00062	.00029	.00002	.016	.00013
%RSD	68.706	72.038	102.10	4.9671	2.3946	180.53	.03212	79.083
#1	.00050	.00229	.00057	.01221	.01225	-.00003	48.766	-.00008
#2	.00080	.01657	.00112	.01191	.01197	.00001	48.743	-.00031
#3	.00188	.01116	.00440	.01310	.01255	-.00001	48.736	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	.00152	.00047	1.6941	.69681	.00679	6.7005	.09661
Stddev	.00028	.00034	.00069	.0121	.10956	.00228	.0824	.00176
%RSD	263.02	22.592	145.23	.71169	15.723	33.604	1.2303	1.8225
#1	.00012	.00140	.00126	1.6838	.70476	.00928	6.6822	.09537
#2	-.00042	.00126	.00017	1.7074	.80218	.00481	6.6287	.09583
#3	-.00002	.00191	-.00001	1.6912	.58350	.00627	6.7905	.09862
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	2.5832	.00056	.00875	.00397	-.00282	-.00582	3.1346
Stddev	.00045	.0155	.00059	.00180	.00234	.00248	.00251	.0016
%RSD	7217.7	.60054	105.69	20.601	58.867	87.688	43.133	.05076
#1	.00015	2.5856	-.00011	.00919	.00134	-.00053	-.00561	3.1362
#2	.00034	2.5667	.00102	.00677	.00581	-.00248	-.00843	3.1345
#3	-.00051	2.5975	.00078	.01030	.00476	-.00545	-.00342	3.1330
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: November 24, 2015

Sample Name: L1511118205 Acquired: 11/23/2015 21:02:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	.05118	-.00891	.00006	.00003	.01311	.58430
Stddev	.00050	.00067	.00359	.00118	.00039	.00014	.43545
%RSD	1306.4	1.3048	40.331	1989.7	1163.7	1.0339	74.524
#1	-.00057	.05195	-.01136	-.00111	-.00041	.01325	.39243
#2	.00042	.05081	-.01058	.00125	.00030	.01298	1.0827
#3	.00003	.05078	-.00478	.00004	.00021	.01312	.27774
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16379.	102020.	2918.7
Stddev	28.	107.	1.6
%RSD	.17048	.10451	.05430
#1	16382.	102130.	2919.7
#2	16350.	101920.	2919.5
#3	16405.	102020.	2916.9

Approved: November 24, 2015

Sample Name: CCV Acquired: 11/23/2015 21:06:50 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.42197	10.576	.42864	.53785	1.0675	.05335	10.672
Stddev	.00050	.017	.00082	.00132	.0034	.00004	.030
%RSD	.11923	.16449	.19190	.24525	.31765	.08142	.27868
#1	.42149	10.572	.42858	.53910	1.0648	.05330	10.638
#2	.42250	10.561	.42950	.53647	1.0665	.05338	10.684
#3	.42192	10.595	.42785	.53796	1.0713	.05337	10.694
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05355	.21042	.54775	.53343	4.2651	54.697	1.0736
Stddev	.00016	.00012	.00086	.00161	.0306	.213	.0056
%RSD	.30600	.05734	.15680	.30205	.71719	.39004	.51861
#1	.05373	.21029	.54711	.53244	4.2313	54.549	1.0711
#2	.05340	.21045	.54740	.53256	4.2732	54.600	1.0698
#3	.05352	.21053	.54872	.53529	4.2909	54.941	1.0800
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.675	.53067	1.0626	53.971	.54138	10.667	.53703
Stddev	.174	.00352	.0005	.275	.00177	.018	.00159
%RSD	1.6274	.66290	.05103	.50954	.32725	.16499	.29565
#1	10.511	.53039	1.0622	53.813	.53936	10.648	.53520
#2	10.655	.52729	1.0632	53.812	.54212	10.683	.53798
#3	10.857	.53431	1.0624	54.289	.54267	10.669	.53791
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: November 24, 2015

Sample Name: CCV Acquired: 11/23/2015 21:06:50 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2888	.43301	5.3998	1.0567	1.0639	1.0689	.54939
Stddev	.0097	.00244	.0083	.0023	.0037	.0067	.00107
%RSD	.75471	.56444	.15461	.21435	.34461	.62577	.19548
#1	1.2784	.43128	5.3906	1.0543	1.0605	1.0612	.55034
#2	1.2904	.43581	5.4067	1.0571	1.0634	1.0724	.54961
#3	1.2977	.43195	5.4022	1.0588	1.0678	1.0731	.54822
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0757	1.0743	F 2.3828
Stddev	.0006	.0020	.4415
%RSD	.05934	.18592	18.528
#1	1.0752	1.0720	2.1857
#2	1.0754	1.0758	2.8884
#3	1.0764	1.0750	2.0741
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16584.	101740.	2961.2
Stddev	22.	185.	12.8
%RSD	.12965	.18193	.43359
#1	16584.	101910.	2965.2
#2	16606.	101760.	2971.6
#3	16563.	101540.	2946.9

Approved: November 24, 2015

Sample Name: CCB Acquired: 11/23/2015 21:10:33 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00162	.00458	-.00209	.00284	.00017	.00000	-.01245
Stddev	.00151	.00660	.00161	.00205	.00128	.00003	.03456
%RSD	93.108	143.99	76.754	72.126	767.96	1059.4	277.48
#1	.00013	.01220	-.00394	.00484	.00060	-.00002	.02660
#2	.00160	.00100	-.00135	.00292	.00118	.00003	-.03907
#3	.00315	.00055	-.00099	.00075	-.00128	.00000	-.02489
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00045	.00019	.00030	.00012	-.01169	.08460	.00555
Stddev	.00004	.00007	.00028	.00070	.01637	.05558	.00142
%RSD	8.5942	35.019	95.060	570.31	140.08	65.700	25.538
#1	-.00041	.00026	.00042	.00083	-.00070	.06403	.00718
#2	-.00048	.00013	-.00003	-.00056	-.00385	.04224	.00460
#3	-.00047	.00017	.00050	.00009	-.03050	.14754	.00488
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02469	-.00091	.00058	.02709	.00058	.00582	.00230
Stddev	.03131	.00163	.00019	.02245	.00126	.00402	.00139
%RSD	126.84	179.30	33.394	82.847	217.26	69.159	60.543
#1	.03794	-.00191	.00074	.05300	.00174	.00270	.00190
#2	.04719	-.00179	.00064	.01473	.00076	.00440	.00385
#3	-.01107	.00097	.00036	.01354	-.00076	.01036	.00115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: November 24, 2015

Sample Name: CCB Acquired: 11/23/2015 21:10:33 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v562) Mode: CONC Corr. Factor: 1.00000(
User: PDM Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00233	-.00060	.00040	.00019	.00003	-.00174	.00001
Stddev	.00259	.00696	.00111	.00059	.00017	.00666	.00138
%RSD	111.09	1165.0	273.92	305.68	626.20	384.01	10767.
#1	-.00367	-.00439	.00133	-.00046	-.00015	.00516	-.00070
#2	.00065	.00744	.00070	.00035	.00019	-.00813	.00160
#3	-.00397	-.00484	-.00082	.00068	.00005	-.00224	-.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00054	.00003	F .35361
Stddev	.00074	.00009	.23595
%RSD	135.55	292.88	66.725
#1	-.00137	-.00006	.57899
#2	.00004	.00003	.10835
#3	-.00030	.00012	.37350
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	16904.	104790.	2945.7
Stddev	34.	222.	27.5
%RSD	.20338	.21207	.93439
#1	16866.	104950.	2914.2
#2	16932.	104880.	2957.5
#3	16915.	104540.	2965.3

Approved: November 24, 2015

2.2.2 Metals ICP-MS Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW08FF-111615	**Prep Method:**	3015	**Prep Date:**	11/18/2015 12:37
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	11/20/2015 09:58
Workgroup #:	WG547469	**Analyst:**	JYH	**Run Date:**	11/20/2015 12:39
Collect Date:	11/16/2015 08:20	**Dilution:**	5	**File ID:**	NI.112015.123903
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0581		0.0200	0.0100	0.00500

Certificate of Analysis

Sample #:	L15110943-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW22FF-111615	**Prep Method:**	3015	**Prep Date:**	11/18/2015 12:37
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	11/20/2015 09:58
Workgroup #:	WG547469	**Analyst:**	JYH	**Run Date:**	11/20/2015 13:27
Collect Date:	11/16/2015 09:25	**Dilution:**	1	**File ID:**	NI.112015.132754
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.00361	J	0.00400	0.00200	0.00100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW24FF-111615	**Prep Method:**	3015	**Prep Date:**	11/18/2015 12:37
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	11/20/2015 09:58
Workgroup #:	WG547469	**Analyst:**	JYH	**Run Date:**	11/20/2015 13:31
Collect Date:	11/16/2015 10:30	**Dilution:**	1	**File ID:**	NI.112015.133105
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0126		0.00400	0.00200	0.00100

Certificate of Analysis

Sample #:	L15110943-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW23FF-111615	**Prep Method:**	3015	**Prep Date:**	11/18/2015 12:37
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	11/20/2015 09:58
Workgroup #:	WG547469	**Analyst:**	JYH	**Run Date:**	11/20/2015 13:01
Collect Date:	11/16/2015 11:35	**Dilution:**	5	**File ID:**	NI.112015.130146
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0425		0.0200	0.0100	0.00500

Certificate of Analysis

Sample #:	L15110943-10	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW18FF-111615	**Prep Method:**	3015	**Prep Date:**	11/18/2015 12:37
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	11/20/2015 09:58
Workgroup #:	WG547469	**Analyst:**	JYH	**Run Date:**	11/20/2015 13:04
Collect Date:	11/16/2015 13:45	**Dilution:**	5	**File ID:**	NI.112015.130457
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0521		0.0200	0.0100	0.00500

Certificate of Analysis

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15110943-12	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	50WW25FF-111615	**Prep Method:**	3015	**Prep Date:**	11/18/2015 12:37
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	11/20/2015 09:58
Workgroup #:	WG547469	**Analyst:**	JYH	**Run Date:**	11/20/2015 12:29
Collect Date:	11/16/2015 14:55	**Dilution:**	5	**File ID:**	NI.112015.122929
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Dissolved	7439-96-5	0.0688		0.0200	0.0100	0.00500

2.2.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer NexION 300X

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	100
Vi = Initial volume	40
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/L)	0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	200
Vi = Initial volume	0.5
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/kg)	40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	40
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	50

50 ug/kg = 0.050 mg/kg

Perkin Elmer NexION ICP/MS

STANDARDS KEY

QC Std 1 - ICV
QC Std 2 - ICB
QC Std 3 - LLICV
QC Std 4 - ICSA
QC Std 5 - ICSAB
QC Std 6 - CCV
QC Std 7 - CCB
QC Std 8 - LLCCV

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.00005	0.05	0.1
Sb	10	0	0.00005	0.05	0.1
As	10	0	0.00005	0.05	0.1
Ba	10	0	0.00005	0.05	0.1
Be	10	0	0.00005	0.05	0.1
Ca	1000	0	0.005	5	10
Cd	10	0	0.0005	0.05	0.1
Cr	10	0	0.0005	0.05	0.1
Co	10	0	0.0005	0.05	0.1
Cu	10	0	0.0005	0.05	0.1
Fe	1000	0	0.005	5	10
Pb	10	0	0.00005	0.05	0.1
Mg	1000	0	0.005	5	10
Mn	10	0	0.00005	0.05	0.1
Ni	10	0	0.00005	0.05	0.1
K	1000	0	0.005	5	10
Se	10	0	0.00005	0.05	0.1
Ag	10	0	0.00005	0.05	0.1
Na	1000	0	0.005	5	10
Tl	10	0	0.00005	0.05	0.1
V	10	0	0.00005	0.05	0.1
U	1000	0	0.00005	0.05	0.1
Zn	10	0	0.00005	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG547429
Analyst: ERP
Spike Analyst: ERP
Run Date: 11/18/2015 12:37
Method: 3015
Balance: BAL019
Instrument: MW-4
Instrument Start: 11/18/2015 12:54

SOP: ME407 Revison 18
Spike Solution: STD71855
Spike Witness: VC
HNO3 Lot #: COA18442
40 & 50 ML. DIGESTION TU COA18558
MS Filters- fisher-Lot#r RGT32947

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG547429-03	BLANK	1	20 mL	50 mL	183.502 g	183.49 g		
2	WG547429-04	LCS	1	20 mL	50 mL	184.707 g	184.7 g	.25 mL	
3	L15110943-02	SAMP	1	20 mL	50 mL	182.583 g	182.567 g		11/27/15
4	L15110943-04	SAMP	1	20 mL	50 mL	183.249 g	183.236 g		11/27/15
5	L15110943-06	SAMP	1	20 mL	50 mL	184.101 g	184.088 g		11/27/15
6	L15110943-08	SAMP	1	20 mL	50 mL	184.879 g	184.864 g		11/27/15
7	L15110943-10	SAMP	1	20 mL	50 mL	182.285 g	182.267 g		11/27/15
8	WG547429-01	REF	1	20 mL	50 mL	183.352 g	183.345 g		
9	L15110943-12	SAMP	1	20 mL	50 mL	183.352 g	183.345 g		11/27/15
10	L15110947-01	SAMP	2	20 mL	50 mL	185.358 g	185.338 g		11/23/15
11	L15110983-01	SAMP	2	20 mL	50 mL	184.038 g	184.015 g		11/30/15
12	L15110988-01	SAMP	1	20 mL	50 mL	184.221 g	184.189 g		11/24/15
13	L15110988-02	SAMP	1	20 mL	50 mL	184.95 g	184.924 g		11/24/15
14	L15110989-01	SAMP	2	20 mL	50 mL	185.574 g	185.562 g		11/24/15
15	L15110990-01	SAMP	2	20 mL	50 mL	182.999 g	182.98 g		11/24/15
16	WG547429-02	REF	2	20 mL	50 mL	184.972 g	184.947 g		
17	L15110992-01	SAMP	2	20 mL	50 mL	184.972 g	184.947 g		11/24/15
18	L15110993-01	SAMP	2	20 mL	50 mL	183.908 g	183.874 g		11/24/15
19	L15111024-02	SAMP	2	20 mL	50 mL	185.233 g	185.2 g		11/25/15
20	L15111040-06	SAMP	2	20 mL	50 mL	184.299 g	184.289 g		11/25/15
21	WG547429-05	MS	1	20 mL	50 mL	180.422 g	180.41 g	.25 mL	
22	WG547429-06	MSD	1	20 mL	50 mL	183.293 g	183.263 g	.25 mL	
23	WG547429-07	DUP	1	20 mL	50 mL	184.019 g	183.992 g		

L15110947-01	filtered digestate
L15110988-01	filtered digestate
L15110993-01	filtered digestate

Analyst: Erin Potter

Reviewer: Vicki Collins

MW_DIG - Modified 09/30/2009
PDF ID: 4506891
Report generated: 11/18/2015 13:28

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 112015A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD73457 ICV Std: STD73456 Post Spike: STD69341
ICSA: STD73335 ICSAB: STD73336 Int. Std: RGT31676
CCV: STD73337 LLCCV: STD73228 Tuning Sol : STD73458
Stannous : Hydroxylamine :

Workgroups: 547639,547469,547893,547895,547876,547908

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.112015.094528	Blank	Blank		1		11/20/15 09:45
2	NI.112015.094840	WG547835-01	Calibration Point		1		11/20/15 09:48
3	NI.112015.095151	WG547835-02	Calibration Point		1		11/20/15 09:51
4	NI.112015.095502	WG547835-03	Calibration Point		1		11/20/15 09:55
5	NI.112015.095813	WG547835-04	Calibration Point		1		11/20/15 09:58
6	NI.112015.100126	WG547835-05	Initial Calibration Verification		1		11/20/15 10:01
7	NI.112015.100438	WG547835-06	Initial Calib Blank		1		11/20/15 10:04
8	NI.112015.100751	WG547835-07	Low Level Initial Calibration V		1		11/20/15 10:07
9	NI.112015.101102	WG547835-08	Interference Check		1		11/20/15 10:11
10	NI.112015.101413	WG547835-09	Interference Check		1		11/20/15 10:14
11	NI.112015.101726	WG547835-10	CCV		1		11/20/15 10:17
12	NI.112015.102037	WG547835-11	CCB		1		11/20/15 10:20
13	NI.112015.102349	WG547610-03	Method/Prep Blank	20/50	1		11/20/15 10:23
14	NI.112015.102700	WG547610-04	Laboratory Control S	20/50	1		11/20/15 10:27
15	NI.112015.103012	WG547540-01	Fluid Blank		1		11/20/15 10:30
16	NI.112015.103323	WG547610-01	Reference Sample		1	L15111050-08	11/20/15 10:33
17	NI.112015.103634	WG547610-05	Matrix Spike	20/50	1	L15111050-08	11/20/15 10:36
18	NI.112015.103945	WG547610-06	Matrix Spike Duplica	20/50	1	L15111050-08	11/20/15 10:39
19	NI.112015.104256	L15110804-01	201	20/50	1		11/20/15 10:42
20	NI.112015.104607	WG547639-01	Post Digestion Spike		1	L15110804-01	11/20/15 10:46
21	NI.112015.104918	WG547639-02	Serial Dilution		5	L15110804-01	11/20/15 10:49
22	NI.112015.105229	WG547639-02	Serial Dilution		25	L15110804-01	11/20/15 10:52
23	NI.112015.105542	WG547835-12	CCV		1		11/20/15 10:55
24	NI.112015.105854	WG547835-13	CCB		1		11/20/15 10:58
25	NI.112015.110207	L15110944-02	60500-SSP0016-SPLP011	20/50	1		11/20/15 11:02
26	NI.112015.110518	L15110944-05	60500-SSP0021-SSP0021	20/50	1		11/20/15 11:05
27	NI.112015.110830	L15111024-01	BMG20	20/50	1		11/20/15 11:08
28	NI.112015.111141	L15111050-03	W1AR	20/50	1		11/20/15 11:11
29	NI.112015.111452	L15111050-05	W50	20/50	1		11/20/15 11:14
30	NI.112015.111825	L15111024-01	BMG20		5		11/20/15 11:18
31	NI.112015.112253	L15111050-06	W18	20/50	1		11/20/15 11:22
32	NI.112015.112604	L15111050-14	W29	20/50	1		11/20/15 11:26
33	NI.112015.112917	L15110944-02	60500-SSP0016-SPLP011	20/50	50		11/20/15 11:29
34	NI.112015.113230	WG547835-14	CCV		1		11/20/15 11:32

Page: 1 Approved: November 23, 2015

Maren Berry

Microbac

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Instrument Run Log

Instrument: ICP-MS2 Dataset: 112015A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD73457 ICV Std: STD73456 Post Spike: STD69341
ICSA: STD73335 ICSAB: STD73336 Int. Std: RGT31676
CCV: STD73337 LLCCV: STD73228 Tuning Sol : STD73458
Stannous : Hydroxylamine :

Workgroups: 547639,547469,547893,547895,547876,547908

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.112015.113541	WG547835-15	CCB		1		11/20/15 11:35
36	NI.112015.114056	L15111050-16	W30WTR	20/50	1		11/20/15 11:40
37	NI.112015.114407	L15111050-18	W30WB	20/50	1		11/20/15 11:44
38	NI.112015.114718	WG547610-02	Reference Sample		1	L15111066-13	11/20/15 11:47
39	NI.112015.115029	WG547610-07	Duplicate	20/50	1	L15111066-13	11/20/15 11:50
40	NI.112015.115340	L15111084-03	W16	20/50	1		11/20/15 11:53
41	NI.112015.115651	L15111084-05	W6	20/50	1		11/20/15 11:56
42	NI.112015.120002	L15111084-06	W6B	20/50	1		11/20/15 12:00
43	NI.112015.120313	L15111084-07	W51	20/50	1		11/20/15 12:03
44	NI.112015.120624	L15111084-09	W7A	20/50	1		11/20/15 12:06
45	NI.112015.120936	L15111086-03	OUTFALL 203 GRAB	20/50	200		11/20/15 12:09
46	NI.112015.121248	WG547835-16	CCV		1		11/20/15 12:12
47	NI.112015.121559	WG547835-17	CCB		1		11/20/15 12:15
48	NI.112015.122307	WG547429-03	Method/Prep Blank	20/50	1		11/20/15 12:23
49	NI.112015.122618	WG547429-04	Laboratory Control S	20/50	1		11/20/15 12:26
50	NI.112015.122929	L15110943-12	50WW25FF-111615		5	WG547429-01	11/20/15 12:29
51	NI.112015.123241	WG547429-05	Matrix Spike	20/50	5	L15110943-12	11/20/15 12:32
52	NI.112015.123552	WG547429-06	Matrix Spike Duplica	20/50	5	L15110943-12	11/20/15 12:35
53	NI.112015.123903	L15110943-02	50WW08FF-111615	20/50	5		11/20/15 12:39
54	NI.112015.124215	L15110943-04	50WW22FF-111615		5		11/20/15 12:42
55	NI.112015.124526	L15110943-06	50WW24FF-111615		5		11/20/15 12:45
56	NI.112015.124837	WG547469-03	Post Digestion Spike		5	L15110943-06	11/20/15 12:48
57	NI.112015.125211	WG547469-04	Serial Dilution		25	L15110943-06	11/20/15 12:52
58	NI.112015.125523	WG547835-39	CCV		1		11/20/15 12:55
59	NI.112015.125834	WG547835-40	CCB		1		11/20/15 12:58
60	NI.112015.130146	L15110943-08	50WW23FF-111615	20/50	5		11/20/15 13:01
61	NI.112015.130457	L15110943-10	50WW18FF-111615	20/50	5		11/20/15 13:04
62	NI.112015.130809	L15110988-01	5110914-01	20/50	1		11/20/15 13:08
63	NI.112015.131157	L15101560-03	5101574-03		20		11/20/15 13:11
64	NI.112015.131724	L15110988-02	5110914-03	20/50	1		11/20/15 13:17
65	NI.112015.132035	L15111050-16	W30WTR	20/50	100		11/20/15 13:20
66	NI.112015.132754	L15110943-04	50WW22FF-111615	20/50	1		11/20/15 13:27
67	NI.112015.133105	L15110943-06	50WW24FF-111615	20/50	1		11/20/15 13:31
68	NI.112015.133416	WG547469-03	Post Digestion Spike		1	L15110943-06	11/20/15 13:34

Page: 2 Approved: November 23, 2015

Maren Berry

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Instrument Run Log

Instrument: ICP-MS2 Dataset: 112015A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD73457 ICV Std: STD73456 Post Spike: STD69341
ICSA: STD73335 ICSAB: STD73336 Int. Std: RGT31676
CCV: STD73337 LLCCV: STD73228 Tuning Sol : STD73458
Stannous : Hydroxylamine :

Workgroups: 547639,547469,547893,547895,547876,547908

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.112015.133728	WG547469-04	Serial Dilution		5	L15110943-06	11/20/15 13:37
70	NI.112015.134041	WG547835-41	CCV		1		11/20/15 13:40
71	NI.112015.134352	WG547835-42	CCB		1		11/20/15 13:43
72	NI.112015.134704	WG547835-43	Low Level Continuing Calibra		1		11/20/15 13:47
73	NI.112015.140058	WG547660-02	Method/Prep Blank	.25/100	1		11/20/15 14:00
74	NI.112015.140409	WG547660-03	Laboratory Control S	.25/100	1		11/20/15 14:04
75	NI.112015.140720	WG547660-01	Reference Sample		1	L15111108-24	11/20/15 14:07
76	NI.112015.141031	WG547660-04	Matrix Spike	.252/100	1	L15111108-24	11/20/15 14:10
77	NI.112015.141342	WG547660-05	Matrix Spike Duplica	.25/100	1	L15111108-24	11/20/15 14:13
78	NI.112015.141653	L15111108-02	201427 5086	.254/100	1		11/20/15 14:16
79	NI.112015.142005	L15111108-04	201427 5087	.254/100	1		11/20/15 14:20
80	NI.112015.142315	WG547876-01	Post Digestion Spike		1	L15111108-04	11/20/15 14:23
81	NI.112015.142627	WG547876-02	Serial Dilution		5	L15111108-04	11/20/15 14:26
82	NI.112015.142937	WG547876-02	Serial Dilution		25	L15111108-04	11/20/15 14:29
83	NI.112015.143250	WG547835-23	CCV		1		11/20/15 14:32
84	NI.112015.143601	WG547835-24	CCB		1		11/20/15 14:36
85	NI.112015.143913	L15111108-06	201427 5088	.25/100	1		11/20/15 14:39
86	NI.112015.144224	L15111108-08	201427 5089	.251/100	1		11/20/15 14:42
87	NI.112015.144535	L15111108-10	201427 5090	.252/100	1		11/20/15 14:45
88	NI.112015.144847	L15111108-12	201427 5093	.252/100	1		11/20/15 14:48
89	NI.112015.145159	L15111108-14	201427 5094	.253/100	1		11/20/15 14:51
90	NI.112015.145510	L15111108-16	201427 5095	.255/100	1		11/20/15 14:55
91	NI.112015.145821	L15111108-18	201427 5096	.251/100	1		11/20/15 14:58
92	NI.112015.150132	L15111108-20	201427 5097	.251/100	1		11/20/15 15:01
93	NI.112015.150443	L15111108-22	201427 5098	.25/100	1		11/20/15 15:04
94	NI.112015.150756	WG547835-25	CCV		1		11/20/15 15:07
95	NI.112015.151107	WG547835-26	CCB		1		11/20/15 15:11
96	NI.112015.152556	WG547711-01	Method/Prep Blank	10/50	2		11/20/15 15:25
97	NI.112015.152908	WG547711-02	Laboratory Control S	10/50	2		11/20/15 15:29
98	NI.112015.153219	WG547711-03	Laboratory Control S	10/50	2		11/20/15 15:32
99	NI.112015.153530	L15111107-01	201427 5071	10.008/50	2		11/20/15 15:35
100	NI.112015.153841	L15111107-03	201427 5072	10.044/50	2		11/20/15 15:38
101	NI.112015.154152	L15111107-05	201427 5073	10.049/50	2		11/20/15 15:41
102	NI.112015.154503	WG547893-01	Post Digestion Spike		2	L15111107-05	11/20/15 15:45

Page: 3 Approved: November 23, 2015

Maren Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 112015A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD73457 ICV Std: STD73456 Post Spike: STD69341
ICSA: STD73335 ICSAB: STD73336 Int. Std: RGT31676
CCV: STD73337 LLCCV: STD73228 Tuning Sol : STD73458
Stannous : Hydroxylamine :

Workgroups: 547639,547469,547893,547895,547876,547908

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.112015.154815	WG547893-02	Serial Dilution		10	L15111107-05	11/20/15 15:48
104	NI.112015.155128	WG547835-27	CCV		1		11/20/15 15:51
105	NI.112015.155439	WG547835-28	CCB		1		11/20/15 15:54
106	NI.112015.155752	L15111107-07	201427 5074	10.007/50	2		11/20/15 15:57
107	NI.112015.160104	L15111107-09	201427 5075	10.029/50	2		11/20/15 16:01
108	NI.112015.160415	L15111107-11	201427 5076	10.045/50	2		11/20/15 16:04
109	NI.112015.160726	L15111107-13	201427 5077	10.034/50	2		11/20/15 16:07
110	NI.112015.161037	L15111107-15	201427 5078	10.012/50	2		11/20/15 16:10
111	NI.112015.161348	L15111107-17	201427 5079	10.012/50	2		11/20/15 16:13
112	NI.112015.161659	L15111107-19	201427 5080	10.015/50	2		11/20/15 16:16
113	NI.112015.162010	L15111107-21	201427 5081	10.028/50	2		11/20/15 16:20
114	NI.112015.162321	L15111107-23	201427 5082	10.027/50	2		11/20/15 16:23
115	NI.112015.162632	L15111107-25	201427 5083	10.039/50	2		11/20/15 16:26
116	NI.112015.162945	WG547835-29	CCV		1		11/20/15 16:29
117	NI.112015.163256	WG547835-30	CCB		1		11/20/15 16:32
118	NI.112015.163609	WG547712-01	Method/Prep Blank	10/50	2		11/20/15 16:36
119	NI.112015.163919	WG547712-02	Laboratory Control S	10/50	2		11/20/15 16:39
120	NI.112015.164231	WG547712-03	Laboratory Control S	10/50	2		11/20/15 16:42
121	NI.112015.164543	L15111108-01	201427 5086	10.027/50	2		11/20/15 16:45
122	NI.112015.164854	L15111108-03	201427 5087	10.019/50	2		11/20/15 16:48
123	NI.112015.165205	L15111108-05	201427 5088	10.049/50	2		11/20/15 16:52
124	NI.112015.165516	WG547895-01	Post Digestion Spike		2	L15111108-05	11/20/15 16:55
125	NI.112015.165826	WG547895-02	Serial Dilution		10	L15111108-05	11/20/15 16:58
126	NI.112015.170139	WG547835-31	CCV		1		11/20/15 17:01
127	NI.112015.170450	WG547835-32	CCB		1		11/20/15 17:04
128	NI.112015.170802	L15111108-07	201427 5089	10.025/50	2		11/20/15 17:08
129	NI.112015.171114	L15111108-09	201427 5090	10.014/50	2		11/20/15 17:11
130	NI.112015.171424	L15111108-11	201427 5093	10.034/50	2		11/20/15 17:14
131	NI.112015.171736	L15111108-13	201427 5094	10.038/50	2		11/20/15 17:17
132	NI.112015.172047	L15111108-15	201427 5095	10.001/50	2		11/20/15 17:20
133	NI.112015.172358	L15111108-17	201427 5096	10.048/50	2		11/20/15 17:23
134	NI.112015.172709	L15111108-19	201427 5097	10.036/50	2		11/20/15 17:27
135	NI.112015.173020	L15111108-21	201427 5098	10.006/50	2		11/20/15 17:30
136	NI.112015.173331	L15111108-23	201427 5099	10.013/50	2		11/20/15 17:33

Page: 4 Approved: November 23, 2015

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 112015A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD73457 ICV Std: STD73456 Post Spike: STD69341
ICSA: STD73335 ICSAB: STD73336 Int. Std: RGT31676
CCV: STD73337 LLCCV: STD73228 Tuning Sol : STD73458
Stannous : Hydroxylamine :

Workgroups: 547639,547469,547893,547895,547876,547908

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	NI.112015.173718	WG547835-33	CCV		1		11/20/15 17:37
138	NI.112015.174030	WG547835-34	CCB		1		11/20/15 17:40
139	NI.112015.174342	WG547652-02	Method/Prep Blank	.25/100	1		11/20/15 17:43
140	NI.112015.174654	WG547652-03	Laboratory Control S	.25/100	1		11/20/15 17:46
141	NI.112015.175005	WG547652-01	Reference Sample		1	L15111107-26	11/20/15 17:50
142	NI.112015.175315	WG547652-04	Matrix Spike	.255/100	1	L15111107-26	11/20/15 17:53
143	NI.112015.175627	WG547652-05	Matrix Spike Duplica	.254/100	1	L15111107-26	11/20/15 17:56
144	NI.112015.175938	L15111107-02	201427 5071	.255/100	1		11/20/15 17:59
145	NI.112015.180250	L15111107-04	201427 5072	.253/100	1		11/20/15 18:02
146	NI.112015.180600	WG547908-01	Post Digestion Spike		1	L15111107-04	11/20/15 18:06
147	NI.112015.180912	WG547908-02	Serial Dilution		5	L15111107-04	11/20/15 18:09
148	NI.112015.181223	WG547908-02	Serial Dilution		25	L15111107-04	11/20/15 18:12
149	NI.112015.181535	WG547835-35	CCV		1		11/20/15 18:15
150	NI.112015.181846	WG547835-36	CCB		1		11/20/15 18:18
151	NI.112015.182158	L15111107-06	201427 5073	.255/100	1		11/20/15 18:21
152	NI.112015.182510	L15111107-08	201427 5074	.251/100	1		11/20/15 18:25
153	NI.112015.182821	L15111107-10	201427 5075	.253/100	1		11/20/15 18:28
154	NI.112015.183132	L15111107-12	201427 5076	.254/100	1		11/20/15 18:31
155	NI.112015.183443	L15111107-14	201427 5077	.251/100	1		11/20/15 18:34
156	NI.112015.183754	L15111107-16	201427 5078	.251/100	1		11/20/15 18:37
157	NI.112015.184105	L15111107-18	201427 5079	.253/100	1		11/20/15 18:41
158	NI.112015.184416	L15111107-20	201427 5080	.255/100	1		11/20/15 18:44
159	NI.112015.184727	L15111107-22	201427 5081	.255/100	1		11/20/15 18:47
160	NI.112015.185039	L15111107-24	201427 5082	.252/100	1		11/20/15 18:50
161	NI.112015.185351	WG547835-37	CCV		1		11/20/15 18:53
162	NI.112015.185702	WG547835-38	CCB		1		11/20/15 18:57
163	NI.112315.083127	WG547835-44	QC Std 6		1		11/23/15 08:31
164	NI.112315.083438	WG547835-45	QC Std 7		1		11/23/15 08:34

Page: 5 Approved: November 23, 2015

Maren Berry

Microbac Laboratories Inc.

Data Checklist

Date: 20-NOV-2015
Analyst: JYH
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 547835
Runlog ID: 71824
Analytical Workgroups: 547639,547469,547893,547895,547876,547908

Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1107,1108
Level 4	944,943
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	MMB
Comments	

Primary Reviewer:
20-NOV-2015

Secondary Reviewer:
23-NOV-2015

CHECKLIST1 - Modified 03/05/2008
Generated: NOV-23-2015 10:49:30

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG547469

Login Number: L15110943

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW08FF-111615	02	11/16/15					11/18/2015	2.2	180		11/20/15	4.2	180	
50WW22FF-111615	04	11/16/15					11/18/2015	2.1	180		11/20/15	4.2	180	
50WW24FF-111615	06	11/16/15					11/18/2015	2.1	180		11/20/15	4.1	180	
50WW23FF-111615	08	11/16/15					11/18/2015	2	180		11/20/15	4.1	180	
50WW18FF-111615	10	11/16/15					11/18/2015	2	180		11/20/15	4	180	
50WW25FF-111615	12	11/16/15					11/18/2015	1.9	180		11/20/15	3.9	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4514395
Report generated 11/23/2015 09:42

METHOD BLANK SUMMARY

Login Number: L15110943
Blank File ID: NI.112015.122307
Prep Date: 11/18/15 12:37
Analyzed Date: 11/20/15 12:23
Analyst: JYH

Work Group: WG547469
Blank Sample ID: WG547429-03
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG547429-04	NI.111815.161823	11/18/15 16:18	01
DUP	WG547429-07	NI.111815.163418	11/18/15 16:34	01
LCS	WG547429-04	NI.112015.122618	11/20/15 12:26	02
50WW25FF-111615	L15110943-12	NI.112015.122929	11/20/15 12:29	DL02
50WW08FF-111615	L15110943-02	NI.112015.123903	11/20/15 12:39	DL01
50WW23FF-111615	L15110943-08	NI.112015.130146	11/20/15 13:01	DL01
50WW18FF-111615	L15110943-10	NI.112015.130457	11/20/15 13:04	DL01
50WW22FF-111615	L15110943-04	NI.112015.132754	11/20/15 13:27	01
50WW24FF-111615	L15110943-06	NI.112015.133105	11/20/15 13:31	01

Report Name: BLANK_SUMMARY
PDF File ID: 4514396
Report generated 11/23/2015 09:42

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15110943 Prep Date: 11/18/15 12:37 Sample ID: WG547429-03
Instrument ID: ICP-MS2 Run Date: 11/20/15 12:23 Prep Method: 3015
File ID: NI.112015.122307 Analyst: JYH Method: 6020A
Workgroup (AAB#): WG547469 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-20-NOV-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Manganese, Dissolved	0.00100	0.00400	0.00100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4514397
23-NOV-2015 09:42

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15110943 Run Date: 11/20/2015 Sample ID: WG547429-04
Instrument ID: ICP-MS2 Run Time: 12:26 Prep Method: 3015
File ID: NI.112015.122618 Analyst: JYH Method: 6020A
Workgroup (AAB#): WG547469 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD71855 Cal ID: ICP-MS-20-NOV-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Manganese, Dissolved	0.125	0.115	92.0	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4514490
Report generated: 11/23/2015 09:55

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L15110943 Cal ID: ICP-MS2- Worknum: WG547469
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG547429-01 File ID: NI.112015.122929 Dil: 5 Matrix: WATER
Sample ID: WG547429-05 MS File ID: NI.112015.123241 Dil: 5 Units: mg/L
Sample ID: WG547429-06 MSD File ID: NI.112015.123552 Dil: 5

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Manganese, Dissolved	0.0688	0.125	0.200	105	0.125	0.221	121	9.60	80 - 120	20	*

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4514399
Report generated 11/23/2015 09:42

Microbac Laboratories Inc.
Serial Dilution Report

Login: L15110943 **Worknum:** WG547469
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG547469-04 **File ID:** NI.112015.133728 **Dil:** 5 **Units:** ug/L
Sample: L15110943-06 **File ID:** NI.112015.133105 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Manganese	5.04	X	5.36	F	6.28	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4514393
11/23/2015 09:42

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L15110943 **Worknum:** WG547469
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG547469-03 **File ID:** NI.112015.133416 **Dil:** 1 **Units:** ug/L
Sample ID: L15110943-06 **File ID:** NI.112015.133105 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MANGANESE	54.8		5.04		50	99.4	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4514394
Report generated: 11/23/2015 09:42

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L15110943	Workgroup (AAB#):	WG547469
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG547835	Initial Calibration Date:	20-NOV-2015 09:58

	WG547835-01		WG547835-02		WG547835-03		WG547835-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
MANGANESE	0	999	.4	1250	50	236000	100	472000	.999975	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4514402
Report generated: 23-NOV-2015 09:43

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L15110943
Instrument ID: ICP-MS2
File ID: NI.112015.100438
Workgroup (AAB#): WG547469
Matrix: WATER

Run Date: 11/20/2015
Run Time: 10:04
Analyst: JYH
Cal ID: ICP-MS2 - 20-NOV-15

Sample ID: WG547835-06
Method: 6020A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
MANGANESE	.4	1.6	.4	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4514404
Report generated 11/23/2015 09:43

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15110943
Run Date: 11/20/2015
Sample ID: WG547835-11
Instrument ID: ICP-MS2
Run Time: 10:20
Method: 6020A
File ID: NI.112015.102037
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG547469
Cal ID: ICP-MS - 20-NOV-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4514407
Report generated 11/23/2015 09:43

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15110943
Run Date: 11/20/2015
Sample ID: WG547835-17
Instrument ID: ICP-MS2
Run Time: 12:15
Method: 6020A
File ID: NI.112015.121559
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG547469
Cal ID: ICP-MS - 20-NOV-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4514407
Report generated 11/23/2015 09:43

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15110943
Run Date: 11/20/2015
Sample ID: WG547835-40
Instrument ID: ICP-MS2
Run Time: 12:58
Method: 6020A
File ID: NI.112015.125834
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG547469
Cal ID: ICP-MS - 20-NOV-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4514407
Report generated 11/23/2015 09:43

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15110943
Run Date: 11/20/2015
Sample ID: WG547835-42
Instrument ID: ICP-MS2
Run Time: 13:43
Method: 6020A
File ID: NI.112015.134352
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG547469
Cal ID: ICP-MS - 20-NOV-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Manganese	0.400	1.60	0.400	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4514407
Report generated 11/23/2015 09:43

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L15110943
Run Date: 11/20/2015
Sample ID: WG547835-05
Instrument ID: ICP-MS2
Run Time: 10:01
Method: 6020A
File ID: NI.112015.100126
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG547469
Cal ID: ICP-MS - 20-NOV-15
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Manganese		50	51.9	104	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4514403
Report generated 11/23/2015 09:43

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110943
Run Date: 11/20/2015
Sample ID: WG547835-10
Instrument ID: ICP-MS2
Run Time: 10:17
Method: 6020A
File ID: NI.112015.101726
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG547469
Cal ID: ICP-MS - 20-NOV-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0519	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4514406
Report generated 11/23/2015 09:43

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110943
Run Date: 11/20/2015
Sample ID: WG547835-16
Instrument ID: ICP-MS2
Run Time: 12:12
Method: 6020A
File ID: NI.112015.121248
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG547469
Cal ID: ICP-MS - 20-NOV-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0469	mg/L	93.8	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4514406
Report generated 11/23/2015 09:43

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110943
Run Date: 11/20/2015
Sample ID: WG547835-39
Instrument ID: ICP-MS2
Run Time: 12:55
Method: 6020A
File ID: NI.112015.125523
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG547469
Cal ID: ICP-MS - 20-NOV-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0484	mg/L	96.9	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4514406
Report generated 11/23/2015 09:43

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110943
Run Date: 11/20/2015
Sample ID: WG547835-41
Instrument ID: ICP-MS2
Run Time: 13:40
Method: 6020A
File ID: NI.112015.134041
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG547469
Cal ID: ICP-MS - 20-NOV-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.0500	0.0492	mg/L	98.4	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4514406
Report generated 11/23/2015 09:43

Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15110943
Run Date: 11/20/2015
Sample ID: WG547835-07
Instrument ID: ICP-MS2
Run Time: 10:07
Method: 6020A
File ID: NI.112015.100751
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG547469
Cal ID: ICP-MS - 20-NOV-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.500	0.521	ug/L	104	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4514408
Report generated 11/23/2015 09:43

Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L15110943
Run Date: 11/20/2015
Sample ID: WG547835-43
Instrument ID: ICP-MS2
Run Time: 13:47
Method: 6020A
File ID: NI.112015.134704
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG547469
Cal ID: ICP-MS - 20-NOV-15
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Manganese		0.500	0.466	ug/L	93.2	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4514408
Report generated 11/23/2015 09:43

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L15110943
Instrument ID: ICP-MS2
Sol. A : WG547835-08 **File ID:** NI.112015.101102
Sol. AB : WG547835-09 **File ID:** NI.112015.101413

Workgroup (AAB#): WG547469
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Manganese	NS	0.0616	NS	100	102	102	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4514405
Report generated 11/23/2015 09:43

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L15110943 **Analytical Method:** 6020
Analytical Workgroup: WG547469 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** JYH
ICAL Date: 20-NOV-2015 09:48

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L15110943-02	SAMP	20-NOV-2015 12:39	84.067	94.905	79.967
L15110943-04	SAMP	20-NOV-2015 13:27	84.7	98.065	87.223
L15110943-06	SAMP	20-NOV-2015 13:31	88.806	98.822	89.447
L15110943-08	SAMP	20-NOV-2015 13:01	82.382	90.71	78.643
L15110943-10	SAMP	20-NOV-2015 13:04	84.144	94.027	80.7
L15110943-12	SAMP	20-NOV-2015 12:29	85.172	95.952	80.08
WG547429-03	BLANK	20-NOV-2015 12:23	90.041	102.768	87.215
WG547429-04	LCS	20-NOV-2015 12:26	90.836	102.15	87.083
WG547429-05	MS	20-NOV-2015 12:32	86.868	96.589	81.548
WG547429-06	MSD	20-NOV-2015 12:35	86.684	95.857	81.789
WG547469-03	PSPK	20-NOV-2015 13:34	89.892	100.643	89.687
WG547469-04	SERIAL	20-NOV-2015 13:37	83.869	90.463	80.723
WG547835-05	ICV	20-NOV-2015 10:01	100.682	100.516	101.269
WG547835-06	ICB	20-NOV-2015 10:04	105.105	104.772	105.017
WG547835-07	LLICV	20-NOV-2015 10:07	99.843	99.263	101.942
WG547835-08	ICS	20-NOV-2015 10:11	98.389	100.448	100.592
WG547835-09	ICS	20-NOV-2015 10:14	90.845	91.682	92.842
WG547835-10	CCV	20-NOV-2015 10:17	98.241	100.263	101.385
WG547835-11	CCB	20-NOV-2015 10:20	99.346	97.898	100.401
WG547835-16	CCV	20-NOV-2015 12:12	88.347	100.967	85.122
WG547835-17	CCB	20-NOV-2015 12:15	89.676	100.565	87.116
WG547835-39	CCV	20-NOV-2015 12:55	89.598	100.018	86.277
WG547835-40	CCB	20-NOV-2015 12:58	90.268	99.756	86.827
WG547835-41	CCV	20-NOV-2015 13:40	89.777	98.277	87.522
WG547835-42	CCB	20-NOV-2015 13:43	88.617	95.222	84.411
WG547835-43	LLCCV	20-NOV-2015 13:47	87.301	94.975	84.422

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4514401
Report generated: 11/23/2015 09:43

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L15110943 **Date:** 10/12/2015
Insturment ID: ICP-MS2 **Method:** 6020A

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Uranium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4514400
Report generated: 11/23/2015 09:43

2.2.2.3 Raw Data

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Friday, November 20, 2015 09:22:15

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	6.975	1347	2025	0.704	
Mg	23.985	23.975	4502	2019	0.708	
Co	58.933	58.925	11692	2021	0.707	
In	114.904	114.875	22859	2028	0.699	
U	238.050	238.025	47448	2042	0.707	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	3.443
5.575	2.761
5.625	4.056
5.675	3.158
5.725	2.373
5.775	3.769
5.825	2.432
5.875	3.647
5.925	4.095
5.975	3.793
6.025	3.487
6.075	10.992
6.125	63.474
6.175	46.566
6.225	46.481
6.275	39.123
6.325	68.698
6.375	34.146
6.425	7.857
6.475	4.353
6.525	4.199
6.575	2.153
6.625	2.024
6.675	2.863
6.725	2.605
6.775	2.484
6.825	1.390

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6.875	3.412
6.925	3.829
6.975	2.414
7.025	1.503
7.075	2.878
7.125	2.355
7.175	3.191
7.225	39.460
7.275	81.441
7.325	122.475
7.375	136.931
7.425	69.722
7.475	91.287
7.525	69.722
7.575	47.507
7.625	91.287
7.675	91.287
7.725	49.793
7.775	71.261
7.825	67.748
7.875	79.057
7.925	81.441
7.975	39.123
8.025	74.975
8.075	47.507
8.125	46.481
8.175	60.858
8.225	55.902
8.275	91.287
8.325	83.853
8.375	122.475
8.425	70.711
8.475	72.436
22.525	100.000
22.575	73.823
22.625	42.592
22.675	53.926
22.725	84.163
22.775	33.026
22.825	31.417
22.875	34.233
22.925	19.174
22.975	21.066
23.025	35.951
23.075	43.416
23.125	22.276
23.175	18.088

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23.225	38.932
23.275	38.508
23.325	19.920
23.375	10.143
23.425	14.425
23.475	4.465
23.525	2.236
23.575	4.785
23.625	1.357
23.675	0.986
23.725	1.504
23.775	1.148
23.825	1.657
23.875	1.282
23.925	2.282
23.975	2.179
24.025	1.502
24.075	2.445
24.125	0.968
24.175	1.726
24.225	1.585
24.275	2.314
24.325	22.822
24.375	24.786
24.425	40.126
24.475	6.344
24.525	6.987
24.575	2.870
24.625	2.371
24.675	2.901
24.725	1.619
24.775	3.885
24.825	2.224
24.875	3.256
24.925	1.702
24.975	2.058
25.025	1.754
25.075	1.042
25.125	1.590
25.175	1.752
25.225	6.149
25.275	32.596
25.325	93.541
25.375	30.987
25.425	16.090
25.475	24.895
57.525	10.239

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57.575	3.165
57.625	1.387
57.675	2.076
57.725	1.844
57.775	2.224
57.825	2.334
57.875	1.454
57.925	1.557
57.975	1.718
58.025	1.958
58.075	4.066
58.125	2.257
58.175	3.728
58.225	5.963
58.275	9.190
58.325	31.110
58.375	21.066
58.425	17.187
58.475	3.832
58.525	2.189
58.575	3.541
58.625	4.105
58.675	2.737
58.725	2.464
58.775	2.230
58.825	0.638
58.875	1.331
58.925	1.559
58.975	1.779
59.025	2.148
59.075	1.800
59.125	1.316
59.175	3.221
59.225	5.823
59.275	43.012
59.325	76.697
59.375	60.858
59.425	44.070
59.475	11.069
59.525	8.733
59.575	7.983
59.625	8.200
59.675	2.472
59.725	5.560
59.775	3.459
59.825	4.067
59.875	3.846

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59.925	3.340
59.975	4.513
60.025	2.319
60.075	2.711
60.125	3.460
60.175	3.188
60.225	10.694
60.275	51.349
60.325	37.268
60.375	47.140
60.425	33.535
60.475	71.442
113.525	2.373
113.575	3.190
113.625	2.304
113.675	3.456
113.725	2.171
113.775	1.601
113.825	2.051
113.875	0.586
113.925	2.046
113.975	2.209
114.025	1.141
114.075	3.092
114.125	2.602
114.175	1.248
114.225	4.831
114.275	12.474
114.325	57.143
114.375	18.506
114.425	15.302
114.475	4.397
114.525	1.590
114.575	3.189
114.625	1.223
114.675	2.306
114.725	2.328
114.775	1.984
114.825	2.136
114.875	1.097
114.925	1.836
114.975	1.863
115.025	0.909
115.075	1.040
115.125	1.837
115.175	1.869
115.225	5.135

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115.275	8.300
115.325	28.331
115.375	80.907
115.425	10.002
115.475	23.866
115.525	6.674
115.575	5.924
115.625	4.769
115.675	2.311
115.725	2.864
115.775	3.047
115.825	7.168
115.875	2.408
115.925	1.524
115.975	6.608
116.025	2.967
116.075	5.038
116.125	4.797
116.175	5.885
116.225	6.764
116.275	19.264
116.325	64.358
116.375	40.745
116.425	25.000
116.475	48.247
236.525	136.931
236.575	33.086
236.625	23.289
236.675	41.458
236.725	19.921
236.775	34.810
236.825	14.816
236.875	20.328
236.925	42.390
236.975	25.087
237.025	31.672
237.075	26.770
237.125	17.275
237.175	25.913
237.225	29.206
237.275	39.891
237.325	15.408
237.375	28.022
237.425	40.018
237.475	17.538
237.525	19.688
237.575	10.896

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237.625	3.596
237.675	3.760
237.725	2.283
237.775	3.419
237.825	2.009
237.875	1.879
237.925	1.563
237.975	2.209
238.025	2.894
238.075	1.011
238.125	1.077
238.175	1.247
238.225	2.188
238.275	1.583
238.325	2.421
238.375	3.753
238.425	3.547
238.475	7.962
238.525	16.363
238.575	25.555
238.625	21.601
238.675	30.829
238.725	20.787
238.775	33.840
238.825	44.712
238.875	20.494
238.925	19.325
238.975	40.745
239.025	29.116
239.075	36.490
239.125	14.286
239.175	43.279
239.225	25.000
239.275	62.641
239.325	50.418
239.375	32.394
239.425	41.574
239.475	33.185

Approved: November 23, 2015

SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 11/20/2015 9:27:20 AM
End Time: 11/20/2015 9:29:26 AM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 4692.59
        Obtained Intensity (Mg 23.985): 154574.41
        Obtained Intensity (In 114.904): 68039.11
        Obtained Intensity (U 238.05): 71611.77
        Obtained Intensity (Bkgd 220): 1.40
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.021 (=5483.39 / 257109.64)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.003 (=814.76 / 257109.64)
```

Report Date/Time: Friday, November 20, 2015 09:29:26
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SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 11/20/2015 9:27:20 AM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 4692.59
                Obtained Intensity (Mg 23.985): 154574.41
                Obtained Intensity (In 114.904): 68039.11
                Obtained Intensity (U 238.05): 71611.77
                Obtained Intensity (Bkgd 220): 1.40
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.021 (=5483.39 / 257109.64)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.003 (=814.76 / 257109.64)
[Passed]  Optimum value(s): N/A

End Time: 11/20/2015 9:29:26 AM
```


Approved: November 23, 2015

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Friday, November 20, 2015 09:45:28
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	49688.2	5.4				ug/L		Standard
	Be	9	6.7	43.3				ug/L		Standard
	Al	27	276.7	15.2				ug/L		Standard
	Sc	45	24625.0	2.0				ug/L		Standard
	Ti	47	198.3	8.2				ug/L		Standard
	V	51	1125.8	4.4				ug/L		Standard
	Cr	52	6071.2	3.0				ug/L		Standard
	Cr	53	331.7	11.4				ug/L		Standard
	Mn	55	876.0	7.0				ug/L		Standard
	Co	59	110.0	10.7				ug/L		Standard
	Ni	60	191.0	7.6				ug/L		Standard
	Cu	65	281.0	5.3				ug/L		Standard
	Zn	66	249.0	2.8				ug/L		Standard
>	Ge	72	297260.2	0.9				ug/L		Standard
	As	75	-66.1	18.7				ug/L		Standard
	Se	82	13.1	17.3				ug/L		Standard
	Se-1	77	47.7	7.4				ug/L		Standard
>	Ga	71	30.0	16.7				mg/L		Standard
	Rb	85	11.7	24.7				ug/L		Standard
	Y	89	310513.9	3.6				ug/L		Standard
>	Rh	103	10.0	86.6				ug/L		Standard
	Mo	98	11.2	20.4				ug/L		Standard
	Ag	107	99.3	15.5				ug/L		Standard
	Cd	111	5.6	56.9				mg/L		Standard
	Cd	114	6.5	109.5				ug/L		Standard
>	In	115	501592.8	2.3				ug/L		Standard
	Sn	118	441.7	14.8				ug/L		Standard
	Sb	123	52.9	25.3				ug/L		Standard
	Ba	135	34.0	15.3				ug/L		Standard
	Ce	140	73.3	28.4				ug/L		Standard
>	Tb	159	924917.3	2.1				ug/L		Standard
	Ho	165	6.7	43.3				ug/L		Standard
	Tl	203	5.7	44.4				ug/L		Standard
	Tl	205	8.3	34.6				ug/L		Standard
	Pb	206	263.7	2.2				ug/L		Standard
	Pb	207	215.3	6.2				ug/L		Standard
	Pb	208	863.0	4.2				ug/L		Standard
	U	238	4.3	26.6				ug/L		Standard
>	Bi	209	507917.3	1.6				ug/L		Standard

Sample ID: Blank
Report Date/Time: Friday, November 20, 2015 09:47:45
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	Na	23	0.0		mg/L	Standard
	Mg	24	20.0	50.0	mg/L	Standard
	K	39	38.3	49.4	mg/L	Standard
	Ca	43	43.3	46.6	mg/L	Standard
	Fe	54	102.9	17.2	mg/L	Standard
	Fe	57	106.7	24.1	mg/L	Standard
>	**Sc-1**	45	24625.0	2.0	mg/L	Standard
	Cl	35	30924.9	3.2	ug/L	Standard
	Kr	83	4.0	50.0	ug/L	Standard
	Br	81	396.7	16.8	ug/L	Standard
	P	31	19275.6	3.6	ug/L	Standard
	S	34	3042.0	3.2	ug/L	Standard
	Sr	88	65.0	33.5	ug/L	Standard
	C	12	286.7	44.2	mg/L	Standard
	N	14	0.0		mg/L	Standard
	Hg	202	3.3	173.2	mg/L	Standard
	Dy	164	22.7	93.4	mg/L	Standard
	Ho-1	165	6.7	43.3	mg/L	Standard
	Er	166	13.3	86.6	mg/L	Standard
	I	127	3275.4	2.2	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: Blank
Report Date/Time: Friday, November 20, 2015 09:47:45
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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Blank
Report Date/Time: Friday, November 20, 2015 09:47:45
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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Friday, November 20, 2015 09:48:40
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50848.5	1.8				ug/L	49688	Standard
	Be	9	6.7	173.2				ug/L	7	Standard
	Al	27	290.0	28.8				ug/L	277	Standard
	Sc	45	25256.0	1.4				ug/L	24625	Standard
	Ti	47	192.3	4.7				ug/L	198	Standard
	V	51	1175.9	10.5				ug/L	1126	Standard
	Cr	52	6190.3	1.2				ug/L	6071	Standard
	Cr	53	316.7	15.8				ug/L	332	Standard
	Mn	55	999.4	0.9				ug/L	876	Standard
	Co	59	129.0	6.7				ug/L	110	Standard
	Ni	60	224.7	0.9				ug/L	191	Standard
	Cu	65	293.3	2.9				ug/L	281	Standard
	Zn	66	237.7	3.0				ug/L	249	Standard
>	**Ge**	72	295704.4	0.7				ug/L	297260	Standard
	As	75	-59.1	13.2				ug/L	-66	Standard
	Se	82	10.9	50.9				ug/L	13	Standard
	Se-1	77	45.7	10.3				ug/L	48	Standard
>	**Ga**	71	51.7	14.8				mg/L	30	Standard
	Rb	85	25.0	52.9				ug/L	12	Standard
	Y	89	323420.7	3.0				ug/L	310514	Standard
>	**Rh**	103	11.7	65.5				ug/L	10	Standard
	Mo	98	15.2	34.9				ug/L	11	Standard
	Ag	107	105.7	11.8				ug/L	99	Standard
	Cd	111	11.3	66.4				mg/L	6	Standard
	Cd	114	16.2	75.9				ug/L	6	Standard
>	**In**	115	507401.5	0.9				ug/L	501593	Standard
	Sn	118	453.3	3.9				ug/L	442	Standard
	Sb	123	32.5	14.0				ug/L	53	Standard
	Ba	135	35.3	17.3				ug/L	34	Standard
	Ce	140	105.0	54.9				ug/L	73	Standard
>	**Tb**	159	918129.0	2.9				ug/L	924917	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	8.0	87.5				ug/L	6	Standard
	Tl	205	8.3	124.9				ug/L	8	Standard
	Pb	206	256.0	5.8				ug/L	264	Standard
	Pb	207	227.3	2.9				ug/L	215	Standard
	Pb	208	828.0	1.2				ug/L	863	Standard
	U	238	8.3	48.5				ug/L	4	Standard
>	**Bi**	209	508489.3	0.7				ug/L	507917	Standard

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	Na	23	0.0		mg/L	0	Standard
	Mg	24	13.3	57.3	mg/L	20	Standard
	K	39	51.7	20.1	mg/L	38	Standard
	Ca	43	73.3	3.9	mg/L	43	Standard
	Fe	54	109.5	12.3	mg/L	103	Standard
	Fe	57	100.0	10.0	mg/L	107	Standard
>	**Sc-1**	45	25256.0	1.4	mg/L	24625	Standard
	Cl	35	32608.4	1.6	ug/L	30925	Standard
	Kr	83	6.3	39.7	ug/L	4	Standard
	Br	81	423.3	7.6	ug/L	397	Standard
	P	31	19617.7	5.0	ug/L	19276	Standard
	S	34	3302.0	3.7	ug/L	3042	Standard
	Sr	88	86.7	26.0	ug/L	65	Standard
	C	12	223.3	20.2	mg/L	287	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	10.0		mg/L	3	Standard
	Dy	164	22.2	90.8	mg/L	23	Standard
	Ho-1	165	3.3	86.6	mg/L	7	Standard
	Er	166	23.3	65.5	mg/L	13	Standard
	I	127	3353.7	3.9	mg/L	3275	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Friday, November 20, 2015 09:51:51
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51507.5	3.2				ug/L	49688	Standard
	Be	9	58.3	13.1				ug/L	7	Standard
	Al	27	4202.3	8.7				ug/L	277	Standard
	Sc	45	26473.1	4.5				ug/L	24625	Standard
	Ti	47	186.0	2.8				ug/L	198	Standard
	V	51	1390.0	5.3				ug/L	1126	Standard
	Cr	52	6299.6	2.1				ug/L	6071	Standard
	Cr	53	325.0	10.8				ug/L	332	Standard
	Mn	55	1249.1	4.5				ug/L	876	Standard
	Co	59	378.3	4.9				ug/L	110	Standard
	Ni	60	311.0	11.0				ug/L	191	Standard
	Cu	65	360.3	6.9				ug/L	281	Standard
	Zn	66	275.7	5.3				ug/L	249	Standard
>	**Ge**	72	305968.8	2.9				ug/L	297260	Standard
	As	75	-1.6	853.9				ug/L	-66	Standard
	Se	82	20.6	8.5				ug/L	13	Standard
	Se-1	77	51.3	12.7				ug/L	48	Standard
>	**Ga**	71	56.7	22.2				mg/L	30	Standard
	Rb	85	11.7	65.5				ug/L	12	Standard
	Y	89	328828.5	5.5				ug/L	310514	Standard
>	**Rh**	103	25.0	34.6				ug/L	10	Standard
	Mo	98	173.9	8.6				ug/L	11	Standard
	Ag	107	400.7	6.7				ug/L	99	Standard
	Cd	111	97.9	6.8				mg/L	6	Standard
	Cd	114	243.3	9.5				ug/L	6	Standard
>	**In**	115	521675.4	4.9				ug/L	501593	Standard
	Sn	118	746.7	0.4				ug/L	442	Standard
	Sb	123	275.2	3.8				ug/L	53	Standard
	Ba	135	151.7	13.5				ug/L	34	Standard
	Ce	140	90.0	58.0				ug/L	73	Standard
>	**Tb**	159	953879.2	5.5				ug/L	924917	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	447.0	0.9				ug/L	6	Standard
	Tl	205	305.0	8.7				ug/L	8	Standard
	Pb	206	571.0	2.3				ug/L	264	Standard
	Pb	207	483.7	1.4				ug/L	215	Standard
	Pb	208	1771.0	2.5				ug/L	863	Standard
	U	238	299.0	6.5				ug/L	4	Standard
>	**Bi**	209	519502.3	4.8				ug/L	507917	Standard

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	Na	23	0.0		mg/L	0	Standard
	Mg	24	25.0	40.0	mg/L	20	Standard
	K	39	46.7	30.9	mg/L	38	Standard
	Ca	43	61.7	32.8	mg/L	43	Standard
	Fe	54	107.5	40.4	mg/L	103	Standard
	Fe	57	105.0	36.0	mg/L	107	Standard
>	**Sc-1**	45	26473.1	4.5	mg/L	24625	Standard
	Cl	35	32479.4	0.1	ug/L	30925	Standard
	Kr	83	3.7	15.7	ug/L	4	Standard
	Br	81	386.7	3.0	ug/L	397	Standard
	P	31	19370.7	2.0	ug/L	19276	Standard
	S	34	3313.7	4.1	ug/L	3042	Standard
	Sr	88	55.0	9.1	ug/L	65	Standard
	C	12	313.3	20.5	mg/L	287	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	6.7	173.2	mg/L	3	Standard
	Dy	164	15.9	32.1	mg/L	23	Standard
	Ho-1	165	3.3	86.6	mg/L	7	Standard
	Er	166	16.7	91.7	mg/L	13	Standard
	I	127	3142.0	3.8	mg/L	3275	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 2
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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Friday, November 20, 2015 09:55:02
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51811.9	5.3				ug/L	49688	Standard
	Be	9	40208.3	2.6	**50.0000**	2.400	4.8	ug/L	7	Standard
	Al	27	3408500.2	1.5	**50.0000**	2.214	4.4	ug/L	277	Standard
	Sc	45	24963.9	1.6				ug/L	24625	Standard
	Ti	47	20439.1	0.5	**100.0000**	1.547	1.5	ug/L	198	Standard
	V	51	251592.8	0.6	**50.0000**	0.587	1.2	ug/L	1126	Standard
	Cr	52	242186.3	0.5	**50.0000**	0.656	1.3	ug/L	6071	Standard
	Cr	53	30260.2	1.1	**50.0000**	1.118	2.2	ug/L	332	Standard
	Mn	55	236363.9	1.1	**50.0000**	1.184	2.4	ug/L	876	Standard
	Co	59	239969.1	0.9	**50.0000**	0.431	0.9	ug/L	110	Standard
	Ni	60	65506.0	0.9	**50.0000**	0.443	0.9	ug/L	191	Standard
	Cu	65	65516.1	2.2	**50.0000**	0.616	1.2	ug/L	281	Standard
	Zn	66	38478.8	2.0	**50.0000**	0.887	1.8	ug/L	249	Standard
>	**Ge**	72	300090.9	1.7				ug/L	297260	Standard
	As	75	42553.7	1.2	**50.0000**	0.298	0.6	ug/L	-66	Standard
	Se	82	3891.5	0.6	**50.0000**	0.810	1.6	ug/L	13	Standard
	Se-1	77	2454.2	1.4	**50.0000**	1.188	2.4	ug/L	48	Standard
>	**Ga**	71	81.7	25.5				mg/L	30	Standard
	Rb	85	556.7	8.1				ug/L	12	Standard
	Y	89	315249.0	2.7				ug/L	310514	Standard
>	**Rh**	103	25.0	20.0				ug/L	10	Standard
	Mo	98	179118.1	0.2	**100.0000**	0.689	0.7	ug/L	11	Standard
	Ag	107	284141.3	1.6	**50.0000**	0.514	1.0	ug/L	99	Standard
	Cd	111	92727.2	2.2	**50.0000**	0.859	1.7	mg/L	6	Standard
	Cd	114	228691.9	0.9	**50.0000**	0.058	0.1	ug/L	6	Standard
>	**In**	115	515049.2	0.8				ug/L	501593	Standard
	Sn	118	250803.1	2.7	**50.0000**	0.992	2.0	ug/L	442	Standard
	Sb	123	249404.1	0.6	**50.0000**	0.161	0.3	ug/L	53	Standard
	Ba	135	100920.3	0.5	**50.0000**	0.560	1.1	ug/L	34	Standard
	Ce	140	105.0	31.2				ug/L	73	Standard
>	**Tb**	159	930155.2	2.1				ug/L	924917	Standard
	Ho	165	6.7	86.6				ug/L	7	Standard
	Tl	203	414169.7	0.2	**50.0000**	0.359	0.7	ug/L	6	Standard
	Tl	205	277479.9	1.7	**50.0000**	1.091	2.2	ug/L	8	Standard
	Pb	206	287260.9	0.5	**50.0000**	0.609	1.2	ug/L	264	Standard
	Pb	207	260132.8	0.9	**50.0000**	0.326	0.7	ug/L	215	Standard
	Pb	208	912704.1	0.2	**50.0000**	0.322	0.6	ug/L	863	Standard
	U	238	304430.7	0.4	**50.0000**	0.436	0.9	ug/L	4	Standard
>	**Bi**	209	510866.7	0.8				ug/L	507917	Standard

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Na	23	1.7	173.2	**5.0000**	8.652	173.0	mg/L	0	Standard
Mg	24	2835.3	3.4	**5.0000**	0.090	1.8	mg/L	20	Standard
K	39	1215.0	5.4	**5.0000**	0.259	5.2	mg/L	38	Standard
Ca	43	110.0	15.7	**5.0000**	1.818	36.4	mg/L	43	Standard
Fe	54	3566.0	4.5	**5.0000**	0.291	5.8	mg/L	103	Standard
Fe	57	976.7	3.6	**5.0000**	0.113	2.3	mg/L	107	Standard
> **Sc-1**	45	24963.9	1.6				mg/L	24625	Standard
Cl	35	30749.2	1.7				ug/L	30925	Standard
Kr	83	3.7	41.7				ug/L	4	Standard
Br	81	440.0	21.9				ug/L	397	Standard
P	31	20063.3	1.2				ug/L	19276	Standard
S	34	3273.7	6.0				ug/L	3042	Standard
Sr	88	63.3	19.9				ug/L	65	Standard
C	12	203.3	25.2				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	3	Standard
Dy	164	9.7	100.8				mg/L	23	Standard
Ho-1	165	6.7	86.6				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	1768.4	2.1				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Friday, November 20, 2015 09:58:13
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	48673.1	3.8				ug/L	49688	Standard
	Be	9	81069.7	1.9	**103.5289**	5.480	5.3	ug/L	7	Standard
	Al	27	6883403.0	2.5	**103.6133**	6.465	6.2	ug/L	277	Standard
	Sc	45	25376.2	3.2				ug/L	24625	Standard
	Ti	47	40511.4	0.3	**200.7899**	0.185	0.1	ug/L	198	Standard
	V	51	505876.7	0.8	**101.0263**	0.596	0.6	ug/L	1126	Standard
	Cr	52	479848.9	0.7	**100.8052**	0.918	0.9	ug/L	6071	Standard
	Cr	53	60008.7	2.8	**100.4624**	3.019	3.0	ug/L	332	Standard
	Mn	55	472283.3	0.7	**100.7012**	0.874	0.9	ug/L	876	Standard
	Co	59	479832.8	1.2	**100.6526**	1.366	1.4	ug/L	110	Standard
	Ni	60	130370.8	0.3	**100.4964**	0.478	0.5	ug/L	191	Standard
	Cu	65	129765.0	0.5	**100.2798**	0.572	0.6	ug/L	281	Standard
	Zn	66	76199.8	0.9	**100.3087**	1.084	1.1	ug/L	249	Standard
>	Ge	72	296190.0	0.2				ug/L	297260	Standard
	As	75	84830.5	0.9	**100.4621**	1.054	1.0	ug/L	-66	Standard
	Se	82	7714.6	0.4	**100.3088**	0.318	0.3	ug/L	13	Standard
	Se-1	77	4777.1	2.5	**99.7776**	2.632	2.6	ug/L	48	Standard
>	Ga	71	75.0	11.5				mg/L	30	Standard
	Rb	85	1143.4	4.1				ug/L	12	Standard
	Y	89	312503.4	1.1				ug/L	310514	Standard
>	Rh	103	43.3	17.6				ug/L	10	Standard
	Mo	98	353049.2	0.7	**201.3502**	1.946	1.0	ug/L	11	Standard
	Ag	107	560229.7	0.8	**100.7033**	0.444	0.4	ug/L	99	Standard
	Cd	111	184206.6	0.5	**101.0725**	0.771	0.8	mg/L	6	Standard
	Cd	114	458354.0	2.4	**101.5075**	1.490	1.5	ug/L	6	Standard
>	In	115	500774.1	1.0				ug/L	501593	Standard
	Sn	118	514067.6	1.1	**102.6911**	1.831	1.8	ug/L	442	Standard
	Sb	123	501461.5	0.2	**101.6741**	0.838	0.8	ug/L	53	Standard
	Ba	135	199781.8	0.4	**100.9043**	0.892	0.9	ug/L	34	Standard
	Ce	140	168.3	19.1				ug/L	73	Standard
>	Tb	159	919870.7	1.0				ug/L	924917	Standard
	Ho	165	11.7	49.5				ug/L	7	Standard
	Tl	203	812504.0	0.8	**100.3099**	1.315	1.3	ug/L	6	Standard
	Tl	205	543776.3	0.9	**100.2599**	2.177	2.2	ug/L	8	Standard
	Pb	206	569163.4	0.5	**100.8299**	1.654	1.6	ug/L	264	Standard
	Pb	207	515330.8	0.3	**100.8191**	1.104	1.1	ug/L	215	Standard
	Pb	208	1812065.3	0.9	**100.9348**	2.243	2.2	ug/L	863	Standard
	U	238	609264.5	0.8	**101.3069**	1.760	1.7	ug/L	4	Standard
>	Bi	209	498049.7	1.4				ug/L	507917	Standard

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Na	23	1.7	173.2	**6.6690**	11.542	173.1	mg/L	0	Standard
Mg	24	6066.2	4.9	**10.2767**	0.469	4.6	mg/L	20	Standard
K	39	2241.8	7.6	**9.5946**	0.555	5.8	mg/L	38	Standard
Ca	43	146.7	10.4	**9.0553**	1.328	14.7	mg/L	43	Standard
Fe	54	6837.6	2.9	**9.7739**	0.349	3.6	mg/L	103	Standard
Fe	57	1933.5	4.6	**10.1434**	0.799	7.9	mg/L	107	Standard
Sc-1	45	25376.2	3.2				mg/L	24625	Standard
Cl	35	30055.8	1.9				ug/L	30925	Standard
Kr	83	4.3	66.6				ug/L	4	Standard
Br	81	450.0	17.6				ug/L	397	Standard
P	31	20812.6	5.7				ug/L	19276	Standard
S	34	3292.0	2.8				ug/L	3042	Standard
Sr	88	73.3	33.6				ug/L	65	Standard
C	12	296.7	12.8				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	5.9	94.0				mg/L	23	Standard
Ho-1	165	11.7	49.5				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	13	Standard
I	127	2355.2	6.5				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998
Corr. Coef.	Ca	43	Correlation coefficient < 0.998

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Friday, November 20, 2015 10:01:26
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	50997.4	1.6				ug/L	49688	Standard
	Be	9	40654.5	2.3	**49.4866**	1.511	3.1	ug/L	7	Standard
	Al	27	3665305.9	2.6	**52.5804**	1.618	3.1	ug/L	277	Standard
	Sc	45	25334.5	1.9				ug/L	24625	Standard
	Ti	47	20617.7	0.7	**100.9127**	1.314	1.3	ug/L	198	Standard
	V	51	257977.8	1.2	**50.9626**	0.240	0.5	ug/L	1126	Standard
	Cr	52	246116.6	0.9	**50.6403**	0.212	0.4	ug/L	6071	Standard
	Cr	53	30268.5	1.6	**49.9878**	0.210	0.4	ug/L	332	Standard
	Mn	55	245835.7	0.3	**51.8640**	0.610	1.2	ug/L	876	Standard
	Co	59	247340.3	1.1	**51.4235**	0.948	1.8	ug/L	110	Standard
	Ni	60	66211.4	0.9	**50.5058**	0.458	0.9	ug/L	191	Standard
	Cu	65	66767.5	1.0	**51.0398**	0.187	0.4	ug/L	281	Standard
	Zn	66	39799.9	0.7	**51.7947**	0.817	1.6	ug/L	249	Standard
>	Ge	72	298794.0	1.2				ug/L	297260	Standard
	As	75	44172.1	0.9	**51.8884**	1.042	2.0	ug/L	-66	Standard
	Se	82	3991.2	1.8	**51.3430**	0.829	1.6	ug/L	13	Standard
	Se-1	77	2519.5	1.7	**51.6975**	1.344	2.6	ug/L	48	Standard
>	Ga	71	86.7	8.8				mg/L	30	Standard
	Rb	85	648.3	5.6				ug/L	12	Standard
	Y	89	313165.7	1.9				ug/L	310514	Standard
>	Rh	103	41.7	18.3				ug/L	10	Standard
	Mo	98	185392.2	1.2	**104.2409**	1.236	1.2	ug/L	11	Standard
	Ag	107	292531.0	0.1	**51.8352**	0.631	1.2	ug/L	99	Standard
	Cd	111	94580.6	0.9	**51.1681**	1.123	2.2	mg/L	6	Standard
	Cd	114	236873.3	1.3	**51.7208**	0.288	0.6	ug/L	6	Standard
>	In	115	507957.0	1.3				ug/L	501593	Standard
	Sn	118	266517.0	0.8	**52.4430**	0.880	1.7	ug/L	442	Standard
	Sb	123	250360.6	0.6	**50.0476**	0.923	1.8	ug/L	53	Standard
	Ba	135	103527.8	1.1	**51.5370**	0.281	0.5	ug/L	34	Standard
	Ce	140	223.3	7.9				ug/L	73	Standard
>	Tb	159	921479.5	2.0				ug/L	924917	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	418453.4	0.3	**50.3086**	0.263	0.5	ug/L	6	Standard
	Tl	205	287182.9	1.0	**51.5589**	0.639	1.2	ug/L	8	Standard
	Pb	206	293267.5	0.9	**50.5698**	0.605	1.2	ug/L	264	Standard
	Pb	207	264222.7	0.9	**50.3194**	0.418	0.8	ug/L	215	Standard
	Pb	208	934743.5	0.7	**50.6764**	0.162	0.3	ug/L	863	Standard
	U	238	313339.8	1.1	**50.7361**	0.377	0.7	ug/L	4	Standard
>	Bi	209	511382.5	0.5				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3157.0	0.8	**5.3404**	0.145	2.7	mg/L	20	Standard
K	39	1303.4	6.7	**5.5169**	0.493	8.9	mg/L	38	Standard
Ca	43	110.0	4.5	**5.2913**	0.736	13.9	mg/L	43	Standard
Fe	54	3570.0	4.6	**5.0388**	0.192	3.8	mg/L	103	Standard
Fe	57	1038.4	8.2	**5.1866**	0.384	7.4	mg/L	107	Standard
Sc-1	45	25334.5	1.9				mg/L	24625	Standard
Cl	35	30889.5	1.0				ug/L	30925	Standard
Kr	83	4.3	35.3				ug/L	4	Standard
Br	81	510.0	12.2				ug/L	397	Standard
P	31	21066.3	1.8				ug/L	19276	Standard
S	34	3525.4	2.3				ug/L	3042	Standard
Sr	88	80.0	18.8				ug/L	65	Standard
C	12	273.3	7.6				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	15.5	36.5				mg/L	23	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	23.3	65.5				mg/L	13	Standard
I	127	1045.0	6.5				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	98.973		
Al	27	105.161		
Sc	45			
Ti	47	100.913		
V	51	101.925		
Cr	52	101.281		
Cr	53			
Mn	55	103.728		
Co	59	102.847		
Ni	60	101.012		
Cu	65	102.080		
Zn	66	103.589		
Ge	72		100.516	
As	75	103.777		
Se	82	102.686		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	104.241		
Ag	107	103.670		
Cd	111	102.336		
Cd	114			
In	115		101.269	
Sn	118	104.886		
Sb	123	100.095		
Ba	135	103.074		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.617		
Tl	205			
Pb	206	101.140		
Pb	207	100.639		
Pb	208	101.353		
U	238	101.472		
Bi	209		100.682	
Na	23	0.100		
Mg	24	106.808		
K	39	110.337		
Ca	43	105.827		
Fe	54	100.776		
Fe	57	103.733		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	K	39	

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Friday, November 20, 2015 10:04:38
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52546.1	5.4				ug/L	49688	Standard
	Be	9	30.0	60.1	**0.0144**	0.020	136.1	ug/L	7	Standard
	Al	27	1258.4	93.8	**0.0075**	0.016	207.0	ug/L	277	Standard
	Sc	45	27536.7	4.5				ug/L	24625	Standard
	Ti	47	178.0	10.9	**0.0454**	0.078	173.0	ug/L	198	Standard
	V	51	1059.6	19.5	**-0.0181**	0.037	207.0	ug/L	1126	Standard
	Cr	52	5515.7	1.0	**-0.1318**	0.024	18.0	ug/L	6071	Standard
	Cr	53	316.7	1.8	**0.0262**	0.016	59.6	ug/L	332	Standard
	Mn	55	1149.0	16.1	**0.0249**	0.036	146.3	ug/L	876	Standard
	Co	59	227.0	61.5	**0.0183**	0.027	149.7	ug/L	110	Standard
	Ni	60	323.3	8.1	**0.0549**	0.015	27.7	ug/L	191	Standard
	Cu	65	309.3	9.3	**0.0071**	0.019	263.1	ug/L	281	Standard
	Zn	66	344.3	3.9	**0.1298**	0.013	9.8	ug/L	249	Standard
>	**Ge**	72	311445.4	1.8				ug/L	297260	Standard
	As	75	-10.4	226.2	**0.0397**	0.026	66.5	ug/L	-66	Standard
	Se	82	12.0	56.0	**-0.0606**	0.083	137.2	ug/L	13	Standard
	Se-1	77	40.7	18.6	**-0.1840**	0.139	75.5	ug/L	48	Standard
>	**Ga**	71	40.0					mg/L	30	Standard
	Rb	85	20.0	25.0				ug/L	12	Standard
	Y	89	322521.8	1.1				ug/L	310514	Standard
>	**Rh**	103	10.0	50.0				ug/L	10	Standard
	Mo	98	389.5	46.4	**0.2151**	0.095	44.0	ug/L	11	Standard
	Ag	107	240.0	82.6	**0.0215**	0.033	154.5	ug/L	99	Standard
	Cd	111	51.5	129.9	**0.0249**	0.034	138.3	mg/L	6	Standard
	Cd	114	116.1	131.4	**0.0224**	0.032	141.6	ug/L	6	Standard
>	**In**	115	526759.4	2.7				ug/L	501593	Standard
	Sn	118	890.0	14.2	**0.0756**	0.023	30.9	ug/L	442	Standard
	Sb	123	1009.0	2.6	**0.1910**	0.010	5.3	ug/L	53	Standard
	Ba	135	97.7	73.9	**0.0233**	0.034	145.5	ug/L	34	Standard
	Ce	140	108.3	65.7				ug/L	73	Standard
>	**Tb**	159	968623.1	4.6				ug/L	924917	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	199.7	148.9	**0.0200**	0.034	171.0	ug/L	6	Standard
	Tl	205	85.0	137.6	**0.0107**	0.020	187.6	ug/L	8	Standard
	Pb	206	473.0	46.9	**0.0311**	0.037	117.8	ug/L	264	Standard
	Pb	207	394.7	46.6	**0.0312**	0.033	107.4	ug/L	215	Standard
	Pb	208	1362.0	37.4	**0.0261**	0.026	101.3	ug/L	863	Standard
	U	238	99.3	130.5	**0.0177**	0.020	113.7	ug/L	4	Standard
>	**Bi**	209	533848.8	2.4				ug/L	507917	Standard

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Na	23	1.7	173.2	**5.9347**	10.270	173.1	mg/L	0	Standard
Mg	24	23.3	24.7	**0.0008**	0.011	1401.0	mg/L	20	Standard
K	39	40.0	25.0	**-0.0280**	0.048	170.5	mg/L	38	Standard
Ca	43	55.0	15.7	**-0.9022**	0.665	73.7	mg/L	43	Standard
Fe	54	122.9	6.4	**0.0184**	0.012	67.4	mg/L	103	Standard
Fe	57	113.3	24.3	**0.0215**	0.147	681.6	mg/L	107	Standard
Sc-1	45	27536.7	4.5				mg/L	24625	Standard
Cl	35	31443.9	0.9				ug/L	30925	Standard
Kr	83	3.7	83.3				ug/L	4	Standard
Br	81	506.7	8.9				ug/L	397	Standard
P	31	21032.9	5.3				ug/L	19276	Standard
S	34	3388.7	2.0				ug/L	3042	Standard
Sr	88	61.7	23.4				ug/L	65	Standard
C	12	236.7	16.0				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	3	Standard
Dy	164	13.0	46.5				mg/L	23	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	2957.0	8.6				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		104.772	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	105.017	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	105.105	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Na	23	
QC Std 2	Ca	43	

Sample ID: QC Std 2
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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Friday, November 20, 2015 10:07:51
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49714.9	4.4				ug/L	49688	Standard
	Be	9	198.3	24.7	**0.2294**	0.074	32.2	ug/L	7	Standard
	Al	27	1346.8	129.5	**0.0109**	0.027	248.8	ug/L	277	Standard
	Sc	45	26090.8	4.3				ug/L	24625	Standard
	Ti	47	168.7	12.0	**0.0459**	0.096	209.3	ug/L	198	Standard
	V	51	2877.9	0.6	**0.3586**	0.004	1.1	ug/L	1126	Standard
	Cr	52	9000.7	0.6	**0.6740**	0.020	3.0	ug/L	6071	Standard
	Cr	53	781.7	11.2	**0.8398**	0.155	18.4	ug/L	332	Standard
	Mn	55	3403.0	2.5	**0.5213**	0.011	2.2	ug/L	876	Standard
	Co	59	2024.5	0.4	**0.3996**	0.004	1.0	ug/L	110	Standard
	Ni	60	2280.8	3.6	**1.5862**	0.080	5.1	ug/L	191	Standard
	Cu	65	1317.1	3.0	**0.8034**	0.035	4.3	ug/L	281	Standard
	Zn	66	5958.5	0.4	**7.5953**	0.084	1.1	ug/L	249	Standard
>	**Ge**	72	295069.1	1.3				ug/L	297260	Standard
	As	75	305.2	19.1	**0.4147**	0.073	17.6	ug/L	-66	Standard
	Se	82	45.4	23.9	**0.3845**	0.147	38.1	ug/L	13	Standard
	Se-1	77	64.3	13.6	**0.3649**	0.193	52.9	ug/L	48	Standard
>	**Ga**	71	50.0	20.0				mg/L	30	Standard
	Rb	85	25.0	20.0				ug/L	12	Standard
	Y	89	315031.5	0.6				ug/L	310514	Standard
>	**Rh**	103	3.3	86.6				ug/L	10	Standard
	Mo	98	118.9	15.7	**0.0712**	0.010	14.3	ug/L	11	Standard
	Ag	107	2280.5	3.9	**0.3823**	0.018	4.7	ug/L	99	Standard
	Cd	111	446.3	11.4	**0.2381**	0.028	11.6	mg/L	6	Standard
	Cd	114	1192.6	8.9	**0.2567**	0.022	8.4	ug/L	6	Standard
>	**In**	115	511332.0	1.0				ug/L	501593	Standard
	Sn	118	526.7	22.2	**0.0097**	0.024	242.9	ug/L	442	Standard
	Sb	123	2167.3	4.3	**0.4267**	0.021	4.8	ug/L	53	Standard
	Ba	135	1506.7	1.6	**0.7222**	0.019	2.6	ug/L	34	Standard
	Ce	140	60.0	16.7				ug/L	73	Standard
>	**Tb**	159	926349.0	0.8				ug/L	924917	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	692.0	14.0	**0.0810**	0.012	15.3	ug/L	6	Standard
	Tl	205	461.7	4.1	**0.0797**	0.003	3.2	ug/L	8	Standard
	Pb	206	1480.4	3.4	**0.2106**	0.010	4.6	ug/L	264	Standard
	Pb	207	1225.0	4.8	**0.1945**	0.007	3.5	ug/L	215	Standard
	Pb	208	4443.3	2.0	**0.1985**	0.006	3.0	ug/L	863	Standard
	U	238	2396.9	2.2	**0.3938**	0.013	3.3	ug/L	4	Standard
>	**Bi**	209	507120.3	1.9				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	25.0	103.9	**0.0056**	0.044	778.6	mg/L	20	Standard
K	39	48.3	15.8	**0.0152**	0.035	229.0	mg/L	38	Standard
Ca	43	48.3	66.5	**-1.1930**	3.451	289.3	mg/L	43	Standard
Fe	54	100.5	18.9	**-0.0043**	0.025	590.5	mg/L	103	Standard
Fe	57	93.3	11.2	**-0.0541**	0.075	139.2	mg/L	107	Standard
Sc-1	45	26090.8	4.3				mg/L	24625	Standard
Cl	35	31018.4	1.6				ug/L	30925	Standard
Kr	83	3.7	63.0				ug/L	4	Standard
Br	81	480.0	5.5				ug/L	397	Standard
P	31	20896.1	1.9				ug/L	19276	Standard
S	34	3337.0	2.0				ug/L	3042	Standard
Sr	88	81.7	15.4				ug/L	65	Standard
C	12	326.7	15.4				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	19.0	52.7				mg/L	23	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	13	Standard
I	127	730.0	14.9				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	114.682		
Al	27	1.094		
Sc	45			
Ti	47			
V	51	89.661		
Cr	52	84.247		
Cr	53			
Mn	55	104.258		
Co	59	99.894		
Ni	60	99.137		
Cu	65	100.427		
Zn	66	121.525		
Ge	72		99.263	
As	75	103.684		
Se	82	96.127		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	95.587		
Cd	111	99.203		
Cd	114			
> In	115		101.942	
Sn	118			
Sb	123	106.679		
Ba	135	96.291		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.266		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.230		
U	238	98.442		
> Bi	209		99.843	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Friday, November 20, 2015 10:11:02
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	50037.5	2.6				ug/L	49688	Standard
	Be	9	15.0	66.7	**-0.0019**	0.012	656.5	ug/L	7	Standard
	Al	27	3475440.7	1.1	**50.8229**	1.237	2.4	ug/L	277	Standard
	Sc	45	24852.0	1.8				ug/L	24625	Standard
	Ti	47	22432.3	2.2	**109.9355**	2.781	2.5	ug/L	198	Standard
	V	51	1009.8	6.2	**-0.0191**	0.013	69.1	ug/L	1126	Standard
	Cr	52	6035.2	1.9	**0.0255**	0.021	83.1	ug/L	6071	Standard
	Cr	53	1438.4	6.7	**1.9191**	0.151	7.9	ug/L	332	Standard
	Mn	55	1274.4	1.8	**0.0616**	0.005	7.5	ug/L	876	Standard
	Co	59	301.3	6.8	**0.0359**	0.004	12.5	ug/L	110	Standard
	Ni	60	635.3	4.4	**0.3043**	0.023	7.6	ug/L	191	Standard
	Cu	65	637.3	5.5	**0.2689**	0.025	9.4	ug/L	281	Standard
	Zn	66	641.0	3.5	**0.5371**	0.031	5.8	ug/L	249	Standard
>	Ge	72	298591.2	0.4				ug/L	297260	Standard
	As	75	-15.9	18.7	**0.0329**	0.003	10.5	ug/L	-66	Standard
	Se	82	13.2	28.2	**-0.0387**	0.048	124.0	ug/L	13	Standard
	Se-1	77	230.3	12.2	**3.8218**	0.590	15.4	ug/L	48	Standard
>	Ga	71	170.0	29.4				mg/L	30	Standard
	Rb	85	651.7	7.0				ug/L	12	Standard
	Y	89	312942.7	1.8				ug/L	310514	Standard
>	Rh	103	10.0	86.6				ug/L	10	Standard
	Mo	98	187995.4	1.5	**106.4220**	2.292	2.2	ug/L	11	Standard
	Ag	107	122.7	0.5	**0.0026**	0.000	11.7	ug/L	99	Standard
	Cd	111	-140.6	4.2	**-0.0784**	0.004	5.1	mg/L	6	Standard
	Cd	114	453.0	20.2	**0.0976**	0.019	19.6	ug/L	6	Standard
>	In	115	504561.3	1.1				ug/L	501593	Standard
	Sn	118	510.0	16.2	**0.0076**	0.016	208.0	ug/L	442	Standard
	Sb	123	190.2	29.6	**0.0345**	0.011	32.4	ug/L	53	Standard
	Ba	135	172.7	7.2	**0.0633**	0.007	11.4	ug/L	34	Standard
	Ce	140	171.7	12.1				ug/L	73	Standard
>	Tb	159	908749.8	1.3				ug/L	924917	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	158.3	5.1	**0.0165**	0.001	5.6	ug/L	6	Standard
	Tl	205	118.3	28.1	**0.0178**	0.006	34.3	ug/L	8	Standard
	Pb	206	368.0	10.8	**0.0179**	0.007	37.9	ug/L	264	Standard
	Pb	207	318.3	3.0	**0.0212**	0.002	7.7	ug/L	215	Standard
	Pb	208	1141.7	4.5	**0.0187**	0.003	15.7	ug/L	863	Standard
	U	238	7.7	19.9	**0.0036**	0.000	7.1	ug/L	4	Standard
>	Bi	209	499733.6	0.4				ug/L	507917	Standard

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Na	23	1.7	173.2	**6.9269**	11.989	173.1	mg/L	0	Standard
Mg	24	7205.0	4.4	**12.4766**	0.741	5.9	mg/L	20	Standard
K	39	1178.4	6.6	**5.0611**	0.261	5.2	mg/L	38	Standard
Ca	43	180.0	21.0	**12.9372**	4.136	32.0	mg/L	43	Standard
Fe	54	8481.6	3.6	**12.4120**	0.356	2.9	mg/L	103	Standard
Fe	57	2310.2	4.7	**12.4764**	0.455	3.6	mg/L	107	Standard
> **Sc-1**	45	24852.0	1.8				mg/L	24625	Standard
Cl	35	29588.9	0.9				ug/L	30925	Standard
Kr	83	3.0	57.7				ug/L	4	Standard
Br	81	446.7	11.5				ug/L	397	Standard
P	31	19507.6	3.7				ug/L	19276	Standard
S	34	3020.3	7.2				ug/L	3042	Standard
Sr	88	70.0	7.1				ug/L	65	Standard
C	12	513.3	15.6				mg/L	287	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	3	Standard
Dy	164	9.0	110.6				mg/L	23	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	20.0	0.0				mg/L	13	Standard
I	127	1260.1	5.2				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27	1.016		
Sc	45			
Ti	47	109.936		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.448	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	106.422		
Ag	107			
Cd	111			
Cd	114			
In	115			100.592
Sn	118			
Sb	123			
Ba	135			
Ce	140			
Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
Bi	209			98.389
Na	23	55.415		
Mg	24	249.531		
K	39	101.222		
Ca	43	86.248		
Fe	54	99.296		
Fe	57	99.811		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Friday, November 20, 2015 10:14:13
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	46350.3	16.1				ug/L	49688	Standard
	Be	9	77247.2	13.8	**103.7515**	2.975	2.9	ug/L	7	Standard
	Al	27	2684087.9	15.8	**42.4060**	1.845	4.4	ug/L	277	Standard
	Sc	45	22767.2	10.9				ug/L	24625	Standard
	Ti	47	16614.2	13.6	**88.8670**	3.131	3.5	ug/L	198	Standard
	V	51	465092.8	10.1	**100.9877**	0.690	0.7	ug/L	1126	Standard
	Cr	52	444067.0	12.8	**101.2267**	2.484	2.5	ug/L	6071	Standard
	Cr	53	55358.8	13.2	**100.5261**	2.706	2.7	ug/L	332	Standard
	Mn	55	441593.9	10.5	**102.3510**	0.781	0.8	ug/L	876	Standard
	Co	59	446463.2	10.6	**101.7906**	0.792	0.8	ug/L	110	Standard
	Ni	60	120500.0	11.7	**100.8703**	1.240	1.2	ug/L	191	Standard
	Cu	65	121288.7	10.5	**101.8825**	0.419	0.4	ug/L	281	Standard
	Zn	66	74025.4	10.5	**105.9432**	1.500	1.4	ug/L	249	Standard
>	Ge	72	272534.4	10.7				ug/L	297260	Standard
	As	75	81923.0	10.4	**105.4590**	0.346	0.3	ug/L	-66	Standard
	Se	82	7380.7	11.0	**104.2997**	2.320	2.2	ug/L	13	Standard
	Se-1	77	4750.1	10.5	**107.9223**	0.410	0.4	ug/L	48	Standard
>	Ga	71	143.3	7.3				mg/L	30	Standard
	Rb	85	456.7	7.3				ug/L	12	Standard
	Y	89	279028.3	11.2				ug/L	310514	Standard
>	Rh	103	40.0	54.5				ug/L	10	Standard
	Mo	98	139364.6	9.6	**85.5752**	1.451	1.7	ug/L	11	Standard
	Ag	107	489678.4	9.9	**94.7480**	1.798	1.9	ug/L	99	Standard
	Cd	111	174206.9	10.4	**102.8438**	0.856	0.8	mg/L	6	Standard
	Cd	114	435984.8	12.2	**103.7462**	1.250	1.2	ug/L	6	Standard
>	In	115	465690.0	11.1				ug/L	501593	Standard
	Sn	118	848.4	12.6	**0.0886**	0.003	3.5	ug/L	442	Standard
	Sb	123	470854.5	8.2	**102.8931**	3.214	3.1	ug/L	53	Standard
	Ba	135	189977.6	9.0	**103.3482**	2.364	2.3	ug/L	34	Standard
	Ce	140	88.3	21.4				ug/L	73	Standard
>	Tb	159	839126.8	9.3				ug/L	924917	Standard
	Ho	165	11.7	49.5				ug/L	7	Standard
	Tl	203	770198.6	10.2	**102.5976**	1.580	1.5	ug/L	6	Standard
	Tl	205	524884.2	10.7	**104.3696**	1.492	1.4	ug/L	8	Standard
	Pb	206	538543.2	8.9	**103.0287**	1.666	1.6	ug/L	264	Standard
	Pb	207	490339.0	10.0	**103.5246**	1.911	1.8	ug/L	215	Standard
	Pb	208	1698331.0	9.4	**102.1144**	1.344	1.3	ug/L	863	Standard
	U	238	579925.3	9.2	**104.1034**	1.120	1.1	ug/L	4	Standard
>	Bi	209	461416.0	9.7				ug/L	507917	Standard

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Na	23	1.7	173.2	**8.4886**	14.694	173.1	mg/L	0	Standard
Mg	24	5754.4	8.8	**10.8887**	0.449	4.1	mg/L	20	Standard
K	39	861.7	5.2	**4.0225**	0.258	6.4	mg/L	38	Standard
Ca	43	165.0	10.9	**12.9337**	0.149	1.1	mg/L	43	Standard
Fe	54	6324.5	10.2	**10.0841**	0.266	2.6	mg/L	103	Standard
Fe	57	1733.4	10.5	**10.1379**	0.641	6.3	mg/L	107	Standard
> **Sc-1**	45	22767.2	10.9				mg/L	24625	Standard
Cl	35	27475.7	9.0				ug/L	30925	Standard
Kr	83	5.0	34.6				ug/L	4	Standard
Br	81	366.7	8.8				ug/L	397	Standard
P	31	17126.5	15.3				ug/L	19276	Standard
S	34	2788.6	10.2				ug/L	3042	Standard
Sr	88	68.3	30.5				ug/L	65	Standard
C	12	423.3	28.6				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	9.2	106.3				mg/L	23	Standard
Ho-1	165	11.7	49.5				mg/L	7	Standard
Er	166	16.7	91.7				mg/L	13	Standard
I	127	1653.4	0.6				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	103.752		
Al	27	0.848		
Sc	45			
Ti	47	88.867		
V	51	100.988		
Cr	52	101.227		
Cr	53			
Mn	55	102.351		
Co	59	101.791		
Ni	60	100.870		
Cu	65	101.882		
Zn	66	105.943		
> Ge	72		91.682	
As	75	105.459		
Se	82	104.300		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	85.575		
Ag	107	94.748		
Cd	111	102.844		
Cd	114			
> In	115		92.842	
Sn	118			
Sb	123	102.893		
Ba	135	103.348		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	102.598		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.114		
U	238	104.103		
> Bi	209		90.845	
Na	23	67.908		
Mg	24	217.774		
K	39	80.450		
Ca	43	86.224		
Fe	54	80.672		
Fe	57	81.103		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

Sample ID: QC Std 5
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, November 20, 2015 10:17:26
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	51393.8	3.7				ug/L	49688	Standard
	Be	9	42665.0	1.8	**51.5496**	1.212	2.4	ug/L	7	Standard
	Al	27	3619287.0	0.5	**51.5510**	1.667	3.2	ug/L	277	Standard
	Sc	45	25281.1	2.9				ug/L	24625	Standard
	Ti	47	20929.1	1.0	**102.7686**	3.709	3.6	ug/L	198	Standard
	V	51	259295.5	0.7	**51.3742**	1.089	2.1	ug/L	1126	Standard
	Cr	52	250131.5	0.8	**51.6454**	1.496	2.9	ug/L	6071	Standard
	Cr	53	30717.8	3.1	**50.9245**	3.046	6.0	ug/L	332	Standard
	Mn	55	245380.3	1.5	**51.9071**	0.695	1.3	ug/L	876	Standard
	Co	59	246387.1	1.5	**51.3612**	0.678	1.3	ug/L	110	Standard
	Ni	60	66397.5	0.2	**50.8030**	1.546	3.0	ug/L	191	Standard
	Cu	65	66657.3	1.0	**51.1157**	1.784	3.5	ug/L	281	Standard
	Zn	66	38728.4	1.4	**50.5287**	0.782	1.5	ug/L	249	Standard
>	Ge	72	298040.6	2.8				ug/L	297260	Standard
	As	75	43838.5	0.9	**51.6467**	1.577	3.1	ug/L	-66	Standard
	Se	82	4056.2	1.4	**52.3419**	1.710	3.3	ug/L	13	Standard
	Se-1	77	2567.2	0.8	**52.8571**	1.937	3.7	ug/L	48	Standard
>	Ga	71	101.7	19.9				mg/L	30	Standard
	Rb	85	596.7	8.0				ug/L	12	Standard
	Y	89	309511.2	6.5				ug/L	310514	Standard
>	Rh	103	25.0	20.0				ug/L	10	Standard
	Mo	98	186937.2	1.8	**105.0195**	1.766	1.7	ug/L	11	Standard
	Ag	107	288455.8	1.0	**51.0962**	2.171	4.2	ug/L	99	Standard
	Cd	111	96721.8	1.6	**52.3108**	2.505	4.8	mg/L	6	Standard
	Cd	114	239860.1	0.7	**52.3529**	1.887	3.6	ug/L	6	Standard
>	In	115	508541.7	3.3				ug/L	501593	Standard
	Sn	118	265350.4	1.6	**52.1793**	1.704	3.3	ug/L	442	Standard
	Sb	123	258127.7	0.7	**51.5787**	2.090	4.1	ug/L	53	Standard
	Ba	135	101919.6	0.6	**50.7202**	2.002	3.9	ug/L	34	Standard
	Ce	140	85.0	10.2				ug/L	73	Standard
>	Tb	159	909009.9	5.2				ug/L	924917	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	421106.6	0.8	**51.9646**	2.425	4.7	ug/L	6	Standard
	Tl	205	286266.8	2.6	**52.7594**	2.981	5.6	ug/L	8	Standard
	Pb	206	295800.7	1.0	**52.3722**	2.996	5.7	ug/L	264	Standard
	Pb	207	267300.7	0.8	**52.2461**	2.247	4.3	ug/L	215	Standard
	Pb	208	939534.0	0.4	**52.2848**	2.459	4.7	ug/L	863	Standard
	U	238	317106.6	1.2	**52.7320**	3.296	6.2	ug/L	4	Standard
>	Bi	209	498981.5	5.0				ug/L	507917	Standard

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Na	23	3.3	86.6	**13.1734**	11.404	86.6	mg/L	0	Standard
Mg	24	2848.6	1.3	**4.8263**	0.141	2.9	mg/L	20	Standard
K	39	1171.7	9.7	**4.9445**	0.448	9.1	mg/L	38	Standard
Ca	43	111.7	31.4	**5.4855**	3.612	65.8	mg/L	43	Standard
Fe	54	3547.4	3.9	**5.0225**	0.309	6.1	mg/L	103	Standard
Fe	57	1013.4	2.8	**5.0704**	0.328	6.5	mg/L	107	Standard
> **Sc-1**	45	25281.1	2.9				mg/L	24625	Standard
Cl	35	31888.9	0.8				ug/L	30925	Standard
Kr	83	4.0	43.3				ug/L	4	Standard
Br	81	443.3	10.4				ug/L	397	Standard
P	31	19108.7	3.4				ug/L	19276	Standard
S	34	3250.3	1.8				ug/L	3042	Standard
Sr	88	73.3	14.2				ug/L	65	Standard
C	12	323.3	4.7				mg/L	287	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	3	Standard
Dy	164	22.7	66.9				mg/L	23	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	13	Standard
I	127	1596.8	6.2				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	103.099		
Al	27	103.102		
Sc	45			
Ti	47	102.769		
V	51	102.748		
Cr	52	103.291		
Cr	53			
Mn	55	103.814		
Co	59	102.722		
Ni	60	101.606		
Cu	65	102.231		
Zn	66	101.057		
> Ge	72		100.263	
As	75	103.293		
Se	82	104.684		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	105.019		
Ag	107	102.192		
Cd	111	104.622		
Cd	114			
In	115		101.385	
Sn	118	104.359		
Sb	123	103.157		
Ba	135	101.440		
Ce	140			
Tb	159			
Ho	165			
Tl	203	103.929		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.570		
U	238	105.464		
Bi	209		98.241	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, November 20, 2015 10:20:37
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51295.2	5.6				ug/L	49688	Standard
	Be	9	51.7	68.0	**0.0409**	0.041	99.5	ug/L	7	Standard
	Al	27	1985.2	103.9	**0.0181**	0.029	158.2	ug/L	277	Standard
	Sc	45	25017.3	1.3				ug/L	24625	Standard
	Ti	47	153.0	14.7	**-0.0226**	0.098	431.4	ug/L	198	Standard
	V	51	1016.4	10.6	**-0.0128**	0.015	120.6	ug/L	1126	Standard
	Cr	52	5393.3	9.9	**-0.0819**	0.080	97.3	ug/L	6071	Standard
	Cr	53	361.7	19.7	**0.1365**	0.105	76.9	ug/L	332	Standard
	Mn	55	1242.7	22.9	**0.0609**	0.056	92.3	ug/L	876	Standard
	Co	59	313.0	69.3	**0.0396**	0.045	114.8	ug/L	110	Standard
	Ni	60	304.7	16.1	**0.0564**	0.032	56.9	ug/L	191	Standard
	Cu	65	296.3	13.9	**0.0124**	0.026	209.5	ug/L	281	Standard
	Zn	66	334.3	11.7	**0.1459**	0.038	26.3	ug/L	249	Standard
>	**Ge**	72	291011.4	3.3				ug/L	297260	Standard
	As	75	3.1	30.5	**0.0552**	0.001	1.9	ug/L	-66	Standard
	Se	82	20.0	40.1	**0.0573**	0.112	195.5	ug/L	13	Standard
	Se-1	77	54.7	15.3	**0.1725**	0.147	85.1	ug/L	48	Standard
>	**Ga**	71	68.3	53.9				mg/L	30	Standard
	Rb	85	18.3	15.7				ug/L	12	Standard
	Y	89	308166.0	3.2				ug/L	310514	Standard
>	**Rh**	103	6.7	43.3				ug/L	10	Standard
	Mo	98	321.1	33.2	**0.1860**	0.056	30.2	ug/L	11	Standard
	Ag	107	293.0	42.1	**0.0328**	0.021	63.0	ug/L	99	Standard
	Cd	111	35.7	120.0	**0.0174**	0.023	131.1	mg/L	6	Standard
	Cd	114	93.2	88.2	**0.0184**	0.018	95.5	ug/L	6	Standard
>	**In**	115	503606.3	2.4				ug/L	501593	Standard
	Sn	118	625.0	25.0	**0.0303**	0.029	95.4	ug/L	442	Standard
	Sb	123	405.8	69.4	**0.0773**	0.055	71.8	ug/L	53	Standard
	Ba	135	73.3	59.1	**0.0132**	0.021	157.7	ug/L	34	Standard
	Ce	140	63.3	98.1				ug/L	73	Standard
>	**Tb**	159	907701.0	3.5				ug/L	924917	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	177.7	118.2	**0.0182**	0.025	135.3	ug/L	6	Standard
	Tl	205	186.7	141.1	**0.0302**	0.048	160.2	ug/L	8	Standard
	Pb	206	383.7	37.9	**0.0196**	0.023	118.6	ug/L	264	Standard
	Pb	207	325.3	38.8	**0.0215**	0.022	103.5	ug/L	215	Standard
	Pb	208	1580.0	58.7	**0.0422**	0.052	122.4	ug/L	863	Standard
	U	238	206.7	126.8	**0.0363**	0.043	119.8	ug/L	4	Standard
>	**Bi**	209	504597.9	3.0				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	25.0	52.9	**0.0068**	0.022	327.7	mg/L	20	Standard
K	39	51.7	20.1	**0.0385**	0.046	118.7	mg/L	38	Standard
Ca	43	55.0	9.1	**-0.3632**	0.499	137.4	mg/L	43	Standard
Fe	54	116.0	21.8	**0.0244**	0.036	147.7	mg/L	103	Standard
Fe	57	90.0	38.9	**-0.0548**	0.190	346.8	mg/L	107	Standard
> **Sc-1**	45	25017.3	1.3				mg/L	24625	Standard
Cl	35	31898.2	2.6				ug/L	30925	Standard
Kr	83	7.7	19.9				ug/L	4	Standard
Br	81	436.7	10.8				ug/L	397	Standard
P	31	17850.6	11.2				ug/L	19276	Standard
S	34	3335.4	2.3				ug/L	3042	Standard
Sr	88	73.3	19.7				ug/L	65	Standard
C	12	296.7	19.2				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	9.5	5.0				mg/L	23	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	2696.9	12.6				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.898	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.401
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.346
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW 44 WG547610-03
Sample Date/Time: Friday, November 20, 2015 10:23:49
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51332.0	5.4				ug/L	49688	Standard
	Be	9	26.7	60.3	**0.0123**	0.021	171.5	ug/L	7	Standard
	Al	27	550.0	27.6	**-0.0019**	0.002	90.7	ug/L	277	Standard
	Sc	45	24414.7	2.9				ug/L	24625	Standard
	Ti	47	149.3	8.9	**-0.0349**	0.064	181.8	ug/L	198	Standard
	V	51	951.9	8.8	**-0.0241**	0.020	84.2	ug/L	1126	Standard
	Cr	52	5686.7	3.3	**-0.0087**	0.019	214.9	ug/L	6071	Standard
	Cr	53	348.3	10.1	**0.1206**	0.070	58.2	ug/L	332	Standard
	Mn	55	1109.7	7.6	**0.0343**	0.014	41.9	ug/L	876	Standard
	Co	59	162.3	5.2	**0.0080**	0.001	15.6	ug/L	110	Standard
	Ni	60	270.3	4.8	**0.0315**	0.011	33.8	ug/L	191	Standard
	Cu	65	275.3	3.9	**-0.0022**	0.005	211.2	ug/L	281	Standard
	Zn	66	408.7	2.5	**0.2503**	0.009	3.8	ug/L	249	Standard
>	**Ge**	72	289066.7	1.9				ug/L	297260	Standard
	As	75	-29.5	43.8	**0.0158**	0.016	98.7	ug/L	-66	Standard
	Se	82	16.3	12.9	**0.0088**	0.030	346.6	ug/L	13	Standard
	Se-1	77	52.0	10.2	**0.1268**	0.128	100.6	ug/L	48	Standard
>	**Ga**	71	71.7	32.2				mg/L	30	Standard
	Rb	85	18.3	15.7				ug/L	12	Standard
	Y	89	310233.5	2.5				ug/L	310514	Standard
>	**Rh**	103	8.3	69.3				ug/L	10	Standard
	Mo	98	116.5	23.5	**0.0698**	0.014	20.2	ug/L	11	Standard
	Ag	107	173.7	1.9	**0.0113**	0.000	2.0	ug/L	99	Standard
	Cd	111	10.1	28.4	**0.0036**	0.001	40.4	mg/L	6	Standard
	Cd	114	27.7	28.2	**0.0041**	0.002	40.4	ug/L	6	Standard
>	**In**	115	510810.7	1.9				ug/L	501593	Standard
	Sn	118	521.7	3.1	**0.0087**	0.002	22.8	ug/L	442	Standard
	Sb	123	302.3	27.6	**0.0566**	0.018	31.1	ug/L	53	Standard
	Ba	135	35.7	3.2	**-0.0057**	0.001	11.6	ug/L	34	Standard
	Ce	140	41.7	13.9				ug/L	73	Standard
>	**Tb**	159	910455.1	3.0				ug/L	924917	Standard
	Ho	165	10.0	173.2				ug/L	7	Standard
	Tl	203	41.0	17.1	**0.0021**	0.001	35.0	ug/L	6	Standard
	Tl	205	30.0	60.1	**0.0016**	0.003	201.1	ug/L	8	Standard
	Pb	206	300.7	5.5	**0.0060**	0.001	21.0	ug/L	264	Standard
	Pb	207	244.7	8.0	**0.0068**	0.003	39.9	ug/L	215	Standard
	Pb	208	875.3	6.2	**0.0039**	0.002	51.4	ug/L	863	Standard
	U	238	25.0	26.2	**0.0064**	0.001	15.4	ug/L	4	Standard
>	**Bi**	209	499633.7	3.1				ug/L	507917	Standard

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	Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
	Mg	24	21.7	48.0	**0.0023**	0.019	823.0	mg/L	20	Standard
	K	39	35.0	49.5	**-0.0315**	0.079	250.4	mg/L	38	Standard
	Ca	43	50.0	43.6	**-0.7969**	2.239	281.0	mg/L	43	Standard
	Fe	54	120.8	19.5	**0.0363**	0.037	102.3	mg/L	103	Standard
	Fe	57	130.0	16.8	**0.1893**	0.126	66.4	mg/L	107	Standard
>	**Sc-1**	45	24414.7	2.9				mg/L	24625	Standard
	Cl	35	31398.5	2.9				ug/L	30925	Standard
	Kr	83	6.0	16.7				ug/L	4	Standard
	Br	81	433.3	11.4				ug/L	397	Standard
	P	31	19178.8	1.1				ug/L	19276	Standard
	S	34	3027.0	9.4				ug/L	3042	Standard
	Sr	88	71.7	17.6				ug/L	65	Standard
	C	12	316.7	12.0				mg/L	287	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	3	Standard
	Dy	164	13.0	179.6				mg/L	23	Standard
	Ho-1	165	10.0	173.2				mg/L	7	Standard
	Er	166	6.7	86.6				mg/L	13	Standard
	I	127	2855.3	3.6				mg/L	3275	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		103.308	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.244	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.838	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.369	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 44 WG547610-04
Sample Date/Time: Friday, November 20, 2015 10:27:00
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	53254.1	10.4				ug/L	49688	Standard
	Be	9	41864.4	1.7	**49.1361**	5.031	10.2	ug/L	7	Standard
	Al	27	1938.5	6.1	**0.0173**	0.004	25.9	ug/L	277	Standard
	Sc	45	25598.4	9.1				ug/L	24625	Standard
	Ti	47	147.0	1.2	**-0.0584**	0.047	79.7	ug/L	198	Standard
	V	51	257882.0	2.5	**51.9137**	4.982	9.6	ug/L	1126	Standard
	Cr	52	249092.6	0.9	**52.2325**	4.390	8.4	ug/L	6071	Standard
	Cr	53	30206.8	3.2	**50.7578**	3.363	6.6	ug/L	332	Standard
	Mn	55	245519.4	1.2	**52.7513**	4.430	8.4	ug/L	876	Standard
	Co	59	246433.3	1.7	**52.1942**	4.764	9.1	ug/L	110	Standard
	Ni	60	65471.9	2.0	**50.8902**	4.834	9.5	ug/L	191	Standard
	Cu	65	66954.3	1.8	**52.1523**	4.824	9.2	ug/L	281	Standard
	Zn	66	39816.9	1.1	**52.7711**	4.418	8.4	ug/L	249	Standard
>	Ge	72	294573.5	7.3				ug/L	297260	Standard
	As	75	42732.9	1.4	**51.1230**	4.418	8.6	ug/L	-66	Standard
	Se	82	3937.5	2.5	**51.6193**	5.048	9.8	ug/L	13	Standard
	Se-1	77	2483.9	4.7	**51.8682**	4.539	8.8	ug/L	48	Standard
>	Ga	71	110.0	19.8				mg/L	30	Standard
	Rb	85	63.3	9.1				ug/L	12	Standard
	Y	89	315922.6	4.7				ug/L	310514	Standard
>	Rh	103	18.3	87.7				ug/L	10	Standard
	Mo	98	80.8	3.5	**0.0500**	0.002	4.3	ug/L	11	Standard
	Ag	107	292508.9	1.5	**51.6463**	4.961	9.6	ug/L	99	Standard
	Cd	111	95234.9	1.4	**51.3301**	4.836	9.4	mg/L	6	Standard
	Cd	114	234210.5	1.6	**50.8954**	3.646	7.2	ug/L	6	Standard
>	In	115	512294.7	7.9				ug/L	501593	Standard
	Sn	118	546.7	5.0	**0.0138**	0.011	79.1	ug/L	442	Standard
	Sb	123	250123.4	1.1	**49.8073**	4.558	9.2	ug/L	53	Standard
	Ba	135	101218.7	1.0	**50.1886**	4.416	8.8	ug/L	34	Standard
	Ce	140	603.3	14.5				ug/L	73	Standard
>	Tb	159	912797.7	10.0				ug/L	924917	Standard
	Ho	165	21.7	35.3				ug/L	7	Standard
	Tl	203	424016.2	0.9	**50.9445**	4.638	9.1	ug/L	6	Standard
	Tl	205	290483.4	1.3	**52.1281**	4.957	9.5	ug/L	8	Standard
	Pb	206	300287.4	2.9	**51.7957**	5.685	11.0	ug/L	264	Standard
	Pb	207	262924.8	1.7	**50.0668**	5.048	10.1	ug/L	215	Standard
	Pb	208	955507.3	1.0	**51.7731**	4.770	9.2	ug/L	863	Standard
	U	238	310227.2	0.5	**50.1888**	4.332	8.6	ug/L	4	Standard
>	Bi	209	514274.9	8.3				ug/L	507917	Standard

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Na	23	1.7	173.2	**7.2426**	12.536	173.1	mg/L	0	Standard
Mg	24	26.7	10.8	**0.0091**	0.006	69.0	mg/L	20	Standard
K	39	28.3	40.8	**-0.0696**	0.044	62.7	mg/L	38	Standard
Ca	43	50.0	50.0	**-1.0540**	2.505	237.6	mg/L	43	Standard
Fe	54	110.0	11.5	**0.0125**	0.018	147.5	mg/L	103	Standard
Fe	57	130.0	36.7	**0.1496**	0.245	163.7	mg/L	107	Standard
Sc-1	45	25598.4	9.1				mg/L	24625	Standard
Cl	35	31073.8	0.1				ug/L	30925	Standard
Kr	83	4.3	53.3				ug/L	4	Standard
Br	81	533.3	14.1				ug/L	397	Standard
P	31	19140.4	4.0				ug/L	19276	Standard
S	34	3133.7	6.4				ug/L	3042	Standard
Sr	88	73.3	10.4				ug/L	65	Standard
C	12	296.7	11.8				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	18.7	56.0				mg/L	23	Standard
Ho-1	165	21.7	35.3				mg/L	7	Standard
Er	166	26.7	43.3				mg/L	13	Standard
I	127	1506.7	1.5				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		107.177	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.096	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.134
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.252
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: F BLANK WG547540-01
Sample Date/Time: Friday, November 20, 2015 10:30:12
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	53735.3	5.7				ug/L	49688	Standard
	Be	9	28.3	27.0	**0.0122**	0.008	69.1	ug/L	7	Standard
	Al	27	2691.9	4.4	**0.0271**	0.004	13.3	ug/L	277	Standard
	Sc	45	26302.8	3.8				ug/L	24625	Standard
	Ti	47	231.3	53.8	**0.3111**	0.631	202.8	ug/L	198	Standard
	V	51	1052.5	1.2	**-0.0188**	0.014	73.1	ug/L	1126	Standard
	Cr	52	6352.7	3.7	**0.0375**	0.032	86.0	ug/L	6071	Standard
	Cr	53	403.3	19.5	**0.1625**	0.106	65.3	ug/L	332	Standard
	Mn	55	2361.2	4.7	**0.2712**	0.007	2.6	ug/L	876	Standard
	Co	59	205.0	9.4	**0.0141**	0.004	30.0	ug/L	110	Standard
	Ni	60	439.3	8.6	**0.1397**	0.008	6.0	ug/L	191	Standard
	Cu	65	598.0	6.8	**0.2198**	0.024	10.9	ug/L	281	Standard
	Zn	66	3557.1	2.3	**4.1754**	0.365	8.7	ug/L	249	Standard
>	Ge	72	311694.3	6.2				ug/L	297260	Standard
	As	75	-2.5	1058.7	**0.0476**	0.029	60.9	ug/L	-66	Standard
	Se	82	16.2	19.1	**-0.0101**	0.028	277.9	ug/L	13	Standard
	Se-1	77	49.3	9.1	**-0.0038**	0.142	3707.8	ug/L	48	Standard
>	Ga	71	80.0	16.5				mg/L	30	Standard
	Rb	85	73.3	15.7				ug/L	12	Standard
	Y	89	327881.2	8.5				ug/L	310514	Standard
>	Rh	103	11.7	65.5				ug/L	10	Standard
	Mo	98	88.2	28.9	**0.0527**	0.016	30.8	ug/L	11	Standard
	Ag	107	272.0	10.4	**0.0269**	0.006	23.0	ug/L	99	Standard
	Cd	111	41.4	75.9	**0.0200**	0.018	87.6	mg/L	6	Standard
	Cd	114	91.6	87.4	**0.0175**	0.018	101.2	ug/L	6	Standard
>	In	115	532225.3	6.1				ug/L	501593	Standard
	Sn	118	746.7	12.1	**0.0475**	0.022	45.8	ug/L	442	Standard
	Sb	123	1651.4	18.2	**0.3144**	0.075	23.9	ug/L	53	Standard
	Ba	135	510.7	6.1	**0.2197**	0.016	7.2	ug/L	34	Standard
	Ce	140	311.7	30.3				ug/L	73	Standard
>	Tb	159	938039.4	7.2				ug/L	924917	Standard
	Ho	165	21.7	13.3				ug/L	7	Standard
	Tl	203	143.0	68.9	**0.0140**	0.012	87.0	ug/L	6	Standard
	Tl	205	43.3	17.6	**0.0038**	0.002	40.4	ug/L	8	Standard
	Pb	206	578.0	12.7	**0.0506**	0.006	12.6	ug/L	264	Standard
	Pb	207	507.3	3.2	**0.0543**	0.006	12.0	ug/L	215	Standard
	Pb	208	1791.0	9.0	**0.0506**	0.004	8.3	ug/L	863	Standard
	U	238	59.3	47.2	**0.0117**	0.005	39.4	ug/L	4	Standard
>	Bi	209	521185.6	6.3				ug/L	507917	Standard

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Na	23	1.7	173.2	**6.5617**	11.356	173.1	mg/L	0	Standard
Mg	24	275.0	9.4	**0.4147**	0.037	8.8	mg/L	20	Standard
K	39	48.3	26.0	**0.0147**	0.060	404.7	mg/L	38	Standard
Ca	43	46.7	49.5	**-1.4988**	2.271	151.5	mg/L	43	Standard
Fe	54	124.2	17.7	**0.0284**	0.036	125.4	mg/L	103	Standard
Fe	57	98.3	25.1	**-0.0297**	0.148	498.9	mg/L	107	Standard
Sc-1	45	26302.8	3.8				mg/L	24625	Standard
Cl	35	31969.0	1.7				ug/L	30925	Standard
Kr	83	3.7	41.7				ug/L	4	Standard
Br	81	500.0	8.0				ug/L	397	Standard
P	31	22329.8	2.2				ug/L	19276	Standard
S	34	3123.7	2.3				ug/L	3042	Standard
Sr	88	63.3	48.2				ug/L	65	Standard
C	12	296.7	8.5				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	3	Standard
Dy	164	25.4	48.2				mg/L	23	Standard
Ho-1	165	21.7	13.3				mg/L	7	Standard
Er	166	26.7	57.3				mg/L	13	Standard
I	127	1603.4	6.0				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.145	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.856	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.107
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.612
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: F BLANK WG547540-01
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Method 6020 - Summary Report

Sample ID: L1511105008 WG547610-01
Sample Date/Time: Friday, November 20, 2015 10:33:23
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49512.5	3.9				ug/L	49688	Standard
	Be	9	20.0	25.0	**0.0046**	0.006	124.9	ug/L	7	Standard
	Al	27	17285915.7	6.1	**255.4862**	14.393	5.6	ug/L	277	Standard
	Sc	45	25751.9	1.1				ug/L	24625	Standard
	Ti	47	391.7	2.2	**1.1859**	0.089	7.5	ug/L	198	Standard
	V	51	1449.1	7.1	**0.0752**	0.021	28.2	ug/L	1126	Standard
	Cr	52	6713.8	3.4	**0.2043**	0.074	36.3	ug/L	6071	Standard
	Cr	53	756.7	15.8	**0.8149**	0.219	26.9	ug/L	332	Standard
	Mn	55	1374505.4	2.6	**298.3891**	12.092	4.1	ug/L	876	Standard
	Co	59	1179.7	4.4	**0.2250**	0.017	7.5	ug/L	110	Standard
	Ni	60	2130.8	4.2	**1.4904**	0.082	5.5	ug/L	191	Standard
	Cu	65	693.3	2.9	**0.3252**	0.018	5.6	ug/L	281	Standard
	Zn	66	1621.1	4.5	**1.8725**	0.078	4.2	ug/L	249	Standard
>	**Ge**	72	291455.9	2.4				ug/L	297260	Standard
	As	75	4879.1	2.0	**5.9223**	0.166	2.8	ug/L	-66	Standard
	Se	82	49.6	9.4	**0.4482**	0.075	16.7	ug/L	13	Standard
	Se-1	77	136.7	6.6	**1.9337**	0.229	11.8	ug/L	48	Standard
>	**Ga**	71	145.0	11.9				mg/L	30	Standard
	Rb	85	3275.4	0.8				ug/L	12	Standard
	Y	89	299574.8	1.7				ug/L	310514	Standard
>	**Rh**	103	138.3	22.1				ug/L	10	Standard
	Mo	98	813.3	4.9	**0.4802**	0.018	3.8	ug/L	11	Standard
	Ag	107	106.7	2.7	**0.0004**	0.001	177.3	ug/L	99	Standard
	Cd	111	18.5	12.5	**0.0087**	0.001	16.5	mg/L	6	Standard
	Cd	114	24.7	14.5	**0.0037**	0.001	20.6	ug/L	6	Standard
>	**In**	115	488483.4	1.6				ug/L	501593	Standard
	Sn	118	510.0	5.2	**0.0110**	0.006	58.0	ug/L	442	Standard
	Sb	123	382.0	18.5	**0.0757**	0.014	19.2	ug/L	53	Standard
	Ba	135	424318.3	1.5	**219.7787**	6.183	2.8	ug/L	34	Standard
	Ce	140	308.3	5.7				ug/L	73	Standard
>	**Tb**	159	874121.7	2.6				ug/L	924917	Standard
	Ho	165	30.0	44.1				ug/L	7	Standard
	Tl	203	256.7	6.5	**0.0298**	0.003	8.6	ug/L	6	Standard
	Tl	205	153.3	32.0	**0.0252**	0.009	34.4	ug/L	8	Standard
	Pb	206	374.3	6.4	**0.0216**	0.006	26.9	ug/L	264	Standard
	Pb	207	327.3	4.7	**0.0254**	0.002	8.1	ug/L	215	Standard
	Pb	208	1153.4	3.5	**0.0218**	0.003	11.8	ug/L	863	Standard
	U	238	275.0	6.0	**0.0496**	0.003	7.0	ug/L	4	Standard
>	**Bi**	209	481583.9	2.1				ug/L	507917	Standard

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Na	23	18.3	15.7	**72.2949**	11.230	15.5	mg/L	0	Standard
Mg	24	10475.3	1.2	**17.5108**	0.347	2.0	mg/L	20	Standard
K	39	176.7	11.4	**0.5697**	0.085	14.9	mg/L	38	Standard
Ca	43	530.0	18.4	**47.9857**	9.386	19.6	mg/L	43	Standard
Fe	54	3131.3	5.3	**4.3289**	0.245	5.7	mg/L	103	Standard
Fe	57	925.0	4.2	**4.4802**	0.209	4.7	mg/L	107	Standard
> **Sc-1**	45	25751.9	1.1				mg/L	24625	Standard
Cl	35	34566.1	0.9				ug/L	30925	Standard
Kr	83	4.0	50.0				ug/L	4	Standard
Br	81	3827.2	5.2				ug/L	397	Standard
P	31	22620.2	3.3				ug/L	19276	Standard
S	34	3225.3	6.0				ug/L	3042	Standard
Sr	88	168.3	16.9				ug/L	65	Standard
C	12	560.0	7.1				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	24.8	57.0				mg/L	23	Standard
Ho-1	165	30.0	44.1				mg/L	7	Standard
Er	166	40.0	100.0				mg/L	13	Standard
I	127	11776.2	3.4				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.646	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.047	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1511105008 WG547610-01
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	97.386	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	94.815	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1511105008 WG547610-01
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Method 6020 - Summary Report

Sample ID: L1511105010S WG547610-05
Sample Date/Time: Friday, November 20, 2015 10:36:34
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51144.5	2.0				ug/L	49688	Standard
	Be	9	42598.2	5.1	**51.7008**	2.642	5.1	ug/L	7	Standard
	Al	27	17130985.8	1.7	**245.0520**	2.450	1.0	ug/L	277	Standard
	Sc	45	26454.8	6.9				ug/L	24625	Standard
	Ti	47	394.7	5.4	**1.1650**	0.133	11.4	ug/L	198	Standard
	V	51	257766.8	0.5	**51.2766**	1.078	2.1	ug/L	1126	Standard
	Cr	52	246357.2	1.1	**51.0650**	1.914	3.7	ug/L	6071	Standard
	Cr	53	30143.3	3.5	**50.1653**	3.080	6.1	ug/L	332	Standard
	Mn	55	1588281.7	0.8	**338.5285**	7.210	2.1	ug/L	876	Standard
	Co	59	234690.5	1.1	**49.1211**	0.732	1.5	ug/L	110	Standard
	Ni	60	65022.9	0.3	**49.9439**	1.277	2.6	ug/L	191	Standard
	Cu	65	63792.4	1.6	**49.1059**	1.780	3.6	ug/L	281	Standard
	Zn	66	41214.3	0.4	**54.0172**	1.228	2.3	ug/L	249	Standard
>	**Ge**	72	296835.0	2.6				ug/L	297260	Standard
	As	75	48711.0	0.6	**57.6036**	1.213	2.1	ug/L	-66	Standard
	Se	82	4025.3	2.4	**52.1356**	1.191	2.3	ug/L	13	Standard
	Se-1	77	2545.9	1.0	**52.6231**	1.897	3.6	ug/L	48	Standard
>	**Ga**	71	135.0	9.8				mg/L	30	Standard
	Rb	85	2960.3	4.4				ug/L	12	Standard
	Y	89	313015.7	4.3				ug/L	310514	Standard
>	**Rh**	103	128.3	21.5				ug/L	10	Standard
	Mo	98	796.7	4.3	**0.4602**	0.023	4.9	ug/L	11	Standard
	Ag	107	277244.2	0.5	**49.9418**	1.613	3.2	ug/L	99	Standard
	Cd	111	91852.5	0.3	**50.5175**	1.799	3.6	mg/L	6	Standard
	Cd	114	228096.7	1.1	**50.6501**	2.243	4.4	ug/L	6	Standard
>	**In**	115	499952.3	3.3				ug/L	501593	Standard
	Sn	118	600.0	38.8	**0.0266**	0.046	172.3	ug/L	442	Standard
	Sb	123	252346.0	0.8	**51.2898**	2.108	4.1	ug/L	53	Standard
	Ba	135	517835.4	0.1	**262.1869**	8.689	3.3	ug/L	34	Standard
	Ce	140	306.7	15.7				ug/L	73	Standard
>	**Tb**	159	902555.2	3.3				ug/L	924917	Standard
	Ho	165	43.3	17.6				ug/L	7	Standard
	Tl	203	409371.5	0.8	**50.9649**	1.889	3.7	ug/L	6	Standard
	Tl	205	278513.2	0.5	**51.7778**	1.905	3.7	ug/L	8	Standard
	Pb	206	288737.6	0.6	**51.5575**	1.906	3.7	ug/L	264	Standard
	Pb	207	248195.0	0.2	**48.9410**	1.599	3.3	ug/L	215	Standard
	Pb	208	897835.3	1.0	**50.4006**	1.709	3.4	ug/L	863	Standard
	U	238	301839.4	1.0	**50.5967**	1.176	2.3	ug/L	4	Standard
>	**Bi**	209	494223.8	3.2				ug/L	507917	Standard

Sample ID: L1511105010S WG547610-05
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Na	23	10.0	132.3	**36.6950**	46.885	127.8	mg/L	0	Standard
Mg	24	10520.3	5.0	**17.1365**	0.602	3.5	mg/L	20	Standard
K	39	150.0	29.1	**0.4466**	0.225	50.5	mg/L	38	Standard
Ca	43	506.7	8.5	**44.3224**	3.603	8.1	mg/L	43	Standard
Fe	54	2890.6	1.8	**3.8857**	0.239	6.1	mg/L	103	Standard
Fe	57	915.0	5.0	**4.3158**	0.533	12.4	mg/L	107	Standard
> **Sc-1**	45	26454.8	6.9				mg/L	24625	Standard
Cl	35	34566.7	2.4				ug/L	30925	Standard
Kr	83	4.0	66.1				ug/L	4	Standard
Br	81	3427.1	12.1				ug/L	397	Standard
P	31	23441.5	3.8				ug/L	19276	Standard
S	34	3263.7	7.1				ug/L	3042	Standard
Sr	88	200.0	21.8				ug/L	65	Standard
C	12	553.3	16.8				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	25.2	147.1				mg/L	23	Standard
Ho-1	165	43.3	17.6				mg/L	7	Standard
Er	166	30.0	66.7				mg/L	13	Standard
I	127	12535.2	4.4				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.931	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.857	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.673
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.304
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1511105012SD WG547610-06
Sample Date/Time: Friday, November 20, 2015 10:39:45
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	50246.5	1.3				ug/L	49688	Standard
	Be	9	39038.6	3.6	**48.2367**	2.319	4.8	ug/L	7	Standard
	Al	27	16274731.0	1.6	**237.0070**	6.800	2.9	ug/L	277	Standard
	Sc	45	25401.3	3.2				ug/L	24625	Standard
	Ti	47	400.0	0.9	**1.2344**	0.010	0.8	ug/L	198	Standard
	V	51	241824.7	2.3	**49.1655**	1.619	3.3	ug/L	1126	Standard
	Cr	52	227072.7	1.2	**48.0224**	0.846	1.8	ug/L	6071	Standard
	Cr	53	28428.3	3.0	**48.3001**	1.298	2.7	ug/L	332	Standard
	Mn	55	1511780.5	0.9	**329.3511**	5.958	1.8	ug/L	876	Standard
	Co	59	221487.0	1.3	**47.3894**	1.115	2.4	ug/L	110	Standard
	Ni	60	60063.5	0.3	**47.1398**	0.560	1.2	ug/L	191	Standard
	Cu	65	58646.3	1.0	**46.1207**	0.877	1.9	ug/L	281	Standard
	Zn	66	36597.2	1.6	**49.0009**	1.286	2.6	ug/L	249	Standard
>	Ge	72	290339.6	1.1				ug/L	297260	Standard
	As	75	45655.7	2.0	**55.1929**	1.667	3.0	ug/L	-66	Standard
	Se	82	3752.3	1.5	**49.6765**	1.290	2.6	ug/L	13	Standard
	Se-1	77	2410.2	3.0	**50.8806**	1.959	3.8	ug/L	48	Standard
>	Ga	71	136.7	11.8				mg/L	30	Standard
	Rb	85	2963.6	1.7				ug/L	12	Standard
	Y	89	304273.2	2.9				ug/L	310514	Standard
>	Rh	103	90.0	25.5				ug/L	10	Standard
	Mo	98	771.6	1.5	**0.4534**	0.011	2.5	ug/L	11	Standard
	Ag	107	260758.0	0.2	**47.7630**	0.612	1.3	ug/L	99	Standard
	Cd	111	86978.7	1.4	**48.6461**	1.351	2.8	mg/L	6	Standard
	Cd	114	213308.4	1.9	**48.1507**	1.019	2.1	ug/L	6	Standard
>	In	115	491379.1	1.4				ug/L	501593	Standard
	Sn	118	491.7	6.8	**0.0066**	0.006	83.9	ug/L	442	Standard
	Sb	123	237861.4	0.6	**49.1534**	0.913	1.9	ug/L	53	Standard
	Ba	135	491070.1	0.2	**252.8257**	3.945	1.6	ug/L	34	Standard
	Ce	140	321.7	17.3				ug/L	73	Standard
>	Tb	159	901757.8	1.1				ug/L	924917	Standard
	Ho	165	26.7	39.0				ug/L	7	Standard
	Tl	203	376022.8	1.5	**47.8033**	0.797	1.7	ug/L	6	Standard
	Tl	205	256823.6	1.5	**48.7553**	0.786	1.6	ug/L	8	Standard
	Pb	206	268927.7	0.7	**49.0332**	0.366	0.7	ug/L	264	Standard
	Pb	207	232246.9	1.9	**46.7674**	0.957	2.0	ug/L	215	Standard
	Pb	208	840244.0	0.8	**48.1674**	0.451	0.9	ug/L	863	Standard
	U	238	282636.7	1.1	**48.3940**	0.614	1.3	ug/L	4	Standard
>	Bi	209	483611.8	0.2				ug/L	507917	Standard

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Na	23	8.3	69.3	**33.2136**	22.703	68.4	mg/L	0	Standard
Mg	24	9644.7	3.1	**16.3469**	0.541	3.3	mg/L	20	Standard
K	39	136.7	9.2	**0.4064**	0.060	14.7	mg/L	38	Standard
Ca	43	478.3	12.5	**43.4031**	5.557	12.8	mg/L	43	Standard
Fe	54	2667.6	3.2	**3.7186**	0.028	0.7	mg/L	103	Standard
Fe	57	900.0	4.5	**4.4148**	0.271	6.1	mg/L	107	Standard
> **Sc-1**	45	25401.3	3.2				mg/L	24625	Standard
Cl	35	33480.3	0.5				ug/L	30925	Standard
Kr	83	5.0	40.0				ug/L	4	Standard
Br	81	3173.7	6.9				ug/L	397	Standard
P	31	21480.2	4.4				ug/L	19276	Standard
S	34	3128.7	4.4				ug/L	3042	Standard
Sr	88	145.0	13.8				ug/L	65	Standard
C	12	543.3	39.5				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	35.9	41.9				mg/L	23	Standard
Ho-1	165	26.7	39.0				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	13	Standard
I	127	10833.9	1.0				mg/L	3275	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		101.124	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.672	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	97.964	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	95.215	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1511105012SD WG547610-06
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Method 6020 - Summary Report

Sample ID: L1511080401
Sample Date/Time: Friday, November 20, 2015 10:42:56
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	39180.7	4.2				ug/L	49688	Standard
	Be	9	1811.8	1.7	**2.8535**	0.114	4.0	ug/L	7	Standard
	Al	27	76391692.6	0.3	**1427.9479**	55.632	3.9	ug/L	277	Standard
	Sc	45	33183.0	3.7				ug/L	24625	Standard
	Ti	47	10432.6	1.3	**55.9107**	1.932	3.5	ug/L	198	Standard
	V	51	55528.0	2.0	**11.9151**	0.150	1.3	ug/L	1126	Standard
	Cr	52	124213.4	0.6	**27.6109**	1.011	3.7	ug/L	6071	Standard
	Cr	53	15828.3	0.4	**28.5991**	0.758	2.7	ug/L	332	Standard
	Mn	55	47954135.2	0.7	**11192.5610**	387.676	3.5	ug/L	876	Standard
	Co	59	27829.9	1.3	**6.3530**	0.269	4.2	ug/L	110	Standard
	Ni	60	63899.8	0.9	**53.7276**	2.041	3.8	ug/L	191	Standard
	Cu	65	10659.4	1.4	**8.7948**	0.183	2.1	ug/L	281	Standard
	Zn	66	53727.4	1.3	**77.1983**	3.092	4.0	ug/L	249	Standard
>	**Ge**	72	271321.2	3.0				ug/L	297260	Standard
	As	75	9543.4	1.7	**12.3939**	0.554	4.5	ug/L	-66	Standard
	Se	82	465.0	2.9	**6.4117**	0.379	5.9	ug/L	13	Standard
	Se-1	77	319.3	6.2	**6.3539**	0.349	5.5	ug/L	48	Standard
>	**Ga**	71	2283.5	2.0				mg/L	30	Standard
	Rb	85	71786.3	0.2				ug/L	12	Standard
	Y	89	900424.2	0.8				ug/L	310514	Standard
>	**Rh**	103	6044.5	4.6				ug/L	10	Standard
	Mo	98	472.0	5.4	**0.3548**	0.029	8.2	ug/L	11	Standard
	Ag	107	581.7	13.4	**0.1167**	0.021	17.8	ug/L	99	Standard
	Cd	111	2242.9	0.8	**1.5962**	0.050	3.1	mg/L	6	Standard
	Cd	114	5560.9	2.6	**1.5972**	0.056	3.5	ug/L	6	Standard
>	**In**	115	385889.4	3.1				ug/L	501593	Standard
	Sn	118	503.3	2.3	**0.0371**	0.003	8.9	ug/L	442	Standard
	Sb	123	705.3	12.3	**0.1823**	0.027	15.0	ug/L	53	Standard
	Ba	135	99723.4	0.7	**65.3861**	1.711	2.6	ug/L	34	Standard
	Ce	140	430675.6	1.1				ug/L	73	Standard
>	**Tb**	159	663289.1	4.3				ug/L	924917	Standard
	Ho	165	44654.1	2.0				ug/L	7	Standard
	Tl	203	288.3	44.2	**0.0507**	0.024	47.9	ug/L	6	Standard
	Tl	205	181.7	13.0	**0.0464**	0.005	11.7	ug/L	8	Standard
	Pb	206	7379.1	0.9	**1.9220**	0.071	3.7	ug/L	264	Standard
	Pb	207	5518.0	2.9	**1.5853**	0.074	4.7	ug/L	215	Standard
	Pb	208	20426.0	0.8	**1.6686**	0.044	2.6	ug/L	863	Standard
	U	238	26116.8	2.4	**6.5371**	0.102	1.6	ug/L	4	Standard
>	**Bi**	209	331004.8	3.3				ug/L	507917	Standard

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Na	23	166.7	14.8	**512.0120**	92.128	18.0	mg/L	0	Standard
Mg	24	256796.2	0.5	**334.0286**	11.423	3.4	mg/L	20	Standard
K	39	931.7	9.2	**2.9217**	0.275	9.4	mg/L	38	Standard
Ca	43	13252.5	0.8	**1046.4734**	40.443	3.9	mg/L	43	Standard
Fe	54	241146.3	1.6	**267.4878**	9.620	3.6	mg/L	103	Standard
Fe	57	68076.0	2.7	**287.4756**	14.455	5.0	mg/L	107	Standard
Sc-1	45	33183.0	3.7				mg/L	24625	Standard
Cl	35	77162.1	2.9				ug/L	30925	Standard
Kr	83	4.0	0.0				ug/L	4	Standard
Br	81	43495.7	3.2				ug/L	397	Standard
P	31	52596.2	3.3				ug/L	19276	Standard
S	34	2286.8	4.9				ug/L	3042	Standard
Sr	88	10353.5	1.8				ug/L	65	Standard
C	12	900.0	13.1				mg/L	287	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	59367.9	0.6				mg/L	23	Standard
Ho-1	165	44654.1	2.0				mg/L	7	Standard
Er	166	40901.8	1.3				mg/L	13	Standard
I	127	67361.3	5.3				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		78.853	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		91.274	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	76.933	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	65.169	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1511080401PS WG547639-01
Sample Date/Time: Friday, November 20, 2015 10:46:07
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	38181.6	8.3				ug/L	49688	Standard
	Be	9	34166.8	1.9	**55.8385**	5.440	9.7	ug/L	7	Standard
	Al	27	77661848.8	2.6	**1493.5064**	104.083	7.0	ug/L	277	Standard
	Sc	45	33169.6	1.2				ug/L	24625	Standard
	Ti	47	10530.0	0.8	**57.9969**	2.937	5.1	ug/L	198	Standard
	V	51	291838.4	0.7	**65.3121**	3.053	4.7	ug/L	1126	Standard
	Cr	52	322422.9	0.8	**75.6925**	3.800	5.0	ug/L	6071	Standard
	Cr	53	40210.0	1.9	**75.3992**	3.646	4.8	ug/L	332	Standard
	Mn	55	49049805.2	0.9	**11757.5115**	541.296	4.6	ug/L	876	Standard
	Co	59	230012.2	1.1	**54.1528**	3.448	6.4	ug/L	110	Standard
	Ni	60	118433.1	0.4	**102.4410**	5.081	5.0	ug/L	191	Standard
	Cu	65	61944.7	1.3	**53.6096**	2.713	5.1	ug/L	281	Standard
	Zn	66	84379.6	0.7	**124.6957**	5.881	4.7	ug/L	249	Standard
>	**Ge**	72	264445.9	5.5				ug/L	297260	Standard
	As	75	51289.5	1.4	**68.1541**	2.961	4.3	ug/L	-66	Standard
	Se	82	4150.1	0.9	**60.4578**	2.813	4.7	ug/L	13	Standard
	Se-1	77	2640.6	2.8	**61.4675**	2.425	3.9	ug/L	48	Standard
>	**Ga**	71	2188.5	7.3				mg/L	30	Standard
	Rb	85	70999.4	2.3				ug/L	12	Standard
	Y	89	882435.1	1.9				ug/L	310514	Standard
>	**Rh**	103	6616.4	3.7				ug/L	10	Standard
	Mo	98	467.1	1.1	**0.3646**	0.016	4.4	ug/L	11	Standard
	Ag	107	202862.4	0.4	**49.2312**	2.041	4.1	ug/L	99	Standard
	Cd	111	71398.5	0.6	**52.8941**	2.043	3.9	mg/L	6	Standard
	Cd	114	182160.7	2.6	**54.4434**	1.039	1.9	ug/L	6	Standard
>	**In**	115	371297.5	4.5				ug/L	501593	Standard
	Sn	118	561.7	9.0	**0.0582**	0.017	28.6	ug/L	442	Standard
	Sb	123	201797.6	1.7	**55.2336**	1.969	3.6	ug/L	53	Standard
	Ba	135	173599.5	0.2	**118.4104**	5.287	4.5	ug/L	34	Standard
	Ce	140	428599.6	1.1				ug/L	73	Standard
>	**Tb**	159	648603.3	4.1				ug/L	924917	Standard
	Ho	165	43731.4	0.3				ug/L	7	Standard
	Tl	203	305741.0	0.2	**59.1464**	2.629	4.4	ug/L	6	Standard
	Tl	205	222363.3	1.3	**64.2278**	2.672	4.2	ug/L	8	Standard
	Pb	206	232009.4	1.2	**64.3620**	2.078	3.2	ug/L	264	Standard
	Pb	207	208944.9	0.3	**64.0361**	2.713	4.2	ug/L	215	Standard
	Pb	208	719960.5	0.9	**62.8072**	2.495	4.0	ug/L	863	Standard
	U	238	282280.3	0.5	**73.5454**	3.234	4.4	ug/L	4	Standard
>	**Bi**	209	318233.0	4.5				ug/L	507917	Standard

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Na	23	176.7	12.8	**541.5648**	75.548	13.9	mg/L	0	Standard
Mg	24	260049.4	0.8	**338.1263**	2.146	0.6	mg/L	20	Standard
K	39	1041.7	11.0	**3.2870**	0.342	10.4	mg/L	38	Standard
Ca	43	13365.9	1.8	**1055.1392**	29.389	2.8	mg/L	43	Standard
Fe	54	238103.4	0.9	**264.0412**	4.789	1.8	mg/L	103	Standard
Fe	57	67491.7	1.2	**284.8334**	3.914	1.4	mg/L	107	Standard
Sc-1	45	33169.6	1.2				mg/L	24625	Standard
Cl	35	76763.3	0.9				ug/L	30925	Standard
Kr	83	3.3	34.6				ug/L	4	Standard
Br	81	44084.2	5.2				ug/L	397	Standard
P	31	51965.7	4.1				ug/L	19276	Standard
S	34	2561.9	4.6				ug/L	3042	Standard
Sr	88	9991.6	2.9				ug/L	65	Standard
C	12	733.4	6.4				mg/L	287	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	59945.1	2.2				mg/L	23	Standard
Ho-1	165	43731.4	0.3				mg/L	7	Standard
Er	166	39822.3	1.9				mg/L	13	Standard
I	127	68617.0	5.8				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		76.842	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		88.961	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	74.024	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	62.654	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	

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Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1511080401SDL WG547639-02
Sample Date/Time: Friday, November 20, 2015 10:49:18
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	38910.0	4.7				ug/L	49688	Standard
	Be	9	503.3	12.3	**0.7809**	0.060	7.7	ug/L	7	Standard
	Al	27	18002995.6	4.8	**338.5395**	8.109	2.4	ug/L	277	Standard
	Sc	45	26214.3	2.7				ug/L	24625	Standard
	Ti	47	2530.5	4.5	**13.4462**	0.695	5.2	ug/L	198	Standard
	V	51	13096.4	1.8	**2.7449**	0.063	2.3	ug/L	1126	Standard
	Cr	52	31817.4	3.1	**6.4056**	0.260	4.1	ug/L	6071	Standard
	Cr	53	3972.2	3.1	**7.0756**	0.226	3.2	ug/L	332	Standard
	Mn	55	10386935.4	2.0	**2509.6690**	50.502	2.0	ug/L	876	Standard
	Co	59	6927.6	5.3	**1.6172**	0.092	5.7	ug/L	110	Standard
	Ni	60	14492.6	0.6	**12.4750**	0.102	0.8	ug/L	191	Standard
	Cu	65	2809.6	3.6	**2.2404**	0.094	4.2	ug/L	281	Standard
	Zn	66	13160.4	1.0	**19.3503**	0.338	1.7	ug/L	249	Standard
>	**Ge**	72	261904.0	0.9				ug/L	297260	Standard
	As	75	1977.7	2.3	**2.6994**	0.082	3.0	ug/L	-66	Standard
	Se	82	129.1	12.1	**1.6930**	0.238	14.1	ug/L	13	Standard
	Se-1	77	90.0	8.8	**1.1480**	0.174	15.1	ug/L	48	Standard
>	**Ga**	71	511.7	7.5				mg/L	30	Standard
	Rb	85	15437.9	1.3				ug/L	12	Standard
	Y	89	397794.1	2.1				ug/L	310514	Standard
>	**Rh**	103	1431.7	1.7				ug/L	10	Standard
	Mo	98	112.2	5.6	**0.0814**	0.004	4.9	ug/L	11	Standard
	Ag	107	340.3	45.3	**0.0538**	0.033	60.8	ug/L	99	Standard
	Cd	111	640.1	19.7	**0.4182**	0.080	19.2	mg/L	6	Standard
	Cd	114	1501.5	20.9	**0.3958**	0.081	20.5	ug/L	6	Standard
>	**In**	115	418587.4	0.5				ug/L	501593	Standard
	Sn	118	318.3	4.0	**-0.0174**	0.003	16.1	ug/L	442	Standard
	Sb	123	890.0	21.2	**0.2120**	0.045	21.1	ug/L	53	Standard
	Ba	135	25496.8	0.7	**15.3856**	0.079	0.5	ug/L	34	Standard
	Ce	140	109863.6	1.2				ug/L	73	Standard
>	**Tb**	159	771665.3	1.5				ug/L	924917	Standard
	Ho	165	10570.4	1.6				ug/L	7	Standard
	Tl	203	419.3	61.3	**0.0623**	0.040	64.8	ug/L	6	Standard
	Tl	205	246.7	52.3	**0.0534**	0.030	56.8	ug/L	8	Standard
	Pb	206	2122.5	13.9	**0.4262**	0.068	16.0	ug/L	264	Standard
	Pb	207	1647.1	18.3	**0.3648**	0.077	21.0	ug/L	215	Standard
	Pb	208	6028.8	17.5	**0.3780**	0.076	20.2	ug/L	863	Standard
	U	238	5891.8	9.4	**1.2347**	0.123	10.0	ug/L	4	Standard
>	**Bi**	209	395995.1	0.5				ug/L	507917	Standard

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Na	23	25.0	20.0	**97.1286**	20.854	21.5	mg/L	0	Standard
Mg	24	58859.1	2.2	**96.8470**	3.075	3.2	mg/L	20	Standard
K	39	335.0	16.8	**1.2226**	0.200	16.4	mg/L	38	Standard
Ca	43	3468.7	4.5	**342.2663**	11.910	3.5	mg/L	43	Standard
Fe	54	54317.6	1.2	**76.1536**	2.871	3.8	mg/L	103	Standard
Fe	57	14733.8	3.6	**78.3537**	4.782	6.1	mg/L	107	Standard
> **Sc-1**	45	26214.3	2.7				mg/L	24625	Standard
Cl	35	36926.3	1.7				ug/L	30925	Standard
Kr	83	3.3	62.4				ug/L	4	Standard
Br	81	7988.8	6.1				ug/L	397	Standard
P	31	17807.1	2.6				ug/L	19276	Standard
S	34	2678.6	3.2				ug/L	3042	Standard
Sr	88	1505.1	5.5				ug/L	65	Standard
C	12	263.3	34.5				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	3	Standard
Dy	164	14262.7	1.1				mg/L	23	Standard
Ho-1	165	10570.4	1.6				mg/L	7	Standard
Er	166	9696.4	2.1				mg/L	13	Standard
I	127	20542.3	2.6				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		78.308	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		88.106	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	83.452	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	77.964	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1511080401SDL WG547639-02
Sample Date/Time: Friday, November 20, 2015 10:52:29
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	40218.3	1.8				ug/L	49688	Standard
	Be	9	121.7	31.1	**0.1678**	0.060	36.0	ug/L	7	Standard
	Al	27	3946671.0	1.2	**71.7864**	0.436	0.6	ug/L	277	Standard
	Sc	45	24160.9	1.4				ug/L	24625	Standard
	Ti	47	584.7	4.9	**2.4008**	0.161	6.7	ug/L	198	Standard
	V	51	3442.2	8.1	**0.5374**	0.061	11.3	ug/L	1126	Standard
	Cr	52	9469.3	0.8	**0.9652**	0.020	2.1	ug/L	6071	Standard
	Cr	53	1033.4	4.3	**1.4294**	0.082	5.7	ug/L	332	Standard
	Mn	55	2172504.9	0.8	**509.8435**	3.837	0.8	ug/L	876	Standard
	Co	59	1573.1	5.4	**0.3358**	0.019	5.8	ug/L	110	Standard
	Ni	60	3114.0	2.6	**2.4600**	0.070	2.9	ug/L	191	Standard
	Cu	65	829.0	1.0	**0.4849**	0.006	1.3	ug/L	281	Standard
	Zn	66	3658.4	1.4	**5.0053**	0.082	1.6	ug/L	249	Standard
>	**Ge**	72	269552.6	0.2				ug/L	297260	Standard
	As	75	413.9	5.1	**0.5899**	0.028	4.8	ug/L	-66	Standard
	Se	82	42.5	8.9	**0.3992**	0.055	13.7	ug/L	13	Standard
	Se-1	77	60.3	12.4	**0.4001**	0.172	43.1	ug/L	48	Standard
>	**Ga**	71	121.7	26.1				mg/L	30	Standard
	Rb	85	3183.7	4.1				ug/L	12	Standard
	Y	89	297760.6	2.9				ug/L	310514	Standard
>	**Rh**	103	378.3	8.6				ug/L	10	Standard
	Mo	98	45.3	23.5	**0.0347**	0.007	19.4	ug/L	11	Standard
	Ag	107	286.7	77.8	**0.0399**	0.046	114.0	ug/L	99	Standard
	Cd	111	127.2	7.9	**0.0788**	0.007	8.8	mg/L	6	Standard
	Cd	114	327.0	3.4	**0.0817**	0.002	2.6	ug/L	6	Standard
>	**In**	115	434032.0	0.9				ug/L	501593	Standard
	Sn	118	235.0	14.9	**-0.0393**	0.008	21.0	ug/L	442	Standard
	Sb	123	338.6	54.9	**0.0752**	0.043	56.6	ug/L	53	Standard
	Ba	135	5530.7	1.2	**3.2001**	0.021	0.6	ug/L	34	Standard
	Ce	140	23958.9	2.0				ug/L	73	Standard
>	**Tb**	159	810297.0	1.7				ug/L	924917	Standard
	Ho	165	2320.2	5.2				ug/L	7	Standard
	Tl	203	386.7	69.2	**0.0519**	0.038	72.6	ug/L	6	Standard
	Tl	205	178.3	53.7	**0.0339**	0.020	59.1	ug/L	8	Standard
	Pb	206	732.0	30.7	**0.1022**	0.045	43.8	ug/L	264	Standard
	Pb	207	612.0	25.3	**0.0970**	0.034	35.0	ug/L	215	Standard
	Pb	208	1888.4	8.3	**0.0765**	0.009	11.4	ug/L	863	Standard
	U	238	1237.1	4.7	**0.2392**	0.010	4.0	ug/L	4	Standard
>	**Bi**	209	432235.5	1.2				ug/L	507917	Standard

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Na	23	10.0	100.0	**41.9869**	41.622	99.1	mg/L	0	Standard
Mg	24	12631.9	0.9	**22.5177**	0.449	2.0	mg/L	20	Standard
K	39	118.3	25.8	**0.3529**	0.142	40.2	mg/L	38	Standard
Ca	43	740.0	1.4	**74.5023**	0.401	0.5	mg/L	43	Standard
Fe	54	11550.3	2.1	**17.4514**	0.612	3.5	mg/L	103	Standard
Fe	57	3050.3	7.8	**17.1634**	1.630	9.5	mg/L	107	Standard
> **Sc-1**	45	24160.9	1.4				mg/L	24625	Standard
Cl	35	28719.2	1.3				ug/L	30925	Standard
Kr	83	4.3	35.3				ug/L	4	Standard
Br	81	1893.5	4.3				ug/L	397	Standard
P	31	8745.9	1.4				ug/L	19276	Standard
S	34	2967.0	3.7				ug/L	3042	Standard
Sr	88	386.7	13.0				ug/L	65	Standard
C	12	193.3	7.9				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	3124.2	2.2				mg/L	23	Standard
Ho-1	165	2320.2	5.2				mg/L	7	Standard
Er	166	2146.8	6.4				mg/L	13	Standard
I	127	7733.6	2.0				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		80.941	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.679	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		86.531
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		85.100
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1511080401SDL WG547639-02
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, November 20, 2015 10:55:42
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	48813.6	3.4				ug/L	49688	Standard
	Be	9	39406.2	3.9	**50.1597**	3.128	6.2	ug/L	7	Standard
	Al	27	3669849.7	2.8	**55.0569**	3.112	5.7	ug/L	277	Standard
	Sc	45	27807.2	4.6				ug/L	24625	Standard
	Ti	47	21546.6	1.2	**103.0453**	3.268	3.2	ug/L	198	Standard
	V	51	256505.2	0.9	**49.4946**	1.110	2.2	ug/L	1126	Standard
	Cr	52	253059.5	1.6	**50.8810**	1.887	3.7	ug/L	6071	Standard
	Cr	53	30453.9	2.8	**49.1439**	2.400	4.9	ug/L	332	Standard
	Mn	55	244898.0	3.3	**50.4581**	1.765	3.5	ug/L	876	Standard
	Co	59	246879.0	1.4	**50.1320**	1.032	2.1	ug/L	110	Standard
	Ni	60	66865.9	1.7	**49.8323**	1.841	3.7	ug/L	191	Standard
	Cu	65	66874.6	1.5	**49.9451**	1.800	3.6	ug/L	281	Standard
	Zn	66	39418.5	0.6	**50.0965**	0.973	1.9	ug/L	249	Standard
>	Ge	72	305945.5	2.0				ug/L	297260	Standard
	As	75	43024.2	1.0	**49.3733**	1.492	3.0	ug/L	-66	Standard
	Se	82	3850.5	0.8	**48.3802**	1.372	2.8	ug/L	13	Standard
	Se-1	77	2537.9	1.5	**50.8563**	1.843	3.6	ug/L	48	Standard
>	Ga	71	35.0	24.7				mg/L	30	Standard
	Rb	85	605.0	9.9				ug/L	12	Standard
	Y	89	314563.1	3.7				ug/L	310514	Standard
>	Rh	103	43.3	35.3				ug/L	10	Standard
	Mo	98	178390.6	1.0	**102.9130**	3.227	3.1	ug/L	11	Standard
	Ag	107	285898.9	0.9	**51.9753**	1.601	3.1	ug/L	99	Standard
	Cd	111	89431.2	2.2	**49.6522**	2.461	5.0	mg/L	6	Standard
	Cd	114	222850.1	0.9	**49.9246**	1.437	2.9	ug/L	6	Standard
>	In	115	495328.7	2.8				ug/L	501593	Standard
	Sn	118	251616.2	2.5	**50.8149**	2.736	5.4	ug/L	442	Standard
	Sb	123	239955.6	1.3	**49.2206**	2.022	4.1	ug/L	53	Standard
	Ba	135	101326.7	1.0	**51.7594**	1.831	3.5	ug/L	34	Standard
	Ce	140	230.0	71.6				ug/L	73	Standard
>	Tb	159	929760.5	3.2				ug/L	924917	Standard
	Ho	165	31.7	92.5				ug/L	7	Standard
	Tl	203	397007.2	0.7	**50.0586**	2.027	4.0	ug/L	6	Standard
	Tl	205	259379.7	0.5	**48.8404**	2.052	4.2	ug/L	8	Standard
	Pb	206	278131.1	1.1	**50.3089**	2.440	4.8	ug/L	264	Standard
	Pb	207	250305.4	1.1	**50.0056**	2.449	4.9	ug/L	215	Standard
	Pb	208	887274.3	1.5	**50.4596**	2.480	4.9	ug/L	863	Standard
	U	238	286031.3	1.3	**48.5876**	2.460	5.1	ug/L	4	Standard
>	Bi	209	488081.2	3.8				ug/L	507917	Standard

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Na	23	1.7	173.2	**6.1537**	10.650	173.1	mg/L	0	Standard
Mg	24	2987.0	2.5	**4.6029**	0.227	4.9	mg/L	20	Standard
K	39	1503.4	2.8	**5.8049**	0.164	2.8	mg/L	38	Standard
Ca	43	135.0	3.7	**6.6453**	0.606	9.1	mg/L	43	Standard
Fe	54	3473.1	2.9	**4.4538**	0.161	3.6	mg/L	103	Standard
Fe	57	968.4	10.6	**4.3243**	0.434	10.0	mg/L	107	Standard
Sc-1	45	27807.2	4.6				mg/L	24625	Standard
Cl	35	30380.4	1.1				ug/L	30925	Standard
Kr	83	5.0	69.3				ug/L	4	Standard
Br	81	683.3	12.3				ug/L	397	Standard
P	31	20253.5	2.3				ug/L	19276	Standard
S	34	3465.4	3.1				ug/L	3042	Standard
Sr	88	81.7	25.5				ug/L	65	Standard
C	12	246.7	26.1				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	3	Standard
Dy	164	22.5	98.2				mg/L	23	Standard
Ho-1	165	31.7	92.5				mg/L	7	Standard
Er	166	16.7	124.9				mg/L	13	Standard
I	127	2340.2	10.9				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	100.319		
Al	27	110.114		
Sc	45			
Ti	47	103.045		
V	51	98.989		
Cr	52	101.762		
Cr	53			
Mn	55	100.916		
Co	59	100.264		
Ni	60	99.665		
Cu	65	99.890		
Zn	66	100.193		
Ge	72		102.922	
As	75	98.747		
Se	82	96.760		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	102.913		
Ag	107	103.951		
Cd	111	99.304		
Cd	114			
In	115		98.751	
Sn	118	101.630		
Sb	123	98.441		
Ba	135	103.519		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.117		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.919		
U	238	97.175		
Bi	209		96.095	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, November 20, 2015 10:58:54
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	46019.9	3.9				ug/L	49688	Standard
	Be	9	68.3	92.7	**0.0718**	0.086	120.4	ug/L	7	Standard
	Al	27	5850.5	119.8	**0.0839**	0.113	134.2	ug/L	277	Standard
	Sc	45	27897.3	2.6				ug/L	24625	Standard
	Ti	47	131.0	30.8	**-0.1603**	0.196	121.9	ug/L	198	Standard
	V	51	1294.4	30.8	**0.0331**	0.078	234.8	ug/L	1126	Standard
	Cr	52	6334.3	10.5	**0.0661**	0.136	206.4	ug/L	6071	Standard
	Cr	53	416.7	24.3	**0.2032**	0.167	82.0	ug/L	332	Standard
	Mn	55	1600.8	14.6	**0.1252**	0.050	40.1	ug/L	876	Standard
	Co	59	382.3	104.6	**0.0514**	0.082	159.1	ug/L	110	Standard
	Ni	60	231.3	47.6	**-0.0083**	0.083	998.2	ug/L	191	Standard
	Cu	65	402.3	32.6	**0.0831**	0.099	118.7	ug/L	281	Standard
	Zn	66	387.0	21.1	**0.1957**	0.105	53.5	ug/L	249	Standard
>	**Ge**	72	303691.5	0.7				ug/L	297260	Standard
	As	75	9.3	794.5	**0.0623**	0.085	137.1	ug/L	-66	Standard
	Se	82	20.4	40.0	**0.0499**	0.105	209.4	ug/L	13	Standard
	Se-1	77	54.7	11.8	**0.1266**	0.133	104.9	ug/L	48	Standard
>	**Ga**	71	25.0	40.0				mg/L	30	Standard
	Rb	85	13.3	57.3				ug/L	12	Standard
	Y	89	299207.6	1.5				ug/L	310514	Standard
>	**Rh**	103	30.0	76.4				ug/L	10	Standard
	Mo	98	439.6	80.4	**0.2691**	0.215	80.1	ug/L	11	Standard
	Ag	107	383.3	65.7	**0.0533**	0.049	91.2	ug/L	99	Standard
	Cd	111	105.7	142.2	**0.0596**	0.088	146.9	mg/L	6	Standard
	Cd	114	254.6	138.1	**0.0578**	0.083	143.1	ug/L	6	Standard
>	**In**	115	478260.4	1.4				ug/L	501593	Standard
	Sn	118	883.4	39.9	**0.0920**	0.077	83.2	ug/L	442	Standard
	Sb	123	541.7	54.7	**0.1118**	0.065	57.9	ug/L	53	Standard
	Ba	135	142.7	115.2	**0.0528**	0.088	167.4	ug/L	34	Standard
	Ce	140	36.7	34.3				ug/L	73	Standard
>	**Tb**	159	904170.7	0.6				ug/L	924917	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	210.7	138.3	**0.0240**	0.037	155.5	ug/L	6	Standard
	Tl	205	118.3	147.7	**0.0187**	0.033	178.6	ug/L	8	Standard
	Pb	206	530.0	70.9	**0.0503**	0.069	137.7	ug/L	264	Standard
	Pb	207	468.3	75.9	**0.0542**	0.072	133.6	ug/L	215	Standard
	Pb	208	1643.4	73.3	**0.0502**	0.070	138.9	ug/L	863	Standard
	U	238	281.3	156.6	**0.0508**	0.076	149.6	ug/L	4	Standard
>	**Bi**	209	480808.1	0.5				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	61.7	20.4	**0.0596**	0.022	36.8	mg/L	20	Standard
K	39	51.7	47.7	**0.0135**	0.092	680.8	mg/L	38	Standard
Ca	43	71.7	34.4	**0.6155**	2.339	380.0	mg/L	43	Standard
Fe	54	127.3	21.5	**0.0214**	0.032	149.0	mg/L	103	Standard
Fe	57	111.7	2.6	**0.0041**	0.028	683.2	mg/L	107	Standard
Sc-1	45	27897.3	2.6				mg/L	24625	Standard
Cl	35	31163.3	0.5				ug/L	30925	Standard
Kr	83	3.0	88.2				ug/L	4	Standard
Br	81	550.0	17.9				ug/L	397	Standard
P	31	21613.7	1.6				ug/L	19276	Standard
S	34	3388.7	2.3				ug/L	3042	Standard
Sr	88	68.3	4.2				ug/L	65	Standard
C	12	226.7	13.5				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	15.5	132.2				mg/L	23	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	23.3	24.7				mg/L	13	Standard
I	127	2883.6	5.3				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.164	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.348
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.663
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1511094402
Sample Date/Time: Friday, November 20, 2015 11:02:07
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	50709.8	3.2				ug/L	49688	Standard
	Be	9	33.3	34.6	**0.0207**	0.015	72.9	ug/L	7	Standard
	Al	27	32797.1	3.1	**0.4641**	0.028	6.1	ug/L	277	Standard
	Sc	45	28730.6	4.3				ug/L	24625	Standard
	Ti	47	159.3	14.3	**-0.0398**	0.132	331.4	ug/L	198	Standard
	V	51	56450.1	0.8	**10.5231**	0.342	3.2	ug/L	1126	Standard
	Cr	52	11819.6	0.7	**1.1430**	0.095	8.3	ug/L	6071	Standard
	Cr	53	918.4	5.6	**0.9903**	0.132	13.3	ug/L	332	Standard
	Mn	55	6095.7	99.2	**1.0528**	1.284	121.9	ug/L	876	Standard
	Co	59	1164.7	0.8	**0.2055**	0.007	3.3	ug/L	110	Standard
	Ni	60	2855.9	2.1	**1.9138**	0.032	1.7	ug/L	191	Standard
	Cu	65	239674.5	0.9	**176.2982**	6.498	3.7	ug/L	281	Standard
	Zn	66	2224.5	4.4	**2.4876**	0.040	1.6	ug/L	249	Standard
>	Ge	72	311732.5	3.6				ug/L	297260	Standard
	As	75	1452.8	3.0	**1.6863**	0.059	3.5	ug/L	-66	Standard
	Se	82	102.7	9.7	**1.0605**	0.086	8.1	ug/L	13	Standard
	Se-1	77	90.3	9.2	**0.8170**	0.219	26.8	ug/L	48	Standard
>	Ga	71	683.3	9.9				mg/L	30	Standard
	Rb	85	6774.8	1.1				ug/L	12	Standard
	Y	89	319298.0	3.1				ug/L	310514	Standard
>	Rh	103	118.3	39.3				ug/L	10	Standard
	Mo	98	14876.6	0.5	**8.4286**	0.183	2.2	ug/L	11	Standard
	Ag	107	276.7	35.7	**0.0303**	0.019	61.4	ug/L	99	Standard
	Cd	111	33.4	175.3	**0.0168**	0.032	193.4	mg/L	6	Standard
	Cd	114	144.1	97.1	**0.0302**	0.032	104.6	ug/L	6	Standard
>	In	115	504475.6	1.9				ug/L	501593	Standard
	Sn	118	718.4	4.0	**0.0491**	0.006	13.1	ug/L	442	Standard
	Sb	123	3197.2	4.2	**0.6402**	0.038	6.0	ug/L	53	Standard
	Ba	135	28173.2	0.4	**14.1082**	0.318	2.3	ug/L	34	Standard
	Ce	140	406.7	54.6				ug/L	73	Standard
>	Tb	159	940271.7	2.5				ug/L	924917	Standard
	Ho	165	36.7	67.3				ug/L	7	Standard
	Tl	203	179.0	82.7	**0.0196**	0.019	97.7	ug/L	6	Standard
	Tl	205	85.0	32.8	**0.0119**	0.005	44.7	ug/L	8	Standard
	Pb	206	749.7	7.3	**0.0870**	0.014	15.8	ug/L	264	Standard
	Pb	207	631.7	13.1	**0.0838**	0.018	22.0	ug/L	215	Standard
	Pb	208	2255.7	7.7	**0.0821**	0.013	15.7	ug/L	863	Standard
	U	238	79.0	81.1	**0.0157**	0.011	71.1	ug/L	4	Standard
>	Bi	209	494573.7	3.1				ug/L	507917	Standard

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Na	23	6.7	86.6	**23.6106**	20.500	86.8	mg/L	0	Standard
Mg	24	4367.3	4.2	**6.5258**	0.330	5.0	mg/L	20	Standard
K	39	933.4	7.4	**3.4156**	0.339	9.9	mg/L	38	Standard
Ca	43	715.0	5.5	**59.5571**	6.327	10.6	mg/L	43	Standard
Fe	54	130.8	6.1	**0.0218**	0.014	63.1	mg/L	103	Standard
Fe	57	341.7	11.0	**1.1175**	0.256	22.9	mg/L	107	Standard
> **Sc-1**	45	28730.6	4.3				mg/L	24625	Standard
Cl	35	42652.0	0.7				ug/L	30925	Standard
Kr	83	3.0	57.7				ug/L	4	Standard
Br	81	2600.2	13.7				ug/L	397	Standard
P	31	22440.0	4.9				ug/L	19276	Standard
S	34	3178.7	3.5				ug/L	3042	Standard
Sr	88	196.7	7.8				ug/L	65	Standard
C	12	430.0	8.4				mg/L	287	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	40.0	66.1				mg/L	3	Standard
Dy	164	35.1	19.7				mg/L	23	Standard
Ho-1	165	36.7	67.3				mg/L	7	Standard
Er	166	33.3	75.5				mg/L	13	Standard
I	127	15943.4	0.2				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.056	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.869	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.575
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.373
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: L1511094405
Sample Date/Time: Friday, November 20, 2015 11:05:18
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	48362.1	3.6				ug/L	49688	Standard
	Be	9	20.0	25.0	**0.0051**	0.006	111.4	ug/L	7	Standard
	Al	27	505501.3	2.0	**7.6467**	0.408	5.3	ug/L	277	Standard
	Sc	45	27641.9	1.9				ug/L	24625	Standard
	Ti	47	1130.4	4.1	**4.6631**	0.236	5.1	ug/L	198	Standard
	V	51	29079.1	1.2	**5.4290**	0.094	1.7	ug/L	1126	Standard
	Cr	52	12317.7	0.8	**1.2952**	0.060	4.7	ug/L	6071	Standard
	Cr	53	1221.7	10.4	**1.5125**	0.190	12.6	ug/L	332	Standard
	Mn	55	10218.1	0.6	**1.9108**	0.058	3.0	ug/L	876	Standard
	Co	59	366.7	4.4	**0.0479**	0.005	9.8	ug/L	110	Standard
	Ni	60	612.0	3.2	**0.2762**	0.009	3.1	ug/L	191	Standard
	Cu	65	23445.5	4.2	**17.3935**	0.291	1.7	ug/L	281	Standard
	Zn	66	2973.6	1.6	**3.5081**	0.078	2.2	ug/L	249	Standard
>	Ge	72	305270.2	2.9				ug/L	297260	Standard
	As	75	4502.8	1.7	**5.2238**	0.058	1.1	ug/L	-66	Standard
	Se	82	98.8	7.0	**1.0417**	0.118	11.4	ug/L	13	Standard
	Se-1	77	104.3	8.4	**1.1399**	0.216	18.9	ug/L	48	Standard
>	Ga	71	165.0	16.0				mg/L	30	Standard
	Rb	85	4834.1	3.6				ug/L	12	Standard
	Y	89	314173.0	1.9				ug/L	310514	Standard
>	Rh	103	48.3	23.9				ug/L	10	Standard
	Mo	98	5360.4	2.9	**3.1233**	0.051	1.6	ug/L	11	Standard
	Ag	107	314.3	0.2	**0.0384**	0.001	2.0	ug/L	99	Standard
	Cd	111	54.8	14.9	**0.0289**	0.004	14.7	mg/L	6	Standard
	Cd	114	134.8	27.1	**0.0287**	0.009	29.8	ug/L	6	Standard
>	In	115	490836.6	1.3				ug/L	501593	Standard
	Sn	118	876.7	13.8	**0.0851**	0.023	26.7	ug/L	442	Standard
	Sb	123	1971.7	3.0	**0.4043**	0.018	4.4	ug/L	53	Standard
	Ba	135	9792.8	2.4	**5.0239**	0.106	2.1	ug/L	34	Standard
	Ce	140	7987.1	6.8				ug/L	73	Standard
>	Tb	159	917127.6	2.3				ug/L	924917	Standard
	Ho	165	165.0	3.0				ug/L	7	Standard
	Tl	203	91.7	3.3	**0.0084**	0.000	3.6	ug/L	6	Standard
	Tl	205	60.0	14.4	**0.0072**	0.002	21.8	ug/L	8	Standard
	Pb	206	4512.7	0.4	**0.7587**	0.008	1.0	ug/L	264	Standard
	Pb	207	4000.5	1.1	**0.7481**	0.015	2.0	ug/L	215	Standard
	Pb	208	14137.9	1.0	**0.7490**	0.014	1.9	ug/L	863	Standard
	U	238	319.7	3.4	**0.0558**	0.002	3.5	ug/L	4	Standard
>	Bi	209	494297.5	0.8				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	7115.0	3.1	**11.0723**	0.536	4.8	mg/L	20	Standard
K	39	518.3	7.8	**1.8882**	0.168	8.9	mg/L	38	Standard
Ca	43	136.7	23.8	**6.8544**	3.029	44.2	mg/L	43	Standard
Fe	54	125.3	4.3	**0.0208**	0.008	37.3	mg/L	103	Standard
Fe	57	171.7	1.7	**0.3135**	0.023	7.2	mg/L	107	Standard
> **Sc-1**	45	27641.9	1.9				mg/L	24625	Standard
Cl	35	34370.3	4.5				ug/L	30925	Standard
Kr	83	4.7	12.4				ug/L	4	Standard
Br	81	1090.0	6.6				ug/L	397	Standard
P	31	20856.0	2.6				ug/L	19276	Standard
S	34	3085.3	3.9				ug/L	3042	Standard
Sr	88	101.7	34.5				ug/L	65	Standard
C	12	280.0	19.9				mg/L	287	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	3	Standard
Dy	164	186.8	21.5				mg/L	23	Standard
Ho-1	165	165.0	3.0				mg/L	7	Standard
Er	166	136.7	34.6				mg/L	13	Standard
I	127	16705.9	2.6				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.331	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.695	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.856
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.318
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1511102401
Sample Date/Time: Friday, November 20, 2015 11:08:30
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	37073.7	3.2				ug/L	49688	Standard
	Be	9	251.7	18.5	**0.4030**	0.091	22.5	ug/L	7	Standard
	Al	27	64389686.1	4.4	**1271.3787**	65.913	5.2	ug/L	277	Standard
	Sc	45	31579.5	1.7				ug/L	24625	Standard
	Ti	47	18474.3	2.3	**106.3222**	3.288	3.1	ug/L	198	Standard
	V	51	111541.9	2.6	**25.7936**	0.861	3.3	ug/L	1126	Standard
	Cr	52	110362.9	2.0	**26.1016**	0.746	2.9	ug/L	6071	Standard
	Cr	53	21461.9	8.1	**41.5931**	3.643	8.8	ug/L	332	Standard
	Mn	55	44300636.9	1.7	**11028.7536**	263.226	2.4	ug/L	876	Standard
	Co	59	28012.2	3.9	**6.8223**	0.320	4.7	ug/L	110	Standard
	Ni	60	76690.1	3.4	**68.8307**	2.891	4.2	ug/L	191	Standard
	Cu	65	12982.9	1.9	**11.4939**	0.195	1.7	ug/L	281	Standard
	Zn	66	38854.1	1.9	**59.4736**	1.601	2.7	ug/L	249	Standard
>	Ge	72	254227.5	0.7				ug/L	297260	Standard
	As	75	13638.8	4.1	**18.8635**	0.890	4.7	ug/L	-66	Standard
	Se	82	2528.2	7.5	**38.1845**	3.144	8.2	ug/L	13	Standard
	Se-1	77	5026.8	9.1	**122.6029**	12.136	9.9	ug/L	48	Standard
>	Ga	71	2041.8	5.7				mg/L	30	Standard
	Rb	85	31676.4	3.9				ug/L	12	Standard
	Y	89	337675.5	4.1				ug/L	310514	Standard
>	Rh	103	14915.7	3.8				ug/L	10	Standard
	Mo	98	570.8	2.4	**0.5100**	0.025	4.8	ug/L	11	Standard
	Ag	107	722.0	2.9	**0.1820**	0.003	1.6	ug/L	99	Standard
	Cd	111	1429.4	4.3	**1.2156**	0.083	6.9	mg/L	6	Standard
	Cd	114	3359.5	2.8	**1.1529**	0.063	5.5	ug/L	6	Standard
>	In	115	322991.1	2.8				ug/L	501593	Standard
	Sn	118	841.7	13.4	**0.1679**	0.040	23.6	ug/L	442	Standard
	Sb	123	1018.4	2.3	**0.3167**	0.015	4.6	ug/L	53	Standard
	Ba	135	214233.1	1.2	**167.8717**	5.919	3.5	ug/L	34	Standard
	Ce	140	93640.2	2.0				ug/L	73	Standard
>	Tb	159	552454.3	4.2				ug/L	924917	Standard
	Ho	165	4804.1	1.9				ug/L	7	Standard
	Tl	203	51.3	4.1	**0.0091**	0.001	10.4	ug/L	6	Standard
	Tl	205	51.7	20.1	**0.0143**	0.004	29.9	ug/L	8	Standard
	Pb	206	11108.7	0.6	**3.7096**	0.155	4.2	ug/L	264	Standard
	Pb	207	8514.7	1.1	**3.1396**	0.156	5.0	ug/L	215	Standard
	Pb	208	31764.8	0.9	**3.3321**	0.126	3.8	ug/L	863	Standard
	U	238	10034.0	1.3	**3.1850**	0.113	3.6	ug/L	4	Standard
>	Bi	209	261287.2	4.1				ug/L	507917	Standard

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Na	23	160.0	3.1	**514.5538**	11.444	2.2	mg/L	0	Standard
Mg	24	585986.7	0.4	**800.4708**	15.531	1.9	mg/L	20	Standard
K	39	971.7	2.3	**3.2194**	0.058	1.8	mg/L	38	Standard
Ca	43	16440.6	3.3	**1365.4937**	68.666	5.0	mg/L	43	Standard
Fe	54	198977.0	1.6	**231.7924**	7.309	3.2	mg/L	103	Standard
Fe	57	57380.1	2.0	**254.3745**	9.169	3.6	mg/L	107	Standard
> **Sc-1**	45	31579.5	1.7				mg/L	24625	Standard
Cl	35	77613.3	4.9				ug/L	30925	Standard
Kr	83	4.0	43.3				ug/L	4	Standard
Br	81	380454.5	1.2				ug/L	397	Standard
P	31	39513.1	0.8				ug/L	19276	Standard
S	34	2401.9	4.5				ug/L	3042	Standard
Sr	88	18314.4	2.2				ug/L	65	Standard
C	12	1440.1	19.3				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	6036.2	7.1				mg/L	23	Standard
Ho-1	165	4804.1	1.9				mg/L	7	Standard
Er	166	4977.5	3.7				mg/L	13	Standard
I	127	705924.8	18.3				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		74.613	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		85.524	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		64.393
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		51.443
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	

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Se-1 77 Upper, S, EEE	Se-1	77
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1511105003
Sample Date/Time: Friday, November 20, 2015 11:11:41
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	46003.1	3.3				ug/L	49688	Standard
	Be	9	21.7	53.3	**0.0089**	0.016	177.8	ug/L	7	Standard
	Al	27	14452602.5	5.7	**229.7067**	5.587	2.4	ug/L	277	Standard
	Sc	45	30041.4	3.8				ug/L	24625	Standard
	Ti	47	307.7	46.8	**0.6867**	0.657	95.7	ug/L	198	Standard
	V	51	2644.2	34.0	**0.2940**	0.162	55.0	ug/L	1126	Standard
	Cr	52	8402.3	5.3	**0.4951**	0.065	13.1	ug/L	6071	Standard
	Cr	53	2528.5	17.9	**3.6578**	0.636	17.4	ug/L	332	Standard
	Mn	55	784816.9	46.4	**162.2228**	71.273	43.9	ug/L	876	Standard
	Co	59	1924.8	8.0	**0.3668**	0.021	5.7	ug/L	110	Standard
	Ni	60	2485.2	26.0	**1.6828**	0.437	26.0	ug/L	191	Standard
	Cu	65	998.7	20.9	**0.5314**	0.137	25.8	ug/L	281	Standard
	Zn	66	2256.2	16.2	**2.5978**	0.402	15.5	ug/L	249	Standard
>	**Ge**	72	303635.4	2.7				ug/L	297260	Standard
	As	75	1449.5	12.9	**1.7223**	0.174	10.1	ug/L	-66	Standard
	Se	82	132.8	18.0	**1.4738**	0.260	17.7	ug/L	13	Standard
	Se-1	77	198.7	20.9	**3.0765**	0.745	24.2	ug/L	48	Standard
>	**Ga**	71	51.7	48.7				mg/L	30	Standard
	Rb	85	13109.0	4.8				ug/L	12	Standard
	Y	89	302945.0	2.6				ug/L	310514	Standard
>	**Rh**	103	740.0	18.6				ug/L	10	Standard
	Mo	98	881.5	4.1	**0.5681**	0.024	4.3	ug/L	11	Standard
	Ag	107	115.3	10.3	**0.0039**	0.002	53.2	ug/L	99	Standard
	Cd	111	16.8	76.6	**0.0084**	0.007	89.0	mg/L	6	Standard
	Cd	114	42.6	68.3	**0.0085**	0.007	79.5	ug/L	6	Standard
>	**In**	115	447184.1	3.5				ug/L	501593	Standard
	Sn	118	401.7	14.6	**-0.0037**	0.012	312.5	ug/L	442	Standard
	Sb	123	158.3	8.7	**0.0323**	0.004	13.0	ug/L	53	Standard
	Ba	135	192070.4	0.6	**108.7069**	3.324	3.1	ug/L	34	Standard
	Ce	140	976.7	103.2				ug/L	73	Standard
>	**Tb**	159	883402.5	3.9				ug/L	924917	Standard
	Ho	165	45.0	77.8				ug/L	7	Standard
	Tl	203	280.3	11.0	**0.0360**	0.004	10.0	ug/L	6	Standard
	Tl	205	165.0	16.9	**0.0303**	0.005	17.4	ug/L	8	Standard
	Pb	206	386.7	28.5	**0.0299**	0.020	68.4	ug/L	264	Standard
	Pb	207	320.0	26.6	**0.0296**	0.017	58.9	ug/L	215	Standard
	Pb	208	1133.0	23.3	**0.0263**	0.015	57.7	ug/L	863	Standard
	U	238	51635.2	1.3	**9.6841**	0.237	2.4	ug/L	4	Standard
>	**Bi**	209	441708.0	1.8				ug/L	507917	Standard

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Na	23	6.7	43.3	**22.4491**	9.282	41.3	mg/L	0	Standard
Mg	24	16576.1	23.9	**23.6867**	5.113	21.6	mg/L	20	Standard
K	39	986.7	2.0	**3.4544**	0.207	6.0	mg/L	38	Standard
Ca	43	706.7	24.4	**55.5968**	13.605	24.5	mg/L	43	Standard
Fe	54	1540.5	103.2	**1.7111**	1.900	111.0	mg/L	103	Standard
Fe	57	710.0	63.9	**2.7292**	2.037	74.6	mg/L	107	Standard
> **Sc-1**	45	30041.4	3.8				mg/L	24625	Standard
Cl	35	30850.7	3.6				ug/L	30925	Standard
Kr	83	3.0	66.7				ug/L	4	Standard
Br	81	9406.4	24.3				ug/L	397	Standard
P	31	22097.8	4.9				ug/L	19276	Standard
S	34	3200.3	5.1				ug/L	3042	Standard
Sr	88	575.0	9.9				ug/L	65	Standard
C	12	486.7	6.3				mg/L	287	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	54.8	97.0				mg/L	23	Standard
Ho-1	165	45.0	77.8				mg/L	7	Standard
Er	166	40.0	114.6				mg/L	13	Standard
I	127	192741.6	6.5				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.584	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.145	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.153
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		86.965
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1511105003
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Method 6020 - Summary Report

Sample ID: L1511105005
Sample Date/Time: Friday, November 20, 2015 11:14:52
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	44896.5	4.2				ug/L	49688	Standard
	Be	9	18.3	68.6	**0.0048**	0.017	348.5	ug/L	7	Standard
	Al	27	13572057.1	0.8	**221.3579**	7.565	3.4	ug/L	277	Standard
	Sc	45	30524.1	5.9				ug/L	24625	Standard
	Ti	47	197.0	3.8	**0.1636**	0.052	31.9	ug/L	198	Standard
	V	51	1954.5	6.6	**0.1630**	0.021	12.7	ug/L	1126	Standard
	Cr	52	8206.9	2.6	**0.4621**	0.106	22.9	ug/L	6071	Standard
	Cr	53	1721.8	6.9	**2.3602**	0.303	12.8	ug/L	332	Standard
	Mn	55	469059.4	1.4	**97.9354**	4.749	4.8	ug/L	876	Standard
	Co	59	1732.4	0.3	**0.3293**	0.021	6.4	ug/L	110	Standard
	Ni	60	2022.1	1.6	**1.3475**	0.093	6.9	ug/L	191	Standard
	Cu	65	839.7	3.1	**0.4164**	0.040	9.7	ug/L	281	Standard
	Zn	66	2062.5	5.8	**2.3651**	0.218	9.2	ug/L	249	Standard
>	**Ge**	72	303068.4	6.3				ug/L	297260	Standard
	As	75	1193.7	6.3	**1.4336**	0.072	5.0	ug/L	-66	Standard
	Se	82	91.0	9.3	**0.9478**	0.036	3.8	ug/L	13	Standard
	Se-1	77	157.3	1.0	**2.2525**	0.170	7.5	ug/L	48	Standard
>	**Ga**	71	33.3	43.3				mg/L	30	Standard
	Rb	85	12551.9	2.5				ug/L	12	Standard
	Y	89	304469.9	4.8				ug/L	310514	Standard
>	**Rh**	103	700.0	6.1				ug/L	10	Standard
	Mo	98	886.3	3.8	**0.5884**	0.040	6.8	ug/L	11	Standard
	Ag	107	117.0	6.5	**0.0050**	0.001	28.2	ug/L	99	Standard
	Cd	111	10.2	9.7	**0.0047**	0.000	6.9	mg/L	6	Standard
	Cd	114	34.7	58.8	**0.0072**	0.006	79.3	ug/L	6	Standard
>	**In**	115	434551.2	4.9				ug/L	501593	Standard
	Sn	118	445.0	3.4	**0.0093**	0.008	90.8	ug/L	442	Standard
	Sb	123	208.5	9.1	**0.0452**	0.007	14.8	ug/L	53	Standard
	Ba	135	183670.9	0.3	**107.0587**	4.878	4.6	ug/L	34	Standard
	Ce	140	210.0	7.1				ug/L	73	Standard
>	**Tb**	159	866274.4	5.5				ug/L	924917	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	281.3	8.3	**0.0358**	0.001	2.8	ug/L	6	Standard
	Tl	205	208.3	6.9	**0.0390**	0.001	2.7	ug/L	8	Standard
	Pb	206	309.3	2.4	**0.0143**	0.003	23.1	ug/L	264	Standard
	Pb	207	253.3	2.9	**0.0147**	0.003	23.5	ug/L	215	Standard
	Pb	208	896.3	1.0	**0.0112**	0.003	23.4	ug/L	863	Standard
	U	238	49562.9	0.2	**9.2369**	0.513	5.5	ug/L	4	Standard
>	**Bi**	209	445344.2	5.7				ug/L	507917	Standard

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Na	23	5.0	100.0	**17.1943**	17.122	99.6	mg/L	0	Standard
Mg	24	13135.7	2.8	**18.5596**	1.003	5.4	mg/L	20	Standard
K	39	940.0	4.5	**3.2300**	0.251	7.8	mg/L	38	Standard
Ca	43	520.0	2.9	**38.8154**	3.031	7.8	mg/L	43	Standard
Fe	54	222.6	11.4	**0.1228**	0.034	27.6	mg/L	103	Standard
Fe	57	336.7	10.1	**0.9938**	0.197	19.8	mg/L	107	Standard
> **Sc-1**	45	30524.1	5.9				mg/L	24625	Standard
Cl	35	32257.0	0.6				ug/L	30925	Standard
Kr	83	2.7	86.6				ug/L	4	Standard
Br	81	6134.6	5.7				ug/L	397	Standard
P	31	20944.5	3.5				ug/L	19276	Standard
S	34	3428.7	2.7				ug/L	3042	Standard
Sr	88	548.3	16.9				ug/L	65	Standard
C	12	306.7	13.2				mg/L	287	Standard
N	14	13.3	43.3				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	29.8	32.7				mg/L	23	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	168777.1	3.1				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.357	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.954	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		86.634
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.680
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1511102401
Sample Date/Time: Friday, November 20, 2015 11:18:25
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	33705.9	6.4				ug/L	49688	Standard
	Be	9	70.0	18.9	**0.1078**	0.017	15.7	ug/L	7	Standard
	Al	27	16658000.2	0.4	**362.6009**	24.662	6.8	ug/L	277	Standard
	Sc	45	26780.3	2.6				ug/L	24625	Standard
	Ti	47	4447.3	1.3	**24.3904**	0.536	2.2	ug/L	198	Standard
	V	51	25962.9	0.7	**5.6945**	0.115	2.0	ug/L	1126	Standard
	Cr	52	30001.7	1.1	**6.0134**	0.059	1.0	ug/L	6071	Standard
	Cr	53	6229.6	2.4	**11.4464**	0.402	3.5	ug/L	332	Standard
	Mn	55	9614717.1	0.3	**2337.7880**	36.874	1.6	ug/L	876	Standard
	Co	59	6735.5	2.1	**1.5818**	0.054	3.4	ug/L	110	Standard
	Ni	60	17894.2	0.7	**15.5453**	0.320	2.1	ug/L	191	Standard
	Cu	65	3478.4	1.7	**2.8456**	0.083	2.9	ug/L	281	Standard
	Zn	66	11274.9	1.3	**16.6392**	0.288	1.7	ug/L	249	Standard
>	**Ge**	72	260285.2	1.3				ug/L	297260	Standard
	As	75	3394.4	1.2	**4.6240**	0.081	1.7	ug/L	-66	Standard
	Se	82	686.4	2.0	**9.9693**	0.266	2.7	ug/L	13	Standard
	Se-1	77	733.4	2.5	**16.6115**	0.662	4.0	ug/L	48	Standard
>	**Ga**	71	468.3	9.9				mg/L	30	Standard
	Rb	85	7318.4	3.6				ug/L	12	Standard
	Y	89	280105.5	0.8				ug/L	310514	Standard
>	**Rh**	103	3630.4	4.5				ug/L	10	Standard
	Mo	98	159.4	10.4	**0.1319**	0.014	10.3	ug/L	11	Standard
	Ag	107	221.0	5.0	**0.0363**	0.003	8.3	ug/L	99	Standard
	Cd	111	328.3	2.2	**0.2500**	0.006	2.5	mg/L	6	Standard
	Cd	114	830.9	3.9	**0.2553**	0.010	3.7	ug/L	6	Standard
>	**In**	115	358377.9	0.6				ug/L	501593	Standard
	Sn	118	341.7	19.3	**0.0019**	0.018	957.8	ug/L	442	Standard
	Sb	123	253.2	2.8	**0.0680**	0.002	3.2	ug/L	53	Standard
	Ba	135	58576.7	1.3	**41.3244**	0.414	1.0	ug/L	34	Standard
	Ce	140	25608.3	2.6				ug/L	73	Standard
>	**Tb**	159	724964.6	0.9				ug/L	924917	Standard
	Ho	165	1278.4	5.9				ug/L	7	Standard
	Tl	203	46.3	25.0	**0.0052**	0.002	38.7	ug/L	6	Standard
	Tl	205	28.3	73.5	**0.0036**	0.005	152.8	ug/L	8	Standard
	Pb	206	3044.0	0.9	**0.7284**	0.005	0.7	ug/L	264	Standard
	Pb	207	2349.8	2.6	**0.6204**	0.024	3.9	ug/L	215	Standard
	Pb	208	8517.2	1.6	**0.6374**	0.008	1.3	ug/L	863	Standard
	U	238	2338.8	2.0	**0.5612**	0.005	1.0	ug/L	4	Standard
>	**Bi**	209	346470.2	1.1				ug/L	507917	Standard

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Na	23	40.0	54.5	**151.7157**	82.952	54.7	mg/L	0	Standard
Mg	24	137708.0	0.5	**221.8357**	4.989	2.2	mg/L	20	Standard
K	39	398.3	5.9	**1.4570**	0.056	3.8	mg/L	38	Standard
Ca	43	5115.9	2.8	**497.2697**	24.753	5.0	mg/L	43	Standard
Fe	54	47460.0	1.1	**65.1093**	2.392	3.7	mg/L	103	Standard
Fe	57	13202.4	1.5	**68.5974**	0.801	1.2	mg/L	107	Standard
> **Sc-1**	45	26780.3	2.6				mg/L	24625	Standard
Cl	35	32712.6	1.2				ug/L	30925	Standard
Kr	83	4.0	90.1				ug/L	4	Standard
Br	81	55956.5	2.5				ug/L	397	Standard
P	31	14251.7	4.7				ug/L	19276	Standard
S	34	2888.6	7.9				ug/L	3042	Standard
Sr	88	3148.7	6.1				ug/L	65	Standard
C	12	456.7	13.2				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	1669.9	7.3				mg/L	23	Standard
Ho-1	165	1278.4	5.9				mg/L	7	Standard
Er	166	1326.7	12.4				mg/L	13	Standard
I	127	195347.3	12.4				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		67.835	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		87.561	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		71.448
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		68.214
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1511105006
Sample Date/Time: Friday, November 20, 2015 11:22:53
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	39033.6	2.0				ug/L	49688	Standard
	Be	9	20.0	86.6	**0.0110**	0.027	247.3	ug/L	7	Standard
	Al	27	7726847.3	0.7	**144.8425**	2.584	1.8	ug/L	277	Standard
	Sc	45	29695.7	2.4				ug/L	24625	Standard
	Ti	47	655.3	19.9	**2.3300**	0.607	26.0	ug/L	198	Standard
	V	51	3264.2	8.6	**0.4073**	0.059	14.4	ug/L	1126	Standard
	Cr	52	10152.7	2.4	**0.8237**	0.072	8.7	ug/L	6071	Standard
	Cr	53	1495.1	4.9	**1.9322**	0.141	7.3	ug/L	332	Standard
	Mn	55	122662.0	1.8	**24.9276**	0.416	1.7	ug/L	876	Standard
	Co	59	1940.5	3.4	**0.3638**	0.018	4.9	ug/L	110	Standard
	Ni	60	2597.9	4.0	**1.7424**	0.099	5.7	ug/L	191	Standard
	Cu	65	2123.8	2.8	**1.3571**	0.049	3.6	ug/L	281	Standard
	Zn	66	3174.3	1.5	**3.7174**	0.065	1.8	ug/L	249	Standard
>	**Ge**	72	308834.8	1.3				ug/L	297260	Standard
	As	75	303.7	0.8	**0.3963**	0.003	0.8	ug/L	-66	Standard
	Se	82	92.2	10.2	**0.9420**	0.103	11.0	ug/L	13	Standard
	Se-1	77	110.3	10.5	**1.2324**	0.210	17.0	ug/L	48	Standard
>	**Ga**	71	225.0	4.4				mg/L	30	Standard
	Rb	85	2180.2	3.8				ug/L	12	Standard
	Y	89	300891.0	2.3				ug/L	310514	Standard
>	**Rh**	103	145.0	26.0				ug/L	10	Standard
	Mo	98	255.9	9.0	**0.1726**	0.014	8.1	ug/L	11	Standard
	Ag	107	170.7	3.7	**0.0160**	0.002	11.7	ug/L	99	Standard
	Cd	111	90.4	16.4	**0.0554**	0.010	18.5	mg/L	6	Standard
	Cd	114	254.3	24.1	**0.0628**	0.015	24.4	ug/L	6	Standard
>	**In**	115	435712.9	2.6				ug/L	501593	Standard
	Sn	118	460.0	10.7	**0.0122**	0.011	93.2	ug/L	442	Standard
	Sb	123	164.3	2.4	**0.0346**	0.002	5.3	ug/L	53	Standard
	Ba	135	35268.7	0.5	**20.4610**	0.432	2.1	ug/L	34	Standard
	Ce	140	3178.7	5.7				ug/L	73	Standard
>	**Tb**	159	869617.7	1.0				ug/L	924917	Standard
	Ho	165	231.7	8.2				ug/L	7	Standard
	Tl	203	224.0	7.7	**0.0285**	0.002	8.3	ug/L	6	Standard
	Tl	205	143.3	22.2	**0.0262**	0.007	26.2	ug/L	8	Standard
	Pb	206	955.7	6.5	**0.1457**	0.011	7.8	ug/L	264	Standard
	Pb	207	791.0	4.3	**0.1355**	0.008	6.0	ug/L	215	Standard
	Pb	208	2795.8	1.7	**0.1327**	0.004	3.2	ug/L	863	Standard
	U	238	16633.8	1.1	**3.1518**	0.046	1.5	ug/L	4	Standard
>	**Bi**	209	437331.3	0.7				ug/L	507917	Standard

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Na	23	5.0	100.0	**17.2713**	17.155	99.3	mg/L	0	Standard
Mg	24	38336.8	1.7	**55.6817**	2.256	4.1	mg/L	20	Standard
K	39	185.0	28.2	**0.5030**	0.207	41.1	mg/L	38	Standard
Ca	43	321.7	17.9	**22.4642**	5.776	25.7	mg/L	43	Standard
Fe	54	185.9	4.2	**0.0843**	0.006	7.6	mg/L	103	Standard
Fe	57	236.7	15.9	**0.5576**	0.150	26.9	mg/L	107	Standard
Sc-1	45	29695.7	2.4				mg/L	24625	Standard
Cl	35	29467.3	3.1				ug/L	30925	Standard
Kr	83	5.3	65.8				ug/L	4	Standard
Br	81	5247.6	8.1				ug/L	397	Standard
P	31	20028.2	3.1				ug/L	19276	Standard
S	34	3165.3	4.4				ug/L	3042	Standard
Sr	88	118.3	19.1				ug/L	65	Standard
C	12	290.0	21.5				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	57.3				mg/L	3	Standard
Dy	164	266.9	19.1				mg/L	23	Standard
Ho-1	165	231.7	8.2				mg/L	7	Standard
Er	166	343.3	6.1				mg/L	13	Standard
I	127	63630.1	3.1				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		78.557	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.894	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		86.866
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		86.103
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1511105014
Sample Date/Time: Friday, November 20, 2015 11:26:04
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	41299.6	2.7				ug/L	49688	Standard
	Be	9	13.3	57.3	**-0.0003**	0.012	4174.7	ug/L	7	Standard
	Al	27	14902854.7	2.8	**264.0253**	6.053	2.3	ug/L	277	Standard
	Sc	45	30669.4	2.7				ug/L	24625	Standard
	Ti	47	312.0	2.7	**0.6757**	0.021	3.1	ug/L	198	Standard
	V	51	1654.8	2.8	**0.0944**	0.005	5.4	ug/L	1126	Standard
	Cr	52	7228.4	2.4	**0.2098**	0.020	9.5	ug/L	6071	Standard
	Cr	53	1690.1	7.7	**2.2127**	0.155	7.0	ug/L	332	Standard
	Mn	55	414542.7	1.3	**83.8160**	3.361	4.0	ug/L	876	Standard
	Co	59	1002.4	0.7	**0.1727**	0.007	4.1	ug/L	110	Standard
	Ni	60	2063.8	3.7	**1.3289**	0.061	4.6	ug/L	191	Standard
	Cu	65	785.7	2.4	**0.3563**	0.011	3.0	ug/L	281	Standard
	Zn	66	1766.8	1.4	**1.9097**	0.057	3.0	ug/L	249	Standard
>	**Ge**	72	312512.2	3.7				ug/L	297260	Standard
	As	75	7210.8	1.0	**8.1462**	0.217	2.7	ug/L	-66	Standard
	Se	82	58.1	12.1	**0.5076**	0.075	14.8	ug/L	13	Standard
	Se-1	77	204.7	3.3	**3.0985**	0.231	7.4	ug/L	48	Standard
>	**Ga**	71	30.0	60.1				mg/L	30	Standard
	Rb	85	2920.3	2.8				ug/L	12	Standard
	Y	89	300464.4	2.4				ug/L	310514	Standard
>	**Rh**	103	160.0	14.3				ug/L	10	Standard
	Mo	98	806.0	2.2	**0.5353**	0.018	3.5	ug/L	11	Standard
	Ag	107	146.0	26.0	**0.0111**	0.008	74.1	ug/L	99	Standard
	Cd	111	25.4	129.9	**0.0144**	0.021	146.1	mg/L	6	Standard
	Cd	114	45.8	161.8	**0.0099**	0.019	191.4	ug/L	6	Standard
>	**In**	115	434094.4	1.9				ug/L	501593	Standard
	Sn	118	468.3	13.3	**0.0146**	0.015	104.5	ug/L	442	Standard
	Sb	123	154.8	27.7	**0.0326**	0.010	31.9	ug/L	53	Standard
	Ba	135	424590.6	0.9	**247.4441**	2.610	1.1	ug/L	34	Standard
	Ce	140	378.3	13.2				ug/L	73	Standard
>	**Tb**	159	874835.9	2.1				ug/L	924917	Standard
	Ho	165	26.7	39.0				ug/L	7	Standard
	Tl	203	231.3	38.7	**0.0286**	0.012	43.4	ug/L	6	Standard
	Tl	205	126.7	32.1	**0.0218**	0.008	36.5	ug/L	8	Standard
	Pb	206	336.0	14.2	**0.0187**	0.009	50.6	ug/L	264	Standard
	Pb	207	275.3	12.2	**0.0187**	0.008	41.5	ug/L	215	Standard
	Pb	208	970.0	6.4	**0.0150**	0.004	24.4	ug/L	863	Standard
	U	238	73.3	14.3	**0.0158**	0.002	11.8	ug/L	4	Standard
>	**Bi**	209	450922.3	2.7				ug/L	507917	Standard

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Na	23	3.3	86.6	**11.1644**	9.671	86.6	mg/L	0	Standard
Mg	24	9251.2	3.3	**12.9736**	0.203	1.6	mg/L	20	Standard
K	39	206.7	21.8	**0.5539**	0.144	26.0	mg/L	38	Standard
Ca	43	636.7	14.8	**48.4805**	7.555	15.6	mg/L	43	Standard
Fe	54	2667.8	1.7	**3.0567**	0.115	3.8	mg/L	103	Standard
Fe	57	986.7	10.7	**3.9629**	0.575	14.5	mg/L	107	Standard
> **Sc-1**	45	30669.4	2.7				mg/L	24625	Standard
Cl	35	28631.7	1.5				ug/L	30925	Standard
Kr	83	4.7	49.5				ug/L	4	Standard
Br	81	3337.0	4.0				ug/L	397	Standard
P	31	20951.2	3.2				ug/L	19276	Standard
S	34	3372.0	3.7				ug/L	3042	Standard
Sr	88	156.7	1.8				ug/L	65	Standard
C	12	260.0	16.8				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	65.5				mg/L	3	Standard
Dy	164	31.7	34.8				mg/L	23	Standard
Ho-1	165	26.7	39.0				mg/L	7	Standard
Er	166	33.3	69.3				mg/L	13	Standard
I	127	20530.6	2.8				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		83.118	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.131	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		86.543
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		88.779
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1511094402
Sample Date/Time: Friday, November 20, 2015 11:29:17
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	38898.3	4.0				ug/L	49688	Standard
	Be	9	15.0	88.2	**0.0036**	0.022	595.2	ug/L	7	Standard
	Al	27	6201.4	44.2	**0.1062**	0.048	45.4	ug/L	277	Standard
	Sc	45	30378.8	4.1				ug/L	24625	Standard
	Ti	47	100.7	10.6	**-0.3140**	0.049	15.7	ug/L	198	Standard
	V	51	2577.3	6.3	**0.2770**	0.031	11.1	ug/L	1126	Standard
	Cr	52	7777.0	2.2	**0.3450**	0.058	16.8	ug/L	6071	Standard
	Cr	53	825.0	12.1	**0.8537**	0.137	16.0	ug/L	332	Standard
	Mn	55	1208.7	7.3	**0.0401**	0.017	43.2	ug/L	876	Standard
	Co	59	179.3	10.5	**0.0094**	0.004	47.1	ug/L	110	Standard
	Ni	60	186.3	5.2	**-0.0439**	0.006	13.3	ug/L	191	Standard
	Cu	65	5348.3	4.0	**3.7656**	0.090	2.4	ug/L	281	Standard
	Zn	66	2544.5	1.1	**2.9318**	0.040	1.4	ug/L	249	Standard
>	**Ge**	72	307714.5	2.1				ug/L	297260	Standard
	As	75	0.3	8855.0	**0.0515**	0.027	51.6	ug/L	-66	Standard
	Se	82	23.2	39.6	**0.0803**	0.113	140.5	ug/L	13	Standard
	Se-1	77	79.0	6.3	**0.6055**	0.088	14.5	ug/L	48	Standard
>	**Ga**	71	31.7	50.8				mg/L	30	Standard
	Rb	85	148.3	30.6				ug/L	12	Standard
	Y	89	294478.6	2.5				ug/L	310514	Standard
>	**Rh**	103	68.3	11.2				ug/L	10	Standard
	Mo	98	329.0	9.3	**0.2215**	0.023	10.4	ug/L	11	Standard
	Ag	107	168.3	8.1	**0.0156**	0.003	18.2	ug/L	99	Standard
	Cd	111	6.7	59.9	**0.0025**	0.003	105.0	mg/L	6	Standard
	Cd	114	7.7	195.0	**0.0001**	0.004	5460.9	ug/L	6	Standard
>	**In**	115	434056.9	1.5				ug/L	501593	Standard
	Sn	118	460.0	2.9	**0.0126**	0.002	17.0	ug/L	442	Standard
	Sb	123	142.5	14.7	**0.0296**	0.005	15.8	ug/L	53	Standard
	Ba	135	638.7	12.3	**0.3494**	0.052	14.8	ug/L	34	Standard
	Ce	140	15.0	33.3				ug/L	73	Standard
>	**Tb**	159	878681.2	1.9				ug/L	924917	Standard
	Ho	165	11.7	49.5				ug/L	7	Standard
	Tl	203	40.0	27.0	**0.0025**	0.002	64.7	ug/L	6	Standard
	Tl	205	33.3	45.8	**0.0029**	0.003	112.6	ug/L	8	Standard
	Pb	206	267.0	5.0	**0.0052**	0.003	60.2	ug/L	264	Standard
	Pb	207	229.7	0.9	**0.0088**	0.001	13.4	ug/L	215	Standard
	Pb	208	819.0	4.8	**0.0057**	0.004	63.9	ug/L	863	Standard
	U	238	2.7	21.7	**0.0028**	0.000	4.1	ug/L	4	Standard
>	**Bi**	209	451336.3	2.5				ug/L	507917	Standard

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Na	23	1.7	173.2	**5.3749**	9.301	173.0	mg/L	0	Standard
Mg	24	166.7	22.5	**0.2022**	0.064	31.6	mg/L	20	Standard
K	39	106.7	7.2	**0.1985**	0.013	6.8	mg/L	38	Standard
Ca	43	71.7	40.3	**0.0571**	2.463	4314.6	mg/L	43	Standard
Fe	54	91.0	30.9	**-0.0357**	0.033	93.6	mg/L	103	Standard
Fe	57	170.0	12.8	**0.2304**	0.128	55.7	mg/L	107	Standard
> **Sc-1**	45	30378.8	4.1				mg/L	24625	Standard
Cl	35	30630.3	2.2				ug/L	30925	Standard
Kr	83	5.0	40.0				ug/L	4	Standard
Br	81	733.4	9.7				ug/L	397	Standard
P	31	18810.0	2.7				ug/L	19276	Standard
S	34	3588.8	3.7				ug/L	3042	Standard
Sr	88	116.7	21.1				ug/L	65	Standard
C	12	176.7	14.2				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	3	Standard
Dy	164	9.2	111.3				mg/L	23	Standard
Ho-1	165	11.7	49.5				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	13	Standard
I	127	9899.9	3.1				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		78.285	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.517	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		86.536
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		88.860
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, November 20, 2015 11:32:30
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	41119.3	7.7				ug/L	49688	Standard
	Be	9	36223.3	1.1	**54.8792**	4.078	7.4	ug/L	7	Standard
	Al	27	3674308.7	2.7	**65.5578**	4.096	6.2	ug/L	277	Standard
	Sc	45	29448.6	0.9				ug/L	24625	Standard
	Ti	47	22896.0	1.7	**107.0825**	1.302	1.2	ug/L	198	Standard
	V	51	261385.3	0.7	**49.3205**	0.766	1.6	ug/L	1126	Standard
	Cr	52	266346.7	0.8	**52.3945**	0.893	1.7	ug/L	6071	Standard
	Cr	53	32889.0	0.7	**51.9110**	1.106	2.1	ug/L	332	Standard
	Mn	55	226158.5	1.0	**45.5489**	0.587	1.3	ug/L	876	Standard
	Co	59	240575.0	0.9	**47.7727**	0.692	1.4	ug/L	110	Standard
	Ni	60	69472.6	0.4	**50.6269**	1.086	2.1	ug/L	191	Standard
	Cu	65	70793.4	1.3	**51.6972**	0.704	1.4	ug/L	281	Standard
	Zn	66	41158.2	0.8	**51.1580**	0.740	1.4	ug/L	249	Standard
>	Ge	72	312846.2	2.2				ug/L	297260	Standard
	As	75	44416.9	1.5	**49.8372**	0.953	1.9	ug/L	-66	Standard
	Se	82	3803.7	0.4	**46.7262**	0.875	1.9	ug/L	13	Standard
	Se-1	77	2654.2	1.6	**52.0226**	0.994	1.9	ug/L	48	Standard
>	Ga	71	26.7	43.3				mg/L	30	Standard
	Rb	85	611.7	5.6				ug/L	12	Standard
	Y	89	296610.7	1.7				ug/L	310514	Standard
>	Rh	103	81.7	3.5				ug/L	10	Standard
	Mo	98	182628.0	1.0	**118.3200**	1.719	1.5	ug/L	11	Standard
	Ag	107	279900.1	0.5	**57.1452**	0.278	0.5	ug/L	99	Standard
	Cd	111	81348.8	0.1	**50.7033**	0.521	1.0	mg/L	6	Standard
	Cd	114	199565.4	2.8	**50.2031**	0.992	2.0	ug/L	6	Standard
>	In	115	440844.0	0.9				ug/L	501593	Standard
	Sn	118	229721.9	4.1	**52.0766**	2.072	4.0	ug/L	442	Standard
	Sb	123	218297.9	1.3	**50.2784**	0.963	1.9	ug/L	53	Standard
	Ba	135	99244.0	1.3	**56.9288**	0.804	1.4	ug/L	34	Standard
	Ce	140	81.7	18.7				ug/L	73	Standard
>	Tb	159	888692.4	1.6				ug/L	924917	Standard
	Ho	165	16.7	75.5				ug/L	7	Standard
	Tl	203	381063.9	0.6	**51.1494**	0.357	0.7	ug/L	6	Standard
	Tl	205	238306.8	2.3	**47.7658**	1.080	2.3	ug/L	8	Standard
	Pb	206	265911.1	0.5	**51.1934**	0.372	0.7	ug/L	264	Standard
	Pb	207	239738.1	0.4	**50.9748**	0.147	0.3	ug/L	215	Standard
	Pb	208	830606.5	0.6	**50.2755**	0.153	0.3	ug/L	863	Standard
	U	238	265019.9	1.1	**47.9124**	0.621	1.3	ug/L	4	Standard
>	Bi	209	458030.8	0.2				ug/L	507917	Standard

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Na	23	1.7	173.2	**5.7974**	10.033	173.1	mg/L	0	Standard
Mg	24	3050.3	6.9	**4.4299**	0.268	6.0	mg/L	20	Standard
K	39	2143.5	4.6	**7.8749**	0.342	4.3	mg/L	38	Standard
Ca	43	161.7	20.6	**8.3077**	3.006	36.2	mg/L	43	Standard
Fe	54	3064.7	9.0	**3.6842**	0.354	9.6	mg/L	103	Standard
Fe	57	1013.4	10.6	**4.2714**	0.546	12.8	mg/L	107	Standard
> **Sc-1**	45	29448.6	0.9				mg/L	24625	Standard
Cl	35	28572.9	1.2				ug/L	30925	Standard
Kr	83	4.3	70.5				ug/L	4	Standard
Br	81	653.3	14.5				ug/L	397	Standard
P	31	20710.8	1.4				ug/L	19276	Standard
S	34	3720.5	2.4				ug/L	3042	Standard
Sr	88	101.7	12.4				ug/L	65	Standard
C	12	196.7	17.9				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	8.9	11.2				mg/L	23	Standard
Ho-1	165	16.7	75.5				mg/L	7	Standard
Er	166	23.3	89.2				mg/L	13	Standard
I	127	8232.2	1.2				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	109.758		
Al	27	131.116		
Sc	45			
Ti	47	107.083		
V	51	98.641		
Cr	52	104.789		
Cr	53			
Mn	55	91.098		
Co	59	95.545		
Ni	60	101.254		
Cu	65	103.394		
Zn	66	102.316		
> Ge	72		105.243	
As	75	99.674		
Se	82	93.452		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	118.320		
Ag	107	114.290		
Cd	111	101.407		
Cd	114			
> In	115			87.889
Sn	118	104.153		
Sb	123	100.557		
Ba	135	113.858		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	102.299		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.551		
U	238	95.825		
> Bi	209			90.178
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	
QC Std 6	Mo	98	
QC Std 6	Ag	107	

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QC Std 6	Ba	135

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, November 20, 2015 11:35:41
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	38978.4	3.3				ug/L	49688	Standard
	Be	9	18.3	15.7	**0.0088**	0.005	53.3	ug/L	7	Standard
	Al	27	1723.5	62.2	**0.0227**	0.020	88.9	ug/L	277	Standard
	Sc	45	28864.1	1.2				ug/L	24625	Standard
	Ti	47	100.7	1.5	**-0.3070**	0.010	3.2	ug/L	198	Standard
	V	51	1053.1	8.7	**-0.0137**	0.020	142.8	ug/L	1126	Standard
	Cr	52	6084.9	4.6	**0.0157**	0.048	309.2	ug/L	6071	Standard
	Cr	53	553.3	16.6	**0.4274**	0.143	33.4	ug/L	332	Standard
	Mn	55	993.4	10.8	**-0.0014**	0.020	1428.0	ug/L	876	Standard
	Co	59	221.0	13.4	**0.0184**	0.006	30.4	ug/L	110	Standard
	Ni	60	188.0	18.1	**-0.0408**	0.024	59.6	ug/L	191	Standard
	Cu	65	343.7	5.9	**0.0392**	0.013	32.8	ug/L	281	Standard
	Zn	66	355.3	1.1	**0.1556**	0.009	5.8	ug/L	249	Standard
>	**Ge**	72	303347.4	1.0				ug/L	297260	Standard
	As	75	-9.6	114.2	**0.0404**	0.013	31.4	ug/L	-66	Standard
	Se	82	16.8	18.5	**0.0037**	0.040	1066.5	ug/L	13	Standard
	Se-1	77	66.0	1.5	**0.3614**	0.034	9.4	ug/L	48	Standard
>	**Ga**	71	23.3	32.7				mg/L	30	Standard
	Rb	85	26.7	43.3				ug/L	12	Standard
	Y	89	293212.9	2.6				ug/L	310514	Standard
>	**Rh**	103	83.3	28.4				ug/L	10	Standard
	Mo	98	260.8	23.9	**0.1793**	0.043	23.9	ug/L	11	Standard
	Ag	107	218.0	26.8	**0.0267**	0.013	47.2	ug/L	99	Standard
	Cd	111	23.5	18.1	**0.0134**	0.003	21.3	mg/L	6	Standard
	Cd	114	48.5	47.0	**0.0108**	0.006	56.0	ug/L	6	Standard
>	**In**	115	427418.9	0.9				ug/L	501593	Standard
	Sn	118	553.3	32.5	**0.0363**	0.043	118.9	ug/L	442	Standard
	Sb	123	155.7	56.0	**0.0334**	0.021	63.1	ug/L	53	Standard
	Ba	135	72.0	30.3	**0.0193**	0.013	68.6	ug/L	34	Standard
	Ce	140	21.7	53.3				ug/L	73	Standard
>	**Tb**	159	854712.5	2.8				ug/L	924917	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	106.3	80.4	**0.0118**	0.012	101.5	ug/L	6	Standard
	Tl	205	68.3	36.8	**0.0103**	0.005	52.2	ug/L	8	Standard
	Pb	206	311.0	24.6	**0.0148**	0.016	107.0	ug/L	264	Standard
	Pb	207	271.0	23.1	**0.0187**	0.014	76.6	ug/L	215	Standard
	Pb	208	980.7	17.2	**0.0166**	0.011	67.1	ug/L	863	Standard
	U	238	56.7	84.6	**0.0129**	0.009	70.2	ug/L	4	Standard
>	**Bi**	209	444259.5	1.4				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	41.7	25.0	**0.0263**	0.016	61.7	mg/L	20	Standard
K	39	65.0	13.3	**0.0592**	0.034	56.8	mg/L	38	Standard
Ca	43	53.3	14.3	**-1.2892**	0.660	51.2	mg/L	43	Standard
Fe	54	122.1	36.1	**0.0092**	0.054	590.0	mg/L	103	Standard
Fe	57	130.0	17.6	**0.0749**	0.120	159.6	mg/L	107	Standard
> **Sc-1**	45	28864.1	1.2				mg/L	24625	Standard
Cl	35	27341.3	2.7				ug/L	30925	Standard
Kr	83	3.0	57.7				ug/L	4	Standard
Br	81	540.0	3.7				ug/L	397	Standard
P	31	19399.2	11.4				ug/L	19276	Standard
S	34	3550.4	3.1				ug/L	3042	Standard
Sr	88	88.3	3.3				ug/L	65	Standard
C	12	150.0	52.9				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	8.9	196.7				mg/L	23	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	23.3	65.5				mg/L	13	Standard
I	127	7690.3	5.0				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.048	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		85.212
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.467
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1511105016
Sample Date/Time: Friday, November 20, 2015 11:40:56
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	41526.9	4.5				ug/L	49688	Standard
	Be	9	23.3	24.7	**0.0142**	0.007	48.5	ug/L	7	Standard
	Al	27	20485526.0	1.6	**361.2247**	11.886	3.3	ug/L	277	Standard
	Sc	45	31841.8	3.4				ug/L	24625	Standard
	Ti	47	180.0	3.5	**0.0212**	0.009	40.9	ug/L	198	Standard
	V	51	2003.4	5.8	**0.1461**	0.010	6.6	ug/L	1126	Standard
	Cr	52	11523.4	1.7	**0.9895**	0.042	4.2	ug/L	6071	Standard
	Cr	53	1850.1	19.9	**2.3522**	0.512	21.8	ug/L	332	Standard
	Mn	55	834514.7	2.4	**162.7010**	9.339	5.7	ug/L	876	Standard
	Co	59	1835.4	5.1	**0.3249**	0.024	7.5	ug/L	110	Standard
	Ni	60	279843.4	1.6	**197.1896**	8.326	4.2	ug/L	191	Standard
	Cu	65	942.0	2.3	**0.4455**	0.024	5.3	ug/L	281	Standard
	Zn	66	4352.6	2.4	**4.9482**	0.301	6.1	ug/L	249	Standard
>	**Ge**	72	324596.8	3.5				ug/L	297260	Standard
	As	75	588.0	8.4	**0.6858**	0.032	4.7	ug/L	-66	Standard
	Se	82	277.5	6.1	**3.0890**	0.137	4.4	ug/L	13	Standard
	Se-1	77	161.0	15.1	**2.0933**	0.380	18.1	ug/L	48	Standard
>	**Ga**	71	48.3	29.9				mg/L	30	Standard
	Rb	85	953.4	2.0				ug/L	12	Standard
	Y	89	311742.1	2.2				ug/L	310514	Standard
>	**Rh**	103	126.7	24.1				ug/L	10	Standard
	Mo	98	1292.9	2.6	**0.8249**	0.037	4.5	ug/L	11	Standard
	Ag	107	122.0	13.7	**0.0051**	0.004	71.8	ug/L	99	Standard
	Cd	111	28.9	14.0	**0.0158**	0.002	13.4	mg/L	6	Standard
	Cd	114	56.6	11.0	**0.0121**	0.001	10.3	ug/L	6	Standard
>	**In**	115	450536.7	2.2				ug/L	501593	Standard
	Sn	118	560.0	12.0	**0.0308**	0.014	44.1	ug/L	442	Standard
	Sb	123	293.2	3.4	**0.0624**	0.003	4.8	ug/L	53	Standard
	Ba	135	71356.0	1.9	**40.0618**	1.479	3.7	ug/L	34	Standard
	Ce	140	885.0	2.0				ug/L	73	Standard
>	**Tb**	159	916396.5	1.8				ug/L	924917	Standard
	Ho	165	33.3	45.8				ug/L	7	Standard
	Tl	203	247.7	9.4	**0.0302**	0.004	12.3	ug/L	6	Standard
	Tl	205	131.7	9.6	**0.0224**	0.003	12.0	ug/L	8	Standard
	Pb	206	312.0	3.6	**0.0128**	0.003	24.6	ug/L	264	Standard
	Pb	207	267.3	1.4	**0.0158**	0.002	10.5	ug/L	215	Standard
	Pb	208	1014.0	8.7	**0.0165**	0.006	36.7	ug/L	863	Standard
	U	238	16932.8	1.1	**3.0520**	0.081	2.7	ug/L	4	Standard
>	**Bi**	209	459864.3	1.7				ug/L	507917	Standard

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Na	23	8.3	124.9	**26.1876**	32.093	122.6	mg/L	0	Standard
Mg	24	17633.6	2.2	**23.8778**	1.289	5.4	mg/L	20	Standard
K	39	163.3	23.2	**0.3788**	0.134	35.4	mg/L	38	Standard
Ca	43	605.0	5.4	**43.9820**	4.450	10.1	mg/L	43	Standard
Fe	54	119.2	8.5	**-0.0079**	0.016	198.5	mg/L	103	Standard
Fe	57	265.0	12.4	**0.6123**	0.173	28.2	mg/L	107	Standard
> **Sc-1**	45	31841.8	3.4				mg/L	24625	Standard
Cl	35	34487.3	4.6				ug/L	30925	Standard
Kr	83	4.3	26.6				ug/L	4	Standard
Br	81	18661.5	2.3				ug/L	397	Standard
P	31	21602.1	3.2				ug/L	19276	Standard
S	34	3493.7	3.9				ug/L	3042	Standard
Sr	88	110.0	4.5				ug/L	65	Standard
C	12	280.0	9.4				mg/L	287	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	21.7	105.1				mg/L	23	Standard
Ho-1	165	33.3	45.8				mg/L	7	Standard
Er	166	33.3	62.5				mg/L	13	Standard
I	127	29993.0	1.9				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		83.575	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.196	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	89.821	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	90.539	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	

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Method 6020 - Summary Report

Sample ID: L1511105018
Sample Date/Time: Friday, November 20, 2015 11:44:07
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	43308.5	3.0				ug/L	49688	Standard
	Be	9	10.0	86.6	**-0.0060**	0.013	207.7	ug/L	7	Standard
	Al	27	14694573.4	1.6	**248.3496**	7.699	3.1	ug/L	277	Standard
	Sc	45	31930.3	2.0				ug/L	24625	Standard
	Ti	47	306.3	10.7	**0.6020**	0.104	17.2	ug/L	198	Standard
	V	51	1822.3	7.4	**0.1152**	0.013	11.1	ug/L	1126	Standard
	Cr	52	8228.9	5.7	**0.3591**	0.038	10.6	ug/L	6071	Standard
	Cr	53	2135.2	3.7	**2.8228**	0.213	7.6	ug/L	332	Standard
	Mn	55	808081.6	0.8	**158.5484**	6.790	4.3	ug/L	876	Standard
	Co	59	1543.7	3.0	**0.2707**	0.003	1.1	ug/L	110	Standard
	Ni	60	3009.6	13.0	**1.9486**	0.210	10.8	ug/L	191	Standard
	Cu	65	997.7	2.7	**0.4898**	0.033	6.7	ug/L	281	Standard
	Zn	66	2701.9	1.3	**2.9768**	0.111	3.7	ug/L	249	Standard
>	**Ge**	72	322453.3	3.6				ug/L	297260	Standard
	As	75	5483.7	1.4	**6.0209**	0.301	5.0	ug/L	-66	Standard
	Se	82	134.4	2.8	**1.3992**	0.016	1.2	ug/L	13	Standard
	Se-1	77	206.0	7.2	**2.9911**	0.186	6.2	ug/L	48	Standard
>	**Ga**	71	40.0	45.1				mg/L	30	Standard
	Rb	85	4110.6	4.6				ug/L	12	Standard
	Y	89	312397.7	2.8				ug/L	310514	Standard
>	**Rh**	103	168.3	15.2				ug/L	10	Standard
	Mo	98	657.8	1.9	**0.4185**	0.008	1.9	ug/L	11	Standard
	Ag	107	105.0	11.7	**0.0015**	0.002	133.0	ug/L	99	Standard
	Cd	111	30.7	21.2	**0.0168**	0.004	22.5	mg/L	6	Standard
	Cd	114	88.7	15.0	**0.0199**	0.004	18.6	ug/L	6	Standard
>	**In**	115	454221.2	2.4				ug/L	501593	Standard
	Sn	118	670.0	34.6	**0.0549**	0.055	100.1	ug/L	442	Standard
	Sb	123	249.0	3.7	**0.0520**	0.003	6.6	ug/L	53	Standard
	Ba	135	467529.0	1.7	**260.5270**	10.618	4.1	ug/L	34	Standard
	Ce	140	595.0	4.7				ug/L	73	Standard
>	**Tb**	159	919393.3	2.7				ug/L	924917	Standard
	Ho	165	28.3	27.0				ug/L	7	Standard
	Tl	203	201.7	7.5	**0.0233**	0.003	12.5	ug/L	6	Standard
	Tl	205	125.0	6.9	**0.0204**	0.001	6.8	ug/L	8	Standard
	Pb	206	398.7	4.7	**0.0274**	0.001	5.1	ug/L	264	Standard
	Pb	207	318.7	2.4	**0.0250**	0.004	14.1	ug/L	215	Standard
	Pb	208	1159.7	3.8	**0.0235**	0.004	18.9	ug/L	863	Standard
	U	238	269.0	3.5	**0.0495**	0.003	5.8	ug/L	4	Standard
>	**Bi**	209	472273.5	3.4				ug/L	507917	Standard

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Na	23	5.0	0.0	**15.9133**	0.318	2.0	mg/L	0	Standard
Mg	24	15209.3	1.0	**20.5132**	0.409	2.0	mg/L	20	Standard
K	39	218.3	18.7	**0.5685**	0.151	26.5	mg/L	38	Standard
Ca	43	730.0	5.5	**54.1035**	4.297	7.9	mg/L	43	Standard
Fe	54	2169.1	3.1	**2.3554**	0.125	5.3	mg/L	103	Standard
Fe	57	875.0	10.0	**3.2910**	0.447	13.6	mg/L	107	Standard
> **Sc-1**	45	31930.3	2.0				mg/L	24625	Standard
Cl	35	33080.1	1.3				ug/L	30925	Standard
Kr	83	4.0	25.0				ug/L	4	Standard
Br	81	9352.9	2.3				ug/L	397	Standard
P	31	22281.4	1.6				ug/L	19276	Standard
S	34	3425.4	3.2				ug/L	3042	Standard
Sr	88	145.0	27.6				ug/L	65	Standard
C	12	326.7	10.8				mg/L	287	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	58.2	43.3				mg/L	23	Standard
Ho-1	165	28.3	27.0				mg/L	7	Standard
Er	166	36.7	110.2				mg/L	13	Standard
I	127	104269.8	9.7				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		87.161	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.475	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.556
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.982
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1511106613 WG547610-02
Sample Date/Time: Friday, November 20, 2015 11:47:18
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	41124.1	2.2				ug/L	49688	Standard
	Be	9	60.0	30.0	**0.0698**	0.026	36.7	ug/L	7	Standard
	Al	27	2931183.1	6.1	**52.1196**	2.498	4.8	ug/L	277	Standard
	Sc	45	29139.7	2.6				ug/L	24625	Standard
	Ti	47	235.7	12.1	**0.3399**	0.155	45.6	ug/L	198	Standard
	V	51	1802.0	7.2	**0.1291**	0.020	15.9	ug/L	1126	Standard
	Cr	52	8457.7	1.5	**0.4925**	0.036	7.4	ug/L	6071	Standard
	Cr	53	885.0	11.0	**0.9610**	0.175	18.2	ug/L	332	Standard
	Mn	55	712274.7	3.0	**147.0180**	4.699	3.2	ug/L	876	Standard
	Co	59	13275.1	0.9	**2.6678**	0.042	1.6	ug/L	110	Standard
	Ni	60	6037.2	1.2	**4.3282**	0.100	2.3	ug/L	191	Standard
	Cu	65	1392.7	0.8	**0.8230**	0.023	2.8	ug/L	281	Standard
	Zn	66	6821.9	2.2	**8.4118**	0.251	3.0	ug/L	249	Standard
>	**Ge**	72	306223.7	2.0				ug/L	297260	Standard
	As	75	81.0	49.6	**0.1436**	0.044	30.8	ug/L	-66	Standard
	Se	82	37.3	15.6	**0.2605**	0.068	26.1	ug/L	13	Standard
	Se-1	77	74.3	16.9	**0.5154**	0.227	44.1	ug/L	48	Standard
>	**Ga**	71	55.0	24.1				mg/L	30	Standard
	Rb	85	7723.6	4.1				ug/L	12	Standard
	Y	89	292776.9	1.2				ug/L	310514	Standard
>	**Rh**	103	120.0	14.4				ug/L	10	Standard
	Mo	98	157.7	5.7	**0.1081**	0.007	6.3	ug/L	11	Standard
	Ag	107	117.7	10.1	**0.0050**	0.003	52.5	ug/L	99	Standard
	Cd	111	74.6	5.8	**0.0453**	0.003	6.4	mg/L	6	Standard
	Cd	114	189.1	31.7	**0.0461**	0.015	32.3	ug/L	6	Standard
>	**In**	115	436169.0	0.9				ug/L	501593	Standard
	Sn	118	530.0	12.3	**0.0282**	0.016	56.8	ug/L	442	Standard
	Sb	123	186.7	4.0	**0.0397**	0.002	4.0	ug/L	53	Standard
	Ba	135	12486.9	17.8	**7.2134**	1.239	17.2	ug/L	34	Standard
	Ce	140	3575.4	1.0				ug/L	73	Standard
>	**Tb**	159	884757.8	2.1				ug/L	924917	Standard
	Ho	165	396.7	7.7				ug/L	7	Standard
	Tl	203	123.3	19.5	**0.0137**	0.003	24.0	ug/L	6	Standard
	Tl	205	75.0	23.1	**0.0112**	0.003	30.1	ug/L	8	Standard
	Pb	206	646.7	6.6	**0.0781**	0.008	10.6	ug/L	264	Standard
	Pb	207	517.0	3.3	**0.0697**	0.004	6.0	ug/L	215	Standard
	Pb	208	1896.0	1.1	**0.0707**	0.002	2.4	ug/L	863	Standard
	U	238	156.0	4.0	**0.0306**	0.001	3.4	ug/L	4	Standard
>	**Bi**	209	455796.7	0.7				ug/L	507917	Standard

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Na	23	3.3	173.2	**11.5681**	20.028	173.1	mg/L	0	Standard
Mg	24	1495.1	7.8	**2.1773**	0.169	7.8	mg/L	20	Standard
K	39	386.7	10.4	**1.2800**	0.145	11.3	mg/L	38	Standard
Ca	43	258.3	27.2	**17.0936**	5.772	33.8	mg/L	43	Standard
Fe	54	147.5	15.4	**0.0403**	0.028	70.1	mg/L	103	Standard
Fe	57	216.7	13.5	**0.4855**	0.142	29.3	mg/L	107	Standard
> **Sc-1**	45	29139.7	2.6				mg/L	24625	Standard
Cl	35	34278.7	2.5				ug/L	30925	Standard
Kr	83	7.0	28.6				ug/L	4	Standard
Br	81	960.0	15.4				ug/L	397	Standard
P	31	19425.8	5.4				ug/L	19276	Standard
S	34	3212.0	4.7				ug/L	3042	Standard
Sr	88	180.0	11.1				ug/L	65	Standard
C	12	226.7	25.5				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	533.1	17.7				mg/L	23	Standard
Ho-1	165	396.7	7.7				mg/L	7	Standard
Er	166	353.3	14.0				mg/L	13	Standard
I	127	11017.4	14.6				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		82.764	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.015	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1511106613 WG547610-02
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		86.957
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		89.738
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1511106613DP WG547610-07
Sample Date/Time: Friday, November 20, 2015 11:50:29
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	41515.2	2.9				ug/L	49688	Standard
	Be	9	66.7	37.0	**0.0800**	0.040	50.5	ug/L	7	Standard
	Al	27	3167590.9	0.4	**55.8405**	1.610	2.9	ug/L	277	Standard
	Sc	45	29821.0	3.6				ug/L	24625	Standard
	Ti	47	236.3	16.8	**0.3208**	0.187	58.4	ug/L	198	Standard
	V	51	1844.3	2.6	**0.1310**	0.007	5.7	ug/L	1126	Standard
	Cr	52	8750.2	1.5	**0.5199**	0.017	3.3	ug/L	6071	Standard
	Cr	53	756.7	20.2	**0.7293**	0.250	34.3	ug/L	332	Standard
	Mn	55	804714.4	1.9	**163.0994**	2.169	1.3	ug/L	876	Standard
	Co	59	15010.8	2.7	**2.9648**	0.080	2.7	ug/L	110	Standard
	Ni	60	6791.5	2.2	**4.7993**	0.106	2.2	ug/L	191	Standard
	Cu	65	1559.4	0.9	**0.9266**	0.013	1.4	ug/L	281	Standard
	Zn	66	7964.1	0.3	**9.6857**	0.051	0.5	ug/L	249	Standard
>	**Ge**	72	311825.5	0.5				ug/L	297260	Standard
	As	75	53.8	38.8	**0.1120**	0.024	21.1	ug/L	-66	Standard
	Se	82	35.8	26.6	**0.2330**	0.117	50.4	ug/L	13	Standard
	Se-1	77	78.7	2.9	**0.5780**	0.043	7.4	ug/L	48	Standard
>	**Ga**	71	55.0	31.5				mg/L	30	Standard
	Rb	85	8902.6	3.0				ug/L	12	Standard
	Y	89	312072.9	0.8				ug/L	310514	Standard
>	**Rh**	103	128.3	18.0				ug/L	10	Standard
	Mo	98	187.7	4.6	**0.1263**	0.005	3.6	ug/L	11	Standard
	Ag	107	135.0	2.7	**0.0083**	0.001	6.7	ug/L	99	Standard
	Cd	111	76.7	7.3	**0.0460**	0.004	8.3	mg/L	6	Standard
	Cd	114	208.5	7.4	**0.0505**	0.004	7.0	ug/L	6	Standard
>	**In**	115	441409.9	0.9				ug/L	501593	Standard
	Sn	118	1486.7	1.9	**0.2437**	0.005	2.1	ug/L	442	Standard
	Sb	123	191.7	6.0	**0.0404**	0.002	6.1	ug/L	53	Standard
	Ba	135	12840.4	0.8	**7.3355**	0.020	0.3	ug/L	34	Standard
	Ce	140	4195.6	12.5				ug/L	73	Standard
>	**Tb**	159	898706.2	2.1				ug/L	924917	Standard
	Ho	165	468.3	6.4				ug/L	7	Standard
	Tl	203	105.7	7.6	**0.0111**	0.001	9.6	ug/L	6	Standard
	Tl	205	81.7	7.1	**0.0123**	0.001	9.1	ug/L	8	Standard
	Pb	206	661.0	2.5	**0.0790**	0.002	2.9	ug/L	264	Standard
	Pb	207	584.7	3.1	**0.0823**	0.003	4.2	ug/L	215	Standard
	Pb	208	2145.1	8.6	**0.0840**	0.011	13.6	ug/L	863	Standard
	U	238	153.0	6.8	**0.0297**	0.002	6.5	ug/L	4	Standard
>	**Bi**	209	462574.6	0.7				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	1793.4	4.5	**2.5628**	0.207	8.1	mg/L	20	Standard
K	39	396.7	8.4	**1.2821**	0.074	5.7	mg/L	38	Standard
Ca	43	258.3	2.2	**16.6827**	1.061	6.4	mg/L	43	Standard
Fe	54	141.1	8.9	**0.0279**	0.011	39.6	mg/L	103	Standard
Fe	57	225.0	12.4	**0.4995**	0.112	22.4	mg/L	107	Standard
> **Sc-1**	45	29821.0	3.6				mg/L	24625	Standard
Cl	35	34228.6	1.5				ug/L	30925	Standard
Kr	83	7.3	56.8				ug/L	4	Standard
Br	81	733.4	5.5				ug/L	397	Standard
P	31	19742.9	2.5				ug/L	19276	Standard
S	34	3095.3	5.5				ug/L	3042	Standard
Sr	88	156.7	31.0				ug/L	65	Standard
C	12	270.0	16.1				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	3	Standard
Dy	164	614.0	15.0				mg/L	23	Standard
Ho-1	165	468.3	6.4				mg/L	7	Standard
Er	166	403.3	16.9				mg/L	13	Standard
I	127	8215.6	3.7				mg/L	3275	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		83.551	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		104.900	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		88.002
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.073
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1511106613DP WG547610-07
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Method 6020 - Summary Report

Sample ID: L1511108403
Sample Date/Time: Friday, November 20, 2015 11:53:40
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	43004.3	3.0				ug/L	49688	Standard
	Be	9	11.7	137.8	**-0.0036**	0.023	647.0	ug/L	7	Standard
	Al	27	11497511.1	4.2	**195.6565**	8.702	4.4	ug/L	277	Standard
	Sc	45	29056.2	1.1				ug/L	24625	Standard
	Ti	47	176.3	7.8	**0.0662**	0.074	112.0	ug/L	198	Standard
	V	51	1976.0	4.4	**0.1688**	0.012	7.4	ug/L	1126	Standard
	Cr	52	8090.2	0.7	**0.4429**	0.036	8.2	ug/L	6071	Standard
	Cr	53	2565.2	5.9	**3.7577**	0.237	6.3	ug/L	332	Standard
	Mn	55	662534.0	0.5	**138.8615**	1.472	1.1	ug/L	876	Standard
	Co	59	3378.4	2.8	**0.6694**	0.010	1.4	ug/L	110	Standard
	Ni	60	3786.5	3.6	**2.6894**	0.061	2.3	ug/L	191	Standard
	Cu	65	1014.7	4.0	**0.5514**	0.030	5.4	ug/L	281	Standard
	Zn	66	2940.3	2.4	**3.5110**	0.072	2.1	ug/L	249	Standard
>	**Ge**	72	301520.0	1.5				ug/L	297260	Standard
	As	75	546.7	9.2	**0.6877**	0.066	9.6	ug/L	-66	Standard
	Se	82	170.6	3.1	**1.9754**	0.100	5.1	ug/L	13	Standard
	Se-1	77	235.0	10.0	**3.8769**	0.553	14.3	ug/L	48	Standard
>	**Ga**	71	30.0	50.0				mg/L	30	Standard
	Rb	85	6779.9	3.0				ug/L	12	Standard
	Y	89	295145.5	1.1				ug/L	310514	Standard
>	**Rh**	103	73.3	23.9				ug/L	10	Standard
	Mo	98	320.6	1.3	**0.2163**	0.007	3.2	ug/L	11	Standard
	Ag	107	97.3	15.9	**0.0010**	0.004	359.3	ug/L	99	Standard
	Cd	111	78.0	11.1	**0.0478**	0.007	13.6	mg/L	6	Standard
	Cd	114	197.7	13.2	**0.0489**	0.008	15.8	ug/L	6	Standard
>	**In**	115	433122.1	2.1				ug/L	501593	Standard
	Sn	118	3005.3	6.2	**0.6013**	0.044	7.3	ug/L	442	Standard
	Sb	123	148.0	9.7	**0.0310**	0.004	13.0	ug/L	53	Standard
	Ba	135	36872.1	0.9	**21.5191**	0.515	2.4	ug/L	34	Standard
	Ce	140	1198.4	12.2				ug/L	73	Standard
>	**Tb**	159	872424.9	2.6				ug/L	924917	Standard
	Ho	165	58.3	24.7				ug/L	7	Standard
	Tl	203	201.0	8.0	**0.0247**	0.002	7.2	ug/L	6	Standard
	Tl	205	116.7	4.9	**0.0201**	0.001	6.4	ug/L	8	Standard
	Pb	206	350.3	2.7	**0.0223**	0.003	13.2	ug/L	264	Standard
	Pb	207	296.0	3.2	**0.0239**	0.003	13.1	ug/L	215	Standard
	Pb	208	1052.7	3.6	**0.0208**	0.001	4.9	ug/L	863	Standard
	U	238	5029.8	1.1	**0.9366**	0.010	1.1	ug/L	4	Standard
>	**Bi**	209	445810.9	2.2				ug/L	507917	Standard

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Na	23	10.0		**34.9623**	0.392	1.1	mg/L	0	Standard
Mg	24	17954.0	1.3	**26.6179**	0.535	2.0	mg/L	20	Standard
K	39	150.0	8.8	**0.3818**	0.052	13.6	mg/L	38	Standard
Ca	43	653.3	4.2	**53.0735**	2.884	5.4	mg/L	43	Standard
Fe	54	215.9	11.4	**0.1274**	0.031	24.4	mg/L	103	Standard
Fe	57	376.7	12.9	**1.2622**	0.255	20.2	mg/L	107	Standard
> **Sc-1**	45	29056.2	1.1				mg/L	24625	Standard
Cl	35	33917.3	1.1				ug/L	30925	Standard
Kr	83	2.7	78.1				ug/L	4	Standard
Br	81	12004.8	3.8				ug/L	397	Standard
P	31	20185.1	1.1				ug/L	19276	Standard
S	34	3298.7	2.5				ug/L	3042	Standard
Sr	88	153.3	10.5				ug/L	65	Standard
C	12	250.0	27.7				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	82.7	36.4				mg/L	23	Standard
Ho-1	165	58.3	24.7				mg/L	7	Standard
Er	166	83.3	13.9				mg/L	13	Standard
I	127	26443.1	3.1				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		86.548	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.433	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	86.349
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	87.772
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1511108405
Sample Date/Time: Friday, November 20, 2015 11:56:51
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	43091.2	2.5				ug/L	49688	Standard
	Be	9	8.3	34.6	**-0.0085**	0.004	46.1	ug/L	7	Standard
	Al	27	14274457.9	1.1	**242.4652**	8.061	3.3	ug/L	277	Standard
	Sc	45	30388.8	3.2				ug/L	24625	Standard
	Ti	47	602.3	16.9	**2.0593**	0.422	20.5	ug/L	198	Standard
	V	51	3402.2	5.0	**0.4310**	0.043	10.0	ug/L	1126	Standard
	Cr	52	9028.4	1.8	**0.5859**	0.039	6.7	ug/L	6071	Standard
	Cr	53	3120.3	3.3	**4.5352**	0.297	6.5	ug/L	332	Standard
	Mn	55	1437736.2	1.2	**293.1437**	5.605	1.9	ug/L	876	Standard
	Co	59	5575.7	3.3	**1.0902**	0.031	2.8	ug/L	110	Standard
	Ni	60	4377.0	1.3	**3.0453**	0.050	1.6	ug/L	191	Standard
	Cu	65	1369.1	3.8	**0.7918**	0.037	4.7	ug/L	281	Standard
	Zn	66	2992.0	2.3	**3.4690**	0.019	0.5	ug/L	249	Standard
>	**Ge**	72	310254.7	2.6				ug/L	297260	Standard
	As	75	1260.4	6.0	**1.4758**	0.076	5.1	ug/L	-66	Standard
	Se	82	280.4	3.3	**3.2807**	0.157	4.8	ug/L	13	Standard
	Se-1	77	243.0	4.3	**3.8953**	0.155	4.0	ug/L	48	Standard
>	**Ga**	71	108.3	30.0				mg/L	30	Standard
	Rb	85	5280.9	3.4				ug/L	12	Standard
	Y	89	303294.4	1.6				ug/L	310514	Standard
>	**Rh**	103	60.0	8.3				ug/L	10	Standard
	Mo	98	419.3	5.8	**0.2742**	0.020	7.3	ug/L	11	Standard
	Ag	107	283.0	2.7	**0.0380**	0.003	7.5	ug/L	99	Standard
	Cd	111	26.8	12.2	**0.0148**	0.002	16.1	mg/L	6	Standard
	Cd	114	56.0	35.4	**0.0122**	0.005	42.5	ug/L	6	Standard
>	**In**	115	445050.4	2.4				ug/L	501593	Standard
	Sn	118	585.0	34.8	**0.0383**	0.047	123.8	ug/L	442	Standard
	Sb	123	333.3	7.6	**0.0723**	0.004	5.5	ug/L	53	Standard
	Ba	135	42223.1	0.5	**23.9848**	0.514	2.1	ug/L	34	Standard
	Ce	140	5596.0	5.6				ug/L	73	Standard
>	**Tb**	159	895816.5	2.7				ug/L	924917	Standard
	Ho	165	236.7	12.9				ug/L	7	Standard
	Tl	203	262.3	6.2	**0.0320**	0.003	9.0	ug/L	6	Standard
	Tl	205	153.3	5.0	**0.0266**	0.002	6.7	ug/L	8	Standard
	Pb	206	690.0	1.2	**0.0850**	0.001	1.5	ug/L	264	Standard
	Pb	207	561.0	1.8	**0.0777**	0.001	1.1	ug/L	215	Standard
	Pb	208	2061.7	1.7	**0.0794**	0.002	3.1	ug/L	863	Standard
	U	238	10121.0	1.3	**1.8196**	0.025	1.4	ug/L	4	Standard
>	**Bi**	209	461207.7	2.2				ug/L	507917	Standard

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Na	23	6.7	86.6	**22.3293**	19.362	86.7	mg/L	0	Standard
Mg	24	24564.9	3.6	**34.8416**	1.282	3.7	mg/L	20	Standard
K	39	230.0	7.8	**0.6494**	0.080	12.3	mg/L	38	Standard
Ca	43	558.3	11.7	**42.1456**	4.241	10.1	mg/L	43	Standard
Fe	54	312.4	6.7	**0.2321**	0.014	6.1	mg/L	103	Standard
Fe	57	366.7	3.4	**1.1350**	0.054	4.7	mg/L	107	Standard
> **Sc-1**	45	30388.8	3.2				mg/L	24625	Standard
Cl	35	36868.8	1.7				ug/L	30925	Standard
Kr	83	4.0	43.3				ug/L	4	Standard
Br	81	19789.6	5.9				ug/L	397	Standard
P	31	20493.9	0.8				ug/L	19276	Standard
S	34	3307.0	3.9				ug/L	3042	Standard
Sr	88	120.0	11.0				ug/L	65	Standard
C	12	333.3	1.7				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	288.3	9.5				mg/L	23	Standard
Ho-1	165	236.7	12.9				mg/L	7	Standard
Er	166	313.3	18.4				mg/L	13	Standard
I	127	45752.5	6.3				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		86.723	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.371	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	88.727
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	90.804
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1511108406
Sample Date/Time: Friday, November 20, 2015 12:00:02
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	40930.4	7.1				ug/L	49688	Standard
	Be	9	20.0	25.0	**0.0098**	0.006	64.5	ug/L	7	Standard
	Al	27	25047500.1	3.0	**448.6263**	20.980	4.7	ug/L	277	Standard
	Sc	45	28503.5	5.7				ug/L	24625	Standard
	Ti	47	254.3	6.7	**0.4860**	0.033	6.9	ug/L	198	Standard
	V	51	3271.4	13.2	**0.4435**	0.076	17.2	ug/L	1126	Standard
	Cr	52	8335.6	3.7	**0.5503**	0.053	9.7	ug/L	6071	Standard
	Cr	53	11797.9	5.3	**19.6349**	0.500	2.5	ug/L	332	Standard
	Mn	55	2463578.9	1.1	**534.4434**	34.617	6.5	ug/L	876	Standard
	Co	59	4311.3	0.5	**0.8915**	0.046	5.1	ug/L	110	Standard
	Ni	60	11124.1	0.9	**8.5373**	0.401	4.7	ug/L	191	Standard
	Cu	65	1671.1	4.6	**1.0940**	0.102	9.4	ug/L	281	Standard
	Zn	66	3548.1	2.4	**4.4511**	0.192	4.3	ug/L	249	Standard
>	**Ge**	72	292291.6	5.5				ug/L	297260	Standard
	As	75	19023.4	0.4	**22.9112**	1.154	5.0	ug/L	-66	Standard
	Se	82	1235.5	4.6	**16.1624**	1.640	10.1	ug/L	13	Standard
	Se-1	77	1263.4	9.5	**25.9719**	1.143	4.4	ug/L	48	Standard
>	**Ga**	71	91.7	12.6				mg/L	30	Standard
	Rb	85	15150.9	0.3				ug/L	12	Standard
	Y	89	289411.5	5.4				ug/L	310514	Standard
>	**Rh**	103	583.3	2.5				ug/L	10	Standard
	Mo	98	1369.0	2.4	**0.9346**	0.042	4.5	ug/L	11	Standard
	Ag	107	197.7	6.9	**0.0230**	0.001	5.2	ug/L	99	Standard
	Cd	111	25.1	10.3	**0.0147**	0.002	15.2	mg/L	6	Standard
	Cd	114	62.9	24.2	**0.0148**	0.005	30.9	ug/L	6	Standard
>	**In**	115	420930.8	4.1				ug/L	501593	Standard
	Sn	118	515.0	7.9	**0.0291**	0.011	37.1	ug/L	442	Standard
	Sb	123	78.3	18.5	**0.0153**	0.004	27.4	ug/L	53	Standard
	Ba	135	22641.9	1.8	**13.5994**	0.620	4.6	ug/L	34	Standard
	Ce	140	473.3	11.6				ug/L	73	Standard
>	**Tb**	159	840473.2	3.7				ug/L	924917	Standard
	Ho	165	108.3	2.7				ug/L	7	Standard
	Tl	203	82.0	20.0	**0.0092**	0.003	27.6	ug/L	6	Standard
	Tl	205	56.7	18.4	**0.0086**	0.002	24.9	ug/L	8	Standard
	Pb	206	349.0	5.3	**0.0270**	0.002	7.1	ug/L	264	Standard
	Pb	207	297.3	1.9	**0.0289**	0.002	8.2	ug/L	215	Standard
	Pb	208	1024.3	5.0	**0.0236**	0.002	7.8	ug/L	863	Standard
	U	238	4454.7	3.0	**0.8909**	0.061	6.8	ug/L	4	Standard
>	**Bi**	209	415917.9	4.9				ug/L	507917	Standard

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Na	23	13.3	108.3	**45.7413**	47.319	103.4	mg/L	0	Standard
Mg	24	72064.3	1.9	**109.2360**	6.211	5.7	mg/L	20	Standard
K	39	486.7	9.3	**1.7028**	0.164	9.6	mg/L	38	Standard
Ca	43	1496.7	7.2	**132.6674**	15.974	12.0	mg/L	43	Standard
Fe	54	2740.8	6.4	**3.3988**	0.282	8.3	mg/L	103	Standard
Fe	57	1126.7	3.4	**4.9915**	0.155	3.1	mg/L	107	Standard
> **Sc-1**	45	28503.5	5.7				mg/L	24625	Standard
Cl	35	39046.3	1.5				ug/L	30925	Standard
Kr	83	4.7	32.7				ug/L	4	Standard
Br	81	92726.7	5.2				ug/L	397	Standard
P	31	21650.5	3.2				ug/L	19276	Standard
S	34	3505.4	7.0				ug/L	3042	Standard
Sr	88	493.3	10.6				ug/L	65	Standard
C	12	466.7	6.5				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	92.3	50.9				mg/L	23	Standard
Ho-1	165	108.3	2.7				mg/L	7	Standard
Er	166	160.0	28.6				mg/L	13	Standard
I	127	492877.8	9.0				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		82.375	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.329	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		83.919
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		81.887
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1511108406
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Method 6020 - Summary Report

Sample ID: L1511108407
Sample Date/Time: Friday, November 20, 2015 12:03:13
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	39630.1	2.9				ug/L	49688	Standard
	Be	9	13.3	21.7	**0.0005**	0.005	969.4	ug/L	7	Standard
	Al	27	25930466.1	2.0	**479.1315**	23.697	4.9	ug/L	277	Standard
	Sc	45	28236.3	1.8				ug/L	24625	Standard
	Ti	47	216.7	4.6	**0.3141**	0.049	15.6	ug/L	198	Standard
	V	51	3240.3	14.3	**0.4480**	0.093	20.8	ug/L	1126	Standard
	Cr	52	8005.1	3.0	**0.5052**	0.030	6.0	ug/L	6071	Standard
	Cr	53	10937.3	4.3	**18.4627**	0.700	3.8	ug/L	332	Standard
	Mn	55	2599701.7	1.5	**571.7942**	5.178	0.9	ug/L	876	Standard
	Co	59	4563.7	1.7	**0.9593**	0.019	2.0	ug/L	110	Standard
	Ni	60	11222.8	0.6	**8.7431**	0.085	1.0	ug/L	191	Standard
	Cu	65	1652.8	3.5	**1.0975**	0.041	3.8	ug/L	281	Standard
	Zn	66	2415.2	1.5	**2.9815**	0.047	1.6	ug/L	249	Standard
>	**Ge**	72	287632.6	1.5				ug/L	297260	Standard
	As	75	19150.8	0.7	**23.3965**	0.295	1.3	ug/L	-66	Standard
	Se	82	987.7	4.6	**13.0500**	0.802	6.1	ug/L	13	Standard
	Se-1	77	1206.4	2.2	**25.2060**	0.167	0.7	ug/L	48	Standard
>	**Ga**	71	70.0	18.9				mg/L	30	Standard
	Rb	85	16030.1	2.5				ug/L	12	Standard
	Y	89	287549.9	1.2				ug/L	310514	Standard
>	**Rh**	103	600.0	5.8				ug/L	10	Standard
	Mo	98	1431.7	7.8	**0.9930**	0.081	8.2	ug/L	11	Standard
	Ag	107	185.3	4.9	**0.0210**	0.002	8.8	ug/L	99	Standard
	Cd	111	9.0	28.1	**0.0042**	0.002	40.6	mg/L	6	Standard
	Cd	114	42.3	31.5	**0.0095**	0.004	38.1	ug/L	6	Standard
>	**In**	115	413854.8	0.5				ug/L	501593	Standard
	Sn	118	410.0	6.8	**0.0056**	0.006	110.9	ug/L	442	Standard
	Sb	123	90.1	12.7	**0.0184**	0.003	15.1	ug/L	53	Standard
	Ba	135	23664.8	1.2	**14.4426**	0.235	1.6	ug/L	34	Standard
	Ce	140	426.7	2.9				ug/L	73	Standard
>	**Tb**	159	827543.6	2.5				ug/L	924917	Standard
	Ho	165	86.7	12.0				ug/L	7	Standard
	Tl	203	72.7	8.4	**0.0079**	0.001	11.5	ug/L	6	Standard
	Tl	205	40.0	25.0	**0.0050**	0.002	43.7	ug/L	8	Standard
	Pb	206	310.0	5.4	**0.0197**	0.003	17.0	ug/L	264	Standard
	Pb	207	288.7	5.0	**0.0278**	0.004	13.1	ug/L	215	Standard
	Pb	208	1024.0	2.2	**0.0246**	0.001	5.5	ug/L	863	Standard
	U	238	4762.1	1.9	**0.9644**	0.012	1.3	ug/L	4	Standard
>	**Bi**	209	409813.1	1.1				ug/L	507917	Standard

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Na	23	10.0	50.0	**36.0541**	18.397	51.0	mg/L	0	Standard
Mg	24	77482.6	1.2	**118.3284**	0.763	0.6	mg/L	20	Standard
K	39	526.7	6.2	**1.8786**	0.165	8.8	mg/L	38	Standard
Ca	43	1443.4	7.6	**128.5811**	12.279	9.5	mg/L	43	Standard
Fe	54	2903.0	4.6	**3.6401**	0.241	6.6	mg/L	103	Standard
Fe	57	1183.4	4.5	**5.3182**	0.155	2.9	mg/L	107	Standard
> **Sc-1**	45	28236.3	1.8				mg/L	24625	Standard
Cl	35	38324.4	1.5				ug/L	30925	Standard
Kr	83	3.3	75.5				ug/L	4	Standard
Br	81	78935.1	0.6				ug/L	397	Standard
P	31	20977.9	4.1				ug/L	19276	Standard
S	34	3173.7	3.9				ug/L	3042	Standard
Sr	88	530.0	11.6				ug/L	65	Standard
C	12	466.7	10.8				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	102.8	18.6				mg/L	23	Standard
Ho-1	165	86.7	12.0				mg/L	7	Standard
Er	166	150.0	26.7				mg/L	13	Standard
I	127	406560.0	2.7				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		79.758	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.761	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		82.508
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		80.685
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1511108407
Report Date/Time: Friday, November 20, 2015 12:05:30
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Method 6020 - Summary Report

Sample ID: L1511108409
Sample Date/Time: Friday, November 20, 2015 12:06:24
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	39486.5	4.9				ug/L	49688	Standard
	Be	9	15.0	88.2	**0.0025**	0.019	765.8	ug/L	7	Standard
	Al	27	14613053.0	3.1	**270.9987**	10.399	3.8	ug/L	277	Standard
	Sc	45	28099.4	2.9				ug/L	24625	Standard
	Ti	47	146.7	7.8	**-0.0570**	0.051	88.8	ug/L	198	Standard
	V	51	2776.7	3.8	**0.3434**	0.016	4.7	ug/L	1126	Standard
	Cr	52	8864.6	1.9	**0.6628**	0.053	8.1	ug/L	6071	Standard
	Cr	53	5942.8	1.1	**9.6485**	0.178	1.8	ug/L	332	Standard
	Mn	55	2113414.2	2.2	**457.2525**	2.957	0.6	ug/L	876	Standard
	Co	59	2112.8	6.5	**0.4221**	0.022	5.2	ug/L	110	Standard
	Ni	60	6044.5	2.0	**4.5466**	0.025	0.6	ug/L	191	Standard
	Cu	65	1279.1	1.6	**0.7832**	0.023	3.0	ug/L	281	Standard
	Zn	66	3364.4	3.8	**4.1970**	0.104	2.5	ug/L	249	Standard
>	**Ge**	72	292349.3	1.6				ug/L	297260	Standard
	As	75	827.7	9.8	**1.0452**	0.111	10.6	ug/L	-66	Standard
	Se	82	386.1	4.6	**4.8910**	0.311	6.4	ug/L	13	Standard
	Se-1	77	497.0	0.3	**9.6259**	0.187	1.9	ug/L	48	Standard
>	**Ga**	71	53.3	19.5				mg/L	30	Standard
	Rb	85	4012.2	2.1				ug/L	12	Standard
	Y	89	287905.8	2.5				ug/L	310514	Standard
>	**Rh**	103	206.7	27.5				ug/L	10	Standard
	Mo	98	382.0	1.1	**0.2622**	0.006	2.2	ug/L	11	Standard
	Ag	107	93.7	5.3	**0.0006**	0.001	194.8	ug/L	99	Standard
	Cd	111	75.5	8.7	**0.0471**	0.004	8.4	mg/L	6	Standard
	Cd	114	205.9	16.2	**0.0520**	0.009	16.6	ug/L	6	Standard
>	**In**	115	424046.5	1.1				ug/L	501593	Standard
	Sn	118	3320.4	2.6	**0.6903**	0.013	1.9	ug/L	442	Standard
	Sb	123	397.5	6.2	**0.0915**	0.006	6.5	ug/L	53	Standard
	Ba	135	41094.0	1.9	**24.4915**	0.321	1.3	ug/L	34	Standard
	Ce	140	803.4	6.0				ug/L	73	Standard
>	**Tb**	159	853386.2	1.0				ug/L	924917	Standard
	Ho	165	101.7	27.1				ug/L	7	Standard
	Tl	203	155.0	5.9	**0.0192**	0.001	6.8	ug/L	6	Standard
	Tl	205	106.7	15.1	**0.0188**	0.003	16.6	ug/L	8	Standard
	Pb	206	285.7	7.2	**0.0116**	0.005	39.7	ug/L	264	Standard
	Pb	207	243.7	3.8	**0.0144**	0.003	20.8	ug/L	215	Standard
	Pb	208	888.7	3.9	**0.0126**	0.002	15.8	ug/L	863	Standard
	U	238	11913.7	1.4	**2.2964**	0.019	0.8	ug/L	4	Standard
>	**Bi**	209	430025.3	1.8				ug/L	507917	Standard

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Na	23	10.0	50.0	**36.5165**	19.212	52.6	mg/L	0	Standard
Mg	24	32344.5	1.5	**49.6267**	0.858	1.7	mg/L	20	Standard
K	39	456.7	14.2	**1.6106**	0.247	15.4	mg/L	38	Standard
Ca	43	775.0	7.3	**66.5050**	5.395	8.1	mg/L	43	Standard
Fe	54	107.3	23.2	**-0.0051**	0.035	688.9	mg/L	103	Standard
Fe	57	345.0	1.4	**1.1657**	0.076	6.5	mg/L	107	Standard
Sc-1	45	28099.4	2.9				mg/L	24625	Standard
Cl	35	36490.6	0.5				ug/L	30925	Standard
Kr	83	3.3	45.8				ug/L	4	Standard
Br	81	28570.2	1.6				ug/L	397	Standard
P	31	19240.6	3.5				ug/L	19276	Standard
S	34	3255.3	2.6				ug/L	3042	Standard
Sr	88	266.7	20.6				ug/L	65	Standard
C	12	270.0	19.2				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	3	Standard
Dy	164	99.8	48.9				mg/L	23	Standard
Ho-1	165	101.7	27.1				mg/L	7	Standard
Er	166	143.3	22.4				mg/L	13	Standard
I	127	128813.7	1.4				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		79.469	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.348	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	84.540
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	84.664
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1511108603
Sample Date/Time: Friday, November 20, 2015 12:09:36
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 200
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	41084.2	7.3				ug/L	49688	Standard
	Be	9	11.7	24.7	**-0.0029**	0.003	106.3	ug/L	7	Standard
	Al	27	52425.8	7.1	**0.9251**	0.057	6.2	ug/L	277	Standard
	Sc	45	27894.0	4.0				ug/L	24625	Standard
	Ti	47	77.0	12.4	**-0.4148**	0.042	10.0	ug/L	198	Standard
	V	51	1118.8	18.1	**0.0040**	0.044	1114.8	ug/L	1126	Standard
	Cr	52	106684.4	2.5	**21.3605**	0.577	2.7	ug/L	6071	Standard
	Cr	53	13265.8	5.1	**21.7364**	0.332	1.5	ug/L	332	Standard
	Mn	55	2387.6	60.7	**0.2931**	0.286	97.6	ug/L	876	Standard
	Co	59	185.3	10.3	**0.0118**	0.003	23.6	ug/L	110	Standard
	Ni	60	135.3	10.0	**-0.0784**	0.009	11.6	ug/L	191	Standard
	Cu	65	389.0	9.1	**0.0795**	0.026	33.1	ug/L	281	Standard
	Zn	66	5555.0	3.4	**7.0033**	0.080	1.1	ug/L	249	Standard
>	**Ge**	72	297381.5	3.6				ug/L	297260	Standard
	As	75	-25.9	65.4	**0.0215**	0.019	88.8	ug/L	-66	Standard
	Se	82	25.2	24.5	**0.1197**	0.088	73.5	ug/L	13	Standard
	Se-1	77	84.0	10.2	**0.7639**	0.115	15.1	ug/L	48	Standard
>	**Ga**	71	20.0	25.0				mg/L	30	Standard
	Rb	85	35.0	49.5				ug/L	12	Standard
	Y	89	288429.5	3.2				ug/L	310514	Standard
>	**Rh**	103	28.3	27.0				ug/L	10	Standard
	Mo	98	32.3	21.9	**0.0266**	0.004	16.1	ug/L	11	Standard
	Ag	107	132.3	10.6	**0.0089**	0.002	26.9	ug/L	99	Standard
	Cd	111	11.6	57.3	**0.0057**	0.004	72.4	mg/L	6	Standard
	Cd	114	22.3	75.3	**0.0040**	0.004	111.2	ug/L	6	Standard
>	**In**	115	422826.0	2.0				ug/L	501593	Standard
	Sn	118	721.7	11.8	**0.0773**	0.019	24.6	ug/L	442	Standard
	Sb	123	140.7	3.7	**0.0301**	0.001	4.6	ug/L	53	Standard
	Ba	135	204.0	43.6	**0.0981**	0.050	51.4	ug/L	34	Standard
	Ce	140	73.3	61.1				ug/L	73	Standard
>	**Tb**	159	843378.3	2.6				ug/L	924917	Standard
	Ho	165	16.7	69.3				ug/L	7	Standard
	Tl	203	78.7	70.7	**0.0078**	0.007	94.4	ug/L	6	Standard
	Tl	205	20.0	90.1	**0.0002**	0.004	2346.1	ug/L	8	Standard
	Pb	206	259.7	12.8	**0.0043**	0.005	122.9	ug/L	264	Standard
	Pb	207	210.7	8.2	**0.0052**	0.003	52.3	ug/L	215	Standard
	Pb	208	730.0	8.9	**0.0007**	0.003	399.8	ug/L	863	Standard
	U	238	17.7	34.6	**0.0056**	0.001	19.2	ug/L	4	Standard
>	**Bi**	209	445471.2	2.6				ug/L	507917	Standard

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Na	23	3.3	173.2	**12.4541**	21.563	173.1	mg/L	0	Standard
Mg	24	100.0	20.0	**0.1180**	0.025	21.6	mg/L	20	Standard
K	39	86.7	18.5	**0.1554**	0.074	47.5	mg/L	38	Standard
Ca	43	68.3	23.5	**0.3462**	1.740	502.6	mg/L	43	Standard
Fe	54	117.1	32.0	**0.0076**	0.045	585.5	mg/L	103	Standard
Fe	57	165.0	33.7	**0.2782**	0.303	109.1	mg/L	107	Standard
> **Sc-1**	45	27894.0	4.0				mg/L	24625	Standard
Cl	35	33668.7	2.2				ug/L	30925	Standard
Kr	83	2.7	57.3				ug/L	4	Standard
Br	81	1220.1	20.5				ug/L	397	Standard
P	31	17370.0	1.1				ug/L	19276	Standard
S	34	3387.0	6.5				ug/L	3042	Standard
Sr	88	91.7	35.5				ug/L	65	Standard
C	12	173.3	31.8				mg/L	287	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	16.2	93.4				mg/L	23	Standard
Ho-1	165	16.7	69.3				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	10053.4	16.2				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		82.684	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.041	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	84.297	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	87.705	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Lower	Ti	47	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, November 20, 2015 12:12:48
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	39055.4	6.8				ug/L	49688	Standard
	Be	9	36074.6	4.5	**57.4631**	3.819	6.6	ug/L	7	Standard
	Al	27	3620914.8	5.4	**67.8878**	2.413	3.6	ug/L	277	Standard
	Sc	45	29027.8	3.2				ug/L	24625	Standard
	Ti	47	22355.1	1.8	**108.9975**	1.328	1.2	ug/L	198	Standard
	V	51	255814.1	1.0	**50.3199**	0.865	1.7	ug/L	1126	Standard
	Cr	52	259564.8	3.8	**53.2182**	0.682	1.3	ug/L	6071	Standard
	Cr	53	32344.5	4.0	**53.2281**	2.435	4.6	ug/L	332	Standard
	Mn	55	223432.1	1.9	**46.9071**	0.256	0.5	ug/L	876	Standard
	Co	59	237368.7	2.0	**49.1266**	0.236	0.5	ug/L	110	Standard
	Ni	60	67098.0	2.4	**50.9552**	0.617	1.2	ug/L	191	Standard
	Cu	65	68546.8	2.3	**52.1716**	0.203	0.4	ug/L	281	Standard
	Zn	66	39827.6	2.6	**51.5926**	0.455	0.9	ug/L	249	Standard
>	Ge	72	300135.7	2.5				ug/L	297260	Standard
	As	75	43112.2	2.0	**50.4172**	0.674	1.3	ug/L	-66	Standard
	Se	82	3706.4	2.8	**47.4472**	0.401	0.8	ug/L	13	Standard
	Se-1	77	2520.9	1.2	**51.5038**	1.525	3.0	ug/L	48	Standard
>	Ga	71	28.3	36.7				mg/L	30	Standard
	Rb	85	618.3	4.7				ug/L	12	Standard
	Y	89	291044.2	1.6				ug/L	310514	Standard
>	Rh	103	21.7	13.3				ug/L	10	Standard
	Mo	98	179246.5	1.0	**119.9034**	0.820	0.7	ug/L	11	Standard
	Ag	107	274233.9	1.6	**57.8111**	0.866	1.5	ug/L	99	Standard
	Cd	111	80290.4	2.5	**51.6622**	0.507	1.0	mg/L	6	Standard
	Cd	114	199168.9	2.5	**51.7363**	0.988	1.9	ug/L	6	Standard
>	In	115	426964.5	1.6				ug/L	501593	Standard
	Sn	118	225730.8	0.8	**52.8493**	1.208	2.3	ug/L	442	Standard
	Sb	123	215900.5	1.5	**51.3440**	0.956	1.9	ug/L	53	Standard
	Ba	135	97341.0	0.7	**57.6554**	0.500	0.9	ug/L	34	Standard
	Ce	140	113.3	31.9				ug/L	73	Standard
>	Tb	159	860601.1	0.2				ug/L	924917	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	380491.1	0.6	**52.1375**	0.736	1.4	ug/L	6	Standard
	Tl	205	239598.1	1.2	**49.0234**	0.543	1.1	ug/L	8	Standard
	Pb	206	263972.9	1.3	**51.8763**	0.548	1.1	ug/L	264	Standard
	Pb	207	239580.1	0.9	**52.0045**	0.803	1.5	ug/L	215	Standard
	Pb	208	824627.6	1.4	**50.9499**	0.332	0.7	ug/L	863	Standard
	U	238	266276.0	1.3	**49.1393**	0.577	1.2	ug/L	4	Standard
>	Bi	209	448730.1	1.5				ug/L	507917	Standard

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Na	23	1.7	173.2	**5.6409**	9.762	173.1	mg/L	0	Standard
Mg	24	2967.0	4.7	**4.3737**	0.203	4.7	mg/L	20	Standard
K	39	2005.1	0.7	**7.4701**	0.278	3.7	mg/L	38	Standard
Ca	43	90.0	9.6	**2.0159**	0.794	39.4	mg/L	43	Standard
Fe	54	3113.2	1.3	**3.8022**	0.076	2.0	mg/L	103	Standard
Fe	57	985.0	5.0	**4.2006**	0.142	3.4	mg/L	107	Standard
Sc-1	45	29027.8	3.2				mg/L	24625	Standard
Cl	35	30307.0	2.7				ug/L	30925	Standard
Kr	83	3.0	33.3				ug/L	4	Standard
Br	81	680.0	2.9				ug/L	397	Standard
P	31	19527.6	1.0				ug/L	19276	Standard
S	34	3710.5	7.9				ug/L	3042	Standard
Sr	88	106.7	10.8				ug/L	65	Standard
C	12	163.3	24.7				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	22.4	51.7				mg/L	23	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	6586.4	8.5				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	114.926		
Al	27	135.776		
Sc	45			
Ti	47	108.997		
V	51	100.640		
Cr	52	106.436		
Cr	53			
Mn	55	93.814		
Co	59	98.253		
Ni	60	101.910		
Cu	65	104.343		
Zn	66	103.185		
Ge	72		100.967	
As	75	100.834		
Se	82	94.894		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	119.903		
Ag	107	115.622		
Cd	111	103.324		
Cd	114			
In	115		85.122	
Sn	118	105.699		
Sb	123	102.688		
Ba	135	115.311		
Ce	140			
Tb	159			
Ho	165			
Tl	203	104.275		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.900		
U	238	98.279		
Bi	209		88.347	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	
QC Std 6	Mo	98	

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QC Std 6	Ag	107
QC Std 6	Ba	135

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, November 20, 2015 12:15:59
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	39548.5	8.6				ug/L	49688	Standard
	Be	9	21.7	74.2	**0.0123**	0.021	173.8	ug/L	7	Standard
	Al	27	1363.4	44.4	**0.0152**	0.010	63.7	ug/L	277	Standard
	Sc	45	29353.5	5.7				ug/L	24625	Standard
	Ti	47	83.0	16.6	**-0.3886**	0.044	11.4	ug/L	198	Standard
	V	51	1159.7	1.7	**0.0110**	0.016	143.2	ug/L	1126	Standard
	Cr	52	6432.4	2.4	**0.1094**	0.043	39.0	ug/L	6071	Standard
	Cr	53	690.0	12.6	**0.6678**	0.109	16.3	ug/L	332	Standard
	Mn	55	976.7	4.2	**-0.0016**	0.003	200.7	ug/L	876	Standard
	Co	59	214.3	10.8	**0.0176**	0.002	12.8	ug/L	110	Standard
	Ni	60	185.3	6.1	**-0.0406**	0.005	11.1	ug/L	191	Standard
	Cu	65	333.0	15.6	**0.0340**	0.025	74.8	ug/L	281	Standard
	Zn	66	337.0	8.6	**0.1380**	0.021	15.0	ug/L	249	Standard
>	**Ge**	72	298938.3	5.7				ug/L	297260	Standard
	As	75	-32.6	89.6	**0.0135**	0.035	257.8	ug/L	-66	Standard
	Se	82	13.5	16.4	**-0.0353**	0.030	84.8	ug/L	13	Standard
	Se-1	77	69.3	3.0	**0.4532**	0.073	16.0	ug/L	48	Standard
>	**Ga**	71	11.7	24.7				mg/L	30	Standard
	Rb	85	25.0	72.1				ug/L	12	Standard
	Y	89	297738.4	5.1				ug/L	310514	Standard
>	**Rh**	103	8.3	124.9				ug/L	10	Standard
	Mo	98	251.8	36.3	**0.1679**	0.052	31.0	ug/L	11	Standard
	Ag	107	201.7	28.9	**0.0220**	0.010	45.3	ug/L	99	Standard
	Cd	111	17.5	46.4	**0.0092**	0.005	54.9	mg/L	6	Standard
	Cd	114	71.9	67.0	**0.0161**	0.011	71.3	ug/L	6	Standard
>	**In**	115	436965.2	4.4				ug/L	501593	Standard
	Sn	118	673.3	5.6	**0.0611**	0.014	22.9	ug/L	442	Standard
	Sb	123	169.7	5.4	**0.0358**	0.003	8.4	ug/L	53	Standard
	Ba	135	56.3	27.6	**0.0090**	0.008	85.1	ug/L	34	Standard
	Ce	140	23.3	12.4				ug/L	73	Standard
>	**Tb**	159	870987.7	5.1				ug/L	924917	Standard
	Ho	165	13.3	21.7				ug/L	7	Standard
	Tl	203	75.0	78.6	**0.0069**	0.007	106.4	ug/L	6	Standard
	Tl	205	70.0	65.5	**0.0099**	0.008	84.7	ug/L	8	Standard
	Pb	206	306.0	13.7	**0.0120**	0.005	41.5	ug/L	264	Standard
	Pb	207	258.0	17.3	**0.0141**	0.007	47.4	ug/L	215	Standard
	Pb	208	1006.3	13.8	**0.0165**	0.007	39.6	ug/L	863	Standard
	U	238	71.3	58.1	**0.0151**	0.007	48.4	ug/L	4	Standard
>	**Bi**	209	455477.6	5.2				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	23.3	65.5	**-0.0009**	0.025	2853.7	mg/L	20	Standard
K	39	65.0	23.1	**0.0544**	0.052	94.9	mg/L	38	Standard
Ca	43	31.7	39.7	**-3.2609**	1.306	40.0	mg/L	43	Standard
Fe	54	96.1	19.5	**-0.0261**	0.018	68.4	mg/L	103	Standard
Fe	57	178.3	11.3	**0.2941**	0.077	26.3	mg/L	107	Standard
Sc-1	45	29353.5	5.7				mg/L	24625	Standard
Cl	35	30924.9	2.9				ug/L	30925	Standard
Kr	83	4.7	61.9				ug/L	4	Standard
Br	81	573.3	15.2				ug/L	397	Standard
P	31	19861.4	4.2				ug/L	19276	Standard
S	34	3758.8	2.0				ug/L	3042	Standard
Sr	88	100.0	31.2				ug/L	65	Standard
C	12	203.3	15.0				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	3	Standard
Dy	164	23.2	139.1				mg/L	23	Standard
Ho-1	165	13.3	21.7				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	6181.3	5.3				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.565	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		87.116
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		89.676
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, November 20, 2015 12:18:16
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Method 6020 - Summary Report

Sample ID: PBW 83 WG547429-03
Sample Date/Time: Friday, November 20, 2015 12:23:07
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	39533.2	3.9				ug/L	49688	Standard
	Be	9	6.7	43.3	**-0.0099**	0.005	49.3	ug/L	7	Standard
	Al	27	1888.5	6.0	**0.0254**	0.003	13.3	ug/L	277	Standard
	Sc	45	29146.3	2.1				ug/L	24625	Standard
	Ti	47	80.0	3.3	**-0.4100**	0.020	4.8	ug/L	198	Standard
	V	51	1263.5	4.5	**0.0255**	0.007	25.5	ug/L	1126	Standard
	Cr	52	6872.6	3.2	**0.1699**	0.056	33.1	ug/L	6071	Standard
	Cr	53	603.3	5.6	**0.5042**	0.070	13.9	ug/L	332	Standard
	Mn	55	1216.7	2.2	**0.0436**	0.008	17.6	ug/L	876	Standard
	Co	59	171.0	6.6	**0.0079**	0.002	23.0	ug/L	110	Standard
	Ni	60	145.3	5.0	**-0.0736**	0.006	8.0	ug/L	191	Standard
	Cu	65	440.7	4.9	**0.1105**	0.020	18.2	ug/L	281	Standard
	Zn	66	1207.4	5.6	**1.2435**	0.092	7.4	ug/L	249	Standard
>	**Ge**	72	305488.6	1.9				ug/L	297260	Standard
	As	75	-37.1	52.2	**0.0087**	0.023	259.6	ug/L	-66	Standard
	Se	82	18.0	28.3	**0.0174**	0.060	344.0	ug/L	13	Standard
	Se-1	77	72.7	7.8	**0.4888**	0.127	26.0	ug/L	48	Standard
>	**Ga**	71	48.3	33.3				mg/L	30	Standard
	Rb	85	81.7	19.7				ug/L	12	Standard
	Y	89	296279.0	3.2				ug/L	310514	Standard
>	**Rh**	103	23.3	32.7				ug/L	10	Standard
	Mo	98	54.3	23.7	**0.0403**	0.008	19.6	ug/L	11	Standard
	Ag	107	107.0	5.2	**0.0027**	0.001	34.6	ug/L	99	Standard
	Cd	111	9.6	12.2	**0.0042**	0.001	18.7	mg/L	6	Standard
	Cd	114	23.7	51.4	**0.0042**	0.003	75.0	ug/L	6	Standard
>	**In**	115	437461.9	1.5				ug/L	501593	Standard
	Sn	118	545.0	2.8	**0.0312**	0.004	13.3	ug/L	442	Standard
	Sb	123	117.5	20.6	**0.0236**	0.006	24.7	ug/L	53	Standard
	Ba	135	339.7	7.5	**0.1731**	0.016	9.3	ug/L	34	Standard
	Ce	140	480.0	8.3				ug/L	73	Standard
>	**Tb**	159	865278.9	2.7				ug/L	924917	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	15.3	32.8	**-0.0009**	0.001	75.9	ug/L	6	Standard
	Tl	205	11.7	65.5	**-0.0016**	0.002	95.8	ug/L	8	Standard
	Pb	206	311.0	6.2	**0.0129**	0.004	29.4	ug/L	264	Standard
	Pb	207	257.0	3.2	**0.0139**	0.002	14.6	ug/L	215	Standard
	Pb	208	969.3	1.4	**0.0141**	0.001	6.4	ug/L	863	Standard
	U	238	11.7	21.6	**0.0044**	0.000	10.1	ug/L	4	Standard
>	**Bi**	209	457332.4	0.9				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	50.0	10.0	**0.0380**	0.009	23.3	mg/L	20	Standard
K	39	86.7	17.6	**0.1393**	0.059	42.6	mg/L	38	Standard
Ca	43	40.0	102.3	**-2.4918**	3.769	151.3	mg/L	43	Standard
Fe	54	94.0	5.2	**-0.0274**	0.006	22.7	mg/L	103	Standard
Fe	57	163.3	26.7	**0.2284**	0.213	93.2	mg/L	107	Standard
> **Sc-1**	45	29146.3	2.1				mg/L	24625	Standard
Cl	35	29950.9	2.3				ug/L	30925	Standard
Kr	83	3.7	56.8				ug/L	4	Standard
Br	81	586.7	11.1				ug/L	397	Standard
P	31	19821.3	3.9				ug/L	19276	Standard
S	34	3302.0	5.1				ug/L	3042	Standard
Sr	88	98.3	43.8				ug/L	65	Standard
C	12	140.0	14.3				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	35.9	97.2				mg/L	23	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	13	Standard
I	127	3808.8	6.6				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		79.563	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.768	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	87.215	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	90.041	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Lower	Ti	47	

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Method 6020 - Summary Report

Sample ID: LCSW 83 WG547429-04
Sample Date/Time: Friday, November 20, 2015 12:26:18
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	38492.2	2.6				ug/L	49688	Standard
	Be	9	34075.0	2.3	**54.9859**	2.584	4.7	ug/L	7	Standard
	Al	27	2223.5	12.8	**0.0326**	0.006	17.4	ug/L	277	Standard
	Sc	45	28418.3	1.7				ug/L	24625	Standard
	Ti	47	71.3	14.0	**-0.4504**	0.043	9.5	ug/L	198	Standard
	V	51	247514.0	2.4	**48.1011**	0.802	1.7	ug/L	1126	Standard
	Cr	52	250632.0	2.4	**50.7433**	0.566	1.1	ug/L	6071	Standard
	Cr	53	30494.0	2.0	**49.5631**	1.395	2.8	ug/L	332	Standard
	Mn	55	221614.6	1.8	**45.9811**	0.625	1.4	ug/L	876	Standard
	Co	59	228101.3	2.0	**46.6611**	0.883	1.9	ug/L	110	Standard
	Ni	60	65605.4	1.5	**49.2424**	0.897	1.8	ug/L	191	Standard
	Cu	65	67917.9	1.9	**51.0985**	1.373	2.7	ug/L	281	Standard
	Zn	66	40008.1	2.5	**51.2251**	1.051	2.1	ug/L	249	Standard
>	Ge	72	303652.5	1.7				ug/L	297260	Standard
	As	75	41017.5	0.4	**47.4162**	0.646	1.4	ug/L	-66	Standard
	Se	82	3557.4	2.0	**45.0110**	1.099	2.4	ug/L	13	Standard
	Se-1	77	2416.5	0.6	**48.7345**	0.783	1.6	ug/L	48	Standard
>	Ga	71	50.0	26.5				mg/L	30	Standard
	Rb	85	56.7	31.0				ug/L	12	Standard
	Y	89	295663.2	2.7				ug/L	310514	Standard
>	Rh	103	31.7	39.7				ug/L	10	Standard
	Mo	98	38.0	27.3	**0.0297**	0.007	22.9	ug/L	11	Standard
	Ag	107	264121.2	1.5	**54.4204**	0.850	1.6	ug/L	99	Standard
	Cd	111	77028.6	0.7	**48.4517**	0.408	0.8	mg/L	6	Standard
	Cd	114	186112.0	2.6	**47.2560**	1.217	2.6	ug/L	6	Standard
>	In	115	436804.4	0.1				ug/L	501593	Standard
	Sn	118	423.3	11.0	**0.0035**	0.011	301.8	ug/L	442	Standard
	Sb	123	204385.7	2.8	**47.5056**	1.401	2.9	ug/L	53	Standard
	Ba	135	93680.4	0.6	**54.2309**	0.280	0.5	ug/L	34	Standard
	Ce	140	228.3	18.4				ug/L	73	Standard
>	Tb	159	870085.6	2.1				ug/L	924917	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	375066.7	1.3	**49.9868**	0.597	1.2	ug/L	6	Standard
	Tl	205	238900.2	3.5	**47.5587**	2.187	4.6	ug/L	8	Standard
	Pb	206	263164.3	1.3	**50.3054**	0.825	1.6	ug/L	264	Standard
	Pb	207	228518.7	1.7	**48.2386**	0.274	0.6	ug/L	215	Standard
	Pb	208	809733.4	1.6	**48.6625**	0.679	1.4	ug/L	863	Standard
	U	238	255453.6	0.9	**45.8599**	0.938	2.0	ug/L	4	Standard
>	Bi	209	461372.2	2.2				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	26.7	10.8	**0.0044**	0.005	114.4	mg/L	20	Standard
K	39	71.7	42.6	**0.0894**	0.119	133.3	mg/L	38	Standard
Ca	43	51.7	14.8	**-1.3671**	0.661	48.3	mg/L	43	Standard
Fe	54	109.3	29.8	**-0.0049**	0.040	817.6	mg/L	103	Standard
Fe	57	156.7	15.7	**0.2169**	0.136	62.6	mg/L	107	Standard
> **Sc-1**	45	28418.3	1.7				mg/L	24625	Standard
Cl	35	28787.3	2.7				ug/L	30925	Standard
Kr	83	5.3	43.3				ug/L	4	Standard
Br	81	543.3	25.4				ug/L	397	Standard
P	31	18608.1	4.5				ug/L	19276	Standard
S	34	3315.4	5.9				ug/L	3042	Standard
Sr	88	93.3	8.2				ug/L	65	Standard
C	12	140.0	32.7				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	3	Standard
Dy	164	15.7	73.5				mg/L	23	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	20.0	0.0				mg/L	13	Standard
I	127	3348.7	5.4				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		77.468	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.150	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	87.083	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	90.836	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Lower	Ti	47	

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Method 6020 - Summary Report

Sample ID: L1511094312 WG547429-01
Sample Date/Time: Friday, November 20, 2015 12:29:29
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	36109.7	4.6				ug/L	49688	Standard
	Be	9	21.7	26.6	**0.0166**	0.009	53.0	ug/L	7	Standard
	Al	27	832254.5	5.2	**16.8542**	0.554	3.3	ug/L	277	Standard
	Sc	45	26645.1	0.9				ug/L	24625	Standard
	Ti	47	120.0	5.8	**-0.1755**	0.047	26.8	ug/L	198	Standard
	V	51	1262.2	8.3	**0.0431**	0.027	61.9	ug/L	1126	Standard
	Cr	52	5943.2	1.2	**0.0654**	0.039	60.3	ug/L	6071	Standard
	Cr	53	616.7	10.8	**0.5962**	0.108	18.2	ug/L	332	Standard
	Mn	55	25751.5	1.2	**5.5057**	0.062	1.1	ug/L	876	Standard
	Co	59	441.7	2.7	**0.0694**	0.002	2.6	ug/L	110	Standard
	Ni	60	358.0	3.4	**0.1046**	0.005	4.4	ug/L	191	Standard
	Cu	65	363.3	5.0	**0.0716**	0.013	18.8	ug/L	281	Standard
	Zn	66	1070.7	1.5	**1.1656**	0.009	0.8	ug/L	249	Standard
>	**Ge**	72	285225.9	1.8				ug/L	297260	Standard
	As	75	586.7	8.7	**0.7721**	0.051	6.6	ug/L	-66	Standard
	Se	82	30.3	24.5	**0.1991**	0.094	47.1	ug/L	13	Standard
	Se-1	77	72.7	6.2	**0.5928**	0.070	11.9	ug/L	48	Standard
>	**Ga**	71	25.0	20.0				mg/L	30	Standard
	Rb	85	6046.2	1.6				ug/L	12	Standard
	Y	89	273207.0	2.2				ug/L	310514	Standard
>	**Rh**	103	50.0	26.5				ug/L	10	Standard
	Mo	98	377.2	8.2	**0.2730**	0.022	7.9	ug/L	11	Standard
	Ag	107	119.7	11.2	**0.0076**	0.003	42.0	ug/L	99	Standard
	Cd	111	14.5	55.8	**0.0082**	0.006	68.5	mg/L	6	Standard
	Cd	114	46.4	29.0	**0.0110**	0.004	34.6	ug/L	6	Standard
>	**In**	115	401677.7	0.6				ug/L	501593	Standard
	Sn	118	256.7	14.4	**-0.0296**	0.009	29.8	ug/L	442	Standard
	Sb	123	557.4	26.2	**0.1371**	0.037	26.7	ug/L	53	Standard
	Ba	135	16573.1	1.1	**10.4143**	0.117	1.1	ug/L	34	Standard
	Ce	140	123.3	27.0				ug/L	73	Standard
>	**Tb**	159	827340.1	0.6				ug/L	924917	Standard
	Ho	165	20.0	66.1				ug/L	7	Standard
	Tl	203	146.0	2.1	**0.0178**	0.001	3.4	ug/L	6	Standard
	Tl	205	111.7	38.1	**0.0197**	0.009	44.3	ug/L	8	Standard
	Pb	206	291.3	4.5	**0.0124**	0.003	22.0	ug/L	264	Standard
	Pb	207	237.0	12.3	**0.0125**	0.007	52.3	ug/L	215	Standard
	Pb	208	845.3	7.7	**0.0095**	0.004	41.3	ug/L	863	Standard
	U	238	1066.7	0.8	**0.2065**	0.004	1.8	ug/L	4	Standard
>	**Bi**	209	432600.9	1.0				ug/L	507917	Standard

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Na	23	1.7	173.2	**6.2956**	10.896	173.1	mg/L	0	Standard
Mg	24	5412.6	1.4	**8.7258**	0.128	1.5	mg/L	20	Standard
K	39	190.0	4.6	**0.5997**	0.032	5.3	mg/L	38	Standard
Ca	43	85.0	11.8	**2.2453**	0.932	41.5	mg/L	43	Standard
Fe	54	160.9	7.4	**0.0763**	0.017	22.7	mg/L	103	Standard
Fe	57	181.7	12.7	**0.3983**	0.120	30.0	mg/L	107	Standard
> **Sc-1**	45	26645.1	0.9				mg/L	24625	Standard
Cl	35	26606.7	2.6				ug/L	30925	Standard
Kr	83	6.3	50.8				ug/L	4	Standard
Br	81	913.4	8.2				ug/L	397	Standard
P	31	9931.6	2.8				ug/L	19276	Standard
S	34	3138.7	7.4				ug/L	3042	Standard
Sr	88	158.3	18.0				ug/L	65	Standard
C	12	230.0	23.0				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	3	Standard
Dy	164	5.9	201.6				mg/L	23	Standard
Ho-1	165	20.0	66.1				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	13	Standard
I	127	75156.8	8.4				mg/L	3275	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		72.673	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.952	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1511094312 WG547429-01
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		80.080
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		85.172
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1511094312S WG547429-05
Sample Date/Time: Friday, November 20, 2015 12:32:41
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	37053.6	2.8				ug/L	49688	Standard
	Be	9	7878.7	4.4	**13.1814**	0.436	3.3	ug/L	7	Standard
	Al	27	816438.4	0.5	**16.1200**	0.524	3.3	ug/L	277	Standard
	Sc	45	27663.6	2.4				ug/L	24625	Standard
	Ti	47	116.0	7.1	**-0.1999**	0.056	27.9	ug/L	198	Standard
	V	51	54690.9	0.9	**11.0749**	0.179	1.6	ug/L	1126	Standard
	Cr	52	58887.9	1.9	**11.6736**	0.172	1.5	ug/L	6071	Standard
	Cr	53	7231.7	0.7	**12.0719**	0.256	2.1	ug/L	332	Standard
	Mn	55	73647.6	1.5	**16.0274**	0.243	1.5	ug/L	876	Standard
	Co	59	51083.0	1.5	**11.0334**	0.272	2.5	ug/L	110	Standard
	Ni	60	14637.1	1.6	**11.4818**	0.298	2.6	ug/L	191	Standard
	Cu	65	15049.5	1.6	**11.8065**	0.277	2.3	ug/L	281	Standard
	Zn	66	10119.0	1.7	**13.4825**	0.204	1.5	ug/L	249	Standard
>	**Ge**	72	287122.0	2.4				ug/L	297260	Standard
	As	75	10086.6	1.2	**12.3703**	0.174	1.4	ug/L	-66	Standard
	Se	82	850.6	4.8	**11.2245**	0.489	4.4	ug/L	13	Standard
	Se-1	77	633.3	3.3	**12.7951**	0.740	5.8	ug/L	48	Standard
>	**Ga**	71	21.7	58.1				mg/L	30	Standard
	Rb	85	6174.6	2.2				ug/L	12	Standard
	Y	89	270033.9	1.8				ug/L	310514	Standard
>	**Rh**	103	50.0	45.8				ug/L	10	Standard
	Mo	98	386.6	8.5	**0.2750**	0.027	9.6	ug/L	11	Standard
	Ag	107	57091.1	2.5	**12.5456**	0.132	1.1	ug/L	99	Standard
	Cd	111	17473.9	2.3	**11.7351**	0.099	0.8	mg/L	6	Standard
	Cd	114	42892.3	2.9	**11.6272**	0.161	1.4	ug/L	6	Standard
>	**In**	115	409037.3	1.5				ug/L	501593	Standard
	Sn	118	311.7	13.0	**-0.0172**	0.010	60.9	ug/L	442	Standard
	Sb	123	47415.2	1.2	**11.7664**	0.070	0.6	ug/L	53	Standard
	Ba	135	36811.3	1.4	**22.7450**	0.350	1.5	ug/L	34	Standard
	Ce	140	166.7	26.2				ug/L	73	Standard
>	**Tb**	159	826715.9	0.7				ug/L	924917	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	81793.9	0.9	**11.3950**	0.032	0.3	ug/L	6	Standard
	Tl	205	52699.8	1.0	**10.9633**	0.166	1.5	ug/L	8	Standard
	Pb	206	58489.0	1.2	**11.6528**	0.085	0.7	ug/L	264	Standard
	Pb	207	50438.5	0.6	**11.1015**	0.033	0.3	ug/L	215	Standard
	Pb	208	179810.0	0.8	**11.2637**	0.017	0.1	ug/L	863	Standard
	U	238	57871.3	1.5	**10.8623**	0.087	0.8	ug/L	4	Standard
>	**Bi**	209	441217.2	0.7				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	5449.3	4.8	**8.4581**	0.281	3.3	mg/L	20	Standard
K	39	175.0	10.3	**0.5110**	0.076	15.0	mg/L	38	Standard
Ca	43	63.3	16.4	**-0.1112**	1.093	983.1	mg/L	43	Standard
Fe	54	129.3	27.8	**0.0264**	0.050	190.7	mg/L	103	Standard
Fe	57	180.0	4.8	**0.3546**	0.032	8.9	mg/L	107	Standard
> **Sc-1**	45	27663.6	2.4				mg/L	24625	Standard
Cl	35	27313.9	0.5				ug/L	30925	Standard
Kr	83	6.0	83.3				ug/L	4	Standard
Br	81	1100.0	3.3				ug/L	397	Standard
P	31	10006.6	3.1				ug/L	19276	Standard
S	34	3148.7	5.8				ug/L	3042	Standard
Sr	88	136.7	9.2				ug/L	65	Standard
C	12	233.3	15.1				mg/L	287	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	19.5	51.2				mg/L	23	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	10.0					mg/L	13	Standard
I	127	72839.9	4.5				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		74.572	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.589	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		81.548
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		86.868
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1511094312SD WG547429-06
Sample Date/Time: Friday, November 20, 2015 12:35:52
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	38371.9	2.5				ug/L	49688	Standard
	Be	9	8120.5	2.7	**13.1195**	0.180	1.4	ug/L	7	Standard
	Al	27	944831.3	5.5	**17.9976**	0.668	3.7	ug/L	277	Standard
	Sc	45	26292.8	2.4				ug/L	24625	Standard
	Ti	47	121.7	7.2	**-0.1670**	0.041	24.3	ug/L	198	Standard
	V	51	57361.7	0.5	**11.7157**	0.148	1.3	ug/L	1126	Standard
	Cr	52	61330.2	0.7	**12.3133**	0.262	2.1	ug/L	6071	Standard
	Cr	53	7493.5	2.8	**12.6237**	0.413	3.3	ug/L	332	Standard
	Mn	55	80372.0	1.0	**17.6436**	0.210	1.2	ug/L	876	Standard
	Co	59	53721.4	1.2	**11.6906**	0.096	0.8	ug/L	110	Standard
	Ni	60	15242.3	2.0	**12.0542**	0.249	2.1	ug/L	191	Standard
	Cu	65	15779.9	2.0	**12.4869**	0.411	3.3	ug/L	281	Standard
	Zn	66	10497.0	2.1	**14.1100**	0.531	3.8	ug/L	249	Standard
>	**Ge**	72	284945.7	1.8				ug/L	297260	Standard
	As	75	10575.1	0.9	**13.0668**	0.351	2.7	ug/L	-66	Standard
	Se	82	887.3	1.6	**11.8119**	0.362	3.1	ug/L	13	Standard
	Se-1	77	651.0	2.3	**13.2829**	0.546	4.1	ug/L	48	Standard
>	**Ga**	71	26.7	39.0				mg/L	30	Standard
	Rb	85	6848.2	4.3				ug/L	12	Standard
	Y	89	274225.4	2.6				ug/L	310514	Standard
>	**Rh**	103	83.3	27.1				ug/L	10	Standard
	Mo	98	431.6	10.5	**0.3054**	0.033	10.7	ug/L	11	Standard
	Ag	107	60705.7	0.9	**13.3039**	0.195	1.5	ug/L	99	Standard
	Cd	111	18318.9	1.0	**12.2673**	0.087	0.7	mg/L	6	Standard
	Cd	114	46583.3	1.1	**12.5932**	0.211	1.7	ug/L	6	Standard
>	**In**	115	410248.2	0.8				ug/L	501593	Standard
	Sn	118	308.3	24.4	**-0.0182**	0.019	104.2	ug/L	442	Standard
	Sb	123	50652.8	0.8	**12.5333**	0.182	1.5	ug/L	53	Standard
	Ba	135	40567.2	0.9	**24.9925**	0.270	1.1	ug/L	34	Standard
	Ce	140	225.0	8.0				ug/L	73	Standard
>	**Tb**	159	834174.3	1.9				ug/L	924917	Standard
	Ho	165	16.7	34.6				ug/L	7	Standard
	Tl	203	84835.9	2.2	**11.8445**	0.226	1.9	ug/L	6	Standard
	Tl	205	54589.8	0.8	**11.3814**	0.159	1.4	ug/L	8	Standard
	Pb	206	62048.1	0.3	**12.3929**	0.160	1.3	ug/L	264	Standard
	Pb	207	53483.6	0.4	**11.8005**	0.141	1.2	ug/L	215	Standard
	Pb	208	189175.0	0.4	**11.8794**	0.136	1.1	ug/L	863	Standard
	U	238	60658.5	0.9	**11.4109**	0.123	1.1	ug/L	4	Standard
>	**Bi**	209	440283.7	1.5				ug/L	507917	Standard

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Na	23	3.3	86.6	**13.0395**	11.291	86.6	mg/L	0	Standard
Mg	24	6017.9	1.4	**9.8417**	0.374	3.8	mg/L	20	Standard
K	39	230.0	12.1	**0.7782**	0.105	13.5	mg/L	38	Standard
Ca	43	73.3	32.2	**1.1685**	2.209	189.1	mg/L	43	Standard
Fe	54	136.7	14.5	**0.0454**	0.028	60.7	mg/L	103	Standard
Fe	57	156.7	16.1	**0.2775**	0.127	45.8	mg/L	107	Standard
Sc-1	45	26292.8	2.4				mg/L	24625	Standard
Cl	35	26987.3	1.4				ug/L	30925	Standard
Kr	83	3.0	57.7				ug/L	4	Standard
Br	81	1590.1	8.2				ug/L	397	Standard
P	31	10096.7	5.9				ug/L	19276	Standard
S	34	3068.6	5.0				ug/L	3042	Standard
Sr	88	145.0	15.8				ug/L	65	Standard
C	12	183.3	11.4				mg/L	287	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	25.9	147.7				mg/L	23	Standard
Ho-1	165	16.7	34.6				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	13	Standard
I	127	53741.8	2.1				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		77.225	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.857	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		81.789
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		86.684
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1511094302
Sample Date/Time: Friday, November 20, 2015 12:39:03
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	38726.1	0.8				ug/L	49688	Standard
	Be	9	16.7	45.8	**0.0063**	0.012	195.1	ug/L	7	Standard
	Al	27	3642077.0	1.4	**68.8006**	1.438	2.1	ug/L	277	Standard
	Sc	45	27343.0	2.7				ug/L	24625	Standard
	Ti	47	133.0	4.9	**-0.1016**	0.021	20.9	ug/L	198	Standard
	V	51	2157.8	7.2	**0.2338**	0.031	13.2	ug/L	1126	Standard
	Cr	52	5748.8	7.2	**0.0374**	0.116	309.8	ug/L	6071	Standard
	Cr	53	2210.2	10.6	**3.4279**	0.477	13.9	ug/L	332	Standard
	Mn	55	21626.4	0.9	**4.6442**	0.122	2.6	ug/L	876	Standard
	Co	59	515.7	0.9	**0.0868**	0.002	2.5	ug/L	110	Standard
	Ni	60	627.3	4.2	**0.3266**	0.032	9.7	ug/L	191	Standard
	Cu	65	653.3	4.6	**0.3107**	0.024	7.6	ug/L	281	Standard
	Zn	66	2215.5	1.5	**2.7691**	0.055	2.0	ug/L	249	Standard
>	**Ge**	72	282115.5	1.9				ug/L	297260	Standard
	As	75	181.4	27.2	**0.2762**	0.057	20.7	ug/L	-66	Standard
	Se	82	76.2	1.5	**0.8327**	0.035	4.2	ug/L	13	Standard
	Se-1	77	210.3	5.7	**3.6629**	0.315	8.6	ug/L	48	Standard
>	**Ga**	71	16.7	17.3				mg/L	30	Standard
	Rb	85	603.3	11.6				ug/L	12	Standard
	Y	89	269411.7	2.4				ug/L	310514	Standard
>	**Rh**	103	75.0	29.1				ug/L	10	Standard
	Mo	98	71.1	4.6	**0.0555**	0.003	4.8	ug/L	11	Standard
	Ag	107	90.7	13.8	**0.0011**	0.003	283.1	ug/L	99	Standard
	Cd	111	17.8	20.1	**0.0104**	0.002	21.2	mg/L	6	Standard
	Cd	114	46.4	31.2	**0.0110**	0.004	38.5	ug/L	6	Standard
>	**In**	115	401107.4	2.0				ug/L	501593	Standard
	Sn	118	256.7	4.9	**-0.0294**	0.004	13.2	ug/L	442	Standard
	Sb	123	156.3	17.8	**0.0360**	0.008	21.7	ug/L	53	Standard
	Ba	135	6080.6	1.0	**3.8124**	0.077	2.0	ug/L	34	Standard
	Ce	140	95.0	19.0				ug/L	73	Standard
>	**Tb**	159	813727.6	1.9				ug/L	924917	Standard
	Ho	165	18.3	56.8				ug/L	7	Standard
	Tl	203	295.0	9.1	**0.0397**	0.006	14.4	ug/L	6	Standard
	Tl	205	171.7	17.6	**0.0331**	0.007	21.0	ug/L	8	Standard
	Pb	206	301.7	6.9	**0.0153**	0.003	21.6	ug/L	264	Standard
	Pb	207	271.7	8.8	**0.0211**	0.003	15.2	ug/L	215	Standard
	Pb	208	909.3	7.2	**0.0144**	0.005	31.6	ug/L	863	Standard
	U	238	8491.0	0.5	**1.6509**	0.077	4.7	ug/L	4	Standard
>	**Bi**	209	426990.0	4.1				ug/L	507917	Standard

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Na	23	1.7	173.2	**6.0255**	10.428	173.1	mg/L	0	Standard
Mg	24	17827.1	0.8	**28.1006**	0.907	3.2	mg/L	20	Standard
K	39	85.0	11.8	**0.1540**	0.038	24.7	mg/L	38	Standard
Ca	43	161.7	7.8	**9.4371**	1.497	15.9	mg/L	43	Standard
Fe	54	49.5	35.9	**-0.0792**	0.024	30.8	mg/L	103	Standard
Fe	57	183.3	24.7	**0.3841**	0.239	62.2	mg/L	107	Standard
Sc-1	45	27343.0	2.7				mg/L	24625	Standard
Cl	35	28665.8	4.0				ug/L	30925	Standard
Kr	83	6.0	104.1				ug/L	4	Standard
Br	81	5110.9	7.1				ug/L	397	Standard
P	31	10290.2	3.8				ug/L	19276	Standard
S	34	2978.6	0.8				ug/L	3042	Standard
Sr	88	136.7	26.0				ug/L	65	Standard
C	12	233.3	8.9				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	15.4	38.4				mg/L	23	Standard
Ho-1	165	18.3	56.8				mg/L	7	Standard
Er	166	26.7	21.7				mg/L	13	Standard
I	127	116057.3	6.4				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		77.938	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		94.905	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		79.967
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		84.067
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1511094304
Sample Date/Time: Friday, November 20, 2015 12:42:15
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	36651.0	2.6				ug/L	49688	Standard
	Be	9	8.3	34.6	**-0.0062**	0.005	82.9	ug/L	7	Standard
	Al	27	7221276.1	3.1	**144.2664**	7.965	5.5	ug/L	277	Standard
	Sc	45	25817.0	1.3				ug/L	24625	Standard
	Ti	47	124.3	7.5	**-0.1343**	0.039	29.0	ug/L	198	Standard
	V	51	2622.3	8.1	**0.3423**	0.045	13.1	ug/L	1126	Standard
	Cr	52	6907.9	2.9	**0.3255**	0.060	18.5	ug/L	6071	Standard
	Cr	53	4325.6	6.2	**7.3106**	0.522	7.1	ug/L	332	Standard
	Mn	55	2080.1	0.2	**0.2673**	0.007	2.7	ug/L	876	Standard
	Co	59	482.7	6.8	**0.0815**	0.006	7.0	ug/L	110	Standard
	Ni	60	1266.7	1.4	**0.8648**	0.011	1.3	ug/L	191	Standard
	Cu	65	721.0	5.8	**0.3776**	0.045	11.8	ug/L	281	Standard
	Zn	66	1475.1	3.8	**1.7828**	0.087	4.9	ug/L	249	Standard
>	**Ge**	72	276686.6	1.6				ug/L	297260	Standard
	As	75	362.1	8.6	**0.5101**	0.036	7.1	ug/L	-66	Standard
	Se	82	151.7	1.4	**1.9072**	0.039	2.1	ug/L	13	Standard
	Se-1	77	427.3	10.0	**8.6621**	1.089	12.6	ug/L	48	Standard
>	**Ga**	71	40.0	25.0				mg/L	30	Standard
	Rb	85	883.4	7.5				ug/L	12	Standard
	Y	89	266468.0	1.4				ug/L	310514	Standard
>	**Rh**	103	166.7	35.2				ug/L	10	Standard
	Mo	98	66.4	12.6	**0.0521**	0.006	11.9	ug/L	11	Standard
	Ag	107	90.7	9.4	**0.0011**	0.002	196.6	ug/L	99	Standard
	Cd	111	20.2	24.5	**0.0120**	0.003	26.9	mg/L	6	Standard
	Cd	114	30.0	33.4	**0.0064**	0.003	43.5	ug/L	6	Standard
>	**In**	115	401478.2	1.1				ug/L	501593	Standard
	Sn	118	250.0	17.4	**-0.0313**	0.010	32.7	ug/L	442	Standard
	Sb	123	122.7	26.7	**0.0274**	0.009	31.4	ug/L	53	Standard
	Ba	135	5650.4	2.0	**3.5369**	0.057	1.6	ug/L	34	Standard
	Ce	140	46.7	16.4				ug/L	73	Standard
>	**Tb**	159	809230.7	3.5				ug/L	924917	Standard
	Ho	165	13.3	21.7				ug/L	7	Standard
	Tl	203	96.3	7.8	**0.0112**	0.001	7.3	ug/L	6	Standard
	Tl	205	48.3	41.8	**0.0068**	0.005	68.5	ug/L	8	Standard
	Pb	206	269.0	5.6	**0.0097**	0.004	44.3	ug/L	264	Standard
	Pb	207	228.0	2.9	**0.0123**	0.001	8.6	ug/L	215	Standard
	Pb	208	814.0	3.7	**0.0093**	0.001	11.7	ug/L	863	Standard
	U	238	8459.7	2.2	**1.6783**	0.069	4.1	ug/L	4	Standard
>	**Bi**	209	418181.3	2.3				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	29510.4	0.6	**49.2688**	0.381	0.8	mg/L	20	Standard
K	39	158.3	17.4	**0.4900**	0.125	25.4	mg/L	38	Standard
Ca	43	303.3	9.9	**24.7650**	2.672	10.8	mg/L	43	Standard
Fe	54	69.5	12.9	**-0.0471**	0.012	24.6	mg/L	103	Standard
Fe	57	200.0	30.7	**0.5315**	0.349	65.7	mg/L	107	Standard
Sc-1	45	25817.0	1.3				mg/L	24625	Standard
Cl	35	32516.9	2.3				ug/L	30925	Standard
Kr	83	4.0	43.3				ug/L	4	Standard
Br	81	10883.9	1.7				ug/L	397	Standard
P	31	9901.6	5.6				ug/L	19276	Standard
S	34	3008.6	2.9				ug/L	3042	Standard
Sr	88	175.0	10.3				ug/L	65	Standard
C	12	186.7	20.3				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	3	Standard
Dy	164	22.4	67.6				mg/L	23	Standard
Ho-1	165	13.3	21.7				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	126536.4	7.4				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		73.762	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.079	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		80.041
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		82.333
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1511094306
Sample Date/Time: Friday, November 20, 2015 12:45:26
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	37805.4	1.5				ug/L	49688	Standard
	Be	9	11.7	99.0	**-0.0011**	0.019	1714.2	ug/L	7	Standard
	Al	27	2147502.5	1.2	**41.5567**	1.024	2.5	ug/L	277	Standard
	Sc	45	27528.3	1.4				ug/L	24625	Standard
	Ti	47	131.7	10.6	**-0.1065**	0.080	75.4	ug/L	198	Standard
	V	51	1940.7	7.4	**0.1889**	0.029	15.6	ug/L	1126	Standard
	Cr	52	7323.4	3.7	**0.3903**	0.042	10.8	ug/L	6071	Standard
	Cr	53	2305.2	7.7	**3.5983**	0.320	8.9	ug/L	332	Standard
	Mn	55	5205.9	1.3	**0.9616**	0.028	2.9	ug/L	876	Standard
	Co	59	326.0	3.7	**0.0451**	0.002	5.2	ug/L	110	Standard
	Ni	60	585.0	5.0	**0.2927**	0.022	7.4	ug/L	191	Standard
	Cu	65	443.3	0.9	**0.1405**	0.005	3.3	ug/L	281	Standard
	Zn	66	1204.7	1.0	**1.3708**	0.033	2.4	ug/L	249	Standard
>	**Ge**	72	281617.4	1.9				ug/L	297260	Standard
	As	75	146.4	14.3	**0.2336**	0.024	10.2	ug/L	-66	Standard
	Se	82	59.7	2.3	**0.6092**	0.027	4.5	ug/L	13	Standard
	Se-1	77	227.3	10.2	**4.0523**	0.601	14.8	ug/L	48	Standard
>	**Ga**	71	18.3	41.7				mg/L	30	Standard
	Rb	85	346.7	14.6				ug/L	12	Standard
	Y	89	277709.1	1.7				ug/L	310514	Standard
>	**Rh**	103	35.0	57.1				ug/L	10	Standard
	Mo	98	35.3	15.4	**0.0295**	0.004	14.4	ug/L	11	Standard
	Ag	107	79.7	25.9	**-0.0017**	0.005	273.3	ug/L	99	Standard
	Cd	111	11.2	18.5	**0.0058**	0.001	22.3	mg/L	6	Standard
	Cd	114	18.3	25.1	**0.0031**	0.001	39.4	ug/L	6	Standard
>	**In**	115	410208.5	1.8				ug/L	501593	Standard
	Sn	118	248.3	6.2	**-0.0329**	0.003	10.5	ug/L	442	Standard
	Sb	123	98.9	19.3	**0.0208**	0.005	24.4	ug/L	53	Standard
	Ba	135	9831.5	3.0	**6.0431**	0.292	4.8	ug/L	34	Standard
	Ce	140	188.3	6.7				ug/L	73	Standard
>	**Tb**	159	820401.1	1.7				ug/L	924917	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	141.7	11.2	**0.0169**	0.002	12.1	ug/L	6	Standard
	Tl	205	105.0	20.8	**0.0181**	0.005	25.6	ug/L	8	Standard
	Pb	206	297.3	3.0	**0.0128**	0.002	15.0	ug/L	264	Standard
	Pb	207	261.3	7.3	**0.0172**	0.004	22.1	ug/L	215	Standard
	Pb	208	919.0	1.3	**0.0134**	0.001	7.0	ug/L	863	Standard
	U	238	1184.7	0.5	**0.2260**	0.001	0.4	ug/L	4	Standard
>	**Bi**	209	438474.4	0.9				ug/L	507917	Standard

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Na	23	3.3	173.2	**12.1325**	21.005	173.1	mg/L	0	Standard
Mg	24	11085.7	3.7	**17.3347**	0.672	3.9	mg/L	20	Standard
K	39	105.0	17.2	**0.2322**	0.071	30.6	mg/L	38	Standard
Ca	43	115.0	27.2	**4.8289**	2.893	59.9	mg/L	43	Standard
Fe	54	53.9	18.2	**-0.0740**	0.013	17.1	mg/L	103	Standard
Fe	57	175.0	25.7	**0.3352**	0.238	71.1	mg/L	107	Standard
> **Sc-1**	45	27528.3	1.4				mg/L	24625	Standard
Cl	35	30564.1	1.5				ug/L	30925	Standard
Kr	83	3.0	66.7				ug/L	4	Standard
Br	81	3087.0	7.1				ug/L	397	Standard
P	31	10056.7	4.3				ug/L	19276	Standard
S	34	3130.3	2.2				ug/L	3042	Standard
Sr	88	126.7	25.7				ug/L	65	Standard
C	12	203.3	32.0				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	15.9	34.6				mg/L	23	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	13	Standard
I	127	18569.8	9.6				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		76.085	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.738	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		81.781
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		86.328
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1511094306PS WG547469-03
Sample Date/Time: Friday, November 20, 2015 12:48:37
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	37990.9	3.7				ug/L	49688	Standard
	Be	9	40841.7	2.0	**66.7915**	2.980	4.5	ug/L	7	Standard
	Al	27	2186075.7	2.8	**42.1127**	1.495	3.6	ug/L	277	Standard
	Sc	45	27703.6	2.1				ug/L	24625	Standard
	Ti	47	123.3	5.1	**-0.1533**	0.040	25.9	ug/L	198	Standard
	V	51	276945.0	2.2	**57.8110**	0.696	1.2	ug/L	1126	Standard
	Cr	52	274958.2	0.8	**59.9821**	0.521	0.9	ug/L	6071	Standard
	Cr	53	35747.1	2.0	**62.4908**	1.953	3.1	ug/L	332	Standard
	Mn	55	250578.3	1.3	**55.8488**	0.390	0.7	ug/L	876	Standard
	Co	59	260872.5	1.1	**57.2837**	0.213	0.4	ug/L	110	Standard
	Ni	60	72623.6	0.9	**58.5407**	0.453	0.8	ug/L	191	Standard
	Cu	65	74888.3	1.2	**60.5064**	0.192	0.3	ug/L	281	Standard
	Zn	66	46030.1	0.7	**63.3346**	0.509	0.8	ug/L	249	Standard
>	Ge	72	282884.2	1.1				ug/L	297260	Standard
	As	75	48538.0	1.0	**60.2087**	0.629	1.0	ug/L	-66	Standard
	Se	82	4304.3	1.4	**58.5136**	0.787	1.3	ug/L	13	Standard
	Se-1	77	3023.0	1.4	**65.7715**	0.652	1.0	ug/L	48	Standard
>	Ga	71	38.3	52.7				mg/L	30	Standard
	Rb	85	313.3	5.1				ug/L	12	Standard
	Y	89	282404.4	1.0				ug/L	310514	Standard
>	Rh	103	58.3	4.9				ug/L	10	Standard
	Mo	98	41.9	7.4	**0.0335**	0.002	6.6	ug/L	11	Standard
	Ag	107	284427.2	1.5	**61.3113**	0.905	1.5	ug/L	99	Standard
	Cd	111	90060.8	0.6	**59.2657**	0.634	1.1	mg/L	6	Standard
	Cd	114	224387.4	2.4	**59.6103**	1.698	2.8	ug/L	6	Standard
>	In	115	417534.0	0.5				ug/L	501593	Standard
	Sn	118	410.0	13.9	**0.0048**	0.014	291.2	ug/L	442	Standard
	Sb	123	230921.4	2.2	**56.1517**	1.295	2.3	ug/L	53	Standard
	Ba	135	117899.3	1.6	**71.4113**	1.335	1.9	ug/L	34	Standard
	Ce	140	213.3	8.2				ug/L	73	Standard
>	Tb	159	851692.8	1.8				ug/L	924917	Standard
	Ho	165	16.7	69.3				ug/L	7	Standard
	Tl	203	416718.7	0.7	**58.2412**	0.402	0.7	ug/L	6	Standard
	Tl	205	269397.3	0.6	**56.2250**	0.486	0.9	ug/L	8	Standard
	Pb	206	293744.4	0.1	**58.8900**	0.293	0.5	ug/L	264	Standard
	Pb	207	263586.8	0.8	**58.3617**	0.384	0.7	ug/L	215	Standard
	Pb	208	915904.4	0.7	**57.7318**	0.564	1.0	ug/L	863	Standard
	U	238	296655.0	0.5	**55.8407**	0.111	0.2	ug/L	4	Standard
>	Bi	209	439898.9	0.4				ug/L	507917	Standard

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Na	23	6.7	86.6	**24.3143**	21.064	86.6	mg/L	0	Standard
Mg	24	11094.1	0.6	**17.2419**	0.426	2.5	mg/L	20	Standard
K	39	116.7	21.1	**0.2751**	0.088	31.9	mg/L	38	Standard
Ca	43	128.3	31.5	**6.0758**	3.989	65.6	mg/L	43	Standard
Fe	54	54.3	39.5	**-0.0741**	0.027	37.0	mg/L	103	Standard
Fe	57	186.7	8.2	**0.3867**	0.064	16.6	mg/L	107	Standard
> **Sc-1**	45	27703.6	2.1				mg/L	24625	Standard
Cl	35	30583.5	0.7				ug/L	30925	Standard
Kr	83	4.3	53.3				ug/L	4	Standard
Br	81	3220.3	5.7				ug/L	397	Standard
P	31	10308.5	1.6				ug/L	19276	Standard
S	34	3292.0	6.3				ug/L	3042	Standard
Sr	88	105.0	24.7				ug/L	65	Standard
C	12	273.3	18.4				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	3	Standard
Dy	164	12.5	93.2				mg/L	23	Standard
Ho-1	165	16.7	69.3				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	13	Standard
I	127	15504.6	1.6				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		76.459	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.164	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		83.242
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		86.608
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1511094306SDL WG547469-04
Sample Date/Time: Friday, November 20, 2015 12:52:11
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	36193.2	2.0				ug/L	49688	Standard
	Be	9	18.3	41.7	**0.0112**	0.014	122.0	ug/L	7	Standard
	Al	27	386061.8	0.8	**7.7952**	0.095	1.2	ug/L	277	Standard
	Sc	45	26044.0	3.1				ug/L	24625	Standard
	Ti	47	69.0	13.0	**-0.4262**	0.053	12.4	ug/L	198	Standard
	V	51	1548.2	3.2	**0.1139**	0.004	3.7	ug/L	1126	Standard
	Cr	52	5756.8	2.0	**0.0702**	0.025	34.9	ug/L	6071	Standard
	Cr	53	820.0	4.8	**1.0036**	0.046	4.6	ug/L	332	Standard
	Mn	55	1532.1	5.7	**0.1436**	0.013	9.3	ug/L	876	Standard
	Co	59	230.7	12.8	**0.0252**	0.006	22.5	ug/L	110	Standard
	Ni	60	211.0	8.6	**-0.0068**	0.018	264.3	ug/L	191	Standard
	Cu	65	315.0	7.5	**0.0421**	0.023	54.5	ug/L	281	Standard
	Zn	66	1213.0	1.3	**1.4218**	0.044	3.1	ug/L	249	Standard
>	**Ge**	72	275186.1	1.9				ug/L	297260	Standard
	As	75	15.1	44.1	**0.0709**	0.009	12.3	ug/L	-66	Standard
	Se	82	20.4	23.0	**0.0762**	0.065	85.9	ug/L	13	Standard
	Se-1	77	93.3	2.7	**1.1210**	0.046	4.1	ug/L	48	Standard
>	**Ga**	71	15.0	100.0				mg/L	30	Standard
	Rb	85	58.3	55.1				ug/L	12	Standard
	Y	89	261826.5	1.3				ug/L	310514	Standard
>	**Rh**	103	11.7	24.7				ug/L	10	Standard
	Mo	98	17.3	19.8	**0.0171**	0.002	13.2	ug/L	11	Standard
	Ag	107	127.7	14.5	**0.0092**	0.004	43.0	ug/L	99	Standard
	Cd	111	18.6	34.1	**0.0109**	0.004	39.0	mg/L	6	Standard
	Cd	114	32.7	46.5	**0.0071**	0.004	58.0	ug/L	6	Standard
>	**In**	115	403221.5	1.6				ug/L	501593	Standard
	Sn	118	211.7	22.9	**-0.0408**	0.013	31.7	ug/L	442	Standard
	Sb	123	620.9	15.8	**0.1528**	0.026	16.9	ug/L	53	Standard
	Ba	135	1762.4	4.3	**1.0827**	0.056	5.2	ug/L	34	Standard
	Ce	140	43.3	13.3				ug/L	73	Standard
>	**Tb**	159	811960.5	2.0				ug/L	924917	Standard
	Ho	165	15.0	88.2				ug/L	7	Standard
	Tl	203	241.7	23.9	**0.0314**	0.007	23.6	ug/L	6	Standard
	Tl	205	140.0	14.3	**0.0259**	0.004	15.4	ug/L	8	Standard
	Pb	206	275.0	17.6	**0.0092**	0.009	96.5	ug/L	264	Standard
	Pb	207	249.3	14.9	**0.0155**	0.007	46.2	ug/L	215	Standard
	Pb	208	872.3	11.8	**0.0114**	0.005	46.5	ug/L	863	Standard
	U	238	253.0	4.0	**0.0509**	0.002	3.2	ug/L	4	Standard
>	**Bi**	209	430759.6	2.3				ug/L	507917	Standard

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Na	23	1.7	173.2	**6.3511**	10.992	173.1	mg/L	0	Standard
Mg	24	1931.8	1.8	**3.1646**	0.086	2.7	mg/L	20	Standard
K	39	76.7	15.1	**0.1354**	0.042	31.2	mg/L	38	Standard
Ca	43	51.7	31.1	**-0.9294**	1.588	170.9	mg/L	43	Standard
Fe	54	34.2	88.4	**-0.0983**	0.041	42.0	mg/L	103	Standard
Fe	57	145.0	11.9	**0.2223**	0.078	35.0	mg/L	107	Standard
Sc-1	45	26044.0	3.1				mg/L	24625	Standard
Cl	35	28841.4	0.7				ug/L	30925	Standard
Kr	83	3.7	15.7				ug/L	4	Standard
Br	81	820.0	9.7				ug/L	397	Standard
P	31	6496.4	6.4				ug/L	19276	Standard
S	34	3138.7	4.4				ug/L	3042	Standard
Sr	88	95.0	10.5				ug/L	65	Standard
C	12	190.0	13.9				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	-1.1	89.2				mg/L	23	Standard
Ho-1	165	15.0	88.2				mg/L	7	Standard
Er	166	23.3	89.2				mg/L	13	Standard
I	127	6273.0	3.0				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		72.841	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.574	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	80.388	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	84.809	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Lower	Ti	47	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, November 20, 2015 12:55:23
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	39110.5	6.2				ug/L	49688	Standard
	Be	9	35628.6	4.2	**56.5866**	1.218	2.2	ug/L	7	Standard
	Al	27	3474846.1	3.4	**65.0827**	2.673	4.1	ug/L	277	Standard
	Sc	45	27154.3	4.3				ug/L	24625	Standard
	Ti	47	21728.9	1.4	**107.0739**	4.425	4.1	ug/L	198	Standard
	V	51	254788.9	2.2	**50.6763**	2.922	5.8	ug/L	1126	Standard
	Cr	52	256577.7	1.8	**53.1825**	1.955	3.7	ug/L	6071	Standard
	Cr	53	31868.5	1.5	**53.0068**	2.495	4.7	ug/L	332	Standard
	Mn	55	228282.1	1.6	**48.4477**	1.845	3.8	ug/L	876	Standard
	Co	59	239627.1	1.8	**50.1242**	1.771	3.5	ug/L	110	Standard
	Ni	60	66317.2	1.6	**50.9046**	1.900	3.7	ug/L	191	Standard
	Cu	65	68089.0	1.9	**52.3964**	2.525	4.8	ug/L	281	Standard
	Zn	66	39229.7	1.5	**51.3676**	1.945	3.8	ug/L	249	Standard
>	Ge	72	297313.1	5.3				ug/L	297260	Standard
	As	75	42253.0	1.8	**49.9403**	1.869	3.7	ug/L	-66	Standard
	Se	82	3705.8	2.3	**47.9449**	1.448	3.0	ug/L	13	Standard
	Se-1	77	2504.9	0.3	**51.7464**	2.917	5.6	ug/L	48	Standard
>	Ga	71	28.3	36.7				mg/L	30	Standard
	Rb	85	628.3	15.1				ug/L	12	Standard
	Y	89	288144.4	5.5				ug/L	310514	Standard
>	Rh	103	25.0	34.6				ug/L	10	Standard
	Mo	98	178890.7	1.0	**118.2259**	4.929	4.2	ug/L	11	Standard
	Ag	107	272225.0	1.3	**56.6907**	2.212	3.9	ug/L	99	Standard
	Cd	111	80351.9	1.4	**51.1023**	2.665	5.2	mg/L	6	Standard
	Cd	114	200822.1	2.4	**51.5173**	1.454	2.8	ug/L	6	Standard
>	In	115	432758.9	5.2				ug/L	501593	Standard
	Sn	118	224122.2	0.9	**51.8314**	2.189	4.2	ug/L	442	Standard
	Sb	123	217315.4	1.3	**51.0673**	2.565	5.0	ug/L	53	Standard
	Ba	135	97269.6	0.5	**56.9271**	2.636	4.6	ug/L	34	Standard
	Ce	140	78.3	31.5				ug/L	73	Standard
>	Tb	159	874411.5	4.7				ug/L	924917	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	381727.4	1.0	**51.6464**	2.288	4.4	ug/L	6	Standard
	Tl	205	247099.5	2.6	**49.8926**	1.337	2.7	ug/L	8	Standard
	Pb	206	267348.6	1.1	**51.8916**	2.680	5.2	ug/L	264	Standard
	Pb	207	241905.6	1.1	**51.8474**	2.362	4.6	ug/L	215	Standard
	Pb	208	845486.3	1.6	**51.5709**	1.861	3.6	ug/L	863	Standard
	U	238	268993.7	1.2	**49.0103**	1.963	4.0	ug/L	4	Standard
>	Bi	209	455084.8	5.1				ug/L	507917	Standard

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Na	23	1.7	173.2	**6.5540**	11.343	173.1	mg/L	0	Standard
Mg	24	3003.6	3.0	**4.7397**	0.222	4.7	mg/L	20	Standard
K	39	1870.1	3.5	**7.4535**	0.488	6.5	mg/L	38	Standard
Ca	43	103.3	19.6	**3.9293**	2.383	60.7	mg/L	43	Standard
Fe	54	3185.4	6.1	**4.1698**	0.159	3.8	mg/L	103	Standard
Fe	57	950.0	8.7	**4.3639**	0.607	13.9	mg/L	107	Standard
> **Sc-1**	45	27154.3	4.3				mg/L	24625	Standard
Cl	35	29723.8	2.8				ug/L	30925	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	603.3	1.0				ug/L	397	Standard
P	31	19122.1	4.1				ug/L	19276	Standard
S	34	3537.1	8.3				ug/L	3042	Standard
Sr	88	110.0	38.8				ug/L	65	Standard
C	12	190.0	36.8				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	19.2	89.5				mg/L	23	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	13	Standard
I	127	3258.7	7.8				mg/L	3275	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	113.173		
	Al	27	130.165		
	Sc	45			
	Ti	47	107.074		
	V	51	101.353		
	Cr	52	106.365		
	Cr	53			
	Mn	55	96.895		
	Co	59	100.248		
	Ni	60	101.809		
	Cu	65	104.793		
	Zn	66	102.735		
>	Ge	72		100.018	
	As	75	99.881		
	Se	82	95.890		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	118.226		
Ag	107	113.381		
Cd	111	102.205		
Cd	114			
In	115		86.277	
Sn	118	103.663		
Sb	123	102.135		
Ba	135	113.854		
Ce	140			
Tb	159			
Ho	165			
Tl	203	103.293		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.142		
U	238	98.021		
Bi	209		89.598	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	
QC Std 6	Mo	98	

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QC Std 6	Ag	107
QC Std 6	Ba	135

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, November 20, 2015 12:58:34
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	39954.3	4.5				ug/L	49688	Standard
	Be	9	41.7	59.2	**0.0436**	0.036	82.2	ug/L	7	Standard
	Al	27	4427.8	110.4	**0.0696**	0.086	123.5	ug/L	277	Standard
	Sc	45	28416.7	5.5				ug/L	24625	Standard
	Ti	47	73.0	24.4	**-0.4342**	0.078	18.0	ug/L	198	Standard
	V	51	1241.8	10.7	**0.0283**	0.015	53.0	ug/L	1126	Standard
	Cr	52	6173.6	5.7	**0.0650**	0.068	105.0	ug/L	6071	Standard
	Cr	53	471.7	2.4	**0.3131**	0.036	11.4	ug/L	332	Standard
	Mn	55	1102.0	24.4	**0.0254**	0.046	182.9	ug/L	876	Standard
	Co	59	358.3	46.1	**0.0474**	0.031	65.4	ug/L	110	Standard
	Ni	60	220.7	16.9	**-0.0129**	0.020	157.7	ug/L	191	Standard
	Cu	65	339.7	19.8	**0.0412**	0.041	100.1	ug/L	281	Standard
	Zn	66	333.3	6.8	**0.1371**	0.018	13.4	ug/L	249	Standard
>	**Ge**	72	296535.9	5.6				ug/L	297260	Standard
	As	75	-18.9	202.2	**0.0280**	0.045	160.9	ug/L	-66	Standard
	Se	82	16.3	23.0	**0.0018**	0.040	2211.2	ug/L	13	Standard
	Se-1	77	57.0	12.3	**0.2011**	0.107	53.3	ug/L	48	Standard
>	**Ga**	71	35.0	42.9				mg/L	30	Standard
	Rb	85	31.7	32.9				ug/L	12	Standard
	Y	89	290676.4	2.6				ug/L	310514	Standard
>	**Rh**	103	10.0					ug/L	10	Standard
	Mo	98	278.4	29.4	**0.1861**	0.046	24.5	ug/L	11	Standard
	Ag	107	242.7	50.4	**0.0303**	0.023	75.9	ug/L	99	Standard
	Cd	111	56.7	81.9	**0.0333**	0.028	82.9	mg/L	6	Standard
	Cd	114	146.3	70.8	**0.0347**	0.025	71.0	ug/L	6	Standard
>	**In**	115	435518.6	4.7				ug/L	501593	Standard
	Sn	118	698.3	8.3	**0.0671**	0.013	19.2	ug/L	442	Standard
	Sb	123	474.1	0.7	**0.1070**	0.006	5.5	ug/L	53	Standard
	Ba	135	104.3	45.7	**0.0366**	0.025	68.3	ug/L	34	Standard
	Ce	140	25.0	87.2				ug/L	73	Standard
>	**Tb**	159	884841.6	3.8				ug/L	924917	Standard
	Ho	165	18.3	68.6				ug/L	7	Standard
	Tl	203	228.3	78.5	**0.0271**	0.023	84.6	ug/L	6	Standard
	Tl	205	245.0	111.6	**0.0441**	0.053	119.1	ug/L	8	Standard
	Pb	206	433.7	30.2	**0.0359**	0.022	61.6	ug/L	264	Standard
	Pb	207	360.7	27.2	**0.0354**	0.018	50.7	ug/L	215	Standard
	Pb	208	1684.4	61.2	**0.0560**	0.058	104.4	ug/L	863	Standard
	U	238	256.7	111.7	**0.0476**	0.050	104.4	ug/L	4	Standard
>	**Bi**	209	458489.0	4.3				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	50.0	79.4	**0.0385**	0.057	149.2	mg/L	20	Standard
K	39	100.0	18.0	**0.1978**	0.051	25.8	mg/L	38	Standard
Ca	43	51.7	11.2	**-1.3738**	0.282	20.5	mg/L	43	Standard
Fe	54	115.8	19.5	**0.0032**	0.022	683.5	mg/L	103	Standard
Fe	57	156.7	20.8	**0.2166**	0.158	73.0	mg/L	107	Standard
> **Sc-1**	45	28416.7	5.5				mg/L	24625	Standard
Cl	35	29423.9	2.0				ug/L	30925	Standard
Kr	83	3.0	57.7				ug/L	4	Standard
Br	81	470.0	14.9				ug/L	397	Standard
P	31	19460.8	4.0				ug/L	19276	Standard
S	34	3358.7	1.4				ug/L	3042	Standard
Sr	88	90.0	14.7				ug/L	65	Standard
C	12	220.0	16.4				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	8.7	109.3				mg/L	23	Standard
Ho-1	165	18.3	68.6				mg/L	7	Standard
Er	166	26.7	57.3				mg/L	13	Standard
I	127	3638.8	6.3				mg/L	3275	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.756	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	86.827	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	90.268	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Ti	47	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1511094308
Sample Date/Time: Friday, November 20, 2015 13:01:46
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	36749.5	2.2				ug/L	49688	Standard
	Be	9	28.3	36.7	**0.0277**	0.019	67.8	ug/L	7	Standard
	Al	27	8753560.4	1.8	**174.2899**	3.952	2.3	ug/L	277	Standard
	Sc	45	26778.7	2.7				ug/L	24625	Standard
	Ti	47	120.3	6.8	**-0.1384**	0.046	32.9	ug/L	198	Standard
	V	51	2065.3	10.1	**0.2345**	0.045	19.3	ug/L	1126	Standard
	Cr	52	6466.7	6.9	**0.2632**	0.107	40.7	ug/L	6071	Standard
	Cr	53	4260.6	19.6	**7.3924**	1.548	20.9	ug/L	332	Standard
	Mn	55	15382.5	1.2	**3.4017**	0.042	1.2	ug/L	876	Standard
	Co	59	628.3	9.3	**0.1180**	0.014	11.8	ug/L	110	Standard
	Ni	60	2299.5	5.9	**1.7682**	0.115	6.5	ug/L	191	Standard
	Cu	65	548.3	7.6	**0.2458**	0.035	14.3	ug/L	281	Standard
	Zn	66	1139.7	1.2	**1.3504**	0.017	1.3	ug/L	249	Standard
>	Ge	72	269644.6	0.3				ug/L	297260	Standard
	As	75	486.9	13.1	**0.6846**	0.082	12.0	ug/L	-66	Standard
	Se	82	237.0	2.9	**3.1826**	0.091	2.8	ug/L	13	Standard
	Se-1	77	496.7	9.1	**10.5109**	1.045	9.9	ug/L	48	Standard
>	Ga	71	16.7	62.4				mg/L	30	Standard
	Rb	85	1031.7	11.4				ug/L	12	Standard
	Y	89	268745.8	0.4				ug/L	310514	Standard
>	Rh	103	156.7	17.6				ug/L	10	Standard
	Mo	98	92.7	13.2	**0.0719**	0.008	11.8	ug/L	11	Standard
	Ag	107	148.0	61.2	**0.0146**	0.021	142.9	ug/L	99	Standard
	Cd	111	78.1	44.1	**0.0527**	0.024	46.0	mg/L	6	Standard
	Cd	114	207.5	50.4	**0.0566**	0.030	52.5	ug/L	6	Standard
>	In	115	394467.6	1.2				ug/L	501593	Standard
	Sn	118	530.0	21.4	**0.0409**	0.028	69.4	ug/L	442	Standard
	Sb	123	192.5	28.1	**0.0458**	0.014	30.7	ug/L	53	Standard
	Ba	135	56585.5	0.3	**36.2682**	0.418	1.2	ug/L	34	Standard
	Ce	140	180.0	4.8				ug/L	73	Standard
>	Tb	159	808902.1	0.8				ug/L	924917	Standard
	Ho	165	18.3	41.7				ug/L	7	Standard
	Tl	203	179.3	93.6	**0.0233**	0.024	105.1	ug/L	6	Standard
	Tl	205	53.3	70.4	**0.0078**	0.008	105.6	ug/L	8	Standard
	Pb	206	308.3	17.2	**0.0179**	0.011	60.7	ug/L	264	Standard
	Pb	207	266.0	24.1	**0.0211**	0.015	69.4	ug/L	215	Standard
	Pb	208	873.7	12.2	**0.0132**	0.007	51.6	ug/L	863	Standard
	U	238	2101.8	1.4	**0.4182**	0.004	0.9	ug/L	4	Standard
>	Bi	209	418432.6	0.5				ug/L	507917	Standard

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Na	23	1.7	173.2	**6.2399**	10.799	173.1	mg/L	0	Standard
Mg	24	23029.2	2.5	**37.0716**	1.257	3.4	mg/L	20	Standard
K	39	173.3	10.9	**0.5287**	0.099	18.7	mg/L	38	Standard
Ca	43	328.3	16.3	**26.1041**	4.847	18.6	mg/L	43	Standard
Fe	54	59.2	29.6	**-0.0649**	0.023	35.0	mg/L	103	Standard
Fe	57	275.0	8.3	**0.8852**	0.159	17.9	mg/L	107	Standard
> **Sc-1**	45	26778.7	2.7				mg/L	24625	Standard
Cl	35	28725.9	3.5				ug/L	30925	Standard
Kr	83	4.0	66.1				ug/L	4	Standard
Br	81	16589.1	2.5				ug/L	397	Standard
P	31	9708.1	3.8				ug/L	19276	Standard
S	34	3155.3	4.3				ug/L	3042	Standard
Sr	88	211.7	4.9				ug/L	65	Standard
C	12	163.3	15.4				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	6.2	180.0				mg/L	23	Standard
Ho-1	165	18.3	41.7				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	52088.4	11.1				mg/L	3275	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		73.960	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		90.710	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	78.643	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	82.382	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1511094310
Sample Date/Time: Friday, November 20, 2015 13:04:57
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	37449.6	3.8				ug/L	49688	Standard
	Be	9	8.3	69.3	**-0.0064**	0.010	160.5	ug/L	7	Standard
	Al	27	3902223.3	2.2	**76.2576**	1.637	2.1	ug/L	277	Standard
	Sc	45	26706.9	1.4				ug/L	24625	Standard
	Ti	47	131.7	13.6	**-0.1020**	0.092	90.6	ug/L	198	Standard
	V	51	1798.3	14.4	**0.1616**	0.052	32.0	ug/L	1126	Standard
	Cr	52	6133.9	2.8	**0.1347**	0.032	23.8	ug/L	6071	Standard
	Cr	53	3127.0	6.7	**5.0934**	0.370	7.3	ug/L	332	Standard
	Mn	55	19336.0	1.2	**4.1696**	0.038	0.9	ug/L	876	Standard
	Co	59	587.0	6.2	**0.1036**	0.007	6.9	ug/L	110	Standard
	Ni	60	815.4	1.7	**0.4849**	0.014	2.8	ug/L	191	Standard
	Cu	65	456.7	3.9	**0.1542**	0.014	8.8	ug/L	281	Standard
	Zn	66	2070.8	3.5	**2.5946**	0.084	3.2	ug/L	249	Standard
>	**Ge**	72	279503.4	1.2				ug/L	297260	Standard
	As	75	260.5	15.0	**0.3779**	0.046	12.1	ug/L	-66	Standard
	Se	82	108.9	10.0	**1.2930**	0.135	10.4	ug/L	13	Standard
	Se-1	77	287.7	3.2	**5.4346**	0.281	5.2	ug/L	48	Standard
>	**Ga**	71	26.7	10.8				mg/L	30	Standard
	Rb	85	415.0	12.2				ug/L	12	Standard
	Y	89	265533.3	0.5				ug/L	310514	Standard
>	**Rh**	103	85.0	31.1				ug/L	10	Standard
	Mo	98	78.9	11.6	**0.0605**	0.006	10.1	ug/L	11	Standard
	Ag	107	90.3	10.9	**0.0008**	0.002	281.0	ug/L	99	Standard
	Cd	111	15.5	20.8	**0.0088**	0.002	25.8	mg/L	6	Standard
	Cd	114	34.4	65.7	**0.0076**	0.006	82.1	ug/L	6	Standard
>	**In**	115	404786.5	0.8				ug/L	501593	Standard
	Sn	118	331.7	9.6	**-0.0115**	0.008	73.8	ug/L	442	Standard
	Sb	123	108.4	24.2	**0.0235**	0.007	28.7	ug/L	53	Standard
	Ba	135	11368.6	1.7	**7.0814**	0.098	1.4	ug/L	34	Standard
	Ce	140	91.7	22.0				ug/L	73	Standard
>	**Tb**	159	811950.3	1.3				ug/L	924917	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	109.0	2.4	**0.0127**	0.000	2.0	ug/L	6	Standard
	Tl	205	60.0	22.0	**0.0090**	0.003	31.4	ug/L	8	Standard
	Pb	206	283.0	3.2	**0.0114**	0.002	21.0	ug/L	264	Standard
	Pb	207	231.0	10.2	**0.0118**	0.005	39.1	ug/L	215	Standard
	Pb	208	839.3	2.2	**0.0098**	0.001	5.4	ug/L	863	Standard
	U	238	2544.9	1.7	**0.4953**	0.003	0.7	ug/L	4	Standard
>	**Bi**	209	427381.0	1.5				ug/L	507917	Standard

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Na	23	1.7	173.2	**6.3215**	10.940	173.1	mg/L	0	Standard
Mg	24	15628.1	2.9	**25.2090**	0.934	3.7	mg/L	20	Standard
K	39	100.0	17.3	**0.2240**	0.067	29.9	mg/L	38	Standard
Ca	43	155.0	50.7	**9.1731**	7.899	86.1	mg/L	43	Standard
Fe	54	75.9	39.8	**-0.0418**	0.040	96.6	mg/L	103	Standard
Fe	57	200.0	13.9	**0.4937**	0.159	32.2	mg/L	107	Standard
Sc-1	45	26706.9	1.4				mg/L	24625	Standard
Cl	35	29546.1	1.3				ug/L	30925	Standard
Kr	83	5.3	10.8				ug/L	4	Standard
Br	81	7425.2	1.4				ug/L	397	Standard
P	31	9531.3	4.2				ug/L	19276	Standard
S	34	3142.0	3.3				ug/L	3042	Standard
Sr	88	160.0	6.3				ug/L	65	Standard
C	12	140.0	43.4				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	25.7	82.8				mg/L	23	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	107162.2	7.1				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		75.369	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		94.027	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		80.700
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		84.144
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1511098801
Sample Date/Time: Friday, November 20, 2015 13:08:09
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	41334.7	3.6				ug/L	49688	Standard
	Be	9	68.3	15.2	**0.0824**	0.017	20.5	ug/L	7	Standard
	Al	27	8856639.4	4.7	**156.7085**	2.265	1.4	ug/L	277	Standard
	Sc	45	29826.0	2.7				ug/L	24625	Standard
	Ti	47	2348.5	2.7	**10.7445**	0.290	2.7	ug/L	198	Standard
	V	51	10512.0	1.4	**1.8582**	0.028	1.5	ug/L	1126	Standard
	Cr	52	12590.6	1.8	**1.3968**	0.054	3.9	ug/L	6071	Standard
	Cr	53	1441.7	3.5	**1.9145**	0.090	4.7	ug/L	332	Standard
	Mn	55	215235.2	1.3	**45.2088**	0.761	1.7	ug/L	876	Standard
	Co	59	6843.2	1.1	**1.3912**	0.022	1.5	ug/L	110	Standard
	Ni	60	4248.3	3.3	**3.0576**	0.113	3.7	ug/L	191	Standard
	Cu	65	2297.2	3.2	**1.5363**	0.056	3.6	ug/L	281	Standard
	Zn	66	20614.4	2.2	**26.5776**	0.638	2.4	ug/L	249	Standard
>	Ge	72	299920.4	0.4				ug/L	297260	Standard
	As	75	857.0	3.7	**1.0533**	0.036	3.4	ug/L	-66	Standard
	Se	82	40.8	16.5	**0.3148**	0.087	27.6	ug/L	13	Standard
	Se-1	77	99.0	3.5	**1.0644**	0.080	7.5	ug/L	48	Standard
>	Ga	71	603.3	3.7				mg/L	30	Standard
	Rb	85	17323.2	1.3				ug/L	12	Standard
	Y	89	303419.8	3.0				ug/L	310514	Standard
>	Rh	103	45.0	29.4				ug/L	10	Standard
	Mo	98	247.9	5.8	**0.1652**	0.009	5.2	ug/L	11	Standard
	Ag	107	142.7	22.9	**0.0098**	0.007	67.3	ug/L	99	Standard
	Cd	111	40.1	27.2	**0.0232**	0.007	29.0	mg/L	6	Standard
	Cd	114	103.7	49.9	**0.0242**	0.013	53.6	ug/L	6	Standard
>	In	115	441364.7	0.5				ug/L	501593	Standard
	Sn	118	731.7	6.6	**0.0725**	0.012	16.1	ug/L	442	Standard
	Sb	123	405.2	8.7	**0.0895**	0.008	8.5	ug/L	53	Standard
	Ba	135	51298.4	1.1	**29.3803**	0.472	1.6	ug/L	34	Standard
	Ce	140	50892.0	2.0				ug/L	73	Standard
>	Tb	159	882768.0	2.3				ug/L	924917	Standard
	Ho	165	965.0	11.0				ug/L	7	Standard
	Tl	203	360.7	15.1	**0.0458**	0.008	16.9	ug/L	6	Standard
	Tl	205	220.0	2.3	**0.0404**	0.001	2.3	ug/L	8	Standard
	Pb	206	6298.0	2.1	**1.1738**	0.035	3.0	ug/L	264	Standard
	Pb	207	5064.5	0.3	**1.0432**	0.012	1.1	ug/L	215	Standard
	Pb	208	18466.1	1.1	**1.0806**	0.012	1.1	ug/L	863	Standard
	U	238	1082.4	1.3	**0.1991**	0.002	0.8	ug/L	4	Standard
>	Bi	209	455360.6	0.7				ug/L	507917	Standard

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Na	23	5.0	100.0	**17.2339**	17.126	99.4	mg/L	0	Standard
Mg	24	1715.1	2.3	**2.4451**	0.077	3.2	mg/L	20	Standard
K	39	281.7	10.7	**0.8558**	0.105	12.2	mg/L	38	Standard
Ca	43	461.7	7.0	**34.6115**	2.703	7.8	mg/L	43	Standard
Fe	54	1282.5	7.9	**1.4381**	0.150	10.4	mg/L	103	Standard
Fe	57	591.7	7.4	**2.2221**	0.129	5.8	mg/L	107	Standard
> **Sc-1**	45	29826.0	2.7				mg/L	24625	Standard
Cl	35	31061.8	1.9				ug/L	30925	Standard
Kr	83	3.3	45.8				ug/L	4	Standard
Br	81	1403.4	12.1				ug/L	397	Standard
P	31	19999.9	3.8				ug/L	19276	Standard
S	34	3282.0	5.1				ug/L	3042	Standard
Sr	88	121.7	9.5				ug/L	65	Standard
C	12	320.0	18.8				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	3	Standard
Dy	164	1454.1	8.7				mg/L	23	Standard
Ho-1	165	965.0	11.0				mg/L	7	Standard
Er	166	890.0	14.0				mg/L	13	Standard
I	127	34479.2	3.0				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		83.188	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.895	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		87.993
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		89.653
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1510156003
Sample Date/Time: Friday, November 20, 2015 13:11:57
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 20
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	40260.2	5.2				ug/L	49688	Standard
	Be	9	16.7	34.6	**0.0052**	0.009	165.1	ug/L	7	Standard
	Al	27	115835.3	5.4	**2.0951**	0.014	0.6	ug/L	277	Standard
	Sc	45	27313.0	4.6				ug/L	24625	Standard
	Ti	47	138.7	1.7	**-0.0899**	0.005	5.2	ug/L	198	Standard
	V	51	1543.6	12.0	**0.0966**	0.036	37.8	ug/L	1126	Standard
	Cr	52	6774.8	4.5	**0.2267**	0.042	18.6	ug/L	6071	Standard
	Cr	53	1461.7	9.2	**2.0369**	0.237	11.6	ug/L	332	Standard
	Mn	55	2018358.9	1.6	**441.2668**	7.776	1.8	ug/L	876	Standard
	Co	59	2772.6	2.2	**0.5686**	0.001	0.2	ug/L	110	Standard
	Ni	60	838.7	3.9	**0.4803**	0.011	2.3	ug/L	191	Standard
	Cu	65	923.7	1.5	**0.5118**	0.020	3.9	ug/L	281	Standard
	Zn	66	2143.8	3.3	**2.5949**	0.082	3.2	ug/L	249	Standard
>	**Ge**	72	289386.0	2.3				ug/L	297260	Standard
	As	75	1001.1	4.7	**1.2642**	0.047	3.7	ug/L	-66	Standard
	Se	82	279.6	7.0	**3.5166**	0.188	5.3	ug/L	13	Standard
	Se-1	77	141.7	9.9	**2.0576**	0.245	11.9	ug/L	48	Standard
>	**Ga**	71	56.7	31.0				mg/L	30	Standard
	Rb	85	21902.5	2.0				ug/L	12	Standard
	Y	89	294084.7	2.8				ug/L	310514	Standard
>	**Rh**	103	70.0	37.8				ug/L	10	Standard
	Mo	98	446679.5	2.5	**293.6147**	2.811	1.0	ug/L	11	Standard
	Ag	107	91.0	11.4	**-0.0004**	0.002	433.4	ug/L	99	Standard
	Cd	111	-316.4	6.6	**-0.2019**	0.013	6.5	mg/L	6	Standard
	Cd	114	1083.0	6.6	**0.2746**	0.018	6.4	ug/L	6	Standard
>	**In**	115	434422.4	1.6				ug/L	501593	Standard
	Sn	118	450.0	17.9	**0.0104**	0.020	194.9	ug/L	442	Standard
	Sb	123	234.2	11.9	**0.0511**	0.007	14.4	ug/L	53	Standard
	Ba	135	2251.2	5.4	**1.2871**	0.052	4.1	ug/L	34	Standard
	Ce	140	2495.2	7.0				ug/L	73	Standard
>	**Tb**	159	875288.8	1.7				ug/L	924917	Standard
	Ho	165	65.0	26.6				ug/L	7	Standard
	Tl	203	202.7	8.4	**0.0251**	0.002	7.3	ug/L	6	Standard
	Tl	205	145.0	10.3	**0.0261**	0.003	10.9	ug/L	8	Standard
	Pb	206	462.0	5.2	**0.0450**	0.007	14.6	ug/L	264	Standard
	Pb	207	390.0	7.6	**0.0450**	0.008	18.1	ug/L	215	Standard
	Pb	208	1335.4	1.8	**0.0389**	0.001	2.1	ug/L	863	Standard
	U	238	63.0	6.9	**0.0141**	0.001	5.8	ug/L	4	Standard
>	**Bi**	209	443115.1	1.9				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	43427.2	2.6	**68.5918**	1.889	2.8	mg/L	20	Standard
K	39	3208.7	3.4	**12.8344**	0.311	2.4	mg/L	38	Standard
Ca	43	111.7	22.1	**4.6004**	2.178	47.3	mg/L	43	Standard
Fe	54	307.6	24.7	**0.2696**	0.105	39.1	mg/L	103	Standard
Fe	57	248.3	19.9	**0.7145**	0.220	30.7	mg/L	107	Standard
> **Sc-1**	45	27313.0	4.6				mg/L	24625	Standard
Cl	35	39099.7	1.0				ug/L	30925	Standard
Kr	83	5.0	34.6				ug/L	4	Standard
Br	81	20390.4	1.2				ug/L	397	Standard
P	31	16652.5	3.5				ug/L	19276	Standard
S	34	3015.3	6.1				ug/L	3042	Standard
Sr	88	125.0	4.0				ug/L	65	Standard
C	12	233.3	6.5				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	84.3	18.5				mg/L	23	Standard
Ho-1	165	65.0	26.6				mg/L	7	Standard
Er	166	50.0	20.0				mg/L	13	Standard
I	127	468252.9	8.4				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		81.026	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.351	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	86.609	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	87.242	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

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Method 6020 - Summary Report

Sample ID: L1511098802
Sample Date/Time: Friday, November 20, 2015 13:17:24
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	44510.9	11.7				ug/L	49688	Standard
	Be	9	25.0	69.3	**0.0133**	0.023	171.2	ug/L	7	Standard
	Al	27	8507201.3	1.1	**141.0886**	16.307	11.6	ug/L	277	Standard
	Sc	45	30711.2	5.5				ug/L	24625	Standard
	Ti	47	1214.0	3.5	**4.8382**	0.388	8.0	ug/L	198	Standard
	V	51	4355.5	1.9	**0.5938**	0.058	9.8	ug/L	1126	Standard
	Cr	52	9667.1	1.4	**0.6705**	0.129	19.2	ug/L	6071	Standard
	Cr	53	1065.0	9.1	**1.1896**	0.175	14.7	ug/L	332	Standard
	Mn	55	206235.5	2.0	**40.8885**	2.518	6.2	ug/L	876	Standard
	Co	59	2041.8	2.0	**0.3731**	0.033	8.7	ug/L	110	Standard
	Ni	60	2207.8	2.7	**1.4072**	0.087	6.2	ug/L	191	Standard
	Cu	65	1223.0	0.6	**0.6639**	0.074	11.1	ug/L	281	Standard
	Zn	66	5954.5	2.8	**7.0267**	0.389	5.5	ug/L	249	Standard
>	**Ge**	72	318653.2	8.3				ug/L	297260	Standard
	As	75	229.2	9.7	**0.3051**	0.036	11.9	ug/L	-66	Standard
	Se	82	37.4	19.7	**0.2492**	0.118	47.2	ug/L	13	Standard
	Se-1	77	75.3	18.6	**0.4848**	0.306	63.2	ug/L	48	Standard
>	**Ga**	71	308.3	23.0				mg/L	30	Standard
	Rb	85	8947.6	1.7				ug/L	12	Standard
	Y	89	312678.1	7.9				ug/L	310514	Standard
>	**Rh**	103	46.7	22.3				ug/L	10	Standard
	Mo	98	423.5	15.5	**0.2628**	0.021	8.1	ug/L	11	Standard
	Ag	107	130.3	10.8	**0.0058**	0.002	27.1	ug/L	99	Standard
	Cd	111	138.1	5.5	**0.0799**	0.009	11.8	mg/L	6	Standard
	Cd	114	280.5	11.5	**0.0646**	0.004	5.4	ug/L	6	Standard
>	**In**	115	467155.5	7.3				ug/L	501593	Standard
	Sn	118	790.0	8.8	**0.0763**	0.018	24.1	ug/L	442	Standard
	Sb	123	501.2	4.8	**0.1054**	0.006	5.8	ug/L	53	Standard
	Ba	135	30046.1	1.4	**16.3123**	1.340	8.2	ug/L	34	Standard
	Ce	140	29588.9	2.0				ug/L	73	Standard
>	**Tb**	159	926248.6	6.6				ug/L	924917	Standard
	Ho	165	488.3	3.6				ug/L	7	Standard
	Tl	203	202.3	2.9	**0.0230**	0.002	9.9	ug/L	6	Standard
	Tl	205	123.3	28.8	**0.0194**	0.005	27.8	ug/L	8	Standard
	Pb	206	3024.0	1.5	**0.5096**	0.040	7.9	ug/L	264	Standard
	Pb	207	2454.5	4.5	**0.4582**	0.042	9.2	ug/L	215	Standard
	Pb	208	9021.0	0.3	**0.4774**	0.036	7.5	ug/L	863	Standard
	U	238	917.4	4.3	**0.1604**	0.006	3.8	ug/L	4	Standard
>	**Bi**	209	481068.1	7.4				ug/L	507917	Standard

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Na	23	3.3	173.2	**11.6759**	20.215	173.1	mg/L	0	Standard
Mg	24	1400.1	2.2	**1.9330**	0.081	4.2	mg/L	20	Standard
K	39	273.3	23.9	**0.7913**	0.205	25.9	mg/L	38	Standard
Ca	43	405.0	11.3	**28.6039**	3.833	13.4	mg/L	43	Standard
Fe	54	432.6	8.4	**0.3748**	0.071	18.9	mg/L	103	Standard
Fe	57	343.3	17.8	**1.0163**	0.308	30.3	mg/L	107	Standard
> **Sc-1**	45	30711.2	5.5				mg/L	24625	Standard
Cl	35	30948.2	1.0				ug/L	30925	Standard
Kr	83	3.3	91.7				ug/L	4	Standard
Br	81	1840.1	3.3				ug/L	397	Standard
P	31	20265.2	0.9				ug/L	19276	Standard
S	34	3097.0	6.8				ug/L	3042	Standard
Sr	88	131.7	12.2				ug/L	65	Standard
C	12	393.3	3.9				mg/L	287	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	3	Standard
Dy	164	890.5	1.7				mg/L	23	Standard
Ho-1	165	488.3	3.6				mg/L	7	Standard
Er	166	406.7	13.5				mg/L	13	Standard
I	127	13777.9	6.2				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.580	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.197	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.134
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.714
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1511105016
Sample Date/Time: Friday, November 20, 2015 13:20:35
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	34410.7	1.0				ug/L	49688	Standard
	Be	9	18.3	41.7	**0.0127**	0.014	109.7	ug/L	7	Standard
	Al	27	225659.9	25.6	**4.7808**	1.180	24.7	ug/L	277	Standard
	Sc	45	25454.7	4.4				ug/L	24625	Standard
	Ti	47	62.0	15.4	**-0.4538**	0.051	11.3	ug/L	198	Standard
	V	51	1370.8	3.5	**0.0850**	0.013	15.6	ug/L	1126	Standard
	Cr	52	5436.0	2.8	**0.0354**	0.026	73.0	ug/L	6071	Standard
	Cr	53	328.3	15.6	**0.1320**	0.092	69.4	ug/L	332	Standard
	Mn	55	8897.3	12.7	**1.9029**	0.284	14.9	ug/L	876	Standard
	Co	59	223.0	14.1	**0.0251**	0.007	27.9	ug/L	110	Standard
	Ni	60	2622.2	3.3	**2.0656**	0.091	4.4	ug/L	191	Standard
	Cu	65	255.3	5.1	**-0.0012**	0.011	946.7	ug/L	281	Standard
	Zn	66	892.4	2.0	**1.0054**	0.037	3.6	ug/L	249	Standard
>	Ge	72	266854.2	0.8				ug/L	297260	Standard
	As	75	-6.1	343.4	**0.0436**	0.027	63.0	ug/L	-66	Standard
	Se	82	19.5	5.6	**0.0718**	0.014	20.2	ug/L	13	Standard
	Se-1	77	70.0	13.6	**0.6408**	0.222	34.7	ug/L	48	Standard
>	Ga	71	16.7	75.5				mg/L	30	Standard
	Rb	85	46.7	24.7				ug/L	12	Standard
	Y	89	258111.5	3.3				ug/L	310514	Standard
>	Rh	103	16.7	62.4				ug/L	10	Standard
	Mo	98	117.7	42.1	**0.0911**	0.036	39.7	ug/L	11	Standard
	Ag	107	109.7	17.1	**0.0061**	0.004	70.4	ug/L	99	Standard
	Cd	111	13.1	102.9	**0.0075**	0.009	127.3	mg/L	6	Standard
	Cd	114	38.1	93.7	**0.0090**	0.010	113.0	ug/L	6	Standard
>	In	115	389714.9	0.8				ug/L	501593	Standard
	Sn	118	193.3	17.2	**-0.0438**	0.009	20.1	ug/L	442	Standard
	Sb	123	87.7	10.4	**0.0191**	0.002	11.5	ug/L	53	Standard
	Ba	135	790.7	25.9	**0.4906**	0.137	28.0	ug/L	34	Standard
	Ce	140	151.7	136.9				ug/L	73	Standard
>	Tb	159	786928.4	1.2				ug/L	924917	Standard
	Ho	165	13.3	21.7				ug/L	7	Standard
	Tl	203	61.3	60.3	**0.0059**	0.005	88.1	ug/L	6	Standard
	Tl	205	56.7	51.7	**0.0084**	0.006	73.5	ug/L	8	Standard
	Pb	206	221.0	7.3	**-0.0008**	0.004	437.1	ug/L	264	Standard
	Pb	207	206.0	18.0	**0.0067**	0.008	117.7	ug/L	215	Standard
	Pb	208	808.0	18.9	**0.0084**	0.009	110.2	ug/L	863	Standard
	U	238	224.0	35.2	**0.0461**	0.015	31.9	ug/L	4	Standard
>	Bi	209	421749.7	1.5				ug/L	507917	Standard

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Na	23	1.7	173.2	**6.7785**	11.732	173.1	mg/L	0	Standard
Mg	24	176.7	20.1	**0.2651**	0.071	27.0	mg/L	20	Standard
K	39	66.7	30.3	**0.1024**	0.097	94.8	mg/L	38	Standard
Ca	43	43.3	46.6	**-1.6038**	2.232	139.2	mg/L	43	Standard
Fe	54	27.7	28.7	**-0.1056**	0.013	12.3	mg/L	103	Standard
Fe	57	200.0	34.4	**0.5458**	0.391	71.6	mg/L	107	Standard
> **Sc-1**	45	25454.7	4.4				mg/L	24625	Standard
Cl	35	27767.4	1.0				ug/L	30925	Standard
Kr	83	4.3	13.3				ug/L	4	Standard
Br	81	553.3	6.8				ug/L	397	Standard
P	31	5712.7	2.7				ug/L	19276	Standard
S	34	2836.9	1.1				ug/L	3042	Standard
Sr	88	96.7	20.9				ug/L	65	Standard
C	12	150.0	29.1				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	36.2	63.8				mg/L	23	Standard
Ho-1	165	13.3	21.7				mg/L	7	Standard
Er	166	10.0					mg/L	13	Standard
I	127	6631.5	2.8				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		69.253	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		89.771	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		77.695
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		83.035
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Lower	Ti	47	

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Method 6020 - Summary Report

Sample ID: L1511094304
Sample Date/Time: Friday, November 20, 2015 13:27:54
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	46434.5	5.4				ug/L	49688	Standard
	Be	9	23.3	53.9	**0.0102**	0.015	151.2	ug/L	7	Standard
	Al	27	33971150.8	7.3	**534.8349**	10.426	1.9	ug/L	277	Standard
	Sc	45	29822.7	1.9				ug/L	24625	Standard
	Ti	47	323.7	7.7	**0.8396**	0.110	13.0	ug/L	198	Standard
	V	51	5389.9	1.3	**0.8767**	0.025	2.9	ug/L	1126	Standard
	Cr	52	11250.2	1.6	**1.1837**	0.054	4.6	ug/L	6071	Standard
	Cr	53	15080.8	2.4	**25.2986**	0.822	3.2	ug/L	332	Standard
	Mn	55	7610.2	2.5	**1.4436**	0.036	2.5	ug/L	876	Standard
	Co	59	1619.8	3.1	**0.3185**	0.011	3.4	ug/L	110	Standard
	Ni	60	5034.8	3.2	**3.7677**	0.096	2.6	ug/L	191	Standard
	Cu	65	2060.1	4.4	**1.4001**	0.053	3.8	ug/L	281	Standard
	Zn	66	2669.2	1.8	**3.2782**	0.026	0.8	ug/L	249	Standard
>	Ge	72	291508.8	1.1				ug/L	297260	Standard
	As	75	1492.8	4.5	**1.8468**	0.080	4.3	ug/L	-66	Standard
	Se	82	654.9	2.2	**8.4613**	0.256	3.0	ug/L	13	Standard
	Se-1	77	1893.8	3.0	**39.6051**	1.652	4.2	ug/L	48	Standard
>	Ga	71	61.7	12.4				mg/L	30	Standard
	Rb	85	3750.5	10.6				ug/L	12	Standard
	Y	89	289845.3	4.9				ug/L	310514	Standard
>	Rh	103	543.3	4.5				ug/L	10	Standard
	Mo	98	301.6	5.7	**0.2018**	0.011	5.6	ug/L	11	Standard
	Ag	107	103.3	1.5	**0.0020**	0.001	33.9	ug/L	99	Standard
	Cd	111	60.0	9.5	**0.0359**	0.003	9.2	mg/L	6	Standard
	Cd	114	160.9	13.0	**0.0390**	0.006	15.1	ug/L	6	Standard
>	In	115	437504.0	1.9				ug/L	501593	Standard
	Sn	118	463.3	14.7	**0.0126**	0.016	127.2	ug/L	442	Standard
	Sb	123	262.3	11.6	**0.0571**	0.006	10.7	ug/L	53	Standard
	Ba	135	24483.8	2.2	**14.1381**	0.472	3.3	ug/L	34	Standard
	Ce	140	148.3	8.5				ug/L	73	Standard
>	Tb	159	858327.7	0.5				ug/L	924917	Standard
	Ho	165	21.7	48.0				ug/L	7	Standard
	Tl	203	97.0	10.9	**0.0109**	0.002	13.8	ug/L	6	Standard
	Tl	205	65.0	48.0	**0.0099**	0.007	66.3	ug/L	8	Standard
	Pb	206	390.7	5.0	**0.0331**	0.004	12.0	ug/L	264	Standard
	Pb	207	320.7	3.8	**0.0318**	0.002	7.6	ug/L	215	Standard
	Pb	208	1158.4	2.3	**0.0300**	0.002	6.9	ug/L	863	Standard
	U	238	37299.2	0.5	**7.1812**	0.025	0.3	ug/L	4	Standard
>	Bi	209	430206.5	0.5				ug/L	507917	Standard

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Na	23	8.3	69.3	**28.1732**	19.005	67.5	mg/L	0	Standard
Mg	24	131859.6	0.9	**190.7115**	4.025	2.1	mg/L	20	Standard
K	39	398.3	9.3	**1.2906**	0.146	11.3	mg/L	38	Standard
Ca	43	1213.4	4.8	**101.0390**	6.220	6.2	mg/L	43	Standard
Fe	54	117.4	23.1	**-0.0009**	0.035	3884.8	mg/L	103	Standard
Fe	57	441.7	10.9	**1.5186**	0.211	13.9	mg/L	107	Standard
> **Sc-1**	45	29822.7	1.9				mg/L	24625	Standard
Cl	35	50141.6	3.2				ug/L	30925	Standard
Kr	83	3.7	41.7				ug/L	4	Standard
Br	81	50611.1	3.3				ug/L	397	Standard
P	31	23807.1	4.7				ug/L	19276	Standard
S	34	3073.6	3.2				ug/L	3042	Standard
Sr	88	571.7	8.4				ug/L	65	Standard
C	12	570.0	19.5				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	23.8	24.3				mg/L	23	Standard
Ho-1	165	21.7	48.0				mg/L	7	Standard
Er	166	60.0	16.7				mg/L	13	Standard
I	127	513988.0	6.8				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.452	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.065	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	87.223	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	84.700	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1511094306
Sample Date/Time: Friday, November 20, 2015 13:31:05
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	45110.5	4.4				ug/L	49688	Standard
	Be	9	23.3	12.4	**0.0118**	0.005	44.0	ug/L	7	Standard
	Al	27	10367988.0	5.9	**168.2637**	10.463	6.2	ug/L	277	Standard
	Sc	45	29851.0	0.5				ug/L	24625	Standard
	Ti	47	481.3	58.5	**1.6120**	1.386	86.0	ug/L	198	Standard
	V	51	4477.8	5.4	**0.6843**	0.052	7.6	ug/L	1126	Standard
	Cr	52	12489.8	4.5	**1.4308**	0.115	8.0	ug/L	6071	Standard
	Cr	53	9681.4	4.1	**15.9500**	0.943	5.9	ug/L	332	Standard
	Mn	55	24376.9	3.6	**5.0442**	0.208	4.1	ug/L	876	Standard
	Co	59	887.4	5.4	**0.1609**	0.009	5.6	ug/L	110	Standard
	Ni	60	2399.9	5.3	**1.6865**	0.101	6.0	ug/L	191	Standard
	Cu	65	948.7	2.2	**0.5202**	0.011	2.0	ug/L	281	Standard
	Zn	66	1908.1	4.4	**2.2384**	0.124	5.5	ug/L	249	Standard
>	Ge	72	293758.4	1.9				ug/L	297260	Standard
	As	75	636.9	8.2	**0.8124**	0.075	9.2	ug/L	-66	Standard
	Se	82	208.1	7.6	**2.5275**	0.250	9.9	ug/L	13	Standard
	Se-1	77	911.7	2.7	**18.3996**	0.708	3.8	ug/L	48	Standard
>	Ga	71	40.0	37.5				mg/L	30	Standard
	Rb	85	1506.7	4.4				ug/L	12	Standard
	Y	89	292205.2	2.5				ug/L	310514	Standard
>	Rh	103	155.0	32.7				ug/L	10	Standard
	Mo	98	152.6	5.0	**0.1021**	0.007	7.2	ug/L	11	Standard
	Ag	107	88.0	9.3	**-0.0016**	0.002	131.3	ug/L	99	Standard
	Cd	111	31.3	7.9	**0.0174**	0.001	6.2	mg/L	6	Standard
	Cd	114	87.6	12.2	**0.0198**	0.003	13.0	ug/L	6	Standard
>	In	115	448658.5	2.8				ug/L	501593	Standard
	Sn	118	586.7	7.4	**0.0373**	0.007	17.5	ug/L	442	Standard
	Sb	123	141.0	14.1	**0.0281**	0.004	12.6	ug/L	53	Standard
	Ba	135	46695.9	2.3	**26.3308**	1.331	5.1	ug/L	34	Standard
	Ce	140	780.0	14.7				ug/L	73	Standard
>	Tb	159	886610.7	2.8				ug/L	924917	Standard
	Ho	165	25.0	20.0				ug/L	7	Standard
	Tl	203	102.7	5.6	**0.0110**	0.001	7.1	ug/L	6	Standard
	Tl	205	63.3	24.1	**0.0090**	0.003	34.8	ug/L	8	Standard
	Pb	206	398.0	3.9	**0.0308**	0.004	14.5	ug/L	264	Standard
	Pb	207	316.3	5.1	**0.0275**	0.002	7.7	ug/L	215	Standard
	Pb	208	1138.0	3.0	**0.0253**	0.003	10.3	ug/L	863	Standard
	U	238	5596.7	0.7	**1.0301**	0.029	2.8	ug/L	4	Standard
>	Bi	209	451059.1	2.3				ug/L	507917	Standard

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Na	23	5.0	0.0	**17.0171**	0.090	0.5	mg/L	0	Standard
Mg	24	52444.0	3.4	**75.7451**	2.773	3.7	mg/L	20	Standard
K	39	246.7	10.0	**0.7252**	0.089	12.3	mg/L	38	Standard
Ca	43	380.0	23.1	**27.3469**	7.589	27.8	mg/L	43	Standard
Fe	54	120.2	16.6	**0.0022**	0.025	1150.6	mg/L	103	Standard
Fe	57	255.0	18.0	**0.6398**	0.211	33.0	mg/L	107	Standard
> **Sc-1**	45	29851.0	0.5				mg/L	24625	Standard
Cl	35	34447.1	0.5				ug/L	30925	Standard
Kr	83	3.0	33.3				ug/L	4	Standard
Br	81	13155.7	5.0				ug/L	397	Standard
P	31	24035.7	3.1				ug/L	19276	Standard
S	34	2942.0	1.9				ug/L	3042	Standard
Sr	88	201.7	21.4				ug/L	65	Standard
C	12	636.7	15.3				mg/L	287	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	28.6	33.3				mg/L	23	Standard
Ho-1	165	25.0	20.0				mg/L	7	Standard
Er	166	30.0	33.3				mg/L	13	Standard
I	127	59981.5	13.2				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.787	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.822	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.447
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		88.806
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1511094306PS WG547469-03
Sample Date/Time: Friday, November 20, 2015 13:34:16
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	44793.3	10.5				ug/L	49688	Standard
	Be	9	39414.6	3.7	**55.0096**	5.945	10.8	ug/L	7	Standard
	Al	27	10110955.8	2.0	**166.2384**	16.264	9.8	ug/L	277	Standard
	Sc	45	30051.6	8.1				ug/L	24625	Standard
	Ti	47	353.0	8.1	**0.9509**	0.218	23.0	ug/L	198	Standard
	V	51	264398.7	1.6	**52.3982**	4.599	8.8	ug/L	1126	Standard
	Cr	52	261463.9	1.1	**53.9915**	3.786	7.0	ug/L	6071	Standard
	Cr	53	41363.1	1.4	**68.6384**	4.845	7.1	ug/L	332	Standard
	Mn	55	258786.4	0.9	**54.7527**	4.426	8.1	ug/L	876	Standard
	Co	59	247225.1	0.9	**51.5327**	4.118	8.0	ug/L	110	Standard
	Ni	60	66791.6	1.8	**51.0450**	3.341	6.5	ug/L	191	Standard
	Cu	65	67607.2	1.3	**51.7810**	3.310	6.4	ug/L	281	Standard
	Zn	66	42290.3	1.4	**55.1996**	4.484	8.1	ug/L	249	Standard
>	**Ge**	72	299171.0	7.4				ug/L	297260	Standard
	As	75	45445.3	1.2	**53.5170**	4.256	8.0	ug/L	-66	Standard
	Se	82	4068.4	1.4	**52.4403**	3.426	6.5	ug/L	13	Standard
	Se-1	77	3463.1	3.0	**71.6294**	6.346	8.9	ug/L	48	Standard
>	**Ga**	71	36.7	20.8				mg/L	30	Standard
	Rb	85	1443.4	5.3				ug/L	12	Standard
	Y	89	297577.4	4.4				ug/L	310514	Standard
>	**Rh**	103	148.3	10.3				ug/L	10	Standard
	Mo	98	156.7	10.4	**0.1051**	0.017	16.1	ug/L	11	Standard
	Ag	107	248958.3	1.4	**49.9786**	3.876	7.8	ug/L	99	Standard
	Cd	111	84667.6	1.9	**51.8894**	4.030	7.8	mg/L	6	Standard
	Cd	114	208150.3	2.1	**51.5115**	4.404	8.5	ug/L	6	Standard
>	**In**	115	449865.9	6.8				ug/L	501593	Standard
	Sn	118	635.0	2.7	**0.0481**	0.006	13.4	ug/L	442	Standard
	Sb	123	229431.6	1.4	**51.9580**	4.014	7.7	ug/L	53	Standard
	Ba	135	145987.0	1.0	**82.3545**	6.333	7.7	ug/L	34	Standard
	Ce	140	823.4	9.9				ug/L	73	Standard
>	**Tb**	159	892284.4	6.7				ug/L	924917	Standard
	Ho	165	45.0	48.4				ug/L	7	Standard
	Tl	203	388942.3	0.7	**52.5164**	3.375	6.4	ug/L	6	Standard
	Tl	205	254032.7	2.5	**51.2720**	4.495	8.8	ug/L	8	Standard
	Pb	206	272431.9	1.0	**52.7767**	3.766	7.1	ug/L	264	Standard
	Pb	207	245356.9	1.5	**52.4919**	3.684	7.0	ug/L	215	Standard
	Pb	208	846022.0	0.8	**51.5136**	3.315	6.4	ug/L	863	Standard
	U	238	287077.7	1.8	**52.2229**	3.784	7.2	ug/L	4	Standard
>	**Bi**	209	456578.5	6.4				ug/L	507917	Standard

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Na	23	8.3	34.6	**27.8073**	8.197	29.5	mg/L	0	Standard
Mg	24	52520.9	1.3	**75.7120**	6.851	9.0	mg/L	20	Standard
K	39	253.3	12.1	**0.7435**	0.081	10.9	mg/L	38	Standard
Ca	43	413.3	1.4	**30.2239**	2.937	9.7	mg/L	43	Standard
Fe	54	151.0	22.1	**0.0389**	0.037	96.0	mg/L	103	Standard
Fe	57	246.7	8.4	**0.5993**	0.141	23.5	mg/L	107	Standard
Sc-1	45	30051.6	8.1				mg/L	24625	Standard
Cl	35	33630.6	1.6				ug/L	30925	Standard
Kr	83	2.7	57.3				ug/L	4	Standard
Br	81	13482.7	4.1				ug/L	397	Standard
P	31	23079.2	1.6				ug/L	19276	Standard
S	34	3013.6	4.4				ug/L	3042	Standard
Sr	88	241.7	8.4				ug/L	65	Standard
C	12	693.3	22.4				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	3	Standard
Dy	164	28.2	3.9				mg/L	23	Standard
Ho-1	165	45.0	48.4				mg/L	7	Standard
Er	166	36.7	63.0				mg/L	13	Standard
I	127	46725.3	3.7				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		90.149	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.643	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.687
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		89.892
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1511094306SDL WG547469-04
Sample Date/Time: Friday, November 20, 2015 13:37:28
Number of Replicates: 3
Autosampler Position: 346
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	36367.0	3.4				ug/L	49688	Standard
	Be	9	146.7	123.1	**0.2255**	0.298	132.3	ug/L	7	Standard
	Al	27	1930281.0	2.6	**38.8320**	0.717	1.8	ug/L	277	Standard
	Sc	45	25282.7	1.0				ug/L	24625	Standard
	Ti	47	109.0	1.8	**-0.1988**	0.011	5.4	ug/L	198	Standard
	V	51	2526.8	42.4	**0.3371**	0.235	69.6	ug/L	1126	Standard
	Cr	52	6954.0	19.3	**0.3808**	0.309	81.2	ug/L	6071	Standard
	Cr	53	3067.0	12.6	**5.2005**	0.703	13.5	ug/L	332	Standard
	Mn	55	5444.0	20.2	**1.0722**	0.255	23.8	ug/L	876	Standard
	Co	59	945.7	103.5	**0.1913**	0.225	117.8	ug/L	110	Standard
	Ni	60	724.7	41.9	**0.4335**	0.256	59.1	ug/L	191	Standard
	Cu	65	574.0	50.5	**0.2686**	0.246	91.4	ug/L	281	Standard
	Zn	66	1688.1	14.3	**2.1519**	0.344	16.0	ug/L	249	Standard
>	**Ge**	72	268910.7	0.3				ug/L	297260	Standard
	As	75	215.7	88.4	**0.3324**	0.248	74.5	ug/L	-66	Standard
	Se	82	67.5	28.4	**0.7591**	0.273	35.9	ug/L	13	Standard
	Se-1	77	273.0	6.2	**5.3444**	0.376	7.0	ug/L	48	Standard
>	**Ga**	71	16.7	45.8				mg/L	30	Standard
	Rb	85	291.7	8.5				ug/L	12	Standard
	Y	89	266142.2	0.7				ug/L	310514	Standard
>	**Rh**	103	40.0	12.5				ug/L	10	Standard
	Mo	98	46.2	35.0	**0.0374**	0.011	29.6	ug/L	11	Standard
	Ag	107	601.7	114.2	**0.1153**	0.155	134.1	ug/L	99	Standard
	Cd	111	254.2	148.1	**0.1722**	0.258	150.0	mg/L	6	Standard
	Cd	114	628.1	137.0	**0.1715**	0.238	139.0	ug/L	6	Standard
>	**In**	115	404902.1	0.9				ug/L	501593	Standard
	Sn	118	320.0	4.1	**-0.0144**	0.004	26.7	ug/L	442	Standard
	Sb	123	1111.9	65.2	**0.2761**	0.185	67.0	ug/L	53	Standard
	Ba	135	9246.2	7.1	**5.7560**	0.459	8.0	ug/L	34	Standard
	Ce	140	171.7	8.9				ug/L	73	Standard
>	**Tb**	159	798193.3	1.6				ug/L	924917	Standard
	Ho	165	16.7	45.8				ug/L	7	Standard
	Tl	203	856.4	113.4	**0.1208**	0.141	116.5	ug/L	6	Standard
	Tl	205	505.0	122.6	**0.1051**	0.134	127.3	ug/L	8	Standard
	Pb	206	966.7	101.1	**0.1534**	0.203	132.5	ug/L	264	Standard
	Pb	207	846.7	110.1	**0.1532**	0.214	139.7	ug/L	215	Standard
	Pb	208	2952.9	104.9	**0.1479**	0.202	136.9	ug/L	863	Standard
	U	238	1840.5	67.4	**0.3604**	0.242	67.2	ug/L	4	Standard
>	**Bi**	209	425986.6	0.9				ug/L	507917	Standard

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Na	23	1.7	173.2	**6.6363**	11.486	173.1	mg/L	0	Standard
Mg	24	9539.7	5.2	**16.2412**	0.924	5.7	mg/L	20	Standard
K	39	93.3	29.5	**0.2186**	0.120	55.0	mg/L	38	Standard
Ca	43	111.7	9.3	**5.4821**	1.128	20.6	mg/L	43	Standard
Fe	54	47.4	29.9	**-0.0771**	0.020	25.8	mg/L	103	Standard
Fe	57	188.3	30.5	**0.4880**	0.322	66.1	mg/L	107	Standard
Sc-1	45	25282.7	1.0				mg/L	24625	Standard
Cl	35	28410.6	0.7				ug/L	30925	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	3340.4	9.5				ug/L	397	Standard
P	31	8644.1	0.5				ug/L	19276	Standard
S	34	2865.3	2.4				ug/L	3042	Standard
Sr	88	115.0	15.1				ug/L	65	Standard
C	12	210.0	21.8				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	35.7	70.0				mg/L	23	Standard
Ho-1	165	16.7	45.8				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	13981.4	0.8				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		73.190	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		90.463	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		80.723
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		83.869
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, November 20, 2015 13:40:41
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	39082.0	3.3				ug/L	49688	Standard
	Be	9	35321.2	5.7	**56.0670**	1.538	2.7	ug/L	7	Standard
	Al	27	3420631.3	4.9	**64.0023**	1.394	2.2	ug/L	277	Standard
	Sc	45	27117.6	3.6				ug/L	24625	Standard
	Ti	47	21368.4	3.6	**106.9880**	2.283	2.1	ug/L	198	Standard
	V	51	251677.8	3.4	**50.8424**	1.048	2.1	ug/L	1126	Standard
	Cr	52	249476.3	2.6	**52.5407**	0.558	1.1	ug/L	6071	Standard
	Cr	53	31075.2	3.0	**52.5071**	0.640	1.2	ug/L	332	Standard
	Mn	55	228149.8	2.3	**49.2120**	0.438	0.9	ug/L	876	Standard
	Co	59	238794.7	2.3	**50.7682**	0.283	0.6	ug/L	110	Standard
	Ni	60	66089.9	3.5	**51.5547**	1.053	2.0	ug/L	191	Standard
	Cu	65	66139.8	2.5	**51.7114**	0.692	1.3	ug/L	281	Standard
	Zn	66	38415.7	3.1	**51.1166**	0.878	1.7	ug/L	249	Standard
>	Ge	72	292139.8	1.8				ug/L	297260	Standard
	As	75	41435.1	1.6	**49.7792**	0.565	1.1	ug/L	-66	Standard
	Se	82	3572.7	2.5	**46.9869**	0.855	1.8	ug/L	13	Standard
	Se-1	77	2528.5	3.7	**53.0710**	1.220	2.3	ug/L	48	Standard
>	Ga	71	26.7	21.7				mg/L	30	Standard
	Rb	85	543.3	18.0				ug/L	12	Standard
	Y	89	286622.2	3.0				ug/L	310514	Standard
>	Rh	103	21.7	53.3				ug/L	10	Standard
	Mo	98	173460.0	3.2	**112.8403**	2.324	2.1	ug/L	11	Standard
	Ag	107	268904.2	2.5	**55.1341**	1.148	2.1	ug/L	99	Standard
	Cd	111	81473.3	3.1	**50.9847**	0.484	0.9	mg/L	6	Standard
	Cd	114	201659.4	2.8	**50.9441**	0.435	0.9	ug/L	6	Standard
>	In	115	439005.9	2.3				ug/L	501593	Standard
	Sn	118	226674.2	3.3	**51.5973**	1.007	2.0	ug/L	442	Standard
	Sb	123	220024.8	2.8	**50.8835**	0.840	1.7	ug/L	53	Standard
	Ba	135	97270.3	2.1	**56.0297**	0.284	0.5	ug/L	34	Standard
	Ce	140	81.7	27.6				ug/L	73	Standard
>	Tb	159	862809.9	3.3				ug/L	924917	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	384254.2	2.1	**51.8090**	0.208	0.4	ug/L	6	Standard
	Tl	205	245161.0	1.2	**49.3688**	0.755	1.5	ug/L	8	Standard
	Pb	206	269502.5	2.6	**52.1149**	0.552	1.1	ug/L	264	Standard
	Pb	207	240750.2	3.5	**51.4194**	1.453	2.8	ug/L	215	Standard
	Pb	208	835893.3	2.3	**50.8221**	0.298	0.6	ug/L	863	Standard
	U	238	267864.1	2.2	**48.6441**	0.553	1.1	ug/L	4	Standard
>	Bi	209	455991.3	2.2				ug/L	507917	Standard

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Na	23	3.3	86.6	**12.7242**	11.021	86.6	mg/L	0	Standard
Mg	24	2765.3	0.8	**4.3652**	0.128	2.9	mg/L	20	Standard
K	39	1795.1	7.4	**7.1385**	0.276	3.9	mg/L	38	Standard
Ca	43	113.3	24.3	**4.8940**	2.934	60.0	mg/L	43	Standard
Fe	54	3069.7	0.8	**4.0224**	0.117	2.9	mg/L	103	Standard
Fe	57	1025.0	5.0	**4.7460**	0.263	5.5	mg/L	107	Standard
> **Sc-1**	45	27117.6	3.6				mg/L	24625	Standard
Cl	35	29124.0	3.9				ug/L	30925	Standard
Kr	83	3.7	41.7				ug/L	4	Standard
Br	81	1046.7	16.4				ug/L	397	Standard
P	31	18132.5	6.8				ug/L	19276	Standard
S	34	3277.0	4.4				ug/L	3042	Standard
Sr	88	103.3	14.8				ug/L	65	Standard
C	12	166.7	38.1				mg/L	287	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	12.7	124.5				mg/L	23	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	13	Standard
I	127	3958.9	9.2				mg/L	3275	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	112.134		
	Al	27	128.005		
	Sc	45			
	Ti	47	106.988		
	V	51	101.685		
	Cr	52	105.081		
	Cr	53			
	Mn	55	98.424		
	Co	59	101.536		
	Ni	60	103.109		
	Cu	65	103.423		
	Zn	66	102.233		
>	Ge	72		98.277	
	As	75	99.558		
	Se	82	93.974		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	112.840		
Ag	107	110.268		
Cd	111	101.969		
Cd	114			
> In	115		87.522	
Sn	118	103.195		
Sb	123	101.767		
Ba	135	112.059		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	103.618		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.644		
U	238	97.288		
> Bi	209		89.777	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	
QC Std 6	Mo	98	

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QC Std 6	Ag	107
QC Std 6	Ba	135

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, November 20, 2015 13:43:52
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	38179.8	6.6				ug/L	49688	Standard
	Be	9	11.7	89.2	**-0.0015**	0.017	1172.6	ug/L	7	Standard
	Al	27	1028.4	60.0	**0.0096**	0.010	105.9	ug/L	277	Standard
	Sc	45	26706.9	4.4				ug/L	24625	Standard
	Ti	47	61.3	11.5	**-0.4759**	0.046	9.6	ug/L	198	Standard
	V	51	1147.6	10.0	**0.0207**	0.021	100.8	ug/L	1126	Standard
	Cr	52	5753.4	1.7	**0.0332**	0.021	63.1	ug/L	6071	Standard
	Cr	53	728.4	6.5	**0.8017**	0.080	10.0	ug/L	332	Standard
	Mn	55	944.7	6.9	**0.0025**	0.007	292.8	ug/L	876	Standard
	Co	59	195.0	3.4	**0.0160**	0.002	12.4	ug/L	110	Standard
	Ni	60	193.3	14.0	**-0.0256**	0.027	103.5	ug/L	191	Standard
	Cu	65	289.7	8.4	**0.0140**	0.016	111.6	ug/L	281	Standard
	Zn	66	282.0	4.9	**0.0870**	0.009	9.8	ug/L	249	Standard
>	**Ge**	72	283057.8	3.4				ug/L	297260	Standard
	As	75	-40.4	21.7	**0.0016**	0.010	646.4	ug/L	-66	Standard
	Se	82	15.3	29.8	**-0.0017**	0.056	3264.7	ug/L	13	Standard
	Se-1	77	71.3	6.6	**0.5767**	0.100	17.4	ug/L	48	Standard
>	**Ga**	71	10.0	50.0				mg/L	30	Standard
	Rb	85	20.0	50.0				ug/L	12	Standard
	Y	89	284771.7	6.4				ug/L	310514	Standard
>	**Rh**	103	16.7	105.4				ug/L	10	Standard
	Mo	98	173.2	32.1	**0.1209**	0.033	27.6	ug/L	11	Standard
	Ag	107	148.3	15.0	**0.0122**	0.004	29.9	ug/L	99	Standard
	Cd	111	23.6	84.1	**0.0133**	0.012	91.7	mg/L	6	Standard
	Cd	114	38.9	56.6	**0.0083**	0.006	68.0	ug/L	6	Standard
>	**In**	115	423401.6	3.3				ug/L	501593	Standard
	Sn	118	600.0	11.5	**0.0482**	0.014	29.1	ug/L	442	Standard
	Sb	123	308.2	20.8	**0.0705**	0.018	24.9	ug/L	53	Standard
	Ba	135	53.0	34.4	**0.0081**	0.010	120.2	ug/L	34	Standard
	Ce	140	18.3	41.7				ug/L	73	Standard
>	**Tb**	159	832698.0	3.6				ug/L	924917	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	70.3	63.9	**0.0065**	0.006	86.9	ug/L	6	Standard
	Tl	205	43.3	86.6	**0.0048**	0.007	152.6	ug/L	8	Standard
	Pb	206	300.3	6.3	**0.0118**	0.002	13.7	ug/L	264	Standard
	Pb	207	275.3	13.2	**0.0186**	0.005	29.3	ug/L	215	Standard
	Pb	208	892.7	11.5	**0.0102**	0.004	39.6	ug/L	863	Standard
	U	238	30.0	20.3	**0.0078**	0.001	11.2	ug/L	4	Standard
>	**Bi**	209	450100.5	4.1				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	30.0	66.7	**0.0116**	0.030	259.5	mg/L	20	Standard
K	39	66.7	24.1	**0.0873**	0.073	83.4	mg/L	38	Standard
Ca	43	28.3	27.0	**-3.3333**	0.855	25.6	mg/L	43	Standard
Fe	54	106.0	12.0	**-0.0002**	0.012	5578.6	mg/L	103	Standard
Fe	57	168.3	18.1	**0.3238**	0.134	41.3	mg/L	107	Standard
> **Sc-1**	45	26706.9	4.4				mg/L	24625	Standard
Cl	35	28182.2	0.0				ug/L	30925	Standard
Kr	83	5.3	84.5				ug/L	4	Standard
Br	81	810.0	19.4				ug/L	397	Standard
P	31	17613.6	1.7				ug/L	19276	Standard
S	34	3188.7	5.4				ug/L	3042	Standard
Sr	88	95.0	13.9				ug/L	65	Standard
C	12	160.0	21.7				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	2.9	187.9				mg/L	23	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	3722.1	10.3				mg/L	3275	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.222	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	84.411	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	88.617	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Ti	47	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Friday, November 20, 2015 13:47:04
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	38276.7	5.4				ug/L	49688	Standard
	Be	9	143.3	24.5	**0.2143**	0.068	31.7	ug/L	7	Standard
	Al	27	680.0	49.6	**0.0035**	0.007	199.5	ug/L	277	Standard
	Sc	45	26720.2	3.0				ug/L	24625	Standard
	Ti	47	50.7	6.9	**-0.5314**	0.024	4.4	ug/L	198	Standard
	V	51	2887.4	7.6	**0.3870**	0.048	12.5	ug/L	1126	Standard
	Cr	52	9591.7	3.6	**0.8925**	0.063	7.0	ug/L	6071	Standard
	Cr	53	1113.4	10.2	**1.4832**	0.178	12.0	ug/L	332	Standard
	Mn	55	3007.6	5.8	**0.4659**	0.041	8.8	ug/L	876	Standard
	Co	59	1971.1	3.1	**0.4071**	0.009	2.2	ug/L	110	Standard
	Ni	60	2068.1	3.0	**1.4932**	0.038	2.5	ug/L	191	Standard
	Cu	65	1267.1	5.1	**0.8091**	0.052	6.5	ug/L	281	Standard
	Zn	66	7114.3	3.2	**9.5548**	0.354	3.7	ug/L	249	Standard
>	**Ge**	72	282322.2	2.3				ug/L	297260	Standard
	As	75	284.4	16.7	**0.4042**	0.054	13.3	ug/L	-66	Standard
	Se	82	44.5	6.0	**0.3990**	0.028	7.1	ug/L	13	Standard
	Se-1	77	84.0	4.3	**0.8626**	0.122	14.2	ug/L	48	Standard
>	**Ga**	71	25.0	0.0				mg/L	30	Standard
	Rb	85	13.3	78.1				ug/L	12	Standard
	Y	89	277491.2	3.1				ug/L	310514	Standard
>	**Rh**	103	10.0	50.0				ug/L	10	Standard
	Mo	98	76.5	11.3	**0.0565**	0.007	12.1	ug/L	11	Standard
	Ag	107	2132.8	4.2	**0.4341**	0.009	2.1	ug/L	99	Standard
	Cd	111	367.5	5.4	**0.2367**	0.012	5.3	mg/L	6	Standard
	Cd	114	943.1	5.2	**0.2451**	0.007	2.9	ug/L	6	Standard
>	**In**	115	423456.6	2.3				ug/L	501593	Standard
	Sn	118	381.7	9.5	**-0.0033**	0.008	227.4	ug/L	442	Standard
	Sb	123	1839.7	1.3	**0.4375**	0.010	2.4	ug/L	53	Standard
	Ba	135	1360.1	6.2	**0.7887**	0.033	4.2	ug/L	34	Standard
	Ce	140	25.0	0.0				ug/L	73	Standard
>	**Tb**	159	848249.4	1.8				ug/L	924917	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	614.3	6.9	**0.0822**	0.004	5.2	ug/L	6	Standard
	Tl	205	411.7	20.0	**0.0815**	0.019	22.9	ug/L	8	Standard
	Pb	206	1291.4	6.0	**0.2098**	0.009	4.3	ug/L	264	Standard
	Pb	207	1097.0	4.0	**0.2004**	0.011	5.3	ug/L	215	Standard
	Pb	208	3883.9	2.2	**0.1984**	0.004	2.1	ug/L	863	Standard
	U	238	2039.1	3.8	**0.3830**	0.009	2.4	ug/L	4	Standard
>	**Bi**	209	443414.8	2.6				ug/L	507917	Standard

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Na	23	1.7	173.2	**6.3321**	10.959	173.1	mg/L	0	Standard
Mg	24	33.3	43.3	**0.0177**	0.023	131.1	mg/L	20	Standard
K	39	58.3	43.1	**0.0524**	0.106	201.6	mg/L	38	Standard
Ca	43	45.0	11.1	**-1.7093**	0.558	32.6	mg/L	43	Standard
Fe	54	95.3	24.4	**-0.0152**	0.030	194.6	mg/L	103	Standard
Fe	57	178.3	33.2	**0.3794**	0.316	83.2	mg/L	107	Standard
Sc-1	45	26720.2	3.0				mg/L	24625	Standard
Cl	35	28696.5	1.1				ug/L	30925	Standard
Kr	83	4.3	48.0				ug/L	4	Standard
Br	81	600.0	10.1				ug/L	397	Standard
P	31	17365.0	2.9				ug/L	19276	Standard
S	34	3203.7	5.3				ug/L	3042	Standard
Sr	88	96.7	34.4				ug/L	65	Standard
C	12	156.7	22.4				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	8.9	126.1				mg/L	23	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	23.3	107.9				mg/L	13	Standard
I	127	2466.9	4.7				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	107.160		
Al	27			
Sc	45			
Ti	47			
V	51	96.745		
Cr	52	111.566		
Cr	53			
Mn	55	93.177		
Co	59	101.763		
Ni	60	93.327		
Cu	65	101.133		
Zn	66	152.877		
Ge	72		94.975	
As	75	101.060		
Se	82	99.742		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	108.518		
Cd	111	98.634		
Cd	114			
> In	115			84.422
Sn	118			
Sb	123	109.381		
Ba	135	105.158		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	102.717		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.187		
U	238	95.761		
> Bi	209			87.301
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 8	Zn	66	

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Method 6020 - Summary Report

Sample ID: PBS M8 WG547660-02
Sample Date/Time: Friday, November 20, 2015 14:00:58
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	38831.6	8.1				ug/L	49688	Standard
	Be	9	11.7	65.5	**-0.0011**	0.014	1316.8	ug/L	7	Standard
	Al	27	878.4	12.1	**0.0069**	0.001	12.3	ug/L	277	Standard
	Sc	45	27404.8	3.1				ug/L	24625	Standard
	Ti	47	65.7	9.8	**-0.4599**	0.049	10.6	ug/L	198	Standard
	V	51	1203.9	6.1	**0.0272**	0.006	20.7	ug/L	1126	Standard
	Cr	52	6399.4	4.0	**0.1473**	0.044	29.7	ug/L	6071	Standard
	Cr	53	550.0	15.5	**0.4656**	0.128	27.4	ug/L	332	Standard
	Mn	55	1339.1	3.3	**0.0847**	0.007	7.9	ug/L	876	Standard
	Co	59	177.3	4.9	**0.0114**	0.003	30.4	ug/L	110	Standard
	Ni	60	175.0	11.3	**-0.0441**	0.013	29.3	ug/L	191	Standard
	Cu	65	1105.0	5.3	**0.6564**	0.036	5.5	ug/L	281	Standard
	Zn	66	1137.7	3.3	**1.2372**	0.037	3.0	ug/L	249	Standard
>	**Ge**	72	289165.9	5.1				ug/L	297260	Standard
	As	75	-24.5	156.3	**0.0223**	0.046	204.3	ug/L	-66	Standard
	Se	82	20.5	19.2	**0.0650**	0.060	91.7	ug/L	13	Standard
	Se-1	77	63.3	17.3	**0.3804**	0.302	79.3	ug/L	48	Standard
>	**Ga**	71	11.7	24.7				mg/L	30	Standard
	Rb	85	33.3	34.6				ug/L	12	Standard
	Y	89	279835.6	0.6				ug/L	310514	Standard
>	**Rh**	103	21.7	26.6				ug/L	10	Standard
	Mo	98	87.0	7.2	**0.0629**	0.003	5.4	ug/L	11	Standard
	Ag	107	100.0	10.5	**0.0017**	0.001	85.6	ug/L	99	Standard
	Cd	111	8.2	14.1	**0.0035**	0.001	19.0	mg/L	6	Standard
	Cd	114	29.9	38.8	**0.0059**	0.003	50.4	ug/L	6	Standard
>	**In**	115	428073.1	3.8				ug/L	501593	Standard
	Sn	118	375.0	16.2	**-0.0059**	0.013	221.5	ug/L	442	Standard
	Sb	123	293.3	16.7	**0.0662**	0.014	21.1	ug/L	53	Standard
	Ba	135	118.3	7.6	**0.0466**	0.006	13.2	ug/L	34	Standard
	Ce	140	36.7	79.9				ug/L	73	Standard
>	**Tb**	159	860695.0	3.2				ug/L	924917	Standard
	Ho	165	8.3	124.9				ug/L	7	Standard
	Tl	203	5.7	36.7	**-0.0022**	0.000	12.0	ug/L	6	Standard
	Tl	205	3.3	173.2	**-0.0032**	0.001	38.5	ug/L	8	Standard
	Pb	206	257.3	9.1	**0.0041**	0.003	77.3	ug/L	264	Standard
	Pb	207	219.3	4.1	**0.0074**	0.001	19.5	ug/L	215	Standard
	Pb	208	822.3	4.7	**0.0068**	0.001	15.4	ug/L	863	Standard
	U	238	5.7	27.0	**0.0034**	0.000	9.1	ug/L	4	Standard
>	**Bi**	209	442946.1	3.1				ug/L	507917	Standard

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Na	23	1.7	173.2	**6.4016**	11.079	173.1	mg/L	0	Standard
Mg	24	33.3	22.9	**0.0166**	0.013	79.4	mg/L	20	Standard
K	39	75.0	0.0	**0.1131**	0.009	8.3	mg/L	38	Standard
Ca	43	46.7	48.3	**-1.6297**	2.308	141.6	mg/L	43	Standard
Fe	54	102.4	20.4	**-0.0084**	0.028	336.5	mg/L	103	Standard
Fe	57	163.3	28.9	**0.2741**	0.223	81.4	mg/L	107	Standard
> **Sc-1**	45	27404.8	3.1				mg/L	24625	Standard
Cl	35	28862.1	2.9				ug/L	30925	Standard
Kr	83	7.0	14.3				ug/L	4	Standard
Br	81	473.3	19.6				ug/L	397	Standard
P	31	17134.7	4.1				ug/L	19276	Standard
S	34	3105.3	2.6				ug/L	3042	Standard
Sr	88	121.7	4.7				ug/L	65	Standard
C	12	240.0	4.2				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	12.9	89.8				mg/L	23	Standard
Ho-1	165	8.3	124.9				mg/L	7	Standard
Er	166	10.0					mg/L	13	Standard
I	127	2865.3	2.4				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		78.151	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.277	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	85.343
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	87.208
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Lower	Ti	47	

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Method 6020 - Summary Report

Sample ID: LCSS M8 WG547660-03
Sample Date/Time: Friday, November 20, 2015 14:04:09
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	40156.7	7.2				ug/L	49688	Standard
	Be	9	17593.6	6.0	**27.2086**	0.962	3.5	ug/L	7	Standard
	Al	27	2586.9	10.2	**0.0374**	0.002	6.5	ug/L	277	Standard
	Sc	45	28026.0	6.8				ug/L	24625	Standard
	Ti	47	97.3	7.2	**-0.3075**	0.057	18.6	ug/L	198	Standard
	V	51	129045.9	4.7	**25.7577**	0.780	3.0	ug/L	1126	Standard
	Cr	52	132674.0	4.2	**27.1368**	0.843	3.1	ug/L	6071	Standard
	Cr	53	15536.3	3.9	**25.8195**	1.142	4.4	ug/L	332	Standard
	Mn	55	120137.8	5.9	**25.5955**	0.601	2.3	ug/L	876	Standard
	Co	59	122005.2	5.5	**25.7120**	0.683	2.7	ug/L	110	Standard
	Ni	60	33875.2	4.7	**26.1251**	0.511	2.0	ug/L	191	Standard
	Cu	65	35028.5	3.7	**27.0751**	0.862	3.2	ug/L	281	Standard
	Zn	66	21567.0	3.2	**28.3530**	0.980	3.5	ug/L	249	Standard
>	Ge	72	294779.5	6.7				ug/L	297260	Standard
	As	75	21707.0	4.4	**25.8938**	0.582	2.2	ug/L	-66	Standard
	Se	82	1886.0	5.5	**24.4965**	0.522	2.1	ug/L	13	Standard
	Se-1	77	1271.4	4.1	**26.0081**	1.618	6.2	ug/L	48	Standard
>	Ga	71	26.7	21.7				mg/L	30	Standard
	Rb	85	48.3	43.1				ug/L	12	Standard
	Y	89	285481.4	7.7				ug/L	310514	Standard
>	Rh	103	18.3	63.0				ug/L	10	Standard
	Mo	98	66.7	12.7	**0.0480**	0.004	8.4	ug/L	11	Standard
	Ag	107	141403.5	6.4	**28.8429**	0.316	1.1	ug/L	99	Standard
	Cd	111	41295.5	3.9	**25.7488**	0.645	2.5	mg/L	6	Standard
	Cd	114	101945.7	4.7	**25.6510**	0.443	1.7	ug/L	6	Standard
>	In	115	441048.1	6.1				ug/L	501593	Standard
	Sn	118	371.7	18.3	**-0.0096**	0.011	114.2	ug/L	442	Standard
	Sb	123	112285.5	4.6	**25.8621**	0.441	1.7	ug/L	53	Standard
	Ba	135	50120.9	4.0	**28.7499**	0.657	2.3	ug/L	34	Standard
	Ce	140	225.0	21.2				ug/L	73	Standard
>	Tb	159	874052.0	6.9				ug/L	924917	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	197542.0	4.4	**26.8103**	0.594	2.2	ug/L	6	Standard
	Tl	205	128759.0	4.9	**26.0888**	0.485	1.9	ug/L	8	Standard
	Pb	206	141105.0	4.8	**27.4420**	0.536	2.0	ug/L	264	Standard
	Pb	207	121462.7	4.9	**26.0908**	0.590	2.3	ug/L	215	Standard
	Pb	208	428746.6	5.0	**26.2140**	0.519	2.0	ug/L	863	Standard
	U	238	134332.9	4.2	**24.5591**	0.557	2.3	ug/L	4	Standard
>	Bi	209	453380.2	6.4				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	41.7	50.0	**0.0268**	0.027	101.0	mg/L	20	Standard
K	39	68.3	30.5	**0.0836**	0.094	112.9	mg/L	38	Standard
Ca	43	41.7	27.7	**-2.1845**	1.344	61.5	mg/L	43	Standard
Fe	54	128.7	21.4	**0.0244**	0.042	174.3	mg/L	103	Standard
Fe	57	161.7	6.4	**0.2556**	0.099	38.8	mg/L	107	Standard
Sc-1	45	28026.0	6.8				mg/L	24625	Standard
Cl	35	28373.2	2.9				ug/L	30925	Standard
Kr	83	4.3	48.0				ug/L	4	Standard
Br	81	473.3	28.4				ug/L	397	Standard
P	31	17368.3	7.4				ug/L	19276	Standard
S	34	2881.9	4.8				ug/L	3042	Standard
Sr	88	113.3	2.5				ug/L	65	Standard
C	12	206.7	21.8				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	12.4	46.7				mg/L	23	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	20.0	0.0				mg/L	13	Standard
I	127	2745.2	5.4				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		80.817	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.165	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		87.930
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		89.263
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1511110824 WG547660-01
Sample Date/Time: Friday, November 20, 2015 14:07:20
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	41268.4	12.5				ug/L	49688	Standard
	Be	9	648.3	11.8	**0.9700**	0.214	22.1	ug/L	7	Standard
	Al	27	595578.3	3.0	**10.6401**	1.122	10.5	ug/L	277	Standard
	Sc	45	35190.9	6.2				ug/L	24625	Standard
	Ti	47	5081.2	1.5	**24.5852**	2.775	11.3	ug/L	198	Standard
	V	51	141736.3	3.2	**28.3352**	4.205	14.8	ug/L	1126	Standard
	Cr	52	434235.5	2.2	**91.5285**	11.269	12.3	ug/L	6071	Standard
	Cr	53	52465.7	3.3	**88.3404**	12.965	14.7	ug/L	332	Standard
	Mn	55	1169656.9	1.9	**250.8955**	30.886	12.3	ug/L	876	Standard
	Co	59	43561.5	1.6	**9.1618**	1.188	13.0	ug/L	110	Standard
	Ni	60	173949.3	1.6	**134.7260**	15.669	11.6	ug/L	191	Standard
	Cu	65	50995.0	0.8	**39.4933**	5.193	13.1	ug/L	281	Standard
	Zn	66	388516.0	1.3	**515.6825**	69.637	13.5	ug/L	249	Standard
>	**Ge**	72	297626.6	11.9				ug/L	297260	Standard
	As	75	7294.6	2.0	**8.7232**	1.017	11.7	ug/L	-66	Standard
	Se	82	563.2	1.2	**7.1639**	0.907	12.7	ug/L	13	Standard
	Se-1	77	446.0	2.0	**8.4724**	1.360	16.0	ug/L	48	Standard
>	**Ga**	71	5869.5	3.7				mg/L	30	Standard
	Rb	85	103923.5	0.4				ug/L	12	Standard
	Y	89	1097436.7	2.9				ug/L	310514	Standard
>	**Rh**	103	41.7	56.7				ug/L	10	Standard
	Mo	98	4288.9	1.3	**2.7722**	0.248	9.0	ug/L	11	Standard
	Ag	107	737.4	15.2	**0.1298**	0.015	11.9	ug/L	99	Standard
	Cd	111	3158.0	2.1	**1.9628**	0.240	12.2	mg/L	6	Standard
	Cd	114	7818.3	1.5	**1.9575**	0.178	9.1	ug/L	6	Standard
>	**In**	115	445224.8	9.9				ug/L	501593	Standard
	Sn	118	510.0	6.1	**0.0224**	0.019	84.1	ug/L	442	Standard
	Sb	123	427.1	24.7	**0.0941**	0.024	25.3	ug/L	53	Standard
	Ba	135	121769.8	1.5	**69.6346**	7.250	10.4	ug/L	34	Standard
	Ce	140	807235.6	3.2				ug/L	73	Standard
>	**Tb**	159	945849.9	11.5				ug/L	924917	Standard
	Ho	165	59670.6	2.3				ug/L	7	Standard
	Tl	203	2691.9	4.0	**0.3531**	0.035	9.9	ug/L	6	Standard
	Tl	205	1748.4	7.3	**0.3422**	0.050	14.7	ug/L	8	Standard
	Pb	206	50903.4	1.1	**9.6371**	1.160	12.0	ug/L	264	Standard
	Pb	207	38817.0	1.7	**8.1137**	0.977	12.0	ug/L	215	Standard
	Pb	208	144261.9	2.2	**8.5820**	1.026	12.0	ug/L	863	Standard
	U	238	34496.2	2.1	**6.1616**	0.780	12.7	ug/L	4	Standard
>	**Bi**	209	467867.7	10.6				ug/L	507917	Standard

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Na	23	3.3	86.6	**9.7386**	8.477	87.0	mg/L	0	Standard
Mg	24	223.3	17.4	**0.2383**	0.050	21.0	mg/L	20	Standard
K	39	508.3	3.0	**1.4167**	0.152	10.7	mg/L	38	Standard
Ca	43	156.7	1.8	**5.6007**	0.721	12.9	mg/L	43	Standard
Fe	54	15170.0	2.0	**15.7622**	1.118	7.1	mg/L	103	Standard
Fe	57	4112.2	3.9	**15.9021**	1.712	10.8	mg/L	107	Standard
> **Sc-1**	45	35190.9	6.2				mg/L	24625	Standard
Cl	35	27370.7	4.7				ug/L	30925	Standard
Kr	83	2.7	21.7				ug/L	4	Standard
Br	81	770.0	6.7				ug/L	397	Standard
P	31	18986.9	5.9				ug/L	19276	Standard
S	34	3232.0	1.4				ug/L	3042	Standard
Sr	88	123.3	28.5				ug/L	65	Standard
C	12	213.3	19.5				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	413.3	17.0				mg/L	3	Standard
Dy	164	82530.3	2.3				mg/L	23	Standard
Ho-1	165	59670.6	2.3				mg/L	7	Standard
Er	166	53400.6	1.3				mg/L	13	Standard
I	127	15114.2	4.8				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		83.055	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.123	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	88.762	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	92.115	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1511110824S WG547660-04
Sample Date/Time: Friday, November 20, 2015 14:10:31
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	39974.4	3.3				ug/L	49688	Standard
	Be	9	18633.1	4.4	**28.9305**	1.274	4.4	ug/L	7	Standard
	Al	27	365623.8	4.2	**6.6817**	0.168	2.5	ug/L	277	Standard
	Sc	45	31891.9	2.0				ug/L	24625	Standard
	Ti	47	3658.4	2.2	**17.4507**	0.396	2.3	ug/L	198	Standard
	V	51	211837.7	1.6	**42.2740**	0.355	0.8	ug/L	1126	Standard
	Cr	52	335991.0	1.8	**70.3682**	0.359	0.5	ug/L	6071	Standard
	Cr	53	41735.7	0.7	**69.9026**	2.005	2.9	ug/L	332	Standard
	Mn	55	1120267.8	2.6	**239.6556**	0.932	0.4	ug/L	876	Standard
	Co	59	149698.0	3.0	**31.4468**	0.243	0.8	ug/L	110	Standard
	Ni	60	152987.2	2.7	**118.2204**	2.060	1.7	ug/L	191	Standard
	Cu	65	66569.6	2.5	**51.4470**	0.499	1.0	ug/L	281	Standard
	Zn	66	288807.1	1.8	**381.8717**	1.978	0.5	ug/L	249	Standard
>	**Ge**	72	295554.4	2.3				ug/L	297260	Standard
	As	75	26499.1	1.9	**31.4874**	0.288	0.9	ug/L	-66	Standard
	Se	82	2211.9	2.7	**28.6741**	0.589	2.1	ug/L	13	Standard
	Se-1	77	1535.1	5.1	**31.4440**	1.112	3.5	ug/L	48	Standard
>	**Ga**	71	2895.3	4.8				mg/L	30	Standard
	Rb	85	62344.7	2.1				ug/L	12	Standard
	Y	89	947840.5	3.4				ug/L	310514	Standard
>	**Rh**	103	48.3	15.8				ug/L	10	Standard
	Mo	98	3041.3	2.6	**1.9349**	0.038	2.0	ug/L	11	Standard
	Ag	107	141612.6	2.5	**28.3136**	0.583	2.1	ug/L	99	Standard
	Cd	111	44894.1	0.4	**27.4118**	0.097	0.4	mg/L	6	Standard
	Cd	114	111110.7	2.8	**27.3832**	0.593	2.2	ug/L	6	Standard
>	**In**	115	449973.9	0.7				ug/L	501593	Standard
	Sn	118	580.0	6.9	**0.0355**	0.009	25.1	ug/L	442	Standard
	Sb	123	26874.5	3.0	**6.0599**	0.155	2.6	ug/L	53	Standard
	Ba	135	148789.7	0.9	**83.6261**	0.727	0.9	ug/L	34	Standard
	Ce	140	639701.3	1.9				ug/L	73	Standard
>	**Tb**	159	909793.6	1.0				ug/L	924917	Standard
	Ho	165	49759.9	2.4				ug/L	7	Standard
	Tl	203	197058.2	2.2	**25.9841**	0.104	0.4	ug/L	6	Standard
	Tl	205	127210.3	1.9	**25.0509**	0.418	1.7	ug/L	8	Standard
	Pb	206	177296.4	1.4	**33.5200**	0.243	0.7	ug/L	264	Standard
	Pb	207	149010.6	1.8	**31.1128**	0.219	0.7	ug/L	215	Standard
	Pb	208	529493.3	2.0	**31.4705**	0.103	0.3	ug/L	863	Standard
	U	238	165769.0	1.5	**29.4465**	0.363	1.2	ug/L	4	Standard
>	**Bi**	209	466223.0	2.1				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	136.7	12.8	**0.1489**	0.026	17.2	mg/L	20	Standard
K	39	281.7	16.0	**0.7891**	0.164	20.7	mg/L	38	Standard
Ca	43	146.7	7.1	**5.9718**	1.064	17.8	mg/L	43	Standard
Fe	54	10038.5	1.1	**11.4384**	0.119	1.0	mg/L	103	Standard
Fe	57	2680.2	6.4	**11.2226**	0.530	4.7	mg/L	107	Standard
Sc-1	45	31891.9	2.0				mg/L	24625	Standard
Cl	35	26863.1	1.5				ug/L	30925	Standard
Kr	83	4.7	53.9				ug/L	4	Standard
Br	81	566.7	1.0				ug/L	397	Standard
P	31	18763.3	1.5				ug/L	19276	Standard
S	34	3257.0	2.7				ug/L	3042	Standard
Sr	88	121.7	31.1				ug/L	65	Standard
C	12	176.7	31.2				mg/L	287	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	393.3	5.3				mg/L	3	Standard
Dy	164	71616.8	4.3				mg/L	23	Standard
Ho-1	165	49759.9	2.4				mg/L	7	Standard
Er	166	45916.1	1.1				mg/L	13	Standard
I	127	11007.3	3.1				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		80.450	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.426	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.709
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.791
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1511110824SD WG547660-05
Sample Date/Time: Friday, November 20, 2015 14:13:42
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	40938.7	7.0				ug/L	49688	Standard
	Be	9	18531.3	2.9	**28.1992**	2.579	9.1	ug/L	7	Standard
	Al	27	392248.0	3.5	**7.0126**	0.285	4.1	ug/L	277	Standard
	Sc	45	31571.3	5.5				ug/L	24625	Standard
	Ti	47	4033.2	1.7	**19.4754**	0.508	2.6	ug/L	198	Standard
	V	51	223977.8	1.9	**45.0576**	1.081	2.4	ug/L	1126	Standard
	Cr	52	346856.1	2.7	**73.2489**	1.634	2.2	ug/L	6071	Standard
	Cr	53	43412.1	2.0	**73.2837**	2.322	3.2	ug/L	332	Standard
	Mn	55	1293431.9	0.8	**279.0084**	9.660	3.5	ug/L	876	Standard
	Co	59	155536.3	0.8	**32.9462**	1.180	3.6	ug/L	110	Standard
	Ni	60	161217.0	1.8	**125.5698**	3.120	2.5	ug/L	191	Standard
	Cu	65	65144.1	1.9	**50.7419**	1.417	2.8	ug/L	281	Standard
	Zn	66	274056.3	1.9	**365.1873**	9.563	2.6	ug/L	249	Standard
>	Ge	72	293446.5	4.3				ug/L	297260	Standard
	As	75	26348.7	0.2	**31.5704**	1.385	4.4	ug/L	-66	Standard
	Se	82	2239.1	0.8	**29.2720**	1.228	4.2	ug/L	13	Standard
	Se-1	77	1508.4	1.4	**31.1452**	0.905	2.9	ug/L	48	Standard
>	Ga	71	3347.0	2.0				mg/L	30	Standard
	Rb	85	68995.1	2.3				ug/L	12	Standard
	Y	89	935804.9	3.8				ug/L	310514	Standard
>	Rh	103	51.7	24.4				ug/L	10	Standard
	Mo	98	3455.5	1.3	**2.1588**	0.128	5.9	ug/L	11	Standard
	Ag	107	136239.3	1.9	**26.7301**	0.924	3.5	ug/L	99	Standard
	Cd	111	43926.3	1.2	**26.3273**	1.160	4.4	mg/L	6	Standard
	Cd	114	110791.0	1.9	**26.8268**	1.818	6.8	ug/L	6	Standard
>	In	115	459047.6	4.9				ug/L	501593	Standard
	Sn	118	538.3	6.2	**0.0241**	0.009	37.4	ug/L	442	Standard
	Sb	123	17464.4	1.3	**3.8642**	0.162	4.2	ug/L	53	Standard
	Ba	135	153711.1	0.6	**84.8228**	4.271	5.0	ug/L	34	Standard
	Ce	140	653760.0	1.5				ug/L	73	Standard
>	Tb	159	920311.9	5.4				ug/L	924917	Standard
	Ho	165	47960.8	1.7				ug/L	7	Standard
	Tl	203	195463.8	1.0	**25.5187**	0.996	3.9	ug/L	6	Standard
	Tl	205	125948.0	1.0	**24.5605**	1.187	4.8	ug/L	8	Standard
	Pb	206	178819.7	0.7	**33.4746**	1.466	4.4	ug/L	264	Standard
	Pb	207	148029.3	1.2	**30.6013**	1.286	4.2	ug/L	215	Standard
	Pb	208	534538.6	1.3	**31.4513**	1.113	3.5	ug/L	863	Standard
	U	238	163536.5	0.8	**28.7642**	1.304	4.5	ug/L	4	Standard
>	Bi	209	471479.2	4.8				ug/L	507917	Standard

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Na	23	3.3	86.6	**10.6833**	9.286	86.9	mg/L	0	Standard
Mg	24	153.3	18.5	**0.1746**	0.047	27.0	mg/L	20	Standard
K	39	281.7	14.5	**0.7986**	0.138	17.2	mg/L	38	Standard
Ca	43	146.7	31.7	**6.1185**	4.028	65.8	mg/L	43	Standard
Fe	54	10212.0	0.6	**11.7794**	0.622	5.3	mg/L	103	Standard
Fe	57	2701.9	2.2	**11.4723**	0.785	6.8	mg/L	107	Standard
Sc-1	45	31571.3	5.5				mg/L	24625	Standard
Cl	35	26097.1	1.9				ug/L	30925	Standard
Kr	83	4.7	12.4				ug/L	4	Standard
Br	81	566.7	19.4				ug/L	397	Standard
P	31	18159.2	4.1				ug/L	19276	Standard
S	34	3015.3	4.1				ug/L	3042	Standard
Sr	88	111.7	40.4				ug/L	65	Standard
C	12	180.0	11.1				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	300.0	26.7				mg/L	3	Standard
Dy	164	67837.3	0.2				mg/L	23	Standard
Ho-1	165	47960.8	1.7				mg/L	7	Standard
Er	166	44826.2	2.6				mg/L	13	Standard
I	127	11761.2	2.3				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		82.391	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.717	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	91.518
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	92.826
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1511110802
Sample Date/Time: Friday, November 20, 2015 14:16:53
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	41460.0	2.6				ug/L	49688	Standard
	Be	9	550.0	11.0	**0.8036**	0.093	11.6	ug/L	7	Standard
	Al	27	752421.4	1.1	**13.2754**	0.483	3.6	ug/L	277	Standard
	Sc	45	41959.7	3.7				ug/L	24625	Standard
	Ti	47	16869.7	4.5	**86.3452**	2.523	2.9	ug/L	198	Standard
	V	51	73716.7	1.7	**15.1044**	0.408	2.7	ug/L	1126	Standard
	Cr	52	331106.5	3.2	**71.8604**	0.981	1.4	ug/L	6071	Standard
	Cr	53	41503.5	3.4	**71.9944**	0.915	1.3	ug/L	332	Standard
	Mn	55	2395454.4	2.1	**531.2337**	1.245	0.2	ug/L	876	Standard
	Co	59	32090.3	2.6	**6.9640**	0.031	0.4	ug/L	110	Standard
	Ni	60	154132.5	3.0	**123.3946**	1.030	0.8	ug/L	191	Standard
	Cu	65	29848.0	1.7	**23.7850**	0.296	1.2	ug/L	281	Standard
	Zn	66	346541.1	1.5	**474.8438**	4.346	0.9	ug/L	249	Standard
>	Ge	72	285255.7	2.2				ug/L	297260	Standard
	As	75	8159.6	4.5	**10.0774**	0.289	2.9	ug/L	-66	Standard
	Se	82	235.6	11.0	**2.9742**	0.286	9.6	ug/L	13	Standard
	Se-1	77	290.3	2.2	**5.3612**	0.007	0.1	ug/L	48	Standard
>	Ga	71	5737.8	1.6				mg/L	30	Standard
	Rb	85	70962.5	1.8				ug/L	12	Standard
	Y	89	3125363.8	1.3				ug/L	310514	Standard
>	Rh	103	223.3	5.6				ug/L	10	Standard
	Mo	98	7910.6	0.6	**4.9902**	0.068	1.4	ug/L	11	Standard
	Ag	107	755.0	5.0	**0.1308**	0.009	6.7	ug/L	99	Standard
	Cd	111	1263.8	1.7	**0.7645**	0.015	2.0	mg/L	6	Standard
	Cd	114	3047.5	1.3	**0.7440**	0.005	0.7	ug/L	6	Standard
>	In	115	453187.5	0.8				ug/L	501593	Standard
	Sn	118	1595.1	3.3	**0.2589**	0.014	5.2	ug/L	442	Standard
	Sb	123	456.1	3.8	**0.0985**	0.003	3.2	ug/L	53	Standard
	Ba	135	194336.3	1.8	**108.4697**	2.707	2.5	ug/L	34	Standard
	Ce	140	2529249.3	0.3				ug/L	73	Standard
>	Tb	159	1015494.5	3.3				ug/L	924917	Standard
	Ho	165	198176.2	1.7				ug/L	7	Standard
	Tl	203	3504.1	2.6	**0.4750**	0.007	1.6	ug/L	6	Standard
	Tl	205	2315.2	3.2	**0.4677**	0.012	2.5	ug/L	8	Standard
	Pb	206	36884.5	2.0	**7.1755**	0.074	1.0	ug/L	264	Standard
	Pb	207	23914.2	2.3	**5.1302**	0.046	0.9	ug/L	215	Standard
	Pb	208	93277.9	1.0	**5.6983**	0.036	0.6	ug/L	863	Standard
	U	238	57014.7	1.1	**10.4769**	0.065	0.6	ug/L	4	Standard
>	Bi	209	450722.8	1.6				ug/L	507917	Standard

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Na	23	8.3	34.6	**20.3152**	7.441	36.6	mg/L	0	Standard
Mg	24	371.7	7.4	**0.3456**	0.016	4.6	mg/L	20	Standard
K	39	396.7	7.4	**0.8580**	0.081	9.4	mg/L	38	Standard
Ca	43	701.7	4.7	**37.9776**	3.794	10.0	mg/L	43	Standard
Fe	54	12992.9	3.2	**11.2591**	0.551	4.9	mg/L	103	Standard
Fe	57	3350.4	1.9	**10.6459**	0.211	2.0	mg/L	107	Standard
> **Sc-1**	45	41959.7	3.7				mg/L	24625	Standard
Cl	35	27143.6	1.3				ug/L	30925	Standard
Kr	83	3.7	56.8				ug/L	4	Standard
Br	81	726.7	13.8				ug/L	397	Standard
P	31	17576.9	2.2				ug/L	19276	Standard
S	34	2705.2	8.3				ug/L	3042	Standard
Sr	88	340.0	14.7				ug/L	65	Standard
C	12	243.3	19.4				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	236.7	31.7				mg/L	3	Standard
Dy	164	266666.8	0.7				mg/L	23	Standard
Ho-1	165	198176.2	1.7				mg/L	7	Standard
Er	166	191179.1	2.6				mg/L	13	Standard
I	127	19742.9	3.3				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		83.440	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.962	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.350
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		88.739
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1511110804
Sample Date/Time: Friday, November 20, 2015 14:20:05
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	40390.6	6.5				ug/L	49688	Standard
	Be	9	290.0	8.6	**0.4272**	0.057	13.4	ug/L	7	Standard
	Al	27	3551667.0	4.5	**64.3846**	1.802	2.8	ug/L	277	Standard
	Sc	45	30475.6	1.4				ug/L	24625	Standard
	Ti	47	2847.3	1.8	**13.8095**	0.160	1.2	ug/L	198	Standard
	V	51	56231.6	1.4	**11.3836**	0.217	1.9	ug/L	1126	Standard
	Cr	52	285175.8	1.5	**61.2745**	0.259	0.4	ug/L	6071	Standard
	Cr	53	35441.4	3.0	**60.9682**	1.107	1.8	ug/L	332	Standard
	Mn	55	947212.8	3.0	**208.3993**	3.931	1.9	ug/L	876	Standard
	Co	59	27512.0	1.5	**5.9240**	0.042	0.7	ug/L	110	Standard
	Ni	60	146564.4	2.6	**116.4874**	1.817	1.6	ug/L	191	Standard
	Cu	65	33236.4	2.8	**26.3125**	0.457	1.7	ug/L	281	Standard
	Zn	66	194832.1	1.3	**264.8940**	1.814	0.7	ug/L	249	Standard
>	Ge	72	287311.1	1.2				ug/L	297260	Standard
	As	75	4558.3	2.0	**5.6133**	0.049	0.9	ug/L	-66	Standard
	Se	82	287.5	7.4	**3.6506**	0.244	6.7	ug/L	13	Standard
	Se-1	77	256.7	8.0	**4.5811**	0.388	8.5	ug/L	48	Standard
>	Ga	71	2106.8	8.2				mg/L	30	Standard
	Rb	85	35897.5	1.5				ug/L	12	Standard
	Y	89	883528.3	6.5				ug/L	310514	Standard
>	Rh	103	41.7	38.6				ug/L	10	Standard
	Mo	98	9418.3	2.0	**5.9523**	0.062	1.0	ug/L	11	Standard
	Ag	107	356.7	4.5	**0.0517**	0.002	4.7	ug/L	99	Standard
	Cd	111	763.4	2.7	**0.4621**	0.012	2.5	mg/L	6	Standard
	Cd	114	1726.4	4.6	**0.4217**	0.022	5.3	ug/L	6	Standard
>	In	115	452213.8	1.0				ug/L	501593	Standard
	Sn	118	571.7	20.0	**0.0330**	0.025	75.1	ug/L	442	Standard
	Sb	123	201.1	1.4	**0.0414**	0.001	2.5	ug/L	53	Standard
	Ba	135	83998.2	0.8	**46.9666**	0.132	0.3	ug/L	34	Standard
	Ce	140	517687.3	1.8				ug/L	73	Standard
>	Tb	159	899818.0	1.3				ug/L	924917	Standard
	Ho	165	44089.1	3.5				ug/L	7	Standard
	Tl	203	1002.7	1.3	**0.1320**	0.003	2.1	ug/L	6	Standard
	Tl	205	636.7	12.9	**0.1240**	0.015	12.4	ug/L	8	Standard
	Pb	206	22043.4	0.4	**4.2122**	0.028	0.7	ug/L	264	Standard
	Pb	207	15522.3	1.3	**3.2712**	0.036	1.1	ug/L	215	Standard
	Pb	208	58882.2	3.3	**3.5320**	0.104	2.9	ug/L	863	Standard
	U	238	19761.2	2.5	**3.5841**	0.067	1.9	ug/L	4	Standard
>	Bi	209	456803.6	1.0				ug/L	507917	Standard

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Na	23	6.7	114.6	**22.4585**	25.885	115.3	mg/L	0	Standard
Mg	24	143.3	19.2	**0.1667**	0.038	23.0	mg/L	20	Standard
K	39	233.3	16.6	**0.6582**	0.141	21.4	mg/L	38	Standard
Ca	43	255.0	17.0	**15.8941**	3.828	24.1	mg/L	43	Standard
Fe	54	7756.4	2.5	**9.2205**	0.254	2.8	mg/L	103	Standard
Fe	57	2128.5	5.2	**9.2341**	0.379	4.1	mg/L	107	Standard
Sc-1	45	30475.6	1.4				mg/L	24625	Standard
Cl	35	26966.0	2.0				ug/L	30925	Standard
Kr	83	5.3	43.3				ug/L	4	Standard
Br	81	546.7	11.6				ug/L	397	Standard
P	31	17034.6	2.6				ug/L	19276	Standard
S	34	2788.6	6.7				ug/L	3042	Standard
Sr	88	148.3	10.8				ug/L	65	Standard
C	12	276.7	15.0				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	240.0	26.0				mg/L	3	Standard
Dy	164	59797.5	5.2				mg/L	23	Standard
Ho-1	165	44089.1	3.5				mg/L	7	Standard
Er	166	41022.1	0.8				mg/L	13	Standard
I	127	8180.5	2.4				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		81.288	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.653	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.156
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		89.937
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1511110804PS WG547876-01
Sample Date/Time: Friday, November 20, 2015 14:23:15
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	40796.6	4.3				ug/L	49688	Standard
	Be	9	37727.0	5.6	**57.4054**	2.326	4.1	ug/L	7	Standard
	Al	27	3606490.6	3.8	**64.7114**	2.676	4.1	ug/L	277	Standard
	Sc	45	30143.3	2.7				ug/L	24625	Standard
	Ti	47	2888.6	2.4	**13.8921**	0.287	2.1	ug/L	198	Standard
	V	51	318356.8	1.4	**64.8999**	1.344	2.1	ug/L	1126	Standard
	Cr	52	533275.3	2.5	**114.6392**	1.584	1.4	ug/L	6071	Standard
	Cr	53	65672.1	2.7	**112.3899**	1.602	1.4	ug/L	332	Standard
	Mn	55	1186489.6	2.9	**258.7936**	1.323	0.5	ug/L	876	Standard
	Co	59	277536.6	2.6	**59.4711**	0.394	0.7	ug/L	110	Standard
	Ni	60	210641.8	2.0	**166.0353**	1.229	0.7	ug/L	191	Standard
	Cu	65	99891.0	2.8	**78.8223**	0.698	0.9	ug/L	281	Standard
	Zn	66	239006.8	3.1	**322.0956**	1.317	0.4	ug/L	249	Standard
>	**Ge**	72	289896.6	2.7				ug/L	297260	Standard
	As	75	49323.0	1.6	**59.7122**	0.721	1.2	ug/L	-66	Standard
	Se	82	4189.3	1.8	**55.5737**	0.968	1.7	ug/L	13	Standard
	Se-1	77	2726.6	0.7	**57.7897**	1.244	2.2	ug/L	48	Standard
>	**Ga**	71	1951.8	11.1				mg/L	30	Standard
	Rb	85	35239.3	0.7				ug/L	12	Standard
	Y	89	882231.0	1.3				ug/L	310514	Standard
>	**Rh**	103	35.0	86.9				ug/L	10	Standard
	Mo	98	9542.6	4.4	**5.9595**	0.114	1.9	ug/L	11	Standard
	Ag	107	276935.5	2.4	**54.4801**	0.415	0.8	ug/L	99	Standard
	Cd	111	90434.1	0.8	**54.3295**	1.275	2.3	mg/L	6	Standard
	Cd	114	222704.2	3.1	**53.9869**	0.795	1.5	ug/L	6	Standard
>	**In**	115	457549.8	3.0				ug/L	501593	Standard
	Sn	118	751.7	2.1	**0.0711**	0.008	11.7	ug/L	442	Standard
	Sb	123	238496.7	1.5	**52.9359**	0.811	1.5	ug/L	53	Standard
	Ba	135	188440.8	1.8	**104.1880**	1.373	1.3	ug/L	34	Standard
	Ce	140	516752.3	2.9				ug/L	73	Standard
>	**Tb**	159	908158.4	1.1				ug/L	924917	Standard
	Ho	165	42165.3	1.8				ug/L	7	Standard
	Tl	203	413377.2	1.4	**55.3295**	0.253	0.5	ug/L	6	Standard
	Tl	205	271872.9	1.5	**54.3423**	0.775	1.4	ug/L	8	Standard
	Pb	206	306748.5	2.0	**58.8898**	0.200	0.3	ug/L	264	Standard
	Pb	207	274448.2	1.2	**58.1983**	0.614	1.1	ug/L	215	Standard
	Pb	208	949965.2	1.4	**57.3432**	0.188	0.3	ug/L	863	Standard
	U	238	310526.7	2.1	**55.9748**	0.475	0.8	ug/L	4	Standard
>	**Bi**	209	459353.9	1.7				ug/L	507917	Standard

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Na	23	3.3	86.6	**11.4139**	9.880	86.6	mg/L	0	Standard
Mg	24	120.0	35.6	**0.1348**	0.057	42.5	mg/L	20	Standard
K	39	231.7	20.5	**0.6644**	0.193	29.1	mg/L	38	Standard
Ca	43	205.0	19.4	**11.8262**	3.888	32.9	mg/L	43	Standard
Fe	54	7765.0	1.6	**9.3354**	0.134	1.4	mg/L	103	Standard
Fe	57	2045.1	10.6	**8.9624**	1.060	11.8	mg/L	107	Standard
> **Sc-1**	45	30143.3	2.7				mg/L	24625	Standard
Cl	35	26809.0	2.7				ug/L	30925	Standard
Kr	83	7.3	43.8				ug/L	4	Standard
Br	81	473.3	10.4				ug/L	397	Standard
P	31	17291.5	3.4				ug/L	19276	Standard
S	34	2947.0	5.9				ug/L	3042	Standard
Sr	88	133.3	4.3				ug/L	65	Standard
C	12	303.3	27.6				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	203.3	36.3				mg/L	3	Standard
Dy	164	59361.9	2.4				mg/L	23	Standard
Ho-1	165	42165.3	1.8				mg/L	7	Standard
Er	166	40189.9	0.2				mg/L	13	Standard
I	127	7668.6	4.2				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		82.105	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.523	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.219
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.439
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

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Ni 60 Upper, S, EEE	Ni	60
Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1511110804SDL WG547876-02
Sample Date/Time: Friday, November 20, 2015 14:26:27
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	36280.1	2.7				ug/L	49688	Standard
	Be	9	80.0	21.7	**0.1170**	0.034	28.6	ug/L	7	Standard
	Al	27	672399.9	2.4	**13.5511**	0.222	1.6	ug/L	277	Standard
	Sc	45	26132.5	3.1				ug/L	24625	Standard
	Ti	47	581.7	5.1	**2.3640**	0.127	5.4	ug/L	198	Standard
	V	51	11102.6	4.2	**2.2085**	0.139	6.3	ug/L	1126	Standard
	Cr	52	56119.4	0.7	**11.7888**	0.256	2.2	ug/L	6071	Standard
	Cr	53	6699.8	6.3	**11.8194**	0.543	4.6	ug/L	332	Standard
	Mn	55	174347.9	1.9	**40.4715**	0.192	0.5	ug/L	876	Standard
	Co	59	5208.9	0.6	**1.1669**	0.020	1.7	ug/L	110	Standard
	Ni	60	28218.3	0.6	**23.6190**	0.389	1.6	ug/L	191	Standard
	Cu	65	6728.8	2.9	**5.4695**	0.036	0.7	ug/L	281	Standard
	Zn	66	39106.1	2.6	**56.0769**	0.217	0.4	ug/L	249	Standard
>	Ge	72	271243.8	2.3				ug/L	297260	Standard
	As	75	868.4	8.3	**1.1735**	0.081	6.9	ug/L	-66	Standard
	Se	82	63.4	7.7	**0.6929**	0.085	12.3	ug/L	13	Standard
	Se-1	77	95.3	12.9	**1.1994**	0.301	25.1	ug/L	48	Standard
>	Ga	71	388.3	2.0				mg/L	30	Standard
	Rb	85	6786.5	3.1				ug/L	12	Standard
	Y	89	382124.2	1.3				ug/L	310514	Standard
>	Rh	103	21.7	81.0				ug/L	10	Standard
	Mo	98	1765.3	2.0	**1.2058**	0.014	1.1	ug/L	11	Standard
	Ag	107	199.3	21.4	**0.0234**	0.009	37.5	ug/L	99	Standard
	Cd	111	176.0	19.9	**0.1133**	0.022	19.4	mg/L	6	Standard
	Cd	114	420.1	12.6	**0.1091**	0.014	12.4	ug/L	6	Standard
>	In	115	419772.2	0.9				ug/L	501593	Standard
	Sn	118	306.7	10.6	**-0.0204**	0.007	36.5	ug/L	442	Standard
	Sb	123	562.6	18.6	**0.1325**	0.026	19.9	ug/L	53	Standard
	Ba	135	15945.4	1.3	**9.5858**	0.073	0.8	ug/L	34	Standard
	Ce	140	97417.3	2.1				ug/L	73	Standard
>	Tb	159	813833.8	1.7				ug/L	924917	Standard
	Ho	165	8107.2	2.8				ug/L	7	Standard
	Tl	203	258.0	21.4	**0.0333**	0.007	22.4	ug/L	6	Standard
	Tl	205	166.7	3.5	**0.0311**	0.001	2.7	ug/L	8	Standard
	Pb	206	4436.0	3.5	**0.8495**	0.023	2.7	ug/L	264	Standard
	Pb	207	3193.7	6.5	**0.6718**	0.039	5.8	ug/L	215	Standard
	Pb	208	11862.1	3.3	**0.7091**	0.018	2.6	ug/L	863	Standard
	U	238	3764.5	3.1	**0.7162**	0.019	2.7	ug/L	4	Standard
>	Bi	209	436614.3	1.1				ug/L	507917	Standard

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Na	23	1.7	173.2	**6.2839**	10.875	173.1	mg/L	0	Standard
Mg	24	58.3	34.6	**0.0600**	0.033	54.7	mg/L	20	Standard
K	39	100.0	13.2	**0.2342**	0.060	25.7	mg/L	38	Standard
Ca	43	78.3	7.4	**1.7366**	0.376	21.7	mg/L	43	Standard
Fe	54	1512.8	11.2	**1.9838**	0.224	11.3	mg/L	103	Standard
Fe	57	538.3	4.7	**2.3349**	0.203	8.7	mg/L	107	Standard
Sc-1	45	26132.5	3.1				mg/L	24625	Standard
Cl	35	25099.4	1.1				ug/L	30925	Standard
Kr	83	3.0	33.3				ug/L	4	Standard
Br	81	416.7	12.1				ug/L	397	Standard
P	31	8023.8	1.7				ug/L	19276	Standard
S	34	2795.3	5.6				ug/L	3042	Standard
Sr	88	93.3	3.1				ug/L	65	Standard
C	12	200.0	18.0				mg/L	287	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	33.3	34.6				mg/L	3	Standard
Dy	164	11429.0	2.3				mg/L	23	Standard
Ho-1	165	8107.2	2.8				mg/L	7	Standard
Er	166	7631.9	3.8				mg/L	13	Standard
I	127	5022.5	1.2				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		73.016	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		91.248	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		83.688
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		85.962
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: November 23, 2015

Method 6020 - Summary Report

Sample ID: L1511110804SDL WG547876-02
Sample Date/Time: Friday, November 20, 2015 14:29:37
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	35950.9	0.4				ug/L	49688	Standard
	Be	9	15.0	57.7	**0.0055**	0.015	273.9	ug/L	7	Standard
	Al	27	134191.9	2.7	**2.7209**	0.066	2.4	ug/L	277	Standard
	Sc	45	24618.3	3.2				ug/L	24625	Standard
	Ti	47	151.3	12.6	**0.0477**	0.087	183.0	ug/L	198	Standard
	V	51	2869.4	5.7	**0.4259**	0.052	12.1	ug/L	1126	Standard
	Cr	52	13826.3	1.7	**2.0537**	0.043	2.1	ug/L	6071	Standard
	Cr	53	1436.7	8.4	**2.2347**	0.256	11.5	ug/L	332	Standard
	Mn	55	34324.2	2.3	**8.0260**	0.215	2.7	ug/L	876	Standard
	Co	59	1203.0	6.4	**0.2564**	0.015	5.7	ug/L	110	Standard
	Ni	60	5605.4	2.8	**4.6766**	0.054	1.2	ug/L	191	Standard
	Cu	65	1494.4	4.4	**1.0785**	0.043	4.0	ug/L	281	Standard
	Zn	66	8503.1	2.8	**12.2999**	0.137	1.1	ug/L	249	Standard
>	**Ge**	72	263861.0	2.5				ug/L	297260	Standard
	As	75	137.5	13.4	**0.2339**	0.021	9.0	ug/L	-66	Standard
	Se	82	23.6	10.6	**0.1347**	0.028	21.1	ug/L	13	Standard
	Se-1	77	59.3	1.9	**0.4076**	0.055	13.6	ug/L	48	Standard
>	**Ga**	71	78.3	41.5				mg/L	30	Standard
	Rb	85	1398.4	4.6				ug/L	12	Standard
	Y	89	284665.1	2.2				ug/L	310514	Standard
>	**Rh**	103	15.0	33.3				ug/L	10	Standard
	Mo	98	337.1	4.2	**0.2369**	0.010	4.1	ug/L	11	Standard
	Ag	107	102.0	11.0	**0.0029**	0.003	108.3	ug/L	99	Standard
	Cd	111	32.0	14.2	**0.0195**	0.004	19.1	mg/L	6	Standard
	Cd	114	94.1	32.9	**0.0232**	0.008	34.4	ug/L	6	Standard
>	**In**	115	414944.0	3.4				ug/L	501593	Standard
	Sn	118	218.3	20.8	**-0.0406**	0.013	31.5	ug/L	442	Standard
	Sb	123	139.2	21.2	**0.0305**	0.008	27.3	ug/L	53	Standard
	Ba	135	3100.7	3.2	**1.8671**	0.014	0.7	ug/L	34	Standard
	Ce	140	19464.2	4.4				ug/L	73	Standard
>	**Tb**	159	814675.1	2.2				ug/L	924917	Standard
	Ho	165	1585.1	7.1				ug/L	7	Standard
	Tl	203	61.7	14.7	**0.0058**	0.001	21.9	ug/L	6	Standard
	Tl	205	26.7	10.8	**0.0018**	0.001	36.3	ug/L	8	Standard
	Pb	206	1006.0	1.5	**0.1586**	0.003	1.9	ug/L	264	Standard
	Pb	207	772.7	5.7	**0.1336**	0.009	6.8	ug/L	215	Standard
	Pb	208	2815.1	3.0	**0.1363**	0.004	3.2	ug/L	863	Standard
	U	238	745.4	6.0	**0.1453**	0.008	5.4	ug/L	4	Standard
>	**Bi**	209	431603.7	0.5				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	26.7	28.6	**0.0107**	0.014	129.3	mg/L	20	Standard
K	39	46.7	16.4	**0.0192**	0.028	145.8	mg/L	38	Standard
Ca	43	33.3	60.6	**-2.5501**	2.233	87.6	mg/L	43	Standard
Fe	54	335.0	8.8	**0.3550**	0.045	12.7	mg/L	103	Standard
Fe	57	258.3	22.9	**0.9220**	0.378	41.0	mg/L	107	Standard
> **Sc-1**	45	24618.3	3.2				mg/L	24625	Standard
Cl	35	24214.7	1.2				ug/L	30925	Standard
Kr	83	5.0	20.0				ug/L	4	Standard
Br	81	376.7	10.1				ug/L	397	Standard
P	31	6019.5	3.9				ug/L	19276	Standard
S	34	2735.2	2.4				ug/L	3042	Standard
Sr	88	118.3	10.6				ug/L	65	Standard
C	12	160.0	34.8				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	3	Standard
Dy	164	2188.0	10.5				mg/L	23	Standard
Ho-1	165	1585.1	7.1				mg/L	7	Standard
Er	166	1366.7	9.1				mg/L	13	Standard
I	127	4459.0	1.8				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		72.353	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		88.764	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		82.725
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		84.975
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: November 23, 2015

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, November 20, 2015 14:32:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	40104.8	6.6				ug/L	49688	Standard
	Be	9	35065.5	2.5	**54.3628**	2.205	4.1	ug/L	7	Standard
	Al	27	3361150.7	4.9	**61.3551**	1.495	2.4	ug/L	277	Standard
	Sc	45	27062.5	2.3				ug/L	24625	Standard
	Ti	47	21144.4	3.7	**109.4823**	2.003	1.8	ug/L	198	Standard
	V	51	250111.1	3.0	**52.2509**	0.445	0.9	ug/L	1126	Standard
	Cr	52	244218.7	3.5	**53.1922**	0.774	1.5	ug/L	6071	Standard
	Cr	53	29887.8	1.4	**52.2315**	0.800	1.5	ug/L	332	Standard
	Mn	55	228162.7	3.0	**50.8916**	0.465	0.9	ug/L	876	Standard
	Co	59	240038.9	1.9	**52.7740**	0.198	0.4	ug/L	110	Standard
	Ni	60	63908.3	3.6	**51.5458**	0.748	1.5	ug/L	191	Standard
	Cu	65	64894.7	2.6	**52.4652**	0.215	0.4	ug/L	281	Standard
	Zn	66	37362.0	2.0	**51.4153**	0.540	1.1	ug/L	249	Standard
>	Ge	72	282534.7	2.2				ug/L	297260	Standard
	As	75	41261.6	0.8	**51.2620**	0.734	1.4	ug/L	-66	Standard
	Se	82	3681.1	0.8	**50.0822**	0.771	1.5	ug/L	13	Standard
	Se-1	77	2440.2	2.0	**52.9702**	0.680	1.3	ug/L	48	Standard
>	Ga	71	18.3	78.7				mg/L	30	Standard
	Rb	85	610.0	6.2				ug/L	12	Standard
	Y	89	286604.1	1.7				ug/L	310514	Standard
>	Rh	103	26.7	57.3				ug/L	10	Standard
	Mo	98	170409.5	3.3	**109.8754**	1.300	1.2	ug/L	11	Standard
	Ag	107	273339.8	3.2	**55.5409**	0.600	1.1	ug/L	99	Standard
	Cd	111	82856.0	2.6	**51.4018**	0.479	0.9	mg/L	6	Standard
	Cd	114	207406.7	2.1	**51.9445**	0.530	1.0	ug/L	6	Standard
>	In	115	442863.9	2.1				ug/L	501593	Standard
	Sn	118	233976.9	2.7	**52.8099**	1.482	2.8	ug/L	442	Standard
	Sb	123	226333.1	1.8	**51.8896**	0.431	0.8	ug/L	53	Standard
	Ba	135	97811.1	1.9	**55.8526**	0.660	1.2	ug/L	34	Standard
	Ce	140	95.0	43.1				ug/L	73	Standard
>	Tb	159	864204.6	1.1				ug/L	924917	Standard
	Ho	165	15.0	88.2				ug/L	7	Standard
	Tl	203	384987.5	1.8	**52.1528**	0.823	1.6	ug/L	6	Standard
	Tl	205	244498.8	1.1	**49.4665**	1.070	2.2	ug/L	8	Standard
	Pb	206	268568.0	2.1	**52.1786**	0.624	1.2	ug/L	264	Standard
	Pb	207	242993.6	2.2	**52.1406**	0.621	1.2	ug/L	215	Standard
	Pb	208	833885.4	2.7	**50.9350**	0.941	1.8	ug/L	863	Standard
	U	238	268531.3	1.3	**49.0015**	1.095	2.2	ug/L	4	Standard
>	Bi	209	453993.7	3.3				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	2668.6	1.9	**4.2185**	0.125	3.0	mg/L	20	Standard
K	39	1735.1	2.3	**6.9145**	0.022	0.3	mg/L	38	Standard
Ca	43	100.0	17.3	**3.5741**	1.617	45.2	mg/L	43	Standard
Fe	54	3196.1	9.5	**4.1993**	0.387	9.2	mg/L	103	Standard
Fe	57	968.4	2.1	**4.4641**	0.222	5.0	mg/L	107	Standard
> **Sc-1**	45	27062.5	2.3				mg/L	24625	Standard
Cl	35	27199.1	3.4				ug/L	30925	Standard
Kr	83	6.0	28.9				ug/L	4	Standard
Br	81	416.7	16.9				ug/L	397	Standard
P	31	16966.2	3.1				ug/L	19276	Standard
S	34	2993.6	3.7				ug/L	3042	Standard
Sr	88	86.7	23.3				ug/L	65	Standard
C	12	133.3	18.9				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	9.4	107.0				mg/L	23	Standard
Ho-1	165	15.0	88.2				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	13	Standard
I	127	1590.1	11.4				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	108.726		
Al	27	122.710		
Sc	45			
Ti	47	109.482		
V	51	104.502		
Cr	52	106.384		
Cr	53			
Mn	55	101.783		
Co	59	105.548		
Ni	60	103.092		
Cu	65	104.930		
Zn	66	102.831		
> Ge	72		95.046	
As	75	102.524		
Se	82	100.164		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	109.875		
Ag	107	111.082		
Cd	111	102.804		
Cd	114			
> In	115		88.292	
Sn	118	105.620		
Sb	123	103.779		
Ba	135	111.705		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	104.306		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.870		
U	238	98.003		
> Bi	209		89.383	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	
QC Std 6	Ag	107	
QC Std 6	Ba	135	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, November 20, 2015 14:36:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	39249.4	8.6				ug/L	49688	Standard
	Be	9	45.0	29.4	**0.0501**	0.015	30.0	ug/L	7	Standard
	Al	27	955.0	43.7	**0.0078**	0.006	77.8	ug/L	277	Standard
	Sc	45	25963.9	3.9				ug/L	24625	Standard
	Ti	47	45.7	12.6	**-0.5548**	0.022	3.9	ug/L	198	Standard
	V	51	984.7	2.2	**-0.0094**	0.013	133.0	ug/L	1126	Standard
	Cr	52	5391.6	3.2	**-0.0256**	0.065	252.1	ug/L	6071	Standard
	Cr	53	330.0	8.4	**0.1101**	0.039	35.0	ug/L	332	Standard
	Mn	55	845.4	5.4	**-0.0163**	0.001	5.9	ug/L	876	Standard
	Co	59	207.3	18.2	**0.0193**	0.006	32.3	ug/L	110	Standard
	Ni	60	187.3	3.6	**-0.0282**	0.010	35.6	ug/L	191	Standard
	Cu	65	259.0	15.1	**-0.0077**	0.023	294.7	ug/L	281	Standard
	Zn	66	211.0	5.1	**-0.0060**	0.003	57.2	ug/L	249	Standard
>	**Ge**	72	278302.0	4.9				ug/L	297260	Standard
	As	75	1.8	491.1	**0.0536**	0.011	21.3	ug/L	-66	Standard
	Se	82	18.3	31.3	**0.0471**	0.090	192.0	ug/L	13	Standard
	Se-1	77	46.0	22.9	**0.0392**	0.255	650.8	ug/L	48	Standard
>	**Ga**	71	25.0	72.1				mg/L	30	Standard
	Rb	85	10.0	100.0				ug/L	12	Standard
	Y	89	282368.7	4.6				ug/L	310514	Standard
>	**Rh**	103	10.0	50.0				ug/L	10	Standard
	Mo	98	214.0	32.4	**0.1444**	0.039	26.8	ug/L	11	Standard
	Ag	107	133.3	17.8	**0.0083**	0.004	46.1	ug/L	99	Standard
	Cd	111	19.6	48.5	**0.0105**	0.005	51.5	mg/L	6	Standard
	Cd	114	39.1	90.3	**0.0079**	0.008	106.7	ug/L	6	Standard
>	**In**	115	434011.2	4.9				ug/L	501593	Standard
	Sn	118	593.3	5.1	**0.0436**	0.011	24.9	ug/L	442	Standard
	Sb	123	251.0	15.8	**0.0554**	0.012	22.0	ug/L	53	Standard
	Ba	135	39.3	19.3	**-0.0004**	0.004	973.7	ug/L	34	Standard
	Ce	140	23.3	53.9				ug/L	73	Standard
>	**Tb**	159	836433.1	7.5				ug/L	924917	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	55.3	53.1	**0.0046**	0.004	81.7	ug/L	6	Standard
	Tl	205	26.7	124.8	**0.0015**	0.007	446.2	ug/L	8	Standard
	Pb	206	283.0	11.5	**0.0092**	0.005	58.3	ug/L	264	Standard
	Pb	207	228.0	12.6	**0.0091**	0.004	46.7	ug/L	215	Standard
	Pb	208	860.7	16.9	**0.0089**	0.007	79.1	ug/L	863	Standard
	U	238	47.3	58.6	**0.0110**	0.005	43.7	ug/L	4	Standard
>	**Bi**	209	443755.6	4.1				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	30.0	16.7	**0.0140**	0.010	73.2	mg/L	20	Standard
K	39	51.7	20.1	**0.0292**	0.037	125.2	mg/L	38	Standard
Ca	43	41.7	6.9	**-1.9239**	0.273	14.2	mg/L	43	Standard
Fe	54	86.2	3.0	**-0.0236**	0.009	36.2	mg/L	103	Standard
Fe	57	190.0	11.5	**0.4704**	0.134	28.4	mg/L	107	Standard
Sc-1	45	25963.9	3.9				mg/L	24625	Standard
Cl	35	27412.8	1.9				ug/L	30925	Standard
Kr	83	5.0	40.0				ug/L	4	Standard
Br	81	460.0	9.5				ug/L	397	Standard
P	31	16784.3	1.9				ug/L	19276	Standard
S	34	2903.6	4.3				ug/L	3042	Standard
Sr	88	120.0	20.8				ug/L	65	Standard
C	12	120.0	30.0				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	12.7	43.3				mg/L	23	Standard
Ho-1	165	8.3	69.3				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	2241.8	0.9				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		93.622	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	86.527	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	87.368	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Ti	47	

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Method 6020 - Summary Report

Sample ID: L1511110806
Sample Date/Time: Friday, November 20, 2015 14:39:13
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	40911.9	3.2				ug/L	49688	Standard
	Be	9	261.7	4.8	**0.3765**	0.007	2.0	ug/L	7	Standard
	Al	27	3219328.6	4.3	**57.5518**	1.276	2.2	ug/L	277	Standard
	Sc	45	30475.6	1.8				ug/L	24625	Standard
	Ti	47	2704.9	3.5	**13.0311**	0.590	4.5	ug/L	198	Standard
	V	51	53790.0	1.3	**10.8384**	0.177	1.6	ug/L	1126	Standard
	Cr	52	161523.4	3.4	**34.0257**	0.564	1.7	ug/L	6071	Standard
	Cr	53	19502.5	1.2	**33.2163**	0.629	1.9	ug/L	332	Standard
	Mn	55	1368232.6	2.3	**300.0279**	4.099	1.4	ug/L	876	Standard
	Co	59	44519.3	1.5	**9.5682**	0.198	2.1	ug/L	110	Standard
	Ni	60	132807.6	1.4	**105.1613**	1.670	1.6	ug/L	191	Standard
	Cu	65	23267.2	2.2	**18.2865**	0.271	1.5	ug/L	281	Standard
	Zn	66	160188.2	1.9	**216.9305**	3.585	1.7	ug/L	249	Standard
>	**Ge**	72	288449.3	2.9				ug/L	297260	Standard
	As	75	4094.9	2.4	**5.0297**	0.103	2.1	ug/L	-66	Standard
	Se	82	938.9	1.5	**12.3569**	0.240	1.9	ug/L	13	Standard
	Se-1	77	675.0	5.3	**13.6173**	0.389	2.9	ug/L	48	Standard
>	**Ga**	71	1571.7	5.1				mg/L	30	Standard
	Rb	85	31701.5	2.7				ug/L	12	Standard
	Y	89	818333.2	2.5				ug/L	310514	Standard
>	**Rh**	103	35.0	65.5				ug/L	10	Standard
	Mo	98	4389.6	1.3	**2.7710**	0.030	1.1	ug/L	11	Standard
	Ag	107	355.0	19.0	**0.0513**	0.014	27.1	ug/L	99	Standard
	Cd	111	698.5	4.2	**0.4218**	0.020	4.7	mg/L	6	Standard
	Cd	114	1671.5	7.1	**0.4073**	0.031	7.6	ug/L	6	Standard
>	**In**	115	453191.2	0.7				ug/L	501593	Standard
	Sn	118	445.0	20.3	**0.0048**	0.020	419.1	ug/L	442	Standard
	Sb	123	296.5	32.3	**0.0628**	0.022	34.9	ug/L	53	Standard
	Ba	135	45625.3	1.2	**25.4442**	0.155	0.6	ug/L	34	Standard
	Ce	140	407498.2	1.8				ug/L	73	Standard
>	**Tb**	159	916219.4	3.7				ug/L	924917	Standard
	Ho	165	35986.0	1.6				ug/L	7	Standard
	Tl	203	2007.5	6.4	**0.2655**	0.020	7.4	ug/L	6	Standard
	Tl	205	1178.4	8.0	**0.2314**	0.021	9.0	ug/L	8	Standard
	Pb	206	16786.0	0.4	**3.1739**	0.048	1.5	ug/L	264	Standard
	Pb	207	11941.0	2.1	**2.4898**	0.078	3.1	ug/L	215	Standard
	Pb	208	46080.6	0.6	**2.7351**	0.025	0.9	ug/L	863	Standard
	U	238	15318.1	2.0	**2.7593**	0.030	1.1	ug/L	4	Standard
>	**Bi**	209	460008.8	1.0				ug/L	507917	Standard

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Na	23	6.7	114.6	**22.0754**	24.995	113.2	mg/L	0	Standard
Mg	24	96.7	15.8	**0.1007**	0.021	21.1	mg/L	20	Standard
K	39	233.3	16.2	**0.6584**	0.139	21.1	mg/L	38	Standard
Ca	43	176.7	16.3	**9.0944**	2.273	25.0	mg/L	43	Standard
Fe	54	5973.1	5.6	**7.0651**	0.346	4.9	mg/L	103	Standard
Fe	57	1676.8	0.7	**7.1599**	0.106	1.5	mg/L	107	Standard
> **Sc-1**	45	30475.6	1.8				mg/L	24625	Standard
Cl	35	26508.5	1.5				ug/L	30925	Standard
Kr	83	2.7	43.3				ug/L	4	Standard
Br	81	360.0	2.8				ug/L	397	Standard
P	31	17465.1	4.8				ug/L	19276	Standard
S	34	2863.6	4.3				ug/L	3042	Standard
Sr	88	115.0	8.7				ug/L	65	Standard
C	12	240.0	18.2				mg/L	287	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	130.0	27.7				mg/L	3	Standard
Dy	164	49940.9	3.0				mg/L	23	Standard
Ho-1	165	35986.0	1.6				mg/L	7	Standard
Er	166	34866.7	1.9				mg/L	13	Standard
I	127	6953.3	2.3				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		82.337	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.036	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.350
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.568
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1511110808
Sample Date/Time: Friday, November 20, 2015 14:42:24
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	39907.8	8.9				ug/L	49688	Standard
	Be	9	231.7	20.1	**0.3451**	0.102	29.5	ug/L	7	Standard
	Al	27	485462.1	2.2	**8.9247**	0.588	6.6	ug/L	277	Standard
	Sc	45	31259.0	6.9				ug/L	24625	Standard
	Ti	47	2258.8	1.7	**10.9513**	0.727	6.6	ug/L	198	Standard
	V	51	25935.5	2.1	**5.2076**	0.386	7.4	ug/L	1126	Standard
	Cr	52	161712.9	1.7	**34.7479**	3.187	9.2	ug/L	6071	Standard
	Cr	53	19863.0	3.0	**34.5022**	3.429	9.9	ug/L	332	Standard
	Mn	55	1116277.2	1.8	**249.2775**	19.845	8.0	ug/L	876	Standard
	Co	59	22389.5	2.3	**4.8829**	0.311	6.4	ug/L	110	Standard
	Ni	60	58082.1	1.8	**46.7580**	4.095	8.8	ug/L	191	Standard
	Cu	65	15335.8	1.2	**12.2053**	1.008	8.3	ug/L	281	Standard
	Zn	66	60940.3	2.0	**83.8854**	7.108	8.5	ug/L	249	Standard
>	**Ge**	72	284349.5	8.1				ug/L	297260	Standard
	As	75	2252.3	1.6	**2.8420**	0.251	8.8	ug/L	-66	Standard
	Se	82	155.2	5.0	**1.9008**	0.092	4.8	ug/L	13	Standard
	Se-1	77	184.3	3.8	**3.0679**	0.328	10.7	ug/L	48	Standard
>	**Ga**	71	1368.4	6.4				mg/L	30	Standard
	Rb	85	35057.3	5.7				ug/L	12	Standard
	Y	89	875848.9	2.4				ug/L	310514	Standard
>	**Rh**	103	31.7	39.7				ug/L	10	Standard
	Mo	98	2914.6	1.4	**1.8721**	0.125	6.7	ug/L	11	Standard
	Ag	107	242.7	5.9	**0.0299**	0.007	21.9	ug/L	99	Standard
	Cd	111	510.4	1.6	**0.3128**	0.020	6.4	mg/L	6	Standard
	Cd	114	1233.1	4.5	**0.3053**	0.030	9.9	ug/L	6	Standard
>	**In**	115	447422.1	8.3				ug/L	501593	Standard
	Sn	118	446.7	2.8	**0.0070**	0.010	146.5	ug/L	442	Standard
	Sb	123	217.5	10.4	**0.0461**	0.009	19.1	ug/L	53	Standard
	Ba	135	55413.5	1.8	**31.4718**	2.992	9.5	ug/L	34	Standard
	Ce	140	443789.9	1.6				ug/L	73	Standard
>	**Tb**	159	912088.4	8.2				ug/L	924917	Standard
	Ho	165	42021.6	2.6				ug/L	7	Standard
	Tl	203	1572.1	2.2	**0.2086**	0.019	8.9	ug/L	6	Standard
	Tl	205	978.4	11.2	**0.1930**	0.031	15.9	ug/L	8	Standard
	Pb	206	17177.1	1.8	**3.2723**	0.300	9.2	ug/L	264	Standard
	Pb	207	12622.9	1.3	**2.6527**	0.236	8.9	ug/L	215	Standard
	Pb	208	46446.9	0.9	**2.7760**	0.231	8.3	ug/L	863	Standard
	U	238	14619.4	1.1	**2.6518**	0.221	8.3	ug/L	4	Standard
>	**Bi**	209	458889.8	7.9				ug/L	507917	Standard

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Na	23	1.7	173.2	**5.0493**	8.737	173.0	mg/L	0	Standard
Mg	24	98.3	2.9	**0.0999**	0.006	6.4	mg/L	20	Standard
K	39	251.7	14.0	**0.7102**	0.184	26.0	mg/L	38	Standard
Ca	43	135.0	23.1	**5.2396**	2.673	51.0	mg/L	43	Standard
Fe	54	4391.6	2.2	**5.0451**	0.464	9.2	mg/L	103	Standard
Fe	57	1248.4	3.1	**5.0552**	0.286	5.7	mg/L	107	Standard
> **Sc-1**	45	31259.0	6.9				mg/L	24625	Standard
Cl	35	25572.2	1.0				ug/L	30925	Standard
Kr	83	5.0	20.0				ug/L	4	Standard
Br	81	440.0	10.4				ug/L	397	Standard
P	31	16894.4	4.8				ug/L	19276	Standard
S	34	2880.3	6.0				ug/L	3042	Standard
Sr	88	100.0	17.3				ug/L	65	Standard
C	12	243.3	28.9				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	186.7	13.5				mg/L	3	Standard
Dy	164	57587.0	1.9				mg/L	23	Standard
Ho-1	165	42021.6	2.6				mg/L	7	Standard
Er	166	38117.9	1.5				mg/L	13	Standard
I	127	10760.5	8.8				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		80.316	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.657	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.200
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.347
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1511110810
Sample Date/Time: Friday, November 20, 2015 14:45:35
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	42021.6	2.6				ug/L	49688	Standard
	Be	9	396.7	6.2	**0.5653**	0.022	3.9	ug/L	7	Standard
	Al	27	469604.1	1.5	**8.1691**	0.210	2.6	ug/L	277	Standard
	Sc	45	30928.3	5.5				ug/L	24625	Standard
	Ti	47	2664.2	1.7	**12.6815**	0.117	0.9	ug/L	198	Standard
	V	51	61888.3	1.5	**12.3733**	0.155	1.3	ug/L	1126	Standard
	Cr	52	155917.5	2.7	**32.4581**	0.156	0.5	ug/L	6071	Standard
	Cr	53	18821.7	6.0	**31.6863**	1.256	4.0	ug/L	332	Standard
	Mn	55	743520.2	3.0	**161.2597**	1.152	0.7	ug/L	876	Standard
	Co	59	19602.0	0.9	**4.1549**	0.063	1.5	ug/L	110	Standard
	Ni	60	122606.3	4.1	**96.0391**	1.826	1.9	ug/L	191	Standard
	Cu	65	26589.3	2.8	**20.7108**	0.133	0.6	ug/L	281	Standard
	Zn	66	249522.4	2.6	**334.5796**	0.740	0.2	ug/L	249	Standard
>	**Ge**	72	291379.8	2.4				ug/L	297260	Standard
	As	75	6194.7	3.9	**7.5031**	0.113	1.5	ug/L	-66	Standard
	Se	82	231.8	4.8	**2.8619**	0.172	6.0	ug/L	13	Standard
	Se-1	77	213.7	5.2	**3.5830**	0.193	5.4	ug/L	48	Standard
>	**Ga**	71	1988.5	2.8				mg/L	30	Standard
	Rb	85	43017.7	3.1				ug/L	12	Standard
	Y	89	782085.8	1.3				ug/L	310514	Standard
>	**Rh**	103	23.3	32.7				ug/L	10	Standard
	Mo	98	9191.5	1.1	**5.7591**	0.078	1.4	ug/L	11	Standard
	Ag	107	324.7	6.3	**0.0448**	0.004	8.7	ug/L	99	Standard
	Cd	111	804.4	0.5	**0.4828**	0.001	0.3	mg/L	6	Standard
	Cd	114	2102.1	1.7	**0.5092**	0.006	1.1	ug/L	6	Standard
>	**In**	115	456182.9	0.6				ug/L	501593	Standard
	Sn	118	425.0	4.1	**-0.0002**	0.004	1617.5	ug/L	442	Standard
	Sb	123	204.4	13.1	**0.0418**	0.006	14.6	ug/L	53	Standard
	Ba	135	55011.7	1.4	**30.4824**	0.340	1.1	ug/L	34	Standard
	Ce	140	396590.4	2.5				ug/L	73	Standard
>	**Tb**	159	915166.7	1.7				ug/L	924917	Standard
	Ho	165	35566.7	2.9				ug/L	7	Standard
	Tl	203	1165.4	3.8	**0.1521**	0.007	4.4	ug/L	6	Standard
	Tl	205	790.0	8.2	**0.1530**	0.012	7.7	ug/L	8	Standard
	Pb	206	21478.5	1.3	**4.0552**	0.032	0.8	ug/L	264	Standard
	Pb	207	16106.6	0.9	**3.3564**	0.026	0.8	ug/L	215	Standard
	Pb	208	59491.5	2.4	**3.5277**	0.080	2.3	ug/L	863	Standard
	U	238	18696.2	1.1	**3.3523**	0.026	0.8	ug/L	4	Standard
>	**Bi**	209	462109.3	1.1				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	135.0	3.7	**0.1525**	0.011	7.2	mg/L	20	Standard
K	39	255.0	11.8	**0.7241**	0.103	14.3	mg/L	38	Standard
Ca	43	125.0	10.6	**4.4779**	0.680	15.2	mg/L	43	Standard
Fe	54	9640.2	1.0	**11.3501**	0.721	6.3	mg/L	103	Standard
Fe	57	2655.2	4.7	**11.4976**	0.633	5.5	mg/L	107	Standard
Sc-1	45	30928.3	5.5				mg/L	24625	Standard
Cl	35	26795.7	0.3				ug/L	30925	Standard
Kr	83	3.3	62.4				ug/L	4	Standard
Br	81	576.7	9.6				ug/L	397	Standard
P	31	17974.0	3.2				ug/L	19276	Standard
S	34	2908.6	5.8				ug/L	3042	Standard
Sr	88	146.7	25.6				ug/L	65	Standard
C	12	176.7	36.8				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	186.7	13.5				mg/L	3	Standard
Dy	164	51473.4	3.0				mg/L	23	Standard
Ho-1	165	35566.7	2.9				mg/L	7	Standard
Er	166	32481.5	5.1				mg/L	13	Standard
I	127	8847.6	1.2				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		84.571	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.022	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.947
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.981
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1511110812
Sample Date/Time: Friday, November 20, 2015 14:48:47
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	42665.0	2.2				ug/L	49688	Standard
	Be	9	131.7	25.3	**0.1712**	0.048	28.0	ug/L	7	Standard
	Al	27	1751663.9	1.7	**30.0308**	0.470	1.6	ug/L	277	Standard
	Sc	45	30168.4	3.5				ug/L	24625	Standard
	Ti	47	1454.7	8.4	**6.3477**	0.387	6.1	ug/L	198	Standard
	V	51	21132.2	2.3	**3.9617**	0.182	4.6	ug/L	1126	Standard
	Cr	52	95928.8	1.6	**18.9188**	0.708	3.7	ug/L	6071	Standard
	Cr	53	11484.4	1.6	**18.6098**	0.438	2.4	ug/L	332	Standard
	Mn	55	395257.1	1.4	**83.2505**	1.830	2.2	ug/L	876	Standard
	Co	59	13924.4	1.6	**2.8603**	0.057	2.0	ug/L	110	Standard
	Ni	60	43036.7	1.2	**32.6634**	0.780	2.4	ug/L	191	Standard
	Cu	65	12434.8	1.3	**9.2974**	0.250	2.7	ug/L	281	Standard
	Zn	66	75085.9	0.3	**97.6953**	3.132	3.2	ug/L	249	Standard
>	Ge	72	299852.5	3.4				ug/L	297260	Standard
	As	75	1346.2	2.2	**1.6259**	0.019	1.2	ug/L	-66	Standard
	Se	82	87.0	6.6	**0.9108**	0.069	7.6	ug/L	13	Standard
	Se-1	77	115.3	11.8	**1.4094**	0.322	22.8	ug/L	48	Standard
>	Ga	71	770.0	4.5				mg/L	30	Standard
	Rb	85	15349.4	0.5				ug/L	12	Standard
	Y	89	580486.6	4.7				ug/L	310514	Standard
>	Rh	103	23.3	53.9				ug/L	10	Standard
	Mo	98	1840.8	2.4	**1.1175**	0.025	2.2	ug/L	11	Standard
	Ag	107	252.3	46.0	**0.0285**	0.021	73.4	ug/L	99	Standard
	Cd	111	350.0	14.5	**0.2017**	0.029	14.2	mg/L	6	Standard
	Cd	114	986.1	10.0	**0.2300**	0.028	12.1	ug/L	6	Standard
>	In	115	472737.8	4.1				ug/L	501593	Standard
	Sn	118	395.0	10.8	**-0.0100**	0.007	66.9	ug/L	442	Standard
	Sb	123	222.8	28.4	**0.0441**	0.013	29.1	ug/L	53	Standard
	Ba	135	39677.2	1.7	**21.2233**	0.529	2.5	ug/L	34	Standard
	Ce	140	229043.4	1.2				ug/L	73	Standard
>	Tb	159	911022.1	3.4				ug/L	924917	Standard
	Ho	165	19734.5	0.7				ug/L	7	Standard
	Tl	203	514.0	23.0	**0.0626**	0.014	22.7	ug/L	6	Standard
	Tl	205	310.0	18.0	**0.0553**	0.011	19.7	ug/L	8	Standard
	Pb	206	8925.6	0.7	**1.5909**	0.058	3.6	ug/L	264	Standard
	Pb	207	6450.7	0.7	**1.2668**	0.061	4.8	ug/L	215	Standard
	Pb	208	24069.1	2.0	**1.3442**	0.063	4.7	ug/L	863	Standard
	U	238	8060.1	1.0	**1.3904**	0.065	4.7	ug/L	4	Standard
>	Bi	209	481383.1	3.9				ug/L	507917	Standard

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Na	23	1.7	173.2	**5.4136**	9.368	173.0	mg/L	0	Standard
Mg	24	58.3	38.7	**0.0479**	0.034	70.2	mg/L	20	Standard
K	39	135.0	23.1	**0.3042**	0.107	35.1	mg/L	38	Standard
Ca	43	156.7	9.8	**7.5214**	1.206	16.0	mg/L	43	Standard
Fe	54	2542.6	2.1	**2.9583**	0.140	4.7	mg/L	103	Standard
Fe	57	830.0	9.4	**3.3050**	0.399	12.1	mg/L	107	Standard
> **Sc-1**	45	30168.4	3.5				mg/L	24625	Standard
Cl	35	26324.9	1.3				ug/L	30925	Standard
Kr	83	4.0	50.0				ug/L	4	Standard
Br	81	426.7	13.7				ug/L	397	Standard
P	31	19601.4	21.2				ug/L	19276	Standard
S	34	2831.9	6.2				ug/L	3042	Standard
Sr	88	116.7	24.7				ug/L	65	Standard
C	12	243.3	19.4				mg/L	287	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	120.0	16.7				mg/L	3	Standard
Dy	164	28371.9	2.4				mg/L	23	Standard
Ho-1	165	19734.5	0.7				mg/L	7	Standard
Er	166	18014.0	1.0				mg/L	13	Standard
I	127	4727.4	3.3				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		85.866	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.872	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.247
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.776
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1511110814
Sample Date/Time: Friday, November 20, 2015 14:51:59
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	40791.6	5.2				ug/L	49688	Standard
	Be	9	160.0	13.6	**0.2244**	0.044	19.6	ug/L	7	Standard
	Al	27	2352584.7	3.0	**42.2170**	1.057	2.5	ug/L	277	Standard
	Sc	45	29290.0	2.6				ug/L	24625	Standard
	Ti	47	1985.8	1.3	**9.2549**	0.234	2.5	ug/L	198	Standard
	V	51	23385.3	4.0	**4.5385**	0.082	1.8	ug/L	1126	Standard
	Cr	52	126307.5	2.3	**26.0675**	0.010	0.0	ug/L	6071	Standard
	Cr	53	15387.8	3.0	**25.8579**	1.311	5.1	ug/L	332	Standard
	Mn	55	407555.4	1.2	**88.3551**	1.164	1.3	ug/L	876	Standard
	Co	59	10604.0	1.4	**2.2362**	0.049	2.2	ug/L	110	Standard
	Ni	60	45600.2	0.4	**35.6379**	0.809	2.3	ug/L	191	Standard
	Cu	65	11460.7	1.1	**8.8069**	0.134	1.5	ug/L	281	Standard
	Zn	66	69109.6	1.5	**92.4960**	0.787	0.9	ug/L	249	Standard
>	Ge	72	291278.8	2.3				ug/L	297260	Standard
	As	75	1824.3	2.9	**2.2487**	0.103	4.6	ug/L	-66	Standard
	Se	82	136.3	12.8	**1.5984**	0.248	15.5	ug/L	13	Standard
	Se-1	77	127.7	8.4	**1.7426**	0.261	15.0	ug/L	48	Standard
>	Ga	71	945.0	11.3				mg/L	30	Standard
	Rb	85	19222.2	6.2				ug/L	12	Standard
	Y	89	601950.6	3.2				ug/L	310514	Standard
>	Rh	103	31.7	9.1				ug/L	10	Standard
	Mo	98	2244.7	3.3	**1.4199**	0.043	3.0	ug/L	11	Standard
	Ag	107	238.3	2.2	**0.0281**	0.001	4.8	ug/L	99	Standard
	Cd	111	477.2	2.8	**0.2877**	0.008	2.8	mg/L	6	Standard
	Cd	114	1056.3	1.1	**0.2568**	0.006	2.3	ug/L	6	Standard
>	In	115	453018.8	1.5				ug/L	501593	Standard
	Sn	118	388.3	9.7	**-0.0077**	0.008	98.4	ug/L	442	Standard
	Sb	123	140.8	8.4	**0.0279**	0.003	10.7	ug/L	53	Standard
	Ba	135	30715.4	1.4	**17.1298**	0.218	1.3	ug/L	34	Standard
	Ce	140	251023.4	4.5				ug/L	73	Standard
>	Tb	159	885468.0	1.9				ug/L	924917	Standard
	Ho	165	20460.5	1.2				ug/L	7	Standard
	Tl	203	625.7	1.6	**0.0803**	0.002	3.0	ug/L	6	Standard
	Tl	205	403.3	10.5	**0.0762**	0.008	10.4	ug/L	8	Standard
	Pb	206	10991.3	0.7	**2.0513**	0.030	1.5	ug/L	264	Standard
	Pb	207	7877.0	1.9	**1.6197**	0.013	0.8	ug/L	215	Standard
	Pb	208	28937.0	1.6	**1.6920**	0.011	0.7	ug/L	863	Standard
	U	238	11083.7	1.8	**1.9872**	0.006	0.3	ug/L	4	Standard
>	Bi	209	462389.8	2.1				ug/L	507917	Standard

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Na	23	1.7	173.2	**5.6494**	9.776	173.1	mg/L	0	Standard
Mg	24	83.3	13.9	**0.0869**	0.019	22.4	mg/L	20	Standard
K	39	166.7	7.5	**0.4411**	0.061	13.8	mg/L	38	Standard
Ca	43	140.0	31.1	**6.4579**	4.026	62.3	mg/L	43	Standard
Fe	54	3459.7	4.3	**4.1993**	0.075	1.8	mg/L	103	Standard
Fe	57	1060.0	1.9	**4.5220**	0.228	5.0	mg/L	107	Standard
> **Sc-1**	45	29290.0	2.6				mg/L	24625	Standard
Cl	35	26387.6	1.6				ug/L	30925	Standard
Kr	83	5.0	80.0				ug/L	4	Standard
Br	81	503.3	6.1				ug/L	397	Standard
P	31	17039.6	3.9				ug/L	19276	Standard
S	34	2780.3	7.1				ug/L	3042	Standard
Sr	88	148.3	1.9				ug/L	65	Standard
C	12	216.7	19.2				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	140.0	42.9				mg/L	3	Standard
Dy	164	28683.5	2.4				mg/L	23	Standard
Ho-1	165	20460.5	1.2				mg/L	7	Standard
Er	166	19946.5	1.5				mg/L	13	Standard
I	127	5054.2	2.9				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		82.095	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.988	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.316
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.036
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1511110816
Sample Date/Time: Friday, November 20, 2015 14:55:10
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	40047.9	3.4				ug/L	49688	Standard
	Be	9	263.3	11.1	**0.3877**	0.042	10.9	ug/L	7	Standard
	Al	27	3793963.5	4.6	**69.2786**	0.894	1.3	ug/L	277	Standard
	Sc	45	31427.6	1.7				ug/L	24625	Standard
	Ti	47	2484.2	2.8	**11.8641**	0.076	0.6	ug/L	198	Standard
	V	51	37002.5	0.9	**7.3703**	0.276	3.7	ug/L	1126	Standard
	Cr	52	205643.4	1.8	**43.5613**	1.175	2.7	ug/L	6071	Standard
	Cr	53	24973.9	3.6	**42.5698**	2.130	5.0	ug/L	332	Standard
	Mn	55	876056.1	2.2	**191.5144**	1.201	0.6	ug/L	876	Standard
	Co	59	24178.9	1.4	**5.1703**	0.077	1.5	ug/L	110	Standard
	Ni	60	64103.3	0.7	**50.5376**	1.103	2.2	ug/L	191	Standard
	Cu	65	18126.2	1.4	**14.1653**	0.490	3.5	ug/L	281	Standard
	Zn	66	119186.3	1.1	**160.9172**	2.769	1.7	ug/L	249	Standard
>	**Ge**	72	289205.1	2.8				ug/L	297260	Standard
	As	75	2605.0	3.3	**3.2092**	0.014	0.4	ug/L	-66	Standard
	Se	82	160.1	6.1	**1.9275**	0.134	7.0	ug/L	13	Standard
	Se-1	77	184.7	6.8	**2.9968**	0.352	11.7	ug/L	48	Standard
>	**Ga**	71	1670.1	7.7				mg/L	30	Standard
	Rb	85	39245.8	0.3				ug/L	12	Standard
	Y	89	897591.0	1.5				ug/L	310514	Standard
>	**Rh**	103	45.0	29.4				ug/L	10	Standard
	Mo	98	2904.6	2.1	**1.8116**	0.011	0.6	ug/L	11	Standard
	Ag	107	289.3	8.6	**0.0374**	0.004	11.4	ug/L	99	Standard
	Cd	111	563.4	1.5	**0.3354**	0.003	1.0	mg/L	6	Standard
	Cd	114	1360.8	7.7	**0.3271**	0.029	8.8	ug/L	6	Standard
>	**In**	115	459083.6	1.5				ug/L	501593	Standard
	Sn	118	408.3	1.4	**-0.0045**	0.002	50.7	ug/L	442	Standard
	Sb	123	199.9	5.6	**0.0405**	0.003	7.4	ug/L	53	Standard
	Ba	135	53653.9	1.8	**29.5412**	0.202	0.7	ug/L	34	Standard
	Ce	140	489861.2	0.4				ug/L	73	Standard
>	**Tb**	159	907475.3	1.9				ug/L	924917	Standard
	Ho	165	43743.1	3.6				ug/L	7	Standard
	Tl	203	857.0	1.8	**0.1120**	0.001	0.9	ug/L	6	Standard
	Tl	205	538.3	1.1	**0.1039**	0.002	1.6	ug/L	8	Standard
	Pb	206	23992.6	0.8	**4.5728**	0.064	1.4	ug/L	264	Standard
	Pb	207	17701.0	0.6	**3.7230**	0.027	0.7	ug/L	215	Standard
	Pb	208	66423.8	1.6	**3.9760**	0.017	0.4	ug/L	863	Standard
	U	238	16900.1	0.8	**3.0552**	0.041	1.3	ug/L	4	Standard
>	**Bi**	209	458407.9	1.3				ug/L	507917	Standard

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Na	23	5.0	100.0	**16.3256**	16.322	100.0	mg/L	0	Standard
Mg	24	111.7	29.8	**0.1171**	0.046	39.0	mg/L	20	Standard
K	39	265.0	3.3	**0.7444**	0.041	5.5	mg/L	38	Standard
Ca	43	256.7	16.6	**15.3190**	3.174	20.7	mg/L	43	Standard
Fe	54	5841.3	2.7	**6.6942**	0.182	2.7	mg/L	103	Standard
Fe	57	1775.1	4.1	**7.3619**	0.205	2.8	mg/L	107	Standard
> **Sc-1**	45	31427.6	1.7				mg/L	24625	Standard
Cl	35	26385.6	1.4				ug/L	30925	Standard
Kr	83	4.3	13.3				ug/L	4	Standard
Br	81	463.3	16.8				ug/L	397	Standard
P	31	17969.0	3.4				ug/L	19276	Standard
S	34	2770.3	9.1				ug/L	3042	Standard
Sr	88	113.3	11.1				ug/L	65	Standard
C	12	300.0	5.8				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	216.7	23.2				mg/L	3	Standard
Dy	164	62728.7	0.4				mg/L	23	Standard
Ho-1	165	43743.1	3.6				mg/L	7	Standard
Er	166	40758.1	3.1				mg/L	13	Standard
I	127	7998.8	4.4				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		80.598	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.290	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	91.525
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	90.252
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1511110818
Sample Date/Time: Friday, November 20, 2015 14:58:21
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	42852.2	2.9				ug/L	49688	Standard
	Be	9	323.3	11.2	**0.4482**	0.052	11.6	ug/L	7	Standard
	Al	27	513471.8	3.4	**8.7632**	0.439	5.0	ug/L	277	Standard
	Sc	45	32643.5	1.3				ug/L	24625	Standard
	Ti	47	3196.7	6.9	**15.3443**	1.235	8.0	ug/L	198	Standard
	V	51	50987.5	3.4	**10.1333**	0.433	4.3	ug/L	1126	Standard
	Cr	52	206537.3	3.0	**43.3158**	1.719	4.0	ug/L	6071	Standard
	Cr	53	25646.7	3.9	**43.2699**	1.444	3.3	ug/L	332	Standard
	Mn	55	698948.3	4.0	**151.2947**	6.992	4.6	ug/L	876	Standard
	Co	59	32946.1	2.3	**6.9864**	0.243	3.5	ug/L	110	Standard
	Ni	60	114332.7	3.2	**89.3887**	3.438	3.8	ug/L	191	Standard
	Cu	65	30849.1	3.8	**24.0156**	0.997	4.2	ug/L	281	Standard
	Zn	66	213220.4	3.6	**285.3104**	12.432	4.4	ug/L	249	Standard
>	Ge	72	292027.8	1.4				ug/L	297260	Standard
	As	75	3866.5	0.8	**4.6939**	0.070	1.5	ug/L	-66	Standard
	Se	82	525.1	2.2	**6.7294**	0.054	0.8	ug/L	13	Standard
	Se-1	77	397.0	2.4	**7.4988**	0.313	4.2	ug/L	48	Standard
>	Ga	71	2805.3	5.3				mg/L	30	Standard
	Rb	85	52214.8	2.2				ug/L	12	Standard
	Y	89	1218351.6	0.8				ug/L	310514	Standard
>	Rh	103	46.7	27.0				ug/L	10	Standard
	Mo	98	3481.9	1.9	**2.1579**	0.091	4.2	ug/L	11	Standard
	Ag	107	380.3	3.3	**0.0549**	0.003	6.3	ug/L	99	Standard
	Cd	111	1058.3	2.0	**0.6279**	0.030	4.8	mg/L	6	Standard
	Cd	114	2485.6	6.2	**0.5958**	0.056	9.4	ug/L	6	Standard
>	In	115	462221.7	3.3				ug/L	501593	Standard
	Sn	118	668.3	5.7	**0.0515**	0.013	24.8	ug/L	442	Standard
	Sb	123	146.0	11.0	**0.0284**	0.004	14.5	ug/L	53	Standard
	Ba	135	75721.8	1.9	**41.4586**	1.928	4.6	ug/L	34	Standard
	Ce	140	732505.9	1.9				ug/L	73	Standard
>	Tb	159	957547.8	3.7				ug/L	924917	Standard
	Ho	165	68454.5	4.3				ug/L	7	Standard
	Tl	203	839.7	2.0	**0.1069**	0.005	4.5	ug/L	6	Standard
	Tl	205	596.7	6.8	**0.1127**	0.010	8.6	ug/L	8	Standard
	Pb	206	25062.7	2.7	**4.6605**	0.191	4.1	ug/L	264	Standard
	Pb	207	18231.0	1.5	**3.7415**	0.154	4.1	ug/L	215	Standard
	Pb	208	67544.4	3.1	**3.9453**	0.210	5.3	ug/L	863	Standard
	U	238	23887.8	2.3	**4.2127**	0.195	4.6	ug/L	4	Standard
>	Bi	209	470121.4	2.6				ug/L	507917	Standard

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Na	23	3.3	173.2	**10.2311**	17.712	173.1	mg/L	0	Standard
Mg	24	133.3	4.3	**0.1401**	0.009	6.6	mg/L	20	Standard
K	39	341.7	5.9	**0.9702**	0.083	8.5	mg/L	38	Standard
Ca	43	171.7	11.8	**7.6894**	1.521	19.8	mg/L	43	Standard
Fe	54	8100.5	4.1	**8.9881**	0.446	5.0	mg/L	103	Standard
Fe	57	2206.8	2.6	**8.9226**	0.125	1.4	mg/L	107	Standard
> **Sc-1**	45	32643.5	1.3				mg/L	24625	Standard
Cl	35	25520.8	2.0				ug/L	30925	Standard
Kr	83	2.3	65.5				ug/L	4	Standard
Br	81	500.0	22.5				ug/L	397	Standard
P	31	17236.5	3.3				ug/L	19276	Standard
S	34	2601.9	2.7				ug/L	3042	Standard
Sr	88	120.0	23.2				ug/L	65	Standard
C	12	233.3	17.8				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	266.7	27.6				mg/L	3	Standard
Dy	164	92996.0	0.5				mg/L	23	Standard
Ho-1	165	68454.5	4.3				mg/L	7	Standard
Er	166	63268.6	4.1				mg/L	13	Standard
I	127	6754.8	2.9				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		86.242	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.240	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		92.151
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.559
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1511110818
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Method 6020 - Summary Report

Sample ID: L1511110820
Sample Date/Time: Friday, November 20, 2015 15:01:32
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	42608.3	6.3				ug/L	49688	Standard
	Be	9	345.0	2.5	**0.4842**	0.045	9.3	ug/L	7	Standard
	Al	27	392272.7	2.0	**6.7393**	0.340	5.0	ug/L	277	Standard
	Sc	45	32907.4	2.5				ug/L	24625	Standard
	Ti	47	2913.3	0.8	**13.7181**	0.432	3.1	ug/L	198	Standard
	V	51	48909.9	1.3	**9.5837**	0.409	4.3	ug/L	1126	Standard
	Cr	52	208127.2	1.1	**43.0637**	1.044	2.4	ug/L	6071	Standard
	Cr	53	25371.2	2.6	**42.2265**	0.265	0.6	ug/L	332	Standard
	Mn	55	927047.8	2.3	**198.0402**	3.790	1.9	ug/L	876	Standard
	Co	59	27942.7	2.0	**5.8425**	0.175	3.0	ug/L	110	Standard
	Ni	60	105422.6	1.7	**81.3073**	1.438	1.8	ug/L	191	Standard
	Cu	65	26788.7	1.8	**20.5475**	0.469	2.3	ug/L	281	Standard
	Zn	66	159829.1	2.0	**210.9180**	3.623	1.7	ug/L	249	Standard
>	**Ge**	72	296011.8	3.2				ug/L	297260	Standard
	As	75	3327.7	1.9	**3.9940**	0.071	1.8	ug/L	-66	Standard
	Se	82	428.1	3.3	**5.3720**	0.003	0.1	ug/L	13	Standard
	Se-1	77	336.7	1.3	**6.1128**	0.237	3.9	ug/L	48	Standard
>	**Ga**	71	2120.1	8.6				mg/L	30	Standard
	Rb	85	43082.8	1.0				ug/L	12	Standard
	Y	89	926099.4	1.2				ug/L	310514	Standard
>	**Rh**	103	33.3	31.2				ug/L	10	Standard
	Mo	98	2349.3	1.8	**1.4452**	0.036	2.5	ug/L	11	Standard
	Ag	107	314.0	1.3	**0.0414**	0.001	3.3	ug/L	99	Standard
	Cd	111	935.2	1.9	**0.5502**	0.027	4.9	mg/L	6	Standard
	Cd	114	2270.5	5.1	**0.5387**	0.027	5.0	ug/L	6	Standard
>	**In**	115	465992.3	3.1				ug/L	501593	Standard
	Sn	118	483.3	5.3	**0.0104**	0.006	59.8	ug/L	442	Standard
	Sb	123	215.4	7.2	**0.0433**	0.004	9.8	ug/L	53	Standard
	Ba	135	109784.3	0.8	**59.6097**	1.720	2.9	ug/L	34	Standard
	Ce	140	515159.5	1.6				ug/L	73	Standard
>	**Tb**	159	945160.8	3.9				ug/L	924917	Standard
	Ho	165	46486.2	3.1				ug/L	7	Standard
	Tl	203	977.4	3.6	**0.1227**	0.000	0.1	ug/L	6	Standard
	Tl	205	623.3	25.3	**0.1155**	0.028	24.0	ug/L	8	Standard
	Pb	206	24532.2	0.9	**4.4834**	0.128	2.9	ug/L	264	Standard
	Pb	207	17965.3	1.2	**3.6229**	0.098	2.7	ug/L	215	Standard
	Pb	208	67636.1	0.9	**3.8829**	0.140	3.6	ug/L	863	Standard
	U	238	20651.7	0.6	**3.5815**	0.152	4.3	ug/L	4	Standard
>	**Bi**	209	478250.8	3.7				ug/L	507917	Standard

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Na	23	3.3	86.6	**10.2460**	8.876	86.6	mg/L	0	Standard
Mg	24	138.3	11.6	**0.1451**	0.019	13.3	mg/L	20	Standard
K	39	263.3	2.9	**0.6968**	0.034	4.9	mg/L	38	Standard
Ca	43	145.0	9.1	**5.4536**	1.064	19.5	mg/L	43	Standard
Fe	54	6479.6	4.1	**7.1009**	0.287	4.0	mg/L	103	Standard
Fe	57	1848.4	3.7	**7.3210**	0.259	3.5	mg/L	107	Standard
> **Sc-1**	45	32907.4	2.5				mg/L	24625	Standard
Cl	35	25853.4	1.6				ug/L	30925	Standard
Kr	83	4.0	25.0				ug/L	4	Standard
Br	81	570.0	8.0				ug/L	397	Standard
P	31	17760.4	2.2				ug/L	19276	Standard
S	34	2661.9	3.2				ug/L	3042	Standard
Sr	88	110.0	16.4				ug/L	65	Standard
C	12	210.0	26.5				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	156.7	32.8				mg/L	3	Standard
Dy	164	64391.3	1.7				mg/L	23	Standard
Ho-1	165	46486.2	3.1				mg/L	7	Standard
Er	166	43161.4	3.6				mg/L	13	Standard
I	127	11197.5	4.9				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		85.751	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.580	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		92.903
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.159
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1511110820
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Method 6020 - Summary Report

Sample ID: L1511110822
Sample Date/Time: Friday, November 20, 2015 15:04:43
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	42780.4	5.7				ug/L	49688	Standard
	Be	9	326.7	14.5	**0.4545**	0.070	15.5	ug/L	7	Standard
	Al	27	283786.3	4.4	**4.8459**	0.074	1.5	ug/L	277	Standard
	Sc	45	31372.5	3.9				ug/L	24625	Standard
	Ti	47	2371.5	2.2	**11.2165**	0.168	1.5	ug/L	198	Standard
	V	51	47238.7	1.1	**9.4063**	0.181	1.9	ug/L	1126	Standard
	Cr	52	161835.9	2.0	**33.7886**	0.326	1.0	ug/L	6071	Standard
	Cr	53	19751.2	2.8	**33.3410**	0.873	2.6	ug/L	332	Standard
	Mn	55	607362.7	1.9	**131.8991**	2.105	1.6	ug/L	876	Standard
	Co	59	26825.7	2.3	**5.7026**	0.071	1.2	ug/L	110	Standard
	Ni	60	90112.5	1.5	**70.6604**	0.762	1.1	ug/L	191	Standard
	Cu	65	22747.4	2.5	**17.7118**	0.204	1.2	ug/L	281	Standard
	Zn	66	174039.5	2.1	**233.6130**	2.553	1.1	ug/L	249	Standard
>	**Ge**	72	290958.5	1.5				ug/L	297260	Standard
	As	75	3234.8	1.6	**3.9496**	0.063	1.6	ug/L	-66	Standard
	Se	82	186.5	2.0	**2.2636**	0.014	0.6	ug/L	13	Standard
	Se-1	77	173.0	4.2	**2.7160**	0.110	4.1	ug/L	48	Standard
>	**Ga**	71	2145.2	5.4				mg/L	30	Standard
	Rb	85	40118.1	3.4				ug/L	12	Standard
	Y	89	768782.8	2.3				ug/L	310514	Standard
>	**Rh**	103	36.7	28.4				ug/L	10	Standard
	Mo	98	1941.7	0.7	**1.1907**	0.021	1.8	ug/L	11	Standard
	Ag	107	281.7	6.5	**0.0349**	0.003	7.4	ug/L	99	Standard
	Cd	111	1199.0	5.1	**0.7024**	0.025	3.6	mg/L	6	Standard
	Cd	114	2809.9	6.4	**0.6643**	0.035	5.3	ug/L	6	Standard
>	**In**	115	467719.1	2.0				ug/L	501593	Standard
	Sn	118	446.7	9.7	**0.0021**	0.010	455.3	ug/L	442	Standard
	Sb	123	144.8	19.5	**0.0278**	0.007	24.6	ug/L	53	Standard
	Ba	135	63684.2	1.3	**34.4245**	0.259	0.8	ug/L	34	Standard
	Ce	140	429337.1	1.5				ug/L	73	Standard
>	**Tb**	159	930265.0	1.2				ug/L	924917	Standard
	Ho	165	37566.5	2.2				ug/L	7	Standard
	Tl	203	700.3	6.3	**0.0889**	0.005	5.2	ug/L	6	Standard
	Tl	205	485.0	12.5	**0.0911**	0.012	13.0	ug/L	8	Standard
	Pb	206	23226.5	1.3	**4.3274**	0.065	1.5	ug/L	264	Standard
	Pb	207	17582.9	1.4	**3.6163**	0.068	1.9	ug/L	215	Standard
	Pb	208	65130.1	1.2	**3.8119**	0.047	1.2	ug/L	863	Standard
	U	238	17816.1	2.5	**3.1503**	0.086	2.7	ug/L	4	Standard
>	**Bi**	209	468657.7	1.5				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	133.3	5.7	**0.1472**	0.005	3.2	mg/L	20	Standard
K	39	233.3	2.5	**0.6345**	0.030	4.7	mg/L	38	Standard
Ca	43	90.0	30.9	**1.4041**	2.273	161.9	mg/L	43	Standard
Fe	54	6407.3	3.3	**7.3749**	0.305	4.1	mg/L	103	Standard
Fe	57	1753.4	6.0	**7.2869**	0.506	6.9	mg/L	107	Standard
Sc-1	45	31372.5	3.9				mg/L	24625	Standard
Cl	35	26547.2	1.2				ug/L	30925	Standard
Kr	83	5.7	27.0				ug/L	4	Standard
Br	81	740.0	3.6				ug/L	397	Standard
P	31	18274.4	3.2				ug/L	19276	Standard
S	34	2898.6	4.9				ug/L	3042	Standard
Sr	88	121.7	22.6				ug/L	65	Standard
C	12	216.7	14.1				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	266.7	9.4				mg/L	3	Standard
Dy	164	50396.1	1.2				mg/L	23	Standard
Ho-1	165	37566.5	2.2				mg/L	7	Standard
Er	166	33323.3	1.5				mg/L	13	Standard
I	127	7747.0	1.9				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		86.098	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.880	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.247
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.270
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

Approved: November 23, 2015

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, November 20, 2015 15:07:56
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	41002.1	3.4				ug/L	49688	Standard
	Be	9	35610.1	2.4	**53.9499**	2.432	4.5	ug/L	7	Standard
	Al	27	3466763.5	2.5	**61.8599**	0.740	1.2	ug/L	277	Standard
	Sc	45	27154.3	3.7				ug/L	24625	Standard
	Ti	47	21206.8	3.6	**109.0500**	0.835	0.8	ug/L	198	Standard
	V	51	250810.3	3.4	**52.0358**	0.240	0.5	ug/L	1126	Standard
	Cr	52	240611.8	3.7	**52.0188**	0.422	0.8	ug/L	6071	Standard
	Cr	53	29373.5	1.8	**50.9757**	1.201	2.4	ug/L	332	Standard
	Mn	55	231229.9	3.2	**51.2288**	0.895	1.7	ug/L	876	Standard
	Co	59	240979.0	2.0	**52.6222**	0.518	1.0	ug/L	110	Standard
	Ni	60	63741.2	3.4	**51.0594**	0.310	0.6	ug/L	191	Standard
	Cu	65	63990.2	2.3	**51.3852**	0.875	1.7	ug/L	281	Standard
	Zn	66	37436.5	2.8	**51.1588**	0.248	0.5	ug/L	249	Standard
>	Ge	72	284500.7	2.9				ug/L	297260	Standard
	As	75	41397.6	1.5	**51.0795**	0.744	1.5	ug/L	-66	Standard
	Se	82	3661.2	2.1	**49.4633**	0.457	0.9	ug/L	13	Standard
	Se-1	77	2419.9	0.1	**52.1773**	1.598	3.1	ug/L	48	Standard
>	Ga	71	26.7	10.8				mg/L	30	Standard
	Rb	85	678.3	1.1				ug/L	12	Standard
	Y	89	293369.5	2.9				ug/L	310514	Standard
>	Rh	103	41.7	70.3				ug/L	10	Standard
	Mo	98	172280.2	1.7	**108.5609**	0.374	0.3	ug/L	11	Standard
	Ag	107	270713.1	2.7	**53.7530**	0.676	1.3	ug/L	99	Standard
	Cd	111	83538.6	2.2	**50.6398**	0.248	0.5	mg/L	6	Standard
	Cd	114	209070.9	2.1	**51.1617**	0.452	0.9	ug/L	6	Standard
>	In	115	453240.9	2.0				ug/L	501593	Standard
	Sn	118	236840.4	1.7	**52.2284**	0.766	1.5	ug/L	442	Standard
	Sb	123	229119.4	2.1	**51.3230**	0.378	0.7	ug/L	53	Standard
	Ba	135	98155.3	2.1	**54.7609**	0.118	0.2	ug/L	34	Standard
	Ce	140	288.3	70.3				ug/L	73	Standard
>	Tb	159	866879.2	3.6				ug/L	924917	Standard
	Ho	165	25.0	72.1				ug/L	7	Standard
	Tl	203	383768.1	2.4	**52.0320**	0.073	0.1	ug/L	6	Standard
	Tl	205	246502.7	1.6	**49.9144**	0.543	1.1	ug/L	8	Standard
	Pb	206	272201.6	1.9	**52.9395**	0.551	1.0	ug/L	264	Standard
	Pb	207	242922.4	1.3	**52.1839**	0.678	1.3	ug/L	215	Standard
	Pb	208	840202.8	1.9	**51.3753**	0.393	0.8	ug/L	863	Standard
	U	238	268417.7	1.4	**49.0289**	1.056	2.2	ug/L	4	Standard
>	Bi	209	453464.8	2.5				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	2788.6	3.0	**4.3947**	0.100	2.3	mg/L	20	Standard
K	39	1685.1	5.1	**6.6840**	0.108	1.6	mg/L	38	Standard
Ca	43	78.3	48.3	**1.3902**	3.521	253.3	mg/L	43	Standard
Fe	54	3437.8	5.7	**4.5164**	0.307	6.8	mg/L	103	Standard
Fe	57	980.0	3.6	**4.5121**	0.344	7.6	mg/L	107	Standard
Sc-1	45	27154.3	3.7				mg/L	24625	Standard
Cl	35	26994.7	1.2				ug/L	30925	Standard
Kr	83	2.3	24.7				ug/L	4	Standard
Br	81	423.3	5.5				ug/L	397	Standard
P	31	17403.3	1.1				ug/L	19276	Standard
S	34	2910.3	3.7				ug/L	3042	Standard
Sr	88	125.0	14.4				ug/L	65	Standard
C	12	210.0	33.0				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	3	Standard
Dy	164	48.6	53.2				mg/L	23	Standard
Ho-1	165	25.0	72.1				mg/L	7	Standard
Er	166	30.0	88.2				mg/L	13	Standard
I	127	1616.8	4.2				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	107.900		
Al	27	123.720		
Sc	45			
Ti	47	109.050		
V	51	104.072		
Cr	52	104.038		
Cr	53			
Mn	55	102.458		
Co	59	105.244		
Ni	60	102.119		
Cu	65	102.770		
Zn	66	102.318		
Ge	72		95.708	
As	75	102.159		
Se	82	98.927		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	108.561		
Ag	107	107.506		
Cd	111	101.280		
Cd	114			
In	115		90.360	
Sn	118	104.457		
Sb	123	102.646		
Ba	135	109.522		
Ce	140			
Tb	159			
Ho	165			
Tl	203	104.064		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.751		
U	238	98.058		
Bi	209		89.279	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
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Approved: November 23, 2015

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, November 20, 2015 15:11:07
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	39132.3	6.3				ug/L	49688	Standard
	Be	9	20.0	25.0	**0.0111**	0.006	58.0	ug/L	7	Standard
	Al	27	790.0	29.8	**0.0050**	0.004	76.8	ug/L	277	Standard
	Sc	45	25479.8	5.7				ug/L	24625	Standard
	Ti	47	46.7	31.1	**-0.5476**	0.062	11.4	ug/L	198	Standard
	V	51	961.3	3.2	**-0.0112**	0.009	78.8	ug/L	1126	Standard
	Cr	52	5108.5	2.6	**-0.0709**	0.054	75.7	ug/L	6071	Standard
	Cr	53	326.7	10.2	**0.1164**	0.086	73.8	ug/L	332	Standard
	Mn	55	849.4	9.7	**-0.0126**	0.005	41.9	ug/L	876	Standard
	Co	59	208.7	3.6	**0.0206**	0.003	14.8	ug/L	110	Standard
	Ni	60	195.0	4.4	**-0.0189**	0.017	87.7	ug/L	191	Standard
	Cu	65	254.3	13.1	**-0.0076**	0.026	339.7	ug/L	281	Standard
	Zn	66	218.3	15.4	**0.0081**	0.030	367.7	ug/L	249	Standard
>	**Ge**	72	274066.0	7.3				ug/L	297260	Standard
	As	75	0.7	4733.5	**0.0518**	0.043	83.2	ug/L	-66	Standard
	Se	82	16.8	18.2	**0.0286**	0.053	186.5	ug/L	13	Standard
	Se-1	77	50.3	15.2	**0.1467**	0.123	83.9	ug/L	48	Standard
>	**Ga**	71	26.7	65.8				mg/L	30	Standard
	Rb	85	11.7	24.7				ug/L	12	Standard
	Y	89	284010.2	5.3				ug/L	310514	Standard
>	**Rh**	103	6.7	114.6				ug/L	10	Standard
	Mo	98	232.5	29.2	**0.1558**	0.036	23.1	ug/L	11	Standard
	Ag	107	145.3	12.4	**0.0108**	0.005	42.4	ug/L	99	Standard
	Cd	111	20.2	36.8	**0.0110**	0.005	45.6	mg/L	6	Standard
	Cd	114	78.6	46.8	**0.0181**	0.009	52.0	ug/L	6	Standard
>	**In**	115	436552.7	5.0				ug/L	501593	Standard
	Sn	118	550.0	15.2	**0.0329**	0.022	65.5	ug/L	442	Standard
	Sb	123	147.7	30.2	**0.0309**	0.011	37.2	ug/L	53	Standard
	Ba	135	47.7	21.2	**0.0042**	0.005	128.1	ug/L	34	Standard
	Ce	140	20.0	25.0				ug/L	73	Standard
>	**Tb**	159	840340.3	7.5				ug/L	924917	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	66.0	31.5	**0.0062**	0.003	43.9	ug/L	6	Standard
	Tl	205	36.7	55.1	**0.0037**	0.004	107.4	ug/L	8	Standard
	Pb	206	279.3	15.8	**0.0088**	0.007	75.1	ug/L	264	Standard
	Pb	207	211.7	19.1	**0.0058**	0.006	110.9	ug/L	215	Standard
	Pb	208	815.7	10.4	**0.0067**	0.003	43.4	ug/L	863	Standard
	U	238	41.0	13.6	**0.0100**	0.001	11.8	ug/L	4	Standard
>	**Bi**	209	439857.2	5.0				ug/L	507917	Standard

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Na	23	1.7	173.2	**6.9468**	12.024	173.1	mg/L	0	Standard
Mg	24	21.7	48.0	**0.0001**	0.016	12401.1	mg/L	20	Standard
K	39	53.3	14.3	**0.0431**	0.044	101.5	mg/L	38	Standard
Ca	43	31.7	79.5	**-2.7934**	2.686	96.2	mg/L	43	Standard
Fe	54	122.9	13.3	**0.0311**	0.018	57.6	mg/L	103	Standard
Fe	57	165.0	5.2	**0.3529**	0.079	22.3	mg/L	107	Standard
Sc-1	45	25479.8	5.7				mg/L	24625	Standard
Cl	35	26648.8	1.3				ug/L	30925	Standard
Kr	83	2.7	21.7				ug/L	4	Standard
Br	81	400.0	21.4				ug/L	397	Standard
P	31	16413.9	1.8				ug/L	19276	Standard
S	34	2736.9	7.1				ug/L	3042	Standard
Sr	88	116.7	22.0				ug/L	65	Standard
C	12	160.0	16.5				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	12.4	46.8				mg/L	23	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	2041.8	6.5				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		92.197	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	87.033
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	86.600
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Ti	47	

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Method 6020 - Summary Report

Sample ID: PBS 21 WG547711-01
Sample Date/Time: Friday, November 20, 2015 15:25:56
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	36933.4	6.9				ug/L	49688	Standard
	Be	9	13.3	57.3	**0.0015**	0.012	768.5	ug/L	7	Standard
	Al	27	1115.0	34.2	**0.0126**	0.008	63.7	ug/L	277	Standard
	Sc	45	25019.0	4.1				ug/L	24625	Standard
	Ti	47	49.3	9.6	**-0.5232**	0.038	7.3	ug/L	198	Standard
	V	51	977.0	10.4	**-0.0032**	0.019	607.5	ug/L	1126	Standard
	Cr	52	4571.4	1.7	**-0.1701**	0.049	28.8	ug/L	6071	Standard
	Cr	53	250.0	4.0	**-0.0146**	0.024	166.9	ug/L	332	Standard
	Mn	55	1028.7	44.0	**0.0358**	0.111	309.2	ug/L	876	Standard
	Co	59	207.7	36.0	**0.0216**	0.018	84.0	ug/L	110	Standard
	Ni	60	194.0	11.8	**-0.0164**	0.021	125.2	ug/L	191	Standard
	Cu	65	237.7	7.1	**-0.0168**	0.013	78.1	ug/L	281	Standard
	Zn	66	1090.7	4.7	**1.2914**	0.003	0.2	ug/L	249	Standard
>	**Ge**	72	267607.1	4.8				ug/L	297260	Standard
	As	75	-12.1	213.1	**0.0347**	0.034	97.0	ug/L	-66	Standard
	Se	82	18.6	64.3	**0.0537**	0.157	291.9	ug/L	13	Standard
	Se-1	77	52.7	14.7	**0.2390**	0.236	98.8	ug/L	48	Standard
>	**Ga**	71	8.3	91.7				mg/L	30	Standard
	Rb	85	21.7	26.6				ug/L	12	Standard
	Y	89	261537.9	4.7				ug/L	310514	Standard
>	**Rh**	103	13.3	114.6				ug/L	10	Standard
	Mo	98	47.5	80.7	**0.0373**	0.026	70.5	ug/L	11	Standard
	Ag	107	104.7	9.0	**0.0033**	0.002	73.5	ug/L	99	Standard
	Cd	111	8.3	25.2	**0.0036**	0.001	34.6	mg/L	6	Standard
	Cd	114	10.7	118.6	**0.0009**	0.003	348.7	ug/L	6	Standard
>	**In**	115	418514.0	4.1				ug/L	501593	Standard
	Sn	118	408.3	7.8	**0.0044**	0.011	254.9	ug/L	442	Standard
	Sb	123	115.0	20.2	**0.0244**	0.007	27.5	ug/L	53	Standard
	Ba	135	60.0	6.0	**0.0130**	0.004	27.9	ug/L	34	Standard
	Ce	140	50.0	45.8				ug/L	73	Standard
>	**Tb**	159	812654.4	3.0				ug/L	924917	Standard
	Ho	165	5.0	0.0				ug/L	7	Standard
	Tl	203	8.0	25.0	**-0.0018**	0.000	17.1	ug/L	6	Standard
	Tl	205	11.7	137.8	**-0.0014**	0.003	250.6	ug/L	8	Standard
	Pb	206	321.0	20.2	**0.0192**	0.014	72.1	ug/L	264	Standard
	Pb	207	284.0	23.4	**0.0241**	0.016	66.9	ug/L	215	Standard
	Pb	208	904.7	12.9	**0.0140**	0.008	53.9	ug/L	863	Standard
	U	238	23.7	133.4	**0.0069**	0.006	89.2	ug/L	4	Standard
>	**Bi**	209	427638.5	3.3				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	31.7	9.1	**0.0186**	0.006	29.7	mg/L	20	Standard
K	39	58.3	62.0	**0.0682**	0.161	236.0	mg/L	38	Standard
Ca	43	31.7	39.7	**-2.8374**	1.216	42.8	mg/L	43	Standard
Fe	54	66.3	18.9	**-0.0485**	0.018	36.5	mg/L	103	Standard
Fe	57	168.3	12.0	**0.3882**	0.132	34.0	mg/L	107	Standard
> **Sc-1**	45	25019.0	4.1				mg/L	24625	Standard
Cl	35	24983.3	1.5				ug/L	30925	Standard
Kr	83	3.0	66.7				ug/L	4	Standard
Br	81	466.7	11.0				ug/L	397	Standard
P	31	10817.2	7.2				ug/L	19276	Standard
S	34	2656.9	5.3				ug/L	3042	Standard
Sr	88	98.3	15.5				ug/L	65	Standard
C	12	136.7	4.2				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	9.2	195.9				mg/L	23	Standard
Ho-1	165	5.0	0.0				mg/L	7	Standard
Er	166	16.7	124.9				mg/L	13	Standard
I	127	1785.1	10.4				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		74.330	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.025	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	83.437	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	84.195	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Lower	Ti	47	

Sample ID: PBS 21 WG547711-01
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Method 6020 - Summary Report

Sample ID: LCSS 21 WG547711-02
Sample Date/Time: Friday, November 20, 2015 15:29:08
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	35287.7	2.5				ug/L	49688	Standard
	Be	9	15135.9	2.0	**26.6136**	0.212	0.8	ug/L	7	Standard
	Al	27	1365.1	40.6	**0.0185**	0.011	57.8	ug/L	277	Standard
	Sc	45	24755.2	5.2				ug/L	24625	Standard
	Ti	47	51.7	12.6	**-0.5090**	0.043	8.5	ug/L	198	Standard
	V	51	109859.0	2.9	**24.2833**	0.218	0.9	ug/L	1126	Standard
	Cr	52	110426.2	3.4	**24.9207**	0.082	0.3	ug/L	6071	Standard
	Cr	53	13040.6	2.7	**23.9736**	0.820	3.4	ug/L	332	Standard
	Mn	55	103479.9	4.3	**24.4227**	0.203	0.8	ug/L	876	Standard
	Co	59	106440.7	4.2	**24.8553**	0.365	1.5	ug/L	110	Standard
	Ni	60	28769.7	4.2	**24.5687**	0.137	0.6	ug/L	191	Standard
	Cu	65	30001.4	3.8	**25.6700**	0.479	1.9	ug/L	281	Standard
	Zn	66	18393.5	4.1	**26.7538**	0.176	0.7	ug/L	249	Standard
>	Ge	72	265836.6	3.7				ug/L	297260	Standard
	As	75	18661.5	2.3	**24.6715**	0.385	1.6	ug/L	-66	Standard
	Se	82	1651.3	3.3	**23.7673**	0.358	1.5	ug/L	13	Standard
	Se-1	77	1149.4	4.7	**26.0120**	0.527	2.0	ug/L	48	Standard
>	Ga	71	21.7	58.1				mg/L	30	Standard
	Rb	85	41.7	38.6				ug/L	12	Standard
	Y	89	264591.7	4.5				ug/L	310514	Standard
>	Rh	103	23.3	75.3				ug/L	10	Standard
	Mo	98	28.2	37.4	**0.0242**	0.007	27.1	ug/L	11	Standard
	Ag	107	122805.7	3.4	**26.6974**	0.288	1.1	ug/L	99	Standard
	Cd	111	37286.2	4.0	**24.7502**	0.277	1.1	mg/L	6	Standard
	Cd	114	89932.4	2.4	**24.1078**	0.451	1.9	ug/L	6	Standard
>	In	115	413873.3	3.6				ug/L	501593	Standard
	Sn	118	330.0	23.8	**-0.0140**	0.017	119.1	ug/L	442	Standard
	Sb	123	96857.1	3.1	**23.7607**	0.167	0.7	ug/L	53	Standard
	Ba	135	43351.0	2.4	**26.4832**	0.478	1.8	ug/L	34	Standard
	Ce	140	165.0	97.7				ug/L	73	Standard
>	Tb	159	804067.8	1.3				ug/L	924917	Standard
	Ho	165	16.7	96.4				ug/L	7	Standard
	Tl	203	170620.9	3.0	**24.4061**	0.067	0.3	ug/L	6	Standard
	Tl	205	112085.3	4.7	**23.9329**	0.370	1.5	ug/L	8	Standard
	Pb	206	123722.0	2.9	**25.3613**	0.126	0.5	ug/L	264	Standard
	Pb	207	106929.2	2.6	**24.2112**	0.151	0.6	ug/L	215	Standard
	Pb	208	375141.9	3.1	**24.1760**	0.057	0.2	ug/L	863	Standard
	U	238	117541.6	3.9	**22.6434**	0.183	0.8	ug/L	4	Standard
>	Bi	209	429794.5	3.2				ug/L	507917	Standard

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Na	23	1.7	173.2	**7.1659**	12.403	173.1	mg/L	0	Standard
Mg	24	33.3	22.9	**0.0219**	0.012	57.0	mg/L	20	Standard
K	39	58.3	19.8	**0.0729**	0.063	86.7	mg/L	38	Standard
Ca	43	30.0	44.1	**-2.9959**	1.230	41.0	mg/L	43	Standard
Fe	54	66.1	16.9	**-0.0480**	0.012	25.7	mg/L	103	Standard
Fe	57	188.3	6.7	**0.5136**	0.125	24.4	mg/L	107	Standard
> **Sc-1**	45	24755.2	5.2				mg/L	24625	Standard
Cl	35	24280.8	0.2				ug/L	30925	Standard
Kr	83	4.0	50.0				ug/L	4	Standard
Br	81	403.3	5.7				ug/L	397	Standard
P	31	10335.2	1.2				ug/L	19276	Standard
S	34	2500.2	4.3				ug/L	3042	Standard
Sr	88	103.3	35.0				ug/L	65	Standard
C	12	163.3	21.5				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	29.2	57.4				mg/L	23	Standard
Ho-1	165	16.7	96.4				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	13	Standard
I	127	2073.5	2.7				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		71.018	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		89.429	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	82.512	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	84.619	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Lower	Ti	47	

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Method 6020 - Summary Report

Sample ID: LCSS DP WG547711-03
Sample Date/Time: Friday, November 20, 2015 15:32:19
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	36455.5	5.1				ug/L	49688	Standard
	Be	9	15464.6	2.7	**26.3393**	0.668	2.5	ug/L	7	Standard
	Al	27	2300.2	4.6	**0.0365**	0.002	5.0	ug/L	277	Standard
	Sc	45	25386.3	6.0				ug/L	24625	Standard
	Ti	47	46.3	13.0	**-0.5425**	0.023	4.2	ug/L	198	Standard
	V	51	111937.4	3.9	**24.4951**	0.274	1.1	ug/L	1126	Standard
	Cr	52	109757.1	3.4	**24.5055**	0.211	0.9	ug/L	6071	Standard
	Cr	53	13185.7	5.9	**23.9721**	0.465	1.9	ug/L	332	Standard
	Mn	55	104282.9	3.6	**24.3761**	0.528	2.2	ug/L	876	Standard
	Co	59	106945.7	3.3	**24.7325**	0.477	1.9	ug/L	110	Standard
	Ni	60	28796.4	4.7	**24.3464**	0.499	2.0	ug/L	191	Standard
	Cu	65	29738.9	4.8	**25.1801**	0.225	0.9	ug/L	281	Standard
	Zn	66	18162.6	5.1	**26.1448**	0.486	1.9	ug/L	249	Standard
>	**Ge**	72	268515.6	4.0				ug/L	297260	Standard
	As	75	18700.5	3.5	**24.4731**	0.361	1.5	ug/L	-66	Standard
	Se	82	1685.9	5.5	**24.0139**	0.546	2.3	ug/L	13	Standard
	Se-1	77	1119.7	4.2	**25.0558**	0.211	0.8	ug/L	48	Standard
>	**Ga**	71	30.0	28.9				mg/L	30	Standard
	Rb	85	41.7	48.5				ug/L	12	Standard
	Y	89	268216.4	3.2				ug/L	310514	Standard
>	**Rh**	103	18.3	56.8				ug/L	10	Standard
	Mo	98	17.3	15.8	**0.0168**	0.002	10.9	ug/L	11	Standard
	Ag	107	121513.2	4.3	**26.3396**	0.465	1.8	ug/L	99	Standard
	Cd	111	37154.1	2.0	**24.6052**	0.269	1.1	mg/L	6	Standard
	Cd	114	90957.2	1.6	**24.3167**	0.269	1.1	ug/L	6	Standard
>	**In**	115	414918.2	2.6				ug/L	501593	Standard
	Sn	118	313.3	26.8	**-0.0179**	0.020	113.1	ug/L	442	Standard
	Sb	123	96884.9	3.9	**23.6993**	0.330	1.4	ug/L	53	Standard
	Ba	135	43431.5	1.6	**26.4608**	0.268	1.0	ug/L	34	Standard
	Ce	140	98.3	16.3				ug/L	73	Standard
>	**Tb**	159	808808.1	3.7				ug/L	924917	Standard
	Ho	165	16.7	62.4				ug/L	7	Standard
	Tl	203	170944.3	4.0	**24.4688**	0.177	0.7	ug/L	6	Standard
	Tl	205	111875.2	3.6	**23.9179**	0.505	2.1	ug/L	8	Standard
	Pb	206	124828.2	3.7	**25.6081**	0.319	1.2	ug/L	264	Standard
	Pb	207	107074.7	3.5	**24.2613**	0.158	0.6	ug/L	215	Standard
	Pb	208	379631.1	4.3	**24.4808**	0.172	0.7	ug/L	863	Standard
	U	238	119359.3	4.7	**23.0092**	0.242	1.0	ug/L	4	Standard
>	**Bi**	209	429461.6	3.7				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	46.7	43.3	**0.0430**	0.033	76.2	mg/L	20	Standard
K	39	53.3	37.9	**0.0460**	0.103	224.7	mg/L	38	Standard
Ca	43	26.7	28.6	**-3.3507**	0.969	28.9	mg/L	43	Standard
Fe	54	58.0	59.0	**-0.0600**	0.054	90.1	mg/L	103	Standard
Fe	57	200.0	8.7	**0.5460**	0.036	6.7	mg/L	107	Standard
> **Sc-1**	45	25386.3	6.0				mg/L	24625	Standard
Cl	35	24173.9	3.3				ug/L	30925	Standard
Kr	83	4.7	12.4				ug/L	4	Standard
Br	81	476.7	19.9				ug/L	397	Standard
P	31	10688.8	1.9				ug/L	19276	Standard
S	34	2471.9	6.0				ug/L	3042	Standard
Sr	88	105.0	14.3				ug/L	65	Standard
C	12	163.3	17.7				mg/L	287	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	32.7	77.1				mg/L	23	Standard
Ho-1	165	16.7	62.4				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	1943.5	7.5				mg/L	3275	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		73.369	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		90.330	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	82.720	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	84.553	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Lower	Ti	47	

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Method 6020 - Summary Report

Sample ID: L1511110701
Sample Date/Time: Friday, November 20, 2015 15:35:30
Number of Replicates: 3
Autosampler Position: 227
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	38198.1	3.4				ug/L	49688	Standard
	Be	9	20.0	50.0	**0.0124**	0.017	136.9	ug/L	7	Standard
	Al	27	775101.0	5.1	**14.8299**	0.239	1.6	ug/L	277	Standard
	Sc	45	26095.8	3.0				ug/L	24625	Standard
	Ti	47	129.7	9.0	**-0.1095**	0.055	50.6	ug/L	198	Standard
	V	51	24268.2	1.8	**4.9522**	0.025	0.5	ug/L	1126	Standard
	Cr	52	5843.8	2.1	**0.0757**	0.018	23.4	ug/L	6071	Standard
	Cr	53	358.3	10.5	**0.1611**	0.064	39.7	ug/L	332	Standard
	Mn	55	13523.7	2.3	**2.8681**	0.035	1.2	ug/L	876	Standard
	Co	59	448.0	4.8	**0.0733**	0.005	7.2	ug/L	110	Standard
	Ni	60	728.0	0.8	**0.4163**	0.004	1.1	ug/L	191	Standard
	Cu	65	358.3	3.6	**0.0748**	0.006	8.7	ug/L	281	Standard
	Zn	66	1830.4	2.6	**2.2707**	0.031	1.3	ug/L	249	Standard
>	**Ge**	72	278160.1	1.5				ug/L	297260	Standard
	As	75	467.5	4.6	**0.6405**	0.019	3.0	ug/L	-66	Standard
	Se	82	65.2	10.1	**0.6946**	0.079	11.4	ug/L	13	Standard
	Se-1	77	88.0	11.2	**0.9779**	0.213	21.8	ug/L	48	Standard
>	**Ga**	71	148.3	19.8				mg/L	30	Standard
	Rb	85	7792.0	2.7				ug/L	12	Standard
	Y	89	276760.0	1.0				ug/L	310514	Standard
>	**Rh**	103	21.7	74.2				ug/L	10	Standard
	Mo	98	2350.7	2.4	**1.5437**	0.048	3.1	ug/L	11	Standard
	Ag	107	119.0	31.7	**0.0053**	0.008	150.3	ug/L	99	Standard
	Cd	111	22.3	21.3	**0.0123**	0.003	24.8	mg/L	6	Standard
	Cd	114	70.4	35.5	**0.0161**	0.006	40.0	ug/L	6	Standard
>	**In**	115	436308.3	0.8				ug/L	501593	Standard
	Sn	118	356.7	16.1	**-0.0117**	0.013	114.3	ug/L	442	Standard
	Sb	123	1777.1	11.1	**0.4099**	0.046	11.3	ug/L	53	Standard
	Ba	135	8610.4	3.8	**4.9697**	0.213	4.3	ug/L	34	Standard
	Ce	140	15.0	115.5				ug/L	73	Standard
>	**Tb**	159	841620.0	3.3				ug/L	924917	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	233.0	24.1	**0.0291**	0.008	26.9	ug/L	6	Standard
	Tl	205	120.0	19.1	**0.0207**	0.004	21.1	ug/L	8	Standard
	Pb	206	340.0	10.6	**0.0201**	0.008	39.3	ug/L	264	Standard
	Pb	207	282.0	9.8	**0.0207**	0.006	27.8	ug/L	215	Standard
	Pb	208	1003.3	2.7	**0.0176**	0.001	3.9	ug/L	863	Standard
	U	238	36.0	23.7	**0.0090**	0.002	17.9	ug/L	4	Standard
>	**Bi**	209	446826.3	2.1				ug/L	507917	Standard

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Na	23	1.7	173.2	**6.3679**	11.021	173.1	mg/L	0	Standard
Mg	24	278.3	4.5	**0.4243**	0.027	6.3	mg/L	20	Standard
K	39	275.0	11.1	**0.9768**	0.114	11.7	mg/L	38	Standard
Ca	43	91.7	30.0	**3.1565**	3.071	97.3	mg/L	43	Standard
Fe	54	67.3	19.2	**-0.0508**	0.021	40.8	mg/L	103	Standard
Fe	57	185.0	16.9	**0.4339**	0.142	32.7	mg/L	107	Standard
> **Sc-1**	45	26095.8	3.0				mg/L	24625	Standard
Cl	35	25073.4	1.5				ug/L	30925	Standard
Kr	83	4.3	53.3				ug/L	4	Standard
Br	81	400.0	2.5				ug/L	397	Standard
P	31	11904.7	2.4				ug/L	19276	Standard
S	34	2338.5	5.8				ug/L	3042	Standard
Sr	88	101.7	33.5				ug/L	65	Standard
C	12	493.3	17.2				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	133.3	4.3				mg/L	3	Standard
Dy	164	9.2	3.0				mg/L	23	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	13	Standard
I	127	5190.9	2.6				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		76.876	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.575	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		86.985
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.972
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1511110703
Sample Date/Time: Friday, November 20, 2015 15:38:41
Number of Replicates: 3
Autosampler Position: 228
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	40265.1	3.0				ug/L	49688	Standard
	Be	9	18.3	41.7	**0.0081**	0.013	155.0	ug/L	7	Standard
	Al	27	544772.3	1.6	**9.8918**	0.203	2.1	ug/L	277	Standard
	Sc	45	26055.7	1.8				ug/L	24625	Standard
	Ti	47	107.0	1.9	**-0.2264**	0.010	4.3	ug/L	198	Standard
	V	51	23124.1	3.4	**4.7315**	0.061	1.3	ug/L	1126	Standard
	Cr	52	5390.0	2.6	**-0.0212**	0.012	57.4	ug/L	6071	Standard
	Cr	53	283.3	21.1	**0.0303**	0.112	368.6	ug/L	332	Standard
	Mn	55	15228.3	2.2	**3.2731**	0.050	1.5	ug/L	876	Standard
	Co	59	416.7	8.2	**0.0667**	0.008	12.1	ug/L	110	Standard
	Ni	60	789.0	2.4	**0.4696**	0.014	2.9	ug/L	191	Standard
	Cu	65	384.7	1.7	**0.0982**	0.006	6.1	ug/L	281	Standard
	Zn	66	1679.8	4.4	**2.0708**	0.098	4.7	ug/L	249	Standard
>	**Ge**	72	276889.9	3.6				ug/L	297260	Standard
	As	75	697.9	7.4	**0.9348**	0.051	5.5	ug/L	-66	Standard
	Se	82	31.5	5.1	**0.2306**	0.032	13.7	ug/L	13	Standard
	Se-1	77	67.7	17.9	**0.5251**	0.240	45.7	ug/L	48	Standard
>	**Ga**	71	95.0	24.1				mg/L	30	Standard
	Rb	85	3918.8	4.2				ug/L	12	Standard
	Y	89	274054.5	3.1				ug/L	310514	Standard
>	**Rh**	103	23.3	89.2				ug/L	10	Standard
	Mo	98	1254.6	7.8	**0.8202**	0.062	7.5	ug/L	11	Standard
	Ag	107	129.0	26.1	**0.0072**	0.007	97.6	ug/L	99	Standard
	Cd	111	33.0	40.4	**0.0189**	0.008	44.8	mg/L	6	Standard
	Cd	114	73.3	35.1	**0.0166**	0.006	38.9	ug/L	6	Standard
>	**In**	115	439410.2	1.9				ug/L	501593	Standard
	Sn	118	313.3	17.6	**-0.0222**	0.011	51.5	ug/L	442	Standard
	Sb	123	1468.9	5.2	**0.3359**	0.022	6.4	ug/L	53	Standard
	Ba	135	7691.0	1.2	**4.4048**	0.034	0.8	ug/L	34	Standard
	Ce	140	48.3	86.1				ug/L	73	Standard
>	**Tb**	159	843016.4	1.6				ug/L	924917	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	136.7	31.9	**0.0157**	0.006	37.6	ug/L	6	Standard
	Tl	205	90.0	43.4	**0.0146**	0.008	56.2	ug/L	8	Standard
	Pb	206	295.7	12.5	**0.0111**	0.007	67.0	ug/L	264	Standard
	Pb	207	272.0	19.6	**0.0183**	0.012	64.0	ug/L	215	Standard
	Pb	208	913.3	12.5	**0.0118**	0.007	60.2	ug/L	863	Standard
	U	238	34.0	108.4	**0.0086**	0.007	79.3	ug/L	4	Standard
>	**Bi**	209	448756.0	1.6				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	293.3	6.5	**0.4492**	0.022	5.0	mg/L	20	Standard
K	39	230.0	11.5	**0.7877**	0.110	14.0	mg/L	38	Standard
Ca	43	78.3	39.0	**1.7583**	3.088	175.6	mg/L	43	Standard
Fe	54	57.7	39.2	**-0.0649**	0.031	47.2	mg/L	103	Standard
Fe	57	203.3	6.2	**0.5377**	0.086	16.0	mg/L	107	Standard
> **Sc-1**	45	26055.7	1.8				mg/L	24625	Standard
Cl	35	25729.8	1.3				ug/L	30925	Standard
Kr	83	4.0	43.3				ug/L	4	Standard
Br	81	396.7	16.2				ug/L	397	Standard
P	31	11571.1	3.9				ug/L	19276	Standard
S	34	2631.9	7.1				ug/L	3042	Standard
Sr	88	108.3	19.2				ug/L	65	Standard
C	12	436.7	8.0				mg/L	287	Standard
N	14	6.7	86.6				mg/L	0	Standard
Hg	202	36.7	15.7				mg/L	3	Standard
Dy	164	23.0	66.9				mg/L	23	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	13	Standard
I	127	3537.1	1.4				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		81.036	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.147	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		87.603
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		88.352
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1511110705
Sample Date/Time: Friday, November 20, 2015 15:41:52
Number of Replicates: 3
Autosampler Position: 229
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	37859.1	7.6				ug/L	49688	Standard
	Be	9	15.0	88.2	**0.0054**	0.024	454.6	ug/L	7	Standard
	Al	27	269477.2	9.3	**5.1950**	0.210	4.1	ug/L	277	Standard
	Sc	45	25640.1	9.2				ug/L	24625	Standard
	Ti	47	163.0	12.1	**0.0989**	0.067	67.6	ug/L	198	Standard
	V	51	26484.1	4.9	**5.6436**	0.063	1.1	ug/L	1126	Standard
	Cr	52	5215.6	5.8	**-0.0211**	0.012	57.6	ug/L	6071	Standard
	Cr	53	308.3	15.6	**0.0915**	0.066	72.5	ug/L	332	Standard
	Mn	55	53792.9	5.6	**12.5016**	0.141	1.1	ug/L	876	Standard
	Co	59	400.7	9.4	**0.0660**	0.005	8.0	ug/L	110	Standard
	Ni	60	1225.7	5.6	**0.8644**	0.018	2.1	ug/L	191	Standard
	Cu	65	311.0	12.7	**0.0454**	0.026	57.6	ug/L	281	Standard
	Zn	66	1568.1	6.0	**1.9867**	0.029	1.5	ug/L	249	Standard
>	**Ge**	72	267791.7	5.0				ug/L	297260	Standard
	As	75	769.4	6.9	**1.0584**	0.028	2.6	ug/L	-66	Standard
	Se	82	33.7	6.8	**0.2761**	0.036	12.9	ug/L	13	Standard
	Se-1	77	57.3	7.0	**0.3426**	0.128	37.3	ug/L	48	Standard
>	**Ga**	71	28.3	36.7				mg/L	30	Standard
	Rb	85	2982.0	5.6				ug/L	12	Standard
	Y	89	269257.3	6.2				ug/L	310514	Standard
>	**Rh**	103	10.0					ug/L	10	Standard
	Mo	98	1102.9	4.0	**0.7286**	0.011	1.5	ug/L	11	Standard
	Ag	107	106.3	23.9	**0.0027**	0.005	178.1	ug/L	99	Standard
	Cd	111	33.5	46.4	**0.0192**	0.009	46.7	mg/L	6	Standard
	Cd	114	96.8	58.1	**0.0226**	0.013	59.2	ug/L	6	Standard
>	**In**	115	435340.1	5.0				ug/L	501593	Standard
	Sn	118	366.7	12.7	**-0.0089**	0.014	154.3	ug/L	442	Standard
	Sb	123	2481.7	3.2	**0.5755**	0.015	2.6	ug/L	53	Standard
	Ba	135	2185.5	4.8	**1.2468**	0.019	1.6	ug/L	34	Standard
	Ce	140	68.3	18.4				ug/L	73	Standard
>	**Tb**	159	827071.8	5.1				ug/L	924917	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	201.7	25.5	**0.0248**	0.006	24.4	ug/L	6	Standard
	Tl	205	101.7	27.1	**0.0169**	0.005	28.2	ug/L	8	Standard
	Pb	206	258.3	4.9	**0.0042**	0.001	21.2	ug/L	264	Standard
	Pb	207	214.0	15.0	**0.0059**	0.005	85.1	ug/L	215	Standard
	Pb	208	779.0	8.4	**0.0039**	0.002	54.4	ug/L	863	Standard
	U	238	14.0	68.1	**0.0049**	0.002	34.1	ug/L	4	Standard
>	**Bi**	209	444639.9	4.6				ug/L	507917	Standard

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Na	23	1.7	173.2	**5.9766**	10.343	173.1	mg/L	0	Standard
Mg	24	353.3	9.2	**0.5641**	0.100	17.7	mg/L	20	Standard
K	39	161.7	11.7	**0.5170**	0.140	27.1	mg/L	38	Standard
Ca	43	53.3	14.3	**-0.6464**	0.945	146.2	mg/L	43	Standard
Fe	54	55.8	29.1	**-0.0648**	0.028	43.7	mg/L	103	Standard
Fe	57	216.7	11.4	**0.6259**	0.025	4.0	mg/L	107	Standard
> **Sc-1**	45	25640.1	9.2				mg/L	24625	Standard
Cl	35	24965.2	4.2				ug/L	30925	Standard
Kr	83	5.0	20.0				ug/L	4	Standard
Br	81	423.3	3.6				ug/L	397	Standard
P	31	12176.6	8.3				ug/L	19276	Standard
S	34	2420.2	6.1				ug/L	3042	Standard
Sr	88	90.0	29.4				ug/L	65	Standard
C	12	370.0	10.8				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	69.3				mg/L	3	Standard
Dy	164	12.2	48.4				mg/L	23	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	23.3	24.7				mg/L	13	Standard
I	127	2755.3	8.4				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		76.193	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.087	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		86.792
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.542
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1511110705PS WG547893-01
Sample Date/Time: Friday, November 20, 2015 15:45:03
Number of Replicates: 3
Autosampler Position: 230
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	37205.7	4.0				ug/L	49688	Standard
	Be	9	34995.4	3.6	**58.4449**	3.229	5.5	ug/L	7	Standard
	Al	27	270781.7	1.1	**5.3199**	0.196	3.7	ug/L	277	Standard
	Sc	45	25641.7	4.8				ug/L	24625	Standard
	Ti	47	164.0	9.2	**0.0922**	0.093	100.7	ug/L	198	Standard
	V	51	267612.8	2.5	**58.0249**	0.899	1.5	ug/L	1126	Standard
	Cr	52	235122.1	1.1	**53.1374**	0.609	1.1	ug/L	6071	Standard
	Cr	53	28924.3	2.7	**52.4218**	0.332	0.6	ug/L	332	Standard
	Mn	55	284415.2	3.1	**65.8668**	0.904	1.4	ug/L	876	Standard
	Co	59	240261.5	1.3	**54.7999**	0.635	1.2	ug/L	110	Standard
	Ni	60	63755.9	1.6	**53.3643**	0.683	1.3	ug/L	191	Standard
	Cu	65	64180.3	2.1	**53.8381**	0.948	1.8	ug/L	281	Standard
	Zn	66	41137.1	2.9	**58.7551**	0.388	0.7	ug/L	249	Standard
>	**Ge**	72	272378.2	2.2				ug/L	297260	Standard
	As	75	42735.4	2.6	**55.0568**	0.614	1.1	ug/L	-66	Standard
	Se	82	3704.8	1.6	**52.2948**	1.074	2.1	ug/L	13	Standard
	Se-1	77	2446.9	3.5	**55.1207**	0.742	1.3	ug/L	48	Standard
>	**Ga**	71	50.0	45.8				mg/L	30	Standard
	Rb	85	3228.7	2.0				ug/L	12	Standard
	Y	89	272497.3	1.6				ug/L	310514	Standard
>	**Rh**	103	21.7	26.6				ug/L	10	Standard
	Mo	98	1168.2	3.1	**0.7712**	0.006	0.8	ug/L	11	Standard
	Ag	107	264467.9	0.6	**54.6963**	1.002	1.8	ug/L	99	Standard
	Cd	111	85694.8	1.7	**54.0967**	0.511	0.9	mg/L	6	Standard
	Cd	114	208856.2	1.2	**53.2261**	0.711	1.3	ug/L	6	Standard
>	**In**	115	435298.7	2.5				ug/L	501593	Standard
	Sn	118	451.7	20.1	**0.0102**	0.019	188.7	ug/L	442	Standard
	Sb	123	225591.3	2.1	**52.6236**	0.922	1.8	ug/L	53	Standard
	Ba	135	101613.1	2.5	**59.0289**	0.185	0.3	ug/L	34	Standard
	Ce	140	105.0	66.2				ug/L	73	Standard
>	**Tb**	159	841907.9	2.6				ug/L	924917	Standard
	Ho	165	15.0	88.2				ug/L	7	Standard
	Tl	203	386393.4	1.6	**53.3643**	0.249	0.5	ug/L	6	Standard
	Tl	205	254049.2	1.7	**52.4121**	1.708	3.3	ug/L	8	Standard
	Pb	206	272350.6	1.3	**53.9527**	0.246	0.5	ug/L	264	Standard
	Pb	207	244928.5	1.7	**53.5866**	0.336	0.6	ug/L	215	Standard
	Pb	208	842303.7	2.2	**52.4590**	0.683	1.3	ug/L	863	Standard
	U	238	270725.3	2.6	**50.3563**	0.917	1.8	ug/L	4	Standard
>	**Bi**	209	445166.3	1.7				ug/L	507917	Standard

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Na	23	1.7	173.2	**6.3787**	11.040	173.1	mg/L	0	Standard
Mg	24	330.0	8.4	**0.5199**	0.054	10.3	mg/L	20	Standard
K	39	143.3	20.1	**0.4316**	0.138	32.1	mg/L	38	Standard
Ca	43	61.7	4.7	**0.1856**	0.256	137.8	mg/L	43	Standard
Fe	54	41.4	20.3	**-0.0862**	0.015	16.8	mg/L	103	Standard
Fe	57	160.0	26.7	**0.3113**	0.196	62.9	mg/L	107	Standard
Sc-1	45	25641.7	4.8				mg/L	24625	Standard
Cl	35	25215.6	1.8				ug/L	30925	Standard
Kr	83	3.3	45.8				ug/L	4	Standard
Br	81	430.0	12.9				ug/L	397	Standard
P	31	12199.9	3.2				ug/L	19276	Standard
S	34	2290.2	2.5				ug/L	3042	Standard
Sr	88	96.7	6.0				ug/L	65	Standard
C	12	410.0	8.8				mg/L	287	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	36.7	83.3				mg/L	3	Standard
Dy	164	19.4	92.3				mg/L	23	Standard
Ho-1	165	15.0	88.2				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	2498.5	5.6				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		74.878	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		91.630	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		86.783
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.645
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1511110705SDL WG547893-02
Sample Date/Time: Friday, November 20, 2015 15:48:15
Number of Replicates: 3
Autosampler Position: 231
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	38709.4	3.0				ug/L	49688	Standard
	Be	9	25.0	69.3	**0.0191**	0.027	141.6	ug/L	7	Standard
	Al	27	52469.2	5.4	**0.9818**	0.039	3.9	ug/L	277	Standard
	Sc	45	25142.5	5.3				ug/L	24625	Standard
	Ti	47	71.0	5.1	**-0.4073**	0.032	7.9	ug/L	198	Standard
	V	51	6122.3	5.0	**1.1263**	0.021	1.9	ug/L	1126	Standard
	Cr	52	5616.7	2.9	**0.0655**	0.043	65.6	ug/L	6071	Standard
	Cr	53	336.7	14.9	**0.1401**	0.072	51.3	ug/L	332	Standard
	Mn	55	11372.9	4.6	**2.4608**	0.041	1.7	ug/L	876	Standard
	Co	59	275.0	13.3	**0.0364**	0.006	17.6	ug/L	110	Standard
	Ni	60	376.7	3.4	**0.1372**	0.007	5.4	ug/L	191	Standard
	Cu	65	285.0	10.4	**0.0218**	0.021	96.9	ug/L	281	Standard
	Zn	66	1494.7	5.2	**1.8652**	0.053	2.8	ug/L	249	Standard
>	**Ge**	72	269565.6	3.4				ug/L	297260	Standard
	As	75	127.9	21.8	**0.2182**	0.037	17.1	ug/L	-66	Standard
	Se	82	17.5	37.8	**0.0419**	0.096	230.0	ug/L	13	Standard
	Se-1	77	57.7	10.5	**0.3376**	0.120	35.6	ug/L	48	Standard
>	**Ga**	71	6.7	43.3				mg/L	30	Standard
	Rb	85	625.0	10.8				ug/L	12	Standard
	Y	89	270691.7	6.5				ug/L	310514	Standard
>	**Rh**	103	13.3	57.3				ug/L	10	Standard
	Mo	98	262.8	6.4	**0.1803**	0.007	3.8	ug/L	11	Standard
	Ag	107	119.3	10.5	**0.0058**	0.002	38.6	ug/L	99	Standard
	Cd	111	21.8	43.4	**0.0122**	0.006	47.4	mg/L	6	Standard
	Cd	114	71.5	15.7	**0.0167**	0.003	18.3	ug/L	6	Standard
>	**In**	115	427534.3	2.6				ug/L	501593	Standard
	Sn	118	441.7	7.5	**0.0098**	0.006	57.8	ug/L	442	Standard
	Sb	123	2054.5	12.0	**0.4852**	0.069	14.2	ug/L	53	Standard
	Ba	135	499.0	3.9	**0.2718**	0.004	1.5	ug/L	34	Standard
	Ce	140	36.7	34.3				ug/L	73	Standard
>	**Tb**	159	816121.2	3.3				ug/L	924917	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	86.0	27.3	**0.0091**	0.003	32.8	ug/L	6	Standard
	Tl	205	93.3	30.5	**0.0156**	0.005	34.7	ug/L	8	Standard
	Pb	206	414.0	9.3	**0.0366**	0.006	15.8	ug/L	264	Standard
	Pb	207	343.7	10.2	**0.0358**	0.006	15.6	ug/L	215	Standard
	Pb	208	1285.4	13.2	**0.0369**	0.009	23.2	ug/L	863	Standard
	U	238	61.0	53.6	**0.0138**	0.006	42.6	ug/L	4	Standard
>	**Bi**	209	436140.0	3.0				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	116.7	8.9	**0.1650**	0.028	17.0	mg/L	20	Standard
K	39	53.3	14.3	**0.0447**	0.031	69.6	mg/L	38	Standard
Ca	43	36.7	56.8	**-2.3191**	2.182	94.1	mg/L	43	Standard
Fe	54	106.1	39.4	**0.0082**	0.058	708.2	mg/L	103	Standard
Fe	57	171.7	8.4	**0.4041**	0.126	31.1	mg/L	107	Standard
> **Sc-1**	45	25142.5	5.3				mg/L	24625	Standard
Cl	35	25752.5	3.1				ug/L	30925	Standard
Kr	83	4.7	81.1				ug/L	4	Standard
Br	81	330.0	18.9				ug/L	397	Standard
P	31	14223.3	3.7				ug/L	19276	Standard
S	34	2298.5	3.3				ug/L	3042	Standard
Sr	88	98.3	2.9				ug/L	65	Standard
C	12	353.3	16.3				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	3	Standard
Dy	164	12.4	90.0				mg/L	23	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	1818.4	2.5				mg/L	3275	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		77.905	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		90.683	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		85.235
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		85.868
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Lower	Ti	47	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, November 20, 2015 15:51:28
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	40146.5	2.4				ug/L	49688	Standard
	Be	9	35409.7	1.4	**54.7592**	1.263	2.3	ug/L	7	Standard
	Al	27	3324757.4	2.8	**60.6045**	2.402	4.0	ug/L	277	Standard
	Sc	45	26758.6	3.6				ug/L	24625	Standard
	Ti	47	21031.3	1.4	**109.8593**	0.985	0.9	ug/L	198	Standard
	V	51	247709.1	2.2	**52.1951**	0.248	0.5	ug/L	1126	Standard
	Cr	52	241032.5	0.7	**52.9587**	0.744	1.4	ug/L	6071	Standard
	Cr	53	29968.0	2.6	**52.8105**	0.487	0.9	ug/L	332	Standard
	Mn	55	230058.0	2.2	**51.7603**	0.432	0.8	ug/L	876	Standard
	Co	59	237111.0	2.5	**52.5699**	0.573	1.1	ug/L	110	Standard
	Ni	60	63033.5	1.3	**51.2874**	0.429	0.8	ug/L	191	Standard
	Cu	65	64126.8	1.4	**52.2921**	0.343	0.7	ug/L	281	Standard
	Zn	66	37355.7	3.6	**51.8324**	0.832	1.6	ug/L	249	Standard
>	Ge	72	280151.7	2.1				ug/L	297260	Standard
	As	75	41168.8	0.9	**51.5787**	0.578	1.1	ug/L	-66	Standard
	Se	82	3652.0	1.1	**50.1078**	0.753	1.5	ug/L	13	Standard
	Se-1	77	2443.2	5.5	**53.4666**	1.885	3.5	ug/L	48	Standard
>	Ga	71	30.0	60.1				mg/L	30	Standard
	Rb	85	588.3	6.9				ug/L	12	Standard
	Y	89	283949.4	3.2				ug/L	310514	Standard
>	Rh	103	36.7	15.7				ug/L	10	Standard
	Mo	98	171503.6	1.9	**108.6926**	1.062	1.0	ug/L	11	Standard
	Ag	107	272284.4	3.5	**54.3766**	1.499	2.8	ug/L	99	Standard
	Cd	111	83767.4	0.7	**51.0800**	0.670	1.3	mg/L	6	Standard
	Cd	114	212284.6	1.5	**52.2487**	0.294	0.6	ug/L	6	Standard
>	In	115	450608.0	1.0				ug/L	501593	Standard
	Sn	118	233939.7	2.7	**51.8874**	1.539	3.0	ug/L	442	Standard
	Sb	123	227674.6	0.8	**51.2984**	0.349	0.7	ug/L	53	Standard
	Ba	135	98470.7	1.4	**55.2578**	0.444	0.8	ug/L	34	Standard
	Ce	140	68.3	16.9				ug/L	73	Standard
>	Tb	159	868340.1	1.3				ug/L	924917	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	383431.4	1.5	**52.0155**	0.278	0.5	ug/L	6	Standard
	Tl	205	248494.0	2.9	**50.3342**	0.988	2.0	ug/L	8	Standard
	Pb	206	269993.5	1.0	**52.5367**	0.437	0.8	ug/L	264	Standard
	Pb	207	243696.2	1.6	**52.3712**	0.617	1.2	ug/L	215	Standard
	Pb	208	833970.4	2.0	**51.0165**	0.553	1.1	ug/L	863	Standard
	U	238	268472.0	2.1	**49.0510**	0.559	1.1	ug/L	4	Standard
>	Bi	209	453186.4	1.0				ug/L	507917	Standard

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Na	23	5.0	100.0	**18.9508**	19.317	101.9	mg/L	0	Standard
Mg	24	2703.6	5.7	**4.3210**	0.170	3.9	mg/L	20	Standard
K	39	1603.4	2.7	**6.4583**	0.379	5.9	mg/L	38	Standard
Ca	43	66.7	24.1	**0.4244**	1.676	394.9	mg/L	43	Standard
Fe	54	3205.2	2.9	**4.2685**	0.282	6.6	mg/L	103	Standard
Fe	57	1006.7	4.0	**4.7278**	0.388	8.2	mg/L	107	Standard
> **Sc-1**	45	26758.6	3.6				mg/L	24625	Standard
Cl	35	27936.4	0.2				ug/L	30925	Standard
Kr	83	2.3	24.7				ug/L	4	Standard
Br	81	443.3	23.0				ug/L	397	Standard
P	31	17181.4	0.3				ug/L	19276	Standard
S	34	2883.6	4.5				ug/L	3042	Standard
Sr	88	96.7	39.5				ug/L	65	Standard
C	12	226.7	13.5				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	3	Standard
Dy	164	22.2	51.4				mg/L	23	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	23.3	24.7				mg/L	13	Standard
I	127	1291.7	4.4				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	109.518		
Al	27	121.209		
Sc	45			
Ti	47	109.859		
V	51	104.390		
Cr	52	105.917		
Cr	53			
Mn	55	103.521		
Co	59	105.140		
Ni	60	102.575		
Cu	65	104.584		
Zn	66	103.665		
> Ge	72		94.245	
As	75	103.157		
Se	82	100.216		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	108.693		
Ag	107	108.753		
Cd	111	102.160		
Cd	114			
In	115		89.835	
Sn	118	103.775		
Sb	123	102.597		
Ba	135	110.516		
Ce	140			
Tb	159			
Ho	165			
Tl	203	104.031		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.033		
U	238	98.102		
Bi	209		89.224	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	
QC Std 6	Ba	135	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, November 20, 2015 15:54:39
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	39070.4	5.8				ug/L	49688	Standard
	Be	9	11.7	65.5	**-0.0014**	0.013	947.6	ug/L	7	Standard
	Al	27	845.0	44.6	**0.0063**	0.008	119.8	ug/L	277	Standard
	Sc	45	25541.5	4.4				ug/L	24625	Standard
	Ti	47	56.0	1.8	**-0.4931**	0.007	1.4	ug/L	198	Standard
	V	51	962.7	4.9	**-0.0097**	0.017	180.0	ug/L	1126	Standard
	Cr	52	5119.5	2.0	**-0.0637**	0.022	34.4	ug/L	6071	Standard
	Cr	53	325.0	17.1	**0.1124**	0.087	77.2	ug/L	332	Standard
	Mn	55	777.4	4.8	**-0.0279**	0.008	29.8	ug/L	876	Standard
	Co	59	216.3	9.3	**0.0224**	0.003	12.9	ug/L	110	Standard
	Ni	60	188.0	8.2	**-0.0244**	0.015	62.2	ug/L	191	Standard
	Cu	65	265.3	11.2	**0.0026**	0.022	848.7	ug/L	281	Standard
	Zn	66	203.3	1.1	**-0.0104**	0.013	123.5	ug/L	249	Standard
>	**Ge**	72	272500.7	3.9				ug/L	297260	Standard
	As	75	-11.9	235.7	**0.0355**	0.036	102.5	ug/L	-66	Standard
	Se	82	26.2	27.9	**0.1596**	0.097	60.7	ug/L	13	Standard
	Se-1	77	53.3	8.7	**0.2243**	0.090	40.2	ug/L	48	Standard
>	**Ga**	71	16.7	96.4				mg/L	30	Standard
	Rb	85	23.3	65.5				ug/L	12	Standard
	Y	89	279660.4	4.3				ug/L	310514	Standard
>	**Rh**	103	10.0	100.0				ug/L	10	Standard
	Mo	98	168.3	24.0	**0.1157**	0.025	21.3	ug/L	11	Standard
	Ag	107	123.7	10.9	**0.0065**	0.003	44.8	ug/L	99	Standard
	Cd	111	20.7	21.7	**0.0113**	0.003	23.4	mg/L	6	Standard
	Cd	114	52.3	38.3	**0.0116**	0.005	45.0	ug/L	6	Standard
>	**In**	115	432504.5	2.1				ug/L	501593	Standard
	Sn	118	596.7	15.6	**0.0447**	0.022	49.8	ug/L	442	Standard
	Sb	123	309.1	20.2	**0.0690**	0.016	22.8	ug/L	53	Standard
	Ba	135	43.0	23.6	**0.0017**	0.006	319.9	ug/L	34	Standard
	Ce	140	18.3	41.7				ug/L	73	Standard
>	**Tb**	159	831506.0	3.0				ug/L	924917	Standard
	Ho	165	11.7	107.9				ug/L	7	Standard
	Tl	203	49.3	31.0	**0.0039**	0.002	54.7	ug/L	6	Standard
	Tl	205	35.0	79.5	**0.0034**	0.006	174.7	ug/L	8	Standard
	Pb	206	282.3	1.7	**0.0093**	0.001	12.6	ug/L	264	Standard
	Pb	207	234.7	15.6	**0.0108**	0.007	65.7	ug/L	215	Standard
	Pb	208	816.0	12.0	**0.0065**	0.005	80.4	ug/L	863	Standard
	U	238	50.3	38.4	**0.0117**	0.004	30.3	ug/L	4	Standard
>	**Bi**	209	441921.5	3.0				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	28.3	27.0	**0.0122**	0.015	120.3	mg/L	20	Standard
K	39	58.3	24.7	**0.0639**	0.069	107.7	mg/L	38	Standard
Ca	43	36.7	20.8	**-2.3607**	0.860	36.4	mg/L	43	Standard
Fe	54	100.8	12.1	**-0.0011**	0.012	1064.4	mg/L	103	Standard
Fe	57	185.0	14.3	**0.4565**	0.121	26.5	mg/L	107	Standard
Sc-1	45	25541.5	4.4				mg/L	24625	Standard
Cl	35	27631.2	2.6				ug/L	30925	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	413.3	16.1				ug/L	397	Standard
P	31	17123.0	5.4				ug/L	19276	Standard
S	34	2953.6	2.9				ug/L	3042	Standard
Sr	88	121.7	2.4				ug/L	65	Standard
C	12	210.0	21.8				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	2.7	204.0				mg/L	23	Standard
Ho-1	165	11.7	107.9				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	1605.1	1.9				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		91.671	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	86.226	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	87.007	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Ti	47	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1511110707
Sample Date/Time: Friday, November 20, 2015 15:57:52
Number of Replicates: 3
Autosampler Position: 232
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	38072.8	3.6				ug/L	49688	Standard
	Be	9	31.7	81.0	**0.0321**	0.044	135.8	ug/L	7	Standard
	Al	27	1401869.8	6.6	**26.9104**	0.919	3.4	ug/L	277	Standard
	Sc	45	26827.1	3.5				ug/L	24625	Standard
	Ti	47	211.7	9.2	**0.3522**	0.076	21.6	ug/L	198	Standard
	V	51	11195.5	3.9	**2.2256**	0.032	1.4	ug/L	1126	Standard
	Cr	52	5137.9	1.3	**-0.0543**	0.039	72.0	ug/L	6071	Standard
	Cr	53	240.0	2.1	**-0.0398**	0.010	24.9	ug/L	332	Standard
	Mn	55	1323090.8	5.3	**308.2126**	8.209	2.7	ug/L	876	Standard
	Co	59	10769.8	4.0	**2.4391**	0.037	1.5	ug/L	110	Standard
	Ni	60	12448.8	3.8	**10.3090**	0.159	1.5	ug/L	191	Standard
	Cu	65	613.7	2.9	**0.2984**	0.023	7.6	ug/L	281	Standard
	Zn	66	4896.1	5.0	**6.7510**	0.181	2.7	ug/L	249	Standard
>	**Ge**	72	271358.1	2.6				ug/L	297260	Standard
	As	75	900.1	1.4	**1.2146**	0.018	1.5	ug/L	-66	Standard
	Se	82	44.0	13.1	**0.4160**	0.085	20.5	ug/L	13	Standard
	Se-1	77	65.0	8.1	**0.4970**	0.086	17.3	ug/L	48	Standard
>	**Ga**	71	33.3	37.7				mg/L	30	Standard
	Rb	85	4232.3	3.9				ug/L	12	Standard
	Y	89	267633.7	2.1				ug/L	310514	Standard
>	**Rh**	103	36.7	70.0				ug/L	10	Standard
	Mo	98	11770.1	4.3	**7.7412**	0.272	3.5	ug/L	11	Standard
	Ag	107	139.3	31.0	**0.0095**	0.009	90.9	ug/L	99	Standard
	Cd	111	183.9	3.2	**0.1145**	0.002	2.1	mg/L	6	Standard
	Cd	114	495.1	14.4	**0.1245**	0.017	14.0	ug/L	6	Standard
>	**In**	115	434429.7	1.5				ug/L	501593	Standard
	Sn	118	433.3	4.7	**0.0064**	0.006	95.6	ug/L	442	Standard
	Sb	123	839.4	4.8	**0.1925**	0.012	6.0	ug/L	53	Standard
	Ba	135	47653.9	3.9	**27.7228**	0.844	3.0	ug/L	34	Standard
	Ce	140	176.7	14.0				ug/L	73	Standard
>	**Tb**	159	819214.7	2.1				ug/L	924917	Standard
	Ho	165	20.0	25.0				ug/L	7	Standard
	Tl	203	480.0	8.0	**0.0632**	0.004	7.1	ug/L	6	Standard
	Tl	205	260.0	12.6	**0.0496**	0.006	12.9	ug/L	8	Standard
	Pb	206	348.7	13.0	**0.0219**	0.008	36.9	ug/L	264	Standard
	Pb	207	288.0	12.5	**0.0221**	0.007	32.9	ug/L	215	Standard
	Pb	208	1013.0	8.6	**0.0183**	0.005	25.6	ug/L	863	Standard
	U	238	29.3	70.1	**0.0077**	0.004	48.4	ug/L	4	Standard
>	**Bi**	209	445936.9	1.3				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	391.7	11.0	**0.5954**	0.089	14.9	mg/L	20	Standard
K	39	290.0	12.4	**1.0112**	0.184	18.2	mg/L	38	Standard
Ca	43	156.7	11.2	**9.2071**	1.344	14.6	mg/L	43	Standard
Fe	54	60.8	23.3	**-0.0623**	0.021	33.8	mg/L	103	Standard
Fe	57	173.3	14.5	**0.3466**	0.107	30.8	mg/L	107	Standard
> **Sc-1**	45	26827.1	3.5				mg/L	24625	Standard
Cl	35	25698.5	2.9				ug/L	30925	Standard
Kr	83	2.3	49.5				ug/L	4	Standard
Br	81	460.0	22.9				ug/L	397	Standard
P	31	11794.6	5.1				ug/L	19276	Standard
S	34	2471.9	5.7				ug/L	3042	Standard
Sr	88	146.7	12.0				ug/L	65	Standard
C	12	323.3	10.9				mg/L	287	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	3	Standard
Dy	164	28.4	70.4				mg/L	23	Standard
Ho-1	165	20.0	25.0				mg/L	7	Standard
Er	166	33.3	34.6				mg/L	13	Standard
I	127	15175.9	4.4				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		76.624	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		91.286	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		86.610
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.797
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1511110709
Sample Date/Time: Friday, November 20, 2015 16:01:04
Number of Replicates: 3
Autosampler Position: 233
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	39052.0	5.5				ug/L	49688	Standard
	Be	9	21.7	58.1	**0.0145**	0.022	150.5	ug/L	7	Standard
	Al	27	431845.3	5.3	**8.0812**	0.072	0.9	ug/L	277	Standard
	Sc	45	24845.4	3.5				ug/L	24625	Standard
	Ti	47	303.0	4.6	**0.9294**	0.046	5.0	ug/L	198	Standard
	V	51	20277.0	4.3	**4.4248**	0.077	1.7	ug/L	1126	Standard
	Cr	52	6604.4	2.9	**0.3608**	0.055	15.4	ug/L	6071	Standard
	Cr	53	345.0	5.2	**0.1835**	0.018	9.8	ug/L	332	Standard
	Mn	55	180177.3	4.4	**43.8484**	0.807	1.8	ug/L	876	Standard
	Co	59	2318.5	5.4	**0.5298**	0.016	3.1	ug/L	110	Standard
	Ni	60	6114.2	3.1	**5.2223**	0.024	0.5	ug/L	191	Standard
	Cu	65	321.0	7.0	**0.0639**	0.016	24.6	ug/L	281	Standard
	Zn	66	3574.8	4.0	**5.0995**	0.098	1.9	ug/L	249	Standard
>	**Ge**	72	258735.8	2.6				ug/L	297260	Standard
	As	75	2081.3	2.4	**2.8719**	0.033	1.1	ug/L	-66	Standard
	Se	82	21.4	28.5	**0.1118**	0.100	89.1	ug/L	13	Standard
	Se-1	77	67.7	9.8	**0.6357**	0.154	24.2	ug/L	48	Standard
>	**Ga**	71	31.7	48.2				mg/L	30	Standard
	Rb	85	2596.9	8.4				ug/L	12	Standard
	Y	89	265790.3	4.2				ug/L	310514	Standard
>	**Rh**	103	21.7	74.2				ug/L	10	Standard
	Mo	98	545.2	7.7	**0.3721**	0.028	7.5	ug/L	11	Standard
	Ag	107	92.3	4.1	**0.0003**	0.001	243.7	ug/L	99	Standard
	Cd	111	76.8	13.6	**0.0480**	0.007	14.8	mg/L	6	Standard
	Cd	114	169.8	15.7	**0.0426**	0.008	17.6	ug/L	6	Standard
>	**In**	115	424003.8	1.8				ug/L	501593	Standard
	Sn	118	2118.5	6.1	**0.4065**	0.023	5.6	ug/L	442	Standard
	Sb	123	907.6	4.9	**0.2137**	0.012	5.6	ug/L	53	Standard
	Ba	135	5720.7	1.8	**3.3899**	0.028	0.8	ug/L	34	Standard
	Ce	140	68.3	27.7				ug/L	73	Standard
>	**Tb**	159	803684.7	2.0				ug/L	924917	Standard
	Ho	165	16.7	17.3				ug/L	7	Standard
	Tl	203	85.0	9.2	**0.0091**	0.001	13.6	ug/L	6	Standard
	Tl	205	71.7	17.6	**0.0113**	0.002	21.1	ug/L	8	Standard
	Pb	206	324.3	3.7	**0.0191**	0.001	6.0	ug/L	264	Standard
	Pb	207	263.3	7.0	**0.0186**	0.005	28.3	ug/L	215	Standard
	Pb	208	936.3	0.5	**0.0154**	0.001	7.7	ug/L	863	Standard
	U	238	9.0	48.4	**0.0040**	0.001	21.2	ug/L	4	Standard
>	**Bi**	209	432339.0	1.9				ug/L	507917	Standard

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Na	23	6.7	173.2	**27.2080**	47.117	173.2	mg/L	0	Standard
Mg	24	666.7	13.2	**1.1188**	0.113	10.1	mg/L	20	Standard
K	39	256.7	16.6	**0.9530**	0.174	18.3	mg/L	38	Standard
Ca	43	55.0	9.1	**-0.3046**	0.738	242.4	mg/L	43	Standard
Fe	54	79.7	12.7	**-0.0280**	0.013	47.7	mg/L	103	Standard
Fe	57	193.3	24.4	**0.5336**	0.262	49.1	mg/L	107	Standard
> **Sc-1**	45	24845.4	3.5				mg/L	24625	Standard
Cl	35	24433.0	2.8				ug/L	30925	Standard
Kr	83	5.3	57.3				ug/L	4	Standard
Br	81	523.3	9.4				ug/L	397	Standard
P	31	12365.0	3.2				ug/L	19276	Standard
S	34	2280.2	6.0				ug/L	3042	Standard
Sr	88	80.0	31.3				ug/L	65	Standard
C	12	1246.7	14.1				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	3	Standard
Dy	164	12.5	48.4				mg/L	23	Standard
Ho-1	165	16.7	17.3				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	13	Standard
I	127	7448.5	4.0				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		78.594	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		87.040	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		84.531
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		85.120
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1511110711
Sample Date/Time: Friday, November 20, 2015 16:04:15
Number of Replicates: 3
Autosampler Position: 234
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	38273.4	6.5				ug/L	49688	Standard
	Be	9	20.0	0.0	**0.0121**	0.002	18.0	ug/L	7	Standard
	Al	27	414060.7	1.6	**7.9227**	0.409	5.2	ug/L	277	Standard
	Sc	45	24436.4	4.6				ug/L	24625	Standard
	Ti	47	293.7	6.0	**0.8599**	0.118	13.7	ug/L	198	Standard
	V	51	45603.0	1.3	**10.1194**	0.143	1.4	ug/L	1126	Standard
	Cr	52	5336.3	2.4	**0.0380**	0.035	93.2	ug/L	6071	Standard
	Cr	53	333.3	23.0	**0.1547**	0.147	95.0	ug/L	332	Standard
	Mn	55	94081.6	2.0	**22.5599**	0.230	1.0	ug/L	876	Standard
	Co	59	551.0	5.5	**0.1041**	0.008	7.6	ug/L	110	Standard
	Ni	60	3029.0	1.8	**2.4675**	0.063	2.6	ug/L	191	Standard
	Cu	65	258.3	6.3	**0.0062**	0.019	299.9	ug/L	281	Standard
	Zn	66	2060.8	1.1	**2.7797**	0.028	1.0	ug/L	249	Standard
>	**Ge**	72	261509.4	2.0				ug/L	297260	Standard
	As	75	4922.5	0.8	**6.6527**	0.158	2.4	ug/L	-66	Standard
	Se	82	19.2	31.6	**0.0726**	0.087	119.3	ug/L	13	Standard
	Se-1	77	54.7	11.0	**0.3063**	0.117	38.2	ug/L	48	Standard
>	**Ga**	71	21.7	70.5				mg/L	30	Standard
	Rb	85	6306.3	3.5				ug/L	12	Standard
	Y	89	267082.7	2.5				ug/L	310514	Standard
>	**Rh**	103	15.0	66.7				ug/L	10	Standard
	Mo	98	506.7	5.4	**0.3447**	0.018	5.2	ug/L	11	Standard
	Ag	107	105.7	9.1	**0.0031**	0.002	62.7	ug/L	99	Standard
	Cd	111	60.0	2.8	**0.0369**	0.001	3.4	mg/L	6	Standard
	Cd	114	211.8	15.4	**0.0533**	0.008	15.6	ug/L	6	Standard
>	**In**	115	425811.7	0.9				ug/L	501593	Standard
	Sn	118	14657.1	2.7	**3.3523**	0.065	1.9	ug/L	442	Standard
	Sb	123	1297.2	1.8	**0.3056**	0.007	2.2	ug/L	53	Standard
	Ba	135	4965.8	0.8	**2.9271**	0.050	1.7	ug/L	34	Standard
	Ce	140	43.3	13.3				ug/L	73	Standard
>	**Tb**	159	819445.2	0.9				ug/L	924917	Standard
	Ho	165	11.7	89.2				ug/L	7	Standard
	Tl	203	173.3	1.8	**0.0216**	0.001	3.6	ug/L	6	Standard
	Tl	205	123.3	8.4	**0.0222**	0.002	10.5	ug/L	8	Standard
	Pb	206	340.3	3.4	**0.0221**	0.002	6.9	ug/L	264	Standard
	Pb	207	283.0	5.1	**0.0227**	0.003	11.1	ug/L	215	Standard
	Pb	208	1006.3	2.8	**0.0197**	0.003	13.6	ug/L	863	Standard
	U	238	8.3	18.3	**0.0039**	0.000	6.9	ug/L	4	Standard
>	**Bi**	209	433962.4	1.4				ug/L	507917	Standard

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Na	23	1.7	173.2	**7.3178**	12.666	173.1	mg/L	0	Standard
Mg	24	500.0	13.7	**0.8503**	0.154	18.1	mg/L	20	Standard
K	39	255.0	30.6	**0.9627**	0.330	34.3	mg/L	38	Standard
Ca	43	75.0	35.3	**1.8754**	2.555	136.3	mg/L	43	Standard
Fe	54	62.7	25.9	**-0.0523**	0.021	39.4	mg/L	103	Standard
Fe	57	165.0	8.0	**0.3882**	0.033	8.5	mg/L	107	Standard
> **Sc-1**	45	24436.4	4.6				mg/L	24625	Standard
Cl	35	25215.6	1.2				ug/L	30925	Standard
Kr	83	4.7	32.7				ug/L	4	Standard
Br	81	966.7	13.9				ug/L	397	Standard
P	31	12248.3	0.8				ug/L	19276	Standard
S	34	2293.5	2.4				ug/L	3042	Standard
Sr	88	103.3	11.2				ug/L	65	Standard
C	12	223.3	18.1				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	15.9	95.7				mg/L	23	Standard
Ho-1	165	11.7	89.2				mg/L	7	Standard
Er	166	16.7	91.7				mg/L	13	Standard
I	127	11799.6	3.0				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		77.027	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		87.973	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		84.892
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		85.440
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1511110713
Sample Date/Time: Friday, November 20, 2015 16:07:26
Number of Replicates: 3
Autosampler Position: 235
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	38193.1	2.9				ug/L	49688	Standard
	Be	9	10.0	50.0	**-0.0040**	0.008	210.4	ug/L	7	Standard
	Al	27	172208.2	1.2	**3.2901**	0.058	1.8	ug/L	277	Standard
	Sc	45	25823.7	4.1				ug/L	24625	Standard
	Ti	47	198.0	4.1	**0.3217**	0.072	22.3	ug/L	198	Standard
	V	51	42721.4	1.4	**9.4766**	0.304	3.2	ug/L	1126	Standard
	Cr	52	4976.2	2.4	**-0.0479**	0.021	43.9	ug/L	6071	Standard
	Cr	53	331.7	13.7	**0.1514**	0.081	53.5	ug/L	332	Standard
	Mn	55	15669.8	2.2	**3.5878**	0.119	3.3	ug/L	876	Standard
	Co	59	358.7	6.9	**0.0585**	0.006	9.7	ug/L	110	Standard
	Ni	60	829.4	5.3	**0.5437**	0.038	6.9	ug/L	191	Standard
	Cu	65	253.0	1.8	**0.0016**	0.008	491.7	ug/L	281	Standard
	Zn	66	1807.4	0.7	**2.4034**	0.059	2.4	ug/L	249	Standard
>	**Ge**	72	261298.6	2.3				ug/L	297260	Standard
	As	75	1597.3	1.8	**2.1953**	0.061	2.8	ug/L	-66	Standard
	Se	82	28.2	19.0	**0.2059**	0.072	35.1	ug/L	13	Standard
	Se-1	77	60.3	9.1	**0.4440**	0.119	26.9	ug/L	48	Standard
>	**Ga**	71	25.0	52.9				mg/L	30	Standard
	Rb	85	5240.9	1.3				ug/L	12	Standard
	Y	89	268712.1	1.1				ug/L	310514	Standard
>	**Rh**	103	10.0	50.0				ug/L	10	Standard
	Mo	98	85.2	1.9	**0.0607**	0.001	1.8	ug/L	11	Standard
	Ag	107	97.7	20.6	**0.0009**	0.004	465.1	ug/L	99	Standard
	Cd	111	24.1	44.2	**0.0134**	0.007	49.5	mg/L	6	Standard
	Cd	114	81.4	79.3	**0.0188**	0.016	86.9	ug/L	6	Standard
>	**In**	115	436137.7	0.9				ug/L	501593	Standard
	Sn	118	878.4	7.4	**0.1080**	0.014	12.8	ug/L	442	Standard
	Sb	123	2195.2	1.6	**0.5073**	0.006	1.1	ug/L	53	Standard
	Ba	135	1150.0	3.4	**0.6438**	0.025	3.9	ug/L	34	Standard
	Ce	140	28.3	20.4				ug/L	73	Standard
>	**Tb**	159	819656.2	2.9				ug/L	924917	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	320.3	9.4	**0.0419**	0.005	11.4	ug/L	6	Standard
	Tl	205	256.7	29.8	**0.0497**	0.016	32.6	ug/L	8	Standard
	Pb	206	314.0	9.8	**0.0160**	0.007	43.5	ug/L	264	Standard
	Pb	207	263.3	6.1	**0.0176**	0.004	23.6	ug/L	215	Standard
	Pb	208	956.7	18.4	**0.0158**	0.012	75.4	ug/L	863	Standard
	U	238	39.3	144.7	**0.0098**	0.011	111.1	ug/L	4	Standard
>	**Bi**	209	439600.7	1.3				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	576.7	6.2	**0.9292**	0.088	9.5	mg/L	20	Standard
K	39	221.7	10.7	**0.7605**	0.089	11.7	mg/L	38	Standard
Ca	43	51.7	27.9	**-0.8378**	1.650	196.9	mg/L	43	Standard
Fe	54	81.3	24.8	**-0.0303**	0.028	93.3	mg/L	103	Standard
Fe	57	201.7	2.9	**0.5396**	0.075	13.9	mg/L	107	Standard
> **Sc-1**	45	25823.7	4.1				mg/L	24625	Standard
Cl	35	26106.5	0.8				ug/L	30925	Standard
Kr	83	2.7	57.3				ug/L	4	Standard
Br	81	530.0	23.6				ug/L	397	Standard
P	31	13260.8	5.4				ug/L	19276	Standard
S	34	2411.9	1.2				ug/L	3042	Standard
Sr	88	118.3	24.8				ug/L	65	Standard
C	12	303.3	6.9				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	12.7	86.9				mg/L	23	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	13.3	173.2				mg/L	13	Standard
I	127	4754.1	2.2				mg/L	3275	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		76.866	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		87.902	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		86.951
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		86.550
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: November 23, 2015

Method 6020 - Summary Report

Sample ID: L1511110715
Sample Date/Time: Friday, November 20, 2015 16:10:37
Number of Replicates: 3
Autosampler Position: 236
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	39372.8	1.2				ug/L	49688	Standard
	Be	9	20.0	66.1	**0.0110**	0.021	188.0	ug/L	7	Standard
	Al	27	69604.8	4.9	**1.2833**	0.049	3.8	ug/L	277	Standard
	Sc	45	25726.8	2.7				ug/L	24625	Standard
	Ti	47	1101.4	4.2	**5.3928**	0.486	9.0	ug/L	198	Standard
	V	51	31838.6	3.5	**6.9635**	0.066	0.9	ug/L	1126	Standard
	Cr	52	26914.2	2.2	**5.2071**	0.151	2.9	ug/L	6071	Standard
	Cr	53	3278.7	2.8	**5.7438**	0.365	6.3	ug/L	332	Standard
	Mn	55	7095.0	6.4	**1.4991**	0.053	3.5	ug/L	876	Standard
	Co	59	362.3	10.8	**0.0591**	0.012	21.0	ug/L	110	Standard
	Ni	60	834.4	3.3	**0.5440**	0.014	2.5	ug/L	191	Standard
	Cu	65	311.3	3.0	**0.0512**	0.007	13.9	ug/L	281	Standard
	Zn	66	2157.8	2.2	**2.9106**	0.094	3.2	ug/L	249	Standard
>	**Ge**	72	262773.6	3.6				ug/L	297260	Standard
	As	75	810.3	10.0	**1.1318**	0.083	7.4	ug/L	-66	Standard
	Se	82	49.1	21.4	**0.5083**	0.134	26.4	ug/L	13	Standard
	Se-1	77	68.3	11.7	**0.6302**	0.229	36.3	ug/L	48	Standard
>	**Ga**	71	241.7	7.3				mg/L	30	Standard
	Rb	85	7635.3	2.7				ug/L	12	Standard
	Y	89	272229.2	3.6				ug/L	310514	Standard
>	**Rh**	103	11.7	65.5				ug/L	10	Standard
	Mo	98	95.1	13.6	**0.0680**	0.010	14.4	ug/L	11	Standard
	Ag	107	84.0	5.2	**-0.0017**	0.001	69.7	ug/L	99	Standard
	Cd	111	14.8	13.6	**0.0077**	0.001	17.9	mg/L	6	Standard
	Cd	114	38.3	82.3	**0.0079**	0.008	99.6	ug/L	6	Standard
>	**In**	115	431247.4	1.9				ug/L	501593	Standard
	Sn	118	373.3	6.2	**-0.0069**	0.004	56.1	ug/L	442	Standard
	Sb	123	1833.0	2.1	**0.4279**	0.011	2.5	ug/L	53	Standard
	Ba	135	1943.8	3.7	**1.1169**	0.036	3.2	ug/L	34	Standard
	Ce	140	2555.2	39.7				ug/L	73	Standard
>	**Tb**	159	818401.9	3.4				ug/L	924917	Standard
	Ho	165	86.7	6.7				ug/L	7	Standard
	Tl	203	95.0	4.6	**0.0103**	0.001	9.9	ug/L	6	Standard
	Tl	205	73.3	37.6	**0.0114**	0.005	48.4	ug/L	8	Standard
	Pb	206	383.0	4.2	**0.0297**	0.001	2.3	ug/L	264	Standard
	Pb	207	311.0	4.9	**0.0280**	0.001	4.2	ug/L	215	Standard
	Pb	208	1147.7	2.1	**0.0277**	0.001	4.8	ug/L	863	Standard
	U	238	101.7	10.0	**0.0214**	0.001	6.6	ug/L	4	Standard
>	**Bi**	209	439985.8	3.3				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	533.3	3.0	**0.8582**	0.022	2.5	mg/L	20	Standard
K	39	225.0	2.2	**0.7794**	0.039	5.1	mg/L	38	Standard
Ca	43	33.3	8.7	**-2.7327**	0.380	13.9	mg/L	43	Standard
Fe	54	87.9	9.7	**-0.0200**	0.015	76.5	mg/L	103	Standard
Fe	57	171.7	22.6	**0.3754**	0.188	50.2	mg/L	107	Standard
> **Sc-1**	45	25726.8	2.7				mg/L	24625	Standard
Cl	35	26237.4	2.9				ug/L	30925	Standard
Kr	83	5.7	20.4				ug/L	4	Standard
Br	81	430.0	4.7				ug/L	397	Standard
P	31	13754.6	2.2				ug/L	19276	Standard
S	34	2496.9	5.5				ug/L	3042	Standard
Sr	88	105.0	33.3				ug/L	65	Standard
C	12	246.7	20.4				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	3	Standard
Dy	164	136.6	60.3				mg/L	23	Standard
Ho-1	165	86.7	6.7				mg/L	7	Standard
Er	166	70.0	37.8				mg/L	13	Standard
I	127	2806.9	4.8				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		79.240	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		88.399	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		85.976
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		86.625
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1511110717
Sample Date/Time: Friday, November 20, 2015 16:13:48
Number of Replicates: 3
Autosampler Position: 237
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	37794.0	9.1				ug/L	49688	Standard
	Be	9	13.3	57.3	**0.0023**	0.014	611.1	ug/L	7	Standard
	Al	27	64833.4	1.2	**1.2516**	0.103	8.2	ug/L	277	Standard
	Sc	45	25326.2	4.5				ug/L	24625	Standard
	Ti	47	736.4	23.3	**3.3760**	0.957	28.3	ug/L	198	Standard
	V	51	30598.0	1.5	**6.7620**	0.182	2.7	ug/L	1126	Standard
	Cr	52	18861.7	2.9	**3.3236**	0.024	0.7	ug/L	6071	Standard
	Cr	53	1900.1	6.2	**3.1604**	0.169	5.4	ug/L	332	Standard
	Mn	55	3612.1	2.3	**0.6719**	0.047	7.0	ug/L	876	Standard
	Co	59	279.0	6.0	**0.0399**	0.004	8.9	ug/L	110	Standard
	Ni	60	657.7	6.3	**0.3959**	0.017	4.2	ug/L	191	Standard
	Cu	65	311.7	4.6	**0.0544**	0.009	15.8	ug/L	281	Standard
	Zn	66	1984.1	3.1	**2.6843**	0.120	4.5	ug/L	249	Standard
>	**Ge**	72	259946.6	3.5				ug/L	297260	Standard
	As	75	623.8	2.0	**0.8938**	0.045	5.0	ug/L	-66	Standard
	Se	82	37.5	9.4	**0.3477**	0.064	18.4	ug/L	13	Standard
	Se-1	77	56.7	5.4	**0.3636**	0.049	13.5	ug/L	48	Standard
>	**Ga**	71	136.7	21.4				mg/L	30	Standard
	Rb	85	4727.4	8.3				ug/L	12	Standard
	Y	89	265764.4	1.8				ug/L	310514	Standard
>	**Rh**	103	15.0	88.2				ug/L	10	Standard
	Mo	98	155.0	7.7	**0.1080**	0.007	6.3	ug/L	11	Standard
	Ag	107	90.7	8.0	**-0.0002**	0.002	636.9	ug/L	99	Standard
	Cd	111	15.0	7.6	**0.0078**	0.001	7.4	mg/L	6	Standard
	Cd	114	28.9	96.8	**0.0055**	0.007	127.6	ug/L	6	Standard
>	**In**	115	429083.2	2.1				ug/L	501593	Standard
	Sn	118	350.0	19.8	**-0.0118**	0.016	137.3	ug/L	442	Standard
	Sb	123	3763.9	1.6	**0.8870**	0.008	0.9	ug/L	53	Standard
	Ba	135	990.4	4.2	**0.5605**	0.019	3.4	ug/L	34	Standard
	Ce	140	868.4	21.1				ug/L	73	Standard
>	**Tb**	159	823264.2	4.2				ug/L	924917	Standard
	Ho	165	43.3	65.6				ug/L	7	Standard
	Tl	203	50.7	15.3	**0.0041**	0.001	28.0	ug/L	6	Standard
	Tl	205	28.3	27.0	**0.0020**	0.002	82.1	ug/L	8	Standard
	Pb	206	345.0	3.1	**0.0224**	0.002	8.7	ug/L	264	Standard
	Pb	207	303.7	9.5	**0.0266**	0.005	19.3	ug/L	215	Standard
	Pb	208	1065.7	3.7	**0.0228**	0.003	11.8	ug/L	863	Standard
	U	238	60.7	23.4	**0.0137**	0.002	17.3	ug/L	4	Standard
>	**Bi**	209	438335.9	2.7				ug/L	507917	Standard

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Na	23	1.7	173.2	**6.7353**	11.657	173.1	mg/L	0	Standard
Mg	24	365.0	21.4	**0.5900**	0.157	26.5	mg/L	20	Standard
K	39	131.7	17.9	**0.3837**	0.083	21.5	mg/L	38	Standard
Ca	43	35.0	51.5	**-2.4736**	2.027	81.9	mg/L	43	Standard
Fe	54	96.8	12.5	**-0.0054**	0.015	284.9	mg/L	103	Standard
Fe	57	203.3	1.4	**0.5697**	0.051	9.0	mg/L	107	Standard
> **Sc-1**	45	25326.2	4.5				mg/L	24625	Standard
Cl	35	25440.0	0.6				ug/L	30925	Standard
Kr	83	4.3	58.1				ug/L	4	Standard
Br	81	1103.4	13.6				ug/L	397	Standard
P	31	12383.4	6.2				ug/L	19276	Standard
S	34	2238.5	2.0				ug/L	3042	Standard
Sr	88	108.3	30.7				ug/L	65	Standard
C	12	310.0	24.4				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	44.1	68.3				mg/L	23	Standard
Ho-1	165	43.3	65.6				mg/L	7	Standard
Er	166	53.3	21.7				mg/L	13	Standard
I	127	3493.7	3.9				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		76.062	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		87.448	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		85.544
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		86.301
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1511110719
Sample Date/Time: Friday, November 20, 2015 16:16:59
Number of Replicates: 3
Autosampler Position: 238
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	38034.4	3.3				ug/L	49688	Standard
	Be	9	15.0	66.7	**0.0037**	0.016	418.8	ug/L	7	Standard
	Al	27	641841.0	0.1	**12.3451**	0.415	3.4	ug/L	277	Standard
	Sc	45	25426.3	3.1				ug/L	24625	Standard
	Ti	47	278.0	6.9	**0.7766**	0.100	12.9	ug/L	198	Standard
	V	51	25046.2	1.1	**5.4807**	0.036	0.7	ug/L	1126	Standard
	Cr	52	4642.4	1.7	**-0.1249**	0.018	14.2	ug/L	6071	Standard
	Cr	53	275.0	7.9	**0.0456**	0.045	98.0	ug/L	332	Standard
	Mn	55	38370.9	1.8	**9.1143**	0.138	1.5	ug/L	876	Standard
	Co	59	937.4	2.4	**0.1968**	0.006	2.9	ug/L	110	Standard
	Ni	60	2587.6	0.6	**2.0899**	0.005	0.2	ug/L	191	Standard
	Cu	65	289.0	3.4	**0.0339**	0.008	22.8	ug/L	281	Standard
	Zn	66	4309.6	1.0	**6.1684**	0.084	1.4	ug/L	249	Standard
>	**Ge**	72	260461.4	0.6				ug/L	297260	Standard
	As	75	1541.8	1.7	**2.1268**	0.032	1.5	ug/L	-66	Standard
	Se	82	16.9	42.0	**0.0410**	0.104	253.1	ug/L	13	Standard
	Se-1	77	57.0	0.0	**0.3692**	0.008	2.3	ug/L	48	Standard
>	**Ga**	71	35.0	71.4				mg/L	30	Standard
	Rb	85	12486.8	3.8				ug/L	12	Standard
	Y	89	267021.0	1.3				ug/L	310514	Standard
>	**Rh**	103	10.0	50.0				ug/L	10	Standard
	Mo	98	422.1	2.7	**0.2838**	0.012	4.2	ug/L	11	Standard
	Ag	107	102.0	14.6	**0.0019**	0.003	148.0	ug/L	99	Standard
	Cd	111	101.8	21.3	**0.0628**	0.013	21.1	mg/L	6	Standard
	Cd	114	253.3	15.2	**0.0630**	0.009	14.1	ug/L	6	Standard
>	**In**	115	432438.9	1.8				ug/L	501593	Standard
	Sn	118	311.7	15.7	**-0.0213**	0.012	55.1	ug/L	442	Standard
	Sb	123	802.1	6.4	**0.1847**	0.014	7.6	ug/L	53	Standard
	Ba	135	9008.3	1.6	**5.2472**	0.104	2.0	ug/L	34	Standard
	Ce	140	125.0	107.9				ug/L	73	Standard
>	**Tb**	159	817623.0	2.3				ug/L	924917	Standard
	Ho	165	25.0	34.6				ug/L	7	Standard
	Tl	203	148.3	27.9	**0.0179**	0.006	31.0	ug/L	6	Standard
	Tl	205	116.7	26.2	**0.0206**	0.006	29.7	ug/L	8	Standard
	Pb	206	330.3	12.5	**0.0196**	0.008	39.5	ug/L	264	Standard
	Pb	207	280.7	2.5	**0.0218**	0.001	4.6	ug/L	215	Standard
	Pb	208	978.0	5.3	**0.0174**	0.003	15.0	ug/L	863	Standard
	U	238	10.3	89.9	**0.0042**	0.002	40.8	ug/L	4	Standard
>	**Bi**	209	436907.7	1.2				ug/L	507917	Standard

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Na	23	1.7	173.2	**6.4406**	11.147	173.1	mg/L	0	Standard
Mg	24	861.7	6.4	**1.4259**	0.090	6.3	mg/L	20	Standard
K	39	356.7	20.1	**1.3715**	0.356	26.0	mg/L	38	Standard
Ca	43	78.3	3.7	**1.9651**	0.347	17.7	mg/L	43	Standard
Fe	54	61.2	25.8	**-0.0571**	0.024	42.0	mg/L	103	Standard
Fe	57	203.3	26.3	**0.5656**	0.304	53.8	mg/L	107	Standard
> **Sc-1**	45	25426.3	3.1				mg/L	24625	Standard
Cl	35	25155.5	2.7				ug/L	30925	Standard
Kr	83	4.0	66.1				ug/L	4	Standard
Br	81	460.0	18.6				ug/L	397	Standard
P	31	13365.9	4.2				ug/L	19276	Standard
S	34	2313.5	7.2				ug/L	3042	Standard
Sr	88	121.7	33.2				ug/L	65	Standard
C	12	256.7	33.6				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	19.4	100.8				mg/L	23	Standard
Ho-1	165	25.0	34.6				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	13	Standard
I	127	10020.0	4.3				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		76.546	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		87.621	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		86.213
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		86.019
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: November 23, 2015

Method 6020 - Summary Report

Sample ID: L1511110721
Sample Date/Time: Friday, November 20, 2015 16:20:10
Number of Replicates: 3
Autosampler Position: 239
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	38854.8	0.1				ug/L	49688	Standard
	Be	9	25.0	69.3	**0.0195**	0.028	141.7	ug/L	7	Standard
	Al	27	201498.3	2.8	**3.7844**	0.108	2.8	ug/L	277	Standard
	Sc	45	26386.3	1.7				ug/L	24625	Standard
	Ti	47	2766.6	15.1	**14.5786**	2.293	15.7	ug/L	198	Standard
	V	51	37410.0	0.9	**8.1440**	0.059	0.7	ug/L	1126	Standard
	Cr	52	65483.2	1.3	**14.3093**	0.233	1.6	ug/L	6071	Standard
	Cr	53	7732.0	4.2	**14.0484**	0.651	4.6	ug/L	332	Standard
	Mn	55	18980.9	4.5	**4.3219**	0.211	4.9	ug/L	876	Standard
	Co	59	486.0	10.8	**0.0871**	0.013	14.5	ug/L	110	Standard
	Ni	60	1935.8	6.5	**1.4876**	0.111	7.5	ug/L	191	Standard
	Cu	65	624.3	4.7	**0.3195**	0.026	8.1	ug/L	281	Standard
	Zn	66	4622.0	1.9	**6.5146**	0.144	2.2	ug/L	249	Standard
>	**Ge**	72	265156.4	0.2				ug/L	297260	Standard
	As	75	704.0	9.5	**0.9823**	0.089	9.1	ug/L	-66	Standard
	Se	82	46.5	19.8	**0.4679**	0.134	28.7	ug/L	13	Standard
	Se-1	77	72.7	15.2	**0.7144**	0.263	36.8	ug/L	48	Standard
>	**Ga**	71	530.0	2.8				mg/L	30	Standard
	Rb	85	12184.9	2.3				ug/L	12	Standard
	Y	89	275578.8	1.3				ug/L	310514	Standard
>	**Rh**	103	11.7	65.5				ug/L	10	Standard
	Mo	98	1189.6	5.6	**0.7856**	0.043	5.5	ug/L	11	Standard
	Ag	107	105.0	7.4	**0.0025**	0.002	68.2	ug/L	99	Standard
	Cd	111	32.1	17.1	**0.0185**	0.003	18.5	mg/L	6	Standard
	Cd	114	75.0	25.5	**0.0173**	0.005	28.5	ug/L	6	Standard
>	**In**	115	435132.6	0.3				ug/L	501593	Standard
	Sn	118	433.3	19.2	**0.0061**	0.019	306.7	ug/L	442	Standard
	Sb	123	3641.0	0.4	**0.8459**	0.002	0.3	ug/L	53	Standard
	Ba	135	3730.5	4.6	**2.1452**	0.094	4.4	ug/L	34	Standard
	Ce	140	7678.6	14.8				ug/L	73	Standard
>	**Tb**	159	840711.8	1.9				ug/L	924917	Standard
	Ho	165	261.7	24.9				ug/L	7	Standard
	Tl	203	130.0	10.8	**0.0151**	0.002	12.3	ug/L	6	Standard
	Tl	205	81.7	25.5	**0.0130**	0.004	32.7	ug/L	8	Standard
	Pb	206	629.0	4.2	**0.0784**	0.005	6.1	ug/L	264	Standard
	Pb	207	479.0	9.6	**0.0648**	0.011	17.0	ug/L	215	Standard
	Pb	208	1800.0	6.7	**0.0683**	0.008	11.9	ug/L	863	Standard
	U	238	288.0	8.5	**0.0562**	0.004	7.5	ug/L	4	Standard
>	**Bi**	209	442213.7	0.8				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	593.3	10.7	**0.9340**	0.106	11.4	mg/L	20	Standard
K	39	280.0	12.5	**0.9849**	0.139	14.1	mg/L	38	Standard
Ca	43	35.0	51.5	**-2.6662**	1.792	67.2	mg/L	43	Standard
Fe	54	168.4	45.2	**0.0883**	0.104	117.5	mg/L	103	Standard
Fe	57	200.0	13.0	**0.5050**	0.134	26.5	mg/L	107	Standard
> **Sc-1**	45	26386.3	1.7				mg/L	24625	Standard
Cl	35	26383.6	1.9				ug/L	30925	Standard
Kr	83	5.3	71.0				ug/L	4	Standard
Br	81	546.7	5.9				ug/L	397	Standard
P	31	14491.9	3.7				ug/L	19276	Standard
S	34	2375.2	3.1				ug/L	3042	Standard
Sr	88	115.0	35.6				ug/L	65	Standard
C	12	463.3	12.5				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	99.0				mg/L	3	Standard
Dy	164	242.4	23.5				mg/L	23	Standard
Ho-1	165	261.7	24.9				mg/L	7	Standard
Er	166	366.7	29.4				mg/L	13	Standard
I	127	4507.3	0.9				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		78.197	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		89.200	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		86.750
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.064
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1511110723
Sample Date/Time: Friday, November 20, 2015 16:23:21
Number of Replicates: 3
Autosampler Position: 240
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	39850.7	3.5				ug/L	49688	Standard
	Be	9	8.3	34.6	**-0.0075**	0.004	59.6	ug/L	7	Standard
	Al	27	560655.5	2.0	**10.2875**	0.243	2.4	ug/L	277	Standard
	Sc	45	26342.9	5.1				ug/L	24625	Standard
	Ti	47	269.7	14.5	**0.6845**	0.165	24.1	ug/L	198	Standard
	V	51	25040.8	3.6	**5.3240**	0.049	0.9	ug/L	1126	Standard
	Cr	52	5642.7	2.2	**0.0802**	0.018	22.5	ug/L	6071	Standard
	Cr	53	516.7	5.0	**0.4825**	0.078	16.1	ug/L	332	Standard
	Mn	55	109307.1	4.7	**25.6182**	0.374	1.5	ug/L	876	Standard
	Co	59	568.7	5.9	**0.1053**	0.009	8.9	ug/L	110	Standard
	Ni	60	2335.2	4.5	**1.8119**	0.027	1.5	ug/L	191	Standard
	Cu	65	6898.6	4.1	**5.6889**	0.102	1.8	ug/L	281	Standard
	Zn	66	18555.4	2.5	**26.8045**	0.410	1.5	ug/L	249	Standard
>	**Ge**	72	267762.0	3.4				ug/L	297260	Standard
	As	75	1002.9	3.8	**1.3647**	0.030	2.2	ug/L	-66	Standard
	Se	82	39.6	13.0	**0.3625**	0.088	24.4	ug/L	13	Standard
	Se-1	77	75.0	10.9	**0.7496**	0.143	19.1	ug/L	48	Standard
>	**Ga**	71	25.0	52.9				mg/L	30	Standard
	Rb	85	9458.0	2.9				ug/L	12	Standard
	Y	89	272583.0	2.8				ug/L	310514	Standard
>	**Rh**	103	18.3	41.7				ug/L	10	Standard
	Mo	98	1731.2	2.6	**1.1243**	0.019	1.6	ug/L	11	Standard
	Ag	107	135.7	44.3	**0.0084**	0.012	146.2	ug/L	99	Standard
	Cd	111	79.8	33.1	**0.0480**	0.017	34.6	mg/L	6	Standard
	Cd	114	197.0	26.9	**0.0477**	0.014	28.4	ug/L	6	Standard
>	**In**	115	441766.7	3.4				ug/L	501593	Standard
	Sn	118	361.7	21.2	**-0.0115**	0.018	152.2	ug/L	442	Standard
	Sb	123	2279.3	2.7	**0.5203**	0.013	2.5	ug/L	53	Standard
	Ba	135	5028.5	1.3	**2.8575**	0.059	2.1	ug/L	34	Standard
	Ce	140	31.7	59.8				ug/L	73	Standard
>	**Tb**	159	832025.1	2.3				ug/L	924917	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	405.0	19.9	**0.0530**	0.011	19.9	ug/L	6	Standard
	Tl	205	211.7	7.2	**0.0398**	0.003	8.3	ug/L	8	Standard
	Pb	206	2713.2	3.8	**0.4916**	0.017	3.4	ug/L	264	Standard
	Pb	207	2248.2	3.3	**0.4520**	0.003	0.7	ug/L	215	Standard
	Pb	208	7927.8	3.9	**0.4500**	0.006	1.4	ug/L	863	Standard
	U	238	8.7	103.4	**0.0039**	0.002	42.4	ug/L	4	Standard
>	**Bi**	209	444575.5	2.7				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	866.7	13.6	**1.3847**	0.194	14.0	mg/L	20	Standard
K	39	281.7	15.1	**0.9957**	0.176	17.6	mg/L	38	Standard
Ca	43	68.3	15.2	**0.7282**	1.427	196.0	mg/L	43	Standard
Fe	54	64.2	15.6	**-0.0558**	0.018	32.7	mg/L	103	Standard
Fe	57	233.3	6.9	**0.6883**	0.131	19.1	mg/L	107	Standard
Sc-1	45	26342.9	5.1				mg/L	24625	Standard
Cl	35	26725.6	2.9				ug/L	30925	Standard
Kr	83	3.7	31.5				ug/L	4	Standard
Br	81	836.7	1.8				ug/L	397	Standard
P	31	13674.5	5.7				ug/L	19276	Standard
S	34	2535.2	4.8				ug/L	3042	Standard
Sr	88	113.3	28.7				ug/L	65	Standard
C	12	330.0	10.9				mg/L	287	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	9.2	103.5				mg/L	23	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	13	Standard
I	127	10291.8	2.9				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		80.202	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		90.077	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		88.073
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.529
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1511110725
Sample Date/Time: Friday, November 20, 2015 16:26:32
Number of Replicates: 3
Autosampler Position: 241
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	40198.3	2.1				ug/L	49688	Standard
	Be	9	11.7	24.7	**-0.0025**	0.004	164.0	ug/L	7	Standard
	Al	27	342782.4	4.4	**6.2271**	0.167	2.7	ug/L	277	Standard
	Sc	45	24900.5	4.4				ug/L	24625	Standard
	Ti	47	271.0	3.7	**0.7422**	0.069	9.3	ug/L	198	Standard
	V	51	28263.7	3.4	**6.2301**	0.083	1.3	ug/L	1126	Standard
	Cr	52	4700.1	1.9	**-0.1077**	0.011	10.3	ug/L	6071	Standard
	Cr	53	301.7	5.3	**0.0978**	0.017	16.9	ug/L	332	Standard
	Mn	55	36485.6	2.3	**8.6811**	0.020	0.2	ug/L	876	Standard
	Co	59	445.3	4.0	**0.0797**	0.003	3.6	ug/L	110	Standard
	Ni	60	1440.4	7.1	**1.0852**	0.064	5.9	ug/L	191	Standard
	Cu	65	271.0	3.4	**0.0187**	0.003	13.8	ug/L	281	Standard
	Zn	66	2360.5	3.1	**3.2512**	0.038	1.2	ug/L	249	Standard
>	**Ge**	72	259744.4	2.4				ug/L	297260	Standard
	As	75	1321.0	4.1	**1.8343**	0.049	2.7	ug/L	-66	Standard
	Se	82	31.7	3.9	**0.2615**	0.010	3.6	ug/L	13	Standard
	Se-1	77	64.0	10.9	**0.5444**	0.203	37.2	ug/L	48	Standard
>	**Ga**	71	15.0	33.3				mg/L	30	Standard
	Rb	85	3628.8	3.7				ug/L	12	Standard
	Y	89	267987.8	1.2				ug/L	310514	Standard
>	**Rh**	103	6.7	114.6				ug/L	10	Standard
	Mo	98	516.2	1.7	**0.3449**	0.010	3.0	ug/L	11	Standard
	Ag	107	91.3	12.0	**-0.0003**	0.002	737.4	ug/L	99	Standard
	Cd	111	37.2	19.5	**0.0219**	0.005	22.7	mg/L	6	Standard
	Cd	114	114.2	22.6	**0.0274**	0.007	26.0	ug/L	6	Standard
>	**In**	115	433662.7	1.9				ug/L	501593	Standard
	Sn	118	340.0	2.5	**-0.0150**	0.001	6.1	ug/L	442	Standard
	Sb	123	1922.9	3.5	**0.4467**	0.022	4.8	ug/L	53	Standard
	Ba	135	2714.6	3.9	**1.5598**	0.034	2.2	ug/L	34	Standard
	Ce	140	38.3	27.2				ug/L	73	Standard
>	**Tb**	159	804276.4	1.6				ug/L	924917	Standard
	Ho	165	16.7	34.6				ug/L	7	Standard
	Tl	203	96.7	18.2	**0.0105**	0.003	24.1	ug/L	6	Standard
	Tl	205	61.7	32.8	**0.0090**	0.004	48.7	ug/L	8	Standard
	Pb	206	337.7	5.0	**0.0204**	0.005	24.1	ug/L	264	Standard
	Pb	207	295.3	10.5	**0.0243**	0.007	30.4	ug/L	215	Standard
	Pb	208	1039.3	2.5	**0.0206**	0.000	1.7	ug/L	863	Standard
	U	238	2.7	21.7	**0.0028**	0.000	3.9	ug/L	4	Standard
>	**Bi**	209	441837.2	2.3				ug/L	507917	Standard

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Na	23	5.0	100.0	**20.9783**	21.095	100.6	mg/L	0	Standard
Mg	24	723.4	12.4	**1.2151**	0.124	10.2	mg/L	20	Standard
K	39	195.0	15.6	**0.6748**	0.097	14.4	mg/L	38	Standard
Ca	43	50.0	26.5	**-0.8764**	1.310	149.4	mg/L	43	Standard
Fe	54	57.9	27.9	**-0.0606**	0.023	37.4	mg/L	103	Standard
Fe	57	216.7	15.7	**0.6669**	0.222	33.2	mg/L	107	Standard
Sc-1	45	24900.5	4.4				mg/L	24625	Standard
Cl	35	26032.4	2.7				ug/L	30925	Standard
Kr	83	4.0	25.0				ug/L	4	Standard
Br	81	533.3	16.4				ug/L	397	Standard
P	31	13637.8	5.3				ug/L	19276	Standard
S	34	2261.8	6.9				ug/L	3042	Standard
Sr	88	85.0	5.9				ug/L	65	Standard
C	12	216.7	11.6				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	23.0	49.0				mg/L	23	Standard
Ho-1	165	16.7	34.6				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	13	Standard
I	127	7505.2	2.0				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		80.901	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		87.379	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		86.457
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		86.990
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, November 20, 2015 16:29:45
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	40154.9	4.9				ug/L	49688	Standard
	Be	9	34579.6	8.6	**53.3904**	2.300	4.3	ug/L	7	Standard
	Al	27	3214643.2	4.4	**58.5929**	2.081	3.6	ug/L	277	Standard
	Sc	45	25119.2	5.0				ug/L	24625	Standard
	Ti	47	20200.5	2.2	**110.7869**	3.367	3.0	ug/L	198	Standard
	V	51	240632.9	2.8	**53.2223**	0.424	0.8	ug/L	1126	Standard
	Cr	52	229717.9	2.8	**52.9680**	0.871	1.6	ug/L	6071	Standard
	Cr	53	28101.0	2.8	**51.9892**	1.737	3.3	ug/L	332	Standard
	Mn	55	219312.9	3.2	**51.7923**	1.148	2.2	ug/L	876	Standard
	Co	59	226600.6	2.6	**52.7417**	1.197	2.3	ug/L	110	Standard
	Ni	60	60187.7	3.1	**51.3927**	0.688	1.3	ug/L	191	Standard
	Cu	65	61288.5	3.2	**52.4479**	0.672	1.3	ug/L	281	Standard
	Zn	66	35602.8	3.0	**51.8631**	0.972	1.9	ug/L	249	Standard
>	Ge	72	266938.3	3.0				ug/L	297260	Standard
	As	75	39360.0	3.4	**51.7418**	0.443	0.9	ug/L	-66	Standard
	Se	82	3524.5	2.0	**50.7592**	0.748	1.5	ug/L	13	Standard
	Se-1	77	2306.5	1.2	**53.0362**	2.322	4.4	ug/L	48	Standard
>	Ga	71	35.0	28.6				mg/L	30	Standard
	Rb	85	570.0	4.6				ug/L	12	Standard
	Y	89	273896.5	5.4				ug/L	310514	Standard
>	Rh	103	20.0	25.0				ug/L	10	Standard
	Mo	98	163841.2	3.5	**106.8075**	1.414	1.3	ug/L	11	Standard
	Ag	107	262531.1	3.5	**53.9303**	0.368	0.7	ug/L	99	Standard
	Cd	111	82883.5	2.6	**51.9899**	0.685	1.3	mg/L	6	Standard
	Cd	114	201511.9	1.1	**51.0451**	1.435	2.8	ug/L	6	Standard
>	In	115	438157.5	3.9				ug/L	501593	Standard
	Sn	118	230198.3	4.9	**52.4926**	0.693	1.3	ug/L	442	Standard
	Sb	123	225598.6	3.1	**52.2892**	1.057	2.0	ug/L	53	Standard
	Ba	135	95218.8	2.8	**54.9668**	0.629	1.1	ug/L	34	Standard
	Ce	140	76.7	26.4				ug/L	73	Standard
>	Tb	159	840383.0	4.1				ug/L	924917	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	375447.6	2.5	**52.2487**	0.253	0.5	ug/L	6	Standard
	Tl	205	241554.7	4.7	**50.1773**	0.975	1.9	ug/L	8	Standard
	Pb	206	266425.6	2.9	**53.1770**	0.513	1.0	ug/L	264	Standard
	Pb	207	239591.2	2.4	**52.8200**	0.376	0.7	ug/L	215	Standard
	Pb	208	808934.2	3.8	**50.7520**	0.423	0.8	ug/L	863	Standard
	U	238	258236.4	2.7	**48.4003**	0.359	0.7	ug/L	4	Standard
>	Bi	209	441825.2	2.9				ug/L	507917	Standard

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Na	23	5.0	100.0	**19.9570**	20.330	101.9	mg/L	0	Standard
Mg	24	2483.5	4.5	**4.2313**	0.179	4.2	mg/L	20	Standard
K	39	1508.4	6.9	**6.4897**	0.786	12.1	mg/L	38	Standard
Ca	43	86.7	14.5	**2.9687**	1.545	52.0	mg/L	43	Standard
Fe	54	3045.7	3.3	**4.3275**	0.354	8.2	mg/L	103	Standard
Fe	57	940.0	0.9	**4.6993**	0.263	5.6	mg/L	107	Standard
Sc-1	45	25119.2	5.0				mg/L	24625	Standard
Cl	35	26386.3	2.3				ug/L	30925	Standard
Kr	83	2.3	24.7				ug/L	4	Standard
Br	81	370.0	16.9				ug/L	397	Standard
P	31	16262.1	6.1				ug/L	19276	Standard
S	34	2495.2	4.0				ug/L	3042	Standard
Sr	88	111.7	36.2				ug/L	65	Standard
C	12	163.3	36.9				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	3	Standard
Dy	164	9.8	177.4				mg/L	23	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	1295.1	8.1				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	106.781		
Al	27	117.186		
Sc	45			
Ti	47	110.787		
V	51	106.445		
Cr	52	105.936		
Cr	53			
Mn	55	103.585		
Co	59	105.483		
Ni	60	102.785		
Cu	65	104.896		
Zn	66	103.726		
Ge	72		89.800	
As	75	103.484		
Se	82	101.518		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	106.808		
Ag	107	107.861		
Cd	111	103.980		
Cd	114			
In	115		87.353	
Sn	118	104.985		
Sb	123	104.578		
Ba	135	109.934		
Ce	140			
Tb	159			
Ho	165			
Tl	203	104.497		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.504		
U	238	96.801		
Bi	209		86.988	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	
QC Std 6	Ti	47	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, November 20, 2015 16:32:56
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	37930.8	0.6				ug/L	49688	Standard
	Be	9	11.7	24.7	**-0.0013**	0.005	360.3	ug/L	7	Standard
	Al	27	668.3	30.7	**0.0032**	0.004	120.2	ug/L	277	Standard
	Sc	45	25010.6	2.7				ug/L	24625	Standard
	Ti	47	45.0	2.2	**-0.5432**	0.013	2.4	ug/L	198	Standard
	V	51	934.2	8.1	**-0.0079**	0.026	325.5	ug/L	1126	Standard
	Cr	52	4986.2	2.3	**-0.0507**	0.027	53.5	ug/L	6071	Standard
	Cr	53	336.7	4.8	**0.1582**	0.009	5.9	ug/L	332	Standard
	Mn	55	811.7	3.3	**-0.0127**	0.009	70.0	ug/L	876	Standard
	Co	59	214.3	9.2	**0.0238**	0.003	12.7	ug/L	110	Standard
	Ni	60	165.7	7.5	**-0.0382**	0.006	14.9	ug/L	191	Standard
	Cu	65	253.3	5.4	**0.0009**	0.013	1517.3	ug/L	281	Standard
	Zn	66	209.3	9.6	**0.0091**	0.025	269.4	ug/L	249	Standard
>	**Ge**	72	262567.1	4.4				ug/L	297260	Standard
	As	75	-4.4	302.0	**0.0461**	0.017	37.1	ug/L	-66	Standard
	Se	82	15.5	21.8	**0.0195**	0.058	298.1	ug/L	13	Standard
	Se-1	77	48.7	12.0	**0.1605**	0.142	88.4	ug/L	48	Standard
>	**Ga**	71	13.3	57.3				mg/L	30	Standard
	Rb	85	18.3	56.8				ug/L	12	Standard
	Y	89	266476.5	1.3				ug/L	310514	Standard
>	**Rh**	103	6.7	43.3				ug/L	10	Standard
	Mo	98	191.1	29.2	**0.1332**	0.033	24.7	ug/L	11	Standard
	Ag	107	110.3	16.3	**0.0042**	0.003	71.6	ug/L	99	Standard
	Cd	111	15.9	16.0	**0.0086**	0.002	21.4	mg/L	6	Standard
	Cd	114	55.1	57.0	**0.0124**	0.008	62.1	ug/L	6	Standard
>	**In**	115	422667.1	3.5				ug/L	501593	Standard
	Sn	118	555.0	9.7	**0.0383**	0.017	44.8	ug/L	442	Standard
	Sb	123	174.5	15.1	**0.0384**	0.008	19.8	ug/L	53	Standard
	Ba	135	40.3	26.7	**0.0007**	0.006	849.5	ug/L	34	Standard
	Ce	140	15.0	88.2				ug/L	73	Standard
>	**Tb**	159	801397.5	3.5				ug/L	924917	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	41.0	39.3	**0.0029**	0.002	70.7	ug/L	6	Standard
	Tl	205	31.7	96.5	**0.0027**	0.006	227.0	ug/L	8	Standard
	Pb	206	260.0	10.7	**0.0065**	0.003	53.3	ug/L	264	Standard
	Pb	207	217.0	9.6	**0.0086**	0.004	45.2	ug/L	215	Standard
	Pb	208	784.3	8.0	**0.0061**	0.002	30.0	ug/L	863	Standard
	U	238	36.0	27.4	**0.0092**	0.002	17.2	ug/L	4	Standard
>	**Bi**	209	427606.3	4.4				ug/L	507917	Standard

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Na	23	1.7	173.2	**6.8360**	11.832	173.1	mg/L	0	Standard
Mg	24	35.0	51.5	**0.0238**	0.030	125.2	mg/L	20	Standard
K	39	71.7	14.5	**0.1266**	0.040	31.3	mg/L	38	Standard
Ca	43	30.0	44.1	**-2.9797**	1.431	48.0	mg/L	43	Standard
Fe	54	99.6	20.3	**0.0007**	0.031	4467.5	mg/L	103	Standard
Fe	57	148.3	7.8	**0.2756**	0.085	31.0	mg/L	107	Standard
> **Sc-1**	45	25010.6	2.7				mg/L	24625	Standard
Cl	35	26212.7	1.9				ug/L	30925	Standard
Kr	83	5.7	27.0				ug/L	4	Standard
Br	81	340.0	2.9				ug/L	397	Standard
P	31	16180.3	4.5				ug/L	19276	Standard
S	34	2458.5	7.5				ug/L	3042	Standard
Sr	88	93.3	34.0				ug/L	65	Standard
C	12	113.3	13.5				mg/L	287	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	35.2	82.3				mg/L	23	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	30.0	115.5				mg/L	13	Standard
I	127	1541.7	4.5				mg/L	3275	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		88.329	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		84.265
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		84.188
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Ti	47	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBS 78 WG547712-01
Sample Date/Time: Friday, November 20, 2015 16:36:09
Number of Replicates: 3
Autosampler Position: 242
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	37011.8	2.5				ug/L	49688	Standard
	Be	9	6.7	86.6	**-0.0091**	0.010	107.9	ug/L	7	Standard
	Al	27	625.0	5.8	**0.0027**	0.001	37.1	ug/L	277	Standard
	Sc	45	25072.4	4.7				ug/L	24625	Standard
	Ti	47	43.0	4.7	**-0.5481**	0.014	2.5	ug/L	198	Standard
	V	51	910.4	3.6	**-0.0082**	0.012	141.8	ug/L	1126	Standard
	Cr	52	4362.6	0.7	**-0.1719**	0.026	15.3	ug/L	6071	Standard
	Cr	53	225.0	8.9	**-0.0417**	0.042	100.8	ug/L	332	Standard
	Mn	55	975.4	4.0	**0.0330**	0.004	13.6	ug/L	876	Standard
	Co	59	183.7	13.3	**0.0179**	0.007	37.9	ug/L	110	Standard
	Ni	60	193.3	7.5	**-0.0092**	0.016	177.7	ug/L	191	Standard
	Cu	65	224.7	3.4	**-0.0190**	0.005	26.2	ug/L	281	Standard
	Zn	66	1376.4	5.8	**1.8027**	0.072	4.0	ug/L	249	Standard
>	**Ge**	72	255554.6	2.4				ug/L	297260	Standard
	As	75	-4.2	238.3	**0.0456**	0.014	30.1	ug/L	-66	Standard
	Se	82	17.4	28.2	**0.0527**	0.067	127.6	ug/L	13	Standard
	Se-1	77	58.0	13.7	**0.4210**	0.206	48.8	ug/L	48	Standard
>	**Ga**	71	23.3	49.5				mg/L	30	Standard
	Rb	85	35.0	37.8				ug/L	12	Standard
	Y	89	260794.9	3.0				ug/L	310514	Standard
>	**Rh**	103	15.0	57.7				ug/L	10	Standard
	Mo	98	59.3	12.9	**0.0454**	0.004	9.6	ug/L	11	Standard
	Ag	107	101.0	18.8	**0.0025**	0.004	166.8	ug/L	99	Standard
	Cd	111	6.5	49.1	**0.0025**	0.002	82.4	mg/L	6	Standard
	Cd	114	24.6	117.6	**0.0048**	0.008	166.9	ug/L	6	Standard
>	**In**	115	417134.8	3.6				ug/L	501593	Standard
	Sn	118	388.3	16.8	**-0.0006**	0.012	2068.6	ug/L	442	Standard
	Sb	123	142.9	15.2	**0.0312**	0.006	19.6	ug/L	53	Standard
	Ba	135	102.7	9.2	**0.0389**	0.005	13.2	ug/L	34	Standard
	Ce	140	15.0	88.2				ug/L	73	Standard
>	**Tb**	159	784582.7	1.1				ug/L	924917	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	22.0	20.8	**0.0002**	0.001	349.8	ug/L	6	Standard
	Tl	205	8.3	34.6	**-0.0021**	0.001	28.7	ug/L	8	Standard
	Pb	206	296.3	9.1	**0.0141**	0.004	26.2	ug/L	264	Standard
	Pb	207	265.0	2.6	**0.0197**	0.003	17.2	ug/L	215	Standard
	Pb	208	924.3	4.9	**0.0153**	0.002	11.9	ug/L	863	Standard
	U	238	11.0	45.5	**0.0044**	0.001	22.7	ug/L	4	Standard
>	**Bi**	209	427251.1	3.0				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	38.3	39.8	**0.0291**	0.023	78.7	mg/L	20	Standard
K	39	35.0	28.6	**-0.0341**	0.051	150.4	mg/L	38	Standard
Ca	43	40.0	25.0	**-1.9574**	1.012	51.7	mg/L	43	Standard
Fe	54	72.6	40.7	**-0.0392**	0.045	114.0	mg/L	103	Standard
Fe	57	198.3	20.4	**0.5602**	0.276	49.2	mg/L	107	Standard
Sc-1	45	25072.4	4.7				mg/L	24625	Standard
Cl	35	26031.0	2.1				ug/L	30925	Standard
Kr	83	3.7	41.7				ug/L	4	Standard
Br	81	426.7	13.7				ug/L	397	Standard
P	31	10568.7	2.7				ug/L	19276	Standard
S	34	2491.9	2.7				ug/L	3042	Standard
Sr	88	121.7	22.6				ug/L	65	Standard
C	12	113.3	10.2				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	3	Standard
Dy	164	2.7	219.6				mg/L	23	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	1875.1	4.7				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		74.488	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		85.970	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	83.162	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	84.118	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Lower	Ti	47	

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Method 6020 - Summary Report

Sample ID: LCSS 78 WG547712-02
Sample Date/Time: Friday, November 20, 2015 16:39:19
Number of Replicates: 3
Autosampler Position: 243
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	36009.4	1.3				ug/L	49688	Standard
	Be	9	15591.4	5.2	**26.8689**	1.539	5.7	ug/L	7	Standard
	Al	27	843.4	40.8	**0.0075**	0.007	95.7	ug/L	277	Standard
	Sc	45	25461.4	5.0				ug/L	24625	Standard
	Ti	47	40.0	8.7	**-0.5698**	0.024	4.3	ug/L	198	Standard
	V	51	110231.7	3.6	**24.8251**	0.362	1.5	ug/L	1126	Standard
	Cr	52	108007.8	3.1	**24.8302**	0.209	0.8	ug/L	6071	Standard
	Cr	53	13007.3	5.3	**24.3502**	0.751	3.1	ug/L	332	Standard
	Mn	55	102737.5	3.7	**24.7096**	0.371	1.5	ug/L	876	Standard
	Co	59	103981.3	4.2	**24.7382**	0.542	2.2	ug/L	110	Standard
	Ni	60	28647.7	1.5	**24.9398**	0.274	1.1	ug/L	191	Standard
	Cu	65	29107.0	3.3	**25.3710**	0.281	1.1	ug/L	281	Standard
	Zn	66	18105.8	3.0	**26.8377**	0.190	0.7	ug/L	249	Standard
>	Ge	72	260865.6	2.3				ug/L	297260	Standard
	As	75	18437.1	2.8	**24.8280**	0.185	0.7	ug/L	-66	Standard
	Se	82	1677.6	3.3	**24.6057**	0.259	1.1	ug/L	13	Standard
	Se-1	77	1115.4	3.7	**25.7121**	0.471	1.8	ug/L	48	Standard
>	Ga	71	16.7	45.8				mg/L	30	Standard
	Rb	85	15.0	33.3				ug/L	12	Standard
	Y	89	260975.4	3.8				ug/L	310514	Standard
>	Rh	103	16.7	96.4				ug/L	10	Standard
	Mo	98	52.7	21.2	**0.0414**	0.008	19.7	ug/L	11	Standard
	Ag	107	121703.0	4.0	**26.5496**	0.418	1.6	ug/L	99	Standard
	Cd	111	37508.6	2.8	**24.9936**	0.175	0.7	mg/L	6	Standard
	Cd	114	91680.4	5.6	**24.6492**	0.792	3.2	ug/L	6	Standard
>	In	115	412299.6	2.4				ug/L	501593	Standard
	Sn	118	315.0	7.3	**-0.0171**	0.005	26.6	ug/L	442	Standard
	Sb	123	98651.7	3.7	**24.2858**	0.376	1.5	ug/L	53	Standard
	Ba	135	43578.9	2.6	**26.7144**	0.045	0.2	ug/L	34	Standard
	Ce	140	23.3	32.7				ug/L	73	Standard
>	Tb	159	771089.1	2.3				ug/L	924917	Standard
	Ho	165	10.0					ug/L	7	Standard
	Tl	203	171317.5	4.0	**24.5997**	0.308	1.3	ug/L	6	Standard
	Tl	205	110171.2	3.9	**23.6251**	0.474	2.0	ug/L	8	Standard
	Pb	206	125740.0	3.6	**25.8766**	0.210	0.8	ug/L	264	Standard
	Pb	207	108693.0	3.0	**24.7086**	0.089	0.4	ug/L	215	Standard
	Pb	208	373366.1	3.0	**24.1589**	0.111	0.5	ug/L	863	Standard
	U	238	115888.3	3.9	**22.4156**	0.258	1.2	ug/L	4	Standard
>	Bi	209	428040.1	2.8				ug/L	507917	Standard

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	Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
	Mg	24	8.3	34.6	**-0.0220**	0.005	20.9	mg/L	20	Standard
	K	39	51.7	24.4	**0.0354**	0.060	170.4	mg/L	38	Standard
	Ca	43	26.7	10.8	**-3.3984**	0.160	4.7	mg/L	43	Standard
	Fe	54	65.4	34.8	**-0.0503**	0.037	73.4	mg/L	103	Standard
	Fe	57	181.7	8.4	**0.4428**	0.066	14.8	mg/L	107	Standard
>	**Sc-1**	45	25461.4	5.0				mg/L	24625	Standard
	Cl	35	26294.1	2.4				ug/L	30925	Standard
	Kr	83	4.7	49.5				ug/L	4	Standard
	Br	81	393.3	7.8				ug/L	397	Standard
	P	31	10533.7	4.4				ug/L	19276	Standard
	S	34	2601.9	4.0				ug/L	3042	Standard
	Sr	88	93.3	43.3				ug/L	65	Standard
	C	12	136.7	25.7				mg/L	287	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	5.9	101.5				mg/L	23	Standard
	Ho-1	165	10.0					mg/L	7	Standard
	Er	166	16.7	91.7				mg/L	13	Standard
	I	127	1365.1	9.0				mg/L	3275	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		72.471	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		87.757	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		82.198
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		84.274
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Lower	Ti	47	

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Method 6020 - Summary Report

Sample ID: LCSS DP WG547712-03
Sample Date/Time: Friday, November 20, 2015 16:42:31
Number of Replicates: 3
Autosampler Position: 244
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	37309.4	6.8				ug/L	49688	Standard
	Be	9	15130.9	1.2	**25.2222**	1.380	5.5	ug/L	7	Standard
	Al	27	771.7	32.0	**0.0056**	0.006	98.2	ug/L	277	Standard
	Sc	45	24199.3	4.7				ug/L	24625	Standard
	Ti	47	51.0	12.9	**-0.5012**	0.028	5.6	ug/L	198	Standard
	V	51	109072.0	4.0	**25.2007**	0.366	1.5	ug/L	1126	Standard
	Cr	52	106162.3	3.9	**25.0429**	0.074	0.3	ug/L	6071	Standard
	Cr	53	12760.4	1.0	**24.5300**	0.666	2.7	ug/L	332	Standard
	Mn	55	100025.4	4.0	**24.6770**	0.198	0.8	ug/L	876	Standard
	Co	59	102312.5	4.7	**24.9653**	0.323	1.3	ug/L	110	Standard
	Ni	60	27502.0	4.6	**24.5436**	0.245	1.0	ug/L	191	Standard
	Cu	65	28008.9	4.6	**25.0338**	0.238	1.0	ug/L	281	Standard
	Zn	66	17575.9	4.2	**26.7178**	0.265	1.0	ug/L	249	Standard
>	**Ge**	72	254354.8	3.7				ug/L	297260	Standard
	As	75	18012.4	3.1	**24.8831**	0.284	1.1	ug/L	-66	Standard
	Se	82	1621.6	4.1	**24.3928**	0.178	0.7	ug/L	13	Standard
	Se-1	77	1071.0	3.5	**25.3308**	1.211	4.8	ug/L	48	Standard
>	**Ga**	71	16.7	91.7				mg/L	30	Standard
	Rb	85	18.3	63.0				ug/L	12	Standard
	Y	89	257525.5	1.7				ug/L	310514	Standard
>	**Rh**	103	13.3	57.3				ug/L	10	Standard
	Mo	98	23.6	29.1	**0.0211**	0.005	21.5	ug/L	11	Standard
	Ag	107	119348.9	3.2	**25.9740**	0.066	0.3	ug/L	99	Standard
	Cd	111	36513.3	4.2	**24.2634**	0.375	1.5	mg/L	6	Standard
	Cd	114	91547.1	2.3	**24.5655**	0.238	1.0	ug/L	6	Standard
>	**In**	115	413392.6	3.3				ug/L	501593	Standard
	Sn	118	328.3	12.8	**-0.0137**	0.013	91.1	ug/L	442	Standard
	Sb	123	97366.6	3.2	**23.9119**	0.321	1.3	ug/L	53	Standard
	Ba	135	43139.7	3.1	**26.3769**	0.225	0.9	ug/L	34	Standard
	Ce	140	30.0	28.9				ug/L	73	Standard
>	**Tb**	159	793221.7	1.8				ug/L	924917	Standard
	Ho	165	5.0	0.0				ug/L	7	Standard
	Tl	203	169268.7	2.7	**24.5601**	0.137	0.6	ug/L	6	Standard
	Tl	205	110743.5	2.8	**23.9936**	0.097	0.4	ug/L	8	Standard
	Pb	206	123858.6	3.3	**25.7505**	0.096	0.4	ug/L	264	Standard
	Pb	207	106401.6	3.5	**24.4319**	0.115	0.5	ug/L	215	Standard
	Pb	208	368728.2	2.6	**24.1045**	0.112	0.5	ug/L	863	Standard
	U	238	116362.0	2.7	**22.7423**	0.088	0.4	ug/L	4	Standard
>	**Bi**	209	423727.1	3.0				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	35.0	75.6	**0.0251**	0.043	173.1	mg/L	20	Standard
K	39	45.0	19.2	**0.0151**	0.034	226.8	mg/L	38	Standard
Ca	43	45.0	50.9	**-1.1773**	2.714	230.5	mg/L	43	Standard
Fe	54	60.4	55.2	**-0.0545**	0.050	91.7	mg/L	103	Standard
Fe	57	178.3	25.4	**0.4840**	0.307	63.4	mg/L	107	Standard
Sc-1	45	24199.3	4.7				mg/L	24625	Standard
Cl	35	25200.9	1.9				ug/L	30925	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	380.0	16.0				ug/L	397	Standard
P	31	10415.3	8.2				ug/L	19276	Standard
S	34	2406.9	3.1				ug/L	3042	Standard
Sr	88	98.3	36.1				ug/L	65	Standard
C	12	196.7	22.9				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	20.0	50.0				mg/L	23	Standard
Ho-1	165	5.0	0.0				mg/L	7	Standard
Er	166	0.0					mg/L	13	Standard
I	127	1351.7	6.0				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		75.087	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		85.566	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		82.416
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		83.424
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Lower	Ti	47	

Sample ID: LCSS DP WG547712-03
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Method 6020 - Summary Report

Sample ID: L1511110801
Sample Date/Time: Friday, November 20, 2015 16:45:43
Number of Replicates: 3
Autosampler Position: 245
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	37297.5	2.8				ug/L	49688	Standard
	Be	9	23.3	65.5	**0.0180**	0.024	134.1	ug/L	7	Standard
	Al	27	405826.0	1.9	**7.9530**	0.177	2.2	ug/L	277	Standard
	Sc	45	24324.5	2.2				ug/L	24625	Standard
	Ti	47	109.0	5.7	**-0.1827**	0.023	12.8	ug/L	198	Standard
	V	51	12303.8	2.3	**2.5670**	0.022	0.9	ug/L	1126	Standard
	Cr	52	5447.0	5.7	**0.0627**	0.052	83.3	ug/L	6071	Standard
	Cr	53	325.0	1.5	**0.1382**	0.011	8.3	ug/L	332	Standard
	Mn	55	26452.8	3.2	**6.1864**	0.090	1.5	ug/L	876	Standard
	Co	59	327.7	15.3	**0.0509**	0.011	21.1	ug/L	110	Standard
	Ni	60	602.0	7.3	**0.3435**	0.033	9.5	ug/L	191	Standard
	Cu	65	287.0	13.4	**0.0308**	0.032	105.3	ug/L	281	Standard
	Zn	66	1367.7	4.5	**1.7403**	0.051	2.9	ug/L	249	Standard
>	**Ge**	72	261748.9	2.1				ug/L	297260	Standard
	As	75	435.9	7.6	**0.6350**	0.034	5.4	ug/L	-66	Standard
	Se	82	31.5	37.5	**0.2527**	0.167	66.1	ug/L	13	Standard
	Se-1	77	60.0	11.5	**0.4324**	0.137	31.8	ug/L	48	Standard
>	**Ga**	71	86.7	27.3				mg/L	30	Standard
	Rb	85	4847.4	1.1				ug/L	12	Standard
	Y	89	262554.1	1.7				ug/L	310514	Standard
>	**Rh**	103	8.3	91.7				ug/L	10	Standard
	Mo	98	1791.6	4.2	**1.2244**	0.036	3.0	ug/L	11	Standard
	Ag	107	126.7	41.2	**0.0078**	0.011	137.3	ug/L	99	Standard
	Cd	111	21.0	71.5	**0.0119**	0.010	80.4	mg/L	6	Standard
	Cd	114	96.4	51.4	**0.0235**	0.013	53.8	ug/L	6	Standard
>	**In**	115	419462.7	1.4				ug/L	501593	Standard
	Sn	118	321.7	15.6	**-0.0166**	0.013	77.7	ug/L	442	Standard
	Sb	123	2391.9	6.4	**0.5756**	0.044	7.6	ug/L	53	Standard
	Ba	135	5769.4	3.4	**3.4555**	0.069	2.0	ug/L	34	Standard
	Ce	140	15.0	115.5				ug/L	73	Standard
>	**Tb**	159	819654.4	1.4				ug/L	924917	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	285.0	24.3	**0.0375**	0.009	23.2	ug/L	6	Standard
	Tl	205	188.3	29.8	**0.0359**	0.011	29.6	ug/L	8	Standard
	Pb	206	306.7	21.1	**0.0154**	0.011	72.8	ug/L	264	Standard
	Pb	207	270.3	20.1	**0.0200**	0.010	51.5	ug/L	215	Standard
	Pb	208	938.3	29.3	**0.0153**	0.016	103.3	ug/L	863	Standard
	U	238	83.3	107.7	**0.0180**	0.016	91.8	ug/L	4	Standard
>	**Bi**	209	431575.5	3.1				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	221.7	1.3	**0.3571**	0.009	2.5	mg/L	20	Standard
K	39	223.3	20.1	**0.8265**	0.198	24.0	mg/L	38	Standard
Ca	43	43.3	26.6	**-1.4541**	1.277	87.8	mg/L	43	Standard
Fe	54	56.2	27.2	**-0.0610**	0.023	37.5	mg/L	103	Standard
Fe	57	210.0	12.6	**0.6533**	0.152	23.3	mg/L	107	Standard
> **Sc-1**	45	24324.5	2.2				mg/L	24625	Standard
Cl	35	24191.3	2.5				ug/L	30925	Standard
Kr	83	5.3	39.0				ug/L	4	Standard
Br	81	580.0	15.8				ug/L	397	Standard
P	31	11431.0	3.6				ug/L	19276	Standard
S	34	2288.5	9.0				ug/L	3042	Standard
Sr	88	133.3	22.0				ug/L	65	Standard
C	12	443.3	15.4				mg/L	287	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	19.5	53.7				mg/L	23	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	3235.3	2.1				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		75.063	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		88.054	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		83.626
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		84.970
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1511110803
Sample Date/Time: Friday, November 20, 2015 16:48:54
Number of Replicates: 3
Autosampler Position: 246
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	37448.0	5.7				ug/L	49688	Standard
	Be	9	11.7	65.5	**-0.0013**	0.012	958.0	ug/L	7	Standard
	Al	27	2177327.7	1.9	**42.5895**	1.659	3.9	ug/L	277	Standard
	Sc	45	25314.5	3.6				ug/L	24625	Standard
	Ti	47	122.3	6.6	**-0.1076**	0.047	44.0	ug/L	198	Standard
	V	51	10079.3	2.5	**2.0615**	0.023	1.1	ug/L	1126	Standard
	Cr	52	5242.6	1.7	**0.0135**	0.034	252.5	ug/L	6071	Standard
	Cr	53	416.7	7.3	**0.3123**	0.062	19.9	ug/L	332	Standard
	Mn	55	239315.1	1.4	**57.6170**	0.180	0.3	ug/L	876	Standard
	Co	59	1941.1	4.4	**0.4338**	0.019	4.5	ug/L	110	Standard
	Ni	60	4237.6	2.8	**3.5193**	0.134	3.8	ug/L	191	Standard
	Cu	65	428.0	3.6	**0.1543**	0.016	10.1	ug/L	281	Standard
	Zn	66	5059.8	0.7	**7.2535**	0.101	1.4	ug/L	249	Standard
>	Ge	72	261911.7	1.5				ug/L	297260	Standard
	As	75	342.9	4.2	**0.5107**	0.024	4.7	ug/L	-66	Standard
	Se	82	49.4	5.0	**0.5177**	0.040	7.7	ug/L	13	Standard
	Se-1	77	77.3	10.5	**0.8458**	0.177	20.9	ug/L	48	Standard
>	Ga	71	103.3	15.6				mg/L	30	Standard
	Rb	85	11000.7	2.4				ug/L	12	Standard
	Y	89	268835.1	4.2				ug/L	310514	Standard
>	Rh	103	28.3	62.0				ug/L	10	Standard
	Mo	98	12239.5	1.9	**8.2020**	0.084	1.0	ug/L	11	Standard
	Ag	107	100.0	7.9	**0.0018**	0.001	81.5	ug/L	99	Standard
	Cd	111	37.0	12.9	**0.0221**	0.003	13.7	mg/L	6	Standard
	Cd	114	93.0	14.6	**0.0223**	0.003	14.9	ug/L	6	Standard
>	In	115	426385.9	0.9				ug/L	501593	Standard
	Sn	118	323.3	11.0	**-0.0177**	0.008	43.7	ug/L	442	Standard
	Sb	123	3016.2	5.7	**0.7146**	0.041	5.8	ug/L	53	Standard
	Ba	135	15945.4	1.0	**9.4375**	0.130	1.4	ug/L	34	Standard
	Ce	140	31.7	18.2				ug/L	73	Standard
>	Tb	159	804704.7	3.0				ug/L	924917	Standard
	Ho	165	6.7	86.6				ug/L	7	Standard
	Tl	203	396.0	9.8	**0.0536**	0.006	10.8	ug/L	6	Standard
	Tl	205	278.3	15.3	**0.0555**	0.009	16.9	ug/L	8	Standard
	Pb	206	303.7	4.0	**0.0152**	0.003	17.9	ug/L	264	Standard
	Pb	207	254.0	13.8	**0.0167**	0.008	50.6	ug/L	215	Standard
	Pb	208	957.3	19.3	**0.0170**	0.012	73.2	ug/L	863	Standard
	U	238	69.7	56.4	**0.0157**	0.008	49.0	ug/L	4	Standard
>	Bi	209	430617.1	0.9				ug/L	507917	Standard

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Na	23	3.3	173.2	**13.3277**	23.076	173.1	mg/L	0	Standard
Mg	24	305.0	4.3	**0.4844**	0.038	7.8	mg/L	20	Standard
K	39	360.0	8.4	**1.3839**	0.084	6.1	mg/L	38	Standard
Ca	43	153.3	3.8	**9.8259**	1.164	11.8	mg/L	43	Standard
Fe	54	59.2	15.0	**-0.0598**	0.014	22.7	mg/L	103	Standard
Fe	57	226.7	9.9	**0.7022**	0.171	24.4	mg/L	107	Standard
Sc-1	45	25314.5	3.6				mg/L	24625	Standard
Cl	35	25848.7	1.8				ug/L	30925	Standard
Kr	83	4.0	25.0				ug/L	4	Standard
Br	81	393.3	7.3				ug/L	397	Standard
P	31	11382.6	5.6				ug/L	19276	Standard
S	34	2405.2	4.0				ug/L	3042	Standard
Sr	88	123.3	13.0				ug/L	65	Standard
C	12	430.0	26.2				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	3	Standard
Dy	164	12.1	47.8				mg/L	23	Standard
Ho-1	165	6.7	86.6				mg/L	7	Standard
Er	166	26.7	94.4				mg/L	13	Standard
I	127	5437.6	3.7				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		75.366	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		88.109	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		85.006
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		84.781
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1511110805
Sample Date/Time: Friday, November 20, 2015 16:52:05
Number of Replicates: 3
Autosampler Position: 247
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	37274.4	8.6				ug/L	49688	Standard
	Be	9	8.3	124.9	**-0.0070**	0.016	226.4	ug/L	7	Standard
	Al	27	574399.4	5.3	**11.3482**	1.494	13.2	ug/L	277	Standard
	Sc	45	25810.3	4.7				ug/L	24625	Standard
	Ti	47	104.0	1.0	**-0.2196**	0.017	7.6	ug/L	198	Standard
	V	51	17944.0	3.1	**3.7803**	0.103	2.7	ug/L	1126	Standard
	Cr	52	6609.4	4.9	**0.3178**	0.067	21.2	ug/L	6071	Standard
	Cr	53	448.3	15.6	**0.3599**	0.134	37.3	ug/L	332	Standard
	Mn	55	2480.5	3.9	**0.3817**	0.020	5.2	ug/L	876	Standard
	Co	59	261.7	6.0	**0.0343**	0.003	10.0	ug/L	110	Standard
	Ni	60	396.0	9.6	**0.1579**	0.028	17.7	ug/L	191	Standard
	Cu	65	277.3	6.4	**0.0187**	0.018	96.8	ug/L	281	Standard
	Zn	66	1313.4	4.8	**1.6288**	0.085	5.2	ug/L	249	Standard
>	**Ge**	72	265974.2	2.6				ug/L	297260	Standard
	As	75	432.4	2.9	**0.6216**	0.016	2.5	ug/L	-66	Standard
	Se	82	38.7	9.6	**0.3510**	0.042	12.1	ug/L	13	Standard
	Se-1	77	61.3	10.9	**0.4408**	0.126	28.6	ug/L	48	Standard
>	**Ga**	71	290.0	28.7				mg/L	30	Standard
	Rb	85	5592.7	4.9				ug/L	12	Standard
	Y	89	271377.7	1.9				ug/L	310514	Standard
>	**Rh**	103	13.3	78.1				ug/L	10	Standard
	Mo	98	2902.0	5.6	**1.9175**	0.132	6.9	ug/L	11	Standard
	Ag	107	128.0	29.8	**0.0073**	0.008	110.1	ug/L	99	Standard
	Cd	111	8.0	33.6	**0.0033**	0.002	55.0	mg/L	6	Standard
	Cd	114	27.3	54.9	**0.0051**	0.004	75.3	ug/L	6	Standard
>	**In**	115	433710.6	3.5				ug/L	501593	Standard
	Sn	118	348.3	14.7	**-0.0133**	0.010	72.3	ug/L	442	Standard
	Sb	123	2160.3	1.4	**0.5024**	0.020	3.9	ug/L	53	Standard
	Ba	135	2264.5	2.7	**1.2987**	0.064	4.9	ug/L	34	Standard
	Ce	140	15.0	100.0				ug/L	73	Standard
>	**Tb**	159	812274.3	2.4				ug/L	924917	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	151.0	16.1	**0.0180**	0.004	20.7	ug/L	6	Standard
	Tl	205	101.7	37.2	**0.0172**	0.008	47.6	ug/L	8	Standard
	Pb	206	287.7	16.7	**0.0101**	0.010	96.5	ug/L	264	Standard
	Pb	207	232.3	20.8	**0.0102**	0.011	108.7	ug/L	215	Standard
	Pb	208	839.7	4.3	**0.0077**	0.001	6.9	ug/L	863	Standard
	U	238	62.0	15.6	**0.0139**	0.002	13.9	ug/L	4	Standard
>	**Bi**	209	444424.2	3.3				ug/L	507917	Standard

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Na	23	1.7	173.2	**6.6808**	11.563	173.1	mg/L	0	Standard
Mg	24	233.3	6.9	**0.3540**	0.025	7.1	mg/L	20	Standard
K	39	248.3	7.6	**0.8779**	0.103	11.7	mg/L	38	Standard
Ca	43	63.3	9.1	**0.3253**	0.738	226.9	mg/L	43	Standard
Fe	54	44.2	22.5	**-0.0829**	0.014	17.0	mg/L	103	Standard
Fe	57	170.0	18.4	**0.3701**	0.194	52.5	mg/L	107	Standard
Sc-1	45	25810.3	4.7				mg/L	24625	Standard
Cl	35	26511.2	1.3				ug/L	30925	Standard
Kr	83	2.7	94.4				ug/L	4	Standard
Br	81	470.0	16.6				ug/L	397	Standard
P	31	11781.3	5.9				ug/L	19276	Standard
S	34	2346.8	4.1				ug/L	3042	Standard
Sr	88	110.0	19.8				ug/L	65	Standard
C	12	453.3	12.7				mg/L	287	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	50.0	34.6				mg/L	3	Standard
Dy	164	9.7	105.8				mg/L	23	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	3202.0	8.2				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		75.017	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		89.475	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		86.467
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.499
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1511110805PS WG547895-01
Sample Date/Time: Friday, November 20, 2015 16:55:16
Number of Replicates: 3
Autosampler Position: 248
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	37937.5	3.8				ug/L	49688	Standard
	Be	9	34552.7	3.6	**56.5487**	1.734	3.1	ug/L	7	Standard
	Al	27	552738.7	2.9	**10.6572**	0.435	4.1	ug/L	277	Standard
	Sc	45	25050.7	4.0				ug/L	24625	Standard
	Ti	47	109.3	10.9	**-0.1808**	0.056	30.9	ug/L	198	Standard
	V	51	253649.0	3.4	**57.2552**	0.867	1.5	ug/L	1126	Standard
	Cr	52	226157.8	2.1	**53.2163**	0.332	0.6	ug/L	6071	Standard
	Cr	53	27578.4	3.7	**52.0331**	0.511	1.0	ug/L	332	Standard
	Mn	55	221011.6	3.1	**53.2540**	0.328	0.6	ug/L	876	Standard
	Co	59	227564.8	2.9	**54.0322**	0.239	0.4	ug/L	110	Standard
	Ni	60	60095.0	3.0	**52.3598**	0.300	0.6	ug/L	191	Standard
	Cu	65	61914.6	1.7	**54.0816**	0.555	1.0	ug/L	281	Standard
	Zn	66	38360.8	2.0	**57.0515**	0.415	0.7	ug/L	249	Standard
>	**Ge**	72	261598.4	2.7				ug/L	297260	Standard
	As	75	40955.5	3.1	**54.9359**	0.568	1.0	ug/L	-66	Standard
	Se	82	3649.1	3.3	**53.6189**	0.363	0.7	ug/L	13	Standard
	Se-1	77	2326.8	3.1	**54.5834**	1.305	2.4	ug/L	48	Standard
>	**Ga**	71	331.7	4.6				mg/L	30	Standard
	Rb	85	5594.4	5.0				ug/L	12	Standard
	Y	89	262329.2	2.6				ug/L	310514	Standard
>	**Rh**	103	28.3	27.0				ug/L	10	Standard
	Mo	98	2836.3	6.8	**1.8989**	0.115	6.0	ug/L	11	Standard
	Ag	107	253144.0	2.4	**53.2895**	1.246	2.3	ug/L	99	Standard
	Cd	111	82705.5	2.6	**53.1564**	1.623	3.1	mg/L	6	Standard
	Cd	114	205778.9	3.0	**53.3736**	0.946	1.8	ug/L	6	Standard
>	**In**	115	427599.2	2.3				ug/L	501593	Standard
	Sn	118	436.7	6.3	**0.0087**	0.006	64.9	ug/L	442	Standard
	Sb	123	221831.7	3.2	**52.6797**	1.697	3.2	ug/L	53	Standard
	Ba	135	97809.2	2.9	**57.8483**	1.461	2.5	ug/L	34	Standard
	Ce	140	26.7	28.6				ug/L	73	Standard
>	**Tb**	159	817849.0	3.8				ug/L	924917	Standard
	Ho	165	13.3	21.7				ug/L	7	Standard
	Tl	203	376464.7	2.7	**52.8572**	1.123	2.1	ug/L	6	Standard
	Tl	205	243917.6	3.5	**51.1258**	0.454	0.9	ug/L	8	Standard
	Pb	206	263784.7	2.0	**53.1285**	1.203	2.3	ug/L	264	Standard
	Pb	207	238994.4	2.2	**53.1621**	1.190	2.2	ug/L	215	Standard
	Pb	208	807398.0	3.3	**51.1125**	0.916	1.8	ug/L	863	Standard
	U	238	261300.6	3.4	**49.4030**	0.822	1.7	ug/L	4	Standard
>	**Bi**	209	437958.4	2.8				ug/L	507917	Standard

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Na	23	1.7	173.2	**6.9826**	12.086	173.1	mg/L	0	Standard
Mg	24	246.7	14.4	**0.3905**	0.076	19.6	mg/L	20	Standard
K	39	198.3	19.6	**0.6857**	0.162	23.6	mg/L	38	Standard
Ca	43	58.3	21.6	**-0.0347**	1.177	3388.0	mg/L	43	Standard
Fe	54	83.7	38.7	**-0.0241**	0.042	174.9	mg/L	103	Standard
Fe	57	211.7	13.4	**0.6285**	0.169	26.9	mg/L	107	Standard
Sc-1	45	25050.7	4.0				mg/L	24625	Standard
Cl	35	26380.3	2.6				ug/L	30925	Standard
Kr	83	4.3	13.3				ug/L	4	Standard
Br	81	463.3	6.6				ug/L	397	Standard
P	31	11787.9	3.2				ug/L	19276	Standard
S	34	2345.2	9.2				ug/L	3042	Standard
Sr	88	108.3	25.4				ug/L	65	Standard
C	12	450.0	7.7				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	63.3	48.2				mg/L	3	Standard
Dy	164	9.0	113.3				mg/L	23	Standard
Ho-1	165	13.3	21.7				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	2556.9	7.9				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		76.351	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		88.003	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1511110805PS WG547895-01
Report Date/Time: Friday, November 20, 2015 16:57:32
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		85.248
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		86.226
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: November 23, 2015

Method 6020 - Summary Report

Sample ID: L1511110805SDL WG547895-02
Sample Date/Time: Friday, November 20, 2015 16:58:26
Number of Replicates: 3
Autosampler Position: 249
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	38191.6	7.2				ug/L	49688	Standard
	Be	9	28.3	53.9	**0.0249**	0.022	86.6	ug/L	7	Standard
	Al	27	113990.1	6.7	**2.1744**	0.011	0.5	ug/L	277	Standard
	Sc	45	25217.7	3.7				ug/L	24625	Standard
	Ti	47	55.7	21.7	**-0.4803**	0.084	17.5	ug/L	198	Standard
	V	51	4374.5	6.3	**0.7693**	0.034	4.4	ug/L	1126	Standard
	Cr	52	5484.0	4.8	**0.0701**	0.034	48.5	ug/L	6071	Standard
	Cr	53	346.7	11.7	**0.1789**	0.081	45.4	ug/L	332	Standard
	Mn	55	1258.4	5.2	**0.0952**	0.002	2.3	ug/L	876	Standard
	Co	59	243.7	11.7	**0.0309**	0.007	21.3	ug/L	110	Standard
	Ni	60	232.7	16.9	**0.0198**	0.024	121.6	ug/L	191	Standard
	Cu	65	268.3	9.2	**0.0138**	0.012	85.9	ug/L	281	Standard
	Zn	66	1489.1	4.2	**1.9189**	0.029	1.5	ug/L	249	Standard
>	**Ge**	72	262256.8	5.4				ug/L	297260	Standard
	As	75	82.1	46.3	**0.1597**	0.044	27.7	ug/L	-66	Standard
	Se	82	23.3	26.0	**0.1309**	0.072	55.4	ug/L	13	Standard
	Se-1	77	52.3	4.8	**0.2518**	0.105	41.6	ug/L	48	Standard
>	**Ga**	71	65.0	30.8				mg/L	30	Standard
	Rb	85	1126.7	4.5				ug/L	12	Standard
	Y	89	262230.5	4.1				ug/L	310514	Standard
>	**Rh**	103	6.7	86.6				ug/L	10	Standard
	Mo	98	602.7	4.5	**0.4062**	0.007	1.6	ug/L	11	Standard
	Ag	107	138.7	30.3	**0.0097**	0.008	81.4	ug/L	99	Standard
	Cd	111	15.7	66.8	**0.0082**	0.006	77.7	mg/L	6	Standard
	Cd	114	40.9	93.4	**0.0086**	0.010	111.5	ug/L	6	Standard
>	**In**	115	428724.6	2.8				ug/L	501593	Standard
	Sn	118	400.0	7.6	**0.0000**	0.009	65753.5	ug/L	442	Standard
	Sb	123	2342.3	10.3	**0.5523**	0.072	13.0	ug/L	53	Standard
	Ba	135	591.7	8.5	**0.3255**	0.021	6.5	ug/L	34	Standard
	Ce	140	20.0	66.1				ug/L	73	Standard
>	**Tb**	159	820229.6	4.1				ug/L	924917	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	102.0	76.5	**0.0111**	0.010	91.3	ug/L	6	Standard
	Tl	205	76.7	55.5	**0.0120**	0.008	67.6	ug/L	8	Standard
	Pb	206	420.7	24.6	**0.0377**	0.017	45.0	ug/L	264	Standard
	Pb	207	327.7	17.5	**0.0322**	0.010	29.7	ug/L	215	Standard
	Pb	208	1179.7	16.0	**0.0302**	0.009	28.5	ug/L	863	Standard
	U	238	66.7	79.8	**0.0147**	0.009	63.7	ug/L	4	Standard
>	**Bi**	209	435528.2	4.4				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	80.0	27.2	**0.1000**	0.032	31.8	mg/L	20	Standard
K	39	103.3	19.6	**0.2634**	0.085	32.4	mg/L	38	Standard
Ca	43	48.3	21.5	**-1.0965**	1.139	103.9	mg/L	43	Standard
Fe	54	75.8	21.5	**-0.0350**	0.026	75.3	mg/L	103	Standard
Fe	57	215.0	14.5	**0.6409**	0.200	31.1	mg/L	107	Standard
Sc-1	45	25217.7	3.7				mg/L	24625	Standard
Cl	35	26537.9	2.8				ug/L	30925	Standard
Kr	83	3.7	41.7				ug/L	4	Standard
Br	81	276.7	17.1				ug/L	397	Standard
P	31	13884.7	3.8				ug/L	19276	Standard
S	34	2388.5	1.7				ug/L	3042	Standard
Sr	88	135.0	11.1				ug/L	65	Standard
C	12	233.3	2.5				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	15.9	74.5				mg/L	23	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	13	Standard
I	127	1666.8	11.3				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		76.863	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		88.225	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		85.473
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		85.748
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Lower	Ti	47	

Sample ID: L1511110805SDL WG547895-02
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, November 20, 2015 17:01:39
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	38886.6	4.5				ug/L	49688	Standard
	Be	9	33004.3	3.9	**52.7381**	2.906	5.5	ug/L	7	Standard
	Al	27	3126724.5	4.1	**58.8297**	1.178	2.0	ug/L	277	Standard
	Sc	45	24853.7	5.2				ug/L	24625	Standard
	Ti	47	19904.7	1.4	**110.3599**	2.209	2.0	ug/L	198	Standard
	V	51	237284.7	3.0	**53.0584**	0.530	1.0	ug/L	1126	Standard
	Cr	52	226942.7	2.5	**52.9029**	0.160	0.3	ug/L	6071	Standard
	Cr	53	26969.0	3.6	**50.4363**	2.217	4.4	ug/L	332	Standard
	Mn	55	216004.5	2.6	**51.5767**	0.989	1.9	ug/L	876	Standard
	Co	59	224674.6	1.9	**52.8733**	0.993	1.9	ug/L	110	Standard
	Ni	60	60255.6	2.2	**52.0279**	0.414	0.8	ug/L	191	Standard
	Cu	65	60112.8	3.6	**52.0102**	1.185	2.3	ug/L	281	Standard
	Zn	66	34842.4	2.3	**51.3147**	0.544	1.1	ug/L	249	Standard
>	Ge	72	263985.9	2.2				ug/L	297260	Standard
	As	75	38065.8	3.0	**50.6007**	0.620	1.2	ug/L	-66	Standard
	Se	82	3370.9	3.4	**49.0628**	0.745	1.5	ug/L	13	Standard
	Se-1	77	2191.2	2.4	**50.8641**	0.591	1.2	ug/L	48	Standard
>	Ga	71	18.3	41.7				mg/L	30	Standard
	Rb	85	566.7	6.2				ug/L	12	Standard
	Y	89	267057.6	2.9				ug/L	310514	Standard
>	Rh	103	13.3	57.3				ug/L	10	Standard
	Mo	98	160535.1	2.3	**105.6047**	1.426	1.4	ug/L	11	Standard
	Ag	107	254823.9	3.7	**52.8122**	0.870	1.6	ug/L	99	Standard
	Cd	111	80448.5	2.4	**50.9094**	0.238	0.5	mg/L	6	Standard
	Cd	114	196269.4	2.0	**50.1415**	0.463	0.9	ug/L	6	Standard
>	In	115	434209.8	2.8				ug/L	501593	Standard
	Sn	118	223808.0	2.1	**51.5175**	0.387	0.8	ug/L	442	Standard
	Sb	123	221330.9	1.9	**51.7608**	0.554	1.1	ug/L	53	Standard
	Ba	135	93804.9	2.0	**54.6368**	0.481	0.9	ug/L	34	Standard
	Ce	140	76.7	26.4				ug/L	73	Standard
>	Tb	159	822013.3	3.2				ug/L	924917	Standard
	Ho	165	13.3	43.3				ug/L	7	Standard
	Tl	203	368652.6	1.8	**51.6657**	0.697	1.3	ug/L	6	Standard
	Tl	205	243074.8	2.0	**50.8749**	1.126	2.2	ug/L	8	Standard
	Pb	206	261584.4	2.1	**52.5786**	0.506	1.0	ug/L	264	Standard
	Pb	207	237243.1	1.9	**52.6679**	0.487	0.9	ug/L	215	Standard
	Pb	208	800704.0	2.3	**50.5982**	0.394	0.8	ug/L	863	Standard
	U	238	257229.8	2.6	**48.5458**	0.148	0.3	ug/L	4	Standard
>	Bi	209	438778.3	2.8				ug/L	507917	Standard

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Na	23	1.7	173.2	**7.2364**	12.525	173.1	mg/L	0	Standard
Mg	24	2535.2	6.3	**4.3618**	0.067	1.5	mg/L	20	Standard
K	39	1600.1	2.0	**6.9536**	0.303	4.4	mg/L	38	Standard
Ca	43	78.3	20.5	**2.1073**	1.357	64.4	mg/L	43	Standard
Fe	54	3239.8	6.0	**4.6559**	0.302	6.5	mg/L	103	Standard
Fe	57	1035.0	4.7	**5.3012**	0.550	10.4	mg/L	107	Standard
> **Sc-1**	45	24853.7	5.2				mg/L	24625	Standard
Cl	35	26311.5	1.9				ug/L	30925	Standard
Kr	83	5.7	20.4				ug/L	4	Standard
Br	81	346.7	6.0				ug/L	397	Standard
P	31	16187.0	5.9				ug/L	19276	Standard
S	34	2726.9	2.7				ug/L	3042	Standard
Sr	88	115.0	15.7				ug/L	65	Standard
C	12	113.3	45.3				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	13.0	46.6				mg/L	23	Standard
Ho-1	165	13.3	43.3				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	13	Standard
I	127	1180.0	9.3				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	105.476		
Al	27	117.659		
Sc	45			
Ti	47	110.360		
V	51	106.117		
Cr	52	105.806		
Cr	53			
Mn	55	103.153		
Co	59	105.747		
Ni	60	104.056		
Cu	65	104.020		
Zn	66	102.629		
> Ge	72		88.806	
As	75	101.201		
Se	82	98.126		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	105.605		
Ag	107	105.624		
Cd	111	101.819		
Cd	114			
In	115		86.566	
Sn	118	103.035		
Sb	123	103.522		
Ba	135	109.274		
Ce	140			
Tb	159			
Ho	165			
Tl	203	103.331		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.196		
U	238	97.092		
Bi	209		86.388	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	
QC Std 6	Ti	47	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, November 20, 2015 17:04:50
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	38076.1	3.2				ug/L	49688	Standard
	Be	9	28.3	53.9	**0.0254**	0.023	92.3	ug/L	7	Standard
	Al	27	931.7	69.6	**0.0080**	0.012	146.8	ug/L	277	Standard
	Sc	45	25483.1	3.4				ug/L	24625	Standard
	Ti	47	38.3	19.9	**-0.5832**	0.038	6.5	ug/L	198	Standard
	V	51	913.9	3.4	**-0.0147**	0.006	43.3	ug/L	1126	Standard
	Cr	52	4815.8	3.6	**-0.1009**	0.013	12.8	ug/L	6071	Standard
	Cr	53	293.3	5.5	**0.0726**	0.041	57.0	ug/L	332	Standard
	Mn	55	797.4	5.0	**-0.0177**	0.010	55.7	ug/L	876	Standard
	Co	59	244.3	18.2	**0.0304**	0.009	30.2	ug/L	110	Standard
	Ni	60	200.0	3.0	**-0.0095**	0.001	10.9	ug/L	191	Standard
	Cu	65	257.0	11.4	**0.0022**	0.023	1065.4	ug/L	281	Standard
	Zn	66	200.7	7.6	**-0.0056**	0.025	435.9	ug/L	249	Standard
>	**Ge**	72	264503.3	2.9				ug/L	297260	Standard
	As	75	-9.9	244.2	**0.0388**	0.032	82.7	ug/L	-66	Standard
	Se	82	18.0	53.2	**0.0537**	0.143	265.8	ug/L	13	Standard
	Se-1	77	48.3	12.1	**0.1468**	0.174	118.4	ug/L	48	Standard
>	**Ga**	71	25.0	0.0				mg/L	30	Standard
	Rb	85	20.0	25.0				ug/L	12	Standard
	Y	89	255172.8	1.5				ug/L	310514	Standard
>	**Rh**	103	10.0	50.0				ug/L	10	Standard
	Mo	98	206.8	34.4	**0.1448**	0.048	33.5	ug/L	11	Standard
	Ag	107	147.0	34.8	**0.0121**	0.011	90.9	ug/L	99	Standard
	Cd	111	22.2	66.1	**0.0127**	0.010	75.6	mg/L	6	Standard
	Cd	114	47.1	97.1	**0.0105**	0.012	114.6	ug/L	6	Standard
>	**In**	115	422178.1	0.5				ug/L	501593	Standard
	Sn	118	605.0	4.4	**0.0500**	0.007	13.1	ug/L	442	Standard
	Sb	123	387.9	19.1	**0.0896**	0.018	19.7	ug/L	53	Standard
	Ba	135	41.7	48.7	**0.0016**	0.012	753.6	ug/L	34	Standard
	Ce	140	25.0	20.0				ug/L	73	Standard
>	**Tb**	159	805430.5	4.9				ug/L	924917	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	78.3	80.8	**0.0080**	0.009	108.5	ug/L	6	Standard
	Tl	205	61.7	75.3	**0.0090**	0.009	105.4	ug/L	8	Standard
	Pb	206	286.7	16.2	**0.0111**	0.008	74.2	ug/L	264	Standard
	Pb	207	241.3	24.9	**0.0131**	0.012	93.6	ug/L	215	Standard
	Pb	208	805.3	15.9	**0.0066**	0.007	106.3	ug/L	863	Standard
	U	238	45.7	55.6	**0.0109**	0.005	42.4	ug/L	4	Standard
>	**Bi**	209	434296.7	2.3				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	26.7	39.0	**0.0092**	0.018	193.4	mg/L	20	Standard
K	39	61.7	59.8	**0.0745**	0.155	207.6	mg/L	38	Standard
Ca	43	33.3	17.3	**-2.7123**	0.526	19.4	mg/L	43	Standard
Fe	54	94.5	29.6	**-0.0100**	0.037	373.0	mg/L	103	Standard
Fe	57	230.0	21.4	**0.7052**	0.247	35.0	mg/L	107	Standard
> **Sc-1**	45	25483.1	3.4				mg/L	24625	Standard
Cl	35	26775.6	0.2				ug/L	30925	Standard
Kr	83	4.7	53.9				ug/L	4	Standard
Br	81	306.7	18.0				ug/L	397	Standard
P	31	16322.1	2.3				ug/L	19276	Standard
S	34	2796.9	2.3				ug/L	3042	Standard
Sr	88	98.3	20.5				ug/L	65	Standard
C	12	146.7	14.2				mg/L	287	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	2.7	219.6				mg/L	23	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	1296.7	5.0				mg/L	3275	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		88.980	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 7
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		84.167
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		85.505
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Ti	47	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1511110807
Sample Date/Time: Friday, November 20, 2015 17:08:02
Number of Replicates: 3
Autosampler Position: 250
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	37922.5	5.7				ug/L	49688	Standard
	Be	9	15.0	0.0	**0.0042**	0.001	33.4	ug/L	7	Standard
	Al	27	266441.1	5.0	**5.1335**	0.172	3.3	ug/L	277	Standard
	Sc	45	25643.4	5.5				ug/L	24625	Standard
	Ti	47	109.7	3.5	**-0.1763**	0.018	10.0	ug/L	198	Standard
	V	51	10981.2	3.3	**2.2762**	0.023	1.0	ug/L	1126	Standard
	Cr	52	4631.7	1.7	**-0.1284**	0.038	29.5	ug/L	6071	Standard
	Cr	53	216.7	13.1	**-0.0675**	0.044	64.8	ug/L	332	Standard
	Mn	55	3180.0	5.0	**0.5627**	0.014	2.5	ug/L	876	Standard
	Co	59	252.3	6.3	**0.0334**	0.005	15.5	ug/L	110	Standard
	Ni	60	370.0	5.1	**0.1424**	0.022	15.1	ug/L	191	Standard
	Cu	65	256.7	0.4	**0.0053**	0.010	186.0	ug/L	281	Standard
	Zn	66	3186.7	0.2	**4.4795**	0.190	4.2	ug/L	249	Standard
>	**Ge**	72	260874.2	3.9				ug/L	297260	Standard
	As	75	191.3	5.0	**0.3085**	0.003	1.0	ug/L	-66	Standard
	Se	82	28.5	4.0	**0.2130**	0.030	13.9	ug/L	13	Standard
	Se-1	77	55.3	19.9	**0.3281**	0.264	80.5	ug/L	48	Standard
>	**Ga**	71	211.7	30.4				mg/L	30	Standard
	Rb	85	5169.2	4.2				ug/L	12	Standard
	Y	89	264676.1	2.7				ug/L	310514	Standard
>	**Rh**	103	13.3	108.3				ug/L	10	Standard
	Mo	98	73.6	6.1	**0.0544**	0.002	3.9	ug/L	11	Standard
	Ag	107	102.7	17.7	**0.0026**	0.004	162.9	ug/L	99	Standard
	Cd	111	6.5	8.9	**0.0025**	0.000	19.2	mg/L	6	Standard
	Cd	114	24.7	70.6	**0.0046**	0.005	100.1	ug/L	6	Standard
>	**In**	115	424154.6	2.5				ug/L	501593	Standard
	Sn	118	321.7	19.2	**-0.0174**	0.016	89.5	ug/L	442	Standard
	Sb	123	5935.2	1.0	**1.4174**	0.024	1.7	ug/L	53	Standard
	Ba	135	702.3	4.1	**0.3954**	0.009	2.4	ug/L	34	Standard
	Ce	140	30.0	57.7				ug/L	73	Standard
>	**Tb**	159	801354.3	3.9				ug/L	924917	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	143.7	4.5	**0.0173**	0.001	8.2	ug/L	6	Standard
	Tl	205	91.7	24.6	**0.0153**	0.004	27.2	ug/L	8	Standard
	Pb	206	291.7	2.6	**0.0119**	0.002	17.9	ug/L	264	Standard
	Pb	207	227.3	10.3	**0.0099**	0.004	40.2	ug/L	215	Standard
	Pb	208	825.0	3.2	**0.0078**	0.003	38.6	ug/L	863	Standard
	U	238	7.7	27.2	**0.0038**	0.000	11.5	ug/L	4	Standard
>	**Bi**	209	436243.6	3.0				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	260.0	9.6	**0.4032**	0.062	15.5	mg/L	20	Standard
K	39	230.0	15.7	**0.8051**	0.159	19.8	mg/L	38	Standard
Ca	43	71.7	17.6	**1.2022**	1.138	94.7	mg/L	43	Standard
Fe	54	66.0	24.4	**-0.0511**	0.023	45.2	mg/L	103	Standard
Fe	57	206.7	8.5	**0.5714**	0.038	6.6	mg/L	107	Standard
> **Sc-1**	45	25643.4	5.5				mg/L	24625	Standard
Cl	35	25440.7	1.5				ug/L	30925	Standard
Kr	83	4.0	66.1				ug/L	4	Standard
Br	81	376.7	6.7				ug/L	397	Standard
P	31	11978.1	3.4				ug/L	19276	Standard
S	34	2418.5	5.7				ug/L	3042	Standard
Sr	88	131.7	13.3				ug/L	65	Standard
C	12	413.3	14.6				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	16.3	92.9				mg/L	23	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	13	Standard
I	127	2395.2	3.1				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		76.321	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		87.760	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		84.562
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		85.889
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: November 23, 2015

Method 6020 - Summary Report

Sample ID: L1511110809
Sample Date/Time: Friday, November 20, 2015 17:11:14
Number of Replicates: 3
Autosampler Position: 251
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	38681.0	3.1				ug/L	49688	Standard
	Be	9	15.0	57.7	**0.0039**	0.014	367.4	ug/L	7	Standard
	Al	27	450781.6	5.0	**8.5273**	0.623	7.3	ug/L	277	Standard
	Sc	45	26222.7	1.4				ug/L	24625	Standard
	Ti	47	137.7	5.6	**-0.0219**	0.038	174.8	ug/L	198	Standard
	V	51	21423.7	3.0	**4.6276**	0.129	2.8	ug/L	1126	Standard
	Cr	52	5560.7	2.2	**0.0892**	0.020	22.4	ug/L	6071	Standard
	Cr	53	370.0	15.2	**0.2235**	0.111	49.8	ug/L	332	Standard
	Mn	55	25771.3	3.6	**6.0157**	0.187	3.1	ug/L	876	Standard
	Co	59	255.7	9.2	**0.0338**	0.006	17.3	ug/L	110	Standard
	Ni	60	605.3	1.7	**0.3461**	0.012	3.5	ug/L	191	Standard
	Cu	65	282.7	9.1	**0.0270**	0.024	89.4	ug/L	281	Standard
	Zn	66	1882.1	1.9	**2.5067**	0.038	1.5	ug/L	249	Standard
>	**Ge**	72	261999.3	0.9				ug/L	297260	Standard
	As	75	474.6	5.1	**0.6865**	0.027	3.9	ug/L	-66	Standard
	Se	82	26.9	22.0	**0.1861**	0.085	45.9	ug/L	13	Standard
	Se-1	77	53.7	15.2	**0.2813**	0.191	67.9	ug/L	48	Standard
>	**Ga**	71	55.0	39.6				mg/L	30	Standard
	Rb	85	8996.0	1.4				ug/L	12	Standard
	Y	89	266746.1	1.2				ug/L	310514	Standard
>	**Rh**	103	11.7	24.7				ug/L	10	Standard
	Mo	98	1412.1	3.7	**0.9392**	0.038	4.1	ug/L	11	Standard
	Ag	107	94.0	5.9	**0.0003**	0.001	344.4	ug/L	99	Standard
	Cd	111	16.6	44.2	**0.0088**	0.005	53.5	mg/L	6	Standard
	Cd	114	35.0	29.4	**0.0071**	0.003	36.1	ug/L	6	Standard
>	**In**	115	431659.1	0.7				ug/L	501593	Standard
	Sn	118	310.0	1.6	**-0.0216**	0.001	3.6	ug/L	442	Standard
	Sb	123	3745.3	1.9	**0.8773**	0.022	2.5	ug/L	53	Standard
	Ba	135	3504.7	3.8	**2.0309**	0.090	4.4	ug/L	34	Standard
	Ce	140	10.0	86.6				ug/L	73	Standard
>	**Tb**	159	816918.9	0.8				ug/L	924917	Standard
	Ho	165	10.0	100.0				ug/L	7	Standard
	Tl	203	170.0	2.7	**0.0206**	0.001	4.3	ug/L	6	Standard
	Tl	205	133.3	39.7	**0.0235**	0.010	44.4	ug/L	8	Standard
	Pb	206	288.0	2.4	**0.0101**	0.000	4.7	ug/L	264	Standard
	Pb	207	241.3	1.3	**0.0121**	0.001	9.9	ug/L	215	Standard
	Pb	208	856.7	1.9	**0.0088**	0.000	4.7	ug/L	863	Standard
	U	238	3.7	68.6	**0.0030**	0.000	15.5	ug/L	4	Standard
>	**Bi**	209	444068.0	1.7				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	351.7	5.4	**0.5421**	0.023	4.3	mg/L	20	Standard
K	39	341.7	25.7	**1.2563**	0.388	30.9	mg/L	38	Standard
Ca	43	41.7	36.7	**-1.9806**	1.485	75.0	mg/L	43	Standard
Fe	54	61.1	24.9	**-0.0602**	0.021	35.4	mg/L	103	Standard
Fe	57	178.3	8.6	**0.3961**	0.081	20.5	mg/L	107	Standard
Sc-1	45	26222.7	1.4				mg/L	24625	Standard
Cl	35	26743.6	1.4				ug/L	30925	Standard
Kr	83	3.3	45.8				ug/L	4	Standard
Br	81	543.3	10.8				ug/L	397	Standard
P	31	12945.5	1.6				ug/L	19276	Standard
S	34	2580.2	3.2				ug/L	3042	Standard
Sr	88	118.3	33.9				ug/L	65	Standard
C	12	323.3	11.7				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	24.7				mg/L	3	Standard
Dy	164	9.7	2.9				mg/L	23	Standard
Ho-1	165	10.0	100.0				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	4298.9	3.6				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		77.848	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		88.138	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		86.058
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.429
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1511110811
Sample Date/Time: Friday, November 20, 2015 17:14:24
Number of Replicates: 3
Autosampler Position: 252
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	38376.9	2.7				ug/L	49688	Standard
	Be	9	18.3	87.7	**0.0089**	0.026	289.9	ug/L	7	Standard
	Al	27	761830.6	0.9	**14.5225**	0.511	3.5	ug/L	277	Standard
	Sc	45	25448.0	4.1				ug/L	24625	Standard
	Ti	47	120.7	2.7	**-0.1049**	0.038	35.8	ug/L	198	Standard
	V	51	10508.9	2.4	**2.1998**	0.047	2.1	ug/L	1126	Standard
	Cr	52	5473.7	3.0	**0.0911**	0.009	10.4	ug/L	6071	Standard
	Cr	53	310.0	11.3	**0.1189**	0.060	50.7	ug/L	332	Standard
	Mn	55	8540.7	3.1	**1.8901**	0.013	0.7	ug/L	876	Standard
	Co	59	376.0	10.5	**0.0638**	0.007	11.4	ug/L	110	Standard
	Ni	60	574.0	1.1	**0.3277**	0.018	5.5	ug/L	191	Standard
	Cu	65	285.7	7.8	**0.0335**	0.011	31.9	ug/L	281	Standard
	Zn	66	1441.7	5.6	**1.8860**	0.079	4.2	ug/L	249	Standard
>	**Ge**	72	257589.8	3.7				ug/L	297260	Standard
	As	75	237.2	5.6	**0.3742**	0.006	1.7	ug/L	-66	Standard
	Se	82	51.9	4.8	**0.5681**	0.022	3.8	ug/L	13	Standard
	Se-1	77	61.7	7.7	**0.4979**	0.105	21.2	ug/L	48	Standard
>	**Ga**	71	223.3	14.9				mg/L	30	Standard
	Rb	85	6196.3	2.0				ug/L	12	Standard
	Y	89	259404.8	4.6				ug/L	310514	Standard
>	**Rh**	103	11.7	24.7				ug/L	10	Standard
	Mo	98	3188.3	3.9	**2.1736**	0.035	1.6	ug/L	11	Standard
	Ag	107	91.7	8.2	**0.0004**	0.001	281.7	ug/L	99	Standard
	Cd	111	6.7	59.8	**0.0026**	0.003	100.6	mg/L	6	Standard
	Cd	114	45.9	23.6	**0.0103**	0.003	27.5	ug/L	6	Standard
>	**In**	115	419825.4	3.4				ug/L	501593	Standard
	Sn	118	338.3	10.7	**-0.0129**	0.008	58.8	ug/L	442	Standard
	Sb	123	1483.4	0.2	**0.3553**	0.013	3.6	ug/L	53	Standard
	Ba	135	7396.8	1.4	**4.4376**	0.185	4.2	ug/L	34	Standard
	Ce	140	31.7	39.7				ug/L	73	Standard
>	**Tb**	159	800680.9	2.2				ug/L	924917	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	141.3	13.7	**0.0172**	0.003	17.6	ug/L	6	Standard
	Tl	205	123.3	15.3	**0.0224**	0.004	16.9	ug/L	8	Standard
	Pb	206	271.7	8.1	**0.0086**	0.003	38.8	ug/L	264	Standard
	Pb	207	245.7	6.4	**0.0148**	0.004	27.0	ug/L	215	Standard
	Pb	208	811.7	9.2	**0.0075**	0.004	47.2	ug/L	863	Standard
	U	238	33.0	26.2	**0.0086**	0.002	17.6	ug/L	4	Standard
>	**Bi**	209	430572.4	2.7				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	178.3	11.7	**0.2671**	0.044	16.5	mg/L	20	Standard
K	39	226.7	8.9	**0.7978**	0.095	11.9	mg/L	38	Standard
Ca	43	75.0	11.5	**1.6344**	1.123	68.7	mg/L	43	Standard
Fe	54	57.8	36.5	**-0.0617**	0.033	54.0	mg/L	103	Standard
Fe	57	186.7	12.7	**0.4739**	0.153	32.2	mg/L	107	Standard
> **Sc-1**	45	25448.0	4.1				mg/L	24625	Standard
Cl	35	25719.2	2.5				ug/L	30925	Standard
Kr	83	4.0	66.1				ug/L	4	Standard
Br	81	420.0	14.9				ug/L	397	Standard
P	31	11913.0	4.7				ug/L	19276	Standard
S	34	2343.5	4.5				ug/L	3042	Standard
Sr	88	111.7	14.4				ug/L	65	Standard
C	12	396.7	12.7				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	103.3	45.7				mg/L	3	Standard
Dy	164	3.2	186.4				mg/L	23	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	2896.9	5.8				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		77.235	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		86.655	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		83.698
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		84.772
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: November 23, 2015

Method 6020 - Summary Report

Sample ID: L1511110813
Sample Date/Time: Friday, November 20, 2015 17:17:36
Number of Replicates: 3
Autosampler Position: 253
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	37265.8	1.5				ug/L	49688	Standard
	Be	9	6.7	114.6	**-0.0094**	0.013	133.8	ug/L	7	Standard
	Al	27	891585.4	0.8	**17.4947**	0.128	0.7	ug/L	277	Standard
	Sc	45	24309.5	0.6				ug/L	24625	Standard
	Ti	47	103.7	9.5	**-0.2047**	0.049	23.7	ug/L	198	Standard
	V	51	10938.6	3.4	**2.2919**	0.055	2.4	ug/L	1126	Standard
	Cr	52	5466.7	2.4	**0.0864**	0.034	39.0	ug/L	6071	Standard
	Cr	53	358.3	7.2	**0.2115**	0.059	27.7	ug/L	332	Standard
	Mn	55	10937.9	2.4	**2.4727**	0.040	1.6	ug/L	876	Standard
	Co	59	361.3	8.4	**0.0601**	0.006	10.7	ug/L	110	Standard
	Ni	60	466.7	2.2	**0.2311**	0.011	4.6	ug/L	191	Standard
	Cu	65	274.7	11.0	**0.0236**	0.029	124.1	ug/L	281	Standard
	Zn	66	1354.7	5.4	**1.7490**	0.082	4.7	ug/L	249	Standard
>	**Ge**	72	258154.3	1.4				ug/L	297260	Standard
	As	75	156.5	21.1	**0.2640**	0.044	16.7	ug/L	-66	Standard
	Se	82	42.9	3.8	**0.4316**	0.027	6.2	ug/L	13	Standard
	Se-1	77	70.7	6.7	**0.7122**	0.113	15.9	ug/L	48	Standard
>	**Ga**	71	208.3	14.5				mg/L	30	Standard
	Rb	85	14942.4	3.1				ug/L	12	Standard
	Y	89	261738.8	2.3				ug/L	310514	Standard
>	**Rh**	103	13.3	78.1				ug/L	10	Standard
	Mo	98	1574.6	1.9	**1.0638**	0.027	2.5	ug/L	11	Standard
	Ag	107	90.7	11.2	**-0.0000**	0.002	5072.2	ug/L	99	Standard
	Cd	111	7.4	54.8	**0.0030**	0.003	86.5	mg/L	6	Standard
	Cd	114	41.3	31.6	**0.0089**	0.003	38.5	ug/L	6	Standard
>	**In**	115	424710.2	0.8				ug/L	501593	Standard
	Sn	118	1628.4	4.5	**0.2903**	0.015	5.1	ug/L	442	Standard
	Sb	123	3123.9	1.4	**0.7431**	0.012	1.7	ug/L	53	Standard
	Ba	135	5888.1	0.9	**3.4840**	0.048	1.4	ug/L	34	Standard
	Ce	140	15.0	0.0				ug/L	73	Standard
>	**Tb**	159	799849.2	1.6				ug/L	924917	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	254.3	7.1	**0.0332**	0.003	8.0	ug/L	6	Standard
	Tl	205	173.3	14.8	**0.0329**	0.006	16.9	ug/L	8	Standard
	Pb	206	259.3	4.5	**0.0059**	0.002	41.5	ug/L	264	Standard
	Pb	207	229.0	5.0	**0.0108**	0.002	19.6	ug/L	215	Standard
	Pb	208	811.0	4.1	**0.0074**	0.003	35.4	ug/L	863	Standard
	U	238	11.3	28.4	**0.0045**	0.001	13.3	ug/L	4	Standard
>	**Bi**	209	432091.3	1.0				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	191.7	14.4	**0.3039**	0.048	15.7	mg/L	20	Standard
K	39	273.3	11.0	**1.0554**	0.134	12.7	mg/L	38	Standard
Ca	43	65.0	13.3	**0.8906**	0.946	106.2	mg/L	43	Standard
Fe	54	52.7	21.8	**-0.0663**	0.017	25.6	mg/L	103	Standard
Fe	57	228.3	11.2	**0.7599**	0.152	20.0	mg/L	107	Standard
Sc-1	45	24309.5	0.6				mg/L	24625	Standard
Cl	35	25127.5	0.6				ug/L	30925	Standard
Kr	83	2.7	78.1				ug/L	4	Standard
Br	81	363.3	10.4				ug/L	397	Standard
P	31	11237.5	2.0				ug/L	19276	Standard
S	34	2320.2	6.9				ug/L	3042	Standard
Sr	88	121.7	28.0				ug/L	65	Standard
C	12	476.7	14.0				mg/L	287	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	40.0	86.6				mg/L	3	Standard
Dy	164	2.7	219.6				mg/L	23	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	3207.0	1.7				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		74.999	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		86.845	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		84.672
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		85.071
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1511110815
Sample Date/Time: Friday, November 20, 2015 17:20:47
Number of Replicates: 3
Autosampler Position: 254
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	38131.3	5.0				ug/L	49688	Standard
	Be	9	8.3	91.7	**-0.0065**	0.013	193.6	ug/L	7	Standard
	Al	27	698638.5	4.8	**13.3960**	0.159	1.2	ug/L	277	Standard
	Sc	45	25541.5	1.6				ug/L	24625	Standard
	Ti	47	120.0	4.4	**-0.1087**	0.042	39.0	ug/L	198	Standard
	V	51	16709.5	3.8	**3.6273**	0.088	2.4	ug/L	1126	Standard
	Cr	52	6744.5	3.9	**0.4020**	0.015	3.8	ug/L	6071	Standard
	Cr	53	438.3	17.8	**0.3656**	0.131	35.9	ug/L	332	Standard
	Mn	55	3966.5	4.2	**0.7664**	0.034	4.4	ug/L	876	Standard
	Co	59	308.3	19.5	**0.0479**	0.017	35.7	ug/L	110	Standard
	Ni	60	424.0	4.9	**0.1942**	0.016	8.1	ug/L	191	Standard
	Cu	65	277.3	1.3	**0.0266**	0.009	35.5	ug/L	281	Standard
	Zn	66	1378.7	3.6	**1.7911**	0.005	0.3	ug/L	249	Standard
>	**Ge**	72	257523.1	3.5				ug/L	297260	Standard
	As	75	290.4	4.2	**0.4476**	0.031	6.9	ug/L	-66	Standard
	Se	82	32.5	6.2	**0.2792**	0.047	16.9	ug/L	13	Standard
	Se-1	77	59.3	16.9	**0.4368**	0.196	45.0	ug/L	48	Standard
>	**Ga**	71	373.3	4.1				mg/L	30	Standard
	Rb	85	7902.1	4.7				ug/L	12	Standard
	Y	89	256941.4	2.7				ug/L	310514	Standard
>	**Rh**	103	15.0	66.7				ug/L	10	Standard
	Mo	98	2020.6	3.5	**1.3754**	0.030	2.2	ug/L	11	Standard
	Ag	107	104.0	24.2	**0.0030**	0.006	187.3	ug/L	99	Standard
	Cd	111	11.7	23.5	**0.0059**	0.002	34.0	mg/L	6	Standard
	Cd	114	39.6	72.4	**0.0084**	0.007	84.7	ug/L	6	Standard
>	**In**	115	421081.8	3.2				ug/L	501593	Standard
	Sn	118	325.0	14.7	**-0.0163**	0.011	68.1	ug/L	442	Standard
	Sb	123	3761.4	2.0	**0.9037**	0.025	2.8	ug/L	53	Standard
	Ba	135	1622.4	1.8	**0.9516**	0.016	1.7	ug/L	34	Standard
	Ce	140	28.3	56.7				ug/L	73	Standard
>	**Tb**	159	804966.9	2.6				ug/L	924917	Standard
	Ho	165	16.7	69.3				ug/L	7	Standard
	Tl	203	153.3	24.5	**0.0190**	0.006	29.5	ug/L	6	Standard
	Tl	205	106.7	22.2	**0.0190**	0.006	29.6	ug/L	8	Standard
	Pb	206	292.0	8.7	**0.0128**	0.004	34.8	ug/L	264	Standard
	Pb	207	243.3	8.3	**0.0143**	0.006	38.5	ug/L	215	Standard
	Pb	208	891.7	13.2	**0.0130**	0.010	73.9	ug/L	863	Standard
	U	238	28.7	75.0	**0.0079**	0.004	54.7	ug/L	4	Standard
>	**Bi**	209	430347.4	3.6				ug/L	507917	Standard

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Na	23	3.3	173.2	**13.0249**	22.551	173.1	mg/L	0	Standard
Mg	24	418.3	8.4	**0.6706**	0.063	9.4	mg/L	20	Standard
K	39	230.0	23.0	**0.8054**	0.213	26.4	mg/L	38	Standard
Ca	43	81.7	24.7	**2.2700**	2.107	92.8	mg/L	43	Standard
Fe	54	84.7	23.9	**-0.0237**	0.031	130.0	mg/L	103	Standard
Fe	57	168.3	19.3	**0.3664**	0.178	48.6	mg/L	107	Standard
> **Sc-1**	45	25541.5	1.6				mg/L	24625	Standard
Cl	35	25152.9	1.9				ug/L	30925	Standard
Kr	83	3.0	57.7				ug/L	4	Standard
Br	81	440.0	21.7				ug/L	397	Standard
P	31	12506.8	3.5				ug/L	19276	Standard
S	34	2336.8	4.7				ug/L	3042	Standard
Sr	88	110.0					ug/L	65	Standard
C	12	666.7	14.4				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	0.0				mg/L	3	Standard
Dy	164	28.6	94.6				mg/L	23	Standard
Ho-1	165	16.7	69.3				mg/L	7	Standard
Er	166	30.0	57.7				mg/L	13	Standard
I	127	4217.3	5.4				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		76.741	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		86.632	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		83.949
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		84.728
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1511110817
Sample Date/Time: Friday, November 20, 2015 17:23:58
Number of Replicates: 3
Autosampler Position: 255
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	38684.3	1.6				ug/L	49688	Standard
	Be	9	10.0	50.0	**-0.0045**	0.008	176.2	ug/L	7	Standard
	Al	27	347307.2	3.7	**6.5582**	0.202	3.1	ug/L	277	Standard
	Sc	45	25212.6	3.5				ug/L	24625	Standard
	Ti	47	109.3	3.8	**-0.1833**	0.030	16.4	ug/L	198	Standard
	V	51	11982.2	2.0	**2.4810**	0.033	1.3	ug/L	1126	Standard
	Cr	52	4939.1	2.0	**-0.0646**	0.030	46.6	ug/L	6071	Standard
	Cr	53	275.0	6.3	**0.0402**	0.027	67.6	ug/L	332	Standard
	Mn	55	7655.9	1.1	**1.6336**	0.007	0.4	ug/L	876	Standard
	Co	59	293.7	5.8	**0.0426**	0.005	10.6	ug/L	110	Standard
	Ni	60	671.3	3.6	**0.4014**	0.020	4.9	ug/L	191	Standard
	Cu	65	333.3	7.1	**0.0701**	0.021	29.3	ug/L	281	Standard
	Zn	66	1365.4	2.2	**1.7282**	0.068	3.9	ug/L	249	Standard
>	**Ge**	72	263014.7	1.2				ug/L	297260	Standard
	As	75	228.2	30.7	**0.3555**	0.092	25.8	ug/L	-66	Standard
	Se	82	46.1	23.4	**0.4653**	0.152	32.6	ug/L	13	Standard
	Se-1	77	75.7	7.7	**0.8000**	0.151	18.9	ug/L	48	Standard
>	**Ga**	71	350.0	7.6				mg/L	30	Standard
	Rb	85	6506.4	3.9				ug/L	12	Standard
	Y	89	267116.0	1.4				ug/L	310514	Standard
>	**Rh**	103	10.0					ug/L	10	Standard
	Mo	98	1431.2	1.2	**0.9390**	0.012	1.2	ug/L	11	Standard
	Ag	107	92.0	8.2	**-0.0003**	0.002	482.8	ug/L	99	Standard
	Cd	111	5.3	29.2	**0.0015**	0.001	63.7	mg/L	6	Standard
	Cd	114	29.2	11.9	**0.0055**	0.001	16.0	ug/L	6	Standard
>	**In**	115	437558.9	0.4				ug/L	501593	Standard
	Sn	118	341.7	11.9	**-0.0154**	0.009	58.9	ug/L	442	Standard
	Sb	123	3138.7	0.6	**0.7246**	0.007	0.9	ug/L	53	Standard
	Ba	135	3928.5	3.2	**2.2477**	0.063	2.8	ug/L	34	Standard
	Ce	140	23.3	32.7				ug/L	73	Standard
>	**Tb**	159	833910.4	1.1				ug/L	924917	Standard
	Ho	165	11.7	89.2				ug/L	7	Standard
	Tl	203	72.3	9.7	**0.0071**	0.001	14.5	ug/L	6	Standard
	Tl	205	41.7	50.0	**0.0048**	0.004	91.3	ug/L	8	Standard
	Pb	206	265.3	10.8	**0.0059**	0.006	102.8	ug/L	264	Standard
	Pb	207	227.7	2.1	**0.0094**	0.001	7.8	ug/L	215	Standard
	Pb	208	815.0	3.2	**0.0065**	0.002	30.8	ug/L	863	Standard
	U	238	4.0	66.1	**0.0030**	0.000	16.4	ug/L	4	Standard
>	**Bi**	209	441805.3	0.7				ug/L	507917	Standard

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Na	23	1.7	173.2	**6.9942**	12.106	173.1	mg/L	0	Standard
Mg	24	441.7	6.9	**0.7201**	0.058	8.0	mg/L	20	Standard
K	39	246.7	10.2	**0.8965**	0.141	15.7	mg/L	38	Standard
Ca	43	40.0	37.5	**-1.9421**	1.705	87.8	mg/L	43	Standard
Fe	54	72.9	14.4	**-0.0397**	0.014	34.3	mg/L	103	Standard
Fe	57	163.3	6.4	**0.3528**	0.089	25.3	mg/L	107	Standard
Sc-1	45	25212.6	3.5				mg/L	24625	Standard
Cl	35	26610.7	1.0				ug/L	30925	Standard
Kr	83	5.7	40.8				ug/L	4	Standard
Br	81	423.3	4.9				ug/L	397	Standard
P	31	12295.0	4.1				ug/L	19276	Standard
S	34	2336.8	1.1				ug/L	3042	Standard
Sr	88	98.3	17.9				ug/L	65	Standard
C	12	403.3	11.7				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	3	Standard
Dy	164	15.7	92.3				mg/L	23	Standard
Ho-1	165	11.7	89.2				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	13	Standard
I	127	2485.2	7.7				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		77.854	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		88.480	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		87.234
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		86.984
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1511110819
Sample Date/Time: Friday, November 20, 2015 17:27:09
Number of Replicates: 3
Autosampler Position: 256
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	38945.0	3.0				ug/L	49688	Standard
	Be	9	10.0	50.0	**-0.0043**	0.008	195.6	ug/L	7	Standard
	Al	27	70830.2	2.4	**1.3210**	0.008	0.6	ug/L	277	Standard
	Sc	45	26514.9	2.7				ug/L	24625	Standard
	Ti	47	123.3	4.5	**-0.1120**	0.042	37.4	ug/L	198	Standard
	V	51	2000.0	2.4	**0.2266**	0.018	8.0	ug/L	1126	Standard
	Cr	52	4705.7	0.7	**-0.1324**	0.030	22.6	ug/L	6071	Standard
	Cr	53	243.3	10.5	**-0.0252**	0.038	152.1	ug/L	332	Standard
	Mn	55	3407.7	3.4	**0.6025**	0.013	2.2	ug/L	876	Standard
	Co	59	238.7	3.6	**0.0290**	0.002	8.5	ug/L	110	Standard
	Ni	60	407.7	5.9	**0.1681**	0.014	8.5	ug/L	191	Standard
	Cu	65	246.7	11.9	**-0.0081**	0.021	256.5	ug/L	281	Standard
	Zn	66	1685.8	3.9	**2.1765**	0.055	2.5	ug/L	249	Standard
>	**Ge**	72	265894.4	2.4				ug/L	297260	Standard
	As	75	43.6	23.7	**0.1091**	0.014	13.0	ug/L	-66	Standard
	Se	82	39.8	9.5	**0.3688**	0.068	18.3	ug/L	13	Standard
	Se-1	77	69.7	8.4	**0.6388**	0.131	20.5	ug/L	48	Standard
>	**Ga**	71	115.0	17.4				mg/L	30	Standard
	Rb	85	5484.3	2.7				ug/L	12	Standard
	Y	89	271284.2	3.7				ug/L	310514	Standard
>	**Rh**	103	10.0	50.0				ug/L	10	Standard
	Mo	98	38.2	19.5	**0.0301**	0.005	15.2	ug/L	11	Standard
	Ag	107	95.3	17.4	**0.0005**	0.003	569.2	ug/L	99	Standard
	Cd	111	10.2	57.0	**0.0047**	0.004	75.9	mg/L	6	Standard
	Cd	114	30.0	124.1	**0.0057**	0.009	162.8	ug/L	6	Standard
>	**In**	115	432359.5	1.8				ug/L	501593	Standard
	Sn	118	311.7	19.4	**-0.0213**	0.014	67.9	ug/L	442	Standard
	Sb	123	3830.1	3.4	**0.8958**	0.029	3.2	ug/L	53	Standard
	Ba	135	903.4	4.5	**0.5053**	0.026	5.1	ug/L	34	Standard
	Ce	140	20.0	25.0				ug/L	73	Standard
>	**Tb**	159	813385.6	0.4				ug/L	924917	Standard
	Ho	165	18.3	83.3				ug/L	7	Standard
	Tl	203	68.3	23.7	**0.0064**	0.002	33.2	ug/L	6	Standard
	Tl	205	36.7	28.4	**0.0036**	0.002	58.3	ug/L	8	Standard
	Pb	206	322.7	8.2	**0.0166**	0.005	28.0	ug/L	264	Standard
	Pb	207	254.3	10.9	**0.0146**	0.006	39.6	ug/L	215	Standard
	Pb	208	870.0	5.4	**0.0093**	0.002	26.6	ug/L	863	Standard
	U	238	8.0	76.0	**0.0038**	0.001	29.4	ug/L	4	Standard
>	**Bi**	209	446814.2	0.9				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	520.0	11.7	**0.8085**	0.075	9.2	mg/L	20	Standard
K	39	273.3	13.7	**0.9524**	0.161	16.9	mg/L	38	Standard
Ca	43	45.0	69.4	**-1.7331**	2.946	170.0	mg/L	43	Standard
Fe	54	56.1	50.2	**-0.0684**	0.039	57.2	mg/L	103	Standard
Fe	57	170.0	7.8	**0.3415**	0.068	19.8	mg/L	107	Standard
> **Sc-1**	45	26514.9	2.7				mg/L	24625	Standard
Cl	35	26930.6	0.3				ug/L	30925	Standard
Kr	83	4.3	13.3				ug/L	4	Standard
Br	81	446.7	18.8				ug/L	397	Standard
P	31	13427.6	4.0				ug/L	19276	Standard
S	34	2488.5	6.0				ug/L	3042	Standard
Sr	88	95.0	10.5				ug/L	65	Standard
C	12	330.0	15.7				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	19.5	51.2				mg/L	23	Standard
Ho-1	165	18.3	83.3				mg/L	7	Standard
Er	166	10.0					mg/L	13	Standard
I	127	2585.2	5.8				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		78.379	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		89.448	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		86.197
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.970
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: November 23, 2015

Method 6020 - Summary Report

Sample ID: L1511110821
Sample Date/Time: Friday, November 20, 2015 17:30:20
Number of Replicates: 3
Autosampler Position: 257
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	38930.0	2.1				ug/L	49688	Standard
	Be	9	10.0	86.6	**-0.0045**	0.014	307.3	ug/L	7	Standard
	Al	27	213371.9	4.1	**3.9991**	0.088	2.2	ug/L	277	Standard
	Sc	45	25514.8	4.9				ug/L	24625	Standard
	Ti	47	177.7	7.4	**0.1995**	0.075	37.6	ug/L	198	Standard
	V	51	20607.4	1.6	**4.4248**	0.036	0.8	ug/L	1126	Standard
	Cr	52	4671.4	3.6	**-0.1290**	0.032	25.1	ug/L	6071	Standard
	Cr	53	256.7	8.8	**0.0054**	0.039	713.3	ug/L	332	Standard
	Mn	55	12482.1	1.8	**2.7949**	0.056	2.0	ug/L	876	Standard
	Co	59	349.7	7.9	**0.0558**	0.006	11.1	ug/L	110	Standard
	Ni	60	795.0	0.9	**0.5090**	0.008	1.6	ug/L	191	Standard
	Cu	65	217.3	15.5	**-0.0311**	0.029	92.6	ug/L	281	Standard
	Zn	66	2059.8	3.1	**2.7598**	0.072	2.6	ug/L	249	Standard
>	**Ge**	72	263016.7	0.9				ug/L	297260	Standard
	As	75	746.7	2.2	**1.0469**	0.027	2.6	ug/L	-66	Standard
	Se	82	31.5	15.3	**0.2528**	0.073	29.1	ug/L	13	Standard
	Se-1	77	59.0	1.7	**0.4036**	0.036	8.9	ug/L	48	Standard
>	**Ga**	71	35.0	0.0				mg/L	30	Standard
	Rb	85	8619.1	5.1				ug/L	12	Standard
	Y	89	263618.6	0.8				ug/L	310514	Standard
>	**Rh**	103	15.0	33.3				ug/L	10	Standard
	Mo	98	142.0	6.3	**0.0988**	0.006	6.3	ug/L	11	Standard
	Ag	107	77.0	18.3	**-0.0032**	0.003	86.2	ug/L	99	Standard
	Cd	111	21.3	21.6	**0.0118**	0.003	25.5	mg/L	6	Standard
	Cd	114	65.5	34.9	**0.0149**	0.006	38.7	ug/L	6	Standard
>	**In**	115	431687.5	1.0				ug/L	501593	Standard
	Sn	118	355.0	11.0	**-0.0112**	0.009	84.5	ug/L	442	Standard
	Sb	123	2613.8	3.0	**0.6111**	0.019	3.1	ug/L	53	Standard
	Ba	135	3552.4	2.5	**2.0586**	0.059	2.9	ug/L	34	Standard
	Ce	140	26.7	47.2				ug/L	73	Standard
>	**Tb**	159	820189.6	1.6				ug/L	924917	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	89.3	7.9	**0.0095**	0.001	11.4	ug/L	6	Standard
	Tl	205	60.0	33.3	**0.0086**	0.004	47.0	ug/L	8	Standard
	Pb	206	301.3	7.2	**0.0133**	0.005	38.3	ug/L	264	Standard
	Pb	207	265.7	3.7	**0.0179**	0.002	10.9	ug/L	215	Standard
	Pb	208	922.3	1.7	**0.0134**	0.001	7.7	ug/L	863	Standard
	U	238	3.0	88.2	**0.0029**	0.001	17.5	ug/L	4	Standard
>	**Bi**	209	440434.4	1.6				ug/L	507917	Standard

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Na	23	3.3	86.6	**13.1345**	11.403	86.8	mg/L	0	Standard
Mg	24	496.7	16.3	**0.8005**	0.094	11.7	mg/L	20	Standard
K	39	231.7	9.7	**0.8199**	0.138	16.8	mg/L	38	Standard
Ca	43	58.3	55.1	**-0.2249**	2.953	1313.2	mg/L	43	Standard
Fe	54	76.1	27.6	**-0.0354**	0.034	95.7	mg/L	103	Standard
Fe	57	181.7	20.7	**0.4453**	0.233	52.3	mg/L	107	Standard
> **Sc-1**	45	25514.8	4.9				mg/L	24625	Standard
Cl	35	27131.6	2.1				ug/L	30925	Standard
Kr	83	4.0	25.0				ug/L	4	Standard
Br	81	783.4	14.0				ug/L	397	Standard
P	31	12413.4	4.5				ug/L	19276	Standard
S	34	2436.9	4.0				ug/L	3042	Standard
Sr	88	106.7	2.7				ug/L	65	Standard
C	12	326.7	16.9				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	16.3	92.9				mg/L	23	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	13	Standard
I	127	4233.9	1.1				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		78.349	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		88.480	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		86.063
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		86.714
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: November 23, 2015

Method 6020 - Summary Report

Sample ID: L1511110823
Sample Date/Time: Friday, November 20, 2015 17:33:31
Number of Replicates: 3
Autosampler Position: 258
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	40368.7	3.0				ug/L	49688	Standard
	Be	9	178.3	39.3	**0.2561**	0.114	44.6	ug/L	7	Standard
	Al	27	506585.6	8.9	**9.1842**	0.987	10.7	ug/L	277	Standard
	Sc	45	28620.3	1.9				ug/L	24625	Standard
	Ti	47	32429.8	7.4	**185.9545**	15.442	8.3	ug/L	198	Standard
	V	51	92823.8	9.8	**21.2848**	2.325	10.9	ug/L	1126	Standard
	Cr	52	592502.0	11.2	**144.6175**	17.652	12.2	ug/L	6071	Standard
	Cr	53	74128.7	9.7	**143.8605**	15.483	10.8	ug/L	332	Standard
	Mn	55	77319.5	11.5	**18.9161**	2.380	12.6	ug/L	876	Standard
	Co	59	2888.6	8.0	**0.6746**	0.063	9.4	ug/L	110	Standard
	Ni	60	15602.8	12.0	**13.7659**	1.807	13.1	ug/L	191	Standard
	Cu	65	3502.4	10.6	**2.9192**	0.362	12.4	ug/L	281	Standard
	Zn	66	40080.8	11.8	**60.9586**	7.771	12.7	ug/L	249	Standard
>	**Ge**	72	256070.3	1.2				ug/L	297260	Standard
	As	75	519.7	21.1	**0.7637**	0.155	20.3	ug/L	-66	Standard
	Se	82	40.8	32.4	**0.4071**	0.205	50.3	ug/L	13	Standard
	Se-1	77	60.3	9.1	**0.4751**	0.150	31.7	ug/L	48	Standard
>	**Ga**	71	5309.3	10.9				mg/L	30	Standard
	Rb	85	84572.1	10.5				ug/L	12	Standard
	Y	89	293129.0	4.7				ug/L	310514	Standard
>	**Rh**	103	15.0	120.2				ug/L	10	Standard
	Mo	98	852.1	11.3	**0.5647**	0.062	11.0	ug/L	11	Standard
	Ag	107	341.0	11.4	**0.0514**	0.008	16.0	ug/L	99	Standard
	Cd	111	199.1	7.5	**0.1241**	0.010	7.8	mg/L	6	Standard
	Cd	114	435.5	15.9	**0.1093**	0.018	16.4	ug/L	6	Standard
>	**In**	115	434638.3	0.3				ug/L	501593	Standard
	Sn	118	1660.1	11.8	**0.2888**	0.044	15.4	ug/L	442	Standard
	Sb	123	3241.8	2.8	**0.7536**	0.019	2.6	ug/L	53	Standard
	Ba	135	26638.2	9.9	**15.4789**	1.498	9.7	ug/L	34	Standard
	Ce	140	87434.4	16.4				ug/L	73	Standard
>	**Tb**	159	818737.7	1.2				ug/L	924917	Standard
	Ho	165	2275.2	1.7				ug/L	7	Standard
	Tl	203	702.3	10.2	**0.0957**	0.009	9.7	ug/L	6	Standard
	Tl	205	516.7	17.5	**0.1046**	0.019	18.3	ug/L	8	Standard
	Pb	206	4439.0	6.5	**0.8484**	0.058	6.9	ug/L	264	Standard
	Pb	207	3350.4	8.5	**0.7056**	0.064	9.0	ug/L	215	Standard
	Pb	208	12171.9	7.2	**0.7273**	0.056	7.7	ug/L	863	Standard
	U	238	3115.7	6.5	**0.5920**	0.040	6.8	ug/L	4	Standard
>	**Bi**	209	437513.9	0.8				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	486.7	15.5	**0.6965**	0.105	15.1	mg/L	20	Standard
K	39	568.3	12.8	**2.0074**	0.243	12.1	mg/L	38	Standard
Ca	43	35.0	49.5	**-2.9102**	1.672	57.4	mg/L	43	Standard
Fe	54	1557.2	11.9	**1.8596**	0.277	14.9	mg/L	103	Standard
Fe	57	523.3	13.7	**2.0100**	0.382	19.0	mg/L	107	Standard
> **Sc-1**	45	28620.3	1.9				mg/L	24625	Standard
Cl	35	24563.2	2.9				ug/L	30925	Standard
Kr	83	3.3	45.8				ug/L	4	Standard
Br	81	406.7	22.3				ug/L	397	Standard
P	31	22453.3	7.2				ug/L	19276	Standard
S	34	2055.1	4.5				ug/L	3042	Standard
Sr	88	73.3	14.2				ug/L	65	Standard
C	12	303.3	21.4				mg/L	287	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	60.0	44.1				mg/L	3	Standard
Dy	164	2940.3	8.4				mg/L	23	Standard
Ho-1	165	2275.2	1.7				mg/L	7	Standard
Er	166	2643.6	27.4				mg/L	13	Standard
I	127	4674.1	2.0				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		81.244	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		86.143	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	86.652	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	86.139	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, November 20, 2015 17:37:18
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	41633.8	2.8				ug/L	49688	Standard
	Be	9	35204.2	1.6	**52.4936**	0.889	1.7	ug/L	7	Standard
	Al	27	3211911.2	2.2	**56.4389**	0.796	1.4	ug/L	277	Standard
	Sc	45	25306.1	3.1				ug/L	24625	Standard
	Ti	47	20253.9	2.5	**110.0834**	0.190	0.2	ug/L	198	Standard
	V	51	242714.1	2.2	**53.2269**	0.281	0.5	ug/L	1126	Standard
	Cr	52	230953.6	2.4	**52.8021**	1.343	2.5	ug/L	6071	Standard
	Cr	53	28371.6	2.7	**52.0228**	0.518	1.0	ug/L	332	Standard
	Mn	55	223857.3	2.6	**52.4119**	0.192	0.4	ug/L	876	Standard
	Co	59	228869.8	2.2	**52.8079**	0.325	0.6	ug/L	110	Standard
	Ni	60	61145.5	2.5	**51.7691**	0.501	1.0	ug/L	191	Standard
	Cu	65	61073.2	1.9	**51.8230**	0.431	0.8	ug/L	281	Standard
	Zn	66	35962.3	2.6	**51.9358**	0.274	0.5	ug/L	249	Standard
>	Ge	72	269224.9	2.6				ug/L	297260	Standard
	As	75	39682.3	2.1	**51.7301**	0.256	0.5	ug/L	-66	Standard
	Se	82	3551.3	2.1	**50.7010**	0.285	0.6	ug/L	13	Standard
	Se-1	77	2316.8	1.9	**52.7811**	0.846	1.6	ug/L	48	Standard
>	Ga	71	33.3	60.6				mg/L	30	Standard
	Rb	85	603.3	17.9				ug/L	12	Standard
	Y	89	283408.3	5.7				ug/L	310514	Standard
>	Rh	103	16.7	45.8				ug/L	10	Standard
	Mo	98	166458.7	2.1	**104.8607**	2.412	2.3	ug/L	11	Standard
	Ag	107	263555.4	1.4	**52.3151**	0.305	0.6	ug/L	99	Standard
	Cd	111	84923.6	1.5	**51.4633**	0.497	1.0	mg/L	6	Standard
	Cd	114	210958.3	2.5	**51.6034**	0.992	1.9	ug/L	6	Standard
>	In	115	453409.2	1.5				ug/L	501593	Standard
	Sn	118	237072.0	0.7	**52.2612**	0.782	1.5	ug/L	442	Standard
	Sb	123	228524.0	0.3	**51.1796**	0.927	1.8	ug/L	53	Standard
	Ba	135	96434.7	1.9	**53.7796**	0.426	0.8	ug/L	34	Standard
	Ce	140	88.3	14.2				ug/L	73	Standard
>	Tb	159	837737.7	1.4				ug/L	924917	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	379366.6	1.4	**52.3790**	0.776	1.5	ug/L	6	Standard
	Tl	205	248844.2	2.4	**51.2983**	0.549	1.1	ug/L	8	Standard
	Pb	206	267570.8	1.9	**52.9823**	0.297	0.6	ug/L	264	Standard
	Pb	207	241032.8	1.8	**52.7144**	0.528	1.0	ug/L	215	Standard
	Pb	208	824714.2	2.1	**51.3431**	0.511	1.0	ug/L	863	Standard
	U	238	267316.8	1.4	**49.7075**	0.342	0.7	ug/L	4	Standard
>	Bi	209	445315.1	1.4				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	2603.6	10.5	**4.3953**	0.337	7.7	mg/L	20	Standard
K	39	1541.7	7.8	**6.5730**	0.700	10.7	mg/L	38	Standard
Ca	43	70.0	7.1	**1.1268**	0.302	26.8	mg/L	43	Standard
Fe	54	3386.1	7.5	**4.7792**	0.370	7.7	mg/L	103	Standard
Fe	57	918.4	6.7	**4.5286**	0.210	4.6	mg/L	107	Standard
> **Sc-1**	45	25306.1	3.1				mg/L	24625	Standard
Cl	35	26272.1	2.0				ug/L	30925	Standard
Kr	83	4.3	96.1				ug/L	4	Standard
Br	81	370.0	36.6				ug/L	397	Standard
P	31	15980.1	0.8				ug/L	19276	Standard
S	34	2243.5	8.6				ug/L	3042	Standard
Sr	88	85.0	17.6				ug/L	65	Standard
C	12	183.3	44.4				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	16.5	36.7				mg/L	23	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	963.4	2.3				mg/L	3275	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	104.987		
	Al	27	112.878		
	Sc	45			
	Ti	47	110.083		
	V	51	106.454		
	Cr	52	105.604		
	Cr	53			
	Mn	55	104.824		
	Co	59	105.616		
	Ni	60	103.538		
	Cu	65	103.646		
	Zn	66	103.872		
>	Ge	72		90.569	
	As	75	103.460		
	Se	82	101.402		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	104.861		
Ag	107	104.630		
Cd	111	102.927		
Cd	114			
In	115		90.394	
Sn	118	104.522		
Sb	123	102.359		
Ba	135	107.559		
Ce	140			
Tb	159			
Ho	165			
Tl	203	104.758		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.686		
U	238	99.415		
Bi	209		87.675	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	
QC Std 6	Ti	47	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, November 20, 2015 17:40:30
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	39904.4	8.7				ug/L	49688	Standard
	Be	9	20.0	43.3	**0.0115**	0.015	133.7	ug/L	7	Standard
	Al	27	705.0	70.6	**0.0029**	0.008	271.9	ug/L	277	Standard
	Sc	45	25726.9	4.6				ug/L	24625	Standard
	Ti	47	35.7	15.9	**-0.5963**	0.038	6.3	ug/L	198	Standard
	V	51	1047.7	11.2	**0.0154**	0.018	119.4	ug/L	1126	Standard
	Cr	52	5273.9	3.0	**0.0114**	0.021	182.5	ug/L	6071	Standard
	Cr	53	376.7	11.1	**0.2292**	0.052	22.7	ug/L	332	Standard
	Mn	55	806.0	4.0	**-0.0153**	0.001	4.2	ug/L	876	Standard
	Co	59	237.3	10.4	**0.0290**	0.004	14.2	ug/L	110	Standard
	Ni	60	231.3	7.6	**0.0179**	0.010	55.3	ug/L	191	Standard
	Cu	65	233.7	10.0	**-0.0179**	0.012	68.7	ug/L	281	Standard
	Zn	66	208.7	6.3	**0.0075**	0.031	420.0	ug/L	249	Standard
>	**Ge**	72	263939.7	4.0				ug/L	297260	Standard
	As	75	-26.0	44.5	**0.0170**	0.016	91.5	ug/L	-66	Standard
	Se	82	13.1	36.0	**-0.0160**	0.077	478.5	ug/L	13	Standard
	Se-1	77	49.7	18.7	**0.1774**	0.215	121.3	ug/L	48	Standard
>	**Ga**	71	20.0	25.0				mg/L	30	Standard
	Rb	85	30.0	76.4				ug/L	12	Standard
	Y	89	269304.5	3.8				ug/L	310514	Standard
>	**Rh**	103	10.0	100.0				ug/L	10	Standard
	Mo	98	207.1	45.3	**0.1401**	0.056	40.0	ug/L	11	Standard
	Ag	107	149.0	60.4	**0.0113**	0.017	152.7	ug/L	99	Standard
	Cd	111	29.8	128.9	**0.0166**	0.023	140.1	mg/L	6	Standard
	Cd	114	105.5	122.4	**0.0245**	0.032	128.7	ug/L	6	Standard
>	**In**	115	432622.5	3.9				ug/L	501593	Standard
	Sn	118	665.0	15.9	**0.0600**	0.019	32.4	ug/L	442	Standard
	Sb	123	222.4	23.8	**0.0483**	0.011	22.2	ug/L	53	Standard
	Ba	135	60.0	84.0	**0.0111**	0.028	249.5	ug/L	34	Standard
	Ce	140	20.0	86.6				ug/L	73	Standard
>	**Tb**	159	795716.5	3.9				ug/L	924917	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	132.0	142.4	**0.0151**	0.025	168.2	ug/L	6	Standard
	Tl	205	21.7	81.0	**0.0007**	0.004	531.2	ug/L	8	Standard
	Pb	206	263.3	37.1	**0.0061**	0.017	288.2	ug/L	264	Standard
	Pb	207	242.0	35.8	**0.0131**	0.017	130.2	ug/L	215	Standard
	Pb	208	781.7	15.1	**0.0051**	0.005	106.2	ug/L	863	Standard
	U	238	34.3	92.7	**0.0087**	0.006	65.6	ug/L	4	Standard
>	**Bi**	209	433764.7	4.2				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	36.7	55.1	**0.0257**	0.034	131.2	mg/L	20	Standard
K	39	50.0	45.8	**0.0276**	0.107	388.1	mg/L	38	Standard
Ca	43	25.0	52.9	**-3.6174**	1.269	35.1	mg/L	43	Standard
Fe	54	115.8	10.6	**0.0195**	0.012	63.5	mg/L	103	Standard
Fe	57	203.3	9.9	**0.5540**	0.143	25.8	mg/L	107	Standard
Sc-1	45	25726.9	4.6				mg/L	24625	Standard
Cl	35	26538.6	3.3				ug/L	30925	Standard
Kr	83	4.3	58.1				ug/L	4	Standard
Br	81	330.0	32.1				ug/L	397	Standard
P	31	15115.9	4.0				ug/L	19276	Standard
S	34	2288.5	4.7				ug/L	3042	Standard
Sr	88	106.7	19.5				ug/L	65	Standard
C	12	146.7	32.2				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	9.7	181.8				mg/L	23	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	1286.7	5.3				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		88.791	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	86.250	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	85.401	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Ti	47	

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Method 6020 - Summary Report

Sample ID: PBS M9 WG547652-02
Sample Date/Time: Friday, November 20, 2015 17:43:42
Number of Replicates: 3
Autosampler Position: 259
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	39312.8	8.2				ug/L	49688	Standard
	Be	9	10.0	100.0	**-0.0041**	0.017	415.9	ug/L	7	Standard
	Al	27	841.7	17.3	**0.0060**	0.002	28.1	ug/L	277	Standard
	Sc	45	25828.7	7.5				ug/L	24625	Standard
	Ti	47	44.3	9.1	**-0.5479**	0.030	5.5	ug/L	198	Standard
	V	51	999.3	3.5	**0.0051**	0.011	217.8	ug/L	1126	Standard
	Cr	52	5473.0	3.9	**0.0594**	0.050	84.0	ug/L	6071	Standard
	Cr	53	311.7	13.4	**0.1077**	0.075	69.6	ug/L	332	Standard
	Mn	55	1023.7	1.2	**0.0373**	0.011	29.3	ug/L	876	Standard
	Co	59	213.3	7.9	**0.0236**	0.006	27.5	ug/L	110	Standard
	Ni	60	252.7	0.6	**0.0369**	0.011	29.5	ug/L	191	Standard
	Cu	65	245.7	12.1	**-0.0074**	0.020	263.0	ug/L	281	Standard
	Zn	66	983.7	1.5	**1.1573**	0.078	6.8	ug/L	249	Standard
>	**Ge**	72	264009.1	5.5				ug/L	297260	Standard
	As	75	-12.6	192.4	**0.0345**	0.033	96.3	ug/L	-66	Standard
	Se	82	17.3	23.2	**0.0449**	0.070	155.2	ug/L	13	Standard
	Se-1	77	50.3	10.0	**0.1943**	0.125	64.2	ug/L	48	Standard
>	**Ga**	71	20.0	25.0				mg/L	30	Standard
	Rb	85	30.0	16.7				ug/L	12	Standard
	Y	89	264351.2	7.5				ug/L	310514	Standard
>	**Rh**	103	6.7	86.6				ug/L	10	Standard
	Mo	98	62.5	23.6	**0.0458**	0.007	16.0	ug/L	11	Standard
	Ag	107	104.3	11.9	**0.0024**	0.002	101.5	ug/L	99	Standard
	Cd	111	10.2	29.8	**0.0047**	0.002	36.0	mg/L	6	Standard
	Cd	114	19.0	9.2	**0.0030**	0.000	15.9	ug/L	6	Standard
>	**In**	115	433518.0	5.3				ug/L	501593	Standard
	Sn	118	411.7	15.9	**0.0018**	0.017	936.3	ug/L	442	Standard
	Sb	123	102.5	20.0	**0.0205**	0.006	28.7	ug/L	53	Standard
	Ba	135	93.0	21.2	**0.0306**	0.009	28.1	ug/L	34	Standard
	Ce	140	100.0	17.3				ug/L	73	Standard
>	**Tb**	159	836705.3	7.3				ug/L	924917	Standard
	Ho	165	10.0	100.0				ug/L	7	Standard
	Tl	203	17.7	32.2	**-0.0005**	0.001	121.0	ug/L	6	Standard
	Tl	205	11.7	173.2	**-0.0016**	0.004	241.0	ug/L	8	Standard
	Pb	206	269.0	12.0	**0.0068**	0.003	45.5	ug/L	264	Standard
	Pb	207	215.7	16.5	**0.0069**	0.006	91.0	ug/L	215	Standard
	Pb	208	770.3	4.9	**0.0040**	0.001	24.5	ug/L	863	Standard
	U	238	10.3	56.7	**0.0042**	0.001	22.8	ug/L	4	Standard
>	**Bi**	209	439413.8	6.2				ug/L	507917	Standard

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Na	23	5.0	100.0	**19.3913**	20.019	103.2	mg/L	0	Standard
Mg	24	35.0	57.1	**0.0236**	0.035	149.1	mg/L	20	Standard
K	39	56.7	22.2	**0.0551**	0.064	115.7	mg/L	38	Standard
Ca	43	26.7	84.5	**-3.4563**	2.337	67.6	mg/L	43	Standard
Fe	54	94.3	34.8	**-0.0124**	0.042	338.4	mg/L	103	Standard
Fe	57	226.7	16.8	**0.6680**	0.131	19.6	mg/L	107	Standard
> **Sc-1**	45	25828.7	7.5				mg/L	24625	Standard
Cl	35	27058.2	3.3				ug/L	30925	Standard
Kr	83	4.0	25.0				ug/L	4	Standard
Br	81	456.7	16.4				ug/L	397	Standard
P	31	15574.7	0.8				ug/L	19276	Standard
S	34	2346.8	5.8				ug/L	3042	Standard
Sr	88	133.3	28.4				ug/L	65	Standard
C	12	153.3	21.0				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	6.0	93.6				mg/L	23	Standard
Ho-1	165	10.0	100.0				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	1360.1	11.5				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		79.119	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		88.814	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	86.428	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	86.513	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Lower	Ti	47	

Sample ID: PBS M9 WG547652-02
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Method 6020 - Summary Report

Sample ID: LCSS M9 WG547652-03
Sample Date/Time: Friday, November 20, 2015 17:46:54
Number of Replicates: 3
Autosampler Position: 260
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	39416.3	6.0				ug/L	49688	Standard
	Be	9	17059.6	4.5	**26.8691**	0.599	2.2	ug/L	7	Standard
	Al	27	1863.5	43.4	**0.0253**	0.016	64.8	ug/L	277	Standard
	Sc	45	26211.0	5.0				ug/L	24625	Standard
	Ti	47	54.7	31.5	**-0.5020**	0.094	18.6	ug/L	198	Standard
	V	51	119249.4	3.4	**25.5310**	0.313	1.2	ug/L	1126	Standard
	Cr	52	118392.2	2.2	**25.9276**	0.601	2.3	ug/L	6071	Standard
	Cr	53	14149.9	4.5	**25.1962**	0.658	2.6	ug/L	332	Standard
	Mn	55	112499.7	3.2	**25.7307**	0.646	2.5	ug/L	876	Standard
	Co	59	114057.2	2.8	**25.7976**	0.429	1.7	ug/L	110	Standard
	Ni	60	30778.9	4.2	**25.4616**	0.640	2.5	ug/L	191	Standard
	Cu	65	31617.7	3.8	**26.1977**	0.427	1.6	ug/L	281	Standard
	Zn	66	18827.7	2.8	**26.5235**	0.503	1.9	ug/L	249	Standard
>	Ge	72	274603.1	4.3				ug/L	297260	Standard
	As	75	20006.2	2.5	**25.6073**	0.508	2.0	ug/L	-66	Standard
	Se	82	1780.0	2.6	**24.8186**	0.430	1.7	ug/L	13	Standard
	Se-1	77	1170.7	3.1	**25.6958**	1.962	7.6	ug/L	48	Standard
>	Ga	71	20.0	43.3				mg/L	30	Standard
	Rb	85	28.3	53.9				ug/L	12	Standard
	Y	89	276500.2	3.2				ug/L	310514	Standard
>	Rh	103	18.3	15.7				ug/L	10	Standard
	Mo	98	56.9	44.4	**0.0417**	0.016	38.7	ug/L	11	Standard
	Ag	107	133220.0	3.8	**27.2558**	0.392	1.4	ug/L	99	Standard
	Cd	111	40596.6	2.9	**25.3754**	0.801	3.2	mg/L	6	Standard
	Cd	114	98133.3	4.9	**24.7571**	1.127	4.6	ug/L	6	Standard
>	In	115	439809.3	4.1				ug/L	501593	Standard
	Sn	118	400.0	20.7	**-0.0020**	0.021	1085.9	ug/L	442	Standard
	Sb	123	112911.6	3.0	**26.0735**	0.561	2.2	ug/L	53	Standard
	Ba	135	46905.2	3.4	**26.9641**	0.548	2.0	ug/L	34	Standard
	Ce	140	53.3	23.6				ug/L	73	Standard
>	Tb	159	833811.6	4.0				ug/L	924917	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	189157.9	2.5	**25.9197**	0.838	3.2	ug/L	6	Standard
	Tl	205	123514.9	2.2	**25.2711**	0.645	2.6	ug/L	8	Standard
	Pb	206	136616.8	3.0	**26.8250**	0.775	2.9	ug/L	264	Standard
	Pb	207	118419.9	2.8	**25.6809**	0.654	2.5	ug/L	215	Standard
	Pb	208	407727.2	2.8	**25.1675**	0.564	2.2	ug/L	863	Standard
	U	238	129215.9	2.6	**23.8487**	0.718	3.0	ug/L	4	Standard
>	Bi	209	449016.6	4.5				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	33.3	8.7	**0.0190**	0.007	37.8	mg/L	20	Standard
K	39	55.0	39.6	**0.0397**	0.080	200.4	mg/L	38	Standard
Ca	43	35.0	37.8	**-2.6203**	1.359	51.9	mg/L	43	Standard
Fe	54	80.1	36.0	**-0.0338**	0.040	116.9	mg/L	103	Standard
Fe	57	220.0	16.4	**0.6232**	0.221	35.5	mg/L	107	Standard
> **Sc-1**	45	26211.0	5.0				mg/L	24625	Standard
Cl	35	27048.8	2.1				ug/L	30925	Standard
Kr	83	6.3	36.5				ug/L	4	Standard
Br	81	443.3	30.6				ug/L	397	Standard
P	31	15551.3	3.0				ug/L	19276	Standard
S	34	2536.9	1.9				ug/L	3042	Standard
Sr	88	108.3	7.1				ug/L	65	Standard
C	12	190.0	13.9				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	3	Standard
Dy	164	6.2	93.6				mg/L	23	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	1903.5	8.1				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		79.327	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.378	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	87.683	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	88.403	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Lower	Ti	47	

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Method 6020 - Summary Report

Sample ID: L1511110726 WG547652-01
Sample Date/Time: Friday, November 20, 2015 17:50:05
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	39984.4	3.1				ug/L	49688	Standard
	Be	9	491.7	3.6	**0.7432**	0.023	3.2	ug/L	7	Standard
	Al	27	454099.7	0.9	**8.3034**	0.223	2.7	ug/L	277	Standard
	Sc	45	31183.8	4.3				ug/L	24625	Standard
	Ti	47	3355.0	3.6	**17.4003**	0.274	1.6	ug/L	198	Standard
	V	51	86538.3	2.7	**18.6617**	0.286	1.5	ug/L	1126	Standard
	Cr	52	230845.5	2.8	**52.2735**	0.917	1.8	ug/L	6071	Standard
	Cr	53	28453.4	4.1	**51.6808**	1.025	2.0	ug/L	332	Standard
	Mn	55	1673445.0	1.9	**389.6248**	6.101	1.6	ug/L	876	Standard
	Co	59	54998.3	1.6	**12.5554**	0.222	1.8	ug/L	110	Standard
	Ni	60	175927.2	2.4	**147.9204**	0.414	0.3	ug/L	191	Standard
	Cu	65	40414.2	1.9	**33.9025**	0.145	0.4	ug/L	281	Standard
	Zn	66	313574.3	1.2	**451.1307**	6.558	1.5	ug/L	249	Standard
>	**Ge**	72	271692.7	2.1				ug/L	297260	Standard
	As	75	6451.5	2.1	**8.3773**	0.152	1.8	ug/L	-66	Standard
	Se	82	498.6	4.5	**6.8711**	0.172	2.5	ug/L	13	Standard
	Se-1	77	401.3	6.7	**8.2310**	0.582	7.1	ug/L	48	Standard
>	**Ga**	71	3505.4	1.7				mg/L	30	Standard
	Rb	85	61411.1	5.6				ug/L	12	Standard
	Y	89	1083554.3	2.3				ug/L	310514	Standard
>	**Rh**	103	51.7	40.3				ug/L	10	Standard
	Mo	98	3989.9	3.1	**2.5671**	0.034	1.3	ug/L	11	Standard
	Ag	107	481.3	3.2	**0.0782**	0.003	3.2	ug/L	99	Standard
	Cd	111	1499.2	2.0	**0.9252**	0.038	4.1	mg/L	6	Standard
	Cd	114	3792.7	3.9	**0.9441**	0.027	2.8	ug/L	6	Standard
>	**In**	115	444665.2	2.2				ug/L	501593	Standard
	Sn	118	475.0	13.8	**0.0135**	0.016	115.3	ug/L	442	Standard
	Sb	123	297.2	8.2	**0.0642**	0.006	10.0	ug/L	53	Standard
	Ba	135	103081.5	1.0	**58.6351**	1.122	1.9	ug/L	34	Standard
	Ce	140	743435.1	1.6				ug/L	73	Standard
>	**Tb**	159	891306.4	2.2				ug/L	924917	Standard
	Ho	165	59578.7	4.0				ug/L	7	Standard
	Tl	203	1789.1	2.6	**0.2410**	0.010	4.3	ug/L	6	Standard
	Tl	205	1231.7	5.1	**0.2467**	0.005	2.1	ug/L	8	Standard
	Pb	206	42575.1	1.2	**8.2859**	0.181	2.2	ug/L	264	Standard
	Pb	207	31250.9	2.1	**6.7122**	0.065	1.0	ug/L	215	Standard
	Pb	208	114937.0	1.2	**7.0285**	0.191	2.7	ug/L	863	Standard
	U	238	30884.1	1.1	**5.6737**	0.156	2.8	ug/L	4	Standard
>	**Bi**	209	451127.3	3.0				ug/L	507917	Standard

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Na	23	5.0	100.0	**16.4375**	16.894	102.8	mg/L	0	Standard
Mg	24	161.7	7.8	**0.1881**	0.024	12.7	mg/L	20	Standard
K	39	305.0	5.7	**0.8965**	0.105	11.7	mg/L	38	Standard
Ca	43	151.7	13.3	**6.7191**	2.225	33.1	mg/L	43	Standard
Fe	54	10989.0	3.6	**12.8483**	0.975	7.6	mg/L	103	Standard
Fe	57	2943.6	5.1	**12.6845**	0.521	4.1	mg/L	107	Standard
Sc-1	45	31183.8	4.3				mg/L	24625	Standard
Cl	35	26310.2	3.8				ug/L	30925	Standard
Kr	83	2.7	21.7				ug/L	4	Standard
Br	81	466.7	13.9				ug/L	397	Standard
P	31	16447.3	1.0				ug/L	19276	Standard
S	34	2536.9	2.7				ug/L	3042	Standard
Sr	88	93.3	44.9				ug/L	65	Standard
C	12	186.7	21.7				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	160.0	6.3				mg/L	3	Standard
Dy	164	82883.7	3.5				mg/L	23	Standard
Ho-1	165	59578.7	4.0				mg/L	7	Standard
Er	166	57572.6	3.2				mg/L	13	Standard
I	127	11542.7	0.6				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		80.471	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		91.399	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		88.651
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		88.819
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1511110726S WG547652-04
Sample Date/Time: Friday, November 20, 2015 17:53:15
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	40888.5	4.4				ug/L	49688	Standard
	Be	9	17001.2	1.3	**25.8322**	1.293	5.0	ug/L	7	Standard
	Al	27	619181.1	4.9	**11.0732**	0.466	4.2	ug/L	277	Standard
	Sc	45	32035.5	4.6				ug/L	24625	Standard
	Ti	47	4319.6	1.8	**23.0999**	1.080	4.7	ug/L	198	Standard
	V	51	217556.2	3.9	**48.1410**	0.942	2.0	ug/L	1126	Standard
	Cr	52	403716.2	0.9	**94.2339**	5.016	5.3	ug/L	6071	Standard
	Cr	53	49893.8	4.2	**92.7277**	2.092	2.3	ug/L	332	Standard
	Mn	55	1581264.3	1.5	**375.3822**	16.232	4.3	ug/L	876	Standard
	Co	59	156734.0	1.6	**36.5303**	1.550	4.2	ug/L	110	Standard
	Ni	60	228214.6	0.5	**195.7987**	9.979	5.1	ug/L	191	Standard
	Cu	65	77489.3	1.0	**66.5211**	3.600	5.4	ug/L	281	Standard
	Zn	66	432144.5	0.5	**634.2669**	34.383	5.4	ug/L	249	Standard
>	**Ge**	72	266856.6	5.6				ug/L	297260	Standard
	As	75	27437.3	0.5	**36.1800**	2.220	6.1	ug/L	-66	Standard
	Se	82	2230.5	0.8	**32.1092**	1.669	5.2	ug/L	13	Standard
	Se-1	77	1481.4	2.3	**33.7382**	1.492	4.4	ug/L	48	Standard
>	**Ga**	71	6169.6	1.1				mg/L	30	Standard
	Rb	85	80737.9	0.7				ug/L	12	Standard
	Y	89	1301739.7	0.8				ug/L	310514	Standard
>	**Rh**	103	58.3	13.1				ug/L	10	Standard
	Mo	98	5173.9	0.4	**3.3373**	0.176	5.3	ug/L	11	Standard
	Ag	107	128140.3	1.2	**25.9892**	1.051	4.0	ug/L	99	Standard
	Cd	111	42496.9	0.7	**26.3289**	1.268	4.8	mg/L	6	Standard
	Cd	114	104895.4	3.2	**26.2567**	2.047	7.8	ug/L	6	Standard
>	**In**	115	444148.6	4.9				ug/L	501593	Standard
	Sn	118	688.3	2.2	**0.0618**	0.006	10.3	ug/L	442	Standard
	Sb	123	4260.3	1.3	**0.9717**	0.048	4.9	ug/L	53	Standard
	Ba	135	146609.2	0.4	**83.6092**	3.987	4.8	ug/L	34	Standard
	Ce	140	949568.9	2.4				ug/L	73	Standard
>	**Tb**	159	885863.4	4.6				ug/L	924917	Standard
	Ho	165	75214.6	2.0				ug/L	7	Standard
	Tl	203	181905.5	0.6	**25.3252**	1.452	5.7	ug/L	6	Standard
	Tl	205	120161.4	2.4	**24.9754**	1.405	5.6	ug/L	8	Standard
	Pb	206	179024.8	1.0	**35.7174**	1.503	4.2	ug/L	264	Standard
	Pb	207	148586.1	1.2	**32.7375**	1.324	4.0	ug/L	215	Standard
	Pb	208	524780.1	0.8	**32.9194**	1.503	4.6	ug/L	863	Standard
	U	238	167890.4	1.0	**31.4789**	1.686	5.4	ug/L	4	Standard
>	**Bi**	209	442429.2	5.1				ug/L	507917	Standard

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Na	23	1.7	173.2	**5.5105**	9.536	173.0	mg/L	0	Standard
Mg	24	171.7	27.1	**0.1937**	0.052	26.8	mg/L	20	Standard
K	39	416.7	1.8	**1.2534**	0.083	6.6	mg/L	38	Standard
Ca	43	186.7	10.1	**9.1737**	1.067	11.6	mg/L	43	Standard
Fe	54	13745.0	0.6	**15.6617**	0.628	4.0	mg/L	103	Standard
Fe	57	3663.8	5.1	**15.5286**	1.524	9.8	mg/L	107	Standard
> **Sc-1**	45	32035.5	4.6				mg/L	24625	Standard
Cl	35	26080.4	2.0				ug/L	30925	Standard
Kr	83	3.0	33.3				ug/L	4	Standard
Br	81	486.7	2.4				ug/L	397	Standard
P	31	16709.2	1.2				ug/L	19276	Standard
S	34	2588.6	1.1				ug/L	3042	Standard
Sr	88	128.3	6.0				ug/L	65	Standard
C	12	213.3	44.6				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	233.3	23.6				mg/L	3	Standard
Dy	164	104914.1	2.0				mg/L	23	Standard
Ho-1	165	75214.6	2.0				mg/L	7	Standard
Er	166	71927.0	1.4				mg/L	13	Standard
I	127	13701.2	1.4				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		82.290	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		89.772	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	88.548
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	87.107
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1511110726S WG547652-04
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Method 6020 - Summary Report

Sample ID: L1511110726SD WG547652-05
Sample Date/Time: Friday, November 20, 2015 17:56:27
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	40569.4	6.6				ug/L	49688	Standard
	Be	9	17959.0	5.7	**27.4945**	1.239	4.5	ug/L	7	Standard
	Al	27	626468.7	1.9	**11.3119**	0.558	4.9	ug/L	277	Standard
	Sc	45	32261.0	2.8				ug/L	24625	Standard
	Ti	47	4282.9	7.1	**22.6085**	1.553	6.9	ug/L	198	Standard
	V	51	219774.4	2.6	**48.0931**	1.135	2.4	ug/L	1126	Standard
	Cr	52	391686.8	2.2	**90.2467**	1.635	1.8	ug/L	6071	Standard
	Cr	53	48166.5	2.3	**88.5107**	2.001	2.3	ug/L	332	Standard
	Mn	55	1943105.1	1.1	**455.8134**	4.631	1.0	ug/L	876	Standard
	Co	59	168106.2	1.4	**38.7154**	0.468	1.2	ug/L	110	Standard
	Ni	60	238207.8	2.1	**201.8659**	3.391	1.7	ug/L	191	Standard
	Cu	65	76363.0	2.4	**64.7376**	1.316	2.0	ug/L	281	Standard
	Zn	66	425194.3	1.1	**616.3342**	4.510	0.7	ug/L	249	Standard
>	**Ge**	72	269654.4	0.5				ug/L	297260	Standard
	As	75	27009.5	2.8	**35.1653**	0.852	2.4	ug/L	-66	Standard
	Se	82	2277.3	3.3	**32.3829**	1.090	3.4	ug/L	13	Standard
	Se-1	77	1541.4	3.7	**34.7153**	1.207	3.5	ug/L	48	Standard
>	**Ga**	71	4925.8	2.4				mg/L	30	Standard
	Rb	85	79608.7	3.0				ug/L	12	Standard
	Y	89	1238817.3	3.3				ug/L	310514	Standard
>	**Rh**	103	68.3	11.2				ug/L	10	Standard
	Mo	98	5237.7	1.5	**3.3151**	0.037	1.1	ug/L	11	Standard
	Ag	107	126641.0	2.9	**25.2131**	0.708	2.8	ug/L	99	Standard
	Cd	111	42587.7	1.8	**25.8939**	0.401	1.6	mg/L	6	Standard
	Cd	114	106440.6	1.4	**26.1248**	0.313	1.2	ug/L	6	Standard
>	**In**	115	451860.8	0.4				ug/L	501593	Standard
	Sn	118	576.7	4.8	**0.0343**	0.006	18.7	ug/L	442	Standard
	Sb	123	4018.6	1.1	**0.8993**	0.011	1.2	ug/L	53	Standard
	Ba	135	152744.9	1.9	**85.4919**	1.752	2.0	ug/L	34	Standard
	Ce	140	879017.5	1.4				ug/L	73	Standard
>	**Tb**	159	891187.2	2.5				ug/L	924917	Standard
	Ho	165	69683.2	0.6				ug/L	7	Standard
	Tl	203	182981.9	1.8	**25.0162**	0.184	0.7	ug/L	6	Standard
	Tl	205	118300.1	1.9	**24.1509**	0.208	0.9	ug/L	8	Standard
	Pb	206	182743.1	2.0	**35.8204**	0.246	0.7	ug/L	264	Standard
	Pb	207	150671.4	2.5	**32.6142**	0.137	0.4	ug/L	215	Standard
	Pb	208	534313.0	1.7	**32.9282**	0.302	0.9	ug/L	863	Standard
	U	238	166417.8	1.8	**30.6458**	0.198	0.6	ug/L	4	Standard
>	**Bi**	209	449694.4	2.1				ug/L	507917	Standard

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Na	23	3.3	173.2	**10.8551**	18.793	173.1	mg/L	0	Standard
Mg	24	193.3	20.9	**0.2233**	0.060	27.0	mg/L	20	Standard
K	39	401.7	10.1	**1.1874**	0.101	8.5	mg/L	38	Standard
Ca	43	165.0	16.0	**7.2960**	1.909	26.2	mg/L	43	Standard
Fe	54	14035.8	1.7	**15.8767**	0.697	4.4	mg/L	103	Standard
Fe	57	3607.1	2.5	**15.1292**	0.468	3.1	mg/L	107	Standard
> **Sc-1**	45	32261.0	2.8				mg/L	24625	Standard
Cl	35	26068.4	2.2				ug/L	30925	Standard
Kr	83	2.3	24.7				ug/L	4	Standard
Br	81	440.0	14.2				ug/L	397	Standard
P	31	16640.8	0.9				ug/L	19276	Standard
S	34	2596.9	3.1				ug/L	3042	Standard
Sr	88	180.0	13.9				ug/L	65	Standard
C	12	233.3	28.5				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	290.0	17.2				mg/L	3	Standard
Dy	164	97312.7	2.2				mg/L	23	Standard
Ho-1	165	69683.2	0.6				mg/L	7	Standard
Er	166	66027.1	5.2				mg/L	13	Standard
I	127	13466.0	0.4				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		81.648	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.713	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.085
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		88.537
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1511110702
Sample Date/Time: Friday, November 20, 2015 17:59:38
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	40985.6	8.1				ug/L	49688	Standard
	Be	9	250.0	17.1	**0.3609**	0.082	22.7	ug/L	7	Standard
	Al	27	1010638.2	2.4	**18.0963**	1.278	7.1	ug/L	277	Standard
	Sc	45	29520.5	7.7				ug/L	24625	Standard
	Ti	47	2348.5	2.8	**11.9676**	0.203	1.7	ug/L	198	Standard
	V	51	63688.3	0.6	**13.7156**	0.673	4.9	ug/L	1126	Standard
	Cr	52	162582.7	0.5	**36.5469**	1.602	4.4	ug/L	6071	Standard
	Cr	53	20318.6	2.5	**36.8806**	1.920	5.2	ug/L	332	Standard
	Mn	55	1075195.5	0.8	**250.8513**	9.122	3.6	ug/L	876	Standard
	Co	59	29397.5	1.8	**6.7120**	0.176	2.6	ug/L	110	Standard
	Ni	60	90780.5	1.1	**76.4244**	2.506	3.3	ug/L	191	Standard
	Cu	65	23955.3	0.9	**20.0549**	0.735	3.7	ug/L	281	Standard
	Zn	66	159510.0	1.0	**229.9783**	12.295	5.3	ug/L	249	Standard
>	**Ge**	72	271310.6	4.4				ug/L	297260	Standard
	As	75	4449.8	0.2	**5.8090**	0.257	4.4	ug/L	-66	Standard
	Se	82	518.2	3.3	**7.1639**	0.094	1.3	ug/L	13	Standard
	Se-1	77	384.0	4.0	**7.8492**	0.291	3.7	ug/L	48	Standard
>	**Ga**	71	1748.4	6.6				mg/L	30	Standard
	Rb	85	30654.3	4.1				ug/L	12	Standard
	Y	89	700521.6	3.9				ug/L	310514	Standard
>	**Rh**	103	23.3	61.9				ug/L	10	Standard
	Mo	98	4642.5	2.5	**2.9105**	0.049	1.7	ug/L	11	Standard
	Ag	107	381.3	17.2	**0.0558**	0.012	20.7	ug/L	99	Standard
	Cd	111	931.8	4.3	**0.5591**	0.007	1.2	mg/L	6	Standard
	Cd	114	2195.9	10.7	**0.5325**	0.063	11.8	ug/L	6	Standard
>	**In**	115	456506.5	4.1				ug/L	501593	Standard
	Sn	118	470.0	21.3	**0.0101**	0.025	246.2	ug/L	442	Standard
	Sb	123	176.7	5.4	**0.0357**	0.003	9.2	ug/L	53	Standard
	Ba	135	81674.2	1.2	**45.2728**	1.330	2.9	ug/L	34	Standard
	Ce	140	367317.2	2.2				ug/L	73	Standard
>	**Tb**	159	873387.7	6.3				ug/L	924917	Standard
	Ho	165	30734.5	2.7				ug/L	7	Standard
	Tl	203	1792.1	6.2	**0.2399**	0.020	8.3	ug/L	6	Standard
	Tl	205	1125.0	3.4	**0.2235**	0.005	2.2	ug/L	8	Standard
	Pb	206	22179.2	0.9	**4.2665**	0.187	4.4	ug/L	264	Standard
	Pb	207	16308.1	1.1	**3.4606**	0.107	3.1	ug/L	215	Standard
	Pb	208	59755.6	0.8	**3.6090**	0.153	4.3	ug/L	863	Standard
	U	238	16998.5	0.7	**3.1028**	0.092	3.0	ug/L	4	Standard
>	**Bi**	209	454277.5	3.6				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	78.3	41.5	**0.0809**	0.054	67.2	mg/L	20	Standard
K	39	195.0	15.4	**0.5448**	0.133	24.4	mg/L	38	Standard
Ca	43	153.3	14.7	**7.4995**	1.370	18.3	mg/L	43	Standard
Fe	54	6173.8	3.8	**7.5869**	0.765	10.1	mg/L	103	Standard
Fe	57	1803.4	12.9	**7.9884**	0.430	5.4	mg/L	107	Standard
> **Sc-1**	45	29520.5	7.7				mg/L	24625	Standard
Cl	35	26822.4	0.7				ug/L	30925	Standard
Kr	83	2.7	43.3				ug/L	4	Standard
Br	81	363.3	13.9				ug/L	397	Standard
P	31	16974.5	2.4				ug/L	19276	Standard
S	34	2643.6	3.9				ug/L	3042	Standard
Sr	88	118.3	12.9				ug/L	65	Standard
C	12	246.7	32.5				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	276.7	29.0				mg/L	3	Standard
Dy	164	43741.7	3.9				mg/L	23	Standard
Ho-1	165	30734.5	2.7				mg/L	7	Standard
Er	166	28713.9	2.1				mg/L	13	Standard
I	127	6566.4	1.5				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		82.486	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		91.270	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.011
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		89.439
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1511110704
Sample Date/Time: Friday, November 20, 2015 18:02:50
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	41429.9	3.4				ug/L	49688	Standard
	Be	9	246.7	37.5	**0.3467**	0.129	37.1	ug/L	7	Standard
	Al	27	777139.5	4.4	**13.7122**	0.324	2.4	ug/L	277	Standard
	Sc	45	29497.0	2.1				ug/L	24625	Standard
	Ti	47	3010.3	2.4	**15.3659**	0.699	4.5	ug/L	198	Standard
	V	51	91673.3	1.5	**19.5710**	0.508	2.6	ug/L	1126	Standard
	Cr	52	164100.4	3.0	**36.4010**	1.533	4.2	ug/L	6071	Standard
	Cr	53	20196.8	1.4	**36.1715**	1.312	3.6	ug/L	332	Standard
	Mn	55	1081504.9	2.2	**249.0799**	9.233	3.7	ug/L	876	Standard
	Co	59	30100.9	2.7	**6.7879**	0.317	4.7	ug/L	110	Standard
	Ni	60	102641.9	2.1	**85.3280**	3.043	3.6	ug/L	191	Standard
	Cu	65	28174.2	2.3	**23.3205**	0.924	4.0	ug/L	281	Standard
	Zn	66	178885.2	3.2	**254.4548**	9.565	3.8	ug/L	249	Standard
>	Ge	72	274682.0	2.3				ug/L	297260	Standard
	As	75	6753.7	3.3	**8.6751**	0.369	4.3	ug/L	-66	Standard
	Se	82	563.9	4.2	**7.7126**	0.283	3.7	ug/L	13	Standard
	Se-1	77	408.7	6.5	**8.3069**	0.752	9.0	ug/L	48	Standard
>	Ga	71	2288.5	8.6				mg/L	30	Standard
	Rb	85	35416.4	5.2				ug/L	12	Standard
	Y	89	752726.5	3.0				ug/L	310514	Standard
>	Rh	103	26.7	28.6				ug/L	10	Standard
	Mo	98	4660.7	3.1	**2.9312**	0.122	4.2	ug/L	11	Standard
	Ag	107	366.0	7.0	**0.0532**	0.005	9.7	ug/L	99	Standard
	Cd	111	1243.8	5.6	**0.7498**	0.052	7.0	mg/L	6	Standard
	Cd	114	2866.9	6.3	**0.6972**	0.046	6.6	ug/L	6	Standard
>	In	115	455002.7	1.8				ug/L	501593	Standard
	Sn	118	435.0	1.1	**0.0022**	0.001	52.8	ug/L	442	Standard
	Sb	123	162.8	16.4	**0.0326**	0.005	16.1	ug/L	53	Standard
	Ba	135	104698.9	1.3	**58.2024**	1.436	2.5	ug/L	34	Standard
	Ce	140	431794.7	0.3				ug/L	73	Standard
>	Tb	159	870042.1	1.7				ug/L	924917	Standard
	Ho	165	34967.0	2.9				ug/L	7	Standard
	Tl	203	1848.4	4.7	**0.2458**	0.012	5.0	ug/L	6	Standard
	Tl	205	1226.7	12.7	**0.2426**	0.031	13.0	ug/L	8	Standard
	Pb	206	25626.3	1.4	**4.9038**	0.098	2.0	ug/L	264	Standard
	Pb	207	18751.9	3.0	**3.9600**	0.136	3.4	ug/L	215	Standard
	Pb	208	68407.8	1.7	**4.1105**	0.099	2.4	ug/L	863	Standard
	U	238	21248.2	1.8	**3.8536**	0.095	2.5	ug/L	4	Standard
>	Bi	209	456877.6	0.7				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	71.7	26.4	**0.0688**	0.028	41.1	mg/L	20	Standard
K	39	190.0	25.4	**0.5260**	0.197	37.4	mg/L	38	Standard
Ca	43	121.7	27.4	**4.7076**	2.951	62.7	mg/L	43	Standard
Fe	54	7499.3	0.2	**9.2123**	0.199	2.2	mg/L	103	Standard
Fe	57	2098.5	3.1	**9.4223**	0.353	3.8	mg/L	107	Standard
> **Sc-1**	45	29497.0	2.1				mg/L	24625	Standard
Cl	35	27161.7	0.7				ug/L	30925	Standard
Kr	83	4.0	66.1				ug/L	4	Standard
Br	81	456.7	7.0				ug/L	397	Standard
P	31	16695.9	3.4				ug/L	19276	Standard
S	34	2731.9	3.4				ug/L	3042	Standard
Sr	88	118.3	28.8				ug/L	65	Standard
C	12	230.0	7.5				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	220.0	12.0				mg/L	3	Standard
Dy	164	48829.7	3.0				mg/L	23	Standard
Ho-1	165	34967.0	2.9				mg/L	7	Standard
Er	166	33069.5	5.7				mg/L	13	Standard
I	127	5749.4	0.2				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		83.380	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.405	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.712
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		89.951
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1511110704PS WG547908-01
Sample Date/Time: Friday, November 20, 2015 18:06:00
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	42502.9	3.3				ug/L	49688	Standard
	Be	9	37670.2	4.1	**55.0527**	3.073	5.6	ug/L	7	Standard
	Al	27	801242.3	3.5	**13.7995**	0.865	6.3	ug/L	277	Standard
	Sc	45	29839.5	7.4				ug/L	24625	Standard
	Ti	47	3094.3	2.6	**15.7579**	0.387	2.5	ug/L	198	Standard
	V	51	345601.4	0.6	**74.1960**	3.300	4.4	ug/L	1126	Standard
	Cr	52	399878.7	1.7	**90.2017**	2.415	2.7	ug/L	6071	Standard
	Cr	53	50293.3	1.0	**90.5167**	3.523	3.9	ug/L	332	Standard
	Mn	55	1332896.7	1.1	**306.0846**	10.027	3.3	ug/L	876	Standard
	Co	59	271996.8	2.7	**61.3233**	0.992	1.6	ug/L	110	Standard
	Ni	60	166942.0	2.3	**138.4220**	2.826	2.0	ug/L	191	Standard
	Cu	65	91544.7	0.3	**76.0509**	3.151	4.1	ug/L	281	Standard
	Zn	66	216688.5	0.7	**307.4735**	12.608	4.1	ug/L	249	Standard
>	**Ge**	72	275651.1	4.3				ug/L	297260	Standard
	As	75	49759.6	0.9	**63.4278**	3.170	5.0	ug/L	-66	Standard
	Se	82	4373.5	1.3	**61.0887**	2.441	4.0	ug/L	13	Standard
	Se-1	77	2778.9	2.6	**62.0452**	2.390	3.9	ug/L	48	Standard
>	**Ga**	71	2165.2	9.4				mg/L	30	Standard
	Rb	85	35381.3	2.0				ug/L	12	Standard
	Y	89	777691.4	2.1				ug/L	310514	Standard
>	**Rh**	103	50.0	26.5				ug/L	10	Standard
	Mo	98	4617.0	1.4	**2.8802**	0.164	5.7	ug/L	11	Standard
	Ag	107	274840.7	2.5	**53.8848**	1.293	2.4	ug/L	99	Standard
	Cd	111	91027.0	0.8	**54.5143**	2.251	4.1	mg/L	6	Standard
	Cd	114	226188.8	1.6	**54.6659**	1.777	3.3	ug/L	6	Standard
>	**In**	115	459331.1	4.4				ug/L	501593	Standard
	Sn	118	528.3	8.5	**0.0218**	0.012	55.2	ug/L	442	Standard
	Sb	123	238150.8	1.0	**52.6953**	1.958	3.7	ug/L	53	Standard
	Ba	135	208838.0	1.9	**115.1162**	4.630	4.0	ug/L	34	Standard
	Ce	140	436794.7	1.9				ug/L	73	Standard
>	**Tb**	159	889720.2	4.7				ug/L	924917	Standard
	Ho	165	35822.3	1.8				ug/L	7	Standard
	Tl	203	405565.7	1.1	**54.1388**	2.605	4.8	ug/L	6	Standard
	Tl	205	266705.9	2.1	**53.1576**	2.504	4.7	ug/L	8	Standard
	Pb	206	311493.8	0.6	**59.6694**	3.462	5.8	ug/L	264	Standard
	Pb	207	275887.1	0.4	**58.3630**	3.273	5.6	ug/L	215	Standard
	Pb	208	933215.5	0.7	**56.1908**	2.941	5.2	ug/L	863	Standard
	U	238	300539.0	1.0	**54.0425**	2.844	5.3	ug/L	4	Standard
>	**Bi**	209	461381.5	5.6				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	100.0	35.0	**0.1066**	0.040	37.8	mg/L	20	Standard
K	39	185.0	18.9	**0.4989**	0.142	28.5	mg/L	38	Standard
Ca	43	126.7	35.8	**4.9408**	3.709	75.1	mg/L	43	Standard
Fe	54	7763.3	3.9	**9.4689**	0.923	9.7	mg/L	103	Standard
Fe	57	2206.8	0.9	**9.8555**	0.834	8.5	mg/L	107	Standard
> **Sc-1**	45	29839.5	7.4				mg/L	24625	Standard
Cl	35	27772.1	0.5				ug/L	30925	Standard
Kr	83	5.0	91.7				ug/L	4	Standard
Br	81	440.0	6.0				ug/L	397	Standard
P	31	17366.6	2.1				ug/L	19276	Standard
S	34	2785.3	1.4				ug/L	3042	Standard
Sr	88	148.3	24.8				ug/L	65	Standard
C	12	213.3	10.8				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	256.7	25.0				mg/L	3	Standard
Dy	164	49941.2	2.0				mg/L	23	Standard
Ho-1	165	35822.3	1.8				mg/L	7	Standard
Er	166	32277.7	1.1				mg/L	13	Standard
I	127	5919.5	4.3				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		85.539	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.731	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.574
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.838
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1511110704SDL WG547908-02
Sample Date/Time: Friday, November 20, 2015 18:09:12
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	37569.9	3.1				ug/L	49688	Standard
	Be	9	56.7	39.8	**0.0732**	0.038	51.6	ug/L	7	Standard
	Al	27	140633.5	3.3	**2.7296**	0.089	3.2	ug/L	277	Standard
	Sc	45	25232.7	3.4				ug/L	24625	Standard
	Ti	47	599.0	6.4	**2.6433**	0.209	7.9	ug/L	198	Standard
	V	51	17649.6	1.4	**3.8570**	0.035	0.9	ug/L	1126	Standard
	Cr	52	32708.6	3.9	**6.7785**	0.220	3.3	ug/L	6071	Standard
	Cr	53	3852.2	3.2	**6.9962**	0.170	2.4	ug/L	332	Standard
	Mn	55	202783.2	3.1	**49.7855**	1.062	2.1	ug/L	876	Standard
	Co	59	5955.5	1.6	**1.4153**	0.026	1.8	ug/L	110	Standard
	Ni	60	19929.8	1.5	**17.5784**	0.064	0.4	ug/L	191	Standard
	Cu	65	5489.3	1.9	**4.6853**	0.036	0.8	ug/L	281	Standard
	Zn	66	35296.7	1.5	**53.4784**	0.254	0.5	ug/L	249	Standard
>	Ge	72	256657.4	1.2				ug/L	297260	Standard
	As	75	1239.6	2.2	**1.7447**	0.022	1.3	ug/L	-66	Standard
	Se	82	122.4	8.6	**1.6300**	0.138	8.5	ug/L	13	Standard
	Se-1	77	111.7	12.2	**1.7179**	0.302	17.6	ug/L	48	Standard
>	Ga	71	395.0	9.9				mg/L	30	Standard
	Rb	85	6466.4	4.5				ug/L	12	Standard
	Y	89	343277.1	2.8				ug/L	310514	Standard
>	Rh	103	16.7	121.2				ug/L	10	Standard
	Mo	98	882.9	3.4	**0.6024**	0.019	3.2	ug/L	11	Standard
	Ag	107	150.7	18.9	**0.0128**	0.006	43.2	ug/L	99	Standard
	Cd	111	244.8	3.7	**0.1576**	0.005	3.0	mg/L	6	Standard
	Cd	114	578.4	13.7	**0.1500**	0.018	12.2	ug/L	6	Standard
>	In	115	421982.3	1.7				ug/L	501593	Standard
	Sn	118	245.0	10.8	**-0.0353**	0.007	20.6	ug/L	442	Standard
	Sb	123	687.5	25.4	**0.1622**	0.045	27.7	ug/L	53	Standard
	Ba	135	20026.9	4.4	**11.9788**	0.325	2.7	ug/L	34	Standard
	Ce	140	82745.3	0.7				ug/L	73	Standard
>	Tb	159	800494.4	2.1				ug/L	924917	Standard
	Ho	165	6588.1	4.3				ug/L	7	Standard
	Tl	203	395.3	7.1	**0.0526**	0.003	5.5	ug/L	6	Standard
	Tl	205	261.7	22.1	**0.0511**	0.012	23.8	ug/L	8	Standard
	Pb	206	5183.9	1.1	**1.0003**	0.013	1.3	ug/L	264	Standard
	Pb	207	3776.8	2.0	**0.8018**	0.008	1.1	ug/L	215	Standard
	Pb	208	13819.8	2.2	**0.8330**	0.006	0.7	ug/L	863	Standard
	U	238	4052.5	2.8	**0.7703**	0.009	1.1	ug/L	4	Standard
>	Bi	209	436887.1	1.9				ug/L	507917	Standard

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Na	23	5.0	100.0	**20.5897**	20.764	100.8	mg/L	0	Standard
Mg	24	43.3	46.6	**0.0384**	0.037	95.2	mg/L	20	Standard
K	39	60.0	38.2	**0.0756**	0.109	143.6	mg/L	38	Standard
Ca	43	63.3	19.9	**0.4831**	1.450	300.1	mg/L	43	Standard
Fe	54	1468.7	1.9	**1.9976**	0.089	4.5	mg/L	103	Standard
Fe	57	590.0	9.8	**2.7170**	0.210	7.7	mg/L	107	Standard
> **Sc-1**	45	25232.7	3.4				mg/L	24625	Standard
Cl	35	25269.1	1.5				ug/L	30925	Standard
Kr	83	5.3	39.0				ug/L	4	Standard
Br	81	383.3	5.4				ug/L	397	Standard
P	31	7807.0	4.2				ug/L	19276	Standard
S	34	2571.9	3.6				ug/L	3042	Standard
Sr	88	133.3	4.3				ug/L	65	Standard
C	12	160.0	27.2				mg/L	287	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	36.7	15.7				mg/L	3	Standard
Dy	164	9172.2	6.2				mg/L	23	Standard
Ho-1	165	6588.1	4.3				mg/L	7	Standard
Er	166	5861.1	5.4				mg/L	13	Standard
I	127	3193.7	2.5				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		75.611	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		86.341	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		84.128
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		86.015
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: November 23, 2015

Method 6020 - Summary Report

Sample ID: L1511110704SDL WG547908-02
Sample Date/Time: Friday, November 20, 2015 18:12:23
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	35346.2	3.6				ug/L	49688	Standard
	Be	9	30.0	44.1	**0.0321**	0.023	70.9	ug/L	7	Standard
	Al	27	30433.9	3.0	**0.6205**	0.018	2.9	ug/L	277	Standard
	Sc	45	23743.6	2.6				ug/L	24625	Standard
	Ti	47	147.3	4.1	**0.0826**	0.029	35.7	ug/L	198	Standard
	V	51	4256.4	2.4	**0.8018**	0.030	3.8	ug/L	1126	Standard
	Cr	52	8968.0	1.1	**1.0388**	0.034	3.2	ug/L	6071	Standard
	Cr	53	915.0	4.3	**1.3642**	0.067	4.9	ug/L	332	Standard
	Mn	55	43380.7	1.9	**10.9029**	0.214	2.0	ug/L	876	Standard
	Co	59	1409.7	2.9	**0.3278**	0.011	3.3	ug/L	110	Standard
	Ni	60	4420.6	1.8	**3.9102**	0.087	2.2	ug/L	191	Standard
	Cu	65	1292.1	4.9	**0.9789**	0.057	5.8	ug/L	281	Standard
	Zn	66	8288.9	1.9	**12.8183**	0.310	2.4	ug/L	249	Standard
>	**Ge**	72	247077.3	0.7				ug/L	297260	Standard
	As	75	238.4	8.1	**0.3900**	0.030	7.7	ug/L	-66	Standard
	Se	82	33.6	7.0	**0.3159**	0.040	12.6	ug/L	13	Standard
	Se-1	77	65.7	6.9	**0.6618**	0.102	15.4	ug/L	48	Standard
>	**Ga**	71	105.0	8.2				mg/L	30	Standard
	Rb	85	1326.7	2.5				ug/L	12	Standard
	Y	89	270376.2	1.0				ug/L	310514	Standard
>	**Rh**	103	11.7	24.7				ug/L	10	Standard
	Mo	98	173.0	9.5	**0.1247**	0.013	10.5	ug/L	11	Standard
	Ag	107	100.3	9.3	**0.0026**	0.002	84.0	ug/L	99	Standard
	Cd	111	70.3	17.2	**0.0451**	0.009	19.0	mg/L	6	Standard
	Cd	114	132.0	38.3	**0.0337**	0.014	41.3	ug/L	6	Standard
>	**In**	115	412865.8	1.5				ug/L	501593	Standard
	Sn	118	235.0	9.3	**-0.0366**	0.004	12.0	ug/L	442	Standard
	Sb	123	192.5	14.9	**0.0437**	0.008	17.6	ug/L	53	Standard
	Ba	135	4254.3	0.8	**2.5836**	0.027	1.0	ug/L	34	Standard
	Ce	140	17193.1	0.7				ug/L	73	Standard
>	**Tb**	159	782111.0	2.2				ug/L	924917	Standard
	Ho	165	1380.1	1.6				ug/L	7	Standard
	Tl	203	110.7	16.4	**0.0132**	0.002	18.5	ug/L	6	Standard
	Tl	205	81.7	81.5	**0.0139**	0.014	102.7	ug/L	8	Standard
	Pb	206	1314.7	2.6	**0.2297**	0.011	4.8	ug/L	264	Standard
	Pb	207	924.4	2.7	**0.1740**	0.008	4.9	ug/L	215	Standard
	Pb	208	3521.5	2.0	**0.1883**	0.005	2.6	ug/L	863	Standard
	U	238	871.4	8.0	**0.1742**	0.012	6.7	ug/L	4	Standard
>	**Bi**	209	419443.2	1.6				ug/L	507917	Standard

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Na	23	1.7	173.2	**7.0087**	12.131	173.1	mg/L	0	Standard
Mg	24	28.3	53.9	**0.0153**	0.027	176.7	mg/L	20	Standard
K	39	56.7	28.4	**0.0755**	0.083	109.7	mg/L	38	Standard
Ca	43	28.3	40.8	**-3.0297**	1.219	40.2	mg/L	43	Standard
Fe	54	309.1	10.7	**0.3341**	0.063	18.9	mg/L	103	Standard
Fe	57	278.3	9.0	**1.0865**	0.143	13.1	mg/L	107	Standard
> **Sc-1**	45	23743.6	2.6				mg/L	24625	Standard
Cl	35	24546.5	1.4				ug/L	30925	Standard
Kr	83	3.3	69.3				ug/L	4	Standard
Br	81	370.0	26.1				ug/L	397	Standard
P	31	5847.8	4.0				ug/L	19276	Standard
S	34	2606.9	5.9				ug/L	3042	Standard
Sr	88	135.0	28.0				ug/L	65	Standard
C	12	133.3	33.8				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	1748.9	4.5				mg/L	23	Standard
Ho-1	165	1380.1	1.6				mg/L	7	Standard
Er	166	1346.7	9.7				mg/L	13	Standard
I	127	3138.7	4.9				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		71.136	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		83.118	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		82.311
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		82.581
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: November 23, 2015

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, November 20, 2015 18:15:35
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	42021.5	1.8				ug/L	49688	Standard
	Be	9	36246.6	1.0	**53.5442**	0.874	1.6	ug/L	7	Standard
	Al	27	3346004.5	1.5	**58.2674**	1.963	3.4	ug/L	277	Standard
	Sc	45	26503.2	2.3				ug/L	24625	Standard
	Ti	47	20664.1	0.9	**108.7557**	2.352	2.2	ug/L	198	Standard
	V	51	248899.0	0.4	**52.8508**	0.772	1.5	ug/L	1126	Standard
	Cr	52	238413.6	1.0	**52.7668**	0.527	1.0	ug/L	6071	Standard
	Cr	53	29590.6	4.9	**52.5172**	1.637	3.1	ug/L	332	Standard
	Mn	55	227966.7	2.2	**51.6790**	1.156	2.2	ug/L	876	Standard
	Co	59	236749.7	2.4	**52.8868**	1.002	1.9	ug/L	110	Standard
	Ni	60	62680.1	2.0	**51.3750**	0.199	0.4	ug/L	191	Standard
	Cu	65	62153.3	2.3	**51.0494**	0.290	0.6	ug/L	281	Standard
	Zn	66	36541.7	2.6	**51.0869**	0.729	1.4	ug/L	249	Standard
>	Ge	72	278068.3	1.8				ug/L	297260	Standard
	As	75	40191.9	2.1	**50.7271**	0.836	1.6	ug/L	-66	Standard
	Se	82	3620.6	3.4	**50.0356**	1.190	2.4	ug/L	13	Standard
	Se-1	77	2320.8	1.4	**51.1695**	1.612	3.1	ug/L	48	Standard
>	Ga	71	18.3	31.5				mg/L	30	Standard
	Rb	85	590.0	5.2				ug/L	12	Standard
	Y	89	287426.4	2.1				ug/L	310514	Standard
>	Rh	103	26.7	28.6				ug/L	10	Standard
	Mo	98	170583.9	2.1	**106.7276**	2.345	2.2	ug/L	11	Standard
	Ag	107	266670.7	1.7	**52.5789**	1.057	2.0	ug/L	99	Standard
	Cd	111	85232.8	1.6	**51.3073**	1.247	2.4	mg/L	6	Standard
	Cd	114	209027.4	0.7	**50.7887**	0.564	1.1	ug/L	6	Standard
>	In	115	456486.8	0.9				ug/L	501593	Standard
	Sn	118	236370.0	2.1	**51.7479**	1.045	2.0	ug/L	442	Standard
	Sb	123	230934.4	1.9	**51.3638**	1.071	2.1	ug/L	53	Standard
	Ba	135	97364.5	0.4	**53.9354**	0.426	0.8	ug/L	34	Standard
	Ce	140	98.3	14.7				ug/L	73	Standard
>	Tb	159	841023.6	2.7				ug/L	924917	Standard
	Ho	165	3.3	173.2				ug/L	7	Standard
	Tl	203	383312.6	1.9	**51.5525**	0.978	1.9	ug/L	6	Standard
	Tl	205	250940.2	2.6	**50.3993**	1.395	2.8	ug/L	8	Standard
	Pb	206	271735.8	0.8	**52.4191**	0.489	0.9	ug/L	264	Standard
	Pb	207	244231.5	1.0	**52.0329**	0.372	0.7	ug/L	215	Standard
	Pb	208	838559.5	1.4	**50.8598**	0.880	1.7	ug/L	863	Standard
	U	238	267871.4	1.1	**48.5232**	0.615	1.3	ug/L	4	Standard
>	Bi	209	457132.0	0.5				ug/L	507917	Standard

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Na	23	1.7	173.2	**6.3179**	10.934	173.1	mg/L	0	Standard
Mg	24	2641.9	4.1	**4.2650**	0.204	4.8	mg/L	20	Standard
K	39	1533.4	6.7	**6.2181**	0.320	5.1	mg/L	38	Standard
Ca	43	78.3	16.1	**1.6380**	1.280	78.1	mg/L	43	Standard
Fe	54	3249.3	2.4	**4.3686**	0.211	4.8	mg/L	103	Standard
Fe	57	1003.4	2.5	**4.7534**	0.164	3.4	mg/L	107	Standard
> **Sc-1**	45	26503.2	2.3				mg/L	24625	Standard
Cl	35	28723.2	2.6				ug/L	30925	Standard
Kr	83	3.3	69.3				ug/L	4	Standard
Br	81	320.0	6.3				ug/L	397	Standard
P	31	17268.2	1.9				ug/L	19276	Standard
S	34	2921.9	8.4				ug/L	3042	Standard
Sr	88	98.3	15.5				ug/L	65	Standard
C	12	190.0	27.3				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	9.2	191.2				mg/L	23	Standard
Ho-1	165	3.3	173.2				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	13	Standard
I	127	1013.4	8.7				mg/L	3275	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	107.088		
	Al	27	116.535		
	Sc	45			
	Ti	47	108.756		
	V	51	105.702		
	Cr	52	105.534		
	Cr	53			
	Mn	55	103.358		
	Co	59	105.774		
	Ni	60	102.750		
	Cu	65	102.099		
	Zn	66	102.174		
>	Ge	72		93.544	
	As	75	101.454		
	Se	82	100.071		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	106.728		
Ag	107	105.158		
Cd	111	102.615		
Cd	114			
In	115		91.007	
Sn	118	103.496		
Sb	123	102.728		
Ba	135	107.871		
Ce	140			
Tb	159			
Ho	165			
Tl	203	103.105		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.720		
U	238	97.046		
Bi	209		90.001	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, November 20, 2015 18:18:46
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	40567.7	5.7				ug/L	49688	Standard
	Be	9	31.7	18.2	**0.0284**	0.011	39.4	ug/L	7	Standard
	Al	27	1045.0	44.7	**0.0092**	0.009	93.2	ug/L	277	Standard
	Sc	45	25646.7	6.1				ug/L	24625	Standard
	Ti	47	44.0	4.5	**-0.5507**	0.011	1.9	ug/L	198	Standard
	V	51	891.8	2.6	**-0.0194**	0.008	41.3	ug/L	1126	Standard
	Cr	52	4821.1	1.6	**-0.0979**	0.027	27.5	ug/L	6071	Standard
	Cr	53	313.3	10.6	**0.1103**	0.062	56.3	ug/L	332	Standard
	Mn	55	823.0	2.8	**-0.0113**	0.008	69.3	ug/L	876	Standard
	Co	59	248.3	8.0	**0.0316**	0.005	15.6	ug/L	110	Standard
	Ni	60	301.3	5.6	**0.0783**	0.009	11.3	ug/L	191	Standard
	Cu	65	261.0	6.6	**0.0064**	0.022	339.1	ug/L	281	Standard
	Zn	66	201.7	4.5	**-0.0040**	0.010	256.8	ug/L	249	Standard
>	**Ge**	72	264249.3	3.2				ug/L	297260	Standard
	As	75	-10.5	327.1	**0.0372**	0.046	124.7	ug/L	-66	Standard
	Se	82	14.6	41.8	**0.0037**	0.089	2389.0	ug/L	13	Standard
	Se-1	77	53.7	18.7	**0.2666**	0.194	72.9	ug/L	48	Standard
>	**Ga**	71	28.3	27.0				mg/L	30	Standard
	Rb	85	28.3	20.4				ug/L	12	Standard
	Y	89	272409.9	4.2				ug/L	310514	Standard
>	**Rh**	103	15.0	0.0				ug/L	10	Standard
	Mo	98	219.6	24.0	**0.1477**	0.029	19.8	ug/L	11	Standard
	Ag	107	157.7	25.8	**0.0133**	0.009	65.6	ug/L	99	Standard
	Cd	111	24.2	48.6	**0.0133**	0.007	53.5	mg/L	6	Standard
	Cd	114	52.2	30.6	**0.0115**	0.004	37.2	ug/L	6	Standard
>	**In**	115	436843.4	3.7				ug/L	501593	Standard
	Sn	118	600.0	20.4	**0.0446**	0.032	70.9	ug/L	442	Standard
	Sb	123	390.0	26.2	**0.0876**	0.027	30.5	ug/L	53	Standard
	Ba	135	46.0	45.2	**0.0034**	0.012	366.9	ug/L	34	Standard
	Ce	140	25.0	34.6				ug/L	73	Standard
>	**Tb**	159	823841.4	4.1				ug/L	924917	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	96.3	60.5	**0.0104**	0.008	78.2	ug/L	6	Standard
	Tl	205	68.3	84.8	**0.0102**	0.012	117.8	ug/L	8	Standard
	Pb	206	310.7	14.9	**0.0146**	0.008	55.4	ug/L	264	Standard
	Pb	207	245.3	12.6	**0.0131**	0.007	52.1	ug/L	215	Standard
	Pb	208	905.0	12.7	**0.0118**	0.006	52.7	ug/L	863	Standard
	U	238	68.7	51.7	**0.0151**	0.007	43.9	ug/L	4	Standard
>	**Bi**	209	443705.3	4.4				ug/L	507917	Standard

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Na	23	1.7	173.2	**6.6624**	11.531	173.1	mg/L	0	Standard
Mg	24	20.0	25.0	**-0.0027**	0.006	237.1	mg/L	20	Standard
K	39	48.3	41.8	**0.0166**	0.077	462.3	mg/L	38	Standard
Ca	43	18.3	15.7	**-4.2653**	0.313	7.3	mg/L	43	Standard
Fe	54	64.2	22.8	**-0.0528**	0.027	50.2	mg/L	103	Standard
Fe	57	228.3	4.6	**0.6921**	0.047	6.8	mg/L	107	Standard
> **Sc-1**	45	25646.7	6.1				mg/L	24625	Standard
Cl	35	27992.5	1.1				ug/L	30925	Standard
Kr	83	5.0	20.0				ug/L	4	Standard
Br	81	326.7	7.1				ug/L	397	Standard
P	31	16180.3	1.3				ug/L	19276	Standard
S	34	2708.6	6.5				ug/L	3042	Standard
Sr	88	110.0	29.8				ug/L	65	Standard
C	12	183.3	3.1				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	3.0	187.1				mg/L	23	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	1246.7	2.7				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		88.895	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	87.091	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	87.358	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Ti	47	

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Method 6020 - Summary Report

Sample ID: L1511110706
Sample Date/Time: Friday, November 20, 2015 18:21:58
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	43833.4	4.6				ug/L	49688	Standard
	Be	9	300.0	4.4	**0.4046**	0.012	3.0	ug/L	7	Standard
	Al	27	405079.1	5.1	**6.7502**	0.035	0.5	ug/L	277	Standard
	Sc	45	30549.1	1.5				ug/L	24625	Standard
	Ti	47	5803.4	2.1	**29.7524**	1.087	3.7	ug/L	198	Standard
	V	51	62360.7	0.3	**12.9862**	0.504	3.9	ug/L	1126	Standard
	Cr	52	142316.2	2.3	**30.7692**	1.134	3.7	ug/L	6071	Standard
	Cr	53	17323.2	0.2	**30.3477**	1.064	3.5	ug/L	332	Standard
	Mn	55	1206731.3	1.3	**272.5078**	6.983	2.6	ug/L	876	Standard
	Co	59	26145.2	0.3	**5.7771**	0.205	3.5	ug/L	110	Standard
	Ni	60	92165.2	1.3	**75.1070**	2.280	3.0	ug/L	191	Standard
	Cu	65	18863.7	1.6	**15.2336**	0.489	3.2	ug/L	281	Standard
	Zn	66	171541.1	1.4	**239.2552**	5.625	2.4	ug/L	249	Standard
>	**Ge**	72	280199.8	3.7				ug/L	297260	Standard
	As	75	4342.0	1.9	**5.4869**	0.118	2.1	ug/L	-66	Standard
	Se	82	200.1	5.7	**2.5484**	0.174	6.8	ug/L	13	Standard
	Se-1	77	194.3	9.8	**3.3290**	0.269	8.1	ug/L	48	Standard
>	**Ga**	71	2670.2	1.8				mg/L	30	Standard
	Rb	85	36445.5	3.4				ug/L	12	Standard
	Y	89	967251.6	1.8				ug/L	310514	Standard
>	**Rh**	103	101.7	17.3				ug/L	10	Standard
	Mo	98	4635.5	1.7	**2.8272**	0.051	1.8	ug/L	11	Standard
	Ag	107	375.7	5.3	**0.0528**	0.002	3.9	ug/L	99	Standard
	Cd	111	872.7	4.3	**0.5097**	0.030	5.9	mg/L	6	Standard
	Cd	114	2206.1	2.9	**0.5198**	0.014	2.6	ug/L	6	Standard
>	**In**	115	469153.0	2.5				ug/L	501593	Standard
	Sn	118	711.7	1.8	**0.0584**	0.006	10.4	ug/L	442	Standard
	Sb	123	348.0	15.5	**0.0718**	0.013	18.6	ug/L	53	Standard
	Ba	135	69208.4	1.0	**37.3056**	0.704	1.9	ug/L	34	Standard
	Ce	140	599463.5	2.5				ug/L	73	Standard
>	**Tb**	159	897145.2	3.0				ug/L	924917	Standard
	Ho	165	48128.0	1.4				ug/L	7	Standard
	Tl	203	1654.4	4.1	**0.2158**	0.005	2.3	ug/L	6	Standard
	Tl	205	1171.7	6.3	**0.2274**	0.010	4.5	ug/L	8	Standard
	Pb	206	23131.0	0.3	**4.3460**	0.091	2.1	ug/L	264	Standard
	Pb	207	16220.0	0.6	**3.3611**	0.069	2.1	ug/L	215	Standard
	Pb	208	60726.7	0.6	**3.5812**	0.066	1.9	ug/L	863	Standard
	U	238	24682.8	0.8	**4.4007**	0.127	2.9	ug/L	4	Standard
>	**Bi**	209	464850.9	2.2				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	136.7	34.6	**0.1562**	0.063	40.6	mg/L	20	Standard
K	39	156.7	21.7	**0.3768**	0.114	30.3	mg/L	38	Standard
Ca	43	245.0	15.4	**14.9777**	3.365	22.5	mg/L	43	Standard
Fe	54	5578.2	0.9	**6.5741**	0.100	1.5	mg/L	103	Standard
Fe	57	1695.1	6.3	**7.2209**	0.381	5.3	mg/L	107	Standard
Sc-1	45	30549.1	1.5				mg/L	24625	Standard
Cl	35	27913.0	1.3				ug/L	30925	Standard
Kr	83	5.3	47.2				ug/L	4	Standard
Br	81	500.0	7.2				ug/L	397	Standard
P	31	16492.3	2.8				ug/L	19276	Standard
S	34	2595.2	8.2				ug/L	3042	Standard
Sr	88	201.7	3.8				ug/L	65	Standard
C	12	183.3	11.4				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	123.3	41.6				mg/L	3	Standard
Dy	164	66684.1	3.0				mg/L	23	Standard
Ho-1	165	48128.0	1.4				mg/L	7	Standard
Er	166	44364.9	3.1				mg/L	13	Standard
I	127	8971.0	1.0				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.217	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.261	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.533
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.521
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1511110706
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Method 6020 - Summary Report

Sample ID: L1511110708
Sample Date/Time: Friday, November 20, 2015 18:25:10
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	43629.4	2.5				ug/L	49688	Standard
	Be	9	390.0	2.6	**0.5346**	0.003	0.6	ug/L	7	Standard
	Al	27	835147.5	3.2	**13.9997**	0.566	4.0	ug/L	277	Standard
	Sc	45	33079.4	3.2				ug/L	24625	Standard
	Ti	47	7787.7	2.8	**40.9772**	0.328	0.8	ug/L	198	Standard
	V	51	85499.0	1.5	**18.2301**	0.118	0.6	ug/L	1126	Standard
	Cr	52	306163.0	2.3	**68.9523**	0.908	1.3	ug/L	6071	Standard
	Cr	53	38131.4	5.5	**68.6401**	2.616	3.8	ug/L	332	Standard
	Mn	55	1506702.7	2.5	**346.8469**	4.021	1.2	ug/L	876	Standard
	Co	59	40838.6	1.1	**9.2123**	0.099	1.1	ug/L	110	Standard
	Ni	60	130289.5	3.2	**108.2869**	2.350	2.2	ug/L	191	Standard
	Cu	65	33357.0	1.8	**27.6332**	0.324	1.2	ug/L	281	Standard
	Zn	66	268687.3	2.8	**382.1286**	3.731	1.0	ug/L	249	Standard
>	Ge	72	274735.5	2.1				ug/L	297260	Standard
	As	75	6604.1	3.2	**8.4787**	0.185	2.2	ug/L	-66	Standard
	Se	82	338.1	2.7	**4.5393**	0.093	2.0	ug/L	13	Standard
	Se-1	77	301.0	8.2	**5.8525**	0.627	10.7	ug/L	48	Standard
>	Ga	71	4175.6	3.4				mg/L	30	Standard
	Rb	85	45702.2	2.1				ug/L	12	Standard
	Y	89	1438486.3	1.9				ug/L	310514	Standard
>	Rh	103	103.3	26.6				ug/L	10	Standard
	Mo	98	15171.3	1.8	**9.5742**	0.014	0.1	ug/L	11	Standard
	Ag	107	598.3	1.2	**0.0997**	0.001	0.9	ug/L	99	Standard
	Cd	111	1080.5	0.6	**0.6540**	0.008	1.2	mg/L	6	Standard
	Cd	114	2603.5	3.2	**0.6361**	0.023	3.6	ug/L	6	Standard
>	In	115	452755.7	1.7				ug/L	501593	Standard
	Sn	118	1121.7	6.5	**0.1545**	0.015	9.9	ug/L	442	Standard
	Sb	123	312.1	23.8	**0.0665**	0.018	27.1	ug/L	53	Standard
	Ba	135	183740.9	1.6	**102.6426**	0.558	0.5	ug/L	34	Standard
	Ce	140	1087370.7	2.6				ug/L	73	Standard
>	Tb	159	901110.8	1.1				ug/L	924917	Standard
	Ho	165	78372.3	2.6				ug/L	7	Standard
	Tl	203	2042.5	3.2	**0.2749**	0.004	1.5	ug/L	6	Standard
	Tl	205	1333.4	9.4	**0.2671**	0.025	9.3	ug/L	8	Standard
	Pb	206	30818.3	1.7	**5.9731**	0.030	0.5	ug/L	264	Standard
	Pb	207	21841.1	2.6	**4.6703**	0.042	0.9	ug/L	215	Standard
	Pb	208	80761.6	1.0	**4.9158**	0.057	1.2	ug/L	863	Standard
	U	238	28068.0	1.4	**5.1462**	0.030	0.6	ug/L	4	Standard
>	Bi	209	451828.0	1.8				ug/L	507917	Standard

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Na	23	5.0	100.0	**15.6022**	15.523	99.5	mg/L	0	Standard
Mg	24	205.0	12.7	**0.2312**	0.033	14.2	mg/L	20	Standard
K	39	248.3	19.0	**0.6404**	0.149	23.3	mg/L	38	Standard
Ca	43	341.7	6.6	**21.0764**	2.238	10.6	mg/L	43	Standard
Fe	54	8828.4	1.1	**9.6816**	0.332	3.4	mg/L	103	Standard
Fe	57	2430.2	5.1	**9.7579**	0.733	7.5	mg/L	107	Standard
Sc-1	45	33079.4	3.2				mg/L	24625	Standard
Cl	35	28345.2	2.8				ug/L	30925	Standard
Kr	83	5.0	40.0				ug/L	4	Standard
Br	81	730.0	9.5				ug/L	397	Standard
P	31	16514.0	5.1				ug/L	19276	Standard
S	34	2665.2	1.4				ug/L	3042	Standard
Sr	88	176.7	4.3				ug/L	65	Standard
C	12	220.0	20.8				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	273.3	27.5				mg/L	3	Standard
Dy	164	103387.3	3.5				mg/L	23	Standard
Ho-1	165	78372.3	2.6				mg/L	7	Standard
Er	166	76120.8	1.3				mg/L	13	Standard
I	127	7261.7	2.7				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		87.806	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		92.423	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.264
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		88.957
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1511110710
Sample Date/Time: Friday, November 20, 2015 18:28:21
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	43490.9	6.8				ug/L	49688	Standard
	Be	9	873.4	5.7	**1.2270**	0.013	1.1	ug/L	7	Standard
	Al	27	705724.5	2.1	**11.9001**	0.892	7.5	ug/L	277	Standard
	Sc	45	34064.9	2.3				ug/L	24625	Standard
	Ti	47	4292.6	0.7	**22.3206**	0.466	2.1	ug/L	198	Standard
	V	51	166287.1	1.2	**35.7960**	0.633	1.8	ug/L	1126	Standard
	Cr	52	566407.6	1.8	**129.1083**	2.736	2.1	ug/L	6071	Standard
	Cr	53	70927.3	1.8	**128.6128**	1.583	1.2	ug/L	332	Standard
	Mn	55	1865277.9	1.9	**431.0157**	4.387	1.0	ug/L	876	Standard
	Co	59	66109.6	1.7	**14.9821**	0.150	1.0	ug/L	110	Standard
	Ni	60	237267.1	1.0	**198.1265**	5.061	2.6	ug/L	191	Standard
	Cu	65	47335.2	2.7	**39.4409**	0.330	0.8	ug/L	281	Standard
	Zn	66	441165.3	1.9	**629.9548**	5.452	0.9	ug/L	249	Standard
>	**Ge**	72	273783.0	2.7				ug/L	297260	Standard
	As	75	14003.5	1.9	**17.9876**	0.349	1.9	ug/L	-66	Standard
	Se	82	667.8	1.9	**9.2044**	0.075	0.8	ug/L	13	Standard
	Se-1	77	481.0	4.7	**9.9829**	0.553	5.5	ug/L	48	Standard
>	**Ga**	71	6479.7	2.6				mg/L	30	Standard
	Rb	85	104952.4	2.2				ug/L	12	Standard
	Y	89	1217177.8	2.1				ug/L	310514	Standard
>	**Rh**	103	50.0	20.0				ug/L	10	Standard
	Mo	98	9926.8	2.3	**6.2209**	0.159	2.6	ug/L	11	Standard
	Ag	107	657.7	3.7	**0.1106**	0.006	5.1	ug/L	99	Standard
	Cd	111	1956.7	4.0	**1.1767**	0.034	2.9	mg/L	6	Standard
	Cd	114	4839.6	3.0	**1.1749**	0.025	2.1	ug/L	6	Standard
>	**In**	115	456101.9	1.2				ug/L	501593	Standard
	Sn	118	480.0	4.5	**0.0118**	0.004	32.8	ug/L	442	Standard
	Sb	123	164.5	15.7	**0.0330**	0.006	18.7	ug/L	53	Standard
	Ba	135	113529.8	1.0	**62.9499**	0.919	1.5	ug/L	34	Standard
	Ce	140	812130.4	1.5				ug/L	73	Standard
>	**Tb**	159	907096.4	2.3				ug/L	924917	Standard
	Ho	165	69470.6	1.9				ug/L	7	Standard
	Tl	203	2724.6	1.1	**0.3643**	0.009	2.5	ug/L	6	Standard
	Tl	205	1671.8	6.8	**0.3328**	0.028	8.5	ug/L	8	Standard
	Pb	206	59420.3	0.8	**11.4521**	0.305	2.7	ug/L	264	Standard
	Pb	207	45078.6	1.7	**9.5920**	0.240	2.5	ug/L	215	Standard
	Pb	208	163250.9	1.6	**9.8853**	0.085	0.9	ug/L	863	Standard
	U	238	33530.4	1.6	**6.0883**	0.074	1.2	ug/L	4	Standard
>	**Bi**	209	456251.0	2.3				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	186.7	11.2	**0.2006**	0.031	15.2	mg/L	20	Standard
K	39	566.7	10.9	**1.6556**	0.232	14.0	mg/L	38	Standard
Ca	43	150.0	8.8	**5.4350**	0.800	14.7	mg/L	43	Standard
Fe	54	20770.2	1.5	**22.3039**	0.851	3.8	mg/L	103	Standard
Fe	57	5264.2	3.1	**21.1269**	0.960	4.5	mg/L	107	Standard
Sc-1	45	34064.9	2.3				mg/L	24625	Standard
Cl	35	28086.0	2.5				ug/L	30925	Standard
Kr	83	2.3	89.2				ug/L	4	Standard
Br	81	720.0	19.3				ug/L	397	Standard
P	31	16472.3	3.0				ug/L	19276	Standard
S	34	2711.9	10.2				ug/L	3042	Standard
Sr	88	145.0	12.4				ug/L	65	Standard
C	12	313.3	18.4				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	406.7	16.7				mg/L	3	Standard
Dy	164	96930.6	3.1				mg/L	23	Standard
Ho-1	165	69470.6	1.9				mg/L	7	Standard
Er	166	65739.0	2.4				mg/L	13	Standard
I	127	14583.7	3.5				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		87.528	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		92.102	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.931
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		89.828
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

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Ni 60 Upper, S, EEE	Ni	60
Zn 66 Upper, S, EEE	Zn	66

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Method 6020 - Summary Report

Sample ID: L1511110712
Sample Date/Time: Friday, November 20, 2015 18:31:32
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	42350.8	3.0				ug/L	49688	Standard
	Be	9	485.0	10.5	**0.6906**	0.072	10.4	ug/L	7	Standard
	Al	27	502162.4	3.0	**8.6651**	0.076	0.9	ug/L	277	Standard
	Sc	45	32162.5	5.0				ug/L	24625	Standard
	Ti	47	3772.1	1.9	**19.4668**	0.132	0.7	ug/L	198	Standard
	V	51	83673.1	1.1	**17.8611**	0.272	1.5	ug/L	1126	Standard
	Cr	52	211891.4	2.0	**47.3992**	0.381	0.8	ug/L	6071	Standard
	Cr	53	26094.1	3.4	**46.8896**	0.461	1.0	ug/L	332	Standard
	Mn	55	1176593.3	2.4	**271.1537**	0.474	0.2	ug/L	876	Standard
	Co	59	40241.7	1.7	**9.0883**	0.076	0.8	ug/L	110	Standard
	Ni	60	104475.0	1.2	**86.9253**	1.312	1.5	ug/L	191	Standard
	Cu	65	26487.5	1.3	**21.9271**	0.296	1.4	ug/L	281	Standard
	Zn	66	146889.8	1.8	**209.0725**	2.402	1.1	ug/L	249	Standard
>	**Ge**	72	274399.8	2.5				ug/L	297260	Standard
	As	75	8880.1	1.5	**11.3994**	0.152	1.3	ug/L	-66	Standard
	Se	82	153.4	3.2	**1.9489**	0.069	3.5	ug/L	13	Standard
	Se-1	77	179.3	6.7	**3.0901**	0.346	11.2	ug/L	48	Standard
>	**Ga**	71	3168.7	1.2				mg/L	30	Standard
	Rb	85	59448.1	1.9				ug/L	12	Standard
	Y	89	1141387.8	2.8				ug/L	310514	Standard
>	**Rh**	103	48.3	23.9				ug/L	10	Standard
	Mo	98	4469.2	3.4	**2.7802**	0.050	1.8	ug/L	11	Standard
	Ag	107	403.7	11.4	**0.0597**	0.008	13.1	ug/L	99	Standard
	Cd	111	818.9	5.1	**0.4875**	0.020	4.0	mg/L	6	Standard
	Cd	114	2011.4	2.1	**0.4835**	0.018	3.8	ug/L	6	Standard
>	**In**	115	459789.0	1.6				ug/L	501593	Standard
	Sn	118	513.3	20.6	**0.0185**	0.025	133.3	ug/L	442	Standard
	Sb	123	165.6	6.6	**0.0329**	0.003	8.1	ug/L	53	Standard
	Ba	135	59595.0	1.8	**32.7651**	0.247	0.8	ug/L	34	Standard
	Ce	140	724174.4	1.9				ug/L	73	Standard
>	**Tb**	159	901472.6	3.5				ug/L	924917	Standard
	Ho	165	63106.2	2.7				ug/L	7	Standard
	Tl	203	1480.1	2.8	**0.1954**	0.005	2.5	ug/L	6	Standard
	Tl	205	931.7	13.1	**0.1826**	0.024	13.4	ug/L	8	Standard
	Pb	206	33378.4	0.9	**6.3764**	0.047	0.7	ug/L	264	Standard
	Pb	207	24999.9	1.0	**5.2721**	0.043	0.8	ug/L	215	Standard
	Pb	208	90702.3	1.7	**5.4431**	0.086	1.6	ug/L	863	Standard
	U	238	32191.5	1.0	**5.8141**	0.038	0.6	ug/L	4	Standard
>	**Bi**	209	458629.2	0.4				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	185.0	13.5	**0.2135**	0.046	21.6	mg/L	20	Standard
K	39	293.3	7.7	**0.8232**	0.109	13.3	mg/L	38	Standard
Ca	43	170.0	21.2	**7.8525**	3.356	42.7	mg/L	43	Standard
Fe	54	10565.9	1.1	**11.9591**	0.496	4.1	mg/L	103	Standard
Fe	57	2850.3	6.7	**11.8650**	0.295	2.5	mg/L	107	Standard
Sc-1	45	32162.5	5.0				mg/L	24625	Standard
Cl	35	27454.9	1.1				ug/L	30925	Standard
Kr	83	5.3	92.5				ug/L	4	Standard
Br	81	456.7	14.1				ug/L	397	Standard
P	31	17321.6	1.3				ug/L	19276	Standard
S	34	2708.6	3.1				ug/L	3042	Standard
Sr	88	158.3	19.0				ug/L	65	Standard
C	12	196.7	16.3				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	190.0	24.1				mg/L	3	Standard
Dy	164	90066.2	1.1				mg/L	23	Standard
Ho-1	165	63106.2	2.7				mg/L	7	Standard
Er	166	57211.1	0.6				mg/L	13	Standard
I	127	17727.0	3.5				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		85.233	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		92.310	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.666
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.296
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1511110714
Sample Date/Time: Friday, November 20, 2015 18:34:43
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	43631.3	7.7				ug/L	49688	Standard
	Be	9	555.0	6.5	**0.7704**	0.039	5.1	ug/L	7	Standard
	Al	27	597795.8	1.9	**10.0438**	0.593	5.9	ug/L	277	Standard
	Sc	45	32920.8	4.4				ug/L	24625	Standard
	Ti	47	3452.7	2.1	**17.4652**	0.514	2.9	ug/L	198	Standard
	V	51	94277.3	1.1	**19.8520**	1.071	5.4	ug/L	1126	Standard
	Cr	52	241835.4	0.6	**53.4374**	2.030	3.8	ug/L	6071	Standard
	Cr	53	29483.7	1.2	**52.2403**	1.642	3.1	ug/L	332	Standard
	Mn	55	5721716.6	1.4	**1299.3813**	40.788	3.1	ug/L	876	Standard
	Co	59	104956.3	1.7	**23.3799**	0.603	2.6	ug/L	110	Standard
	Ni	60	294190.5	1.1	**241.4795**	12.667	5.2	ug/L	191	Standard
	Cu	65	36902.6	2.8	**30.1550**	0.948	3.1	ug/L	281	Standard
	Zn	66	269983.2	1.6	**378.6056**	10.405	2.7	ug/L	249	Standard
>	**Ge**	72	278871.8	4.3				ug/L	297260	Standard
	As	75	7839.2	0.4	**9.9197**	0.454	4.6	ug/L	-66	Standard
	Se	82	344.5	2.7	**4.5649**	0.279	6.1	ug/L	13	Standard
	Se-1	77	307.3	3.3	**5.8978**	0.416	7.0	ug/L	48	Standard
>	**Ga**	71	3718.8	2.2				mg/L	30	Standard
	Rb	85	73023.9	1.7				ug/L	12	Standard
	Y	89	1189401.6	1.8				ug/L	310514	Standard
>	**Rh**	103	28.3	53.9				ug/L	10	Standard
	Mo	98	6322.6	0.9	**3.8598**	0.132	3.4	ug/L	11	Standard
	Ag	107	482.7	4.6	**0.0734**	0.001	1.5	ug/L	99	Standard
	Cd	111	3377.0	1.7	**1.9790**	0.066	3.3	mg/L	6	Standard
	Cd	114	8143.8	3.3	**1.9264**	0.085	4.4	ug/L	6	Standard
>	**In**	115	468791.8	3.9				ug/L	501593	Standard
	Sn	118	500.0	5.3	**0.0132**	0.002	12.8	ug/L	442	Standard
	Sb	123	179.0	12.8	**0.0352**	0.006	18.2	ug/L	53	Standard
	Ba	135	342439.6	0.5	**184.9281**	6.336	3.4	ug/L	34	Standard
	Ce	140	764712.3	0.9				ug/L	73	Standard
>	**Tb**	159	918879.0	4.8				ug/L	924917	Standard
	Ho	165	65886.3	0.9				ug/L	7	Standard
	Tl	203	7688.6	1.7	**1.0027**	0.034	3.4	ug/L	6	Standard
	Tl	205	5145.9	2.4	**1.0023**	0.068	6.8	ug/L	8	Standard
	Pb	206	35662.3	0.5	**6.6538**	0.365	5.5	ug/L	264	Standard
	Pb	207	26310.8	1.0	**5.4174**	0.264	4.9	ug/L	215	Standard
	Pb	208	97377.1	0.9	**5.7053**	0.235	4.1	ug/L	863	Standard
	U	238	39121.4	1.2	**6.8964**	0.320	4.6	ug/L	4	Standard
>	**Bi**	209	470558.1	4.9				ug/L	507917	Standard

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Na	23	3.3	86.6	**10.0756**	8.728	86.6	mg/L	0	Standard
Mg	24	153.3	8.2	**0.1654**	0.023	13.6	mg/L	20	Standard
K	39	333.3	18.5	**0.9314**	0.198	21.2	mg/L	38	Standard
Ca	43	163.3	6.4	**6.9247**	0.893	12.9	mg/L	43	Standard
Fe	54	11335.7	3.9	**12.5393**	0.688	5.5	mg/L	103	Standard
Fe	57	3167.0	8.6	**12.9859**	1.748	13.5	mg/L	107	Standard
> **Sc-1**	45	32920.8	4.4				mg/L	24625	Standard
Cl	35	27804.8	1.4				ug/L	30925	Standard
Kr	83	4.7	44.6				ug/L	4	Standard
Br	81	480.0	14.4				ug/L	397	Standard
P	31	17072.9	1.8				ug/L	19276	Standard
S	34	2703.6	4.7				ug/L	3042	Standard
Sr	88	131.7	21.6				ug/L	65	Standard
C	12	236.7	24.0				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	203.3	30.0				mg/L	3	Standard
Dy	164	90361.5	2.4				mg/L	23	Standard
Ho-1	165	65886.3	0.9				mg/L	7	Standard
Er	166	59520.1	3.2				mg/L	13	Standard
I	127	16160.3	5.0				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		87.810	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.814	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.461
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.645
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1511110716
Sample Date/Time: Friday, November 20, 2015 18:37:54
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	44005.5	2.7				ug/L	49688	Standard
	Be	9	408.3	14.3	**0.5546**	0.070	12.5	ug/L	7	Standard
	Al	27	398830.7	3.0	**6.6206**	0.052	0.8	ug/L	277	Standard
	Sc	45	31962.0	2.8				ug/L	24625	Standard
	Ti	47	3335.0	3.4	**16.7260**	0.229	1.4	ug/L	198	Standard
	V	51	76915.9	2.1	**16.0433**	0.549	3.4	ug/L	1126	Standard
	Cr	52	277562.4	0.8	**61.1153**	1.737	2.8	ug/L	6071	Standard
	Cr	53	35207.5	1.2	**62.0747**	1.274	2.1	ug/L	332	Standard
	Mn	55	1853841.5	1.4	**418.1542**	6.629	1.6	ug/L	876	Standard
	Co	59	43899.2	1.1	**9.7025**	0.193	2.0	ug/L	110	Standard
	Ni	60	163064.8	1.0	**132.8329**	2.605	2.0	ug/L	191	Standard
	Cu	65	42321.4	0.7	**34.4085**	1.050	3.1	ug/L	281	Standard
	Zn	66	212646.2	0.8	**296.2768**	6.095	2.1	ug/L	249	Standard
>	Ge	72	280507.8	2.9				ug/L	297260	Standard
	As	75	6031.5	1.9	**7.5923**	0.171	2.2	ug/L	-66	Standard
	Se	82	573.5	1.9	**7.6835**	0.173	2.2	ug/L	13	Standard
	Se-1	77	430.3	4.2	**8.5864**	0.231	2.7	ug/L	48	Standard
>	Ga	71	2746.9	2.4				mg/L	30	Standard
	Rb	85	62400.1	4.3				ug/L	12	Standard
	Y	89	1190373.6	0.9				ug/L	310514	Standard
>	Rh	103	38.3	49.4				ug/L	10	Standard
	Mo	98	3640.9	2.2	**2.1939**	0.081	3.7	ug/L	11	Standard
	Ag	107	430.7	6.5	**0.0624**	0.007	11.4	ug/L	99	Standard
	Cd	111	1428.0	4.5	**0.8245**	0.051	6.2	mg/L	6	Standard
	Cd	114	3660.7	3.6	**0.8527**	0.030	3.5	ug/L	6	Standard
>	In	115	475219.0	2.2				ug/L	501593	Standard
	Sn	118	548.3	4.5	**0.0220**	0.004	18.5	ug/L	442	Standard
	Sb	123	170.0	6.5	**0.0326**	0.003	7.7	ug/L	53	Standard
	Ba	135	166346.8	0.4	**88.5519**	1.635	1.8	ug/L	34	Standard
	Ce	140	717920.1	1.3				ug/L	73	Standard
>	Tb	159	921301.5	1.6				ug/L	924917	Standard
	Ho	165	67307.5	0.7				ug/L	7	Standard
	Tl	203	2124.1	1.9	**0.2755**	0.003	0.9	ug/L	6	Standard
	Tl	205	1400.1	6.9	**0.2706**	0.025	9.3	ug/L	8	Standard
	Pb	206	37316.6	0.4	**6.9785**	0.203	2.9	ug/L	264	Standard
	Pb	207	27565.1	1.7	**5.6899**	0.173	3.0	ug/L	215	Standard
	Pb	208	101053.4	1.2	**5.9357**	0.122	2.1	ug/L	863	Standard
	U	238	37242.7	0.1	**6.5798**	0.160	2.4	ug/L	4	Standard
>	Bi	209	469022.7	2.5				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	166.7	12.5	**0.1886**	0.024	12.7	mg/L	20	Standard
K	39	346.7	13.9	**1.0147**	0.196	19.3	mg/L	38	Standard
Ca	43	183.3	6.3	**8.9695**	1.212	13.5	mg/L	43	Standard
Fe	54	10472.9	4.1	**11.9209**	0.681	5.7	mg/L	103	Standard
Fe	57	2808.6	7.3	**11.7707**	0.913	7.8	mg/L	107	Standard
Sc-1	45	31962.0	2.8				mg/L	24625	Standard
Cl	35	28283.0	1.2				ug/L	30925	Standard
Kr	83	3.7	83.3				ug/L	4	Standard
Br	81	463.3	16.2				ug/L	397	Standard
P	31	16814.3	2.3				ug/L	19276	Standard
S	34	2910.3	3.1				ug/L	3042	Standard
Sr	88	156.7	12.9				ug/L	65	Standard
C	12	276.7	24.1				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	230.0	7.5				mg/L	3	Standard
Dy	164	92796.9	3.5				mg/L	23	Standard
Ho-1	165	67307.5	0.7				mg/L	7	Standard
Er	166	61407.6	3.1				mg/L	13	Standard
I	127	10198.4	3.7				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		88.563	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		94.364	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.742
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.342
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1511110718
Sample Date/Time: Friday, November 20, 2015 18:41:05
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	44405.3	8.4				ug/L	49688	Standard
	Be	9	426.7	1.8	**0.5789**	0.052	8.9	ug/L	7	Standard
	Al	27	386322.0	2.6	**6.3797**	0.471	7.4	ug/L	277	Standard
	Sc	45	31659.8	5.0				ug/L	24625	Standard
	Ti	47	2830.6	3.7	**14.1974**	1.012	7.1	ug/L	198	Standard
	V	51	78287.6	4.2	**16.4696**	1.383	8.4	ug/L	1126	Standard
	Cr	52	250412.9	3.4	**55.4452**	3.781	6.8	ug/L	6071	Standard
	Cr	53	31006.7	2.0	**55.0467**	3.507	6.4	ug/L	332	Standard
	Mn	55	787832.2	2.1	**178.9900**	11.097	6.2	ug/L	876	Standard
	Co	59	33555.1	1.8	**7.4682**	0.454	6.1	ug/L	110	Standard
	Ni	60	153318.6	1.8	**125.8432**	7.156	5.7	ug/L	191	Standard
	Cu	65	34755.2	2.3	**28.4294**	1.662	5.8	ug/L	281	Standard
	Zn	66	202311.3	1.8	**284.1081**	18.277	6.4	ug/L	249	Standard
>	**Ge**	72	278795.7	5.3				ug/L	297260	Standard
	As	75	5378.0	2.8	**6.8309**	0.499	7.3	ug/L	-66	Standard
	Se	82	675.8	4.8	**9.1710**	0.835	9.1	ug/L	13	Standard
	Se-1	77	486.7	5.2	**9.9272**	0.755	7.6	ug/L	48	Standard
>	**Ga**	71	2510.2	8.9				mg/L	30	Standard
	Rb	85	51953.9	2.0				ug/L	12	Standard
	Y	89	947611.2	1.9				ug/L	310514	Standard
>	**Rh**	103	41.7	50.0				ug/L	10	Standard
	Mo	98	3908.4	2.7	**2.3906**	0.185	7.8	ug/L	11	Standard
	Ag	107	353.7	5.7	**0.0486**	0.002	4.5	ug/L	99	Standard
	Cd	111	1236.1	4.1	**0.7244**	0.065	9.0	mg/L	6	Standard
	Cd	114	3144.8	5.5	**0.7443**	0.077	10.4	ug/L	6	Standard
>	**In**	115	469033.3	4.9				ug/L	501593	Standard
	Sn	118	391.7	14.8	**-0.0096**	0.015	154.1	ug/L	442	Standard
	Sb	123	143.3	16.3	**0.0274**	0.006	21.5	ug/L	53	Standard
	Ba	135	84378.7	2.1	**45.5851**	3.096	6.8	ug/L	34	Standard
	Ce	140	575044.9	4.2				ug/L	73	Standard
>	**Tb**	159	901878.7	3.7				ug/L	924917	Standard
	Ho	165	50074.3	0.6				ug/L	7	Standard
	Tl	203	1020.4	0.8	**0.1307**	0.008	6.0	ug/L	6	Standard
	Tl	205	698.3	8.5	**0.1326**	0.013	9.6	ug/L	8	Standard
	Pb	206	32818.9	2.4	**6.1252**	0.427	7.0	ug/L	264	Standard
	Pb	207	24317.8	2.4	**5.0072**	0.287	5.7	ug/L	215	Standard
	Pb	208	89447.8	2.3	**5.2407**	0.275	5.3	ug/L	863	Standard
	U	238	27031.1	2.7	**4.7694**	0.284	6.0	ug/L	4	Standard
>	**Bi**	209	470341.0	5.1				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	123.3	6.2	**0.1325**	0.019	14.0	mg/L	20	Standard
K	39	286.7	8.8	**0.8141**	0.091	11.1	mg/L	38	Standard
Ca	43	128.3	30.3	**4.5329**	3.195	70.5	mg/L	43	Standard
Fe	54	9806.0	5.0	**11.2887**	1.143	10.1	mg/L	103	Standard
Fe	57	2633.6	8.1	**11.1599**	1.550	13.9	mg/L	107	Standard
> **Sc-1**	45	31659.8	5.0				mg/L	24625	Standard
Cl	35	28732.6	1.2				ug/L	30925	Standard
Kr	83	2.7	21.7				ug/L	4	Standard
Br	81	520.0	10.2				ug/L	397	Standard
P	31	17103.0	2.9				ug/L	19276	Standard
S	34	2833.6	7.5				ug/L	3042	Standard
Sr	88	141.7	21.3				ug/L	65	Standard
C	12	226.7	9.2				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	176.7	32.2				mg/L	3	Standard
Dy	164	68875.8	1.9				mg/L	23	Standard
Ho-1	165	50074.3	0.6				mg/L	7	Standard
Er	166	45658.8	5.1				mg/L	13	Standard
I	127	7185.0	1.6				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.368	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.788	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.509
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.602
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1511110718
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Method 6020 - Summary Report

Sample ID: L1511110720
Sample Date/Time: Friday, November 20, 2015 18:44:16
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	43151.5	4.7				ug/L	49688	Standard
	Be	9	403.3	8.3	**0.5596**	0.031	5.6	ug/L	7	Standard
	Al	27	325610.4	5.7	**5.5092**	0.062	1.1	ug/L	277	Standard
	Sc	45	32506.6	5.3				ug/L	24625	Standard
	Ti	47	3154.3	3.2	**15.9494**	0.636	4.0	ug/L	198	Standard
	V	51	99150.3	3.4	**20.9433**	0.442	2.1	ug/L	1126	Standard
	Cr	52	210119.8	1.6	**46.4186**	0.441	0.9	ug/L	6071	Standard
	Cr	53	25907.1	2.0	**46.0022**	0.707	1.5	ug/L	332	Standard
	Mn	55	300046.2	1.4	**68.1825**	1.421	2.1	ug/L	876	Standard
	Co	59	25928.2	1.9	**5.7759**	0.061	1.0	ug/L	110	Standard
	Ni	60	129740.0	2.7	**106.6779**	1.779	1.7	ug/L	191	Standard
	Cu	65	38892.2	1.6	**31.9136**	0.771	2.4	ug/L	281	Standard
	Zn	66	252746.2	1.3	**355.6756**	4.685	1.3	ug/L	249	Standard
>	**Ge**	72	277703.2	2.1				ug/L	297260	Standard
	As	75	6413.9	0.7	**8.1502**	0.112	1.4	ug/L	-66	Standard
	Se	82	363.3	3.0	**4.8428**	0.247	5.1	ug/L	13	Standard
	Se-1	77	302.7	0.2	**5.8134**	0.128	2.2	ug/L	48	Standard
>	**Ga**	71	3078.6	2.4				mg/L	30	Standard
	Rb	85	54317.2	0.3				ug/L	12	Standard
	Y	89	1101539.8	1.9				ug/L	310514	Standard
>	**Rh**	103	51.7	11.2				ug/L	10	Standard
	Mo	98	3088.1	2.0	**1.8700**	0.043	2.3	ug/L	11	Standard
	Ag	107	416.0	0.2	**0.0600**	0.002	3.3	ug/L	99	Standard
	Cd	111	1939.0	1.3	**1.1253**	0.038	3.4	mg/L	6	Standard
	Cd	114	4689.0	1.6	**1.0979**	0.012	1.1	ug/L	6	Standard
>	**In**	115	472949.3	2.4				ug/L	501593	Standard
	Sn	118	625.0	13.2	**0.0387**	0.015	40.0	ug/L	442	Standard
	Sb	123	164.5	3.1	**0.0316**	0.002	5.6	ug/L	53	Standard
	Ba	135	52482.4	0.9	**28.0558**	0.454	1.6	ug/L	34	Standard
	Ce	140	681698.4	1.9				ug/L	73	Standard
>	**Tb**	159	914908.0	1.9				ug/L	924917	Standard
	Ho	165	60428.6	2.3				ug/L	7	Standard
	Tl	203	1154.0	2.0	**0.1500**	0.001	0.9	ug/L	6	Standard
	Tl	205	786.7	10.3	**0.1518**	0.016	10.3	ug/L	8	Standard
	Pb	206	33939.3	1.2	**6.4129**	0.068	1.1	ug/L	264	Standard
	Pb	207	24665.4	0.3	**5.1440**	0.056	1.1	ug/L	215	Standard
	Pb	208	92424.0	1.7	**5.4860**	0.074	1.3	ug/L	863	Standard
	U	238	38461.1	0.8	**6.8703**	0.065	0.9	ug/L	4	Standard
>	**Bi**	209	463712.6	1.2				ug/L	507917	Standard

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Na	23	1.7	173.2	**5.1570**	8.924	173.0	mg/L	0	Standard
Mg	24	121.7	20.7	**0.1262**	0.037	29.3	mg/L	20	Standard
K	39	263.3	4.0	**0.7085**	0.045	6.4	mg/L	38	Standard
Ca	43	143.3	20.4	**5.4065**	1.920	35.5	mg/L	43	Standard
Fe	54	10470.8	3.0	**11.7377**	0.910	7.7	mg/L	103	Standard
Fe	57	2791.9	1.4	**11.5104**	0.656	5.7	mg/L	107	Standard
Sc-1	45	32506.6	5.3				mg/L	24625	Standard
Cl	35	28709.9	3.1				ug/L	30925	Standard
Kr	83	4.0	66.1				ug/L	4	Standard
Br	81	506.7	24.7				ug/L	397	Standard
P	31	17358.3	2.9				ug/L	19276	Standard
S	34	2848.6	6.8				ug/L	3042	Standard
Sr	88	128.3	14.8				ug/L	65	Standard
C	12	203.3	12.4				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	216.7	22.8				mg/L	3	Standard
Dy	164	83787.5	2.0				mg/L	23	Standard
Ho-1	165	60428.6	2.3				mg/L	7	Standard
Er	166	56478.4	0.7				mg/L	13	Standard
I	127	7075.0	3.0				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		86.845	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		93.421	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.289
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.297
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ni 60 Upper, S, EEE	Ni	60	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1511110722
Sample Date/Time: Friday, November 20, 2015 18:47:27
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	45543.4	2.6				ug/L	49688	Standard
	Be	9	635.0	11.4	**0.8460**	0.106	12.6	ug/L	7	Standard
	Al	27	854572.9	0.7	**13.7221**	0.254	1.8	ug/L	277	Standard
	Sc	45	35352.9	1.8				ug/L	24625	Standard
	Ti	47	4727.4	4.1	**23.8948**	0.254	1.1	ug/L	198	Standard
	V	51	163396.3	3.2	**34.1118**	0.243	0.7	ug/L	1126	Standard
	Cr	52	509499.6	1.8	**112.5424**	1.881	1.7	ug/L	6071	Standard
	Cr	53	61738.9	2.8	**108.6002**	4.135	3.8	ug/L	332	Standard
	Mn	55	2201330.9	2.3	**493.6667**	6.814	1.4	ug/L	876	Standard
	Co	59	66055.7	1.8	**14.5282**	0.282	1.9	ug/L	110	Standard
	Ni	60	251701.3	2.0	**203.9329**	3.359	1.6	ug/L	191	Standard
	Cu	65	68011.0	2.1	**55.0894**	0.756	1.4	ug/L	281	Standard
	Zn	66	553677.7	2.5	**767.3156**	13.019	1.7	ug/L	249	Standard
>	**Ge**	72	282158.8	3.5				ug/L	297260	Standard
	As	75	10364.6	2.4	**12.9331**	0.152	1.2	ug/L	-66	Standard
	Se	82	742.4	0.5	**9.9531**	0.338	3.4	ug/L	13	Standard
	Se-1	77	577.7	3.7	**11.8021**	0.590	5.0	ug/L	48	Standard
>	**Ga**	71	9716.5	5.3				mg/L	30	Standard
	Rb	85	100406.7	2.4				ug/L	12	Standard
	Y	89	1395853.5	2.2				ug/L	310514	Standard
>	**Rh**	103	73.3	10.4				ug/L	10	Standard
	Mo	98	8420.1	0.7	**5.0684**	0.040	0.8	ug/L	11	Standard
	Ag	107	792.4	5.0	**0.1309**	0.007	5.7	ug/L	99	Standard
	Cd	111	2707.9	2.0	**1.5648**	0.021	1.3	mg/L	6	Standard
	Cd	114	6681.9	0.3	**1.5588**	0.010	0.7	ug/L	6	Standard
>	**In**	115	474904.9	1.0				ug/L	501593	Standard
	Sn	118	980.0	2.6	**0.1131**	0.004	3.6	ug/L	442	Standard
	Sb	123	166.5	10.1	**0.0319**	0.003	10.8	ug/L	53	Standard
	Ba	135	163594.8	0.9	**87.1300**	1.541	1.8	ug/L	34	Standard
	Ce	140	948838.1	0.5				ug/L	73	Standard
>	**Tb**	159	946732.2	1.4				ug/L	924917	Standard
	Ho	165	81885.7	0.9				ug/L	7	Standard
	Tl	203	2380.9	0.3	**0.3090**	0.008	2.4	ug/L	6	Standard
	Tl	205	1486.7	1.0	**0.2870**	0.007	2.3	ug/L	8	Standard
	Pb	206	60965.8	1.9	**11.4171**	0.039	0.3	ug/L	264	Standard
	Pb	207	44978.3	0.9	**9.3007**	0.125	1.3	ug/L	215	Standard
	Pb	208	164531.1	1.2	**9.6834**	0.099	1.0	ug/L	863	Standard
	U	238	50946.2	1.2	**8.9906**	0.087	1.0	ug/L	4	Standard
>	**Bi**	209	469385.4	2.2				ug/L	507917	Standard

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Na	23	1.7	173.2	**4.8967**	8.473	173.0	mg/L	0	Standard
Mg	24	216.7	13.1	**0.2286**	0.038	16.8	mg/L	20	Standard
K	39	500.0	1.0	**1.3771**	0.017	1.2	mg/L	38	Standard
Ca	43	195.0	31.1	**8.4200**	4.742	56.3	mg/L	43	Standard
Fe	54	18634.2	2.0	**19.2577**	0.684	3.5	mg/L	103	Standard
Fe	57	5009.2	3.3	**19.3126**	0.446	2.3	mg/L	107	Standard
> **Sc-1**	45	35352.9	1.8				mg/L	24625	Standard
Cl	35	29016.4	2.8				ug/L	30925	Standard
Kr	83	4.3	74.2				ug/L	4	Standard
Br	81	670.0	2.6				ug/L	397	Standard
P	31	18112.5	3.1				ug/L	19276	Standard
S	34	2765.3	2.2				ug/L	3042	Standard
Sr	88	146.7	32.2				ug/L	65	Standard
C	12	263.3	19.1				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	286.7	10.1				mg/L	3	Standard
Dy	164	116842.6	1.0				mg/L	23	Standard
Ho-1	165	81885.7	0.9				mg/L	7	Standard
Er	166	76294.9	0.6				mg/L	13	Standard
I	127	14540.3	0.4				mg/L	3275	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		91.658	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		94.920	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.679
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.414
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

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Ni 60 Upper, S, EEE	Ni	60
Zn 66 Upper, S, EEE	Zn	66

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Method 6020 - Summary Report

Sample ID: L1511110724
Sample Date/Time: Friday, November 20, 2015 18:50:39
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	43131.4	4.0				ug/L	49688	Standard
	Be	9	568.3	8.5	**0.7967**	0.040	5.0	ug/L	7	Standard
	Al	27	576952.1	1.9	**9.7820**	0.208	2.1	ug/L	277	Standard
	Sc	45	32965.8	2.9				ug/L	24625	Standard
	Ti	47	3851.5	1.0	**19.6717**	0.300	1.5	ug/L	198	Standard
	V	51	111768.4	2.7	**23.6663**	0.423	1.8	ug/L	1126	Standard
	Cr	52	317146.7	1.6	**70.7781**	0.340	0.5	ug/L	6071	Standard
	Cr	53	39307.6	0.2	**70.1351**	1.153	1.6	ug/L	332	Standard
	Mn	55	3505680.4	3.2	**799.5137**	14.234	1.8	ug/L	876	Standard
	Co	59	93550.1	2.7	**20.9317**	0.313	1.5	ug/L	110	Standard
	Ni	60	227695.6	1.0	**187.5953**	1.006	0.5	ug/L	191	Standard
	Cu	65	50587.7	2.1	**41.6148**	0.375	0.9	ug/L	281	Standard
	Zn	66	393022.8	2.2	**553.8121**	7.317	1.3	ug/L	249	Standard
>	**Ge**	72	277368.1	1.4				ug/L	297260	Standard
	As	75	8197.5	1.6	**10.4137**	0.169	1.6	ug/L	-66	Standard
	Se	82	702.1	5.3	**9.5625**	0.590	6.2	ug/L	13	Standard
	Se-1	77	526.0	5.9	**10.8479**	0.580	5.3	ug/L	48	Standard
>	**Ga**	71	3917.2	1.8				mg/L	30	Standard
	Rb	85	75939.9	1.4				ug/L	12	Standard
	Y	89	1177367.8	2.3				ug/L	310514	Standard
>	**Rh**	103	50.0	34.6				ug/L	10	Standard
	Mo	98	4714.7	2.9	**2.8836**	0.069	2.4	ug/L	11	Standard
	Ag	107	533.7	8.9	**0.0835**	0.010	11.4	ug/L	99	Standard
	Cd	111	1837.6	2.8	**1.0782**	0.047	4.3	mg/L	6	Standard
	Cd	114	4665.5	3.2	**1.1044**	0.022	2.0	ug/L	6	Standard
>	**In**	115	467703.9	1.5				ug/L	501593	Standard
	Sn	118	566.7	5.9	**0.0279**	0.009	31.9	ug/L	442	Standard
	Sb	123	141.9	8.6	**0.0271**	0.003	11.5	ug/L	53	Standard
	Ba	135	211848.7	1.7	**114.5602**	0.579	0.5	ug/L	34	Standard
	Ce	140	781418.9	1.2				ug/L	73	Standard
>	**Tb**	159	918602.9	4.4				ug/L	924917	Standard
	Ho	165	67483.3	1.9				ug/L	7	Standard
	Tl	203	2228.8	4.0	**0.2931**	0.004	1.5	ug/L	6	Standard
	Tl	205	1555.1	0.9	**0.3048**	0.009	3.1	ug/L	8	Standard
	Pb	206	47031.6	2.3	**8.9241**	0.038	0.4	ug/L	264	Standard
	Pb	207	34889.8	1.8	**7.3093**	0.073	1.0	ug/L	215	Standard
	Pb	208	128825.2	2.2	**7.6812**	0.065	0.8	ug/L	863	Standard
	U	238	36331.8	1.4	**6.5053**	0.126	1.9	ug/L	4	Standard
>	**Bi**	209	462738.5	2.7				ug/L	507917	Standard

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Na	23	1.7	173.2	**5.2006**	8.999	173.0	mg/L	0	Standard
Mg	24	153.3	7.5	**0.1645**	0.013	7.6	mg/L	20	Standard
K	39	365.0	6.3	**1.0382**	0.102	9.8	mg/L	38	Standard
Ca	43	165.0	21.9	**6.9870**	2.509	35.9	mg/L	43	Standard
Fe	54	16092.5	1.5	**17.8246**	0.438	2.5	mg/L	103	Standard
Fe	57	4288.9	5.3	**17.6914**	0.904	5.1	mg/L	107	Standard
> **Sc-1**	45	32965.8	2.9				mg/L	24625	Standard
Cl	35	28836.1	3.7				ug/L	30925	Standard
Kr	83	4.0	25.0				ug/L	4	Standard
Br	81	420.0	8.2				ug/L	397	Standard
P	31	17289.9	2.0				ug/L	19276	Standard
S	34	2955.3	7.6				ug/L	3042	Standard
Sr	88	160.0	31.7				ug/L	65	Standard
C	12	256.7	33.6				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	210.0	4.8				mg/L	3	Standard
Dy	164	93663.8	2.0				mg/L	23	Standard
Ho-1	165	67483.3	1.9				mg/L	7	Standard
Er	166	62913.8	4.3				mg/L	13	Standard
I	127	13225.8	2.1				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		86.804	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.308	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.244
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.105
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, November 20, 2015 18:53:51
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	45423.2	6.5				ug/L	49688	Standard
	Be	9	38266.6	2.6	**52.4887**	4.759	9.1	ug/L	7	Standard
	Al	27	3549189.8	1.3	**57.2992**	3.414	6.0	ug/L	277	Standard
	Sc	45	27735.4	2.7				ug/L	24625	Standard
	Ti	47	20995.2	0.7	**107.2969**	2.220	2.1	ug/L	198	Standard
	V	51	252072.8	0.9	**51.9795**	1.147	2.2	ug/L	1126	Standard
	Cr	52	237250.5	0.7	**50.9638**	1.433	2.8	ug/L	6071	Standard
	Cr	53	28743.9	0.3	**49.5531**	1.516	3.1	ug/L	332	Standard
	Mn	55	232281.1	1.1	**51.1409**	1.137	2.2	ug/L	876	Standard
	Co	59	236887.6	1.0	**51.4084**	1.664	3.2	ug/L	110	Standard
	Ni	60	62813.6	0.5	**50.0083**	1.158	2.3	ug/L	191	Standard
	Cu	65	63024.1	0.5	**50.2880**	1.397	2.8	ug/L	281	Standard
	Zn	66	37196.3	1.1	**50.5082**	0.908	1.8	ug/L	249	Standard
>	Ge	72	286379.1	2.8				ug/L	297260	Standard
	As	75	41100.4	0.2	**50.3929**	1.418	2.8	ug/L	-66	Standard
	Se	82	3692.4	1.3	**49.5652**	0.870	1.8	ug/L	13	Standard
	Se-1	77	2383.5	1.6	**51.0435**	2.138	4.2	ug/L	48	Standard
>	Ga	71	40.0	12.5				mg/L	30	Standard
	Rb	85	618.3	8.9				ug/L	12	Standard
	Y	89	295227.4	3.5				ug/L	310514	Standard
>	Rh	103	21.7	35.3				ug/L	10	Standard
	Mo	98	174670.9	0.9	**103.8511**	4.696	4.5	ug/L	11	Standard
	Ag	107	273105.2	0.9	**51.1706**	2.380	4.7	ug/L	99	Standard
	Cd	111	87756.6	1.2	**50.1819**	1.815	3.6	mg/L	6	Standard
	Cd	114	216548.6	0.8	**50.0088**	2.531	5.1	ug/L	6	Standard
>	In	115	480982.4	4.5				ug/L	501593	Standard
	Sn	118	244492.6	2.5	**50.8268**	0.993	2.0	ug/L	442	Standard
	Sb	123	237076.5	0.7	**50.0963**	1.836	3.7	ug/L	53	Standard
	Ba	135	98635.7	0.2	**51.9203**	2.236	4.3	ug/L	34	Standard
	Ce	140	208.3	22.2				ug/L	73	Standard
>	Tb	159	891227.3	4.3				ug/L	924917	Standard
	Ho	165	21.7	74.2				ug/L	7	Standard
	Tl	203	388688.4	0.9	**50.3049**	1.787	3.6	ug/L	6	Standard
	Tl	205	255365.9	1.1	**49.3566**	1.924	3.9	ug/L	8	Standard
	Pb	206	277390.2	0.2	**51.4875**	1.604	3.1	ug/L	264	Standard
	Pb	207	252186.3	1.3	**51.6862**	1.021	2.0	ug/L	215	Standard
	Pb	208	852087.9	0.1	**49.7255**	1.542	3.1	ug/L	863	Standard
	U	238	272967.4	0.9	**47.5754**	1.410	3.0	ug/L	4	Standard
>	Bi	209	475389.6	3.2				ug/L	507917	Standard

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Na	23	3.3	86.6	**12.1477**	10.526	86.6	mg/L	0	Standard
Mg	24	2530.2	3.3	**3.8983**	0.035	0.9	mg/L	20	Standard
K	39	1445.1	1.2	**5.5865**	0.191	3.4	mg/L	38	Standard
Ca	43	86.7	21.8	**2.0654**	1.708	82.7	mg/L	43	Standard
Fe	54	3238.9	2.4	**4.1552**	0.216	5.2	mg/L	103	Standard
Fe	57	1011.7	5.6	**4.5612**	0.334	7.3	mg/L	107	Standard
> **Sc-1**	45	27735.4	2.7				mg/L	24625	Standard
Cl	35	29872.8	1.2				ug/L	30925	Standard
Kr	83	5.0	80.0				ug/L	4	Standard
Br	81	476.7	21.1				ug/L	397	Standard
P	31	18085.8	3.0				ug/L	19276	Standard
S	34	2905.3	0.3				ug/L	3042	Standard
Sr	88	106.7	9.8				ug/L	65	Standard
C	12	200.0	26.0				mg/L	287	Standard
N	14	6.7	86.6				mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	3	Standard
Dy	164	29.4	90.7				mg/L	23	Standard
Ho-1	165	21.7	74.2				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	13	Standard
I	127	1065.0	11.0				mg/L	3275	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	104.977		
	Al	27	114.598		
	Sc	45			
	Ti	47	107.297		
	V	51	103.959		
	Cr	52	101.928		
	Cr	53			
	Mn	55	102.282		
	Co	59	102.817		
	Ni	60	100.017		
	Cu	65	100.576		
	Zn	66	101.016		
>	Ge	72		96.340	
	As	75	100.786		
	Se	82	99.130		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	103.851		
Ag	107	102.341		
Cd	111	100.364		
Cd	114			
In	115		95.891	
Sn	118	101.654		
Sb	123	100.193		
Ba	135	103.841		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.610		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.451		
U	238	95.151		
Bi	209		93.596	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, November 20, 2015 18:57:02
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	44329.8	3.1				ug/L	49688	Standard
	Be	9	91.7	149.6	**0.1053**	0.187	177.6	ug/L	7	Standard
	Al	27	6238.3	153.1	**0.0911**	0.154	168.7	ug/L	277	Standard
	Sc	45	25716.8	0.9				ug/L	24625	Standard
	Ti	47	73.0	83.4	**-0.4070**	0.322	79.1	ug/L	198	Standard
	V	51	1160.1	51.2	**0.0295**	0.126	425.4	ug/L	1126	Standard
	Cr	52	5287.6	15.0	**-0.0393**	0.173	440.6	ug/L	6071	Standard
	Cr	53	348.3	27.1	**0.1488**	0.166	111.8	ug/L	332	Standard
	Mn	55	1241.4	59.8	**0.0759**	0.168	221.3	ug/L	876	Standard
	Co	59	574.7	102.4	**0.1022**	0.131	128.5	ug/L	110	Standard
	Ni	60	479.7	37.2	**0.2152**	0.145	67.3	ug/L	191	Standard
	Cu	65	339.3	50.4	**0.0613**	0.140	228.5	ug/L	281	Standard
	Zn	66	285.3	39.7	**0.1019**	0.157	154.5	ug/L	249	Standard
>	**Ge**	72	275460.5	0.7				ug/L	297260	Standard
	As	75	56.9	139.9	**0.1235**	0.100	81.3	ug/L	-66	Standard
	Se	82	27.9	29.6	**0.1808**	0.113	62.4	ug/L	13	Standard
	Se-1	77	61.0	24.5	**0.3843**	0.332	86.5	ug/L	48	Standard
>	**Ga**	71	18.3	63.0				mg/L	30	Standard
	Rb	85	13.3	108.3				ug/L	12	Standard
	Y	89	286262.5	1.3				ug/L	310514	Standard
>	**Rh**	103	16.7	91.7				ug/L	10	Standard
	Mo	98	478.7	84.5	**0.3003**	0.249	83.1	ug/L	11	Standard
	Ag	107	356.0	115.3	**0.0500**	0.080	159.7	ug/L	99	Standard
	Cd	111	123.6	157.2	**0.0716**	0.115	161.0	mg/L	6	Standard
	Cd	114	332.6	146.3	**0.0778**	0.117	149.8	ug/L	6	Standard
>	**In**	115	462503.0	0.4				ug/L	501593	Standard
	Sn	118	1021.7	58.1	**0.1276**	0.128	100.5	ug/L	442	Standard
	Sb	123	489.3	98.8	**0.1037**	0.106	102.3	ug/L	53	Standard
	Ba	135	161.0	130.7	**0.0646**	0.115	178.0	ug/L	34	Standard
	Ce	140	28.3	27.0				ug/L	73	Standard
>	**Tb**	159	858580.7	0.9				ug/L	924917	Standard
	Ho	165	13.3	57.3				ug/L	7	Standard
	Tl	203	323.3	152.3	**0.0394**	0.064	163.5	ug/L	6	Standard
	Tl	205	168.3	152.7	**0.0290**	0.050	172.8	ug/L	8	Standard
	Pb	206	611.0	97.8	**0.0682**	0.112	163.9	ug/L	264	Standard
	Pb	207	569.4	96.5	**0.0778**	0.113	145.9	ug/L	215	Standard
	Pb	208	1829.7	101.4	**0.0638**	0.109	171.0	ug/L	863	Standard
	U	238	416.7	160.1	**0.0757**	0.117	155.1	ug/L	4	Standard
>	**Bi**	209	464977.7	1.6				ug/L	507917	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	31.7	77.9	**0.0169**	0.041	242.4	mg/L	20	Standard
K	39	45.0	40.1	**0.0036**	0.077	2168.1	mg/L	38	Standard
Ca	43	35.0	51.5	**-2.5673**	1.839	71.6	mg/L	43	Standard
Fe	54	104.5	9.6	**0.0035**	0.013	388.7	mg/L	103	Standard
Fe	57	190.0	7.9	**0.4780**	0.073	15.3	mg/L	107	Standard
> **Sc-1**	45	25716.8	0.9				mg/L	24625	Standard
Cl	35	30839.4	0.3				ug/L	30925	Standard
Kr	83	4.0	25.0				ug/L	4	Standard
Br	81	436.7	4.8				ug/L	397	Standard
P	31	17698.7	4.7				ug/L	19276	Standard
S	34	2982.0	2.1				ug/L	3042	Standard
Sr	88	110.0	24.1				ug/L	65	Standard
C	12	186.7	15.5				mg/L	287	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	6.0	194.2				mg/L	23	Standard
Ho-1	165	13.3	57.3				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	1200.0	1.8				mg/L	3275	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.666	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	92.207	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	91.546	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Be	9	
QC Std 7	Ti	47	

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2.3 General Chemistry Data

2.3.1 Method 9056

2.3.1.1 Summary Data

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-01	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW08-111615	**Prep Method:**	9056	**Prep Date:**	11/17/2015 13:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG547299	**Analyst:**	ALS	**Run Date:**	11/17/2015 18:34
Collect Date:	11/16/2015 08:20	**Dilution:**	5	**File ID:**	I2_111715-17
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	478	J	2.00	1.00	0.500
Nitrate	14797-55-8	1.00	U	2.00	1.00	0.500
Nitrite	14797-65-0	1.00	U	2.00	1.00	0.500
Sulfate	14808-79-8	311		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-01	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW08-111615	**Prep Method:**	9056	**Prep Date:**	11/17/2015 13:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG547299	**Analyst:**	ALS	**Run Date:**	11/17/2015 18:52
Collect Date:	11/16/2015 08:20	**Dilution:**	25	**File ID:**	I2_111715-18
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	390		10.0	5.00	2.50
Nitrate	14797-55-8	5.00	U	10.0	5.00	2.50
Nitrite	14797-65-0	5.00	U	10.0	5.00	2.50
Sulfate	14808-79-8	284		50.0	25.0	12.5

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-03	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW22-111615	**Prep Method:**	9056	**Prep Date:**	11/17/2015 13:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG547299	**Analyst:**	ALS	**Run Date:**	11/17/2015 19:10
Collect Date:	11/16/2015 09:25	**Dilution:**	5	**File ID:**	I2_111715-19
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1450	J	2.00	1.00	0.500
Nitrate	14797-55-8	1.00	U	2.00	1.00	0.500
Nitrite	14797-65-0	1.00	U	2.00	1.00	0.500
Sulfate	14808-79-8	785	J	10.0	5.00	2.50

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-03	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW22-111615	**Prep Method:**	9056	**Prep Date:**	11/17/2015 13:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG547299	**Analyst:**	ALS	**Run Date:**	11/17/2015 19:28
Collect Date:	11/16/2015 09:25	**Dilution:**	50	**File ID:**	I2_111715-20
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1070		20.0	10.0	5.00
Nitrate	14797-55-8	10.0	U	20.0	10.0	5.00
Nitrite	14797-65-0	10.0	U	20.0	10.0	5.00
Sulfate	14808-79-8	636		100	50.0	25.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-05	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW24-111615	**Prep Method:**	9056	**Prep Date:**	11/17/2015 13:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG547299	**Analyst:**	ALS	**Run Date:**	11/17/2015 19:47
Collect Date:	11/16/2015 10:30	**Dilution:**	2	**File ID:**	I2_111715-21
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	538	J	0.800	0.400	0.200
Nitrate	14797-55-8	0.400	U	0.800	0.400	0.200
Nitrite	14797-65-0	0.400	U	0.800	0.400	0.200
Sulfate	14808-79-8	108		4.00	2.00	1.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-05	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW24-111615	**Prep Method:**	9056	**Prep Date:**	11/17/2015 13:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG547299	**Analyst:**	ALS	**Run Date:**	11/17/2015 20:05
Collect Date:	11/16/2015 10:30	**Dilution:**	25	**File ID:**	I2_111715-22
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	386		10.0	5.00	2.50
Nitrate	14797-55-8	5.00	U	10.0	5.00	2.50
Nitrite	14797-65-0	5.00	U	10.0	5.00	2.50
Sulfate	14808-79-8	105		50.0	25.0	12.5

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-07	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW23-111615	**Prep Method:**	9056	**Prep Date:**	11/17/2015 13:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG547299	**Analyst:**	ALS	**Run Date:**	11/17/2015 20:23
Collect Date:	11/16/2015 11:35	**Dilution:**	10	**File ID:**	I2_111715-23
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	2780	J	4.00	2.00	1.00
Nitrate	14797-55-8	2.00	U	4.00	2.00	1.00
Nitrite	14797-65-0	2.00	U	4.00	2.00	1.00
Sulfate	14808-79-8	80.5		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-07	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW23-111615	**Prep Method:**	9056	**Prep Date:**	11/17/2015 13:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG547299	**Analyst:**	ALS	**Run Date:**	11/17/2015 20:41
Collect Date:	11/16/2015 11:35	**Dilution:**	100	**File ID:**	I2_111715-24
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	2030		40.0	20.0	10.0
Nitrate	14797-55-8	20.0	U	40.0	20.0	10.0
Nitrite	14797-65-0	20.0	U	40.0	20.0	10.0
Sulfate	14808-79-8	128	J	200	100	50.0

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-09	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW18-111615	**Prep Method:**	9056	**Prep Date:**	11/17/2015 13:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG547299	**Analyst:**	ALS	**Run Date:**	11/17/2015 20:59
Collect Date:	11/16/2015 13:45	**Dilution:**	5	**File ID:**	I2_111715-25
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	1090	J	2.00	1.00	0.500
Nitrate	14797-55-8	1.00	U	2.00	1.00	0.500
Nitrite	14797-65-0	1.00	U	2.00	1.00	0.500
Sulfate	14808-79-8	160		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-09	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW18-111615	**Prep Method:**	9056	**Prep Date:**	11/17/2015 13:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG547299	**Analyst:**	ALS	**Run Date:**	11/17/2015 21:18
Collect Date:	11/16/2015 13:45	**Dilution:**	50	**File ID:**	I2_111715-26
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	799		20.0	10.0	5.00
Nitrate	14797-55-8	10.0	U	20.0	10.0	5.00
Nitrite	14797-65-0	10.0	U	20.0	10.0	5.00
Sulfate	14808-79-8	165		100	50.0	25.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-11	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW25-111615	**Prep Method:**	9056	**Prep Date:**	11/17/2015 13:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG547299	**Analyst:**	ALS	**Run Date:**	11/17/2015 22:12
Collect Date:	11/16/2015 14:55	**Dilution:**	1	**File ID:**	I2_111715-29
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	35.9	J	0.400	0.200	0.100
Nitrate	14797-55-8	0.200	U	0.400	0.200	0.100
Nitrite	14797-65-0	0.200	U	0.400	0.200	0.100
Sulfate	14808-79-8	67.6		2.00	1.00	0.500

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-11	**PrePrep Method:**	N/A	**Instrument:**	IC2
Client ID:	50WW25-111615	**Prep Method:**	9056	**Prep Date:**	11/17/2015 13:00
Matrix:	Water	**Analytical Method:**	9056	**Cal Date:**	08/03/2015 16:14
Workgroup #:	WG547299	**Analyst:**	ALS	**Run Date:**	11/17/2015 22:30
Collect Date:	11/16/2015 14:55	**Dilution:**	2	**File ID:**	I2_111715-30
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloride	16887-00-6	31.7		0.800	0.400	0.200
Nitrate	14797-55-8	0.400	U	0.800	0.400	0.200
Nitrite	14797-65-0	0.400	U	0.800	0.400	0.200
Sulfate	14808-79-8	61.9		4.00	2.00	1.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.3.1.2 QC Summary Data

Example Calculations - Ion Chromatography

A. Methods 9056/300.0 (Quadratic with Offset)

1. Retrieve Curve Data from the ICAL Curve

c2 = the value of curve constant
c1= the curve slope
c0 = the curve offset

2. Obtain the area, y , from the instrument raw data

3. Calculate the concentration of the analyte, f(y), where:

$$f(y) = \frac{1}{2 * c_2} * \left(-c_1 \pm \sqrt{c_1^2 - 4 * c_2 * (c_0 - y)}\right)$$

Example Calculation:

Value of constant, c2, (curve):	0.0003
Value of curve constant, c1, (slope):	0.0869
Value of curve constant, c0, (offset):	-0.0103
Area of target analyte, y, (uS*min):	2.993
Calculated concentration, f(y), (mg/L):	31.1998864
or:	-40.1161215 *
Dilution factor (D):	1.00
Concentration of analyte in sample (mg/L):	31.200

* There are two possible solutions, but only one is valid.

B. Method 314.0 - Perchlorate (Linear)

Retrieve Curve Data from Linear Plot

c1 = the curve slope

Obtain the area, y , from the quantitation report

Calculate the concentration of the analyte, f(y), where:

f (y) = y / c1

Example Calculation:

Value of c1, slope:	0.0034
Area of target analyte, y:	0.083
Calculated concentration:	24.4117647
Dilution Factor:	1
Concentration in sample:	24.4117647

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC2 Dataset: 080315 ICAL IC2.SEQ
Analyst1: AED Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 17

Maintenance Log ID: 53330 Syringe Filter Lot#: 00195722
Eluent ID#: RGT34279
Column 1 ID: AG14A-4MM Column 2 ID: AS14A-4MM
Workgroups:

Internal STD: NA Surrogate STD: NA Calibration STD STD69215 (02/17/15)
CCV STD: STD69215 LCS STD: STD69216 MS/MSD STD: STD69216

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I2_080315-01	ELUENT	1	1		08/03/15 14:06
2	I2_080315-02	DI WATER	1	1		08/03/15 14:25
3	I2_080315-03	WG533569-01 STD \#6	1	1		08/03/15 14:43
4	I2_080315-04	WG533569-02 STD \#5	1	1		08/03/15 15:01
5	I2_080315-05	WG533569-03 STD \#4	1	1		08/03/15 15:19
6	I2_080315-06	WG533569-04 STD \#3	1	1		08/03/15 15:37
7	I2_080315-07	WG533569-05 STD \#2	1	1		08/03/15 15:56
8	I2_080315-08	WG533569-06 STD \#1	1	1		08/03/15 16:14
9	I2_080315-09	WG533569-07 SSCV	1	1		08/03/15 16:32
10	I2_080315-10	LCRV Level \#6	1	1		08/03/15 16:50
11	I2_080315-11	LCRV Level \#2	1	1		08/03/15 17:08
12	I2_080315-12	LCRV Eluent Blank	1	1		08/03/15 17:27
13	I2_080315-13	END	1	1		08/03/15 17:45

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 19-AUG-15

Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC2 Dataset: 111715 IC2.SEQ
Analyst1: ALS Analyst2: NA
Method: 300/9056 SOP: IC01 Rev: 18

Maintenance Log ID: Syringe Filter Lot#: 150514254
Eluent ID#: RGT35377

Column 1 ID: AG14SA-4MM Column 2 ID: AS14A-4MM

Workgroups: WG547299

Internal STD: NA Surrogate STD: NA Calibration STD STD71545 (08/03/15)

CCV STD: STD71545 LCS STD: STD71546 MS/MSD STD: STD71546

Comments: Fractions L15110943-01,03,05,07, and 09 were analyzed at a dilution due to CL and/or SO4 exceeding 200ppm.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	I2_111715-01	ELUENT	1	1		11/17/15 13:42
2	I2_111715-02	DI WATER	1	1		11/17/15 14:01
3	I2_111715-03	WG547348-01 ANION CCV	1	1		11/17/15 14:19
4	I2_111715-04	WG547348-02 ANION CCB	1	1		11/17/15 14:37
5	I2_111715-05	WG547299-01 ANION BLANK	1	1		11/17/15 14:55
6	I2_111715-06	WG547299-02 ANION LCS	1	1		11/17/15 15:13
7	I2_111715-07	L15110945-01 (NO3) REF	1	1		11/17/15 15:32
8	I2_111715-08	WG547299-04 DUP 0945-01	1	1		11/17/15 15:50
9	I2_111715-09	L15110945-02 (NO3) MS	1	1		11/17/15 16:08
10	I2_111715-10	L15110945-03 (NO3) MSD	1	1		11/17/15 16:26
11	I2_111715-11	L15110946-01 (NO3) REF	1	1		11/17/15 16:45
12	I2_111715-12	WG547299-08 DUP 0946-01	1	1		11/17/15 17:03
13	I2_111715-13	L15110946-02 (NO3) MS	1	1		11/17/15 17:21
14	I2_111715-14	L15110946-03 (NO3) MSD	1	1		11/17/15 17:39
15	I2_111715-15	WG547348-03 ANION CCV	1	1		11/17/15 17:57
16	I2_111715-16	WG547348-04 ANION CCB	1	1		11/17/15 18:16
17	I2_111715-17	L15110943-01 1/5 (CL,NO2,NO3,SO4)	1	5		11/17/15 18:34
18	I2_111715-18	L15110943-01 1/25 (CL,NO2,NO3,SO4)	1	25		11/17/15 18:52
19	I2_111715-19	L15110943-03 1/5 (CL,NO2,NO3,SO4)	1	5		11/17/15 19:10
20	I2_111715-20	L15110943-03 1/50 (CL,NO2,NO3,SO4)	1	50		11/17/15 19:28
21	I2_111715-21	L15110943-05 1/2 (CL,NO2,NO3,SO4)	1	2		11/17/15 19:47
22	I2_111715-22	L15110943-05 1/25 (CL,NO2,NO3,SO4)	1	25		11/17/15 20:05
23	I2_111715-23	L15110943-07 1/10 (CL,NO2,NO3,SO3)	1	10		11/17/15 20:23
24	I2_111715-24	L15110943-07 1/100 (CL,NO2,NO3,SO3)	1	100		11/17/15 20:41
25	I2_111715-25	L15110943-09 1/5 (CL,NO2,NO3,SO4)	1	5		11/17/15 20:59
26	I2_111715-26	L15110943-09 1/50 (CL,NO2,NO3,SO4)	1	50		11/17/15 21:18
27	I2_111715-27	WG547348-05 ANION CCV	1	1		11/17/15 21:36
28	I2_111715-28	WG547348-06 ANION CCB	1	1		11/17/15 21:54
29	I2_111715-29	L15110943-11 (CL,NO2,NO3,SO4)	1	1		11/17/15 22:12
30	I2_111715-30	L15110943-11 1/2 (CL,NO2,NO3,SO4)	1	2		11/17/15 22:30
31	I2_111715-31	FLUID BLANK WG546941	1	1		11/17/15 22:49
32	I2_111715-32	L15110792-01 1/2 (CL)	18	2		11/17/15 23:07
33	I2_111715-33	L15110792-02 (CL)	18	1		11/17/15 23:25

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: IC2 Dataset: 111715 IC2.SEQ

Analyst1: ALS Analyst2: NA

Method: 300/9056 SOP: IC01 Rev: 18

Maintenance Log ID: Syringe Filter Lot#: 150514254

Eluent ID#: RGT35377

Column 1 ID: AG14SA-4MM Column 2 ID: AS14A-4MM

Workgroups: WG547299

Internal STD: NA Surrogate STD: NA STD71545 (08/03/15)

CCV STD: STD71545 LCS STD: STD71546 STD71546

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	I2_111715-34	WG547348-07 ANION CCV	1	1		11/17/15 23:43
35	I2_111715-35	WG547348-08 ANION CCB	1	1		11/18/15 00:02
36	I2_111715-36	END	1	1		11/18/15 00:20

Comments

Seq.	Rerun	Dil.	Reason	Analytes
30				
	L15110943-11 1/2 (CL,NO2,NO3,SO4) was analyzed at a dilution due to CL exceeding the ICAL.			

Page: 2 Approved: 18-NOV-15

Microbac Laboratories Inc.

Data Checklist

Date: 03-AUG-2015
Analyst: AED
Analyst: NA
Method: 9056/300
Instrument: IC2
Curve Workgroup: NA
Runlog ID: 69606
Analytical Workgroups: WG533569 IC2 ICAL

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	NA
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	NA
Recoveries	NA
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	NA
TCL hits	NA
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	NA
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	AED
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
04-AUG-2015

Secondary Reviewer:
19-AUG-2015

CHECKLIST1 - Modified 03/05/2008
Generated: AUG-19-2015 11:38:56

Microbac Laboratories Inc.

Data Checklist

Date: 17-NOV-2015
Analyst: ALS
Analyst: NA
Method: 9056/300
Instrument: IC2
Curve Workgroup: NA
Runlog ID: 71747
Analytical Workgroups: 11-0792,0943,0945,0946

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	NA
Endrin/DDT breakdown (8081/MS)	NA
Pentachlorophenol/benzidine tailing (MS)	NA
Eluent check (IC)/system pressure (HPLC)	X
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	X
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	NA
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	X
Check for completeness	X
Primary Reviewer	ALS
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 18-NOV-2015

Secondary Reviewer: 18-NOV-2015

CHECKLIST1 - Modified 03/05/2008

Generated: NOV-18-2015 14:28:21

Microbac Laboratories Inc.

00652883

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 9056 AAB#: WG547299

Login Number: L15110943

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW08-111615	01	11/16/15					11/17/2015	1.2	2		11/17/15	1.4	2	
50WW08-111615	01	11/16/15					11/17/2015	1.2	2		11/17/15	1.4	2	
50WW22-111615	03	11/16/15					11/17/2015	1.1	2		11/17/15	1.4	2	
50WW22-111615	03	11/16/15					11/17/2015	1.1	2		11/17/15	1.4	2	
50WW24-111615	05	11/16/15					11/17/2015	1.1	2		11/17/15	1.4	2	
50WW24-111615	05	11/16/15					11/17/2015	1.1	2		11/17/15	1.4	2	
50WW23-111615	07	11/16/15					11/17/2015	1.1	2		11/17/15	1.4	2	
50WW23-111615	07	11/16/15					11/17/2015	1.1	2		11/17/15	1.4	2	
50WW18-111615	09	11/16/15					11/17/2015	1	2		11/17/15	1.3	2	
50WW18-111615	09	11/16/15					11/17/2015	1	2		11/17/15	1.3	2	
50WW25-111615	11	11/16/15					11/17/2015	.9	2		11/17/15	1.3	2	
50WW25-111615	11	11/16/15					11/17/2015	.9	2		11/17/15	1.3	2	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4505045
Report generated 11/18/2015 14:49

METHOD BLANK SUMMARY

Login Number: L15110943
Blank File ID: I2_111715-05
Prep Date: 11/17/15 13:00
Analyzed Date: 11/17/15 14:55
Analyst: ALS

Work Group: WG547299
Blank Sample ID: WG547299-01
Instrument ID: IC2
Method: 9056

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG547299-02	I2_111715-06	11/17/15 15:13	01
DUP	WG547299-04	I2_111715-08	11/17/15 15:50	01
DUP	WG547299-08	I2_111715-12	11/17/15 17:03	01
50WW08-111615	L15110943-01	I2_111715-17	11/17/15 18:34	DL01
50WW08-111615	L15110943-01	I2_111715-18	11/17/15 18:52	DL02
50WW22-111615	L15110943-03	I2_111715-19	11/17/15 19:10	DL01
50WW22-111615	L15110943-03	I2_111715-20	11/17/15 19:28	DL02
50WW24-111615	L15110943-05	I2_111715-21	11/17/15 19:47	DL01
50WW24-111615	L15110943-05	I2_111715-22	11/17/15 20:05	DL02
50WW23-111615	L15110943-07	I2_111715-23	11/17/15 20:23	DL01
50WW23-111615	L15110943-07	I2_111715-24	11/17/15 20:41	DL02
50WW18-111615	L15110943-09	I2_111715-25	11/17/15 20:59	DL01
50WW18-111615	L15110943-09	I2_111715-26	11/17/15 21:18	DL02
50WW25-111615	L15110943-11	I2_111715-29	11/17/15 22:12	01
50WW25-111615	L15110943-11	I2_111715-30	11/17/15 22:30	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4505046
Report generated 11/18/2015 14:49

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15110943 Prep Date: 11/17/15 13:00 Sample ID: WG547299-01
Instrument ID: IC2 Run Date: 11/17/15 14:55 Prep Method: 9056
File ID: I2 111715-05 Analyst: ALS Method: 9056
Workgroup (AAB#): WG547299 Matrix: Water Units: mg/L
Contract #: Cal ID: IC2-03-AUG-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Chloride	0.100	0.400	0.100	1	U
Nitrate	0.100	0.400	0.100	1	U
Nitrite	0.100	0.400	0.100	1	U
Sulfate	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4505047
18-NOV-2015 14:49

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15110943 Run Date: 11/17/2015 Sample ID: WG547299-02
Instrument ID: IC2 Run Time: 15:13 Prep Method: 9056
File ID: I2 111715-06 Analyst: ALS Method: 9056
Workgroup (AAB#): WG547299 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD71546 Cal ID: IC2 - 03-AUG-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Chloride	8.00	8.19	102	90 - 110	
Nitrate	5.42	5.32	98.2	90 - 110	
Nitrite	4.87	5.07	104	90 - 110	
Sulfate	40.0	39.6	99.1	90 - 110	

LCS - Modified 03/06/2008
PDF File ID: 4505048
Report generated: 11/18/2015 14:49

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L15110943
Analytical Method: 9056
ICAL Workgroup: WG533569

Instrument ID: IC2
Initial Calibration Date: 03-AUG-15 16:14
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Chloride		5.425	8.21	0.99800	
Nitrate		2.145	11.5	0.99700	
Nitrite		2.773	7.31	1.00000	
Sulfate		7.062	16.0	0.99600	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4505049
Report generated 11/18/2015 14:49

Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number: L15110943
Analytical Method: 9056
Instrument ID: IC2
Initial Calibration Date: 03-AUG-15 16:14
Column ID: F

Analyte	WG533569-01			WG533569-02			WG533569-03		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	24.0	5.09400000	4.711	12.0	2.31500000	5.184	8.00	1.45300000	5.506
Nitrate	16.3	9.09800000	1.788	8.13	4.10300000	1.982	5.42	2.52000000	2.151
Nitrite	14.6	5.74700000	2.543	7.31	2.80200000	2.608	4.87	1.78800000	2.724
Sulfate	120	21.5820000	5.560	60.0	9.61600000	6.240	40.0	5.87200000	6.812

INT_CAL - Modified 03/06/2008
PDF File ID: 4505049
Report generated 11/18/2015 14:49

Microbac Laboratories Inc.
INITIAL CALIBRATION DATA

Login Number: L15110943
Analytical Method: 9056
Instrument ID: IC2
Initial Calibration Date: 03-AUG-15 16:14
Column ID: F

Analyte	WG533569-04			WG533569-05			WG533569-06		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Chloride	4.00	0.716000000	5.587	1.00	0.176000000	5.682	0.200	0.0340000000	5.882
Nitrate	2.71	1.22300000	2.217	0.678	0.300000000	2.258	0.134	0.0540000000	2.473
Nitrite	2.44	0.889000000	2.740	0.609	0.210000000	2.900	0.122	0.0390000000	3.123
Sulfate	20.0	2.74900000	7.275	5.00	0.636000000	7.862	1.00	0.116000000	8.621

INT_CAL - Modified 03/06/2008
PDF File ID: 4505049
Report generated 11/18/2015 14:49

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15110943 Run Date: 08/03/2015 Sample ID: WG533569-07
Instrument ID: IC2 Run Time: 16:32 Method: 9056
File ID: I2 080315-09 Analyst: AED QC Key: DOD4
ICal Workgroup: WG533569 Cal ID: IC2 - 03-AUG-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloride		8.00	7.48	mg/L	5.38	6.60	10	
Nitrate		5.42	5.03	mg/L	2.08	7.20	10	
Nitrite		4.87	4.72	mg/L	2.70	3.10	10	
Sulfate		40.0	36.7	mg/L	6.63	8.40	10	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4505050
Report generated 11/18/2015 14:49

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15110943
Run Date: 11/17/2015
Sample ID: WG547348-02
Instrument ID: IC2
Run Time: 14:37
Method: 9056
File ID: I2 111715-04
Analyst: ALS
Units: mg/L
Workgroup (AAB#): WG547299
Cal ID: IC2 - 03-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4505052
Report generated 11/18/2015 14:49

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15110943
Run Date: 11/17/2015
Sample ID: WG547348-04
Instrument ID: IC2
Run Time: 18:16
Method: 9056
File ID: I2 111715-16
Analyst: ALS
Units: mg/L
Workgroup (AAB#): WG547299
Cal ID: IC2 - 03-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4505052
Report generated 11/18/2015 14:49

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15110943
Run Date: 11/17/2015
Sample ID: WG547348-06
Instrument ID: IC2
Run Time: 21:54
Method: 9056
File ID: I2 111715-28
Analyst: ALS
Units: mg/L
Workgroup (AAB#): WG547299
Cal ID: IC2 - 03-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4505052
Report generated 11/18/2015 14:49

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L15110943
Run Date: 11/18/2015
Sample ID: WG547348-08
Instrument ID: IC2
Run Time: 00:02
Method: 9056
File ID: I2 111715-35
Analyst: ALS
Units: mg/L
Workgroup (AAB#): WG547299
Cal ID: IC2 - 03-AUG-15
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Chloride	0.100	0.400	0.100	U
Nitrate	0.100	0.400	0.100	U
Nitrite	0.100	0.400	0.100	U
Sulfate	0.500	2.00	0.500	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4505052
Report generated 11/18/2015 14:49

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110943
Run Date: 11/17/2015
Sample ID: WG547348-01
Instrument ID: IC2
Run Time: 14:19
Method: 9056
File ID: I2 111715-03
Analyst: ALS
QC Key: DOD4
Workgroup (AAB#): WG547299
Cal ID: IC2 - 03-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.13	mg/L	4.94	1.66	10	
Nitrate		5.42	5.27	mg/L	1.98	2.80	10	
Nitrite		4.87	5.00	mg/L	2.55	2.54	10	
Sulfate		40.0	38.8	mg/L	6.25	2.95	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4505051
Report generated 11/18/2015 14:49

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110943
Run Date: 11/17/2015
Sample ID: WG547348-03
Instrument ID: IC2
Run Time: 17:57
Method: 9056
File ID: I2 111715-15
Analyst: ALS
QC Key: DOD4
Workgroup (AAB#): WG547299
Cal ID: IC2 - 03-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.12	mg/L	4.95	1.51	10	
Nitrate		5.42	5.29	mg/L	1.98	2.45	10	
Nitrite		4.87	5.13	mg/L	2.48	5.39	10	
Sulfate		40.0	39.5	mg/L	6.15	1.34	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4505051
Report generated 11/18/2015 14:49

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110943
Run Date: 11/17/2015
Sample ID: WG547348-05
Instrument ID: IC2
Run Time: 21:36
Method: 9056
File ID: I2 111715-27
Analyst: ALS
QC Key: DOD4
Workgroup (AAB#): WG547299
Cal ID: IC2 - 03-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.18	mg/L	4.92	2.23	10	
Nitrate		5.42	5.32	mg/L	1.97	1.86	10	
Nitrite		4.87	5.08	mg/L	2.51	4.18	10	
Sulfate		40.0	39.7	mg/L	6.12	0.850	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4505051
Report generated 11/18/2015 14:49

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110943
Run Date: 11/17/2015
Sample ID: WG547348-07
Instrument ID: IC2
Run Time: 23:43
Method: 9056
File ID: I2 111715-34
Analyst: ALS
QC Key: DOD4
Workgroup (AAB#): WG547299
Cal ID: IC2 - 03-AUG-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloride		8.00	8.21	mg/L	4.90	2.60	10	
Nitrate		5.42	5.32	mg/L	1.97	1.89	10	
Nitrite		4.87	5.08	mg/L	2.50	4.36	10	
Sulfate		40.0	39.8	mg/L	6.10	0.485	10	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4505051
Report generated 11/18/2015 14:49

2.3.1.3 Sample Data

17 L15110943-01 1/5 (CL,NO2,NO3,SO4)

1,5 ALS (CL,SO4>200PPM)

Sample Name:	**L15110943-01 1/5 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**25.0**
Vial Number:	**17**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/17/2015 18:34**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

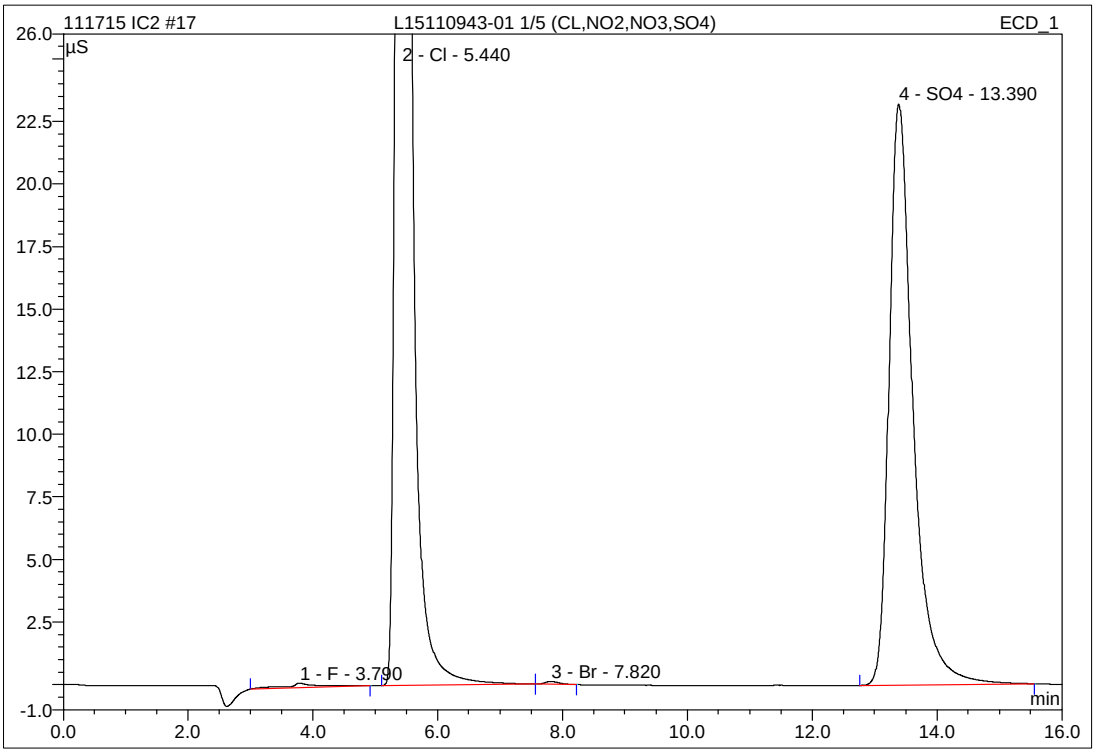

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.79	F	0.181	0.110	0.37	0.339	BMB
2	5.44	Cl	78.011	19.171	64.73	95.613	BMB
3	7.82	Br	0.116	0.030	0.10	0.446	bMB
4	13.39	SO4	23.209	10.306	34.80	62.157	BMB
Total:			101.517	29.617	100.00	158.554	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

18 L15110943-01 1/25 (CL,NO2,NO3,SO4)

1,25 ALS

Sample Name:	**L15110943-01 1/25 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**25.0**
Vial Number:	**18**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/17/2015 18:52**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

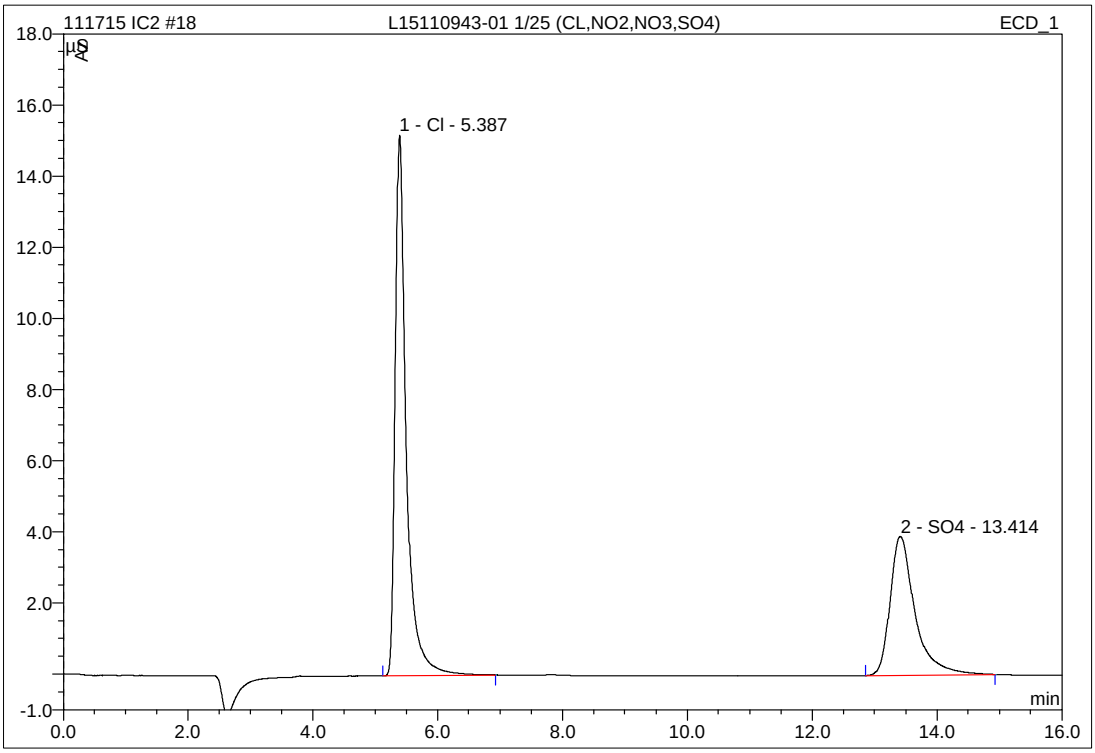

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	5.39	Cl	15.194	3.120	63.42	15.618	BMB
2	13.41	SO4	3.897	1.799	36.58	11.374	BMB
Total:			19.091	4.919	100.00	26.992	

19 L15110943-03 1/5 (CL,NO2,NO3,SO4)

1,5 ALS (CL,SO4>200PPM)

Sample Name:	**L15110943-03 1/5 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**25.0**
Vial Number:	**19**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/17/2015 19:10**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

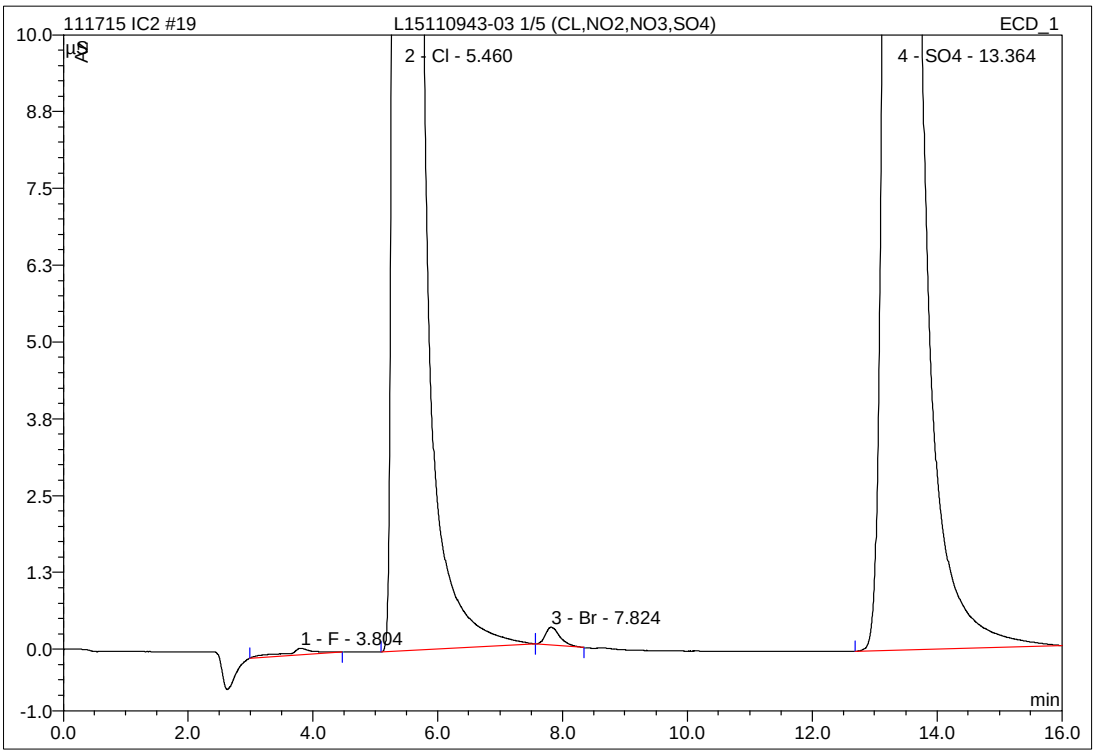

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.80	F	0.104	0.055	0.07	0.163	BMB
2	5.46	Cl	248.721	58.060	68.79	289.432	BMb
3	7.82	Br	0.292	0.079	0.09	1.101	bMB
4	13.36	SO4	59.503	26.204	31.05	157.063	BMB
Total:			308.620	84.398	100.00	447.759	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

20 L15110943-03 1/50 (CL,NO2,NO3,SO4)

1,50 ALS

Sample Name:	**L15110943-03 1/50 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**25.0**
Vial Number:	**20**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/17/2015 19:28**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

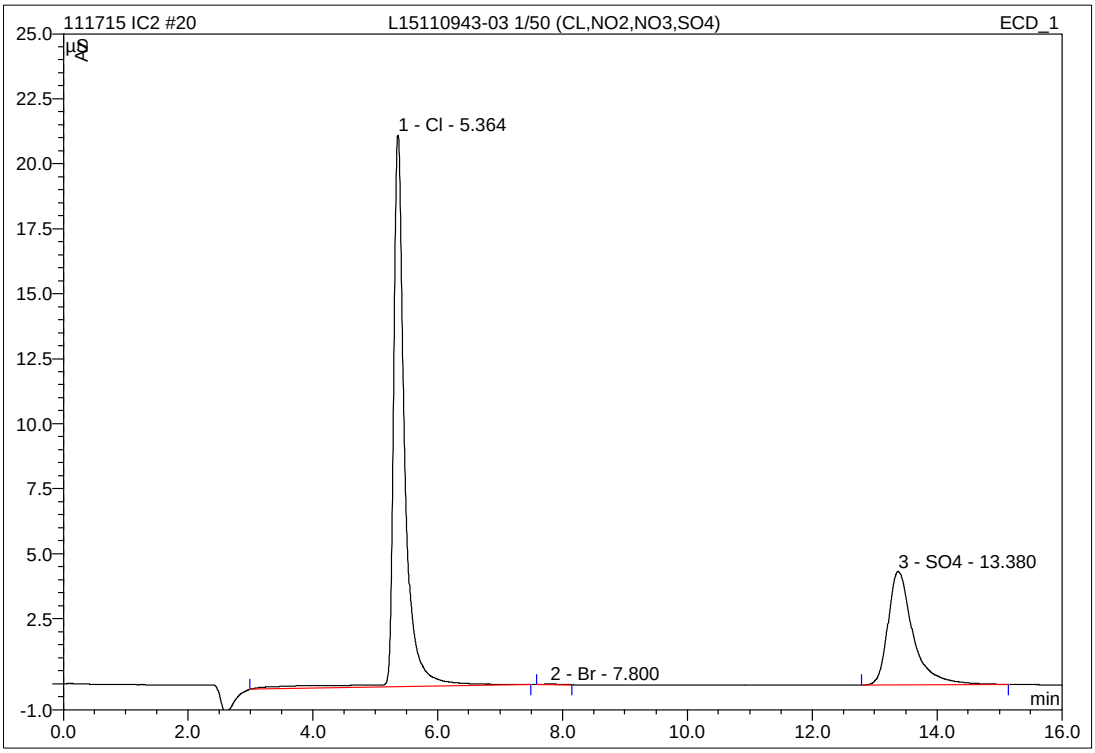

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	5.36	Cl	21.219	4.542	69.09	22.707	BMB
2	7.80	Br	0.031	0.009	0.13	0.153	BMB
3	13.38	SO4	4.367	2.024	30.78	12.715	BMB
Total:			25.617	6.575	100.00	35.575	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

20 L15110943-03 1/50 (CL,NO2,NO3,SO4)

1,50 ALS

Sample Name:	**L15110943-03 1/50 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**25.0**
Vial Number:	**20**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/17/2015 19:28**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

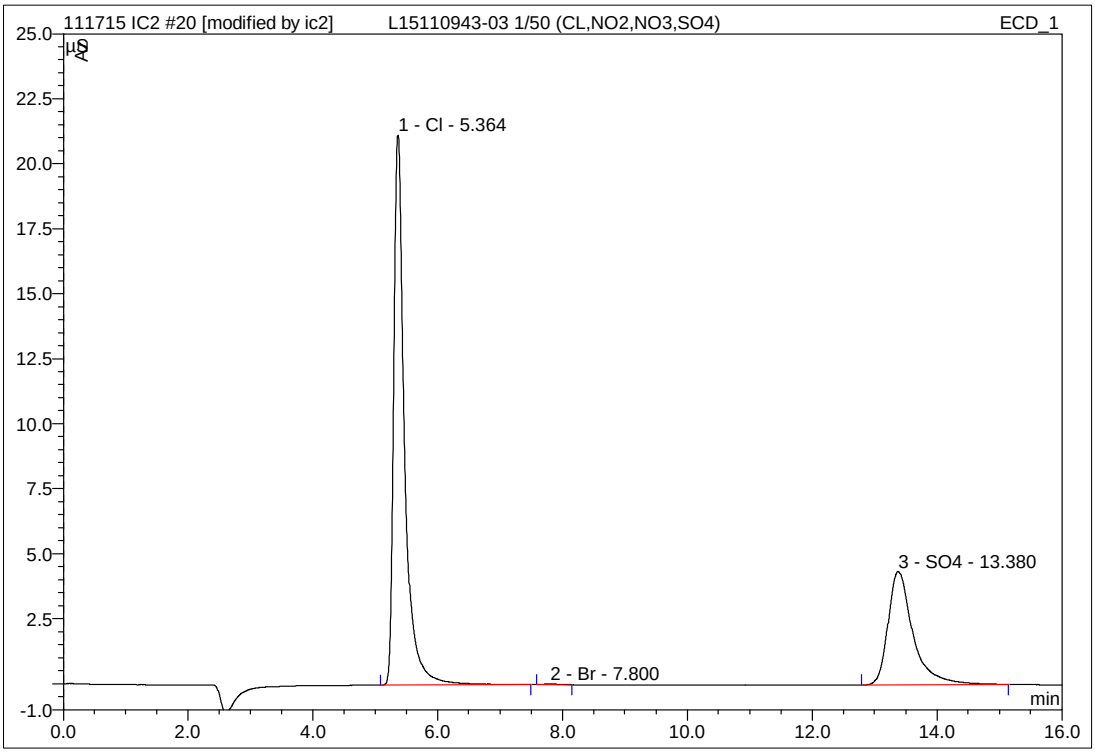

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	5.36	Cl	21.150	4.265	67.72	21.323	BMB*
2	7.80	Br	0.031	0.009	0.14	0.153	BMB
3	13.38	SO4	4.367	2.024	32.14	12.715	BMB
Total:			25.548	6.297	100.00	34.191	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

Analyst: 11/18/2015 08:04 Supervisor: 11/18/2015 14:18

#4 - System establishes incorrect baseline

21 L15110943-05 1/2 (CL,NO2,NO3,SO4)

1,2 ALS (CL>200PPM)

Sample Name:	**L15110943-05 1/2 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**25.0**
Vial Number:	**21**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/17/2015 19:47**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

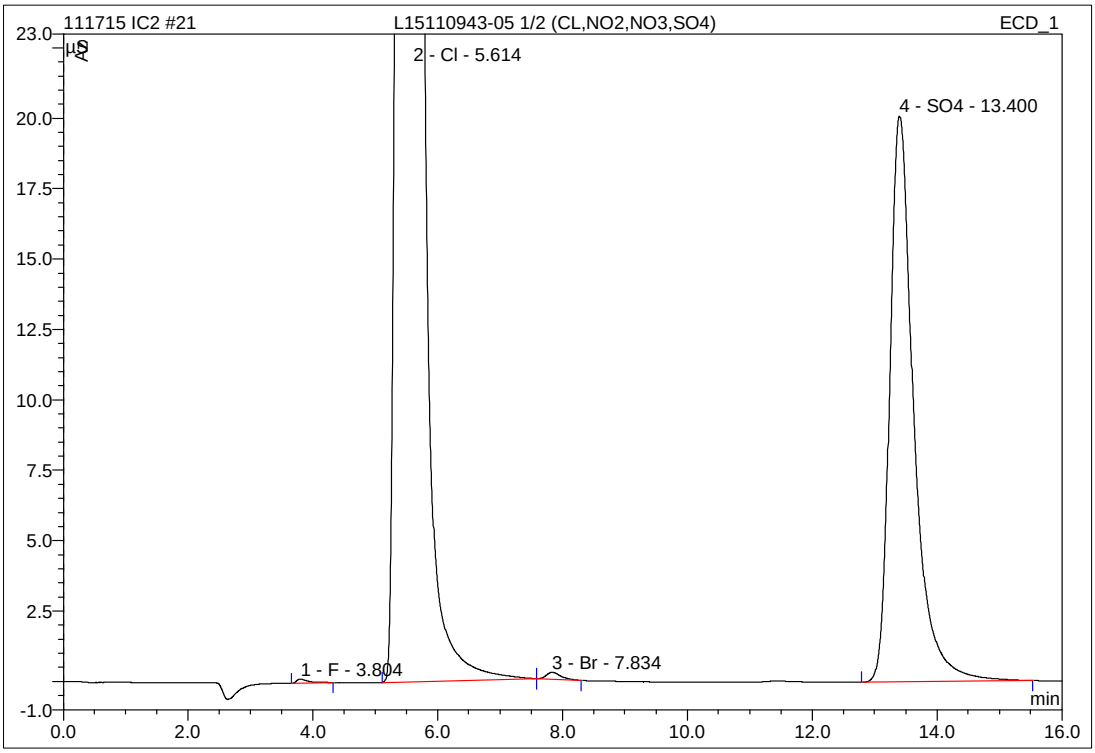

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.80	F	0.146	0.033	0.05	0.093	BMB
2	5.61	Cl	210.278	53.942	85.63	268.906	BMb
3	7.83	Br	0.245	0.066	0.10	0.918	bMB
4	13.40	SO4	20.089	8.951	14.21	54.067	BMB
Total:			230.758	62.991	100.00	323.983	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

22 L15110943-05 1/25 (CL,NO2,NO3,SO4)

1,25 ALS

Sample Name:	**L15110943-05 1/25 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**25.0**
Vial Number:	**22**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/17/2015 20:05**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

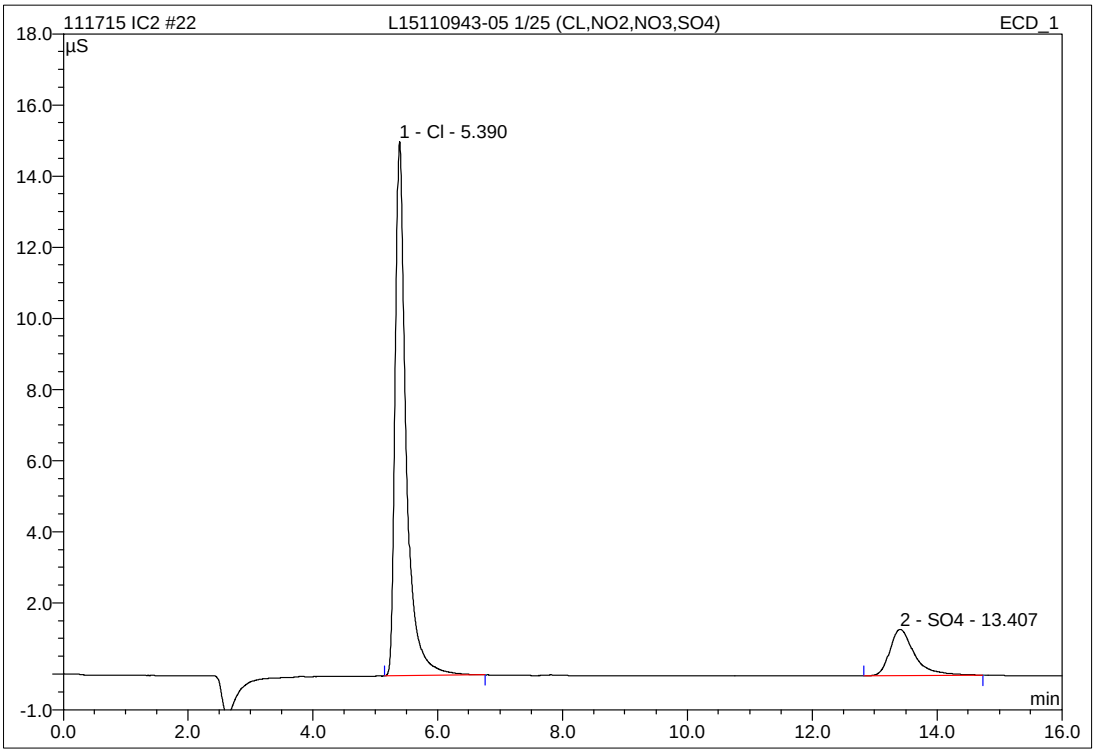

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	5.39	Cl	15.019	3.085	83.70	15.443	BMB
2	13.41	SO4	1.302	0.601	16.30	4.219	BMB
Total:			16.321	3.686	100.00	19.662	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

23 L15110943-07 1/10 (CL,NO2,NO3,SO3)

1,10 ALS (CL>200PPM)

Sample Name:	**L15110943-07 1/10 (CL,NO2,NO3,SO3)**	*Injection Volume:*	**25.0**
Vial Number:	**23**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/17/2015 20:23**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

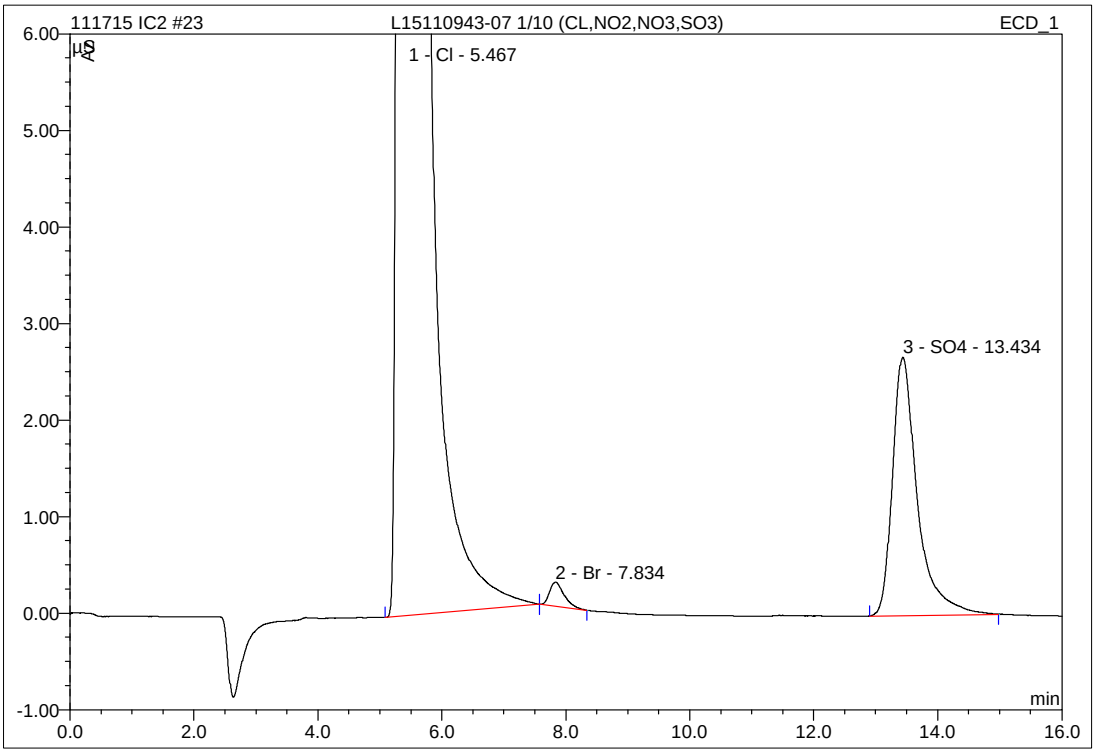

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	5.47	Cl	262.869	55.784	97.70	278.089	BMb
2	7.83	Br	0.251	0.068	0.12	0.952	bMB
3	13.43	SO4	2.673	1.243	2.18	8.051	BMB
Total:			265.794	57.095	100.00	287.093	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

24 L15110943-07 1/100 (CL,NO2,NO3,SO3)

1,100 ALS

Sample Name:	**L15110943-07 1/100 (CL,NO2,NO3,SO3)**	*Injection Volume:*	**25.0**
Vial Number:	**24**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/17/2015 20:41**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

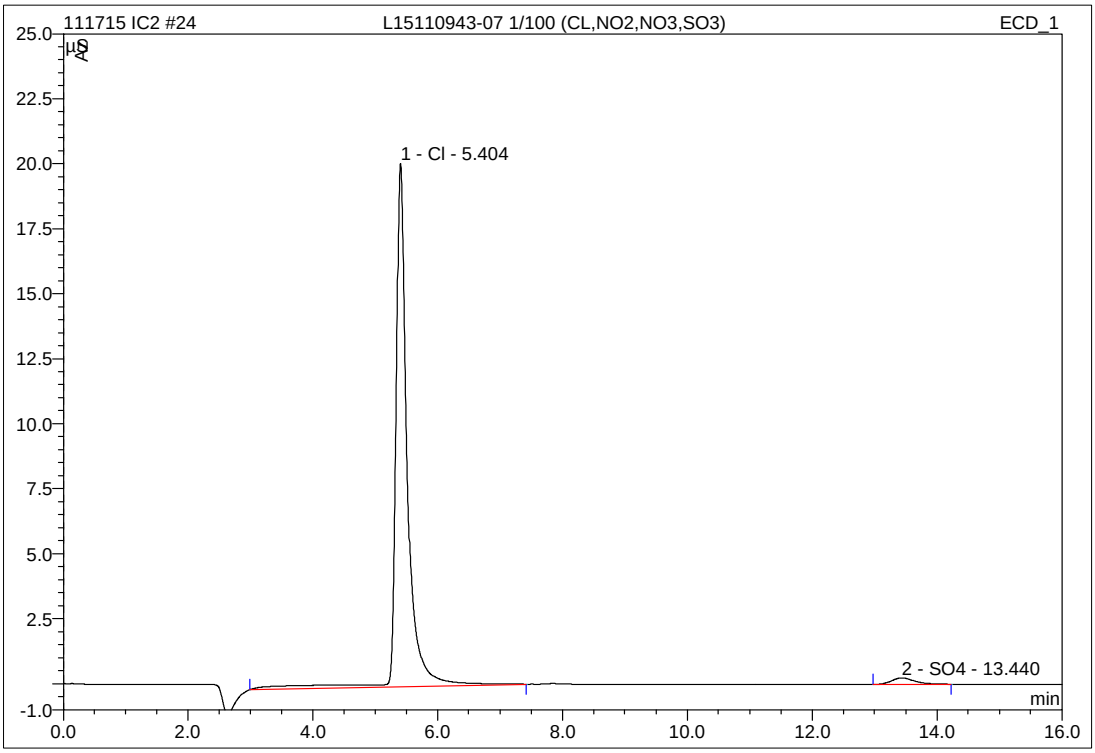

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	5.40	Cl	20.126	4.369	97.58	21.845	BMB
2	13.44	SO4	0.251	0.109	2.42	1.280	BMB
Total:			20.377	4.478	100.00	23.125	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

24 L15110943-07 1/100 (CL,NO2,NO3,SO3)

1,100 ALS

Sample Name:	**L15110943-07 1/100 (CL,NO2,NO3,SO3)**	*Injection Volume:*	**25.0**
Vial Number:	**24**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/17/2015 20:41**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

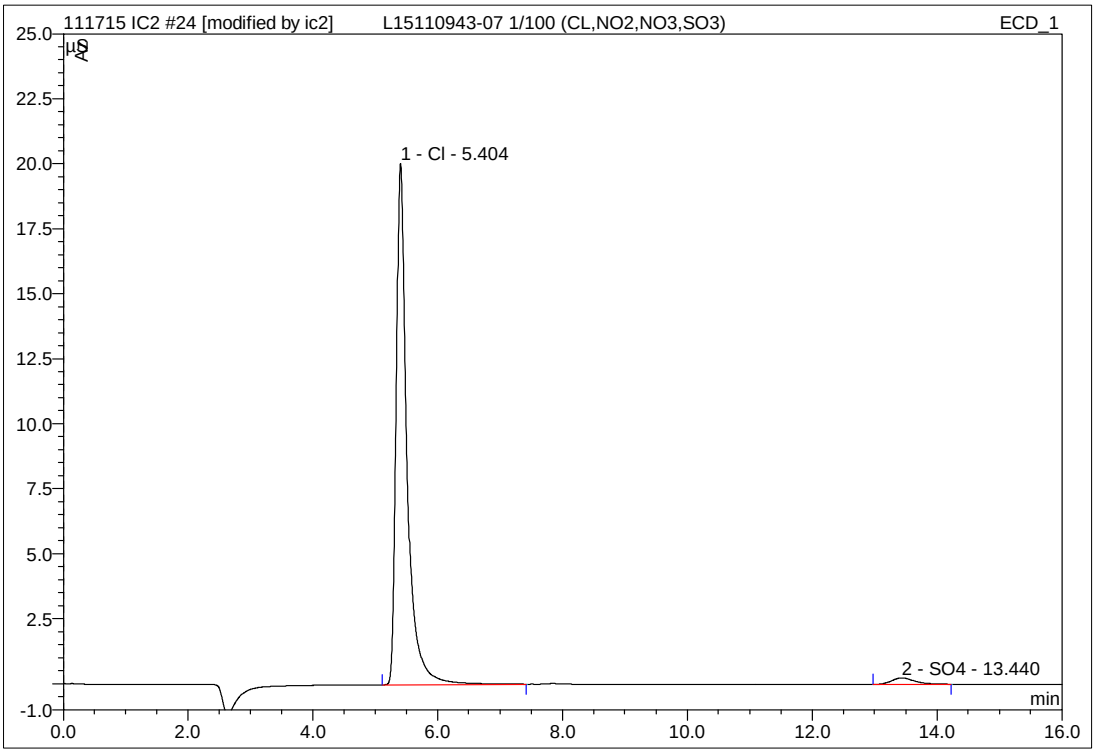

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	5.40	Cl	20.054	4.062	97.40	20.314	BMB*
2	13.44	SO4	0.251	0.109	2.60	1.280	BMB
Total:			20.305	4.171	100.00	21.594	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

Analyst: 11/18/2015 08:05 Supervisor: 11/18/2015 14:19

#4 - System establishes incorrect baseline

25 L15110943-09 1/5 (CL,NO2,NO3,SO4)

1,5 ALS (CL>200PPM)

Sample Name:	**L15110943-09 1/5 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**25.0**
Vial Number:	**25**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/17/2015 20:59**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

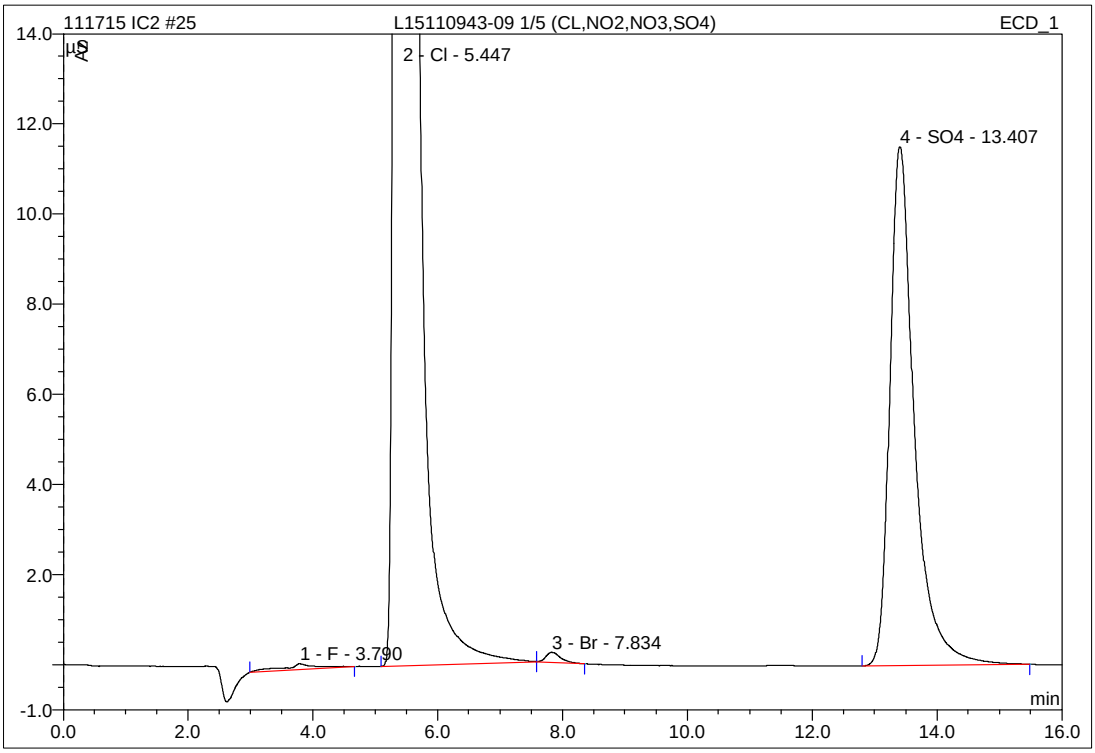

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.79	F	0.125	0.077	0.16	0.233	BMB
2	5.45	Cl	189.708	43.659	89.02	217.657	BMb
3	7.83	Br	0.224	0.060	0.12	0.846	bMB
4	13.41	SO4	11.516	5.249	10.70	31.970	BMB
Total:			201.573	49.045	100.00	250.706	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

26 L15110943-09 1/50 (CL,NO2,NO3,SO4)

1,50 ALS

Sample Name:	**L15110943-09 1/50 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**25.0**
Vial Number:	**26**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/17/2015 21:18**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

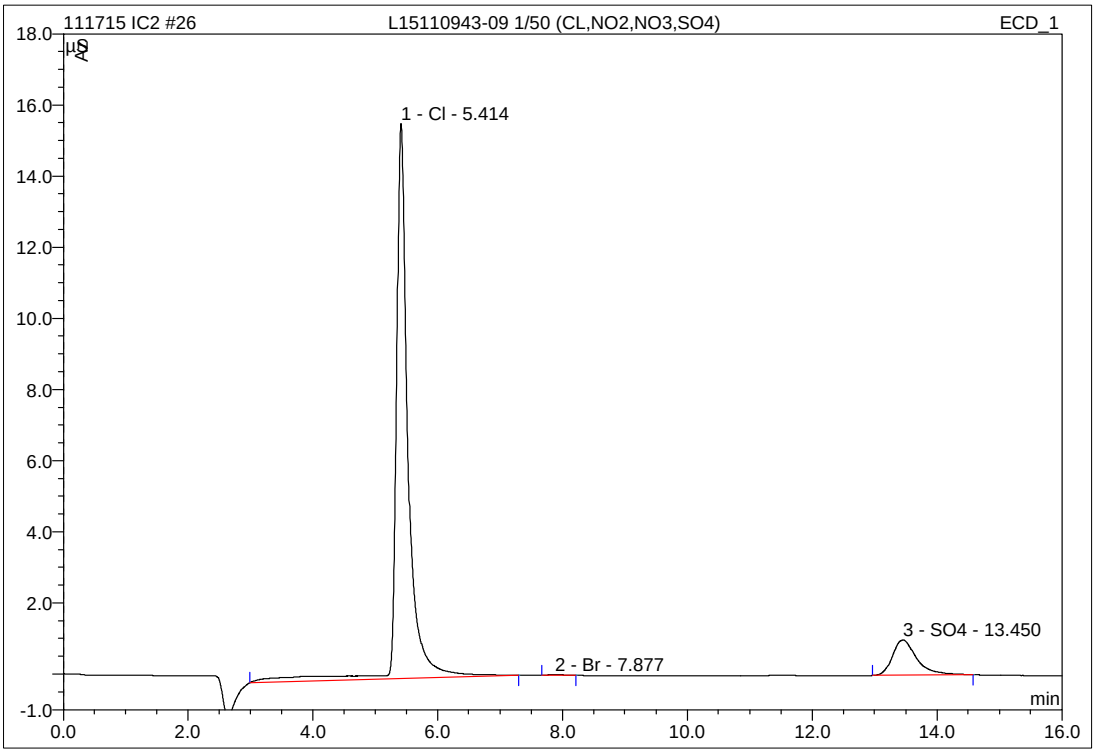

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	5.41	Cl	15.600	3.509	88.53	17.556	BMB
2	7.88	Br	0.024	0.006	0.16	0.122	BMB
3	13.45	SO4	0.992	0.448	11.31	3.308	BMB
Total:			16.616	3.963	100.00	20.986	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

26 L15110943-09 1/50 (CL,NO2,NO3,SO4)

1,50 ALS

Sample Name:	**L15110943-09 1/50 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**25.0**
Vial Number:	**26**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/17/2015 21:18**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

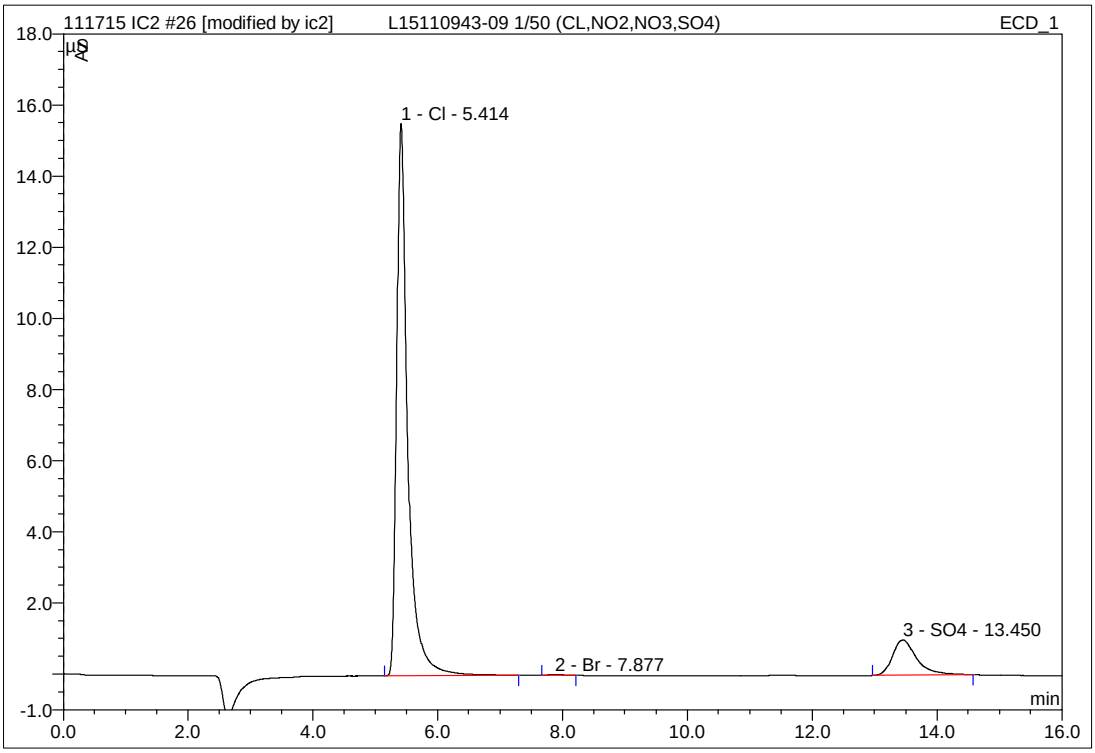

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	5.41	Cl	15.527	3.193	87.54	15.983	BMB*
2	7.88	Br	0.024	0.006	0.17	0.122	BMB
3	13.45	SO4	0.992	0.448	12.28	3.308	BMB
Total:			16.542	3.647	100.00	19.412	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

Analyst: 11/18/2015 08:06 Supervisor: 11/18/2015 14:19

#4 - System establishes incorrect baseline

29 L15110943-11 (CL,NO2,NO3,SO4)

1,1 ALS

Sample Name:	**L15110943-11 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**25.0**
Vial Number:	**29**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/17/2015 22:12**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

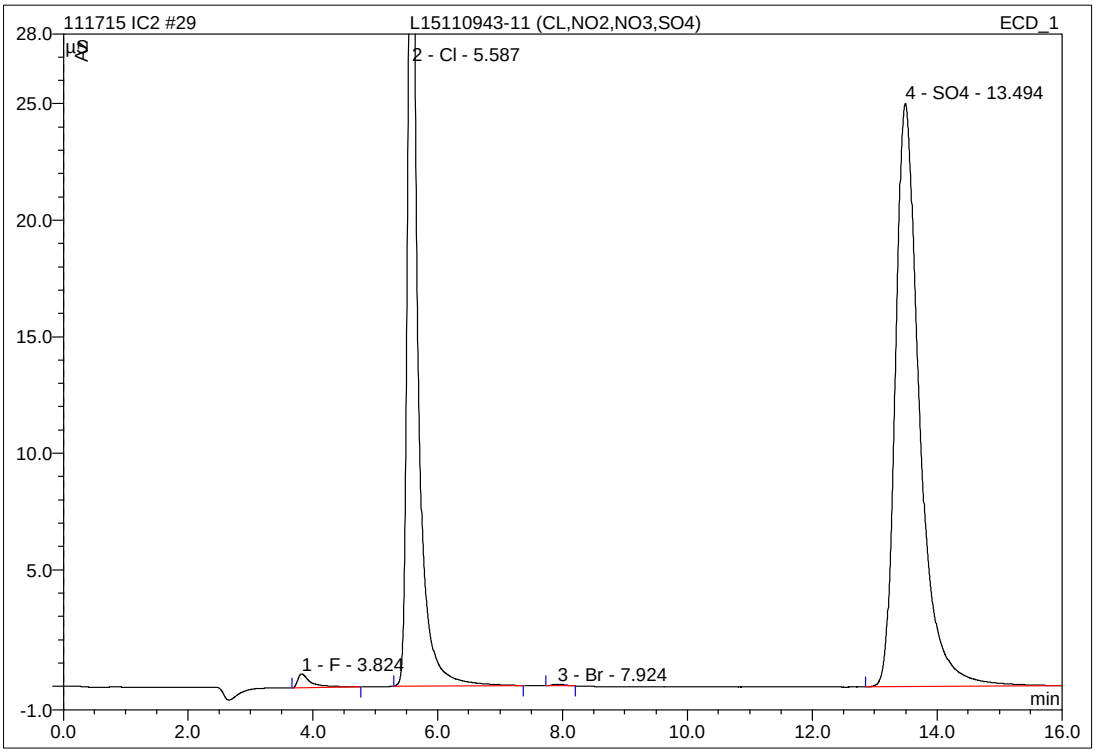

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.82	F	0.598	0.151	0.81	0.473	BMB
2	5.59	Cl	38.902	7.195	38.71	35.927	BMB
3	7.92	Br	0.071	0.016	0.09	0.255	BMB
4	13.49	SO4	25.027	11.223	60.39	67.633	BMB
Total:			64.597	18.585	100.00	104.288	

30 L15110943-11 1/2 (CL,NO2,NO3,SO4)

1,2 ALS

Sample Name:	**L15110943-11 1/2 (CL,NO2,NO3,SO4)**	*Injection Volume:*	**25.0**
Vial Number:	**30**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/17/2015 22:30**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

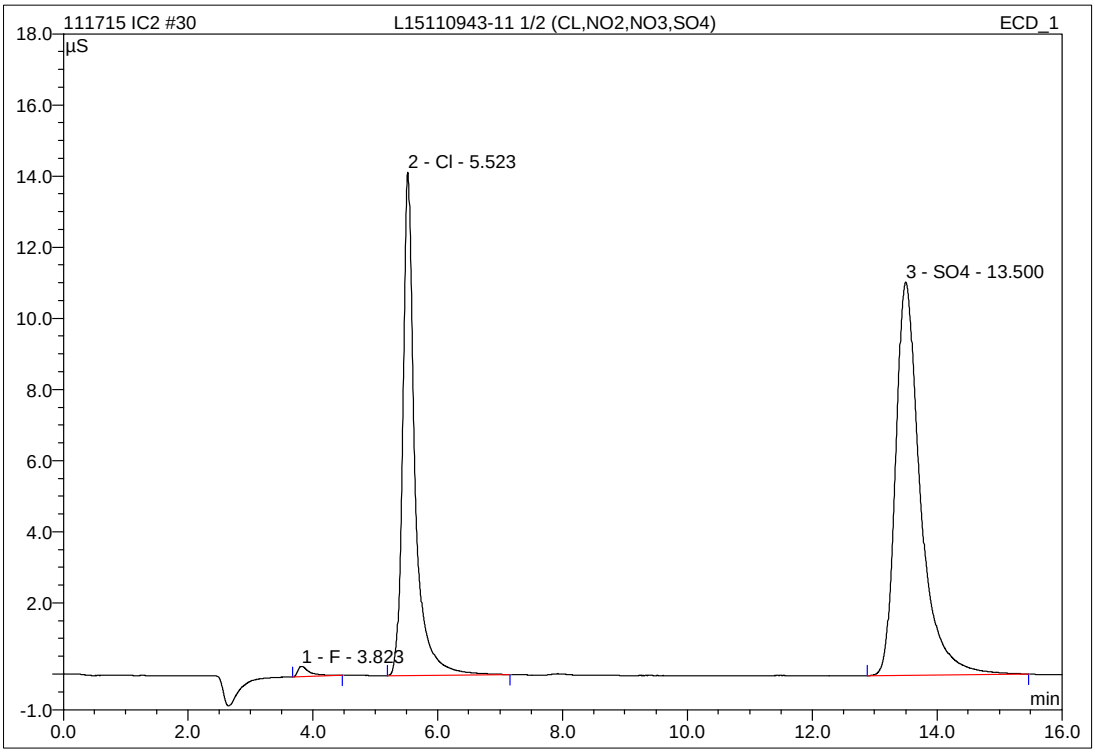

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.82	F	0.297	0.067	0.81	0.201	BMB
2	5.52	Cl	14.154	3.165	38.07	15.843	BMB
3	13.50	SO4	11.057	5.081	61.12	30.968	BMB
Total:			25.508	8.313	100.00	47.012	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

2.3.1.4 Standards Data

3 WG533569-01 STD #6

1,1 AED STD71715

Sample Name:	**WG533569-01 STD #6**	*Injection Volume:*	**25.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/03/2015 14:43**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

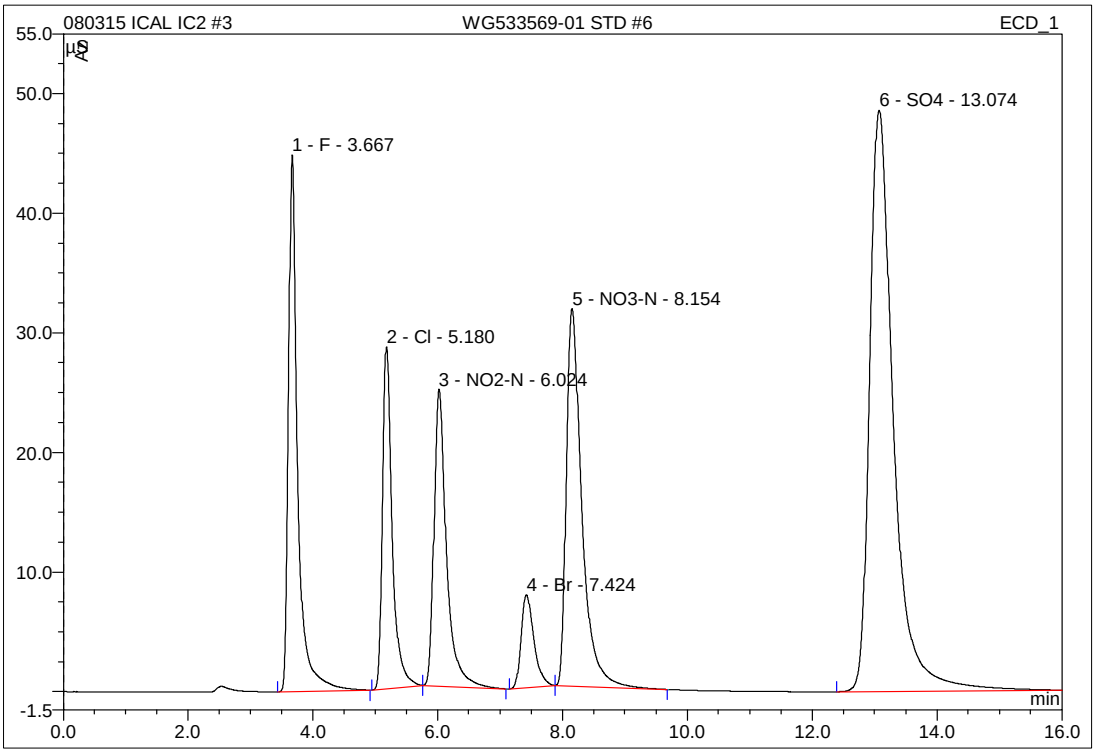

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.67	F	44.847	7.653	15.00	24.644	BMB
2	5.18	Cl	28.577	5.094	9.99	25.455	BMb
3	6.02	NO2-N	24.807	5.747	11.27	14.934	bMB
4	7.42	Br	7.771	1.837	3.60	24.664	BMb
5	8.15	NO3-N	31.557	9.098	17.84	17.397	bMB
6	13.07	SO4	48.562	21.582	42.31	129.474	BMB
Total:			186.121	51.010	100.00	236.568	

4 WG533569-02 STD #5

1,1 AED STD71715

Sample Name:	**WG533569-02 STD #5**	*Injection Volume:*	**25.0**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/03/2015 15:01**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

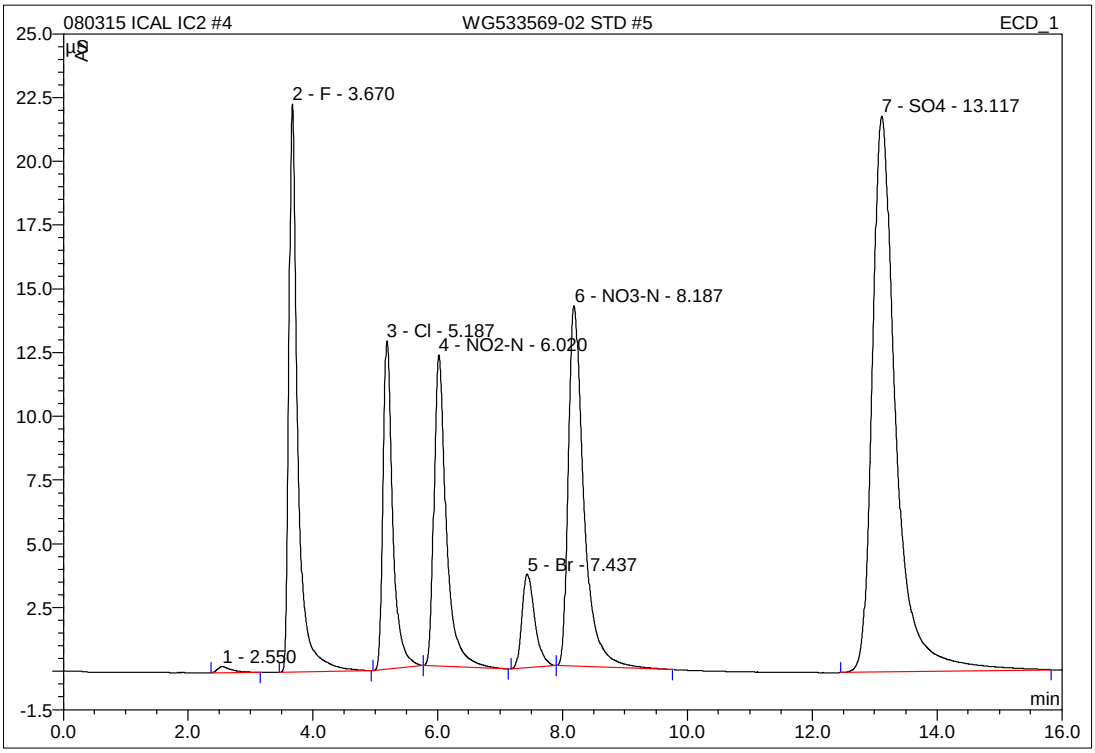

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.55	n.a.	0.232	0.060	0.25	n.a.	BMB
2	3.67	F	22.283	3.709	15.79	11.936	BMB
3	5.19	Cl	12.875	2.315	9.86	11.605	BMb
4	6.02	NO2-N	12.209	2.802	11.93	7.301	bMB
5	7.44	Br	3.673	0.879	3.74	11.828	BMb
6	8.19	NO3-N	14.133	4.103	17.47	7.881	bMB
7	13.12	SO4	21.786	9.616	40.95	58.039	BMB
Total:			87.191	23.484	100.00	108.591	

5 WG533569-03 STD #4

1,1 AED STD71715

Sample Name:	**WG533569-03 STD #4**	*Injection Volume:*	**25.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/03/2015 15:19**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

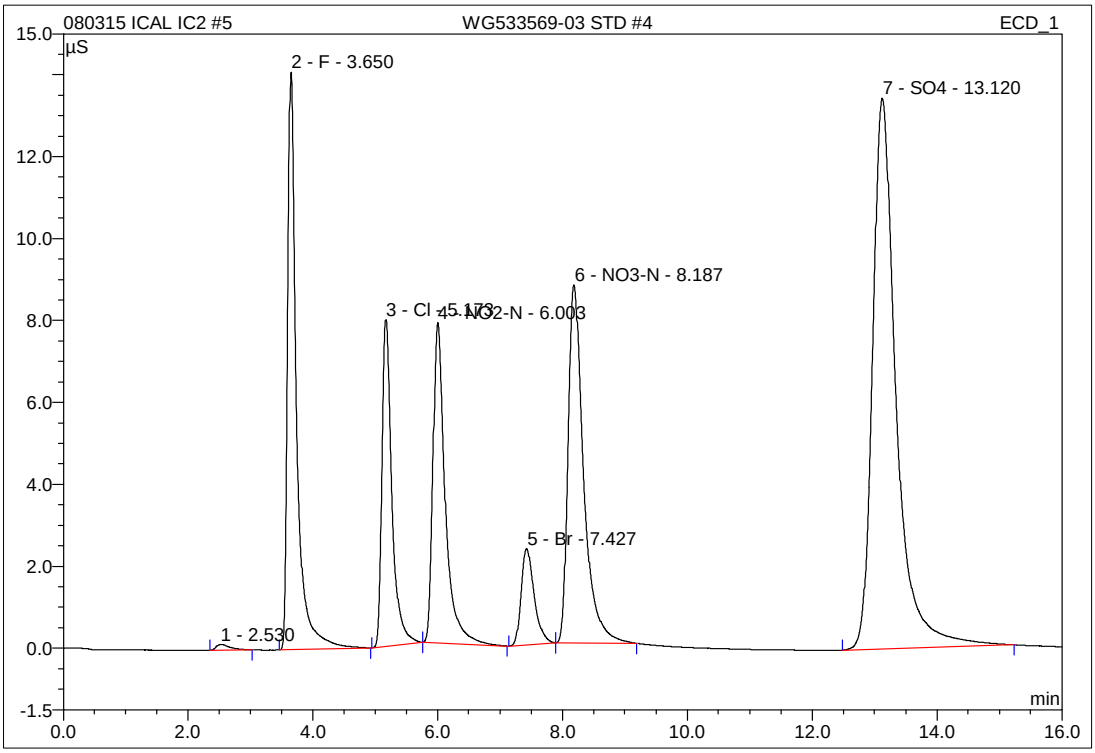

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.53	n.a.	0.143	0.036	0.25	n.a.	BMB
2	3.65	F	14.095	2.348	16.10	7.551	BMB
3	5.17	Cl	7.978	1.453	9.96	7.312	BMb
4	6.00	NO2-N	7.818	1.788	12.26	4.670	bMB
5	7.43	Br	2.352	0.566	3.88	7.625	BMB
6	8.19	NO3-N	8.740	2.520	17.28	4.866	bMB
7	13.12	SO4	13.444	5.872	40.27	35.687	BMB
Total:			54.570	14.583	100.00	67.710	

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5 WG533569-03 STD #4

1,1 AED STD71715

Sample Name:	**WG533569-03 STD #4**	*Injection Volume:*	**25.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**8/3/2015 15:19**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

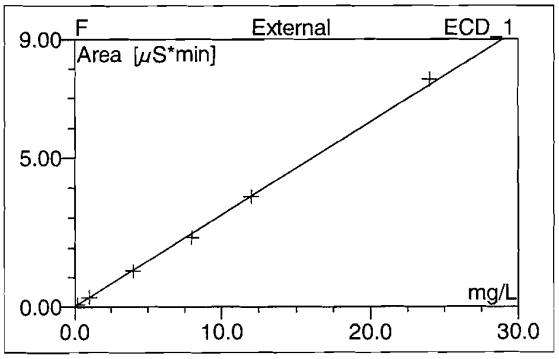

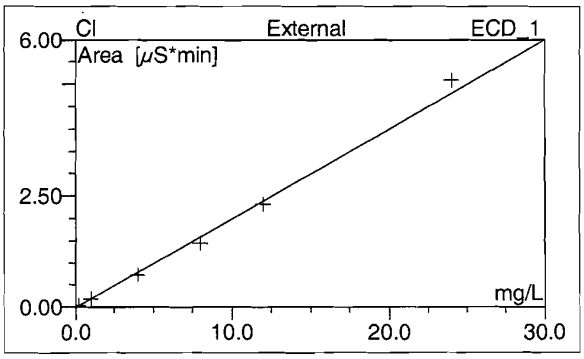

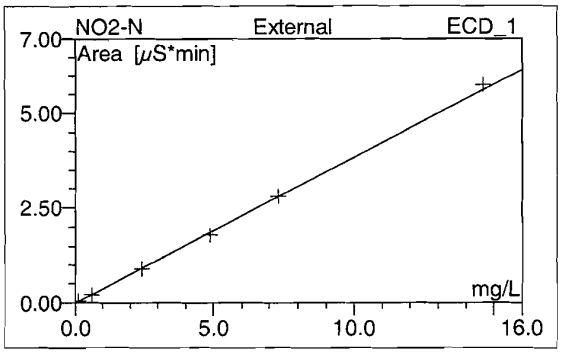

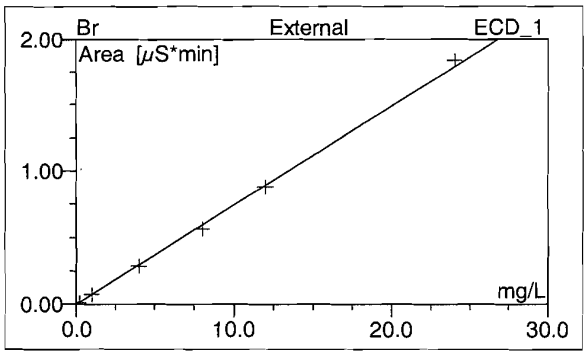

No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	2.53	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	3.65	F	XLOff	6	99.9442	0.0045	0.3104	0.0000
3	5.17	Cl	XLOff	6	99.7675	-0.0139	0.2006	0.0000
4	6.00	NO2-N	XLOff	6	99.9587	-0.0135	0.3857	0.0000
5	7.43	Br	XLOff	6	99.9503	-0.0028	0.0746	0.0000
6	8.19	NO3-N	XLOff	6	99.6785	-0.0340	0.5249	0.0000
7	13.12	SO4	XLOff	6	99.5716	-0.1060	0.1675	0.0000
Average:					99.8118	-0.0276	0.2773	0.0000

00652920

5 WG533569-03 STD #4

1,1 AED STD71715

Sample Name:	**WG533569-03 STD #4**	*Injection Volume:*	**25.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**8/3/2015 15:19**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

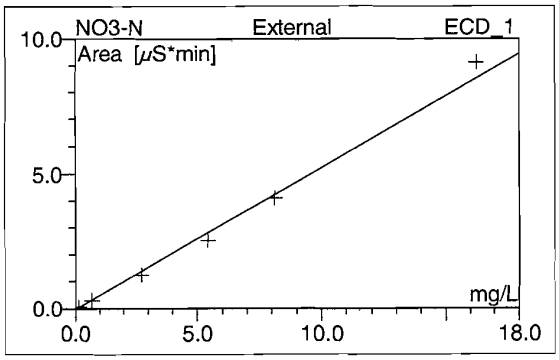

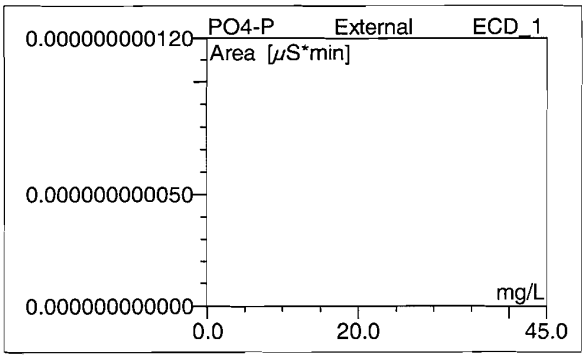

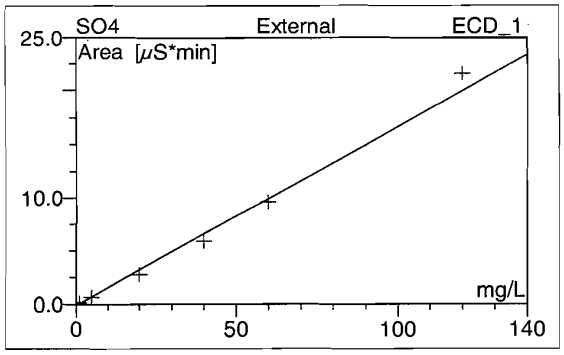

No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	2.53	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
2	3.65	F	XLOff	6	99.9442	0.0045	0.3104	0.0000
3	5.17	Cl	XLOff	6	99.7675	-0.0139	0.2006	0.0000
4	6.00	NO2-N	XLOff	6	99.9587	-0.0135	0.3857	0.0000
5	7.43	Br	XLOff	6	99.9503	-0.0028	0.0746	0.0000
6	8.19	NO3-N	XLOff	6	99.6785	-0.0340	0.5249	0.0000
7	13.12	SO4	XLOff	6	99.5716	-0.1060	0.1675	0.0000
Average:					99.8118	-0.0276	0.2773	0.0000

6 WG533569-04 STD #3

1,1 AED STD71715

Sample Name:	**WG533569-04 STD #3**	*Injection Volume:*	**25.0**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/03/2015 15:37**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

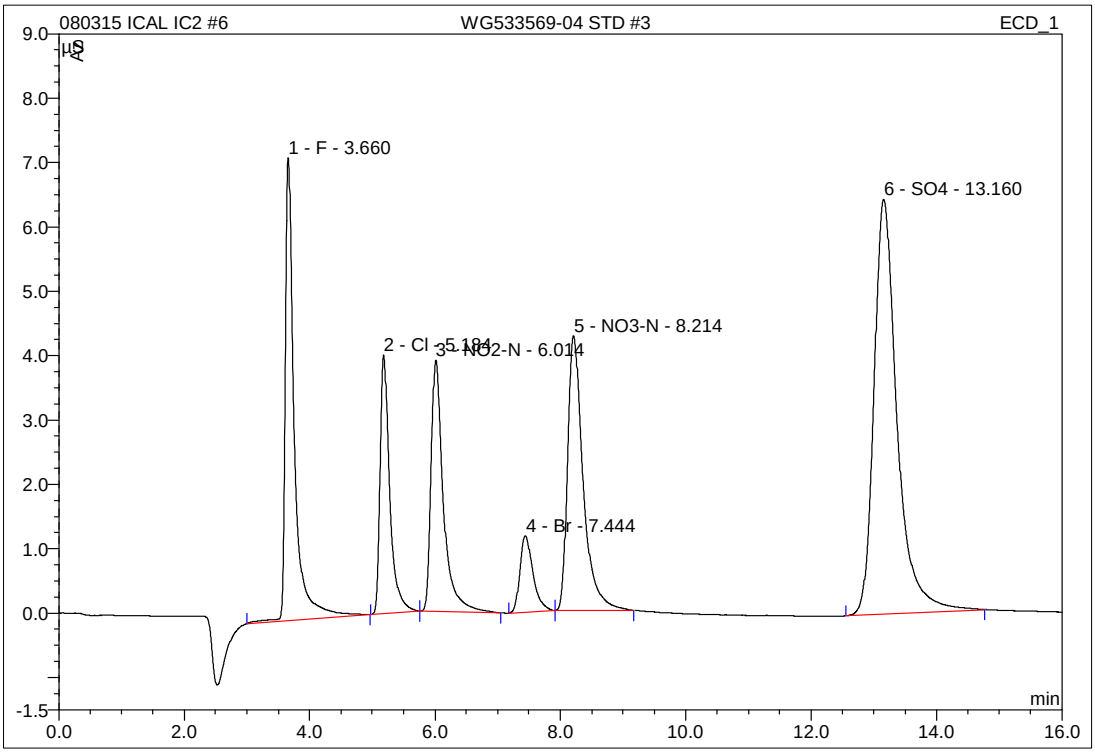

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.66	F	7.188	1.206	17.06	3.871	BMB
2	5.18	Cl	4.017	0.716	10.13	3.639	BMb
3	6.01	NO2-N	3.908	0.889	12.57	2.339	bMB
4	7.44	Br	1.187	0.286	4.05	3.872	BMB
5	8.21	NO3-N	4.268	1.223	17.30	2.394	BMB
6	13.16	SO4	6.444	2.749	38.89	17.045	BMB
Total:			27.012	7.069	100.00	33.160	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

7 WG533569-05 STD #2

1,1 AED STD71715

Sample Name:	**WG533569-05 STD #2**	*Injection Volume:*	**25.0**
Vial Number:	**7**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/03/2015 15:56**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

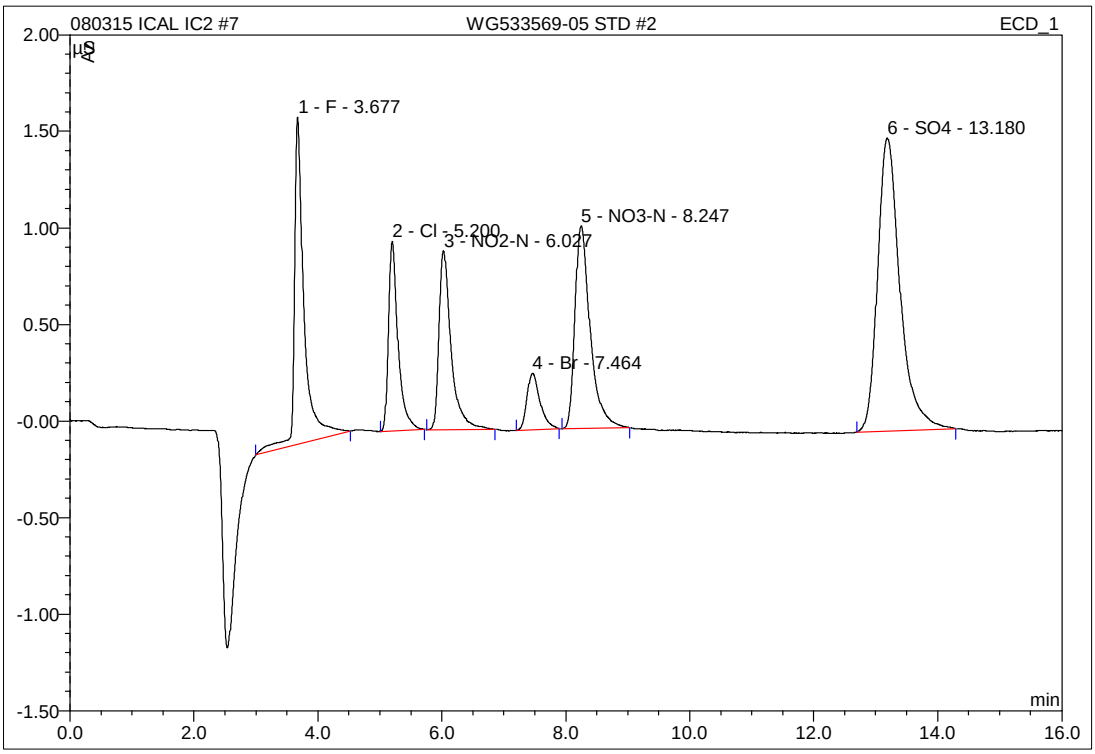

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.68	F	1.694	0.309	18.15	0.981	BMB
2	5.20	Cl	0.982	0.176	10.36	0.949	BMB
3	6.03	NO2-N	0.926	0.210	12.33	0.579	BMB
4	7.46	Br	0.293	0.072	4.20	0.997	BMB
5	8.25	NO3-N	1.048	0.300	17.59	0.635	BMB
6	13.18	SO4	1.519	0.636	37.37	4.432	BMB
Total:			6.462	1.703	100.00	8.574	

8 WG533569-06 STD #1

1,1 AED STD71715

Sample Name:	**WG533569-06 STD #1**	*Injection Volume:*	**25.0**
Vial Number:	**8**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/03/2015 16:14**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

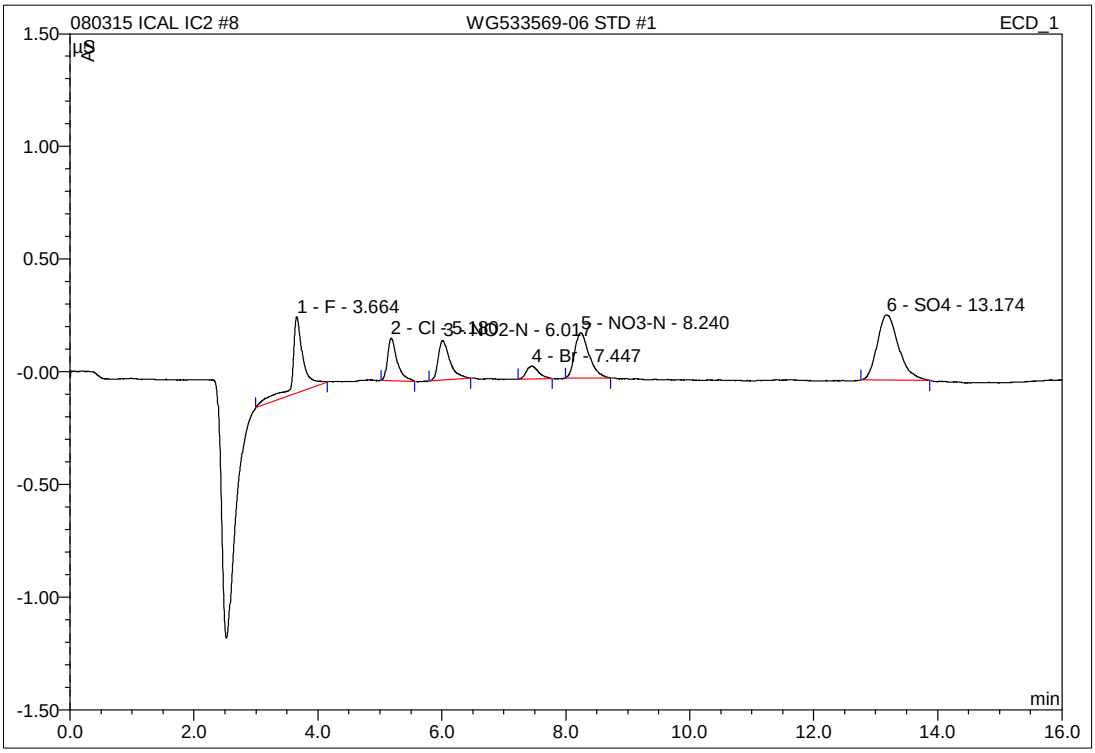

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.66	F	0.339	0.072	21.92	0.217	BMB
2	5.18	Cl	0.188	0.034	10.44	0.240	BMB
3	6.02	NO2-N	0.175	0.039	11.76	0.135	BMB
4	7.45	Br	0.057	0.013	4.02	0.214	BMB
5	8.24	NO3-N	0.201	0.054	16.59	0.168	BMB
6	13.17	SO4	0.290	0.116	35.26	1.323	BMB
Total:			1.251	0.328	100.00	2.297	

9 WG533569-07 SSCV

1,1 AED STD71716

Sample Name:	**WG533569-07 SSCV**	*Injection Volume:*	**25.0**
Vial Number:	**9**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**08/03/2015 16:32**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

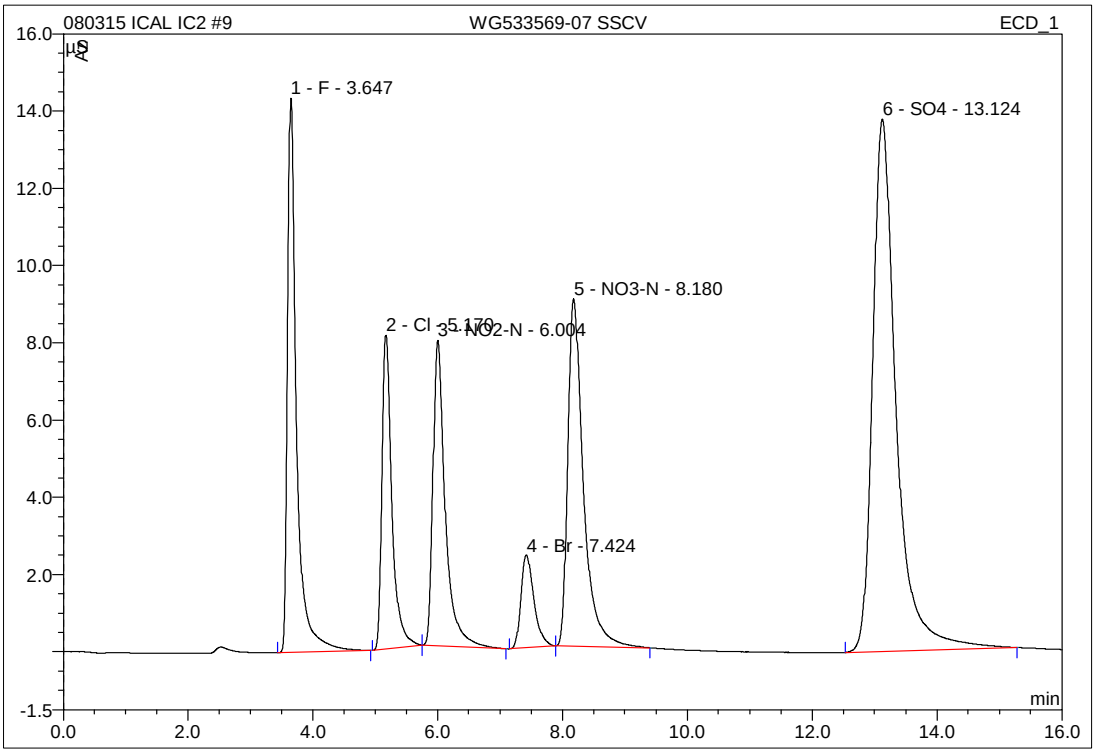

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.65	F	14.345	2.395	16.06	7.703	BMB
2	5.17	Cl	8.120	1.486	9.97	7.476	BMb
3	6.00	NO2-N	7.914	1.807	12.12	4.719	bMB
4	7.42	Br	2.406	0.580	3.89	7.809	BMB
5	8.18	NO3-N	8.988	2.608	17.49	5.033	BMB
6	13.12	SO4	13.783	6.034	40.47	36.657	BMB
Total:			55.556	14.910	100.00	69.397	

9 WG533569-07 SSCV

1,1 AED STD71716

Sample Name:	**WG533569-07 SSCV**	*Injection Volume:*	**25.0**
Vial Number:	**9**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**8/3/2015 16:32**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

WG533569-07 SSC	Actual mg/L	Recovered mg/L	%Difference	
F	8.00	7.7027	-3.72	PASS
Cl	8	7.4765	-6.54	PASS
NO2-N	4.8714	4.7193	-3.12	PASS
NO3-N	5.4216	5.0331	-7.17	PASS
Br	8	7.8092	-2.38	PASS
SO4	40	36.6566	-8.36	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!

3 WG547348-01 ANION CCV

1,1 ALS STD71545 (_____ psi)

Sample Name:	**WG547348-01 ANION CCV**	*Injection Volume:*	**25.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/17/2015 14:19**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

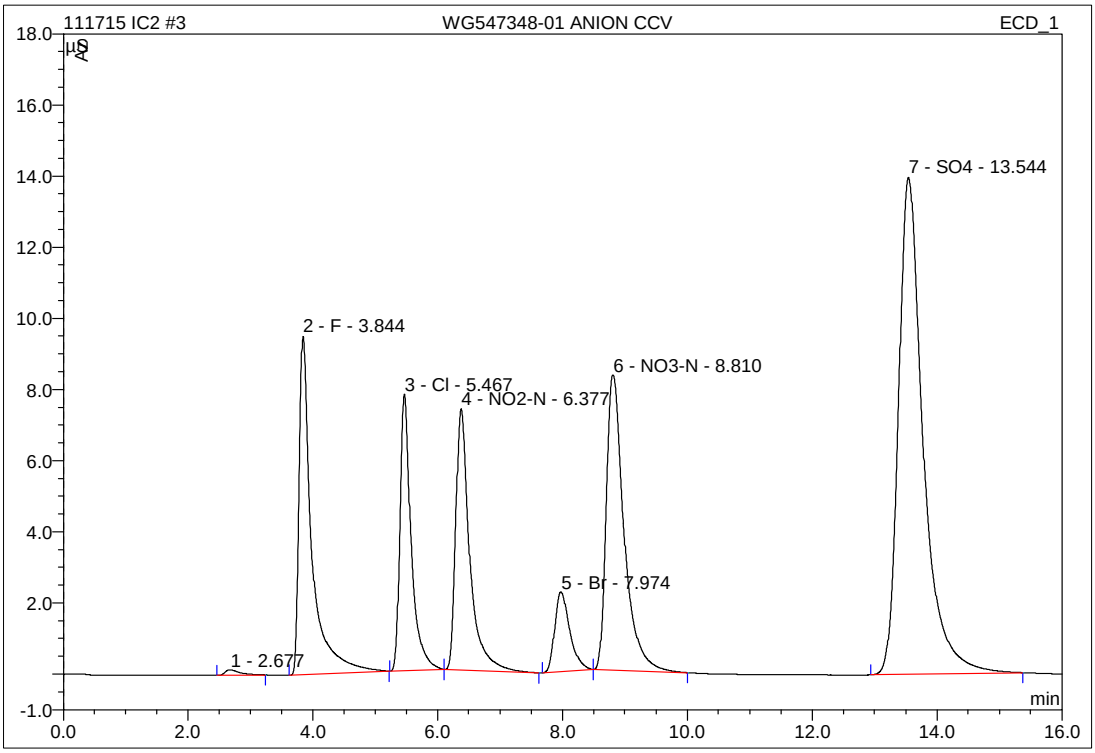

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.68	n.a.	0.153	0.042	0.27	n.a.	BMB
2	3.84	F	9.504	2.242	14.40	7.208	BMB
3	5.47	Cl	7.777	1.618	10.39	8.133	BMb
4	6.38	NO2-N	7.340	1.913	12.29	4.995	bMB
5	7.97	Br	2.248	0.627	4.03	8.446	BMb
6	8.81	NO3-N	8.300	2.732	17.55	5.270	bMB
7	13.54	SO4	13.971	6.397	41.08	38.819	BMB
Total:			49.293	15.571	100.00	72.870	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

3 WG547348-01 ANION CCV

1,1 ALS STD71545 (_____ psi)

Sample Name:	**WG547348-01 ANION CCV**	*Injection Volume:*	**25.0**
Vial Number:	**3**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/17/2015 14:19**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

WG547348-01 ANI(	Actual mg/L	Recovered mg/L	%Difference	
F	8.00	7.2079	-9.90	PASS
Cl	8	8.1330	1.66	PASS
NO2-N	4.8714	4.9951	2.54	PASS
NO3-N	5.4216	5.2699	-2.80	PASS
Br	8	8.4460	5.58	PASS
SO4	40	38.8186	-2.95	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!

15 WG547348-03 ANION CCV

1,1 ALS STD71545

Sample Name:	**WG547348-03 ANION CCV**	*Injection Volume:*	**25.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/17/2015 17:57**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

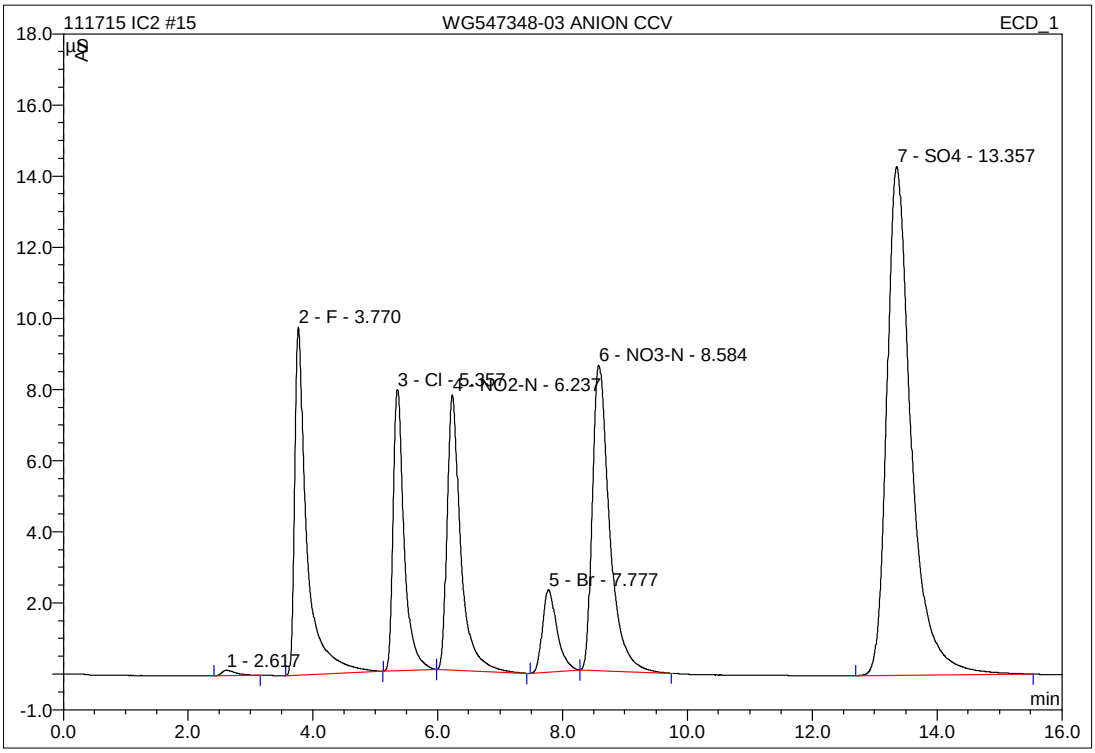

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.62	n.a.	0.154	0.041	0.26	n.a.	BMB
2	3.77	F	9.773	2.240	14.23	7.201	BMB
3	5.36	Cl	7.910	1.615	10.27	8.121	BMB
4	6.24	NO2-N	7.735	1.967	12.50	5.134	BMB
5	7.78	Br	2.309	0.625	3.97	8.420	BMb
6	8.58	NO3-N	8.584	2.742	17.43	5.289	bMB
7	13.36	SO4	14.306	6.505	41.34	39.466	BMB
Total:			50.773	15.736	100.00	73.630	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

15 WG547348-03 ANION CCV

1,1 ALS STD71545

Sample Name:	**WG547348-03 ANION CCV**	*Injection Volume:*	**25.0**
Vial Number:	**15**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/17/2015 17:57**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

WG547348-03 ANI(	Actual mg/L	Recovered mg/L	%Difference	
F	8.00	7.2012	-9.99	PASS
Cl	8	8.1206	1.51	PASS
NO2-N	4.8714	5.1341	5.39	PASS
NO3-N	5.4216	5.2891	-2.44	PASS
Br	8	8.4196	5.24	PASS
SO4	40	39.4659	-1.34	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!

27 WG547348-05 ANION CCV

1,1 ALS STD71545

Sample Name:	**WG547348-05 ANION CCV**	*Injection Volume:*	**25.0**
Vial Number:	**27**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/17/2015 21:36**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

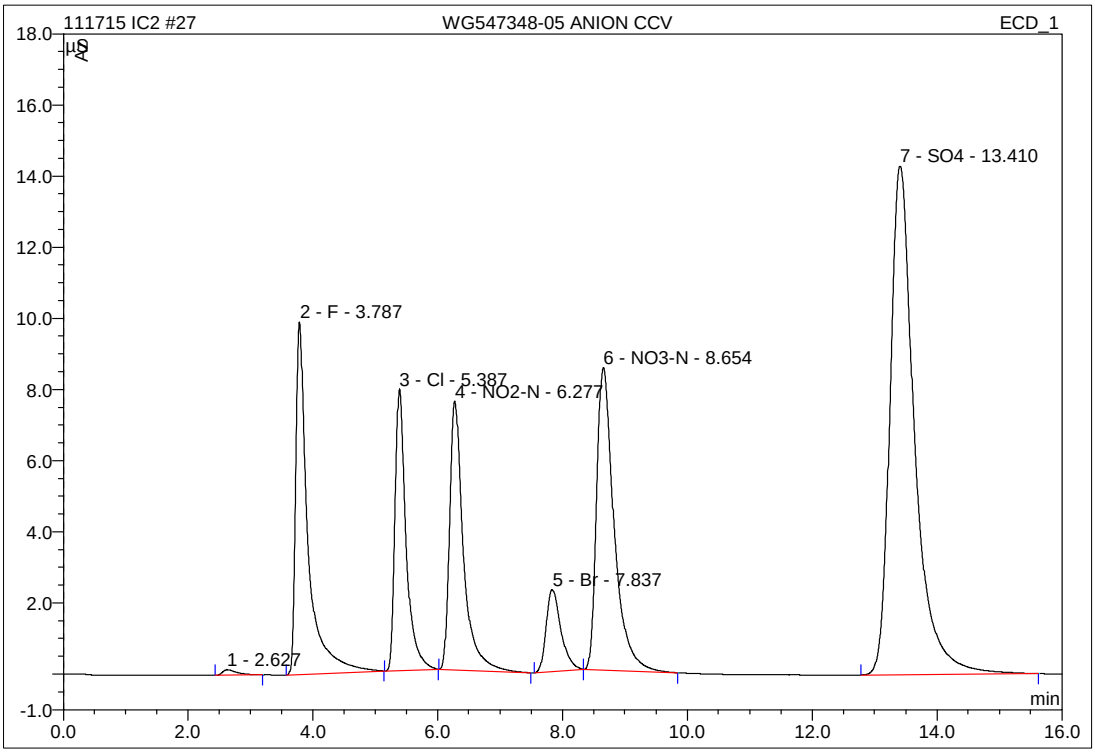

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.63	n.a.	0.154	0.042	0.26	n.a.	BMB
2	3.79	F	9.914	2.262	14.31	7.273	BMB
3	5.39	Cl	7.906	1.627	10.30	8.178	BMB
4	6.28	NO2-N	7.558	1.944	12.30	5.075	BMB
5	7.84	Br	2.298	0.632	4.00	8.510	BMB
6	8.65	NO3-N	8.509	2.759	17.46	5.321	bMB
7	13.41	SO4	14.294	6.537	41.37	39.660	BMB
Total:			50.633	15.803	100.00	74.017	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

27 WG547348-05 ANION CCV

1,1 ALS STD71545

Sample Name:	**WG547348-05 ANION CCV**	*Injection Volume:*	**25.0**
Vial Number:	**27**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/17/2015 21:36**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

WG547348-05 ANI(	Actual mg/L	Recovered mg/L	%Difference	
F	8.00	7.2727	-9.09	PASS
Cl	8	8.1783	2.23	PASS
NO2-N	4.8714	5.0748	4.18	PASS
NO3-N	5.4216	5.3215	-1.85	PASS
Br	8	8.5096	6.37	PASS
SO4	40	39.6600	-0.85	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!

34 WG547348-07 ANION CCV

1,1 ALS STD71545

Sample Name:	**WG547348-07 ANION CCV**	*Injection Volume:*	**25.0**
Vial Number:	**39**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/17/2015 23:43**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

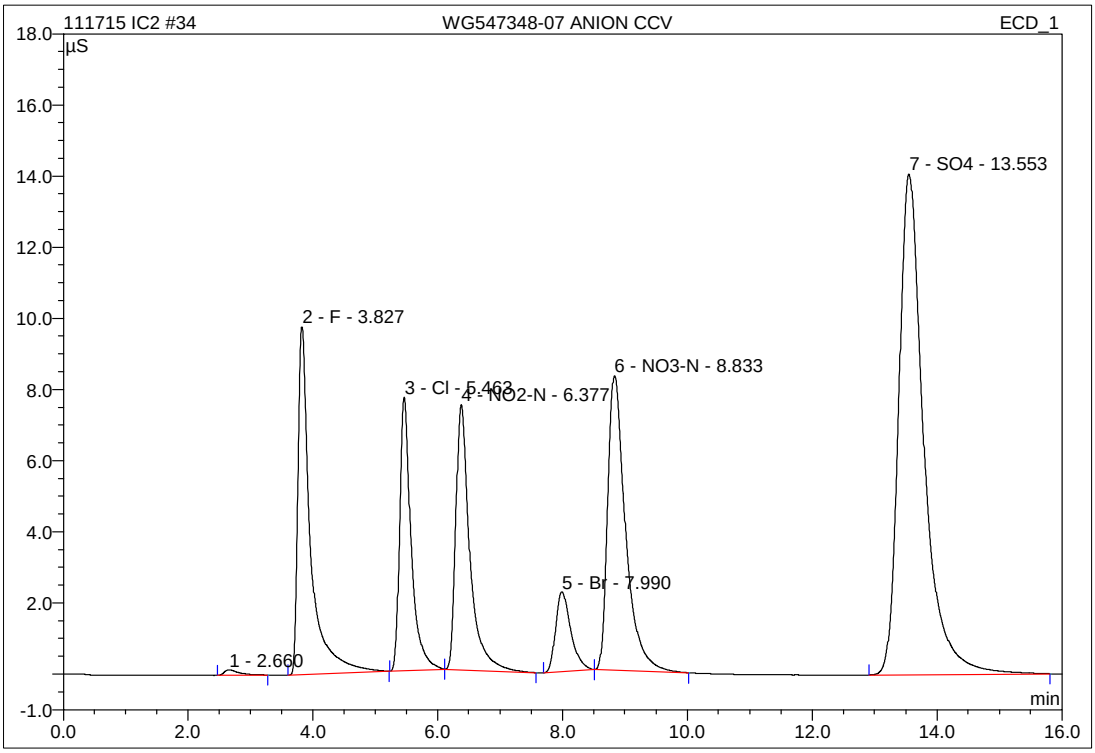

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	2.66	n.a.	0.154	0.043	0.27	n.a.	BMB
2	3.83	F	9.772	2.266	14.30	7.285	BMB
3	5.46	Cl	7.686	1.633	10.31	8.208	BMB
4	6.38	NO2-N	7.455	1.947	12.29	5.084	BMB
5	7.99	Br	2.248	0.634	4.00	8.536	BMb
6	8.83	NO3-N	8.284	2.758	17.41	5.319	bMB
7	13.55	SO4	14.071	6.562	41.42	39.806	BMB
Total:			49.670	15.842	100.00	74.238	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

34 WG547348-07 ANION CCV

1,1 ALS STD71545

Sample Name:	**WG547348-07 ANION CCV**	*Injection Volume:*	**25.0**
Vial Number:	**39**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/17/2015 23:43**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

WG547348-07 ANI(	Actual mg/L	Recovered mg/L	%Difference	
F	8.00	7.2851	-8.94	PASS
Cl	8	8.2082	2.60	PASS
NO2-N	4.8714	5.0838	4.36	PASS
NO3-N	5.4216	5.3185	-1.90	PASS
Br	8	8.5365	6.71	PASS
SO4	40	39.8064	-0.48	PASS
PO4-P	13.0456	n.a.	#VALUE!	#VALUE!

4 WG547348-02 ANION CCB

1,1 ALS

Sample Name:	**WG547348-02 ANION CCB**	*Injection Volume:*	**25.0**
Vial Number:	**4**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/17/2015 14:37**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

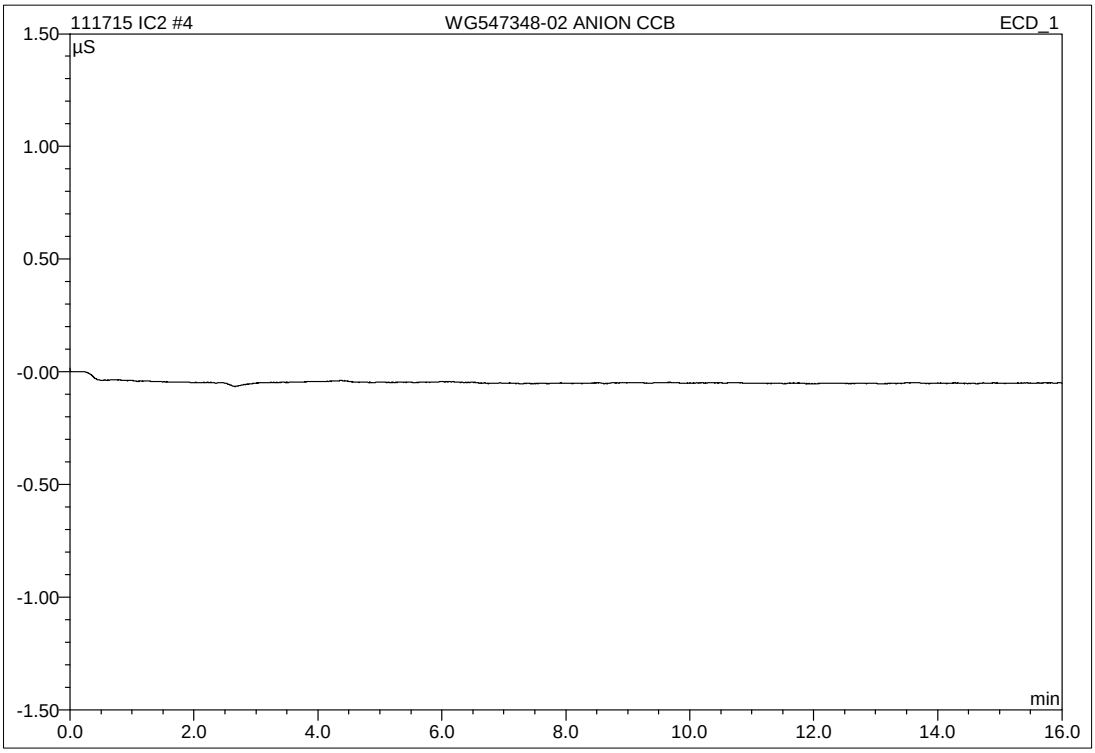

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

16 WG547348-04 ANION CCB

1,1 ALS

Sample Name:	**WG547348-04 ANION CCB**	*Injection Volume:*	**25.0**
Vial Number:	**16**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/17/2015 18:16**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

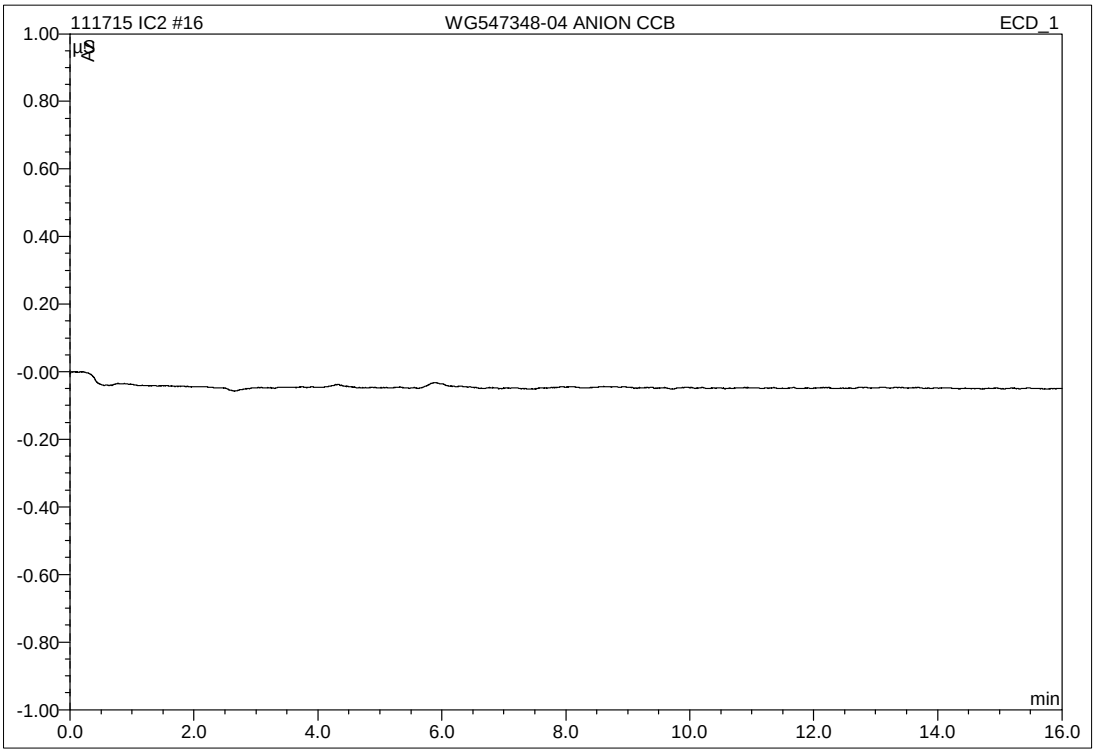

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

28 WG547348-06 ANION CCB

1,1 ALS

Sample Name:	**WG547348-06 ANION CCB**	*Injection Volume:*	**25.0**
Vial Number:	**28**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/17/2015 21:54**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

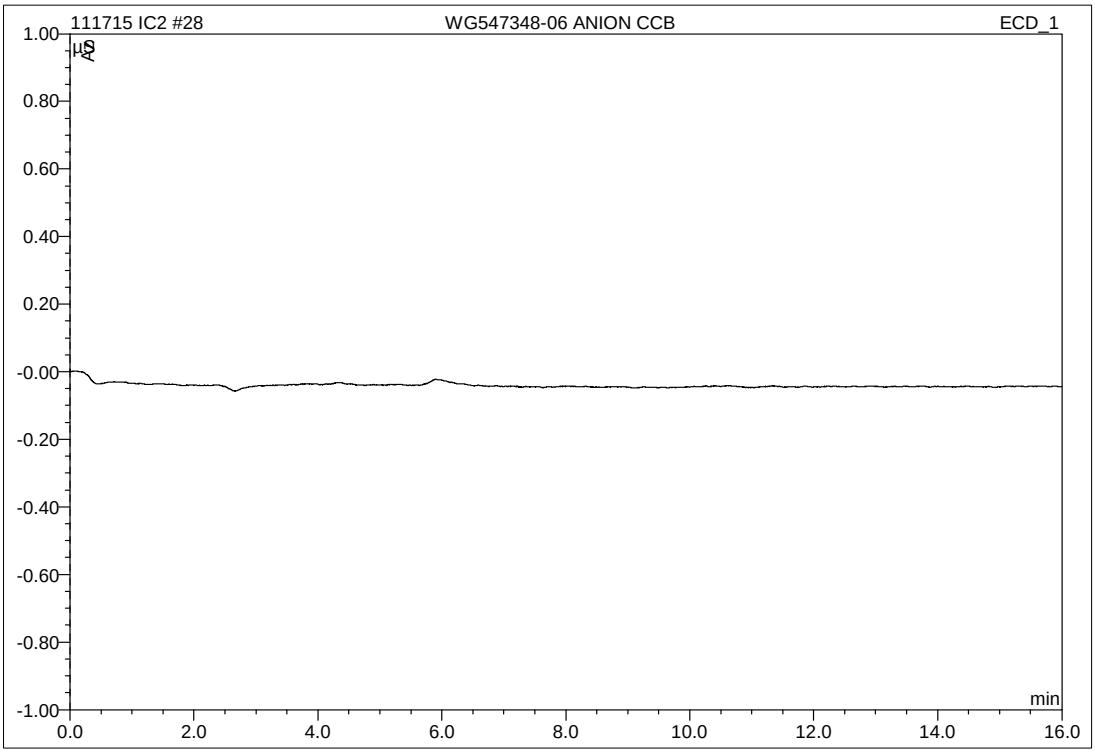

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

35 WG547348-08 ANION CCB

1,1 ALS

Sample Name:	**WG547348-08 ANION CCB**	*Injection Volume:*	**25.0**
Vial Number:	**40**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/18/2015 0:02**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

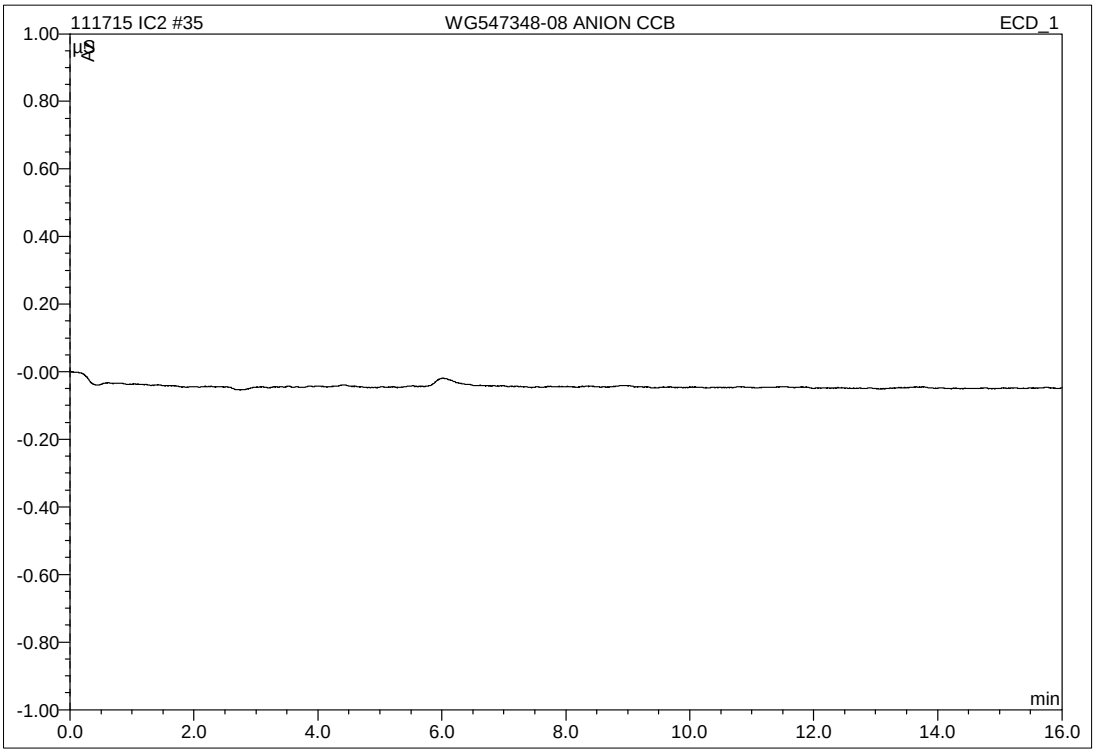

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

RETENTION TIME WINDOWS

Lab Name: MICROBAC Laboratories, Inc.

Instrument ID: IC1

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	6/5/2013	6/5/2013	6/6/2013
File #	WG432976-05	WG432976-07	WG433275-01
Time	16:16	18:25	16:50

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.41	3.40	3.41	0.017
Cl	4.87	4.87	4.88	0.017
NO2-N	5.67	5.66	5.67	0.017
Br	7.01	6.99	7.02	0.046
NO3-N	7.76	7.74	7.77	0.046
SO4	13.35	13.35	13.35	0.000

Instrument ID: IC2

IC Column: AS14A-4mm

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	3/2/2015	3/4/2015	3/5/2015
File #	WG514023-02	WG514341-02	WG514431-02
Time	23:15	18:47	17:41

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.33	3.33	3.32	0.017
Cl	4.75	4.78	4.76	0.043
NO2-N	5.54	5.59	5.56	0.082
Br	6.86	6.98	6.93	0.180
NO3-N	7.59	7.73	7.67	0.222
SO4	12.42	12.38	12.34	0.116

Instrument ID: IC3

IC Column: AG14A-SC/AS14A-SC

	STANDARD #1	STANDARD #2	STANDARD #3
Date Run	5/20/2014	5/21/2014	5/21/2014
File #	WG476910-05	WG476934-01	WG476934-03
Time	12:41	9:54	13:59

COMPOUND	STD #1 RT	STD #2 RT	STD #3 RT	RT WIN
F	3.41	3.41	3.41	0.000
Cl	5.11	5.09	5.07	0.050
NO2-N	6.14	6.11	6.07	0.101
Br	7.90	7.84	7.75	0.220
NO3-N	8.94	8.86	8.76	0.271
SO4	13.35	13.39	13.42	0.101

2.3.1.5 Raw QC Data

5 WG547299-01 ANION BLANK

1,1 ALS

Sample Name:	**WG547299-01 ANION BLANK**	*Injection Volume:*	**25.0**
Vial Number:	**5**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/17/2015 14:55**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

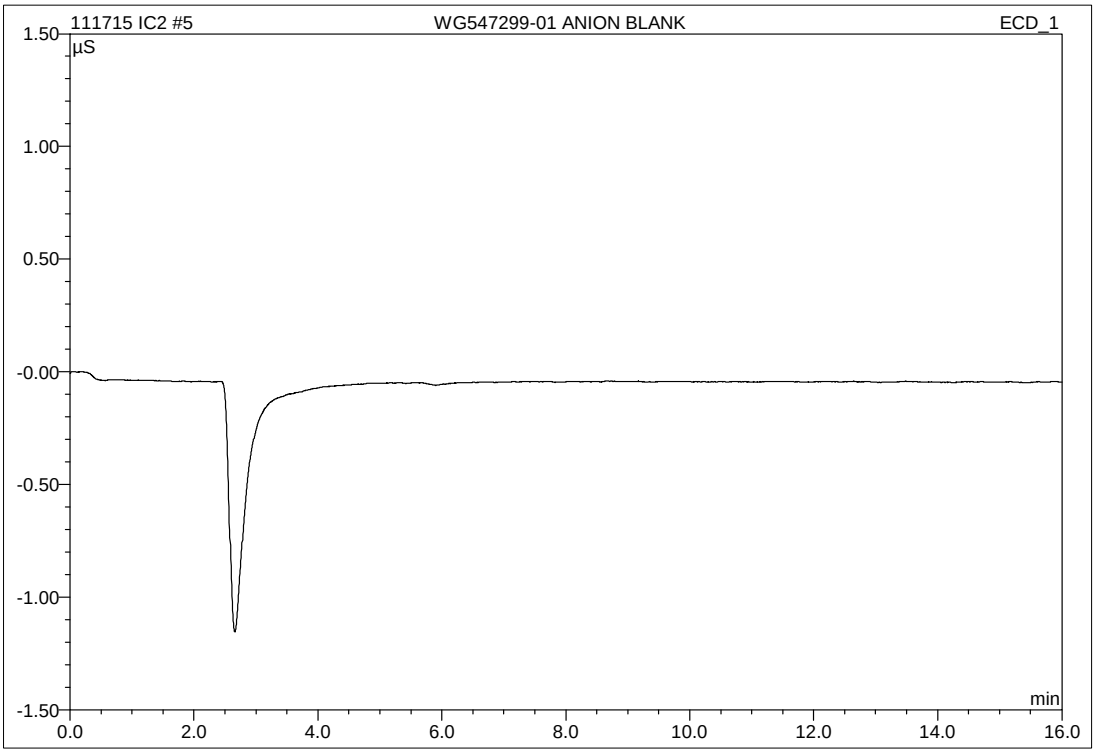

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
Total:			0.000	0.000	0.00	0.000	

6 WG547299-02 ANION LCS

1,1 ALS STD71546

Sample Name:	**WG547299-02 ANION LCS**	*Injection Volume:*	**25.0**
Vial Number:	**6**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**9056**	*Bandwidth:*	**n.a.**
Quantif. Method:	**9056_300**	*Dilution Factor:*	**1.0000**
Recording Time:	**11/17/2015 15:13**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

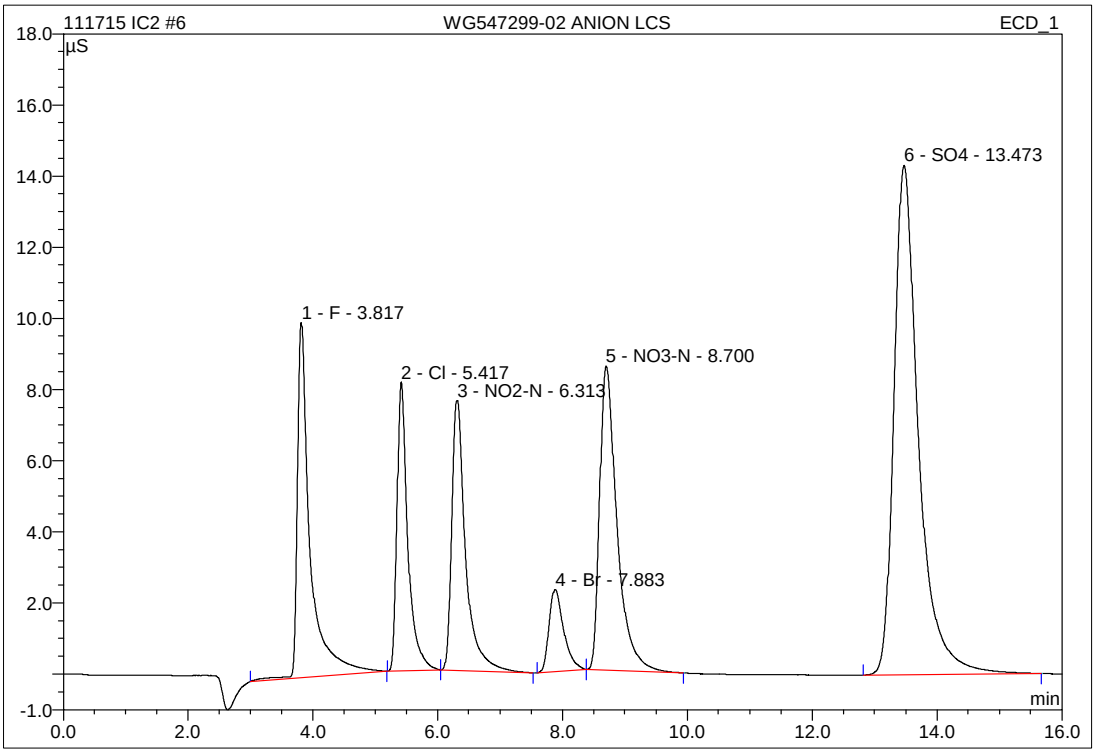

No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount mg/L	Type
1	3.82	F	9.984	2.335	14.76	7.510	BMB
2	5.42	Cl	8.114	1.630	10.30	8.191	BMb
3	6.31	NO2-N	7.593	1.943	12.28	5.072	bMB
4	7.88	Br	2.307	0.629	3.97	8.468	BMb
5	8.70	NO3-N	8.545	2.756	17.42	5.316	bMB
6	13.47	SO4	14.314	6.532	41.28	39.628	BMB
Total:			50.857	15.825	100.00	74.185	

IC/Integration

Chromeleon (c) Dionex 1996-2001
Version 6.80 SP1 Build 2238

2.3.2 Alkalinity Data

2.3.2.1 Summary Data

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW08-111615	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	11/23/2015 09:16
Workgroup #:	WG548010	**Analyst:**	DCM	**Run Date:**	11/23/2015 09:26
Collect Date:	11/16/2015 08:20	**Dilution:**	2	**File ID:**	S2151123001.024
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	412		80.0	40.0	20.0

Certificate of Analysis

Sample #:	L15110943-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW22-111615	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	11/23/2015 09:16
Workgroup #:	WG548010	**Analyst:**	DCM	**Run Date:**	11/23/2015 09:26
Collect Date:	11/16/2015 09:25	**Dilution:**	2	**File ID:**	S2151123001.025
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	395		80.0	40.0	20.0

Certificate of Analysis

Sample #:	L15110943-05	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW24-111615	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	11/23/2015 09:16
Workgroup #:	WG548010	**Analyst:**	DCM	**Run Date:**	11/23/2015 09:27
Collect Date:	11/16/2015 10:30	**Dilution:**	1	**File ID:**	S2151123001.026
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	291		40.0	20.0	10.0

Certificate of Analysis

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15110943-07	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW23-111615	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	11/23/2015 09:16
Workgroup #:	WG548010	**Analyst:**	DCM	**Run Date:**	11/23/2015 09:28
Collect Date:	11/16/2015 11:35	**Dilution:**	1	**File ID:**	S2151123001.027
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	263		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L15110943-09	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW18-111615	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	11/23/2015 09:16
Workgroup #:	WG548010	**Analyst:**	DCM	**Run Date:**	11/23/2015 09:28
Collect Date:	11/16/2015 13:45	**Dilution:**	2	**File ID:**	S2151123001.028
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	342		80.0	40.0	20.0

Certificate of Analysis

Sample #:	L15110943-11	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM2
Client ID:	50WW25-111615	**Prep Method:**	310.2	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	310.2	**Cal Date:**	11/23/2015 09:16
Workgroup #:	WG548010	**Analyst:**	DCM	**Run Date:**	11/23/2015 09:46
Collect Date:	11/16/2015 14:55	**Dilution:**	2	**File ID:**	S2151123001.045
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Alkalinity, Total (as CaCO3)	11-43-8	425		80.0	40.0	20.0

2.3.2.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809
Value of b from plot:	0.0004135
Absorbance of unknown from quantitation report (y):	0.31
Calculated concentration (x):	0.03964483
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	0.0396 mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796
Value of B from plot:	318.9056
Value of C from plot:	-2.2712
Absorbance of unknown from quantitation report (x):	0.1583
Calculated concentration (y):	50.7495108
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	50.75 mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 23-NOV-2015
Analyst: DCM
Analyst: NA
Method: ALK
Instrument: SC
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG548051 WG548083 WG548010

Calibration/Linearity	11-23-2015
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DCM
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
23-NOV-2015

Secondary Reviewer:
25-NOV-2015

CHECKLIST1 - Modified 03/05/2008
Generated: NOV-25-2015 13:31:31

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 310.2 AAB#: WG548010

Login Number: L15110943

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW08-111615	01	11/16/15					11/23/2015	7	14		11/23/15	7	14	
50WW22-111615	03	11/16/15					11/23/2015	7	14		11/23/15	7	14	
50WW24-111615	05	11/16/15					11/23/2015	7	14		11/23/15	7	14	
50WW23-111615	07	11/16/15					11/23/2015	6.9	14		11/23/15	6.9	14	
50WW18-111615	09	11/16/15					11/23/2015	6.8	14		11/23/15	6.8	14	
50WW25-111615	11	11/16/15					11/23/2015	6.8	14		11/23/15	6.8	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4518147
Report generated 11/24/2015 13:45

METHOD BLANK SUMMARY

Login Number: L15110943
Blank File ID: S2151123001.012
Prep Date: 11/23/15 09:19
Analyzed Date: 11/23/15 09:19
Analyst: DCM

Work Group: WG548010
Blank Sample ID: WG548010-01
Instrument ID: SMARTCHEM2
Method: 310.2

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG548010-02	S2151123001.013	11/23/15 09:19	01
LCS2	WG548010-03	S2151123001.014	11/23/15 09:20	01
50WW08-111615	L15110943-01	S2151123001.024	11/23/15 09:26	DL01
50WW22-111615	L15110943-03	S2151123001.025	11/23/15 09:26	DL01
50WW24-111615	L15110943-05	S2151123001.026	11/23/15 09:27	01
50WW23-111615	L15110943-07	S2151123001.027	11/23/15 09:28	01
50WW18-111615	L15110943-09	S2151123001.028	11/23/15 09:28	DL01
DUP	WG548010-08	S2151123001.041	11/23/15 09:36	DL01
50WW25-111615	L15110943-11	S2151123001.045	11/23/15 09:46	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4518148
Report generated 11/24/2015 13:45

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15110943 Prep Date: 11/23/15 09:19 Sample ID: WG548010-01
Instrument ID: SMARTCHEM2 Run Date: 11/23/15 09:19 Prep Method: 310.2
File ID: S2151123001.012 Analyst: DCM Method: 310.2
Workgroup (AAB#): WG548010 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-23-NOV-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Alkalinity, Total (as CaCO3)	10.0	40.0	-12.4	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4518149
24-NOV-2015 13:45

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15110943 Analyst: DCM Prep Method: 310.2
Instrument ID: SMARTCHEM2 Matrix: Water Method: 310.2
Workgroup (AAB#): WG548010 Units: mg/L
QC Key: DOD4 Lot #: STD73606

Sample ID: WG548010-02 LCS File ID: S2151123001.013 Run Date: 11/23/2015 09:19
Sample ID: WG548010-03 LCS2 File ID: S2151123001.014 Run Date: 11/23/2015 09:20

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Alkalinity, Total (as CaCO3)	200	202	101	200	197	98.7	2.28	85 - 115	20	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4518150
Report generated: 11/24/2015 13:45

2.3.2.3 Raw Data

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

WORKGROUP: WG548010

548051
548083

Daily Check

- [x] Lamp On
- [x] Probe Rinse Full
- [x] DI Water > ½ Full
- [x] Wash Solution > ½ Full
- [ ] NO3 Reagent bottle connected / purged
- [ ] NO3 pH adj to pH 5-9

Syringe filter lot # _____

- [x] WBL Run
- [x] Reagents Full
- [x] Dilution H_2O Full
- [ ] Waste Container Check

1) **Workgroup** _____
Plan # 20151123001
2) **Workgroup** _____
Plan # 20151123002
3) **Workgroup** _____
Plan # 20151123003

Instrument: SC1 [ ] SC2 [x]

	Analyte	1	2	3
		Blk		
		Dilution		
SC Prepared Curve				
Position				
1-1	Icv			
1-2	Blk			
1-3	LCS			
1-4	LCSDup			
1-5	11-949-c2	1/4		color
1-6	c3	1/4		color
1-7	c5	1/4		color
1-8	c6	1/4		color
1-9	11-941-c2			
1-10	c4	1/2		
1-11	c6	1/2		
1-12	11-943-c1	1/2		
1-13	c3	1/2		
1-14	c5			
1-15	c7			
1-16	c9	1/2		
1-17	11			
1-18	11-1050-c2	1/2		
1-19	c4	1/2		
1-20	c6	1/4		
1-21	c7	1/4		
1-22	MS c9	1/4		
2-1	MSD 11	1/4		
2-2	13	1/2		
2-3	15			

NOTES:
* Run NO2 std on NO3 runs
* LCSD must be run if no MS or Duplicate
*MS(10% sample): NO3, TKN, NH3, PHOS

	Analyte	1	2	3
Position				
2-4	11-1050-17	1/2		
2-5	Dup 11-1050-17	1/2		
2-6				
2-7				
2-8 1	Icv			
2-9 2	Blk			
2-10 3	LCS			
2-11 4	LCSDup			
2-12 5	11-1084-c2	1/2		
2-13 6	c4	1/2		
2-14 7	c6	1/2		
2-15 8	c7	1/2		
2-16 9	c8	1/2		
2-17 10	10			
2-18 11	12	1/2		
2-19 12	14	1/2		
2-20 13	11-1109-c1			
2-21 14	11-1245-c2	1/4		color
2-22 15	c3	1/4		color
2-23 16	c5	1/4		color
2-24 17	c6	1/4		color
2-25 18	c8	1/4		color
2-26 19	c9	1/4		color
3-1 20	11-1069-c1	1/10		
3-2 21	c4	1/20		
22	11-1268-c2	1/2		
1 23	c3	1/2		
2	c5	1/2		
3	Dup 11-1268-c5	1/2		

DCN#114934

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

WORKGROUP: WG548010

Position	Analyte	1	2	3
3-3 1	ICV			
3-4 2	Blk			
3-5 3	LCS			
3-6 4	LCSDUP			
3-7 5	11-1268-06	1/5		
3-8 6	11-1143-C1	1/2		
3-9 7	04	1/10	dup 11/23/15	color
3-10 8	07	~~1/5~~	1/20	color
3-11 9	10	1/10		
3-12 10	13			
3-13 11	16	1/100		color
3-14 12	19	1/100	dup 11/23/15	color
3-15 13	22	~~1/3~~	1/10	color

Position	Analyte	1	2	3
3-16 14	11-1207-C1			
3-17 15	04	1/2		
3-18 16	07	1/2		color
3-19 17	14	1/2		
3-20 18	17			
3-21 19	20			
3-22 20	23	1/3		
3-23 21	32			
3-24 22	11-1269-04			
3-25 1	DUP 11-1269-04			
3-26				
3-27				
3-28				

	Chloride	EPA 325.2/SM 4500-Cl E-2000
	Nitrate-Nitrite	EPA 353.2/SM 4500-NO3 F-2000
✓	Alkalinity	EPA 310.2
	Sulfate	EPA 375.4/SM 426C (15th)/ SM4500-504 E-1997

	Ammonia	EPA 350.1/SM 4500-NH3 B-1997
	TKN	EPA 351.2
	Phos	EPA 365.4

Analyte	Alk		Reagents
SOP & Revision	K3102 R17		REG 35419
Curve Stock (SC made)	Std 73315		
NO2 STD			
ICV	Std 73277		
CCV	Std 73605		
LCS	Std 73606		
MS	Std 72182 0.4 (2500) / 10 = 100 Dilution		

Comments: _____

Analyst: David Merrell Date: 11/23/15

DCN#114934

MICROBAC (OVD)

SMARTCHEM200 INST2 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.0	0.7162	0.00		9:10:41 AM
DIL-1	RBL	0.0	0.7173	0.00		9:10:59 AM
DIL-1	RBL	0.0	0.7192	0.00		9:11:53 AM
DIL-1	Std-1	0.0	-0.0068	0.00		9:12:11 AM
SR5-1	Std-2	10.0	-0.0141	0.00	EPL	9:13:05 AM
SR5-2	Std-3	20.0	-0.0317	0.00		9:13:23 AM
SR5-3	Std-4	50.0	-0.0764	0.00		9:14:17 AM
SR5-4	Std-5	100.0	-0.1578	0.00		9:14:35 AM
SR5-5	Std-6	200.0	-0.3178	0.00		9:15:29 AM
SR5-6	Std-7	250.0	-0.4151	0.00		9:15:47 AM
SR5-7	Std-8	300.0	-0.4811	0.00		9:16:41 AM
ST-3	1CCV (150 mg/L)	141.1	-0.2248	94.10		9:16:59 AM
ST-2	2CCB (0 mg/L)	-8.6	0.0122	0.00	INV,><,LL	9:17:53 AM
1	ICV	252.8	-0.4084	0.00		9:18:11 AM
2	WG548010-01 BLK	-12.4	0.0181	0.00	INV,><,LL	9:19:05 AM
3	WG548010-02 LCS	202.0	-0.3242	0.00		9:19:23 AM
4	WG548010-03 LCSDUP	197.5	-0.3167	0.00		9:20:17 AM
5	L15110949-02 (4)	148.2	-0.2362	0.00		9:20:35 AM
6	L15110949-03 (4)	100.2	-0.1589	0.00		9:21:29 AM
7	L15110949-05 (4)	179.9	-0.2878	0.00		9:21:47 AM
8	L15110949-06 (4)	85.1	-0.1349	0.00		9:22:41 AM
9	L15110941-02	276.9	-0.4489	0.00		9:22:59 AM
10	L15110941-04 (2)	166.7	-0.2662	0.00		9:23:53 AM
ST-3	1CCV (150 mg/L)	145.2	-0.2313	96.78		9:24:11 AM
ST-2	2CCB (0 mg/L)	-4.0	0.0051	0.00	INV,><,LL	9:25:05 AM
11	L15110941-06 (2)	238.8	-0.3851	0.00		9:25:23 AM
12	L15110943-01 (2)	205.8	-0.3304	0.00		9:26:17 AM
13	L15110943-03 (2)	197.7	-0.3170	0.00		9:26:35 AM
14	L15110943-05	291.0	-0.4728	0.00		9:27:47 AM
15	L15110943-07	263.1	-0.4257	0.00		9:28:05 AM
16	L15110943-09 (2)	171.2	-0.2736	0.00		9:28:59 AM
17	L15110943-11	X 337.2	-0.5518	0.00	EPL,><,LH	9:29:17 AM

Report Date :11/23/2015 **Run Date :11/23/2015** **Operator : SMARTCHEM2** **Plan # :20151123001**

Plan Description : ALK-A2-DCM/11/23/2015

MICROBAC (OVD)
SMARTCHEM200 INST2 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
18	L15111050-02 (2)	243.5	-0.3930	0.00		9:30:11 AM
19	L15111050-04 (2)	255.4	-0.4128	0.00		9:30:29 AM
20	L15111050-06 (4)	160.9	-0.2569	0.00		9:31:23 AM
ST-3	1CCV (150 mg/L)	149.6	-0.2385	99.74		9:31:41 AM
ST-2	2CCB (0 mg/L)	2.6	-0.0052	0.00		9:32:35 AM
21	L15111050-07 (4)	126.9	-0.2018	0.00		9:32:53 AM
22	L15111050-09 (4) MS	156.7	-0.2500	0.00		9:33:47 AM
23	L15111050-11 (4) MSD	155.6	-0.2483	0.00		9:34:05 AM
24	L15111050-13 (2)	261.9	-0.4238	0.00		9:34:59 AM
25	L15111080-15	229.2	-0.3691	0.00		9:35:17 AM
26	L15111050-17 (2)	201.7	-0.3237	0.00		9:36:11 AM
27	WG548010-08 (2) DUP	207.1	-0.3325	0.00		9:36:29 AM
28	ID 28	***	0.5984	0.00	SS	9:37:23 AM
ST-3	1CCV (150 mg/L)	155.3	-0.2478	103.56		9:37:41 AM
ST-2	2CCB (0 mg/L)	6.8	-0.0117	0.00		9:38:53 AM
17-[1/2]	L15110943-11	425.1	-0.3415	0.00	LH	9:46:33 AM
ST-3	1CCV (150 mg/L)	162.8	-0.2600	108.56		9:46:33 AM
ST-2	2CCB (0 mg/L)	12.0	-0.0198	0.00		9:47:27 AM

Report Date :11/23/2015 Run Date :11/23/2015 Operator : SMARTCHEM2 Plan # :20151123001

Plan Description : ALK-A2-DCM/11/23/2015

Calibrant Report - WALK -

Calib Lot #:010104 Exp Date:6/21/2020 User:MICROBAC

Plan # : 20151123001 Description : [ALK-A2-DCM/11/23/2015] Unit

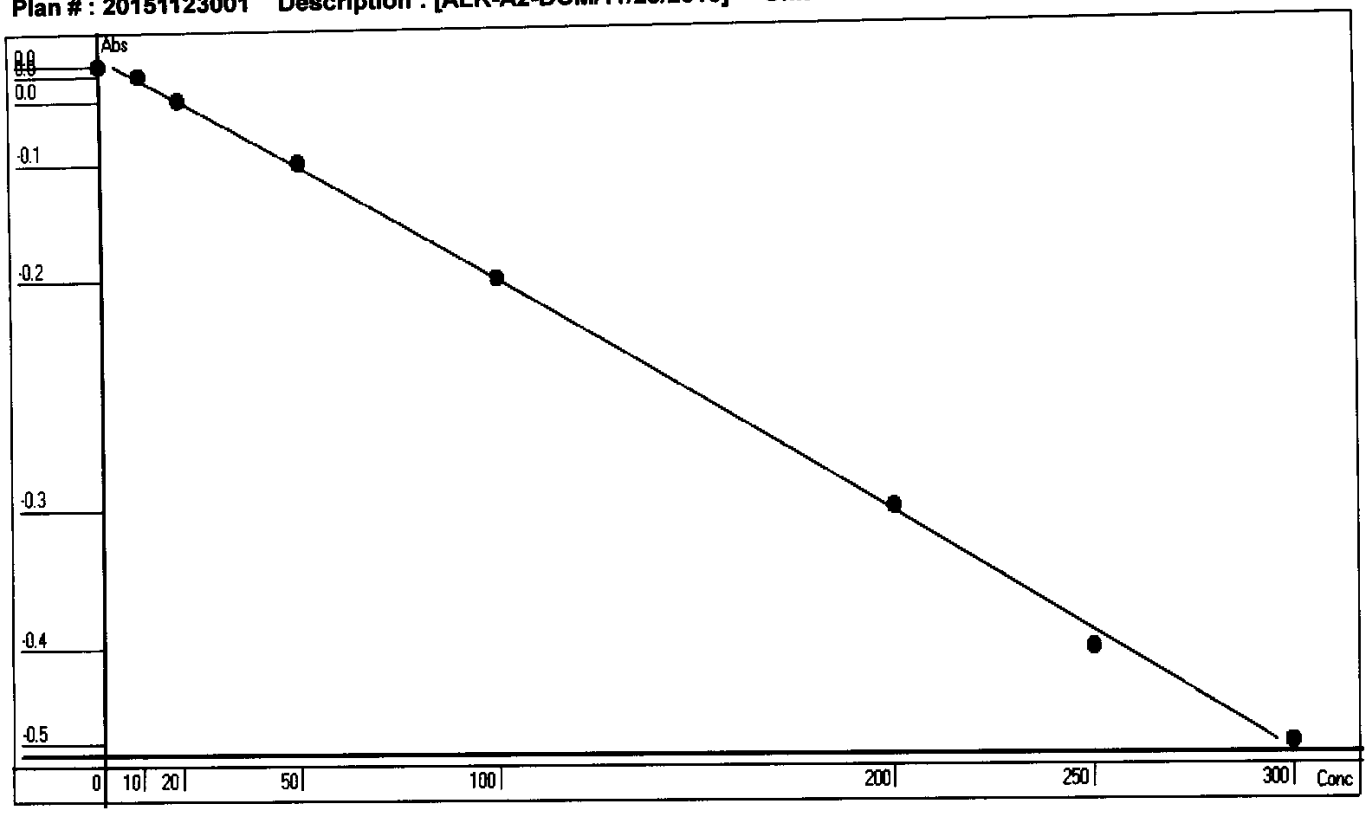

Point	OD	Conc	Recalc Conc	% Error
1	-0.0068	0	3.6766	367.66
2	-0.0141	10	8.3688	-16.31
3	-0.0317	20	19.6563	-1.72
4	-0.0764	50	48.1655	-3.67
5	-0.1577	100	99.4338	-0.57
6	-0.3178	200	198.1910	-0.90
7	-0.4150	250	256.7230	2.69
8	-0.4811	300	295.9119	-1.36

Conc= -56.9994*Abso^2 -643.9502*Abso -0.6996 R^2=0.9991

RBL
0.7168
0

Report Date 11/23/2015 Run Date 11/23/2015

MICROBAC (OVD)

SMARTCHEM200 INST2 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.0	0.6005	0.00		10:47:52 AM
DIL-1	RBL	0.0	0.6070	0.00		10:48:10 AM
DIL-1	RBL	0.0	0.5961	0.00		10:49:04 AM
DIL-1	Std-1	0.0	0.0026	0.00	INV,EPL	10:49:22 AM
SR5-1	Std-2	10.0	-0.0137	0.00		10:50:16 AM
SR5-2	Std-3	20.0	-0.0281	0.00		10:50:34 AM
SR5-3	Std-4	50.0	-0.0607	0.00		10:51:28 AM
SR5-4	Std-5	100.0	-0.1341	0.00		10:51:46 AM
SR5-5	Std-6	200.0	-0.2779	0.00		10:52:40 AM
SR5-6	Std-7	250.0	-0.3610	0.00		10:52:58 AM
SR5-7	Std-8	300.0	-0.4231	0.00		10:53:52 AM
ST-3	1CCV (150 mg/L)	150.4	-0.2071	100.24		10:54:10 AM
ST-2	2CCB (0 mg/L)	-11.5	0.0178	0.00	INV,><,LL	10:55:04 AM
1	ICV	247.3	-0.3489	0.00		10:55:22 AM
2	WG548051-01 BLK	-11.8	0.0182	0.00	INV,><,LL	10:56:16 AM
3	WG548051-02 LCS	196.2	-0.2734	0.00		10:56:34 AM
4	WG548051-03 LCSDUP	195.3	-0.2721	0.00		10:57:28 AM
5	L15111084-02 (2)	201.7	-0.2815	0.00		10:57:46 AM
6	L15111084-04 (2)	190.5	-0.2651	0.00		10:58:40 AM
7	L15111084-06 (2)	256.6	-0.3627	0.00		10:58:58 AM
8	L15111084-07 (2)	251.8	-0.3556	0.00		10:59:52 AM
9	L15111084-08 (2)	188.5	-0.2622	0.00		11:00:10 AM
10	L15111084-10	294.6	-0.4202	0.00		11:01:04 AM
ST-3	1CCV (150 mg/L)	148.5	-0.2045	99.03		11:01:22 AM
ST-2	2CCB (0 mg/L)	-1.3	0.0040	0.00	INV,><,LL	11:02:16 AM
11	L15111084-12 (2)	196.9	-0.2744	0.00		11:02:34 AM
12	L15111084-14 (2)	182.0	-0.2527	0.00		11:03:28 AM
13	L15111109-01	26.7	-0.0341	0.00		11:03:46 AM
14	L15111245-02 (4)	153.9	-0.2122	0.00		11:04:58 AM
15	L15111245-03 (4)	96.1	-0.1302	0.00		11:05:16 AM
16	L15111245-05 (4)	155.0	-0.2137	0.00		11:06:10 AM
17	L15111245-06 (4)	106.9	-0.1453	0.00	EPL	11:06:28 AM

Report Date :11/23/2015 **Run Date :11/23/2015** **Operator : SMARTCHEM2** **Plan # :20151123002**

Plan Description : ALK-B2-DCM/11/23/2015

MICROBAC (OVD)

SMARTCHEM200 INST2 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
18	L15111245-08 (4)	206.2	-0.2881	0.00		11:07:22 AM
19	L15111245-09 (4)	120.3	-0.1643	0.00		11:07:40 AM
20	L15111069-01 (10)	147.5	-0.2030	0.00		11:08:34 AM
ST-3	1CCV (150 mg/L)	155.4	-0.2143	103.59		11:08:52 AM
ST-2	2CCB (0 mg/L)	6.4	-0.0065	0.00		11:09:46 AM
21	L15111069-04 (20)	144.6	-0.1989	0.00		11:10:04 AM
22	L15111268-02 (2)	284.8	-0.4053	0.00		11:10:58 AM
23	L15111268-03 (2)	260.0	-0.3679	0.00		11:11:16 AM
24	L15111268-05 (2)	176.3	-0.2445	0.00		11:12:10 AM
25	WG548051-05 (2) DUP	176.8	-0.2452	0.00		11:12:28 AM
ST-3	1CCV (150 mg/L)	152.2	-0.2098	101.50		11:13:22 AM
ST-2	2CCB (0 mg/L)	5.5	-0.0052	0.00		11:13:40 AM

Report Date :11/23/2015 **Run Date :11/23/2015** **Operator : SMARTCHEM2** **Plan # :20151123002**

Plan Description : ALK-B2-DCM/11/23/2015

Calibrant Report - WALK -

Calib Lot #:010104 Exp Date:6/21/2020 User:MICROBAC

Plan # : 20151123002 Description : [ALK-B2-DCM/11/23/2015] Unit

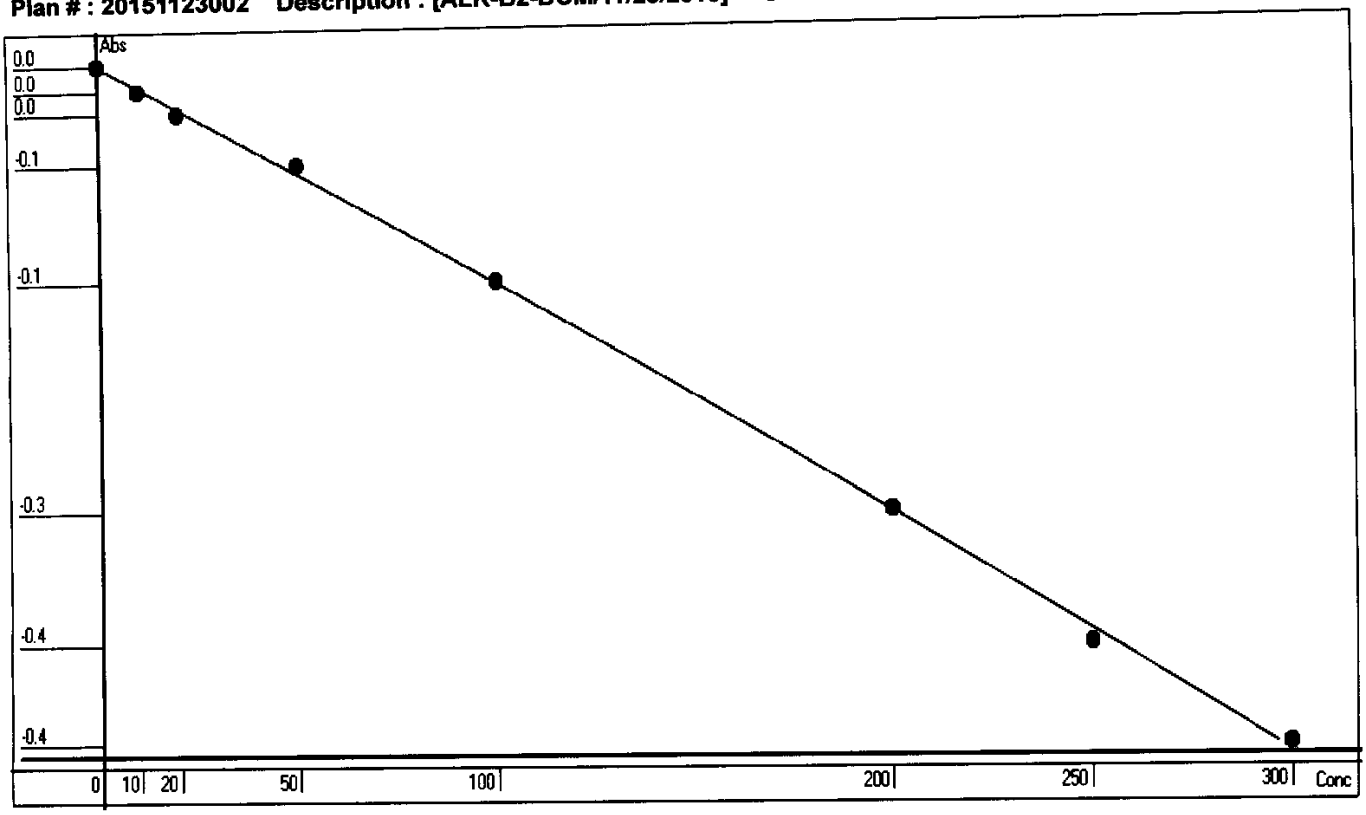

Point	OD	Conc	Recalc Conc	% Error
1	0.0026	0	-0.2854	-28.54
2	-0.0137	10	11.7334	17.33
3	-0.0281	20	22.3078	11.54
4	-0.0607	50	46.0972	-7.81
5	-0.1341	100	98.8974	-1.10
6	-0.2779	200	199.2797	-0.36
7	-0.3610	250	255.4420	2.18
8	-0.4231	300	296.5282	-1.16

Conc= -97.9727*Abso^2 -738.434*Abso +1.6352 R^2=0.9993

RBL
0.5983
0

Report Date 11/23/2015 Run Date 11/23/2015

MICROBAC (OVD)

SMARTCHEM200 INST2 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.0	0.5118	0.00		12:07:05 PM
DIL-1	RBL	0.0	0.5182	0.00		12:07:22 PM
DIL-1	RBL	0.0	0.5118	0.00		12:08:17 PM
DIL-1	Std-1	0.0	0.0003	0.00	INV	12:08:35 PM
SR5-1	Std-2	10.0	-0.0066	0.00		12:09:29 PM
SR5-2	Std-3	20.0	-0.0127	0.00		12:09:46 PM
SR5-3	Std-4	50.0	-0.0535	0.00		12:10:41 PM
SR5-4	Std-5	100.0	-0.1106	0.00		12:10:59 PM
SR5-5	Std-6	200.0	-0.2406	0.00		12:11:53 PM
SR5-6	Std-7	250.0	-0.3110	0.00		12:12:11 PM
SR5-7	Std-8	300.0	-0.3611	0.00		12:13:05 PM
ST-3	1CCV (150 mg/L)	147.9	-0.1742	98.58		12:13:23 PM
ST-2	2CCB (0 mg/L)	-8.7	0.0167	0.00	INV,><,LL	12:14:17 PM
1	ICV	246.3	-0.2982	0.00		12:14:35 PM
2	WG548083-01 BLK	-8.5	0.0165	0.00	INV,><,LL	12:15:29 PM
3	WG548083-02 LCS	194.7	-0.2328	0.00		12:15:47 PM
4	WG548083-03 LCSDUP	195.3	-0.2335	0.00		12:16:41 PM
5	L15111268-06 (5)	184.8	-0.2203	0.00		12:16:59 PM
6	L15111143-01 (2)	208.2	-0.2498	0.00		12:17:53 PM
7	L15111143-04 (10)	201.9	-0.2419	0.00		12:18:11 PM
8	L15111143-07 (20)	112.5	-0.1304	0.00		12:19:05 PM
9	L15111143-10 (10)	59.2	-0.0652	0.00		12:19:23 PM
10	L15111143-13	258.3	-0.3135	0.00		12:20:17 PM
ST-3	1CCV (150 mg/L)	150.1	-0.1770	100.08		12:20:35 PM
ST-2	2CCB (0 mg/L)	1.2	0.0049	0.00	INV,><	12:21:29 PM
11	L15111143-16 (100)	110.4	-0.1278	0.00		12:21:47 PM
12	L15111143-19 (100)	38.2	-0.0397	0.00		12:22:41 PM
13	L15111143-22 (10)	80.1	-0.0906	0.00		12:22:59 PM
14	L15111207-01	211.7	-0.2543	0.00		12:24:11 PM
15	L15111207-04 (2)	204.4	-0.2450	0.00		12:24:29 PM
16	L15111207-07 (2)	X 350.0	-0.4324	0.00	><,LH	12:25:23 PM
17	L15111207-14 (2)	231.1	-0.2788	0.00		12:25:41 PM

Report Date :11/23/2015 **Run Date :11/23/2015** **Operator : SMARTCHEM2** **Plan # :20151123003**

Plan Description : ALK-C2-DCM/11/23/2015

MICROBAC (OVD)

SMARTCHEM200 INST2 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WALK -Unit [mg/L] - ALKALINITY EPA 310.2

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
18	L15111207-17	296.6	-0.3628	0.00	><	12:26:35 PM
19	L15111207-20	X325.4	-0.4002	0.00	><,LH	12:26:53 PM
20	L15111207-23 (3)	180.2	-0.2146	0.00		12:27:47 PM
ST-3	1CCV (150 mg/L)	157.9	-0.1867	105.27		12:28:05 PM
ST-2	2CCB (0 mg/L)	5.7	-0.0005	0.00		12:28:59 PM
21	L15111207-32	264.3	-0.3212	0.00		12:29:17 PM
22	L15111269-04	272.6	-0.3319	0.00		12:30:11 PM
23	WG548083-05 DUP	273.0	-0.3324	0.00		12:30:29 PM
ST-3	1CCV (150 mg/L)	157.6	-0.1863	105.05		12:31:23 PM
ST-2	2CCB (0 mg/L)	9.6	-0.0052	0.00		12:31:41 PM
16-[1/2]	L15111207-07 (2)	572.3	-0.3493	0.00	LH	12:39:21 PM
19-[1/2]	L15111207-20	412.4	-0.2473	0.00	LH	12:40:33 PM
ST-3	1CCV (150 mg/L)	154.9	-0.1829	103.24		12:40:33 PM
ST-2	2CCB (0 mg/L)	15.9	-0.0128	0.00		12:41:27 PM

Report Date :11/23/2015 **Run Date :11/23/2015** **Operator : SMARTCHEM2** **Plan # :20151123003**

Plan Description : ALK-C2-DCM/11/23/2015

Calibrant Report - WALK -

Calib Lot #:010104 Exp Date:6/21/2020 User:MICROBAC

Plan # : 20151123003 Description : [ALK-C2-DCM/11/23/2015] Unit

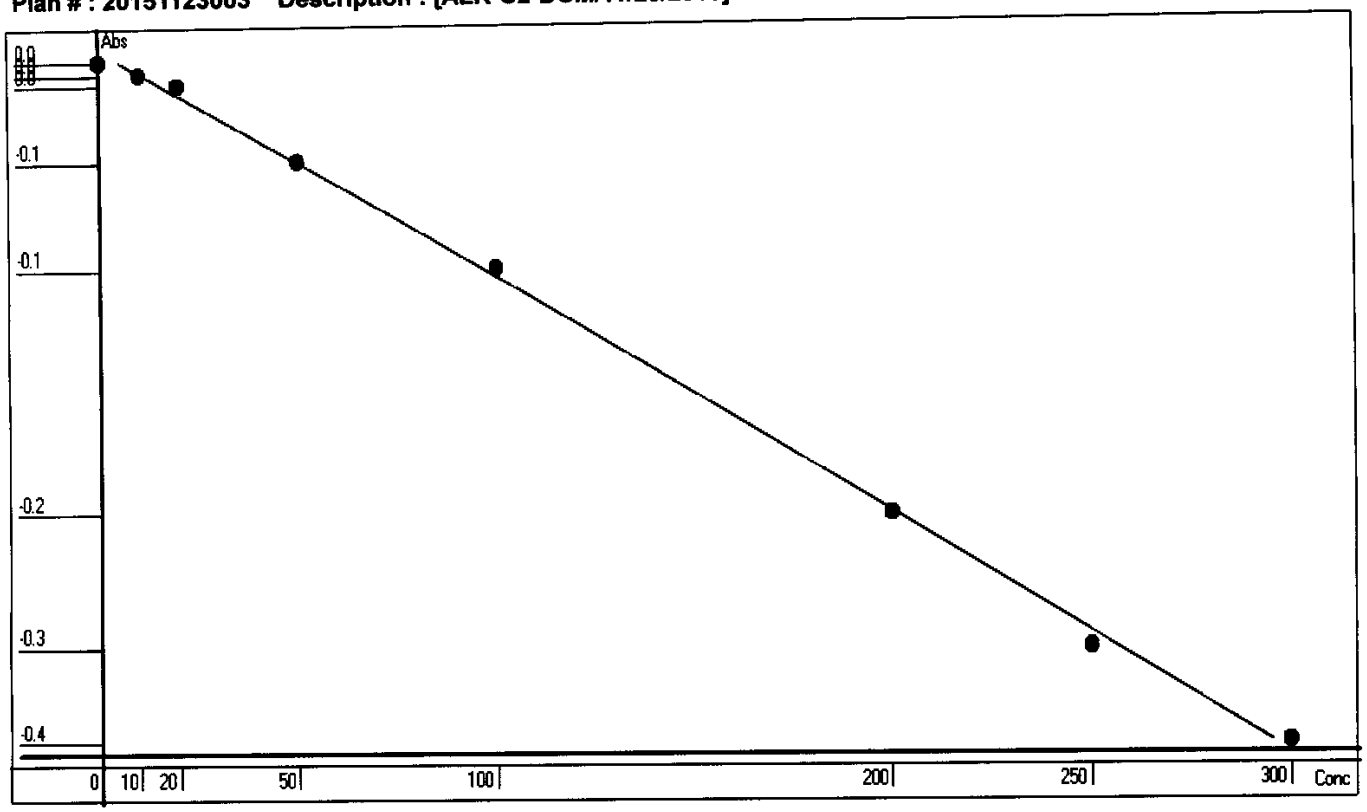

Point	OD	Conc	Recalc Conc	% Error
1	0.0003	0	4.9963	499.63
2	-0.0066	10	10.7417	7.42
3	-0.0127	20	15.8143	-20.93
4	-0.0535	50	49.5834	-0.83
5	-0.1106	100	96.3789	-3.62
6	-0.2406	200	200.8960	0.45
7	-0.3110	250	256.3230	2.53
8	-0.3611	300	295.2656	-1.58

Conc= -83.1474*Abso^2 -833.1795*Abso +5.2463 R^2=0.9988

RBL
0.5118
0

Report Date 11/23/2015 Run Date 11/23/2015

2.3.3 Phosphorus Data

2.3.3.1 Summary Data

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-01	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW08-111615	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	11/19/2015 12:01
Workgroup #:	WG547563	**Analyst:**	DCM	**Run Date:**	11/19/2015 12:12
Collect Date:	11/16/2015 08:20	**Dilution:**	1	**File ID:**	SC151119003.025
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-03	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW22-111615	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	11/23/2015 11:00
Workgroup #:	WG548015	**Analyst:**	DCM	**Run Date:**	11/23/2015 11:11
Collect Date:	11/16/2015 09:25	**Dilution:**	1	**File ID:**	SC151123002.025
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-05	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW24-111615	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	11/23/2015 11:00
Workgroup #:	WG548015	**Analyst:**	DCM	**Run Date:**	11/23/2015 11:12
Collect Date:	11/16/2015 10:30	**Dilution:**	1	**File ID:**	SC151123002.026
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-07	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW23-111615	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	11/23/2015 11:00
Workgroup #:	WG548015	**Analyst:**	DCM	**Run Date:**	11/23/2015 11:12
Collect Date:	11/16/2015 11:35	**Dilution:**	1	**File ID:**	SC151123002.027
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-09	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW18-111615	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	11/23/2015 11:00
Workgroup #:	WG548015	**Analyst:**	DCM	**Run Date:**	11/23/2015 11:13
Collect Date:	11/16/2015 13:45	**Dilution:**	1	**File ID:**	SC151123002.028
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-11	**PrePrep Method:**	N/A	**Instrument:**	SMARTCHEM
Client ID:	50WW25-111615	**Prep Method:**	365.4	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	365.4	**Cal Date:**	11/23/2015 11:00
Workgroup #:	WG548015	**Analyst:**	DCM	**Run Date:**	11/23/2015 11:13
Collect Date:	11/16/2015 14:55	**Dilution:**	1	**File ID:**	SC151123002.029
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Phosphorus, Total	7723-14-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.3.3.2 QC Summary Data

Example Calculations for Visible Spectrophotometric Methods

Linear Calibration Model

Step 1 - Retrieve Curve Data from ICAL

m = slope of the linear equation
b = intercept from the linear equation
y = instrument response as absorbance or OD
x = concentration of analyte (mg/L)
y = mx + b

Step 2: Calculate the instrument concentration, x

Where:

x = (y - b)/m

Step 3: Solve for analyte concentration in sample, Cx

Cx = (x) (D)

Example Calculation (LCS):

Value of m from plot:	7.809
Value of b from plot:	0.0004135
Absorbance of unknown from quantitation report (y):	0.31
Calculated concentration (x):	0.03964483
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	0.0396 mg/L

SmartChem Autoanalyzer - Quadratic Calibration for Chloride and Sulfate

Step 1 - Retrieve Curve Data from Smartchem ICAL

A, B, C = constants from the ICAL quadratic regression

x = instrument response as absorbance or OD

y = concentration of analyte (mg/L)

Step 2: Calculate the instrument concentration, y

Where:

y = Ax^2 + Bx + C

Step 3: Solve for analyte concentration in sample, Cy

Cy = (y) (D)

Example Calculation (LCS):

Value of A from plot:	101.2796
Value of B from plot:	318.9056
Value of C from plot:	-2.2712
Absorbance of unknown from quantitation report (x):	0.1583
Calculated concentration (y):	50.7495108
Dilution factor (D):	1.00
Concentration of analyte in sample, Cy:	50.75 mg/L

Microbac Laboratories Inc.

Data Checklist

Date: 19-NOV-2015
Analyst: DCM
Analyst: NA
Method: PHOS
Instrument: SC
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG547563

Calibration/Linearity	11-19-2015
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DCM
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
20-NOV-2015

Secondary Reviewer:
20-NOV-2015

CHECKLIST1 - Modified 03/05/2008
Generated: NOV-20-2015 16:25:35

Microbac Laboratories Inc.

Data Checklist

Date: 23-NOV-2015
Analyst: DCM
Analyst: NA
Method: PHOS
Instrument: SC
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG548015

Calibration/Linearity	11-23-2015
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	DCM
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
23-NOV-2015

Secondary Reviewer:
25-NOV-2015

CHECKLIST1 - Modified 03/05/2008
Generated: NOV-25-2015 13:23:48

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 365.4 AAB#: WG547563

Login Number: L15110943

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW08-111615	01	11/16/15					11/19/2015	3.2	28		11/19/15	3.2	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4513041
Report generated 11/25/2015 11:19

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 365.4 AAB#: WG548015

Login Number: L15110943

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW22-111615	03	11/16/15					11/23/2015	7.1	28		11/23/15	7.1	28	
50WW24-111615	05	11/16/15					11/23/2015	7	28		11/23/15	7	28	
50WW23-111615	07	11/16/15					11/23/2015	7	28		11/23/15	7	28	
50WW18-111615	09	11/16/15					11/23/2015	6.9	28		11/23/15	6.9	28	
50WW25-111615	11	11/16/15					11/23/2015	6.8	28		11/23/15	6.8	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4513041
Report generated 11/25/2015 11:19

METHOD BLANK SUMMARY

Login Number: L15110943
Blank File ID: SC151119003.010
Prep Date: 11/19/15 12:03
Analyzed Date: 11/19/15 12:03
Analyst: DCM

Work Group: WG547563
Blank Sample ID: WG547563-01
Instrument ID: SMARTCHEM
Method: 365.4

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG547563-02	SC151119003.011	11/19/15 12:04	01
50WW08-111615	L15110943-01	SC151119003.025	11/19/15 12:12	01
DUP	WG547563-04	SC151119003.026	11/19/15 12:13	01

Report Name: BLANK_SUMMARY
PDF File ID: 4513042
Report generated 11/25/2015 11:19

METHOD BLANK SUMMARY

Login Number: L15110943
Blank File ID: SC151123002.010
Prep Date: 11/23/15 11:02
Analyzed Date: 11/23/15 11:02
Analyst: DCM

Work Group: WG548015
Blank Sample ID: WG548015-01
Instrument ID: SMARTCHEM
Method: 365.4

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG548015-02	SC151123002.011	11/23/15 11:03	01
50WW22-111615	L15110943-03	SC151123002.025	11/23/15 11:11	01
50WW24-111615	L15110943-05	SC151123002.026	11/23/15 11:12	01
50WW23-111615	L15110943-07	SC151123002.027	11/23/15 11:12	01
50WW18-111615	L15110943-09	SC151123002.028	11/23/15 11:13	01
50WW25-111615	L15110943-11	SC151123002.029	11/23/15 11:13	01
DUP	WG548015-06	SC151123002.037	11/23/15 11:18	01

Report Name: BLANK_SUMMARY
PDF File ID: 4513042
Report generated 11/25/2015 11:19

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15110943 Prep Date: 11/19/15 12:03 Sample ID: WG547563-01
Instrument ID: SMARTCHEM Run Date: 11/19/15 12:03 Prep Method: 365.4
File ID: SC151119003.010 Analyst: DCM Method: 365.4
Workgroup (AAB#): WG547563 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-19-NOV-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Phosphorus, Total	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4513043
25-NOV-2015 11:19

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15110943 Prep Date: 11/23/15 11:02 Sample ID: WG548015-01
Instrument ID: SMARTCHEM Run Date: 11/23/15 11:02 Prep Method: 365.4
File ID: SC151123002.010 Analyst: DCM Method: 365.4
Workgroup (AAB#): WG548015 Matrix: Water Units: mg/L
Contract #: Cal ID: SMARTC-23-NOV-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Phosphorus, Total	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4513043
25-NOV-2015 11:19

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15110943 Run Date: 11/19/2015 Sample ID: WG547563-02
Instrument ID: SMARTCHEM Run Time: 12:04 Prep Method: 365.4
File ID: SC151119003.011 Analyst: DCM Method: 365.4
Workgroup (AAB#): WG547563 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD73418 Cal ID: SMARTC-19-NOV-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Phosphorus, Total	1.00	0.978	97.8	70 - 130	

LCS - Modified 03/06/2008
PDF File ID: 4513044
Report generated: 11/25/2015 11:20

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15110943 Run Date: 11/23/2015 Sample ID: WG548015-02
Instrument ID: SMARTCHEM Run Time: 11:03 Prep Method: 365.4
File ID: SC151123002.011 Analyst: DCM Method: 365.4
Workgroup (AAB#): WG548015 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD73418 Cal ID: SMARTC-23-NOV-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Phosphorus, Total	1.00	1.09	109	70 - 130	

LCS - Modified 03/06/2008
PDF File ID: 4513044
Report generated: 11/25/2015 11:20

2.3.3.3 Raw Data

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

WORKGROUP: WG548015

Daily Check

- [x] Lamp On
- [x] Probe Rinse Full
- [x] DI Water > ½ Full
- [x] Wash Solution > ½ Full
- [ ] NO3 Reagent bottle connected / purged
- [ ] NO3 pH adj to pH 5-9

Syringe filter lot # _____

- [x] WBL Run
- [x] Reagents Full
- [x] Dilution H_2O Full
- [x] Waste Container Check

1) **Workgroup** _____
Plan # 20151123002
2) **Workgroup** _____
Plan # _____
3) **Workgroup** _____
Plan # _____

Instrument: SC1 [x] SC2 [ ]

	Analyte	1	2	3
		PHOS		
		Dilution		
SC Prepared Curve				
Position				
1-1	ICV			
1-2	Blk			
1-3	LCS			
1-4	11-983-C1			
1-5	11-1069-C1	1ml/5		
1-6	C4	1ml/25		
1-7	11-1143-C1			
1-8	C4			
1-9	C7			
1-10	10	1ml/2		
1-11	13			
1-12	16	1ml/10		
1-13	19			
1-14	22			
1-15	11-943-C3			
1-16	C5			
1-17	C7			
1-18	C9			
1-19	11			
1-20	11-1039-C1			
1-21	C2			
1-22	C3			
2-1	11-945-C1			
2-2	MS 11-945-C1			
2-3	DUP 11-1039-C3			

	Analyte	1	2	3
Position				
2-4				
2-5				
2-6				
2-7				
2-8				
2-9				
2-10				
2-11				
2-12				
2-13				
2-14				
2-15				
2-16				
2-17				
2-18				
2-19				
2-20				
2-21				
2-22				
2-23				
2-24				
2-25				
2-26				
3-1				
3-2				

NOTES:
* Run NO2 std on NO3 runs
* LCSD must be run if no MS or Duplicate
*MS(10% sample): NO3, TKN, NH3, PHOS

DCN#114937

SMARTCHEM RUN LOG
(smartchem2, smartchem3)

WORKGROUP: WG548015

Position	Analyte	1	2	3
3-3				
3-4				
3-5				
3-6				
3-7				
3-8				
3-9				
3-10				
3-11				
3-12				
3-13				
3-14				
3-15				

Position	Analyte	1	2	3
3-16				
3-17				
3-18				
3-19				
3-20				
3-21				
3-22				
3-23				
3-24				
3-25				
3-26				
3-27				
3-28				

	Chloride	EPA 325.2/SM 4500-CI E-2000
	Nitrate-Nitrite	EPA 353.2/SM 4500-NO3 F-2000
	Alkalinity	EPA 310.2
	Sulfate	EPA 375.4/SM 426C (15th)/ SM4500-504 E-1997

	Ammonia	EPA 350.1/SM 4500-NH3 B-1997
	TKN	EPA 351.2
✓	Phos	EPA 365.4

Analyte	PHOS		Reagents
SOP & Revision	K3654 R18		REGT 35393
Curve Stock (SC made)			REGT 35121
NO2 STD			REGT 34471
ICV	see Digest		
CCV	log		
LCS			
MS	Dilution		

Comments:

Analyst: David Merkle

Date: 11/23/15

DCN#114937

TKN/Phosphorus Digestion Log

TKN WG: _____ Phos WG: _____

TKN Std: Std 73570 Phos Std: Std 73570

TKN CCV: 1/2 (Std 73570) Phos CCV: 1/2 (Std 73570

TKN ICV: Std 73251 Phos ICV: Std 73454

TKN LCS: Std 73461 Phos LCS: Std 73415

MS/MSD: Std 72041

Daily Dilution: 1(25)/25 = 1

Block Digester Temperature: 380 °C Digest Reagent: RGT 35113

	Sample	Volume	TKN Dilution	Phos Dilution		Sample	Volume	TKN Dilution	Phos Dilution	
1	Std		5	2	26	11-1143-16	1/10	✓	✓	*
2	Std		5	2	27	19		✓	✓	
3	ICVT		2		28	22		✓	✓	
4	ICVP			1.5	29	11-943-03			✓	
5	LCST		1		30	05			✓	
6	LCSP			1	31	07			✓	
7	11-894-08		✓		32	09			✓	
8	09		✓		33	11			✓	
9	10		✓		34	11-1039-01			✓	
10	11-949-02	1/50	✓		35	02			✓	
11	03	1/50	✓		36	03			✓	
12	11-949-01		✓		37	Dup 11-1038-03		✓	✓	
13	MS 02		✓		38	Blk				
14	MSD 03		✓		39	Blk				
15	11-946-01		✓		40	Blk				
16	MS 02		✓		41					
17	MSD 03		✓		42					
18	11-983-01		✓	✓	43					
19	11-1069-01	1/5	✓	✓	44					
20	04	1/25	✓	✓	45					
21	11-1143-01		✓	✓	46					
22	04		✓	✓	47					
23	07		✓	✓	48					
24	10	1/2	✓	✓	49					
25	13		✓	✓	50					

* Diluted for matrix interference

Analyst: [signature] Date: 11/20/15

MICROBAC (OVD)
SMARTCHEM200 INST1 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WTPH -Unit [mg/L] - EPA 365.4 TOTAL PHOSPHORUS

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.000	0.0893	0.00	R	10:55:40 AM
DIL-1	RBL	0.000	0.0935	0.00	R	10:55:58 AM
DIL-1	RBL	0.000	0.0904	0.00	R	10:56:53 AM
SR5-1	Std-1	0.010	0.0028	0.00		10:57:10 AM
SR5-2	Std-2	0.200	0.0213	0.00		10:58:05 AM
SR5-3	Std-3	0.500	0.0554	0.00		10:58:22 AM
SR5-4	Std-4	1.000	0.1182	0.00		10:59:17 AM
SR5-5	Std-5	1.500	0.1709	0.00		10:59:34 AM
ST-1	Std-6	2.000	0.2349	0.00		11:00:29 AM
ST-3	1CCV (1 mg/L)	0.970	0.1125	97.03		11:00:46 AM
ST-2	2CCB (0 mg/L)	0.095	0.0102	0.00		11:01:41 AM
1	ICV	1.692	0.1969	0.00		11:01:58 AM
2	WG548015-01 BLK	-0.027	-0.0041	0.00	INV,><,LL	11:02:53 AM
3	WG548015-02 LCS	1.090	0.1265	0.00		11:03:11 AM
4	L15110983-01	2.895	0.3375	0.00	><,LH	11:04:05 AM
5	L15111069-01 (5)	-0.012	-0.0023	0.00	INV,><,LL	11:04:22 AM
6	L15111069-04 (25)	-0.069	-0.0090	0.00	INV,><,LL	11:05:17 AM
7	L15111143-01	0.480	0.0552	0.00		11:05:35 AM
8	L15111143-04	1.983	0.2309	0.00		11:06:29 AM
9	L15111143-07	4.040	0.4713	0.00	><,LH	11:06:47 AM
10	L15111143-10 (2)	0.176	0.0197	0.00		11:07:41 AM
ST-3	1CCV (1 mg/L)	0.957	0.1110	95.74		11:07:59 AM
ST-2	2CCB (0 mg/L)	0.001	-0.0008	0.00	INV,><	11:08:53 AM
11	L15111143-13	0.274	0.0311	0.00		11:09:11 AM
12	L15111143-16 (10)	1.694	0.1971	0.00		11:10:05 AM
13	L15111143-19	5.050	0.5894	0.00	><,LH	11:10:23 AM
14	L15111143-22	0.582	0.0671	0.00		11:11:17 AM
15	L15110943-03	0.017	0.0010	0.00	><	11:11:35 AM
16	L15110943-05	-0.068	-0.0089	0.00	INV,><,LL	11:12:29 AM
17	L15110943-07	-0.105	-0.0132	0.00	INV,><,LL	11:12:47 AM
18	L15110943-09	-0.015	-0.0027	0.00	INV,><,LL	11:13:41 AM
19	L15110943-11	-0.004	-0.0014	0.00	INV,><,LL	11:13:59 AM

Report Date :11/23/2015 **Run Date :11/23/2015** **Operator : SMARTCHEM1** **Plan # :20151123002**

Plan Description : PHOS-A1-DCM/11/23/2015

MICROBAC (OVD)
SMARTCHEM200 INST1 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WTPH -Unit [mg/L] - EPA 365.4 TOTAL PHOSPHORUS

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
20	L15111039-01	-0.231	-0.0279	0.00	INV,><,LL	11:14:53 AM
ST-3	1CCV (1 mg/L)	0.969	0.1123	96.86		11:15:11 AM
ST-2	2CCB (0 mg/L)	0.011	0.0003	0.00	><	11:16:05 AM
21	L15111039-02	-0.079	-0.0101	0.00	INV,><,LL	11:16:23 AM
22	L15111039-03	0.149	0.0165	0.00		11:17:17 AM
23	WG548015-03 REF	-0.028	-0.0042	0.00	INV,><,LL	11:17:35 AM
24	WG548015-04 MS	1.020	0.1183	0.00		11:18:29 AM
25	WG548015-06 DUP	0.134	0.0147	0.00		11:18:47 AM
26	ID 26	0.064	0.0066	0.00		11:19:41 AM
27	ID 27	0.177	0.0198	0.00		11:19:59 AM
28	ID 28	1.134	0.1316	0.00		11:20:53 AM
ST-3	1CCV (1 mg/L)	1.023	0.1186	102.25		11:21:11 AM
ST-2	2CCB (0 mg/L)	0.034	0.0031	0.00		11:22:05 AM
4-[1/2]	L15110983-01	2.623	0.1524	0.00	LH	11:29:45 AM
9-[1/2]	L15111143-07	3.807	0.2216	0.00	LH	11:30:57 AM
ST-3	1CCV (1 mg/L)	0.933	0.1081	93.26		11:30:57 AM
ST-2	2CCB (0 mg/L)	0.011	0.0003	0.00	><	11:31:51 AM
13-[1/2]	L15111143-19	X4.842	0.2821	0.00	EPL,><,LH	11:33:21 AM
ST-3	1CCV (1 mg/L)	0.985	0.1142	98.48		11:33:21 AM
ST-2	2CCB (0 mg/L)	-0.015	-0.0027	0.00	INV,><,LL	11:34:15 AM
13-[1/5]	L15111143-19	4.223	0.0978	0.00	LH	11:41:55 AM
ST-3	1CCV (1 mg/L)	1.024	0.1188	102.42		11:41:55 AM
ST-2	2CCB (0 mg/L)	0.039	0.0036	0.00		11:42:49 AM

Report Date :11/23/2015 Run Date :11/23/2015 Operator : SMARTCHEM1 Plan # :20151123002

Plan Description : PHOS-A1-DCM/11/23/2015

Calibrant Report - WTPH -

Calib Lot #:010104 Exp Date:6/18/2020 User:MICROBAC

Plan # : 20151123002 Description : [PHOS-A1-DCM/11/23/2015] Unit

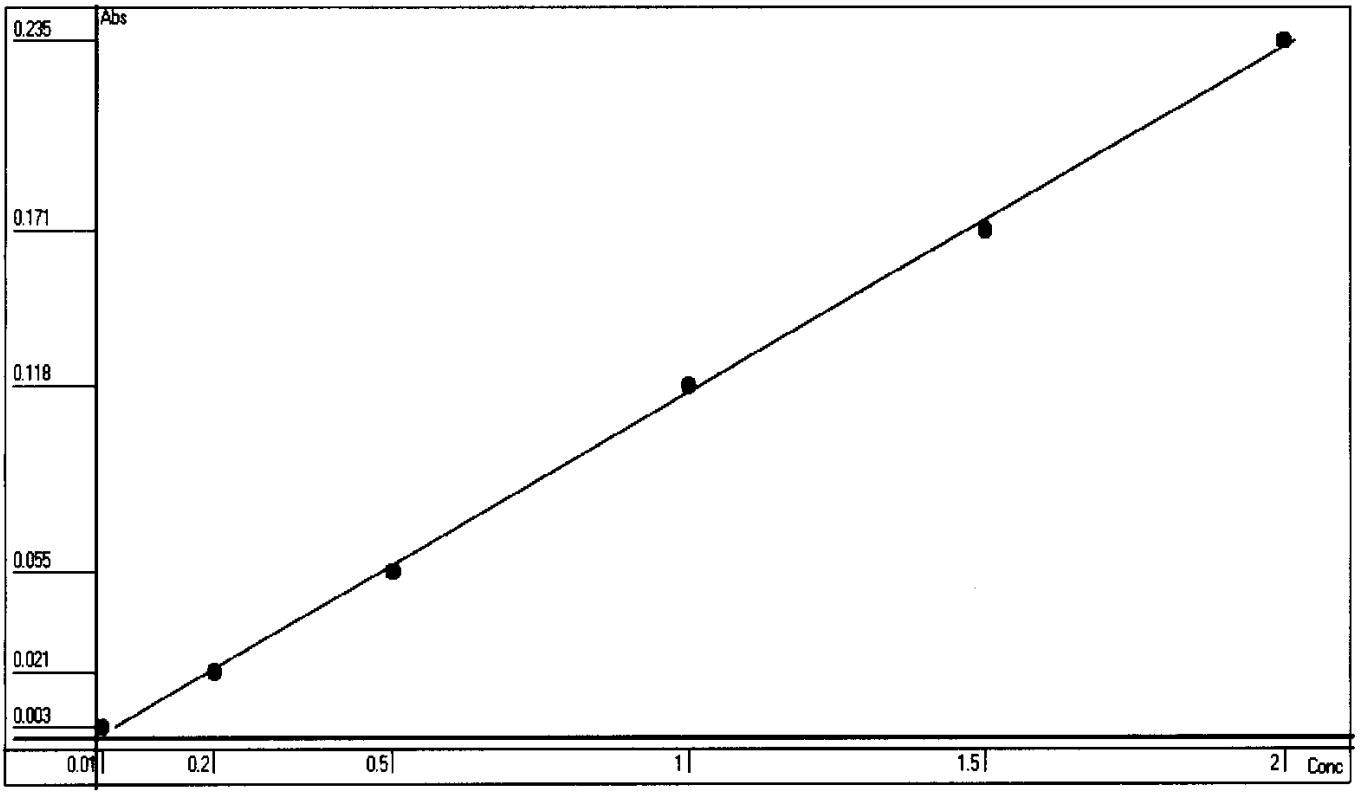

Point	OD	Conc	Recalc Conc	% Error
1	0.0028	0.01	0.0324	224.00
2	0.0213	0.2	0.1906	-4.70
3	0.0554	0.5	0.4823	-3.54
4	0.1182	1	1.0195	1.95
5	0.1708	1.5	1.4694	-2.04
6	0.2349	2	2.0178	0.89

Conc= +8.5541*Abso +0.0084 R^2=0.9992

RBL
0.0898
0

Report Date 11/23/2015 Run Date 11/23/2015

SMARTCHEM RUN LOG

(smartchem2, smartchem3)

WORKGROUP: WG547563

Daily Check

- [x] Lamp On
- [x] Probe Rinse Full
- [x] DI Water > ½ Full
- [x] Wash Solution > ½ Full
- [ ] NO3 Reagent bottle connected / purged
- [ ] NO3 pH adj to pH 5-9

Syringe filter lot # _____

- [x] WBL Run
- [x] Reagents Full
- [x] Dilution H_2O Full
- [x] Waste Container Check

1) **Workgroup** _____
Plan # 20150119003
2) **Workgroup** _____
Plan # _____
3) **Workgroup** _____
Plan # _____

Instrument: SC1 [x] SC2 [ ]

	Analyte	1	2	3
		PHOS		
		Dilution		
SC Prepared Curve				
Position				
1-1	JCV			
1-2	BLK			
1-3	LCS			
1-4	11-800-01			
1-5	11-672-01			
1-6	02			
1-7	03			
1-8	04			
1-9	11-798-01	1/25		
1-10	11-793-07			
1-11	09			
1-12	11			
1-13	13			
1-14	15			
1-15	11-943-01			
1-16	DUP 11-672-01			
1-17	MS 11-672-01			
1-18	MS 11-672-02			
1-19				
1-20	11-793-07	1/2		
1-21				
1-22				
2-1				
2-2				
2-3				

	Analyte	1	2	3
Position				
2-4				
2-5				
2-6				
2-7				
2-8				
2-9				
2-10				
2-11				
2-12				
2-13				
2-14				
2-15				
2-16				
2-17				
2-18				
2-19				
2-20				
2-21				
2-22				
2-23				
2-24				
2-25				
2-26				
3-1				
3-2				

NOTES:
* Run NO2 std on NO3 runs
* LCSD must be run if no MS or Duplicate
*MS(10% sample): NO3, TKN, NH3, PHOS

DCN#114853

SMARTCHEM RUN LOG
(smartchem2, smartchem3)

WORKGROUP: WG547563

Position	Analyte	1	2	3
3-3				
3-4				
3-5				
3-6				
3-7				
3-8				
3-9				
3-10				
3-11				
3-12				
3-13				
3-14				
3-15				

Position	Analyte	1	2	3
3-16				
3-17				
3-18				
3-19				
3-20				
3-21				
3-22				
3-23				
3-24				
3-25				
3-26				
3-27				
3-28				

	Chloride	EPA 325.2/SM 4500-CI E-2000
	Nitrate-Nitrite	EPA 353.2/SM 4500-NO3 F-2000
	Alkalinity	EPA 310.2
	Sulfate	EPA 375.4/SM 426C (15th)/ SM4500-504 E-1997

	Ammonia	EPA 350.1/SM 4500-NH3 B-1997
	TKN	EPA 351.2
✓	Phos	EPA 365.4

Analyte	DHOS		Reagents
SOP & Revision	K 3654 R 17		RGT 35121
Curve Stock (SC made)			RGT 34471
NO2 STD			RGT 35393
ICV	Does		
CCV	see log		
LCS			
MS	Dilution		

Comments: _____

Analyst: David Merchel Date: 11/19/15

DCN#114853

TKN/Phosphorus Digestion Log

TKN WG:
TKN Std: Std 73492
TKN CCV: 1/2 (Std 73492)
TKN ICV: Std 73251
TKN LCS: Std 73464

Phos WG:
Phos Std: Std 73492
Phos CCV: 1/2 (Std 73492)
Phos ICV: Std 73454
Phos LCS: Std 73418

MS/MSD: Std 72041
Daily Dilution: 1(25)/25=1

Block Digester Temperature: 380 °C
Digest Reagent: RGr 35113

	Sample	Volume	TKN Dilution	Phos Dilution		Sample	Volume	TKN Dilution	Phos Dilution
1	Std				26	11-894-c7		✓	
2	Std				27	11-793-c1			✓
3	ICV T				28	11-793-c7			✓
4	ICV P				29	c9			✓
5	LCST				30	11			✓
6	LCSP				31	13			✓
7	11-794-c2	1/50	✓		32	15			✓
8	c5	1/50	✓		33	11-943-c1			✓
9	c8	1/50	✓		34	DUP 11-672-c1		✓	✓
10	11-800-c1	1/10	✓	✓	35	MS 11-672-c1		✓	✓
11	11-848-c1		✓		36	MS 11-672-c2		✓	✓
12	11-672-c1		✓	✓	37	Blk			
13	c2		✓	✓	38	Blk			
14	c3		✓	✓	39	Blk			
15	c4		✓	✓	40	Blk			
16	11-735-c2		✓		41				
17	c3		✓		42				
18	c4		✓		43				
19	11-889-c2		✓		44				
20	11-894-c1		✓		45				
21	c2		✓		46				
22	c3		✓		47				
23	c4		✓		48				
24	c5		✓		49				
25	c6		✓		50				

Analyst: David Merkle Date: 11/18/15

MICROBAC (OVD)

SMARTCHEM200 INST1 (VER3.1.14)

NH3, TKN, NO3NO2 (MG/L N)

ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WTPH -Unit [mg/L] - EPA 365.4 TOTAL PHOSPHORUS

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
DIL-1	RBL	0.000	0.0512	0.00	R	11:56:45 AM
DIL-1	RBL	0.000	0.0514	0.00	R	11:57:03 AM
DIL-1	RBL	0.000	0.0530	0.00	R	11:57:57 AM
SR5-1	Std-1	0.010	-0.0009	0.00	INV	11:58:15 AM
SR5-2	Std-2	0.200	0.0311	0.00		11:59:09 AM
SR5-3	Std-3	0.500	0.0648	0.00		11:59:27 AM
SR5-4	Std-4	1.000	0.1320	0.00		12:00:22 PM
SR5-5	Std-5	1.500	0.1940	0.00		12:00:39 PM
ST-1	Std-6	2.000	0.2656	0.00		12:01:34 PM
ST-3	1CCV (1 mg/L)	0.965	0.1271	96.46		12:01:51 PM
ST-2	2CCB (0 mg/L)	0.004	0.0007	0.00		12:02:46 PM
1	ICV	1.565	0.2061	0.00		12:03:03 PM
2	WG547563-01 BLK	0.038	0.0051	0.00		12:03:58 PM
3	WG547563-02 LCS	0.978	0.1288	0.00		12:04:15 PM
4	L15110800-01	0.480	0.0633	0.00		12:05:10 PM
5	L15110672-01	0.015	0.0021	0.00		12:05:27 PM
6	L15110672-02	-0.025	-0.0031	0.00	INV,><,LL	12:06:22 PM
7	L15110672-03	0.190	0.0251	0.00		12:06:39 PM
8	L15110672-04	0.192	0.0254	0.00		12:07:34 PM
9	L15110798-01 (25)	1.697	0.2235	0.00		12:07:52 PM
10	L15110793-07	2.204	0.2902	0.00	EPL,><,LH	12:08:46 PM
ST-3	1CCV (1 mg/L)	0.975	0.1284	97.45		12:09:04 PM
ST-2	2CCB (0 mg/L)	0.012	0.0017	0.00		12:09:58 PM
11	L15110793-09	0.719	0.0948	0.00	EPL	12:10:16 PM
12	L15110793-11	0.321	0.0424	0.00	EPL	12:11:10 PM
13	L15110793-13	0.408	0.0539	0.00		12:11:28 PM
14	L15110793-15	0.000	0.0001	0.00	LL	12:12:22 PM
15	L15110943-01	-0.013	-0.0015	0.00	INV,><,LL	12:12:39 PM
16	WG547563-04 DUP	0.087	0.0116	0.00		12:13:34 PM
17	WG547563-05 MS	1.042	0.1373	0.00		12:13:52 PM
18	WG547563-07 MS	1.037	0.1366	0.00		12:14:46 PM
19	ID 19	2.287	0.3011	0.00	EPL,><,LH	12:15:04 PM

Report Date :11/19/2015 **Run Date :11/19/2015** **Operator : SMARTCHEM1** **Plan # :20151119003**

Plan Description : PHOS-A1-DCM/11/19/2015

MICROBAC (OVD)
SMARTCHEM200 INST1 (VER3.1.14)
NH3, TKN, NO3NO2 (MG/L N)
ALK (MG/L CaCO3) CL, SO4 (MG/L)

Method : WTPH -Unit [mg/L] - EPA 365.4 TOTAL PHOSPHORUS

Smp#/[Dil Fact]	Sample ID	Conc	OD	%Recovery/RPD	Flag	Analysis Time
20	ID 20 L15110793-07 (2)	1.023	0.1348	0.00		12:15:58 PM
ST-3	1CCV (1 mg/L)	0.967	0.1274	96.69		12:16:16 PM
ST-2	2CCB (0 mg/L)	0.026	0.0035	0.00		12:17:10 PM
10-[1/2]	L15110793-07	0.173	0.0115	0.00		12:24:50 PM
19-[1/2]	ID 19	0.472	0.0312	0.00		12:26:02 PM
ST-3	1CCV (1 mg/L)	0.971	0.1280	97.14		12:26:02 PM
ST-2	2CCB (0 mg/L)	-0.011	-0.0013	0.00	INV,><,LL	12:26:56 PM

Report Date :11/19/2015 Run Date :11/19/2015 Operator : SMARTCHEM1 Plan # :20151119003

Plan Description : PHOS-A1-DCM/11/19/2015

Calibrant Report - WTPH -

Calib Lot #:010104 Exp Date:6/18/2020 User:MICROBAC

Plan # : 20151119003 Description : [PHOS-A1-DCM/11/19/2015] Unit

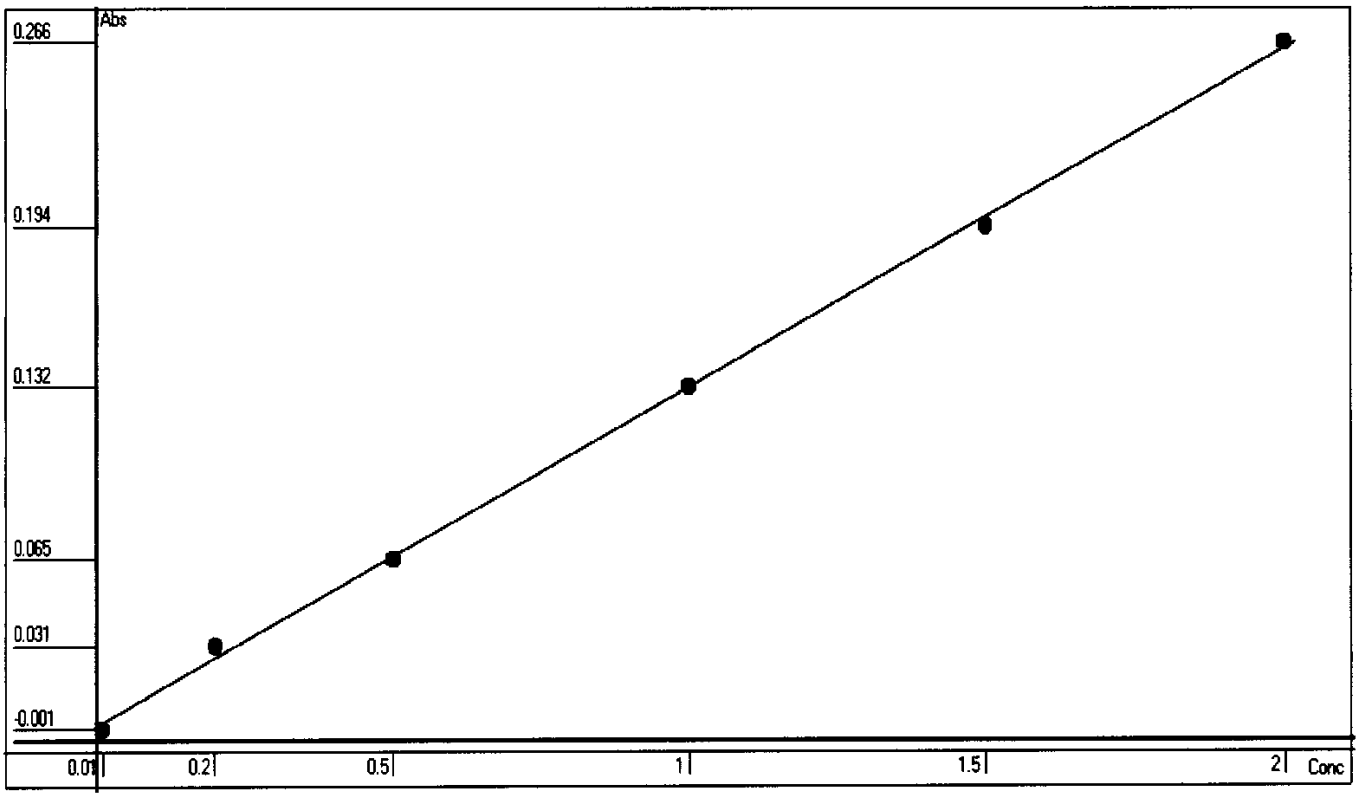

Point	OD	Conc	Recalc Conc	% Error
1	-0.0009	0.01	-0.0079	-179.00
2	0.0311	0.2	0.2352	17.60
3	0.0648	0.5	0.4912	-1.76
4	0.1320	1	1.0018	0.18
5	0.1940	1.5	1.4729	-1.81
6	0.2656	2	2.0169	0.85

Conc= +7.5979*Abso -0.0011 R^2=0.9991

RBL
0.0513
0

Report Date 11/19/2015 Run Date 11/19/2015

2.3.4 Sulfide Data

2.3.4.1 Summary Data

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-01	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW08-111615	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG547574	**Analyst:**	TB	**Run Date:**	11/19/2015 18:00
Collect Date:	11/16/2015 08:20	**Dilution:**	1	**File ID:**	ET.1511191800-07
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-03	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW22-111615	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG547574	**Analyst:**	TB	**Run Date:**	11/19/2015 18:00
Collect Date:	11/16/2015 09:25	**Dilution:**	1	**File ID:**	ET.1511191800-08
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-05	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW24-111615	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG547574	**Analyst:**	TB	**Run Date:**	11/19/2015 18:00
Collect Date:	11/16/2015 10:30	**Dilution:**	1	**File ID:**	ET.1511191800-09
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-07	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW23-111615	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG547574	**Analyst:**	TB	**Run Date:**	11/19/2015 18:00
Collect Date:	11/16/2015 11:35	**Dilution:**	1	**File ID:**	ET.1511191800-10
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-09	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW18-111615	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG547574	**Analyst:**	TB	**Run Date:**	11/19/2015 18:00
Collect Date:	11/16/2015 13:45	**Dilution:**	1	**File ID:**	ET.1511191800-11
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-11	**PrePrep Method:**	N/A	**Instrument:**	BURET
Client ID:	50WW25-111615	**Prep Method:**	SM4500-S-(-2)-F-2000	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	SM4500-S-(-2)-F-2000	**Cal Date:**	
Workgroup #:	WG547574	**Analyst:**	TB	**Run Date:**	11/19/2015 18:00
Collect Date:	11/16/2015 14:55	**Dilution:**	1	**File ID:**	ET.1511191800-12
Sample Tag:		**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sulfide	18496-25-8	1.00	U	2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.3.4.2 QC Summary Data

Example Total Sulfide(Liquid) Calculations

[mL Iodine * N Iodide) - (mL titrant * N titrant)] * 16000/(volume * dilution) = mg/L Sulfide

where:

mL Iodine = mL of Iodine used
N Iodine = normality of Iodine
mL titrant = mL of titrant used
N titrant = normality of titrant
16000 = factor: 1mL of 0.025 N iodine reacts with 0.4mg sulfide
volume = mL filtered of mL titrated(if not filtered)
dilution = dilution in decimal form (1/5 = 0.2)

Example Total Sulfide(Soil) Calculations

[(mL Iodine * N Iodine) - (mL titrant * N titrant)] * 16.03/weight = mg/kg sulfide

where:

mL Iodine = mL of Iodine used
N Iodine = normality of Iodine
mL titrant = normality of titrant
16.03 = 32.06 grams per 2 equivalents
weight = kg of sample used

Microbac Laboratories Inc.

Data Checklist

Date: 19-NOV-2015
Analyst: TB
Analyst: NA
Method: S
Instrument: BURET
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG547574

Calibration/Linearity	11/19/2015
Second Source Check	X
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	X
QC Violation Sheet	X
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	TB
Secondary Reviewer	DIH
Comments	

Primary Reviewer: 20-NOV-2015 Todd Boyle

Secondary Reviewer: 20-NOV-2015 Dianna Hesson

CHECKLIST1 - Modified 03/05/2008
Generated: NOV-20-2015 14:12:03

Microbac Laboratories Inc.

00653011

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: SM4500-S-(-2)-F-

AAB#: WG547574

Login Number: L15110943

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW08-111615	01	11/16/15					11/19/2015	3.4	7		11/19/15	3.4	7	
50WW22-111615	03	11/16/15					11/19/2015	3.4	7		11/19/15	3.4	7	
50WW24-111615	05	11/16/15					11/19/2015	3.3	7		11/19/15	3.3	7	
50WW23-111615	07	11/16/15					11/19/2015	3.3	7		11/19/15	3.3	7	
50WW18-111615	09	11/16/15					11/19/2015	3.2	7		11/19/15	3.2	7	
50WW25-111615	11	11/16/15					11/19/2015	3.1	7		11/19/15	3.1	7	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4512207
Report generated 11/20/2015 12:47

METHOD BLANK SUMMARY

Login Number: L15110943
Blank File ID: ET.1511191800-01
Prep Date: 11/19/15 18:00
Analyzed Date: 11/19/15 18:00
Analyst: TB

Work Group: WG547574
Blank Sample ID: WG547574-01
Instrument ID: BURET
Method: SM4500-S-(-2)-F-

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG547574-02	ET.1511191800-02	11/19/15 18:00	
LCS2	WG547574-03	ET.1511191800-03	11/19/15 18:00	
50WW08-111615	L15110943-01	ET.1511191800-07	11/19/15 18:00	
50WW22-111615	L15110943-03	ET.1511191800-08	11/19/15 18:00	
50WW24-111615	L15110943-05	ET.1511191800-09	11/19/15 18:00	
50WW23-111615	L15110943-07	ET.1511191800-10	11/19/15 18:00	
50WW18-111615	L15110943-09	ET.1511191800-11	11/19/15 18:00	
50WW25-111615	L15110943-11	ET.1511191800-12	11/19/15 18:00	

Report Name: BLANK_SUMMARY
PDF File ID: 4512208
Report generated 11/20/2015 12:47

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15110943 Prep Date: 11/19/15 18:00 Sample ID: WG547574-01
Instrument ID: BURET Run Date: 11/19/15 18:00 Prep Method: SM4500-S-(-2)-F
File ID: ET.1511191800-01 Analyst: TB Method: SM4500-S-(-2)-F
Workgroup (AAB#): WG547574 Matrix: Water Units: mg/L
Contract #: Cal ID: BURET-

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Sulfide	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4512209
20-NOV-2015 12:47

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15110943 Analyst: TB Prep Method: SM4500-S-(-2)-F
Instrument ID: BURET Matrix: Water Method: SM4500-S-(-2)-F
Workgroup (AAB#): WG547574 Units: mg/L
QC Key: DOD4 Lot #: STD73558

Sample ID: WG547574-02 LCS File ID: ET.1511191800-02 Run Date: 11/19/2015 18:00
Sample ID: WG547574-03 LCS2 File ID: ET.1511191800-03 Run Date: 11/19/2015 18:00

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Sulfide	19.2	19.1	99.4	19.2	19.1	99.4	0.00	85 - 115	10	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4512210
Report generated: 11/20/2015 12:47

2.3.4.3 Raw Data

SULFIDE
(sulfide1)

WORKGROUP: WG547574

Water:
EPA 376.1 / SM4500-S(-2)-F
SOP K3761 Revision #: 17

Soil:
SM846 9030B/9034
SOP K9030 Revision #: _____

Instrument: Buret

LCS: 41 73558

Iodine standardization (0.025N) COA: 18311
mL 0.025N titrant: 10.1
Volume I: 10.0 mL
Normality I: 0.0248

(0.1 N I) COA: 18450
mL 0.025 N titrant: ~~9.9~~ 8.0
Volume I: ~~10.0~~ 2.0 mL
Normality I: 0.099

TB 11/19/15

Stock standardization (in duplicate) 5.0 mL stock
mL I 1) 8.0 2) 8.0
N I 1) 0.099 2) 0.099
mL 0.025 titrant 1) 15.8 2) 15.8
LCS daily dilution: 3(1280)/200 = 19.21 mg/L

1280 = stock conc (mg/L)

Titrant: T- 1689-01-03

SAMPLE	Volume Filtered mL	mL Iodine	N Iodine	0.0248 N Sodium Thiosulfate (mL)
BLANK	200	15.0	0.025	15.1
LCS (mL)	200	15.0	0.025	5.5
LCSDUP (mL)	200	15.0	0.025	5.5
11-941-02	490	15.0	0.025	15.1
04	480	15.0	0.025	15.1
06	500	15.0	0.025	15.0
943-01	490	15.0	0.025	14.8
03	460	15.0	0.025	14.6
05	490	15.0	0.025	14.6
07	480	15.0	0.025	14.9
09	480	15.0	0.025	14.7
11	500	15.0	0.025	14.7
1050-02	500	15.0	0.025	15.1
04	470	15.0	0.025	14.9
06	490	15.0	0.025	14.8
07 Ref	510	15.0	0.025	15.1
09 MS	480	15.0	0.025	5.7
11 MSD	480	15.0	0.025	5.7
13	520	15.0	0.025	15.0
15	480	15.0	0.025	15.1
17	500	15.0	0.025	14.7
1072-01	100	15.0	0.025	15.1
02	190	15.0	0.025	15.1
1084-02	500	15.0	0.025	14.8
04	520	15.0	0.025	15.0

Analyst: [signature] Date/Time: 1800 11/19/15

DCN#114860

Microbac Laboratories Inc.
TITRAMETRIC REPORT

Workgroup (AAB#): WG547574
Product: EPA 376.1\9034
Analyte: Sulfide

Analyst: TB
Run Date: 11/19/2015 18:00

SAMPLE NUMBER	Volume	Vol I	Nor I	Vol T	Nor T	Dil	Analytical	Reported	Units
WG547574-01	200.0	15	.025	15.1	.0248	1	0.0416	0.04160	mg/L
WG547574-02	200.0	15	.025	5.5	.0248	1	19.1	19.09	mg/L
WG547574-03	200.0	15	.025	5.5	.0248	1	19.1	19.09	mg/L
L15110941-02	490.0	15	.025	15.1	.0248	1	0.0170	ND	mg/L
L15110941-04	480.0	15	.025	15.1	.0248	1	0.0173	ND	mg/L
L15110941-06	500.0	15	.025	15	.0248	1	0.0960	ND	mg/L
L15110943-01	490.0	15	.025	14.8	.0248	1	0.260	ND	mg/L
L15110943-03	460.0	15	.025	14.6	.0248	1	0.449	ND	mg/L
L15110943-05	490.0	15	.025	14.6	.0248	1	0.422	ND	mg/L
L15110943-07	480.0	15	.025	14.9	.0248	1	0.183	ND	mg/L
L15110943-09	480.0	15	.025	14.7	.0248	1	0.348	ND	mg/L
L15110943-11	500.0	15	.025	14.7	.0248	1	0.334	ND	mg/L
L15111050-02	500.0	15	.025	15.1	.0248	1	0.0166	ND	mg/L
L15111050-04	470.0	15	.025	14.9	.0248	1	0.187	ND	mg/L
L15111050-06	490.0	15	.025	14.8	.0248	1	0.260	ND	mg/L
L15111050-07	510.0	15	.025	15.1	.0248	1	0.0163	ND	mg/L
WG547574-04	510.0	15	.025	15.1	.0248	1	0.0163	0.01631	mg/L
L15111050-09	480.0	15	.025	5.7	.0248	1	7.79	7.788	mg/L
WG547574-05	480.0	15	.025	5.7	.0248	1	7.79	7.788	mg/L
L15111050-11	480.0	15	.025	5.7	.0248	1	7.79	7.788	mg/L
WG547574-06	480.0	15	.025	5.7	.0248	1	7.79	7.788	mg/L
L15111050-13	520.0	15	.025	15	.0248	1	0.0923	ND	mg/L
L15111050-15	480.0	15	.025	15.1	.0248	1	0.0173	ND	mg/L
L15111050-17	500.0	15	.025	14.7	.0248	1	0.334	ND	mg/L
L15111072-01	100.0	15	.025	15.1	.0248	1	0.0832	ND	mg/L
L15111072-02	190.0	15	.025	15.1	.0248	1	0.0438	ND	mg/L
L15111084-02	500.0	15	.025	14.8	.0248	1	0.255	ND	mg/L
L15111084-04	520.0	15	.025	15	.0248	1	0.0923	ND	mg/L

SULFIDE_REPORT - Modified 03/06/2008

Report generated 11/20/2015 11:26

[redacted]

2.3.5 Total Organic Carbon Data

2.3.5.1 Summary Data

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110943-01	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW08-111615	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	10/30/2015 17:00
Workgroup #:	WG547789	**Analyst:**	EPT	**Run Date:**	11/22/2015 13:02
Collect Date:	11/16/2015 08:20	**Dilution:**	5	**File ID:**	TC11202015.038
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	61.1		10.0	5.00	2.50

Certificate of Analysis

Sample #:	L15110943-03	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW22-111615	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	10/30/2015 17:00
Workgroup #:	WG547789	**Analyst:**	EPT	**Run Date:**	11/20/2015 17:12
Collect Date:	11/16/2015 09:25	**Dilution:**	3	**File ID:**	TC11202015.008
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	49.6		6.00	3.00	1.50

Certificate of Analysis

Sample #:	L15110943-05	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW24-111615	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	10/30/2015 17:00
Workgroup #:	WG547789	**Analyst:**	EPT	**Run Date:**	11/22/2015 13:24
Collect Date:	11/16/2015 10:30	**Dilution:**	5	**File ID:**	TC11202015.039
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	77.1		10.0	5.00	2.50

Certificate of Analysis

Microbac

Lab Report #: L15110943
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L15110943-07	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW23-111615	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	10/30/2015 17:00
Workgroup #:	WG547789	**Analyst:**	EPT	**Run Date:**	11/20/2015 17:57
Collect Date:	11/16/2015 11:35	**Dilution:**	3	**File ID:**	TC11202015.010
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	39.2		6.00	3.00	1.50

Certificate of Analysis

Sample #:	L15110943-09	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW18-111615	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	10/30/2015 17:00
Workgroup #:	WG547789	**Analyst:**	EPT	**Run Date:**	11/22/2015 13:46
Collect Date:	11/16/2015 13:45	**Dilution:**	5	**File ID:**	TC11202015.040
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	56.1		10.0	5.00	2.50

Certificate of Analysis

Sample #:	L15110943-11	**PrePrep Method:**	N/A	**Instrument:**	TOC-VWP
Client ID:	50WW25-111615	**Prep Method:**	415.1	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	415.1	**Cal Date:**	10/30/2015 17:00
Workgroup #:	WG547789	**Analyst:**	EPT	**Run Date:**	11/22/2015 14:08
Collect Date:	11/16/2015 14:55	**Dilution:**	5	**File ID:**	TC11202015.041
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Total Organic Carbon	TOC	107		10.0	5.00	2.50

2.3.5.2 QC Summary Data

Total Organic Carbon Example Calculations
(Direct Readout Parameter)

(Readout)/(dilution) = mg/L

where:

Readout = direct readout from the instrument
dilution = dilution in decimal form (ex. 1/5 dilution = 0.2)

Microbac Laboratories Inc.

Data Checklist

Date: 20-NOV-2015
Analyst: EPT
Analyst: NA
Method: TOC
Instrument: TOC-VWP
Curve Workgroup: NA
Runlog ID:
Analytical Workgroups: WG547789

Calibration/Linearity	10/31/15
Second Source Check	
ICV/CCV (std)	X
ICB/CCB	X
Blank	X
LCS/LCS Dup	X
MS/MSD	X
Duplicate	X
Upload Results	X
Client Forms	
QC Violation Sheet	
Case Narratives	X
Signed Raw Data	X
STD/LCS on benchsheet	X
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	
Primary Reviewer	EPT
Secondary Reviewer	DIH
Comments	

Primary Reviewer:
23-NOV-2015

Ethan Tido

Secondary Reviewer:
25-NOV-2015

Dianna Hesson

CHECKLIST1 - Modified 03/05/2008
Generated: NOV-25-2015 13:25:13

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 415.1 AAB#: WG547789

Login Number: L15110943

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW08-111615	01	11/16/15					11/22/2015	6.2	28		11/22/15	6.2	28	
50WW22-111615	03	11/16/15					11/20/2015	4.3	28		11/20/15	4.3	28	
50WW24-111615	05	11/16/15					11/22/2015	6.1	28		11/22/15	6.1	28	
50WW23-111615	07	11/16/15					11/20/2015	4.3	28		11/20/15	4.3	28	
50WW18-111615	09	11/16/15					11/22/2015	6	28		11/22/15	6	28	
50WW25-111615	11	11/16/15					11/22/2015	6	28		11/22/15	6	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4515775
Report generated 11/23/2015 13:23

METHOD BLANK SUMMARY

Login Number: L15110943
Blank File ID: TC11202015.004
Prep Date: 11/20/15 15:48
Analyzed Date: 11/20/15 15:48
Analyst: EPT

Work Group: WG547789
Blank Sample ID: WG547789-01
Instrument ID: TOC-VWP
Method: 415.1

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG547789-02	TC11202015.005	11/20/15 16:07	01
LCS2	WG547789-03	TC11202015.006	11/20/15 16:27	01
50WW22-111615	L15110943-03	TC11202015.008	11/20/15 17:12	DL01
50WW23-111615	L15110943-07	TC11202015.010	11/20/15 17:57	DL01
DUP	WG547789-05	TC11202015.031	11/21/15 00:48	01
50WW08-111615	L15110943-01	TC11202015.038	11/22/15 13:02	DL01
50WW24-111615	L15110943-05	TC11202015.039	11/22/15 13:24	DL01
50WW18-111615	L15110943-09	TC11202015.040	11/22/15 13:46	DL01
50WW25-111615	L15110943-11	TC11202015.041	11/22/15 14:08	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4515776
Report generated 11/23/2015 13:23

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15110943 Prep Date: 11/20/15 15:48 Sample ID: WG547789-01
Instrument ID: TOC-VWP Run Date: 11/20/15 15:48 Prep Method: 415.1
File ID: TC11202015.004 Analyst: EPT Method: 415.1
Workgroup (AAB#): WG547789 Matrix: Water Units: mg/L
Contract #: Cal ID: TOC-VW-30-OCT-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Total Organic Carbon	0.500	2.00	0.500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4515777
23-NOV-2015 13:23

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15110943 Analyst: EPT Prep Method: 415.1
Instrument ID: TOC-VWP Matrix: Water Method: 415.1
Workgroup (AAB#): WG547789 Units: mg/L
QC Key: DOD4 Lot #: STD72270

Sample ID: WG547789-02 LCS File ID: TC11202015.005 Run Date: 11/20/2015 16:07
Sample ID: WG547789-03 LCS2 File ID: TC11202015.006 Run Date: 11/20/2015 16:27

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Total Organic Carbon	25.0	26.7	107	25.0	26.9	108	0.709	85 - 115	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4515778
Report generated: 11/23/2015 13:23

2.3.5.3 Raw Data

Curve

wg545145

Total Organic Carbon

MAKE DAILY

CCV (TOC): _____ (5/200)(1000) = 25mg/L

LCS (TOC): _____ (5/200)(1000) = 25mg/L

CCV (TIC): _____ (5/200)(1000) = 25mg/L

See Below

MS (TOC): _____

Calibration Curve Date: _____

Reagent: RGT 34567 / RGT 34459

☑ SM5310-C : Matrix 2 WG_____

☐ EPA 415.1/9060A(mod): Matrix 1 WG_____ SOP: K 4151 Rev. 18

WG_____ Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

- ☑ drain reservoir filled
- ☑ ASI water bottle full
- ☑ dilution water bottle full
- ☑ 3rd bottle full
- ☑ sufficient gas
- ☑ sufficient persulfate
- ☑ sufficient acid
- ☑ waste container

Position	Sample ID	Dilution	Position	Sample ID	Dilution	Position	Sample ID	Dilution
1	TC Curve		26	TC Curve		51		
2	TIC Curve		27	Std 72153		52	See SOP	
3	TC ICV		28			53	for point	
4	TIC ICV		29	TIC Curve		54	preparation	
5			30	Std 72165		55		
6			31			56		
7			32			57		
8			33	TOC (TC)		58		
9			34	ICV		59		
10			35	Std 72270		60	5/200 (1000) = 25	
11			36			61		
12			37	TIC ICV		62		
13	All points		38	Std 72654		63		
14	analyzed		39			64		
15	in duplicate		40			65		
16			41			66		
17			42			67		
18			43			68		
19			44			69		
20			45			70		
21			46			71		
22			47			72		
23			48			73		
24			49			74		
25			50			75		

Analyst: David Merkle Date/Time: 10/31/15

DCN#114406

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Cal. Curve

Sample Name: TCCURVE
Sample ID:
Cal. Curve: TCCURVE-10-30-2015.2015_10_30_16_06_37.cal
Status Completed

Type	Anal.
Standard	TC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	4.764	500uL	1	*******		10/30/2015 4:10:07 PM
2	3.607	500uL	1	*******		10/30/2015 4:13:33 PM

Acid Add. 0.000%
Mean Area 4.186

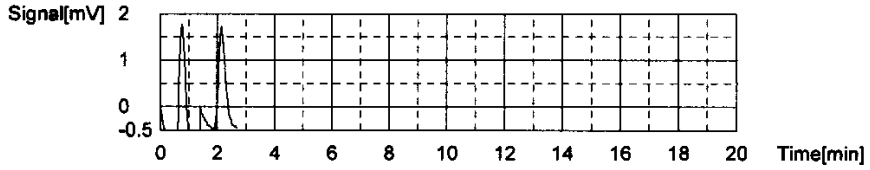

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	46.19	500uL	1	*******		10/30/2015 4:19:03 PM
2	46.28	500uL	1	*******		10/30/2015 4:22:56 PM

Acid Add. 0.000%
Mean Area 46.23

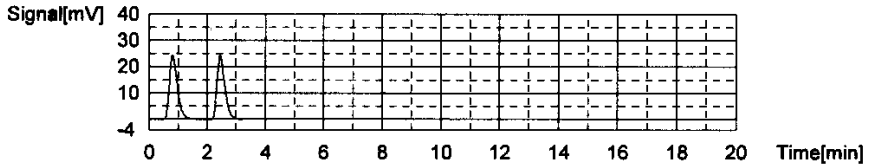

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	194.3	500uL	1	*******		10/30/2015 4:28:42 PM
2	193.1	500uL	1	*******		10/30/2015 4:32:47 PM

Acid Add. 0.000%
Mean Area 193.7

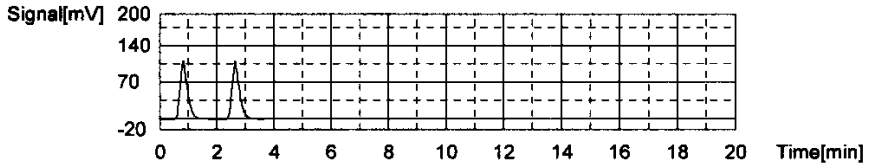

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	390.8	500uL	1	*******		10/30/2015 4:38:42 PM
2	391.3	500uL	1	*******		10/30/2015 4:42:54 PM

Acid Add. 0.000%
Mean Area 391.1

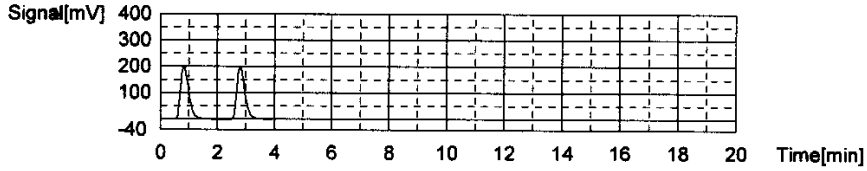

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	989.0	500uL	1	*******		10/30/2015 4:49:06 PM
2	994.6	500uL	1	*******		10/30/2015 4:53:33 PM

Acid Add. 0.000%
Mean Area 991.8

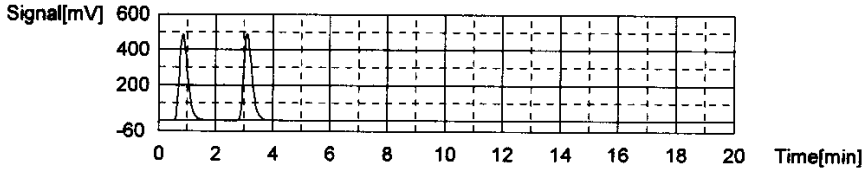

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1946	500uL	1	*******		10/30/2015 5:00:24 PM
2	1948	500uL	1	*******		10/30/2015 5:05:23 PM

Acid Add. 0.000%
Mean Area 1947

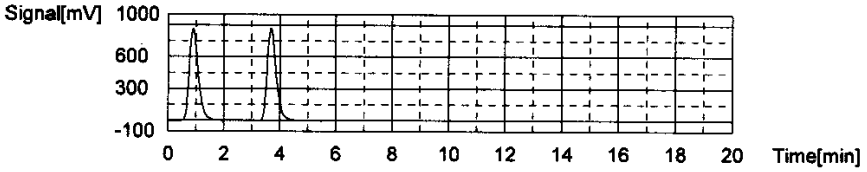

Slope: 38.95
Intercept 4.952
r^2 0.999910
Zero Shift No

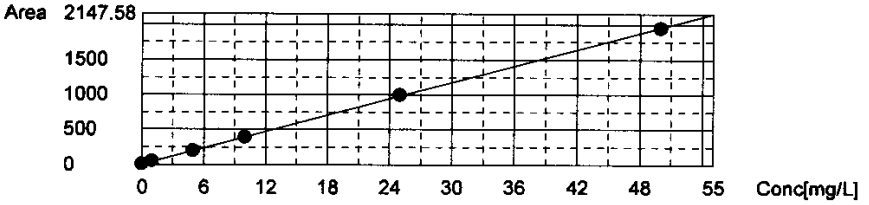

Sample

Sample Name: TC ICV
Sample ID:
Origin: TCCURVE-10-30-2015.2015_10_30_16_06_37.cal
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TC	1.000	TC:25.93mg/L

= 103.7%

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1020	26.06mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	10/31/2015 9:56:57 AM
2	1010	25.80mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	10/31/2015 10:02:17 AM

Mean Area 1015
Mean Conc. 25.93mg/L

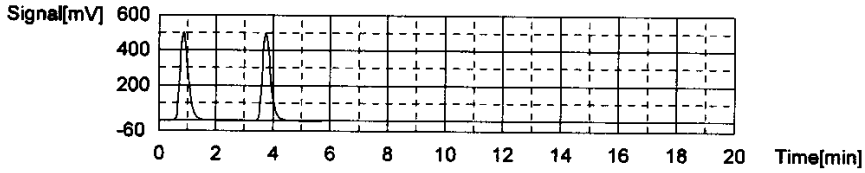

Cal. Curve

Sample Name: TICCURVE
Sample ID: Untitled
Cal. Curve: TICCURVE-10-30-2015.2015_10_31_11_55_05.cal
Status Completed

Type	Anal.
Standard	IC

Conc: 0.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	2.732	500uL	1	*******		10/31/2015 12:00:21 PM
2	5.011	500uL	1	*******		10/31/2015 12:04:52 PM

Acid Add. 10.00%
Mean Area 3.872

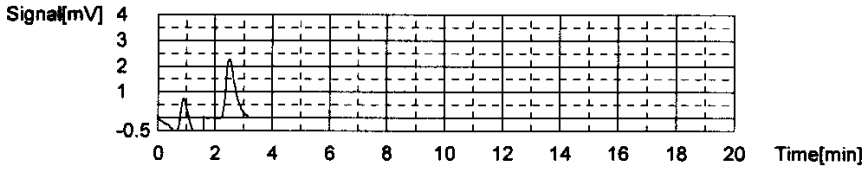

Conc: 1.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	35.96	500uL	1	*******		10/31/2015 12:12:47 PM
2	37.13	500uL	1	*******		10/31/2015 12:17:43 PM

Acid Add. 10.00%
Mean Area 36.55

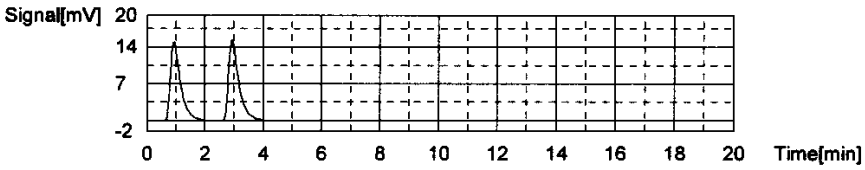

Conc: 5.000mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	173.6	500uL	1	*******		10/31/2015 12:26:14 PM
2	175.6	500uL	1	*******		10/31/2015 12:31:38 PM

Acid Add. 10.00%
Mean Area 174.6

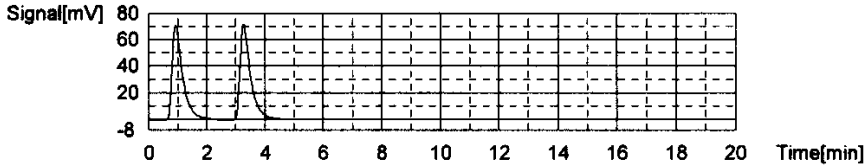

Conc: 10.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	344.8	500uL	1	*******		10/31/2015 12:40:18 PM
2	345.1	500uL	1	*******		10/31/2015 12:45:49 PM

Acid Add. 10.00%
Mean Area 345.0

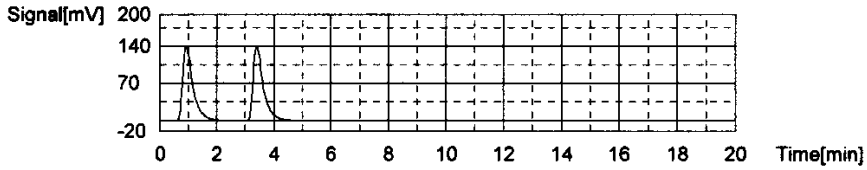

Conc: 25.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	835.5	500uL	1	*******		10/31/2015 12:54:43 PM
2	845.9	500uL	1	*******		10/31/2015 1:00:42 PM

Acid Add. 10.00%
Mean Area 840.7

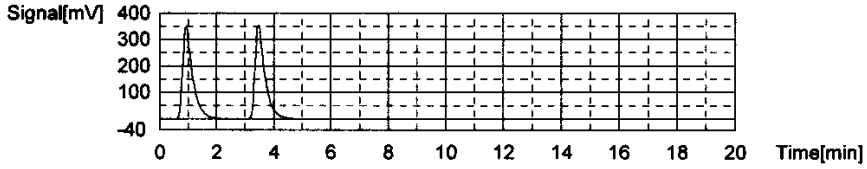

Conc: 50.00mg/L

No.	Area	Inj. Vol.	Aut. Dil.	Rem.	Ex.	Date / Time
1	1676	500uL	1	*******		10/31/2015 1:09:51 PM
2	1677	500uL	1	*******		10/31/2015 1:15:54 PM

Acid Add. 10.00%
Mean Area 1677

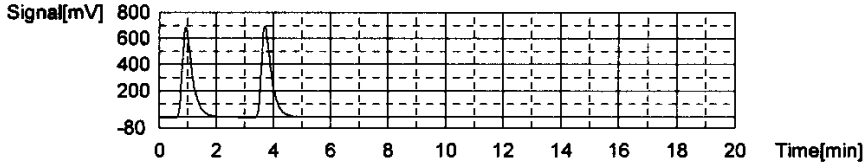

Slope: 33.42
Intercept 5.927
r^2 0.999982
Zero Shift No

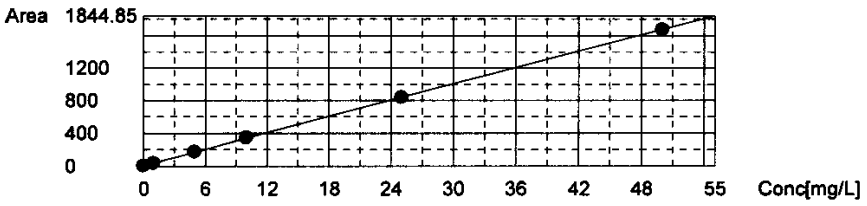

Sample

Sample Name: TIC ICV
Sample ID: Untitled
Origin: TICCURVE-10-30-2015.cal
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	IC	1.000	IC:25.37mg/L

= 101.5%

1. Det

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	854.5	25.39mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	10/31/2015 1:25:27 PM
2	853.1	25.35mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	10/31/2015 1:31:33 PM

Mean Area 853.8
Mean Conc. 25.37mg/L

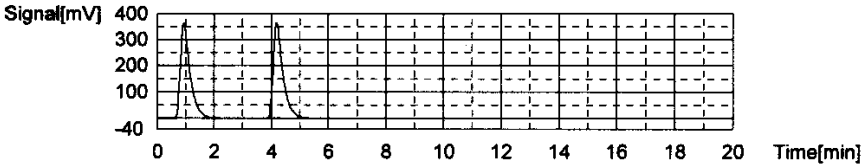

WORKGROUP: WG547789

Total Organic Carbon

MAKE DAILY

CCV (TOC): Std 72133 (5/200)(1000) = 25mg/L

LCS (TOC): Std 72270 (5/200)(1000) = 25mg/L

CCV (TIC): Std 72654 (5/200)(1000) = 25mg/L

MS (TOC): Std 72270 1.4)(1000)/40 =10

Calibration Curve Date: 10/31/15

Reagent: 35313, 34459

☒ SM5310-C : Matrix 2 WG 547789

☐ EPA 415.1/9060A(mod): Matrix 1 WG _____ WG _____

SOP: K 4151 Rev. 18

Instrument: Shimadza TOC-VWP/ASI

DAILY CHECK

☒ drain reservoir filled
☒ ASI water bottle full
☒ dilution water bottle full

☒ 3rd bottle full
☒ sufficient gas
☒ sufficient persulfate

☒ sufficient acid
☒ waste container

Position	Sample ID	Dilution
1	TIC	
2	TOC/TIC	
3	CCV	
4	BLK	
5	LCS	
6	LCSDUP	
7	11-0943-01	1/3
8	-03	1/3
9	-05	1/3
10	-07	1/3
11	-09	1/3
12	-11	1/3
13	11-0974-09	
14	CCV	
15	CCB	
16	11-1039-01	
17	-02	
18	-03	
19	11-1047-04	
20	-05	
21	-06	
22	-07	
23	-08	
24	-09	
25	-10	

Position	Sample ID	Dilution
26	CCV	
27	CCB	
28	11-1047-11	
29	-12	
30	11-1109-01	
31	DUP 11-1047-04	
32	MS 11-1047-04	
33	~~CCV~~ TOC/TIC	
34	~~CCB~~ CCV	x ← no sample (AIR)
35	CCB	
36	CCV	
37	CCB	
38	11-943-01	1/5
39	05	1/5
40	09	1/5
41	11	1/5
42	CCV	
43	CCB	
44		
45		
46		
47		
48		
49		
50		

Position	Sample ID	Dilution
51		
52		
53		
54		
55		
56		
57		
58		
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60		
61		
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73		
74		
75		

Analyst: Esther Tidell

Date/Time: 11/20/15 1515

DCN#114904

C:\TOC3201\Data\11-20-2015-EPT-TOC.t32

	Analysis	Sample Name	Result	Status	Date / Time	Vial
1	TOC	TIC	TOC:4.333mg/L TC:27.96mg/L IC:23.63mg/L	Complete	11/20/2015 3:18:13 PM	1
2	TOC	TOC/TIC	TOC:28.22mg/L TC:36.05mg/L IC:7.829mg/L	Complete	11/20/2015 3:30:54 PM	2
3	TOC	CCV	TOC:27.51mg/L TC:27.55mg/L IC:0.04115mg/L	Complete	11/20/2015 3:43:03 PM	3
4	TOC	WG547789-01 BLK	TOC:0.05649mg/L TC:0.1147mg/L IC:0.05823	Complete	11/20/2015 3:59:29 PM	0
5	TOC	WG547789-02 LCS	TOC:26.70mg/L TC:26.74mg/L IC:0.04396mg/L	Complete	11/20/2015 4:20:15 PM	5
6	TOC	WG547789-03 LCSDUP	TOC:26.89mg/L TC:26.93mg/L IC:0.04185mg/L	Complete	11/20/2015 4:40:53 PM	6
7	TOC	<Untitled>	TOC:3.521mg/L TC:58.26mg/L IC:54.74mg/L	Complete	11/20/2015 5:04:34 PM	7
8	TOC	L15110943-03 (3)	TOC:16.54mg/L TC:36.29mg/L IC:19.75mg/L	Complete	11/20/2015 5:27:15 PM	8
9	TOC	<Untitled>	!!Error!! TOC:-0.1858mg/L TC:61.13mg/L IC:61	Complete	11/20/2015 5:49:49 PM	9
10	TOC	L15110943-07 (3)	TOC:13.06mg/L TC:43.80mg/L IC:30.74mg/L	Complete	11/20/2015 6:13:45 PM	10
11	TOC	<Untitled>	TOC:7.476mg/L TC:52.52mg/L IC:45.04mg/L	Complete	11/20/2015 6:36:15 PM	11
12	TOC	<Untitled>	TOC:3.530mg/L TC:56.85mg/L IC:53.32mg/L	Complete	11/20/2015 6:59:46 PM	12
13	TOC	L15110974-09	TOC:3.944mg/L TC:10.18mg/L IC:6.231mg/L	Complete	11/20/2015 7:20:25 PM	13
14	TOC	CCV	TOC:27.48mg/L TC:27.58mg/L IC:0.09261mg/L	Complete	11/20/2015 7:32:32 PM	14
15	TOC	CCB	TOC:0.05915mg/L TC:0.1254mg/L IC:0.06622	Complete	11/20/2015 7:41:25 PM	0
16	TOC	L15111039-01	TOC:12.38mg/L TC:38.78mg/L IC:26.41mg/L	Complete	11/20/2015 8:04:04 PM	16
17	TOC	L15111039-02	TOC:9.507mg/L TC:21.07mg/L IC:11.57mg/L	Complete	11/20/2015 8:25:29 PM	17
18	TOC	L15111039-03	TOC:4.544mg/L TC:11.50mg/L IC:6.957mg/L	Complete	11/20/2015 8:46:15 PM	18
19	TOC	L15111047-04	TOC:3.024mg/L TC:11.77mg/L IC:8.744mg/L	Complete	11/20/2015 9:06:55 PM	19
20	TOC	L15111047-05	TOC:2.983mg/L TC:11.13mg/L IC:8.144mg/L	Complete	11/20/2015 9:27:32 PM	20
21	TOC	L15111047-06	TOC:2.788mg/L TC:10.85mg/L IC:8.062mg/L	Complete	11/20/2015 9:48:12 PM	21
22	TOC	L15111047-07	TOC:9.407mg/L TC:13.28mg/L IC:3.874mg/L	Complete	11/20/2015 10:10:03 P	22
23	TOC	L15111047-08	TOC:9.479mg/L TC:12.79mg/L IC:3.313mg/L	Complete	11/20/2015 10:31:57 P	23
24	TOC	L15111047-09	TOC:9.164mg/L TC:12.32mg/L IC:3.151mg/L	Complete	11/20/2015 10:53:37 P	24
25	TOC	L15111047-10	TOC:9.591mg/L TC:14.92mg/L IC:5.325mg/L	Complete	11/20/2015 11:15:27 P	25
26	TOC	CCV	TOC:27.58mg/L TC:27.65mg/L IC:0.07744mg/L	Complete	11/20/2015 11:27:31 P	26
27	TOC	CCB	TOC:0.05553mg/L TC:0.1180mg/L IC:0.06248	Complete	11/20/2015 11:36:27 P	0
28	TOC	L15111047-11	TOC:9.748mg/L TC:14.29mg/L IC:4.547mg/L	Complete	11/20/2015 11:58:14 P	28
29	TOC	L15111047-12	TOC:9.636mg/L TC:13.99mg/L IC:4.349mg/L	Complete	11/21/2015 12:19:57 A	29
30	TOC	L15111109-01	TOC:5.836mg/L TC:22.70mg/L IC:16.86mg/L	Complete	11/21/2015 12:41:29 A	30
31	TOC	WG547789-05 DUP	TOC:2.335mg/L TC:6.340mg/L IC:4.005mg/L	Complete	11/21/2015 1:01:55 AM	31
32	TOC	WG547789-06 MS	TOC:13.28mg/L TC:17.23mg/L IC:3.953mg/L	Complete	11/21/2015 1:22:37 AM	32
33	TOC	TOC/TIC	TOC:26.37mg/L TC:26.43mg/L IC:0.06670mg/L	Complete	11/21/2015 1:43:21 AM	33
34	TOC	CCV	TOC:0.02985mg/L TC:0.1026mg/L IC:0.07280	Complete	11/21/2015 1:54:19 AM	34
35	TOC	CCB	TOC:0.06329mg/L TC:0.1280mg/L IC:0.06475	Complete	11/21/2015 2:03:09 AM	0
36	TOC	CCV	TOC:26.29mg/L TC:26.40mg/L IC:0.1042mg/L	Complete	11/22/2015 12:45:19 P	36
37	TOC	CCB	TOC:0.05971mg/L TC:0.1401mg/L IC:0.08043	Complete	11/22/2015 12:54:15 P	0
38	TOC	L15110943-01 (5)	TOC:12.21mg/L TC:41.93mg/L IC:29.72mg/L	Complete	11/22/2015 1:16:49 PM	38
39	TOC	L15110943-05 (5)	TOC:15.42mg/L TC:45.66mg/L IC:30.25mg/L	Complete	11/22/2015 1:39:27 PM	39
40	TOC	L15110943-09 (5)	TOC:11.21mg/L TC:35.32mg/L IC:24.11mg/L	Complete	11/22/2015 2:00:43 PM	40
41	TOC	L15110943-11 (5)	TOC:21.40mg/L TC:43.34mg/L IC:21.94mg/L	Complete	11/22/2015 2:22:41 PM	41
42	TOC	CCV	TOC:25.83mg/L TC:26.01mg/L IC:0.1799mg/L	Complete	11/22/2015 2:35:03 PM	36
43	TOC	CCB	TOC:0.06887mg/L TC:0.1596mg/L IC:0.09078	Complete	11/22/2015 2:43:57 PM	0

Instr.Information

System TOCVW ASI
Detector Wet Chemical

Sample

Sample Name: TIC
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.333mg/L TC:27.96mg/L IC:23.63mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1094	27.96mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 3:13:09 PM

Mean Area 1094
Mean Conc. 27.96mg/L

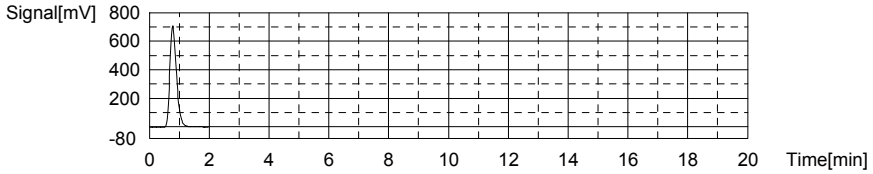

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	795.7	23.63mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 3:18:13 PM

Mean Area 795.7
Mean Conc. 23.63mg/L

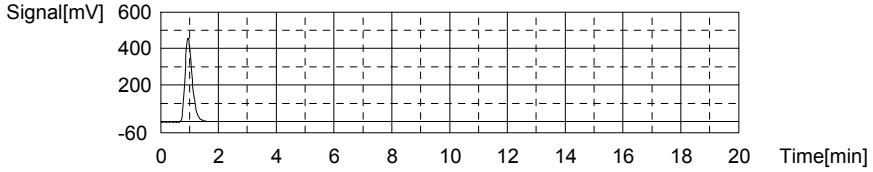

Sample

Sample Name: TOC/TIC
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:28.22mg/L TC:36.05mg/L IC:7.829mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1409	36.05mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 3:26:04 PM

Mean Area 1409
Mean Conc. 36.05mg/L

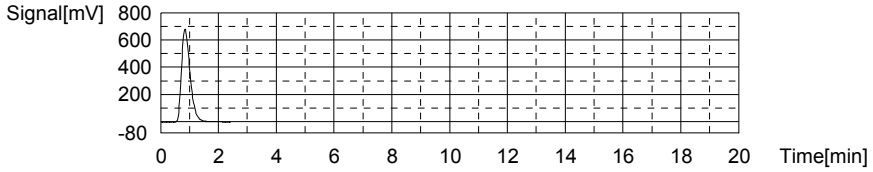

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	267.6	7.829mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 3:30:54 PM

Mean Area 267.6
Mean Conc. 7.829mg/L

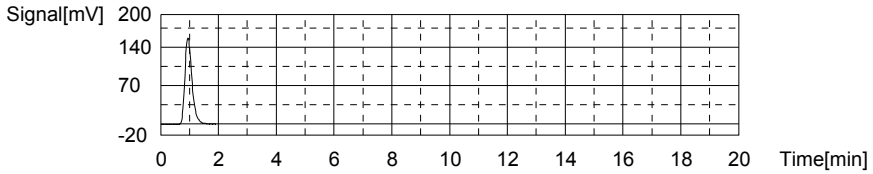

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:27.51mg/L TC:27.55mg/L IC:0.04115mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1078	27.55mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 3:38:38 PM

Mean Area 1078
Mean Conc. 27.55mg/L

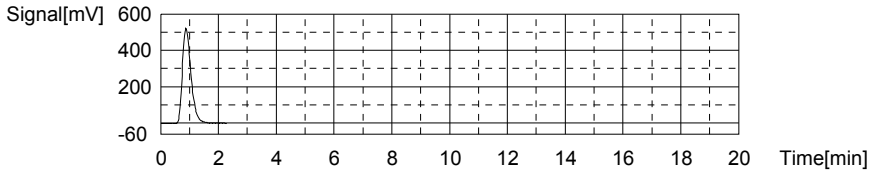

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.302	0.04115mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 3:43:03 PM

Mean Area 7.302
Mean Conc. 0.04115mg/L

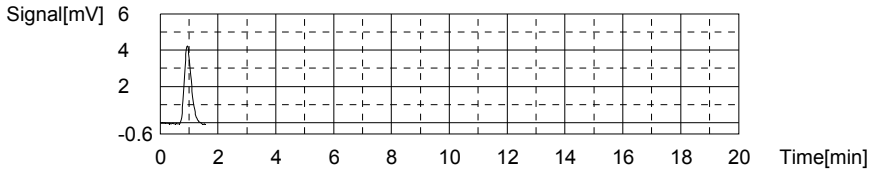

Sample

Sample Name: WG547789-01 BLK
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.05649mg/L TC:0.1147mg/L IC:0.05823mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.993	0.1294mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 3:48:06 PM
2	8.847	0.1000mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 3:51:35 PM

Mean Area 9.420
Mean Conc. 0.1147mg/L

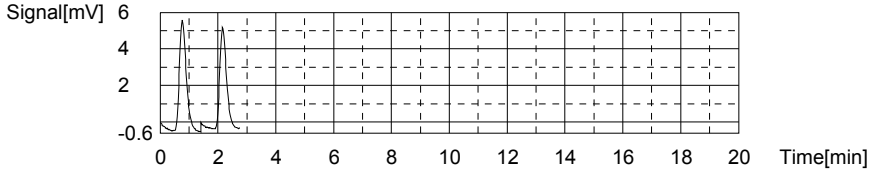

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.881	0.05847mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 3:55:32 PM
2	7.865	0.05799mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 3:59:29 PM

Mean Area 7.873
Mean Conc. 0.05823mg/L

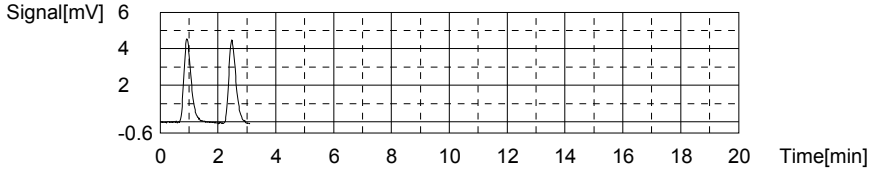

Sample

Sample Name: WG547789-02 LCS
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:26.70mg/L TC:26.74mg/L IC:0.04396mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1074	27.45mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 4:07:15 PM
2	1019	26.04mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 4:11:45 PM

Mean Area 1047
Mean Conc. 26.74mg/L

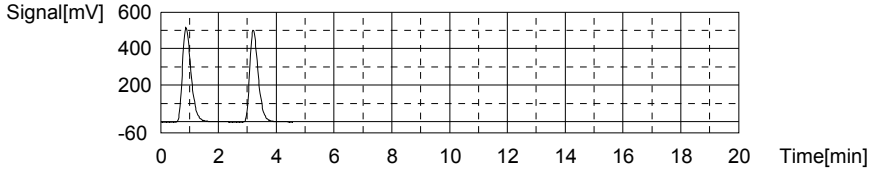

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.337	0.04219mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 4:16:07 PM
2	7.455	0.04572mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 4:20:15 PM

Mean Area 7.396
Mean Conc. 0.04396mg/L

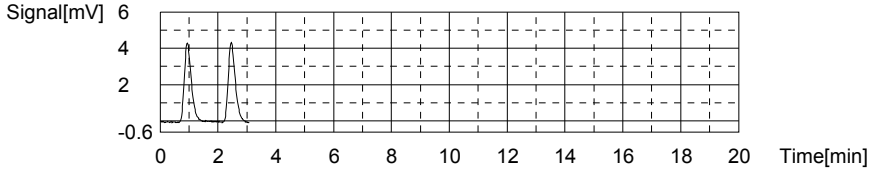

Sample

Sample Name: WG547789-03 LCSDUP
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:26.89mg/L TC:26.93mg/L IC:0.04185mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1070	27.35mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 4:27:56 PM
2	1038	26.52mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 4:32:25 PM

Mean Area 1054
Mean Conc. 26.93mg/L

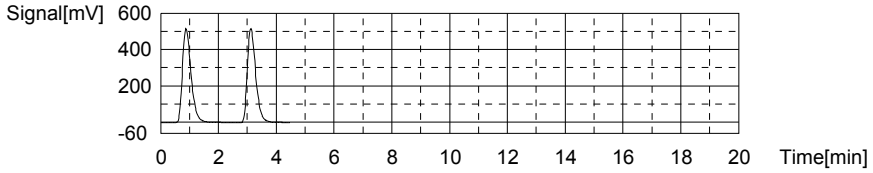

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	7.326	0.04186mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 4:36:46 PM
2	7.325	0.04183mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 4:40:53 PM

Mean Area 7.325
Mean Conc. 0.04185mg/L

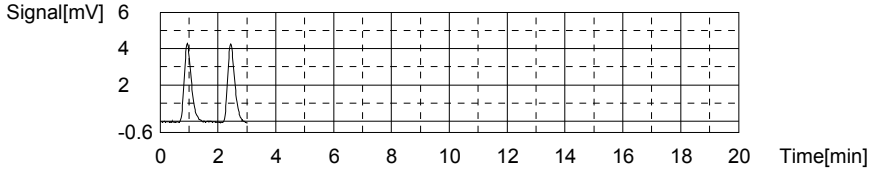

Sample

Sample Name: <Untitled>
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.521mg/L TC:58.26mg/L IC:54.74mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2281	58.44mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 4:48:33 PM
2	2267	58.08mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 4:53:15 PM

Mean Area 2274
Mean Conc. 58.26mg/L

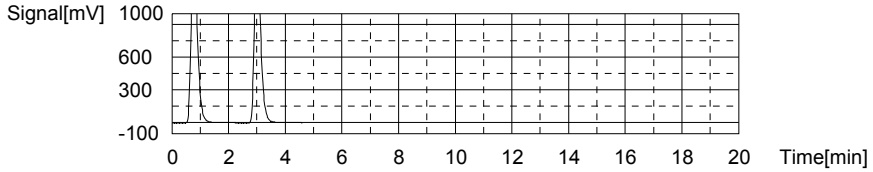

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1829	54.54mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 4:58:59 PM
2	1842	54.93mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 5:04:34 PM

Mean Area 1836
Mean Conc. 54.74mg/L

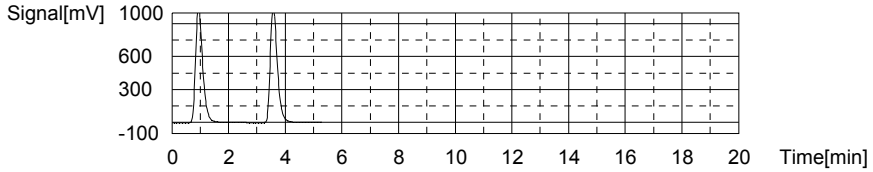

Sample

Sample Name: L15110943-03 (3)
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:16.54mg/L TC:36.29mg/L IC:19.75mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1429	36.56mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 5:12:36 PM
2	1408	36.02mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 5:17:26 PM

Mean Area 1419
Mean Conc. 36.29mg/L

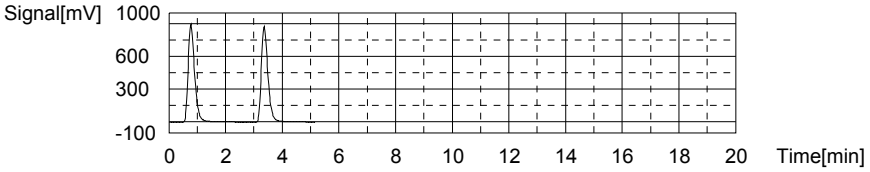

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	697.0	20.68mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 5:22:30 PM
2	635.3	18.83mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 5:27:15 PM

Mean Area 666.2
Mean Conc. 19.75mg/L

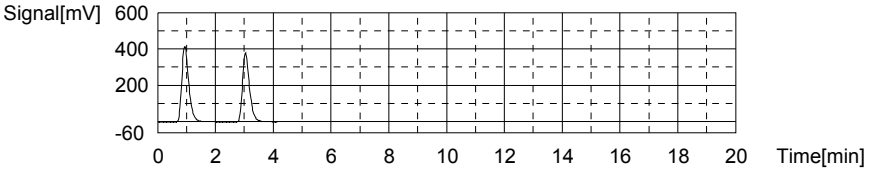

Sample

Sample Name: <Untitled>
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	!!Error!! TOC:-0.1858mg/L TC:61.13mg/L IC:61.32mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2357	60.39mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 5:34:52 PM
2	2415	61.88mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 5:39:23 PM

Mean Area 2386
Mean Conc. 61.13mg/L

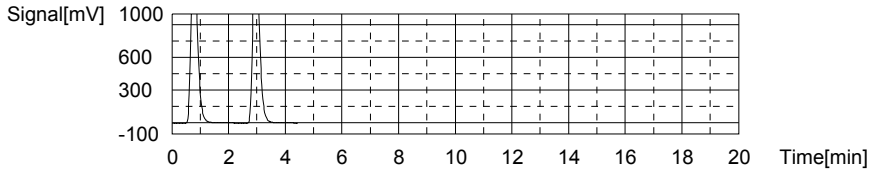

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2058	61.39mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 5:44:45 PM
2	2053	61.25mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 5:49:49 PM

Mean Area 2056
Mean Conc. 61.32mg/L

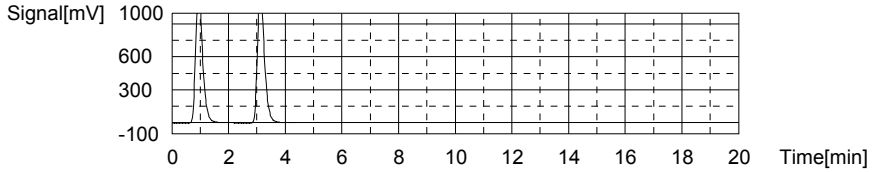

Sample

Sample Name: L15110943-07 (3)
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:13.06mg/L TC:43.80mg/L IC:30.74mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1666	42.65mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 5:57:41 PM
2	1756	44.96mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 6:03:44 PM

Mean Area 1711
Mean Conc. 43.80mg/L

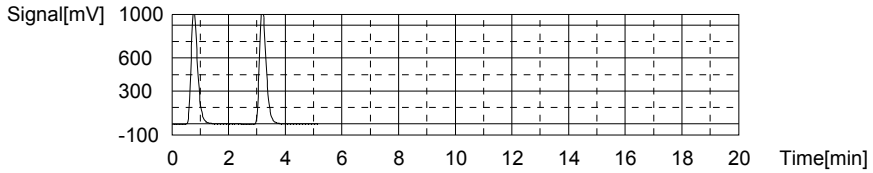

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1121	33.36mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 6:08:55 PM
2	946.1	28.13mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 6:13:45 PM

Mean Area 1034
Mean Conc. 30.74mg/L

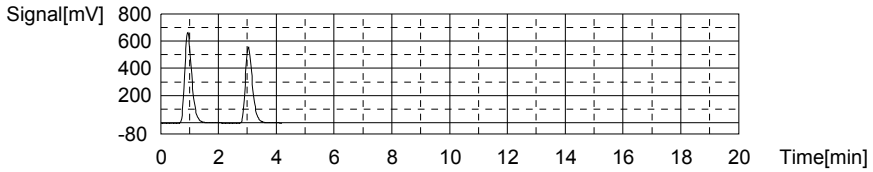

Sample

Sample Name: <Untitled>
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:7.476mg/L TC:52.52mg/L IC:45.04mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2048	52.46mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 6:21:25 PM
2	2053	52.58mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 6:25:59 PM

Mean Area 2051
Mean Conc. 52.52mg/L

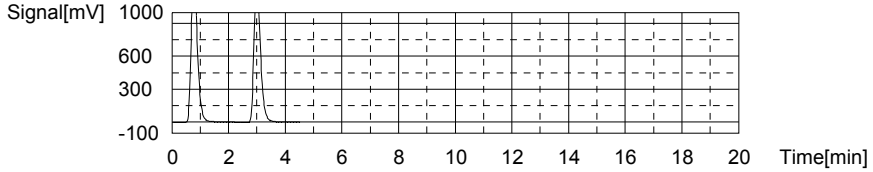

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1510	45.00mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 6:31:17 PM
2	1513	45.09mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 6:36:15 PM

Mean Area 1512
Mean Conc. 45.04mg/L

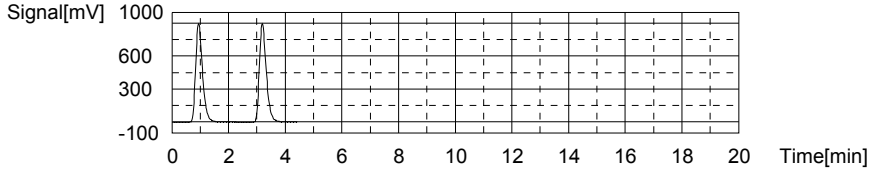

Sample

Sample Name: <Untitled>
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.530mg/L TC:56.85mg/L IC:53.32mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	2219	56.85mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 6:43:54 PM
2	2219	56.85mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 6:48:34 PM

Mean Area 2219
Mean Conc. 56.85mg/L

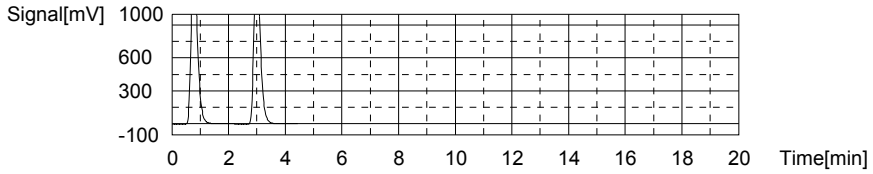

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1800	53.68mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 6:54:27 PM
2	1776	52.96mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 6:59:46 PM

Mean Area 1788
Mean Conc. 53.32mg/L

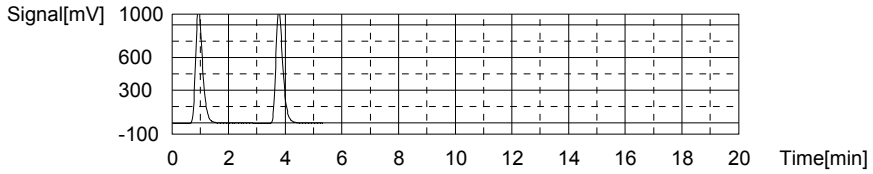

Sample

Sample Name: L15110974-09
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.944mg/L TC:10.18mg/L IC:6.231mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	403.1	10.22mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 7:07:07 PM
2	399.4	10.13mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 7:11:14 PM

Mean Area 401.3
Mean Conc. 10.18mg/L

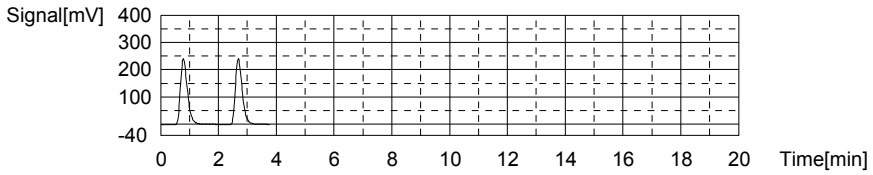

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	215.9	6.282mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 7:15:57 PM
2	212.5	6.180mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 7:20:25 PM

Mean Area 214.2
Mean Conc. 6.231mg/L

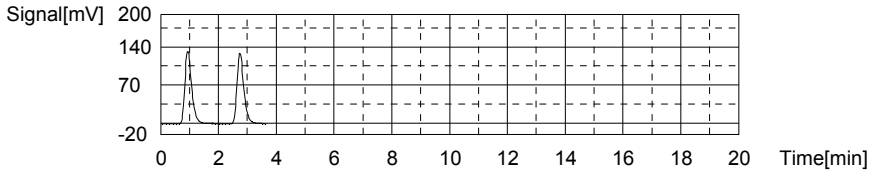

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:27.48mg/L TC:27.58mg/L IC:0.09261mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1079	27.58mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 7:28:13 PM

Mean Area 1079
Mean Conc. 27.58mg/L

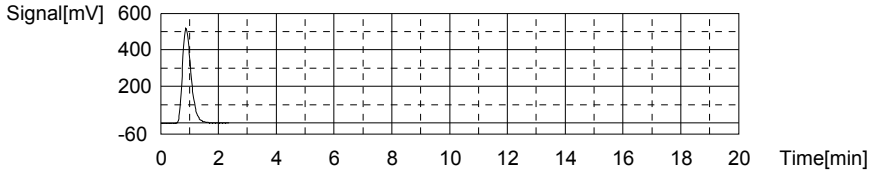

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.022	0.09261mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 7:32:32 PM

Mean Area 9.022
Mean Conc. 0.09261mg/L

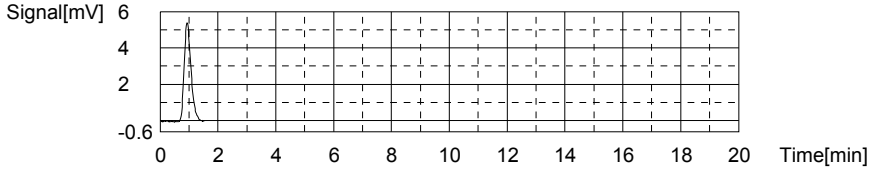

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.05915mg/L TC:0.1254mg/L IC:0.06622mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.835	0.1254mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 7:37:31 PM

Mean Area 9.835
Mean Conc. 0.1254mg/L

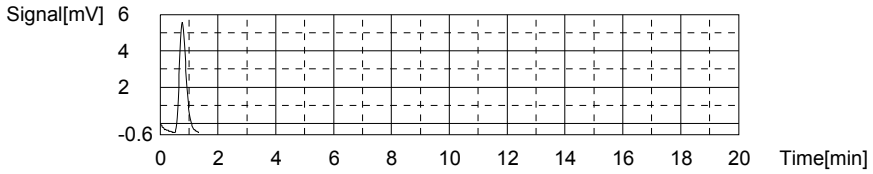

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.140	0.06622mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 7:41:25 PM

Mean Area 8.140
Mean Conc. 0.06622mg/L

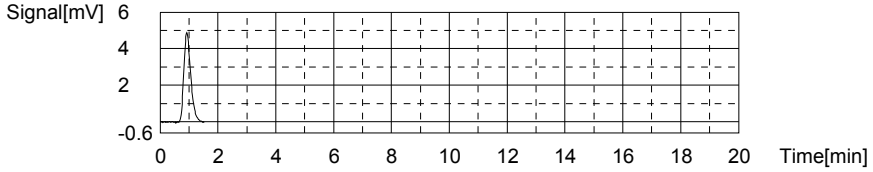

Sample

Sample Name: L15111039-01
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:12.38mg/L TC:38.78mg/L IC:26.41mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1520	38.90mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 7:49:21 PM
2	1511	38.67mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 7:54:09 PM

Mean Area 1516
Mean Conc. 38.78mg/L

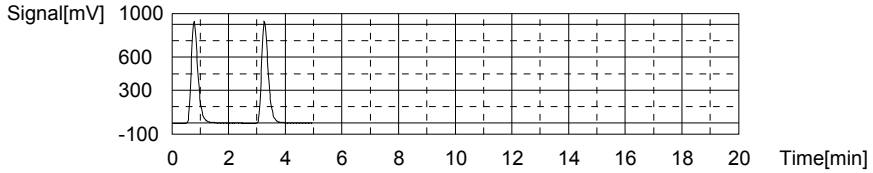

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	889.2	26.43mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 7:59:12 PM
2	887.9	26.39mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 8:04:04 PM

Mean Area 888.6
Mean Conc. 26.41mg/L

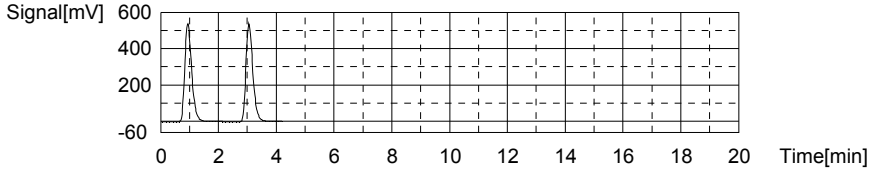

Sample

Sample Name: L15111039-02
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:9.507mg/L TC:21.07mg/L IC:11.57mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	825.9	21.08mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 8:11:41 PM
2	825.6	21.07mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 8:16:01 PM

Mean Area 825.8
Mean Conc. 21.07mg/L

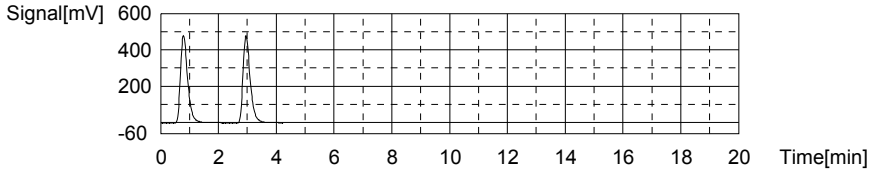

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	393.0	11.58mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 8:20:54 PM
2	392.1	11.55mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 8:25:29 PM

Mean Area 392.6
Mean Conc. 11.57mg/L

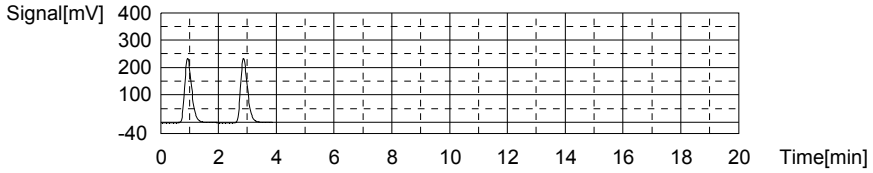

Sample

Sample Name: L15111039-03
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:4.544mg/L TC:11.50mg/L IC:6.957mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	457.4	11.62mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 8:32:53 PM
2	448.4	11.39mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 8:37:05 PM

Mean Area 452.9
Mean Conc. 11.50mg/L

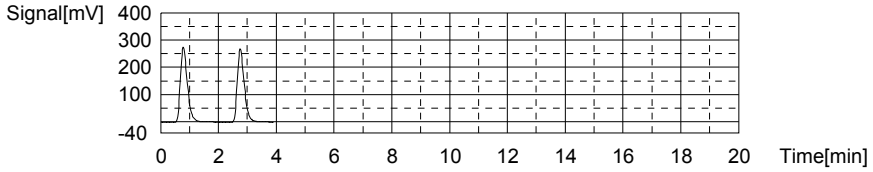

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	237.0	6.913mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 8:41:45 PM
2	239.9	7.000mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 8:46:15 PM

Mean Area 238.4
Mean Conc. 6.957mg/L

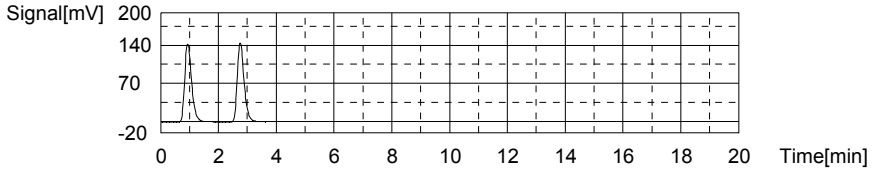

Sample

Sample Name: L15111047-04
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:3.024mg/L TC:11.77mg/L IC:8.744mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	463.8	11.78mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 8:53:29 PM
2	462.8	11.76mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 8:57:36 PM

Mean Area 463.3
Mean Conc. 11.77mg/L

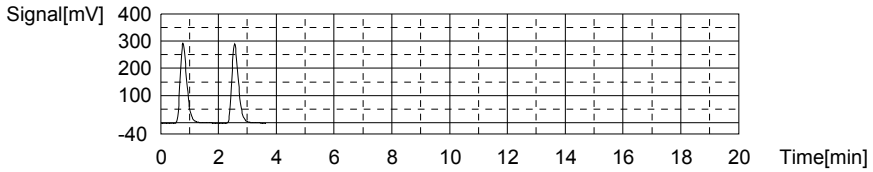

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	298.8	8.762mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 9:02:27 PM
2	297.6	8.726mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 9:06:55 PM

Mean Area 298.2
Mean Conc. 8.744mg/L

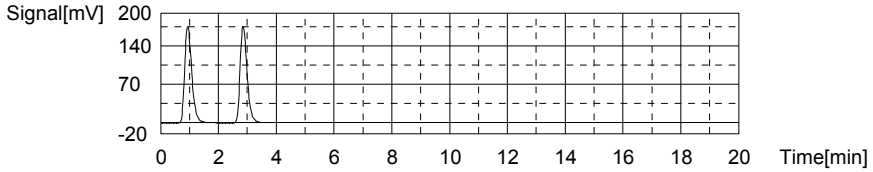

Sample

Sample Name: L15111047-05
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.983mg/L TC:11.13mg/L IC:8.144mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	437.7	11.11mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 9:14:11 PM
2	439.0	11.14mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 9:18:17 PM

Mean Area 438.4
Mean Conc. 11.13mg/L

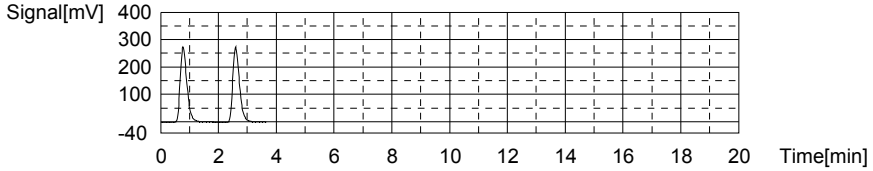

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	279.2	8.176mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 9:23:02 PM
2	277.1	8.113mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 9:27:32 PM

Mean Area 278.1
Mean Conc. 8.144mg/L

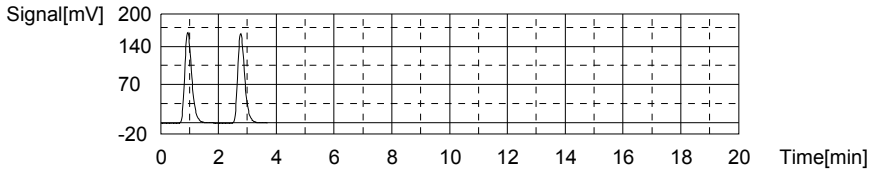

Sample

Sample Name: L15111047-06
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.788mg/L TC:10.85mg/L IC:8.062mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	429.9	10.91mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 9:34:56 PM
2	425.2	10.79mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 9:39:03 PM

Mean Area 427.6
Mean Conc. 10.85mg/L

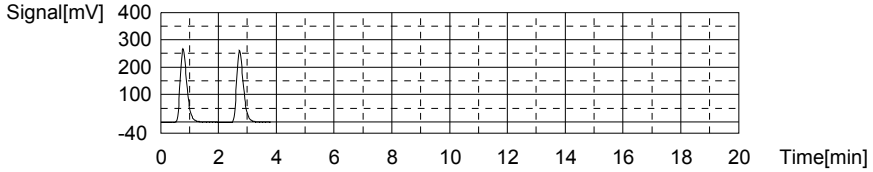

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	277.4	8.122mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 9:43:44 PM
2	273.4	8.002mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 9:48:12 PM

Mean Area 275.4
Mean Conc. 8.062mg/L

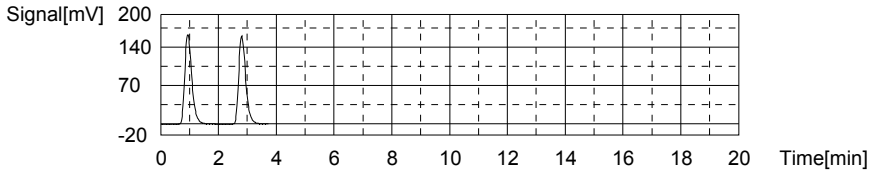

Sample

Sample Name: L15111047-07
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:9.407mg/L TC:13.28mg/L IC:3.874mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	525.6	13.37mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 9:56:08 PM
2	518.8	13.19mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 10:00:55 PM

Mean Area 522.2
Mean Conc. 13.28mg/L

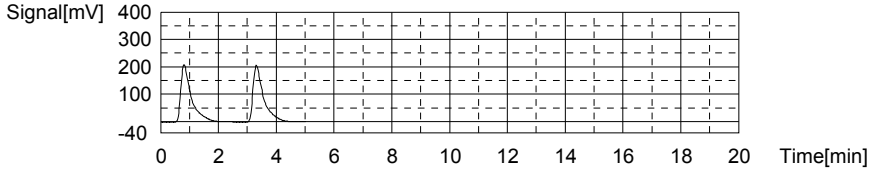

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	136.5	3.907mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 10:05:35 PM
2	134.3	3.841mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 10:10:03 PM

Mean Area 135.4
Mean Conc. 3.874mg/L

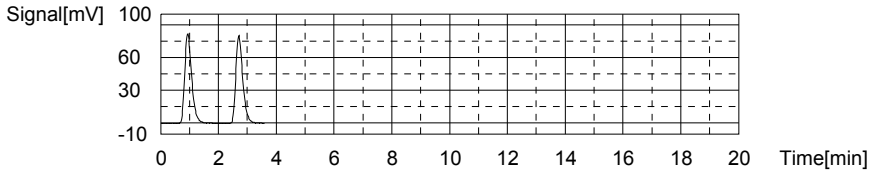

Sample

Sample Name: L15111047-08
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:9.479mg/L TC:12.79mg/L IC:3.313mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	504.4	12.82mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 10:18:02 PM
2	501.9	12.76mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 10:22:58 PM

Mean Area 503.2
Mean Conc. 12.79mg/L

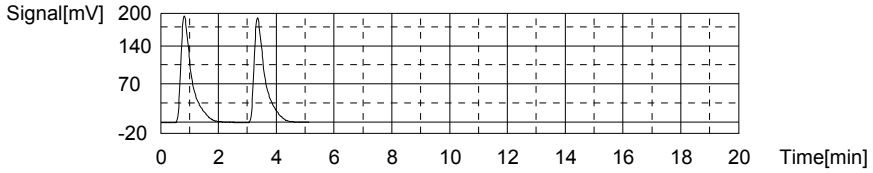

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	117.5	3.338mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 10:27:36 PM
2	115.8	3.287mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 10:31:57 PM

Mean Area 116.7
Mean Conc. 3.313mg/L

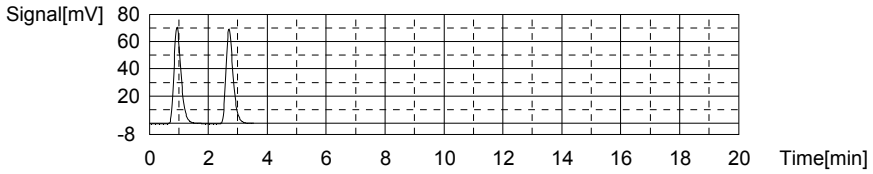

Sample

Sample Name: L15111047-09
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:9.164mg/L TC:12.32mg/L IC:3.151mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	483.5	12.29mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 10:39:52 PM
2	485.7	12.34mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 10:44:36 PM

Mean Area 484.6
Mean Conc. 12.32mg/L

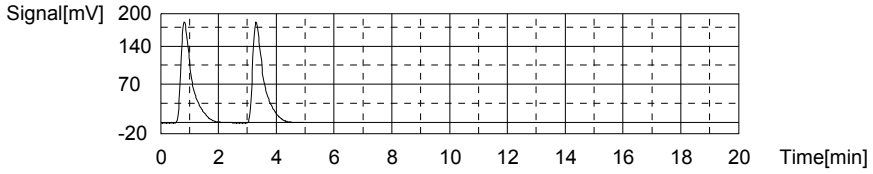

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	111.9	3.171mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 10:49:12 PM
2	110.6	3.132mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 10:53:37 PM

Mean Area 111.3
Mean Conc. 3.151mg/L

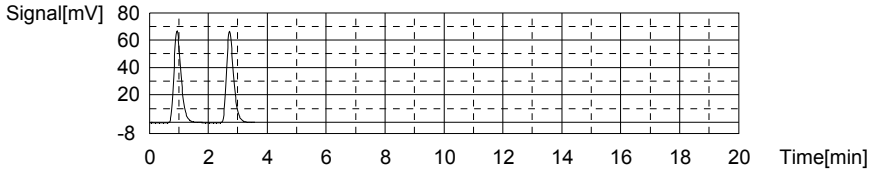

Sample

Sample Name: L15111047-10
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:9.591mg/L TC:14.92mg/L IC:5.325mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	590.3	15.03mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 11:01:35 PM
2	581.5	14.80mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 11:06:22 PM

Mean Area 585.9
Mean Conc. 14.92mg/L

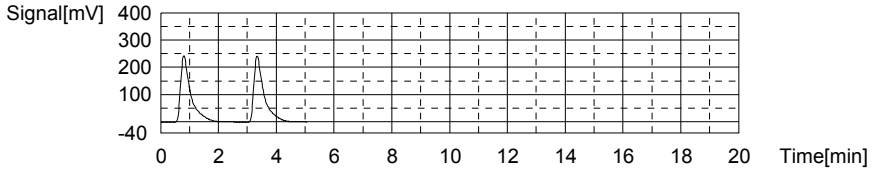

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	184.6	5.346mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 11:11:05 PM
2	183.2	5.304mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 11:15:27 PM

Mean Area 183.9
Mean Conc. 5.325mg/L

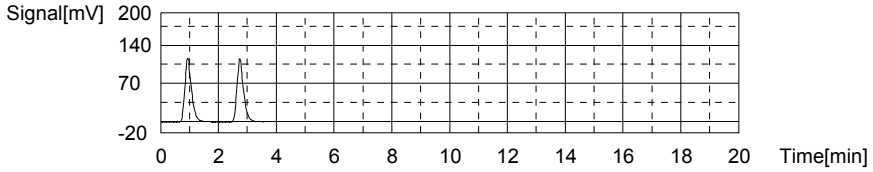

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:27.58mg/L TC:27.65mg/L IC:0.07744mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1082	27.65mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 11:23:13 PM

Mean Area 1082
Mean Conc. 27.65mg/L

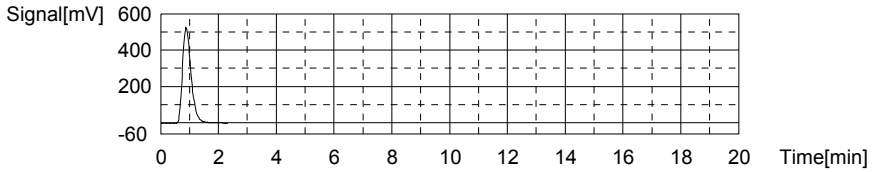

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.515	0.07744mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 11:27:31 PM

Mean Area 8.515
Mean Conc. 0.07744mg/L

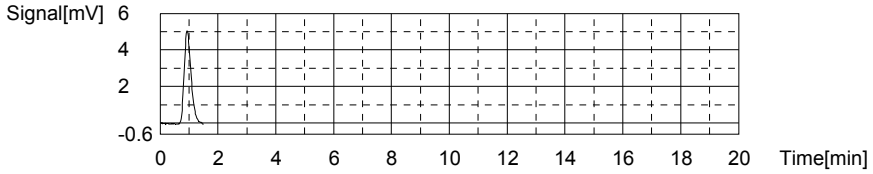

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.05553mg/L TC:0.1180mg/L IC:0.06248mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.548	0.1180mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 11:32:32 PM

Mean Area 9.548
Mean Conc. 0.1180mg/L

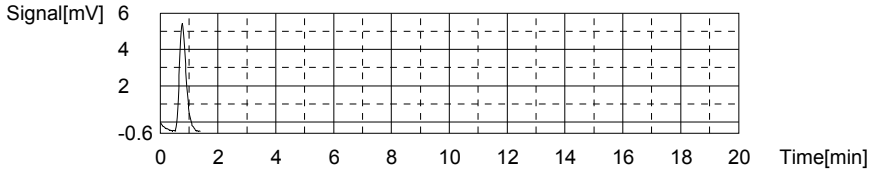

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.015	0.06248mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 11:36:27 PM

Mean Area 8.015
Mean Conc. 0.06248mg/L

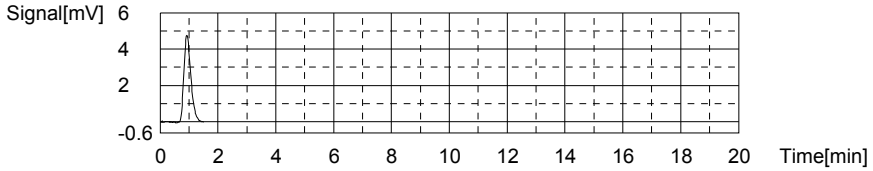

Sample

Sample Name: L15111047-11
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:9.748mg/L TC:14.29mg/L IC:4.547mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	561.6	14.29mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 11:44:25 PM
2	561.8	14.30mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/20/2015 11:49:11 PM

Mean Area 561.7
Mean Conc. 14.29mg/L

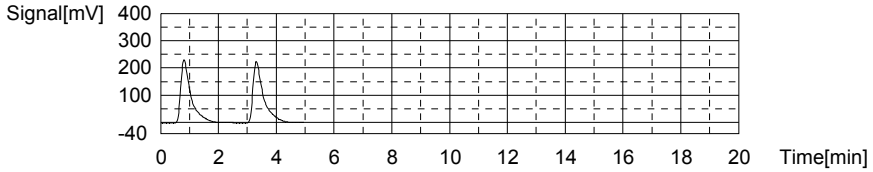

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	159.0	4.580mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 11:53:49 PM
2	156.8	4.514mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/20/2015 11:58:14 PM

Mean Area 157.9
Mean Conc. 4.547mg/L

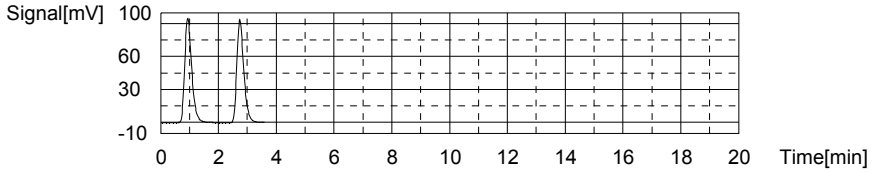

Sample

Sample Name: L15111047-12
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:9.636mg/L TC:13.99mg/L IC:4.349mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	550.8	14.01mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/21/2015 12:06:13 AM
2	548.5	13.96mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/21/2015 12:10:59 AM

Mean Area 549.7
Mean Conc. 13.99mg/L

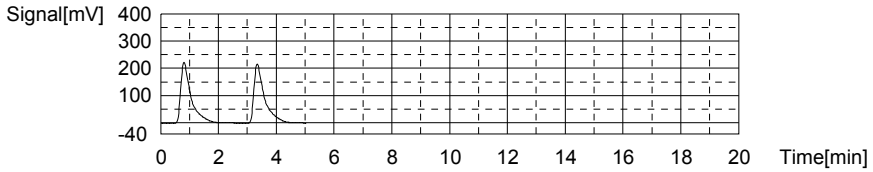

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	152.9	4.397mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/21/2015 12:15:36 AM
2	149.7	4.301mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/21/2015 12:19:57 AM

Mean Area 151.3
Mean Conc. 4.349mg/L

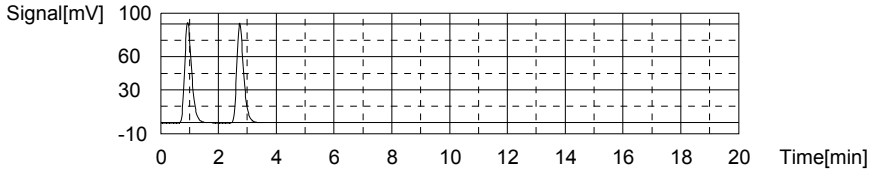

Sample

Sample Name: L15111109-01
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:5.836mg/L TC:22.70mg/L IC:16.86mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	893.6	22.82mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/21/2015 12:27:36 AM
2	884.4	22.58mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/21/2015 12:32:00 AM

Mean Area 889.0
Mean Conc. 22.70mg/L

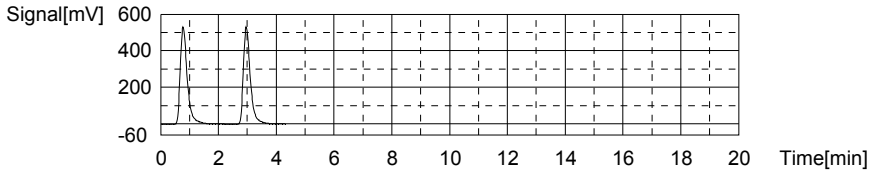

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	569.8	16.87mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/21/2015 12:36:51 AM
2	569.3	16.86mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/21/2015 12:41:29 AM

Mean Area 569.6
Mean Conc. 16.86mg/L

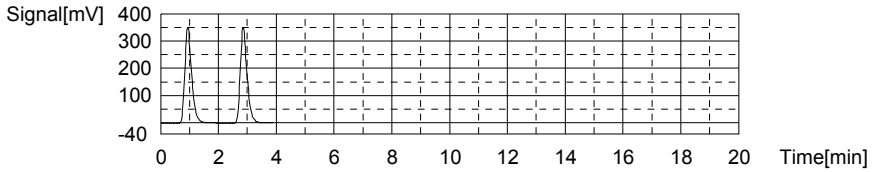

Sample

Sample Name: WG547789-05 DUP
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:2.335mg/L TC:6.340mg/L IC:4.005mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	252.8	6.364mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/21/2015 12:48:40 AM
2	251.0	6.317mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/21/2015 12:52:49 AM

Mean Area 251.9
Mean Conc. 6.340mg/L

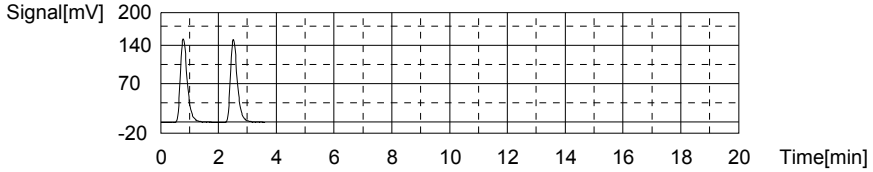

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	140.7	4.032mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/21/2015 12:57:32 AM
2	138.9	3.978mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/21/2015 1:01:55 AM

Mean Area 139.8
Mean Conc. 4.005mg/L

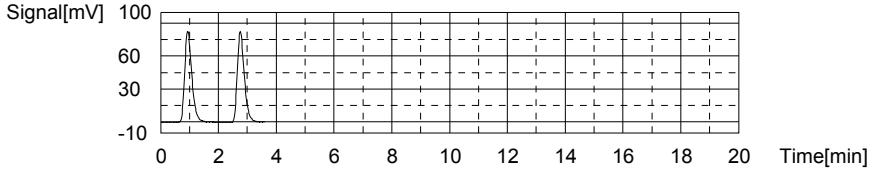

Sample

Sample Name: WG547789-06 MS
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:13.28mg/L TC:17.23mg/L IC:3.953mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	681.4	17.37mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/21/2015 1:09:25 AM
2	670.9	17.10mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/21/2015 1:13:34 AM

Mean Area 676.1
Mean Conc. 17.23mg/L

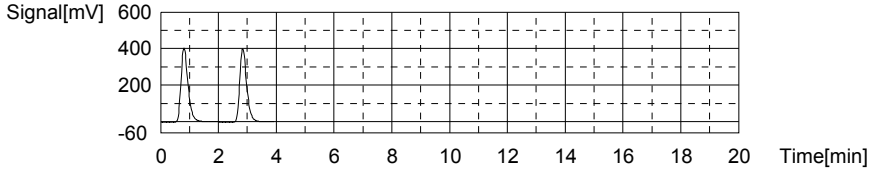

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	138.1	3.954mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/21/2015 1:18:15 AM
2	138.0	3.951mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/21/2015 1:22:37 AM

Mean Area 138.1
Mean Conc. 3.953mg/L

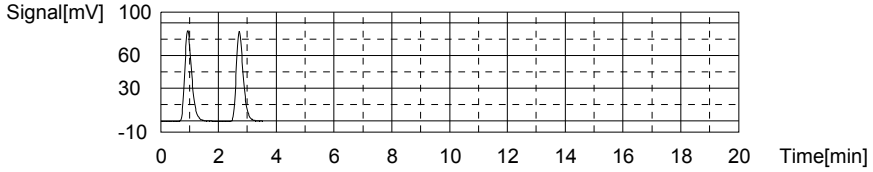

Sample

Sample Name: TOC/TIC
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:26.37mg/L TC:26.43mg/L IC:0.06670mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1030	26.32mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/21/2015 1:30:24 AM
2	1039	26.55mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/21/2015 1:34:56 AM

Mean Area 1035
Mean Conc. 26.43mg/L

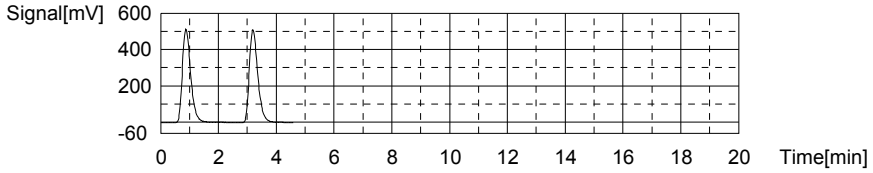

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.251	0.06954mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/21/2015 1:39:14 AM
2	8.061	0.06385mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/21/2015 1:43:21 AM

Mean Area 8.156
Mean Conc. 0.06670mg/L

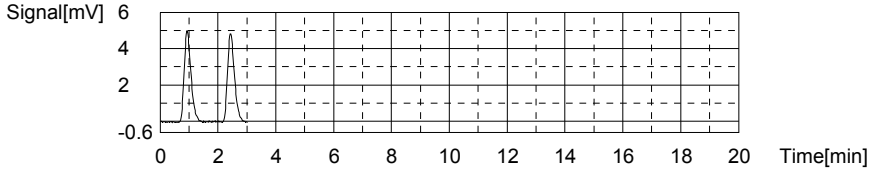

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.02985mg/L TC:0.1026mg/L IC:0.07280mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.950	0.1026mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/21/2015 1:50:01 AM

Mean Area 8.950
Mean Conc. 0.1026mg/L

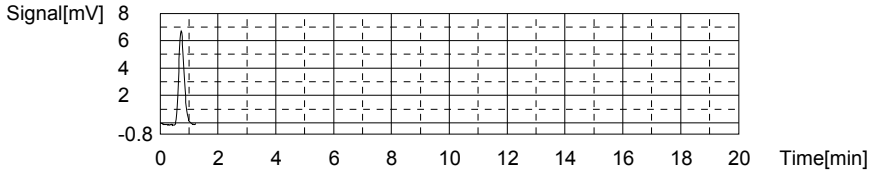

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.360	0.07280mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/21/2015 1:54:19 AM

Mean Area 8.360
Mean Conc. 0.07280mg/L

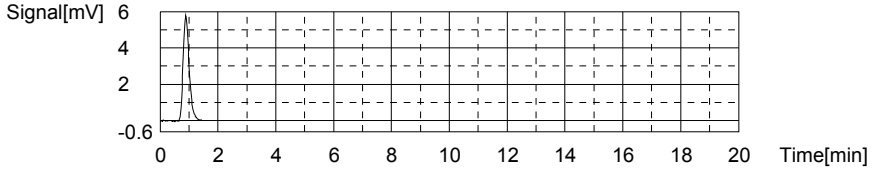

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.06329mg/L TC:0.1280mg/L IC:0.06475mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.939	0.1280mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/21/2015 1:59:17 AM

Mean Area 9.939
Mean Conc. 0.1280mg/L

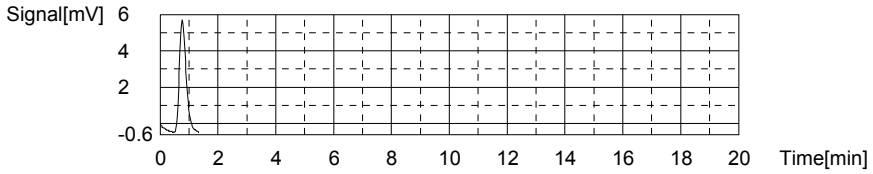

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.091	0.06475mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/21/2015 2:03:09 AM

Mean Area 8.091
Mean Conc. 0.06475mg/L

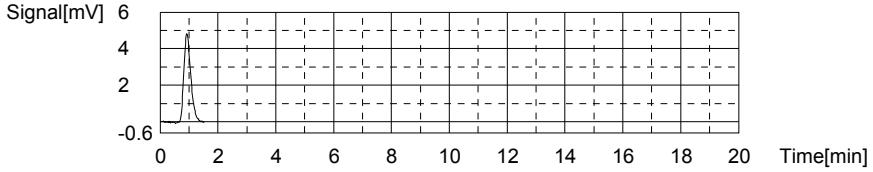

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:26.29mg/L TC:26.40mg/L IC:0.1042mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1033	26.40mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/22/2015 12:40:59 PM

Mean Area 1033
Mean Conc. 26.40mg/L

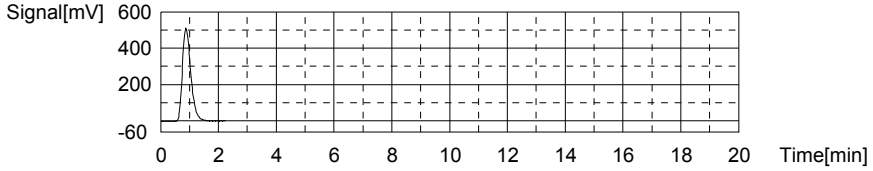

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	9.409	0.1042mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/22/2015 12:45:19 PM

Mean Area 9.409
Mean Conc. 0.1042mg/L

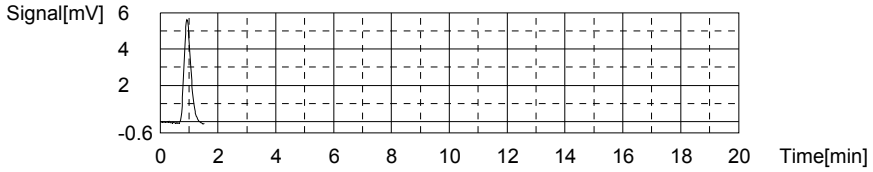

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.05971mg/L TC:0.1401mg/L IC:0.08043mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	10.41	0.1401mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/22/2015 12:50:21 PM

Mean Area 10.41
Mean Conc. 0.1401mg/L

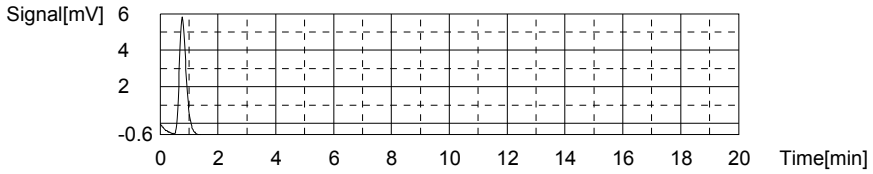

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.615	0.08043mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/22/2015 12:54:15 PM

Mean Area 8.615
Mean Conc. 0.08043mg/L

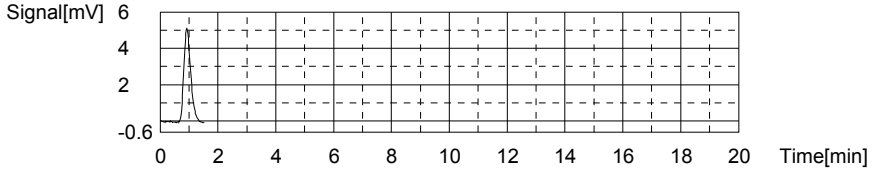

Sample

Sample Name: L15110943-01 (5)
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:12.21mg/L TC:41.93mg/L IC:29.72mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1660	42.49mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/22/2015 1:02:21 PM
2	1616	41.36mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/22/2015 1:06:40 PM

Mean Area 1638
Mean Conc. 41.93mg/L

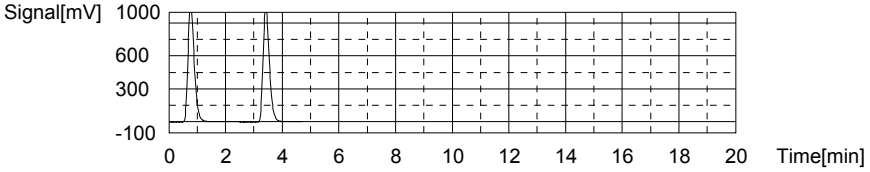

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1127	33.54mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/22/2015 1:11:48 PM
2	871.8	25.91mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/22/2015 1:16:49 PM

Mean Area 999.4
Mean Conc. 29.72mg/L

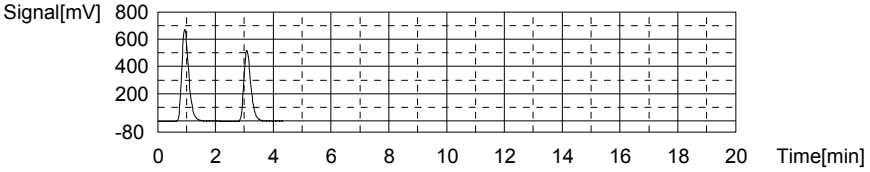

Sample

Sample Name: L15110943-05 (5)
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:15.42mg/L TC:45.66mg/L IC:30.25mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1818	46.55mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/22/2015 1:24:36 PM
2	1749	44.78mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/22/2015 1:29:00 PM

Mean Area 1784
Mean Conc. 45.66mg/L

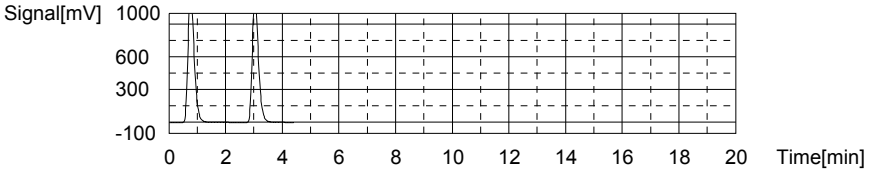

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1182	35.19mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/22/2015 1:34:36 PM
2	851.7	25.30mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/22/2015 1:39:27 PM

Mean Area 1017
Mean Conc. 30.25mg/L

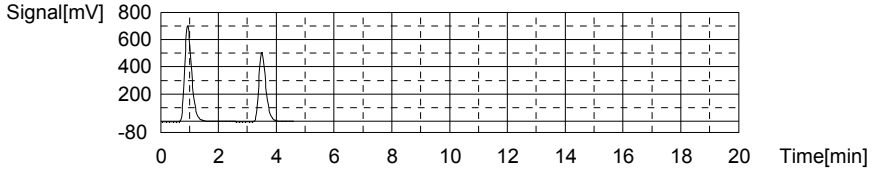

Sample

Sample Name: L15110943-09 (5)
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:11.21mg/L TC:35.32mg/L IC:24.11mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1384	35.41mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/22/2015 1:46:50 PM
2	1377	35.23mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/22/2015 1:50:59 PM

Mean Area 1381
Mean Conc. 35.32mg/L

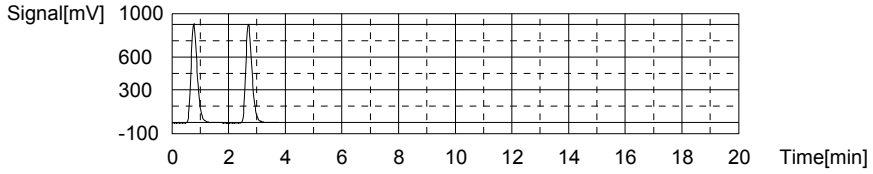

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	945.3	28.10mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/22/2015 1:56:00 PM
2	678.0	20.11mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/22/2015 2:00:43 PM

Mean Area 811.7
Mean Conc. 24.11mg/L

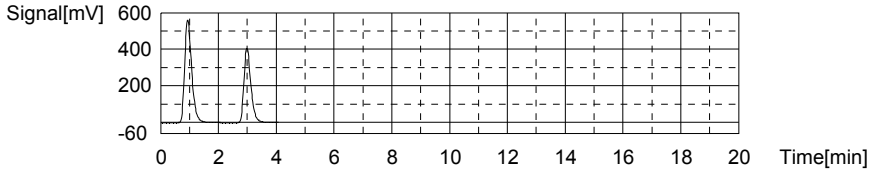

Sample

Sample Name: L15110943-11 (5)
Sample ID: <Untitled>
Origin: TOC-10-31-2015A.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:21.40mg/L TC:43.34mg/L IC:21.94mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1790	45.83mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/22/2015 2:08:28 PM
2	1596	40.85mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/22/2015 2:12:52 PM

Mean Area 1693
Mean Conc. 43.34mg/L

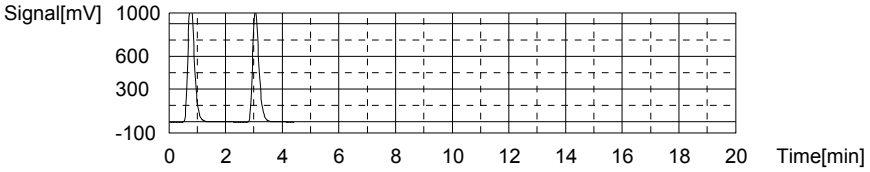

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	892.0	26.51mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/22/2015 2:17:51 PM
2	586.4	17.37mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/22/2015 2:22:41 PM

Mean Area 739.2
Mean Conc. 21.94mg/L

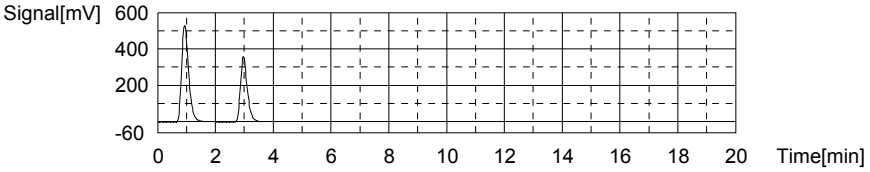

Sample

Sample Name: CCV
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:25.83mg/L TC:26.01mg/L IC:0.1799mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	1018	26.01mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/22/2015 2:30:41 PM

Mean Area 1018
Mean Conc. 26.01mg/L

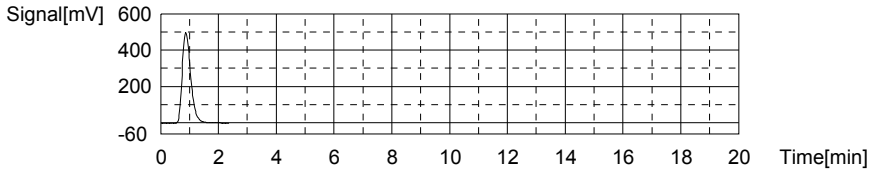

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.94	0.1799mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/22/2015 2:35:03 PM

Mean Area 11.94
Mean Conc. 0.1799mg/L

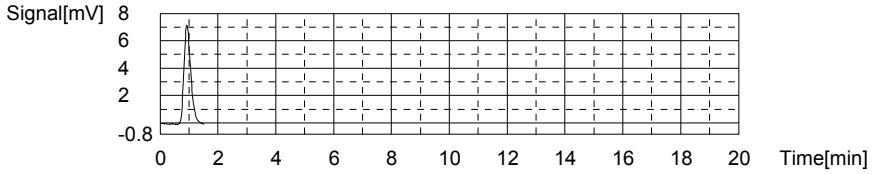

Sample

Sample Name: CCB
Sample ID:
Origin: TOC-10-31-2015.met
Status Completed
Chk. Result

Type	Anal.	Dil.	Result
Unknown	TOC	1.000	TOC:0.06887mg/L TC:0.1596mg/L IC:0.09078mg/L

1. Det

Anal.: TC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	11.17	0.1596mg/L	500uL	1		TCCURVE-10-30-2015.2015_10_30_16_06_3	11/22/2015 2:40:05 PM

Mean Area 11.17
Mean Conc. 0.1596mg/L

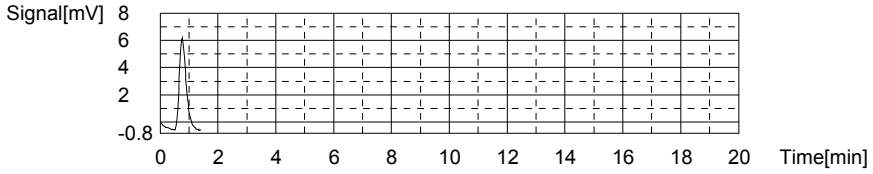

Anal.: IC

No.	Area	Conc.	Inj. Vol.	Aut. Dil.	Ex.	Cal. Curve	Date / Time
1	8.961	0.09078mg/L	500uL	1		TICCURVE-10-30-2015.2015_10_31_11_55_0	11/22/2015 2:43:57 PM

Mean Area 8.961
Mean Conc. 0.09078mg/L

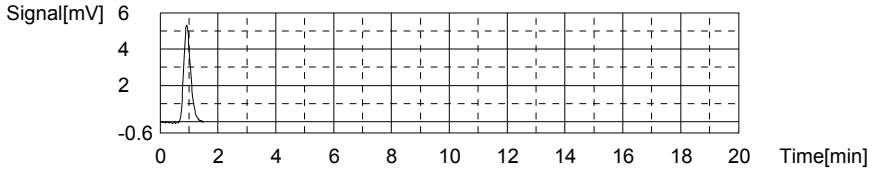

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
December 1, 2015

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001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK
EPT - ETHAN P. TIDD
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
December 01, 2015

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
December 01, 2015

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Stephanie Mossburg	Project Manager: Mark Heaston	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): Scott Beesinger	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205			
Turn Around Time: STANDARD	pH:	Program:	
Project Name/Location: Longhorn			
Project Number: 60256135.0002GA		ERPIMS REQUIRED FIELDS	

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Dissolved Gases / Carbon Dioxide	Alkalinity	Sulfide	Chloride / Sulfate Nitrate / Nitrite	TOC / Total Phosphorous	Dissolved Iron / Dissolved Manganese	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 50	50WW08 - 111615			11/16/15	0820		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW08 FF - 111615			11/16/15	0820		✓	W	1								✓					
	50WW22 - 111615			11/16/15	0925		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW22FF - 111615			11/16/15	0925		✓	W	1								✓					
	50WW24 - 111615			11/16/15	1030		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW24FF - 111615			11/16/15	1030		✓	W	1								✓					
	50WW23 - 111615			11/16/15	1135		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW23FF - 111615			11/16/15	1135		✓	W	1								✓					
	50WW18 - 111615			11/16/15	1345		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW18FF - 111615			11/16/15	1345		✓	W	1								✓					
	50WW25 - 111615			11/16/15	1455		✓	W	11	✓	✓	✓	✓	✓	✓	✓						
	50WW25FF - 111615			11/16/15	1455		✓	W	1								✓					
	TRIP BLANK			11/16/15			✓	W	2	✓												

Comments: **STANDARD TAT**

Relinquished by: (Signature) Scott Beesinger	Date 11/16/15	Time 1600	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Time		Remarks:

Microbac OVD
Received: 11/17/2015 09:55
By: BRENDA GREENWALT 221000078486

Brenda Greenwalt

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15110943
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 27-NOV-2015

Samplenum	Container ID	Products
L15110943-01	663302	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 11:38	BRG		
2	ANALYZ	V1	ORG4	17-NOV-2015 16:16	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 11:38	BRG		
2	ANALYZ	V1	ORG4	17-NOV-2015 16:16	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 11:38	BRG		
2	ANALYZ	V1	ORG4	17-NOV-2015 16:16	AWE	CLS	

Samplenum	Container ID	Products
L15110943-01	663303	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 11:38	BRG		
2	ANALYZ	V1	ORG1	17-NOV-2015 16:16	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 11:38	BRG		
2	ANALYZ	V1	ORG1	17-NOV-2015 16:17	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 11:38	BRG		
2	ANALYZ	V1	ORG1	17-NOV-2015 16:17	AWE	CLS	

Samplenum	Container ID	Products
L15110943-01	663304	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	SEM	17-NOV-2015 11:38	BRG		
2	STORE	SEM	A1	23-NOV-2015 11:28	CLS	ALS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15110943
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 27-NOV-2015

Samplenum	Container ID	Products
L15110943-01	663305	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	WET	17-NOV-2015 11:38	BRG		
2	STORE	WET	A1	24-NOV-2015 15:14	CLS	DCM	

Samplenum	Container ID	Products
L15110943-01	663306	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-NOV-2015 11:38	BRG		

Samplenum	Container ID	Products
L15110943-01	663307	PHOS TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-NOV-2015 11:38	BRG		<2
2	ANALYZ	W1	WET	18-NOV-2015 09:35	DCM	CLS	
3	STORE	WET	A1	24-NOV-2015 15:13	CLS	DCM	

Samplenum	Container ID	Products
L15110943-01	663308	826-LOW 9056 RSK175EXT S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-NOV-2015 11:38	BRG		
2	ANALYZ	W1	WET	19-NOV-2015 09:03	TB	BRG	
3	ANALYZ	WET	A1	23-NOV-2015 15:49	BRG	TB	

Samplenum	Container ID	Products
L15110943-02	663309	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-NOV-2015 11:38	BRG		
2	PREP	W1	DIG	17-NOV-2015 12:37	ERP	BRG	
3	ANALYZ*	DIG	METALS	18-NOV-2015 11:00	JYH	ERP	
4	STORE	DIG	A1	18-NOV-2015 13:15	BRG	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15110943
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 27-NOV-2015

Samplenum	Container ID	Products
L15110943-03	663310	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 11:38	BRG		
2	ANALYZ	V1	ORG4	17-NOV-2015 16:16	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 11:38	BRG		
2	ANALYZ	V1	ORG4	17-NOV-2015 16:16	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 11:38	BRG		
2	ANALYZ	V1	ORG4	17-NOV-2015 16:16	AWE	CLS	

Samplenum	Container ID	Products
L15110943-03	663311	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 11:38	BRG		
2	ANALYZ	V1	ORG1	17-NOV-2015 16:17	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 11:38	BRG		
2	ANALYZ	V1	ORG1	17-NOV-2015 16:17	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 11:38	BRG		
2	ANALYZ	V1	ORG1	17-NOV-2015 16:17	AWE	CLS	

Samplenum	Container ID	Products
L15110943-03	663312	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	SEM	17-NOV-2015 11:38	BRG		
2	STORE	SEM	A1	23-NOV-2015 11:28	CLS	ALS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15110943
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 27-NOV-2015

Samplenum	Container ID	Products
L15110943-03	663313	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	WET	17-NOV-2015 11:38	BRG		
2	STORE	WET	A1	24-NOV-2015 15:14	CLS	DCM	

Samplenum	Container ID	Products
L15110943-03	663314	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-NOV-2015 11:38	BRG		

Samplenum	Container ID	Products
L15110943-03	663315	PHOS TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-NOV-2015 11:38	BRG		<2
2	ANALYZ	W1	WET	18-NOV-2015 09:35	DCM	CLS	
3	STORE	WET	A1	24-NOV-2015 15:13	CLS	DCM	

Samplenum	Container ID	Products
L15110943-03	663316	826-LOW 9056 RSK175EXT S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-NOV-2015 11:38	BRG		
2	ANALYZ	W1	WET	19-NOV-2015 09:03	TB	BRG	
3	ANALYZ	WET	A1	23-NOV-2015 15:49	BRG	TB	

Samplenum	Container ID	Products
L15110943-04	663317	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-NOV-2015 11:38	BRG		
2	PREP	W1	DIG	17-NOV-2015 12:37	ERP	BRG	
3	ANALYZ*	DIG	METALS	18-NOV-2015 11:00	JYH	ERP	
4	STORE	DIG	A1	18-NOV-2015 13:15	BRG	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15110943
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 27-NOV-2015

Samplenum	Container ID	Products
L15110943-05	663318	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 11:38	BRG		
2	ANALYZ	V1	ORG4	17-NOV-2015 16:16	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 11:38	BRG		
2	ANALYZ	V1	ORG4	17-NOV-2015 16:16	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 11:38	BRG		
2	ANALYZ	V1	ORG4	17-NOV-2015 16:16	AWE	CLS	

Samplenum	Container ID	Products
L15110943-05	663319	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 11:38	BRG		
2	ANALYZ	V1	ORG1	17-NOV-2015 16:17	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 11:38	BRG		
2	ANALYZ	V1	ORG1	17-NOV-2015 16:17	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 11:38	BRG		
2	ANALYZ	V1	ORG1	17-NOV-2015 16:17	AWE	CLS	

Samplenum	Container ID	Products
L15110943-05	663320	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	SEM	17-NOV-2015 11:38	BRG		
2	STORE	SEM	A1	23-NOV-2015 11:28	CLS	ALS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15110943
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 27-NOV-2015

Samplenum	Container ID	Products
L15110943-05	663321	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	WET	17-NOV-2015 11:38	BRG		
2	STORE	WET	A1	24-NOV-2015 15:14	CLS	DCM	

Samplenum	Container ID	Products
L15110943-05	663322	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-NOV-2015 11:38	BRG		

Samplenum	Container ID	Products
L15110943-05	663323	PHOS TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-NOV-2015 11:38	BRG		<2
2	ANALYZ	W1	WET	18-NOV-2015 09:35	DCM	CLS	
3	STORE	WET	A1	24-NOV-2015 15:14	CLS	DCM	

Samplenum	Container ID	Products
L15110943-05	663324	826-LOW 9056 RSK175EXT S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-NOV-2015 11:38	BRG		
2	ANALYZ	W1	WET	19-NOV-2015 09:03	TB	BRG	

Samplenum	Container ID	Products
L15110943-06	663325	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-NOV-2015 11:38	BRG		
2	PREP	W1	DIG	17-NOV-2015 12:37	ERP	BRG	
3	ANALYZ*	DIG	METALS	18-NOV-2015 11:00	JYH	ERP	
4	STORE	DIG	A1	18-NOV-2015 13:15	BRG	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15110943
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 27-NOV-2015

Samplenum	Container ID	Products
L15110943-07	663326	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 11:38	BRG		
2	ANALYZ	V1	ORG4	17-NOV-2015 16:16	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 11:38	BRG		
2	ANALYZ	V1	ORG4	17-NOV-2015 16:16	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 11:38	BRG		
2	ANALYZ	V1	ORG4	17-NOV-2015 16:16	AWE	CLS	

Samplenum	Container ID	Products
L15110943-07	663327	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 11:38	BRG		
2	ANALYZ	V1	ORG1	17-NOV-2015 16:17	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 11:38	BRG		
2	ANALYZ	V1	ORG1	17-NOV-2015 16:17	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 11:38	BRG		
2	ANALYZ	V1	ORG1	17-NOV-2015 16:17	AWE	CLS	

Samplenum	Container ID	Products
L15110943-07	663328	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	SEM	17-NOV-2015 11:38	BRG		
2	STORE	SEM	A1	23-NOV-2015 11:28	CLS	ALS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15110943
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 27-NOV-2015

Samplenum	Container ID	Products
L15110943-07	663329	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	WET	17-NOV-2015 11:38	BRG		
2	STORE	WET	A1	24-NOV-2015 15:14	CLS	DCM	

Samplenum	Container ID	Products
L15110943-07	663330	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-NOV-2015 11:38	BRG		

Samplenum	Container ID	Products
L15110943-07	663331	PHOS TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-NOV-2015 11:38	BRG		<2
2	ANALYZ	W1	WET	18-NOV-2015 09:35	DCM	CLS	
3	STORE	WET	A1	24-NOV-2015 15:14	CLS	DCM	

Samplenum	Container ID	Products
L15110943-07	663332	826-LOW 9056 RSK175EXT S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-NOV-2015 11:38	BRG		
2	ANALYZ	W1	WET	19-NOV-2015 09:03	TB	BRG	
3	ANALYZ	WET	A1	23-NOV-2015 15:49	BRG	TB	

Samplenum	Container ID	Products
L15110943-08	663333	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-NOV-2015 11:38	BRG		
2	PREP	W1	DIG	17-NOV-2015 12:37	ERP	BRG	
3	ANALYZ*	DIG	METALS	18-NOV-2015 11:00	JYH	ERP	
4	STORE	DIG	A1	18-NOV-2015 13:15	BRG	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15110943
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 27-NOV-2015

Samplenum	Container ID	Products
L15110943-09	663334	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 11:38	BRG		
2	ANALYZ	V1	ORG4	17-NOV-2015 16:16	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 11:38	BRG		
2	ANALYZ	V1	ORG4	17-NOV-2015 16:16	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 11:38	BRG		
2	ANALYZ	V1	ORG4	17-NOV-2015 16:16	AWE	CLS	

Samplenum	Container ID	Products
L15110943-09	663335	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 11:38	BRG		
2	ANALYZ	V1	ORG1	17-NOV-2015 16:17	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 11:38	BRG		
2	ANALYZ	V1	ORG1	17-NOV-2015 16:17	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 11:38	BRG		
2	ANALYZ	V1	ORG1	17-NOV-2015 16:17	AWE	CLS	

Samplenum	Container ID	Products
L15110943-09	663336	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	SEM	17-NOV-2015 11:38	BRG		
2	STORE	SEM	A1	23-NOV-2015 11:29	CLS	ALS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15110943
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 27-NOV-2015

Samplenum	Container ID	Products
L15110943-09	663337	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	WET	17-NOV-2015 11:38	BRG		
2	STORE	WET	A1	24-NOV-2015 15:14	CLS	DCM	

Samplenum	Container ID	Products
L15110943-09	663338	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-NOV-2015 11:38	BRG		

Samplenum	Container ID	Products
L15110943-09	663339	PHOS TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-NOV-2015 11:38	BRG		<2
2	ANALYZ	W1	WET	18-NOV-2015 09:35	DCM	CLS	
3	STORE	WET	A1	24-NOV-2015 15:13	CLS	DCM	

Samplenum	Container ID	Products
L15110943-09	663340	826-LOW 9056 RSK175EXT S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-NOV-2015 11:38	BRG		
2	ANALYZ	W1	WET	19-NOV-2015 09:03	TB	BRG	
3	ANALYZ	WET	A1	23-NOV-2015 15:49	BRG	TB	

Samplenum	Container ID	Products
L15110943-10	663341	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-NOV-2015 11:38	BRG		
2	PREP	W1	DIG	17-NOV-2015 12:37	ERP	BRG	
3	ANALYZ*	DIG	METALS	18-NOV-2015 11:00	JYH	ERP	
4	STORE	DIG	A1	18-NOV-2015 13:15	BRG	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15110943
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 27-NOV-2015

Samplenum	Container ID	Products
L15110943-11	663342	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 11:38	BRG		
2	ANALYZ	V1	ORG4	17-NOV-2015 16:16	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 11:38	BRG		
2	ANALYZ	V1	ORG4	17-NOV-2015 16:16	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 11:38	BRG		
2	ANALYZ	V1	ORG4	17-NOV-2015 16:16	AWE	CLS	

Samplenum	Container ID	Products
L15110943-11	663343	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 11:38	BRG		
2	ANALYZ	V1	ORG1	17-NOV-2015 16:17	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 11:38	BRG		
2	ANALYZ	V1	ORG1	17-NOV-2015 16:17	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 11:38	BRG		
2	ANALYZ	V1	ORG1	17-NOV-2015 16:17	AWE	CLS	

Samplenum	Container ID	Products
L15110943-11	663344	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	SEM	17-NOV-2015 11:38	BRG		
2	STORE	SEM	A1	23-NOV-2015 11:28	CLS	ALS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15110943
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 27-NOV-2015

Samplenum	Container ID	Products
L15110943-11	663345	ALK

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	WET	17-NOV-2015 11:38	BRG		
2	STORE	WET	A1	24-NOV-2015 15:14	CLS	DCM	

Samplenum	Container ID	Products
L15110943-11	663346	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-NOV-2015 11:38	BRG		

Samplenum	Container ID	Products
L15110943-11	663347	PHOS TOC

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-NOV-2015 11:38	BRG		<2
2	ANALYZ	W1	WET	18-NOV-2015 09:35	DCM	CLS	
3	STORE	WET	A1	24-NOV-2015 15:13	CLS	DCM	

Samplenum	Container ID	Products
L15110943-11	663348	826-LOW 9056 RSK175EXT S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-NOV-2015 11:38	BRG		
2	ANALYZ	W1	WET	19-NOV-2015 09:03	TB	BRG	
3	ANALYZ	WET	A1	23-NOV-2015 15:49	BRG	TB	

Samplenum	Container ID	Products
L15110943-12	663349	FE-D MN-MSD

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-NOV-2015 11:38	BRG		
2	PREP	W1	DIG	17-NOV-2015 12:37	ERP	BRG	
3	ANALYZ*	DIG	METALS	18-NOV-2015 11:00	JYH	ERP	
4	STORE	DIG	A1	18-NOV-2015 13:15	BRG	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15110943
Account: 2551
Project: 2551.096
Samples: 13
Due Date: 27-NOV-2015

Samplenum	Container ID	Products
L15110943-13	663350	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 11:38	BRG		
2	ANALYZ	V1	ORG4	17-NOV-2015 16:16	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 11:38	BRG		
2	ANALYZ	V1	ORG4	17-NOV-2015 16:16	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - November 30, 2015

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Non-DoD LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD DoD Scope of Accreditation:

SOLID AND HAZARDOUS CHEMICALS

Fluoride by EPA 300.0/9056/9056A
Bromide by EPA 9056/9056A
Nitrate as N by EPA 9056/9056A

Microbac

Laboratory Report Number: L15110950

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on December 01 2015

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00113252	H	0.0		J4599413224	X
0019770	H	0.0		J4599413233	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
50WW05-111315	L15110950-01	11/13/2015 08:00	11/17/2015 09:55
50WW05MS-111315	L15110950-02	11/13/2015 08:00	11/17/2015 09:55
50WW05MSD-111315	L15110950-03	11/13/2015 08:00	11/17/2015 09:55
50SW06-111315	L15110950-04	11/13/2015 08:30	11/17/2015 09:55
GPW1-111315	L15110950-05	11/13/2015 08:45	11/17/2015 09:55
50WW28-111315	L15110950-06	11/13/2015 09:45	11/17/2015 09:55
50WW16-111315	L15110950-07	11/13/2015 10:45	11/17/2015 09:55
LHSMW54-111315	L15110950-08	11/13/2015 13:45	11/17/2015 09:55
47WW38-111315	L15110950-09	11/13/2015 14:55	11/17/2015 09:55
TRIP BLANK	L15110950-10	11/13/2015 00:01	11/17/2015 09:55

Microbac Laboratories ● Ohio Valley Division
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Microbac REPORT L15110950
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.0 Summary Data

1.1 Narratives

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Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110950
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG547466	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-11-30 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden	Franci Bolden	Analyst I	2015-11-30 21:47:17

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Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110950
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG547466	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-11-30 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110950
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG547466	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-11-30 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		X			1
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			2
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

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Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110950
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG547466	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-11-30 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			4
Was the ICAL curve verified for each analyte?		X			3
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110950
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG547466	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-11-30 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L15110950
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG547466	**Reviewer Name:**	Franci Bolden
LRC Date:	2015-11-30 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) Carbon disulfide was below the LCL in the LCS analyzed 11/18/15 on HPMS17.

2) Carbon disulfide and trichloroethene were below the LCL in the MS/MSD samples 02 and 03. Trichloroethene present in parent sample.

3) Carbon disulfide and trichlorofluoromethane were below the LCL in the ICV analyzed 11/11/15 on HPMS17.

4) Acetone, 2-hexanone and 4-methyl-2-butanone were below the LCL in the CCV analyzed 11/18/15 on HPMS17.

1.2 Certificate of Analysis

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110950-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW05-111315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	11/11/2015 17:53
Workgroup #:	WG547466	**Analyst:**	ADC	**Run Date:**	11/18/2015 19:23
Collect Date:	11/13/2015 08:00	**Dilution:**	1	**File ID:**	17M016552
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.183	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.93		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.42	J	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	17.2		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

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Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.848	J	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	210		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	111	70	120	
Toluene-d8	110	85	120	
4-Bromofluorobenzene	110	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110950-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW05MS-111315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	11/11/2015 17:53
Workgroup #:	WG547466	**Analyst:**	ADC	**Run Date:**	11/18/2015 16:45
Collect Date:	11/13/2015 08:00	**Dilution:**	1	**File ID:**	17M016544
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	20.8	Q	10.0	5.00	2.50
Benzene	71-43-2	18.5		1.00	0.250	0.125
Bromobenzene	108-86-1	19.2		1.00	0.250	0.125
Bromochloromethane	74-97-5	20.0		1.00	0.400	0.200
Bromodichloromethane	75-27-4	18.7		1.00	0.500	0.250
Bromoform	75-25-2	20.8		2.00	1.00	0.500
Bromomethane	74-83-9	21.8		2.00	1.00	0.500
2-Butanone	78-93-3	19.5		10.0	5.00	2.50
n-Butylbenzene	104-51-8	19.1		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	19.7		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	19.7		1.00	0.500	0.250
Carbon disulfide	75-15-0	7.12		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	17.9		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.1		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	18.9		1.00	0.500	0.250
Chloroethane	75-00-3	22.8		2.00	1.00	0.500
Chloroform	67-66-3	19.0		1.00	0.250	0.125
Chloromethane	74-87-3	15.8		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	19.9		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	20.0		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	18.7		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	18.6		1.00	0.500	0.250
Dibromomethane	74-95-3	19.1		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	20.2		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	20.2		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	19.3		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	17.1		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	18.4		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	21.3		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	19.9		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	34.0		1.00	0.500	0.250

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	18.2		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	18.4		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	19.1		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	20.2		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	19.3		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	18.6		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	18.1		1.00	0.500	0.250
Ethylbenzene	100-41-4	18.8		1.00	0.500	0.250
2-Hexanone	591-78-6	19.2	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	17.4		1.00	0.500	0.250
Isopropylbenzene	98-82-8	19.8		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	18.8		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	18.5	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	17.1		1.00	0.500	0.250
Naphthalene	91-20-3	17.7		1.00	0.400	0.200
n-Propylbenzene	103-65-1	20.2		1.00	0.250	0.125
Styrene	100-42-5	19.2		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	19.1		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	19.1		1.00	0.400	0.200
Tetrachloroethene	127-18-4	19.9		1.00	0.500	0.250
Toluene	108-88-3	18.8		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	17.9		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	19.0		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	19.0		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	18.2		1.00	0.500	0.250
Trichloroethene	79-01-6	205		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	19.5		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	18.4		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	18.9		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	19.2		1.00	0.500	0.250
Vinyl chloride	75-01-4	18.7		1.00	0.500	0.250
o-Xylene	95-47-6	19.6		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	39.4		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	85	115	
1,2-Dichloroethane-d4	111	70	120	
Toluene-d8	108	85	120	
4-Bromofluorobenzene	106	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110950-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW05MSD-111315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	11/11/2015 17:53
Workgroup #:	WG547466	**Analyst:**	ADC	**Run Date:**	11/18/2015 17:04
Collect Date:	11/13/2015 08:00	**Dilution:**	1	**File ID:**	17M016545
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	21.3	Q	10.0	5.00	2.50
Benzene	71-43-2	18.8		1.00	0.250	0.125
Bromobenzene	108-86-1	19.8		1.00	0.250	0.125
Bromochloromethane	74-97-5	20.1		1.00	0.400	0.200
Bromodichloromethane	75-27-4	19.0		1.00	0.500	0.250
Bromoform	75-25-2	21.1		2.00	1.00	0.500
Bromomethane	74-83-9	21.9		2.00	1.00	0.500
2-Butanone	78-93-3	20.5		10.0	5.00	2.50
n-Butylbenzene	104-51-8	19.8		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	20.4		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	20.6		1.00	0.500	0.250
Carbon disulfide	75-15-0	6.85		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	18.0		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.4		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	19.4		1.00	0.500	0.250
Chloroethane	75-00-3	23.0		2.00	1.00	0.500
Chloroform	67-66-3	19.2		1.00	0.250	0.125
Chloromethane	74-87-3	16.0		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	20.5		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	20.8		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	19.5		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	19.0		1.00	0.500	0.250
Dibromomethane	74-95-3	19.5		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	21.0		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	20.9		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	20.0		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	17.0		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	18.7		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	21.6		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	20.2		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	34.4		1.00	0.500	0.250

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	18.1		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	18.7		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	19.5		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	20.2		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	19.6		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	18.8		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	18.2		1.00	0.500	0.250
Ethylbenzene	100-41-4	19.2		1.00	0.500	0.250
2-Hexanone	591-78-6	19.4	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	18.2		1.00	0.500	0.250
Isopropylbenzene	98-82-8	20.0		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	19.5		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	19.3	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	17.3		1.00	0.500	0.250
Naphthalene	91-20-3	18.6		1.00	0.400	0.200
n-Propylbenzene	103-65-1	20.7		1.00	0.250	0.125
Styrene	100-42-5	19.6		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	19.4		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	19.8		1.00	0.400	0.200
Tetrachloroethene	127-18-4	20.1		1.00	0.500	0.250
Toluene	108-88-3	19.1		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	18.5		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	19.7		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	19.1		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	18.6		1.00	0.500	0.250
Trichloroethene	79-01-6	203		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	19.7		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	19.1		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	19.5		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	19.8		1.00	0.500	0.250
Vinyl chloride	75-01-4	18.7		1.00	0.500	0.250
o-Xylene	95-47-6	20.0		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	39.7		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	85	115	
1,2-Dichloroethane-d4	112	70	120	
Toluene-d8	108	85	120	
4-Bromofluorobenzene	110	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110950-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50SW06-111315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	11/11/2015 17:53
Workgroup #:	WG547466	**Analyst:**	ADC	**Run Date:**	11/18/2015 21:03
Collect Date:	11/13/2015 08:30	**Dilution:**	1	**File ID:**	17M016557
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	111	70	120	
Toluene-d8	109	85	120	
4-Bromofluorobenzene	110	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110950-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	GPW1-111315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	11/11/2015 17:53
Workgroup #:	WG547466	**Analyst:**	ADC	**Run Date:**	11/18/2015 21:23
Collect Date:	11/13/2015 08:45	**Dilution:**	1	**File ID:**	17M016558
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	113	70	120	
Toluene-d8	110	85	120	
4-Bromofluorobenzene	112	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110950-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW28-111315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	11/11/2015 17:53
Workgroup #:	WG547466	**Analyst:**	ADC	**Run Date:**	11/18/2015 21:43
Collect Date:	11/13/2015 09:45	**Dilution:**	1	**File ID:**	17M016559
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	85	115	
1,2-Dichloroethane-d4	115	70	120	
Toluene-d8	111	85	120	
4-Bromofluorobenzene	114	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110950-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW16-111315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	11/11/2015 17:53
Workgroup #:	WG547466	**Analyst:**	ADC	**Run Date:**	11/18/2015 22:02
Collect Date:	11/13/2015 10:45	**Dilution:**	1	**File ID:**	17M016560
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.986	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	115	70	120	
Toluene-d8	111	85	120	
4-Bromofluorobenzene	112	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110950-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	LHSMW54-111315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	11/11/2015 17:53
Workgroup #:	WG547466	**Analyst:**	ADC	**Run Date:**	11/18/2015 22:22
Collect Date:	11/13/2015 13:45	**Dilution:**	1	**File ID:**	17M016561
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.323	J	1.00	0.500	0.250

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	88.3		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	85	115	
1,2-Dichloroethane-d4	115	70	120	
Toluene-d8	110	85	120	
4-Bromofluorobenzene	108	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110950-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	47WW38-111315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	11/11/2015 17:53
Workgroup #:	WG547466	**Analyst:**	ADC	**Run Date:**	11/18/2015 22:42
Collect Date:	11/13/2015 14:55	**Dilution:**	1	**File ID:**	17M016562
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	114	70	120	
Toluene-d8	110	85	120	
4-Bromofluorobenzene	111	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110950-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	11/11/2015 17:53
Workgroup #:	WG547466	**Analyst:**	ADC	**Run Date:**	11/18/2015 18:04
Collect Date:	11/13/2015 00:01	**Dilution:**	1	**File ID:**	17M016548
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	112	70	120	
Toluene-d8	111	85	120	
4-Bromofluorobenzene	111	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110950-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW05-111315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	11/11/2015 17:53
Workgroup #:	WG547466	**Analyst:**	ADC	**Run Date:**	11/18/2015 19:23
Collect Date:	11/13/2015 08:00	**Dilution:**	1	**File ID:**	17M016552
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.183	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.93		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.42	J	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	17.2		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.848	J	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	210		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	111	70	120	
Toluene-d8	110	85	120	
4-Bromofluorobenzene	110	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110950-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW05MS-111315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	11/11/2015 17:53
Workgroup #:	WG547466	**Analyst:**	ADC	**Run Date:**	11/18/2015 16:45
Collect Date:	11/13/2015 08:00	**Dilution:**	1	**File ID:**	17M016544
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	20.8	Q	10.0	5.00	2.50
Benzene	71-43-2	18.5		1.00	0.250	0.125
Bromobenzene	108-86-1	19.2		1.00	0.250	0.125
Bromochloromethane	74-97-5	20.0		1.00	0.400	0.200
Bromodichloromethane	75-27-4	18.7		1.00	0.500	0.250
Bromoform	75-25-2	20.8		2.00	1.00	0.500
Bromomethane	74-83-9	21.8		2.00	1.00	0.500
2-Butanone	78-93-3	19.5		10.0	5.00	2.50
n-Butylbenzene	104-51-8	19.1		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	19.7		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	19.7		1.00	0.500	0.250
Carbon disulfide	75-15-0	7.12		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	17.9		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.1		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	18.9		1.00	0.500	0.250
Chloroethane	75-00-3	22.8		2.00	1.00	0.500
Chloroform	67-66-3	19.0		1.00	0.250	0.125
Chloromethane	74-87-3	15.8		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	19.9		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	20.0		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	18.7		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	18.6		1.00	0.500	0.250
Dibromomethane	74-95-3	19.1		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	20.2		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	20.2		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	19.3		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	17.1		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	18.4		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	21.3		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	19.9		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	34.0		1.00	0.500	0.250

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	18.2		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	18.4		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	19.1		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	20.2		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	19.3		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	18.6		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	18.1		1.00	0.500	0.250
Ethylbenzene	100-41-4	18.8		1.00	0.500	0.250
2-Hexanone	591-78-6	19.2	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	17.4		1.00	0.500	0.250
Isopropylbenzene	98-82-8	19.8		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	18.8		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	18.5	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	17.1		1.00	0.500	0.250
Naphthalene	91-20-3	17.7		1.00	0.400	0.200
n-Propylbenzene	103-65-1	20.2		1.00	0.250	0.125
Styrene	100-42-5	19.2		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	19.1		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	19.1		1.00	0.400	0.200
Tetrachloroethene	127-18-4	19.9		1.00	0.500	0.250
Toluene	108-88-3	18.8		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	17.9		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	19.0		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	19.0		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	18.2		1.00	0.500	0.250
Trichloroethene	79-01-6	205		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	19.5		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	18.4		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	18.9		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	19.2		1.00	0.500	0.250
Vinyl chloride	75-01-4	18.7		1.00	0.500	0.250
o-Xylene	95-47-6	19.6		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	39.4		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	85	115	
1,2-Dichloroethane-d4	111	70	120	
Toluene-d8	108	85	120	
4-Bromofluorobenzene	106	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110950-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW05MSD-111315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	11/11/2015 17:53
Workgroup #:	WG547466	**Analyst:**	ADC	**Run Date:**	11/18/2015 17:04
Collect Date:	11/13/2015 08:00	**Dilution:**	1	**File ID:**	17M016545
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	21.3	Q	10.0	5.00	2.50
Benzene	71-43-2	18.8		1.00	0.250	0.125
Bromobenzene	108-86-1	19.8		1.00	0.250	0.125
Bromochloromethane	74-97-5	20.1		1.00	0.400	0.200
Bromodichloromethane	75-27-4	19.0		1.00	0.500	0.250
Bromoform	75-25-2	21.1		2.00	1.00	0.500
Bromomethane	74-83-9	21.9		2.00	1.00	0.500
2-Butanone	78-93-3	20.5		10.0	5.00	2.50
n-Butylbenzene	104-51-8	19.8		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	20.4		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	20.6		1.00	0.500	0.250
Carbon disulfide	75-15-0	6.85		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	18.0		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.4		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	19.4		1.00	0.500	0.250
Chloroethane	75-00-3	23.0		2.00	1.00	0.500
Chloroform	67-66-3	19.2		1.00	0.250	0.125
Chloromethane	74-87-3	16.0		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	20.5		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	20.8		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	19.5		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	19.0		1.00	0.500	0.250
Dibromomethane	74-95-3	19.5		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	21.0		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	20.9		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	20.0		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	17.0		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	18.7		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	21.6		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	20.2		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	34.4		1.00	0.500	0.250

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	18.1		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	18.7		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	19.5		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	20.2		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	19.6		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	18.8		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	18.2		1.00	0.500	0.250
Ethylbenzene	100-41-4	19.2		1.00	0.500	0.250
2-Hexanone	591-78-6	19.4	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	18.2		1.00	0.500	0.250
Isopropylbenzene	98-82-8	20.0		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	19.5		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	19.3	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	17.3		1.00	0.500	0.250
Naphthalene	91-20-3	18.6		1.00	0.400	0.200
n-Propylbenzene	103-65-1	20.7		1.00	0.250	0.125
Styrene	100-42-5	19.6		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	19.4		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	19.8		1.00	0.400	0.200
Tetrachloroethene	127-18-4	20.1		1.00	0.500	0.250
Toluene	108-88-3	19.1		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	18.5		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	19.7		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	19.1		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	18.6		1.00	0.500	0.250
Trichloroethene	79-01-6	203		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	19.7		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	19.1		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	19.5		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	19.8		1.00	0.500	0.250
Vinyl chloride	75-01-4	18.7		1.00	0.500	0.250
o-Xylene	95-47-6	20.0		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	39.7		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	85	115	
1,2-Dichloroethane-d4	112	70	120	
Toluene-d8	108	85	120	
4-Bromofluorobenzene	110	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110950-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50SW06-111315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	11/11/2015 17:53
Workgroup #:	WG547466	**Analyst:**	ADC	**Run Date:**	11/18/2015 21:03
Collect Date:	11/13/2015 08:30	**Dilution:**	1	**File ID:**	17M016557
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	111	70	120	
Toluene-d8	109	85	120	
4-Bromofluorobenzene	110	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110950-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	GPW1-111315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	11/11/2015 17:53
Workgroup #:	WG547466	**Analyst:**	ADC	**Run Date:**	11/18/2015 21:23
Collect Date:	11/13/2015 08:45	**Dilution:**	1	**File ID:**	17M016558
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	113	70	120	
Toluene-d8	110	85	120	
4-Bromofluorobenzene	112	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110950-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW28-111315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	11/11/2015 17:53
Workgroup #:	WG547466	**Analyst:**	ADC	**Run Date:**	11/18/2015 21:43
Collect Date:	11/13/2015 09:45	**Dilution:**	1	**File ID:**	17M016559
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	85	115	
1,2-Dichloroethane-d4	115	70	120	
Toluene-d8	111	85	120	
4-Bromofluorobenzene	114	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110950-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	50WW16-111315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	11/11/2015 17:53
Workgroup #:	WG547466	**Analyst:**	ADC	**Run Date:**	11/18/2015 22:02
Collect Date:	11/13/2015 10:45	**Dilution:**	1	**File ID:**	17M016560
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.986	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	115	70	120	
Toluene-d8	111	85	120	
4-Bromofluorobenzene	112	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110950-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	LHSMW54-111315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	11/11/2015 17:53
Workgroup #:	WG547466	**Analyst:**	ADC	**Run Date:**	11/18/2015 22:22
Collect Date:	11/13/2015 13:45	**Dilution:**	1	**File ID:**	17M016561
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.323	J	1.00	0.500	0.250

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	88.3		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	85	115	
1,2-Dichloroethane-d4	115	70	120	
Toluene-d8	110	85	120	
4-Bromofluorobenzene	108	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110950-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	47WW38-111315	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	11/11/2015 17:53
Workgroup #:	WG547466	**Analyst:**	ADC	**Run Date:**	11/18/2015 22:42
Collect Date:	11/13/2015 14:55	**Dilution:**	1	**File ID:**	17M016562
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	114	70	120	
Toluene-d8	110	85	120	
4-Bromofluorobenzene	111	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L15110950-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS17
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	11/11/2015 17:53
Workgroup #:	WG547466	**Analyst:**	ADC	**Run Date:**	11/18/2015 18:04
Collect Date:	11/13/2015 00:01	**Dilution:**	1	**File ID:**	17M016548
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	112	70	120	
Toluene-d8	111	85	120	
4-Bromofluorobenzene	111	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L15110950
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS17 Dataset: 111115

Analyst1: ADC Analyst2: NA

Method: 8260B SOP: MSV01 Rev: 23

Method: 5035/5030B/ 5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD72995 Surrogate Standard: STD72996

CCV: STD73343 LCS: STD73034 MS/MSD: STD73034

Column 1 ID: RTX-VMS Column 2 ID: NA

Workgroups: WG546498 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
17M016364	TEST BFB	NA	1	1	STD72715	11/11/15 13:32
17M016366	WG546498-01 50ng BFB STD	NA	1	1	STD72715	11/11/15 14:17
17M016367	WG546498-02 50ug/L CCV STD	NA	1	1	STD73185	11/11/15 14:34
17M016368	RINSE	NA	1	1	STD73185	11/11/15 14:54
17M016369	WG546498-03 0.3ug/L STD	NA	1	1	STD73185	11/11/15 15:14
17M016370	WG546498-04 0.4ug/L STD	NA	1	1	STD73185	11/11/15 15:34
17M016371	WG546498-05 1.0ug/L STD	NA	1	1	STD73185	11/11/15 15:54
17M016372	WG546498-06 2.0ug/L STD 8260	NA	1	1	STD73185	11/11/15 16:14
17M016373	WG546498-07 5.0ug/L STD 8260	NA	1	1	STD73185	11/11/15 16:33
17M016374	WG546498-08 20.0ug/L STD 8260	NA	1	1	STD73185	11/11/15 16:53
17M016375	WG546498-09 100.0ug/L STD 8260	NA	1	1	STD73185	11/11/15 17:13
17M016376	WG546498-10 200.0ug/L STD 8260	NA	1	1	STD73185	11/11/15 17:33
17M016377	WG546498-11 300.0ug/L STD 8260	NA	1	1	STD73185	11/11/15 17:53
17M016378	RINSE	NA	1	1		11/11/15 18:13
17M016379	WG546498-12 50.0ug/L ALT 8260	NA	1	1	STD73387	11/11/15 18:33

Approved: November 16, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS17 Dataset: 111815
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 22
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD73495 Surrogate Standard: STD73496
CCV: STD73185 LCS: STD73387 MS/MSD: NA

Column 1 ID: RTX-VMS Column 2 ID: NA
Workgroups: WG547466

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
17M016537	WG547460-01 50ng BFB STD	NA	1	1	STD72715	11/18/15 14:26
17M016538	WG547460-02 50ug/L CCV STD	NA	1	1	STD73185	11/18/15 14:45
17M016539	RINSE	NA	1	1		11/18/15 15:05
17M016540	WG547466-01 BLK 8260	NA	1	1		11/18/15 15:25
17M016541	WG547466-02 20ug/L LCS 8260	NA	1	1	STD73387	11/18/15 15:45
17M016542	L15110946-02 A MS 826-SPE	NA	1	1	STD73387	11/18/15 16:05
17M016543	L15110946-03 A MSD 826-SPE	NA	1	1	STD73387	11/18/15 16:25
17M016544	L15110950-02 A MS 826-LOW	NA	1	1	STD73387	11/18/15 16:45
17M016545	L15110950-03 A MSD 826-LOW	NA	1	1	STD73387	11/18/15 17:04
17M016546	L15110405-01 5,000,000X 8260 0.00g	NA	11	500000		11/18/15 17:24
17M016547	RINSE	NA	1	1		11/18/15 17:44
17M016548	L15110950-10 A 826-LOW	<2	1	1		11/18/15 18:04
17M016549	L15110946-04 A 826-SPE	5	1	1		11/18/15 18:24
17M016550	L15110693-01 B 8260	11	1	1		11/18/15 18:44
17M016551	L15110946-01 A 826-SPE	NA	1	1		11/18/15 19:04
17M016552	L15110950-01 A 826-LOW	NA	1	1		11/18/15 19:23
17M016553	L15110943-03 A 826-LOW	<2	1	1		11/18/15 19:43
17M016554	L15110943-05 A 826-LOW	<2	1	1		11/18/15 20:03
17M016555	L15110943-07 A 826-LOW	<2	1	1		11/18/15 20:23
17M016556	L15110943-09 A 826-LOW	<2	1	1		11/18/15 20:43
17M016557	L15110950-04 826-LOW	<2	1	1		11/18/15 21:03
17M016558	L15110950-05 826-LOW	<2	1	1		11/18/15 21:23
17M016559	L15110950-06 826-LOW	<2	1	1		11/18/15 21:43
17M016560	L15110950-07 826-LOW	<2	1	1		11/18/15 22:02
17M016561	L15110950-08 826-LOW	<2	1	1		11/18/15 22:22
17M016562	L15110950-09 826-LOW	<2	1	1		11/18/15 22:42
17M016563	L15110943-01 826-LOW	<2	1	1		11/18/15 23:02
17M016564	RINSE	NA	1	1		11/18/15 23:22
17M016565	RINSE	NA	1	1		11/18/15 23:42
17M016566	RINSE	NA	1	1		11/19/15 00:02

Approved: November 30, 2015

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Microbac Laboratories Inc.

Data Checklist

Date: 11-NOV-2015
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS17
Curve Workgroup: WG546498
Runlog ID: 71668
Analytical Workgroups:

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
13-NOV-2015

Secondary Reviewer:
16-NOV-2015

CHECKLIST1 - Modified 03/05/2008
Generated: NOV-16-2015 09:59:26

Microbac Laboratories Inc.

Data Checklist

Date: 18-NOV-2015
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS17
Curve Workgroup: NA
Runlog ID: 71963
Analytical Workgroups: WG547466

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
30-NOV-2015

Secondary Reviewer:
30-NOV-2015

CHECKLIST1 - Modified 03/05/2008
Generated: NOV-30-2015 15:34:47

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG547466

Login Number: L15110950

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
50WW05-111315	01	11/13/15					11/18/2015	5.5	14		11/18/15	5.5	14	
50WW05MS-111315	02	11/13/15					11/18/2015	5.4	14		11/18/15	5.4	14	
50WW05MSD-111315	03	11/13/15					11/18/2015	5.4	14		11/18/15	5.4	14	
50SW06-111315	04	11/13/15					11/18/2015	5.5	14		11/18/15	5.5	14	
GPW1-111315	05	11/13/15					11/18/2015	5.5	14		11/18/15	5.5	14	
50WW28-111315	06	11/13/15					11/18/2015	5.5	14		11/18/15	5.5	14	
50WW16-111315	07	11/13/15					11/18/2015	5.5	14		11/18/15	5.5	14	
LHSMW54-111315	08	11/13/15					11/18/2015	5.4	14		11/18/15	5.4	14	
47WW38-111315	09	11/13/15					11/18/2015	5.3	14		11/18/15	5.3	14	
TRIP BLANK	10	11/13/15					11/18/2015	5.8	14		11/18/15	5.8	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4522950
Report generated 11/30/2015 15:33

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L15110950
Instrument Id: HPMS17
Workgroup (AAB#): WG547466

Method: 8260
CAL ID: HPMS17-11-NOV-15
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L15110950-01	1.00	01	111	104	110	110
L15110950-02	1.00	01	111	107	106	108
L15110950-03	1.00	01	112	107	110	108
L15110950-04	1.00	01	111	103	110	109
L15110950-05	1.00	01	113	104	112	110
L15110950-06	1.00	01	115	105	114	111
L15110950-07	1.00	01	115	104	112	111
L15110950-08	1.00	01	115	105	108	110
L15110950-09	1.00	01	114	104	111	110
L15110950-10	1.00	01	112	104	111	111
WG547466-01	1.00	01	110	103	111	110
WG547466-02	1.00	01	110	108	106	109

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4522966
Report generated: 11/30/2015 15:33

METHOD BLANK SUMMARY

Login Number: L15110950
Blank File ID: 17M016540
Prep Date: 11/18/15 15:25
Analyzed Date: 11/18/15 15:25
Analyst: ADC

Work Group: WG547466
Blank Sample ID: WG547466-01
Instrument ID: HPMS17
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG547466-02	17M016541	11/18/15 15:45	01
50WW05MS-111315	L15110950-02	17M016544	11/18/15 16:45	01
50WW05MSD-111315	L15110950-03	17M016545	11/18/15 17:04	01
TRIP BLANK	L15110950-10	17M016548	11/18/15 18:04	01
50WW05-111315	L15110950-01	17M016552	11/18/15 19:23	01
50SW06-111315	L15110950-04	17M016557	11/18/15 21:03	01
GPW1-111315	L15110950-05	17M016558	11/18/15 21:23	01
50WW28-111315	L15110950-06	17M016559	11/18/15 21:43	01
50WW16-111315	L15110950-07	17M016560	11/18/15 22:02	01
LHSMW54-111315	L15110950-08	17M016561	11/18/15 22:22	01
47WW38-111315	L15110950-09	17M016562	11/18/15 22:42	01

Report Name: BLANK_SUMMARY
PDF File ID: 4522951
Report generated 11/30/2015 15:33

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L15110950 Prep Date: 11/18/15 15:25 Sample ID: WG547466-01
Instrument ID: HPMS17 Run Date: 11/18/15 15:25 Prep Method: 5030B/5030C/503
File ID: 17M016540 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG547466 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS17-11-NOV-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 4522952
30-NOV-2015 15:33

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L15110950 Prep Date: 11/18/15 15:25 Sample ID: WG547466-01
Instrument ID: HPMS17 Run Date: 11/18/15 15:25 Prep Method: 5030B/5030C/503
File ID: 17M016540 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG547466 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS17-11-NOV-15

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	103	85 - 115	PASS
1,2-Dichloroethane-d4	110	70 - 120	PASS
Toluene-d8	110	85 - 120	PASS
4-Bromofluorobenzene	111	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4522952
30-NOV-2015 15:33

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15110950 | Run Date: 11/18/2015 | Sample ID: WG547466-02
Instrument ID: HPMS17 | Run Time: 15:45 | Prep Method: 5030B/5030C/503
File ID: 17M016541 | Analyst: ADC | Method: 8260B
Workgroup (AAB#): WG547466 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD73387 | Cal ID: HPMS17-11-NOV-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	20.0	100	40 - 140	
Benzene	20.0	19.5	97.3	80 - 120	
Bromobenzene	20.0	19.4	97.2	75 - 125	
Bromochloromethane	20.0	20.5	102	65 - 130	
Bromodichloromethane	20.0	19.4	97.1	75 - 120	
Bromoform	20.0	20.9	104	70 - 130	
Bromomethane	20.0	22.2	111	30 - 145	
2-Butanone	20.0	19.4	97.1	30 - 150	
n-Butylbenzene	20.0	20.2	101	70 - 135	
sec-Butylbenzene	20.0	20.9	104	70 - 125	
tert-Butylbenzene	20.0	20.7	104	70 - 130	
Carbon disulfide	20.0	6.63	33.2	35 - 160	*
Carbon tetrachloride	20.0	19.9	99.5	65 - 140	
Chlorobenzene	20.0	21.1	106	80 - 120	
Chlorodibromomethane	20.0	19.1	95.5	60 - 135	
Chloroethane	20.0	24.3	121	60 - 135	
Chloroform	20.0	19.9	99.4	65 - 135	
Chloromethane	20.0	16.4	82.2	40 - 125	
2-Chlorotoluene	20.0	20.4	102	75 - 125	
4-Chlorotoluene	20.0	20.5	102	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	17.9	89.5	50 - 130	
1,2-Dibromoethane	20.0	18.6	93.0	80 - 120	
Dibromomethane	20.0	19.1	95.7	75 - 125	
1,2-Dichlorobenzene	20.0	20.3	102	70 - 120	
1,3-Dichlorobenzene	20.0	20.8	104	75 - 125	
1,4-Dichlorobenzene	20.0	19.7	98.7	75 - 125	
Dichlorodifluoromethane	20.0	19.6	98.0	30 - 155	
1,1-Dichloroethane	20.0	19.2	96.2	70 - 135	
1,2-Dichloroethane	20.0	19.7	98.5	70 - 130	
1,1-Dichloroethene	20.0	20.4	102	70 - 130	
cis-1,2-Dichloroethene	20.0	18.9	94.7	70 - 125	
trans-1,2-Dichloroethene	20.0	18.9	94.3	60 - 140	
1,2-Dichloropropane	20.0	19.3	96.4	75 - 125	
1,3-Dichloropropane	20.0	19.5	97.5	75 - 125	
2,2-Dichloropropane	20.0	21.2	106	70 - 135	
cis-1,3-Dichloropropene	20.0	19.9	99.7	70 - 130	
trans-1,3-Dichloropropene	20.0	18.8	93.9	55 - 140	
1,1-Dichloropropene	20.0	19.3	96.6	75 - 130	
Ethylbenzene	20.0	20.1	100	75 - 125	
2-Hexanone	20.0	18.3	91.3	55 - 130	
Hexachlorobutadiene	20.0	18.7	93.3	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4522953
Report generated: 11/30/2015 15:33

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L15110950 Run Date: 11/18/2015 Sample ID: WG547466-02
Instrument ID: HPMS17 Run Time: 15:45 Prep Method: 5030B/5030C/503
File ID: 17M016541 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG547466 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD73387 Cal ID: HPMS17 - 11-NOV-15

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	21.2	106	75 - 125	
p-Isopropyltoluene	20.0	19.8	98.8	75 - 130	
4-Methyl-2-pentanone	20.0	17.9	89.6	60 - 135	
Methylene chloride	20.0	17.6	87.9	55 - 140	
Naphthalene	20.0	17.0	85.1	55 - 140	
n-Propylbenzene	20.0	20.9	105	70 - 130	
Styrene	20.0	20.0	100	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	19.7	98.7	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	18.3	91.4	65 - 130	
Tetrachloroethene	20.0	20.4	102	45 - 150	
Toluene	20.0	19.9	99.4	75 - 120	
1,2,3-Trichlorobenzene	20.0	17.7	88.7	55 - 140	
1,2,4-Trichlorobenzene	20.0	19.3	96.4	65 - 135	
1,1,1-Trichloroethane	20.0	20.3	101	65 - 130	
1,1,2-Trichloroethane	20.0	18.3	91.4	75 - 125	
Trichloroethene	20.0	19.6	98.0	70 - 125	
Trichlorofluoromethane	20.0	21.8	109	60 - 145	
1,2,3-Trichloropropane	20.0	17.5	87.6	75 - 125	
1,2,4-Trimethylbenzene	20.0	19.6	97.8	75 - 130	
1,3,5-Trimethylbenzene	20.0	19.9	99.5	75 - 130	
Vinyl chloride	20.0	20.1	101	50 - 145	
o-Xylene	20.0	20.9	104	80 - 120	
m-,p-Xylene	40.0	41.6	104	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	108	85 - 115	PASS
1,2-Dichloroethane-d4	110	70 - 120	PASS
Toluene-d8	109	85 - 120	PASS
4-Bromofluorobenzene	106	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4522953
Report generated: 11/30/2015 15:33

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L15110950 Cal ID: HPMS17- 11-NOV-15 Worknum: WG547466

Instrument ID: HPMS17 Contract #: Prep Method: 5030B/5030C/

Parent ID: L15110950-01 File ID: 17M016552 Dil: 1 Method: 5035A

Sample ID: L15110950-02 MS File ID: 17M016544 Dil: 1 Matrix: 8260B

Sample ID: L15110950-03 MSD File ID: 17M016545 Dil: 1 Units: Water ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,1,1,2-Tetrachloroethane	U	20.0	19.1	95.3	20.0	19.4	97.2	2.00	80 - 130	30	
1,1,1-Trichloroethane	U	20.0	19.0	94.8	20.0	19.1	95.5	0.673	65 - 130	30	
1,1,2,2-Tetrachloroethane	U	20.0	19.1	95.5	20.0	19.8	99.2	3.79	65 - 130	30	
1,1,2-Trichloroethane	U	20.0	18.2	91.2	20.0	18.6	92.9	1.87	75 - 125	30	
1,1-Dichloroethane	0.183	20.0	18.4	91	20.0	18.7	92.7	1.90	70 - 135	30	
1,1-Dichloroethene	1.42	20.0	19.9	92.4	20.0	20.2	93.7	1.27	70 - 130	30	
1,1-Dichloropropene	U	20.0	18.1	90.7	20.0	18.2	91.1	0.380	75 - 130	30	
1,2,3-Trichlorobenzene	U	20.0	17.9	89.3	20.0	18.5	92.7	3.75	55 - 140	30	
1,2,3-Trichloropropane	U	20.0	18.4	91.9	20.0	19.1	95.5	3.79	75 - 125	30	
1,2,4-Trichlorobenzene	U	20.0	19.0	94.9	20.0	19.7	98.6	3.87	65 - 135	30	
1,2,4-Trimethylbenzene	U	20.0	18.9	94.6	20.0	19.5	97.6	3.17	75 - 130	30	
1,2-Dibromo-3-chloropropane	U	20.0	18.7	93.4	20.0	19.5	97.7	4.45	50 - 130	30	
1,2-Dibromoethane	U	20.0	18.6	92.8	20.0	19.0	95.1	2.42	80 - 120	30	
1,2-Dichlorobenzene	U	20.0	20.2	101	20.0	21.0	105	3.92	70 - 120	30	
1,2-Dichloroethane	1.93	20.0	21.3	96.7	20.0	21.6	98.4	1.55	70 - 130	30	
1,2-Dichloropropane	U	20.0	18.4	92.2	20.0	18.7	93.7	1.63	75 - 125	30	
1,3,5-Trimethylbenzene	U	20.0	19.2	95.8	20.0	19.8	98.9	3.24	75 - 130	30	
1,3-Dichlorobenzene	U	20.0	20.2	101	20.0	20.9	105	3.64	75 - 125	30	
1,3-Dichloropropane	U	20.0	19.1	95.5	20.0	19.5	97.6	2.20	75 - 125	30	
1,4-Dichlorobenzene	U	20.0	19.3	96.6	20.0	20.0	100	3.46	75 - 125	30	
2,2-Dichloropropane	U	20.0	20.2	101	20.0	20.2	101	0.274	70 - 135	30	
2-Butanone	U	20.0	19.5	97.5	20.0	20.5	103	5.08	30 - 150	30	
2-Chlorotoluene	U	20.0	19.9	99.7	20.0	20.5	103	2.89	75 - 125	30	
2-Hexanone	U	20.0	19.2	95.9	20.0	19.4	97.2	1.27	55 - 130	30	
4-Chlorotoluene	U	20.0	20.0	100	20.0	20.8	104	3.62	75 - 130	30	
4-Methyl-2-pentanone	U	20.0	18.5	92.5	20.0	19.3	96.3	3.97	60 - 135	30	
Acetone	U	20.0	20.8	104	20.0	21.3	107	2.43	40 - 140	30	
Benzene	U	20.0	18.5	92.5	20.0	18.8	93.9	1.49	80 - 120	30	
Bromobenzene	U	20.0	19.2	95.8	20.0	19.8	99.2	3.53	75 - 125	30	
Bromochloromethane	U	20.0	20.0	100	20.0	20.1	101	0.647	65 - 130	30	
Bromodichloromethane	U	20.0	18.7	93.5	20.0	19.0	95.2	1.78	75 - 120	30	
Bromoform	U	20.0	20.8	104	20.0	21.1	105	1.29	70 - 130	30	
Bromomethane	U	20.0	21.8	109	20.0	21.9	109	0.534	30 - 145	30	
Carbon disulfide	U	20.0	7.12	35.6	20.0	6.85	34.3	3.73	35 - 160	30	*
Carbon tetrachloride	U	20.0	17.9	89.3	20.0	18.0	89.9	0.574	65 - 140	30	
Chlorobenzene	U	20.0	20.1	100	20.0	20.4	102	1.69	80 - 120	30	
Chloroethane	U	20.0	22.8	114	20.0	23.0	115	1.07	60 - 135	30	
Chloroform	U	20.0	19.0	95.2	20.0	19.2	96.2	1.05	65 - 135	30	
Chloromethane	U	20.0	15.8	79.2	20.0	16.0	80	1.05	40 - 125	30	
cis-1,2-Dichloroethene	17.2	20.0	34.0	83.9	20.0	34.4	85.6	1.02	70 - 125	30	
cis-1,3-Dichloropropene	U	20.0	19.3	96.7	20.0	19.6	98.1	1.45	70 - 130	30	

MS_MSD - Modified 03/06/2008
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Report generated 11/30/2015 15:33

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L15110950 Cal ID: HPMS17 11-NOV-15 Worknum: WG547466

Instrument ID: HPMS17 Contract #: Prep Method: 5030B/5030C/

Parent ID: L15110950-01 File ID: 17M016552 Dil: 1 Method: 5035A

Sample ID: L15110950-02 MS File ID: 17M016544 Dil: 1 Matrix: 8260B

Sample ID: L15110950-03 MSD File ID: 17M016545 Dil: 1 Units: Water ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chlorodibromomethane	U	20.0	18.9	94.6	20.0	19.4	97	2.53	60 - 135	30	
Dibromomethane	U	20.0	19.1	95.5	20.0	19.5	97.4	1.99	75 - 125	30	
Dichlorodifluoromethane	U	20.0	17.1	85.6	20.0	17.0	85.2	0.397	30 - 155	30	
Ethylbenzene	U	20.0	18.8	94	20.0	19.2	96	2.17	75 - 125	30	
Hexachlorobutadiene	U	20.0	17.4	87.2	20.0	18.2	90.9	4.18	50 - 140	30	
Isopropylbenzene	U	20.0	19.8	99	20.0	20.0	100	0.987	75 - 125	30	
m-,p-Xylene	U	40.0	39.4	98.5	40.0	39.7	99.2	0.737	75 - 130	30	
Methylene chloride	U	20.0	17.1	85.3	20.0	17.3	86.3	1.22	55 - 140	30	
n-Butylbenzene	U	20.0	19.1	95.7	20.0	19.8	99.1	3.44	70 - 135	30	
n-Propylbenzene	U	20.0	20.2	101	20.0	20.7	103	2.64	70 - 130	30	
Naphthalene	U	20.0	17.7	88.3	20.0	18.6	92.8	4.99	55 - 140	30	
o-Xylene	U	20.0	19.6	97.9	20.0	20.0	100	2.14	80 - 120	30	
p-Isopropyltoluene	U	20.0	18.8	94.1	20.0	19.5	97.5	3.63	75 - 130	30	
sec-Butylbenzene	U	20.0	19.7	98.6	20.0	20.4	102	3.28	70 - 125	30	
Styrene	U	20.0	19.2	95.8	20.0	19.6	98	2.27	65 - 135	30	
tert-Butylbenzene	U	20.0	19.7	98.7	20.0	20.6	103	4.21	70 - 130	30	
Tetrachloroethene	0.848	20.0	19.9	95.1	20.0	20.1	96.5	1.40	45 - 150	30	
Toluene	U	20.0	18.8	93.9	20.0	19.1	95.5	1.71	75 - 120	30	
trans-1,2-Dichloroethene	U	20.0	18.2	91.1	20.0	18.1	90.4	0.679	60 - 140	30	
trans-1,3-Dichloropropene	U	20.0	18.6	92.8	20.0	18.8	94.2	1.48	55 - 140	30	
Trichloroethene	210	20.0	205	-26.7	20.0	203	-32.3	0.546	70 - 125	30	*
Trichlorofluoromethane	U	20.0	19.5	97.5	20.0	19.7	98.4	0.885	60 - 145	30	
Vinyl chloride	U	20.0	18.7	93.7	20.0	18.7	93.6	0.115	50 - 145	30	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4522954
Report generated 11/30/2015 15:33

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15110950
Instrument: HPMS17
Analyst: ADC
Workgroup: WG546498

Tune ID: WG546498-01
Run Date: 11/11/2015
Run Time: 14:17
File ID: 17M016366
Cal ID: HPMS17 - 11-NOV-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	17.7	8344	PASS
75.0	95.0	30.0	60.0	48.1	22677	PASS
95.0	95.0	100	100	100	47164	PASS
96.0	95.0	5.00	9.00	6.75	3185	PASS
173	174	0	2.00	0.643	273	PASS
174	95.0	50.0	100	90.1	42488	PASS
175	174	5.00	9.00	7.71	3275	PASS
176	174	95.0	101	97.8	41568	PASS
177	176	5.00	9.00	6.69	2779	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG546498-02	STD-CCV	01	11/11/2015 14:34	
WG546498-03	STD	01	11/11/2015 15:14	
WG546498-04	STD	01	11/11/2015 15:34	
WG546498-05	STD	01	11/11/2015 15:54	
WG546498-06	STD	01	11/11/2015 16:14	
WG546498-07	STD	01	11/11/2015 16:33	
WG546498-08	STD	01	11/11/2015 16:53	
WG546498-09	STD	01	11/11/2015 17:13	
WG546498-10	STD	01	11/11/2015 17:33	
WG546498-11	STD	01	11/11/2015 17:53	
WG546498-12	SSCV	01	11/11/2015 18:33	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4522956
Report generated 11/30/2015 15:33

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L15110950
Instrument: HPMS17
Analyst: ADC
Workgroup: WG547460

Tune ID: WG547460-01
Run Date: 11/18/2015
Run Time: 14:26
File ID: 17M016537
Cal ID: HPMS17 - 11-NOV-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	18.0	7173	PASS
75.0	95.0	30.0	60.0	49.5	19685	PASS
95.0	95.0	100	100	100	39752	PASS
96.0	95.0	5.00	9.00	6.51	2587	PASS
173	174	0	2.00	0.827	308	PASS
174	95.0	50.0	100	93.7	37237	PASS
175	174	5.00	9.00	7.31	2721	PASS
176	174	95.0	101	96.2	35824	PASS
177	176	5.00	9.00	6.50	2328	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG547460-02	CCV	01	11/18/2015 14:45	
WG547466-01	BLANK	01	11/18/2015 15:25	
WG547466-02	LCS	01	11/18/2015 15:45	
L15110950-02	50WW05MS-111315	01	11/18/2015 16:45	
L15110950-03	50WW05MSD-111315	01	11/18/2015 17:04	
L15110950-10	TRIP BLANK	01	11/18/2015 18:04	
L15110950-01	50WW05-111315	01	11/18/2015 19:23	
L15110950-04	50SW06-111315	01	11/18/2015 21:03	
L15110950-05	GPW1-111315	01	11/18/2015 21:23	
L15110950-06	50WW28-111315	01	11/18/2015 21:43	
L15110950-07	50WW16-111315	01	11/18/2015 22:02	
L15110950-08	LHSMW54-111315	01	11/18/2015 22:22	
L15110950-09	47WW38-111315	01	11/18/2015 22:42	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4522956
Report generated 11/30/2015 15:33

Response Factor Report HPMS17

Method Path : D:\MassHunter\GCMS\1\methods\
Method File : 8260_VMS.M
Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
Last Update : Thu Nov 12 09:48:27 2015
Response Via : Initial Calibration
Curve: WG546498
Calibration Files
0.3 =17M016369.D 0.4 =17M016370.D 1 =17M016371.D 2 =17M016372.D 5 =17M016373.D 20 =17M016374.D 50 =17M016367.D
100 =17M016375.D 200 =17M016376.D 300 =17M016377.D

		Compound	0.3	0.4	1	2	5	20	50	100	200	300	Avg	%RSD	Linear	Quadratic
															R^2	
1)	I	Fluorobenzene	----------ISTD----------													
2)	T	Dichlorodifluo...			0.304	0.313	0.357	0.359	0.367	0.386	0.374	0.385	0.356	8.72		
3)	P	Chloromethane			0.416	0.390	0.413	0.367	0.354	0.370	0.356	0.364	0.379	6.53		
4)	C	Vinyl Chloride		0.347	0.309	0.317	0.362	0.333	0.331	0.350	0.343	0.352	0.338	5.08#		
5)	T	1,3-Butadiene			0.255	0.224	0.215	0.204	0.205	0.209	0.210	0.217	0.217	7.55		
6)	T	Bromomethane			0.195	0.195	0.194	0.164	0.156	0.169	0.172	0.183	0.178	8.61		
7)	T	Chloroethane			0.205	0.184	0.201	0.172	0.178	0.151	0.145	0.147	0.173	13.74		
8)	T	Trichlorofluor...		0.446	0.403	0.411	0.454	0.406	0.405	0.412	0.284	0.292	0.390	15.58		0.992
9)	T	Diethyl ether			0.194	0.218	0.215	0.200	0.175	0.194	0.196	0.205	0.200	6.77		
10)	C	1,1-Dichloroet...		0.386	0.369	0.381	0.434	0.387	0.385	0.401	0.384	0.406	0.392	4.85#		
11)	T	Carbon Disulfide		0.997	0.810	0.781	0.811	0.782	0.803	0.808	0.805	0.843	0.827	8.04		
12)	T	1,1,2-Trichlor...		0.233	0.230	0.238	0.272	0.237	0.242	0.250	0.237	0.252	0.243	5.36		
13)	T	Iodomethane											0.000	-1.00		
14)	T	Acrolein					0.032	0.026	0.021	0.026	0.027	0.028	0.027	12.92		
15)	T	Methylene Chlo...			0.355	0.317	0.329	0.268	0.252	0.267	0.262	0.273	0.290	13.00		
16)	T	Acetone					0.064	0.054	0.040	0.047	0.049	0.053	0.051	15.38	0.993	
17)	T	trans-1,2-Dich...		0.270	0.254	0.248	0.278	0.251	0.242	0.254	0.252	0.261	0.257	4.33		
18)	T	Methyl acetate	0.172	0.111	0.153	0.118	0.144	0.143	0.126	0.146	0.153	0.163	0.143	13.64		
19)	T	Methyl Tert Bu...		0.643	0.635	0.653	0.758	0.648	0.570	0.651	0.646	0.682	0.654	7.52		
20)	P	1,1-Dichloroet...		0.489	0.465	0.479	0.547	0.484	0.474	0.494	0.485	0.501	0.491	4.81		
21)	T	Acrylonitrile				0.075	0.075	0.068	0.057	0.064	0.067	0.070	0.068	9.16		
22)	T	Vinyl Acetate					0.018	0.025	0.026	0.030	0.032	0.035	0.028	21.73	0.993	
23)	T	cis-1,2-Dichlo...		0.347	0.275	0.285	0.321	0.285	0.274	0.286	0.284	0.295	0.295	8.21		
24)	T	2,2-Dichloropr...		0.392	0.314	0.325	0.376	0.354	0.389	0.390	0.379	0.387	0.367	8.09		
25)	T	Cyclohexane		0.471	0.474	0.483	0.483	0.451	0.467	0.469	0.469	0.487	0.473	2.32		
26)	T	Bromochloromet...			0.155	0.163	0.192	0.172	0.165	0.179	0.178	0.186	0.174	7.21		
27)	C	Chloroform	0.563	0.544	0.449	0.466	0.526	0.461	0.447	0.470	0.462	0.476	0.486	8.59#		
28)	T	Carbon Tetrach...		0.344	0.346	0.370	0.418	0.372	0.371	0.393	0.385	0.401	0.378	6.46		
29)	S	Dibromofluorom...					0.269	0.248	0.257	0.261	0.248		0.256	3.37		
30)	T	1,1,1-Trichlor...		0.447	0.402	0.422	0.480	0.410	0.405	0.426	0.418	0.431	0.427	5.68		
31)	T	1,1-Dichloropr...		0.360	0.339	0.354	0.404	0.349	0.351	0.366	0.359	0.373	0.362	5.11		
32)	T	2-Butanone					0.086	0.084	0.068	0.081	0.084	0.091	0.082	9.16		
33)	T	Benzene		1.123	1.044	1.052	1.185	1.047	1.027	1.066	1.052	1.075	1.074	4.61		
34)	S	1,2-Dichloroet...					0.265	0.239	0.239	0.248	0.240		0.246	4.59		
35)	T	1,2-Dichloroet...		0.311	0.303	0.323	0.369	0.323	0.298	0.326	0.322	0.335	0.323	6.44		
36)	T	Methylcyclohexane	0.633	0.558	0.479	0.486	0.486	0.450	0.478	0.476	0.479	0.499	0.502	10.67		
37)	T	Trichloroethene		0.313	0.290	0.289	0.325	0.287	0.283	0.298	0.294	0.305	0.298	4.64		
38)	T	Dibromomethane		0.177	0.151	0.156	0.178	0.154	0.140	0.157	0.157	0.165	0.159	7.63		
39)	C	1,2-Dichloropr...		0.289	0.282	0.293	0.332	0.290	0.281	0.297	0.293	0.302	0.295	5.19#		

40)	T	Bromodichlorom...		0.365	0.338	0.361	0.408	0.361	0.347	0.372	0.370	0.382	0.367	5.53
41)	T	1,4-Dioxane						0.001	0.002	0.002	0.002	0.002	0.002	14.12
42)	T	2-Chloroethyl ...			0.144	0.146	0.157	0.152	0.133	0.147	0.152	0.162	0.149	5.95
43)	T	cis-1,3-Dichlo...		0.407	0.400	0.415	0.484	0.432	0.416	0.444	0.442	0.456	0.433	6.17
44)	T	4-Methyl-2-Pen...					0.082	0.074	0.058	0.071	0.076	0.080	0.073	11.50
45)	T	trans-1,3-Dich...		0.344	0.340	0.356	0.414	0.370	0.348	0.383	0.384	0.396	0.370	6.91
46)	I	Chlorobenzene-d5	----------ISTD----------											
47)	S	Toluene-d8					1.349	1.225	1.331	1.300	1.238		1.289	4.28
48)	C	Toluene		1.641	1.494	1.580	1.811	1.538	1.544	1.579	1.529	1.538	1.584	5.98#
49)	T	Tetrachloroethene		0.450	0.402	0.416	0.471	0.403	0.414	0.426	0.422	0.438	0.427	5.32
50)	T	1,1,2-Trichlor...		0.352	0.286	0.290	0.334	0.279	0.254	0.282	0.282	0.292	0.295	10.17
51)	T	Dibromochlorom...		0.363	0.356	0.366	0.425	0.372	0.351	0.389	0.393	0.408	0.380	6.59
52)	T	1,3-Dichloropr...		0.460	0.454	0.472	0.539	0.457	0.423	0.464	0.463	0.475	0.467	6.58
53)	T	1,2-Dibromoethane		0.294	0.287	0.296	0.333	0.283	0.260	0.289	0.289	0.301	0.292	6.56
54)	T	2-Hexanone				0.212	0.203	0.188	0.151	0.179	0.190	0.202	0.189	10.69
55)	P	Chlorobenzene		1.044	0.969	1.007	1.137	0.988	0.993	1.028	1.015	1.006	1.021	4.78
56)	T	1-Chlorohexane			0.124	0.110	0.104	0.095	0.103	0.100	0.101	0.102	0.105	8.37
57)	C	Ethylbenzene		0.576	0.532	0.535	0.614	0.535	0.542	0.561	0.552	0.554	0.556	4.68#
58)	T	1,1,1,2-Tetrac...		0.363	0.353	0.373	0.425	0.371	0.364	0.383	0.383	0.384	0.378	5.49
59)	T	m-,p-Xylene		0.672	0.629	0.657	0.754	0.655	0.662	0.681	0.657	0.632	0.667	5.52
60)	T	o-Xylene		0.655	0.625	0.637	0.741	0.637	0.642	0.667	0.662	0.654	0.658	5.15
61)	T	Styrene		1.087	1.036	1.079	1.220	1.064	1.063	1.110	1.105	1.073	1.093	4.81
62)	P	Bromoform		0.220	0.219	0.242	0.283	0.248	0.225	0.263	0.274	0.281	0.251	10.31
63)	T	Isopropylbenzene		1.787	1.651	1.716	1.956	1.683	1.687	1.735	1.660	1.555	1.714	6.46
64)	I	1,4-Dichlorobenzen...	----------ISTD----------											
65)	T	1,3,5-Trimethy...		2.902	2.679	2.778	3.133	2.629	2.726	2.724	2.598	2.469	2.737	6.97
66)	S	p-Bromofluorob...					0.871	0.809	0.896	0.887	0.859		0.864	3.95
67)	T	Bromobenzene	0.938	0.870	0.817	0.818	0.951	0.806	0.806	0.838			0.856	6.88
68)	T	n-Propylbenzene		3.686	3.447	3.602	4.131	3.513	3.654	3.611	3.354	3.160	3.573	7.48
69)	P	1,1,2,2-Tetrac...		0.678	0.590	0.605	0.717	0.595	0.534	0.609	0.613	0.643	0.621	8.57
70)	T	2-Chlorotoluene		2.275	2.115	2.156	2.497	2.102	2.157	2.191	2.115	2.058	2.185	6.05
71)	T	1,2,3-Trichlor...			0.197	0.184	0.202	0.158	0.143	0.164	0.164	0.170	0.173	11.67
72)	T	trans-1,4-Dich...		0.186	0.136	0.151	0.148	0.131	0.120	0.136	0.140	0.144	0.144	12.70
73)	T	1,2,4-Trimethy...		2.899	2.683	2.733	3.139	2.641	2.725	2.723	2.603	2.448	2.733	7.10
74)	T	4-Chlorotoluene		2.395	2.117	2.258	2.567	2.133	2.256	2.238	2.167	2.105	2.248	6.70
75)	T	tert-Butylbenzene		0.485	0.479	0.492	0.561	0.477	0.498	0.508	0.507	0.510	0.502	5.07
76)	T	sec-Butylbenzene		3.569	3.291	3.426	3.890	3.252	3.390	3.382	3.152	2.921	3.364	8.02
77)	T	p-Isopropyltol...		2.965	2.848	2.901	3.367	2.820	2.976	2.947	2.789	2.570	2.909	7.29
78)	T	1,3-Dichlorobe...		1.618	1.522	1.552	1.750	1.507	1.543	1.573	1.554	1.522	1.571	4.76
79)	T	1,4-Dichlorobe...	1.968	1.586	1.531	1.540	1.762	1.488	1.525	1.566	1.547	1.516	1.603	9.28
80)	T	n-Butylbenzene		2.805	2.560	2.658	3.036	2.571	2.765	2.711	2.590	2.402	2.678	6.76
81)	T	1,2-Dichlorobe...	1.695	1.467	1.426	1.445	1.691	1.421	1.416	1.484	1.463	1.451	1.496	7.10
82)	T	1,2-Dibromo-3-...				0.114	0.133	0.111	0.099	0.117	0.117	0.124	0.116	9.10
83)	T	Hexachlorobuta...		0.696	0.634	0.665	0.758	0.655	0.706	0.682	0.705	0.695	0.689	5.16
84)	T	1,2,4-Trichlor...		1.229	1.131	1.145	1.349	1.158	1.168	1.175	1.192	1.198	1.194	5.45
85)	T	Naphthalene		2.380	2.183	2.277	2.624	2.160	1.937	2.124	2.113	2.102	2.211	8.92
86)	T	1,2,3-Trichlor...		1.132	1.062	1.083	1.275	1.067	1.029	1.066	1.092	1.109	1.102	6.48

(#) = Out of Range

8260_VMS.M Thu Nov 12 09:59:47 2015

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15110950 Run Date: 11/11/2015 Sample ID: WG546498-12
Instrument ID: HPMS17 Run Time: 18:33 Method: 8260B
File ID: 17M016379 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG546498 Cal ID: HPMS17 - 11-NOV-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.9	ug/L	0.496	1.90	20	
1,1-Dichloroethene	CCC	50.0	48.4	ug/L	0.380	3.30	20	
1,2-Dichloropropane	CCC	50.0	51.7	ug/L	0.306	3.50	20	
Ethylbenzene	CCC	50.0	51.4	ug/L	0.571	2.90	20	
Toluene	CCC	50.0	51.1	ug/L	1.62	2.10	20	
Vinyl Chloride	CCC	50.0	55.3	ug/L	0.374	10.6	20	
Bromoform	SPCC	50.0	56.3	ug/L	0.283	12.7	20	
Chlorobenzene	SPCC	50.0	53.9	ug/L	1.10	7.70	20	
Chloromethane	SPCC	50.0	50.3	ug/L	0.381	0.600	20	
1,1-Dichloroethane	SPCC	50.0	50.8	ug/L	0.498	1.50	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	51.8	ug/L	0.643	3.50	20	
Acetone		50.0	56.9	ug/L	0.0569	13.7	20	
Benzene		50.0	50.9	ug/L	1.09	1.80	20	
Bromobenzene		50.0	49.8	ug/L	0.853	0.300	20	
Bromochloromethane		50.0	54.7	ug/L	0.190	9.40	20	
Bromodichloromethane		50.0	51.3	ug/L	0.377	2.50	20	
Bromomethane		50.0	48.8	ug/L	0.174	2.40	20	
2-Butanone		50.0	55.4	ug/L	0.0913	10.7	20	
n-Butylbenzene		50.0	50.8	ug/L	2.72	1.60	20	
sec-Butylbenzene		50.0	52.8	ug/L	3.55	5.50	20	
tert-Butylbenzene		50.0	53.1	ug/L	0.533	6.20	20	
Carbon Disulfide		50.0	15.9	ug/L	0.263	68.1	20	*
Carbon Tetrachloride		50.0	52.5	ug/L	0.396	4.90	20	
Dibromochloromethane		50.0	52.2	ug/L	0.397	4.30	20	
Chloroethane		50.0	45.5	ug/L	0.157	8.90	20	
2-Chlorotoluene		50.0	52.6	ug/L	2.30	5.10	20	
4-Chlorotoluene		50.0	51.7	ug/L	2.32	3.40	20	
1,2-Dibromo-3-Chloropropane		50.0	53.9	ug/L	0.126	7.70	20	
1,2-Dibromoethane		50.0	51.2	ug/L	0.300	2.50	20	
Dibromomethane		50.0	52.4	ug/L	0.167	4.70	20	
1,2-Dichlorobenzene		50.0	53.0	ug/L	1.59	6.00	20	
1,3-Dichlorobenzene		50.0	52.2	ug/L	1.64	4.50	20	
1,4-Dichlorobenzene		50.0	49.5	ug/L	1.59	0.900	20	
Dichlorodifluoromethane		50.0	57.1	ug/L	0.406	14.2	20	
1,2-Dichloroethane		50.0	52.0	ug/L	0.337	4.10	20	
cis-1,2-Dichloroethene		50.0	49.6	ug/L	0.292	0.800	20	
trans-1,2-Dichloroethene		50.0	49.9	ug/L	0.256	0.300	20	
1,3-Dichloropropane		50.0	52.4	ug/L	0.490	4.90	20	
2,2-Dichloropropane		50.0	52.8	ug/L	0.388	5.60	20	
cis-1,3-Dichloropropene		50.0	54.7	ug/L	0.473	9.40	20	
trans-1,3-Dichloropropene		50.0	51.8	ug/L	0.384	3.60	20	
1,1-Dichloropropene		50.0	50.7	ug/L	0.367	1.40	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4522955
Report generated 11/30/2015 15:33

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L15110950 Run Date: 11/11/2015 Sample ID: WG546498-12
Instrument ID: HPMS17 Run Time: 18:33 Method: 8260B
File ID: 17M016379 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG546498 Cal ID: HPMS17 - 11-NOV-15

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	53.0	ug/L	0.201	6.00	20	
Hexachlorobutadiene		50.0	51.9	ug/L	0.715	3.90	20	
Isopropylbenzene		50.0	53.1	ug/L	1.82	6.20	20	
p-Isopropyltoluene		50.0	50.5	ug/L	2.94	0.900	20	
4-Methyl-2-Pentanone		50.0	53.5	ug/L	0.0785	7.00	20	
Methylene Chloride		50.0	46.9	ug/L	0.272	6.30	20	
Naphthalene		50.0	53.4	ug/L	2.36	6.70	20	
n-Propylbenzene		50.0	53.5	ug/L	3.83	7.10	20	
Styrene		50.0	51.3	ug/L	1.12	2.70	20	
1,1,1,2-Tetrachloroethane		50.0	50.7	ug/L	0.383	1.30	20	
Tetrachloroethene		50.0	51.7	ug/L	0.441	3.30	20	
1,2,3-Trichlorobenzene		50.0	53.3	ug/L	1.17	6.60	20	
1,2,4-Trichlorobenzene		50.0	53.3	ug/L	1.27	6.60	20	
1,1,1-Trichloroethane		50.0	52.3	ug/L	0.446	4.50	20	
1,1,2-Trichloroethane		50.0	49.6	ug/L	0.292	0.800	20	
Trichloroethene		50.0	50.7	ug/L	0.302	1.40	20	
Trichlorofluoromethane		50.0	35.2	ug/L	0.286	29.5	20	*
1,2,3-Trichloropropane		50.0	49.5	ug/L	0.171	1.00	20	
1,2,4-Trimethylbenzene		50.0	50.0	ug/L	2.74	0.100	20	
1,3,5-Trimethylbenzene		50.0	51.3	ug/L	2.81	2.70	20	
o-Xylene		50.0	53.1	ug/L	0.699	6.20	20	
m-,p-Xylene		100	107	ug/L	0.710	6.60	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4522955
Report generated 11/30/2015 15:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110950 Run Date: 11/18/2015 Sample ID: WG547460-02
Instrument ID: HPMS17 Run Time: 14:45 Method: 8260B
File ID: 17M016538 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG547466 Cal ID: HPMS17 - 11-NOV-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.7	ug/L	0.464	4.54	20	
1,1-Dichloroethene	CCC	50.0	54.0	ug/L	0.424	8.00	20	
1,2-Dichloropropane	CCC	50.0	47.4	ug/L	0.280	5.18	20	
Ethylbenzene	CCC	50.0	51.1	ug/L	0.568	2.22	20	
Toluene	CCC	50.0	49.9	ug/L	1.58	0.161	20	
Vinyl Chloride	CCC	50.0	50.4	ug/L	0.341	0.829	20	
Bromoform	SPCC	50.0	52.4	ug/L	0.263	4.85	20	
Chlorobenzene	SPCC	50.0	51.6	ug/L	1.05	3.24	20	
Chloromethane	SPCC	50.0	42.6	ug/L	0.323	14.8	20	
1,1-Dichloroethane	SPCC	50.0	48.4	ug/L	0.475	3.26	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	47.5	ug/L	0.590	4.91	20	
Xylenes		150	157	ug/L	0.688	4.70	20	
Acetone		50.0	40.0	ug/L	0.0402	20.1	20	*
Benzene		50.0	47.9	ug/L	1.03	4.18	20	
Bromobenzene		50.0	51.1	ug/L	0.875	2.24	20	
Bromochloromethane		50.0	49.0	ug/L	0.170	2.09	20	
Bromodichloromethane		50.0	49.3	ug/L	0.362	1.34	20	
Bromomethane		50.0	59.3	ug/L	0.212	18.7	20	
2-Butanone		50.0	40.9	ug/L	0.0675	18.2	20	
n-Butylbenzene		50.0	55.2	ug/L	2.96	10.4	20	
sec-Butylbenzene		50.0	54.3	ug/L	3.65	8.59	20	
tert-Butylbenzene		50.0	52.9	ug/L	0.532	5.88	20	
Carbon Disulfide		50.0	53.3	ug/L	0.881	6.56	20	
Carbon Tetrachloride		50.0	50.7	ug/L	0.383	1.31	20	
Dibromochloromethane		50.0	49.8	ug/L	0.379	0.429	20	
Chloroethane		50.0	59.7	ug/L	0.206	19.4	20	
2-Chlorotoluene		50.0	52.8	ug/L	2.31	5.57	20	
4-Chlorotoluene		50.0	52.9	ug/L	2.38	5.72	20	
1,2-Dibromo-3-Chloropropane		50.0	44.7	ug/L	0.104	10.6	20	
1,2-Dibromoethane		50.0	45.6	ug/L	0.267	8.74	20	
Dibromomethane		50.0	45.8	ug/L	0.146	8.47	20	
1,2-Dichlorobenzene		50.0	51.8	ug/L	1.55	3.60	20	
1,3-Dichlorobenzene		50.0	54.8	ug/L	1.72	9.68	20	
1,4-Dichlorobenzene		50.0	53.3	ug/L	1.71	6.70	20	
Dichlorodifluoromethane		50.0	53.4	ug/L	0.380	6.77	20	
1,2-Dichloroethane		50.0	47.9	ug/L	0.310	4.14	20	
cis-1,2-Dichloroethene		50.0	47.3	ug/L	0.279	5.37	20	
trans-1,2-Dichloroethene		50.0	48.2	ug/L	0.248	3.54	20	
1,3-Dichloropropane		50.0	46.6	ug/L	0.436	6.71	20	
2,2-Dichloropropane		50.0	54.8	ug/L	0.403	9.70	20	
cis-1,3-Dichloropropene		50.0	48.5	ug/L	0.420	3.02	20	
trans-1,3-Dichloropropene		50.0	48.6	ug/L	0.360	2.82	20	

CCV - Modified 03/05/2008
PDF File ID: 4522963
Report generated 11/30/2015 15:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L15110950 Run Date: 11/18/2015 Sample ID: WG547460-02
Instrument ID: HPMS17 Run Time: 14:45 Method: 8260B
File ID: 17M016538 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG547466 Cal ID: HPMS17 - 11-NOV-15
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	49.7	ug/L	0.360	0.604	20	
2-Hexanone		50.0	38.4	ug/L	0.146	23.2	20	*
Hexachlorobutadiene		50.0	47.4	ug/L	0.653	5.10	20	
Isopropylbenzene		50.0	52.8	ug/L	1.81	5.57	20	
p-Isopropyltoluene		50.0	54.9	ug/L	3.19	9.82	20	
4-Methyl-2-Pentanone		50.0	37.1	ug/L	0.0545	25.7	20	*
Methylene Chloride		50.0	43.3	ug/L	0.252	13.3	20	
Naphthalene		50.0	40.7	ug/L	1.80	18.5	20	
n-Propylbenzene		50.0	54.9	ug/L	3.92	9.75	20	
Styrene		50.0	51.9	ug/L	1.13	3.79	20	
1,1,1,2-Tetrachloroethane		50.0	52.4	ug/L	0.396	4.79	20	
Tetrachloroethene		50.0	51.3	ug/L	0.438	2.57	20	
1,2,3-Trichlorobenzene		50.0	42.7	ug/L	0.941	14.6	20	
1,2,4-Trichlorobenzene		50.0	48.8	ug/L	1.16	2.48	20	
1,1,1-Trichloroethane		50.0	49.4	ug/L	0.421	1.30	20	
1,1,2-Trichloroethane		50.0	45.0	ug/L	0.265	10.0	20	
Trichloroethene		50.0	49.3	ug/L	0.294	1.31	20	
Trichlorofluoromethane		50.0	59.8	ug/L	0.471	19.7	20	
1,2,3-Trichloropropane		50.0	46.0	ug/L	0.159	8.09	20	
1,2,4-Trimethylbenzene		50.0	53.7	ug/L	2.94	7.43	20	
1,3,5-Trimethylbenzene		50.0	53.5	ug/L	2.93	6.97	20	
o-Xylene		50.0	50.8	ug/L	0.669	1.69	20	
m-,p-Xylene		100	106	ug/L	0.708	6.20	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4522963
Report generated 11/30/2015 15:33

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15110950
Instrument ID: HPMS17
Workgroup (AAB#): WG547466

ICAL CCV Number: WG546498-02
CAL ID: HPMS17-11-NOV-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG546498-02	NA	NA	185646	339437	458822
Upper Limit	NA	NA	371292	678874	917644
Lower Limit	NA	NA	92823	169719	229411
L15110950-01	1.00	01	146830	267381	362260
L15110950-02	1.00	01	158149	283634	378803
L15110950-03	1.00	01	153469	280483	375454
L15110950-04	1.00	01	138323	258155	347138
L15110950-05	1.00	01	140848	261451	350642
L15110950-06	1.00	01	139555	258704	346599
L15110950-07	1.00	01	140772	260638	346872
L15110950-08	1.00	01	143307	258195	344817
L15110950-09	1.00	01	141516	260507	347986
L15110950-10	1.00	01	147133	271900	366766
WG547466-01	1.00	01	146327	270869	367570
WG547466-02	1.00	01	152992	267591	357828

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4522965
Report generated 11/30/2015 15:33

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L15110950
Instrument ID: HPMS17
Workgroup (AAB#): WG547466

ICAL CCV Number: WG546498-02
CAL ID: HPMS17-11-NOV-15
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG546498-02	NA	NA	9.305	7.976	5.141
Upper Limit	NA	NA	9.805	8.476	5.641
Lower Limit	NA	NA	8.805	7.476	4.641
L15110950-01	1.00	01	9.3	7.97	5.14
L15110950-02	1.00	01	9.3	7.97	5.14
L15110950-03	1.00	01	9.3	7.97	5.14
L15110950-04	1.00	01	9.3	7.97	5.14
L15110950-05	1.00	01	9.3	7.97	5.14
L15110950-06	1.00	01	9.3	7.97	5.14
L15110950-07	1.00	01	9.3	7.97	5.14
L15110950-08	1.00	01	9.3	7.97	5.14
L15110950-09	1.00	01	9.3	7.97	5.14
L15110950-10	1.00	01	9.3	7.97	5.14
WG547466-01	1.00	01	9.3	7.97	5.14
WG547466-02	1.00	01	9.3	7.97	5.14

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4522967
Report generated: 11/30/2015 15:33

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016552.D
Acq On : 18 Nov 2015 19:23
Operator : ADC
Sample : L15110950-01 A 826-LOW
Misc : 1,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Nov 30 09:36:57 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.144	96	362260	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	267381	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.302	152	146830	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.177	111	96710	26.0241 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.096%		
34) 1,2-Dichloroethane-d4	4.814	65	99284	27.8202 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.281%		
47) Toluene-d8	6.710	98	379693	27.5484 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 110.194%#		
66) p-Bromofluorobenzene	8.723	95	139466	27.4775 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 109.910%		
Target Compounds					Qvalue
10) 1,1-Dichloroethene	1.867	61	8097	1.4238 ug/L	98
16) Acetone	2.341	43	147	Below Cal #	42
17) trans-1,2-Dichloroethene	2.417	96	527	0.1417 ug/L	94
20) 1,1-Dichloroethane	2.981	63	1301	0.1828 ug/L #	82
23) cis-1,2-Dichloroethene	3.566	96	73526	17.2243 ug/L	99
35) 1,2-Dichloroethane	4.892	62	9061	1.9341 ug/L	97
36) Methylcyclohexane	5.324	83	10751	1.4768 ug/L #	1
37) Trichloroethene	5.324	130	906860	209.8996 ug/L	98
49) Tetrachloroethene	7.087	166	3870	0.8476 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016552.D
Acq On : 18 Nov 2015 19:23
Operator : ADC
Sample : L15110950-01 A 826-LOW
Misc : 1,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Nov 30 09:36:57 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

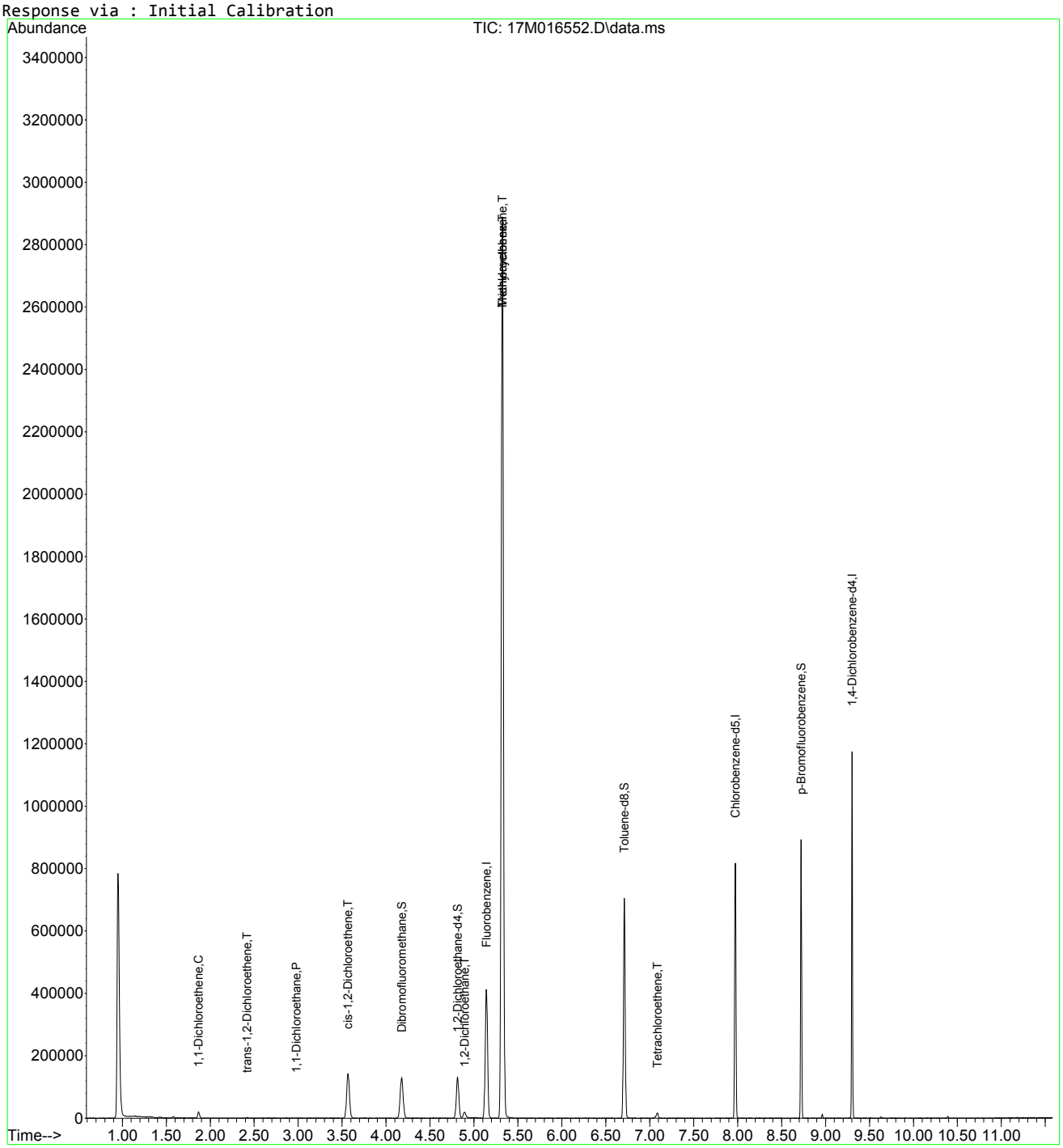

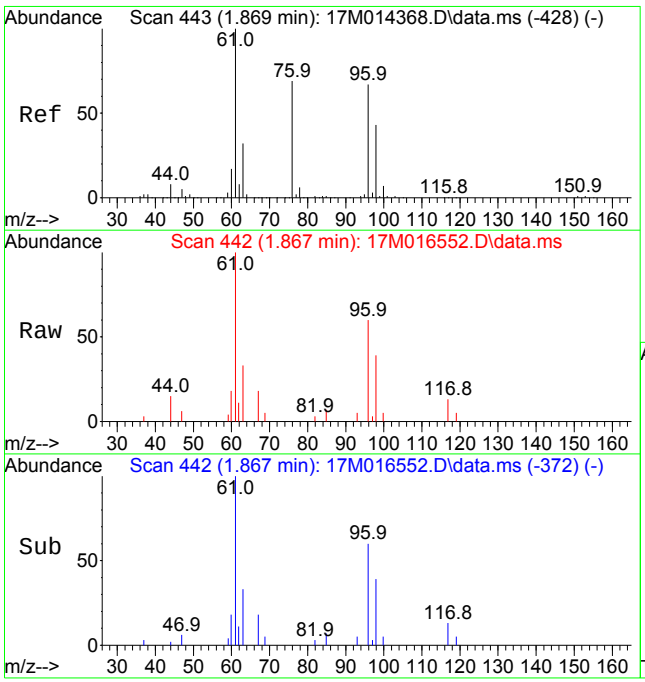

#10
1,1-Dichloroethene
Concen: 1.4238 ug/L
RT: 1.867 min Scan# 442
Delta R.T. 0.003 min
Lab File: 17M016552.D
Acq: 18 Nov 2015 19:23

Tgt Ion: 61 Resp: 8097

Ion	Ratio	Lower	Upper
61	100		
96	58.8	48.4	72.6

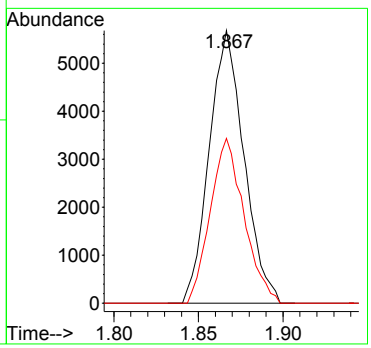

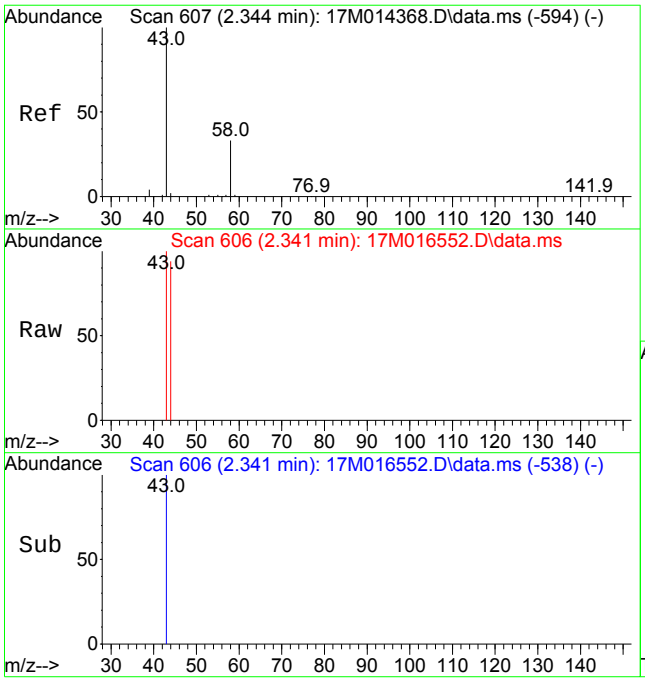

#16
Acetone
Concen: Below Cal
RT: 2.341 min Scan# 606
Delta R.T. -0.003 min
Lab File: 17M016552.D
Acq: 18 Nov 2015 19:23

Tgt Ion: 43 Resp: 147

Ion	Ratio	Lower	Upper
43	100		
58	0.0	19.4	45.4#

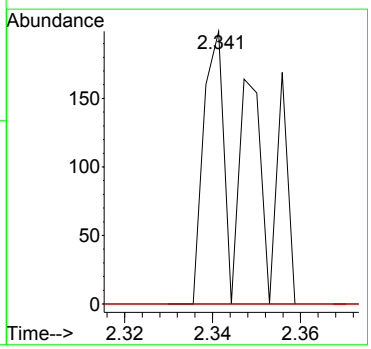

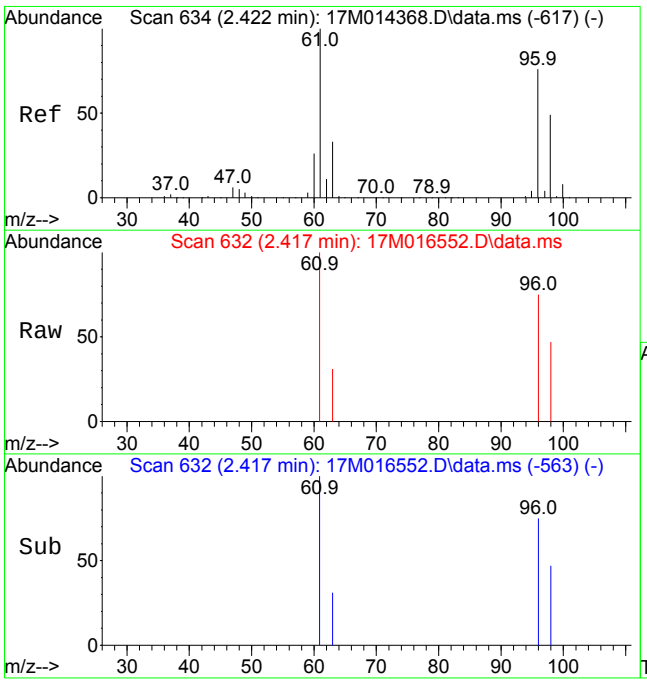

#17
trans-1,2-Dichloroethene
Concen: 0.1417 ug/L
RT: 2.417 min Scan# 632
Delta R.T. -0.000 min
Lab File: 17M016552.D
Acq: 18 Nov 2015 19:23

Tgt Ion: 96 Resp: 527

Ion	Ratio	Lower	Upper
96	100		
61	157.3	119.7	179.5

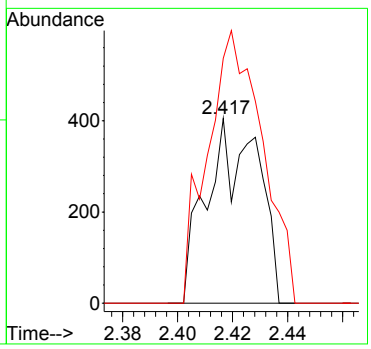

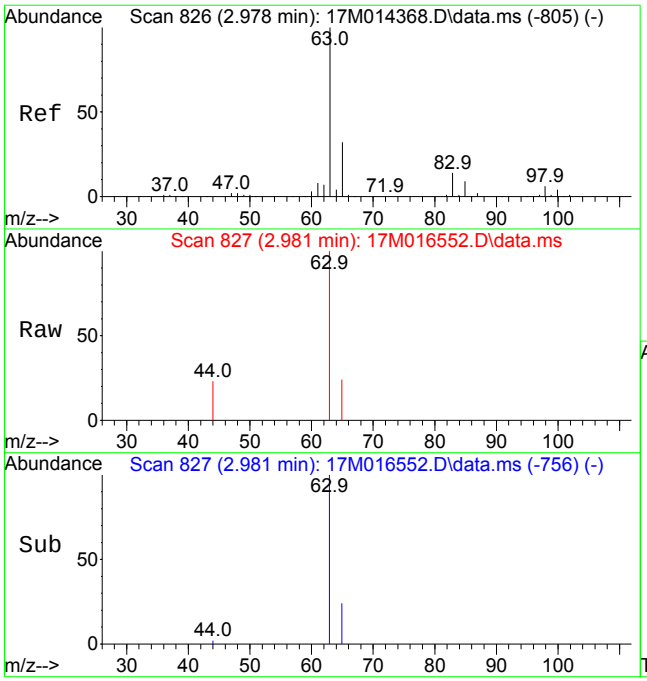

#20
1,1-Dichloroethane
Concen: 0.1828 ug/L
RT: 2.981 min Scan# 827
Delta R.T. 0.006 min
Lab File: 17M016552.D
Acq: 18 Nov 2015 19:23

Tgt Ion: 63 Resp: 1301

Ion	Ratio	Lower	Upper
63	100		
65	21.6	25.4	38.0#

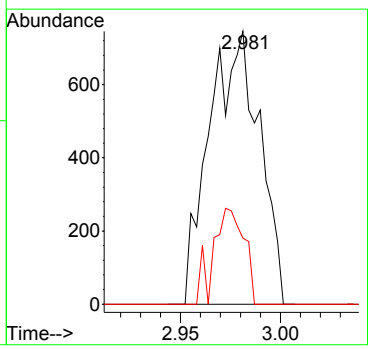

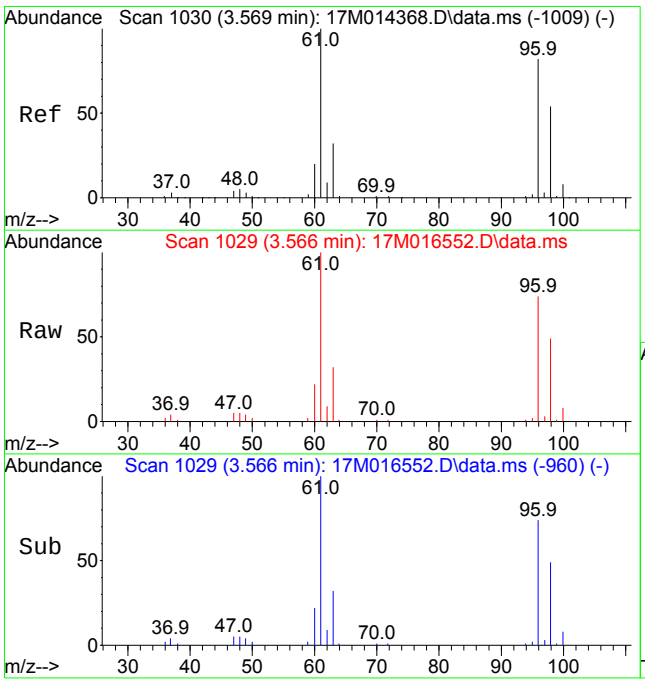

#23
cis-1,2-Dichloroethene
Concen: 17.2243 ug/L
RT: 3.566 min Scan# 1029
Delta R.T. 0.000 min
Lab File: 17M016552.D
Acq: 18 Nov 2015 19:23

Tgt Ion: 96 Resp: 73526

Ion	Ratio	Lower	Upper
96	100		
61	132.7	107.0	160.4

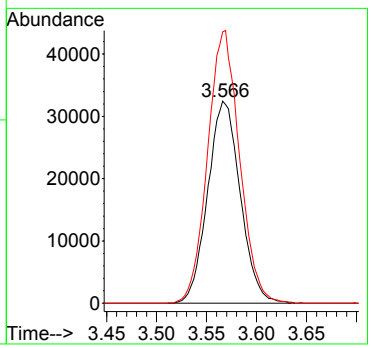

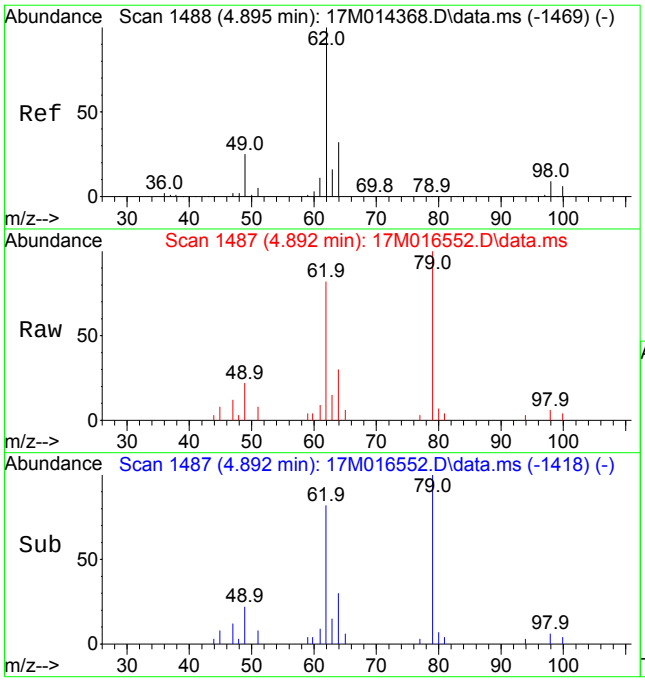

#35
1,2-Dichloroethane
Concen: 1.9341 ug/L
RT: 4.892 min Scan# 1487
Delta R.T. 0.000 min
Lab File: 17M016552.D
Acq: 18 Nov 2015 19:23

Tgt Ion: 62 Resp: 9061

Ion	Ratio	Lower	Upper
62	100		
49	29.9	16.9	39.3
98	6.9	4.9	11.5

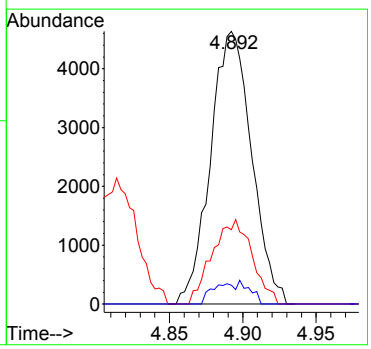

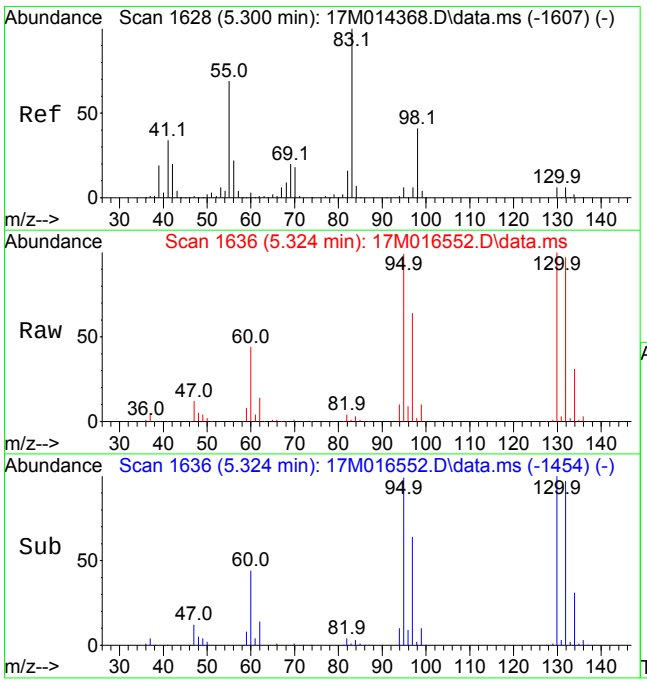

#36
Methylcyclohexane
Concen: 1.4768 ug/L
RT: 5.324 min Scan# 1636
Delta R.T. 0.026 min
Lab File: 17M016552.D
Acq: 18 Nov 2015 19:23

Tgt Ion: 83 Resp: 10751

Ion	Ratio	Lower	Upper
83	100		
55	0.0	63.0	94.4#
98	205.6	32.8	49.2#

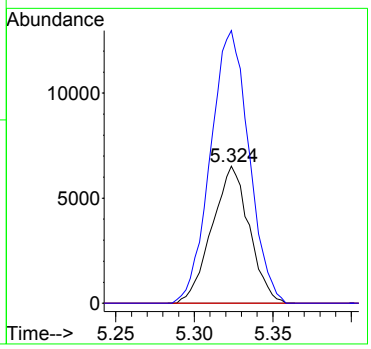

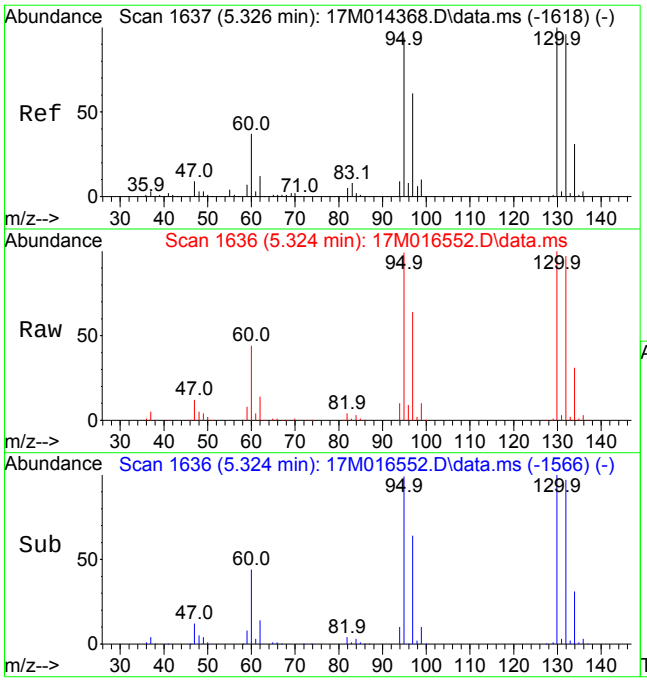

#37
Trichloroethene
Concen: 209.8996 ug/L
RT: 5.324 min Scan# 1636
Delta R.T. 0.003 min
Lab File: 17M016552.D
Acq: 18 Nov 2015 19:23

Tgt Ion:130 Resp: 906860

Ion	Ratio	Lower	Upper
130	100		
60	43.6	25.3	58.9

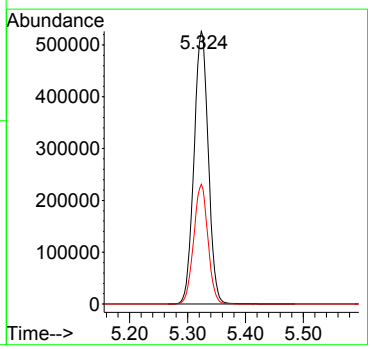

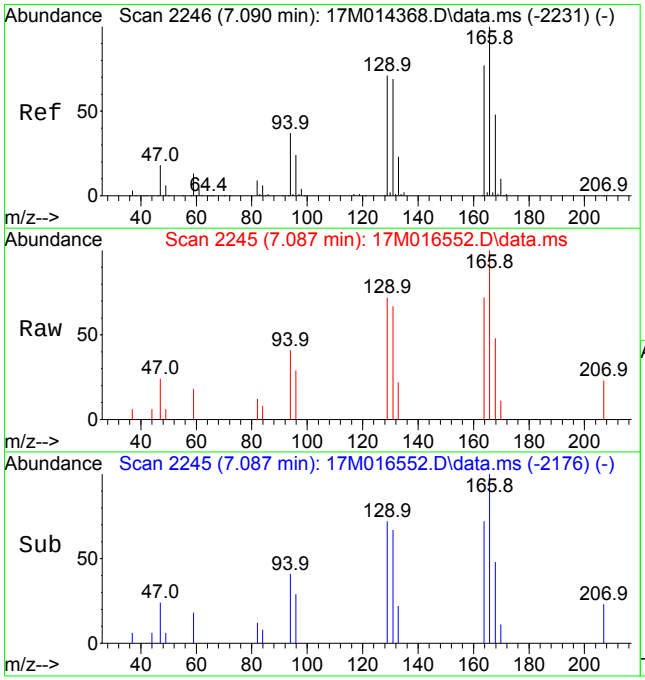

#49
Tetrachloroethene
Concen: 0.8476 ug/L
RT: 7.087 min Scan# 2245
Delta R.T. -0.000 min
Lab File: 17M016552.D
Acq: 18 Nov 2015 19:23

Tgt Ion:166 Resp: 3870

Ion	Ratio	Lower	Upper
166	100		
129	73.2	59.4	89.2
94	40.3	31.9	47.9

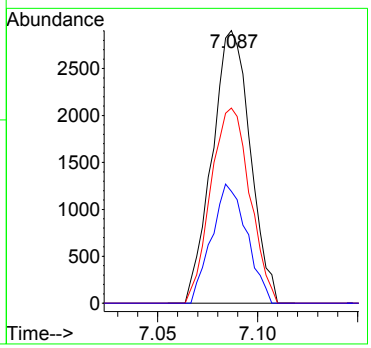

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016544.D
Acq On : 18 Nov 2015 16:45
Operator : ADC
Sample : L15110950-02 A MS 826-LOW
Misc : 1,1 STD73387
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 18 16:56:49 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.141	96	378803	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	283634	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.302	152	158149	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.177	111	104101	26.7895 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.158%		
34) 1,2-Dichloroethane-d4	4.814	65	103419	27.7133 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 110.853%		
47) Toluene-d8	6.710	98	393870	26.9395 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 107.758%		
66) p-Bromofluorobenzene	8.723	95	145259	26.5705 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 106.282%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.038	85	92179	17.1114 ug/L	99
3) Chloromethane	1.148	50	90889	15.8395 ug/L	100
4) Vinyl Chloride	1.195	62	96069	18.7428 ug/L	99
5) 1,3-Butadiene	1.209	54	1036	0.3145 ug/L	95
6) Bromomethane	1.383	94	58809	21.7527 ug/L	100
7) Chloroethane	1.450	64	59655	22.7950 ug/L	84
8) Trichlorofluoromethane	1.531	101	122139	19.5032 ug/L	99
9) Diethyl ether	1.751	59	306808	101.4429 ug/L	99
10) 1,1-Dichloroethene	1.864	61	118351	19.9029 ug/L	100
11) Carbon Disulfide	1.878	76	89113	7.1152 ug/L	97
12) 1,1,2-Trichloro-1,2,2-...	1.893	101	73439	19.9166 ug/L	99
15) Methylene Chloride	2.289	84	75030	17.0535 ug/L	99
16) Acetone	2.344	43	16061	20.7956 ug/L	94
17) trans-1,2-Dichloroethene	2.417	96	70804	18.2124 ug/L	95
18) Methyl acetate	2.451	43	39796	18.3994 ug/L #	99
19) Methyl Tert Butyl Ether	2.530	73	201989	20.3823 ug/L	99
20) 1,1-Dichloroethane	2.975	63	136756	18.3804 ug/L	100
21) Acrylonitrile	3.033	53	17319	16.8166 ug/L	99
23) cis-1,2-Dichloroethene	3.569	96	151783	34.0041 ug/L	98
24) 2,2-Dichloropropane	3.691	77	112675	20.2468 ug/L	98
25) Cyclohexane	3.795	56	123119	17.1932 ug/L	97
26) Bromochloromethane	3.806	130	52720	20.0022 ug/L	99
27) Chloroform	3.937	83	140313	19.0346 ug/L	100
28) Carbon Tetrachloride	4.081	117	102277	17.8682 ug/L	99
30) 1,1,1-Trichloroethane	4.177	97	122604	18.9620 ug/L	100
31) 1,1-Dichloropropene	4.345	75	99450	18.1434 ug/L	99
32) 2-Butanone	4.368	43	24375	19.5091 ug/L	94
33) Benzene	4.646	78	301192	18.5004 ug/L	99
35) 1,2-Dichloroethane	4.892	62	104228	21.2765 ug/L	100
36) Methylcyclohexane	5.297	83	138838	18.2384 ug/L #	88
37) Trichloroethene	5.324	130	924111	204.5514 ug/L	98
38) Dibromomethane	5.743	93	46143	19.0999 ug/L	100
39) 1,2-Dichloropropane	5.848	63	82505	18.4364 ug/L	98
40) Bromodichloromethane	5.937	83	104076	18.7061 ug/L	100
41) 1,4-Dioxane	6.152	88	5136	188.9572 ug/L	90
42) 2-Chloroethyl Vinyl Ether	6.542	63	801	0.3541 ug/L #	43
43) cis-1,3-Dichloropropene	6.542	75	126852	19.3384 ug/L	100
44) 4-Methyl-2-Pentanone	7.814	58	20562	18.5043 ug/L	99
45) trans-1,3-Dichloropropene	7.145	75	104200	18.5663 ug/L	99
48) Toluene	6.757	91	337463	18.7805 ug/L	99
49) Tetrachloroethene	7.087	166	96215	19.8663 ug/L	98
50) 1,1,2-Trichloroethane	7.275	97	60981	18.2429 ug/L	100
51) Dibromochloromethane	7.414	129	81652	18.9212 ug/L	99
52) 1,3-Dichloropropane	7.495	76	101243	19.0957 ug/L	99

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016544.D
Acq On : 18 Nov 2015 16:45
Operator : ADC
Sample : L15110950-02 A MS 826-LOW
Misc : 1,1 STD73387
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 18 16:56:49 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) 1,2-Dibromoethane	7.585	107	61567	18.5605 ug/L	99
54) 2-Hexanone	7.814	43	41241	19.1899 ug/L	97
55) Chlorobenzene	7.984	112	232452	20.0733 ug/L	100
56) 1-Chlorohexane	7.999	69	21063	17.7086 ug/L	79
57) Ethylbenzene	8.022	106	118446	18.7911 ug/L	97
58) 1,1,1,2-Tetrachloroethane	8.036	131	81685	19.0533 ug/L	99
59) m-,p-Xylene	8.120	106	297927	39.3977 ug/L	99
60) o-Xylene	8.384	106	146151	19.5862 ug/L	98
61) Styrene	8.416	104	237618	19.1615 ug/L	99
62) Bromoform	8.419	173	59179	20.7997 ug/L	100
63) Isopropylbenzene	8.572	105	385066	19.7967 ug/L	99
65) 1,3,5-Trimethylbenzene	8.911	105	331732	19.1566 ug/L	100
67) Bromobenzene	8.775	156	103690	19.1570 ug/L	97
68) n-Propylbenzene	8.804	91	455636	20.1585 ug/L	100
69) 1,1,2,2-Tetrachloroethane	8.844	83	74981	19.0988 ug/L	100
70) 2-Chlorotoluene	8.879	91	275709	19.9449 ug/L	99
71) 1,2,3-Trichloropropane	8.908	110	20088	18.3831 ug/L	97
72) trans-1,4-Dichloro-2-B...	8.937	53	13997	15.4091 ug/L #	96
73) 1,2,4-Trimethylbenzene	9.108	105	327020	18.9173 ug/L	100
74) 4-Chlorotoluene	8.966	91	284716	20.0180 ug/L	98
75) tert-Butylbenzene	9.073	134	62658	19.7317 ug/L	99
76) sec-Butylbenzene	9.163	105	419668	19.7221 ug/L	100
77) p-Isopropyltoluene	9.238	119	346227	18.8134 ug/L	100
78) 1,3-Dichlorobenzene	9.264	146	200585	20.1800 ug/L	99
79) 1,4-Dichlorobenzene	9.310	146	195981	19.3287 ug/L	99
80) n-Butylbenzene	9.441	91	324218	19.1416 ug/L	100
81) 1,2-Dichlorobenzene	9.513	146	190909	20.1750 ug/L	98
82) 1,2-Dibromo-3-Chloropr...	9.889	75	13766	18.6834 ug/L	97
83) Hexachlorobutadiene	10.185	225	75922	17.4307 ug/L	99
84) 1,2,4-Trichlorobenzene	10.199	180	143268	18.9715 ug/L	99
85) Naphthalene	10.350	128	246965	17.6556 ug/L	100
86) 1,2,3-Trichlorobenzene	10.434	180	124428	17.8530 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016544.D
Acq On : 18 Nov 2015 16:45
Operator : ADC
Sample : L15110950-02 A MS 826-LOW
Misc : 1,1 STD73387
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 18 16:56:49 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

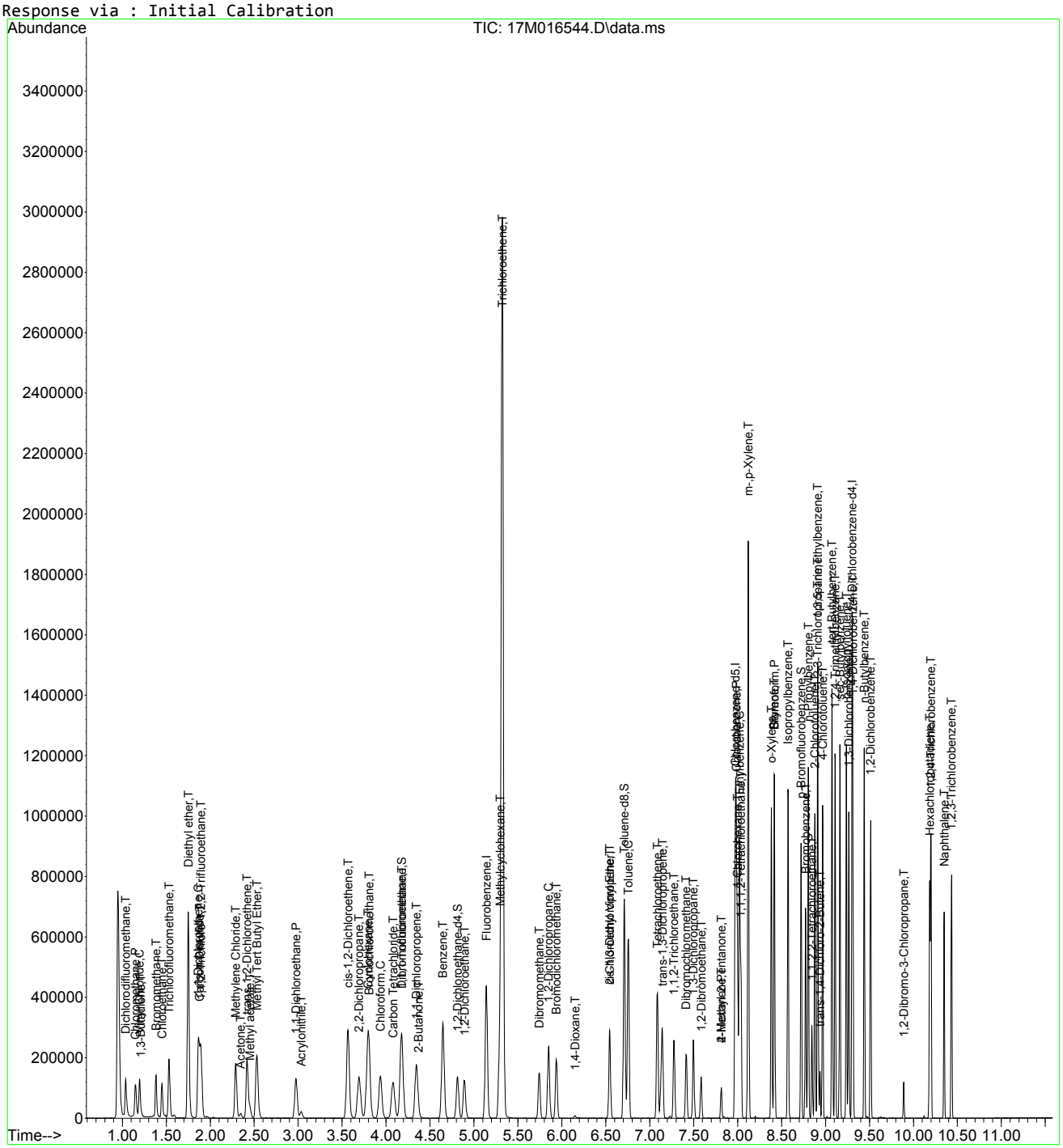

8260_VMS.M Wed Nov 18 16:56:50 2015 Page: 3

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016545.D
Acq On : 18 Nov 2015 17:04
Operator : ADC
Sample : L15110950-03 A MSD 826-LOW
Misc : 1,1 STD73387
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 18 17:16:32 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.141	96	375454	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	280483	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.302	152	153469	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.174	111	103104	26.7696 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.078%		
34) 1,2-Dichloroethane-d4	4.811	65	103267	27.9194 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.678%		
47) Toluene-d8	6.710	98	390926	27.0385 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 108.154%		
66) p-Bromofluorobenzene	8.723	95	145420	27.4111 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 109.644%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.038	85	91002	17.0436 ug/L	99
3) Chloromethane	1.148	50	91032	16.0059 ug/L	99
4) Vinyl Chloride	1.195	62	95110	18.7212 ug/L	100
5) 1,3-Butadiene	1.209	54	1037	0.3176 ug/L	86
6) Bromomethane	1.380	94	58601	21.8691 ug/L	98
7) Chloroethane	1.450	64	59761	23.0392 ug/L	84
8) Trichlorofluoromethane	1.531	101	122110	19.6766 ug/L	100
9) Diethyl ether	1.751	59	310706	103.6481 ug/L	99
10) 1,1-Dichloroethene	1.864	61	118800	20.1566 ug/L	99
11) Carbon Disulfide	1.878	76	85090	6.8546 ug/L	96
12) 1,1,2-Trichloro-1,2,2-...	1.893	101	72947	19.9596 ug/L	100
15) Methylene Chloride	2.289	84	75281	17.2632 ug/L	99
16) Acetone	2.347	43	16300	21.3081 ug/L	96
17) trans-1,2-Dichloroethene	2.417	96	69703	18.0891 ug/L	98
18) Methyl acetate	2.448	43	40293	18.7954 ug/L #	99
19) Methyl Tert Butyl Ether	2.529	73	203103	20.6776 ug/L	100
20) 1,1-Dichloroethane	2.972	63	138142	18.7323 ug/L	100
21) Acrylonitrile	3.033	53	17694	17.3339 ug/L	99
23) cis-1,2-Dichloroethene	3.566	96	151979	34.3517 ug/L	98
24) 2,2-Dichloropropane	3.693	77	111373	20.1914 ug/L	97
25) Cyclohexane	3.792	56	122575	17.2699 ug/L	97
26) Bromochloromethane	3.806	130	52593	20.1320 ug/L	99
27) Chloroform	3.937	83	140536	19.2350 ug/L	99
28) Carbon Tetrachloride	4.078	117	101956	17.9710 ug/L	99
30) 1,1,1-Trichloroethane	4.174	97	122341	19.0901 ug/L	100
31) 1,1-Dichloropropene	4.345	75	98946	18.2125 ug/L	99
32) 2-Butanone	4.371	43	25418	20.5254 ug/L	93
33) Benzene	4.646	78	303008	18.7780 ug/L	99
35) 1,2-Dichloroethane	4.889	62	104923	21.6094 ug/L	100
36) Methylcyclohexane	5.297	83	137980	18.2874 ug/L #	88
37) Trichloroethene	5.323	130	910952	203.4372 ug/L	98
38) Dibromomethane	5.743	93	46652	19.4828 ug/L	99
39) 1,2-Dichloropropane	5.848	63	83118	18.7391 ug/L	97
40) Bromodichloromethane	5.937	83	105011	19.0426 ug/L	100
41) 1,4-Dioxane	6.152	88	5133	190.5314 ug/L	88
42) 2-Chloroethyl Vinyl Ether	6.545	63	624	0.2783 ug/L #	43
43) cis-1,3-Dichloropropene	6.545	75	127562	19.6201 ug/L	100
44) 4-Methyl-2-Pentanone	7.813	58	21205	19.2532 ug/L	98
45) trans-1,3-Dichloropropene	7.145	75	104816	18.8426 ug/L	99
48) Toluene	6.757	91	339461	19.1039 ug/L	99
49) Tetrachloroethene	7.087	166	96489	20.1467 ug/L	98
50) 1,1,2-Trichloroethane	7.275	97	61439	18.5864 ug/L	99
51) Dibromochloromethane	7.414	129	82810	19.4052 ug/L	99
52) 1,3-Dichloropropane	7.498	76	102350	19.5214 ug/L	98

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016545.D
Acq On : 18 Nov 2015 17:04
Operator : ADC
Sample : L15110950-03 A MSD 826-LOW
Misc : 1,1 STD73387
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 18 17:16:32 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) 1,2-Dibromoethane	7.585	107	62372	19.0144 ug/L	98
54) 2-Hexanone	7.813	43	41305	19.4356 ug/L	99
55) Chlorobenzene	7.984	112	233784	20.4151 ug/L	99
56) 1-Chlorohexane	7.999	69	21531	18.3055 ug/L	85
57) Ethylbenzene	8.022	106	119695	19.2026 ug/L	99
58) 1,1,1,2-Tetrachloroethane	8.036	131	82412	19.4388 ug/L	100
59) m-,p-Xylene	8.120	106	296796	39.6891 ug/L	98
60) o-Xylene	8.384	106	147655	20.0101 ug/L	98
61) Styrene	8.419	104	240373	19.6014 ug/L	99
62) Bromoform	8.419	173	59279	21.0690 ug/L	99
63) Isopropylbenzene	8.575	105	384565	19.9931 ug/L	100
65) 1,3,5-Trimethylbenzene	8.911	105	332531	19.7883 ug/L	100
67) Bromobenzene	8.775	156	104238	19.8456 ug/L	97
68) n-Propylbenzene	8.804	91	453971	20.6973 ug/L	100
69) 1,1,2,2-Tetrachloroethane	8.844	83	75573	19.8366 ug/L	99
70) 2-Chlorotoluene	8.879	91	275398	20.5299 ug/L	99
71) 1,2,3-Trichloropropane	8.908	110	20246	19.0927 ug/L	98
72) trans-1,4-Dichloro-2-B...	8.937	53	14270	16.1887 ug/L #	93
73) 1,2,4-Trimethylbenzene	9.111	105	327572	19.5271 ug/L	100
74) 4-Chlorotoluene	8.969	91	286468	20.7553 ug/L	99
75) tert-Butylbenzene	9.073	134	63419	20.5804 ug/L	99
76) sec-Butylbenzene	9.163	105	420817	20.3792 ug/L	99
77) p-Isopropyltoluene	9.238	119	348392	19.5083 ug/L	100
78) 1,3-Dichlorobenzene	9.264	146	201869	20.9285 ug/L	99
79) 1,4-Dichlorobenzene	9.310	146	196880	20.0095 ug/L	99
80) n-Butylbenzene	9.441	91	325649	19.8123 ug/L	99
81) 1,2-Dichlorobenzene	9.513	146	192665	20.9814 ug/L	98
82) 1,2-Dibromo-3-Chloropr...	9.889	75	13966	19.5329 ug/L	99
83) Hexachlorobutadiene	10.185	225	76817	18.1740 ug/L	100
84) 1,2,4-Trichlorobenzene	10.199	180	144519	19.7208 ug/L	99
85) Naphthalene	10.350	128	251912	18.5584 ug/L	100
86) 1,2,3-Trichlorobenzene	10.434	180	125366	18.5362 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016545.D
Acq On : 18 Nov 2015 17:04
Operator : ADC
Sample : L15110950-03 A MSD 826-LOW
Misc : 1,1 STD73387
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 18 17:16:32 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

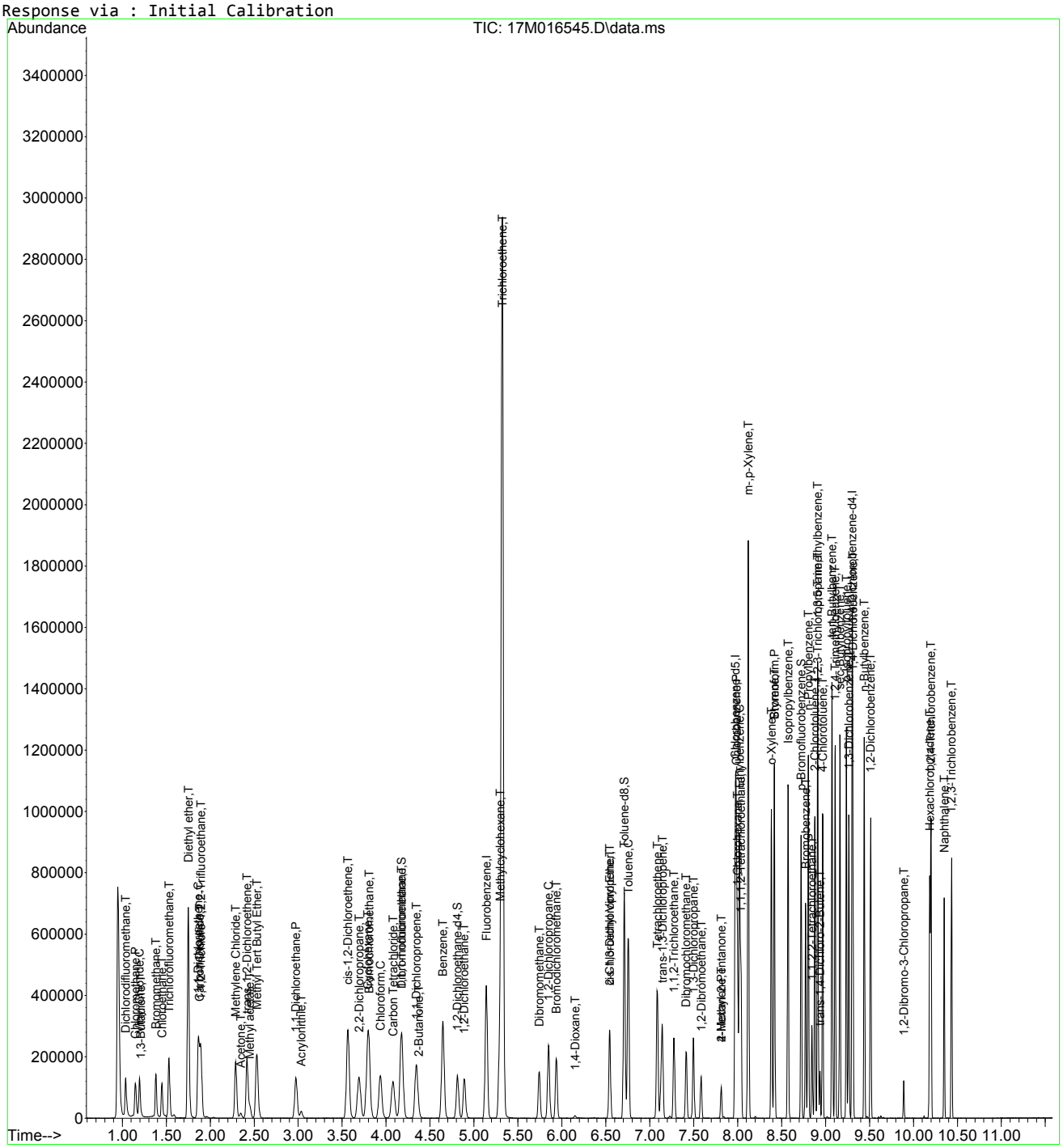

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016557.D
Acq On : 18 Nov 2015 21:03
Operator : ADC
Sample : L15110950-04 826-LOW
Misc : 1,1
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Nov 30 09:37:13 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.141	96	347138	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	258155	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.302	152	138323	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.174	111	91538	25.7053 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.821%		
34) 1,2-Dichloroethane-d4	4.811	65	94810	27.7239 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 110.896%		
47) Toluene-d8	6.711	98	363902	27.3463 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 109.385%		
66) p-Bromofluorobenzene	8.723	95	131560	27.5139 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 110.056%		
Target Compounds					Qvalue
3) Chloromethane	1.146	50	841	0.1599 ug/L #	42
7) Chloroethane	1.395	64	409	0.1705 ug/L #	1
16) Acetone	2.344	43	1396	1.4167 ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016557.D
Acq On : 18 Nov 2015 21:03
Operator : ADC
Sample : L15110950-04 826-LOW
Misc : 1,1
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Nov 30 09:37:13 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

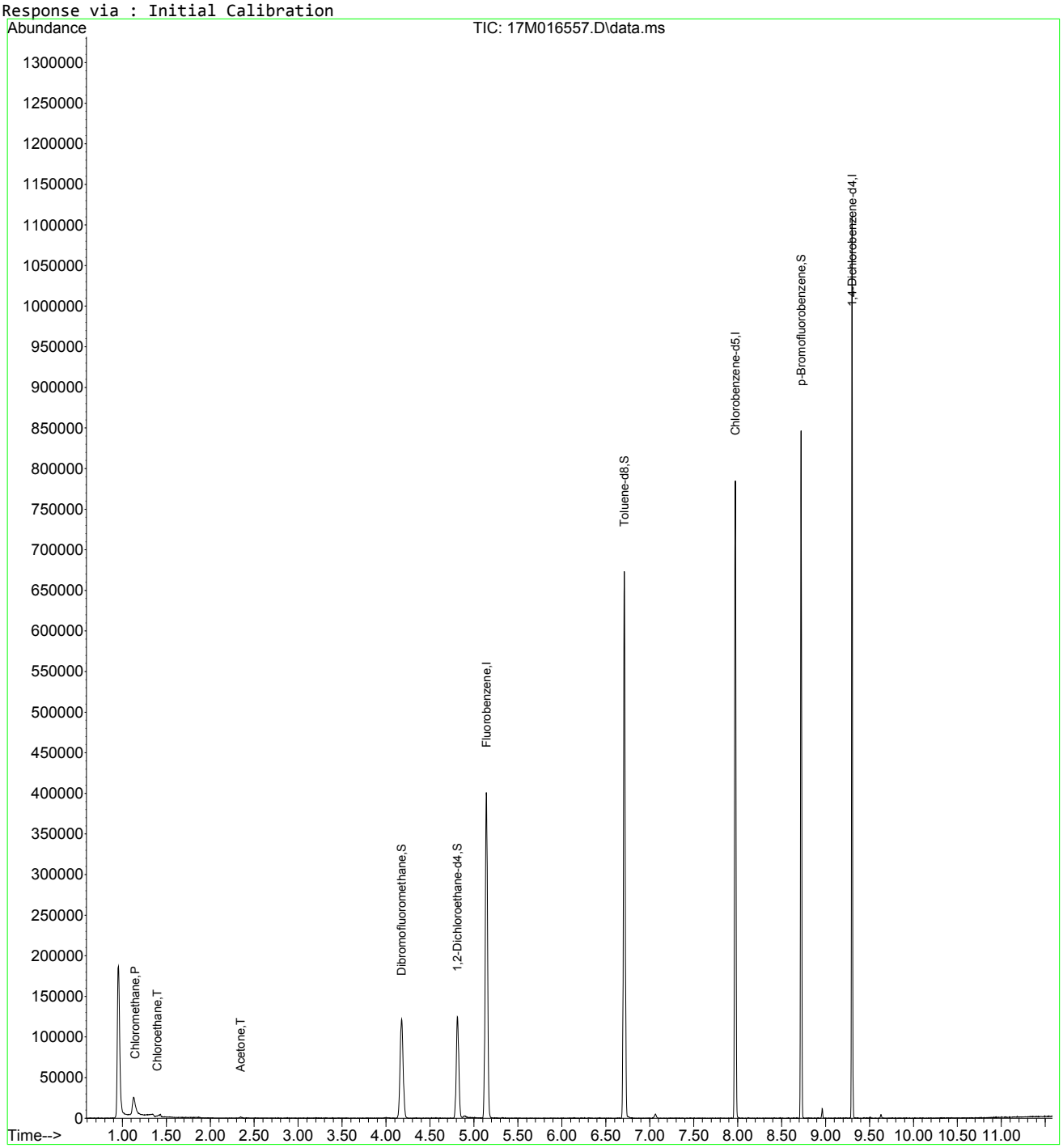

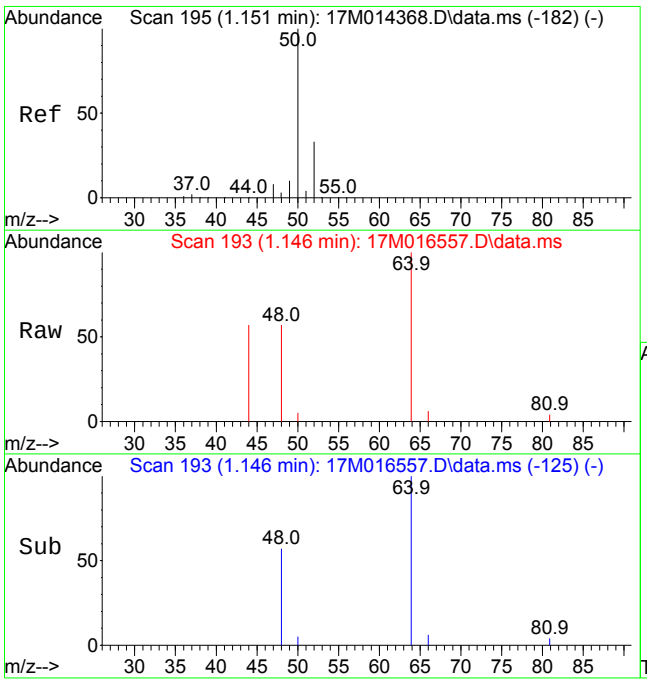

#3
Chloromethane
Concen: 0.1599 ug/L
RT: 1.146 min Scan# 193
Delta R.T. -0.003 min
Lab File: 17M016557.D
Acq: 18 Nov 2015 21:03

Tgt Ion: 50 Resp: 841

Ion	Ratio	Lower	Upper
50	100		
52	0.0	19.6	45.6#

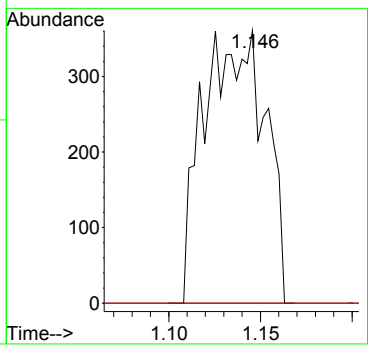

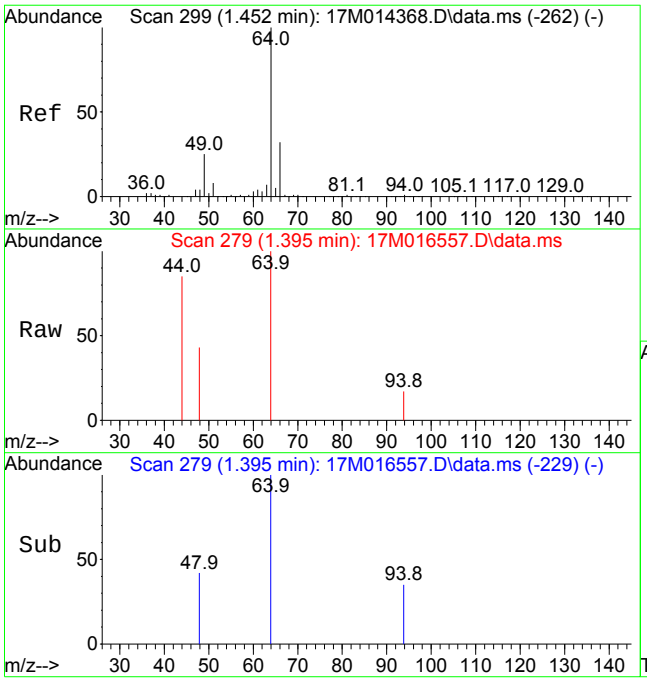

#7
Chloroethane
Concen: 0.1705 ug/L
RT: 1.395 min Scan# 279
Delta R.T. -0.055 min
Lab File: 17M016557.D
Acq: 18 Nov 2015 21:03

Tgt Ion: 64 Resp: 409

Ion	Ratio	Lower	Upper
64	100		
49	182.2	14.8	34.6#

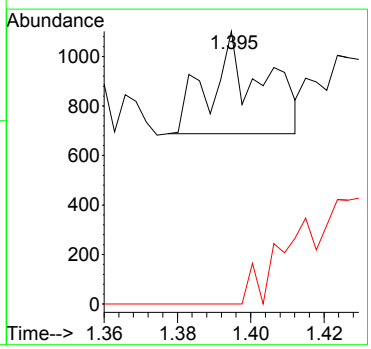

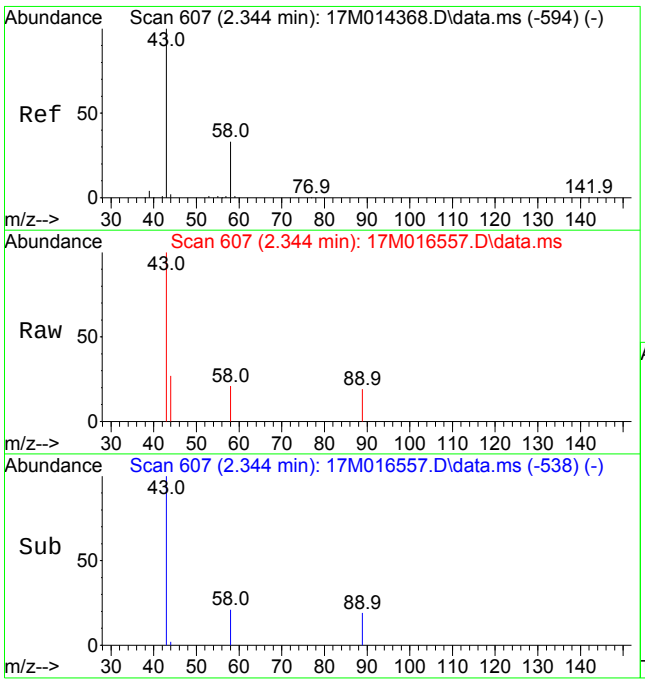

#16
Acetone
Concen: 1.4167 ug/L
RT: 2.344 min Scan# 607
Delta R.T. 0.000 min
Lab File: 17M016557.D
Acq: 18 Nov 2015 21:03

Tgt Ion: 43 Resp: 1396

Ion	Ratio	Lower	Upper
43	100		
58	21.1	19.4	45.4

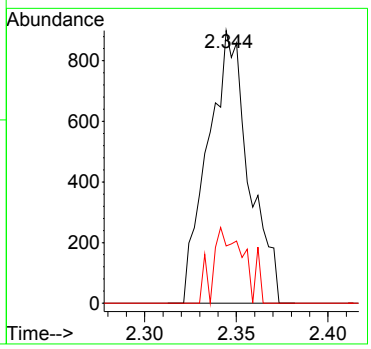

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016558.D
Acq On : 18 Nov 2015 21:23
Operator : ADC
Sample : L15110950-05 826-LOW
Misc : 1,1
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Nov 30 09:37:16 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.141	96	350642	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	261451	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.302	152	140848	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.177	111	93811	26.0804 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.322%		
34) 1,2-Dichloroethane-d4	4.814	65	97712	28.2869 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 113.148%		
47) Toluene-d8	6.710	98	370443	27.4869 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 109.948%		
66) p-Bromofluorobenzene	8.723	95	136135	27.9603 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 111.841%		
Target Compounds					Qvalue
3) Chloromethane	1.140	50	704	0.1325 ug/L #	42
7) Chloroethane	1.415	64	1837	0.7583 ug/L #	49
16) Acetone	2.347	43	1453	1.4785 ug/L	81

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016558.D
Acq On : 18 Nov 2015 21:23
Operator : ADC
Sample : L15110950-05 826-LOW
Misc : 1,1
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Nov 30 09:37:16 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

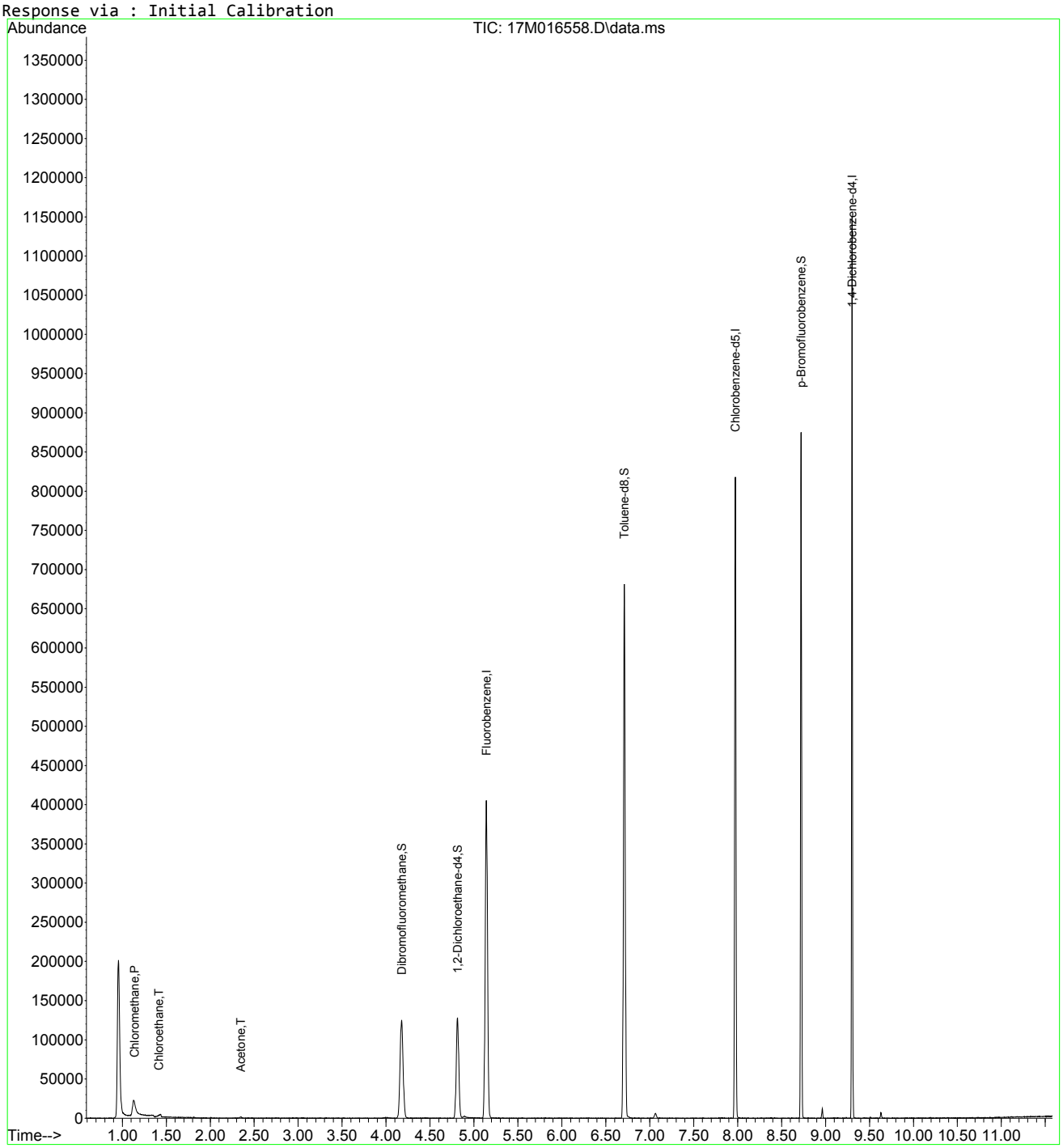

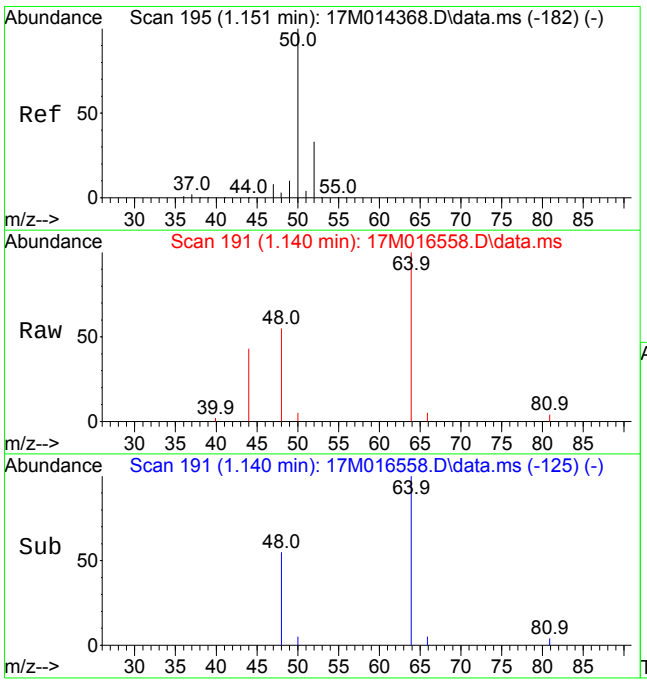

#3
Chloromethane
Concen: 0.1325 ug/L
RT: 1.140 min Scan# 191
Delta R.T. -0.009 min
Lab File: 17M016558.D
Acq: 18 Nov 2015 21:23

Tgt Ion: 50 Resp: 704

Ion	Ratio	Lower	Upper
50	100		
52	0.0	19.6	45.6#

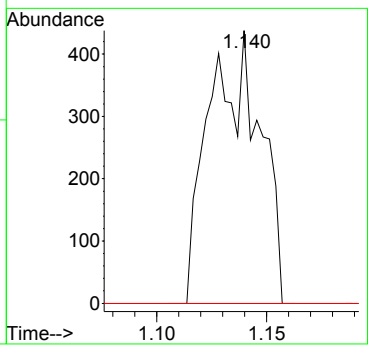

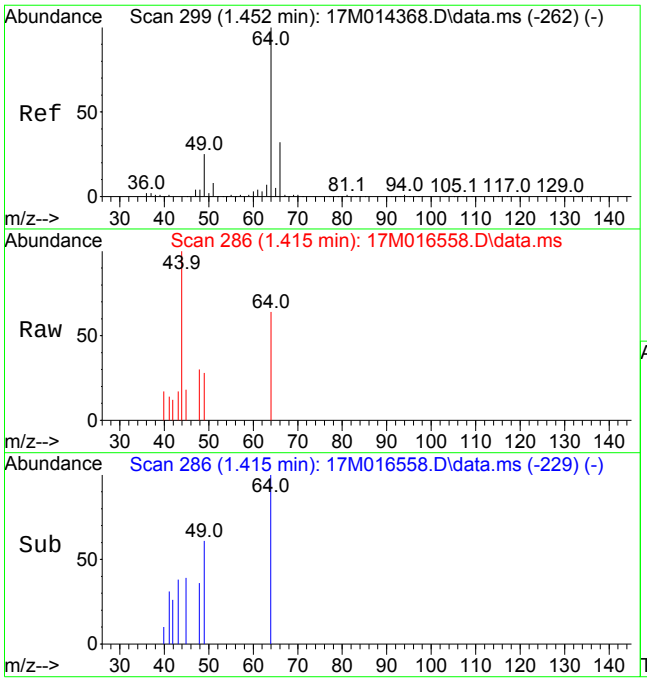

#7
Chloroethane
Concen: 0.7583 ug/L
RT: 1.415 min Scan# 286
Delta R.T. -0.035 min
Lab File: 17M016558.D
Acq: 18 Nov 2015 21:23

Tgt Ion: 64 Resp: 1837

Ion	Ratio	Lower	Upper
64	100		
49	50.1	14.8	34.6#

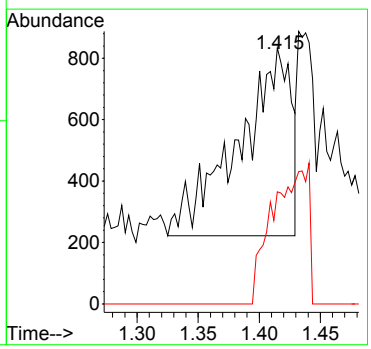

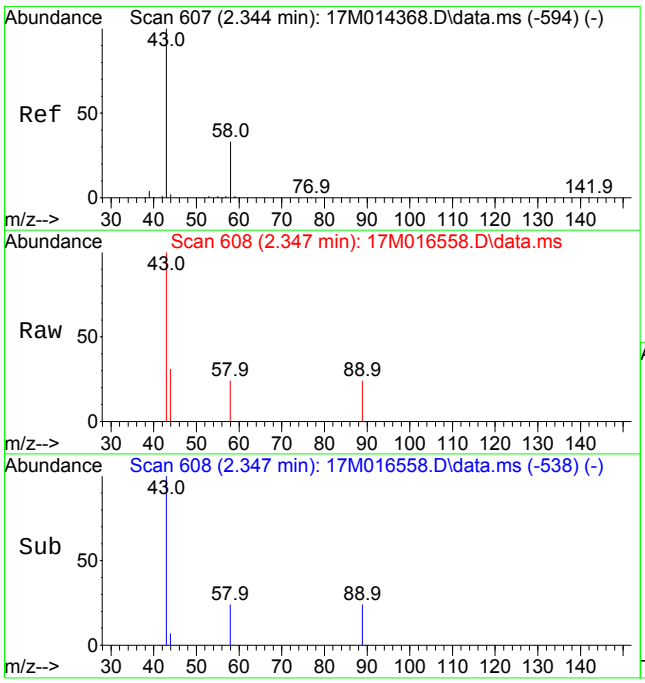

#16
Acetone
Concen: 1.4785 ug/L
RT: 2.347 min Scan# 608
Delta R.T. 0.003 min
Lab File: 17M016558.D
Acq: 18 Nov 2015 21:23

Tgt Ion: 43 Resp: 1453

Ion	Ratio	Lower	Upper
43	100		
58	21.7	19.4	45.4

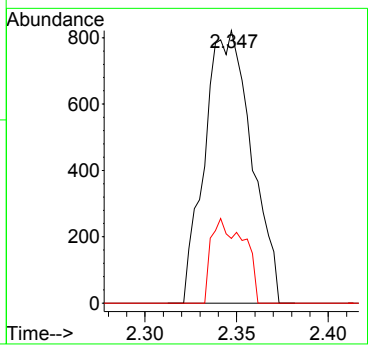

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016559.D
Acq On : 18 Nov 2015 21:43
Operator : ADC
Sample : L15110950-06 826-LOW
Misc : 1,1
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Nov 30 09:37:19 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.141	96	346599	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	258704	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.302	152	139555	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.177	111	93055	26.1720 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.688%		
34) 1,2-Dichloroethane-d4	4.814	65	97960	28.6895 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 114.758%		
47) Toluene-d8	6.711	98	369891	27.7374 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 110.950%#		
66) p-Bromofluorobenzene	8.723	95	137001	28.3989 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 113.596%		
Target Compounds					Qvalue
7) Chloroethane	1.435	64	2426	1.0131 ug/L #	66
16) Acetone	2.347	43	196	Below Cal #	42

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016559.D
Acq On : 18 Nov 2015 21:43
Operator : ADC
Sample : L15110950-06 826-LOW
Misc : 1,1
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Nov 30 09:37:19 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

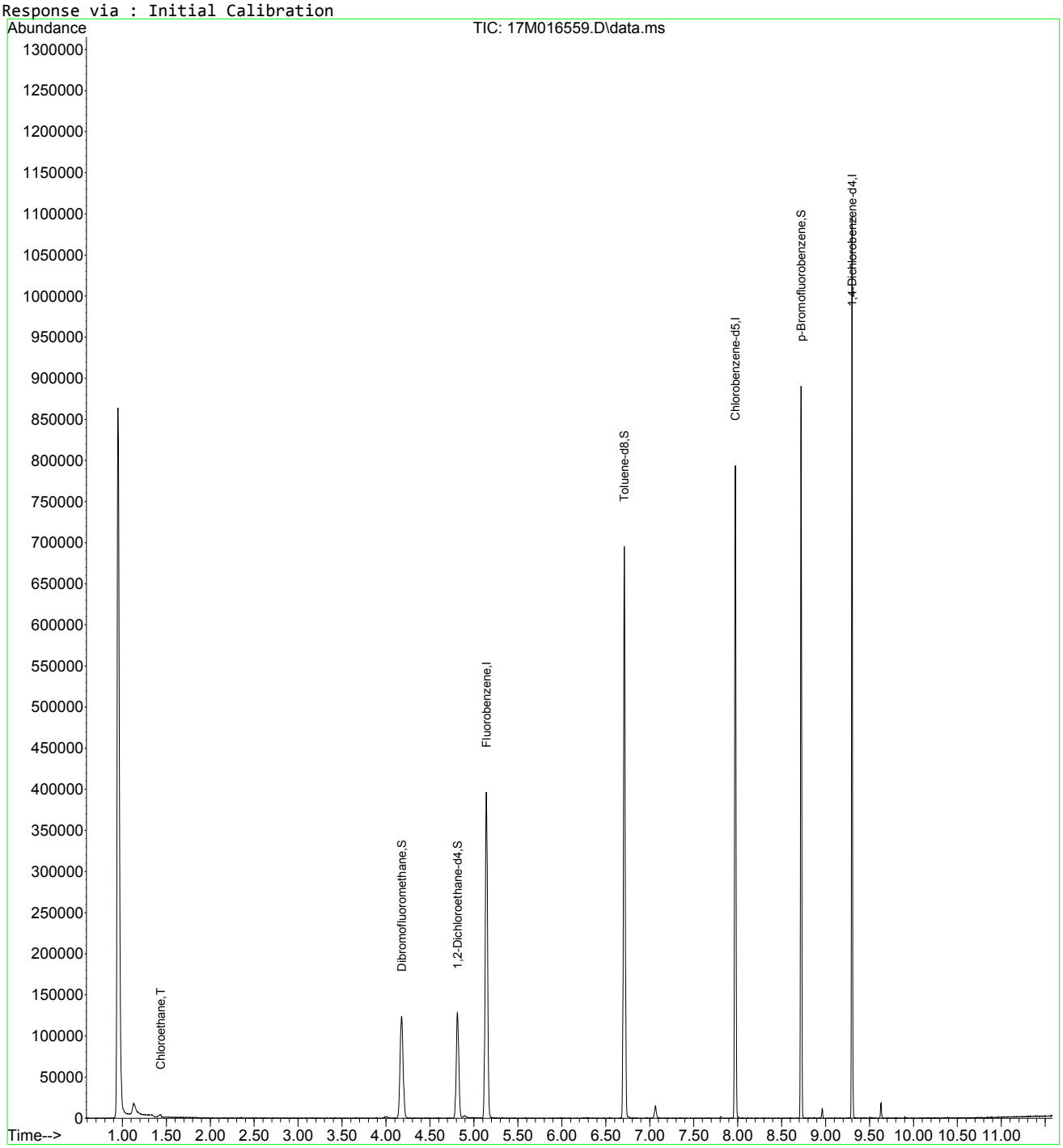

8260_VMS.M Mon Nov 30 09:37:20 2015 Page: 2

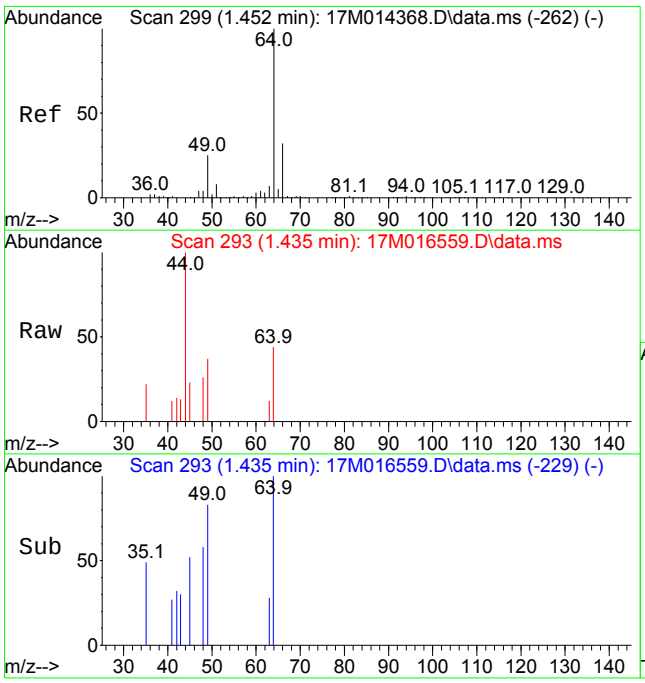

#7
Chloroethane
Concen: 1.0131 ug/L
RT: 1.435 min Scan# 293
Delta R.T. -0.015 min
Lab File: 17M016559.D
Acq: 18 Nov 2015 21:43

Tgt Ion: 64 Resp: 2426

Ion	Ratio	Lower	Upper
64	100		
49	41.5	14.8	34.6#

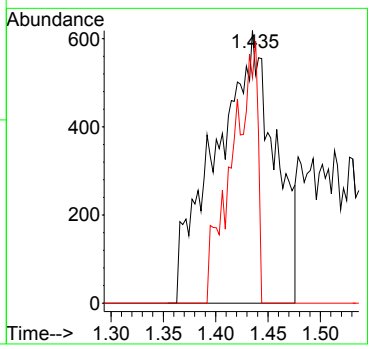

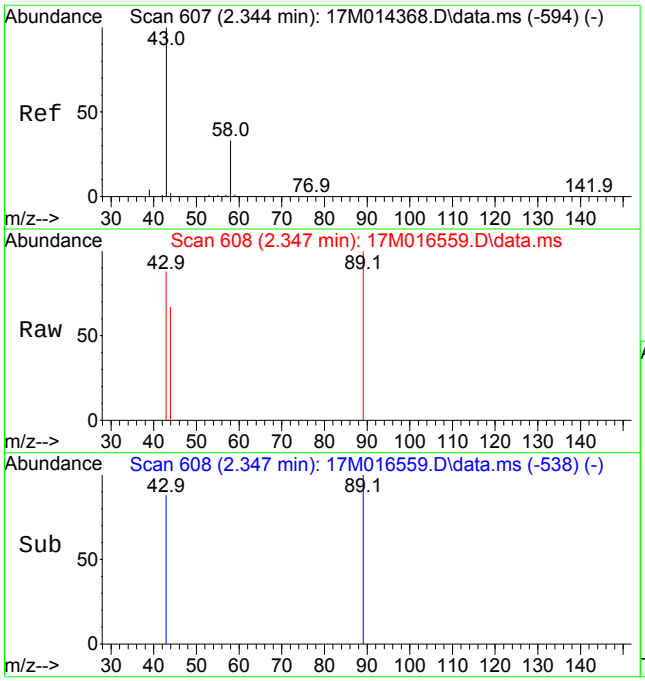

#16
Acetone
Concen: Below Cal
RT: 2.347 min Scan# 608
Delta R.T. 0.003 min
Lab File: 17M016559.D
Acq: 18 Nov 2015 21:43

Tgt Ion: 43 Resp: 196

Ion	Ratio	Lower	Upper
43	100		
58	0.0	19.4	45.4#

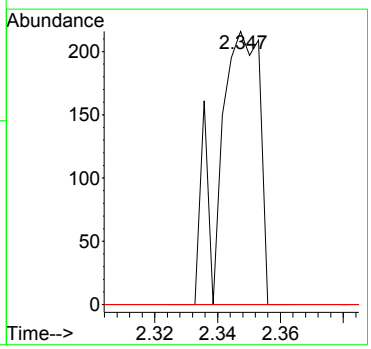

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016560.D
Acq On : 18 Nov 2015 22:02
Operator : ADC
Sample : L15110950-07 826-LOW
Misc : 1,1
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Nov 30 09:37:22 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.141	96	346872	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	260638	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.302	152	140772	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.177	111	92959	26.1244 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.498%		
34) 1,2-Dichloroethane-d4	4.811	65	97836	28.6306 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 114.522%		
47) Toluene-d8	6.711	98	371497	27.6511 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 110.604%#		
66) p-Bromofluorobenzene	8.723	95	136861	28.1246 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 112.498%		
Target Compounds					Qvalue
7) Chloroethane	1.412	64	839	0.3501 ug/L #	1
16) Acetone	2.341	43	291	Below Cal #	42
37) Trichloroethene	5.318	130	4079	0.9860 ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016560.D
Acq On : 18 Nov 2015 22:02
Operator : ADC
Sample : L15110950-07 826-LOW
Misc : 1,1
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Nov 30 09:37:22 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

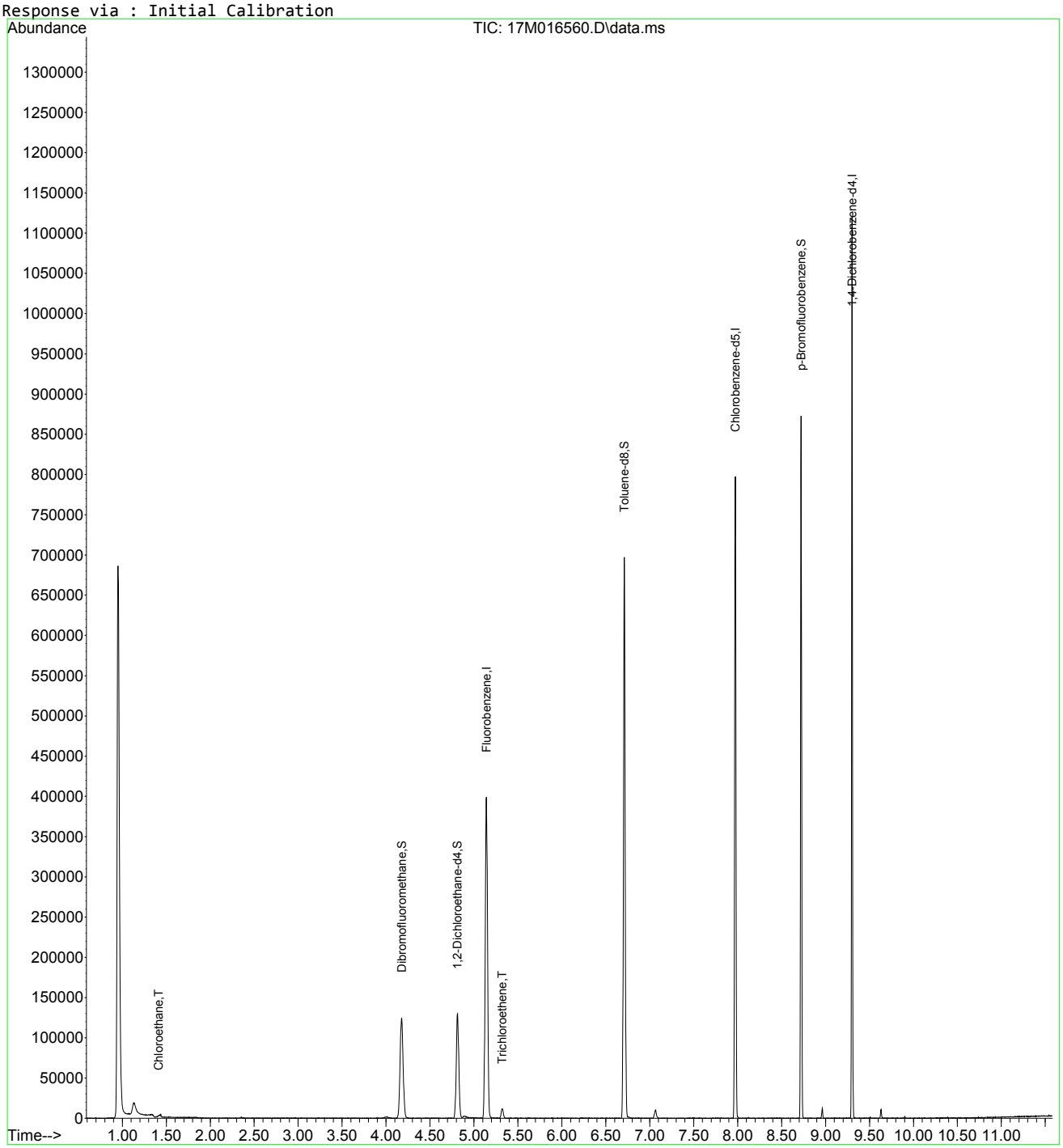

8260_VMS.M Mon Nov 30 09:37:23 2015 Page: 2

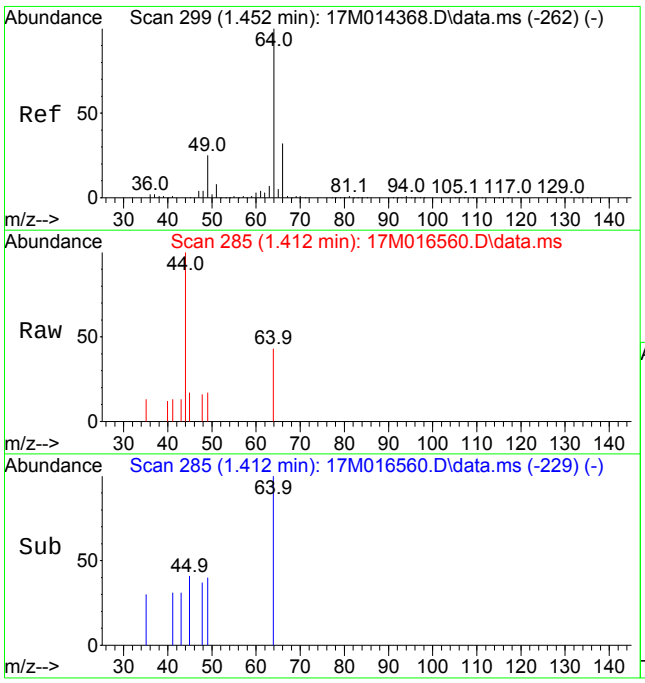

#7
Chloroethane
Concen: 0.3501 ug/L
RT: 1.412 min Scan# 285
Delta R.T. -0.038 min
Lab File: 17M016560.D
Acq: 18 Nov 2015 22:02

Tgt Ion: 64 Resp: 839

Ion	Ratio	Lower	Upper
64	100		
49	110.6	14.8	34.6#

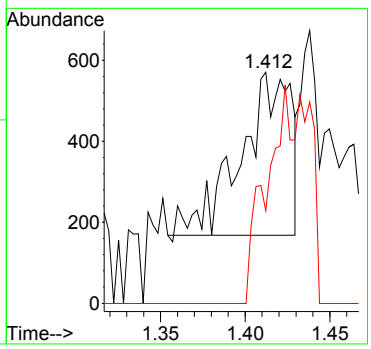

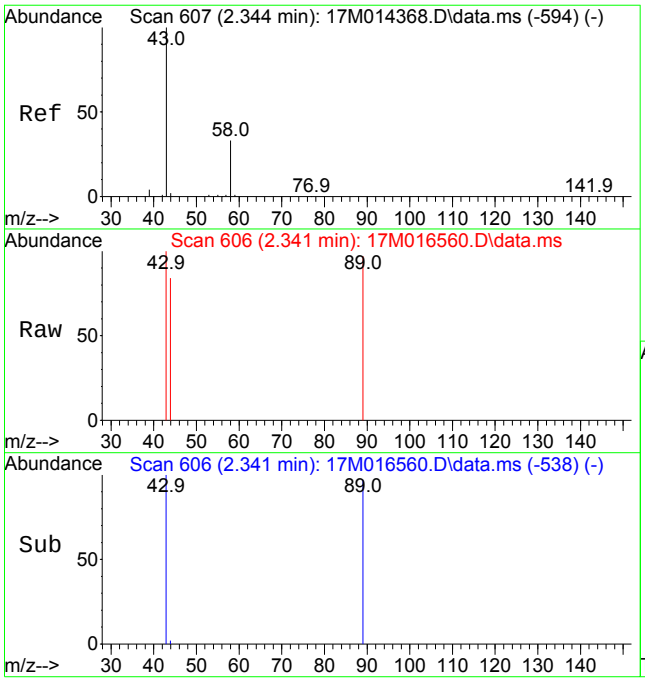

#16
Acetone
Concen: Below Cal
RT: 2.341 min Scan# 606
Delta R.T. -0.003 min
Lab File: 17M016560.D
Acq: 18 Nov 2015 22:02

Tgt Ion: 43 Resp: 291

Ion	Ratio	Lower	Upper
43	100		
58	0.0	19.4	45.4#

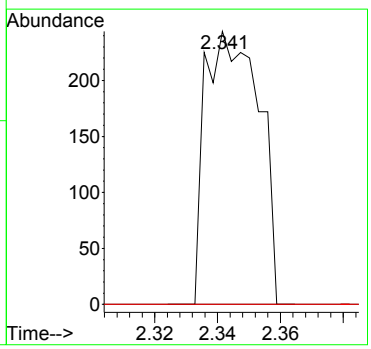

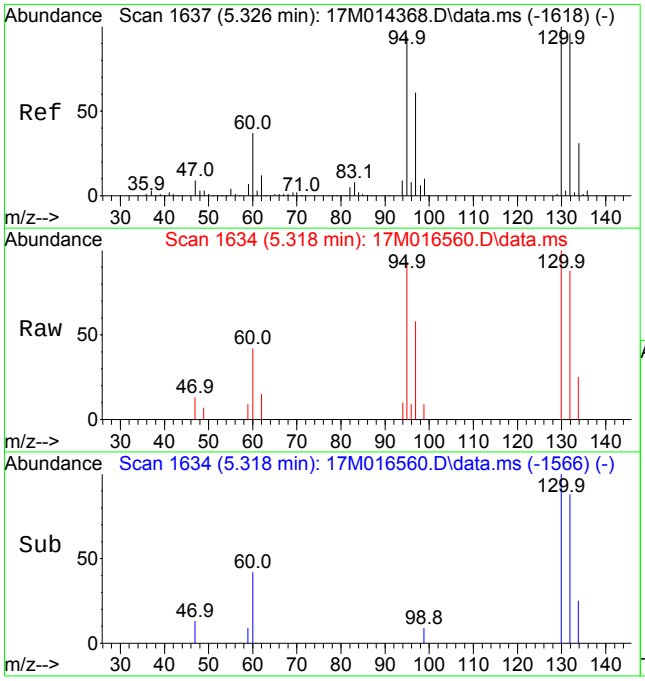

#37
Trichloroethene
Concen: 0.9860 ug/L
RT: 5.318 min Scan# 1634
Delta R.T. -0.003 min
Lab File: 17M016560.D
Acq: 18 Nov 2015 22:02

Tgt Ion:130 Resp: 4079

Ion	Ratio	Lower	Upper
130	100		
60	40.7	25.3	58.9

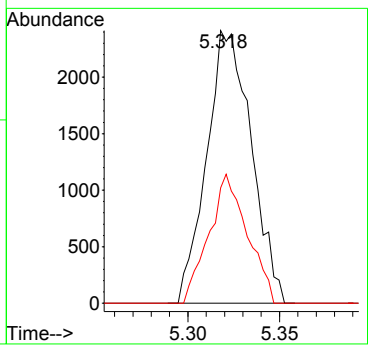

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016561.D
Acq On : 18 Nov 2015 22:22
Operator : ADC
Sample : L15110950-08 826-LOW
Misc : 1,1
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Nov 30 09:37:25 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.141	96	344817	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	258195	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.302	152	143307	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.177	111	93067	26.3106 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 105.242%		
34) 1,2-Dichloroethane-d4	4.811	65	97684	28.7565 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 115.026%		
47) Toluene-d8	6.710	98	367425	27.6068 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 110.427%#		
66) p-Bromofluorobenzene	8.723	95	133950	27.0395 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 108.158%		
Target Compounds					Qvalue
7) Chloroethane	1.438	64	910	0.3820 ug/L #	1
16) Acetone	2.341	43	152	Below Cal #	42
23) cis-1,2-Dichloroethene	3.563	96	1312	0.3229 ug/L	97
36) Methylcyclohexane	5.321	83	4101	0.5918 ug/L #	1
37) Trichloroethene	5.324	130	363114	88.2970 ug/L	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016561.D
Acq On : 18 Nov 2015 22:22
Operator : ADC
Sample : L15110950-08 826-LOW
Misc : 1,1
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Nov 30 09:37:25 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

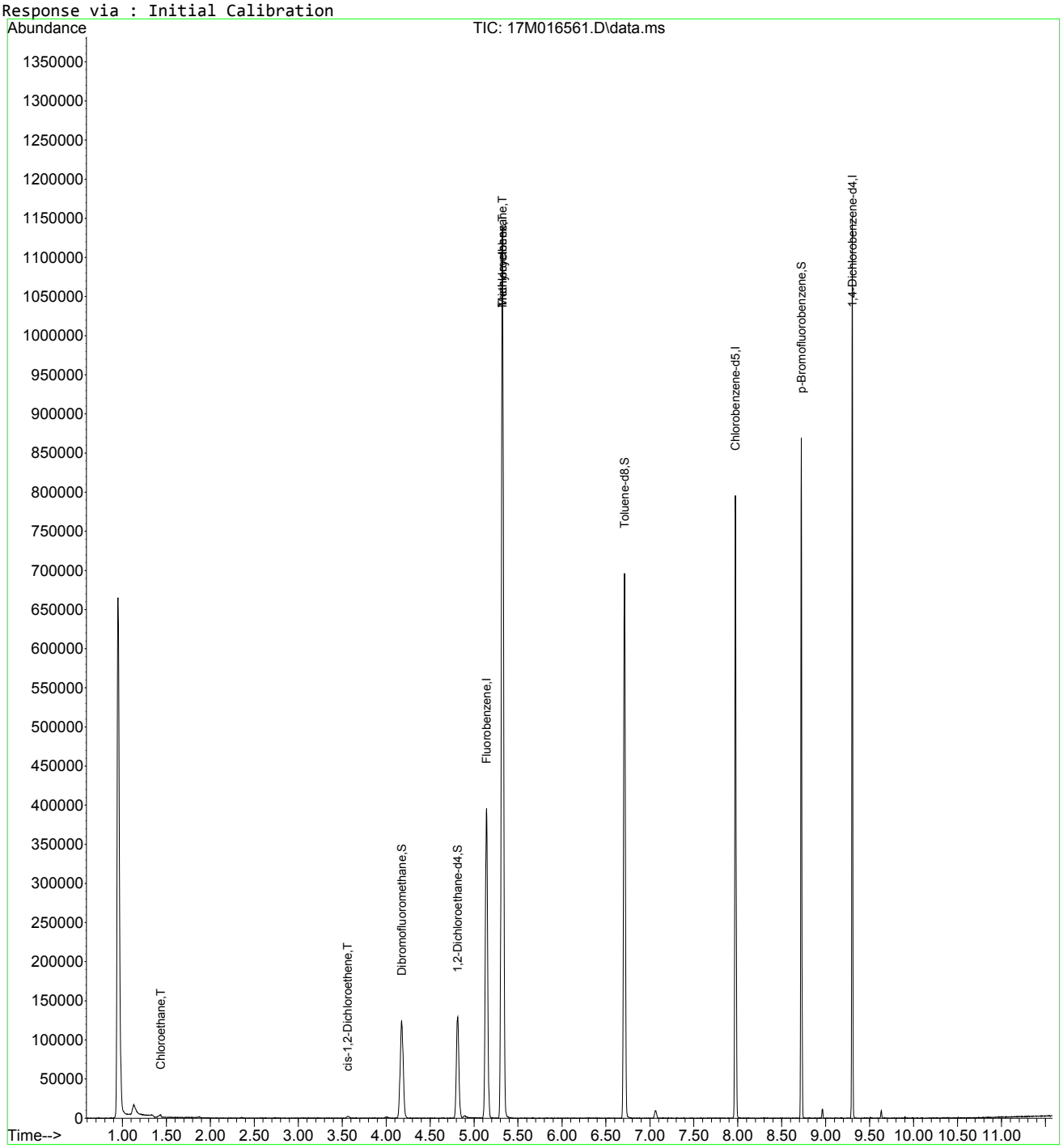

8260_VMS.M Mon Nov 30 09:37:26 2015 Page: 2

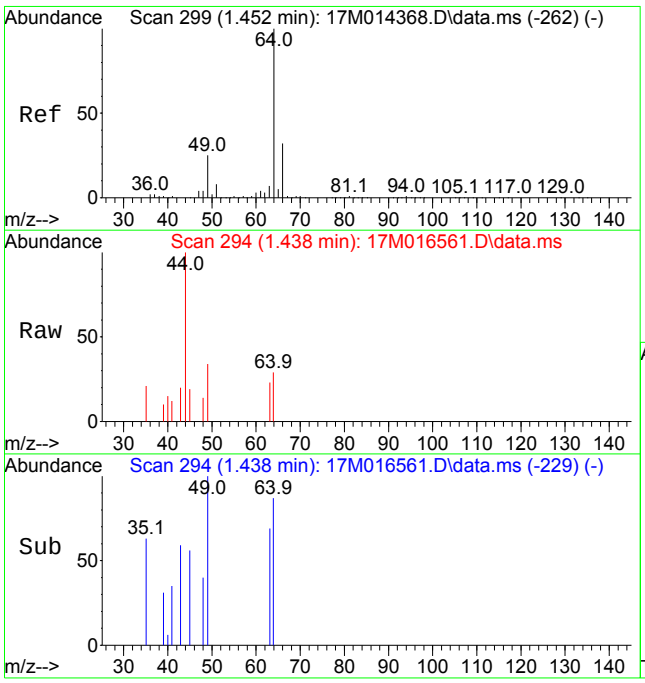

#7
Chloroethane
Concen: 0.3820 ug/L
RT: 1.438 min Scan# 294
Delta R.T. -0.012 min
Lab File: 17M016561.D
Acq: 18 Nov 2015 22:22

Tgt Ion: 64 Resp: 910

Ion	Ratio	Lower	Upper
64	100		
49	91.3	14.8	34.6#

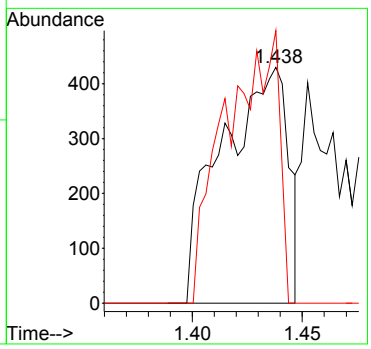

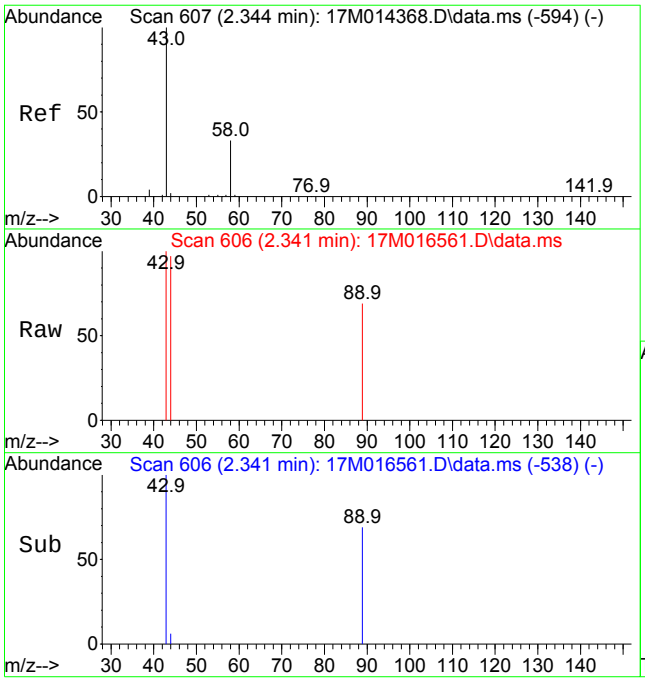

#16
Acetone
Concen: Below Cal
RT: 2.341 min Scan# 606
Delta R.T. -0.003 min
Lab File: 17M016561.D
Acq: 18 Nov 2015 22:22

Tgt Ion: 43 Resp: 152

Ion	Ratio	Lower	Upper
43	100		
58	0.0	19.4	45.4#

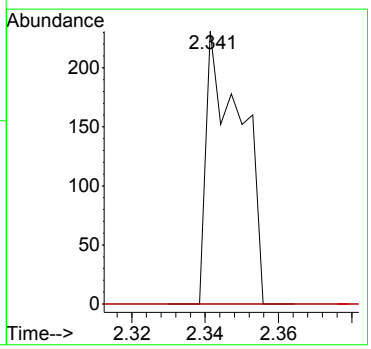

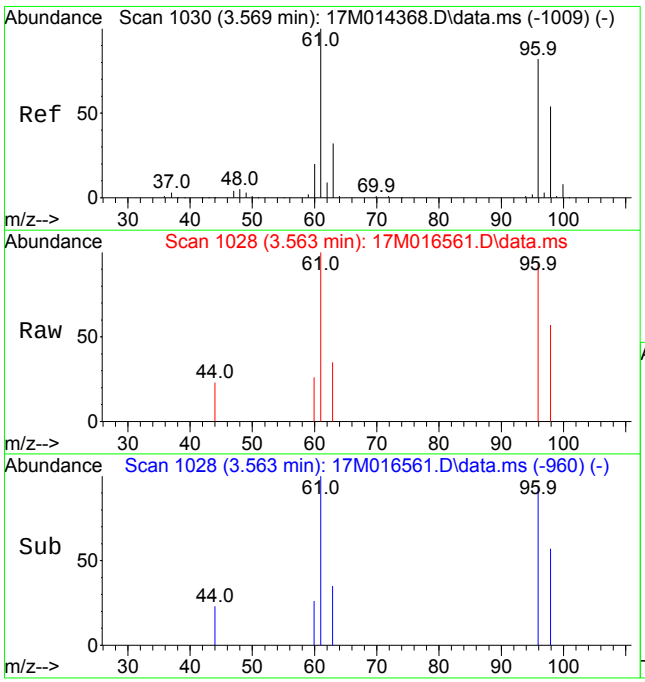

#23
cis-1,2-Dichloroethene
Concen: 0.3229 ug/L
RT: 3.563 min Scan# 1028
Delta R.T. -0.003 min
Lab File: 17M016561.D
Acq: 18 Nov 2015 22:22

Tgt Ion: 96 Resp: 1312

Ion	Ratio	Lower	Upper
96	100		
61	129.6	107.0	160.4

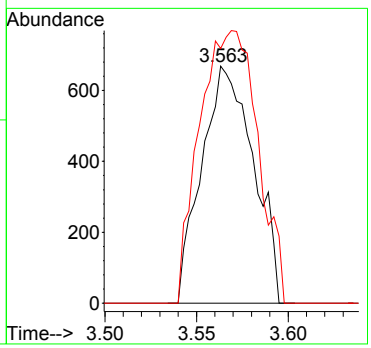

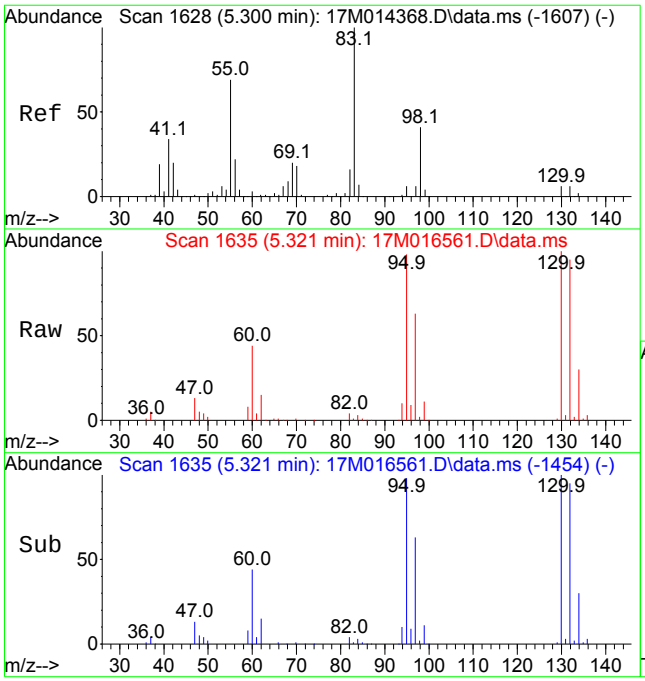

#36
Methylcyclohexane
Concen: 0.5918 ug/L
RT: 5.321 min Scan# 1635
Delta R.T. 0.023 min
Lab File: 17M016561.D
Acq: 18 Nov 2015 22:22

Tgt Ion: 83 Resp: 4101

Ion	Ratio	Lower	Upper
83	100		
55	0.0	63.0	94.4#
98	214.9	32.8	49.2#

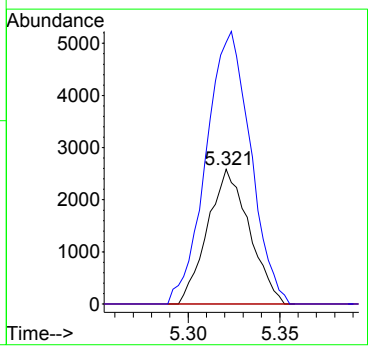

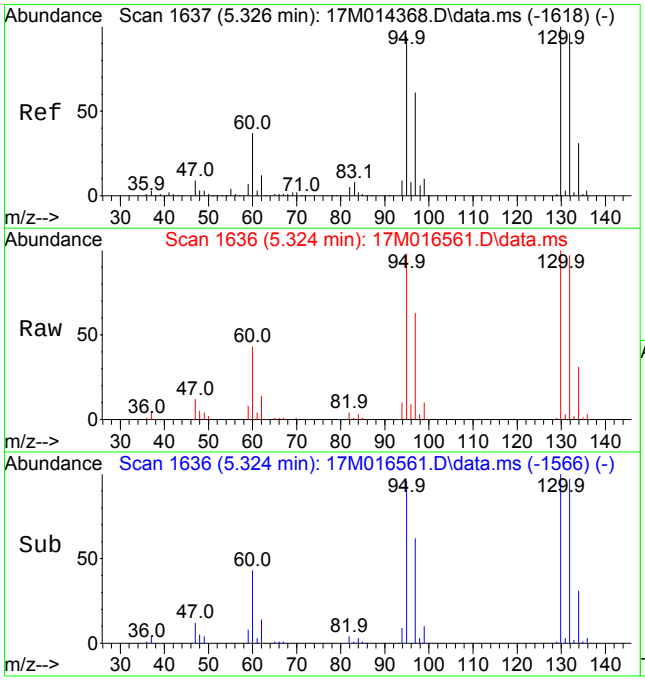

#37
Trichloroethene
Concen: 88.2970 ug/L
RT: 5.324 min Scan# 1636
Delta R.T. 0.003 min
Lab File: 17M016561.D
Acq: 18 Nov 2015 22:22

Tgt Ion:130 Resp: 363114

Ion	Ratio	Lower	Upper
130	100		
60	43.4	25.3	58.9

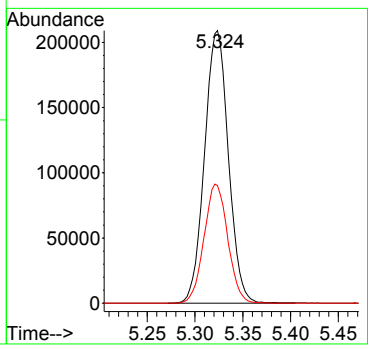

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016562.D
Acq On : 18 Nov 2015 22:42
Operator : ADC
Sample : L15110950-09 826-LOW
Misc : 1,1
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Nov 30 09:37:29 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.141	96	347986	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	260507	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.302	152	141516	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.177	111	92804	25.9973 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.989%		
34) 1,2-Dichloroethane-d4	4.814	65	97414	28.4159 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 113.664%		
47) Toluene-d8	6.710	98	368715	27.4578 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 109.831%		
66) p-Bromofluorobenzene	8.723	95	135663	27.7319 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 110.928%		
Target Compounds					Qvalue
7) Chloroethane	1.435	64	423	0.1759 ug/L #	1
16) Acetone	2.341	43	1258	1.2115 ug/L #	71
37) Trichloroethene	5.318	130	993	0.2393 ug/L	89

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016562.D
Acq On : 18 Nov 2015 22:42
Operator : ADC
Sample : L15110950-09 826-LOW
Misc : 1,1
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Nov 30 09:37:29 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

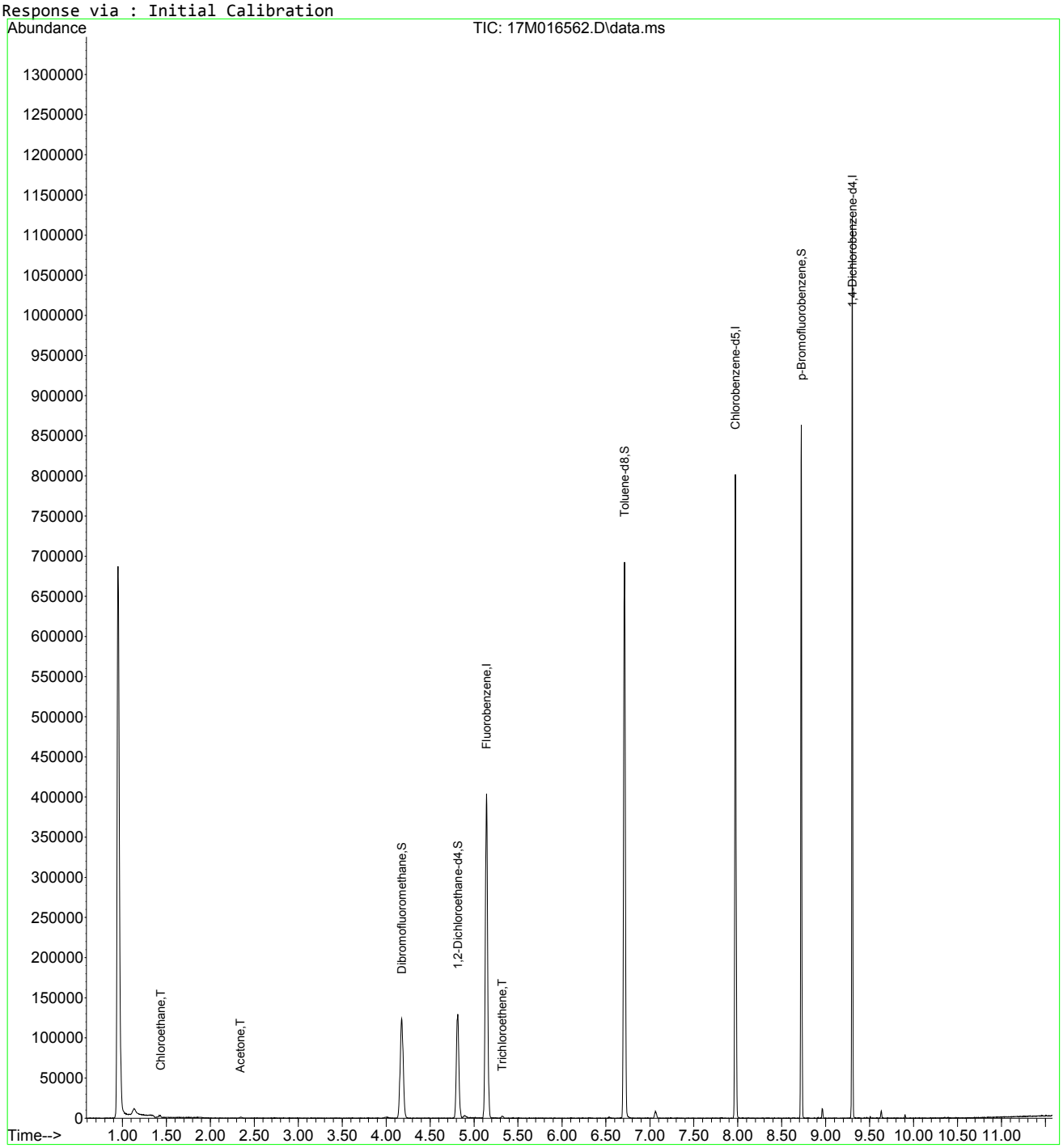

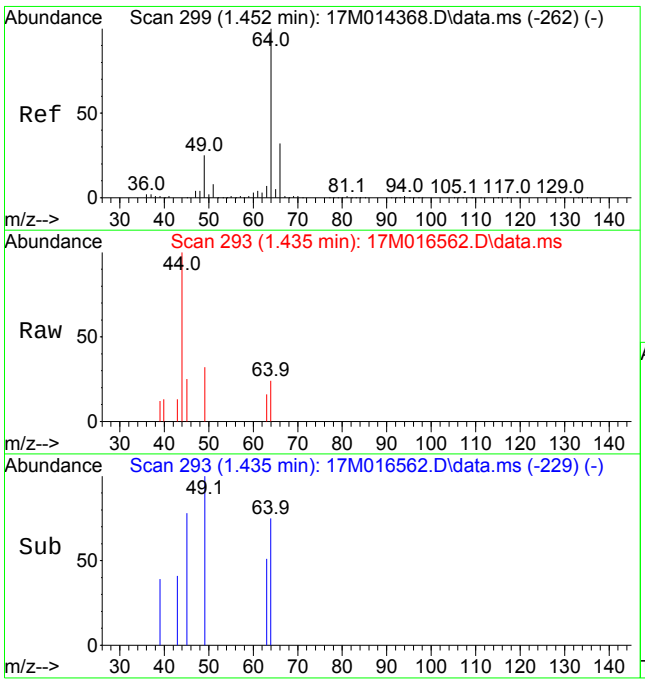

#7
Chloroethane
Concen: 0.1759 ug/L
RT: 1.435 min Scan# 293
Delta R.T. -0.015 min
Lab File: 17M016562.D
Acq: 18 Nov 2015 22:42

Tgt Ion: 64 Resp: 423

Ion	Ratio	Lower	Upper
64	100		
49	172.8	14.8	34.6#

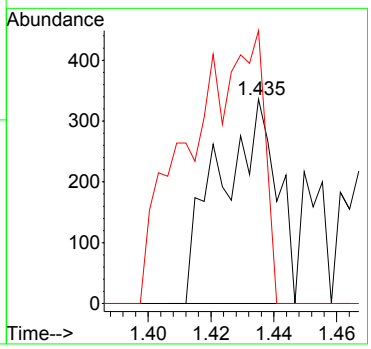

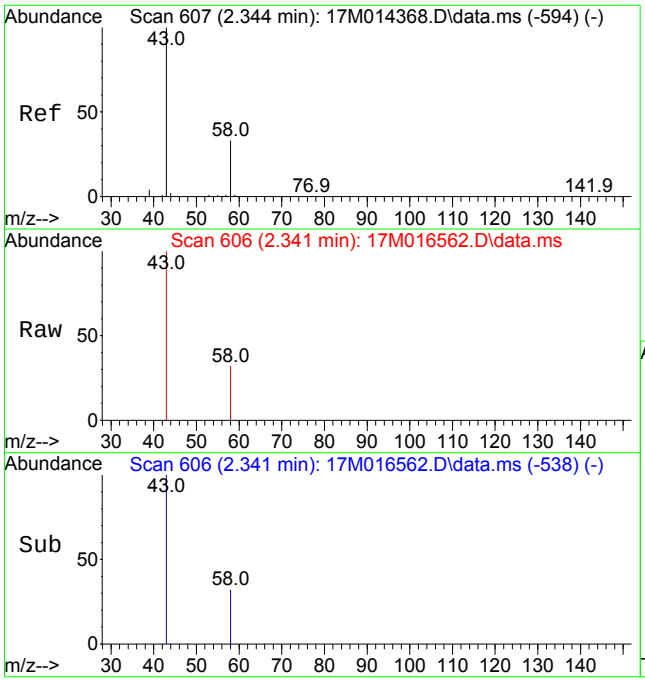

#16
Acetone
Concen: 1.2115 ug/L
RT: 2.341 min Scan# 606
Delta R.T. -0.003 min
Lab File: 17M016562.D
Acq: 18 Nov 2015 22:42

Tgt Ion: 43 Resp: 1258

Ion	Ratio	Lower	Upper
43	100		
58	16.3	19.4	45.4#

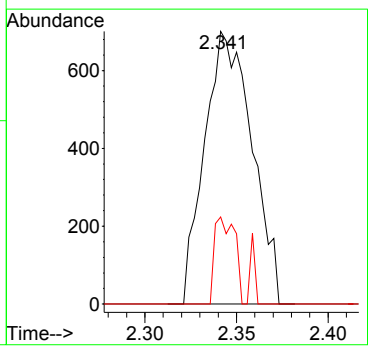

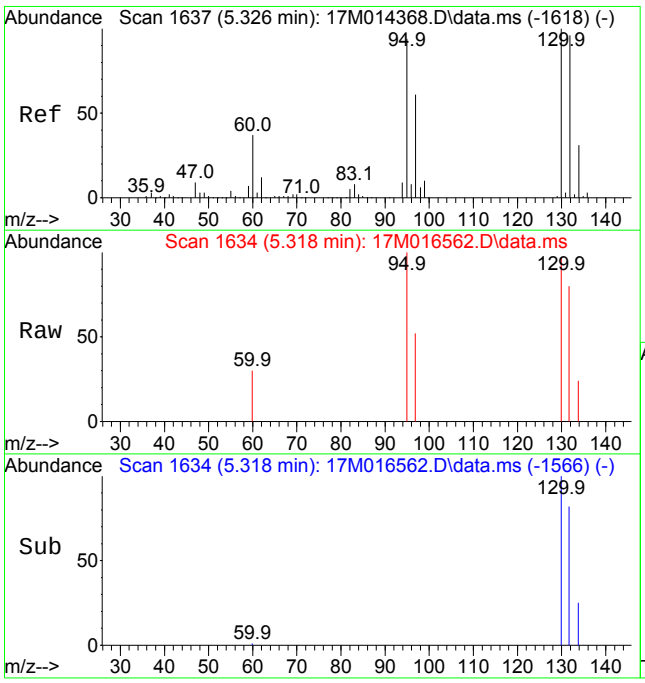

#37
Trichloroethene
Concen: 0.2393 ug/L
RT: 5.318 min Scan# 1634
Delta R.T. -0.003 min
Lab File: 17M016562.D
Acq: 18 Nov 2015 22:42

Tgt Ion:130 Resp: 993

Ion	Ratio	Lower	Upper
130	100		
60	35.2	25.3	58.9

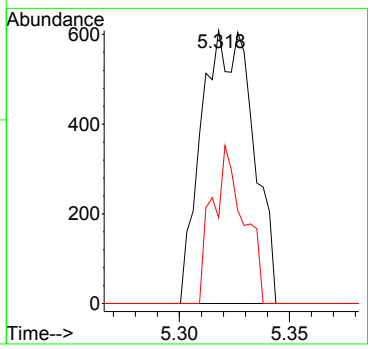

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016548.D
Acq On : 18 Nov 2015 18:04
Operator : ADC
Sample : L15110950-10 A 826-LOW
Misc : 1,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Nov 30 09:36:44 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.141	96	366766	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	271900	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.302	152	147133	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.180	111	98015	26.0512 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.205%		
34) 1,2-Dichloroethane-d4	4.814	65	101079	27.9752 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.901%		
47) Toluene-d8	6.711	98	387891	27.6755 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 110.702%#		
66) p-Bromofluorobenzene	8.723	95	141403	27.8017 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 111.207%		
Target Compounds					Qvalue
6) Bromomethane	1.383	94	320	0.1222 ug/L	82
15) Methylene Chloride	2.295	84	542	0.1272 ug/L	98
16) Acetone	2.347	43	337	Below Cal #	42

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016548.D
Acq On : 18 Nov 2015 18:04
Operator : ADC
Sample : L15110950-10 A 826-LOW
Misc : 1,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Nov 30 09:36:44 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

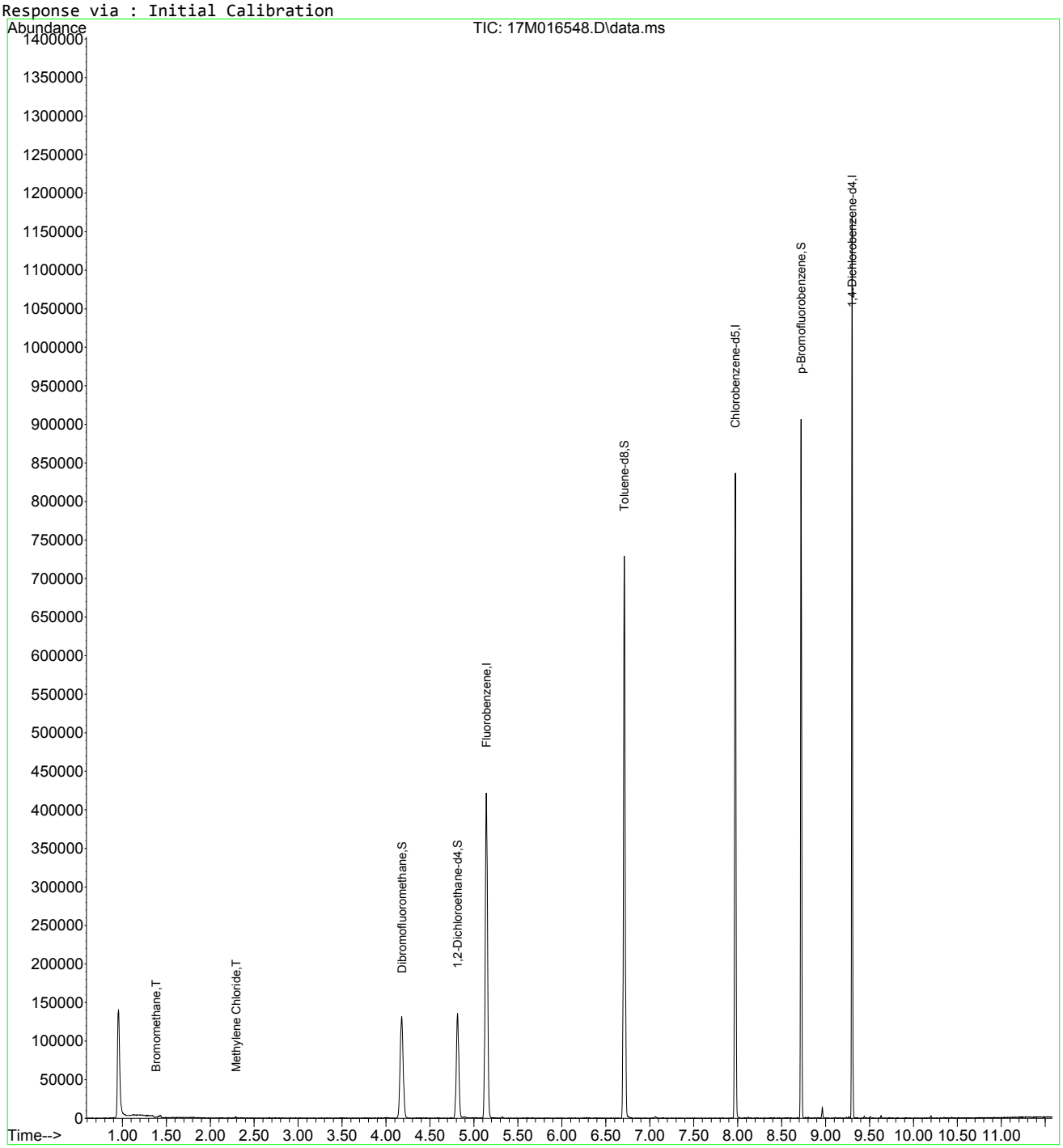

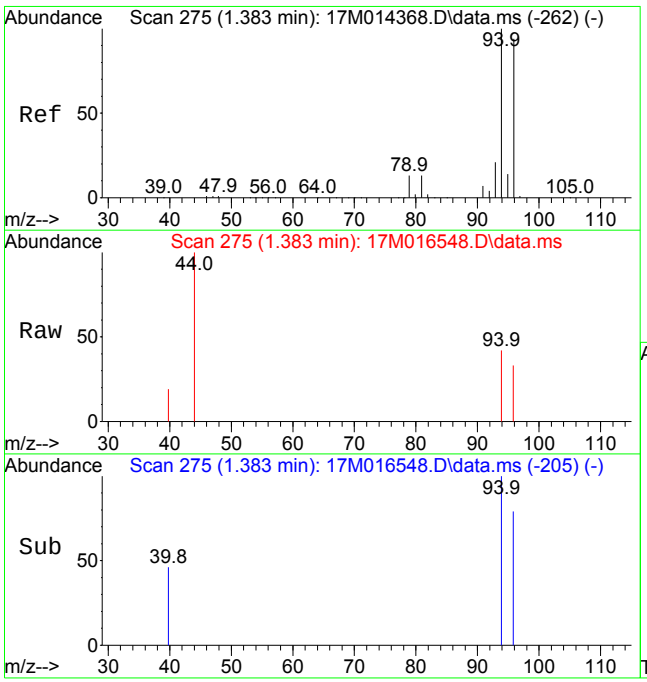

#6
Bromomethane
Concen: 0.1222 ug/L
RT: 1.383 min Scan# 275
Delta R.T. 0.003 min
Lab File: 17M016548.D
Acq: 18 Nov 2015 18:04

Tgt Ion: 94 Resp: 320

Ion	Ratio	Lower	Upper
94	100		
96	110.3	56.0	130.8

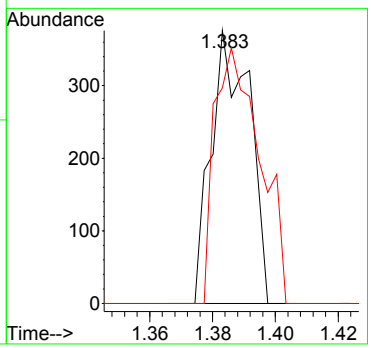

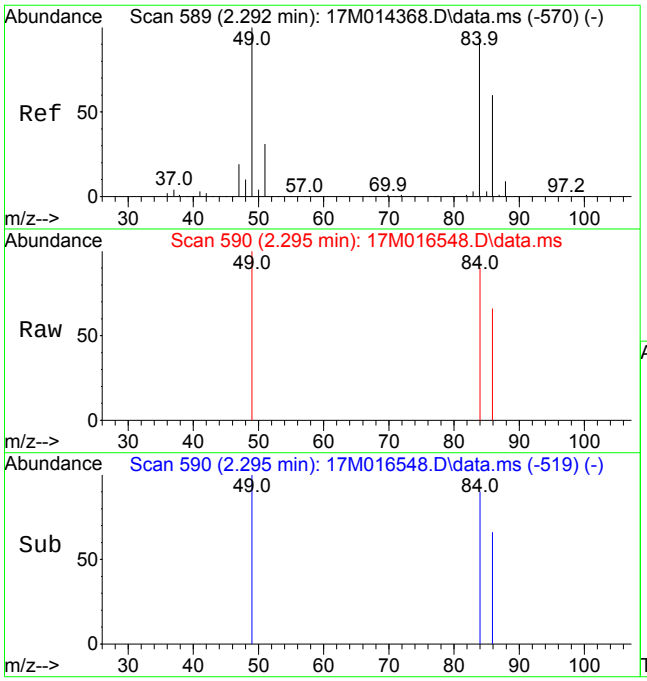

#15
Methylene Chloride
Concen: 0.1272 ug/L
RT: 2.295 min Scan# 590
Delta R.T. 0.006 min
Lab File: 17M016548.D
Acq: 18 Nov 2015 18:04

Tgt Ion: 84 Resp: 542

Ion	Ratio	Lower	Upper
84	100		
49	129.3	101.8	152.8

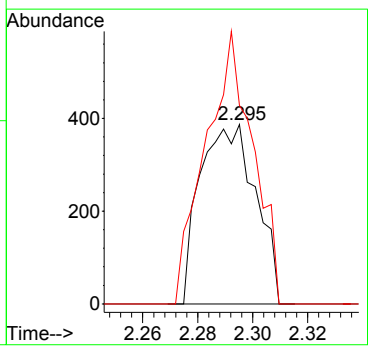

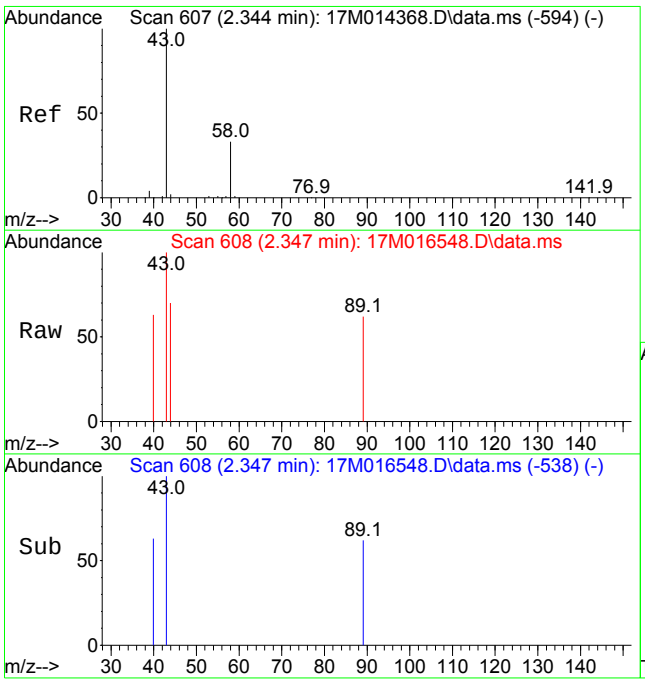

#16
Acetone
Concen: Below Cal
RT: 2.347 min Scan# 608
Delta R.T. 0.003 min
Lab File: 17M016548.D
Acq: 18 Nov 2015 18:04

Tgt Ion: 43 Resp: 337

Ion	Ratio	Lower	Upper
43	100		
58	0.0	19.4	45.4#

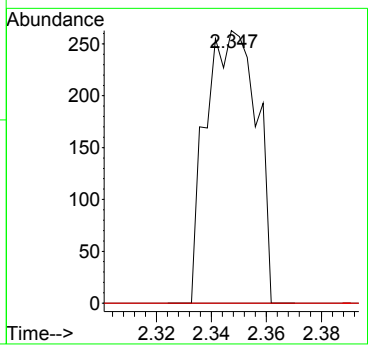

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016367.D
Acq On : 11 Nov 2015 14:34
Operator : ADC
Sample : WG546498-02 50ug/L CCV STD
Misc : 1,1 STD73185
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 12 09:55:23 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.141	96	458822	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.976	117	339437	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.305	152	185646	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.174	111	117230	24.9068 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.627%		
34) 1,2-Dichloroethane-d4	4.814	65	109219	24.1633 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.653%		
47) Toluene-d8	6.713	98	451841	25.8239 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.296%		
66) p-Bromofluorobenzene	8.723	95	166533	25.9500 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.800%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.039	85	335655	51.4419 ug/L	100
3) Chloromethane	1.149	50	324623	46.7065 ug/L	100
4) Vinyl Chloride	1.195	62	302744	48.7635 ug/L	100
5) 1,3-Butadiene	1.204	54	187905	47.0884 ug/L	99
6) Bromomethane	1.380	94	144179	44.0291 ug/L	99
7) Chloroethane	1.450	64	162615	51.3007 ug/L	100
8) Trichlorofluoromethane	1.531	101	371160	50.8195 ug/L	100
9) Diethyl ether	1.748	59	160210	43.7335 ug/L	100
10) 1,1-Dichloroethene	1.864	61	352128	48.8893 ug/L	100
11) Carbon Disulfide	1.875	76	735227	48.4661 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.893	101	221329	49.5559 ug/L	100
14) Acrolein	2.113	56	19271	39.2750 ug/L	100
15) Methylene Chloride	2.289	84	231020	43.3508 ug/L	100
16) Acetone	2.344	43	36680	39.7538 ug/L	100
17) trans-1,2-Dichloroethene	2.417	96	221824	47.1071 ug/L	100
18) Methyl acetate	2.449	43	114978	43.8882 ug/L #	100
19) Methyl Tert Butyl Ether	2.530	73	521300	43.4294 ug/L	100
20) 1,1-Dichloroethane	2.975	63	432976	48.0443 ug/L	100
21) Acrylonitrile	3.033	53	52338	41.9566 ug/L	100
22) Vinyl Acetate	3.274	86	23768	42.3588 ug/L	100
23) cis-1,2-Dichloroethene	3.566	96	250754	46.3794 ug/L	100
24) 2,2-Dichloropropane	3.694	77	356884	52.9451 ug/L	100
25) Cyclohexane	3.795	56	427191	49.2519 ug/L	100
26) Bromochloromethane	3.806	130	150619	47.1793 ug/L	100
27) Chloroform	3.934	83	408941	45.8012 ug/L	100
28) Carbon Tetrachloride	4.079	117	339341	48.9449 ug/L	100
30) 1,1,1-Trichloroethane	4.177	97	368726	47.0816 ug/L	100
31) 1,1-Dichloropropene	4.345	75	321276	48.3906 ug/L	100
32) 2-Butanone	4.365	43	62587	41.3567 ug/L	100
33) Benzene	4.646	78	939455	47.6412 ug/L	100
35) 1,2-Dichloroethane	4.892	62	272253	45.8836 ug/L	100
36) Methylcyclohexane	5.298	83	436849	47.3782 ug/L	100
37) Trichloroethene	5.321	130	258556	47.2500 ug/L	100
38) Dibromomethane	5.741	93	128239	43.8243 ug/L	100
39) 1,2-Dichloropropane	5.851	63	256757	47.3682 ug/L	100
40) Bromodichloromethane	5.937	83	316920	47.0276 ug/L	100
41) 1,4-Dioxane	6.149	88	3229	98.0789 ug/L	99
42) 2-Chloroethyl Vinyl Ether	6.528	63	121436	44.3247 ug/L	100
43) cis-1,3-Dichloropropene	6.545	75	380601	47.9030 ug/L	100
44) 4-Methyl-2-Pentanone	7.814	58	53208	39.5325 ug/L	99
45) trans-1,3-Dichloropropene	7.145	75	318685	46.8800 ug/L	100
48) Toluene	6.757	91	1047176	48.6967 ug/L	100
49) Tetrachloroethene	7.087	166	281120	48.5026 ug/L	100
50) 1,1,2-Trichloroethane	7.275	97	172931	43.2287 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016367.D
Acq On : 11 Nov 2015 14:34
Operator : ADC
Sample : WG546498-02 50ug/L CCV STD
Misc : 1,1 STD73185
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 12 09:55:23 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
51) Dibromochloromethane	7.417	129	238478	46.1774 ug/L	100
52) 1,3-Dichloropropane	7.498	76	287243	45.2709 ug/L	100
53) 1,2-Dibromoethane	7.585	107	176507	44.4634 ug/L	100
54) 2-Hexanone	7.814	43	103462	40.2276 ug/L	99
55) Chlorobenzene	7.984	112	674203	48.6490 ug/L	100
56) 1-Chlorohexane	7.999	69	69305	48.6888 ug/L	98
57) Ethylbenzene	8.022	106	367709	48.7457 ug/L	100
58) 1,1,1,2-Tetrachloroethane	8.039	131	247369	48.2138 ug/L	100
59) m-,p-Xylene	8.123	106	899052	99.3448 ug/L	100
60) o-Xylene	8.384	106	435980	48.8219 ug/L	100
61) Styrene	8.419	104	720887	48.5753 ug/L	100
62) Bromoform	8.422	173	152687	44.8427 ug/L	100
63) Isopropylbenzene	8.575	105	1145537	49.2114 ug/L	100
65) 1,3,5-Trimethylbenzene	8.914	105	1011949	49.7817 ug/L	100
67) Bromobenzene	8.775	156	299300	47.1063 ug/L	99
68) n-Propylbenzene	8.804	91	1356725	51.1343 ug/L	100
69) 1,1,2,2-Tetrachloroethane	8.844	83	198425	43.0559 ug/L	100
70) 2-Chlorotoluene	8.879	91	800522	49.3327 ug/L	100
71) 1,2,3-Trichloropropane	8.911	110	52918	41.2540 ug/L	100
72) trans-1,4-Dichloro-2-B...	8.937	53	45281	42.4657 ug/L #	99
73) 1,2,4-Trimethylbenzene	9.111	105	1011612	49.8516 ug/L	100
74) 4-Chlorotoluene	8.969	91	823222	49.3067 ug/L	99
75) tert-Butylbenzene	9.076	134	184752	49.5630 ug/L	100
76) sec-Butylbenzene	9.166	105	1259196	50.4106 ug/L	100
77) p-Isopropyltoluene	9.238	119	1105207	51.1600 ug/L	100
78) 1,3-Dichlorobenzene	9.267	146	573087	49.1162 ug/L	100
79) 1,4-Dichlorobenzene	9.310	146	565458	47.5085 ug/L	100
80) n-Butylbenzene	9.441	91	1026625	51.6336 ug/L	100
81) 1,2-Dichlorobenzene	9.513	146	525641	47.3213 ug/L	100
82) 1,2-Dibromo-3-Chloropr...	9.890	75	36703	42.4356 ug/L	100
83) Hexachlorobutadiene	10.188	225	262150	51.2717 ug/L	100
84) 1,2,4-Trichlorobenzene	10.202	180	433827	48.9385 ug/L	100
85) Naphthalene	10.353	128	719141	43.7967 ug/L	100
86) 1,2,3-Trichlorobenzene	10.437	180	382234	46.7201 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016367.D
Acq On : 11 Nov 2015 14:34
Operator : ADC
Sample : WG546498-02 50ug/L CCV STD
Misc : 1,1 STD73185
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 12 09:55:23 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

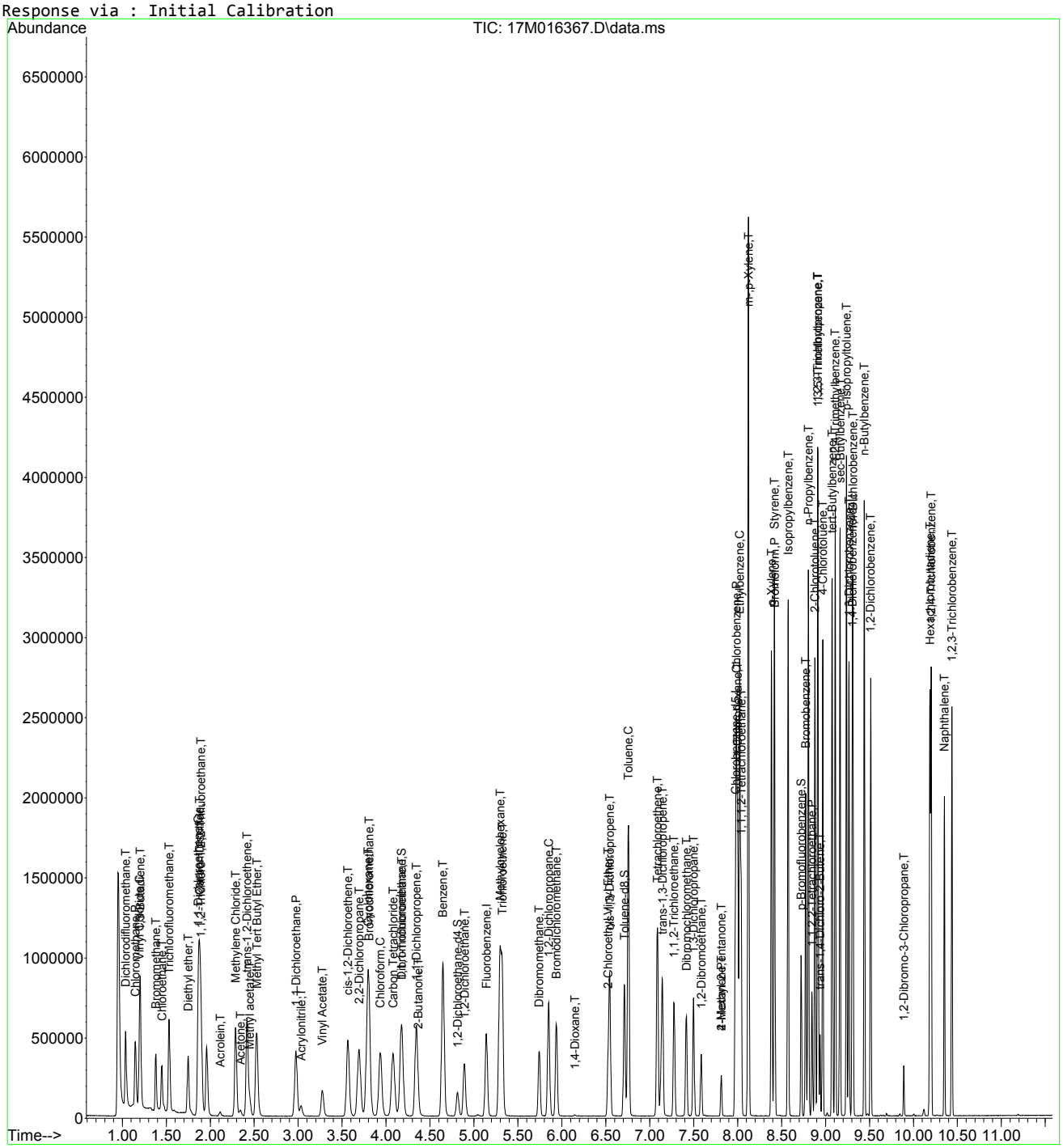

8260_VMS.M Thu Nov 12 09:55:24 2015 Page: 3

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016369.D
Acq On : 11 Nov 2015 15:14
Operator : ADC
Sample : WG546498-03 0.3ug/L STD
Misc : 1,1 STD73185
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 12 09:49:10 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	5.141	96	439106	25.00000	ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	325410	25.00000	ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.302	152	177701	25.00000	ug/L	0.0000
System Monitoring Compounds						
29) Dibromofluoromethane	4.180	111	805	0.1787	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.715%#		
34) 1,2-Dichloroethane-d4	4.811	65	993	0.2296	ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.918%#		
47) Toluene-d8	6.710	98	2790	0.1663	ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.665%#		
66) p-Bromofluorobenzene	8.723	95	1579	0.2570	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery =	1.028%#		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.038	85	2307	0.3694	ug/L	95
3) Chloromethane	1.148	50	3131	0.4707	ug/L	98
4) Vinyl Chloride	1.195	62	1967	0.3311	ug/L	97
5) 1,3-Butadiene	1.206	54	2510	0.6572	ug/L	92
6) Bromomethane	1.383	94	1901	0.6066	ug/L	75
7) Chloroethane	1.426	64	13916	4.5872	ug/L #	58
8) Trichlorofluoromethane	1.545	101	2531	0.3193	ug/L #	77
9) Diethyl ether	1.745	59	2180	0.6218	ug/L #	65
10) 1,1-Dichloroethene	1.867	61	2371	0.3440	ug/L #	69
11) Carbon Disulfide	1.881	76	5882	0.4052	ug/L #	68
12) 1,1,2-Trichloro-1,2,2-...	1.895	101	1495	0.3498	ug/L #	91
14) Acrolein	2.118	56	410	0.8731	ug/L	80
15) Methylene Chloride	2.286	84	3861	0.7570	ug/L #	66
16) Acetone	2.344	43	1441	1.0431	ug/L	93
17) trans-1,2-Dichloroethene	2.417	96	1871	0.4152	ug/L #	75
18) Methyl acetate	2.446	43	906	0.3614	ug/L #	57
19) Methyl Tert Butyl Ether	2.532	73	3666	0.3191	ug/L #	62
20) 1,1-Dichloroethane	2.975	63	2707	0.3139	ug/L #	74
21) Acrylonitrile	3.033	53	314	0.2630	ug/L #	54
23) cis-1,2-Dichloroethene	3.572	96	2030	0.3923	ug/L	78
24) 2,2-Dichloropropane	3.702	77	2489	0.3858	ug/L	97
25) Cyclohexane	3.798	56	2908	0.3503	ug/L #	67
26) Bromochloromethane	3.801	130	869	0.2844	ug/L	99
27) Chloroform	3.931	83	2965	0.3470	ug/L #	91
28) Carbon Tetrachloride	4.087	117	2090	0.3150	ug/L #	94
30) 1,1,1-Trichloroethane	4.189	97	2828	0.3773	ug/L	90
31) 1,1-Dichloropropene	4.342	75	2168	0.3412	ug/L #	66
32) 2-Butanone	4.362	43	768	0.5303	ug/L #	28
33) Benzene	4.646	78	6827	0.3618	ug/L	97
35) 1,2-Dichloroethane	4.892	62	1698	0.2990	ug/L	88
36) Methylcyclohexane	5.292	83	3337	0.3782	ug/L #	80
37) Trichloroethene	5.324	130	1957	0.3737	ug/L	98
38) Dibromomethane	5.743	93	1009	0.3603	ug/L	89
39) 1,2-Dichloropropane	5.851	63	1623	0.3129	ug/L	94
40) Bromodichloromethane	5.937	83	2224	0.3448	ug/L	98
42) 2-Chloroethyl Vinyl Ether	6.525	63	864	0.3295	ug/L	100
43) cis-1,3-Dichloropropene	6.545	75	2413	0.3173	ug/L #	74
44) 4-Methyl-2-Pentanone	7.816	58	692	0.5372	ug/L #	1
45) trans-1,3-Dichloropropene	7.148	75	1977	0.3039	ug/L #	75
48) Toluene	6.757	91	7140	0.3463	ug/L	98
49) Tetrachloroethene	7.087	166	1943	0.3497	ug/L	96
50) 1,1,2-Trichloroethane	7.275	97	1612	0.4203	ug/L	83
51) Dibromochloromethane	7.420	129	1509	0.3048	ug/L	98
52) 1,3-Dichloropropane	7.495	76	1902	0.3127	ug/L #	59

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016369.D
Acq On : 11 Nov 2015 15:14
Operator : ADC
Sample : WG546498-03 0.3ug/L STD
Misc : 1,1 STD73185
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 12 09:49:10 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) 1,2-Dibromoethane	7.585	107	1289	0.3387 ug/L	71
54) 2-Hexanone	7.814	43	1273	0.5163 ug/L	96
55) Chlorobenzene	7.984	112	4633	0.3487 ug/L #	1
56) 1-Chlorohexane	7.999	69	849	0.6222 ug/L #	1
57) Ethylbenzene	8.019	106	2418	0.3344 ug/L	100
58) 1,1,1,2-Tetrachloroethane	8.039	131	1431	0.2909 ug/L #	66
59) m-,p-Xylene	8.120	106	5961	0.6871 ug/L	97
60) o-Xylene	8.387	106	2794	0.3264 ug/L	99
61) Styrene	8.419	104	4886	0.3434 ug/L	97
62) Bromoform	8.422	173	887	0.2717 ug/L #	91
63) Isopropylbenzene	8.575	105	8316	0.3726 ug/L	93
65) 1,3,5-Trimethylbenzene	8.911	105	6999	0.3597 ug/L	95
67) Bromobenzene	8.775	156	2001	0.3290 ug/L	86
68) n-Propylbenzene	8.804	91	9056	0.3566 ug/L #	98
69) 1,1,2,2-Tetrachloroethane	8.844	83	1383	0.3135 ug/L	93
70) 2-Chlorotoluene	8.879	91	5492	0.3536 ug/L	99
71) 1,2,3-Trichloropropane	8.911	110	821	0.6687 ug/L #	18
72) trans-1,4-Dichloro-2-B...	8.937	53	553	0.5418 ug/L #	44
73) 1,2,4-Trimethylbenzene	9.111	105	7227	0.3721 ug/L	94
74) 4-Chlorotoluene	8.966	91	6024	0.3769 ug/L	99
75) tert-Butylbenzene	9.076	134	1256	0.3520 ug/L	93
76) sec-Butylbenzene	9.163	105	8905	0.3724 ug/L	96
77) p-Isopropyltoluene	9.235	119	7255	0.3508 ug/L	98
78) 1,3-Dichlorobenzene	9.264	146	3977	0.3561 ug/L	82
79) 1,4-Dichlorobenzene	9.310	146	4196	0.3683 ug/L	86
80) n-Butylbenzene	9.441	91	7271	0.3820 ug/L	99
81) 1,2-Dichlorobenzene	9.513	146	3615	0.3400 ug/L	83
82) 1,2-Dibromo-3-Chloropr...	9.890	75	220	0.2657 ug/L	86
83) Hexachlorobutadiene	10.188	225	1776	0.3629 ug/L	97
84) 1,2,4-Trichlorobenzene	10.199	180	3287	0.3874 ug/L	97
85) Naphthalene	10.350	128	5757	0.3663 ug/L	99
86) 1,2,3-Trichlorobenzene	10.437	180	2990	0.3818 ug/L	95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016369.D
Acq On : 11 Nov 2015 15:14
Operator : ADC
Sample : WG546498-03 0.3ug/L STD
Misc : 1,1 STD73185
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 12 09:49:10 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

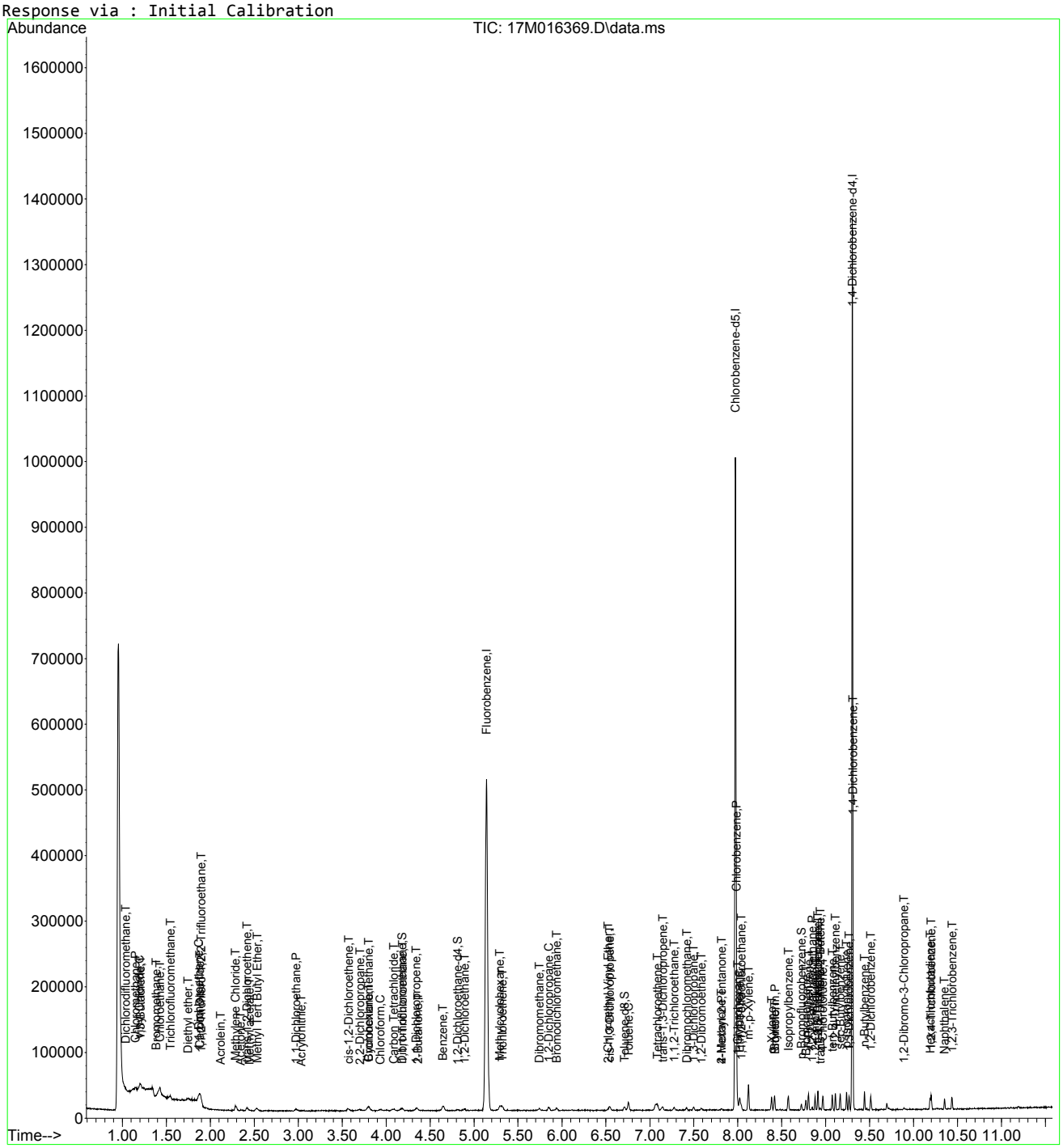

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016369.D
Acq On : 11 Nov 2015 15:14
Operator : ADC
Sample : WG546498-03 0.3ug/L STD
Misc : 1,1 STD73185
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 12 09:49:10 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	100	0.000
2	T	Dichlorodifluoromethane	-1.000	0.369	0.0	0	0.000
3	P	Chloromethane	-1.000	0.471	0.0	0	0.000
4	C	Vinyl Chloride	-1.000	0.331	0.0	0	0.000
5	T	1,3-Butadiene	-1.000	0.657	0.0	0	0.000
6	T	Bromomethane	-1.000	0.607	0.0	0	0.000
7	T	Chloroethane	-1.000	4.587	0.0	0	-0.024
8	T	Trichlorofluoromethane	-1.000	0.319	0.0	0	0.014
9	T	Diethyl ether	-1.000	0.622	0.0	0	0.000
10	C	1,1-Dichloroethene	-1.000	0.344	0.0	0	0.000
11	T	Carbon Disulfide	-1.000	0.405	0.0	0	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.000	0.350	0.0	0	0.000
13	T	Iodomethane	-1.000	0.000	0.0	0	0.000
14	T	Acrolein	-1.000	0.873	0.0	0	0.000
15	T	Methylene Chloride	-1.000	0.757	0.0	0	0.000
16	T	Acetone	-1.000	1.043	0.0	0	0.000
17	T	trans-1,2-Dichloroethene	-1.000	0.415	0.0	0	0.000
18	T	Methyl acetate	0.300	0.361	-20.3	100	0.000
19	T	Methyl Tert Butyl Ether	-1.000	0.319	0.0	0	0.000
20	P	1,1-Dichloroethane	-1.000	0.314	0.0	0	0.000
21	T	Acrylonitrile	-1.000	0.263	0.0	0	0.000
22	T	Vinyl Acetate	-1.000	0.000	0.0	0	-3.274#
23	T	cis-1,2-Dichloroethene	-1.000	0.392	0.0	0	0.000
24	T	2,2-Dichloropropane	-1.000	0.386	0.0	0	0.000
25	T	Cyclohexane	-1.000	0.350	0.0	0	0.000
26	T	Bromochloromethane	-1.000	0.284	0.0	0	0.000
27	C	Chloroform	0.300	0.347	-15.7#	100	0.000
28	T	Carbon Tetrachloride	-1.000	0.315	0.0	0	0.000
29	S	Dibromofluoromethane	-1.000	0.179	0.0	0	0.000
30	T	1,1,1-Trichloroethane	-1.000	0.377	0.0	0	0.012
31	T	1,1-Dichloropropene	-1.000	0.341	0.0	0	0.000
32	T	2-Butanone	-1.000	0.530	0.0	0	0.000
33	T	Benzene	-1.000	0.362	0.0	0	0.000
34	S	1,2-Dichloroethane-d4	-1.000	0.230	0.0	0	0.000
35	T	1,2-Dichloroethane	-1.000	0.299	0.0	0	0.000
36	T	Methylcyclohexane	0.300	0.378	-26.0#	100	0.000
37	T	Trichloroethene	-1.000	0.374	0.0	0	0.000
38	T	Dibromomethane	-1.000	0.360	0.0	0	0.000
39	C	1,2-Dichloropropane	-1.000	0.313	0.0	0	0.000
40	T	Bromodichloromethane	-1.000	0.345	0.0	0	0.000
41	T	1,4-Dioxane	-1.000	0.000	0.0	0	-6.149#
42	T	2-Chloroethyl Vinyl Ether	-1.000	0.330	0.0	0	0.000
43	T	cis-1,3-Dichloropropene	-1.000	0.317	0.0	0	0.000
44	T	4-Methyl-2-Pentanone	-1.000	0.537	0.0	0	0.000
45	T	trans-1,3-Dichloropropene	-1.000	0.304	0.0	0	0.000
46	I	Chlorobenzene-d5	25.000	25.000	0.0	100	0.000
47	S	Toluene-d8	-1.000	0.166	0.0	0	0.000
48	C	Toluene	-1.000	0.346	0.0	0	0.000
49	T	Tetrachloroethene	-1.000	0.350	0.0	0	0.000
50	T	1,1,2-Trichloroethane	-1.000	0.420	0.0	0	0.000
51	T	Dibromochloromethane	-1.000	0.305	0.0	0	0.000
52	T	1,3-Dichloropropane	-1.000	0.313	0.0	0	0.000
53	T	1,2-Dibromoethane	-1.000	0.339	0.0	0	0.000
54	T	2-Hexanone	-1.000	0.516	0.0	0	0.000
55	P	Chlorobenzene	-1.000	0.349	0.0	0	0.000

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016369.D
Acq On : 11 Nov 2015 15:14
Operator : ADC
Sample : WG546498-03 0.3ug/L STD
Misc : 1,1 STD73185
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 12 09:49:10 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	1-Chlorohexane	-1.000	0.622	0.0	0	0.000
57	C	Ethylbenzene	-1.000	0.334	0.0	0	0.000
58	T	1,1,1,2-Tetrachloroethane	-1.000	0.291	0.0	0	0.000
59	T	m-,p-Xylene	-1.000	0.687	0.0	0	0.000
60	T	o-Xylene	-1.000	0.326	0.0	0	0.000
61	T	Styrene	-1.000	0.343	0.0	0	0.000
62	P	Bromoform	-1.000	0.272	0.0	0	0.000
63	T	Isopropylbenzene	-1.000	0.373	0.0	0	0.000
64	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	100	0.000
65	T	1,3,5-Trimethylbenzene	-1.000	0.360	0.0	0	0.000
66	S	p-Bromofluorobenzene	-1.000	0.257	0.0	0	0.000
67	T	Bromobenzene	0.300	0.329	-9.7	100	0.000
68	T	n-Propylbenzene	-1.000	0.357	0.0	0	0.000
69	P	1,1,2,2-Tetrachloroethane	-1.000	0.314	0.0	0	0.000
70	T	2-Chlorotoluene	-1.000	0.354	0.0	0	0.000
71	T	1,2,3-Trichloropropane	-1.000	0.669	0.0	0	0.000
72	T	trans-1,4-Dichloro-2-Butene	-1.000	0.542	0.0	0	0.000
73	T	1,2,4-Trimethylbenzene	-1.000	0.372	0.0	0	0.000
74	T	4-Chlorotoluene	-1.000	0.377	0.0	0	0.000
75	T	tert-Butylbenzene	-1.000	0.352	0.0	0	0.000
76	T	sec-Butylbenzene	-1.000	0.372	0.0	0	0.000
77	T	p-Isopropyltoluene	-1.000	0.351	0.0	0	0.000
78	T	1,3-Dichlorobenzene	-1.000	0.356	0.0	0	0.000
79	T	1,4-Dichlorobenzene	0.300	0.368	-22.7	100	0.000
80	T	n-Butylbenzene	-1.000	0.382	0.0	0	0.000
81	T	1,2-Dichlorobenzene	0.300	0.340	-13.3	100	0.000
82	T	1,2-Dibromo-3-Chloropropane	-1.000	0.266	0.0	0	0.000
83	T	Hexachlorobutadiene	-1.000	0.363	0.0	0	0.000
84	T	1,2,4-Trichlorobenzene	-1.000	0.387	0.0	0	0.000
85	T	Naphthalene	-1.000	0.366	0.0	0	0.000
86	T	1,2,3-Trichlorobenzene	-1.000	0.382	0.0	0	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 1

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016370.D
Acq On : 11 Nov 2015 15:34
Operator : ADC
Sample : WG546498-04 0.4ug/L STD
Misc : 1,1 STD73185
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 12 09:49:12 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.141	96	441960	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	330272	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.302	152	179952	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.183	111	716	0.1579 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.632%#	
34) 1,2-Dichloroethane-d4	4.805	65	795	0.1826 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.730%#	
47) Toluene-d8	6.713	98	2899	0.1703 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.681%#	
66) p-Bromofluorobenzene	8.723	95	1391	0.2236 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.894%#	
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.038	85	2219	0.3531 ug/L	91
3) Chloromethane	1.148	50	3970	0.5930 ug/L	96
4) Vinyl Chloride	1.195	62	2454	0.4104 ug/L	93
5) 1,3-Butadiene	1.206	54	2446	0.6363 ug/L	90
6) Bromomethane	1.380	94	2302	0.7298 ug/L	80
7) Chloroethane	1.461	64	3782	1.2386 ug/L #	69
8) Trichlorofluoromethane	1.548	101	3151	0.4003 ug/L #	89
9) Diethyl ether	1.748	59	2054	0.5821 ug/L	76
10) 1,1-Dichloroethene	1.867	61	2730	0.3935 ug/L	90
11) Carbon Disulfide	1.887	76	7051	0.4825 ug/L #	61
12) 1,1,2-Trichloro-1,2,2-...	1.895	101	1648	0.3831 ug/L #	86
14) Acrolein	2.040	56	209	0.4422 ug/L	85
15) Methylene Chloride	2.289	84	3898	0.7594 ug/L #	71
16) Acetone	2.269	43	352	Below Cal	97
17) trans-1,2-Dichloroethene	2.422	96	1909	0.4209 ug/L	94
18) Methyl acetate	2.451	43	783	0.3103 ug/L #	51
19) Methyl Tert Butyl Ether	2.530	73	4547	0.3933 ug/L #	81
20) 1,1-Dichloroethane	2.978	63	3455	0.3980 ug/L	93
21) Acrylonitrile	3.045	53	813	0.6766 ug/L #	57
23) cis-1,2-Dichloroethene	3.566	96	2457	0.4718 ug/L	78
24) 2,2-Dichloropropane	3.688	77	2771	0.4268 ug/L	98
25) Cyclohexane	3.801	56	3331	0.3987 ug/L #	76
26) Bromochloromethane	3.806	130	1045	0.3398 ug/L	90
27) Chloroform	3.928	83	3848	0.4474 ug/L	94
28) Carbon Tetrachloride	4.084	117	2434	0.3645 ug/L #	94
30) 1,1,1-Trichloroethane	4.171	97	3164	0.4194 ug/L	97
31) 1,1-Dichloropropene	4.342	75	2548	0.3984 ug/L #	83
32) 2-Butanone	4.374	43	1298	0.8904 ug/L #	41
33) Benzene	4.652	78	7938	0.4179 ug/L	99
35) 1,2-Dichloroethane	4.892	62	2197	0.3844 ug/L #	87
36) Methylcyclohexane	5.295	83	3944	0.4441 ug/L #	90
37) Trichloroethene	5.324	130	2213	0.4198 ug/L	96
38) Dibromomethane	5.738	93	1249	0.4431 ug/L	98
39) 1,2-Dichloropropane	5.848	63	2044	0.3915 ug/L	92
40) Bromodichloromethane	5.934	83	2582	0.3978 ug/L	99
42) 2-Chloroethyl Vinyl Ether	6.528	63	1041	0.3945 ug/L	96
43) cis-1,3-Dichloropropene	6.545	75	2878	0.3760 ug/L #	67
44) 4-Methyl-2-Pentanone	7.816	58	659	0.5083 ug/L #	68
45) trans-1,3-Dichloropropene	7.145	75	2430	0.3711 ug/L #	72
48) Toluene	6.757	91	8674	0.4146 ug/L	100
49) Tetrachloroethene	7.084	166	2376	0.4213 ug/L	96
50) 1,1,2-Trichloroethane	7.275	97	1862	0.4784 ug/L	92
51) Dibromochloromethane	7.417	129	1919	0.3819 ug/L	96
52) 1,3-Dichloropropane	7.498	76	2429	0.3934 ug/L	77

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016370.D
Acq On : 11 Nov 2015 15:34
Operator : ADC
Sample : WG546498-04 0.4ug/L STD
Misc : 1,1 STD73185
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 12 09:49:12 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) 1,2-Dibromoethane	7.588	107	1554	0.4023 ug/L	65
55) Chlorobenzene	7.984	112	5515	0.4090 ug/L #	15
56) 1-Chlorohexane	7.996	69	783	0.5653 ug/L #	1
57) Ethylbenzene	8.019	106	3043	0.4146 ug/L	90
58) 1,1,1,2-Tetrachloroethane	8.037	131	1919	0.3844 ug/L	78
59) m-,p-Xylene	8.120	106	7103	0.8067 ug/L	95
60) o-Xylene	8.384	106	3462	0.3984 ug/L	99
61) Styrene	8.419	104	5746	0.3979 ug/L	94
62) Bromoform	8.419	173	1165	0.3516 ug/L #	90
63) Isopropylbenzene	8.572	105	9444	0.4170 ug/L	96
65) 1,3,5-Trimethylbenzene	8.911	105	8355	0.4240 ug/L	95
67) Bromobenzene	8.775	156	2505	0.4067 ug/L	95
68) n-Propylbenzene	8.804	91	10612	0.4126 ug/L #	96
69) 1,1,2,2-Tetrachloroethane	8.844	83	1952	0.4370 ug/L	86
70) 2-Chlorotoluene	8.879	91	6551	0.4165 ug/L	98
71) 1,2,3-Trichloropropane	8.911	110	844	0.6788 ug/L #	36
72) trans-1,4-Dichloro-2-B...	8.937	53	535	0.5176 ug/L #	60
73) 1,2,4-Trimethylbenzene	9.111	105	8347	0.4244 ug/L	97
74) 4-Chlorotoluene	8.966	91	6896	0.4261 ug/L	100
75) tert-Butylbenzene	9.076	134	1397	0.3866 ug/L	95
76) sec-Butylbenzene	9.163	105	10277	0.4244 ug/L	97
77) p-Isopropyltoluene	9.238	119	8537	0.4077 ug/L	99
78) 1,3-Dichlorobenzene	9.264	146	4658	0.4118 ug/L	86
79) 1,4-Dichlorobenzene	9.310	146	4566	0.3958 ug/L #	78
80) n-Butylbenzene	9.441	91	8075	0.4190 ug/L	99
81) 1,2-Dichlorobenzene	9.513	146	4223	0.3922 ug/L	74
82) 1,2-Dibromo-3-Chloropr...	9.892	75	280	0.3340 ug/L	98
83) Hexachlorobutadiene	10.188	225	2004	0.4043 ug/L	97
84) 1,2,4-Trichlorobenzene	10.202	180	3538	0.4117 ug/L	96
85) Naphthalene	10.353	128	6853	0.4306 ug/L	100
86) 1,2,3-Trichlorobenzene	10.437	180	3258	0.4108 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016370.D
Acq On : 11 Nov 2015 15:34
Operator : ADC
Sample : WG546498-04 0.4ug/L STD
Misc : 1,1 STD73185
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 12 09:49:12 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

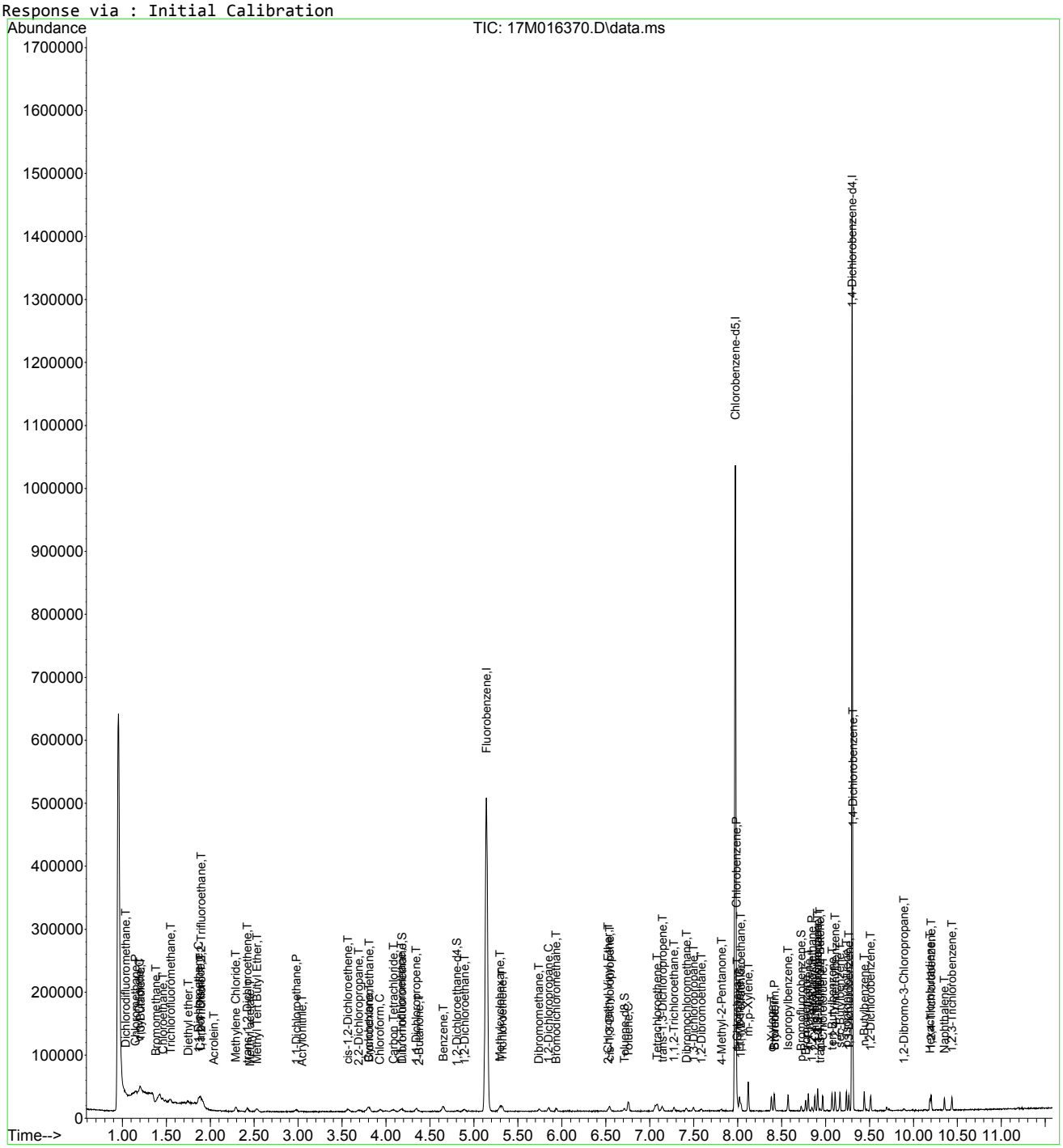

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016370.D
Acq On : 11 Nov 2015 15:34
Operator : ADC
Sample : WG546498-04 0.4ug/L STD
Misc : 1,1 STD73185
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 12 09:49:12 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	100	0.000
2	T	Dichlorodifluoromethane	-1.000	0.353	0.0	0	0.000
3	P	Chloromethane	-1.000	0.593	0.0	0	0.000
4	C	Vinyl Chloride	0.400	0.410	-2.5#	100	0.000
5	T	1,3-Butadiene	-1.000	0.636	0.0	0	0.000
6	T	Bromomethane	-1.000	0.730	0.0	0	0.000
7	T	Chloroethane	-1.000	1.239	0.0	0	0.011
8	T	Trichlorofluoromethane	0.400	0.400	0.0	100	0.017
9	T	Diethyl ether	-1.000	0.582	0.0	0	0.000
10	C	1,1-Dichloroethene	0.400	0.393	1.8#	100	0.000
11	T	Carbon Disulfide	0.400	0.483	-20.7	100	0.012
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.400	0.383	4.3	100	0.000
13	T	Iodomethane	-1.000	0.000	0.0	0	0.000
14	T	Acrolein	-1.000	0.442	0.0	0	-0.073
15	T	Methylene Chloride	-1.000	0.759	0.0	0	0.000
16	T	Acetone	-1.000	-0.212	0.0	0	-0.075
17	T	trans-1,2-Dichloroethene	0.400	0.421	-5.2	100	0.000
18	T	Methyl acetate	0.400	0.310	22.5	100	0.000
19	T	Methyl Tert Butyl Ether	0.400	0.393	1.8	100	0.000
20	P	1,1-Dichloroethane	0.400	0.398	0.5	100	0.000
21	T	Acrylonitrile	-1.000	0.677	0.0	0	0.012
22	T	Vinyl Acetate	-1.000	0.000	0.0	0	-3.274#
23	T	cis-1,2-Dichloroethene	0.400	0.472	-18.0	100	0.000
24	T	2,2-Dichloropropane	0.400	0.427	-6.7	100	0.000
25	T	Cyclohexane	0.400	0.399	0.3	100	0.000
26	T	Bromochloromethane	-1.000	0.340	0.0	0	0.000
27	C	Chloroform	0.400	0.447	-11.7#	100	0.000
28	T	Carbon Tetrachloride	0.400	0.364	9.0	100	0.000
29	S	Dibromofluoromethane	-1.000	0.158	0.0	0	0.000
30	T	1,1,1-Trichloroethane	0.400	0.419	-4.7	100	0.000
31	T	1,1-Dichloropropene	0.400	0.398	0.5	100	0.000
32	T	2-Butanone	-1.000	0.890	0.0	0	0.000
33	T	Benzene	0.400	0.418	-4.5	100	0.000
34	S	1,2-Dichloroethane-d4	-1.000	0.183	0.0	0	0.000
35	T	1,2-Dichloroethane	0.400	0.384	4.0	100	0.000
36	T	Methylcyclohexane	0.400	0.444	-11.0	100	0.000
37	T	Trichloroethene	0.400	0.420	-5.0	100	0.000
38	T	Dibromomethane	0.400	0.443	-10.7	100	0.000
39	C	1,2-Dichloropropane	0.400	0.391	2.3#	100	0.000
40	T	Bromodichloromethane	0.400	0.398	0.5	100	0.000
41	T	1,4-Dioxane	-1.000	0.000	0.0	0	-6.149#
42	T	2-Chloroethyl Vinyl Ether	-1.000	0.394	0.0	0	0.000
43	T	cis-1,3-Dichloropropene	0.400	0.376	6.0	100	0.000
44	T	4-Methyl-2-Pentanone	-1.000	0.508	0.0	0	0.000
45	T	trans-1,3-Dichloropropene	0.400	0.371	7.3	100	0.000
46	I	Chlorobenzene-d5	25.000	25.000	0.0	100	0.000
47	S	Toluene-d8	-1.000	0.170	0.0	0	0.000
48	C	Toluene	0.400	0.415	-3.7#	100	0.000
49	T	Tetrachloroethene	0.400	0.421	-5.2	100	0.000
50	T	1,1,2-Trichloroethane	0.400	0.478	-19.5	100	0.000
51	T	Dibromochloromethane	0.400	0.382	4.5	100	0.000
52	T	1,3-Dichloropropane	0.400	0.393	1.8	100	0.000
53	T	1,2-Dibromoethane	0.400	0.402	-0.5	100	0.000
54	T	2-Hexanone	-1.000	0.101	0.0	0	-0.061
55	P	Chlorobenzene	0.400	0.409	-2.2	100	0.000

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016370.D
Acq On : 11 Nov 2015 15:34
Operator : ADC
Sample : WG546498-04 0.4ug/L STD
Misc : 1,1 STD73185
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 12 09:49:12 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	1-Chlorohexane	-1.000	0.565	0.0	0	0.000
57	C	Ethylbenzene	0.400	0.415	-3.7#	100	0.000
58	T	1,1,1,2-Tetrachloroethane	0.400	0.384	4.0	100	0.000
59	T	m-,p-Xylene	0.800	0.807	-0.9	100	0.000
60	T	o-Xylene	0.400	0.398	0.5	100	0.000
61	T	Styrene	0.400	0.398	0.5	100	0.000
62	P	Bromoform	0.400	0.352	12.0	100	0.000
63	T	Isopropylbenzene	0.400	0.417	-4.2	100	0.000
64	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	100	0.000
65	T	1,3,5-Trimethylbenzene	0.400	0.424	-6.0	100	0.000
66	S	p-Bromofluorobenzene	-1.000	0.224	0.0	0	0.000
67	T	Bromobenzene	0.400	0.407	-1.7	100	0.000
68	T	n-Propylbenzene	0.400	0.413	-3.2	100	0.000
69	P	1,1,2,2-Tetrachloroethane	0.400	0.437	-9.2	100	0.000
70	T	2-Chlorotoluene	0.400	0.416	-4.0	100	0.000
71	T	1,2,3-Trichloropropane	-1.000	0.679	0.0	0	0.000
72	T	trans-1,4-Dichloro-2-Butene	0.400	0.518	-29.5#	100	0.000
73	T	1,2,4-Trimethylbenzene	0.400	0.424	-6.0	100	0.000
74	T	4-Chlorotoluene	0.400	0.426	-6.5	100	0.000
75	T	tert-Butylbenzene	0.400	0.387	3.3	100	0.000
76	T	sec-Butylbenzene	0.400	0.424	-6.0	100	0.000
77	T	p-Isopropyltoluene	0.400	0.408	-2.0	100	0.000
78	T	1,3-Dichlorobenzene	0.400	0.412	-3.0	100	0.000
79	T	1,4-Dichlorobenzene	0.400	0.396	1.0	100	0.000
80	T	n-Butylbenzene	0.400	0.419	-4.7	100	0.000
81	T	1,2-Dichlorobenzene	0.400	0.392	2.0	100	0.000
82	T	1,2-Dibromo-3-Chloropropane	-1.000	0.334	0.0	0	0.000
83	T	Hexachlorobutadiene	0.400	0.404	-1.0	100	0.000
84	T	1,2,4-Trichlorobenzene	0.400	0.412	-3.0	100	0.000
85	T	Naphthalene	0.400	0.431	-7.7	100	0.000
86	T	1,2,3-Trichlorobenzene	0.400	0.411	-2.7	100	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016371.D
Acq On : 11 Nov 2015 15:54
Operator : ADC
Sample : WG546498-05 1.0ug/L STD
Misc : 1,1 STD73185
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 12 09:49:14 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	5.141	96	445058	25.00000	ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	332322	25.00000	ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.302	152	180826	25.00000	ug/L	0.0000
System Monitoring Compounds						
29) Dibromofluoromethane	4.168	111	618	0.1354	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.542%#		
34) 1,2-Dichloroethane-d4	4.811	65	856	0.1952	ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.781%#		
47) Toluene-d8	6.713	98	3321	0.1939	ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.776%#		
66) p-Bromofluorobenzene	8.723	95	994	0.1590	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.636%#		
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.041	85	5409	0.8546	ug/L	99
3) Chloromethane	1.148	50	7399	1.0975	ug/L	99
4) Vinyl Chloride	1.195	62	5503	0.9138	ug/L	98
5) 1,3-Butadiene	1.209	54	4534	1.1713	ug/L	92
6) Bromomethane	1.383	94	3471	1.0927	ug/L	90
7) Chloroethane	1.458	64	3649	1.1868	ug/L	100
8) Trichlorofluoromethane	1.545	101	7176	0.9336	ug/L #	93
9) Diethyl ether	1.748	59	3461	0.9740	ug/L	91
10) 1,1-Dichloroethene	1.869	61	6561	0.9391	ug/L	94
11) Carbon Disulfide	1.884	76	14418	0.9798	ug/L #	93
12) 1,1,2-Trichloro-1,2,2-...	1.898	101	4094	0.9450	ug/L	97
14) Acrolein	2.113	56	698	1.4665	ug/L #	63
15) Methylene Chloride	2.292	84	6316	1.2218	ug/L	83
16) Acetone	2.347	43	2407	2.1169	ug/L	83
17) trans-1,2-Dichloroethene	2.419	96	4523	0.9902	ug/L	93
18) Methyl acetate	2.448	43	2044	0.8043	ug/L #	82
19) Methyl Tert Butyl Ether	2.532	73	11296	0.9702	ug/L	93
20) 1,1-Dichloroethane	2.981	63	8285	0.9478	ug/L	95
21) Acrylonitrile	3.039	53	1509	1.2471	ug/L	76
23) cis-1,2-Dichloroethene	3.566	96	4887	0.9319	ug/L	97
24) 2,2-Dichloropropane	3.693	77	5589	0.8548	ug/L	92
25) Cyclohexane	3.798	56	8433	1.0023	ug/L	95
26) Bromochloromethane	3.806	130	2760	0.8913	ug/L	99
27) Chloroform	3.940	83	8002	0.9239	ug/L	95
28) Carbon Tetrachloride	4.081	117	6155	0.9152	ug/L	99
30) 1,1,1-Trichloroethane	4.180	97	7156	0.9420	ug/L	97
31) 1,1-Dichloropropene	4.345	75	6043	0.9383	ug/L	91
32) 2-Butanone	4.383	43	2111	1.4381	ug/L #	64
33) Benzene	4.649	78	18589	0.9718	ug/L	99
35) 1,2-Dichloroethane	4.895	62	5395	0.9374	ug/L #	86
36) Methylcyclohexane	5.297	83	8495	0.9498	ug/L #	92
37) Trichloroethene	5.321	130	5165	0.9731	ug/L	98
38) Dibromomethane	5.740	93	2682	0.9449	ug/L #	53
39) 1,2-Dichloropropane	5.850	63	5018	0.9544	ug/L	99
40) Bromodichloromethane	5.937	83	6016	0.9203	ug/L	99
42) 2-Chloroethyl Vinyl Ether	6.528	63	2565	0.9652	ug/L	94
43) cis-1,3-Dichloropropene	6.542	75	7125	0.9245	ug/L #	87
44) 4-Methyl-2-Pentanone	7.813	58	1421	1.0884	ug/L	92
45) trans-1,3-Dichloropropene	7.145	75	6054	0.9181	ug/L	93
48) Toluene	6.757	91	19859	0.9433	ug/L	98
49) Tetrachloroethene	7.084	166	5340	0.9411	ug/L	97
50) 1,1,2-Trichloroethane	7.272	97	3805	0.9715	ug/L	97
51) Dibromochloromethane	7.414	129	4728	0.9351	ug/L	99
52) 1,3-Dichloropropane	7.495	76	6040	0.9723	ug/L	88

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016371.D
Acq On : 11 Nov 2015 15:54
Operator : ADC
Sample : WG546498-05 1.0ug/L STD
Misc : 1,1 STD73185
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 12 09:49:14 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
53) 1,2-Dibromoethane	7.585	107	3809	0.9801 ug/L	96
54) 2-Hexanone	7.816	43	2683	1.0655 ug/L	98
55) Chlorobenzene	7.984	112	12879	0.9492 ug/L #	64
56) 1-Chlorohexane	7.996	69	1649	1.1833 ug/L #	1
57) Ethylbenzene	8.019	106	7075	0.9580 ug/L	99
58) 1,1,1,2-Tetrachloroethane	8.036	131	4693	0.9343 ug/L	95
59) m-,p-Xylene	8.120	106	16718	1.8869 ug/L	97
60) o-Xylene	8.384	106	8304	0.9498 ug/L	100
61) Styrene	8.416	104	13773	0.9479 ug/L	97
62) Bromoform	8.419	173	2916	0.8747 ug/L	96
63) Isopropylbenzene	8.572	105	21951	0.9632 ug/L	98
65) 1,3,5-Trimethylbenzene	8.911	105	19374	0.9785 ug/L	98
67) Bromobenzene	8.775	156	5908	0.9546 ug/L	97
68) n-Propylbenzene	8.804	91	24929	0.9646 ug/L #	98
69) 1,1,2,2-Tetrachloroethane	8.844	83	4271	0.9515 ug/L	97
70) 2-Chlorotoluene	8.879	91	15301	0.9681 ug/L	99
71) 1,2,3-Trichloropropane	8.908	110	1422	1.1381 ug/L	78
72) trans-1,4-Dichloro-2-B...	8.937	53	987	0.9503 ug/L #	79
73) 1,2,4-Trimethylbenzene	9.108	105	19409	0.9820 ug/L	99
74) 4-Chlorotoluene	8.966	91	15311	0.9415 ug/L	96
75) tert-Butylbenzene	9.073	134	3468	0.9552 ug/L	99
76) sec-Butylbenzene	9.163	105	23806	0.9785 ug/L	99
77) p-Isopropyltoluene	9.238	119	20603	0.9791 ug/L	100
78) 1,3-Dichlorobenzene	9.264	146	11012	0.9689 ug/L	96
79) 1,4-Dichlorobenzene	9.310	146	11073	0.9551 ug/L	93
80) n-Butylbenzene	9.441	91	18519	0.9562 ug/L	100
81) 1,2-Dichlorobenzene	9.513	146	10314	0.9533 ug/L	93
82) 1,2-Dibromo-3-Chloropr...	9.889	75	842	0.9995 ug/L	93
83) Hexachlorobutadiene	10.188	225	4589	0.9214 ug/L	97
84) 1,2,4-Trichlorobenzene	10.202	180	8177	0.9470 ug/L	99
85) Naphthalene	10.353	128	15793	0.9875 ug/L	99
86) 1,2,3-Trichlorobenzene	10.437	180	7685	0.9644 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016371.D
Acq On : 11 Nov 2015 15:54
Operator : ADC
Sample : WG546498-05 1.0ug/L STD
Misc : 1,1 STD73185
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 12 09:49:14 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

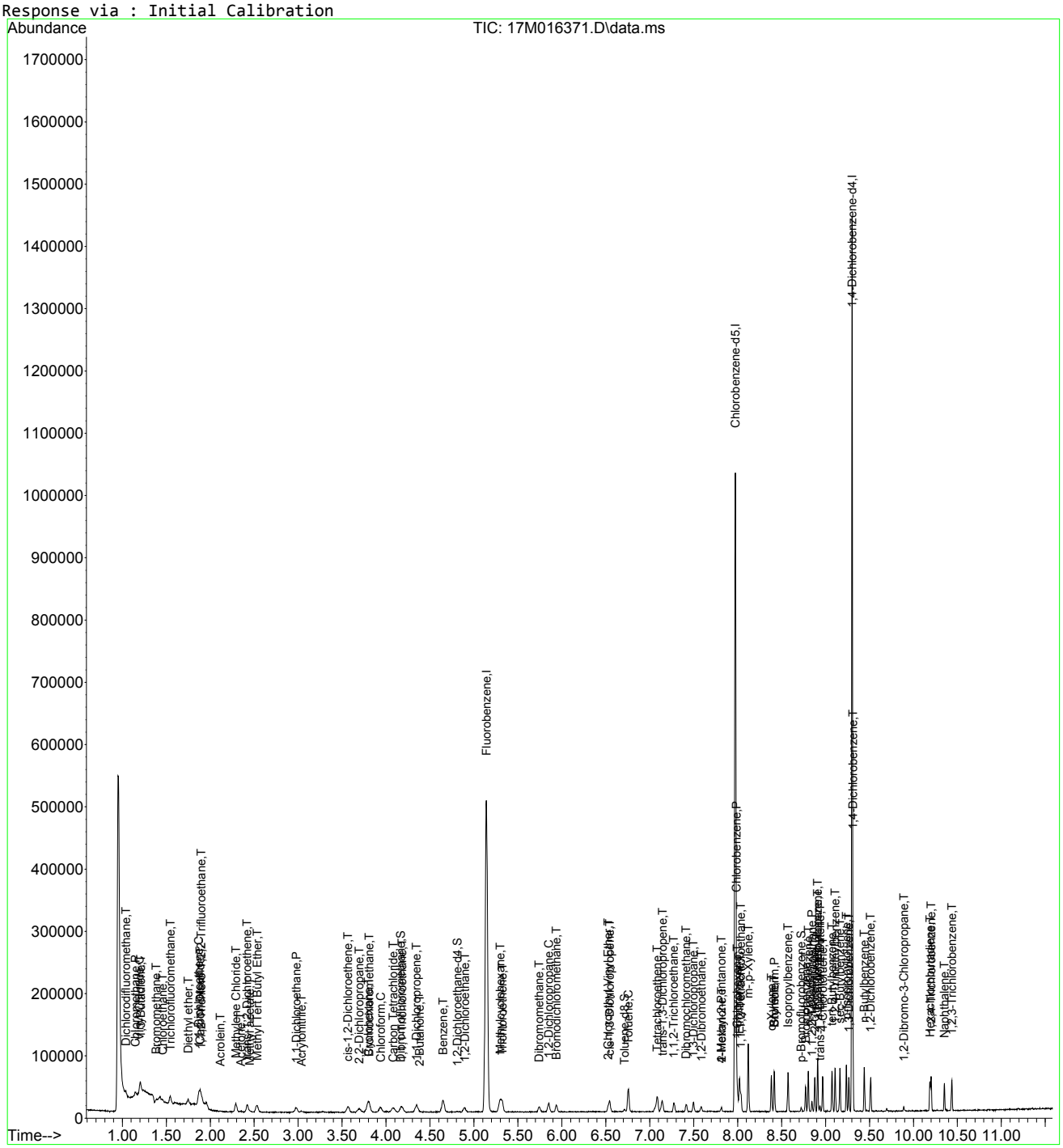

8260_VMS.M Thu Nov 12 09:53:38 2015 Page: 3

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016371.D
Acq On : 11 Nov 2015 15:54
Operator : ADC
Sample : WG546498-05 1.0ug/L STD
Misc : 1,1 STD73185
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 12 09:49:14 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	100	0.000
2	T	Dichlorodifluoromethane	1.000	0.855	14.5	100	0.000
3	P	Chloromethane	1.000	1.097	-9.7	100	0.000
4	C	Vinyl Chloride	1.000	0.914	8.6#	100	0.000
5	T	1,3-Butadiene	1.000	1.171	-17.1	100	0.000
6	T	Bromomethane	1.000	1.093	-9.3	100	0.000
7	T	Chloroethane	1.000	1.187	-18.7	100	0.000
8	T	Trichlorofluoromethane	1.000	0.934	6.6	100	0.014
9	T	Diethyl ether	1.000	0.974	2.6	100	0.000
10	C	1,1-Dichloroethene	1.000	0.939	6.1#	100	0.000
11	T	Carbon Disulfide	1.000	0.980	2.0	100	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.000	0.945	5.5	100	0.000
13	T	Iodomethane	-1.000	0.000	0.0	0	0.000
14	T	Acrolein	-1.000	1.467	0.0	0	0.000
15	T	Methylene Chloride	1.000	1.222	-22.2	100	0.000
16	T	Acetone	-1.000	2.117	0.0	0	0.000
17	T	trans-1,2-Dichloroethene	1.000	0.990	1.0	100	0.000
18	T	Methyl acetate	1.000	0.804	19.6	75	0.000
19	T	Methyl Tert Butyl Ether	1.000	0.970	3.0	100	0.000
20	P	1,1-Dichloroethane	1.000	0.948	5.2	100	0.000
21	T	Acrylonitrile	-1.000	1.247	0.0	0	0.000
22	T	Vinyl Acetate	-1.000	0.000	0.0	0	-3.274#
23	T	cis-1,2-Dichloroethene	1.000	0.932	6.8	100	0.000
24	T	2,2-Dichloropropane	1.000	0.855	14.5	100	0.000
25	T	Cyclohexane	1.000	1.002	-0.2	100	0.000
26	T	Bromochloromethane	1.000	0.891	10.9	100	0.000
27	C	Chloroform	1.000	0.924	7.6#	100	0.000
28	T	Carbon Tetrachloride	1.000	0.915	8.5	100	0.000
29	S	Dibromofluoromethane	-1.000	0.135	0.0	0	0.000
30	T	1,1,1-Trichloroethane	1.000	0.942	5.8	100	0.000
31	T	1,1-Dichloropropene	1.000	0.938	6.2	100	0.000
32	T	2-Butanone	-1.000	1.438	0.0	0	0.018
33	T	Benzene	1.000	0.972	2.8	100	0.000
34	S	1,2-Dichloroethane-d4	-1.000	0.195	0.0	0	0.000
35	T	1,2-Dichloroethane	1.000	0.937	6.3	100	0.000
36	T	Methylcyclohexane	1.000	0.950	5.0	100	0.000
37	T	Trichloroethene	1.000	0.973	2.7	100	0.000
38	T	Dibromomethane	1.000	0.945	5.5	100	0.000
39	C	1,2-Dichloropropane	1.000	0.954	4.6#	100	0.000
40	T	Bromodichloromethane	1.000	0.920	8.0	100	0.000
41	T	1,4-Dioxane	-1.000	0.000	0.0	0	-6.149#
42	T	2-Chloroethyl Vinyl Ether	1.000	0.965	3.5	100	0.000
43	T	cis-1,3-Dichloropropene	1.000	0.924	7.6	100	0.000
44	T	4-Methyl-2-Pentanone	-1.000	1.088	0.0	0	0.000
45	T	trans-1,3-Dichloropropene	1.000	0.918	8.2	100	0.000
46	I	Chlorobenzene-d5	25.000	25.000	0.0	100	0.000
47	S	Toluene-d8	-1.000	0.194	0.0	0	0.000
48	C	Toluene	1.000	0.943	5.7#	100	0.000
49	T	Tetrachloroethene	1.000	0.941	5.9	100	0.000
50	T	1,1,2-Trichloroethane	1.000	0.972	2.8	100	0.000
51	T	Dibromochloromethane	1.000	0.935	6.5	100	0.000
52	T	1,3-Dichloropropane	1.000	0.972	2.8	100	0.000
53	T	1,2-Dibromoethane	1.000	0.980	2.0	100	0.000
54	T	2-Hexanone	-1.000	1.066	0.0	0	0.000
55	P	Chlorobenzene	1.000	0.949	5.1	100	0.000

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016371.D
Acq On : 11 Nov 2015 15:54
Operator : ADC
Sample : WG546498-05 1.0ug/L STD
Misc : 1,1 STD73185
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Nov 12 09:49:14 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	1-Chlorohexane	1.000	1.183	-18.3	100	0.000
57	C	Ethylbenzene	1.000	0.958	4.2#	100	0.000
58	T	1,1,1,2-Tetrachloroethane	1.000	0.934	6.6	100	0.000
59	T	m-,p-Xylene	2.000	1.887	5.6	100	0.000
60	T	o-Xylene	1.000	0.950	5.0	100	0.000
61	T	Styrene	1.000	0.948	5.2	100	0.000
62	P	Bromoform	1.000	0.875	12.5	100	0.000
63	T	Isopropylbenzene	1.000	0.963	3.7	100	0.000
64	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	100	0.000
65	T	1,3,5-Trimethylbenzene	1.000	0.978	2.2	100	0.000
66	S	p-Bromofluorobenzene	-1.000	0.159	0.0	0	0.000
67	T	Bromobenzene	1.000	0.955	4.5	100	0.000
68	T	n-Propylbenzene	1.000	0.965	3.5	100	0.000
69	P	1,1,2,2-Tetrachloroethane	1.000	0.951	4.9	100	0.000
70	T	2-Chlorotoluene	1.000	0.968	3.2	100	0.000
71	T	1,2,3-Trichloropropane	1.000	1.138	-13.8	100	0.000
72	T	trans-1,4-Dichloro-2-Butene	1.000	0.950	5.0	100	0.000
73	T	1,2,4-Trimethylbenzene	1.000	0.982	1.8	100	0.000
74	T	4-Chlorotoluene	1.000	0.941	5.9	100	0.000
75	T	tert-Butylbenzene	1.000	0.955	4.5	100	0.000
76	T	sec-Butylbenzene	1.000	0.978	2.2	100	0.000
77	T	p-Isopropyltoluene	1.000	0.979	2.1	100	0.000
78	T	1,3-Dichlorobenzene	1.000	0.969	3.1	100	0.000
79	T	1,4-Dichlorobenzene	1.000	0.955	4.5	100	0.000
80	T	n-Butylbenzene	1.000	0.956	4.4	100	0.000
81	T	1,2-Dichlorobenzene	1.000	0.953	4.7	100	0.000
82	T	1,2-Dibromo-3-Chloropropane	-1.000	0.999	0.0	0	0.000
83	T	Hexachlorobutadiene	1.000	0.921	7.9	100	0.000
84	T	1,2,4-Trichlorobenzene	1.000	0.947	5.3	100	0.000
85	T	Naphthalene	1.000	0.987	1.3	100	0.000
86	T	1,2,3-Trichlorobenzene	1.000	0.964	3.6	100	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016372.D
Acq On : 11 Nov 2015 16:14
Operator : ADC
Sample : WG546498-06 2.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 12 09:49:16 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	5.141	96	441729	25.00000	ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	328196	25.00000	ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.302	152	179770	25.00000	ug/L	0.0000
System Monitoring Compounds						
29) Dibromofluoromethane	4.171	111	953	0.2103	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery	=	0.841%#	
34) 1,2-Dichloroethane-d4	4.814	65	759	0.1744	ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery	=	0.698%#	
47) Toluene-d8	6.710	98	2962	0.1751	ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery	=	0.700%#	
66) p-Bromofluorobenzene	8.723	95	1652	0.2658	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery	=	1.063%#	
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.038	85	11070	1.7622	ug/L	99
3) Chloromethane	1.151	50	13794	2.0615	ug/L	99
4) Vinyl Chloride	1.195	62	11207	1.8750	ug/L	98
5) 1,3-Butadiene	1.206	54	7924	2.0626	ug/L	99
6) Bromomethane	1.383	94	6882	2.1829	ug/L	83
7) Chloroethane	1.455	64	6503	2.1309	ug/L #	74
8) Trichlorofluoromethane	1.542	101	14507	1.9268	ug/L	97
9) Diethyl ether	1.748	59	7718	2.1884	ug/L	93
10) 1,1-Dichloroethene	1.869	61	13450	1.9397	ug/L	98
11) Carbon Disulfide	1.884	76	27593	1.8893	ug/L #	90
12) 1,1,2-Trichloro-1,2,2-...	1.898	101	8397	1.9529	ug/L	99
14) Acrolein	2.115	56	1360	2.8790	ug/L	85
15) Methylene Chloride	2.289	84	11187	2.1805	ug/L	90
16) Acetone	2.344	43	2472	2.2118	ug/L	96
17) trans-1,2-Dichloroethene	2.419	96	8767	1.9338	ug/L	98
18) Methyl acetate	2.448	43	4481	1.7766	ug/L #	91
19) Methyl Tert Butyl Ether	2.532	73	23088	1.9979	ug/L	95
20) 1,1-Dichloroethane	2.975	63	16937	1.9521	ug/L	98
21) Acrylonitrile	3.042	53	2643	2.2007	ug/L	91
22) Vinyl Acetate	3.282	86	272	4.0182	ug/L #	1
23) cis-1,2-Dichloroethene	3.566	96	10057	1.9321	ug/L	97
24) 2,2-Dichloropropane	3.693	77	11469	1.7673	ug/L	94
25) Cyclohexane	3.792	56	17078	2.0452	ug/L	98
26) Bromochloromethane	3.812	130	5776	1.8793	ug/L	100
27) Chloroform	3.937	83	16478	1.9169	ug/L	98
28) Carbon Tetrachloride	4.079	117	13065	1.9574	ug/L	97
30) 1,1,1-Trichloroethane	4.174	97	14902	1.9764	ug/L	100
31) 1,1-Dichloropropene	4.345	75	12522	1.9590	ug/L	94
32) 2-Butanone	4.374	43	3362	2.3075	ug/L #	40
33) Benzene	4.649	78	37184	1.9586	ug/L	100
35) 1,2-Dichloroethane	4.889	62	11420	1.9991	ug/L #	95
36) Methylcyclohexane	5.295	83	17144	1.9313	ug/L	96
37) Trichloroethene	5.324	130	10227	1.9413	ug/L	97
38) Dibromomethane	5.743	93	5519	1.9590	ug/L	98
39) 1,2-Dichloropropane	5.850	63	10340	1.9814	ug/L	100
40) Bromodichloromethane	5.937	83	12772	1.9686	ug/L	99
42) 2-Chloroethyl Vinyl Ether	6.525	63	5173	1.9612	ug/L	97
43) cis-1,3-Dichloropropene	6.545	75	14648	1.9150	ug/L	95
44) 4-Methyl-2-Pentanone	7.811	58	2934	2.2643	ug/L	89
45) trans-1,3-Dichloropropene	7.145	75	12566	1.9200	ug/L	96
48) Toluene	6.757	91	41495	1.9957	ug/L	99
49) Tetrachloroethene	7.084	166	10927	1.9498	ug/L	99
50) 1,1,2-Trichloroethane	7.275	97	7614	1.9685	ug/L	96
51) Dibromochloromethane	7.414	129	9610	1.9246	ug/L	99

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016372.D
Acq On : 11 Nov 2015 16:14
Operator : ADC
Sample : WG546498-06 2.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 12 09:49:16 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
52) 1,3-Dichloropropane	7.495	76	12384	2.0186 ug/L	97
53) 1,2-Dibromoethane	7.588	107	7777	2.0262 ug/L	100
54) 2-Hexanone	7.814	43	5573	2.2411 ug/L	99
55) Chlorobenzene	7.984	112	26437	1.9730 ug/L	85
56) 1-Chlorohexane	7.999	69	2876	2.0897 ug/L #	83
57) Ethylbenzene	8.019	106	14041	1.9251 ug/L	94
58) 1,1,1,2-Tetrachloroethane	8.036	131	9797	1.9749 ug/L	97
59) m-,p-Xylene	8.120	106	34517	3.9447 ug/L	100
60) o-Xylene	8.384	106	16733	1.9380 ug/L	97
61) Styrene	8.416	104	28327	1.9741 ug/L	99
62) Bromoform	8.419	173	6362	1.9325 ug/L	98
63) Isopropylbenzene	8.575	105	45060	2.0020 ug/L	99
65) 1,3,5-Trimethylbenzene	8.911	105	39947	2.0294 ug/L	98
67) Bromobenzene	8.775	156	11767	1.9125 ug/L	97
68) n-Propylbenzene	8.804	91	51807	2.0164 ug/L	99
69) 1,1,2,2-Tetrachloroethane	8.844	83	8705	1.9506 ug/L	100
70) 2-Chlorotoluene	8.879	91	31003	1.9730 ug/L	99
71) 1,2,3-Trichloropropane	8.911	110	2646	2.1302 ug/L	90
72) trans-1,4-Dichloro-2-B...	8.937	53	2166	2.0977 ug/L #	81
73) 1,2,4-Trimethylbenzene	9.108	105	39303	2.0001 ug/L	99
74) 4-Chlorotoluene	8.966	91	32473	2.0085 ug/L	100
75) tert-Butylbenzene	9.073	134	7070	1.9586 ug/L	97
76) sec-Butylbenzene	9.163	105	49271	2.0370 ug/L	99
77) p-Isopropyltoluene	9.238	119	41728	1.9947 ug/L	99
78) 1,3-Dichlorobenzene	9.264	146	22316	1.9751 ug/L	98
79) 1,4-Dichlorobenzene	9.310	146	22145	1.9214 ug/L	97
80) n-Butylbenzene	9.441	91	38221	1.9851 ug/L	99
81) 1,2-Dichlorobenzene	9.513	146	20783	1.9322 ug/L	95
82) 1,2-Dibromo-3-Chloropr...	9.889	75	1645	1.9641 ug/L	95
83) Hexachlorobutadiene	10.185	225	9564	1.9317 ug/L	99
84) 1,2,4-Trichlorobenzene	10.199	180	16464	1.9180 ug/L	99
85) Naphthalene	10.353	128	32754	2.0600 ug/L	98
86) 1,2,3-Trichlorobenzene	10.434	180	15576	1.9661 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016372.D
Acq On : 11 Nov 2015 16:14
Operator : ADC
Sample : WG546498-06 2.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 12 09:49:16 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

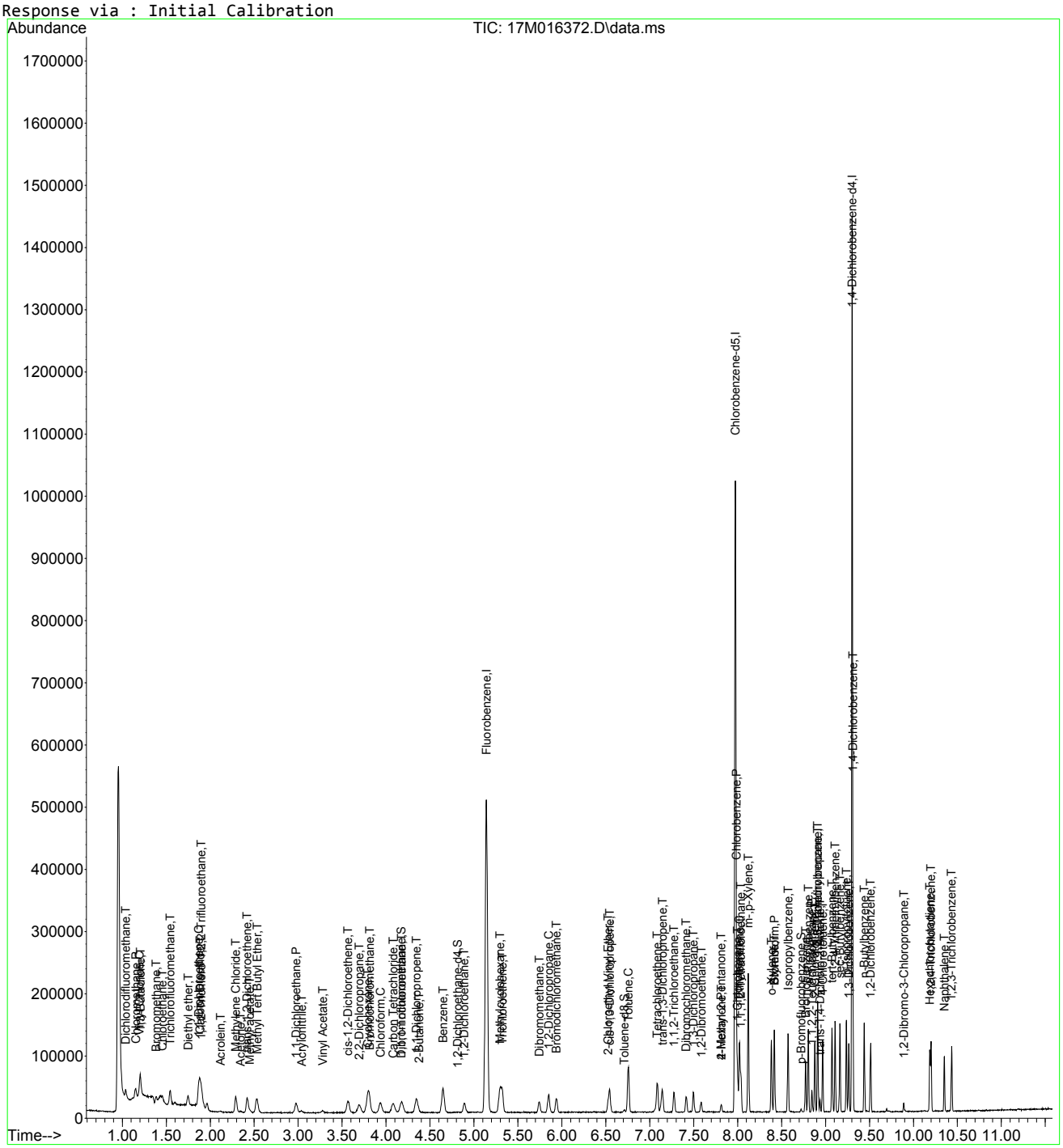

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016372.D
Acq On : 11 Nov 2015 16:14
Operator : ADC
Sample : WG546498-06 2.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 12 09:49:16 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	100	0.000
2	T	Dichlorodifluoromethane	2.000	1.762	11.9	100	0.000
3	P	Chloromethane	2.000	2.061	-3.0	100	0.000
4	C	Vinyl Chloride	2.000	1.875	6.3#	100	0.000
5	T	1,3-Butadiene	2.000	2.063	-3.2	100	0.000
6	T	Bromomethane	2.000	2.183	-9.1	100	0.000
7	T	Chloroethane	2.000	2.131	-6.5	100	0.000
8	T	Trichlorofluoromethane	2.000	1.927	3.6	100	0.011
9	T	Diethyl ether	2.000	2.188	-9.4	100	0.000
10	C	1,1-Dichloroethene	2.000	1.940	3.0#	100	0.000
11	T	Carbon Disulfide	2.000	1.889	5.5	100	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.000	1.953	2.3	100	0.000
13	T	Iodomethane	-1.000	0.000	0.0	0	0.000
14	T	Acrolein	-1.000	2.879	0.0	0	0.000
15	T	Methylene Chloride	2.000	2.180	-9.0	100	0.000
16	T	Acetone	-1.000	2.212	0.0	0	0.000
17	T	trans-1,2-Dichloroethene	2.000	1.934	3.3	100	0.000
18	T	Methyl acetate	2.000	1.777	11.2	108	0.000
19	T	Methyl Tert Butyl Ether	2.000	1.998	0.1	100	0.000
20	P	1,1-Dichloroethane	2.000	1.952	2.4	100	0.000
21	T	Acrylonitrile	2.000	2.201	-10.1	100	0.000
22	T	Vinyl Acetate	-1.000	4.018	0.0	0	0.000
23	T	cis-1,2-Dichloroethene	2.000	1.932	3.4	100	0.000
24	T	2,2-Dichloropropane	2.000	1.767	11.7	100	0.000
25	T	Cyclohexane	2.000	2.045	-2.2	100	0.000
26	T	Bromochloromethane	2.000	1.879	6.0	100	0.000
27	C	Chloroform	2.000	1.917	4.1#	100	0.000
28	T	Carbon Tetrachloride	2.000	1.957	2.1	100	0.000
29	S	Dibromofluoromethane	-1.000	0.210	0.0	0	0.000
30	T	1,1,1-Trichloroethane	2.000	1.976	1.2	100	0.000
31	T	1,1-Dichloropropene	2.000	1.959	2.0	100	0.000
32	T	2-Butanone	-1.000	2.308	0.0	0	0.000
33	T	Benzene	2.000	1.959	2.0	100	0.000
34	S	1,2-Dichloroethane-d4	-1.000	0.174	0.0	0	0.000
35	T	1,2-Dichloroethane	2.000	1.999	0.0	100	0.000
36	T	Methylcyclohexane	2.000	1.931	3.4	100	0.000
37	T	Trichloroethene	2.000	1.941	2.9	100	0.000
38	T	Dibromomethane	2.000	1.959	2.0	100	0.000
39	C	1,2-Dichloropropane	2.000	1.981	0.9#	100	0.000
40	T	Bromodichloromethane	2.000	1.969	1.5	100	0.000
41	T	1,4-Dioxane	-1.000	0.000	0.0	0	-6.149#
42	T	2-Chloroethyl Vinyl Ether	2.000	1.961	1.9	100	0.000
43	T	cis-1,3-Dichloropropene	2.000	1.915	4.2	100	0.000
44	T	4-Methyl-2-Pentanone	-1.000	2.264	0.0	0	0.000
45	T	trans-1,3-Dichloropropene	2.000	1.920	4.0	100	0.000
46	I	Chlorobenzene-d5	25.000	25.000	0.0	100	0.000
47	S	Toluene-d8	-1.000	0.175	0.0	0	0.000
48	C	Toluene	2.000	1.996	0.2#	100	0.000
49	T	Tetrachloroethene	2.000	1.950	2.5	100	0.000
50	T	1,1,2-Trichloroethane	2.000	1.969	1.5	100	0.000
51	T	Dibromochloromethane	2.000	1.925	3.7	100	0.000
52	T	1,3-Dichloropropane	2.000	2.019	-1.0	100	0.000
53	T	1,2-Dibromoethane	2.000	2.026	-1.3	100	0.000
54	T	2-Hexanone	2.000	2.241	-12.1	100	0.000
55	P	Chlorobenzene	2.000	1.973	1.3	100	0.000

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016372.D
Acq On : 11 Nov 2015 16:14
Operator : ADC
Sample : WG546498-06 2.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Nov 12 09:49:16 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	1-Chlorohexane	2.000	2.090	-4.5	100	0.000
57	C	Ethylbenzene	2.000	1.925	3.7#	100	0.000
58	T	1,1,1,2-Tetrachloroethane	2.000	1.975	1.2	100	0.000
59	T	m-,p-Xylene	4.000	3.945	1.4	100	0.000
60	T	o-Xylene	2.000	1.938	3.1	100	0.000
61	T	Styrene	2.000	1.974	1.3	100	0.000
62	P	Bromoform	2.000	1.932	3.4	100	0.000
63	T	Isopropylbenzene	2.000	2.002	-0.1	100	0.000
64	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	100	0.000
65	T	1,3,5-Trimethylbenzene	2.000	2.029	-1.4	100	0.000
66	S	p-Bromofluorobenzene	-1.000	0.266	0.0	0	0.000
67	T	Bromobenzene	2.000	1.913	4.3	100	0.000
68	T	n-Propylbenzene	2.000	2.016	-0.8	100	0.000
69	P	1,1,2,2-Tetrachloroethane	2.000	1.951	2.4	100	0.000
70	T	2-Chlorotoluene	2.000	1.973	1.3	100	0.000
71	T	1,2,3-Trichloropropane	2.000	2.130	-6.5	100	0.000
72	T	trans-1,4-Dichloro-2-Butene	2.000	2.098	-4.9	100	0.000
73	T	1,2,4-Trimethylbenzene	2.000	2.000	0.0	100	0.000
74	T	4-Chlorotoluene	2.000	2.009	-0.4	100	0.000
75	T	tert-Butylbenzene	2.000	1.959	2.0	100	0.000
76	T	sec-Butylbenzene	2.000	2.037	-1.8	100	0.000
77	T	p-Isopropyltoluene	2.000	1.995	0.2	100	0.000
78	T	1,3-Dichlorobenzene	2.000	1.975	1.2	100	0.000
79	T	1,4-Dichlorobenzene	2.000	1.921	3.9	100	0.000
80	T	n-Butylbenzene	2.000	1.985	0.7	100	0.000
81	T	1,2-Dichlorobenzene	2.000	1.932	3.4	100	0.000
82	T	1,2-Dibromo-3-Chloropropane	2.000	1.964	1.8	100	0.000
83	T	Hexachlorobutadiene	2.000	1.932	3.4	100	0.000
84	T	1,2,4-Trichlorobenzene	2.000	1.918	4.1	100	0.000
85	T	Naphthalene	2.000	2.060	-3.0	100	0.000
86	T	1,2,3-Trichlorobenzene	2.000	1.966	1.7	100	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016373.D
Acq On : 11 Nov 2015 16:33
Operator : ADC
Sample : WG546498-07 5.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 12 09:55:30 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.141	96	432623	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	320606	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.302	152	175287	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.180	111	23235	5.2355 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 20.942%#		
34) 1,2-Dichloroethane-d4	4.814	65	22950	5.3849 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 21.540%#		
47) Toluene-d8	6.710	98	86498	5.2339 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 20.936%#		
66) p-Bromofluorobenzene	8.723	95	30541	5.0403 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 20.161%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.038	85	30889	5.0207 ug/L	99
3) Chloromethane	1.148	50	35766	5.4576 ug/L	99
4) Vinyl Chloride	1.195	62	31301	5.3470 ug/L	98
5) 1,3-Butadiene	1.206	54	18569	4.9351 ug/L	98
6) Bromomethane	1.383	94	16788	5.4372 ug/L	100
7) Chloroethane	1.452	64	17410	5.8250 ug/L	83
8) Trichlorofluoromethane	1.539	101	39315	5.3920 ug/L	98
9) Diethyl ether	1.748	59	18562	5.3738 ug/L	99
10) 1,1-Dichloroethene	1.866	61	37561	5.5308 ug/L	99
11) Carbon Disulfide	1.881	76	70129	4.9029 ug/L	99
12) 1,1,2-Trichloro-1,2,2-...	1.898	101	23545	5.5910 ug/L	100
14) Acrolein	2.113	56	2740	5.9224 ug/L	91
15) Methylene Chloride	2.292	84	28500	5.6719 ug/L	95
16) Acetone	2.347	43	5507	5.8137 ug/L #	72
17) trans-1,2-Dichloroethene	2.422	96	24016	5.4089 ug/L	100
18) Methyl acetate	2.451	43	12641	5.1174 ug/L #	98
19) Methyl Tert Butyl Ether	2.529	73	65593	5.7955 ug/L	99
20) 1,1-Dichloroethane	2.978	63	47350	5.5723 ug/L	100
21) Acrylonitrile	3.036	53	6503	5.5288 ug/L	96
22) Vinyl Acetate	3.276	86	1562	6.2614 ug/L #	76
23) cis-1,2-Dichloroethene	3.566	96	27739	5.4413 ug/L	100
24) 2,2-Dichloropropane	3.693	77	32509	5.1149 ug/L	99
25) Cyclohexane	3.792	56	41807	5.1119 ug/L	97
26) Bromochloromethane	3.803	130	16652	5.5319 ug/L	100
27) Chloroform	3.934	83	45552	5.4108 ug/L	99
28) Carbon Tetrachloride	4.081	117	36188	5.5357 ug/L	99
30) 1,1,1-Trichloroethane	4.180	97	41493	5.6190 ug/L	99
31) 1,1-Dichloropropene	4.345	75	34916	5.5775 ug/L	99
32) 2-Butanone	4.374	43	7475	5.2385 ug/L #	95
33) Benzene	4.646	78	102565	5.5162 ug/L	99
35) 1,2-Dichloroethane	4.892	62	31926	5.7064 ug/L	98
36) Methylcyclohexane	5.297	83	41963	4.8267 ug/L	98
37) Trichloroethene	5.323	130	28145	5.4549 ug/L	98
38) Dibromomethane	5.743	93	15419	5.5884 ug/L	99
39) 1,2-Dichloropropane	5.850	63	28726	5.6205 ug/L	99
40) Bromodichloromethane	5.937	83	35304	5.5560 ug/L	96
41) 1,4-Dioxane	6.157	88	236	7.6025 ug/L #	1
42) 2-Chloroethyl Vinyl Ether	6.528	63	13598	5.2639 ug/L	100
43) cis-1,3-Dichloropropene	6.545	75	41870	5.5889 ug/L	99
44) 4-Methyl-2-Pentanone	7.813	58	7057	5.5607 ug/L	100
45) trans-1,3-Dichloropropene	7.145	75	35851	5.5932 ug/L	98
48) Toluene	6.754	91	116097	5.7160 ug/L	99
49) Tetrachloroethene	7.087	166	30215	5.5193 ug/L	100
50) 1,1,2-Trichloroethane	7.275	97	21414	5.6674 ug/L	99

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016373.D
Acq On : 11 Nov 2015 16:33
Operator : ADC
Sample : WG546498-07 5.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 12 09:55:30 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
51) Dibromochloromethane	7.417	129	27260	5.5885 ug/L	98
52) 1,3-Dichloropropane	7.498	76	34573	5.7689 ug/L	98
53) 1,2-Dibromoethane	7.585	107	21349	5.6938 ug/L	100
54) 2-Hexanone	7.813	43	12998	5.3507 ug/L	97
55) Chlorobenzene	7.984	112	72910	5.5700 ug/L	94
56) 1-Chlorohexane	7.999	69	6646	4.9432 ug/L	70
57) Ethylbenzene	8.019	106	39341	5.5216 ug/L	99
58) 1,1,1,2-Tetrachloroethane	8.036	131	27278	5.6289 ug/L	97
59) m-,p-Xylene	8.120	106	96707	11.3137 ug/L	100
60) o-Xylene	8.384	106	47483	5.6295 ug/L	98
61) Styrene	8.416	104	78212	5.5797 ug/L	99
62) Bromoform	8.419	173	18171	5.6501 ug/L	99
63) Isopropylbenzene	8.572	105	125413	5.7041 ug/L	99
65) 1,3,5-Trimethylbenzene	8.911	105	109819	5.7217 ug/L	99
67) Bromobenzene	8.772	156	33338	5.5571 ug/L	99
68) n-Propylbenzene	8.804	91	144838	5.7815 ug/L	99
69) 1,1,2,2-Tetrachloroethane	8.844	83	25151	5.7800 ug/L	99
70) 2-Chlorotoluene	8.879	91	87536	5.7133 ug/L	99
71) 1,2,3-Trichloropropane	8.908	110	7088	5.8522 ug/L	95
72) trans-1,4-Dichloro-2-B...	8.937	53	5177	5.1421 ug/L #	94
73) 1,2,4-Trimethylbenzene	9.108	105	110041	5.7432 ug/L	99
74) 4-Chlorotoluene	8.966	91	89996	5.7088 ug/L	99
75) tert-Butylbenzene	9.073	134	19681	5.5918 ug/L	96
76) sec-Butylbenzene	9.163	105	136371	5.7821 ug/L	99
77) p-Isopropyltoluene	9.238	119	118047	5.7873 ug/L	99
78) 1,3-Dichlorobenzene	9.264	146	61365	5.5701 ug/L	99
79) 1,4-Dichlorobenzene	9.310	146	61766	5.4961 ug/L	99
80) n-Butylbenzene	9.441	91	106426	5.6690 ug/L	100
81) 1,2-Dichlorobenzene	9.513	146	59292	5.6533 ug/L	100
82) 1,2-Dibromo-3-Chloropr...	9.889	75	4656	5.7013 ug/L	96
83) Hexachlorobutadiene	10.185	225	26568	5.5033 ug/L	99
84) 1,2,4-Trichlorobenzene	10.199	180	47276	5.6482 ug/L	100
85) Naphthalene	10.350	128	91986	5.9331 ug/L	100
86) 1,2,3-Trichlorobenzene	10.434	180	44703	5.7869 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016373.D
Acq On : 11 Nov 2015 16:33
Operator : ADC
Sample : WG546498-07 5.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 12 09:55:30 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

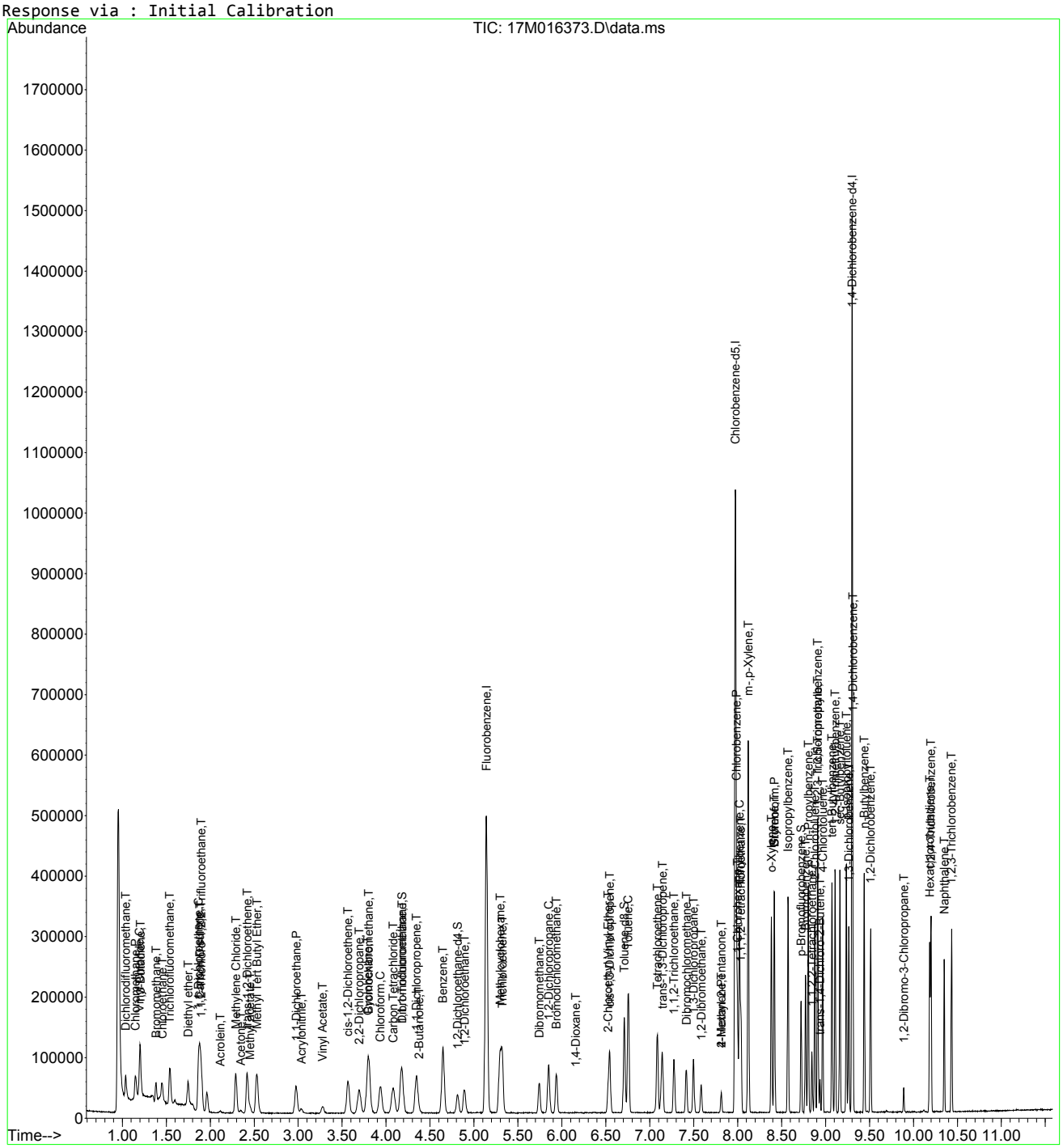

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016373.D
Acq On : 11 Nov 2015 16:33
Operator : ADC
Sample : WG546498-07 5.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 12 09:49:18 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	100	0.000
2	T	Dichlorodifluoromethane	5.000	5.021	-0.4	100	0.000
3	P	Chloromethane	5.000	5.458	-9.2	100	0.000
4	C	Vinyl Chloride	5.000	5.347	-6.9#	100	0.000
5	T	1,3-Butadiene	5.000	4.935	1.3	100	0.000
6	T	Bromomethane	5.000	5.437	-8.7	100	0.000
7	T	Chloroethane	5.000	5.825	-16.5	100	0.000
8	T	Trichlorofluoromethane	5.000	5.392	-7.8	100	0.000
9	T	Diethyl ether	5.000	5.374	-7.5	100	0.000
10	C	1,1-Dichloroethene	5.000	5.531	-10.6#	100	0.000
11	T	Carbon Disulfide	5.000	4.903	1.9	100	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.000	5.591	-11.8	100	0.000
13	T	Iodomethane	-1.000	0.000	0.0	0	0.000
14	T	Acrolein	5.000	5.922	-18.4	100	0.000
15	T	Methylene Chloride	5.000	5.672	-13.4	100	0.000
16	T	Acetone	5.000	5.814	-16.3	100	0.000
17	T	trans-1,2-Dichloroethene	5.000	5.409	-8.2	100	0.000
18	T	Methyl acetate	5.000	5.117	-2.3	102	0.000
19	T	Methyl Tert Butyl Ether	5.000	5.795	-15.9	100	0.000
20	P	1,1-Dichloroethane	5.000	5.572	-11.4	100	0.000
21	T	Acrylonitrile	5.000	5.529	-10.6	100	0.000
22	T	Vinyl Acetate	5.000	6.261	-25.2#	100	0.000
23	T	cis-1,2-Dichloroethene	5.000	5.441	-8.8	100	0.000
24	T	2,2-Dichloropropane	5.000	5.115	-2.3	100	0.000
25	T	Cyclohexane	5.000	5.112	-2.2	100	0.000
26	T	Bromochloromethane	5.000	5.532	-10.6	100	0.000
27	C	Chloroform	5.000	5.411	-8.2#	100	0.000
28	T	Carbon Tetrachloride	5.000	5.536	-10.7	100	0.000
29	S	Dibromofluoromethane	5.000	5.235	-4.7	100	0.000
30	T	1,1,1-Trichloroethane	5.000	5.619	-12.4	100	0.000
31	T	1,1-Dichloropropene	5.000	5.578	-11.6	100	0.000
32	T	2-Butanone	5.000	5.239	-4.8	100	0.000
33	T	Benzene	5.000	5.516	-10.3	100	0.000
34	S	1,2-Dichloroethane-d4	5.000	5.385	-7.7	100	0.000
35	T	1,2-Dichloroethane	5.000	5.706	-14.1	100	0.000
36	T	Methylcyclohexane	5.000	4.827	3.5	100	0.000
37	T	Trichloroethene	5.000	5.455	-9.1	100	0.000
38	T	Dibromomethane	5.000	5.588	-11.8	100	0.000
39	C	1,2-Dichloropropane	5.000	5.620	-12.4#	100	0.000
40	T	Bromodichloromethane	5.000	5.556	-11.1	100	0.000
41	T	1,4-Dioxane	-1.000	7.602	0.0	0	0.000
42	T	2-Chloroethyl Vinyl Ether	5.000	5.264	-5.3	100	0.000
43	T	cis-1,3-Dichloropropene	5.000	5.589	-11.8	100	0.000
44	T	4-Methyl-2-Pentanone	5.000	5.561	-11.2	100	0.000
45	T	trans-1,3-Dichloropropene	5.000	5.593	-11.9	100	0.000
46	I	Chlorobenzene-d5	25.000	25.000	0.0	100	0.000
47	S	Toluene-d8	5.000	5.234	-4.7	100	0.000
48	C	Toluene	5.000	5.716	-14.3#	100	0.000
49	T	Tetrachloroethene	5.000	5.519	-10.4	100	0.000
50	T	1,1,2-Trichloroethane	5.000	5.667	-13.3	100	0.000
51	T	Dibromochloromethane	5.000	5.588	-11.8	100	0.000
52	T	1,3-Dichloropropane	5.000	5.769	-15.4	100	0.000
53	T	1,2-Dibromoethane	5.000	5.694	-13.9	100	0.000
54	T	2-Hexanone	5.000	5.351	-7.0	100	0.000
55	P	Chlorobenzene	5.000	5.570	-11.4	100	0.000

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016373.D
Acq On : 11 Nov 2015 16:33
Operator : ADC
Sample : WG546498-07 5.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Nov 12 09:49:18 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	1-Chlorohexane	5.000	4.943	1.1	100	0.000
57	C	Ethylbenzene	5.000	5.522	-10.4#	100	0.000
58	T	1,1,1,2-Tetrachloroethane	5.000	5.629	-12.6	100	0.000
59	T	m-,p-Xylene	10.000	11.314	-13.1	100	0.000
60	T	o-Xylene	5.000	5.630	-12.6	100	0.000
61	T	Styrene	5.000	5.580	-11.6	100	0.000
62	P	Bromoform	5.000	5.650	-13.0	100	0.000
63	T	Isopropylbenzene	5.000	5.704	-14.1	100	0.000
64	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	100	0.000
65	T	1,3,5-Trimethylbenzene	5.000	5.722	-14.4	100	0.000
66	S	p-Bromofluorobenzene	5.000	5.040	-0.8	100	0.000
67	T	Bromobenzene	5.000	5.557	-11.1	100	0.000
68	T	n-Propylbenzene	5.000	5.781	-15.6	100	0.000
69	P	1,1,2,2-Tetrachloroethane	5.000	5.780	-15.6	100	0.000
70	T	2-Chlorotoluene	5.000	5.713	-14.3	100	0.000
71	T	1,2,3-Trichloropropane	5.000	5.852	-17.0	100	0.000
72	T	trans-1,4-Dichloro-2-Butene	5.000	5.142	-2.8	100	0.000
73	T	1,2,4-Trimethylbenzene	5.000	5.743	-14.9	100	0.000
74	T	4-Chlorotoluene	5.000	5.709	-14.2	100	0.000
75	T	tert-Butylbenzene	5.000	5.592	-11.8	100	0.000
76	T	sec-Butylbenzene	5.000	5.782	-15.6	100	0.000
77	T	p-Isopropyltoluene	5.000	5.787	-15.7	100	0.000
78	T	1,3-Dichlorobenzene	5.000	5.570	-11.4	100	0.000
79	T	1,4-Dichlorobenzene	5.000	5.496	-9.9	100	0.000
80	T	n-Butylbenzene	5.000	5.669	-13.4	100	0.000
81	T	1,2-Dichlorobenzene	5.000	5.653	-13.1	100	0.000
82	T	1,2-Dibromo-3-Chloropropane	5.000	5.701	-14.0	100	0.000
83	T	Hexachlorobutadiene	5.000	5.503	-10.1	100	0.000
84	T	1,2,4-Trichlorobenzene	5.000	5.648	-13.0	100	0.000
85	T	Naphthalene	5.000	5.933	-18.7	100	0.000
86	T	1,2,3-Trichlorobenzene	5.000	5.787	-15.7	100	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016374.D
Acq On : 11 Nov 2015 16:53
Operator : ADC
Sample : WG546498-08 20.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 12 09:55:33 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.141	96	432020	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	326915	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.302	152	182702	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.177	111	42853	9.6694 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 38.678%#		
34) 1,2-Dichloroethane-d4	4.814	65	41338	9.7129 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 38.852%#		
47) Toluene-d8	6.710	98	160163	9.5043 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 38.017%#		
66) p-Bromofluorobenzene	8.723	95	59106	9.3586 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 37.434%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.038	85	123979	20.1796 ug/L	99
3) Chloromethane	1.148	50	126802	19.3760 ug/L	100
4) Vinyl Chloride	1.195	62	115155	19.6989 ug/L	100
5) 1,3-Butadiene	1.206	54	70591	18.7874 ug/L	99
6) Bromomethane	1.380	94	56601	18.3570 ug/L	100
7) Chloroethane	1.452	64	59359	19.8879 ug/L	90
8) Trichlorofluoromethane	1.539	101	140439	19.6669 ug/L	99
9) Diethyl ether	1.748	59	68959	19.9920 ug/L	100
10) 1,1-Dichloroethene	1.867	61	133678	19.7112 ug/L	100
11) Carbon Disulfide	1.881	76	270202	18.9167 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.895	101	81830	19.4585 ug/L	99
14) Acrolein	2.113	56	9085	19.6642 ug/L	95
15) Methylene Chloride	2.289	84	92582	18.4508 ug/L	99
16) Acetone	2.344	43	18531	21.0453 ug/L	97
17) trans-1,2-Dichloroethene	2.420	96	86627	19.5376 ug/L	97
18) Methyl acetate	2.448	43	49421	20.0348 ug/L #	100
19) Methyl Tert Butyl Ether	2.530	73	224023	19.8211 ug/L	100
20) 1,1-Dichloroethane	2.975	63	167386	19.7259 ug/L	100
21) Acrylonitrile	3.036	53	23363	19.8908 ug/L	98
22) Vinyl Acetate	3.277	86	8716	18.6688 ug/L #	98
23) cis-1,2-Dichloroethene	3.566	96	98647	19.3777 ug/L	98
24) 2,2-Dichloropropane	3.693	77	122341	19.2757 ug/L	100
25) Cyclohexane	3.792	56	155883	19.0871 ug/L	99
26) Bromochloromethane	3.806	130	59579	19.8201 ug/L	100
27) Chloroform	3.934	83	159418	18.9624 ug/L	100
28) Carbon Tetrachloride	4.081	117	128615	19.7017 ug/L	100
30) 1,1,1-Trichloroethane	4.180	97	141801	19.2295 ug/L	100
31) 1,1-Dichloropropene	4.345	75	120635	19.2973 ug/L	99
32) 2-Butanone	4.365	43	28955	20.3201 ug/L	95
33) Benzene	4.649	78	361894	19.4908 ug/L	100
35) 1,2-Dichloroethane	4.892	62	111640	19.9823 ug/L	99
36) Methylcyclohexane	5.297	83	155527	17.9140 ug/L	99
37) Trichloroethene	5.324	130	99096	19.2329 ug/L	100
38) Dibromomethane	5.743	93	53396	19.3796 ug/L	100
39) 1,2-Dichloropropane	5.851	63	100181	19.6287 ug/L	99
40) Bromodichloromethane	5.937	83	124598	19.6361 ug/L	100
41) 1,4-Dioxane	6.152	88	996	32.1298 ug/L	83
42) 2-Chloroethyl Vinyl Ether	6.528	63	52665	20.4156 ug/L	100
43) cis-1,3-Dichloropropene	6.545	75	149360	19.9649 ug/L	100
44) 4-Methyl-2-Pentanone	7.814	58	25486	20.1103 ug/L	100
45) trans-1,3-Dichloropropene	7.145	75	127855	19.9749 ug/L	100
48) Toluene	6.757	91	402334	19.4263 ug/L	100
49) Tetrachloroethene	7.087	166	105353	18.8732 ug/L	100
50) 1,1,2-Trichloroethane	7.278	97	72898	18.9208 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016374.D
Acq On : 11 Nov 2015 16:53
Operator : ADC
Sample : WG546498-08 20.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 12 09:55:33 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
51) Dibromochloromethane	7.414	129	97313	19.5649 ug/L	100
52) 1,3-Dichloropropane	7.498	76	119400	19.5388 ug/L	98
53) 1,2-Dibromoethane	7.585	107	73953	19.3429 ug/L	100
54) 2-Hexanone	7.814	43	49286	19.8972 ug/L	100
55) Chlorobenzene	7.984	112	258377	19.3581 ug/L	100
56) 1-Chlorohexane	7.999	69	24751	18.0543 ug/L	82
57) Ethylbenzene	8.022	106	139900	19.2563 ug/L	100
58) 1,1,1,2-Tetrachloroethane	8.036	131	97056	19.6414 ug/L	99
59) m-,p-Xylene	8.120	106	342429	39.2876 ug/L	100
60) o-Xylene	8.384	106	166521	19.3616 ug/L	99
61) Styrene	8.419	104	278369	19.4757 ug/L	100
62) Bromoform	8.419	173	64836	19.7711 ug/L	100
63) Isopropylbenzene	8.575	105	440028	19.6273 ug/L	100
65) 1,3,5-Trimethylbenzene	8.911	105	384226	19.2062 ug/L	100
67) Bromobenzene	8.775	156	117847	18.8466 ug/L	99
68) n-Propylbenzene	8.804	91	513406	19.6618 ug/L	100
69) 1,1,2,2-Tetrachloroethane	8.844	83	86968	19.1751 ug/L	100
70) 2-Chlorotoluene	8.879	91	307191	19.2359 ug/L	100
71) 1,2,3-Trichloropropane	8.911	110	23108	18.3049 ug/L	97
72) trans-1,4-Dichloro-2-B...	8.937	53	19213	18.3088 ug/L #	97
73) 1,2,4-Trimethylbenzene	9.111	105	385956	19.3261 ug/L	100
74) 4-Chlorotoluene	8.966	91	311813	18.9769 ug/L	99
75) tert-Butylbenzene	9.073	134	69746	19.0121 ug/L	99
76) sec-Butylbenzene	9.163	105	475309	19.3351 ug/L	100
77) p-Isopropyltoluene	9.238	119	412112	19.3841 ug/L	99
78) 1,3-Dichlorobenzene	9.264	146	220206	19.1768 ug/L	99
79) 1,4-Dichlorobenzene	9.310	146	217507	18.5689 ug/L	100
80) n-Butylbenzene	9.441	91	375849	19.2078 ug/L	100
81) 1,2-Dichlorobenzene	9.513	146	207637	18.9939 ug/L	99
82) 1,2-Dibromo-3-Chloropr...	9.890	75	16258	19.1002 ug/L	99
83) Hexachlorobutadiene	10.185	225	95794	19.0374 ug/L	100
84) 1,2,4-Trichlorobenzene	10.199	180	169274	19.4029 ug/L	99
85) Naphthalene	10.350	128	315706	19.5368 ug/L	100
86) 1,2,3-Trichlorobenzene	10.434	180	155899	19.3625 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016374.D
Acq On : 11 Nov 2015 16:53
Operator : ADC
Sample : WG546498-08 20.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Nov 12 09:55:33 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

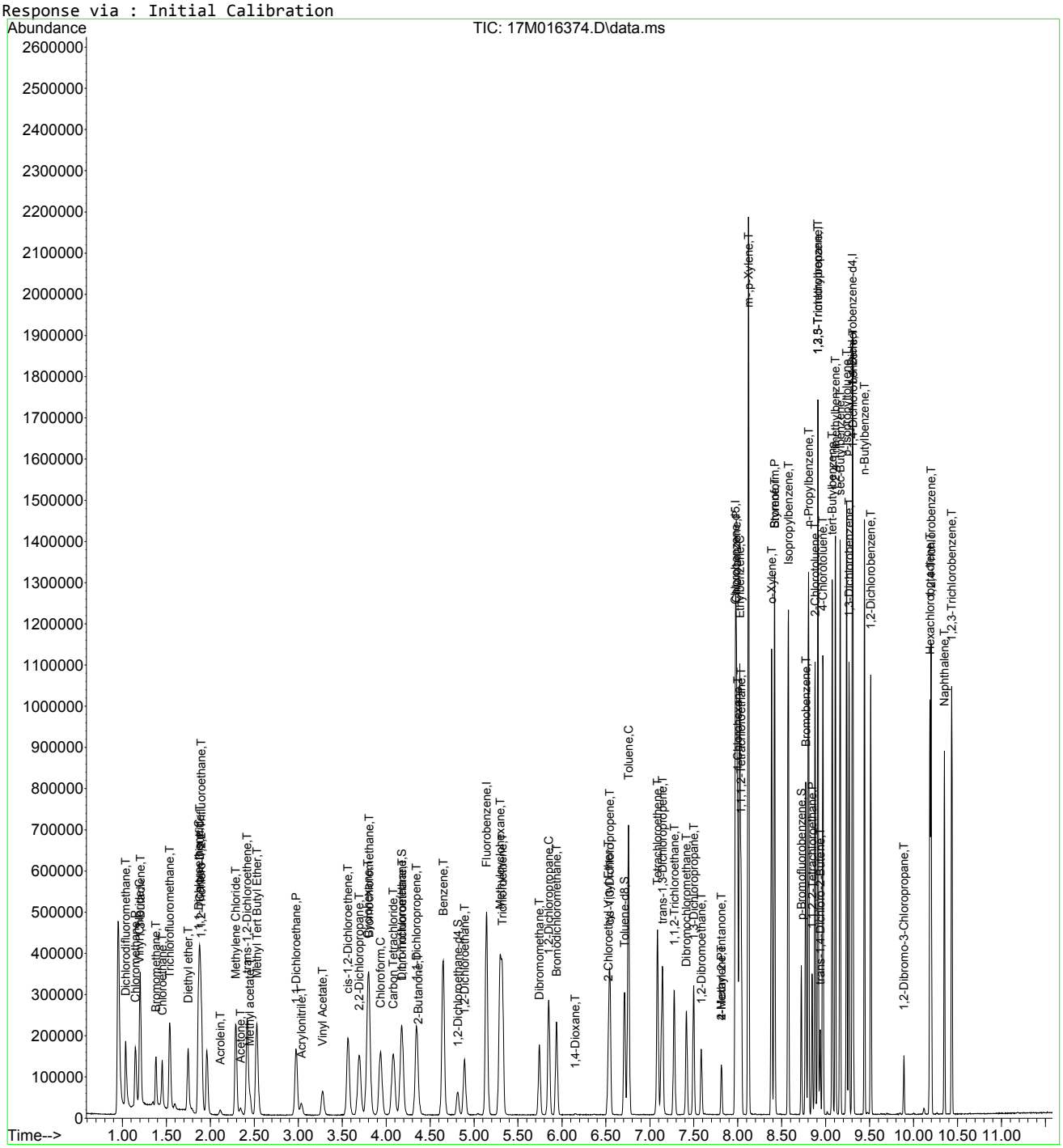

8260_VMS.M Thu Nov 12 09:55:34 2015 Page: 3

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016375.D
Acq On : 11 Nov 2015 17:13
Operator : ADC
Sample : WG546498-09 100.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 12 09:55:36 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.141	96	435819	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.976	117	329330	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.305	152	183512	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.177	111	227102	50.7971 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 203.188%#		
34) 1,2-Dichloroethane-d4	4.814	65	216427	50.4089 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 201.636%#		
47) Toluene-d8	6.713	98	856306	50.4420 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 201.768%#		
66) p-Bromofluorobenzene	8.723	95	325380	51.2920 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 205.168%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.036	85	672429	108.4947 ug/L	100
3) Chloromethane	1.146	50	645008	97.7016 ug/L	100
4) Vinyl Chloride	1.195	62	610828	103.5801 ug/L	100
5) 1,3-Butadiene	1.204	54	364239	96.0949 ug/L	99
6) Bromomethane	1.380	94	294852	94.7939 ug/L	99
7) Chloroethane	1.447	64	263145	87.3968 ug/L	93
8) Trichlorofluoromethane	1.525	101	718507	111.8531 ug/L	99
9) Diethyl ether	1.751	59	337490	96.9892 ug/L	100
10) 1,1-Dichloroethene	1.858	61	699242	102.2065 ug/L	100
11) Carbon Disulfide	1.872	76	1408250	97.7315 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.890	101	435206	102.5865 ug/L	100
14) Acrolein	2.116	56	45618	97.8782 ug/L	98
15) Methylene Chloride	2.286	84	465653	91.9915 ug/L	99
16) Acetone	2.347	43	82674	95.1744 ug/L	100
17) trans-1,2-Dichloroethene	2.417	96	442162	98.8546 ug/L	100
18) Methyl acetate	2.451	43	254121	102.1203 ug/L #	100
19) Methyl Tert Butyl Ether	2.533	73	1134395	99.4943 ug/L	100
20) 1,1-Dichloroethane	2.973	63	861653	100.6580 ug/L	100
21) Acrylonitrile	3.036	53	112295	94.7724 ug/L	97
22) Vinyl Acetate	3.277	86	51476	92.0281 ug/L	100
23) cis-1,2-Dichloroethene	3.563	96	498482	97.0654 ug/L	99
24) 2,2-Dichloropropane	3.691	77	680182	106.2335 ug/L	100
25) Cyclohexane	3.795	56	816785	99.1396 ug/L	100
26) Bromochloromethane	3.804	130	312915	103.1896 ug/L	99
27) Chloroform	3.937	83	818816	96.5474 ug/L	100
28) Carbon Tetrachloride	4.079	117	685171	104.0420 ug/L	100
30) 1,1,1-Trichloroethane	4.177	97	743102	99.8928 ug/L	100
31) 1,1-Dichloropropene	4.345	75	637540	101.0947 ug/L	100
32) 2-Butanone	4.368	43	141619	98.5194 ug/L	96
33) Benzene	4.649	78	1857716	99.1801 ug/L	100
35) 1,2-Dichloroethane	4.892	62	568138	100.8038 ug/L	100
36) Methylcyclohexane	5.298	83	830648	94.8424 ug/L	99
37) Trichloroethene	5.324	130	518925	99.8367 ug/L	100
38) Dibromomethane	5.743	93	273038	98.2326 ug/L	100
39) 1,2-Dichloropropane	5.851	63	517749	100.5593 ug/L	100
40) Bromodichloromethane	5.937	83	649100	101.4034 ug/L	100
41) 1,4-Dioxane	6.149	88	6000	191.8656 ug/L	98
42) 2-Chloroethyl Vinyl Ether	6.528	63	256923	98.7279 ug/L	99
43) cis-1,3-Dichloropropene	6.545	75	774345	102.6042 ug/L	100
44) 4-Methyl-2-Pentanone	7.814	58	124090	97.0627 ug/L	99
45) trans-1,3-Dichloropropene	7.148	75	666807	103.2676 ug/L	100
48) Toluene	6.760	91	2080036	99.6962 ug/L	100
49) Tetrachloroethene	7.087	166	561598	99.8681 ug/L	100
50) 1,1,2-Trichloroethane	7.278	97	371905	95.8206 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016375.D
Acq On : 11 Nov 2015 17:13
Operator : ADC
Sample : WG546498-09 100.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 12 09:55:36 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
51) Dibromochloromethane	7.417	129	512307	102.2445 ug/L	100
52) 1,3-Dichloropropane	7.498	76	610983	99.2491 ug/L	99
53) 1,2-Dibromoethane	7.585	107	380846	98.8822 ug/L	100
54) 2-Hexanone	7.814	43	236286	94.6911 ug/L	99
55) Chlorobenzene	7.987	112	1353581	100.6690 ug/L	99
56) 1-Chlorohexane	8.002	69	132271	95.7760 ug/L	91
57) Ethylbenzene	8.025	106	739094	100.9856 ug/L	97
58) 1,1,1,2-Tetrachloroethane	8.039	131	504662	101.3805 ug/L	99
59) m-,p-Xylene	8.123	106	1793260	204.2356 ug/L	97
60) o-Xylene	8.387	106	878654	101.4130 ug/L	100
61) Styrene	8.419	104	1461980	101.5355 ug/L	99
62) Bromoform	8.422	173	346760	104.9655 ug/L	99
63) Isopropylbenzene	8.575	105	2285181	101.1825 ug/L	99
65) 1,3,5-Trimethylbenzene	8.914	105	1999382	99.5012 ug/L	99
67) Bromobenzene	8.775	156	615182	97.9484 ug/L	100
68) n-Propylbenzene	8.807	91	2650686	101.0647 ug/L	99
69) 1,1,2,2-Tetrachloroethane	8.847	83	447119	98.1479 ug/L	100
70) 2-Chlorotoluene	8.882	91	1608621	100.2851 ug/L	100
71) 1,2,3-Trichloropropane	8.911	110	120391	94.9462 ug/L	99
72) trans-1,4-Dichloro-2-B...	8.937	53	100016	94.8885 ug/L #	95
73) 1,2,4-Trimethylbenzene	9.111	105	1998749	99.6424 ug/L	99
74) 4-Chlorotoluene	8.969	91	1642797	99.5391 ug/L	99
75) tert-Butylbenzene	9.076	134	373097	101.2538 ug/L	98
76) sec-Butylbenzene	9.166	105	2482748	100.5500 ug/L	100
77) p-Isopropyltoluene	9.241	119	2163497	101.3129 ug/L	99
78) 1,3-Dichlorobenzene	9.267	146	1154638	100.1085 ug/L	100
79) 1,4-Dichlorobenzene	9.313	146	1149692	97.7177 ug/L	99
80) n-Butylbenzene	9.444	91	1990054	101.2528 ug/L	99
81) 1,2-Dichlorobenzene	9.516	146	1089096	99.1869 ug/L	100
82) 1,2-Dibromo-3-Chloropr...	9.890	75	85646	100.1744 ug/L	99
83) Hexachlorobutadiene	10.185	225	500717	99.0697 ug/L	100
84) 1,2,4-Trichlorobenzene	10.202	180	862453	98.4217 ug/L	99
85) Naphthalene	10.350	128	1559335	96.0701 ug/L	100
86) 1,2,3-Trichlorobenzene	10.437	180	782232	96.7234 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016375.D
Acq On : 11 Nov 2015 17:13
Operator : ADC
Sample : WG546498-09 100.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Nov 12 09:55:36 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

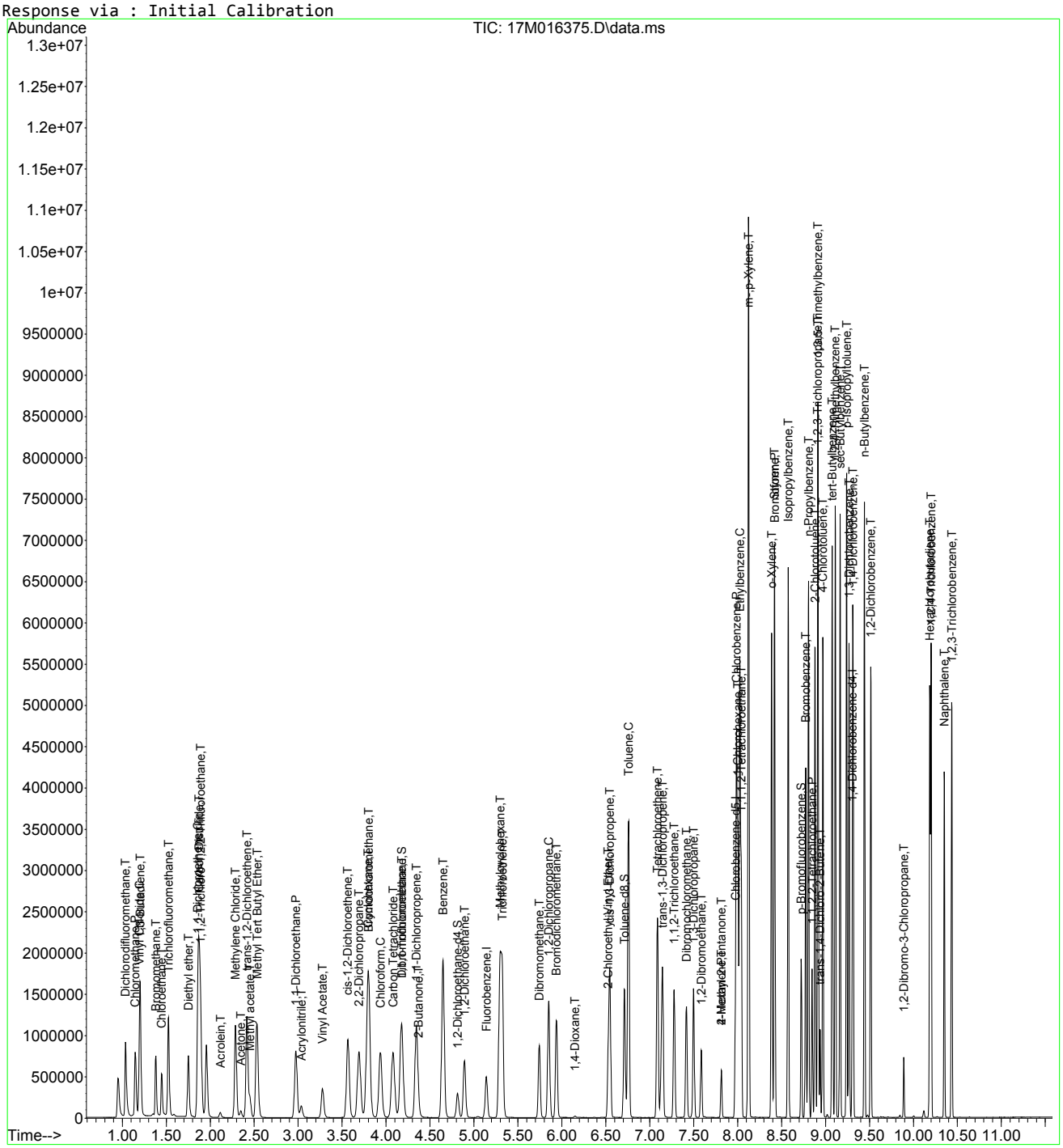

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016376.D
Acq On : 11 Nov 2015 17:33
Operator : ADC
Sample : WG546498-10 200.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Nov 12 09:55:39 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.141	96	423136	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.976	117	320833	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.308	152	183130	25.00000 ug/L	# 0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.177	111	420579	96.8928 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 387.571%#		
34) 1,2-Dichloroethane-d4	4.814	65	405549	97.2893 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 389.157%#		
47) Toluene-d8	6.713	98	1589278	96.0983 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 384.393%#		
66) p-Bromofluorobenzene	8.726	95	628947	99.3522 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 397.409%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.036	85	1264469	210.1340 ug/L	100
3) Chloromethane	1.146	50	1204363	187.8971 ug/L	100
4) Vinyl Chloride	1.192	62	1161924	202.9371 ug/L	100
5) 1,3-Butadiene	1.204	54	712072	193.4925 ug/L	99
6) Bromomethane	1.380	94	582345	192.8336 ug/L	99
7) Chloroethane	1.447	64	489582	167.4758 ug/L	95
8) Trichlorofluoromethane	1.519	101	962068	166.0101 ug/L	99
9) Diethyl ether	1.754	59	664790	196.7764 ug/L	99
10) 1,1-Dichloroethene	1.852	61	1300715	195.8211 ug/L	99
11) Carbon Disulfide	1.864	76	2724227	194.7261 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.881	101	800798	194.4217 ug/L	100
14) Acrolein	2.119	56	90976	201.0493 ug/L	97
15) Methylene Chloride	2.286	84	887378	180.5595 ug/L	99
16) Acetone	2.356	43	164198	195.3327 ug/L	100
17) trans-1,2-Dichloroethene	2.414	96	851904	196.1699 ug/L	99
18) Methyl acetate	2.454	43	519405	214.9829 ug/L #	100
19) Methyl Tert Butyl Ether	2.535	73	2188063	197.6605 ug/L	100
20) 1,1-Dichloroethane	2.973	63	1641677	197.5284 ug/L	100
21) Acrylonitrile	3.042	53	225747	196.2319 ug/L	97
22) Vinyl Acetate	3.280	86	108500	195.6239 ug/L	99
23) cis-1,2-Dichloroethene	3.563	96	960093	192.5549 ug/L	100
24) 2,2-Dichloropropane	3.694	77	1283660	206.4964 ug/L	100
25) Cyclohexane	3.792	56	1586635	198.3547 ug/L	99
26) Bromochloromethane	3.806	130	602274	204.5643 ug/L	100
27) Chloroform	3.937	83	1564805	190.0381 ug/L	99
28) Carbon Tetrachloride	4.079	117	1303376	203.8475 ug/L	99
30) 1,1,1-Trichloroethane	4.174	97	1414455	195.8398 ug/L	100
31) 1,1-Dichloropropene	4.345	75	1215152	198.4622 ug/L	100
32) 2-Butanone	4.377	43	285771	204.7598 ug/L	95
33) Benzene	4.649	78	3559886	195.7526 ug/L	100
35) 1,2-Dichloroethane	4.892	62	1090735	199.3282 ug/L	100
36) Methylcyclohexane	5.298	83	1621652	190.7083 ug/L	99
37) Trichloroethene	5.324	130	995167	197.2003 ug/L	99
38) Dibromomethane	5.743	93	530177	196.4626 ug/L	100
39) 1,2-Dichloropropane	5.851	63	991101	198.2655 ug/L	100
40) Bromodichloromethane	5.940	83	1254068	201.7847 ug/L	100
41) 1,4-Dioxane	6.160	88	12975	427.3457 ug/L	98
42) 2-Chloroethyl Vinyl Ether	6.531	63	515167	203.8971 ug/L	99
43) cis-1,3-Dichloropropene	6.548	75	1497163	204.3271 ug/L	100
44) 4-Methyl-2-Pentanone	7.819	58	255733	206.0290 ug/L	99
45) trans-1,3-Dichloropropene	7.148	75	1298472	207.1204 ug/L	100
48) Toluene	6.760	91	3923514	193.0347 ug/L	99
49) Tetrachloroethene	7.090	166	1081912	197.4901 ug/L	100
50) 1,1,2-Trichloroethane	7.278	97	722575	191.1007 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016376.D
Acq On : 11 Nov 2015 17:33
Operator : ADC
Sample : WG546498-10 200.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Nov 12 09:55:39 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
51) Dibromochloromethane	7.420	129	1009082	206.7227 ug/L	100
52) 1,3-Dichloropropane	7.501	76	1187193	197.9571 ug/L	99
53) 1,2-Dibromoethane	7.588	107	742133	197.7892 ug/L	100
54) 2-Hexanone	7.819	43	487942	200.7205 ug/L	99
55) Chlorobenzene	7.987	112	2606043	198.9506 ug/L	100
56) 1-Chlorohexane	8.005	69	259970	193.2269 ug/L	99
57) Ethylbenzene	8.028	106	1416629	198.6864 ug/L	94
58) 1,1,1,2-Tetrachloroethane	8.045	131	983720	202.8513 ug/L	99
59) m-,p-Xylene	8.129	106	3371507	394.1526 ug/L	91
60) o-Xylene	8.390	106	1697857	201.1541 ug/L	97
61) Styrene	8.422	104	2836707	202.2289 ug/L	99
62) Bromoform	8.425	173	703885	218.7114 ug/L	99
63) Isopropylbenzene	8.578	105	4261510	193.6870 ug/L	97
65) 1,3,5-Trimethylbenzene	8.917	105	3806148	189.8118 ug/L	97
67) Bromobenzene	8.778	156	1229913	196.2334 ug/L	99
68) n-Propylbenzene	8.810	91	4913490	187.7312 ug/L	96
69) 1,1,2,2-Tetrachloroethane	8.847	83	897807	197.4902 ug/L	100
70) 2-Chlorotoluene	8.882	91	3098585	193.5759 ug/L	99
71) 1,2,3-Trichloropropane	8.914	110	240327	189.9290 ug/L	99
72) trans-1,4-Dichloro-2-B...	8.940	53	204813	194.7181 ug/L #	99
73) 1,2,4-Trimethylbenzene	9.114	105	3814185	190.5429 ug/L	97
74) 4-Chlorotoluene	8.972	91	3174219	192.7311 ug/L	97
75) tert-Butylbenzene	9.079	134	742569	201.9442 ug/L	93
76) sec-Butylbenzene	9.169	105	4617155	187.3825 ug/L	97
77) p-Isopropyltoluene	9.241	119	4086031	191.7410 ug/L	96
78) 1,3-Dichlorobenzene	9.270	146	2276647	197.7997 ug/L	99
79) 1,4-Dichlorobenzene	9.313	146	2266056	193.0044 ug/L	99
80) n-Butylbenzene	9.444	91	3793868	193.4324 ug/L	97
81) 1,2-Dichlorobenzene	9.516	146	2143436	195.6157 ug/L	99
82) 1,2-Dibromo-3-Chloropr...	9.890	75	171231	200.6953 ug/L	98
83) Hexachlorobutadiene	10.188	225	1033545	204.9194 ug/L	99
84) 1,2,4-Trichlorobenzene	10.202	180	1746090	199.6766 ug/L	99
85) Naphthalene	10.353	128	3095323	191.0995 ug/L	99
86) 1,2,3-Trichlorobenzene	10.437	180	1600471	198.3119 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016376.D
Acq On : 11 Nov 2015 17:33
Operator : ADC
Sample : WG546498-10 200.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Nov 12 09:55:39 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

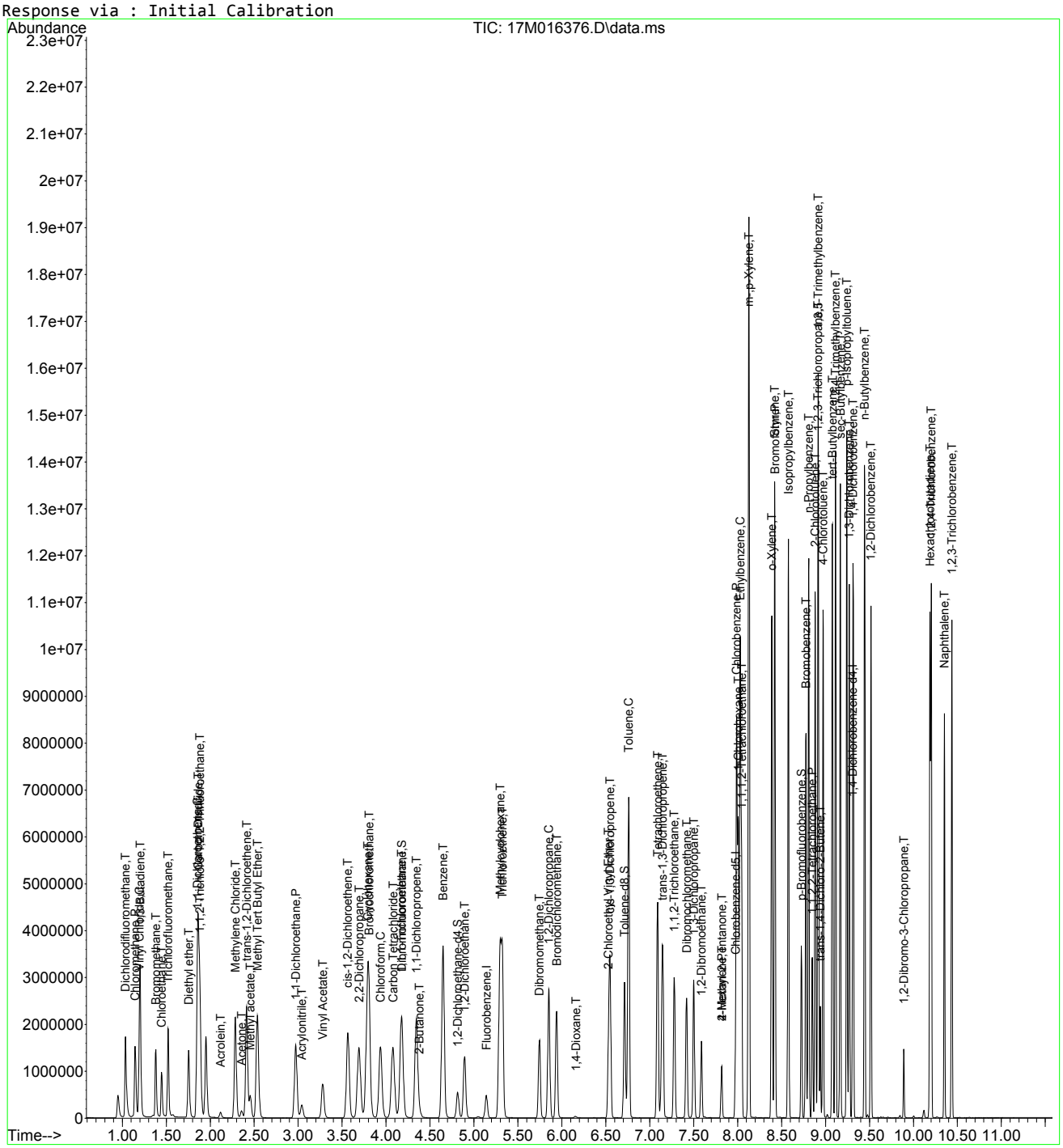

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016377.D
Acq On : 11 Nov 2015 17:53
Operator : ADC
Sample : WG546498-11 300.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Nov 12 09:55:42 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) Fluorobenzene	5.141	96	420818	25.00000	ug/L	0.0000
46) Chlorobenzene-d5	7.979	117	319267	25.00000	ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.308	152	178164	25.00000	ug/L	# 0.0000
System Monitoring Compounds						
29) Dibromofluoromethane	4.174	111	2005	0.4645	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 1.858%#			
34) 1,2-Dichloroethane-d4	4.895	65	75388	18.1848	ug/L	0.0811
Spiked Amount 25.000	Range 80 - 120		Recovery = 72.739%#			
47) Toluene-d8	6.713	98	7696	0.4676	ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 1.870%#			
66) p-Bromofluorobenzene	8.726	95	4059	0.6591	ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 2.636%#			
Target Compounds						Qvalue
2) Dichlorodifluoromethane	1.036	85	1945784	325.1385	ug/L	100
3) Chloromethane	1.146	50	1837720	288.2887	ug/L	100
4) Vinyl Chloride	1.192	62	1776531	311.9911	ug/L	100
5) 1,3-Butadiene	1.201	54	1096278	299.5343	ug/L	99
6) Bromomethane	1.377	94	923135	307.3642	ug/L	99
7) Chloroethane	1.447	64	740775	254.7995	ug/L	96
8) Trichlorofluoromethane	1.519	101	1475110	336.7949	ug/L	99
9) Diethyl ether	1.754	59	1034731	307.9652	ug/L	99
10) 1,1-Dichloroethene	1.849	61	2048985	310.1714	ug/L	99
11) Carbon Disulfide	1.861	76	4256834	305.9520	ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.878	101	1274995	311.2546	ug/L	100
14) Acrolein	2.118	56	143184	318.1676	ug/L	99
15) Methylene Chloride	2.284	84	1378330	282.0009	ug/L	98
16) Acetone	2.359	43	265332	317.7657	ug/L	99
17) trans-1,2-Dichloroethene	2.411	96	1318765	305.3478	ug/L	99
18) Methyl acetate	2.457	43	821397	341.8507	ug/L #	100
19) Methyl Tert Butyl Ether	2.538	73	3445729	312.9873	ug/L	99
20) 1,1-Dichloroethane	2.970	63	2532008	306.3322	ug/L	100
21) Acrylonitrile	3.045	53	353163	308.6800	ug/L	98
22) Vinyl Acetate	3.282	86	177753	319.9490	ug/L	97
23) cis-1,2-Dichloroethene	3.566	96	1490170	300.5126	ug/L	100
24) 2,2-Dichloropropane	3.694	77	1953259	315.9425	ug/L	99
25) Cyclohexane	3.792	56	2458451	309.0386	ug/L	99
26) Bromochloromethane	3.809	130	940915	321.3451	ug/L	100
27) Chloroform	3.937	83	2402887	293.4265	ug/L	99
28) Carbon Tetrachloride	4.079	117	2024773	318.4181	ug/L	99
30) 1,1,1-Trichloroethane	4.174	97	2174917	302.7891	ug/L	100
31) 1,1-Dichloropropene	4.345	75	1885045	309.5670	ug/L	100
32) 2-Butanone	4.377	43	457131	329.3463	ug/L	94
33) Benzene	4.649	78	5427000	300.0661	ug/L	99
35) 1,2-Dichloroethane	4.895	62	1692616	311.0238	ug/L	99
36) Methylcyclohexane	5.300	83	2521219	298.1316	ug/L	99
37) Trichloroethene	5.327	130	1538806	306.6064	ug/L	99
38) Dibromomethane	5.746	93	835373	311.2612	ug/L	100
39) 1,2-Dichloropropane	5.853	63	1527247	307.2021	ug/L	100
40) Bromodichloromethane	5.940	83	1930467	312.3311	ug/L	100
41) 1,4-Dioxane	6.160	88	21478	711.2978	ug/L	95
42) 2-Chloroethyl Vinyl Ether	6.534	63	817699	325.4185	ug/L	100
43) cis-1,3-Dichloropropene	6.551	75	2302818	316.0110	ug/L	100
44) 4-Methyl-2-Pentanone	7.819	58	403770	327.0855	ug/L	98
45) trans-1,3-Dichloropropene	7.151	75	1998087	320.4722	ug/L	100
48) Toluene	6.763	91	5891973	291.3037	ug/L	97
49) Tetrachloroethene	7.090	166	1679502	308.0767	ug/L	100
50) 1,1,2-Trichloroethane	7.281	97	1120163	297.7046	ug/L	99

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016377.D
Acq On : 11 Nov 2015 17:53
Operator : ADC
Sample : WG546498-11 300.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Nov 12 09:55:42 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
51) Dibromochloromethane	7.420	129	1562657	321.6995 ug/L	100
52) 1,3-Dichloropropane	7.504	76	1819636	304.9014 ug/L	99
53) 1,2-Dibromoethane	7.591	107	1152224	308.5906 ug/L	99
54) 2-Hexanone	7.819	43	775083	320.4031 ug/L	100
55) Chlorobenzene	7.990	112	3853710	295.6431 ug/L	99
56) 1-Chlorohexane	8.011	69	392578	293.2211 ug/L #	1
57) Ethylbenzene	8.034	106	2123533	299.2926 ug/L	90
58) 1,1,1,2-Tetrachloroethane	8.048	131	1472443	305.1193 ug/L	99
59) m-,p-Xylene	8.132	106	4844404	569.1225 ug/L	84
60) o-Xylene	8.390	106	2506623	298.4296 ug/L	95
61) Styrene	8.425	104	4111228	294.5271 ug/L	97
62) Bromoform	8.427	173	1077319	336.3869 ug/L	99
63) Isopropylbenzene	8.578	105	5955931	272.0268 ug/L	94
65) 1,3,5-Trimethylbenzene	8.920	105	5279568	270.6297 ug/L	94
67) Bromobenzene	8.778	156	1836436	301.1715 ug/L	99
68) n-Propylbenzene	8.810	91	6755527	265.3048 ug/L	93
69) 1,1,2,2-Tetrachloroethane	8.850	83	1375069	310.9043 ug/L	100
70) 2-Chlorotoluene	8.885	91	4400883	282.5968 ug/L	97
71) 1,2,3-Trichloropropane	8.914	110	364474	296.0703 ug/L	98
72) trans-1,4-Dichloro-2-B...	8.943	53	307861	300.8452 ug/L #	98
73) 1,2,4-Trimethylbenzene	9.117	105	5234243	268.7723 ug/L	93
74) 4-Chlorotoluene	8.975	91	4499465	280.8118 ug/L	96
75) tert-Butylbenzene	9.079	134	1090615	304.8636 ug/L	87
76) sec-Butylbenzene	9.169	105	6245857	260.5470 ug/L	93
77) p-Isopropyltoluene	9.244	119	5493886	264.9919 ug/L	93
78) 1,3-Dichlorobenzene	9.273	146	3254851	290.6703 ug/L	97
79) 1,4-Dichlorobenzene	9.316	146	3240905	283.7282 ug/L	98
80) n-Butylbenzene	9.447	91	5136023	269.1618 ug/L	93
81) 1,2-Dichlorobenzene	9.519	146	3102408	291.0259 ug/L	98
82) 1,2-Dibromo-3-Chloropr...	9.890	75	266133	320.6218 ug/L	98
83) Hexachlorobutadiene	10.188	225	1484949	302.6249 ug/L	99
84) 1,2,4-Trichlorobenzene	10.205	180	2561526	301.0917 ug/L	99
85) Naphthalene	10.353	128	4493705	285.1660 ug/L	97
86) 1,2,3-Trichlorobenzene	10.440	180	2371583	302.0500 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016377.D
Acq On : 11 Nov 2015 17:53
Operator : ADC
Sample : WG546498-11 300.0ug/L STD 8260
Misc : 1,1 STD73185
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Nov 12 09:55:42 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

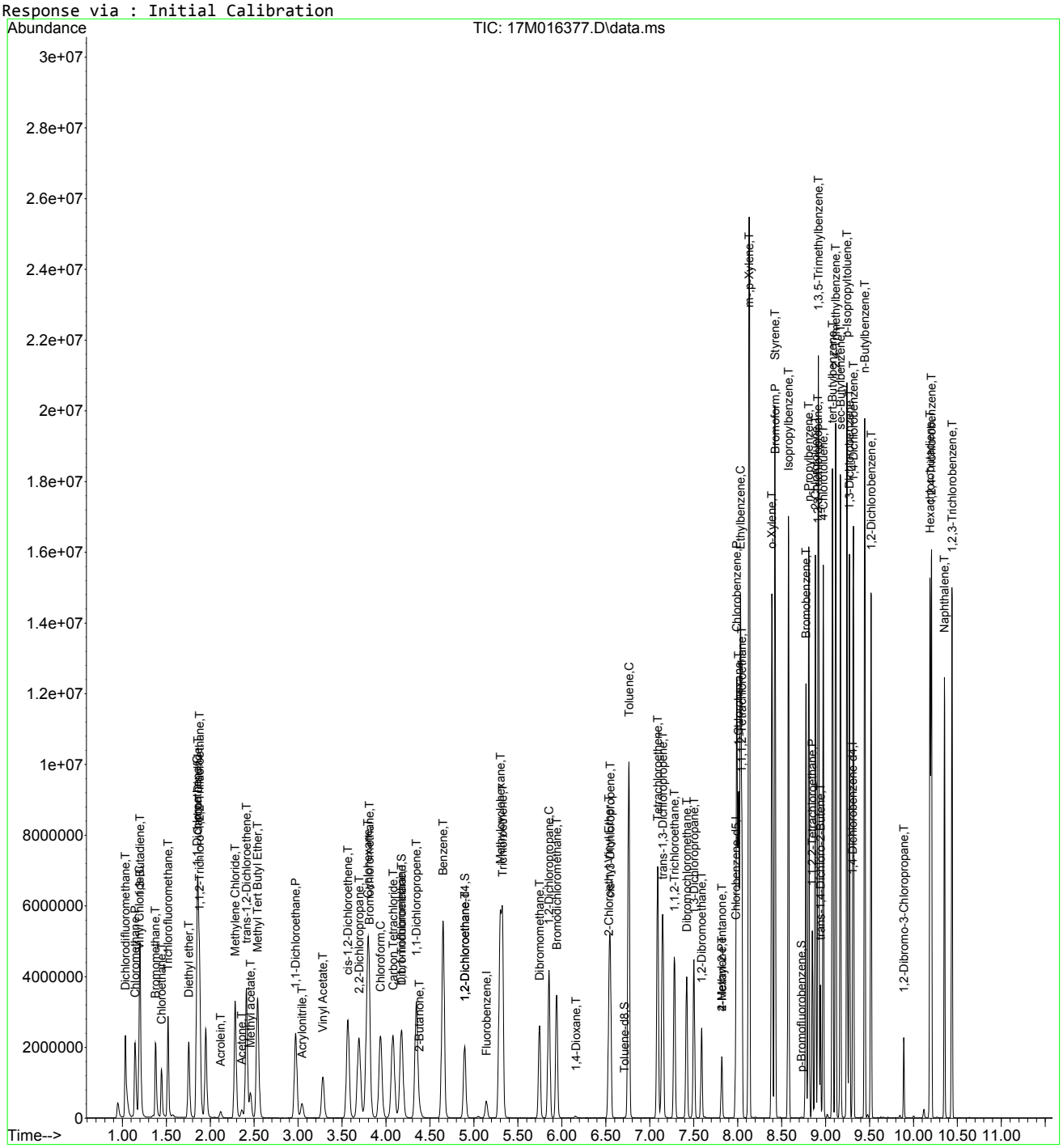

8260_VMS.M Thu Nov 12 09:55:43 2015 Page: 3

Trichlorofluoromethane

00653273

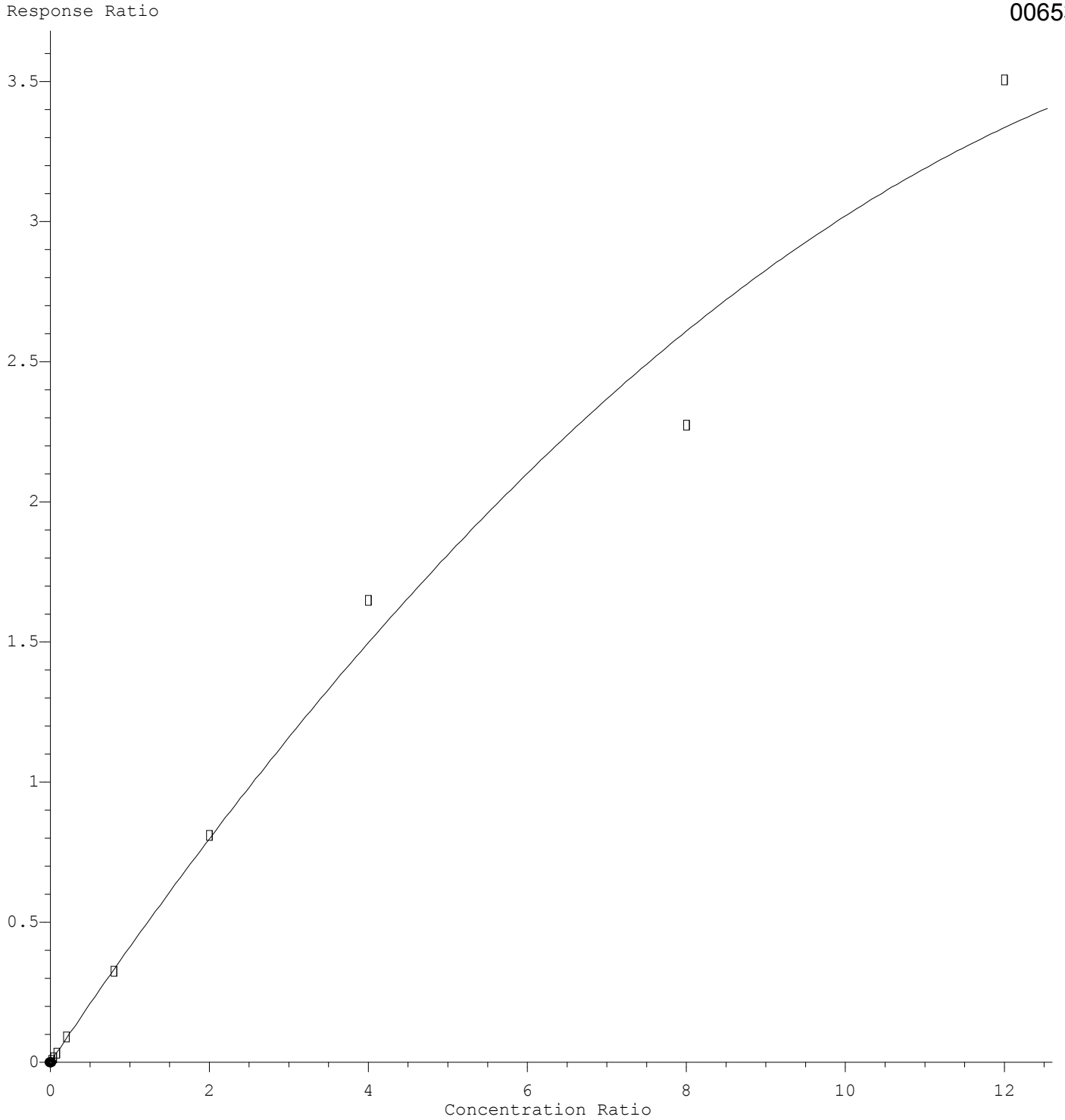

R = -1.203e-002 A*A + 4.222e-001 A + 3.726e-004
Coef of Det (r^2) = 0.991819 Curve Fit: Quadratic w(1/a)
Method Name: D:\MassHunter\GCMS\1\methods\8260_VMS.M
Calibration Table Last Updated: Thu Nov 12 09:48:27 2015

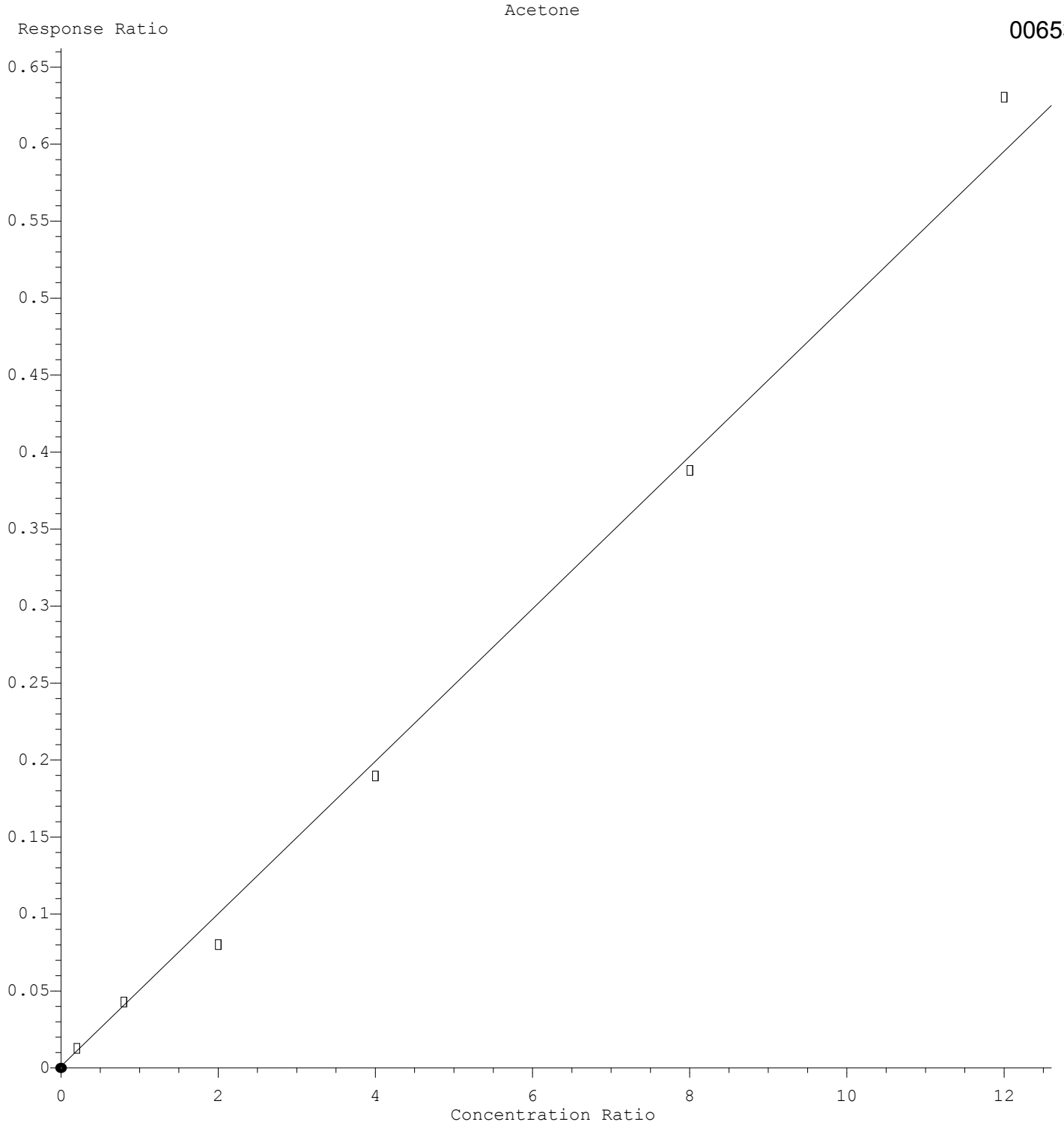

Response = 4.951e-002 * Amt + 1.216e-003
Coef of Det (r^2) = 0.993438 Curve Fit: wlr(1/a)
Method Name: D:\MassHunter\GCMS\1\methods\8260_VMS.M
Calibration Table Last Updated: Thu Nov 12 09:48:27 2015

Vinyl Acetate

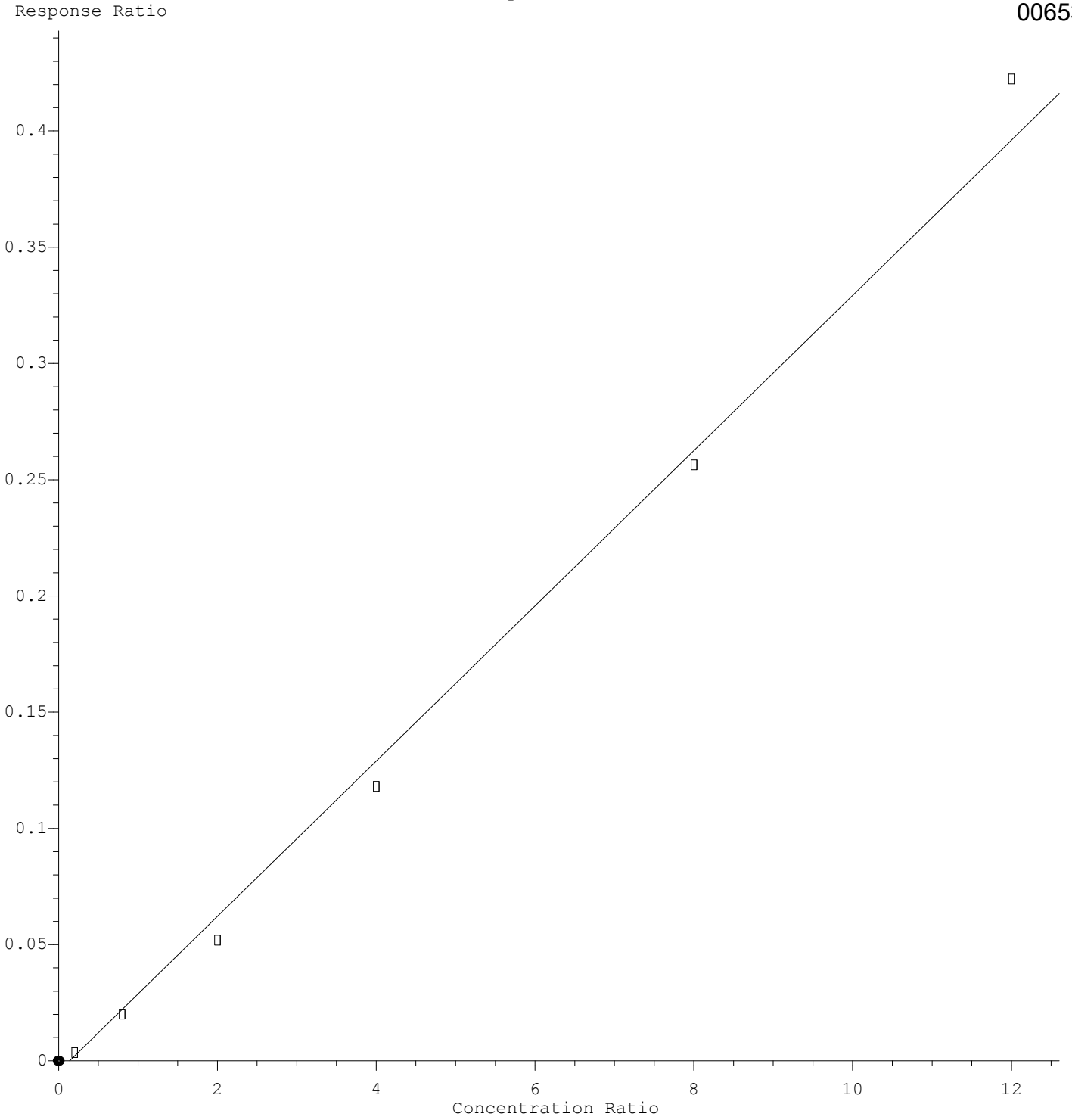

Response = 3.338e-002 * Amt - 4.749e-003
Coef of Det (r^2) = 0.993500 Curve Fit: wlr(1/a)
Method Name: D:\MassHunter\GCMS\1\methods\8260_VMS.M
Calibration Table Last Updated: Thu Nov 12 09:48:27 2015

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016379.D
Acq On : 11 Nov 2015 18:33
Operator : ADC
Sample : WG546498-12 50.0ug/L ALT 8260
Misc : 1,1 STD73387
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Nov 12 09:55:48 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.135	96	439844	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.976	117	330854	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.305	152	182862	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.177	111	117314	26.0001 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.000%		
34) 1,2-Dichloroethane-d4	4.811	65	114324	26.3840 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 105.536%		
47) Toluene-d8	6.711	98	441253	25.8730 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.492%		
66) p-Bromofluorobenzene	8.723	95	162405	25.6921 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.768%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.030	85	357156	57.0989 ug/L	100
3) Chloromethane	1.143	50	335169	50.3046 ug/L	100
4) Vinyl Chloride	1.189	62	329215	55.3152 ug/L	100
5) 1,3-Butadiene	1.201	54	220256	57.5770 ug/L	100
6) Bromomethane	1.374	94	153126	48.7790 ug/L	100
7) Chloroethane	1.444	64	138377	45.5378 ug/L	93
8) Trichlorofluoromethane	1.516	101	251328	35.2255 ug/L	100
9) Diethyl ether	1.757	59	839605	239.0809 ug/L	100
10) 1,1-Dichloroethene	1.838	61	333854	48.3521 ug/L	100
11) Carbon Disulfide	1.849	76	231598	15.9256 ug/L	95
12) 1,1,2-Trichloro-1,2,2-...	1.867	101	223754	52.2605 ug/L	99
14) Acrolein	2.119	56	51908	110.3548 ug/L	97
15) Methylene Chloride	2.278	84	239345	46.8508 ug/L	99
16) Acetone	2.368	43	50068	56.8653 ug/L	98
17) trans-1,2-Dichloroethene	2.405	96	225050	49.8542 ug/L	99
18) Methyl acetate	2.460	43	137709	54.8329 ug/L #	100
19) Methyl Tert Butyl Ether	2.541	73	619677	53.8526 ug/L	100
20) 1,1-Dichloroethane	2.967	63	438476	50.7539 ug/L	100
21) Acrylonitrile	3.045	53	56047	46.8685 ug/L	99
22) Vinyl Acetate	3.280	86	27714	50.7528 ug/L	99
23) cis-1,2-Dichloroethene	3.560	96	256956	49.5771 ug/L	100
24) 2,2-Dichloropropane	3.682	77	341133	52.7919 ug/L	100
25) Cyclohexane	3.775	56	400484	48.1650 ug/L	100
26) Bromochloromethane	3.801	130	167330	54.6753 ug/L	100
27) Chloroform	3.934	83	435896	50.9266 ug/L	100
28) Carbon Tetrachloride	4.070	117	348721	52.4681 ug/L	99
30) 1,1,1-Trichloroethane	4.168	97	392404	52.2669 ug/L	100
31) 1,1-Dichloropropene	4.333	75	322773	50.7138 ug/L	100
32) 2-Butanone	4.383	43	80321	55.3652 ug/L #	73
33) Benzene	4.640	78	962221	50.9011 ug/L	100
35) 1,2-Dichloroethane	4.889	62	296059	52.0486 ug/L	100
36) Methylcyclohexane	5.289	83	405489	45.8746 ug/L	99
37) Trichloroethene	5.318	130	265903	50.6893 ug/L	100
38) Dibromomethane	5.741	93	146903	52.3686 ug/L	99
39) 1,2-Dichloropropane	5.848	63	268793	51.7283 ug/L	100
40) Bromodichloromethane	5.937	83	331206	51.2680 ug/L	100
41) 1,4-Dioxane	6.158	88	18832	596.6913 ug/L	92
42) 2-Chloroethyl Vinyl Ether	6.528	63	142411	54.2235 ug/L	99
43) cis-1,3-Dichloropropene	6.546	75	416471	54.6793 ug/L	100
44) 4-Methyl-2-Pentanone	7.817	58	69050	53.5164 ug/L	98
45) trans-1,3-Dichloropropene	7.145	75	337676	51.8169 ug/L	100
48) Toluene	6.754	91	1070197	51.0583 ug/L	100
49) Tetrachloroethene	7.087	166	291797	51.6508 ug/L	100
50) 1,1,2-Trichloroethane	7.278	97	193335	49.5830 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016379.D
Acq On : 11 Nov 2015 18:33
Operator : ADC
Sample : WG546498-12 50.0ug/L ALT 8260
Misc : 1,1 STD73387
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Nov 12 09:55:48 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
51) Dibromochloromethane	7.417	129	262533	52.1541 ug/L	99
52) 1,3-Dichloropropane	7.498	76	324341	52.4438 ug/L	100
53) 1,2-Dibromoethane	7.585	107	198274	51.2424 ug/L	100
54) 2-Hexanone	7.817	43	132872	53.0029 ug/L	100
55) Chlorobenzene	7.984	112	727708	53.8720 ug/L	99
56) 1-Chlorohexane	7.999	69	65457	47.1784 ug/L	81
57) Ethylbenzene	8.022	106	378118	51.4259 ug/L	97
58) 1,1,1,2-Tetrachloroethane	8.040	131	253352	50.6609 ug/L	100
59) m-,p-Xylene	8.123	106	940133	106.5792 ug/L	99
60) o-Xylene	8.387	106	462189	53.0995 ug/L	99
61) Styrene	8.419	104	742734	51.3458 ug/L	100
62) Bromoform	8.422	173	186982	56.3394 ug/L	99
63) Isopropylbenzene	8.575	105	1205164	53.1161 ug/L	100
65) 1,3,5-Trimethylbenzene	8.914	105	1027919	51.3372 ug/L	100
67) Bromobenzene	8.775	156	311835	49.8264 ug/L	100
68) n-Propylbenzene	8.804	91	1399192	53.5377 ug/L	100
69) 1,1,2,2-Tetrachloroethane	8.847	83	235015	51.7719 ug/L	100
70) 2-Chlorotoluene	8.879	91	840062	52.5576 ug/L	100
71) 1,2,3-Trichloropropane	8.911	110	62512	49.4753 ug/L	100
72) trans-1,4-Dichloro-2-B...	8.937	53	45129	42.9676 ug/L #	96
73) 1,2,4-Trimethylbenzene	9.111	105	1000330	50.0461 ug/L	99
74) 4-Chlorotoluene	8.969	91	849980	51.6844 ug/L	98
75) tert-Butylbenzene	9.076	134	194975	53.1018 ug/L	100
76) sec-Butylbenzene	9.166	105	1298213	52.7639 ug/L	100
77) p-Isopropyltoluene	9.238	119	1073778	50.4619 ug/L	100
78) 1,3-Dichlorobenzene	9.267	146	600361	52.2370 ug/L	99
79) 1,4-Dichlorobenzene	9.311	146	580802	49.5405 ug/L	100
80) n-Butylbenzene	9.444	91	995390	50.8249 ug/L	100
81) 1,2-Dichlorobenzene	9.513	146	579966	53.0068 ug/L	99
82) 1,2-Dibromo-3-Chloropr...	9.890	75	45888	53.8629 ug/L	99
83) Hexachlorobutadiene	10.188	225	261520	51.9272 ug/L	100
84) 1,2,4-Trichlorobenzene	10.202	180	465537	53.3152 ug/L	100
85) Naphthalene	10.353	128	863260	53.3742 ug/L	100
86) 1,2,3-Trichlorobenzene	10.437	180	429354	53.2786 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016379.D
Acq On : 11 Nov 2015 18:33
Operator : ADC
Sample : WG546498-12 50.0ug/L ALT 8260
Misc : 1,1 STD73387
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Nov 12 09:55:48 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

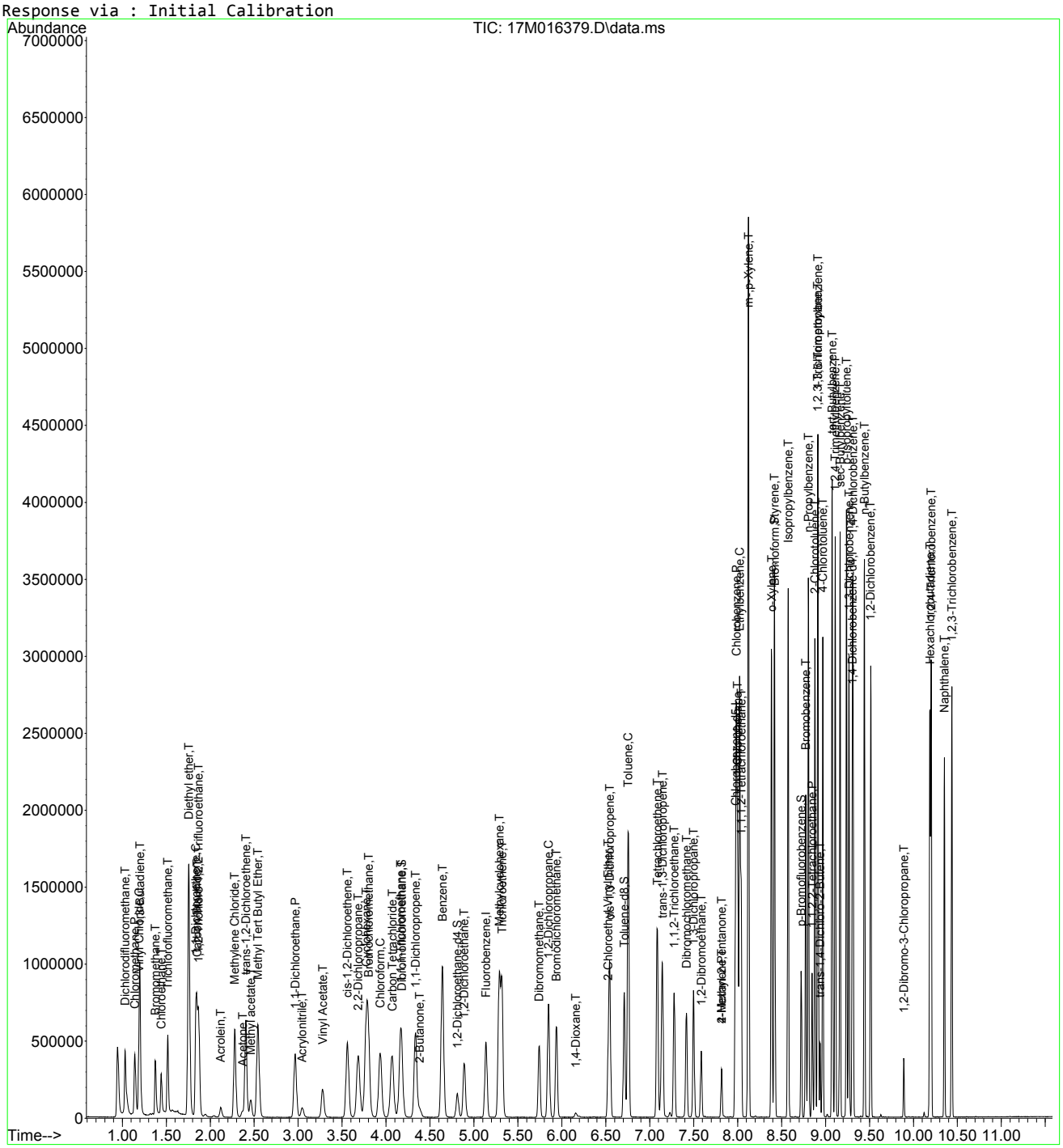

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016379.D
Acq On : 11 Nov 2015 18:33
Operator : ADC
Sample : WG546498-12 50.0ug/L ALT 8260
Misc : 1,1 STD73387
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Nov 12 09:55:48 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	96	0.000
2	T	Dichlorodifluoromethane	50.000	57.099	-14.2	106	0.000
3	P	Chloromethane	50.000	50.305	-0.6	104	0.000
4	C	Vinyl Chloride	50.000	55.315	-10.6#	109	0.000
5	T	1,3-Butadiene	50.000	57.577	-15.2	117	0.000
6	T	Bromomethane	50.000	48.779	2.4	107	0.000
7	T	Chloroethane	50.000	45.538	8.9	85	0.000
8	T	Trichlorofluoromethane	50.000	35.225	29.5#	68	-0.015
9	T	Diethyl ether	50.000	239.081	-378.2#	524	0.000
10	C	1,1-Dichloroethene	50.000	48.352	3.3#	95	-0.026
11	T	Carbon Disulfide	50.000	15.926	68.1#	32	-0.026
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.000	52.261	-4.5	101	-0.026
13	T	Iodomethane	-1.000	0.000	0.0	0	-0.014
14	T	Acrolein	50.000	110.355	-120.7#	269	0.000
15	T	Methylene Chloride	50.000	46.851	6.3	104	-0.011
16	T	Acetone	50.000	56.865	-13.7	136	0.024
17	T	trans-1,2-Dichloroethene	50.000	49.854	0.3	101	-0.012
18	T	Methyl acetate	50.000	54.833	-9.7	120	0.011
19	T	Methyl Tert Butyl Ether	50.000	53.853	-7.7	119	0.011
20	P	1,1-Dichloroethane	50.000	50.754	-1.5	101	0.000
21	T	Acrylonitrile	50.000	46.869	6.3	107	0.012
22	T	Vinyl Acetate	50.000	50.753	-1.5	117	0.000
23	T	cis-1,2-Dichloroethene	50.000	49.577	0.8	102	0.000
24	T	2,2-Dichloropropane	50.000	52.792	-5.6	96	-0.012
25	T	Cyclohexane	50.000	48.165	3.7	94	-0.020
26	T	Bromochloromethane	50.000	54.675	-9.3	111	0.000
27	C	Chloroform	50.000	50.927	-1.9#	107	0.000
28	T	Carbon Tetrachloride	50.000	52.468	-4.9	103	0.000
29	S	Dibromofluoromethane	25.000	26.000	-4.0	100	0.000
30	T	1,1,1-Trichloroethane	50.000	52.267	-4.5	106	0.000
31	T	1,1-Dichloropropene	50.000	50.714	-1.4	100	-0.012
32	T	2-Butanone	50.000	55.365	-10.7	128	0.018
33	T	Benzene	50.000	50.901	-1.8	102	0.000
34	S	1,2-Dichloroethane-d4	25.000	26.384	-5.5	105	0.000
35	T	1,2-Dichloroethane	50.000	52.049	-4.1	109	0.000
36	T	Methylcyclohexane	50.000	45.875	8.3	93	0.000
37	T	Trichloroethene	50.000	50.689	-1.4	103	0.000
38	T	Dibromomethane	50.000	52.369	-4.7	115	0.000
39	C	1,2-Dichloropropane	50.000	51.728	-3.5#	105	0.000
40	T	Bromodichloromethane	50.000	51.268	-2.5	104	0.000
41	T	1,4-Dioxane	100.000	596.691	-496.7#	583	0.000
42	T	2-Chloroethyl Vinyl Ether	50.000	54.224	-8.4	117	0.000
43	T	cis-1,3-Dichloropropene	50.000	54.679	-9.4	109	0.000
44	T	4-Methyl-2-Pentanone	50.000	53.516	-7.0	130	0.000
45	T	trans-1,3-Dichloropropene	50.000	51.817	-3.6	106	0.000
46	I	Chlorobenzene-d5	25.000	25.000	0.0	97	0.000
47	S	Toluene-d8	25.000	25.873	-3.5	98	0.000
48	C	Toluene	50.000	51.058	-2.1#	102	0.000
49	T	Tetrachloroethene	50.000	51.651	-3.3	104	0.000
50	T	1,1,2-Trichloroethane	50.000	49.583	0.8	112	0.000
51	T	Dibromochloromethane	50.000	52.154	-4.3	110	0.000
52	T	1,3-Dichloropropane	50.000	52.444	-4.9	113	0.000
53	T	1,2-Dibromoethane	50.000	51.242	-2.5	112	0.000
54	T	2-Hexanone	50.000	53.003	-6.0	130	0.000
55	P	Chlorobenzene	50.000	53.872	-7.7	108	0.000

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016379.D
Acq On : 11 Nov 2015 18:33
Operator : ADC
Sample : WG546498-12 50.0ug/L ALT 8260
Misc : 1,1 STD73387
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Nov 12 09:55:48 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	1-Chlorohexane	50.000	47.178	5.6	94	0.000
57	C	Ethylbenzene	50.000	51.426	-2.9#	103	0.000
58	T	1,1,1,2-Tetrachloroethane	50.000	50.661	-1.3	102	0.000
59	T	m-,p-Xylene	100.000	106.579	-6.6	105	0.000
60	T	o-Xylene	50.000	53.099	-6.2	106	0.000
61	T	Styrene	50.000	51.346	-2.7	103	0.000
62	P	Bromoform	50.000	56.339	-12.7	122	0.000
63	T	Isopropylbenzene	50.000	53.116	-6.2	105	0.000
64	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	99	0.000
65	T	1,3,5-Trimethylbenzene	50.000	51.337	-2.7	102	0.000
66	S	p-Bromofluorobenzene	25.000	25.692	-2.8	98	0.000
67	T	Bromobenzene	50.000	49.826	0.3	104	0.000
68	T	n-Propylbenzene	50.000	53.538	-7.1	103	0.000
69	P	1,1,2,2-Tetrachloroethane	50.000	51.772	-3.5	118	0.000
70	T	2-Chlorotoluene	50.000	52.558	-5.1	105	0.000
71	T	1,2,3-Trichloropropane	50.000	49.475	1.0	118	0.000
72	T	trans-1,4-Dichloro-2-Butene	50.000	42.968	14.1	101	0.000
73	T	1,2,4-Trimethylbenzene	50.000	50.046	-0.1	99	0.000
74	T	4-Chlorotoluene	50.000	51.684	-3.4	101	0.000
75	T	tert-Butylbenzene	50.000	53.102	-6.2	106	0.000
76	T	sec-Butylbenzene	50.000	52.764	-5.5	103	0.000
77	T	p-Isopropyltoluene	50.000	50.462	-0.9	97	0.000
78	T	1,3-Dichlorobenzene	50.000	52.237	-4.5	105	0.000
79	T	1,4-Dichlorobenzene	50.000	49.541	0.9	103	0.000
80	T	n-Butylbenzene	50.000	50.825	-1.7	97	0.000
81	T	1,2-Dichlorobenzene	50.000	53.007	-6.0	110	0.000
82	T	1,2-Dibromo-3-Chloropropane	50.000	53.863	-7.7	125	0.000
83	T	Hexachlorobutadiene	50.000	51.927	-3.9	100	0.000
84	T	1,2,4-Trichlorobenzene	50.000	53.315	-6.6	107	0.000
85	T	Naphthalene	50.000	53.374	-6.7	120	0.000
86	T	1,2,3-Trichlorobenzene	50.000	53.279	-6.6	112	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016538.D
Acq On : 18 Nov 2015 14:45
Operator : ADC
Sample : WG547460-02 50ug/L CCV STD
Misc : 1,1 STD73185
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 18 14:57:14 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.141	96	373671	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.976	117	277950	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.305	152	152944	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.177	111	103276	26.9423 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.769%		
34) 1,2-Dichloroethane-d4	4.814	65	97758	26.5561 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 106.224%		
47) Toluene-d8	6.710	98	391251	27.3076 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 109.230%		
66) p-Bromofluorobenzene	8.723	95	142426	26.9389 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 107.756%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.038	85	283685	53.3845 ug/L	98
3) Chloromethane	1.148	50	241028	42.5815 ug/L	100
4) Vinyl Chloride	1.195	62	254906	50.4144 ug/L	100
5) 1,3-Butadiene	1.206	54	158466	48.7604 ug/L	98
6) Bromomethane	1.383	94	158253	59.3396 ug/L	99
7) Chloroethane	1.452	64	154077	59.6836 ug/L	92
8) Trichlorofluoromethane	1.536	101	352010	59.8371 ug/L	100
9) Diethyl ether	1.748	59	141349	47.3775 ug/L	99
10) 1,1-Dichloroethene	1.866	61	316771	54.0024 ug/L	99
11) Carbon Disulfide	1.881	76	658262	53.2807 ug/L	100
12) 1,1,2-Trichloro-1,2,2-...	1.898	101	198444	54.5570 ug/L	100
14) Acrolein	2.113	56	14979	37.4843 ug/L	95
15) Methylene Chloride	2.289	84	188137	43.3487 ug/L	100
16) Acetone	2.344	43	30036	39.9745 ug/L	97
17) trans-1,2-Dichloroethene	2.419	96	184955	48.2279 ug/L	98
18) Methyl acetate	2.448	43	101159	47.4125 ug/L #	99
19) Methyl Tert Butyl Ether	2.529	73	420960	43.0617 ug/L	100
20) 1,1-Dichloroethane	2.975	63	355009	48.3695 ug/L	100
21) Acrylonitrile	3.036	53	41275	40.6280 ug/L	97
22) Vinyl Acetate	3.276	86	19474	42.5933 ug/L	98
23) cis-1,2-Dichloroethene	3.566	96	208334	47.3143 ug/L	99
24) 2,2-Dichloropropane	3.693	77	301098	54.8480 ug/L	99
25) Cyclohexane	3.795	56	351064	49.6984 ug/L	98
26) Bromochloromethane	3.806	130	127288	48.9569 ug/L	99
27) Chloroform	3.937	83	347066	47.7291 ug/L	100
28) Carbon Tetrachloride	4.079	117	286018	50.6547 ug/L	99
30) 1,1,1-Trichloroethane	4.177	97	314780	49.3525 ug/L	99
31) 1,1-Dichloropropene	4.345	75	268722	49.6982 ug/L	99
32) 2-Butanone	4.371	43	50412	40.9026 ug/L	99
33) Benzene	4.649	78	769441	47.9112 ug/L	100
35) 1,2-Dichloroethane	4.892	62	231627	47.9324 ug/L	100
36) Methylcyclohexane	5.295	83	362429	48.2642 ug/L	98
37) Trichloroethene	5.323	130	219917	49.3470 ug/L	98
38) Dibromomethane	5.743	93	109068	45.7664 ug/L	99
39) 1,2-Dichloropropane	5.848	63	209294	47.4107 ug/L	97
40) Bromodichloromethane	5.937	83	270735	49.3290 ug/L	100
41) 1,4-Dioxane	6.154	88	2564	95.6270 ug/L	93
42) 2-Chloroethyl Vinyl Ether	6.528	63	96178	43.1052 ug/L	99
43) cis-1,3-Dichloropropene	6.545	75	313760	48.4892 ug/L	100
44) 4-Methyl-2-Pentanone	7.813	58	40713	37.1420 ug/L	97
45) trans-1,3-Dichloropropene	7.145	75	268995	48.5876 ug/L	99
48) Toluene	6.757	91	879014	49.9193 ug/L	99
49) Tetrachloroethene	7.087	166	243394	51.2833 ug/L	98
50) 1,1,2-Trichloroethane	7.275	97	147367	44.9875 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016538.D
Acq On : 18 Nov 2015 14:45
Operator : ADC
Sample : WG547460-02 50ug/L CCV STD
Misc : 1,1 STD73185
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 18 14:57:14 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
51) Dibromochloromethane	7.417	129	210537	49.7855 ug/L	99
52) 1,3-Dichloropropane	7.498	76	242359	46.6467 ug/L	98
53) 1,2-Dibromoethane	7.585	107	148327	45.6303 ug/L	100
54) 2-Hexanone	7.813	43	80912	38.4192 ug/L	98
55) Chlorobenzene	7.984	112	585807	51.6215 ug/L	99
56) 1-Chlorohexane	7.999	69	58291	50.0101 ug/L	92
57) Ethylbenzene	8.022	106	315710	51.1108 ug/L	99
58) 1,1,1,2-Tetrachloroethane	8.039	131	220126	52.3950 ug/L	100
59) m-,p-Xylene	8.123	106	787022	106.2037 ug/L	100
60) o-Xylene	8.384	106	371814	50.8471 ug/L	99
61) Styrene	8.419	104	630659	51.8962 ug/L	100
62) Bromoform	8.422	173	146168	52.4245 ug/L	100
63) Isopropylbenzene	8.575	105	1006119	52.7836 ug/L	100
65) 1,3,5-Trimethylbenzene	8.914	105	895732	53.4863 ug/L	100
67) Bromobenzene	8.775	156	267595	51.1215 ug/L	98
68) n-Propylbenzene	8.804	91	1199473	54.8737 ug/L	100
69) 1,1,2,2-Tetrachloroethane	8.847	83	180514	47.5445 ug/L	99
70) 2-Chlorotoluene	8.879	91	705675	52.7861 ug/L	99
71) 1,2,3-Trichloropropane	8.911	110	48566	45.9566 ug/L	98
72) trans-1,4-Dichloro-2-B...	8.937	53	37550	42.7451 ug/L #	97
73) 1,2,4-Trimethylbenzene	9.111	105	897991	53.7143 ug/L	100
74) 4-Chlorotoluene	8.969	91	727068	52.8588 ug/L	97
75) tert-Butylbenzene	9.076	134	162576	52.9393 ug/L	100
76) sec-Butylbenzene	9.166	105	1117333	54.2955 ug/L	100
77) p-Isopropyltoluene	9.238	119	977276	54.9108 ug/L	100
78) 1,3-Dichlorobenzene	9.267	146	527181	54.8424 ug/L	99
79) 1,4-Dichlorobenzene	9.310	146	523118	53.3486 ug/L	99
80) n-Butylbenzene	9.441	91	904341	55.2085 ug/L	100
81) 1,2-Dichlorobenzene	9.513	146	474051	51.8019 ug/L	99
82) 1,2-Dibromo-3-Chloropr...	9.889	75	31859	44.7110 ug/L	98
83) Hexachlorobutadiene	10.188	225	199866	47.4482 ug/L	100
84) 1,2,4-Trichlorobenzene	10.202	180	356118	48.7620 ug/L	100
85) Naphthalene	10.353	128	551084	40.7379 ug/L	100
86) 1,2,3-Trichlorobenzene	10.440	180	287900	42.7139 ug/L	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016538.D
Acq On : 18 Nov 2015 14:45
Operator : ADC
Sample : WG547460-02 50ug/L CCV STD
Misc : 1,1 STD73185
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 18 14:57:14 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

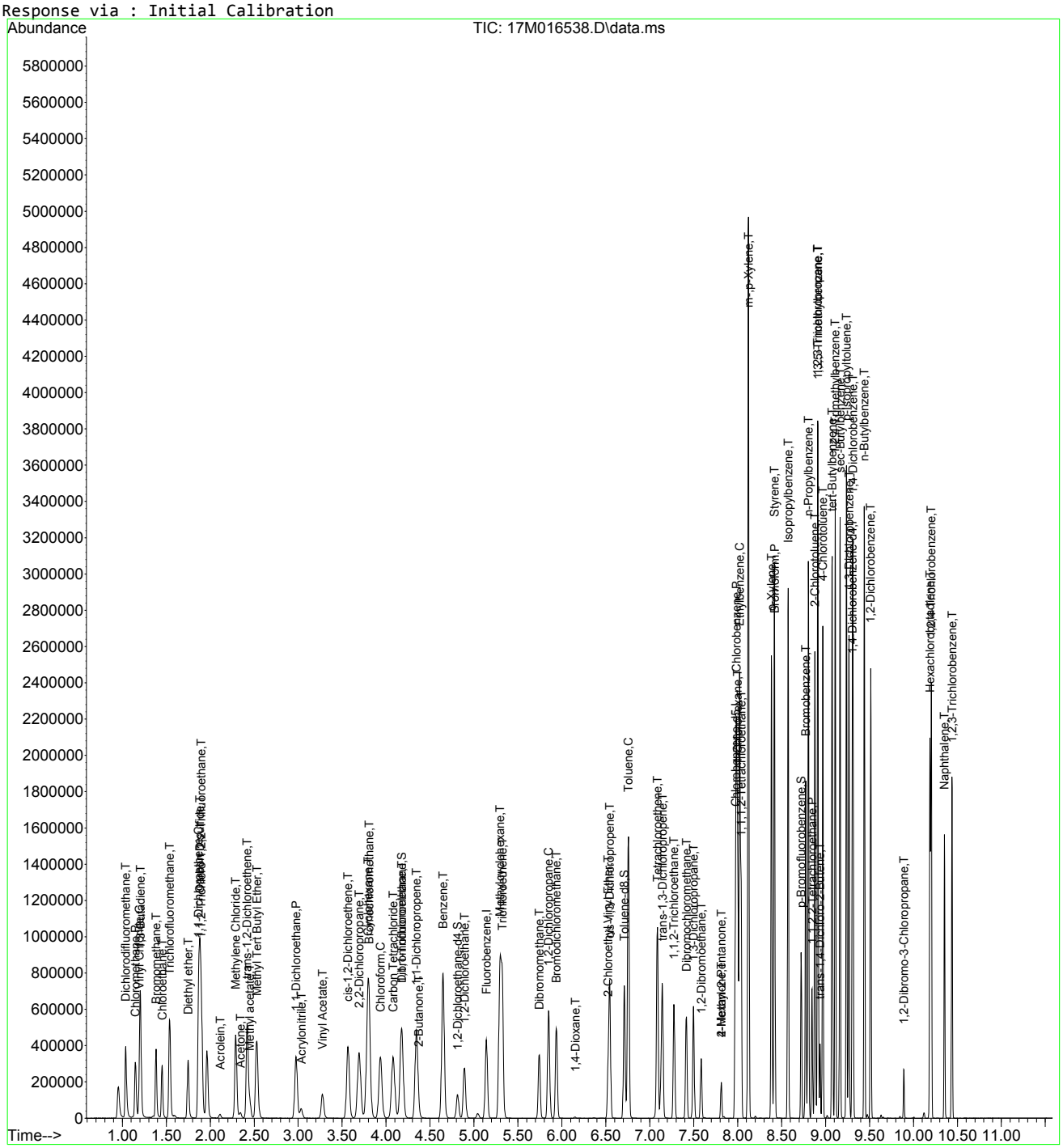

8260_VMS.M Wed Nov 18 14:57:15 2015 Page: 3

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016538.D
Acq On : 18 Nov 2015 14:45
Operator : ADC
Sample : WG547460-02 50ug/L CCV STD
Misc : 1,1 STD73185
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 18 14:57:14 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.000	1.000	0.0	82	0.000
2	T	Dichlorodifluoromethane	0.356	0.380	-6.7	85	0.000
3	P	Chloromethane	0.379	0.323	14.8	74	0.000
4	C	Vinyl Chloride	0.338	0.341	-0.9#	84	0.000
5	T	1,3-Butadiene	0.217	0.212	2.3	84	0.000
6	T	Bromomethane	0.178	0.212	-19.1	111	0.000
7	T	Chloroethane	0.173	0.206	-19.1	95	0.000
8	T	Trichlorofluoromethane	0.390	0.471	-20.8	95	0.000
9	T	Diethyl ether	0.200	0.189	5.5	88	0.000
10	C	1,1-Dichloroethene	0.392	0.424	-8.2#	90	0.000
11	T	Carbon Disulfide	0.827	0.881	-6.5	90	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.243	0.266	-9.5	90	0.000
13	T	Iodomethane	0.000	0.000	0.0	0#	0.000
14	T	Acrolein	0.027	0.020	25.9#	78	0.000
15	T	Methylene Chloride	0.290	0.252	13.1	82	0.000
16	T	Acetone	0.051	0.040	21.6	82	0.000
17	T	trans-1,2-Dichloroethene	0.257	0.247	3.9	83	0.000
18	T	Methyl acetate	0.143	0.135	5.6	88	0.000
19	T	Methyl Tert Butyl Ether	0.654	0.563	13.9	81	0.000
20	P	1,1-Dichloroethane	0.491	0.475	3.3	82	0.000
21	T	Acrylonitrile	0.068	0.055	19.1	79	0.000
22	T	Vinyl Acetate	0.028	0.026	7.1	82	0.000
23	T	cis-1,2-Dichloroethene	0.295	0.279	5.4	83	0.000
24	T	2,2-Dichloropropane	0.367	0.403	-9.8	85	0.000
25	T	Cyclohexane	0.473	0.470	0.6	82	0.000
26	T	Bromochloromethane	0.174	0.170	2.3	85	0.000
27	C	Chloroform	0.486	0.464	4.5#	85	0.000
28	T	Carbon Tetrachloride	0.378	0.383	-1.3	84	0.000
29	S	Dibromofluoromethane	0.256	0.276	-7.8	88	0.000
30	T	1,1,1-Trichloroethane	0.427	0.421	1.4	85	0.000
31	T	1,1-Dichloropropene	0.362	0.360	0.6	84	0.000
32	T	2-Butanone	0.082	0.067	18.3	81	0.000
33	T	Benzene	1.074	1.030	4.1	82	0.000
34	S	1,2-Dichloroethane-d4	0.246	0.262	-6.5	89	0.000
35	T	1,2-Dichloroethane	0.323	0.310	4.0	85	0.000
36	T	Methylcyclohexane	0.502	0.485	3.4	83	0.000
37	T	Trichloroethene	0.298	0.294	1.3	85	0.000
38	T	Dibromomethane	0.159	0.146	8.2	85	0.000
39	C	1,2-Dichloropropane	0.295	0.280	5.1#	82	0.000
40	T	Bromodichloromethane	0.367	0.362	1.4	85	0.000
41	T	1,4-Dioxane	0.002	0.002	0.0	79	0.000
42	T	2-Chloroethyl Vinyl Ether	0.149	0.129	13.4	79	0.000
43	T	cis-1,3-Dichloropropene	0.433	0.420	3.0	82	0.000
44	T	4-Methyl-2-Pentanone	0.073	0.054	26.0#	77	0.000
45	T	trans-1,3-Dichloropropene	0.370	0.360	2.7	84	0.000
46	I	Chlorobenzene-d5	1.000	1.000	0.0	82	0.000
47	S	Toluene-d8	1.289	1.408	-9.2	87	0.000
48	C	Toluene	1.584	1.581	0.2#	84	0.000
49	T	Tetrachloroethene	0.427	0.438	-2.6	87	0.000
50	T	1,1,2-Trichloroethane	0.295	0.265	10.2	85	0.000
51	T	Dibromochloromethane	0.380	0.379	0.3	88	0.000
52	T	1,3-Dichloropropane	0.467	0.436	6.6	84	0.000
53	T	1,2-Dibromoethane	0.292	0.267	8.6	84	0.000
54	T	2-Hexanone	0.189	0.146	22.8	79	0.000
55	P	Chlorobenzene	1.021	1.054	-3.2	87	0.000

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016538.D
Acq On : 18 Nov 2015 14:45
Operator : ADC
Sample : WG547460-02 50ug/L CCV STD
Misc : 1,1 STD73185
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 18 14:57:14 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
56	T	1-Chlorohexane	0.105	0.105	0.0	84	0.000
57	C	Ethylbenzene	0.556	0.568	-2.2#	86	0.000
58	T	1,1,1,2-Tetrachloroethane	0.378	0.396	-4.8	89	0.000
59	T	m-,p-Xylene	0.667	0.708	-6.1	88	0.000
60	T	o-Xylene	0.658	0.669	-1.7	85	0.000
61	T	Styrene	1.093	1.134	-3.8	87	0.000
62	P	Bromoform	0.251	0.263	-4.8	96	0.000
63	T	Isopropylbenzene	1.714	1.810	-5.6	88	0.000
64	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	82	0.000
65	T	1,3,5-Trimethylbenzene	2.737	2.928	-7.0	88	0.000
66	S	p-Bromofluorobenzene	0.864	0.931	-7.8	86	0.000
67	T	Bromobenzene	0.856	0.875	-2.2	89	0.000
68	T	n-Propylbenzene	3.573	3.921	-9.7	88	0.000
69	P	1,1,2,2-Tetrachloroethane	0.621	0.590	5.0	91	0.000
70	T	2-Chlorotoluene	2.185	2.307	-5.6	88	0.000
71	T	1,2,3-Trichloropropane	0.173	0.159	8.1	92	0.000
72	T	trans-1,4-Dichloro-2-Butene	0.144	0.123	14.6	84	0.000
73	T	1,2,4-Trimethylbenzene	2.733	2.936	-7.4	89	0.000
74	T	4-Chlorotoluene	2.248	2.377	-5.7	87	0.000
75	T	tert-Butylbenzene	0.502	0.531	-5.8	88	0.000
76	T	sec-Butylbenzene	3.364	3.653	-8.6	89	0.000
77	T	p-Isopropyltoluene	2.909	3.195	-9.8	88	0.000
78	T	1,3-Dichlorobenzene	1.571	1.723	-9.7	92	0.000
79	T	1,4-Dichlorobenzene	1.603	1.710	-6.7	92	0.000
80	T	n-Butylbenzene	2.678	2.956	-10.4	88	0.000
81	T	1,2-Dichlorobenzene	1.496	1.550	-3.6	90	0.000
82	T	1,2-Dibromo-3-Chloropropane	0.116	0.104	10.3	87	0.000
83	T	Hexachlorobutadiene	0.689	0.653	5.2	76	0.000
84	T	1,2,4-Trichlorobenzene	1.194	1.164	2.5	82	0.000
85	T	Naphthalene	2.211	1.802	18.5	77	0.000
86	T	1,2,3-Trichlorobenzene	1.102	0.941	14.6	75	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

Evaluate Continuing Calibration Report

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016538.D
Acq On : 18 Nov 2015 14:45
Operator : ADC
Sample : WG547460-02 50ug/L CCV STD
Misc : 1,1 STD73185
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 18 14:57:14 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.000	25.000	0.0	82	0.000
2	T	Dichlorodifluoromethane	50.000	53.384	-6.8	85	0.000
3	P	Chloromethane	50.000	42.581	14.8	74	0.000
4	C	Vinyl Chloride	50.000	50.414	-0.8#	84	0.000
5	T	1,3-Butadiene	50.000	48.760	2.5	84	0.000
6	T	Bromomethane	50.000	59.340	-18.7	111	0.000
7	T	Chloroethane	50.000	59.684	-19.4	95	0.000
8	T	Trichlorofluoromethane	50.000	59.837	-19.7	95	0.000
9	T	Diethyl ether	50.000	47.377	5.2	88	0.000
10	C	1,1-Dichloroethene	50.000	54.002	-8.0#	90	0.000
11	T	Carbon Disulfide	50.000	53.281	-6.6	90	0.000
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.000	54.557	-9.1	90	0.000
13	T	Iodomethane	-1.000	0.000	0.0	0	0.000
14	T	Acrolein	50.000	37.484	25.0#	78	0.000
15	T	Methylene Chloride	50.000	43.349	13.3	82	0.000
16	T	Acetone	50.000	39.974	20.1	82	0.000
17	T	trans-1,2-Dichloroethene	50.000	48.228	3.5	83	0.000
18	T	Methyl acetate	50.000	47.412	5.2	88	0.000
19	T	Methyl Tert Butyl Ether	50.000	43.062	13.9	81	0.000
20	P	1,1-Dichloroethane	50.000	48.370	3.3	82	0.000
21	T	Acrylonitrile	50.000	40.628	18.7	79	0.000
22	T	Vinyl Acetate	50.000	42.593	14.8	82	0.000
23	T	cis-1,2-Dichloroethene	50.000	47.314	5.4	83	0.000
24	T	2,2-Dichloropropane	50.000	54.848	-9.7	85	0.000
25	T	Cyclohexane	50.000	49.698	0.6	82	0.000
26	T	Bromochloromethane	50.000	48.957	2.1	85	0.000
27	C	Chloroform	50.000	47.729	4.5#	85	0.000
28	T	Carbon Tetrachloride	50.000	50.655	-1.3	84	0.000
29	S	Dibromofluoromethane	25.000	26.942	-7.8	88	0.000
30	T	1,1,1-Trichloroethane	50.000	49.353	1.3	85	0.000
31	T	1,1-Dichloropropene	50.000	49.698	0.6	84	0.000
32	T	2-Butanone	50.000	40.903	18.2	81	0.000
33	T	Benzene	50.000	47.911	4.2	82	0.000
34	S	1,2-Dichloroethane-d4	25.000	26.556	-6.2	89	0.000
35	T	1,2-Dichloroethane	50.000	47.932	4.1	85	0.000
36	T	Methylcyclohexane	50.000	48.264	3.5	83	0.000
37	T	Trichloroethene	50.000	49.347	1.3	85	0.000
38	T	Dibromomethane	50.000	45.766	8.5	85	0.000
39	C	1,2-Dichloropropane	50.000	47.411	5.2#	82	0.000
40	T	Bromodichloromethane	50.000	49.329	1.3	85	0.000
41	T	1,4-Dioxane	100.000	95.627	4.4	79	0.000
42	T	2-Chloroethyl Vinyl Ether	50.000	43.105	13.8	79	0.000
43	T	cis-1,3-Dichloropropene	50.000	48.489	3.0	82	0.000
44	T	4-Methyl-2-Pentanone	50.000	37.142	25.7#	77	0.000
45	T	trans-1,3-Dichloropropene	50.000	48.588	2.8	84	0.000
46	I	Chlorobenzene-d5	25.000	25.000	0.0	82	0.000
47	S	Toluene-d8	25.000	27.308	-9.2	87	0.000
48	C	Toluene	50.000	49.919	0.2#	84	0.000
49	T	Tetrachloroethene	50.000	51.283	-2.6	87	0.000
50	T	1,1,2-Trichloroethane	50.000	44.988	10.0	85	0.000
51	T	Dibromochloromethane	50.000	49.785	0.4	88	0.000
52	T	1,3-Dichloropropane	50.000	46.647	6.7	84	0.000
53	T	1,2-Dibromoethane	50.000	45.630	8.7	84	0.000
54	T	2-Hexanone	50.000	38.419	23.2	79	0.000
55	P	Chlorobenzene	50.000	51.621	-3.2	87	0.000

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016538.D
Acq On : 18 Nov 2015 14:45
Operator : ADC
Sample : WG547460-02 50ug/L CCV STD
Misc : 1,1 STD73185
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Nov 18 14:57:14 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.500min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
56	T	1-Chlorohexane	50.000	50.010	-0.0	84	0.000
57	C	Ethylbenzene	50.000	51.111	-2.2#	86	0.000
58	T	1,1,1,2-Tetrachloroethane	50.000	52.395	-4.8	89	0.000
59	T	m-,p-Xylene	100.000	106.204	-6.2	88	0.000
60	T	o-Xylene	50.000	50.847	-1.7	85	0.000
61	T	Styrene	50.000	51.896	-3.8	87	0.000
62	P	Bromoform	50.000	52.425	-4.8	96	0.000
63	T	Isopropylbenzene	50.000	52.784	-5.6	88	0.000
64	I	1,4-Dichlorobenzene-d4	25.000	25.000	0.0	82	0.000
65	T	1,3,5-Trimethylbenzene	50.000	53.486	-7.0	88	0.000
66	S	p-Bromofluorobenzene	25.000	26.939	-7.8	86	0.000
67	T	Bromobenzene	50.000	51.122	-2.2	89	0.000
68	T	n-Propylbenzene	50.000	54.874	-9.7	88	0.000
69	P	1,1,2,2-Tetrachloroethane	50.000	47.545	4.9	91	0.000
70	T	2-Chlorotoluene	50.000	52.786	-5.6	88	0.000
71	T	1,2,3-Trichloropropane	50.000	45.957	8.1	92	0.000
72	T	trans-1,4-Dichloro-2-Butene	50.000	42.745	14.5	84	0.000
73	T	1,2,4-Trimethylbenzene	50.000	53.714	-7.4	89	0.000
74	T	4-Chlorotoluene	50.000	52.859	-5.7	87	0.000
75	T	tert-Butylbenzene	50.000	52.939	-5.9	88	0.000
76	T	sec-Butylbenzene	50.000	54.296	-8.6	89	0.000
77	T	p-Isopropyltoluene	50.000	54.911	-9.8	88	0.000
78	T	1,3-Dichlorobenzene	50.000	54.842	-9.7	92	0.000
79	T	1,4-Dichlorobenzene	50.000	53.349	-6.7	92	0.000
80	T	n-Butylbenzene	50.000	55.209	-10.4	88	0.000
81	T	1,2-Dichlorobenzene	50.000	51.802	-3.6	90	0.000
82	T	1,2-Dibromo-3-Chloropropane	50.000	44.711	10.6	87	0.000
83	T	Hexachlorobutadiene	50.000	47.448	5.1	76	0.000
84	T	1,2,4-Trichlorobenzene	50.000	48.762	2.5	82	0.000
85	T	Naphthalene	50.000	40.738	18.5	77	0.000
86	T	1,2,3-Trichlorobenzene	50.000	42.714	14.6	75	0.000

(#) = Out of Range SPCC's out = 0 CCC's out = 6

2.1.1.5 Raw QC Data

Data Path : D:\MassHunter\GCMS\1\data\111115\
Data File : 17M016366.D
Acq On : 11 Nov 2015 14:17
Operator : ADC
Sample : WG546498-01 50ng BFB STD
Misc : 1,1 STD72715
ALS Vial : 1 Sample Multiplier: 1

Integration File: lscint.p

Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
Last Update : Mon Nov 02 12:09:40 2015

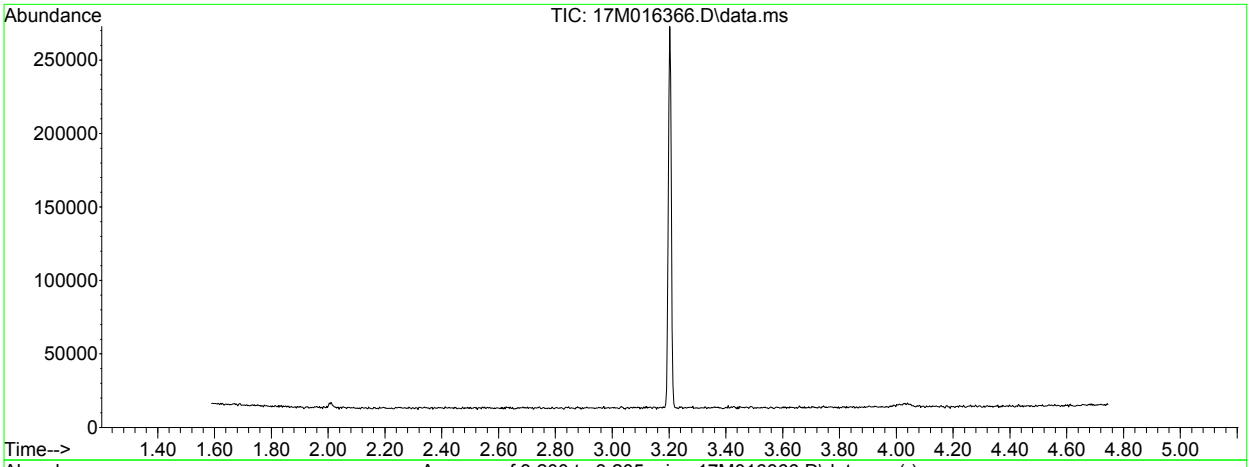

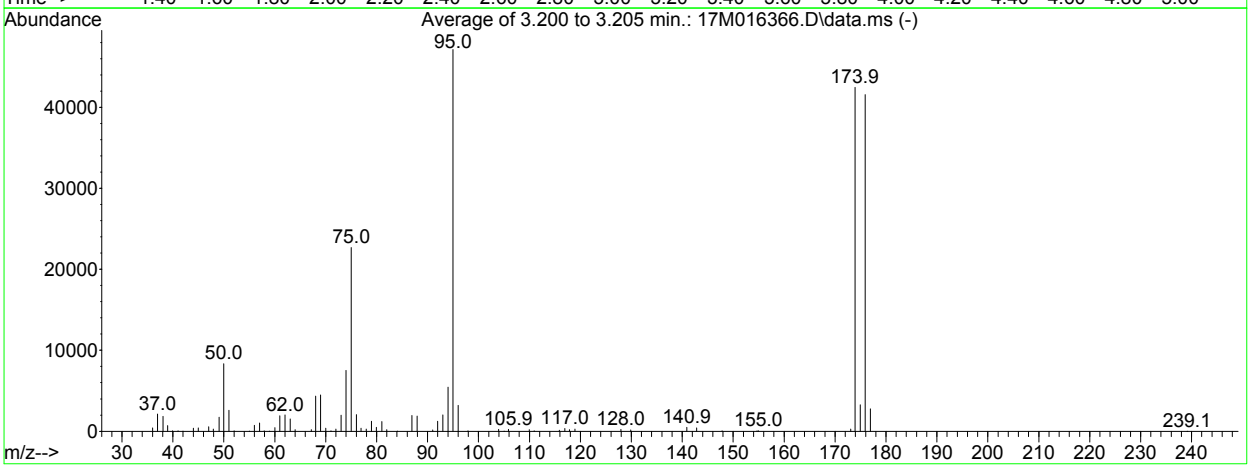

AutoFind: Scans 557, 558, 559; Background Corrected with Scan 548

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.7	8344	PASS
75	95	30	60	48.1	22677	PASS
95	95	100	100	100.0	47164	PASS
96	95	5	9	6.8	3185	PASS
173	174	0.00	2	0.6	273	PASS
174	95	50	100	90.1	42488	PASS
175	174	5	9	7.7	3275	PASS
176	174	95	101	97.8	41568	PASS
177	176	5	9	6.7	2779	PASS

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016537.D
Acq On : 18 Nov 2015 14:26
Operator : ADC
Sample : WG547460-01 50ng BFB STD
Misc : 1,1 STD72715
ALS Vial : 1 Sample Multiplier: 1

Integration File: lscint.p

Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
Last Update : Thu Nov 12 09:48:27 2015

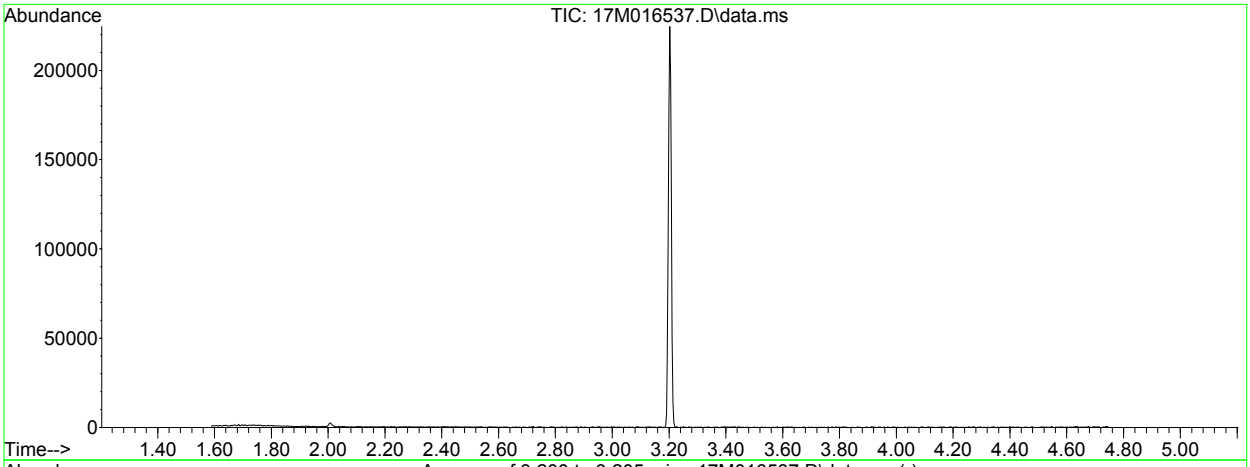

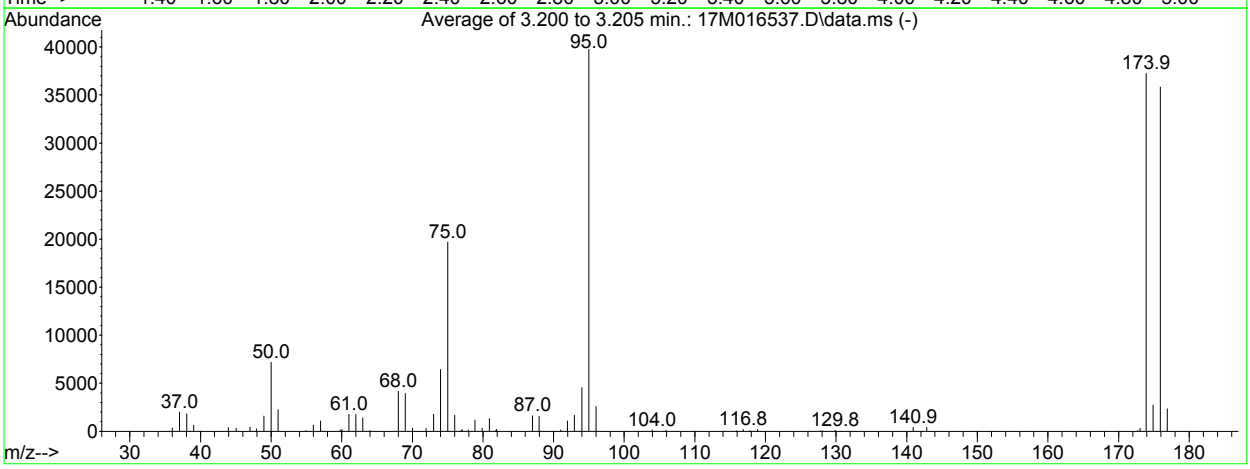

AutoFind: Scans 557, 558, 559; Background Corrected with Scan 548

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.0	7173	PASS
75	95	30	60	49.5	19685	PASS
95	95	100	100	100.0	39752	PASS
96	95	5	9	6.5	2587	PASS
173	174	0.00	2	0.8	308	PASS
174	95	50	100	93.7	37237	PASS
175	174	5	9	7.3	2721	PASS
176	174	95	101	96.2	35824	PASS
177	176	5	9	6.5	2328	PASS

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016540.D
Acq On : 18 Nov 2015 15:25
Operator : ADC
Sample : WG547466-01 BLK 8260
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 30 09:36:35 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.141	96	367570	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	270869	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.302	152	146327	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.177	111	96917	25.7030 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.812%		
34) 1,2-Dichloroethane-d4	4.814	65	99869	27.5799 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 110.320%		
47) Toluene-d8	6.711	98	384543	27.5410 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 110.164%#		
66) p-Bromofluorobenzene	8.723	95	140230	27.7230 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 110.892%		
Target Compounds					Qvalue
6) Bromomethane	1.386	94	388	0.1479 ug/L	99
16) Acetone	2.353	43	119	Below Cal #	42
83) Hexachlorobutadiene	10.185	225	512	0.1270 ug/L	90

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016540.D
Acq On : 18 Nov 2015 15:25
Operator : ADC
Sample : WG547466-01 BLK 8260
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Nov 30 09:36:35 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

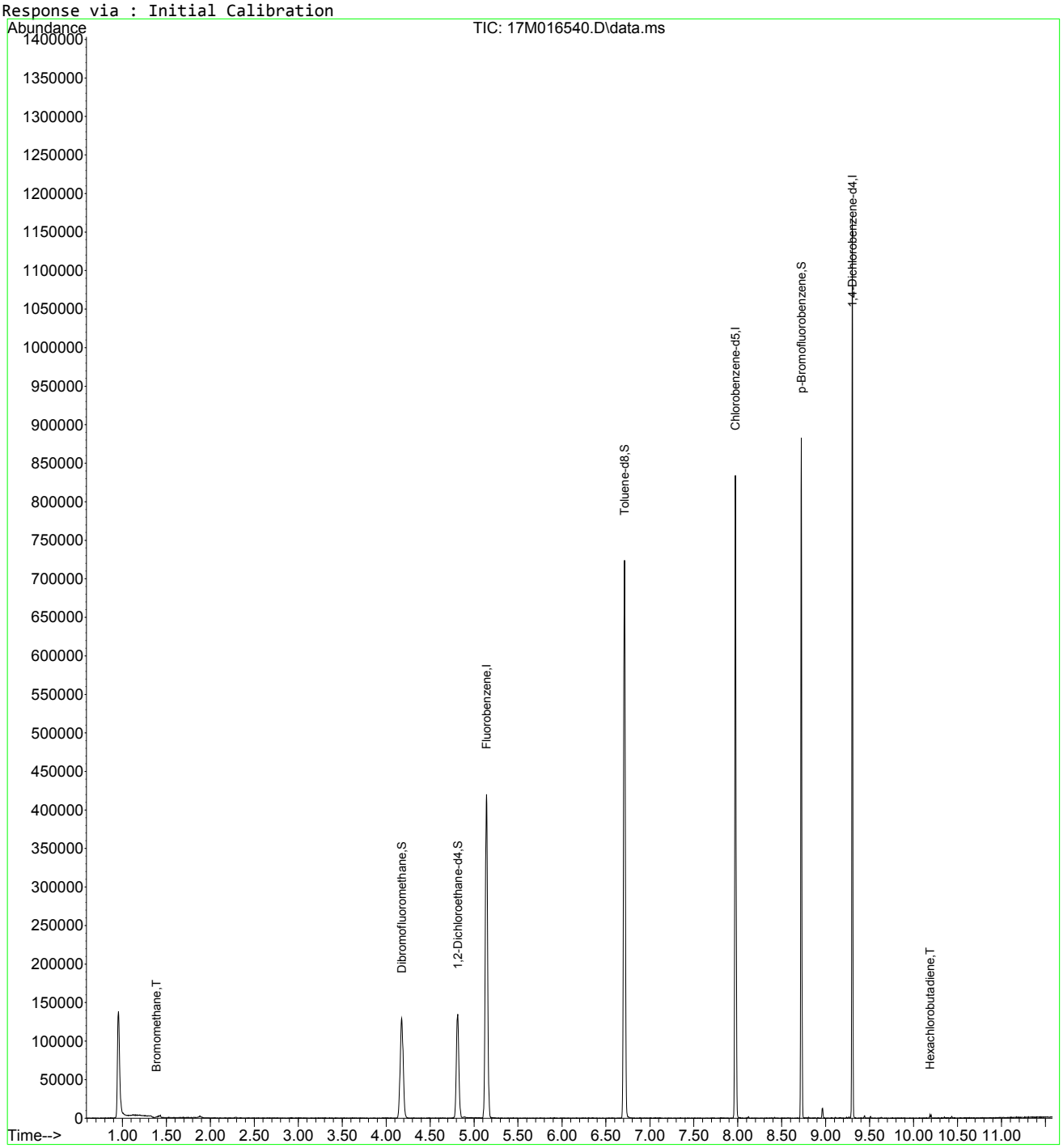

8260_VMS.M Mon Nov 30 09:36:36 2015 Page: 2

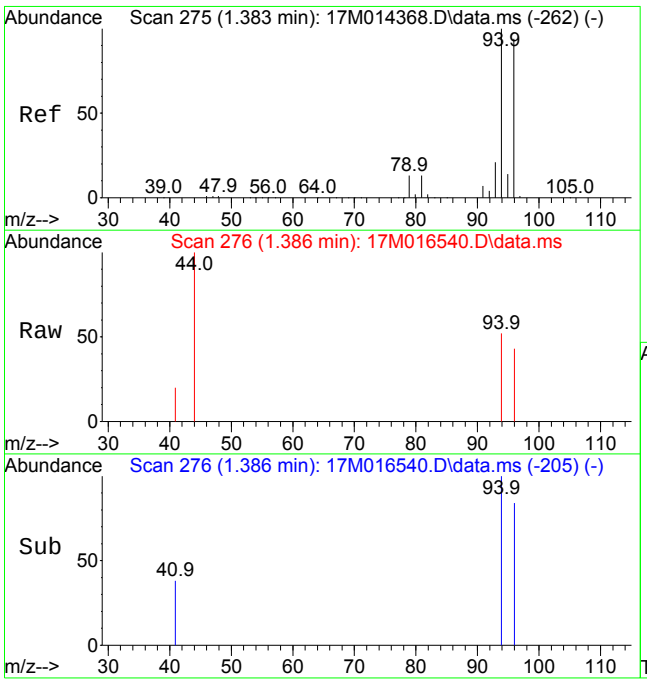

#6
Bromomethane
Concen: 0.1479 ug/L
RT: 1.386 min Scan# 276
Delta R.T. 0.006 min
Lab File: 17M016540.D
Acq: 18 Nov 2015 15:25

Tgt Ion: 94 Resp: 388

Ion	Ratio	Lower	Upper
94	100		
96	94.6	56.0	130.8

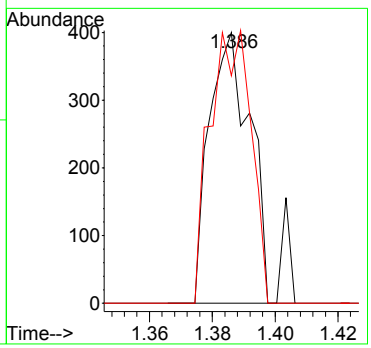

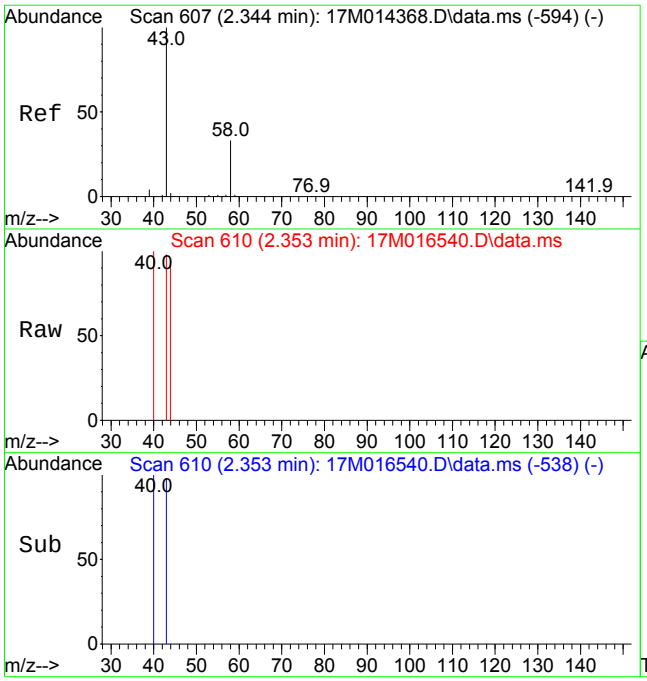

#16
Acetone
Concen: Below Cal
RT: 2.353 min Scan# 610
Delta R.T. 0.009 min
Lab File: 17M016540.D
Acq: 18 Nov 2015 15:25

Tgt Ion: 43 Resp: 119

Ion	Ratio	Lower	Upper
43	100		
58	0.0	19.4	45.4#

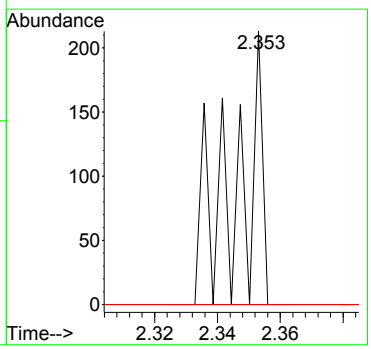

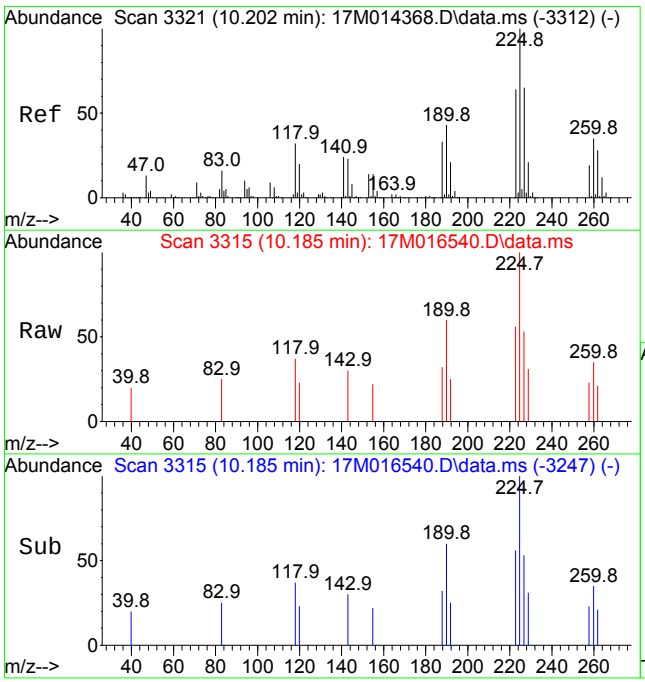

#83
Hexachlorobutadiene
Concen: 0.1270 ug/L
RT: 10.185 min Scan# 3315
Delta R.T. -0.003 min
Lab File: 17M016540.D
Acq: 18 Nov 2015 15:25

Tgt Ion:225 Resp: 512

Ion	Ratio	Lower	Upper
225	100		
223	58.6	50.0	75.0
227	52.5	51.1	76.7

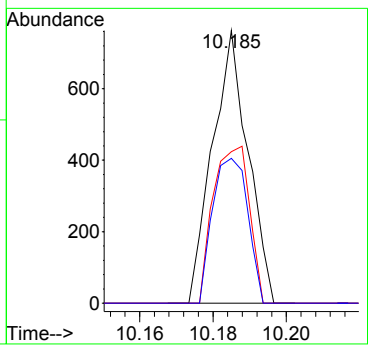

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016541.D
Acq On : 18 Nov 2015 15:45
Operator : ADC
Sample : WG547466-02 20ug/L LCS 8260
Misc : 1,1 STD73387
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 18 15:57:16 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) Fluorobenzene	5.141	96	357828	25.00000 ug/L	0.0000
46) Chlorobenzene-d5	7.973	117	267591	25.00000 ug/L	0.0000
64) 1,4-Dichlorobenzene-d4	9.302	152	152992	25.00000 ug/L	0.0000
System Monitoring Compounds					
29) Dibromofluoromethane	4.177	111	99448	27.0923 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 118		Recovery = 108.369%		
34) 1,2-Dichloroethane-d4	4.811	65	97102	27.5458 ug/L	0.0000
Spiked Amount 25.000	Range 80 - 120		Recovery = 110.183%		
47) Toluene-d8	6.710	98	377051	27.3353 ug/L	0.0000
Spiked Amount 25.000	Range 88 - 110		Recovery = 109.341%		
66) p-Bromofluorobenzene	8.723	95	139915	26.4557 ug/L	0.0000
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.823%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	1.036	85	99711	19.5946 ug/L	99
3) Chloromethane	1.149	50	89126	16.4427 ug/L	100
4) Vinyl Chloride	1.195	62	97521	20.1413 ug/L	99
5) 1,3-Butadiene	1.206	54	60089	19.3082 ug/L	98
6) Bromomethane	1.380	94	56798	22.2403 ug/L	98
7) Chloroethane	1.450	64	60033	24.2841 ug/L	84
8) Trichlorofluoromethane	1.522	101	128615	21.8021 ug/L	100
9) Diethyl ether	1.751	59	283630	99.2765 ug/L	99
10) 1,1-Dichloroethene	1.861	61	114627	20.4066 ug/L	99
11) Carbon Disulfide	1.872	76	78479	6.6335 ug/L #	94
12) 1,1,2-Trichloro-1,2,2-...	1.890	101	77342	22.2046 ug/L	100
14) Acrolein	2.113	56	34133	89.1982 ug/L	99
15) Methylene Chloride	2.289	84	73092	17.5868 ug/L	99
16) Acetone	2.347	43	14625	20.0242 ug/L	93
17) trans-1,2-Dichloroethene	2.417	96	69294	18.8687 ug/L	97
18) Methyl acetate	2.451	43	41532	20.3276 ug/L #	99
19) Methyl Tert Butyl Ether	2.533	73	183695	19.6229 ug/L	100
20) 1,1-Dichloroethane	2.973	63	135225	19.2400 ug/L	100
21) Acrylonitrile	3.036	53	16170	16.6212 ug/L	99
22) Vinyl Acetate	3.277	86	7406	19.0599 ug/L	90
23) cis-1,2-Dichloroethene	3.563	96	79835	18.9339 ug/L	98
24) 2,2-Dichloropropane	3.688	77	111287	21.1696 ug/L	98
25) Cyclohexane	3.792	56	126014	18.6290 ug/L	97
26) Bromochloromethane	3.806	130	51020	20.4919 ug/L	100
27) Chloroform	3.934	83	138480	19.8872 ug/L	100
28) Carbon Tetrachloride	4.076	117	107634	19.9063 ug/L	99
30) 1,1,1-Trichloroethane	4.174	97	123861	20.2793 ug/L	99
31) 1,1-Dichloropropene	4.345	75	99999	19.3129 ug/L	99
32) 2-Butanone	4.371	43	22925	19.4241 ug/L	94
33) Benzene	4.646	78	299147	19.4519 ug/L	99
35) 1,2-Dichloroethane	4.892	62	91157	19.6990 ug/L	99
36) Methylcyclohexane	5.295	83	130859	18.1979 ug/L	99
37) Trichloroethene	5.321	130	83657	19.6029 ug/L	98
38) Dibromomethane	5.743	93	43671	19.1363 ug/L	100
39) 1,2-Dichloropropane	5.848	63	81505	19.2805 ug/L	97
40) Bromodichloromethane	5.937	83	102065	19.4200 ug/L	100
41) 1,4-Dioxane	6.149	88	4119	160.4240 ug/L	90
42) 2-Chloroethyl Vinyl Ether	6.525	63	39692	18.5768 ug/L	100
43) cis-1,3-Dichloropropene	6.543	75	123587	19.9451 ug/L	100
44) 4-Methyl-2-Pentanone	7.814	58	18808	17.9180 ug/L	98
45) trans-1,3-Dichloropropene	7.145	75	99601	18.7871 ug/L	100
48) Toluene	6.754	91	336969	19.8773 ug/L	99
49) Tetrachloroethene	7.087	166	93407	20.4428 ug/L	98
50) 1,1,2-Trichloroethane	7.275	97	57644	18.2785 ug/L	100

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016541.D
Acq On : 18 Nov 2015 15:45
Operator : ADC
Sample : WG547466-02 20ug/L LCS 8260
Misc : 1,1 STD73387
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 18 15:57:16 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
51) Dibromochloromethane	7.414	129	77792	19.1075 ug/L	100
52) 1,3-Dichloropropane	7.498	76	97507	19.4936 ug/L	98
53) 1,2-Dibromoethane	7.585	107	58217	18.6028 ug/L	100
54) 2-Hexanone	7.814	43	37017	18.2571 ug/L	98
55) Chlorobenzene	7.984	112	230790	21.1246 ug/L	99
56) 1-Chlorohexane	7.999	69	21453	19.1179 ug/L	85
57) Ethylbenzene	8.022	106	119393	20.0770 ug/L	99
58) 1,1,1,2-Tetrachloroethane	8.037	131	79859	19.7441 ug/L	99
59) m-,p-Xylene	8.121	106	297000	41.6298 ug/L	99
60) o-Xylene	8.384	106	146951	20.8741 ug/L	99
61) Styrene	8.416	104	233960	19.9976 ug/L	100
62) Bromoform	8.419	173	56092	20.8967 ug/L	100
63) Isopropylbenzene	8.572	105	389474	21.2238 ug/L	100
65) 1,3,5-Trimethylbenzene	8.911	105	333523	19.9092 ug/L	100
67) Bromobenzene	8.775	156	101838	19.4491 ug/L	97
68) n-Propylbenzene	8.804	91	457147	20.9071 ug/L	99
69) 1,1,2,2-Tetrachloroethane	8.844	83	69422	18.2789 ug/L	100
70) 2-Chlorotoluene	8.879	91	273290	20.4363 ug/L	99
71) 1,2,3-Trichloropropane	8.908	110	18524	17.5232 ug/L	96
72) trans-1,4-Dichloro-2-B...	8.937	53	12285	13.9802 ug/L #	96
73) 1,2,4-Trimethylbenzene	9.111	105	327094	19.5594 ug/L	99
74) 4-Chlorotoluene	8.966	91	282001	20.4954 ug/L	98
75) tert-Butylbenzene	9.073	134	63669	20.7259 ug/L	100
76) sec-Butylbenzene	9.163	105	430066	20.8920 ug/L	99
77) p-Isopropyltoluene	9.238	119	351945	19.7687 ug/L	100
78) 1,3-Dichlorobenzene	9.264	146	199871	20.7860 ug/L	98
79) 1,4-Dichlorobenzene	9.311	146	193634	19.7410 ug/L	99
80) n-Butylbenzene	9.441	91	331728	20.2451 ug/L	99
81) 1,2-Dichlorobenzene	9.513	146	186022	20.3212 ug/L	98
82) 1,2-Dibromo-3-Chloropr...	9.890	75	12765	17.9088 ug/L	99
83) Hexachlorobutadiene	10.185	225	78595	18.6526 ug/L	100
84) 1,2,4-Trichlorobenzene	10.199	180	140916	19.2891 ug/L	99
85) Naphthalene	10.350	128	230216	17.0130 ug/L	100
86) 1,2,3-Trichlorobenzene	10.434	180	119656	17.7471 ug/L	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : D:\MassHunter\GCMS\1\data\111815\
Data File : 17M016541.D
Acq On : 18 Nov 2015 15:45
Operator : ADC
Sample : WG547466-02 20ug/L LCS 8260
Misc : 1,1 STD73387
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Nov 18 15:57:16 2015
Quant Method : D:\MassHunter\GCMS\1\methods\8260_VMS.M
Quant Title : 8260B/624 SOP:OVL MSV01 WATER 11/11/15 HPMS17
QLast Update : Thu Nov 12 09:48:27 2015
Response via : Initial Calibration

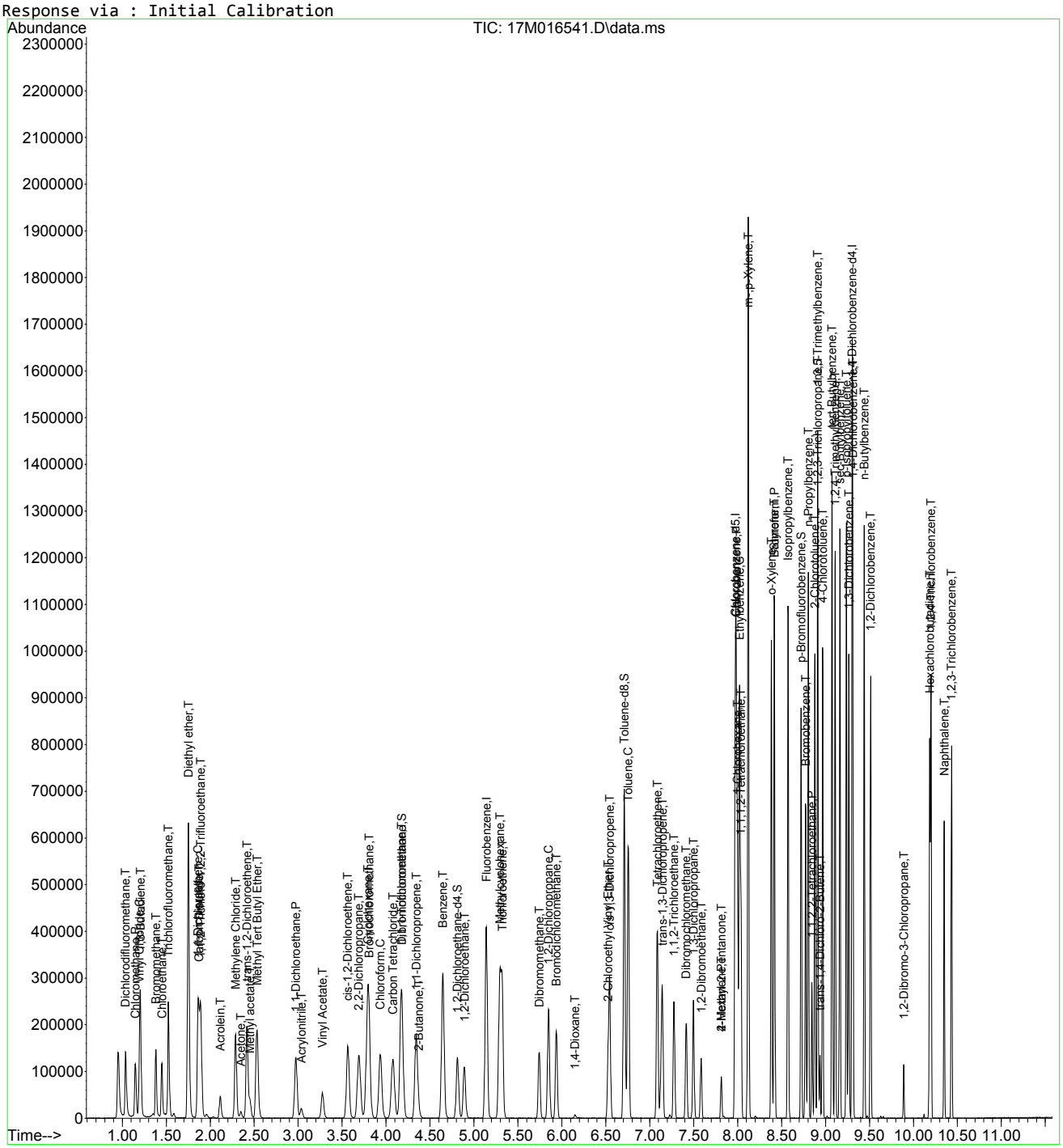

8260_VMS.M Wed Nov 18 15:57:18 2015 Page: 3

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
December 1, 2015

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001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK
EPT - ETHAN P. TIDD
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
December 01, 2015

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
December 01, 2015

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Mark Heaston
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD	pH:	
Project Name/Location:	Longhorn		
Project Number:	60256135.0002GA		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 50	50WW05-111315			11/13/15	0800		✓	W	4	✓	✓					
	50WW05MS-111315			11/13/15	0800		✓	W	4	✓	✓					
	50WW05MSD-111315			11/13/15	0800		✓	W	4	✓	✓					
	50SW06-111315			11/13/15	0830		✓	W	4	✓	✓					
	BPW1-111315			11/13/15	0845		✓	W	4	✓	✓					
	50WW28-111315			11/13/15	0945		✓	W	4	✓	✓					
	50WW16-111315			11/13/15	1045		✓	W	4	✓	✓					
	LHSMW54-111315			11/13/15	1345		✓	W	4	✓	✓					
	42WW38-111315			11/13/15	1455		✓	W	4	✓	✓					
	TRIP BLANK			11/13/15			✓	W	2	✓						

Comments: **STANDARD TAT**

	Date	Time
Relinquished by: (Signature) Scott Beesinger	11/16/15	1600
Relinquished by: (Signature)		

Microbac OVD
Received: 11/17/2015 09:55
By: BRENDA GREENWALT
221000078487

Date	Time	Relinquished by: (Signature)
Time		Remarks:

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

00653302

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15110950
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 27-NOV-2015

Samplenum	Container ID	Products
L15110950-01	663424	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 13:16	BRG		
2	ANALYZ	V1	ORG4	17-NOV-2015 16:15	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 13:16	BRG		
2	ANALYZ	V1	ORG4	17-NOV-2015 16:15	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 13:16	BRG		
2	ANALYZ	V1	ORG4	17-NOV-2015 16:15	AWE	CLS	

Samplenum	Container ID	Products
L15110950-01	663425	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-NOV-2015 13:16	BRG		

Samplenum	Container ID	Products
L15110950-02	663426	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 13:16	BRG		
2	ANALYZ	V1	ORG4	17-NOV-2015 16:15	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 13:16	BRG		
2	ANALYZ	V1	ORG4	17-NOV-2015 16:15	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 13:16	BRG		
2	ANALYZ	V1	ORG4	17-NOV-2015 16:15	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15110950
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 27-NOV-2015

Samplenum	Container ID	Products
L15110950-02	663427	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-NOV-2015 13:16	BRG		

Samplenum	Container ID	Products
L15110950-03	663428	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		17-NOV-2015 13:16	BRG		

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 13:16	BRG		
2	ANALYZ	V1	ORG4	17-NOV-2015 16:15	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 13:16	BRG		
2	ANALYZ	V1	ORG4	17-NOV-2015 16:15	AWE	CLS	

Samplenum	Container ID	Products
L15110950-03	663429	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-NOV-2015 13:16	BRG		

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15110950
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 27-NOV-2015

Samplenum	Container ID	Products
L15110950-04	663430	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 13:16	BRG		
2	ANALYZ	V1	ORG4	17-NOV-2015 16:15	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 13:16	BRG		
2	ANALYZ	V1	ORG4	17-NOV-2015 16:15	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 13:16	BRG		
2	ANALYZ	V1	ORG4	17-NOV-2015 16:15	AWE	CLS	

Samplenum	Container ID	Products
L15110950-04	663431	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-NOV-2015 13:16	BRG		

Samplenum	Container ID	Products
L15110950-05	663432	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 13:16	BRG		
2	ANALYZ	V1	ORG4	17-NOV-2015 16:15	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 13:16	BRG		
2	ANALYZ	V1	ORG4	17-NOV-2015 16:15	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 13:16	BRG		
2	ANALYZ	V1	ORG4	17-NOV-2015 16:15	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15110950
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 27-NOV-2015

Samplenum	Container ID	Products
L15110950-05	663433	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-NOV-2015 13:16	BRG		

Samplenum	Container ID	Products
L15110950-06	663434	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 13:16	BRG		
2	ANALYZ	V1	ORG4	17-NOV-2015 16:15	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 13:16	BRG		
2	ANALYZ	V1	ORG4	17-NOV-2015 16:15	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 13:16	BRG		
2	ANALYZ	V1	ORG4	17-NOV-2015 16:15	AWE	CLS	

Samplenum	Container ID	Products
L15110950-06	663435	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-NOV-2015 13:16	BRG		

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15110950
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 27-NOV-2015

Samplenum	Container ID	Products
L15110950-07	663436	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 13:16	BRG		
2	ANALYZ	V1	ORG4	17-NOV-2015 16:15	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 13:16	BRG		
2	ANALYZ	V1	ORG4	17-NOV-2015 16:15	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 13:16	BRG		
2	ANALYZ	V1	ORG4	17-NOV-2015 16:15	AWE	CLS	

Samplenum	Container ID	Products
L15110950-07	663437	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-NOV-2015 13:16	BRG		

Samplenum	Container ID	Products
L15110950-08	663438	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 13:16	BRG		
2	ANALYZ	V1	ORG4	17-NOV-2015 16:15	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		17-NOV-2015 13:16	BRG		

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 13:16	BRG		
2	ANALYZ	V1	ORG4	17-NOV-2015 16:15	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L15110950
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 27-NOV-2015

Samplenum	Container ID	Products
L15110950-08	663439	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-NOV-2015 13:16	BRG		

Samplenum	Container ID	Products
L15110950-09	663440	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 13:16	BRG		
2	ANALYZ	V1	ORG4	17-NOV-2015 16:15	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 13:16	BRG		
2	ANALYZ	V1	ORG4	17-NOV-2015 16:15	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 13:16	BRG		
2	ANALYZ	V1	ORG4	17-NOV-2015 16:15	AWE	CLS	

Samplenum	Container ID	Products
L15110950-09	663441	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-NOV-2015 13:16	BRG		

Samplenum	Container ID	Products
L15110950-10	663442	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 13:16	BRG		
2	ANALYZ	V1	ORG4	17-NOV-2015 16:15	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-NOV-2015 13:16	BRG		
2	ANALYZ	V1	ORG4	17-NOV-2015 16:15	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - November 30, 2015

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Non-DoD LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD DoD Scope of Accreditation:

SOLID AND HAZARDOUS CHEMICALS

Fluoride by EPA 300.0/9056/9056A
Bromide by EPA 9056/9056A
Nitrate as N by EPA 9056/9056A

ANALYTICAL DATA PACKAGE

SDG # 1511179

PROJECT NAME: Perchlorate

SUBMITTAL TO:

Stephanie Mossburg
Microbac Laboratories, Inc.
158 Starlite Drive
Marietta, OH 45750

SUBMITTAL BY:

Empirical Laboratories, LLC (EL)
621 Mainstream Drive, Suite 270
Nashville, TN 37228
Tel (615)345-1115
Fax (866)417-0548

LABORATORY CONTACT PERSON:

Project Manager: Sonya Gordon
Tel (615)345-1115
Fax (866)417-0548
Email: sgordon@empirlabs.com

Original Report Date: December 8, 2015
Report Revision #: N/A
Revision Date: N/A
Total # of Pages: 162

THIS DOCUMENT MEETS DoD QSM 4.2 STANDARDS

The results relate to only the samples associated with the referenced SDG and the submitted data has been produced in accordance with laboratory procedures. The Laboratory's Technical Lab Director, Mr. Rick Davis, is responsible for the final data produced and reported. His signature is listed at the end of the Case Narrative within the Analytical Data Package. If applicable to this report package, details on report revisions and the information on subcontracted analysis are listed in the package Case Narrative. This report shall not be reproduced, except in full, without the written approval of Empirical Laboratories, LLC.

L-A-B Accredited - Certificate Number L2226 - Testing

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Sample Delivery Group Case Narrative

Receipt Information:

The samples were received within the preservation guidelines for the associated methods. The information associated with sample receipt and the Sample Delivery Group (SDG) are included within section 4 of this package, which also provides information on the link between the client sample ID listed on the COC and laboratory's assigned unique sample ID or WorkOrder #. The sample is tracked through the laboratory for all analysis via the assigned WorkOrder #.

All samples that were received were analyzed and none of the samples were placed on hold without analyses. There were no subcontracted analyses for this SDG.

Changes to the Revision:

This is an original submittal of the final report package.

Analytical Information:

All samples were prepped (where applicable) and analyzed within the standard allowed holding times, unless noted within the exceptions listed below. The laboratory analyzed all samples within the program and method guidelines. Sample preparation and dilution information is provided within the final results report and at the beginning of each form set. The following information is provided specific to individual methods:

SW6850:

Note – Samples 1511179-01 (2x), -03 (5x) (and matrix spikes), -04 (5x), -05 (5x), and -06 (5x) are qualified with a C10 to indicate that the sample was analyzed at the dilutions indicated due to the conductivity of the samples.

The following matrix spikes exceeded criteria:

5K20010-MS1/MSD1 (1511179-03) the concentrations recovered are less than the DL due to the matrix spikes being analyzed at a 5x due to the conductivity of the parent sample

No additional anomalies or deviations are noted and the proper data qualifiers have been applied.

Data Qualifiers:

As applicable and where required, the following general qualifiers are associated with the sample results. Additional qualifiers will be specified within the reporting sections of the data package or within the body of the Case Narrative.

Analytical Report Terms and Qualifiers

DL: The detection limit (DL) is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The DL is supported by the method detection limit (MDL) which is determined from analysis of a sample containing the analyte in a given matrix.

LOD: The Limit of Detection is an estimate of the minimum amount of a substance that an analytical process can reliably detect. An LOD is analyte- and matrix-specific and may be laboratory-dependent. This definition is further clarified in the DoD QSM 4.2 revisions as the smallest amount or concentration of a substance that must be present in a sample in order to be detected at a high level of confidence (99%). At the LOD, the false negative rate (Type II error) is 1%.

LOQ: The Limit of Quantitation is the minimum level, concentration, or quantity of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. This term is further clarified within the DoD QSM 4.2 as the lowest concentration that produces a quantitative result within specified limits of precision and bias.

*****: Exceeding quality control criteria are associated with the reported result.

B: The presence of a "B" to the right of an analytical value indicates that this compound was also detected in the method blank and the data should be interpreted with caution. One should consider the possibility that the correct sample result might be less than the reported result and, perhaps, zero.

D: When a sample (or sample extract) is rerun diluted because one of the compound concentrations exceeded the highest concentration range for the standard curve, all of the values obtained in the dilution run will be flagged with a "D".

E: The concentration for any compound found which exceeds the highest concentration level on the standard curve for that compound will be flagged with an "E". Usually the sample will be rerun at a dilution to quantitate the flagged compound. For Metals, the qualifier indicates that the serial dilution was outside of the control limits and the compound should be considered estimated due to the presence of interference.

H1: The result was analyzed outside of the EPA recommended holding time.

H2: The result was extracted outside of the EPA recommended holding time.

H3: The sample for this analyte was received outside of the EPA recommended holding time.

J: The presence of a "J" to the right of an analytical result indicates that the reported result is estimated. The mass spectral data pass the identification criteria showing that the compound is present, but the calculated result is less than the LOQ. One should feel confident that the result is greater than zero and less than the LOQ.

M: Indicates that the sample matrix interfered with the quantitation of the analyte. In dual column analysis the result is reported from the column with the lower concentration. In inorganics, it indicates that the parameters DL/LOD/LOQ have been raised.

N: The MS/MSD accuracy and/or precision are outside criteria. The predigested spike recovery is not within control limits for the associated parameter.

P: The associated numerical value is an estimated quantity. There is greater than a 40% difference between the two GC columns for the detected concentrations. The higher of the two values is reported unless matrix interference is obvious or for HPLC analysis where the primary column is reported.

Q: The relative percent difference (RPD) and/or percent recovery exceeded limits in the associated Blank Spike and/or Blank Spike Duplicate.

S: The associated internal standard exceeded criteria.

U: The presence of a "U" indicates that the analyte was analyzed for but was not detected or the concentration of the analyte quantitated below the DL.

X: The parameter shows a potential positive bias on a reported concentration due to an ICV or CCV exceeding the upper control limit on the high side.

Y: The parameter shows a potential negative bias on a reported concentration due to an ICV or CCV exceeding the lower control limit on the low side.

Z: The parameter shows lack of confirmation/detection, which may be due to a negative bias in the ICV or CCV which exceeds the lower control limit.

Chromatographic Flags for Manual Integration:

The following letters are used to denote manual integrations on the laboratory's raw data in association with chromatographic integrations:

A: The peak was manually integrated as it was not integrated in the original chromatogram.

B: The peak was manually integrated due to resolution or coelution issues in the original chromatogram.

C: The peak was manually integrated to correct the baseline from the original chromatogram.

D: The peak was manually integrated to identify the correct peak as the wrong peak was identified in the original chromatogram.

E: The peak was manually integrated to include the entire peak as the original chromatogram only integrated part of the peak.

LIMS Definitions / Naming Conventions:

The following are general naming conventions that are used throughout the laboratory; however, on a method by method basis, there are additional QAQC items that are named in a consistent format.

BLK: LIMS assigns a unique identifier to the Method Blank by naming it as the letters BLK

appended to the Batch ID. A Method Blank is an analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The Method Blank is used to assess for possible contamination during preparation and/or analysis steps. Method Blanks within a Batch or Analytical sequence will be appended with a numerical value beginning with 1 that will increase incrementally.

BS: LIMS assigns a unique identifier to the Blank Spike by naming it as the letters BS appended to the Batch ID. The Blank Spike or Lab Control Sample is a controlled analyte-free matrix, which is spiked with known and verified concentrations of target analytes. Spiking concentrations can be referenced in the method SOP. The BS is used to evaluate the viability of analytes taken through the entire prep (when applicable) and analytical process. Blank Spikes within a Batch or Analytical sequence will be appended with a numerical value beginning with 1 that will increase incrementally. A duplicate Blank Spike will be designated as a BSD.

MS: The LIMS assigns each Client sample with a unique identifier. The Matrix Spike is designated with a MS at the end of the sample's unique identifier. The Matrix Spike sample is used to assess the effect of the sample matrix on the precision and accuracy of the results generated using the selected method. A duplicate Matrix Spike will be designated as a MSD.

IDs: The LIMS assigns each Client sample with a unique identifier. The letter "RE" may potentially be appended to the end of the LIMS Sample ID. And "**RE"** implies that the sample was either re-prepped, re-analyzed straight, or re-analyzed at a dilution. Subsequent re-analysis for the sample will be appended with a numerical value beginning with 1 that will increase incrementally. Eg: RE1, RE2, RE3, etc.

Statement of Data Authenticity:

I certify that, based upon my inquiry of those individuals immediately responsible for obtaining the information and to the best of my knowledge, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in this Case Narrative, as verified by my signature below. During absences, the Data Quality Manager, Technical Directors or Project Managers are authorized to sign this Statement of Data Authenticity.

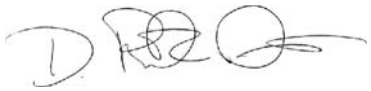

Mr. Rick D. Davis
Laboratory Technical Director / VP Operations

Empirical Laboratories, LLC
Certifications/Approvals
(Revised 11/06/2015)

DoD ELAP QSM5.0, Certificate Number L2226
- Aqueous
- Non-aqueous
- Expires: 01/30/2016

State of Florida, Department of Health – NELAP, Lab ID: E87646
- Clean Water Act
- RCRA/CERCLA
- Expires: 06/30/2016

State of Georgia, Environmental Protection Agency – NELAP, Self Certification
- Expires: 11/30/2015

Commonwealth of Kentucky, Energy and Environment Cabinet – WWLCP, Laboratory Number: 98017
- Wastewater
- Expires: 12/31/2015

Commonwealth of Kentucky, Department of Environmental Protection – UST, Certificate Number: 77
- Aqueous
- Non-aqueous
- Expires: 11/30/2015

State of New Jersey, Department of Environmental Protection – NELAP Primary, Lab ID: TN473
- Water Pollution
- Solid and Hazardous Waste
- Expires: 11/30/2015

State of North Carolina, Department of Environment and Natural Resources - Certificate Number: 643
- Aqueous
- Non-aqueous
- Expires: 12/31/2015

State of Texas, Commission on Environmental Quality – NELAP, Certificate Number: T104704307-15-11
- Aqueous
- Non-aqueous
- Expires: 12/31/2015

State of Utah, Department of Health – NELAP, Certificate Number: TN0042015-7
- Aqueous
- Non-aqueous
- Expires: 07/31/2016

Commonwealth of Virginia, Department of General Services – NELAP, Certificate Number: 7700, Lab ID: 460243
- Aqueous
- Non-aqueous
- Expires: 12/14/2015

State of Washington, Department of Ecology – NELAP, Lab ID: C934-15
- Groundwater
- Solid and Hazardous Waste
- Expires: 03/18/2016

ORGANIC CALCULATIONS

GC/MS Volatiles

$$\text{Final Concentration} = \frac{\text{On-column(ug/L or ug/Kg) * Expected Vol/Weight (mL or g) * Dilution}}{\text{Initial Vol/Weight (mL or g) * (Percent Solids/100) (if applicable)}}$$

Note - Expected Vol/Weight value is found in "Final Vol" column of Preparation Batch Summary.

GC/MS Extractables

$$\text{Final Concentration} = \frac{\text{On-column(ng/uL) * Final Vol (ml) * Dilution *(1000uL/mL)}}{\text{Initial Vol/Weight (mL or g) * (Percent Solids/100) (if applicable)}}$$

= ng/mL or ng/g

= ug/L or ug/kg

GC or LC Extractables

$$\text{Final Concentration} = \frac{\text{On-column(ng/mL) * Final Vol (mL) * Dilution}}{\text{Initial Vol/Weight (mL or g) * (Percent Solids/100) (if applicable)}}$$

= ng/mL or ng/g

= ug/L or ug/kg

Sample Receipt Information

Attn: Renee Vogel - Perchlorates only

Report to Stephanie.Mossburg@microbac.com

1511179

Chain of Custody Record

COC Number:

1511179-01 A

POC: Stephanie Mossburg	Project Manager: Mark Heaston	Mail to: Linda Raabe	
Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE 400	
Marietta, OH 45750	Sampler (print): Scott Beesinger	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205		Program:	
Turn Around Time: STANDARD	pH:		
Project Name/Location: Longhorn			
Project Number: 60256135.0002GA		ERPIMS REQUIRED FIELDS	

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 50 01	50WW17-110915			11/9/15	0815		✓	W	4	✓	✓					
02	50WW19-110915			11/9/15	0925		✓	W	4	✓	✓					
03	50WW07-110915			11/9/15	1035		✓	W	4	✓	✓					
	50WW07MS-110915			11/9/15	1035		✓	W	4	✓	✓					
	50WW07MSD-110915			11/9/15	1035		✓	W	4	✓	✓					
04	50WW26-111015			11/10/15	1310		✓	W	4	✓	✓					
05	50WW26FD-111015			11/10/15	1310		✓	W	4	✓	✓					
06	50WW21-111015			11/10/15	1415		✓	W	4	✓	✓					
07	50WW20-111015			11/10/15	1510		✓	W	4	✓	✓					
	TRIP BLANK			11/10/15			✓	W	2	✓						

Comments: STANDARD TAT

Microbac OVD
Received 11/11/2015 09 49
By CARA STRICKLER 221000078530
Cara Strickler

	Date	Time				
Relinquished by (Signature): Scott Beesinger	11/10/15	1600	Received by (Sign			uished by: (Signature)
Relinquished by (Signature)	Date	Time	Received for Laboratory by (Signature)	Date	Time	Remarks

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

email level 4 - SEDD EDD

00653321

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II. EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

Cooler Received/Opened On: 11/18/15 @ 0850 Work order# 1511179

1. Tracking # 4165 (last 4 digits, FedEx)

   Courier: FedEx

2. Temperature of rep. sample or temp blank when opened: -0.1 °C + correction factor(+0.4) = 0.3 °C

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler? YES...NO...NA

   If yes, how many and where: 1 on front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

   I certify that I opened the cooler and answered questions 1-6 (initial/date) JTG 11/18/15 JTG 11/18/15

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

   Were these signed and dated correctly? YES...NO...NA

8. Packing material used? Bubble wrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13. a. Were VOA vials received? YES...NO...NA

    b. Was there observable headspace present in any VOA vial (>5mm-6mm)? YES...NO...NA

14. Was there a Trip Blank in this cooler (custody seals present/intact)? YES...NO...NA...Comments_____
    If multiple coolers, sequence #_____

    I certify that I unloaded the cooler and answered questions 7-14 (initial/date) TH 11/18/15

15. a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

    b. Did the bottle labels indicate that the correct preservatives were used? YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

    I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial/date) TH 11/18/15

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA If not, PM notified? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA If not, PM notified? YES...NO...NA

21. Were there Non-Conformance issues at login? YES...NO...NCR#_____

I certify that I entered this project into LIMS and answered questions 17-21 (initial/date) TH 11/18/15

I certify that I attached a label with the unique LIMS number to each container (initial/date) TH 11/18/15

I certify that I notified the laboratory of any short holding time or RUSH parameters (initial/date) TH 11/18/15

C \Users\thutchings\Desktop\Cooler Receipt Updated 2014.doc

II. EMPIRICAL LABORATORIES
COOLER RECEIPT FORM (Continued)

LIMS Data Entry Second Check

Work order# 1511179

22. Cooler Receipt Form Issues reviewed and communicated to PM? YES...NO...NA

23. Client and Project verified to match the COC/CRF in LIMS Project Screen? YES...NO...NA

24. Following items verified to items verified to match the COC/CRF in LIMS Receipt Screen:

    a. Received Date/Received By YES...NO...NA

    b. TAT (COC specified different?) YES...NO...NA

    c. Shipping Container Temperatures (corrected temps) YES...NO ...NA

    d. Condition Items (seals, intact, labels, preservation, ROI) YES...NO...NA

25. Following LIMS Sample Information verified against COC for each sample:

    a. Name YES...NO...NA

    b. QC Source YES...NO...NA

    c. Matrix YES...NO...NA

    d. Sample Type YES...NO...NA

    e. Sampled Date/Time (Correct Time Zone) YES...NO...NA

    f. Work Analyses/Versions (if applicable) YES...NO...NA

    g. Sample Issues included in comments (limited volume, concentration warnings, etc.)? YES...NO...NA

    h. Unpreserved VOA holding time set to 7 days? YES...NO...NA

26. Containers consistent with tests requested? YES...NO...NA

27. Field data entered and matching COC? YES...NO...NA

I certify that I have verified the LIMS data entry and answered questions 23-27 above (initial/date): _____.

Additional Details:

SUB-CONTRACTED ANALYSES

L#:

Shipped To: Empirical lab
ATT. Renee Vogel
621 Mainstream Dr. Suite 270
Nashville, TN 37228

Shipped Via: Fed Ex

P.O. #:

From: Microbac Laboratories Inc.
158 Starlite Park
Marietta, OH 45750
(740) 373-4071

Report To: S. Mossburg

TAT Required:

See Chain of Custody for ID's, date and time collected.

Microbac Workorder Number	Number of Samples	Analyses
L15110969	9	SUB-CL04

Level: 1 2 3 (4) - SEDD EDD

Internal COC: (YES) / NO

Relinquished By	Date/Time	Comments
Brenda Gregory	11/17/15 @ 1400	
Received By	**Date/Time**	**Cooler Temp**

Form 7-1
Revised 07/18/11

WORK ORDER

Printed: 12/8/2015 10:07:48AM

1511179

Empirical Laboratories, LLC

Client: **Microbac Laboratories, Inc.-Ohio Valley Division**
Project: **Perchlorate**

Project Manager: **Sonya Gordon**
Project Number: **MIC_Perc**

Report To:
Microbac Laboratories, Inc.-Ohio Valley Division
Stephanie Mossburg
158 Starlite Drive
Marietta, OH 45750
Phone: (740) 373-4071
Fax: (740) 373-4835

Invoice To:
Microbac Laboratories, Inc.-Ohio Valley Division
Stephanie Mossburg
158 Starlite Drive
Marietta, OH 45750
Phone :(740) 373-4071
Fax: (740) 373-4835

Date Due: 12/04/2015 16:00 (10 day TAT)

Received By: Tiana L. Hutchings
Date Received: 11/18/2015 08:50

Logged In By: Tiana L. Hutchings
Date Logged In: 11/18/2015 09:14

Samples Received at: **0.3°C**

Custody Seals	Yes	Received On Ice	Yes
Containers Intact	Yes		
COC/Labels Agree	Yes		
Preservation Confir	No		

Analysis	Due	TAT	Expires	Comments
1511179-01 50MW17-110915 [Water] Sampled 11/09/2015 08:15 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/01/2015 16:00	10	12/07/2015 08:15	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511179-02 50MW19-110915 [Water] Sampled 11/09/2015 09:25 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/01/2015 16:00	10	12/07/2015 09:25	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511179-03 50MW07-110915 [Water] Sampled 11/09/2015 10:35 (GMT-06:00) Central Time (US &				**MS/MSD**
LCMS_PERC_6850	12/01/2015 16:00	10	12/07/2015 10:35	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511179-04 50MW26-111015 [Water] Sampled 11/10/2015 13:10 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/01/2015 16:00	10	12/08/2015 13:10	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511179-05 50MW26FD-111015 [Water] Sampled 11/10/2015 13:10 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/01/2015 16:00	10	12/08/2015 13:10	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511179-06 50MW21-111015 [Water] Sampled 11/10/2015 14:15 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/01/2015 16:00	10	12/08/2015 14:15	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511179-07 50MW20-111015 [Water] Sampled 11/10/2015 15:10 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/01/2015 16:00	10	12/08/2015 15:10	low DL/LOD/LOQ 0.1/0.2/0.4ug/L

Reviewed By

Date

WORK ORDER

Printed: 12/8/2015 10:07:48AM

1511179

Empirical Laboratories, LLC

Client:	**Microbac Laboratories, Inc.-Ohio Valley Division**	**Project Manager:**	**Sonya Gordon**
Project:	**Perchlorate**	**Project Number:**	**MIC_Perc**

Analysis	Due	TAT	Expires	Comments

Reviewed By

Date

Sample Delivery Group Assignment Form

CLIENT: Microbac Laboratories, Inc.-Ohio Valley Division
PROJECT NAME: Perchlorate
SDG #: 1511179

QC LEVEL: Level IV
Report Due: 12/4/2015
Client Sample Count: 6

Sample Type	Sampled	Received	Lab ID	Client ID	Report Matrix	SW6850
Client Sample	11/9/2015	11/18/2015	1511179-01	50MW17-110915	Water	X
Client Sample	11/9/2015	11/18/2015	1511179-02	50MW19-110915	Water	X
Client Sample	11/9/2015	11/18/2015	1511179-03	50MW07-110915	Water	MS/MSD
Client Sample	11/10/2015	11/18/2015	1511179-04	50MW26-111015	Water	X
Field Duplicate	11/10/2015	11/18/2015	1511179-05	50MW26FD-111015	Water	X
Client Sample	11/10/2015	11/18/2015	1511179-06	50MW21-111015	Water	X
Client Sample	11/10/2015	11/18/2015	1511179-07	50MW20-111015	Water	X

Data for SW6850 Forms

Sample Extraction Data

Prep Method: LCMS_PREP6850_W-SW6850

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1511179-01 [50MW17-110915]	5K20010	10.00/10.00	10.0	10.0	2.00			11/20/15
1511179-02 [50MW19-110915]	5K20010	10.00/10.00	10.0	10.0	1.00			11/20/15
1511179-03 [50MW07-110915]	5K20010	10.00/10.00	10.0	10.0	5.00			11/20/15
1511179-04 [50MW26-111015]	5K20010	10.00/10.00	10.0	10.0	5.00			11/20/15
1511179-05 [50MW26FD-111015]	5K20010	10.00/10.00	10.0	10.0	5.00			11/20/15
1511179-06 [50MW21-111015]	5K20010	10.00/10.00	10.0	10.0	5.00			11/20/15
1511179-07 [50MW20-111015]	5K20010	10.00/10.00	10.0	10.0	1.00			11/20/15

ANALYSIS DATA SHEET

50MW17-110915

Laboratory:	Empirical Laboratories, LLC			SDG:	1511179
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511179-01	File ID:	PERC000019.D.Report.TXT
Sampled:	11/09/15 08:15	Prepared:	11/20/15 13:58	Analyzed:	11/20/15 20:42
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	2

Batch: 5K20010 Sequence: 5K32709 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.200	0.400	0.800	C10U

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50MW19-110915

Laboratory:	Empirical Laboratories, LLC			SDG:	1511179
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511179-02	File ID:	PERC000020.D.Report.TXT
Sampled:	11/09/15 09:25	Prepared:	11/20/15 13:58	Analyzed:	11/20/15 21:00
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	1

Batch: 5K20010 Sequence: 5K32709 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.100	0.200	0.400	U

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50MW07-110915

Laboratory:	Empirical Laboratories, LLC			SDG:	1511179
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511179-03	File ID:	PERC000011.D.Report.TXT
Sampled:	11/09/15 10:35	Prepared:	11/20/15 13:58	Analyzed:	11/21/15 19:53
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	5

Batch: 5K20010 Sequence: 5K32716 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.500	1.00	2.00	C10U

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50MW26-111015

Laboratory:	Empirical Laboratories, LLC			SDG:	1511179
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511179-04	File ID:	PERC000024.D.Report.TXT
Sampled:	11/10/15 13:10	Prepared:	11/20/15 13:58	Analyzed:	11/20/15 22:11
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	5

Batch: 5K20010 Sequence: 5K32709 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.500	1.00	2.00	C10U

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50MW26FD-111015

Laboratory:	Empirical Laboratories, LLC			SDG:	1511179
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511179-05	File ID:	PERC000025.D.Report.TXT
Sampled:	11/10/15 13:10	Prepared:	11/20/15 13:58	Analyzed:	11/20/15 22:29
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	5

Batch: 5K20010 Sequence: 5K32709 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.500	1.00	2.00	C10U

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50MW21-111015

Laboratory:	Empirical Laboratories, LLC			SDG:	1511179
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511179-06	File ID:	PERC000026.D.Report.TXT
Sampled:	11/10/15 14:15	Prepared:	11/20/15 13:58	Analyzed:	11/20/15 22:47
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	5

Batch: 5K20010 Sequence: 5K32709 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**1.21**	0.500	1.00	2.00	C10JD

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50MW20-111015

Laboratory:	Empirical Laboratories, LLC			SDG:	1511179
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511179-07	File ID:	PERC000031.D.Report.TXT
Sampled:	11/10/15 15:10	Prepared:	11/20/15 13:58	Analyzed:	11/21/15 00:16
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	1

Batch: 5K20010 Sequence: 5K32709 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.100	0.200	0.400	U

Total Target Analytes Reported 1 Project Analytes: 1

LCS / LCS DUPLICATE RECOVERY

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511179
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Matrix:	Water		
Batch:	5K20010	Laboratory ID:	5K20010-BS1
Preparation:	LCMS_PREP6850_W	Initial/Final:	10 mL / 10 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
Perchlorate	2.000	2.046	102	80 - 120

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW6850

50MW07-110915

Laboratory: Empirical Laboratories, LLC
SDG: 1511179
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Matrix: Water
Batch: 5K20010
% Solids:
Source Sample Name: **1511179-03**

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	Q	QC LIMITS REC.
Perchlorate	2.000	ND	2.00 U	0	*	80 - 120

ANALYTE	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Perchlorate	2.000	2.00 U	0		*	15	80 - 120

PREPARATION BATCH SUMMARY

SW6850

Laboratory: Empirical Laboratories, LLC SDG: 1511179

Client: Microbac Laboratories, Inc.-Ohio Valley Division Project: Perchlorate

Batch: 5K20010 Batch Matrix: Water Preparation: LCMS_PREP6850_W

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
50MW17-110915	1511179-01	11/20/15 13:58	10.00	10.00
50MW19-110915	1511179-02	11/20/15 13:58	10.00	10.00
50MW07-110915	1511179-03	11/20/15 13:58	10.00	10.00
50MW26-111015	1511179-04	11/20/15 13:58	10.00	10.00
50MW26FD-111015	1511179-05	11/20/15 13:58	10.00	10.00
50MW21-111015	1511179-06	11/20/15 13:58	10.00	10.00
50MW20-111015	1511179-07	11/20/15 13:58	10.00	10.00
Blank	5K20010-BLK1	11/20/15 13:58	10.00	10.00
LCS	5K20010-BS1	11/20/15 13:58	10.00	10.00
50MW07-110915	5K20010-MS1	11/20/15 13:58	10.00	10.00
50MW07-110915	5K20010-MSD1	11/20/15 13:58	10.00	10.00

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC SDG: 1511179

Client: Microbac Laboratories, Inc.-Ohio Valley Division Project: Perchlorate

Matrix: Laboratory ID: 5K20010-BLK1 File ID: PERC000017.D.Report.TXT

Sampled: Prepared: Analyzed: 11/20/15 20:06

Solids: Preparation: LCMS_PREP6850_W Dilution:

Batch: 5K20010 Sequence: 5K32709 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.100	0.200	0.400	U

Total Target Analytes Reported: 1

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC SDG: 1511179

Client: Microbac Laboratories, Inc.-Ohio Valley Division Project: Perchlorate

Matrix: Laboratory ID: 5K20010-BS1 File ID: PERC000018.D.Report.TXT

Sampled: Prepared: Analyzed: 11/20/15 20:24

Solids: Preparation: LCMS_PREP6850_W Dilution:

Batch: 5K20010 Sequence: 5K32709 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**2.046**	0.100	0.200	0.400	

Total Target Analytes Reported: 1

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC SDG: 1511179

Client: Microbac Laboratories, Inc.-Ohio Valley Division Project: Perchlorate

Matrix: Laboratory ID: 5K20010-MS1 File ID: PERC000012.D.Report.TXT

Sampled: Prepared: Analyzed: 11/21/15 20:10

Solids: Preparation: LCMS_PREP6850_W Dilution:

Batch: 5K20010 Sequence: 5K32716 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.500	1.00	2.00	

Total Target Analytes Reported: 1

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC SDG: 1511179

Client: Microbac Laboratories, Inc.-Ohio Valley Division Project: Perchlorate

Matrix: Laboratory ID: 5K20010-MSD1 File ID: PERC000013.D.Report.TXT

Sampled: Prepared: Analyzed: 11/21/15 20:28

Solids: Preparation: LCMS_PREP6850_W Dilution:

Batch: 5K20010 Sequence: 5K32716 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.500	1.00	2.00	

Total Target Analytes Reported: 1

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511179
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Lab File ID:	PERC000002.D.Report.TXT	Injection Date:	11/11/15
Instrument ID:	LCMS1	Injection Time:	15:35
Sequence:	5K31704	Lab Sample ID:	5K31704-TUN1

m/z	MASS CRITERIA	ACTUAL MASS	
99	(+/- 0.3) of the actual mass	99	PASS
101	(+/- 0.3) of the actual mass	101	PASS

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511179
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Lab File ID:	PERC000002.D.Report.TXT	Injection Date:	11/20/15
Instrument ID:	LCMS1	Injection Time:	15:39
Sequence:	5K32709	Lab Sample ID:	5K32709-TUN1

m/z	MASS CRITERIA	ACTUAL MASS	
99	(+/- 0.3) of the actual mass	99	PASS
101	(+/- 0.3) of the actual mass	101	PASS

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511179
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Lab File ID:	PERC000002.D.Report.TXT	Injection Date:	11/21/15
Instrument ID:	LCMS1	Injection Time:	17:12
Sequence:	5K32716	Lab Sample ID:	5K32716-TUN1

m/z	MASS CRITERIA	ACTUAL MASS	
99	(+/- 0.3) of the actual mass	99	PASS
101	(+/- 0.3) of the actual mass	101	PASS

ICP INTERFERENCE CHECK SAMPLE

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511179
Client: Microbac Laboratories, Inc.-Ohio Valley Divisio
Project: Perchlorate
Instrument ID: LCMS1
Calibration: 5317001
Sequence: 5K32709

Lab Sample ID	Analyte	True	Found	%R	Units
5K32709-IFA1	Perchlorate-d18	5.000	5.00	101	ug/L
	Perchlorate	2.000	1.84	91.9	ug/L

ICP INTERFERENCE CHECK SAMPLE

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511179
Client: Microbac Laboratories, Inc.-Ohio Valley Divisio
Project: Perchlorate
Instrument ID: LCMS1
Calibration: 5317001
Sequence: 5K32716

Lab Sample ID	Analyte	True	Found	%R	Units
5K32716-IFA1	Perchlorate-d18	5.000	5.00	101	ug/L
	Perchlorate	2.000	1.85	92.3	ug/L

INITIAL CALIBRATION STANDARDS

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511179
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Sequence:	5K31704	Instrument:	LCMS1
Calibration:	5317001		

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
15F0073	Perchlorate 2nd Source Std 0.1 mg/L	5K31704-TUN1	PERC000002.D.Report.TXT	11/11/15 15:35
15H0455	Perchlorate Init Cal 0.2 ug/L	5K31704-CAL1	PERC000005.D.Report.TXT	11/11/15 16:29
15H0456	Perchlorate Init Cal 0.5 ug/L	5K31704-CAL2	PERC000006.D.Report.TXT	11/11/15 16:47
15H0457	Perchlorate Init Cal 1.0 ug/L	5K31704-CAL3	PERC000007.D.Report.TXT	11/11/15 17:04
15H0458	Perchlorate Init Cal 2.0 ug/L	5K31704-CAL4	PERC000008.D.Report.TXT	11/11/15 17:22
15H0459	Perchlorate Init Cal 5.0 ug/L	5K31704-CAL5	PERC000009.D.Report.TXT	11/11/15 17:40
15H0460	Perchlorate Init Cal 10 ug/L	5K31704-CAL6	PERC000010.D.Report.TXT	11/11/15 17:58
15H0461	Perchlorate Init Cal 20 ug/L	5K31704-CAL7	PERC000011.D.Report.TXT	11/11/15 18:16
15H0462	Perchlorate Init Cal 50 ug/L	5K31704-CAL8	PERC000012.D.Report.TXT	11/11/15 18:34

ANALYSIS SEQUENCE SUMMARY

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511179
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Sequence:	5K31704	Instrument:	LCMS1
Calibration:	5317001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	5K31704-TUN1	PERC000002.D.Report.TXT	11/11/15 15:35
Cal Standard	5K31704-CAL1	PERC000005.D.Report.TXT	11/11/15 16:29
Cal Standard	5K31704-CAL2	PERC000006.D.Report.TXT	11/11/15 16:47
Cal Standard	5K31704-CAL3	PERC000007.D.Report.TXT	11/11/15 17:04
Cal Standard	5K31704-CAL4	PERC000008.D.Report.TXT	11/11/15 17:22
Cal Standard	5K31704-CAL5	PERC000009.D.Report.TXT	11/11/15 17:40
Cal Standard	5K31704-CAL6	PERC000010.D.Report.TXT	11/11/15 17:58
Cal Standard	5K31704-CAL7	PERC000011.D.Report.TXT	11/11/15 18:16
Cal Standard	5K31704-CAL8	PERC000012.D.Report.TXT	11/11/15 18:34
Initial Cal Check	5K31704-ICV1	PERC000013.D.Report.TXT	11/11/15 18:51

ANALYSIS SEQUENCE SUMMARY

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511179
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Sequence: 5K32709
Instrument: LCMS1
Calibration: 5317001

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	5K32709-TUN1	PERC000002.D.Report.TXT	11/20/15 15:39
Calibration Check	5K32709-CCV1	PERC000005.D.Report.TXT	11/20/15 16:32
Low Cal Check	5K32709-LCV1	PERC000006.D.Report.TXT	11/20/15 16:50
Low Cal Check	5K32709-LCV2	PERC000007.D.Report.TXT	11/20/15 17:08
Interference Check A	5K32709-IFA1	PERC000008.D.Report.TXT	11/20/15 17:26
Blank	5K20010-BLK1	PERC000017.D.Report.TXT	11/20/15 20:06
LCS	5K20010-BS1	PERC000018.D.Report.TXT	11/20/15 20:24
50MW17-110915	1511179-01	PERC000019.D.Report.TXT	11/20/15 20:42
50MW19-110915	1511179-02	PERC000020.D.Report.TXT	11/20/15 21:00
50MW26-111015	1511179-04	PERC000024.D.Report.TXT	11/20/15 22:11
50MW26FD-111015	1511179-05	PERC000025.D.Report.TXT	11/20/15 22:29
50MW21-111015	1511179-06	PERC000026.D.Report.TXT	11/20/15 22:47
Calibration Check	5K32709-CCV2	PERC000028.D.Report.TXT	11/20/15 23:23
Low Cal Check	5K32709-LCV3	PERC000029.D.Report.TXT	11/20/15 23:41
Low Cal Check	5K32709-LCV4	PERC000030.D.Report.TXT	11/20/15 23:58
50MW20-111015	1511179-07	PERC000031.D.Report.TXT	11/21/15 00:16
Calibration Check	5K32709-CCV3	PERC000034.D.Report.TXT	11/21/15 01:10
Low Cal Check	5K32709-LCV5	PERC000035.D.Report.TXT	11/21/15 01:28
Low Cal Check	5K32709-LCV6	PERC000036.D.Report.TXT	11/21/15 01:45

ANALYSIS SEQUENCE SUMMARY

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511179
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Sequence:	5K32716	Instrument:	LCMS1
Calibration:	5317001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	5K32716-TUN1	PERC000002.D.Report.TXT	11/21/15 17:12
Calibration Check	5K32716-CCV1	PERC000005.D.Report.TXT	11/21/15 18:06
Low Cal Check	5K32716-LCV1	PERC000006.D.Report.TXT	11/21/15 18:23
Low Cal Check	5K32716-LCV2	PERC000007.D.Report.TXT	11/21/15 18:41
Interference Check A	5K32716-IFA1	PERC000008.D.Report.TXT	11/21/15 18:59
50MW07-110915	1511179-03	PERC000011.D.Report.TXT	11/21/15 19:53
50MW07-110915	5K20010-MS1	PERC000012.D.Report.TXT	11/21/15 20:10
50MW07-110915	5K20010-MSD1	PERC000013.D.Report.TXT	11/21/15 20:28
Calibration Check	5K32716-CCV2	PERC000016.D.Report.TXT	11/21/15 21:22
Low Cal Check	5K32716-LCV3	PERC000017.D.Report.TXT	11/21/15 21:40
Low Cal Check	5K32716-LCV4	PERC000018.D.Report.TXT	11/21/15 21:58

INTERNAL STANDARD AREA AND RT SUMMARY
SW6850

Laboratory: Empirical Laboratories, LLC
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Sequence: 5K32709

SDG: 1511179
Project: Perchlorate
Instrument: LCMS1
Calibration: 5317001

Internal Standard	Response	RT	Response	Reference Area %	Area % Limits	Q
Calibration Check (5K32709-CCV1)		Lab File ID: PERC000005.D.Report.TXT			Analyzed: 11/20/15 16:32	
Perchlorate-d18	781848	8.806	627649	125	50 - 150	
Low Cal Check (5K32709-LCV1)		Lab File ID: PERC000006.D.Report.TXT			Analyzed: 11/20/15 16:50	
Perchlorate-d18	782599	8.872	627649	125	50 - 150	
Low Cal Check (5K32709-LCV2)		Lab File ID: PERC000007.D.Report.TXT			Analyzed: 11/20/15 17:08	
Perchlorate-d18	785716	8.796	627649	125	50 - 150	
Interference Check A (5K32709-IFA1)		Lab File ID: PERC000008.D.Report.TXT			Analyzed: 11/20/15 17:26	
Perchlorate-d18	788400	7.645	627649	126	50 - 150	
Blank (5K20010-BLK1)		Lab File ID: PERC000017.D.Report.TXT			Analyzed: 11/20/15 20:06	
Perchlorate-d18	727654	8.917	627649	116	50 - 150	
LCS (5K20010-BS1)		Lab File ID: PERC000018.D.Report.TXT			Analyzed: 11/20/15 20:24	
Perchlorate-d18	773492	8.918	627649	123	50 - 150	
50MW17-110915 (1511179-01)		Lab File ID: PERC000019.D.Report.TXT			Analyzed: 11/20/15 20:42	
Perchlorate-d18	838680	8.138	627649	134	50 - 150	
50MW19-110915 (1511179-02)		Lab File ID: PERC000020.D.Report.TXT			Analyzed: 11/20/15 21:00	
Perchlorate-d18	698959	7.977	627649	111	50 - 150	
50MW26-111015 (1511179-04)		Lab File ID: PERC000024.D.Report.TXT			Analyzed: 11/20/15 22:11	
Perchlorate-d18	807958	8.104	627649	129	50 - 150	
50MW26FD-111015 (1511179-05)		Lab File ID: PERC000025.D.Report.TXT			Analyzed: 11/20/15 22:29	
Perchlorate-d18	802531	8.106	627649	128	50 - 150	
50MW21-111015 (1511179-06)		Lab File ID: PERC000026.D.Report.TXT			Analyzed: 11/20/15 22:47	
Perchlorate-d18	464753	8.077	627649	74	50 - 150	
Calibration Check (5K32709-CCV2)		Lab File ID: PERC000028.D.Report.TXT			Analyzed: 11/20/15 23:23	
Perchlorate-d18	751236	8.789	627649	120	50 - 150	
Low Cal Check (5K32709-LCV3)		Lab File ID: PERC000029.D.Report.TXT			Analyzed: 11/20/15 23:41	
Perchlorate-d18	748170	8.849	627649	119	50 - 150	
Low Cal Check (5K32709-LCV4)		Lab File ID: PERC000030.D.Report.TXT			Analyzed: 11/20/15 23:58	
Perchlorate-d18	751501	8.8	627649	120	50 - 150	
50MW20-111015 (1511179-07)		Lab File ID: PERC000031.D.Report.TXT			Analyzed: 11/21/15 00:16	
Perchlorate-d18	700589	8.069	627649	112	50 - 150	
Calibration Check (5K32709-CCV3)		Lab File ID: PERC000034.D.Report.TXT			Analyzed: 11/21/15 01:10	
Perchlorate-d18	742105	8.794	627649	118	50 - 150	
Low Cal Check (5K32709-LCV5)		Lab File ID: PERC000035.D.Report.TXT			Analyzed: 11/21/15 01:28	
Perchlorate-d18	743756	8.851	627649	118	50 - 150	
Low Cal Check (5K32709-LCV6)		Lab File ID: PERC000036.D.Report.TXT			Analyzed: 11/21/15 01:45	
Perchlorate-d18	747982	8.808	627649	119	50 - 150	

INTERNAL STANDARD AREA AND RT SUMMARY
SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511179
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Sequence:	5K32716	Instrument:	LCMS1
		Calibration:	5317001

Internal Standard	Response	RT	Response	Reference Area %	Area % Limits	Q
Calibration Check (5K32716-CCV1)		Lab File ID: PERC000005.D.Report.TXT			Analyzed: 11/21/15 18:06	
Perchlorate-d18	790128	8.804	627649	126	50 - 150	
Low Cal Check (5K32716-LCV1)		Lab File ID: PERC000006.D.Report.TXT			Analyzed: 11/21/15 18:23	
Perchlorate-d18	795005	8.862	627649	127	50 - 150	
Low Cal Check (5K32716-LCV2)		Lab File ID: PERC000007.D.Report.TXT			Analyzed: 11/21/15 18:41	
Perchlorate-d18	798016	8.83	627649	127	50 - 150	
Interference Check A (5K32716-IFA1)		Lab File ID: PERC000008.D.Report.TXT			Analyzed: 11/21/15 18:59	
Perchlorate-d18	798252	7.658	627649	127	50 - 150	
50MW07-110915 (1511179-03)		Lab File ID: PERC000011.D.Report.TXT			Analyzed: 11/21/15 19:53	
Perchlorate-d18	772449	8.405	627649	123	50 - 150	
Matrix Spike (5K20010-MS1)		Lab File ID: PERC000012.D.Report.TXT			Analyzed: 11/21/15 20:10	
Perchlorate-d18	794576	8.381	627649	127	50 - 150	
Matrix Spike Dup (5K20010-MSD1)		Lab File ID: PERC000013.D.Report.TXT			Analyzed: 11/21/15 20:28	
Perchlorate-d18	777839	8.386	627649	124	50 - 150	
Calibration Check (5K32716-CCV2)		Lab File ID: PERC000016.D.Report.TXT			Analyzed: 11/21/15 21:22	
Perchlorate-d18	795377	8.83	627649	127	50 - 150	
Low Cal Check (5K32716-LCV3)		Lab File ID: PERC000017.D.Report.TXT			Analyzed: 11/21/15 21:40	
Perchlorate-d18	801287	8.889	627649	128	50 - 150	
Low Cal Check (5K32716-LCV4)		Lab File ID: PERC000018.D.Report.TXT			Analyzed: 11/21/15 21:58	
Perchlorate-d18	802548	8.856	627649	128	50 - 150	

INITIAL CALIBRATION DATA

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511179	
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate	
Calibration:	5317001	Instrument:	LCMS1	
Matrix:	Water	Calibration Dates:	11/11/15 16:29	11/11/15 18:34

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Perchlorate	0.2	1.28592	0.5	1.112583	1	1.16135	2	1.156456	5	1.169845	10	1.167638
Perchlorate (101)	0.2	0.4162459	0.5	0.3724168	1	0.377893	2	0.3773375	5	0.3817238	10	0.3780177

INITIAL CALIBRATION DATA (Continued)

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511179	
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate	
Calibration:	5317001	Instrument:	LCMS1	
Matrix:	Water	Calibration Dates:	11/11/15 16:29	11/11/15 18:34

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Perchlorate	20	1.198806	50	1.174267								
Perchlorate (101)	20	0.3858999	50	0.3809597								

INITIAL CALIBRATION DATA (Continued)

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511179	
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate	
Calibration:	5317001	Instrument:	LCMS1	
Matrix:	Water	Calibration Dates:	11/11/15 16:29	11/11/15 18:34

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Perchlorate	1.178358	4.217321	8.902375	0.124603			20	
Perchlorate (101)	0.3838118	3.56316	8.918625	0.1359902			20	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511179
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Instrument ID:	LCMS1	Calibration:	5317001
Lab File ID:	PERC000013.D.Report.TXT	Calibration Date:	11/11/15 00:00
Sequence:	5K31704	Injection Date:	11/11/15
Lab Sample ID:	5K31704-ICV1	Injection Time:	18:51

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN (#)	ICV	LIMIT (#)
Perchlorate	A	5.000	4.974	1.178358	1.172325		-0.5	15

CONTINUING CALIBRATION CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511179
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Instrument ID:	LCMS1	Calibration:	5317001
Lab File ID:	PERC000005.D.Report.TXT	Calibration Date:	11/11/15 00:00
Sequence:	5K32709	Injection Date:	11/20/15
Lab Sample ID:	5K32709-CCV1	Injection Time:	16:32

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perchlorate	A	5.000	5.152	1.178358	1.214157		3.0	15

CONTINUING CALIBRATION CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511179
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Instrument ID:	LCMS1	Calibration:	5317001
Lab File ID:	PERC000028.D.Report.TXT	Calibration Date:	11/11/15 00:00
Sequence:	5K32709	Injection Date:	11/20/15
Lab Sample ID:	5K32709-CCV2	Injection Time:	23:23

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perchlorate	A	5.000	5.221	1.178358	1.230394		4.4	15

CONTINUING CALIBRATION CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511179
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Instrument ID:	LCMS1	Calibration:	5317001
Lab File ID:	PERC000034.D.Report.TXT	Calibration Date:	11/11/15 00:00
Sequence:	5K32709	Injection Date:	11/21/15
Lab Sample ID:	5K32709-CCV3	Injection Time:	01:10

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perchlorate	A	5.000	5.210	1.178358	1.227877		4.2	15

CONTINUING CALIBRATION CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511179
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Instrument ID:	LCMS1	Calibration:	5317001
Lab File ID:	PERC000005.D.Report.TXT	Calibration Date:	11/11/15 00:00
Sequence:	5K32716	Injection Date:	11/21/15
Lab Sample ID:	5K32716-CCV1	Injection Time:	18:06

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perchlorate	A	5.000	5.140	1.178358	1.211421		2.8	15

CONTINUING CALIBRATION CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511179
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Instrument ID:	LCMS1	Calibration:	5317001
Lab File ID:	PERC000016.D.Report.TXT	Calibration Date:	11/11/15 00:00
Sequence:	5K32716	Injection Date:	11/21/15
Lab Sample ID:	5K32716-CCV2	Injection Time:	21:22

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perchlorate	A	5.000	5.193	1.178358	1.223773		3.9	15

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511179
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5K32709-LCV1
Sequence: 5K32709
Standard ID: 15J0445

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	1.000	0.9992	-0.08	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511179
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5K32709-LCV2
Sequence: 5K32709
Standard ID: 15H0001

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	0.4000	0.4912	22.8	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511179
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5K32709-LCV3
Sequence: 5K32709
Standard ID: 15J0445

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	1.000	1.005	0.5	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511179
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5K32709-LCV4
Sequence: 5K32709
Standard ID: 15H0001

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	0.4000	0.4756	18.9	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511179
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5K32709-LCV5
Sequence: 5K32709
Standard ID: 15J0445

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	1.000	1.029	2.9	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511179
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5K32709-LCV6
Sequence: 5K32709
Standard ID: 15H0001

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	0.4000	0.4866	21.7	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511179
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5K32716-LCV1
Sequence: 5K32716
Standard ID: 15J0445

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	1.000	0.9958	-0.4	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511179
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5K32716-LCV2
Sequence: 5K32716
Standard ID: 15H0001

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	0.4000	0.4829	20.7	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511179
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5K32716-LCV3
Sequence: 5K32716
Standard ID: 15J0445

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	1.000	1.028	2.8	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511179
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5K32716-LCV4
Sequence: 5K32716
Standard ID: 15H0001

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	0.4000	0.4750	18.7	30.00

HOLDING TIME SUMMARY

SW6850

Laboratory: Empirical Laboratories, LLC SDG: 1511179

Client: Microbac Laboratories, Inc.-Ohio Valley Division Project: Perchlorate

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
50MW17-110915	11/09/15 08:15	11/18/15 08:50	11/20/15 13:58	11.24	28.00	11/20/15 20:42	11.52	28.00	
50MW19-110915	11/09/15 09:25	11/18/15 08:50	11/20/15 13:58	11.19	28.00	11/20/15 21:00	11.48	28.00	
50MW07-110915	11/09/15 10:35	11/18/15 08:50	11/20/15 13:58	11.14	28.00	11/21/15 19:53	12.39	28.00	
50MW26-111015	11/10/15 13:10	11/18/15 08:50	11/20/15 13:58	10.03	28.00	11/20/15 22:11	10.38	28.00	
50MW26FD-111015	11/10/15 13:10	11/18/15 08:50	11/20/15 13:58	10.03	28.00	11/20/15 22:29	10.39	28.00	
50MW21-111015	11/10/15 14:15	11/18/15 08:50	11/20/15 13:58	9.99	28.00	11/20/15 22:47	10.36	28.00	
50MW20-111015	11/10/15 15:10	11/18/15 08:50	11/20/15 13:58	9.95	28.00	11/21/15 00:16	10.38	28.00	

Data for SW6850
Supporting Raw Data / Logs

Print of all graphic windows
Data File : C:\CHEM32\1\DATA\111115A\PERC000002.D
Sample Name : SEQ-TUN1

==========

Acq. Operator	:	Seq. Line :	2
Acq. Instrument	: Instrument 1	Location :	Vial 1
Injection Date	: 11/11/2015 3:35:26 PM	Inj :	1
		Inj Volume :	100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_SC
Last changed : 9/29/2015 11:41:05 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/11/2015 2:51:33 PM
(modified after loading)

Current Chromatogram(s)

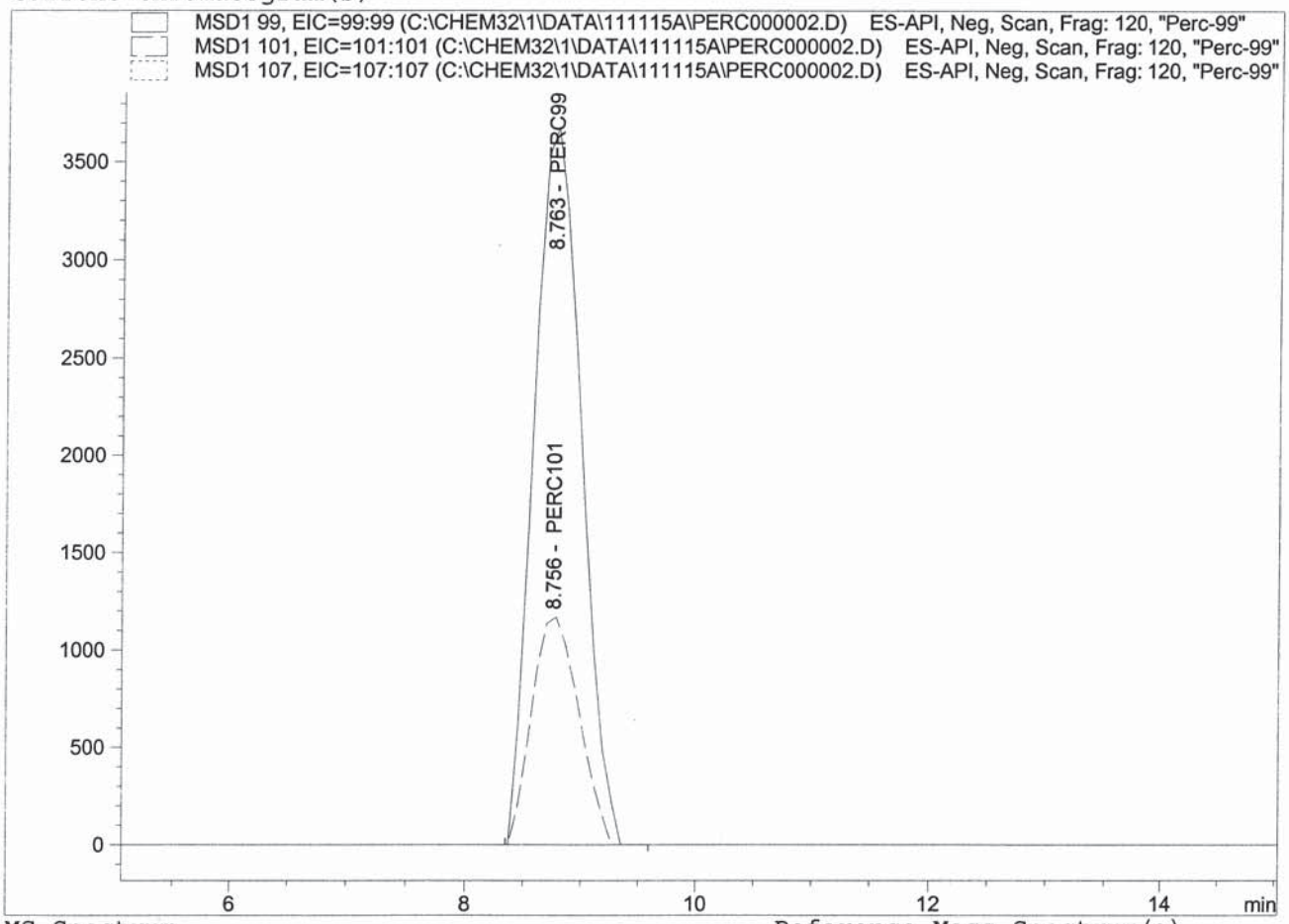

MS Spectrum

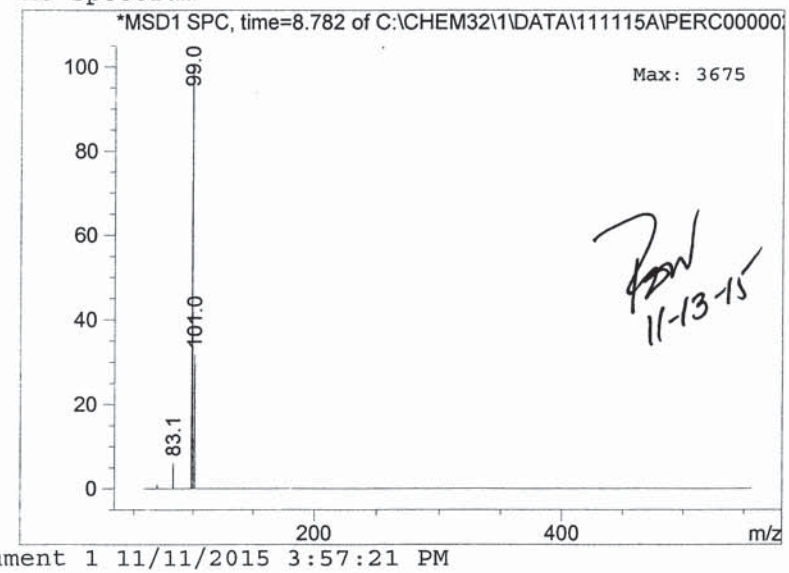

Reference Mass Spectrum(a)

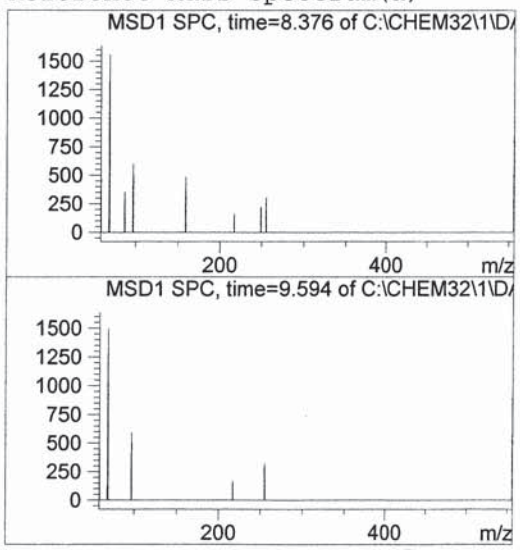

11/16/15

11-13-15

Data File C:\CHEM32\1\DATA\111115A\PERC000002.D
Sample Name: SEQ-TUN1

==========

Acq. Operator	:	Seq. Line	: 2
Acq. Instrument	: Instrument 1	Location	: Vial 1
Injection Date	: 11/11/2015 3:35:26 PM	Inj	: 1
		Inj Volume	: 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_SC
Last changed : 9/29/2015 11:41:05 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/11/2015 2:51:33 PM
(modified after loading)

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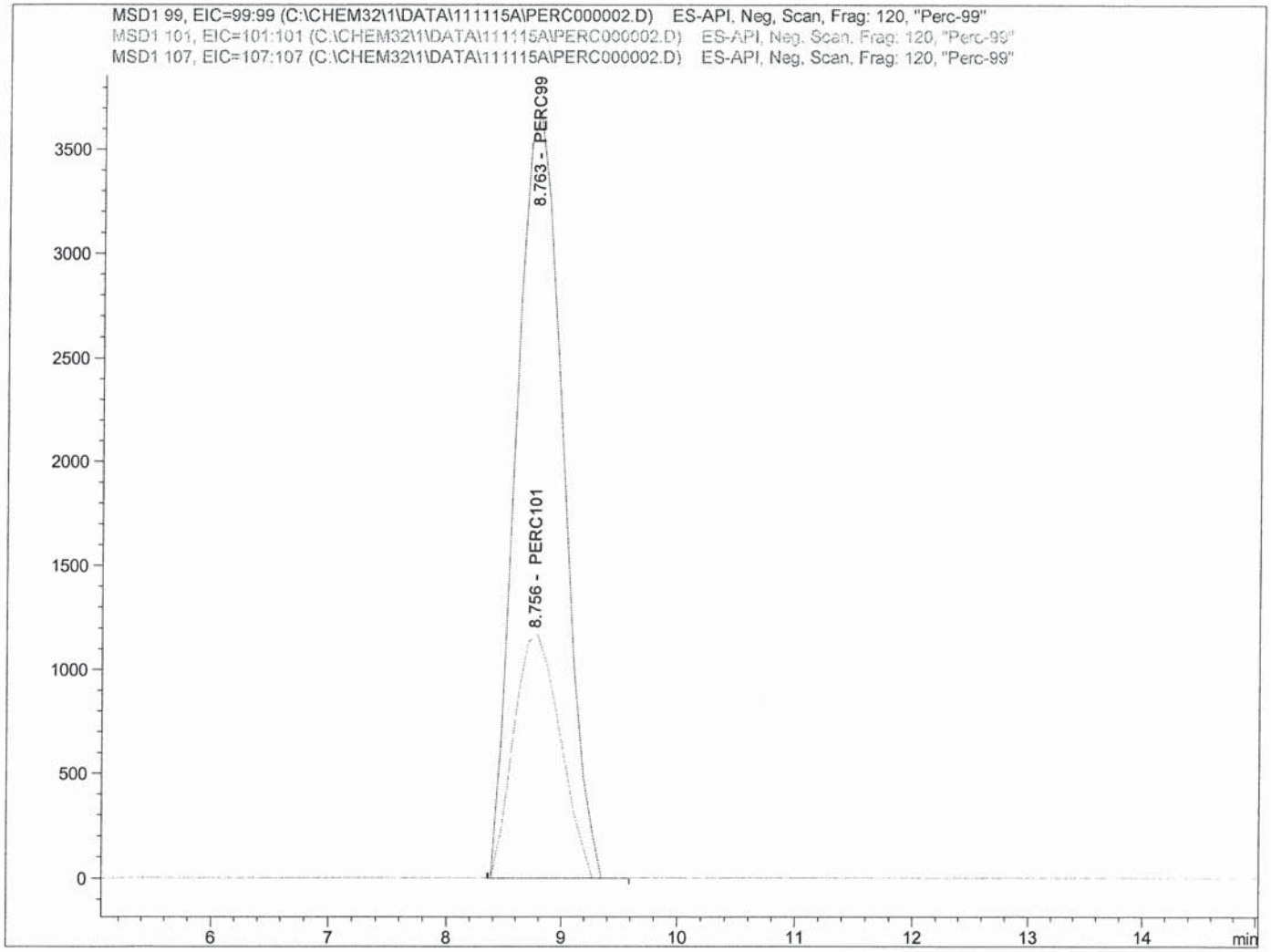

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Internal Standard Report

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11/16/15

Sorted By : Signal
Calib. Data Modified : 11/11/2015 2:51:33 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

11-13-15

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\111115A\PERC000002.D
Sample Name: SEQ-TUN1

```
==================================================================
Acq. Operator   :                                  Seq. Line :   2
Acq. Instrument : Instrument 1                      Location : Vial 1
Injection Date  : 11/11/2015 3:35:26 PM                  Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_SC
Last changed    : 9/29/2015 11:41:05 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed    : 11/11/2015 2:51:33 PM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.763	BB	1	1.04488e5	0.00000	0.00000		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.756	BB	1	3.29786e4	0.00000	0.00000		PERC101

Totals without ISTD(s) : 0.00000

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.840		1	-	-	-		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : ISTD compound(s) not found

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*** End of Report ***

Data File C:\CHEM32\1\DATA\111115A\PERC000005.D
Sample Name: SEQ-CAL1

==========

Acq. Operator : Seq. Line : 5
Acq. Instrument : Instrument 1 Location : Vial 91
Injection Date : 11/11/2015 4:29:18 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/11/2015 4:51:15 PM
(modified after loading)

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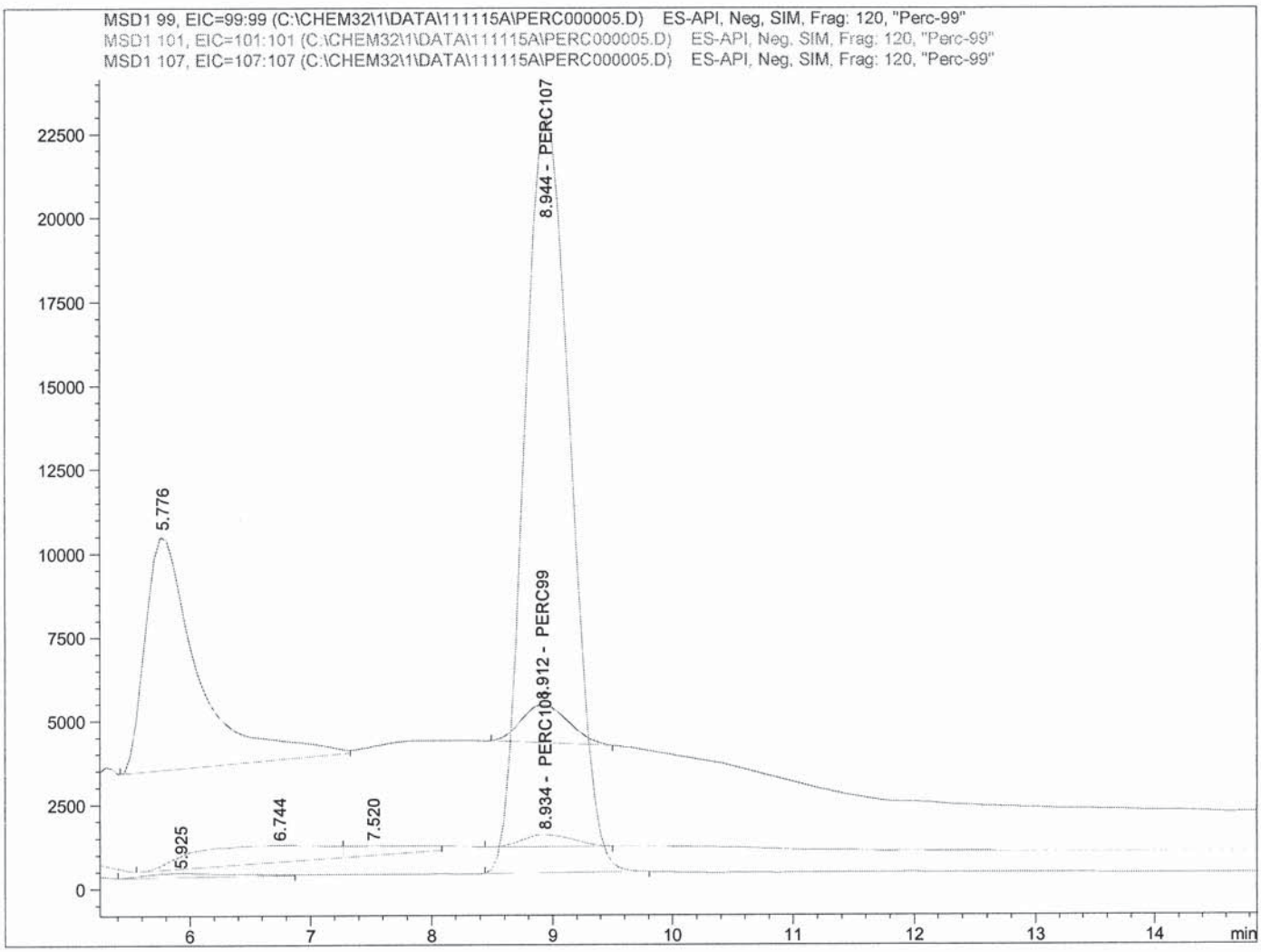

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : 11/11/2015 4:49:21 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

11/16/15

11-13-15

Data File C:\CHEM32\1\DATA\111115A\PERC000005.D
Sample Name: SEQ-CAL1

==========

Acq. Operator : Seq. Line : 5
Acq. Instrument : Instrument 1 Location : Vial 91
Injection Date : 11/11/2015 4:29:18 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/11/2015 4:51:15 PM
(modified after loading)

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1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.912	BBA	1	3.10224e4	9.44928e-1	2.43020e-1		PERC99

Totals without ISTD(s) : 2.43020e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.934	BBA	1	1.00418e4	2.82395	2.35091e-1		PERC101

Totals without ISTD(s) : 2.35091e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.944	BBA I	1	6.03117e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

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*** End of Report ***

Data File C:\CHEM32\1\DATA\111115A\PERC000006.D
Sample Name: SEQ-CAL2

==========

Acq. Operator	:	Seq. Line :	6
Acq. Instrument	: Instrument 1	Location :	Vial 92
Injection Date	: 11/11/2015 4:47:05 PM	Inj :	1
		Inj Volume :	100.0 µl
Acq. Method	: C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M		
Last changed	: 11/11/2015 2:52:52 PM		
Analysis Method	: C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M		
Last changed	: 11/13/2015 9:37:20 AM (modified after loading)		

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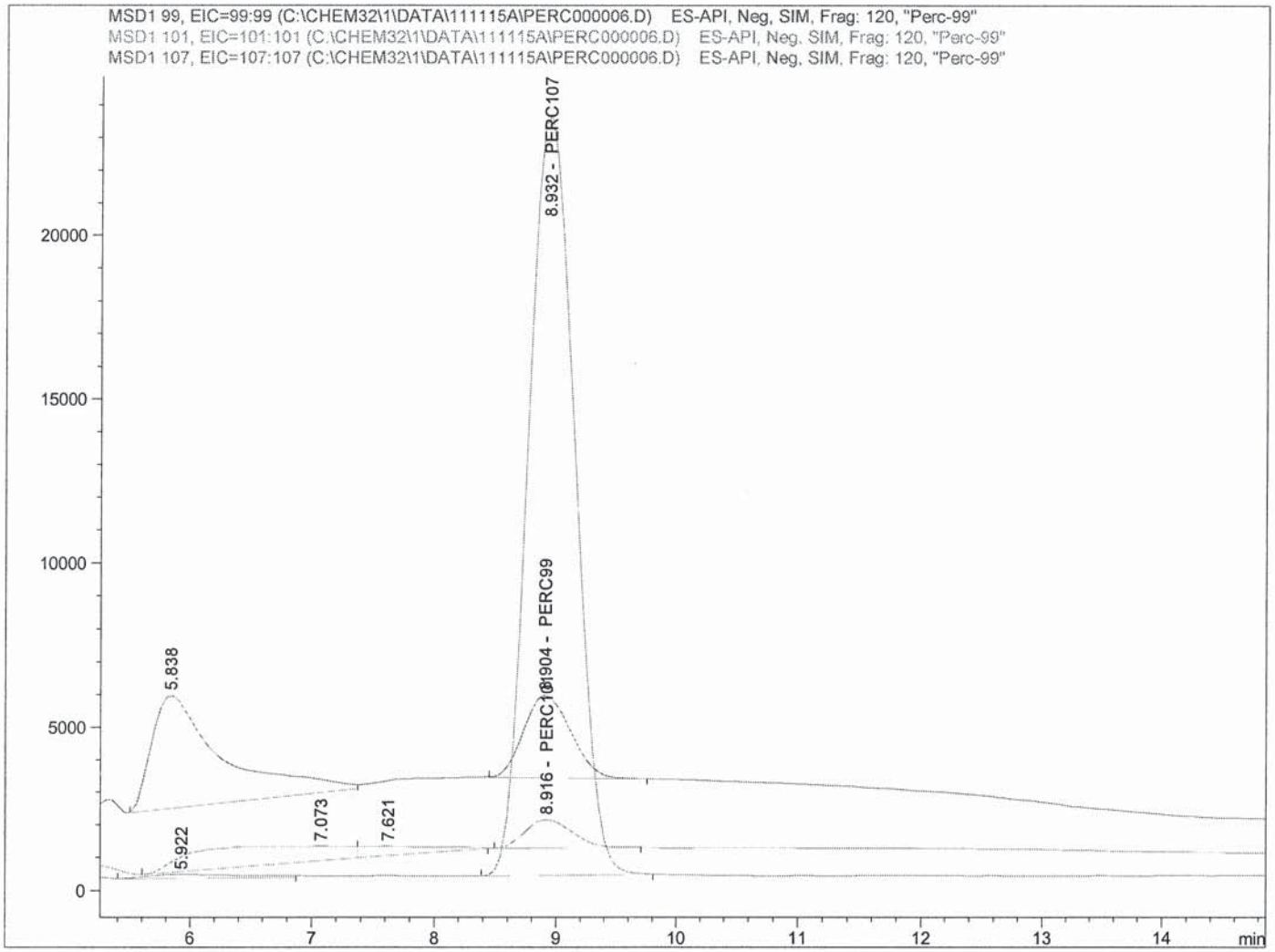

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Internal Standard Report

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11/16/15

Sorted By	:	Signal
Calib. Data Modified	:	Wednesday, November 11, 2015 4:52:18 PM
Multiplier	:	1.0000
Dilution	:	1.0000

Do not use Multiplier & Dilution Factor with ISTDs

11-13-15

Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\111115A\PERC000006.D
Sample Name: SEQ-CAL2

```
==================================================================
Acq. Operator   :                                Seq. Line :   6
Acq. Instrument : Instrument 1                    Location : Vial 92
Injection Date  : 11/11/2015 4:47:05 PM                Inj :   1
                                               Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed    : 11/13/2015 9:37:20 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.904	BB	1	6.88955e4	9.15059e-1	5.09040e-1		PERC99

Totals without ISTD(s) : 5.09040e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.916	BBA	1	2.30615e4	2.78000	5.17658e-1		PERC101

Totals without ISTD(s) : 5.17658e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.932	BBA I	1	6.19239e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

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*** End of Report ***

Data File C:\CHEM32\1\DATA\111115A\PERC000007.D
Sample Name: SEQ-CAL3

==========

Acq. Operator	:	Seq. Line :	7
Acq. Instrument	: Instrument 1	Location :	Vial 93
Injection Date	: 11/11/2015 5:04:53 PM	Inj :	1
		Inj Volume :	100.0 µl
Acq. Method	: C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M		
Last changed	: 11/11/2015 2:52:52 PM		
Analysis Method	: C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M		
Last changed	: 11/13/2015 9:38:16 AM (modified after loading)		

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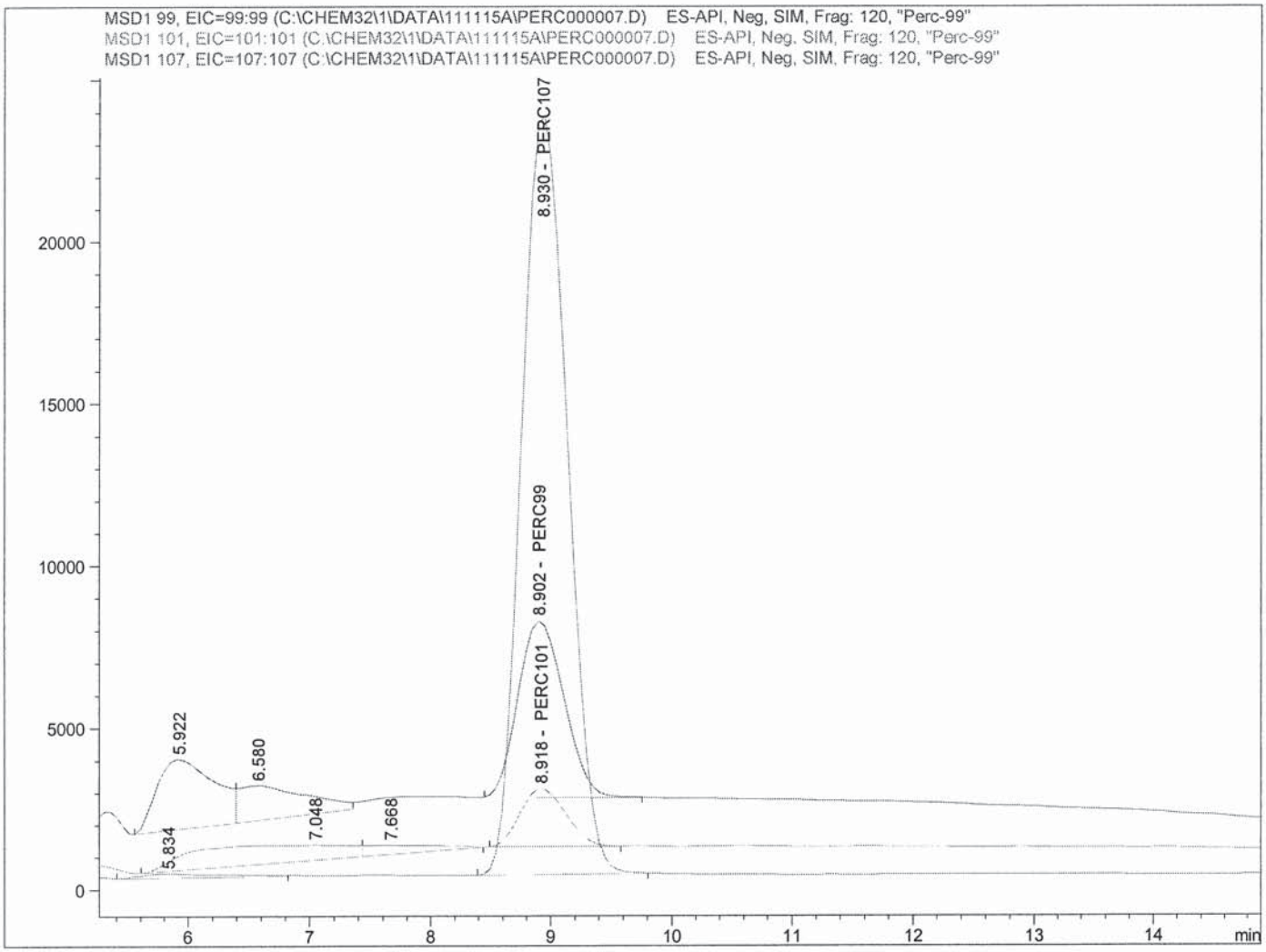

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Internal Standard Report

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11/16/15

Sorted By	:	Signal
Calib. Data Modified	:	Friday, November 13, 2015 9:38:16 AM
Multiplier	:	1.0000
Dilution	:	1.0000

Do not use Multiplier & Dilution Factor with ISTDs

11-13-15

Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\111115A\PERC000007.D
Sample Name: SEQ-CAL3

```
==================================================================
Acq. Operator   :                                  Seq. Line :   7
Acq. Instrument : Instrument 1                      Location : Vial 93
Injection Date  : 11/11/2015 5:04:53 PM                 Inj :   1
                                                 Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed    : 11/13/2015 9:38:16 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.902	BB	1	1.45188e5	8.98167e-1	1.04309		PERC99

Totals without ISTD(s) : 1.04309

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.918	BV	1	4.72429e4	2.75163	1.03982		PERC101

Totals without ISTD(s) : 1.03982

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.930	BBA I	1	6.25083e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

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*** End of Report ***

Data File C:\CHEM32\1\DATA\111115A\PERC000008.D
Sample Name: SEQ-CAL4

==========

Acq. Operator : Seq. Line : 8
Acq. Instrument : Instrument 1 Location : Vial 94
Injection Date : 11/11/2015 5:22:47 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/13/2015 9:38:59 AM
(modified after loading)

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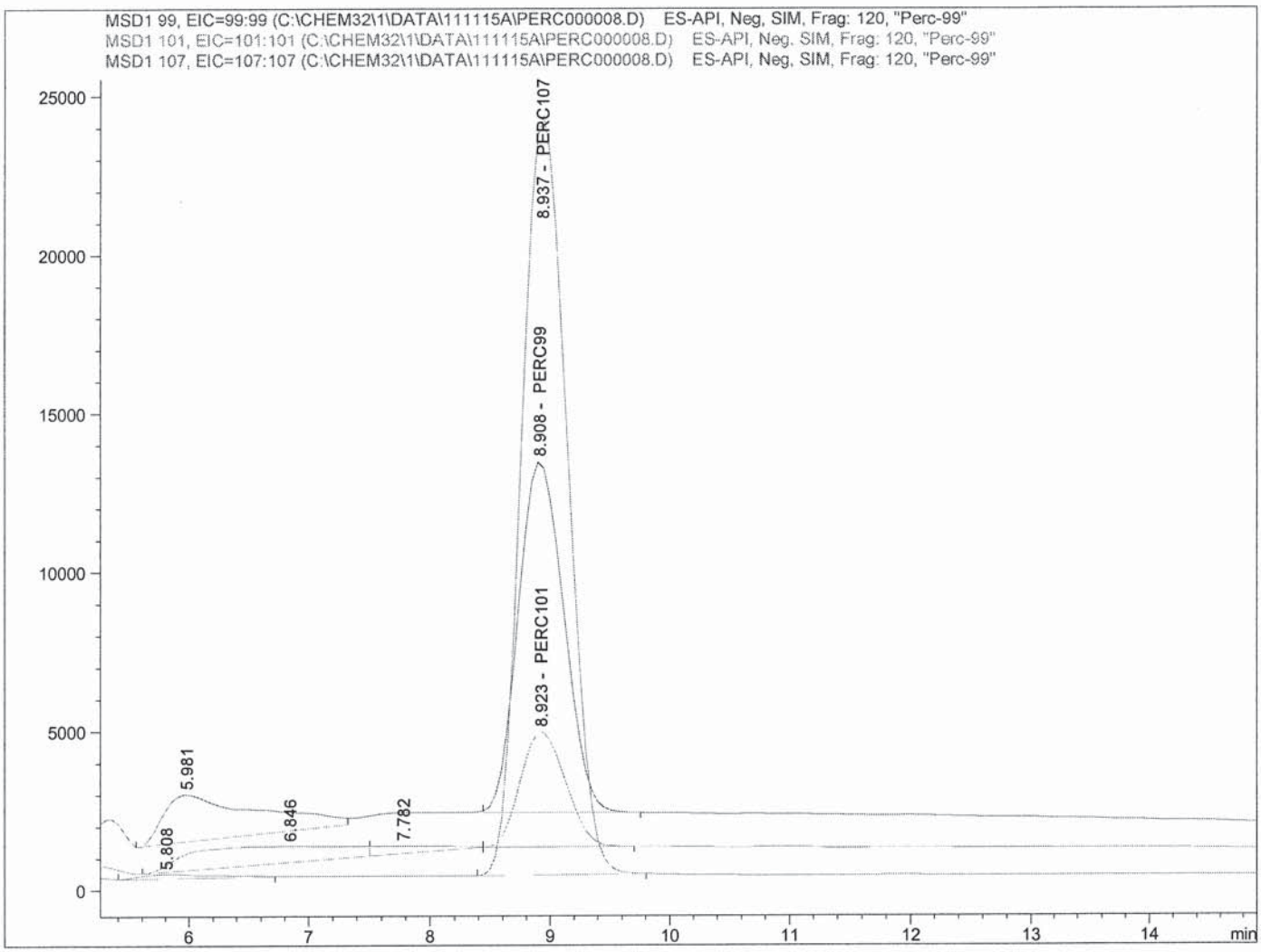

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : Friday, November 13, 2015 9:38:59 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

11-13-15

11/16/15

Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\111115A\PERC000008.D
Sample Name: SEQ-CAL4

```
==================================================================
Acq. Operator   :                                Seq. Line :   8
Acq. Instrument : Instrument 1                    Location : Vial 94
Injection Date  : 11/11/2015 5:22:47 PM                Inj :   1
                                               Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed    : 11/13/2015 9:38:59 AM
                  (modified after loading)
==================================================================

  1      5.00000   PERC107


Signal 1: MSD1 99, EIC=99:99

RetTime  Type  ISTD    Area     Amt/Area    Amount   Grp   Name
 [min]         used              ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.908 BB        1 2.94696e5  8.87076e-1    2.05173    PERC99

Totals without ISTD(s) :                2.05173



Signal 2: MSD1 101, EIC=101:101

RetTime  Type  ISTD    Area     Amt/Area    Amount   Grp   Name
 [min]         used              ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.923 BBA       1 9.61557e4     2.72316    2.05510    PERC101

Totals without ISTD(s) :                2.05510



Signal 3: MSD1 107, EIC=107:107

RetTime  Type  ISTD    Area     Amt/Area    Amount   Grp   Name
 [min]         used              ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.937 BBA  I    1 6.37067e5     1.00000    5.00000    PERC107

Totals without ISTD(s) :                0.00000


==================================================================
                          *** End of Report ***
```

Data File C:\CHEM32\1\DATA\111115A\PERC000009.D
Sample Name: SEQ-CAL5

==========

Acq. Operator : Seq. Line : 9
Acq. Instrument : Instrument 1 Location : Vial 95
Injection Date : 11/11/2015 5:40:37 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/13/2015 9:39:41 AM
(modified after loading)

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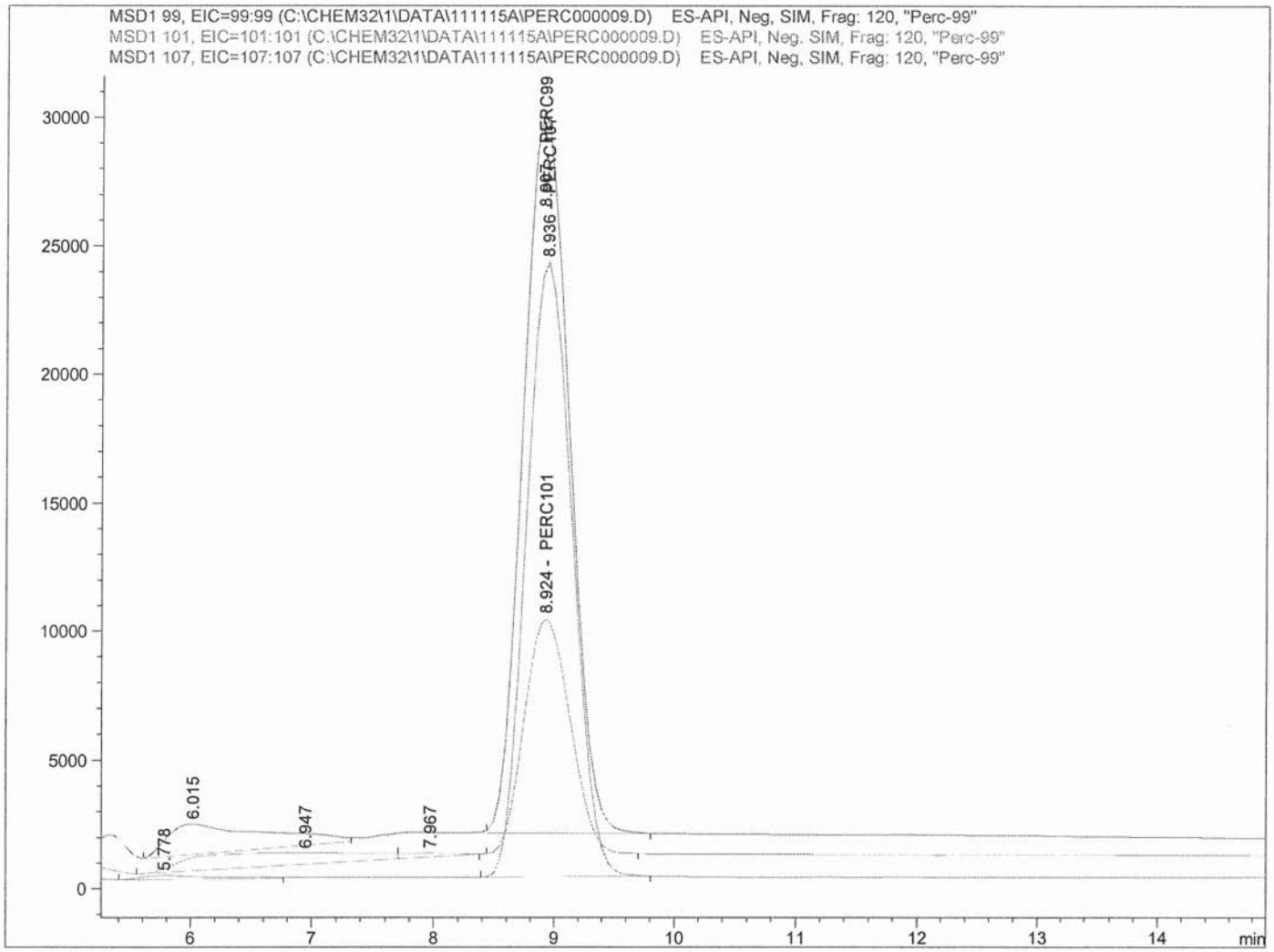

==========

Internal Standard Report

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11/16/15

Sorted By : Signal
Calib. Data Modified : Friday, November 13, 2015 9:39:41 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

11-13-15

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\111115A\PERC000009.D
Sample Name: SEQ-CAL5

==========

Acq. Operator : Seq. Line : 9
Acq. Instrument : Instrument 1 Location : Vial 95
Injection Date : 11/11/2015 5:40:37 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/13/2015 9:39:41 AM
(modified after loading)

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1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.907	BBA	1	7.47180e5	8.79368e-1	5.14361		PERC99

Totals without ISTD(s) : 5.14361

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.924	BBA	1	2.43807e5	2.69615	5.14592		PERC101

Totals without ISTD(s) : 5.14592

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.936	BBA I	1	6.38700e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\111115A\PERC000010.D
Sample Name: SEQ-CAL6

==========

Acq. Operator : Seq. Line : 10
Acq. Instrument : Instrument 1 Location : Vial 96
Injection Date : 11/11/2015 5:58:29 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/13/2015 9:40:28 AM
(modified after loading)

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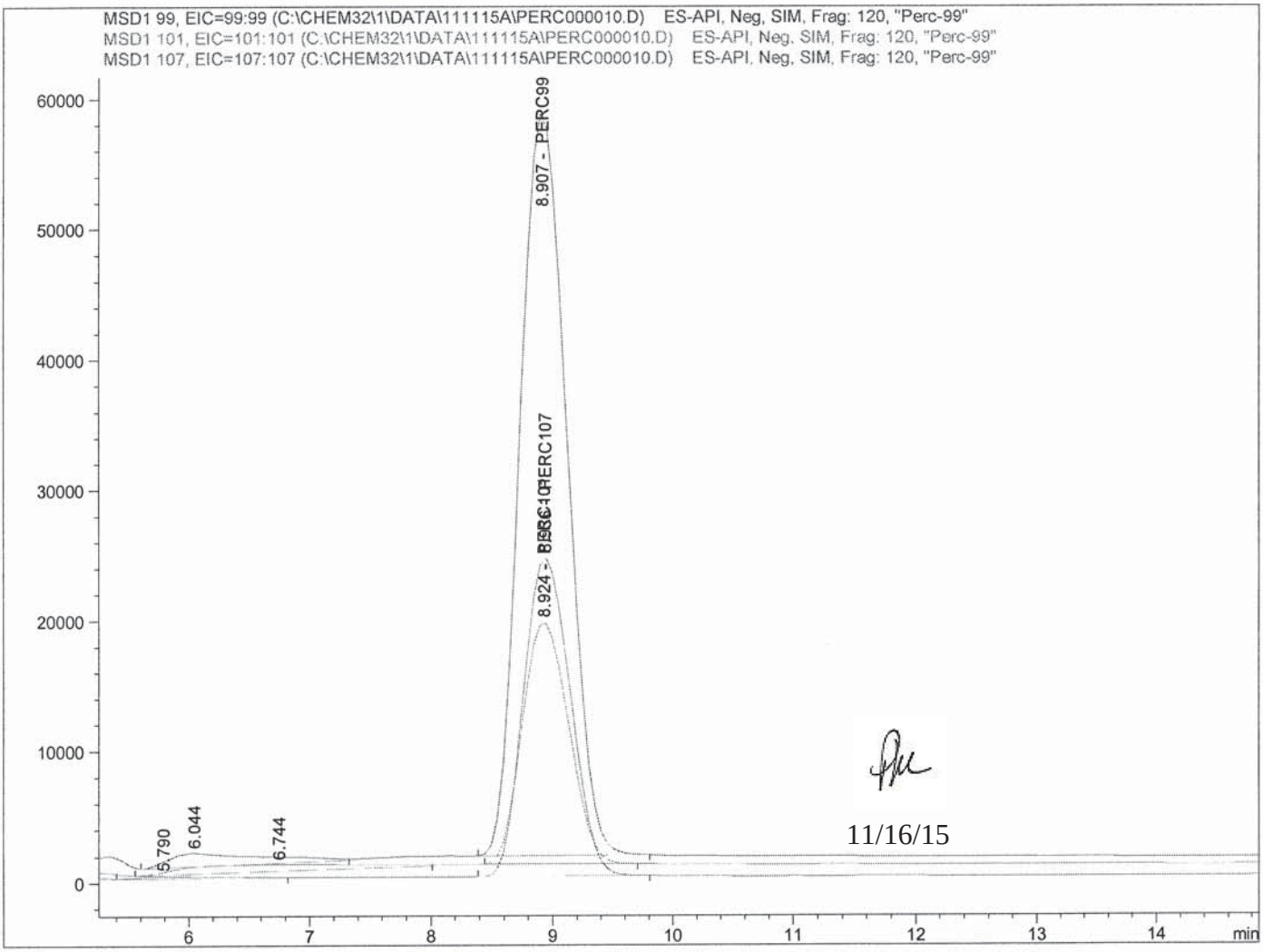

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : Friday, November 13, 2015 9:40:28 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

11-13-15

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\111115A\PERC000010.D
Sample Name: SEQ-CAL6

```
==================================================================
Acq. Operator   :                                Seq. Line :  10
Acq. Instrument : Instrument 1                    Location : Vial 96
Injection Date  : 11/11/2015 5:58:29 PM                Inj :   1
                                               Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed    : 11/13/2015 9:40:28 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.907	BBA	1	1.51860e6	8.71535e-1	10.17641		PERC99

Totals without ISTD(s) : 10.17641

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.924	BBA	1	4.91640e5	2.66963	10.09166		PERC101

Totals without ISTD(s) : 10.09166

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.936	BBA I	1	6.50287e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\111115A\PERC000011.D
Sample Name: SEQ-CAL7

==========

Acq. Operator	:	Seq. Line	: 11
Acq. Instrument	: Instrument 1	Location	: Vial 97
Injection Date	: 11/11/2015 6:16:16 PM	Inj	: 1
		Inj Volume	: 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/13/2015 9:41:08 AM
(modified after loading)

==========

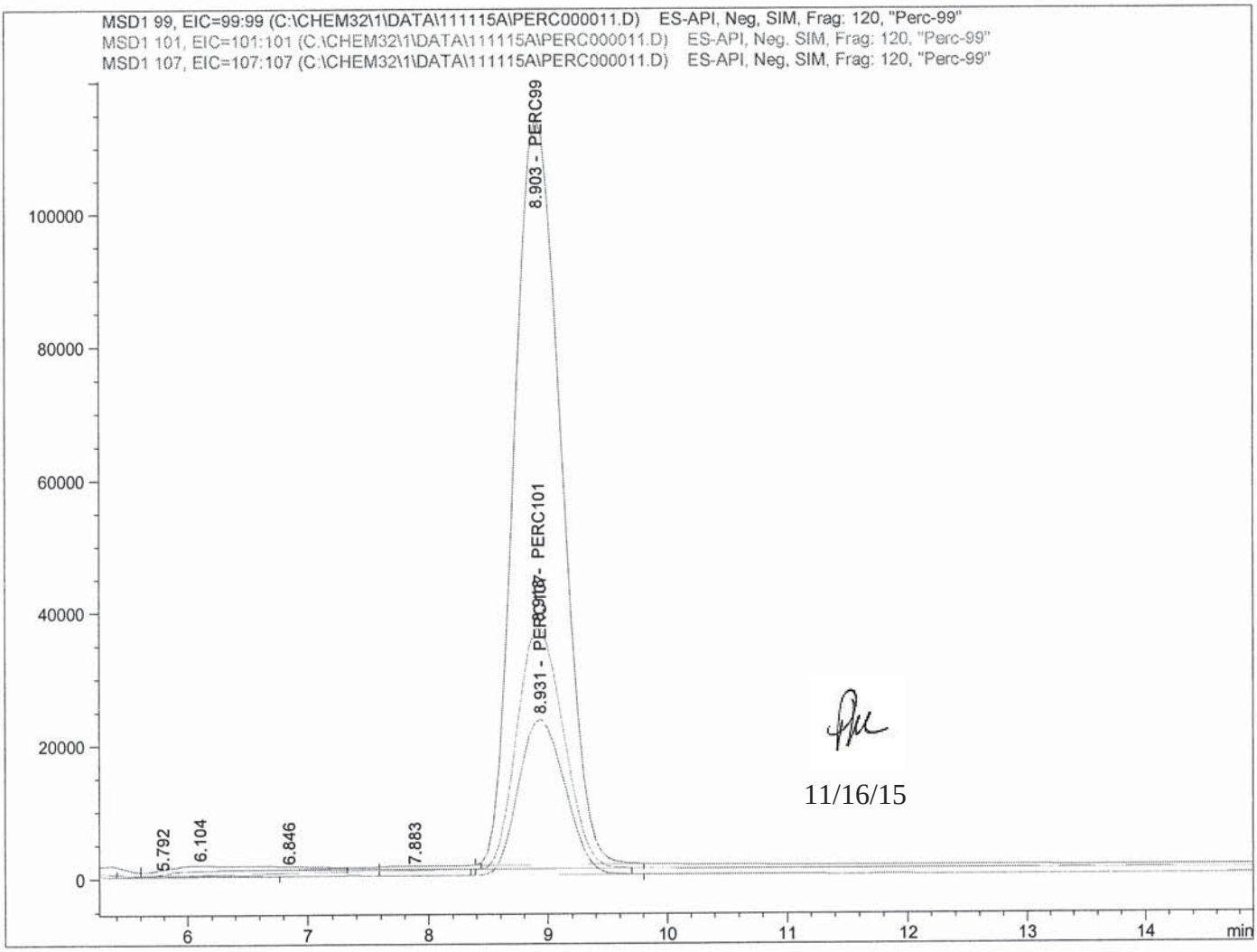

11/16/15

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : Friday, November 13, 2015 9:41:08 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

11-13-15

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\111115A\PERC000011.D
Sample Name: SEQ-CAL7

```
==================================================================
Acq. Operator   :                                Seq. Line :  11
Acq. Instrument : Instrument 1                    Location : Vial 97
Injection Date  : 11/11/2015 6:16:16 PM                Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed    : 11/13/2015 9:41:08 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.903	BBA	1	3.03553e6	8.63235e-1	20.69704		PERC99

Totals without ISTD(s) : 20.69704

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.918	BBA	1	9.77148e5	2.64709	20.43021		PERC101

Totals without ISTD(s) : 20.43021

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.931	BBA I	1	6.33032e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

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*** End of Report ***

Data File C:\CHEM32\1\DATA\111115A\PERC000012.D
Sample Name: SEQ-CAL8

==========

Acq. Operator : Seq. Line : 12
Acq. Instrument : Instrument 1 Location : Vial 98
Injection Date : 11/11/2015 6:34:15 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/13/2015 9:43:12 AM
(modified after loading)

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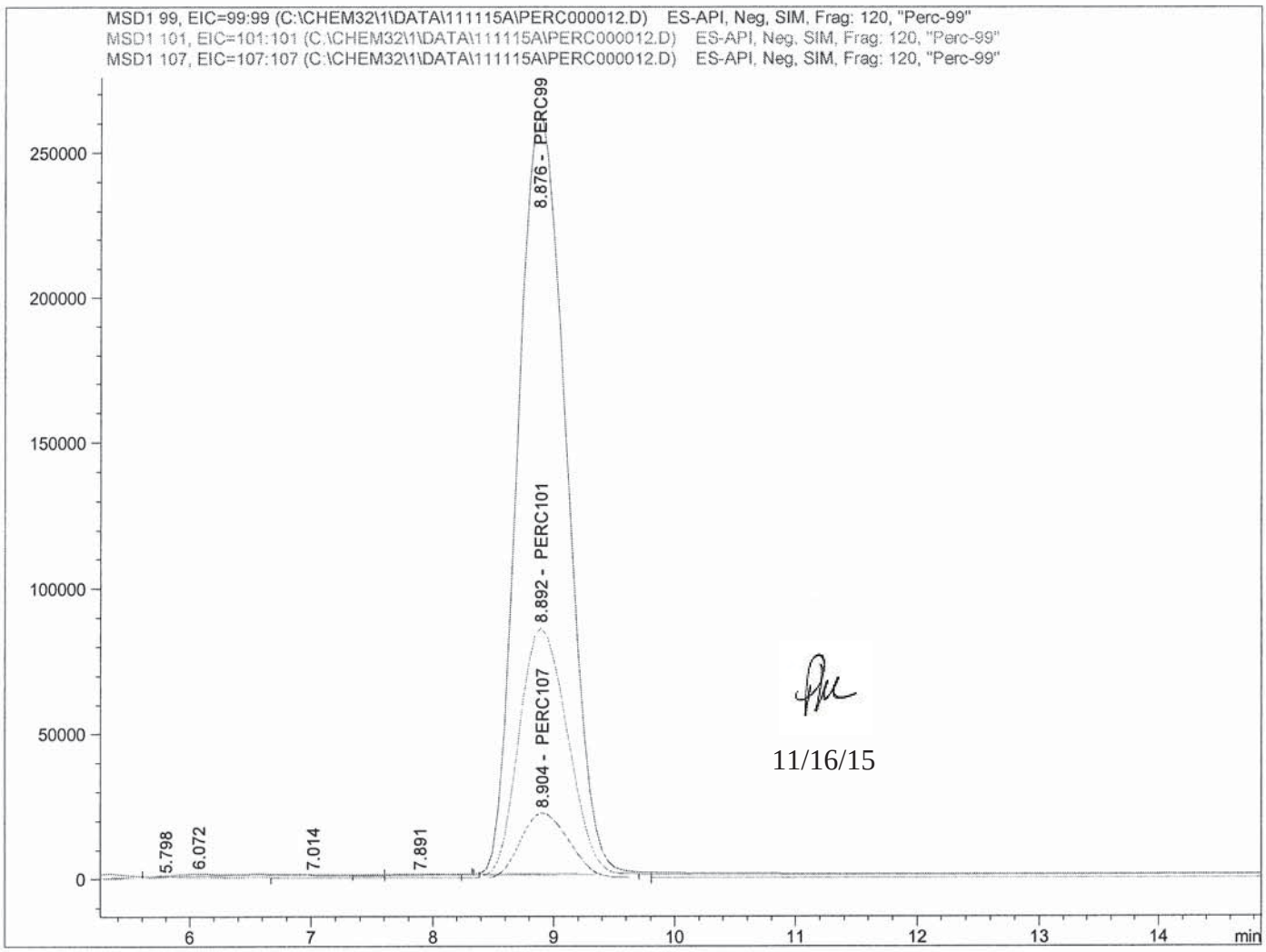

11/16/15

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : 11/13/2015 9:42:29 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

11-13-15

Data File C:\CHEM32\1\DATA\111115A\PERC000012.D
Sample Name: SEQ-CAL8

```
==================================================================
Acq. Operator   :                                Seq. Line :  12
Acq. Instrument : Instrument 1                    Location : Vial 98
Injection Date  : 11/11/2015 6:34:15 PM                Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed    : 11/13/2015 9:43:12 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.876	BBA	1	7.21782e6	8.48638e-1	49.82637		PERC99

Totals without ISTD(s) : 49.82637

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.892	BBA	1	2.34163e6	2.60663	49.65108		PERC101

Totals without ISTD(s) : 49.65108

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.904	BBA I	1	6.14666e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

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*** End of Report ***

Data File C:\CHEM32\1\DATA\111115A\PERC000013.D
Sample Name: SEQ-ICV1

==========

Acq. Operator : Seq. Line : 13
Acq. Instrument : Instrument 1 Location : Vial 99
Injection Date : 11/11/2015 6:51:59 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/13/2015 9:43:59 AM
(modified after loading)

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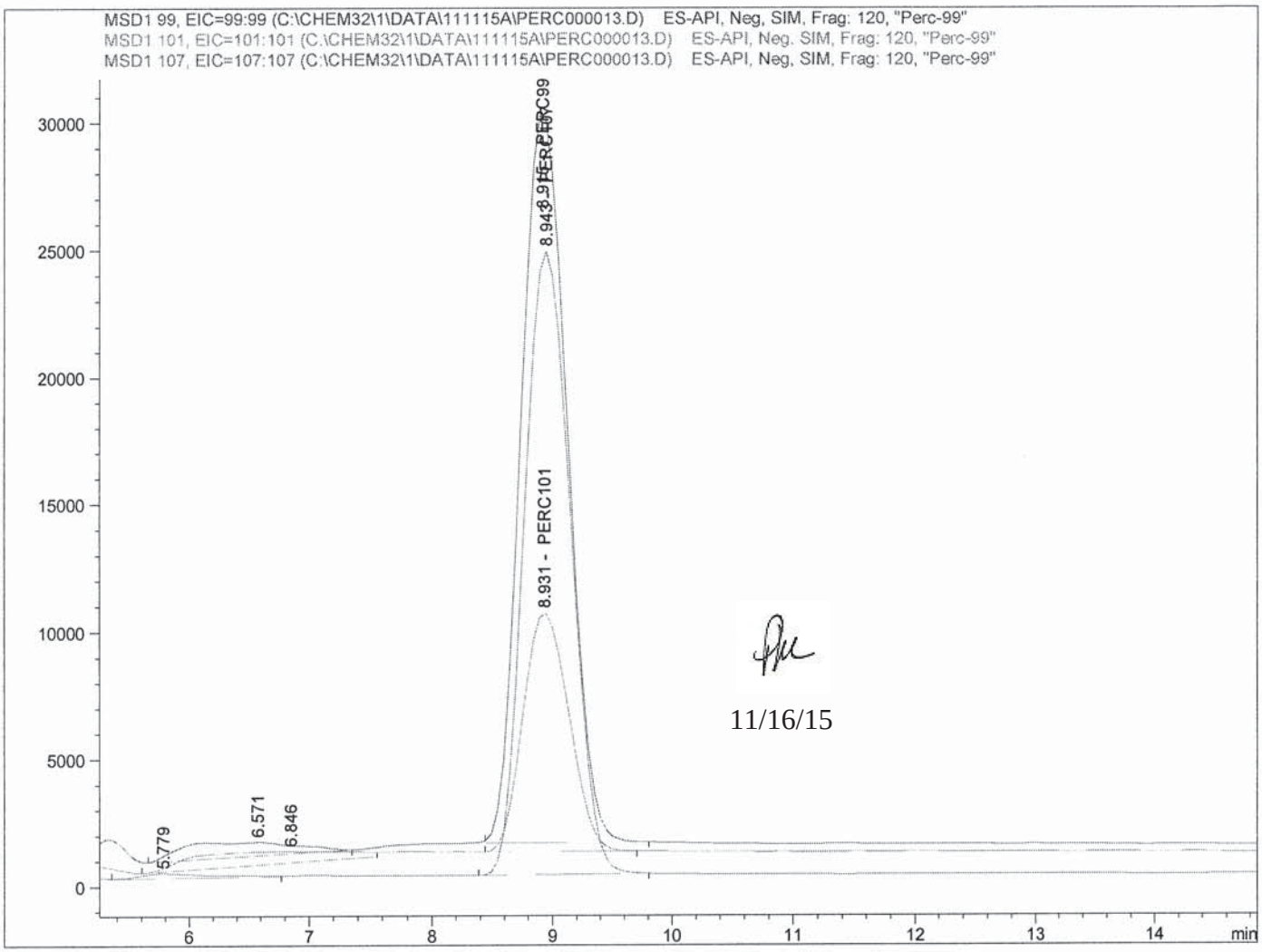

11/16/15

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : Friday, November 13, 2015 9:43:59 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

11-13-15

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\111115A\PERC000013.D
Sample Name: SEQ-ICV1

```
==================================================================
Acq. Operator   :                                Seq. Line :  13
Acq. Instrument : Instrument 1                    Location : Vial 99
Injection Date  : 11/11/2015 6:51:59 PM                Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed    : 11/13/2015 9:43:59 AM
                  (modified after loading)
==================================================================
```

1	5.00000	PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.915	BBA	1	7.66770e5	8.48638e-1	4.97440		PERC99

Totals without ISTD(s) : 4.97440

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.931	BBA	1	2.49299e5	2.60545	4.96540		PERC101

Totals without ISTD(s) : 4.96540

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.943	BBA I	1	6.54059e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

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*** End of Report ***

Print of all graphic windows
Data File : C:\CHEM32\1\DATA\112015\PERC000002.D
Sample Name : SEQ-TUN1

Acq. Operator	:	Seq. Line :	2
Acq. Instrument	: Instrument 1	Location :	Vial 1
Injection Date	: 11/20/2015 3:39:07 PM	Inj :	1
		Inj Volume :	100.0 µl
Acq. Method	: C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_SC		
Last changed	: 11/18/2015 10:54:05 AM		
Analysis Method	: C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M		
Last changed	: 11/20/2015 5:16:54 PM		

Current Chromatogram(s)

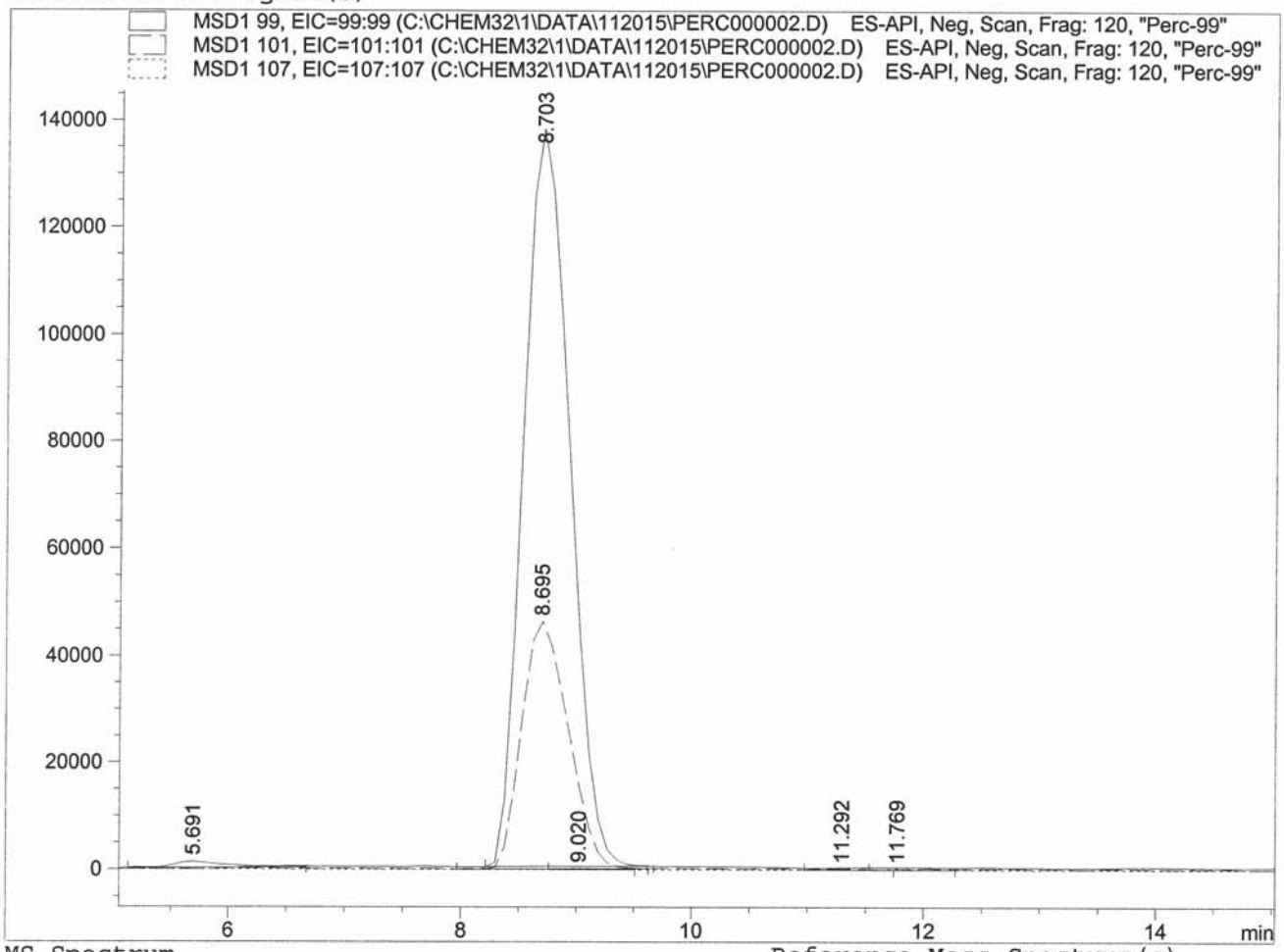

MS Spectrum

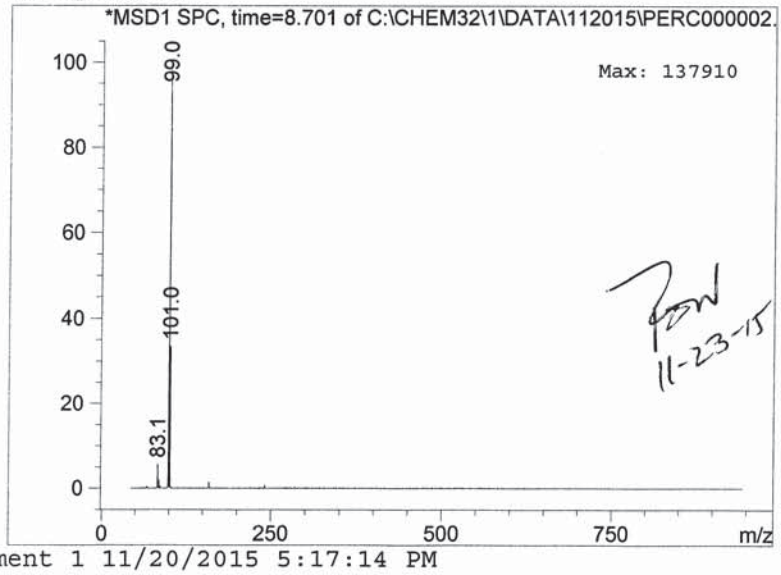

Reference Mass Spectrum(a)

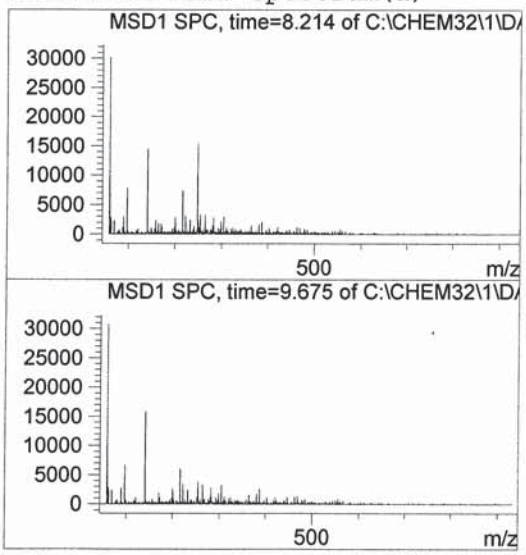

11/23/15

Data File C:\CHEM32\1\DATA\112015\PERC000002.D
Sample Name: SEQ-TUN1

==========

Acq. Operator : Seq. Line : 2
Acq. Instrument : Instrument 1 Location : Vial 1
Injection Date : 11/20/2015 3:39:07 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_SC
Last changed : 11/18/2015 10:54:05 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 11/20/2015 5:17:55 PM
(modified after loading)

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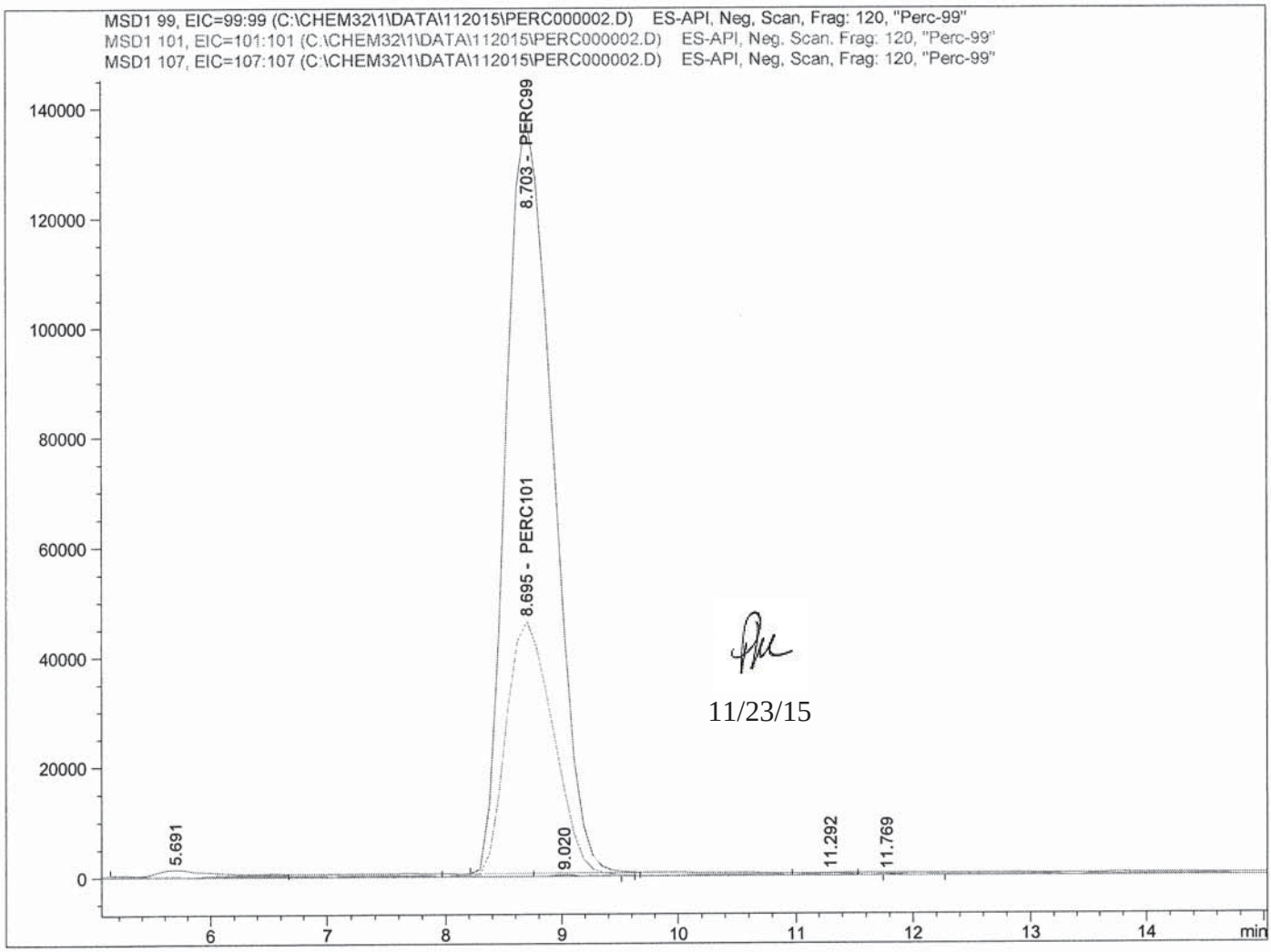

11/23/15

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Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 11/20/2015 5:17:55 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

11-23-15

Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\112015\PERC000002.D
Sample Name: SEQ-TUN1

```
==================================================================
Acq. Operator   :                                Seq. Line :   2
Acq. Instrument : Instrument 1                    Location : Vial 1
Injection Date  : 11/20/2015 3:39:07 PM                Inj :   1
                                               Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_SC
Last changed    : 11/18/2015 10:54:05 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 11/20/2015 5:17:55 PM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.703	BBA	1	3.82984e6	0.00000	0.00000		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.695	VV	1	1.30177e6	0.00000	0.00000		PERC101

Totals without ISTD(s) : 0.00000

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.700		1	-	-	-		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : ISTD compound(s) not found

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*** End of Report ***

Data File C:\CHEM32\1\DATA\112015\PERC000005.D
Sample Name: SEQ-CCV1

==========

Acq. Operator : Seq. Line : 5
Acq. Instrument : Instrument 1 Location : Vial 3
Injection Date : 11/20/2015 4:32:45 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 11/20/2015 5:17:55 PM
(modified after loading)

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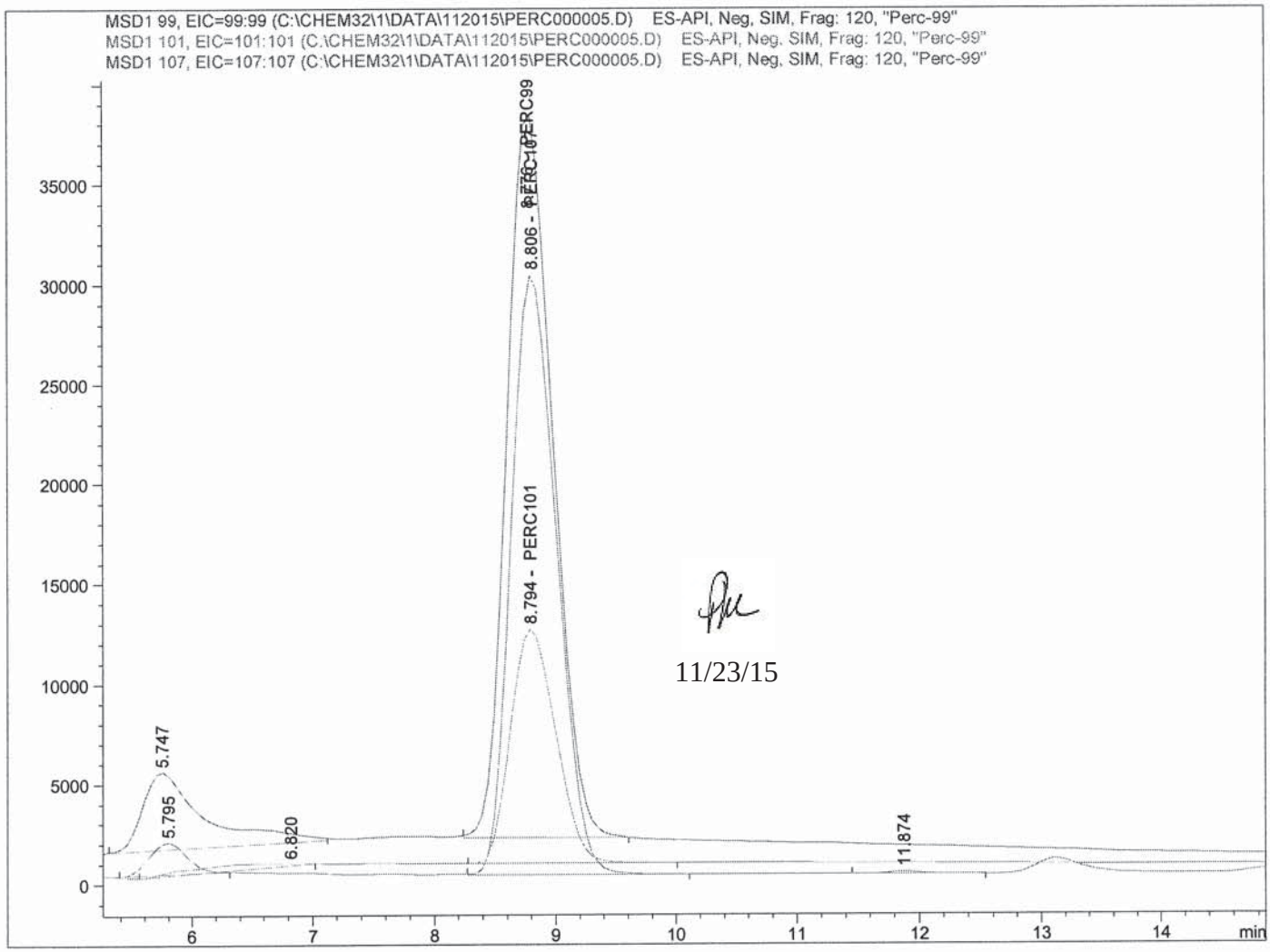

11/23/15

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Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 11/20/2015 5:17:55 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

11-23-15

Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\112015\PERC000005.D
Sample Name: SEQ-CCV1

```
==================================================================
Acq. Operator   :                                  Seq. Line :   5
Acq. Instrument : Instrument 1                      Location : Vial 3
Injection Date  : 11/20/2015 4:32:45 PM                  Inj :   1
                                                 Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 11/20/2015 5:17:55 PM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.776	BBA	1	9.49286e5	8.48638e-1	5.15190		PERC99

Totals without ISTD(s) : 5.15190

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.794	VBA	1	3.04865e5	2.60545	5.07969		PERC101

Totals without ISTD(s) : 5.07969

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.806	VB I	1	7.81848e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

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*** End of Report ***

Data File C:\CHEM32\1\DATA\112015\PERC000006.D
Sample Name: SEQ-LCV1

```
==================================================================
Acq. Operator   :                                  Seq. Line :   6
Acq. Instrument : Instrument 1                      Location : Vial 4
Injection Date  : 11/20/2015 4:50:33 PM                 Inj :   1
                                                 Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 11/20/2015 5:17:55 PM
                  (modified after loading)
==================================================================
```

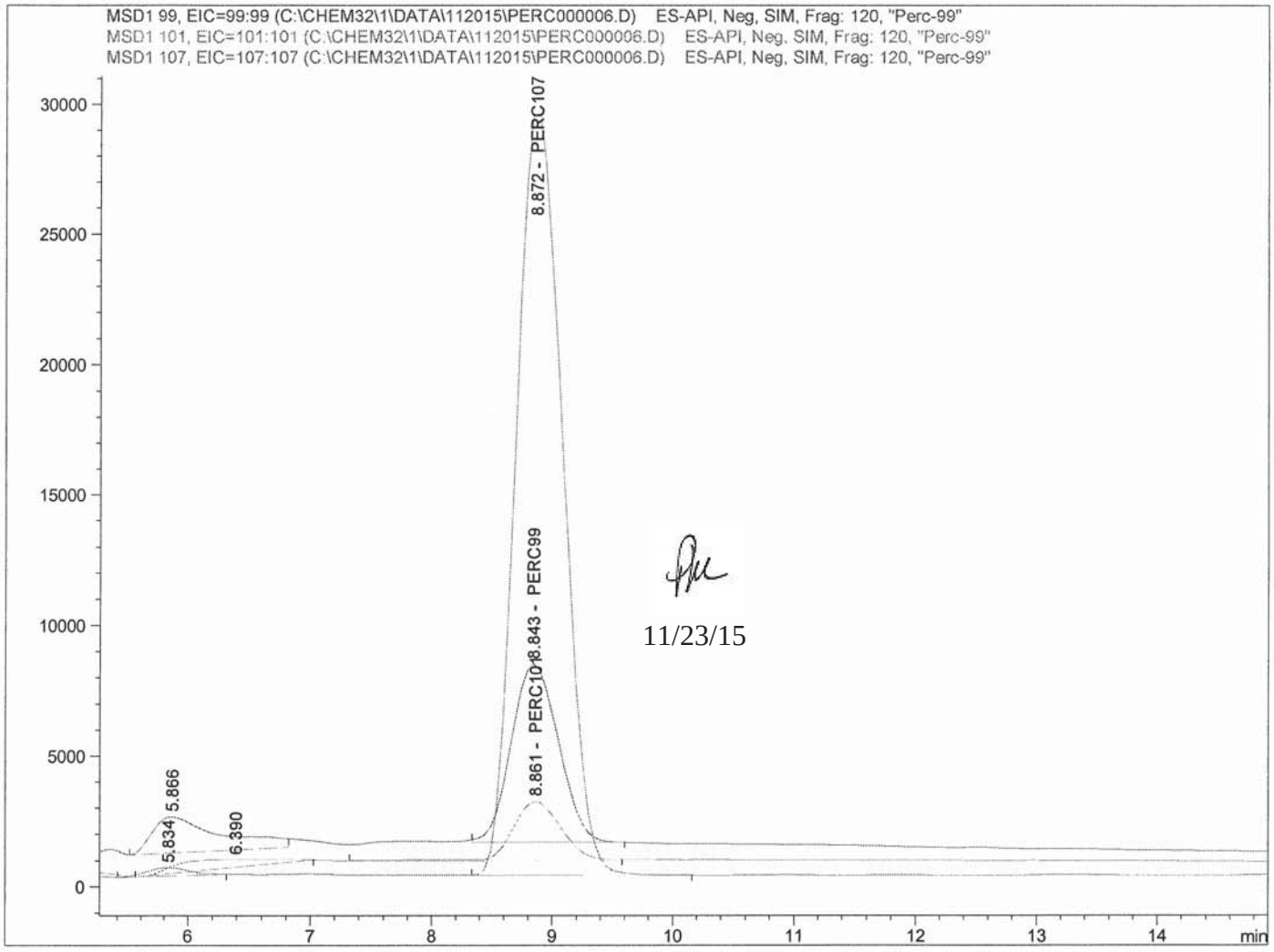

11/23/15

```
==================================================================
                      Internal Standard Report
==================================================================

Sorted By             :      Signal
Calib. Data Modified  :      11/20/2015 5:17:55 PM
Multiplier            :      1.0000
Dilution              :      1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:
ISTD  ISTD Amount   Name
  #     [ug/L]
----|-------------|-------------------------
```

11-23-15

Data File C:\CHEM32\1\DATA\112015\PERC000006.D
Sample Name: SEQ-LCV1

```
==================================================================
Acq. Operator   :                                Seq. Line :   6
Acq. Instrument : Instrument 1                    Location : Vial 4
Injection Date  : 11/20/2015 4:50:33 PM                Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 11/20/2015 5:17:55 PM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.843	BBA	1	1.84295e5	8.48638e-1	9.99232e-1		PERC99

Totals without ISTD(s) : 9.99232e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.861	BV	1	6.13645e4	2.60545	1.02148		PERC101

Totals without ISTD(s) : 1.02148

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.872	BB I	1	7.82599e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\112015\PERC000007.D
Sample Name: SEQ-LCV2

==========

Acq. Operator : Seq. Line : 7
Acq. Instrument : Instrument 1 Location : Vial 83
Injection Date : 11/20/2015 5:08:25 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 11/20/2015 5:17:55 PM
(modified after loading)

==========

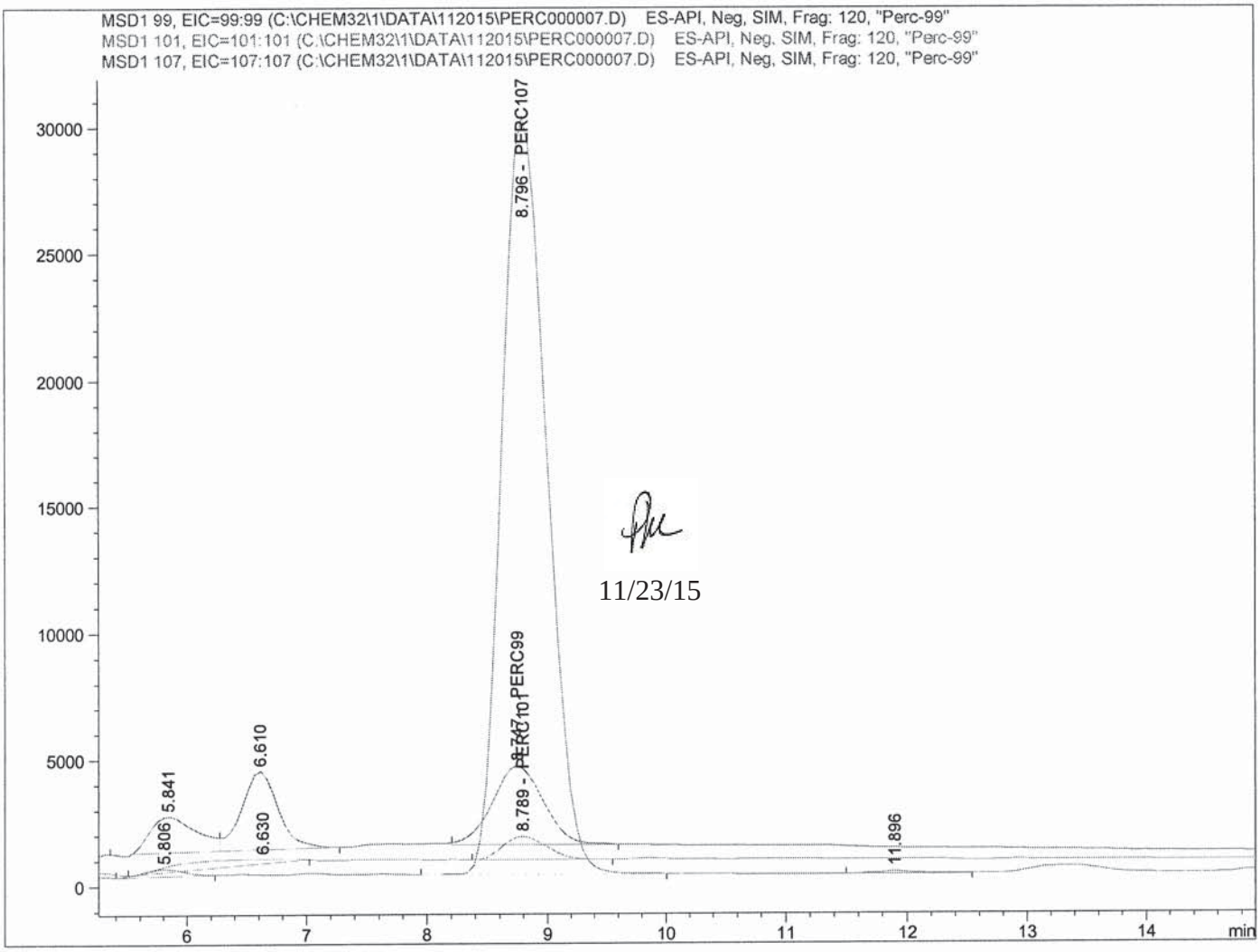

11/23/15

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : 11/20/2015 5:17:55 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

11-23-15

Data File C:\CHEM32\1\DATA\112015\PERC000007.D
Sample Name: SEQ-LCV2

```
==================================================================
Acq. Operator   :                                  Seq. Line :   7
Acq. Instrument : Instrument 1                      Location : Vial 83
Injection Date  : 11/20/2015 5:08:25 PM                  Inj :   1
                                                 Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 11/20/2015 5:17:55 PM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.747	BBA	1	9.09645e4	8.48638e-1	4.91246e-1		PERC99

Totals without ISTD(s) : 4.91246e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.789	VV	1	2.33303e4	2.60545	3.86818e-1		PERC101

Totals without ISTD(s) : 3.86818e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.796	VB I	1	7.85716e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\112015\PERC000008.D
Sample Name: SEQ-IFA1

==========

Acq. Operator : Seq. Line : 8
Acq. Instrument : Instrument 1 Location : Vial 5
Injection Date : 11/20/2015 5:26:24 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 11/21/2015 8:58:41 AM
(modified after loading)

==========

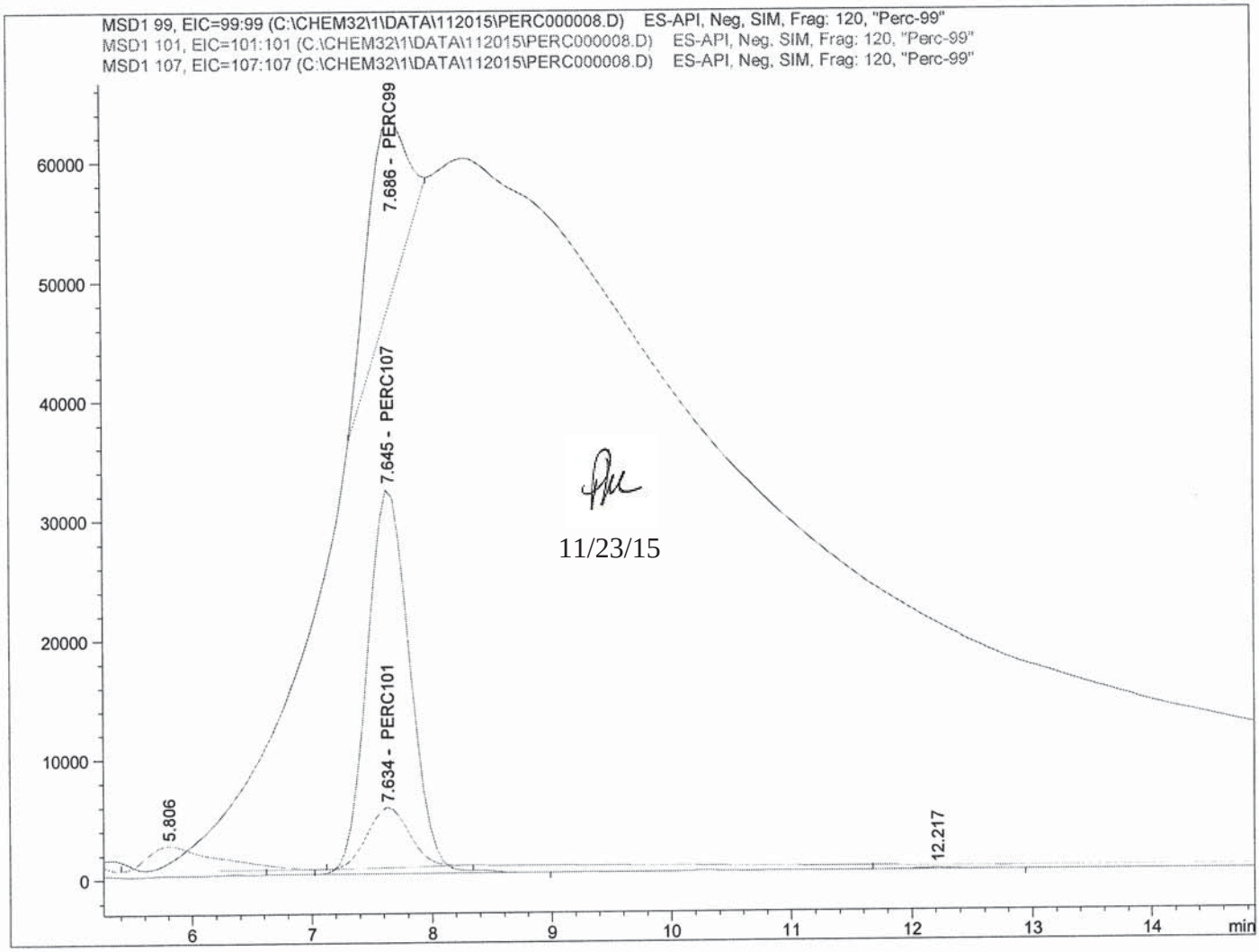

11/23/15

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : 11/21/2015 8:56:53 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

11-23-15

Data File C:\CHEM32\1\DATA\112015\PERC000008.D
Sample Name: SEQ-IFA1

```
==================================================================
Acq. Operator   :                                  Seq. Line :   8
Acq. Instrument : Instrument 1                      Location : Vial 5
Injection Date  : 11/20/2015 5:26:24 PM                  Inj :   1
                                                 Inj Volume : 100.0 µl

Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 11/21/2015 8:58:41 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
7.686	BBA	1	3.41536e5	8.48638e-1	1.83816		PERC99

Totals without ISTD(s) : 1.83816

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
7.634	BBA	1	1.21946e5	2.60545	2.01499		PERC101

Totals without ISTD(s) : 2.01499

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
7.645	BV I	1	7.88400e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

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*** End of Report ***

Data File C:\CHEM32\1\DATA\112015\PERC000017.D
Sample Name: 5K20010-BLK1

Acq. Operator	:	Seq. Line	: 17
Acq. Instrument	: Instrument 1	Location	: Vial 12
Injection Date	: 11/20/2015 8:06:45 PM	Inj	: 1
		Inj Volume	: 100.0 µl
Acq. Method	: C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M		
Last changed	: 11/18/2015 10:55:16 AM		
Analysis Method	: C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M		
Last changed	: 11/21/2015 9:05:13 AM (modified after loading)		

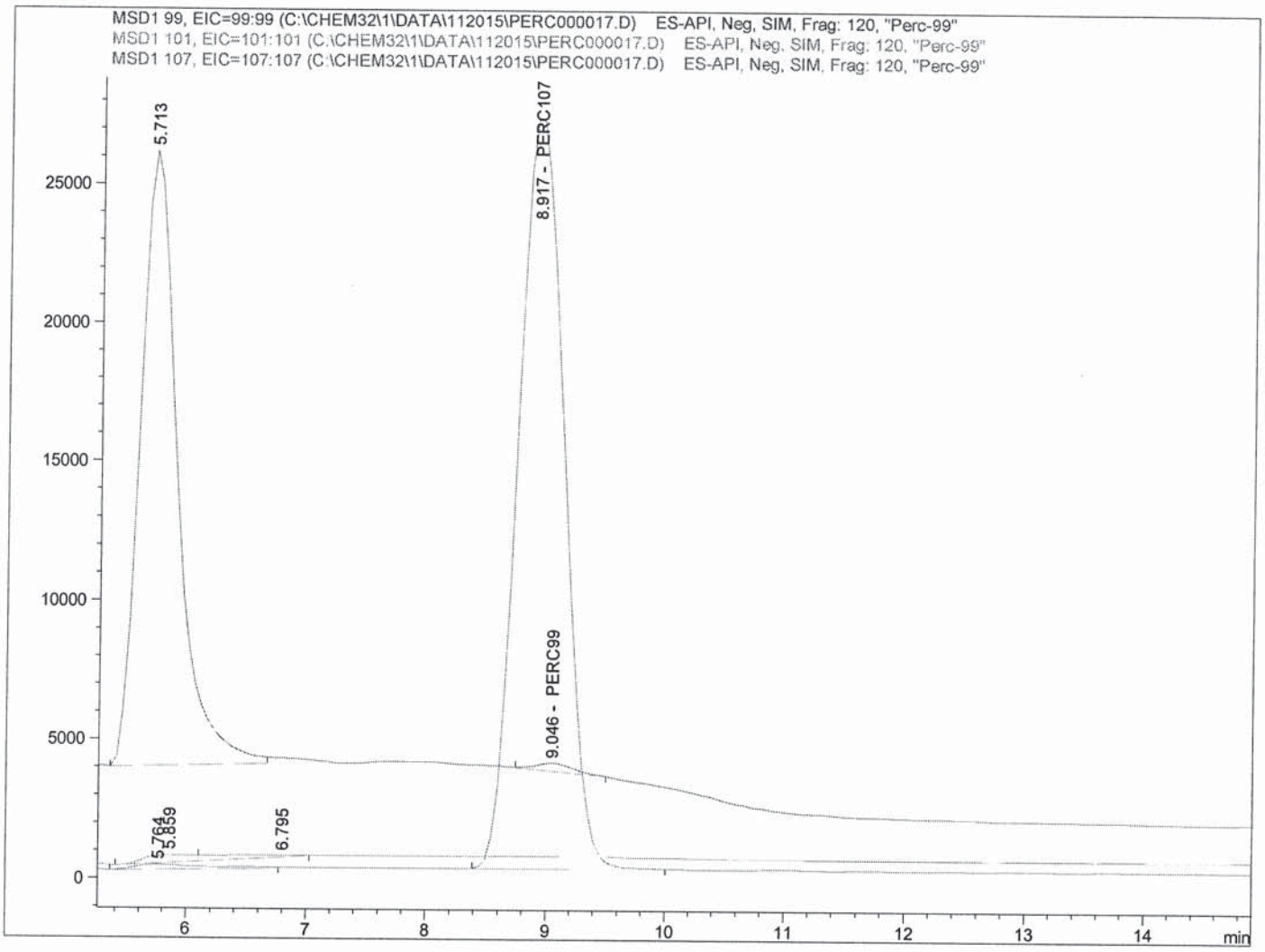

Internal Standard Report

11/23/15

Sorted By	:	Signal
Calib. Data Modified	:	11/21/2015 9:04:21 AM
Multiplier	:	1.0000
Dilution	:	1.0000

Do not use Multiplier & Dilution Factor with ISTDs

11-23-15

Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\112015\PERC000017.D
Sample Name: 5K20010-BLK1

```
==================================================================
Acq. Operator   :                                Seq. Line :  17
Acq. Instrument : Instrument 1                    Location : Vial 12
Injection Date  : 11/20/2015 8:06:45 PM                Inj :   1
                                               Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 11/21/2015 9:05:13 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
9.046	BBA	1	6082.27441	8.48638e-1	3.54678e-2		PERC99

Totals without ISTD(s) : 3.54678e-2

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.920		1	-	-	-		PERC101

Totals without ISTD(s) : 0.00000

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.917	BBA I	1	7.27654e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

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*** End of Report ***

Data File C:\CHEM32\1\DATA\112015\PERC000018.D
Sample Name: 5K20010-BS1

==========

Acq. Operator : Seq. Line : 18
Acq. Instrument : Instrument 1 Location : Vial 13
Injection Date : 11/20/2015 8:24:37 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 11/21/2015 9:06:13 AM
(modified after loading)

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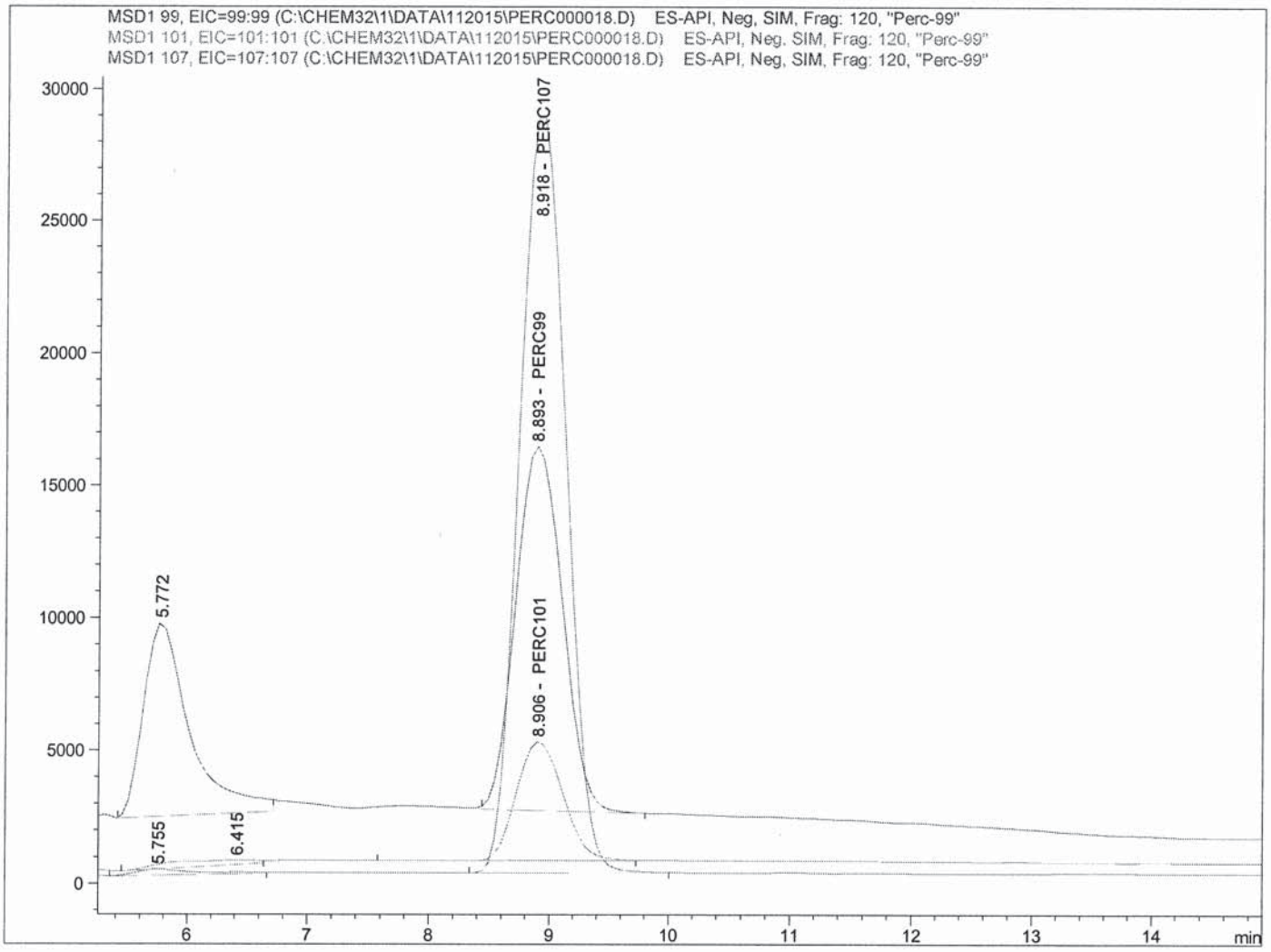

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : 11/21/2015 9:04:21 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

11/23/15

11-23-15

Data File C:\CHEM32\1\DATA\112015\PERC000018.D
Sample Name: 5K20010-BS1

```
==================================================================
Acq. Operator   :                                Seq. Line :  18
Acq. Instrument : Instrument 1                    Location : Vial 13
Injection Date  : 11/20/2015 8:24:37 PM                Inj :   1
                                               Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 11/21/2015 9:06:13 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.893	BB	1	3.73047e5	8.48638e-1	2.04644		PERC99

Totals without ISTD(s) : 2.04644

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.906	BBA	1	1.20900e5	2.60545	2.03621		PERC101

Totals without ISTD(s) : 2.03621

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.918	BBA I	1	7.73492e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

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*** End of Report ***

Data File C:\CHEM32\1\DATA\112015\PERC000019.D
Sample Name: 1511179-01@2

==========

Acq. Operator	:	Seq. Line	: 19
Acq. Instrument	: Instrument 1	Location	: Vial 14
Injection Date	: 11/20/2015 8:42:27 PM	Inj	: 1
		Inj Volume	: 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 11/21/2015 9:17:40 AM
(modified after loading)

==========

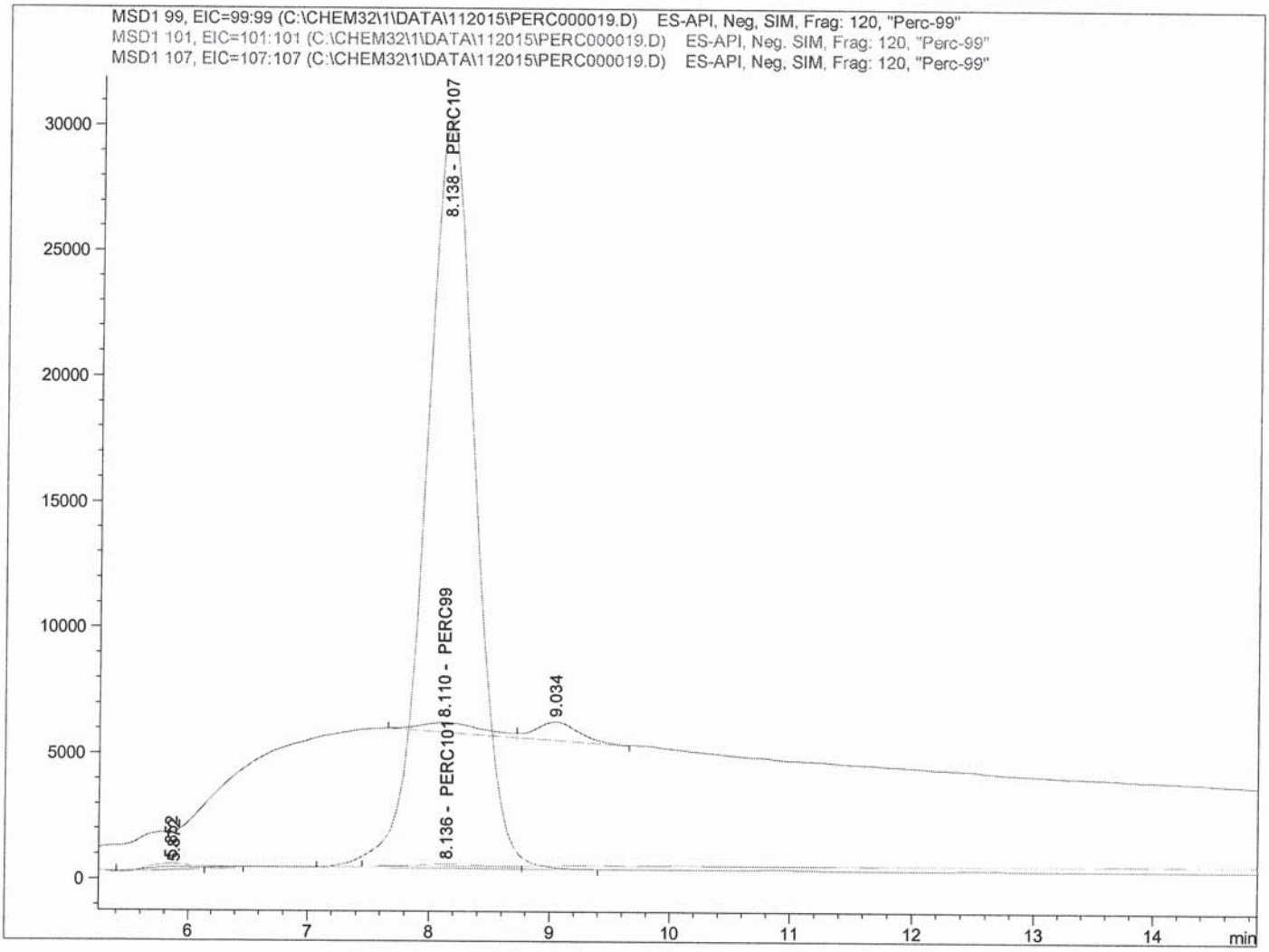

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : 11/21/2015 9:16:53 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

11/23/15

11-23-15

Data File C:\CHEM32\1\DATA\112015\PERC000019.D
Sample Name: 1511179-01@2

```
==================================================================
Acq. Operator   :                                  Seq. Line :  19
Acq. Instrument : Instrument 1                      Location : Vial 14
Injection Date  : 11/20/2015 8:42:27 PM                 Inj :   1
                                                 Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 11/21/2015 9:17:40 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.110	BV	1	1.46547e4	8.48638e-1	7.41437e-2		PERC99

Totals without ISTD(s) : 7.41437e-2

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.136	BV	1	2944.92993	2.60545	4.57436e-2		PERC101

Totals without ISTD(s) : 4.57436e-2

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.138	BB I	1	8.38680e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

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*** End of Report ***

Data File C:\CHEM32\1\DATA\112015\PERC000020.D
Sample Name: 1511179-02

==========

Acq. Operator : Seq. Line : 20
Acq. Instrument : Instrument 1 Location : Vial 15
Injection Date : 11/20/2015 9:00:15 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 11/21/2015 9:17:40 AM
(modified after loading)

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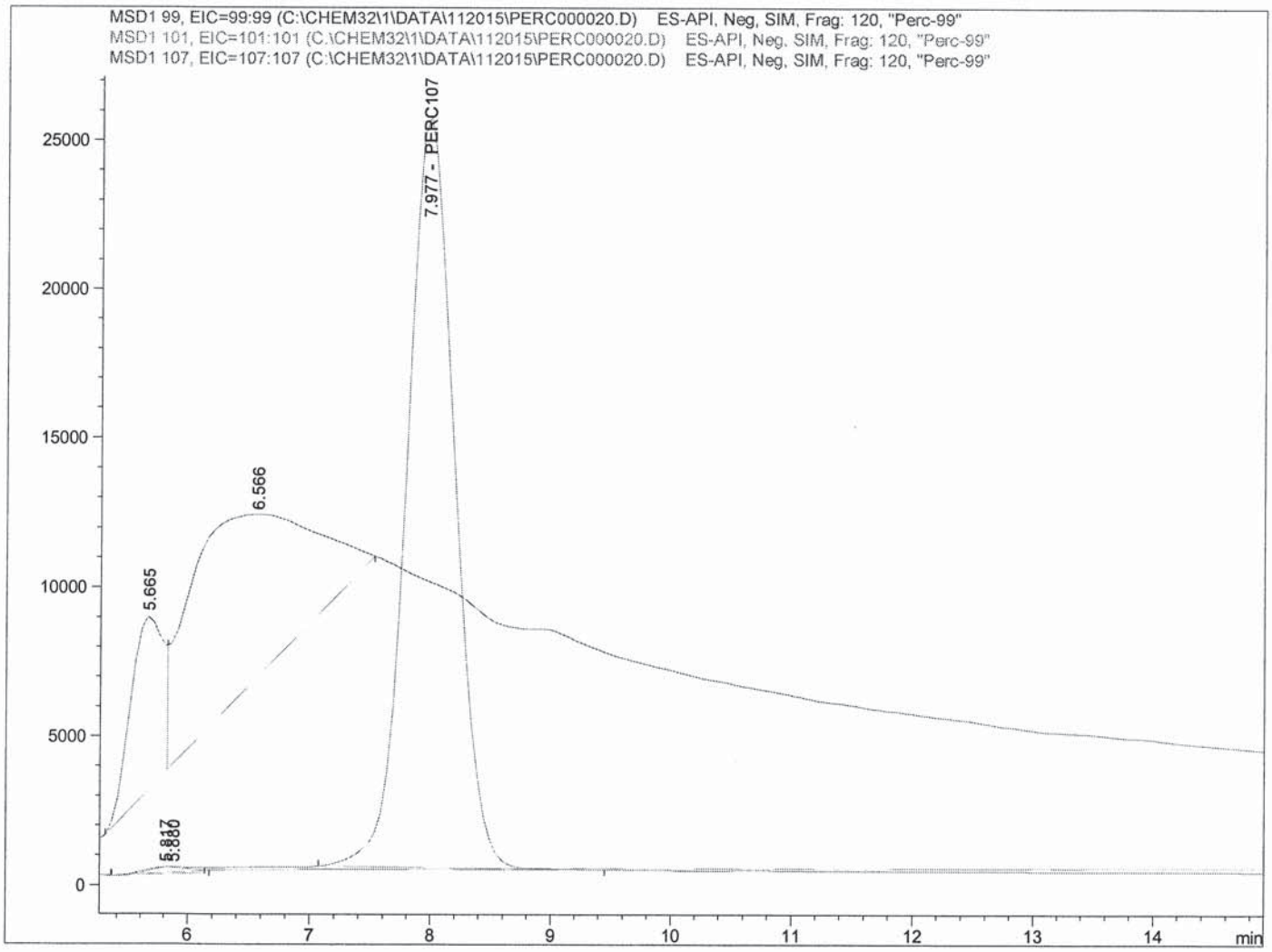

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Internal Standard Report

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11/23/15

Sorted By : Signal
Calib. Data Modified : 11/21/2015 9:16:53 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

11-23-15

Data File C:\CHEM32\1\DATA\112015\PERC000020.D
Sample Name: 1511179-02

```
==================================================================
Acq. Operator   :                                  Seq. Line :  20
Acq. Instrument : Instrument 1                      Location : Vial 15
Injection Date  : 11/20/2015 9:00:15 PM                 Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 11/21/2015 9:17:40 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.140		1	-	-	-		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.140		1	-	-	-		PERC101

Totals without ISTD(s) : 0.00000

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
7.977	BB I	1	6.98959e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\112015\PERC000024.D
Sample Name: 1511179-04@5

==========

Acq. Operator : Seq. Line : 24
Acq. Instrument : Instrument 1 Location : Vial 19
Injection Date : 11/20/2015 10:11:40 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 11/21/2015 9:17:40 AM
(modified after loading)

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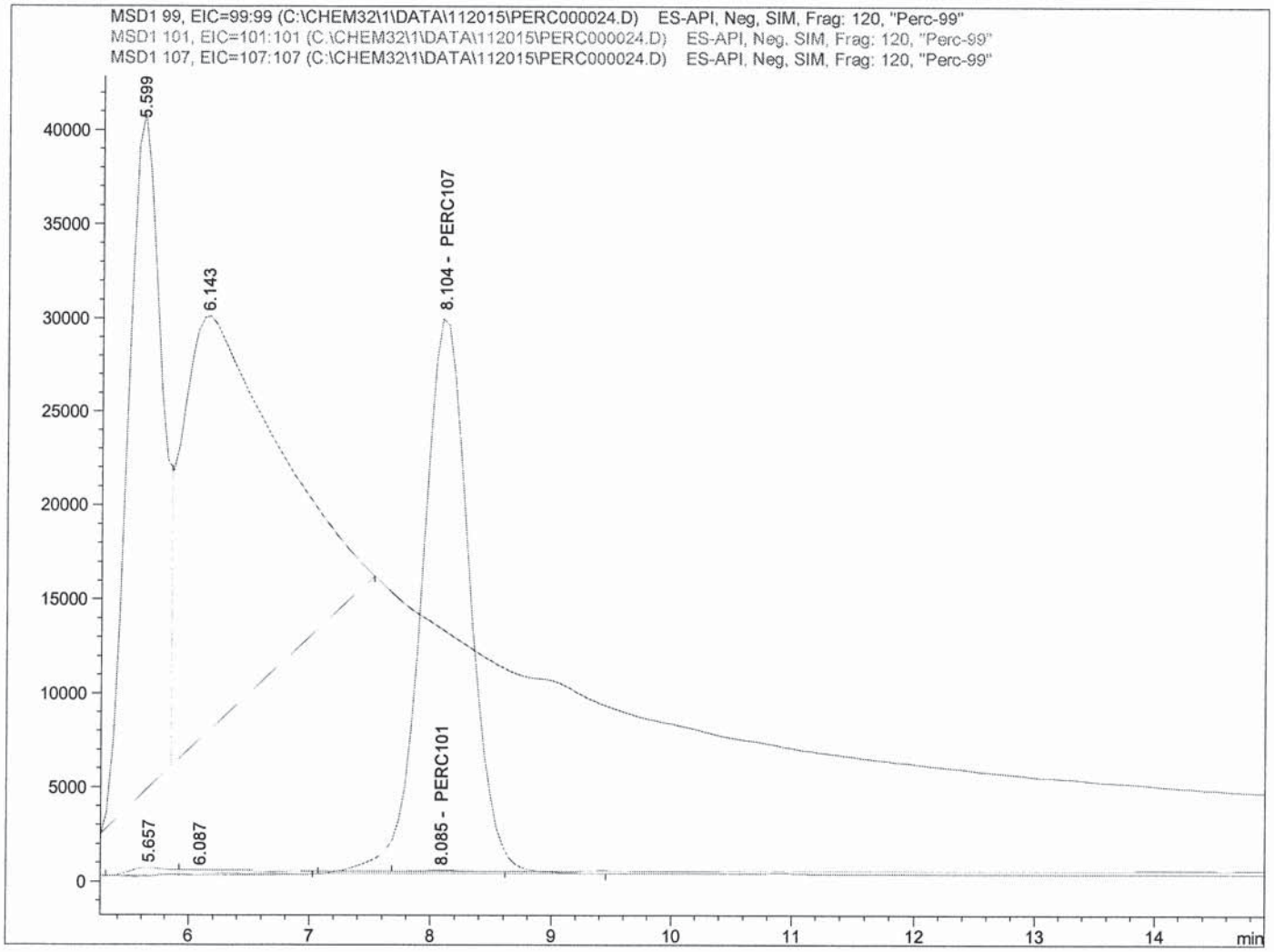

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Internal Standard Report

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11/23/15

Sorted By : Signal
Calib. Data Modified : 11/21/2015 9:16:53 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

11-23-15

Data File C:\CHEM32\1\DATA\112015\PERC000024.D
Sample Name: 1511179-04@5

```
==================================================================
Acq. Operator   :                                Seq. Line :  24
Acq. Instrument : Instrument 1                    Location : Vial 19
Injection Date  : 11/20/2015 10:11:40 PM               Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 11/21/2015 9:17:40 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.140		1	-	-	-		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.085	BV	1	1728.21558	2.60545	2.78651e-2		PERC101

Totals without ISTD(s) : 2.78651e-2

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.104	BB I	1	8.07958e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\112015\PERC000025.D
Sample Name: 1511179-05@5

==========

Acq. Operator : Seq. Line : 25
Acq. Instrument : Instrument 1 Location : Vial 20
Injection Date : 11/20/2015 10:29:32 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 11/21/2015 9:17:40 AM
(modified after loading)

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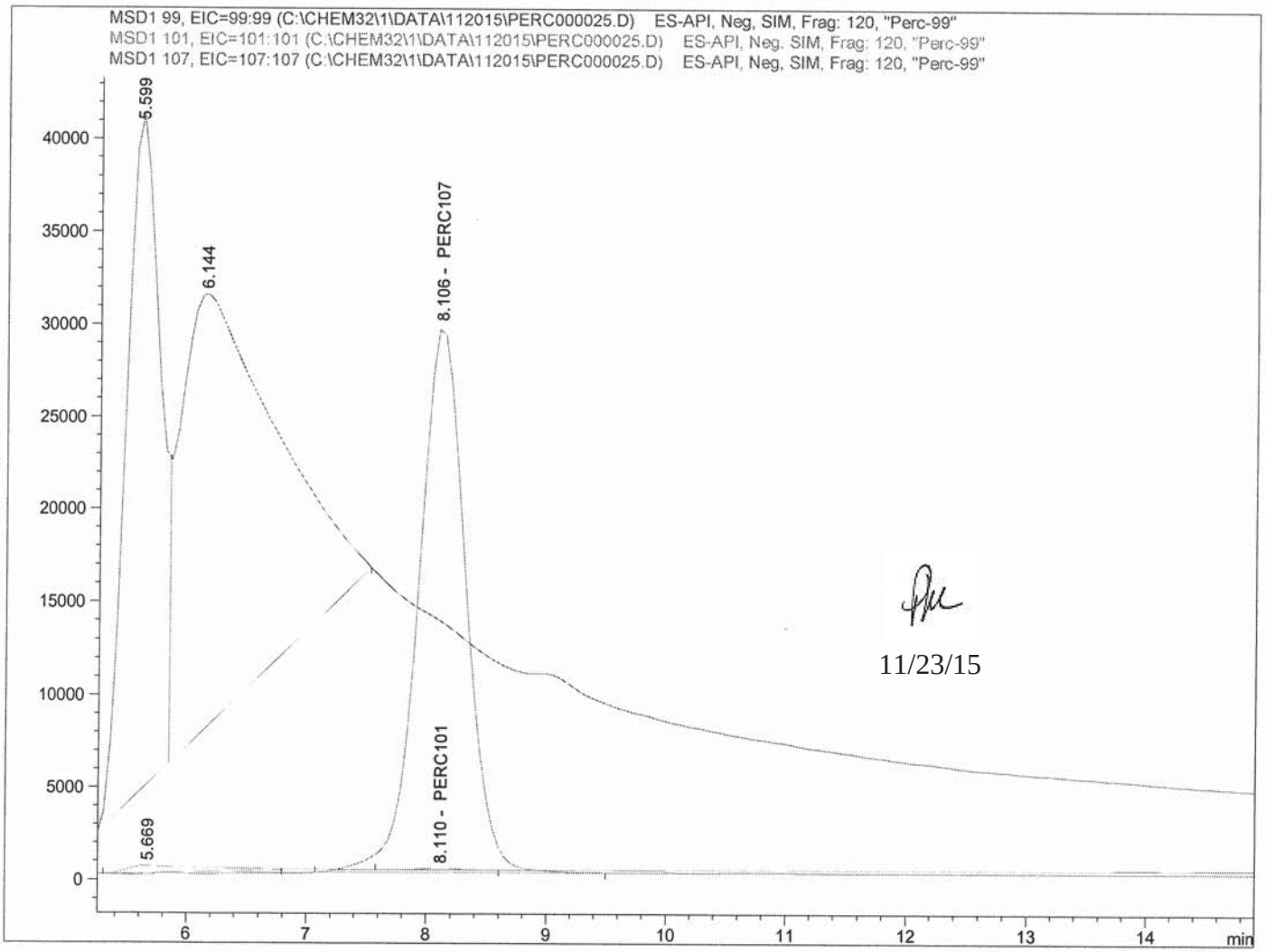

11/23/15

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : 11/21/2015 9:16:53 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

11-23-15

Data File C:\CHEM32\1\DATA\112015\PERC000025.D
Sample Name: 1511179-05@5

```
==================================================================
Acq. Operator   :                                  Seq. Line :  25
Acq. Instrument : Instrument 1                      Location : Vial 20
Injection Date  : 11/20/2015 10:29:32 PM                 Inj :   1
                                                 Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 11/21/2015 9:17:40 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.140		1	-	-	-		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.110	BV	1	2411.20508	2.60545	3.91403e-2		PERC101

Totals without ISTD(s) : 3.91403e-2

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.106	BB I	1	8.02531e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\112015\PERC000026.D
Sample Name: 1511179-06@5

==========

Acq. Operator : Seq. Line : 26
Acq. Instrument : Instrument 1 Location : Vial 21
Injection Date : 11/20/2015 10:47:31 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 11/21/2015 9:24:44 AM
(modified after loading)
Additional Info : Peak(s) manually integrated

==========

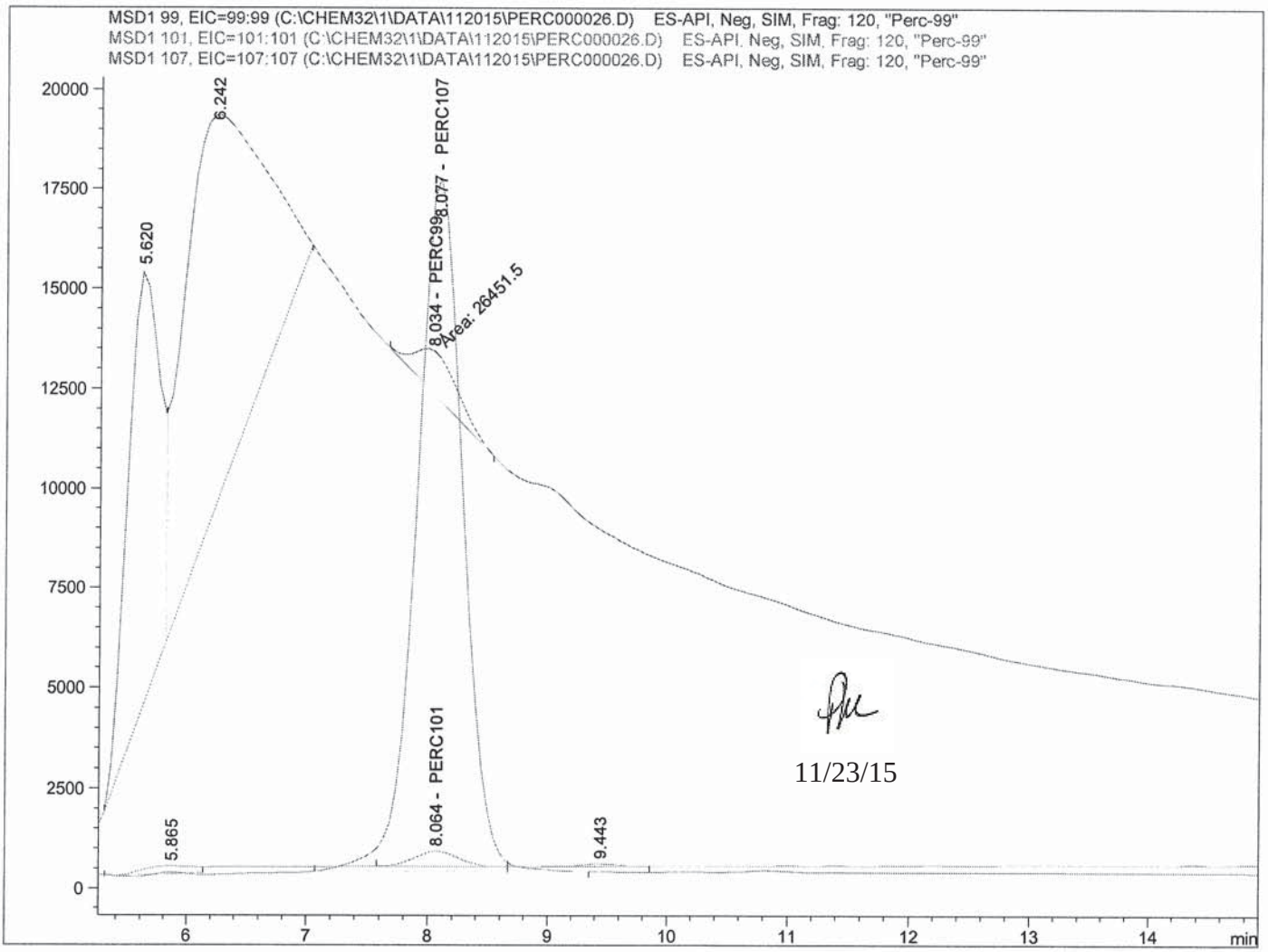

11/23/15

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 11/21/2015 9:16:53 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

11-23-15

Data File C:\CHEM32\1\DATA\112015\PERC000026.D
Sample Name: 1511179-06@5

```
==================================================================
Acq. Operator   :                                Seq. Line :  26
Acq. Instrument : Instrument 1                    Location : Vial 21
Injection Date  : 11/20/2015 10:47:31 PM               Inj :   1
                                               Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 11/21/2015 9:24:44 AM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
==================================================================

----|-------------|-------------------------
  1      5.00000   PERC107


Signal 1: MSD1 99, EIC=99:99

RetTime  Type  ISTD    Area     Amt/Area    Amount   Grp   Name
 [min]         used              ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.034 MM        1 2.64515e4  8.48638e-1 2.41502e-1    PERC99

Totals without ISTD(s) :             2.41502e-1



Signal 2: MSD1 101, EIC=101:101

RetTime  Type  ISTD    Area     Amt/Area    Amount   Grp   Name
 [min]         used              ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.064 BV        1 9757.93457    2.60545 2.73519e-1    PERC101

Totals without ISTD(s) :             2.73519e-1



Signal 3: MSD1 107, EIC=107:107

RetTime  Type  ISTD    Area     Amt/Area    Amount   Grp   Name
 [min]         used              ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.077 BB   I    1 4.64753e5     1.00000    5.00000    PERC107

Totals without ISTD(s) :                0.00000


==================================================================
                         *** End of Report ***
```

Print of window 38: Current Chromatogram(s)
Data File : C:\CHEM32\1\DATA\112015\PERC000026.D
Sample Name : 1511179-06@5

==========

Acq. Operator : Seq. Line : 26
Acq. Instrument : Instrument 1 Location : Vial 21
Injection Date : 11/20/2015 10:47:31 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 11/21/2015 9:24:44 AM
(modified after loading)

Current Chromatogram(s)

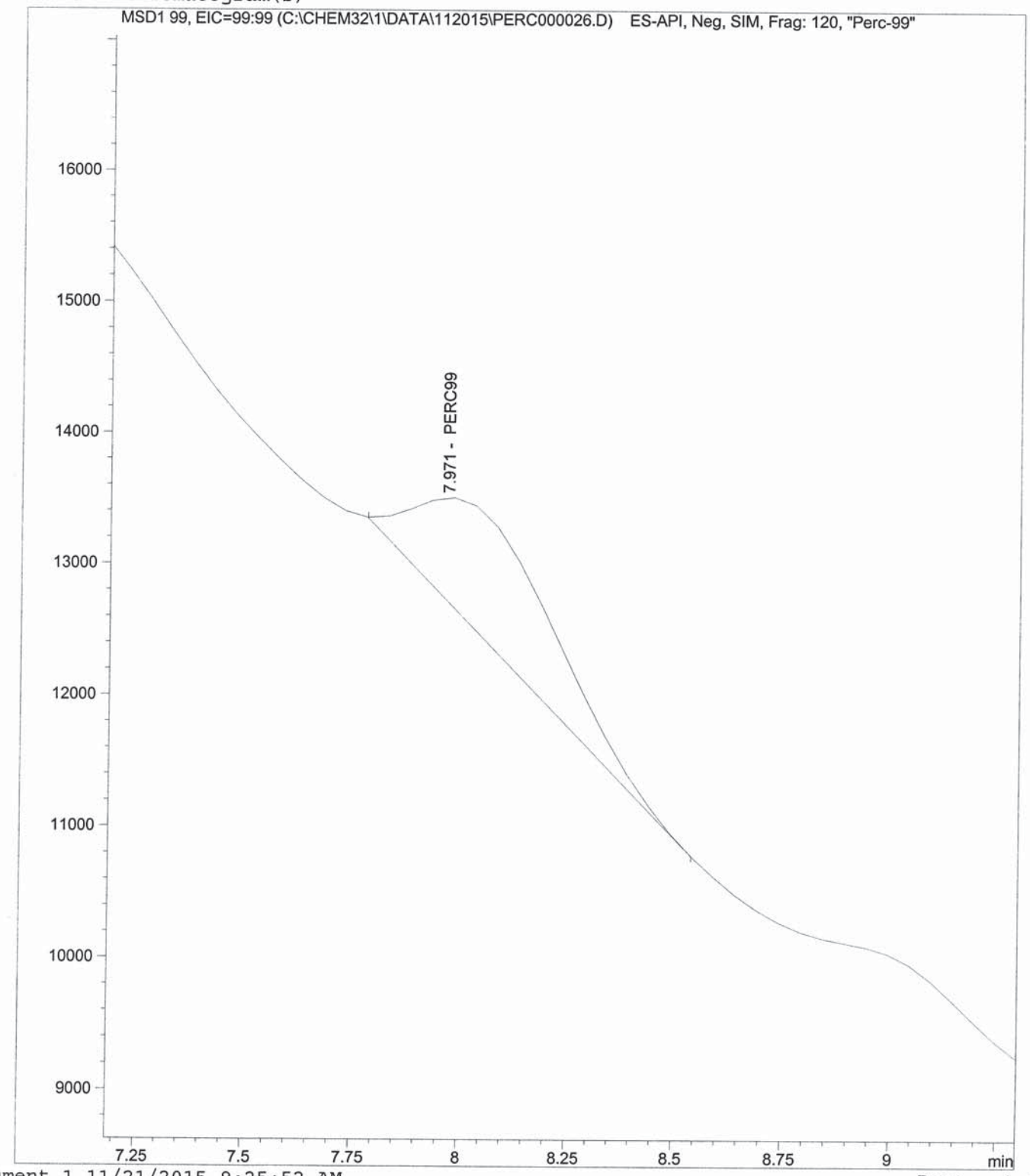

Print of window 38: Current Chromatogram(s)
Data File : C:\CHEM32\1\DATA\112015\PERC000026.D
Sample Name : 1511179-06@5

==========

Acq. Operator : Seq. Line : 26
Acq. Instrument : Instrument 1 Location : Vial 21
Injection Date : 11/20/2015 10:47:31 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 11/21/2015 9:24:44 AM
(modified after loading)
Additional Info : Peak(s) manually integrated

Current Chromatogram(s)

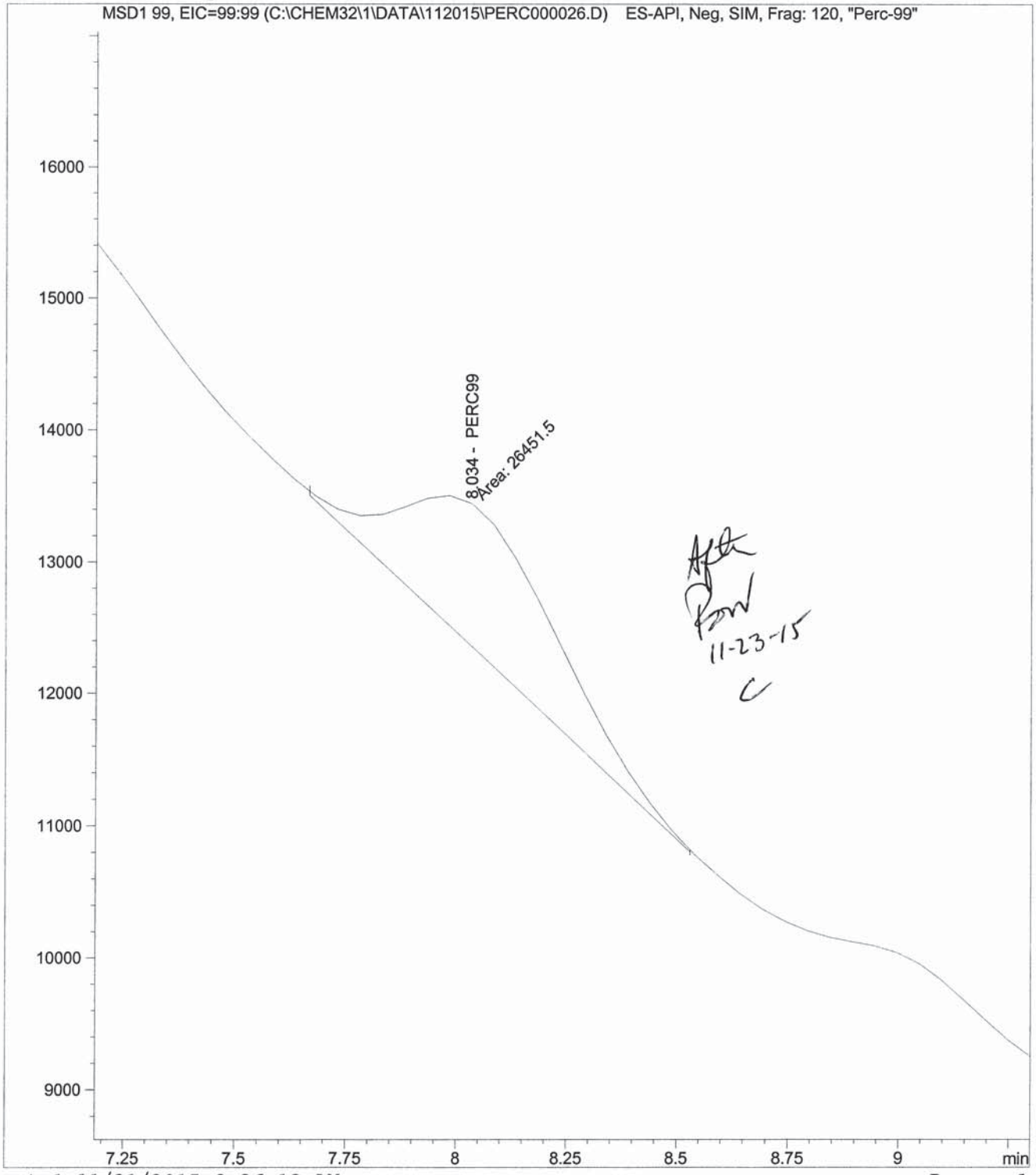

Data File C:\CHEM32\1\DATA\112015\PERC000028.D
Sample Name: SEQ-CCV2

==========

Acq. Operator	:	Seq. Line	: 28
Acq. Instrument	: Instrument 1	Location	: Vial 3
Injection Date	: 11/20/2015 11:23:07 PM	Inj	: 1
		Inj Volume	: 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 11/21/2015 9:28:01 AM
(modified after loading)

==========

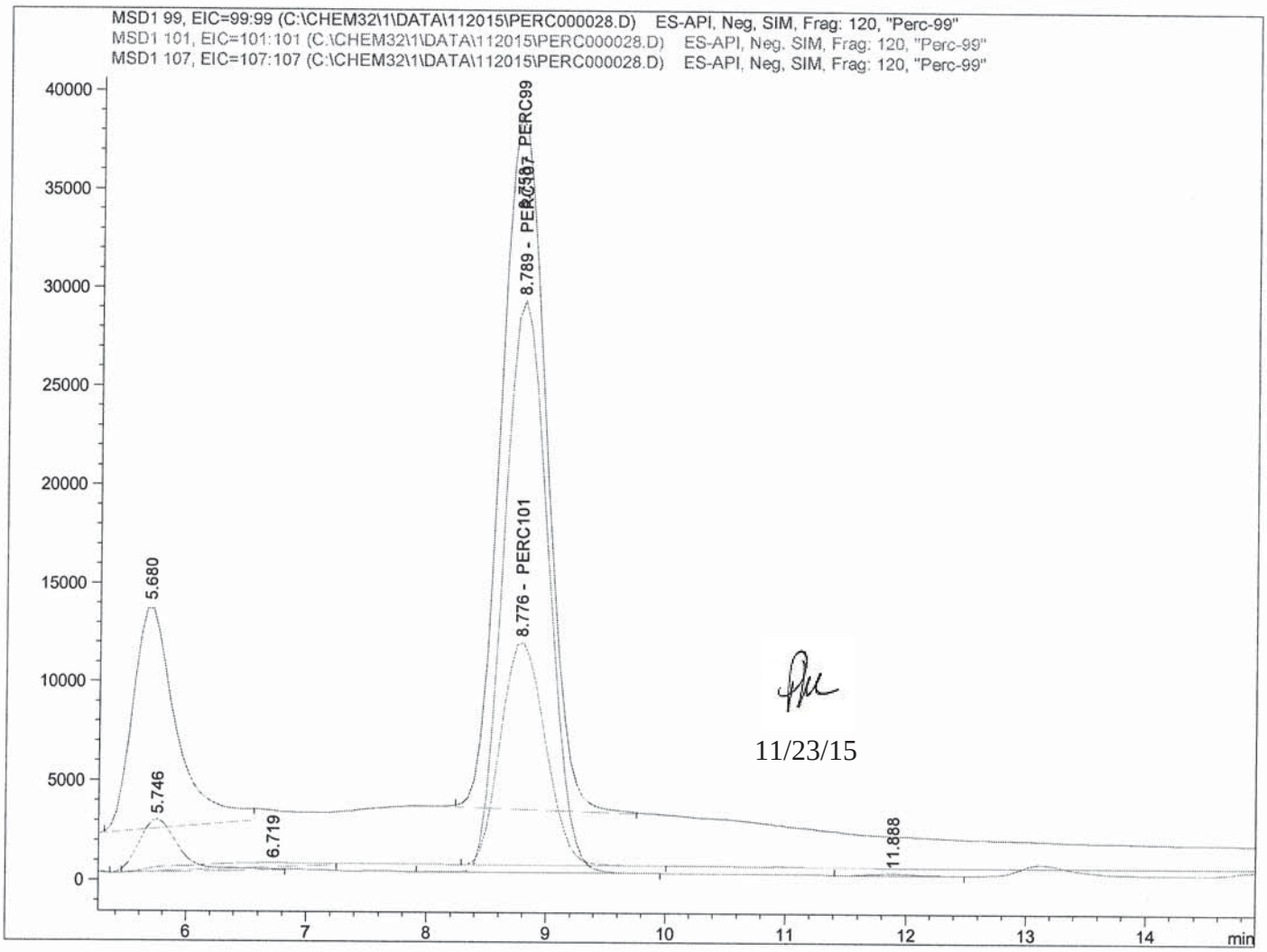

11/23/15

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 11/21/2015 9:27:46 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

11-23-15

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\112015\PERC000028.D
Sample Name: SEQ-CCV2

```
==================================================================
Acq. Operator   :                                Seq. Line :  28
Acq. Instrument : Instrument 1                    Location : Vial 3
Injection Date  : 11/20/2015 11:23:07 PM               Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 11/21/2015 9:28:01 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.758	BB	1	9.24316e5	8.48638e-1	5.22079		PERC99

Totals without ISTD(s) : 5.22079

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.776	BBA	1	2.93025e5	2.60545	5.08136		PERC101

Totals without ISTD(s) : 5.08136

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.789	VB I	1	7.51236e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\112015\PERC000029.D
Sample Name: SEQ-LCV3

==========

Acq. Operator : Seq. Line : 29
Acq. Instrument : Instrument 1 Location : Vial 4
Injection Date : 11/20/2015 11:41:02 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 11/21/2015 9:28:01 AM
(modified after loading)

==========

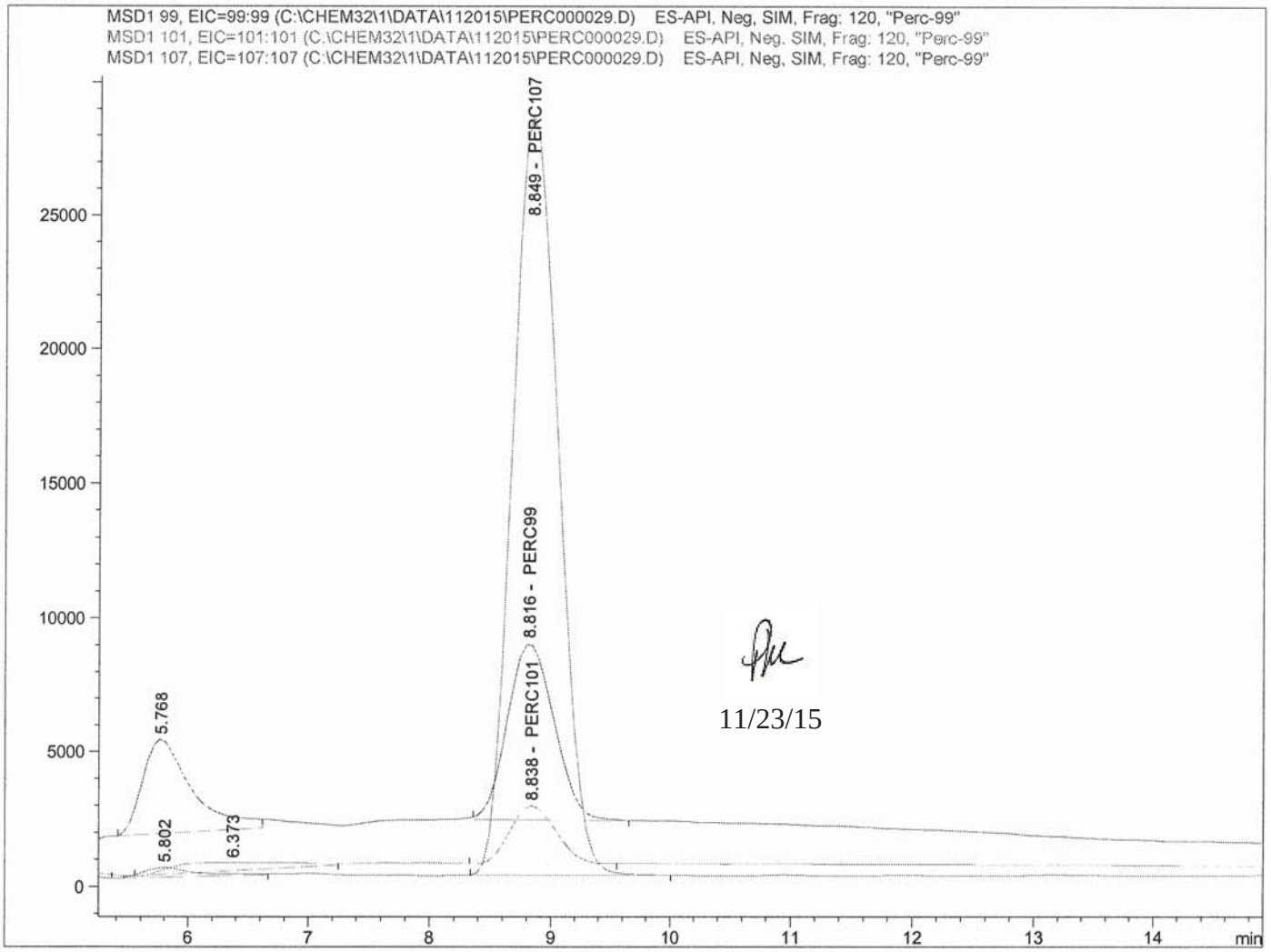

11/23/15

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Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 11/21/2015 9:27:46 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

11-23-15

Data File C:\CHEM32\1\DATA\112015\PERC000029.D
Sample Name: SEQ-LCV3

```
==================================================================
Acq. Operator   :                                  Seq. Line :  29
Acq. Instrument : Instrument 1                      Location : Vial 4
Injection Date  : 11/20/2015 11:41:02 PM                 Inj :   1
                                                 Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 11/21/2015 9:28:01 AM
                  (modified after loading)
==================================================================
```

1	5.00000	PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.816	BB	1	1.77123e5	8.48638e-1	1.00454		PERC99

Totals without ISTD(s) : 1.00454

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.838	VV	1	5.63305e4	2.60545	9.80833e-1		PERC101

Totals without ISTD(s) : 9.80833e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.849	BBA I	1	7.48170e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\112015\PERC000030.D
Sample Name: SEQ-LCV4

==========

Acq. Operator : Seq. Line : 30
Acq. Instrument : Instrument 1 Location : Vial 83
Injection Date : 11/20/2015 11:58:53 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 11/21/2015 9:29:49 AM
(modified after loading)

==========

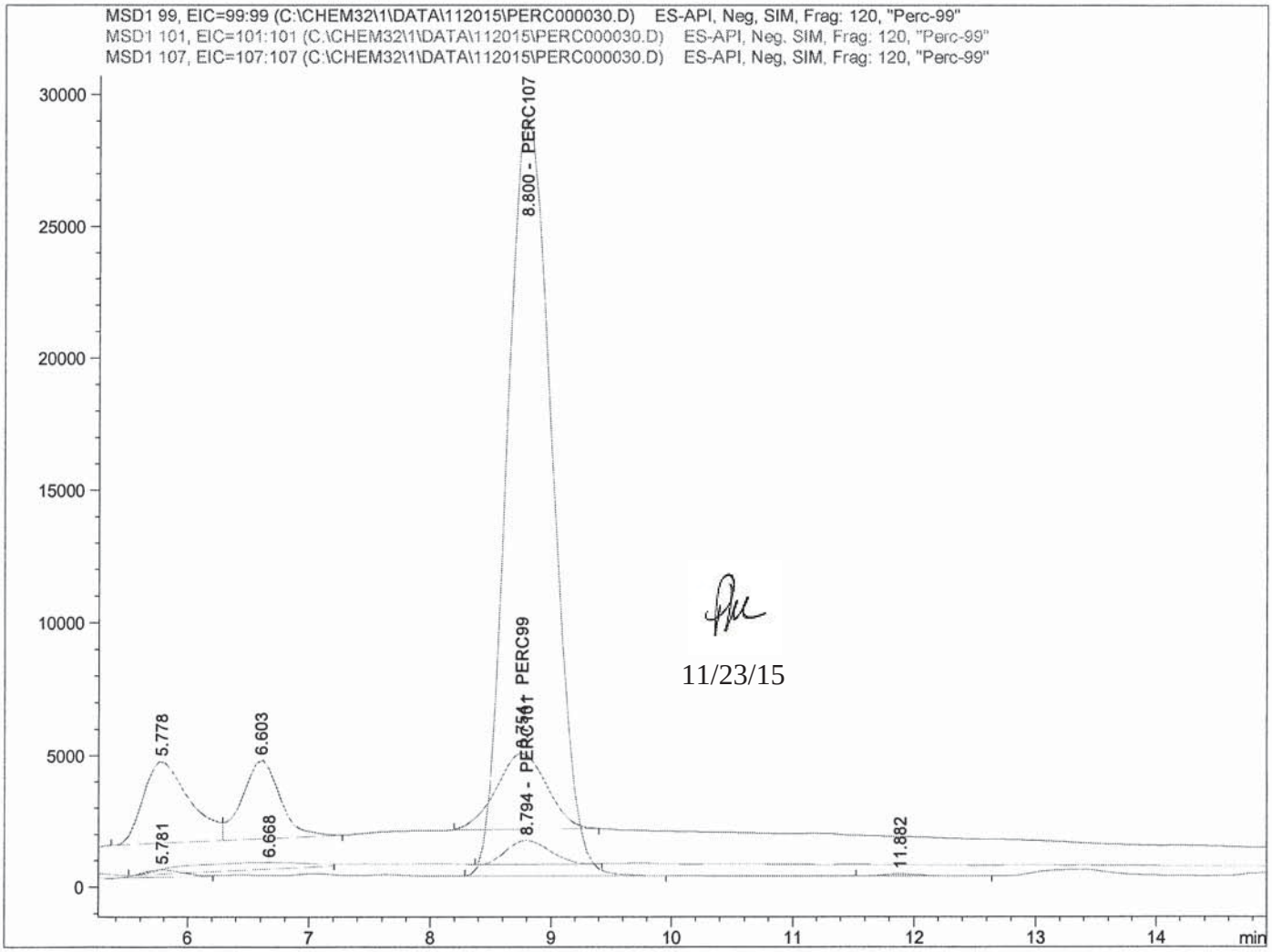

11/23/15

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 11/21/2015 9:27:46 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

11-23-15

Data File C:\CHEM32\1\DATA\112015\PERC000030.D
Sample Name: SEQ-LCV4

```
==================================================================
Acq. Operator   :                                  Seq. Line :  30
Acq. Instrument : Instrument 1                      Location : Vial 83
Injection Date  : 11/20/2015 11:58:53 PM                 Inj :   1
                                                 Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 11/21/2015 9:29:49 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.754	BBA	1	8.42350e4	8.48638e-1	4.75615e-1		PERC99

Totals without ISTD(s) : 4.75615e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.794	VV	1	2.34230e4	2.60545	4.06036e-1		PERC101

Totals without ISTD(s) : 4.06036e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.800	BB I	1	7.51501e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\112015\PERC000031.D
Sample Name: 1511179-07

==========

Acq. Operator : Seq. Line : 31
Acq. Instrument : Instrument 1 Location : Vial 22
Injection Date : 11/21/2015 12:16:45 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 11/21/2015 3:39:56 PM
(modified after loading)
Additional Info : Peak(s) manually integrated

==========

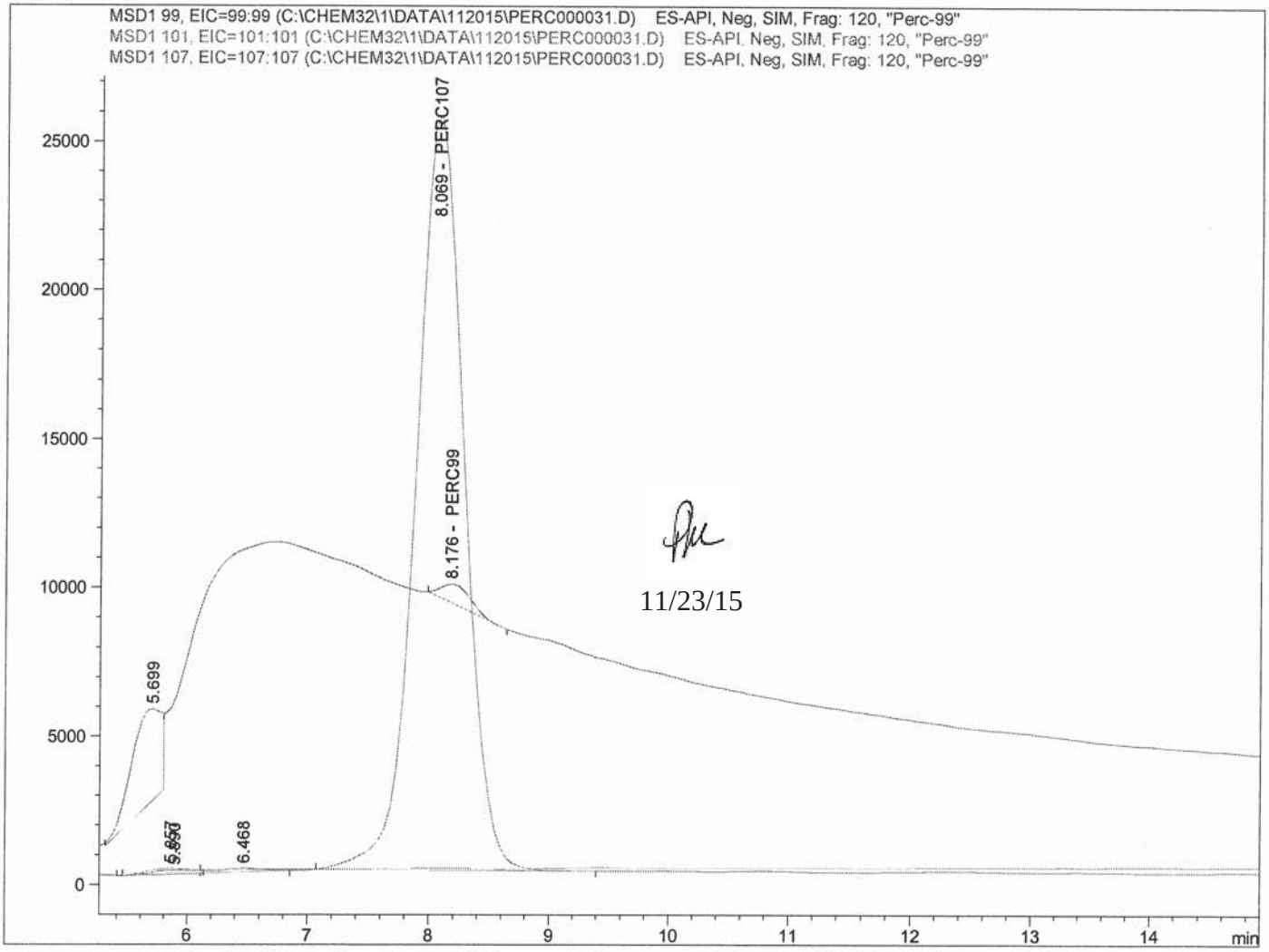

11/23/15

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 11/21/2015 3:38:44 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

11-23-15

Data File C:\CHEM32\1\DATA\112015\PERC000031.D
Sample Name: 1511179-07

```
==================================================================
Acq. Operator   :                                  Seq. Line :  31
Acq. Instrument : Instrument 1                      Location : Vial 22
Injection Date  : 11/21/2015 12:16:45 AM                 Inj :   1
                                                 Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 11/21/2015 3:39:56 PM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
==================================================================

----|-------------|-------------------------
  1      5.00000   PERC107


Signal 1: MSD1 99, EIC=99:99

RetTime  Type  ISTD    Area     Amt/Area    Amount   Grp   Name
 [min]         used              ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.176 BBA       1 1.10530e4  8.48638e-1 6.69436e-2    PERC99

Totals without ISTD(s) :             6.69436e-2


Signal 2: MSD1 101, EIC=101:101

RetTime  Type  ISTD    Area     Amt/Area    Amount   Grp   Name
 [min]         used              ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.070           1     -          -          -         PERC101

Totals without ISTD(s) :                0.00000


Signal 3: MSD1 107, EIC=107:107

RetTime  Type  ISTD    Area     Amt/Area    Amount   Grp   Name
 [min]         used              ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.069 BB   I    1 7.00589e5     1.00000    5.00000    PERC107

Totals without ISTD(s) :                0.00000


1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==================================================================
                        *** End of Report ***
```

11053/700589/1.17836 x5 = 0.066 9436

Data File C:\CHEM32\1\DATA\112015\PERC000034.D
Sample Name: SEQ-CCV3

==========

Acq. Operator : Seq. Line : 34
Acq. Instrument : Instrument 1 Location : Vial 3
Injection Date : 11/21/2015 1:10:12 AM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 11/21/2015 3:46:06 PM
(modified after loading)

==========

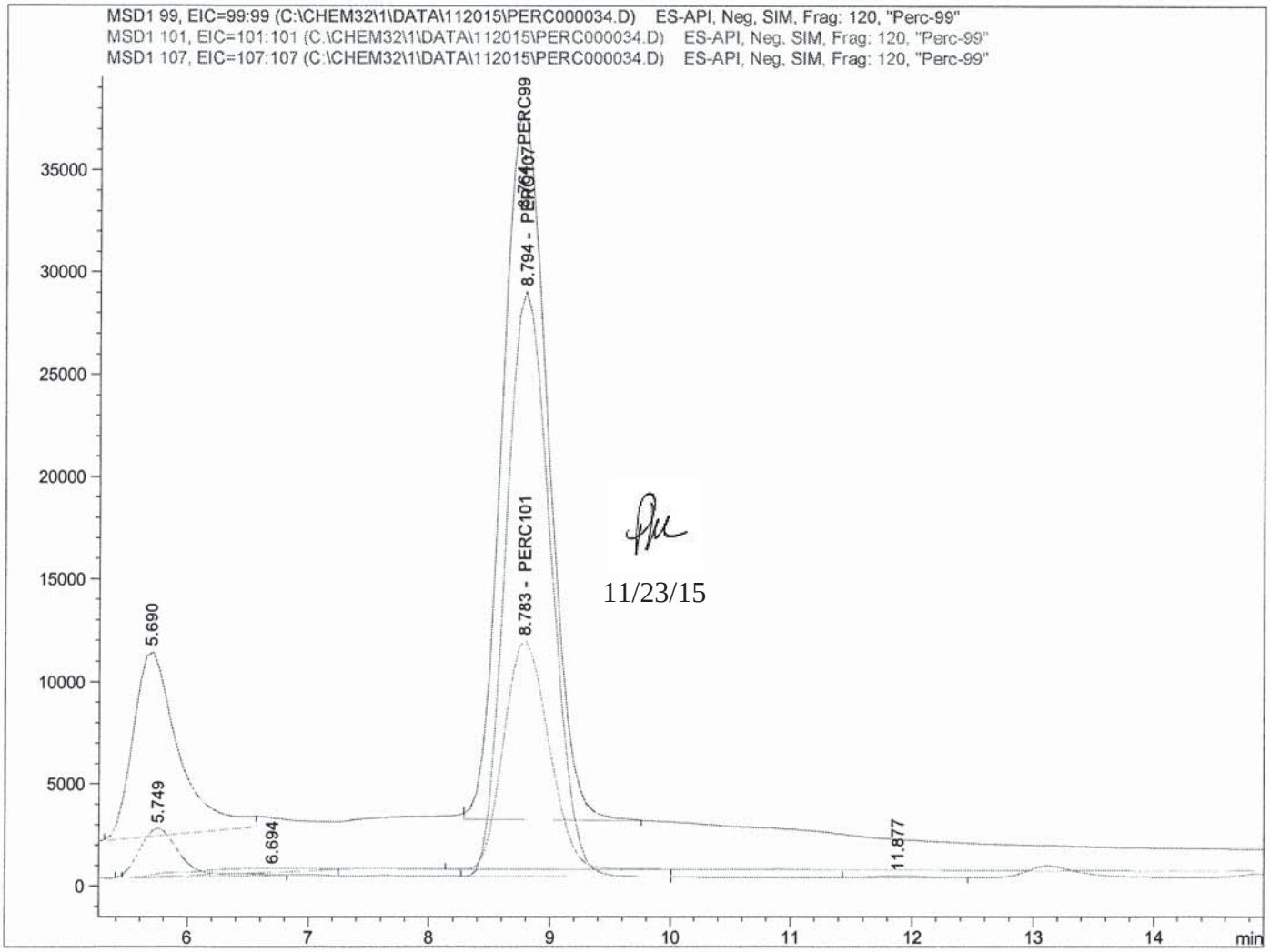

11/23/15

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 11/21/2015 3:46:06 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

11-23-15

Data File C:\CHEM32\1\DATA\112015\PERC000034.D
Sample Name: SEQ-CCV3

```
==================================================================
Acq. Operator   :                                Seq. Line :  34
Acq. Instrument : Instrument 1                    Location : Vial 3
Injection Date  : 11/21/2015 1:10:12 AM                Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 11/21/2015 3:46:06 PM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.764	BB	1	9.11214e5	8.48638e-1	5.21012		PERC99

Totals without ISTD(s) : 5.21012

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.783	BBA	1	2.89705e5	2.60545	5.08561		PERC101

Totals without ISTD(s) : 5.08561

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.794	VBA I	1	7.42105e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\112015\PERC000035.D
Sample Name: SEQ-LCV5

==========

Acq. Operator : Seq. Line : 35
Acq. Instrument : Instrument 1 Location : Vial 4
Injection Date : 11/21/2015 1:28:13 AM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 11/21/2015 3:46:06 PM
(modified after loading)

==========

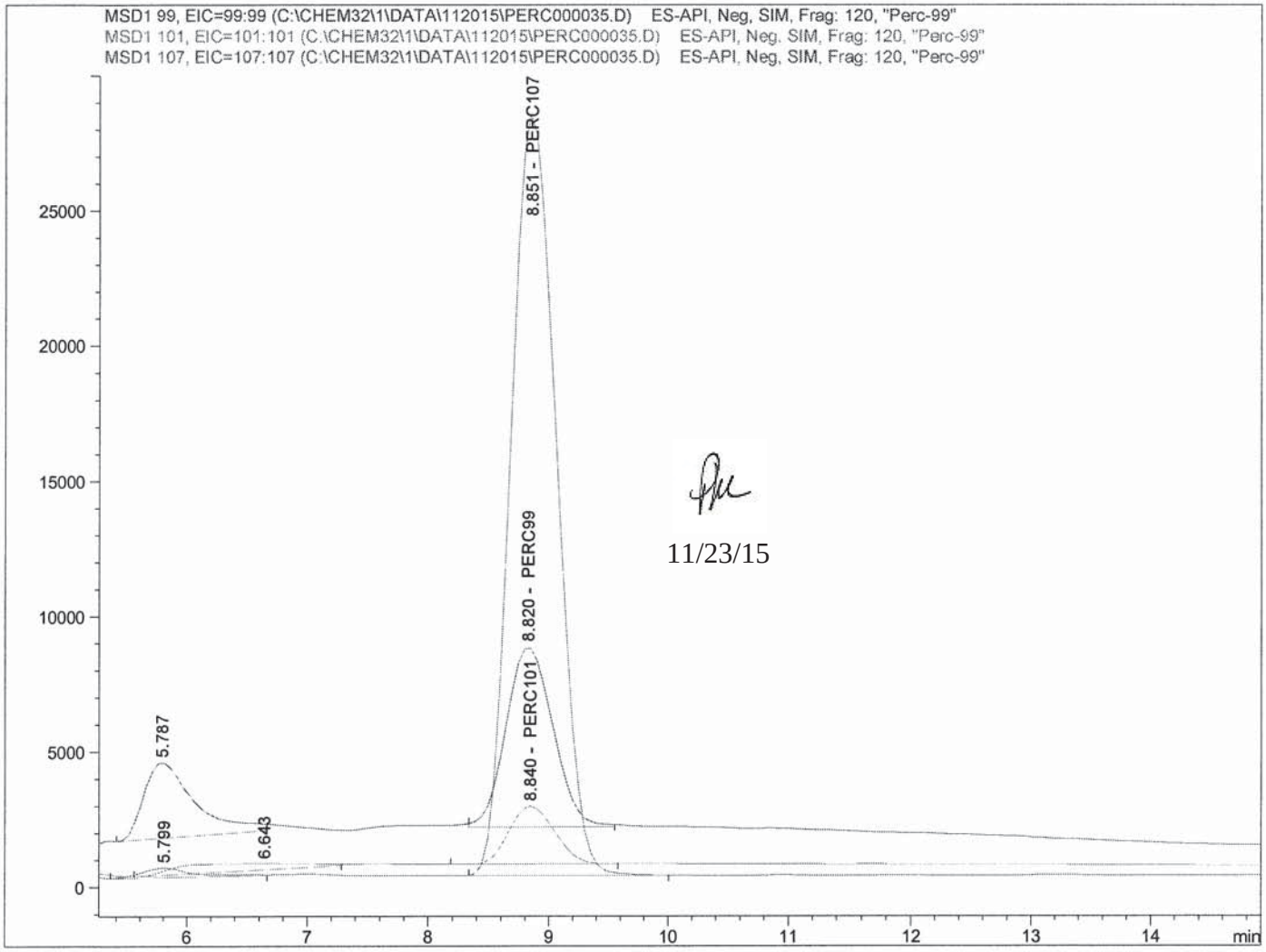

11/23/15

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 11/21/2015 3:46:06 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

11-23-15

Data File C:\CHEM32\1\DATA\112015\PERC000035.D
Sample Name: SEQ-LCV5

```
==================================================================
Acq. Operator   :                                  Seq. Line :  35
Acq. Instrument : Instrument 1                      Location : Vial 4
Injection Date  : 11/21/2015 1:28:13 AM                  Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 11/21/2015 3:46:06 PM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.820	BB	1	1.80397e5	8.48638e-1	1.02918		PERC99

Totals without ISTD(s) : 1.02918

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.840	BBA	1	5.67010e4	2.60545	9.93145e-1		PERC101

Totals without ISTD(s) : 9.93145e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.851	BBA I	1	7.43756e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\112015\PERC000036.D
Sample Name: SEQ-LCV6

==========

Acq. Operator : Seq. Line : 36
Acq. Instrument : Instrument 1 Location : Vial 83
Injection Date : 11/21/2015 1:45:57 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 11/21/2015 3:48:31 PM
(modified after loading)

==========

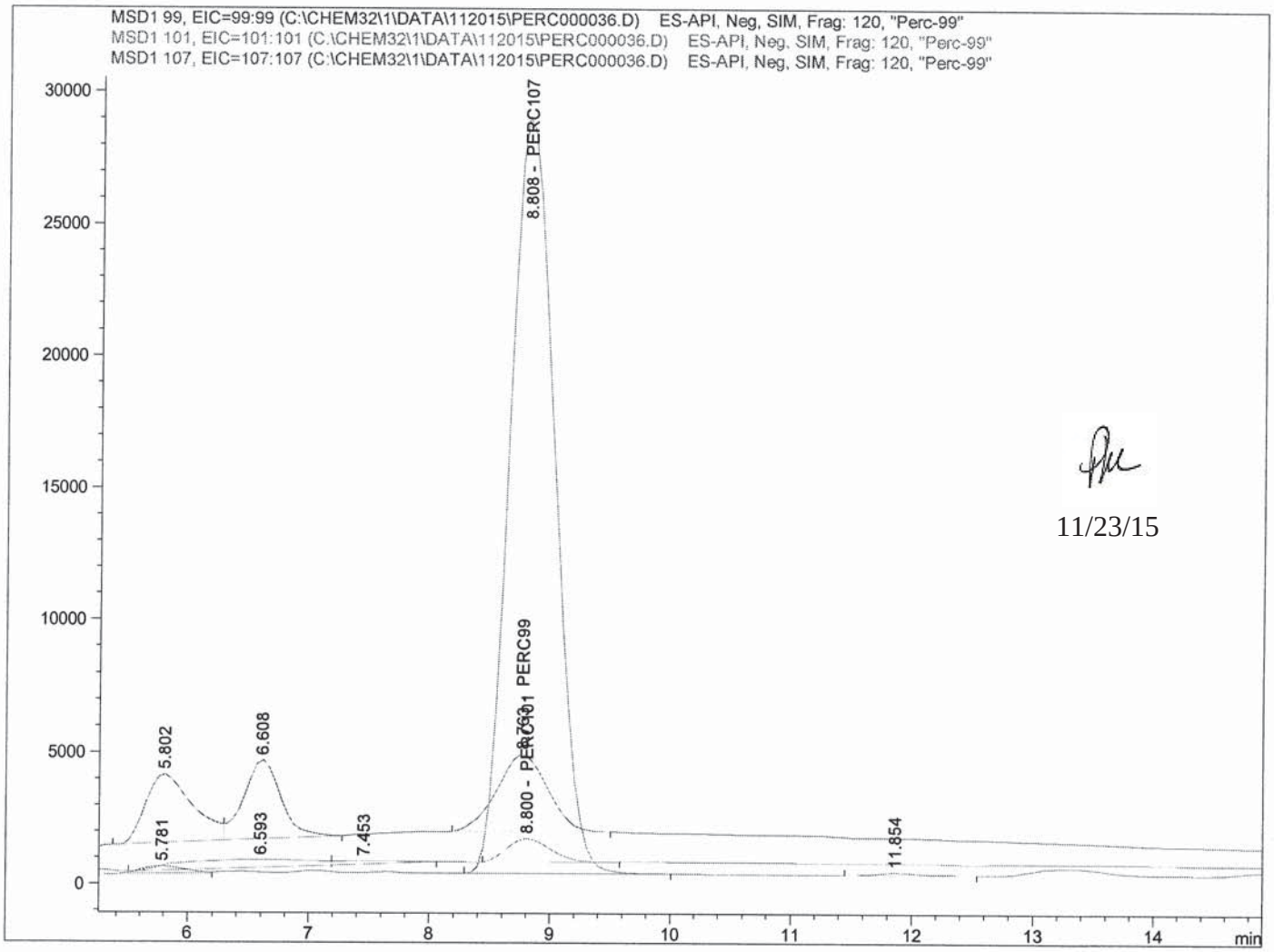

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==========

Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : 11/21/2015 3:46:06 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

11-23-15

Data File C:\CHEM32\1\DATA\112015\PERC000036.D
Sample Name: SEQ-LCV6

```
==================================================================
Acq. Operator   :                                  Seq. Line :  36
Acq. Instrument : Instrument 1                      Location : Vial 83
Injection Date  : 11/21/2015 1:45:57 AM                 Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 11/21/2015 3:48:31 PM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.763	BBA	1	8.57799e4	8.48638e-1	4.86616e-1		PERC99

Totals without ISTD(s) : 4.86616e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.800	BV	1	2.34138e4	2.60545	4.07786e-1		PERC101

Totals without ISTD(s) : 4.07786e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.808	BBA I	1	7.47982e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Print of all graphic windows
Data File : C:\CHEM32\1\DATA\112115\PERC000002.D
Sample Name : SEQ-TUN1

==========

Acq. Operator : Seq. Line : 2
Acq. Instrument : Instrument 1 Location : Vial 1
Injection Date : 11/21/2015 5:12:25 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_SC
Last changed : 11/18/2015 10:54:05 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 11/21/2015 3:48:31 PM
(modified after loading)

Current Chromatogram(s)

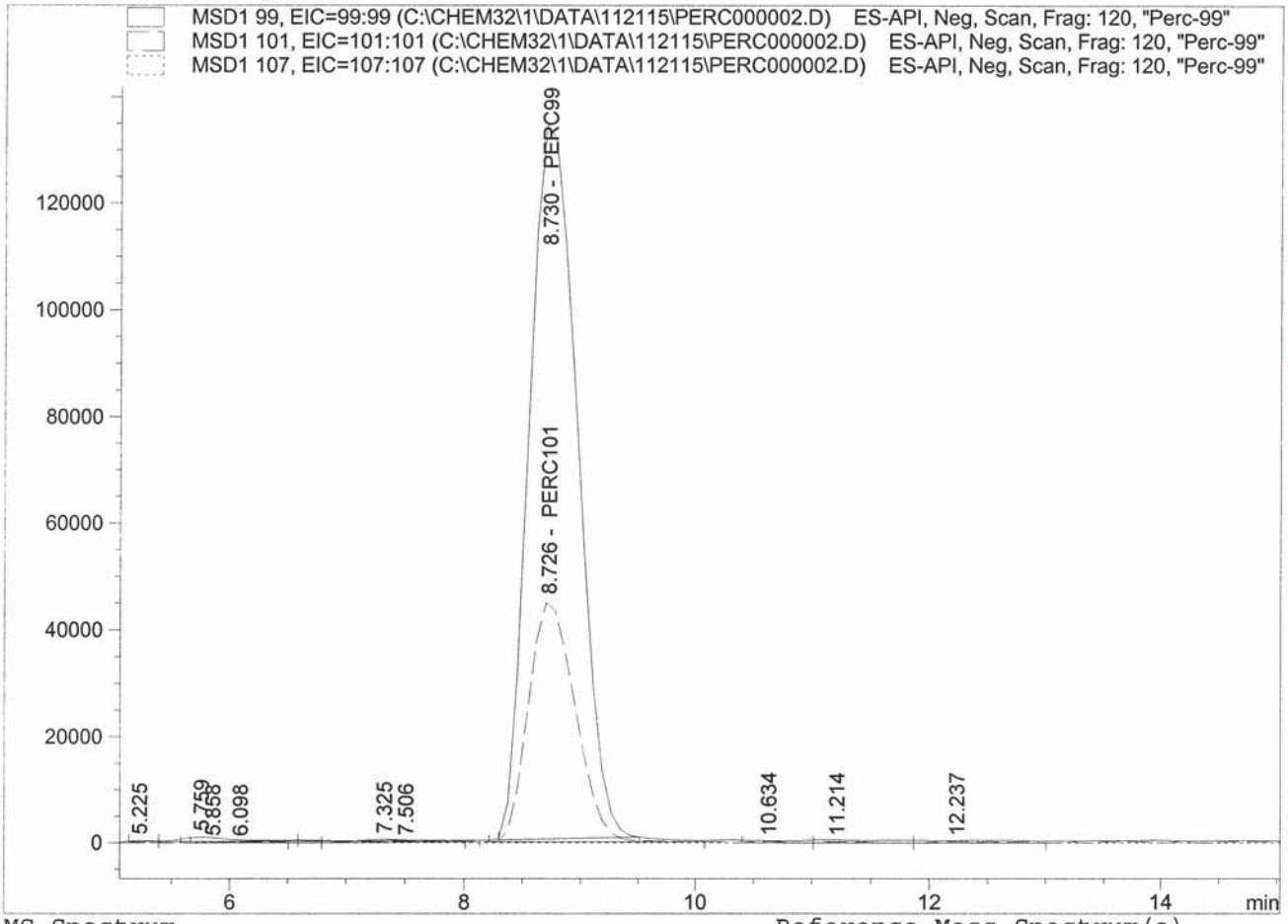

MS Spectrum

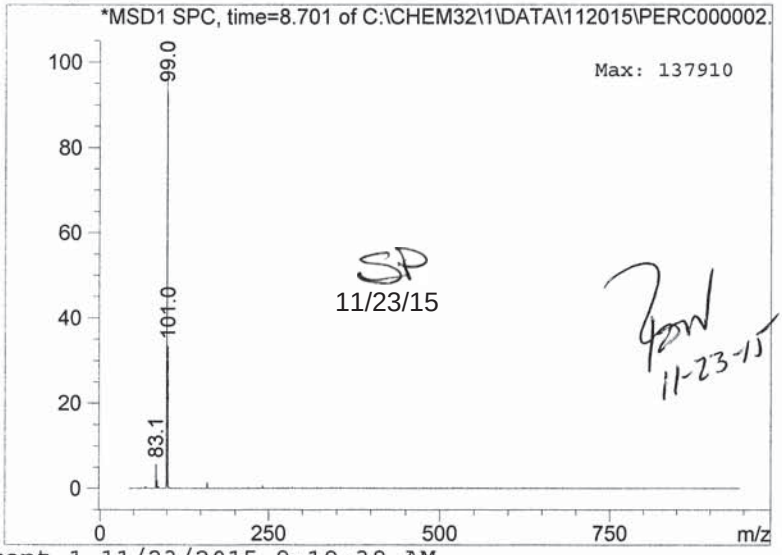

SP
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Reference Mass Spectrum(a)

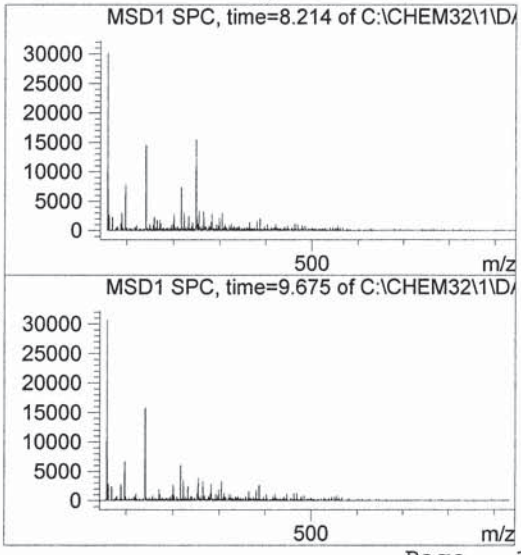

Data File C:\CHEM32\1\DATA\112115\PERC000002.D
Sample Name: SEQ-TUN1

==========

Acq. Operator	:	Seq. Line	: 2
Acq. Instrument	: Instrument 1	Location	: Vial 1
Injection Date	: 11/21/2015 5:12:25 PM	Inj	: 1
		Inj Volume	: 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_SC
Last changed : 11/18/2015 10:54:05 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 11/21/2015 3:48:31 PM
(modified after loading)

==========

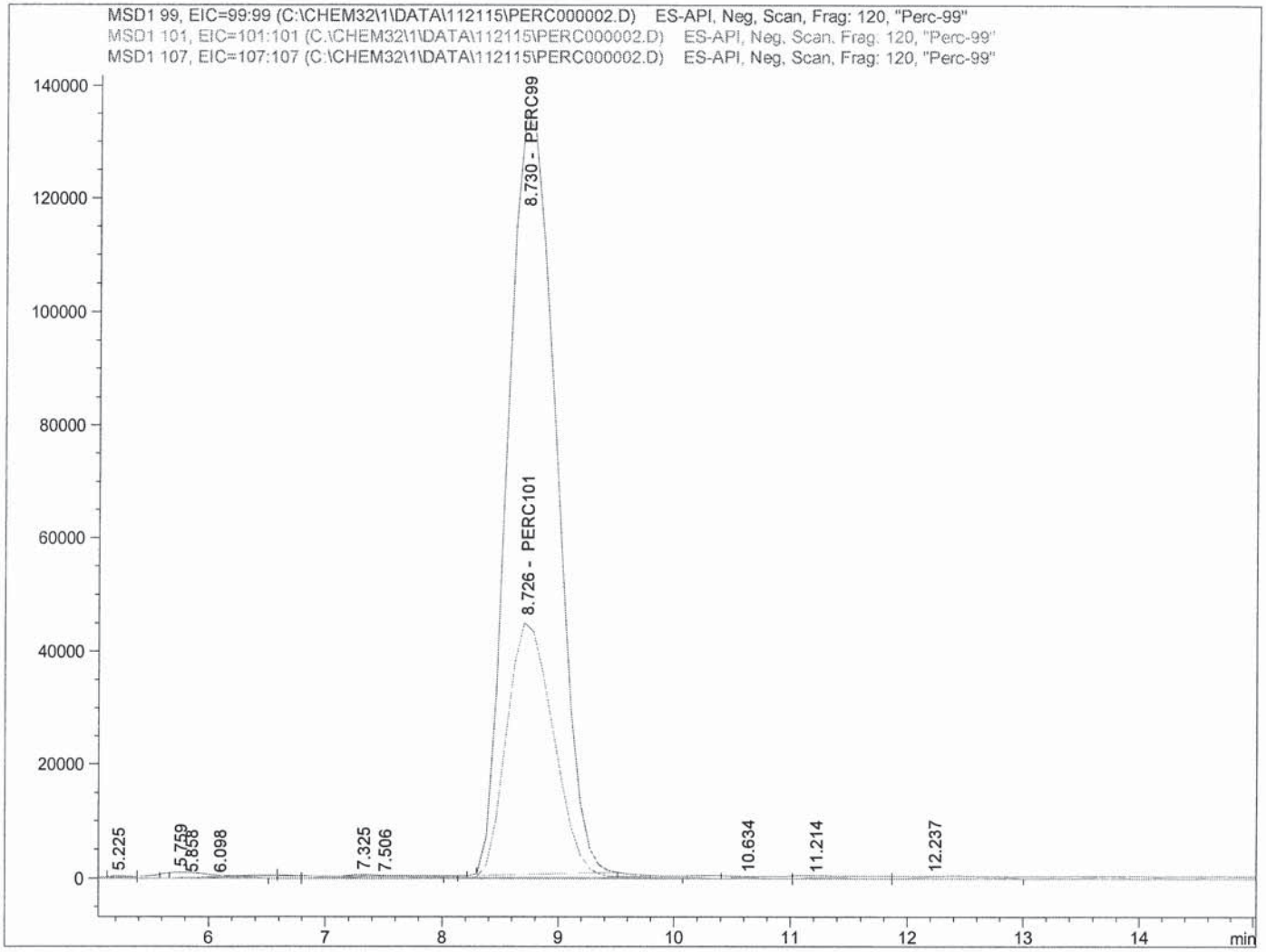

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 11/21/2015 3:46:06 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
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11-23-15

Data File C:\CHEM32\1\DATA\112115\PERC000002.D
Sample Name: SEQ-TUN1

==========

Acq. Operator : Seq. Line : 2
Acq. Instrument : Instrument 1 Location : Vial 1
Injection Date : 11/21/2015 5:12:25 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_SC
Last changed : 11/18/2015 10:54:05 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 11/21/2015 3:48:31 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.730	BBA	1	3.84957e6	0.00000	0.00000		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.726	BBA	1	1.25617e6	0.00000	0.00000		PERC101

Totals without ISTD(s) : 0.00000

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.780		1	-	-	-		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : ISTD compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\112115\PERC000005.D
Sample Name: SEQ-CCV1

```
==========================================================================
Acq. Operator   :                                  Seq. Line :   5
Acq. Instrument : Instrument 1                      Location : Vial 3
Injection Date  : 11/21/2015 6:06:01 PM                 Inj :   1
                                                 Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 11/21/2015 3:48:31 PM
                  (modified after loading)
==========================================================================
```

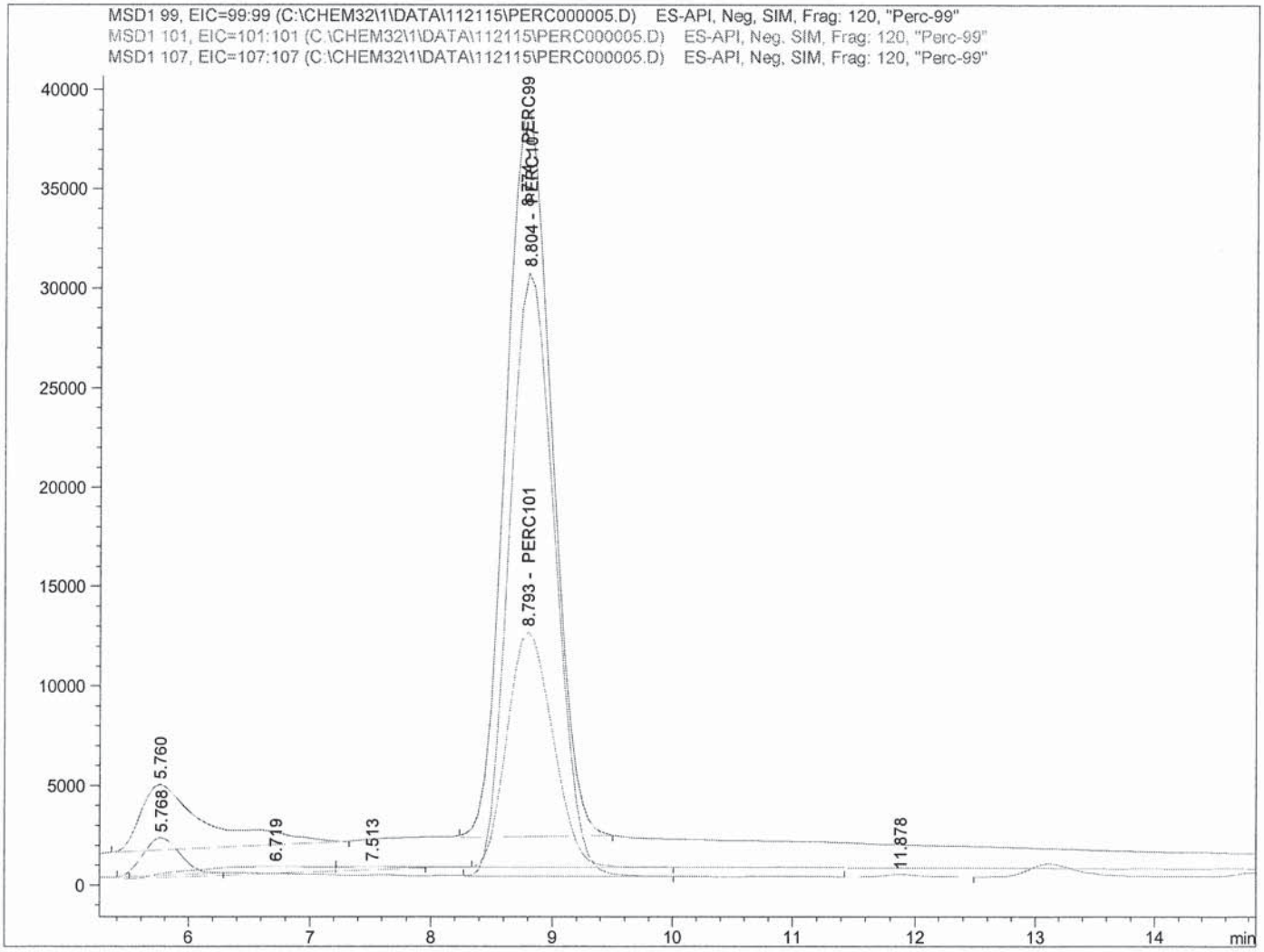


```
==========================================================================
                        Internal Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      11/21/2015 3:46:06 PM
Multiplier            :      1.0000
Dilution              :      1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:
ISTD  ISTD Amount   Name
  #     [ug/L]
----|-------------|-------------------------
```

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Data File C:\CHEM32\1\DATA\112115\PERC000005.D
Sample Name: SEQ-CCV1

```
==================================================================
Acq. Operator   :                                Seq. Line :   5
Acq. Instrument : Instrument 1                    Location : Vial 3
Injection Date  : 11/21/2015 6:06:01 PM                Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 11/21/2015 3:48:31 PM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.774	BBA	1	9.57178e5	8.48638e-1	5.14029		PERC99

Totals without ISTD(s) : 5.14029

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.793	BBA	1	3.07978e5	2.60545	5.07779		PERC101

Totals without ISTD(s) : 5.07779

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.804	VBA I	1	7.90128e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\112115\PERC000006.D
Sample Name: SEQ-LCV1

==========

Acq. Operator : Seq. Line : 6
Acq. Instrument : Instrument 1 Location : Vial 4
Injection Date : 11/21/2015 6:23:50 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 11/21/2015 3:48:31 PM
(modified after loading)

==========

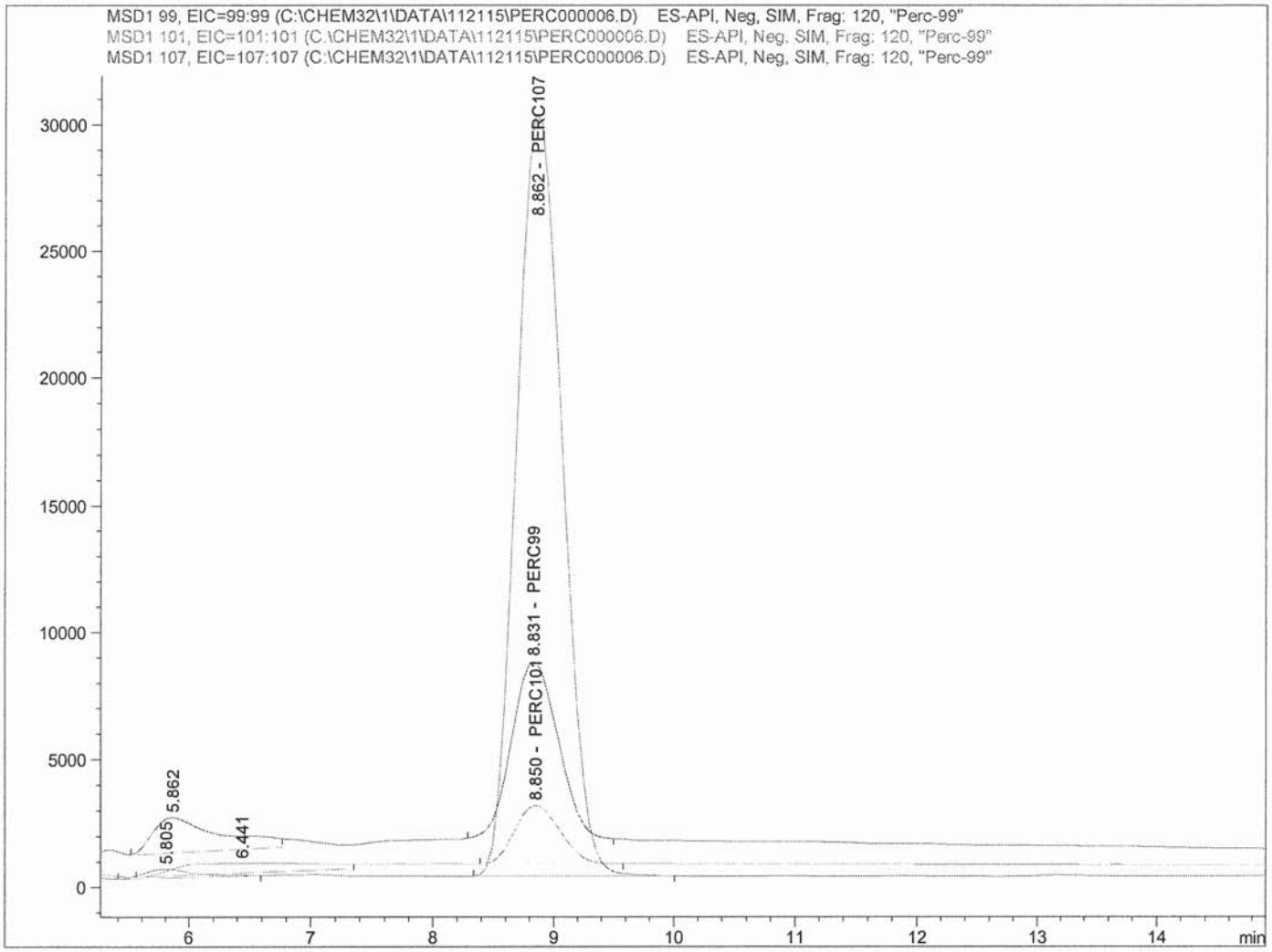

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 11/21/2015 3:46:06 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
11/23/15

11-23-15

Data File C:\CHEM32\1\DATA\112115\PERC000006.D
Sample Name: SEQ-LCV1

```
==================================================================
Acq. Operator   :                                  Seq. Line :   6
Acq. Instrument : Instrument 1                      Location : Vial 4
Injection Date  : 11/21/2015 6:23:50 PM                 Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 11/21/2015 3:48:31 PM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.831	BBA	1	1.86574e5	8.48638e-1	9.95804e-1		PERC99

Totals without ISTD(s) : 9.95804e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.850	BV	1	6.01194e4	2.60545	9.85137e-1		PERC101

Totals without ISTD(s) : 9.85137e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.862	BBA I	1	7.95005e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\112115\PERC000007.D
Sample Name: SEQ-LCV2

Acq. Operator	:	Seq. Line	: 7
Acq. Instrument	: Instrument 1	Location	: Vial 83
Injection Date	: 11/21/2015 6:41:41 PM	Inj	: 1
		Inj Volume	: 100.0 µl
Acq. Method	: C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M		
Last changed	: 11/18/2015 10:55:16 AM		
Analysis Method	: C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M		
Last changed	: 11/21/2015 3:48:31 PM (modified after loading)		

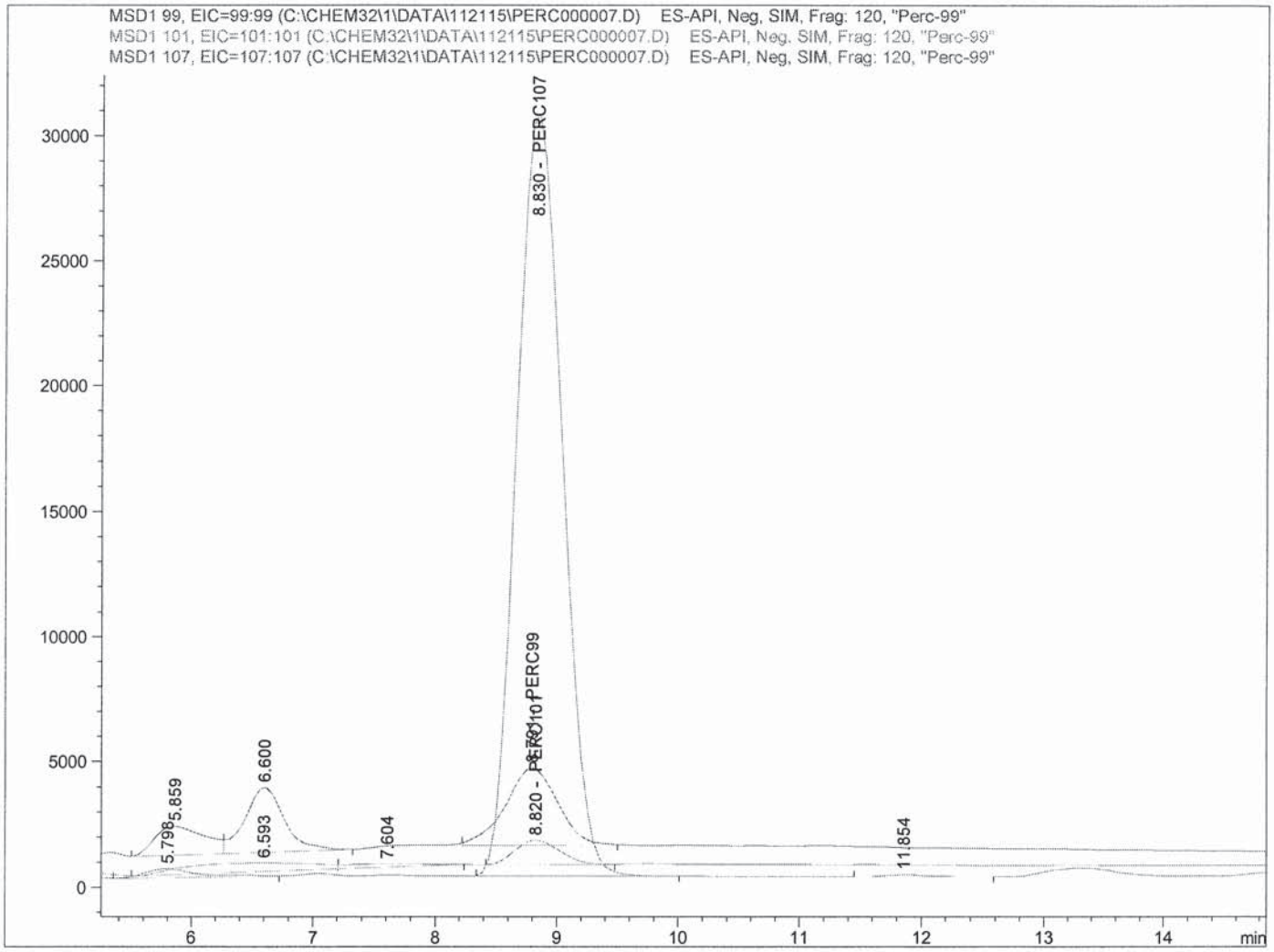

Internal Standard Report

SP
11/23/15

Sorted By	:	Signal
Calib. Data Modified	:	11/21/2015 3:46:06 PM
Multiplier	:	1.0000
Dilution	:	1.0000

Do not use Multiplier & Dilution Factor with ISTDs

Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

11-23-15

Data File C:\CHEM32\1\DATA\112115\PERC000007.D
Sample Name: SEQ-LCV2

```
==================================================================
Acq. Operator   :                                Seq. Line :   7
Acq. Instrument : Instrument 1                    Location : Vial 83
Injection Date  : 11/21/2015 6:41:41 PM                Inj :   1
                                               Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 11/21/2015 3:48:31 PM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.791	BBA	1	9.08117e4	8.48638e-1	4.82862e-1		PERC99

Totals without ISTD(s) : 4.82862e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.820	BV	1	2.50809e4	2.60545	4.09434e-1		PERC101

Totals without ISTD(s) : 4.09434e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.830	BBA I	1	7.98016e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\112115\PERC000008.D
Sample Name: SEQ-IFA1

==========

Acq. Operator : Seq. Line : 8
Acq. Instrument : Instrument 1 Location : Vial 5
Injection Date : 11/21/2015 6:59:31 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 11/23/2015 9:22:56 AM
(modified after loading)

==========

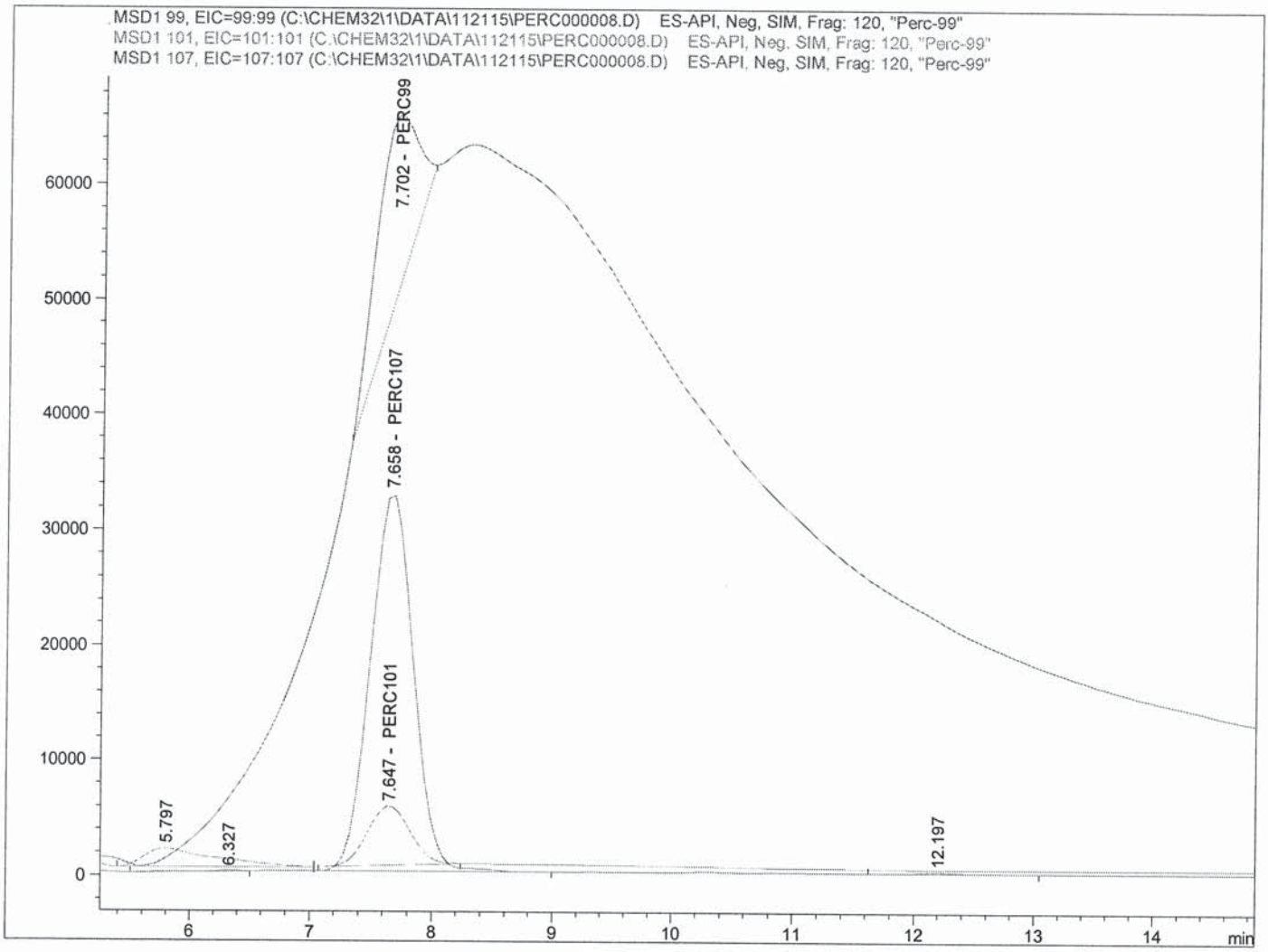

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Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 11/23/2015 9:22:31 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

11-23-15

SP
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Data File C:\CHEM32\1\DATA\112115\PERC000008.D
Sample Name: SEQ-IFA1

```
==================================================================
Acq. Operator   :                                Seq. Line :   8
Acq. Instrument : Instrument 1                    Location : Vial 5
Injection Date  : 11/21/2015 6:59:31 PM                Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 11/23/2015 9:22:56 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
7.702	BBA	1	3.47263e5	8.48638e-1	1.84591		PERC99

Totals without ISTD(s) : 1.84591

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
7.647	VBA	1	1.22657e5	2.60545	2.00173		PERC101

Totals without ISTD(s) : 2.00173

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
7.658	BB I	1	7.98252e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\112115\PERC000011.D
Sample Name: 1511179-03@5

==========

Acq. Operator : Seq. Line : 11
Acq. Instrument : Instrument 1 Location : Vial 6
Injection Date : 11/21/2015 7:53:01 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 11/23/2015 9:24:47 AM
(modified after loading)
Additional Info : Peak(s) manually integrated

==========

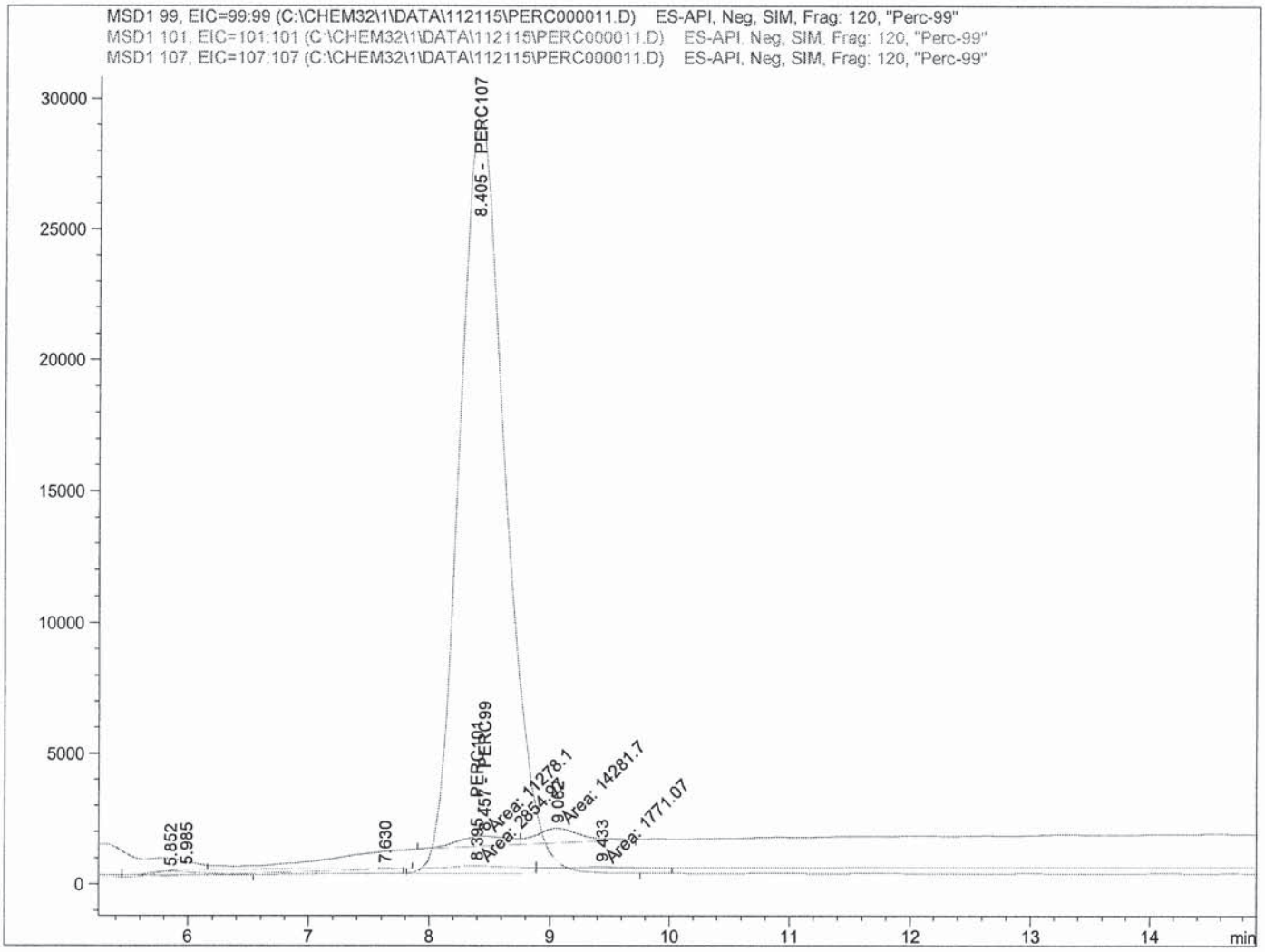

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 11/23/2015 9:24:21 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
11/23/15

11-23-15

Data File C:\CHEM32\1\DATA\112115\PERC000011.D
Sample Name: 1511179-03@5

```
==================================================================
Acq. Operator   :                                Seq. Line :  11
Acq. Instrument : Instrument 1                    Location : Vial 6
Injection Date  : 11/21/2015 7:53:01 PM                Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 11/23/2015 9:24:47 AM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
==================================================================

----|-------------|-------------------------
  1      5.00000   PERC107


Signal 1: MSD1 99, EIC=99:99

RetTime  Type  ISTD    Area     Amt/Area    Amount   Grp   Name
 [min]         used              ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.457 MF        1 1.12781e4  8.48638e-1 6.19526e-2    PERC99

Totals without ISTD(s) :             6.19526e-2



Signal 2: MSD1 101, EIC=101:101

RetTime  Type  ISTD    Area     Amt/Area    Amount   Grp   Name
 [min]         used              ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.395 MF        1 2854.96509    2.60545 4.81485e-2    PERC101

Totals without ISTD(s) :             4.81485e-2



Signal 3: MSD1 107, EIC=107:107

RetTime  Type  ISTD    Area     Amt/Area    Amount   Grp   Name
 [min]         used              ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.405 BB   I    1 7.72449e5     1.00000    5.00000    PERC107

Totals without ISTD(s) :                0.00000


==================================================================
                         *** End of Report ***
```

Print of window 38: Current Chromatogram(s)
Data File : C:\CHEM32\1\DATA\112115\PERC000011.D
Sample Name : 1511179-03@5

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 11/21/2015 7:53:01 PM

Seq. Line : 11
Location : Vial 6
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 11/23/2015 9:24:47 AM
(modified after loading)

Current Chromatogram(s)

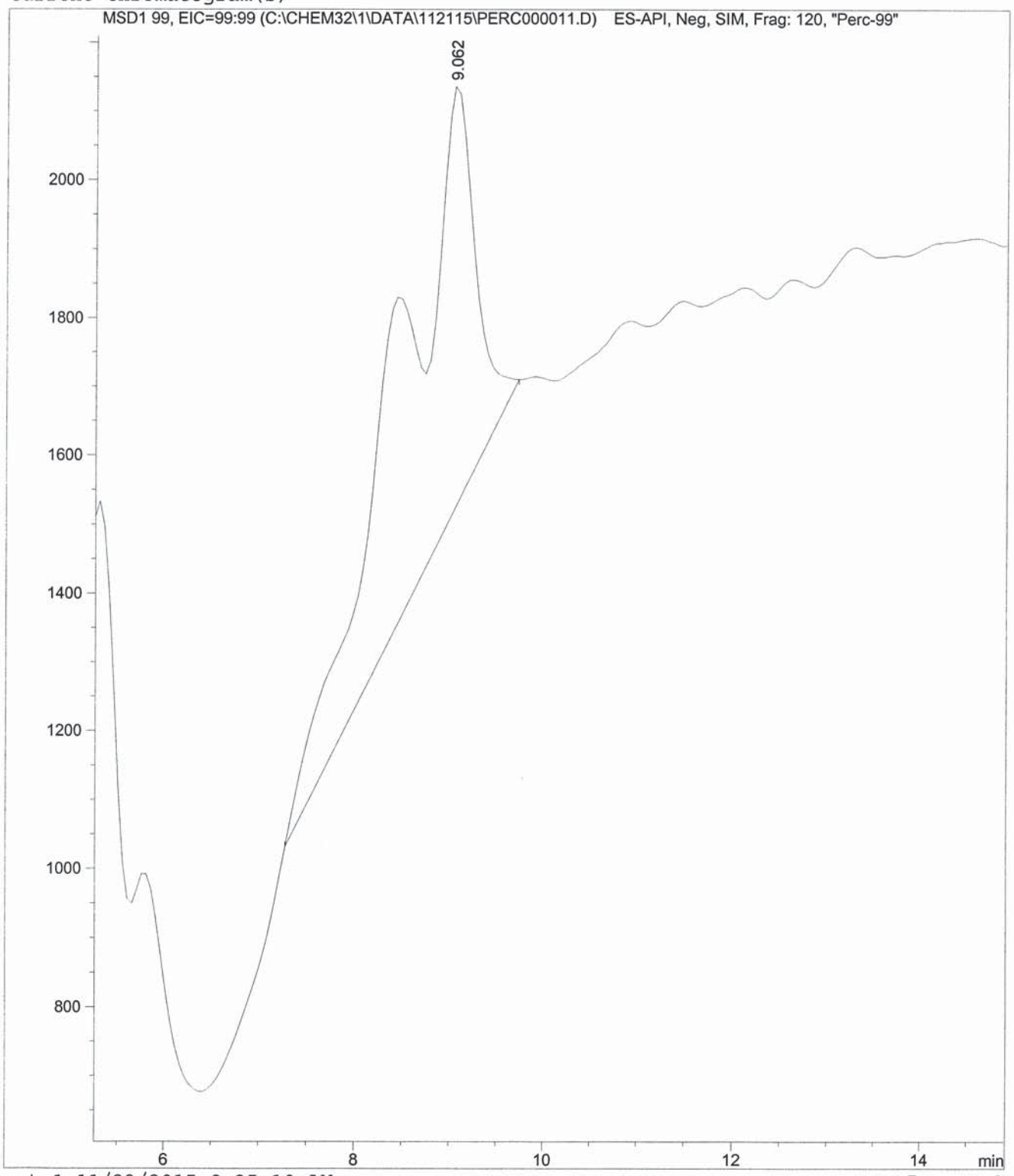

Print of window 38: Current Chromatogram(s)
Data File : C:\CHEM32\1\DATA\112115\PERC000011.D
Sample Name : 1511179-03@5

==========

Acq. Operator : Seq. Line : 11
Acq. Instrument : Instrument 1 Location : Vial 6
Injection Date : 11/21/2015 7:53:01 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 11/23/2015 9:24:47 AM
(modified after loading)
Additional Info : Peak(s) manually integrated

Current Chromatogram(s)

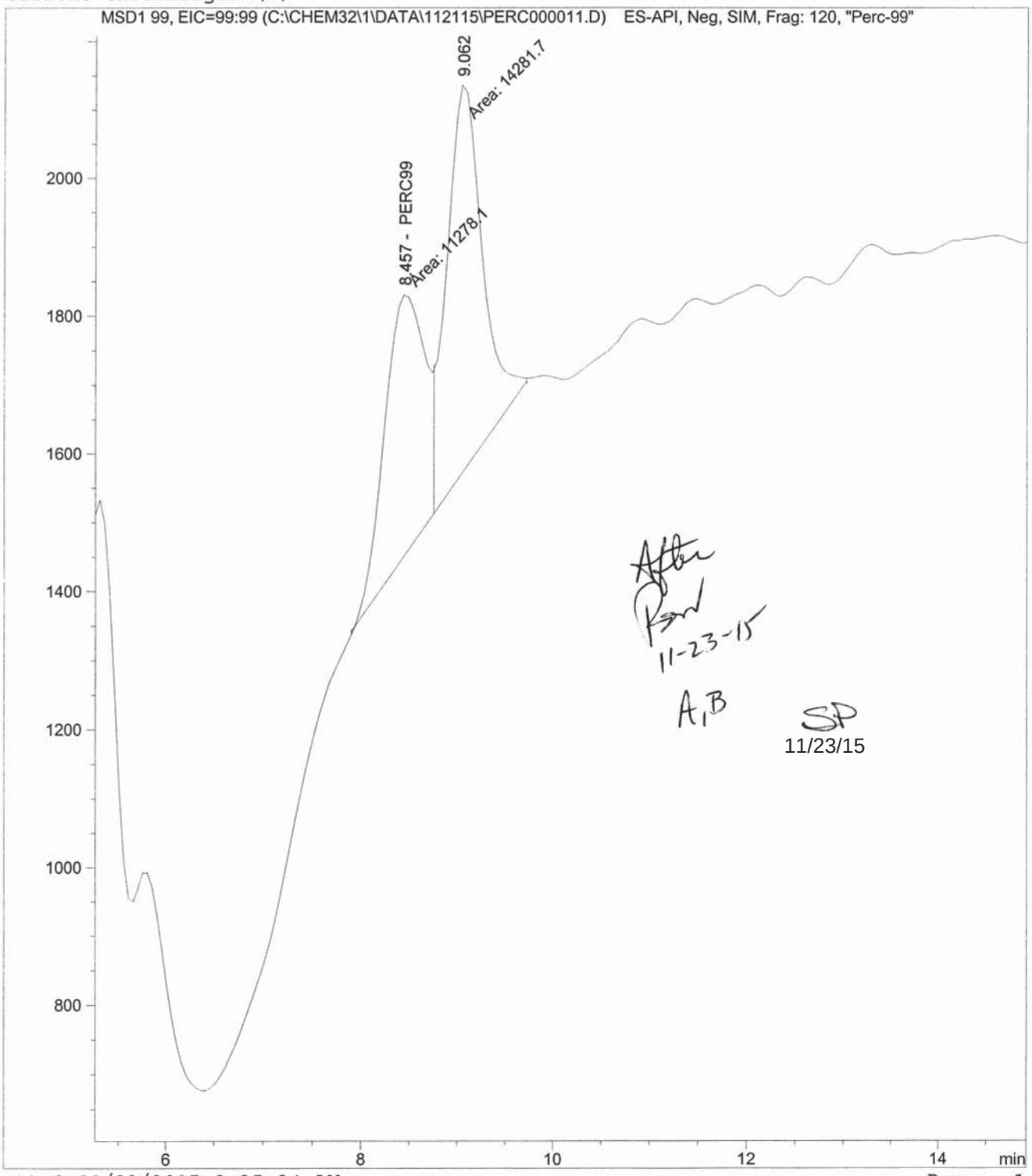

Instrument 1 11/23/2015 9:25:34 AM

Print of window 38: Current Chromatogram(s)
Data File : C:\CHEM32\1\DATA\112115\PERC000011.D
Sample Name : 1511179-03@5

==========

Acq. Operator : Seq. Line : 11
Acq. Instrument : Instrument 1 Location : Vial 6
Injection Date : 11/21/2015 7:53:01 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 11/23/2015 9:24:47 AM
(modified after loading)
Additional Info : Peak(s) manually integrated

Current Chromatogram(s)

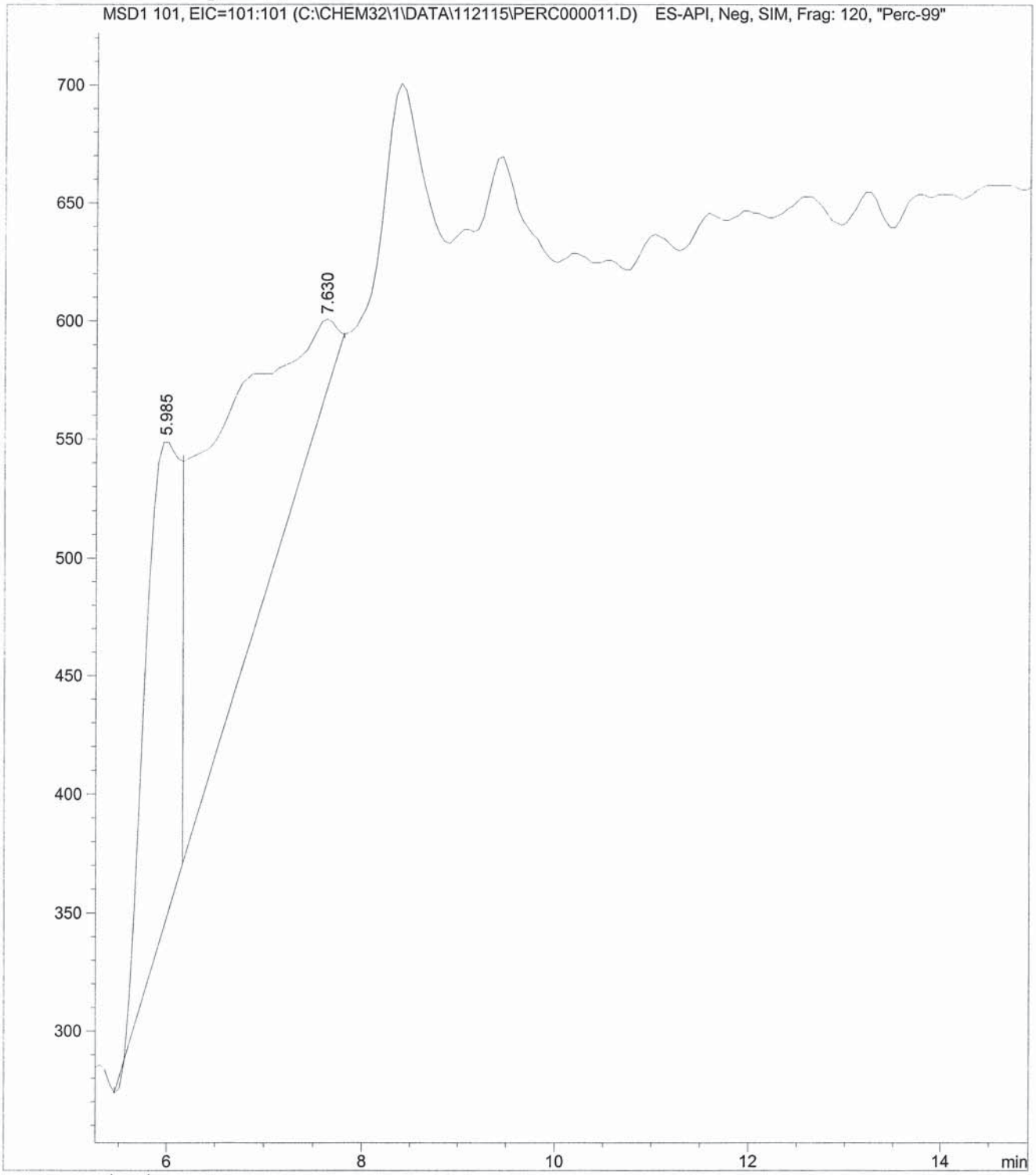

Print of window 38: Current Chromatogram(s)
Data File : C:\CHEM32\1\DATA\112115\PERC000011.D
Sample Name : 1511179-03@5

==========

Acq. Operator : Seq. Line : 11
Acq. Instrument : Instrument 1 Location : Vial 6
Injection Date : 11/21/2015 7:53:01 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 11/23/2015 9:24:47 AM
(modified after loading)
Additional Info : Peak(s) manually integrated

Current Chromatogram(s)

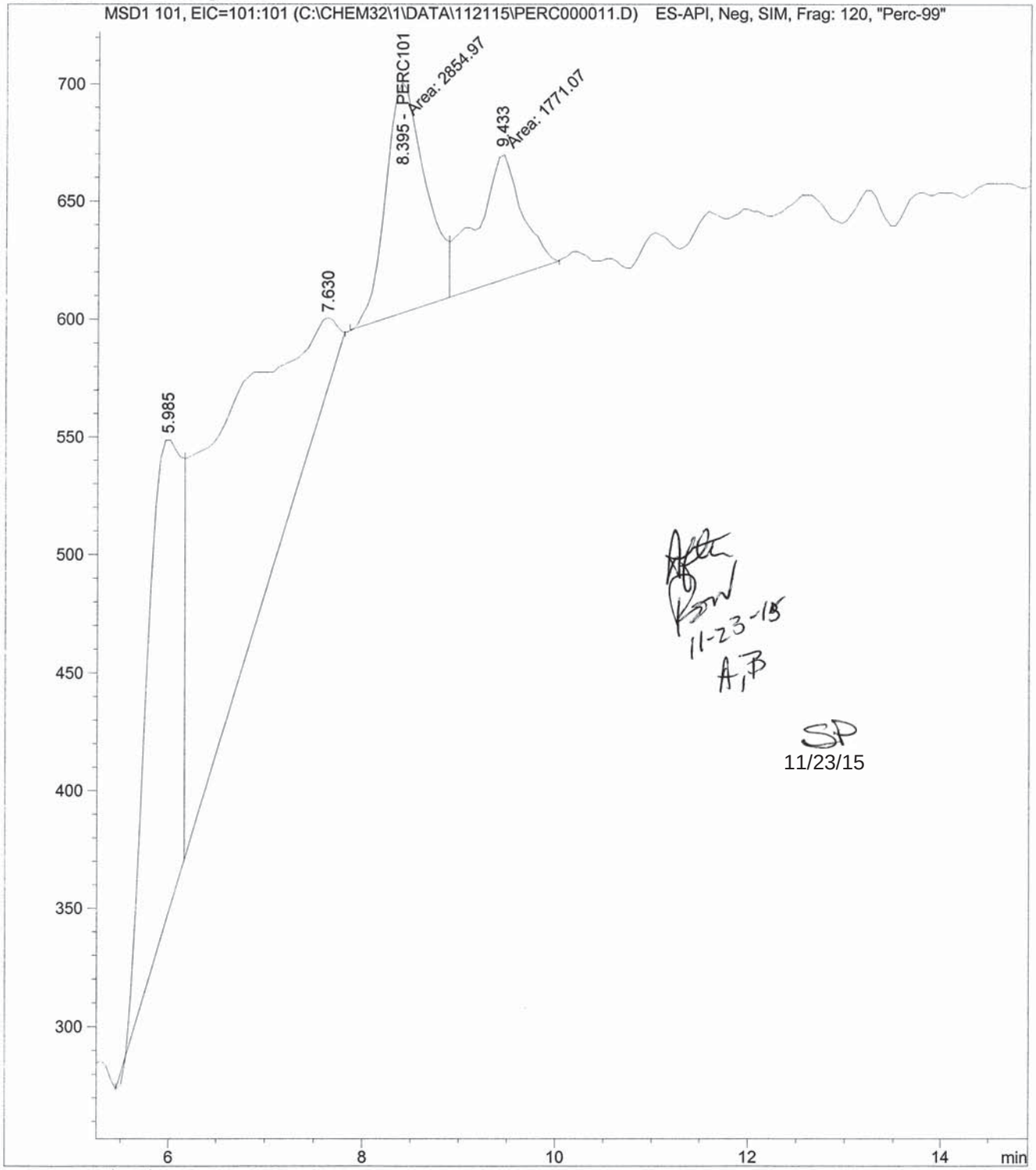

Data File C:\CHEM32\1\DATA\112115\PERC000012.D
Sample Name: 5K20010-MS1@5

==========

Acq. Operator : Seq. Line : 12
Acq. Instrument : Instrument 1 Location : Vial 7
Injection Date : 11/21/2015 8:10:51 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 11/23/2015 9:24:47 AM
(modified after loading)
Additional Info : Peak(s) manually integrated

==========

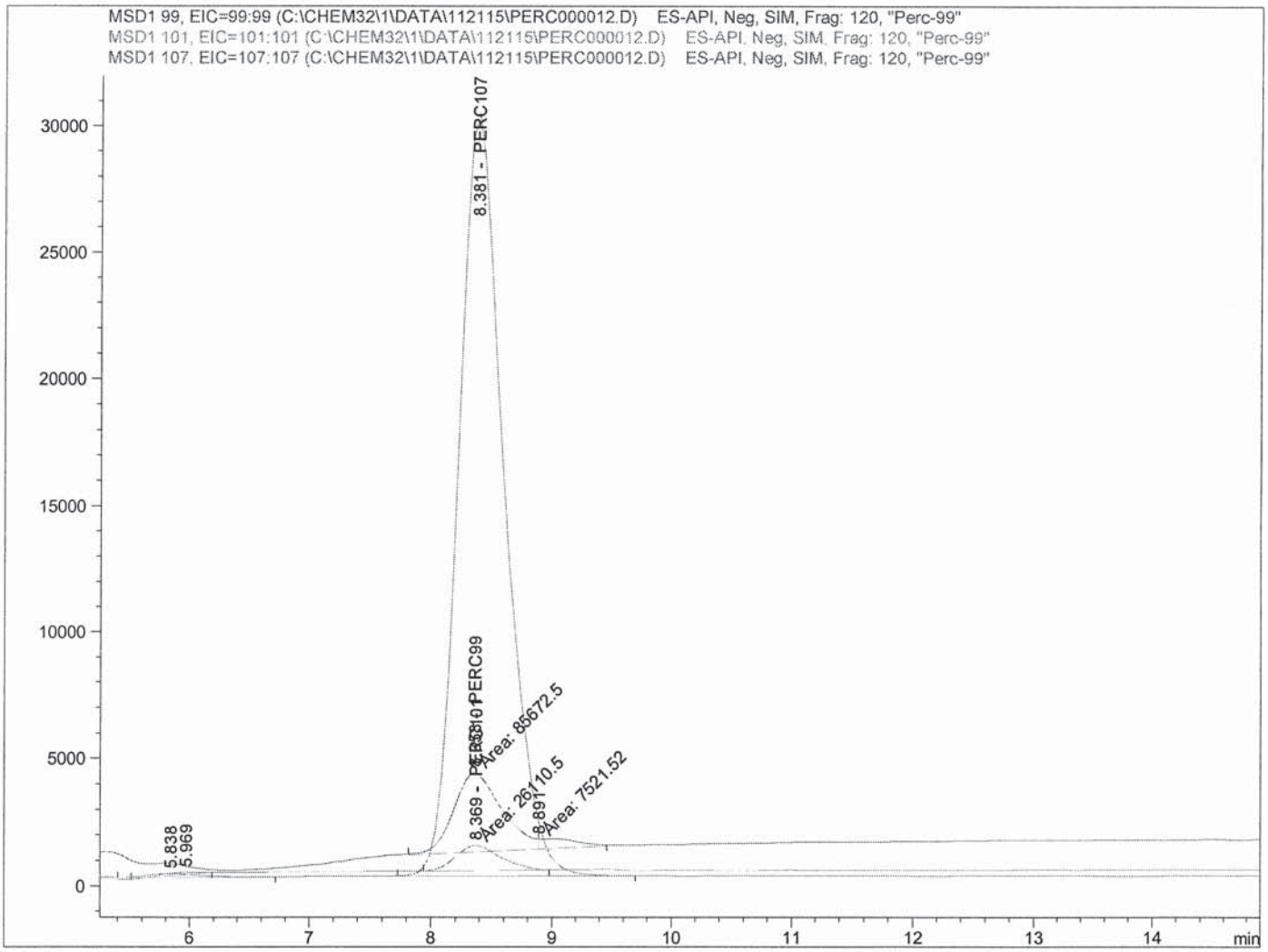

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 11/23/2015 9:24:21 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
11/23/15

11-23-15

Data File C:\CHEM32\1\DATA\112115\PERC000012.D
Sample Name: 5K20010-MS1@5

```
==================================================================
Acq. Operator   :                                Seq. Line :  12
Acq. Instrument : Instrument 1                    Location : Vial 7
Injection Date  : 11/21/2015 8:10:51 PM                Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 11/23/2015 9:24:47 AM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
==================================================================

----|-------------|-------------------------
  1      5.00000   PERC107


Signal 1: MSD1 99, EIC=99:99

RetTime  Type  ISTD    Area     Amt/Area    Amount   Grp   Name
 [min]         used              ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.358 MF        1 8.56725e4  8.48638e-1 4.57508e-1    PERC99

Totals without ISTD(s) :             4.57508e-1



Signal 2: MSD1 101, EIC=101:101

RetTime  Type  ISTD    Area     Amt/Area    Amount   Grp   Name
 [min]         used              ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.369 MM        1 2.61105e4     2.60545 4.28087e-1    PERC101

Totals without ISTD(s) :             4.28087e-1



Signal 3: MSD1 107, EIC=107:107

RetTime  Type  ISTD    Area     Amt/Area    Amount   Grp   Name
 [min]         used              ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.381 BB   I    1 7.94576e5     1.00000    5.00000    PERC107

Totals without ISTD(s) :                0.00000


==================================================================
                         *** End of Report ***
```

Print of window 38: Current Chromatogram(s)
Data File : C:\CHEM32\1\DATA\112115\PERC000012.D
Sample Name : 5K20010-MS1@5

==========

Acq. Operator : Seq. Line : 12
Acq. Instrument : Instrument 1 Location : Vial 7
Injection Date : 11/21/2015 8:10:51 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 11/23/2015 9:24:47 AM
(modified after loading)
Additional Info : Peak(s) manually integrated

Current Chromatogram(s)

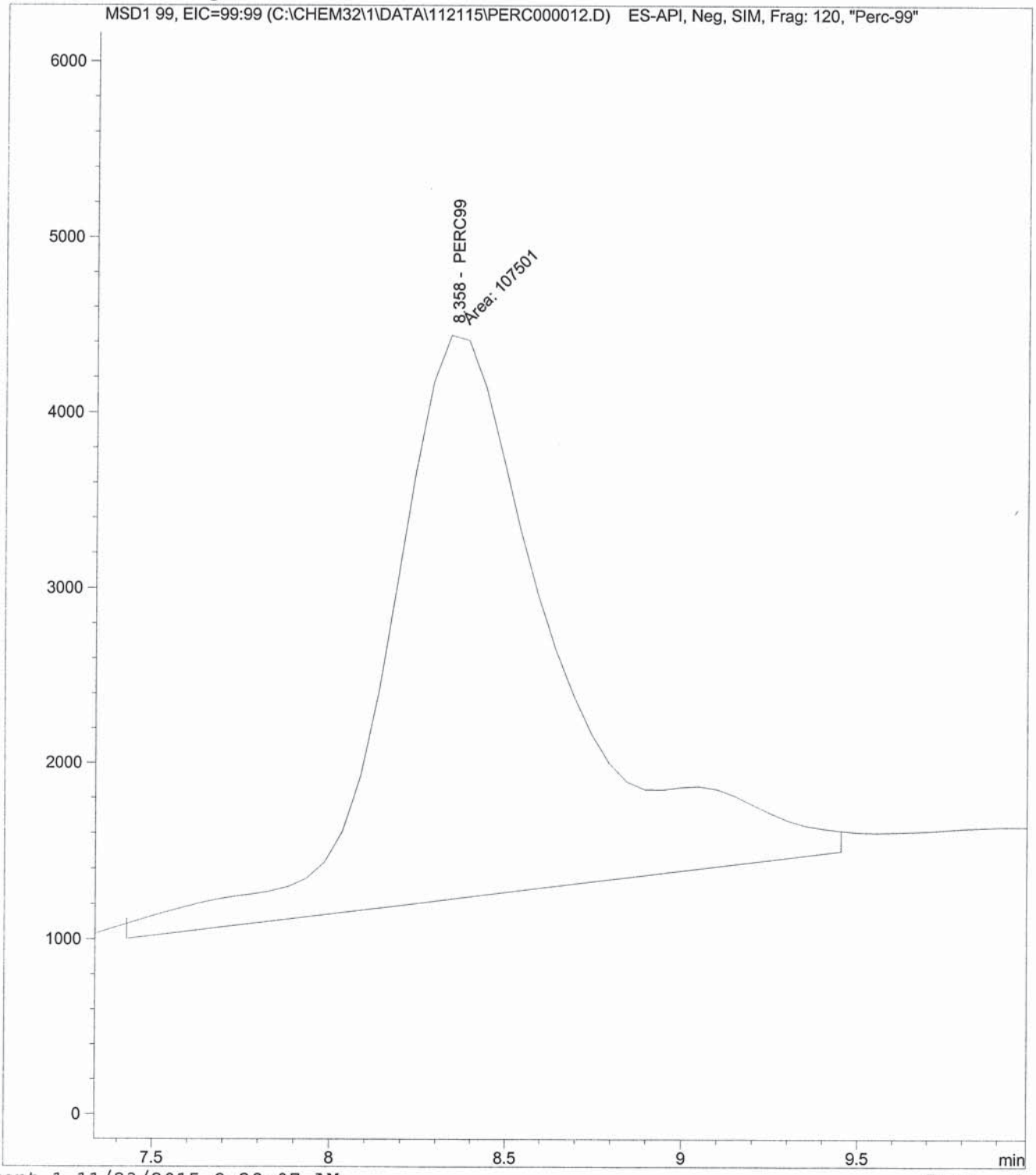

Print of window 38: Current Chromatogram(s)
Data File : C:\CHEM32\1\DATA\112115\PERC000012.D
Sample Name : 5K20010-MS1@5

==========

Acq. Operator : Seq. Line : 12
Acq. Instrument : Instrument 1 Location : Vial 7
Injection Date : 11/21/2015 8:10:51 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 11/23/2015 9:24:47 AM
(modified after loading)
Additional Info : Peak(s) manually integrated

Current Chromatogram(s)

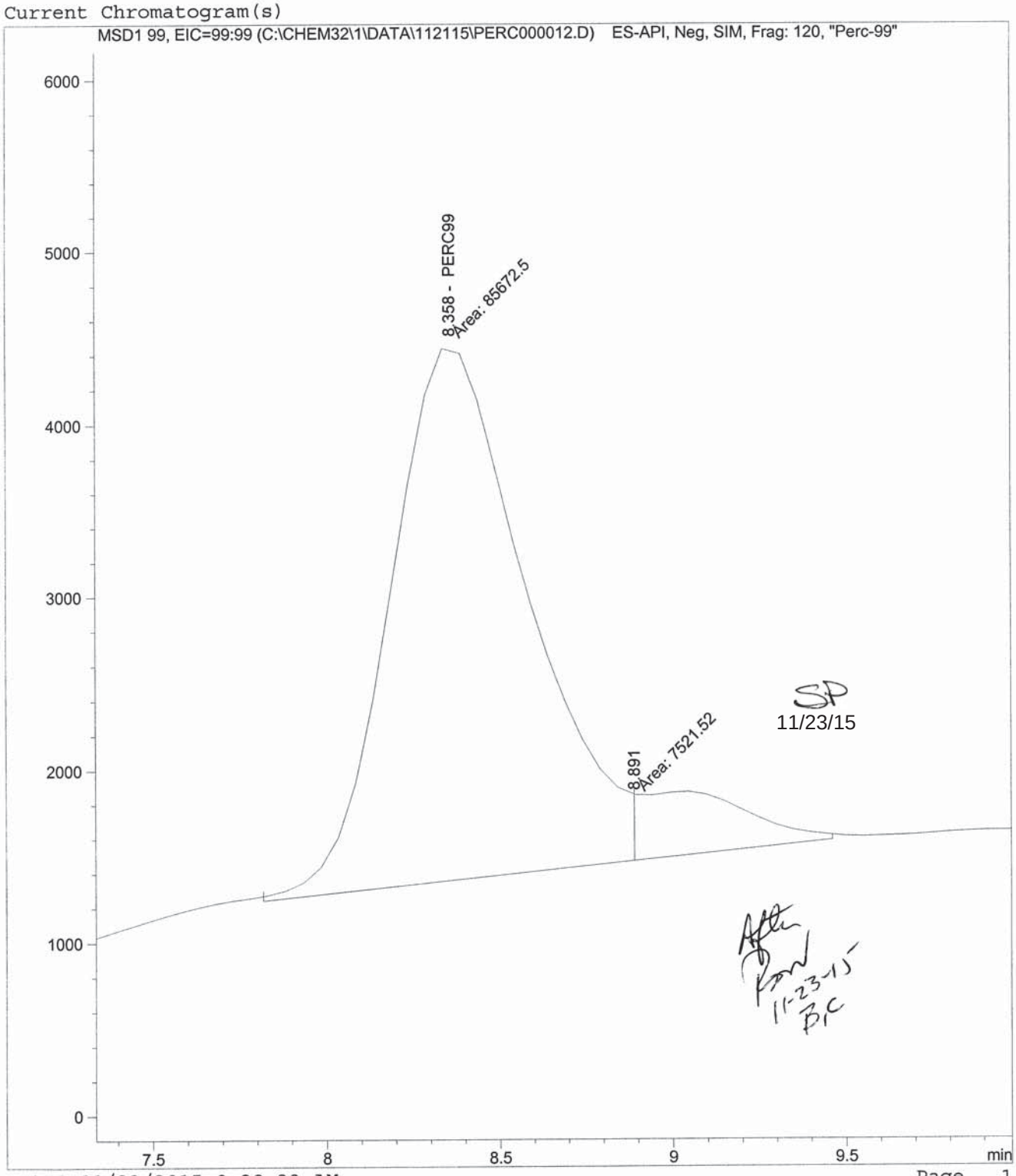

Print of window 38: Current Chromatogram(s)
Data File : C:\CHEM32\1\DATA\112115\PERC000012.D
Sample Name : 5K20010-MS1@5

==========

Acq. Operator : Seq. Line : 12
Acq. Instrument : Instrument 1 Location : Vial 7
Injection Date : 11/21/2015 8:10:51 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 11/23/2015 9:24:47 AM
(modified after loading)
Additional Info : Peak(s) manually integrated

Current Chromatogram(s)

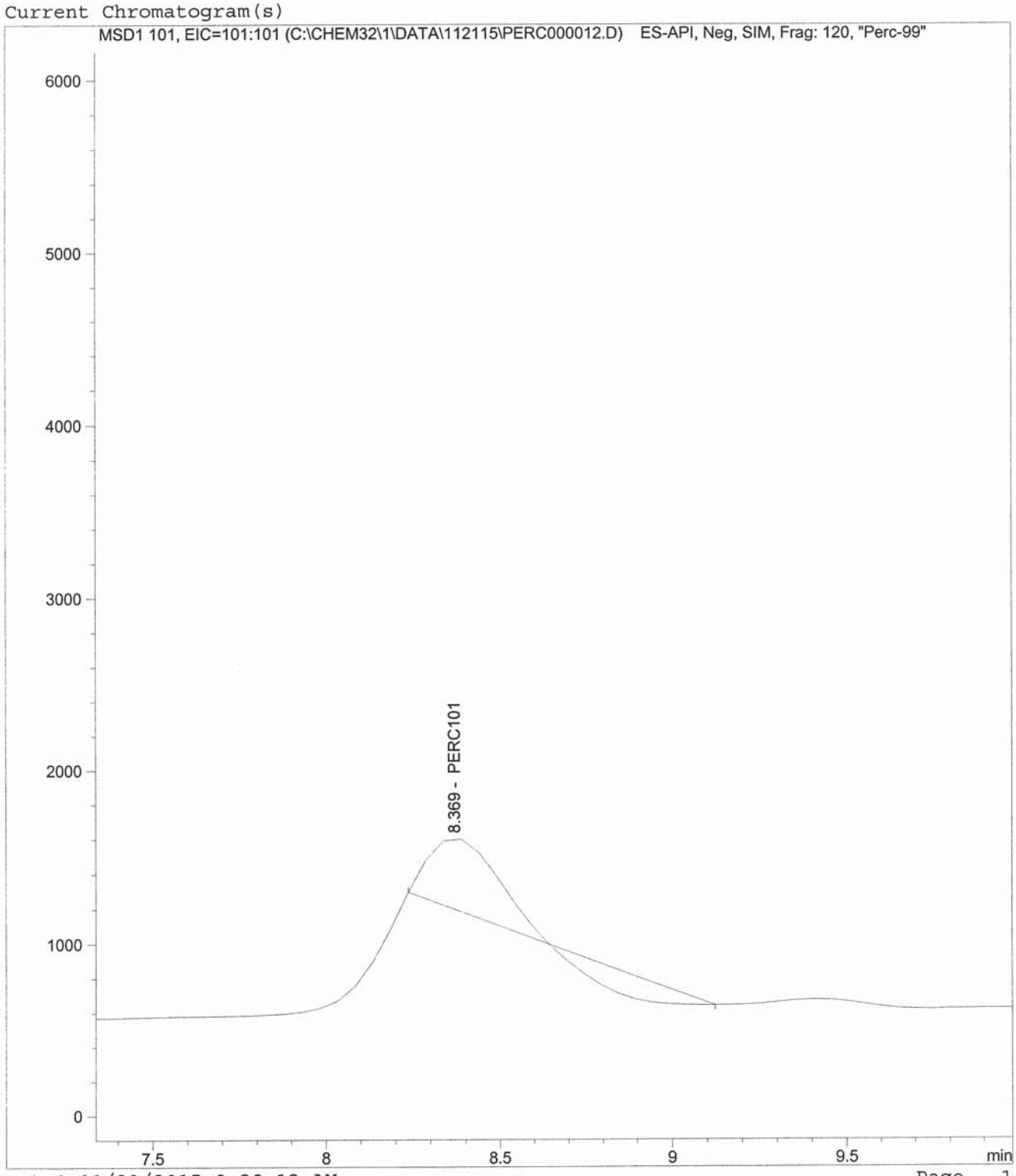

Print of window 38: Current Chromatogram(s)
Data File : C:\CHEM32\1\DATA\112115\PERC000012.D
Sample Name : 5K20010-MS1@5

==========

Acq. Operator : Seq. Line : 12
Acq. Instrument : Instrument 1 Location : Vial 7
Injection Date : 11/21/2015 8:10:51 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 11/23/2015 9:24:47 AM
(modified after loading)
Additional Info : Peak(s) manually integrated

Current Chromatogram(s)

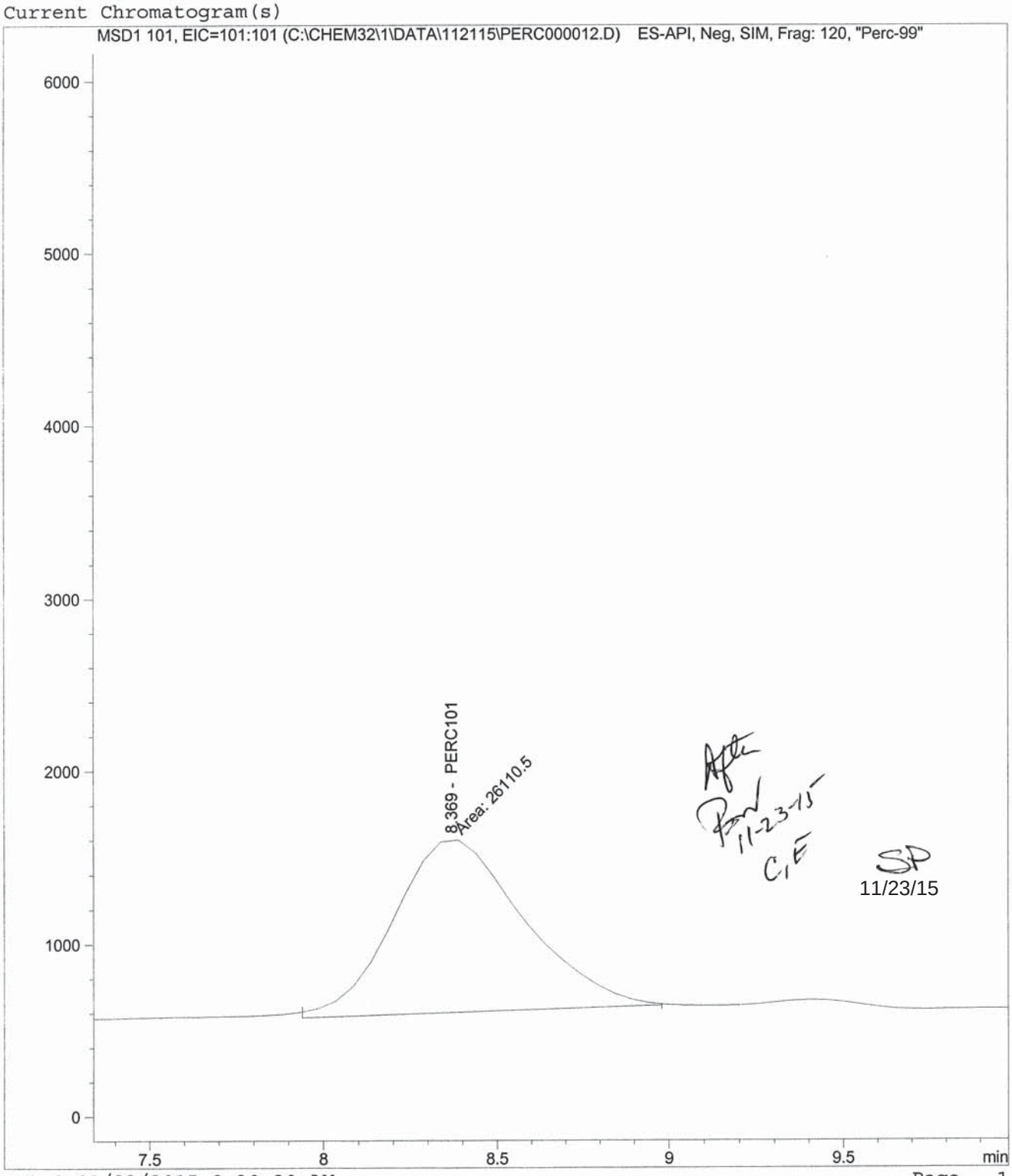

Data File C:\CHEM32\1\DATA\112115\PERC000013.D
Sample Name: 5K20010-MSD1@5

==========

Acq. Operator : Seq. Line : 13
Acq. Instrument : Instrument 1 Location : Vial 8
Injection Date : 11/21/2015 8:28:43 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 11/23/2015 9:24:47 AM
(modified after loading)
Additional Info : Peak(s) manually integrated

==========

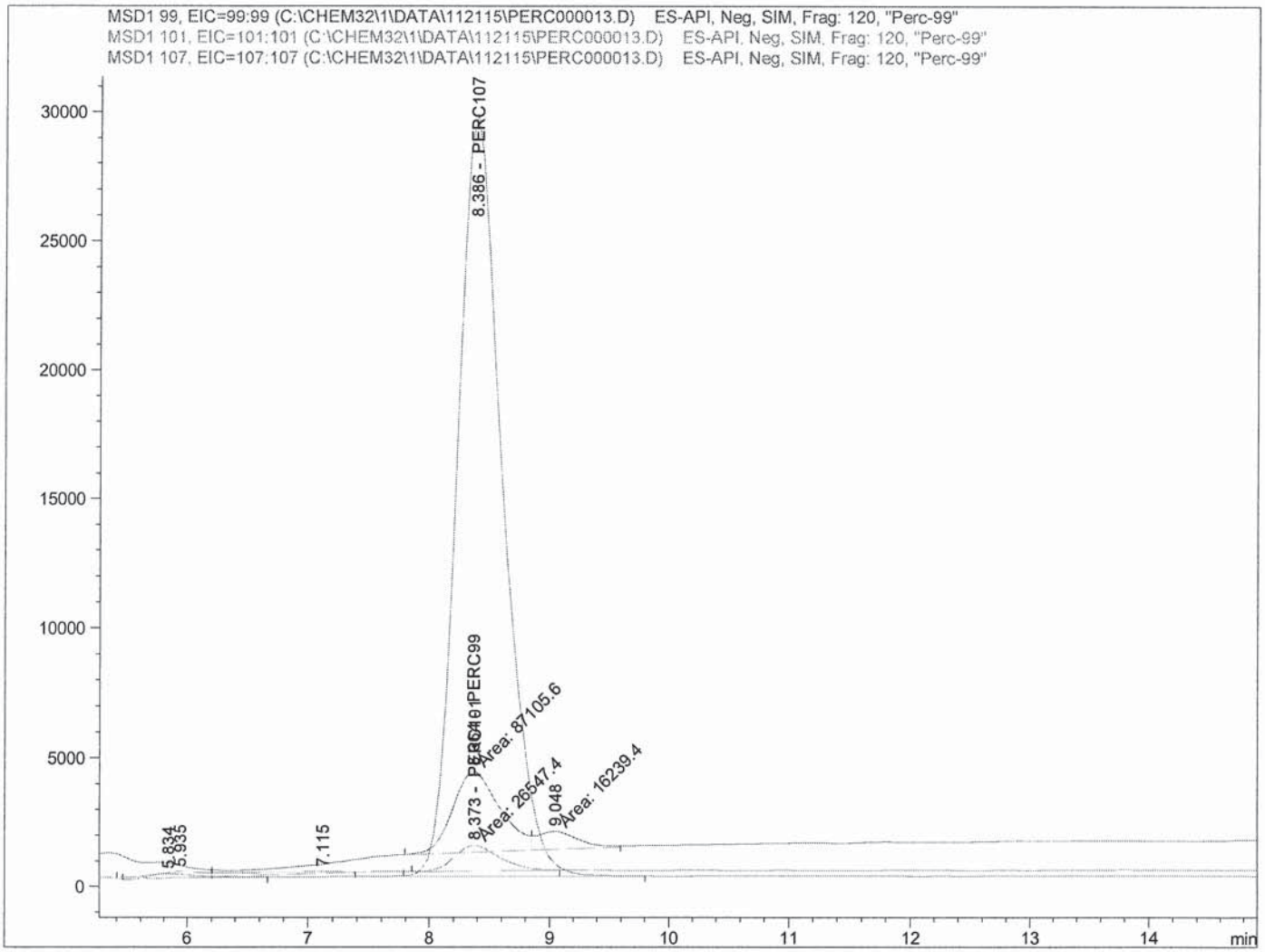

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 11/23/2015 9:24:21 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

11-23-15

SP
11/23/15

Data File C:\CHEM32\1\DATA\112115\PERC000013.D
Sample Name: 5K20010-MSD1@5

```
==================================================================
Acq. Operator   :                                  Seq. Line :  13
Acq. Instrument : Instrument 1                      Location : Vial 8
Injection Date  : 11/21/2015 8:28:43 PM                 Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 11/23/2015 9:24:47 AM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
==================================================================

----|-------------|-------------------------
  1      5.00000   PERC107


Signal 1: MSD1 99, EIC=99:99

RetTime  Type  ISTD    Area     Amt/Area    Amount   Grp   Name
 [min]         used              ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.364 MF        1 8.71056e4  8.48638e-1 4.75170e-1    PERC99

Totals without ISTD(s) :             4.75170e-1



Signal 2: MSD1 101, EIC=101:101

RetTime  Type  ISTD    Area     Amt/Area    Amount   Grp   Name
 [min]         used              ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.373 MM        1 2.65474e4     2.60545 4.44615e-1    PERC101

Totals without ISTD(s) :             4.44615e-1



Signal 3: MSD1 107, EIC=107:107

RetTime  Type  ISTD    Area     Amt/Area    Amount   Grp   Name
 [min]         used              ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.386 BB   I    1 7.77839e5     1.00000    5.00000    PERC107

Totals without ISTD(s) :                0.00000


==================================================================
                         *** End of Report ***
```

Print of window 38: Current Chromatogram(s)
Data File : C:\CHEM32\1\DATA\112115\PERC000013.D
Sample Name : 5K20010-MSD1@5

==========

Acq. Operator : Seq. Line : 13
Acq. Instrument : Instrument 1 Location : Vial 8
Injection Date : 11/21/2015 8:28:43 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 11/23/2015 9:24:47 AM
(modified after loading)

Current Chromatogram(s)

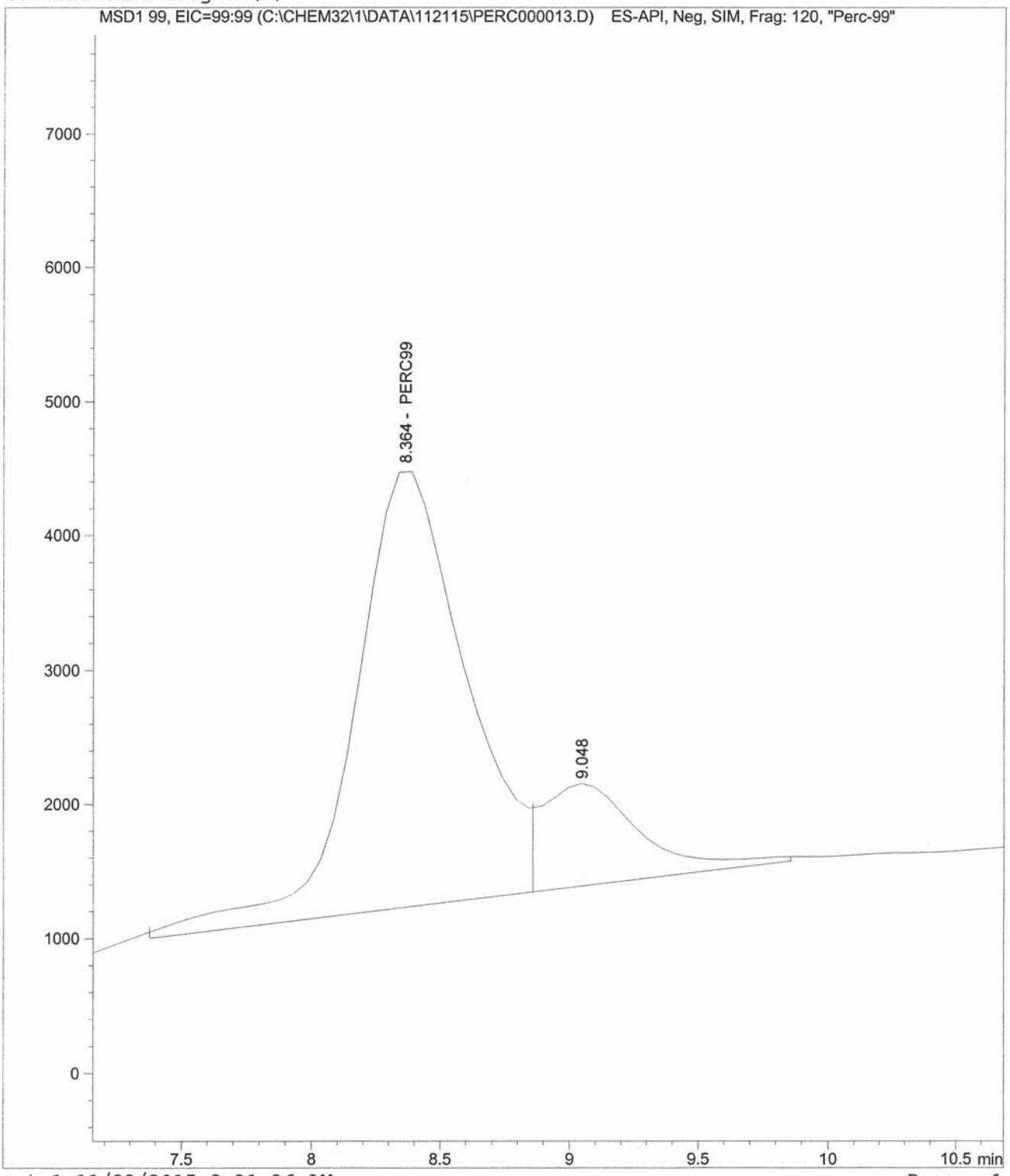

Print of window 38: Current Chromatogram(s)
Data File : C:\CHEM32\1\DATA\112115\PERC000013.D
Sample Name : 5K20010-MSD1@5

==========

Acq. Operator : Seq. Line : 13
Acq. Instrument : Instrument 1 Location : Vial 8
Injection Date : 11/21/2015 8:28:43 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 11/23/2015 9:24:47 AM
(modified after loading)
Additional Info : Peak(s) manually integrated

Current Chromatogram(s)

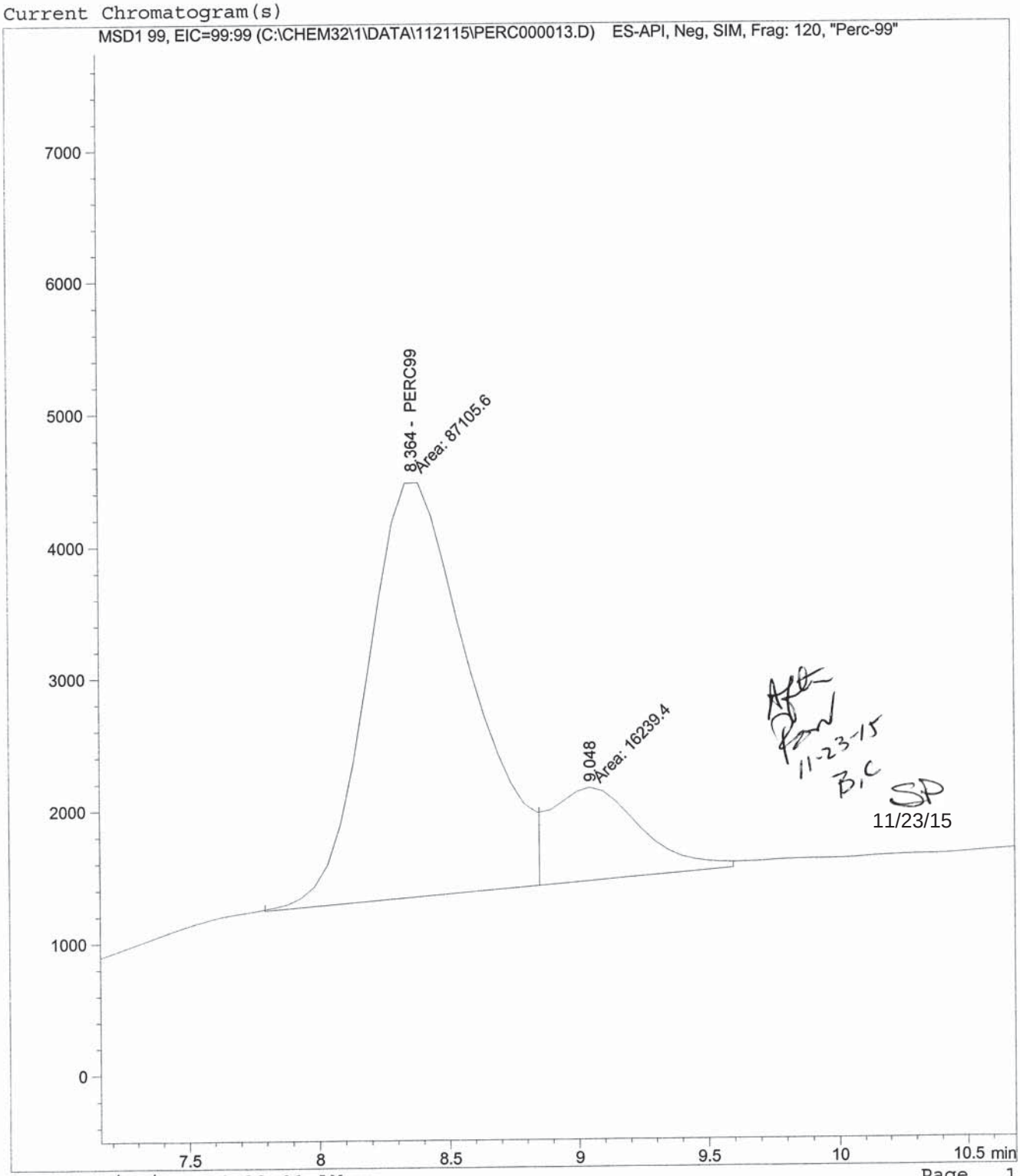

Instrument 1 11/23/2015 9:32:01 AM

Print of window 38: Current Chromatogram(s)
Data File : C:\CHEM32\1\DATA\112115\PERC000013.D
Sample Name : 5K20010-MSD1@5

==========

Acq. Operator : Seq. Line : 13
Acq. Instrument : Instrument 1 Location : Vial 8
Injection Date : 11/21/2015 8:28:43 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 11/23/2015 9:24:47 AM
(modified after loading)
Additional Info : Peak(s) manually integrated

Current Chromatogram(s)

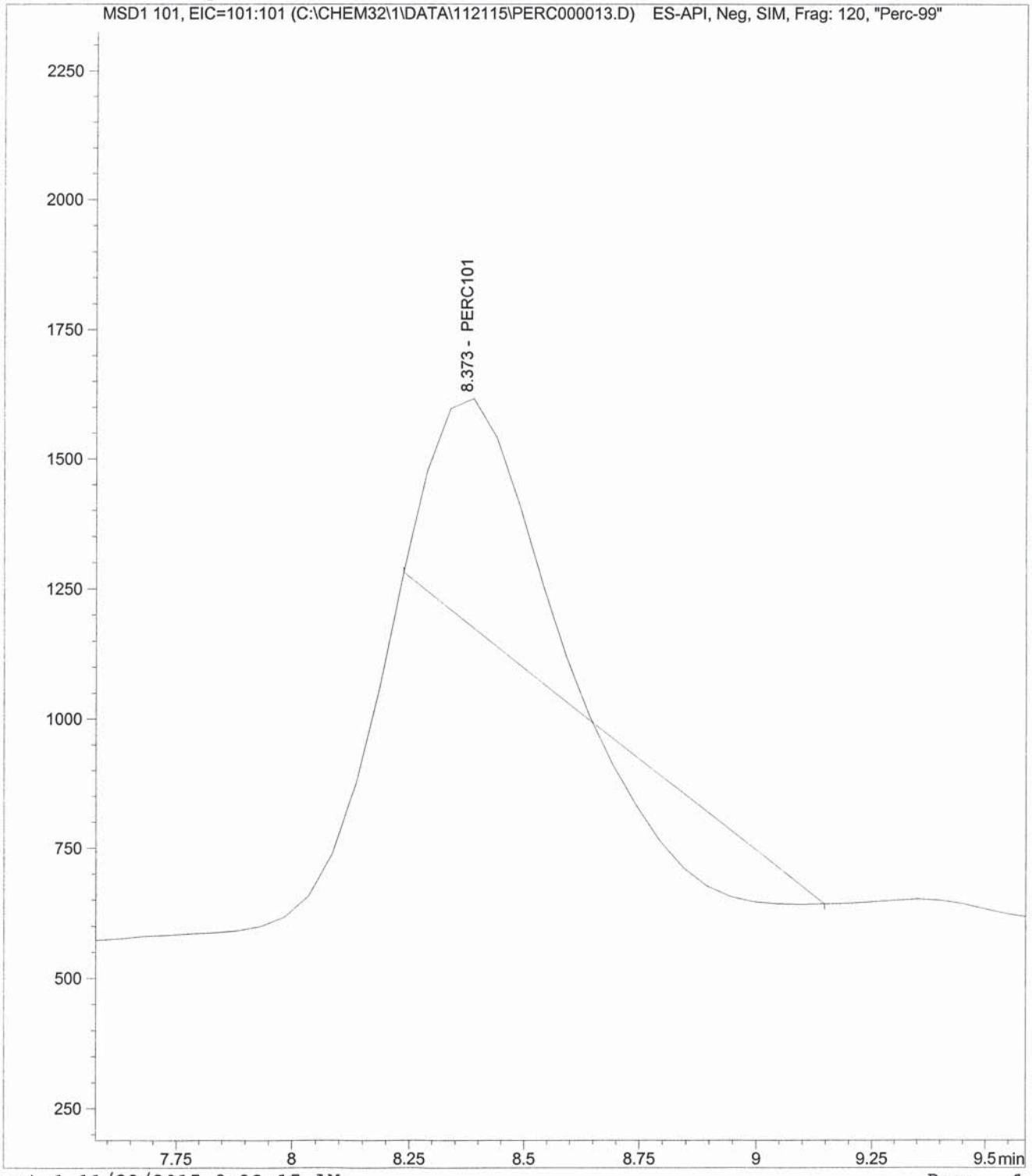

Print of window 38: Current Chromatogram(s)
Data File : C:\CHEM32\1\DATA\112115\PERC000013.D
Sample Name : 5K20010-MSD1@5

==========

Acq. Operator : Seq. Line : 13
Acq. Instrument : Instrument 1 Location : Vial 8
Injection Date : 11/21/2015 8:28:43 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 11/23/2015 9:24:47 AM
(modified after loading)
Additional Info : Peak(s) manually integrated

Current Chromatogram(s)

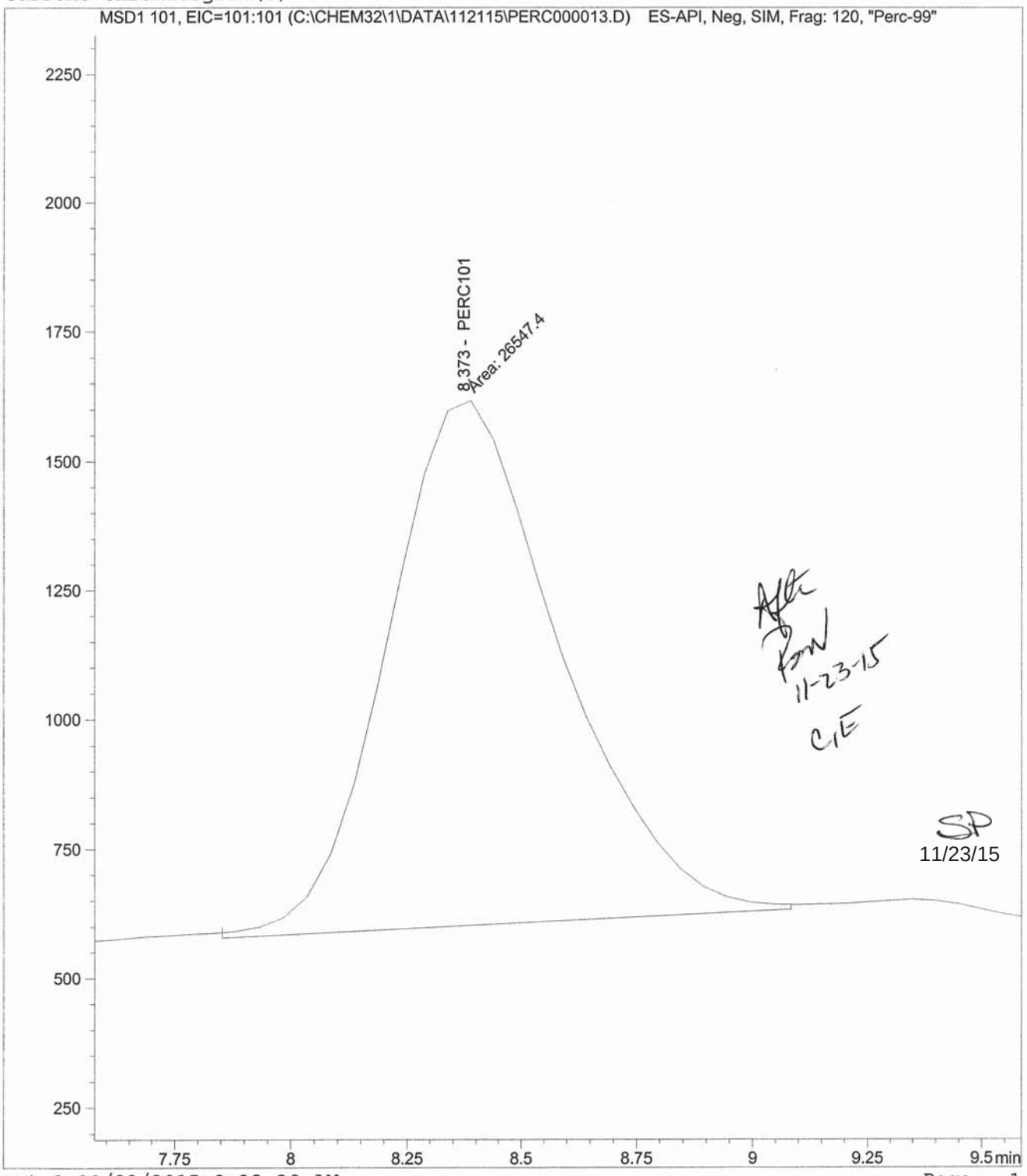

Instrument 1 11/23/2015 9:32:29 AM

Data File C:\CHEM32\1\DATA\112115\PERC000016.D
Sample Name: SEQ-CCV2

==========

Acq. Operator : Seq. Line : 16
Acq. Instrument : Instrument 1 Location : Vial 3
Injection Date : 11/21/2015 9:22:17 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 11/23/2015 9:34:39 AM
(modified after loading)

==========

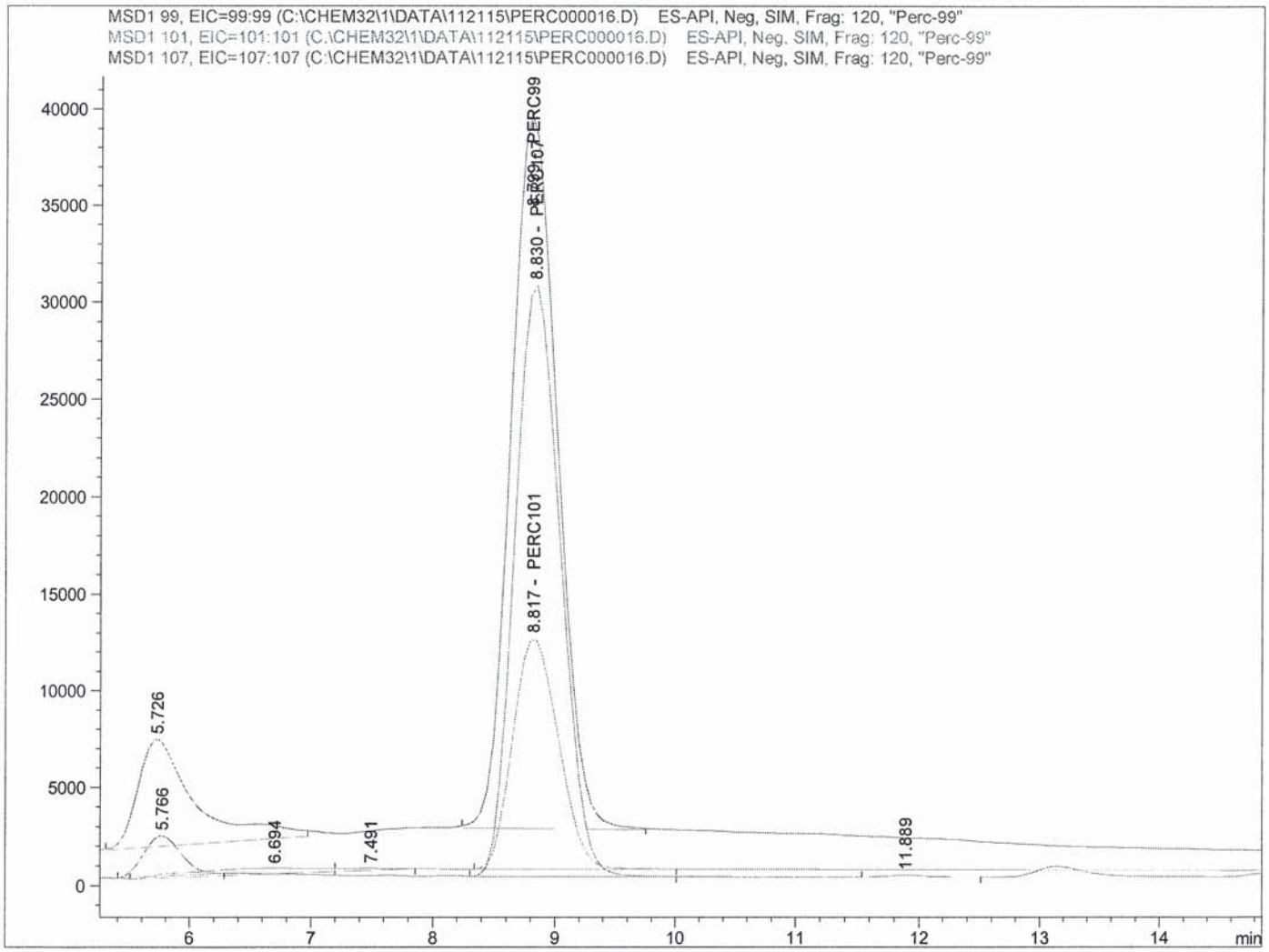

==========

Internal Standard Report

==========

SP
11/23/15

Sorted By : Signal
Calib. Data Modified : 11/23/2015 9:33:53 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

Rpd 11-23-15

Data File C:\CHEM32\1\DATA\112115\PERC000016.D
Sample Name: SEQ-CCV2

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 11/21/2015 9:22:17 PM

Seq. Line : 16
Location : Vial 3
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 11/23/2015 9:34:39 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.799	BB	1	9.73361e5	8.48638e-1	5.19270		PERC99

Totals without ISTD(s) : 5.19270

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.817	BBA	1	3.11202e5	2.60545	5.09708		PERC101

Totals without ISTD(s) : 5.09708

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.830	VBA I	1	7.95377e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\112115\PERC000017.D
Sample Name: SEQ-LCV3

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 11/21/2015 9:40:07 PM

Seq. Line : 17
Location : Vial 4
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 11/23/2015 9:34:39 AM
(modified after loading)

==========

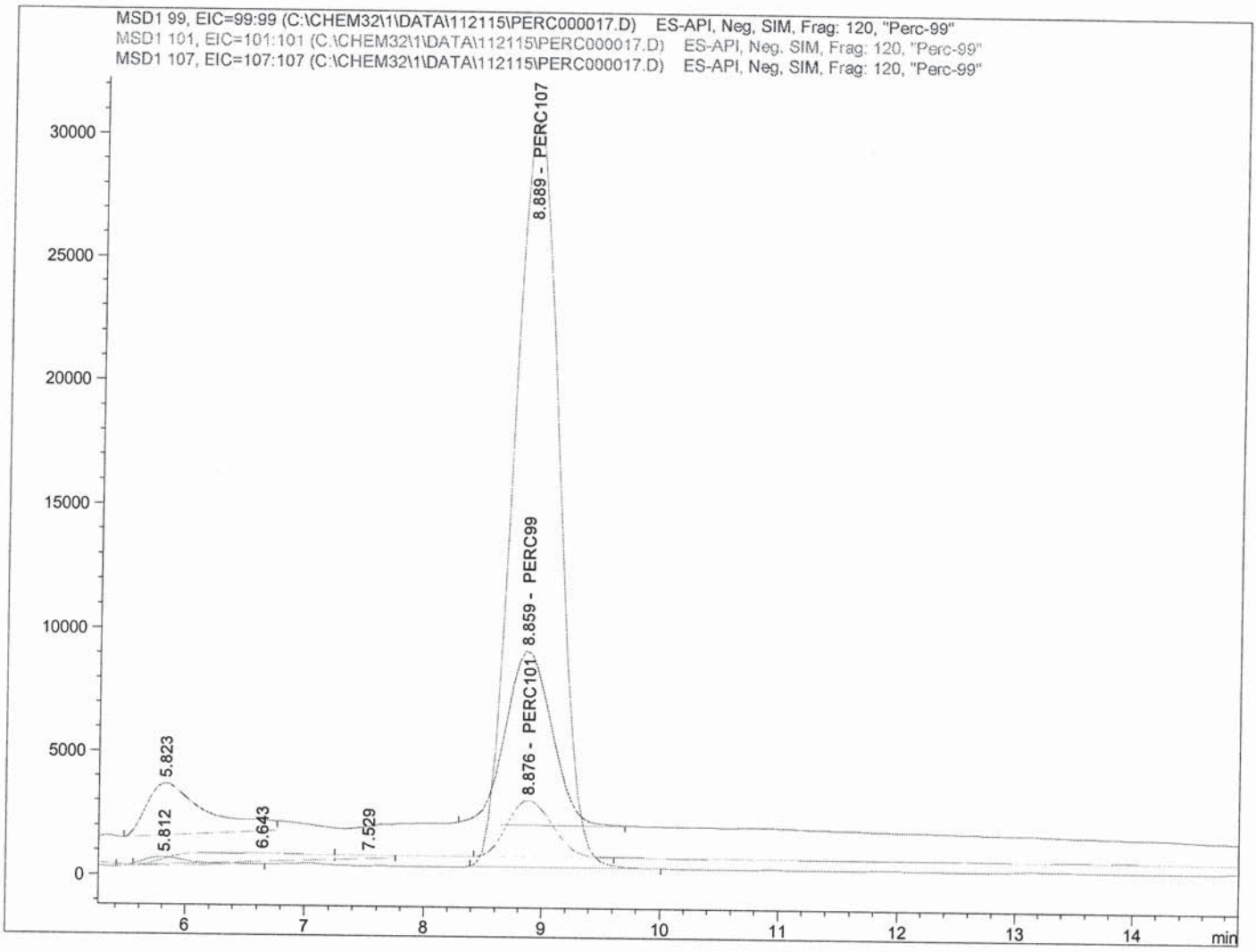

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Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 11/23/2015 9:33:53 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
11/23/15

11-23-15

Data File C:\CHEM32\1\DATA\112115\PERC000017.D
Sample Name: SEQ-LCV3

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 11/21/2015 9:40:07 PM

Seq. Line : 17
Location : Vial 4
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 11/23/2015 9:34:39 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.859	BB	1	1.94144e5	8.48638e-1	1.02808		PERC99

Totals without ISTD(s) : 1.02808

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.876	BV	1	6.15470e4	2.60545	1.00062		PERC101

Totals without ISTD(s) : 1.00062

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.889	BBA I	1	8.01287e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\112115\PERC000018.D
Sample Name: SEQ-LCV4

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 11/21/2015 9:58:00 PM

Seq. Line : 18
Location : Vial 83
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 11/23/2015 9:36:44 AM
(modified after loading)

==========

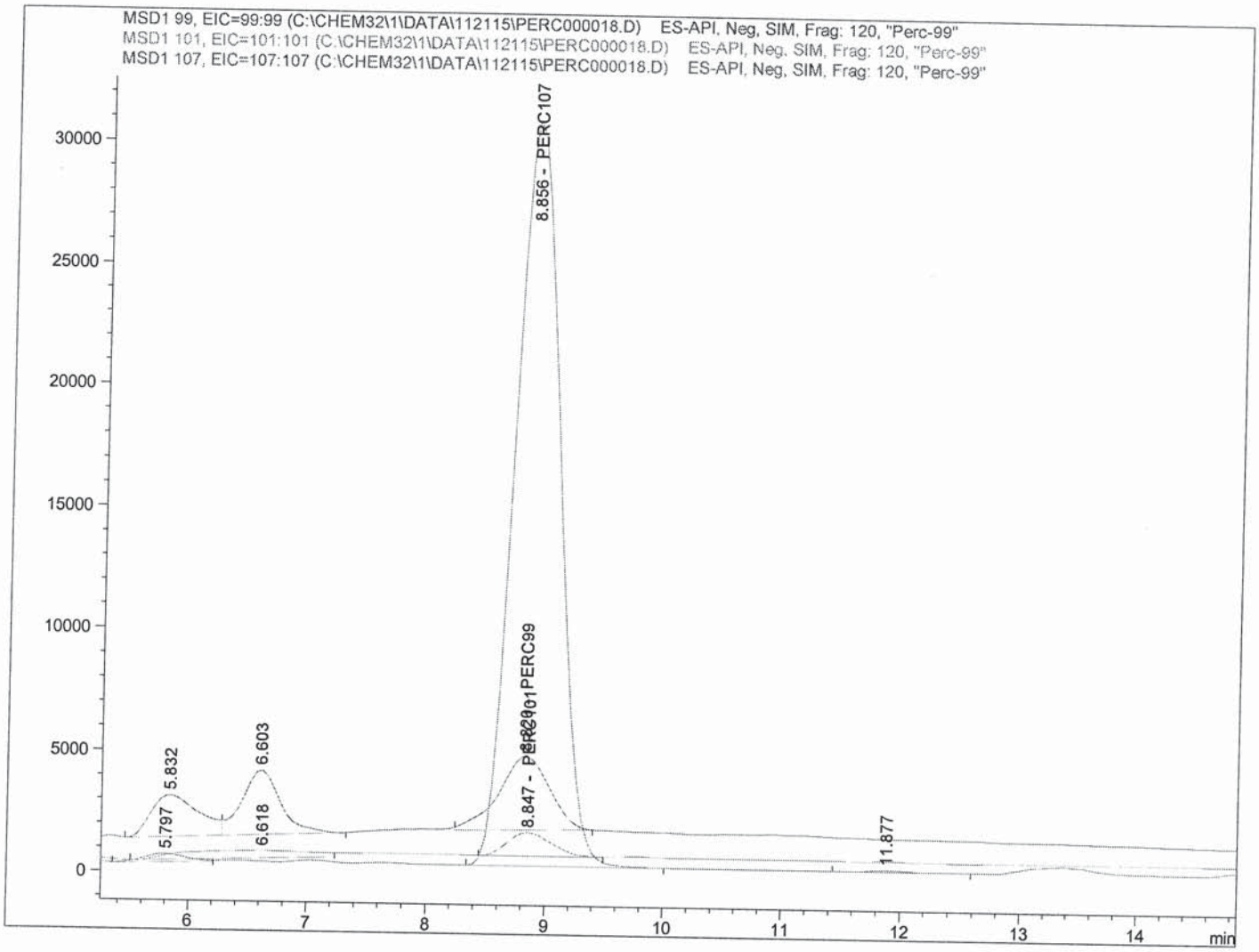

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 11/23/2015 9:33:53 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

11-23-15

SP
11/23/15

Data File C:\CHEM32\1\DATA\112115\PERC000018.D
Sample Name: SEQ-LCV4

```
==================================================================
Acq. Operator   :                                Seq. Line :  18
Acq. Instrument : Instrument 1                    Location : Vial 83
Injection Date  : 11/21/2015 9:58:00 PM                Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/18/2015 10:55:16 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 11/23/2015 9:36:44 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.820	BBA	1	8.98335e4	8.48638e-1	4.74963e-1		PERC99

Totals without ISTD(s) : 4.74963e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.847	BV	1	2.52318e4	2.60545	4.09571e-1		PERC101

Totals without ISTD(s) : 4.09571e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.856	BBA I	1	8.02548e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

00653473

PREPARATION BENCH SHEET

5K20010

Empirical Laboratories, LLC

Printed: 12/8/2015 10:00:32AM

Instrument:

Matrix: Water **Prepared using: GCLC - LCMS_PREP6850_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1511179-01	A	LCMS_PERC_6850	11/20/2015	10	10					NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511179-02	A	LCMS_PERC_6850	11/20/2015	10	10					NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511179-03	B	LCMS_PERC_6850_SPLP_Full	11/20/2015	10	10					NA	MS/MSD;BatchQC;Added for BatchQC in: 5K20010
1511179-03	B	LCMS_PERC_6850_Q5	11/20/2015	10	10					NA	MS/MSD;BatchQC;Added for BatchQC in: 5K20010
1511179-03	B	LCMS_PERC_6850	11/20/2015	10	10					NA	MS/MSD;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511179-04	A	LCMS_PERC_6850	11/20/2015	10	10					NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511179-05	A	LCMS_PERC_6850	11/20/2015	10	10					NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511179-06	A	LCMS_PERC_6850	11/20/2015	10	10					NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511179-07	A	LCMS_PERC_6850	11/20/2015	10	10					NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511188-02	D	LCMS_PERC_6850_Q5	11/20/2015	10	10					NA	;QSM5;QSM5
5K20010-BLK1		QC	11/20/2015	10	10					NA	
5K20010-BS1		QC	11/20/2015	10	10	15F0073		200		NA	
5K20010-MS1		QC	11/20/2015	10	10	15F0073	1511179-03	200		NA	
5K20010-MSD1		QC	11/20/2015	10	10	15F0073	1511179-03	200		NA	

Reagents Used:

Standard	Description

ANALYTICAL DATA PACKAGE

SDG # 1511269

PROJECT NAME: Perchlorate

SUBMITTAL TO:

Stephanie Mossburg
Microbac Laboratories, Inc.
158 Starlite Drive
Marietta, OH 45750

SUBMITTAL BY:

Empirical Laboratories, LLC (EL)
621 Mainstream Drive, Suite 270
Nashville, TN 37228
Tel (615)345-1115
Fax (866)417-0548

LABORATORY CONTACT PERSON:

Project Manager: Sonya Gordon
Tel (615)345-1115
Fax (866)417-0548
Email: sgordon@empirlabs.com

Original Report Date: December 21, 2015
Report Revision #: N/A
Revision Date: N/A
Total # of Pages: 274

THIS DOCUMENT MEETS DoD QSM 4.2 STANDARDS

The results relate to only the samples associated with the referenced SDG and the submitted data has been produced in accordance with laboratory procedures. The Laboratory's Technical Lab Director, Mr. Rick Davis, is responsible for the final data produced and reported. His signature is listed at the end of the Case Narrative within the Analytical Data Package. If applicable to this report package, details on report revisions and the information on subcontracted analysis are listed in the package Case Narrative. This report shall not be reproduced, except in full, without the written approval of Empirical Laboratories, LLC.

L-A-B Accredited - Certificate Number L2226 - Testing

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5	Data for SW6850 Required Data / QAQC / Calibration Forms Supporting Raw Data / Logs	20

Sample Delivery Group Case Narrative

Receipt Information:
The samples were received within the preservation guidelines for the associated methods. The information associated with sample receipt and the Sample Delivery Group (SDG) are included within section 4 of this package, which also provides information on the link between the client sample ID listed on the COC and laboratory's assigned unique sample ID or WorkOrder #. The sample is tracked through the laboratory for all analysis via the assigned WorkOrder #.

All samples that were received were analyzed and none of the samples were placed on hold without analyses. There were no subcontracted analyses for this SDG.

Changes to the Revision:
This is an original submittal of the final report package.

Analytical Information:
All samples were prepped (where applicable) and analyzed within the standard allowed holding times, unless noted within the exceptions listed below. The laboratory analyzed all samples within the program and method guidelines. Sample preparation and dilution information is provided within the final results report and at the beginning of each form set. The following information is provided specific to individual methods:

SW6850:
Note – Samples 1511269-01 (and matrix spikes) (5x) and -08 (10x) were analyzed at the dilutions indicated due to split peaks caused by sample matrix and samples 1511269-07 (50x), -20 (500x), -21 (5x), -22 (1000x), -23 (500x), and -24 (2000x) were analyzed at the dilutions indicated due to high concentrations of target analytes. Samples 1511269-06, -09, -10, -11, -12, -13, -14, -15, -16, -17, and -18 are qualified with a C10 to indicate that the sample was analyzed at the dilutions indicated due to the conductivity of the samples.

The following matrix spikes exceeded criteria:
5L01021-MS1/MSD1 (1511269-01) with a positive bias and exceeded relative percent difference criteria for Perchlorate; note – the associated batch spike is within criteria

The following internal standards exceeded criteria:
Perchlorate-d8 in 5L01021-BLK1; note – with a bias of 14% calculated (164% area with an upper limit of 150%), the Perchlorate concentration would still be below the LOD

No additional anomalies or deviations are noted and the proper data qualifiers have been applied.

Data Qualifiers:

As applicable and where required, the following general qualifiers are associated with the sample results. Additional qualifiers will be specified within the reporting sections of the data package or within the body of the Case Narrative.

Analytical Report Terms and Qualifiers

DL: The detection limit (DL) is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The DL is supported by the method detection limit (MDL) which is determined from analysis of a sample containing the analyte in a given matrix.

LOD: The Limit of Detection is an estimate of the minimum amount of a substance that an analytical process can reliably detect. An LOD is analyte- and matrix-specific and may be laboratory-dependent. This definition is further clarified in the DoD QSM 4.2 revisions as the smallest amount or concentration of a substance that must be present in a sample in order to be detected at a high level of confidence (99%). At the LOD, the false negative rate (Type II error) is 1%.

LOQ: The Limit of Quantitation is the minimum level, concentration, or quantity of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. This term is further clarified within the DoD QSM 4.2 as the lowest concentration that produces a quantitative result within specified limits of precision and bias.

*****: Exceeding quality control criteria are associated with the reported result.

B: The presence of a "B" to the right of an analytical value indicates that this compound was also detected in the method blank and the data should be interpreted with caution. One should consider the possibility that the correct sample result might be less than the reported result and, perhaps, zero.

D: When a sample (or sample extract) is rerun diluted because one of the compound concentrations exceeded the highest concentration range for the standard curve, all of the values obtained in the dilution run will be flagged with a "D".

E: The concentration for any compound found which exceeds the highest concentration level on the standard curve for that compound will be flagged with an "E". Usually the sample will be rerun at a dilution to quantitate the flagged compound. For Metals, the qualifier indicates that the serial dilution was outside of the control limits and the compound should be considered estimated due to the presence of interference.

H1: The result was analyzed outside of the EPA recommended holding time.

H2: The result was extracted outside of the EPA recommended holding time.

H3: The sample for this analyte was received outside of the EPA recommended holding time.

J: The presence of a "J" to the right of an analytical result indicates that the reported result is estimated. The mass spectral data pass the identification criteria showing that the compound is present, but the calculated result is less than the LOQ. One should feel confident that the result is greater than zero and less than the LOQ.

M: Indicates that the sample matrix interfered with the quantitation of the analyte. In dual column analysis the result is reported from the column with the lower concentration. In inorganics, it indicates that the parameters DL/LOD/LOQ have been raised.

N: The MS/MSD accuracy and/or precision are outside criteria. The predigested spike recovery is not within control limits for the associated parameter.

P: The associated numerical value is an estimated quantity. There is greater than a 40% difference between the two GC columns for the detected concentrations. The higher of the two values is reported unless matrix interference is obvious or for HPLC analysis where the primary column is reported.

Q: The relative percent difference (RPD) and/or percent recovery exceeded limits in the associated Blank Spike and/or Blank Spike Duplicate.

S: The associated internal standard exceeded criteria.

U: The presence of a "U" indicates that the analyte was analyzed for but was not detected or the concentration of the analyte quantitated below the DL.

X: The parameter shows a potential positive bias on a reported concentration due to an ICV or CCV exceeding the upper control limit on the high side.

Y: The parameter shows a potential negative bias on a reported concentration due to an ICV or CCV exceeding the lower control limit on the low side.

Z: The parameter shows lack of confirmation/detection, which may be due to a negative bias in the ICV or CCV which exceeds the lower control limit.

Chromatographic Flags for Manual Integration:

The following letters are used to denote manual integrations on the laboratory's raw data in association with chromatographic integrations:

A: The peak was manually integrated as it was not integrated in the original chromatogram.

B: The peak was manually integrated due to resolution or coelution issues in the original chromatogram.

C: The peak was manually integrated to correct the baseline from the original chromatogram.

D: The peak was manually integrated to identify the correct peak as the wrong peak was identified in the original chromatogram.

E: The peak was manually integrated to include the entire peak as the original chromatogram only integrated part of the peak.

LIMS Definitions / Naming Conventions:

The following are general naming conventions that are used throughout the laboratory; however, on a method by method basis, there are additional QAQC items that are named in a consistent format.

BLK: LIMS assigns a unique identifier to the Method Blank by naming it as the letters BLK

appended to the Batch ID. A Method Blank is an analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The Method Blank is used to assess for possible contamination during preparation and/or analysis steps. Method Blanks within a Batch or Analytical sequence will be appended with a numerical value beginning with 1 that will increase incrementally.

BS: LIMS assigns a unique identifier to the Blank Spike by naming it as the letters BS appended to the Batch ID. The Blank Spike or Lab Control Sample is a controlled analyte-free matrix, which is spiked with known and verified concentrations of target analytes. Spiking concentrations can be referenced in the method SOP. The BS is used to evaluate the viability of analytes taken through the entire prep (when applicable) and analytical process. Blank Spikes within a Batch or Analytical sequence will be appended with a numerical value beginning with 1 that will increase incrementally. A duplicate Blank Spike will be designated as a BSD.

MS: The LIMS assigns each Client sample with a unique identifier. The Matrix Spike is designated with a MS at the end of the sample's unique identifier. The Matrix Spike sample is used to assess the effect of the sample matrix on the precision and accuracy of the results generated using the selected method. A duplicate Matrix Spike will be designated as a MSD.

IDs: The LIMS assigns each Client sample with a unique identifier. The letter "RE" may potentially be appended to the end of the LIMS Sample ID. And "**RE"** implies that the sample was either re-prepped, re-analyzed straight, or re-analyzed at a dilution. Subsequent re-analysis for the sample will be appended with a numerical value beginning with 1 that will increase incrementally. Eg: RE1, RE2, RE3, etc.

Statement of Data Authenticity:

I certify that, based upon my inquiry of those individuals immediately responsible for obtaining the information and to the best of my knowledge, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in this Case Narrative, as verified by my signature below. During absences, the Data Quality Manager, Technical Directors or Project Managers are authorized to sign this Statement of Data Authenticity.

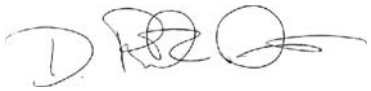

Mr. Rick D. Davis
Laboratory Technical Director / VP Operations

Empirical Laboratories, LLC
Certifications/Approvals
(Revised 12/16/2015)

DoD ELAP QSM5.0, Certificate Number L2226
- Aqueous
- Non-aqueous
- Expires: 01/30/2016

State of Florida, Department of Health – NELAP, Lab ID: E87646
- Clean Water Act
- RCRA/CERCLA
- Expires: 06/30/2016

State of Georgia, Environmental Protection Agency – NELAP, Self Certification
- Expires: 06/30/2016

Commonwealth of Kentucky, Energy and Environment Cabinet – WWLCP, Laboratory Number: 98017
- Wastewater
- Expires: 12/31/2015

Commonwealth of Kentucky, Department of Environmental Protection – UST, Certificate Number: 77
- Aqueous
- Non-aqueous
- Expires: 06/30/2016

State of New Jersey, Department of Environmental Protection – NELAP Primary, Lab ID: TN473
- Water Pollution
- Solid and Hazardous Waste
- Expires: 06/30/2016

State of North Carolina, Department of Environment and Natural Resources - Certificate Number: 643
- Aqueous
- Non-aqueous
- Expires: 12/31/2015

State of Texas, Commission on Environmental Quality – NELAP, Certificate Number: T104704307-15-11
- Aqueous
- Non-aqueous
- Expires: 12/31/2015

State of Utah, Department of Health – NELAP, Certificate Number: TN0042015-7
- Aqueous
- Non-aqueous
- Expires: 07/31/2016

Commonwealth of Virginia, Department of General Services – NELAP, Certificate Number: 7700, Lab ID: 460243
- Aqueous
- Non-aqueous
- Expires: 12/14/2016

State of Washington, Department of Ecology – NELAP, Lab ID: C934-15
- Groundwater
- Solid and Hazardous Waste
- Expires: 03/18/2016

ORGANIC CALCULATIONS

GC/MS Volatiles

$$\text{Final Concentration} = \frac{\text{On-column(ug/L or ug/Kg) * Expected Vol/Weight (mL or g) * Dilution}}{\text{Initial Vol/Weight (mL or g) * (Percent Solids/100) (if applicable)}}$$

Note - Expected Vol/Weight value is found in "Final Vol" column of Preparation Batch Summary.

GC/MS Extractables

$$\text{Final Concentration} = \frac{\text{On-column(ng/uL) * Final Vol (ml) * Dilution *(1000uL/mL)}}{\text{Initial Vol/Weight (mL or g) * (Percent Solids/100) (if applicable)}}$$

= ng/mL or ng/g

= ug/L or ug/kg

GC or LC Extractables

$$\text{Final Concentration} = \frac{\text{On-column(ng/mL) * Final Vol (mL) * Dilution}}{\text{Initial Vol/Weight (mL or g) * (Percent Solids/100) (if applicable)}}$$

= ng/mL or ng/g

= ug/L or ug/kg

Sample Receipt Information

L15110950 Perchlorate only report - stephanie.mossburg@microbac.com

00653483

AECOM Chain of Custody Record

COC Number:

1511269-01 A

OC: Stephanie Mossburg	Project Manager: Mark Heaston	Mail to: Linda Raabe	
ve	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
5750	Sampler (print): Scott Beesinger	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205		Program: L#15111377	
Turn Around Time: STANDARD	pH:		
Project Name/Location: Longhorn		ERPIMS REQUIRED FIELDS	
Project Number: 60256135.0002GA			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp	Grab	Matrix	Number of Containers	VOC	Perchlorate					SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 50	50WW05-111315			11/13/15	0800		✓	W	4	✓	✓				-01					
	50WW05MS-111315			11/13/15	0800		✓	W	4	✓	✓				02					
	50WW05MSD-111315			11/13/15	0800		✓	W	4	✓	✓				03					
	50SW06-111315			11/13/15	0830		✓	W	4	✓	✓			02	04					
	GPW1-111315			11/13/15	0845		✓	W	4	✓	✓			03	05					
	50WW28-111315			11/13/15	0945		✓	W	4	✓	✓			04	06					
	50WW16-111315			11/13/15	1045		✓	W	4	✓	✓			05	07					
	LHSMW54-111315			11/13/15	1345		✓	W	4	✓	✓			06	08					
	42WW38-111315			11/13/15	1455		✓	W	4	✓	✓			07	09					
	TRip BLANK			11/13/15			✓	W	2	✓										

11/25/15

Comments: **STANDARD TAT**

	Date	Time
Relinquished by: (Signature) Scott Beesinger	11/16/15	1600
Relinquished by: (Signature)	Date	Time

Microbac OVD *
Received 11/17/2015 09 55
By BRENDA GREENWALT 221000078887

9xs relogged + subbed out BG
Brenda Greenwalt

Date	Time	Relinquished by (Signature)
Time		Remarks:

Manager, Pink QA/QC Manager

11/25/15 @ 845

*Homogenize all composite samples prior to analysis

1511269

M5110443 Perchlorate only report - stephanie.mossburg@microbac.com

00653484

AECOM Chain of Custody Record

COC Number: 11

Laboratory: Microbac POC: Stephanie Mossburg	Project Manager: Mark Heaston	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): Scott Beesinger	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205	pH:	Program: L#15111376	
Turn Around Time: STANDARD			
Project Name/Location: Longhorn			
Project Number: 60256135.0002GA		ERPIMS REQUIRED FIELDS	

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Dissolved Gases / Carbon Dioxide	Alkalinity	Sulfide	Chloride / Sulfate Nitrate / Nitrite	TOC / Total Phosphorous	Dissolved Iron / Dissolved Manganese	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 50	50WW08 - 111615			11/16/15	0820		✓	W	11	✓	✓	✓	✓	✓	✓	✓				~~10~~	08	
	50WW08FF - 111615			11/16/15	0820		✓	W	1								✓					
	50WW22 - 111615			11/16/15	0925		✓	W	11	✓	✓	✓	✓	✓	✓	✓				11	09	
	50WW22FF - 111615			11/16/15	0925		✓	W	1								✓					
	50WW24 - 111615			11/16/15	1030		✓	W	11	✓	✓	✓	✓	✓	✓	✓				12	10	
	50WW24FF - 111615			11/16/15	1030		✓	W	1								✓					
	50WW23 - 111615			11/16/15	1135		✓	W	11	✓	✓	✓	✓	✓	✓	✓				13	11	
	50WW23FF - 111615			11/16/15	1135		✓	W	1								✓					
	50WW18 - 111615			11/16/15	1345		✓	W	11	✓	✓	✓	✓	✓	✓	✓			11/23/15	14	12	
	50WW18FF - 111615			11/16/15	1345		✓	W	1								✓					
	50WW25 - 111615			11/16/15	1455		✓	W	11	✓	✓	✓	✓	✓	✓	✓				15	13	
	50WW25FF - 111615			11/16/15	1455		✓	W	1								✓					
	TRIP BLANK			11/16/15			✓	W	2	✓												

Comments: **STANDARD TAT**

Relinquished by: (Signature) Scott Beesinger	Date 11/16/15	Time 1600	R	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	R (S		Time	Remarks:

Microbac OVD
Received 11/17/2015 09 55
By BRENDA GREENWALT 221000078886
SYS relogged + subbed out BG

*Homogenize all composite samples prior to analysis

Brenda Greenwalt Laboratory, Sandy for Project Manager, Pink QA/QC Manager

1511269

L15110193 Perchlorate only

AECOM Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Stephanie Mossburg	Project Manager: Mark Heaston	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE 400	
Marietta, OH 45750	Sampler (print): Scott Beesinger	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste 400			
San Antonio, TX 78205		Program: L15111375	
Turn Around Time: STANDARD	pH:		
Project Name/Location: Longhorn			
Project Number: 60256135.0002GA			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp	Grab	Matrix	Number of Containers	VOC	Perchlorate	Dissolved Gases / Carbon Dioxide	Alkalinity	Sulfide	Chloride / Sulfate Nitrate / Nitrite	TOC / Total Phosphorous	Dissolved Iron / Dissolved Manganese	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 50	50WW27-111115			11/11/15	0815		✓	W	4	✓	✓								14	~~16~~		
	50WW15-111115			11/11/15	0915		✓	W	4	✓	✓								15	~~17~~		
	50WW15FD-111115			11/11/15	0915		✓	W	4	✓	✓								16	~~18~~		
	50WW09-111115			11/11/15	1035		✓	W	4	✓	✓								17	~~19~~		
	50WW09FD-111115			11/11/15	1035		✓	W	4	✓	✓								18	~~20~~		
	50WW10-111115			11/11/15	1435		✓	W	4	✓	✓								19	~~21~~		
	50WW13-111215			11/12/15	0840		✓	W	11	✓	✓	✓	✓	✓	✓	✓			20	~~22~~		
	50WW13FF-111215			11/12/15	0840		✓	W	1								✓					
	50WW14-111215			11/12/15	0950		✓	W	11	✓	✓	✓	✓	✓	✓	✓			21	~~23~~		
	50WW14FF-111215			11/12/15	0950		✓	W	1								✓					
	50WW11-111215			11/12/15	1100		✓	W	11	✓	✓	✓	✓	✓	✓	✓			22	~~24~~		
	50WW11FF-111215			11/12/15	1100		✓	W	1								✓					
	50WW06-111215			11/12/15	1325		✓	W	11	✓	✓	✓	✓	✓	✓	✓			23	~~25~~		
	50WW06FF-111215			11/12/15	1325		✓	W	1								✓					

Comments: STANDARD TAT

AH 11/13/15

Relinquished by (Signature): Scott Beesinger	Date: 11/12/15	Time: 1545	Receiv	Time	Relinquished by (Signature)	
Relinquished by (Signature)	Date	Time	Receiv (Signa	Time	Remarks	

Microbac OVD
Received 11/13/2015 09 48
By BRENDA GREENWALT 221000078885
SXS relogged + subbed out
BG
Brenda Greenwalt

•Homogenize all composite samples prior to analysis

Distribution White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

00653485

1511269

12

L15110793-2

00653486

AECOM

Chain of Custody Record

COC Number: 13

Laboratory: Microbac POC: Stephanie Mossburg	Project Manager: Mark Heaston	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): Scott Beesinger	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205			
Turn Around Time: STANDARD	pH:	Program:	
Project Name/Location: Longhorn			
Project Number: 60256135.0002GA			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Dissolved Gases / Carbon Dioxide	Alkalinity	Sulfide	Chloride / Sulfate / Nitrate / Nitrite	TOC / Total Phosphorous	Dissolved Iron / Dissolved Manganese	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 50	50WW12-111215			11/12/15	1435		✓	W	11	✓	✓	✓	✓	✓	✓	✓	✓		24	[illegible]	+L	
	50WW12FF-111215			11/12/15	1435		✓	W	1								✓				11/25	15
	TRIPBLANK			11/12/15			✓	W	2	✓												

Comments: **STANDARD TAT**

Relinquished by: (Signature) Scott Beesinger	Date 11/12/15	Time 1545	Rec	Date	Time	Relinquished by (Signature)
Relinquished by: (Signature)	Date	Time	Rec (Sig	Time		Remarks:

Microbac OVD
Received 11/13/2015 09 48
By BRENDA GREENWALT 221000078885
Brenda Greenwalt

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

1511269

II. EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

Cooler Received/Opened On: 11/25/15 @ 0845 Work order# 1511269

1. Tracking # 4496 (last 4 digits, FedEx)

   Courier: FedEx

2. Temperature of rep. sample or temp blank when opened: 0.4 °C + correction factor(+0.4) = 0.8 °C

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler? YES...NO...NA

   If yes, how many and where: 1 on front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

   I certify that I opened the cooler and answered questions 1-6 (initial/date) JTG 11/25/15

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

   Were these signed and dated correctly? YES...NO...NA

8. Packing material used? Bubble wrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13. a. Were VOA vials received? YES...NO...NA

    b. Was there observable headspace present in any VOA vial (>5mm-6mm)? YES...NO...NA

14. Was there a Trip Blank in this cooler (custody seals present/intact)? YES...NO...NA...Comments_____
    If multiple coolers, sequence #_____

    I certify that I unloaded the cooler and answered questions 7-14 (initial/date) TH 11/25/15

15. a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA TH 11/25/15

    b. Did the bottle labels indicate that the correct preservatives were used? YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

    I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial/date) TH 11/25/15

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA If not, PM notified? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA If not, PM notified? YES...NO...NA

21. Were there Non-Conformance issues at login? YES...NO...NCR#_____

I certify that I entered this project into LIMS and answered questions 17-21 (initial/date) TH 11/25/15

I certify that I attached a label with the unique LIMS number to each container (initial/date) TH 11/25/15

I certify that I notified the laboratory of any short holding time or RUSH parameters (initial/date) TH 11/25/15

C \Users\thutchings\Desktop\Cooler Receipt Updated 2014.doc

III. EMPIRICAL LABORATORIES, LLC
DATA ENTRY VERIFICATION FORM – PROJECT MANAGEMENT

Workorder#: 1511269

	Verification Item	Yes	No	NA
1.	**Cooler Receipt Form Issues reviewed and communicated to client**			X
2.	**Element/ Project Screen/items verified to match the COC/CRF:**			
a.	**Client/Project**	X		
b.	Comments requiring laboratory reminder?			X
c.	Client and/or Project Memo requiring laboratory reminder?			X
3.	**Receipt Screen items verified to match the COC/CRF:**			
a.	Received Date/Received By	X		
b.	Workorder Due Date	X		
c.	Package Due Date	X		
d.	TAT	X		
e.	SDG Identifier Populated	X		
4.	**Sample Information verified against COC for each sample:**			
a.	Name	X		
b.	QC Source	X		
c.	Matrix	X		
d.	Sample Type	X		
e.	Sampled Date/Time (Correct Time Zone)	X		
f.	Work Analyses/Versions	X		
g.	Sample Issues included in comments			X
h.	Unpreserved VOA holding time set to 7 days			X
5.	**Containers consistent with tests requested**	X		
6.	**Field data entered and matching COC, if applicable**			X
	I certify that I have performed a second check of the LIMS information against the COC to confirm accuracy (initial/date):	SMG 11/25/2015		

C:\Users\sgordon\Desktop\QS10_R21_20140729_CoolerReceiptForm.doc

WORK ORDER

Printed: 11/25/2015 4:40:29PM

1511269

Empirical Laboratories, LLC

Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Project Manager: Sonya Gordon
Project Number: MIC_Perc

Report To:
Microbac Laboratories, Inc.-Ohio Valley Division
Stephanie Mossburg
158 Starlite Drive
Marietta, OH 45750
Phone: (740) 373-4071
Fax: (740) 373-4835

Invoice To:
Microbac Laboratories, Inc.-Ohio Valley Division
Kathy Albertson
158 Starlite Drive
Marietta, OH 45750
Phone :(800) 373-4071
Fax: (740) 373-4835

Date Due: 12/11/2015 16:00 (10 day TAT)
Received By: Tiana L. Hutchings
Date Received: 11/25/2015 08:45
Logged In By: Tiana L. Hutchings
Date Logged In: 11/25/2015 09:05

Samples Received at: **0.8°C**

Custody Seals	Yes	Received On Ice	Yes
Containers Intact	Yes		
COC/Labels Agree	Yes		
Preservation Confirme	No		

Analysis	Due	TAT	Expires	Comments
1511269-01 50WW05-111315 [Water] Sampled 11/13/2015 08:00 (GMT-06:00) Central Time (US &				**MS/MSD**
LCMS_PERC_6850	12/08/2015 16:00	10	12/11/2015 08:00	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-02 50SW06-111315 [Water] Sampled 11/13/2015 08:30 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/11/2015 08:30	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-03 GPW1-111315 [Water] Sampled 11/13/2015 08:45 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/11/2015 08:45	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-04 50WW28-111315 [Water] Sampled 11/13/2015 09:45 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/11/2015 09:45	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-05 50WW16-111315 [Water] Sampled 11/13/2015 10:45 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/11/2015 10:45	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-06 LHSMW54-111315 [Water] Sampled 11/13/2015 13:45 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/11/2015 13:45	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-07 47WW38-111315 [Water] Sampled 11/13/2015 14:55 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/11/2015 14:55	low DL/LOD/LOQ 0.1/0.2/0.4ug/L

WORK ORDER

Printed: 11/25/2015 4:40:29PM

1511269

Empirical Laboratories, LLC

Client:	**Microbac Laboratories, Inc.-Ohio Valley Division**	**Project Manager:**	**Sonya Gordon**
Project:	**Perchlorate**	**Project Number:**	**MIC_Perc**

Analysis	Due	TAT	Expires	Comments
1511269-08 50WW08-111615 [Water] Sampled 11/16/2015 08:20 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/14/2015 08:20	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-09 50WW22-111615 [Water] Sampled 11/16/2015 09:25 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/14/2015 09:25	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-10 50WW24-111615 [Water] Sampled 11/16/2015 10:30 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/14/2015 10:30	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-11 50WW23-111615 [Water] Sampled 11/16/2015 11:35 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/14/2015 11:35	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-12 50WW18-111615 [Water] Sampled 11/16/2015 13:45 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/14/2015 13:45	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-13 50WW25-111615 [Water] Sampled 11/16/2015 14:55 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/14/2015 14:55	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-14 50WW27-111115 [Water] Sampled 11/11/2015 08:15 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/09/2015 08:15	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-15 50WW15-111115 [Water] Sampled 11/11/2015 09:15 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/09/2015 09:15	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-16 50WW15FD-111115 [Water] Sampled 11/11/2015 09:15 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/09/2015 09:15	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-17 50WW09-111115 [Water] Sampled 11/11/2015 10:35 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/09/2015 10:35	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-18 50WW09FD-111115 [Water] Sampled 11/11/2015 10:35 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/09/2015 10:35	low DL/LOD/LOQ 0.1/0.2/0.4ug/L

WORK ORDER

Printed: 11/25/2015 4:40:29PM

1511269

Empirical Laboratories, LLC

Client:	**Microbac Laboratories, Inc.-Ohio Valley Division**	**Project Manager:**	**Sonya Gordon**
Project:	**Perchlorate**	**Project Number:**	**MIC_Perc**

Analysis	Due	TAT	Expires	Comments
1511269-19 50WW10-111115 [Water] Sampled 11/11/2015 14:35 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/09/2015 14:35	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-20 50WW13-111215 [Water] Sampled 11/12/2015 08:40 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/10/2015 08:40	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-21 50WW14-111215 [Water] Sampled 11/12/2015 09:50 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/10/2015 09:50	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-22 50WW11-111215 [Water] Sampled 11/12/2015 11:00 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/10/2015 11:00	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-23 50WW06-111215 [Water] Sampled 11/12/2015 13:25 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/10/2015 13:25	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-24 50WW12-111215 [Water] Sampled 11/12/2015 14:35 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/10/2015 14:35	low DL/LOD/LOQ 0.1/0.2/0.4ug/L

Reviewed By

Date

Sample Delivery Group Assignment Form

CLIENT: CB&I
PROJECT NAME: Kelly AFB
SDG #: 1511184

QC LEVEL: Level III/TRPP
Report Due: 12/11/2015
Client Sample Count: 2

Sample Type	Sampled	Received	Lab ID	Client ID	Lab Matrix	Report Matrix	E410.4	SM2540D	SM5210B	SW1664A	SW8260B	SW8270D
Trip Blank	11/17/2015	11/18/2015	1511184-01	TB-01-151117	Water	Water					X	
Client Sample	11/10/2015	11/18/2015	1511184-02	OUTFALL001-151110	Water	Water	X					
Client Sample	11/17/2015	11/18/2015	1511184-03	OUTFALL001-151117	Water	Water	X	X	X	X	X	X

Data for SW6850 Forms

Sample Extraction Data

Prep Method: LCMS_PREP6850_W-SW6850

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1511269-01 [50WW05-111315]	5L01021	10.00/10.00	10.0	10.0	5.00			12/01/15
1511269-02 [50SW06-111315]	5L01021	10.00/10.00	10.0	10.0	1.00			12/01/15
1511269-03 [GPW1-111315]	5L01021	10.00/10.00	10.0	10.0	1.00			12/01/15
1511269-06 [LHSMW54-111315]	5L01021	10.00/10.00	10.0	10.0	5.00			12/01/15
1511269-07 [47WW38-111315]	5L01021	10.00/10.00	10.0	10.0	50.00			12/01/15
1511269-08 [50WW08-111615]	5L01021	10.00/10.00	10.0	10.0	10.00			12/01/15
1511269-09 [50WW22-111615]	5L01021	10.00/10.00	10.0	10.0	5.00			12/01/15

Sample Extraction Data

Prep Method: LCMS_PREP6850_W-SW6850

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1511269-04 [50WW28-111315]	5L03014	10.00/10.00	10.0	10.0	1.00			12/03/15
1511269-05 [50WW16-111315]	5L03014	10.00/10.00	10.0	10.0	1.00			12/03/15
1511269-10 [50WW24-111615]	5L03014	10.00/10.00	10.0	10.0	5.00			12/03/15
1511269-11 [50WW23-111615]	5L03014	10.00/10.00	10.0	10.0	5.00			12/03/15
1511269-12 [50WW18-111615]	5L03014	10.00/10.00	10.0	10.0	5.00			12/03/15
1511269-13 [50WW25-111615]	5L03014	10.00/10.00	10.0	10.0	5.00			12/03/15
1511269-14 [50WW27-111115]	5L03014	10.00/10.00	10.0	10.0	5.00			12/03/15
1511269-15 [50WW15-111115]	5L03014	10.00/10.00	10.0	10.0	5.00			12/03/15
1511269-16 [50WW15FD-111115]	5L03014	10.00/10.00	10.0	10.0	5.00			12/03/15
1511269-17 [50WW09-111115]	5L03014	10.00/10.00	10.0	10.0	5.00			12/03/15
1511269-18 [50WW09FD-111115]	5L03014	10.00/10.00	10.0	10.0	5.00			12/03/15
1511269-19 [50WW10-111115]	5L03014	10.00/10.00	10.0	10.0	1.00			12/03/15
1511269-20 [50WW13-111215]	5L03014	10.00/10.00	10.0	10.0	500.00			12/03/15
1511269-21 [50WW14-111215]	5L03014	10.00/10.00	10.0	10.0	5.00			12/03/15
1511269-22 [50WW11-111215]	5L03014	10.00/10.00	10.0	10.0	1,000.00			12/03/15
1511269-23 [50WW06-111215]	5L03014	10.00/10.00	10.0	10.0	500.00			12/03/15
1511269-24 [50WW12-111215]	5L03014	10.00/10.00	10.0	10.0	2,000.00			12/03/15

ANALYSIS DATA SHEET

50WW05-111315

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-01	File ID:	PERC000011.D.Report.TXT
Sampled:	11/13/15 08:00	Prepared:	12/01/15 13:39	Analyzed:	12/04/15 18:04
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	5

Batch: 5L01021 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**0.700**	0.500	1.00	2.00	NJD

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50SW06-111315

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-02	File ID:	PERC000029.D.Report.TXT
Sampled:	11/13/15 08:30	Prepared:	12/01/15 13:39	Analyzed:	12/02/15 17:11
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	1

Batch: 5L01021 Sequence: 5L33714 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**1.44**	0.100	0.200	0.400	

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

GPW1-111315

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-03	File ID:	PERC000030.D.Report.TXT
Sampled:	11/13/15 08:45	Prepared:	12/01/15 13:39	Analyzed:	12/02/15 17:29
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	1

Batch: 5L01021 Sequence: 5L33714 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**0.139**	0.100	0.200	0.400	J

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW28-111315

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-04	File ID:	PERC000023.D.Report.TXT
Sampled:	11/13/15 09:45	Prepared:	12/03/15 12:00	Analyzed:	12/04/15 21:38
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	1

Batch: 5L03014 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**1.64**	0.100	0.200	0.400	

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW16-111315

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-05	File ID:	PERC000014.D.Report.TXT
Sampled:	11/13/15 10:45	Prepared:	12/03/15 12:00	Analyzed:	12/07/15 20:56
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	1

Batch: 5L03014 Sequence: 5L34214 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.100	0.200	0.400	U

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

LHSMW54-111315

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-06	File ID:	PERC000014.D.Report.TXT
Sampled:	11/13/15 13:45	Prepared:	12/01/15 13:39	Analyzed:	12/04/15 18:57
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	5

Batch: 5L01021 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.500	1.00	2.00	C10U

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

47WW38-111315

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-07	File ID:	PERC000015.D.Report.TXT
Sampled:	11/13/15 14:55	Prepared:	12/01/15 13:39	Analyzed:	12/04/15 19:15
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	50

Batch: 5L01021 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**579**	5.00	10.0	20.0	D

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW08-111615

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-08	File ID:	PERC000016.D.Report.TXT
Sampled:	11/16/15 08:20	Prepared:	12/01/15 13:39	Analyzed:	12/04/15 19:33
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	10

Batch: 5L01021 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**32.4**	1.00	2.00	4.00	D

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW22-111615

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-09	File ID:	PERC000036.D.Report.TXT
Sampled:	11/16/15 09:25	Prepared:	12/01/15 13:39	Analyzed:	12/02/15 19:16
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	5

Batch: 5L01021 Sequence: 5L33714 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**0.642**	0.500	1.00	2.00	C10JD

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW24-111615

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-10	File ID:	PERC000025.D.Report.TXT
Sampled:	11/16/15 10:30	Prepared:	12/03/15 12:00	Analyzed:	12/04/15 22:13
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	5

Batch: 5L03014 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.500	1.00	2.00	C10U

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW23-111615

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-11	File ID:	PERC000030.D.Report.TXT
Sampled:	11/16/15 11:35	Prepared:	12/03/15 12:00	Analyzed:	12/04/15 23:43
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	5

Batch: 5L03014 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.500	1.00	2.00	C10U

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW18-111615

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-12	File ID:	PERC000031.D.Report.TXT
Sampled:	11/16/15 13:45	Prepared:	12/03/15 12:00	Analyzed:	12/05/15 00:00
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	5

Batch: 5L03014 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.500	1.00	2.00	C10U

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW25-111615

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-13	File ID:	PERC000023.D.Report.TXT
Sampled:	11/16/15 14:55	Prepared:	12/03/15 12:00	Analyzed:	12/07/15 23:37
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	5

Batch: 5L03014 Sequence: 5L34214 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**0.727**	0.500	1.00	2.00	C10JD

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW27-111115

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-14	File ID:	PERC000033.D.Report.TXT
Sampled:	11/11/15 08:15	Prepared:	12/03/15 12:00	Analyzed:	12/05/15 00:36
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	5

Batch: 5L03014 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.500	1.00	2.00	C10U

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW15-111115

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-15	File ID:	PERC000034.D.Report.TXT
Sampled:	11/11/15 09:15	Prepared:	12/03/15 12:00	Analyzed:	12/05/15 00:54
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	5

Batch: 5L03014 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.500	1.00	2.00	C10U

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW15FD-111115

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-16	File ID:	PERC000035.D.Report.TXT
Sampled:	11/11/15 09:15	Prepared:	12/03/15 12:00	Analyzed:	12/05/15 01:12
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	5

Batch: 5L03014 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.500	1.00	2.00	C10U

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW09-111115

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-17	File ID:	PERC000036.D.Report.TXT
Sampled:	11/11/15 10:35	Prepared:	12/03/15 12:00	Analyzed:	12/05/15 01:30
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	5

Batch: 5L03014 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.500	1.00	2.00	C10U

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW09FD-111115

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-18	File ID:	PERC000037.D.Report.TXT
Sampled:	11/11/15 10:35	Prepared:	12/03/15 12:00	Analyzed:	12/05/15 01:47
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	5

Batch: 5L03014 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.500	1.00	2.00	C10U

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW10-111115

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-19	File ID:	PERC000038.D.Report.TXT
Sampled:	11/11/15 14:35	Prepared:	12/03/15 12:00	Analyzed:	12/05/15 02:05
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	1

Batch: 5L03014 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.100	0.200	0.400	U

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW13-111215

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-20	File ID:	PERC000028.D.Report.TXT
Sampled:	11/12/15 08:40	Prepared:	12/03/15 12:00	Analyzed:	12/08/15 01:06
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	500

Batch: 5L03014 Sequence: 5L34214 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**11400**	50.0	100	200	D

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW14-111215

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-21	File ID:	PERC000044.D.Report.TXT
Sampled:	11/12/15 09:50	Prepared:	12/03/15 12:00	Analyzed:	12/05/15 03:52
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	5

Batch: 5L03014 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**7.50**	0.500	1.00	2.00	D

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW11-111215

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-22	File ID:	PERC000029.D.Report.TXT
Sampled:	11/12/15 11:00	Prepared:	12/03/15 12:00	Analyzed:	12/08/15 01:24
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	1000

Batch: 5L03014 Sequence: 5L34214 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**22800**	100	200	400	D

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW06-111215

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-23	File ID:	PERC000030.D.Report.TXT
Sampled:	11/12/15 13:25	Prepared:	12/03/15 12:00	Analyzed:	12/08/15 01:42
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	500

Batch: 5L03014 Sequence: 5L34214 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**5860**	50.0	100	200	D

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW12-111215

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-24	File ID:	PERC000031.D.Report.TXT
Sampled:	11/12/15 14:35	Prepared:	12/03/15 12:00	Analyzed:	12/08/15 02:00
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	2000

Batch: 5L03014 Sequence: 5L34214 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**37900**	200	400	800	D

Total Target Analytes Reported 1 Project Analytes: 1

LCS / LCS DUPLICATE RECOVERY

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Matrix:	Water		
Batch:	5L01021	Laboratory ID:	5L01021-BS1
Preparation:	LCMS_PREP6850_W	Initial/Final:	10 mL / 10 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
Perchlorate	2.000	2.150	108	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Matrix:	Water		
Batch:	5L03014	Laboratory ID:	5L03014-BS1
Preparation:	LCMS_PREP6850_W	Initial/Final:	10 mL / 10 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
Perchlorate	2.000	2.023	101	80 - 120

ANALYTE	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Perchlorate	2.000	2.011	101	0.579	15	80 - 120

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW6850

50WW05-111315

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Matrix: Water
Batch: 5L01021
% Solids:
Source Sample Name: **1511269-01**

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	Q	QC LIMITS REC.
Perchlorate	2.000	0.7004	3.471	174	*	80 - 120

ANALYTE	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Perchlorate	2.000	2.652	133	26.7	* *	15	80 - 120

PREPARATION BATCH SUMMARY

SW6850

Laboratory: Empirical Laboratories, LLC SDG: 1511269

Client: Microbac Laboratories, Inc.-Ohio Valley Division Project: Perchlorate

Batch: 5L01021 Batch Matrix: Water Preparation: LCMS_PREP6850_W

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
50WW05-111315	1511269-01	12/01/15 13:39	10.00	10.00
50SW06-111315	1511269-02	12/01/15 13:39	10.00	10.00
GPW1-111315	1511269-03	12/01/15 13:39	10.00	10.00
LHSMW54-111315	1511269-06	12/01/15 13:39	10.00	10.00
47WW38-111315	1511269-07	12/01/15 13:39	10.00	10.00
50WW08-111615	1511269-08	12/01/15 13:39	10.00	10.00
50WW22-111615	1511269-09	12/01/15 13:39	10.00	10.00
Blank	5L01021-BLK1	12/01/15 13:39	10.00	10.00
LCS	5L01021-BS1	12/01/15 13:39	10.00	10.00
50WW05-111315	5L01021-MS1	12/01/15 13:39	10.00	10.00
50WW05-111315	5L01021-MSD1	12/01/15 13:39	10.00	10.00

PREPARATION BATCH SUMMARY

SW6850

Laboratory: Empirical Laboratories, LLC SDG: 1511269

Client: Microbac Laboratories, Inc.-Ohio Valley Division Project: Perchlorate

Batch: 5L03014 Batch Matrix: Water Preparation: LCMS_PREP6850_W

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
50WW28-111315	1511269-04	12/03/15 12:00	10.00	10.00
50WW16-111315	1511269-05	12/03/15 12:00	10.00	10.00
50WW24-111615	1511269-10	12/03/15 12:00	10.00	10.00
50WW23-111615	1511269-11	12/03/15 12:00	10.00	10.00
50WW18-111615	1511269-12	12/03/15 12:00	10.00	10.00
50WW25-111615	1511269-13	12/03/15 12:00	10.00	10.00
50WW27-111115	1511269-14	12/03/15 12:00	10.00	10.00
50WW15-111115	1511269-15	12/03/15 12:00	10.00	10.00
50WW15FD-111115	1511269-16	12/03/15 12:00	10.00	10.00
50WW09-111115	1511269-17	12/03/15 12:00	10.00	10.00
50WW09FD-111115	1511269-18	12/03/15 12:00	10.00	10.00
50WW10-111115	1511269-19	12/03/15 12:00	10.00	10.00
50WW13-111215	1511269-20	12/03/15 12:00	10.00	10.00
50WW14-111215	1511269-21	12/03/15 12:00	10.00	10.00
50WW11-111215	1511269-22	12/03/15 12:00	10.00	10.00
50WW06-111215	1511269-23	12/03/15 12:00	10.00	10.00
50WW12-111215	1511269-24	12/03/15 12:00	10.00	10.00
Blank	5L03014-BLK1	12/03/15 12:00	10.00	10.00
LCS	5L03014-BS1	12/03/15 12:00	10.00	10.00
LCS Dup	5L03014-BSD1	12/03/15 12:00	10.00	10.00

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC SDG: 1511269

Client: Microbac Laboratories, Inc.-Ohio Valley Division Project: Perchlorate

Matrix: Laboratory ID: 5L01021-BLK1 File ID: PERC000010.D.Report.TXT

Sampled: Prepared: Analyzed: 12/02/15 11:32

Solids: Preparation: LCMS_PREP6850_W Dilution:

Batch: 5L01021 Sequence: 5L33714 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.100	0.200	0.400	U

Total Target Analytes Reported: 1

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC SDG: 1511269

Client: Microbac Laboratories, Inc.-Ohio Valley Division Project: Perchlorate

Matrix: Laboratory ID: 5L01021-BS1 File ID: PERC000011.D.Report.TXT

Sampled: Prepared: Analyzed: 12/02/15 11:50

Solids: Preparation: LCMS_PREP6850_W Dilution:

Batch: 5L01021 Sequence: 5L33714 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**2.150**	0.100	0.200	0.400	

Total Target Analytes Reported: 1

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC SDG: 1511269

Client: Microbac Laboratories, Inc.-Ohio Valley Division Project: Perchlorate

Matrix: Laboratory ID: 5L01021-MS1 File ID: PERC000012.D.Report.TXT

Sampled: Prepared: Analyzed: 12/04/15 18:22

Solids: Preparation: LCMS_PREP6850_W Dilution:

Batch: 5L01021 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**3.471**	0.500	1.00	2.00	D

Total Target Analytes Reported: 1

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC SDG: 1511269

Client: Microbac Laboratories, Inc.-Ohio Valley Division Project: Perchlorate

Matrix: Laboratory ID: 5L01021-MSD1 File ID: PERC000013.D.Report.TXT

Sampled: Prepared: Analyzed: 12/04/15 18:39

Solids: Preparation: LCMS_PREP6850_W Dilution:

Batch: 5L01021 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**2.652**	0.500	1.00	2.00	D

Total Target Analytes Reported: 1

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC SDG: 1511269

Client: Microbac Laboratories, Inc.-Ohio Valley Division Project: Perchlorate

Matrix: Laboratory ID: 5L03014-BLK1 File ID: PERC000011.D.Report.TXT

Sampled: Prepared: Analyzed: 12/07/15 20:02

Solids: Preparation: LCMS_PREP6850_W Dilution:

Batch: 5L03014 Sequence: 5L34214 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.100	0.200	0.400	U

Total Target Analytes Reported: 1

ANALYSIS DATA SHEET

LCS

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate

Matrix:		Laboratory ID:	5L03014-BS1	File ID:	PERC000012.D.Report.TXT
Sampled:		Prepared:		Analyzed:	12/07/15 20:20
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	

Batch:	5L03014	Sequence:	5L34214	Calibration:	5317001	Instrument:	LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**2.023**	0.100	0.200	0.400	

Total Target Analytes Reported: 1

ANALYSIS DATA SHEET

LCS Dup

Laboratory: Empirical Laboratories, LLC SDG: 1511269

Client: Microbac Laboratories, Inc.-Ohio Valley Division Project: Perchlorate

Matrix: Laboratory ID: 5L03014-BSD1 File ID: PERC000013.D.Report.TXT

Sampled: Prepared: Analyzed: 12/07/15 20:38

Solids: Preparation: LCMS_PREP6850_W Dilution:

Batch: 5L03014 Sequence: 5L34214 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**2.011**	0.100	0.200	0.400	

Total Target Analytes Reported: 1

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Lab File ID:	PERC000002.D.Report.TXT	Injection Date:	11/11/15
Instrument ID:	LCMS1	Injection Time:	15:35
Sequence:	5K31704	Lab Sample ID:	5K31704-TUN1

m/z	MASS CRITERIA	ACTUAL MASS	
99	(+/- 0.3) of the actual mass	99	PASS
101	(+/- 0.3) of the actual mass	101	PASS

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Lab File ID:	PERC000002.D.Report.TXT	Injection Date:	12/02/15
Instrument ID:	LCMS1	Injection Time:	09:09
Sequence:	5L33714	Lab Sample ID:	5L33714-TUN1

m/z	MASS CRITERIA	ACTUAL MASS	
99	(+/- 0.3) of the actual mass	99	PASS
101	(+/- 0.3) of the actual mass	101	PASS

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Lab File ID:	PERC000002.D.Report.TXT	Injection Date:	12/07/15
Instrument ID:	LCMS1	Injection Time:	17:21
Sequence:	5L34214	Lab Sample ID:	5L34214-TUN1

m/z	MASS CRITERIA	ACTUAL MASS	
99	(+/- 0.3) of the actual mass	99	PASS
101	(+/- 0.3) of the actual mass	101	PASS

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Lab File ID:	PERC000002.D.Report.TXT	Injection Date:	12/04/15
Instrument ID:	LCMS1	Injection Time:	15:23
Sequence:	5L34216	Lab Sample ID:	5L34216-TUN1

m/z	MASS CRITERIA	ACTUAL MASS	
99	(+/- 0.3) of the actual mass	99	PASS
101	(+/- 0.3) of the actual mass	101	PASS

ICP INTERFERENCE CHECK SAMPLE

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Divisio
Project: Perchlorate
Instrument ID: LCMS1
Calibration: 5317001
Sequence: 5L33714

Lab Sample ID	Analyte	True	Found	%R	Units
5L33714-IFA1	Perchlorate-d18	5.000	5.00	100	ug/L
	Perchlorate	2.000	2.13	107	ug/L

ICP INTERFERENCE CHECK SAMPLE

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Divisio
Project: Perchlorate
Instrument ID: LCMS1
Calibration: 5317001
Sequence: 5L34214

Lab Sample ID	Analyte	True	Found	%R	Units
5L34214-IFA1	Perchlorate-d18	5.000	5.00	100	ug/L
	Perchlorate	2.000	2.39	120	ug/L

ICP INTERFERENCE CHECK SAMPLE

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Divisio
Project: Perchlorate
Instrument ID: LCMS1
Calibration: 5317001
Sequence: 5L34216

Lab Sample ID	Analyte	True	Found	%R	Units
5L34216-IFA1	Perchlorate-d18	5.000	5.00	99.5	ug/L
	Perchlorate	2.000	2.25	112	ug/L

INITIAL CALIBRATION STANDARDS

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Sequence:	5K31704	Instrument:	LCMS1
Calibration:	5317001		

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
15F0073	Perchlorate 2nd Source Std 0.1 mg/L	5K31704-TUN1	PERC000002.D.Report.TXT	11/11/15 15:35
15H0455	Perchlorate Init Cal 0.2 ug/L	5K31704-CAL1	PERC000005.D.Report.TXT	11/11/15 16:29
15H0456	Perchlorate Init Cal 0.5 ug/L	5K31704-CAL2	PERC000006.D.Report.TXT	11/11/15 16:47
15H0457	Perchlorate Init Cal 1.0 ug/L	5K31704-CAL3	PERC000007.D.Report.TXT	11/11/15 17:04
15H0458	Perchlorate Init Cal 2.0 ug/L	5K31704-CAL4	PERC000008.D.Report.TXT	11/11/15 17:22
15H0459	Perchlorate Init Cal 5.0 ug/L	5K31704-CAL5	PERC000009.D.Report.TXT	11/11/15 17:40
15H0460	Perchlorate Init Cal 10 ug/L	5K31704-CAL6	PERC000010.D.Report.TXT	11/11/15 17:58
15H0461	Perchlorate Init Cal 20 ug/L	5K31704-CAL7	PERC000011.D.Report.TXT	11/11/15 18:16
15H0462	Perchlorate Init Cal 50 ug/L	5K31704-CAL8	PERC000012.D.Report.TXT	11/11/15 18:34

ANALYSIS SEQUENCE SUMMARY

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Sequence:	5K31704	Instrument:	LCMS1
Calibration:	5317001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	5K31704-TUN1	PERC000002.D.Report.TXT	11/11/15 15:35
Cal Standard	5K31704-CAL1	PERC000005.D.Report.TXT	11/11/15 16:29
Cal Standard	5K31704-CAL2	PERC000006.D.Report.TXT	11/11/15 16:47
Cal Standard	5K31704-CAL3	PERC000007.D.Report.TXT	11/11/15 17:04
Cal Standard	5K31704-CAL4	PERC000008.D.Report.TXT	11/11/15 17:22
Cal Standard	5K31704-CAL5	PERC000009.D.Report.TXT	11/11/15 17:40
Cal Standard	5K31704-CAL6	PERC000010.D.Report.TXT	11/11/15 17:58
Cal Standard	5K31704-CAL7	PERC000011.D.Report.TXT	11/11/15 18:16
Cal Standard	5K31704-CAL8	PERC000012.D.Report.TXT	11/11/15 18:34
Initial Cal Check	5K31704-ICV1	PERC000013.D.Report.TXT	11/11/15 18:51

ANALYSIS SEQUENCE SUMMARY

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Sequence: 5L33714
Instrument: LCMS1
Calibration: 5317001

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	5L33714-TUN1	PERC000002.D.Report.TXT	12/02/15 09:09
Calibration Check	5L33714-CCV1	PERC000005.D.Report.TXT	12/02/15 10:03
Low Cal Check	5L33714-LCV1	PERC000006.D.Report.TXT	12/02/15 10:21
Interference Check A	5L33714-IFA1	PERC000007.D.Report.TXT	12/02/15 10:39
Blank	5L01021-BLK1	PERC000010.D.Report.TXT	12/02/15 11:32
LCS	5L01021-BS1	PERC000011.D.Report.TXT	12/02/15 11:50
Calibration Check	5L33714-CCV2	PERC000023.D.Report.TXT	12/02/15 15:24
Low Cal Check	5L33714-LCV2	PERC000024.D.Report.TXT	12/02/15 15:42
Low Cal Check	5L33714-LCV3	PERC000025.D.Report.TXT	12/02/15 16:00
50SW06-111315	1511269-02	PERC000029.D.Report.TXT	12/02/15 17:11
GPW1-111315	1511269-03	PERC000030.D.Report.TXT	12/02/15 17:29
50WW22-111615	1511269-09	PERC000036.D.Report.TXT	12/02/15 19:16
Calibration Check	5L33714-CCV3	PERC000039.D.Report.TXT	12/02/15 20:10
Low Cal Check	5L33714-LCV4	PERC000040.D.Report.TXT	12/02/15 20:28
Low Cal Check	5L33714-LCV5	PERC000041.D.Report.TXT	12/02/15 20:45

ANALYSIS SEQUENCE SUMMARY

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Sequence:	5L34214	Instrument:	LCMS1
Calibration:	5317001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	5L34214-TUN1	PERC000002.D.Report.TXT	12/07/15 17:21
Calibration Check	5L34214-CCV1	PERC000005.D.Report.TXT	12/07/15 18:15
Low Cal Check	5L34214-LCV1	PERC000006.D.Report.TXT	12/07/15 18:33
Low Cal Check	5L34214-LCV2	PERC000007.D.Report.TXT	12/07/15 18:51
Interference Check A	5L34214-IFA1	PERC000008.D.Report.TXT	12/07/15 19:09
Blank	5L03014-BLK1	PERC000011.D.Report.TXT	12/07/15 20:02
LCS	5L03014-BS1	PERC000012.D.Report.TXT	12/07/15 20:20
LCS Dup	5L03014-BSD1	PERC000013.D.Report.TXT	12/07/15 20:38
50WW16-111315	1511269-05	PERC000014.D.Report.TXT	12/07/15 20:56
50WW25-111615	1511269-13	PERC000023.D.Report.TXT	12/07/15 23:37
Calibration Check	5L34214-CCV2	PERC000025.D.Report.TXT	12/08/15 00:12
Low Cal Check	5L34214-LCV3	PERC000026.D.Report.TXT	12/08/15 00:30
Low Cal Check	5L34214-LCV4	PERC000027.D.Report.TXT	12/08/15 00:48
50WW13-111215	1511269-20	PERC000028.D.Report.TXT	12/08/15 01:06
50WW11-111215	1511269-22	PERC000029.D.Report.TXT	12/08/15 01:24
50WW06-111215	1511269-23	PERC000030.D.Report.TXT	12/08/15 01:42
50WW12-111215	1511269-24	PERC000031.D.Report.TXT	12/08/15 02:00
Calibration Check	5L34214-CCV3	PERC000033.D.Report.TXT	12/08/15 02:35
Low Cal Check	5L34214-LCV5	PERC000034.D.Report.TXT	12/08/15 02:53
Low Cal Check	5L34214-LCV6	PERC000035.D.Report.TXT	12/08/15 03:11

ANALYSIS SEQUENCE SUMMARY

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Sequence: 5L34216
Instrument: LCMS1
Calibration: 5317001

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	5L34216-TUN1	PERC000002.D.Report.TXT	12/04/15 15:23
Calibration Check	5L34216-CCV1	PERC000005.D.Report.TXT	12/04/15 16:17
Low Cal Check	5L34216-LCV1	PERC000006.D.Report.TXT	12/04/15 16:35
Low Cal Check	5L34216-LCV2	PERC000007.D.Report.TXT	12/04/15 16:52
Interference Check A	5L34216-IFA1	PERC000008.D.Report.TXT	12/04/15 17:10
50WW05-111315	1511269-01	PERC000011.D.Report.TXT	12/04/15 18:04
50WW05-111315	5L01021-MS1	PERC000012.D.Report.TXT	12/04/15 18:22
50WW05-111315	5L01021-MSD1	PERC000013.D.Report.TXT	12/04/15 18:39
LHSMW54-111315	1511269-06	PERC000014.D.Report.TXT	12/04/15 18:57
47WW38-111315	1511269-07	PERC000015.D.Report.TXT	12/04/15 19:15
50WW08-111615	1511269-08	PERC000016.D.Report.TXT	12/04/15 19:33
50WW28-111315	1511269-04	PERC000023.D.Report.TXT	12/04/15 21:38
50WW24-111615	1511269-10	PERC000025.D.Report.TXT	12/04/15 22:13
Calibration Check	5L34216-CCV2	PERC000027.D.Report.TXT	12/04/15 22:49
Low Cal Check	5L34216-LCV3	PERC000028.D.Report.TXT	12/04/15 23:07
Low Cal Check	5L34216-LCV4	PERC000029.D.Report.TXT	12/04/15 23:25
50WW23-111615	1511269-11	PERC000030.D.Report.TXT	12/04/15 23:43
50WW18-111615	1511269-12	PERC000031.D.Report.TXT	12/05/15 00:00
50WW27-111115	1511269-14	PERC000033.D.Report.TXT	12/05/15 00:36
50WW15-111115	1511269-15	PERC000034.D.Report.TXT	12/05/15 00:54
50WW15FD-111115	1511269-16	PERC000035.D.Report.TXT	12/05/15 01:12
50WW09-111115	1511269-17	PERC000036.D.Report.TXT	12/05/15 01:30
50WW09FD-111115	1511269-18	PERC000037.D.Report.TXT	12/05/15 01:47
50WW10-111115	1511269-19	PERC000038.D.Report.TXT	12/05/15 02:05
Calibration Check	5L34216-CCV3	PERC000041.D.Report.TXT	12/05/15 02:59
Low Cal Check	5L34216-LCV5	PERC000042.D.Report.TXT	12/05/15 03:17
Low Cal Check	5L34216-LCV6	PERC000043.D.Report.TXT	12/05/15 03:35
50WW14-111215	1511269-21	PERC000044.D.Report.TXT	12/05/15 03:52
Calibration Check	5L34216-CCV4	PERC000050.D.Report.TXT	12/05/15 05:40
Low Cal Check	5L34216-LCV7	PERC000051.D.Report.TXT	12/05/15 05:57
Low Cal Check	5L34216-LCV8	PERC000052.D.Report.TXT	12/05/15 06:15

INTERNAL STANDARD AREA AND RT SUMMARY
SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Sequence:	5L33714	Instrument:	LCMS1
		Calibration:	5317001

Internal Standard	Response	RT	Response	Reference Area %	Area % Limits	Q
Calibration Check (5L33714-CCV1)		Lab File ID: PERC000005.D.Report.TXT			Analyzed: 12/02/15 10:03	
Perchlorate-d18	797656	8.857	627649	127	50 - 150	
Low Cal Check (5L33714-LCV1)		Lab File ID: PERC000006.D.Report.TXT			Analyzed: 12/02/15 10:21	
Perchlorate-d18	799120	8.893	627649	127	50 - 150	
Interference Check A (5L33714-IFA1)		Lab File ID: PERC000007.D.Report.TXT			Analyzed: 12/02/15 10:39	
Perchlorate-d18	799831	7.645	627649	127	50 - 150	
Blank (5L01021-BLK1)		Lab File ID: PERC000010.D.Report.TXT			Analyzed: 12/02/15 11:32	
Perchlorate-d18	1027170	8.929	627649	164	50 - 150	*
LCS (5L01021-BS1)		Lab File ID: PERC000011.D.Report.TXT			Analyzed: 12/02/15 11:50	
Perchlorate-d18	770780	8.94	627649	123	50 - 150	
Calibration Check (5L33714-CCV2)		Lab File ID: PERC000023.D.Report.TXT			Analyzed: 12/02/15 15:24	
Perchlorate-d18	745744	8.866	627649	119	50 - 150	
Low Cal Check (5L33714-LCV2)		Lab File ID: PERC000024.D.Report.TXT			Analyzed: 12/02/15 15:42	
Perchlorate-d18	747259	8.921	627649	119	50 - 150	
Low Cal Check (5L33714-LCV3)		Lab File ID: PERC000025.D.Report.TXT			Analyzed: 12/02/15 16:00	
Perchlorate-d18	755297	8.84	627649	120	50 - 150	
50SW06-111315 (1511269-02)		Lab File ID: PERC000029.D.Report.TXT			Analyzed: 12/02/15 17:11	
Perchlorate-d18	730496	8.551	627649	116	50 - 150	
GPW1-111315 (1511269-03)		Lab File ID: PERC000030.D.Report.TXT			Analyzed: 12/02/15 17:29	
Perchlorate-d18	881174	8.57	627649	140	50 - 150	
50WW22-111615 (1511269-09)		Lab File ID: PERC000036.D.Report.TXT			Analyzed: 12/02/15 19:16	
Perchlorate-d18	903310	8.068	627649	144	50 - 150	
Calibration Check (5L33714-CCV3)		Lab File ID: PERC000039.D.Report.TXT			Analyzed: 12/02/15 20:10	
Perchlorate-d18	732515	8.86	627649	117	50 - 150	
Low Cal Check (5L33714-LCV4)		Lab File ID: PERC000040.D.Report.TXT			Analyzed: 12/02/15 20:28	
Perchlorate-d18	736450	8.913	627649	117	50 - 150	
Low Cal Check (5L33714-LCV5)		Lab File ID: PERC000041.D.Report.TXT			Analyzed: 12/02/15 20:45	
Perchlorate-d18	743147	8.84	627649	118	50 - 150	

INTERNAL STANDARD AREA AND RT SUMMARY
SW6850

Laboratory: Empirical Laboratories, LLC
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Sequence: 5L34214
SDG: 1511269
Project: Perchlorate
Instrument: LCMS1
Calibration: 5317001

Internal Standard	Response	RT	Response	Reference Area %	Area % Limits	Q
Calibration Check (5L34214-CCV1)		Lab File ID: PERC000005.D.Report.TXT			Analyzed: 12/07/15 18:15	
Perchlorate-d18	659346	8.847	627649	105	50 - 150	
Low Cal Check (5L34214-LCV1)		Lab File ID: PERC000006.D.Report.TXT			Analyzed: 12/07/15 18:33	
Perchlorate-d18	675145	8.879	627649	108	50 - 150	
Low Cal Check (5L34214-LCV2)		Lab File ID: PERC000007.D.Report.TXT			Analyzed: 12/07/15 18:51	
Perchlorate-d18	674495	8.807	627649	107	50 - 150	
Interference Check A (5L34214-IFA1)		Lab File ID: PERC000008.D.Report.TXT			Analyzed: 12/07/15 19:09	
Perchlorate-d18	661861	7.7	627649	105	50 - 150	
Blank (5L03014-BLK1)		Lab File ID: PERC000011.D.Report.TXT			Analyzed: 12/07/15 20:02	
Perchlorate-d18	638227	8.903	627649	102	50 - 150	
LCS (5L03014-BS1)		Lab File ID: PERC000012.D.Report.TXT			Analyzed: 12/07/15 20:20	
Perchlorate-d18	659183	8.905	627649	105	50 - 150	
LCS Dup (5L03014-BSD1)		Lab File ID: PERC000013.D.Report.TXT			Analyzed: 12/07/15 20:38	
Perchlorate-d18	660510	8.899	627649	105	50 - 150	
50WW16-111315 (1511269-05)		Lab File ID: PERC000014.D.Report.TXT			Analyzed: 12/07/15 20:56	
Perchlorate-d18	665001	8.509	627649	106	50 - 150	
50WW25-111615 (1511269-13)		Lab File ID: PERC000023.D.Report.TXT			Analyzed: 12/07/15 23:37	
Perchlorate-d18	750602	8.539	627649	120	50 - 150	
Calibration Check (5L34214-CCV2)		Lab File ID: PERC000025.D.Report.TXT			Analyzed: 12/08/15 00:12	
Perchlorate-d18	642843	8.852	627649	102	50 - 150	
Low Cal Check (5L34214-LCV3)		Lab File ID: PERC000026.D.Report.TXT			Analyzed: 12/08/15 00:30	
Perchlorate-d18	655481	8.885	627649	104	50 - 150	
Low Cal Check (5L34214-LCV4)		Lab File ID: PERC000027.D.Report.TXT			Analyzed: 12/08/15 00:48	
Perchlorate-d18	660003	8.81	627649	105	50 - 150	
50WW13-111215 (1511269-20)		Lab File ID: PERC000028.D.Report.TXT			Analyzed: 12/08/15 01:06	
Perchlorate-d18	633737	8.916	627649	101	50 - 150	
50WW11-111215 (1511269-22)		Lab File ID: PERC000029.D.Report.TXT			Analyzed: 12/08/15 01:24	
Perchlorate-d18	654391	8.918	627649	104	50 - 150	
50WW06-111215 (1511269-23)		Lab File ID: PERC000030.D.Report.TXT			Analyzed: 12/08/15 01:42	
Perchlorate-d18	661468	8.938	627649	105	50 - 150	
50WW12-111215 (1511269-24)		Lab File ID: PERC000031.D.Report.TXT			Analyzed: 12/08/15 02:00	
Perchlorate-d18	646151	8.922	627649	103	50 - 150	
Calibration Check (5L34214-CCV3)		Lab File ID: PERC000033.D.Report.TXT			Analyzed: 12/08/15 02:35	
Perchlorate-d18	641819	8.876	627649	102	50 - 150	
Low Cal Check (5L34214-LCV5)		Lab File ID: PERC000034.D.Report.TXT			Analyzed: 12/08/15 02:53	
Perchlorate-d18	659144	8.886	627649	105	50 - 150	
Low Cal Check (5L34214-LCV6)		Lab File ID: PERC000035.D.Report.TXT			Analyzed: 12/08/15 03:11	
Perchlorate-d18	656658	8.827	627649	105	50 - 150	

INTERNAL STANDARD AREA AND RT SUMMARY
SW6850

Laboratory: Empirical Laboratories, LLC
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Sequence: 5L34216
SDG: 1511269
Project: Perchlorate
Instrument: LCMS1
Calibration: 5317001

Internal Standard	Response	RT	Response	Reference Area %	Area % Limits	Q
Calibration Check (5L34216-CCV1)		Lab File ID: PERC000005.D.Report.TXT			Analyzed: 12/04/15 16:17	
Perchlorate-d18	745180	8.881	627649	119	50 - 150	
Low Cal Check (5L34216-LCV1)		Lab File ID: PERC000006.D.Report.TXT			Analyzed: 12/04/15 16:35	
Perchlorate-d18	751208	8.931	627649	120	50 - 150	
Low Cal Check (5L34216-LCV2)		Lab File ID: PERC000007.D.Report.TXT			Analyzed: 12/04/15 16:52	
Perchlorate-d18	755377	8.852	627649	120	50 - 150	
Interference Check A (5L34216-IFA1)		Lab File ID: PERC000008.D.Report.TXT			Analyzed: 12/04/15 17:10	
Perchlorate-d18	741624	7.655	627649	118	50 - 150	
50WW05-111315 (1511269-01)		Lab File ID: PERC000011.D.Report.TXT			Analyzed: 12/04/15 18:04	
Perchlorate-d18	850119	8.21	627649	135	50 - 150	
Matrix Spike (5L01021-MS1)		Lab File ID: PERC000012.D.Report.TXT			Analyzed: 12/04/15 18:22	
Perchlorate-d18	817554	8.189	627649	130	50 - 150	
Matrix Spike Dup (5L01021-MSD1)		Lab File ID: PERC000013.D.Report.TXT			Analyzed: 12/04/15 18:39	
Perchlorate-d18	775742	8.172	627649	124	50 - 150	
LHSMW54-111315 (1511269-06)		Lab File ID: PERC000014.D.Report.TXT			Analyzed: 12/04/15 18:57	
Perchlorate-d18	869886	8.306	627649	139	50 - 150	
47WW38-111315 (1511269-07)		Lab File ID: PERC000015.D.Report.TXT			Analyzed: 12/04/15 19:15	
Perchlorate-d18	795443	8.851	627649	127	50 - 150	
50WW08-111615 (1511269-08)		Lab File ID: PERC000016.D.Report.TXT			Analyzed: 12/04/15 19:33	
Perchlorate-d18	809895	8.36	627649	129	50 - 150	
50WW28-111315 (1511269-04)		Lab File ID: PERC000023.D.Report.TXT			Analyzed: 12/04/15 21:38	
Perchlorate-d18	934815	8.703	627649	149	50 - 150	
50WW24-111615 (1511269-10)		Lab File ID: PERC000025.D.Report.TXT			Analyzed: 12/04/15 22:13	
Perchlorate-d18	775288	8.265	627649	124	50 - 150	
Calibration Check (5L34216-CCV2)		Lab File ID: PERC000027.D.Report.TXT			Analyzed: 12/04/15 22:49	
Perchlorate-d18	724671	8.868	627649	115	50 - 150	
Low Cal Check (5L34216-LCV3)		Lab File ID: PERC000028.D.Report.TXT			Analyzed: 12/04/15 23:07	
Perchlorate-d18	726899	8.915	627649	116	50 - 150	
Low Cal Check (5L34216-LCV4)		Lab File ID: PERC000029.D.Report.TXT			Analyzed: 12/04/15 23:25	
Perchlorate-d18	731364	8.843	627649	117	50 - 150	
50WW23-111615 (1511269-11)		Lab File ID: PERC000030.D.Report.TXT			Analyzed: 12/04/15 23:43	
Perchlorate-d18	807759	8.249	627649	129	50 - 150	
50WW18-111615 (1511269-12)		Lab File ID: PERC000031.D.Report.TXT			Analyzed: 12/05/15 00:00	
Perchlorate-d18	776843	8.213	627649	124	50 - 150	
50WW27-111115 (1511269-14)		Lab File ID: PERC000033.D.Report.TXT			Analyzed: 12/05/15 00:36	
Perchlorate-d18	897185	8.236	627649	143	50 - 150	
50WW15-111115 (1511269-15)		Lab File ID: PERC000034.D.Report.TXT			Analyzed: 12/05/15 00:54	
Perchlorate-d18	846581	8.21	627649	135	50 - 150	

INTERNAL STANDARD AREA AND RT SUMMARY
SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Sequence:	5L34216	Instrument:	LCMS1
		Calibration:	5317001

Internal Standard	Response	RT	Response	Reference Area %	Area % Limits	Q
50WW15FD-111115 (1511269-16)		Lab File ID: PERC000035.D.Report.TXT			Analyzed: 12/05/15 01:12	
Perchlorate-d18	890641	8.218	627649	142	50 - 150	
50WW09-111115 (1511269-17)		Lab File ID: PERC000036.D.Report.TXT			Analyzed: 12/05/15 01:30	
Perchlorate-d18	863099	8.179	627649	138	50 - 150	
50WW09FD-111115 (1511269-18)		Lab File ID: PERC000037.D.Report.TXT			Analyzed: 12/05/15 01:47	
Perchlorate-d18	825938	8.187	627649	132	50 - 150	
50WW10-111115 (1511269-19)		Lab File ID: PERC000038.D.Report.TXT			Analyzed: 12/05/15 02:05	
Perchlorate-d18	516344	8.11	627649	82	50 - 150	
Calibration Check (5L34216-CCV3)		Lab File ID: PERC000041.D.Report.TXT			Analyzed: 12/05/15 02:59	
Perchlorate-d18	686932	8.862	627649	109	50 - 150	
Low Cal Check (5L34216-LCV5)		Lab File ID: PERC000042.D.Report.TXT			Analyzed: 12/05/15 03:17	
Perchlorate-d18	693929	8.914	627649	111	50 - 150	
Low Cal Check (5L34216-LCV6)		Lab File ID: PERC000043.D.Report.TXT			Analyzed: 12/05/15 03:35	
Perchlorate-d18	696546	8.85	627649	111	50 - 150	
50WW14-111215 (1511269-21)		Lab File ID: PERC000044.D.Report.TXT			Analyzed: 12/05/15 03:52	
Perchlorate-d18	819078	8.192	627649	130	50 - 150	
Calibration Check (5L34216-CCV4)		Lab File ID: PERC000050.D.Report.TXT			Analyzed: 12/05/15 05:40	
Perchlorate-d18	596132	8.872	627649	95	50 - 150	
Low Cal Check (5L34216-LCV7)		Lab File ID: PERC000051.D.Report.TXT			Analyzed: 12/05/15 05:57	
Perchlorate-d18	609669	8.926	627649	97	50 - 150	
Low Cal Check (5L34216-LCV8)		Lab File ID: PERC000052.D.Report.TXT			Analyzed: 12/05/15 06:15	
Perchlorate-d18	614081	8.852	627649	98	50 - 150	

INITIAL CALIBRATION DATA

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269	
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate	
Calibration:	5317001	Instrument:	LCMS1	
Matrix:	Water	Calibration Dates:	11/11/15 16:29	11/11/15 18:34

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Perchlorate	0.2	1.28592	0.5	1.112583	1	1.16135	2	1.156456	5	1.169845	10	1.167638
Perchlorate (101)	0.2	0.4162459	0.5	0.3724168	1	0.377893	2	0.3773375	5	0.3817238	10	0.3780177

INITIAL CALIBRATION DATA (Continued)

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269	
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate	
Calibration:	5317001	Instrument:	LCMS1	
Matrix:	Water	Calibration Dates:	11/11/15 16:29	11/11/15 18:34

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Perchlorate	20	1.198806	50	1.174267								
Perchlorate (101)	20	0.3858999	50	0.3809597								

INITIAL CALIBRATION DATA (Continued)

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269	
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate	
Calibration:	5317001	Instrument:	LCMS1	
Matrix:	Water	Calibration Dates:	11/11/15 16:29	11/11/15 18:34

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Perchlorate	1.178358	4.217321	8.902375	0.124603			20	
Perchlorate (101)	0.3838118	3.56316	8.918625	0.1359902			20	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Instrument ID:	LCMS1	Calibration:	5317001
Lab File ID:	PERC000013.D.Report.TXT	Calibration Date:	11/11/15 00:00
Sequence:	5K31704	Injection Date:	11/11/15
Lab Sample ID:	5K31704-ICV1	Injection Time:	18:51

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN (#)	ICV	LIMIT (#)
Perchlorate	A	5.000	4.974	1.178358	1.172325		-0.5	15

CONTINUING CALIBRATION CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Instrument ID:	LCMS1	Calibration:	5317001
Lab File ID:	PERC000005.D.Report.TXT	Calibration Date:	11/11/15 00:00
Sequence:	5L33714	Injection Date:	12/02/15
Lab Sample ID:	5L33714-CCV1	Injection Time:	10:03

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perchlorate	A	5.000	5.147	1.178358	1.212903		2.9	15

CONTINUING CALIBRATION CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Instrument ID:	LCMS1	Calibration:	5317001
Lab File ID:	PERC000023.D.Report.TXT	Calibration Date:	11/11/15 00:00
Sequence:	5L33714	Injection Date:	12/02/15
Lab Sample ID:	5L33714-CCV2	Injection Time:	15:24

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perchlorate	A	5.000	5.145	1.178358	1.212613		2.9	15

CONTINUING CALIBRATION CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Instrument ID:	LCMS1	Calibration:	5317001
Lab File ID:	PERC000039.D.Report.TXT	Calibration Date:	11/11/15 00:00
Sequence:	5L33714	Injection Date:	12/02/15
Lab Sample ID:	5L33714-CCV3	Injection Time:	20:10

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perchlorate	A	5.000	5.150	1.178358	1.21381		3.0	15

CONTINUING CALIBRATION CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Instrument ID:	LCMS1	Calibration:	5317001
Lab File ID:	PERC000005.D.Report.TXT	Calibration Date:	11/11/15 00:00
Sequence:	5L34214	Injection Date:	12/07/15
Lab Sample ID:	5L34214-CCV1	Injection Time:	18:15

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perchlorate	A	5.000	5.235	1.178358	1.233812		4.7	15

CONTINUING CALIBRATION CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Instrument ID:	LCMS1	Calibration:	5317001
Lab File ID:	PERC000025.D.Report.TXT	Calibration Date:	11/11/15 00:00
Sequence:	5L34214	Injection Date:	12/08/15
Lab Sample ID:	5L34214-CCV2	Injection Time:	00:12

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perchlorate	A	5.000	5.228	1.178358	1.2322		4.6	15

CONTINUING CALIBRATION CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Instrument ID:	LCMS1	Calibration:	5317001
Lab File ID:	PERC000033.D.Report.TXT	Calibration Date:	11/11/15 00:00
Sequence:	5L34214	Injection Date:	12/08/15
Lab Sample ID:	5L34214-CCV3	Injection Time:	02:35

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perchlorate	A	5.000	5.209	1.178358	1.227655		4.2	15

CONTINUING CALIBRATION CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Instrument ID:	LCMS1	Calibration:	5317001
Lab File ID:	PERC000005.D.Report.TXT	Calibration Date:	11/11/15 00:00
Sequence:	5L34216	Injection Date:	12/04/15
Lab Sample ID:	5L34216-CCV1	Injection Time:	16:17

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perchlorate	A	5.000	5.141	1.178358	1.21156		2.8	15

CONTINUING CALIBRATION CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Instrument ID:	LCMS1	Calibration:	5317001
Lab File ID:	PERC000027.D.Report.TXT	Calibration Date:	11/11/15 00:00
Sequence:	5L34216	Injection Date:	12/04/15
Lab Sample ID:	5L34216-CCV2	Injection Time:	22:49

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perchlorate	A	5.000	5.218	1.178358	1.229703		4.4	15

CONTINUING CALIBRATION CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Instrument ID:	LCMS1	Calibration:	5317001
Lab File ID:	PERC000041.D.Report.TXT	Calibration Date:	11/11/15 00:00
Sequence:	5L34216	Injection Date:	12/05/15
Lab Sample ID:	5L34216-CCV3	Injection Time:	02:59

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perchlorate	A	5.000	5.196	1.178358	1.224521		3.9	15

CONTINUING CALIBRATION CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Instrument ID:	LCMS1	Calibration:	5317001
Lab File ID:	PERC000050.D.Report.TXT	Calibration Date:	11/11/15 00:00
Sequence:	5L34216	Injection Date:	12/05/15
Lab Sample ID:	5L34216-CCV4	Injection Time:	05:40

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perchlorate	A	5.000	5.164	1.178358	1.216917		3.3	15

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L33714-LCV1
Sequence: 5L33714
Standard ID: 15J0445

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	1.000	0.9930	-0.7	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L33714-LCV2
Sequence: 5L33714
Standard ID: 15J0445

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	1.000	1.008	0.8	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L33714-LCV3
Sequence: 5L33714
Standard ID: 15H0001

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	0.4000	0.4244	6.1	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L33714-LCV4
Sequence: 5L33714
Standard ID: 15J0445

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	1.000	0.9977	-0.2	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L33714-LCV5
Sequence: 5L33714
Standard ID: 15H0001

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	0.4000	0.4523	13.1	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L34214-LCV1
Sequence: 5L34214
Standard ID: 15J0445

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	1.000	1.024	2.4	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L34214-LCV2
Sequence: 5L34214
Standard ID: 15H0001

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	0.4000	0.4029	0.7	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L34214-LCV3
Sequence: 5L34214
Standard ID: 15J0445

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	1.000	1.003	0.3	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L34214-LCV4
Sequence: 5L34214
Standard ID: 15H0001

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	0.4000	0.4415	10.4	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L34214-LCV5
Sequence: 5L34214
Standard ID: 15J0445

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	1.000	1.001	0.09	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L34214-LCV6
Sequence: 5L34214
Standard ID: 15H0001

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	0.4000	0.4354	8.9	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L34216-LCV1
Sequence: 5L34216
Standard ID: 15J0445

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	1.000	1.002	0.2	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L34216-LCV2
Sequence: 5L34216
Standard ID: 15H0001

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	0.4000	0.4115	2.9	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L34216-LCV3
Sequence: 5L34216
Standard ID: 15J0445

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	1.000	1.011	1.1	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L34216-LCV4
Sequence: 5L34216
Standard ID: 15H0001

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	0.4000	0.4418	10.5	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L34216-LCV5
Sequence: 5L34216
Standard ID: 15J0445

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	1.000	1.008	0.8	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L34216-LCV6
Sequence: 5L34216
Standard ID: 15H0001

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	0.4000	0.4735	18.4	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L34216-LCV7
Sequence: 5L34216
Standard ID: 15J0445

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	1.000	0.9984	-0.2	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L34216-LCV8
Sequence: 5L34216
Standard ID: 15H0001

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	0.4000	0.4333	8.3	30.00

HOLDING TIME SUMMARY

SW6850

Laboratory: Empirical Laboratories, LLC SDG: 1511269

Client: Microbac Laboratories, Inc.-Ohio Valley Division Project: Perchlorate

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
50WW05-111315	11/13/15 08:00	11/25/15 08:45	12/01/15 13:39	18.24	28.00	12/04/15 18:04	21.42	28.00	
50SW06-111315	11/13/15 08:30	11/25/15 08:45	12/01/15 13:39	18.21	28.00	12/02/15 17:11	19.36	28.00	
GPW1-111315	11/13/15 08:45	11/25/15 08:45	12/01/15 13:39	18.20	28.00	12/02/15 17:29	19.36	28.00	
50WW28-111315	11/13/15 09:45	11/25/15 08:45	12/03/15 12:00	20.09	28.00	12/04/15 21:38	21.50	28.00	
50WW16-111315	11/13/15 10:45	11/25/15 08:45	12/03/15 12:00	20.05	28.00	12/07/15 20:56	24.42	28.00	
LHSMW54-111315	11/13/15 13:45	11/25/15 08:45	12/01/15 13:39	18.00	28.00	12/04/15 18:57	21.22	28.00	
47WW38-111315	11/13/15 14:55	11/25/15 08:45	12/01/15 13:39	17.95	28.00	12/04/15 19:15	21.18	28.00	
50WW08-111615	11/16/15 08:20	11/25/15 08:45	12/01/15 13:39	15.22	28.00	12/04/15 19:33	18.47	28.00	
50WW22-111615	11/16/15 09:25	11/25/15 08:45	12/01/15 13:39	15.18	28.00	12/02/15 19:16	16.41	28.00	
50WW24-111615	11/16/15 10:30	11/25/15 08:45	12/03/15 12:00	17.06	28.00	12/04/15 22:13	18.49	28.00	
50WW23-111615	11/16/15 11:35	11/25/15 08:45	12/03/15 12:00	17.02	28.00	12/04/15 23:43	18.51	28.00	
50WW18-111615	11/16/15 13:45	11/25/15 08:45	12/03/15 12:00	16.93	28.00	12/05/15 00:00	18.43	28.00	
50WW25-111615	11/16/15 14:55	11/25/15 08:45	12/03/15 12:00	16.88	28.00	12/07/15 23:37	21.36	28.00	
50WW27-111115	11/11/15 08:15	11/25/15 08:45	12/03/15 12:00	22.16	28.00	12/05/15 00:36	23.68	28.00	
50WW15-111115	11/11/15 09:15	11/25/15 08:45	12/03/15 12:00	22.11	28.00	12/05/15 00:54	23.65	28.00	
50WW15FD-111115	11/11/15 09:15	11/25/15 08:45	12/03/15 12:00	22.11	28.00	12/05/15 01:12	23.66	28.00	
50WW09-111115	11/11/15 10:35	11/25/15 08:45	12/03/15 12:00	22.06	28.00	12/05/15 01:30	23.62	28.00	
50WW09FD-111115	11/11/15 10:35	11/25/15 08:45	12/03/15 12:00	22.06	28.00	12/05/15 01:47	23.63	28.00	
50WW10-111115	11/11/15 14:35	11/25/15 08:45	12/03/15 12:00	21.89	28.00	12/05/15 02:05	23.48	28.00	
50WW13-111215	11/12/15 08:40	11/25/15 08:45	12/03/15 12:00	21.14	28.00	12/08/15 01:06	25.69	28.00	
50WW14-111215	11/12/15 09:50	11/25/15 08:45	12/03/15 12:00	21.09	28.00	12/05/15 03:52	22.75	28.00	
50WW11-111215	11/12/15 11:00	11/25/15 08:45	12/03/15 12:00	21.04	28.00	12/08/15 01:24	25.60	28.00	
50WW06-111215	11/12/15 13:25	11/25/15 08:45	12/03/15 12:00	20.94	28.00	12/08/15 01:42	25.51	28.00	

HOLDING TIME SUMMARY

SW6850

Laboratory: Empirical Laboratories, LLC SDG: 1511269

Client: Microbac Laboratories, Inc.-Ohio Valley Division Project: Perchlorate

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
50WW12-111215	11/12/15 14:35	11/25/15 08:45	12/03/15 12:00	20.89	28.00	12/08/15 02:00	25.48	28.00	

Data for SW6850
Supporting Raw Data / Logs

Print of all graphic windows
Data File : C:\CHEM32\1\DATA\111115A\PERC000002.D
Sample Name : SEQ-TUN1

Acq. Operator	:	Seq. Line :	2
Acq. Instrument	: Instrument 1	Location :	Vial 1
Injection Date	: 11/11/2015 3:35:26 PM	Inj :	1
		Inj Volume :	100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_SC
Last changed : 9/29/2015 11:41:05 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/11/2015 2:51:33 PM
(modified after loading)

Current Chromatogram(s)

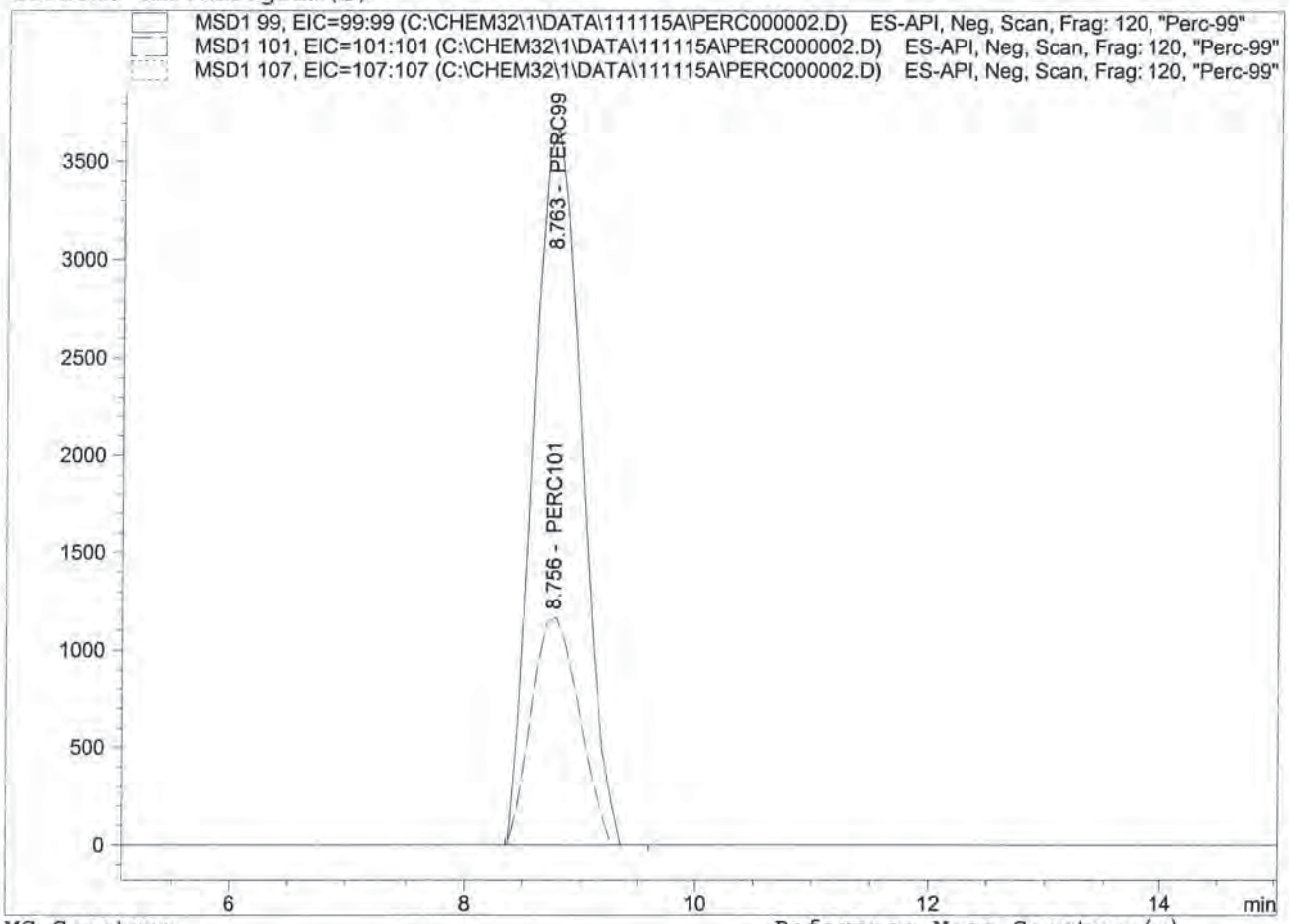

MS Spectrum

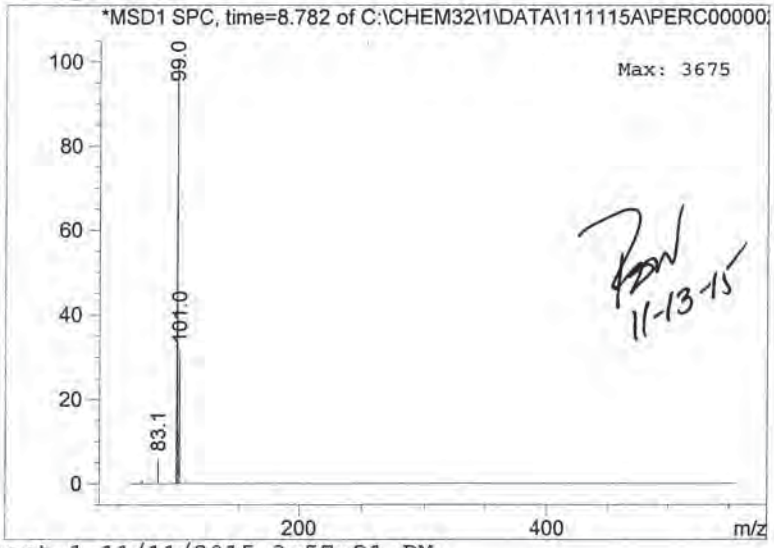

Reference Mass Spectrum(a)

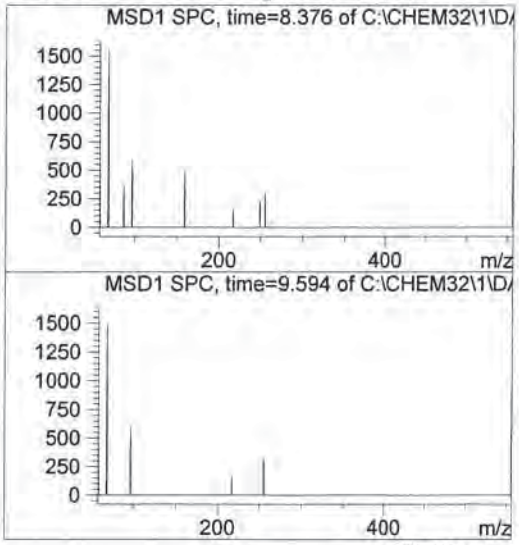

11/16/15

11-13-15

Data File C:\CHEM32\1\DATA\111115A\PERC000002.D
Sample Name: SEQ-TUN1

==========

Acq. Operator : Seq. Line : 2
Acq. Instrument : Instrument 1 Location : Vial 1
Injection Date : 11/11/2015 3:35:26 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_SC
Last changed : 9/29/2015 11:41:05 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/11/2015 2:51:33 PM
(modified after loading)

==========

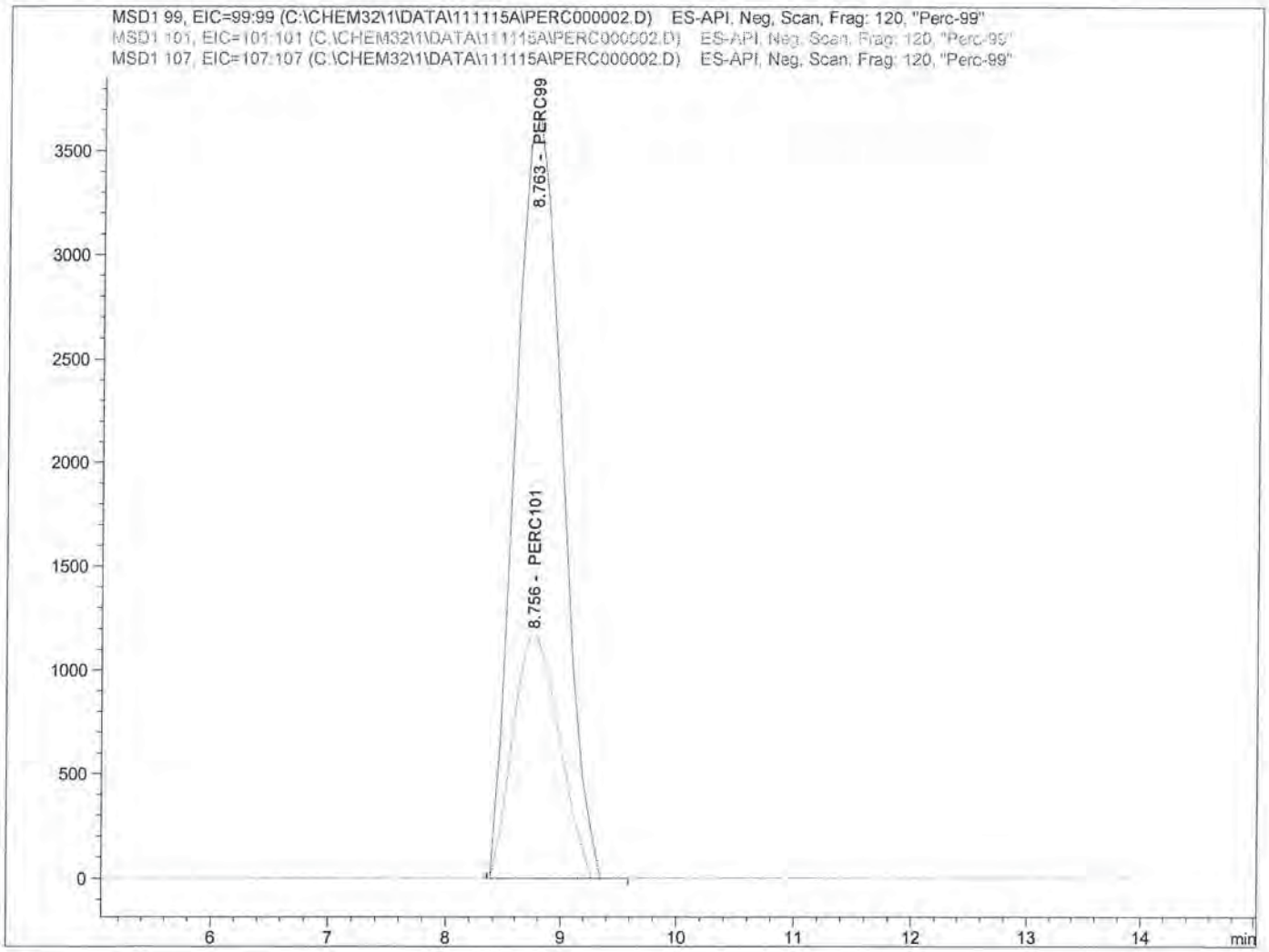

==========

Internal Standard Report

==========

11/16/15

Sorted By : Signal
Calib. Data Modified : 11/11/2015 2:51:33 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

11-13-15

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\111115A\PERC000002.D
Sample Name: SEQ-TUN1

```
==================================================================
Acq. Operator   :                                  Seq. Line :   2
Acq. Instrument : Instrument 1                      Location : Vial 1
Injection Date  : 11/11/2015 3:35:26 PM                  Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_SC
Last changed    : 9/29/2015 11:41:05 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed    : 11/11/2015 2:51:33 PM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.763	BB	1	1.04488e5	0.00000	0.00000		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.756	BB	1	3.29786e4	0.00000	0.00000		PERC101

Totals without ISTD(s) : 0.00000

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.840		1	-	-	-		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : ISTD compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\111115A\PERC000005.D
Sample Name: SEQ-CAL1

==========

Acq. Operator : Seq. Line : 5
Acq. Instrument : Instrument 1 Location : Vial 91
Injection Date : 11/11/2015 4:29:18 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/11/2015 4:51:15 PM
(modified after loading)

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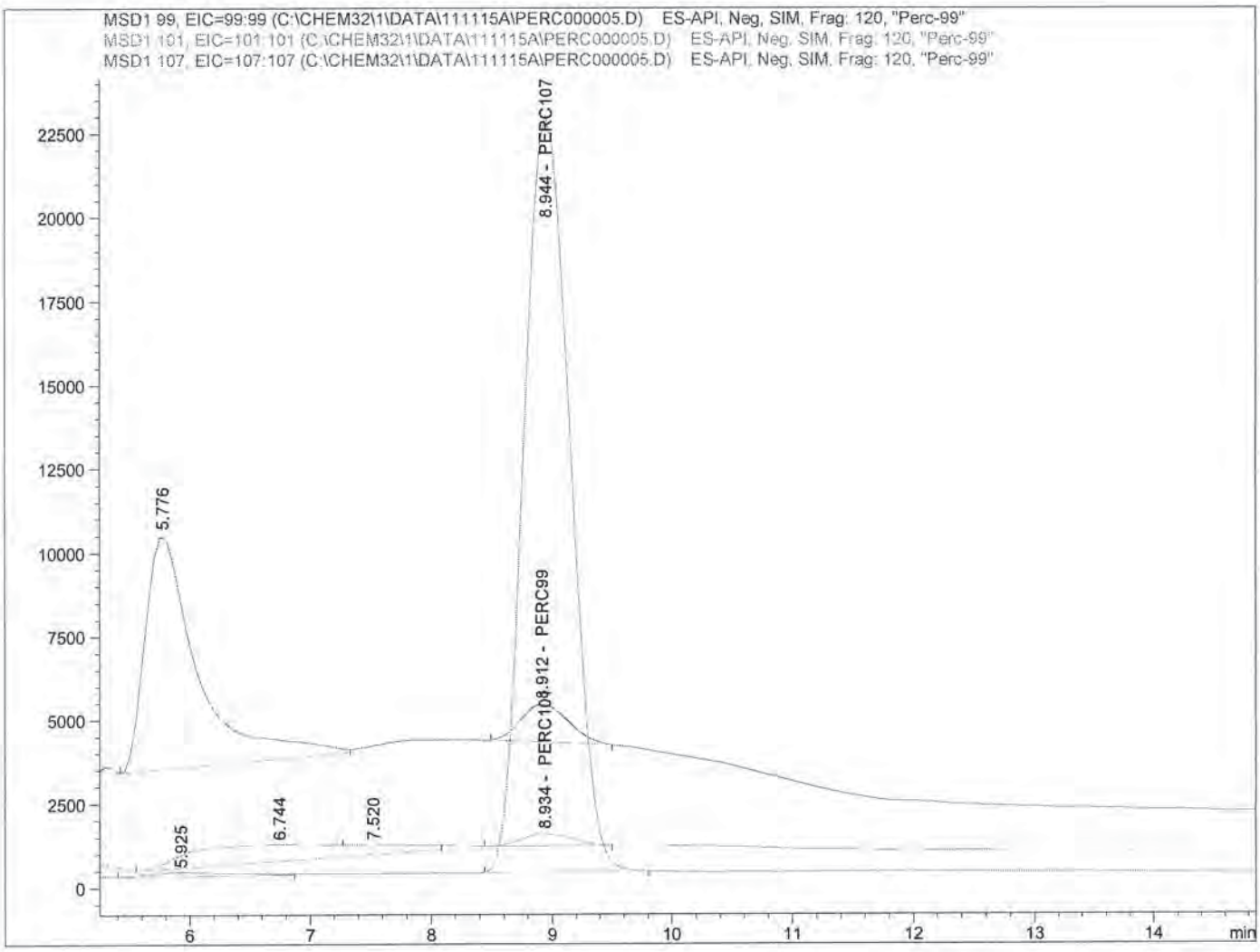

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : 11/11/2015 4:49:21 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

11/16/15

11-13-15

Data File C:\CHEM32\1\DATA\111115A\PERC000005.D
Sample Name: SEQ-CAL1

```
==================================================================
Acq. Operator   :                                  Seq. Line :   5
Acq. Instrument : Instrument 1                      Location : Vial 91
Injection Date  : 11/11/2015 4:29:18 PM                  Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed    : 11/11/2015 4:51:15 PM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.912	BBA	1	3.10224e4	9.44928e-1	2.43020e-1		PERC99

Totals without ISTD(s) : 2.43020e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.934	BBA	1	1.00418e4	2.82395	2.35091e-1		PERC101

Totals without ISTD(s) : 2.35091e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.944	BBA I	1	6.03117e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\111115A\PERC000006.D
Sample Name: SEQ-CAL2

==========

Acq. Operator : Seq. Line : 6
Acq. Instrument : Instrument 1 Location : Vial 92
Injection Date : 11/11/2015 4:47:05 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/13/2015 9:37:20 AM
(modified after loading)

==========

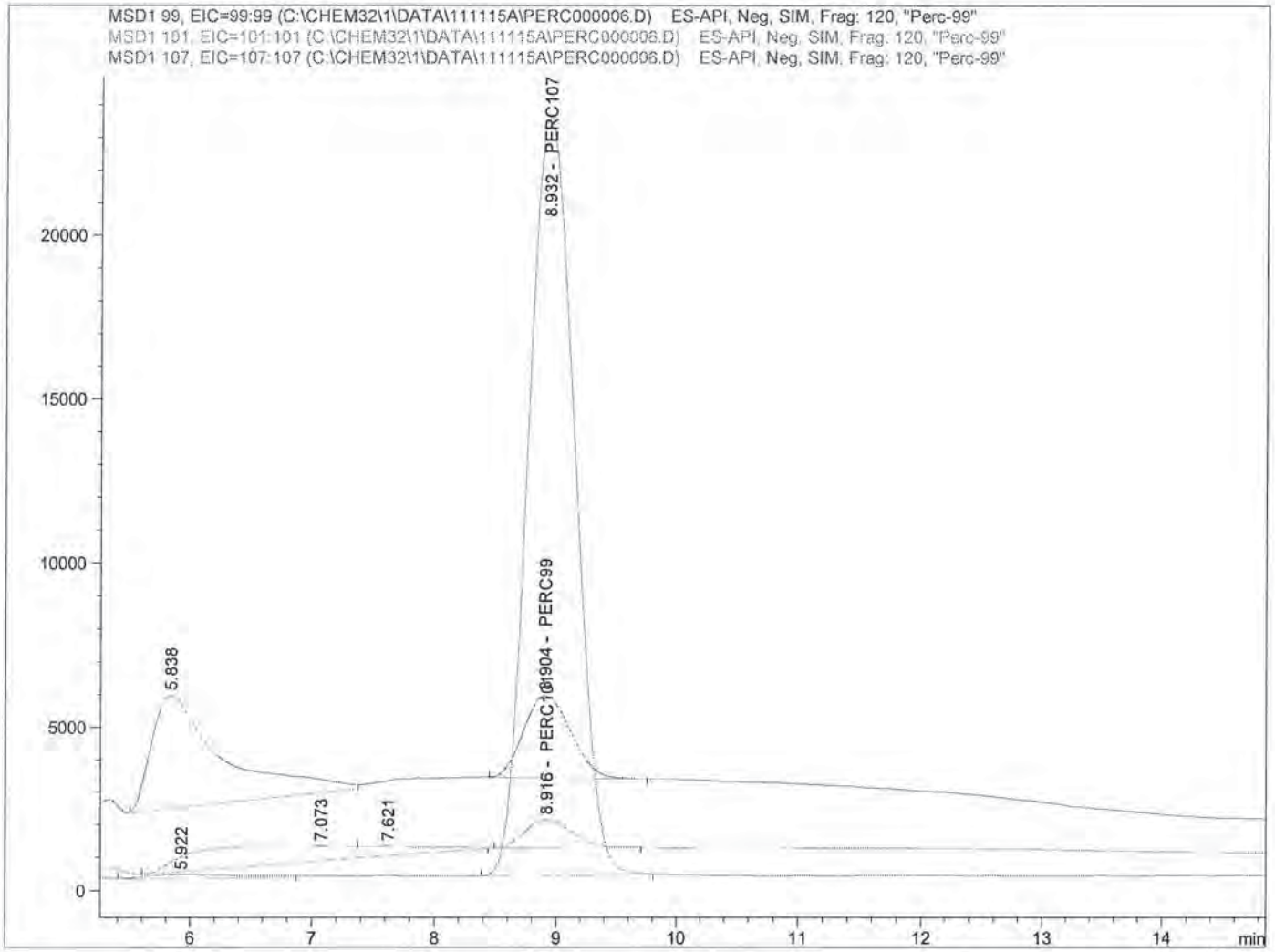

==========

Internal Standard Report

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11/16/15

Sorted By : Signal
Calib. Data Modified : Wednesday, November 11, 2015 4:52:18 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

11-13-15

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\111115A\PERC000006.D
Sample Name: SEQ-CAL2

```
==================================================================
Acq. Operator   :                                Seq. Line :   6
Acq. Instrument : Instrument 1                    Location : Vial 92
Injection Date  : 11/11/2015 4:47:05 PM                Inj :   1
                                                 Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed    : 11/13/2015 9:37:20 AM
                  (modified after loading)
==================================================================

  1      5.00000   PERC107


Signal 1: MSD1 99, EIC=99:99

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.904 BB        1 6.88955e4  9.15059e-1 5.09040e-1    PERC99

Totals without ISTD(s) :             5.09040e-1



Signal 2: MSD1 101, EIC=101:101

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.916 BBA       1 2.30615e4     2.78000 5.17658e-1    PERC101

Totals without ISTD(s) :             5.17658e-1



Signal 3: MSD1 107, EIC=107:107

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.932 BBA  I    1 6.19239e5     1.00000    5.00000    PERC107

Totals without ISTD(s) :                0.00000


==================================================================
                         *** End of Report ***
```

Data File C:\CHEM32\1\DATA\111115A\PERC000007.D
Sample Name: SEQ-CAL3

==========

Acq. Operator : Seq. Line : 7
Acq. Instrument : Instrument 1 Location : Vial 93
Injection Date : 11/11/2015 5:04:53 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/13/2015 9:38:16 AM
(modified after loading)

==========

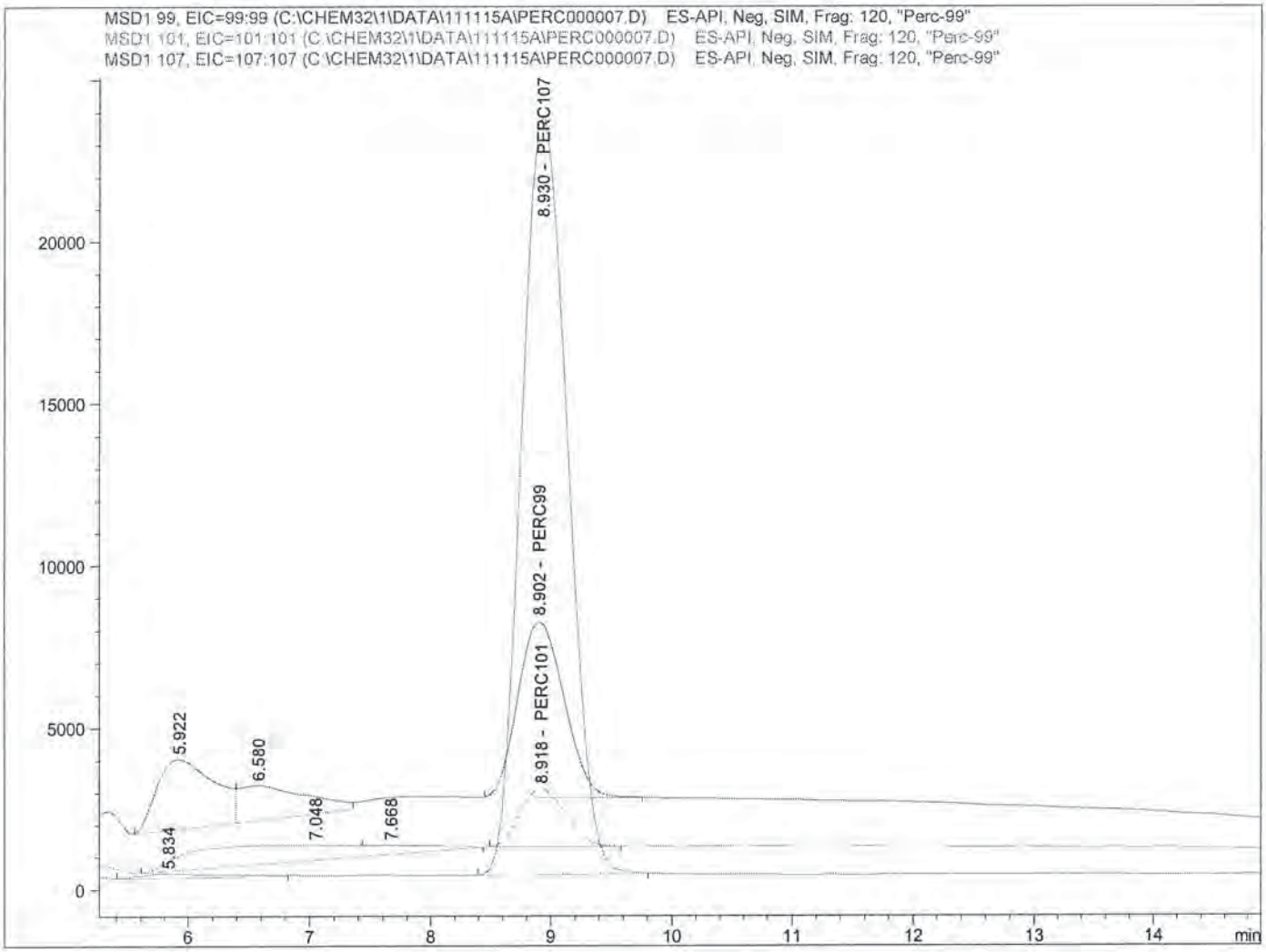

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : Friday, November 13, 2015 9:38:16 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

11/16/15

11-13-15

Data File C:\CHEM32\1\DATA\111115A\PERC000007.D
Sample Name: SEQ-CAL3

==========

Acq. Operator : Seq. Line : 7
Acq. Instrument : Instrument 1 Location : Vial 93
Injection Date : 11/11/2015 5:04:53 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/13/2015 9:38:16 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.902	BB	1	1.45188e5	8.98167e-1	1.04309		PERC99

Totals without ISTD(s) : 1.04309

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.918	BV	1	4.72429e4	2.75163	1.03982		PERC101

Totals without ISTD(s) : 1.03982

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.930	BBA I	1	6.25083e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\111115A\PERC000008.D
Sample Name: SEQ-CAL4

==========

Acq. Operator : Seq. Line : 8
Acq. Instrument : Instrument 1 Location : Vial 94
Injection Date : 11/11/2015 5:22:47 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/13/2015 9:38:59 AM
(modified after loading)

==========

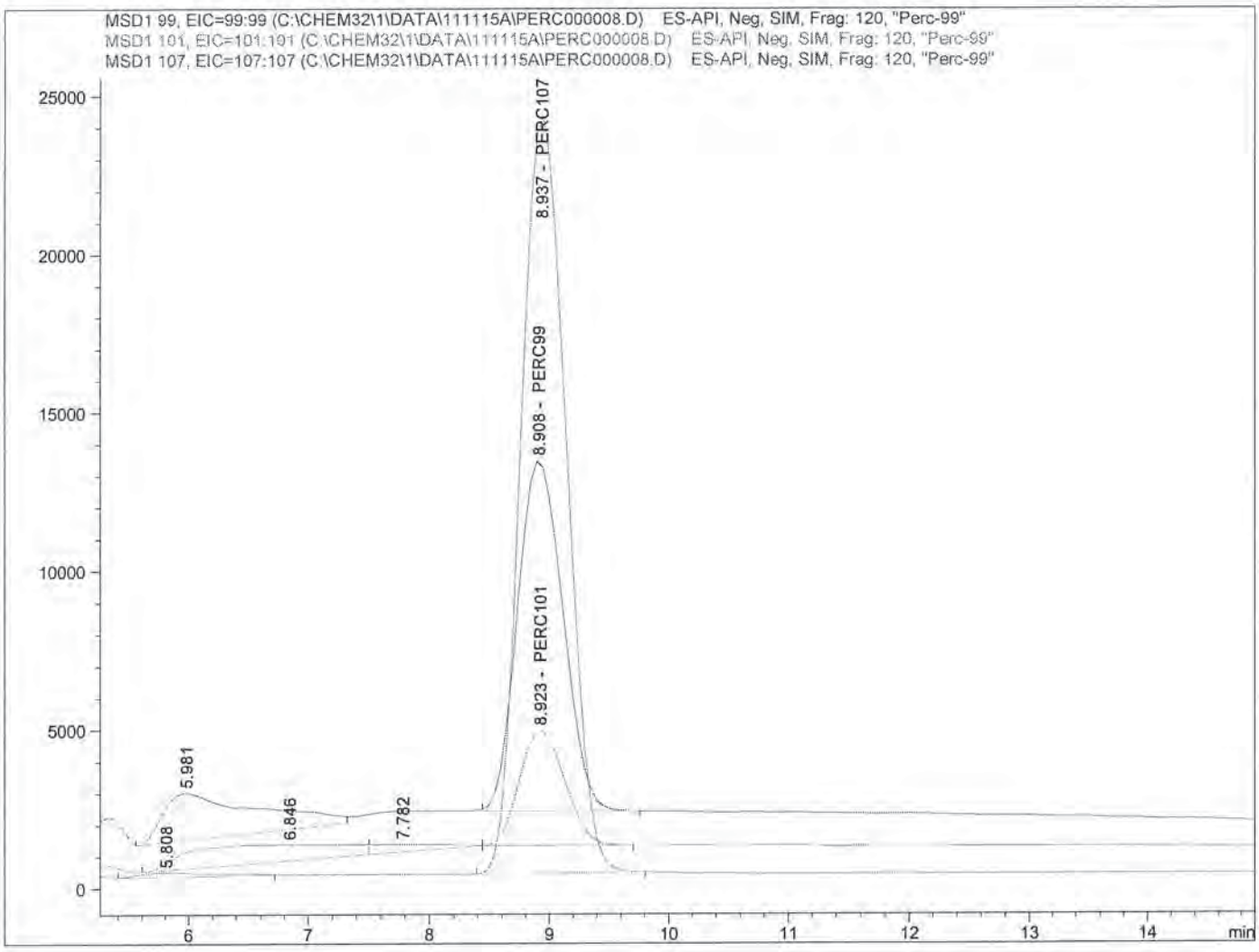

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Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : Friday, November 13, 2015 9:38:59 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

11-13-15

11/16/15

Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\111115A\PERC000008.D
Sample Name: SEQ-CAL4

```
==================================================================
Acq. Operator   :                                Seq. Line :   8
Acq. Instrument : Instrument 1                    Location : Vial 94
Injection Date  : 11/11/2015 5:22:47 PM                Inj :   1
                                                 Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed    : 11/13/2015 9:38:59 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.908	BB	1	2.94696e5	8.87076e-1	2.05173		PERC99

Totals without ISTD(s) : 2.05173

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.923	BBA	1	9.61557e4	2.72316	2.05510		PERC101

Totals without ISTD(s) : 2.05510

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.937	BBA I	1	6.37067e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\111115A\PERC000009.D
Sample Name: SEQ-CAL5

==========

Acq. Operator : Seq. Line : 9
Acq. Instrument : Instrument 1 Location : Vial 95
Injection Date : 11/11/2015 5:40:37 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/13/2015 9:39:41 AM
(modified after loading)

==========

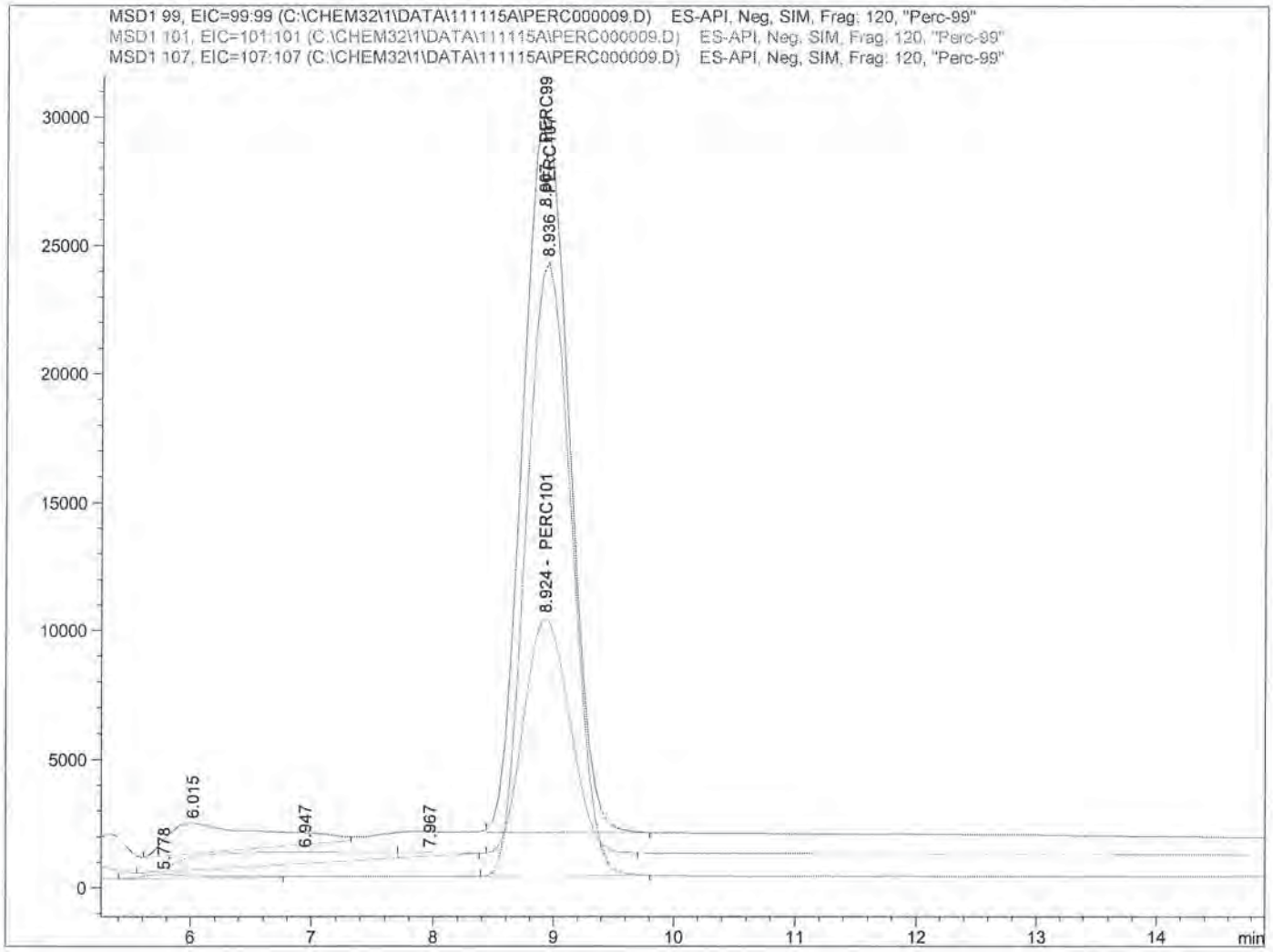

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Internal Standard Report

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11/16/15

Sorted By : Signal
Calib. Data Modified : Friday, November 13, 2015 9:39:41 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

11-13-15

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\111115A\PERC000009.D
Sample Name: SEQ-CAL5

```
==================================================================
Acq. Operator   :                                Seq. Line :   9
Acq. Instrument : Instrument 1                    Location : Vial 95
Injection Date  : 11/11/2015 5:40:37 PM                Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed    : 11/13/2015 9:39:41 AM
                  (modified after loading)
==================================================================

  1      5.00000   PERC107


Signal 1: MSD1 99, EIC=99:99

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.907 BBA       1 7.47180e5  8.79368e-1    5.14361    PERC99

Totals without ISTD(s) :                 5.14361



Signal 2: MSD1 101, EIC=101:101

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.924 BBA       1 2.43807e5     2.69615    5.14592    PERC101

Totals without ISTD(s) :                 5.14592



Signal 3: MSD1 107, EIC=107:107

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.936 BBA  I    1 6.38700e5     1.00000    5.00000    PERC107

Totals without ISTD(s) :                 0.00000


==================================================================
                        *** End of Report ***
```

Data File C:\CHEM32\1\DATA\111115A\PERC000010.D
Sample Name: SEQ-CAL6

==========

Acq. Operator : Seq. Line : 10
Acq. Instrument : Instrument 1 Location : Vial 96
Injection Date : 11/11/2015 5:58:29 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/13/2015 9:40:28 AM
(modified after loading)

==========

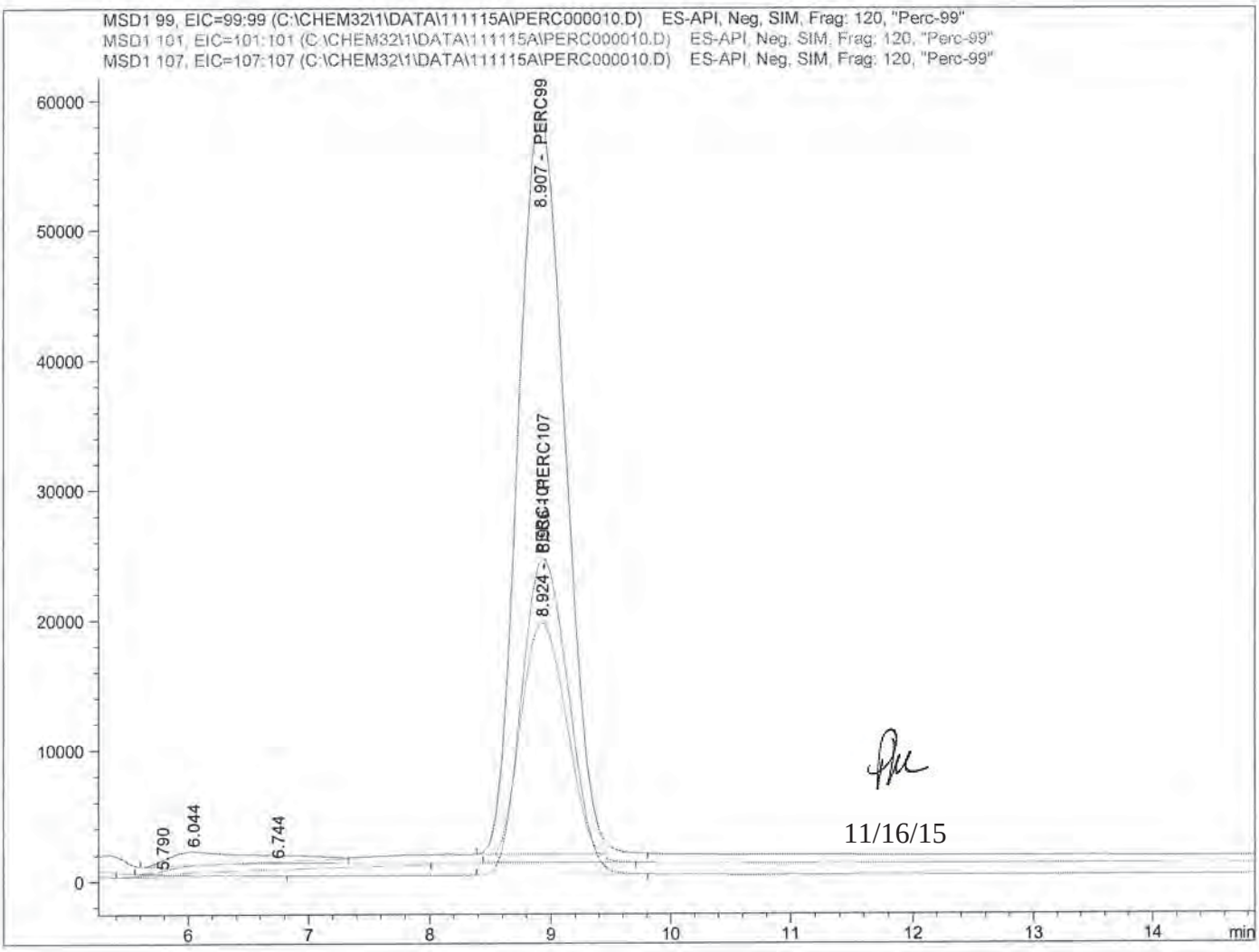

11/16/15

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : Friday, November 13, 2015 9:40:28 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

11-13-15

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\111115A\PERC000010.D
Sample Name: SEQ-CAL6

```
==================================================================
Acq. Operator   :                                Seq. Line :  10
Acq. Instrument : Instrument 1                    Location : Vial 96
Injection Date  : 11/11/2015 5:58:29 PM                Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed    : 11/13/2015 9:40:28 AM
                  (modified after loading)
==================================================================

  1      5.00000   PERC107


Signal 1: MSD1 99, EIC=99:99

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.907 BBA       1 1.51860e6  8.71535e-1   10.17641    PERC99

Totals without ISTD(s) :                10.17641



Signal 2: MSD1 101, EIC=101:101

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.924 BBA       1 4.91640e5     2.66963   10.09166    PERC101

Totals without ISTD(s) :                10.09166



Signal 3: MSD1 107, EIC=107:107

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.936 BBA  I    1 6.50287e5     1.00000    5.00000    PERC107

Totals without ISTD(s) :                 0.00000


==================================================================
                        *** End of Report ***
```

Data File C:\CHEM32\1\DATA\111115A\PERC000011.D
Sample Name: SEQ-CAL7

==========

Acq. Operator : Seq. Line : 11
Acq. Instrument : Instrument 1 Location : Vial 97
Injection Date : 11/11/2015 6:16:16 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/13/2015 9:41:08 AM
(modified after loading)

==========

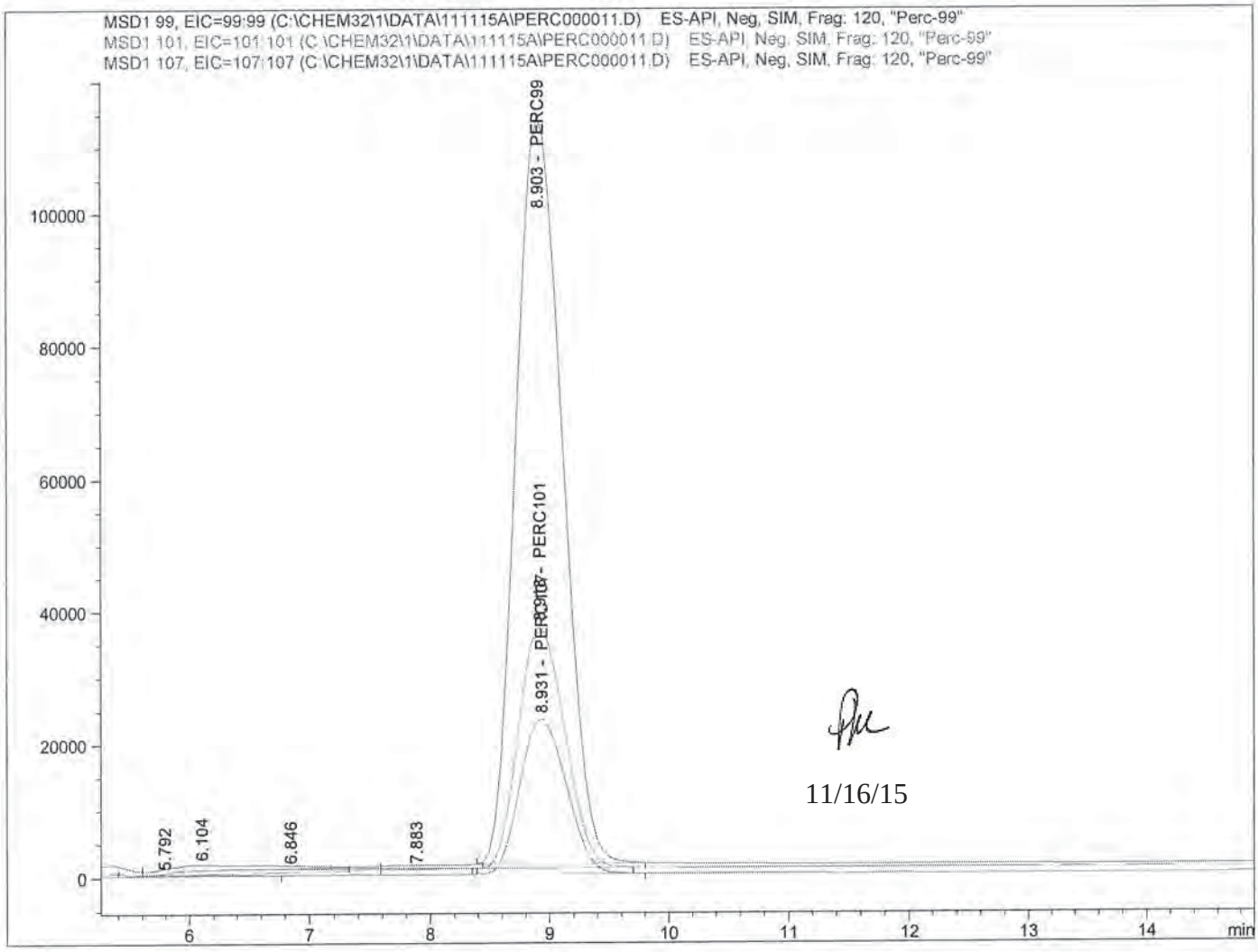

11/16/15

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Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : Friday, November 13, 2015 9:41:08 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

11-13-15

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\111115A\PERC000011.D
Sample Name: SEQ-CAL7

==========

Acq. Operator : Seq. Line : 11
Acq. Instrument : Instrument 1 Location : Vial 97
Injection Date : 11/11/2015 6:16:16 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/13/2015 9:41:08 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.903	BBA	1	3.03553e6	8.63235e-1	20.69704		PERC99

Totals without ISTD(s) : 20.69704

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.918	BBA	1	9.77148e5	2.64709	20.43021		PERC101

Totals without ISTD(s) : 20.43021

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.931	BBA I	1	6.33032e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\111115A\PERC000012.D
Sample Name: SEQ-CAL8

==========

Acq. Operator : Seq. Line : 12
Acq. Instrument : Instrument 1 Location : Vial 98
Injection Date : 11/11/2015 6:34:15 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/13/2015 9:43:12 AM
(modified after loading)

==========

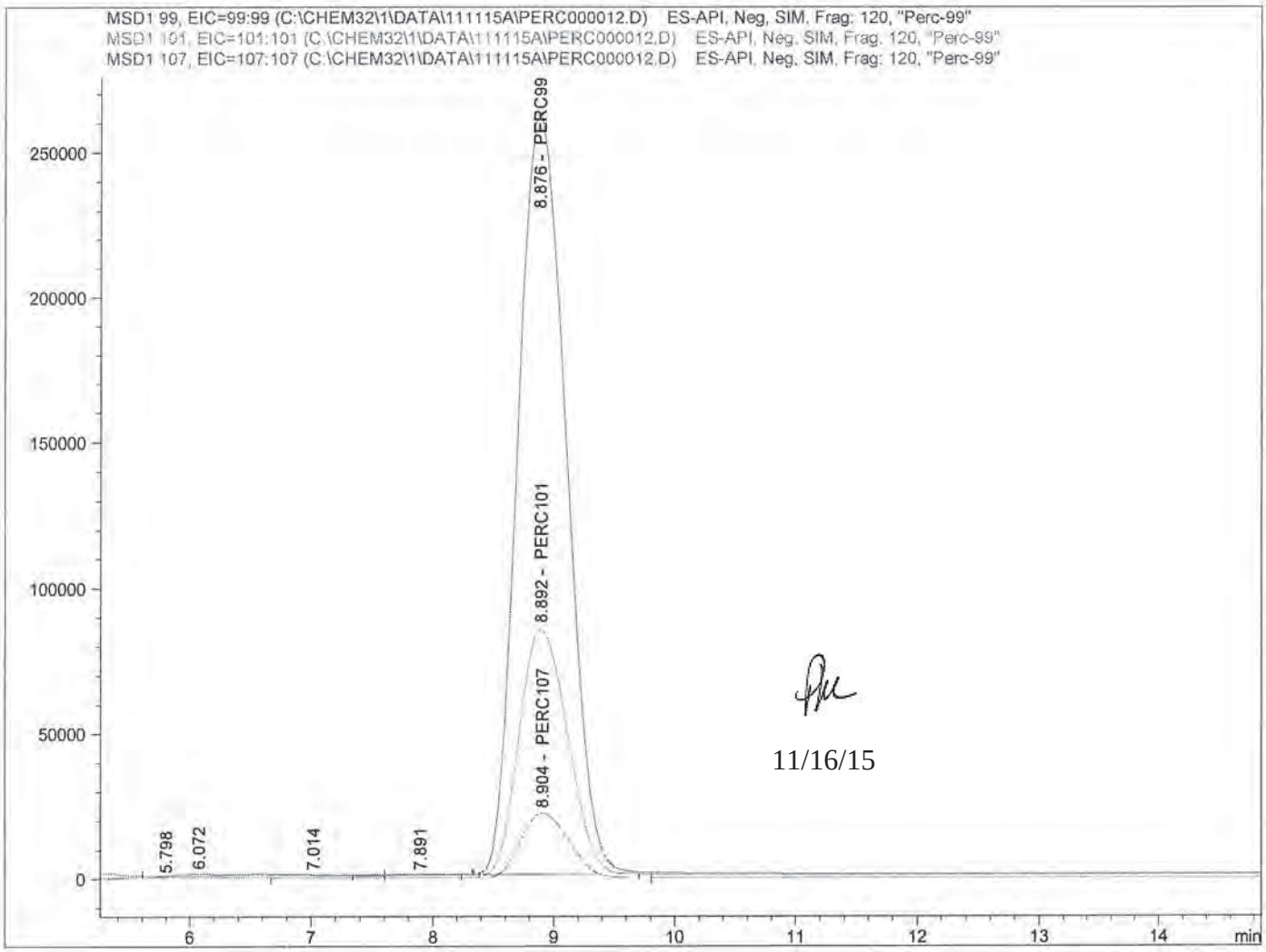

11/16/15

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Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 11/13/2015 9:42:29 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

11-13-15

Data File C:\CHEM32\1\DATA\111115A\PERC000012.D
Sample Name: SEQ-CAL8

```
==================================================================
Acq. Operator   :                                Seq. Line :  12
Acq. Instrument : Instrument 1                    Location : Vial 98
Injection Date  : 11/11/2015 6:34:15 PM                Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed    : 11/13/2015 9:43:12 AM
                  (modified after loading)
==================================================================
```

1	5.00000	PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.876	BBA	1	7.21782e6	8.48638e-1	49.82637		PERC99

Totals without ISTD(s) : 49.82637

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.892	BBA	1	2.34163e6	2.60663	49.65108		PERC101

Totals without ISTD(s) : 49.65108

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.904	BBA I	1	6.14666e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\111115A\PERC000013.D
Sample Name: SEQ-ICV1

==========

Acq. Operator : Seq. Line : 13
Acq. Instrument : Instrument 1 Location : Vial 99
Injection Date : 11/11/2015 6:51:59 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/13/2015 9:43:59 AM
(modified after loading)

==========

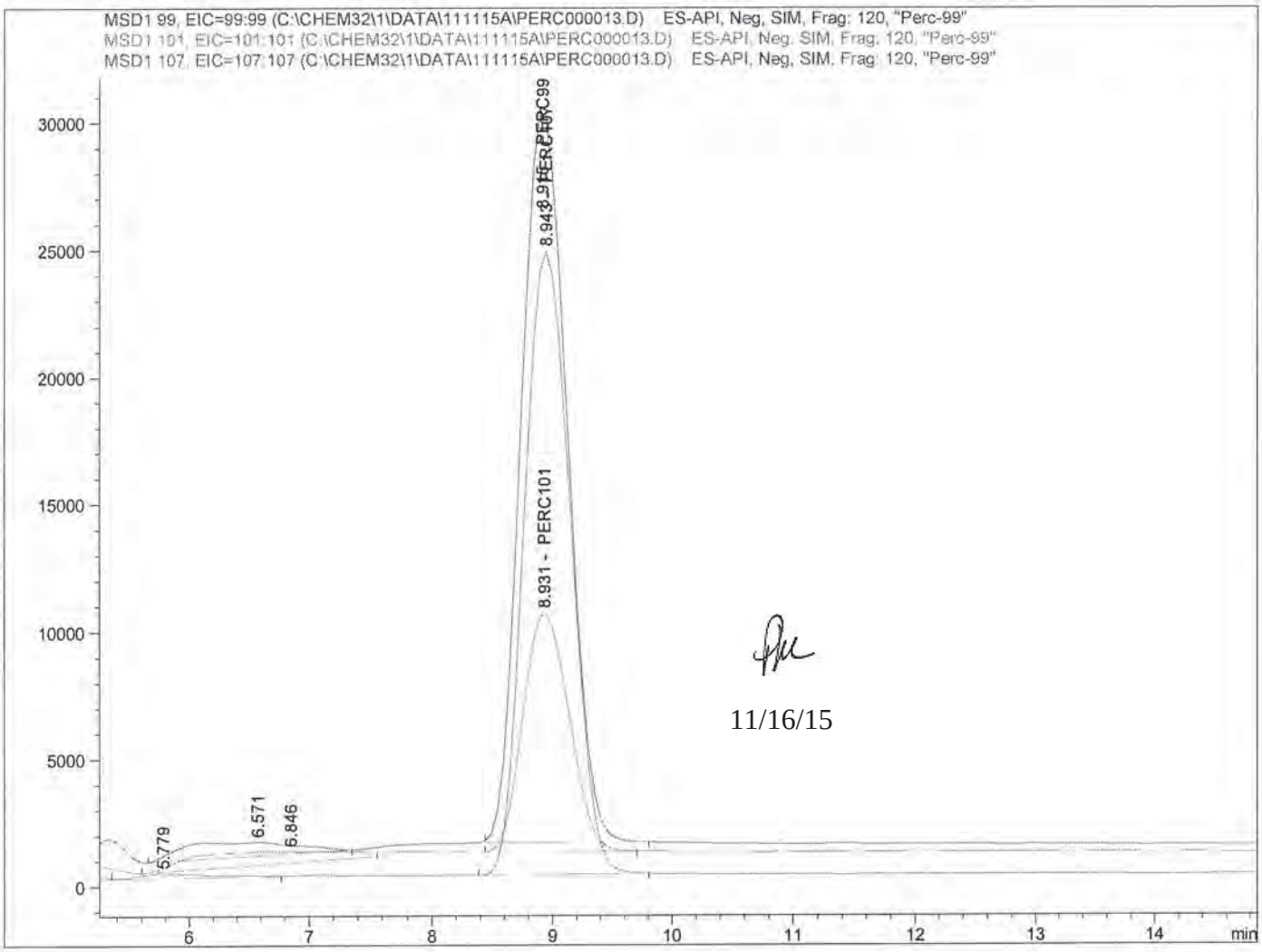

11/16/15

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : Friday, November 13, 2015 9:43:59 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

11-13-15

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\111115A\PERC000013.D
Sample Name: SEQ-ICV1

```
==================================================================
Acq. Operator   :                                Seq. Line :  13
Acq. Instrument : Instrument 1                    Location : Vial 99
Injection Date  : 11/11/2015 6:51:59 PM                Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed    : 11/13/2015 9:43:59 AM
                  (modified after loading)
==================================================================

  1      5.00000   PERC107


Signal 1: MSD1 99, EIC=99:99

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.915 BBA       1 7.66770e5  8.48638e-1    4.97440    PERC99

Totals without ISTD(s) :                 4.97440


Signal 2: MSD1 101, EIC=101:101

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.931 BBA       1 2.49299e5     2.60545    4.96540    PERC101

Totals without ISTD(s) :                 4.96540


Signal 3: MSD1 107, EIC=107:107

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.943 BBA  I    1 6.54059e5     1.00000    5.00000    PERC107

Totals without ISTD(s) :                 0.00000


==================================================================
                        *** End of Report ***
```

Print of all graphic windows
Data File : C:\CHEM32\1\DATA\120215\PERC000002.D
Sample Name : SEQ-TUN1

==========

Acq. Operator : Seq. Line : 2
Acq. Instrument : Instrument 1 Location : Vial 1
Injection Date : 12/2/2015 9:09:29 AM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_SC
Last changed : 11/28/2015 11:11:28 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/2/2015 10:12:07 AM
(modified after loading)

Current Chromatogram(s)

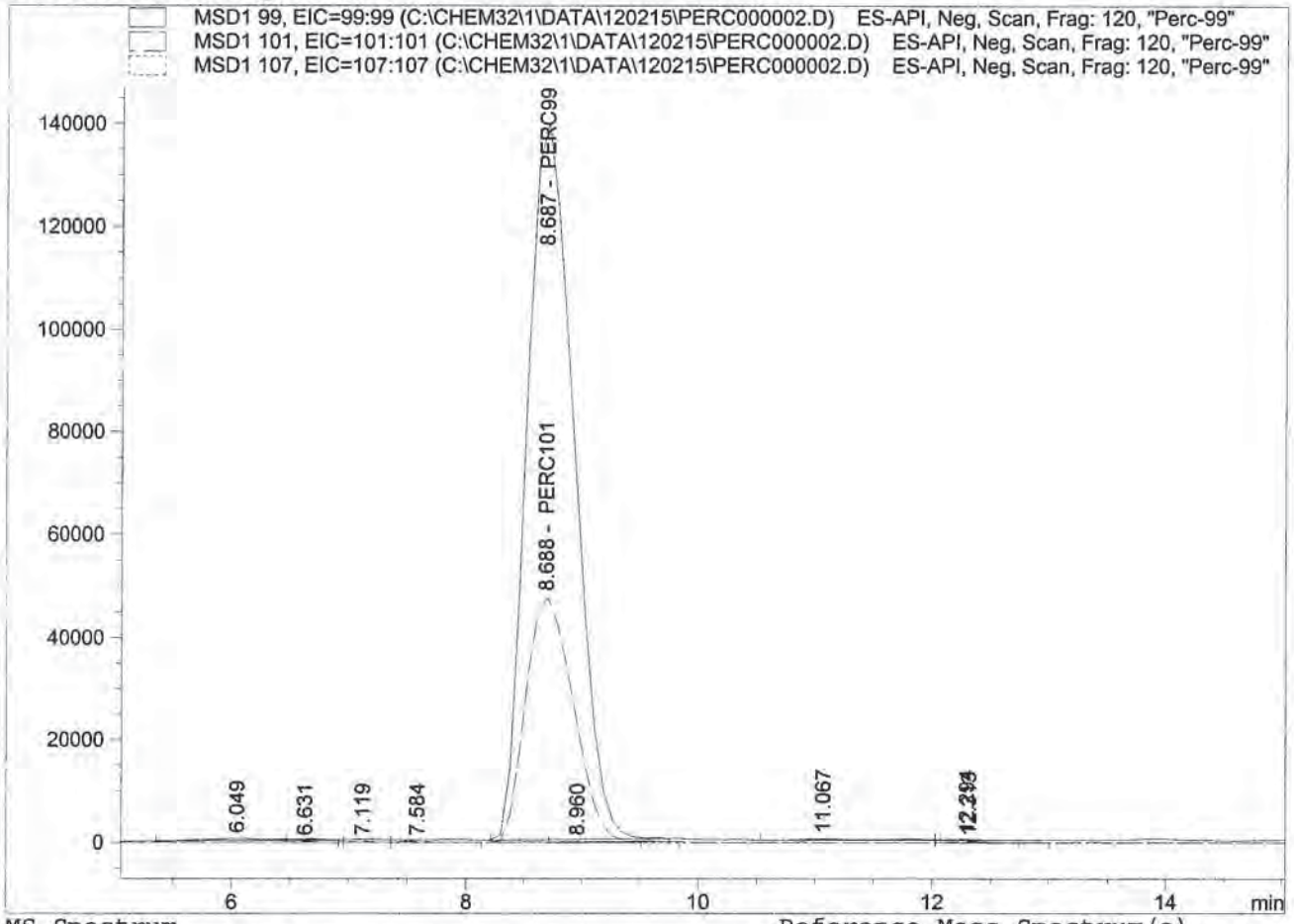

MS Spectrum

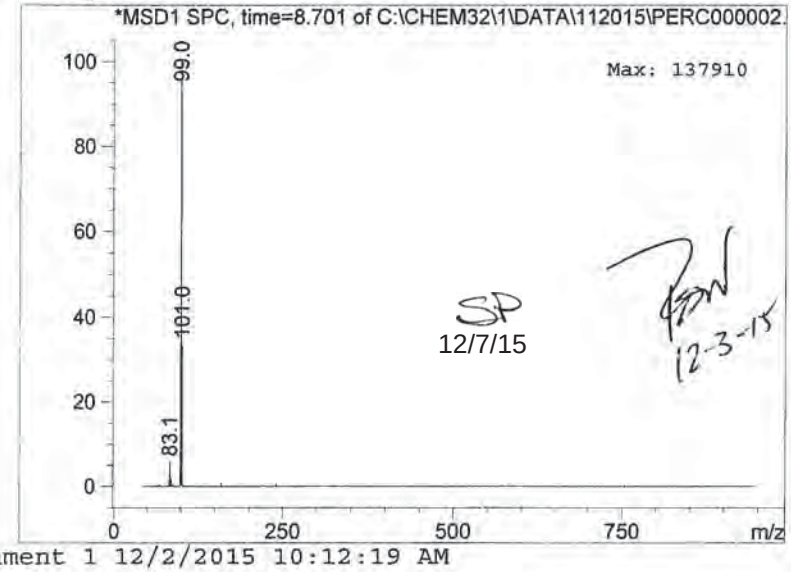

SP
12/7/15

12-3-15

Reference Mass Spectrum(a)

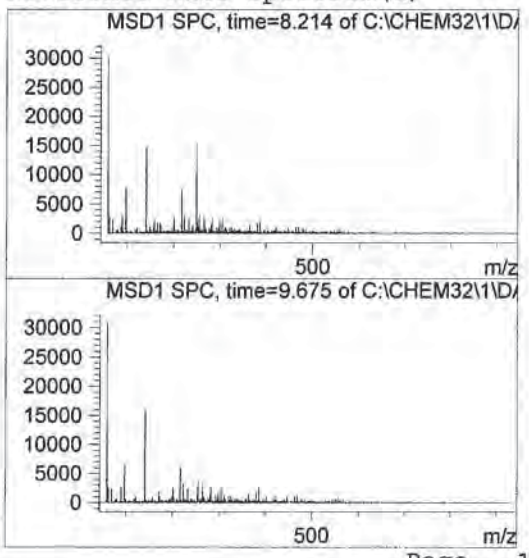

Data File C:\CHEM32\1\DATA\120215\PERC000002.D
Sample Name: SEQ-TUN1

==========

Acq. Operator : Seq. Line : 2
Acq. Instrument : Instrument 1 Location : Vial 1
Injection Date : 12/2/2015 9:09:29 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_SC
Last changed : 11/28/2015 11:11:28 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/2/2015 10:12:07 AM
(modified after loading)

==========

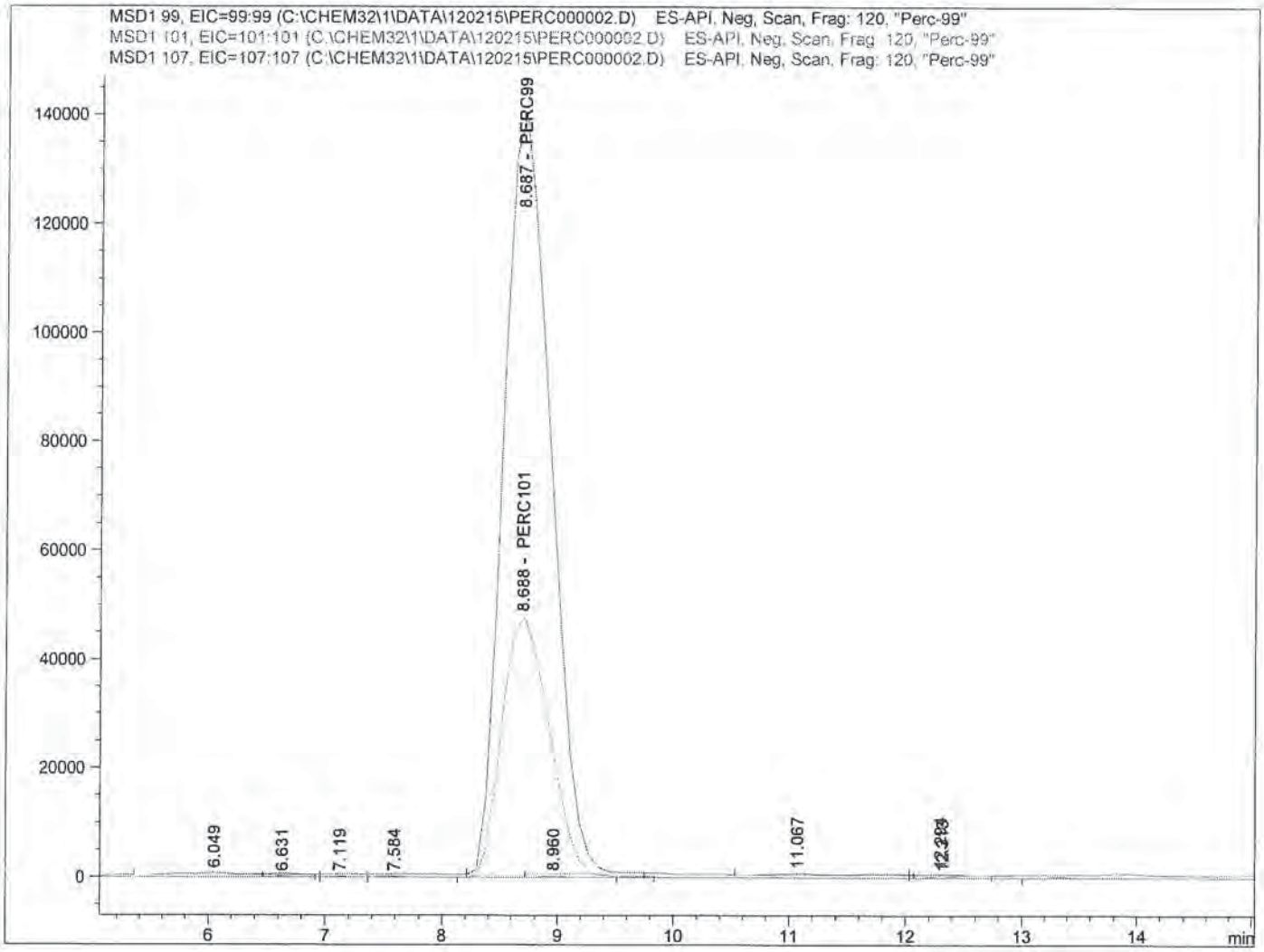

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Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/2/2015 10:12:07 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-3-15

SP
12/7/15

Data File C:\CHEM32\1\DATA\120215\PERC000002.D
Sample Name: SEQ-TUN1

```
==================================================================
Acq. Operator   :                                  Seq. Line :   2
Acq. Instrument : Instrument 1                      Location : Vial 1
Injection Date  : 12/2/2015 9:09:29 AM                  Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_SC
Last changed    : 11/28/2015 11:11:28 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/2/2015 10:12:07 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.687	BB	1	3.92307e6	0.00000	0.00000		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.688	BBA	1	1.35732e6	0.00000	0.00000		PERC101

Totals without ISTD(s) : 0.00000

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.680		1	-	-	-		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : ISTD compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120215\PERC000005.D
Sample Name: SEQ-CCV1

==========

Acq. Operator : Seq. Line : 5
Acq. Instrument : Instrument 1 Location : Vial 3
Injection Date : 12/2/2015 10:03:13 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/2/2015 10:12:07 AM
(modified after loading)

==========

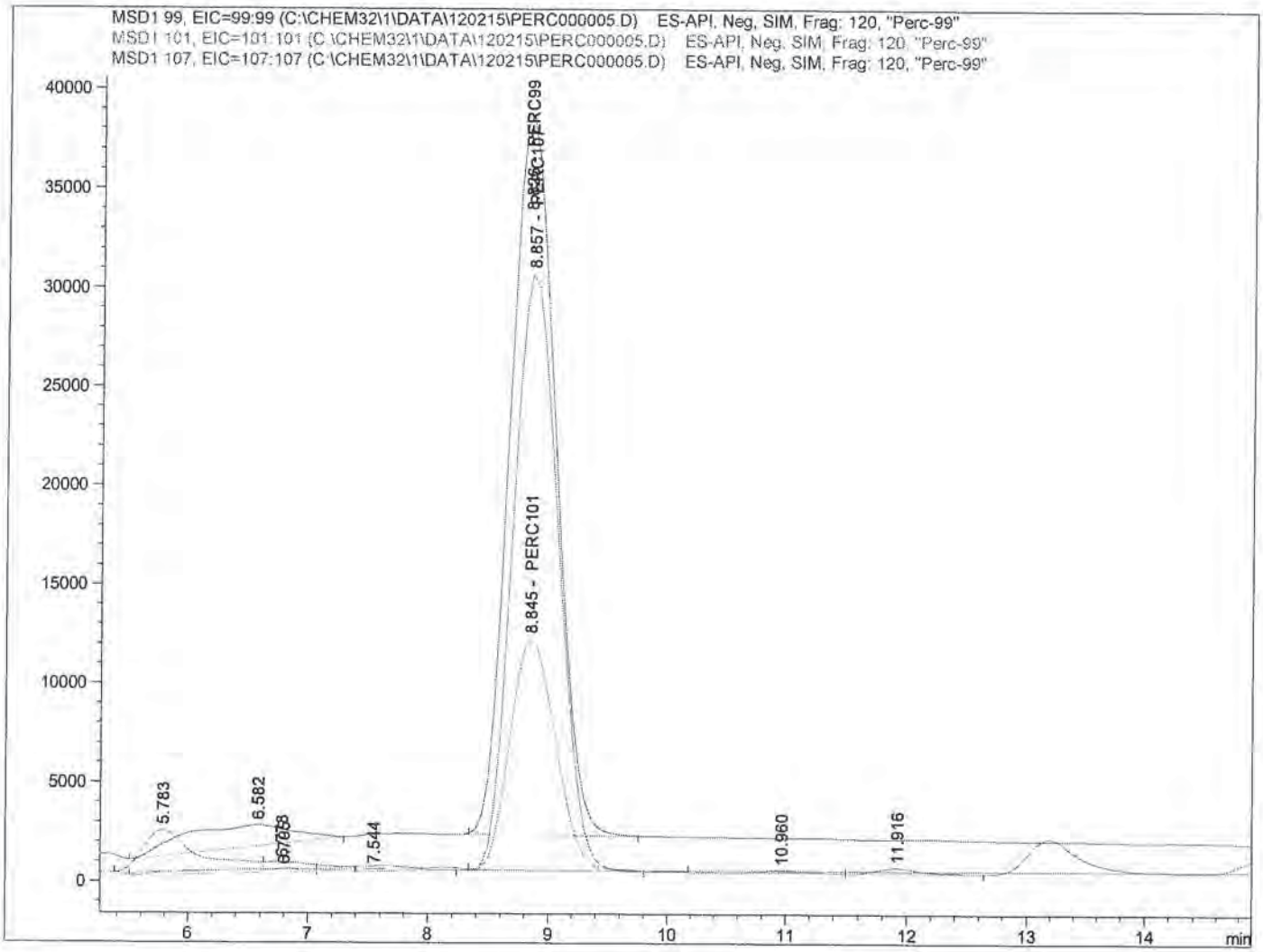

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Internal Standard Report

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SP
12/7/15

Sorted By : Signal
Calib. Data Modified : 12/2/2015 10:12:07 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-3-15

Data File C:\CHEM32\1\DATA\120215\PERC000005.D
Sample Name: SEQ-CCV1

```
==================================================================
Acq. Operator   :                                  Seq. Line :   5
Acq. Instrument : Instrument 1                      Location : Vial 3
Injection Date  : 12/2/2015 10:03:13 AM                 Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/2/2015 10:12:07 AM
                  (modified after loading)
==================================================================

  1      5.00000   PERC107


Signal 1: MSD1 99, EIC=99:99

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.826 BB        1 9.67479e5  8.48638e-1    5.14658     PERC99

Totals without ISTD(s) :                 5.14658


Signal 2: MSD1 101, EIC=101:101

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.845 BBA       1 3.10275e5     2.60545    5.06737     PERC101

Totals without ISTD(s) :                 5.06737


Signal 3: MSD1 107, EIC=107:107

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.857 VBA  I    1 7.97656e5     1.00000    5.00000     PERC107

Totals without ISTD(s) :                 0.00000


==================================================================
                        *** End of Report ***
```

Data File C:\CHEM32\1\DATA\120215\PERC000006.D
Sample Name: SEQ-LCV1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/2/2015 10:21:12 AM

Seq. Line : 6
Location : Vial 4
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/2/2015 10:38:04 AM
(modified after loading)

==========

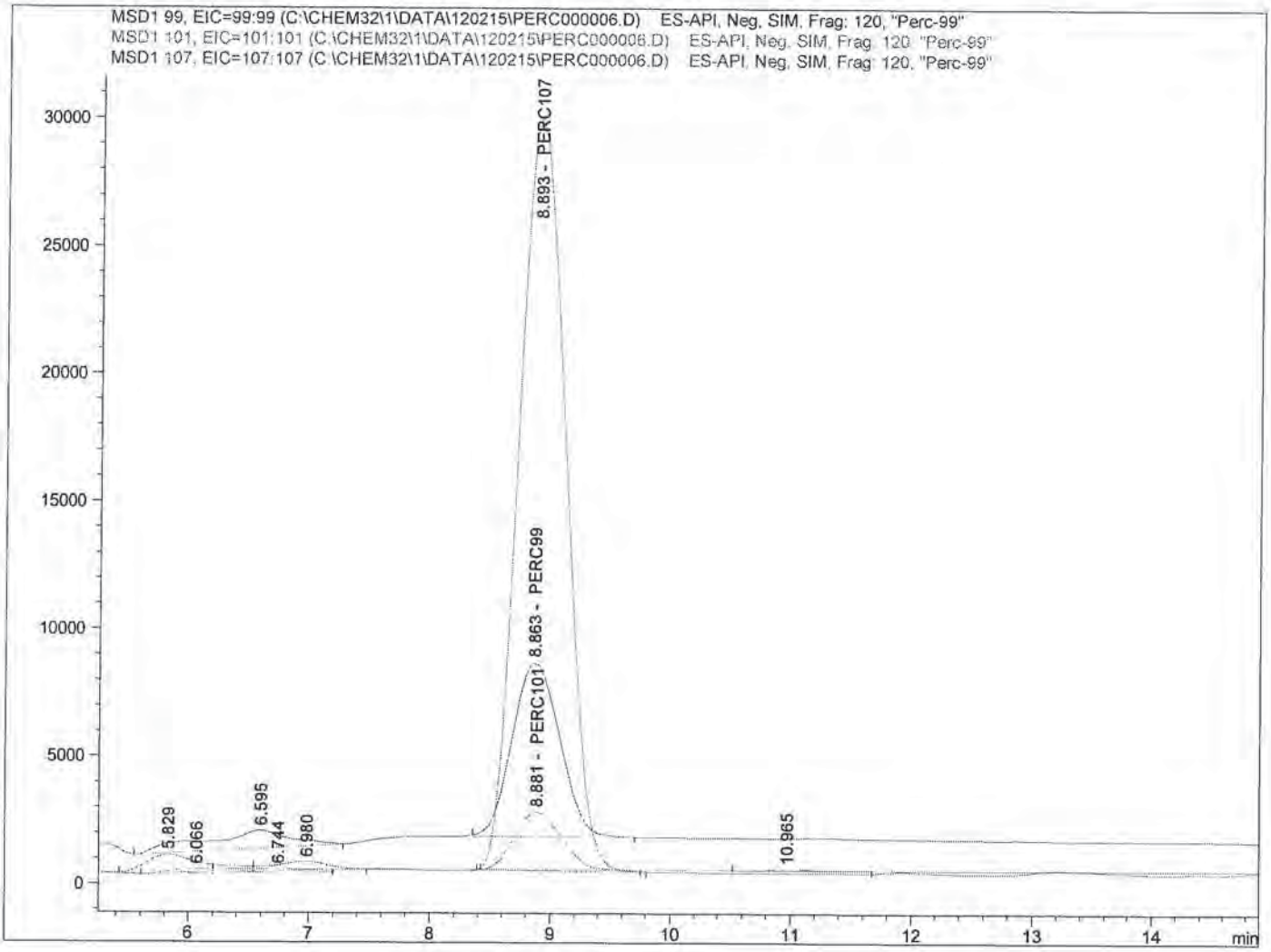

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/2/2015 10:38:04 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/7/15

12-3-15

Data File C:\CHEM32\1\DATA\120215\PERC000006.D
Sample Name: SEQ-LCV1

```
==================================================================
Acq. Operator   :                                  Seq. Line :   6
Acq. Instrument : Instrument 1                      Location : Vial 4
Injection Date  : 12/2/2015 10:21:12 AM                 Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/2/2015 10:38:04 AM
                  (modified after loading)
==================================================================

  1      5.00000   PERC107


Signal 1: MSD1 99, EIC=99:99

RetTime  Type  ISTD    Area     Amt/Area    Amount   Grp   Name
 [min]         used              ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.863 BB        1 1.87021e5  8.48638e-1 9.93050e-1    PERC99

Totals without ISTD(s) :             9.93050e-1


Signal 2: MSD1 101, EIC=101:101

RetTime  Type  ISTD    Area     Amt/Area    Amount   Grp   Name
 [min]         used              ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.881 BB        1 6.07802e4     2.60545 9.90837e-1    PERC101

Totals without ISTD(s) :             9.90837e-1


Signal 3: MSD1 107, EIC=107:107

RetTime  Type  ISTD    Area     Amt/Area    Amount   Grp   Name
 [min]         used              ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.893 BBA  I    1 7.99120e5     1.00000    5.00000    PERC107

Totals without ISTD(s) :                0.00000


==================================================================
                        *** End of Report ***
```

Data File C:\CHEM32\1\DATA\120215\PERC000007.D
Sample Name: SEQ-IFA1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/2/2015 10:39:03 AM

Seq. Line : 7
Location : Vial 5
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/2/2015 12:40:40 PM
(modified after loading)

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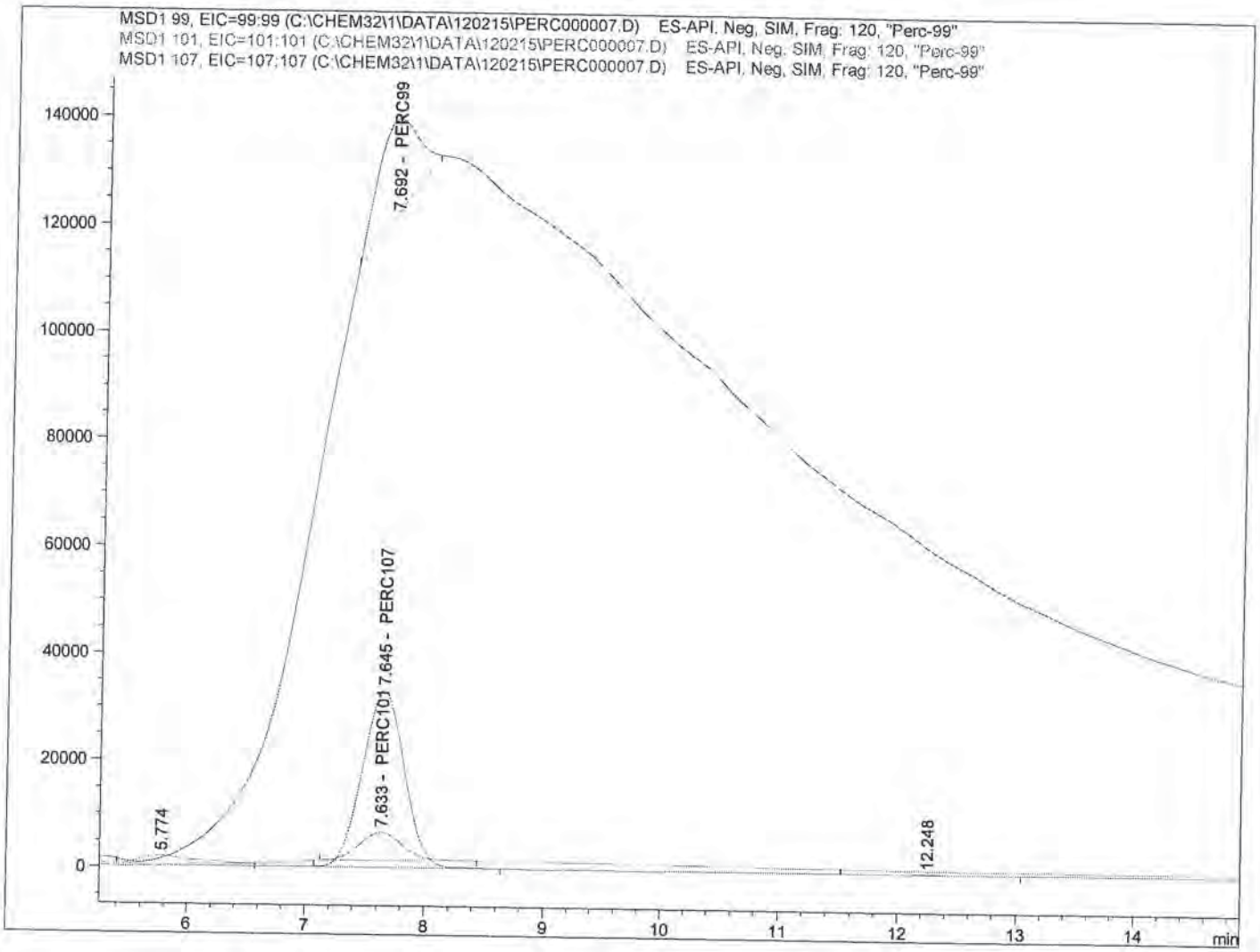

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/2/2015 12:37:31 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/7/15

12-3-15

Data File C:\CHEM32\1\DATA\120215\PERC000007.D
Sample Name: SEQ-IFA1

```
==================================================================
Acq. Operator   :                                  Seq. Line :   7
Acq. Instrument : Instrument 1                      Location : Vial 5
Injection Date  : 12/2/2015 10:39:03 AM                 Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/2/2015 12:40:40 PM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
7.692	BBA	1	4.01962e5	8.48638e-1	2.13245		PERC99

Totals without ISTD(s) : 2.13245

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
7.633	BBA	1	1.32873e5	2.60545	2.16416		PERC101

Totals without ISTD(s) : 2.16416

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
7.645	BBA I	1	7.99831e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120215\PERC000010.D
Sample Name: 5L01021-BLK1

==========

Acq. Operator : Seq. Line : 10
Acq. Instrument : Instrument 1 Location : Vial 6
Injection Date : 12/2/2015 11:32:37 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/2/2015 12:41:57 PM
(modified after loading)

==========

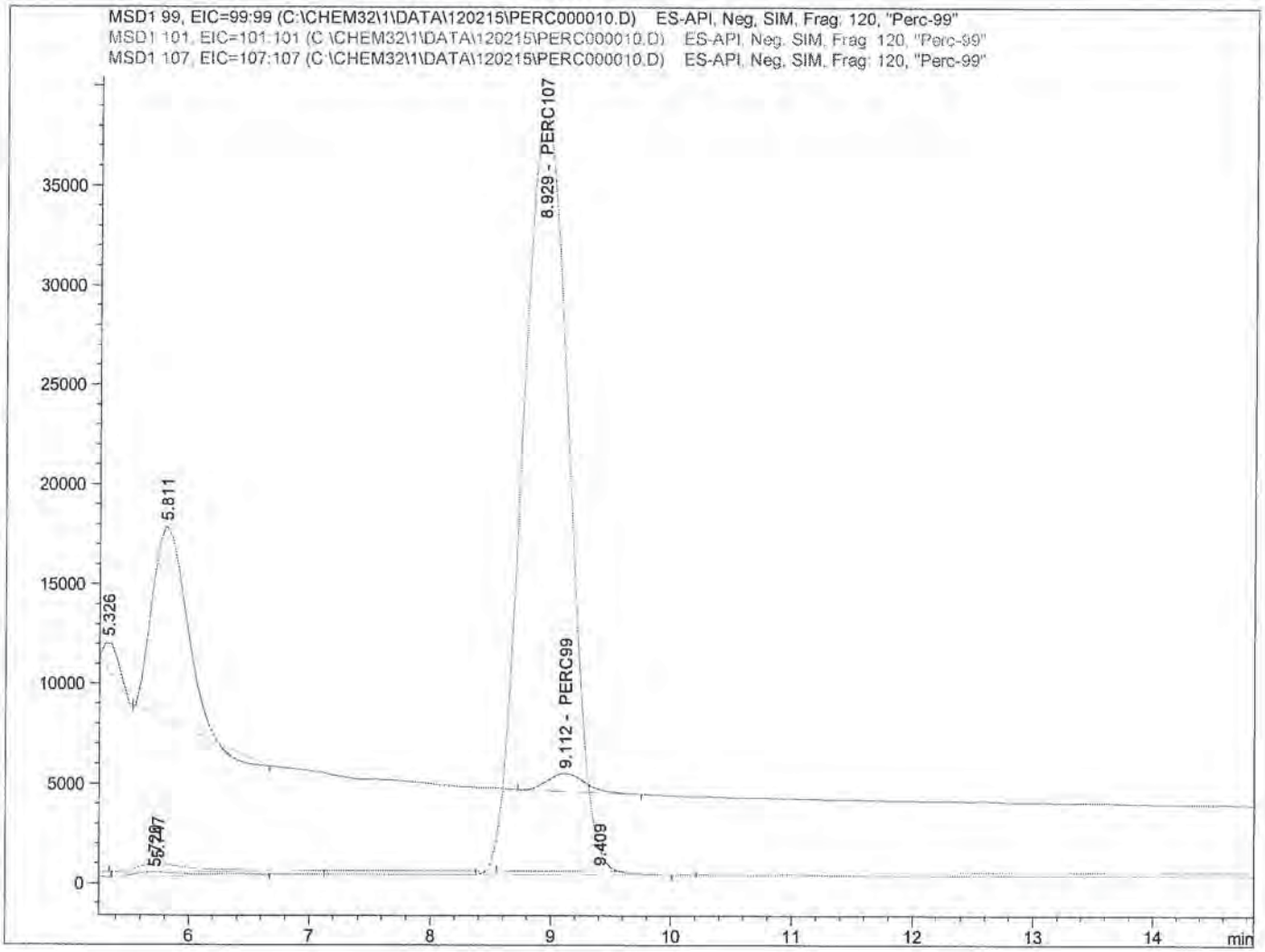

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/2/2015 12:41:42 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-3-15

Data File C:\CHEM32\1\DATA\120215\PERC000010.D
Sample Name: 5L01021-BLK1

```
==================================================================
Acq. Operator   :                                  Seq. Line :  10
Acq. Instrument : Instrument 1                      Location : Vial 6
Injection Date  : 12/2/2015 11:32:37 AM                 Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/2/2015 12:41:57 PM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
9.112	BB	1	1.99660e4	8.48638e-1	8.24789e-2		PERC99

Totals without ISTD(s) : 8.24789e-2

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.930		1	-	-	-		PERC101

Totals without ISTD(s) : 0.00000

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.929	BBA I	1	1.02717e6	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120215\PERC000011.D
Sample Name: 5L01021-BS1

==========

Acq. Operator : Seq. Line : 11
Acq. Instrument : Instrument 1 Location : Vial 7
Injection Date : 12/2/2015 11:50:23 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/2/2015 12:41:57 PM
(modified after loading)

==========

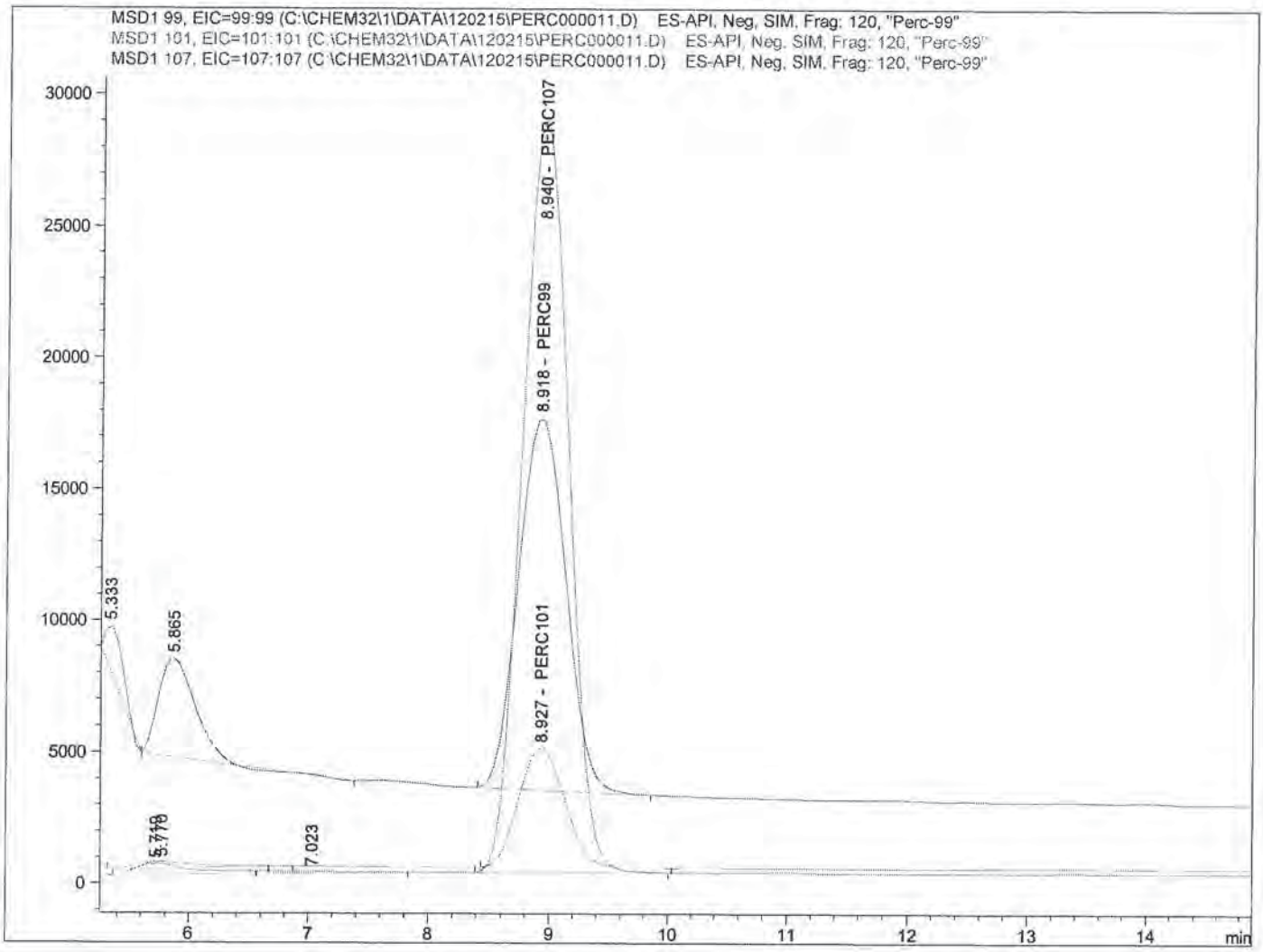

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/2/2015 12:41:42 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/7/15

12-3-15

Data File C:\CHEM32\1\DATA\120215\PERC000011.D
Sample Name: 5L01021-BS1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/2/2015 11:50:23 AM

Seq. Line : 11
Location : Vial 7
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/2/2015 12:41:57 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.918	BB	1	3.90564e5	8.48638e-1	2.15008		PERC99

Totals without ISTD(s) : 2.15008

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.927	BV	1	1.23412e5	2.60545	2.08582		PERC101

Totals without ISTD(s) : 2.08582

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.940	BBA I	1	7.70780e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120215\PERC000023.D
Sample Name: SEQ-CCV2

==========

Acq. Operator : Seq. Line : 23
Acq. Instrument : Instrument 1 Location : Vial 3
Injection Date : 12/2/2015 3:24:42 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 10:48:45 AM
(modified after loading)

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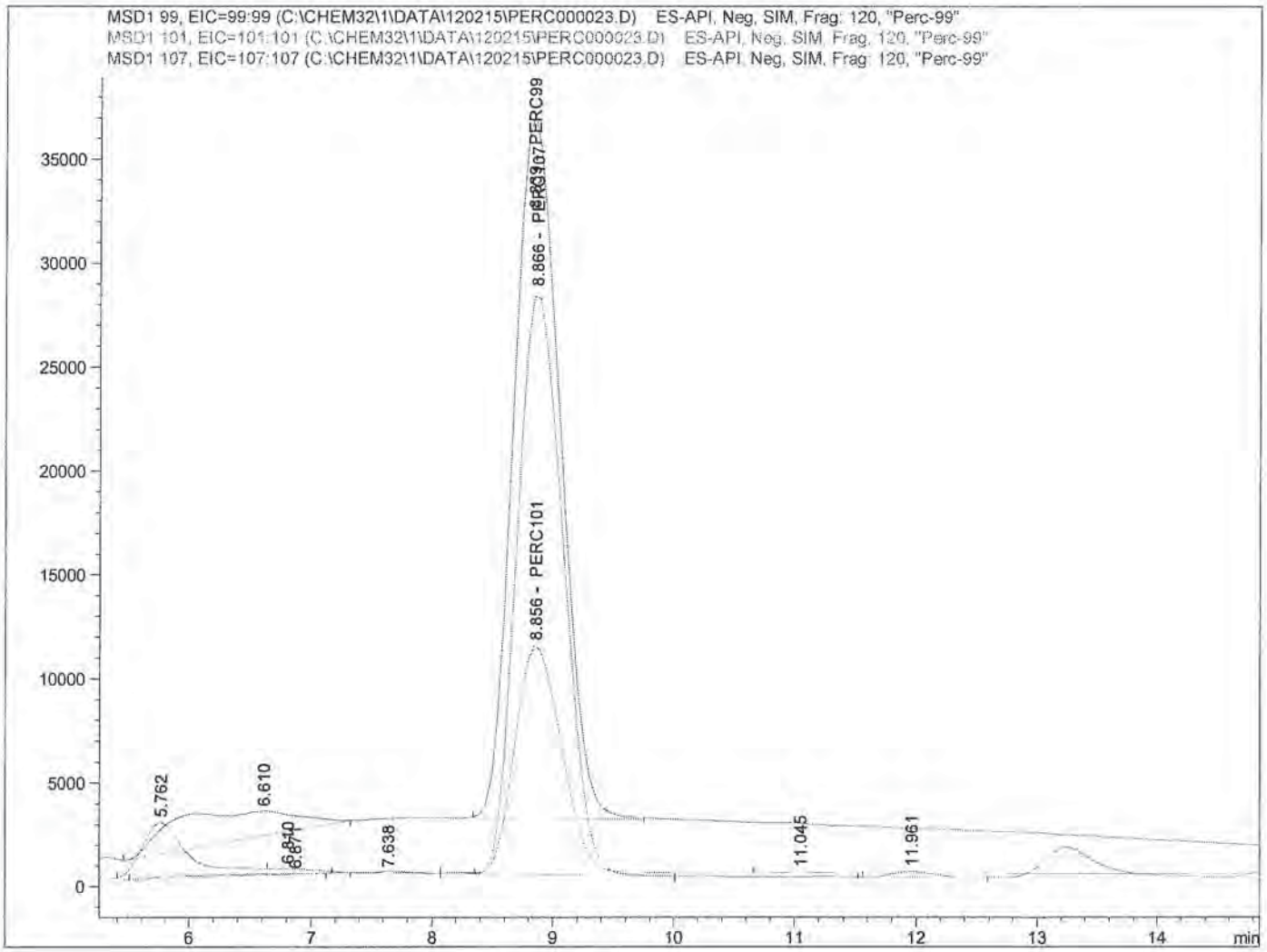

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Internal Standard Report

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SP
12/7/15

Sorted By : Signal
Calib. Data Modified : 12/3/2015 10:48:45 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-3-15

Data File C:\CHEM32\1\DATA\120215\PERC000023.D
Sample Name: SEQ-CCV2

```
==================================================================
Acq. Operator   :                                Seq. Line :  23
Acq. Instrument : Instrument 1                    Location : Vial 3
Injection Date  : 12/2/2015 3:24:42 PM                 Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/3/2015 10:48:45 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.839	BB	1	9.04299e5	8.48638e-1	5.14535		PERC99

Totals without ISTD(s) : 5.14535

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.856	VBA	1	2.92477e5	2.60545	5.10921		PERC101

Totals without ISTD(s) : 5.10921

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.866	VBA I	1	7.45744e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120215\PERC000024.D
Sample Name: SEQ-LCV2

==========

Acq. Operator : Seq. Line : 24
Acq. Instrument : Instrument 1 Location : Vial 4
Injection Date : 12/2/2015 3:42:31 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 10:48:45 AM
(modified after loading)

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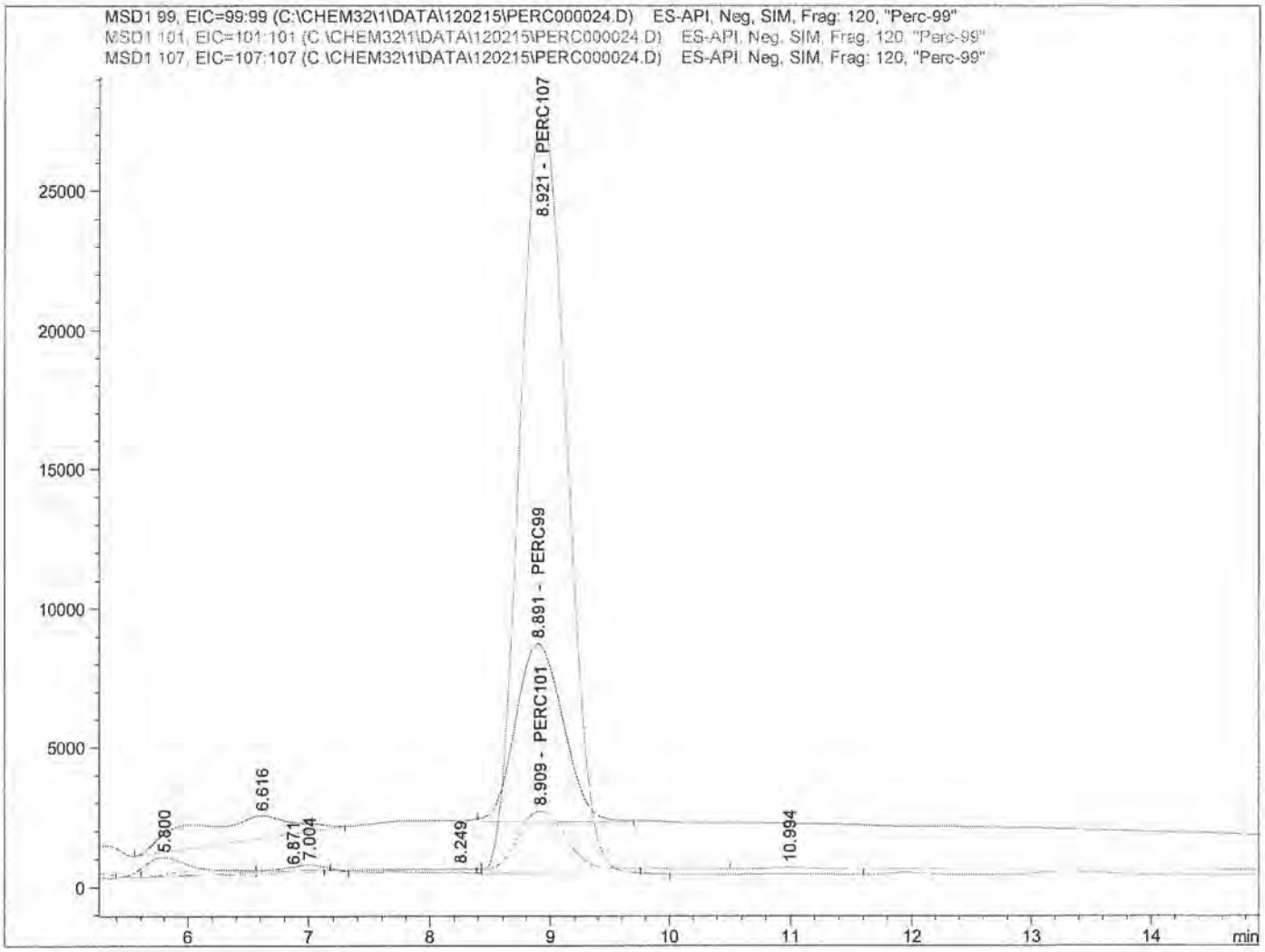

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Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/3/2015 10:48:45 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/7/15

RSW
12-3-15

Data File C:\CHEM32\1\DATA\120215\PERC000024.D
Sample Name: SEQ-LCV2

```
==================================================================
Acq. Operator   :                                Seq. Line :  24
Acq. Instrument : Instrument 1                    Location : Vial 4
Injection Date  : 12/2/2015 3:42:31 PM                 Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/3/2015 10:48:45 AM
                  (modified after loading)
==================================================================

  1      5.00000   PERC107


Signal 1: MSD1 99, EIC=99:99

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.891 BB        1 1.77465e5  8.48638e-1    1.00771    PERC99

Totals without ISTD(s) :                 1.00771



Signal 2: MSD1 101, EIC=101:101

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.909 VB        1 5.69423e4     2.60545 9.92694e-1    PERC101

Totals without ISTD(s) :              9.92694e-1



Signal 3: MSD1 107, EIC=107:107

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.921 BBA  I    1 7.47259e5     1.00000    5.00000    PERC107

Totals without ISTD(s) :                 0.00000


==================================================================
                         *** End of Report ***
```

Data File C:\CHEM32\1\DATA\120215\PERC000025.D
Sample Name: SEQ-LCV3

==========

Acq. Operator : Seq. Line : 25
Acq. Instrument : Instrument 1 Location : Vial 83
Injection Date : 12/2/2015 4:00:17 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 10:50:43 AM
(modified after loading)

==========

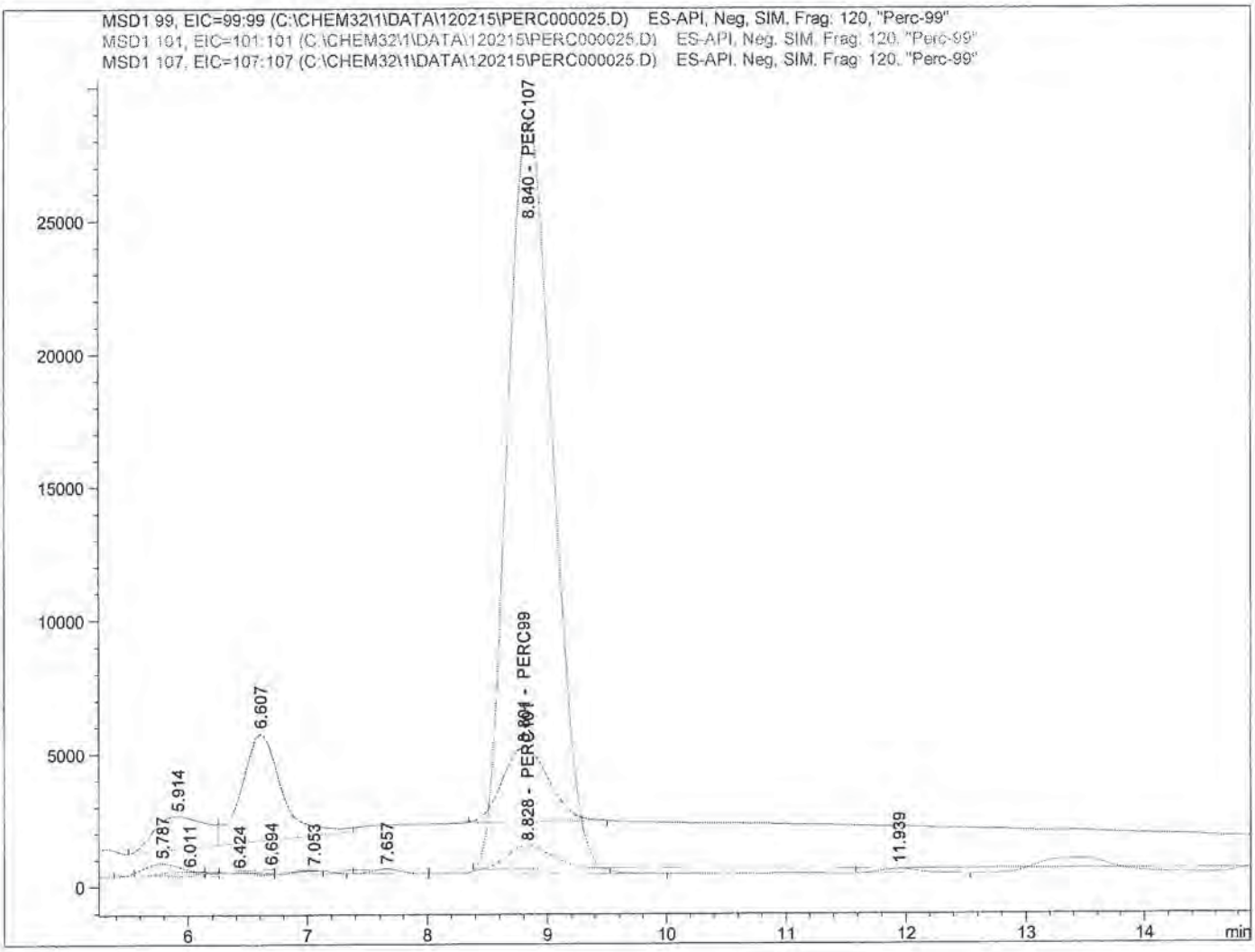

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/3/2015 10:48:45 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/7/15

12-3-15

Data File C:\CHEM32\1\DATA\120215\PERC000025.D
Sample Name: SEQ-LCV3

```
==================================================================
Acq. Operator   :                                Seq. Line :  25
Acq. Instrument : Instrument 1                    Location : Vial 83
Injection Date  : 12/2/2015 4:00:17 PM                 Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/3/2015 10:50:43 AM
                  (modified after loading)
==================================================================

  1      5.00000   PERC107


Signal 1: MSD1 99, EIC=99:99

RetTime  Type  ISTD    Area     Amt/Area    Amount   Grp   Name
 [min]         used              ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.801 BBA       1 7.55531e4  8.48638e-1 4.24450e-1    PERC99

Totals without ISTD(s) :             4.24450e-1


Signal 2: MSD1 101, EIC=101:101

RetTime  Type  ISTD    Area     Amt/Area    Amount   Grp   Name
 [min]         used              ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.828 VV        1 2.31256e4     2.60545 3.98866e-1    PERC101

Totals without ISTD(s) :             3.98866e-1


Signal 3: MSD1 107, EIC=107:107

RetTime  Type  ISTD    Area     Amt/Area    Amount   Grp   Name
 [min]         used              ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.840 VBA  I    1 7.55297e5     1.00000    5.00000    PERC107

Totals without ISTD(s) :                0.00000


==================================================================
                        *** End of Report ***
```

Data File C:\CHEM32\1\DATA\120215\PERC000029.D
Sample Name: 1511269-02

==========

Acq. Operator : Seq. Line : 29
Acq. Instrument : Instrument 1 Location : Vial 21
Injection Date : 12/2/2015 5:11:56 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 10:53:53 AM
(modified after loading)

==========

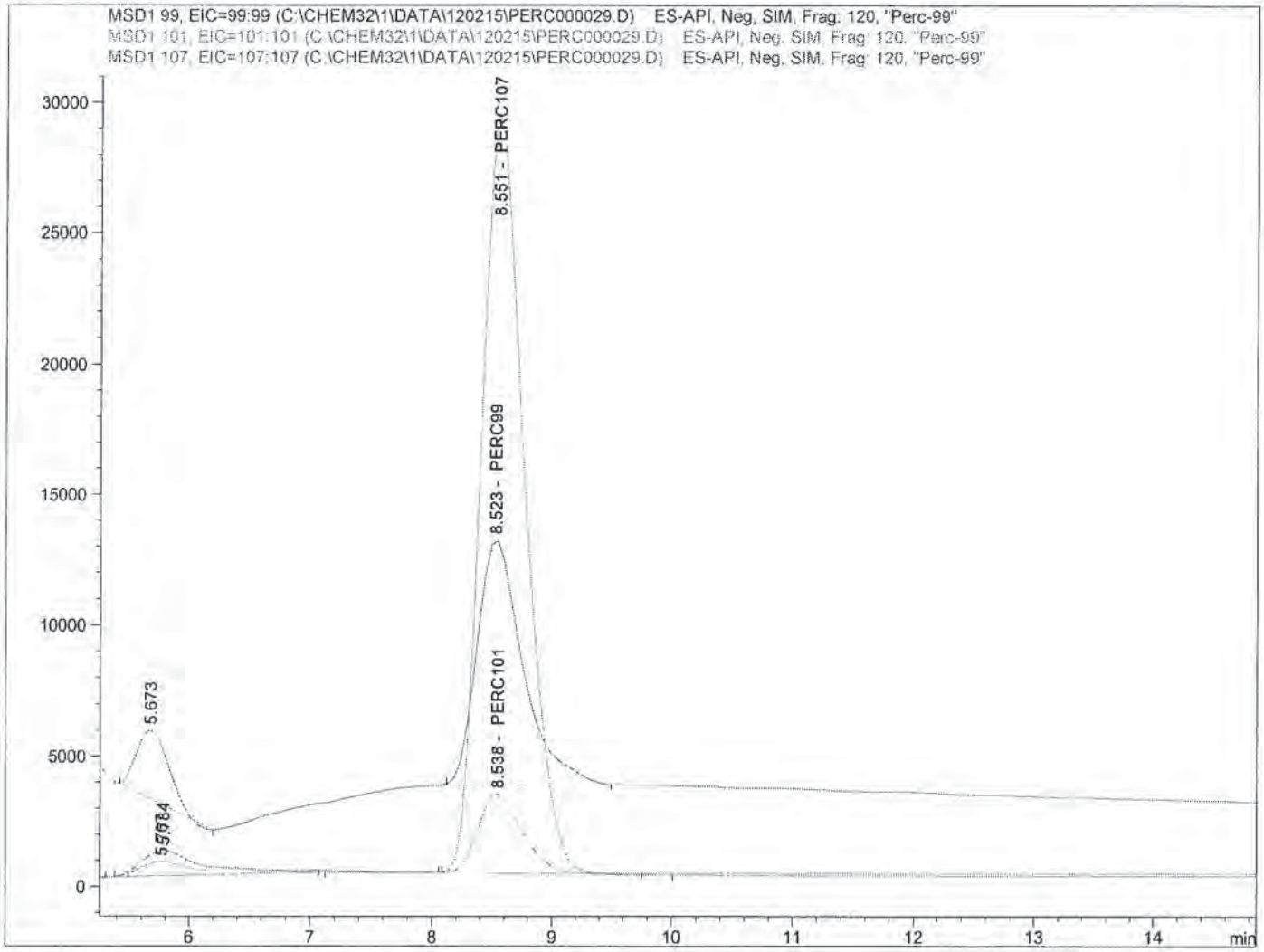

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/3/2015 10:53:53 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/7/15

PDW
12-3-15

Data File C:\CHEM32\1\DATA\120215\PERC000029.D
Sample Name: 1511269-02

```
==================================================================
Acq. Operator   :                                Seq. Line :  29
Acq. Instrument : Instrument 1                    Location : Vial 21
Injection Date  : 12/2/2015 5:11:56 PM                 Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/3/2015 10:53:53 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.523	BBA	1	2.48518e5	8.48638e-1	1.44355		PERC99

Totals without ISTD(s) : 1.44355

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.538	VB	1	7.65177e4	2.60545	1.36457		PERC101

Totals without ISTD(s) : 1.36457

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.551	BBA I	1	7.30496e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120215\PERC000030.D
Sample Name: 1511269-03

==========

Acq. Operator : Seq. Line : 30
Acq. Instrument : Instrument 1 Location : Vial 22
Injection Date : 12/2/2015 5:29:36 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 10:55:13 AM
(modified after loading)

==========

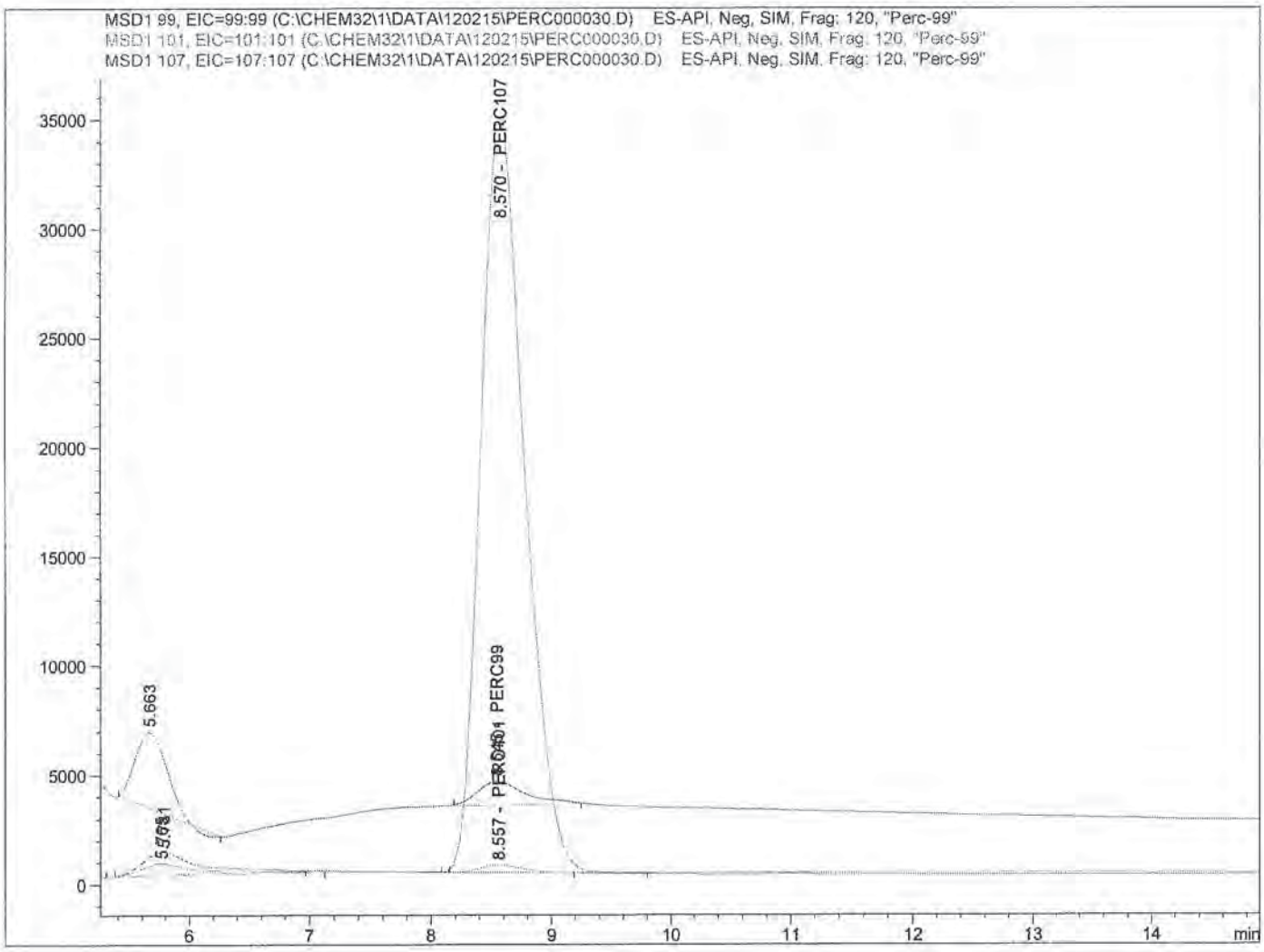

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/3/2015 10:53:53 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-3-15

SP
12/7/15

Data File C:\CHEM32\1\DATA\120215\PERC000030.D
Sample Name: 1511269-03

```
==================================================================
Acq. Operator   :                                  Seq. Line :  30
Acq. Instrument : Instrument 1                      Location : Vial 22
Injection Date  : 12/2/2015 5:29:36 PM                  Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/3/2015 10:55:13 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.545	BBA	1	2.88171e4	8.48638e-1	1.38766e-1		PERC99

Totals without ISTD(s) : 1.38766e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.557	VV	1	8163.78955	2.60545	1.20693e-1		PERC101

Totals without ISTD(s) : 1.20693e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.570	BB I	1	8.81174e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120215\PERC000036.D
Sample Name: 1511269-09@5

==========

Acq. Operator : Seq. Line : 36
Acq. Instrument : Instrument 1 Location : Vial 28
Injection Date : 12/2/2015 7:16:37 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 11:02:35 AM
(modified after loading)
Additional Info : Peak(s) manually integrated

==========

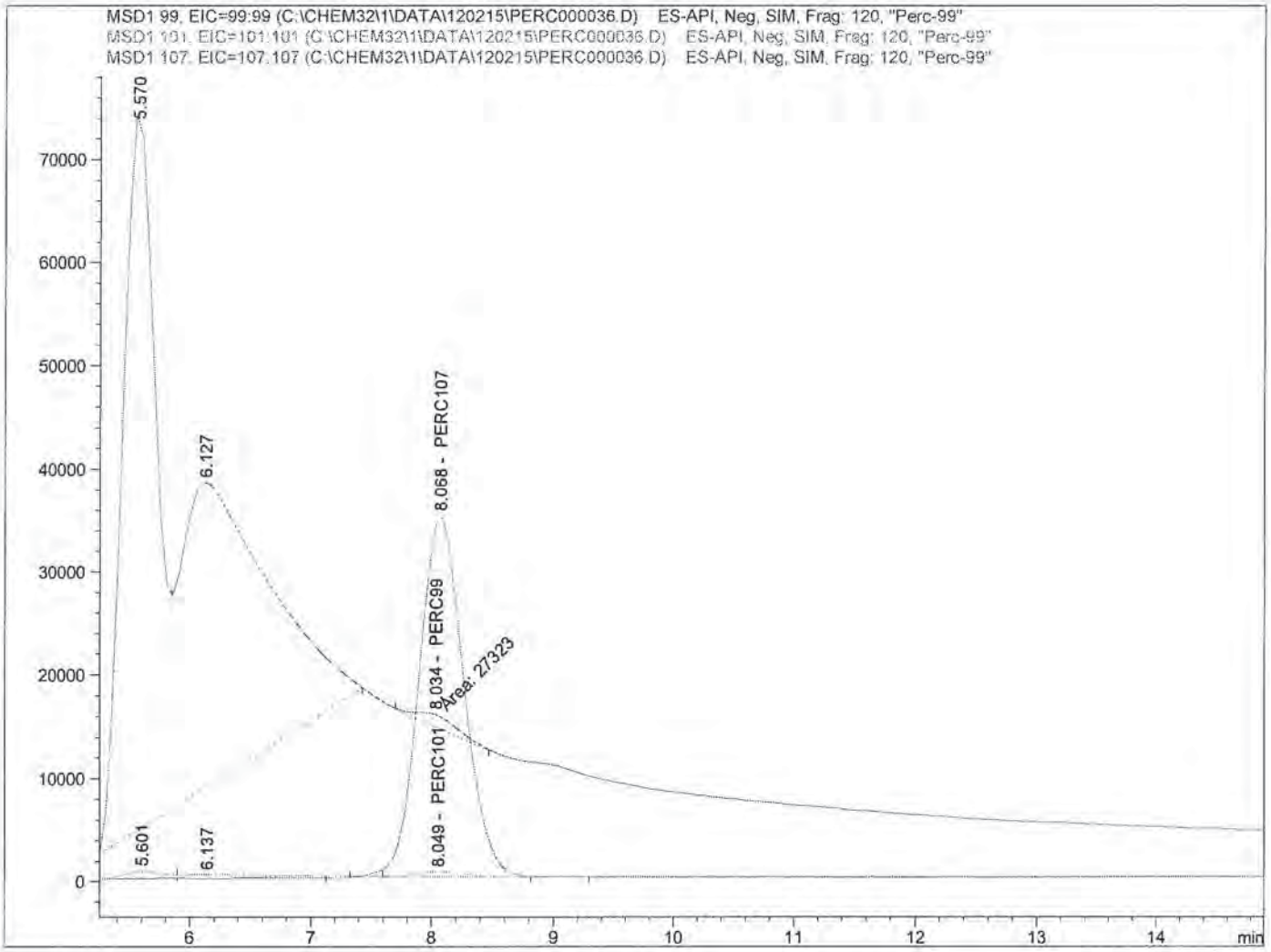

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/3/2015 10:59:36 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/7/15

RDN
12-3-15

Data File C:\CHEM32\1\DATA\120215\PERC000036.D
Sample Name: 1511269-09@5

```
==================================================================
Acq. Operator   :                                Seq. Line :  36
Acq. Instrument : Instrument 1                    Location : Vial 28
Injection Date  : 12/2/2015 7:16:37 PM                Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/3/2015 11:02:35 AM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
==================================================================

----|-------------|-------------------------
  1      5.00000   PERC107


Signal 1: MSD1 99, EIC=99:99

RetTime  Type  ISTD    Area     Amt/Area    Amount   Grp   Name
 [min]         used              ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.034 MM        1 2.73230e4  8.48638e-1 1.28347e-1    PERC99

Totals without ISTD(s) :             1.28347e-1



Signal 2: MSD1 101, EIC=101:101

RetTime  Type  ISTD    Area     Amt/Area    Amount   Grp   Name
 [min]         used              ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.049 BV        1 1.09870e4     2.60545 1.58451e-1    PERC101

Totals without ISTD(s) :             1.58451e-1



Signal 3: MSD1 107, EIC=107:107

RetTime  Type  ISTD    Area     Amt/Area    Amount   Grp   Name
 [min]         used              ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.068 BB   I    1 9.03310e5     1.00000    5.00000    PERC107

Totals without ISTD(s) :                0.00000


==================================================================
                        *** End of Report ***
```

Print of window 38: Current Chromatogram(s)
Data File : C:\CHEM32\1\DATA\120215\PERC000036.D
Sample Name : 1511269-09@5

==========

Acq. Operator : Seq. Line : 36
Acq. Instrument : Instrument 1 Location : Vial 28
Injection Date : 12/2/2015 7:16:37 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 11:00:14 AM
(modified after loading)

Current Chromatogram(s)

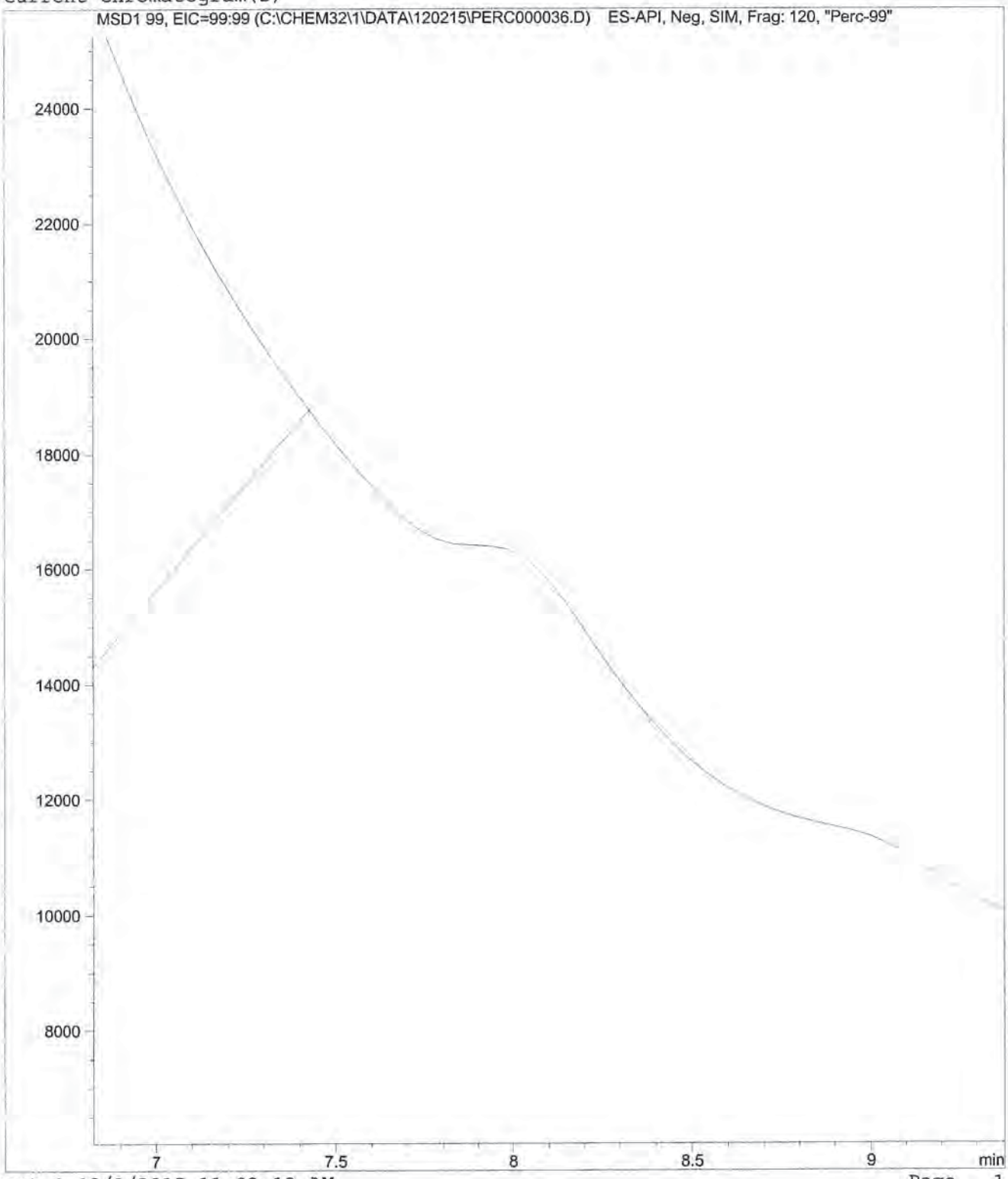

Print of window 38: Current Chromatogram(s)
Data File : C:\CHEM32\1\DATA\120215\PERC000036.D
Sample Name : 1511269-09@5

==========

Acq. Operator : Seq. Line : 36
Acq. Instrument : Instrument 1 Location : Vial 28
Injection Date : 12/2/2015 7:16:37 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 11:00:14 AM
(modified after loading)
Additional Info : Peak(s) manually integrated

Current Chromatogram(s)

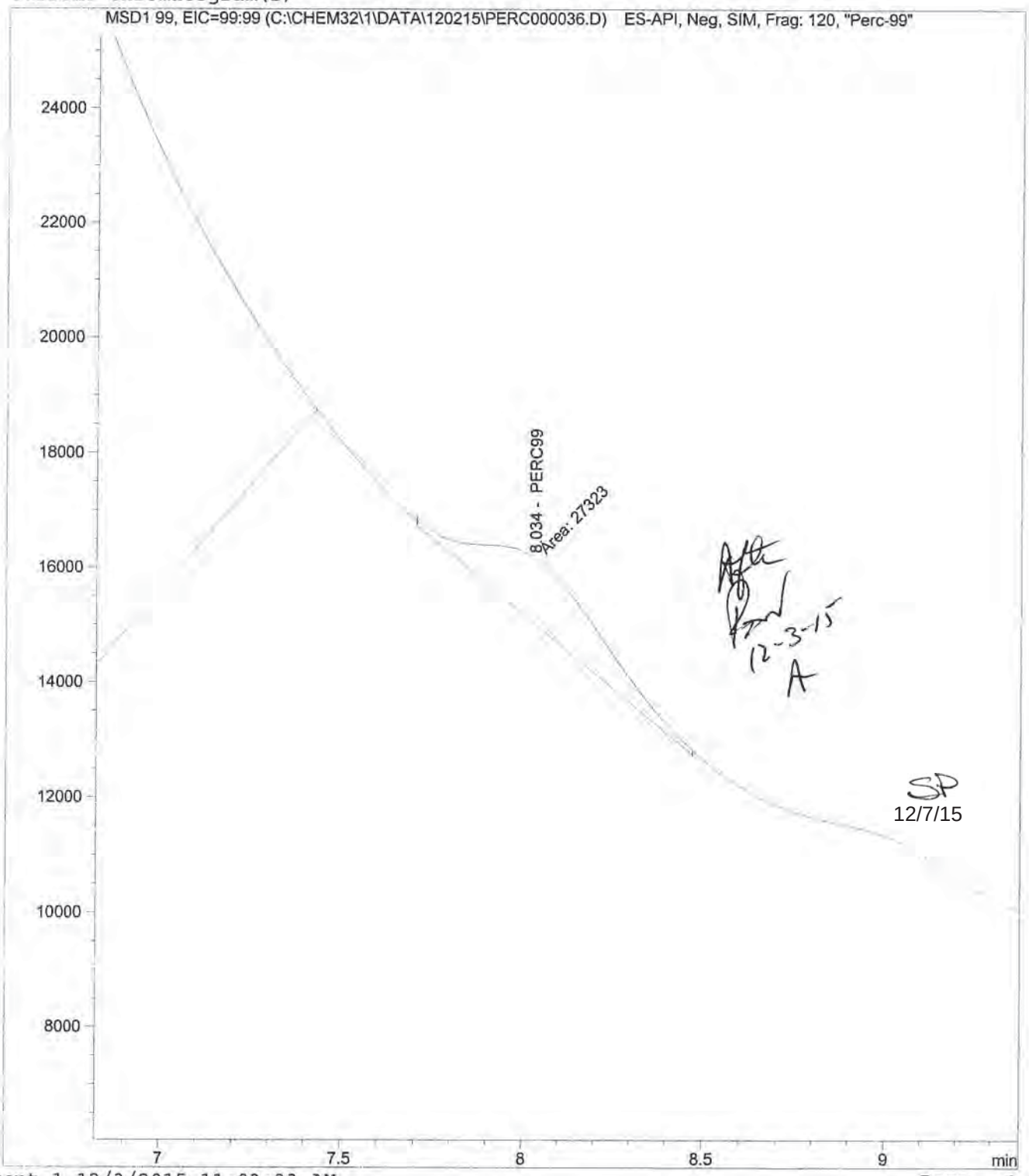

12-3-15
A

SP
12/7/15

Data File C:\CHEM32\1\DATA\120215\PERC000039.D
Sample Name: SEQ-CCV3

==========

Acq. Operator : Seq. Line : 39
Acq. Instrument : Instrument 1 Location : Vial 3
Injection Date : 12/2/2015 8:10:21 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 11:09:23 AM
(modified after loading)

==========

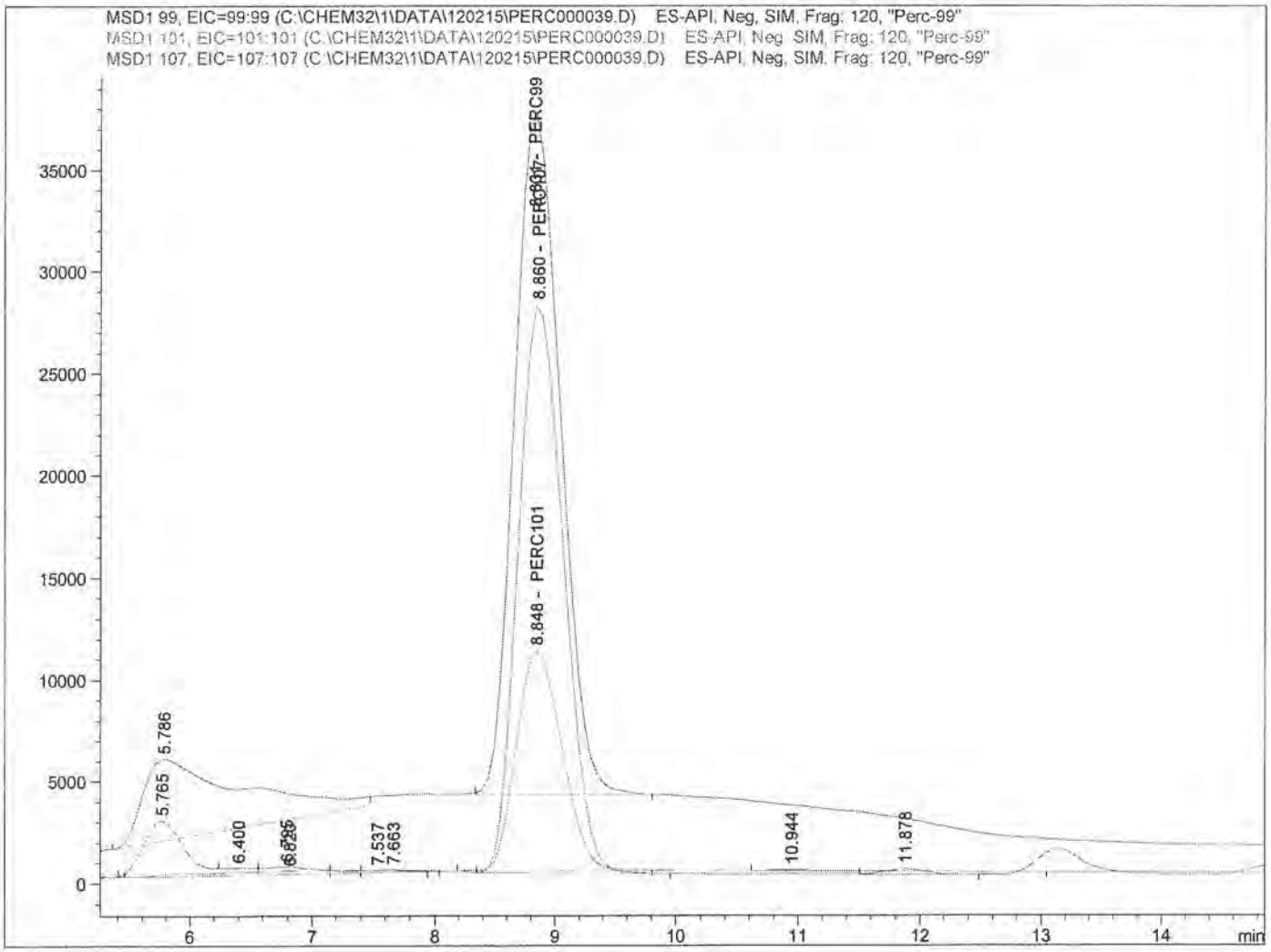

==========

Internal Standard Report

==========

SP
12/7/15

Sorted By : Signal
Calib. Data Modified : 12/3/2015 11:09:23 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-3-15

Data File C:\CHEM32\1\DATA\120215\PERC000039.D
Sample Name: SEQ-CCV3

==========

Acq. Operator : Seq. Line : 39
Acq. Instrument : Instrument 1 Location : Vial 3
Injection Date : 12/2/2015 8:10:21 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 11:09:23 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.831	BBA	1	8.89134e5	8.48638e-1	5.15043		PERC99

Totals without ISTD(s) : 5.15043

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.848	BBA	1	2.85453e5	2.60545	5.07658		PERC101

Totals without ISTD(s) : 5.07658

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.860	VB I	1	7.32515e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120215\PERC000040.D
Sample Name: SEQ-LCV4

==========

Acq. Operator : Seq. Line : 40
Acq. Instrument : Instrument 1 Location : Vial 4
Injection Date : 12/2/2015 8:28:02 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 11:09:23 AM
(modified after loading)

==========

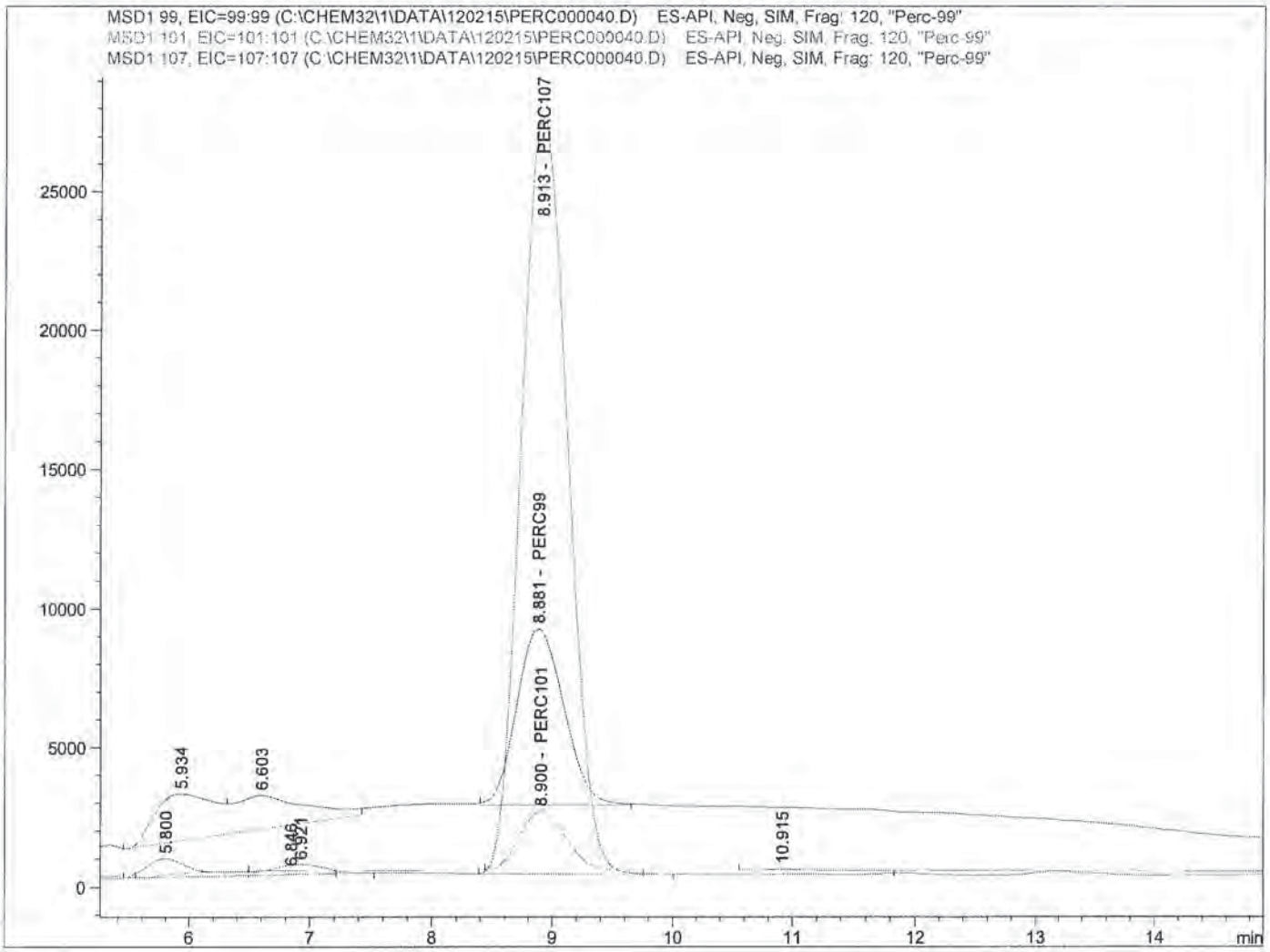

==========

Internal Standard Report

==========

SP
12/7/15

Sorted By : Signal
Calib. Data Modified : 12/3/2015 11:09:23 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

12-3-15

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\120215\PERC000040.D
Sample Name: SEQ-LCV4

```
==================================================================
Acq. Operator   :                                  Seq. Line :  40
Acq. Instrument : Instrument 1                      Location : Vial 4
Injection Date  : 12/2/2015 8:28:02 PM                 Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/3/2015 11:09:23 AM
                  (modified after loading)
==================================================================

  1      5.00000   PERC107


Signal 1: MSD1 99, EIC=99:99

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.881 BB        1 1.73163e5  8.48638e-1 9.97712e-1    PERC99

Totals without ISTD(s) :              9.97712e-1


Signal 2: MSD1 101, EIC=101:101

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.900 BB        1 5.63203e4     2.60545 9.96263e-1    PERC101

Totals without ISTD(s) :              9.96263e-1


Signal 3: MSD1 107, EIC=107:107

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.913 BBA  I    1 7.36450e5     1.00000    5.00000    PERC107

Totals without ISTD(s) :                 0.00000


==================================================================
                        *** End of Report ***
```

Data File C:\CHEM32\1\DATA\120215\PERC000041.D
Sample Name: SEQ-LCV5

==========

Acq. Operator : Seq. Line : 41
Acq. Instrument : Instrument 1 Location : Vial 83
Injection Date : 12/2/2015 8:45:55 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 11:09:23 AM
(modified after loading)

==========

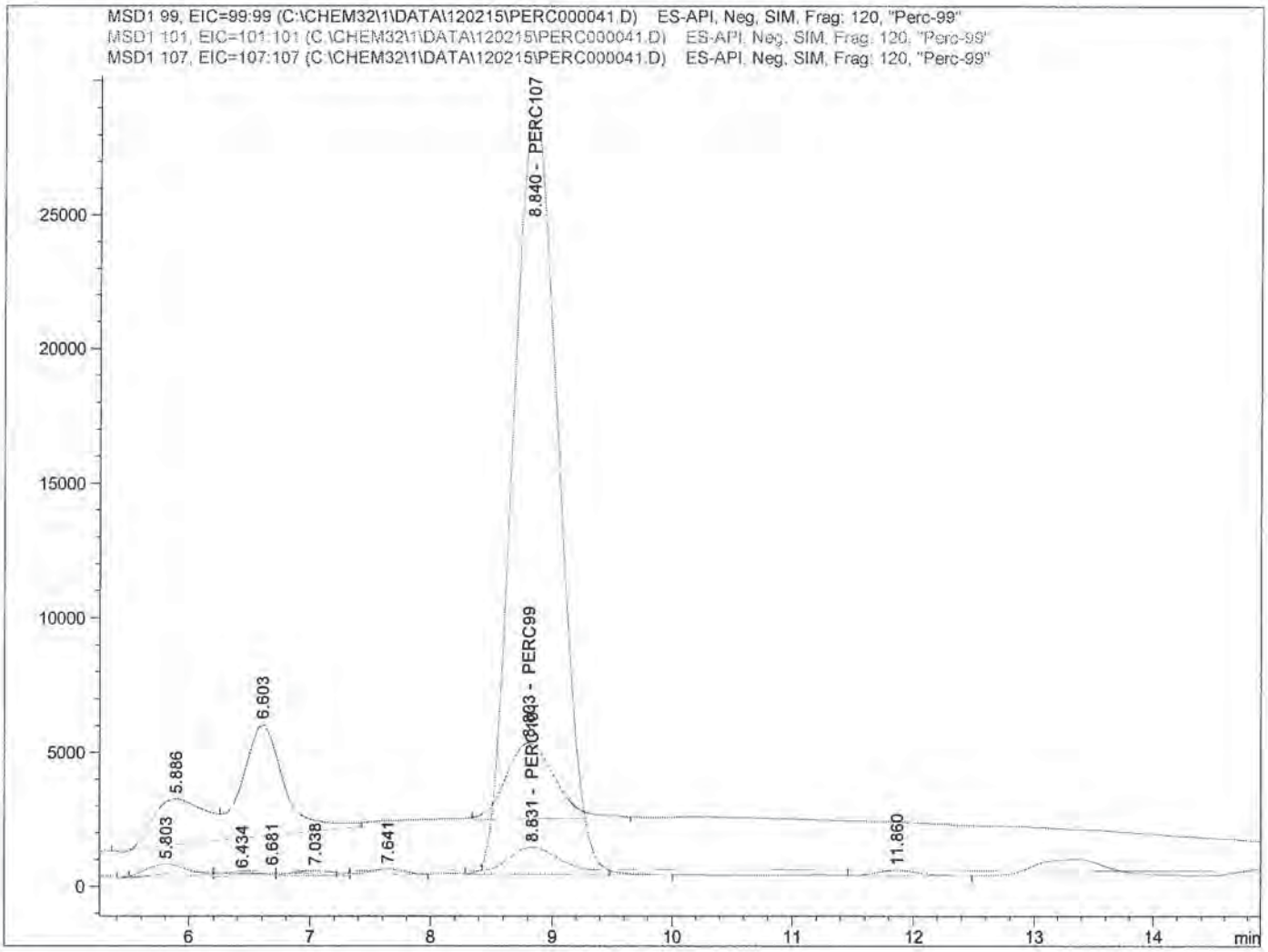

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/3/2015 11:09:23 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/7/15

12-3-15

Data File C:\CHEM32\1\DATA\120215\PERC000041.D
Sample Name: SEQ-LCV5

```
==================================================================
Acq. Operator   :                                Seq. Line :  41
Acq. Instrument : Instrument 1                    Location : Vial 83
Injection Date  : 12/2/2015 8:45:55 PM                 Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/3/2015 11:09:23 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.803	BB	1	7.92151e4	8.48638e-1	4.52299e-1		PERC99

Totals without ISTD(s) : 4.52299e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.831	BV	1	2.26247e4	2.60545	3.96608e-1		PERC101

Totals without ISTD(s) : 3.96608e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.840	VBA I	1	7.43147e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Print of all graphic windows
Data File : C:\CHEM32\1\DATA\120715\PERC000002.D
Sample Name : SEQ-TUN1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/7/2015 5:21:54 PM

Seq. Line : 2
Location : Vial 1
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_SC
Last changed : 12/4/2015 2:35:18 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 9:38:09 AM
(modified after loading)

Current Chromatogram(s)

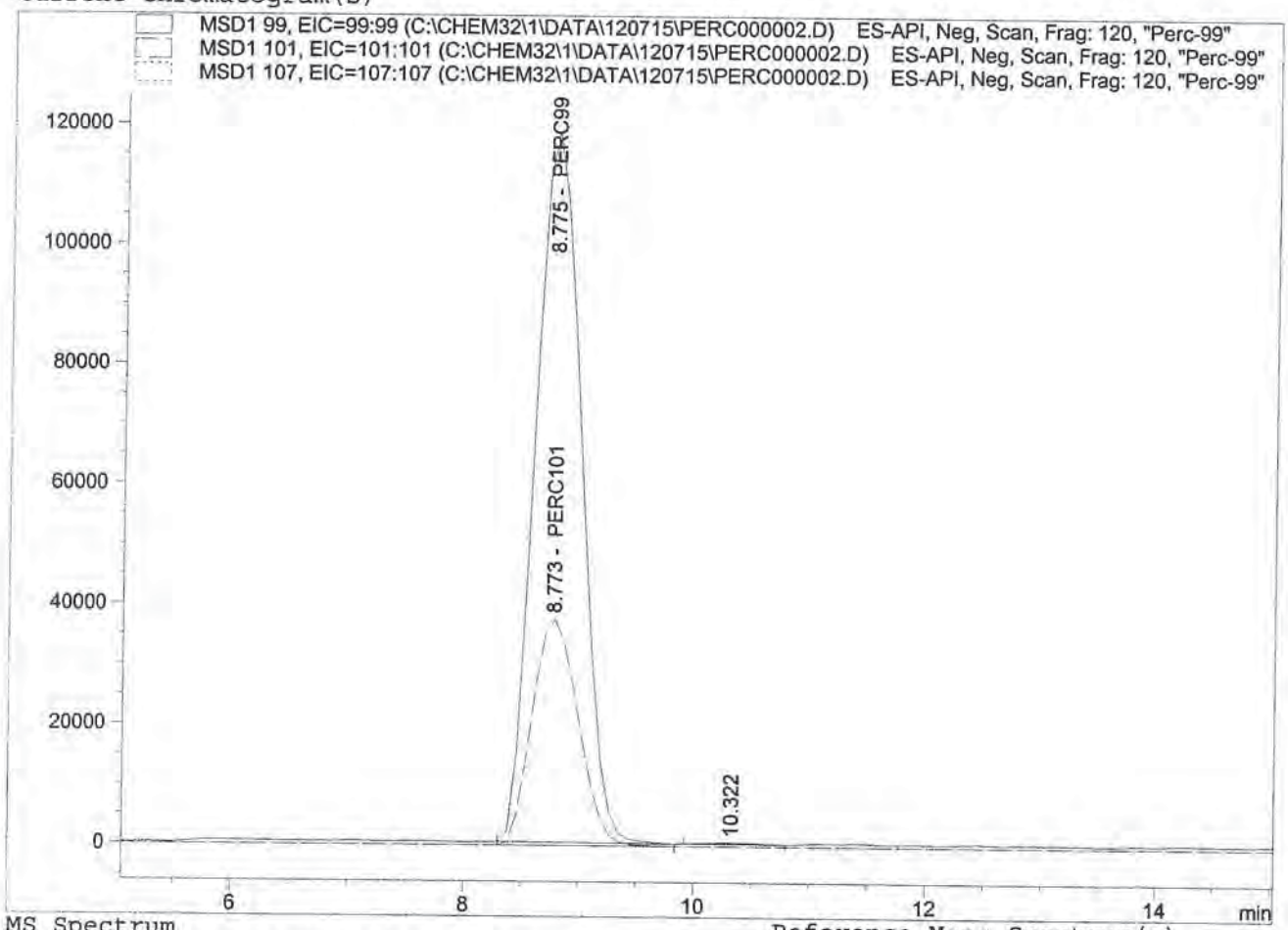

MS Spectrum

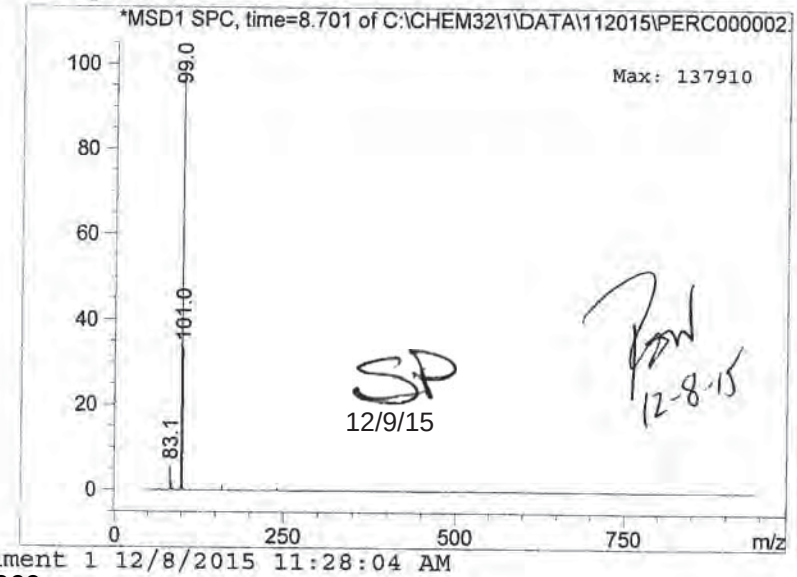

Reference Mass Spectrum(a)

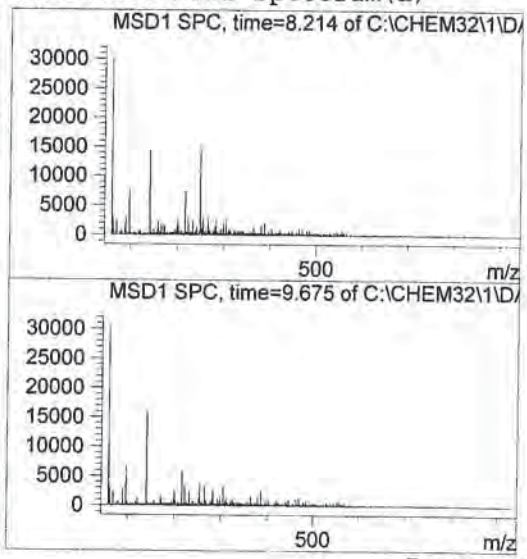

SP 12/9/15

12-8-15

Instrument 1 12/8/2015 11:28:04 AM

Data File C:\CHEM32\1\DATA\120715\PERC000002.D
Sample Name: SEQ-TUN1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/7/2015 5:21:54 PM

Seq. Line : 2
Location : Vial 1
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_SC
Last changed : 12/4/2015 2:35:18 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 9:38:09 AM
(modified after loading)

==========

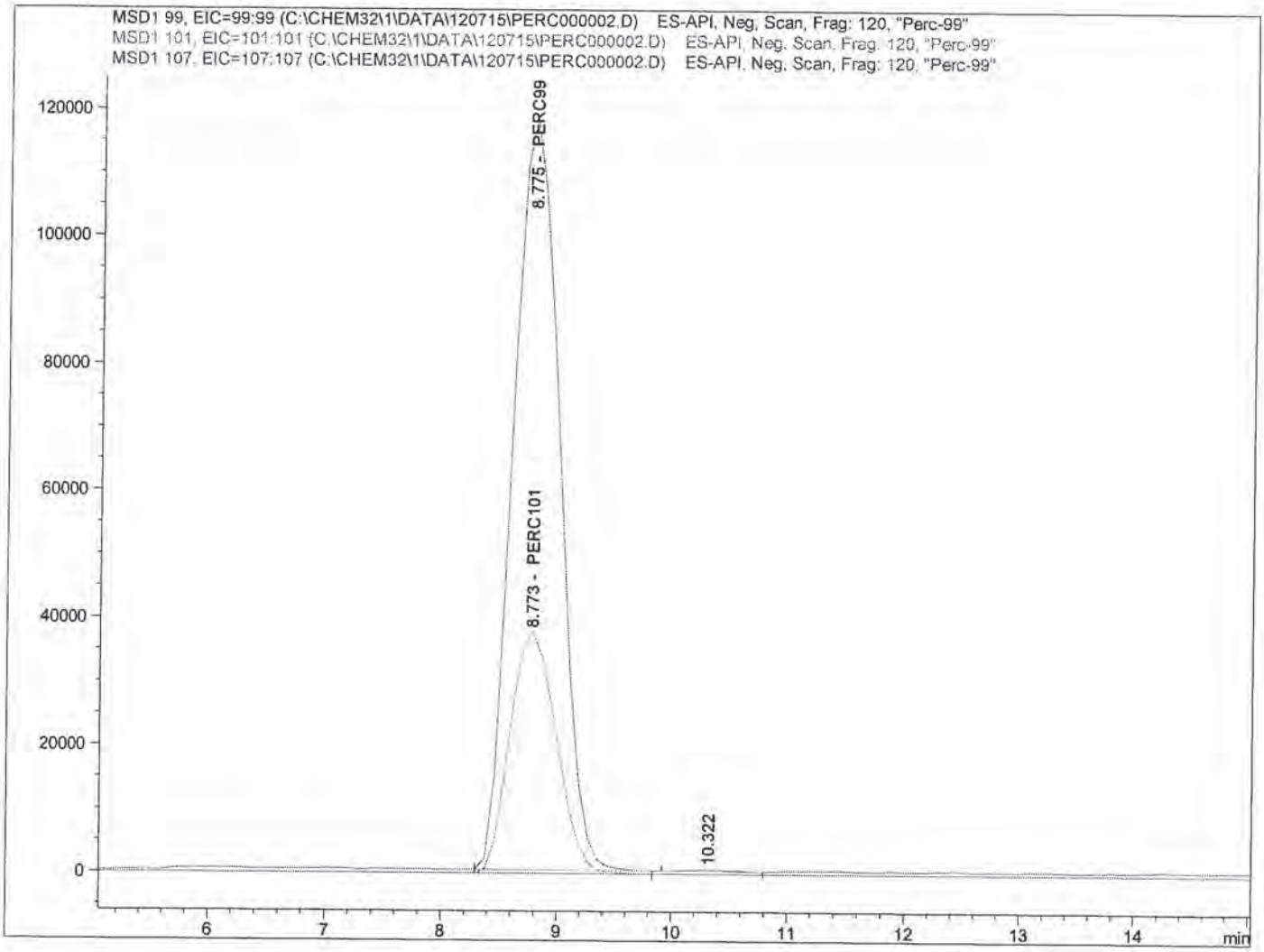

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Internal Standard Report

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SP
12/9/15

Sorted By : Signal
Calib. Data Modified : 12/8/2015 9:37:54 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-8-15

Data File C:\CHEM32\1\DATA\120715\PERC000002.D
Sample Name: SEQ-TUN1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/7/2015 5:21:54 PM

Seq. Line : 2
Location : Vial 1
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_SC
Last changed : 12/4/2015 2:35:18 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 9:38:09 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.775	BBA	1	3.28367e6	0.00000	0.00000		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.773	BBA	1	1.05100e6	0.00000	0.00000		PERC101

Totals without ISTD(s) : 0.00000

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.509		1	-	-	-		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : ISTD compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000005.D
Sample Name: SEQ-CCV1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/7/2015 6:15:38 PM

Seq. Line : 5
Location : Vial 3
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:29:21 AM
(modified after loading)

==========

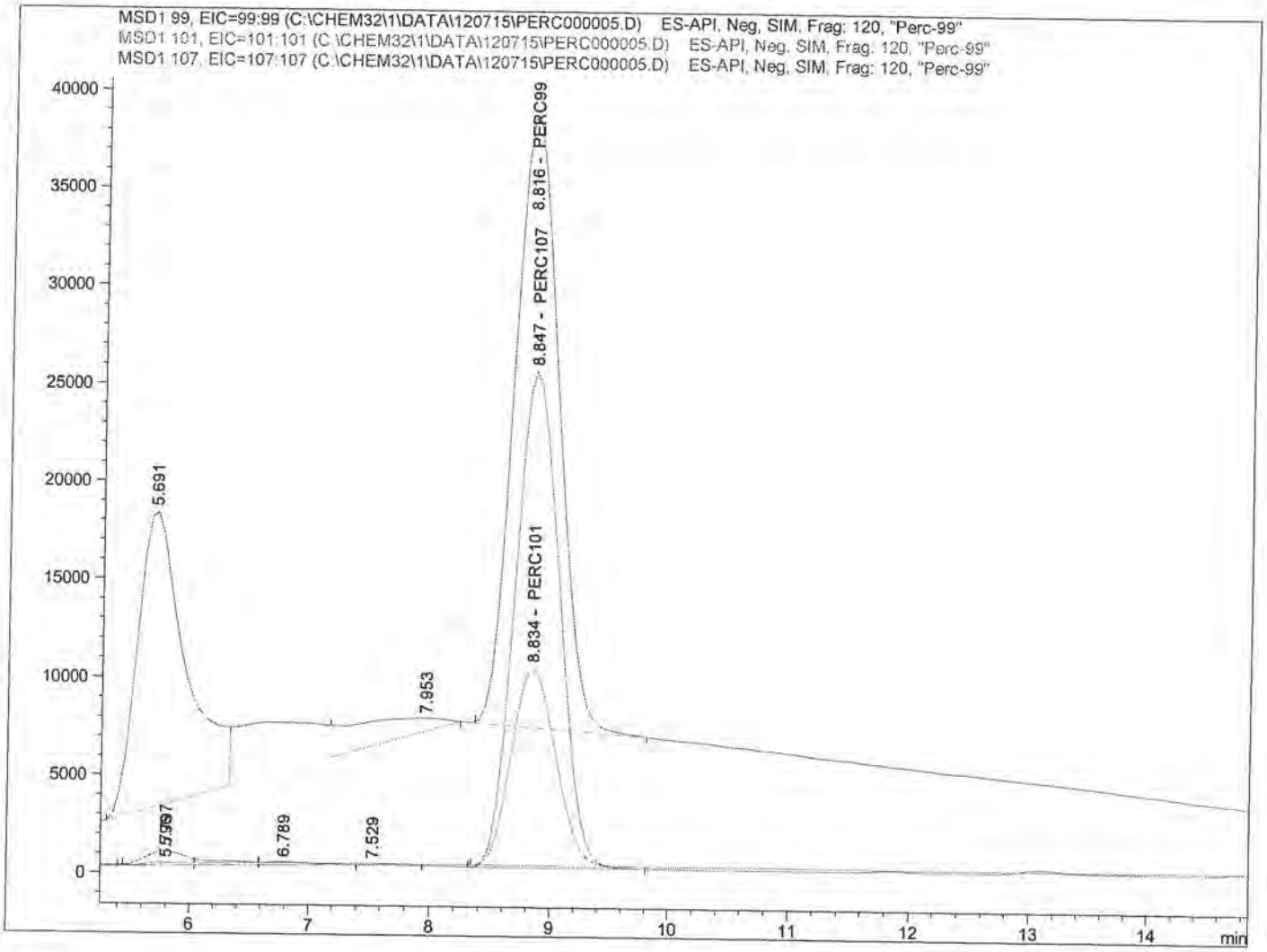

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:29:22 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-8-15

Data File C:\CHEM32\1\DATA\120715\PERC000005.D
Sample Name: SEQ-CCV1

```
==========================================================================
Acq. Operator   :                                   Seq. Line :   5
Acq. Instrument : Instrument 1                       Location : Vial 3
Injection Date  : 12/7/2015 6:15:38 PM                    Inj :   1
                                                   Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/8/2015 11:29:21 AM
                  (modified after loading)
==========================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.816	BBA	1	8.13509e5	8.48638e-1	5.23530		PERC99

Totals without ISTD(s) : 5.23530

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.834	BBA	1	2.62987e5	2.60545	5.19605		PERC101

Totals without ISTD(s) : 5.19605

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.847	VBA I	1	6.59346e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000006.D
Sample Name: SEQ-LCV1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/7/2015 6:33:28 PM

Seq. Line : 6
Location : Vial 4
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:29:21 AM
(modified after loading)

==========

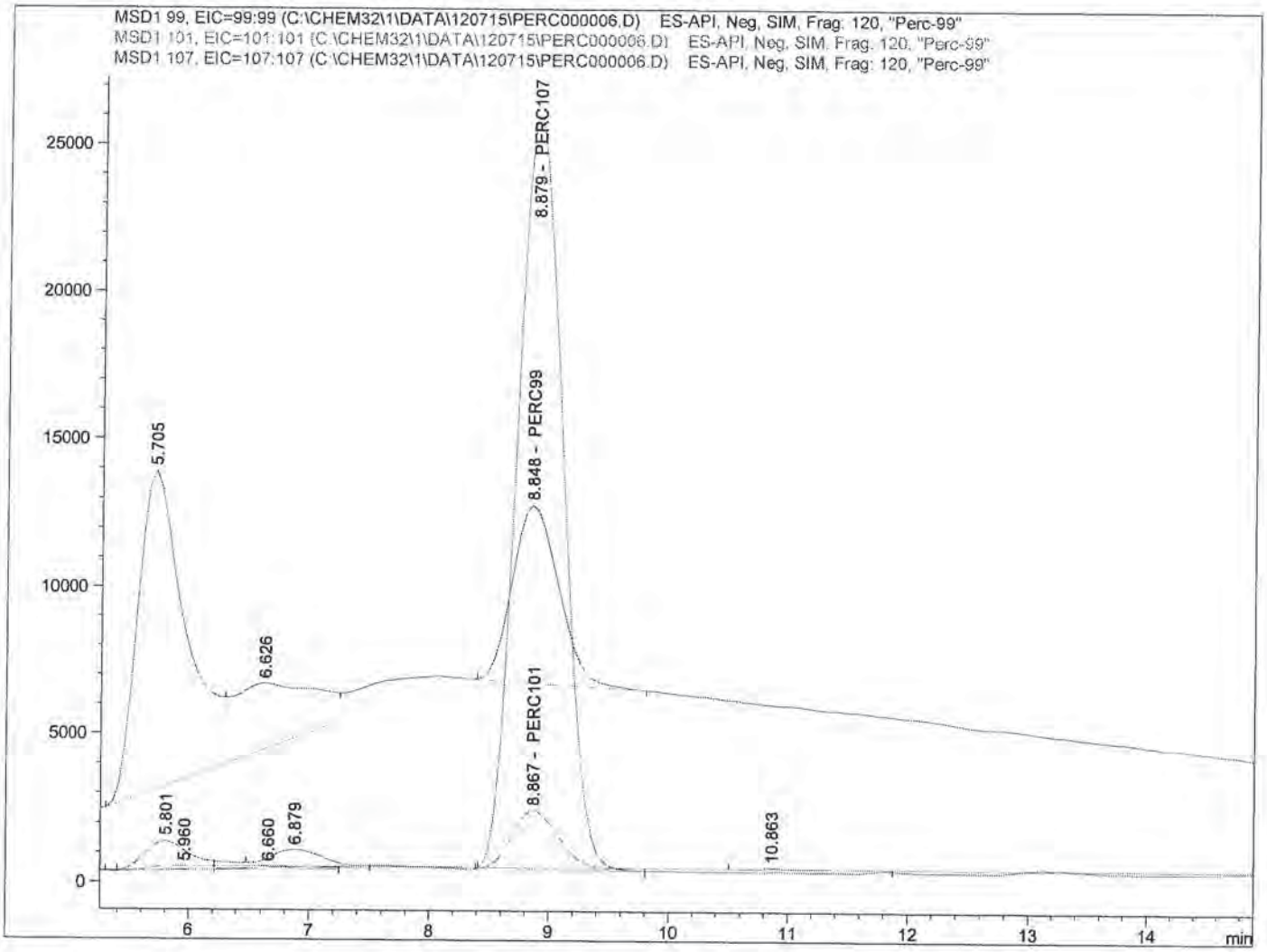

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:29:22 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-8-15

SP
12/9/15

Data File C:\CHEM32\1\DATA\120715\PERC000006.D
Sample Name: SEQ-LCV1

```
==================================================================
Acq. Operator   :                                  Seq. Line :   6
Acq. Instrument : Instrument 1                      Location : Vial 4
Injection Date  : 12/7/2015 6:33:28 PM                  Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/8/2015 11:29:21 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.848	BBA	1	1.63005e5	8.48638e-1	1.02446		PERC99

Totals without ISTD(s) : 1.02446

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.867	BBA	1	5.12670e4	2.60545	9.89220e-1		PERC101

Totals without ISTD(s) : 9.89220e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.879	BBA I	1	6.75145e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000007.D
Sample Name: SEQ-LCV2

Acq. Operator	:	Seq. Line	: 7
Acq. Instrument	: Instrument 1	Location	: Vial 83
Injection Date	: 12/7/2015 6:51:19 PM	Inj	: 1
		Inj Volume	: 100.0 µl
Acq. Method	: C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M		
Last changed	: 12/7/2015 5:01:12 PM		
Analysis Method	: C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M		
Last changed	: 12/8/2015 11:30:41 AM (modified after loading)		

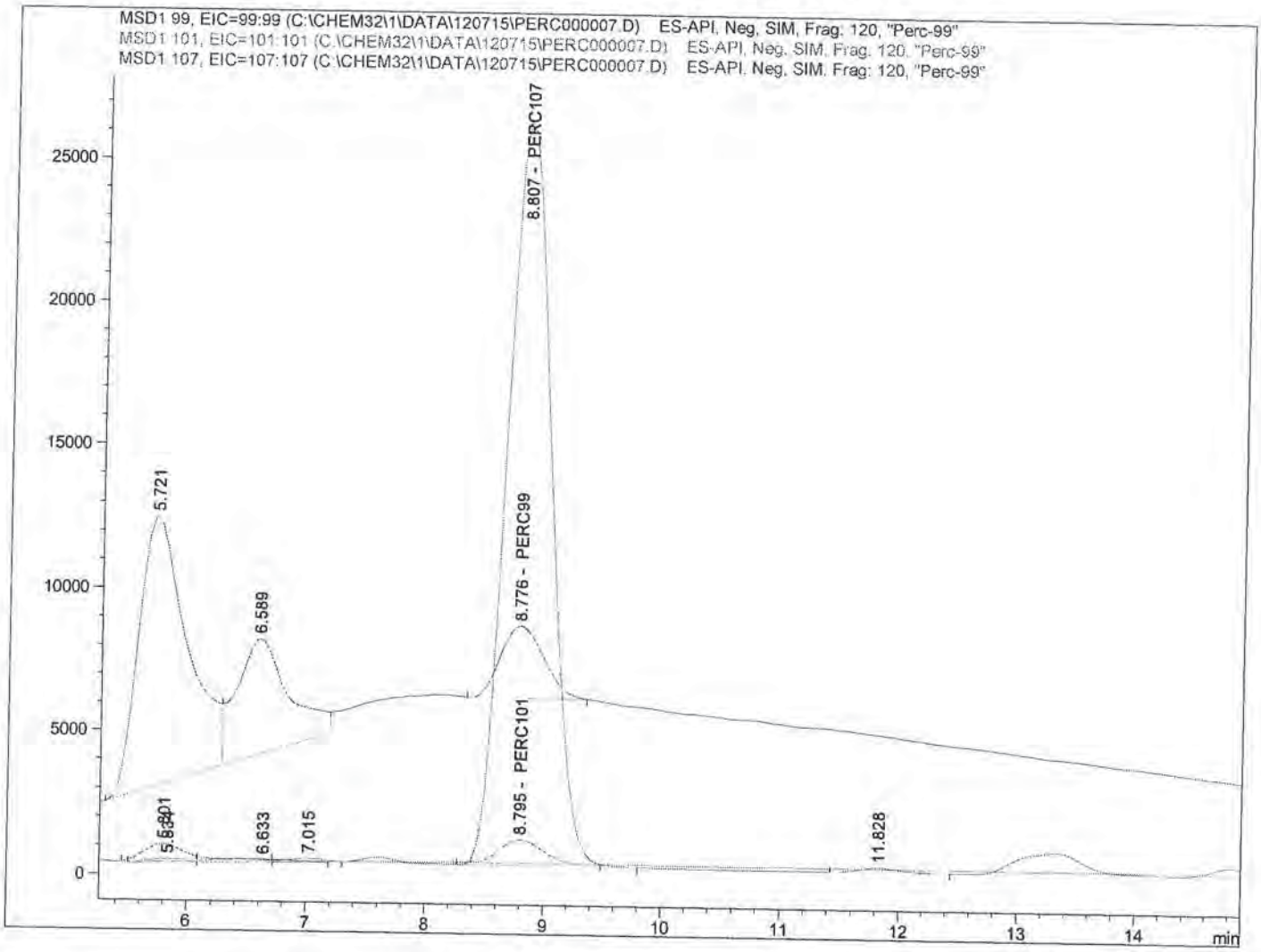

Internal Standard Report

Sorted By	:	Signal
Calib. Data Modified	:	12/8/2015 11:29:22 AM
Multiplier	:	1.0000
Dilution	:	1.0000

Do not use Multiplier & Dilution Factor with ISTDs

Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-8-15

Data File C:\CHEM32\1\DATA\120715\PERC000007.D
Sample Name: SEQ-LCV2

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/7/2015 6:51:19 PM

Seq. Line : 7
Location : Vial 83
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:30:41 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.776	BBA	1	6.40467e4	8.48638e-1	4.02912e-1		PERC99

Totals without ISTD(s) : 4.02912e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.795	BV	1	2.09004e4	2.60545	4.03670e-1		PERC101

Totals without ISTD(s) : 4.03670e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.807	VBA I	1	6.74495e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000008.D
Sample Name: SEQ-IFA1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/7/2015 7:09:12 PM

Seq. Line : 8
Location : Vial 5
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:33:00 AM
(modified after loading)

==========

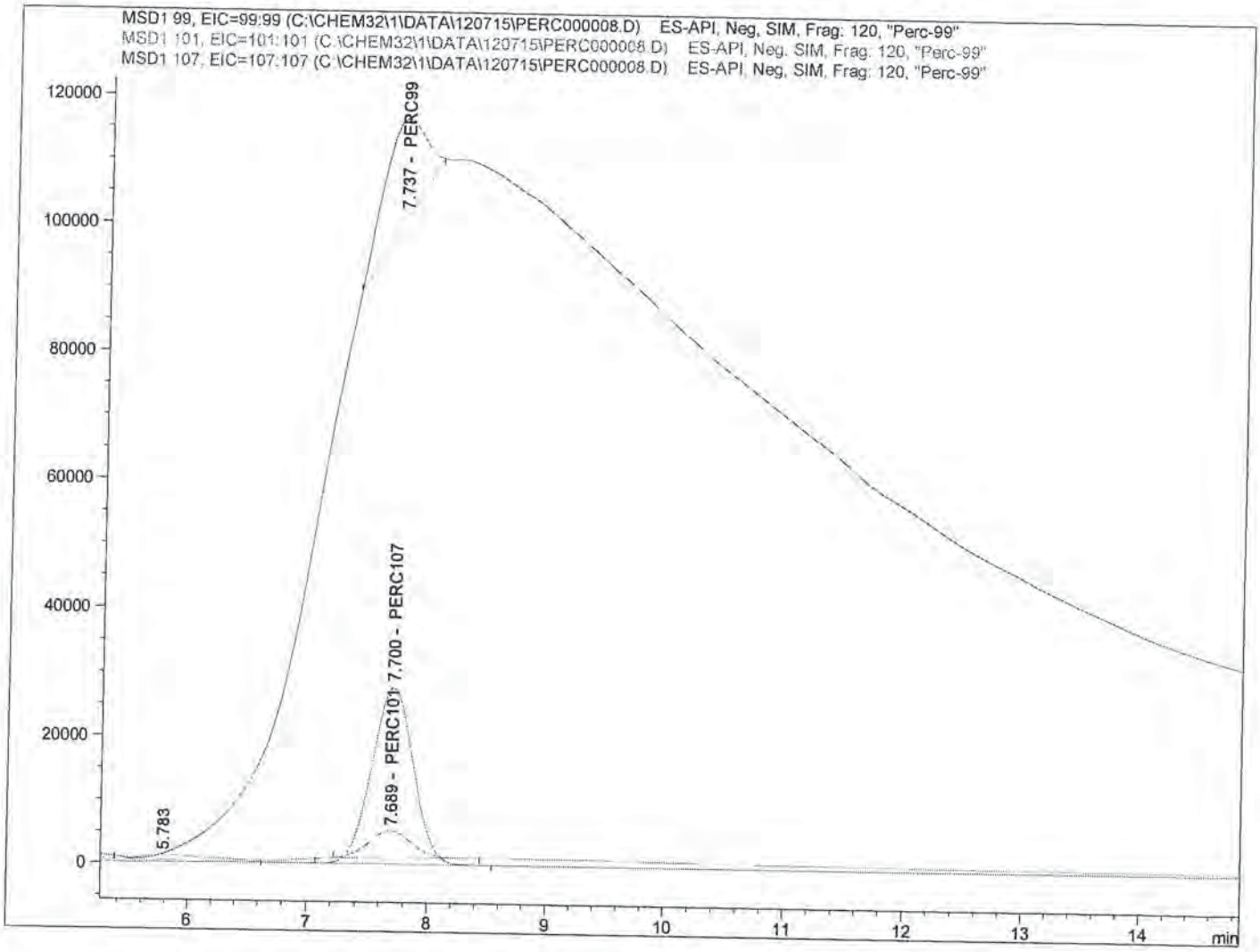

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:31:37 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-8-15

SP
12/9/15

Data File C:\CHEM32\1\DATA\120715\PERC000008.D
Sample Name: SEQ-IFA1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/7/2015 7:09:12 PM

Seq. Line : 8
Location : Vial 5
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:33:00 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
7.737	BBA	1	3.72802e5	8.48638e-1	2.39003		PERC99

Totals without ISTD(s) : 2.39003

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
7.689	BBA	1	1.04210e5	2.60545	2.05114		PERC101

Totals without ISTD(s) : 2.05114

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
7.700	BBA I	1	6.61861e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000011.D
Sample Name: 5L03014-BLK1

Acq. Operator	:	Seq. Line	: 11
Acq. Instrument	: Instrument 1	Location	: Vial 6
Injection Date	: 12/7/2015 8:02:47 PM	Inj	: 1
		Inj Volume	: 100.0 µl
Acq. Method	: C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M		
Last changed	: 12/7/2015 5:01:12 PM		
Analysis Method	: C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M		
Last changed	: 12/8/2015 11:35:05 AM (modified after loading)		

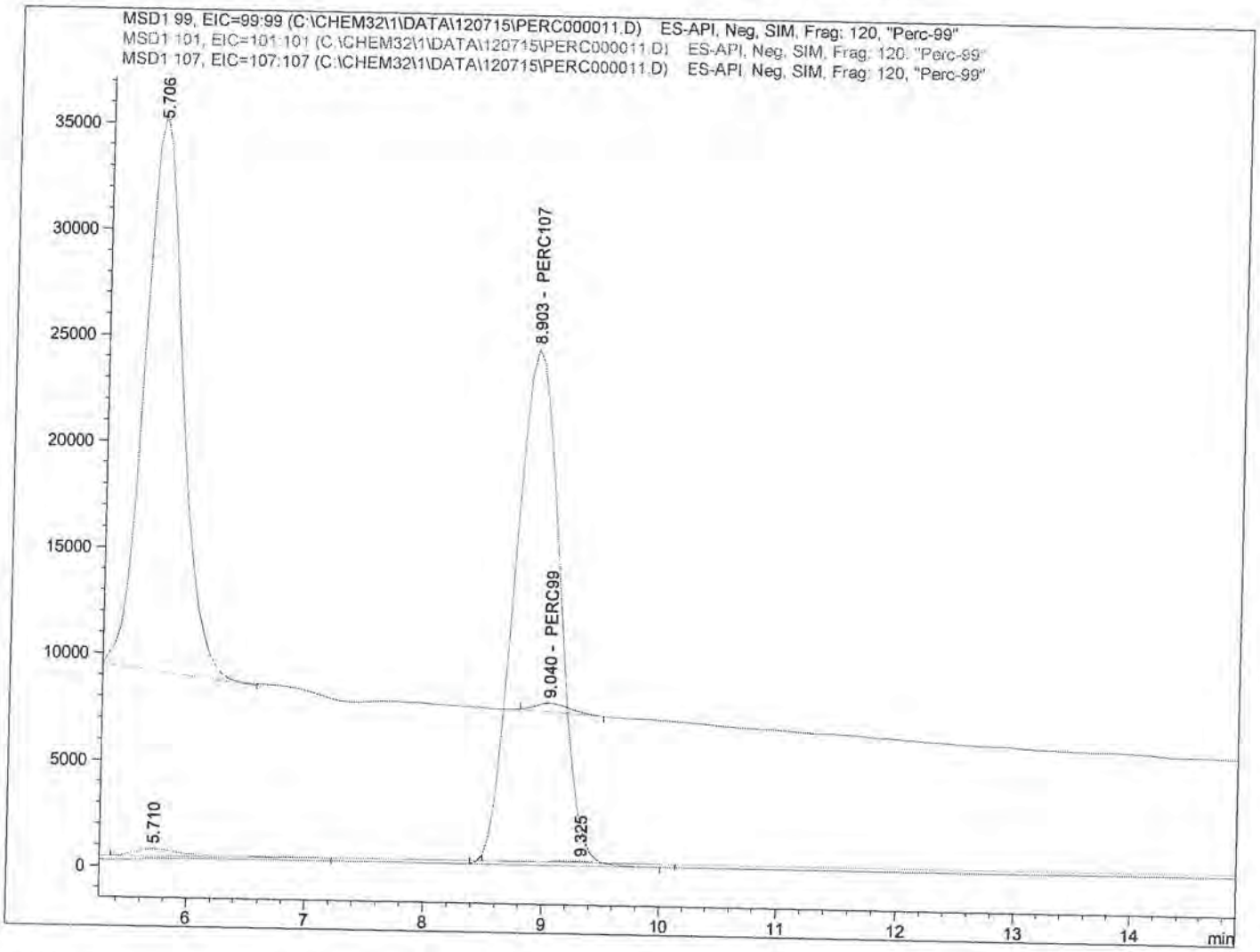

Internal Standard Report

Sorted By	:	Signal
Calib. Data Modified	:	12/8/2015 11:33:50 AM
Multiplier	:	1.0000
Dilution	:	1.0000

Do not use Multiplier & Dilution Factor with ISTDs

Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-8-15

Data File C:\CHEM32\1\DATA\120715\PERC000011.D
Sample Name: 5L03014-BLK1

```
==================================================================
Acq. Operator   :                                  Seq. Line :  11
Acq. Instrument : Instrument 1                      Location : Vial 6
Injection Date  : 12/7/2015 8:02:47 PM                  Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/8/2015 11:35:05 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
9.040	BBA	1	8308.46484	8.48638e-1	5.52381e-2		PERC99

Totals without ISTD(s) : 5.52381e-2

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.900		1	-	-	-		PERC101

Totals without ISTD(s) : 0.00000

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.903	BBA I	1	6.38227e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000012.D
Sample Name: 5L03014-BS1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/7/2015 8:20:32 PM

Seq. Line : 12
Location : Vial 7
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:36:17 AM
(modified after loading)

==========

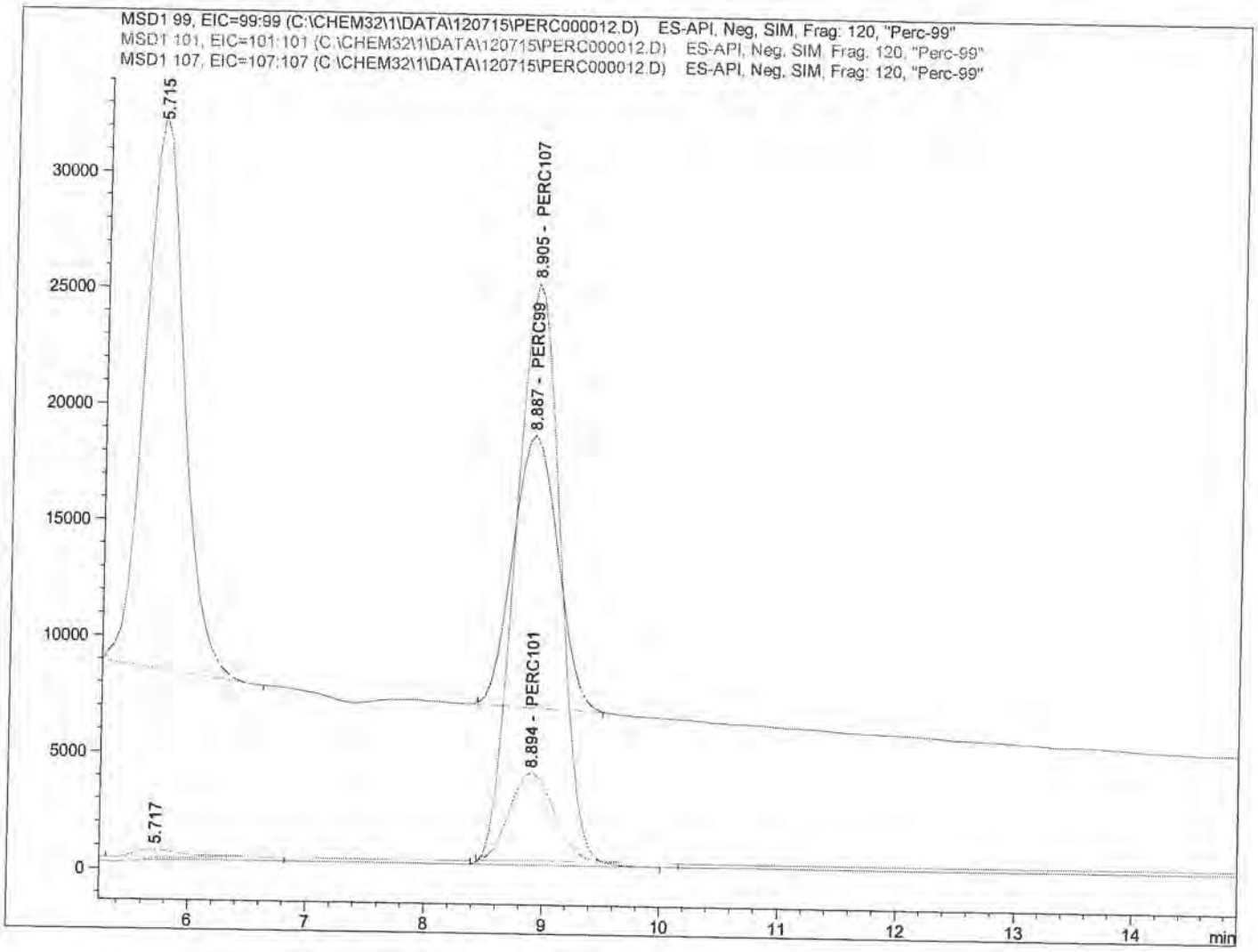

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:33:50 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

RDW 12-8-15

Data File C:\CHEM32\1\DATA\120715\PERC000012.D
Sample Name: 5L03014-BS1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/7/2015 8:20:32 PM

Seq. Line : 12
Location : Vial 7
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:36:17 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.887	BBA	1	3.14219e5	8.48638e-1	2.02264		PERC99

Totals without ISTD(s) : 2.02264

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.894	BB	1	1.00694e5	2.60545	1.98998		PERC101

Totals without ISTD(s) : 1.98998

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.905	BBA I	1	6.59183e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000013.D
Sample Name: 5L03014-BSD1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/7/2015 8:38:23 PM

Seq. Line : 13
Location : Vial 8
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:36:17 AM
(modified after loading)

==========

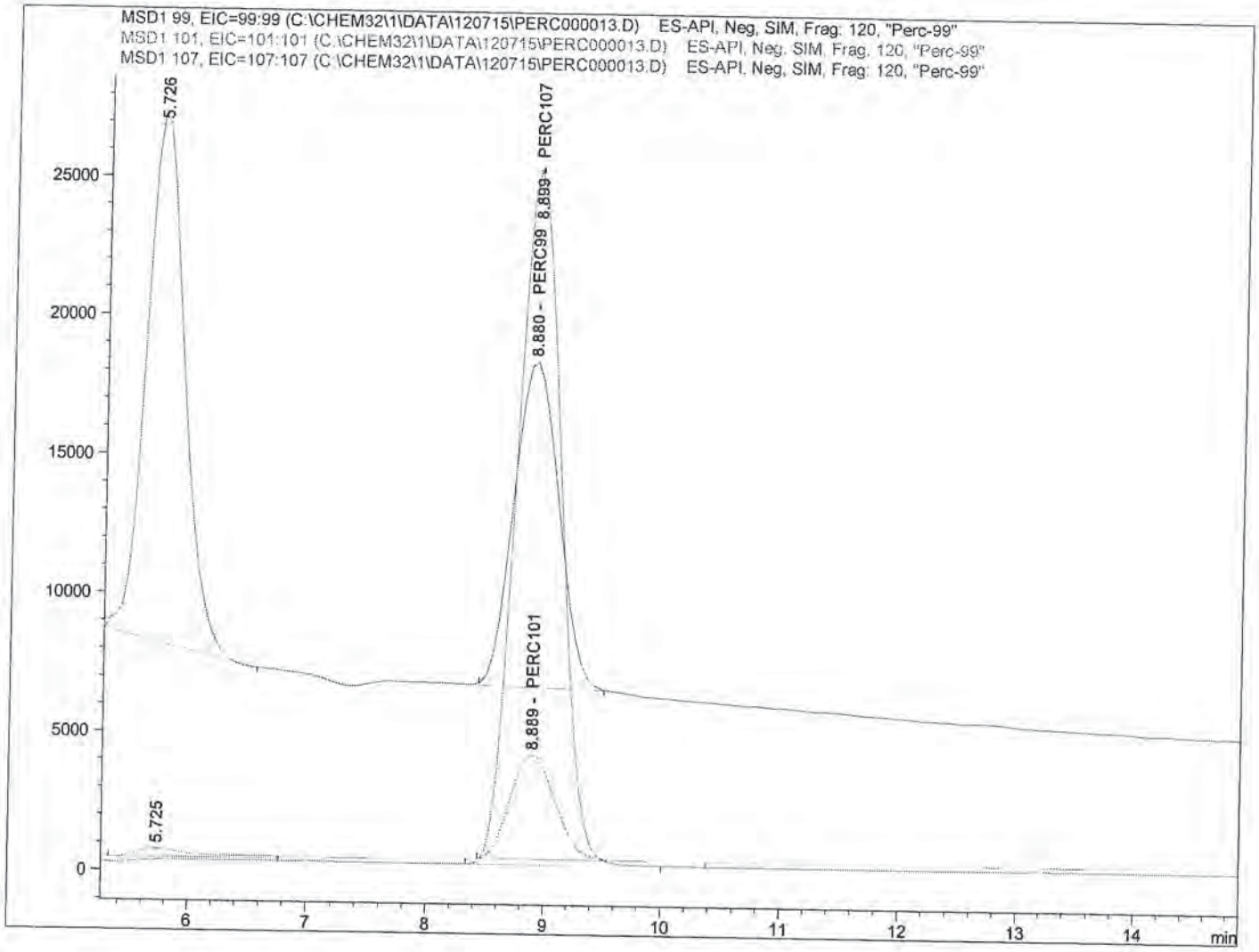

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:33:50 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-8-15

Data File C:\CHEM32\1\DATA\120715\PERC000013.D
Sample Name: 5L03014-BSD1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/7/2015 8:38:23 PM

Seq. Line : 13
Location : Vial 8
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:36:17 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.880	BBA	1	3.13034e5	8.48638e-1	2.01096		PERC99

Totals without ISTD(s) : 2.01096

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.889	BV	1	1.01070e5	2.60545	1.99339		PERC101

Totals without ISTD(s) : 1.99339

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.899	BBA I	1	6.60510e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000014.D
Sample Name: 1511269-05

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/7/2015 8:56:17 PM

Seq. Line : 14
Location : Vial 9
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:38:07 AM
(modified after loading)

==========

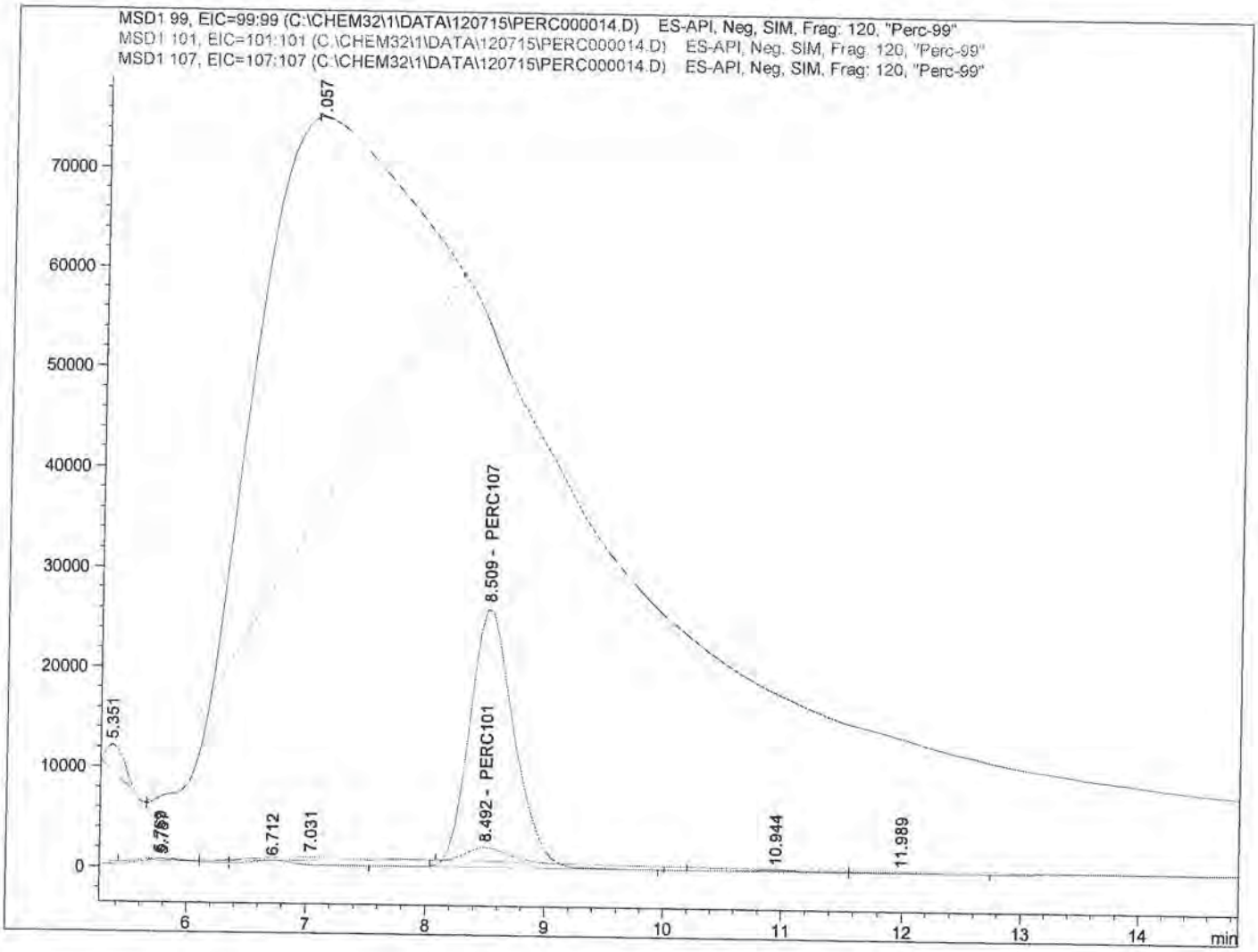

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:37:43 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-8-15

Data File C:\CHEM32\1\DATA\120715\PERC000014.D
Sample Name: 1511269-05

```
==================================================================
Acq. Operator    :                                  Seq. Line :  14
Acq. Instrument  : Instrument 1                      Location : Vial 9
Injection Date   : 12/7/2015 8:56:17 PM                 Inj :   1
                                                   Inj Volume : 100.0 µl
Acq. Method      : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed     : 12/7/2015 5:01:12 PM
Analysis Method  : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed     : 12/8/2015 11:38:07 AM
                   (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.500		1	-	-	-		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.492	BBA	1	3.50323e4	2.60545	6.86275e-1		PERC101

Totals without ISTD(s) : 6.86275e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.509	BB I	1	6.65001e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000023.D
Sample Name: 1511269-13@5

==========

Acq. Operator : Seq. Line : 23
Acq. Instrument : Instrument 1 Location : Vial 18
Injection Date : 12/7/2015 11:37:04 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:43:22 AM
(modified after loading)
Additional Info : Peak(s) manually integrated

==========

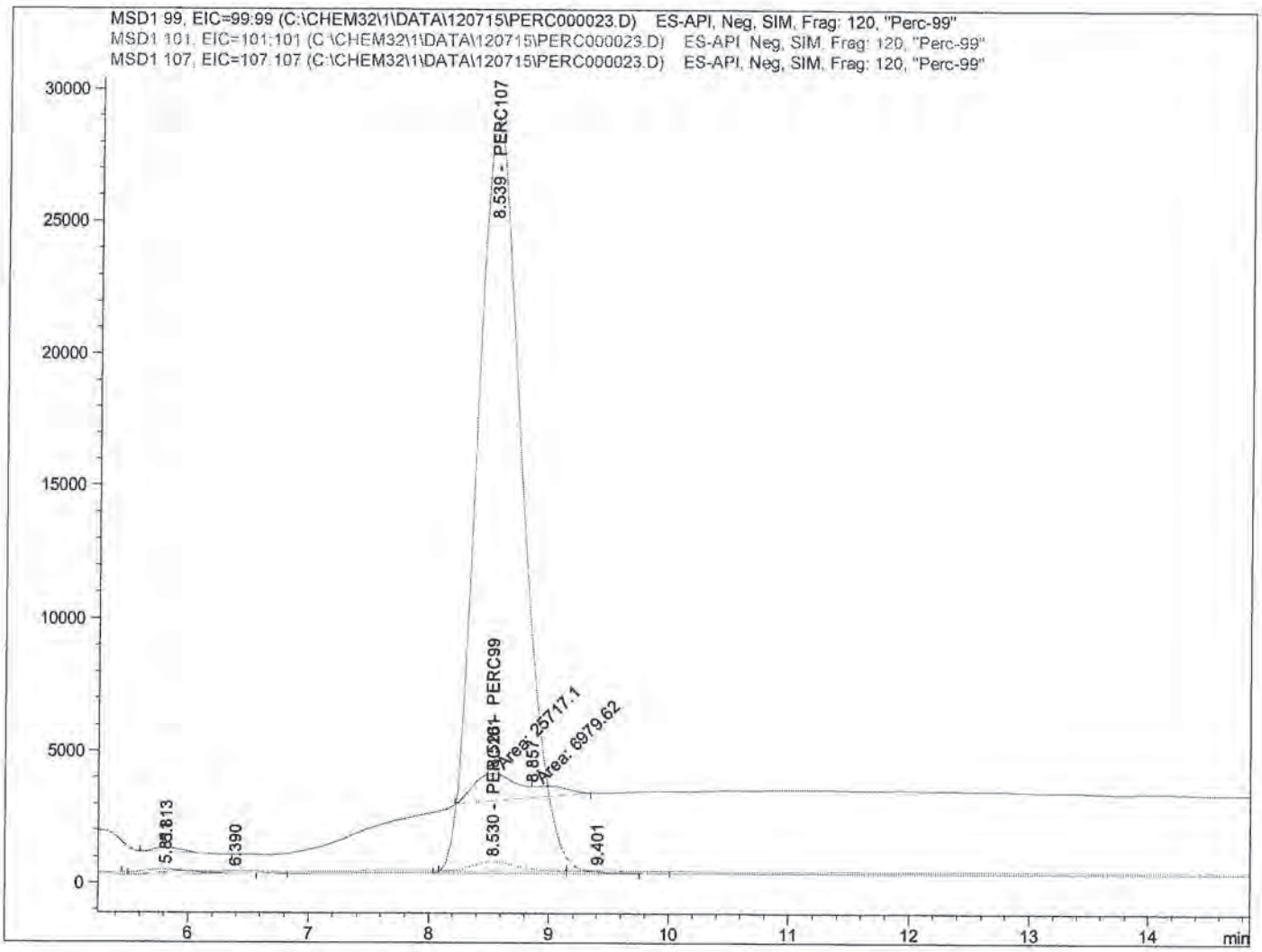

==========

Internal Standard Report

==========

SP
12/9/15

Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:43:27 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-8-15

Data File C:\CHEM32\1\DATA\120715\PERC000023.D
Sample Name: 1511269-13@5

==========

Acq. Operator : Seq. Line : 23
Acq. Instrument : Instrument 1 Location : Vial 18
Injection Date : 12/7/2015 11:37:04 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:43:22 AM
(modified after loading)
Additional Info : Peak(s) manually integrated

==========

1	5.00000	PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.526	MF	1	2.57171e4	8.48638e-1	1.45380e-1		PERC99

Totals without ISTD(s) : 1.45380e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.530	BV	1	1.00623e4	2.60545	1.74639e-1		PERC101

Totals without ISTD(s) : 1.74639e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.539	BB I	1	7.50602e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Print of window 38: Current Chromatogram(s)
Data File : C:\CHEM32\1\DATA\120715\PERC000023.D
Sample Name : 1511269-13@5

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/7/2015 11:37:04 PM

Seq. Line : 23
Location : Vial 18
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:43:22 AM
(modified after loading)

Current Chromatogram(s)

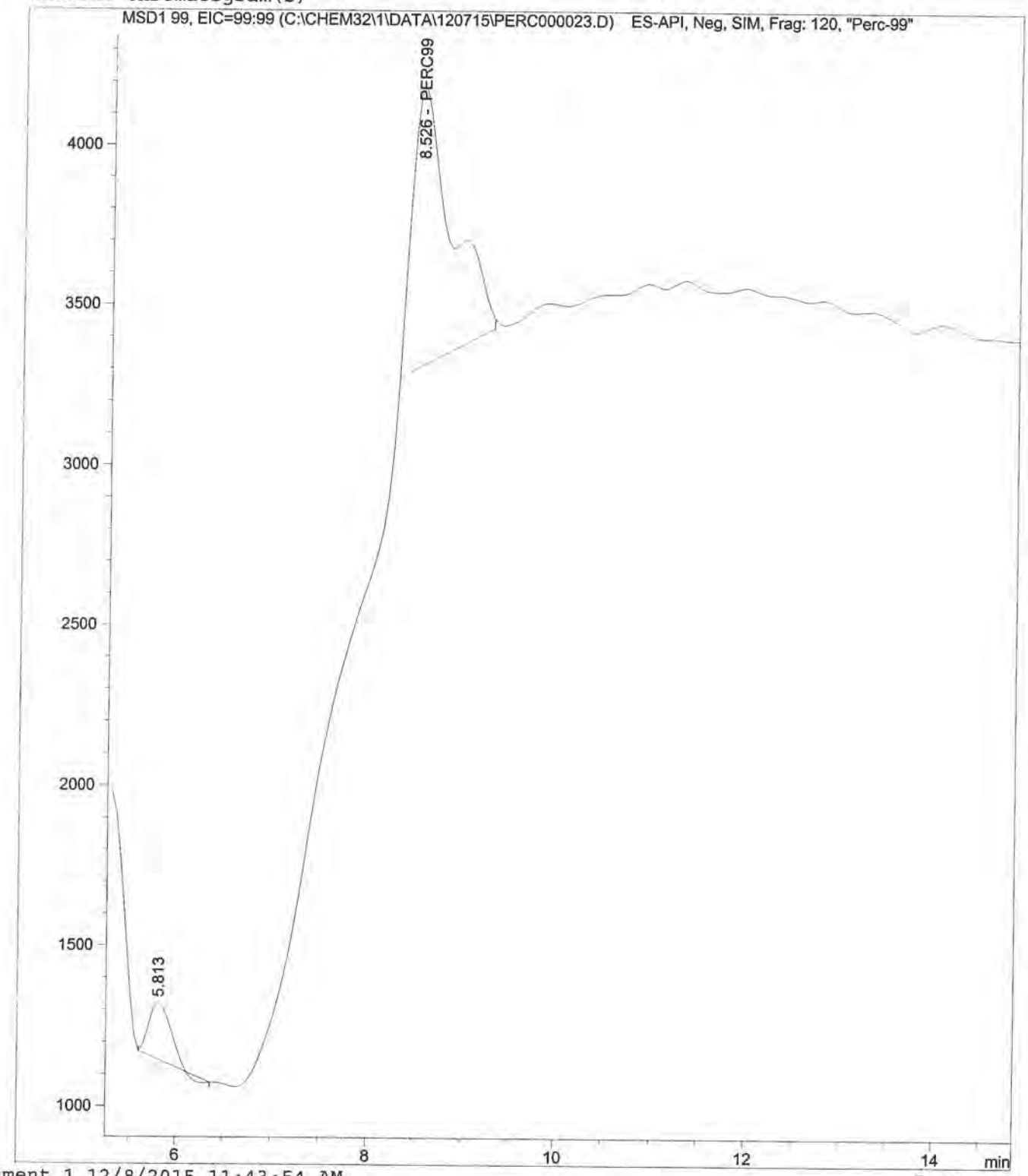

Instrument 1 12/8/2015 11:43:54 AM

Print of window 38: Current Chromatogram(s)
Data File : C:\CHEM32\1\DATA\120715\PERC000023.D
Sample Name : 1511269-13@5

==========

Acq. Operator : Seq. Line : 23
Acq. Instrument : Instrument 1 Location : Vial 18
Injection Date : 12/7/2015 11:37:04 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:43:22 AM
(modified after loading)
Additional Info : Peak(s) manually integrated

Current Chromatogram(s)

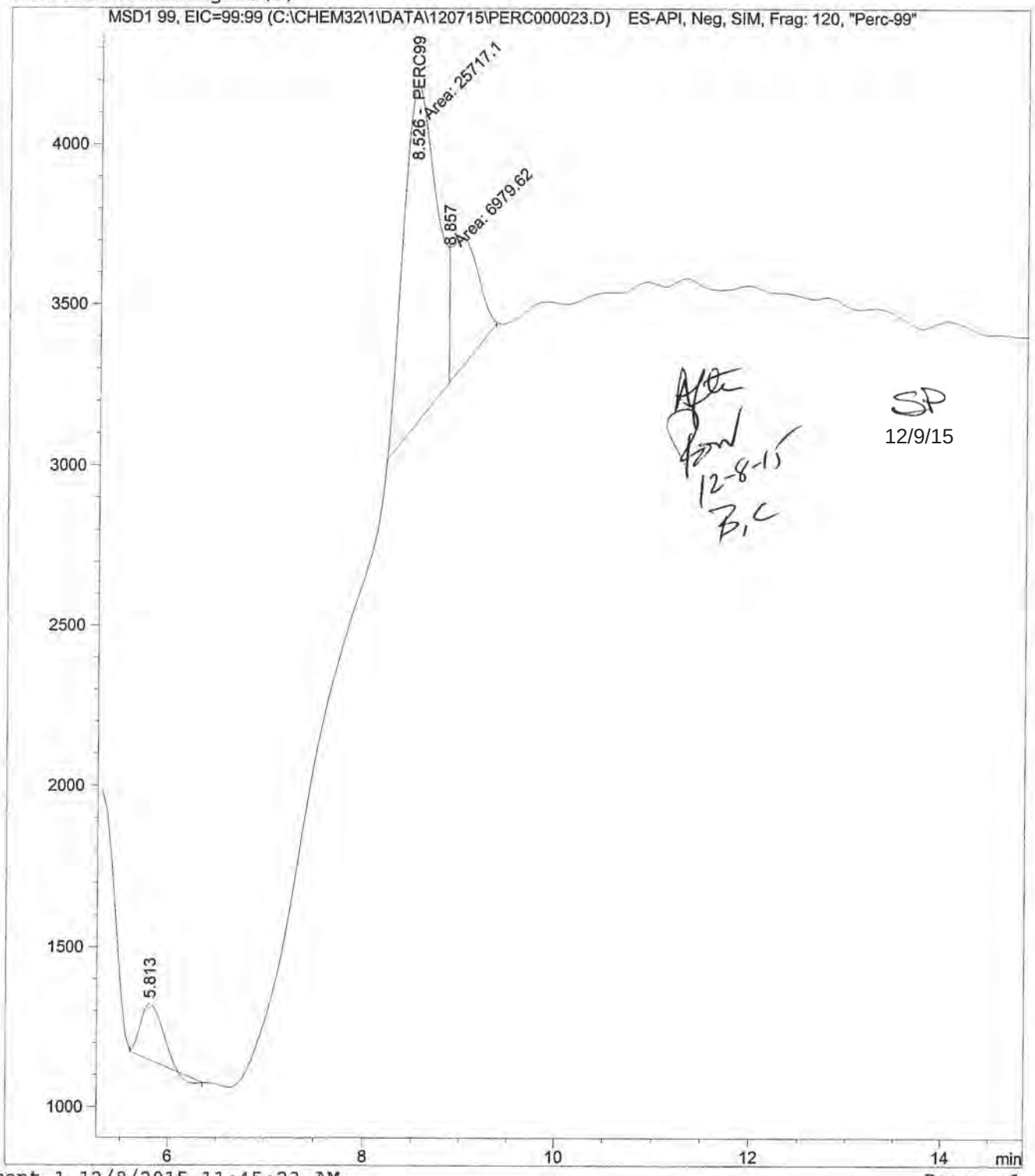

SP
12/9/15

12-8-15
B.C

Instrument 1 12/8/2015 11:45:23 AM

Data File C:\CHEM32\1\DATA\120715\PERC000025.D
Sample Name: SEQ-CCV2

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/8/2015 12:12:46 AM

Seq. Line : 25
Location : Vial 3
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:46:48 AM
(modified after loading)

==========

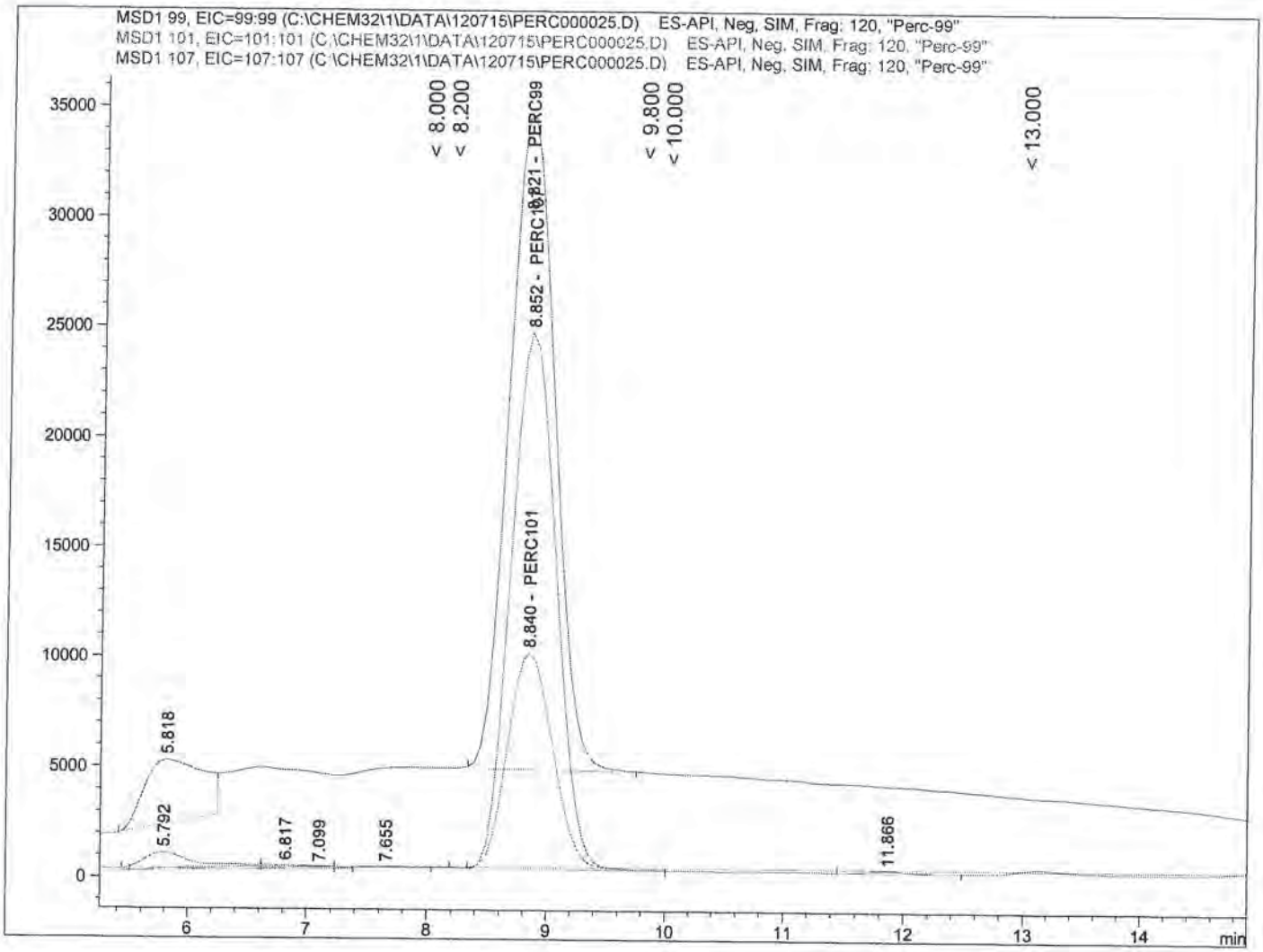

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Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:46:16 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-8-15

Data File C:\CHEM32\1\DATA\120715\PERC000025.D
Sample Name: SEQ-CCV2

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/8/2015 12:12:46 AM

Seq. Line : 25
Location : Vial 3
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:46:48 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.821	BB	1	7.92111e5	8.48638e-1	5.22846		PERC99

Totals without ISTD(s) : 5.22846

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.840	BBA	1	2.57331e5	2.60545	5.21482		PERC101

Totals without ISTD(s) : 5.21482

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.852	BBA I	1	6.42843e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000026.D
Sample Name: SEQ-LCV3

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/8/2015 12:30:38 AM

Seq. Line : 26
Location : Vial 4
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:46:48 AM
(modified after loading)

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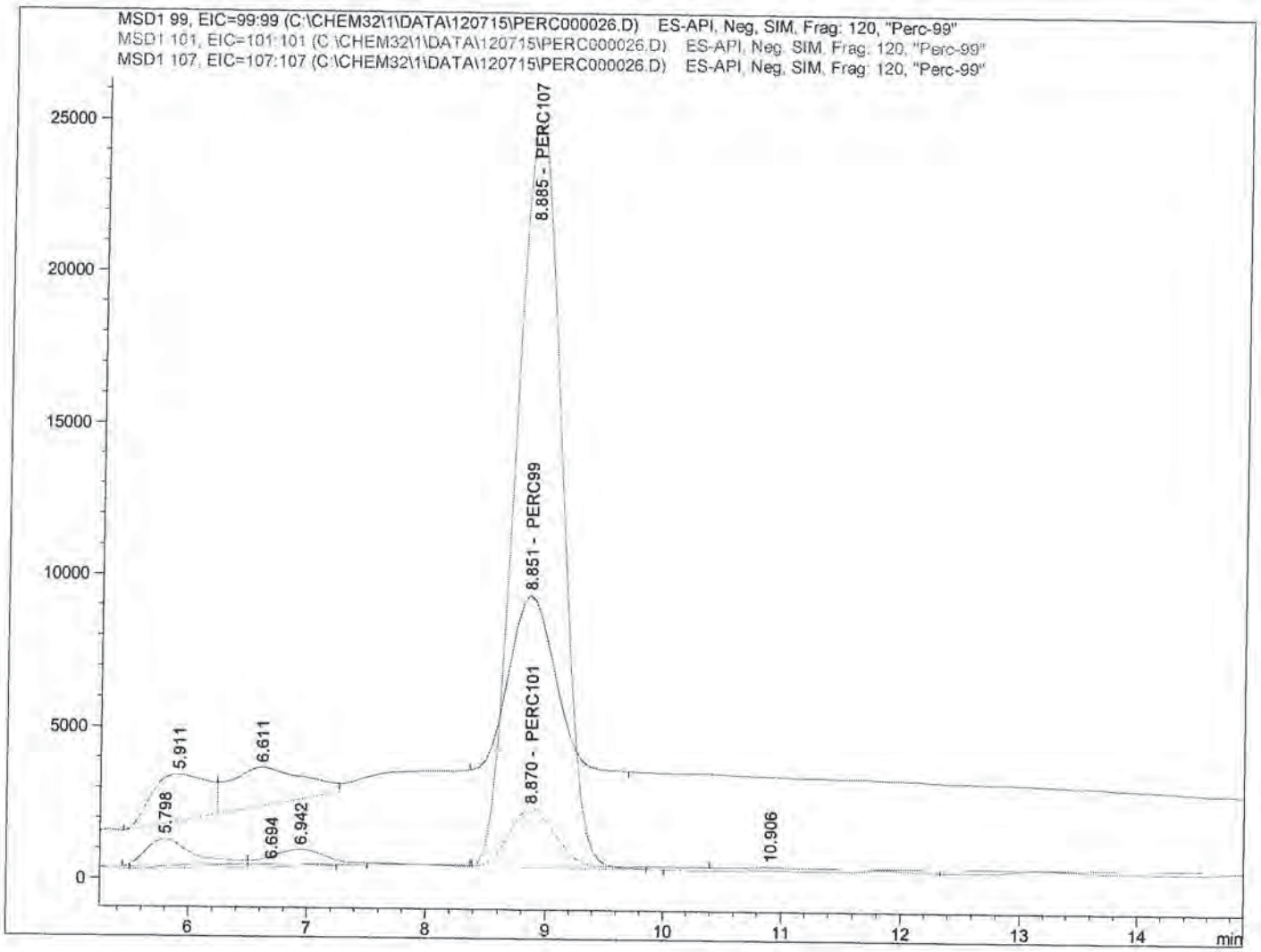

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:46:16 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-8-15

Data File C:\CHEM32\1\DATA\120715\PERC000026.D
Sample Name: SEQ-LCV3

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/8/2015 12:30:38 AM

Seq. Line : 26
Location : Vial 4
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:46:48 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.851	BB	1	1.54983e5	8.48638e-1	1.00326		PERC99

Totals without ISTD(s) : 1.00326

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.870	VB	1	5.04227e4	2.60545	1.00211		PERC101

Totals without ISTD(s) : 1.00211

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.885	BBA I	1	6.55481e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000027.D
Sample Name: SEQ-LCV4

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/8/2015 12:48:32 AM

Seq. Line : 27
Location : Vial 83
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:46:48 AM
(modified after loading)

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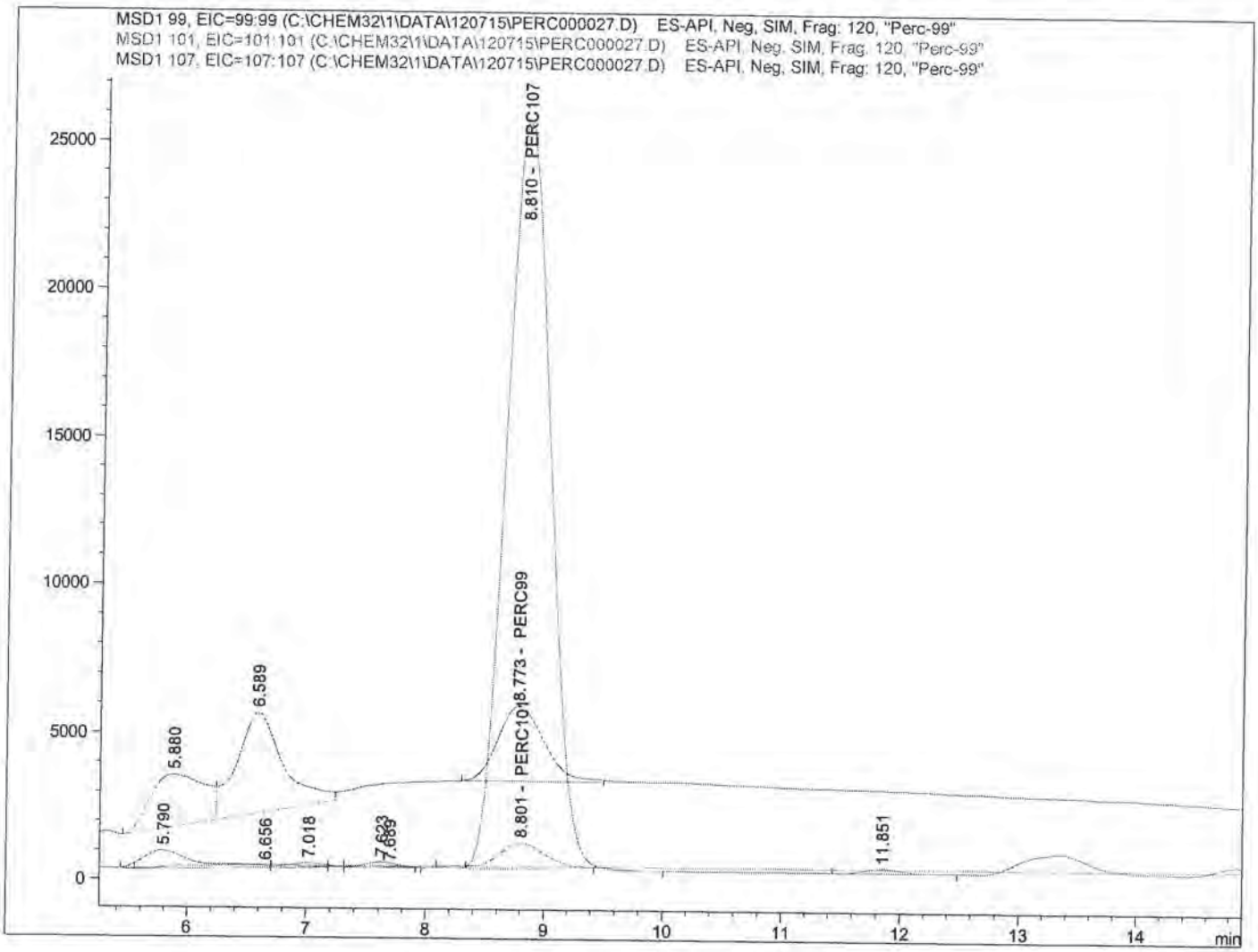

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Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:46:16 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-8-15

Data File C:\CHEM32\1\DATA\120715\PERC000027.D
Sample Name: SEQ-LCV4

```
==================================================================
Acq. Operator   :                                  Seq. Line :  27
Acq. Instrument : Instrument 1                      Location : Vial 83
Injection Date  : 12/8/2015 12:48:32 AM                 Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/8/2015 11:46:48 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.773	BB	1	6.86795e4	8.48638e-1	4.41543e-1		PERC99

Totals without ISTD(s) : 4.41543e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.801	BV	1	2.12409e4	2.60545	4.19255e-1		PERC101

Totals without ISTD(s) : 4.19255e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.810	BBA I	1	6.60003e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000028.D
Sample Name: 1511269-20@500

==========

Acq. Operator : Seq. Line : 28
Acq. Instrument : Instrument 1 Location : Vial 19
Injection Date : 12/8/2015 1:06:32 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:46:48 AM
(modified after loading)

==========

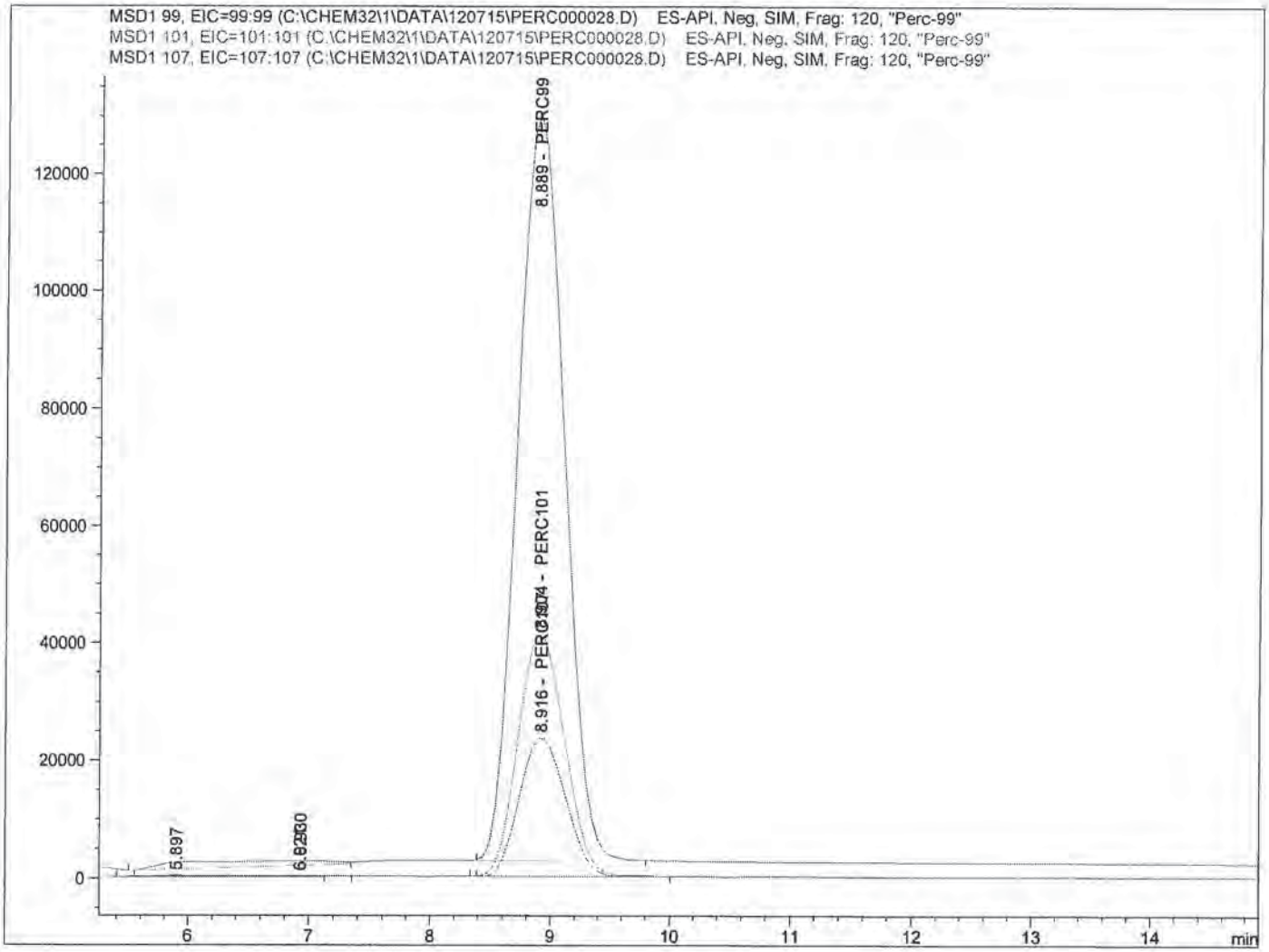

==========

Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:46:16 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-8-15

Data File C:\CHEM32\1\DATA\120715\PERC000028.D
Sample Name: 1511269-20@500

```
==================================================================
Acq. Operator   :                                  Seq. Line :  28
Acq. Instrument : Instrument 1                      Location : Vial 19
Injection Date  : 12/8/2015 1:06:32 AM                  Inj :   1
                                                 Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/8/2015 11:46:48 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.889	BBA	1	3.41953e6	8.48638e-1	22.89549		PERC99

Totals without ISTD(s) : 22.89549

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.904	BBA	1	1.10636e6	2.60545	22.74252		PERC101

Totals without ISTD(s) : 22.74252

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.916	BBA I	1	6.33737e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000029.D
Sample Name: 1511269-22@1000

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/8/2015 1:24:17 AM

Seq. Line : 29
Location : Vial 20
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:46:48 AM
(modified after loading)

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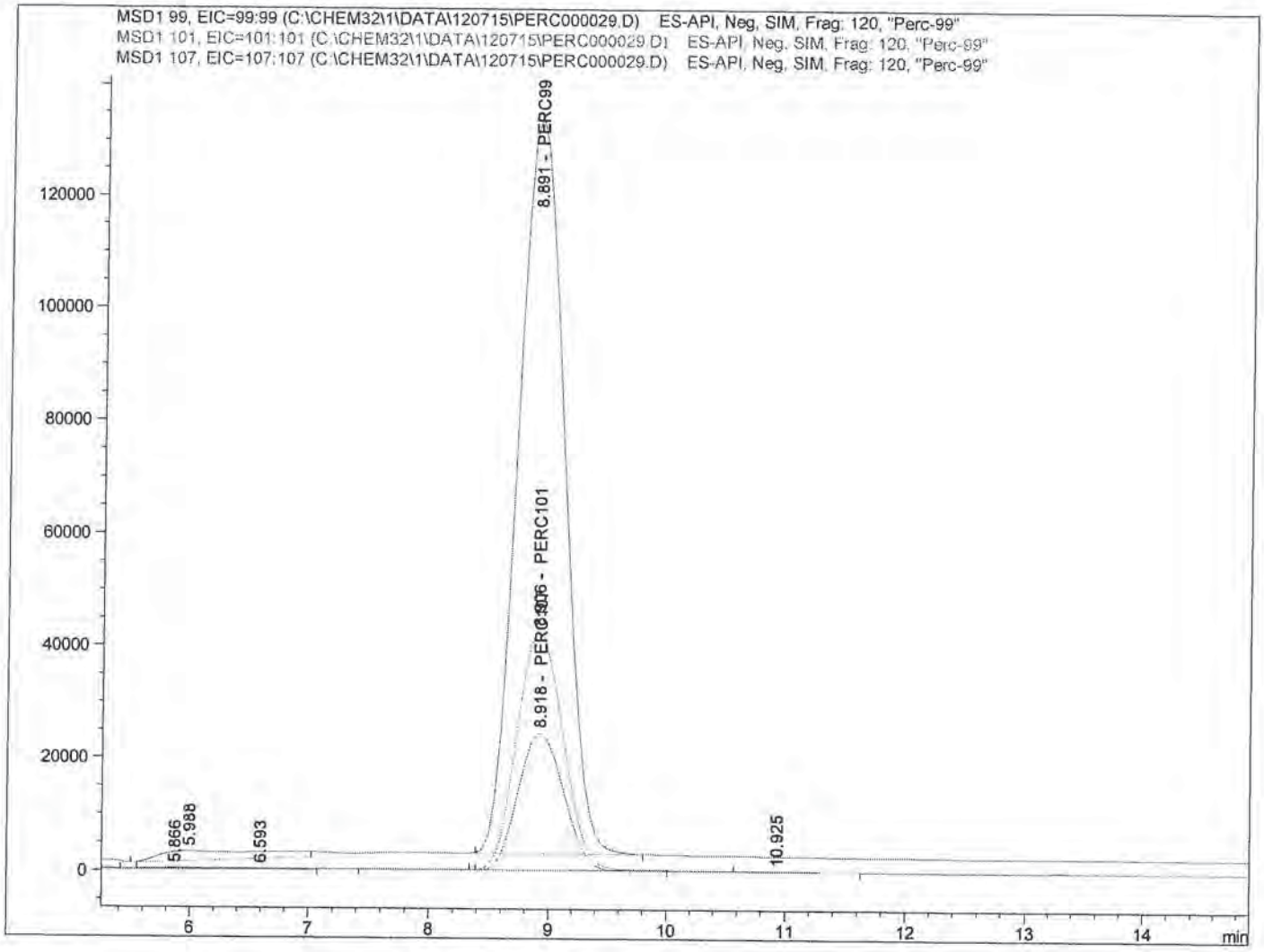

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:46:16 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-8-15

Data File C:\CHEM32\1\DATA\120715\PERC000029.D
Sample Name: 1511269-22@1000

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/8/2015 1:24:17 AM

Seq. Line : 29
Location : Vial 20
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:46:48 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.891	BBA	1	3.52388e6	8.48638e-1	22.84948		PERC99

Totals without ISTD(s) : 22.84948

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.906	BBA	1	1.14095e6	2.60545	22.71343		PERC101

Totals without ISTD(s) : 22.71343

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.918	BBA I	1	6.54391e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000030.D
Sample Name: 1511269-23@500

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/8/2015 1:42:10 AM

Seq. Line : 30
Location : Vial 21
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:46:48 AM
(modified after loading)

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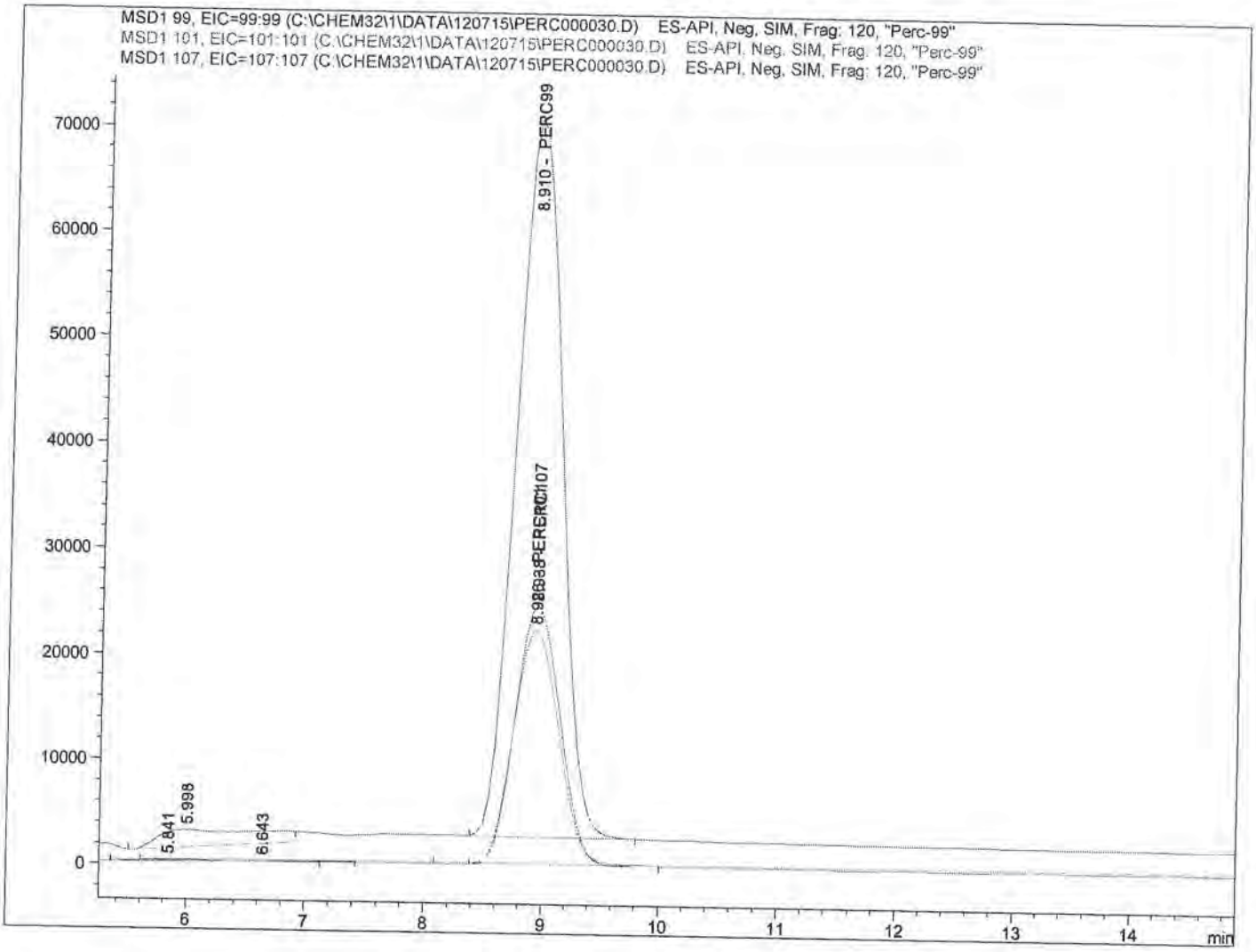

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Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:46:16 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-8-15

Data File C:\CHEM32\1\DATA\120715\PERC000030.D
Sample Name: 1511269-23@500

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/8/2015 1:42:10 AM

Seq. Line : 30
Location : Vial 21
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:46:48 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.910	BBA	1	1.82791e6	8.48638e-1	11.72570		PERC99

Totals without ISTD(s) : 11.72570

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.926	BBA	1	6.00132e5	2.60545	11.81926		PERC101

Totals without ISTD(s) : 11.81926

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.938	BBA I	1	6.61468e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000031.D
Sample Name: 1511269-24@2000

Acq. Operator	:	Seq. Line	: 31
Acq. Instrument	: Instrument 1	Location	: Vial 22
Injection Date	: 12/8/2015 2:00:05 AM	Inj	: 1
		Inj Volume	: 100.0 µl
Acq. Method	: C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M		
Last changed	: 12/7/2015 5:01:12 PM		
Analysis Method	: C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M		
Last changed	: 12/8/2015 11:46:48 AM (modified after loading)		

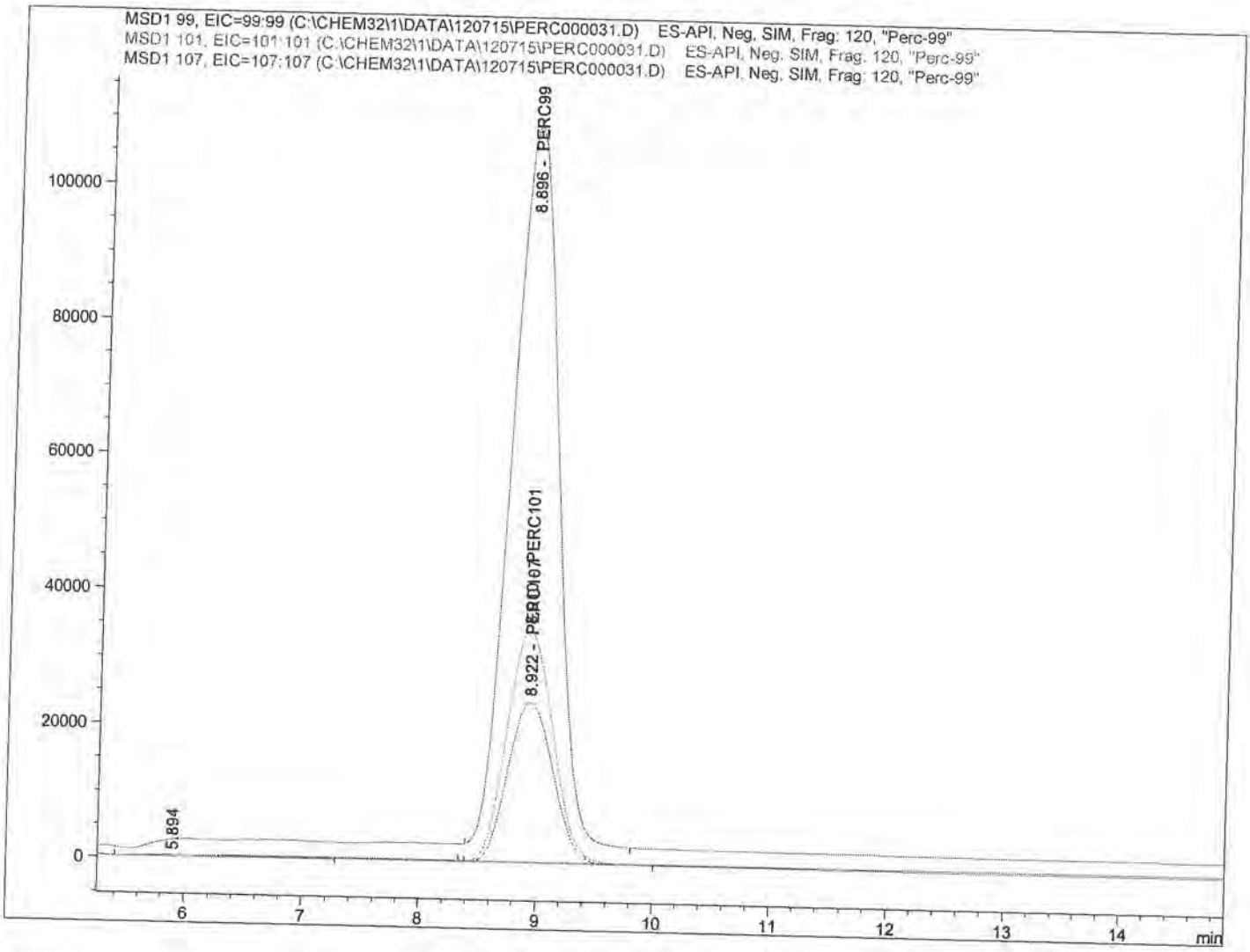

Internal Standard Report

SP
12/9/15

Sorted By	:	Signal
Calib. Data Modified	:	12/8/2015 11:46:16 AM
Multiplier	:	1.0000
Dilution	:	1.0000

12-8-15

Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\120715\PERC000031.D
Sample Name: 1511269-24@2000

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/8/2015 2:00:05 AM

Seq. Line : 31
Location : Vial 22
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:46:48 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.896	BBA	1	2.88337e6	8.48638e-1	18.93473		PERC99

Totals without ISTD(s) : 18.93473

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.910	BBA	1	9.32391e5	2.60545	18.79819		PERC101

Totals without ISTD(s) : 18.79819

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.922	BBA I	1	6.46151e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

2883370/64615 1/1.17836 x 5 = 18.9347 x 2000 = 37869.39

Data File C:\CHEM32\1\DATA\120715\PERC000033.D
Sample Name: SEQ-CCV3

Acq. Operator	:	Seq. Line	: 33
Acq. Instrument	: Instrument 1	Location	: Vial 3
Injection Date	: 12/8/2015 2:35:43 AM	Inj	: 1
		Inj Volume	: 100.0 µl
Acq. Method	: C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M		
Last changed	: 12/7/2015 5:01:12 PM		
Analysis Method	: C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M		
Last changed	: 12/8/2015 11:46:48 AM (modified after loading)		

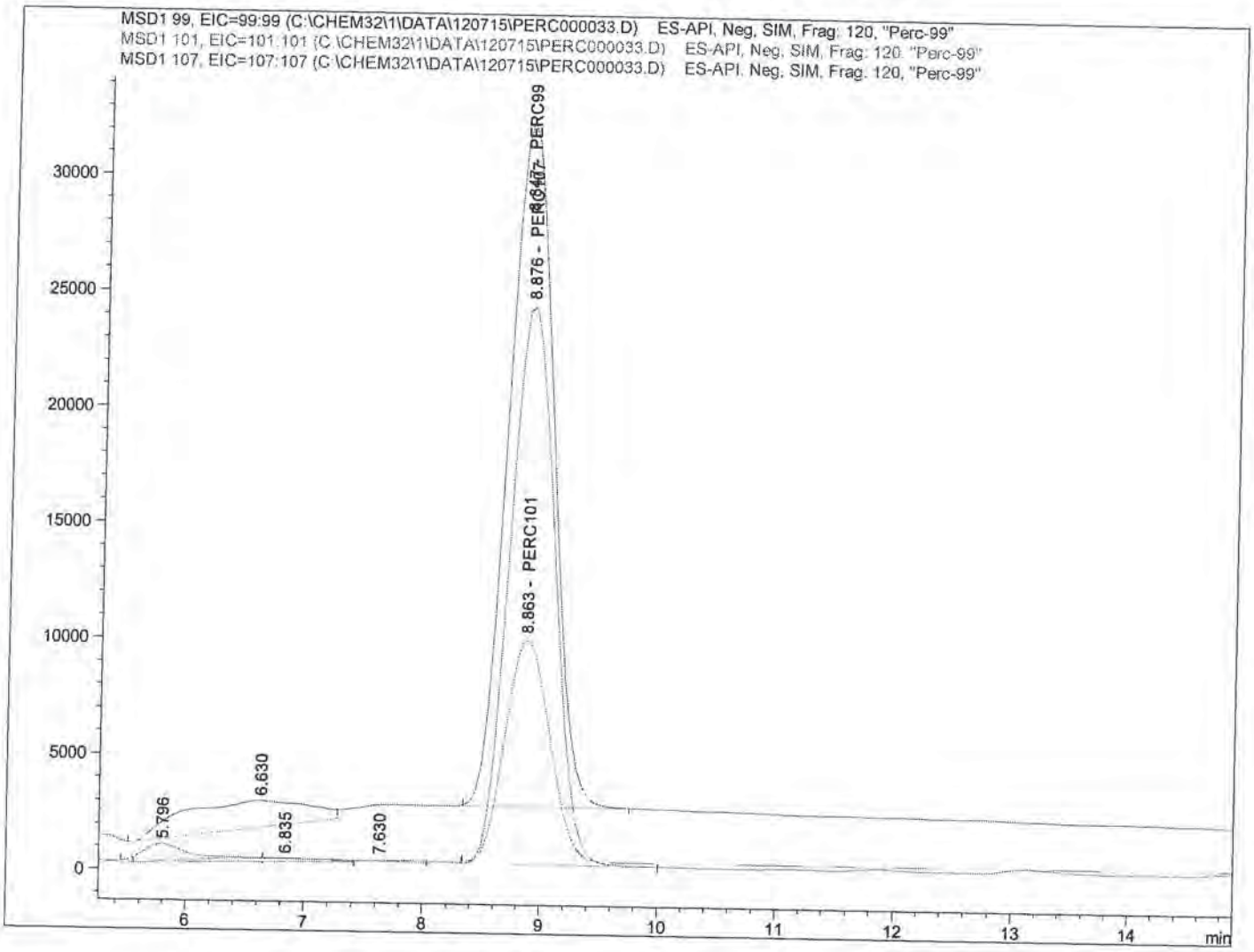

Internal Standard Report

Sorted By	:	Signal
Calib. Data Modified	:	12/8/2015 11:46:16 AM
Multiplier	:	1.0000
Dilution	:	1.0000

Do not use Multiplier & Dilution Factor with ISTDs

Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

Pond 12-8-15 SP 12/9/15

Data File C:\CHEM32\1\DATA\120715\PERC000033.D
Sample Name: SEQ-CCV3

==========

Acq. Operator :
Seq. Line : 33
Acq. Instrument : Instrument 1
Location : Vial 3
Injection Date : 12/8/2015 2:35:43 AM
Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:46:48 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.847	BB	1	7.87932e5	8.48638e-1	5.20917		PERC99

Totals without ISTD(s) : 5.20917

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.863	BBA	1	2.55387e5	2.60545	5.18369		PERC101

Totals without ISTD(s) : 5.18369

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.876	VBA I	1	6.41819e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000034.D
Sample Name: SEQ-LCV5

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/8/2015 2:53:35 AM

Seq. Line : 34
Location : Vial 4
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:46:48 AM
(modified after loading)

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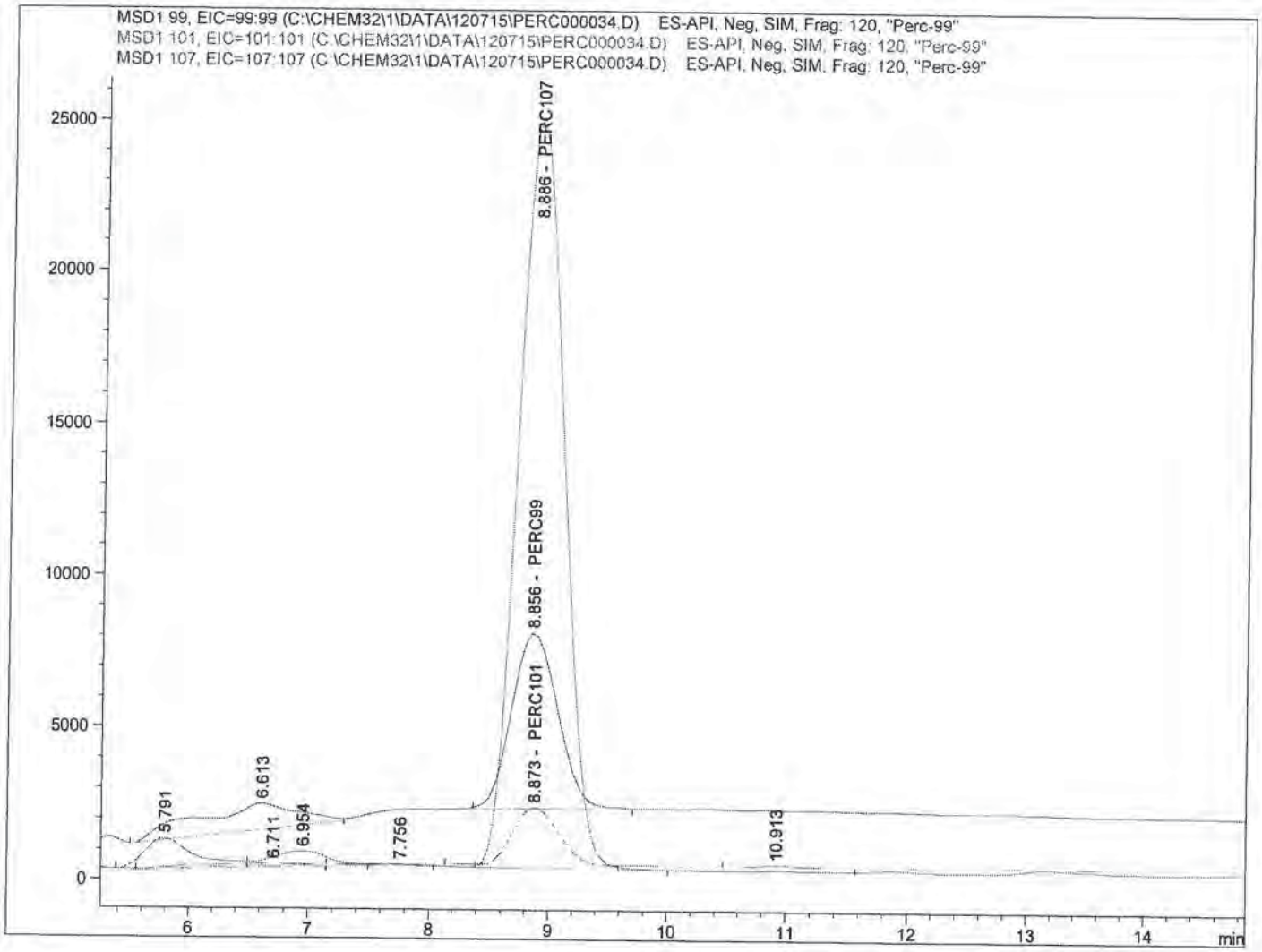

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:46:16 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-8-15

SP
12/9/15

Data File C:\CHEM32\1\DATA\120715\PERC000034.D
Sample Name: SEQ-LCV5

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/8/2015 2:53:35 AM

Seq. Line : 34
Location : Vial 4
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:46:48 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.856	BB	1	1.55476e5	8.48638e-1	1.00086		PERC99

Totals without ISTD(s) : 1.00086

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.873	BV	1	5.09008e4	2.60545	1.00600		PERC101

Totals without ISTD(s) : 1.00600

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.886	BBA I	1	6.59144e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000035.D
Sample Name: SEQ-LCV6

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/8/2015 3:11:24 AM

Seq. Line : 35
Location : Vial 83
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:52:59 AM
(modified after loading)

==========

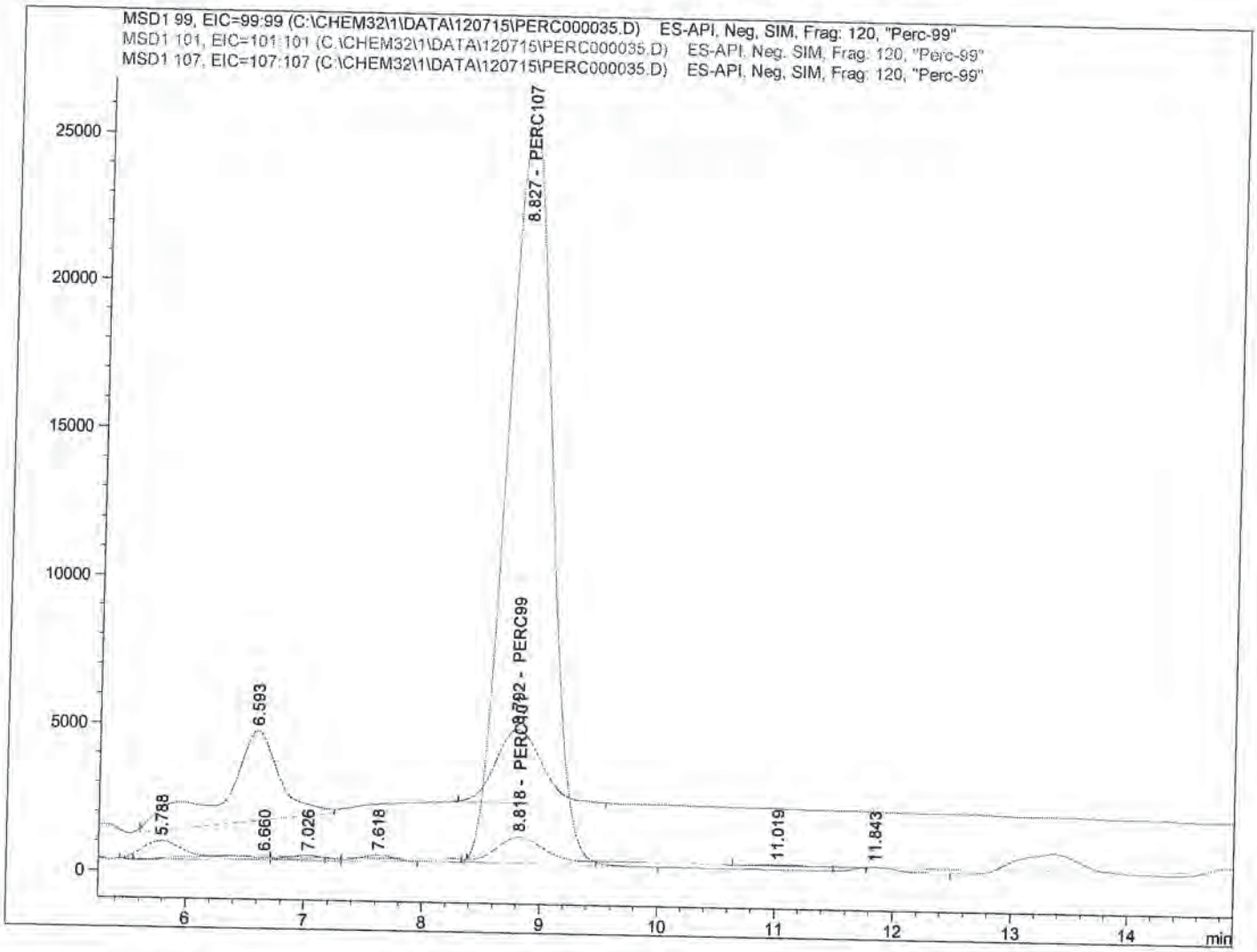

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:46:16 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

RDW 12-8-15

SP 12/9/15

Data File C:\CHEM32\1\DATA\120715\PERC000035.D
Sample Name: SEQ-LCV6

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/8/2015 3:11:24 AM

Seq. Line : 35
Location : Vial 83
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:52:59 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.792	BB	1	6.73815e4	8.48638e-1	4.35406e-1		PERC99

Totals without ISTD(s) : 4.35406e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.818	VV	1	2.07169e4	2.60545	4.10996e-1		PERC101

Totals without ISTD(s) : 4.10996e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.827	BBA I	1	6.56658e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Print of all graphic windows
Data File : C:\CHEM32\1\DATA\120415\PERC000002.D
Sample Name : SEQ-TUN1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/4/2015 3:23:35 PM

Seq. Line : 2
Location : Vial 1
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_SC
Last changed : 12/4/2015 2:35:18 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 11:18:25 AM
(modified after loading)

Current Chromatogram(s)

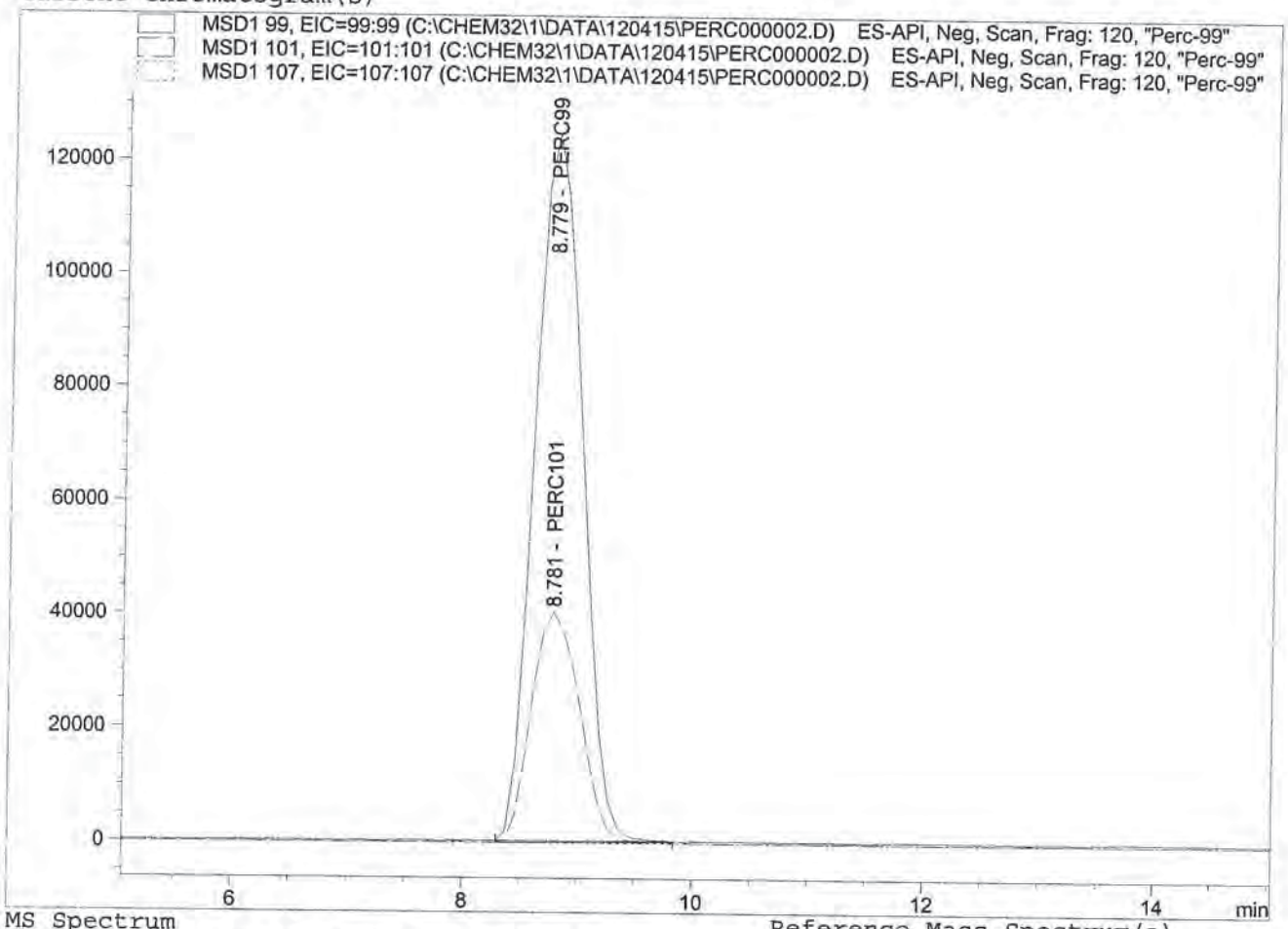

MS Spectrum

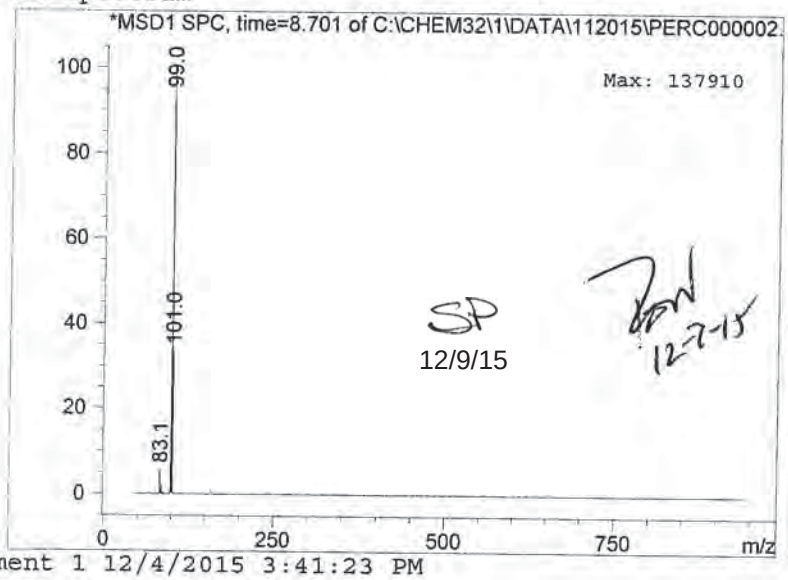

SP
12/9/15

12-7-15

Reference Mass Spectrum(a)

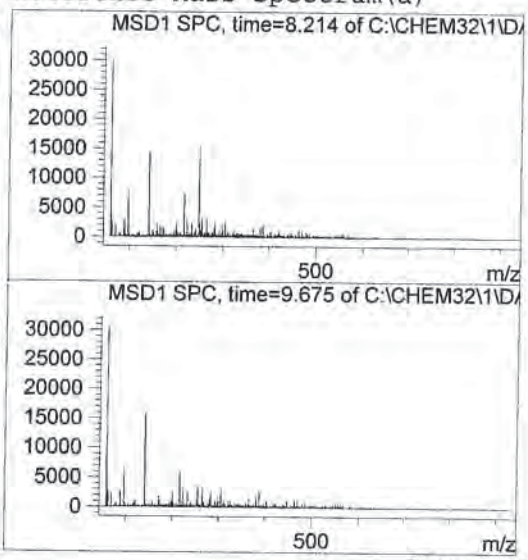

Data File C:\CHEM32\1\DATA\120415\PERC000002.D
Sample Name: SEQ-TUN1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/4/2015 3:23:35 PM

Seq. Line : 2
Location : Vial 1
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_SC
Last changed : 12/4/2015 2:35:18 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 11:18:25 AM
(modified after loading)

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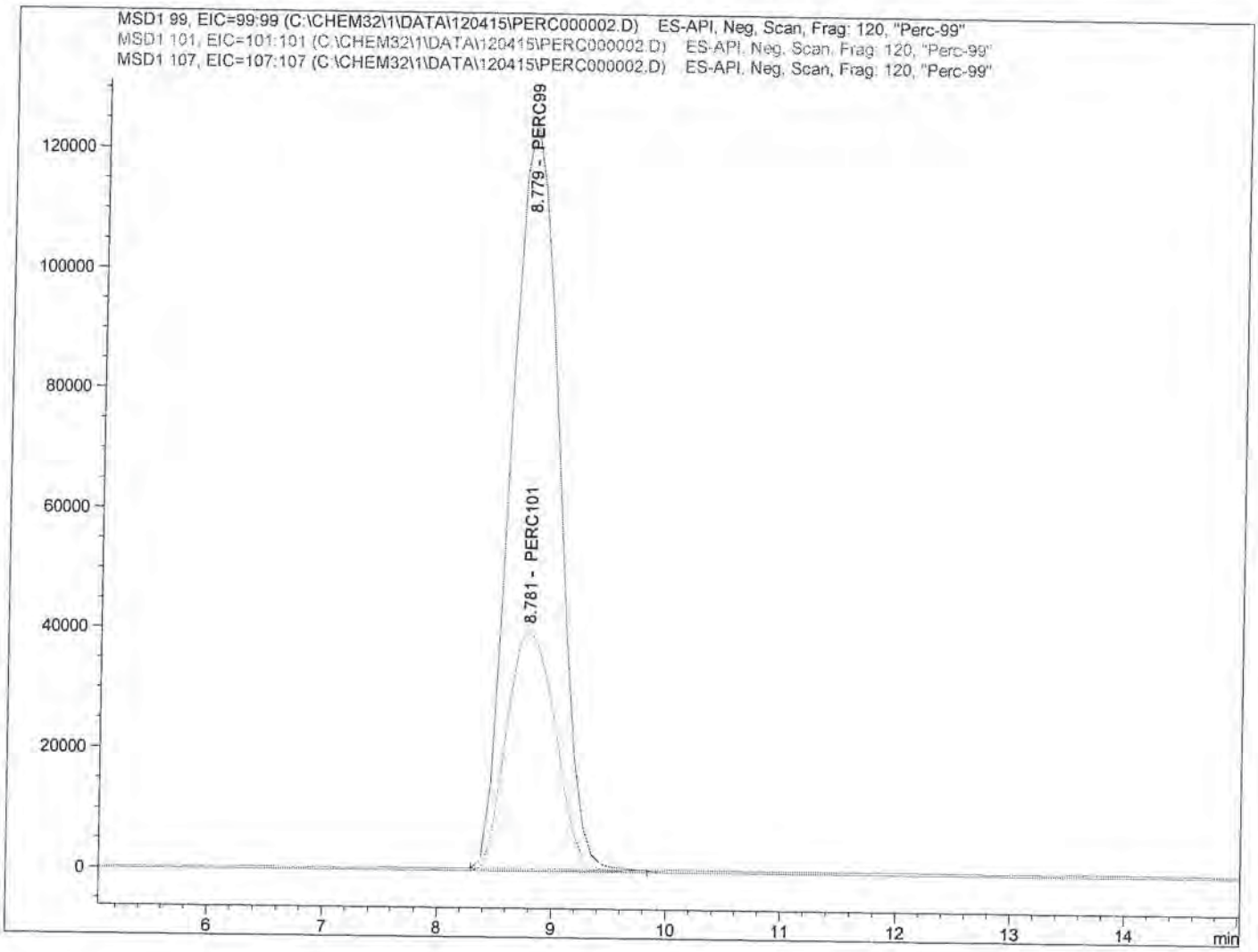

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : 12/3/2015 11:17:55 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000002.D
Sample Name: SEQ-TUN1

```
==================================================================
Acq. Operator   :                                Seq. Line :   2
Acq. Instrument : Instrument 1                    Location : Vial 1
Injection Date  : 12/4/2015 3:23:35 PM                 Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_SC
Last changed    : 12/4/2015 2:35:18 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/3/2015 11:18:25 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.779	BBA	1	3.54798e6	0.00000	0.00000		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.781	BBA	1	1.17920e6	0.00000	0.00000		PERC101

Totals without ISTD(s) : 0.00000

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.860		1	-	-	-		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : ISTD compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000005.D
Sample Name: SEQ-CCV1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/4/2015 4:17:10 PM

Seq. Line : 5
Location : Vial 3
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 11:18:25 AM
(modified after loading)

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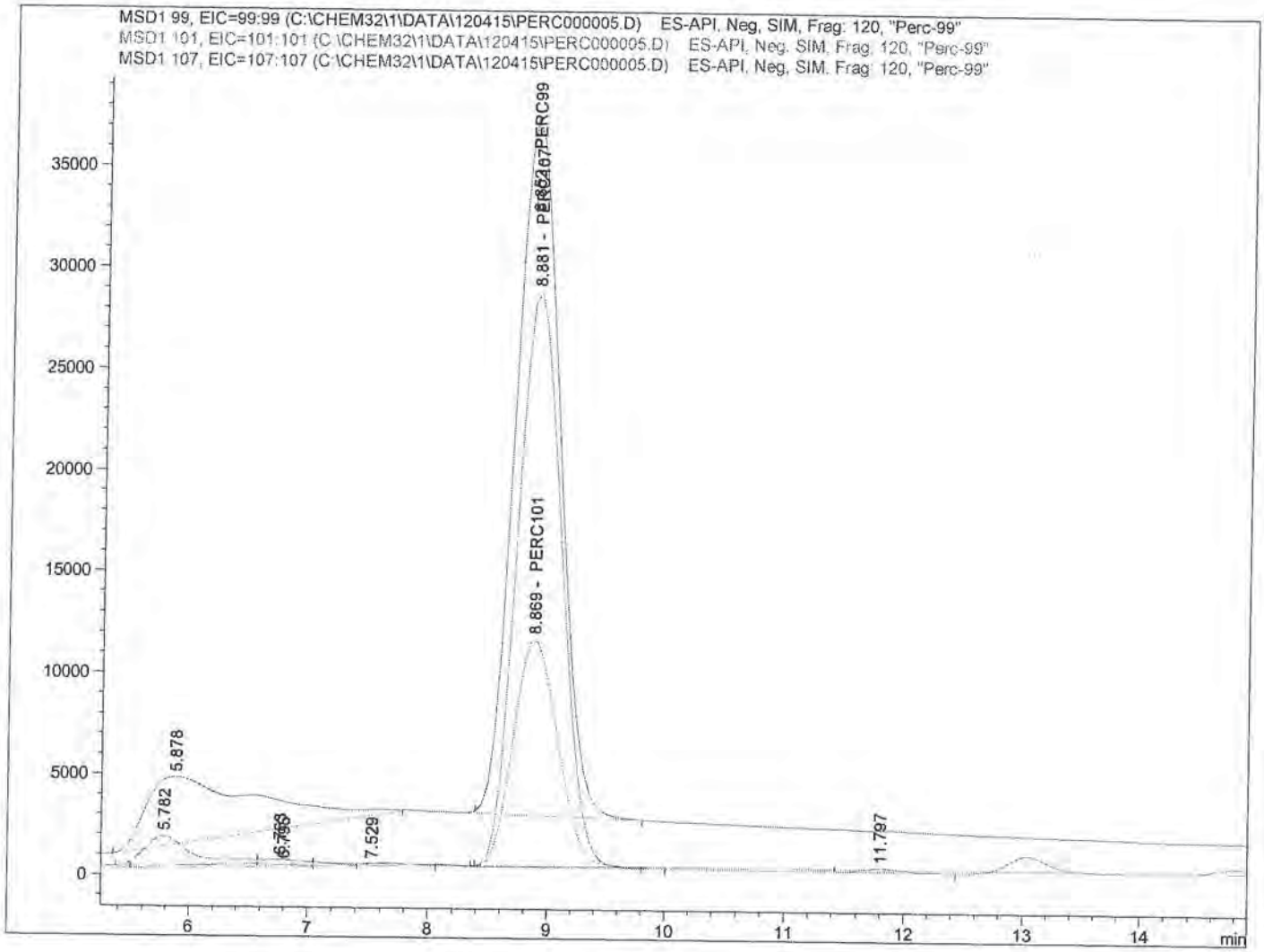

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Internal Standard Report

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SP
12/9/15

Sorted By : Signal
Calib. Data Modified : 12/3/2015 11:17:55 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000005.D
Sample Name: SEQ-CCV1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/4/2015 4:17:10 PM

Seq. Line : 5
Location : Vial 3
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 11:18:25 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.852	BBA	1	9.02830e5	8.48638e-1	5.14088		PERC99

Totals without ISTD(s) : 5.14088

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.869	BBA	1	2.94125e5	2.60545	5.14189		PERC101

Totals without ISTD(s) : 5.14189

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.881	VBA I	1	7.45180e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

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*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000006.D
Sample Name: SEQ-LCV1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/4/2015 4:35:03 PM

Seq. Line : 6
Location : Vial 4
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 11:18:25 AM
(modified after loading)

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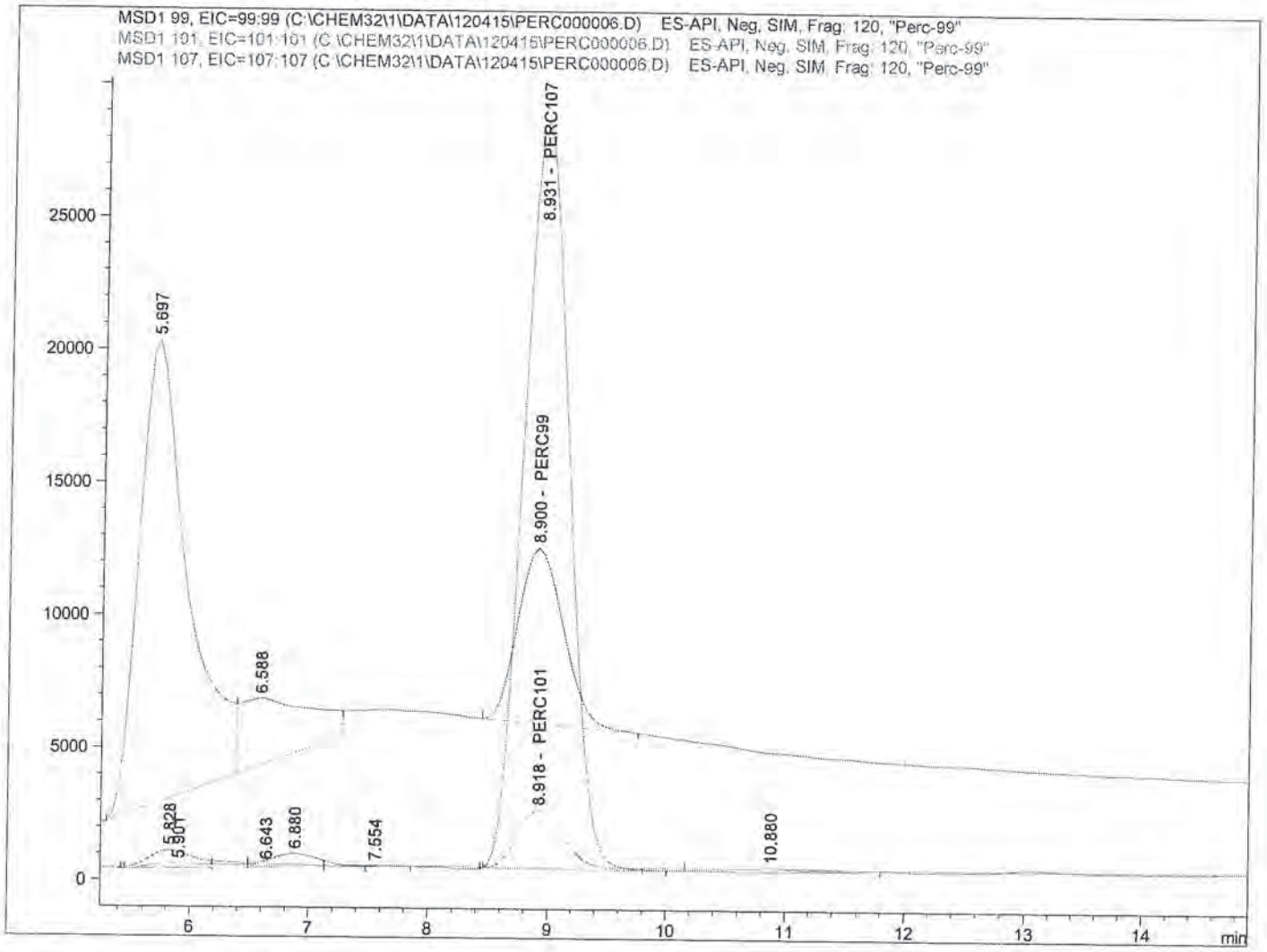

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Internal Standard Report

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SP
12/9/15

Sorted By : Signal
Calib. Data Modified : 12/3/2015 11:17:55 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

Pond 12-7-15

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\120415\PERC000006.D
Sample Name: SEQ-LCV1

```
==================================================================
Acq. Operator   :                                Seq. Line :   6
Acq. Instrument : Instrument 1                    Location : Vial 4
Injection Date  : 12/4/2015 4:35:03 PM                 Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/3/2015 11:18:25 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.900	BB	1	1.77304e5	8.48638e-1	1.00150		PERC99

Totals without ISTD(s) : 1.00150

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.918	BBA	1	5.77441e4	2.60545	1.00138		PERC101

Totals without ISTD(s) : 1.00138

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.931	BBA I	1	7.51208e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

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*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000007.D
Sample Name: SEQ-LCV2

==========

Acq. Operator : Seq. Line : 7
Acq. Instrument : Instrument 1 Location : Vial 83
Injection Date : 12/4/2015 4:52:47 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/4/2015 5:14:28 PM
(modified after loading)

==========

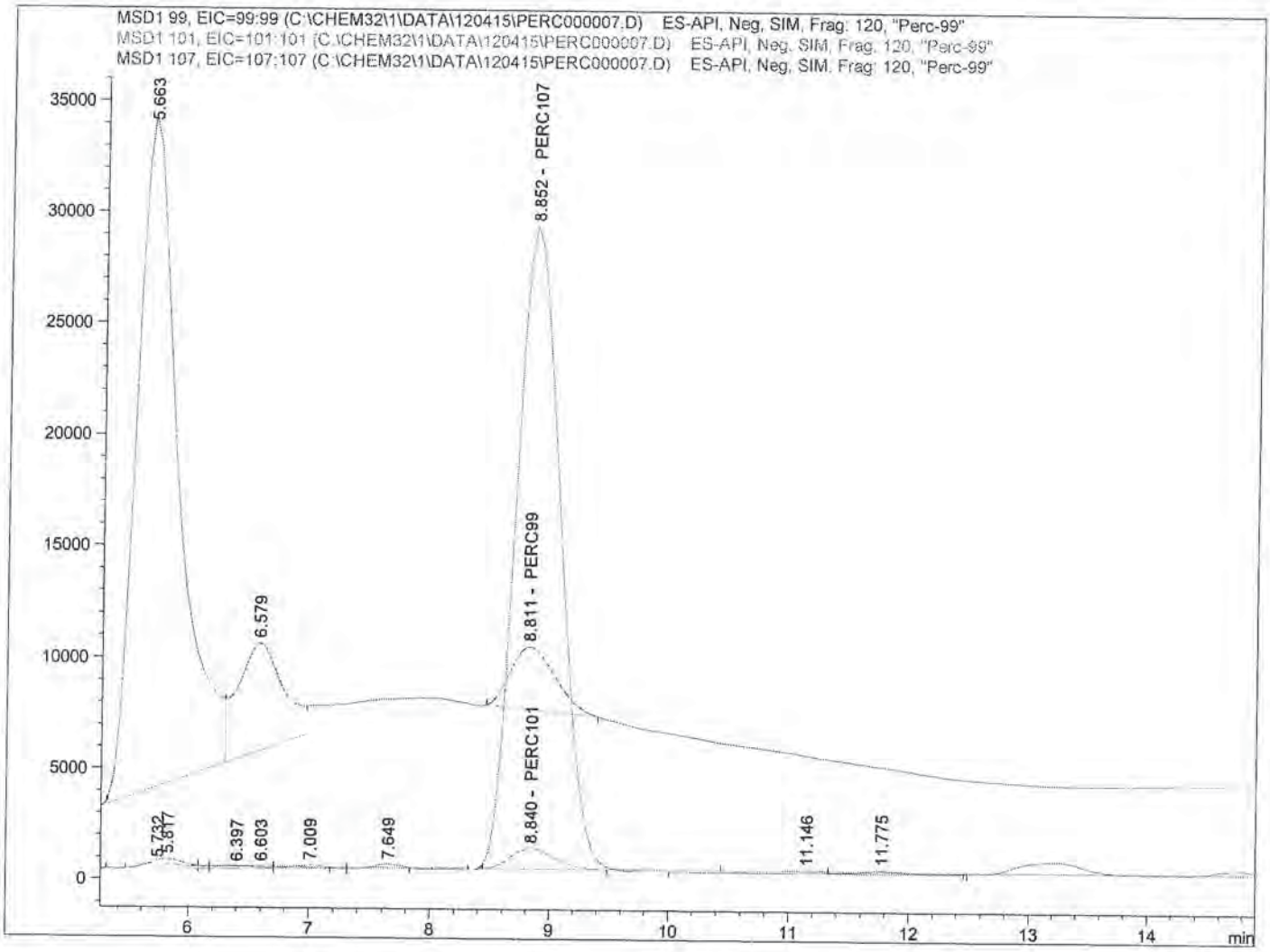

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Internal Standard Report

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SP
12/9/15

Sorted By : Signal
Calib. Data Modified : 12/3/2015 11:17:55 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000007.D
Sample Name: SEQ-LCV2

==========

Acq. Operator :
Seq. Line : 7
Acq. Instrument : Instrument 1
Location : Vial 83
Injection Date : 12/4/2015 4:52:47 PM
Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/4/2015 5:14:28 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.811	BBA	1	7.32641e4	8.48638e-1	4.11548e-1		PERC99

Totals without ISTD(s) : 4.11548e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.840	BV	1	2.36895e4	2.60545	4.08549e-1		PERC101

Totals without ISTD(s) : 4.08549e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.852	VBA I	1	7.55377e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000008.D
Sample Name: SEQ-IFA1

==========

Acq. Operator : Seq. Line : 8
Acq. Instrument : Instrument 1 Location : Vial 5
Injection Date : 12/4/2015 5:10:48 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 11:54:15 AM
(modified after loading)

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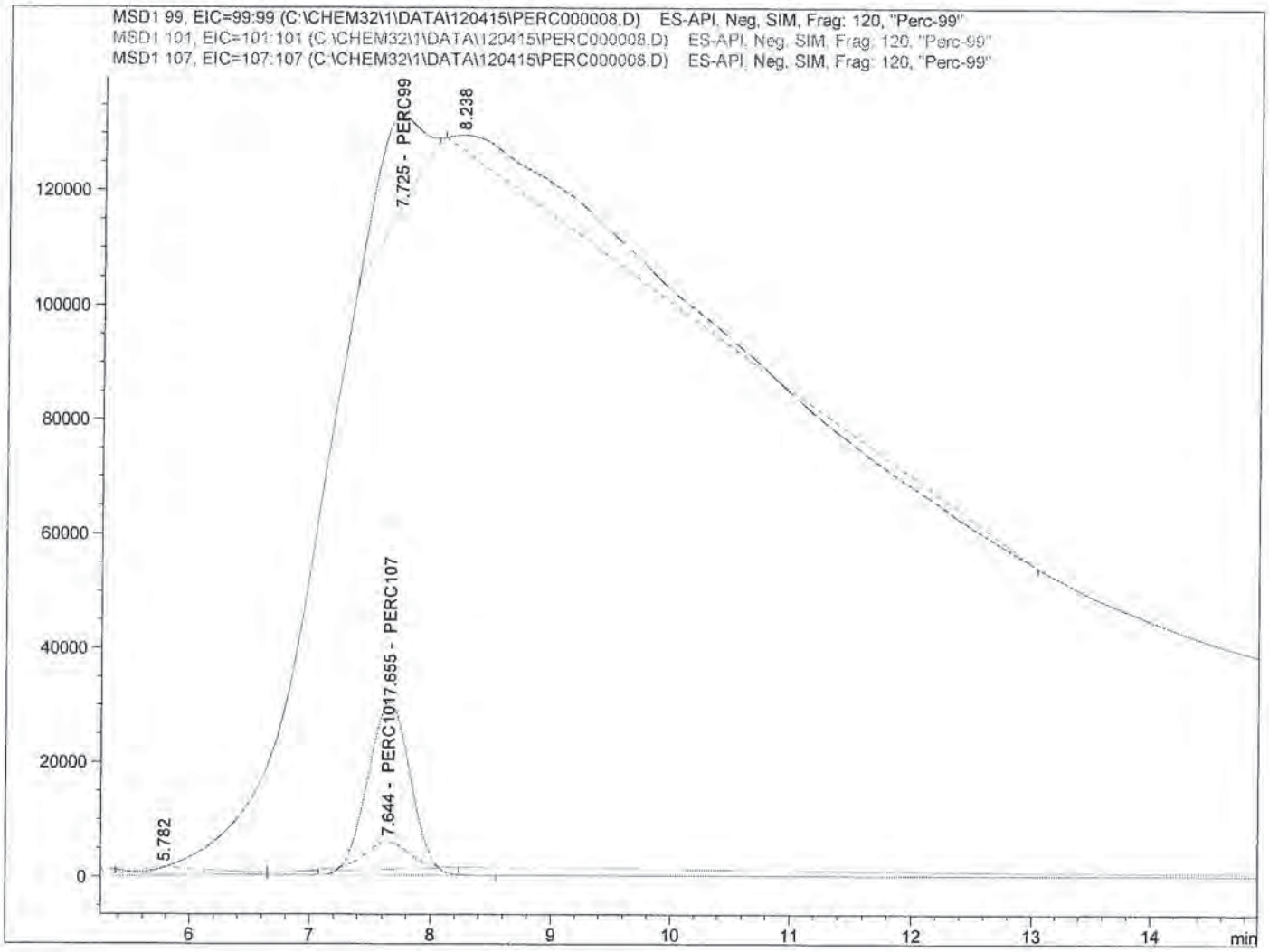

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Internal Standard Report

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SP
12/9/15

Sorted By : Signal
Calib. Data Modified : 12/5/2015 11:53:01 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

PDW
12-7-15

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\120415\PERC000008.D
Sample Name: SEQ-IFA1

==========

Acq. Operator : Seq. Line : 8
Acq. Instrument : Instrument 1 Location : Vial 5
Injection Date : 12/4/2015 5:10:48 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 11:54:15 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
7.725	BBA	1	3.92685e5	8.48638e-1	2.24674		PERC99

Totals without ISTD(s) : 2.24674

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
7.644	VBA	1	1.28427e5	2.60545	2.25592		PERC101

Totals without ISTD(s) : 2.25592

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
7.655	BBA I	1	7.41624e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

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*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000011.D
Sample Name: 1511269-01@5

==========

Acq. Operator : Seq. Line : 11
Acq. Instrument : Instrument 1 Location : Vial 6
Injection Date : 12/4/2015 6:04:17 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 12:19:44 PM
(modified after loading)

==========

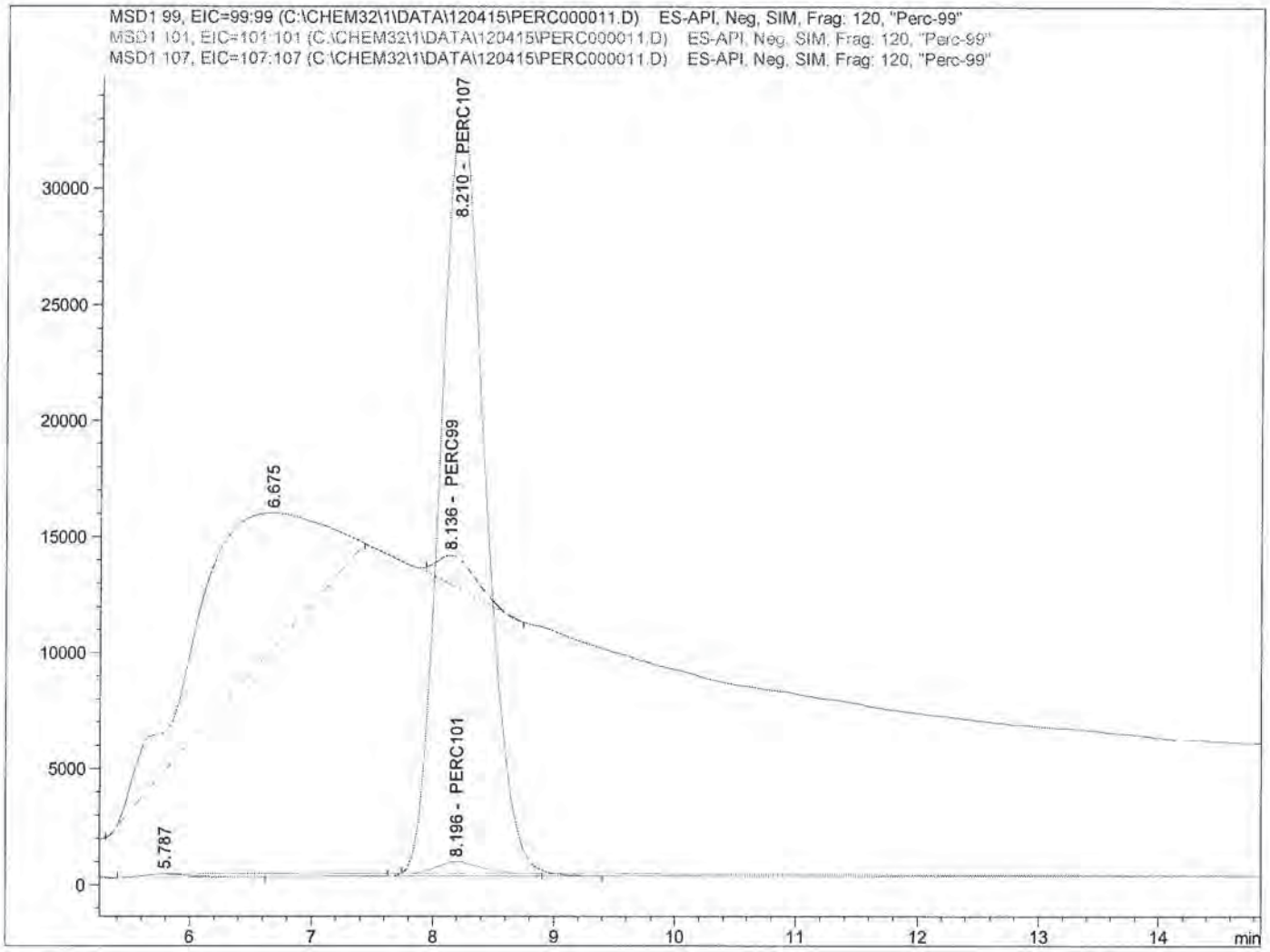

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Internal Standard Report

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SP
12/9/15

Sorted By : Signal
Calib. Data Modified : 12/5/2015 12:16:32 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

RDW
12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000011.D
Sample Name: 1511269-01@5

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/4/2015 6:04:17 PM

Seq. Line : 11
Location : Vial 6
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 12:19:44 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.136	BBA	1	2.80634e4	8.48638e-1	1.40073e-1		PERC99

Totals without ISTD(s) : 1.40073e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.196	BV	1	1.28386e4	2.60545	1.96738e-1		PERC101

Totals without ISTD(s) : 1.96738e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.210	BBA I	1	8.50119e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000012.D
Sample Name: 5L01021-MS1@5

==========

Acq. Operator : Seq. Line : 12
Acq. Instrument : Instrument 1 Location : Vial 7
Injection Date : 12/4/2015 6:22:05 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 12:19:44 PM
(modified after loading)

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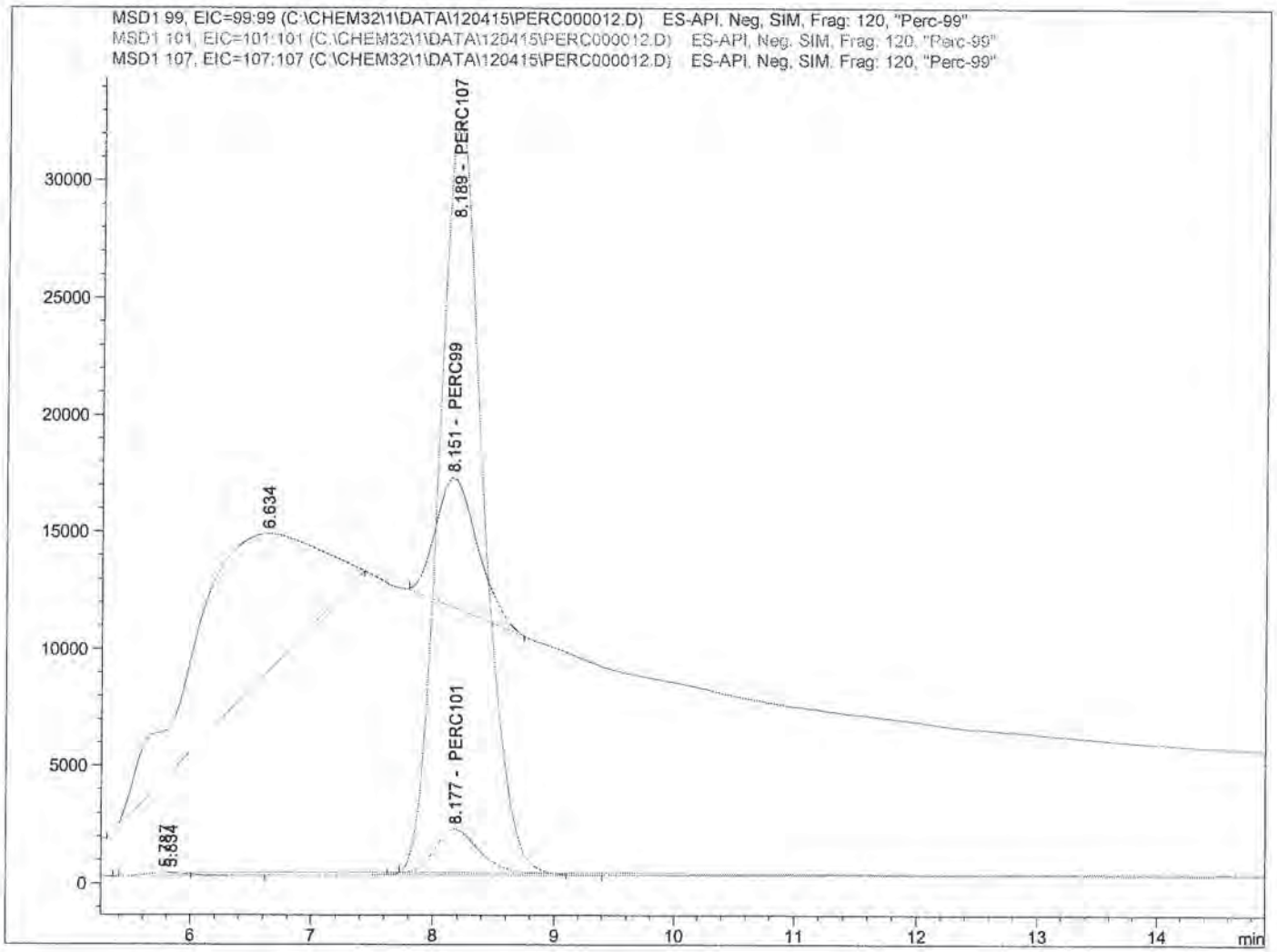

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : 12/5/2015 12:16:32 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000012.D
Sample Name: 5L01021-MS1@5

==========

Acq. Operator : Seq. Line : 12
Acq. Instrument : Instrument 1 Location : Vial 7
Injection Date : 12/4/2015 6:22:05 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 12:19:44 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.151	BBA	1	1.33738e5	8.48638e-1	6.94116e-1		PERC99

Totals without ISTD(s) : 6.94116e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.177	BB	1	4.60720e4	2.60545	7.34130e-1		PERC101

Totals without ISTD(s) : 7.34130e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.189	BBA I	1	8.17554e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000013.D
Sample Name: 5L01021-MSD1@5

==========

Acq. Operator :
Seq. Line : 13
Acq. Instrument : Instrument 1
Location : Vial 8
Injection Date : 12/4/2015 6:39:51 PM
Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 12:19:44 PM
(modified after loading)

==========

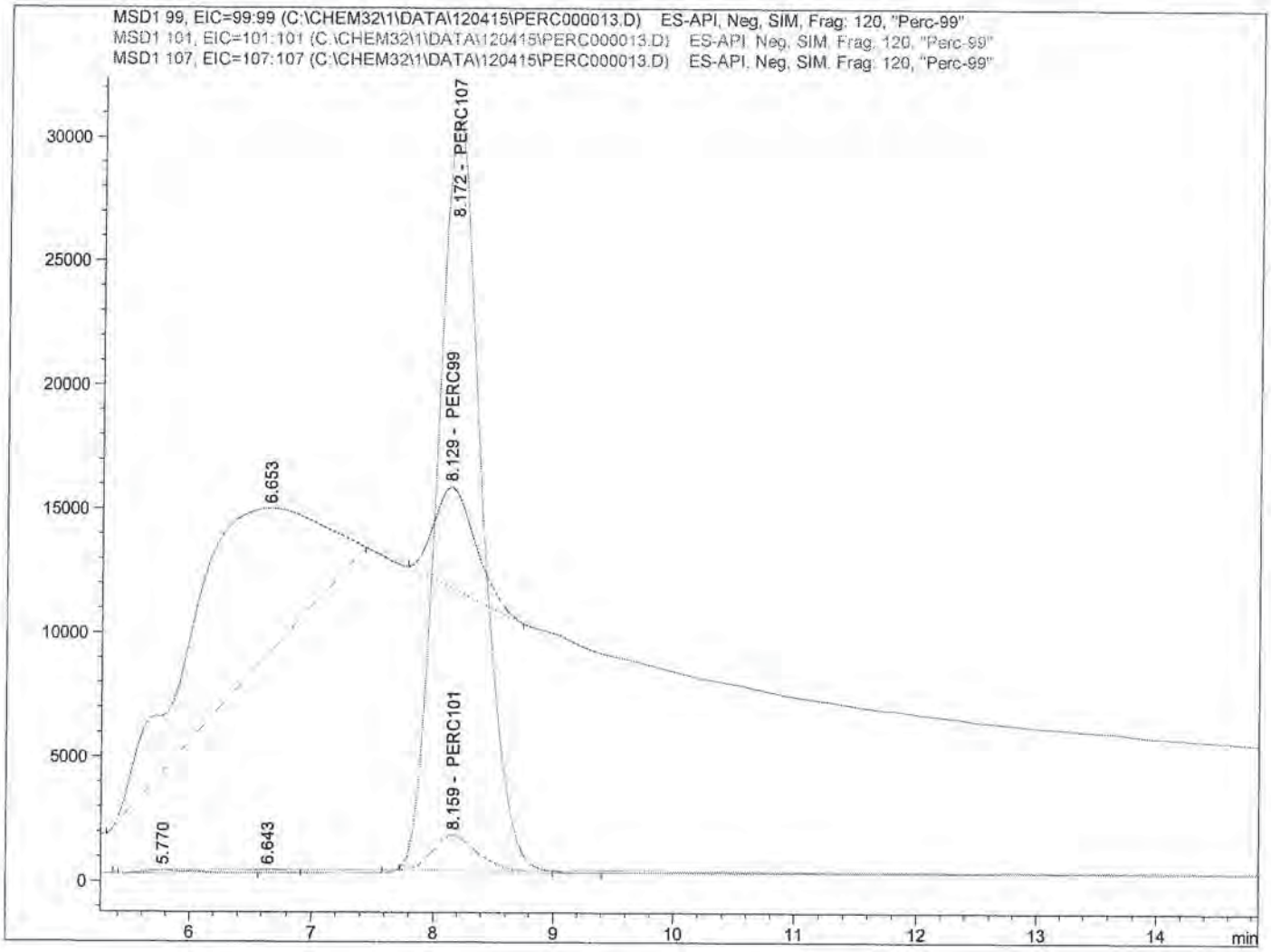

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/5/2015 12:16:32 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000013.D
Sample Name: 5L01021-MSD1@5

==========

Acq. Operator : Seq. Line : 13
Acq. Instrument : Instrument 1 Location : Vial 8
Injection Date : 12/4/2015 6:39:51 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 12:19:44 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.129	BBA	1	9.69694e4	8.48638e-1	5.30408e-1		PERC99

Totals without ISTD(s) : 5.30408e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.159	BB	1	3.53944e4	2.60545	5.94386e-1		PERC101

Totals without ISTD(s) : 5.94386e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.172	BBA I	1	7.75742e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000014.D
Sample Name: 1511269-06@5

Acq. Operator	:	Seq. Line	: 14
Acq. Instrument	: Instrument 1	Location	: Vial 9
Injection Date	: 12/4/2015 6:57:39 PM	Inj	: 1
		Inj Volume	: 100.0 µl
Acq. Method	: C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M		
Last changed	: 12/4/2015 2:39:26 PM		
Analysis Method	: C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M		
Last changed	: 12/5/2015 12:19:44 PM (modified after loading)		

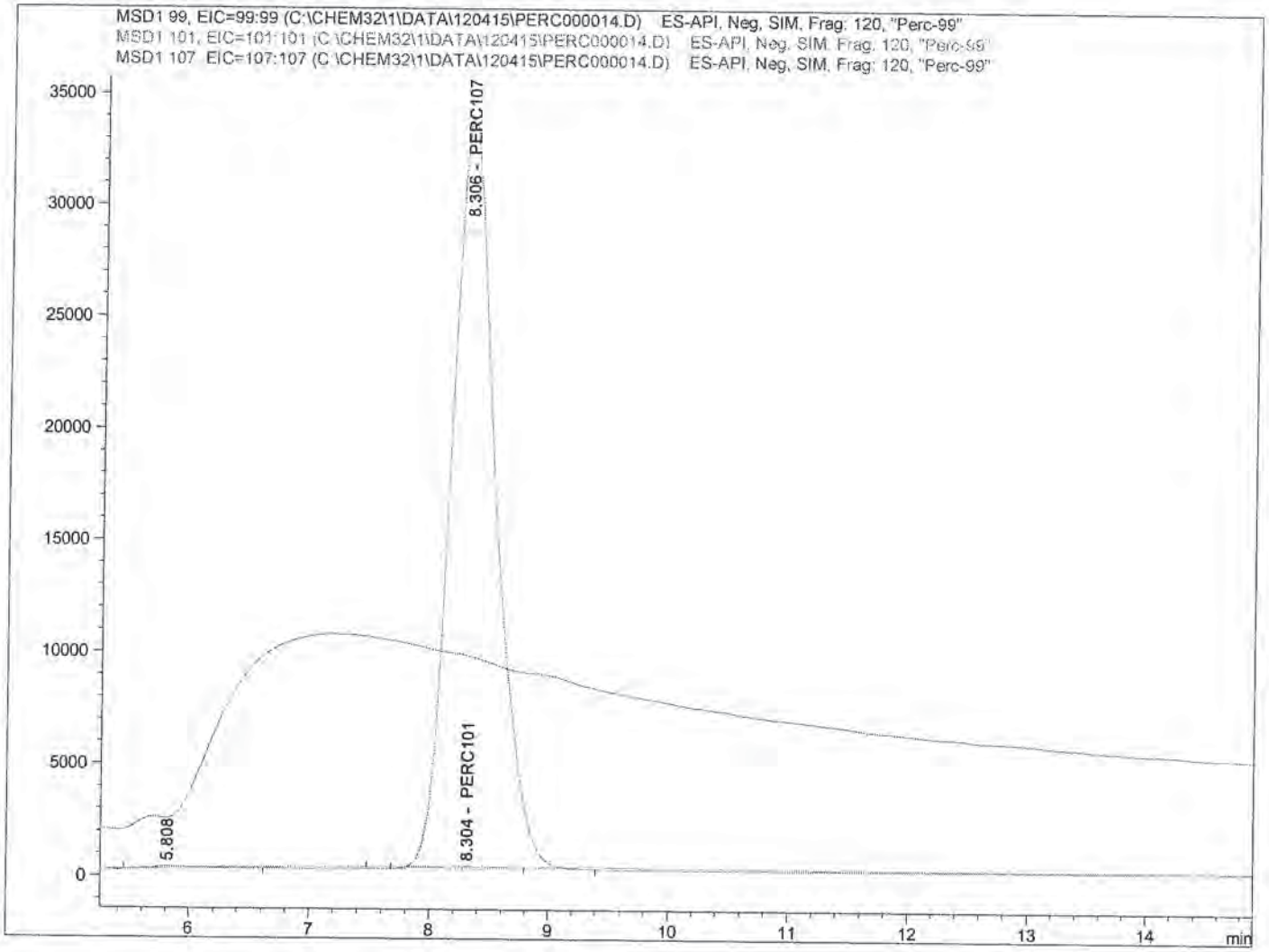

Internal Standard Report

Sorted By	:	Signal
Calib. Data Modified	:	12/5/2015 12:16:32 PM
Multiplier	:	1.0000
Dilution	:	1.0000

Do not use Multiplier & Dilution Factor with ISTDs

Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000014.D
Sample Name: 1511269-06@5

==========

Acq. Operator : Seq. Line : 14
Acq. Instrument : Instrument 1 Location : Vial 9
Injection Date : 12/4/2015 6:57:39 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 12:19:44 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.210		1	-	-	-		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.304	BV	1	1488.96106	2.60545	2.22984e-2		PERC101

Totals without ISTD(s) : 2.22984e-2

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.306	BBA I	1	8.69886e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000015.D
Sample Name: 1511269-07@50

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/4/2015 7:15:36 PM

Seq. Line : 15
Location : Vial 10
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 12:23:37 PM
(modified after loading)

==========

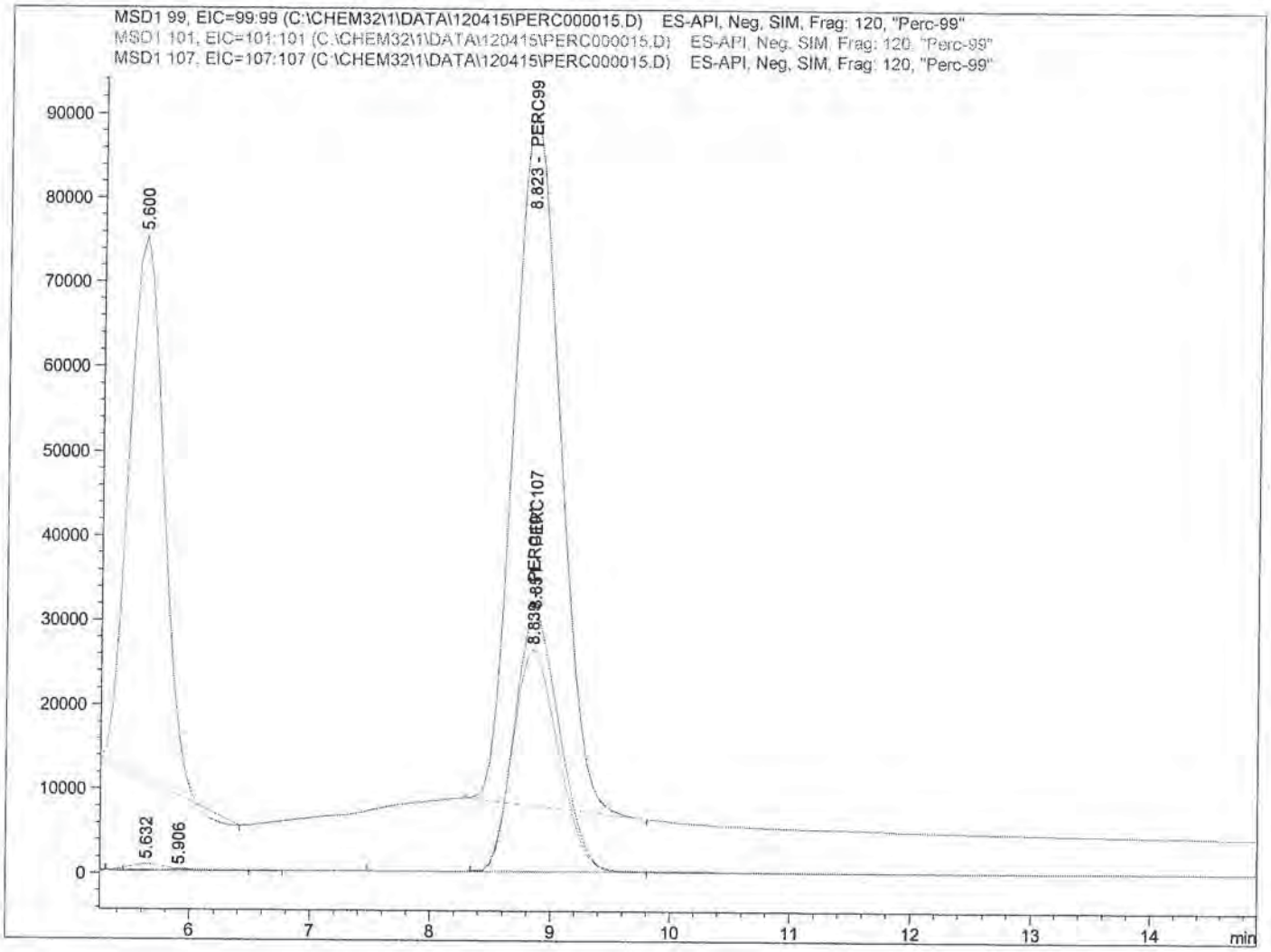

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/5/2015 12:22:34 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000015.D
Sample Name: 1511269-07@50

==========

Acq. Operator : Seq. Line : 15
Acq. Instrument : Instrument 1 Location : Vial 10
Injection Date : 12/4/2015 7:15:36 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 12:23:37 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.823	BBA	1	2.17249e6	8.48638e-1	11.58889		PERC99

Totals without ISTD(s) : 11.58889

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.839	BBA	1	6.89596e5	2.60545	11.29374		PERC101

Totals without ISTD(s) : 11.29374

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.851	BBA I	1	7.95443e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

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*** End of Report ***

217249 / 795443 / 1.17836 x 5 = 11.58886048 x 50 = 579.44

Data File C:\CHEM32\1\DATA\120415\PERC000016.D
Sample Name: 1511269-08@10

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/4/2015 7:33:28 PM

Seq. Line : 16
Location : Vial 11
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/7/2015 10:17:33 AM
(modified after loading)

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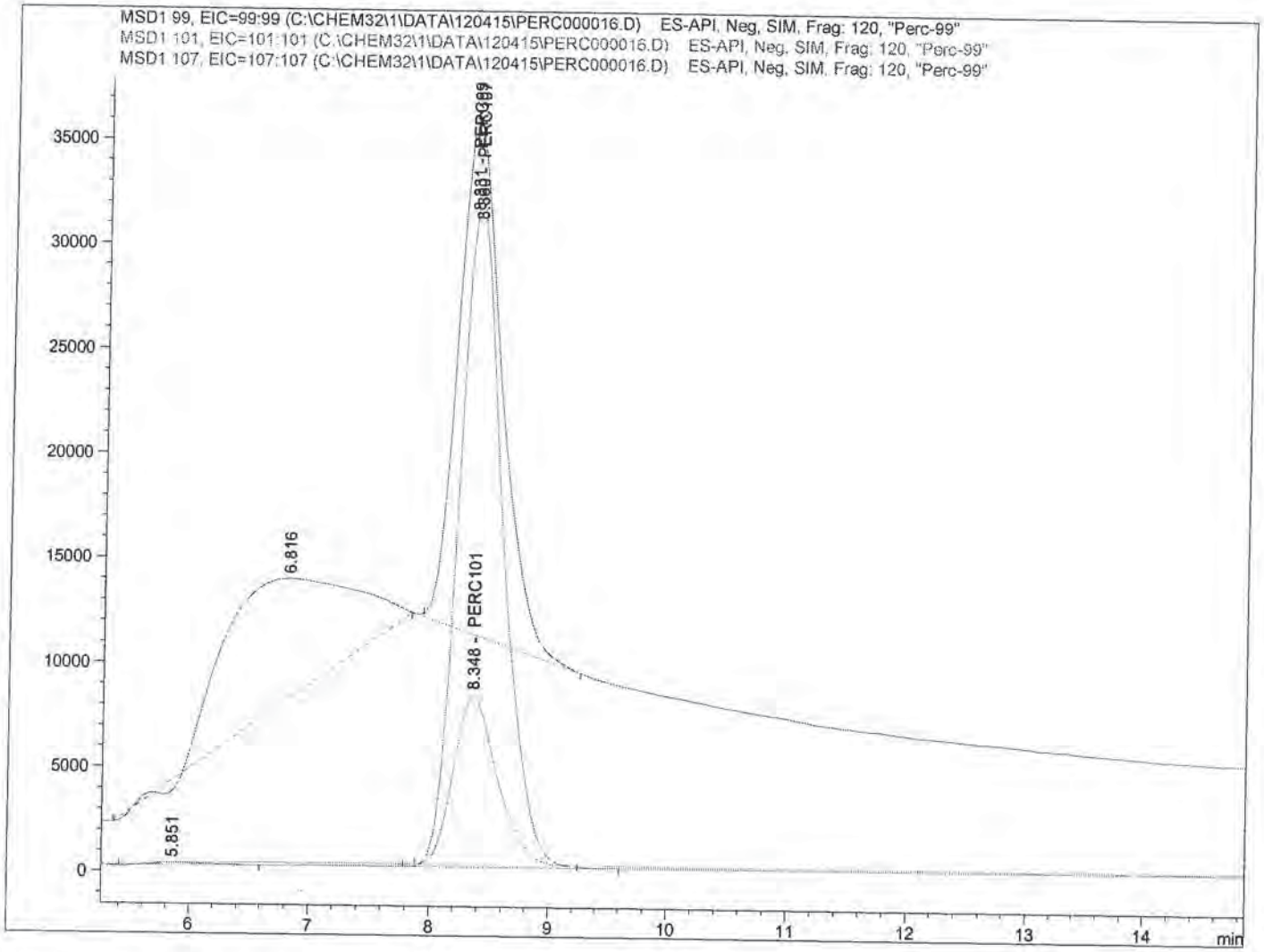

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : 12/7/2015 10:16:40 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

RW
12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000016.D
Sample Name: 1511269-08@10

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/4/2015 7:33:28 PM

Seq. Line : 16
Location : Vial 11
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/7/2015 10:17:33 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.331	BBA	1	6.18903e5	8.48638e-1	3.24255		PERC99

Totals without ISTD(s) : 3.24255

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.348	BBA	1	2.04505e5	2.60545	3.28949		PERC101

Totals without ISTD(s) : 3.28949

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.360	BBA I	1	8.09895e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000023.D
Sample Name: 1511269-04

==========

Acq. Operator : Seq. Line : 23
Acq. Instrument : Instrument 1 Location : Vial 18
Injection Date : 12/4/2015 9:38:16 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 3:58:10 PM
(modified after loading)

==========

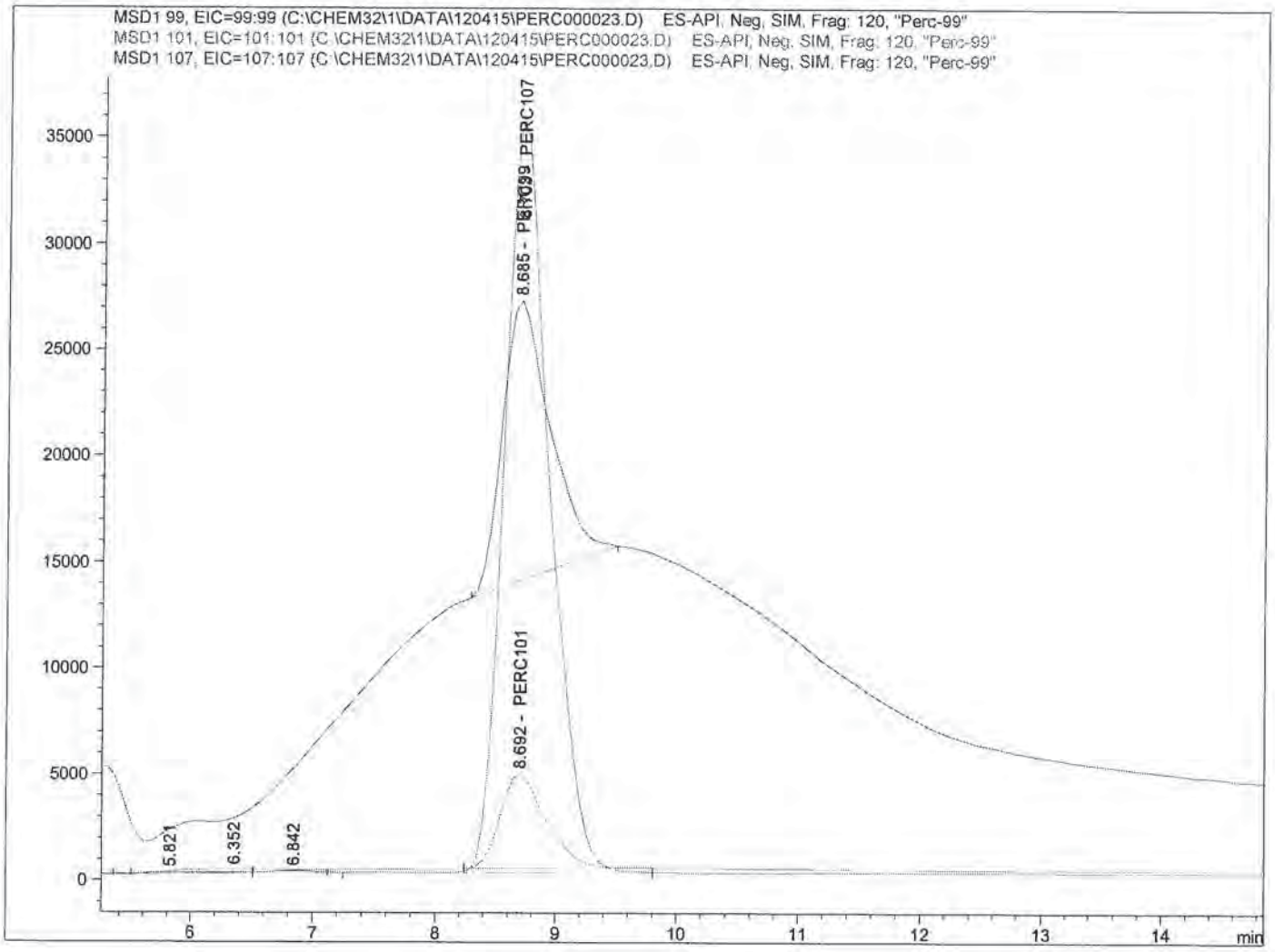

SP
12/9/15

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/5/2015 1:46:13 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

Pond 12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000023.D
Sample Name: 1511269-04

```
==================================================================
Acq. Operator   :                                  Seq. Line :  23
Acq. Instrument : Instrument 1                      Location : Vial 18
Injection Date  : 12/4/2015 9:38:16 PM                  Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/5/2015 3:58:10 PM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.685	BBA	1	3.60706e5	8.48638e-1	1.63727		PERC99

Totals without ISTD(s) : 1.63727

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.692	BBA	1	1.18492e5	2.60545	1.65125		PERC101

Totals without ISTD(s) : 1.65125

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.703	BBA I	1	9.34815e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000025.D
Sample Name: 1511269-10@5

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/4/2015 10:13:54 PM

Seq. Line : 25
Location : Vial 20
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:02:19 PM
(modified after loading)

==========

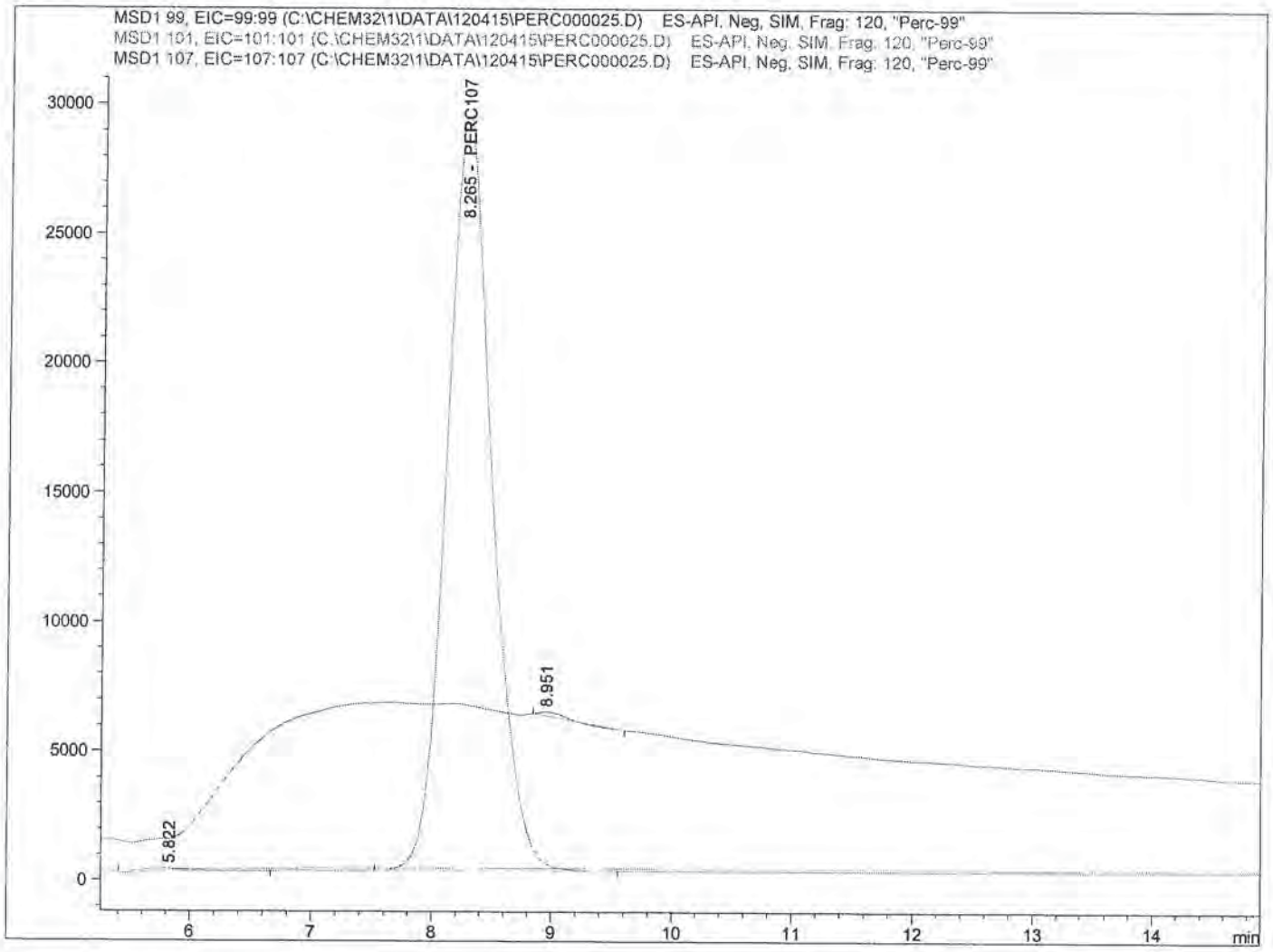

==========

Internal Standard Report

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SP
12/9/15

Sorted By : Signal
Calib. Data Modified : 12/5/2015 4:02:19 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000025.D
Sample Name: 1511269-10@5

==========

Acq. Operator : Seq. Line : 25
Acq. Instrument : Instrument 1 Location : Vial 20
Injection Date : 12/4/2015 10:13:54 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:02:19 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.260		1	-	-	-		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.260		1	-	-	-		PERC101

Totals without ISTD(s) : 0.00000

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.265	BB I	1	7.75288e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000027.D
Sample Name: SEQ-CCV2

==========

Acq. Operator : Seq. Line : 27
Acq. Instrument : Instrument 1 Location : Vial 3
Injection Date : 12/4/2015 10:49:37 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:06:17 PM
(modified after loading)

==========

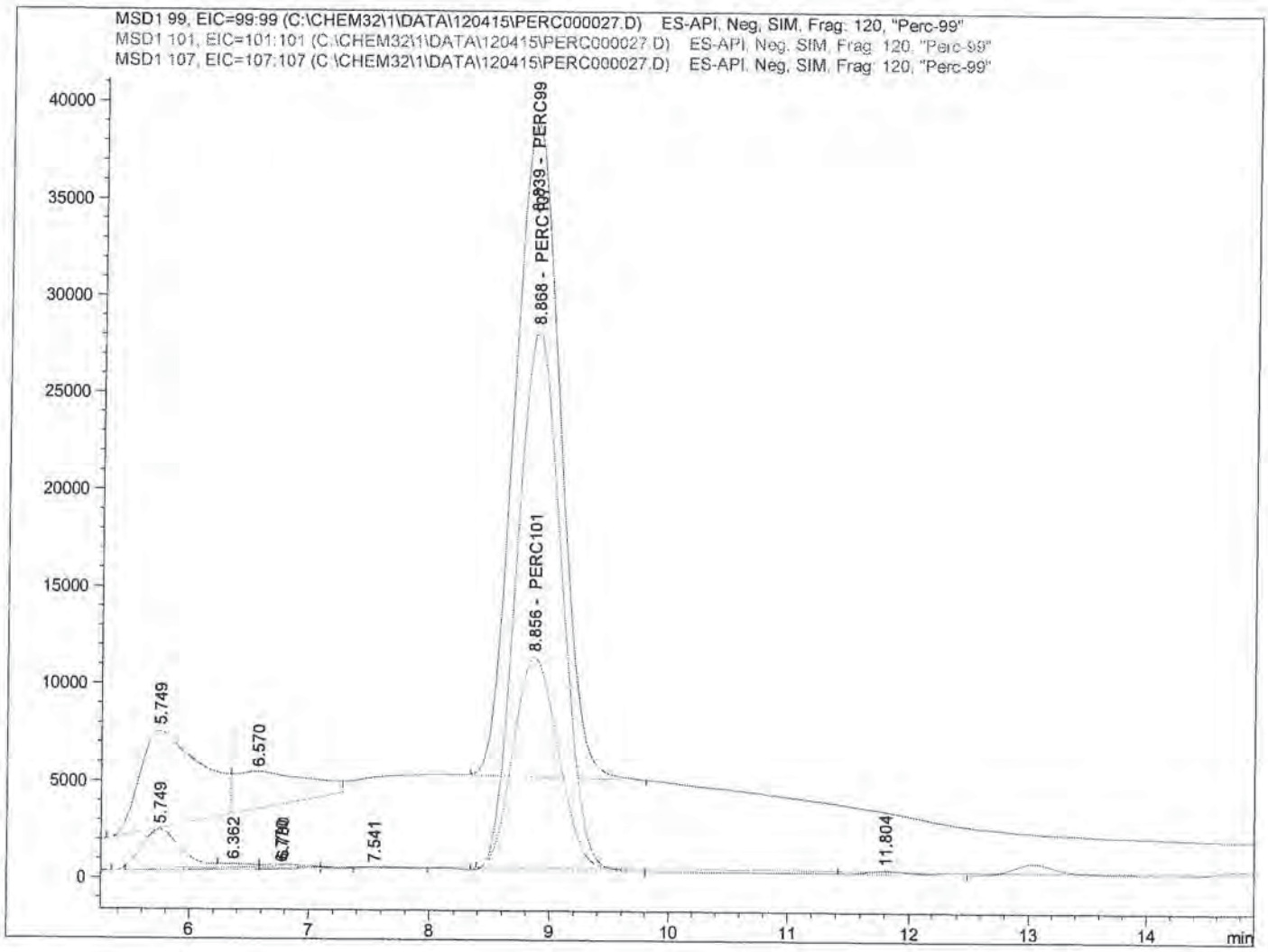

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Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/5/2015 4:05:44 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000027.D
Sample Name: SEQ-CCV2

```
==================================================================
Acq. Operator   :                                  Seq. Line :  27
Acq. Instrument : Instrument 1                      Location : Vial 3
Injection Date  : 12/4/2015 10:49:37 PM                  Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/5/2015 4:06:17 PM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.839	BBA	1	8.91130e5	8.48638e-1	5.21787		PERC99

Totals without ISTD(s) : 5.21787

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.856	BBA	1	2.84917e5	2.60545	5.12188		PERC101

Totals without ISTD(s) : 5.12188

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.868	VBA I	1	7.24671e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000028.D
Sample Name: SEQ-LCV3

==========

Acq. Operator : Seq. Line : 28
Acq. Instrument : Instrument 1 Location : Vial 4
Injection Date : 12/4/2015 11:07:26 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:06:17 PM
(modified after loading)

==========

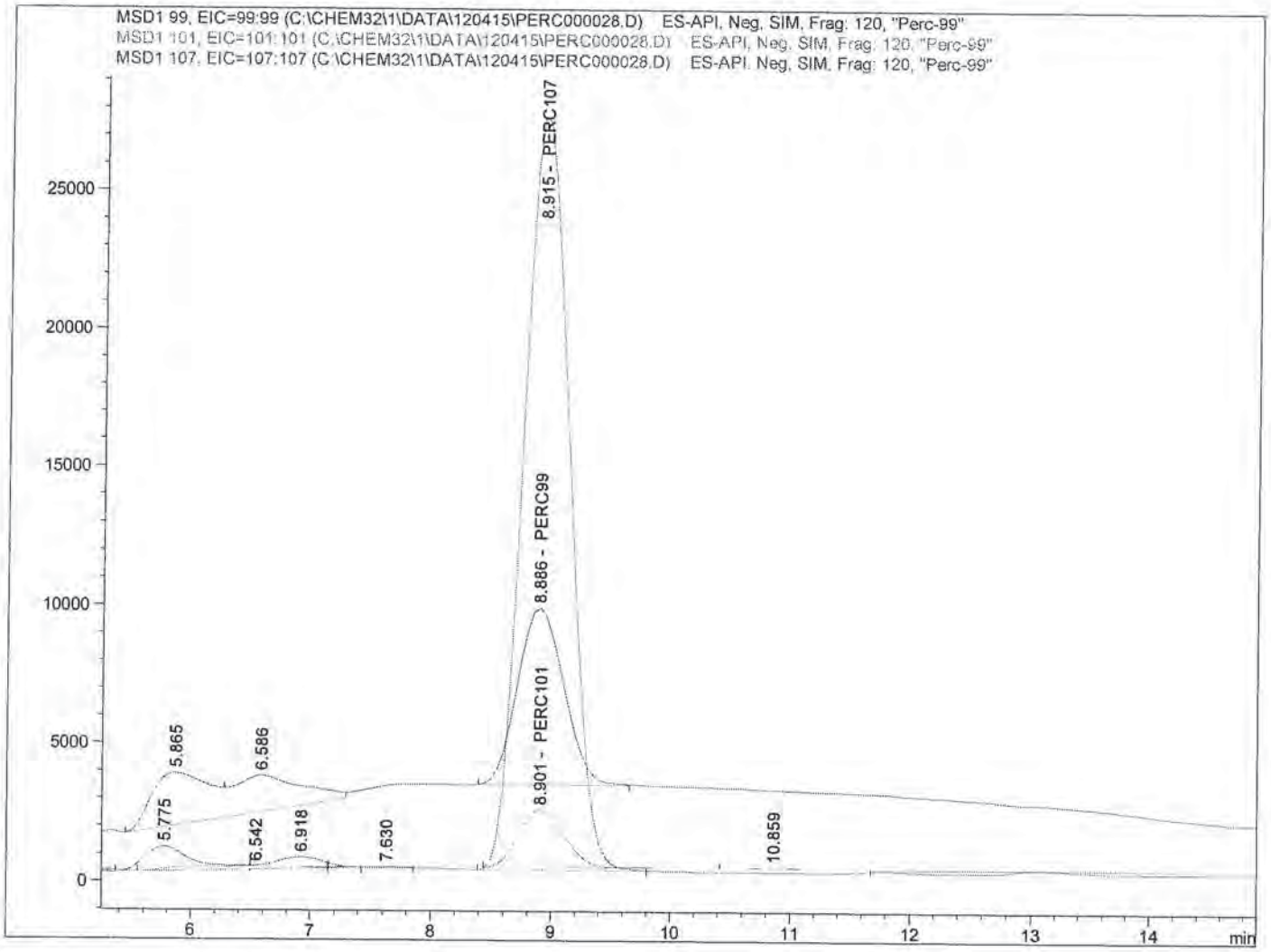

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/5/2015 4:05:44 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000028.D
Sample Name: SEQ-LCV3

==========

Acq. Operator : Seq. Line : 28
Acq. Instrument : Instrument 1 Location : Vial 4
Injection Date : 12/4/2015 11:07:26 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:06:17 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.886	BB	1	1.73164e5	8.48638e-1	1.01082		PERC99

Totals without ISTD(s) : 1.01082

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.901	BBA	1	5.52206e4	2.60545	9.89645e-1		PERC101

Totals without ISTD(s) : 9.89645e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.915	BBA I	1	7.26899e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000029.D
Sample Name: SEQ-LCV4

==========

Acq. Operator : Seq. Line : 29
Acq. Instrument : Instrument 1 Location : Vial 83
Injection Date : 12/4/2015 11:25:18 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:06:17 PM
(modified after loading)

==========

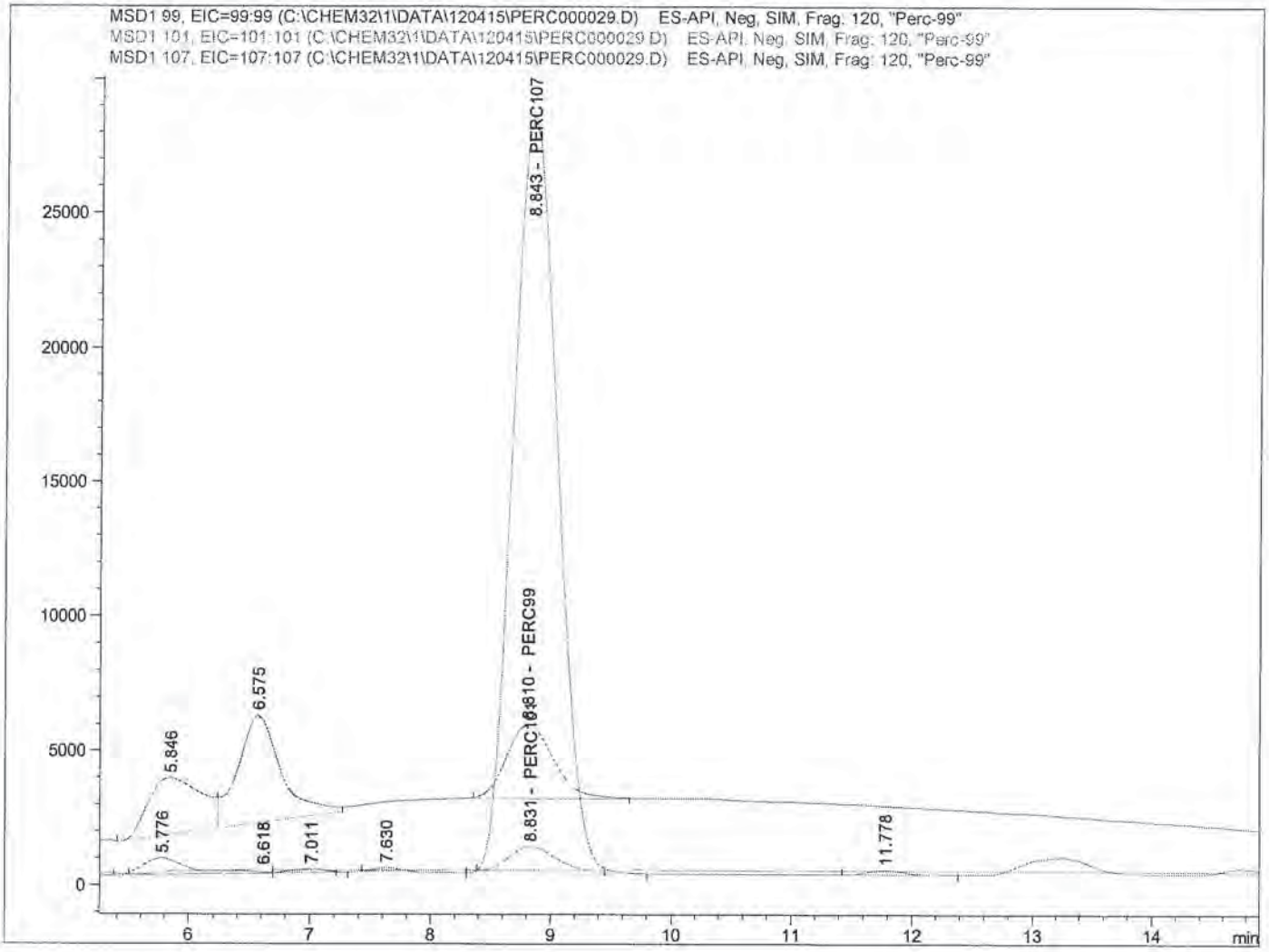

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/5/2015 4:05:44 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

12-7-15

SP
12/9/15

Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\120415\PERC000029.D
Sample Name: SEQ-LCV4

```
==================================================================
Acq. Operator   :                                  Seq. Line :  29
Acq. Instrument : Instrument 1                      Location : Vial 83
Injection Date  : 12/4/2015 11:25:18 PM                 Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/5/2015 4:06:17 PM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.810	BB	1	7.61508e4	8.48638e-1	4.41808e-1		PERC99

Totals without ISTD(s) : 4.41808e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.831	VV	1	2.25169e4	2.60545	4.01077e-1		PERC101

Totals without ISTD(s) : 4.01077e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.843	VBA I	1	7.31364e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000030.D
Sample Name: 1511269-11@5

==========

Acq. Operator : Seq. Line : 30
Acq. Instrument : Instrument 1 Location : Vial 21
Injection Date : 12/4/2015 11:43:10 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:08:08 PM
(modified after loading)

==========

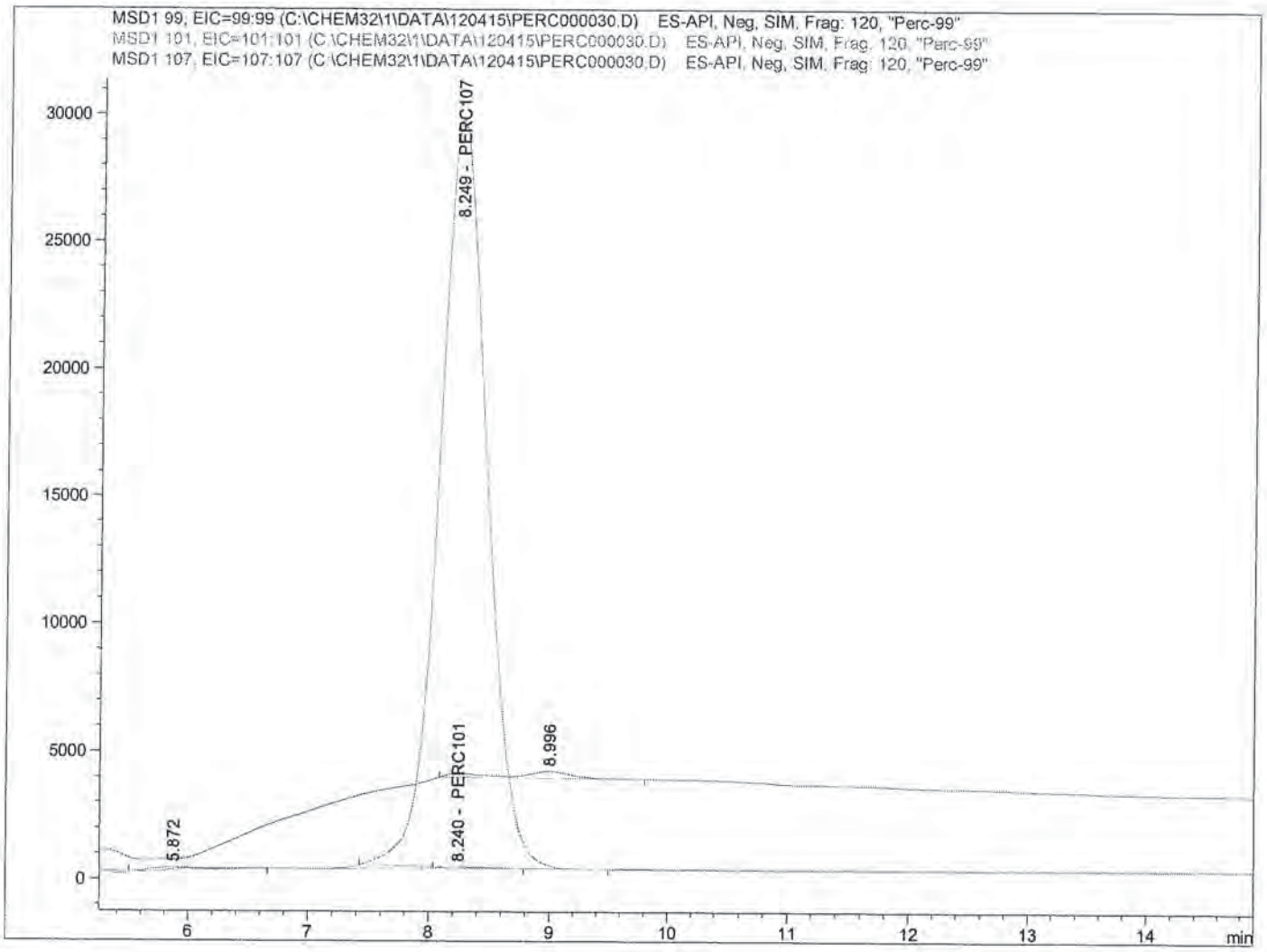

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : 12/5/2015 4:08:08 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000030.D
Sample Name: 1511269-11@5

==========

Acq. Operator : Seq. Line : 30
Acq. Instrument : Instrument 1 Location : Vial 21
Injection Date : 12/4/2015 11:43:10 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:08:08 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.250		1	-	-	-		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.240	BV	1	1125.18457	2.60545	1.81465e-2		PERC101

Totals without ISTD(s) : 1.81465e-2

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.249	BB I	1	8.07759e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000031.D
Sample Name: 1511269-12@5

Acq. Operator	:	Seq. Line	: 31
Acq. Instrument	: Instrument 1	Location	: Vial 22
Injection Date	: 12/5/2015 12:00:59 AM	Inj	: 1
		Inj Volume	: 100.0 µl
Acq. Method	: C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M		
Last changed	: 12/4/2015 2:39:26 PM		
Analysis Method	: C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M		
Last changed	: 12/5/2015 4:08:08 PM (modified after loading)		

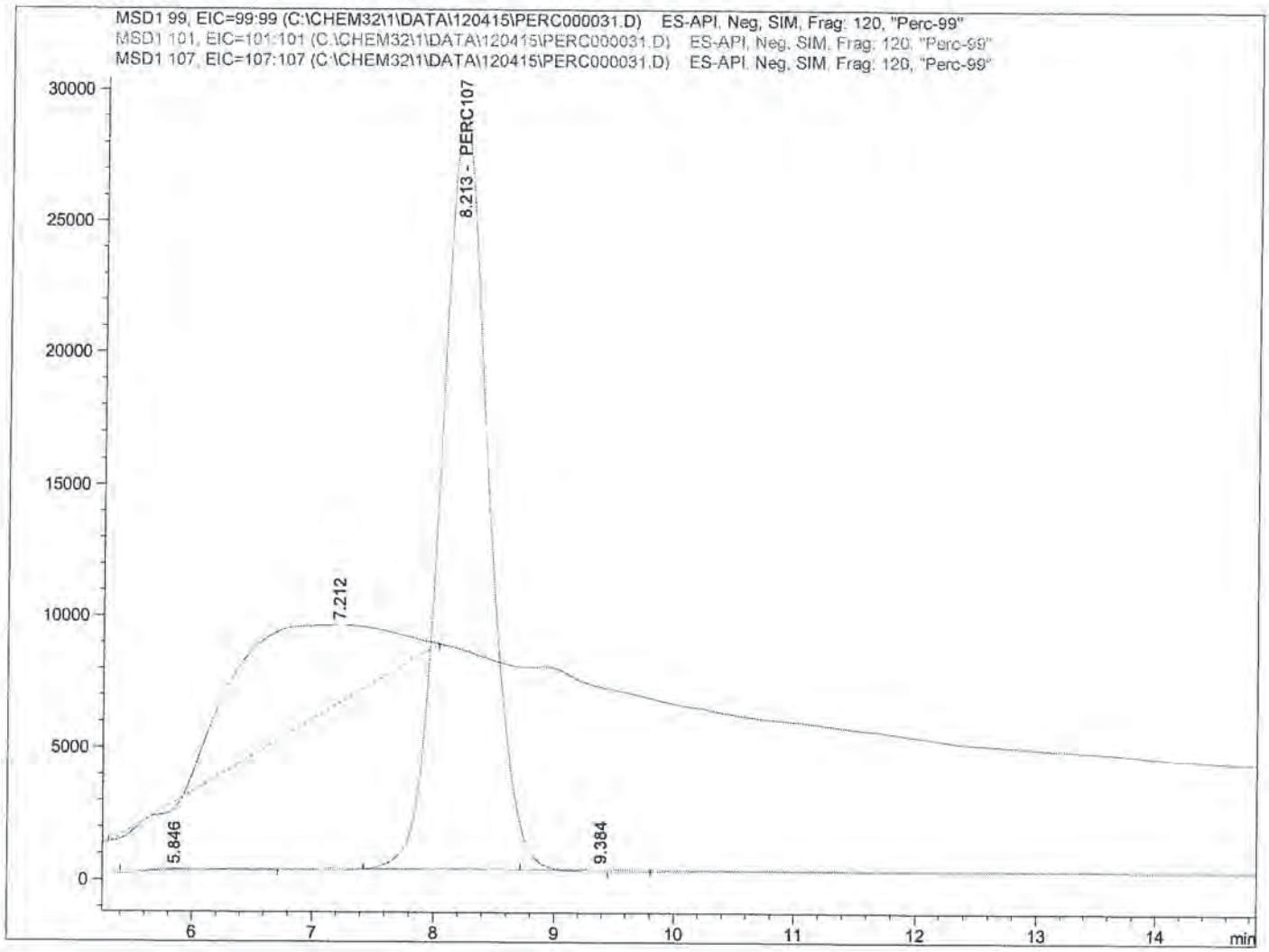

Internal Standard Report

Sorted By	:	Signal
Calib. Data Modified	:	12/5/2015 4:08:08 PM
Multiplier	:	1.0000
Dilution	:	1.0000

Do not use Multiplier & Dilution Factor with ISTDs

Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-7-15

SP
12/9/15

Data File C:\CHEM32\1\DATA\120415\PERC000031.D
Sample Name: 1511269-12@5

==========

Acq. Operator : Seq. Line : 31
Acq. Instrument : Instrument 1 Location : Vial 22
Injection Date : 12/5/2015 12:00:59 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:08:08 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.250		1	-	-	-		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.250		1	-	-	-		PERC101

Totals without ISTD(s) : 0.00000

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.213	BB I	1	7.76843e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000033.D
Sample Name: 1511269-14@5

==========

Acq. Operator : Seq. Line : 33
Acq. Instrument : Instrument 1 Location : Vial 24
Injection Date : 12/5/2015 12:36:35 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:09:23 PM
(modified after loading)

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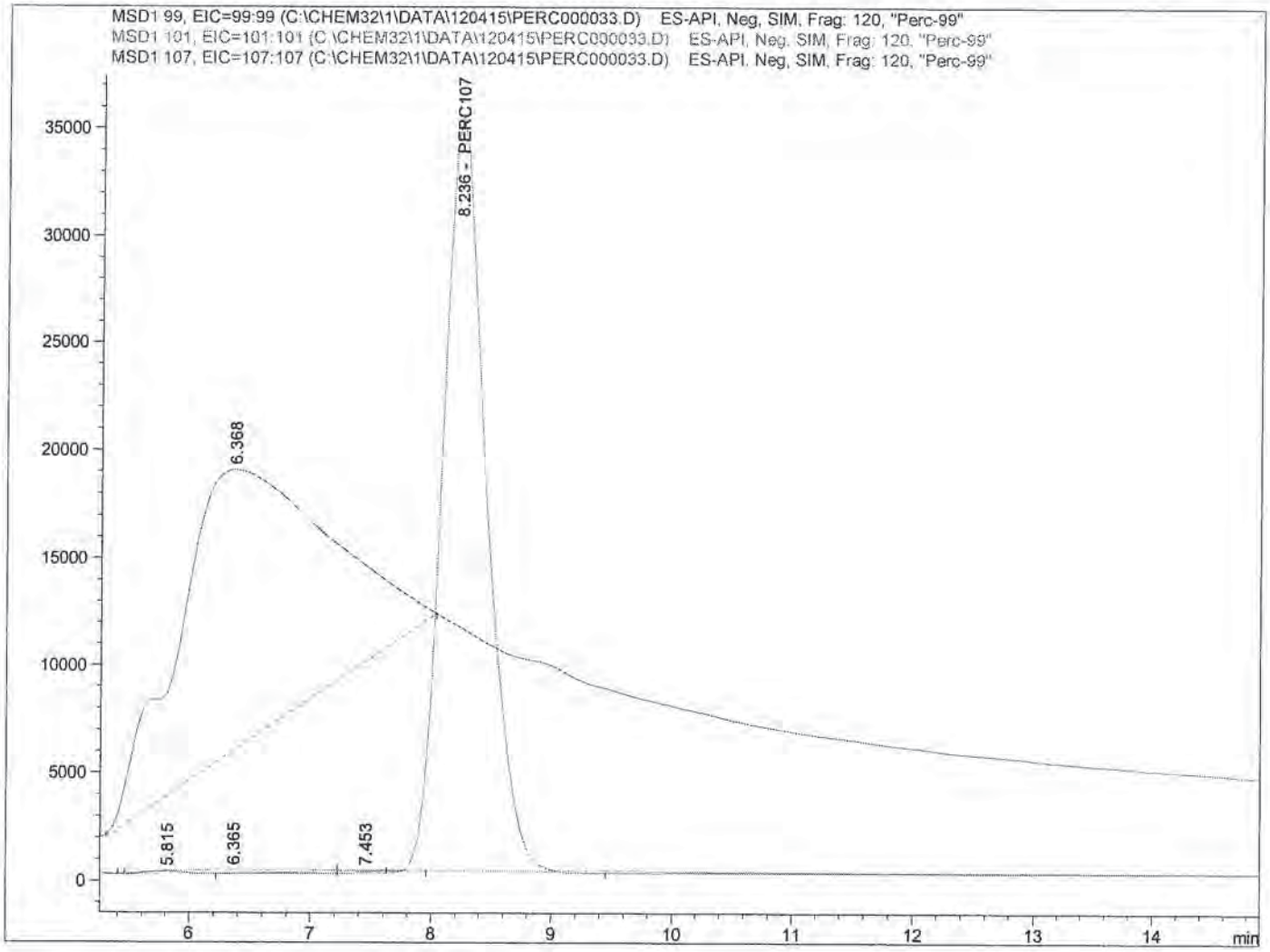

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : 12/5/2015 4:09:23 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

Rpd 12-7-15

SP
12/9/15

Data File C:\CHEM32\1\DATA\120415\PERC000033.D
Sample Name: 1511269-14@5

==========

Acq. Operator : Seq. Line : 33
Acq. Instrument : Instrument 1 Location : Vial 24
Injection Date : 12/5/2015 12:36:35 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:09:23 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.180		1	-	-	-		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.180		1	-	-	-		PERC101

Totals without ISTD(s) : 0.00000

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.236	BB I	1	8.97185e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000034.D
Sample Name: 1511269-15@5

==========

Acq. Operator	:	Seq. Line	: 34
Acq. Instrument	: Instrument 1	Location	: Vial 25
Injection Date	: 12/5/2015 12:54:26 AM	Inj	: 1
		Inj Volume	: 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:09:23 PM
(modified after loading)

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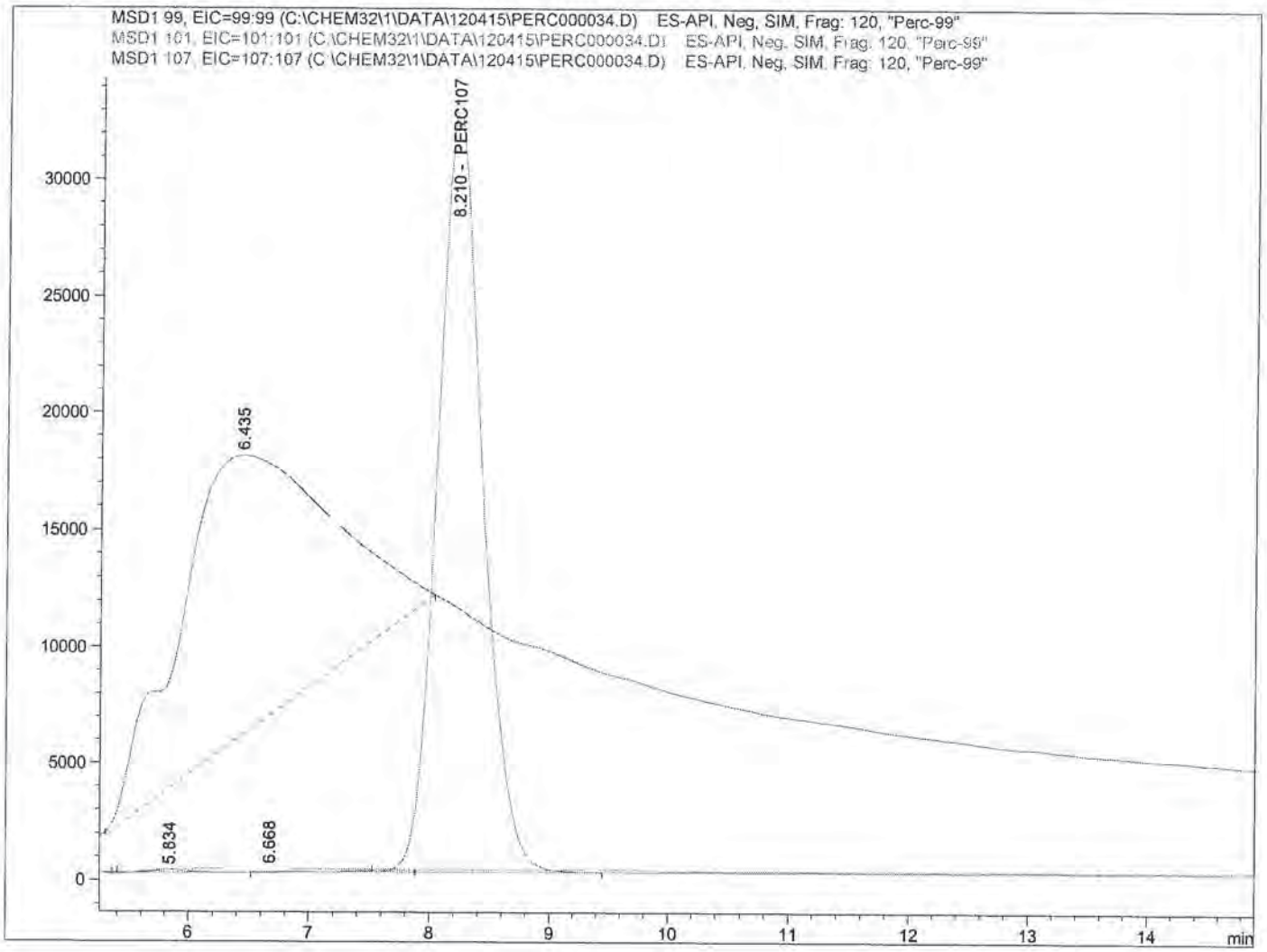

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : 12/5/2015 4:09:23 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

RPW 12-7-15

SP 12/9/15

Data File C:\CHEM32\1\DATA\120415\PERC000034.D
Sample Name: 1511269-15@5

==========

Acq. Operator : Seq. Line : 34
Acq. Instrument : Instrument 1 Location : Vial 25
Injection Date : 12/5/2015 12:54:26 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:09:23 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.180		1	-	-	-		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.180		1	-	-	-		PERC101

Totals without ISTD(s) : 0.00000

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.210	BB I	1	8.46581e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000035.D
Sample Name: 1511269-16@5

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/5/2015 1:12:17 AM

Seq. Line : 35
Location : Vial 26
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:09:23 PM
(modified after loading)

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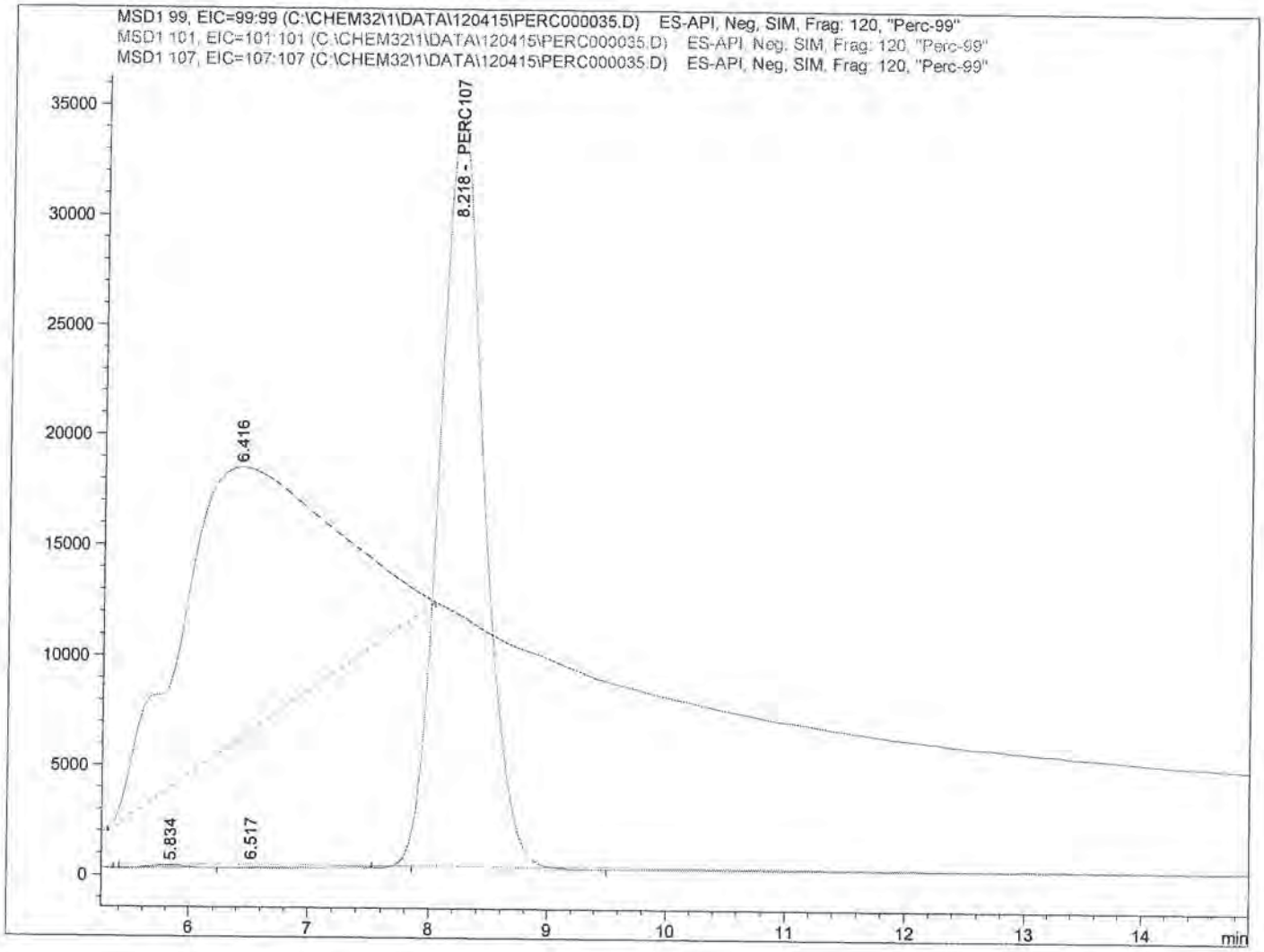

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : 12/5/2015 4:09:23 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000035.D
Sample Name: 1511269-16@5

==========

Acq. Operator : Seq. Line : 35
Acq. Instrument : Instrument 1 Location : Vial 26
Injection Date : 12/5/2015 1:12:17 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:09:23 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.180		1	-	-	-		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.180		1	-	-	-		PERC101

Totals without ISTD(s) : 0.00000

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.218	BB I	1	8.90641e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000036.D
Sample Name: 1511269-17@5

==========

Acq. Operator : Seq. Line : 36
Acq. Instrument : Instrument 1 Location : Vial 27
Injection Date : 12/5/2015 1:30:12 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:09:23 PM
(modified after loading)

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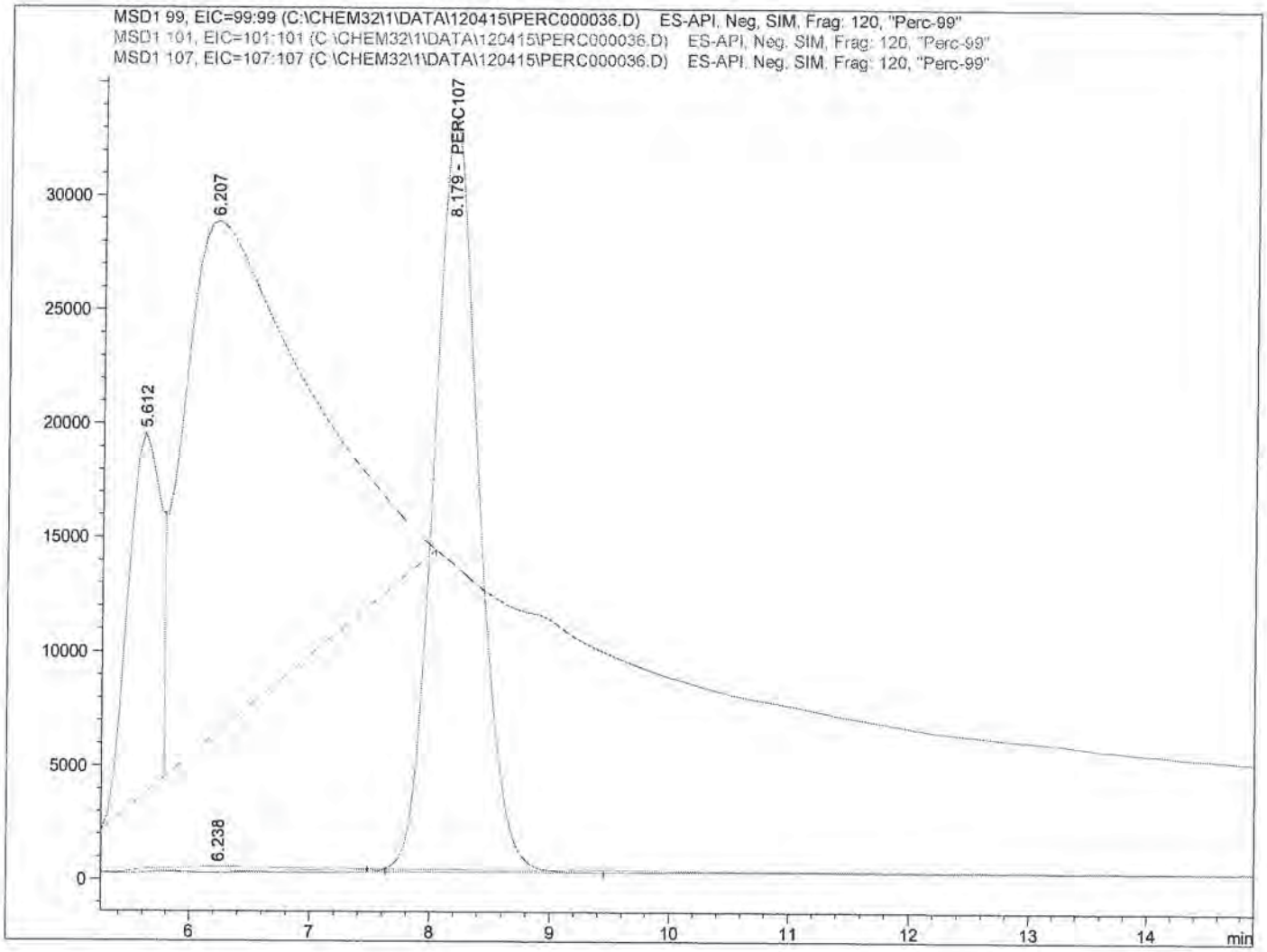

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Internal Standard Report

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SP
12/9/15

Sorted By : Signal
Calib. Data Modified : 12/5/2015 4:09:23 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000036.D
Sample Name: 1511269-17@5

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/5/2015 1:30:12 AM

Seq. Line : 36
Location : Vial 27
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:09:23 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.180		1	-	-	-		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.180		1	-	-	-		PERC101

Totals without ISTD(s) : 0.00000

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.179	BB I	1	8.63099e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000037.D
Sample Name: 1511269-18@5

==========

Acq. Operator : Seq. Line : 37
Acq. Instrument : Instrument 1 Location : Vial 28
Injection Date : 12/5/2015 1:47:57 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:09:23 PM
(modified after loading)

==========

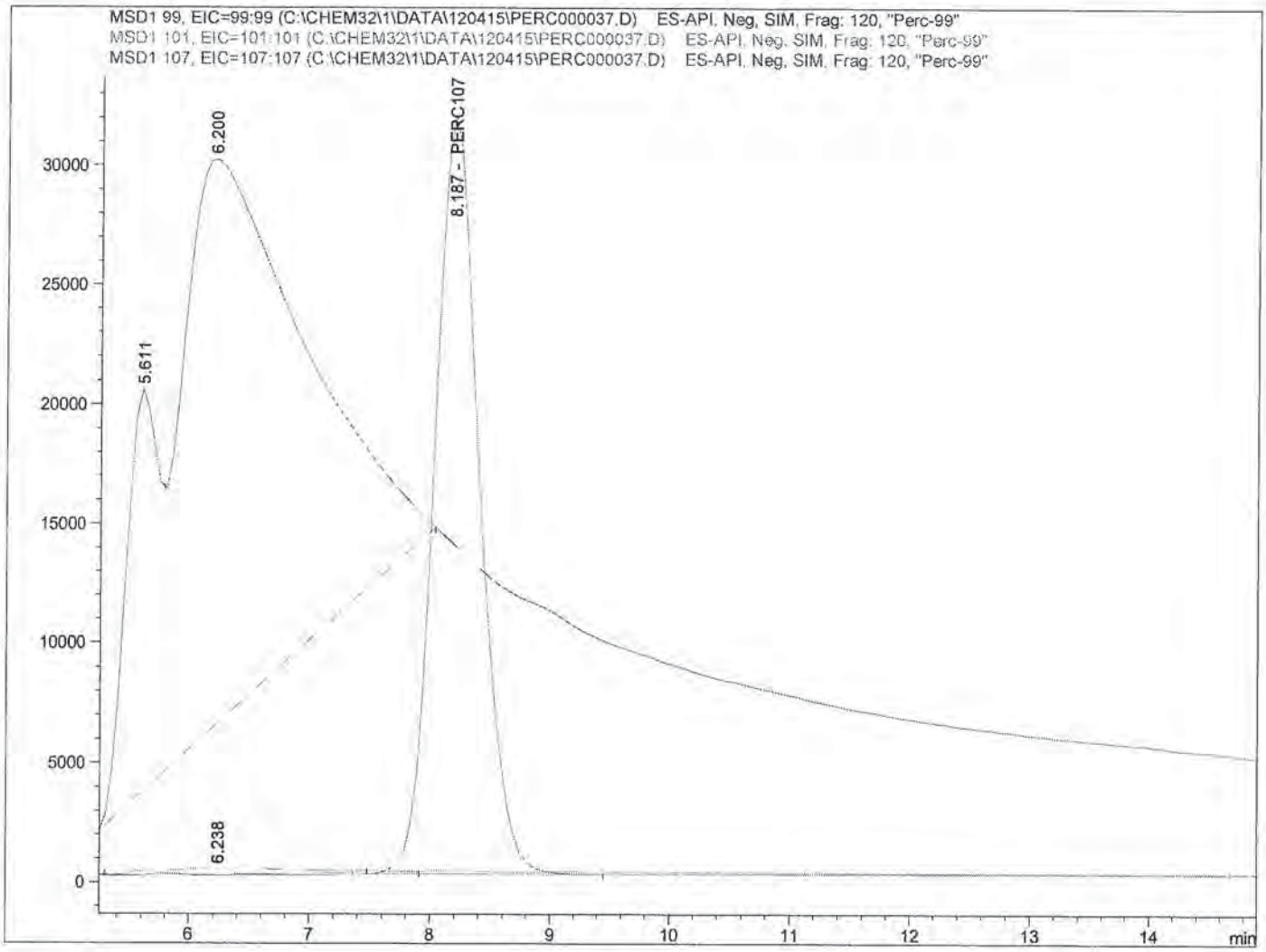

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Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/5/2015 4:09:23 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000037.D
Sample Name: 1511269-18@5

==========

Acq. Operator : Seq. Line : 37
Acq. Instrument : Instrument 1 Location : Vial 28
Injection Date : 12/5/2015 1:47:57 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:09:23 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.180		1	-	-	-		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.180		1	-	-	-		PERC101

Totals without ISTD(s) : 0.00000

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.187	BB I	1	8.25938e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000038.D
Sample Name: 1511269-19

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/5/2015 2:05:50 AM

Seq. Line : 38
Location : Vial 29
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:12:07 PM
(modified after loading)

==========

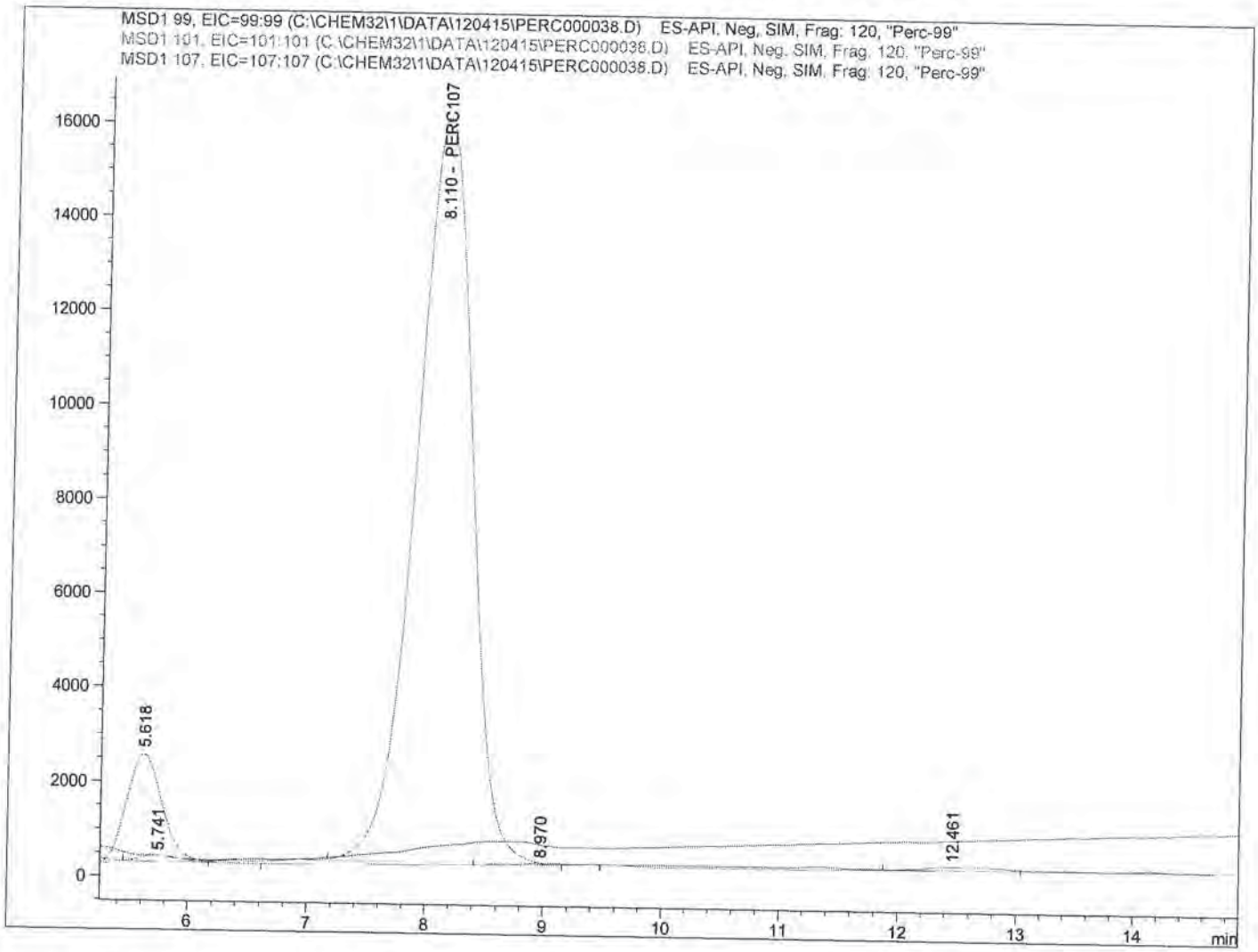

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Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/5/2015 4:09:23 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000038.D
Sample Name: 1511269-19

==========

Acq. Operator : Seq. Line : 38
Acq. Instrument : Instrument 1 Location : Vial 29
Injection Date : 12/5/2015 2:05:50 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:12:07 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.180		1	-	-	-		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.180		1	-	-	-		PERC101

Totals without ISTD(s) : 0.00000

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.110	BV I	1	5.16344e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000041.D
Sample Name: SEQ-CCV3

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/5/2015 2:59:27 AM

Seq. Line : 41
Location : Vial 3
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:15:23 PM
(modified after loading)

==========

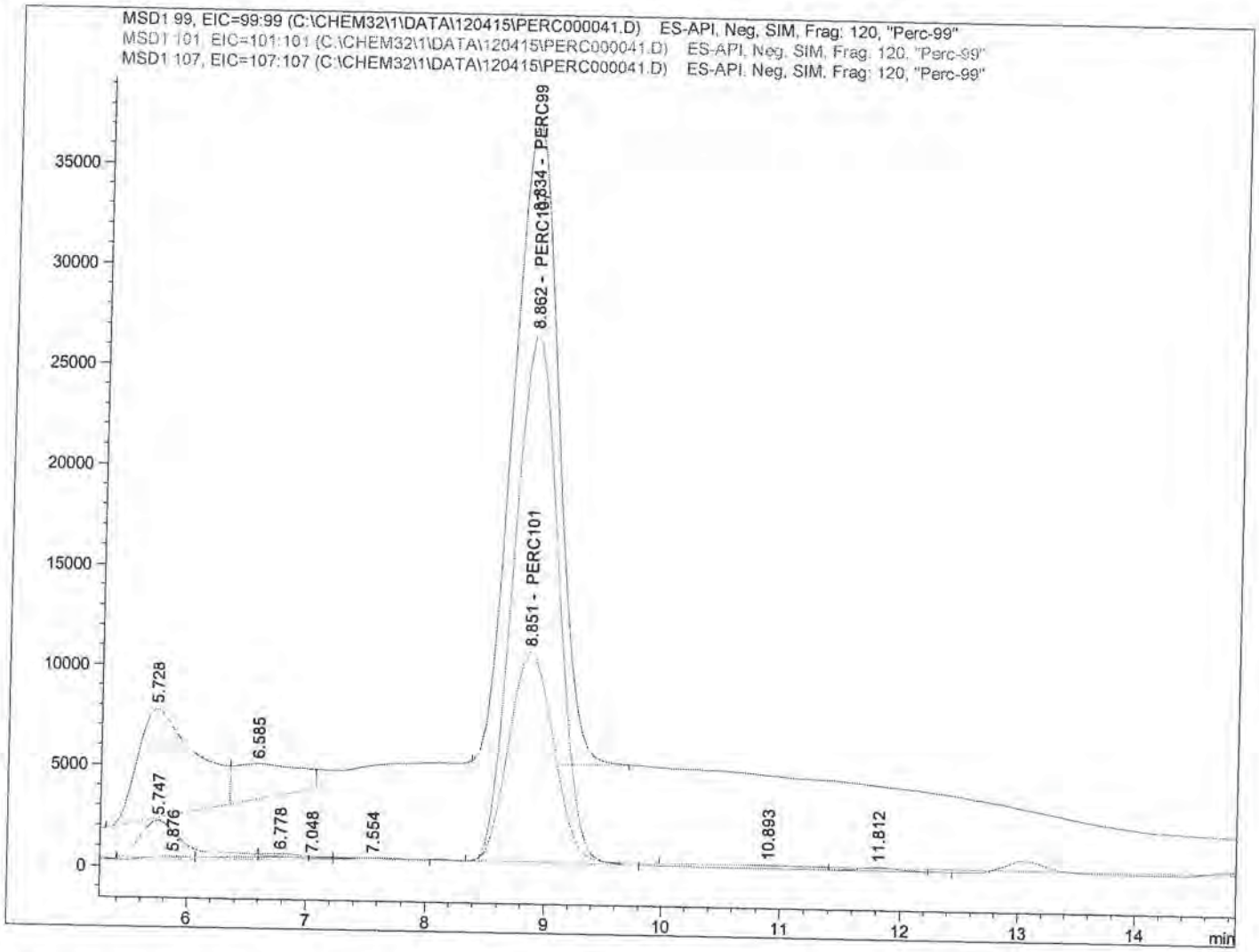

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/5/2015 4:14:53 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000041.D
Sample Name: SEQ-CCV3

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/5/2015 2:59:27 AM

Seq. Line : 41
Location : Vial 3
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:15:23 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.834	BB	1	8.41163e5	8.48638e-1	5.19588		PERC99

Totals without ISTD(s) : 5.19588

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.851	BBA	1	2.72706e5	2.60545	5.17170		PERC101

Totals without ISTD(s) : 5.17170

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.862	VBA I	1	6.86932e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

841163/686932/1.17836x5 = 5.19587

Data File C:\CHEM32\1\DATA\120415\PERC000042.D
Sample Name: SEQ-LCV5

==========

Acq. Operator : Seq. Line : 42
Acq. Instrument : Instrument 1 Location : Vial 4
Injection Date : 12/5/2015 3:17:16 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:15:23 PM
(modified after loading)

==========

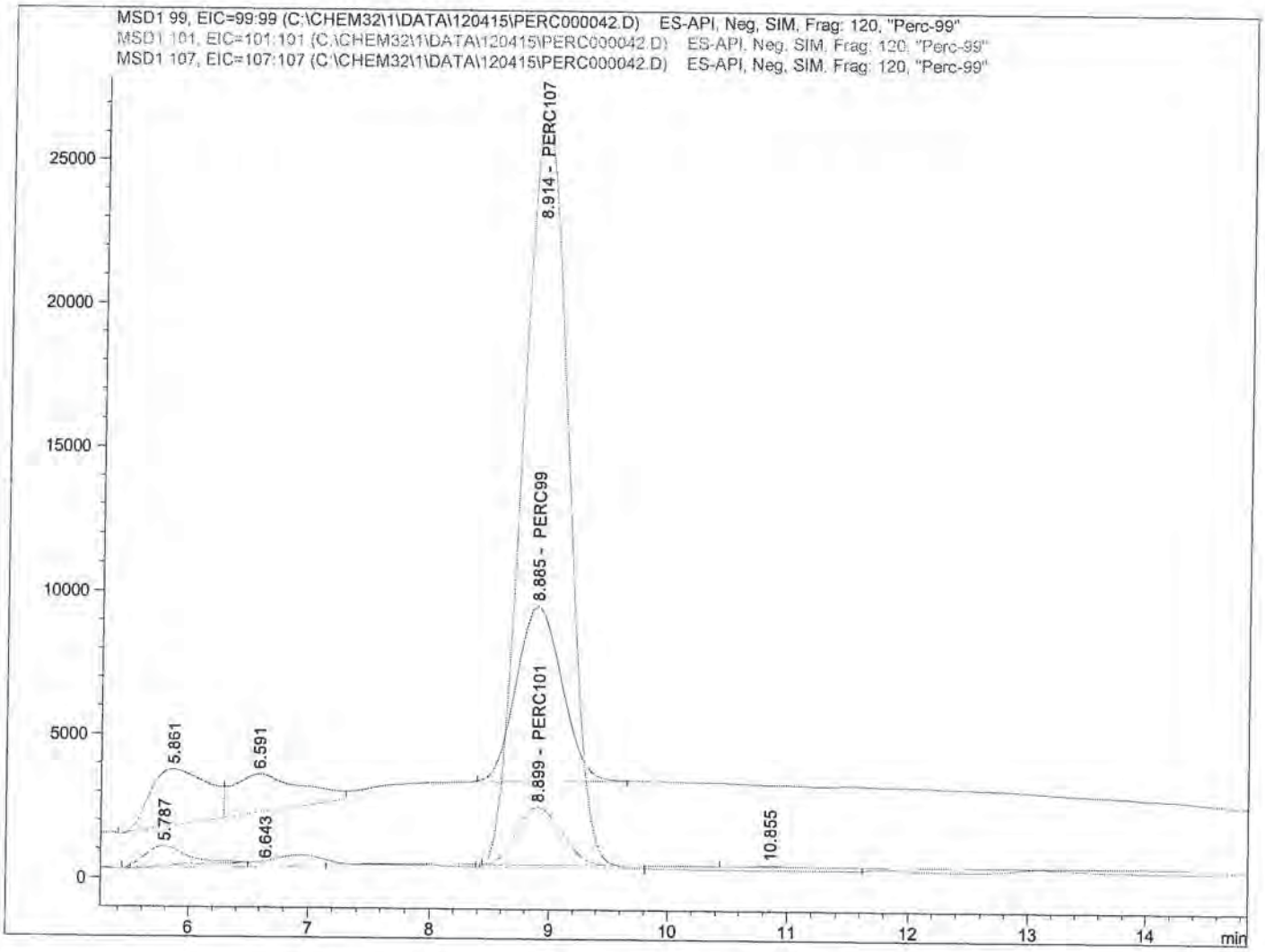

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : 12/5/2015 4:14:53 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000042.D
Sample Name: SEQ-LCV5

==========

Acq. Operator : Seq. Line : 42
Acq. Instrument : Instrument 1 Location : Vial 4
Injection Date : 12/5/2015 3:17:16 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:15:23 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.885	BB	1	1.64882e5	8.48638e-1	1.00821		PERC99

Totals without ISTD(s) : 1.00821

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.899	BBA	1	5.29614e4	2.60545	9.94251e-1		PERC101

Totals without ISTD(s) : 9.94251e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.914	BBA I	1	6.93929e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000043.D
Sample Name: SEQ-LCV6

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/5/2015 3:35:04 AM

Seq. Line : 43
Location : Vial 83
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:15:23 PM
(modified after loading)

==========

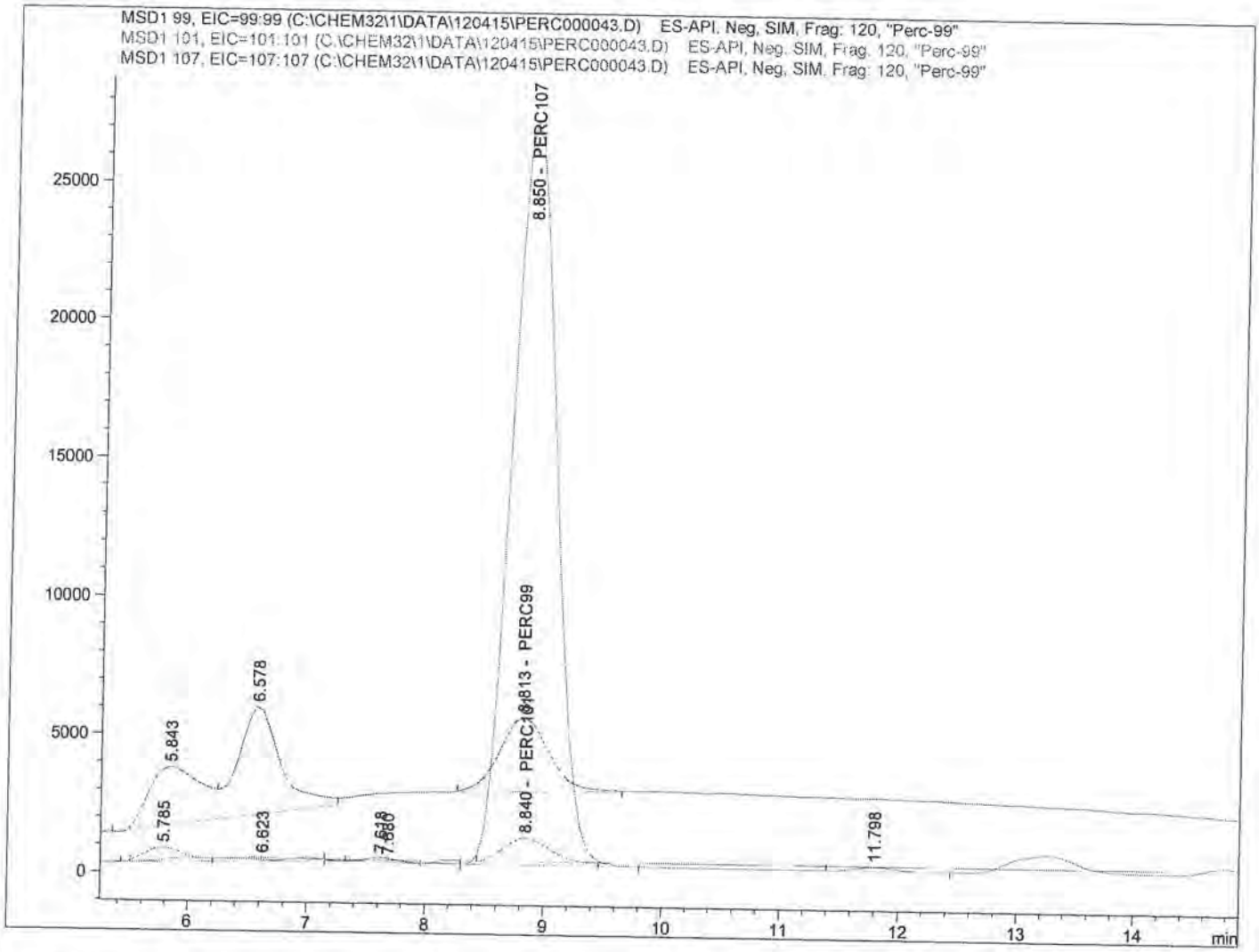

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : 12/5/2015 4:14:53 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000043.D
Sample Name: SEQ-LCV6

```
==========================================================================
Acq. Operator   :                                   Seq. Line :  43
Acq. Instrument : Instrument 1                       Location : Vial 83
Injection Date  : 12/5/2015 3:35:04 AM                    Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/5/2015 4:15:23 PM
                  (modified after loading)
==========================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.813	BB	1	7.77357e4	8.48638e-1	4.73547e-1		PERC99

Totals without ISTD(s) : 4.73547e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.840	BV	1	2.21682e4	2.60545	4.14603e-1		PERC101

Totals without ISTD(s) : 4.14603e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.850	VBA I	1	6.96546e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000044.D
Sample Name: 1511269-21@5

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/5/2015 3:52:57 AM

Seq. Line : 44
Location : Vial 31
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:23:31 PM
(modified after loading)

==========

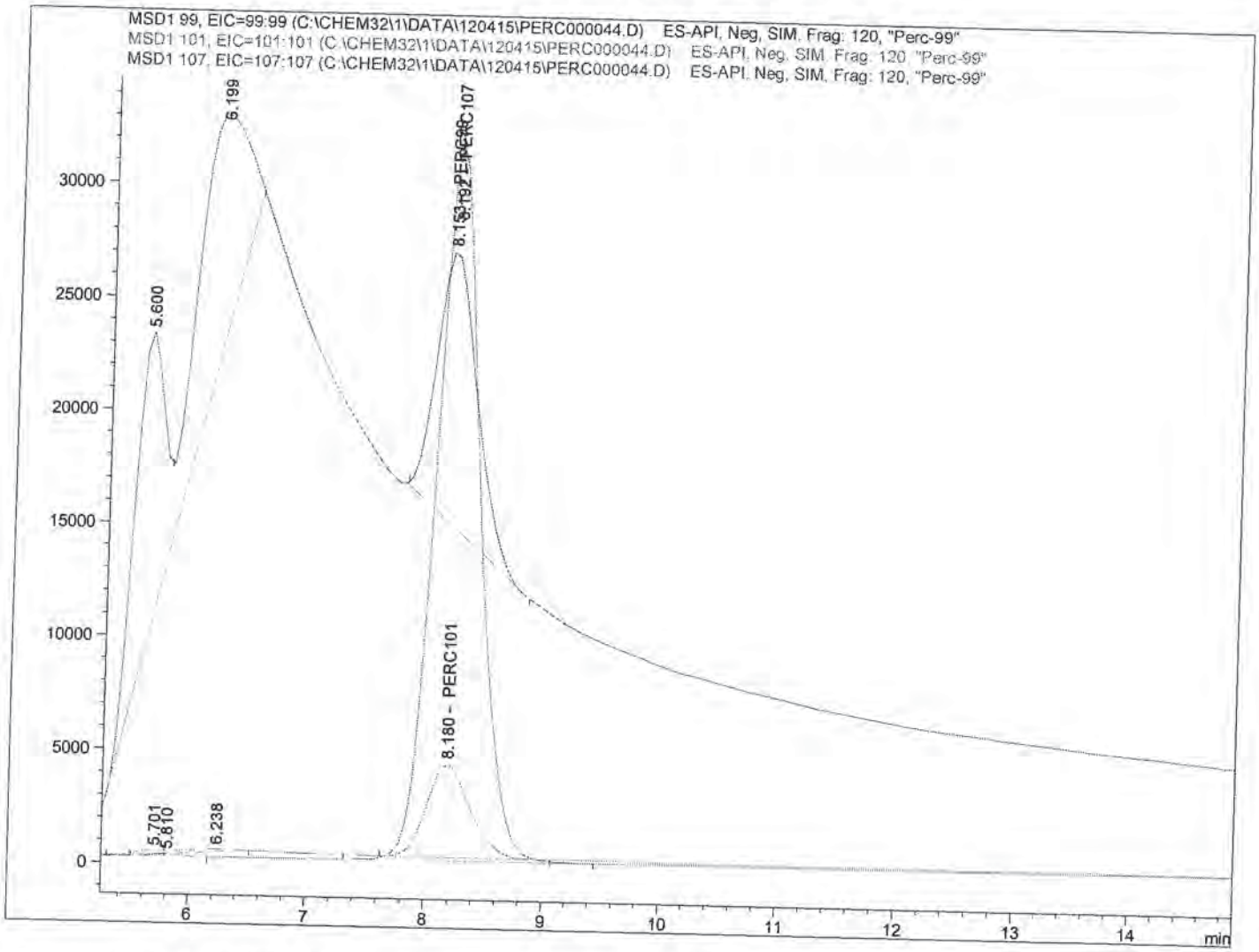

==========

Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : 12/5/2015 4:23:07 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000044.D
Sample Name: 1511269-21@5

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/5/2015 3:52:57 AM

Seq. Line : 44
Location : Vial 31
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:23:31 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.153	BBA	1	2.89553e5	8.48638e-1	1.50001		PERC99

Totals without ISTD(s) : 1.50001

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.180	BV	1	1.04770e5	2.60545	1.66634		PERC101

Totals without ISTD(s) : 1.66634

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.192	BB I	1	8.19078e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

289553/89078/1.17836×5 = 1.500012×5 = 7.50006

Data File C:\CHEM32\1\DATA\120415\PERC000050.D
Sample Name: SEQ-CCV4

Acq. Operator	:	Seq. Line	: 50
Acq. Instrument	: Instrument 1	Location	: Vial 3
Injection Date	: 12/5/2015 5:40:05 AM	Inj	: 1
		Inj Volume	: 100.0 µl
Acq. Method	: C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M		
Last changed	: 12/4/2015 2:39:26 PM		
Analysis Method	: C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M		
Last changed	: 12/7/2015 9:30:42 AM (modified after loading)		

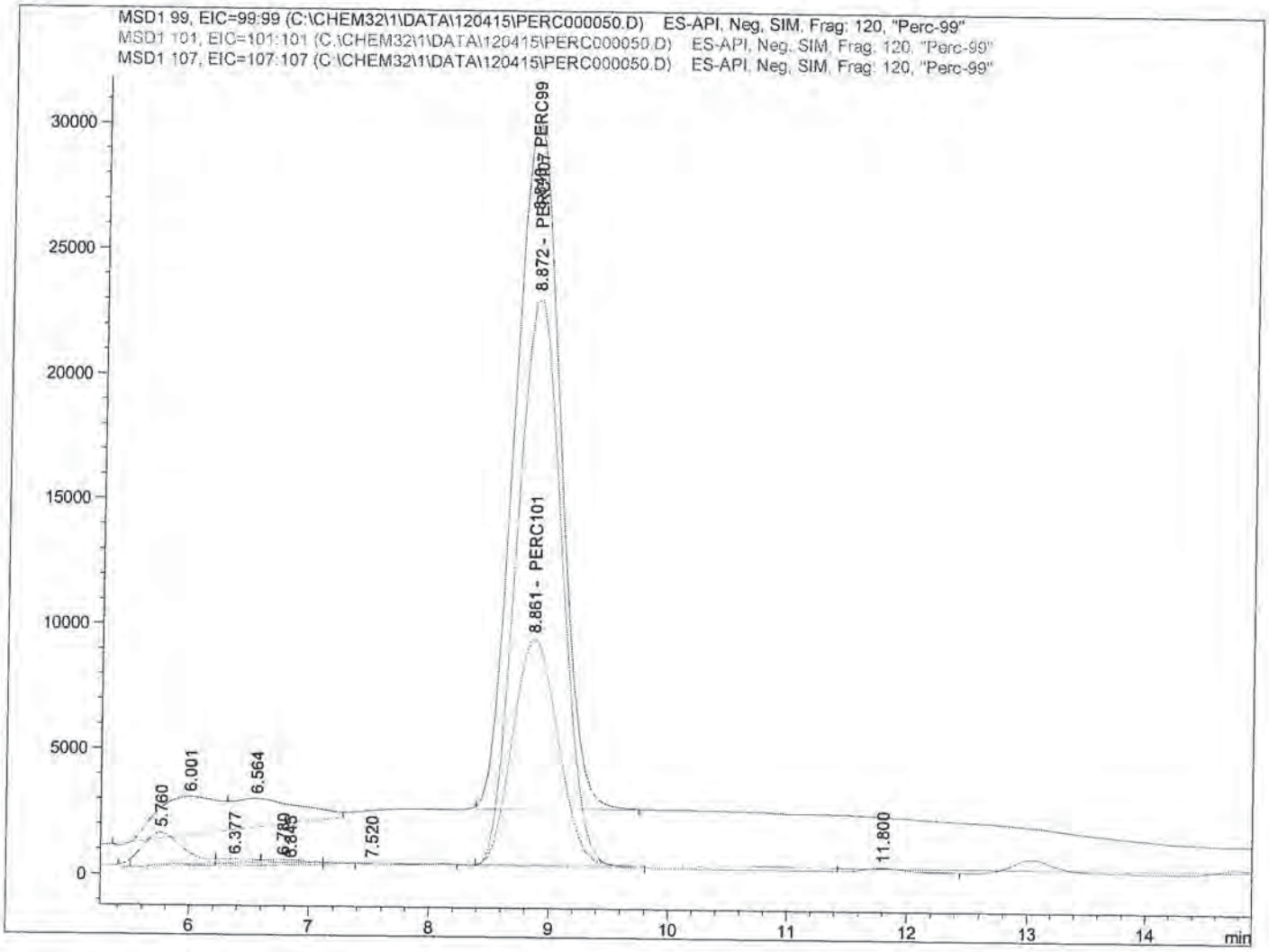

Internal Standard Report

SP
12/9/15

Sorted By	:	Signal
Calib. Data Modified	:	12/7/2015 9:29:59 AM
Multiplier	:	1.0000
Dilution	:	1.0000

Do not use Multiplier & Dilution Factor with ISTDs

12-7-15

Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\120415\PERC000050.D
Sample Name: SEQ-CCV4

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/5/2015 5:40:05 AM

Seq. Line : 50
Location : Vial 3
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/7/2015 9:30:42 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.843	BB	1	7.25443e5	8.48638e-1	5.16361		PERC99

Totals without ISTD(s) : 5.16361

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.861	BBA	1	2.37303e5	2.60545	5.18577		PERC101

Totals without ISTD(s) : 5.18577

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.872	BBA I	1	5.96132e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000051.D
Sample Name: SEQ-LCV7

Acq. Operator	:	Seq. Line	: 51
Acq. Instrument	: Instrument 1	Location	: Vial 4
Injection Date	: 12/5/2015 5:57:52 AM	Inj	: 1
		Inj Volume	: 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/7/2015 9:30:42 AM
(modified after loading)

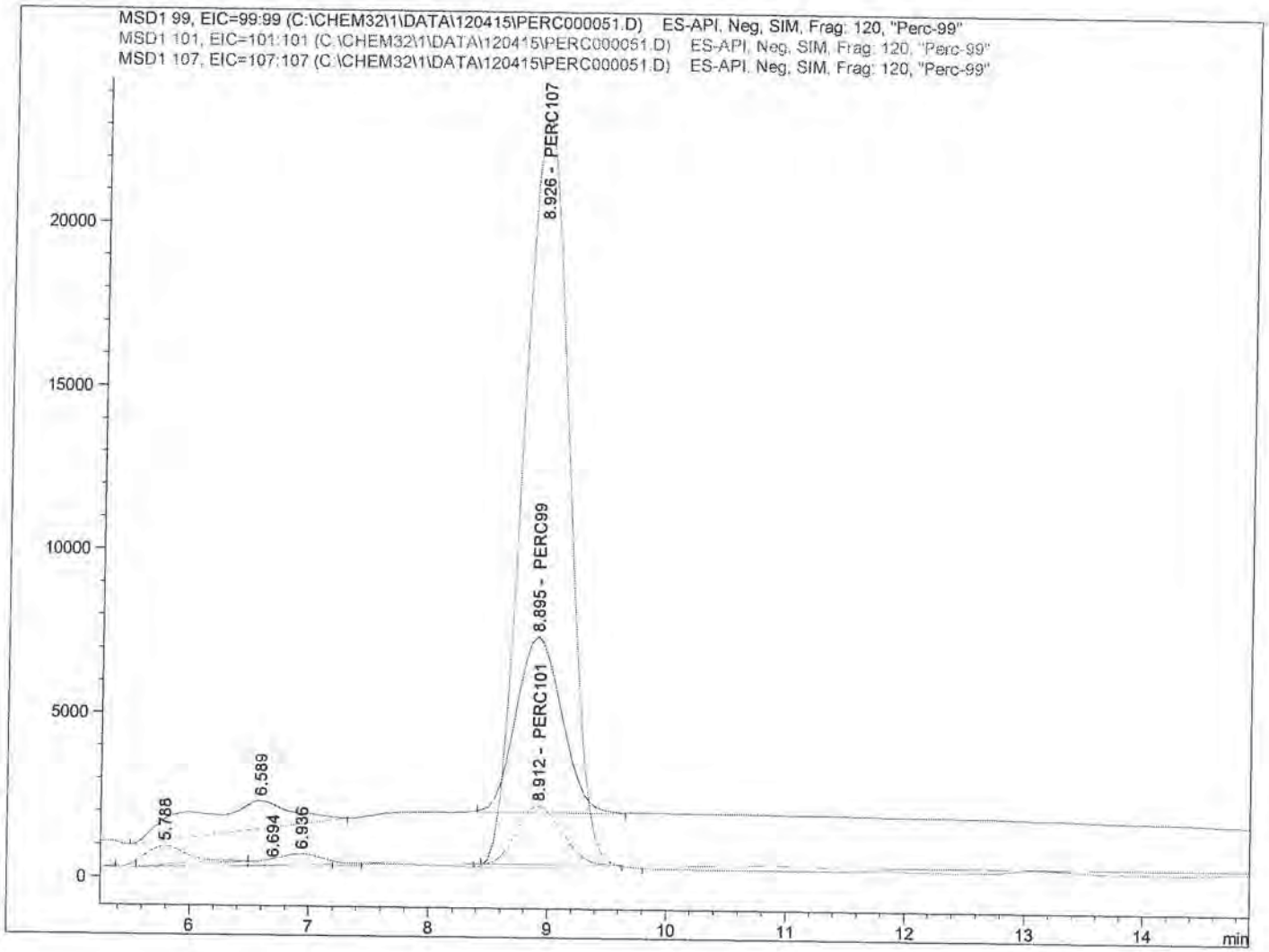

SP
12/9/15

Internal Standard Report

Sorted By : Signal
Calib. Data Modified : 12/7/2015 9:29:59 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

RDW 12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000051.D
Sample Name: SEQ-LCV7

==========

Acq. Operator : Seq. Line : 51
Acq. Instrument : Instrument 1 Location : Vial 4
Injection Date : 12/5/2015 5:57:52 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/7/2015 9:30:42 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.895	BB	1	1.43449e5	8.48638e-1	9.98380e-1		PERC99

Totals without ISTD(s) : 9.98380e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.912	BBA	1	4.67792e4	2.60545	9.99564e-1		PERC101

Totals without ISTD(s) : 9.99564e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.926	BBA I	1	6.09669e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000052.D
Sample Name: SEQ-LCV8

==========

Acq. Operator : Seq. Line : 52
Acq. Instrument : Instrument 1 Location : Vial 83
Injection Date : 12/5/2015 6:15:43 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/7/2015 9:30:42 AM
(modified after loading)

==========

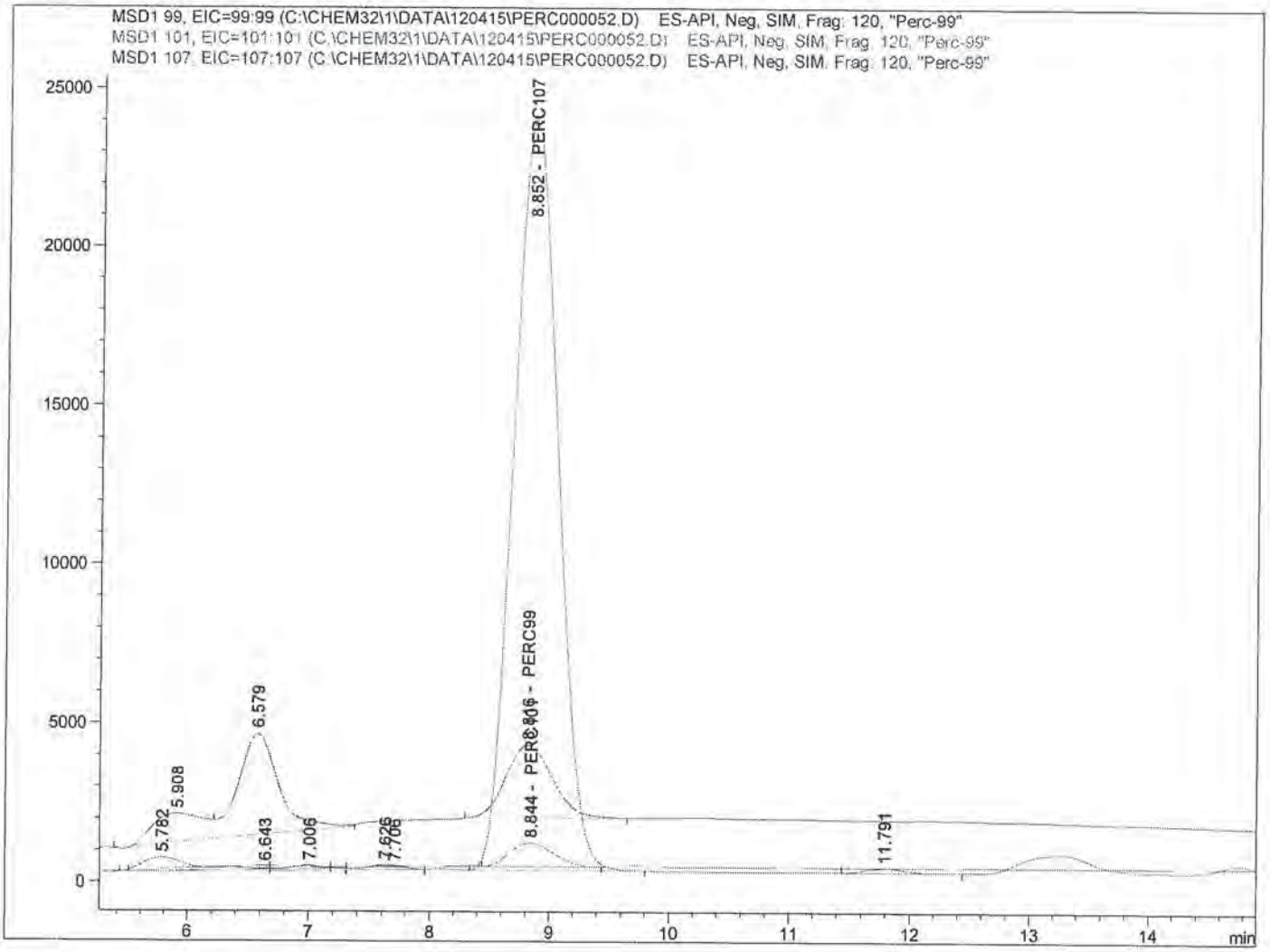

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Internal Standard Report

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SP
12/9/15

Sorted By : Signal
Calib. Data Modified : 12/7/2015 9:29:59 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000052.D
Sample Name: SEQ-LCV8

==========

Acq. Operator : Seq. Line : 52
Acq. Instrument : Instrument 1 Location : Vial 83
Injection Date : 12/5/2015 6:15:43 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/7/2015 9:30:42 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.816	BB	1	6.27140e4	8.48638e-1	4.33343e-1		PERC99

Totals without ISTD(s) : 4.33343e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.844	BV	1	1.89055e4	2.60545	4.01066e-1		PERC101

Totals without ISTD(s) : 4.01066e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.852	BBA I	1	6.14081e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

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*** End of Report ***

00653744

PREPARATION BENCH SHEET

5L01021

Empirical Laboratories, LLC

Printed: 12/10/2015 3:56:29PM

Instrument:

Matrix: Water **Prepared using: GCLC - LCMS_PREP6850_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID		ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1511075-06	A	LCMS_PERC_6850_SPLP_Full	12/01/2015	10	10						NA	;QSM5;QSM5
1511075-08	A	LCMS_PERC_6850_SPLP_Full	12/01/2015	10	10						NA	;QSM5;QSM5
1511093-02	A	LCMS_PERC_6850_SPLP_Full	12/01/2015	10	10						NA	;QSM5;QSM5
1511093-03	A	LCMS_PERC_6850_SPLP_Full	12/01/2015	10	10						NA	;QSM5;QSM5
1511093-06	A	LCMS_PERC_6850_SPLP_Full	12/01/2015	10	10						NA	;QSM5;QSM5
1511093-09	A	LCMS_PERC_6850_SPLP_Full	12/01/2015	10	10						NA	;QSM5;QSM5
1511152-01	D	LCMS_PERC_6850_Q5	12/01/2015	10	10						NA	;QSM5;QSM5
1511154-01	D	LCMS_PERC_6850_Q5	12/01/2015	10	10						NA	;QSM5;QSM5
1511269-01	A	LCMS_PERC_6850_SPLP_Full	12/01/2015	10	10						NA	MS/MSD;BatchQC;Added for BatchQC in: 5L01021
1511269-01	A	LCMS_PERC_6850	12/01/2015	10	10						NA	MS/MSD;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-01	A	LCMS_PERC_6850_Q5	12/01/2015	10	10						NA	MS/MSD;BatchQC;Added for BatchQC in: 5L01021
1511269-02	A	LCMS_PERC_6850	12/01/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-03	A	LCMS_PERC_6850	12/01/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-06	A	LCMS_PERC_6850	12/01/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-07	A	LCMS_PERC_6850	12/01/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-08	A	LCMS_PERC_6850	12/01/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-09	A	LCMS_PERC_6850	12/01/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L

00653745

PREPARATION BENCH SHEET

5L01021

Empirical Laboratories, LLC

Printed: 12/10/2015 3:56:29PM

Instrument:

Matrix: Water **Prepared using: GCLC - LCMS_PREP6850_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1512004-01	A	LCMS_PERC_6850	12/01/2015	10	10					NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1512004-01RE1	A	LCMS_PERC_6850	12/01/2015	10	10					NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L; RR 100x RDW 12/03/15
5L01021-BLK1		QC	12/01/2015	10	10					NA	
5L01021-BS1		QC	12/01/2015	10	10	15F0073		200		NA	
5L01021-MS1		QC	12/01/2015	10	10	15F0073	1511269-01	200		NA	
5L01021-MSD1		QC	12/01/2015	10	10	15F0073	1511269-01	200		NA	

Reagents Used:

Standard	Description

272

1511269

00653746

PREPARATION BENCH SHEET

5L03014

Empirical Laboratories, LLC

Printed: 12/10/2015 3:57:14PM

Instrument:

Matrix: Water **Prepared using: GCLC - LCMS_PREP6850_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID		ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1511169-01	G	LCMS_PERC_6850	12/03/2015	10	10						NA	;;
1511169-03	H	LCMS_PERC_6850	12/03/2015	10	10						NA	;;
1511269-04	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-05	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-10	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-11	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-12	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-13	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-14	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-15	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-16	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-17	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-18	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-19	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-20	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-21	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-22	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L

PREPARATION BENCH SHEET

5L03014

Empirical Laboratories, LLC

Printed: 12/10/2015 3:57:14PM

Instrument:

Matrix: Water **Prepared using: GCLC - LCMS_PREP6850_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID		ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1511269-23	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-24	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511275-01	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;lowest DL possible;lowest DL possible
5L03014-BLK1		QC	12/03/2015	10	10						NA	
5L03014-BS1		QC	12/03/2015	10	10	15L0084			200		NA	
5L03014-BSD1		QC	12/03/2015	10	10	15L0084			200		NA	

Reagents Used:

Standard	Description

ANALYTICAL DATA PACKAGE

SDG # 1511269

PROJECT NAME: Perchlorate

SUBMITTAL TO:

Stephanie Mossburg
Microbac Laboratories, Inc.
158 Starlite Drive
Marietta, OH 45750

SUBMITTAL BY:

Empirical Laboratories, LLC (EL)
621 Mainstream Drive, Suite 270
Nashville, TN 37228
Tel (615)345-1115
Fax (866)417-0548

LABORATORY CONTACT PERSON:

Project Manager: Sonya Gordon
Tel (615)345-1115
Fax (866)417-0548
Email: sgordon@empirlabs.com

Original Report Date: December 21, 2015
Report Revision #: N/A
Revision Date: N/A
Total # of Pages: 274

THIS DOCUMENT MEETS DoD QSM 4.2 STANDARDS

The results relate to only the samples associated with the referenced SDG and the submitted data has been produced in accordance with laboratory procedures. The Laboratory's Technical Lab Director, Mr. Rick Davis, is responsible for the final data produced and reported. His signature is listed at the end of the Case Narrative within the Analytical Data Package. If applicable to this report package, details on report revisions and the information on subcontracted analysis are listed in the package Case Narrative. This report shall not be reproduced, except in full, without the written approval of Empirical Laboratories, LLC.

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Sample Delivery Group Case Narrative

Receipt Information:
The samples were received within the preservation guidelines for the associated methods. The information associated with sample receipt and the Sample Delivery Group (SDG) are included within section 4 of this package, which also provides information on the link between the client sample ID listed on the COC and laboratory's assigned unique sample ID or WorkOrder #. The sample is tracked through the laboratory for all analysis via the assigned WorkOrder #.

All samples that were received were analyzed and none of the samples were placed on hold without analyses. There were no subcontracted analyses for this SDG.

Changes to the Revision:
This is an original submittal of the final report package.

Analytical Information:
All samples were prepped (where applicable) and analyzed within the standard allowed holding times, unless noted within the exceptions listed below. The laboratory analyzed all samples within the program and method guidelines. Sample preparation and dilution information is provided within the final results report and at the beginning of each form set. The following information is provided specific to individual methods:

SW6850:
Note – Samples 1511269-01 (and matrix spikes) (5x) and -08 (10x) were analyzed at the dilutions indicated due to split peaks caused by sample matrix and samples 1511269-07 (50x), -20 (500x), -21 (5x), -22 (1000x), -23 (500x), and -24 (2000x) were analyzed at the dilutions indicated due to high concentrations of target analytes. Samples 1511269-06, -09, -10, -11, -12, -13, -14, -15, -16, -17, and -18 are qualified with a C10 to indicate that the sample was analyzed at the dilutions indicated due to the conductivity of the samples.

The following matrix spikes exceeded criteria:
5L01021-MS1/MSD1 (1511269-01) with a positive bias and exceeded relative percent difference criteria for Perchlorate; note – the associated batch spike is within criteria

The following internal standards exceeded criteria:
Perchlorate-d8 in 5L01021-BLK1; note – with a bias of 14% calculated (164% area with an upper limit of 150%), the Perchlorate concentration would still be below the LOD

No additional anomalies or deviations are noted and the proper data qualifiers have been applied.

Data Qualifiers:

As applicable and where required, the following general qualifiers are associated with the sample results. Additional qualifiers will be specified within the reporting sections of the data package or within the body of the Case Narrative.

Analytical Report Terms and Qualifiers

DL: The detection limit (DL) is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The DL is supported by the method detection limit (MDL) which is determined from analysis of a sample containing the analyte in a given matrix.

LOD: The Limit of Detection is an estimate of the minimum amount of a substance that an analytical process can reliably detect. An LOD is analyte- and matrix-specific and may be laboratory-dependent. This definition is further clarified in the DoD QSM 4.2 revisions as the smallest amount or concentration of a substance that must be present in a sample in order to be detected at a high level of confidence (99%). At the LOD, the false negative rate (Type II error) is 1%.

LOQ: The Limit of Quantitation is the minimum level, concentration, or quantity of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. This term is further clarified within the DoD QSM 4.2 as the lowest concentration that produces a quantitative result within specified limits of precision and bias.

*****: Exceeding quality control criteria are associated with the reported result.

B: The presence of a "B" to the right of an analytical value indicates that this compound was also detected in the method blank and the data should be interpreted with caution. One should consider the possibility that the correct sample result might be less than the reported result and, perhaps, zero.

D: When a sample (or sample extract) is rerun diluted because one of the compound concentrations exceeded the highest concentration range for the standard curve, all of the values obtained in the dilution run will be flagged with a "D".

E: The concentration for any compound found which exceeds the highest concentration level on the standard curve for that compound will be flagged with an "E". Usually the sample will be rerun at a dilution to quantitate the flagged compound. For Metals, the qualifier indicates that the serial dilution was outside of the control limits and the compound should be considered estimated due to the presence of interference.

H1: The result was analyzed outside of the EPA recommended holding time.

H2: The result was extracted outside of the EPA recommended holding time.

H3: The sample for this analyte was received outside of the EPA recommended holding time.

J: The presence of a "J" to the right of an analytical result indicates that the reported result is estimated. The mass spectral data pass the identification criteria showing that the compound is present, but the calculated result is less than the LOQ. One should feel confident that the result is greater than zero and less than the LOQ.

M: Indicates that the sample matrix interfered with the quantitation of the analyte. In dual column analysis the result is reported from the column with the lower concentration. In inorganics, it indicates that the parameters DL/LOD/LOQ have been raised.

N: The MS/MSD accuracy and/or precision are outside criteria. The predigested spike recovery is not within control limits for the associated parameter.

P: The associated numerical value is an estimated quantity. There is greater than a 40% difference between the two GC columns for the detected concentrations. The higher of the two values is reported unless matrix interference is obvious or for HPLC analysis where the primary column is reported.

Q: The relative percent difference (RPD) and/or percent recovery exceeded limits in the associated Blank Spike and/or Blank Spike Duplicate.

S: The associated internal standard exceeded criteria.

U: The presence of a "U" indicates that the analyte was analyzed for but was not detected or the concentration of the analyte quantitated below the DL.

X: The parameter shows a potential positive bias on a reported concentration due to an ICV or CCV exceeding the upper control limit on the high side.

Y: The parameter shows a potential negative bias on a reported concentration due to an ICV or CCV exceeding the lower control limit on the low side.

Z: The parameter shows lack of confirmation/detection, which may be due to a negative bias in the ICV or CCV which exceeds the lower control limit.

Chromatographic Flags for Manual Integration:

The following letters are used to denote manual integrations on the laboratory's raw data in association with chromatographic integrations:

A: The peak was manually integrated as it was not integrated in the original chromatogram.

B: The peak was manually integrated due to resolution or coelution issues in the original chromatogram.

C: The peak was manually integrated to correct the baseline from the original chromatogram.

D: The peak was manually integrated to identify the correct peak as the wrong peak was identified in the original chromatogram.

E: The peak was manually integrated to include the entire peak as the original chromatogram only integrated part of the peak.

LIMS Definitions / Naming Conventions:

The following are general naming conventions that are used throughout the laboratory; however, on a method by method basis, there are additional QAQC items that are named in a consistent format.

BLK: LIMS assigns a unique identifier to the Method Blank by naming it as the letters BLK

appended to the Batch ID. A Method Blank is an analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The Method Blank is used to assess for possible contamination during preparation and/or analysis steps. Method Blanks within a Batch or Analytical sequence will be appended with a numerical value beginning with 1 that will increase incrementally.

BS: LIMS assigns a unique identifier to the Blank Spike by naming it as the letters BS appended to the Batch ID. The Blank Spike or Lab Control Sample is a controlled analyte-free matrix, which is spiked with known and verified concentrations of target analytes. Spiking concentrations can be referenced in the method SOP. The BS is used to evaluate the viability of analytes taken through the entire prep (when applicable) and analytical process. Blank Spikes within a Batch or Analytical sequence will be appended with a numerical value beginning with 1 that will increase incrementally. A duplicate Blank Spike will be designated as a BSD.

MS: The LIMS assigns each Client sample with a unique identifier. The Matrix Spike is designated with a MS at the end of the sample's unique identifier. The Matrix Spike sample is used to assess the effect of the sample matrix on the precision and accuracy of the results generated using the selected method. A duplicate Matrix Spike will be designated as a MSD.

IDs: The LIMS assigns each Client sample with a unique identifier. The letter "RE" may potentially be appended to the end of the LIMS Sample ID. And "**RE"** implies that the sample was either re-prepped, re-analyzed straight, or re-analyzed at a dilution. Subsequent re-analysis for the sample will be appended with a numerical value beginning with 1 that will increase incrementally. Eg: RE1, RE2, RE3, etc.

Statement of Data Authenticity:

I certify that, based upon my inquiry of those individuals immediately responsible for obtaining the information and to the best of my knowledge, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in this Case Narrative, as verified by my signature below. During absences, the Data Quality Manager, Technical Directors or Project Managers are authorized to sign this Statement of Data Authenticity.

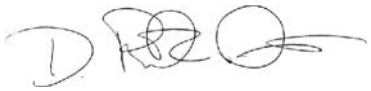

Mr. Rick D. Davis
Laboratory Technical Director / VP Operations

Empirical Laboratories, LLC
Certifications/Approvals
(Revised 12/16/2015)

DoD ELAP QSM5.0, Certificate Number L2226
- Aqueous
- Non-aqueous
- Expires: 01/30/2016

State of Florida, Department of Health – NELAP, Lab ID: E87646
- Clean Water Act
- RCRA/CERCLA
- Expires: 06/30/2016

State of Georgia, Environmental Protection Agency – NELAP, Self Certification
- Expires: 06/30/2016

Commonwealth of Kentucky, Energy and Environment Cabinet – WWLCP, Laboratory Number: 98017
- Wastewater
- Expires: 12/31/2015

Commonwealth of Kentucky, Department of Environmental Protection – UST, Certificate Number: 77
- Aqueous
- Non-aqueous
- Expires: 06/30/2016

State of New Jersey, Department of Environmental Protection – NELAP Primary, Lab ID: TN473
- Water Pollution
- Solid and Hazardous Waste
- Expires: 06/30/2016

State of North Carolina, Department of Environment and Natural Resources - Certificate Number: 643
- Aqueous
- Non-aqueous
- Expires: 12/31/2015

State of Texas, Commission on Environmental Quality – NELAP, Certificate Number: T104704307-15-11
- Aqueous
- Non-aqueous
- Expires: 12/31/2015

State of Utah, Department of Health – NELAP, Certificate Number: TN0042015-7
- Aqueous
- Non-aqueous
- Expires: 07/31/2016

Commonwealth of Virginia, Department of General Services – NELAP, Certificate Number: 7700, Lab ID: 460243
- Aqueous
- Non-aqueous
- Expires: 12/14/2016

State of Washington, Department of Ecology – NELAP, Lab ID: C934-15
- Groundwater
- Solid and Hazardous Waste
- Expires: 03/18/2016

ORGANIC CALCULATIONS

GC/MS Volatiles

$$\text{Final Concentration} = \frac{\text{On-column(ug/L or ug/Kg) * Expected Vol/Weight (mL or g) * Dilution}}{\text{Initial Vol/Weight (mL or g) * (Percent Solids/100) (if applicable)}}$$

Note - Expected Vol/Weight value is found in "Final Vol" column of Preparation Batch Summary.

GC/MS Extractables

$$\text{Final Concentration} = \frac{\text{On-column(ng/uL) * Final Vol (ml) * Dilution *(1000uL/mL)}}{\text{Initial Vol/Weight (mL or g) * (Percent Solids/100) (if applicable)}}$$

= ng/mL or ng/g

= ug/L or ug/kg

GC or LC Extractables

$$\text{Final Concentration} = \frac{\text{On-column(ng/mL) * Final Vol (mL) * Dilution}}{\text{Initial Vol/Weight (mL or g) * (Percent Solids/100) (if applicable)}}$$

= ng/mL or ng/g

= ug/L or ug/kg

Sample Receipt Information

L15110950 Perchlorate only report - stephanie.mossburg@microbac.com

00653757

AECOM Chain of Custody Record

COC Number:

1511269-01 A

OC: Stephanie Mossburg	Project Manager: Mark Heaston	Mail to: Linda Raabe	
ve	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
5750	Sampler (print): Scott Beesinger	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205		Program: L#15111377	
Turn Around Time: STANDARD	pH:		
Project Name/Location: Longhorn		ERPIMS REQUIRED FIELDS	
Project Number: 60256135.0002GA			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp	Grab	Matrix	Number of Containers	VOC	Perchlorate					SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 50	50WW05-111315			11/13/15	0800		✓	W	4	✓	✓				-01					
	50WW05MS-111315			11/13/15	0800		✓	W	4	✓	✓				02					
	50WW05MSD-111315			11/13/15	0800		✓	W	4	✓	✓				03					
	50SW06-111315			11/13/15	0830		✓	W	4	✓	✓			02	04					
	GPW1-111315			11/13/15	0845		✓	W	4	✓	✓			03	05					
	50WW28-111315			11/13/15	0945		✓	W	4	✓	✓			04	06					
	50WW16-111315			11/13/15	1045		✓	W	4	✓	✓			05	07					
	LHSMW54-111315			11/13/15	1345		✓	W	4	✓	✓			06	08					
	42WW38-111315			11/13/15	1455		✓	W	4	✓	✓			07	09					
	TRip BLANK			11/13/15			✓	W	2	✓										

11/25/15

Comments: **STANDARD TAT**

	Date	Time
Relinquished by: (Signature) Scott Beesinger	11/16/15	1600
Relinquished by: (Signature)		

Microbac OVD *
Received 11/17/2015 09 55
By BRENDA GREENWALT 221000078887

9xs relogged + subbed out BG
Brenda Greenwalt

Date	Time	Relinquished by (Signature)
Time		Remarks:

Manager, Pink QA/QC Manager

11/25/15 @ 845

•Homogenize all composite samples prior to analysis

1511269

M5110443 Perchlorate only report - stephanie.mossburg@microbac.com

00653758

AECOM Chain of Custody Record

COC Number: 11

Laboratory: Microbac POC: Stephanie Mossburg	Project Manager: Mark Heaston	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): Scott Beesinger	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205	pH:	Program: L#15111376	
Turn Around Time: STANDARD			
Project Name/Location: Longhorn			
Project Number: 60256135.0002GA		ERPIMS REQUIRED FIELDS	

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Dissolved Gases / Carbon Dioxide	Alkalinity	Sulfide	Chloride / Sulfate Nitrate / Nitrite	TOC / Total Phosphorous	Dissolved Iron / Dissolved Manganese	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 50	50WW08 - 111615			11/16/15	0820		✓	W	11	✓	✓	✓	✓	✓	✓	✓				~~10~~	08	
	50WW08 FF - 111615			11/16/15	0820		✓	W	1								✓					
	50WW22 - 111615			11/16/15	0925		✓	W	11	✓	✓	✓	✓	✓	✓	✓				11	09	
	50WW22FF - 111615			11/16/15	0925		✓	W	1								✓					
	50WW24 - 111615			11/16/15	1030		✓	W	11	✓	✓	✓	✓	✓	✓	✓				12	10	
	50WW24FF - 111615			11/16/15	1030		✓	W	1								✓					
	50WW23 - 111615			11/16/15	1135		✓	W	11	✓	✓	✓	✓	✓	✓	✓				13	11	
	50WW23FF - 111615			11/16/15	1135		✓	W	1								✓					
	50WW18 - 111615			11/16/15	1345		✓	W	11	✓	✓	✓	✓	✓	✓	✓			TH 11/23/15	14	12	
	50WW18FF - 111615			11/16/15	1345		✓	W	1								✓					
	50WW25 - 111615			11/16/15	1455		✓	W	11	✓	✓	✓	✓	✓	✓	✓				15	13	
	50WW25FF - 111615			11/16/15	1455		✓	W	1								✓					
	TRIP BLANK			11/16/15			✓	W	2	✓												

Comments: **STANDARD TAT**

Relinquished by: (Signature) Scott Beesinger	Date 11/16/15	Time 1600	R	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	R (S		Time	Remarks:

Microbac OVD
Received 11/17/2015 09 55
By BRENDA GREENWALT 221000078886
SYS relogged + subbed out BG

*Homogenize all composite samples prior to analysis

Brenda Greenwalt Laboratory, Sandy for Project Manager, Pink QA/QC Manager

1511269

00653759 15110149 Perchlorate only

AECOM Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Stephanie Mossburg	Project Manager: Mark Heaston	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE 400	
Marietta, OH 45750	Sampler (print): Scott Beesinger	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste 400			
San Antonio, TX 78205		Program: L15111375	
Turn Around Time: STANDARD	pH:		
Project Name/Location: Longhorn			
Project Number: 60256135.0002GA			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp	Grab	Matrix	Number of Containers	VOC	Perchlorate	Dissolved Gases / Carbon Dioxide	Alkalinity	Sulfide	Chloride / Sulfate Nitrate / Nitrite	TOC / Total Phosphorous	Dissolved Iron / Dissolved Manganese	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 50	50WW27-111115			11/11/15	0815		✓	W	4	✓	✓								14	~~16~~		
	50WW15-111115			11/11/15	0915		✓	W	4	✓	✓								15	~~17~~		
	50WW15FD-111115			11/11/15	0915		✓	W	4	✓	✓								16	~~18~~		
	50WW09-111115			11/11/15	1035		✓	W	4	✓	✓								17	~~19~~		
	50WW09FD-111115			11/11/15	1035		✓	W	4	✓	✓								18	~~20~~		
	50WW10-111115			11/11/15	1435		✓	W	4	✓	✓								19	~~21~~		
	50WW13-111215			11/12/15	0840		✓	W	11	✓	✓	✓	✓	✓	✓	✓			20	~~22~~		
	50WW13FF-111215			11/12/15	0840		✓	W	1								✓					
	50WW14-111215			11/12/15	0950		✓	W	11	✓	✓	✓	✓	✓	✓	✓			21	~~23~~		
	50WW14FF-111215			11/12/15	0950		✓	W	1								✓					
	50WW11-111215			11/12/15	1100		✓	W	11	✓	✓	✓	✓	✓	✓	✓			22	~~24~~		
	50WW11FF-111215			11/12/15	1100		✓	W	1								✓					
	50WW06-111215			11/12/15	1325		✓	W	11	✓	✓	✓	✓	✓	✓	✓			23	~~25~~		
	50WW06FF-111215			11/12/15	1325		✓	W	1								✓					

ERPIMS REQUIRED FIELDS

Comments: STANDARD TAT

Microbac OVD
Received 11/13/2015 09 48
By BRENDA GREENWALT 221000078885
SXS relogged + subbed out
BG
Brenda Greenwalt

Relinquished by (Signature)	Date	Time	Received	Time	Relinquished by (Signature)
Scott Beesinger	11/12/15	1545			
Relinquished by (Signature)	Date	Time	Received (Signature)	Time	Remarks

*Homogenize all composite samples prior to analysis

Distribution White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

1511269

L15110793-2

00653760

AECOM

Chain of Custody Record

COC Number: 13

Laboratory: Microbac POC: Stephanie Mossburg	Project Manager: Mark Heaston	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): Scott Beesinger	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205			
Turn Around Time: STANDARD	pH:	Program:	
Project Name/Location: Longhorn			
Project Number: 60256135.0002GA			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Dissolved Gases / Carbon Dioxide	Alkalinity	Sulfide	Chloride / Sulfate / Nitrate / Nitrite	TOC / Total Phosphorous	Dissolved Iron / Dissolved Manganese	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 50	50WW12-111215			11/12/15	1435		✓	W	11	✓	✓	✓	✓	✓	✓	✓	✓		24	[illegible]	+L	
	50WW12FF-111215			11/12/15	1435		✓	W	1								✓				11/25	15
	TRIPBLANK			11/12/15			✓	W	2	✓												

Comments: **STANDARD TAT**

Relinquished by: (Signature) Scott Beesinger	Date 11/12/15	Time 1545	Rec	Date	Time	Relinquished by (Signature)
Relinquished by: (Signature)	Date	Time	Rec (Sig		Time	Remarks:

Microbac OVD
Received 11/13/2015 09 48
By BRENDA GREENWALT 221000078885
Brenda Greenwalt

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

1511269

II. EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

Cooler Received/Opened On: 11/25/15 @ 0845 Work order# 1511269

1. Tracking # 4496 (last 4 digits, FedEx)

   Courier: FedEx

2. Temperature of rep. sample or temp blank when opened: 0.4 °C + correction factor(+0.4) = 0.8 °C

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler? YES...NO...NA

   If yes, how many and where: 1 on front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

   I certify that I opened the cooler and answered questions 1-6 (initial/date) JTG 11/25/15

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

   Were these signed and dated correctly? YES...NO...NA

8. Packing material used? Bubble wrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13. a. Were VOA vials received? YES...NO...NA

    b. Was there observable headspace present in any VOA vial (>5mm-6mm)? YES...NO...NA

14. Was there a Trip Blank in this cooler (custody seals present/intact)? YES...NO...NA...Comments_____
    If multiple coolers, sequence #_____

    I certify that I unloaded the cooler and answered questions 7-14 (initial/date) TH 11/25/15

15. a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA TH 11/25/15

    b. Did the bottle labels indicate that the correct preservatives were used? YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

    I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial/date) TH 11/25/15

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA If not, PM notified? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA If not, PM notified? YES...NO...NA

21. Were there Non-Conformance issues at login? YES...NO...NCR#_____

I certify that I entered this project into LIMS and answered questions 17-21 (initial/date) TH 11/25/15

I certify that I attached a label with the unique LIMS number to each container (initial/date) TH 11/25/15

I certify that I notified the laboratory of any short holding time or RUSH parameters (initial/date) TH 11/25/15

C \Users\thutchings\Desktop\Cooler Receipt Updated 2014.doc

III. EMPIRICAL LABORATORIES, LLC
DATA ENTRY VERIFICATION FORM – PROJECT MANAGEMENT

Workorder#: 1511269

	Verification Item	Yes	No	NA
1.	**Cooler Receipt Form Issues reviewed and communicated to client**			X
2.	**Element/ Project Screen/items verified to match the COC/CRF:**			
a.	**Client/Project**	X		
b.	Comments requiring laboratory reminder?			X
c.	Client and/or Project Memo requiring laboratory reminder?			X
3.	**Receipt Screen items verified to match the COC/CRF:**			
a.	Received Date/Received By	X		
b.	Workorder Due Date	X		
c.	Package Due Date	X		
d.	TAT	X		
e.	SDG Identifier Populated	X		
4.	**Sample Information verified against COC for each sample:**			
a.	Name	X		
b.	QC Source	X		
c.	Matrix	X		
d.	Sample Type	X		
e.	Sampled Date/Time (Correct Time Zone)	X		
f.	Work Analyses/Versions	X		
g.	Sample Issues included in comments			X
h.	Unpreserved VOA holding time set to 7 days			X
5.	**Containers consistent with tests requested**	X		
6.	**Field data entered and matching COC, if applicable**			X
	I certify that I have performed a second check of the LIMS information against the COC to confirm accuracy (initial/date):	SMG 11/25/2015		

C:\Users\sgordon\Desktop\QS10_R21_20140729_CoolerReceiptForm.doc

WORK ORDER

Printed: 11/25/2015 4:40:29PM

1511269

Empirical Laboratories, LLC

Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Project Manager: Sonya Gordon
Project Number: MIC_Perc

Report To:
Microbac Laboratories, Inc.-Ohio Valley Division
Stephanie Mossburg
158 Starlite Drive
Marietta, OH 45750
Phone: (740) 373-4071
Fax: (740) 373-4835

Invoice To:
Microbac Laboratories, Inc.-Ohio Valley Division
Kathy Albertson
158 Starlite Drive
Marietta, OH 45750
Phone :(800) 373-4071
Fax: (740) 373-4835

Date Due: 12/11/2015 16:00 (10 day TAT)
Received By: Tiana L. Hutchings
Date Received: 11/25/2015 08:45
Logged In By: Tiana L. Hutchings
Date Logged In: 11/25/2015 09:05

Samples Received at: **0.8°C**
Custody Seals Yes Received On Ice Yes
Containers Intact Yes
COC/Labels Agree Yes
Preservation Confirme No

Analysis	Due	TAT	Expires	Comments
1511269-01 50WW05-111315 [Water] Sampled 11/13/2015 08:00 (GMT-06:00) Central Time (US &				**MS/MSD**
LCMS_PERC_6850	12/08/2015 16:00	10	12/11/2015 08:00	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-02 50SW06-111315 [Water] Sampled 11/13/2015 08:30 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/11/2015 08:30	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-03 GPW1-111315 [Water] Sampled 11/13/2015 08:45 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/11/2015 08:45	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-04 50WW28-111315 [Water] Sampled 11/13/2015 09:45 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/11/2015 09:45	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-05 50WW16-111315 [Water] Sampled 11/13/2015 10:45 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/11/2015 10:45	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-06 LHSMW54-111315 [Water] Sampled 11/13/2015 13:45 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/11/2015 13:45	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-07 47WW38-111315 [Water] Sampled 11/13/2015 14:55 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/11/2015 14:55	low DL/LOD/LOQ 0.1/0.2/0.4ug/L

WORK ORDER

Printed: 11/25/2015 4:40:29PM

1511269

Empirical Laboratories, LLC

Client:	**Microbac Laboratories, Inc.-Ohio Valley Division**	**Project Manager:**	**Sonya Gordon**
Project:	**Perchlorate**	**Project Number:**	**MIC_Perc**

Analysis	Due	TAT	Expires	Comments
1511269-08 50WW08-111615 [Water] Sampled 11/16/2015 08:20 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/14/2015 08:20	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-09 50WW22-111615 [Water] Sampled 11/16/2015 09:25 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/14/2015 09:25	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-10 50WW24-111615 [Water] Sampled 11/16/2015 10:30 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/14/2015 10:30	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-11 50WW23-111615 [Water] Sampled 11/16/2015 11:35 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/14/2015 11:35	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-12 50WW18-111615 [Water] Sampled 11/16/2015 13:45 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/14/2015 13:45	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-13 50WW25-111615 [Water] Sampled 11/16/2015 14:55 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/14/2015 14:55	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-14 50WW27-111115 [Water] Sampled 11/11/2015 08:15 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/09/2015 08:15	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-15 50WW15-111115 [Water] Sampled 11/11/2015 09:15 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/09/2015 09:15	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-16 50WW15FD-111115 [Water] Sampled 11/11/2015 09:15 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/09/2015 09:15	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-17 50WW09-111115 [Water] Sampled 11/11/2015 10:35 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/09/2015 10:35	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-18 50WW09FD-111115 [Water] Sampled 11/11/2015 10:35 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/09/2015 10:35	low DL/LOD/LOQ 0.1/0.2/0.4ug/L

WORK ORDER

Printed: 11/25/2015 4:40:29PM

1511269

Empirical Laboratories, LLC

Client:	**Microbac Laboratories, Inc.-Ohio Valley Division**	**Project Manager:**	**Sonya Gordon**
Project:	**Perchlorate**	**Project Number:**	**MIC_Perc**

Analysis	Due	TAT	Expires	Comments
1511269-19 50WW10-111115 [Water] Sampled 11/11/2015 14:35 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/09/2015 14:35	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-20 50WW13-111215 [Water] Sampled 11/12/2015 08:40 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/10/2015 08:40	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-21 50WW14-111215 [Water] Sampled 11/12/2015 09:50 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/10/2015 09:50	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-22 50WW11-111215 [Water] Sampled 11/12/2015 11:00 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/10/2015 11:00	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-23 50WW06-111215 [Water] Sampled 11/12/2015 13:25 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/10/2015 13:25	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-24 50WW12-111215 [Water] Sampled 11/12/2015 14:35 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/10/2015 14:35	low DL/LOD/LOQ 0.1/0.2/0.4ug/L

Reviewed By

Date

Sample Delivery Group Assignment Form

CLIENT: CB&I
PROJECT NAME: Kelly AFB
SDG #: 1511184

QC LEVEL: Level III/TRPP
Report Due: 12/11/2015
Client Sample Count: 2

Sample Type	Sampled	Received	Lab ID	Client ID	Lab Matrix	Report Matrix	E410.4	SM2540D	SM5210B	SW1664A	SW8260B	SW8270D
Trip Blank	11/17/2015	11/18/2015	1511184-01	TB-01-151117	Water	Water					X	
Client Sample	11/10/2015	11/18/2015	1511184-02	OUTFALL001-151110	Water	Water	X					
Client Sample	11/17/2015	11/18/2015	1511184-03	OUTFALL001-151117	Water	Water	X	X	X	X	X	X

Data for SW6850 Forms

Sample Extraction Data

Prep Method: LCMS_PREP6850_W-SW6850

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1511269-01 [50WW05-111315]	5L01021	10.00/10.00	10.0	10.0	5.00			12/01/15
1511269-02 [50SW06-111315]	5L01021	10.00/10.00	10.0	10.0	1.00			12/01/15
1511269-03 [GPW1-111315]	5L01021	10.00/10.00	10.0	10.0	1.00			12/01/15
1511269-06 [LHSMW54-111315]	5L01021	10.00/10.00	10.0	10.0	5.00			12/01/15
1511269-07 [47WW38-111315]	5L01021	10.00/10.00	10.0	10.0	50.00			12/01/15
1511269-08 [50WW08-111615]	5L01021	10.00/10.00	10.0	10.0	10.00			12/01/15
1511269-09 [50WW22-111615]	5L01021	10.00/10.00	10.0	10.0	5.00			12/01/15

Sample Extraction Data

Prep Method: LCMS_PREP6850_W-SW6850

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1511269-04 [50WW28-111315]	5L03014	10.00/10.00	10.0	10.0	1.00			12/03/15
1511269-05 [50WW16-111315]	5L03014	10.00/10.00	10.0	10.0	1.00			12/03/15
1511269-10 [50WW24-111615]	5L03014	10.00/10.00	10.0	10.0	5.00			12/03/15
1511269-11 [50WW23-111615]	5L03014	10.00/10.00	10.0	10.0	5.00			12/03/15
1511269-12 [50WW18-111615]	5L03014	10.00/10.00	10.0	10.0	5.00			12/03/15
1511269-13 [50WW25-111615]	5L03014	10.00/10.00	10.0	10.0	5.00			12/03/15
1511269-14 [50WW27-111115]	5L03014	10.00/10.00	10.0	10.0	5.00			12/03/15
1511269-15 [50WW15-111115]	5L03014	10.00/10.00	10.0	10.0	5.00			12/03/15
1511269-16 [50WW15FD-111115]	5L03014	10.00/10.00	10.0	10.0	5.00			12/03/15
1511269-17 [50WW09-111115]	5L03014	10.00/10.00	10.0	10.0	5.00			12/03/15
1511269-18 [50WW09FD-111115]	5L03014	10.00/10.00	10.0	10.0	5.00			12/03/15
1511269-19 [50WW10-111115]	5L03014	10.00/10.00	10.0	10.0	1.00			12/03/15
1511269-20 [50WW13-111215]	5L03014	10.00/10.00	10.0	10.0	500.00			12/03/15
1511269-21 [50WW14-111215]	5L03014	10.00/10.00	10.0	10.0	5.00			12/03/15
1511269-22 [50WW11-111215]	5L03014	10.00/10.00	10.0	10.0	1,000.00			12/03/15
1511269-23 [50WW06-111215]	5L03014	10.00/10.00	10.0	10.0	500.00			12/03/15
1511269-24 [50WW12-111215]	5L03014	10.00/10.00	10.0	10.0	2,000.00			12/03/15

ANALYSIS DATA SHEET

50WW05-111315

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-01	File ID:	PERC000011.D.Report.TXT
Sampled:	11/13/15 08:00	Prepared:	12/01/15 13:39	Analyzed:	12/04/15 18:04
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	5

Batch: 5L01021 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**0.700**	0.500	1.00	2.00	NJD

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50SW06-111315

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-02	File ID:	PERC000029.D.Report.TXT
Sampled:	11/13/15 08:30	Prepared:	12/01/15 13:39	Analyzed:	12/02/15 17:11
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	1

Batch: 5L01021 Sequence: 5L33714 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**1.44**	0.100	0.200	0.400	

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

GPW1-111315

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-03	File ID:	PERC000030.D.Report.TXT
Sampled:	11/13/15 08:45	Prepared:	12/01/15 13:39	Analyzed:	12/02/15 17:29
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	1

Batch: 5L01021 Sequence: 5L33714 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**0.139**	0.100	0.200	0.400	J

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW28-111315

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-04	File ID:	PERC000023.D.Report.TXT
Sampled:	11/13/15 09:45	Prepared:	12/03/15 12:00	Analyzed:	12/04/15 21:38
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	1

Batch: 5L03014 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**1.64**	0.100	0.200	0.400	

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW16-111315

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-05	File ID:	PERC000014.D.Report.TXT
Sampled:	11/13/15 10:45	Prepared:	12/03/15 12:00	Analyzed:	12/07/15 20:56
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	1

Batch: 5L03014 Sequence: 5L34214 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.100	0.200	0.400	U

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

LHSMW54-111315

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-06	File ID:	PERC000014.D.Report.TXT
Sampled:	11/13/15 13:45	Prepared:	12/01/15 13:39	Analyzed:	12/04/15 18:57
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	5

Batch: 5L01021 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.500	1.00	2.00	C10U

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

47WW38-111315

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-07	File ID:	PERC000015.D.Report.TXT
Sampled:	11/13/15 14:55	Prepared:	12/01/15 13:39	Analyzed:	12/04/15 19:15
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	50

Batch: 5L01021 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**579**	5.00	10.0	20.0	D

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW08-111615

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-08	File ID:	PERC000016.D.Report.TXT
Sampled:	11/16/15 08:20	Prepared:	12/01/15 13:39	Analyzed:	12/04/15 19:33
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	10

Batch: 5L01021 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**32.4**	1.00	2.00	4.00	D

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW22-111615

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-09	File ID:	PERC000036.D.Report.TXT
Sampled:	11/16/15 09:25	Prepared:	12/01/15 13:39	Analyzed:	12/02/15 19:16
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	5

Batch: 5L01021 Sequence: 5L33714 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**0.642**	0.500	1.00	2.00	C10JD

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW24-111615

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-10	File ID:	PERC000025.D.Report.TXT
Sampled:	11/16/15 10:30	Prepared:	12/03/15 12:00	Analyzed:	12/04/15 22:13
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	5

Batch: 5L03014 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.500	1.00	2.00	C10U

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW23-111615

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-11	File ID:	PERC000030.D.Report.TXT
Sampled:	11/16/15 11:35	Prepared:	12/03/15 12:00	Analyzed:	12/04/15 23:43
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	5

Batch: 5L03014 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.500	1.00	2.00	C10U

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW18-111615

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-12	File ID:	PERC000031.D.Report.TXT
Sampled:	11/16/15 13:45	Prepared:	12/03/15 12:00	Analyzed:	12/05/15 00:00
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	5

Batch: 5L03014 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.500	1.00	2.00	C10U

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW25-111615

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-13	File ID:	PERC000023.D.Report.TXT
Sampled:	11/16/15 14:55	Prepared:	12/03/15 12:00	Analyzed:	12/07/15 23:37
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	5

Batch: 5L03014 Sequence: 5L34214 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**0.727**	0.500	1.00	2.00	C10JD

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW27-111115

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-14	File ID:	PERC000033.D.Report.TXT
Sampled:	11/11/15 08:15	Prepared:	12/03/15 12:00	Analyzed:	12/05/15 00:36
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	5

Batch: 5L03014 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.500	1.00	2.00	C10U

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW15-111115

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-15	File ID:	PERC000034.D.Report.TXT
Sampled:	11/11/15 09:15	Prepared:	12/03/15 12:00	Analyzed:	12/05/15 00:54
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	5

Batch: 5L03014 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.500	1.00	2.00	C10U

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW15FD-111115

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-16	File ID:	PERC000035.D.Report.TXT
Sampled:	11/11/15 09:15	Prepared:	12/03/15 12:00	Analyzed:	12/05/15 01:12
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	5

Batch: 5L03014 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.500	1.00	2.00	C10U

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW09-111115

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-17	File ID:	PERC000036.D.Report.TXT
Sampled:	11/11/15 10:35	Prepared:	12/03/15 12:00	Analyzed:	12/05/15 01:30
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	5

Batch: 5L03014 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.500	1.00	2.00	C10U

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW09FD-111115

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-18	File ID:	PERC000037.D.Report.TXT
Sampled:	11/11/15 10:35	Prepared:	12/03/15 12:00	Analyzed:	12/05/15 01:47
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	5

Batch: 5L03014 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.500	1.00	2.00	C10U

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW10-111115

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-19	File ID:	PERC000038.D.Report.TXT
Sampled:	11/11/15 14:35	Prepared:	12/03/15 12:00	Analyzed:	12/05/15 02:05
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	1

Batch: 5L03014 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.100	0.200	0.400	U

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW13-111215

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-20	File ID:	PERC000028.D.Report.TXT
Sampled:	11/12/15 08:40	Prepared:	12/03/15 12:00	Analyzed:	12/08/15 01:06
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	500

Batch: 5L03014 Sequence: 5L34214 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**11400**	50.0	100	200	D

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW14-111215

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-21	File ID:	PERC000044.D.Report.TXT
Sampled:	11/12/15 09:50	Prepared:	12/03/15 12:00	Analyzed:	12/05/15 03:52
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	5

Batch: 5L03014 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**7.50**	0.500	1.00	2.00	D

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW11-111215

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-22	File ID:	PERC000029.D.Report.TXT
Sampled:	11/12/15 11:00	Prepared:	12/03/15 12:00	Analyzed:	12/08/15 01:24
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	1000

Batch: 5L03014 Sequence: 5L34214 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**22800**	100	200	400	D

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW06-111215

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-23	File ID:	PERC000030.D.Report.TXT
Sampled:	11/12/15 13:25	Prepared:	12/03/15 12:00	Analyzed:	12/08/15 01:42
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	500

Batch: 5L03014 Sequence: 5L34214 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**5860**	50.0	100	200	D

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW12-111215

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-24	File ID:	PERC000031.D.Report.TXT
Sampled:	11/12/15 14:35	Prepared:	12/03/15 12:00	Analyzed:	12/08/15 02:00
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	2000

Batch: 5L03014 Sequence: 5L34214 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**37900**	200	400	800	D

Total Target Analytes Reported 1 Project Analytes: 1

LCS / LCS DUPLICATE RECOVERY

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Matrix:	Water		
Batch:	5L01021	Laboratory ID:	5L01021-BS1
Preparation:	LCMS_PREP6850_W	Initial/Final:	10 mL / 10 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
Perchlorate	2.000	2.150	108	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Matrix:	Water		
Batch:	5L03014	Laboratory ID:	5L03014-BS1
Preparation:	LCMS_PREP6850_W	Initial/Final:	10 mL / 10 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
Perchlorate	2.000	2.023	101	80 - 120

ANALYTE	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Perchlorate	2.000	2.011	101	0.579	15	80 - 120

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW6850

50WW05-111315

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Matrix: Water
Batch: 5L01021
% Solids:
Source Sample Name: **1511269-01**

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	Q	QC LIMITS REC.
Perchlorate	2.000	0.7004	3.471	174	*	80 - 120

ANALYTE	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Perchlorate	2.000	2.652	133	26.7	* *	15	80 - 120

PREPARATION BATCH SUMMARY

SW6850

Laboratory: Empirical Laboratories, LLC SDG: 1511269

Client: Microbac Laboratories, Inc.-Ohio Valley Division Project: Perchlorate

Batch: 5L01021 Batch Matrix: Water Preparation: LCMS_PREP6850_W

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
50WW05-111315	1511269-01	12/01/15 13:39	10.00	10.00
50SW06-111315	1511269-02	12/01/15 13:39	10.00	10.00
GPW1-111315	1511269-03	12/01/15 13:39	10.00	10.00
LHSMW54-111315	1511269-06	12/01/15 13:39	10.00	10.00
47WW38-111315	1511269-07	12/01/15 13:39	10.00	10.00
50WW08-111615	1511269-08	12/01/15 13:39	10.00	10.00
50WW22-111615	1511269-09	12/01/15 13:39	10.00	10.00
Blank	5L01021-BLK1	12/01/15 13:39	10.00	10.00
LCS	5L01021-BS1	12/01/15 13:39	10.00	10.00
50WW05-111315	5L01021-MS1	12/01/15 13:39	10.00	10.00
50WW05-111315	5L01021-MSD1	12/01/15 13:39	10.00	10.00

PREPARATION BATCH SUMMARY

SW6850

Laboratory: Empirical Laboratories, LLC SDG: 1511269

Client: Microbac Laboratories, Inc.-Ohio Valley Division Project: Perchlorate

Batch: 5L03014 Batch Matrix: Water Preparation: LCMS_PREP6850_W

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
50WW28-111315	1511269-04	12/03/15 12:00	10.00	10.00
50WW16-111315	1511269-05	12/03/15 12:00	10.00	10.00
50WW24-111615	1511269-10	12/03/15 12:00	10.00	10.00
50WW23-111615	1511269-11	12/03/15 12:00	10.00	10.00
50WW18-111615	1511269-12	12/03/15 12:00	10.00	10.00
50WW25-111615	1511269-13	12/03/15 12:00	10.00	10.00
50WW27-111115	1511269-14	12/03/15 12:00	10.00	10.00
50WW15-111115	1511269-15	12/03/15 12:00	10.00	10.00
50WW15FD-111115	1511269-16	12/03/15 12:00	10.00	10.00
50WW09-111115	1511269-17	12/03/15 12:00	10.00	10.00
50WW09FD-111115	1511269-18	12/03/15 12:00	10.00	10.00
50WW10-111115	1511269-19	12/03/15 12:00	10.00	10.00
50WW13-111215	1511269-20	12/03/15 12:00	10.00	10.00
50WW14-111215	1511269-21	12/03/15 12:00	10.00	10.00
50WW11-111215	1511269-22	12/03/15 12:00	10.00	10.00
50WW06-111215	1511269-23	12/03/15 12:00	10.00	10.00
50WW12-111215	1511269-24	12/03/15 12:00	10.00	10.00
Blank	5L03014-BLK1	12/03/15 12:00	10.00	10.00
LCS	5L03014-BS1	12/03/15 12:00	10.00	10.00
LCS Dup	5L03014-BSD1	12/03/15 12:00	10.00	10.00

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC SDG: 1511269

Client: Microbac Laboratories, Inc.-Ohio Valley Division Project: Perchlorate

Matrix: Laboratory ID: 5L01021-BLK1 File ID: PERC000010.D.Report.TXT

Sampled: Prepared: Analyzed: 12/02/15 11:32

Solids: Preparation: LCMS_PREP6850_W Dilution:

Batch: 5L01021 Sequence: 5L33714 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.100	0.200	0.400	U

Total Target Analytes Reported: 1

ANALYSIS DATA SHEET

LCS

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate

Matrix:		Laboratory ID:	5L01021-BS1	File ID:	PERC000011.D.Report.TXT
Sampled:		Prepared:		Analyzed:	12/02/15 11:50
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	

Batch:	5L01021	Sequence:	5L33714	Calibration:	5317001	Instrument:	LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**2.150**	0.100	0.200	0.400	

Total Target Analytes Reported: 1

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC SDG: 1511269

Client: Microbac Laboratories, Inc.-Ohio Valley Division Project: Perchlorate

Matrix: Laboratory ID: 5L01021-MS1 File ID: PERC000012.D.Report.TXT

Sampled: Prepared: Analyzed: 12/04/15 18:22

Solids: Preparation: LCMS_PREP6850_W Dilution:

Batch: 5L01021 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**3.471**	0.500	1.00	2.00	D

Total Target Analytes Reported: 1

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC SDG: 1511269

Client: Microbac Laboratories, Inc.-Ohio Valley Division Project: Perchlorate

Matrix: Laboratory ID: 5L01021-MSD1 File ID: PERC000013.D.Report.TXT

Sampled: Prepared: Analyzed: 12/04/15 18:39

Solids: Preparation: LCMS_PREP6850_W Dilution:

Batch: 5L01021 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**2.652**	0.500	1.00	2.00	D

Total Target Analytes Reported: 1

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC SDG: 1511269

Client: Microbac Laboratories, Inc.-Ohio Valley Division Project: Perchlorate

Matrix: Laboratory ID: 5L03014-BLK1 File ID: PERC000011.D.Report.TXT

Sampled: Prepared: Analyzed: 12/07/15 20:02

Solids: Preparation: LCMS_PREP6850_W Dilution:

Batch: 5L03014 Sequence: 5L34214 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.100	0.200	0.400	U

Total Target Analytes Reported: 1

ANALYSIS DATA SHEET

LCS

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate

Matrix:		Laboratory ID:	5L03014-BS1	File ID:	PERC000012.D.Report.TXT
Sampled:		Prepared:		Analyzed:	12/07/15 20:20
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	

Batch:	5L03014	Sequence:	5L34214	Calibration:	5317001	Instrument:	LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**2.023**	0.100	0.200	0.400	

Total Target Analytes Reported: 1

ANALYSIS DATA SHEET

LCS Dup

Laboratory: Empirical Laboratories, LLC SDG: 1511269

Client: Microbac Laboratories, Inc.-Ohio Valley Division Project: Perchlorate

Matrix: Laboratory ID: 5L03014-BSD1 File ID: PERC000013.D.Report.TXT

Sampled: Prepared: Analyzed: 12/07/15 20:38

Solids: Preparation: LCMS_PREP6850_W Dilution:

Batch: 5L03014 Sequence: 5L34214 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**2.011**	0.100	0.200	0.400	

Total Target Analytes Reported: 1

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Lab File ID:	PERC000002.D.Report.TXT	Injection Date:	11/11/15
Instrument ID:	LCMS1	Injection Time:	15:35
Sequence:	5K31704	Lab Sample ID:	5K31704-TUN1

m/z	MASS CRITERIA	ACTUAL MASS	
99	(+/- 0.3) of the actual mass	99	PASS
101	(+/- 0.3) of the actual mass	101	PASS

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Lab File ID:	PERC000002.D.Report.TXT	Injection Date:	12/02/15
Instrument ID:	LCMS1	Injection Time:	09:09
Sequence:	5L33714	Lab Sample ID:	5L33714-TUN1

m/z	MASS CRITERIA	ACTUAL MASS	
99	(+/- 0.3) of the actual mass	99	PASS
101	(+/- 0.3) of the actual mass	101	PASS

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Lab File ID:	PERC000002.D.Report.TXT	Injection Date:	12/07/15
Instrument ID:	LCMS1	Injection Time:	17:21
Sequence:	5L34214	Lab Sample ID:	5L34214-TUN1

m/z	MASS CRITERIA	ACTUAL MASS	
99	(+/- 0.3) of the actual mass	99	PASS
101	(+/- 0.3) of the actual mass	101	PASS

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Lab File ID:	PERC000002.D.Report.TXT	Injection Date:	12/04/15
Instrument ID:	LCMS1	Injection Time:	15:23
Sequence:	5L34216	Lab Sample ID:	5L34216-TUN1

m/z	MASS CRITERIA	ACTUAL MASS	
99	(+/- 0.3) of the actual mass	99	PASS
101	(+/- 0.3) of the actual mass	101	PASS

ICP INTERFERENCE CHECK SAMPLE

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Divisio
Project: Perchlorate
Instrument ID: LCMS1
Calibration: 5317001
Sequence: 5L33714

Lab Sample ID	Analyte	True	Found	%R	Units
5L33714-IFA1	Perchlorate-d18	5.000	5.00	100	ug/L
	Perchlorate	2.000	2.13	107	ug/L

ICP INTERFERENCE CHECK SAMPLE

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Divisio
Project: Perchlorate
Instrument ID: LCMS1
Calibration: 5317001
Sequence: 5L34214

Lab Sample ID	Analyte	True	Found	%R	Units
5L34214-IFA1	Perchlorate-d18	5.000	5.00	100	ug/L
	Perchlorate	2.000	2.39	120	ug/L

ICP INTERFERENCE CHECK SAMPLE

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Divisio
Project: Perchlorate
Instrument ID: LCMS1
Calibration: 5317001
Sequence: 5L34216

Lab Sample ID	Analyte	True	Found	%R	Units
5L34216-IFA1	Perchlorate-d18	5.000	5.00	99.5	ug/L
	Perchlorate	2.000	2.25	112	ug/L

INITIAL CALIBRATION STANDARDS

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Sequence:	5K31704	Instrument:	LCMS1
Calibration:	5317001		

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
15F0073	Perchlorate 2nd Source Std 0.1 mg/L	5K31704-TUN1	PERC000002.D.Report.TXT	11/11/15 15:35
15H0455	Perchlorate Init Cal 0.2 ug/L	5K31704-CAL1	PERC000005.D.Report.TXT	11/11/15 16:29
15H0456	Perchlorate Init Cal 0.5 ug/L	5K31704-CAL2	PERC000006.D.Report.TXT	11/11/15 16:47
15H0457	Perchlorate Init Cal 1.0 ug/L	5K31704-CAL3	PERC000007.D.Report.TXT	11/11/15 17:04
15H0458	Perchlorate Init Cal 2.0 ug/L	5K31704-CAL4	PERC000008.D.Report.TXT	11/11/15 17:22
15H0459	Perchlorate Init Cal 5.0 ug/L	5K31704-CAL5	PERC000009.D.Report.TXT	11/11/15 17:40
15H0460	Perchlorate Init Cal 10 ug/L	5K31704-CAL6	PERC000010.D.Report.TXT	11/11/15 17:58
15H0461	Perchlorate Init Cal 20 ug/L	5K31704-CAL7	PERC000011.D.Report.TXT	11/11/15 18:16
15H0462	Perchlorate Init Cal 50 ug/L	5K31704-CAL8	PERC000012.D.Report.TXT	11/11/15 18:34

ANALYSIS SEQUENCE SUMMARY

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Sequence:	5K31704	Instrument:	LCMS1
Calibration:	5317001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	5K31704-TUN1	PERC000002.D.Report.TXT	11/11/15 15:35
Cal Standard	5K31704-CAL1	PERC000005.D.Report.TXT	11/11/15 16:29
Cal Standard	5K31704-CAL2	PERC000006.D.Report.TXT	11/11/15 16:47
Cal Standard	5K31704-CAL3	PERC000007.D.Report.TXT	11/11/15 17:04
Cal Standard	5K31704-CAL4	PERC000008.D.Report.TXT	11/11/15 17:22
Cal Standard	5K31704-CAL5	PERC000009.D.Report.TXT	11/11/15 17:40
Cal Standard	5K31704-CAL6	PERC000010.D.Report.TXT	11/11/15 17:58
Cal Standard	5K31704-CAL7	PERC000011.D.Report.TXT	11/11/15 18:16
Cal Standard	5K31704-CAL8	PERC000012.D.Report.TXT	11/11/15 18:34
Initial Cal Check	5K31704-ICV1	PERC000013.D.Report.TXT	11/11/15 18:51

ANALYSIS SEQUENCE SUMMARY

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Sequence: 5L33714
Instrument: LCMS1
Calibration: 5317001

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	5L33714-TUN1	PERC000002.D.Report.TXT	12/02/15 09:09
Calibration Check	5L33714-CCV1	PERC000005.D.Report.TXT	12/02/15 10:03
Low Cal Check	5L33714-LCV1	PERC000006.D.Report.TXT	12/02/15 10:21
Interference Check A	5L33714-IFA1	PERC000007.D.Report.TXT	12/02/15 10:39
Blank	5L01021-BLK1	PERC000010.D.Report.TXT	12/02/15 11:32
LCS	5L01021-BS1	PERC000011.D.Report.TXT	12/02/15 11:50
Calibration Check	5L33714-CCV2	PERC000023.D.Report.TXT	12/02/15 15:24
Low Cal Check	5L33714-LCV2	PERC000024.D.Report.TXT	12/02/15 15:42
Low Cal Check	5L33714-LCV3	PERC000025.D.Report.TXT	12/02/15 16:00
50SW06-111315	1511269-02	PERC000029.D.Report.TXT	12/02/15 17:11
GPW1-111315	1511269-03	PERC000030.D.Report.TXT	12/02/15 17:29
50WW22-111615	1511269-09	PERC000036.D.Report.TXT	12/02/15 19:16
Calibration Check	5L33714-CCV3	PERC000039.D.Report.TXT	12/02/15 20:10
Low Cal Check	5L33714-LCV4	PERC000040.D.Report.TXT	12/02/15 20:28
Low Cal Check	5L33714-LCV5	PERC000041.D.Report.TXT	12/02/15 20:45

ANALYSIS SEQUENCE SUMMARY

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Sequence: 5L34214
Instrument: LCMS1
Calibration: 5317001

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	5L34214-TUN1	PERC000002.D.Report.TXT	12/07/15 17:21
Calibration Check	5L34214-CCV1	PERC000005.D.Report.TXT	12/07/15 18:15
Low Cal Check	5L34214-LCV1	PERC000006.D.Report.TXT	12/07/15 18:33
Low Cal Check	5L34214-LCV2	PERC000007.D.Report.TXT	12/07/15 18:51
Interference Check A	5L34214-IFA1	PERC000008.D.Report.TXT	12/07/15 19:09
Blank	5L03014-BLK1	PERC000011.D.Report.TXT	12/07/15 20:02
LCS	5L03014-BS1	PERC000012.D.Report.TXT	12/07/15 20:20
LCS Dup	5L03014-BSD1	PERC000013.D.Report.TXT	12/07/15 20:38
50WW16-111315	1511269-05	PERC000014.D.Report.TXT	12/07/15 20:56
50WW25-111615	1511269-13	PERC000023.D.Report.TXT	12/07/15 23:37
Calibration Check	5L34214-CCV2	PERC000025.D.Report.TXT	12/08/15 00:12
Low Cal Check	5L34214-LCV3	PERC000026.D.Report.TXT	12/08/15 00:30
Low Cal Check	5L34214-LCV4	PERC000027.D.Report.TXT	12/08/15 00:48
50WW13-111215	1511269-20	PERC000028.D.Report.TXT	12/08/15 01:06
50WW11-111215	1511269-22	PERC000029.D.Report.TXT	12/08/15 01:24
50WW06-111215	1511269-23	PERC000030.D.Report.TXT	12/08/15 01:42
50WW12-111215	1511269-24	PERC000031.D.Report.TXT	12/08/15 02:00
Calibration Check	5L34214-CCV3	PERC000033.D.Report.TXT	12/08/15 02:35
Low Cal Check	5L34214-LCV5	PERC000034.D.Report.TXT	12/08/15 02:53
Low Cal Check	5L34214-LCV6	PERC000035.D.Report.TXT	12/08/15 03:11

ANALYSIS SEQUENCE SUMMARY

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Sequence: 5L34216
Instrument: LCMS1
Calibration: 5317001

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	5L34216-TUN1	PERC000002.D.Report.TXT	12/04/15 15:23
Calibration Check	5L34216-CCV1	PERC000005.D.Report.TXT	12/04/15 16:17
Low Cal Check	5L34216-LCV1	PERC000006.D.Report.TXT	12/04/15 16:35
Low Cal Check	5L34216-LCV2	PERC000007.D.Report.TXT	12/04/15 16:52
Interference Check A	5L34216-IFA1	PERC000008.D.Report.TXT	12/04/15 17:10
50WW05-111315	1511269-01	PERC000011.D.Report.TXT	12/04/15 18:04
50WW05-111315	5L01021-MS1	PERC000012.D.Report.TXT	12/04/15 18:22
50WW05-111315	5L01021-MSD1	PERC000013.D.Report.TXT	12/04/15 18:39
LHSMW54-111315	1511269-06	PERC000014.D.Report.TXT	12/04/15 18:57
47WW38-111315	1511269-07	PERC000015.D.Report.TXT	12/04/15 19:15
50WW08-111615	1511269-08	PERC000016.D.Report.TXT	12/04/15 19:33
50WW28-111315	1511269-04	PERC000023.D.Report.TXT	12/04/15 21:38
50WW24-111615	1511269-10	PERC000025.D.Report.TXT	12/04/15 22:13
Calibration Check	5L34216-CCV2	PERC000027.D.Report.TXT	12/04/15 22:49
Low Cal Check	5L34216-LCV3	PERC000028.D.Report.TXT	12/04/15 23:07
Low Cal Check	5L34216-LCV4	PERC000029.D.Report.TXT	12/04/15 23:25
50WW23-111615	1511269-11	PERC000030.D.Report.TXT	12/04/15 23:43
50WW18-111615	1511269-12	PERC000031.D.Report.TXT	12/05/15 00:00
50WW27-111115	1511269-14	PERC000033.D.Report.TXT	12/05/15 00:36
50WW15-111115	1511269-15	PERC000034.D.Report.TXT	12/05/15 00:54
50WW15FD-111115	1511269-16	PERC000035.D.Report.TXT	12/05/15 01:12
50WW09-111115	1511269-17	PERC000036.D.Report.TXT	12/05/15 01:30
50WW09FD-111115	1511269-18	PERC000037.D.Report.TXT	12/05/15 01:47
50WW10-111115	1511269-19	PERC000038.D.Report.TXT	12/05/15 02:05
Calibration Check	5L34216-CCV3	PERC000041.D.Report.TXT	12/05/15 02:59
Low Cal Check	5L34216-LCV5	PERC000042.D.Report.TXT	12/05/15 03:17
Low Cal Check	5L34216-LCV6	PERC000043.D.Report.TXT	12/05/15 03:35
50WW14-111215	1511269-21	PERC000044.D.Report.TXT	12/05/15 03:52
Calibration Check	5L34216-CCV4	PERC000050.D.Report.TXT	12/05/15 05:40
Low Cal Check	5L34216-LCV7	PERC000051.D.Report.TXT	12/05/15 05:57
Low Cal Check	5L34216-LCV8	PERC000052.D.Report.TXT	12/05/15 06:15

INTERNAL STANDARD AREA AND RT SUMMARY
SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Sequence:	5L33714	Instrument:	LCMS1
		Calibration:	5317001

Internal Standard	Response	RT	Response	Reference Area %	Area % Limits	Q
Calibration Check (5L33714-CCV1)		Lab File ID: PERC000005.D.Report.TXT			Analyzed: 12/02/15 10:03	
Perchlorate-d18	797656	8.857	627649	127	50 - 150	
Low Cal Check (5L33714-LCV1)		Lab File ID: PERC000006.D.Report.TXT			Analyzed: 12/02/15 10:21	
Perchlorate-d18	799120	8.893	627649	127	50 - 150	
Interference Check A (5L33714-IFA1)		Lab File ID: PERC000007.D.Report.TXT			Analyzed: 12/02/15 10:39	
Perchlorate-d18	799831	7.645	627649	127	50 - 150	
Blank (5L01021-BLK1)		Lab File ID: PERC000010.D.Report.TXT			Analyzed: 12/02/15 11:32	
Perchlorate-d18	1027170	8.929	627649	164	50 - 150	*
LCS (5L01021-BS1)		Lab File ID: PERC000011.D.Report.TXT			Analyzed: 12/02/15 11:50	
Perchlorate-d18	770780	8.94	627649	123	50 - 150	
Calibration Check (5L33714-CCV2)		Lab File ID: PERC000023.D.Report.TXT			Analyzed: 12/02/15 15:24	
Perchlorate-d18	745744	8.866	627649	119	50 - 150	
Low Cal Check (5L33714-LCV2)		Lab File ID: PERC000024.D.Report.TXT			Analyzed: 12/02/15 15:42	
Perchlorate-d18	747259	8.921	627649	119	50 - 150	
Low Cal Check (5L33714-LCV3)		Lab File ID: PERC000025.D.Report.TXT			Analyzed: 12/02/15 16:00	
Perchlorate-d18	755297	8.84	627649	120	50 - 150	
50SW06-111315 (1511269-02)		Lab File ID: PERC000029.D.Report.TXT			Analyzed: 12/02/15 17:11	
Perchlorate-d18	730496	8.551	627649	116	50 - 150	
GPW1-111315 (1511269-03)		Lab File ID: PERC000030.D.Report.TXT			Analyzed: 12/02/15 17:29	
Perchlorate-d18	881174	8.57	627649	140	50 - 150	
50WW22-111615 (1511269-09)		Lab File ID: PERC000036.D.Report.TXT			Analyzed: 12/02/15 19:16	
Perchlorate-d18	903310	8.068	627649	144	50 - 150	
Calibration Check (5L33714-CCV3)		Lab File ID: PERC000039.D.Report.TXT			Analyzed: 12/02/15 20:10	
Perchlorate-d18	732515	8.86	627649	117	50 - 150	
Low Cal Check (5L33714-LCV4)		Lab File ID: PERC000040.D.Report.TXT			Analyzed: 12/02/15 20:28	
Perchlorate-d18	736450	8.913	627649	117	50 - 150	
Low Cal Check (5L33714-LCV5)		Lab File ID: PERC000041.D.Report.TXT			Analyzed: 12/02/15 20:45	
Perchlorate-d18	743147	8.84	627649	118	50 - 150	

INTERNAL STANDARD AREA AND RT SUMMARY
SW6850

Laboratory: Empirical Laboratories, LLC
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Sequence: 5L34214

SDG: 1511269
Project: Perchlorate
Instrument: LCMS1
Calibration: 5317001

Internal Standard	Response	RT	Response	Reference Area %	Area % Limits	Q
Calibration Check (5L34214-CCV1)		Lab File ID: PERC000005.D.Report.TXT			Analyzed: 12/07/15 18:15	
Perchlorate-d18	659346	8.847	627649	105	50 - 150	
Low Cal Check (5L34214-LCV1)		Lab File ID: PERC000006.D.Report.TXT			Analyzed: 12/07/15 18:33	
Perchlorate-d18	675145	8.879	627649	108	50 - 150	
Low Cal Check (5L34214-LCV2)		Lab File ID: PERC000007.D.Report.TXT			Analyzed: 12/07/15 18:51	
Perchlorate-d18	674495	8.807	627649	107	50 - 150	
Interference Check A (5L34214-IFA1)		Lab File ID: PERC000008.D.Report.TXT			Analyzed: 12/07/15 19:09	
Perchlorate-d18	661861	7.7	627649	105	50 - 150	
Blank (5L03014-BLK1)		Lab File ID: PERC000011.D.Report.TXT			Analyzed: 12/07/15 20:02	
Perchlorate-d18	638227	8.903	627649	102	50 - 150	
LCS (5L03014-BS1)		Lab File ID: PERC000012.D.Report.TXT			Analyzed: 12/07/15 20:20	
Perchlorate-d18	659183	8.905	627649	105	50 - 150	
LCS Dup (5L03014-BSD1)		Lab File ID: PERC000013.D.Report.TXT			Analyzed: 12/07/15 20:38	
Perchlorate-d18	660510	8.899	627649	105	50 - 150	
50WW16-111315 (1511269-05)		Lab File ID: PERC000014.D.Report.TXT			Analyzed: 12/07/15 20:56	
Perchlorate-d18	665001	8.509	627649	106	50 - 150	
50WW25-111615 (1511269-13)		Lab File ID: PERC000023.D.Report.TXT			Analyzed: 12/07/15 23:37	
Perchlorate-d18	750602	8.539	627649	120	50 - 150	
Calibration Check (5L34214-CCV2)		Lab File ID: PERC000025.D.Report.TXT			Analyzed: 12/08/15 00:12	
Perchlorate-d18	642843	8.852	627649	102	50 - 150	
Low Cal Check (5L34214-LCV3)		Lab File ID: PERC000026.D.Report.TXT			Analyzed: 12/08/15 00:30	
Perchlorate-d18	655481	8.885	627649	104	50 - 150	
Low Cal Check (5L34214-LCV4)		Lab File ID: PERC000027.D.Report.TXT			Analyzed: 12/08/15 00:48	
Perchlorate-d18	660003	8.81	627649	105	50 - 150	
50WW13-111215 (1511269-20)		Lab File ID: PERC000028.D.Report.TXT			Analyzed: 12/08/15 01:06	
Perchlorate-d18	633737	8.916	627649	101	50 - 150	
50WW11-111215 (1511269-22)		Lab File ID: PERC000029.D.Report.TXT			Analyzed: 12/08/15 01:24	
Perchlorate-d18	654391	8.918	627649	104	50 - 150	
50WW06-111215 (1511269-23)		Lab File ID: PERC000030.D.Report.TXT			Analyzed: 12/08/15 01:42	
Perchlorate-d18	661468	8.938	627649	105	50 - 150	
50WW12-111215 (1511269-24)		Lab File ID: PERC000031.D.Report.TXT			Analyzed: 12/08/15 02:00	
Perchlorate-d18	646151	8.922	627649	103	50 - 150	
Calibration Check (5L34214-CCV3)		Lab File ID: PERC000033.D.Report.TXT			Analyzed: 12/08/15 02:35	
Perchlorate-d18	641819	8.876	627649	102	50 - 150	
Low Cal Check (5L34214-LCV5)		Lab File ID: PERC000034.D.Report.TXT			Analyzed: 12/08/15 02:53	
Perchlorate-d18	659144	8.886	627649	105	50 - 150	
Low Cal Check (5L34214-LCV6)		Lab File ID: PERC000035.D.Report.TXT			Analyzed: 12/08/15 03:11	
Perchlorate-d18	656658	8.827	627649	105	50 - 150	

INTERNAL STANDARD AREA AND RT SUMMARY
SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Sequence: 5L34216
Instrument: LCMS1
Calibration: 5317001

Internal Standard	Response	RT	Response	Reference Area %	Area % Limits	Q
Calibration Check (5L34216-CCV1)		Lab File ID: PERC000005.D.Report.TXT			Analyzed: 12/04/15 16:17	
Perchlorate-d18	745180	8.881	627649	119	50 - 150	
Low Cal Check (5L34216-LCV1)		Lab File ID: PERC000006.D.Report.TXT			Analyzed: 12/04/15 16:35	
Perchlorate-d18	751208	8.931	627649	120	50 - 150	
Low Cal Check (5L34216-LCV2)		Lab File ID: PERC000007.D.Report.TXT			Analyzed: 12/04/15 16:52	
Perchlorate-d18	755377	8.852	627649	120	50 - 150	
Interference Check A (5L34216-IFA1)		Lab File ID: PERC000008.D.Report.TXT			Analyzed: 12/04/15 17:10	
Perchlorate-d18	741624	7.655	627649	118	50 - 150	
50WW05-111315 (1511269-01)		Lab File ID: PERC000011.D.Report.TXT			Analyzed: 12/04/15 18:04	
Perchlorate-d18	850119	8.21	627649	135	50 - 150	
Matrix Spike (5L01021-MS1)		Lab File ID: PERC000012.D.Report.TXT			Analyzed: 12/04/15 18:22	
Perchlorate-d18	817554	8.189	627649	130	50 - 150	
Matrix Spike Dup (5L01021-MSD1)		Lab File ID: PERC000013.D.Report.TXT			Analyzed: 12/04/15 18:39	
Perchlorate-d18	775742	8.172	627649	124	50 - 150	
LHSMW54-111315 (1511269-06)		Lab File ID: PERC000014.D.Report.TXT			Analyzed: 12/04/15 18:57	
Perchlorate-d18	869886	8.306	627649	139	50 - 150	
47WW38-111315 (1511269-07)		Lab File ID: PERC000015.D.Report.TXT			Analyzed: 12/04/15 19:15	
Perchlorate-d18	795443	8.851	627649	127	50 - 150	
50WW08-111615 (1511269-08)		Lab File ID: PERC000016.D.Report.TXT			Analyzed: 12/04/15 19:33	
Perchlorate-d18	809895	8.36	627649	129	50 - 150	
50WW28-111315 (1511269-04)		Lab File ID: PERC000023.D.Report.TXT			Analyzed: 12/04/15 21:38	
Perchlorate-d18	934815	8.703	627649	149	50 - 150	
50WW24-111615 (1511269-10)		Lab File ID: PERC000025.D.Report.TXT			Analyzed: 12/04/15 22:13	
Perchlorate-d18	775288	8.265	627649	124	50 - 150	
Calibration Check (5L34216-CCV2)		Lab File ID: PERC000027.D.Report.TXT			Analyzed: 12/04/15 22:49	
Perchlorate-d18	724671	8.868	627649	115	50 - 150	
Low Cal Check (5L34216-LCV3)		Lab File ID: PERC000028.D.Report.TXT			Analyzed: 12/04/15 23:07	
Perchlorate-d18	726899	8.915	627649	116	50 - 150	
Low Cal Check (5L34216-LCV4)		Lab File ID: PERC000029.D.Report.TXT			Analyzed: 12/04/15 23:25	
Perchlorate-d18	731364	8.843	627649	117	50 - 150	
50WW23-111615 (1511269-11)		Lab File ID: PERC000030.D.Report.TXT			Analyzed: 12/04/15 23:43	
Perchlorate-d18	807759	8.249	627649	129	50 - 150	
50WW18-111615 (1511269-12)		Lab File ID: PERC000031.D.Report.TXT			Analyzed: 12/05/15 00:00	
Perchlorate-d18	776843	8.213	627649	124	50 - 150	
50WW27-111115 (1511269-14)		Lab File ID: PERC000033.D.Report.TXT			Analyzed: 12/05/15 00:36	
Perchlorate-d18	897185	8.236	627649	143	50 - 150	
50WW15-111115 (1511269-15)		Lab File ID: PERC000034.D.Report.TXT			Analyzed: 12/05/15 00:54	
Perchlorate-d18	846581	8.21	627649	135	50 - 150	

INTERNAL STANDARD AREA AND RT SUMMARY
SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Sequence:	5L34216	Instrument:	LCMS1
		Calibration:	5317001

Internal Standard	Response	RT	Response	Reference Area %	Area % Limits	Q
50WW15FD-111115 (1511269-16)		Lab File ID: PERC000035.D.Report.TXT			Analyzed: 12/05/15 01:12	
Perchlorate-d18	890641	8.218	627649	142	50 - 150	
50WW09-111115 (1511269-17)		Lab File ID: PERC000036.D.Report.TXT			Analyzed: 12/05/15 01:30	
Perchlorate-d18	863099	8.179	627649	138	50 - 150	
50WW09FD-111115 (1511269-18)		Lab File ID: PERC000037.D.Report.TXT			Analyzed: 12/05/15 01:47	
Perchlorate-d18	825938	8.187	627649	132	50 - 150	
50WW10-111115 (1511269-19)		Lab File ID: PERC000038.D.Report.TXT			Analyzed: 12/05/15 02:05	
Perchlorate-d18	516344	8.11	627649	82	50 - 150	
Calibration Check (5L34216-CCV3)		Lab File ID: PERC000041.D.Report.TXT			Analyzed: 12/05/15 02:59	
Perchlorate-d18	686932	8.862	627649	109	50 - 150	
Low Cal Check (5L34216-LCV5)		Lab File ID: PERC000042.D.Report.TXT			Analyzed: 12/05/15 03:17	
Perchlorate-d18	693929	8.914	627649	111	50 - 150	
Low Cal Check (5L34216-LCV6)		Lab File ID: PERC000043.D.Report.TXT			Analyzed: 12/05/15 03:35	
Perchlorate-d18	696546	8.85	627649	111	50 - 150	
50WW14-111215 (1511269-21)		Lab File ID: PERC000044.D.Report.TXT			Analyzed: 12/05/15 03:52	
Perchlorate-d18	819078	8.192	627649	130	50 - 150	
Calibration Check (5L34216-CCV4)		Lab File ID: PERC000050.D.Report.TXT			Analyzed: 12/05/15 05:40	
Perchlorate-d18	596132	8.872	627649	95	50 - 150	
Low Cal Check (5L34216-LCV7)		Lab File ID: PERC000051.D.Report.TXT			Analyzed: 12/05/15 05:57	
Perchlorate-d18	609669	8.926	627649	97	50 - 150	
Low Cal Check (5L34216-LCV8)		Lab File ID: PERC000052.D.Report.TXT			Analyzed: 12/05/15 06:15	
Perchlorate-d18	614081	8.852	627649	98	50 - 150	

INITIAL CALIBRATION DATA

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269	
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate	
Calibration:	5317001	Instrument:	LCMS1	
Matrix:	Water	Calibration Dates:	11/11/15 16:29	11/11/15 18:34

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Perchlorate	0.2	1.28592	0.5	1.112583	1	1.16135	2	1.156456	5	1.169845	10	1.167638
Perchlorate (101)	0.2	0.4162459	0.5	0.3724168	1	0.377893	2	0.3773375	5	0.3817238	10	0.3780177

INITIAL CALIBRATION DATA (Continued)

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269	
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate	
Calibration:	5317001	Instrument:	LCMS1	
Matrix:	Water	Calibration Dates:	11/11/15 16:29	11/11/15 18:34

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Perchlorate	20	1.198806	50	1.174267								
Perchlorate (101)	20	0.3858999	50	0.3809597								

INITIAL CALIBRATION DATA (Continued)

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269	
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate	
Calibration:	5317001	Instrument:	LCMS1	
Matrix:	Water	Calibration Dates:	11/11/15 16:29	11/11/15 18:34

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Perchlorate	1.178358	4.217321	8.902375	0.124603			20	
Perchlorate (101)	0.3838118	3.56316	8.918625	0.1359902			20	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Instrument ID:	LCMS1	Calibration:	5317001
Lab File ID:	PERC000013.D.Report.TXT	Calibration Date:	11/11/15 00:00
Sequence:	5K31704	Injection Date:	11/11/15
Lab Sample ID:	5K31704-ICV1	Injection Time:	18:51

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN (#)	ICV	LIMIT (#)
Perchlorate	A	5.000	4.974	1.178358	1.172325		-0.5	15

CONTINUING CALIBRATION CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Instrument ID:	LCMS1	Calibration:	5317001
Lab File ID:	PERC000005.D.Report.TXT	Calibration Date:	11/11/15 00:00
Sequence:	5L33714	Injection Date:	12/02/15
Lab Sample ID:	5L33714-CCV1	Injection Time:	10:03

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perchlorate	A	5.000	5.147	1.178358	1.212903		2.9	15

CONTINUING CALIBRATION CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Instrument ID:	LCMS1	Calibration:	5317001
Lab File ID:	PERC000023.D.Report.TXT	Calibration Date:	11/11/15 00:00
Sequence:	5L33714	Injection Date:	12/02/15
Lab Sample ID:	5L33714-CCV2	Injection Time:	15:24

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perchlorate	A	5.000	5.145	1.178358	1.212613		2.9	15

CONTINUING CALIBRATION CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Instrument ID:	LCMS1	Calibration:	5317001
Lab File ID:	PERC000039.D.Report.TXT	Calibration Date:	11/11/15 00:00
Sequence:	5L33714	Injection Date:	12/02/15
Lab Sample ID:	5L33714-CCV3	Injection Time:	20:10

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perchlorate	A	5.000	5.150	1.178358	1.21381		3.0	15

CONTINUING CALIBRATION CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Instrument ID:	LCMS1	Calibration:	5317001
Lab File ID:	PERC000005.D.Report.TXT	Calibration Date:	11/11/15 00:00
Sequence:	5L34214	Injection Date:	12/07/15
Lab Sample ID:	5L34214-CCV1	Injection Time:	18:15

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perchlorate	A	5.000	5.235	1.178358	1.233812		4.7	15

CONTINUING CALIBRATION CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Instrument ID:	LCMS1	Calibration:	5317001
Lab File ID:	PERC000025.D.Report.TXT	Calibration Date:	11/11/15 00:00
Sequence:	5L34214	Injection Date:	12/08/15
Lab Sample ID:	5L34214-CCV2	Injection Time:	00:12

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perchlorate	A	5.000	5.228	1.178358	1.2322		4.6	15

CONTINUING CALIBRATION CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Instrument ID:	LCMS1	Calibration:	5317001
Lab File ID:	PERC000033.D.Report.TXT	Calibration Date:	11/11/15 00:00
Sequence:	5L34214	Injection Date:	12/08/15
Lab Sample ID:	5L34214-CCV3	Injection Time:	02:35

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perchlorate	A	5.000	5.209	1.178358	1.227655		4.2	15

CONTINUING CALIBRATION CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Instrument ID:	LCMS1	Calibration:	5317001
Lab File ID:	PERC000005.D.Report.TXT	Calibration Date:	11/11/15 00:00
Sequence:	5L34216	Injection Date:	12/04/15
Lab Sample ID:	5L34216-CCV1	Injection Time:	16:17

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perchlorate	A	5.000	5.141	1.178358	1.21156		2.8	15

CONTINUING CALIBRATION CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Instrument ID:	LCMS1	Calibration:	5317001
Lab File ID:	PERC000027.D.Report.TXT	Calibration Date:	11/11/15 00:00
Sequence:	5L34216	Injection Date:	12/04/15
Lab Sample ID:	5L34216-CCV2	Injection Time:	22:49

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perchlorate	A	5.000	5.218	1.178358	1.229703		4.4	15

CONTINUING CALIBRATION CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Instrument ID:	LCMS1	Calibration:	5317001
Lab File ID:	PERC000041.D.Report.TXT	Calibration Date:	11/11/15 00:00
Sequence:	5L34216	Injection Date:	12/05/15
Lab Sample ID:	5L34216-CCV3	Injection Time:	02:59

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perchlorate	A	5.000	5.196	1.178358	1.224521		3.9	15

CONTINUING CALIBRATION CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Instrument ID:	LCMS1	Calibration:	5317001
Lab File ID:	PERC000050.D.Report.TXT	Calibration Date:	11/11/15 00:00
Sequence:	5L34216	Injection Date:	12/05/15
Lab Sample ID:	5L34216-CCV4	Injection Time:	05:40

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perchlorate	A	5.000	5.164	1.178358	1.216917		3.3	15

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L33714-LCV1
Sequence: 5L33714
Standard ID: 15J0445

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	1.000	0.9930	-0.7	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L33714-LCV2
Sequence: 5L33714
Standard ID: 15J0445

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	1.000	1.008	0.8	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L33714-LCV3
Sequence: 5L33714
Standard ID: 15H0001

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	0.4000	0.4244	6.1	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L33714-LCV4
Sequence: 5L33714
Standard ID: 15J0445

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	1.000	0.9977	-0.2	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L33714-LCV5
Sequence: 5L33714
Standard ID: 15H0001

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	0.4000	0.4523	13.1	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L34214-LCV1
Sequence: 5L34214
Standard ID: 15J0445

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	1.000	1.024	2.4	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L34214-LCV2
Sequence: 5L34214
Standard ID: 15H0001

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	0.4000	0.4029	0.7	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L34214-LCV3
Sequence: 5L34214
Standard ID: 15J0445

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	1.000	1.003	0.3	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L34214-LCV4
Sequence: 5L34214
Standard ID: 15H0001

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	0.4000	0.4415	10.4	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L34214-LCV5
Sequence: 5L34214
Standard ID: 15J0445

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	1.000	1.001	0.09	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L34214-LCV6
Sequence: 5L34214
Standard ID: 15H0001

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	0.4000	0.4354	8.9	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L34216-LCV1
Sequence: 5L34216
Standard ID: 15J0445

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	1.000	1.002	0.2	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L34216-LCV2
Sequence: 5L34216
Standard ID: 15H0001

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	0.4000	0.4115	2.9	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L34216-LCV3
Sequence: 5L34216
Standard ID: 15J0445

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	1.000	1.011	1.1	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L34216-LCV4
Sequence: 5L34216
Standard ID: 15H0001

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	0.4000	0.4418	10.5	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L34216-LCV5
Sequence: 5L34216
Standard ID: 15J0445

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	1.000	1.008	0.8	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L34216-LCV6
Sequence: 5L34216
Standard ID: 15H0001

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	0.4000	0.4735	18.4	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L34216-LCV7
Sequence: 5L34216
Standard ID: 15J0445

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	1.000	0.9984	-0.2	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L34216-LCV8
Sequence: 5L34216
Standard ID: 15H0001

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	0.4000	0.4333	8.3	30.00

HOLDING TIME SUMMARY

SW6850

Laboratory: Empirical Laboratories, LLC SDG: 1511269

Client: Microbac Laboratories, Inc.-Ohio Valley Division Project: Perchlorate

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
50WW05-111315	11/13/15 08:00	11/25/15 08:45	12/01/15 13:39	18.24	28.00	12/04/15 18:04	21.42	28.00	
50SW06-111315	11/13/15 08:30	11/25/15 08:45	12/01/15 13:39	18.21	28.00	12/02/15 17:11	19.36	28.00	
GPW1-111315	11/13/15 08:45	11/25/15 08:45	12/01/15 13:39	18.20	28.00	12/02/15 17:29	19.36	28.00	
50WW28-111315	11/13/15 09:45	11/25/15 08:45	12/03/15 12:00	20.09	28.00	12/04/15 21:38	21.50	28.00	
50WW16-111315	11/13/15 10:45	11/25/15 08:45	12/03/15 12:00	20.05	28.00	12/07/15 20:56	24.42	28.00	
LHSMW54-111315	11/13/15 13:45	11/25/15 08:45	12/01/15 13:39	18.00	28.00	12/04/15 18:57	21.22	28.00	
47WW38-111315	11/13/15 14:55	11/25/15 08:45	12/01/15 13:39	17.95	28.00	12/04/15 19:15	21.18	28.00	
50WW08-111615	11/16/15 08:20	11/25/15 08:45	12/01/15 13:39	15.22	28.00	12/04/15 19:33	18.47	28.00	
50WW22-111615	11/16/15 09:25	11/25/15 08:45	12/01/15 13:39	15.18	28.00	12/02/15 19:16	16.41	28.00	
50WW24-111615	11/16/15 10:30	11/25/15 08:45	12/03/15 12:00	17.06	28.00	12/04/15 22:13	18.49	28.00	
50WW23-111615	11/16/15 11:35	11/25/15 08:45	12/03/15 12:00	17.02	28.00	12/04/15 23:43	18.51	28.00	
50WW18-111615	11/16/15 13:45	11/25/15 08:45	12/03/15 12:00	16.93	28.00	12/05/15 00:00	18.43	28.00	
50WW25-111615	11/16/15 14:55	11/25/15 08:45	12/03/15 12:00	16.88	28.00	12/07/15 23:37	21.36	28.00	
50WW27-111115	11/11/15 08:15	11/25/15 08:45	12/03/15 12:00	22.16	28.00	12/05/15 00:36	23.68	28.00	
50WW15-111115	11/11/15 09:15	11/25/15 08:45	12/03/15 12:00	22.11	28.00	12/05/15 00:54	23.65	28.00	
50WW15FD-111115	11/11/15 09:15	11/25/15 08:45	12/03/15 12:00	22.11	28.00	12/05/15 01:12	23.66	28.00	
50WW09-111115	11/11/15 10:35	11/25/15 08:45	12/03/15 12:00	22.06	28.00	12/05/15 01:30	23.62	28.00	
50WW09FD-111115	11/11/15 10:35	11/25/15 08:45	12/03/15 12:00	22.06	28.00	12/05/15 01:47	23.63	28.00	
50WW10-111115	11/11/15 14:35	11/25/15 08:45	12/03/15 12:00	21.89	28.00	12/05/15 02:05	23.48	28.00	
50WW13-111215	11/12/15 08:40	11/25/15 08:45	12/03/15 12:00	21.14	28.00	12/08/15 01:06	25.69	28.00	
50WW14-111215	11/12/15 09:50	11/25/15 08:45	12/03/15 12:00	21.09	28.00	12/05/15 03:52	22.75	28.00	
50WW11-111215	11/12/15 11:00	11/25/15 08:45	12/03/15 12:00	21.04	28.00	12/08/15 01:24	25.60	28.00	
50WW06-111215	11/12/15 13:25	11/25/15 08:45	12/03/15 12:00	20.94	28.00	12/08/15 01:42	25.51	28.00	

HOLDING TIME SUMMARY

SW6850

Laboratory: Empirical Laboratories, LLC SDG: 1511269

Client: Microbac Laboratories, Inc.-Ohio Valley Division Project: Perchlorate

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
50WW12-111215	11/12/15 14:35	11/25/15 08:45	12/03/15 12:00	20.89	28.00	12/08/15 02:00	25.48	28.00	

Data for SW6850
Supporting Raw Data / Logs

Print of all graphic windows
Data File : C:\CHEM32\1\DATA\111115A\PERC000002.D
Sample Name : SEQ-TUN1

==========

Acq. Operator : Seq. Line : 2
Acq. Instrument : Instrument 1 Location : Vial 1
Injection Date : 11/11/2015 3:35:26 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_SC
Last changed : 9/29/2015 11:41:05 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/11/2015 2:51:33 PM
(modified after loading)

Current Chromatogram(s)

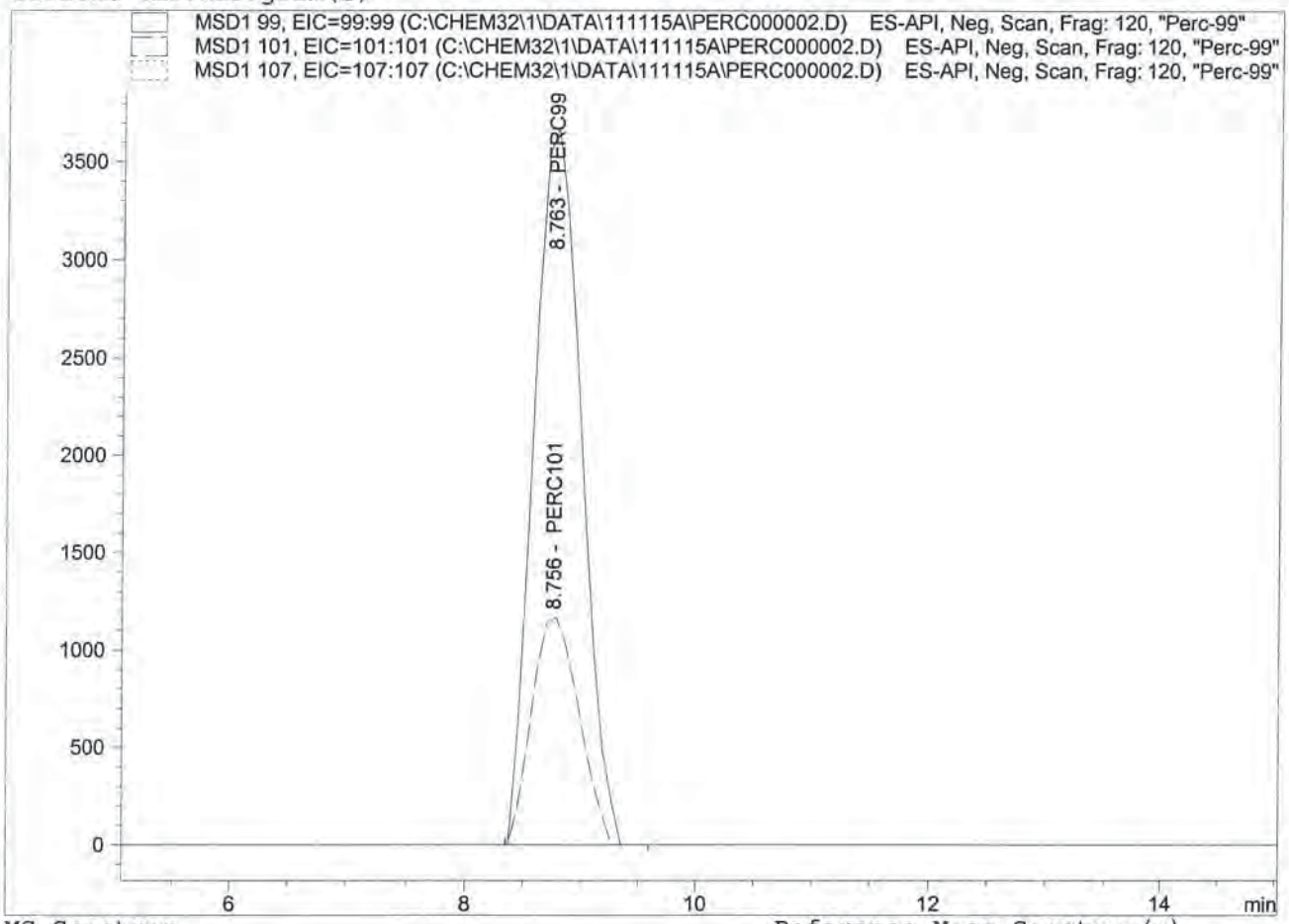

MS Spectrum

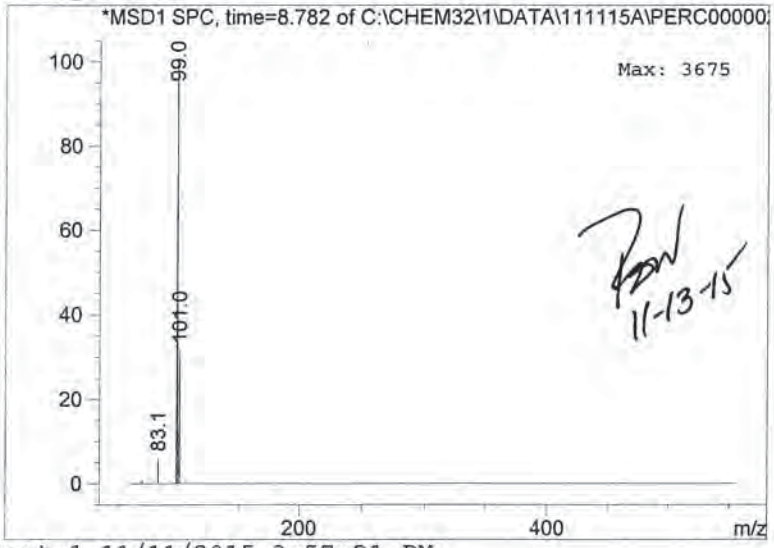

Reference Mass Spectrum(a)

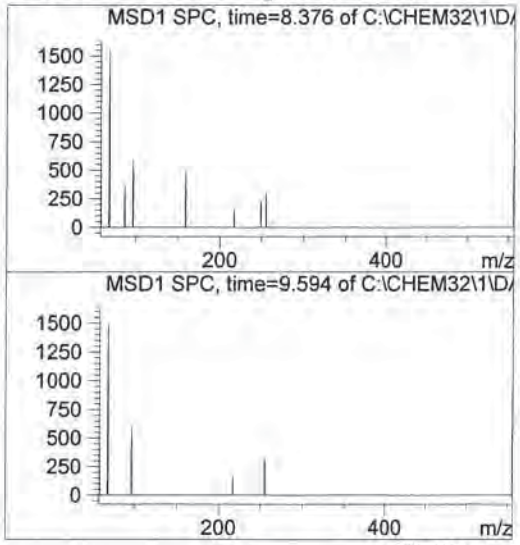

11/16/15

11-13-15

Data File C:\CHEM32\1\DATA\111115A\PERC000002.D
Sample Name: SEQ-TUN1

==========

Acq. Operator	:	Seq. Line	: 2
Acq. Instrument	: Instrument 1	Location	: Vial 1
Injection Date	: 11/11/2015 3:35:26 PM	Inj	: 1
		Inj Volume	: 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_SC
Last changed : 9/29/2015 11:41:05 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/11/2015 2:51:33 PM
(modified after loading)

==========

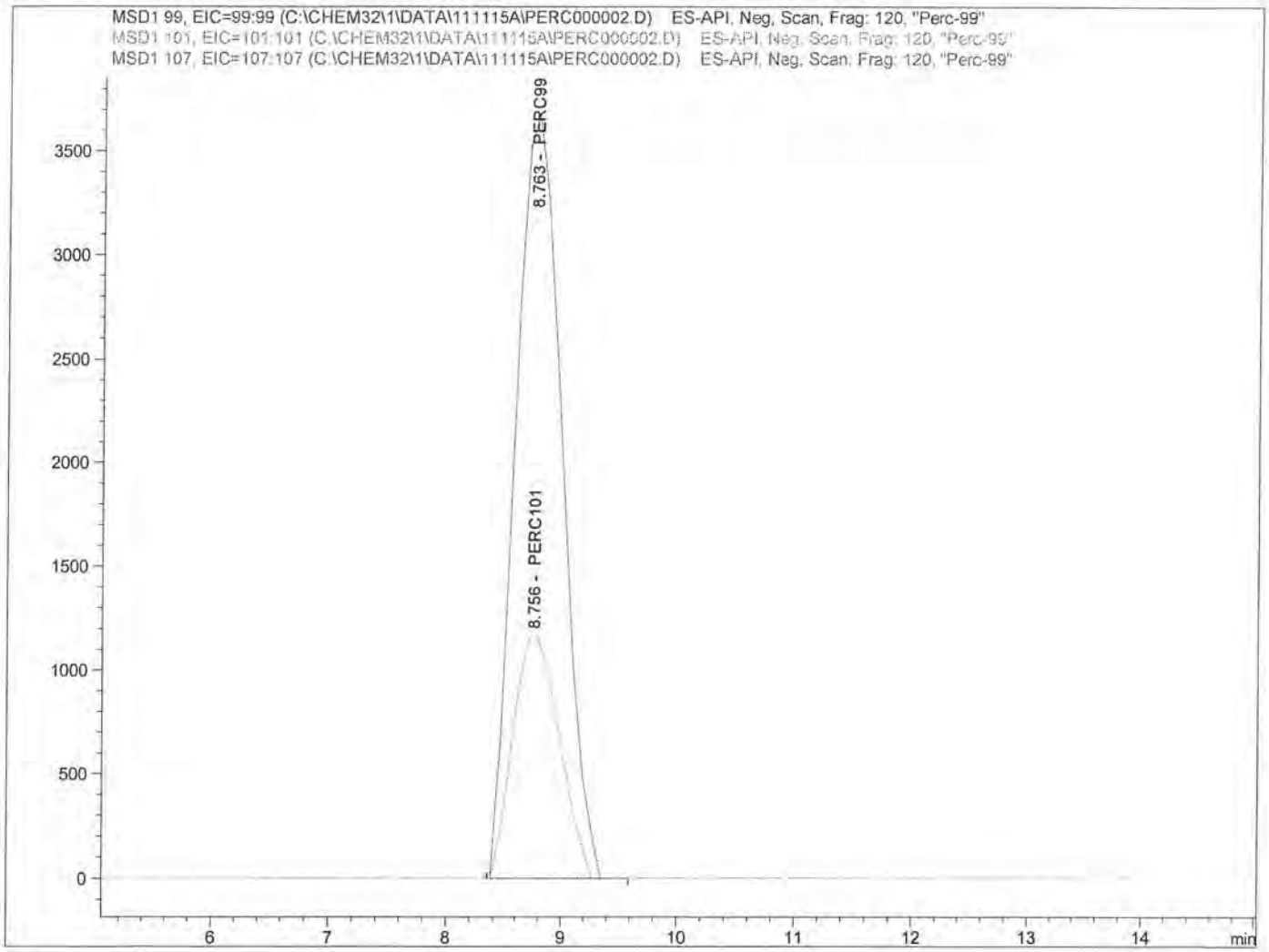

==========

Internal Standard Report

==========

11/16/15

Sorted By	:	Signal
Calib. Data Modified	:	11/11/2015 2:51:33 PM
Multiplier	:	1.0000
Dilution	:	1.0000

Do not use Multiplier & Dilution Factor with ISTDs

11-13-15

Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\111115A\PERC000002.D
Sample Name: SEQ-TUN1

```
==================================================================
Acq. Operator   :                                  Seq. Line :   2
Acq. Instrument : Instrument 1                      Location : Vial 1
Injection Date  : 11/11/2015 3:35:26 PM                  Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_SC
Last changed    : 9/29/2015 11:41:05 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed    : 11/11/2015 2:51:33 PM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.763	BB	1	1.04488e5	0.00000	0.00000		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.756	BB	1	3.29786e4	0.00000	0.00000		PERC101

Totals without ISTD(s) : 0.00000

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.840		1	-	-	-		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : ISTD compound(s) not found

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*** End of Report ***

Data File C:\CHEM32\1\DATA\111115A\PERC000005.D
Sample Name: SEQ-CAL1

==========

Acq. Operator : Seq. Line : 5
Acq. Instrument : Instrument 1 Location : Vial 91
Injection Date : 11/11/2015 4:29:18 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/11/2015 4:51:15 PM
(modified after loading)

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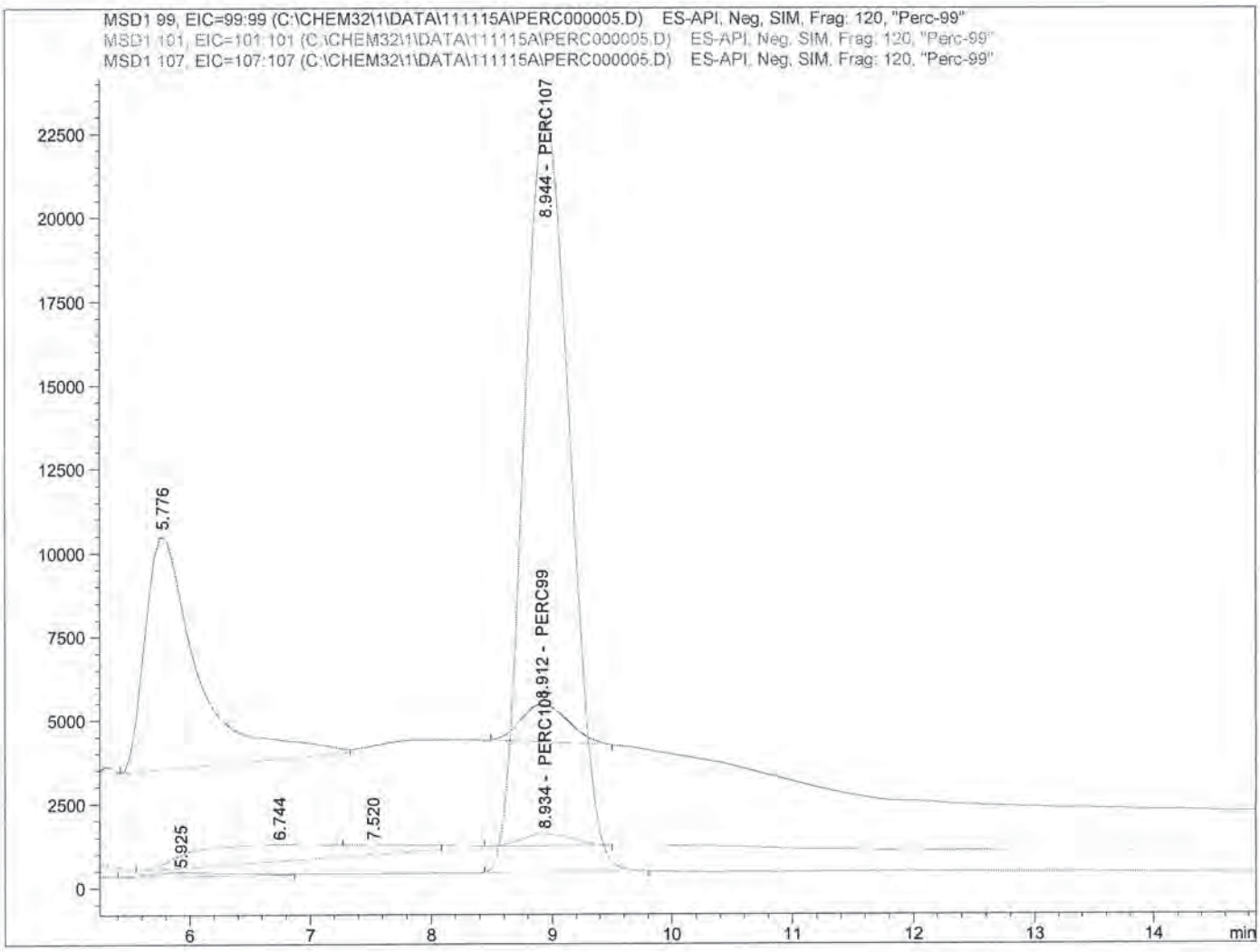

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : 11/11/2015 4:49:21 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

11/16/15

11-13-15

Data File C:\CHEM32\1\DATA\111115A\PERC000005.D
Sample Name: SEQ-CAL1

==========

Acq. Operator : Seq. Line : 5
Acq. Instrument : Instrument 1 Location : Vial 91
Injection Date : 11/11/2015 4:29:18 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/11/2015 4:51:15 PM
(modified after loading)

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1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.912	BBA	1	3.10224e4	9.44928e-1	2.43020e-1		PERC99

Totals without ISTD(s) : 2.43020e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.934	BBA	1	1.00418e4	2.82395	2.35091e-1		PERC101

Totals without ISTD(s) : 2.35091e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.944	BBA I	1	6.03117e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\111115A\PERC000006.D
Sample Name: SEQ-CAL2

==========

Acq. Operator : Seq. Line : 6
Acq. Instrument : Instrument 1 Location : Vial 92
Injection Date : 11/11/2015 4:47:05 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/13/2015 9:37:20 AM
(modified after loading)

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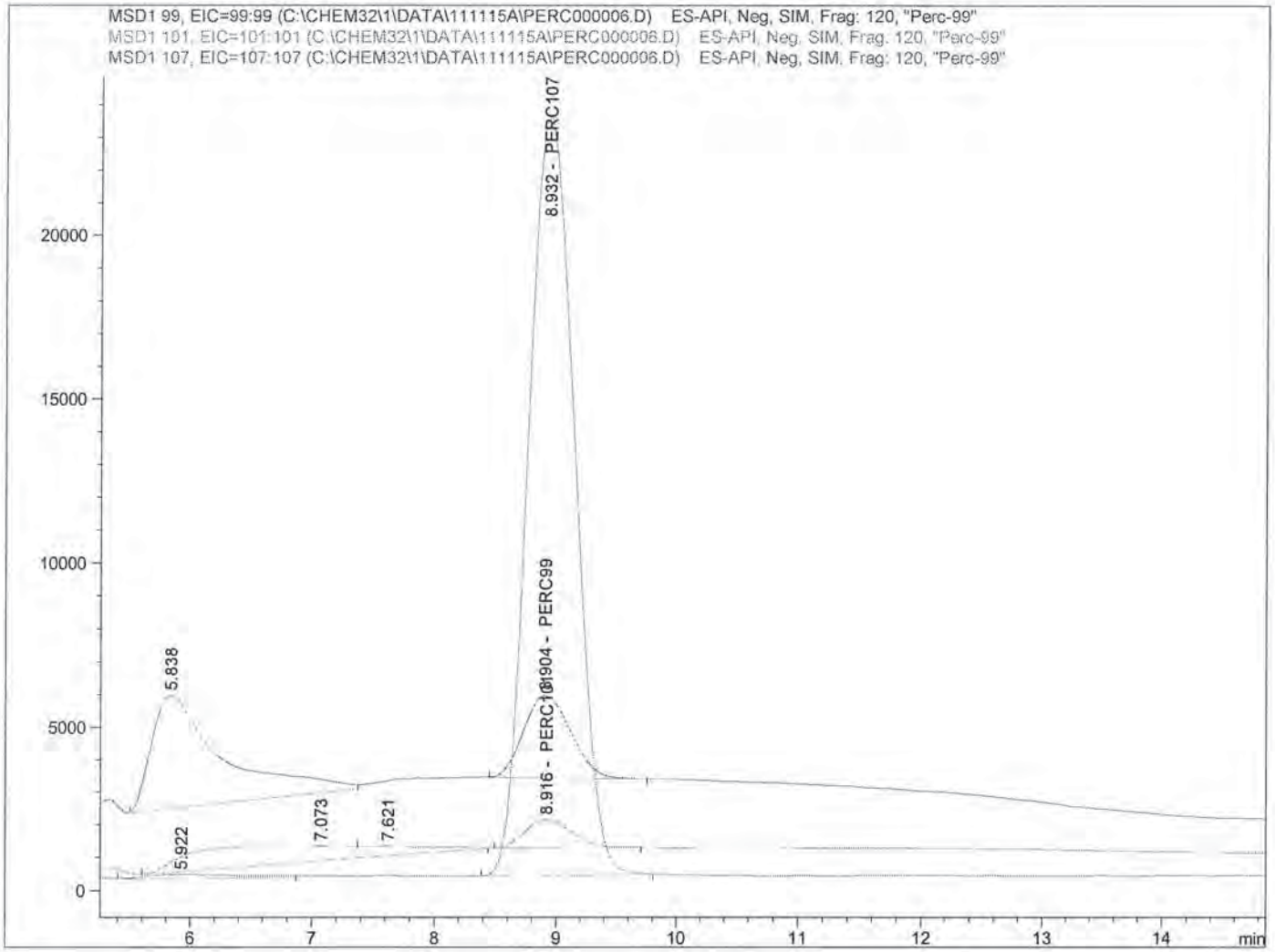

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : Wednesday, November 11, 2015 4:52:18 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

11/16/15

11-13-15

Data File C:\CHEM32\1\DATA\111115A\PERC000006.D
Sample Name: SEQ-CAL2

```
==================================================================
Acq. Operator   :                                Seq. Line :   6
Acq. Instrument : Instrument 1                    Location : Vial 92
Injection Date  : 11/11/2015 4:47:05 PM                Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed    : 11/13/2015 9:37:20 AM
                  (modified after loading)
==================================================================

  1      5.00000   PERC107


Signal 1: MSD1 99, EIC=99:99

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.904 BB        1 6.88955e4  9.15059e-1 5.09040e-1    PERC99

Totals without ISTD(s) :             5.09040e-1



Signal 2: MSD1 101, EIC=101:101

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.916 BBA       1 2.30615e4     2.78000 5.17658e-1    PERC101

Totals without ISTD(s) :             5.17658e-1



Signal 3: MSD1 107, EIC=107:107

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.932 BBA  I    1 6.19239e5     1.00000    5.00000    PERC107

Totals without ISTD(s) :                0.00000


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                         *** End of Report ***
```

Data File C:\CHEM32\1\DATA\111115A\PERC000007.D
Sample Name: SEQ-CAL3

==========

Acq. Operator : Seq. Line : 7
Acq. Instrument : Instrument 1 Location : Vial 93
Injection Date : 11/11/2015 5:04:53 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/13/2015 9:38:16 AM
(modified after loading)

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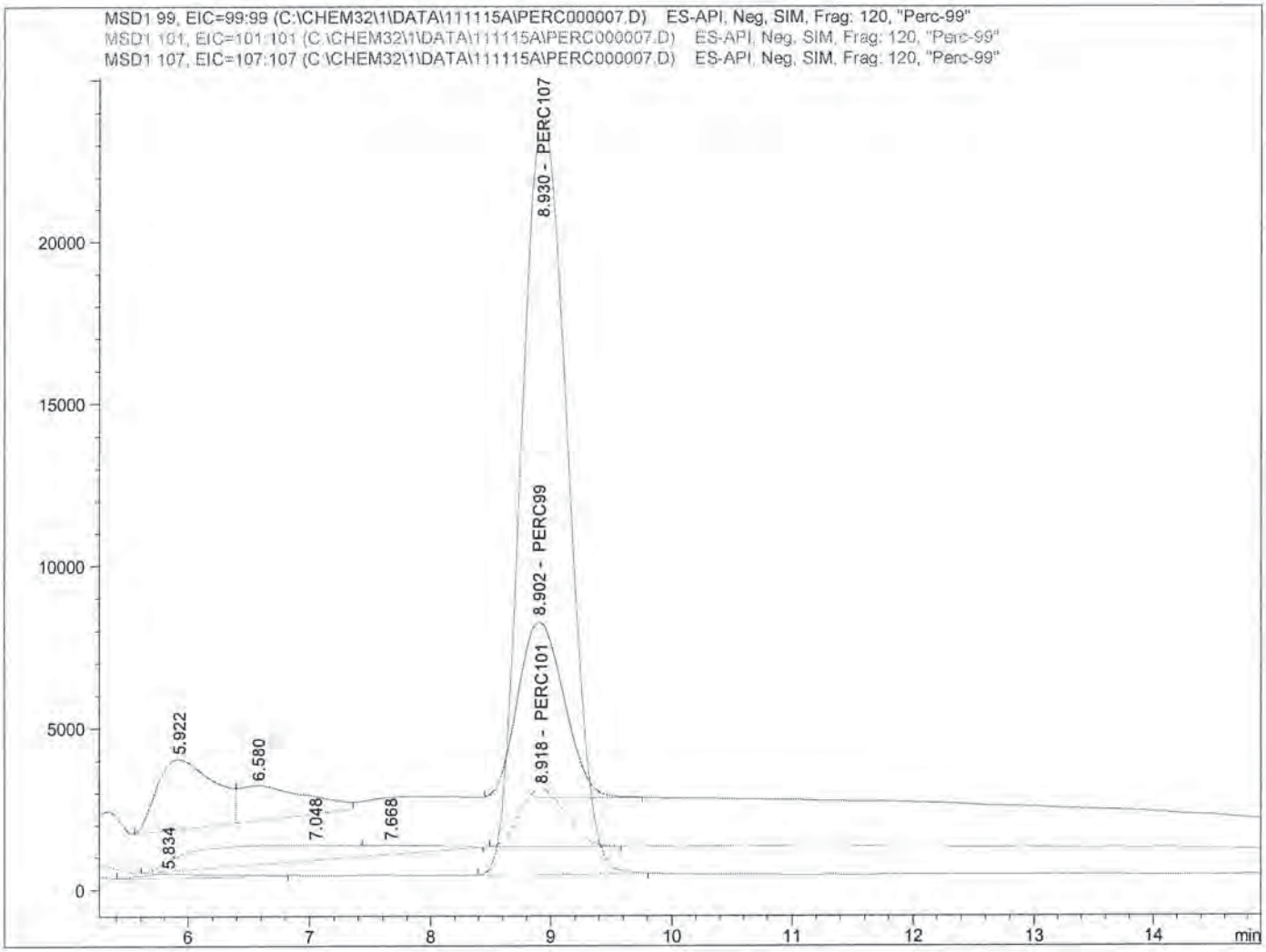

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : Friday, November 13, 2015 9:38:16 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

11/16/15

11-13-15

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\111115A\PERC000007.D
Sample Name: SEQ-CAL3

==========

Acq. Operator : Seq. Line : 7
Acq. Instrument : Instrument 1 Location : Vial 93
Injection Date : 11/11/2015 5:04:53 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/13/2015 9:38:16 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.902	BB	1	1.45188e5	8.98167e-1	1.04309		PERC99

Totals without ISTD(s) : 1.04309

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.918	BV	1	4.72429e4	2.75163	1.03982		PERC101

Totals without ISTD(s) : 1.03982

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.930	BBA I	1	6.25083e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\111115A\PERC000008.D
Sample Name: SEQ-CAL4

==========

Acq. Operator : Seq. Line : 8
Acq. Instrument : Instrument 1 Location : Vial 94
Injection Date : 11/11/2015 5:22:47 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/13/2015 9:38:59 AM
(modified after loading)

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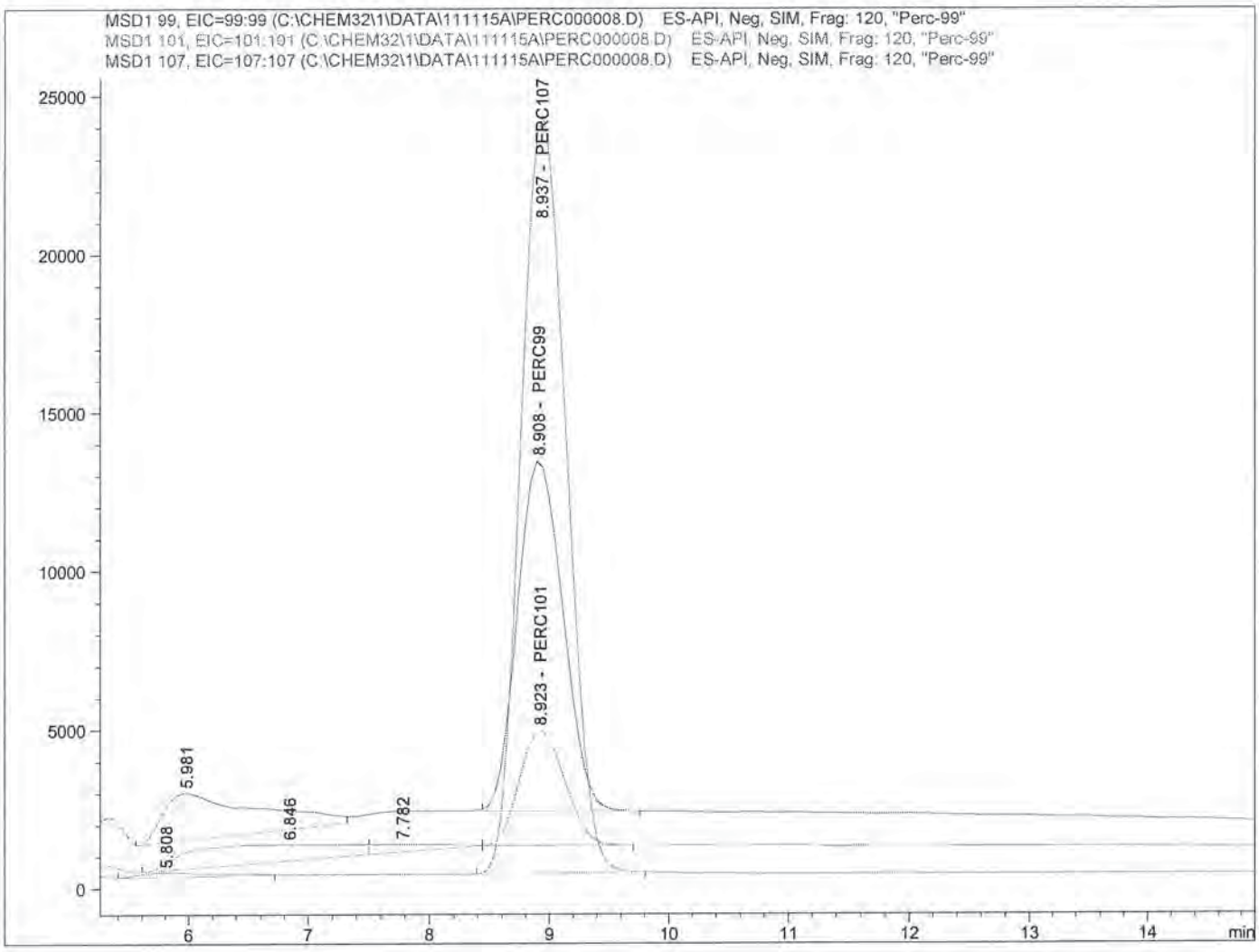

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : Friday, November 13, 2015 9:38:59 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

11-13-15

11/16/15

Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\111115A\PERC000008.D
Sample Name: SEQ-CAL4

```
==================================================================
Acq. Operator   :                                Seq. Line :   8
Acq. Instrument : Instrument 1                    Location : Vial 94
Injection Date  : 11/11/2015 5:22:47 PM                Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed    : 11/13/2015 9:38:59 AM
                  (modified after loading)
==================================================================

  1      5.00000   PERC107


Signal 1: MSD1 99, EIC=99:99

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.908 BB        1 2.94696e5  8.87076e-1    2.05173    PERC99

Totals without ISTD(s) :                 2.05173


Signal 2: MSD1 101, EIC=101:101

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.923 BBA       1 9.61557e4     2.72316    2.05510    PERC101

Totals without ISTD(s) :                 2.05510


Signal 3: MSD1 107, EIC=107:107

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.937 BBA  I    1 6.37067e5     1.00000    5.00000    PERC107

Totals without ISTD(s) :                 0.00000


==================================================================
                        *** End of Report ***
```

Data File C:\CHEM32\1\DATA\111115A\PERC000009.D
Sample Name: SEQ-CAL5

==========

Acq. Operator : Seq. Line : 9
Acq. Instrument : Instrument 1 Location : Vial 95
Injection Date : 11/11/2015 5:40:37 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/13/2015 9:39:41 AM
(modified after loading)

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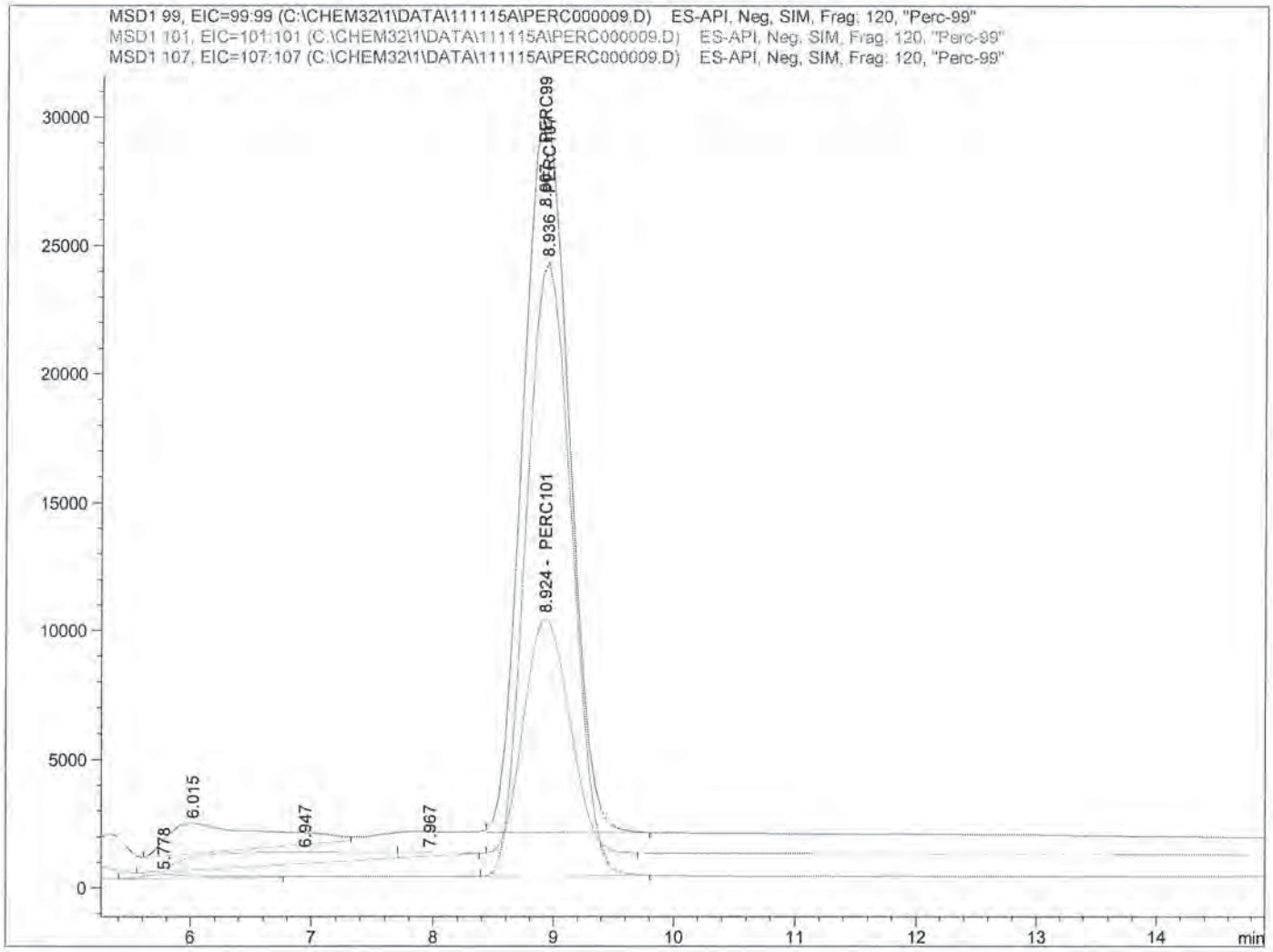

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Internal Standard Report

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11/16/15

Sorted By : Signal
Calib. Data Modified : Friday, November 13, 2015 9:39:41 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

11-13-15

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\111115A\PERC000009.D
Sample Name: SEQ-CAL5

```
==================================================================
Acq. Operator   :                                Seq. Line :   9
Acq. Instrument : Instrument 1                    Location : Vial 95
Injection Date  : 11/11/2015 5:40:37 PM                Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed    : 11/13/2015 9:39:41 AM
                  (modified after loading)
==================================================================

  1      5.00000   PERC107


Signal 1: MSD1 99, EIC=99:99

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.907 BBA       1 7.47180e5  8.79368e-1    5.14361    PERC99

Totals without ISTD(s) :                 5.14361



Signal 2: MSD1 101, EIC=101:101

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.924 BBA       1 2.43807e5     2.69615    5.14592    PERC101

Totals without ISTD(s) :                 5.14592



Signal 3: MSD1 107, EIC=107:107

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.936 BBA  I    1 6.38700e5     1.00000    5.00000    PERC107

Totals without ISTD(s) :                 0.00000


==================================================================
                        *** End of Report ***
```

Data File C:\CHEM32\1\DATA\111115A\PERC000010.D
Sample Name: SEQ-CAL6

==========

Acq. Operator : Seq. Line : 10
Acq. Instrument : Instrument 1 Location : Vial 96
Injection Date : 11/11/2015 5:58:29 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/13/2015 9:40:28 AM
(modified after loading)

==========

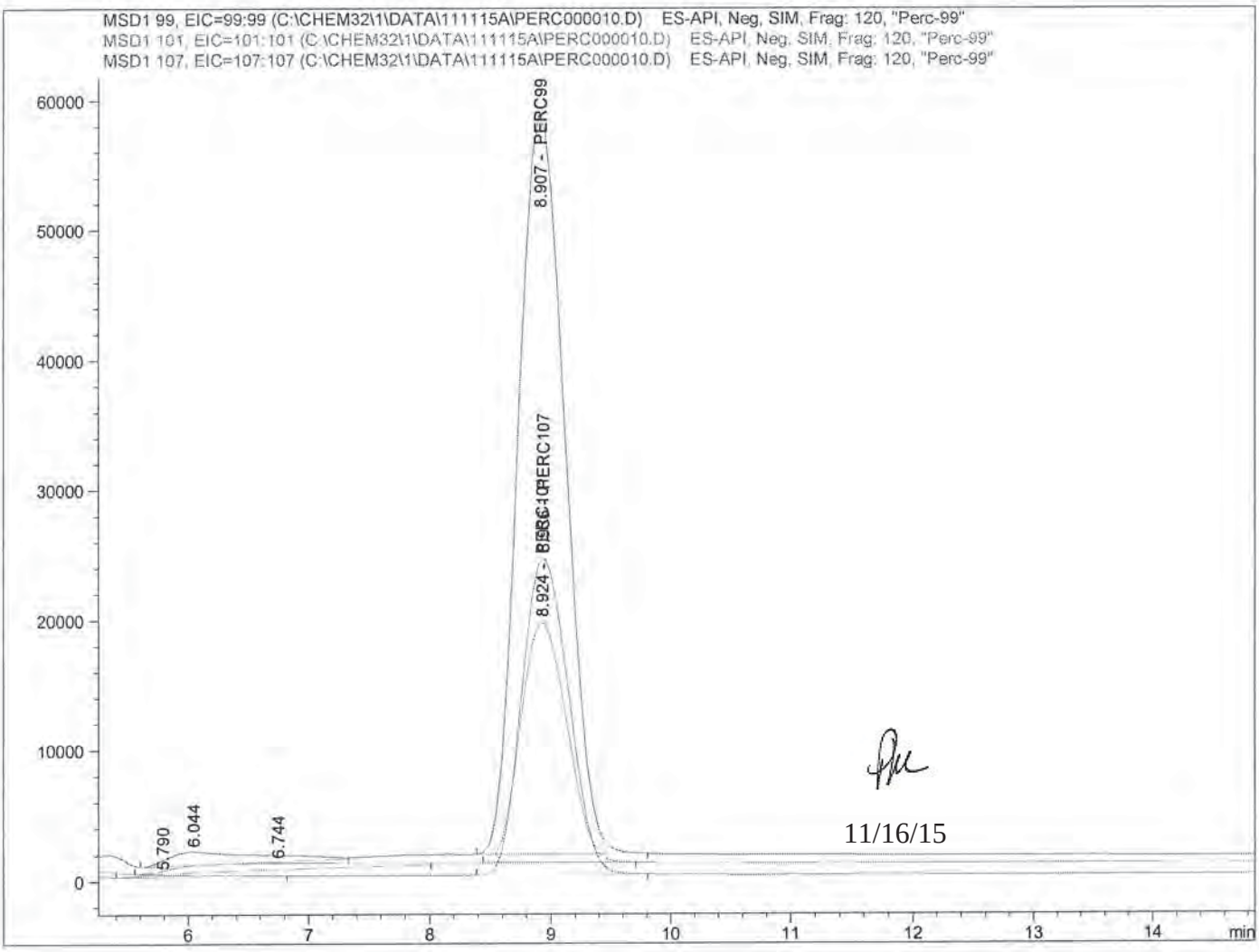

11/16/15

==========

Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : Friday, November 13, 2015 9:40:28 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

11-13-15

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\111115A\PERC000010.D
Sample Name: SEQ-CAL6

```
==================================================================
Acq. Operator   :                                Seq. Line :  10
Acq. Instrument : Instrument 1                    Location : Vial 96
Injection Date  : 11/11/2015 5:58:29 PM                Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed    : 11/13/2015 9:40:28 AM
                  (modified after loading)
==================================================================

  1      5.00000   PERC107


Signal 1: MSD1 99, EIC=99:99

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.907 BBA       1 1.51860e6  8.71535e-1   10.17641    PERC99

Totals without ISTD(s) :                10.17641



Signal 2: MSD1 101, EIC=101:101

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.924 BBA       1 4.91640e5     2.66963   10.09166    PERC101

Totals without ISTD(s) :                10.09166



Signal 3: MSD1 107, EIC=107:107

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.936 BBA  I    1 6.50287e5     1.00000    5.00000    PERC107

Totals without ISTD(s) :                 0.00000


==================================================================
                        *** End of Report ***
```

Data File C:\CHEM32\1\DATA\111115A\PERC000011.D
Sample Name: SEQ-CAL7

==========

Acq. Operator : Seq. Line : 11
Acq. Instrument : Instrument 1 Location : Vial 97
Injection Date : 11/11/2015 6:16:16 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/13/2015 9:41:08 AM
(modified after loading)

==========

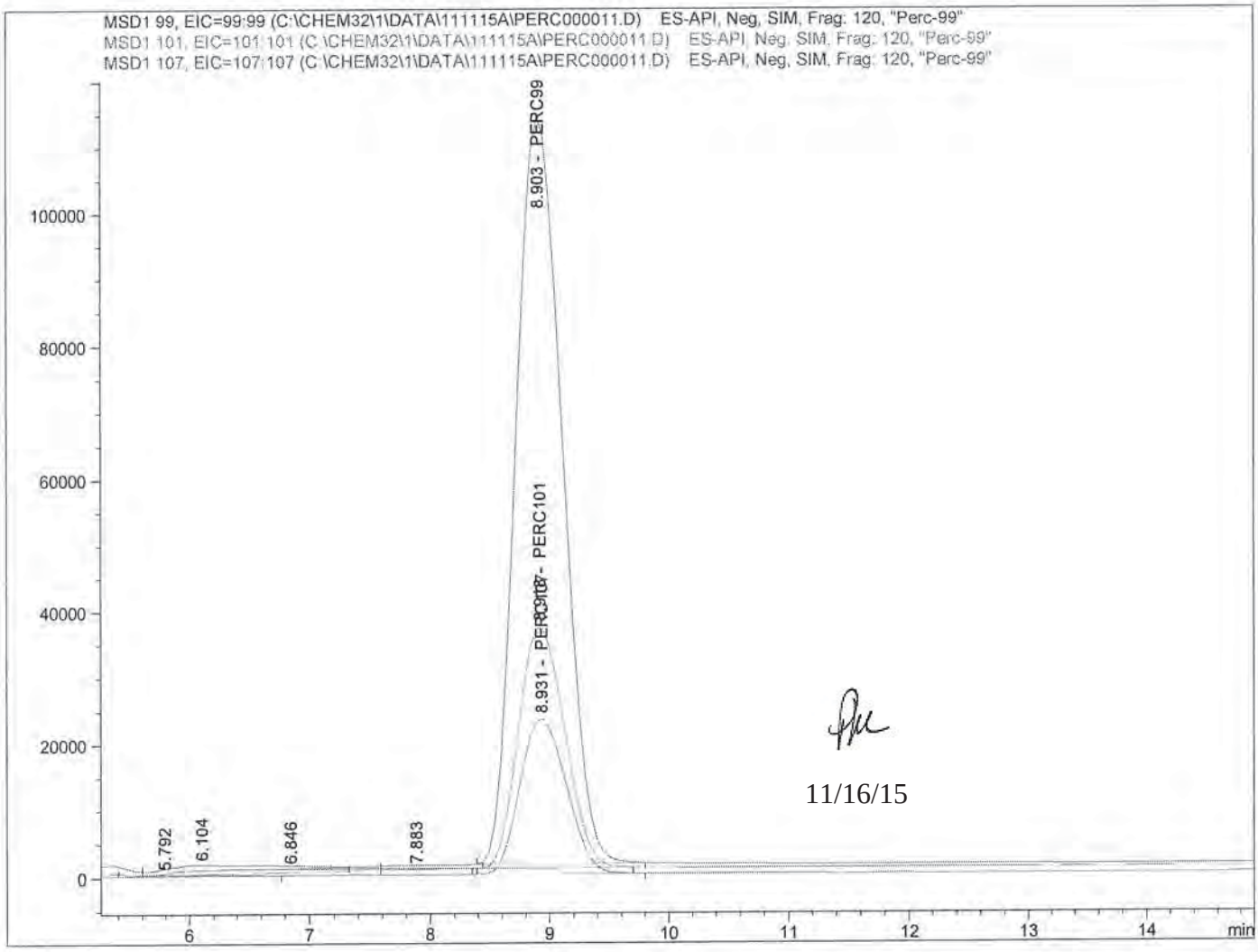

11/16/15

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : Friday, November 13, 2015 9:41:08 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

11-13-15

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\111115A\PERC000011.D
Sample Name: SEQ-CAL7

==========

Acq. Operator : Seq. Line : 11
Acq. Instrument : Instrument 1 Location : Vial 97
Injection Date : 11/11/2015 6:16:16 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/13/2015 9:41:08 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.903	BBA	1	3.03553e6	8.63235e-1	20.69704		PERC99

Totals without ISTD(s) : 20.69704

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.918	BBA	1	9.77148e5	2.64709	20.43021		PERC101

Totals without ISTD(s) : 20.43021

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.931	BBA I	1	6.33032e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\111115A\PERC000012.D
Sample Name: SEQ-CAL8

==========

Acq. Operator : Seq. Line : 12
Acq. Instrument : Instrument 1 Location : Vial 98
Injection Date : 11/11/2015 6:34:15 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/13/2015 9:43:12 AM
(modified after loading)

==========

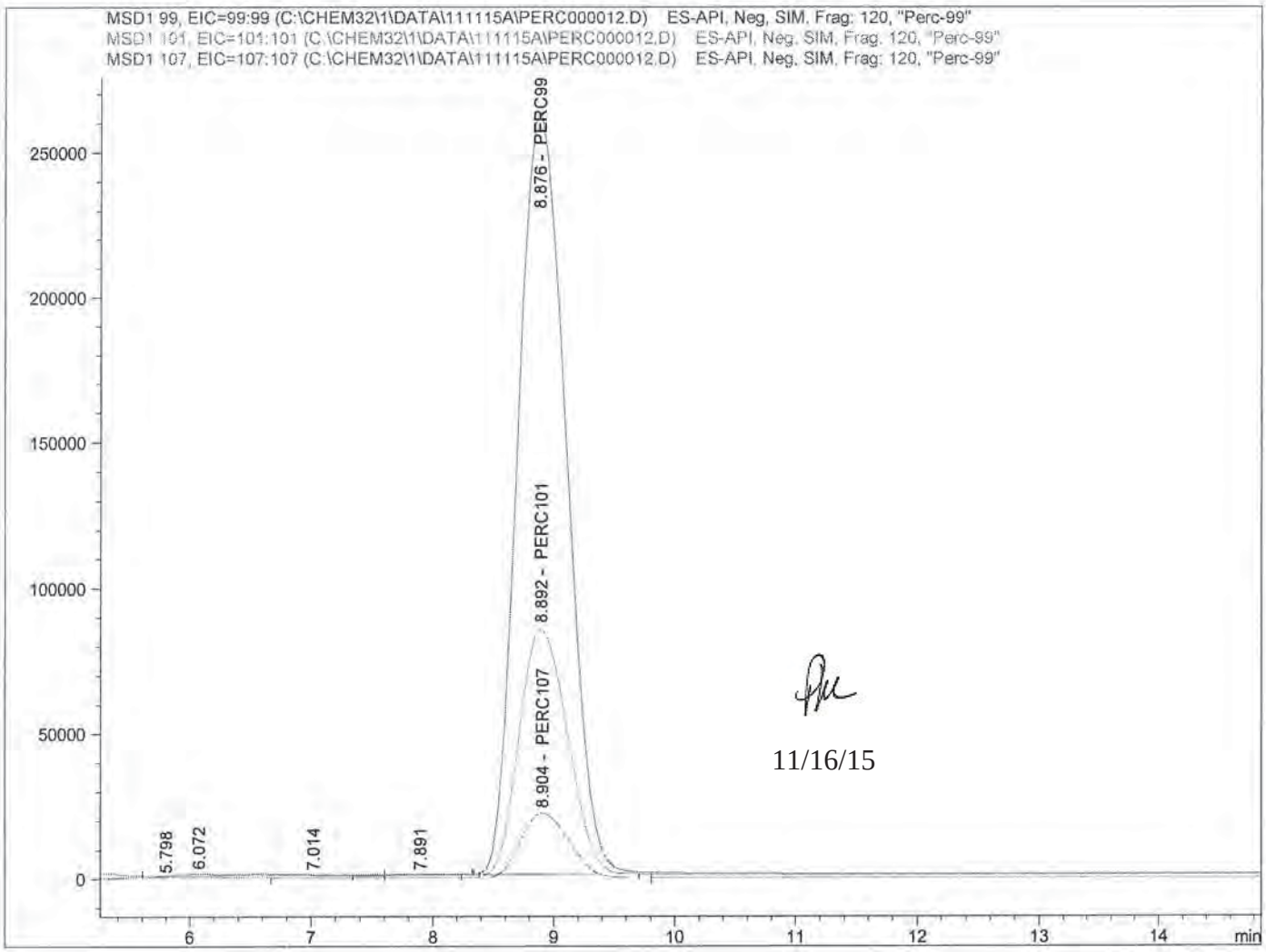

11/16/15

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : 11/13/2015 9:42:29 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

11-13-15

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\111115A\PERC000012.D
Sample Name: SEQ-CAL8

```
==================================================================
Acq. Operator   :                                Seq. Line :  12
Acq. Instrument : Instrument 1                    Location : Vial 98
Injection Date  : 11/11/2015 6:34:15 PM                Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed    : 11/13/2015 9:43:12 AM
                  (modified after loading)
==================================================================

  1      5.00000   PERC107


Signal 1: MSD1 99, EIC=99:99

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.876 BBA       1 7.21782e6  8.48638e-1   49.82637    PERC99

Totals without ISTD(s) :                49.82637



Signal 2: MSD1 101, EIC=101:101

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.892 BBA       1 2.34163e6     2.60663   49.65108    PERC101

Totals without ISTD(s) :                49.65108



Signal 3: MSD1 107, EIC=107:107

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.904 BBA  I    1 6.14666e5     1.00000    5.00000    PERC107

Totals without ISTD(s) :                 0.00000


==================================================================
                        *** End of Report ***
```

Data File C:\CHEM32\1\DATA\111115A\PERC000013.D
Sample Name: SEQ-ICV1

==========

Acq. Operator : Seq. Line : 13
Acq. Instrument : Instrument 1 Location : Vial 99
Injection Date : 11/11/2015 6:51:59 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/13/2015 9:43:59 AM
(modified after loading)

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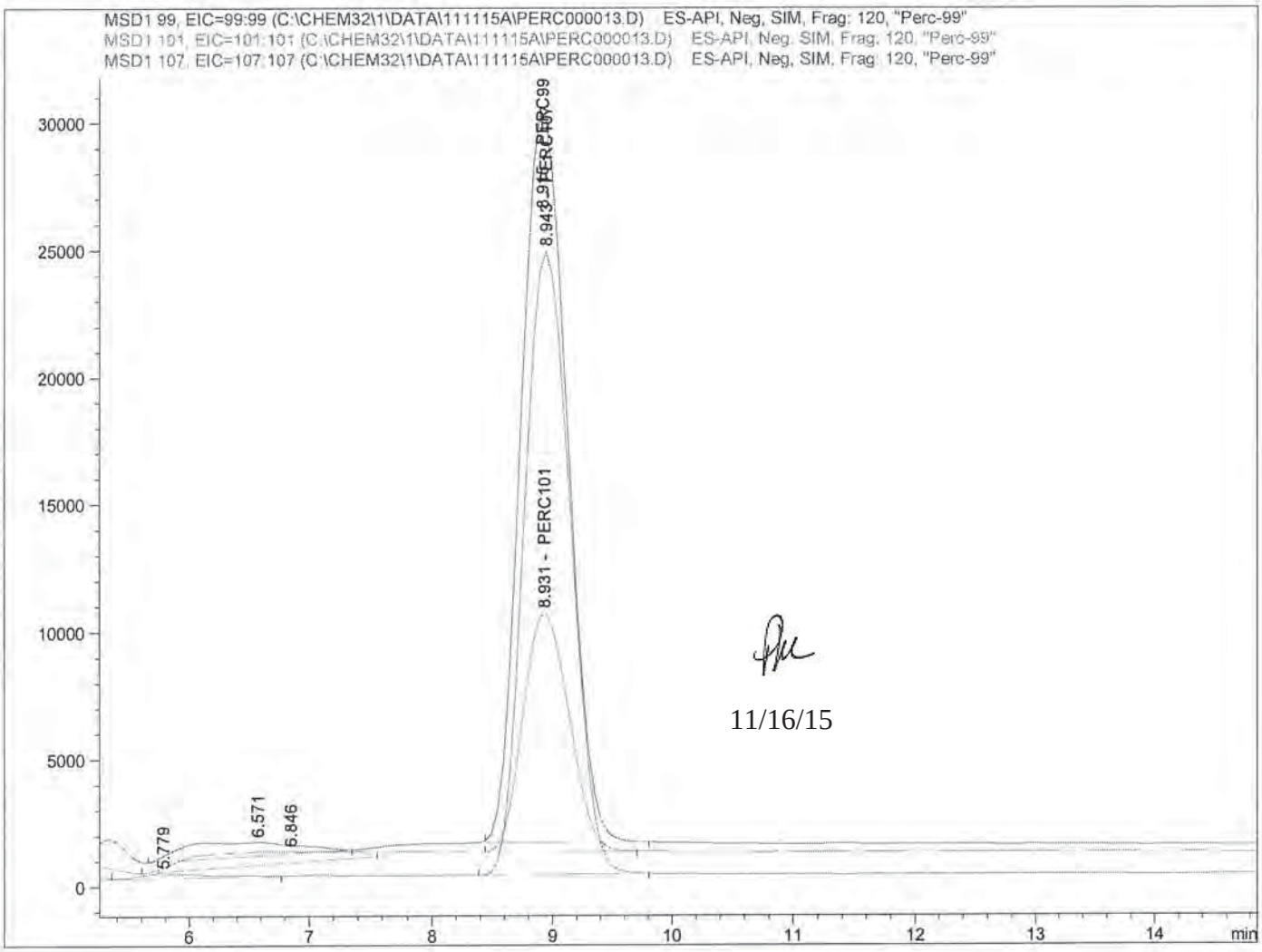

11/16/15

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Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : Friday, November 13, 2015 9:43:59 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

11-13-15

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\111115A\PERC000013.D
Sample Name: SEQ-ICV1

==========

Acq. Operator : Seq. Line : 13
Acq. Instrument : Instrument 1 Location : Vial 99
Injection Date : 11/11/2015 6:51:59 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/13/2015 9:43:59 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.915	BBA	1	7.66770e5	8.48638e-1	4.97440		PERC99

Totals without ISTD(s) : 4.97440

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.931	BBA	1	2.49299e5	2.60545	4.96540		PERC101

Totals without ISTD(s) : 4.96540

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.943	BBA I	1	6.54059e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Print of all graphic windows
Data File : C:\CHEM32\1\DATA\120215\PERC000002.D
Sample Name : SEQ-TUN1

==========

Acq. Operator : Seq. Line : 2
Acq. Instrument : Instrument 1 Location : Vial 1
Injection Date : 12/2/2015 9:09:29 AM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_SC
Last changed : 11/28/2015 11:11:28 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/2/2015 10:12:07 AM
(modified after loading)

Current Chromatogram(s)

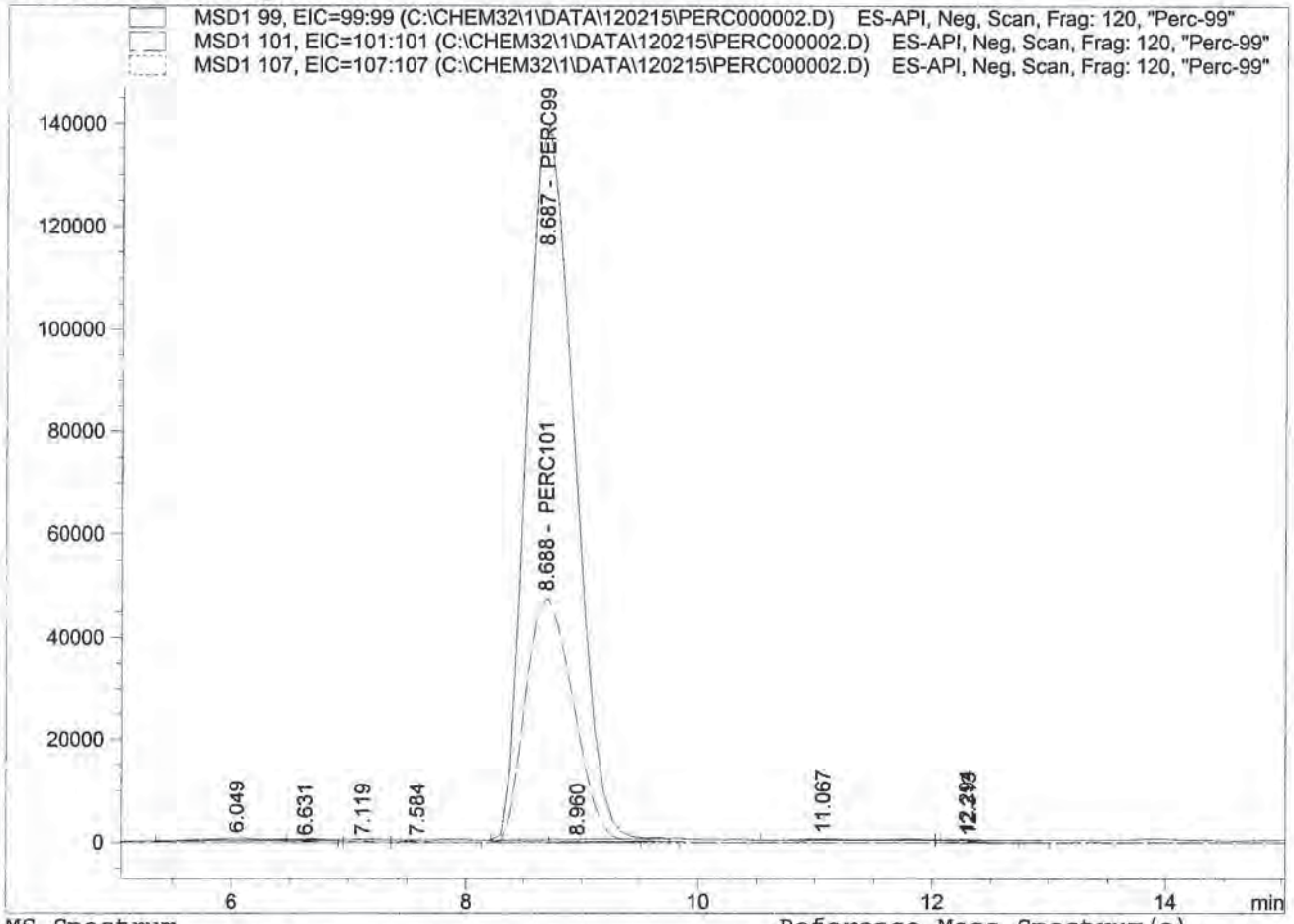

MS Spectrum

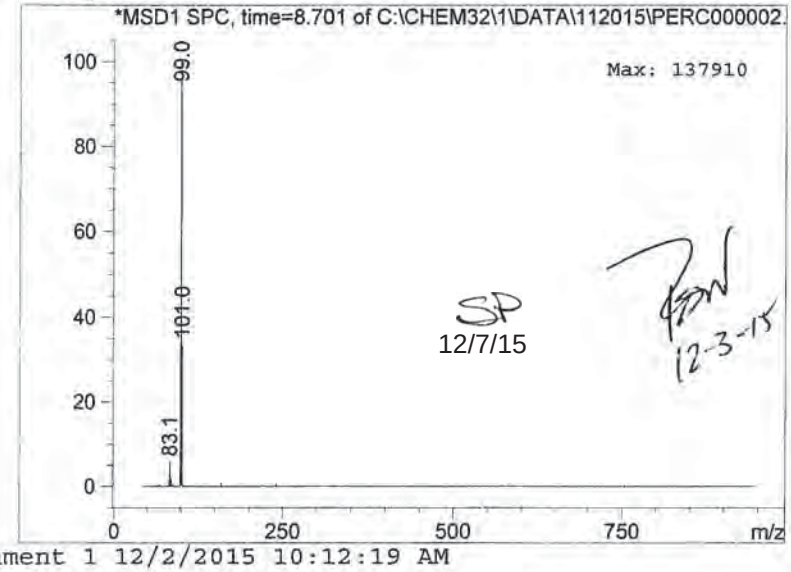

SP
12/7/15

12-3-15

Reference Mass Spectrum(a)

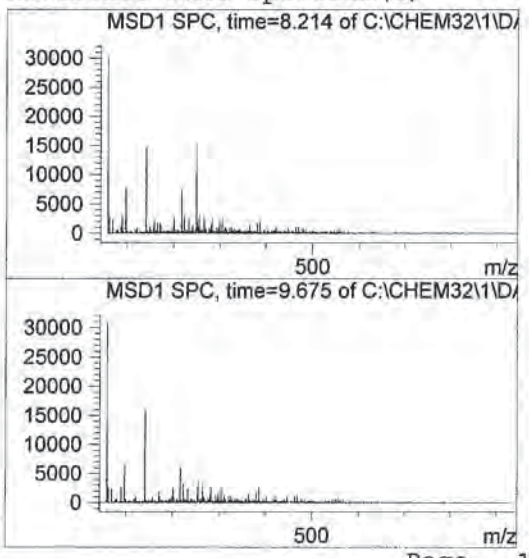

Data File C:\CHEM32\1\DATA\120215\PERC000002.D
Sample Name: SEQ-TUN1

==========

Acq. Operator : Seq. Line : 2
Acq. Instrument : Instrument 1 Location : Vial 1
Injection Date : 12/2/2015 9:09:29 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_SC
Last changed : 11/28/2015 11:11:28 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/2/2015 10:12:07 AM
(modified after loading)

==========

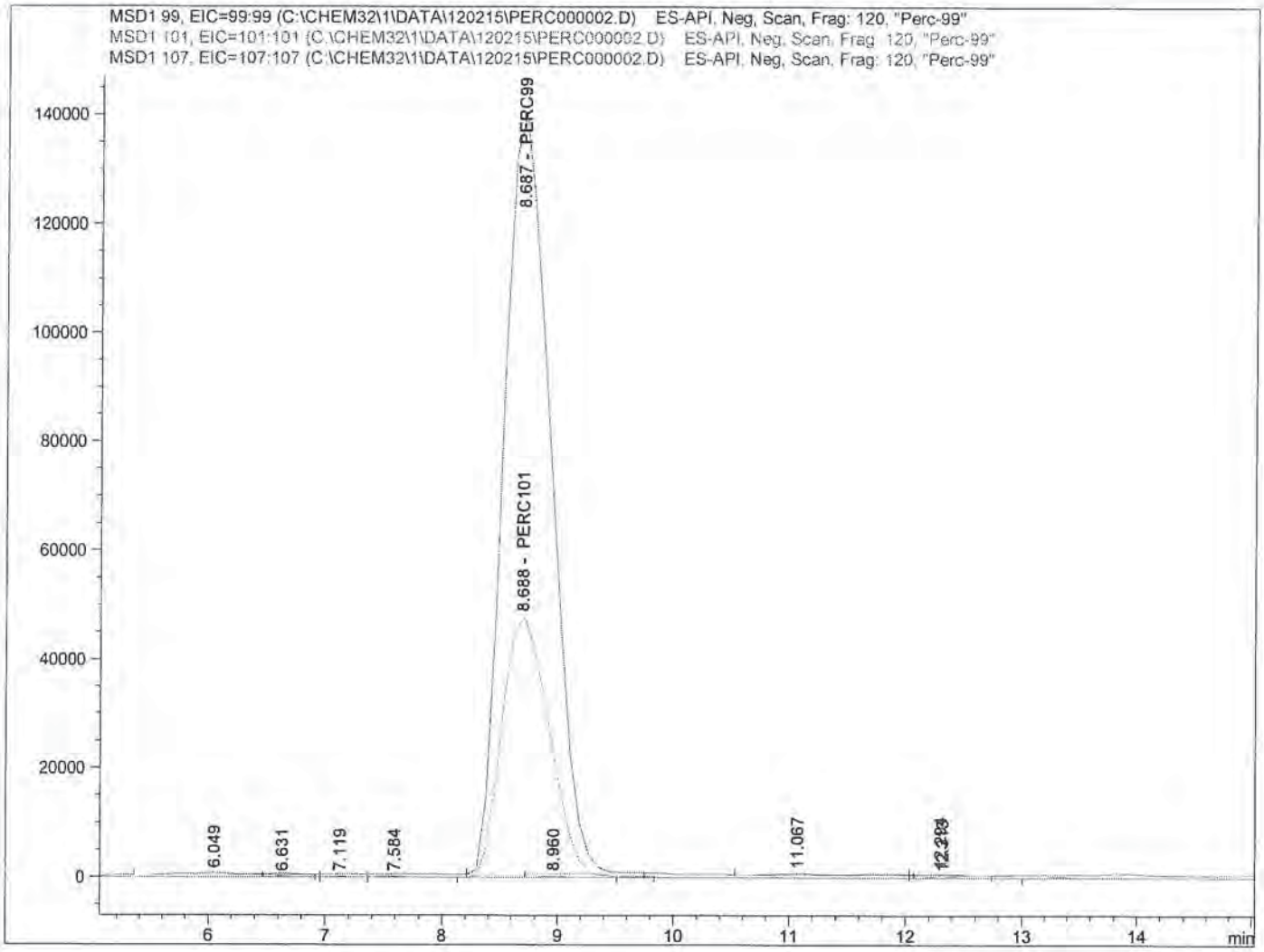

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : 12/2/2015 10:12:07 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-3-15

SP
12/7/15

Data File C:\CHEM32\1\DATA\120215\PERC000002.D
Sample Name: SEQ-TUN1

```
==================================================================
Acq. Operator   :                                  Seq. Line :   2
Acq. Instrument : Instrument 1                      Location : Vial 1
Injection Date  : 12/2/2015 9:09:29 AM                  Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_SC
Last changed    : 11/28/2015 11:11:28 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/2/2015 10:12:07 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.687	BB	1	3.92307e6	0.00000	0.00000		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.688	BBA	1	1.35732e6	0.00000	0.00000		PERC101

Totals without ISTD(s) : 0.00000

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.680		1	-	-	-		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : ISTD compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120215\PERC000005.D
Sample Name: SEQ-CCV1

==========

Acq. Operator : Seq. Line : 5
Acq. Instrument : Instrument 1 Location : Vial 3
Injection Date : 12/2/2015 10:03:13 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/2/2015 10:12:07 AM
(modified after loading)

==========

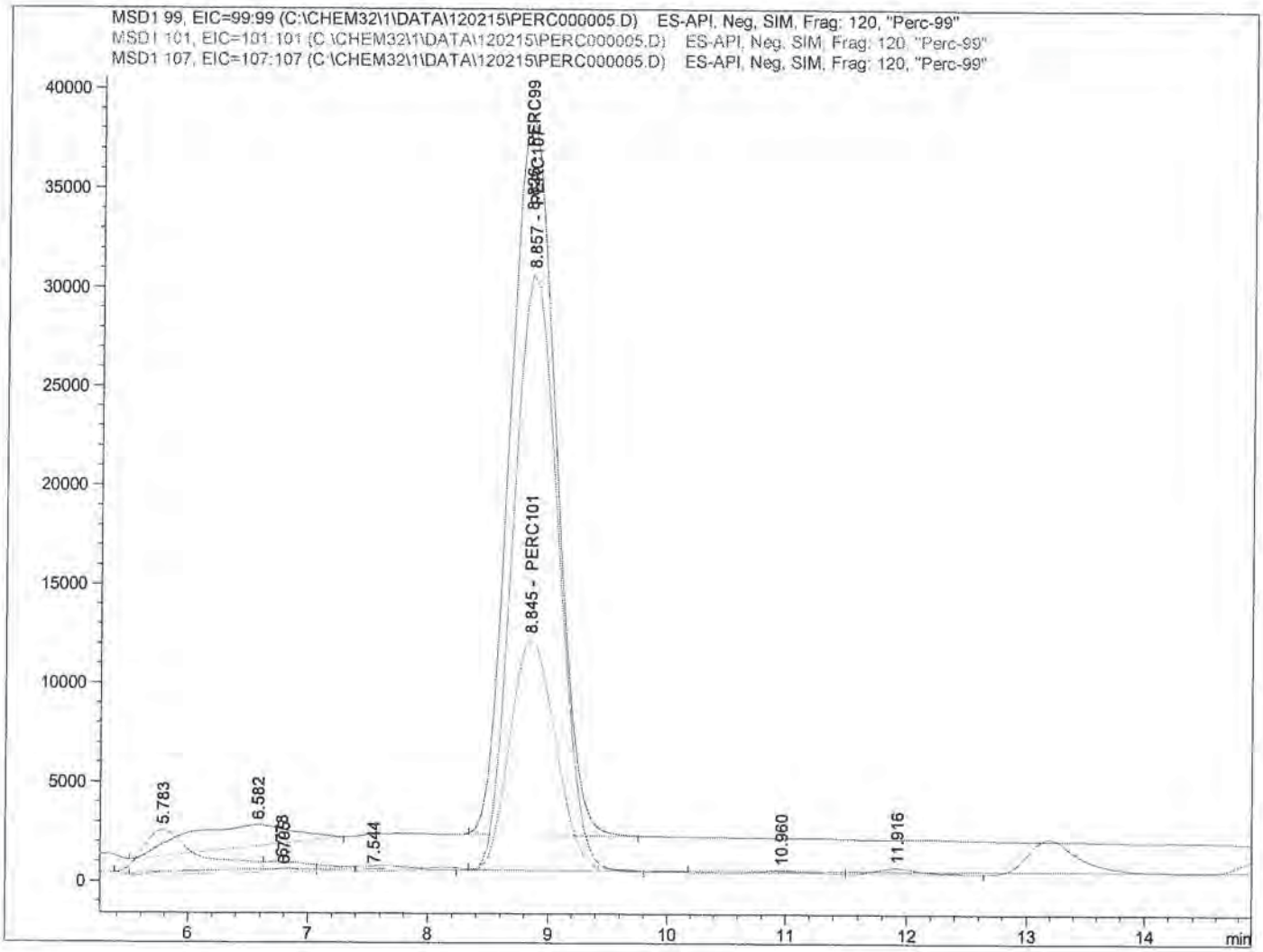

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Internal Standard Report

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SP
12/7/15

Sorted By : Signal
Calib. Data Modified : 12/2/2015 10:12:07 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-3-15

Data File C:\CHEM32\1\DATA\120215\PERC000005.D
Sample Name: SEQ-CCV1

```
==================================================================
Acq. Operator   :                                  Seq. Line :   5
Acq. Instrument : Instrument 1                      Location : Vial 3
Injection Date  : 12/2/2015 10:03:13 AM                 Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/2/2015 10:12:07 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.826	BB	1	9.67479e5	8.48638e-1	5.14658		PERC99

Totals without ISTD(s) : 5.14658

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.845	BBA	1	3.10275e5	2.60545	5.06737		PERC101

Totals without ISTD(s) : 5.06737

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.857	VBA I	1	7.97656e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120215\PERC000006.D
Sample Name: SEQ-LCV1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/2/2015 10:21:12 AM

Seq. Line : 6
Location : Vial 4
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/2/2015 10:38:04 AM
(modified after loading)

==========

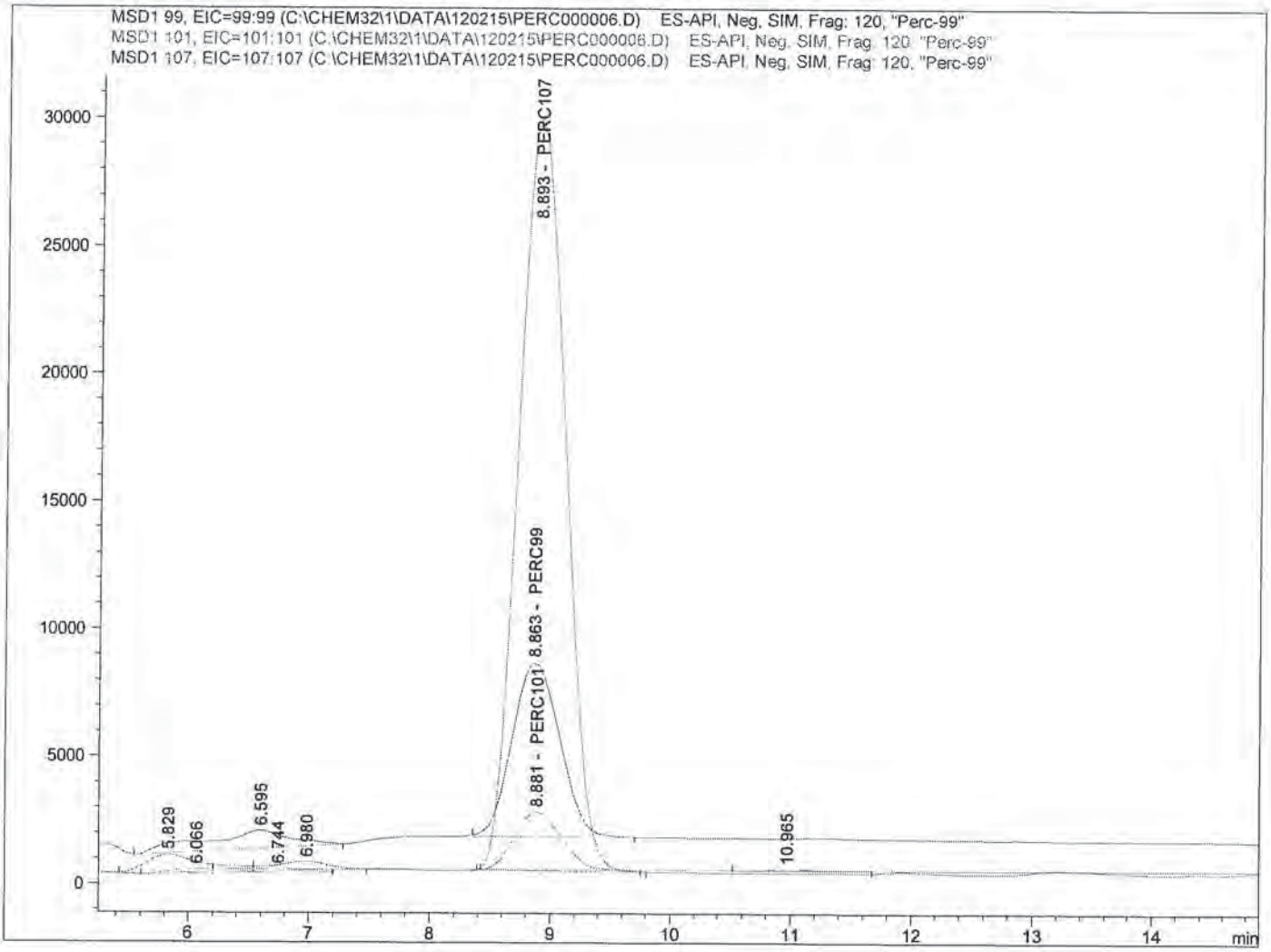

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Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/2/2015 10:38:04 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP 12/7/15

12-3-15

Data File C:\CHEM32\1\DATA\120215\PERC000006.D
Sample Name: SEQ-LCV1

```
==================================================================
Acq. Operator   :                                  Seq. Line :   6
Acq. Instrument : Instrument 1                      Location : Vial 4
Injection Date  : 12/2/2015 10:21:12 AM                 Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/2/2015 10:38:04 AM
                  (modified after loading)
==================================================================

  1      5.00000   PERC107


Signal 1: MSD1 99, EIC=99:99

RetTime  Type  ISTD    Area     Amt/Area    Amount   Grp   Name
 [min]         used              ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.863 BB        1 1.87021e5  8.48638e-1 9.93050e-1    PERC99

Totals without ISTD(s) :             9.93050e-1


Signal 2: MSD1 101, EIC=101:101

RetTime  Type  ISTD    Area     Amt/Area    Amount   Grp   Name
 [min]         used              ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.881 BB        1 6.07802e4     2.60545 9.90837e-1    PERC101

Totals without ISTD(s) :             9.90837e-1


Signal 3: MSD1 107, EIC=107:107

RetTime  Type  ISTD    Area     Amt/Area    Amount   Grp   Name
 [min]         used              ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.893 BBA  I    1 7.99120e5     1.00000    5.00000    PERC107

Totals without ISTD(s) :                0.00000


==================================================================
                        *** End of Report ***
```

Data File C:\CHEM32\1\DATA\120215\PERC000007.D
Sample Name: SEQ-IFA1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/2/2015 10:39:03 AM

Seq. Line : 7
Location : Vial 5
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/2/2015 12:40:40 PM
(modified after loading)

==========

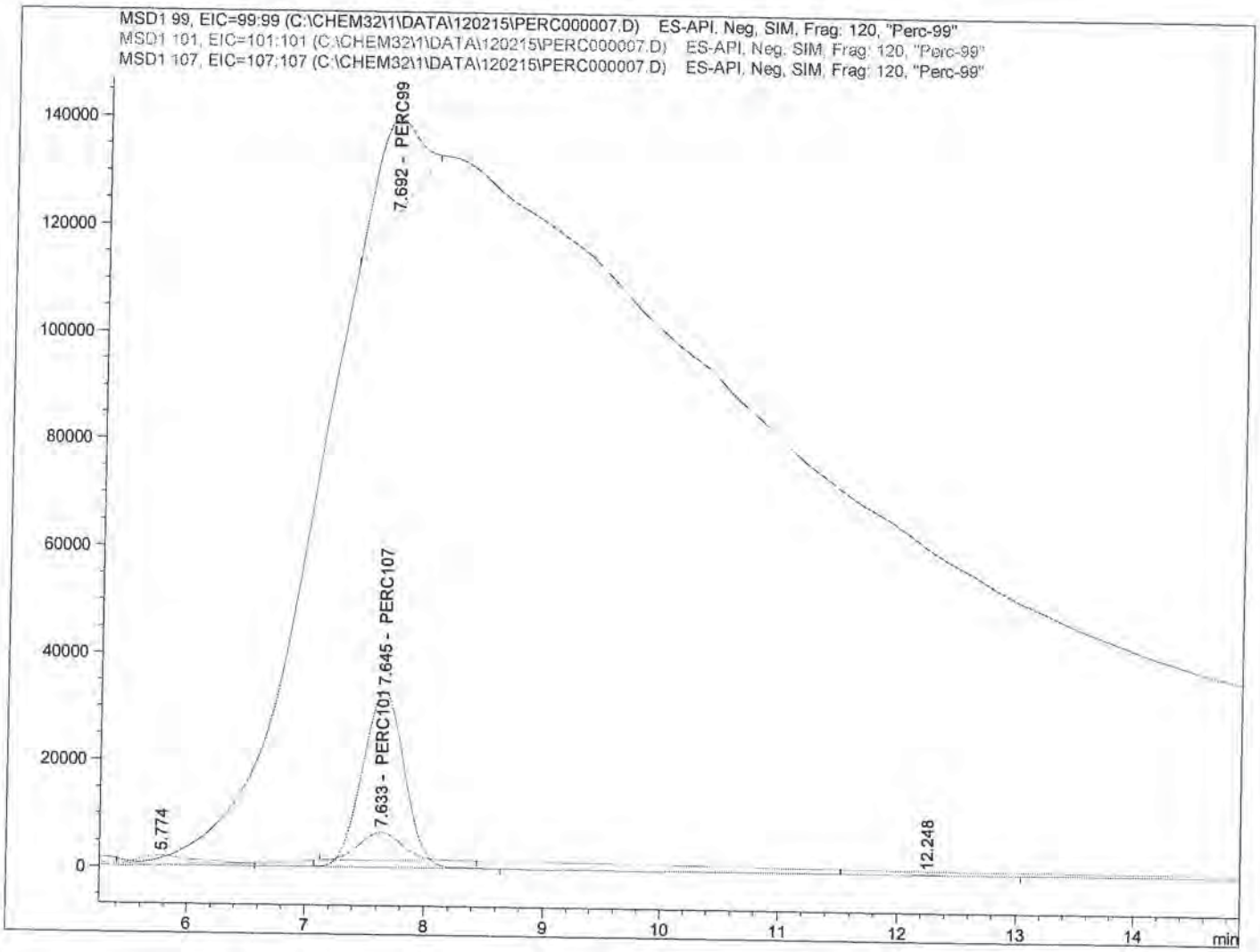

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/2/2015 12:37:31 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/7/15

12-3-15

Data File C:\CHEM32\1\DATA\120215\PERC000007.D
Sample Name: SEQ-IFA1

==========

Acq. Operator : Seq. Line : 7
Acq. Instrument : Instrument 1 Location : Vial 5
Injection Date : 12/2/2015 10:39:03 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/2/2015 12:40:40 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
7.692	BBA	1	4.01962e5	8.48638e-1	2.13245		PERC99

Totals without ISTD(s) : 2.13245

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
7.633	BBA	1	1.32873e5	2.60545	2.16416		PERC101

Totals without ISTD(s) : 2.16416

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
7.645	BBA I	1	7.99831e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120215\PERC000010.D
Sample Name: 5L01021-BLK1

==========

Acq. Operator : Seq. Line : 10
Acq. Instrument : Instrument 1 Location : Vial 6
Injection Date : 12/2/2015 11:32:37 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/2/2015 12:41:57 PM
(modified after loading)

==========

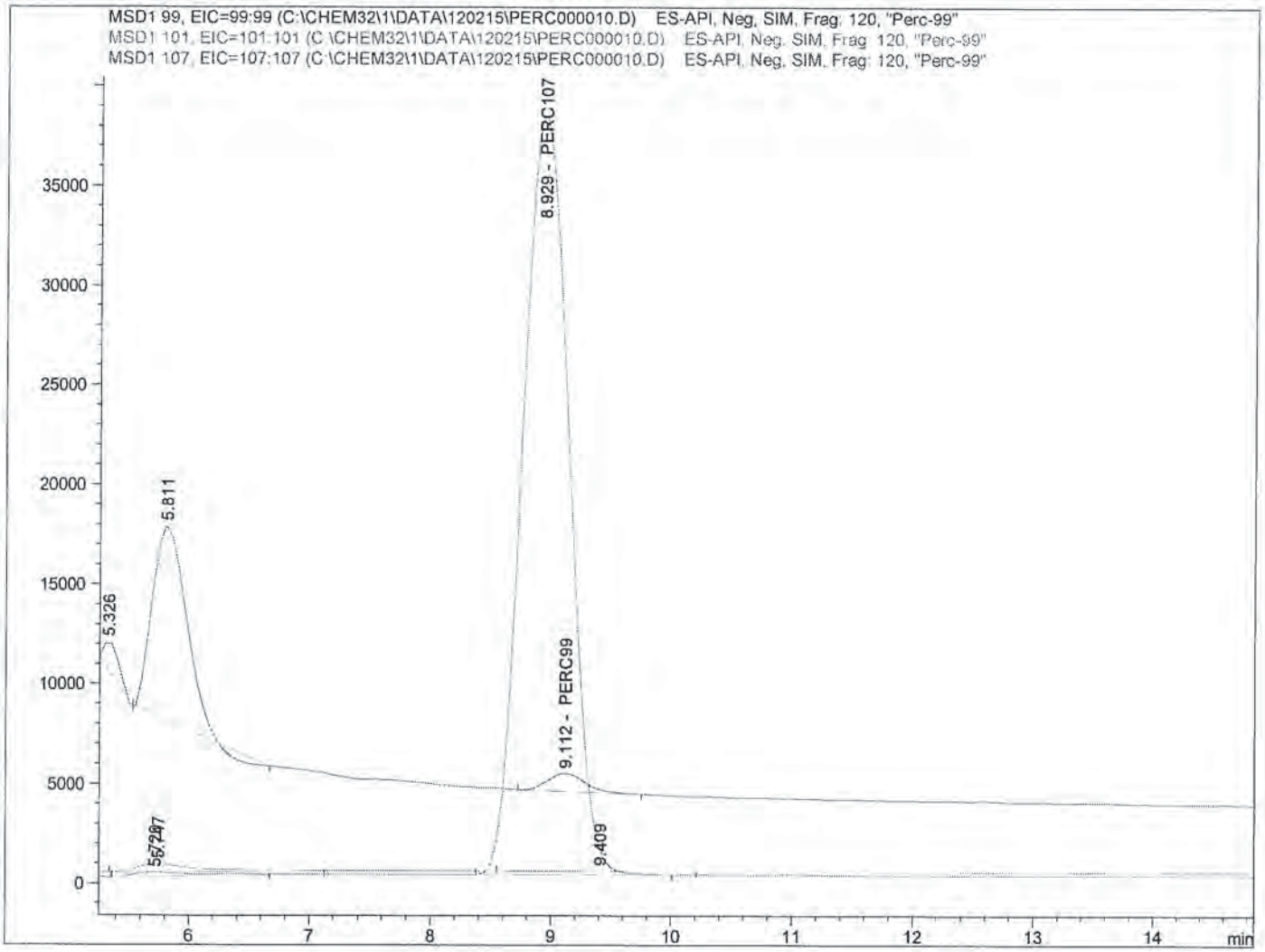

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/2/2015 12:41:42 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-3-15

Data File C:\CHEM32\1\DATA\120215\PERC000010.D
Sample Name: 5L01021-BLK1

```
==================================================================
Acq. Operator   :                                  Seq. Line :  10
Acq. Instrument : Instrument 1                      Location : Vial 6
Injection Date  : 12/2/2015 11:32:37 AM                 Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/2/2015 12:41:57 PM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
9.112	BB	1	1.99660e4	8.48638e-1	8.24789e-2		PERC99

Totals without ISTD(s) : 8.24789e-2

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.930		1	-	-	-		PERC101

Totals without ISTD(s) : 0.00000

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.929	BBA I	1	1.02717e6	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120215\PERC000011.D
Sample Name: 5L01021-BS1

==========

Acq. Operator : Seq. Line : 11
Acq. Instrument : Instrument 1 Location : Vial 7
Injection Date : 12/2/2015 11:50:23 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/2/2015 12:41:57 PM
(modified after loading)

==========

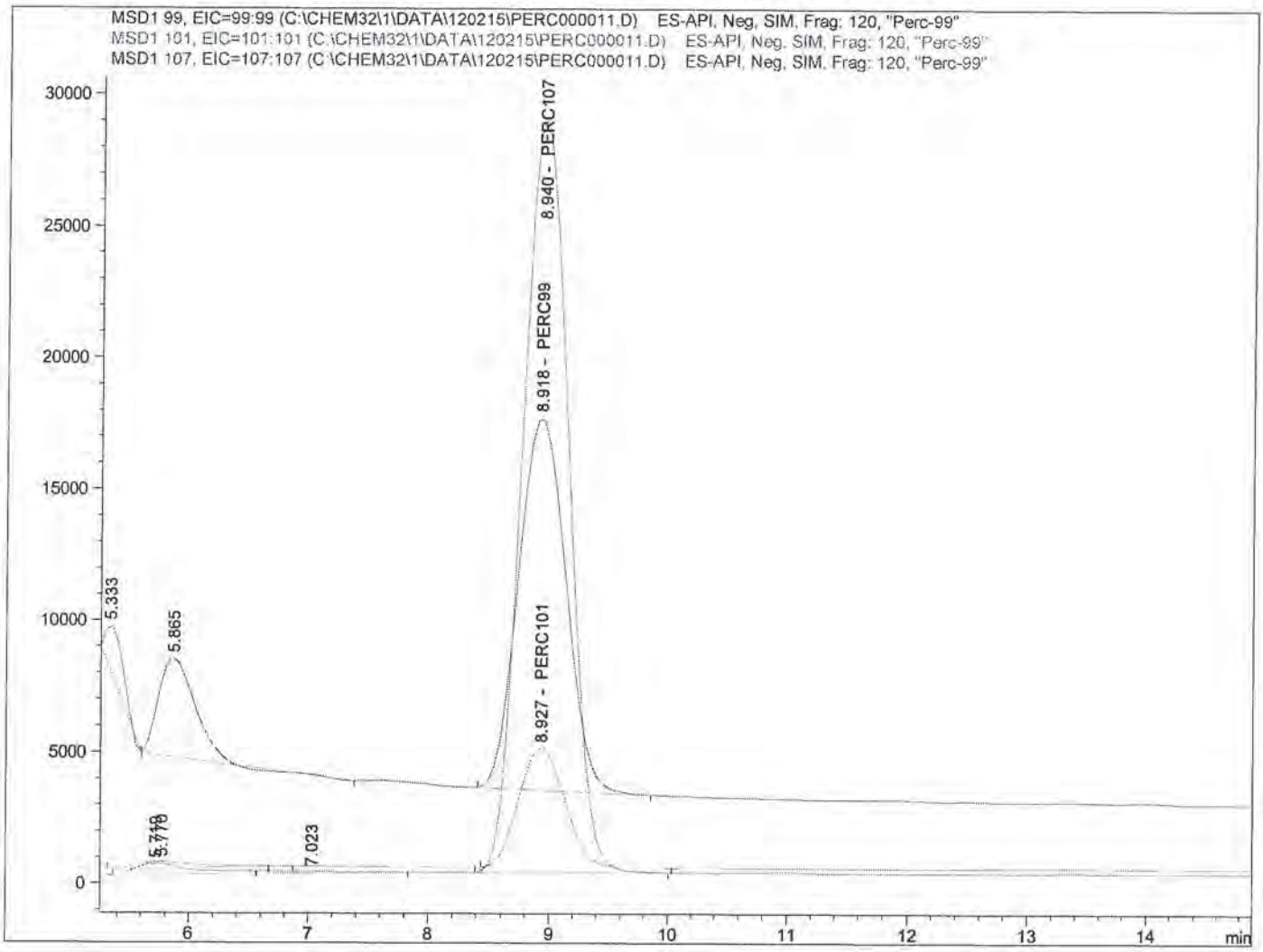

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/2/2015 12:41:42 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/7/15

12-3-15

Data File C:\CHEM32\1\DATA\120215\PERC000011.D
Sample Name: 5L01021-BS1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/2/2015 11:50:23 AM

Seq. Line : 11
Location : Vial 7
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/2/2015 12:41:57 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.918	BB	1	3.90564e5	8.48638e-1	2.15008		PERC99

Totals without ISTD(s) : 2.15008

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.927	BV	1	1.23412e5	2.60545	2.08582		PERC101

Totals without ISTD(s) : 2.08582

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.940	BBA I	1	7.70780e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120215\PERC000023.D
Sample Name: SEQ-CCV2

==========

Acq. Operator : Seq. Line : 23
Acq. Instrument : Instrument 1 Location : Vial 3
Injection Date : 12/2/2015 3:24:42 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 10:48:45 AM
(modified after loading)

==========

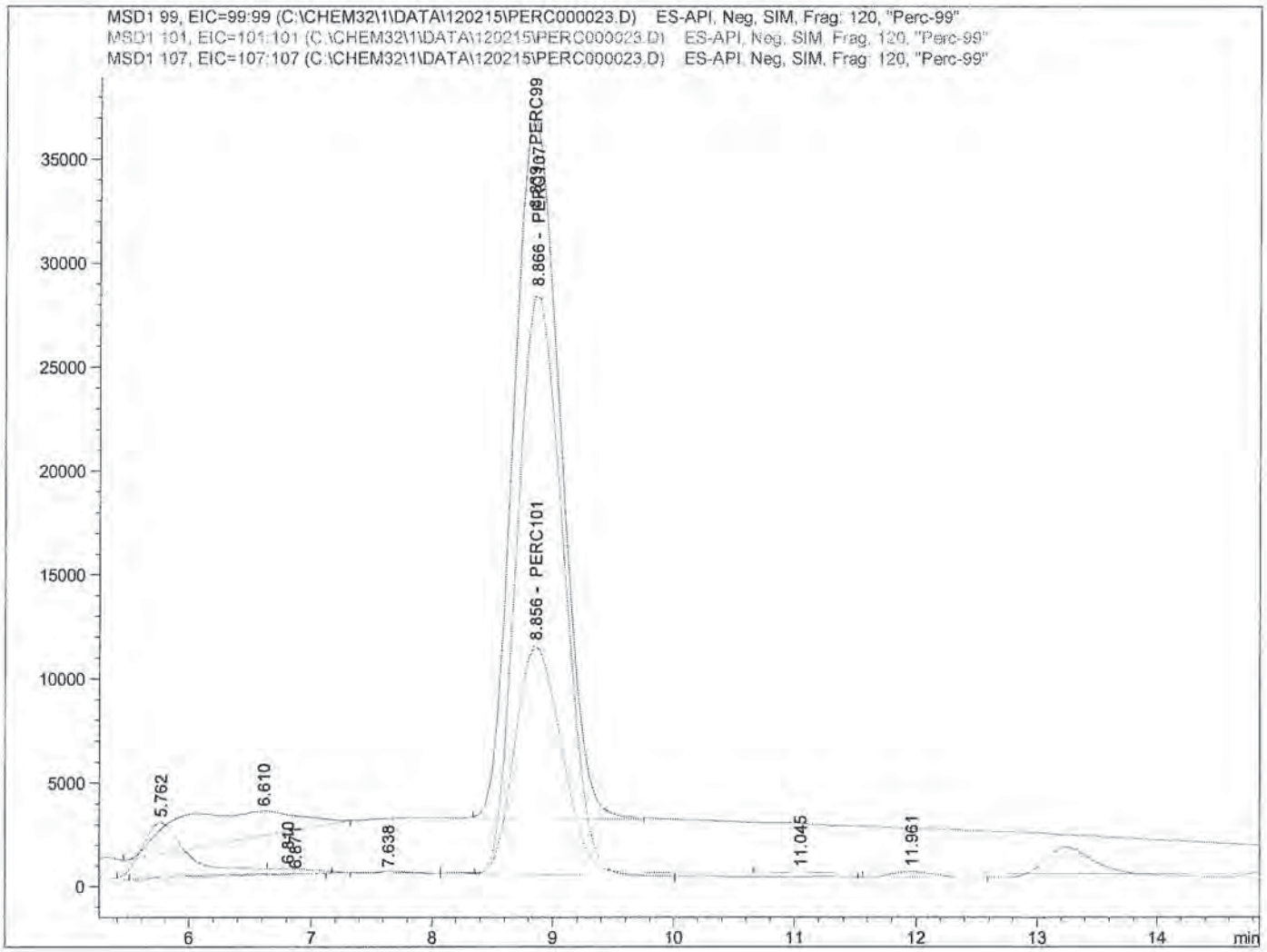

==========

Internal Standard Report

==========

SP
12/7/15

Sorted By : Signal
Calib. Data Modified : 12/3/2015 10:48:45 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

PW
12-3-15

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\120215\PERC000023.D
Sample Name: SEQ-CCV2

```
==================================================================
Acq. Operator   :                                Seq. Line :  23
Acq. Instrument : Instrument 1                    Location : Vial 3
Injection Date  : 12/2/2015 3:24:42 PM                 Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/3/2015 10:48:45 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.839	BB	1	9.04299e5	8.48638e-1	5.14535		PERC99

Totals without ISTD(s) : 5.14535

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.856	VBA	1	2.92477e5	2.60545	5.10921		PERC101

Totals without ISTD(s) : 5.10921

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.866	VBA I	1	7.45744e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120215\PERC000024.D
Sample Name: SEQ-LCV2

==========

Acq. Operator : Seq. Line : 24
Acq. Instrument : Instrument 1 Location : Vial 4
Injection Date : 12/2/2015 3:42:31 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 10:48:45 AM
(modified after loading)

==========

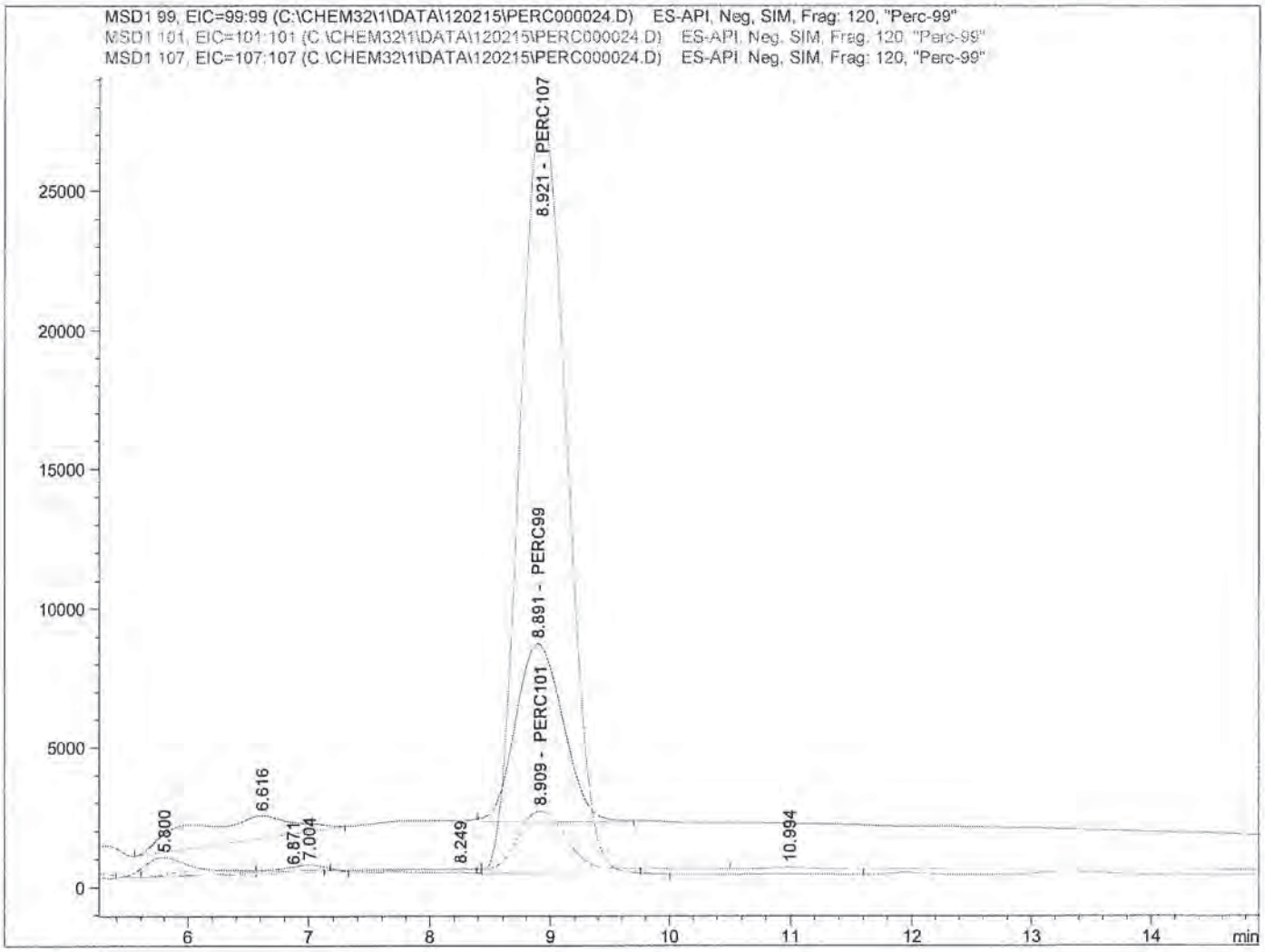

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/3/2015 10:48:45 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/7/15

RSW
12-3-15

Data File C:\CHEM32\1\DATA\120215\PERC000024.D
Sample Name: SEQ-LCV2

```
==================================================================
Acq. Operator   :                                Seq. Line :  24
Acq. Instrument : Instrument 1                    Location : Vial 4
Injection Date  : 12/2/2015 3:42:31 PM                 Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/3/2015 10:48:45 AM
                  (modified after loading)
==================================================================

  1      5.00000   PERC107


Signal 1: MSD1 99, EIC=99:99

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.891 BB        1 1.77465e5  8.48638e-1    1.00771    PERC99

Totals without ISTD(s) :                 1.00771


Signal 2: MSD1 101, EIC=101:101

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.909 VB        1 5.69423e4     2.60545 9.92694e-1    PERC101

Totals without ISTD(s) :              9.92694e-1


Signal 3: MSD1 107, EIC=107:107

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.921 BBA  I    1 7.47259e5     1.00000    5.00000    PERC107

Totals without ISTD(s) :                 0.00000


==================================================================
                        *** End of Report ***
```

Data File C:\CHEM32\1\DATA\120215\PERC000025.D
Sample Name: SEQ-LCV3

==========

Acq. Operator : Seq. Line : 25
Acq. Instrument : Instrument 1 Location : Vial 83
Injection Date : 12/2/2015 4:00:17 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 10:50:43 AM
(modified after loading)

==========

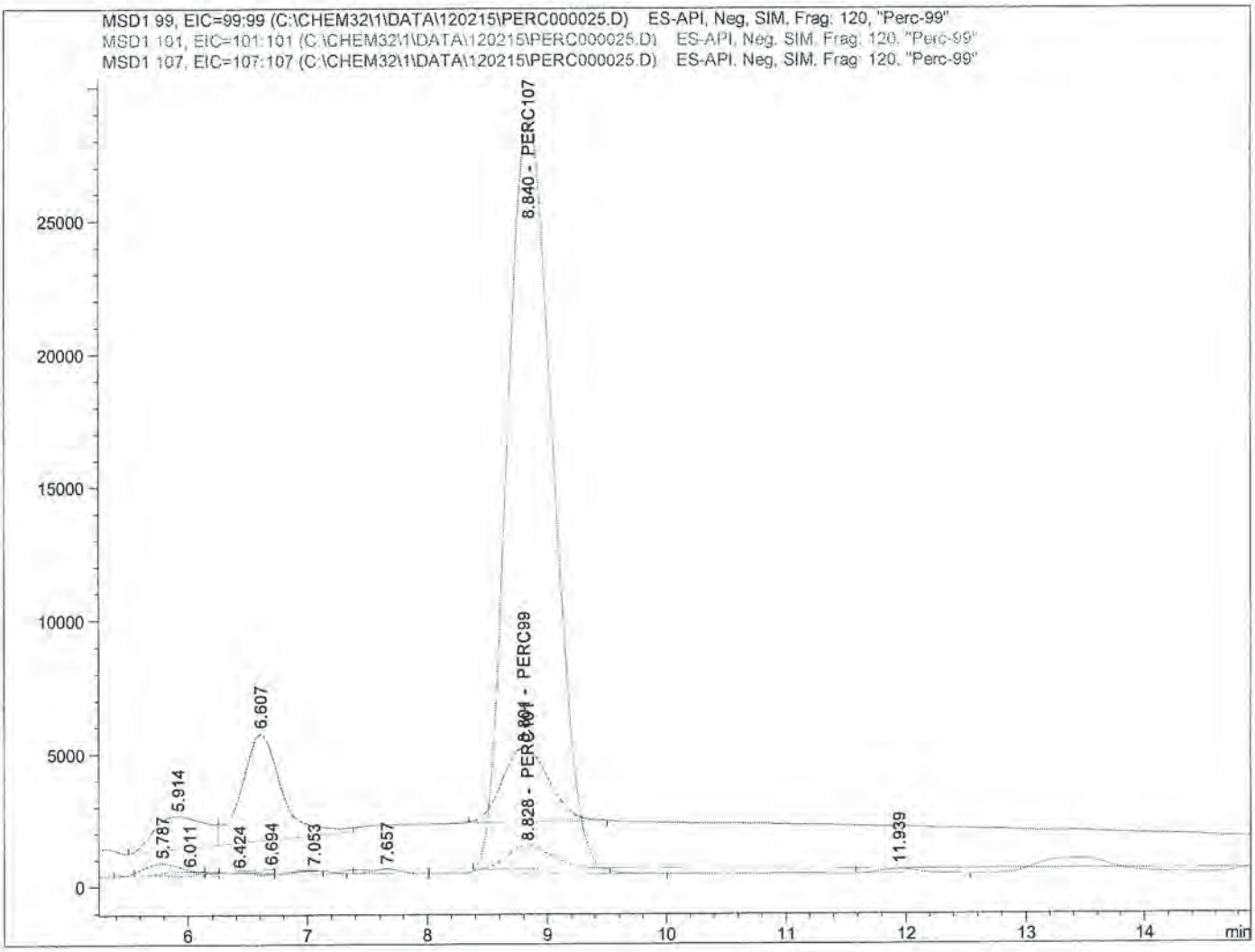

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/3/2015 10:48:45 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/7/15

12-3-15

Data File C:\CHEM32\1\DATA\120215\PERC000025.D
Sample Name: SEQ-LCV3

```
==================================================================
Acq. Operator   :                                Seq. Line :  25
Acq. Instrument : Instrument 1                    Location : Vial 83
Injection Date  : 12/2/2015 4:00:17 PM                 Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/3/2015 10:50:43 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.801	BBA	1	7.55531e4	8.48638e-1	4.24450e-1		PERC99

Totals without ISTD(s) : 4.24450e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.828	VV	1	2.31256e4	2.60545	3.98866e-1		PERC101

Totals without ISTD(s) : 3.98866e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.840	VBA I	1	7.55297e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120215\PERC000029.D
Sample Name: 1511269-02

==========

Acq. Operator : Seq. Line : 29
Acq. Instrument : Instrument 1 Location : Vial 21
Injection Date : 12/2/2015 5:11:56 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 10:53:53 AM
(modified after loading)

==========

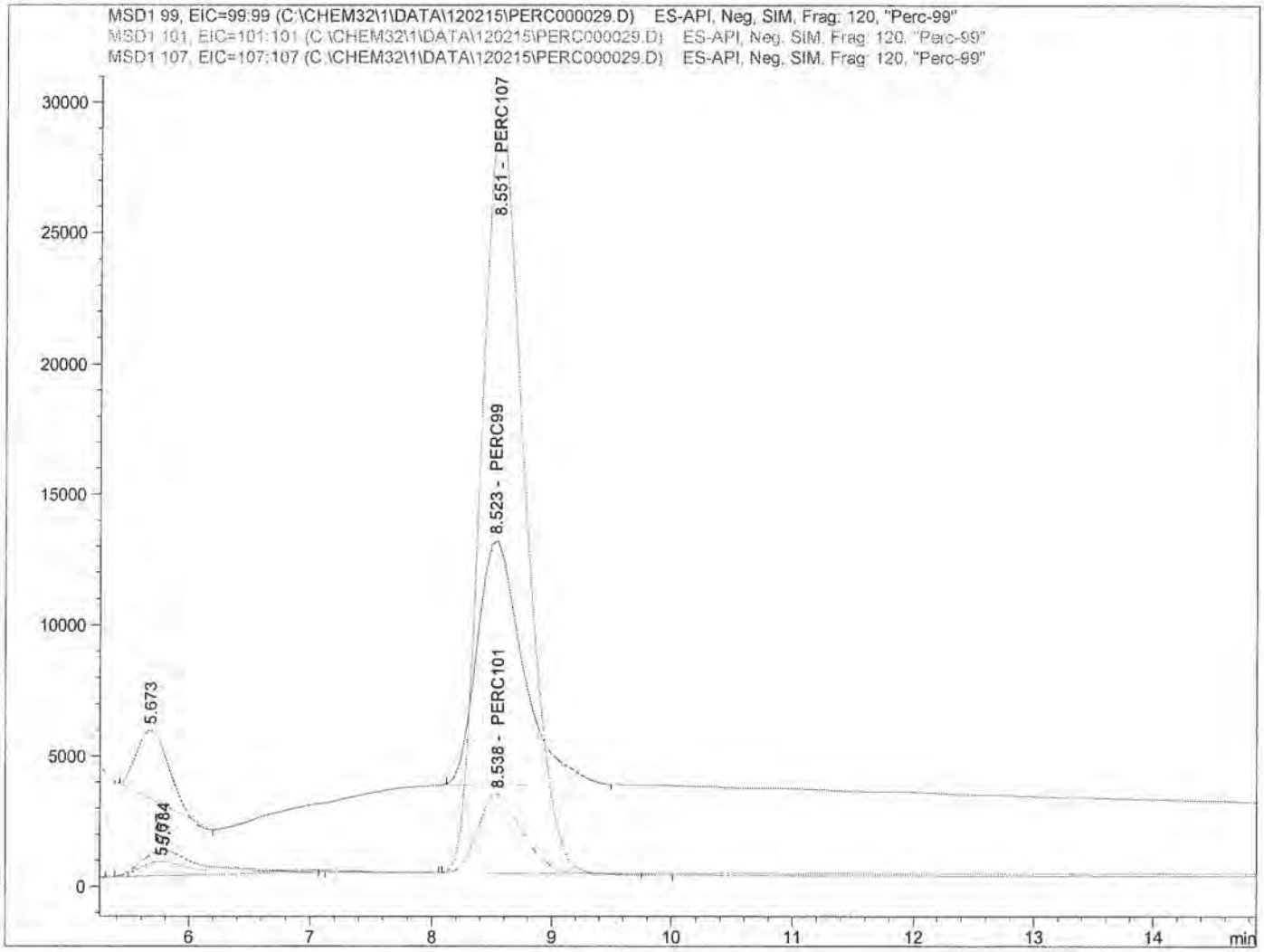

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/3/2015 10:53:53 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/7/15

PDW
12-3-15

Data File C:\CHEM32\1\DATA\120215\PERC000029.D
Sample Name: 1511269-02

```
==================================================================
Acq. Operator   :                                Seq. Line :  29
Acq. Instrument : Instrument 1                    Location : Vial 21
Injection Date  : 12/2/2015 5:11:56 PM                 Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/3/2015 10:53:53 AM
                  (modified after loading)
==================================================================
```

1	5.00000	PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.523	BBA	1	2.48518e5	8.48638e-1	1.44355		PERC99

Totals without ISTD(s) : 1.44355

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.538	VB	1	7.65177e4	2.60545	1.36457		PERC101

Totals without ISTD(s) : 1.36457

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.551	BBA I	1	7.30496e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120215\PERC000030.D
Sample Name: 1511269-03

==========

Acq. Operator : Seq. Line : 30
Acq. Instrument : Instrument 1 Location : Vial 22
Injection Date : 12/2/2015 5:29:36 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 10:55:13 AM
(modified after loading)

==========

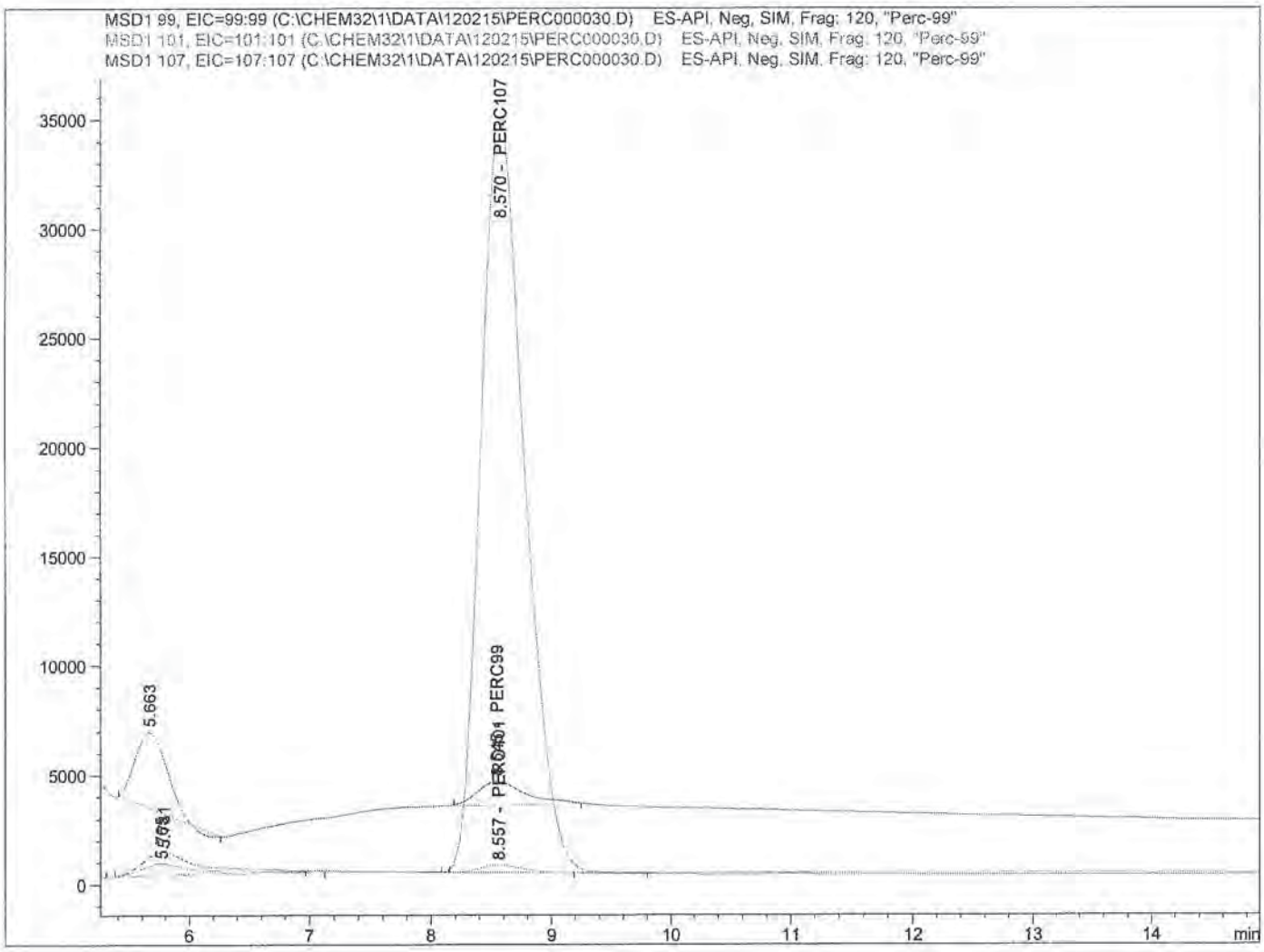

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/3/2015 10:53:53 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-3-15

SP
12/7/15

Data File C:\CHEM32\1\DATA\120215\PERC000030.D
Sample Name: 1511269-03

```
==================================================================
Acq. Operator   :                                Seq. Line :  30
Acq. Instrument : Instrument 1                    Location : Vial 22
Injection Date  : 12/2/2015 5:29:36 PM                 Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/3/2015 10:55:13 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.545	BBA	1	2.88171e4	8.48638e-1	1.38766e-1		PERC99

Totals without ISTD(s) : 1.38766e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.557	VV	1	8163.78955	2.60545	1.20693e-1		PERC101

Totals without ISTD(s) : 1.20693e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.570	BB I	1	8.81174e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120215\PERC000036.D
Sample Name: 1511269-09@5

==========

Acq. Operator : Seq. Line : 36
Acq. Instrument : Instrument 1 Location : Vial 28
Injection Date : 12/2/2015 7:16:37 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 11:02:35 AM
(modified after loading)
Additional Info : Peak(s) manually integrated

==========

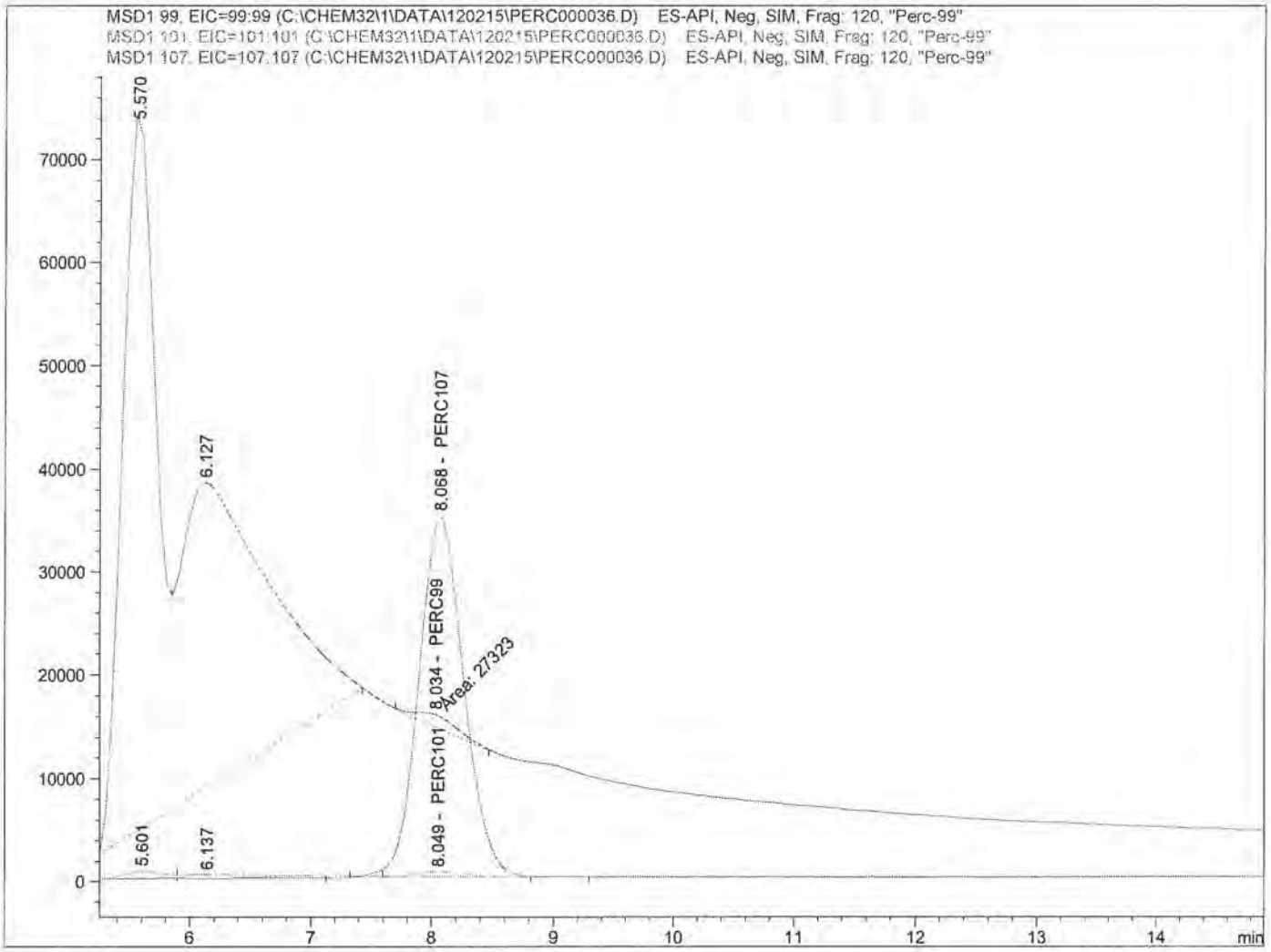

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/3/2015 10:59:36 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/7/15

RDN
12-3-15

Data File C:\CHEM32\1\DATA\120215\PERC000036.D
Sample Name: 1511269-09@5

```
==================================================================
Acq. Operator   :                                Seq. Line :  36
Acq. Instrument : Instrument 1                    Location : Vial 28
Injection Date  : 12/2/2015 7:16:37 PM                Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/3/2015 11:02:35 AM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
==================================================================

----|-------------|-------------------------
  1      5.00000   PERC107


Signal 1: MSD1 99, EIC=99:99

RetTime  Type  ISTD    Area     Amt/Area    Amount   Grp   Name
 [min]         used              ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.034 MM        1 2.73230e4  8.48638e-1 1.28347e-1    PERC99

Totals without ISTD(s) :             1.28347e-1



Signal 2: MSD1 101, EIC=101:101

RetTime  Type  ISTD    Area     Amt/Area    Amount   Grp   Name
 [min]         used              ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.049 BV        1 1.09870e4     2.60545 1.58451e-1    PERC101

Totals without ISTD(s) :             1.58451e-1



Signal 3: MSD1 107, EIC=107:107

RetTime  Type  ISTD    Area     Amt/Area    Amount   Grp   Name
 [min]         used              ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.068 BB   I    1 9.03310e5     1.00000    5.00000    PERC107

Totals without ISTD(s) :                0.00000


==================================================================
                        *** End of Report ***
```

Print of window 38: Current Chromatogram(s)
Data File : C:\CHEM32\1\DATA\120215\PERC000036.D
Sample Name : 1511269-09@5

==========

Acq. Operator : Seq. Line : 36
Acq. Instrument : Instrument 1 Location : Vial 28
Injection Date : 12/2/2015 7:16:37 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 11:00:14 AM
(modified after loading)

Current Chromatogram(s)

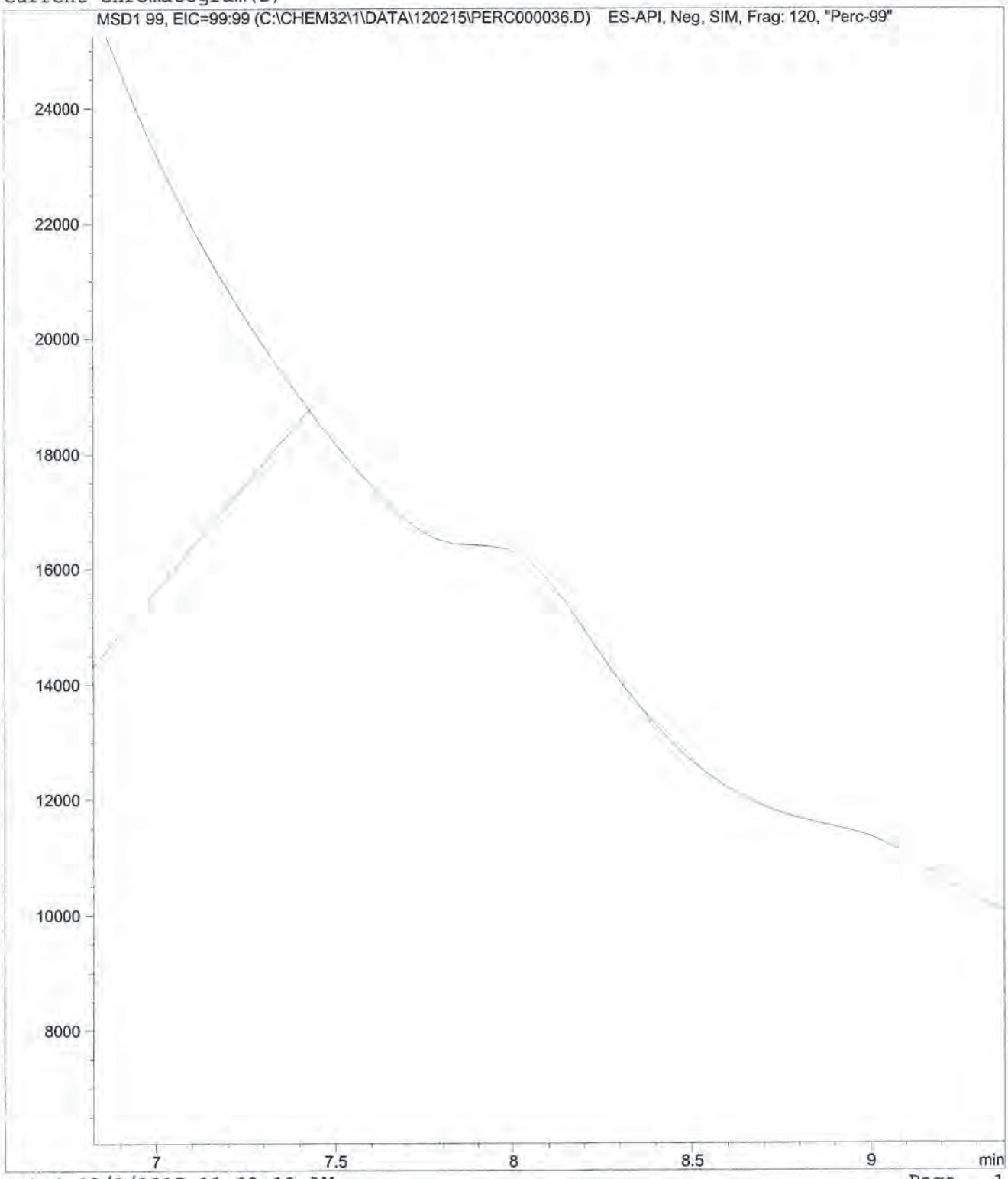

Print of window 38: Current Chromatogram(s)
Data File : C:\CHEM32\1\DATA\120215\PERC000036.D
Sample Name : 1511269-09@5

==========

Acq. Operator : Seq. Line : 36
Acq. Instrument : Instrument 1 Location : Vial 28
Injection Date : 12/2/2015 7:16:37 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 11:00:14 AM
(modified after loading)
Additional Info : Peak(s) manually integrated

Current Chromatogram(s)

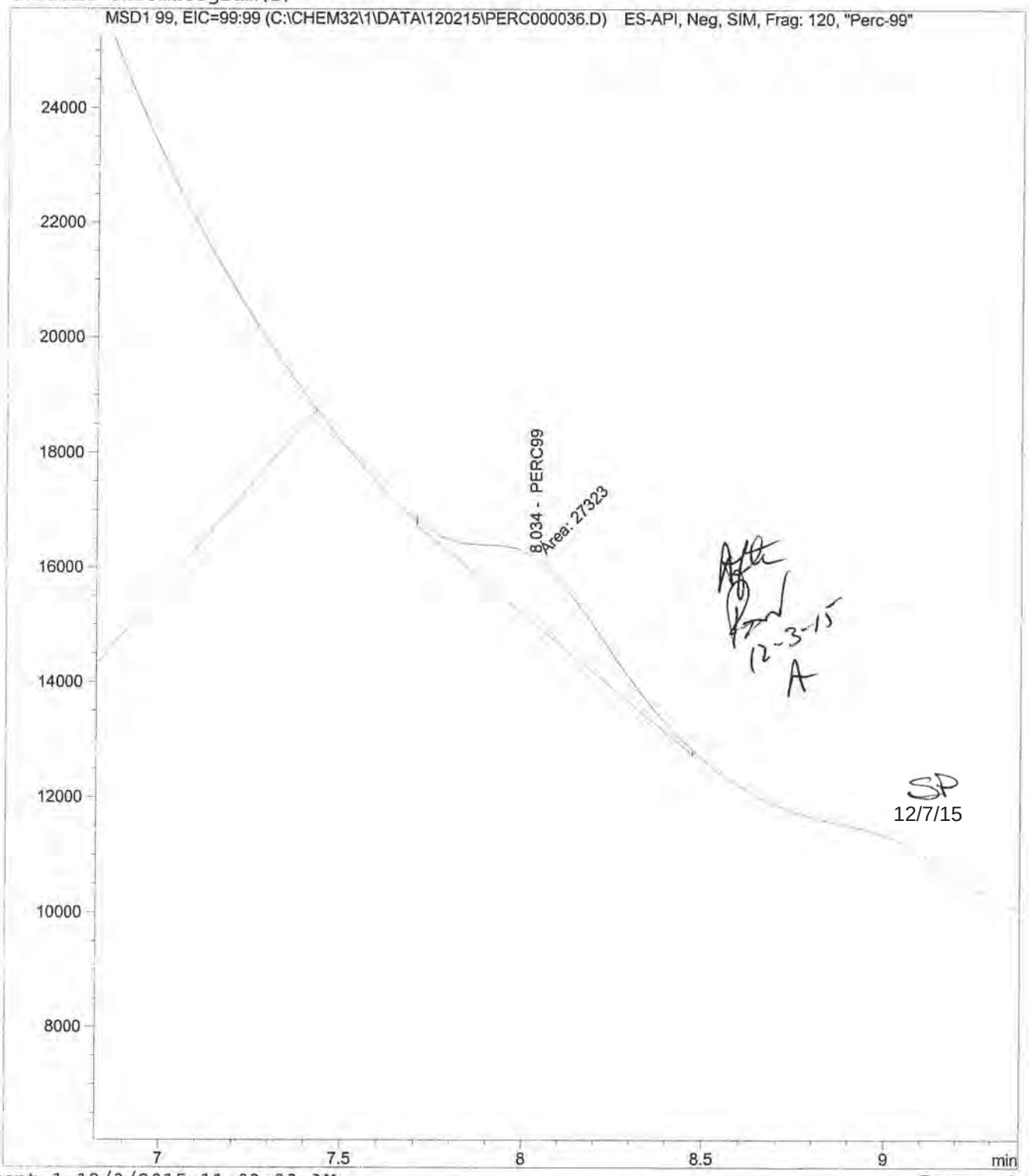

Data File C:\CHEM32\1\DATA\120215\PERC000039.D
Sample Name: SEQ-CCV3

==========

Acq. Operator : Seq. Line : 39
Acq. Instrument : Instrument 1 Location : Vial 3
Injection Date : 12/2/2015 8:10:21 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 11:09:23 AM
(modified after loading)

==========

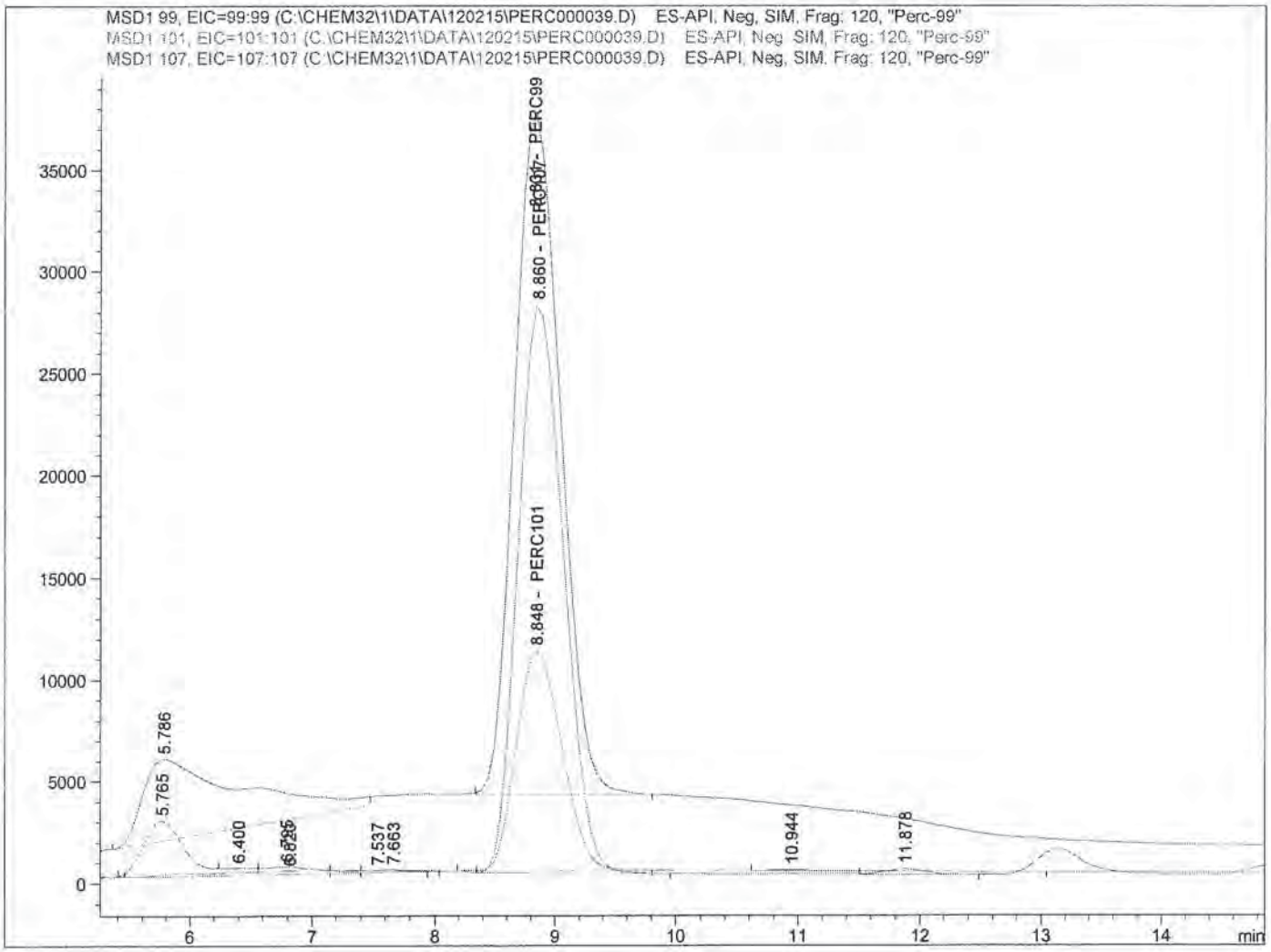

==========

Internal Standard Report

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SP
12/7/15

Sorted By : Signal
Calib. Data Modified : 12/3/2015 11:09:23 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-3-15

Data File C:\CHEM32\1\DATA\120215\PERC000039.D
Sample Name: SEQ-CCV3

==========

Acq. Operator : Seq. Line : 39
Acq. Instrument : Instrument 1 Location : Vial 3
Injection Date : 12/2/2015 8:10:21 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 11:09:23 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.831	BBA	1	8.89134e5	8.48638e-1	5.15043		PERC99

Totals without ISTD(s) : 5.15043

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.848	BBA	1	2.85453e5	2.60545	5.07658		PERC101

Totals without ISTD(s) : 5.07658

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.860	VB I	1	7.32515e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120215\PERC000040.D
Sample Name: SEQ-LCV4

==========

Acq. Operator : Seq. Line : 40
Acq. Instrument : Instrument 1 Location : Vial 4
Injection Date : 12/2/2015 8:28:02 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 11:09:23 AM
(modified after loading)

==========

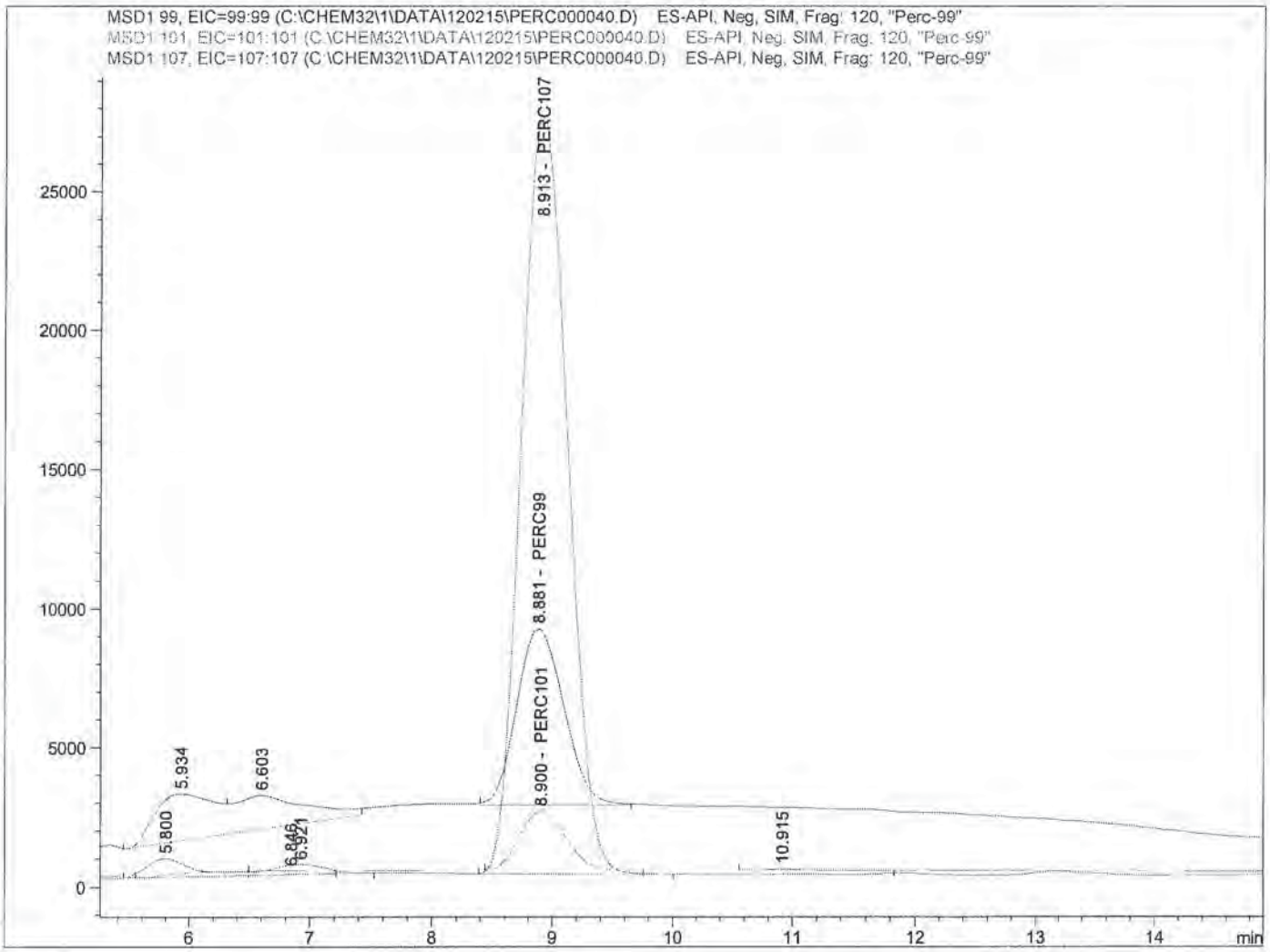

==========

Internal Standard Report

==========

SP
12/7/15

Sorted By : Signal
Calib. Data Modified : 12/3/2015 11:09:23 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

12-3-15

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\120215\PERC000040.D
Sample Name: SEQ-LCV4

```
==================================================================
Acq. Operator   :                                  Seq. Line :  40
Acq. Instrument : Instrument 1                      Location : Vial 4
Injection Date  : 12/2/2015 8:28:02 PM                 Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/3/2015 11:09:23 AM
                  (modified after loading)
==================================================================
```

1	5.00000	PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.881	BB	1	1.73163e5	8.48638e-1	9.97712e-1		PERC99

Totals without ISTD(s) : 9.97712e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.900	BB	1	5.63203e4	2.60545	9.96263e-1		PERC101

Totals without ISTD(s) : 9.96263e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.913	BBA I	1	7.36450e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120215\PERC000041.D
Sample Name: SEQ-LCV5

```
==================================================================
Acq. Operator   :                                Seq. Line :  41
Acq. Instrument : Instrument 1                    Location : Vial 83
Injection Date  : 12/2/2015 8:45:55 PM                 Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/3/2015 11:09:23 AM
                  (modified after loading)
==================================================================
```

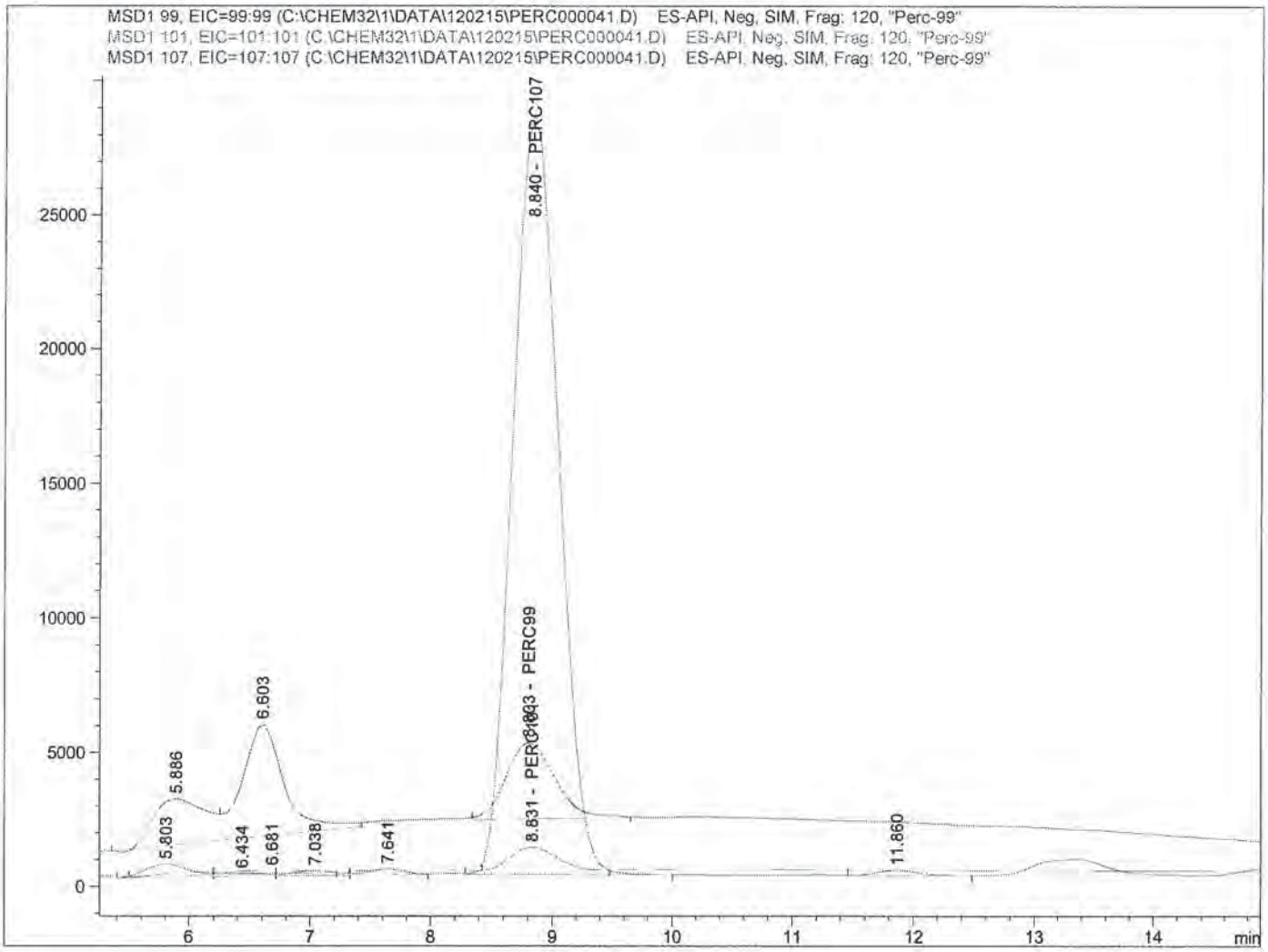


```
==================================================================
                      Internal Standard Report
==================================================================

Sorted By             :      Signal
Calib. Data Modified  :      12/3/2015 11:09:23 AM
Multiplier            :      1.0000
Dilution              :      1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:
ISTD  ISTD Amount   Name
  #     [ug/L]
----|-------------|-------------------------
```

SP
12/7/15

12-3-15

Data File C:\CHEM32\1\DATA\120215\PERC000041.D
Sample Name: SEQ-LCV5

```
==================================================================
Acq. Operator   :                                  Seq. Line :  41
Acq. Instrument : Instrument 1                      Location : Vial 83
Injection Date  : 12/2/2015 8:45:55 PM                   Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/3/2015 11:09:23 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.803	BB	1	7.92151e4	8.48638e-1	4.52299e-1		PERC99

Totals without ISTD(s) : 4.52299e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.831	BV	1	2.26247e4	2.60545	3.96608e-1		PERC101

Totals without ISTD(s) : 3.96608e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.840	VBA I	1	7.43147e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Print of all graphic windows
Data File : C:\CHEM32\1\DATA\120715\PERC000002.D
Sample Name : SEQ-TUN1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/7/2015 5:21:54 PM

Seq. Line : 2
Location : Vial 1
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_SC
Last changed : 12/4/2015 2:35:18 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 9:38:09 AM
(modified after loading)

Current Chromatogram(s)

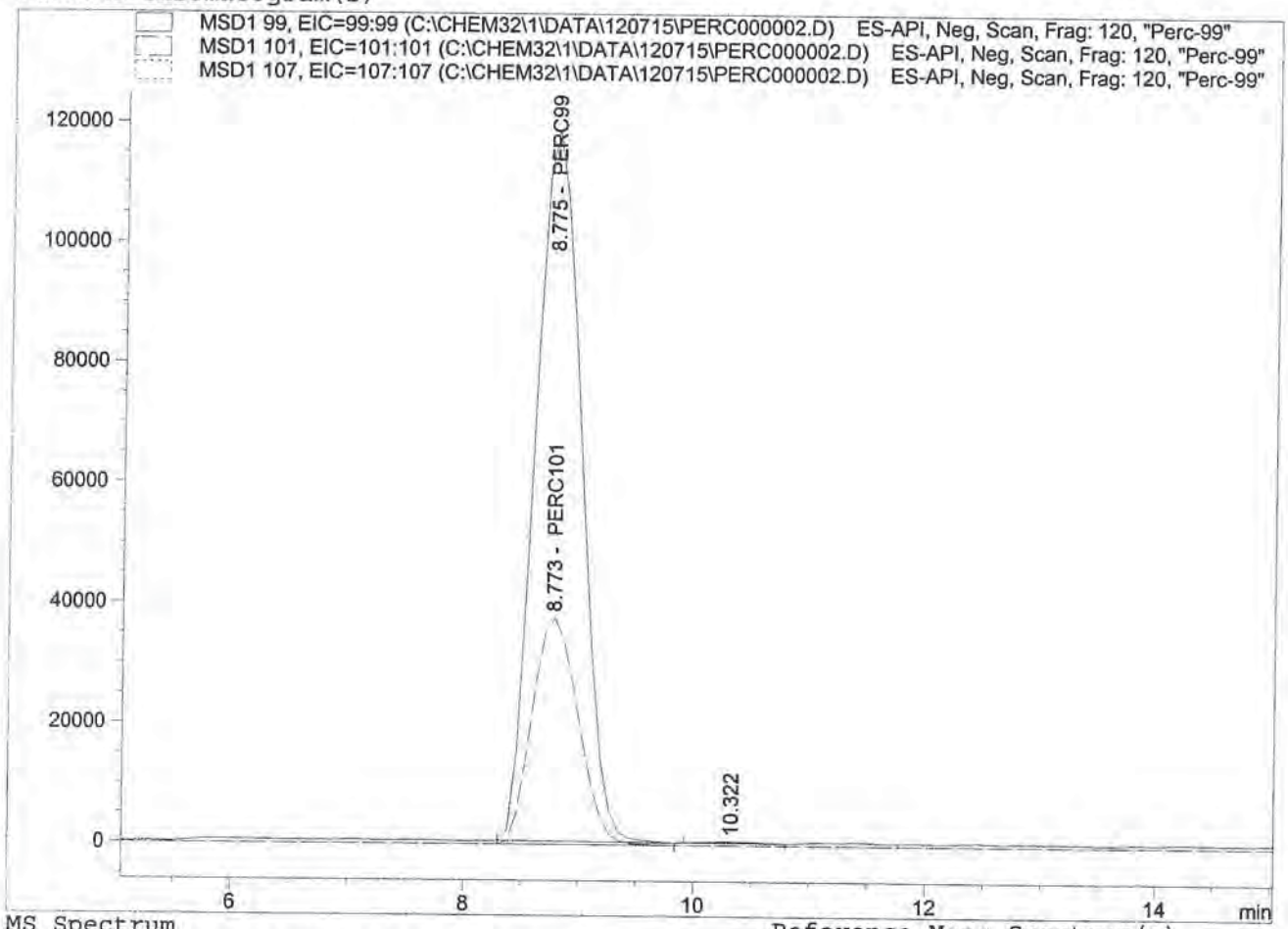

MS Spectrum

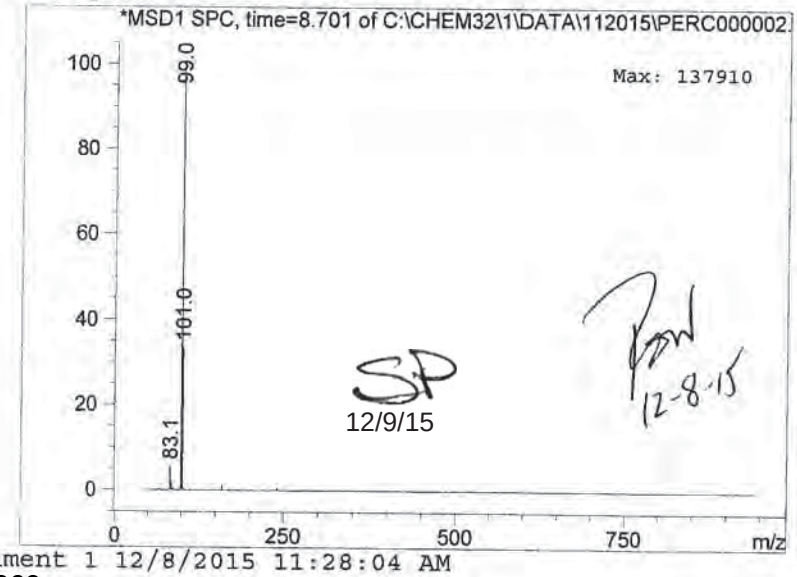

Reference Mass Spectrum(a)

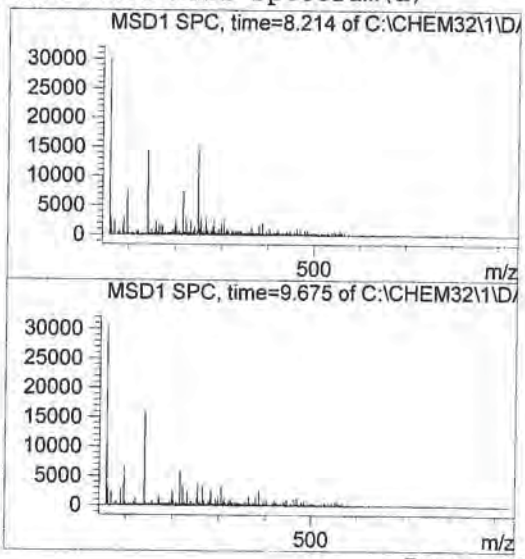

SP 12/9/15

12-8-15

Instrument 1 12/8/2015 11:28:04 AM

Data File C:\CHEM32\1\DATA\120715\PERC000002.D
Sample Name: SEQ-TUN1

Acq. Operator	:	Seq. Line :	2
Acq. Instrument	: Instrument 1	Location :	Vial 1
Injection Date	: 12/7/2015 5:21:54 PM	Inj :	1
		Inj Volume :	100.0 µl
Acq. Method	: C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_SC		
Last changed	: 12/4/2015 2:35:18 PM		
Analysis Method	: C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M		
Last changed	: 12/8/2015 9:38:09 AM (modified after loading)		

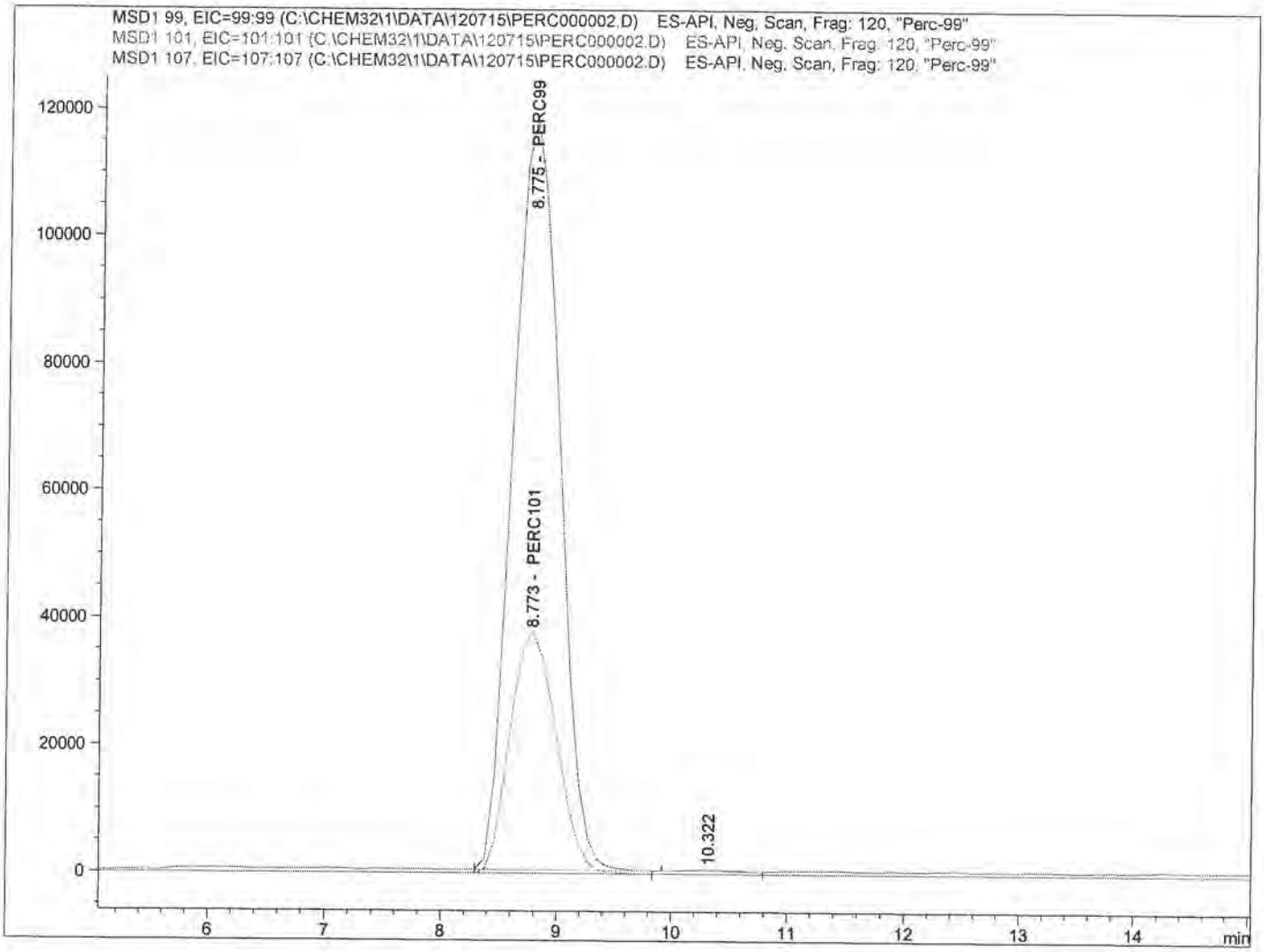

Internal Standard Report

SP
12/9/15

Sorted By	:	Signal
Calib. Data Modified	:	12/8/2015 9:37:54 AM
Multiplier	:	1.0000
Dilution	:	1.0000

Do not use Multiplier & Dilution Factor with ISTDs

Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-8-15

Data File C:\CHEM32\1\DATA\120715\PERC000002.D
Sample Name: SEQ-TUN1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/7/2015 5:21:54 PM

Seq. Line : 2
Location : Vial 1
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_SC
Last changed : 12/4/2015 2:35:18 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 9:38:09 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.775	BBA	1	3.28367e6	0.00000	0.00000		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.773	BBA	1	1.05100e6	0.00000	0.00000		PERC101

Totals without ISTD(s) : 0.00000

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.509		1	-	-	-		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : ISTD compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000005.D
Sample Name: SEQ-CCV1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/7/2015 6:15:38 PM

Seq. Line : 5
Location : Vial 3
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:29:21 AM
(modified after loading)

==========

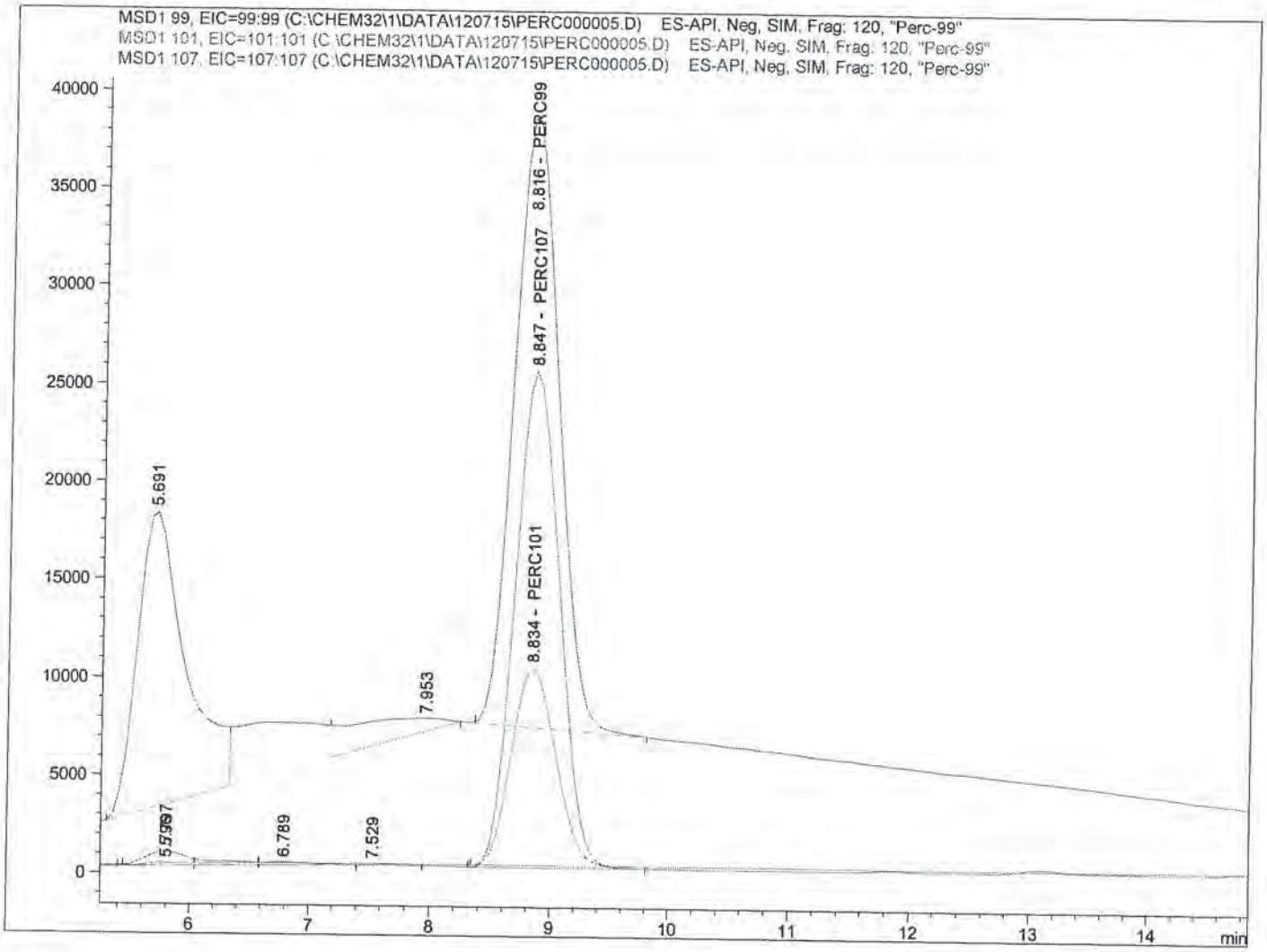

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Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:29:22 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-8-15

Data File C:\CHEM32\1\DATA\120715\PERC000005.D
Sample Name: SEQ-CCV1

```
==========================================================================
Acq. Operator   :                                   Seq. Line :   5
Acq. Instrument : Instrument 1                       Location : Vial 3
Injection Date  : 12/7/2015 6:15:38 PM                    Inj :   1
                                                   Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/8/2015 11:29:21 AM
                  (modified after loading)
==========================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.816	BBA	1	8.13509e5	8.48638e-1	5.23530		PERC99

Totals without ISTD(s) : 5.23530

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.834	BBA	1	2.62987e5	2.60545	5.19605		PERC101

Totals without ISTD(s) : 5.19605

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.847	VBA I	1	6.59346e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000006.D
Sample Name: SEQ-LCV1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/7/2015 6:33:28 PM

Seq. Line : 6
Location : Vial 4
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:29:21 AM
(modified after loading)

==========

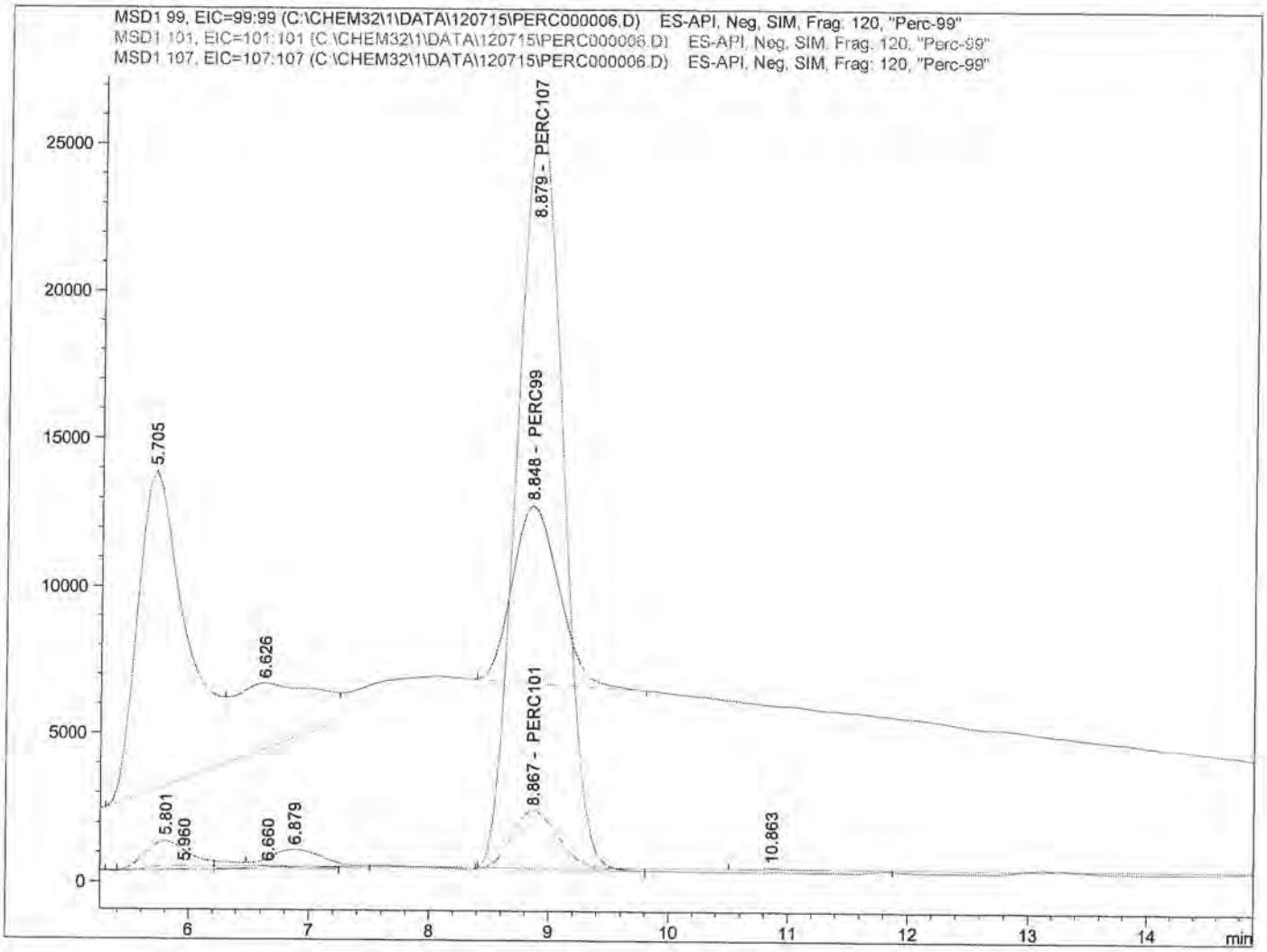

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:29:22 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-8-15

SP
12/9/15

Data File C:\CHEM32\1\DATA\120715\PERC000006.D
Sample Name: SEQ-LCV1

```
==================================================================
Acq. Operator   :                                  Seq. Line :   6
Acq. Instrument : Instrument 1                      Location : Vial 4
Injection Date  : 12/7/2015 6:33:28 PM                  Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/8/2015 11:29:21 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.848	BBA	1	1.63005e5	8.48638e-1	1.02446		PERC99

Totals without ISTD(s) : 1.02446

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.867	BBA	1	5.12670e4	2.60545	9.89220e-1		PERC101

Totals without ISTD(s) : 9.89220e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.879	BBA I	1	6.75145e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000007.D
Sample Name: SEQ-LCV2

Acq. Operator	:	Seq. Line	: 7
Acq. Instrument	: Instrument 1	Location	: Vial 83
Injection Date	: 12/7/2015 6:51:19 PM	Inj	: 1
		Inj Volume	: 100.0 µl
Acq. Method	: C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M		
Last changed	: 12/7/2015 5:01:12 PM		
Analysis Method	: C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M		
Last changed	: 12/8/2015 11:30:41 AM (modified after loading)		

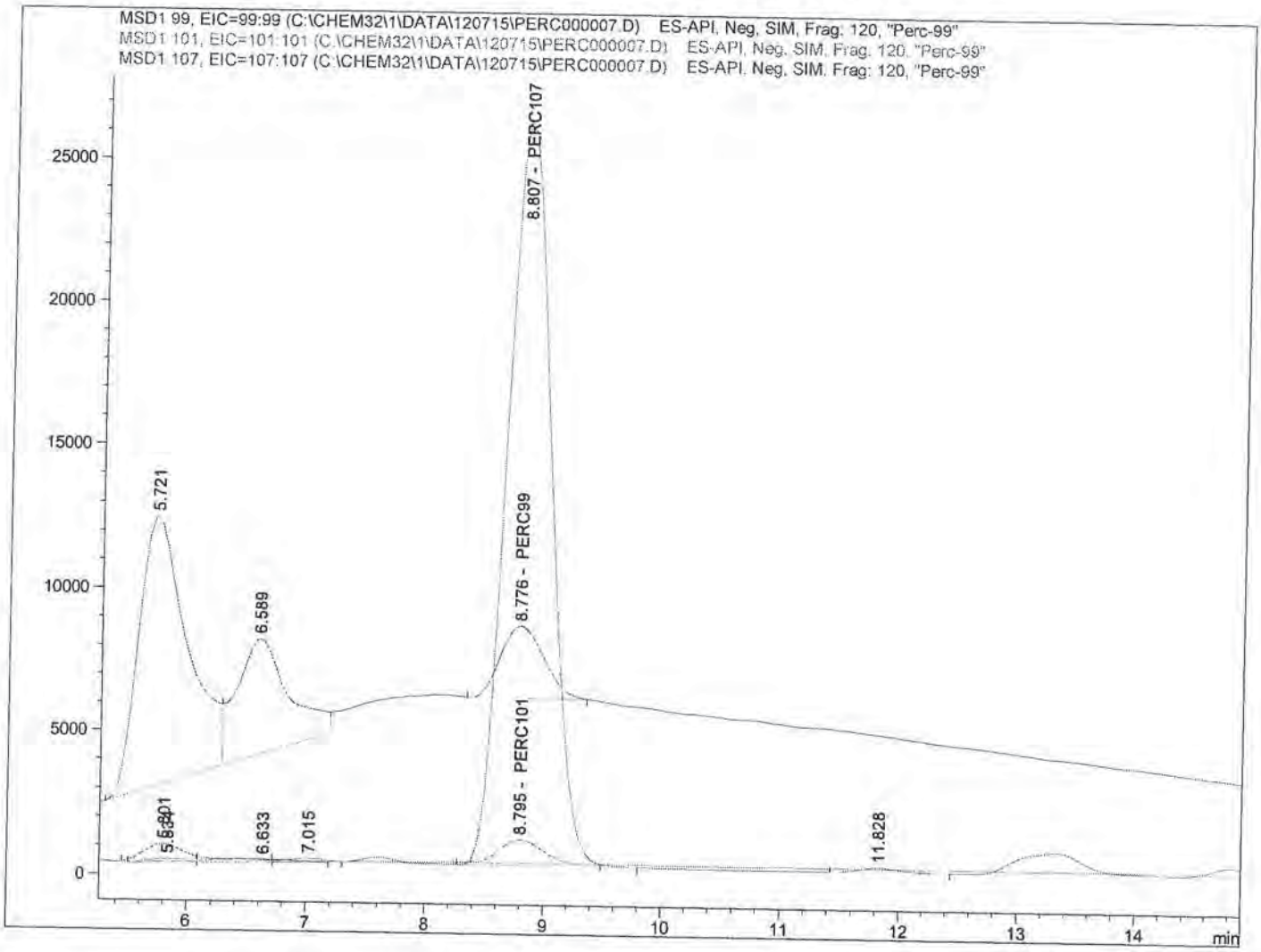

Internal Standard Report

Sorted By	:	Signal
Calib. Data Modified	:	12/8/2015 11:29:22 AM
Multiplier	:	1.0000
Dilution	:	1.0000

Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-8-15

Data File C:\CHEM32\1\DATA\120715\PERC000007.D
Sample Name: SEQ-LCV2

```
==================================================================
Acq. Operator   :                                  Seq. Line :   7
Acq. Instrument : Instrument 1                      Location : Vial 83
Injection Date  : 12/7/2015 6:51:19 PM                 Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/8/2015 11:30:41 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.776	BBA	1	6.40467e4	8.48638e-1	4.02912e-1		PERC99

Totals without ISTD(s) : 4.02912e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.795	BV	1	2.09004e4	2.60545	4.03670e-1		PERC101

Totals without ISTD(s) : 4.03670e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.807	VBA I	1	6.74495e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000008.D
Sample Name: SEQ-IFA1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/7/2015 7:09:12 PM

Seq. Line : 8
Location : Vial 5
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:33:00 AM
(modified after loading)

==========

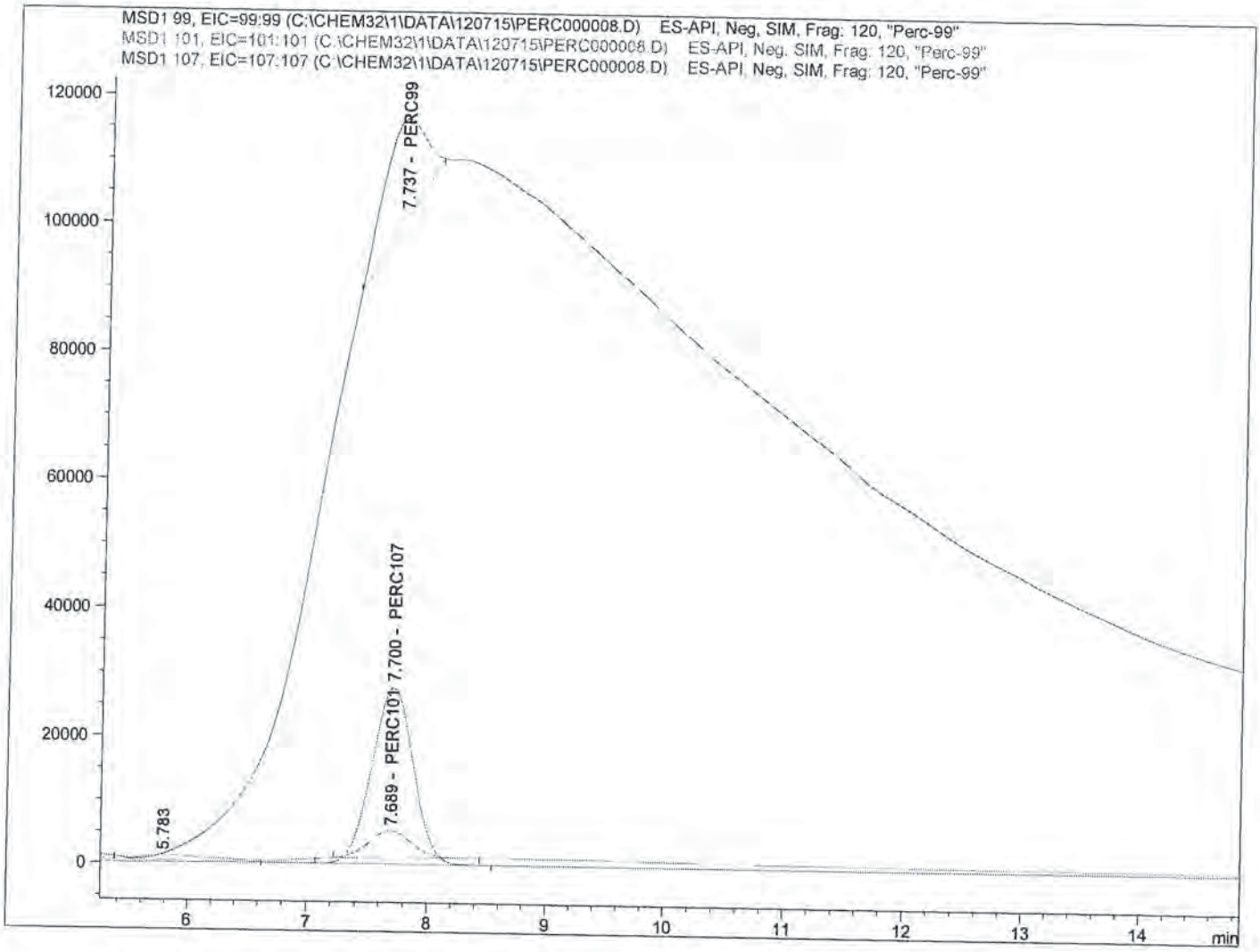

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:31:37 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-8-15

SP
12/9/15

Data File C:\CHEM32\1\DATA\120715\PERC000008.D
Sample Name: SEQ-IFA1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/7/2015 7:09:12 PM

Seq. Line : 8
Location : Vial 5
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:33:00 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
7.737	BBA	1	3.72802e5	8.48638e-1	2.39003		PERC99

Totals without ISTD(s) : 2.39003

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
7.689	BBA	1	1.04210e5	2.60545	2.05114		PERC101

Totals without ISTD(s) : 2.05114

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
7.700	BBA I	1	6.61861e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000011.D
Sample Name: 5L03014-BLK1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/7/2015 8:02:47 PM

Seq. Line : 11
Location : Vial 6
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:35:05 AM
(modified after loading)

==========

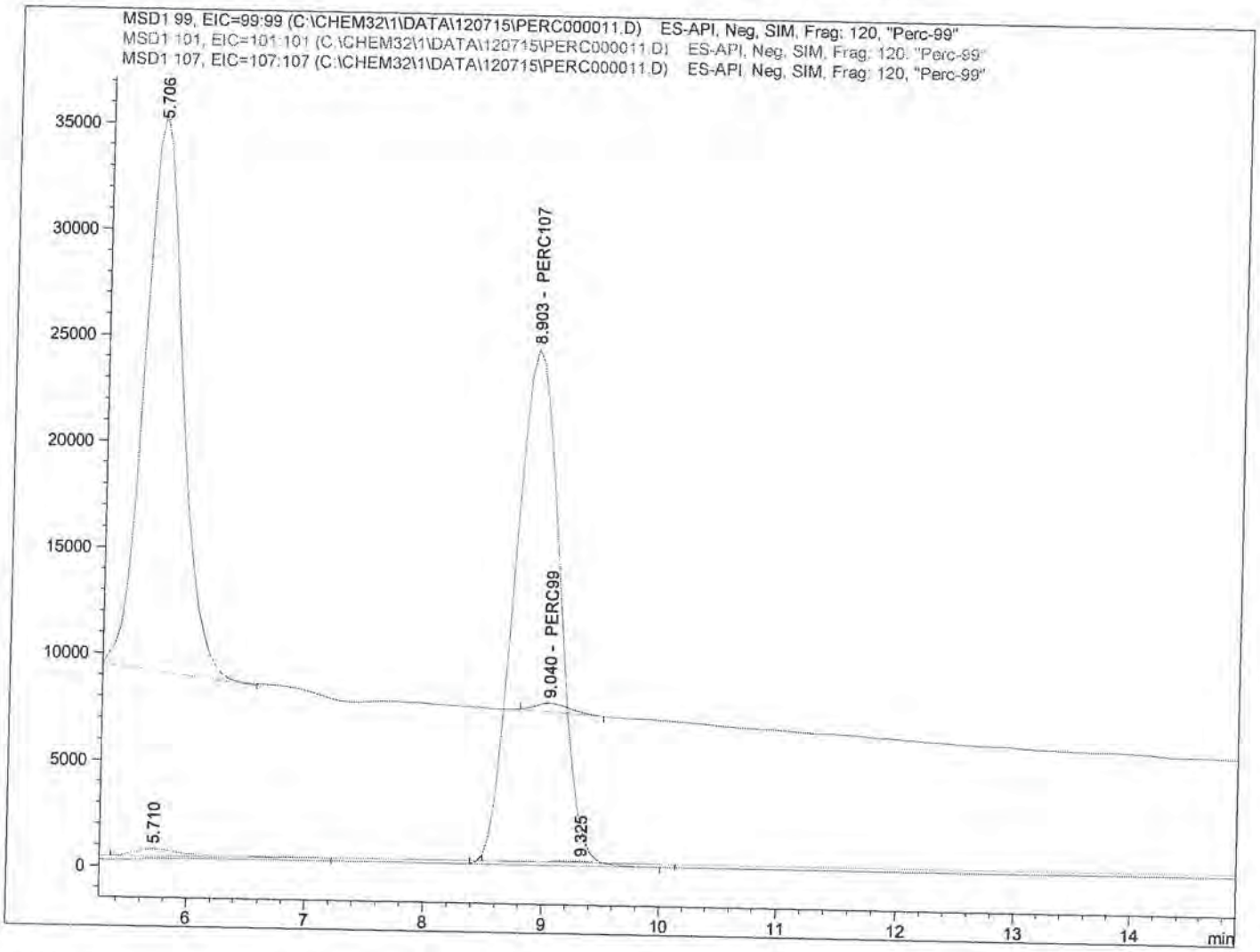

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:33:50 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-8-15

Data File C:\CHEM32\1\DATA\120715\PERC000011.D
Sample Name: 5L03014-BLK1

```
==================================================================
Acq. Operator   :                                  Seq. Line :  11
Acq. Instrument : Instrument 1                      Location : Vial 6
Injection Date  : 12/7/2015 8:02:47 PM                  Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/8/2015 11:35:05 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
9.040	BBA	1	8308.46484	8.48638e-1	5.52381e-2		PERC99

Totals without ISTD(s) : 5.52381e-2

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.900		1	-	-	-		PERC101

Totals without ISTD(s) : 0.00000

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.903	BBA I	1	6.38227e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000012.D
Sample Name: 5L03014-BS1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/7/2015 8:20:32 PM

Seq. Line : 12
Location : Vial 7
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:36:17 AM
(modified after loading)

==========

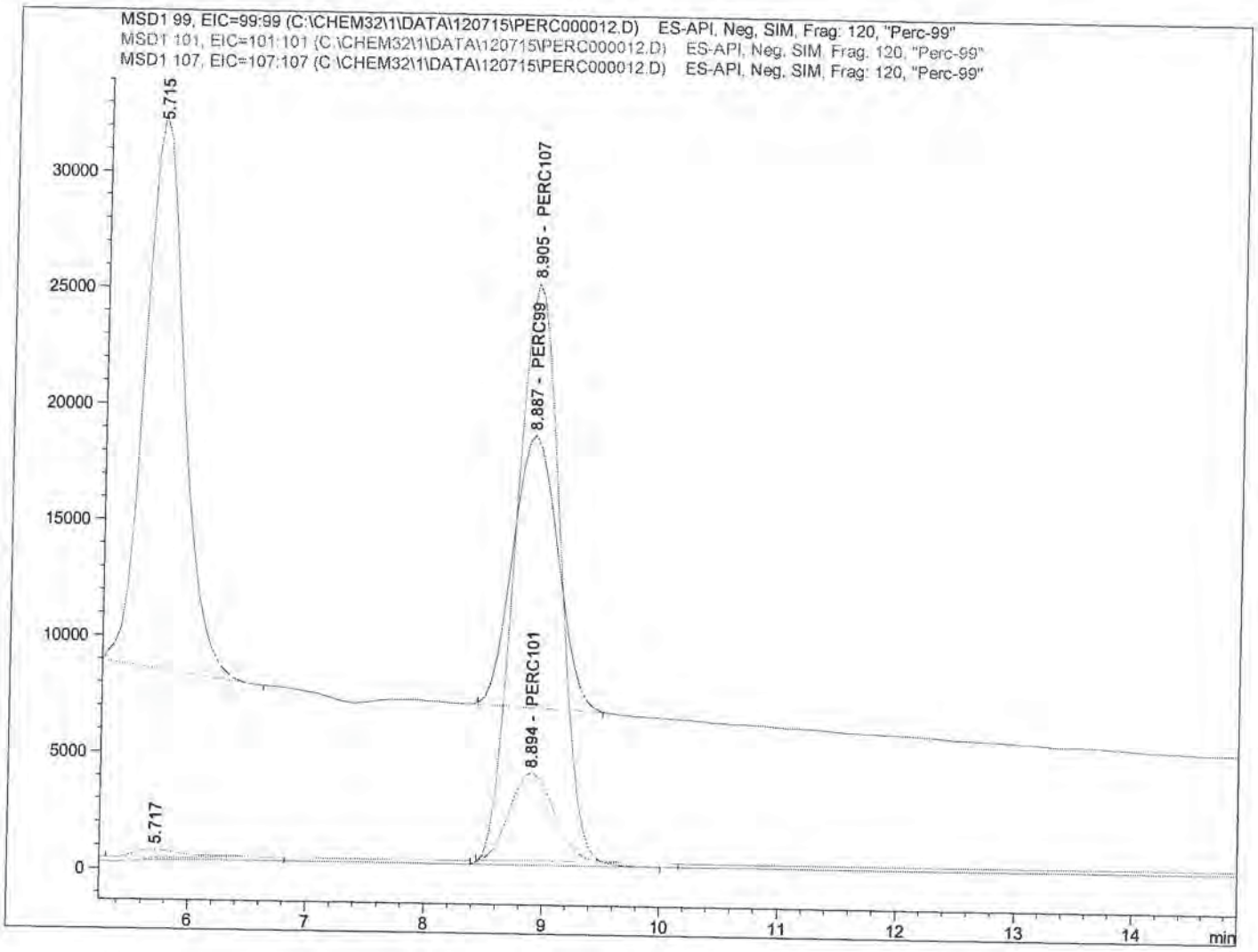

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:33:50 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

RDW 12-8-15

Data File C:\CHEM32\1\DATA\120715\PERC000012.D
Sample Name: 5L03014-BS1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/7/2015 8:20:32 PM

Seq. Line : 12
Location : Vial 7
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:36:17 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.887	BBA	1	3.14219e5	8.48638e-1	2.02264		PERC99

Totals without ISTD(s) : 2.02264

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.894	BB	1	1.00694e5	2.60545	1.98998		PERC101

Totals without ISTD(s) : 1.98998

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.905	BBA I	1	6.59183e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000013.D
Sample Name: 5L03014-BSD1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/7/2015 8:38:23 PM

Seq. Line : 13
Location : Vial 8
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:36:17 AM
(modified after loading)

==========

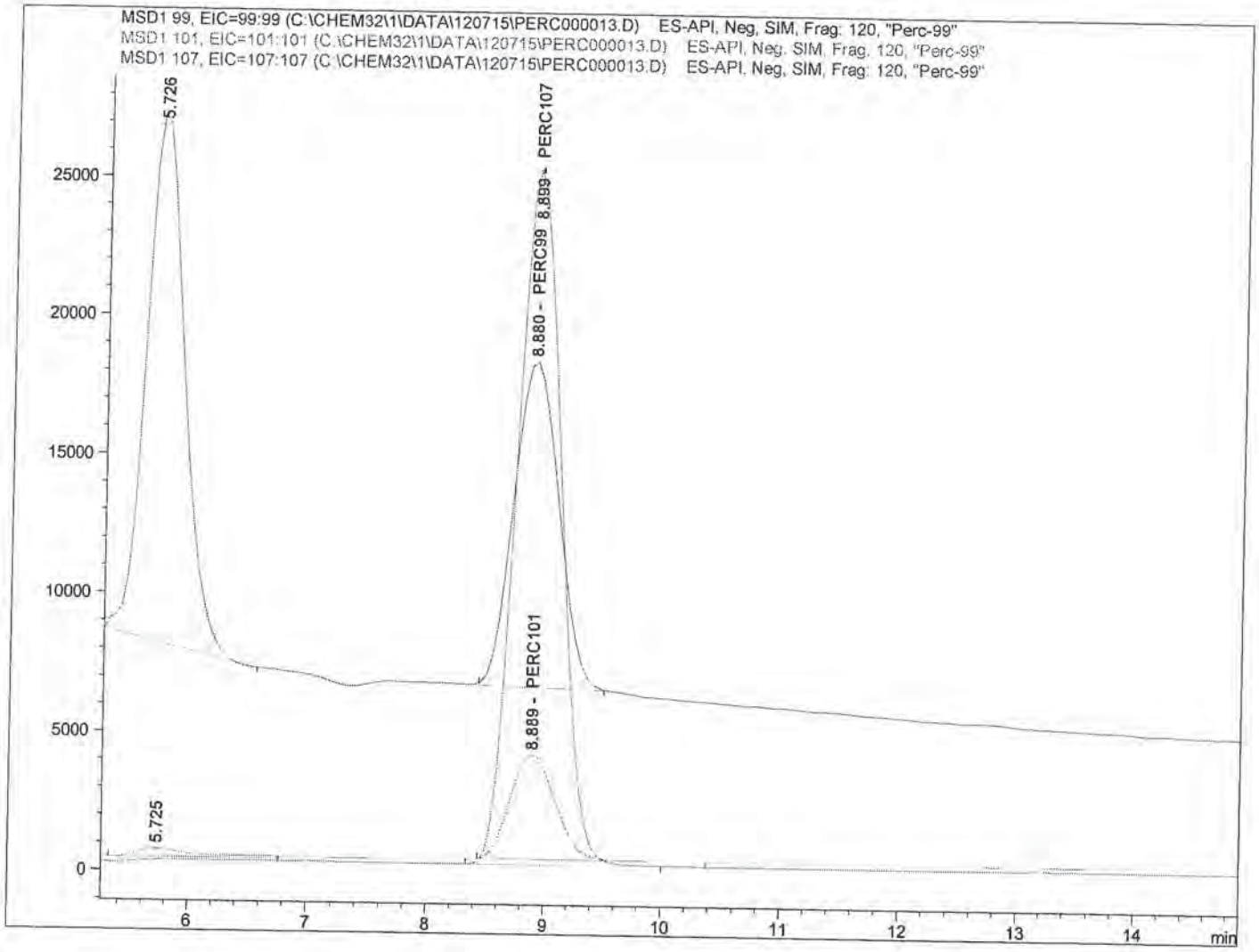

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:33:50 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-8-15

Data File C:\CHEM32\1\DATA\120715\PERC000013.D
Sample Name: 5L03014-BSD1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/7/2015 8:38:23 PM

Seq. Line : 13
Location : Vial 8
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:36:17 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.880	BBA	1	3.13034e5	8.48638e-1	2.01096		PERC99

Totals without ISTD(s) : 2.01096

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.889	BV	1	1.01070e5	2.60545	1.99339		PERC101

Totals without ISTD(s) : 1.99339

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.899	BBA I	1	6.60510e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000014.D
Sample Name: 1511269-05

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/7/2015 8:56:17 PM

Seq. Line : 14
Location : Vial 9
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:38:07 AM
(modified after loading)

==========

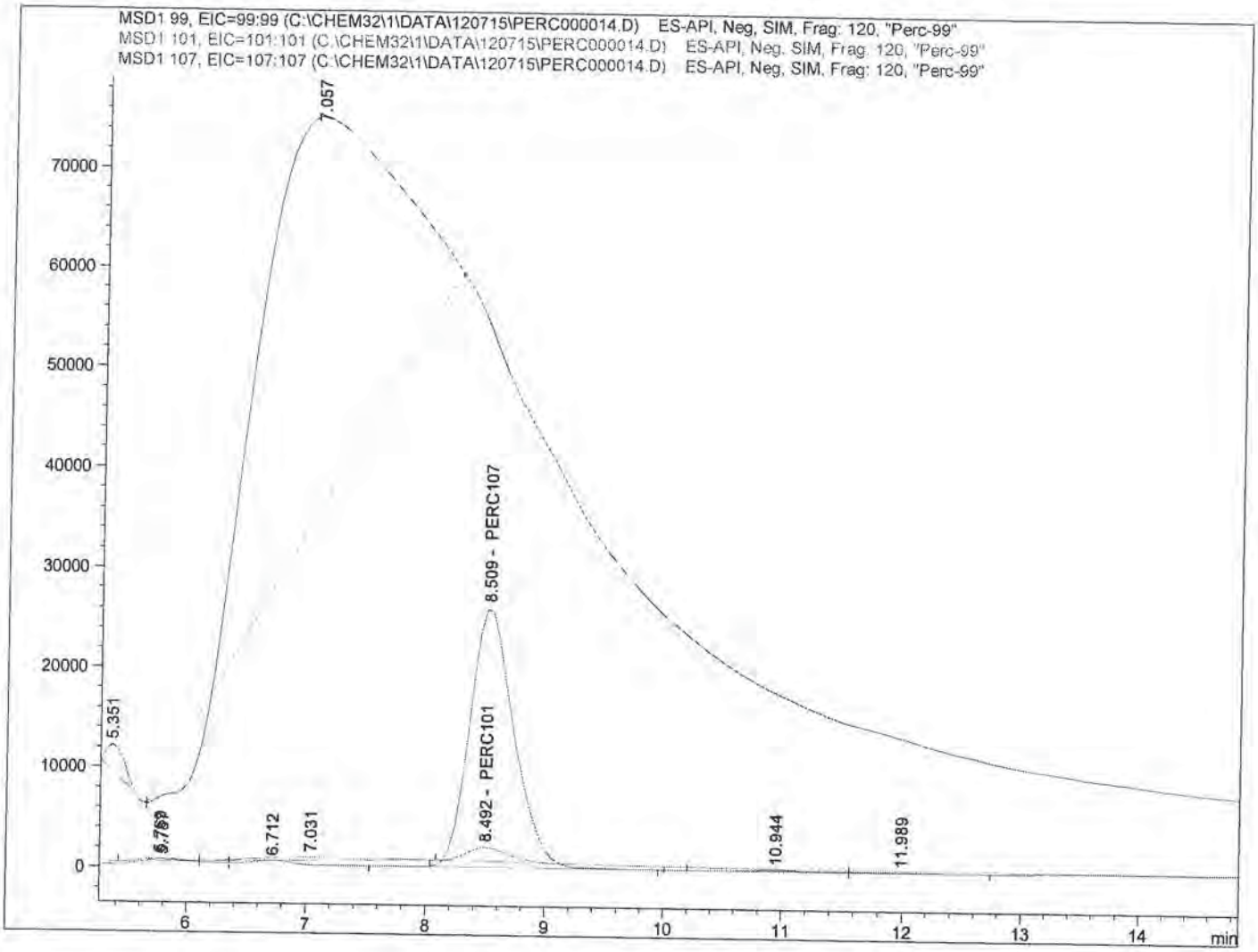

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:37:43 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-8-15

Data File C:\CHEM32\1\DATA\120715\PERC000014.D
Sample Name: 1511269-05

```
==================================================================
Acq. Operator   :                                  Seq. Line :  14
Acq. Instrument : Instrument 1                      Location : Vial 9
Injection Date  : 12/7/2015 8:56:17 PM                 Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/8/2015 11:38:07 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.500		1	-	-	-		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.492	BBA	1	3.50323e4	2.60545	6.86275e-1		PERC101

Totals without ISTD(s) : 6.86275e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.509	BB I	1	6.65001e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000023.D
Sample Name: 1511269-13@5

==========

Acq. Operator : Seq. Line : 23
Acq. Instrument : Instrument 1 Location : Vial 18
Injection Date : 12/7/2015 11:37:04 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:43:22 AM
(modified after loading)
Additional Info : Peak(s) manually integrated

==========

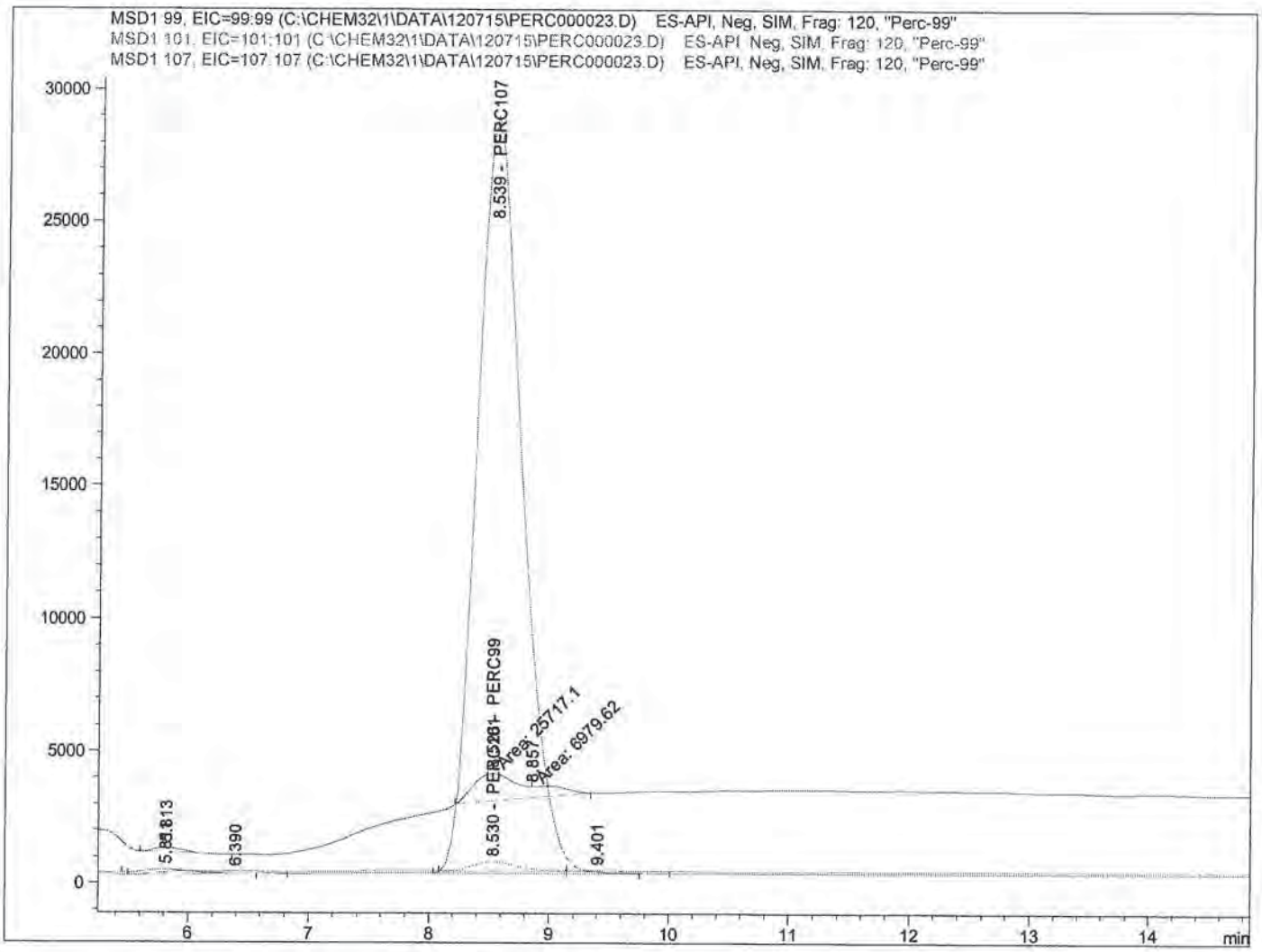

==========

Internal Standard Report

==========

SP
12/9/15

Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:43:27 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-8-15

Data File C:\CHEM32\1\DATA\120715\PERC000023.D
Sample Name: 1511269-13@5

```
==================================================================
Acq. Operator   :                                  Seq. Line :  23
Acq. Instrument : Instrument 1                      Location : Vial 18
Injection Date  : 12/7/2015 11:37:04 PM                 Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/8/2015 11:43:22 AM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
==================================================================

----|-------------|-------------------------
  1      5.00000   PERC107


Signal 1: MSD1 99, EIC=99:99

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.526 MF        1 2.57171e4  8.48638e-1 1.45380e-1    PERC99

Totals without ISTD(s) :             1.45380e-1


Signal 2: MSD1 101, EIC=101:101

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.530 BV        1 1.00623e4     2.60545 1.74639e-1    PERC101

Totals without ISTD(s) :             1.74639e-1


Signal 3: MSD1 107, EIC=107:107

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.539 BB   I    1 7.50602e5     1.00000    5.00000    PERC107

Totals without ISTD(s) :                0.00000


==================================================================
                        *** End of Report ***
```

Print of window 38: Current Chromatogram(s)
Data File : C:\CHEM32\1\DATA\120715\PERC000023.D
Sample Name : 1511269-13@5

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/7/2015 11:37:04 PM

Seq. Line : 23
Location : Vial 18
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:43:22 AM
(modified after loading)

Current Chromatogram(s)

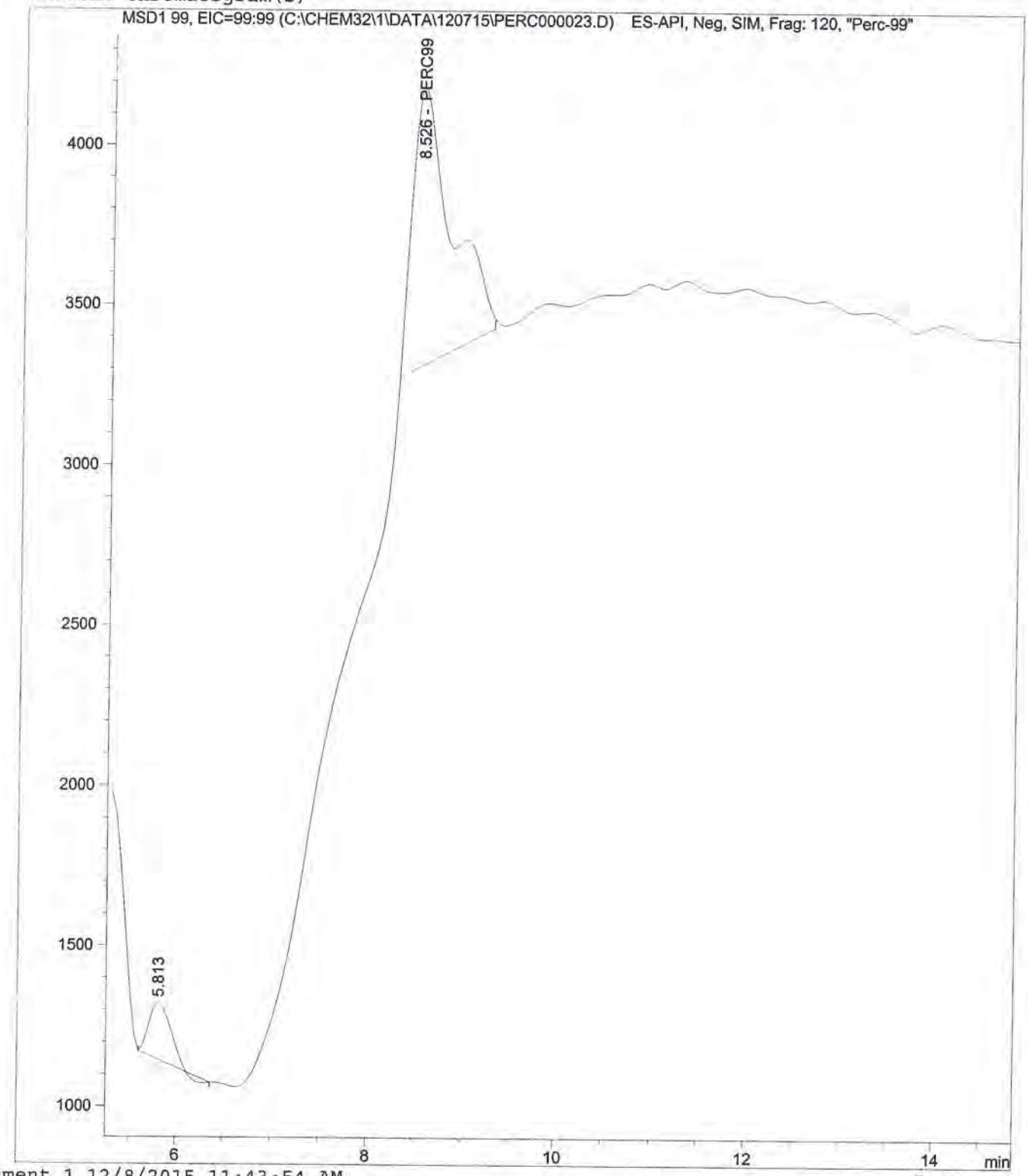

Instrument 1 12/8/2015 11:43:54 AM

Print of window 38: Current Chromatogram(s)
Data File : C:\CHEM32\1\DATA\120715\PERC000023.D
Sample Name : 1511269-13@5

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/7/2015 11:37:04 PM

Seq. Line : 23
Location : Vial 18
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:43:22 AM
(modified after loading)
Additional Info : Peak(s) manually integrated

Current Chromatogram(s)

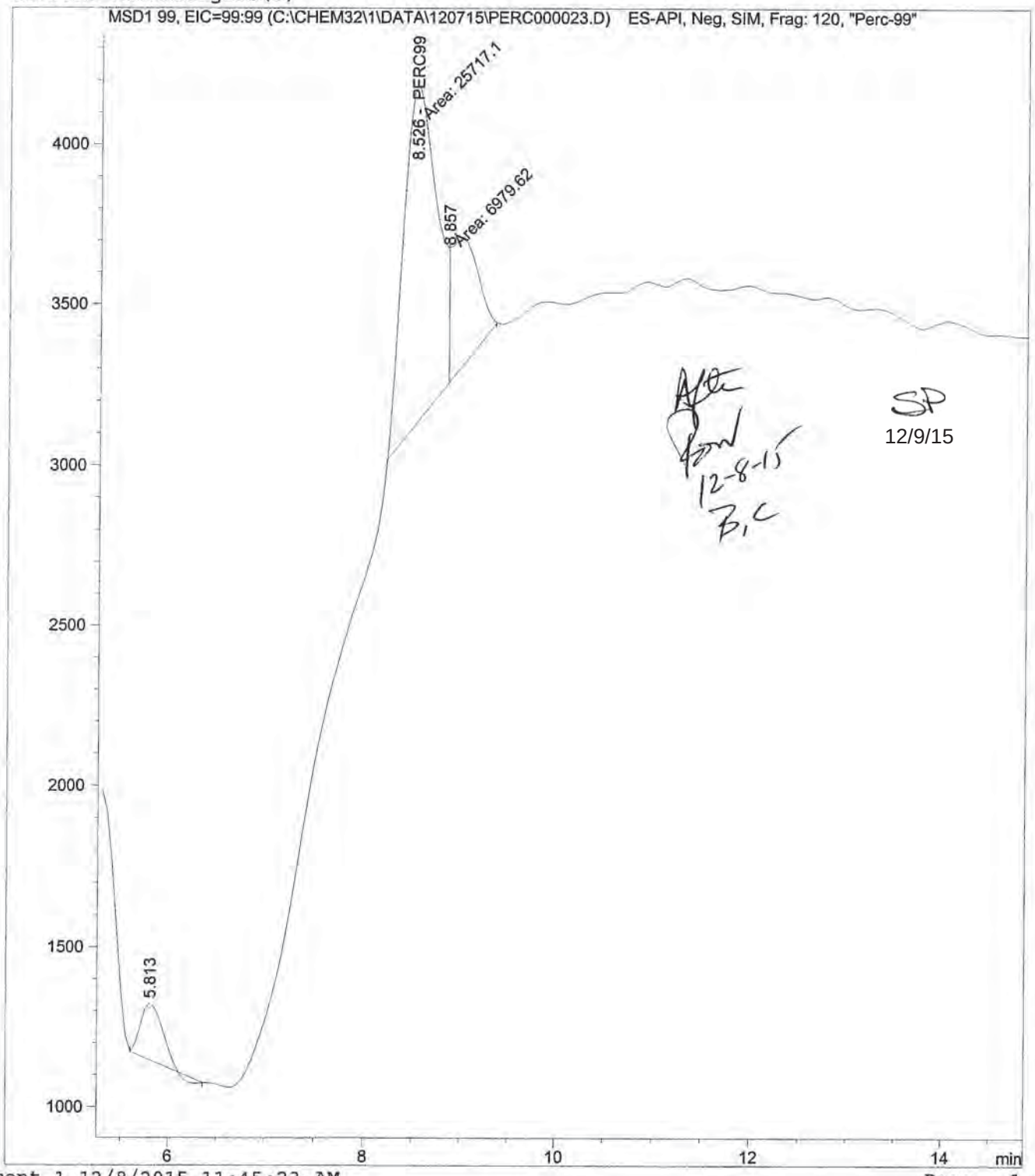

SP
12/9/15

12-8-15
B.C

Instrument 1 12/8/2015 11:45:23 AM

Data File C:\CHEM32\1\DATA\120715\PERC000025.D
Sample Name: SEQ-CCV2

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/8/2015 12:12:46 AM

Seq. Line : 25
Location : Vial 3
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:46:48 AM
(modified after loading)

==========

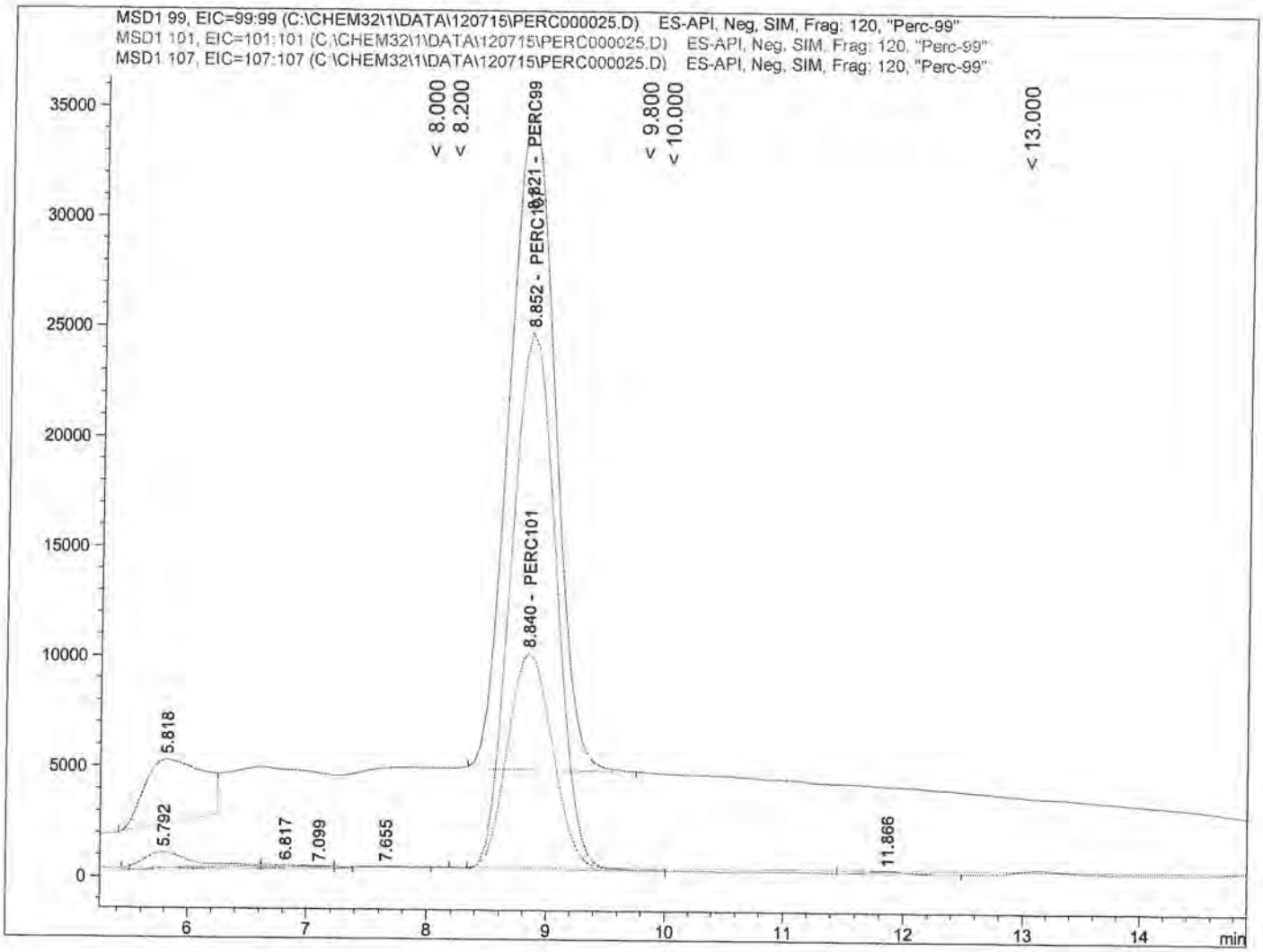

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:46:16 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-8-15

Data File C:\CHEM32\1\DATA\120715\PERC000025.D
Sample Name: SEQ-CCV2

==========

Acq. Operator : Seq. Line : 25
Acq. Instrument : Instrument 1 Location : Vial 3
Injection Date : 12/8/2015 12:12:46 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:46:48 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.821	BB	1	7.92111e5	8.48638e-1	5.22846		PERC99

Totals without ISTD(s) : 5.22846

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.840	BBA	1	2.57331e5	2.60545	5.21482		PERC101

Totals without ISTD(s) : 5.21482

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.852	BBA I	1	6.42843e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000026.D
Sample Name: SEQ-LCV3

==========

Acq. Operator :
Seq. Line : 26
Acq. Instrument : Instrument 1
Location : Vial 4
Injection Date : 12/8/2015 12:30:38 AM
Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:46:48 AM
(modified after loading)

==========

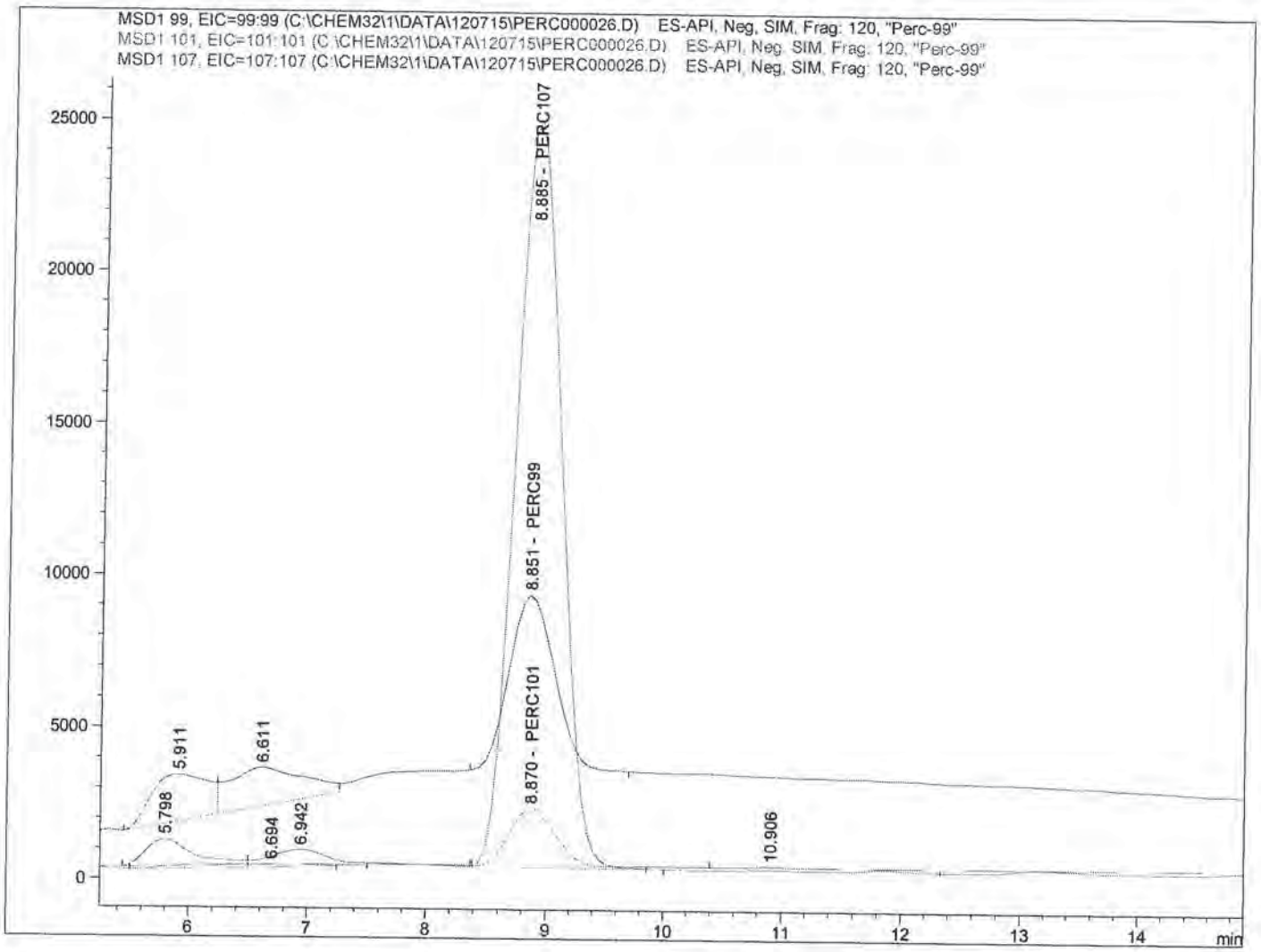

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Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:46:16 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-8-15

Data File C:\CHEM32\1\DATA\120715\PERC000026.D
Sample Name: SEQ-LCV3

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/8/2015 12:30:38 AM

Seq. Line : 26
Location : Vial 4
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:46:48 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.851	BB	1	1.54983e5	8.48638e-1	1.00326		PERC99

Totals without ISTD(s) : 1.00326

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.870	VB	1	5.04227e4	2.60545	1.00211		PERC101

Totals without ISTD(s) : 1.00211

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.885	BBA I	1	6.55481e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000027.D
Sample Name: SEQ-LCV4

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/8/2015 12:48:32 AM

Seq. Line : 27
Location : Vial 83
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:46:48 AM
(modified after loading)

==========

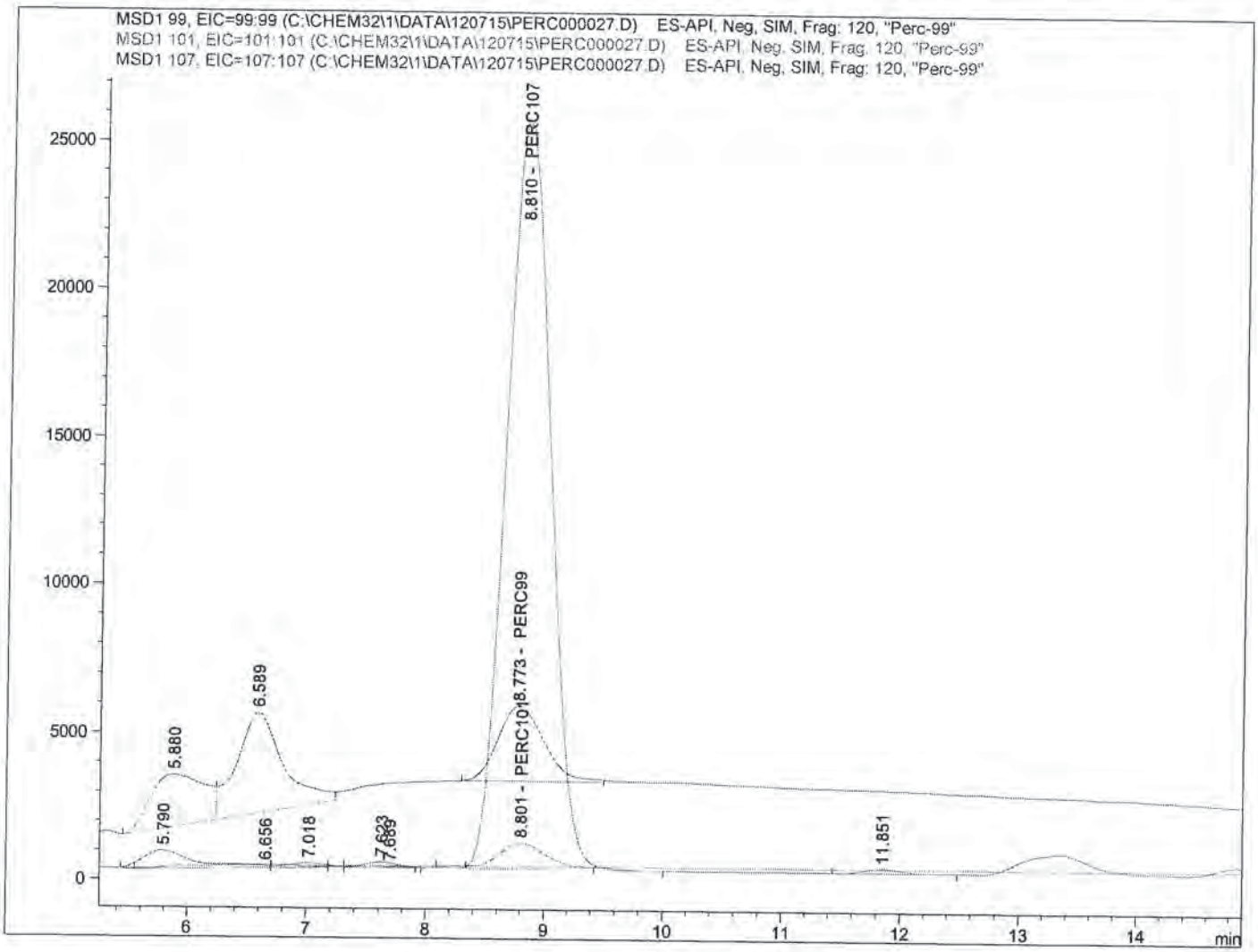

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Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:46:16 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-8-15

Data File C:\CHEM32\1\DATA\120715\PERC000027.D
Sample Name: SEQ-LCV4

```
==================================================================
Acq. Operator   :                                  Seq. Line :  27
Acq. Instrument : Instrument 1                      Location : Vial 83
Injection Date  : 12/8/2015 12:48:32 AM                 Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/8/2015 11:46:48 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.773	BB	1	6.86795e4	8.48638e-1	4.41543e-1		PERC99

Totals without ISTD(s) : 4.41543e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.801	BV	1	2.12409e4	2.60545	4.19255e-1		PERC101

Totals without ISTD(s) : 4.19255e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.810	BBA I	1	6.60003e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000028.D
Sample Name: 1511269-20@500

==========

Acq. Operator : Seq. Line : 28
Acq. Instrument : Instrument 1 Location : Vial 19
Injection Date : 12/8/2015 1:06:32 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:46:48 AM
(modified after loading)

==========

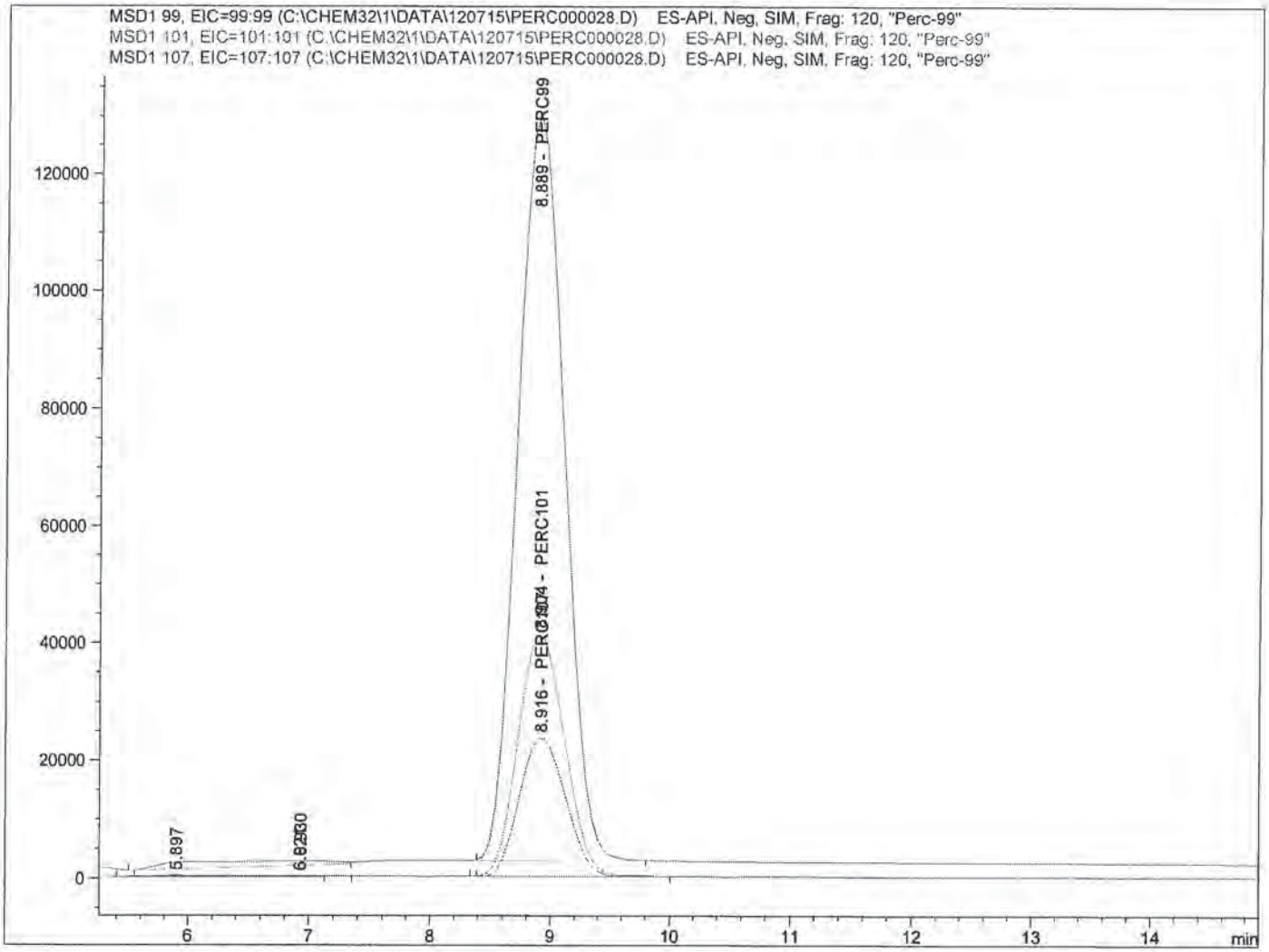

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:46:16 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-8-15

Data File C:\CHEM32\1\DATA\120715\PERC000028.D
Sample Name: 1511269-20@500

==========

Acq. Operator : Seq. Line : 28
Acq. Instrument : Instrument 1 Location : Vial 19
Injection Date : 12/8/2015 1:06:32 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:46:48 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.889	BBA	1	3.41953e6	8.48638e-1	22.89549		PERC99

Totals without ISTD(s) : 22.89549

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.904	BBA	1	1.10636e6	2.60545	22.74252		PERC101

Totals without ISTD(s) : 22.74252

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.916	BBA I	1	6.33737e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000029.D
Sample Name: 1511269-22@1000

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/8/2015 1:24:17 AM

Seq. Line : 29
Location : Vial 20
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:46:48 AM
(modified after loading)

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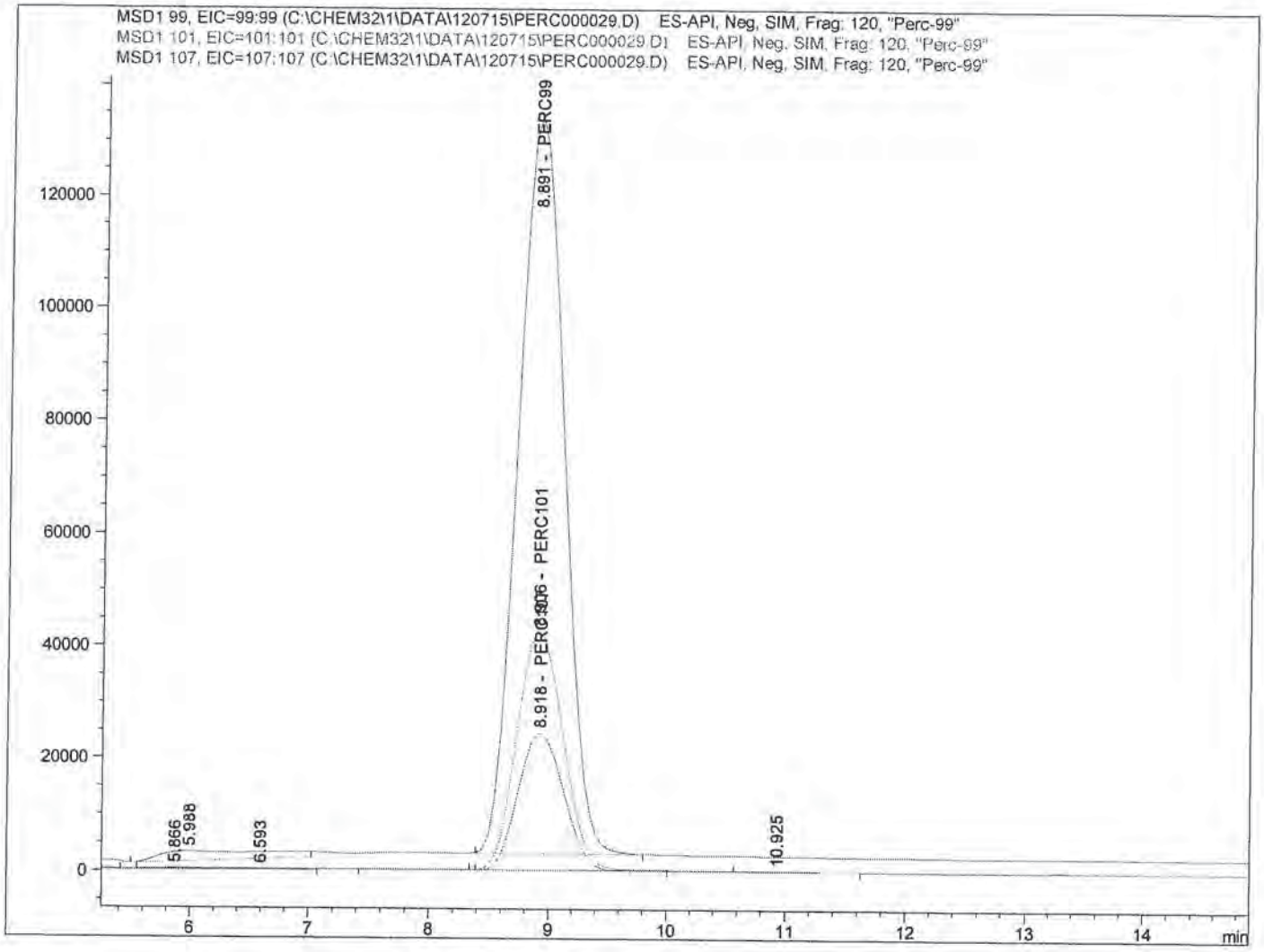

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Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:46:16 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-8-15

Data File C:\CHEM32\1\DATA\120715\PERC000029.D
Sample Name: 1511269-22@1000

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/8/2015 1:24:17 AM

Seq. Line : 29
Location : Vial 20
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:46:48 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.891	BBA	1	3.52388e6	8.48638e-1	22.84948		PERC99

Totals without ISTD(s) : 22.84948

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.906	BBA	1	1.14095e6	2.60545	22.71343		PERC101

Totals without ISTD(s) : 22.71343

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.918	BBA I	1	6.54391e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

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*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000030.D
Sample Name: 1511269-23@500

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/8/2015 1:42:10 AM

Seq. Line : 30
Location : Vial 21
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:46:48 AM
(modified after loading)

==========

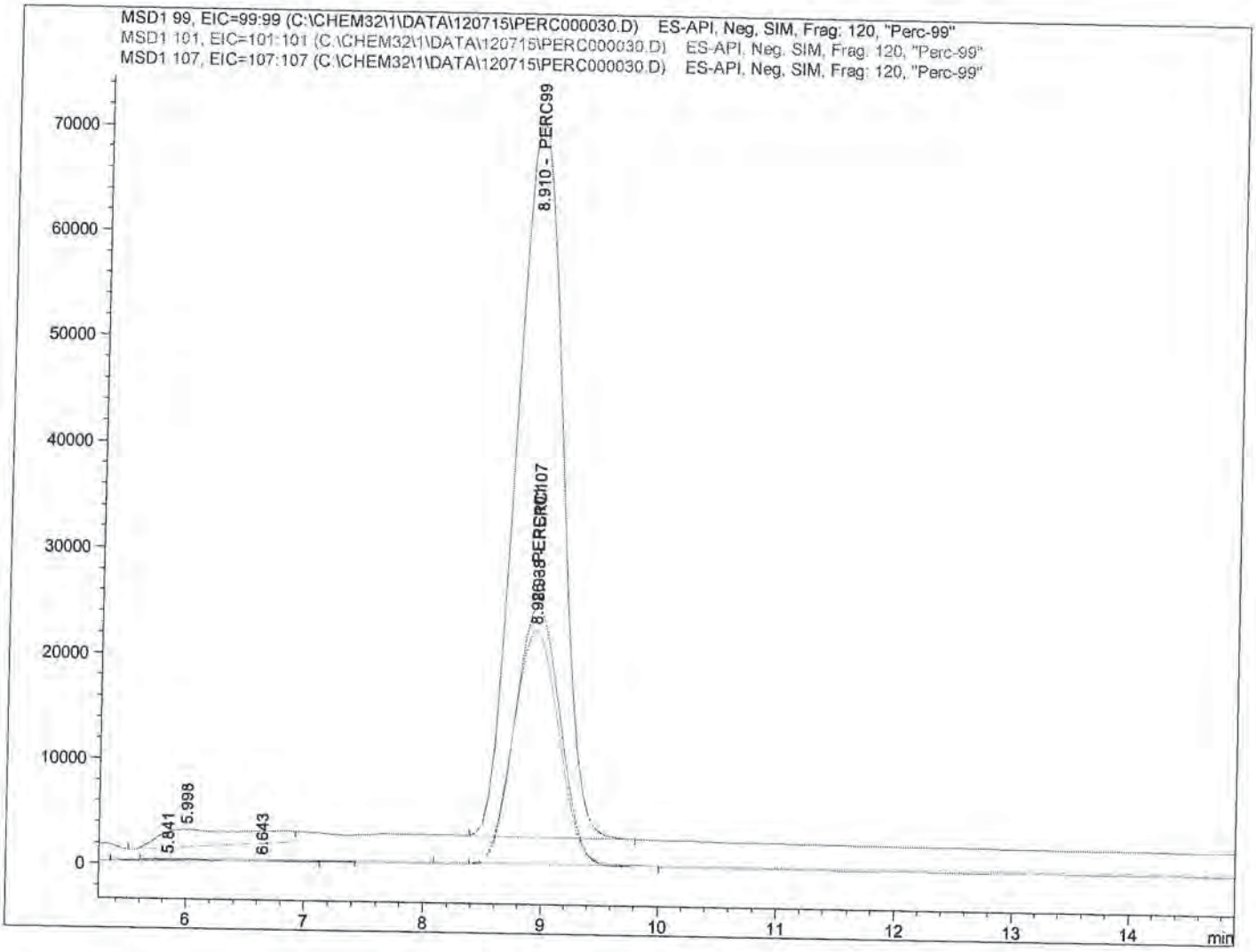

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Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:46:16 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-8-15

Data File C:\CHEM32\1\DATA\120715\PERC000030.D
Sample Name: 1511269-23@500

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/8/2015 1:42:10 AM

Seq. Line : 30
Location : Vial 21
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:46:48 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.910	BBA	1	1.82791e6	8.48638e-1	11.72570		PERC99

Totals without ISTD(s) : 11.72570

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.926	BBA	1	6.00132e5	2.60545	11.81926		PERC101

Totals without ISTD(s) : 11.81926

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.938	BBA I	1	6.61468e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000031.D
Sample Name: 1511269-24@2000

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/8/2015 2:00:05 AM

Seq. Line : 31
Location : Vial 22
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:46:48 AM
(modified after loading)

==========

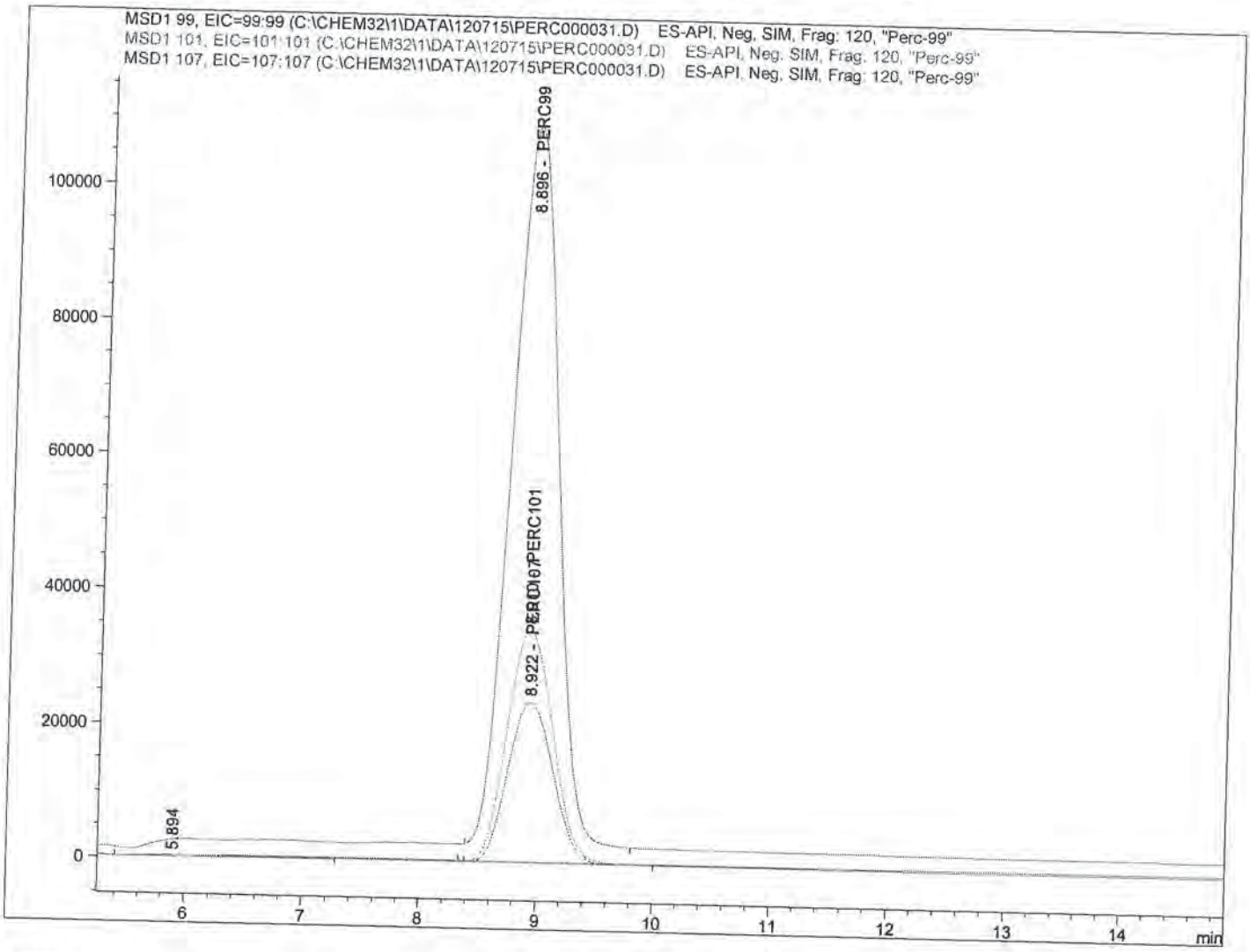

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Internal Standard Report

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SP
12/9/15

Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:46:16 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

12-8-15

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\120715\PERC000031.D
Sample Name: 1511269-24@2000

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/8/2015 2:00:05 AM

Seq. Line : 31
Location : Vial 22
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:46:48 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.896	BBA	1	2.88337e6	8.48638e-1	18.93473		PERC99

Totals without ISTD(s) : 18.93473

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.910	BBA	1	9.32391e5	2.60545	18.79819		PERC101

Totals without ISTD(s) : 18.79819

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.922	BBA I	1	6.46151e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

2883370/64615 1/1.17836 x 5 = 18.9347 x 2000 = 37869.39

Data File C:\CHEM32\1\DATA\120715\PERC000033.D
Sample Name: SEQ-CCV3

Acq. Operator	:	Seq. Line	: 33
Acq. Instrument	: Instrument 1	Location	: Vial 3
Injection Date	: 12/8/2015 2:35:43 AM	Inj	: 1
		Inj Volume	: 100.0 µl
Acq. Method	: C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M		
Last changed	: 12/7/2015 5:01:12 PM		
Analysis Method	: C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M		
Last changed	: 12/8/2015 11:46:48 AM (modified after loading)		

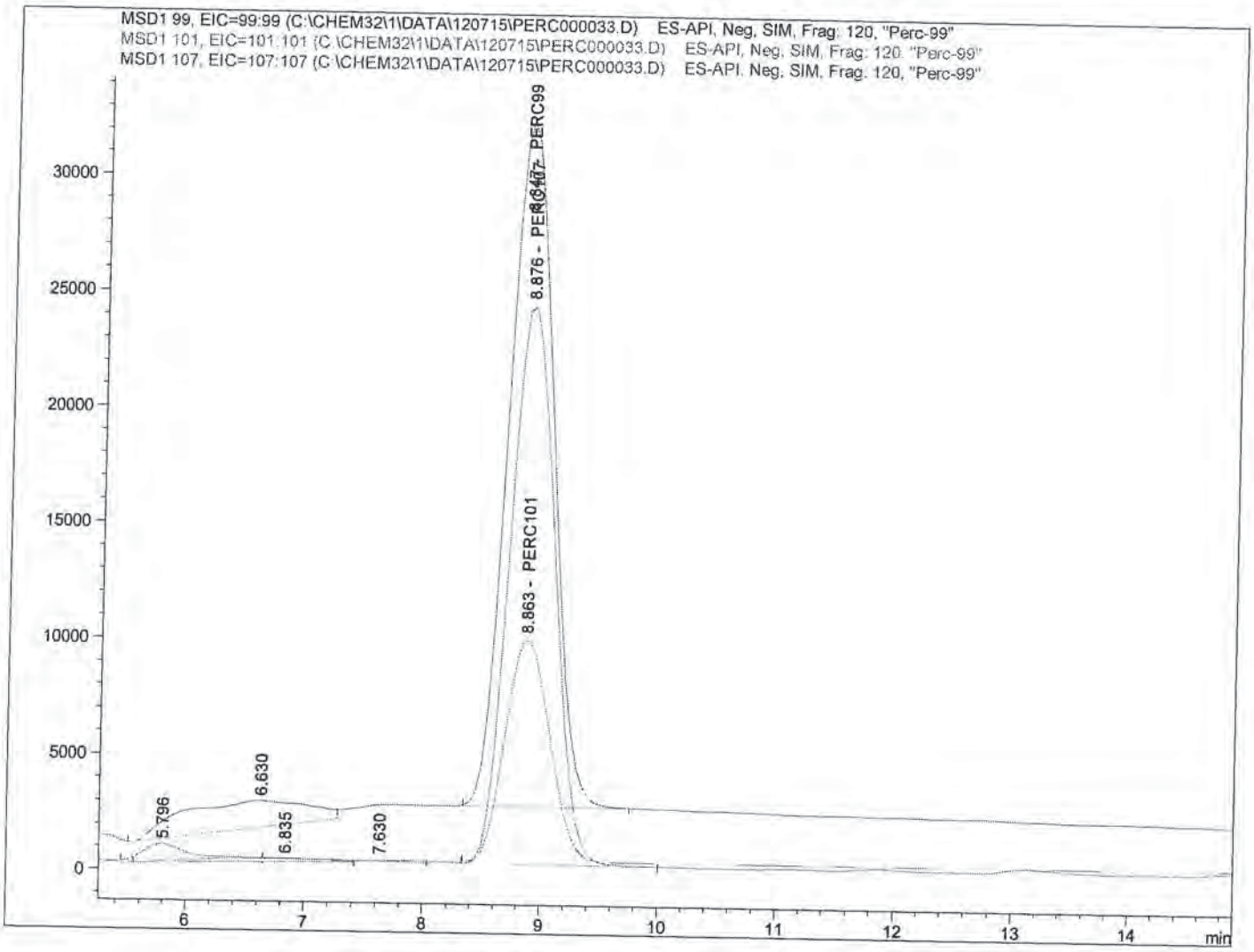

Internal Standard Report

Sorted By	:	Signal
Calib. Data Modified	:	12/8/2015 11:46:16 AM
Multiplier	:	1.0000
Dilution	:	1.0000

Do not use Multiplier & Dilution Factor with ISTDs

Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

Pond 12-8-15 SP 12/9/15

Data File C:\CHEM32\1\DATA\120715\PERC000033.D
Sample Name: SEQ-CCV3

==========

Acq. Operator :
Seq. Line : 33
Acq. Instrument : Instrument 1
Location : Vial 3
Injection Date : 12/8/2015 2:35:43 AM
Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:46:48 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.847	BB	1	7.87932e5	8.48638e-1	5.20917		PERC99

Totals without ISTD(s) : 5.20917

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.863	BBA	1	2.55387e5	2.60545	5.18369		PERC101

Totals without ISTD(s) : 5.18369

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.876	VBA I	1	6.41819e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000034.D
Sample Name: SEQ-LCV5

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/8/2015 2:53:35 AM

Seq. Line : 34
Location : Vial 4
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:46:48 AM
(modified after loading)

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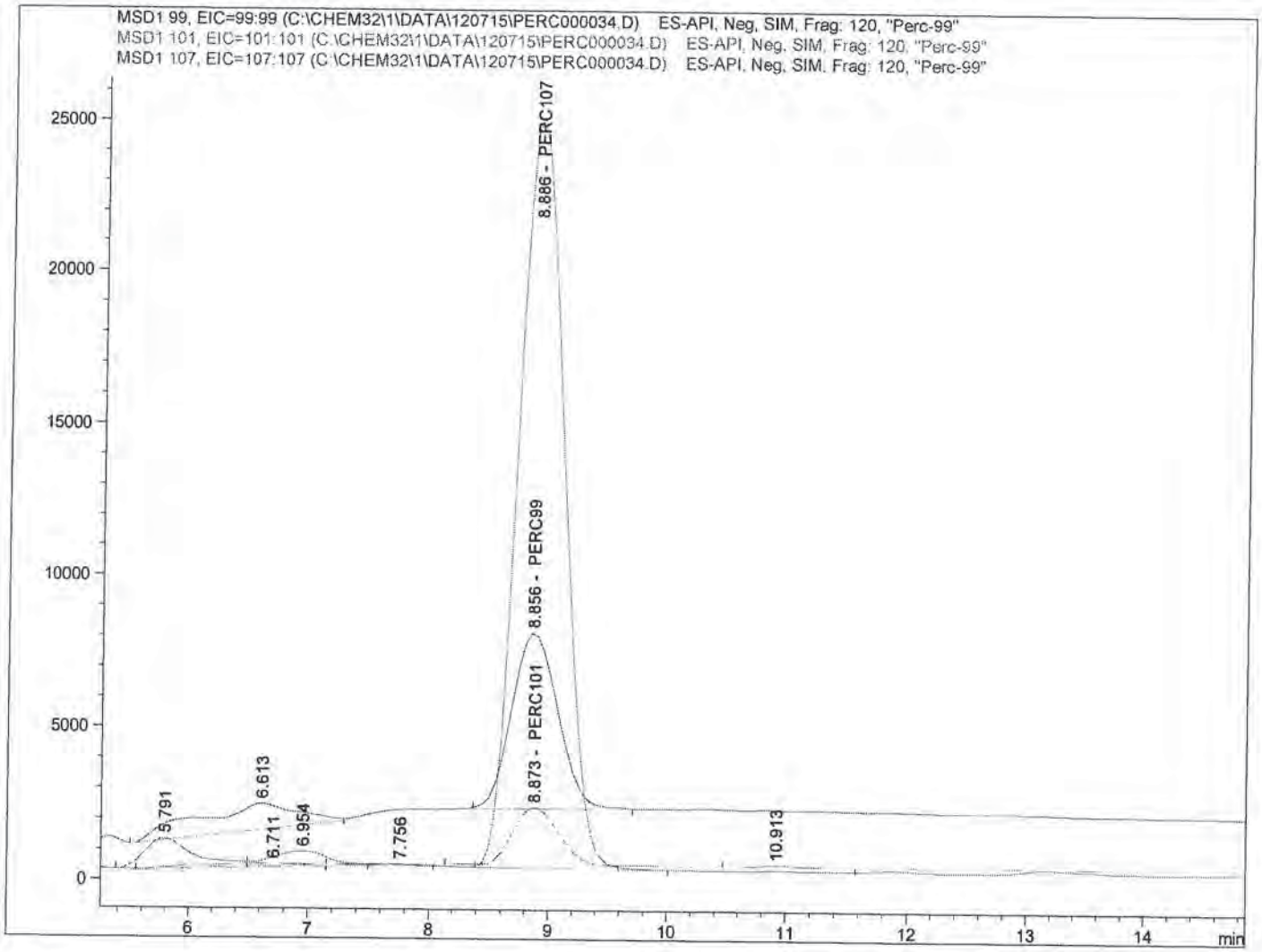

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:46:16 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-8-15

SP
12/9/15

Data File C:\CHEM32\1\DATA\120715\PERC000034.D
Sample Name: SEQ-LCV5

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/8/2015 2:53:35 AM

Seq. Line : 34
Location : Vial 4
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:46:48 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.856	BB	1	1.55476e5	8.48638e-1	1.00086		PERC99

Totals without ISTD(s) : 1.00086

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.873	BV	1	5.09008e4	2.60545	1.00600		PERC101

Totals without ISTD(s) : 1.00600

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.886	BBA I	1	6.59144e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000035.D
Sample Name: SEQ-LCV6

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/8/2015 3:11:24 AM

Seq. Line : 35
Location : Vial 83
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:52:59 AM
(modified after loading)

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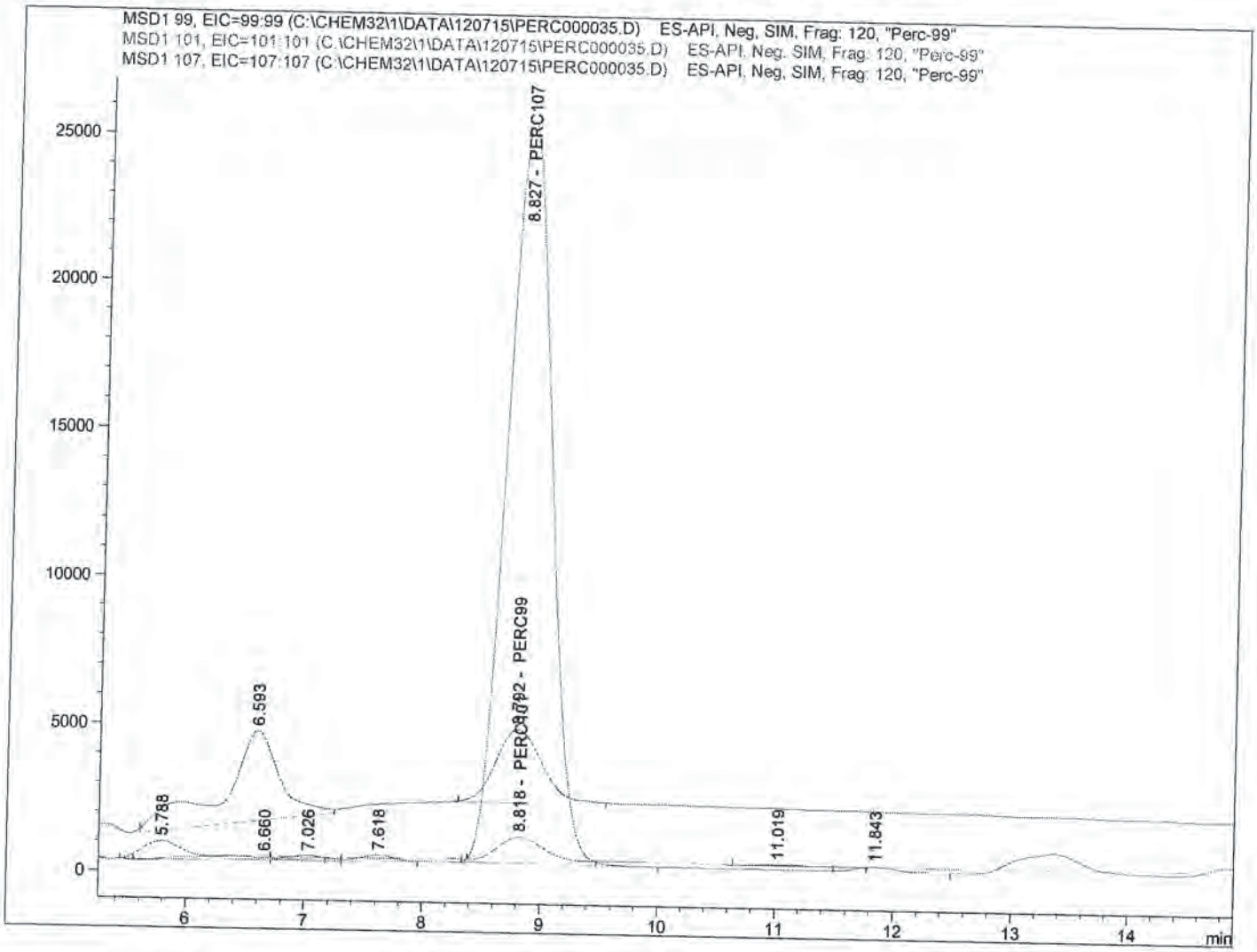

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:46:16 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-8-15

SP
12/9/15

Data File C:\CHEM32\1\DATA\120715\PERC000035.D
Sample Name: SEQ-LCV6

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/8/2015 3:11:24 AM

Seq. Line : 35
Location : Vial 83
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:52:59 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.792	BB	1	6.73815e4	8.48638e-1	4.35406e-1		PERC99

Totals without ISTD(s) : 4.35406e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.818	VV	1	2.07169e4	2.60545	4.10996e-1		PERC101

Totals without ISTD(s) : 4.10996e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.827	BBA I	1	6.56658e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Print of all graphic windows
Data File : C:\CHEM32\1\DATA\120415\PERC000002.D
Sample Name : SEQ-TUN1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/4/2015 3:23:35 PM

Seq. Line : 2
Location : Vial 1
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_SC
Last changed : 12/4/2015 2:35:18 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 11:18:25 AM
(modified after loading)

Current Chromatogram(s)

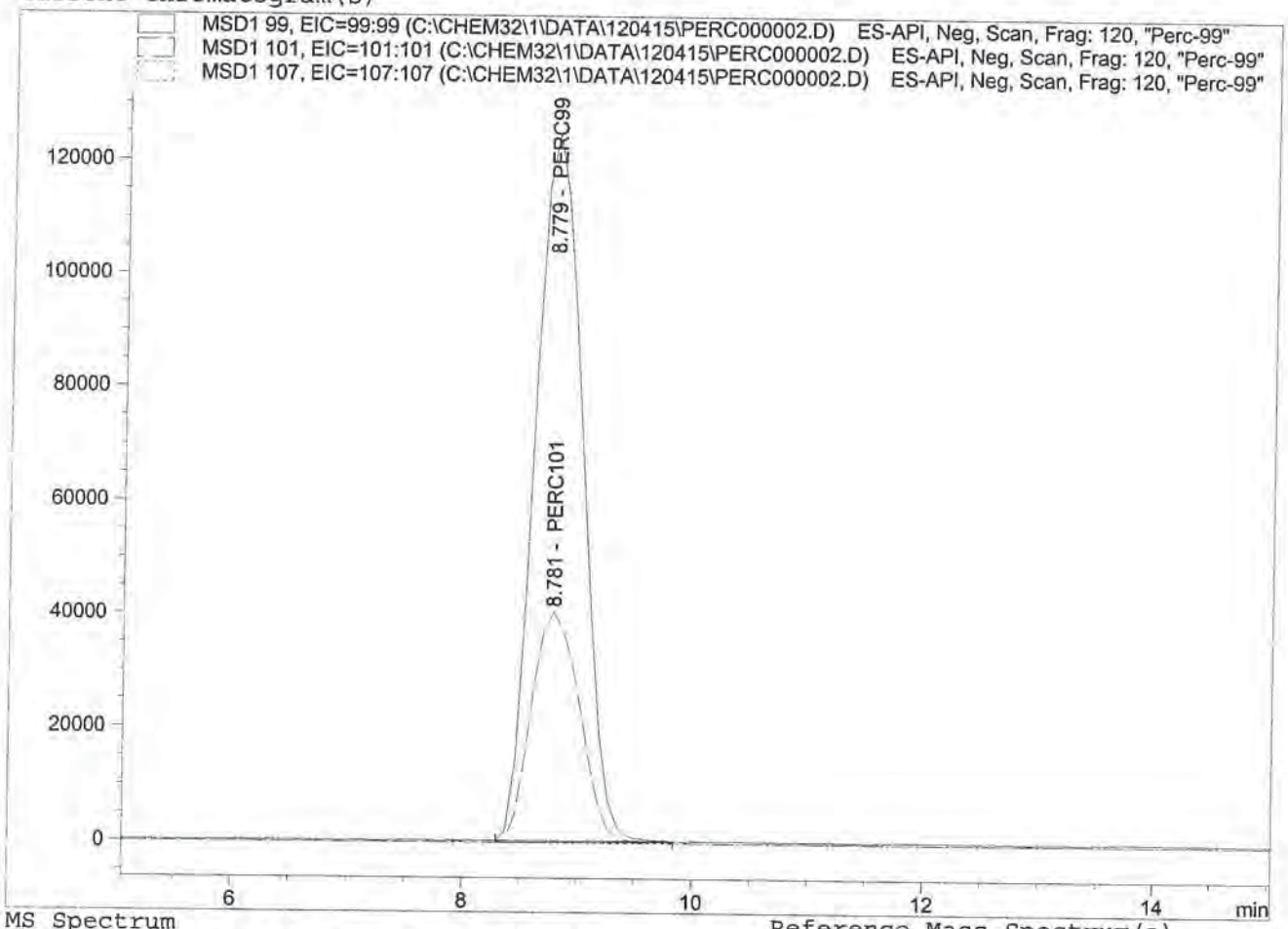

MS Spectrum

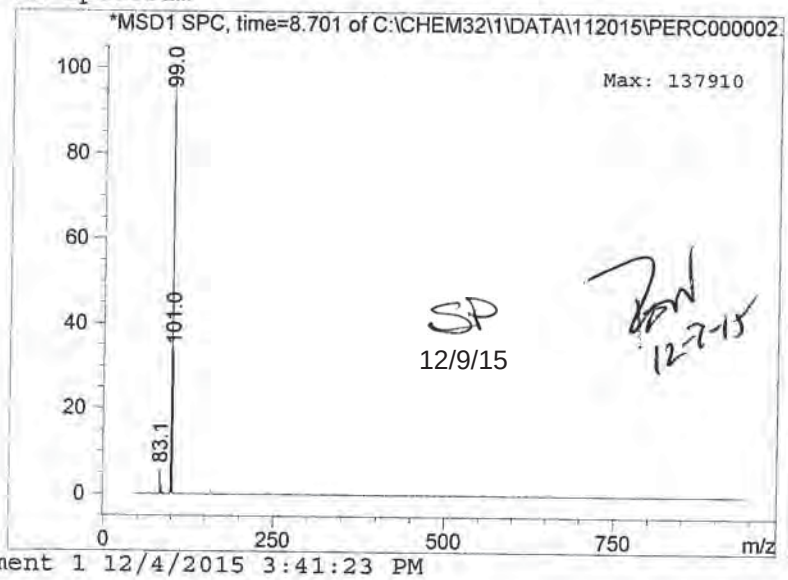

Reference Mass Spectrum(a)

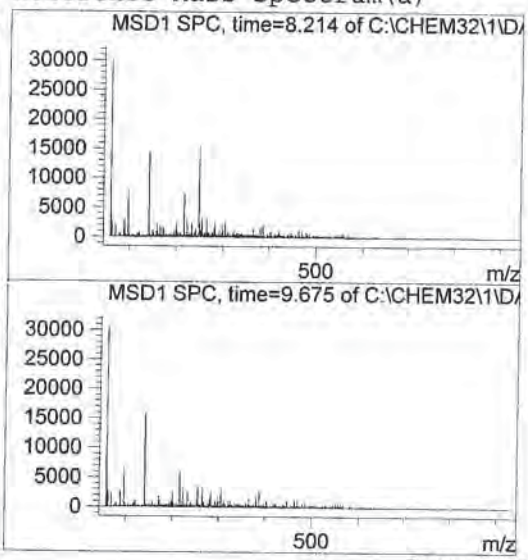

SP
12/9/15

12-7-15

Instrument 1 12/4/2015 3:41:23 PM

Data File C:\CHEM32\1\DATA\120415\PERC000002.D
Sample Name: SEQ-TUN1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/4/2015 3:23:35 PM

Seq. Line : 2
Location : Vial 1
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_SC
Last changed : 12/4/2015 2:35:18 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 11:18:25 AM
(modified after loading)

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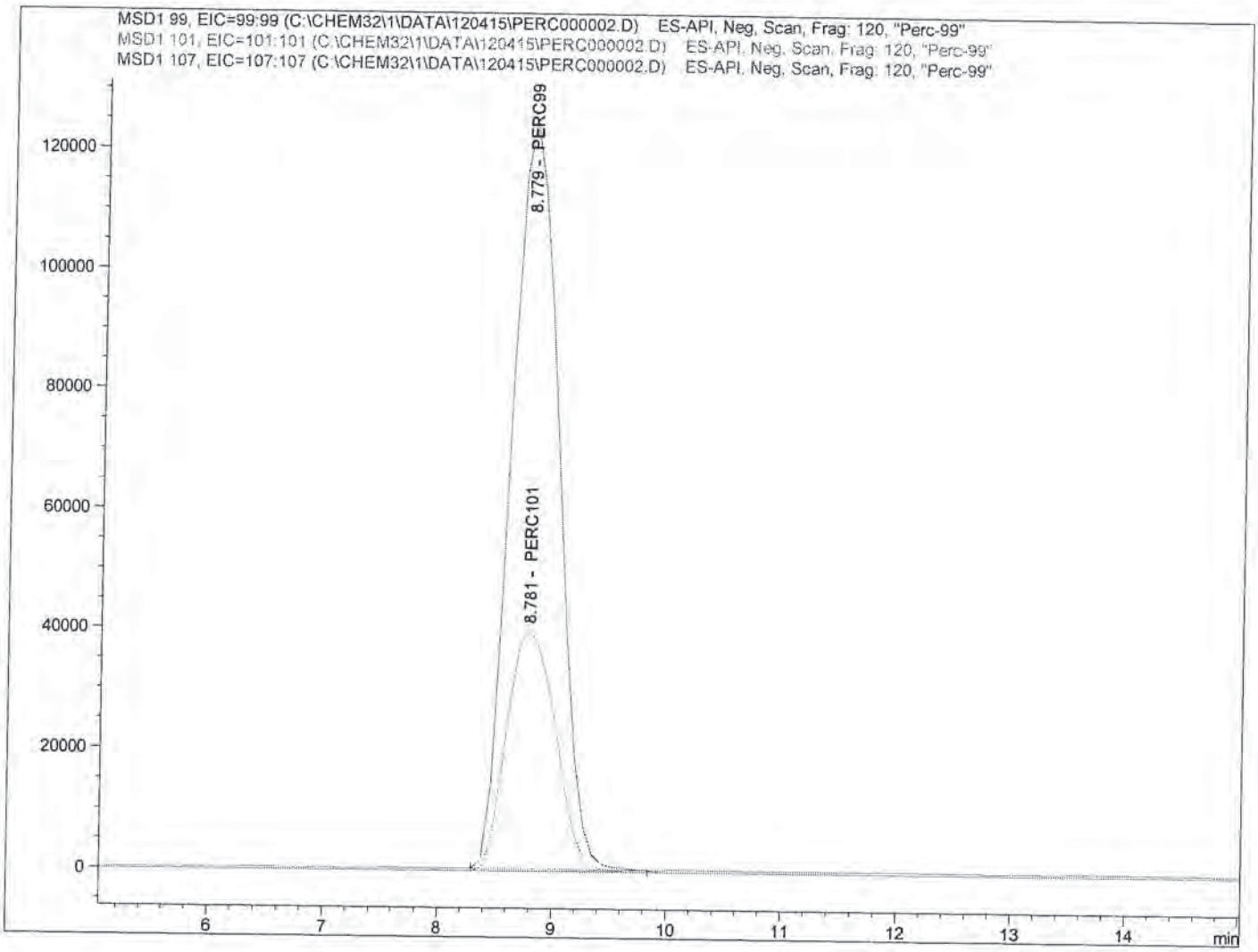

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : 12/3/2015 11:17:55 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000002.D
Sample Name: SEQ-TUN1

```
==================================================================
Acq. Operator   :                                Seq. Line :   2
Acq. Instrument : Instrument 1                    Location : Vial 1
Injection Date  : 12/4/2015 3:23:35 PM                 Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_SC
Last changed    : 12/4/2015 2:35:18 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/3/2015 11:18:25 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.779	BBA	1	3.54798e6	0.00000	0.00000		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.781	BBA	1	1.17920e6	0.00000	0.00000		PERC101

Totals without ISTD(s) : 0.00000

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.860		1	-	-	-		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : ISTD compound(s) not found

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*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000005.D
Sample Name: SEQ-CCV1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/4/2015 4:17:10 PM

Seq. Line : 5
Location : Vial 3
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 11:18:25 AM
(modified after loading)

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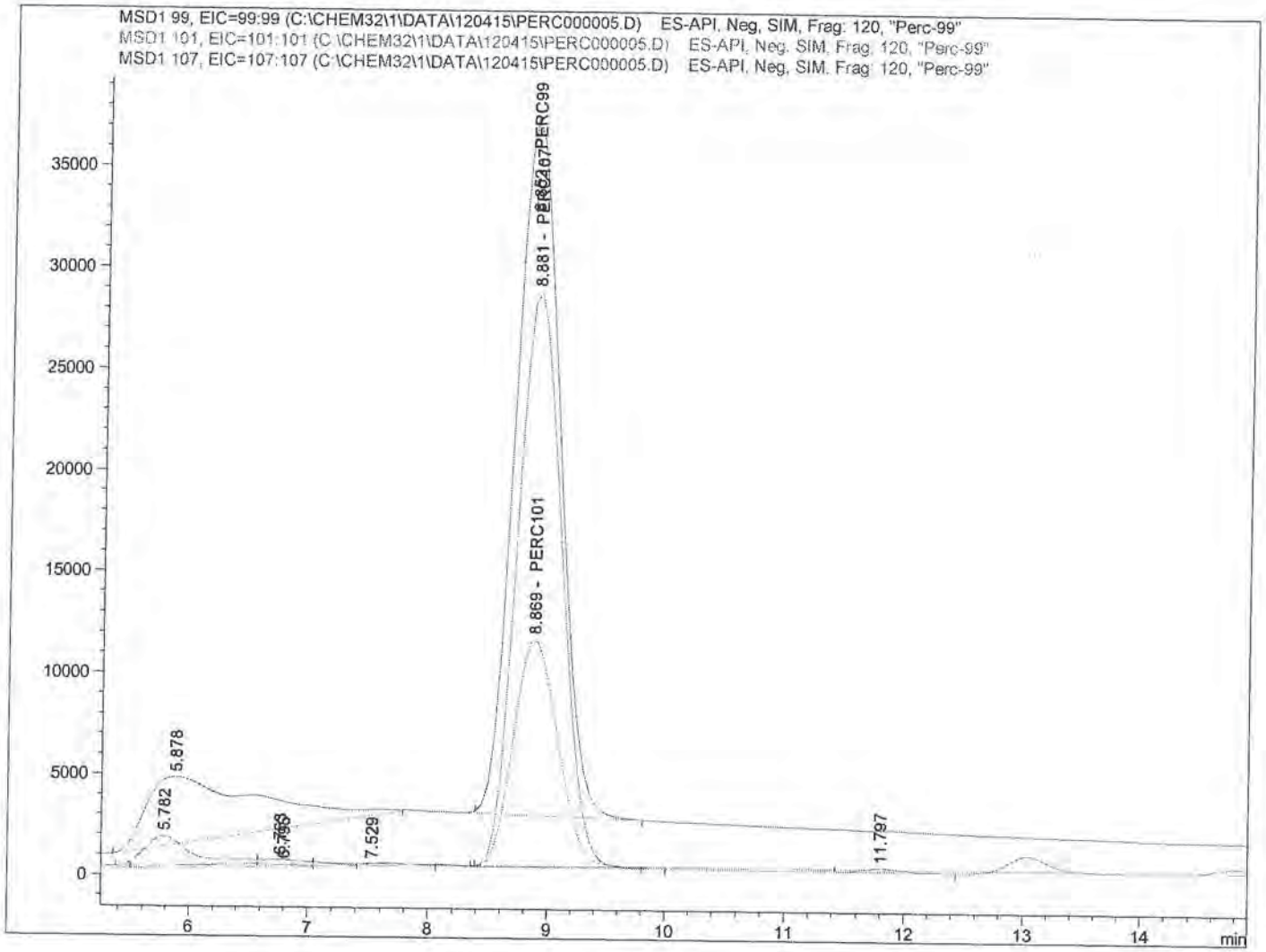

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Internal Standard Report

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SP
12/9/15

Sorted By : Signal
Calib. Data Modified : 12/3/2015 11:17:55 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000005.D
Sample Name: SEQ-CCV1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/4/2015 4:17:10 PM

Seq. Line : 5
Location : Vial 3
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 11:18:25 AM
(modified after loading)

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1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.852	BBA	1	9.02830e5	8.48638e-1	5.14088		PERC99

Totals without ISTD(s) : 5.14088

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.869	BBA	1	2.94125e5	2.60545	5.14189		PERC101

Totals without ISTD(s) : 5.14189

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.881	VBA I	1	7.45180e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

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*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000006.D
Sample Name: SEQ-LCV1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/4/2015 4:35:03 PM

Seq. Line : 6
Location : Vial 4
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 11:18:25 AM
(modified after loading)

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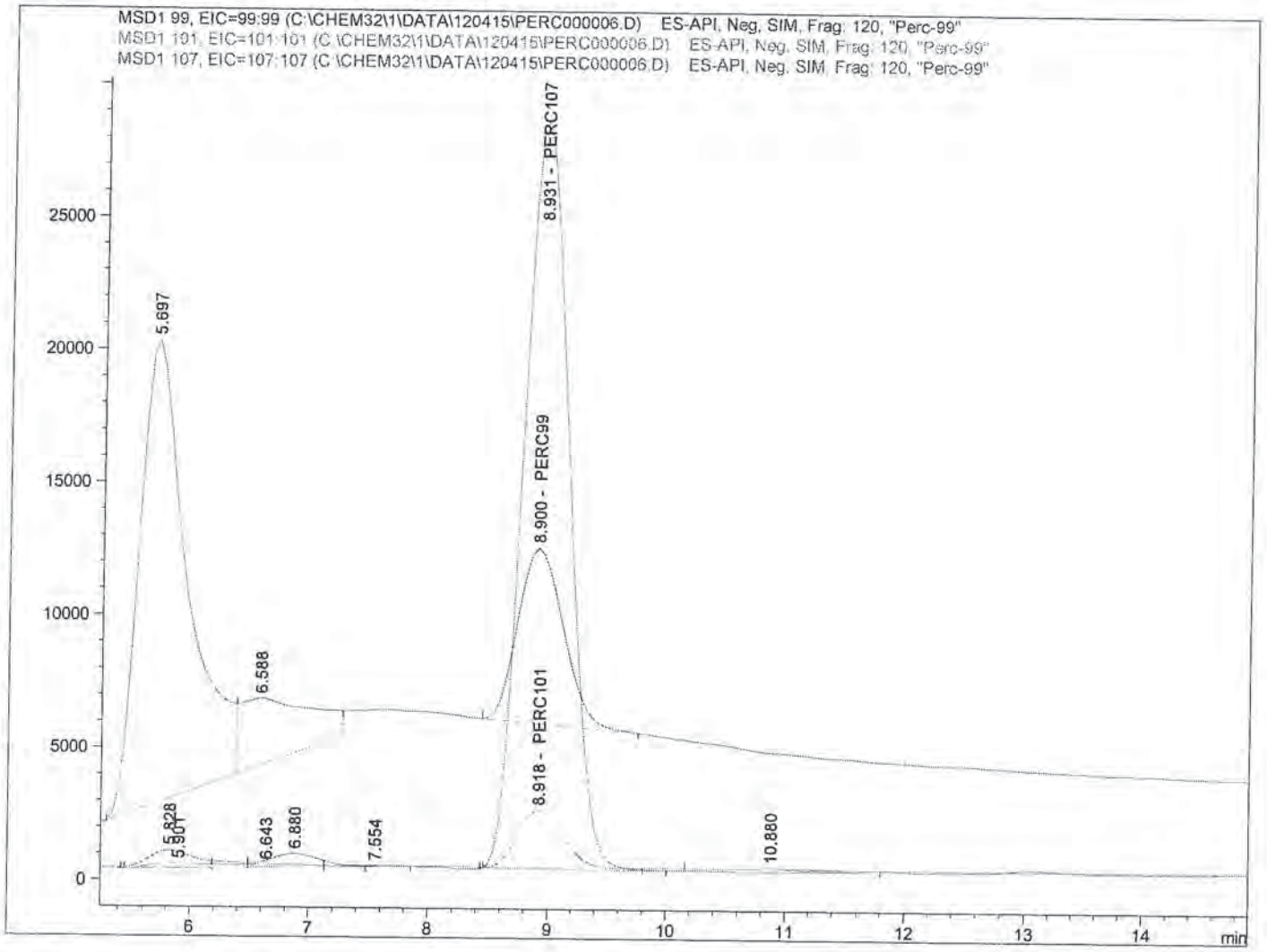

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Internal Standard Report

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SP
12/9/15

Sorted By : Signal
Calib. Data Modified : 12/3/2015 11:17:55 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

Pond 12-7-15

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\120415\PERC000006.D
Sample Name: SEQ-LCV1

```
==================================================================
Acq. Operator   :                                Seq. Line :   6
Acq. Instrument : Instrument 1                    Location : Vial 4
Injection Date  : 12/4/2015 4:35:03 PM                 Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/3/2015 11:18:25 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.900	BB	1	1.77304e5	8.48638e-1	1.00150		PERC99

Totals without ISTD(s) : 1.00150

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.918	BBA	1	5.77441e4	2.60545	1.00138		PERC101

Totals without ISTD(s) : 1.00138

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.931	BBA I	1	7.51208e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

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*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000007.D
Sample Name: SEQ-LCV2

==========

Acq. Operator : Seq. Line : 7
Acq. Instrument : Instrument 1 Location : Vial 83
Injection Date : 12/4/2015 4:52:47 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/4/2015 5:14:28 PM
(modified after loading)

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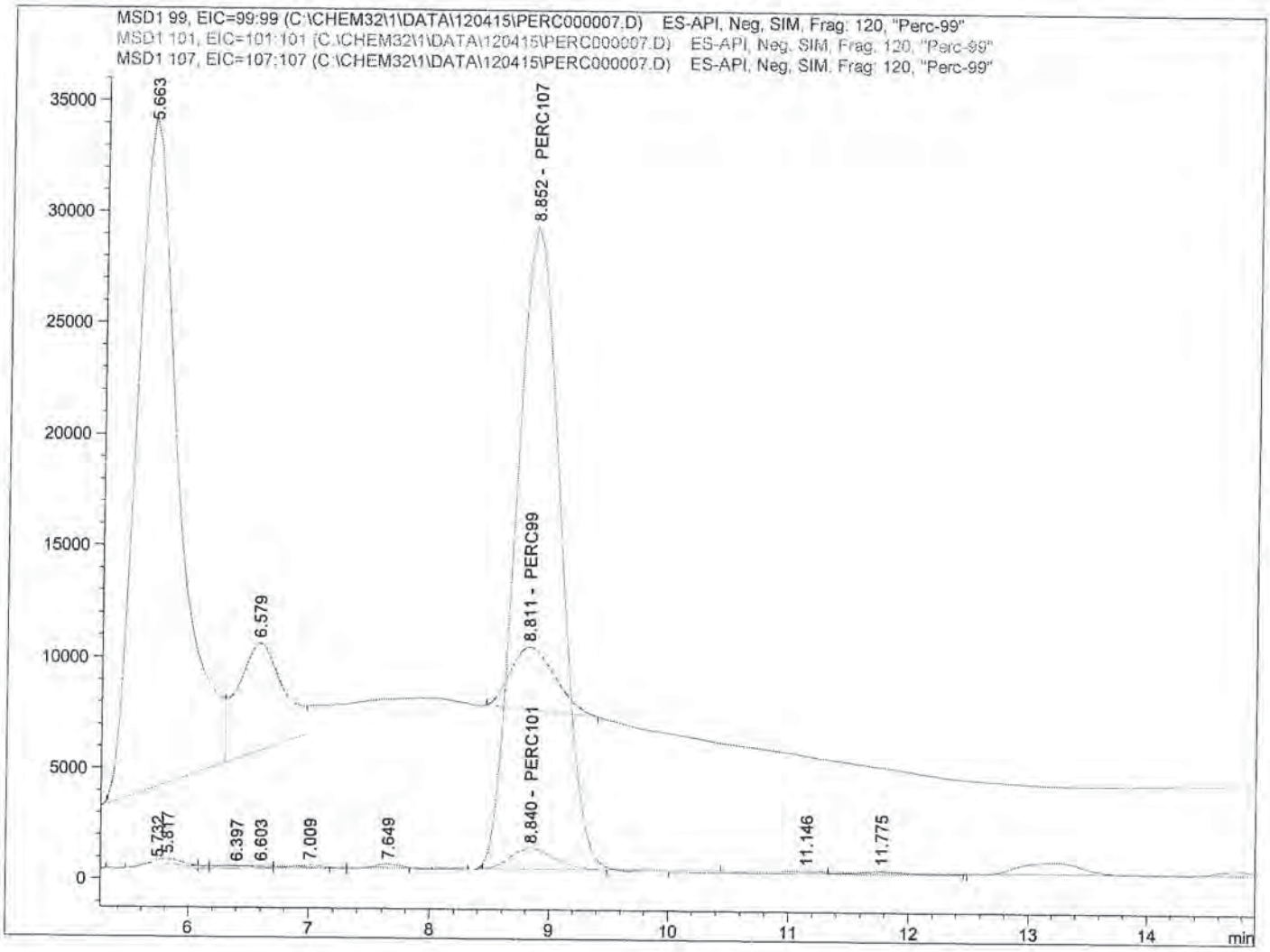

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Internal Standard Report

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SP
12/9/15

Sorted By : Signal
Calib. Data Modified : 12/3/2015 11:17:55 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000007.D
Sample Name: SEQ-LCV2

```
==================================================================
Acq. Operator   :                                  Seq. Line :   7
Acq. Instrument : Instrument 1                      Location : Vial 83
Injection Date  : 12/4/2015 4:52:47 PM                 Inj :   1
                                                 Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/4/2015 5:14:28 PM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.811	BBA	1	7.32641e4	8.48638e-1	4.11548e-1		PERC99

Totals without ISTD(s) : 4.11548e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.840	BV	1	2.36895e4	2.60545	4.08549e-1		PERC101

Totals without ISTD(s) : 4.08549e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.852	VBA I	1	7.55377e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000008.D
Sample Name: SEQ-IFA1

==========

Acq. Operator : Seq. Line : 8
Acq. Instrument : Instrument 1 Location : Vial 5
Injection Date : 12/4/2015 5:10:48 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 11:54:15 AM
(modified after loading)

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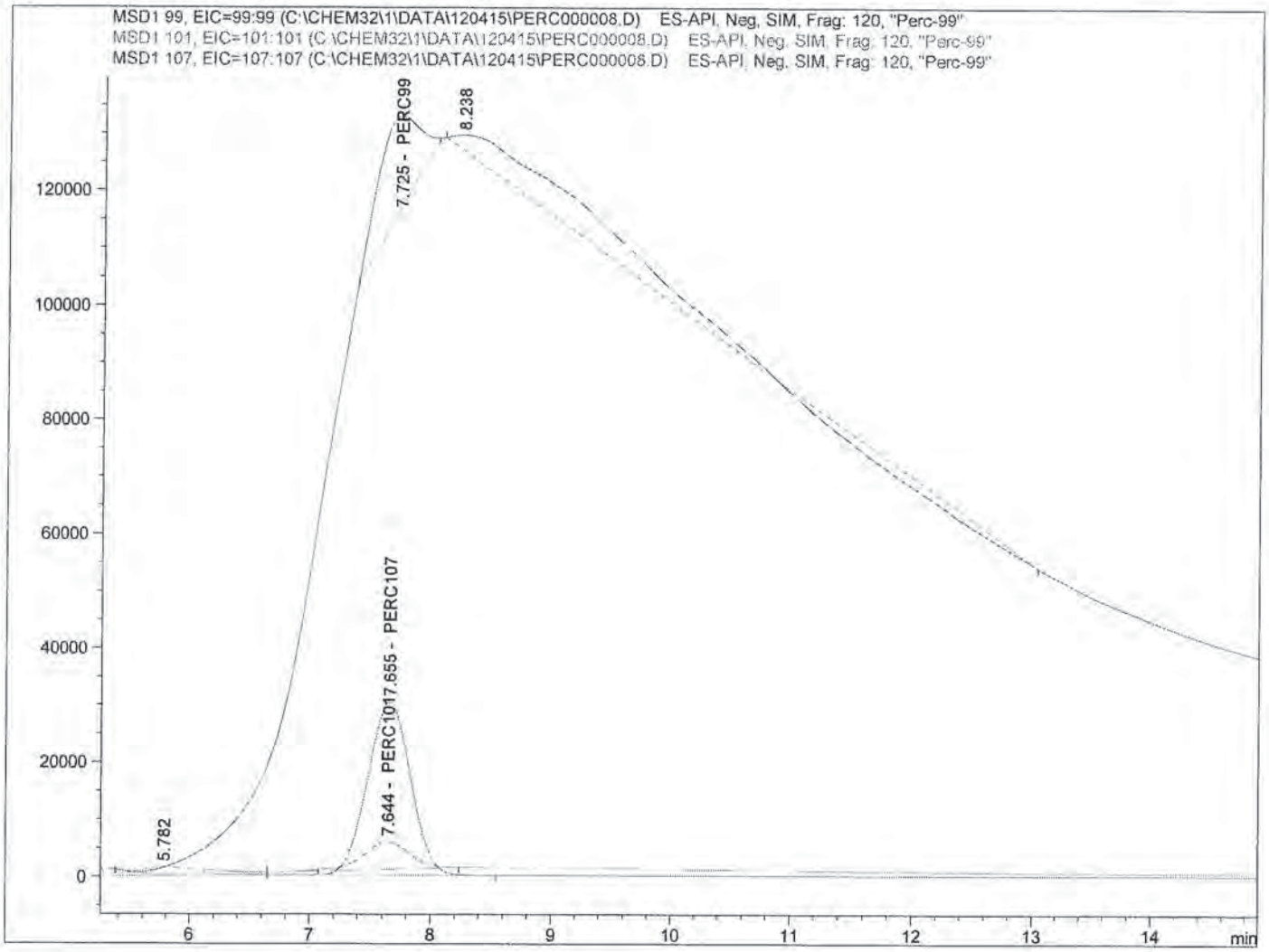

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Internal Standard Report

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SP
12/9/15

Sorted By : Signal
Calib. Data Modified : 12/5/2015 11:53:01 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

RDW 12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000008.D
Sample Name: SEQ-IFA1

==========

Acq. Operator : Seq. Line : 8
Acq. Instrument : Instrument 1 Location : Vial 5
Injection Date : 12/4/2015 5:10:48 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 11:54:15 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
7.725	BBA	1	3.92685e5	8.48638e-1	2.24674		PERC99

Totals without ISTD(s) : 2.24674

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
7.644	VBA	1	1.28427e5	2.60545	2.25592		PERC101

Totals without ISTD(s) : 2.25592

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
7.655	BBA I	1	7.41624e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

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*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000011.D
Sample Name: 1511269-01@5

==========

Acq. Operator : Seq. Line : 11
Acq. Instrument : Instrument 1 Location : Vial 6
Injection Date : 12/4/2015 6:04:17 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 12:19:44 PM
(modified after loading)

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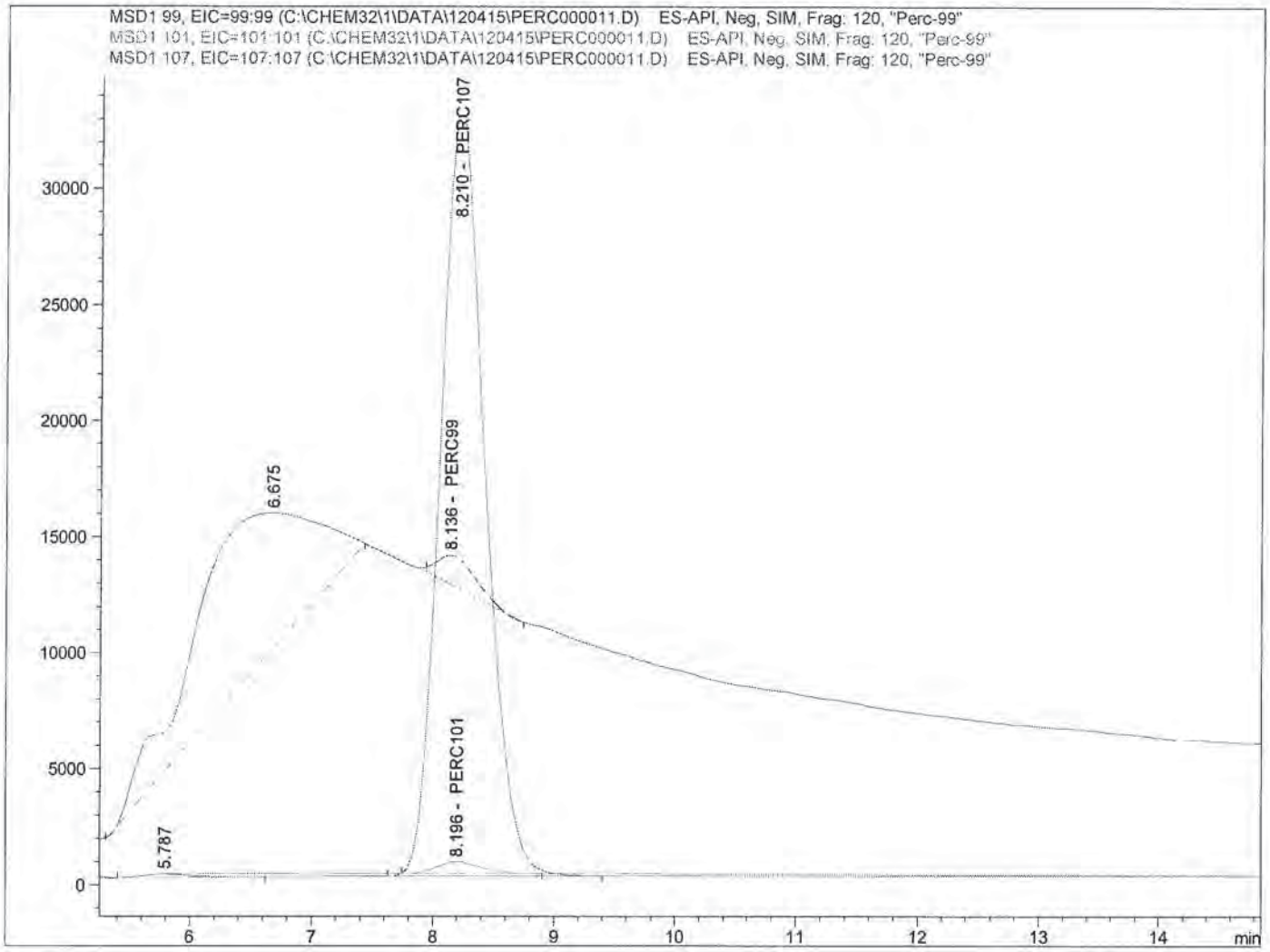

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Internal Standard Report

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SP
12/9/15

Sorted By : Signal
Calib. Data Modified : 12/5/2015 12:16:32 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

RDW
12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000011.D
Sample Name: 1511269-01@5

==========

Acq. Operator : Seq. Line : 11
Acq. Instrument : Instrument 1 Location : Vial 6
Injection Date : 12/4/2015 6:04:17 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 12:19:44 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.136	BBA	1	2.80634e4	8.48638e-1	1.40073e-1		PERC99

Totals without ISTD(s) : 1.40073e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.196	BV	1	1.28386e4	2.60545	1.96738e-1		PERC101

Totals without ISTD(s) : 1.96738e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.210	BBA I	1	8.50119e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000012.D
Sample Name: 5L01021-MS1@5

==========

Acq. Operator : Seq. Line : 12
Acq. Instrument : Instrument 1 Location : Vial 7
Injection Date : 12/4/2015 6:22:05 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 12:19:44 PM
(modified after loading)

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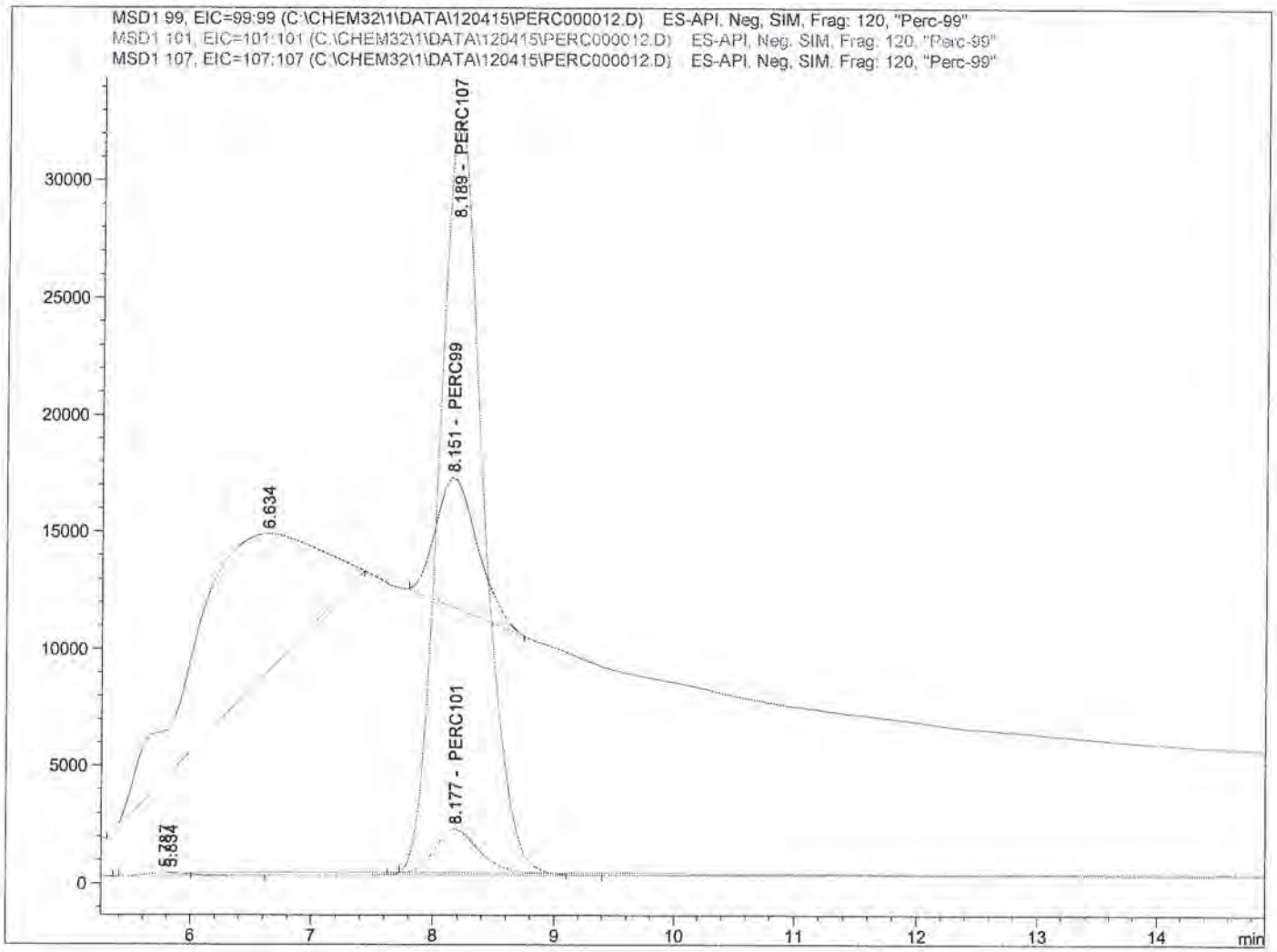

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/5/2015 12:16:32 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000012.D
Sample Name: 5L01021-MS1@5

==========

Acq. Operator : Seq. Line : 12
Acq. Instrument : Instrument 1 Location : Vial 7
Injection Date : 12/4/2015 6:22:05 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 12:19:44 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.151	BBA	1	1.33738e5	8.48638e-1	6.94116e-1		PERC99

Totals without ISTD(s) : 6.94116e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.177	BB	1	4.60720e4	2.60545	7.34130e-1		PERC101

Totals without ISTD(s) : 7.34130e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.189	BBA I	1	8.17554e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000013.D
Sample Name: 5L01021-MSD1@5

==========

Acq. Operator :
Seq. Line : 13
Acq. Instrument : Instrument 1
Location : Vial 8
Injection Date : 12/4/2015 6:39:51 PM
Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 12:19:44 PM
(modified after loading)

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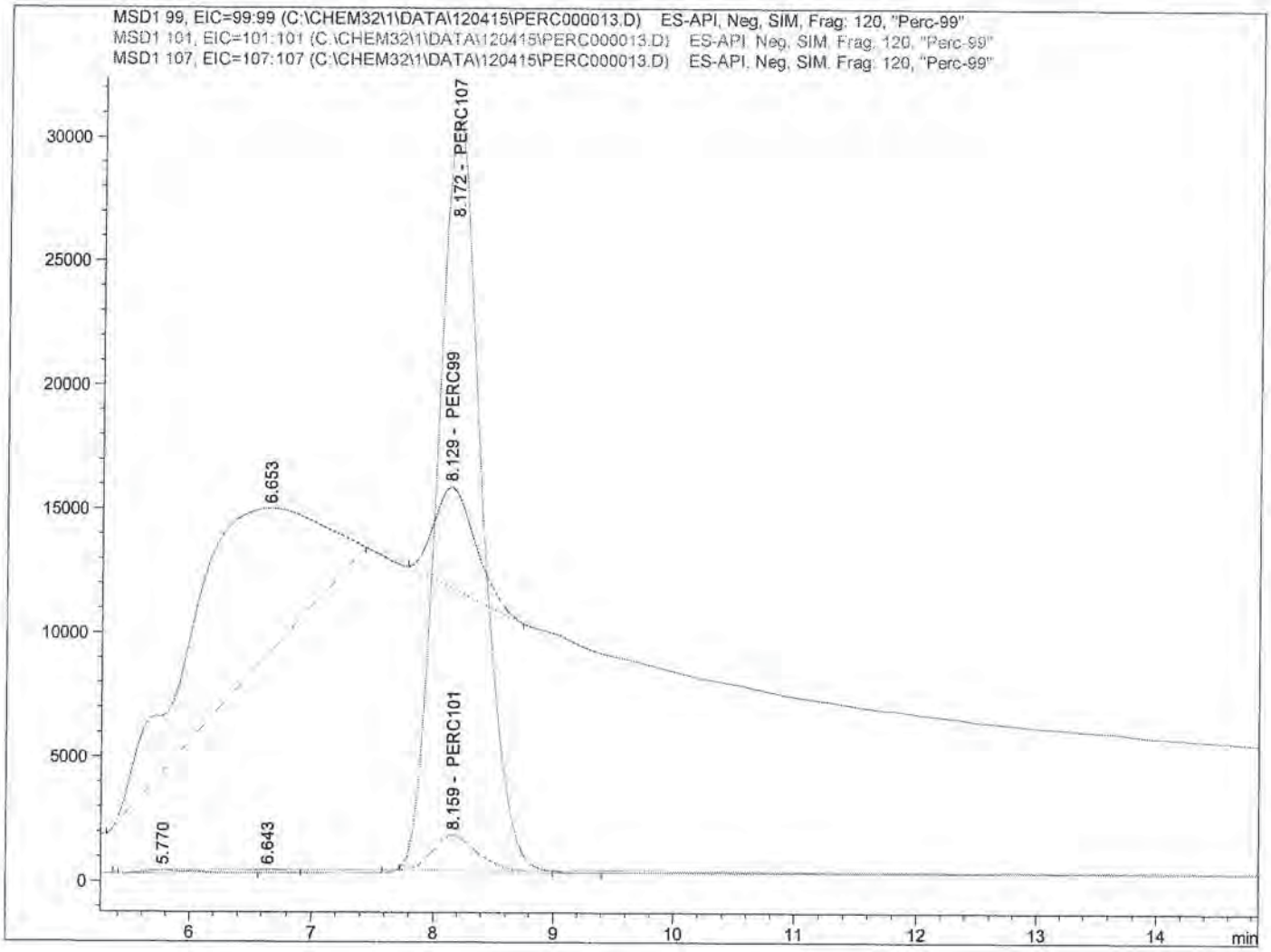

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Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/5/2015 12:16:32 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000013.D
Sample Name: 5L01021-MSD1@5

==========

Acq. Operator : Seq. Line : 13
Acq. Instrument : Instrument 1 Location : Vial 8
Injection Date : 12/4/2015 6:39:51 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 12:19:44 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.129	BBA	1	9.69694e4	8.48638e-1	5.30408e-1		PERC99

Totals without ISTD(s) : 5.30408e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.159	BB	1	3.53944e4	2.60545	5.94386e-1		PERC101

Totals without ISTD(s) : 5.94386e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.172	BBA I	1	7.75742e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000014.D
Sample Name: 1511269-06@5

Acq. Operator	:	Seq. Line	: 14
Acq. Instrument	: Instrument 1	Location	: Vial 9
Injection Date	: 12/4/2015 6:57:39 PM	Inj	: 1
		Inj Volume	: 100.0 µl
Acq. Method	: C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M		
Last changed	: 12/4/2015 2:39:26 PM		
Analysis Method	: C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M		
Last changed	: 12/5/2015 12:19:44 PM (modified after loading)		

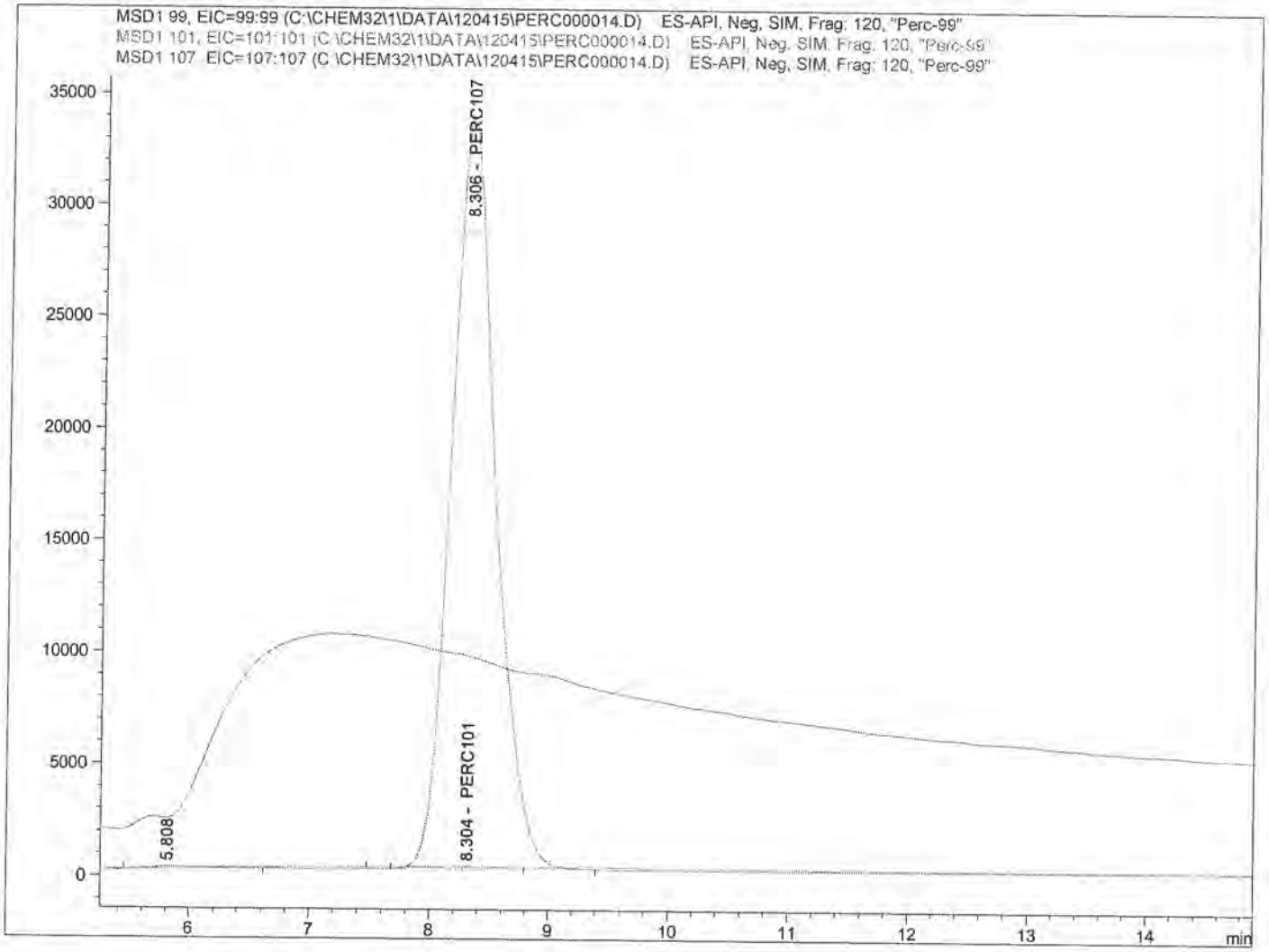

Internal Standard Report

Sorted By	:	Signal
Calib. Data Modified	:	12/5/2015 12:16:32 PM
Multiplier	:	1.0000
Dilution	:	1.0000

Do not use Multiplier & Dilution Factor with ISTDs

Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000014.D
Sample Name: 1511269-06@5

==========

Acq. Operator : Seq. Line : 14
Acq. Instrument : Instrument 1 Location : Vial 9
Injection Date : 12/4/2015 6:57:39 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 12:19:44 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.210		1	-	-	-		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.304	BV	1	1488.96106	2.60545	2.22984e-2		PERC101

Totals without ISTD(s) : 2.22984e-2

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.306	BBA I	1	8.69886e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000015.D
Sample Name: 1511269-07@50

==========

Acq. Operator : Seq. Line : 15
Acq. Instrument : Instrument 1 Location : Vial 10
Injection Date : 12/4/2015 7:15:36 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 12:23:37 PM
(modified after loading)

==========

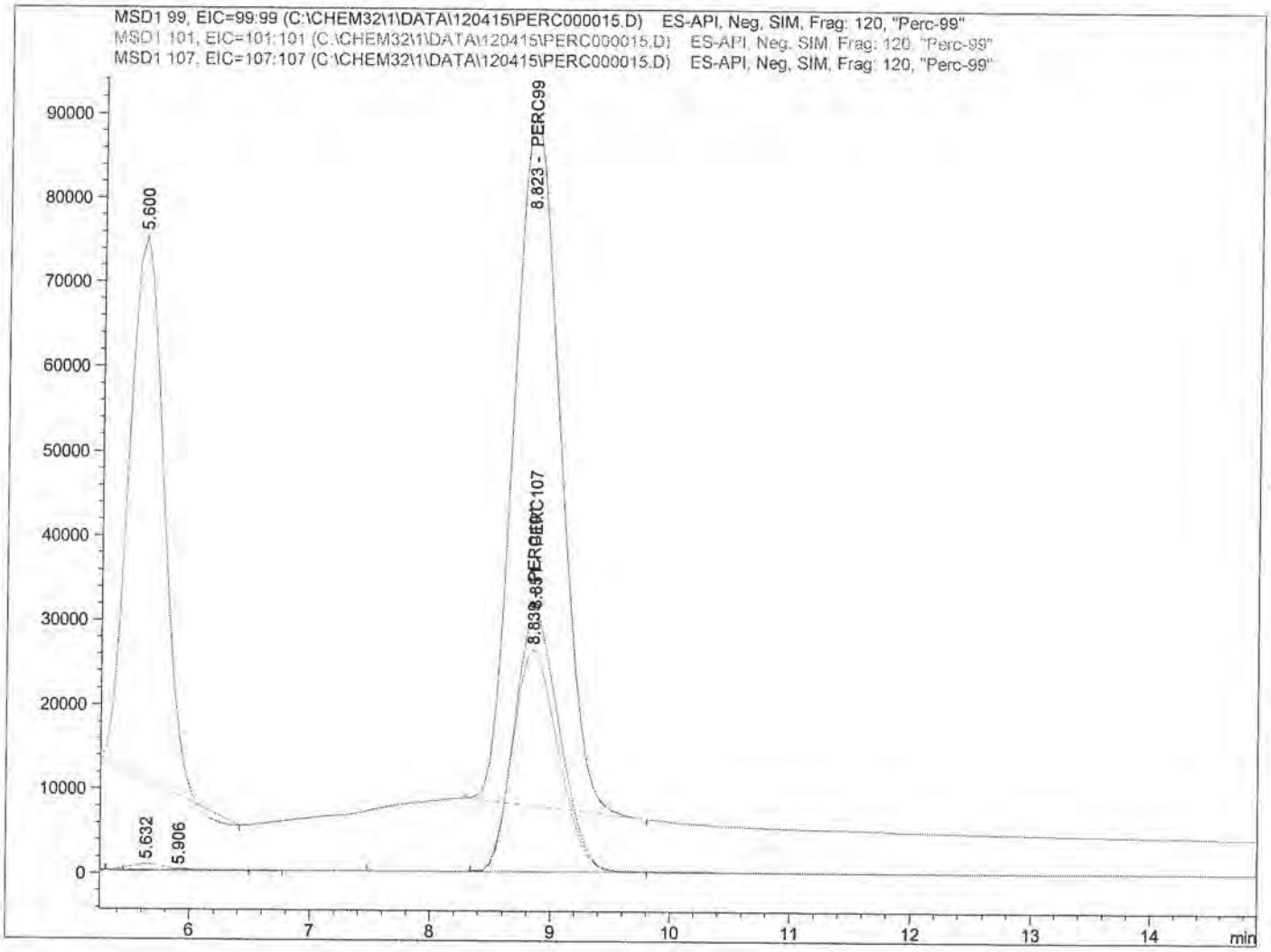

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Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/5/2015 12:22:34 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000015.D
Sample Name: 1511269-07@50

==========

Acq. Operator : Seq. Line : 15
Acq. Instrument : Instrument 1 Location : Vial 10
Injection Date : 12/4/2015 7:15:36 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 12:23:37 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.823	BBA	1	2.17249e6	8.48638e-1	11.58889		PERC99

Totals without ISTD(s) : 11.58889

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.839	BBA	1	6.89596e5	2.60545	11.29374		PERC101

Totals without ISTD(s) : 11.29374

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.851	BBA I	1	7.95443e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

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*** End of Report ***

217249 / 795443 / 1.17836 x 5 = 11.58886048 x 50 = 579.44

Data File C:\CHEM32\1\DATA\120415\PERC000016.D
Sample Name: 1511269-08@10

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/4/2015 7:33:28 PM

Seq. Line : 16
Location : Vial 11
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/7/2015 10:17:33 AM
(modified after loading)

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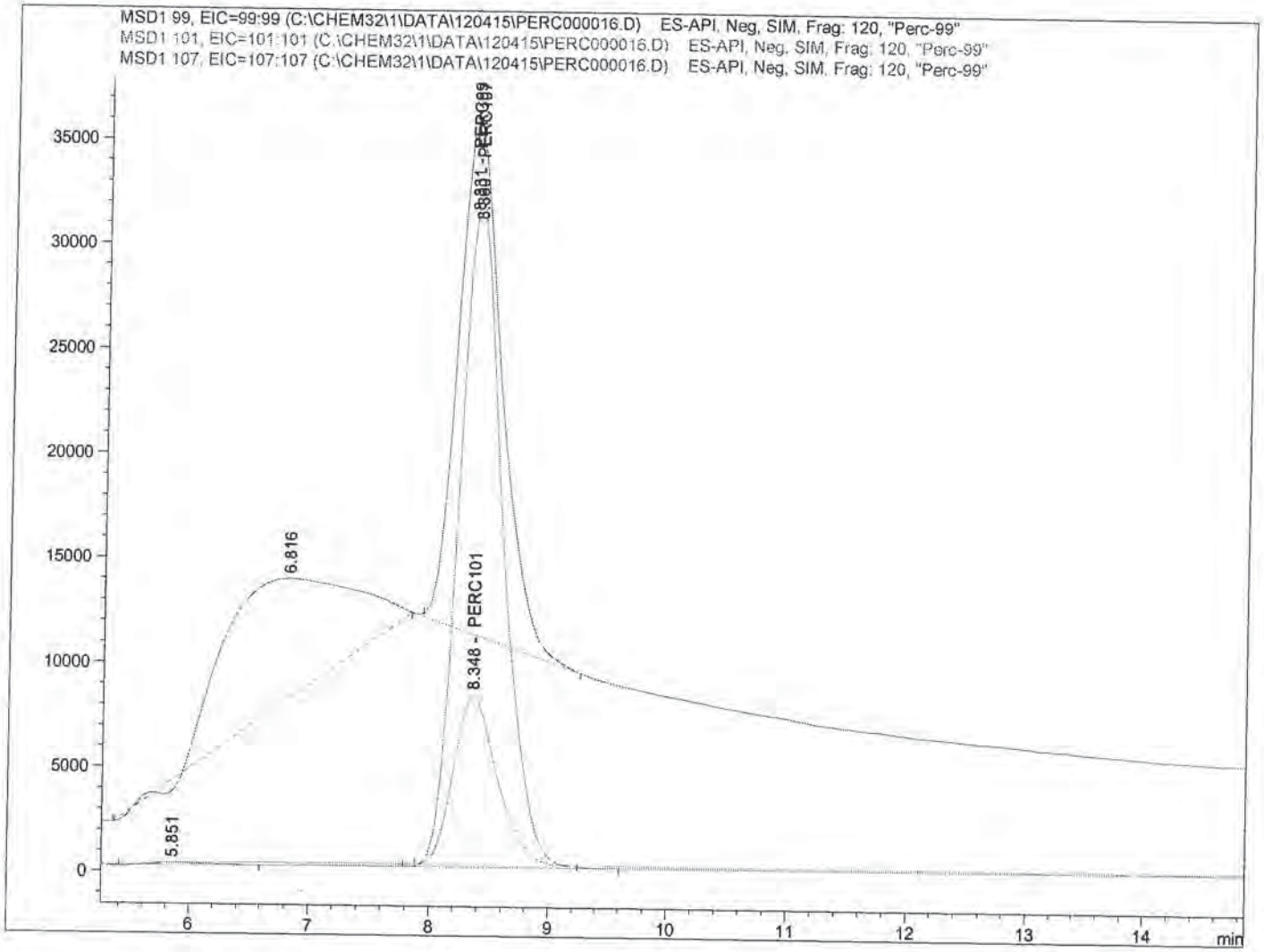

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Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/7/2015 10:16:40 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

RW
12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000016.D
Sample Name: 1511269-08@10

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/4/2015 7:33:28 PM

Seq. Line : 16
Location : Vial 11
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/7/2015 10:17:33 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.331	BBA	1	6.18903e5	8.48638e-1	3.24255		PERC99

Totals without ISTD(s) : 3.24255

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.348	BBA	1	2.04505e5	2.60545	3.28949		PERC101

Totals without ISTD(s) : 3.28949

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.360	BBA I	1	8.09895e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000023.D
Sample Name: 1511269-04

==========

Acq. Operator : Seq. Line : 23
Acq. Instrument : Instrument 1 Location : Vial 18
Injection Date : 12/4/2015 9:38:16 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 3:58:10 PM
(modified after loading)

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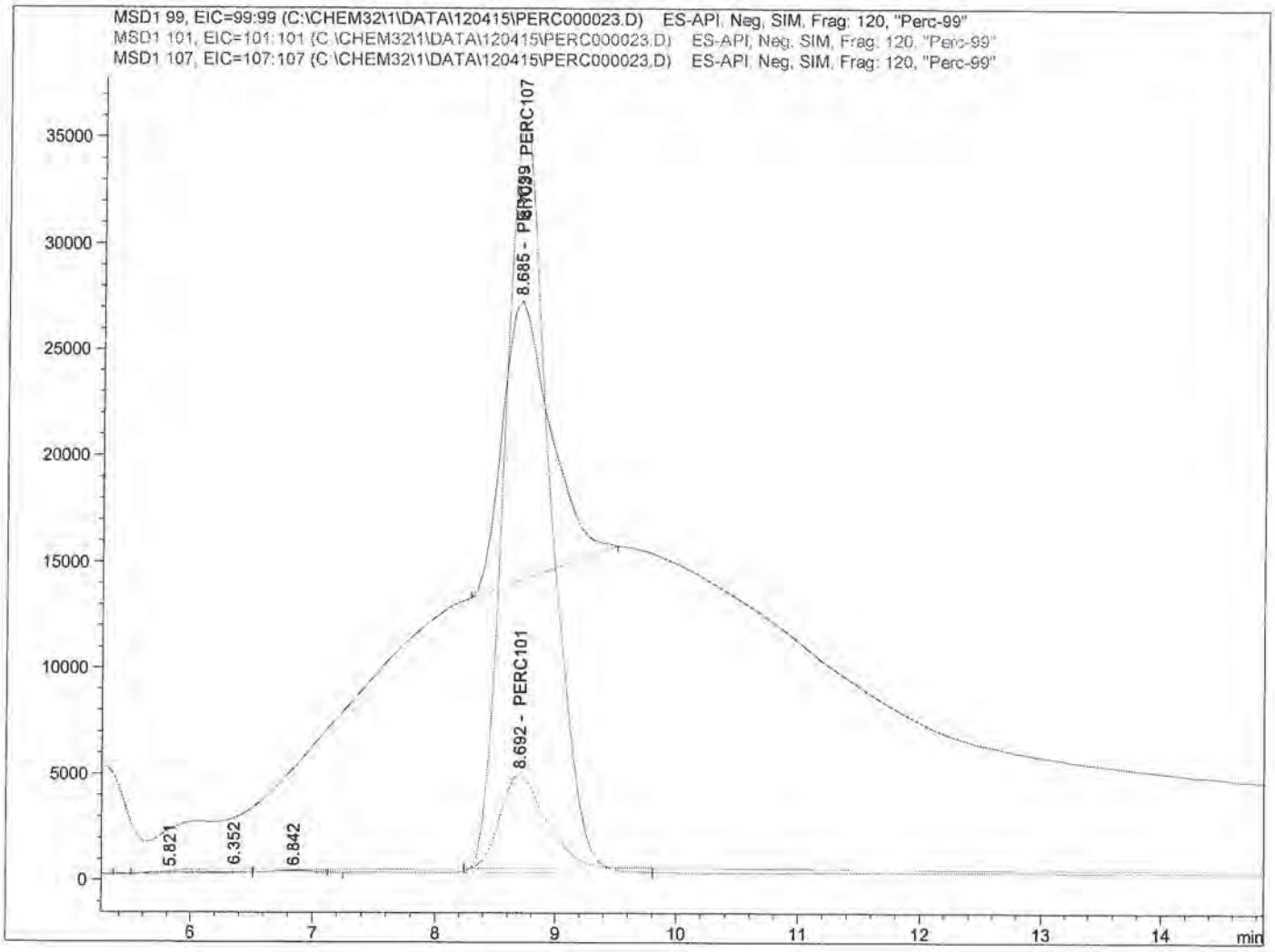

SP
12/9/15

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/5/2015 1:46:13 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

Pond 12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000023.D
Sample Name: 1511269-04

==========

Acq. Operator : Seq. Line : 23
Acq. Instrument : Instrument 1 Location : Vial 18
Injection Date : 12/4/2015 9:38:16 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 3:58:10 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.685	BBA	1	3.60706e5	8.48638e-1	1.63727		PERC99

Totals without ISTD(s) : 1.63727

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.692	BBA	1	1.18492e5	2.60545	1.65125		PERC101

Totals without ISTD(s) : 1.65125

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.703	BBA I	1	9.34815e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000025.D
Sample Name: 1511269-10@5

==========

Acq. Operator : Seq. Line : 25
Acq. Instrument : Instrument 1 Location : Vial 20
Injection Date : 12/4/2015 10:13:54 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:02:19 PM
(modified after loading)

==========

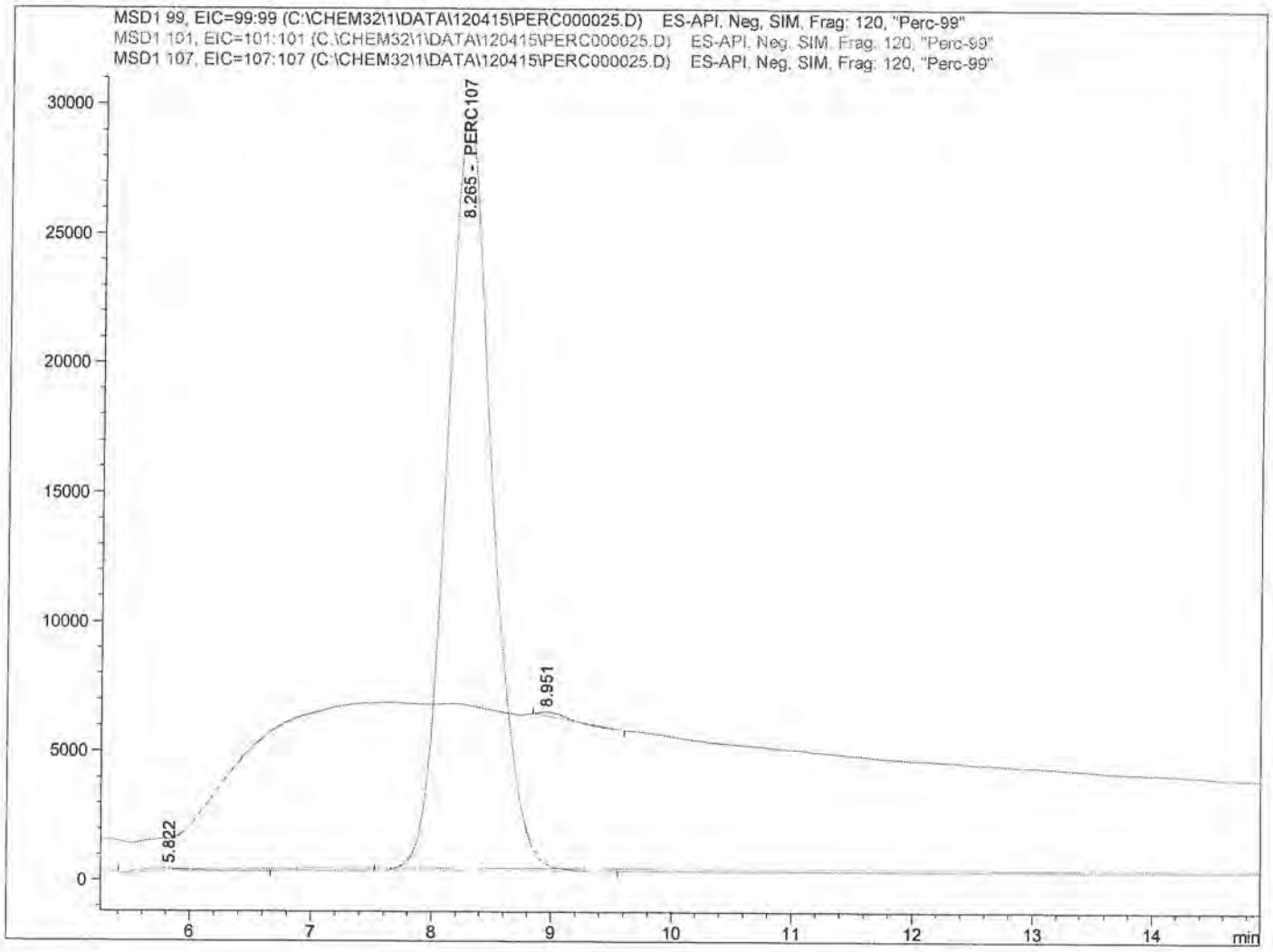

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Internal Standard Report

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SP
12/9/15

Sorted By : Signal
Calib. Data Modified : 12/5/2015 4:02:19 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000025.D
Sample Name: 1511269-10@5

==========

Acq. Operator : Seq. Line : 25
Acq. Instrument : Instrument 1 Location : Vial 20
Injection Date : 12/4/2015 10:13:54 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:02:19 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.260		1	-	-	-		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.260		1	-	-	-		PERC101

Totals without ISTD(s) : 0.00000

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.265	BB I	1	7.75288e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000027.D
Sample Name: SEQ-CCV2

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/4/2015 10:49:37 PM

Seq. Line : 27
Location : Vial 3
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:06:17 PM
(modified after loading)

==========

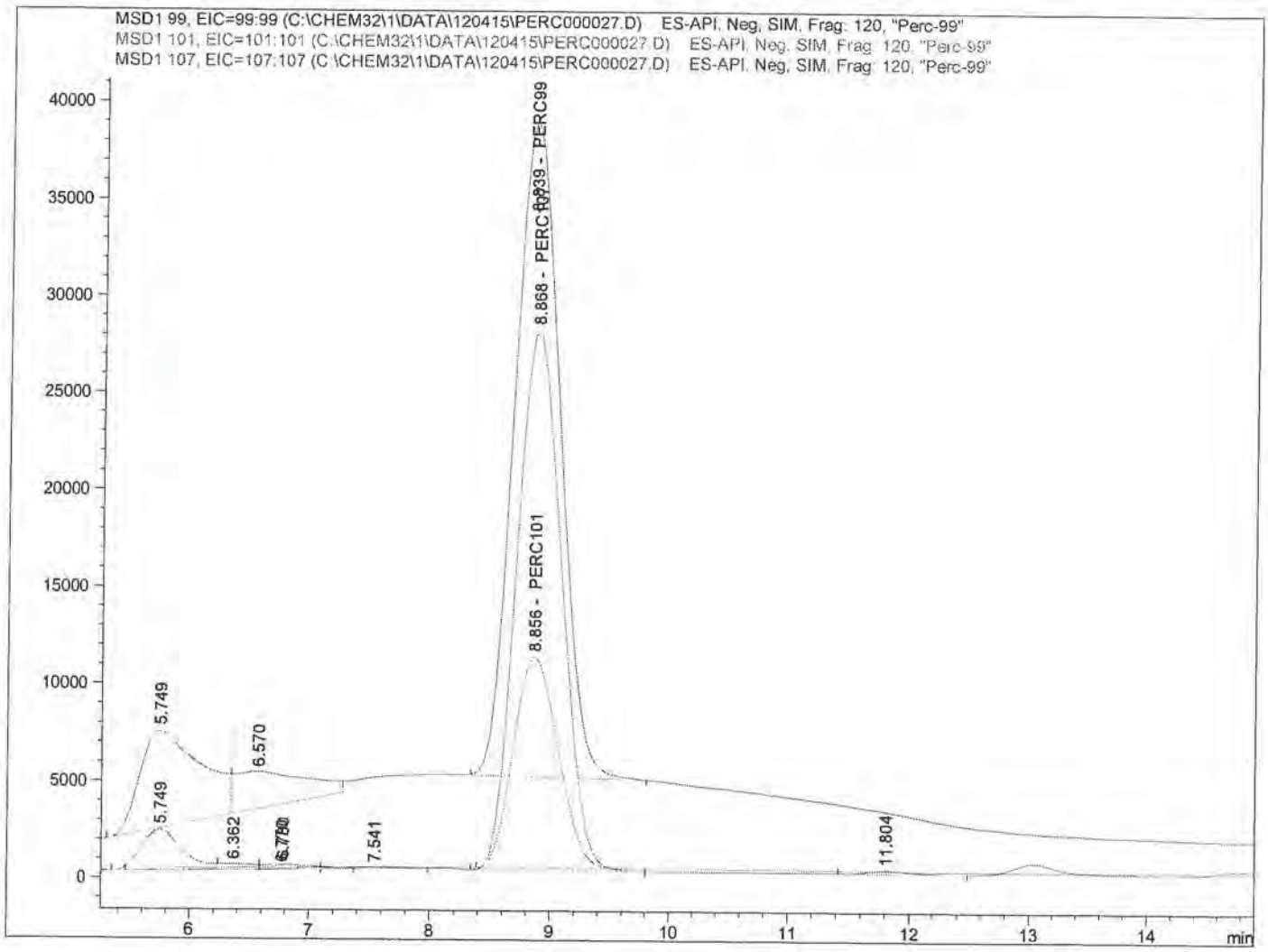

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Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/5/2015 4:05:44 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000027.D
Sample Name: SEQ-CCV2

```
==================================================================
Acq. Operator   :                                  Seq. Line :  27
Acq. Instrument : Instrument 1                      Location : Vial 3
Injection Date  : 12/4/2015 10:49:37 PM                  Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/5/2015 4:06:17 PM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.839	BBA	1	8.91130e5	8.48638e-1	5.21787		PERC99

Totals without ISTD(s) : 5.21787

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.856	BBA	1	2.84917e5	2.60545	5.12188		PERC101

Totals without ISTD(s) : 5.12188

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.868	VBA I	1	7.24671e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000028.D
Sample Name: SEQ-LCV3

==========

Acq. Operator : Seq. Line : 28
Acq. Instrument : Instrument 1 Location : Vial 4
Injection Date : 12/4/2015 11:07:26 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:06:17 PM
(modified after loading)

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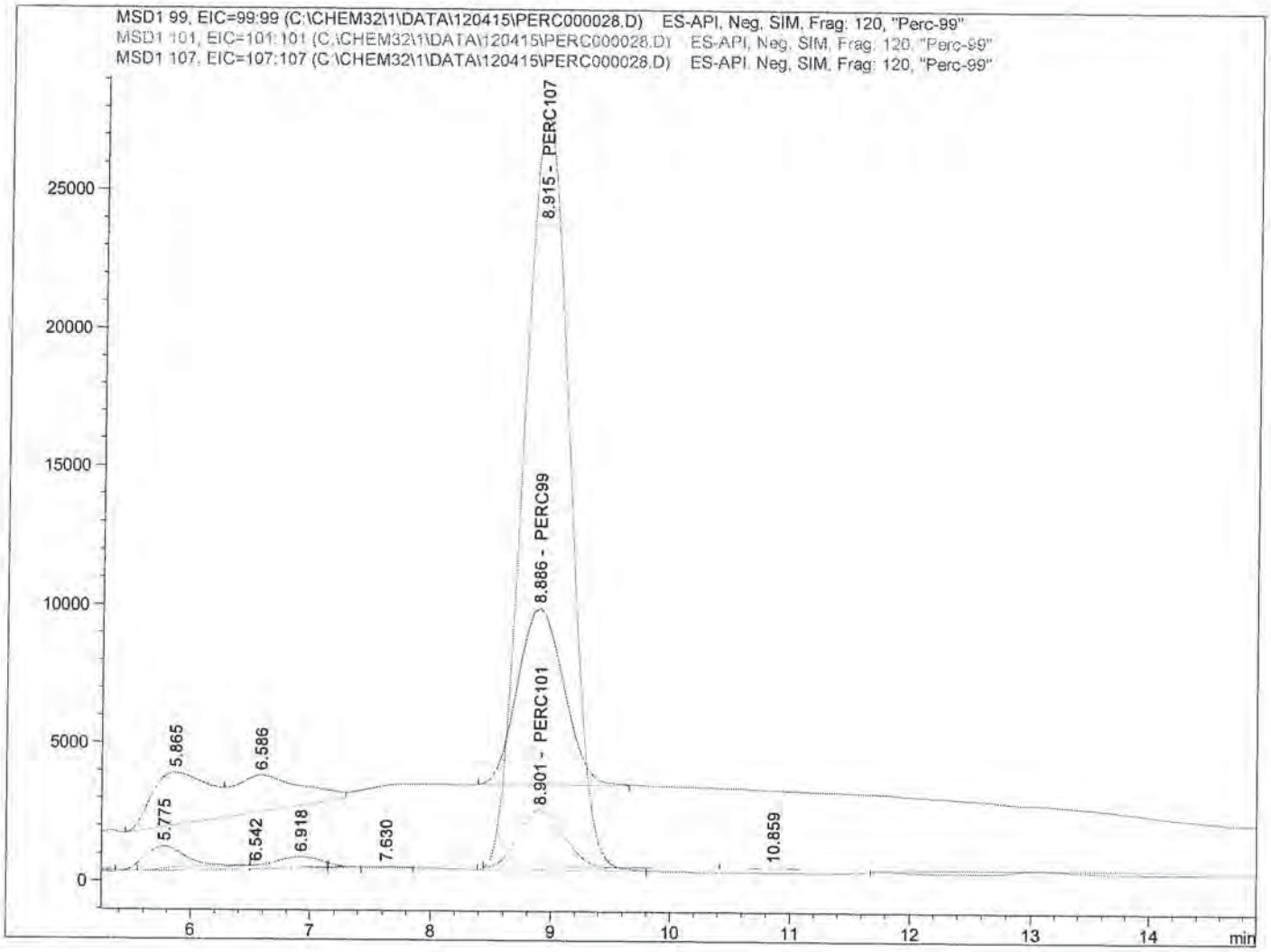

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Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/5/2015 4:05:44 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000028.D
Sample Name: SEQ-LCV3

==========

Acq. Operator : Seq. Line : 28
Acq. Instrument : Instrument 1 Location : Vial 4
Injection Date : 12/4/2015 11:07:26 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:06:17 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.886	BB	1	1.73164e5	8.48638e-1	1.01082		PERC99

Totals without ISTD(s) : 1.01082

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.901	BBA	1	5.52206e4	2.60545	9.89645e-1		PERC101

Totals without ISTD(s) : 9.89645e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.915	BBA I	1	7.26899e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000029.D
Sample Name: SEQ-LCV4

==========

Acq. Operator : Seq. Line : 29
Acq. Instrument : Instrument 1 Location : Vial 83
Injection Date : 12/4/2015 11:25:18 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:06:17 PM
(modified after loading)

==========

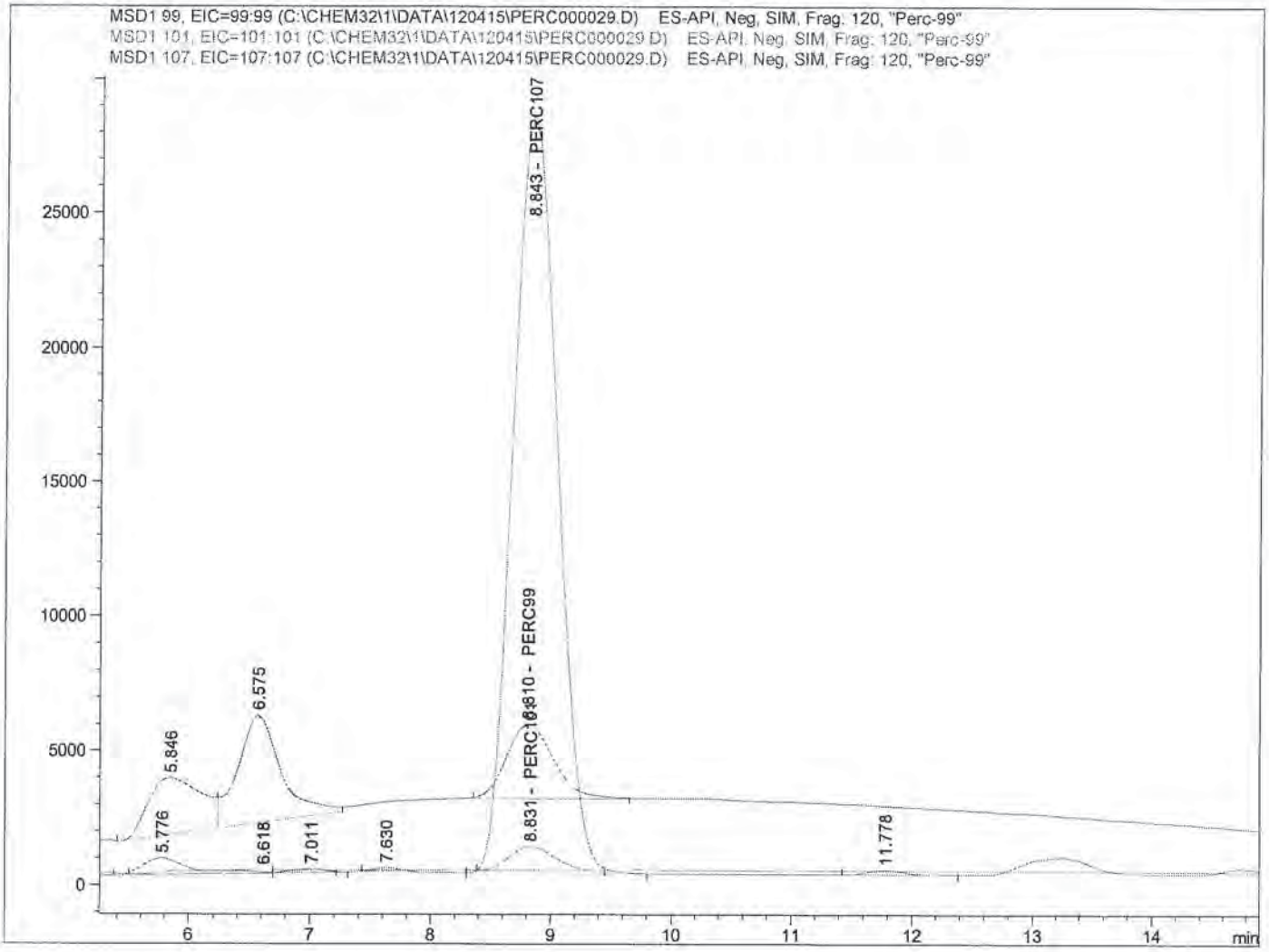

==========

Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : 12/5/2015 4:05:44 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-7-15

SP
12/9/15

Data File C:\CHEM32\1\DATA\120415\PERC000029.D
Sample Name: SEQ-LCV4

```
==================================================================
Acq. Operator   :                                  Seq. Line :  29
Acq. Instrument : Instrument 1                      Location : Vial 83
Injection Date  : 12/4/2015 11:25:18 PM                 Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/5/2015 4:06:17 PM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.810	BB	1	7.61508e4	8.48638e-1	4.41808e-1		PERC99

Totals without ISTD(s) : 4.41808e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.831	VV	1	2.25169e4	2.60545	4.01077e-1		PERC101

Totals without ISTD(s) : 4.01077e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.843	VBA I	1	7.31364e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000030.D
Sample Name: 1511269-11@5

==========

Acq. Operator : Seq. Line : 30
Acq. Instrument : Instrument 1 Location : Vial 21
Injection Date : 12/4/2015 11:43:10 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:08:08 PM
(modified after loading)

==========

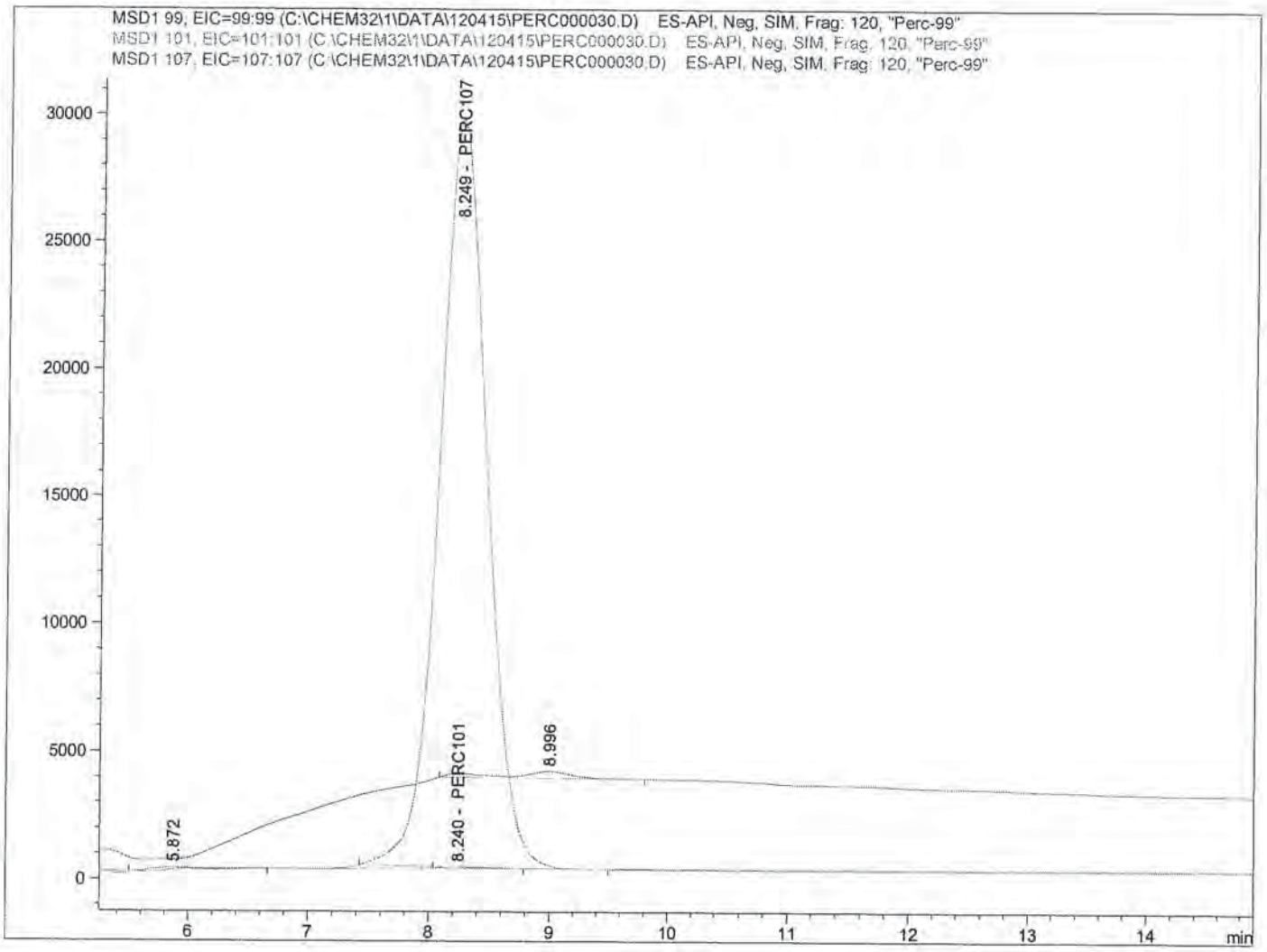

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : 12/5/2015 4:08:08 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000030.D
Sample Name: 1511269-11@5

==========

Acq. Operator : Seq. Line : 30
Acq. Instrument : Instrument 1 Location : Vial 21
Injection Date : 12/4/2015 11:43:10 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:08:08 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.250		1	-	-	-		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.240	BV	1	1125.18457	2.60545	1.81465e-2		PERC101

Totals without ISTD(s) : 1.81465e-2

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.249	BB I	1	8.07759e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000031.D
Sample Name: 1511269-12@5

Acq. Operator	:	Seq. Line	: 31
Acq. Instrument	: Instrument 1	Location	: Vial 22
Injection Date	: 12/5/2015 12:00:59 AM	Inj	: 1
		Inj Volume	: 100.0 µl
Acq. Method	: C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M		
Last changed	: 12/4/2015 2:39:26 PM		
Analysis Method	: C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M		
Last changed	: 12/5/2015 4:08:08 PM (modified after loading)		

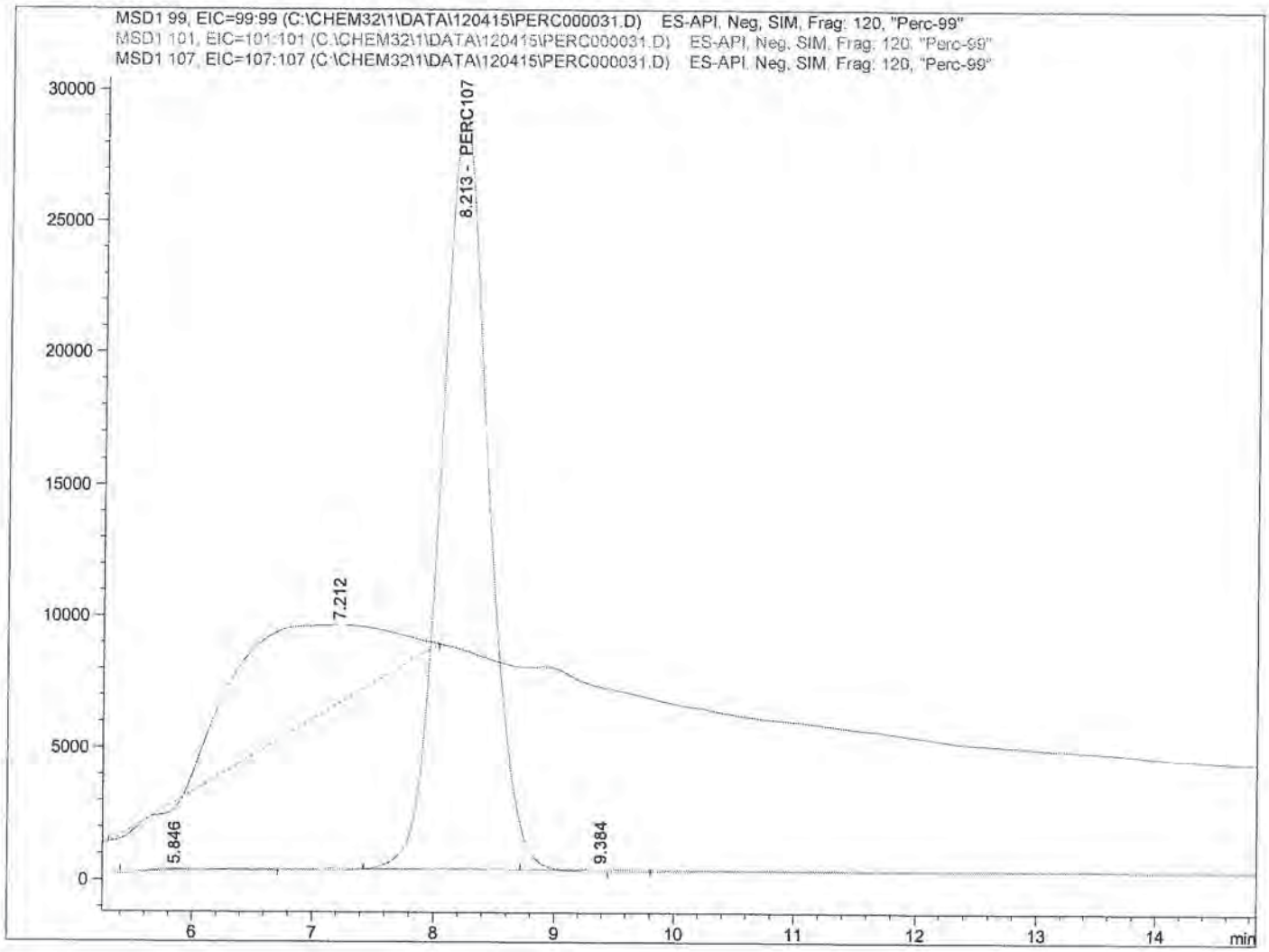

Internal Standard Report

Sorted By	:	Signal
Calib. Data Modified	:	12/5/2015 4:08:08 PM
Multiplier	:	1.0000
Dilution	:	1.0000

Do not use Multiplier & Dilution Factor with ISTDs

Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

RBW 12-7-15

SP 12/9/15

Data File C:\CHEM32\1\DATA\120415\PERC000031.D
Sample Name: 1511269-12@5

==========

Acq. Operator : Seq. Line : 31
Acq. Instrument : Instrument 1 Location : Vial 22
Injection Date : 12/5/2015 12:00:59 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:08:08 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.250		1	-	-	-		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.250		1	-	-	-		PERC101

Totals without ISTD(s) : 0.00000

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.213	BB I	1	7.76843e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000033.D
Sample Name: 1511269-14@5

==========

Acq. Operator : Seq. Line : 33
Acq. Instrument : Instrument 1 Location : Vial 24
Injection Date : 12/5/2015 12:36:35 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:09:23 PM
(modified after loading)

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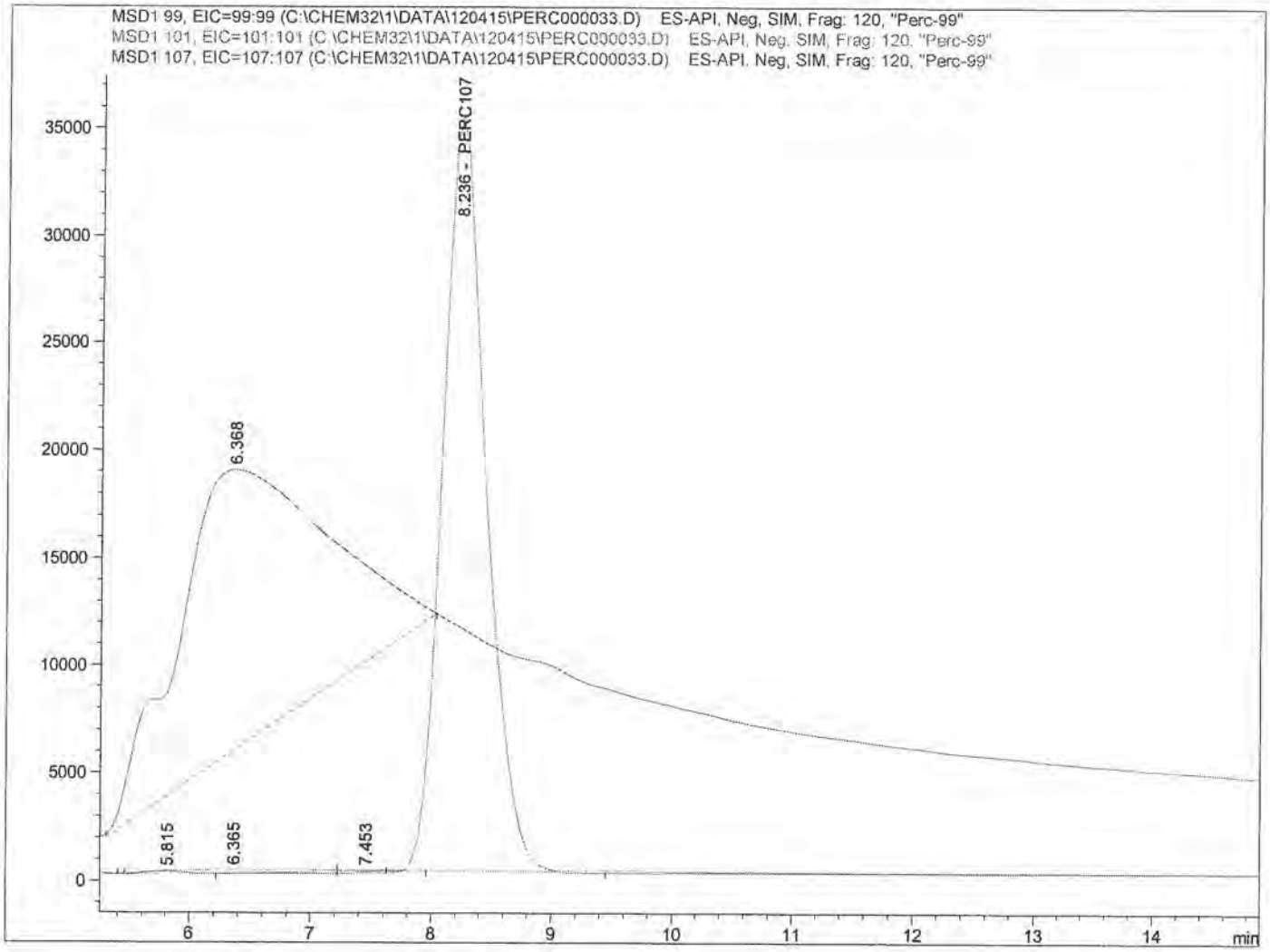

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : 12/5/2015 4:09:23 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

Rpd 12-7-15

SP 12/9/15

Data File C:\CHEM32\1\DATA\120415\PERC000033.D
Sample Name: 1511269-14@5

==========

Acq. Operator : Seq. Line : 33
Acq. Instrument : Instrument 1 Location : Vial 24
Injection Date : 12/5/2015 12:36:35 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:09:23 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.180		1	-	-	-		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.180		1	-	-	-		PERC101

Totals without ISTD(s) : 0.00000

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.236	BB I	1	8.97185e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000034.D
Sample Name: 1511269-15@5

==========

Acq. Operator	:	Seq. Line	: 34
Acq. Instrument	: Instrument 1	Location	: Vial 25
Injection Date	: 12/5/2015 12:54:26 AM	Inj	: 1
		Inj Volume	: 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:09:23 PM
(modified after loading)

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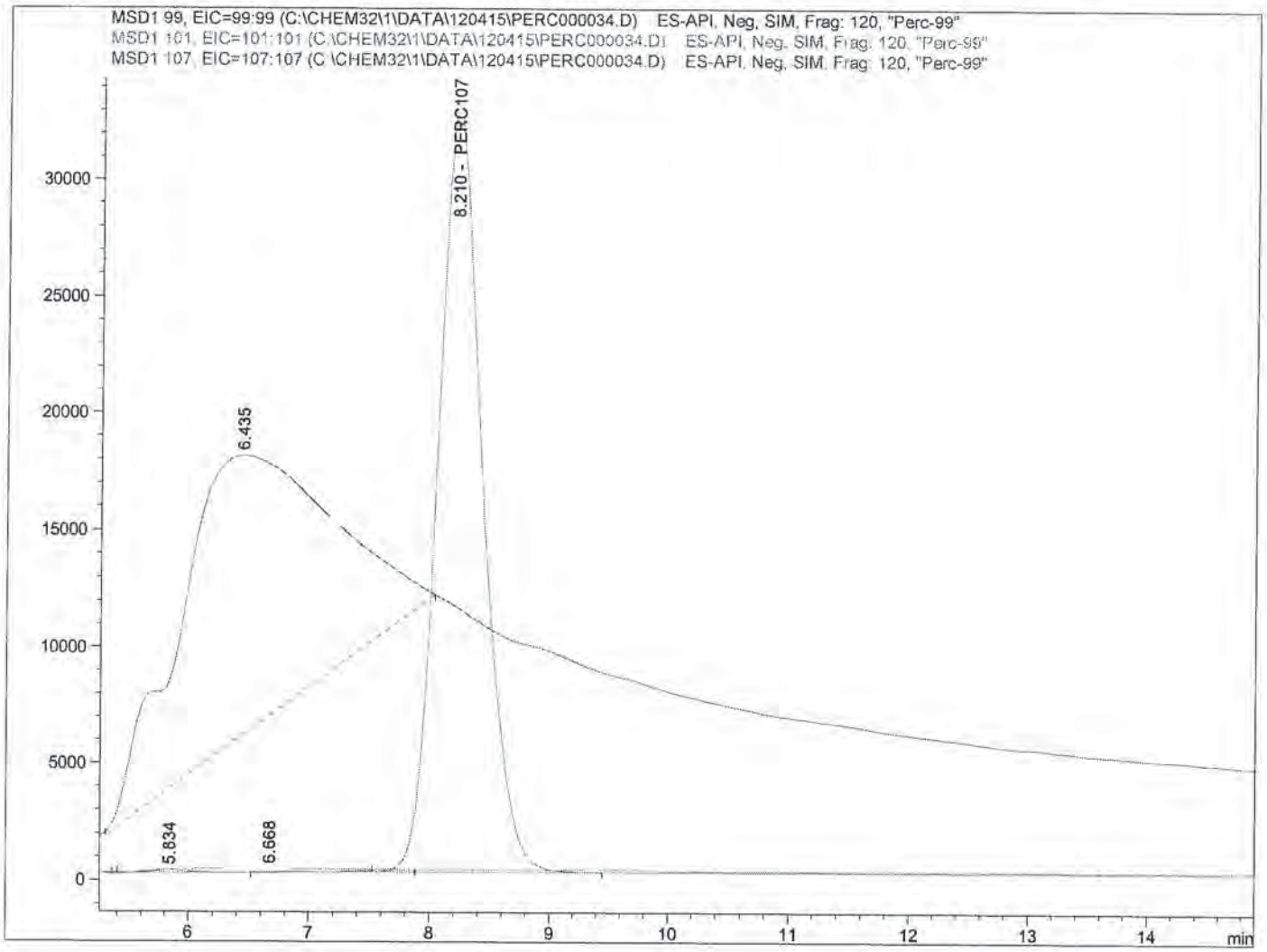

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : 12/5/2015 4:09:23 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

RPW 12-7-15

SP 12/9/15

Data File C:\CHEM32\1\DATA\120415\PERC000034.D
Sample Name: 1511269-15@5

==========

Acq. Operator : Seq. Line : 34
Acq. Instrument : Instrument 1 Location : Vial 25
Injection Date : 12/5/2015 12:54:26 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:09:23 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.180		1	-	-	-		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.180		1	-	-	-		PERC101

Totals without ISTD(s) : 0.00000

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.210	BB I	1	8.46581e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000035.D
Sample Name: 1511269-16@5

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/5/2015 1:12:17 AM

Seq. Line : 35
Location : Vial 26
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:09:23 PM
(modified after loading)

==========

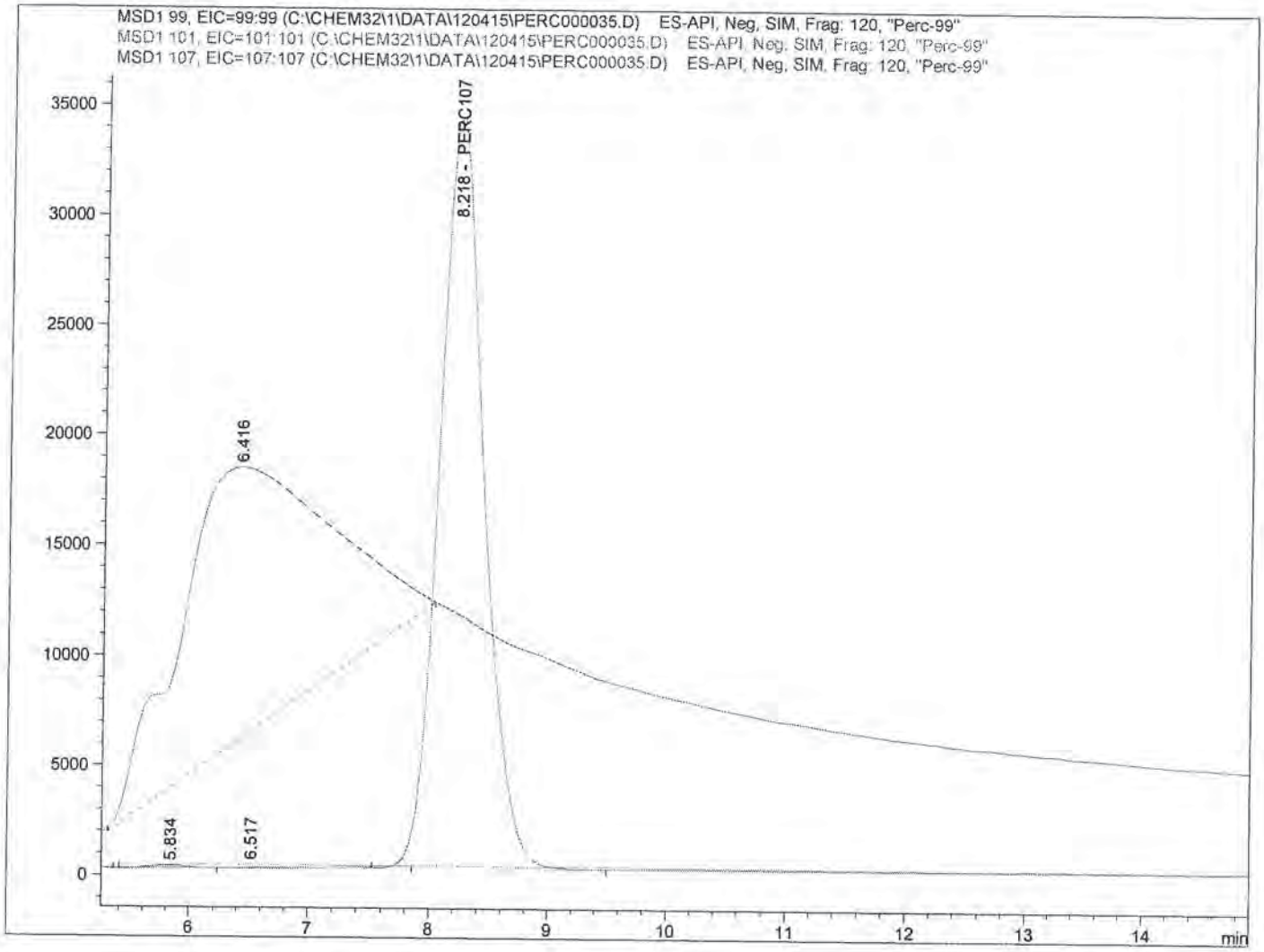

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : 12/5/2015 4:09:23 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000035.D
Sample Name: 1511269-16@5

==========

Acq. Operator : Seq. Line : 35
Acq. Instrument : Instrument 1 Location : Vial 26
Injection Date : 12/5/2015 1:12:17 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:09:23 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.180		1	-	-	-		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.180		1	-	-	-		PERC101

Totals without ISTD(s) : 0.00000

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.218	BB I	1	8.90641e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000036.D
Sample Name: 1511269-17@5

==========

Acq. Operator : Seq. Line : 36
Acq. Instrument : Instrument 1 Location : Vial 27
Injection Date : 12/5/2015 1:30:12 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:09:23 PM
(modified after loading)

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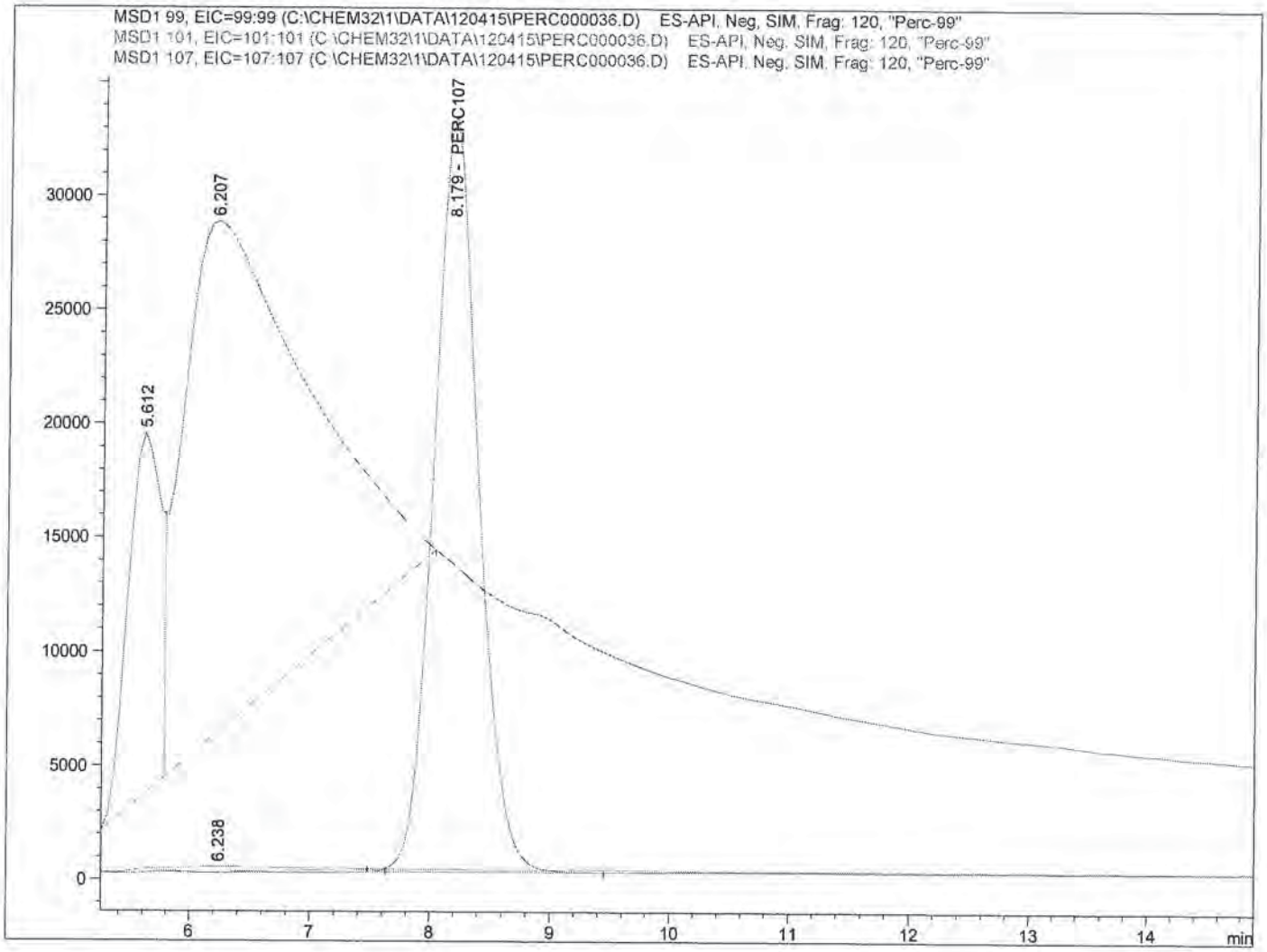

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Internal Standard Report

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SP
12/9/15

Sorted By : Signal
Calib. Data Modified : 12/5/2015 4:09:23 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000036.D
Sample Name: 1511269-17@5

==========

Acq. Operator : Seq. Line : 36
Acq. Instrument : Instrument 1 Location : Vial 27
Injection Date : 12/5/2015 1:30:12 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:09:23 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.180		1	-	-	-		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.180		1	-	-	-		PERC101

Totals without ISTD(s) : 0.00000

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.179	BB I	1	8.63099e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000037.D
Sample Name: 1511269-18@5

==========

Acq. Operator : Seq. Line : 37
Acq. Instrument : Instrument 1 Location : Vial 28
Injection Date : 12/5/2015 1:47:57 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:09:23 PM
(modified after loading)

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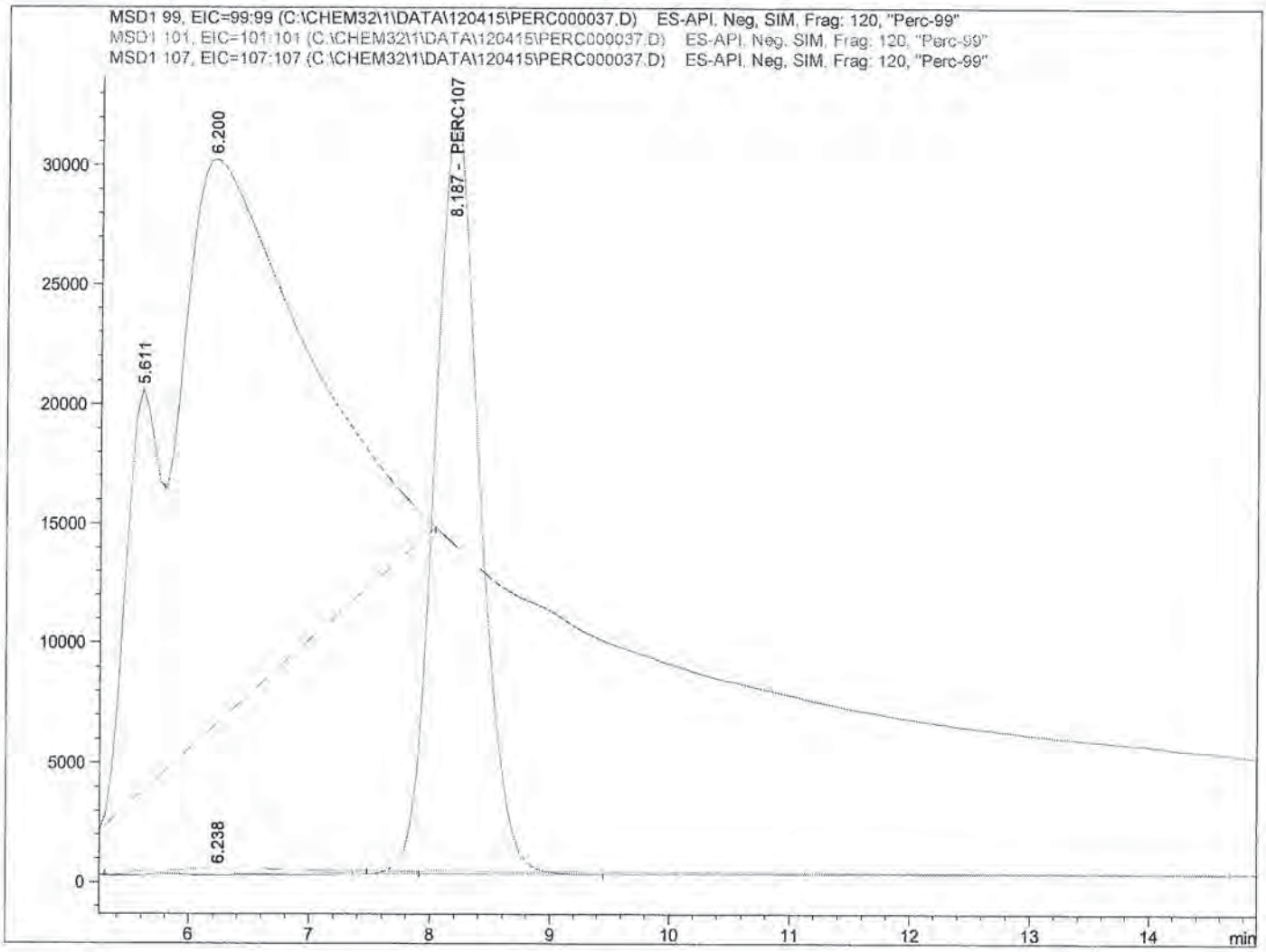

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : 12/5/2015 4:09:23 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000037.D
Sample Name: 1511269-18@5

==========

Acq. Operator : Seq. Line : 37
Acq. Instrument : Instrument 1 Location : Vial 28
Injection Date : 12/5/2015 1:47:57 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:09:23 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.180		1	-	-	-		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.180		1	-	-	-		PERC101

Totals without ISTD(s) : 0.00000

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.187	BB I	1	8.25938e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000038.D
Sample Name: 1511269-19

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/5/2015 2:05:50 AM

Seq. Line : 38
Location : Vial 29
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:12:07 PM
(modified after loading)

==========

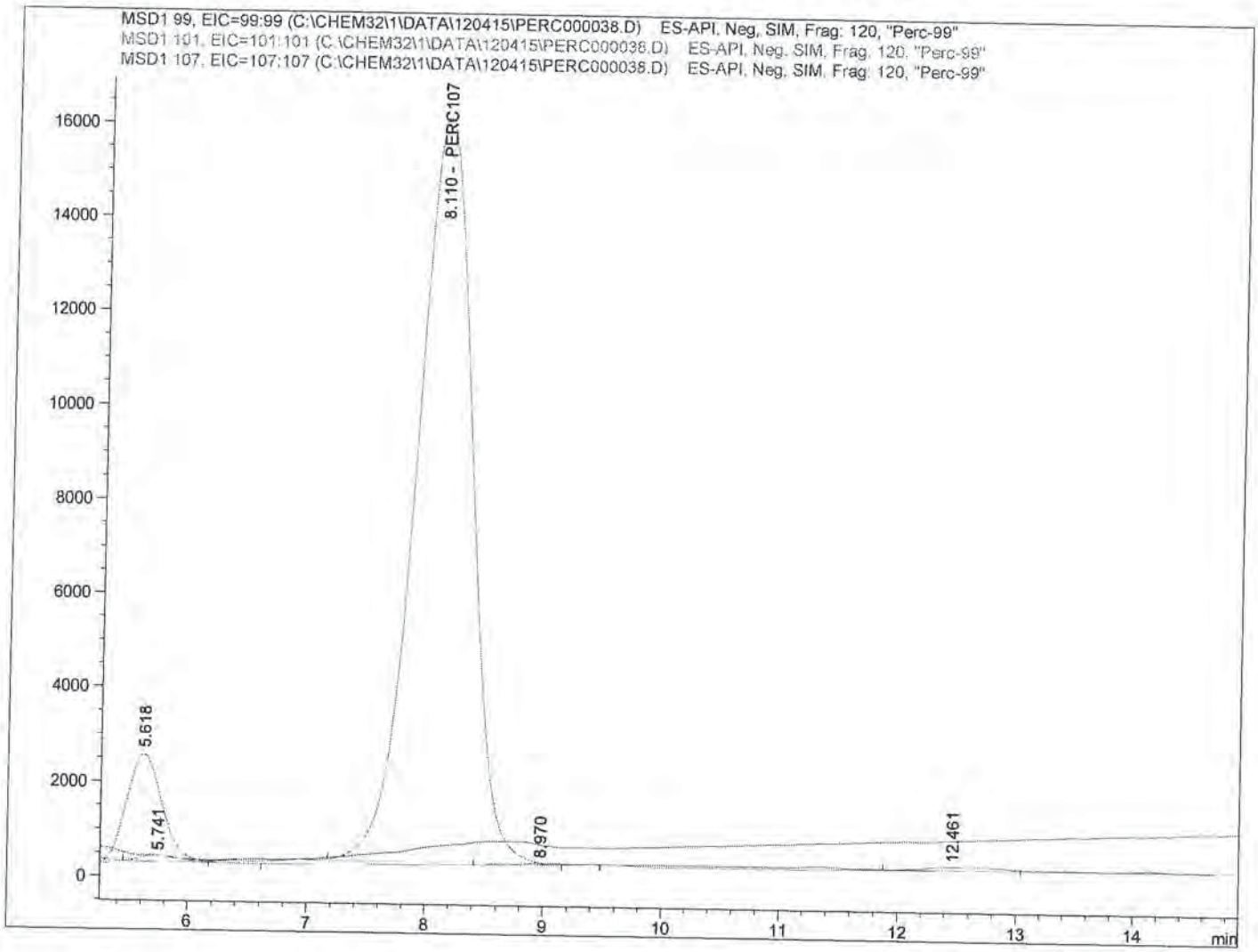

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/5/2015 4:09:23 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000038.D
Sample Name: 1511269-19

==========

Acq. Operator : Seq. Line : 38
Acq. Instrument : Instrument 1 Location : Vial 29
Injection Date : 12/5/2015 2:05:50 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:12:07 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.180		1	-	-	-		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.180		1	-	-	-		PERC101

Totals without ISTD(s) : 0.00000

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.110	BV I	1	5.16344e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000041.D
Sample Name: SEQ-CCV3

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/5/2015 2:59:27 AM

Seq. Line : 41
Location : Vial 3
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:15:23 PM
(modified after loading)

==========

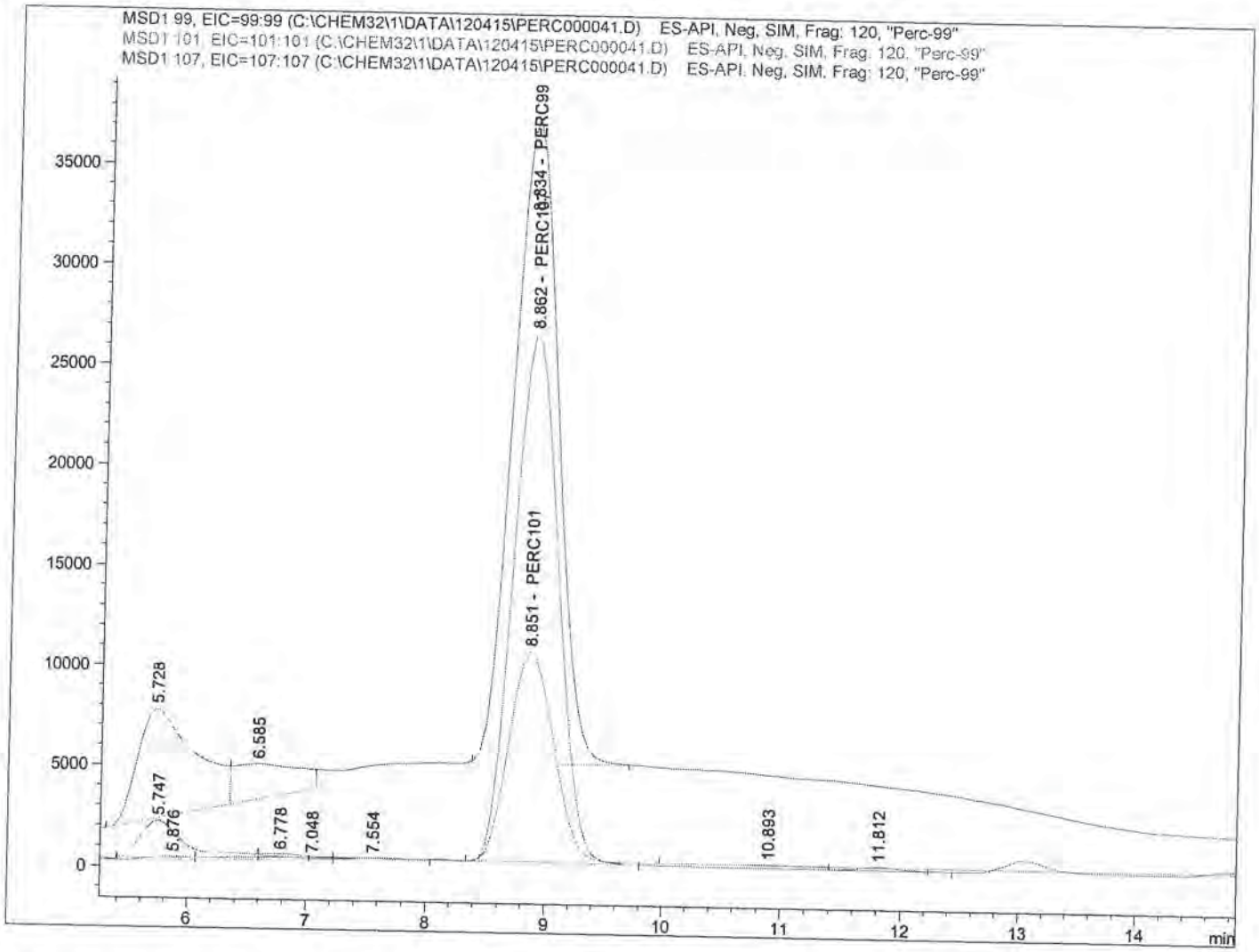

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/5/2015 4:14:53 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000041.D
Sample Name: SEQ-CCV3

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/5/2015 2:59:27 AM

Seq. Line : 41
Location : Vial 3
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:15:23 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.834	BB	1	8.41163e5	8.48638e-1	5.19588		PERC99

Totals without ISTD(s) : 5.19588

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.851	BBA	1	2.72706e5	2.60545	5.17170		PERC101

Totals without ISTD(s) : 5.17170

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.862	VBA I	1	6.86932e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

841163/686932/1.17836x5 = 5.19587

Data File C:\CHEM32\1\DATA\120415\PERC000042.D
Sample Name: SEQ-LCV5

==========

Acq. Operator : Seq. Line : 42
Acq. Instrument : Instrument 1 Location : Vial 4
Injection Date : 12/5/2015 3:17:16 AM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:15:23 PM
(modified after loading)

==========

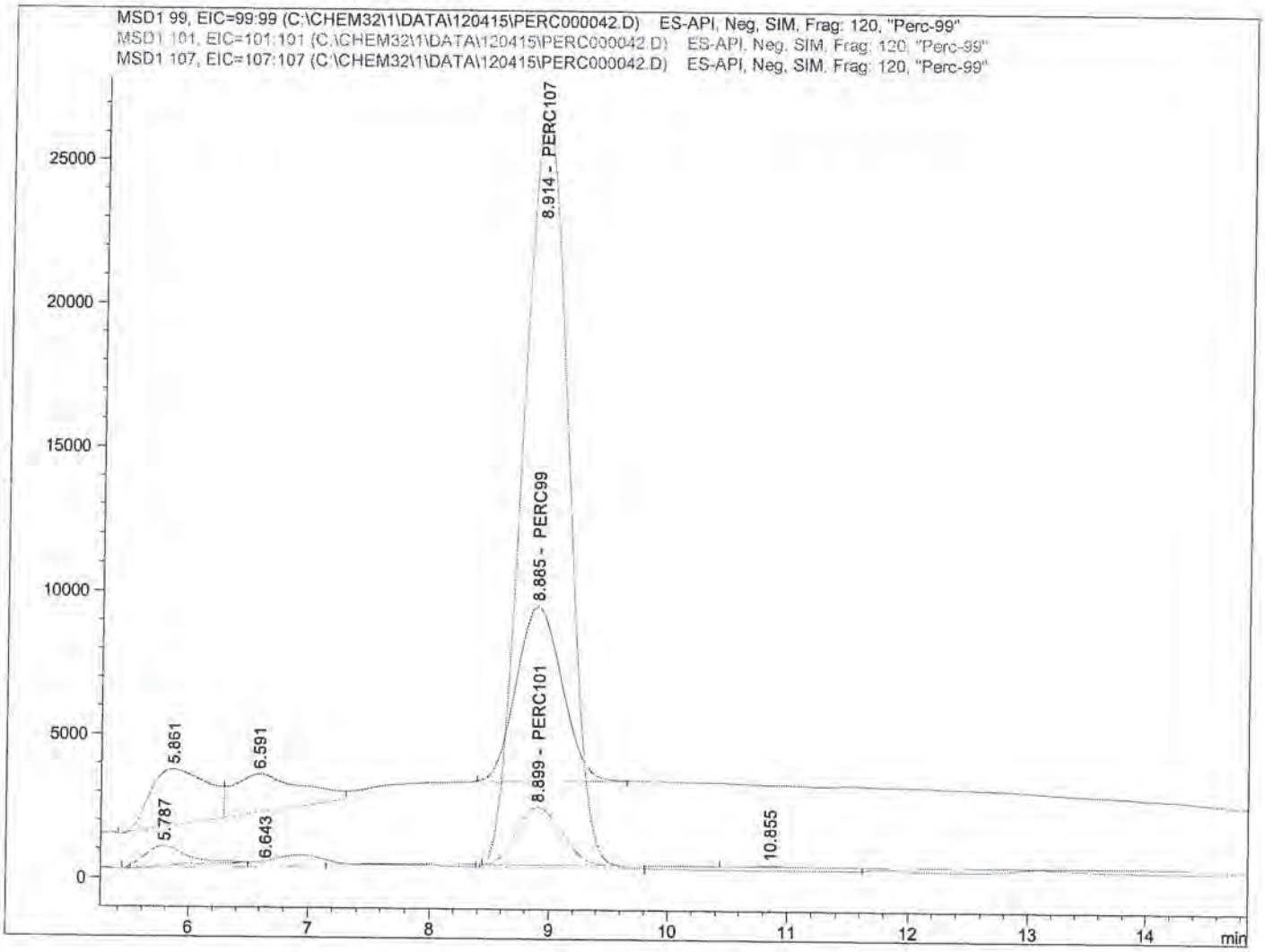

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/5/2015 4:14:53 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000042.D
Sample Name: SEQ-LCV5

==========

Acq. Operator : Seq. Line : 42
Acq. Instrument : Instrument 1 Location : Vial 4
Injection Date : 12/5/2015 3:17:16 AM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:15:23 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.885	BB	1	1.64882e5	8.48638e-1	1.00821		PERC99

Totals without ISTD(s) : 1.00821

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.899	BBA	1	5.29614e4	2.60545	9.94251e-1		PERC101

Totals without ISTD(s) : 9.94251e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.914	BBA I	1	6.93929e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000043.D
Sample Name: SEQ-LCV6

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/5/2015 3:35:04 AM

Seq. Line : 43
Location : Vial 83
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:15:23 PM
(modified after loading)

==========

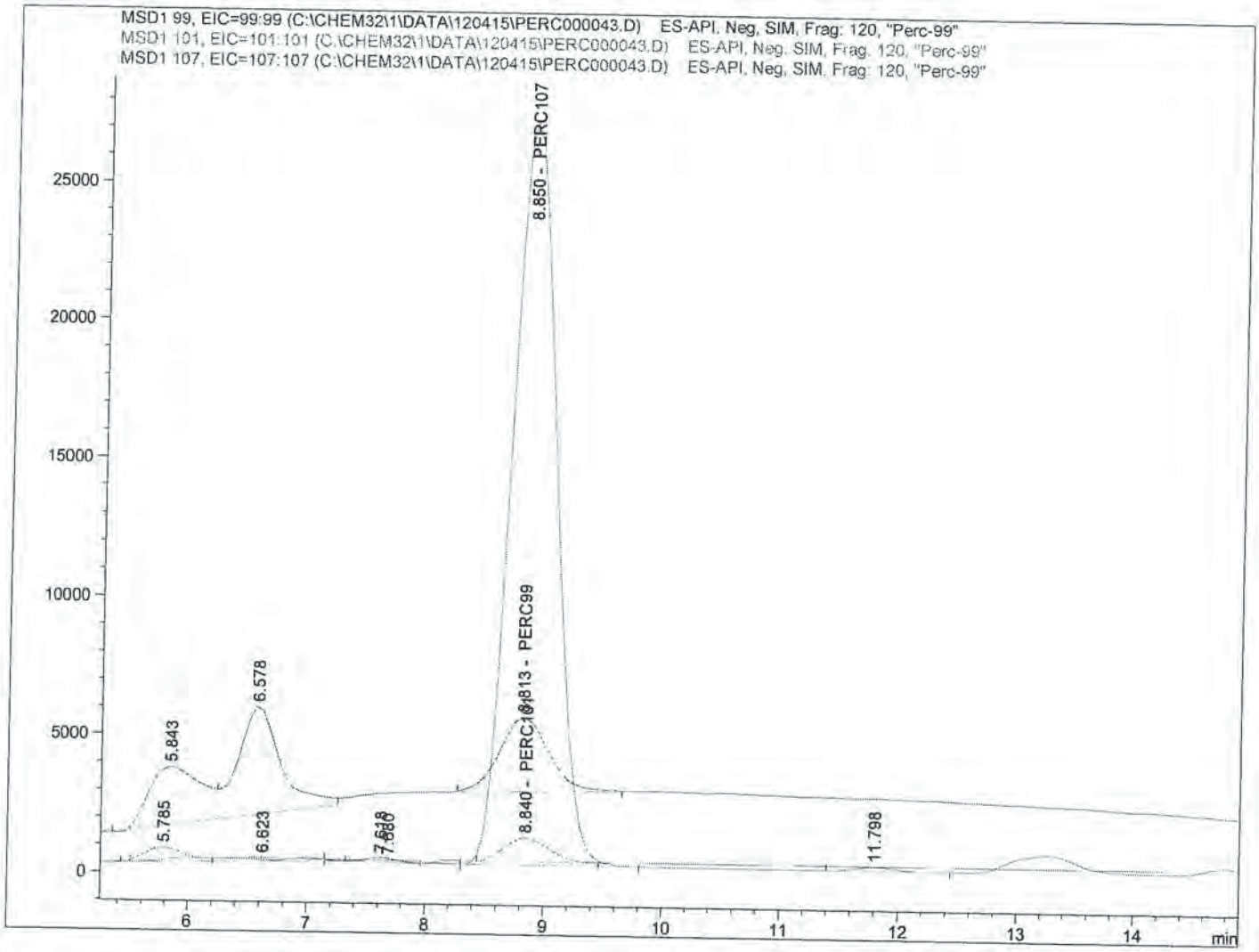

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/5/2015 4:14:53 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000043.D
Sample Name: SEQ-LCV6

```
==========================================================================
Acq. Operator   :                                   Seq. Line :  43
Acq. Instrument : Instrument 1                       Location : Vial 83
Injection Date  : 12/5/2015 3:35:04 AM                    Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/5/2015 4:15:23 PM
                  (modified after loading)
==========================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.813	BB	1	7.77357e4	8.48638e-1	4.73547e-1		PERC99

Totals without ISTD(s) : 4.73547e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.840	BV	1	2.21682e4	2.60545	4.14603e-1		PERC101

Totals without ISTD(s) : 4.14603e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.850	VBA I	1	6.96546e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000044.D
Sample Name: 1511269-21@5

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/5/2015 3:52:57 AM

Seq. Line : 44
Location : Vial 31
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:23:31 PM
(modified after loading)

==========

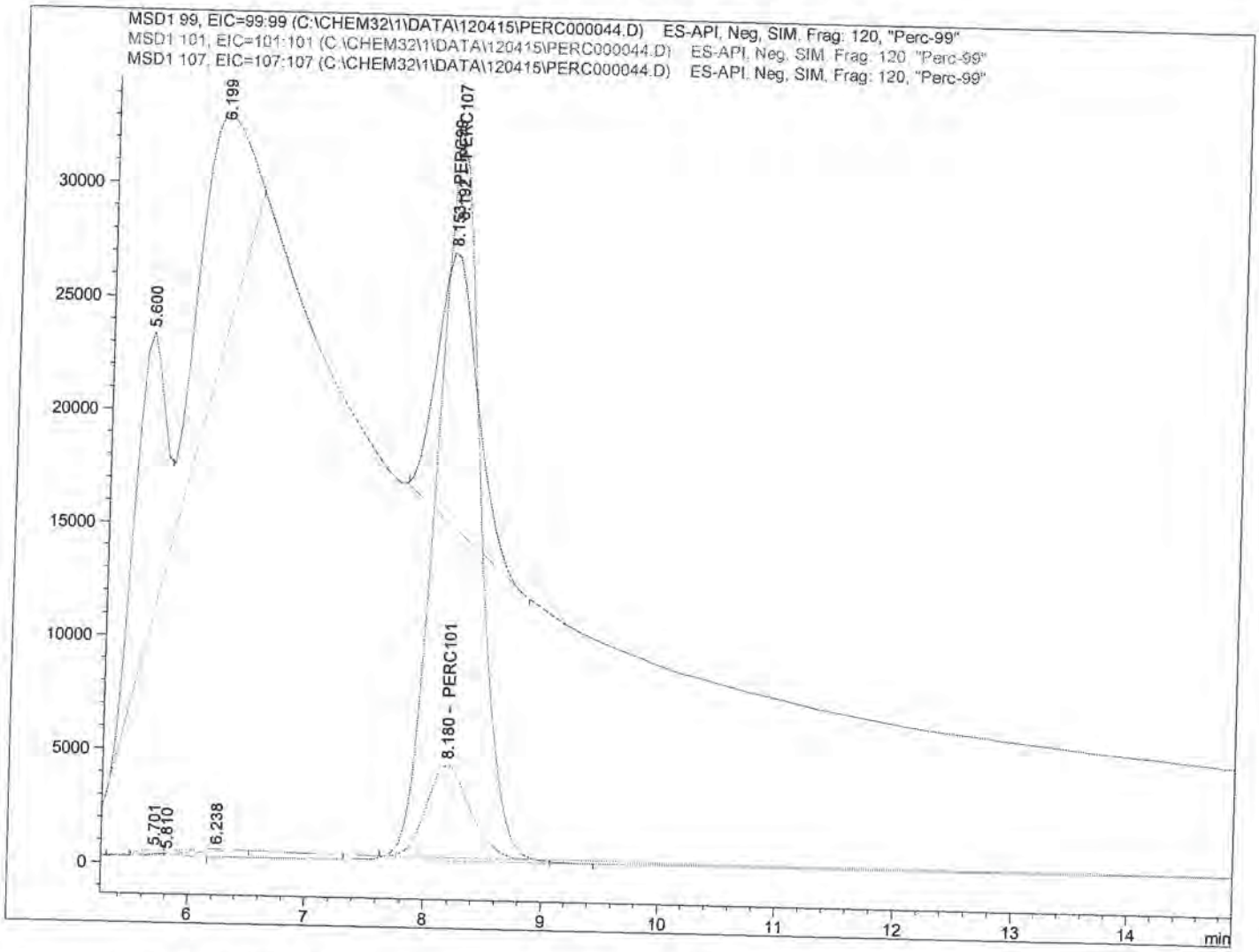

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/5/2015 4:23:07 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000044.D
Sample Name: 1511269-21@5

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/5/2015 3:52:57 AM

Seq. Line : 44
Location : Vial 31
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:23:31 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.153	BBA	1	2.89553e5	8.48638e-1	1.50001		PERC99

Totals without ISTD(s) : 1.50001

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.180	BV	1	1.04770e5	2.60545	1.66634		PERC101

Totals without ISTD(s) : 1.66634

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.192	BB I	1	8.19078e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

289553/89078/1.17836×5 = 1.500012×5 = 7.50006

Data File C:\CHEM32\1\DATA\120415\PERC000050.D
Sample Name: SEQ-CCV4

Acq. Operator	:	Seq. Line	: 50
Acq. Instrument	: Instrument 1	Location	: Vial 3
Injection Date	: 12/5/2015 5:40:05 AM	Inj	: 1
		Inj Volume	: 100.0 µl
Acq. Method	: C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M		
Last changed	: 12/4/2015 2:39:26 PM		
Analysis Method	: C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M		
Last changed	: 12/7/2015 9:30:42 AM (modified after loading)		

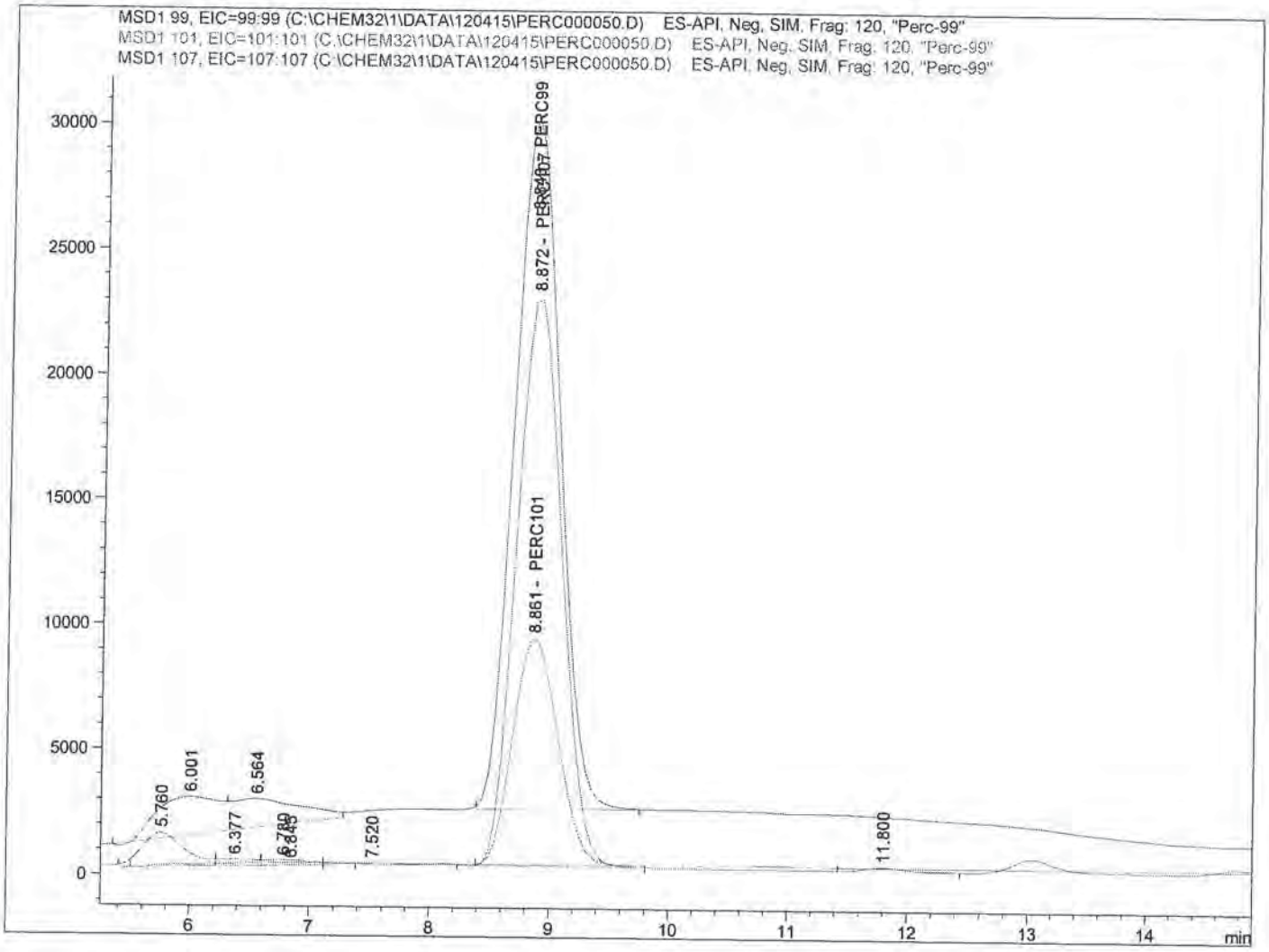

Internal Standard Report

SP
12/9/15

Sorted By	:	Signal
Calib. Data Modified	:	12/7/2015 9:29:59 AM
Multiplier	:	1.0000
Dilution	:	1.0000

Do not use Multiplier & Dilution Factor with ISTDs

12-7-15

Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\120415\PERC000050.D
Sample Name: SEQ-CCV4

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/5/2015 5:40:05 AM

Seq. Line : 50
Location : Vial 3
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/7/2015 9:30:42 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.843	BB	1	7.25443e5	8.48638e-1	5.16361		PERC99

Totals without ISTD(s) : 5.16361

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.861	BBA	1	2.37303e5	2.60545	5.18577		PERC101

Totals without ISTD(s) : 5.18577

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.872	BBA I	1	5.96132e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000051.D
Sample Name: SEQ-LCV7

==========

Acq. Operator : Seq. Line : 51
Acq. Instrument : Instrument 1 Location : Vial 4
Injection Date : 12/5/2015 5:57:52 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/7/2015 9:30:42 AM
(modified after loading)

==========

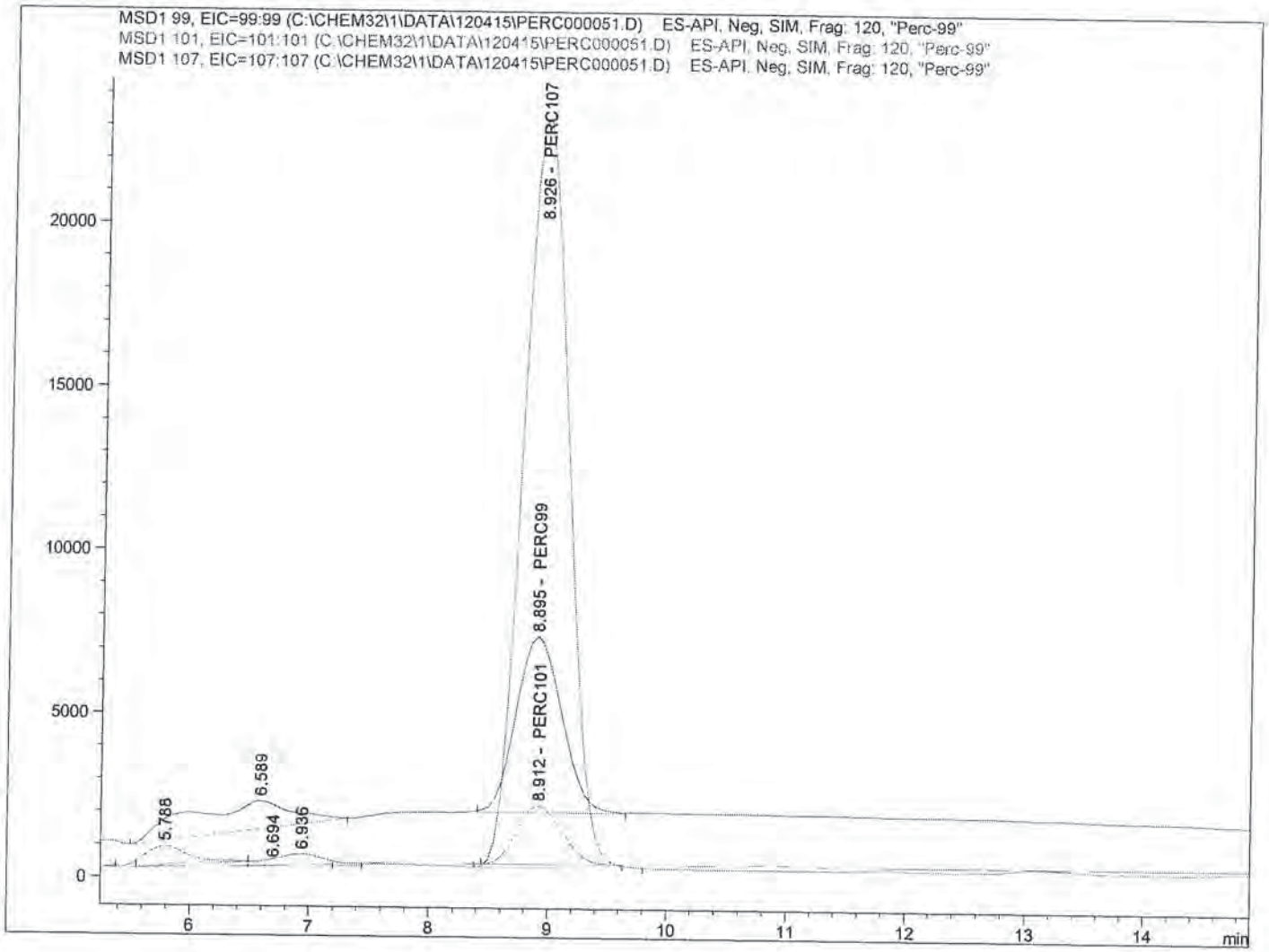

SP
12/9/15

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/7/2015 9:29:59 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

RDW
12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000051.D
Sample Name: SEQ-LCV7

```
==================================================================
Acq. Operator   :                                Seq. Line :  51
Acq. Instrument : Instrument 1                    Location : Vial 4
Injection Date  : 12/5/2015 5:57:52 AM                 Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/7/2015 9:30:42 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.895	BB	1	1.43449e5	8.48638e-1	9.98380e-1		PERC99

Totals without ISTD(s) : 9.98380e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.912	BBA	1	4.67792e4	2.60545	9.99564e-1		PERC101

Totals without ISTD(s) : 9.99564e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.926	BBA I	1	6.09669e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000052.D
Sample Name: SEQ-LCV8

==========

Acq. Operator : Seq. Line : 52
Acq. Instrument : Instrument 1 Location : Vial 83
Injection Date : 12/5/2015 6:15:43 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/7/2015 9:30:42 AM
(modified after loading)

==========

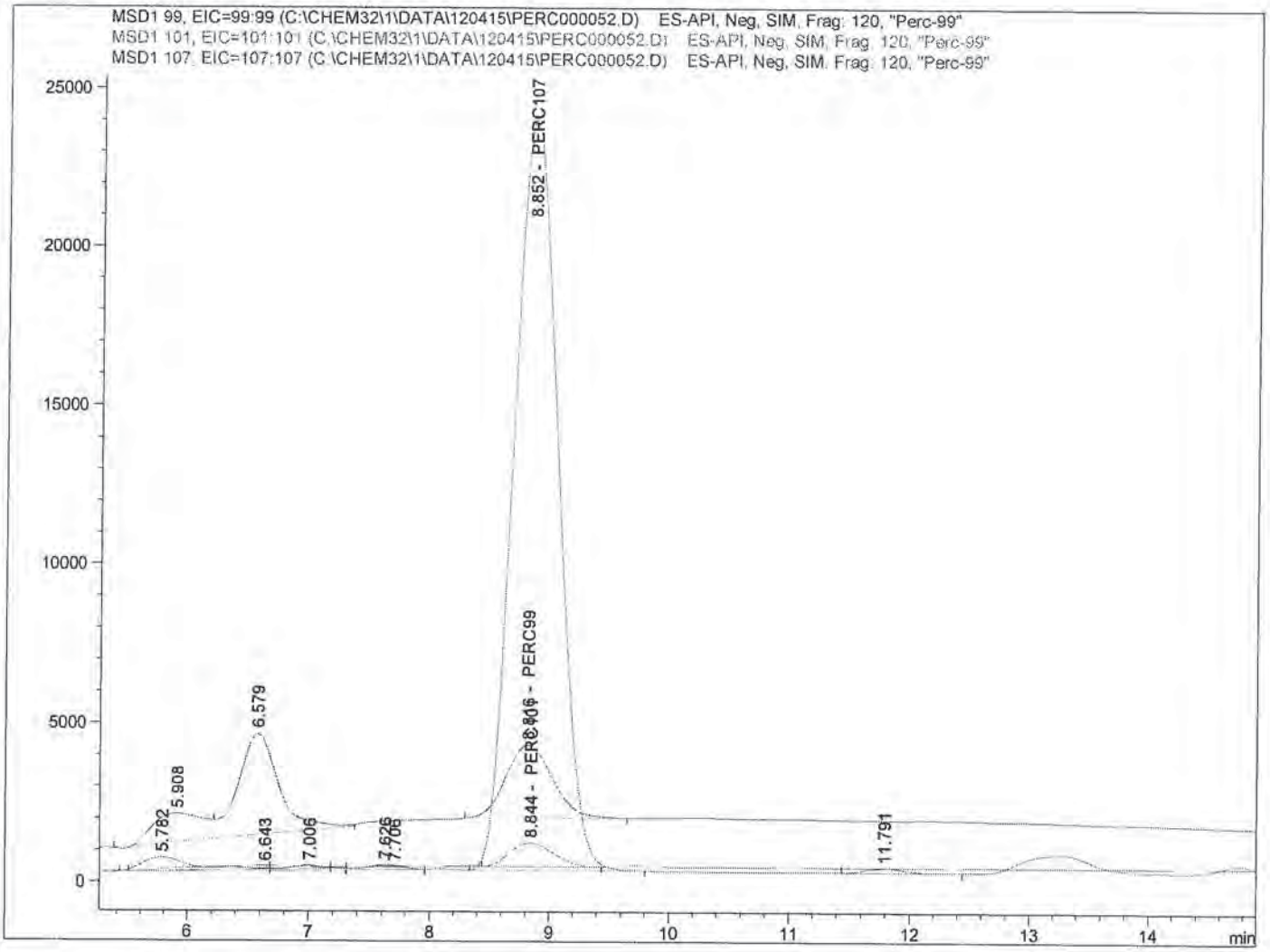

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Internal Standard Report

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SP
12/9/15

Sorted By : Signal
Calib. Data Modified : 12/7/2015 9:29:59 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000052.D
Sample Name: SEQ-LCV8

```
==================================================================
Acq. Operator   :                                  Seq. Line :  52
Acq. Instrument : Instrument 1                      Location : Vial 83
Injection Date  : 12/5/2015 6:15:43 AM                  Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/7/2015 9:30:42 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.816	BB	1	6.27140e4	8.48638e-1	4.33343e-1		PERC99

Totals without ISTD(s) : 4.33343e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.844	BV	1	1.89055e4	2.60545	4.01066e-1		PERC101

Totals without ISTD(s) : 4.01066e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.852	BBA I	1	6.14081e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

PREPARATION BENCH SHEET

5L01021

Empirical Laboratories, LLC

Printed: 12/10/2015 3:56:29PM

Instrument:

Matrix: Water **Prepared using: GCLC - LCMS_PREP6850_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID		ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1511075-06	A	LCMS_PERC_6850_SPLP_Full	12/01/2015	10	10						NA	;QSM5;QSM5
1511075-08	A	LCMS_PERC_6850_SPLP_Full	12/01/2015	10	10						NA	;QSM5;QSM5
1511093-02	A	LCMS_PERC_6850_SPLP_Full	12/01/2015	10	10						NA	;QSM5;QSM5
1511093-03	A	LCMS_PERC_6850_SPLP_Full	12/01/2015	10	10						NA	;QSM5;QSM5
1511093-06	A	LCMS_PERC_6850_SPLP_Full	12/01/2015	10	10						NA	;QSM5;QSM5
1511093-09	A	LCMS_PERC_6850_SPLP_Full	12/01/2015	10	10						NA	;QSM5;QSM5
1511152-01	D	LCMS_PERC_6850_Q5	12/01/2015	10	10						NA	;QSM5;QSM5
1511154-01	D	LCMS_PERC_6850_Q5	12/01/2015	10	10						NA	;QSM5;QSM5
1511269-01	A	LCMS_PERC_6850_SPLP_Full	12/01/2015	10	10						NA	MS/MSD;BatchQC;Added for BatchQC in: 5L01021
1511269-01	A	LCMS_PERC_6850	12/01/2015	10	10						NA	MS/MSD;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-01	A	LCMS_PERC_6850_Q5	12/01/2015	10	10						NA	MS/MSD;BatchQC;Added for BatchQC in: 5L01021
1511269-02	A	LCMS_PERC_6850	12/01/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-03	A	LCMS_PERC_6850	12/01/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-06	A	LCMS_PERC_6850	12/01/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-07	A	LCMS_PERC_6850	12/01/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-08	A	LCMS_PERC_6850	12/01/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-09	A	LCMS_PERC_6850	12/01/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L

00654019

PREPARATION BENCH SHEET

5L01021

Empirical Laboratories, LLC

Printed: 12/10/2015 3:56:29PM

Instrument:

Matrix: Water **Prepared using: GCLC - LCMS_PREP6850_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1512004-01	A	LCMS_PERC_6850	12/01/2015	10	10					NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1512004-01RE1	A	LCMS_PERC_6850	12/01/2015	10	10					NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L; RR 100x RDW 12/03/15
5L01021-BLK1		QC	12/01/2015	10	10					NA	
5L01021-BS1		QC	12/01/2015	10	10	15F0073		200		NA	
5L01021-MS1		QC	12/01/2015	10	10	15F0073	1511269-01	200		NA	
5L01021-MSD1		QC	12/01/2015	10	10	15F0073	1511269-01	200		NA	

Reagents Used:

Standard	Description

272

1511269

00654020

PREPARATION BENCH SHEET

5L03014

Empirical Laboratories, LLC

Printed: 12/10/2015 3:57:14PM

Instrument:

Matrix: Water **Prepared using: GCLC - LCMS_PREP6850_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID		ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1511169-01	G	LCMS_PERC_6850	12/03/2015	10	10						NA	;;
1511169-03	H	LCMS_PERC_6850	12/03/2015	10	10						NA	;;
1511269-04	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-05	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-10	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-11	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-12	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-13	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-14	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-15	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-16	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-17	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-18	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-19	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-20	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-21	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-22	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L

PREPARATION BENCH SHEET

5L03014

Empirical Laboratories, LLC

Printed: 12/10/2015 3:57:14PM

Instrument:

Matrix: Water **Prepared using: GCLC - LCMS_PREP6850_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID		ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1511269-23	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-24	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511275-01	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;lowest DL possible;lowest DL possible
5L03014-BLK1		QC	12/03/2015	10	10						NA	
5L03014-BS1		QC	12/03/2015	10	10	15L0084			200		NA	
5L03014-BSD1		QC	12/03/2015	10	10	15L0084			200		NA	

Reagents Used:

Standard	Description

ANALYTICAL DATA PACKAGE

SDG # 1511269

PROJECT NAME: Perchlorate

SUBMITTAL TO:

Stephanie Mossburg
Microbac Laboratories, Inc.
158 Starlite Drive
Marietta, OH 45750

SUBMITTAL BY:

Empirical Laboratories, LLC (EL)
621 Mainstream Drive, Suite 270
Nashville, TN 37228
Tel (615)345-1115
Fax (866)417-0548

LABORATORY CONTACT PERSON:

Project Manager: Sonya Gordon
Tel (615)345-1115
Fax (866)417-0548
Email: sgordon@empirlabs.com

Original Report Date: December 21, 2015
Report Revision #: N/A
Revision Date: N/A
Total # of Pages: 274

THIS DOCUMENT MEETS DoD QSM 4.2 STANDARDS

The results relate to only the samples associated with the referenced SDG and the submitted data has been produced in accordance with laboratory procedures. The Laboratory's Technical Lab Director, Mr. Rick Davis, is responsible for the final data produced and reported. His signature is listed at the end of the Case Narrative within the Analytical Data Package. If applicable to this report package, details on report revisions and the information on subcontracted analysis are listed in the package Case Narrative. This report shall not be reproduced, except in full, without the written approval of Empirical Laboratories, LLC.

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Sample Delivery Group Case Narrative

Receipt Information:
The samples were received within the preservation guidelines for the associated methods. The information associated with sample receipt and the Sample Delivery Group (SDG) are included within section 4 of this package, which also provides information on the link between the client sample ID listed on the COC and laboratory's assigned unique sample ID or WorkOrder #. The sample is tracked through the laboratory for all analysis via the assigned WorkOrder #.

All samples that were received were analyzed and none of the samples were placed on hold without analyses. There were no subcontracted analyses for this SDG.

Changes to the Revision:
This is an original submittal of the final report package.

Analytical Information:
All samples were prepped (where applicable) and analyzed within the standard allowed holding times, unless noted within the exceptions listed below. The laboratory analyzed all samples within the program and method guidelines. Sample preparation and dilution information is provided within the final results report and at the beginning of each form set. The following information is provided specific to individual methods:

SW6850:
Note – Samples 1511269-01 (and matrix spikes) (5x) and -08 (10x) were analyzed at the dilutions indicated due to split peaks caused by sample matrix and samples 1511269-07 (50x), -20 (500x), -21 (5x), -22 (1000x), -23 (500x), and -24 (2000x) were analyzed at the dilutions indicated due to high concentrations of target analytes. Samples 1511269-06, -09, -10, -11, -12, -13, -14, -15, -16, -17, and -18 are qualified with a C10 to indicate that the sample was analyzed at the dilutions indicated due to the conductivity of the samples.

The following matrix spikes exceeded criteria:
5L01021-MS1/MSD1 (1511269-01) with a positive bias and exceeded relative percent difference criteria for Perchlorate; note – the associated batch spike is within criteria

The following internal standards exceeded criteria:
Perchlorate-d8 in 5L01021-BLK1; note – with a bias of 14% calculated (164% area with an upper limit of 150%), the Perchlorate concentration would still be below the LOD

No additional anomalies or deviations are noted and the proper data qualifiers have been applied.

Data Qualifiers:

As applicable and where required, the following general qualifiers are associated with the sample results. Additional qualifiers will be specified within the reporting sections of the data package or within the body of the Case Narrative.

Analytical Report Terms and Qualifiers

DL: The detection limit (DL) is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The DL is supported by the method detection limit (MDL) which is determined from analysis of a sample containing the analyte in a given matrix.

LOD: The Limit of Detection is an estimate of the minimum amount of a substance that an analytical process can reliably detect. An LOD is analyte- and matrix-specific and may be laboratory-dependent. This definition is further clarified in the DoD QSM 4.2 revisions as the smallest amount or concentration of a substance that must be present in a sample in order to be detected at a high level of confidence (99%). At the LOD, the false negative rate (Type II error) is 1%.

LOQ: The Limit of Quantitation is the minimum level, concentration, or quantity of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. This term is further clarified within the DoD QSM 4.2 as the lowest concentration that produces a quantitative result within specified limits of precision and bias.

*****: Exceeding quality control criteria are associated with the reported result.

B: The presence of a "B" to the right of an analytical value indicates that this compound was also detected in the method blank and the data should be interpreted with caution. One should consider the possibility that the correct sample result might be less than the reported result and, perhaps, zero.

D: When a sample (or sample extract) is rerun diluted because one of the compound concentrations exceeded the highest concentration range for the standard curve, all of the values obtained in the dilution run will be flagged with a "D".

E: The concentration for any compound found which exceeds the highest concentration level on the standard curve for that compound will be flagged with an "E". Usually the sample will be rerun at a dilution to quantitate the flagged compound. For Metals, the qualifier indicates that the serial dilution was outside of the control limits and the compound should be considered estimated due to the presence of interference.

H1: The result was analyzed outside of the EPA recommended holding time.

H2: The result was extracted outside of the EPA recommended holding time.

H3: The sample for this analyte was received outside of the EPA recommended holding time.

J: The presence of a "J" to the right of an analytical result indicates that the reported result is estimated. The mass spectral data pass the identification criteria showing that the compound is present, but the calculated result is less than the LOQ. One should feel confident that the result is greater than zero and less than the LOQ.

M: Indicates that the sample matrix interfered with the quantitation of the analyte. In dual column analysis the result is reported from the column with the lower concentration. In inorganics, it indicates that the parameters DL/LOD/LOQ have been raised.

N: The MS/MSD accuracy and/or precision are outside criteria. The predigested spike recovery is not within control limits for the associated parameter.

P: The associated numerical value is an estimated quantity. There is greater than a 40% difference between the two GC columns for the detected concentrations. The higher of the two values is reported unless matrix interference is obvious or for HPLC analysis where the primary column is reported.

Q: The relative percent difference (RPD) and/or percent recovery exceeded limits in the associated Blank Spike and/or Blank Spike Duplicate.

S: The associated internal standard exceeded criteria.

U: The presence of a "U" indicates that the analyte was analyzed for but was not detected or the concentration of the analyte quantitated below the DL.

X: The parameter shows a potential positive bias on a reported concentration due to an ICV or CCV exceeding the upper control limit on the high side.

Y: The parameter shows a potential negative bias on a reported concentration due to an ICV or CCV exceeding the lower control limit on the low side.

Z: The parameter shows lack of confirmation/detection, which may be due to a negative bias in the ICV or CCV which exceeds the lower control limit.

Chromatographic Flags for Manual Integration:

The following letters are used to denote manual integrations on the laboratory's raw data in association with chromatographic integrations:

A: The peak was manually integrated as it was not integrated in the original chromatogram.

B: The peak was manually integrated due to resolution or coelution issues in the original chromatogram.

C: The peak was manually integrated to correct the baseline from the original chromatogram.

D: The peak was manually integrated to identify the correct peak as the wrong peak was identified in the original chromatogram.

E: The peak was manually integrated to include the entire peak as the original chromatogram only integrated part of the peak.

LIMS Definitions / Naming Conventions:

The following are general naming conventions that are used throughout the laboratory; however, on a method by method basis, there are additional QAQC items that are named in a consistent format.

BLK: LIMS assigns a unique identifier to the Method Blank by naming it as the letters BLK

appended to the Batch ID. A Method Blank is an analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The Method Blank is used to assess for possible contamination during preparation and/or analysis steps. Method Blanks within a Batch or Analytical sequence will be appended with a numerical value beginning with 1 that will increase incrementally.

BS: LIMS assigns a unique identifier to the Blank Spike by naming it as the letters BS appended to the Batch ID. The Blank Spike or Lab Control Sample is a controlled analyte-free matrix, which is spiked with known and verified concentrations of target analytes. Spiking concentrations can be referenced in the method SOP. The BS is used to evaluate the viability of analytes taken through the entire prep (when applicable) and analytical process. Blank Spikes within a Batch or Analytical sequence will be appended with a numerical value beginning with 1 that will increase incrementally. A duplicate Blank Spike will be designated as a BSD.

MS: The LIMS assigns each Client sample with a unique identifier. The Matrix Spike is designated with a MS at the end of the sample's unique identifier. The Matrix Spike sample is used to assess the effect of the sample matrix on the precision and accuracy of the results generated using the selected method. A duplicate Matrix Spike will be designated as a MSD.

IDs: The LIMS assigns each Client sample with a unique identifier. The letter "RE" may potentially be appended to the end of the LIMS Sample ID. And "**RE"** implies that the sample was either re-prepped, re-analyzed straight, or re-analyzed at a dilution. Subsequent re-analysis for the sample will be appended with a numerical value beginning with 1 that will increase incrementally. Eg: RE1, RE2, RE3, etc.

Statement of Data Authenticity:

I certify that, based upon my inquiry of those individuals immediately responsible for obtaining the information and to the best of my knowledge, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in this Case Narrative, as verified by my signature below. During absences, the Data Quality Manager, Technical Directors or Project Managers are authorized to sign this Statement of Data Authenticity.

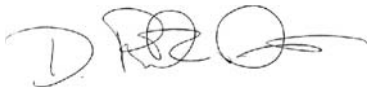

Mr. Rick D. Davis
Laboratory Technical Director / VP Operations

Empirical Laboratories, LLC
Certifications/Approvals
(Revised 12/16/2015)

DoD ELAP QSM5.0, Certificate Number L2226
- Aqueous
- Non-aqueous
- Expires: 01/30/2016

State of Florida, Department of Health – NELAP, Lab ID: E87646
- Clean Water Act
- RCRA/CERCLA
- Expires: 06/30/2016

State of Georgia, Environmental Protection Agency – NELAP, Self Certification
- Expires: 06/30/2016

Commonwealth of Kentucky, Energy and Environment Cabinet – WWLCP, Laboratory Number: 98017
- Wastewater
- Expires: 12/31/2015

Commonwealth of Kentucky, Department of Environmental Protection – UST, Certificate Number: 77
- Aqueous
- Non-aqueous
- Expires: 06/30/2016

State of New Jersey, Department of Environmental Protection – NELAP Primary, Lab ID: TN473
- Water Pollution
- Solid and Hazardous Waste
- Expires: 06/30/2016

State of North Carolina, Department of Environment and Natural Resources - Certificate Number: 643
- Aqueous
- Non-aqueous
- Expires: 12/31/2015

State of Texas, Commission on Environmental Quality – NELAP, Certificate Number: T104704307-15-11
- Aqueous
- Non-aqueous
- Expires: 12/31/2015

State of Utah, Department of Health – NELAP, Certificate Number: TN0042015-7
- Aqueous
- Non-aqueous
- Expires: 07/31/2016

Commonwealth of Virginia, Department of General Services – NELAP, Certificate Number: 7700, Lab ID: 460243
- Aqueous
- Non-aqueous
- Expires: 12/14/2016

State of Washington, Department of Ecology – NELAP, Lab ID: C934-15
- Groundwater
- Solid and Hazardous Waste
- Expires: 03/18/2016

ORGANIC CALCULATIONS

GC/MS Volatiles

$$\text{Final Concentration} = \frac{\text{On-column(ug/L or ug/Kg) * Expected Vol/Weight (mL or g) * Dilution}}{\text{Initial Vol/Weight (mL or g) * (Percent Solids/100) (if applicable)}}$$

Note - Expected Vol/Weight value is found in "Final Vol" column of Preparation Batch Summary.

GC/MS Extractables

$$\text{Final Concentration} = \frac{\text{On-column(ng/uL) * Final Vol (ml) * Dilution *(1000uL/mL)}}{\text{Initial Vol/Weight (mL or g) * (Percent Solids/100) (if applicable)}}$$

= ng/mL or ng/g

= ug/L or ug/kg

GC or LC Extractables

$$\text{Final Concentration} = \frac{\text{On-column(ng/mL) * Final Vol (mL) * Dilution}}{\text{Initial Vol/Weight (mL or g) * (Percent Solids/100) (if applicable)}}$$

= ng/mL or ng/g

= ug/L or ug/kg

Sample Receipt Information

L15110950 Perchlorate only report - stephanie.mossburg@microbac.com

00654031

AECOM Chain of Custody Record

COC Number:

1511269-01 A

OC: Stephanie Mossburg	Project Manager: Mark Heaston	Mail to: Linda Raabe	
ve	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
5750	Sampler (print): Scott Beesinger	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205		Program: L#15111377	
Turn Around Time: STANDARD	pH:		
Project Name/Location: Longhorn		ERPIMS REQUIRED FIELDS	
Project Number: 60256135.0002GA			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp	Grab	Matrix	Number of Containers	VOC	Perchlorate						SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 50	50WW05-111315			11/13/15	0800		✓	W	4	✓	✓					-01					
	50WW05MS-111315			11/13/15	0800		✓	W	4	✓	✓					02					
	50WW05MSD-111315			11/13/15	0800		✓	W	4	✓	✓					03					
	50SW06-111315			11/13/15	0830		✓	W	4	✓	✓			02		04					
	GPW1-111315			11/13/15	0845		✓	W	4	✓	✓			03		05					
	50WW28-111315			11/13/15	0945		✓	W	4	✓	✓			04		06					
	50WW16-111315			11/13/15	1045		✓	W	4	✓	✓			05		07					
	LHSMW54-111315			11/13/15	1345		✓	W	4	✓	✓			06		08					
	42WW38-111315			11/13/15	1455		✓	W	4	✓	✓			07		09					
	TRip BLANK			11/13/15			✓	W	2	✓											

11/25/15

Comments: **STANDARD TAT**

Relinquished by: (Signature) Scott Beesinger	Date 11/16/15	Time 1600
Relinquished by: (Signature)	Date	Time

Microbac OVD *
Received 11/17/2015 09 55
By BRENDA GREENWALT 221000078887

9xs relogged + subbed out BG
Brenda Greenwalt

Date	Time	Relinquished by (Signature)
Time		Remarks:

Manager, Pink QA/QC Manager

11/25/15 @ 845

•Homogenize all composite samples prior to analysis

1511269

M5110443 Perchlorate only report - stephanie.mossburg@microbac.com

00654032

AECOM Chain of Custody Record

COC Number: 11

Laboratory: Microbac POC: Stephanie Mossburg	Project Manager: Mark Heaston	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): Scott Beesinger	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205	pH:	Program: L#15111376	
Turn Around Time: STANDARD			
Project Name/Location: Longhorn			
Project Number: 60256135.0002GA		ERPIMS REQUIRED FIELDS	

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Dissolved Gases / Carbon Dioxide	Alkalinity	Sulfide	Chloride / Sulfate Nitrate / Nitrite	TOC / Total Phosphorous	Dissolved Iron / Dissolved Manganese	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 50	50WW08 - 111615			11/16/15	0820		✓	W	11	✓	✓	✓	✓	✓	✓	✓				~~10~~	08	
	50WW08FF - 111615			11/16/15	0820		✓	W	1								✓					
	50WW22 - 111615			11/16/15	0925		✓	W	11	✓	✓	✓	✓	✓	✓	✓				11	09	
	50WW22FF - 111615			11/16/15	0925		✓	W	1								✓					
	50WW24 - 111615			11/16/15	1030		✓	W	11	✓	✓	✓	✓	✓	✓	✓				12	10	
	50WW24FF - 111615			11/16/15	1030		✓	W	1								✓					
	50WW23 - 111615			11/16/15	1135		✓	W	11	✓	✓	✓	✓	✓	✓	✓				13	11	
	50WW23FF - 111615			11/16/15	1135		✓	W	1								✓					
	50WW18 - 111615			11/16/15	1345		✓	W	11	✓	✓	✓	✓	✓	✓	✓			TH 11/23/15	14	12	
	50WW18FF - 111615			11/16/15	1345		✓	W	1								✓					
	50WW25 - 111615			11/16/15	1455		✓	W	11	✓	✓	✓	✓	✓	✓	✓				15	13	
	50WW25FF - 111615			11/16/15	1455		✓	W	1								✓					
	TRIP BLANK			11/16/15			✓	W	2	✓												

Comments: **STANDARD TAT**

Relinquished by: (Signature) Scott Beesinger	Date 11/16/15	Time 1600	R	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	R (S		Time	Remarks:

Microbac OVD
Received 11/17/2015 09 55
By BRENDA GREENWALT 221000078886
SYS relogged + subbed out BG

*Homogenize all composite samples prior to analysis

Brenda Greenwalt, Laboratory, Sandy for Project Manager, Pink QA/QC Manager

1511269

L15110193 Perchlorate only

AECOM Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Stephanie Mossburg	Project Manager: Mark Heaston	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE 400	
Marietta, OH 45750	Sampler (print): Scott Beesinger	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste 400			
San Antonio, TX 78205			
Turn Around Time: STANDARD	pH:	Program: L15111375	
Project Name/Location: Longhorn			
Project Number: 60256135.0002GA			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Dissolved Gases / Carbon Dioxide	Alkalinity	Sulfide	Chloride / Sulfate Nitrate / Nitrite	TOC / Total Phosphorous	Dissolved Iron / Dissolved Manganese	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 50	50WW27-111115			11/11/15	0815		✓	W	4	✓	✓								14	~~16~~		
	50WW15-111115			11/11/15	0915		✓	W	4	✓	✓								15	~~17~~		
	50WW15FD-111115			11/11/15	0915		✓	W	4	✓	✓								16	~~18~~		
	50WW09-111115			11/11/15	1035		✓	W	4	✓	✓								17	~~19~~		
	50WW09FD-111115			11/11/15	1035		✓	W	4	✓	✓								18	~~20~~		
	50WW10-111115			11/11/15	1435		✓	W	4	✓	✓								19	~~21~~		
	50WW13-111215			11/12/15	0840		✓	W	11	✓	✓	✓	✓	✓	✓	✓			20	~~22~~		
	50WW13FF-111215			11/12/15	0840		✓	W	1								✓					
	50WW14-111215			11/12/15	0950		✓	W	11	✓	✓	✓	✓	✓	✓	✓			21	~~23~~		
	50WW14FF-111215			11/12/15	0950		✓	W	1								✓					
	50WW11-111215			11/12/15	1100		✓	W	11	✓	✓	✓	✓	✓	✓	✓			22	~~24~~		
	50WW11FF-111215			11/12/15	1100		✓	W	1								✓					
	50WW06-111215			11/12/15	1325		✓	W	11	✓	✓	✓	✓	✓	✓	✓			23	~~25~~		
	50WW06FF-111215			11/12/15	1325		✓	W	1								✓					

ERPIMS REQUIRED FIELDS

Comments: STANDARD TAT

Microbac OVD
Received 11/13/2015 09 48
By BRENDA GREENWALT 221000078885
SXS relogged + subbed out
BG
Brenda Greenwalt

Relinquished by (Signature)	Date	Time	Received	Time	Relinquished by (Signature)
Scott Beesinger	11/12/15	1545			
Relinquished by (Signature)	Date	Time	Received (Signature)	Time	Remarks

*Homogenize all composite samples prior to analysis

Distribution White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

006540032

1511269

L15110793-2

00654034

AECOM

Chain of Custody Record

COC Number: 13

Laboratory: Microbac POC: Stephanie Mossburg	Project Manager: Mark Heaston	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): Scott Beesinger	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205			
Turn Around Time: STANDARD	pH:	Program:	
Project Name/Location: Longhorn			
Project Number: 60256135.0002GA			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Dissolved Gases / Carbon Dioxide	Alkalinity	Sulfide	Chloride / Sulfate / Nitrate / Nitrite	TOC / Total Phosphorous	Dissolved Iron / Dissolved Manganese	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 50	50WW12-111215			11/12/15	1435		✓	W	11	✓	✓	✓	✓	✓	✓	✓	✓		24	[illegible]	+L	
	50WW12FF-111215			11/12/15	1435		✓	W	1								✓				11/25	15
	TRIPBLANK			11/12/15			✓	W	2	✓												

Comments: **STANDARD TAT**

Relinquished by: (Signature) Scott Beesinger	Date 11/12/15	Time 1545	Rec	Date	Time	Relinquished by (Signature)
Relinquished by: (Signature)	Date	Time	Rec (Sig	Time		Remarks:

Microbac OVD
Received 11/13/2015 09 48
By BRENDA GREENWALT 221000078885
Brenda Greenwalt

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

1511269

II. EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

Cooler Received/Opened On: 11/25/15 @ 0845 Work order# 1511269

1. Tracking # 4496 (last 4 digits, FedEx)

   Courier: FedEx

2. Temperature of rep. sample or temp blank when opened: 0.4 °C + correction factor(+0.4) = 0.8 °C
3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO ..NA
4. Were custody seals on outside of cooler? YES..NO...NA

   If yes, how many and where: 1 on front
5. Were the seals intact, signed, and dated correctly? YES...NO...NA
6. Were custody papers inside cooler? YES...NO...NA

   I certify that I opened the cooler and answered questions 1-6 (initial/date) JTG 11/25/15
7. Were custody seals on containers: YES NO and Intact YES...NO...NA

   Were these signed and dated correctly? YES...NO...NA
8. Packing material used? Bubble wrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None
9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None
10. Did all containers arrive in good condition (unbroken)? YES..NO...NA
11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA
12. Did all container labels and tags agree with custody papers? YES..NO...NA
13. a. Were VOA vials received? YES..NO..NA

    b. Was there observable headspace present in any VOA vial (>5mm-6mm)? YES...NO...NA
14. Was there a Trip Blank in this cooler (custody seals present/intact)? YES...NO...NA...Comments_____
    If multiple coolers, sequence #_____

    I certify that I unloaded the cooler and answered questions 7-14 (initial/date) TH 11/25/15
15. a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA TH 11/25/15

    b. Did the bottle labels indicate that the correct preservatives were used? YES...NO...NA
16. Was residual chlorine present? YES...NO...NA

    I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial/date) TH 11/25/15
17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA
18. Did you sign the custody papers in the appropriate place? YES...NO...NA
19. Were correct containers used for the analysis requested? YES...NO...NA If not, PM notified? YES...NO...NA
20. Was sufficient amount of sample sent in each container? YES...NO...NA If not, PM notified? YES...NO...NA
21. Were there Non-Conformance issues at login? YES...NO...NCR#_____

I certify that I entered this project into LIMS and answered questions 17-21 (initial/date) TH 11/25/15

I certify that I attached a label with the unique LIMS number to each container (initial/date) TH 11/25/15

I certify that I notified the laboratory of any short holding time or RUSH parameters (initial/date) TH 11/25/15

C \Users\thutchings\Desktop\Cooler Receipt Updated 2014.doc

III. EMPIRICAL LABORATORIES, LLC
DATA ENTRY VERIFICATION FORM – PROJECT MANAGEMENT

Workorder#: 1511269

	Verification Item	Yes	No	NA
1.	**Cooler Receipt Form Issues reviewed and communicated to client**			X
2.	**Element/ Project Screen/items verified to match the COC/CRF:**			
a.	**Client/Project**	X		
b.	Comments requiring laboratory reminder?			X
c.	Client and/or Project Memo requiring laboratory reminder?			X
3.	**Receipt Screen items verified to match the COC/CRF:**			
a.	Received Date/Received By	X		
b.	Workorder Due Date	X		
c.	Package Due Date	X		
d.	TAT	X		
e.	SDG Identifier Populated	X		
4.	**Sample Information verified against COC for each sample:**			
a.	Name	X		
b.	QC Source	X		
c.	Matrix	X		
d.	Sample Type	X		
e.	Sampled Date/Time (Correct Time Zone)	X		
f.	Work Analyses/Versions	X		
g.	Sample Issues included in comments			X
h.	Unpreserved VOA holding time set to 7 days			X
5.	**Containers consistent with tests requested**	X		
6.	**Field data entered and matching COC, if applicable**			X
	I certify that I have performed a second check of the LIMS information against the COC to confirm accuracy (initial/date):	SMG 11/25/2015		

C:\Users\sgordon\Desktop\QS10_R21_20140729_CoolerReceiptForm.doc

WORK ORDER

Printed: 11/25/2015 4:40:29PM

1511269

Empirical Laboratories, LLC

Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Project Manager: Sonya Gordon
Project Number: MIC_Perc

Report To:
Microbac Laboratories, Inc.-Ohio Valley Division
Stephanie Mossburg
158 Starlite Drive
Marietta, OH 45750
Phone: (740) 373-4071
Fax: (740) 373-4835

Invoice To:
Microbac Laboratories, Inc.-Ohio Valley Division
Kathy Albertson
158 Starlite Drive
Marietta, OH 45750
Phone :(800) 373-4071
Fax: (740) 373-4835

Date Due: 12/11/2015 16:00 (10 day TAT)
Received By: Tiana L. Hutchings
Date Received: 11/25/2015 08:45
Logged In By: Tiana L. Hutchings
Date Logged In: 11/25/2015 09:05

Samples Received at: **0.8°C**
Custody Seals Yes Received On Ice Yes
Containers Intact Yes
COC/Labels Agree Yes
Preservation Confirme No

Analysis	Due	TAT	Expires	Comments
1511269-01 50WW05-111315 [Water] Sampled 11/13/2015 08:00 (GMT-06:00) Central Time (US &				**MS/MSD**
LCMS_PERC_6850	12/08/2015 16:00	10	12/11/2015 08:00	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-02 50SW06-111315 [Water] Sampled 11/13/2015 08:30 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/11/2015 08:30	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-03 GPW1-111315 [Water] Sampled 11/13/2015 08:45 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/11/2015 08:45	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-04 50WW28-111315 [Water] Sampled 11/13/2015 09:45 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/11/2015 09:45	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-05 50WW16-111315 [Water] Sampled 11/13/2015 10:45 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/11/2015 10:45	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-06 LHSMW54-111315 [Water] Sampled 11/13/2015 13:45 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/11/2015 13:45	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-07 47WW38-111315 [Water] Sampled 11/13/2015 14:55 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/11/2015 14:55	low DL/LOD/LOQ 0.1/0.2/0.4ug/L

WORK ORDER

Printed: 11/25/2015 4:40:29PM

1511269

Empirical Laboratories, LLC

Client:	**Microbac Laboratories, Inc.-Ohio Valley Division**	**Project Manager:**	**Sonya Gordon**
Project:	**Perchlorate**	**Project Number:**	**MIC_Perc**

Analysis	Due	TAT	Expires	Comments
1511269-08 50WW08-111615 [Water] Sampled 11/16/2015 08:20 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/14/2015 08:20	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-09 50WW22-111615 [Water] Sampled 11/16/2015 09:25 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/14/2015 09:25	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-10 50WW24-111615 [Water] Sampled 11/16/2015 10:30 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/14/2015 10:30	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-11 50WW23-111615 [Water] Sampled 11/16/2015 11:35 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/14/2015 11:35	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-12 50WW18-111615 [Water] Sampled 11/16/2015 13:45 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/14/2015 13:45	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-13 50WW25-111615 [Water] Sampled 11/16/2015 14:55 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/14/2015 14:55	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-14 50WW27-111115 [Water] Sampled 11/11/2015 08:15 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/09/2015 08:15	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-15 50WW15-111115 [Water] Sampled 11/11/2015 09:15 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/09/2015 09:15	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-16 50WW15FD-111115 [Water] Sampled 11/11/2015 09:15 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/09/2015 09:15	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-17 50WW09-111115 [Water] Sampled 11/11/2015 10:35 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/09/2015 10:35	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-18 50WW09FD-111115 [Water] Sampled 11/11/2015 10:35 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/09/2015 10:35	low DL/LOD/LOQ 0.1/0.2/0.4ug/L

WORK ORDER

Printed: 11/25/2015 4:40:29PM

1511269

Empirical Laboratories, LLC

Client:	**Microbac Laboratories, Inc.-Ohio Valley Division**	**Project Manager:**	**Sonya Gordon**
Project:	**Perchlorate**	**Project Number:**	**MIC_Perc**

Analysis	Due	TAT	Expires	Comments
1511269-19 50WW10-111115 [Water] Sampled 11/11/2015 14:35 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/09/2015 14:35	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-20 50WW13-111215 [Water] Sampled 11/12/2015 08:40 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/10/2015 08:40	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-21 50WW14-111215 [Water] Sampled 11/12/2015 09:50 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/10/2015 09:50	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-22 50WW11-111215 [Water] Sampled 11/12/2015 11:00 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/10/2015 11:00	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-23 50WW06-111215 [Water] Sampled 11/12/2015 13:25 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/10/2015 13:25	low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-24 50WW12-111215 [Water] Sampled 11/12/2015 14:35 (GMT-06:00) Central Time (US &				
LCMS_PERC_6850	12/08/2015 16:00	10	12/10/2015 14:35	low DL/LOD/LOQ 0.1/0.2/0.4ug/L

Reviewed By

Date

Sample Delivery Group Assignment Form

CLIENT: CB&I
PROJECT NAME: Kelly AFB
SDG #: 1511184

QC LEVEL: Level III/TRPP
Report Due: 12/11/2015
Client Sample Count: 2

Sample Type	Sampled	Received	Lab ID	Client ID	Lab Matrix	Report Matrix	E410.4	SM2540D	SM5210B	SW1664A	SW8260B	SW8270D
Trip Blank	11/17/2015	11/18/2015	1511184-01	TB-01-151117	Water	Water					X	
Client Sample	11/10/2015	11/18/2015	1511184-02	OUTFALL001-151110	Water	Water	X					
Client Sample	11/17/2015	11/18/2015	1511184-03	OUTFALL001-151117	Water	Water	X	X	X	X	X	X

Data for SW6850 Forms

Sample Extraction Data

Prep Method: LCMS_PREP6850_W-SW6850

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1511269-01 [50WW05-111315]	5L01021	10.00/10.00	10.0	10.0	5.00			12/01/15
1511269-02 [50SW06-111315]	5L01021	10.00/10.00	10.0	10.0	1.00			12/01/15
1511269-03 [GPW1-111315]	5L01021	10.00/10.00	10.0	10.0	1.00			12/01/15
1511269-06 [LHSMW54-111315]	5L01021	10.00/10.00	10.0	10.0	5.00			12/01/15
1511269-07 [47WW38-111315]	5L01021	10.00/10.00	10.0	10.0	50.00			12/01/15
1511269-08 [50WW08-111615]	5L01021	10.00/10.00	10.0	10.0	10.00			12/01/15
1511269-09 [50WW22-111615]	5L01021	10.00/10.00	10.0	10.0	5.00			12/01/15

Sample Extraction Data

Prep Method: LCMS_PREP6850_W-SW6850

Lab Number [Field ID]	Batch	Nominal Initial/Final	Initial [mL]	Final [mL]	Dilution	% Solids	Notes	Date
1511269-04 [50WW28-111315]	5L03014	10.00/10.00	10.0	10.0	1.00			12/03/15
1511269-05 [50WW16-111315]	5L03014	10.00/10.00	10.0	10.0	1.00			12/03/15
1511269-10 [50WW24-111615]	5L03014	10.00/10.00	10.0	10.0	5.00			12/03/15
1511269-11 [50WW23-111615]	5L03014	10.00/10.00	10.0	10.0	5.00			12/03/15
1511269-12 [50WW18-111615]	5L03014	10.00/10.00	10.0	10.0	5.00			12/03/15
1511269-13 [50WW25-111615]	5L03014	10.00/10.00	10.0	10.0	5.00			12/03/15
1511269-14 [50WW27-111115]	5L03014	10.00/10.00	10.0	10.0	5.00			12/03/15
1511269-15 [50WW15-111115]	5L03014	10.00/10.00	10.0	10.0	5.00			12/03/15
1511269-16 [50WW15FD-111115]	5L03014	10.00/10.00	10.0	10.0	5.00			12/03/15
1511269-17 [50WW09-111115]	5L03014	10.00/10.00	10.0	10.0	5.00			12/03/15
1511269-18 [50WW09FD-111115]	5L03014	10.00/10.00	10.0	10.0	5.00			12/03/15
1511269-19 [50WW10-111115]	5L03014	10.00/10.00	10.0	10.0	1.00			12/03/15
1511269-20 [50WW13-111215]	5L03014	10.00/10.00	10.0	10.0	500.00			12/03/15
1511269-21 [50WW14-111215]	5L03014	10.00/10.00	10.0	10.0	5.00			12/03/15
1511269-22 [50WW11-111215]	5L03014	10.00/10.00	10.0	10.0	1,000.00			12/03/15
1511269-23 [50WW06-111215]	5L03014	10.00/10.00	10.0	10.0	500.00			12/03/15
1511269-24 [50WW12-111215]	5L03014	10.00/10.00	10.0	10.0	2,000.00			12/03/15

ANALYSIS DATA SHEET

50WW05-111315

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-01	File ID:	PERC000011.D.Report.TXT
Sampled:	11/13/15 08:00	Prepared:	12/01/15 13:39	Analyzed:	12/04/15 18:04
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	5

Batch: 5L01021 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**0.700**	0.500	1.00	2.00	NJD

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50SW06-111315

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-02	File ID:	PERC000029.D.Report.TXT
Sampled:	11/13/15 08:30	Prepared:	12/01/15 13:39	Analyzed:	12/02/15 17:11
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	1

Batch: 5L01021 Sequence: 5L33714 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**1.44**	0.100	0.200	0.400	

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

GPW1-111315

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-03	File ID:	PERC000030.D.Report.TXT
Sampled:	11/13/15 08:45	Prepared:	12/01/15 13:39	Analyzed:	12/02/15 17:29
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	1
Batch:	5L01021	Sequence:	5L33714	Calibration:	5317001
Instrument:	LCMS1				

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**0.139**	0.100	0.200	0.400	J

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW28-111315

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-04	File ID:	PERC000023.D.Report.TXT
Sampled:	11/13/15 09:45	Prepared:	12/03/15 12:00	Analyzed:	12/04/15 21:38
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	1

Batch: 5L03014 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**1.64**	0.100	0.200	0.400	

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW16-111315

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-05	File ID:	PERC000014.D.Report.TXT
Sampled:	11/13/15 10:45	Prepared:	12/03/15 12:00	Analyzed:	12/07/15 20:56
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	1

Batch: 5L03014 Sequence: 5L34214 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.100	0.200	0.400	U

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

LHSMW54-111315

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-06	File ID:	PERC000014.D.Report.TXT
Sampled:	11/13/15 13:45	Prepared:	12/01/15 13:39	Analyzed:	12/04/15 18:57
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	5

Batch: 5L01021 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.500	1.00	2.00	C10U

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

47WW38-111315

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-07	File ID:	PERC000015.D.Report.TXT
Sampled:	11/13/15 14:55	Prepared:	12/01/15 13:39	Analyzed:	12/04/15 19:15
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	50

Batch: 5L01021 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**579**	5.00	10.0	20.0	D

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW08-111615

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-08	File ID:	PERC000016.D.Report.TXT
Sampled:	11/16/15 08:20	Prepared:	12/01/15 13:39	Analyzed:	12/04/15 19:33
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	10

Batch: 5L01021 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**32.4**	1.00	2.00	4.00	D

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW22-111615

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-09	File ID:	PERC000036.D.Report.TXT
Sampled:	11/16/15 09:25	Prepared:	12/01/15 13:39	Analyzed:	12/02/15 19:16
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	5

Batch: 5L01021 Sequence: 5L33714 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**0.642**	0.500	1.00	2.00	C10JD

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW24-111615

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-10	File ID:	PERC000025.D.Report.TXT
Sampled:	11/16/15 10:30	Prepared:	12/03/15 12:00	Analyzed:	12/04/15 22:13
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	5

Batch: 5L03014 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.500	1.00	2.00	C10U

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW23-111615

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-11	File ID:	PERC000030.D.Report.TXT
Sampled:	11/16/15 11:35	Prepared:	12/03/15 12:00	Analyzed:	12/04/15 23:43
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	5

Batch: 5L03014 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.500	1.00	2.00	C10U

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW18-111615

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-12	File ID:	PERC000031.D.Report.TXT
Sampled:	11/16/15 13:45	Prepared:	12/03/15 12:00	Analyzed:	12/05/15 00:00
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	5

Batch: 5L03014 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.500	1.00	2.00	C10U

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW25-111615

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-13	File ID:	PERC000023.D.Report.TXT
Sampled:	11/16/15 14:55	Prepared:	12/03/15 12:00	Analyzed:	12/07/15 23:37
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	5

Batch: 5L03014 Sequence: 5L34214 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**0.727**	0.500	1.00	2.00	C10JD

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW27-111115

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-14	File ID:	PERC000033.D.Report.TXT
Sampled:	11/11/15 08:15	Prepared:	12/03/15 12:00	Analyzed:	12/05/15 00:36
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	5

Batch: 5L03014 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.500	1.00	2.00	C10U

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW15-111115

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-15	File ID:	PERC000034.D.Report.TXT
Sampled:	11/11/15 09:15	Prepared:	12/03/15 12:00	Analyzed:	12/05/15 00:54
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	5

Batch: 5L03014 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.500	1.00	2.00	C10U

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW15FD-111115

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-16	File ID:	PERC000035.D.Report.TXT
Sampled:	11/11/15 09:15	Prepared:	12/03/15 12:00	Analyzed:	12/05/15 01:12
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	5

Batch: 5L03014 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.500	1.00	2.00	C10U

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW09-111115

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-17	File ID:	PERC000036.D.Report.TXT
Sampled:	11/11/15 10:35	Prepared:	12/03/15 12:00	Analyzed:	12/05/15 01:30
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	5

Batch: 5L03014 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.500	1.00	2.00	C10U

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW09FD-111115

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-18	File ID:	PERC000037.D.Report.TXT
Sampled:	11/11/15 10:35	Prepared:	12/03/15 12:00	Analyzed:	12/05/15 01:47
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	5

Batch: 5L03014 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.500	1.00	2.00	C10U

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW10-111115

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-19	File ID:	PERC000038.D.Report.TXT
Sampled:	11/11/15 14:35	Prepared:	12/03/15 12:00	Analyzed:	12/05/15 02:05
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	1

Batch: 5L03014 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.100	0.200	0.400	U

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW13-111215

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-20	File ID:	PERC000028.D.Report.TXT
Sampled:	11/12/15 08:40	Prepared:	12/03/15 12:00	Analyzed:	12/08/15 01:06
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	500

Batch: 5L03014 Sequence: 5L34214 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**11400**	50.0	100	200	D

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW14-111215

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-21	File ID:	PERC000044.D.Report.TXT
Sampled:	11/12/15 09:50	Prepared:	12/03/15 12:00	Analyzed:	12/05/15 03:52
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	5

Batch: 5L03014 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**7.50**	0.500	1.00	2.00	D

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW11-111215

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-22	File ID:	PERC000029.D.Report.TXT
Sampled:	11/12/15 11:00	Prepared:	12/03/15 12:00	Analyzed:	12/08/15 01:24
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	1000

Batch: 5L03014 Sequence: 5L34214 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**22800**	100	200	400	D

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW06-111215

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-23	File ID:	PERC000030.D.Report.TXT
Sampled:	11/12/15 13:25	Prepared:	12/03/15 12:00	Analyzed:	12/08/15 01:42
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	500

Batch: 5L03014 Sequence: 5L34214 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**5860**	50.0	100	200	D

Total Target Analytes Reported 1 Project Analytes: 1

ANALYSIS DATA SHEET

50WW12-111215

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Vall			Project:	Perchlorate
Matrix:	Water	Laboratory ID:	1511269-24	File ID:	PERC000031.D.Report.TXT
Sampled:	11/12/15 14:35	Prepared:	12/03/15 12:00	Analyzed:	12/08/15 02:00
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	2000

Batch: 5L03014 Sequence: 5L34214 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**37900**	200	400	800	D

Total Target Analytes Reported 1 Project Analytes: 1

LCS / LCS DUPLICATE RECOVERY

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Matrix:	Water		
Batch:	5L01021	Laboratory ID:	5L01021-BS1
Preparation:	LCMS_PREP6850_W	Initial/Final:	10 mL / 10 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
Perchlorate	2.000	2.150	108	80 - 120

LCS / LCS DUPLICATE RECOVERY

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Matrix:	Water		
Batch:	5L03014	Laboratory ID:	5L03014-BS1
Preparation:	LCMS_PREP6850_W	Initial/Final:	10 mL / 10 mL

ANALYTE	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC.	QC LIMITS REC.
Perchlorate	2.000	2.023	101	80 - 120

ANALYTE	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC. #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Perchlorate	2.000	2.011	101	0.579	15	80 - 120

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

SW6850

50WW05-111315

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Matrix: Water
Batch: 5L01021
% Solids:
Source Sample Name: **1511269-01**

ANALYTE	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC.	Q	QC LIMITS REC.
Perchlorate	2.000	0.7004	3.471	174	*	80 - 120

ANALYTE	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC. #	% RPD	Q	QC LIMITS RPD	QC LIMITS REC.
Perchlorate	2.000	2.652	133	26.7	* *	15	80 - 120

PREPARATION BATCH SUMMARY

SW6850

Laboratory: Empirical Laboratories, LLC SDG: 1511269

Client: Microbac Laboratories, Inc.-Ohio Valley Division Project: Perchlorate

Batch: 5L01021 Batch Matrix: Water Preparation: LCMS_PREP6850_W

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
50WW05-111315	1511269-01	12/01/15 13:39	10.00	10.00
50SW06-111315	1511269-02	12/01/15 13:39	10.00	10.00
GPW1-111315	1511269-03	12/01/15 13:39	10.00	10.00
LHSMW54-111315	1511269-06	12/01/15 13:39	10.00	10.00
47WW38-111315	1511269-07	12/01/15 13:39	10.00	10.00
50WW08-111615	1511269-08	12/01/15 13:39	10.00	10.00
50WW22-111615	1511269-09	12/01/15 13:39	10.00	10.00
Blank	5L01021-BLK1	12/01/15 13:39	10.00	10.00
LCS	5L01021-BS1	12/01/15 13:39	10.00	10.00
50WW05-111315	5L01021-MS1	12/01/15 13:39	10.00	10.00
50WW05-111315	5L01021-MSD1	12/01/15 13:39	10.00	10.00

PREPARATION BATCH SUMMARY

SW6850

Laboratory: Empirical Laboratories, LLC SDG: 1511269

Client: Microbac Laboratories, Inc.-Ohio Valley Division Project: Perchlorate

Batch: 5L03014 Batch Matrix: Water Preparation: LCMS_PREP6850_W

SAMPLE NAME	LAB SAMPLE ID	DATE PREPARED	INITIAL VOL./WEIGHT	FINAL VOL.
50WW28-111315	1511269-04	12/03/15 12:00	10.00	10.00
50WW16-111315	1511269-05	12/03/15 12:00	10.00	10.00
50WW24-111615	1511269-10	12/03/15 12:00	10.00	10.00
50WW23-111615	1511269-11	12/03/15 12:00	10.00	10.00
50WW18-111615	1511269-12	12/03/15 12:00	10.00	10.00
50WW25-111615	1511269-13	12/03/15 12:00	10.00	10.00
50WW27-111115	1511269-14	12/03/15 12:00	10.00	10.00
50WW15-111115	1511269-15	12/03/15 12:00	10.00	10.00
50WW15FD-111115	1511269-16	12/03/15 12:00	10.00	10.00
50WW09-111115	1511269-17	12/03/15 12:00	10.00	10.00
50WW09FD-111115	1511269-18	12/03/15 12:00	10.00	10.00
50WW10-111115	1511269-19	12/03/15 12:00	10.00	10.00
50WW13-111215	1511269-20	12/03/15 12:00	10.00	10.00
50WW14-111215	1511269-21	12/03/15 12:00	10.00	10.00
50WW11-111215	1511269-22	12/03/15 12:00	10.00	10.00
50WW06-111215	1511269-23	12/03/15 12:00	10.00	10.00
50WW12-111215	1511269-24	12/03/15 12:00	10.00	10.00
Blank	5L03014-BLK1	12/03/15 12:00	10.00	10.00
LCS	5L03014-BS1	12/03/15 12:00	10.00	10.00
LCS Dup	5L03014-BSD1	12/03/15 12:00	10.00	10.00

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC SDG: 1511269

Client: Microbac Laboratories, Inc.-Ohio Valley Division Project: Perchlorate

Matrix: Laboratory ID: 5L01021-BLK1 File ID: PERC000010.D.Report.TXT

Sampled: Prepared: Analyzed: 12/02/15 11:32

Solids: Preparation: LCMS_PREP6850_W Dilution:

Batch: 5L01021 Sequence: 5L33714 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.100	0.200	0.400	U

Total Target Analytes Reported: 1

ANALYSIS DATA SHEET

LCS

Laboratory: Empirical Laboratories, LLC SDG: 1511269

Client: Microbac Laboratories, Inc.-Ohio Valley Division Project: Perchlorate

Matrix: Laboratory ID: 5L01021-BS1 File ID: PERC000011.D.Report.TXT

Sampled: Prepared: Analyzed: 12/02/15 11:50

Solids: Preparation: LCMS_PREP6850_W Dilution:

Batch: 5L01021 Sequence: 5L33714 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**2.150**	0.100	0.200	0.400	

Total Target Analytes Reported: 1

ANALYSIS DATA SHEET

Matrix Spike

Laboratory: Empirical Laboratories, LLC SDG: 1511269

Client: Microbac Laboratories, Inc.-Ohio Valley Division Project: Perchlorate

Matrix: Laboratory ID: 5L01021-MS1 File ID: PERC000012.D.Report.TXT

Sampled: Prepared: Analyzed: 12/04/15 18:22

Solids: Preparation: LCMS_PREP6850_W Dilution:

Batch: 5L01021 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**3.471**	0.500	1.00	2.00	D

Total Target Analytes Reported: 1

ANALYSIS DATA SHEET

Matrix Spike Dup

Laboratory: Empirical Laboratories, LLC SDG: 1511269

Client: Microbac Laboratories, Inc.-Ohio Valley Division Project: Perchlorate

Matrix: Laboratory ID: 5L01021-MSD1 File ID: PERC000013.D.Report.TXT

Sampled: Prepared: Analyzed: 12/04/15 18:39

Solids: Preparation: LCMS_PREP6850_W Dilution:

Batch: 5L01021 Sequence: 5L34216 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**2.652**	0.500	1.00	2.00	D

Total Target Analytes Reported: 1

ANALYSIS DATA SHEET

Blank

Laboratory: Empirical Laboratories, LLC SDG: 1511269

Client: Microbac Laboratories, Inc.-Ohio Valley Division Project: Perchlorate

Matrix: Laboratory ID: 5L03014-BLK1 File ID: PERC000011.D.Report.TXT

Sampled: Prepared: Analyzed: 12/07/15 20:02

Solids: Preparation: LCMS_PREP6850_W Dilution:

Batch: 5L03014 Sequence: 5L34214 Calibration: 5317001 Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate		0.100	0.200	0.400	U

Total Target Analytes Reported: 1

ANALYSIS DATA SHEET

LCS

Laboratory:	Empirical Laboratories, LLC			SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division			Project:	Perchlorate
Matrix:		Laboratory ID:	5L03014-BS1	File ID:	PERC000012.D.Report.TXT
Sampled:		Prepared:		Analyzed:	12/07/15 20:20
Solids:		Preparation:	LCMS_PREP6850_W	Dilution:	
Batch:	5L03014	Sequence:	5L34214	Calibration:	5317001
Instrument:	LCMS1				

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**2.023**	0.100	0.200	0.400	

Total Target Analytes Reported: 1

ANALYSIS DATA SHEET

LCS Dup

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Matrix:
Laboratory ID: 5L03014-BSD1
File ID: PERC000013.D.Report.TXT
Sampled:
Prepared:
Analyzed: 12/07/15 20:38
Solids:
Preparation: LCMS_PREP6850_W
Dilution:
Batch: 5L03014
Sequence: 5L34214
Calibration: 5317001
Instrument: LCMS1

CAS NO.	COMPOUND	CONC. (ug/L)	DL	LOD	LOQ	Q
14797-73-0	Perchlorate	**2.011**	0.100	0.200	0.400	

Total Target Analytes Reported: 1

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Lab File ID:	PERC000002.D.Report.TXT	Injection Date:	11/11/15
Instrument ID:	LCMS1	Injection Time:	15:35
Sequence:	5K31704	Lab Sample ID:	5K31704-TUN1

m/z	MASS CRITERIA	ACTUAL MASS	
99	(+/- 0.3) of the actual mass	99	PASS
101	(+/- 0.3) of the actual mass	101	PASS

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Lab File ID:	PERC000002.D.Report.TXT	Injection Date:	12/02/15
Instrument ID:	LCMS1	Injection Time:	09:09
Sequence:	5L33714	Lab Sample ID:	5L33714-TUN1

m/z	MASS CRITERIA	ACTUAL MASS	
99	(+/- 0.3) of the actual mass	99	PASS
101	(+/- 0.3) of the actual mass	101	PASS

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Lab File ID:	PERC000002.D.Report.TXT	Injection Date:	12/07/15
Instrument ID:	LCMS1	Injection Time:	17:21
Sequence:	5L34214	Lab Sample ID:	5L34214-TUN1

m/z	MASS CRITERIA	ACTUAL MASS	
99	(+/- 0.3) of the actual mass	99	PASS
101	(+/- 0.3) of the actual mass	101	PASS

MASS SPECTROMETER INSTRUMENT PERFORMANCE CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Lab File ID:	PERC000002.D.Report.TXT	Injection Date:	12/04/15
Instrument ID:	LCMS1	Injection Time:	15:23
Sequence:	5L34216	Lab Sample ID:	5L34216-TUN1

m/z	MASS CRITERIA	ACTUAL MASS	
99	(+/- 0.3) of the actual mass	99	PASS
101	(+/- 0.3) of the actual mass	101	PASS

ICP INTERFERENCE CHECK SAMPLE

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Divisio
Project: Perchlorate
Instrument ID: LCMS1
Calibration: 5317001
Sequence: 5L33714

Lab Sample ID	Analyte	True	Found	%R	Units
5L33714-IFA1	Perchlorate-d18	5.000	5.00	100	ug/L
	Perchlorate	2.000	2.13	107	ug/L

ICP INTERFERENCE CHECK SAMPLE

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Divisio
Project: Perchlorate
Instrument ID: LCMS1
Calibration: 5317001
Sequence: 5L34214

Lab Sample ID	Analyte	True	Found	%R	Units
5L34214-IFA1	Perchlorate-d18	5.000	5.00	100	ug/L
	Perchlorate	2.000	2.39	120	ug/L

ICP INTERFERENCE CHECK SAMPLE

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Divisio
Project: Perchlorate
Instrument ID: LCMS1
Calibration: 5317001
Sequence: 5L34216

Lab Sample ID	Analyte	True	Found	%R	Units
5L34216-IFA1	Perchlorate-d18	5.000	5.00	99.5	ug/L
	Perchlorate	2.000	2.25	112	ug/L

INITIAL CALIBRATION STANDARDS

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Sequence:	5K31704	Instrument:	LCMS1
Calibration:	5317001		

Standard ID	Description	Lab Sample ID	Lab File ID	Analysis Date/Time
15F0073	Perchlorate 2nd Source Std 0.1 mg/L	5K31704-TUN1	PERC000002.D.Report.TXT	11/11/15 15:35
15H0455	Perchlorate Init Cal 0.2 ug/L	5K31704-CAL1	PERC000005.D.Report.TXT	11/11/15 16:29
15H0456	Perchlorate Init Cal 0.5 ug/L	5K31704-CAL2	PERC000006.D.Report.TXT	11/11/15 16:47
15H0457	Perchlorate Init Cal 1.0 ug/L	5K31704-CAL3	PERC000007.D.Report.TXT	11/11/15 17:04
15H0458	Perchlorate Init Cal 2.0 ug/L	5K31704-CAL4	PERC000008.D.Report.TXT	11/11/15 17:22
15H0459	Perchlorate Init Cal 5.0 ug/L	5K31704-CAL5	PERC000009.D.Report.TXT	11/11/15 17:40
15H0460	Perchlorate Init Cal 10 ug/L	5K31704-CAL6	PERC000010.D.Report.TXT	11/11/15 17:58
15H0461	Perchlorate Init Cal 20 ug/L	5K31704-CAL7	PERC000011.D.Report.TXT	11/11/15 18:16
15H0462	Perchlorate Init Cal 50 ug/L	5K31704-CAL8	PERC000012.D.Report.TXT	11/11/15 18:34

ANALYSIS SEQUENCE SUMMARY

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Sequence:	5K31704	Instrument:	LCMS1
Calibration:	5317001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	5K31704-TUN1	PERC000002.D.Report.TXT	11/11/15 15:35
Cal Standard	5K31704-CAL1	PERC000005.D.Report.TXT	11/11/15 16:29
Cal Standard	5K31704-CAL2	PERC000006.D.Report.TXT	11/11/15 16:47
Cal Standard	5K31704-CAL3	PERC000007.D.Report.TXT	11/11/15 17:04
Cal Standard	5K31704-CAL4	PERC000008.D.Report.TXT	11/11/15 17:22
Cal Standard	5K31704-CAL5	PERC000009.D.Report.TXT	11/11/15 17:40
Cal Standard	5K31704-CAL6	PERC000010.D.Report.TXT	11/11/15 17:58
Cal Standard	5K31704-CAL7	PERC000011.D.Report.TXT	11/11/15 18:16
Cal Standard	5K31704-CAL8	PERC000012.D.Report.TXT	11/11/15 18:34
Initial Cal Check	5K31704-ICV1	PERC000013.D.Report.TXT	11/11/15 18:51

ANALYSIS SEQUENCE SUMMARY

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Sequence:	5L33714	Instrument:	LCMS1
Calibration:	5317001		

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	5L33714-TUN1	PERC000002.D.Report.TXT	12/02/15 09:09
Calibration Check	5L33714-CCV1	PERC000005.D.Report.TXT	12/02/15 10:03
Low Cal Check	5L33714-LCV1	PERC000006.D.Report.TXT	12/02/15 10:21
Interference Check A	5L33714-IFA1	PERC000007.D.Report.TXT	12/02/15 10:39
Blank	5L01021-BLK1	PERC000010.D.Report.TXT	12/02/15 11:32
LCS	5L01021-BS1	PERC000011.D.Report.TXT	12/02/15 11:50
Calibration Check	5L33714-CCV2	PERC000023.D.Report.TXT	12/02/15 15:24
Low Cal Check	5L33714-LCV2	PERC000024.D.Report.TXT	12/02/15 15:42
Low Cal Check	5L33714-LCV3	PERC000025.D.Report.TXT	12/02/15 16:00
50SW06-111315	1511269-02	PERC000029.D.Report.TXT	12/02/15 17:11
GPW1-111315	1511269-03	PERC000030.D.Report.TXT	12/02/15 17:29
50WW22-111615	1511269-09	PERC000036.D.Report.TXT	12/02/15 19:16
Calibration Check	5L33714-CCV3	PERC000039.D.Report.TXT	12/02/15 20:10
Low Cal Check	5L33714-LCV4	PERC000040.D.Report.TXT	12/02/15 20:28
Low Cal Check	5L33714-LCV5	PERC000041.D.Report.TXT	12/02/15 20:45

ANALYSIS SEQUENCE SUMMARY

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Sequence: 5L34214
Instrument: LCMS1
Calibration: 5317001

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	5L34214-TUN1	PERC000002.D.Report.TXT	12/07/15 17:21
Calibration Check	5L34214-CCV1	PERC000005.D.Report.TXT	12/07/15 18:15
Low Cal Check	5L34214-LCV1	PERC000006.D.Report.TXT	12/07/15 18:33
Low Cal Check	5L34214-LCV2	PERC000007.D.Report.TXT	12/07/15 18:51
Interference Check A	5L34214-IFA1	PERC000008.D.Report.TXT	12/07/15 19:09
Blank	5L03014-BLK1	PERC000011.D.Report.TXT	12/07/15 20:02
LCS	5L03014-BS1	PERC000012.D.Report.TXT	12/07/15 20:20
LCS Dup	5L03014-BSD1	PERC000013.D.Report.TXT	12/07/15 20:38
50WW16-111315	1511269-05	PERC000014.D.Report.TXT	12/07/15 20:56
50WW25-111615	1511269-13	PERC000023.D.Report.TXT	12/07/15 23:37
Calibration Check	5L34214-CCV2	PERC000025.D.Report.TXT	12/08/15 00:12
Low Cal Check	5L34214-LCV3	PERC000026.D.Report.TXT	12/08/15 00:30
Low Cal Check	5L34214-LCV4	PERC000027.D.Report.TXT	12/08/15 00:48
50WW13-111215	1511269-20	PERC000028.D.Report.TXT	12/08/15 01:06
50WW11-111215	1511269-22	PERC000029.D.Report.TXT	12/08/15 01:24
50WW06-111215	1511269-23	PERC000030.D.Report.TXT	12/08/15 01:42
50WW12-111215	1511269-24	PERC000031.D.Report.TXT	12/08/15 02:00
Calibration Check	5L34214-CCV3	PERC000033.D.Report.TXT	12/08/15 02:35
Low Cal Check	5L34214-LCV5	PERC000034.D.Report.TXT	12/08/15 02:53
Low Cal Check	5L34214-LCV6	PERC000035.D.Report.TXT	12/08/15 03:11

ANALYSIS SEQUENCE SUMMARY

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Sequence: 5L34216
Instrument: LCMS1
Calibration: 5317001

Sample Name	Lab Sample ID	Lab File ID	Analysis Date/Time
MS Tune	5L34216-TUN1	PERC000002.D.Report.TXT	12/04/15 15:23
Calibration Check	5L34216-CCV1	PERC000005.D.Report.TXT	12/04/15 16:17
Low Cal Check	5L34216-LCV1	PERC000006.D.Report.TXT	12/04/15 16:35
Low Cal Check	5L34216-LCV2	PERC000007.D.Report.TXT	12/04/15 16:52
Interference Check A	5L34216-IFA1	PERC000008.D.Report.TXT	12/04/15 17:10
50WW05-111315	1511269-01	PERC000011.D.Report.TXT	12/04/15 18:04
50WW05-111315	5L01021-MS1	PERC000012.D.Report.TXT	12/04/15 18:22
50WW05-111315	5L01021-MSD1	PERC000013.D.Report.TXT	12/04/15 18:39
LHSMW54-111315	1511269-06	PERC000014.D.Report.TXT	12/04/15 18:57
47WW38-111315	1511269-07	PERC000015.D.Report.TXT	12/04/15 19:15
50WW08-111615	1511269-08	PERC000016.D.Report.TXT	12/04/15 19:33
50WW28-111315	1511269-04	PERC000023.D.Report.TXT	12/04/15 21:38
50WW24-111615	1511269-10	PERC000025.D.Report.TXT	12/04/15 22:13
Calibration Check	5L34216-CCV2	PERC000027.D.Report.TXT	12/04/15 22:49
Low Cal Check	5L34216-LCV3	PERC000028.D.Report.TXT	12/04/15 23:07
Low Cal Check	5L34216-LCV4	PERC000029.D.Report.TXT	12/04/15 23:25
50WW23-111615	1511269-11	PERC000030.D.Report.TXT	12/04/15 23:43
50WW18-111615	1511269-12	PERC000031.D.Report.TXT	12/05/15 00:00
50WW27-111115	1511269-14	PERC000033.D.Report.TXT	12/05/15 00:36
50WW15-111115	1511269-15	PERC000034.D.Report.TXT	12/05/15 00:54
50WW15FD-111115	1511269-16	PERC000035.D.Report.TXT	12/05/15 01:12
50WW09-111115	1511269-17	PERC000036.D.Report.TXT	12/05/15 01:30
50WW09FD-111115	1511269-18	PERC000037.D.Report.TXT	12/05/15 01:47
50WW10-111115	1511269-19	PERC000038.D.Report.TXT	12/05/15 02:05
Calibration Check	5L34216-CCV3	PERC000041.D.Report.TXT	12/05/15 02:59
Low Cal Check	5L34216-LCV5	PERC000042.D.Report.TXT	12/05/15 03:17
Low Cal Check	5L34216-LCV6	PERC000043.D.Report.TXT	12/05/15 03:35
50WW14-111215	1511269-21	PERC000044.D.Report.TXT	12/05/15 03:52
Calibration Check	5L34216-CCV4	PERC000050.D.Report.TXT	12/05/15 05:40
Low Cal Check	5L34216-LCV7	PERC000051.D.Report.TXT	12/05/15 05:57
Low Cal Check	5L34216-LCV8	PERC000052.D.Report.TXT	12/05/15 06:15

INTERNAL STANDARD AREA AND RT SUMMARY
SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Sequence:	5L33714	Instrument:	LCMS1
		Calibration:	5317001

Internal Standard	Response	RT	Response	Reference Area %	Area % Limits	Q
Calibration Check (5L33714-CCV1)		Lab File ID: PERC000005.D.Report.TXT			Analyzed: 12/02/15 10:03	
Perchlorate-d18	797656	8.857	627649	127	50 - 150	
Low Cal Check (5L33714-LCV1)		Lab File ID: PERC000006.D.Report.TXT			Analyzed: 12/02/15 10:21	
Perchlorate-d18	799120	8.893	627649	127	50 - 150	
Interference Check A (5L33714-IFA1)		Lab File ID: PERC000007.D.Report.TXT			Analyzed: 12/02/15 10:39	
Perchlorate-d18	799831	7.645	627649	127	50 - 150	
Blank (5L01021-BLK1)		Lab File ID: PERC000010.D.Report.TXT			Analyzed: 12/02/15 11:32	
Perchlorate-d18	1027170	8.929	627649	164	50 - 150	*
LCS (5L01021-BS1)		Lab File ID: PERC000011.D.Report.TXT			Analyzed: 12/02/15 11:50	
Perchlorate-d18	770780	8.94	627649	123	50 - 150	
Calibration Check (5L33714-CCV2)		Lab File ID: PERC000023.D.Report.TXT			Analyzed: 12/02/15 15:24	
Perchlorate-d18	745744	8.866	627649	119	50 - 150	
Low Cal Check (5L33714-LCV2)		Lab File ID: PERC000024.D.Report.TXT			Analyzed: 12/02/15 15:42	
Perchlorate-d18	747259	8.921	627649	119	50 - 150	
Low Cal Check (5L33714-LCV3)		Lab File ID: PERC000025.D.Report.TXT			Analyzed: 12/02/15 16:00	
Perchlorate-d18	755297	8.84	627649	120	50 - 150	
50SW06-111315 (1511269-02)		Lab File ID: PERC000029.D.Report.TXT			Analyzed: 12/02/15 17:11	
Perchlorate-d18	730496	8.551	627649	116	50 - 150	
GPW1-111315 (1511269-03)		Lab File ID: PERC000030.D.Report.TXT			Analyzed: 12/02/15 17:29	
Perchlorate-d18	881174	8.57	627649	140	50 - 150	
50WW22-111615 (1511269-09)		Lab File ID: PERC000036.D.Report.TXT			Analyzed: 12/02/15 19:16	
Perchlorate-d18	903310	8.068	627649	144	50 - 150	
Calibration Check (5L33714-CCV3)		Lab File ID: PERC000039.D.Report.TXT			Analyzed: 12/02/15 20:10	
Perchlorate-d18	732515	8.86	627649	117	50 - 150	
Low Cal Check (5L33714-LCV4)		Lab File ID: PERC000040.D.Report.TXT			Analyzed: 12/02/15 20:28	
Perchlorate-d18	736450	8.913	627649	117	50 - 150	
Low Cal Check (5L33714-LCV5)		Lab File ID: PERC000041.D.Report.TXT			Analyzed: 12/02/15 20:45	
Perchlorate-d18	743147	8.84	627649	118	50 - 150	

INTERNAL STANDARD AREA AND RT SUMMARY
SW6850

Laboratory: Empirical Laboratories, LLC
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Sequence: 5L34214
SDG: 1511269
Project: Perchlorate
Instrument: LCMS1
Calibration: 5317001

Internal Standard	Response	RT	Response	Reference Area %	Area % Limits	Q
Calibration Check (5L34214-CCV1)		Lab File ID: PERC000005.D.Report.TXT			Analyzed: 12/07/15 18:15	
Perchlorate-d18	659346	8.847	627649	105	50 - 150	
Low Cal Check (5L34214-LCV1)		Lab File ID: PERC000006.D.Report.TXT			Analyzed: 12/07/15 18:33	
Perchlorate-d18	675145	8.879	627649	108	50 - 150	
Low Cal Check (5L34214-LCV2)		Lab File ID: PERC000007.D.Report.TXT			Analyzed: 12/07/15 18:51	
Perchlorate-d18	674495	8.807	627649	107	50 - 150	
Interference Check A (5L34214-IFA1)		Lab File ID: PERC000008.D.Report.TXT			Analyzed: 12/07/15 19:09	
Perchlorate-d18	661861	7.7	627649	105	50 - 150	
Blank (5L03014-BLK1)		Lab File ID: PERC000011.D.Report.TXT			Analyzed: 12/07/15 20:02	
Perchlorate-d18	638227	8.903	627649	102	50 - 150	
LCS (5L03014-BS1)		Lab File ID: PERC000012.D.Report.TXT			Analyzed: 12/07/15 20:20	
Perchlorate-d18	659183	8.905	627649	105	50 - 150	
LCS Dup (5L03014-BSD1)		Lab File ID: PERC000013.D.Report.TXT			Analyzed: 12/07/15 20:38	
Perchlorate-d18	660510	8.899	627649	105	50 - 150	
50WW16-111315 (1511269-05)		Lab File ID: PERC000014.D.Report.TXT			Analyzed: 12/07/15 20:56	
Perchlorate-d18	665001	8.509	627649	106	50 - 150	
50WW25-111615 (1511269-13)		Lab File ID: PERC000023.D.Report.TXT			Analyzed: 12/07/15 23:37	
Perchlorate-d18	750602	8.539	627649	120	50 - 150	
Calibration Check (5L34214-CCV2)		Lab File ID: PERC000025.D.Report.TXT			Analyzed: 12/08/15 00:12	
Perchlorate-d18	642843	8.852	627649	102	50 - 150	
Low Cal Check (5L34214-LCV3)		Lab File ID: PERC000026.D.Report.TXT			Analyzed: 12/08/15 00:30	
Perchlorate-d18	655481	8.885	627649	104	50 - 150	
Low Cal Check (5L34214-LCV4)		Lab File ID: PERC000027.D.Report.TXT			Analyzed: 12/08/15 00:48	
Perchlorate-d18	660003	8.81	627649	105	50 - 150	
50WW13-111215 (1511269-20)		Lab File ID: PERC000028.D.Report.TXT			Analyzed: 12/08/15 01:06	
Perchlorate-d18	633737	8.916	627649	101	50 - 150	
50WW11-111215 (1511269-22)		Lab File ID: PERC000029.D.Report.TXT			Analyzed: 12/08/15 01:24	
Perchlorate-d18	654391	8.918	627649	104	50 - 150	
50WW06-111215 (1511269-23)		Lab File ID: PERC000030.D.Report.TXT			Analyzed: 12/08/15 01:42	
Perchlorate-d18	661468	8.938	627649	105	50 - 150	
50WW12-111215 (1511269-24)		Lab File ID: PERC000031.D.Report.TXT			Analyzed: 12/08/15 02:00	
Perchlorate-d18	646151	8.922	627649	103	50 - 150	
Calibration Check (5L34214-CCV3)		Lab File ID: PERC000033.D.Report.TXT			Analyzed: 12/08/15 02:35	
Perchlorate-d18	641819	8.876	627649	102	50 - 150	
Low Cal Check (5L34214-LCV5)		Lab File ID: PERC000034.D.Report.TXT			Analyzed: 12/08/15 02:53	
Perchlorate-d18	659144	8.886	627649	105	50 - 150	
Low Cal Check (5L34214-LCV6)		Lab File ID: PERC000035.D.Report.TXT			Analyzed: 12/08/15 03:11	
Perchlorate-d18	656658	8.827	627649	105	50 - 150	

INTERNAL STANDARD AREA AND RT SUMMARY
SW6850

Laboratory: Empirical Laboratories, LLC
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Sequence: 5L34216
SDG: 1511269
Project: Perchlorate
Instrument: LCMS1
Calibration: 5317001

Internal Standard	Response	RT	Response	Reference Area %	Area % Limits	Q
Calibration Check (5L34216-CCV1)		Lab File ID: PERC000005.D.Report.TXT			Analyzed: 12/04/15 16:17	
Perchlorate-d18	745180	8.881	627649	119	50 - 150	
Low Cal Check (5L34216-LCV1)		Lab File ID: PERC000006.D.Report.TXT			Analyzed: 12/04/15 16:35	
Perchlorate-d18	751208	8.931	627649	120	50 - 150	
Low Cal Check (5L34216-LCV2)		Lab File ID: PERC000007.D.Report.TXT			Analyzed: 12/04/15 16:52	
Perchlorate-d18	755377	8.852	627649	120	50 - 150	
Interference Check A (5L34216-IFA1)		Lab File ID: PERC000008.D.Report.TXT			Analyzed: 12/04/15 17:10	
Perchlorate-d18	741624	7.655	627649	118	50 - 150	
50WW05-111315 (1511269-01)		Lab File ID: PERC000011.D.Report.TXT			Analyzed: 12/04/15 18:04	
Perchlorate-d18	850119	8.21	627649	135	50 - 150	
Matrix Spike (5L01021-MS1)		Lab File ID: PERC000012.D.Report.TXT			Analyzed: 12/04/15 18:22	
Perchlorate-d18	817554	8.189	627649	130	50 - 150	
Matrix Spike Dup (5L01021-MSD1)		Lab File ID: PERC000013.D.Report.TXT			Analyzed: 12/04/15 18:39	
Perchlorate-d18	775742	8.172	627649	124	50 - 150	
LHSMW54-111315 (1511269-06)		Lab File ID: PERC000014.D.Report.TXT			Analyzed: 12/04/15 18:57	
Perchlorate-d18	869886	8.306	627649	139	50 - 150	
47WW38-111315 (1511269-07)		Lab File ID: PERC000015.D.Report.TXT			Analyzed: 12/04/15 19:15	
Perchlorate-d18	795443	8.851	627649	127	50 - 150	
50WW08-111615 (1511269-08)		Lab File ID: PERC000016.D.Report.TXT			Analyzed: 12/04/15 19:33	
Perchlorate-d18	809895	8.36	627649	129	50 - 150	
50WW28-111315 (1511269-04)		Lab File ID: PERC000023.D.Report.TXT			Analyzed: 12/04/15 21:38	
Perchlorate-d18	934815	8.703	627649	149	50 - 150	
50WW24-111615 (1511269-10)		Lab File ID: PERC000025.D.Report.TXT			Analyzed: 12/04/15 22:13	
Perchlorate-d18	775288	8.265	627649	124	50 - 150	
Calibration Check (5L34216-CCV2)		Lab File ID: PERC000027.D.Report.TXT			Analyzed: 12/04/15 22:49	
Perchlorate-d18	724671	8.868	627649	115	50 - 150	
Low Cal Check (5L34216-LCV3)		Lab File ID: PERC000028.D.Report.TXT			Analyzed: 12/04/15 23:07	
Perchlorate-d18	726899	8.915	627649	116	50 - 150	
Low Cal Check (5L34216-LCV4)		Lab File ID: PERC000029.D.Report.TXT			Analyzed: 12/04/15 23:25	
Perchlorate-d18	731364	8.843	627649	117	50 - 150	
50WW23-111615 (1511269-11)		Lab File ID: PERC000030.D.Report.TXT			Analyzed: 12/04/15 23:43	
Perchlorate-d18	807759	8.249	627649	129	50 - 150	
50WW18-111615 (1511269-12)		Lab File ID: PERC000031.D.Report.TXT			Analyzed: 12/05/15 00:00	
Perchlorate-d18	776843	8.213	627649	124	50 - 150	
50WW27-111115 (1511269-14)		Lab File ID: PERC000033.D.Report.TXT			Analyzed: 12/05/15 00:36	
Perchlorate-d18	897185	8.236	627649	143	50 - 150	
50WW15-111115 (1511269-15)		Lab File ID: PERC000034.D.Report.TXT			Analyzed: 12/05/15 00:54	
Perchlorate-d18	846581	8.21	627649	135	50 - 150	

INTERNAL STANDARD AREA AND RT SUMMARY
SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Sequence:	5L34216	Instrument:	LCMS1
		Calibration:	5317001

Internal Standard	Response	RT	Response	Reference Area %	Area % Limits	Q
50WW15FD-111115 (1511269-16)		Lab File ID: PERC000035.D.Report.TXT			Analyzed: 12/05/15 01:12	
Perchlorate-d18	890641	8.218	627649	142	50 - 150	
50WW09-111115 (1511269-17)		Lab File ID: PERC000036.D.Report.TXT			Analyzed: 12/05/15 01:30	
Perchlorate-d18	863099	8.179	627649	138	50 - 150	
50WW09FD-111115 (1511269-18)		Lab File ID: PERC000037.D.Report.TXT			Analyzed: 12/05/15 01:47	
Perchlorate-d18	825938	8.187	627649	132	50 - 150	
50WW10-111115 (1511269-19)		Lab File ID: PERC000038.D.Report.TXT			Analyzed: 12/05/15 02:05	
Perchlorate-d18	516344	8.11	627649	82	50 - 150	
Calibration Check (5L34216-CCV3)		Lab File ID: PERC000041.D.Report.TXT			Analyzed: 12/05/15 02:59	
Perchlorate-d18	686932	8.862	627649	109	50 - 150	
Low Cal Check (5L34216-LCV5)		Lab File ID: PERC000042.D.Report.TXT			Analyzed: 12/05/15 03:17	
Perchlorate-d18	693929	8.914	627649	111	50 - 150	
Low Cal Check (5L34216-LCV6)		Lab File ID: PERC000043.D.Report.TXT			Analyzed: 12/05/15 03:35	
Perchlorate-d18	696546	8.85	627649	111	50 - 150	
50WW14-111215 (1511269-21)		Lab File ID: PERC000044.D.Report.TXT			Analyzed: 12/05/15 03:52	
Perchlorate-d18	819078	8.192	627649	130	50 - 150	
Calibration Check (5L34216-CCV4)		Lab File ID: PERC000050.D.Report.TXT			Analyzed: 12/05/15 05:40	
Perchlorate-d18	596132	8.872	627649	95	50 - 150	
Low Cal Check (5L34216-LCV7)		Lab File ID: PERC000051.D.Report.TXT			Analyzed: 12/05/15 05:57	
Perchlorate-d18	609669	8.926	627649	97	50 - 150	
Low Cal Check (5L34216-LCV8)		Lab File ID: PERC000052.D.Report.TXT			Analyzed: 12/05/15 06:15	
Perchlorate-d18	614081	8.852	627649	98	50 - 150	

INITIAL CALIBRATION DATA

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269	
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate	
Calibration:	5317001	Instrument:	LCMS1	
Matrix:	Water	Calibration Dates:	11/11/15 16:29	11/11/15 18:34

Compound	Level 01		Level 02		Level 03		Level 04		Level 05		Level 06	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Perchlorate	0.2	1.28592	0.5	1.112583	1	1.16135	2	1.156456	5	1.169845	10	1.167638
Perchlorate (101)	0.2	0.4162459	0.5	0.3724168	1	0.377893	2	0.3773375	5	0.3817238	10	0.3780177

INITIAL CALIBRATION DATA (Continued)

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269	
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate	
Calibration:	5317001	Instrument:	LCMS1	
Matrix:	Water	Calibration Dates:	11/11/15 16:29	11/11/15 18:34

Compound	Level 07		Level 08		Level 09		Level 10		Level 11		Level 12	
	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF	ug/L	RF
Perchlorate	20	1.198806	50	1.174267								
Perchlorate (101)	20	0.3858999	50	0.3809597								

INITIAL CALIBRATION DATA (Continued)

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269	
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate	
Calibration:	5317001	Instrument:	LCMS1	
Matrix:	Water	Calibration Dates:	11/11/15 16:29	11/11/15 18:34

Compound	Mean RF	RF RSD	Mean RT	RT RSD	Linear r	Quad COD	LIMIT	Q
Perchlorate	1.178358	4.217321	8.902375	0.124603			20	
Perchlorate (101)	0.3838118	3.56316	8.918625	0.1359902			20	

Per current DoD QSM requirements, effective 03/17/2014, Empirical has updated the linear calibration coefficient requirements to reflect a limit of 0.990 for "r2" rather than the previously reported limit of 0.995 for "r". The change in assessment criteria is consistent with regulatory requirements.

INITIAL CALIBRATION CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Instrument ID:	LCMS1	Calibration:	5317001
Lab File ID:	PERC000013.D.Report.TXT	Calibration Date:	11/11/15 00:00
Sequence:	5K31704	Injection Date:	11/11/15
Lab Sample ID:	5K31704-ICV1	Injection Time:	18:51

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	ICV	ICAL	ICV	MIN (#)	ICV	LIMIT (#)
Perchlorate	A	5.000	4.974	1.178358	1.172325		-0.5	15

CONTINUING CALIBRATION CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Instrument ID:	LCMS1	Calibration:	5317001
Lab File ID:	PERC000005.D.Report.TXT	Calibration Date:	11/11/15 00:00
Sequence:	5L33714	Injection Date:	12/02/15
Lab Sample ID:	5L33714-CCV1	Injection Time:	10:03

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perchlorate	A	5.000	5.147	1.178358	1.212903		2.9	15

CONTINUING CALIBRATION CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Instrument ID:	LCMS1	Calibration:	5317001
Lab File ID:	PERC000023.D.Report.TXT	Calibration Date:	11/11/15 00:00
Sequence:	5L33714	Injection Date:	12/02/15
Lab Sample ID:	5L33714-CCV2	Injection Time:	15:24

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perchlorate	A	5.000	5.145	1.178358	1.212613		2.9	15

CONTINUING CALIBRATION CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Instrument ID:	LCMS1	Calibration:	5317001
Lab File ID:	PERC000039.D.Report.TXT	Calibration Date:	11/11/15 00:00
Sequence:	5L33714	Injection Date:	12/02/15
Lab Sample ID:	5L33714-CCV3	Injection Time:	20:10

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perchlorate	A	5.000	5.150	1.178358	1.21381		3.0	15

CONTINUING CALIBRATION CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Instrument ID:	LCMS1	Calibration:	5317001
Lab File ID:	PERC000005.D.Report.TXT	Calibration Date:	11/11/15 00:00
Sequence:	5L34214	Injection Date:	12/07/15
Lab Sample ID:	5L34214-CCV1	Injection Time:	18:15

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perchlorate	A	5.000	5.235	1.178358	1.233812		4.7	15

CONTINUING CALIBRATION CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Instrument ID:	LCMS1	Calibration:	5317001
Lab File ID:	PERC000025.D.Report.TXT	Calibration Date:	11/11/15 00:00
Sequence:	5L34214	Injection Date:	12/08/15
Lab Sample ID:	5L34214-CCV2	Injection Time:	00:12

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perchlorate	A	5.000	5.228	1.178358	1.2322		4.6	15

CONTINUING CALIBRATION CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Instrument ID:	LCMS1	Calibration:	5317001
Lab File ID:	PERC000033.D.Report.TXT	Calibration Date:	11/11/15 00:00
Sequence:	5L34214	Injection Date:	12/08/15
Lab Sample ID:	5L34214-CCV3	Injection Time:	02:35

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perchlorate	A	5.000	5.209	1.178358	1.227655		4.2	15

CONTINUING CALIBRATION CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Instrument ID:	LCMS1	Calibration:	5317001
Lab File ID:	PERC000005.D.Report.TXT	Calibration Date:	11/11/15 00:00
Sequence:	5L34216	Injection Date:	12/04/15
Lab Sample ID:	5L34216-CCV1	Injection Time:	16:17

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perchlorate	A	5.000	5.141	1.178358	1.21156		2.8	15

CONTINUING CALIBRATION CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Instrument ID:	LCMS1	Calibration:	5317001
Lab File ID:	PERC000027.D.Report.TXT	Calibration Date:	11/11/15 00:00
Sequence:	5L34216	Injection Date:	12/04/15
Lab Sample ID:	5L34216-CCV2	Injection Time:	22:49

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perchlorate	A	5.000	5.218	1.178358	1.229703		4.4	15

CONTINUING CALIBRATION CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Instrument ID:	LCMS1	Calibration:	5317001
Lab File ID:	PERC000041.D.Report.TXT	Calibration Date:	11/11/15 00:00
Sequence:	5L34216	Injection Date:	12/05/15
Lab Sample ID:	5L34216-CCV3	Injection Time:	02:59

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perchlorate	A	5.000	5.196	1.178358	1.224521		3.9	15

CONTINUING CALIBRATION CHECK

SW6850

Laboratory:	Empirical Laboratories, LLC	SDG:	1511269
Client:	Microbac Laboratories, Inc.-Ohio Valley Division	Project:	Perchlorate
Instrument ID:	LCMS1	Calibration:	5317001
Lab File ID:	PERC000050.D.Report.TXT	Calibration Date:	11/11/15 00:00
Sequence:	5L34216	Injection Date:	12/05/15
Lab Sample ID:	5L34216-CCV4	Injection Time:	05:40

		CONC. (ug/L)		RESPONSE FACTOR			% DIFF / DRIFT	
COMPOUND	TYPE	STD	CCV	ICAL	CCV	MIN (#)	CCV	LIMIT (#)
Perchlorate	A	5.000	5.164	1.178358	1.216917		3.3	15

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L33714-LCV1
Sequence: 5L33714
Standard ID: 15J0445

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	1.000	0.9930	-0.7	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L33714-LCV2
Sequence: 5L33714
Standard ID: 15J0445

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	1.000	1.008	0.8	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L33714-LCV3
Sequence: 5L33714
Standard ID: 15H0001

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	0.4000	0.4244	6.1	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L33714-LCV4
Sequence: 5L33714
Standard ID: 15J0445

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	1.000	0.9977	-0.2	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L33714-LCV5
Sequence: 5L33714
Standard ID: 15H0001

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	0.4000	0.4523	13.1	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L34214-LCV1
Sequence: 5L34214
Standard ID: 15J0445

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	1.000	1.024	2.4	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L34214-LCV2
Sequence: 5L34214
Standard ID: 15H0001

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	0.4000	0.4029	0.7	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L34214-LCV3
Sequence: 5L34214
Standard ID: 15J0445

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	1.000	1.003	0.3	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L34214-LCV4
Sequence: 5L34214
Standard ID: 15H0001

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	0.4000	0.4415	10.4	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L34214-LCV5
Sequence: 5L34214
Standard ID: 15J0445

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	1.000	1.001	0.09	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L34214-LCV6
Sequence: 5L34214
Standard ID: 15H0001

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	0.4000	0.4354	8.9	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L34216-LCV1
Sequence: 5L34216
Standard ID: 15J0445

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	1.000	1.002	0.2	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L34216-LCV2
Sequence: 5L34216
Standard ID: 15H0001

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	0.4000	0.4115	2.9	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L34216-LCV3
Sequence: 5L34216
Standard ID: 15J0445

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	1.000	1.011	1.1	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L34216-LCV4
Sequence: 5L34216
Standard ID: 15H0001

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	0.4000	0.4418	10.5	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L34216-LCV5
Sequence: 5L34216
Standard ID: 15J0445

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	1.000	1.008	0.8	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L34216-LCV6
Sequence: 5L34216
Standard ID: 15H0001

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	0.4000	0.4735	18.4	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L34216-LCV7
Sequence: 5L34216
Standard ID: 15J0445

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	1.000	0.9984	-0.2	30.00

LOW-CONCENTRATION CALIBRATION VERIFICATION

SW6850

Laboratory: Empirical Laboratories, LLC
SDG: 1511269
Client: Microbac Laboratories, Inc.-Ohio Valley Division
Project: Perchlorate
Calibration: 5317001
Laboratory ID: 5L34216-LCV8
Sequence: 5L34216
Standard ID: 15H0001

ANALYTE	EXPECTED (ug/L)	FOUND (ug/L)	% DRIFT	QC LIMIT
Perchlorate	0.4000	0.4333	8.3	30.00

HOLDING TIME SUMMARY

SW6850

Laboratory: Empirical Laboratories, LLC SDG: 1511269

Client: Microbac Laboratories, Inc.-Ohio Valley Division Project: Perchlorate

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
50WW05-111315	11/13/15 08:00	11/25/15 08:45	12/01/15 13:39	18.24	28.00	12/04/15 18:04	21.42	28.00	
50SW06-111315	11/13/15 08:30	11/25/15 08:45	12/01/15 13:39	18.21	28.00	12/02/15 17:11	19.36	28.00	
GPW1-111315	11/13/15 08:45	11/25/15 08:45	12/01/15 13:39	18.20	28.00	12/02/15 17:29	19.36	28.00	
50WW28-111315	11/13/15 09:45	11/25/15 08:45	12/03/15 12:00	20.09	28.00	12/04/15 21:38	21.50	28.00	
50WW16-111315	11/13/15 10:45	11/25/15 08:45	12/03/15 12:00	20.05	28.00	12/07/15 20:56	24.42	28.00	
LHSMW54-111315	11/13/15 13:45	11/25/15 08:45	12/01/15 13:39	18.00	28.00	12/04/15 18:57	21.22	28.00	
47WW38-111315	11/13/15 14:55	11/25/15 08:45	12/01/15 13:39	17.95	28.00	12/04/15 19:15	21.18	28.00	
50WW08-111615	11/16/15 08:20	11/25/15 08:45	12/01/15 13:39	15.22	28.00	12/04/15 19:33	18.47	28.00	
50WW22-111615	11/16/15 09:25	11/25/15 08:45	12/01/15 13:39	15.18	28.00	12/02/15 19:16	16.41	28.00	
50WW24-111615	11/16/15 10:30	11/25/15 08:45	12/03/15 12:00	17.06	28.00	12/04/15 22:13	18.49	28.00	
50WW23-111615	11/16/15 11:35	11/25/15 08:45	12/03/15 12:00	17.02	28.00	12/04/15 23:43	18.51	28.00	
50WW18-111615	11/16/15 13:45	11/25/15 08:45	12/03/15 12:00	16.93	28.00	12/05/15 00:00	18.43	28.00	
50WW25-111615	11/16/15 14:55	11/25/15 08:45	12/03/15 12:00	16.88	28.00	12/07/15 23:37	21.36	28.00	
50WW27-111115	11/11/15 08:15	11/25/15 08:45	12/03/15 12:00	22.16	28.00	12/05/15 00:36	23.68	28.00	
50WW15-111115	11/11/15 09:15	11/25/15 08:45	12/03/15 12:00	22.11	28.00	12/05/15 00:54	23.65	28.00	
50WW15FD-111115	11/11/15 09:15	11/25/15 08:45	12/03/15 12:00	22.11	28.00	12/05/15 01:12	23.66	28.00	
50WW09-111115	11/11/15 10:35	11/25/15 08:45	12/03/15 12:00	22.06	28.00	12/05/15 01:30	23.62	28.00	
50WW09FD-111115	11/11/15 10:35	11/25/15 08:45	12/03/15 12:00	22.06	28.00	12/05/15 01:47	23.63	28.00	
50WW10-111115	11/11/15 14:35	11/25/15 08:45	12/03/15 12:00	21.89	28.00	12/05/15 02:05	23.48	28.00	
50WW13-111215	11/12/15 08:40	11/25/15 08:45	12/03/15 12:00	21.14	28.00	12/08/15 01:06	25.69	28.00	
50WW14-111215	11/12/15 09:50	11/25/15 08:45	12/03/15 12:00	21.09	28.00	12/05/15 03:52	22.75	28.00	
50WW11-111215	11/12/15 11:00	11/25/15 08:45	12/03/15 12:00	21.04	28.00	12/08/15 01:24	25.60	28.00	
50WW06-111215	11/12/15 13:25	11/25/15 08:45	12/03/15 12:00	20.94	28.00	12/08/15 01:42	25.51	28.00	

HOLDING TIME SUMMARY

SW6850

Laboratory: Empirical Laboratories, LLC SDG: 1511269

Client: Microbac Laboratories, Inc.-Ohio Valley Division Project: Perchlorate

Sample Name	Date Collected	Date Received	Date Prepared	Days to Prep	Max Days to Prep	Date Analyzed	Days to Analysis	Max Days to Analysis	Q
50WW12-111215	11/12/15 14:35	11/25/15 08:45	12/03/15 12:00	20.89	28.00	12/08/15 02:00	25.48	28.00	

Data for SW6850
Supporting Raw Data / Logs

Print of all graphic windows
Data File : C:\CHEM32\1\DATA\111115A\PERC000002.D
Sample Name : SEQ-TUN1

Acq. Operator	:	Seq. Line :	2
Acq. Instrument	: Instrument 1	Location :	Vial 1
Injection Date	: 11/11/2015 3:35:26 PM	Inj :	1
		Inj Volume :	100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_SC
Last changed : 9/29/2015 11:41:05 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/11/2015 2:51:33 PM
(modified after loading)

Current Chromatogram(s)

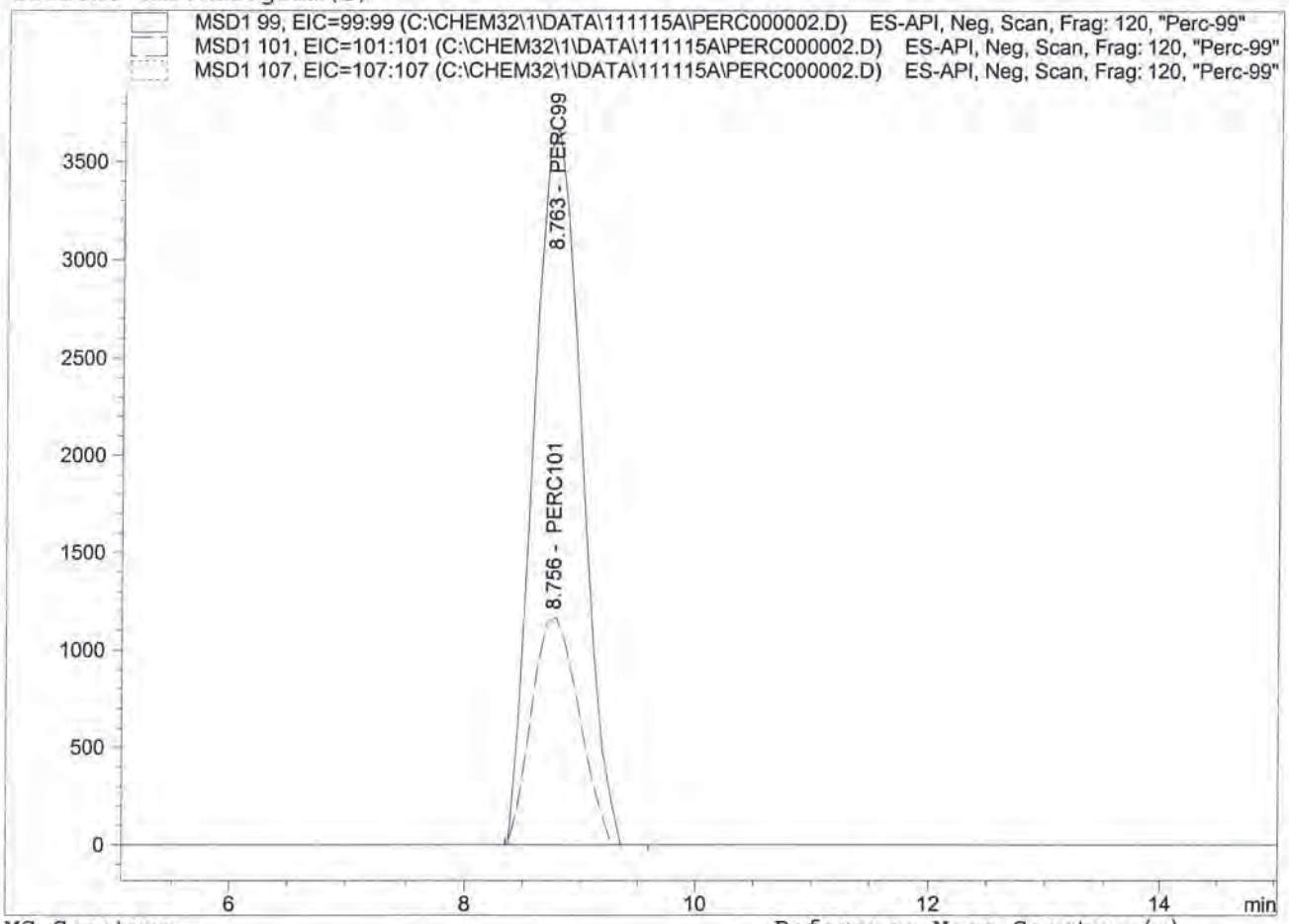

MS Spectrum

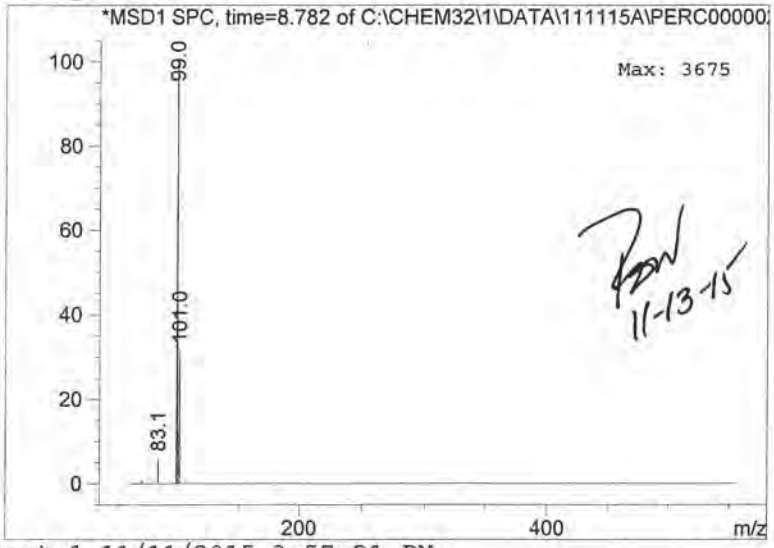

Reference Mass Spectrum(a)

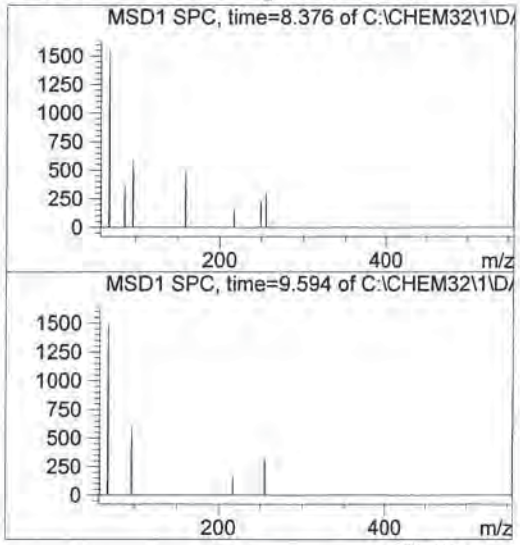

11/16/15

11-13-15

Data File C:\CHEM32\1\DATA\111115A\PERC000002.D
Sample Name: SEQ-TUN1

==========

Acq. Operator : Seq. Line : 2
Acq. Instrument : Instrument 1 Location : Vial 1
Injection Date : 11/11/2015 3:35:26 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_SC
Last changed : 9/29/2015 11:41:05 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/11/2015 2:51:33 PM
(modified after loading)

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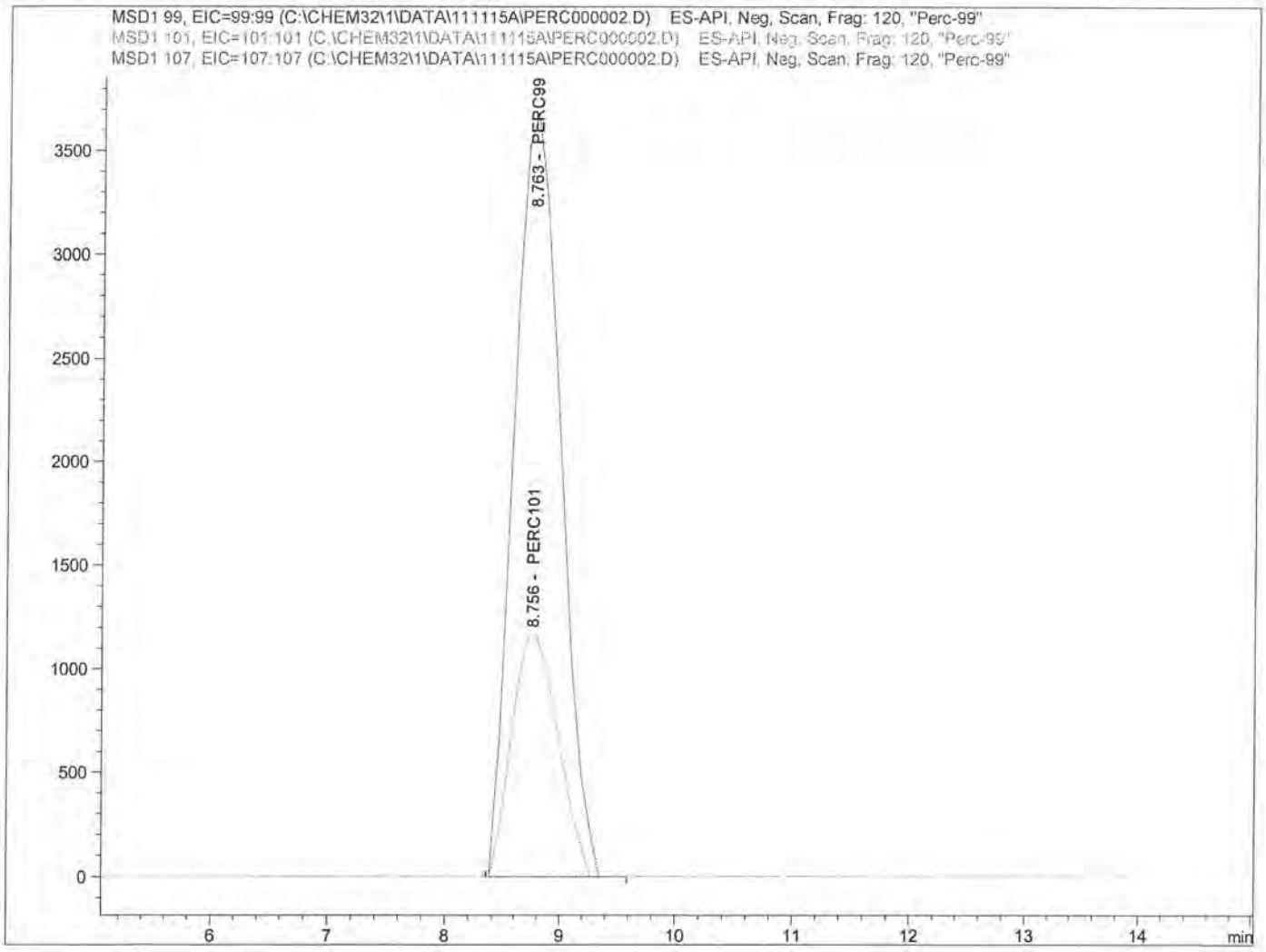

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Internal Standard Report

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11/16/15

Sorted By : Signal
Calib. Data Modified : 11/11/2015 2:51:33 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

11-13-15

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\111115A\PERC000002.D
Sample Name: SEQ-TUN1

```
==================================================================
Acq. Operator   :                                  Seq. Line :   2
Acq. Instrument : Instrument 1                      Location : Vial 1
Injection Date  : 11/11/2015 3:35:26 PM                  Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_SC
Last changed    : 9/29/2015 11:41:05 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed    : 11/11/2015 2:51:33 PM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.763	BB	1	1.04488e5	0.00000	0.00000		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.756	BB	1	3.29786e4	0.00000	0.00000		PERC101

Totals without ISTD(s) : 0.00000

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.840		1	-	-	-		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : ISTD compound(s) not found

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*** End of Report ***

Data File C:\CHEM32\1\DATA\111115A\PERC000005.D
Sample Name: SEQ-CAL1

==========

Acq. Operator : Seq. Line : 5
Acq. Instrument : Instrument 1 Location : Vial 91
Injection Date : 11/11/2015 4:29:18 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/11/2015 4:51:15 PM
(modified after loading)

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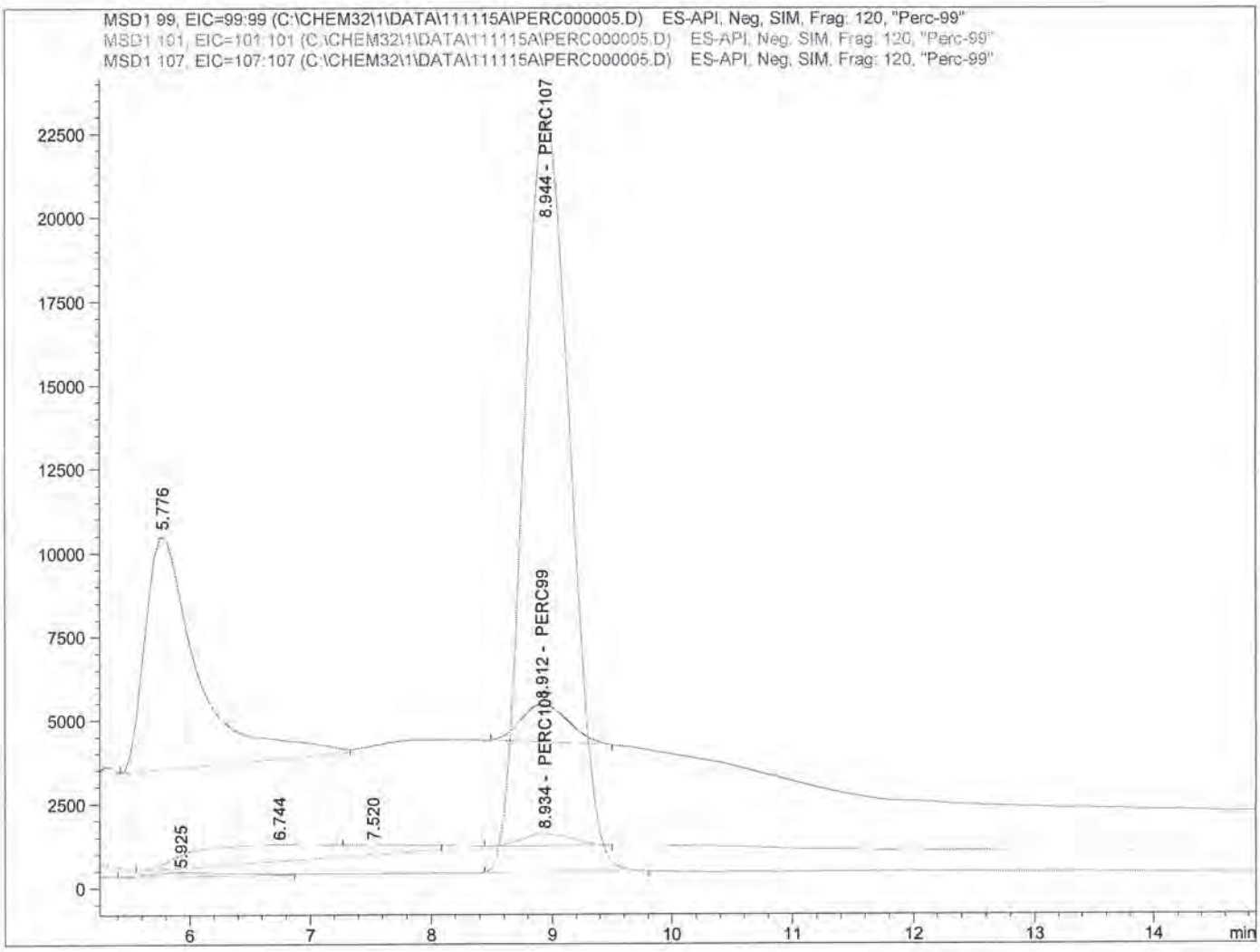

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : 11/11/2015 4:49:21 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

11/16/15

11-13-15

Data File C:\CHEM32\1\DATA\111115A\PERC000005.D
Sample Name: SEQ-CAL1

==========

Acq. Operator : Seq. Line : 5
Acq. Instrument : Instrument 1 Location : Vial 91
Injection Date : 11/11/2015 4:29:18 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/11/2015 4:51:15 PM
(modified after loading)

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1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.912	BBA	1	3.10224e4	9.44928e-1	2.43020e-1		PERC99

Totals without ISTD(s) : 2.43020e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.934	BBA	1	1.00418e4	2.82395	2.35091e-1		PERC101

Totals without ISTD(s) : 2.35091e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.944	BBA I	1	6.03117e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\111115A\PERC000006.D
Sample Name: SEQ-CAL2

==========

Acq. Operator : Seq. Line : 6
Acq. Instrument : Instrument 1 Location : Vial 92
Injection Date : 11/11/2015 4:47:05 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/13/2015 9:37:20 AM
(modified after loading)

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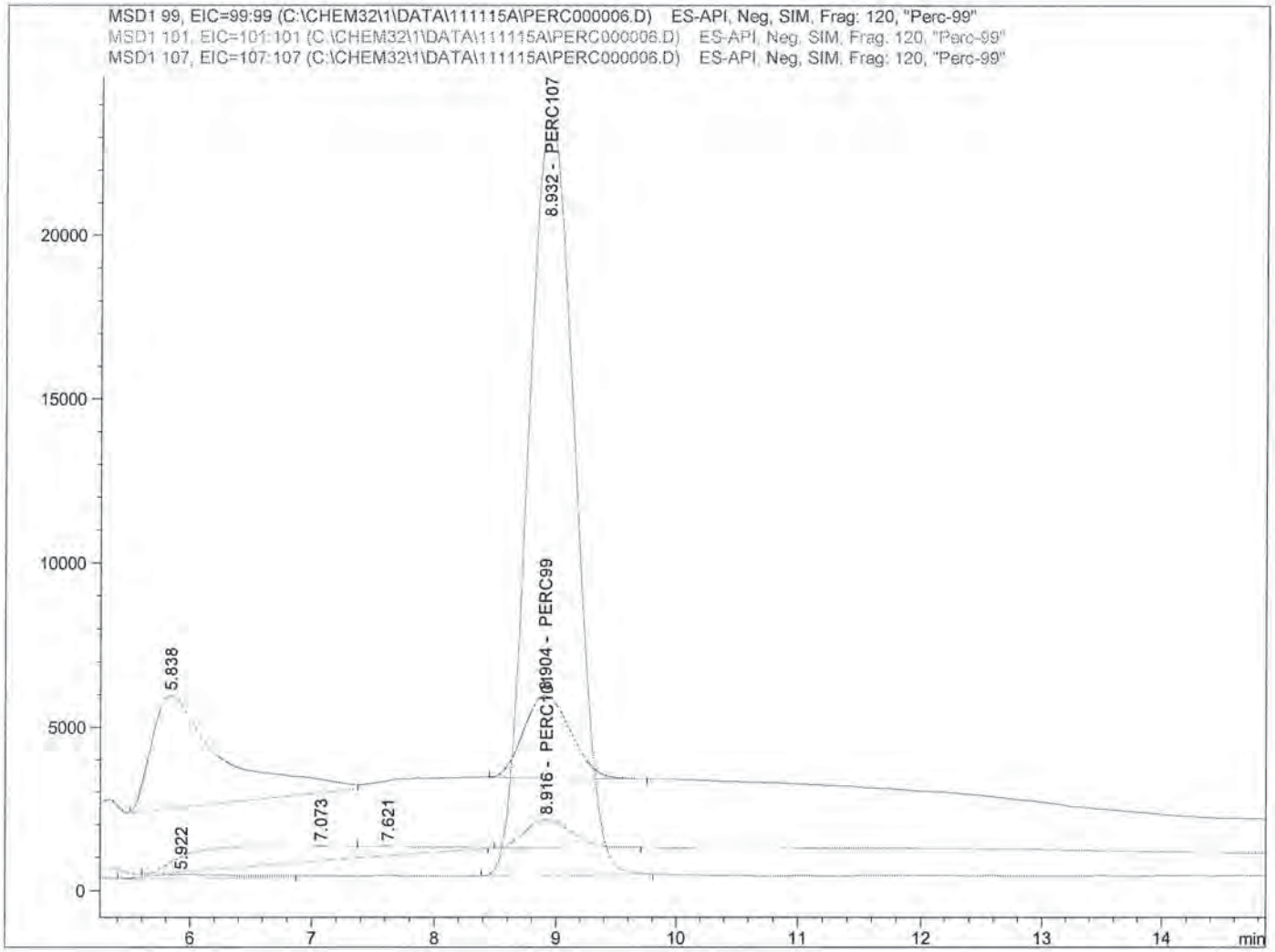

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Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : Wednesday, November 11, 2015 4:52:18 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

11/16/15

11-13-15

Data File C:\CHEM32\1\DATA\111115A\PERC000006.D
Sample Name: SEQ-CAL2

```
==================================================================
Acq. Operator   :                                Seq. Line :   6
Acq. Instrument : Instrument 1                    Location : Vial 92
Injection Date  : 11/11/2015 4:47:05 PM                Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed    : 11/13/2015 9:37:20 AM
                  (modified after loading)
==================================================================

  1      5.00000   PERC107


Signal 1: MSD1 99, EIC=99:99

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.904 BB        1 6.88955e4  9.15059e-1 5.09040e-1    PERC99

Totals without ISTD(s) :             5.09040e-1



Signal 2: MSD1 101, EIC=101:101

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.916 BBA       1 2.30615e4     2.78000 5.17658e-1    PERC101

Totals without ISTD(s) :             5.17658e-1



Signal 3: MSD1 107, EIC=107:107

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.932 BBA  I    1 6.19239e5     1.00000    5.00000    PERC107

Totals without ISTD(s) :                0.00000


==================================================================
                         *** End of Report ***
```

Data File C:\CHEM32\1\DATA\111115A\PERC000007.D
Sample Name: SEQ-CAL3

==========

Acq. Operator : Seq. Line : 7
Acq. Instrument : Instrument 1 Location : Vial 93
Injection Date : 11/11/2015 5:04:53 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/13/2015 9:38:16 AM
(modified after loading)

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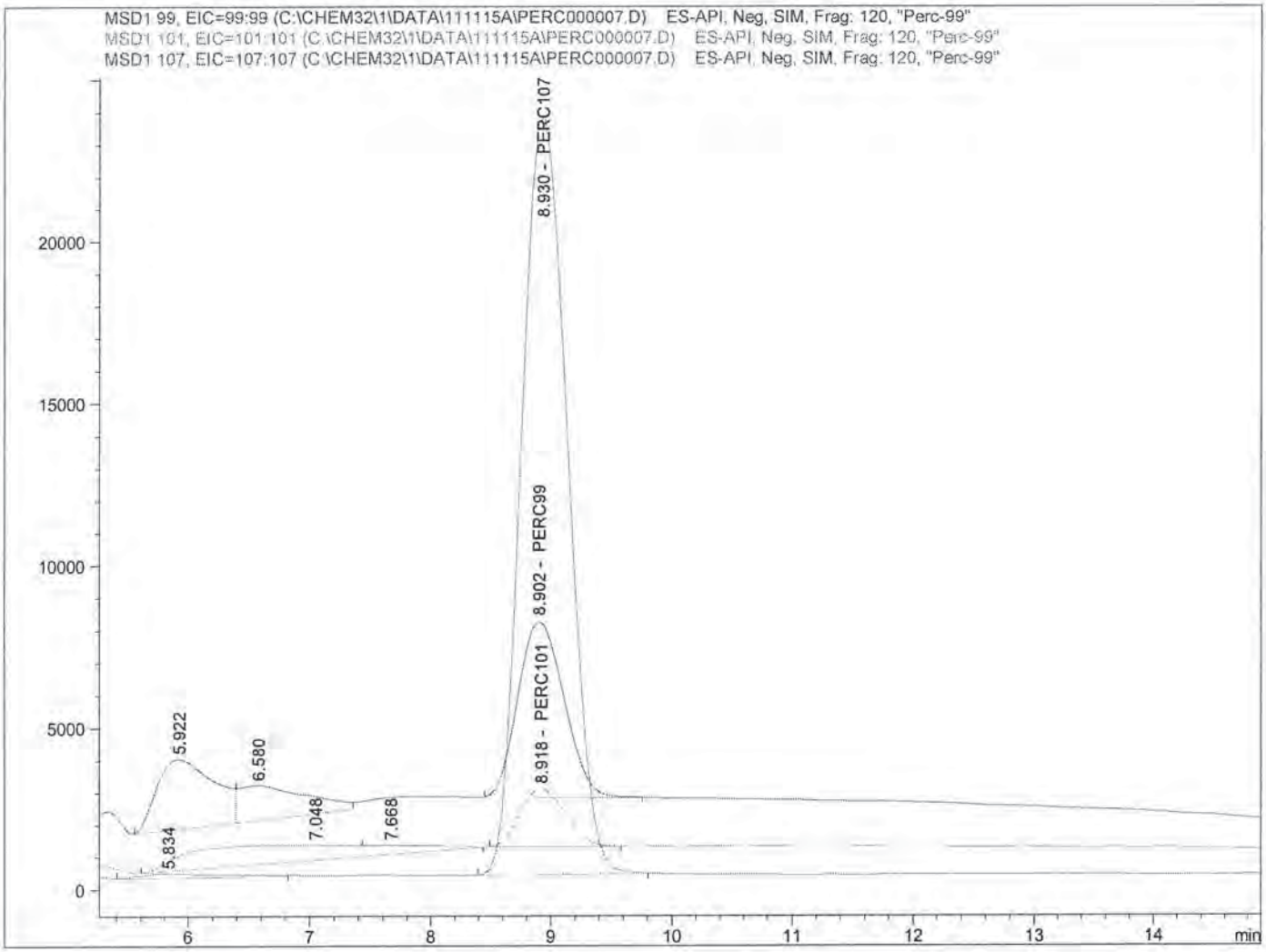

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Internal Standard Report

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11/16/15

Sorted By : Signal
Calib. Data Modified : Friday, November 13, 2015 9:38:16 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

11-13-15

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\111115A\PERC000007.D
Sample Name: SEQ-CAL3

==========

Acq. Operator : Seq. Line : 7
Acq. Instrument : Instrument 1 Location : Vial 93
Injection Date : 11/11/2015 5:04:53 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/13/2015 9:38:16 AM
(modified after loading)

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1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.902	BB	1	1.45188e5	8.98167e-1	1.04309		PERC99

Totals without ISTD(s) : 1.04309

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.918	BV	1	4.72429e4	2.75163	1.03982		PERC101

Totals without ISTD(s) : 1.03982

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.930	BBA I	1	6.25083e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\111115A\PERC000008.D
Sample Name: SEQ-CAL4

==========

Acq. Operator : Seq. Line : 8
Acq. Instrument : Instrument 1 Location : Vial 94
Injection Date : 11/11/2015 5:22:47 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/13/2015 9:38:59 AM
(modified after loading)

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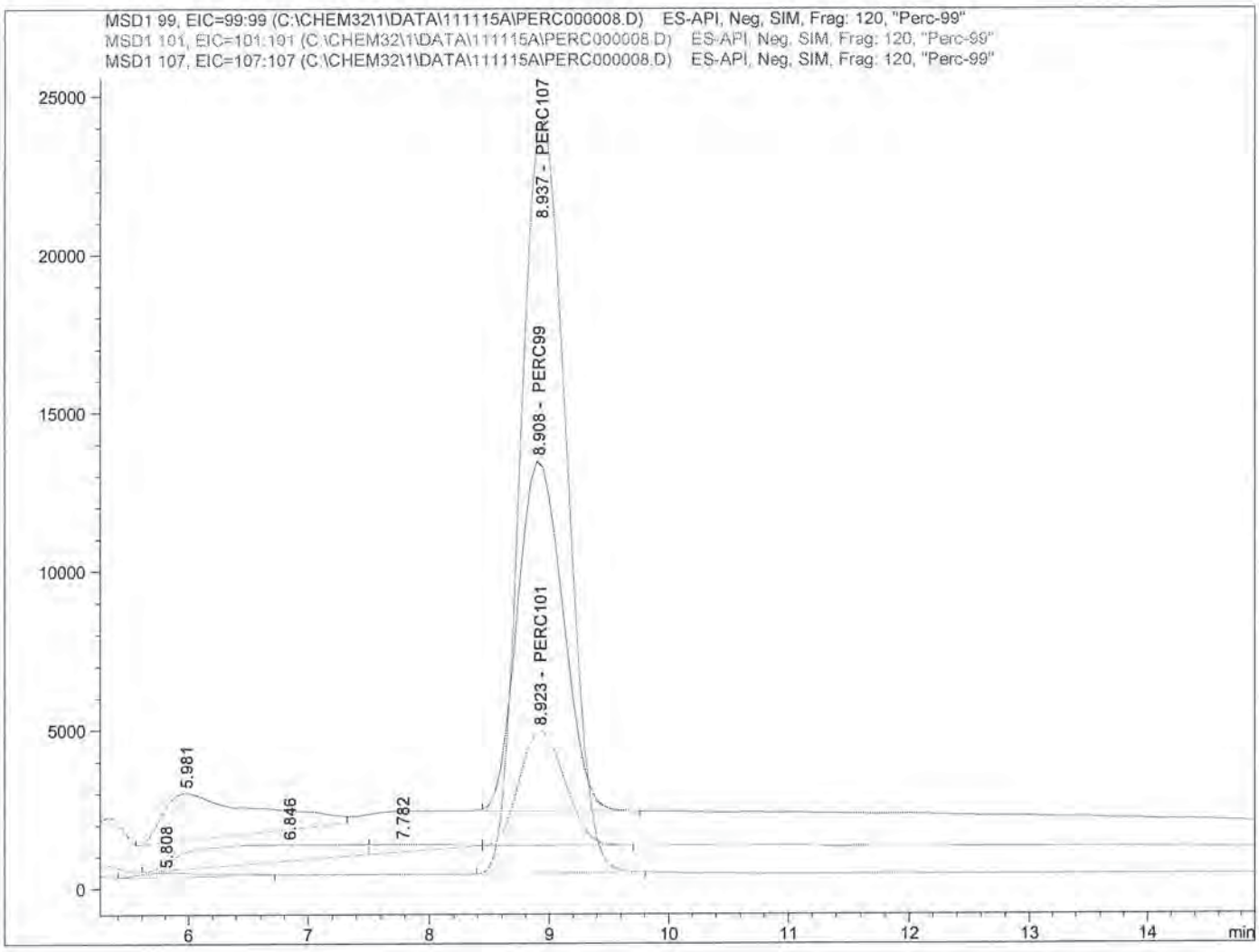

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Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : Friday, November 13, 2015 9:38:59 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

11-13-15

11/16/15

Data File C:\CHEM32\1\DATA\111115A\PERC000008.D
Sample Name: SEQ-CAL4

```
==================================================================
Acq. Operator   :                                Seq. Line :   8
Acq. Instrument : Instrument 1                    Location : Vial 94
Injection Date  : 11/11/2015 5:22:47 PM                Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed    : 11/13/2015 9:38:59 AM
                  (modified after loading)
==================================================================

  1      5.00000   PERC107


Signal 1: MSD1 99, EIC=99:99

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.908 BB        1 2.94696e5  8.87076e-1    2.05173    PERC99

Totals without ISTD(s) :                 2.05173


Signal 2: MSD1 101, EIC=101:101

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.923 BBA       1 9.61557e4     2.72316    2.05510    PERC101

Totals without ISTD(s) :                 2.05510


Signal 3: MSD1 107, EIC=107:107

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.937 BBA  I    1 6.37067e5     1.00000    5.00000    PERC107

Totals without ISTD(s) :                 0.00000


==================================================================
                        *** End of Report ***
```

Data File C:\CHEM32\1\DATA\111115A\PERC000009.D
Sample Name: SEQ-CAL5

==========

Acq. Operator : Seq. Line : 9
Acq. Instrument : Instrument 1 Location : Vial 95
Injection Date : 11/11/2015 5:40:37 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/13/2015 9:39:41 AM
(modified after loading)

==========

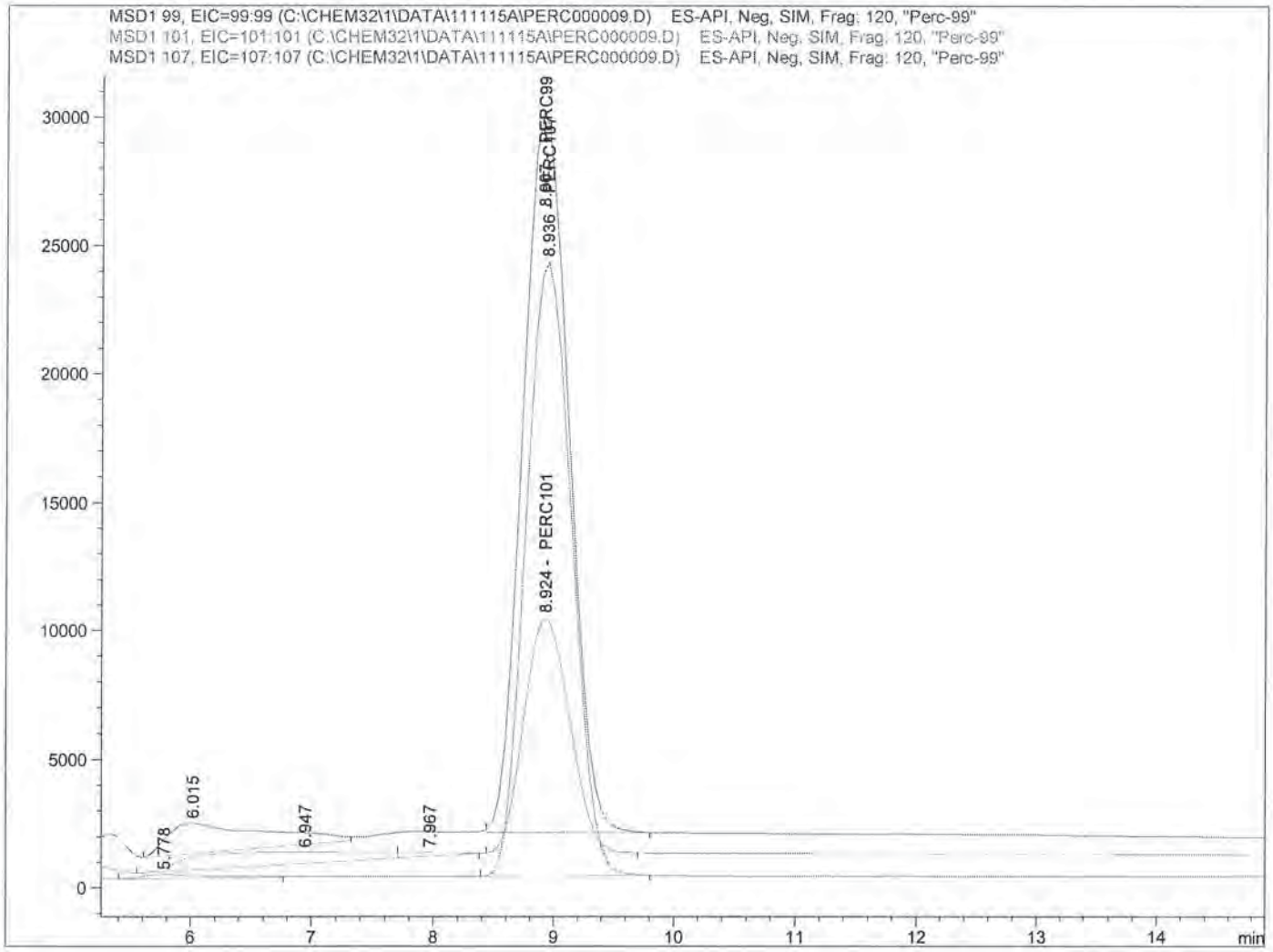

==========

Internal Standard Report

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11/16/15

Sorted By : Signal
Calib. Data Modified : Friday, November 13, 2015 9:39:41 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

11-13-15

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\111115A\PERC000009.D
Sample Name: SEQ-CAL5

```
==================================================================
Acq. Operator   :                                Seq. Line :   9
Acq. Instrument : Instrument 1                    Location : Vial 95
Injection Date  : 11/11/2015 5:40:37 PM                Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed    : 11/13/2015 9:39:41 AM
                  (modified after loading)
==================================================================

  1      5.00000   PERC107


Signal 1: MSD1 99, EIC=99:99

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.907 BBA       1 7.47180e5  8.79368e-1    5.14361    PERC99

Totals without ISTD(s) :                 5.14361



Signal 2: MSD1 101, EIC=101:101

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.924 BBA       1 2.43807e5     2.69615    5.14592    PERC101

Totals without ISTD(s) :                 5.14592



Signal 3: MSD1 107, EIC=107:107

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.936 BBA  I    1 6.38700e5     1.00000    5.00000    PERC107

Totals without ISTD(s) :                 0.00000


==================================================================
                        *** End of Report ***
```

Data File C:\CHEM32\1\DATA\111115A\PERC000010.D
Sample Name: SEQ-CAL6

==========

Acq. Operator : Seq. Line : 10
Acq. Instrument : Instrument 1 Location : Vial 96
Injection Date : 11/11/2015 5:58:29 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/13/2015 9:40:28 AM
(modified after loading)

==========

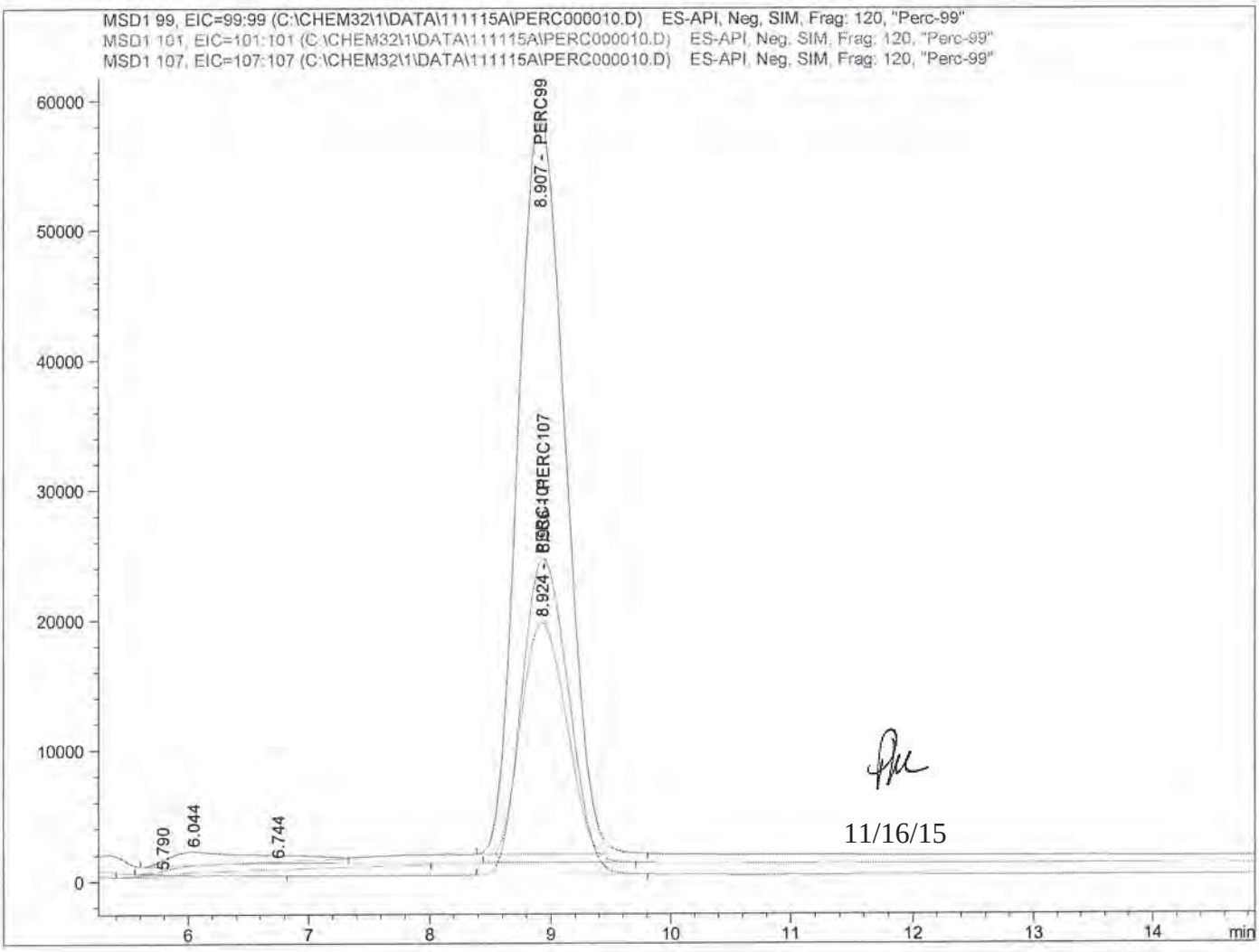

11/16/15

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : Friday, November 13, 2015 9:40:28 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

11-13-15

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\111115A\PERC000010.D
Sample Name: SEQ-CAL6

```
==================================================================
Acq. Operator   :                                Seq. Line :  10
Acq. Instrument : Instrument 1                    Location : Vial 96
Injection Date  : 11/11/2015 5:58:29 PM                Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed    : 11/13/2015 9:40:28 AM
                  (modified after loading)
==================================================================

  1      5.00000   PERC107


Signal 1: MSD1 99, EIC=99:99

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.907 BBA       1 1.51860e6  8.71535e-1   10.17641    PERC99

Totals without ISTD(s) :                10.17641



Signal 2: MSD1 101, EIC=101:101

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.924 BBA       1 4.91640e5     2.66963   10.09166    PERC101

Totals without ISTD(s) :                10.09166



Signal 3: MSD1 107, EIC=107:107

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.936 BBA  I    1 6.50287e5     1.00000    5.00000    PERC107

Totals without ISTD(s) :                 0.00000


==================================================================
                        *** End of Report ***
```

Data File C:\CHEM32\1\DATA\111115A\PERC000011.D
Sample Name: SEQ-CAL7

==========

Acq. Operator	:	Seq. Line	: 11
Acq. Instrument	: Instrument 1	Location	: Vial 97
Injection Date	: 11/11/2015 6:16:16 PM	Inj	: 1
		Inj Volume	: 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/13/2015 9:41:08 AM
(modified after loading)

==========

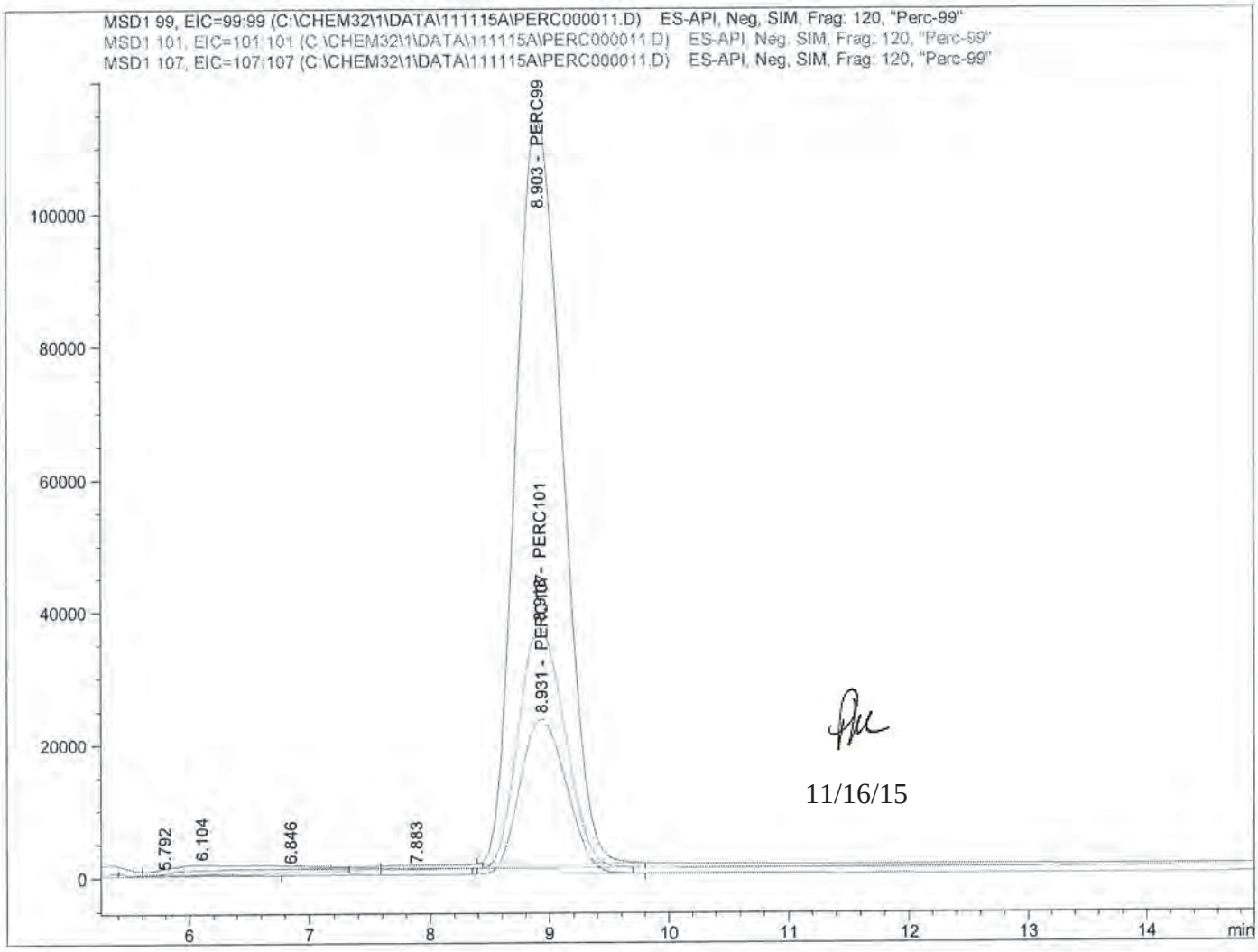

11/16/15

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Internal Standard Report

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Sorted By	:	Signal
Calib. Data Modified	:	Friday, November 13, 2015 9:41:08 AM
Multiplier	:	1.0000
Dilution	:	1.0000

Do not use Multiplier & Dilution Factor with ISTDs

11-13-15

Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\111115A\PERC000011.D
Sample Name: SEQ-CAL7

==========

Acq. Operator : Seq. Line : 11
Acq. Instrument : Instrument 1 Location : Vial 97
Injection Date : 11/11/2015 6:16:16 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/13/2015 9:41:08 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.903	BBA	1	3.03553e6	8.63235e-1	20.69704		PERC99

Totals without ISTD(s) : 20.69704

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.918	BBA	1	9.77148e5	2.64709	20.43021		PERC101

Totals without ISTD(s) : 20.43021

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.931	BBA I	1	6.33032e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\111115A\PERC000012.D
Sample Name: SEQ-CAL8

==========

Acq. Operator : Seq. Line : 12
Acq. Instrument : Instrument 1 Location : Vial 98
Injection Date : 11/11/2015 6:34:15 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/13/2015 9:43:12 AM
(modified after loading)

==========

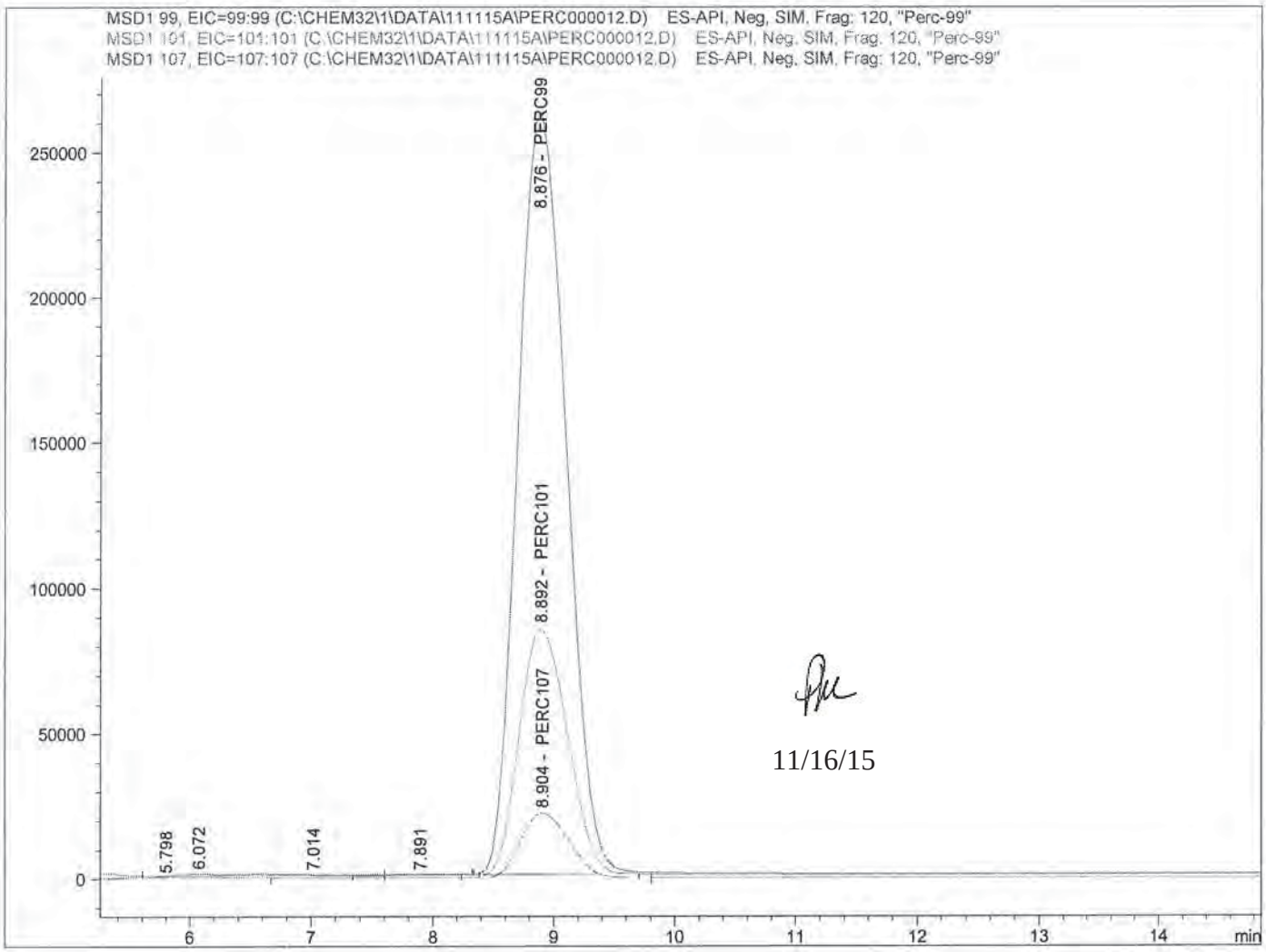

11/16/15

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : 11/13/2015 9:42:29 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

11-13-15

Data File C:\CHEM32\1\DATA\111115A\PERC000012.D
Sample Name: SEQ-CAL8

```
==================================================================
Acq. Operator   :                                Seq. Line :  12
Acq. Instrument : Instrument 1                    Location : Vial 98
Injection Date  : 11/11/2015 6:34:15 PM                Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed    : 11/13/2015 9:43:12 AM
                  (modified after loading)
==================================================================

  1      5.00000   PERC107


Signal 1: MSD1 99, EIC=99:99

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.876 BBA       1 7.21782e6  8.48638e-1   49.82637    PERC99

Totals without ISTD(s) :                49.82637



Signal 2: MSD1 101, EIC=101:101

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.892 BBA       1 2.34163e6     2.60663   49.65108    PERC101

Totals without ISTD(s) :                49.65108



Signal 3: MSD1 107, EIC=107:107

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.904 BBA  I    1 6.14666e5     1.00000    5.00000    PERC107

Totals without ISTD(s) :                 0.00000


==================================================================
                        *** End of Report ***
```

Data File C:\CHEM32\1\DATA\111115A\PERC000013.D
Sample Name: SEQ-ICV1

==========

Acq. Operator : Seq. Line : 13
Acq. Instrument : Instrument 1 Location : Vial 99
Injection Date : 11/11/2015 6:51:59 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/13/2015 9:43:59 AM
(modified after loading)

==========

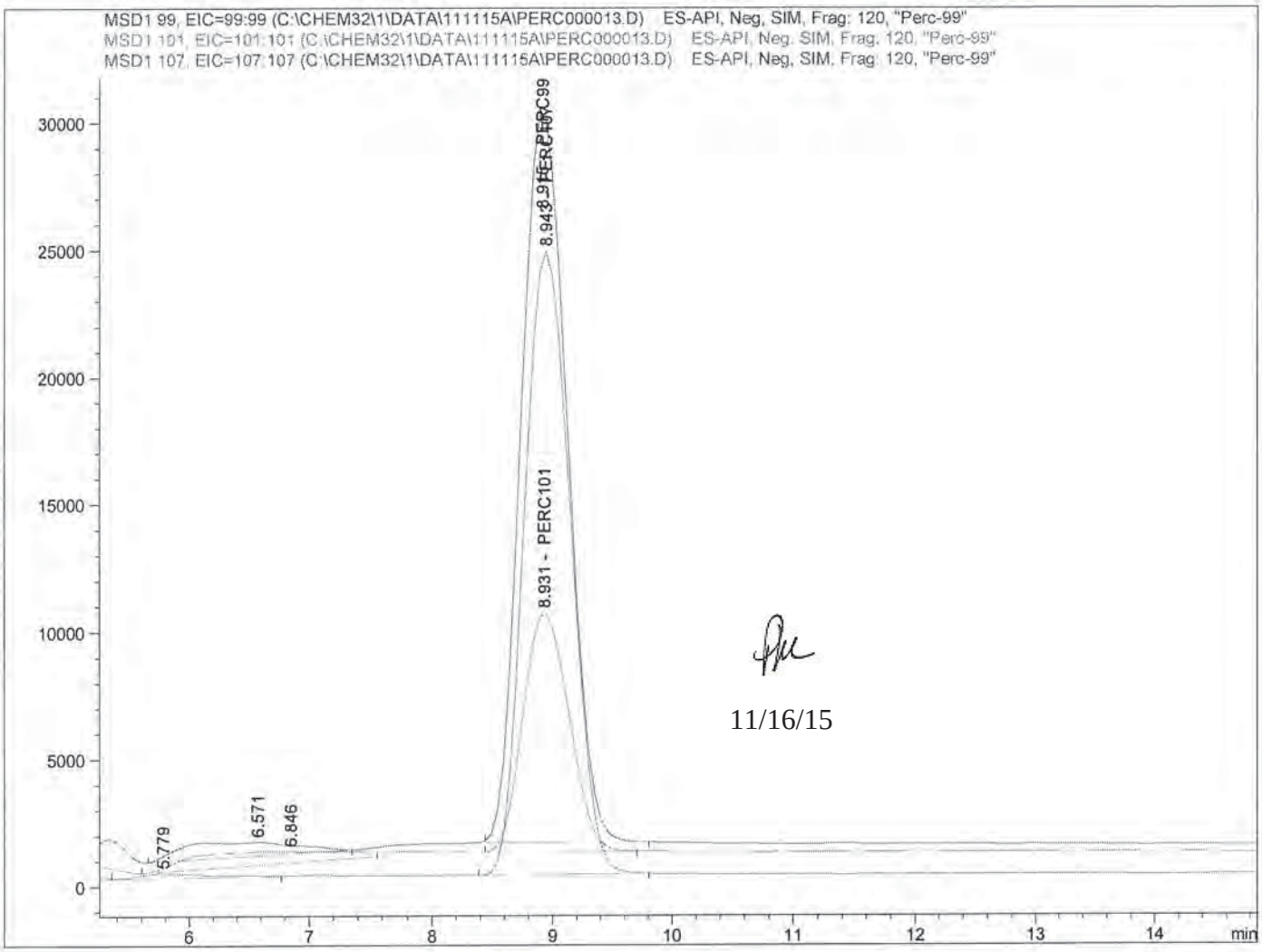

11/16/15

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : Friday, November 13, 2015 9:43:59 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

11-13-15

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\111115A\PERC000013.D
Sample Name: SEQ-ICV1

==========

Acq. Operator : Seq. Line : 13
Acq. Instrument : Instrument 1 Location : Vial 99
Injection Date : 11/11/2015 6:51:59 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 11/11/2015 2:52:52 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_092515CAL.M
Last changed : 11/13/2015 9:43:59 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.915	BBA	1	7.66770e5	8.48638e-1	4.97440		PERC99

Totals without ISTD(s) : 4.97440

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.931	BBA	1	2.49299e5	2.60545	4.96540		PERC101

Totals without ISTD(s) : 4.96540

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.943	BBA I	1	6.54059e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Print of all graphic windows
Data File : C:\CHEM32\1\DATA\120215\PERC000002.D
Sample Name : SEQ-TUN1

==========

Acq. Operator : Seq. Line : 2
Acq. Instrument : Instrument 1 Location : Vial 1
Injection Date : 12/2/2015 9:09:29 AM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_SC
Last changed : 11/28/2015 11:11:28 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/2/2015 10:12:07 AM
(modified after loading)

Current Chromatogram(s)

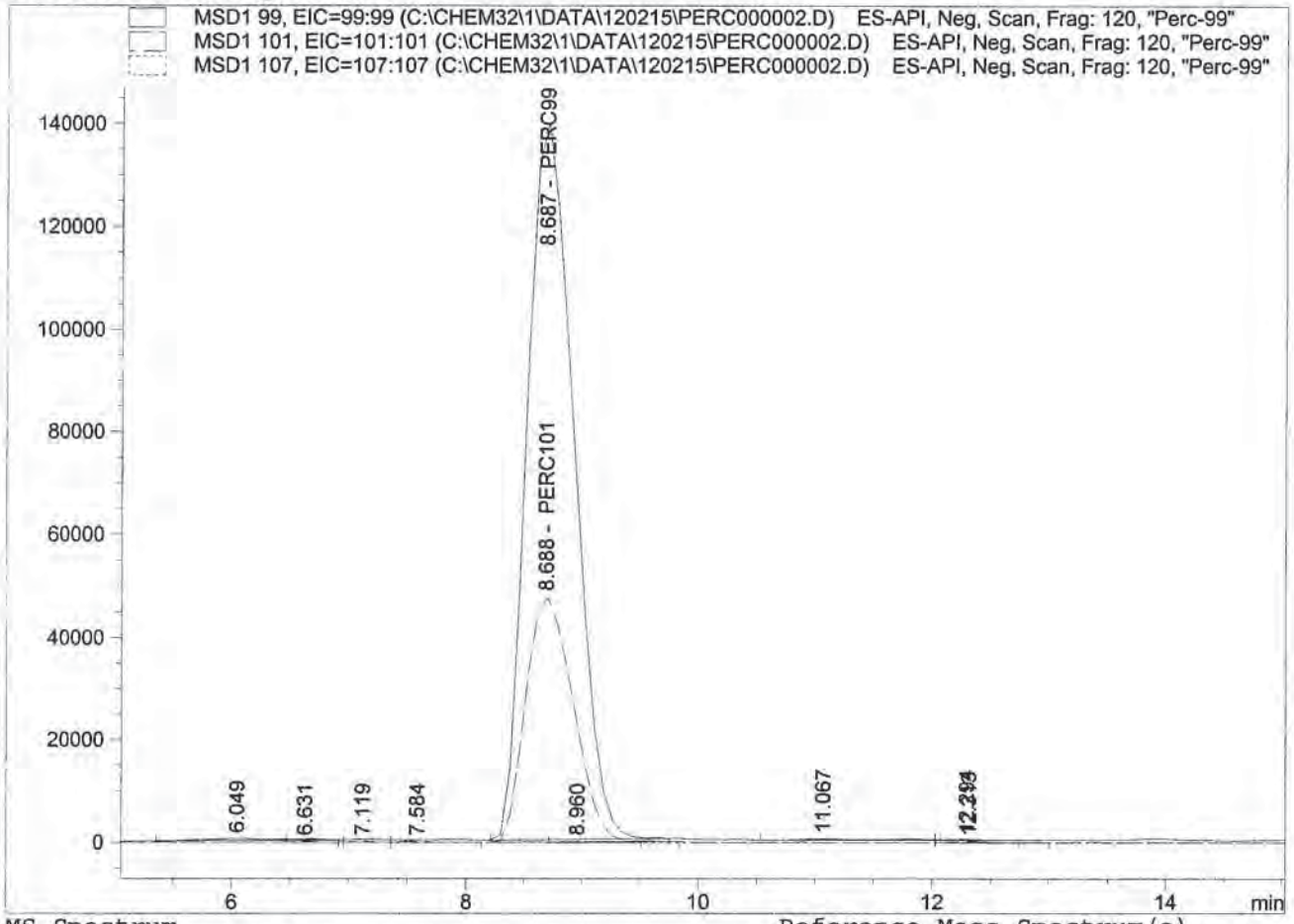

MS Spectrum

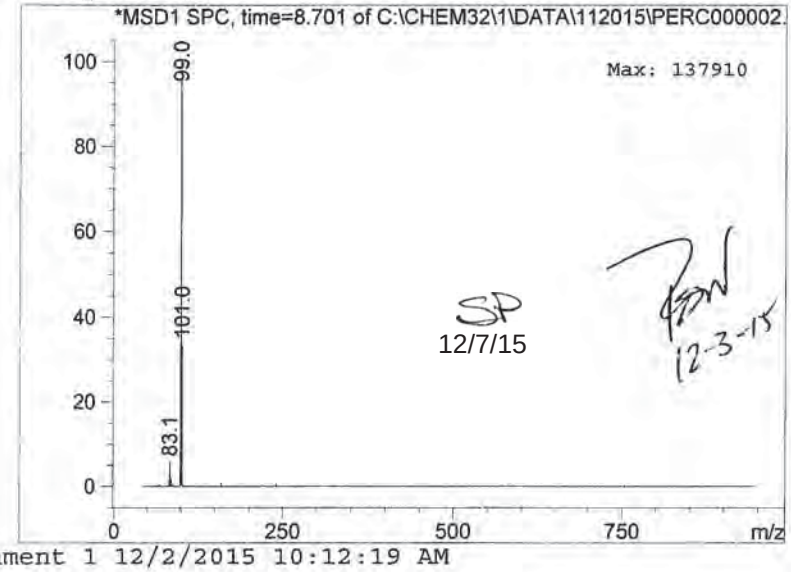

SP
12/7/15

12-3-15

Reference Mass Spectrum(a)

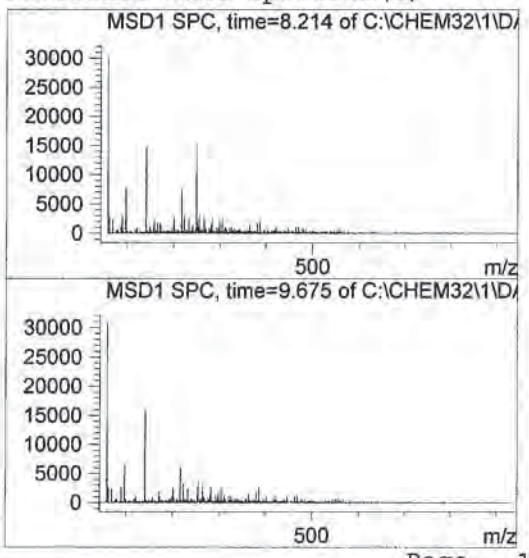

Data File C:\CHEM32\1\DATA\120215\PERC000002.D
Sample Name: SEQ-TUN1

==========

Acq. Operator : Seq. Line : 2
Acq. Instrument : Instrument 1 Location : Vial 1
Injection Date : 12/2/2015 9:09:29 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_SC
Last changed : 11/28/2015 11:11:28 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/2/2015 10:12:07 AM
(modified after loading)

==========

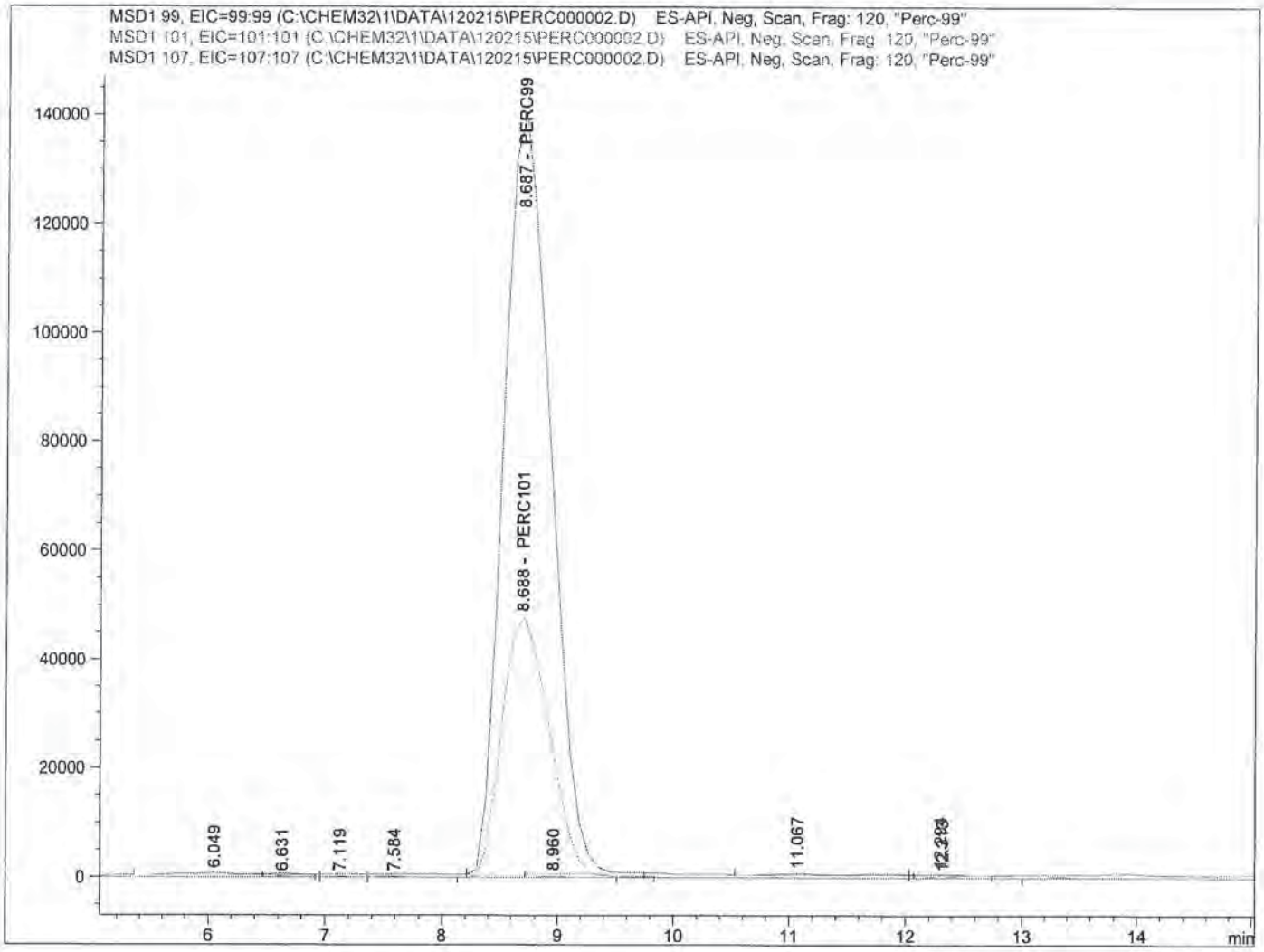

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Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/2/2015 10:12:07 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-3-15

SP
12/7/15

Data File C:\CHEM32\1\DATA\120215\PERC000002.D
Sample Name: SEQ-TUN1

```
==================================================================
Acq. Operator   :                                  Seq. Line :   2
Acq. Instrument : Instrument 1                      Location : Vial 1
Injection Date  : 12/2/2015 9:09:29 AM                  Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_SC
Last changed    : 11/28/2015 11:11:28 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/2/2015 10:12:07 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.687	BB	1	3.92307e6	0.00000	0.00000		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.688	BBA	1	1.35732e6	0.00000	0.00000		PERC101

Totals without ISTD(s) : 0.00000

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.680		1	-	-	-		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : ISTD compound(s) not found

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*** End of Report ***

Data File C:\CHEM32\1\DATA\120215\PERC000005.D
Sample Name: SEQ-CCV1

==========

Acq. Operator : Seq. Line : 5
Acq. Instrument : Instrument 1 Location : Vial 3
Injection Date : 12/2/2015 10:03:13 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/2/2015 10:12:07 AM
(modified after loading)

==========

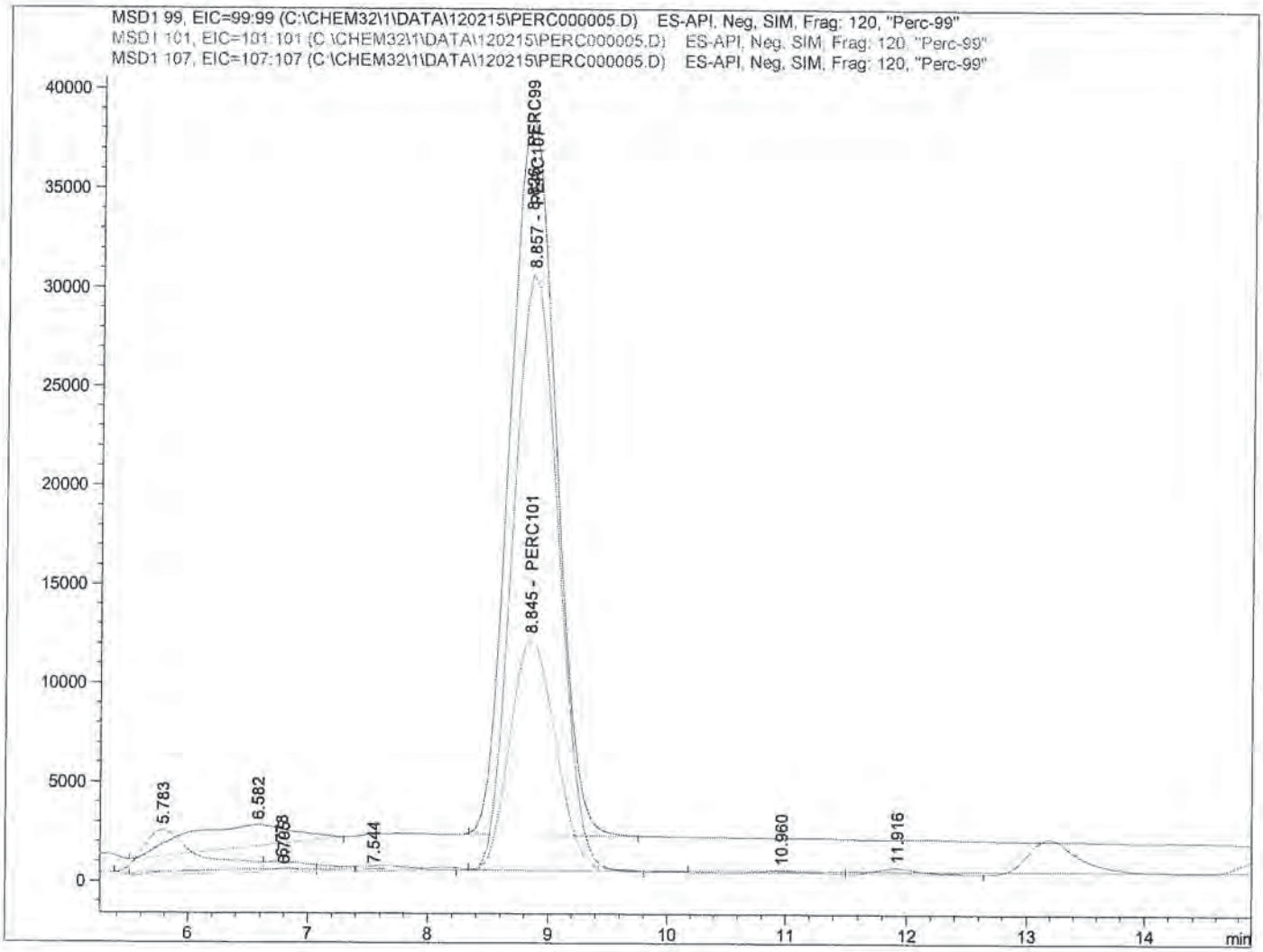

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Internal Standard Report

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SP
12/7/15

Sorted By : Signal
Calib. Data Modified : 12/2/2015 10:12:07 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-3-15

Data File C:\CHEM32\1\DATA\120215\PERC000005.D
Sample Name: SEQ-CCV1

```
==================================================================
Acq. Operator   :                                  Seq. Line :   5
Acq. Instrument : Instrument 1                      Location : Vial 3
Injection Date  : 12/2/2015 10:03:13 AM                 Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/2/2015 10:12:07 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.826	BB	1	9.67479e5	8.48638e-1	5.14658		PERC99

Totals without ISTD(s) : 5.14658

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.845	BBA	1	3.10275e5	2.60545	5.06737		PERC101

Totals without ISTD(s) : 5.06737

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.857	VBA I	1	7.97656e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120215\PERC000006.D
Sample Name: SEQ-LCV1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/2/2015 10:21:12 AM

Seq. Line : 6
Location : Vial 4
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/2/2015 10:38:04 AM
(modified after loading)

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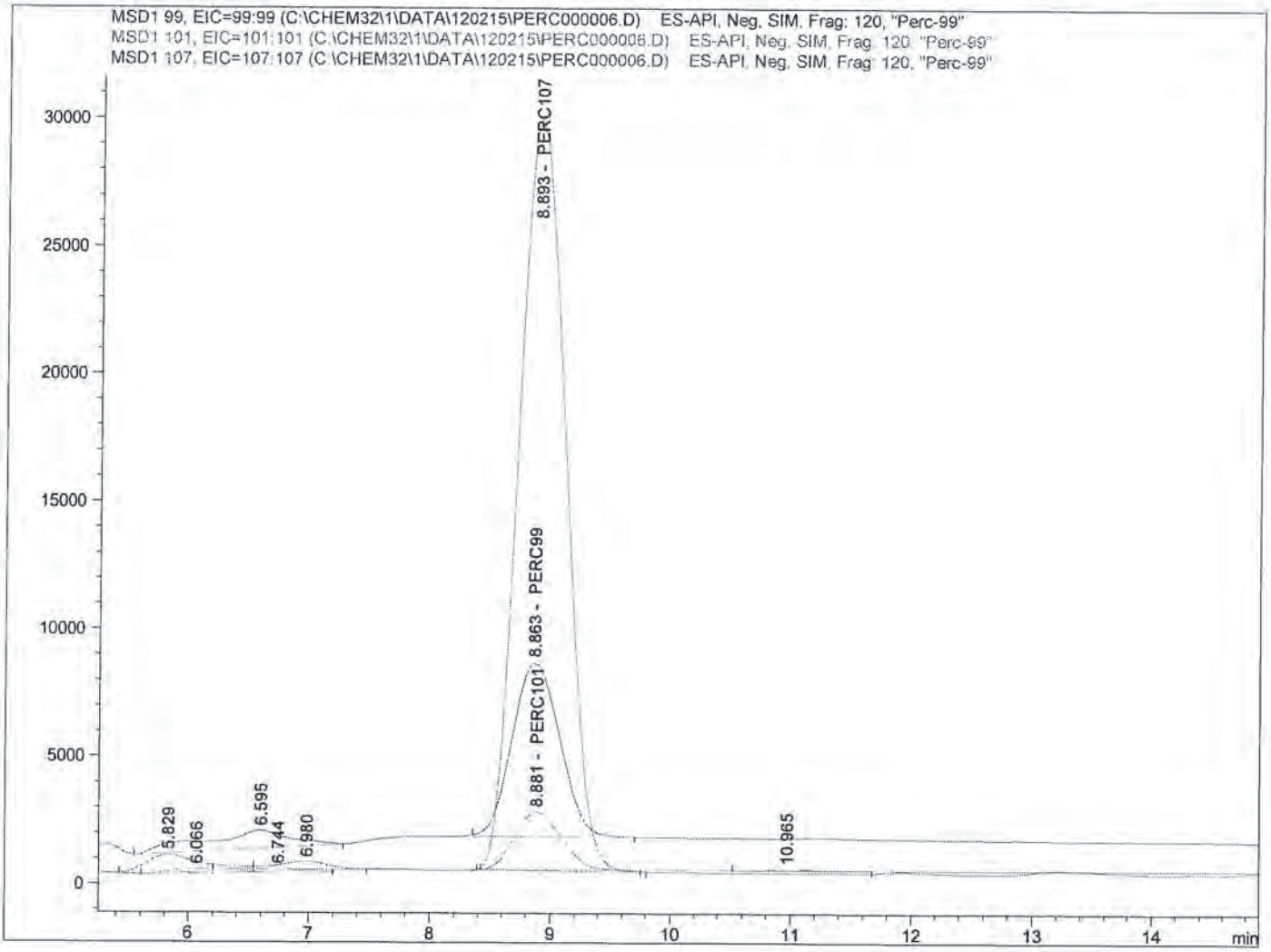

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : 12/2/2015 10:38:04 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP 12/7/15

12-3-15

Data File C:\CHEM32\1\DATA\120215\PERC000006.D
Sample Name: SEQ-LCV1

```
==================================================================
Acq. Operator   :                                  Seq. Line :   6
Acq. Instrument : Instrument 1                      Location : Vial 4
Injection Date  : 12/2/2015 10:21:12 AM                 Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/2/2015 10:38:04 AM
                  (modified after loading)
==================================================================

  1      5.00000   PERC107


Signal 1: MSD1 99, EIC=99:99

RetTime  Type  ISTD    Area     Amt/Area    Amount   Grp   Name
 [min]         used              ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.863 BB        1 1.87021e5  8.48638e-1 9.93050e-1    PERC99

Totals without ISTD(s) :             9.93050e-1


Signal 2: MSD1 101, EIC=101:101

RetTime  Type  ISTD    Area     Amt/Area    Amount   Grp   Name
 [min]         used              ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.881 BB        1 6.07802e4     2.60545 9.90837e-1    PERC101

Totals without ISTD(s) :             9.90837e-1


Signal 3: MSD1 107, EIC=107:107

RetTime  Type  ISTD    Area     Amt/Area    Amount   Grp   Name
 [min]         used              ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.893 BBA  I    1 7.99120e5     1.00000    5.00000    PERC107

Totals without ISTD(s) :                0.00000


==================================================================
                        *** End of Report ***
```

Data File C:\CHEM32\1\DATA\120215\PERC000007.D
Sample Name: SEQ-IFA1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/2/2015 10:39:03 AM

Seq. Line : 7
Location : Vial 5
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/2/2015 12:40:40 PM
(modified after loading)

==========

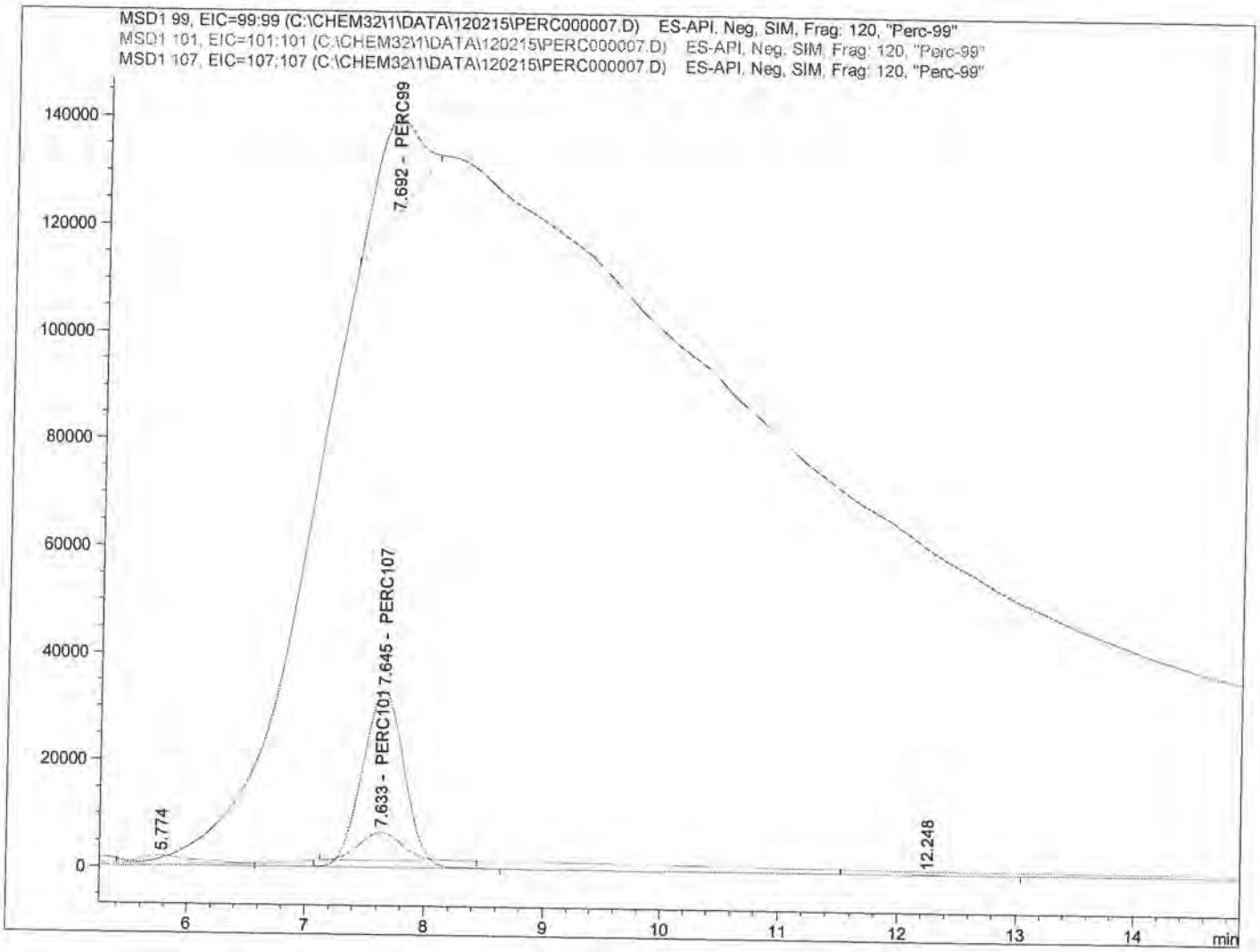

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/2/2015 12:37:31 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/7/15

12-3-15

Data File C:\CHEM32\1\DATA\120215\PERC000007.D
Sample Name: SEQ-IFA1

```
==================================================================
Acq. Operator   :                                  Seq. Line :   7
Acq. Instrument : Instrument 1                      Location : Vial 5
Injection Date  : 12/2/2015 10:39:03 AM                 Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/2/2015 12:40:40 PM
                  (modified after loading)
==================================================================

  1      5.00000   PERC107


Signal 1: MSD1 99, EIC=99:99

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  7.692 BBA       1 4.01962e5  8.48638e-1    2.13245    PERC99

Totals without ISTD(s) :                 2.13245


Signal 2: MSD1 101, EIC=101:101

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  7.633 BBA       1 1.32873e5     2.60545    2.16416    PERC101

Totals without ISTD(s) :                 2.16416


Signal 3: MSD1 107, EIC=107:107

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  7.645 BBA  I    1 7.99831e5     1.00000    5.00000    PERC107

Totals without ISTD(s) :                 0.00000


==================================================================
                        *** End of Report ***
```

Data File C:\CHEM32\1\DATA\120215\PERC000010.D
Sample Name: 5L01021-BLK1

==========

Acq. Operator : Seq. Line : 10
Acq. Instrument : Instrument 1 Location : Vial 6
Injection Date : 12/2/2015 11:32:37 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/2/2015 12:41:57 PM
(modified after loading)

==========

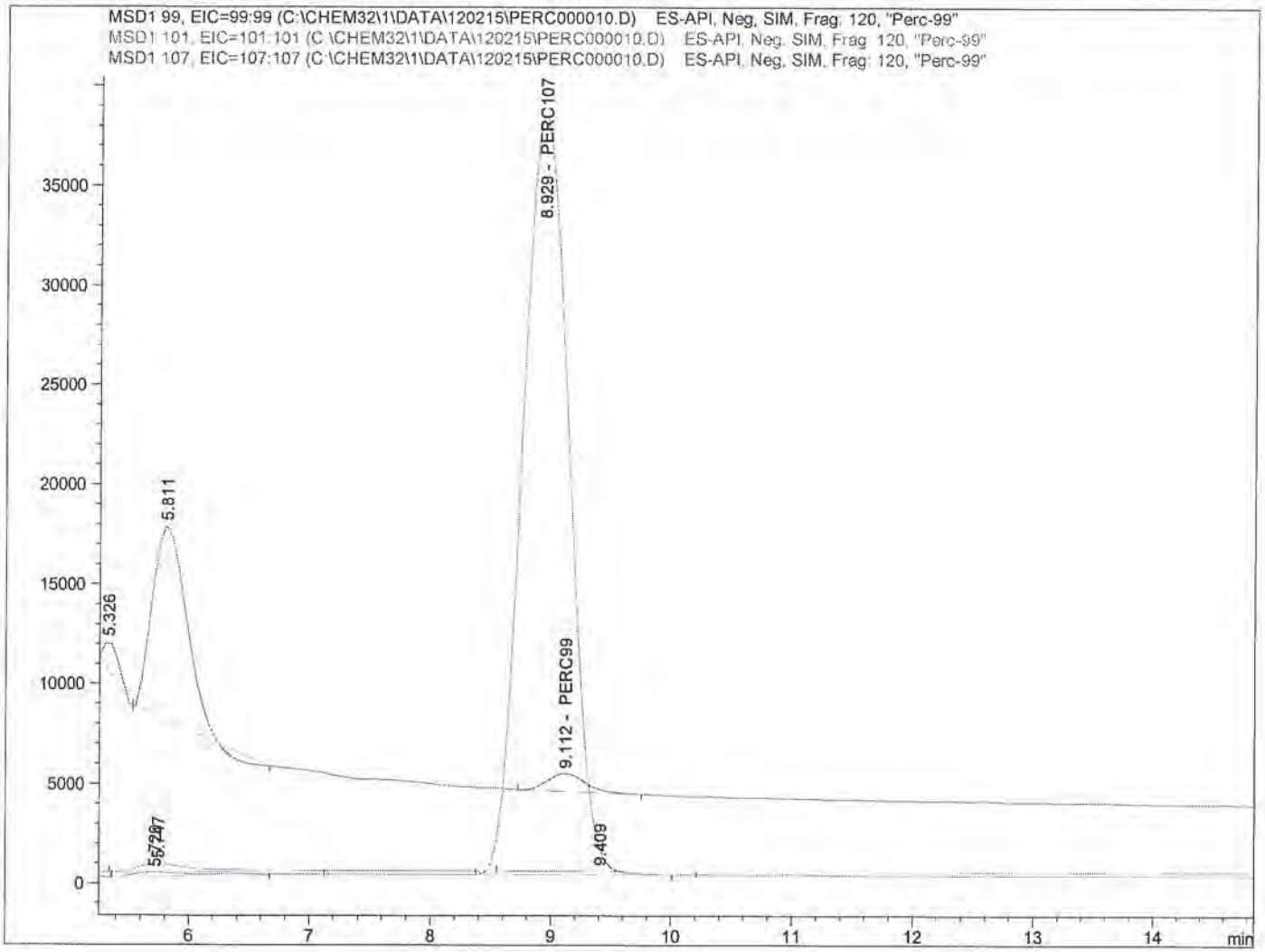

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/2/2015 12:41:42 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-3-15

Data File C:\CHEM32\1\DATA\120215\PERC000010.D
Sample Name: 5L01021-BLK1

```
==================================================================
Acq. Operator   :                                Seq. Line :  10
Acq. Instrument : Instrument 1                    Location : Vial 6
Injection Date  : 12/2/2015 11:32:37 AM                Inj :   1
                                                 Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/2/2015 12:41:57 PM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
9.112	BB	1	1.99660e4	8.48638e-1	8.24789e-2		PERC99

Totals without ISTD(s) : 8.24789e-2

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.930		1	-	-	-		PERC101

Totals without ISTD(s) : 0.00000

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.929	BBA I	1	1.02717e6	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120215\PERC000011.D
Sample Name: 5L01021-BS1

==========

Acq. Operator : Seq. Line : 11
Acq. Instrument : Instrument 1 Location : Vial 7
Injection Date : 12/2/2015 11:50:23 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/2/2015 12:41:57 PM
(modified after loading)

==========

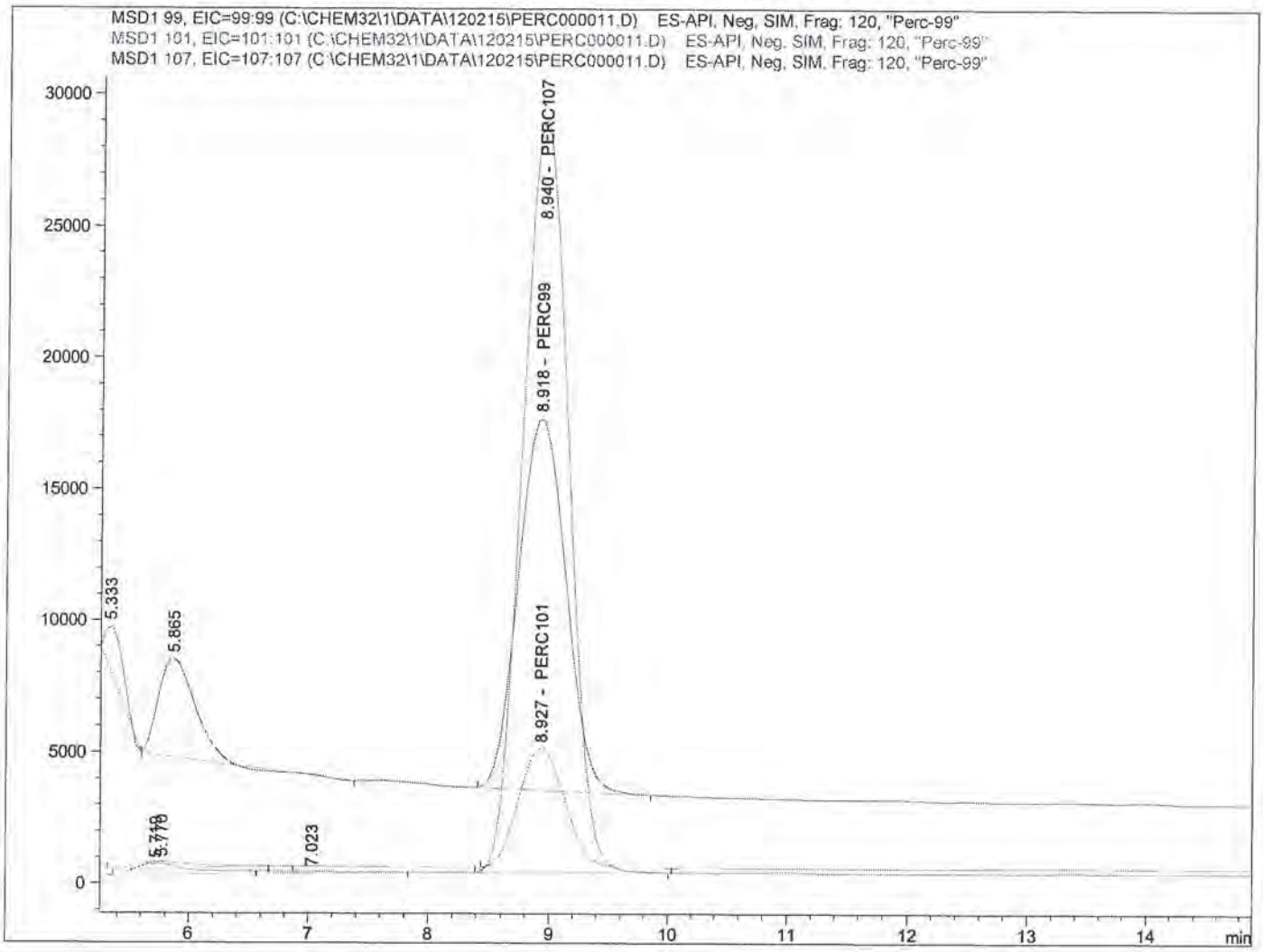

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/2/2015 12:41:42 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/7/15

12-3-15

Data File C:\CHEM32\1\DATA\120215\PERC000011.D
Sample Name: 5L01021-BS1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/2/2015 11:50:23 AM

Seq. Line : 11
Location : Vial 7
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/2/2015 12:41:57 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.918	BB	1	3.90564e5	8.48638e-1	2.15008		PERC99

Totals without ISTD(s) : 2.15008

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.927	BV	1	1.23412e5	2.60545	2.08582		PERC101

Totals without ISTD(s) : 2.08582

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.940	BBA I	1	7.70780e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120215\PERC000023.D
Sample Name: SEQ-CCV2

==========

Acq. Operator : Seq. Line : 23
Acq. Instrument : Instrument 1 Location : Vial 3
Injection Date : 12/2/2015 3:24:42 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 10:48:45 AM
(modified after loading)

==========

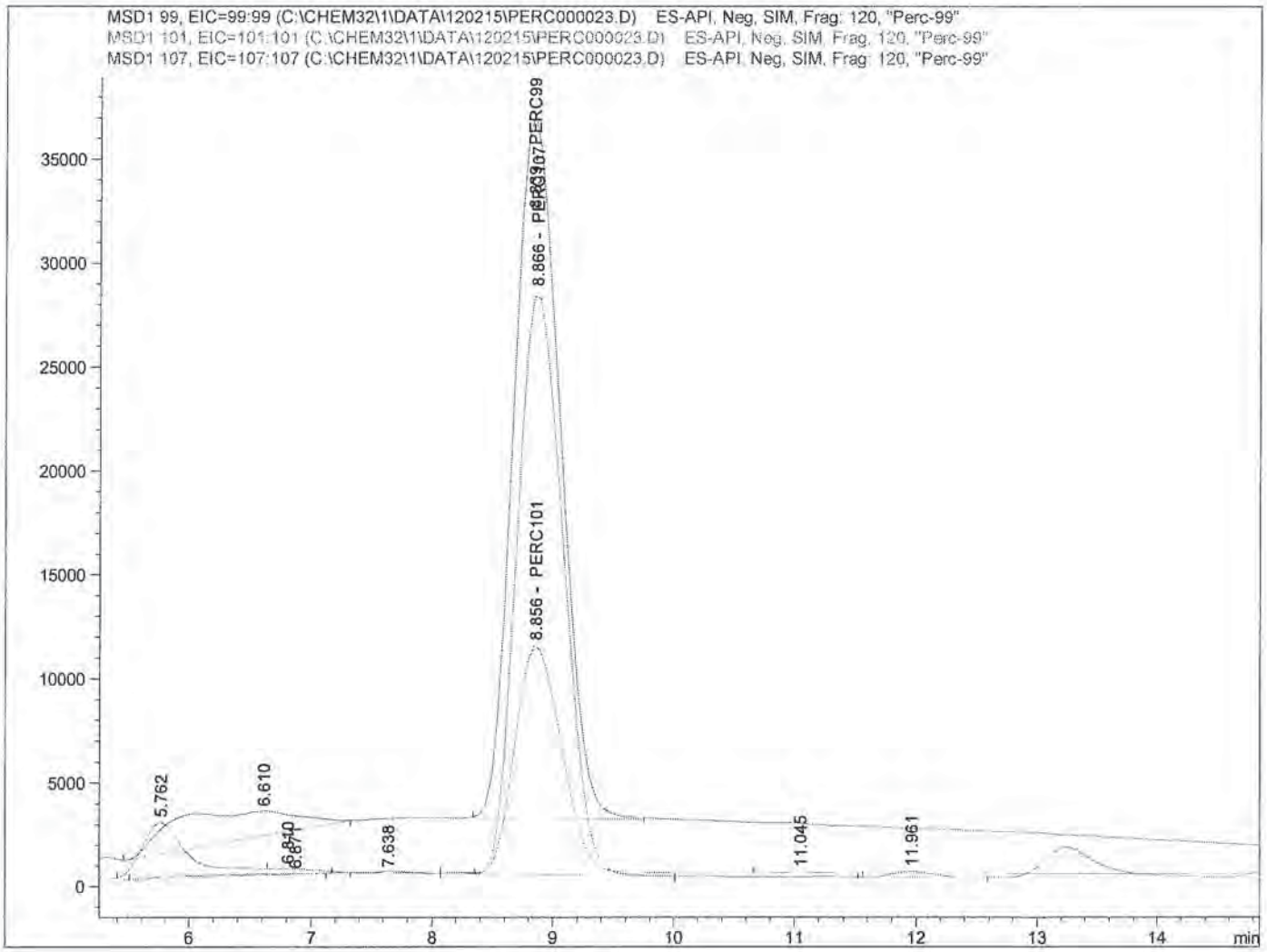

==========

Internal Standard Report

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SP
12/7/15

Sorted By : Signal
Calib. Data Modified : 12/3/2015 10:48:45 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

12-3-15

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\120215\PERC000023.D
Sample Name: SEQ-CCV2

==========

Acq. Operator : Seq. Line : 23
Acq. Instrument : Instrument 1 Location : Vial 3
Injection Date : 12/2/2015 3:24:42 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 10:48:45 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.839	BB	1	9.04299e5	8.48638e-1	5.14535		PERC99

Totals without ISTD(s) : 5.14535

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.856	VBA	1	2.92477e5	2.60545	5.10921		PERC101

Totals without ISTD(s) : 5.10921

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.866	VBA I	1	7.45744e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120215\PERC000024.D
Sample Name: SEQ-LCV2

==========

Acq. Operator : Seq. Line : 24
Acq. Instrument : Instrument 1 Location : Vial 4
Injection Date : 12/2/2015 3:42:31 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 10:48:45 AM
(modified after loading)

==========

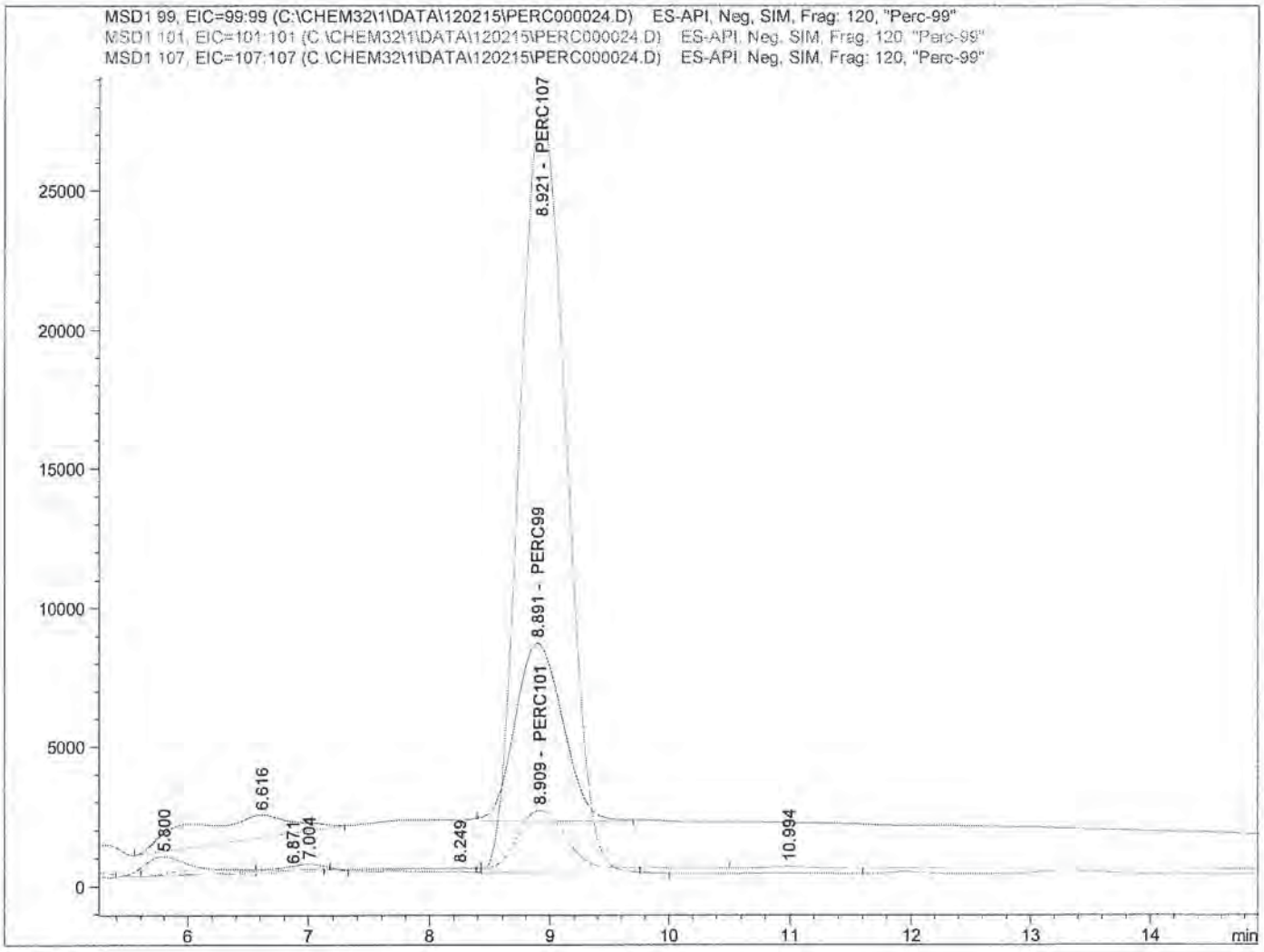

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/3/2015 10:48:45 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/7/15

RSW
12-3-15

Data File C:\CHEM32\1\DATA\120215\PERC000024.D
Sample Name: SEQ-LCV2

```
==================================================================
Acq. Operator   :                                Seq. Line :  24
Acq. Instrument : Instrument 1                    Location : Vial 4
Injection Date  : 12/2/2015 3:42:31 PM                 Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/3/2015 10:48:45 AM
                  (modified after loading)
==================================================================

  1      5.00000   PERC107


Signal 1: MSD1 99, EIC=99:99

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.891 BB        1 1.77465e5  8.48638e-1    1.00771    PERC99

Totals without ISTD(s) :                 1.00771



Signal 2: MSD1 101, EIC=101:101

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.909 VB        1 5.69423e4     2.60545 9.92694e-1    PERC101

Totals without ISTD(s) :              9.92694e-1



Signal 3: MSD1 107, EIC=107:107

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.921 BBA  I    1 7.47259e5     1.00000    5.00000    PERC107

Totals without ISTD(s) :                 0.00000


==================================================================
                         *** End of Report ***
```

Data File C:\CHEM32\1\DATA\120215\PERC000025.D
Sample Name: SEQ-LCV3

==========

Acq. Operator : Seq. Line : 25
Acq. Instrument : Instrument 1 Location : Vial 83
Injection Date : 12/2/2015 4:00:17 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 10:50:43 AM
(modified after loading)

==========

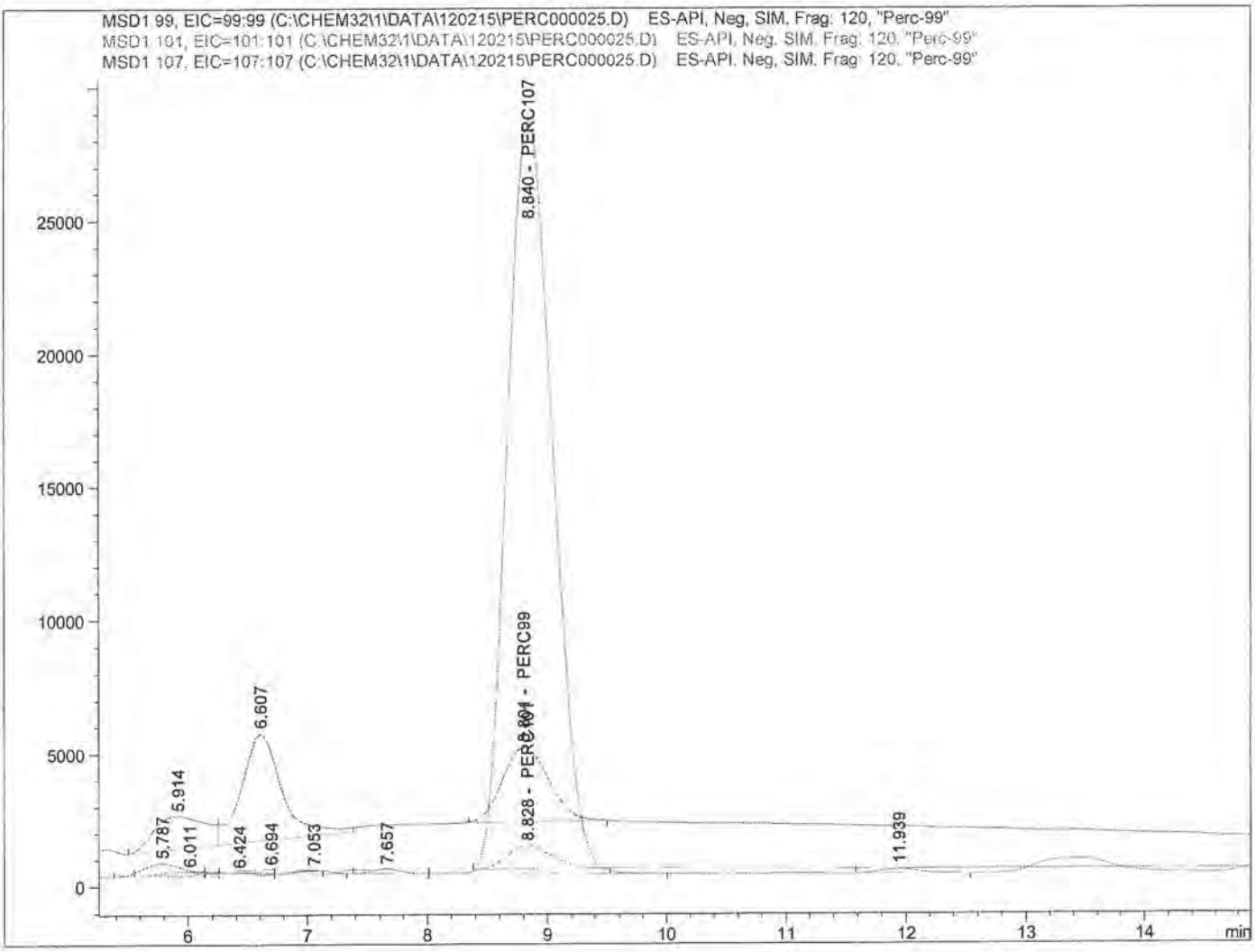

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Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/3/2015 10:48:45 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/7/15

12-3-15

Data File C:\CHEM32\1\DATA\120215\PERC000025.D
Sample Name: SEQ-LCV3

```
==================================================================
Acq. Operator   :                                Seq. Line :  25
Acq. Instrument : Instrument 1                    Location : Vial 83
Injection Date  : 12/2/2015 4:00:17 PM                 Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/3/2015 10:50:43 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.801	BBA	1	7.55531e4	8.48638e-1	4.24450e-1		PERC99

Totals without ISTD(s) : 4.24450e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.828	VV	1	2.31256e4	2.60545	3.98866e-1		PERC101

Totals without ISTD(s) : 3.98866e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.840	VBA I	1	7.55297e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120215\PERC000029.D
Sample Name: 1511269-02

==========

Acq. Operator : Seq. Line : 29
Acq. Instrument : Instrument 1 Location : Vial 21
Injection Date : 12/2/2015 5:11:56 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 10:53:53 AM
(modified after loading)

==========

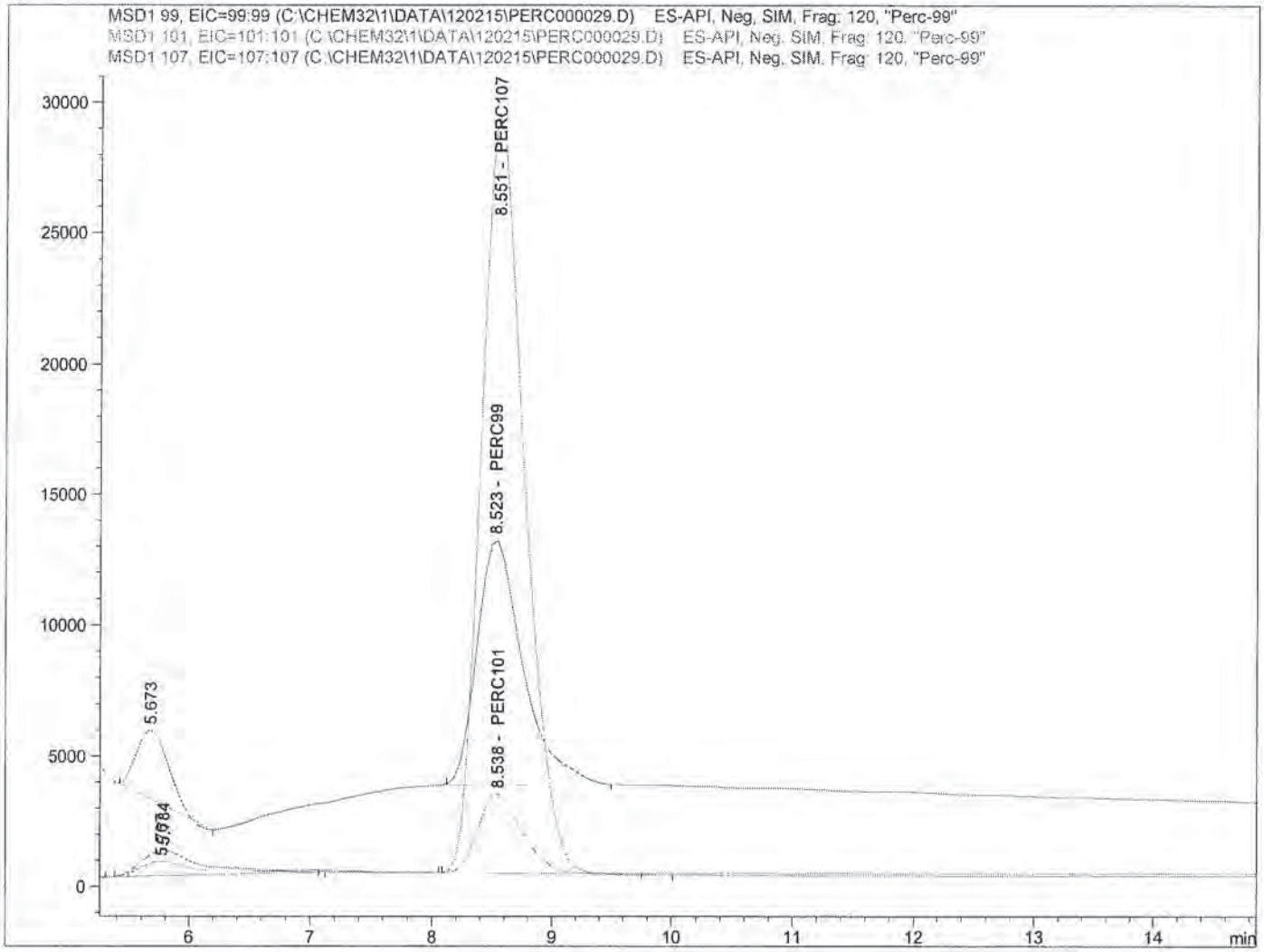

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/3/2015 10:53:53 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/7/15

PDW
12-3-15

Data File C:\CHEM32\1\DATA\120215\PERC000029.D
Sample Name: 1511269-02

```
==================================================================
Acq. Operator   :                                Seq. Line :  29
Acq. Instrument : Instrument 1                    Location : Vial 21
Injection Date  : 12/2/2015 5:11:56 PM                 Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/3/2015 10:53:53 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.523	BBA	1	2.48518e5	8.48638e-1	1.44355		PERC99

Totals without ISTD(s) : 1.44355

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.538	VB	1	7.65177e4	2.60545	1.36457		PERC101

Totals without ISTD(s) : 1.36457

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.551	BBA I	1	7.30496e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120215\PERC000030.D
Sample Name: 1511269-03

==========

Acq. Operator : Seq. Line : 30
Acq. Instrument : Instrument 1 Location : Vial 22
Injection Date : 12/2/2015 5:29:36 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 10:55:13 AM
(modified after loading)

==========

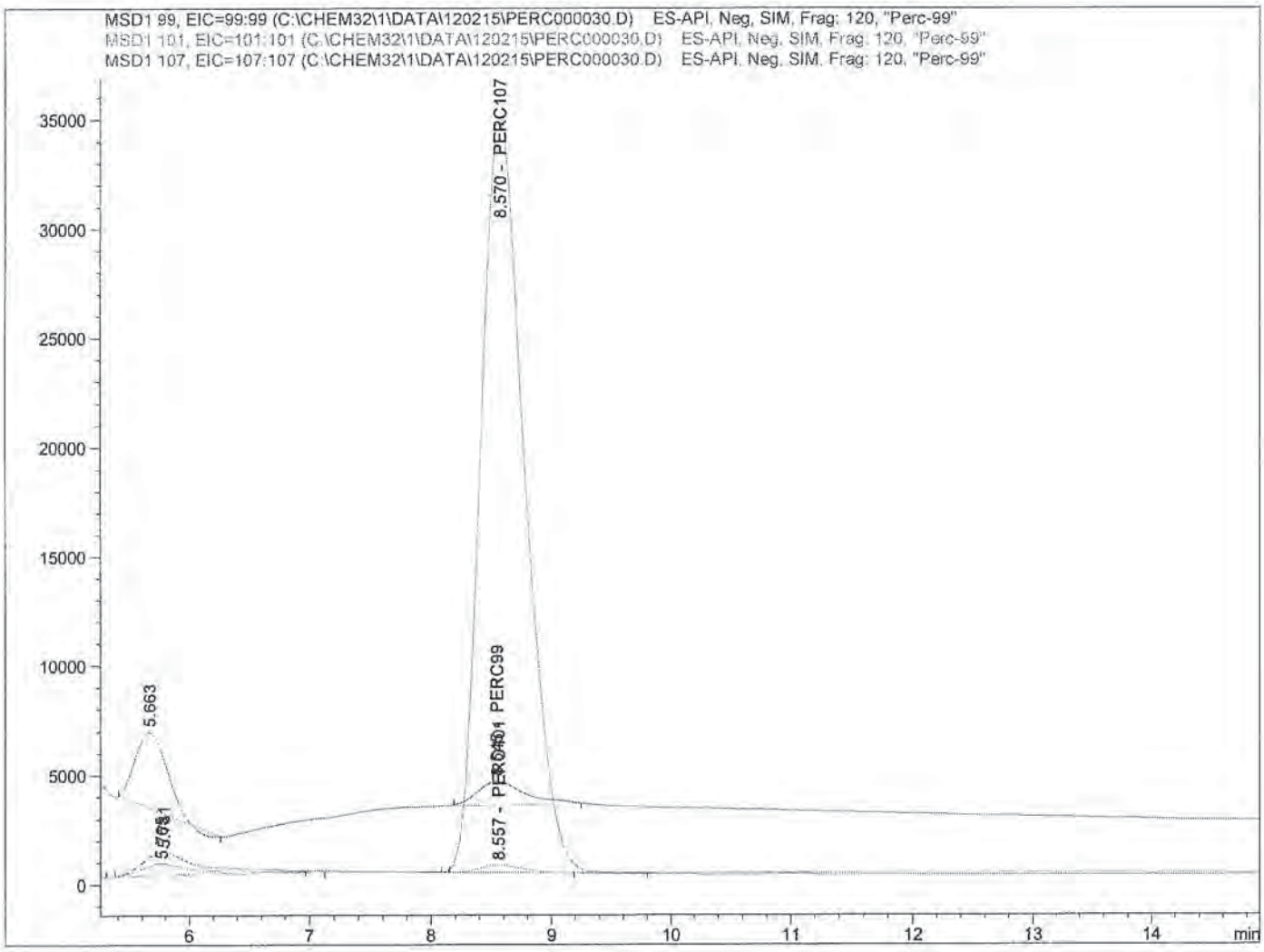

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/3/2015 10:53:53 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-3-15

SP
12/7/15

Data File C:\CHEM32\1\DATA\120215\PERC000030.D
Sample Name: 1511269-03

==========

Acq. Operator : Seq. Line : 30
Acq. Instrument : Instrument 1 Location : Vial 22
Injection Date : 12/2/2015 5:29:36 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 10:55:13 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.545	BBA	1	2.88171e4	8.48638e-1	1.38766e-1		PERC99

Totals without ISTD(s) : 1.38766e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.557	VV	1	8163.78955	2.60545	1.20693e-1		PERC101

Totals without ISTD(s) : 1.20693e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.570	BB I	1	8.81174e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120215\PERC000036.D
Sample Name: 1511269-09@5

==========

Acq. Operator : Seq. Line : 36
Acq. Instrument : Instrument 1 Location : Vial 28
Injection Date : 12/2/2015 7:16:37 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 11:02:35 AM
(modified after loading)
Additional Info : Peak(s) manually integrated

==========

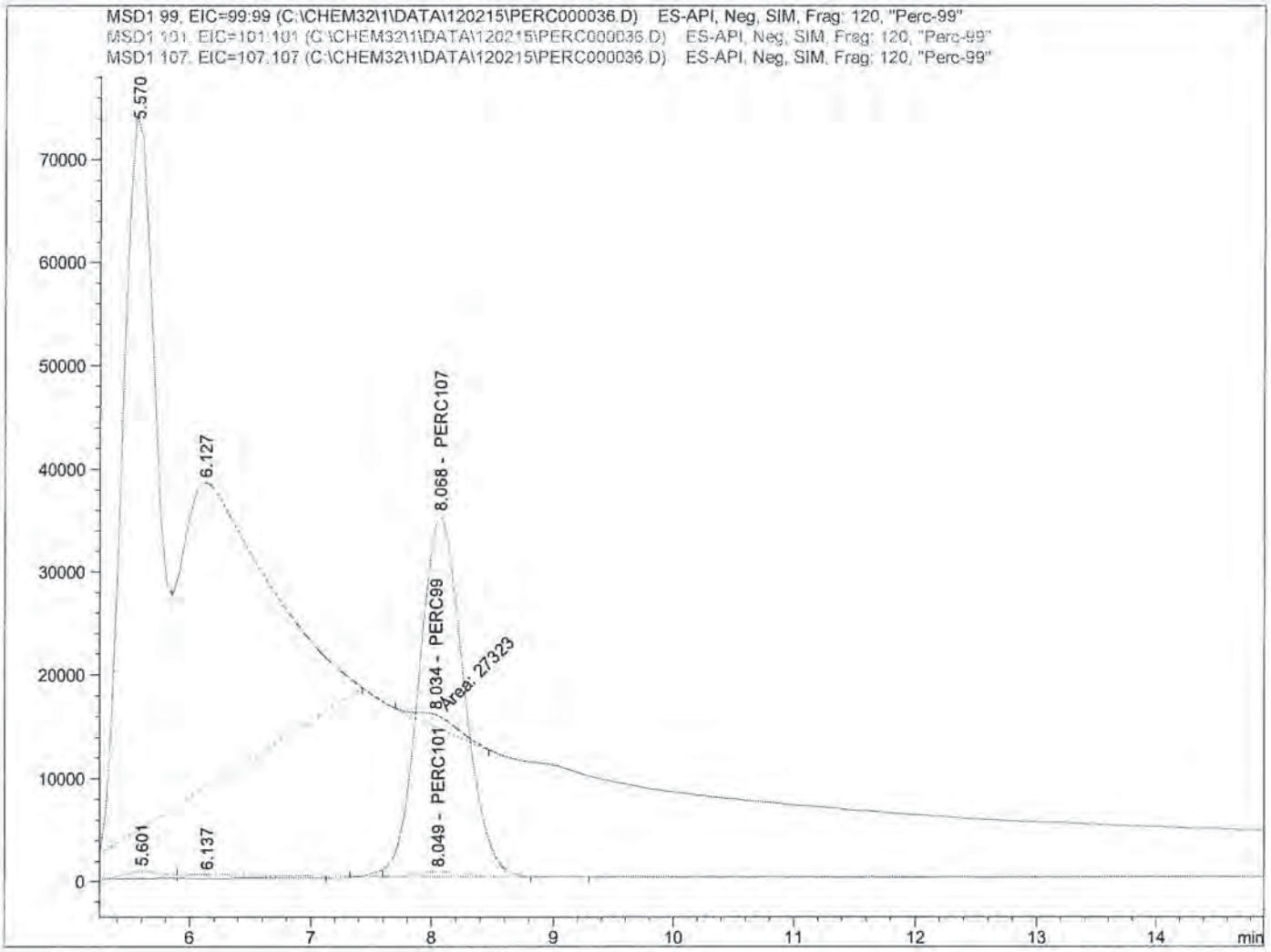

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/3/2015 10:59:36 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/7/15

RDN
12-3-15

Data File C:\CHEM32\1\DATA\120215\PERC000036.D
Sample Name: 1511269-09@5

```
==================================================================
Acq. Operator   :                                Seq. Line :  36
Acq. Instrument : Instrument 1                    Location : Vial 28
Injection Date  : 12/2/2015 7:16:37 PM                 Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/3/2015 11:02:35 AM
                  (modified after loading)
Additional Info : Peak(s) manually integrated
==================================================================

----|-------------|-------------------------
  1      5.00000   PERC107


Signal 1: MSD1 99, EIC=99:99

RetTime  Type  ISTD    Area     Amt/Area    Amount   Grp   Name
 [min]         used              ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.034 MM        1 2.73230e4  8.48638e-1 1.28347e-1    PERC99

Totals without ISTD(s) :             1.28347e-1



Signal 2: MSD1 101, EIC=101:101

RetTime  Type  ISTD    Area     Amt/Area    Amount   Grp   Name
 [min]         used              ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.049 BV        1 1.09870e4     2.60545 1.58451e-1    PERC101

Totals without ISTD(s) :             1.58451e-1



Signal 3: MSD1 107, EIC=107:107

RetTime  Type  ISTD    Area     Amt/Area    Amount   Grp   Name
 [min]         used              ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.068 BB   I    1 9.03310e5     1.00000    5.00000    PERC107

Totals without ISTD(s) :                0.00000


==================================================================
                        *** End of Report ***
```

Print of window 38: Current Chromatogram(s)
Data File : C:\CHEM32\1\DATA\120215\PERC000036.D
Sample Name : 1511269-09@5

==========

Acq. Operator : Seq. Line : 36
Acq. Instrument : Instrument 1 Location : Vial 28
Injection Date : 12/2/2015 7:16:37 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 11:00:14 AM
(modified after loading)

Current Chromatogram(s)

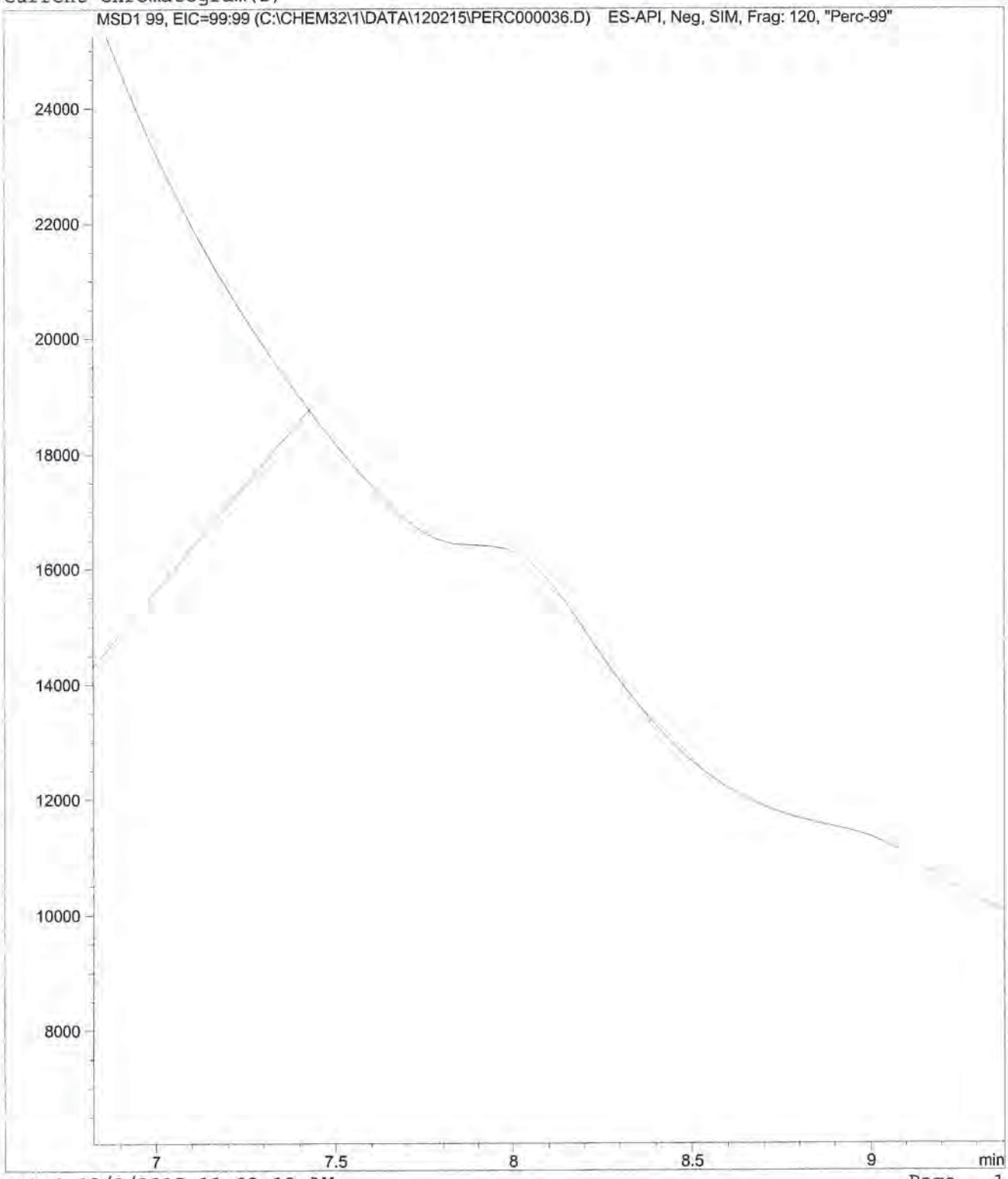

Print of window 38: Current Chromatogram(s)
Data File : C:\CHEM32\1\DATA\120215\PERC000036.D
Sample Name : 1511269-09@5

Acq. Operator	:	Seq. Line	: 36
Acq. Instrument	: Instrument 1	Location	: Vial 28
Injection Date	: 12/2/2015 7:16:37 PM	Inj	: 1
		Inj Volume	: 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 11:00:14 AM
(modified after loading)
Additional Info : Peak(s) manually integrated

Current Chromatogram(s)

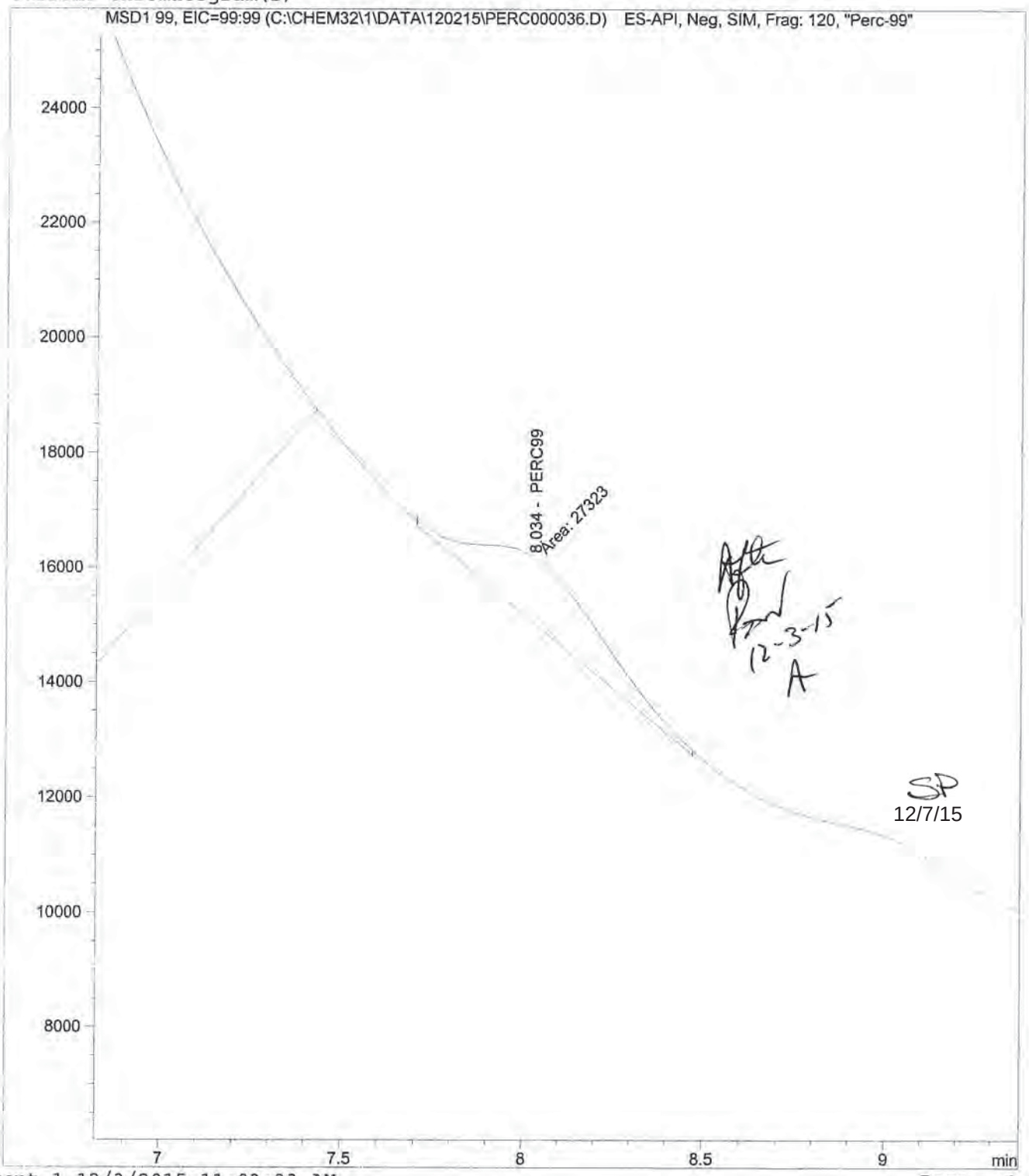

Data File C:\CHEM32\1\DATA\120215\PERC000039.D
Sample Name: SEQ-CCV3

==========

Acq. Operator : Seq. Line : 39
Acq. Instrument : Instrument 1 Location : Vial 3
Injection Date : 12/2/2015 8:10:21 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 11:09:23 AM
(modified after loading)

==========

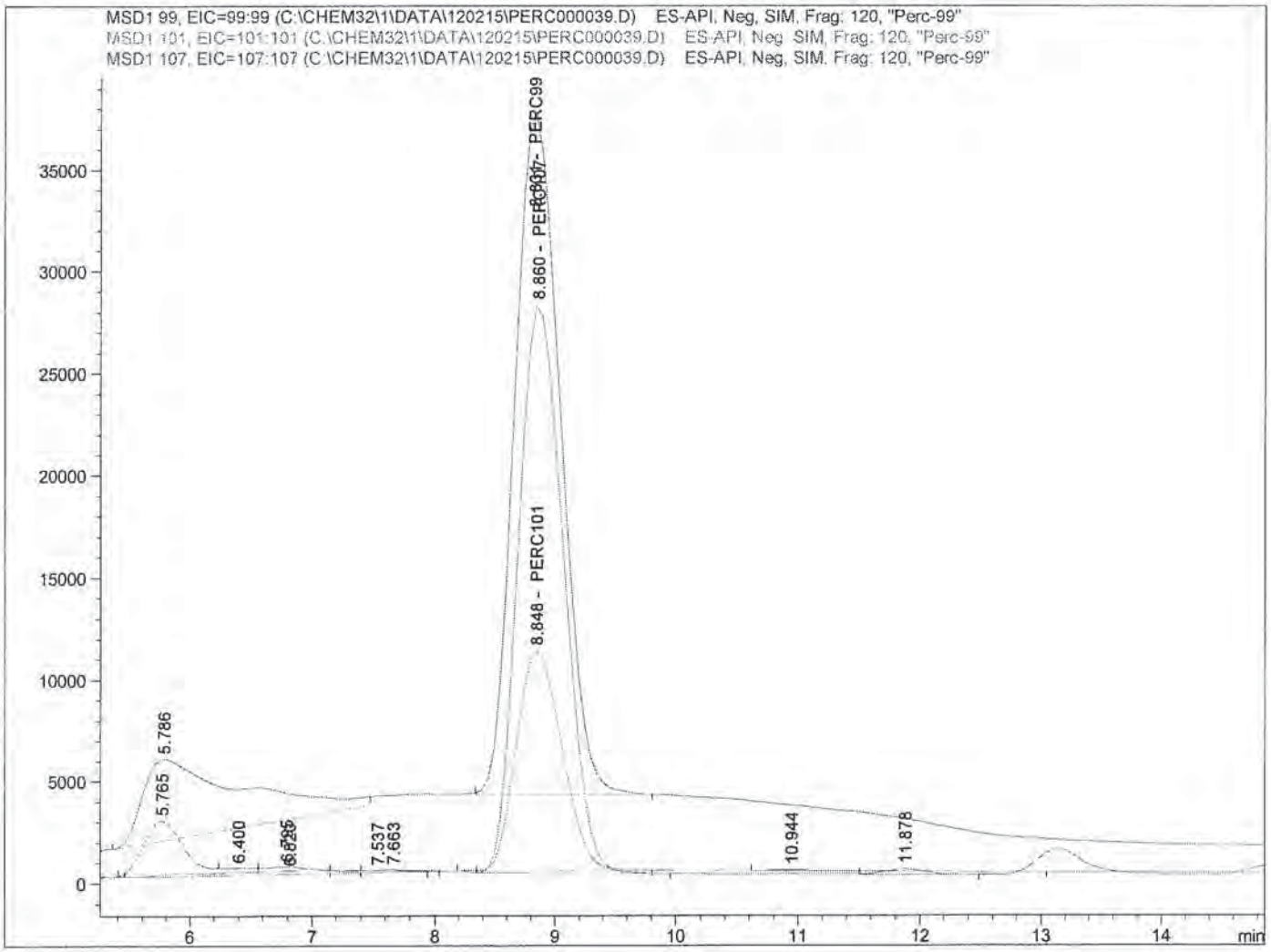

==========

Internal Standard Report

==========

SP
12/7/15

Sorted By : Signal
Calib. Data Modified : 12/3/2015 11:09:23 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

12-3-15

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\120215\PERC000039.D
Sample Name: SEQ-CCV3

```
==================================================================
Acq. Operator   :                                Seq. Line :  39
Acq. Instrument : Instrument 1                    Location : Vial 3
Injection Date  : 12/2/2015 8:10:21 PM                 Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/3/2015 11:09:23 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.831	BBA	1	8.89134e5	8.48638e-1	5.15043		PERC99

Totals without ISTD(s) : 5.15043

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.848	BBA	1	2.85453e5	2.60545	5.07658		PERC101

Totals without ISTD(s) : 5.07658

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.860	VB I	1	7.32515e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120215\PERC000040.D
Sample Name: SEQ-LCV4

==========

Acq. Operator : Seq. Line : 40
Acq. Instrument : Instrument 1 Location : Vial 4
Injection Date : 12/2/2015 8:28:02 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 11:09:23 AM
(modified after loading)

==========

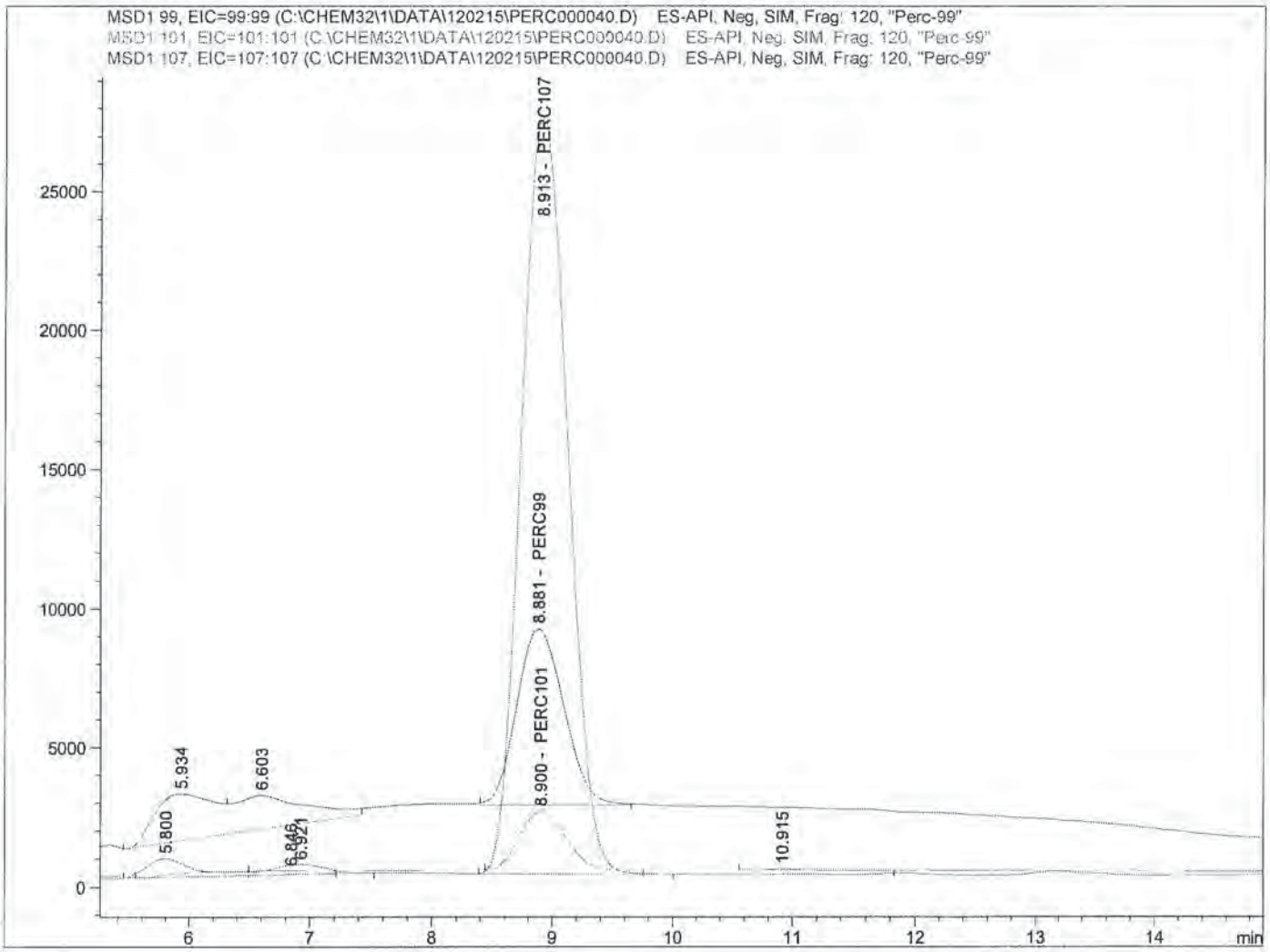

==========

Internal Standard Report

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SP
12/7/15

Sorted By : Signal
Calib. Data Modified : 12/3/2015 11:09:23 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

12-3-15

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\120215\PERC000040.D
Sample Name: SEQ-LCV4

```
==================================================================
Acq. Operator   :                                  Seq. Line :  40
Acq. Instrument : Instrument 1                      Location : Vial 4
Injection Date  : 12/2/2015 8:28:02 PM                 Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/3/2015 11:09:23 AM
                  (modified after loading)
==================================================================

  1      5.00000   PERC107


Signal 1: MSD1 99, EIC=99:99

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.881 BB        1 1.73163e5  8.48638e-1 9.97712e-1    PERC99

Totals without ISTD(s) :              9.97712e-1


Signal 2: MSD1 101, EIC=101:101

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.900 BB        1 5.63203e4     2.60545 9.96263e-1    PERC101

Totals without ISTD(s) :              9.96263e-1


Signal 3: MSD1 107, EIC=107:107

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.913 BBA  I    1 7.36450e5     1.00000    5.00000    PERC107

Totals without ISTD(s) :                 0.00000


==================================================================
                        *** End of Report ***
```

Data File C:\CHEM32\1\DATA\120215\PERC000041.D
Sample Name: SEQ-LCV5

==========

Acq. Operator : Seq. Line : 41
Acq. Instrument : Instrument 1 Location : Vial 83
Injection Date : 12/2/2015 8:45:55 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 11:09:23 AM
(modified after loading)

==========

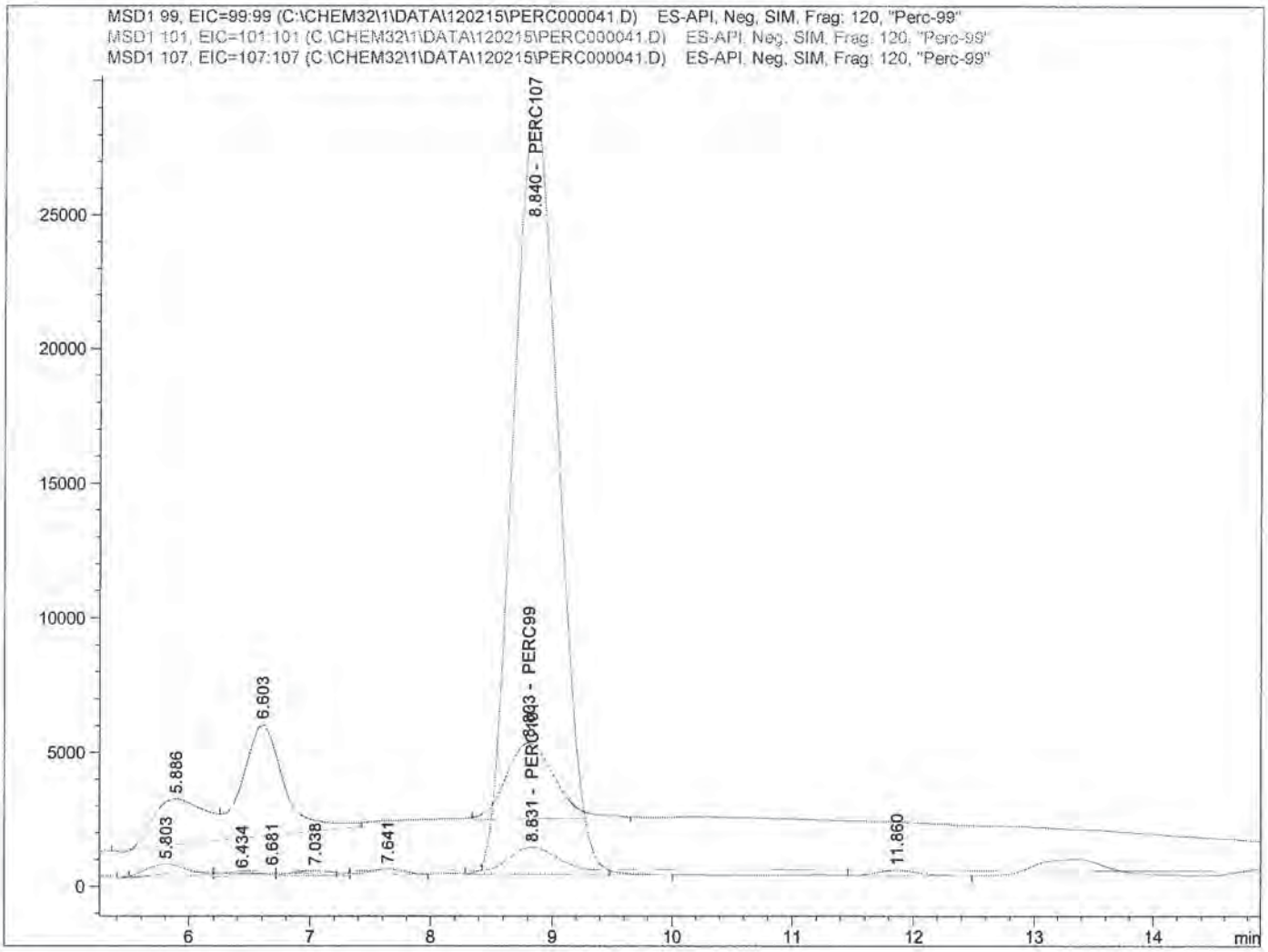

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/3/2015 11:09:23 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/7/15

12-3-15

Data File C:\CHEM32\1\DATA\120215\PERC000041.D
Sample Name: SEQ-LCV5

```
==================================================================
Acq. Operator   :                                Seq. Line :  41
Acq. Instrument : Instrument 1                    Location : Vial 83
Injection Date  : 12/2/2015 8:45:55 PM                 Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/2/2015 8:49:41 AM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/3/2015 11:09:23 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.803	BB	1	7.92151e4	8.48638e-1	4.52299e-1		PERC99

Totals without ISTD(s) : 4.52299e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.831	BV	1	2.26247e4	2.60545	3.96608e-1		PERC101

Totals without ISTD(s) : 3.96608e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.840	VBA I	1	7.43147e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Print of all graphic windows
Data File : C:\CHEM32\1\DATA\120715\PERC000002.D
Sample Name : SEQ-TUN1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/7/2015 5:21:54 PM

Seq. Line : 2
Location : Vial 1
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_SC
Last changed : 12/4/2015 2:35:18 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 9:38:09 AM
(modified after loading)

Current Chromatogram(s)

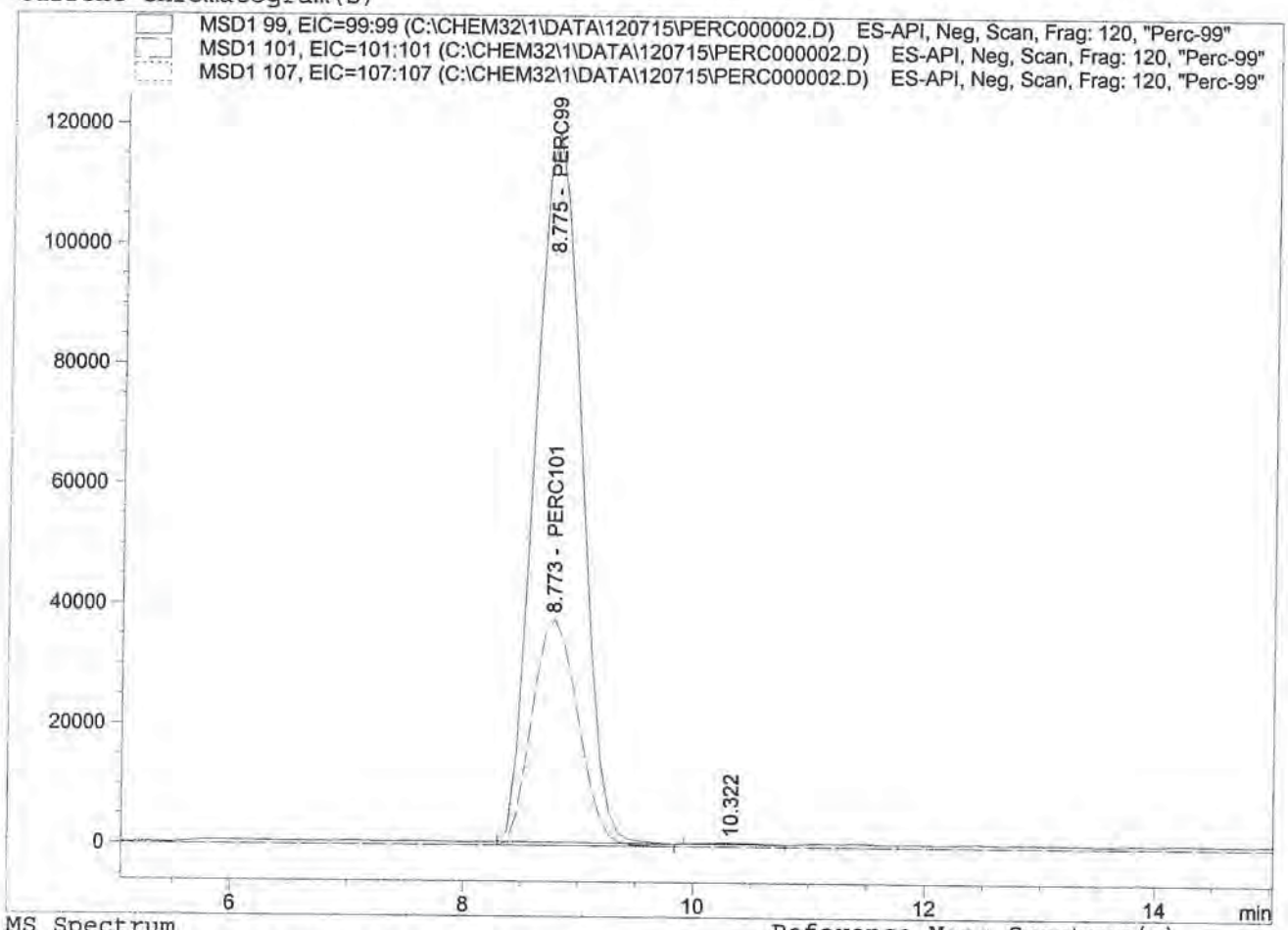

MS Spectrum

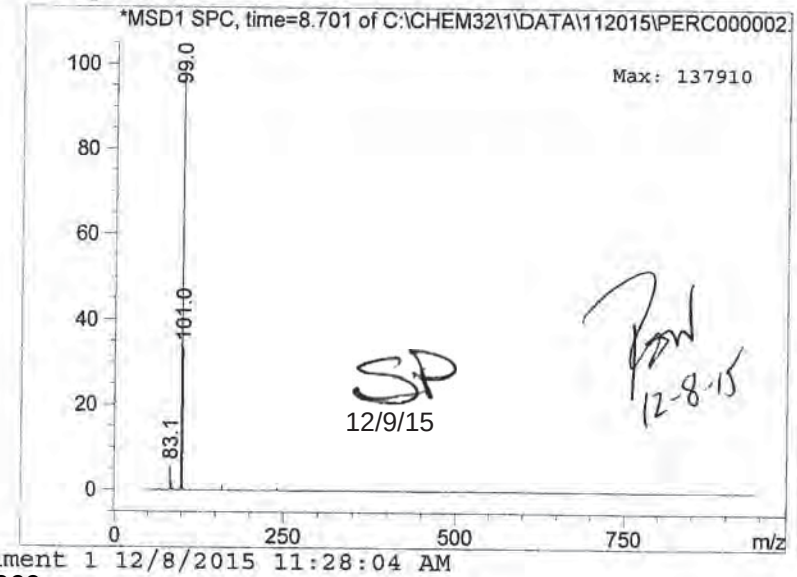

Reference Mass Spectrum(a)

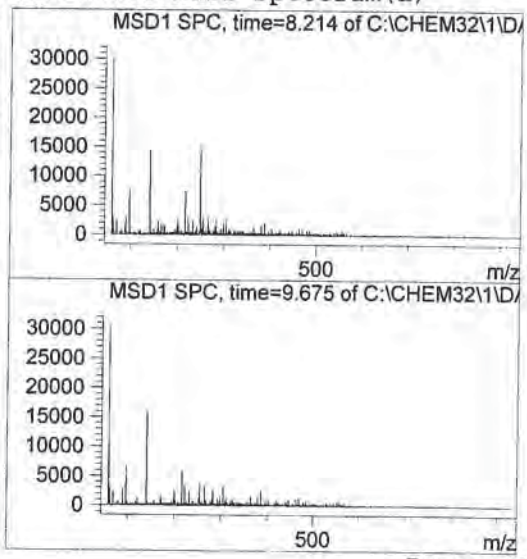

SP
12/9/15

12-8-15

Instrument 1 12/8/2015 11:28:04 AM

Data File C:\CHEM32\1\DATA\120715\PERC000002.D
Sample Name: SEQ-TUN1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/7/2015 5:21:54 PM

Seq. Line : 2
Location : Vial 1
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_SC
Last changed : 12/4/2015 2:35:18 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 9:38:09 AM
(modified after loading)

==========

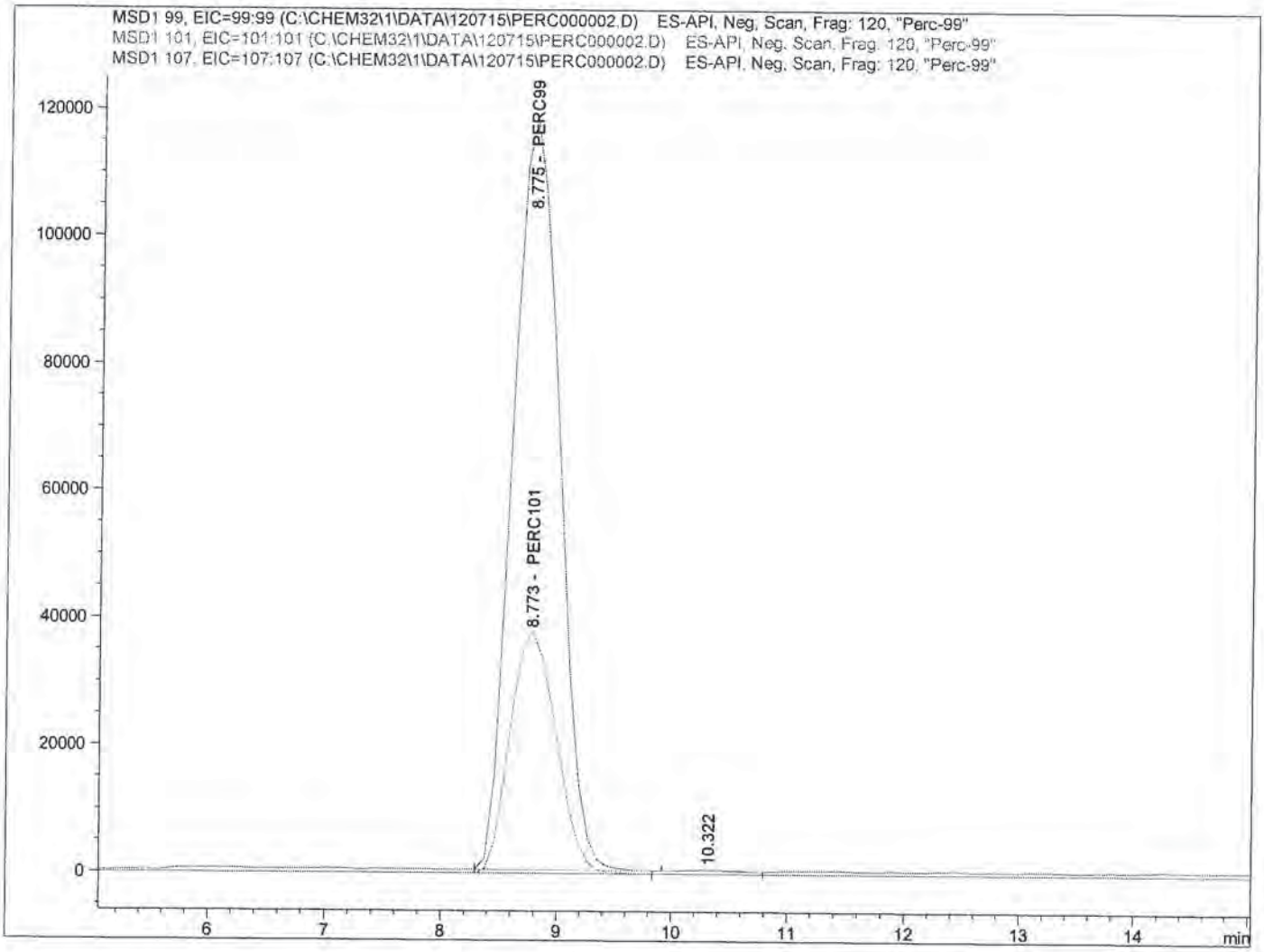

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Internal Standard Report

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SP
12/9/15

Sorted By : Signal
Calib. Data Modified : 12/8/2015 9:37:54 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-8-15

Data File C:\CHEM32\1\DATA\120715\PERC000002.D
Sample Name: SEQ-TUN1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/7/2015 5:21:54 PM

Seq. Line : 2
Location : Vial 1
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_SC
Last changed : 12/4/2015 2:35:18 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 9:38:09 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.775	BBA	1	3.28367e6	0.00000	0.00000		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.773	BBA	1	1.05100e6	0.00000	0.00000		PERC101

Totals without ISTD(s) : 0.00000

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.509		1	-	-	-		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : ISTD compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000005.D
Sample Name: SEQ-CCV1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/7/2015 6:15:38 PM

Seq. Line : 5
Location : Vial 3
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:29:21 AM
(modified after loading)

==========

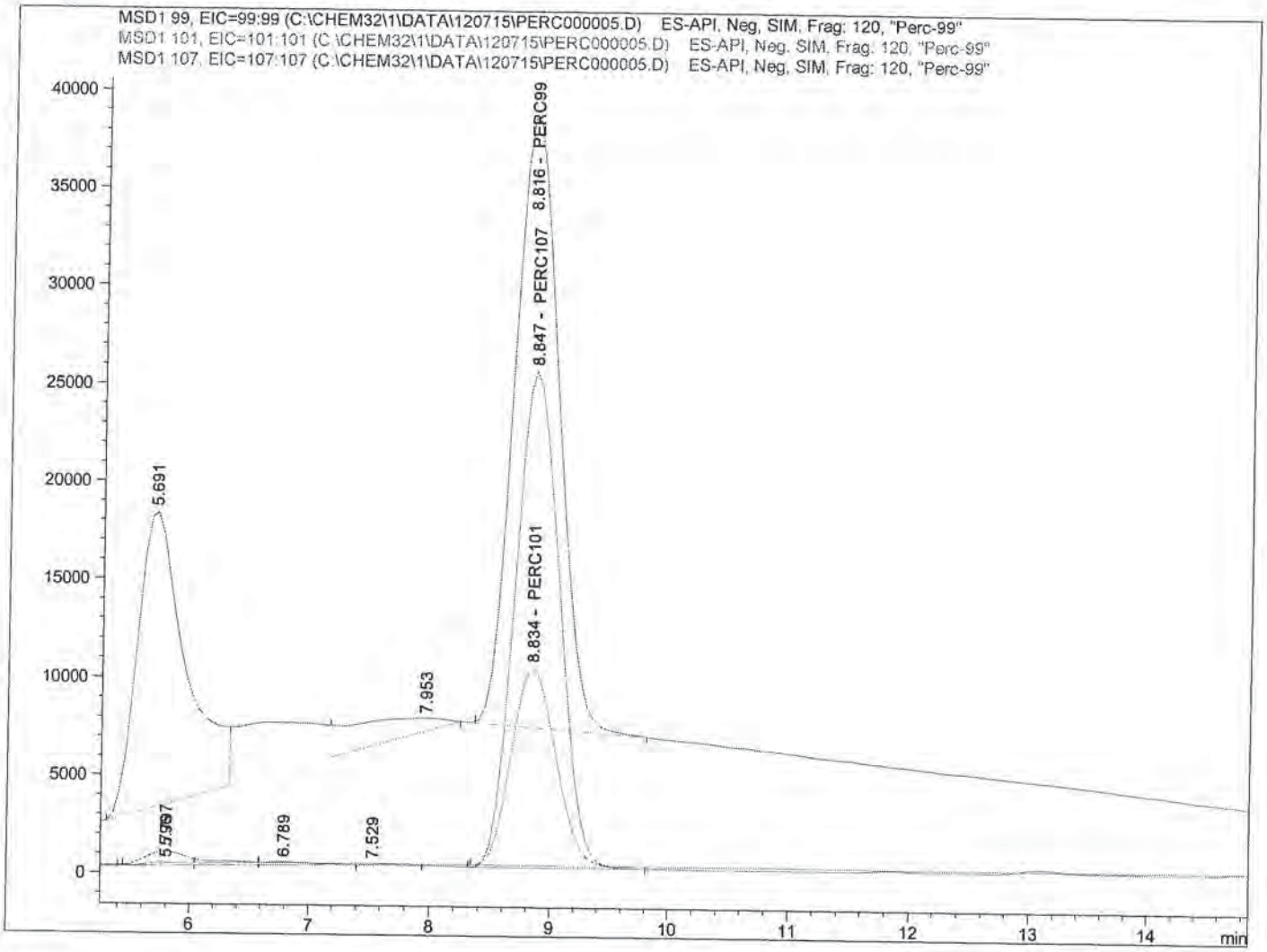

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Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:29:22 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-8-15

Data File C:\CHEM32\1\DATA\120715\PERC000005.D
Sample Name: SEQ-CCV1

```
==================================================================
Acq. Operator   :                                  Seq. Line :   5
Acq. Instrument : Instrument 1                      Location : Vial 3
Injection Date  : 12/7/2015 6:15:38 PM                   Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/8/2015 11:29:21 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.816	BBA	1	8.13509e5	8.48638e-1	5.23530		PERC99

Totals without ISTD(s) : 5.23530

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.834	BBA	1	2.62987e5	2.60545	5.19605		PERC101

Totals without ISTD(s) : 5.19605

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.847	VBA I	1	6.59346e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000006.D
Sample Name: SEQ-LCV1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/7/2015 6:33:28 PM

Seq. Line : 6
Location : Vial 4
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:29:21 AM
(modified after loading)

==========

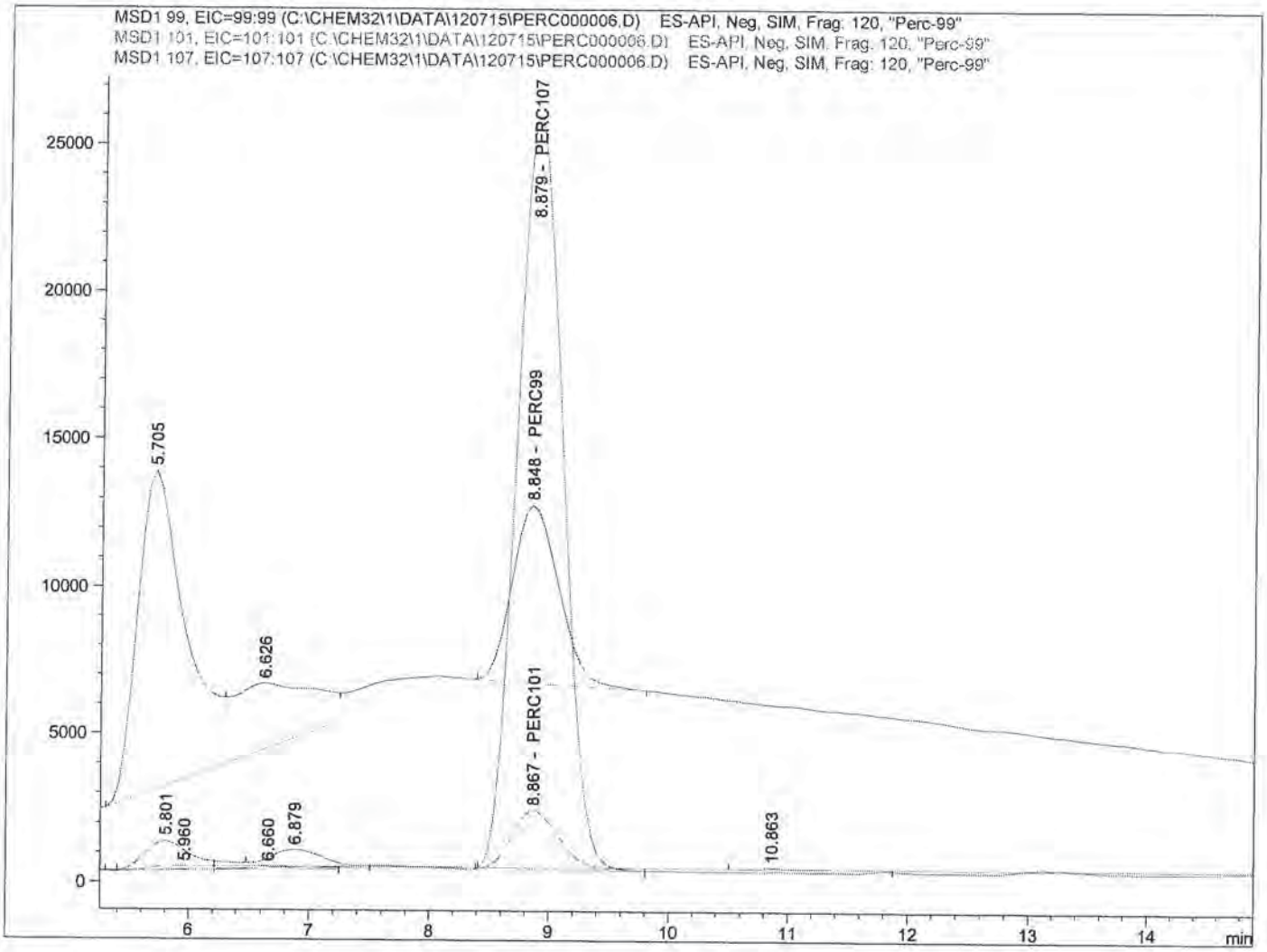

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Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:29:22 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-8-15

SP
12/9/15

Data File C:\CHEM32\1\DATA\120715\PERC000006.D
Sample Name: SEQ-LCV1

```
==================================================================
Acq. Operator   :                                  Seq. Line :   6
Acq. Instrument : Instrument 1                      Location : Vial 4
Injection Date  : 12/7/2015 6:33:28 PM                  Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/8/2015 11:29:21 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.848	BBA	1	1.63005e5	8.48638e-1	1.02446		PERC99

Totals without ISTD(s) : 1.02446

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.867	BBA	1	5.12670e4	2.60545	9.89220e-1		PERC101

Totals without ISTD(s) : 9.89220e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.879	BBA I	1	6.75145e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000007.D
Sample Name: SEQ-LCV2

Acq. Operator	:	Seq. Line	: 7
Acq. Instrument	: Instrument 1	Location	: Vial 83
Injection Date	: 12/7/2015 6:51:19 PM	Inj	: 1
		Inj Volume	: 100.0 µl
Acq. Method	: C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M		
Last changed	: 12/7/2015 5:01:12 PM		
Analysis Method	: C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M		
Last changed	: 12/8/2015 11:30:41 AM (modified after loading)		

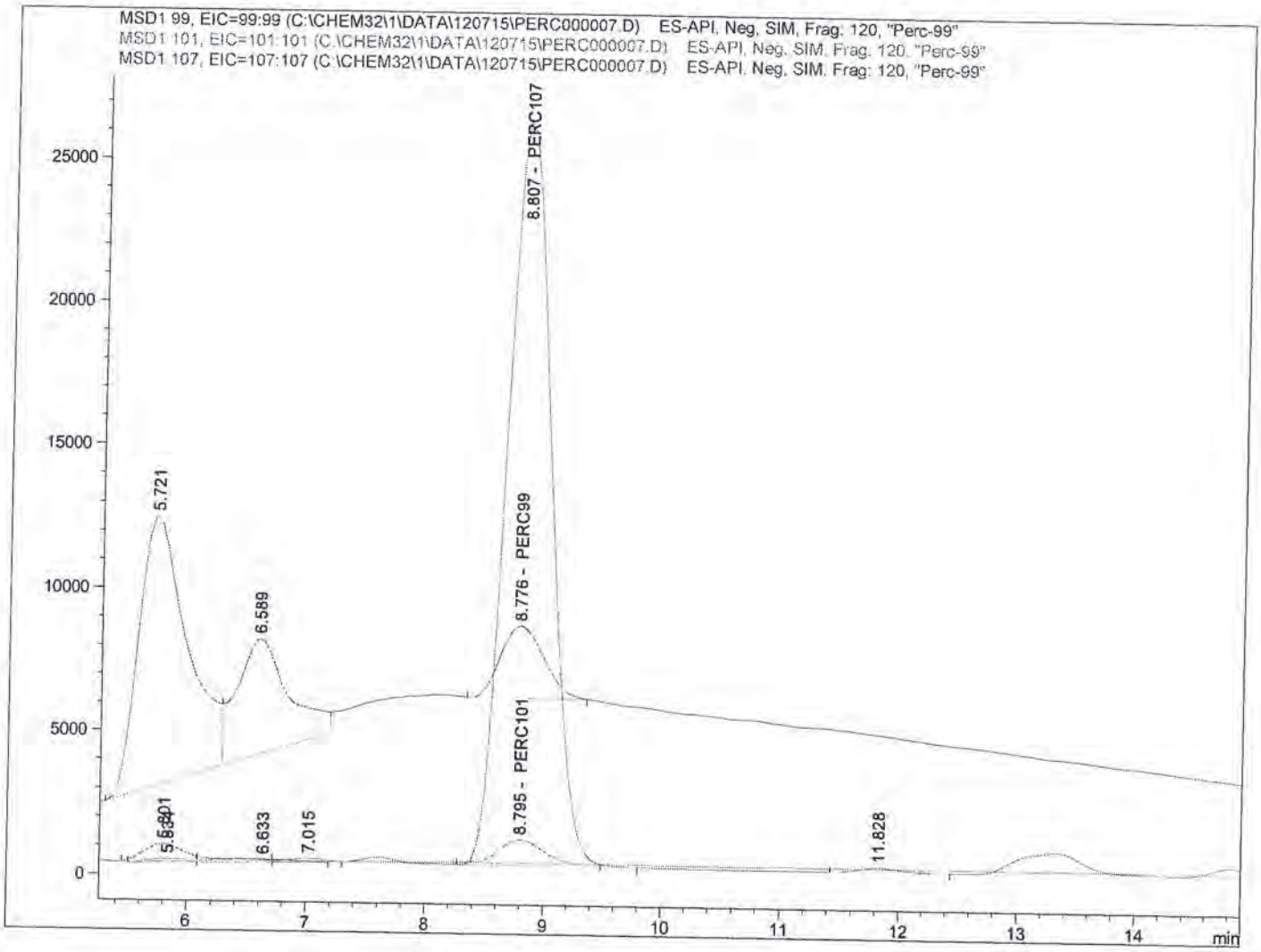

Internal Standard Report

Sorted By	:	Signal
Calib. Data Modified	:	12/8/2015 11:29:22 AM
Multiplier	:	1.0000
Dilution	:	1.0000

Do not use Multiplier & Dilution Factor with ISTDs

Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-8-15

Data File C:\CHEM32\1\DATA\120715\PERC000007.D
Sample Name: SEQ-LCV2

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/7/2015 6:51:19 PM

Seq. Line : 7
Location : Vial 83
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:30:41 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.776	BBA	1	6.40467e4	8.48638e-1	4.02912e-1		PERC99

Totals without ISTD(s) : 4.02912e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.795	BV	1	2.09004e4	2.60545	4.03670e-1		PERC101

Totals without ISTD(s) : 4.03670e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.807	VBA I	1	6.74495e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000008.D
Sample Name: SEQ-IFA1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/7/2015 7:09:12 PM

Seq. Line : 8
Location : Vial 5
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:33:00 AM
(modified after loading)

==========

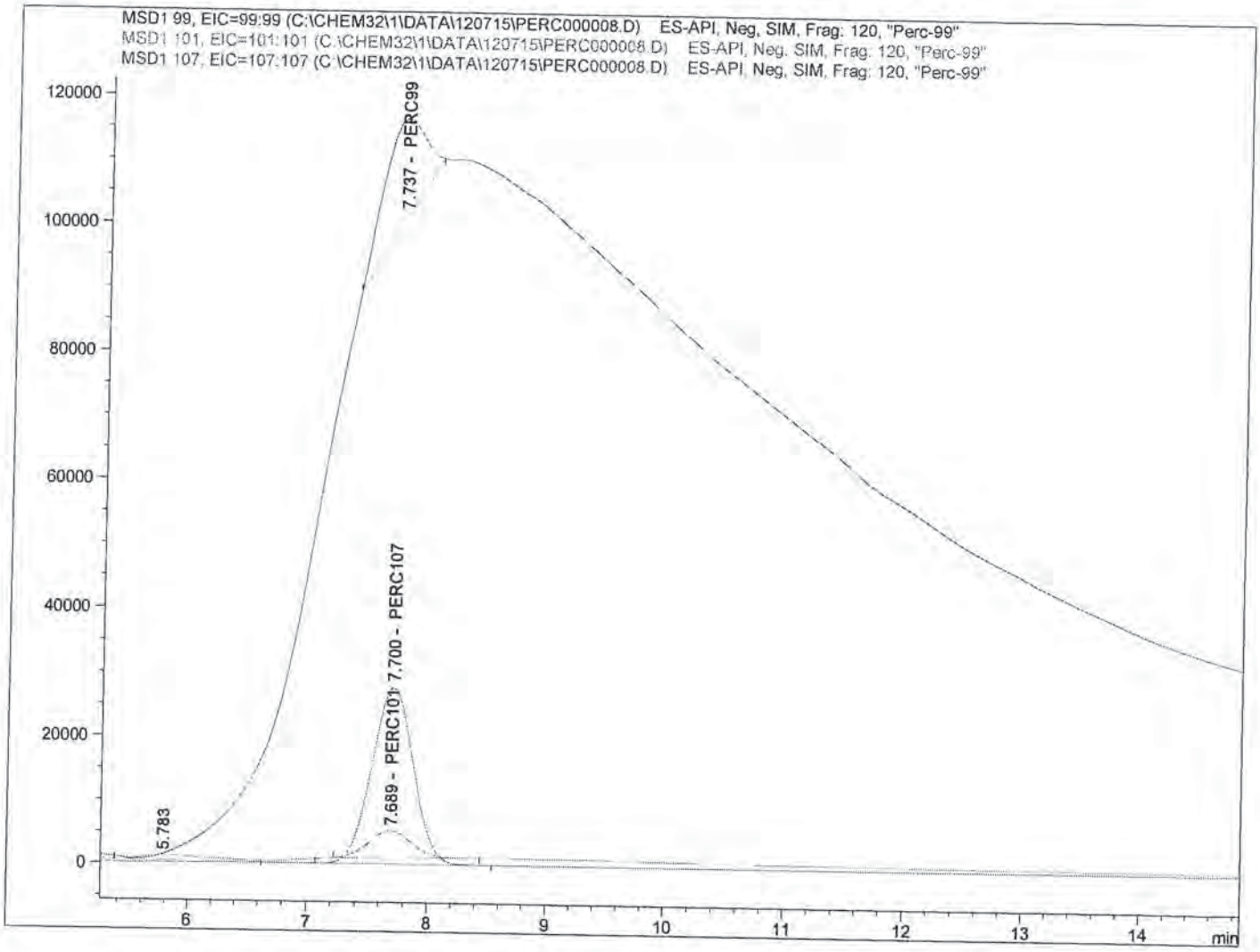

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:31:37 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-8-15

SP
12/9/15

Data File C:\CHEM32\1\DATA\120715\PERC000008.D
Sample Name: SEQ-IFA1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/7/2015 7:09:12 PM

Seq. Line : 8
Location : Vial 5
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:33:00 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
7.737	BBA	1	3.72802e5	8.48638e-1	2.39003		PERC99

Totals without ISTD(s) : 2.39003

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
7.689	BBA	1	1.04210e5	2.60545	2.05114		PERC101

Totals without ISTD(s) : 2.05114

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
7.700	BBA I	1	6.61861e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000011.D
Sample Name: 5L03014-BLK1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/7/2015 8:02:47 PM

Seq. Line : 11
Location : Vial 6
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:35:05 AM
(modified after loading)

==========

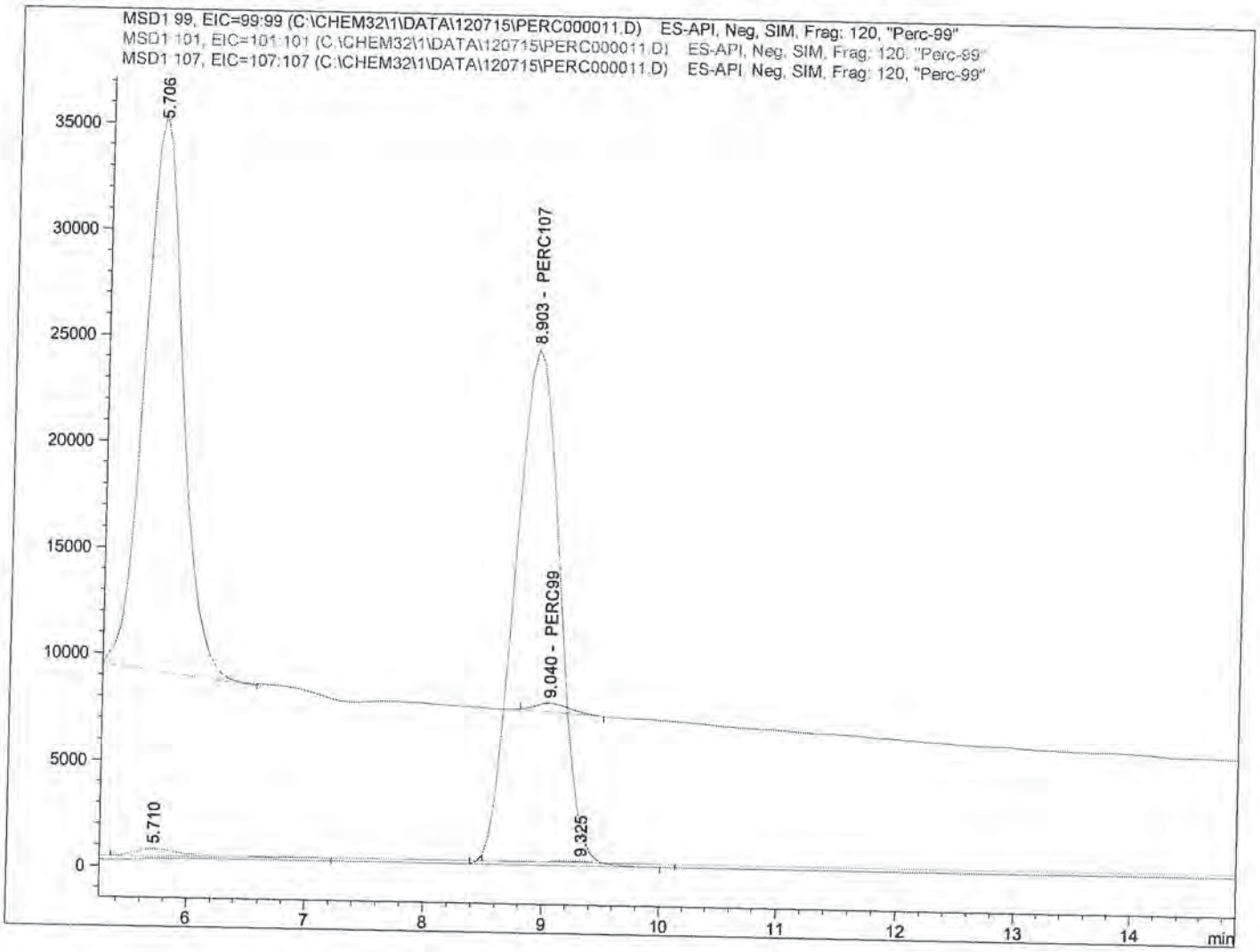

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:33:50 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-8-15

Data File C:\CHEM32\1\DATA\120715\PERC000011.D
Sample Name: 5L03014-BLK1

```
==================================================================
Acq. Operator   :                                  Seq. Line :  11
Acq. Instrument : Instrument 1                      Location : Vial 6
Injection Date  : 12/7/2015 8:02:47 PM                  Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/8/2015 11:35:05 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
9.040	BBA	1	8308.46484	8.48638e-1	5.52381e-2		PERC99

Totals without ISTD(s) : 5.52381e-2

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.900		1	-	-	-		PERC101

Totals without ISTD(s) : 0.00000

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.903	BBA I	1	6.38227e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000012.D
Sample Name: 5L03014-BS1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/7/2015 8:20:32 PM

Seq. Line : 12
Location : Vial 7
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:36:17 AM
(modified after loading)

==========

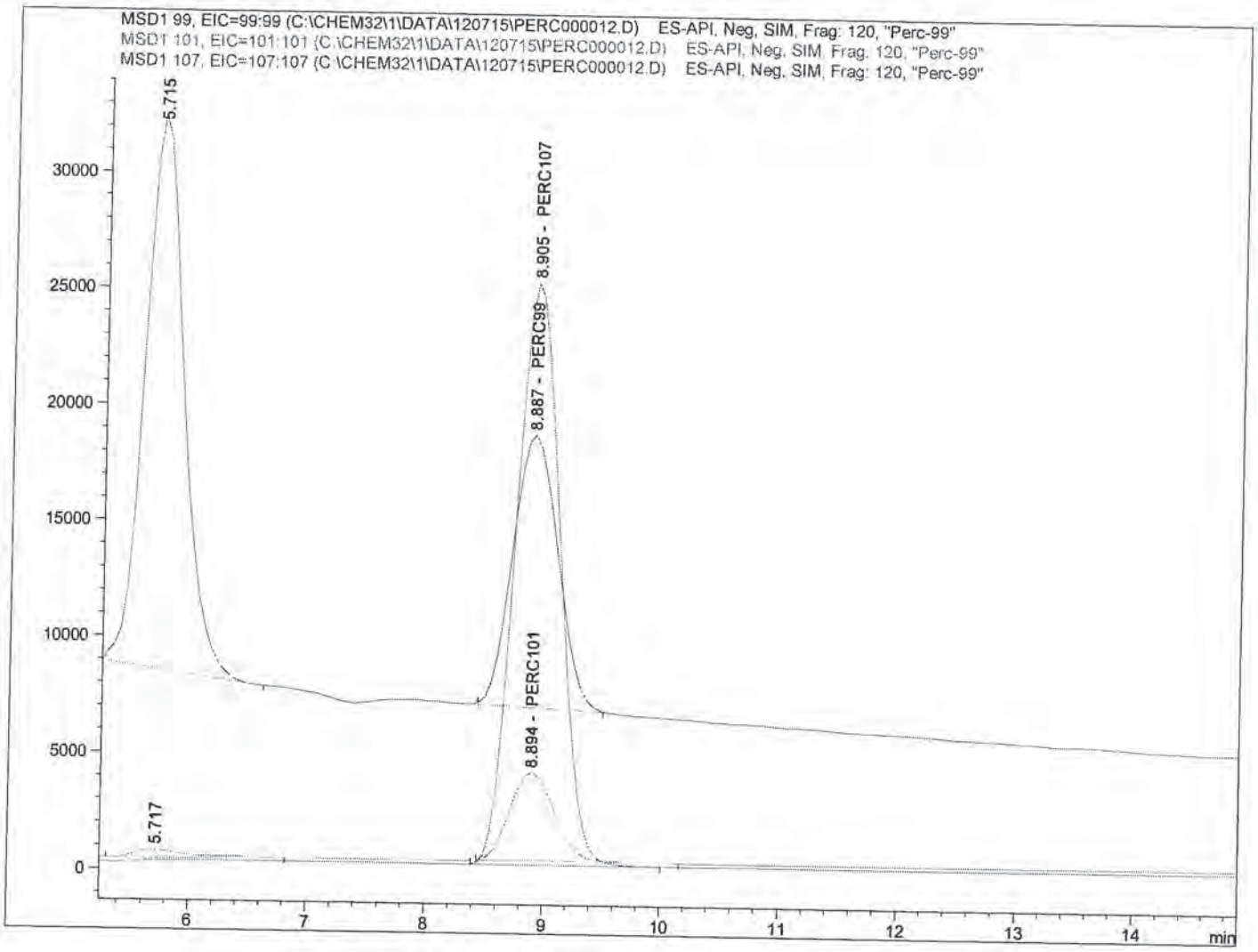

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:33:50 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

RDW 12-8-15

Data File C:\CHEM32\1\DATA\120715\PERC000012.D
Sample Name: 5L03014-BS1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/7/2015 8:20:32 PM

Seq. Line : 12
Location : Vial 7
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:36:17 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.887	BBA	1	3.14219e5	8.48638e-1	2.02264		PERC99

Totals without ISTD(s) : 2.02264

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.894	BB	1	1.00694e5	2.60545	1.98998		PERC101

Totals without ISTD(s) : 1.98998

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.905	BBA I	1	6.59183e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000013.D
Sample Name: 5L03014-BSD1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/7/2015 8:38:23 PM

Seq. Line : 13
Location : Vial 8
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:36:17 AM
(modified after loading)

==========

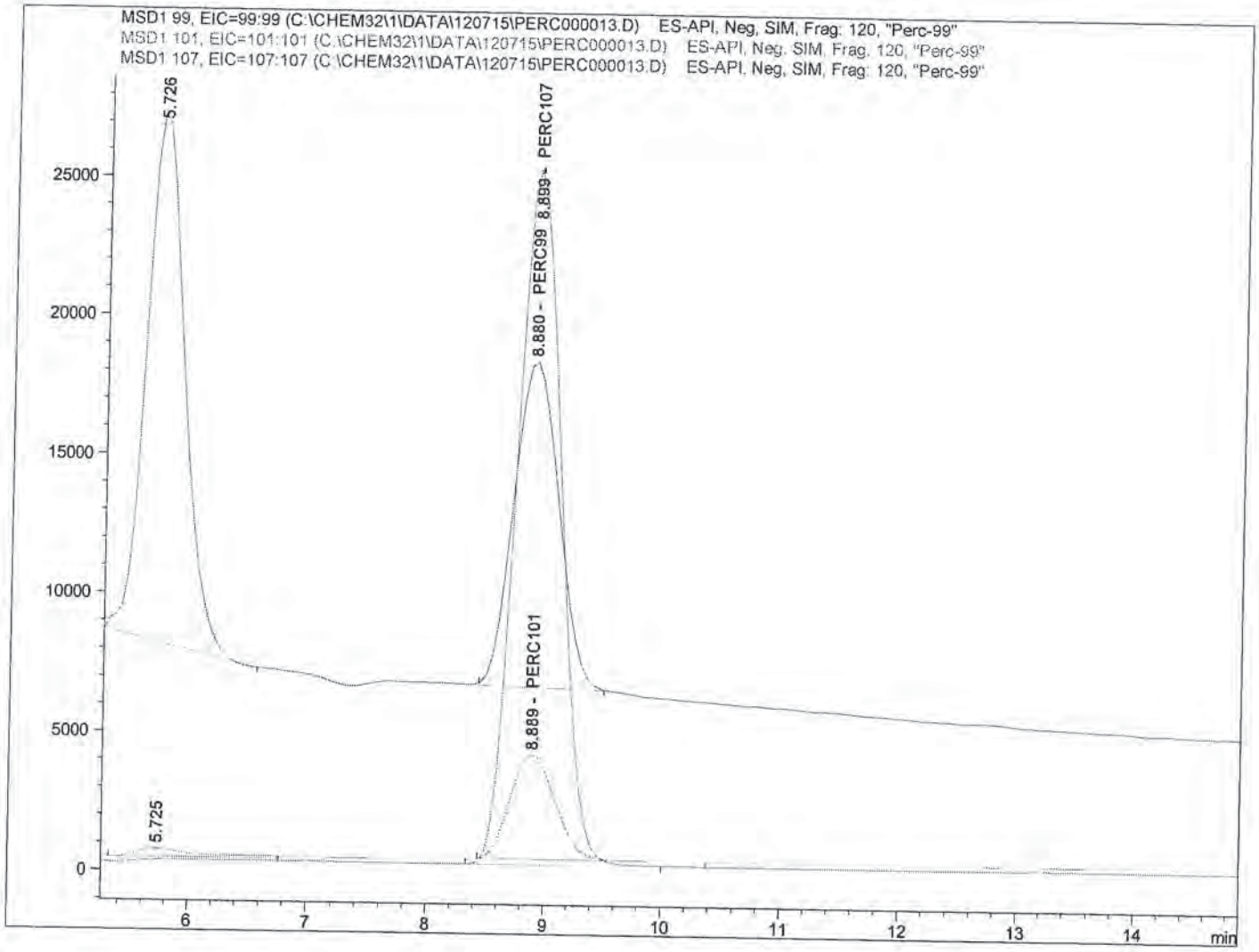

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:33:50 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-8-15

Data File C:\CHEM32\1\DATA\120715\PERC000013.D
Sample Name: 5L03014-BSD1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/7/2015 8:38:23 PM

Seq. Line : 13
Location : Vial 8
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:36:17 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.880	BBA	1	3.13034e5	8.48638e-1	2.01096		PERC99

Totals without ISTD(s) : 2.01096

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.889	BV	1	1.01070e5	2.60545	1.99339		PERC101

Totals without ISTD(s) : 1.99339

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.899	BBA I	1	6.60510e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000014.D
Sample Name: 1511269-05

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/7/2015 8:56:17 PM

Seq. Line : 14
Location : Vial 9
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:38:07 AM
(modified after loading)

==========

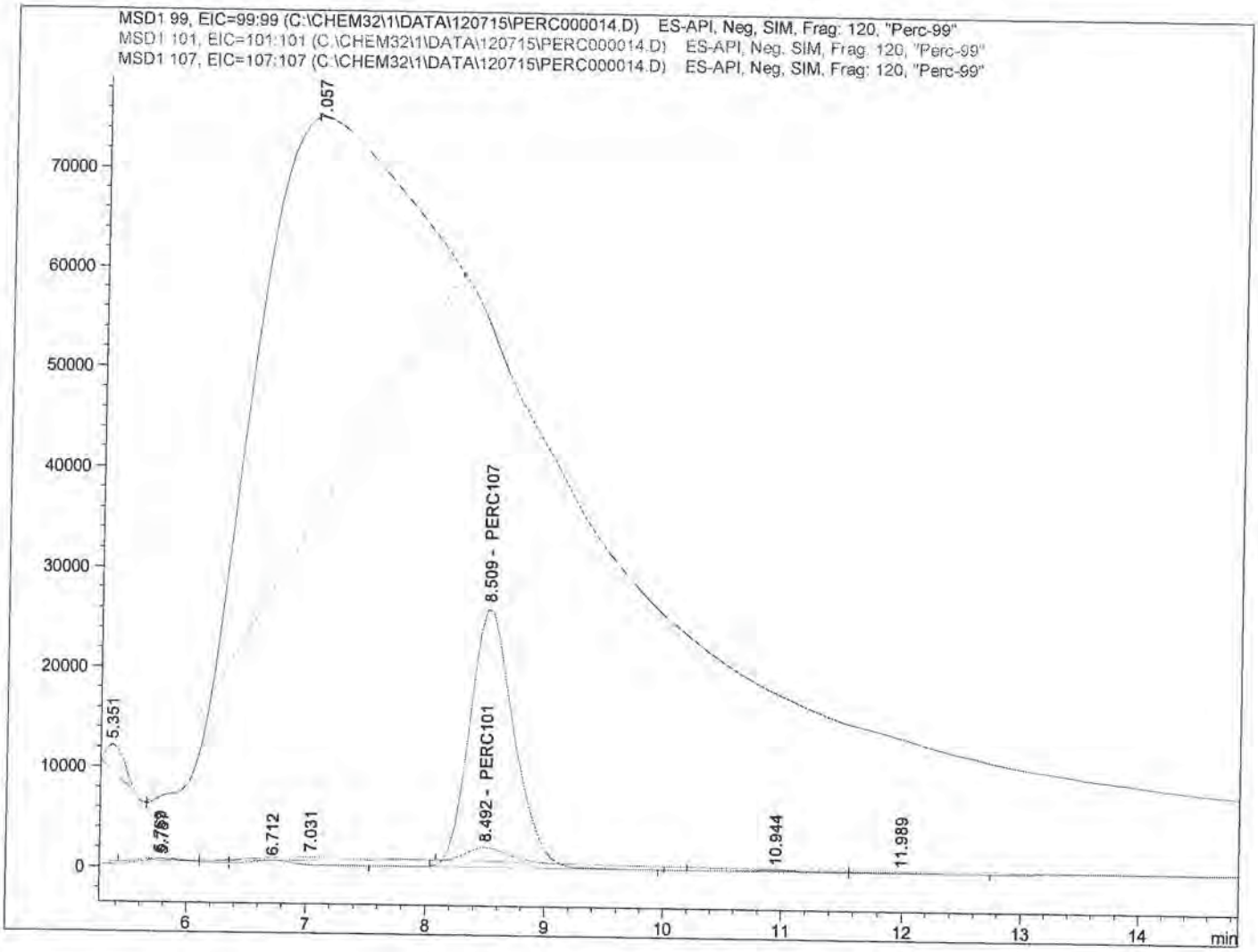

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:37:43 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-8-15

Data File C:\CHEM32\1\DATA\120715\PERC000014.D
Sample Name: 1511269-05

```
==================================================================
Acq. Operator    :                                  Seq. Line :  14
Acq. Instrument  : Instrument 1                      Location : Vial 9
Injection Date   : 12/7/2015 8:56:17 PM                 Inj :   1
                                                   Inj Volume : 100.0 µl
Acq. Method      : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed     : 12/7/2015 5:01:12 PM
Analysis Method  : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed     : 12/8/2015 11:38:07 AM
                   (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.500		1	-	-	-		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.492	BBA	1	3.50323e4	2.60545	6.86275e-1		PERC101

Totals without ISTD(s) : 6.86275e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.509	BB I	1	6.65001e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000023.D
Sample Name: 1511269-13@5

==========

Acq. Operator : Seq. Line : 23
Acq. Instrument : Instrument 1 Location : Vial 18
Injection Date : 12/7/2015 11:37:04 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:43:22 AM
(modified after loading)
Additional Info : Peak(s) manually integrated

==========

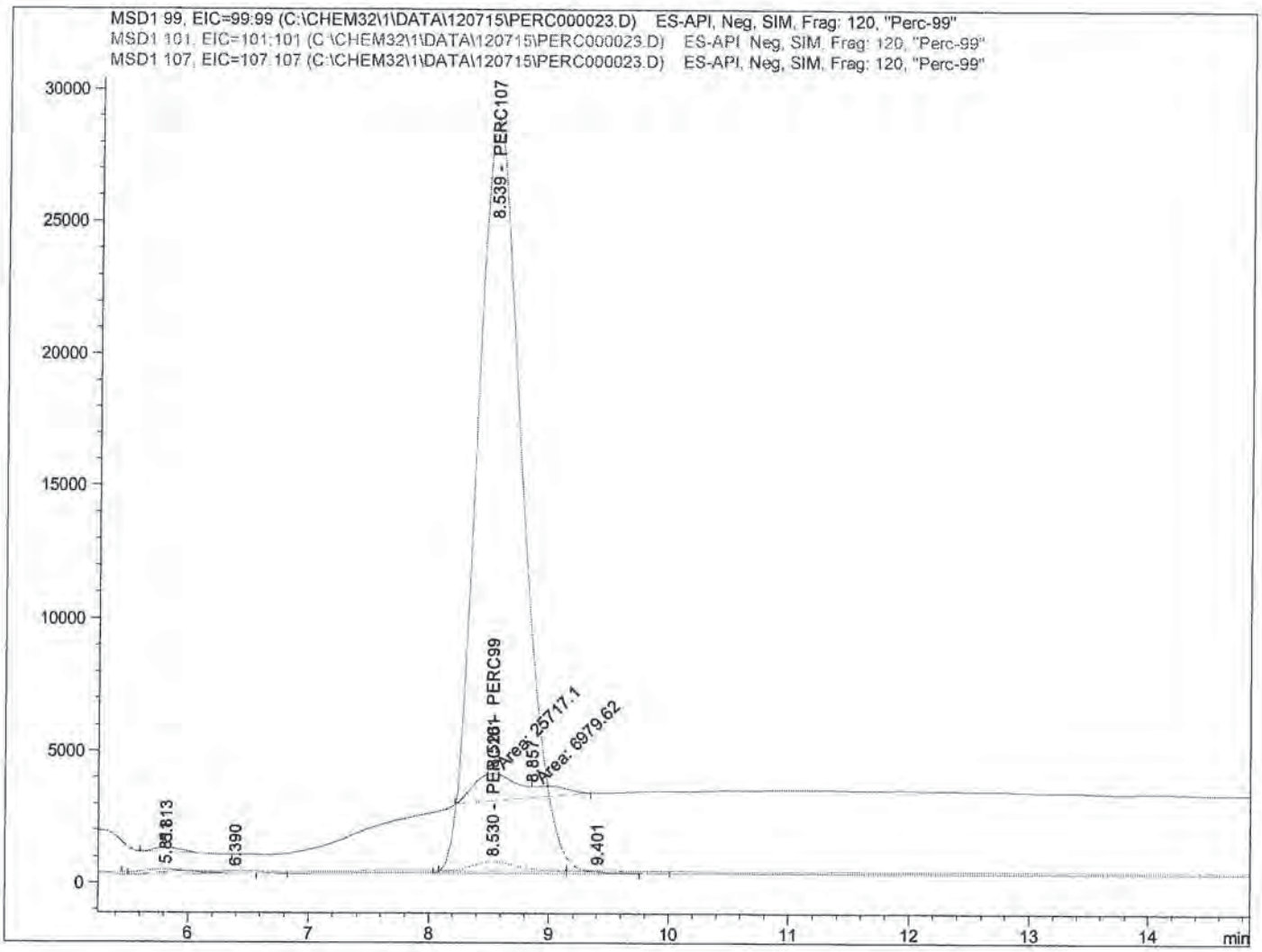

==========

Internal Standard Report

==========

SP
12/9/15

Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:43:27 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-8-15

Data File C:\CHEM32\1\DATA\120715\PERC000023.D
Sample Name: 1511269-13@5

==========

Acq. Operator : Seq. Line : 23
Acq. Instrument : Instrument 1 Location : Vial 18
Injection Date : 12/7/2015 11:37:04 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:43:22 AM
(modified after loading)
Additional Info : Peak(s) manually integrated

==========

1	5.00000	PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.526	MF	1	2.57171e4	8.48638e-1	1.45380e-1		PERC99

Totals without ISTD(s) : 1.45380e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.530	BV	1	1.00623e4	2.60545	1.74639e-1		PERC101

Totals without ISTD(s) : 1.74639e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.539	BB I	1	7.50602e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Print of window 38: Current Chromatogram(s)
Data File : C:\CHEM32\1\DATA\120715\PERC000023.D
Sample Name : 1511269-13@5

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/7/2015 11:37:04 PM

Seq. Line : 23
Location : Vial 18
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:43:22 AM
(modified after loading)

Current Chromatogram(s)

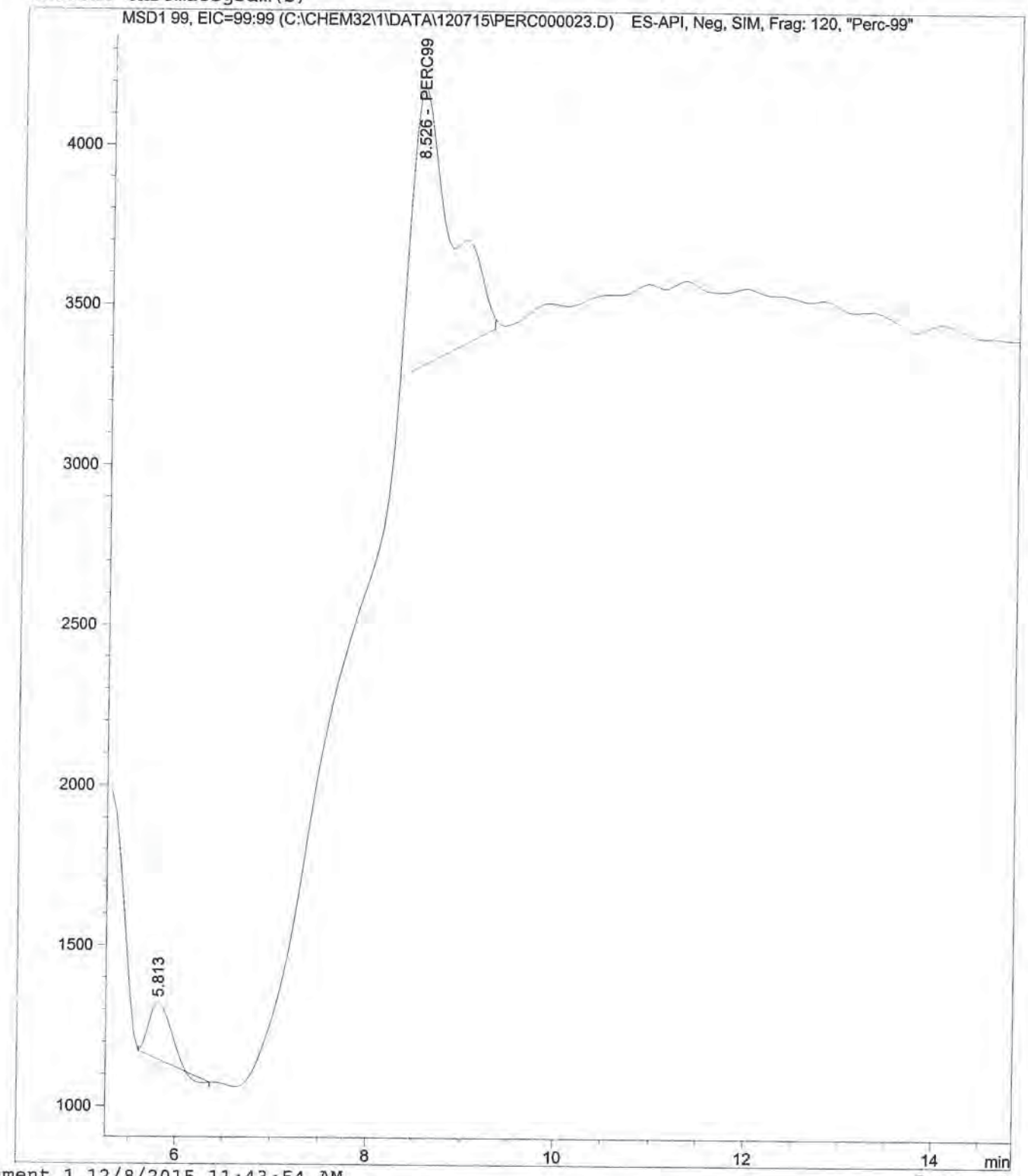

Instrument 1 12/8/2015 11:43:54 AM

Print of window 38: Current Chromatogram(s)
Data File : C:\CHEM32\1\DATA\120715\PERC000023.D
Sample Name : 1511269-13@5

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/7/2015 11:37:04 PM

Seq. Line : 23
Location : Vial 18
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:43:22 AM
(modified after loading)
Additional Info : Peak(s) manually integrated

Current Chromatogram(s)

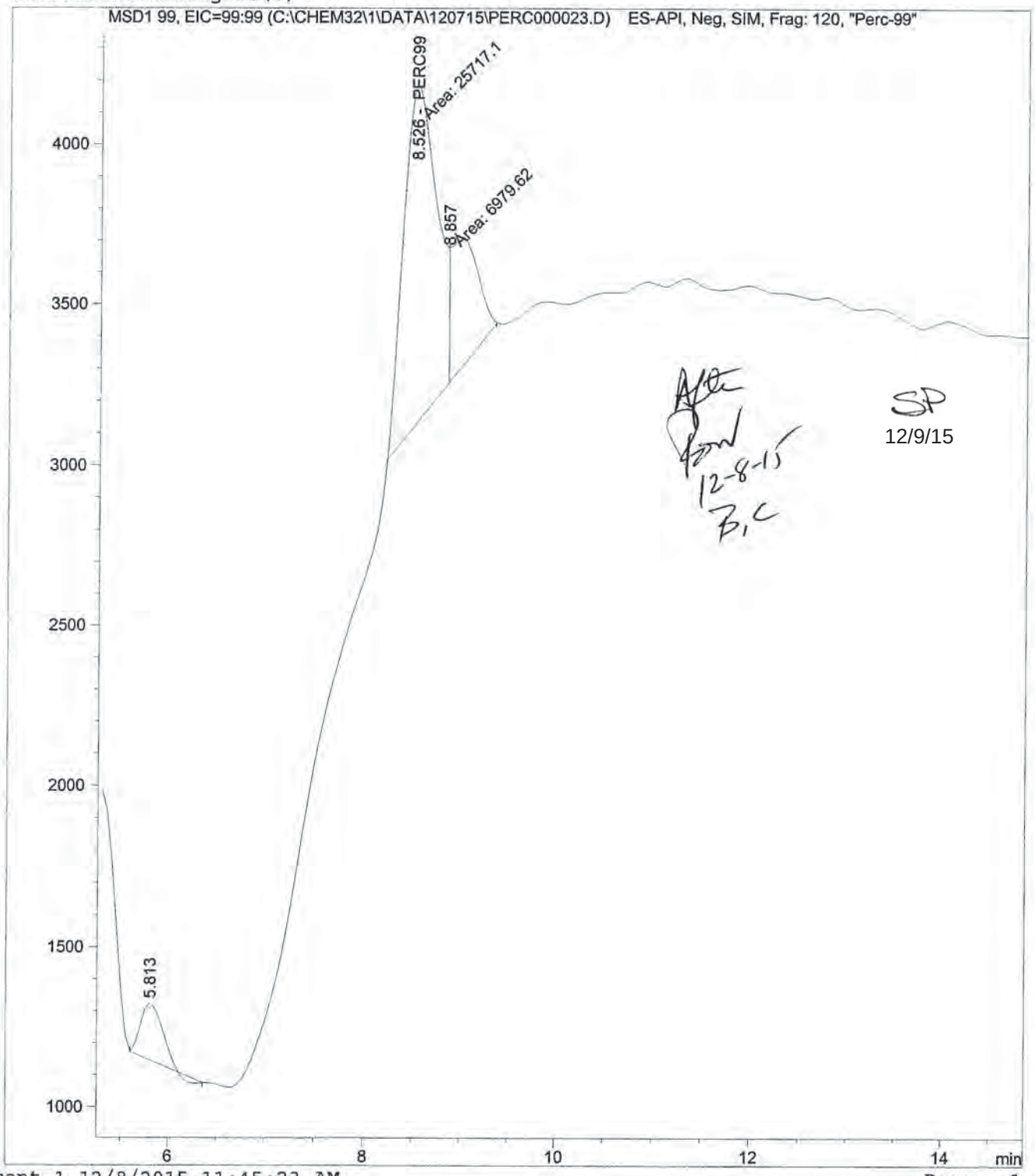

SP
12/9/15

12-8-15
B.C

Instrument 1 12/8/2015 11:45:23 AM

Data File C:\CHEM32\1\DATA\120715\PERC000025.D
Sample Name: SEQ-CCV2

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/8/2015 12:12:46 AM

Seq. Line : 25
Location : Vial 3
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:46:48 AM
(modified after loading)

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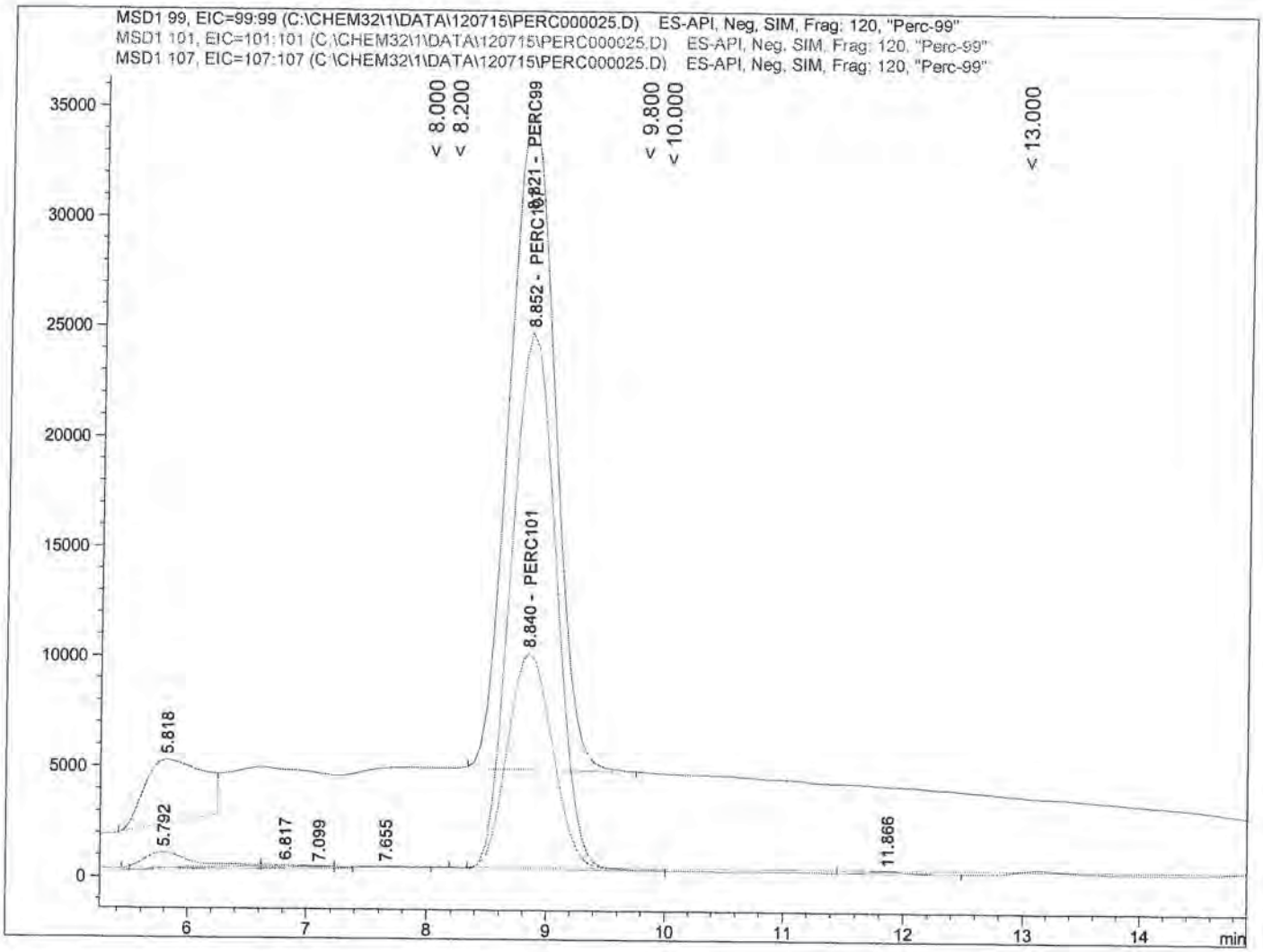

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:46:16 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-8-15

Data File C:\CHEM32\1\DATA\120715\PERC000025.D
Sample Name: SEQ-CCV2

==========

Acq. Operator : Seq. Line : 25
Acq. Instrument : Instrument 1 Location : Vial 3
Injection Date : 12/8/2015 12:12:46 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:46:48 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.821	BB	1	7.92111e5	8.48638e-1	5.22846		PERC99

Totals without ISTD(s) : 5.22846

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.840	BBA	1	2.57331e5	2.60545	5.21482		PERC101

Totals without ISTD(s) : 5.21482

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.852	BBA I	1	6.42843e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000026.D
Sample Name: SEQ-LCV3

==========

Acq. Operator :
Seq. Line : 26
Acq. Instrument : Instrument 1
Location : Vial 4
Injection Date : 12/8/2015 12:30:38 AM
Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:46:48 AM
(modified after loading)

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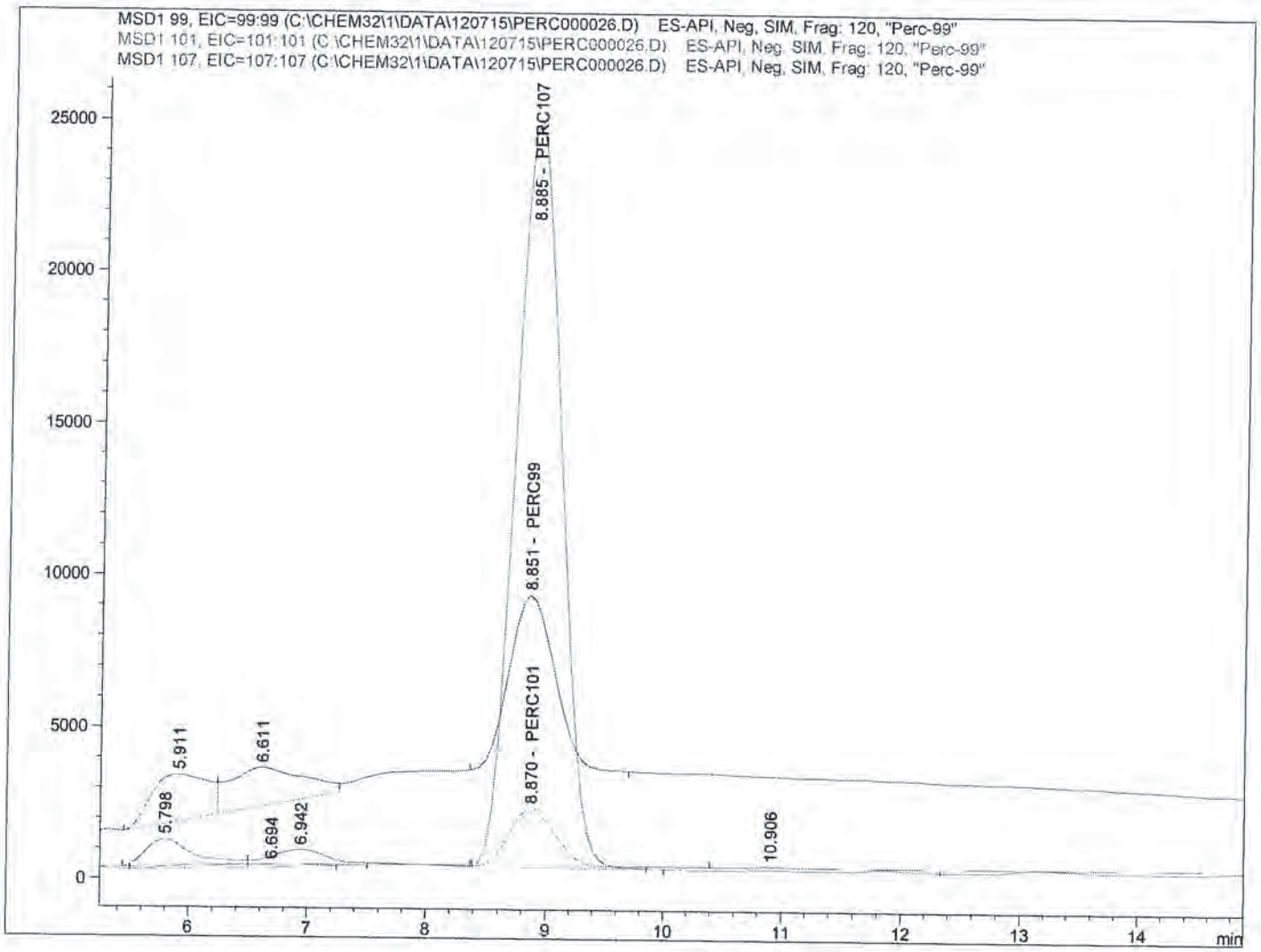

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Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:46:16 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-8-15

Data File C:\CHEM32\1\DATA\120715\PERC000026.D
Sample Name: SEQ-LCV3

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/8/2015 12:30:38 AM

Seq. Line : 26
Location : Vial 4
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:46:48 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.851	BB	1	1.54983e5	8.48638e-1	1.00326		PERC99

Totals without ISTD(s) : 1.00326

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.870	VB	1	5.04227e4	2.60545	1.00211		PERC101

Totals without ISTD(s) : 1.00211

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.885	BBA I	1	6.55481e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000027.D
Sample Name: SEQ-LCV4

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/8/2015 12:48:32 AM

Seq. Line : 27
Location : Vial 83
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:46:48 AM
(modified after loading)

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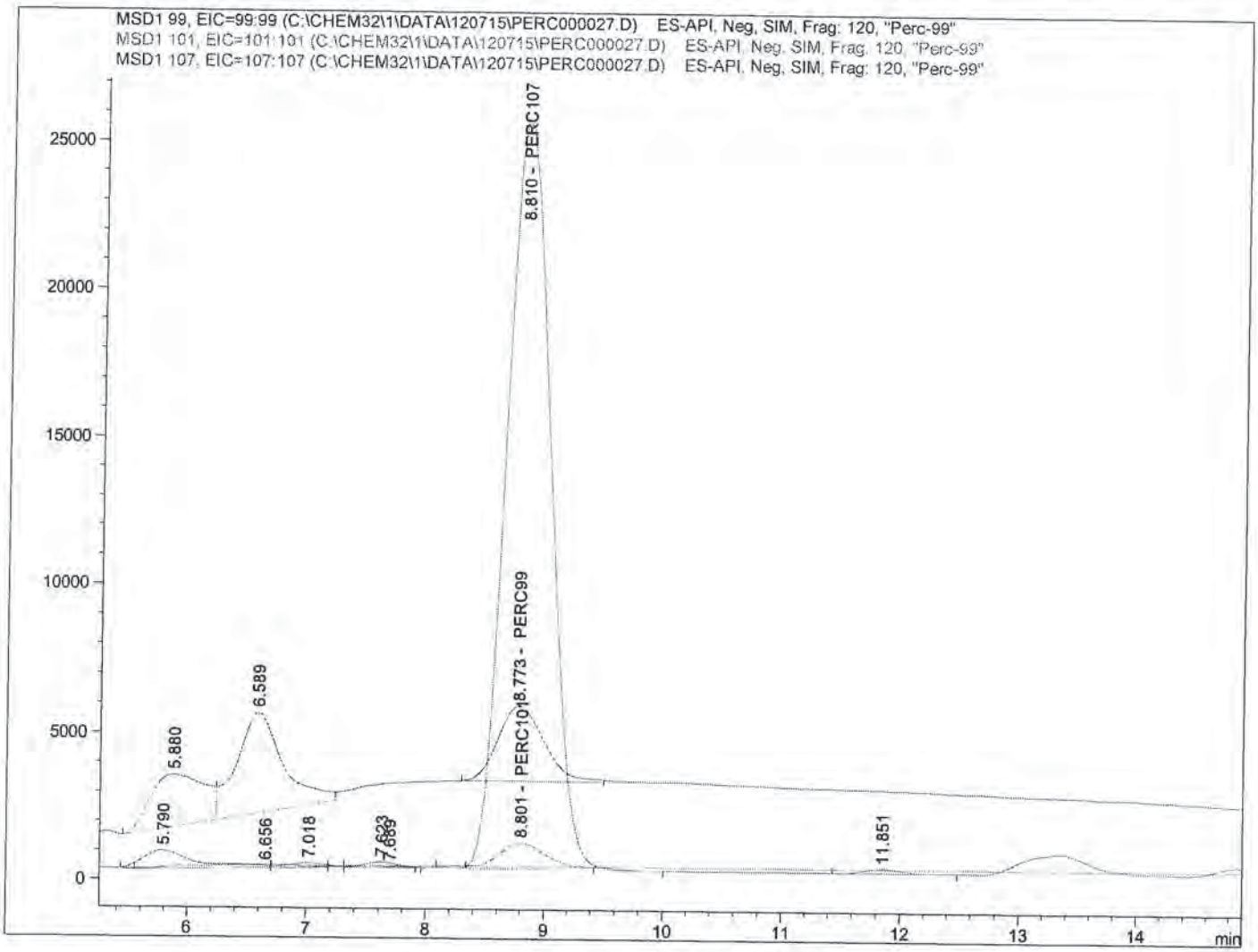

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:46:16 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-8-15

Data File C:\CHEM32\1\DATA\120715\PERC000027.D
Sample Name: SEQ-LCV4

```
==================================================================
Acq. Operator   :                                  Seq. Line :  27
Acq. Instrument : Instrument 1                      Location : Vial 83
Injection Date  : 12/8/2015 12:48:32 AM                 Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/8/2015 11:46:48 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.773	BB	1	6.86795e4	8.48638e-1	4.41543e-1		PERC99

Totals without ISTD(s) : 4.41543e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.801	BV	1	2.12409e4	2.60545	4.19255e-1		PERC101

Totals without ISTD(s) : 4.19255e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.810	BBA I	1	6.60003e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000028.D
Sample Name: 1511269-20@500

==========

Acq. Operator : Seq. Line : 28
Acq. Instrument : Instrument 1 Location : Vial 19
Injection Date : 12/8/2015 1:06:32 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:46:48 AM
(modified after loading)

==========

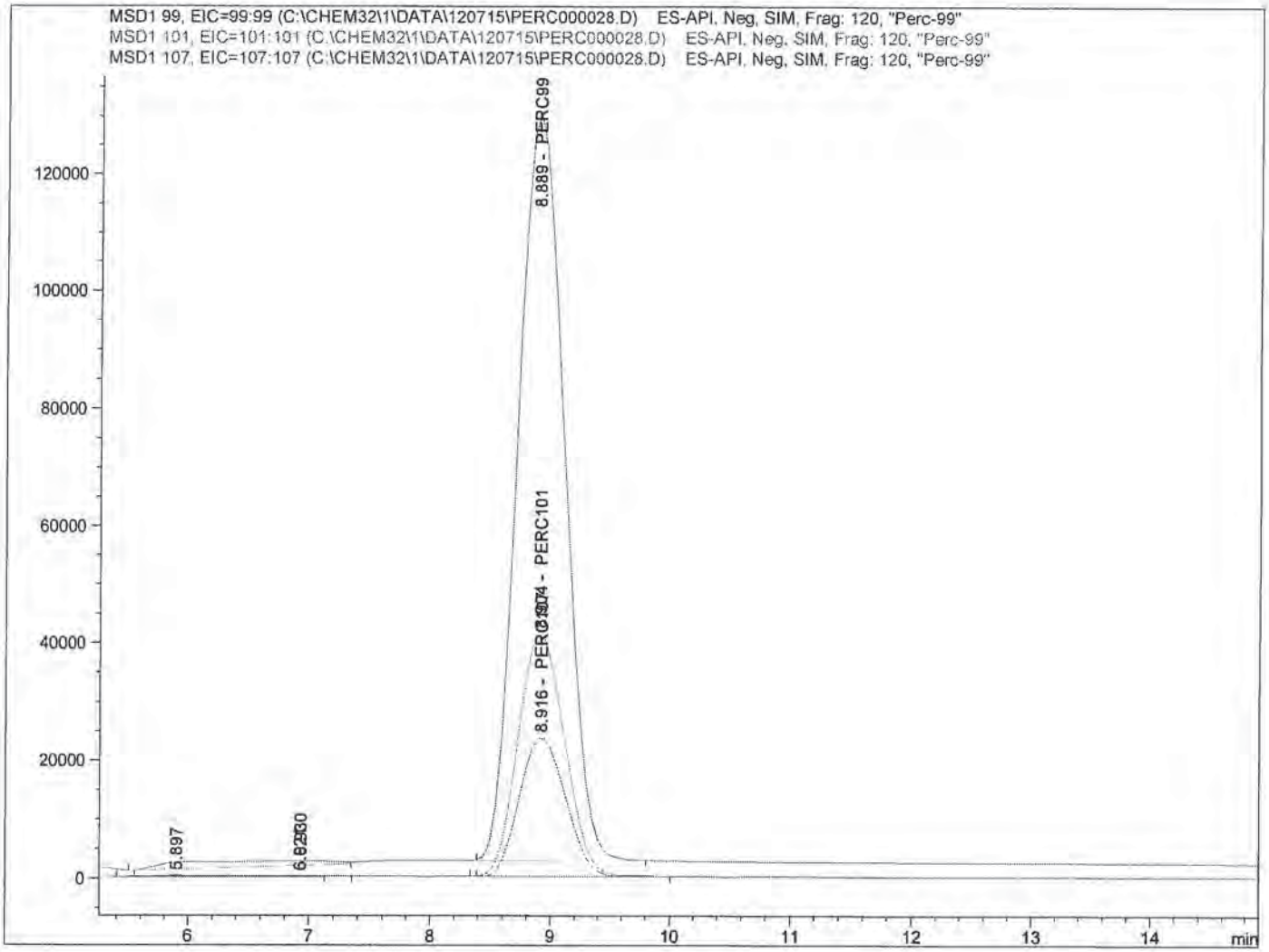

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Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:46:16 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-8-15

Data File C:\CHEM32\1\DATA\120715\PERC000028.D
Sample Name: 1511269-20@500

==========

Acq. Operator : Seq. Line : 28
Acq. Instrument : Instrument 1 Location : Vial 19
Injection Date : 12/8/2015 1:06:32 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:46:48 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.889	BBA	1	3.41953e6	8.48638e-1	22.89549		PERC99

Totals without ISTD(s) : 22.89549

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.904	BBA	1	1.10636e6	2.60545	22.74252		PERC101

Totals without ISTD(s) : 22.74252

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.916	BBA I	1	6.33737e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000029.D
Sample Name: 1511269-22@1000

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/8/2015 1:24:17 AM

Seq. Line : 29
Location : Vial 20
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:46:48 AM
(modified after loading)

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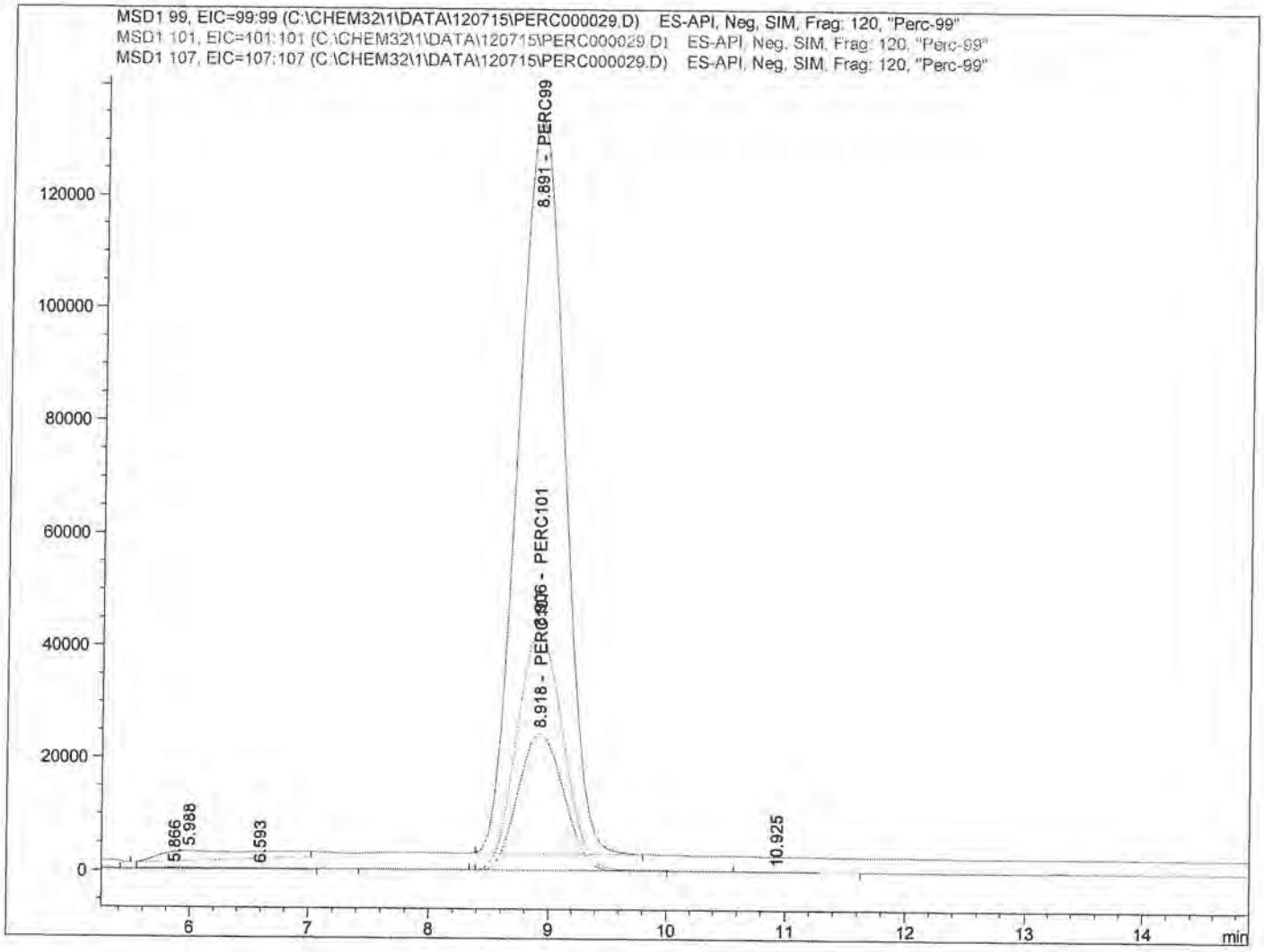

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Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:46:16 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-8-15

Data File C:\CHEM32\1\DATA\120715\PERC000029.D
Sample Name: 1511269-22@1000

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/8/2015 1:24:17 AM

Seq. Line : 29
Location : Vial 20
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:46:48 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.891	BBA	1	3.52388e6	8.48638e-1	22.84948		PERC99

Totals without ISTD(s) : 22.84948

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.906	BBA	1	1.14095e6	2.60545	22.71343		PERC101

Totals without ISTD(s) : 22.71343

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.918	BBA I	1	6.54391e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000030.D
Sample Name: 1511269-23@500

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/8/2015 1:42:10 AM

Seq. Line : 30
Location : Vial 21
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:46:48 AM
(modified after loading)

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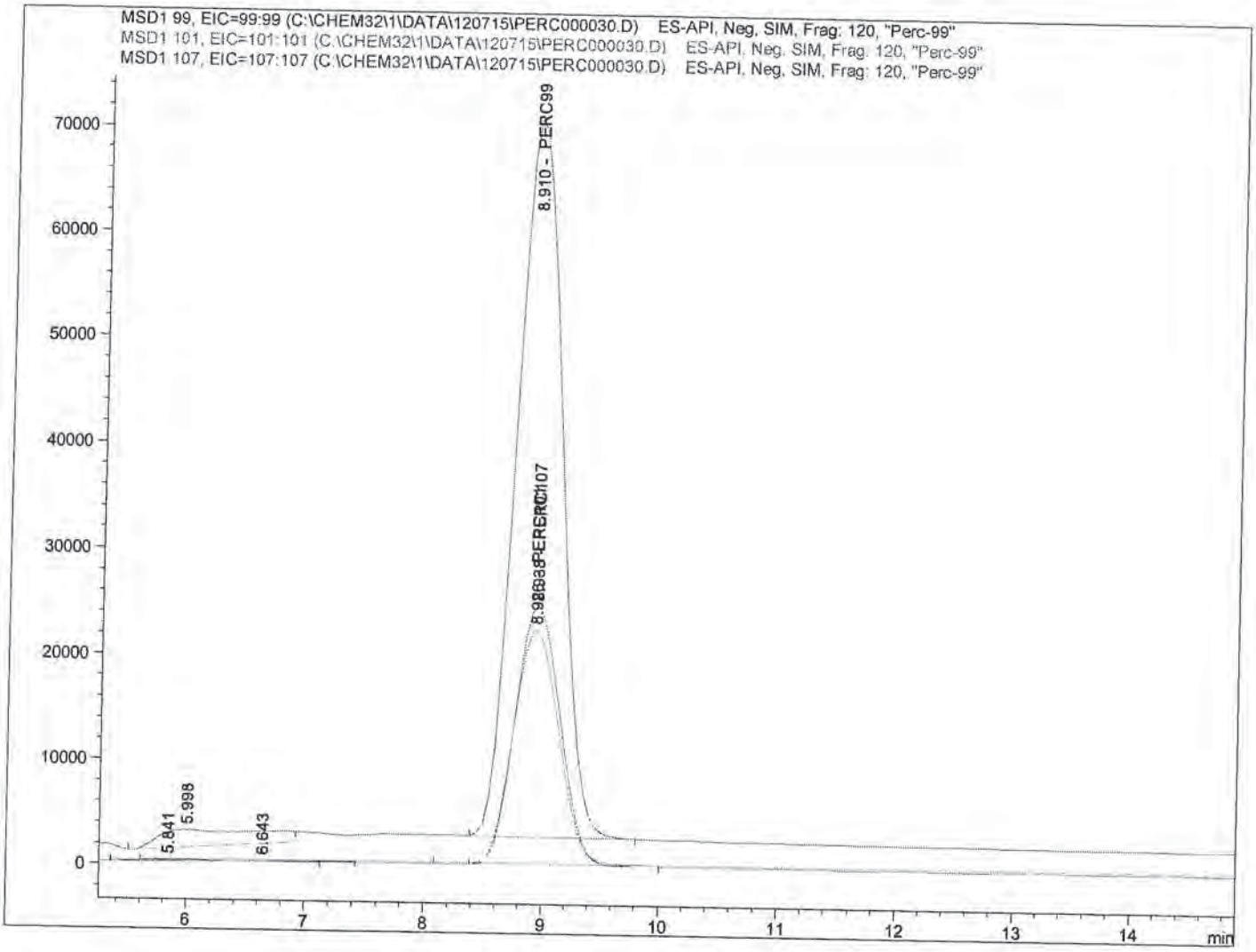

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Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:46:16 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-8-15

Data File C:\CHEM32\1\DATA\120715\PERC000030.D
Sample Name: 1511269-23@500

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/8/2015 1:42:10 AM

Seq. Line : 30
Location : Vial 21
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:46:48 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.910	BBA	1	1.82791e6	8.48638e-1	11.72570		PERC99

Totals without ISTD(s) : 11.72570

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.926	BBA	1	6.00132e5	2.60545	11.81926		PERC101

Totals without ISTD(s) : 11.81926

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.938	BBA I	1	6.61468e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000031.D
Sample Name: 1511269-24@2000

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/8/2015 2:00:05 AM

Seq. Line : 31
Location : Vial 22
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:46:48 AM
(modified after loading)

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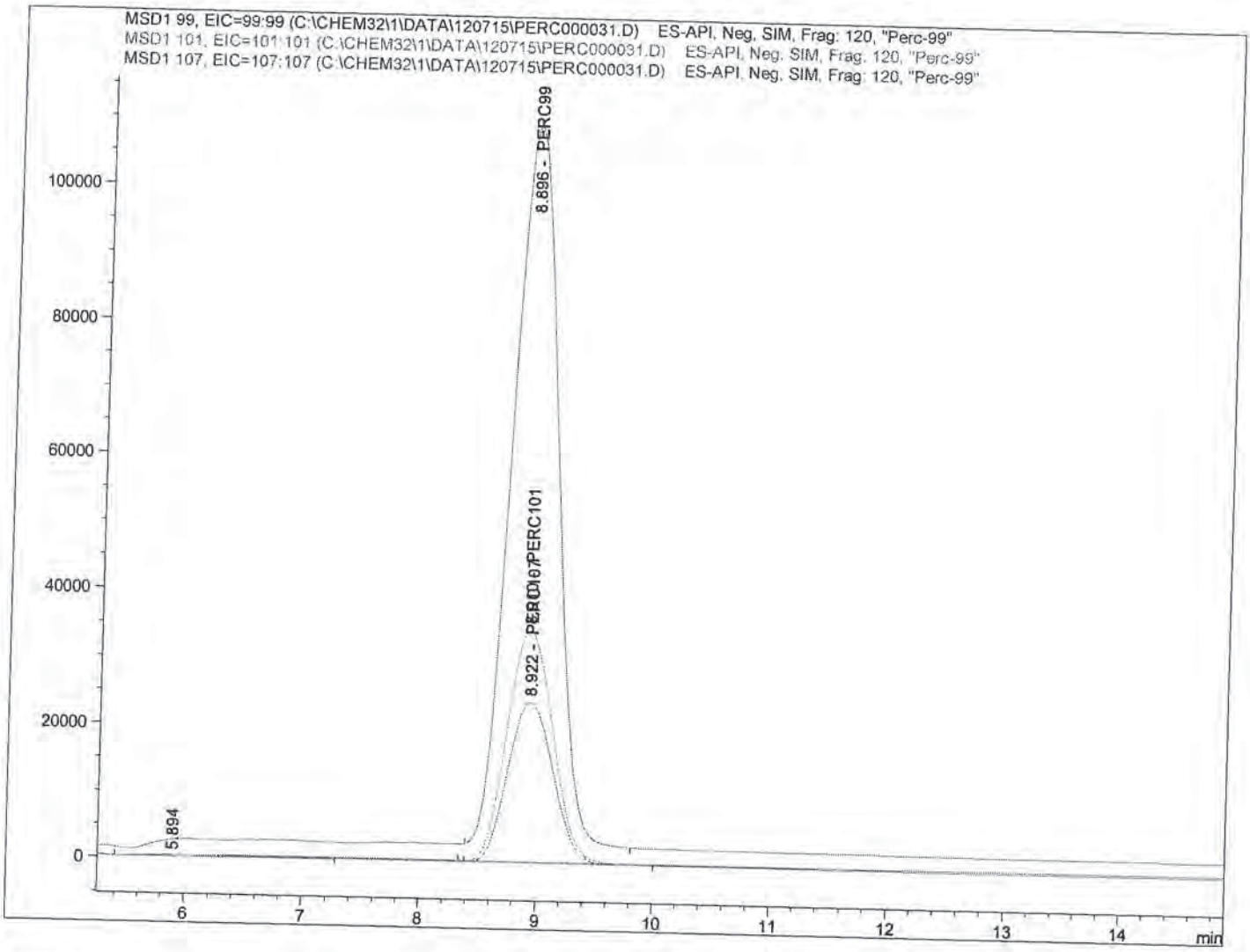

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Internal Standard Report

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SP
12/9/15

Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:46:16 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs

12-8-15

Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\120715\PERC000031.D
Sample Name: 1511269-24@2000

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/8/2015 2:00:05 AM

Seq. Line : 31
Location : Vial 22
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:46:48 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.896	BBA	1	2.88337e6	8.48638e-1	18.93473		PERC99

Totals without ISTD(s) : 18.93473

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.910	BBA	1	9.32391e5	2.60545	18.79819		PERC101

Totals without ISTD(s) : 18.79819

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.922	BBA I	1	6.46151e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

2883370/64615 1/1.17836 x 5 = 18.9347 x 2000 = 37869.39

Data File C:\CHEM32\1\DATA\120715\PERC000033.D
Sample Name: SEQ-CCV3

Acq. Operator	:	Seq. Line	: 33
Acq. Instrument	: Instrument 1	Location	: Vial 3
Injection Date	: 12/8/2015 2:35:43 AM	Inj	: 1
		Inj Volume	: 100.0 µl
Acq. Method	: C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M		
Last changed	: 12/7/2015 5:01:12 PM		
Analysis Method	: C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M		
Last changed	: 12/8/2015 11:46:48 AM (modified after loading)		

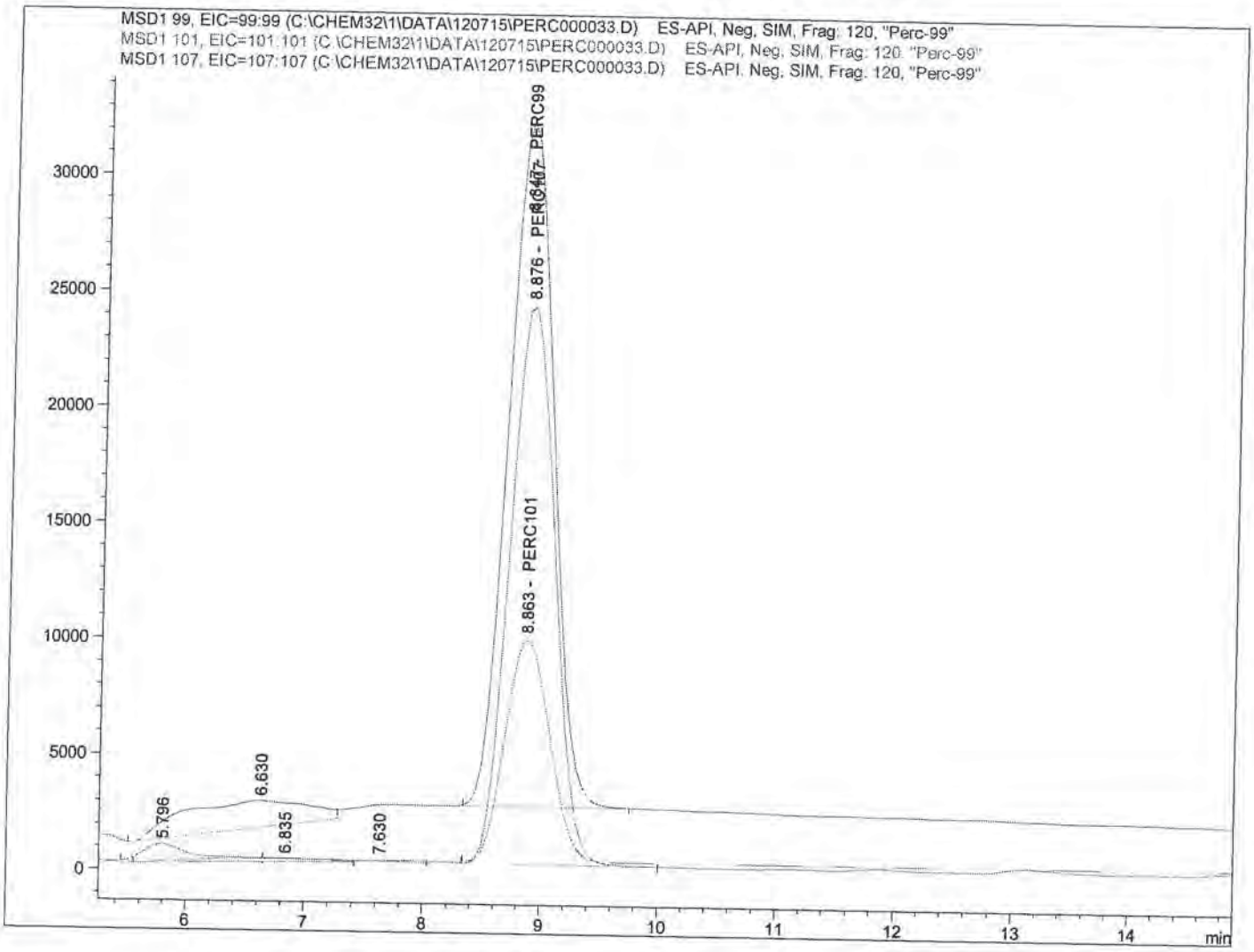

Internal Standard Report

Sorted By	:	Signal
Calib. Data Modified	:	12/8/2015 11:46:16 AM
Multiplier	:	1.0000
Dilution	:	1.0000

Do not use Multiplier & Dilution Factor with ISTDs

Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

Pond 12-8-15 SP 12/9/15

Data File C:\CHEM32\1\DATA\120715\PERC000033.D
Sample Name: SEQ-CCV3

==========

Acq. Operator :
Seq. Line : 33
Acq. Instrument : Instrument 1
Location : Vial 3
Injection Date : 12/8/2015 2:35:43 AM
Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:46:48 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.847	BB	1	7.87932e5	8.48638e-1	5.20917		PERC99

Totals without ISTD(s) : 5.20917

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.863	BBA	1	2.55387e5	2.60545	5.18369		PERC101

Totals without ISTD(s) : 5.18369

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.876	VBA I	1	6.41819e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000034.D
Sample Name: SEQ-LCV5

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/8/2015 2:53:35 AM

Seq. Line : 34
Location : Vial 4
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:46:48 AM
(modified after loading)

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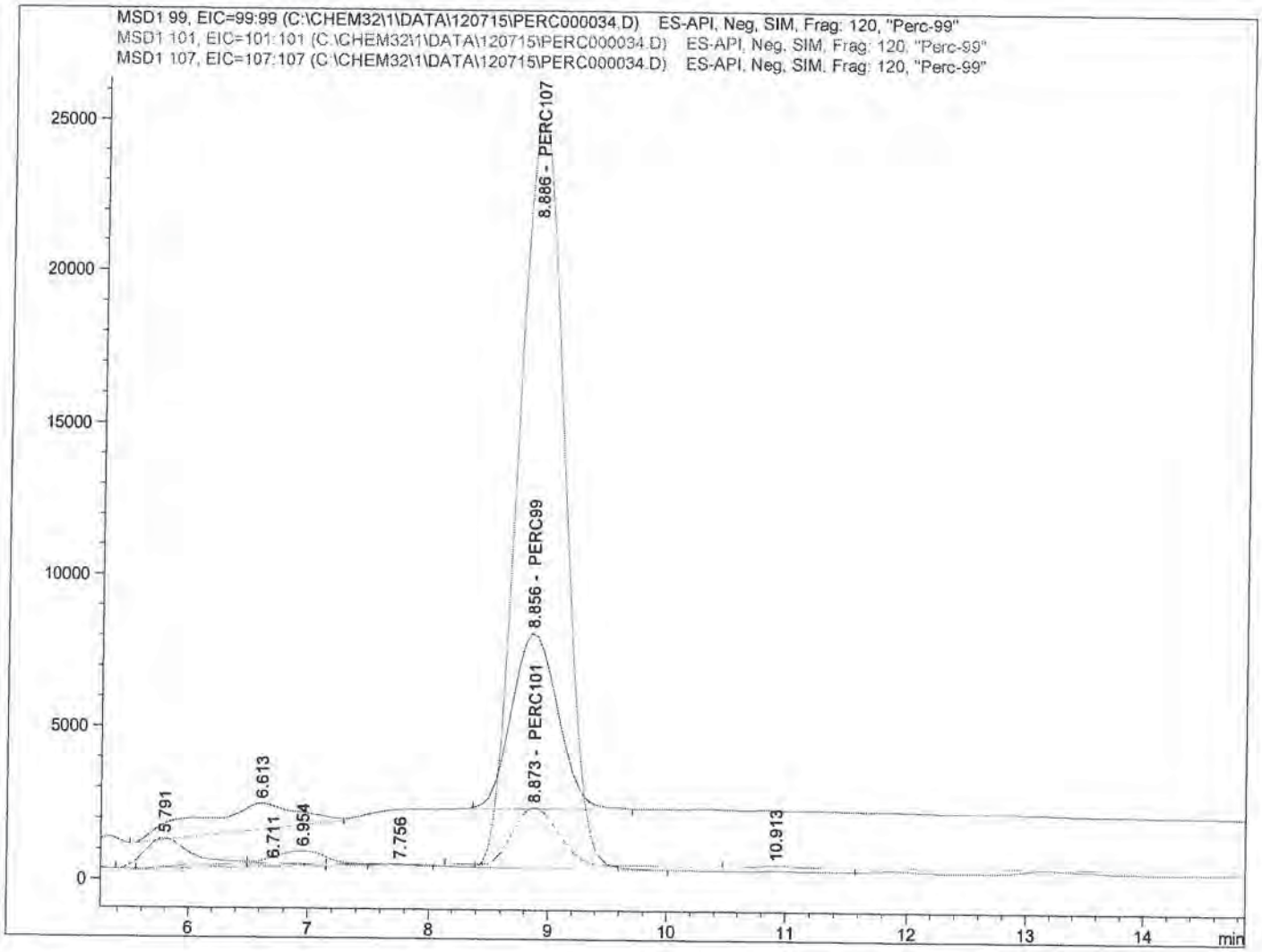

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:46:16 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-8-15

SP
12/9/15

Data File C:\CHEM32\1\DATA\120715\PERC000034.D
Sample Name: SEQ-LCV5

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/8/2015 2:53:35 AM

Seq. Line : 34
Location : Vial 4
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:46:48 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.856	BB	1	1.55476e5	8.48638e-1	1.00086		PERC99

Totals without ISTD(s) : 1.00086

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.873	BV	1	5.09008e4	2.60545	1.00600		PERC101

Totals without ISTD(s) : 1.00600

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.886	BBA I	1	6.59144e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120715\PERC000035.D
Sample Name: SEQ-LCV6

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/8/2015 3:11:24 AM

Seq. Line : 35
Location : Vial 83
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:52:59 AM
(modified after loading)

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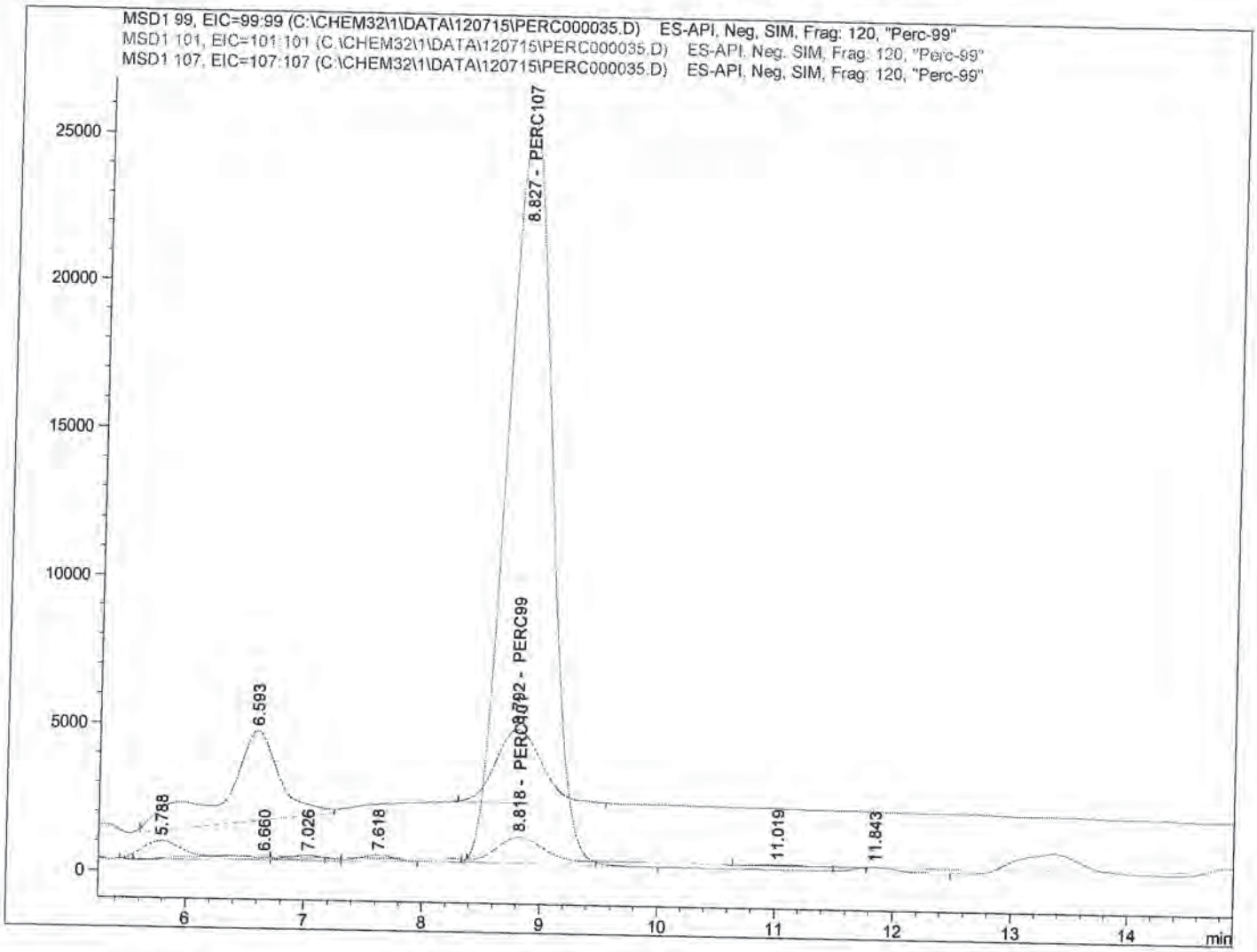

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : 12/8/2015 11:46:16 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-8-15

SP
12/9/15

Data File C:\CHEM32\1\DATA\120715\PERC000035.D
Sample Name: SEQ-LCV6

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/8/2015 3:11:24 AM

Seq. Line : 35
Location : Vial 83
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/7/2015 5:01:12 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/8/2015 11:52:59 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.792	BB	1	6.73815e4	8.48638e-1	4.35406e-1		PERC99

Totals without ISTD(s) : 4.35406e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.818	VV	1	2.07169e4	2.60545	4.10996e-1		PERC101

Totals without ISTD(s) : 4.10996e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.827	BBA I	1	6.56658e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Print of all graphic windows
Data File : C:\CHEM32\1\DATA\120415\PERC000002.D
Sample Name : SEQ-TUN1

Acq. Operator	:	Seq. Line	: 2
Acq. Instrument	: Instrument 1	Location	: Vial 1
Injection Date	: 12/4/2015 3:23:35 PM	Inj	: 1
		Inj Volume	: 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_SC
Last changed : 12/4/2015 2:35:18 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 11:18:25 AM
(modified after loading)

Current Chromatogram(s)

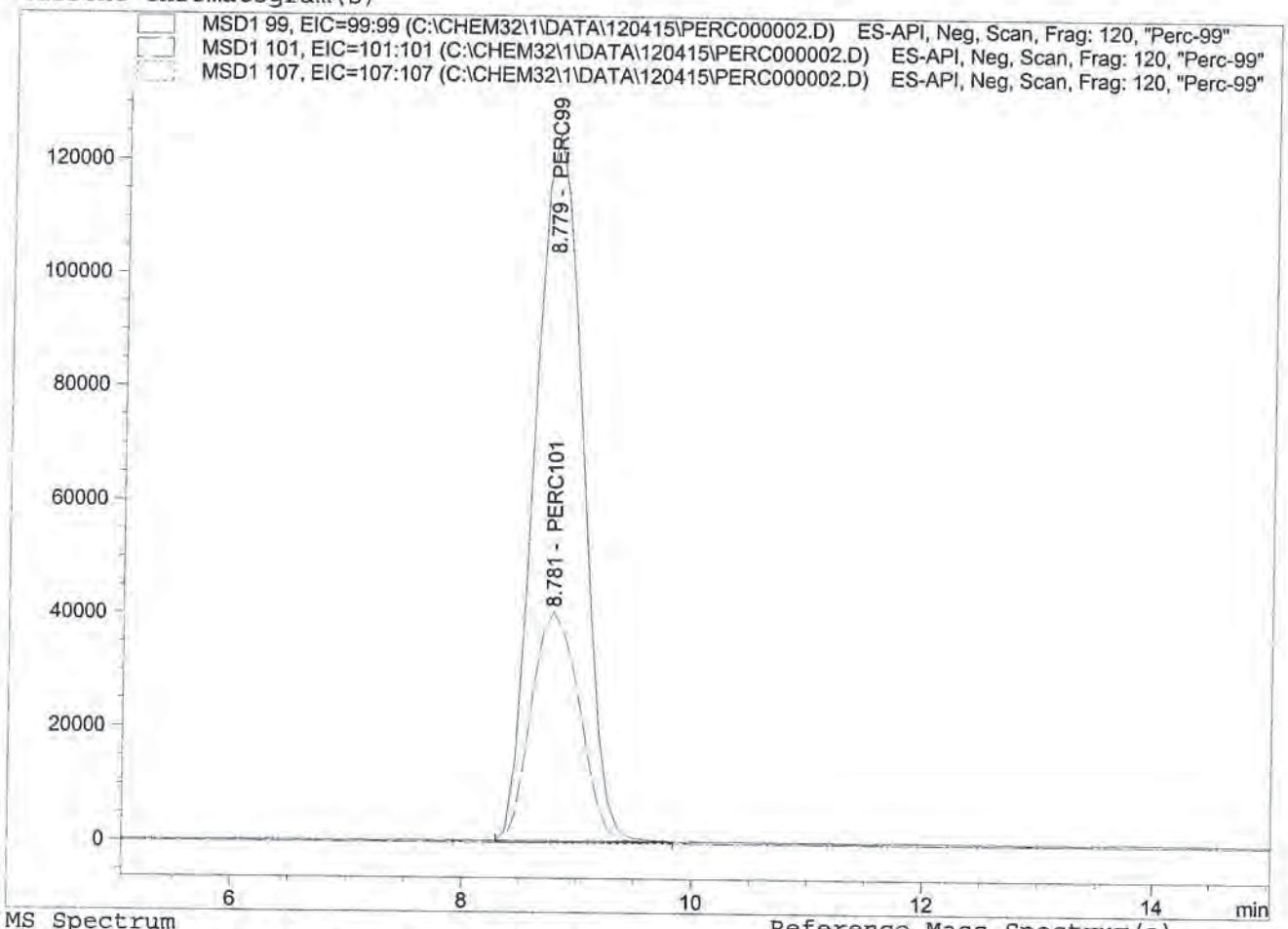

MS Spectrum

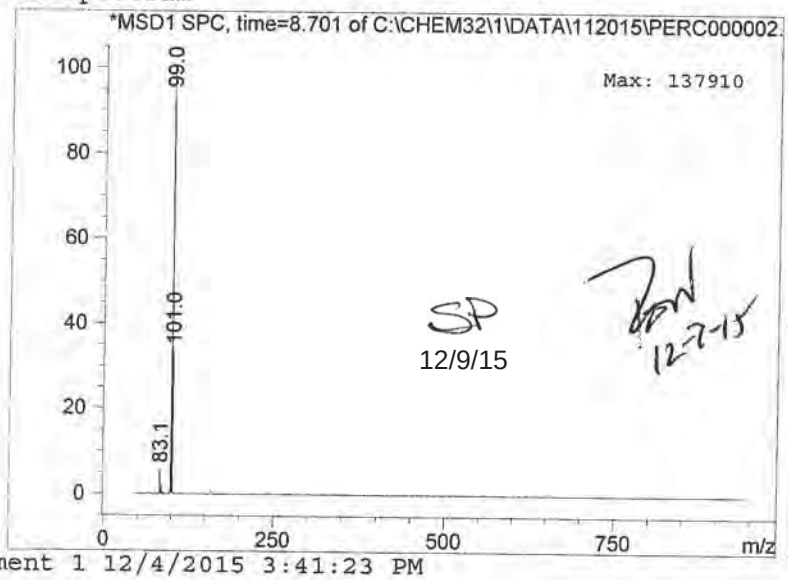

Reference Mass Spectrum(a)

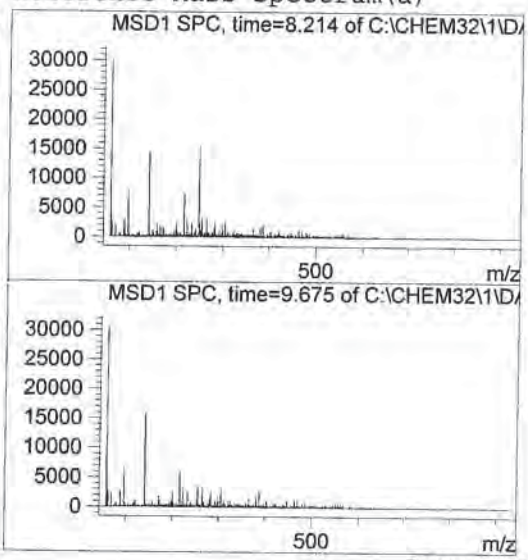

SP
12/9/15

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000002.D
Sample Name: SEQ-TUN1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/4/2015 3:23:35 PM

Seq. Line : 2
Location : Vial 1
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_SC
Last changed : 12/4/2015 2:35:18 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 11:18:25 AM
(modified after loading)

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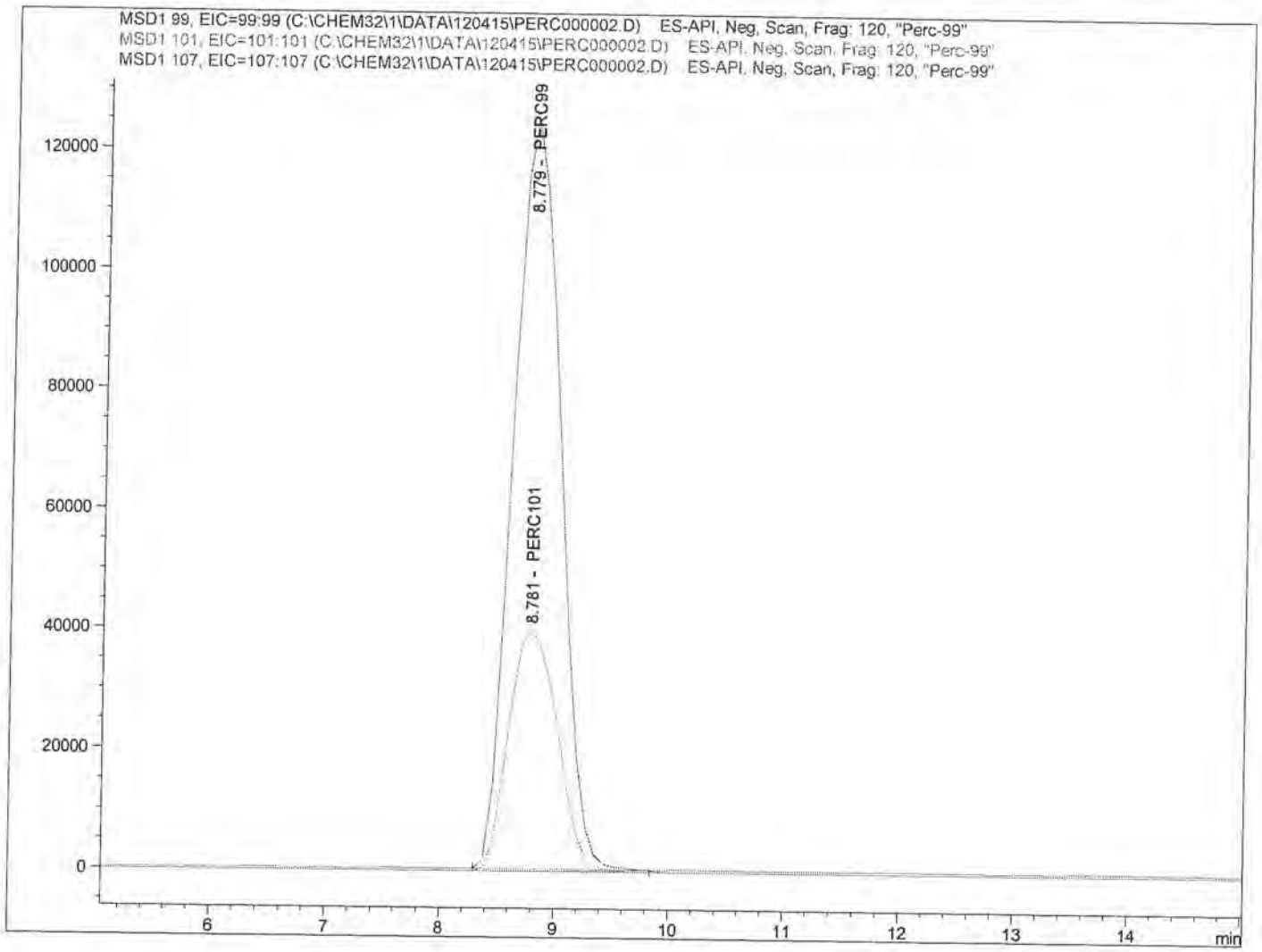

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : 12/3/2015 11:17:55 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000002.D
Sample Name: SEQ-TUN1

```
==================================================================
Acq. Operator   :                                Seq. Line :   2
Acq. Instrument : Instrument 1                    Location : Vial 1
Injection Date  : 12/4/2015 3:23:35 PM                 Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_SC
Last changed    : 12/4/2015 2:35:18 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/3/2015 11:18:25 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.779	BBA	1	3.54798e6	0.00000	0.00000		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.781	BBA	1	1.17920e6	0.00000	0.00000		PERC101

Totals without ISTD(s) : 0.00000

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.860		1	-	-	-		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : ISTD compound(s) not found

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*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000005.D
Sample Name: SEQ-CCV1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/4/2015 4:17:10 PM

Seq. Line : 5
Location : Vial 3
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 11:18:25 AM
(modified after loading)

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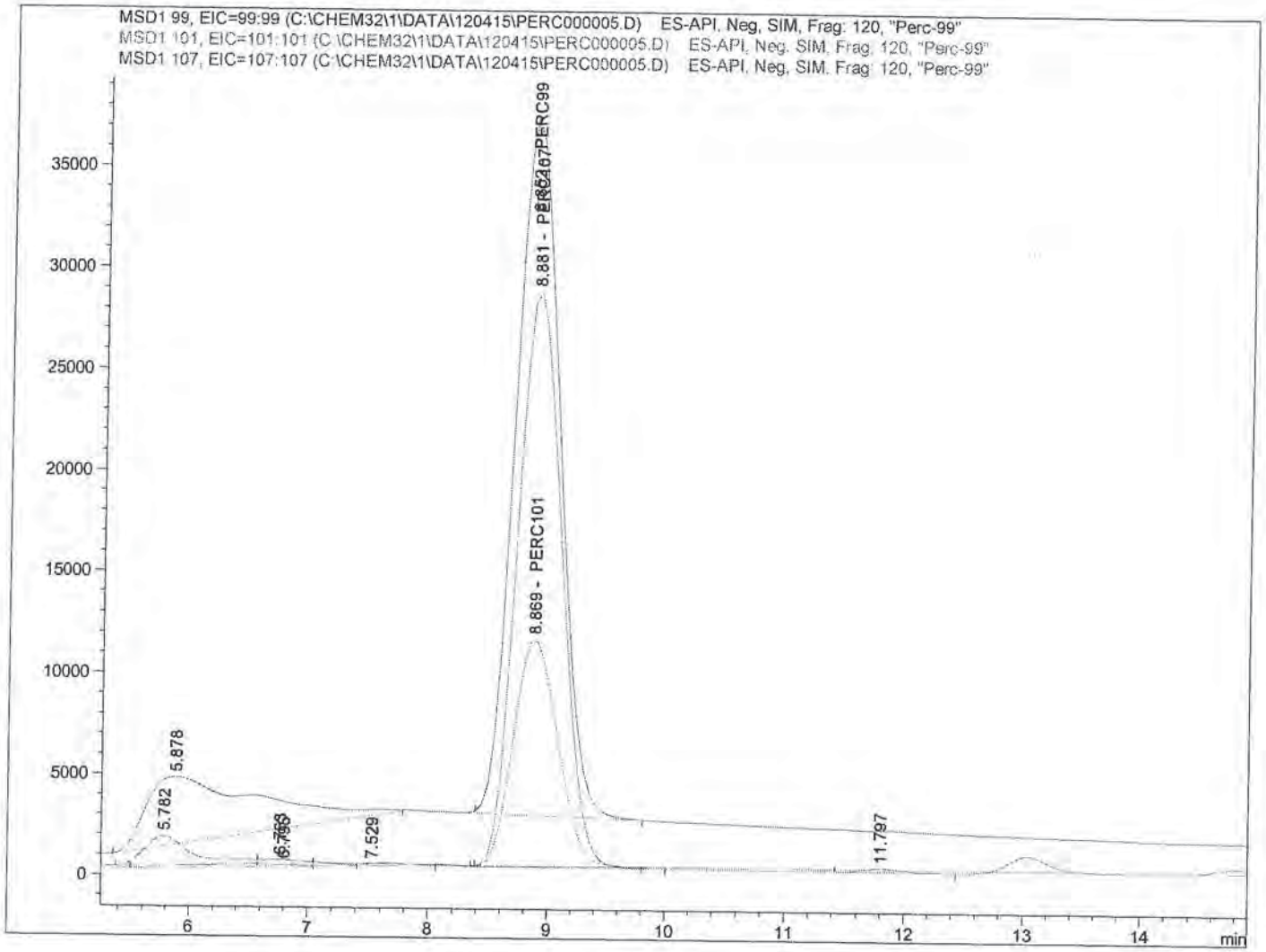

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Internal Standard Report

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SP
12/9/15

Sorted By : Signal
Calib. Data Modified : 12/3/2015 11:17:55 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000005.D
Sample Name: SEQ-CCV1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/4/2015 4:17:10 PM

Seq. Line : 5
Location : Vial 3
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 11:18:25 AM
(modified after loading)

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1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.852	BBA	1	9.02830e5	8.48638e-1	5.14088		PERC99

Totals without ISTD(s) : 5.14088

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.869	BBA	1	2.94125e5	2.60545	5.14189		PERC101

Totals without ISTD(s) : 5.14189

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.881	VBA I	1	7.45180e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

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*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000006.D
Sample Name: SEQ-LCV1

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/4/2015 4:35:03 PM

Seq. Line : 6
Location : Vial 4
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/3/2015 11:18:25 AM
(modified after loading)

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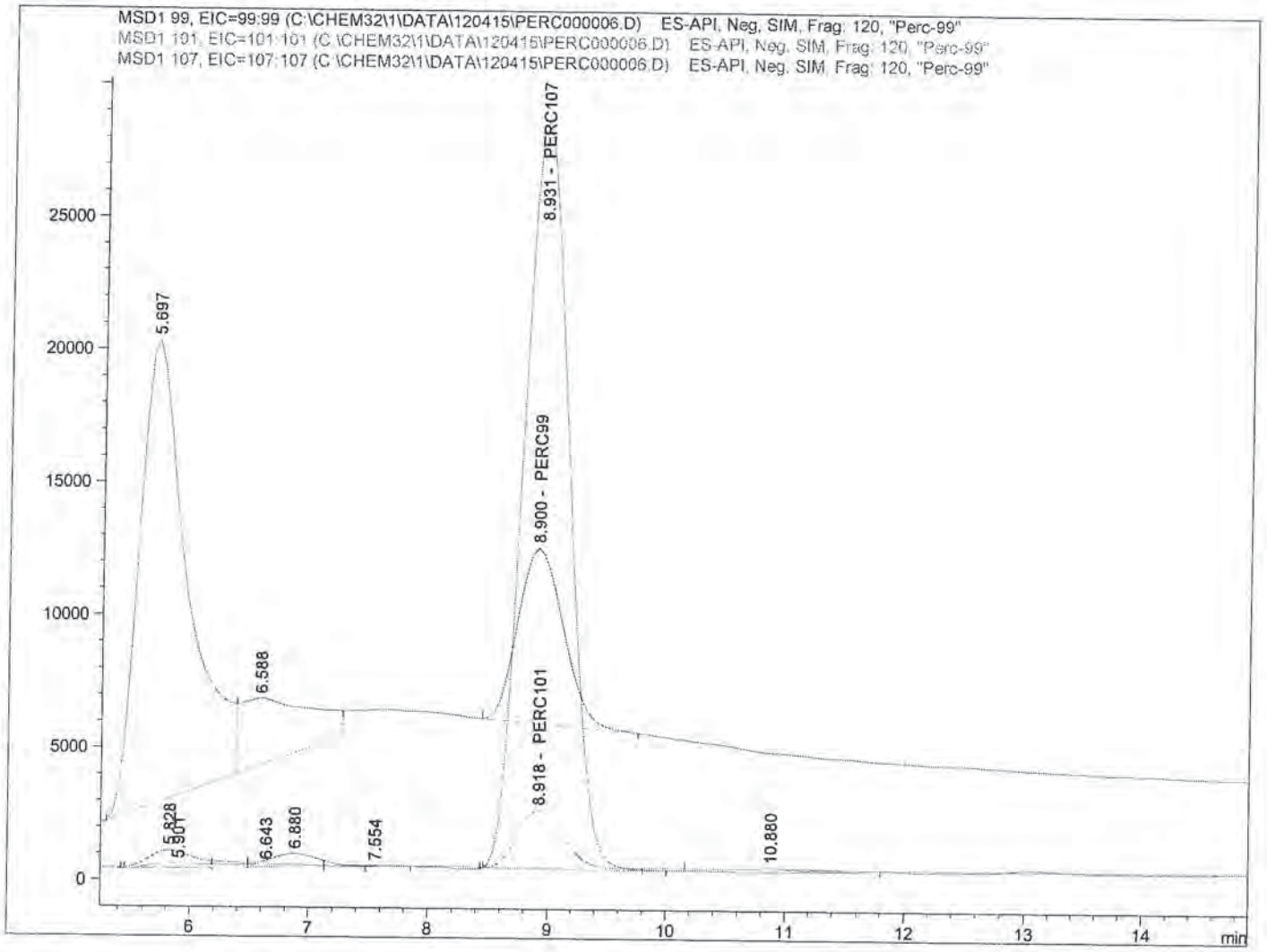

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Internal Standard Report

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SP
12/9/15

Sorted By : Signal
Calib. Data Modified : 12/3/2015 11:17:55 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

Pond 12-7-15

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\120415\PERC000006.D
Sample Name: SEQ-LCV1

```
==================================================================
Acq. Operator   :                                Seq. Line :   6
Acq. Instrument : Instrument 1                    Location : Vial 4
Injection Date  : 12/4/2015 4:35:03 PM                 Inj :   1
                                                Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/3/2015 11:18:25 AM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.900	BB	1	1.77304e5	8.48638e-1	1.00150		PERC99

Totals without ISTD(s) : 1.00150

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.918	BBA	1	5.77441e4	2.60545	1.00138		PERC101

Totals without ISTD(s) : 1.00138

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.931	BBA I	1	7.51208e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

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*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000007.D
Sample Name: SEQ-LCV2

==========

Acq. Operator : Seq. Line : 7
Acq. Instrument : Instrument 1 Location : Vial 83
Injection Date : 12/4/2015 4:52:47 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/4/2015 5:14:28 PM
(modified after loading)

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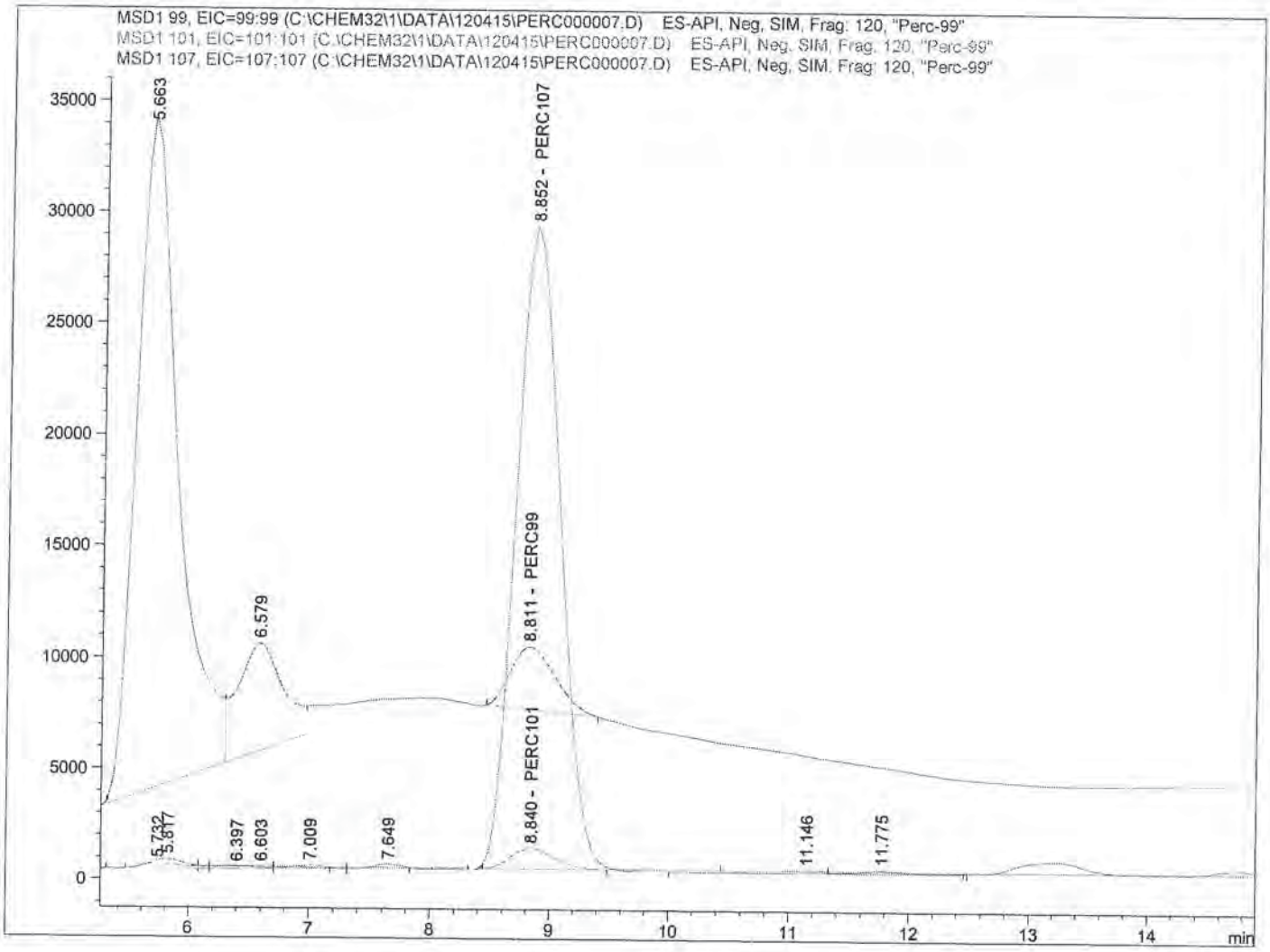

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Internal Standard Report

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SP
12/9/15

Sorted By : Signal
Calib. Data Modified : 12/3/2015 11:17:55 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000007.D
Sample Name: SEQ-LCV2

```
==================================================================
Acq. Operator   :                                  Seq. Line :   7
Acq. Instrument : Instrument 1                      Location : Vial 83
Injection Date  : 12/4/2015 4:52:47 PM                  Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/4/2015 5:14:28 PM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.811	BBA	1	7.32641e4	8.48638e-1	4.11548e-1		PERC99

Totals without ISTD(s) : 4.11548e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.840	BV	1	2.36895e4	2.60545	4.08549e-1		PERC101

Totals without ISTD(s) : 4.08549e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.852	VBA I	1	7.55377e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000008.D
Sample Name: SEQ-IFA1

==========

Acq. Operator : Seq. Line : 8
Acq. Instrument : Instrument 1 Location : Vial 5
Injection Date : 12/4/2015 5:10:48 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 11:54:15 AM
(modified after loading)

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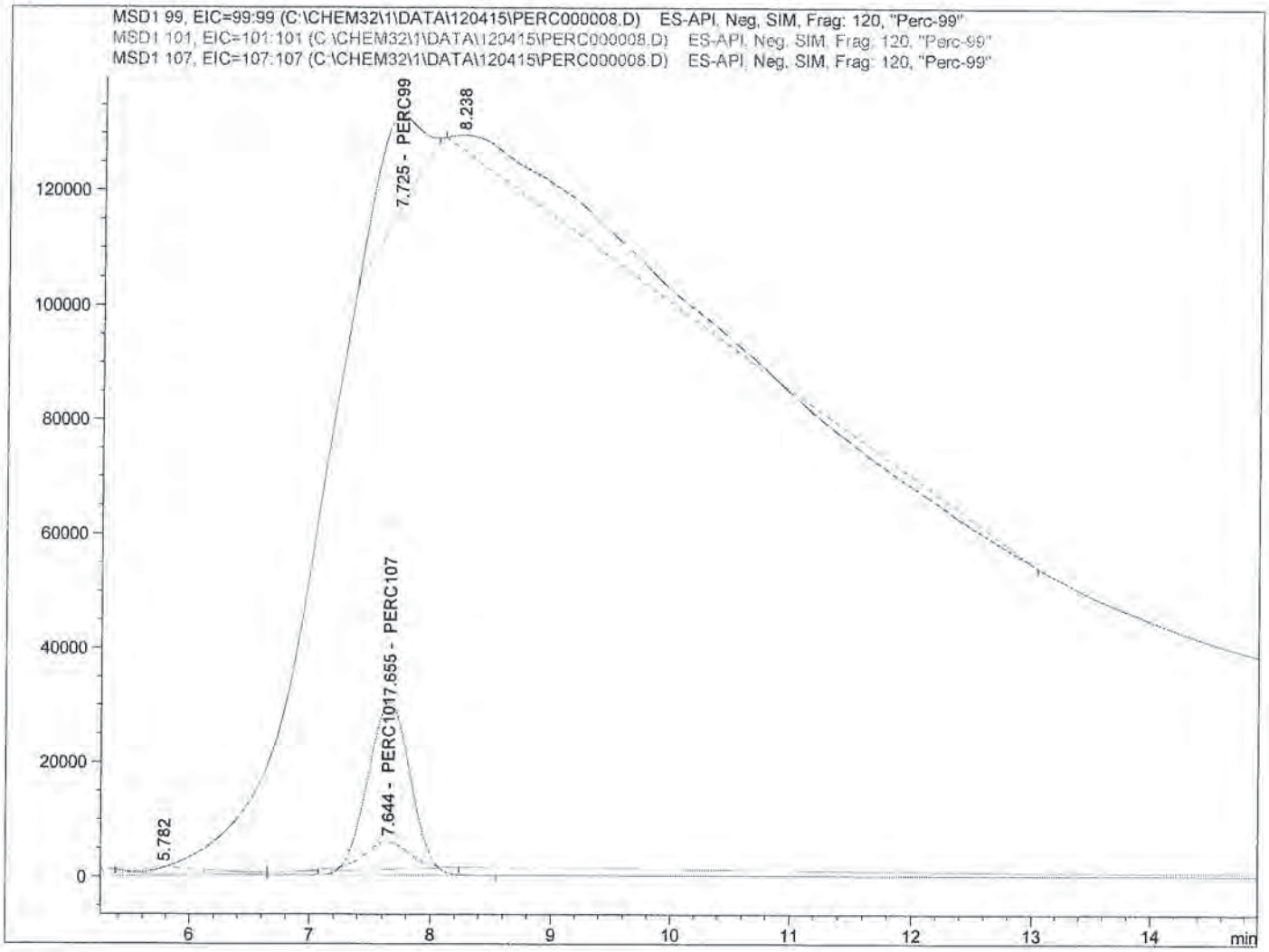

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Internal Standard Report

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SP
12/9/15

Sorted By : Signal
Calib. Data Modified : 12/5/2015 11:53:01 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

RDW 12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000008.D
Sample Name: SEQ-IFA1

==========

Acq. Operator : Seq. Line : 8
Acq. Instrument : Instrument 1 Location : Vial 5
Injection Date : 12/4/2015 5:10:48 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 11:54:15 AM
(modified after loading)

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1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
7.725	BBA	1	3.92685e5	8.48638e-1	2.24674		PERC99

Totals without ISTD(s) : 2.24674

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
7.644	VBA	1	1.28427e5	2.60545	2.25592		PERC101

Totals without ISTD(s) : 2.25592

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
7.655	BBA I	1	7.41624e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

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*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000011.D
Sample Name: 1511269-01@5

==========

Acq. Operator : Seq. Line : 11
Acq. Instrument : Instrument 1 Location : Vial 6
Injection Date : 12/4/2015 6:04:17 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 12:19:44 PM
(modified after loading)

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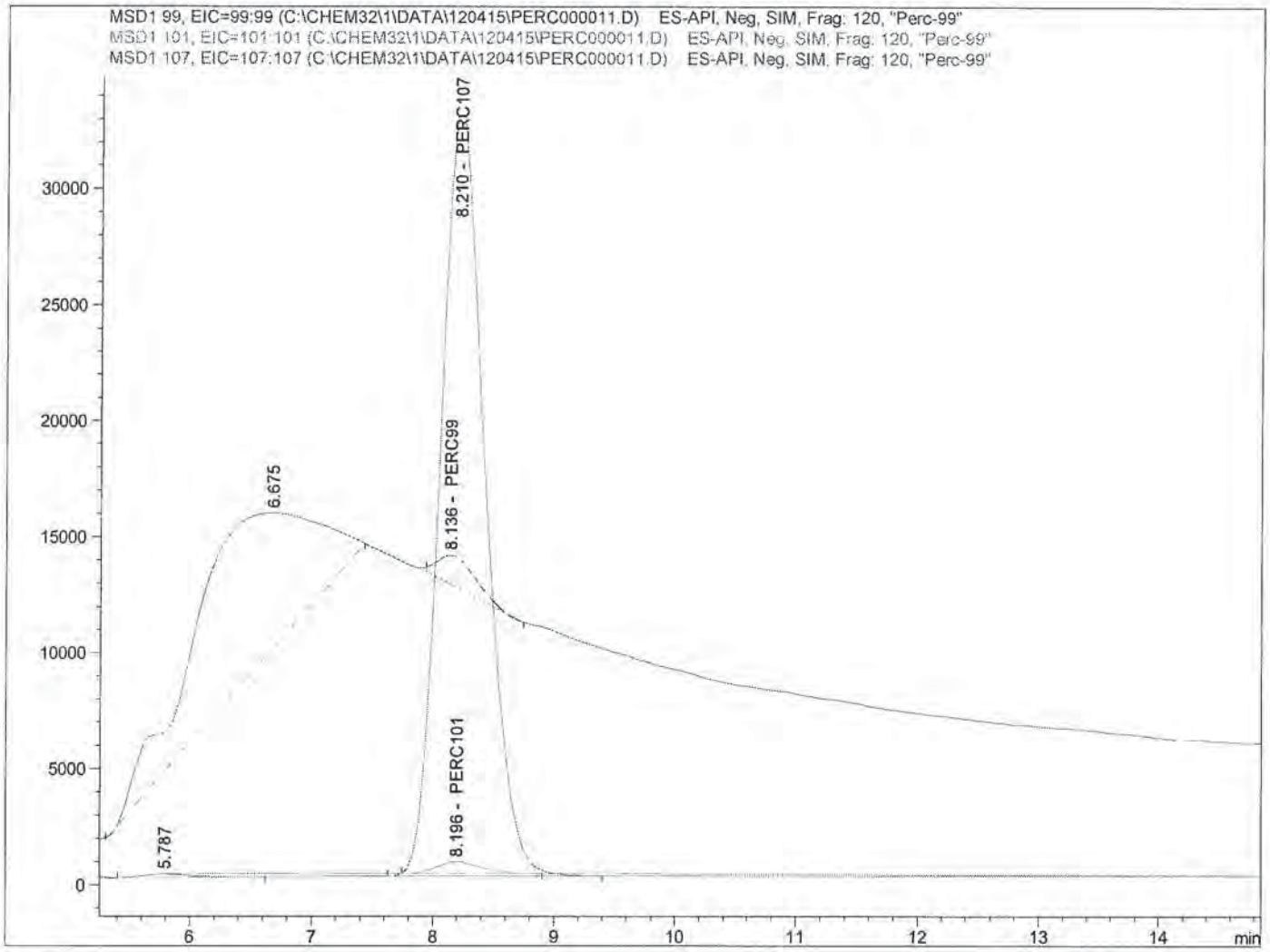

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Internal Standard Report

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SP
12/9/15

Sorted By : Signal
Calib. Data Modified : 12/5/2015 12:16:32 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

RDW
12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000011.D
Sample Name: 1511269-01@5

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/4/2015 6:04:17 PM

Seq. Line : 11
Location : Vial 6
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 12:19:44 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.136	BBA	1	2.80634e4	8.48638e-1	1.40073e-1		PERC99

Totals without ISTD(s) : 1.40073e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.196	BV	1	1.28386e4	2.60545	1.96738e-1		PERC101

Totals without ISTD(s) : 1.96738e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.210	BBA I	1	8.50119e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000012.D
Sample Name: 5L01021-MS1@5

==========

Acq. Operator : Seq. Line : 12
Acq. Instrument : Instrument 1 Location : Vial 7
Injection Date : 12/4/2015 6:22:05 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 12:19:44 PM
(modified after loading)

==========

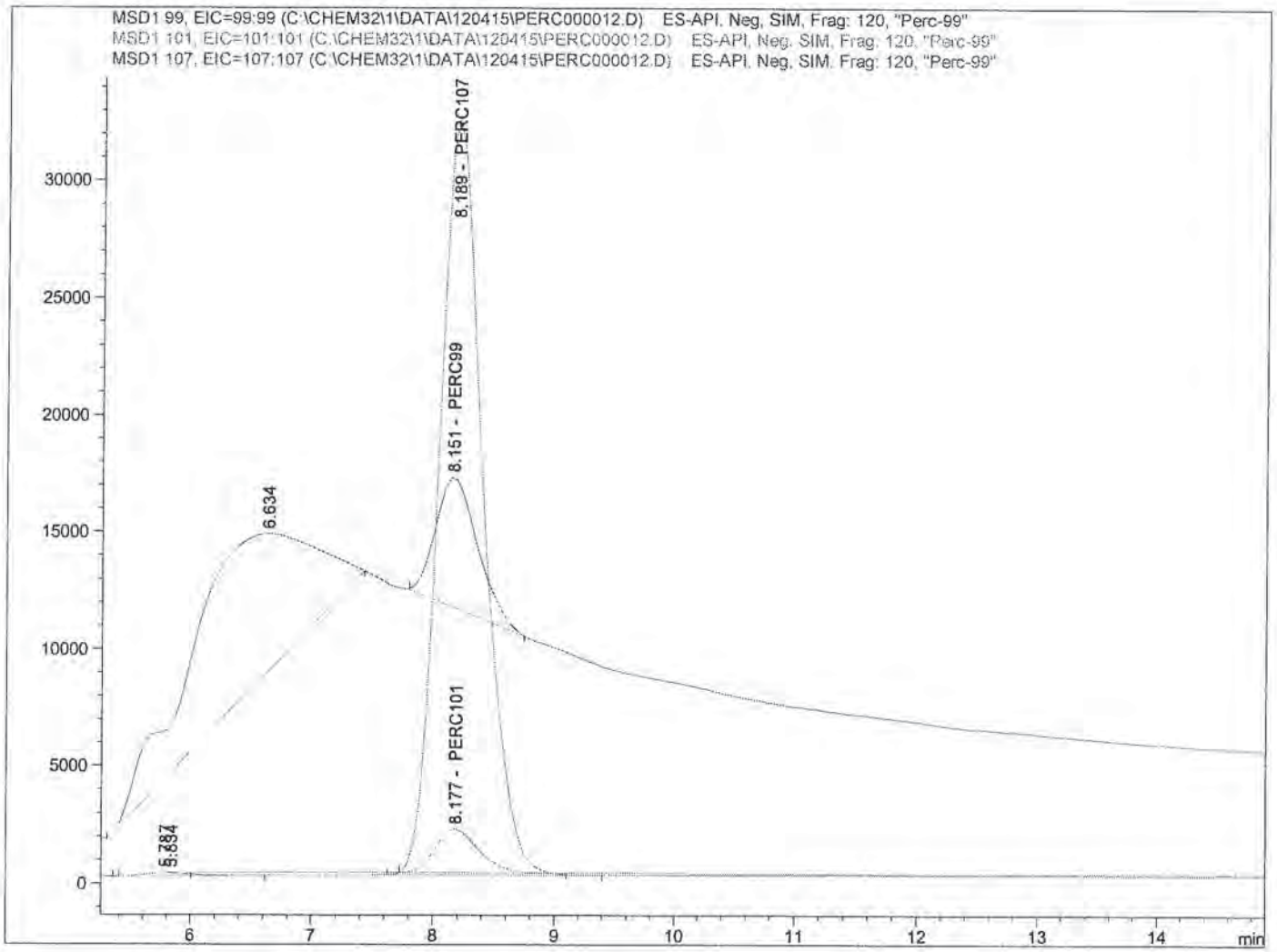

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/5/2015 12:16:32 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000012.D
Sample Name: 5L01021-MS1@5

==========

Acq. Operator : Seq. Line : 12
Acq. Instrument : Instrument 1 Location : Vial 7
Injection Date : 12/4/2015 6:22:05 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 12:19:44 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.151	BBA	1	1.33738e5	8.48638e-1	6.94116e-1		PERC99

Totals without ISTD(s) : 6.94116e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.177	BB	1	4.60720e4	2.60545	7.34130e-1		PERC101

Totals without ISTD(s) : 7.34130e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.189	BBA I	1	8.17554e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000013.D
Sample Name: 5L01021-MSD1@5

==========

Acq. Operator : Seq. Line : 13
Acq. Instrument : Instrument 1 Location : Vial 8
Injection Date : 12/4/2015 6:39:51 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 12:19:44 PM
(modified after loading)

==========

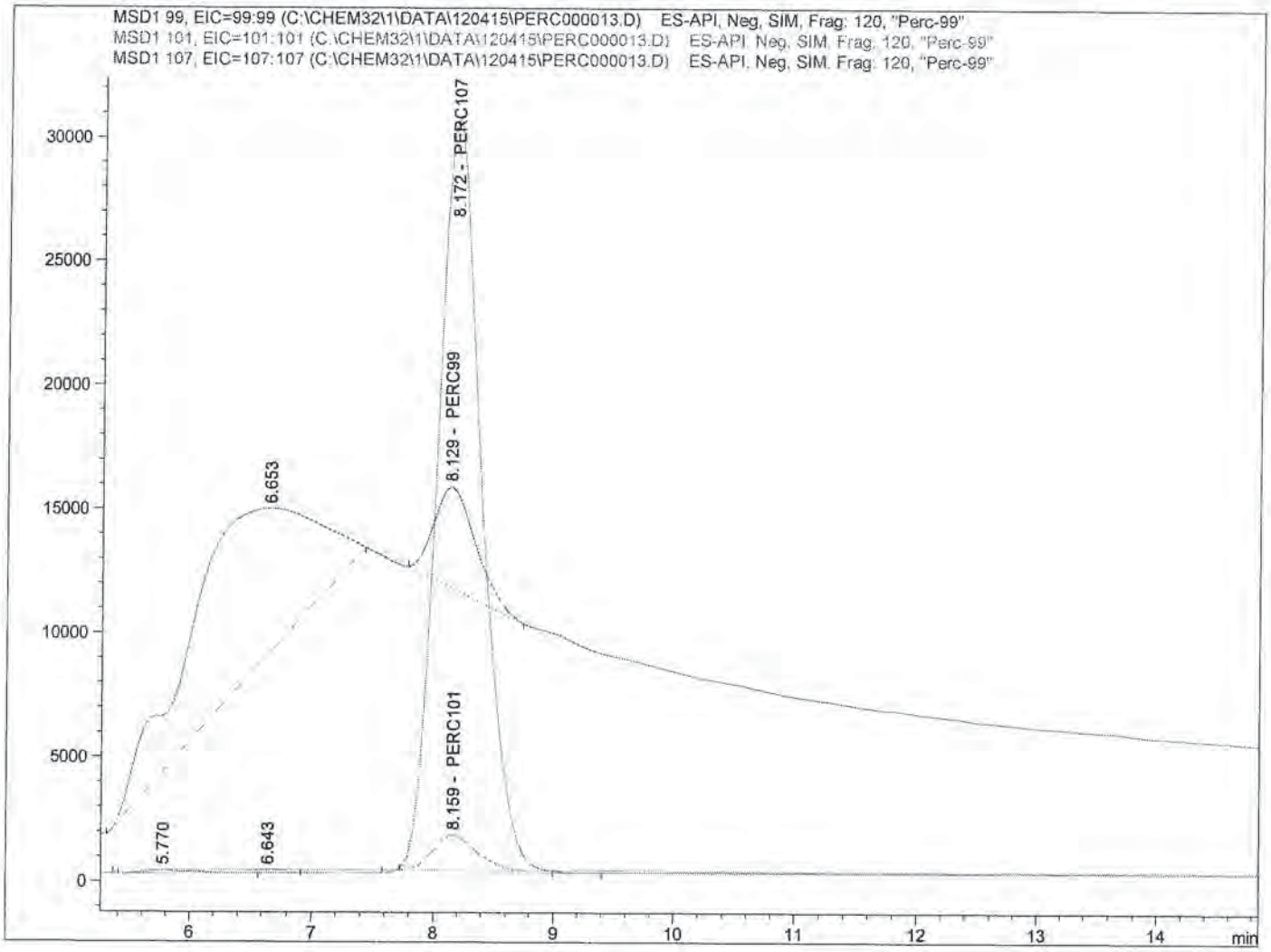

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Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/5/2015 12:16:32 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000013.D
Sample Name: 5L01021-MSD1@5

==========

Acq. Operator : Seq. Line : 13
Acq. Instrument : Instrument 1 Location : Vial 8
Injection Date : 12/4/2015 6:39:51 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 12:19:44 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.129	BBA	1	9.69694e4	8.48638e-1	5.30408e-1		PERC99

Totals without ISTD(s) : 5.30408e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.159	BB	1	3.53944e4	2.60545	5.94386e-1		PERC101

Totals without ISTD(s) : 5.94386e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.172	BBA I	1	7.75742e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000014.D
Sample Name: 1511269-06@5

Acq. Operator	:	Seq. Line	: 14
Acq. Instrument	: Instrument 1	Location	: Vial 9
Injection Date	: 12/4/2015 6:57:39 PM	Inj	: 1
		Inj Volume	: 100.0 µl
Acq. Method	: C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M		
Last changed	: 12/4/2015 2:39:26 PM		
Analysis Method	: C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M		
Last changed	: 12/5/2015 12:19:44 PM (modified after loading)		

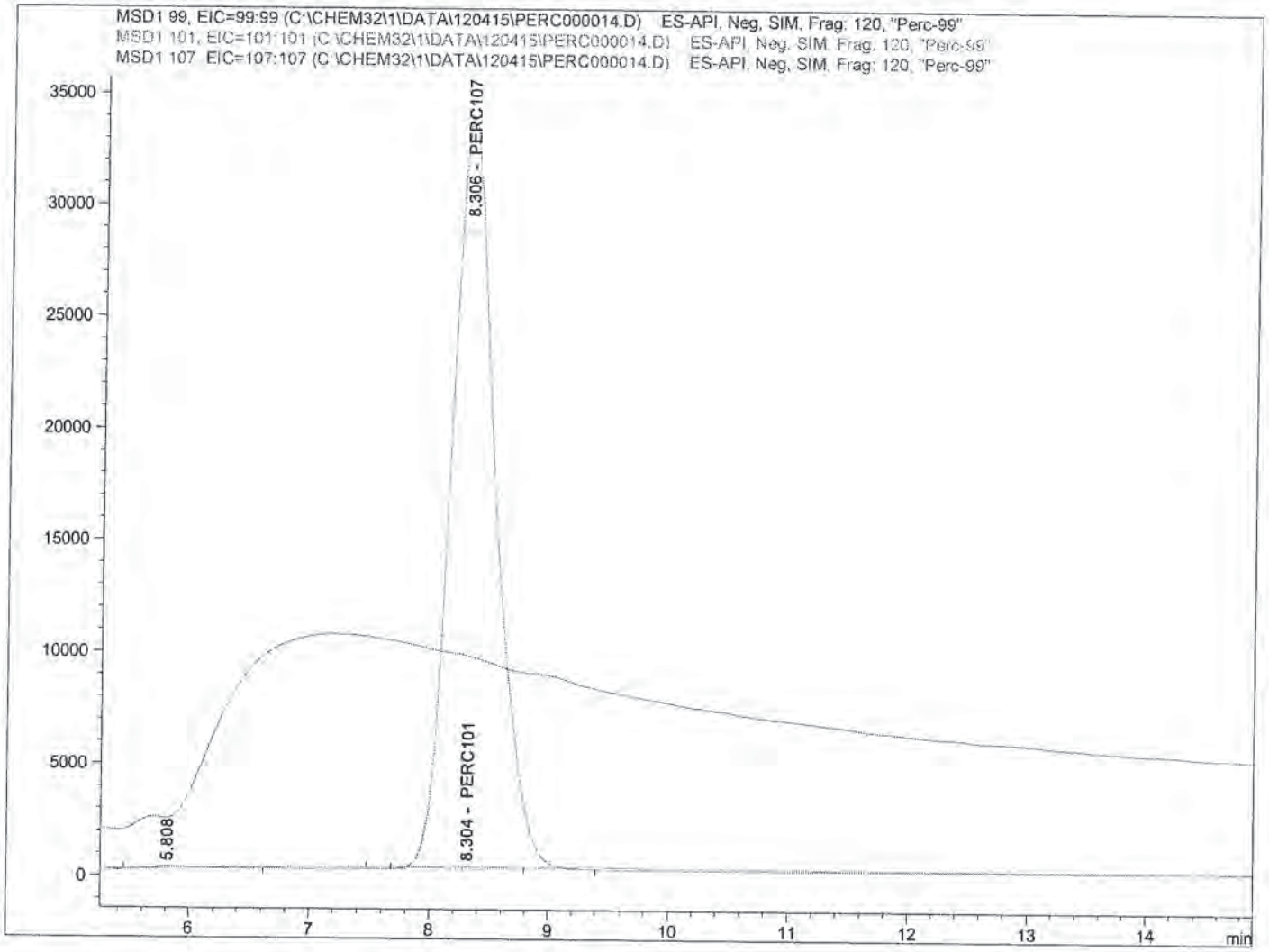

Internal Standard Report

Sorted By	:	Signal
Calib. Data Modified	:	12/5/2015 12:16:32 PM
Multiplier	:	1.0000
Dilution	:	1.0000

Do not use Multiplier & Dilution Factor with ISTDs

Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000014.D
Sample Name: 1511269-06@5

==========

Acq. Operator : Seq. Line : 14
Acq. Instrument : Instrument 1 Location : Vial 9
Injection Date : 12/4/2015 6:57:39 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 12:19:44 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.210		1	-	-	-		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.304	BV	1	1488.96106	2.60545	2.22984e-2		PERC101

Totals without ISTD(s) : 2.22984e-2

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.306	BBA I	1	8.69886e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000015.D
Sample Name: 1511269-07@50

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/4/2015 7:15:36 PM

Seq. Line : 15
Location : Vial 10
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 12:23:37 PM
(modified after loading)

==========

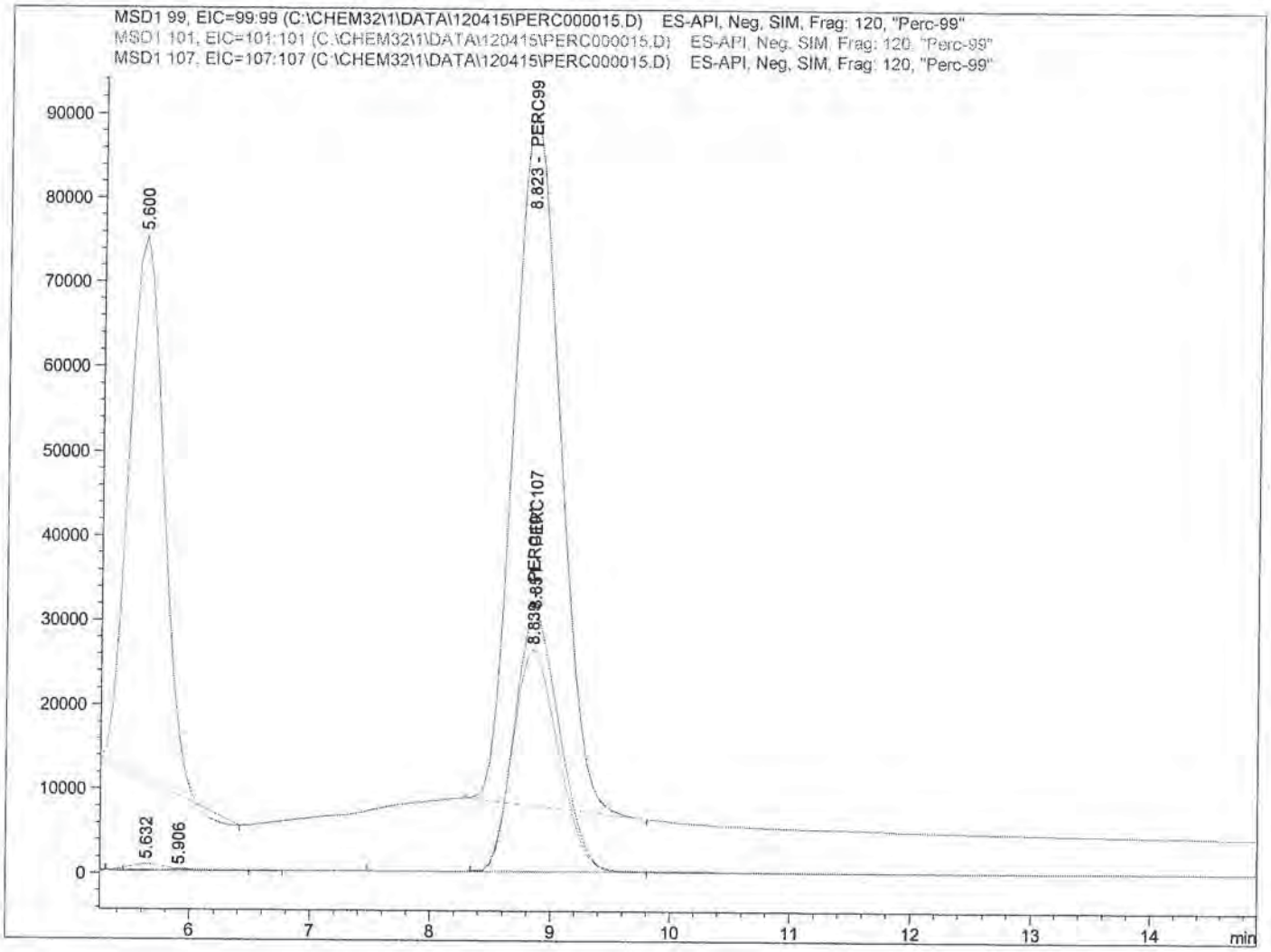

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : 12/5/2015 12:22:34 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000015.D
Sample Name: 1511269-07@50

==========

Acq. Operator : Seq. Line : 15
Acq. Instrument : Instrument 1 Location : Vial 10
Injection Date : 12/4/2015 7:15:36 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 12:23:37 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.823	BBA	1	2.17249e6	8.48638e-1	11.58889		PERC99

Totals without ISTD(s) : 11.58889

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.839	BBA	1	6.89596e5	2.60545	11.29374		PERC101

Totals without ISTD(s) : 11.29374

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.851	BBA I	1	7.95443e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

217249 / 795443 / 1.17836 x 5 = 11.58886048 x 50 = 579.44

Data File C:\CHEM32\1\DATA\120415\PERC000016.D
Sample Name: 1511269-08@10

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/4/2015 7:33:28 PM

Seq. Line : 16
Location : Vial 11
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/7/2015 10:17:33 AM
(modified after loading)

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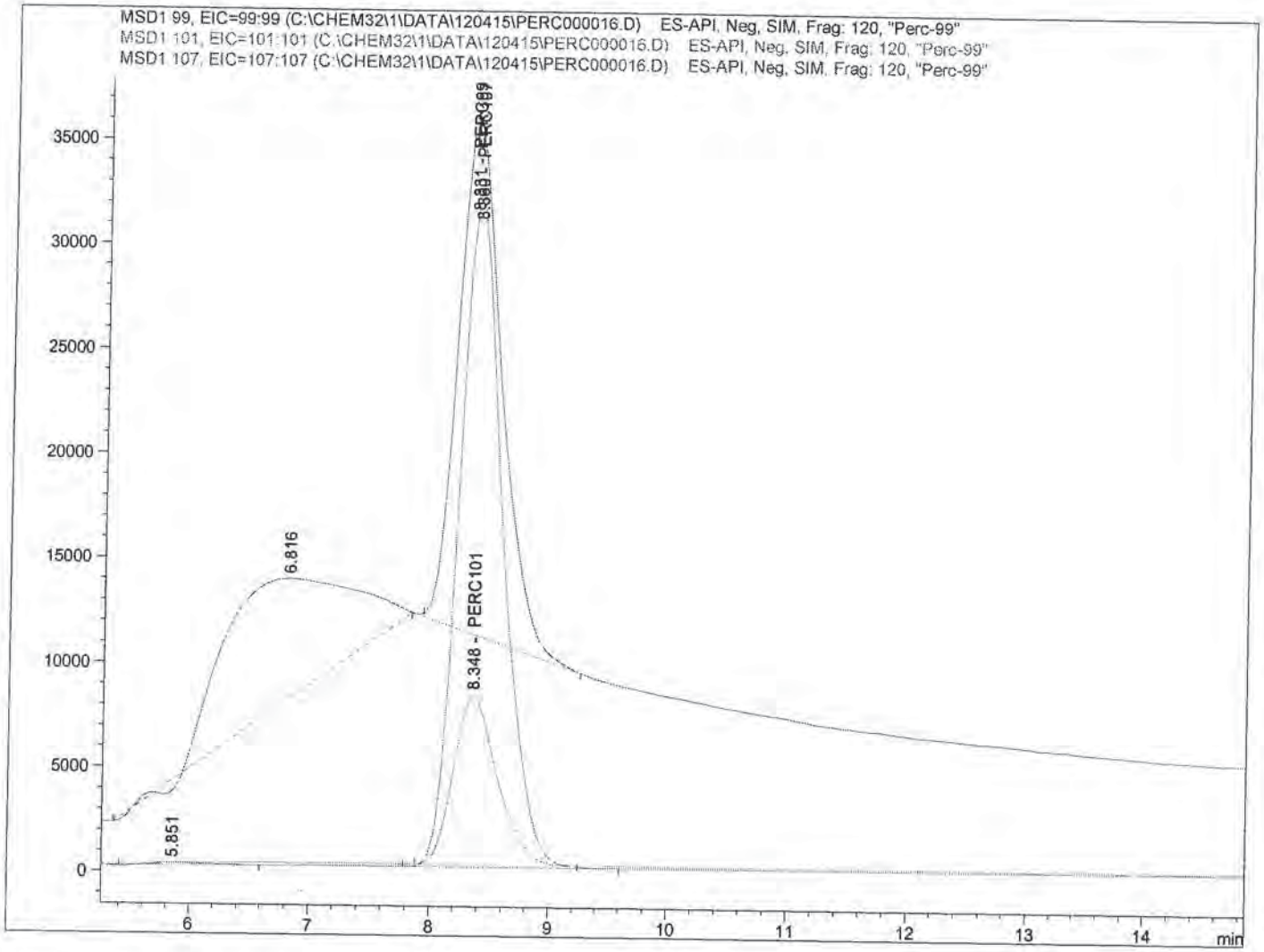

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Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/7/2015 10:16:40 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

RW
12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000016.D
Sample Name: 1511269-08@10

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/4/2015 7:33:28 PM

Seq. Line : 16
Location : Vial 11
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/7/2015 10:17:33 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.331	BBA	1	6.18903e5	8.48638e-1	3.24255		PERC99

Totals without ISTD(s) : 3.24255

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.348	BBA	1	2.04505e5	2.60545	3.28949		PERC101

Totals without ISTD(s) : 3.28949

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.360	BBA I	1	8.09895e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000023.D
Sample Name: 1511269-04

==========

Acq. Operator : Seq. Line : 23
Acq. Instrument : Instrument 1 Location : Vial 18
Injection Date : 12/4/2015 9:38:16 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 3:58:10 PM
(modified after loading)

==========

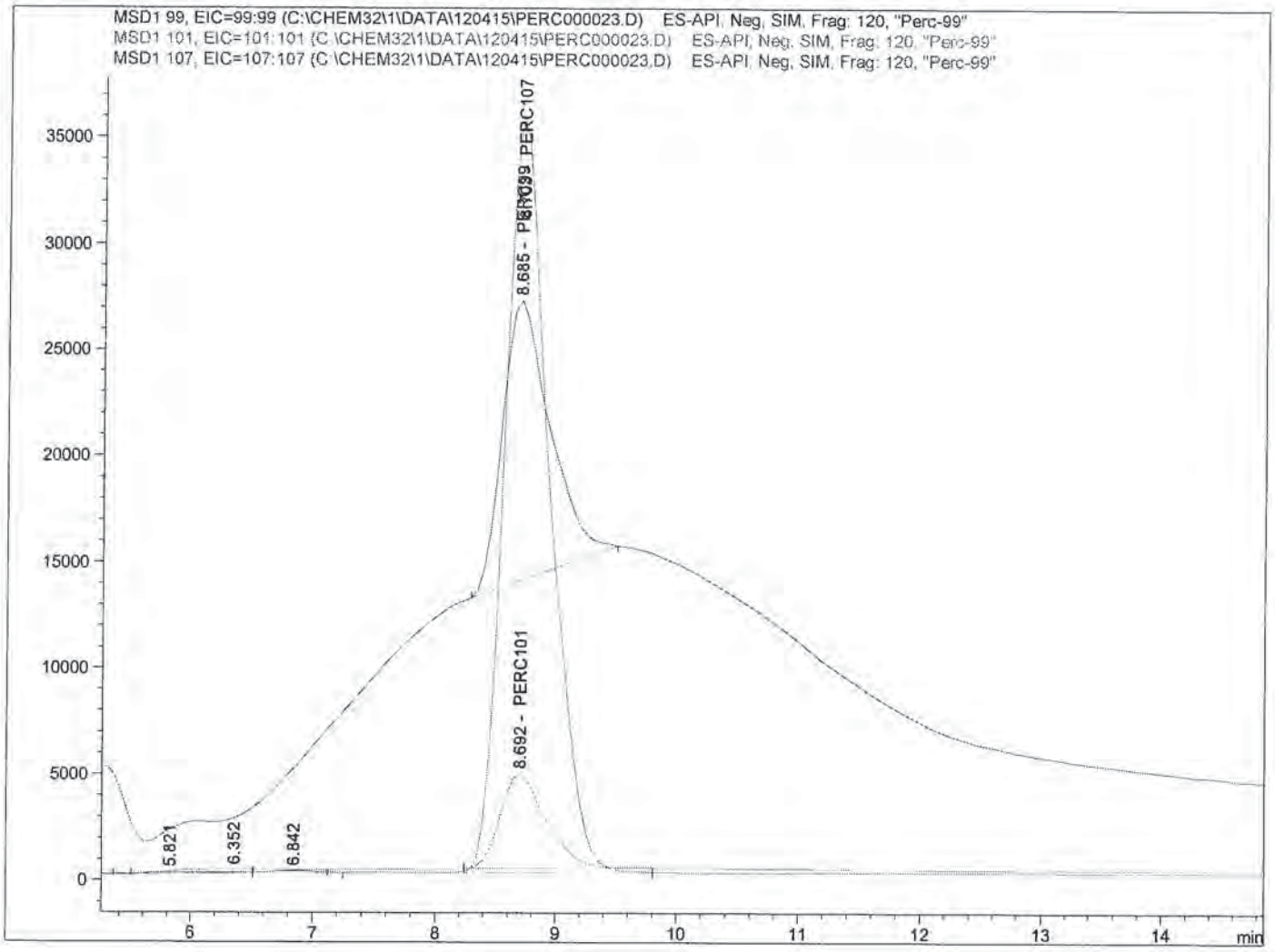

SP
12/9/15

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/5/2015 1:46:13 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

Pond 12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000023.D
Sample Name: 1511269-04

```
==================================================================
Acq. Operator   :                                  Seq. Line :  23
Acq. Instrument : Instrument 1                      Location : Vial 18
Injection Date  : 12/4/2015 9:38:16 PM                  Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/5/2015 3:58:10 PM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.685	BBA	1	3.60706e5	8.48638e-1	1.63727		PERC99

Totals without ISTD(s) : 1.63727

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.692	BBA	1	1.18492e5	2.60545	1.65125		PERC101

Totals without ISTD(s) : 1.65125

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.703	BBA I	1	9.34815e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000025.D
Sample Name: 1511269-10@5

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/4/2015 10:13:54 PM

Seq. Line : 25
Location : Vial 20
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:02:19 PM
(modified after loading)

==========

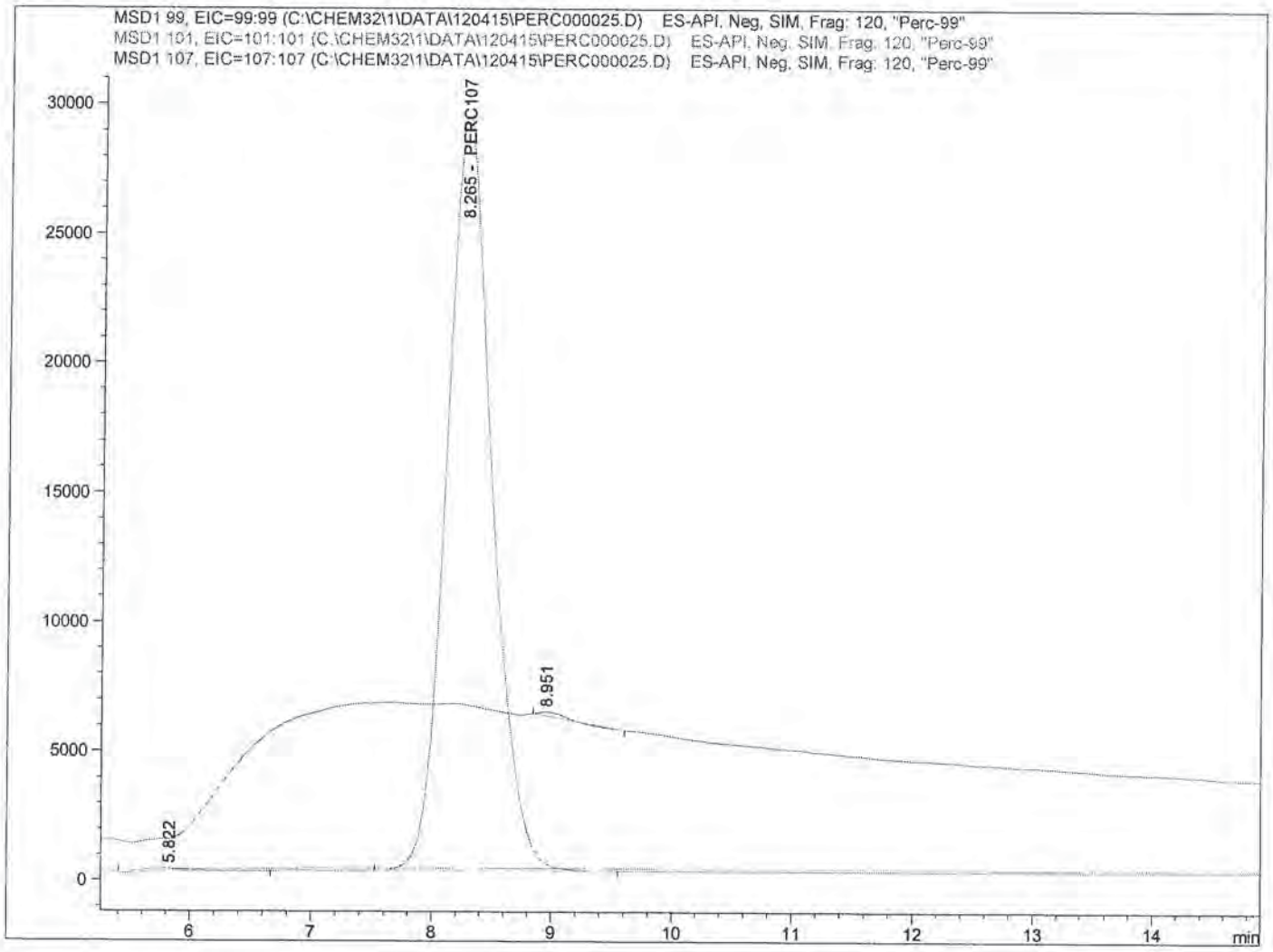

==========

Internal Standard Report

==========

SP
12/9/15

Sorted By : Signal
Calib. Data Modified : 12/5/2015 4:02:19 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000025.D
Sample Name: 1511269-10@5

==========

Acq. Operator : Seq. Line : 25
Acq. Instrument : Instrument 1 Location : Vial 20
Injection Date : 12/4/2015 10:13:54 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:02:19 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.260		1	-	-	-		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.260		1	-	-	-		PERC101

Totals without ISTD(s) : 0.00000

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.265	BB I	1	7.75288e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000027.D
Sample Name: SEQ-CCV2

==========

Acq. Operator : Seq. Line : 27
Acq. Instrument : Instrument 1 Location : Vial 3
Injection Date : 12/4/2015 10:49:37 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:06:17 PM
(modified after loading)

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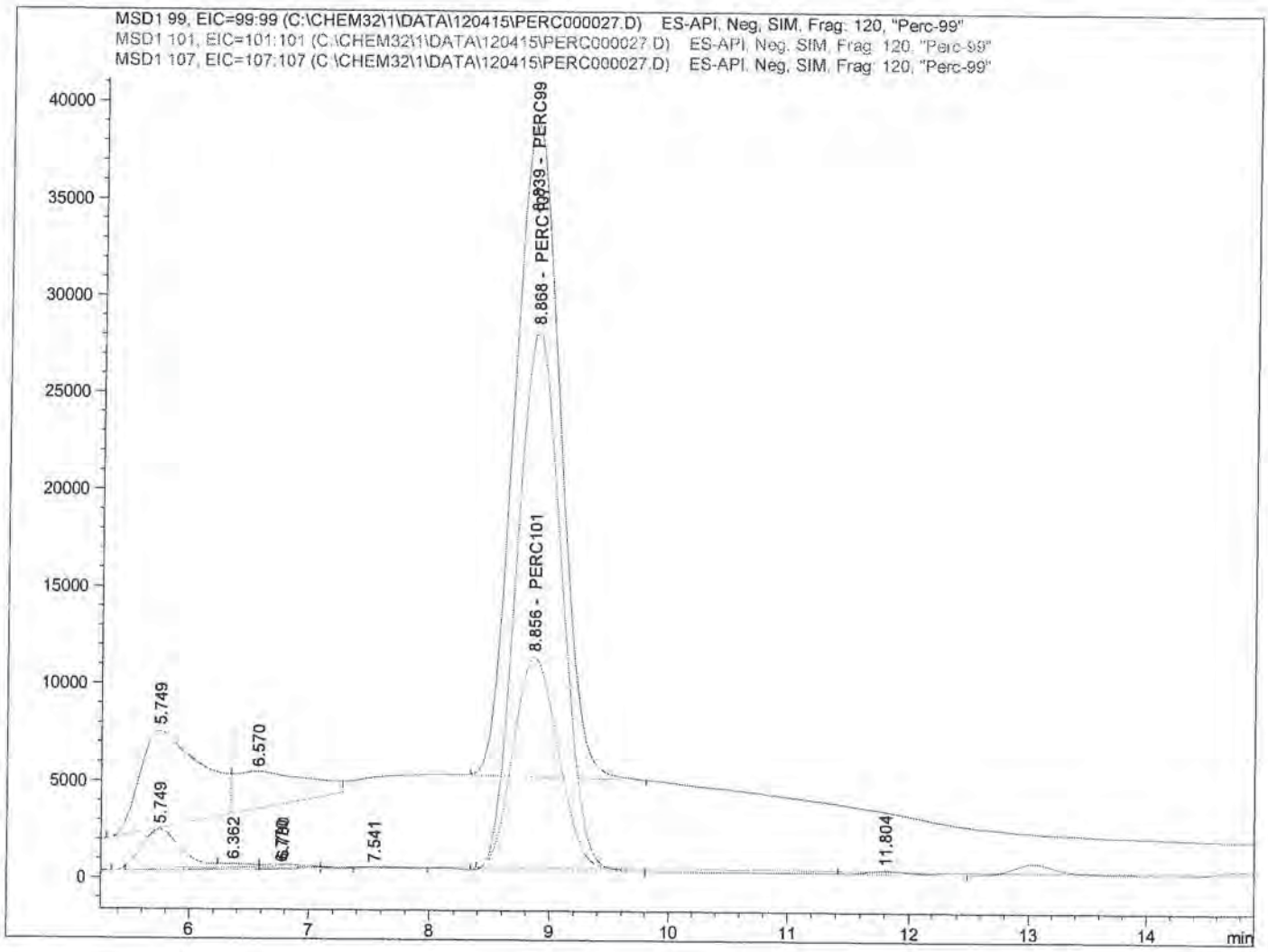

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/5/2015 4:05:44 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000027.D
Sample Name: SEQ-CCV2

```
==================================================================
Acq. Operator   :                                  Seq. Line :  27
Acq. Instrument : Instrument 1                      Location : Vial 3
Injection Date  : 12/4/2015 10:49:37 PM                  Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/5/2015 4:06:17 PM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.839	BBA	1	8.91130e5	8.48638e-1	5.21787		PERC99

Totals without ISTD(s) : 5.21787

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.856	BBA	1	2.84917e5	2.60545	5.12188		PERC101

Totals without ISTD(s) : 5.12188

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.868	VBA I	1	7.24671e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000028.D
Sample Name: SEQ-LCV3

==========

Acq. Operator : Seq. Line : 28
Acq. Instrument : Instrument 1 Location : Vial 4
Injection Date : 12/4/2015 11:07:26 PM Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:06:17 PM
(modified after loading)

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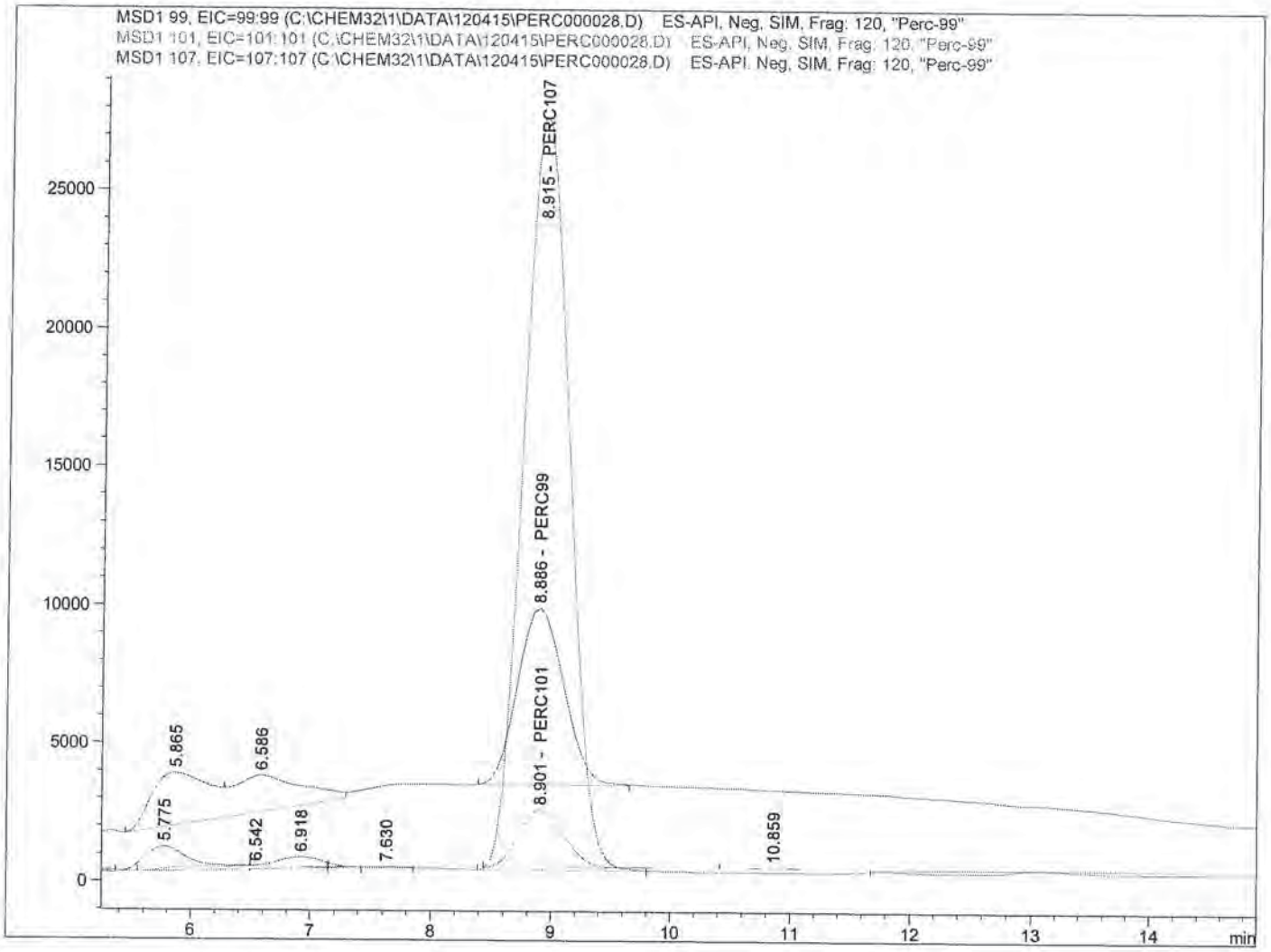

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/5/2015 4:05:44 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000028.D
Sample Name: SEQ-LCV3

```
==================================================================
Acq. Operator   :                                  Seq. Line :  28
Acq. Instrument : Instrument 1                      Location : Vial 4
Injection Date  : 12/4/2015 11:07:26 PM                 Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/5/2015 4:06:17 PM
                  (modified after loading)
==================================================================

  1      5.00000   PERC107


Signal 1: MSD1 99, EIC=99:99

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.886 BB        1 1.73164e5  8.48638e-1    1.01082    PERC99

Totals without ISTD(s) :                 1.01082


Signal 2: MSD1 101, EIC=101:101

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.901 BBA       1 5.52206e4     2.60545 9.89645e-1    PERC101

Totals without ISTD(s) :              9.89645e-1


Signal 3: MSD1 107, EIC=107:107

RetTime  Type  ISTD    Area      Amt/Area    Amount   Grp   Name
 [min]         used               ratio      [ug/L]
-------|------|----|----------|----------|----------|--|------------------
  8.915 BBA  I    1 7.26899e5     1.00000    5.00000    PERC107

Totals without ISTD(s) :                 0.00000


==================================================================
                         *** End of Report ***
```

Data File C:\CHEM32\1\DATA\120415\PERC000029.D
Sample Name: SEQ-LCV4

==========

Acq. Operator : Seq. Line : 29
Acq. Instrument : Instrument 1 Location : Vial 83
Injection Date : 12/4/2015 11:25:18 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:06:17 PM
(modified after loading)

==========

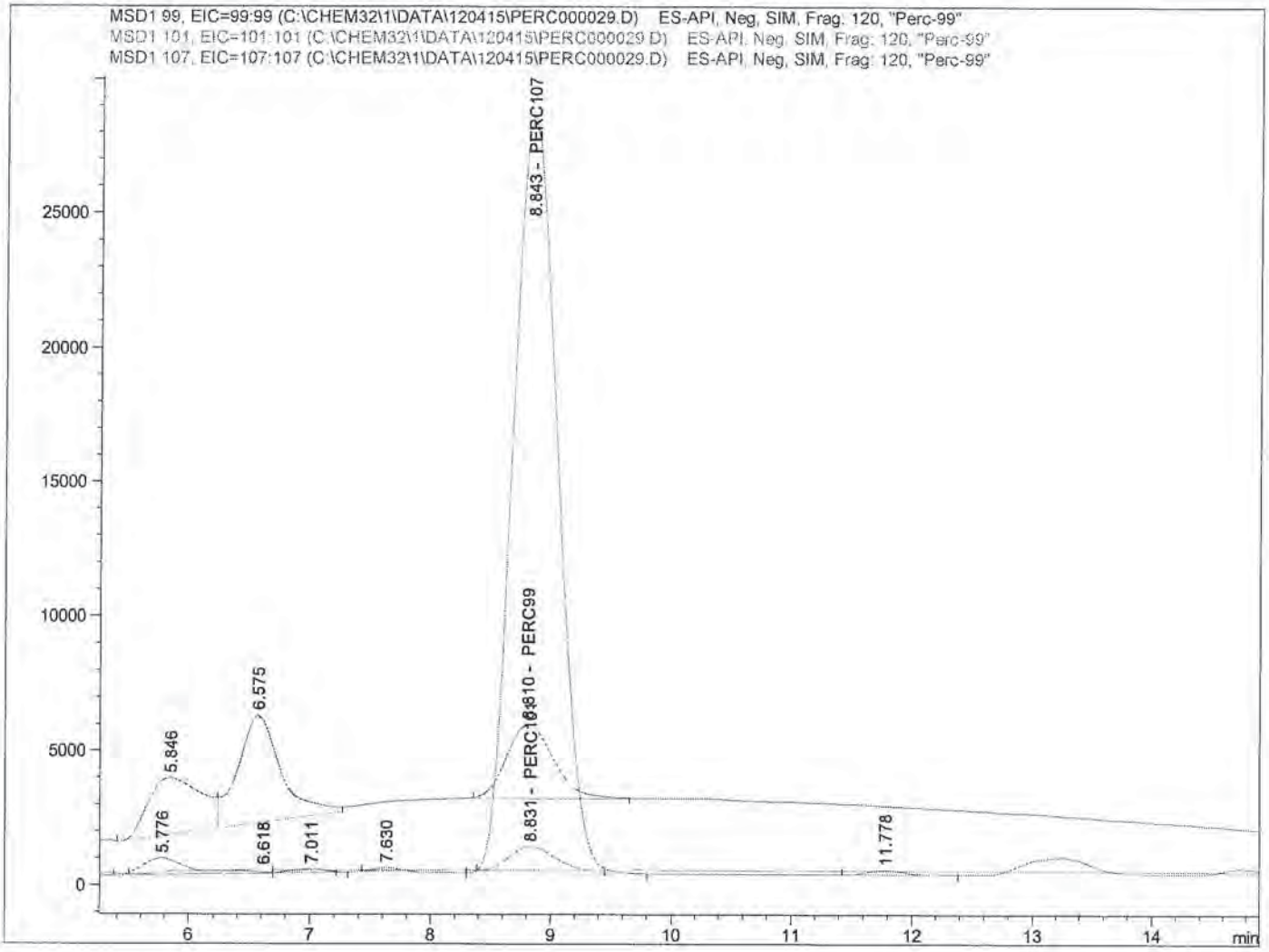

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Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/5/2015 4:05:44 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-7-15

SP
12/9/15

Data File C:\CHEM32\1\DATA\120415\PERC000029.D
Sample Name: SEQ-LCV4

```
==================================================================
Acq. Operator   :                                  Seq. Line :  29
Acq. Instrument : Instrument 1                      Location : Vial 83
Injection Date  : 12/4/2015 11:25:18 PM                 Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/5/2015 4:06:17 PM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.810	BB	1	7.61508e4	8.48638e-1	4.41808e-1		PERC99

Totals without ISTD(s) : 4.41808e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.831	VV	1	2.25169e4	2.60545	4.01077e-1		PERC101

Totals without ISTD(s) : 4.01077e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.843	VBA I	1	7.31364e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000030.D
Sample Name: 1511269-11@5

==========

Acq. Operator	:	Seq. Line	: 30
Acq. Instrument	: Instrument 1	Location	: Vial 21
Injection Date	: 12/4/2015 11:43:10 PM	Inj	: 1
		Inj Volume	: 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:08:08 PM
(modified after loading)

==========

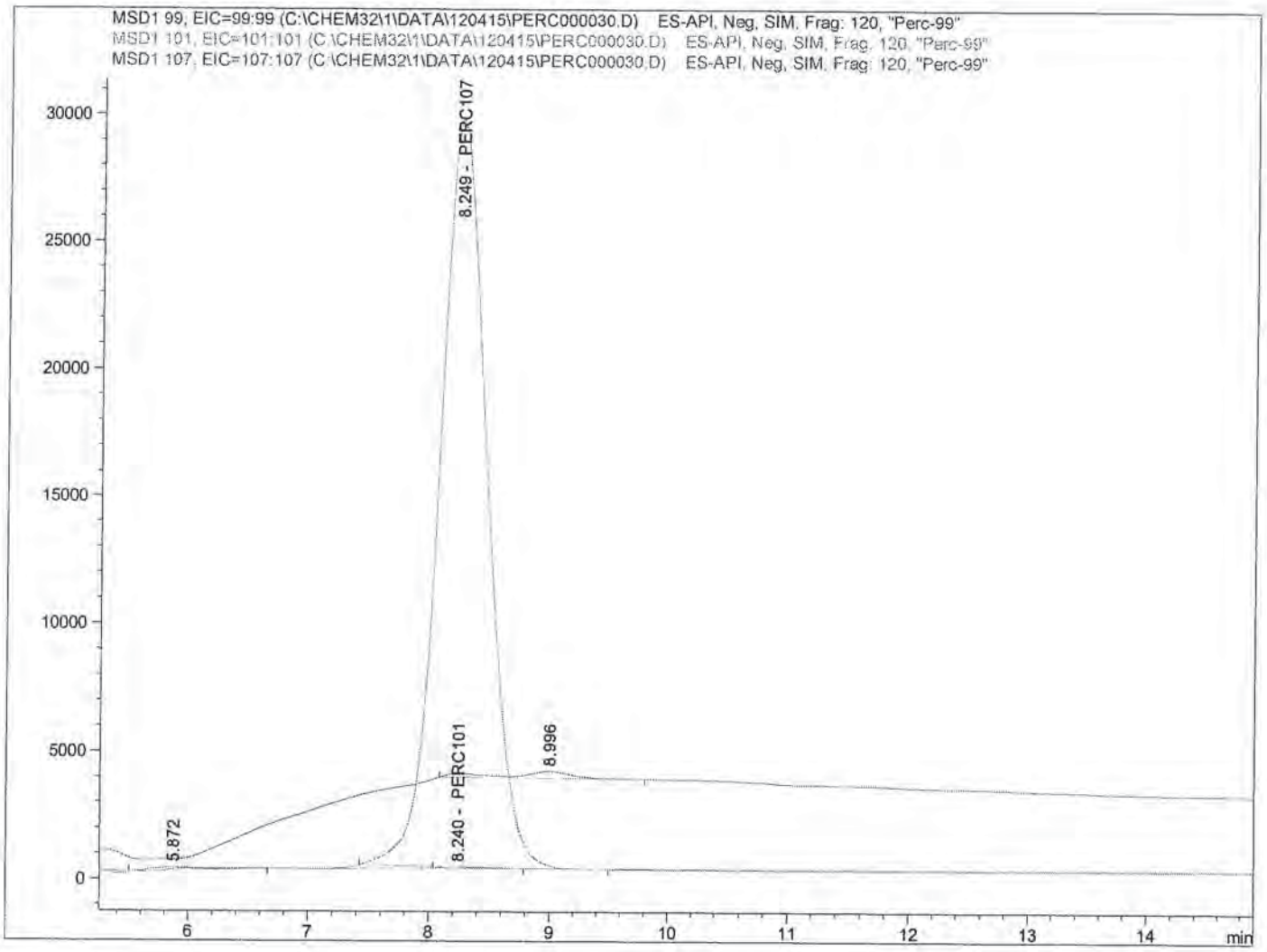

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Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/5/2015 4:08:08 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000030.D
Sample Name: 1511269-11@5

==========

Acq. Operator : Seq. Line : 30
Acq. Instrument : Instrument 1 Location : Vial 21
Injection Date : 12/4/2015 11:43:10 PM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:08:08 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.250		1	-	-	-		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.240	BV	1	1125.18457	2.60545	1.81465e-2		PERC101

Totals without ISTD(s) : 1.81465e-2

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.249	BB I	1	8.07759e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000031.D
Sample Name: 1511269-12@5

==========

Acq. Operator	:	Seq. Line	: 31
Acq. Instrument	: Instrument 1	Location	: Vial 22
Injection Date	: 12/5/2015 12:00:59 AM	Inj	: 1
		Inj Volume	: 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:08:08 PM
(modified after loading)

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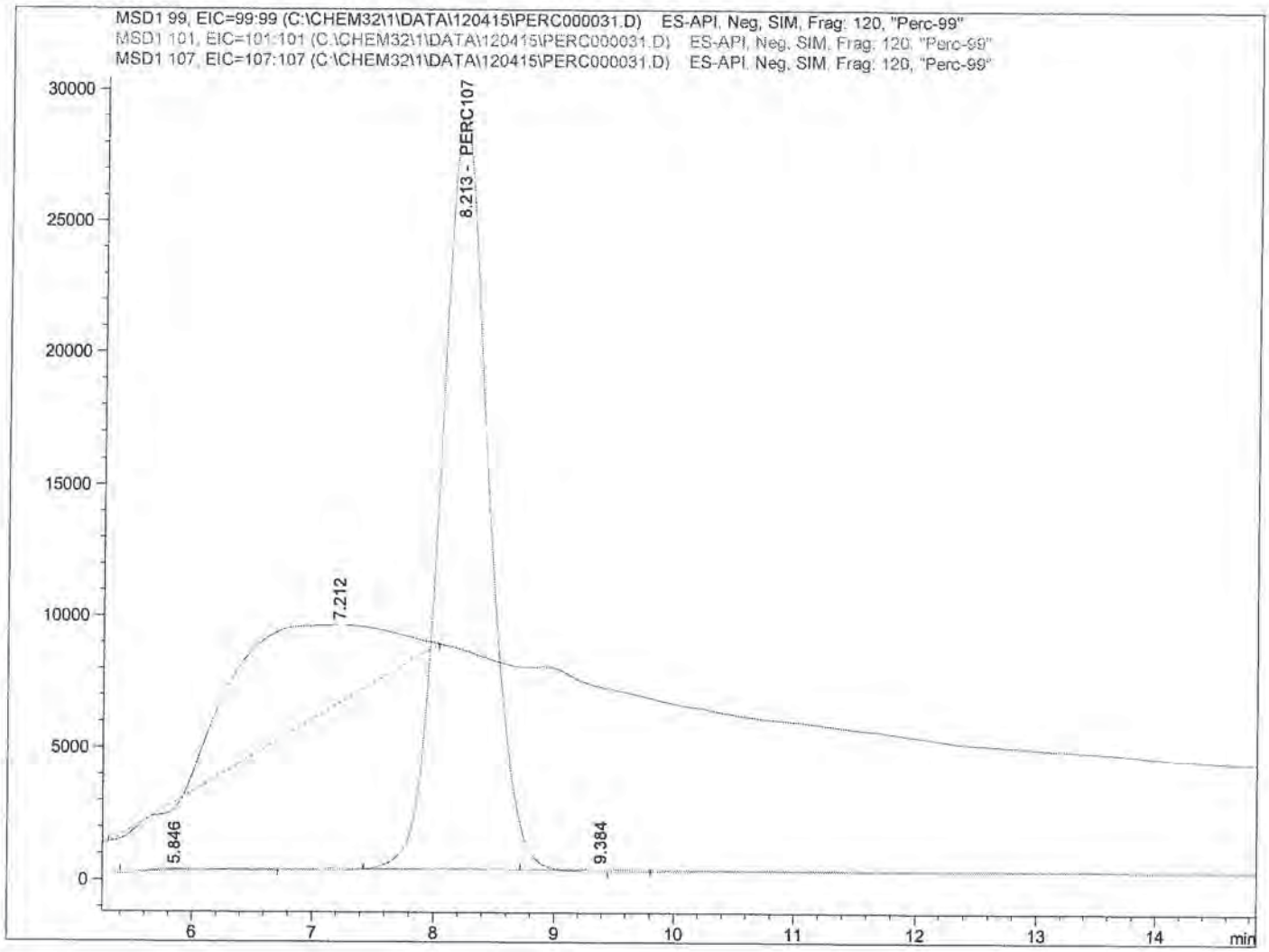

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : 12/5/2015 4:08:08 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-7-15

SP
12/9/15

Data File C:\CHEM32\1\DATA\120415\PERC000031.D
Sample Name: 1511269-12@5

==========

Acq. Operator : Seq. Line : 31
Acq. Instrument : Instrument 1 Location : Vial 22
Injection Date : 12/5/2015 12:00:59 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:08:08 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.250		1	-	-	-		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.250		1	-	-	-		PERC101

Totals without ISTD(s) : 0.00000

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.213	BB I	1	7.76843e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000033.D
Sample Name: 1511269-14@5

==========

Acq. Operator : Seq. Line : 33
Acq. Instrument : Instrument 1 Location : Vial 24
Injection Date : 12/5/2015 12:36:35 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:09:23 PM
(modified after loading)

==========

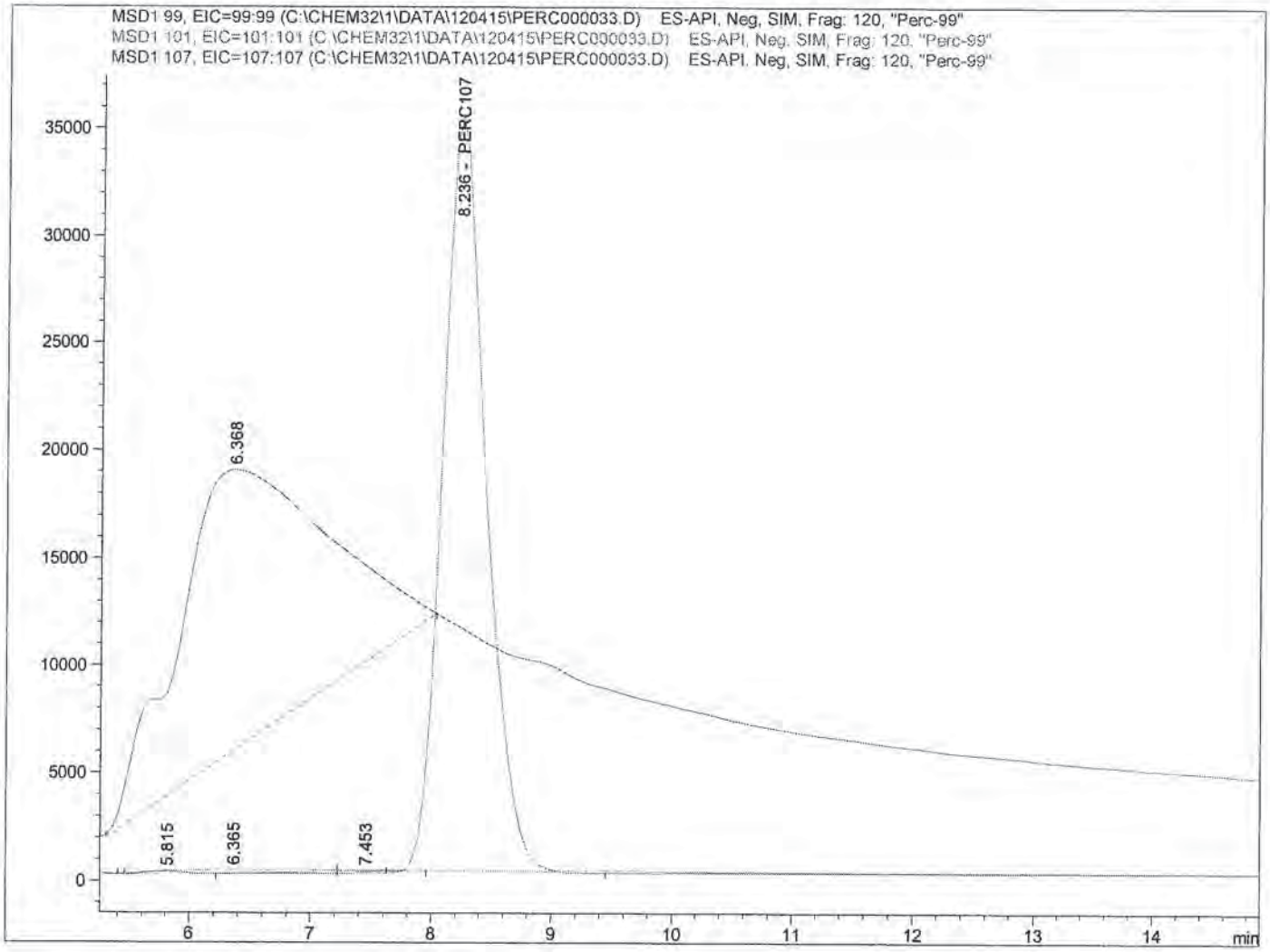

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : 12/5/2015 4:09:23 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

Rpd 12-7-15

SP 12/9/15

Data File C:\CHEM32\1\DATA\120415\PERC000033.D
Sample Name: 1511269-14@5

==========

Acq. Operator : Seq. Line : 33
Acq. Instrument : Instrument 1 Location : Vial 24
Injection Date : 12/5/2015 12:36:35 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:09:23 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.180		1	-	-	-		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.180		1	-	-	-		PERC101

Totals without ISTD(s) : 0.00000

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.236	BB I	1	8.97185e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000034.D
Sample Name: 1511269-15@5

==========

Acq. Operator	:	Seq. Line	: 34
Acq. Instrument	: Instrument 1	Location	: Vial 25
Injection Date	: 12/5/2015 12:54:26 AM	Inj	: 1
		Inj Volume	: 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:09:23 PM
(modified after loading)

==========

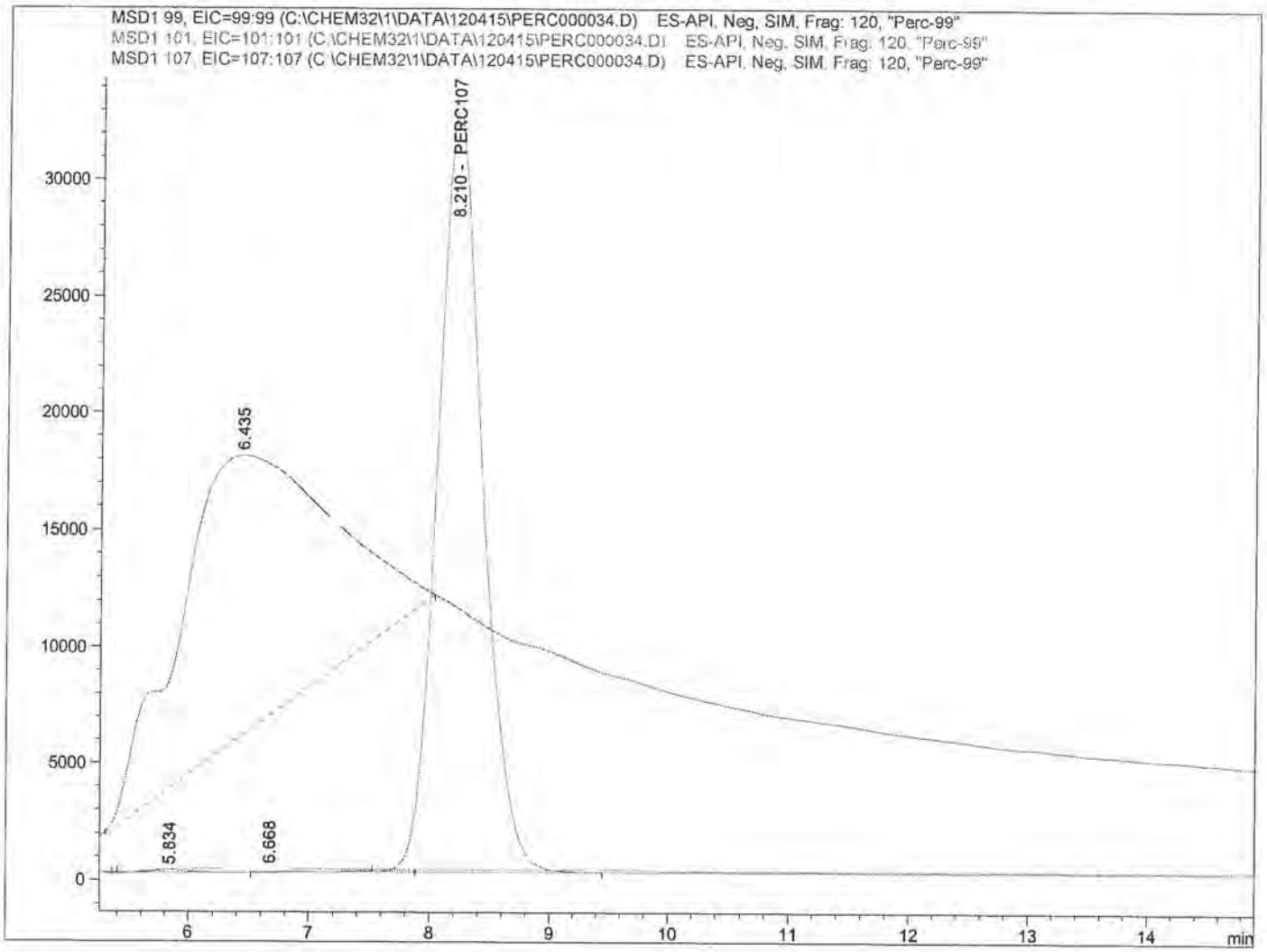

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : 12/5/2015 4:09:23 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

PBW 12-7-15

SP 12/9/15

Data File C:\CHEM32\1\DATA\120415\PERC000034.D
Sample Name: 1511269-15@5

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/5/2015 12:54:26 AM

Seq. Line : 34
Location : Vial 25
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:09:23 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.180		1	-	-	-		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.180		1	-	-	-		PERC101

Totals without ISTD(s) : 0.00000

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.210	BB I	1	8.46581e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000035.D
Sample Name: 1511269-16@5

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/5/2015 1:12:17 AM

Seq. Line : 35
Location : Vial 26
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:09:23 PM
(modified after loading)

==========

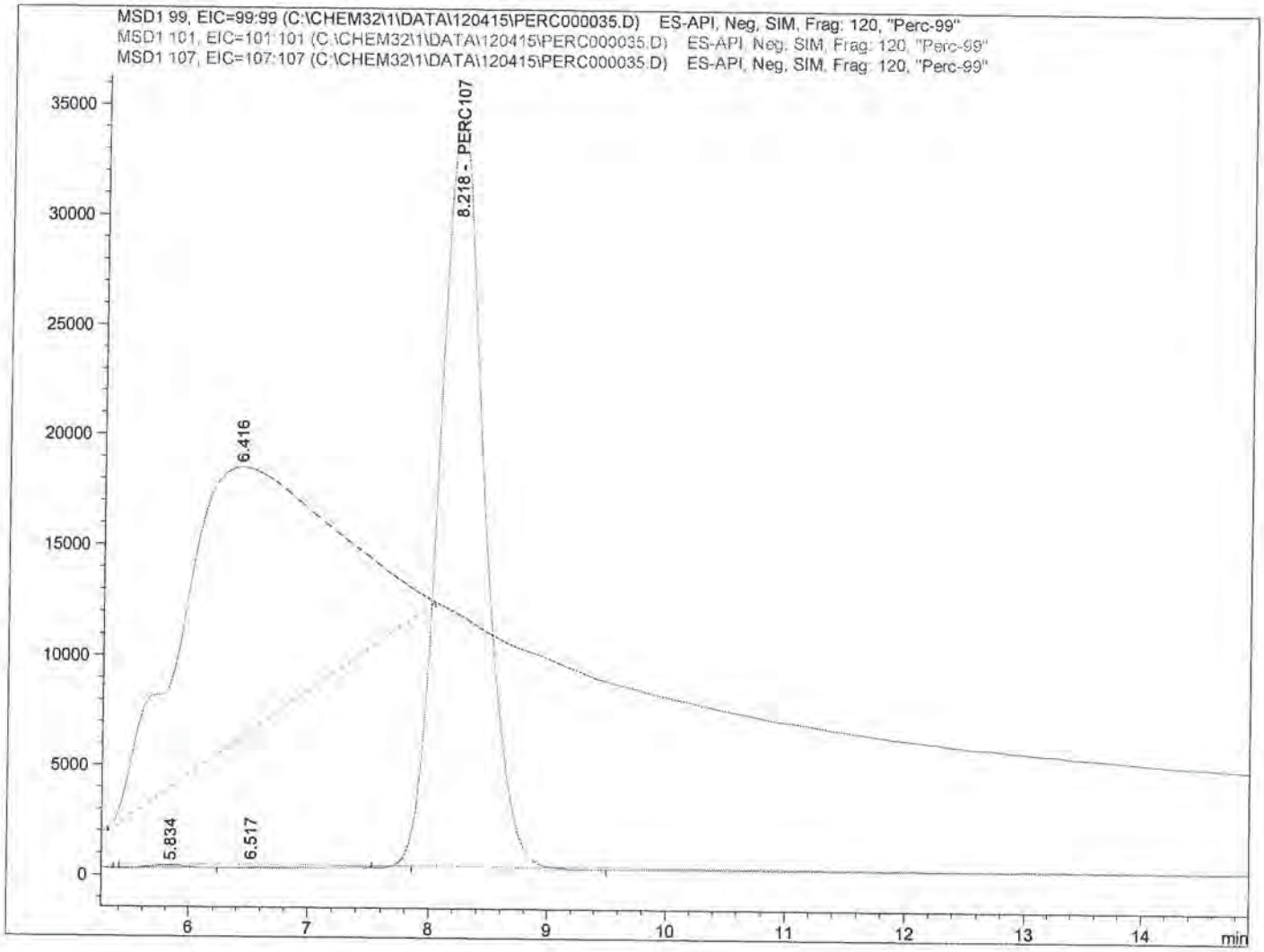

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Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/5/2015 4:09:23 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000035.D
Sample Name: 1511269-16@5

==========

Acq. Operator : Seq. Line : 35
Acq. Instrument : Instrument 1 Location : Vial 26
Injection Date : 12/5/2015 1:12:17 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:09:23 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.180		1	-	-	-		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.180		1	-	-	-		PERC101

Totals without ISTD(s) : 0.00000

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.218	BB I	1	8.90641e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000036.D
Sample Name: 1511269-17@5

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/5/2015 1:30:12 AM

Seq. Line : 36
Location : Vial 27
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:09:23 PM
(modified after loading)

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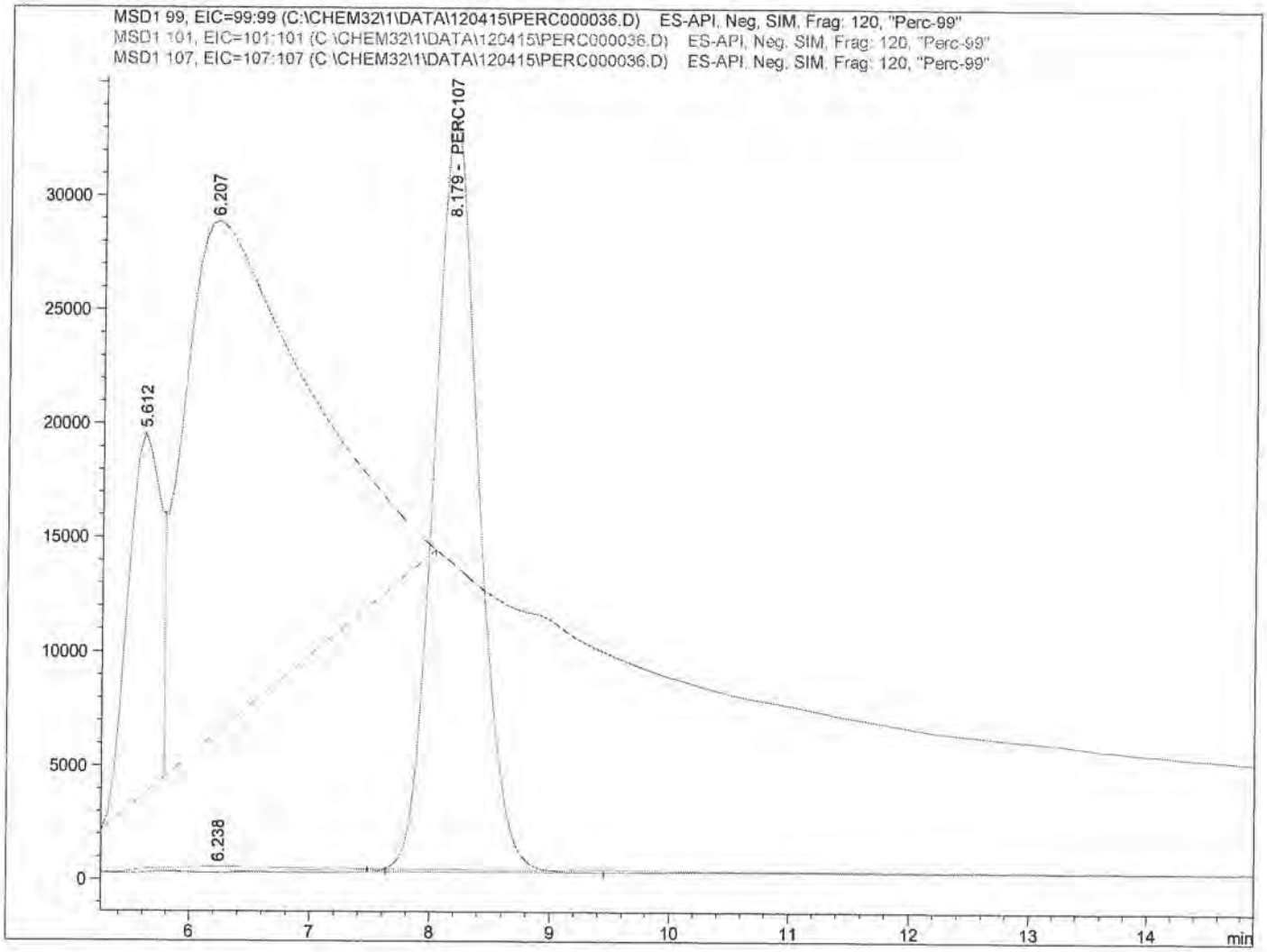

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Internal Standard Report

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SP
12/9/15

Sorted By : Signal
Calib. Data Modified : 12/5/2015 4:09:23 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000036.D
Sample Name: 1511269-17@5

==========

Acq. Operator :
Seq. Line : 36
Acq. Instrument : Instrument 1
Location : Vial 27
Injection Date : 12/5/2015 1:30:12 AM
Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:09:23 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.180		1	-	-	-		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.180		1	-	-	-		PERC101

Totals without ISTD(s) : 0.00000

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.179	BB I	1	8.63099e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000037.D
Sample Name: 1511269-18@5

==========

Acq. Operator : Seq. Line : 37
Acq. Instrument : Instrument 1 Location : Vial 28
Injection Date : 12/5/2015 1:47:57 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:09:23 PM
(modified after loading)

==========

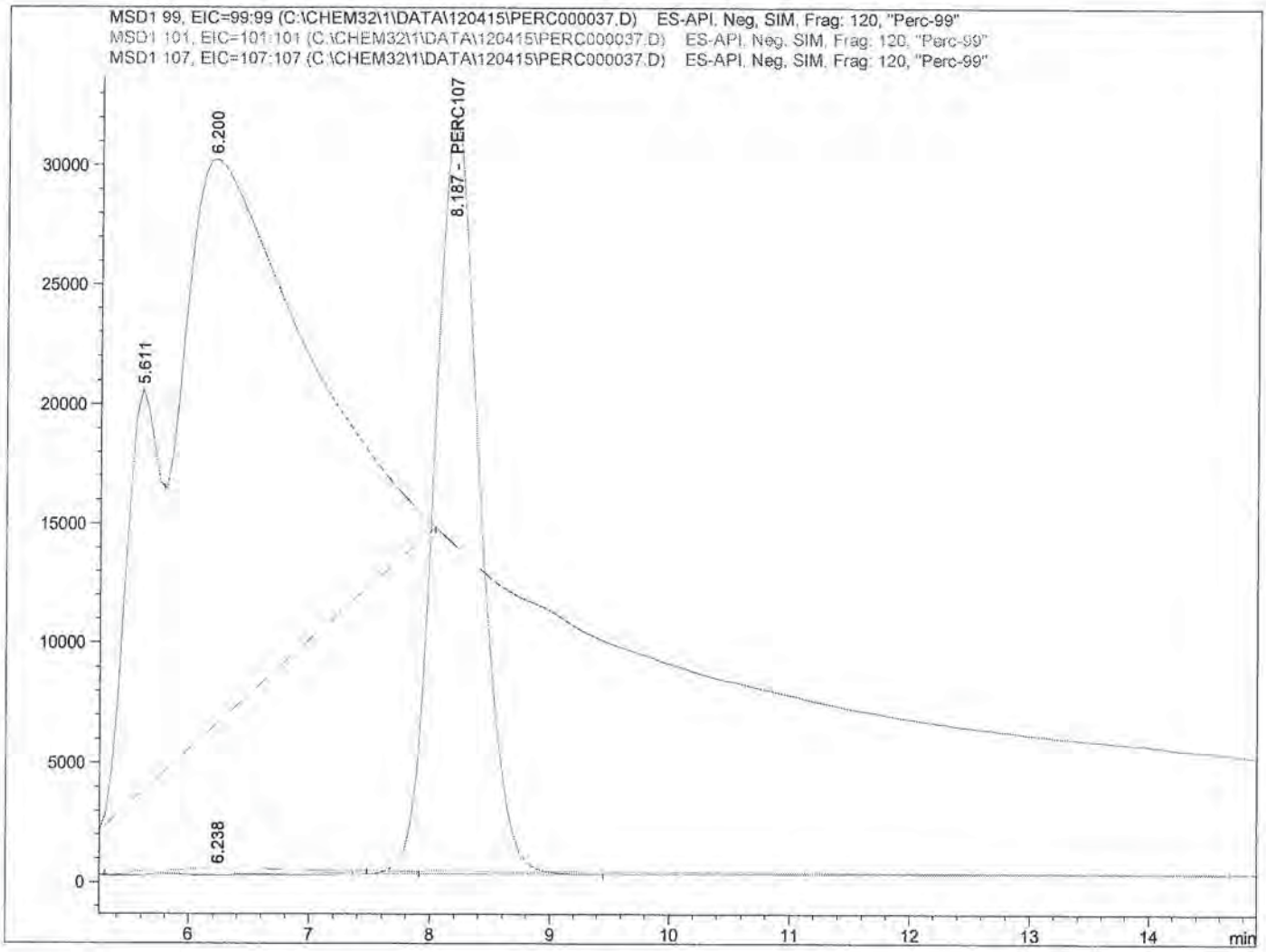

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : 12/5/2015 4:09:23 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000037.D
Sample Name: 1511269-18@5

==========

Acq. Operator : Seq. Line : 37
Acq. Instrument : Instrument 1 Location : Vial 28
Injection Date : 12/5/2015 1:47:57 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:09:23 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.180		1	-	-	-		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.180		1	-	-	-		PERC101

Totals without ISTD(s) : 0.00000

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.187	BB I	1	8.25938e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000038.D
Sample Name: 1511269-19

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/5/2015 2:05:50 AM

Seq. Line : 38
Location : Vial 29
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:12:07 PM
(modified after loading)

==========

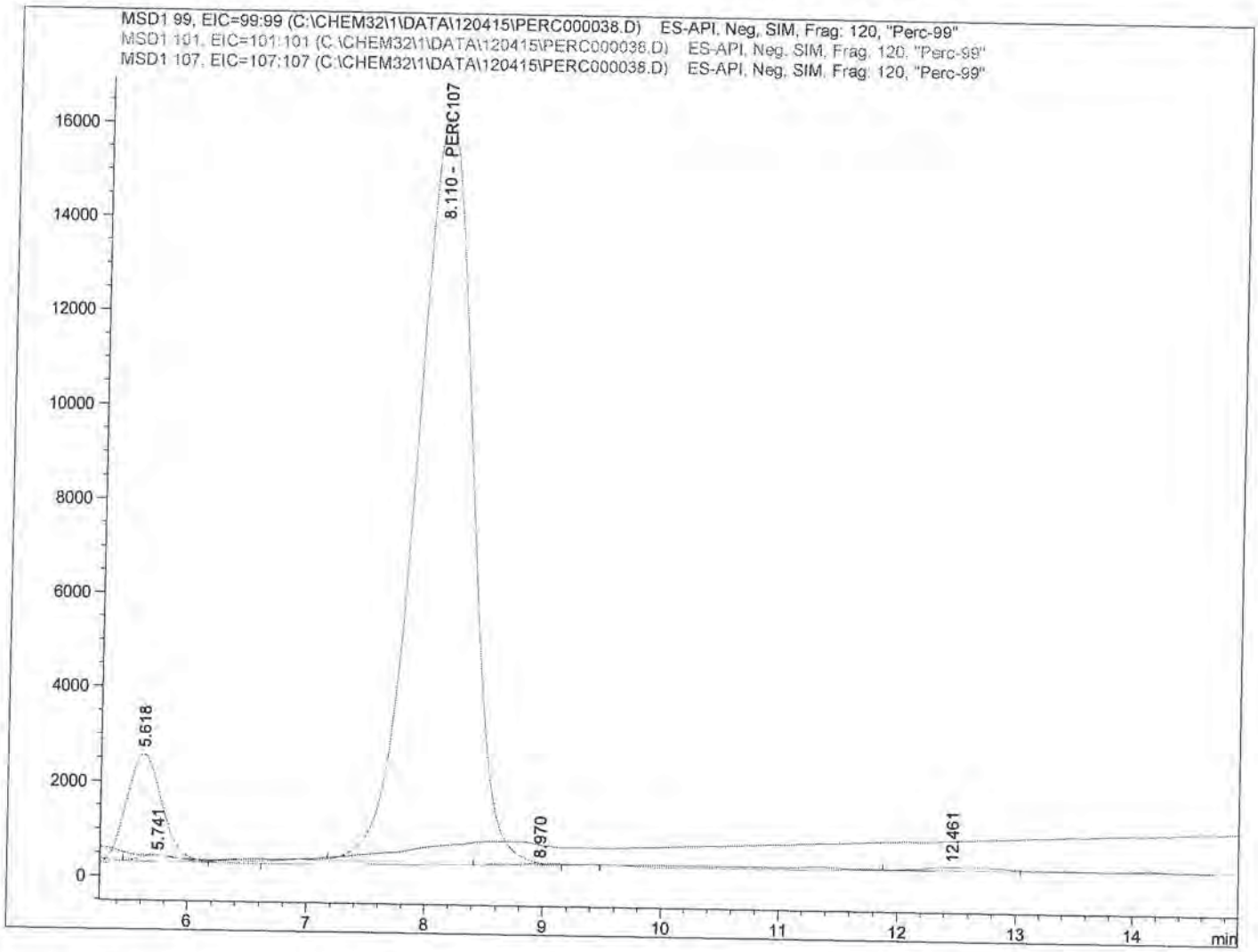

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/5/2015 4:09:23 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000038.D
Sample Name: 1511269-19

==========

Acq. Operator : Seq. Line : 38
Acq. Instrument : Instrument 1 Location : Vial 29
Injection Date : 12/5/2015 2:05:50 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:12:07 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.180		1	-	-	-		PERC99

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.180		1	-	-	-		PERC101

Totals without ISTD(s) : 0.00000

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.110	BV I	1	5.16344e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000041.D
Sample Name: SEQ-CCV3

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/5/2015 2:59:27 AM

Seq. Line : 41
Location : Vial 3
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:15:23 PM
(modified after loading)

==========

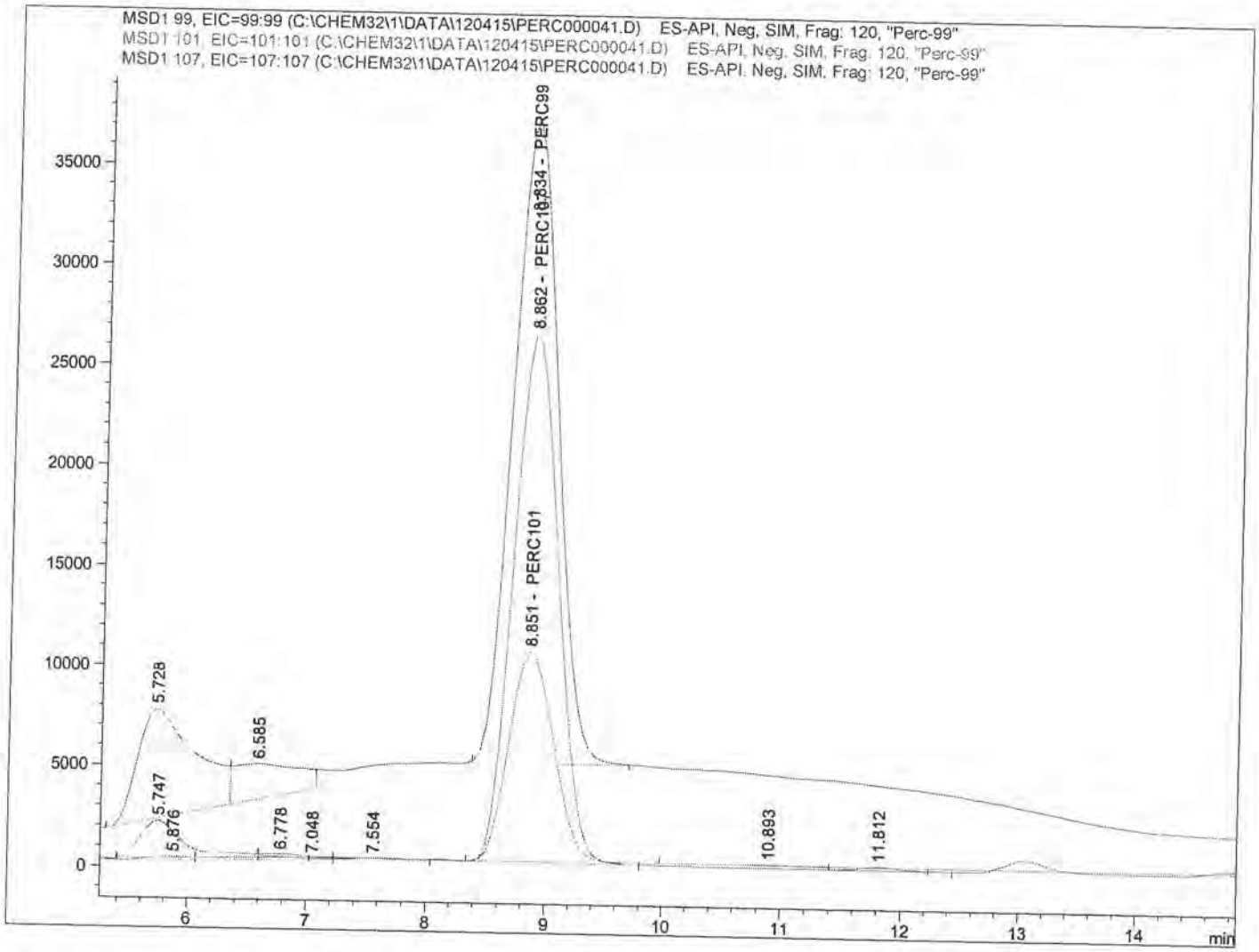

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/5/2015 4:14:53 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000041.D
Sample Name: SEQ-CCV3

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/5/2015 2:59:27 AM

Seq. Line : 41
Location : Vial 3
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:15:23 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.834	BB	1	8.41163e5	8.48638e-1	5.19588		PERC99

Totals without ISTD(s) : 5.19588

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.851	BBA	1	2.72706e5	2.60545	5.17170		PERC101

Totals without ISTD(s) : 5.17170

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.862	VBA I	1	6.86932e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

841163/686932/1.17836x5= 5.19587

Data File C:\CHEM32\1\DATA\120415\PERC000042.D
Sample Name: SEQ-LCV5

==========

Acq. Operator : Seq. Line : 42
Acq. Instrument : Instrument 1 Location : Vial 4
Injection Date : 12/5/2015 3:17:16 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:15:23 PM
(modified after loading)

==========

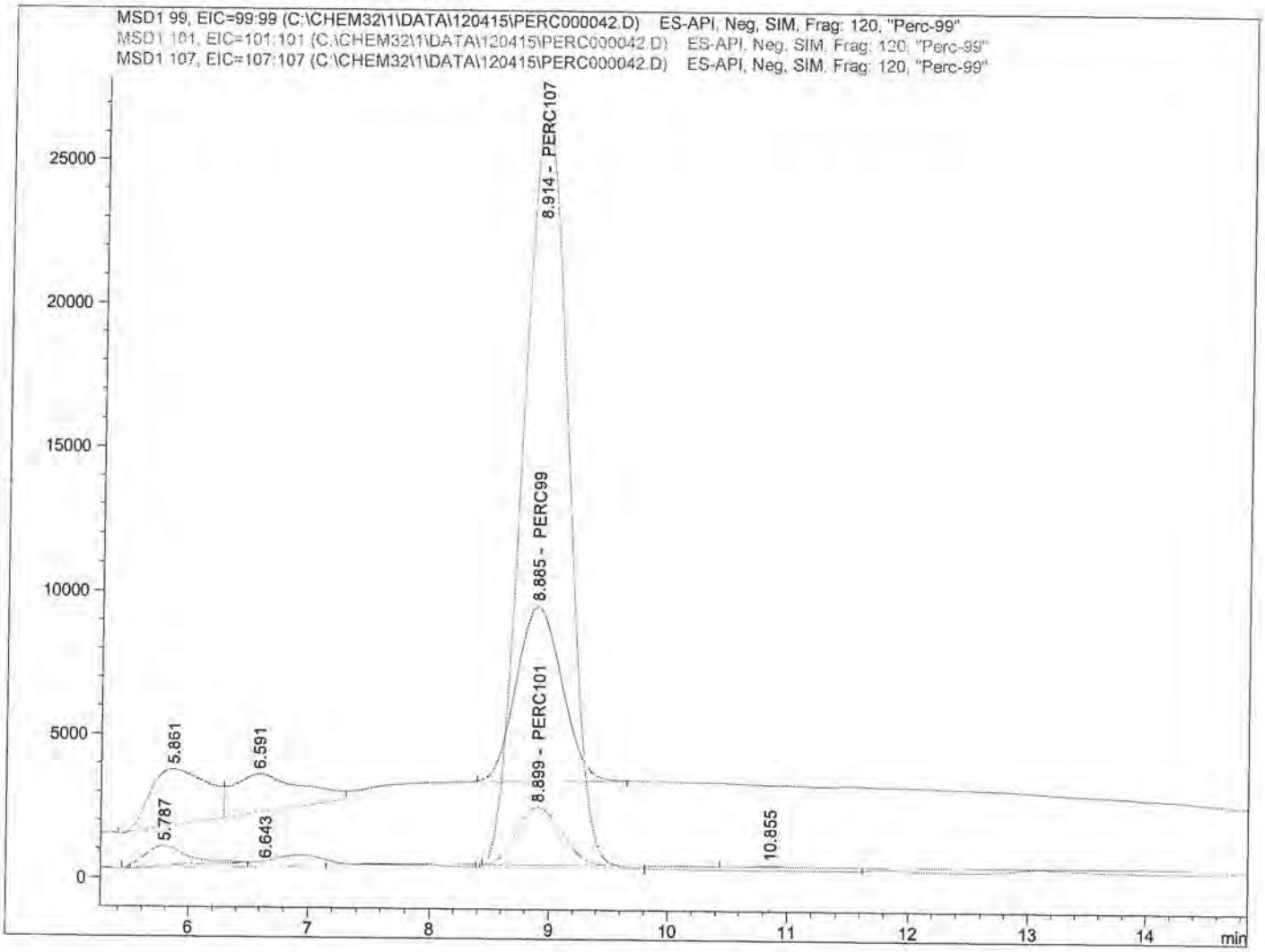

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : 12/5/2015 4:14:53 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000042.D
Sample Name: SEQ-LCV5

==========

Acq. Operator : Seq. Line : 42
Acq. Instrument : Instrument 1 Location : Vial 4
Injection Date : 12/5/2015 3:17:16 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:15:23 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.885	BB	1	1.64882e5	8.48638e-1	1.00821		PERC99

Totals without ISTD(s) : 1.00821

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.899	BBA	1	5.29614e4	2.60545	9.94251e-1		PERC101

Totals without ISTD(s) : 9.94251e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.914	BBA I	1	6.93929e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000043.D
Sample Name: SEQ-LCV6

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/5/2015 3:35:04 AM

Seq. Line : 43
Location : Vial 83
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:15:23 PM
(modified after loading)

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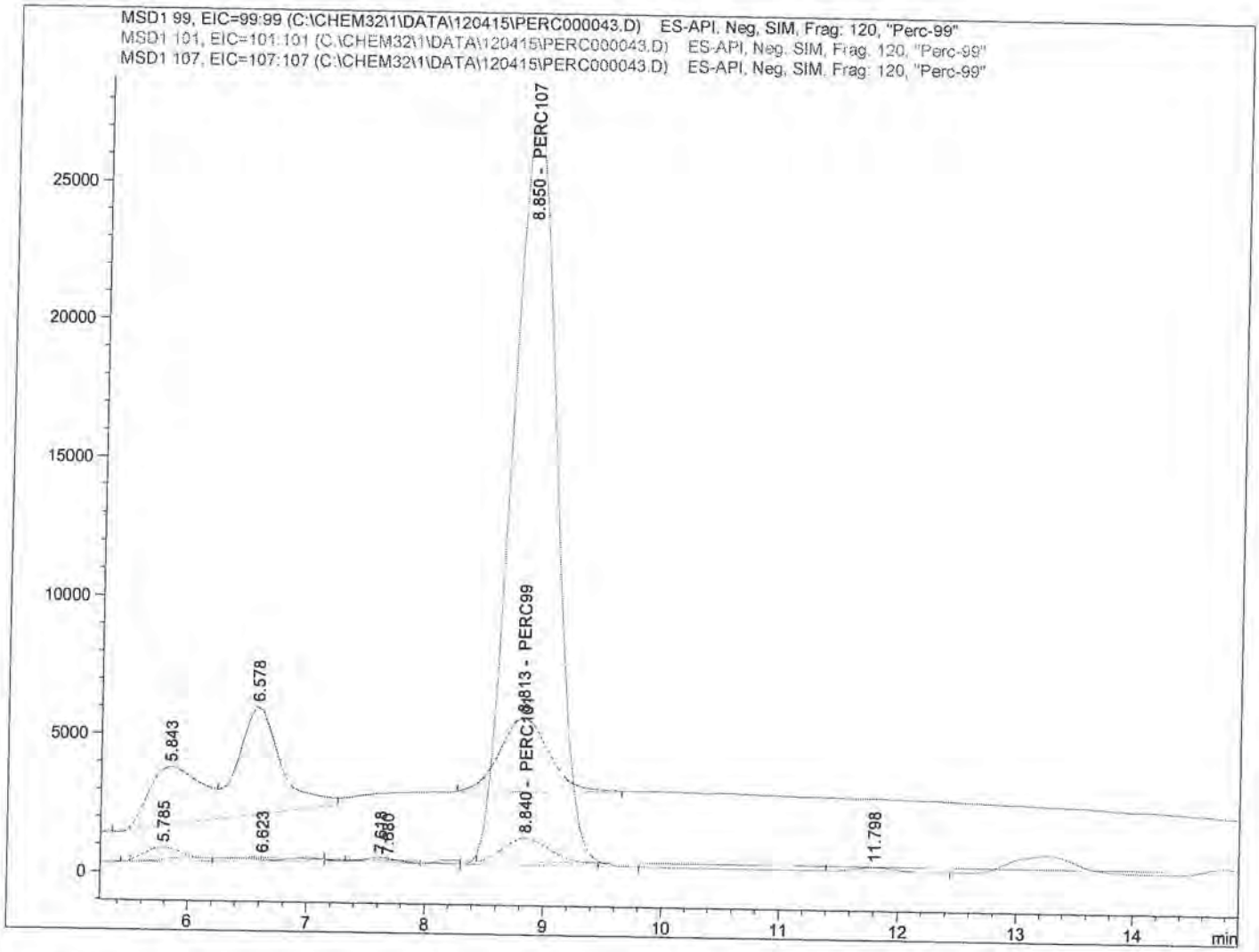

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Internal Standard Report

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Sorted By : Signal
Calib. Data Modified : 12/5/2015 4:14:53 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000043.D
Sample Name: SEQ-LCV6

```
==================================================================
Acq. Operator   :                                  Seq. Line :  43
Acq. Instrument : Instrument 1                      Location : Vial 83
Injection Date  : 12/5/2015 3:35:04 AM                   Inj :   1
                                                  Inj Volume : 100.0 µl
Acq. Method     : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed    : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed    : 12/5/2015 4:15:23 PM
                  (modified after loading)
==================================================================
```

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.813	BB	1	7.77357e4	8.48638e-1	4.73547e-1		PERC99

Totals without ISTD(s) : 4.73547e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.840	BV	1	2.21682e4	2.60545	4.14603e-1		PERC101

Totals without ISTD(s) : 4.14603e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.850	VBA I	1	6.96546e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000044.D
Sample Name: 1511269-21@5

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/5/2015 3:52:57 AM

Seq. Line : 44
Location : Vial 31
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:23:31 PM
(modified after loading)

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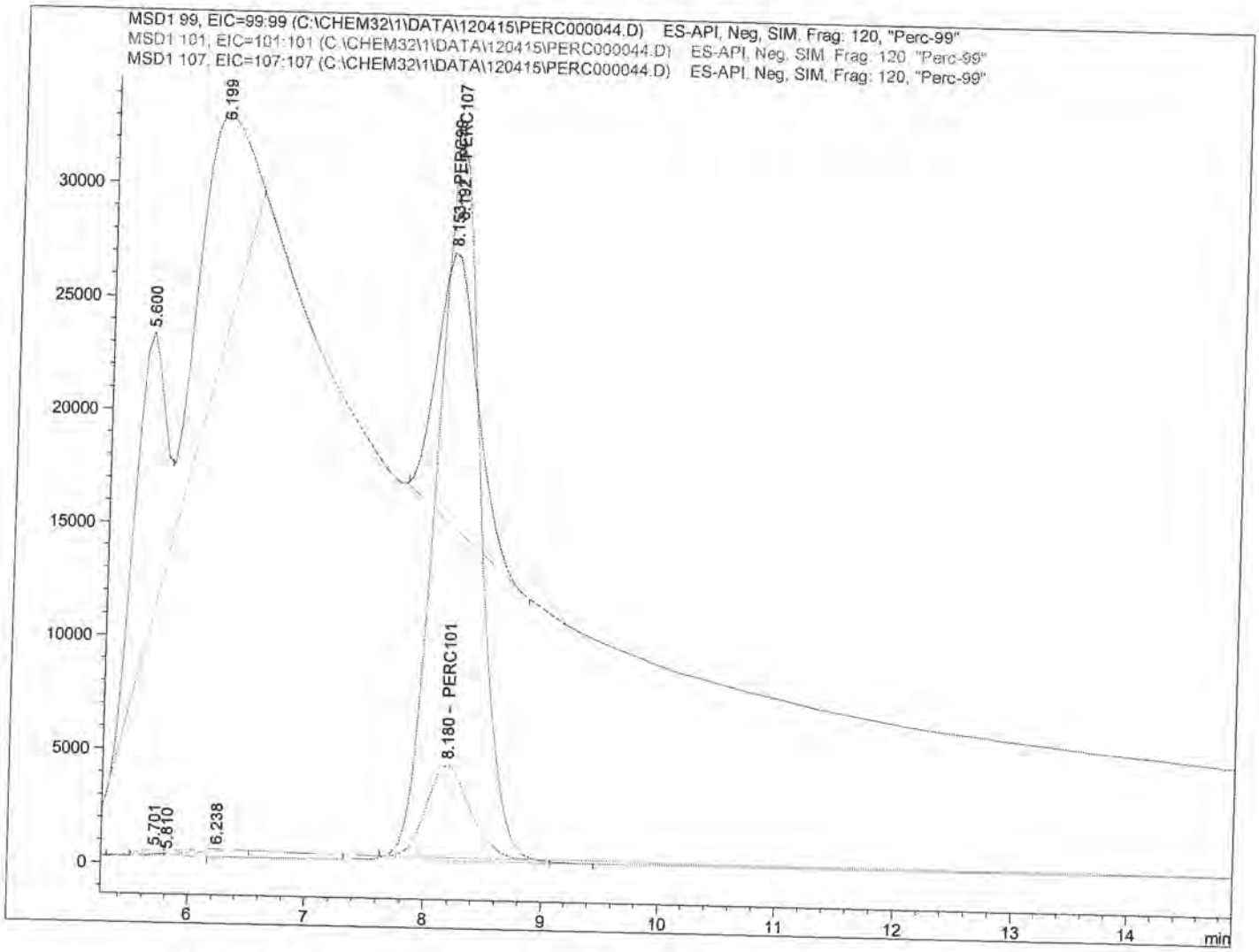

==========

Internal Standard Report

==========

Sorted By : Signal
Calib. Data Modified : 12/5/2015 4:23:07 PM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

SP
12/9/15

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000044.D
Sample Name: 1511269-21@5

==========

Acq. Operator :
Acq. Instrument : Instrument 1
Injection Date : 12/5/2015 3:52:57 AM

Seq. Line : 44
Location : Vial 31
Inj : 1
Inj Volume : 100.0 µl

Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/5/2015 4:23:31 PM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.153	BBA	1	2.89553e5	8.48638e-1	1.50001		PERC99

Totals without ISTD(s) : 1.50001

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.180	BV	1	1.04770e5	2.60545	1.66634		PERC101

Totals without ISTD(s) : 1.66634

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.192	BB I	1	8.19078e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

289553/89078/1.17836×5 = 1.500012×5 = 7.50006

Data File C:\CHEM32\1\DATA\120415\PERC000050.D
Sample Name: SEQ-CCV4

Acq. Operator	:	Seq. Line	: 50
Acq. Instrument	: Instrument 1	Location	: Vial 3
Injection Date	: 12/5/2015 5:40:05 AM	Inj	: 1
		Inj Volume	: 100.0 µl
Acq. Method	: C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M		
Last changed	: 12/4/2015 2:39:26 PM		
Analysis Method	: C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M		
Last changed	: 12/7/2015 9:30:42 AM (modified after loading)		

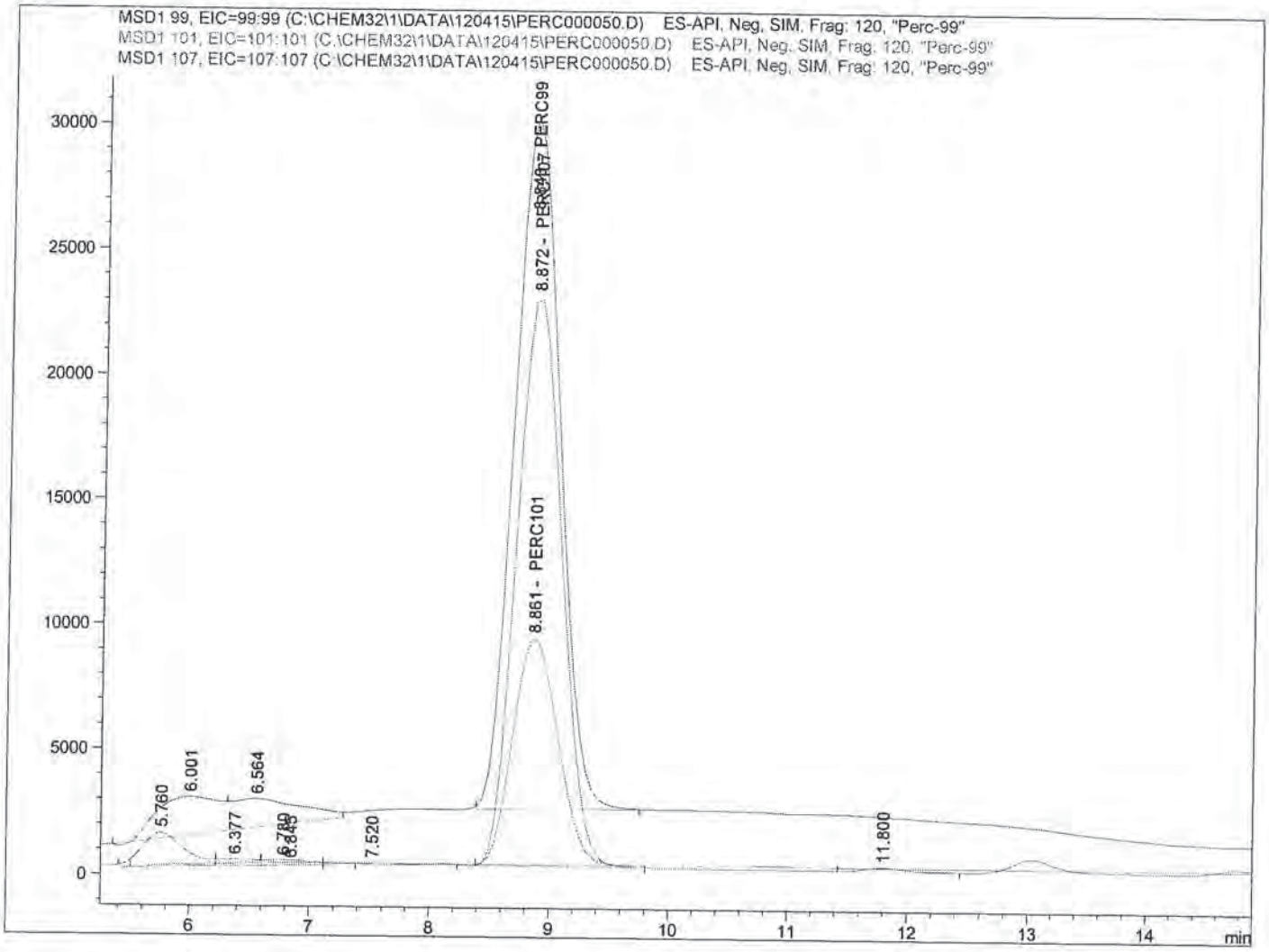

Internal Standard Report

SP
12/9/15

Sorted By	:	Signal
Calib. Data Modified	:	12/7/2015 9:29:59 AM
Multiplier	:	1.0000
Dilution	:	1.0000

Do not use Multiplier & Dilution Factor with ISTDs

12-7-15

Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

Data File C:\CHEM32\1\DATA\120415\PERC000050.D
Sample Name: SEQ-CCV4

==========

Acq. Operator : Seq. Line : 50
Acq. Instrument : Instrument 1 Location : Vial 3
Injection Date : 12/5/2015 5:40:05 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/7/2015 9:30:42 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.843	BB	1	7.25443e5	8.48638e-1	5.16361		PERC99

Totals without ISTD(s) : 5.16361

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.861	BBA	1	2.37303e5	2.60545	5.18577		PERC101

Totals without ISTD(s) : 5.18577

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.872	BBA I	1	5.96132e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000051.D
Sample Name: SEQ-LCV7

Acq. Operator	:	Seq. Line	: 51
Acq. Instrument	: Instrument 1	Location	: Vial 4
Injection Date	: 12/5/2015 5:57:52 AM	Inj	: 1
		Inj Volume	: 100.0 µl
Acq. Method	: C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M		
Last changed	: 12/4/2015 2:39:26 PM		
Analysis Method	: C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M		
Last changed	: 12/7/2015 9:30:42 AM (modified after loading)		

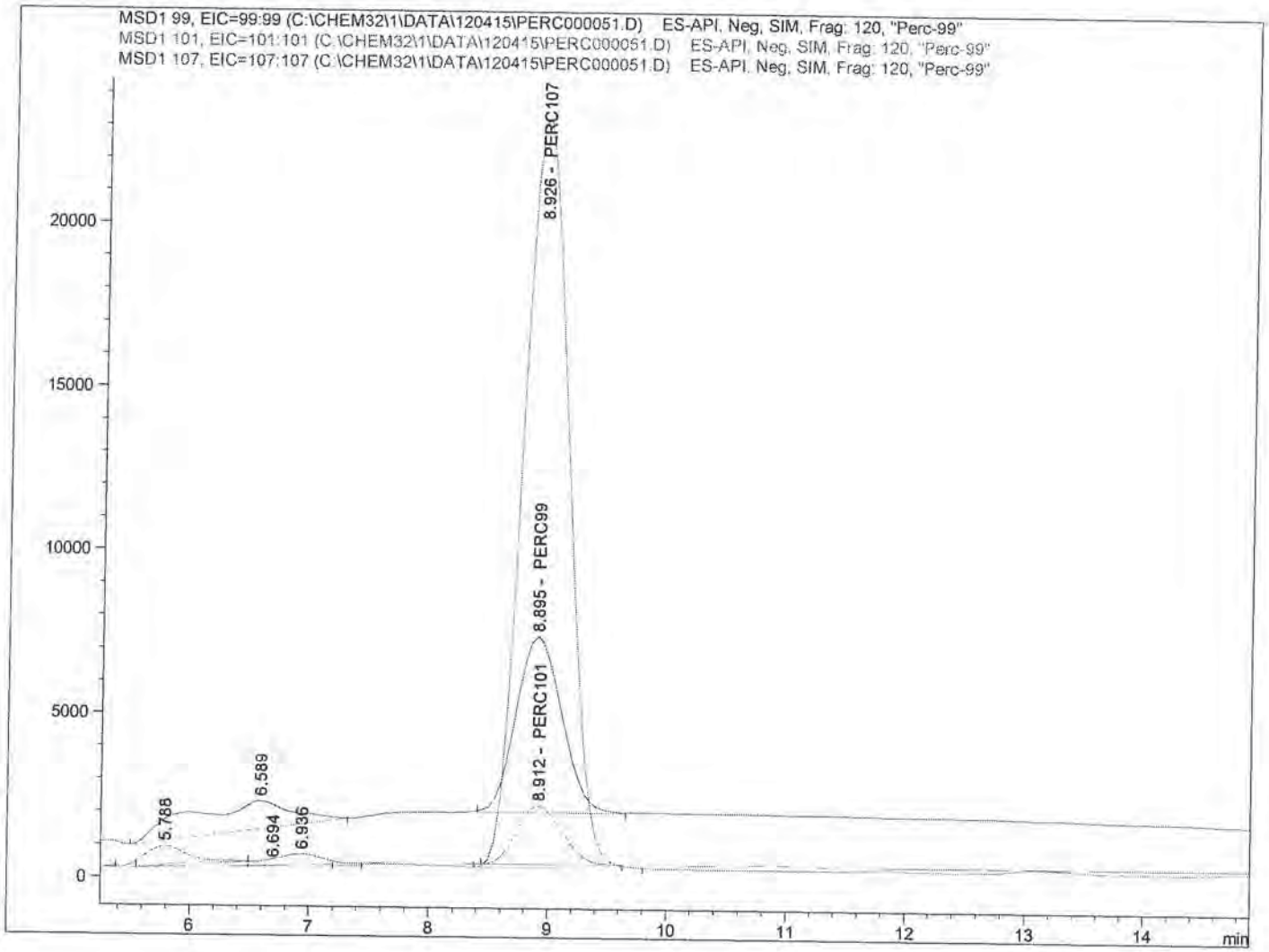

SP
12/9/15

Internal Standard Report

Sorted By : Signal
Calib. Data Modified : 12/7/2015 9:29:59 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

RDW 12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000051.D
Sample Name: SEQ-LCV7

==========

Acq. Operator : Seq. Line : 51
Acq. Instrument : Instrument 1 Location : Vial 4
Injection Date : 12/5/2015 5:57:52 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/7/2015 9:30:42 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.895	BB	1	1.43449e5	8.48638e-1	9.98380e-1		PERC99

Totals without ISTD(s) : 9.98380e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.912	BBA	1	4.67792e4	2.60545	9.99564e-1		PERC101

Totals without ISTD(s) : 9.99564e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.926	BBA I	1	6.09669e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

Data File C:\CHEM32\1\DATA\120415\PERC000052.D
Sample Name: SEQ-LCV8

==========

Acq. Operator : Seq. Line : 52
Acq. Instrument : Instrument 1 Location : Vial 83
Injection Date : 12/5/2015 6:15:43 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/7/2015 9:30:42 AM
(modified after loading)

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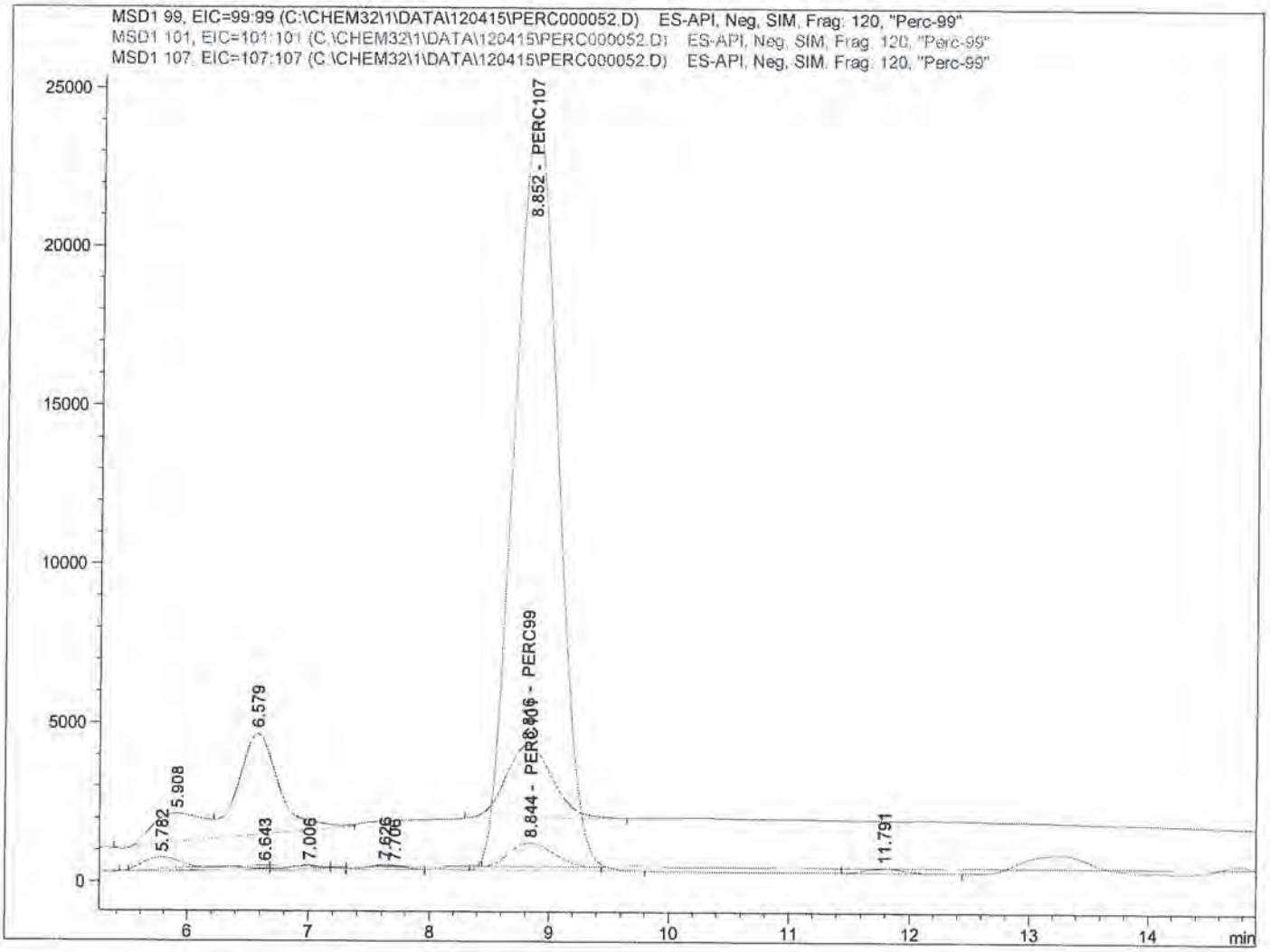

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Internal Standard Report

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SP
12/9/15

Sorted By : Signal
Calib. Data Modified : 12/7/2015 9:29:59 AM
Multiplier : 1.0000
Dilution : 1.0000
Do not use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:

ISTD #	ISTD Amount [ug/L]	Name

12-7-15

Data File C:\CHEM32\1\DATA\120415\PERC000052.D
Sample Name: SEQ-LCV8

==========

Acq. Operator : Seq. Line : 52
Acq. Instrument : Instrument 1 Location : Vial 83
Injection Date : 12/5/2015 6:15:43 AM Inj : 1
Inj Volume : 100.0 µl
Acq. Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS.M
Last changed : 12/4/2015 2:39:26 PM
Analysis Method : C:\CHEM32\1\METHODS\PERCHLORATE_LCMS_111115CAL.M
Last changed : 12/7/2015 9:30:42 AM
(modified after loading)

==========

1 5.00000 PERC107

Signal 1: MSD1 99, EIC=99:99

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.816	BB	1	6.27140e4	8.48638e-1	4.33343e-1		PERC99

Totals without ISTD(s) : 4.33343e-1

Signal 2: MSD1 101, EIC=101:101

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.844	BV	1	1.89055e4	2.60545	4.01066e-1		PERC101

Totals without ISTD(s) : 4.01066e-1

Signal 3: MSD1 107, EIC=107:107

RetTime [min]	Type	ISTD used	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
8.852	BBA I	1	6.14081e5	1.00000	5.00000		PERC107

Totals without ISTD(s) : 0.00000

==========

*** End of Report ***

00654292

PREPARATION BENCH SHEET

5L01021

Empirical Laboratories, LLC

Printed: 12/10/2015 3:56:29PM

Instrument:

Matrix: Water **Prepared using: GCLC - LCMS_PREP6850_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID		ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1511075-06	A	LCMS_PERC_6850_SPLP_Full	12/01/2015	10	10						NA	;QSM5;QSM5
1511075-08	A	LCMS_PERC_6850_SPLP_Full	12/01/2015	10	10						NA	;QSM5;QSM5
1511093-02	A	LCMS_PERC_6850_SPLP_Full	12/01/2015	10	10						NA	;QSM5;QSM5
1511093-03	A	LCMS_PERC_6850_SPLP_Full	12/01/2015	10	10						NA	;QSM5;QSM5
1511093-06	A	LCMS_PERC_6850_SPLP_Full	12/01/2015	10	10						NA	;QSM5;QSM5
1511093-09	A	LCMS_PERC_6850_SPLP_Full	12/01/2015	10	10						NA	;QSM5;QSM5
1511152-01	D	LCMS_PERC_6850_Q5	12/01/2015	10	10						NA	;QSM5;QSM5
1511154-01	D	LCMS_PERC_6850_Q5	12/01/2015	10	10						NA	;QSM5;QSM5
1511269-01	A	LCMS_PERC_6850_SPLP_Full	12/01/2015	10	10						NA	MS/MSD;BatchQC;Added for BatchQC in: 5L01021
1511269-01	A	LCMS_PERC_6850	12/01/2015	10	10						NA	MS/MSD;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-01	A	LCMS_PERC_6850_Q5	12/01/2015	10	10						NA	MS/MSD;BatchQC;Added for BatchQC in: 5L01021
1511269-02	A	LCMS_PERC_6850	12/01/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-03	A	LCMS_PERC_6850	12/01/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-06	A	LCMS_PERC_6850	12/01/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-07	A	LCMS_PERC_6850	12/01/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-08	A	LCMS_PERC_6850	12/01/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-09	A	LCMS_PERC_6850	12/01/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L

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PREPARATION BENCH SHEET

5L01021

Empirical Laboratories, LLC

Printed: 12/10/2015 3:56:29PM

Instrument:

Matrix: Water **Prepared using: GCLC - LCMS_PREP6850_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1512004-01	A	LCMS_PERC_6850	12/01/2015	10	10					NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1512004-01RE1	A	LCMS_PERC_6850	12/01/2015	10	10					NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L; RR 100x RDW 12/03/15
5L01021-BLK1		QC	12/01/2015	10	10					NA	
5L01021-BS1		QC	12/01/2015	10	10	15F0073		200		NA	
5L01021-MS1		QC	12/01/2015	10	10	15F0073	1511269-01	200		NA	
5L01021-MSD1		QC	12/01/2015	10	10	15F0073	1511269-01	200		NA	

Reagents Used:

Standard	Description

272

1511269

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PREPARATION BENCH SHEET

5L03014

Empirical Laboratories, LLC

Printed: 12/10/2015 3:57:14PM

Instrument:

Matrix: Water **Prepared using: GCLC - LCMS_PREP6850_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID		ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1511169-01	G	LCMS_PERC_6850	12/03/2015	10	10						NA	;;
1511169-03	H	LCMS_PERC_6850	12/03/2015	10	10						NA	;;
1511269-04	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-05	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-10	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-11	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-12	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-13	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-14	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-15	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-16	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-17	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-18	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-19	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-20	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-21	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-22	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L

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PREPARATION BENCH SHEET

5L03014

Empirical Laboratories, LLC

Printed: 12/10/2015 3:57:14PM

Instrument:

Matrix: Water **Prepared using: GCLC - LCMS_PREP6850_W** **(No Surrogate)**

Lab Number	Cont ID	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID		ul Spike	ul Surrogate	PH	Comments (Sample; Analysis; Extraction)
1511269-23	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511269-24	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;low DL/LOD/LOQ 0.1/0.2/0.4ug/L;low DL/LOD/LOQ 0.1/0.2/0.4ug/L
1511275-01	A	LCMS_PERC_6850	12/03/2015	10	10						NA	;lowest DL possible;lowest DL possible
5L03014-BLK1		QC	12/03/2015	10	10						NA	
5L03014-BS1		QC	12/03/2015	10	10	15L0084			200		NA	
5L03014-BSD1		QC	12/03/2015	10	10	15L0084			200		NA	

Reagents Used:

Standard	Description

APPENDIX E: Proposed Changes to MNA Groundwater Monitoring Program – LHAAP-50

Appendix E: Proposed Changes to MNA Groundwater Monitoring Program – LHAAP-50

Well ID	Groundwater Zone	LOC	P Conc* (μg/L)	TCE Conc* (μg/L)	DP	Recommendation for 2nd MNA Monitoring Event	Initial Monitoring Parameters
50WW02	Upper Shallow	UGP	Dry	Dry	Dry	CONTINUE MNA and CONTAMINANT monitoring until we can sample/assess, well currently dry	VOCs, P, MNA
50WW03	Upper Shallow	UG	Dry	Dry	Dry	**Remove from Contaminant Monitoring** – Replaced by 50WW22	VOCs, P
50WW04	Upper Shallow	UG/SG	Dry	Dry	Dry	**Remove from Contaminant Monitoring** – Replaced by 50WW21	VOCs, P
50WW05	Upper Shallow	CP	< 0.20	329	Yes	No Change	VOCs, P
50WW06	Lower Shallow	DGP	1,510	36.1	Yes	CONTINUE MNA monitoring – as well with low perc/low VOC, some DPs, E end of plume	VOCs, P, MNA
50WW07	Upper Shallow	SG	< 0.20	< 0.50	No	**STOP CONTAMINANT MONITORING** - 50WW 24 retained as ND well delineating plume in this direction.	VOCs, P
50WW08	Upper Shallow	UGP	56.3	685	Yes	CONTINUE MNA monitoring – as well with moderate concentrations of both perc and TCE (247), some DPs present, W end of plume	VOCs, P, MNA
50WW09	Lower Shallow	UGP	0.593	19.8	Yes	No Change	VOCs, P
50WW10	Intermediate	UGP	< 0.20	< 0.50	No	INTERMEDIATE ZONE WELL - NO CHANGES	VOCs, P
50WW11	Upper Shallow	CP	22,300	3,550	Yes	CONTINUE MNA monitoring – Most highly impacted well overall. High perc, high VOCs, central plume location	VOCs, P, MNA
50WW12	Upper Shallow	CP	14,300	< 0.50	No	CONTINUE MNA monitoring - as well with high perc/no VOCs, within DG portion of plume	VOCs, P, MNA
50WW13	Upper Shallow	CP	11,700	9,150	Yes	CONTINUE MNA – already monitoring nearby well 50WW 11 with similar TCE, but much higher Perc; watch this well for differences from 50WW 11 that has high levels of both TCE and Perc	VOCs, P, MNA
50WW14	Lower Shallow	CP	5.37	26.7	Yes	CONTINUE MNA – as a lower shallow analog to upper shallow 50WW 06 with mixed contaminants.	VOCs, P, MNA
50WW15	Upper Shallow	SGP	< 0.20	35.4	Yes	No Change	VOCs, P
50WW16	Upper Shallow	DGP	< 0.20	1.05	No	BEGIN MNA - as a well with low TCE/no perchlorate	VOCs, P
50WW17	Shallow	DG	< 0.20	< 0.50	No	No Change	VOCs, P
50WW18	Upper Shallow	DG	< 0.20	< 0.50	No	**STOP MNA Monitoring** – Clean location, Very far down-gradient	VOCs, P, MNA
50WW19	Shallow	DG	< 0.20	< 0.50	No	**STOP CONTAMINANT MONITORING** – clean location, very far down-gradient; 50WW 18 is retained in this area due to position more directly DG of plume.	VOCs, P

Appendix E: Proposed Changes to MNA Groundwater Monitoring Program – LHAAP-50

Well ID	Groundwater Zone	LOC	P Conc* (μg/L)	TCE Conc* (μg/L)	DP	Recommendation for 2nd MNA Monitoring Event	Initial Monitoring Parameters
50WW20	Shallow	SG	< 0.20	< 0.50	No	**STOP CONTAMINANT MONITORING** - 50WW 21 and 50WW 23 are retained as ND wells delineating plume in this direction.	VOCs, P
50WW21	Upper Shallow	SG	0.779	< 0.50	No	No Change	VOCs, P
50WW22	Upper Shallow	UG	1.06	0.339 J	No	CONTINUE MNA – as an upgradient, "unimpacted" reference well	VOCs, P, MNA
50WW23	Upper Shallow	SG	< 0.20	< 0.50	No	CONTINUE MNA – as unimpacted sidegradient well, Outside plume to SE	VOCs, P, MNA
50WW24	Upper Shallow	SG	< 0.20	< 0.50	No	**STOP MNA Monitoring** - Outside plume to SE, 50WW 23 retained in this area	VOCs, P, MNA
50WW25	Lower Shallow	SG	17.8**	< 0.50	No	**STOP MNA Monitoring** - Location is outside plume to NW, substitute with 50WW 16 (low TCE/no perchlorate)	VOCs, P, MNA
50WW26	Lower Shallow	SG	< 0.20	< 0.50	No	**STOP CONTAMINANT MONITORING** - 50WW 21 is retained as the ND well delineating plume in this direction.	VOCs, P
50WW27	Lower Shallow	SGP	< 0.20	< 0.50	Yes	No Change	VOCs, P
50WW28	Upper Shallow	SG	2.01 J	< 0.50	No	**STOP CONTAMINANT MONITORING** Results consistently below detection or MCL	VOCs, P
47WW38	Upper Shallow	SG	860	< 0.50	No	**STOP CONTAMINANT MONITORING** - Does not provide delineation of LHAAP- 50 plumes.	VOCs, P
LHSMW54^	Upper Shallow	DG/SG	< 0.20	112	Yes	**STOP CONTAMINANT MONITORING** - Does not provide delineation of LHAAP- 50 plumes.	VOCs, P

DP - TCE biodegradation daughter products
J - estimated concentration
LOC - location of well relative to source/plume (UG-upgradient, DG-downgradient, SG-sidegradient, CP indicates wells at center of the plume, P indicates the well is within the plume)
MNA - Monitored Natural Attenuation parameters
ND - not detected
P - Perchlorate
VOC - volatile organic compounds
* As of November 2014 sampling event in micrograms per liter (μg/L)
** Perchlorate in 50WW25 is related to a different source from site 47.
^ Samples Collected February 2015, May 2015 and November 2015.

APPENDIX F: Surface Water Sample Collection Forms

Table J1 - LHAAP-50 Rainfall Duration Prior to Sampling GPW-1/GPW-1A

Precipitation Rate (in/hr)	Dry Ground Waiting Time[1] (min)	Wet Ground Waiting Time[2] (min)
0.25	72.0	48.0
0.5	36.0	24.0
0.75	24.0	16.0
1	18.0	12.0
1.2	15.0	10.0
1.5	12.0	8.0
1.7	10.6	7.1
2	9.0	6.0
2.5	7.2	4.8
3	6.0	4.0
4	4.5	3.0
6	3.0	2.0
8	2.3	1.5

[1]Utilize when ground surface is dry to the touch; **not** wetted by prior rainfall.

[2]Utilize when ground surface is wet to the touch; wetted by prior rainfall.

[1,2]Waiting Time begins when precipitation begins falling at designated rate.

Table J2 - LHAAP-50 Runoff Curves

	AMCII	AMCIII
CN	71	85.2
S	4.08	1.74 in
I_a	0.20	0.09 in

Expected Rainfall (in)	Runoff with Previously Dry Soil (in)	Runoff with Previously Wet Soil (in)
0.1	0.0000	0.0001
0.2	0.0000	0.0069
0.3	0.0022	0.0233
0.4	0.0090	0.0478
0.5	0.0200	0.0794
0.6	0.0350	0.1170
0.7	0.0537	0.1600
0.8	0.0758	0.2076
0.9	0.1013	0.2593
1	0.1298	0.3146
1.1	0.1611	0.3732
1.2	0.1952	0.4347
1.3	0.2318	0.4988
1.4	0.2708	0.5653
1.5	0.3121	0.6339
1.6	0.3555	0.7044
1.7	0.4009	0.7767
1.8	0.4483	0.8506
1.9	0.4975	0.9260
2	0.5484	1.0027

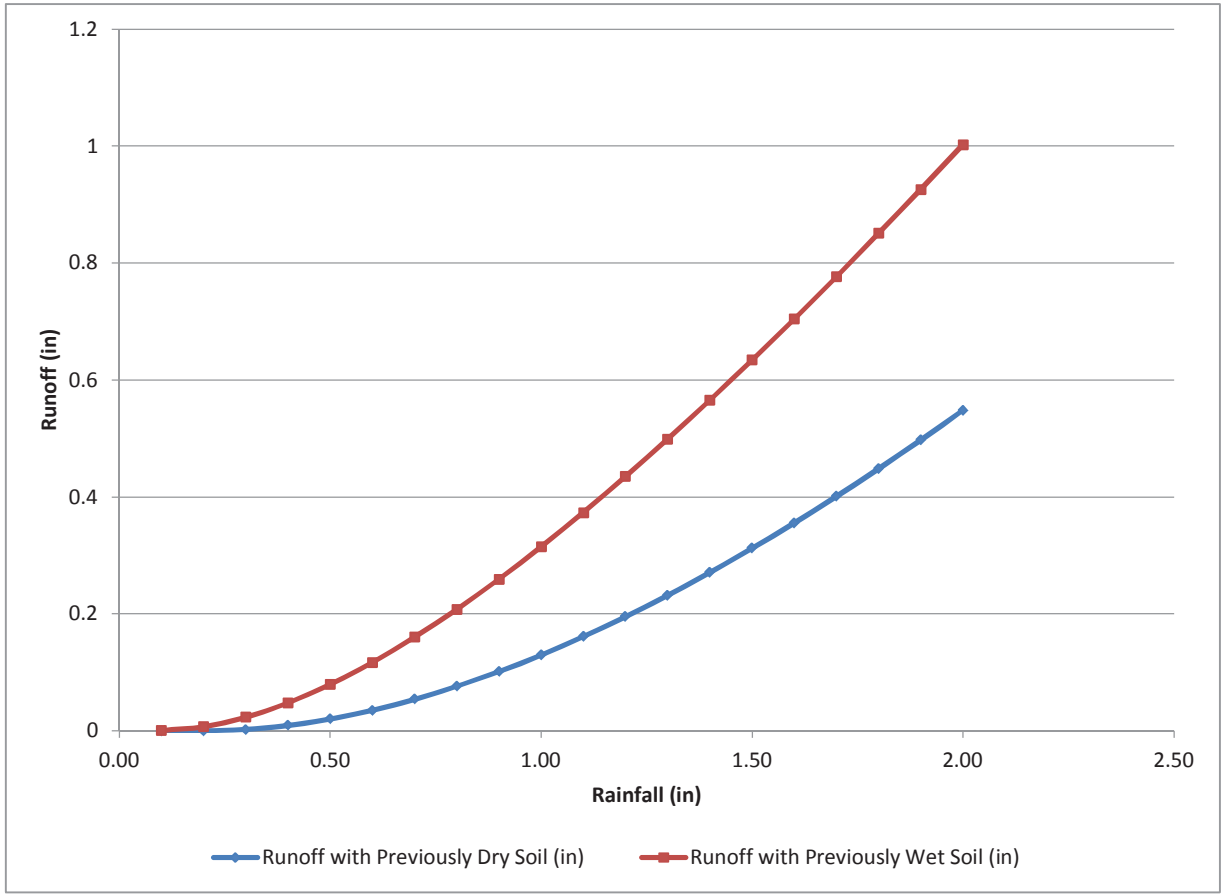

Assumes Soil Type C and ungrazed Bahia Grass pasture

Dry Soil Runoff (in) = (Expected Rainfall (in) - AMCII I_a) ^2 / Expected Rainfall (in) - AMCII I_a + AMCII S

Wet Soil Runoff (in) = (Expected Rainfall (in) - AMCIII I_a)^2 / Expected Rainfall (in) - AMCIII I_a + AMCIII S

AMCII I_a - initial abstraction (amount of soil moisture prior to rainfall event); antecedant moisture condition - average soil moisture

AMCII S - potential maximum soil moisture (retention before runoff begins); antecedent moisture condition - average soil moisture

AMCIII I_a - initial abstraction (amount of soil moisture prior to rainfall event); antecedent moisture condition- moist soil

AMCIII S - potential maximum soil moisture (retention before runoff begins); antecedent moisture condition - moist soil

CN - Natural Resources Conservation Service Runoff Curve Number

AMC - Antecedent Moisture Condition

AECOM

SURFACE WATER SAMPLE COLLECTION FORM - MNA SITES
(FOR USE WITH LHAAP-50 GPW-1 and GPW-1A ONLY)

LOCATION			
Site: LHAAP-50	LocID: GPW-1	Date: 2/17/2015	Time:
Project: Longhorn Army Ammunition Plant	Project No. : 60256135.0002GA	Recorded By: SJB	Checked By: MFS

Rainfall Event (at Stated Precipitation Rate) Start Time at LHAAP (24-hour): Rained on 2/16/2016 a total of 1.29 inches. No rain on day of sampling.

Precipitation Rate (inches/hour): < 0.25 inches per hour

Surface Conditions (circle one): WETTED (WET TO THE TOUCH) DRY (DRY TO THE TOUCH)

Required Minimum Wait Time To Sample - RACR Table J1 (HH:MM:SS): 72 minutes Earliest Sampling Time (24-hour):

CREEK CONDITION INFO		
FLOWING / PONDED WATER / DRY CREEK CONDITION (circle one above)	Sampling Point Photograph No.: None taken	
	Upstream Photograph No.: None taken	

IF SURFACE WATER IS NOT FLOWING, CONTINUE TO OBSERVE SAMPLE POINT UNTIL RUNOFF IS FLOWING, THEN SAMPLE

Groundwater Contribution Assessment		Loc ID:	TOC (MSL)	DTW (FTOC)	Sample Point Elevation (MSL)	Groundwater Elevation (MSL) (TOC - DTW = GW Elevation)	Is Sample Point Elevation < = Groundwater Elevation (CIRCLE ONE)
	Surface Water Location	GPW-1			185.25		YES
	Monitoring Well Location	50WW15	196.30	18.75		177.55	NO

SAMPLE ID: GPW1-021715 TIME: 1635

DUPLICATE (D): YES/NO
MATRIX SPIKE (MS): YES/NO
MATRIX DUPLICATE (MD): YES/NO

No. Containers/Volume/Type	Preserv.	Filter (Y/N)		Parameter(s)
125-ml polyethylene	4°C	Y	0.2µm filtration	6850 - Perchlorate

AECOM

SURFACE WATER SAMPLE COLLECTION FORM - MNA SITES
(FOR USE WITH LHAAP-50 GPW-1 and GPW-1A ONLY)

LOCATION			
Site: LHAAP-50	LocID: GPW-1A	Date: 2/17/2015	Time:
Project: Longhorn Army Ammunition Plant	Project No. : 60256135.0002GA	Recorded By: SJB	Checked By: MFS

Rainfall Event (at Stated Precipitation Rate) Start Time at LHAAP (24-hour): Rained on 2/16/2016 a total of 1.29 inches. No rain on day of sampling.

Precipitation Rate (inches/hour): < 0.25 inches per hour

Surface Conditions (circle one): WETTED (WET TO THE TOUCH) DRY (DRY TO THE TOUCH)

Required Minimum Wait Time To Sample - RACR Table J1 (HH:MM:SS): 72 minutes Earliest Sampling Time (24-hour):

CREEK CONDITION INFO		
FLOWING / PONDED WATER / DRY	Sampling Point Photograph No.:	
CREEK CONDITION (circle one above)	Upstream Photograph No.:	

IF SURFACE WATER IS NOT FLOWING, CONTINUE TO OBSERVE SAMPLE POINT UNTIL RUNOFF IS FLOWING, THEN SAMPLE

Groundwater Contribution Assessment		Loc ID:	TOC (MSL)	DTW (FTOC)	Sample Point Elevation (MSL)	Groundwater Elevation (MSL) (TOC - DTW = GW Elevation)	Is Sample Point Elevation < = Groundwater Elevation (CIRCLE ONE)
	Surface Water Location	GPW-1A			183.70		YES
	Monitoring Well Location	50WW01	198.50	20.35		178.15	NO

SAMPLE ID: GPW1A-021715 TIME: 1625

DUPLICATE (D): YES/NO
MATRIX SPIKE (MS): YES/NO
MATRIX DUPLICATE (MD): YES/NO

No. Containers/Volume/Type	Preserv.	Filter (Y/N)		Parameter(s)
125-ml polyethylene	4°C	Y	0.2µm filtration	6850 - Perchlorate

AECOM

SURFACE WATER SAMPLE COLLECTION FORM - MNA SITES
(FOR USE WITH LHAAP-50 GPW-1 and GPW-1A ONLY)

LOCATION			
Site: LHAAP-50	LocID: GPW-1	Date: 2/23/2015	Time:
Project: Longhorn Army Ammunition Plant	Project No. : 60256135.0002GA	Recorded By: SJB	Checked By: MFS

Rainfall Event (at Stated Precipitation Rate) Start Time at LHAAP (24-hour): Rained on 2/19/2016 a total of 1.24 inches.

Precipitation Rate (inches/hour): < 0.25 inches per hour

Surface Conditions (circle one): WETTED (WET TO THE TOUCH) DRY (DRY TO THE TOUCH)

Required Minimum Wait Time To Sample - RACR Table J1 (HH:MM:SS): 72 minutes Earliest Sampling Time (24-hour):

CREEK CONDITION INFO		
FLOWING / PONDED WATER / DRY CREEK CONDITION (circle one above)	Sampling Point Photograph No.: None taken	
	Upstream Photograph No.: None taken	

IF SURFACE WATER IS NOT FLOWING, CONTINUE TO OBSERVE SAMPLE POINT UNTIL RUNOFF IS FLOWING, THEN SAMPLE

Groundwater Contribution Assessment		Loc ID:	TOC (MSL)	DTW (FTOC)	Sample Point Elevation (MSL)	Groundwater Elevation (MSL) (TOC - DTW = GW Elevation)	Is Sample Point Elevation < = Groundwater Elevation (CIRCLE ONE)
	Surface Water Location	GPW-1			185.25		YES
	Monitoring Well Location	50WW15	196.30	NA		NA	NO

SAMPLE ID: GPW1-022315 TIME: 0950

DUPLICATE (D): YES/NO
MATRIX SPIKE (MS): YES/NO
MATRIX DUPLICATE (MD): YES/NO

No. Containers/Volume/Type	Preserv.	Filter (Y/N)		Parameter(s)
125-ml polyethylene	4°C	Y	0.2µm filtration	6850 - Perchlorate

AECOM

SURFACE WATER SAMPLE COLLECTION FORM - MNA SITES
(FOR USE WITH LHAAP-50 GPW-1 and GPW-1A ONLY)

LOCATION			
Site: LHAAP-50	LocID: GPW-1A	Date: 2/23/2015	Time:
Project: Longhorn Army Ammunition Plant	Project No. : 60256135.0002GA	Recorded By: SJB	Checked By: MFS

Rainfall Event (at Stated Precipitation Rate) Start Time at LHAAP (24-hour): Rained on 2/23/2016 a total of 1.24 inches.

Precipitation Rate (inches/hour): < 0.25 inches per hour

Surface Conditions (circle one): WETTED (WET TO THE TOUCH) DRY (DRY TO THE TOUCH)

Required Minimum Wait Time To Sample - RACR Table J1 (HH:MM:SS): 72 minutes Earliest Sampling Time (24-hour):

CREEK CONDITION INFO		
FLOWING / PONDED WATER / DRY CREEK CONDITION (circle one above)	Sampling Point Photograph No.:	
	Upstream Photograph No.:	

IF SURFACE WATER IS NOT FLOWING, CONTINUE TO OBSERVE SAMPLE POINT UNTIL RUNOFF IS FLOWING, THEN SAMPLE

Groundwater Contribution Assessment		Loc ID:	TOC (MSL)	DTW (FTOC)	Sample Point Elevation (MSL)	Groundwater Elevation (MSL) (TOC - DTW = GW Elevation)	Is Sample Point Elevation < = Groundwater Elevation (CIRCLE ONE)
	Surface Water Location	GPW-1A			183.70		YES
	Monitoring Well Location	50WW01	198.50	NA		NA	NO

SAMPLE ID: NA TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)		Parameter(s)
	125-ml polyethylene	4°C	Y	0.2µm filtration	6850 - Perchlorate
DUPLICATE (D): YES/NO					
MATRIX SPIKE (MS): YES/NO					
MATRIX DUPLICATE (MD): YES/NO					

AECOM

SURFACE WATER SAMPLE COLLECTION FORM - MNA SITES
(FOR USE WITH LHAAP-50 GPW-1 and GPW-1A ONLY)

LOCATION			
Site: LHAAP-50	LocID: GPW-1	Date: 5/08/2015	Time:
Project: Longhorn Army Ammunition Plant	Project No. : 60256135.0002GA	Recorded By: SJB	Checked By: MFS

Rainfall Event (at Stated Precipitation Rate) Start Time at LHAAP (24-hour): Rained on 5/08/2016 a total of 3.00 inches.

Precipitation Rate (inches/hour): > 0.25 inches per hour

Surface Conditions (circle one): WETTED (WET TO THE TOUCH) DRY (DRY TO THE TOUCH)

Required Minimum Wait Time To Sample - RACR Table J1 (HH:MM:SS): < 36 minutes Earliest Sampling Time (24-hour):

CREEK CONDITION INFO		
FLOWING / PONDED WATER / DRY CREEK CONDITION (circle one above)	Sampling Point Photograph No.: None taken	
	Upstream Photograph No.: None taken	

IF SURFACE WATER IS NOT FLOWING, CONTINUE TO OBSERVE SAMPLE POINT UNTIL RUNOFF IS FLOWING, THEN SAMPLE

Groundwater Contribution Assessment		Loc ID:	TOC (MSL)	DTW (FTOC)	Sample Point Elevation (MSL)	Groundwater Elevation (MSL) (TOC - DTW = GW Elevation)	Is Sample Point Elevation < = Groundwater Elevation (CIRCLE ONE)
	Surface Water Location	GPW-1			185.25		YES
	Monitoring Well Location	50WW15	196.30	NA		NA	NO

SAMPLE ID: GPW1-050815 TIME: 0940

DUPLICATE (D): YES/NO
MATRIX SPIKE (MS): YES/NO
MATRIX DUPLICATE (MD): YES/NO

No. Containers/Volume/Type	Preserv.	Filter (Y/N)		Parameter(s)
125-ml polyethylene	4°C	Y	0.2µm filtration	6850 - Perchlorate

AECOM

SURFACE WATER SAMPLE COLLECTION FORM - MNA SITES
(FOR USE WITH LHAAP-50 GPW-1 and GPW-1A ONLY)

LOCATION			
Site: LHAAP-50	LocID: GPW-1A	Date: 5/08/2015	Time:
Project: Longhorn Army Ammunition Plant	Project No. : 60256135.0002GA	Recorded By: SJB	Checked By: MFS

Rainfall Event (at Stated Precipitation Rate) Start Time at LHAAP (24-hour): Rained on 5/08/2016 a total of 3.00 inches.

Precipitation Rate (inches/hour): > 0.25 inches per hour

Surface Conditions (circle one): WETTED (WET TO THE TOUCH) DRY (DRY TO THE TOUCH)

Required Minimum Wait Time To Sample - RACR Table J1 (HH:MM:SS): < 36 minutes Earliest Sampling Time (24-hour):

CREEK CONDITION INFO		
FLOWING / PONDED WATER / DRY	Sampling Point Photograph No.:	
CREEK CONDITION (circle one above)	Upstream Photograph No.:	

IF SURFACE WATER IS NOT FLOWING, CONTINUE TO OBSERVE SAMPLE POINT UNTIL RUNOFF IS FLOWING, THEN SAMPLE

Groundwater Contribution Assessment		Loc ID:	TOC (MSL)	DTW (FTOC)	Sample Point Elevation (MSL)	Groundwater Elevation (MSL) (TOC - DTW = GW Elevation)	Is Sample Point Elevation < = Groundwater Elevation (CIRCLE ONE)
	Surface Water Location	GPW-1A			183.70		YES
	Monitoring Well Location	50WW01	198.50	NA		NA	NO

SAMPLE ID: GPW1A-050815 TIME: 0930

DUPLICATE (D): YES/NO
MATRIX SPIKE (MS): YES/NO
MATRIX DUPLICATE (MD): YES/NO

No. Containers/Volume/Type	Preserv.	Filter (Y/N)		Parameter(s)
125-ml polyethylene	4°C	Y	0.2µm filtration	6850 - Perchlorate

AECOM

SURFACE WATER SAMPLE COLLECTION FORM - MNA SITES
(FOR USE WITH LHAAP-50 GPW-1 and GPW-1A ONLY)

LOCATION			
Site: LHAAP-50	LocID: GPW-1	Date: 5/22/2015	Time:
Project: Longhorn Army Ammunition Plant	Project No. : 60256135.0002GA	Recorded By: SJB	Checked By: MFS

Rainfall Event (at Stated Precipitation Rate) Start Time at LHAAP (24-hour): Rained on 5/21/2016 a total of 1.63 inches.

Precipitation Rate (inches/hour): < 0.25 inches per hour

Surface Conditions (circle one): WETTED (WET TO THE TOUCH) DRY (DRY TO THE TOUCH)

Required Minimum Wait Time To Sample - RACR Table J1 (HH:MM:SS): > 72 minutes Earliest Sampling Time (24-hour):

CREEK CONDITION INFO		
FLOWING / PONDED WATER / DRY CREEK CONDITION (circle one above)	Sampling Point Photograph No.: None taken	
	Upstream Photograph No.: None taken	

IF SURFACE WATER IS NOT FLOWING, CONTINUE TO OBSERVE SAMPLE POINT UNTIL RUNOFF IS FLOWING, THEN SAMPLE

Groundwater Contribution Assessment		Loc ID:	TOC (MSL)	DTW (FTOC)	Sample Point Elevation (MSL)	Groundwater Elevation (MSL) (TOC - DTW = GW Elevation)	Is Sample Point Elevation < = Groundwater Elevation (CIRCLE ONE)
	Surface Water Location	GPW-1			185.25		YES
	Monitoring Well Location	50WW15	196.30	17.05		179.25	NO

SAMPLE ID: GPW1-052215 TIME: 1305

DUPLICATE (D): YES/NO
MATRIX SPIKE (MS): YES/NO
MATRIX DUPLICATE (MD): YES/NO

No. Containers/Volume/Type	Preserv.	Filter (Y/N)		Parameter(s)
125-ml polyethylene	4°C	Y	0.2µm filtration	6850 - Perchlorate

AECOM

SURFACE WATER SAMPLE COLLECTION FORM - MNA SITES
(FOR USE WITH LHAAP-50 GPW-1 and GPW-1A ONLY)

LOCATION			
Site: LHAAP-50	LocID: GPW-1A	Date: 5/22/2015	Time:
Project: Longhorn Army Ammunition Plant	Project No. : 60256135.0002GA	Recorded By: SJB	Checked By: MFS

Rainfall Event (at Stated Precipitation Rate) Start Time at LHAAP (24-hour): Rained on 5/21/2016 a total of 1.63 inches.

Precipitation Rate (inches/hour): < 0.25 inches per hour

Surface Conditions (circle one): WETTED (WET TO THE TOUCH) DRY (DRY TO THE TOUCH)

Required Minimum Wait Time To Sample - RACR Table J1 (HH:MM:SS): > 72 minutes Earliest Sampling Time (24-hour):

CREEK CONDITION INFO	
FLOWING / PONDED WATER / DRY CREEK CONDITION (circle one above)	Sampling Point Photograph No.: None taken Upstream Photograph No.: None taken

IF SURFACE WATER IS NOT FLOWING, CONTINUE TO OBSERVE SAMPLE POINT UNTIL RUNOFF IS FLOWING, THEN SAMPLE

Groundwater Contribution Assessment		Loc ID:	TOC (MSL)	DTW (FTOC)	Sample Point Elevation (MSL)	Groundwater Elevation (MSL) (TOC - DTW = GW Elevation)	Is Sample Point Elevation < = Groundwater Elevation (CIRCLE ONE)
	Surface Water Location	GPW-1A			183.70		YES
	Monitoring Well Location	50WW01	198.50	18.56		179.94	NO

SAMPLE ID: TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)		Parameter(s)
	125-ml polyethylene	4°C	Y	0.2µm filtration	6850 - Perchlorate
DUPLICATE (D): YES/NO					
MATRIX SPIKE (MS): YES/NO					
MATRIX DUPLICATE (MD): YES/NO					

AECOM

SURFACE WATER SAMPLE COLLECTION FORM - MNA SITES
(FOR USE WITH LHAAP-50 GPW-1 and GPW-1A ONLY)

LOCATION			
	Site: LHAAP-50	LocID: GPW-1	Date: 10/26/2015 Time:
	Project: Longhorn Army Ammunition Plant	Project No. : 60256135.0002GA	Recorded By: SJB Checked By: MFS

Rainfall Event (at Stated Precipitation Rate) Start Time at LHAAP (24-hour): Rained on sampling day 0.35 in. Rained on 10/24-25/2015 a total of 4.98 inches.

Precipitation Rate (inches/hour): < 0.25 inches per hour on day of sampling. > 0.25 inches per hour on previous two days.

Surface Conditions (circle one): WETTED (WET TO THE TOUCH) DRY (DRY TO THE TOUCH)

Required Minimum Wait Time To Sample - RACR Table J1 (HH:MM:SS): > 72 minutes on day of sampling Earliest Sampling Time (24-hour):

CREEK CONDITION INFO		
	FLOWING / PONDED WATER / DRY CREEK CONDITION (circle one above)	Sampling Point Photograph No.: None taken Upstream Photograph No.: None taken

IF SURFACE WATER IS NOT FLOWING, CONTINUE TO OBSERVE SAMPLE POINT UNTIL RUNOFF IS FLOWING, THEN SAMPLE

Groundwater Contribution Assessment		Loc ID:	TOC (MSL)	DTW (FTOC)	Sample Point Elevation (MSL)	Groundwater Elevation (MSL) (TOC - DTW = GW Elevation)	Is Sample Point Elevation < = Groundwater Elevation (CIRCLE ONE)
	Surface Water Location	GPW-1			185.25		YES
	Monitoring Well Location	50WW15	196.30	NA		NA	NO

SAMPLE ID: GPW1-102615 TIME: 1130

DUPLICATE (D): YES/NO
MATRIX SPIKE (MS): YES/NO
MATRIX DUPLICATE (MD): YES/NO

No. Containers/Volume/Type	Preserv.	Filter (Y/N)		Parameter(s)
125-ml polyethylene	4°C	Y	0.2µm filtration	6850 - Perchlorate

AECOM

SURFACE WATER SAMPLE COLLECTION FORM - MNA SITES
(FOR USE WITH LHAAP-50 GPW-1 and GPW-1A ONLY)

LOCATION			
Site: LHAAP-50	LocID: GPW-1A	Date: 10/26/2015	Time:
Project: Longhorn Army Ammunition Plant	Project No. : 60256135.0002GA	Recorded By: SJB	Checked By: MFS

Rainfall Event (at Stated Precipitation Rate) Start Time at LHAAP (24-hour): Rained on sampling day 0.35 in. Rained on 10/24-25/2015 a total of 4.98 inches.

Precipitation Rate (inches/hour): < 0.25 inches per hour on day of sampling. > 0.25 inches per hour on previous two days.

Surface Conditions (circle one): WETTED (WET TO THE TOUCH) DRY (DRY TO THE TOUCH)

Required Minimum Wait Time To Sample - RACR Table J1 (HH:MM:SS): > 72 minutes on day of sampling Earliest Sampling Time (24-hour):

CREEK CONDITION INFO		
FLOWING / PONDED WATER / DRY	Sampling Point Photograph No.: None taken	
CREEK CONDITION (circle one above)	Upstream Photograph No.: None taken	

IF SURFACE WATER IS NOT FLOWING, CONTINUE TO OBSERVE SAMPLE POINT UNTIL RUNOFF IS FLOWING, THEN SAMPLE

Groundwater Contribution Assessment		Loc ID:	TOC (MSL)	DTW (FTOC)	Sample Point Elevation (MSL)	Groundwater Elevation (MSL) (TOC - DTW = GW Elevation)	Is Sample Point Elevation < = Groundwater Elevation (CIRCLE ONE)
	Surface Water Location	GPW-1A			183.70		YES
	Monitoring Well Location	50WW01	198.50	NA		NA	NO

SAMPLE ID: TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)		Parameter(s)
	125-ml polyethylene	4°C	Y	0.2µm filtration	6850 - Perchlorate
DUPLICATE (D): YES/NO					
MATRIX SPIKE (MS): YES/NO					
MATRIX DUPLICATE (MD): YES/NO					

AECOM

SURFACE WATER SAMPLE COLLECTION FORM - MNA SITES
(FOR USE WITH LHAAP-50 GPW-1 and GPW-1A ONLY)

LOCATION			
Site: LHAAP-50	LocID: GPW-1	Date: 11/13/2015	Time:
Project: Longhorn Army Ammunition Plant	Project No. : 60256135.0002GA	Recorded By: SJB	Checked By: MFS

Rainfall Event (at Stated Precipitation Rate) Start Time at LHAAP (24-hour): No rain since 11/7-8/15 of 2.23 inches.

Precipitation Rate (inches/hour): No rain

Surface Conditions (circle one): WETTED (WET TO THE TOUCH) DRY (DRY TO THE TOUCH)

Required Minimum Wait Time To Sample - RACR Table J1 (HH:MM:SS): NA Earliest Sampling Time (24-hour):

CREEK CONDITION INFO		
FLOWING / PONDED WATER / DRY	Sampling Point Photograph No.: None taken	
CREEK CONDITION (circle one above)	Upstream Photograph No.: None taken	

IF SURFACE WATER IS NOT FLOWING, CONTINUE TO OBSERVE SAMPLE POINT UNTIL RUNOFF IS FLOWING, THEN SAMPLE

Groundwater Contribution Assessment		Loc ID:	TOC (MSL)	DTW (FTOC)	Sample Point Elevation (MSL)	Groundwater Elevation (MSL) (TOC - DTW = GW Elevation)	Is Sample Point Elevation < = Groundwater Elevation (CIRCLE ONE)
	Surface Water Location	GPW-1			185.25		YES
	Monitoring Well Location	50WW15	196.30	19.84		176.46	NO

SAMPLE ID: GPW1-111315 TIME: 0845

DUPLICATE (D): YES/NO

MATRIX SPIKE (MS): YES/NO

MATRIX DUPLICATE (MD): YES/NO

No. Containers/Volume/Type	Preserv.	Filter (Y/N)		Parameter(s)
125-ml polyethylene	4°C	Y	0.2µm filtration	6850 - Perchlorate

AECOM

SURFACE WATER SAMPLE COLLECTION FORM - MNA SITES
(FOR USE WITH LHAAP-50 GPW-1 and GPW-1A ONLY)

LOCATION			
Site: LHAAP-50	LocID: GPW-1A	Date: 11/13/2015	Time:
Project: Longhorn Army Ammunition Plant	Project No. : 60256135.0002GA	Recorded By: SJB	Checked By: MFS

Rainfall Event (at Stated Precipitation Rate) Start Time at LHAAP (24-hour): No rain since 11/7-8/15 of 2.23 inches.

Precipitation Rate (inches/hour): No rain

Surface Conditions (circle one): WETTED (WET TO THE TOUCH) DRY (DRY TO THE TOUCH)

Required Minimum Wait Time To Sample - RACR Table J1 (HH:MM:SS): NA Earliest Sampling Time (24-hour):

CREEK CONDITION INFO		
FLOWING / PONDED WATER / DRY	Sampling Point Photograph No.:	
CREEK CONDITION (circle one above)	Upstream Photograph No.:	

IF SURFACE WATER IS NOT FLOWING, CONTINUE TO OBSERVE SAMPLE POINT UNTIL RUNOFF IS FLOWING, THEN SAMPLE

Groundwater Contribution Assessment		Loc ID:	TOC (MSL)	DTW (FTOC)	Sample Point Elevation (MSL)	Groundwater Elevation (MSL) (TOC - DTW = GW Elevation)	Is Sample Point Elevation < = Groundwater Elevation (CIRCLE ONE)
	Surface Water Location	GPW-1A			183.70		YES
	Monitoring Well Location	50WW01	198.50	21.45		177.05	NO

SAMPLE ID: NA TIME:

DUPLICATE (D): YES/NO
MATRIX SPIKE (MS): YES/NO
MATRIX DUPLICATE (MD): YES/NO

No. Containers/Volume/Type	Preserv.	Filter (Y/N)		Parameter(s)
125-ml polyethylene	4°C	Y	0.2µm filtration	6850 - Perchlorate

AECOM

SURFACE WATER SAMPLE COLLECTION FORM - MNA SITES
(FOR USE WITH LHAAP-50 GPW-1 and GPW-1A ONLY)

LOCATION			
	Site: LHAAP-50	LocID: GPW-1	Date: 11/19/2015 Time:
	Project: Longhorn Army Ammunition Plant	Project No. : 60256135.0002GA	Recorded By: SJB Checked By: MFS

Rainfall Event (at Stated Precipitation Rate) Start Time at LHAAP (24-hour): No rain on sampling day. Rained on 11/17/2015 a total of 3.31 inches.

Precipitation Rate (inches/hour): NA on day of sampling. > 0.25 inches per hour 48 hours prior

Surface Conditions (circle one): WETTED (WET TO THE TOUCH) DRY (DRY TO THE TOUCH)

Required Minimum Wait Time To Sample - RACR Table J1 (HH:MM:SS): NA Earliest Sampling Time (24-hour):

CREEK CONDITION INFO		
	FLOWING / PONDED WATER / DRY CREEK CONDITION (circle one above)	Sampling Point Photograph No.: None taken Upstream Photograph No.: None taken

IF SURFACE WATER IS NOT FLOWING, CONTINUE TO OBSERVE SAMPLE POINT UNTIL RUNOFF IS FLOWING, THEN SAMPLE

Groundwater Contribution Assessment		Loc ID:	TOC (MSL)	DTW (FTOC)	Sample Point Elevation (MSL)	Groundwater Elevation (MSL) (TOC - DTW = GW Elevation)	Is Sample Point Elevation < = Groundwater Elevation (CIRCLE ONE)
	Surface Water Location	GPW-1			185.25		YES
	Monitoring Well Location	50WW15	196.30	NA		NA	NO

SAMPLE ID: GPW1-111915 TIME: 1410

DUPLICATE (D): YES/NO
MATRIX SPIKE (MS): YES/NO
MATRIX DUPLICATE (MD): YES/NO

No. Containers/Volume/Type	Preserv.	Filter (Y/N)		Parameter(s)
125-ml polyethylene	4°C	Y	0.2µm filtration	6850 - Perchlorate

AECOM

SURFACE WATER SAMPLE COLLECTION FORM - MNA SITES
(FOR USE WITH LHAAP-50 GPW-1 and GPW-1A ONLY)

LOCATION			
Site: LHAAP-50	LocID: GPW-1A	Date: 11/19/2015	Time:
Project: Longhorn Army Ammunition Plant	Project No. : 60256135.0002GA	Recorded By: SJB	Checked By: MFS

Rainfall Event (at Stated Precipitation Rate) Start Time at LHAAP (24-hour): No rain on sampling day. Rained on 11/17/2015 a total of 3.31 inches.

Precipitation Rate (inches/hour): NA on day of sampling. > 0.25 inches per hour 48 hours prior

Surface Conditions (circle one): WETTED (WET TO THE TOUCH) DRY (DRY TO THE TOUCH)

Required Minimum Wait Time To Sample - RACR Table J1 (HH:MM:SS): > 72 minutes on day of sampling Earliest Sampling Time (24-hour):

CREEK CONDITION INFO		
FLOWING / PONDED WATER / DRY	Sampling Point Photograph No.: None taken	
CREEK CONDITION (circle one above)	Upstream Photograph No.: None taken	

IF SURFACE WATER IS NOT FLOWING, CONTINUE TO OBSERVE SAMPLE POINT UNTIL RUNOFF IS FLOWING, THEN SAMPLE

Groundwater Contribution Assessment		Loc ID:	TOC (MSL)	DTW (FTOC)	Sample Point Elevation (MSL)	Groundwater Elevation (MSL) (TOC - DTW = GW Elevation)	Is Sample Point Elevation < = Groundwater Elevation (CIRCLE ONE)
	Surface Water Location	GPW-1A			183.70		YES
	Monitoring Well Location	50WW01	198.50	NA		NA	NO

SAMPLE ID:	TIME:	No. Containers/Volume/Type	Preserv.	Filter (Y/N)		Parameter(s)
		125-ml polyethylene	4°C	Y	0.2µm filtration	6850 - Perchlorate
DUPLICATE (D): YES/NO						
MATRIX SPIKE (MS): YES/NO						
MATRIX DUPLICATE (MD): YES/NO						

APPENDIX G: Mann-Kendall Trend Test Results

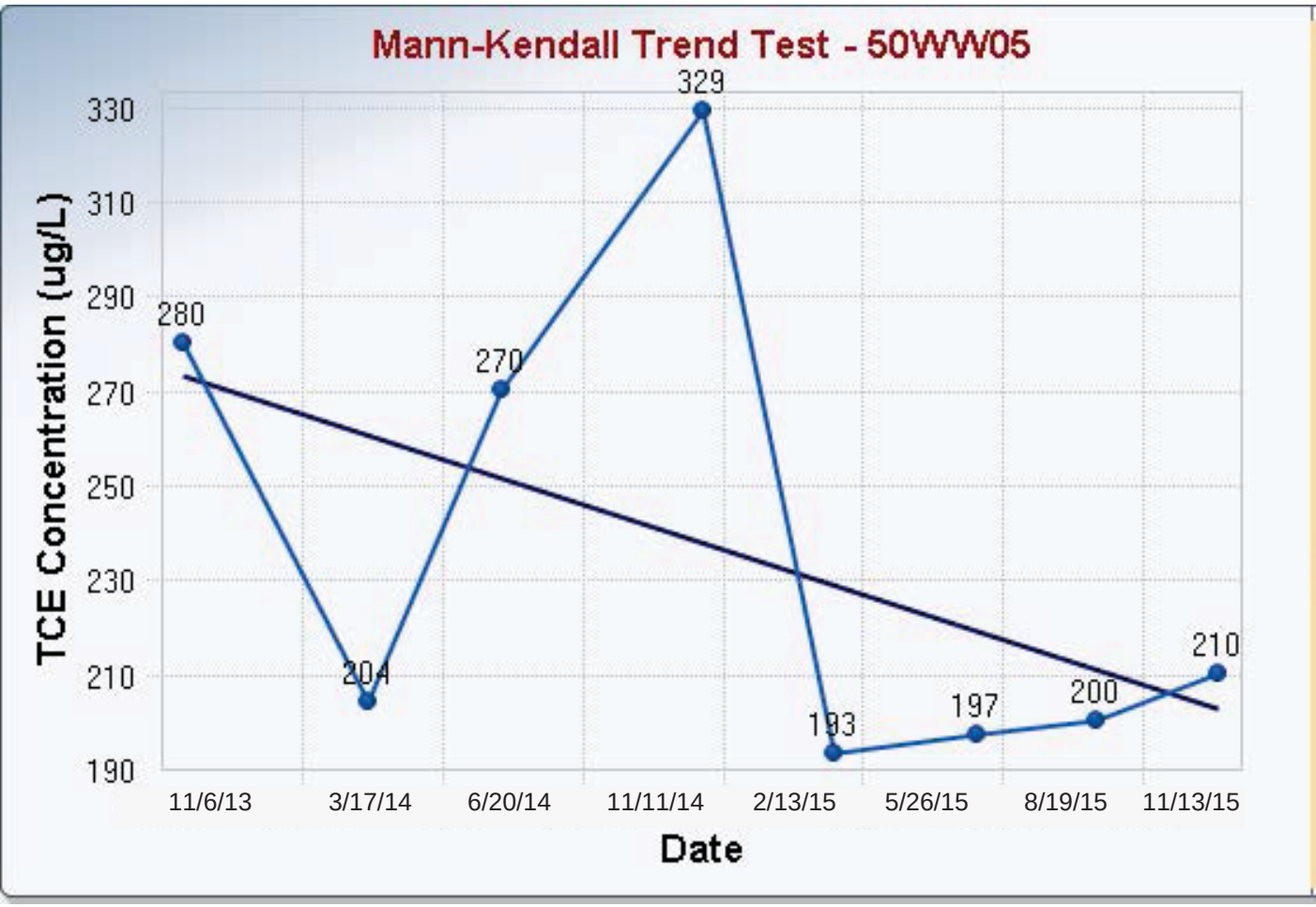

Mann-Kendall Trend Analysis

n	8
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	8.0829
Standardized Value of S	-0.6186
Test Value (S)	-6
Tabulated p-value	0.2740
Approximate p-value	0.2681

OLS Regression Line (Blue)

OLS Regression Slope	-0.0949
OLS Regression Intercept	4,220.9927

Insufficient statistical evidence of a significant trend at the specified level of significance.

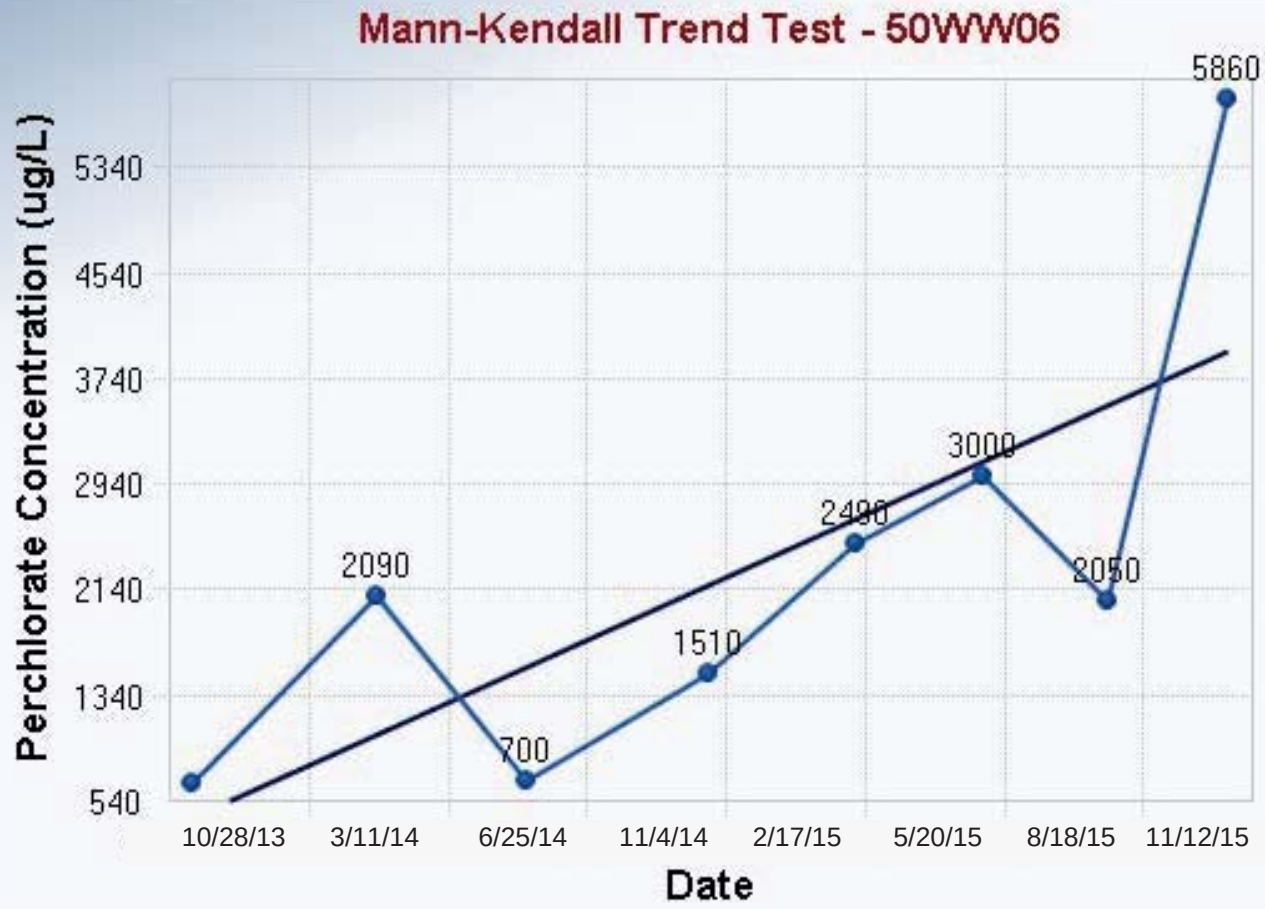

Mann-Kendall Trend Analysis

n	8
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	8.0829
Standardized Value of S	2.1032
Test Value (S)	18
Tabulated p-value	0.0160
Approximate p-value	0.0177

OLS Regression Line (Blue)

OLS Regression Slope	4.7774
OLS Regression Intercept	-198,234.3595

Statistically significant evidence of an increasing trend at the specified level of significance.

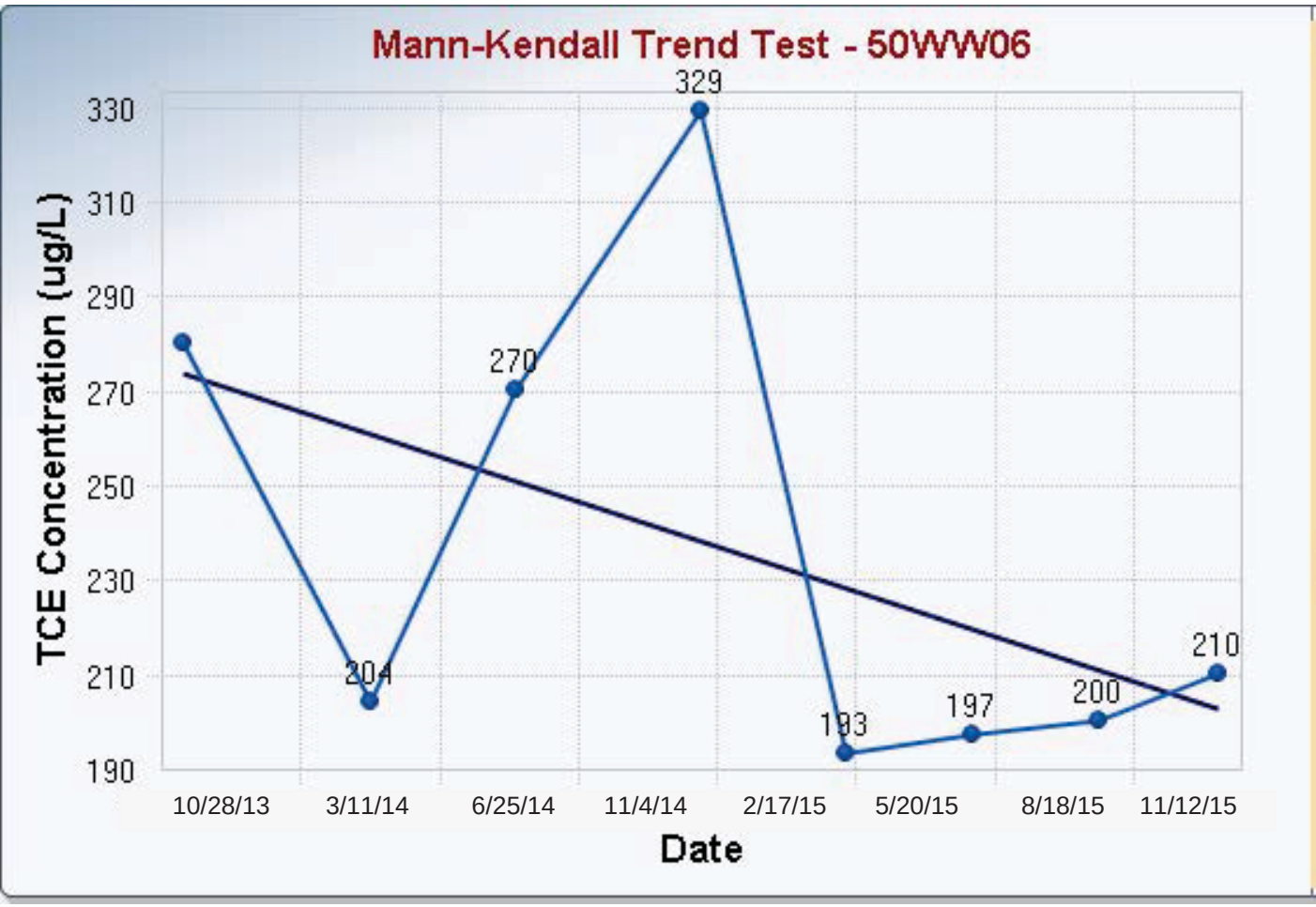

Mann-Kendall Trend Analysis

n	8
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	8.0829
Standardized Value of S	-0.6186
Test Value (S)	-6
Tabulated p-value	0.2740
Approximate p-value	0.2681

OLS Regression Line (Blue)

OLS Regression Slope	-0.0949
OLS Regression Intercept	4,218.1878

Insufficient statistical evidence of a significant trend at the specified level of significance.

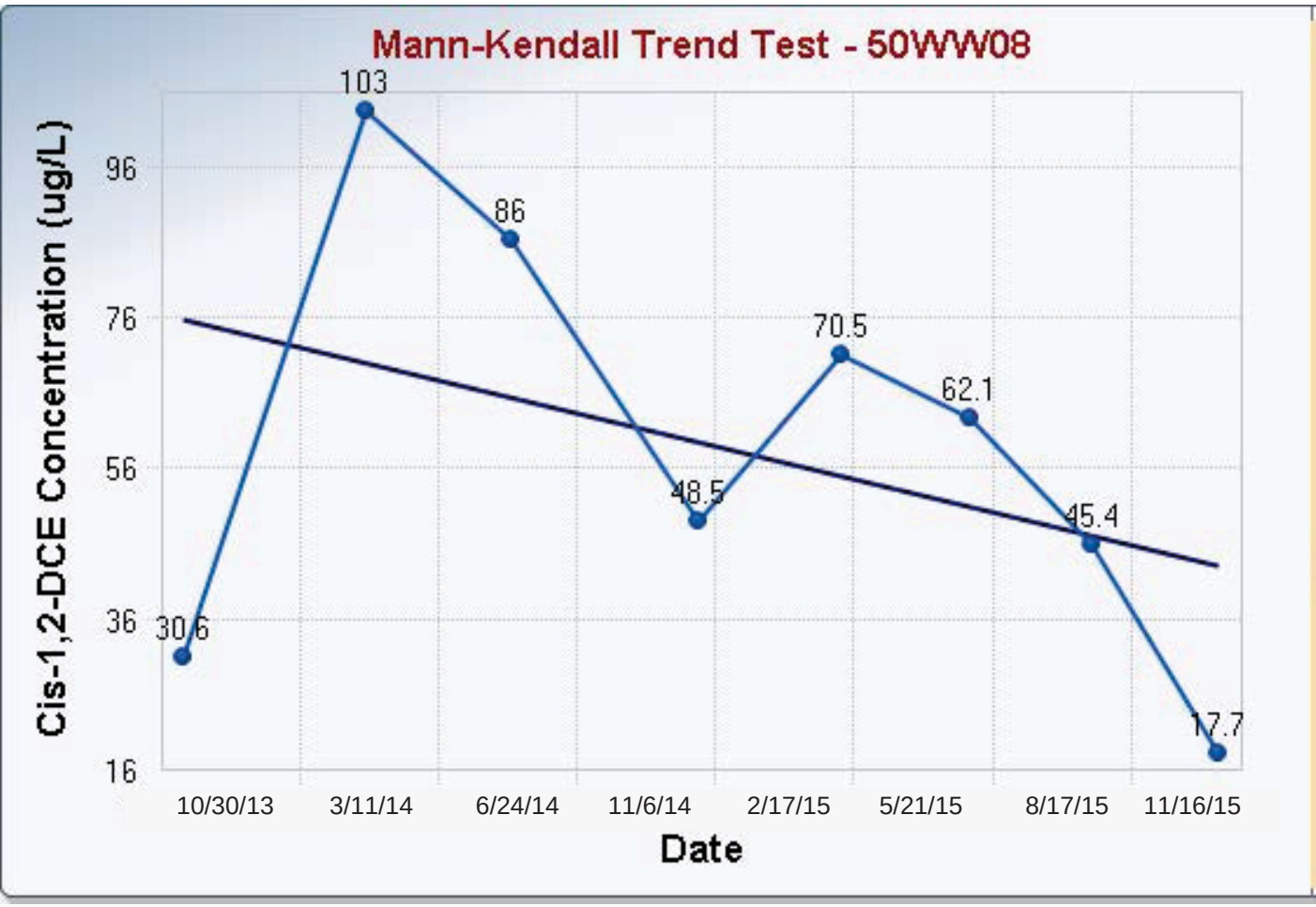

Mann-Kendall Trend Analysis

n	8
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	8.0829
Standardized Value of S	-1.3609
Test Value (S)	-12
Tabulated p-value	0.0890
Approximate p-value	0.0868

OLS Regression Line (Blue)

OLS Regression Slope	-0.0438
OLS Regression Intercept	1,896.8225

Insufficient statistical evidence of a significant trend at the specified level of significance.

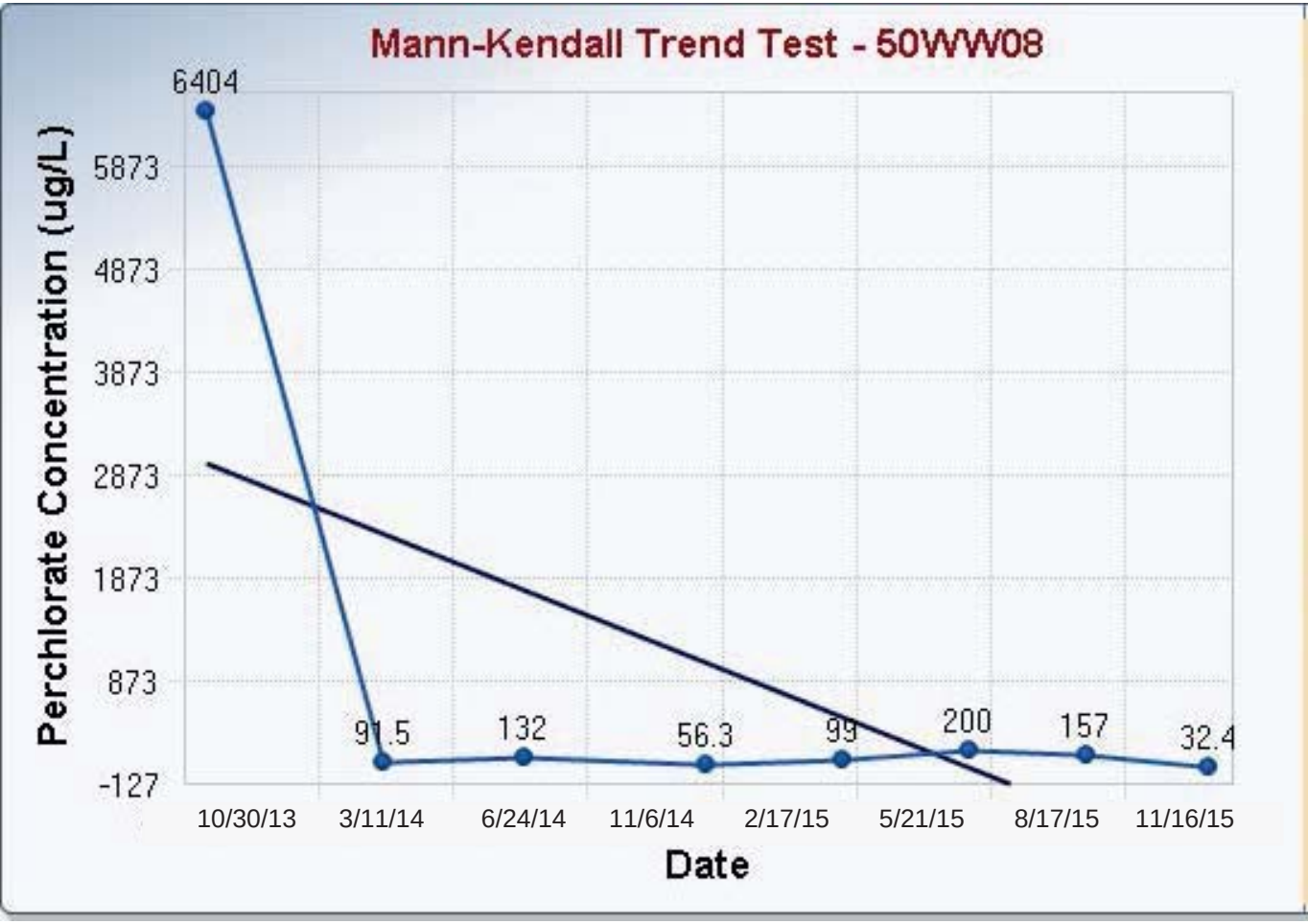

Mann-Kendall Trend Analysis

n	8
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	8.0829
Standardized Value of S	-0.6186
Test Value (S)	-6
Tabulated p-value	0.2740
Approximate p-value	0.2681

OLS Regression Line (Blue)

OLS Regression Slope	-5.2304
OLS Regression Intercept	220,444.5570

Insufficient statistical evidence of a significant trend at the specified level of significance.

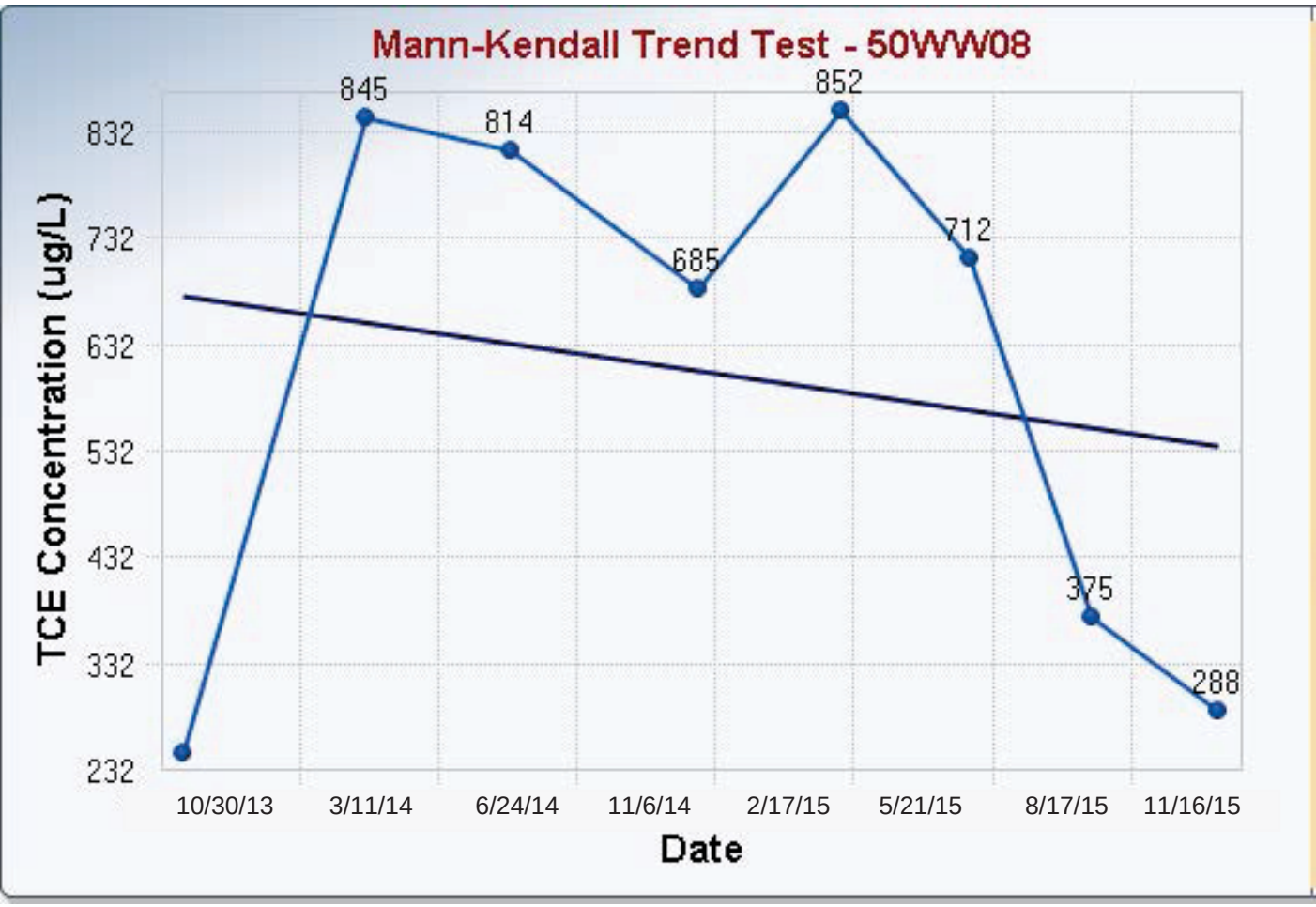

Mann-Kendall Trend Analysis

n	8
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	8.0829
Standardized Value of S	-0.6186
Test Value (S)	-6
Tabulated p-value	0.2740
Approximate p-value	0.2681

OLS Regression Line (Blue)

OLS Regression Slope	-0.1876
OLS Regression Intercept	8,475.9323

Insufficient statistical evidence of a significant trend at the specified level of significance.

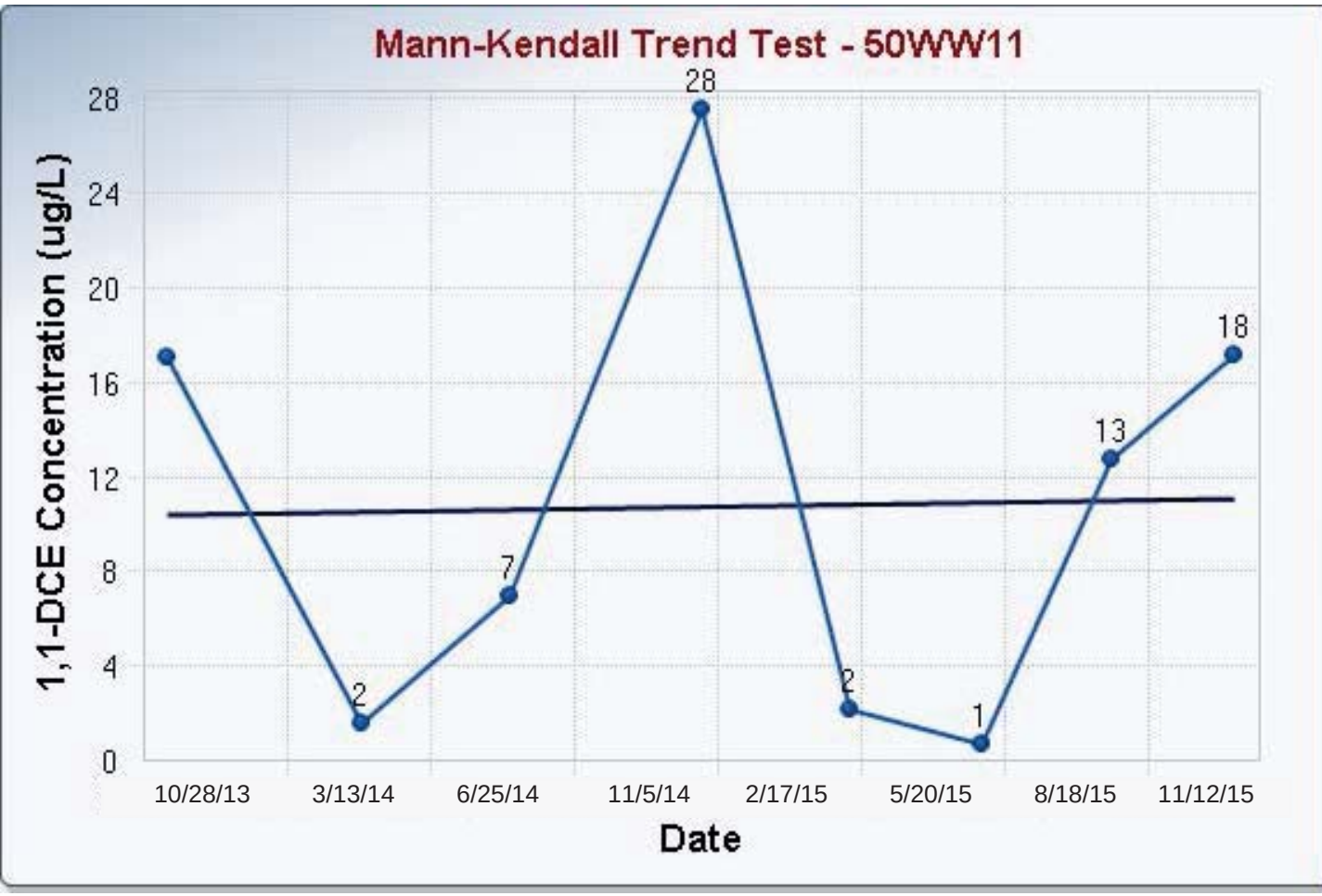

Mann-Kendall Trend Analysis

n	8
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	8.0829
Standardized Value of S	0.1237
Test Value (S)	2
Tabulated p-value	0.4520
Approximate p-value	0.4508

OLS Regression Line (Blue)

OLS Regression Slope	0.0009
OLS Regression Intercept	-25.9201

Insufficient statistical evidence of a significant trend at the specified level of significance.

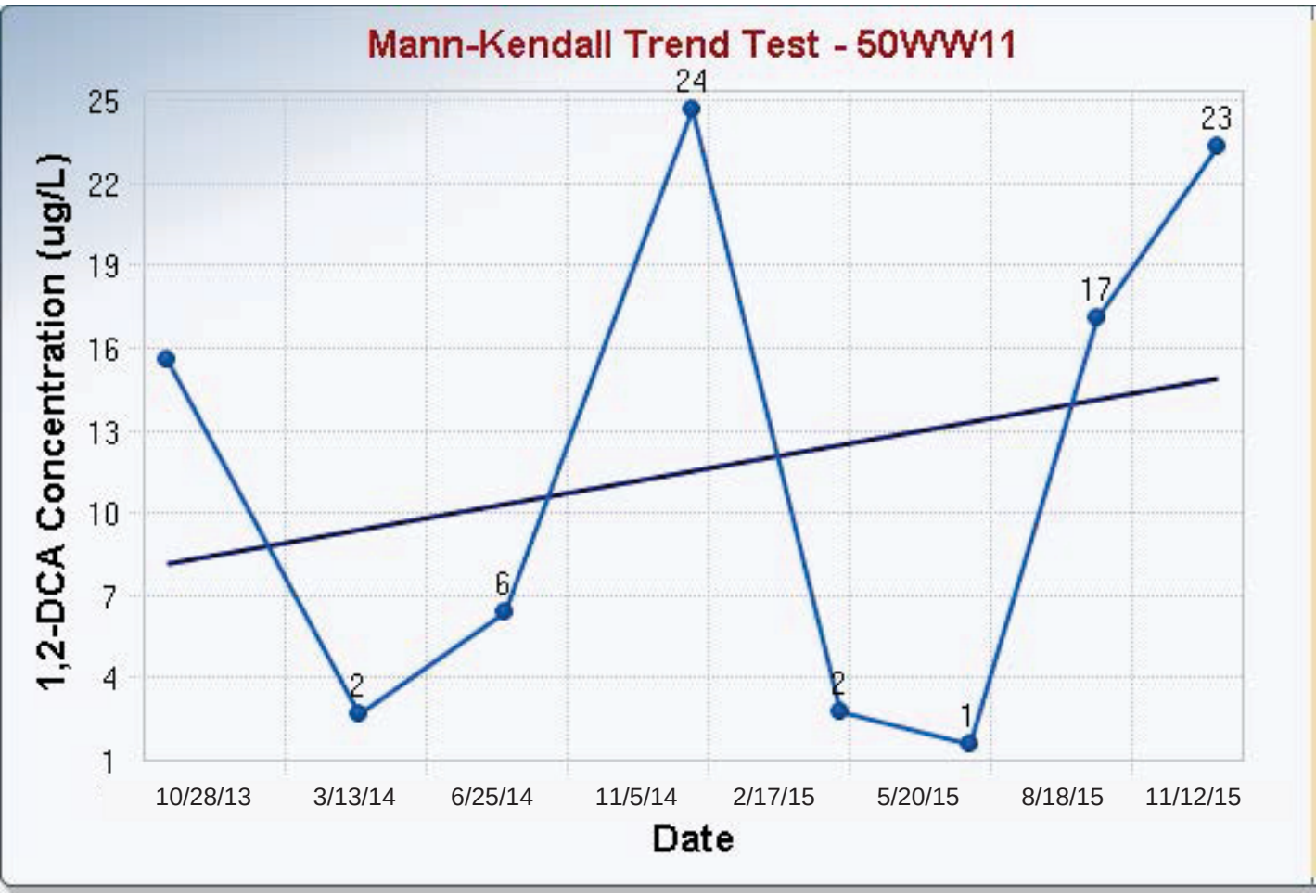

Mann-Kendall Trend Analysis

n	8
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	8.0829
Standardized Value of S	0.3712
Test Value (S)	4
Tabulated p-value	0.3600
Approximate p-value	0.3553

OLS Regression Line (Blue)

OLS Regression Slope	0.0091
OLS Regression Intercept	-369.6657

Insufficient statistical evidence of a significant trend at the specified level of significance.

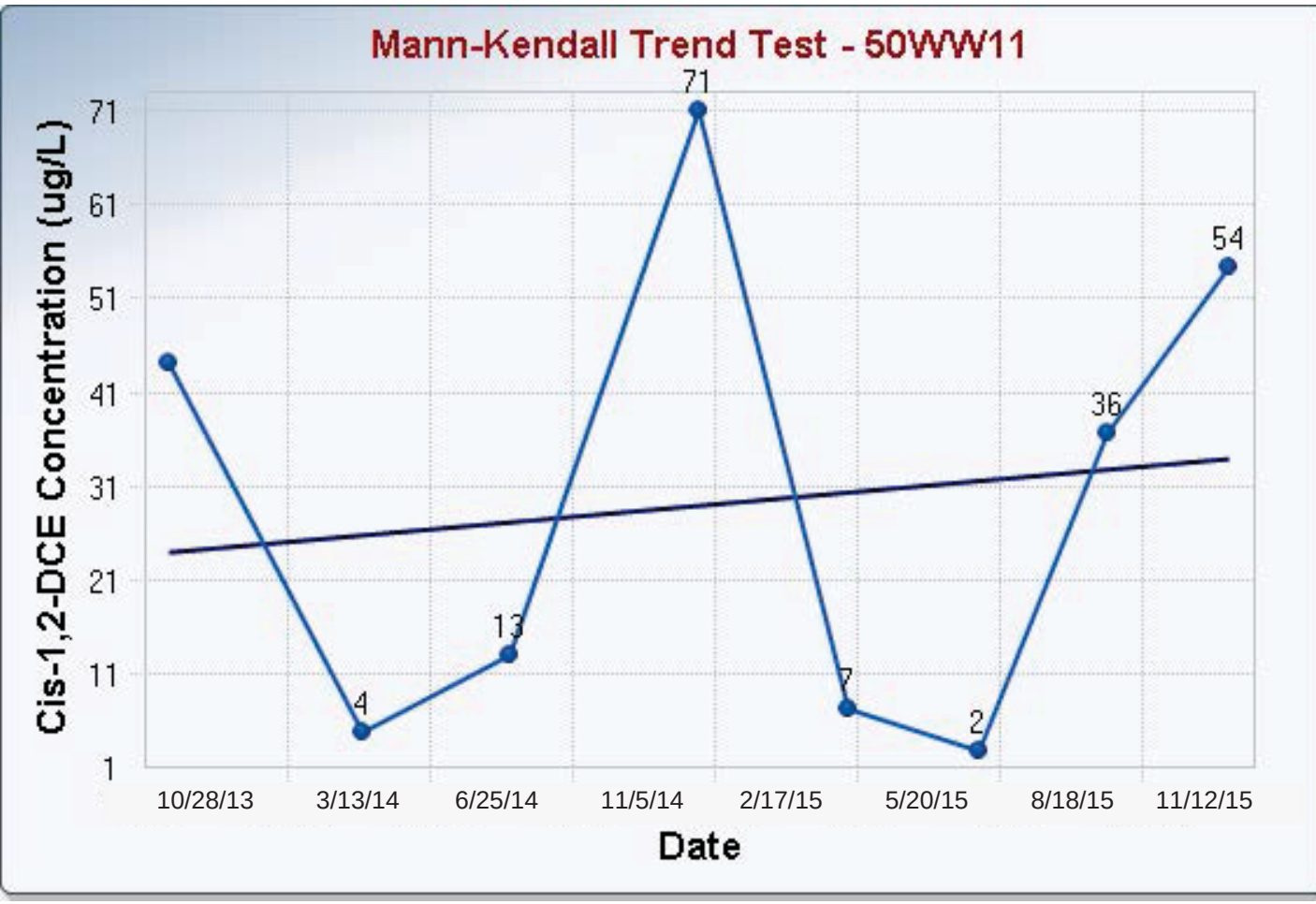

Mann-Kendall Trend Analysis

n	8
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	8.0829
Standardized Value of S	0.1237
Test Value (S)	2
Tabulated p-value	0.4520
Approximate p-value	0.4508

OLS Regression Line (Blue)

OLS Regression Slope	0.0134
OLS Regression Intercept	-531.5268

Insufficient statistical evidence of a significant trend at the specified level of significance.

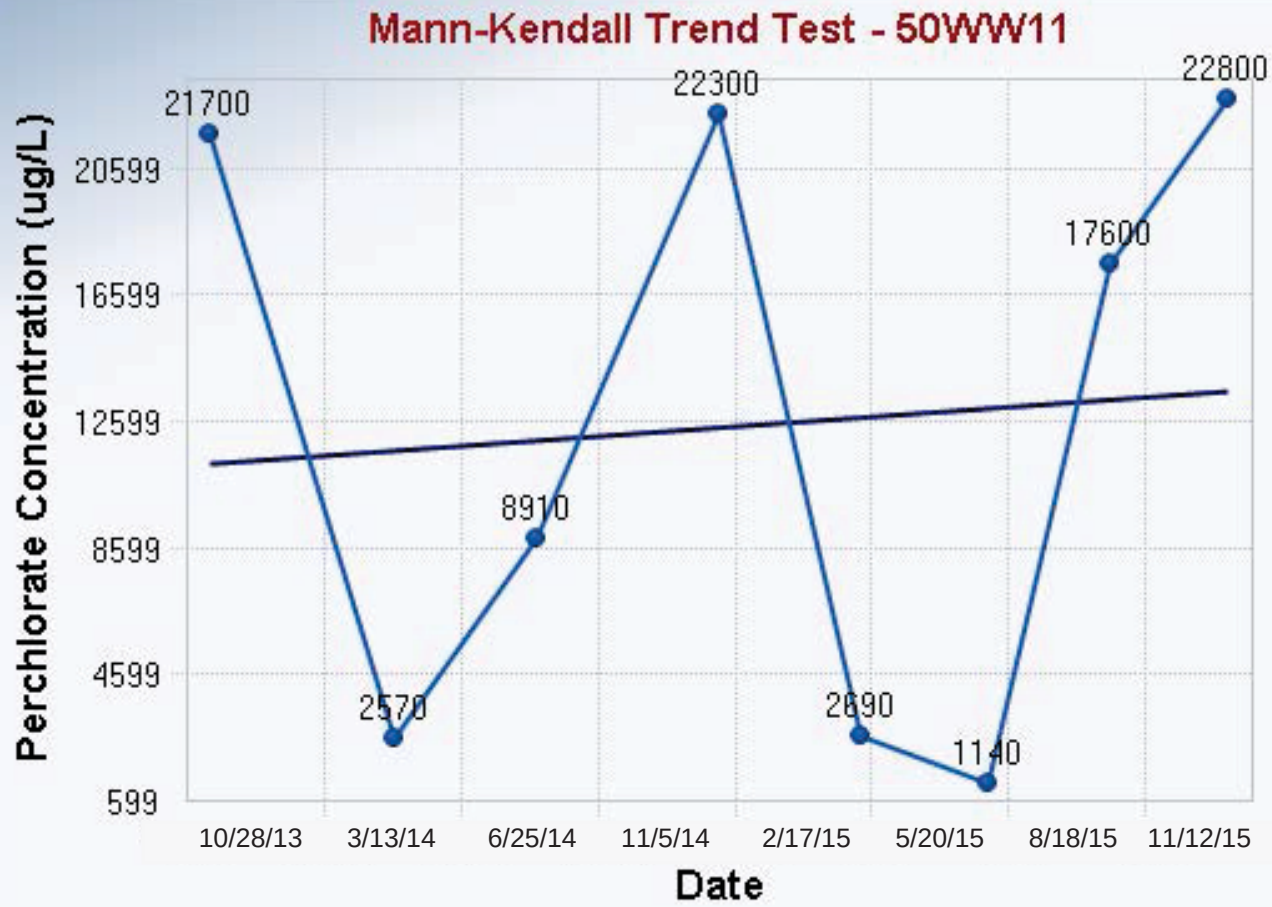

Mann-Kendall Trend Analysis

n	8
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	8.0829
Standardized Value of S	0.3712
Test Value (S)	4
Tabulated p-value	0.3600
Approximate p-value	0.3553

OLS Regression Line (Blue)

OLS Regression Slope	3.0432
OLS Regression Intercept	-115,276.0481

Insufficient statistical evidence of a significant trend at the specified level of significance.

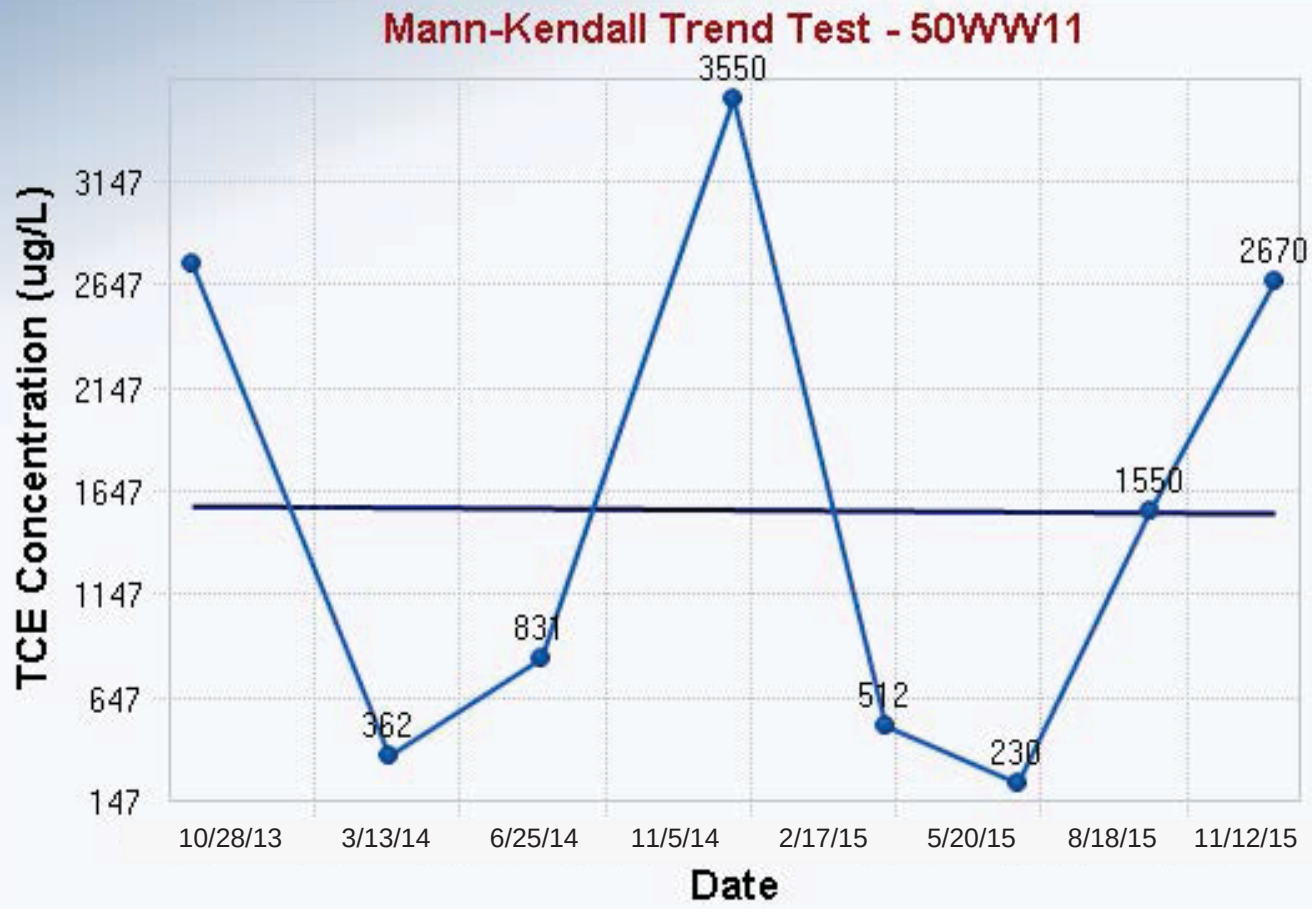

Mann-Kendall Trend Analysis

n	8
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	8.0829
Standardized Value of S	
Test Value (S)	0
Tabulated p-value	0.5480
Approximate p-value	

OLS Regression Line (Blue)

OLS Regression Slope	-0.0460
OLS Regression Intercept	3,487.9451

Insufficient statistical evidence of a significant trend at the specified level of significance.

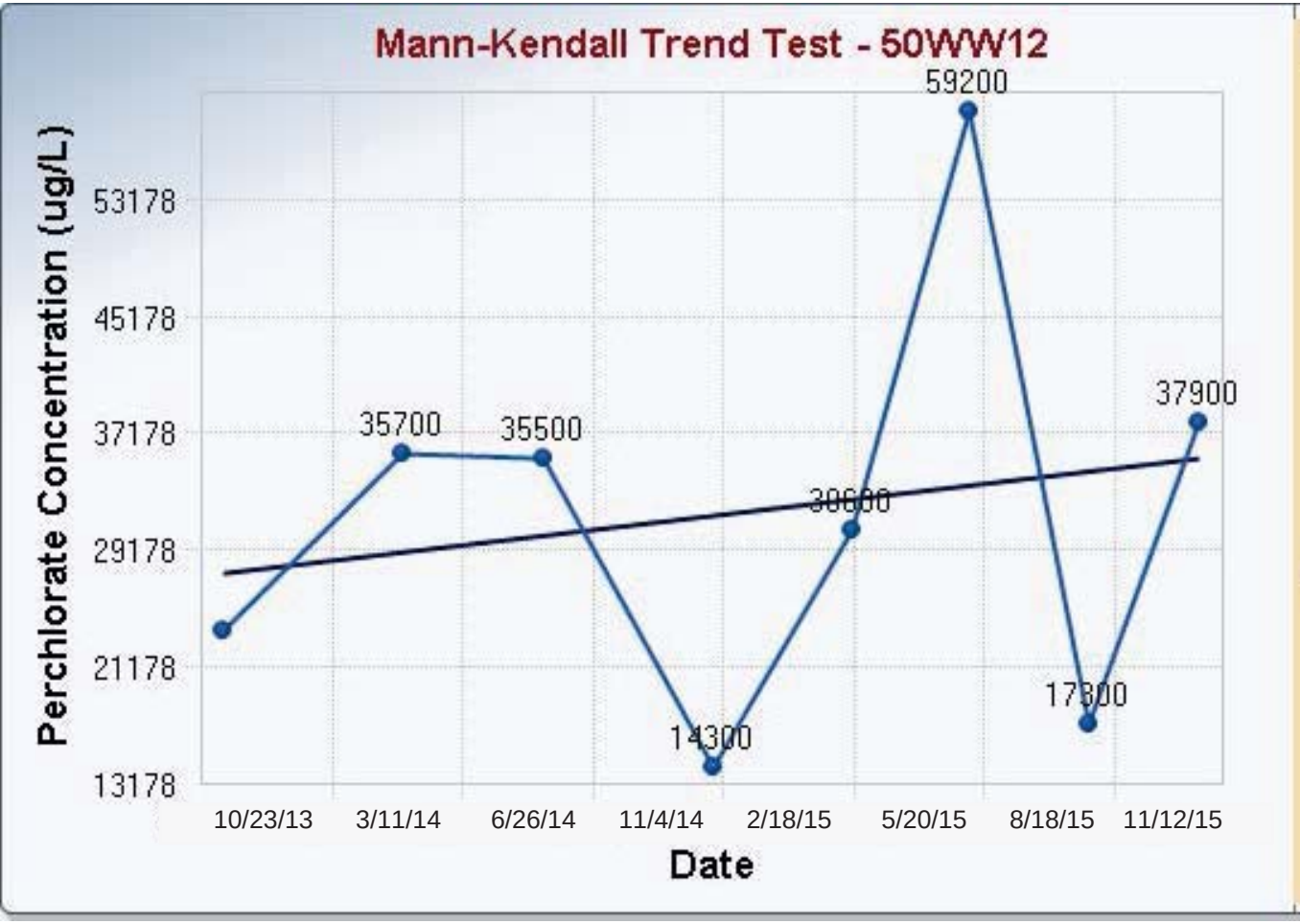

Mann-Kendall Trend Analysis

n	8
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	8.0829
Standardized Value of S	0.3712
Test Value (S)	4
Tabulated p-value	0.3600
Approximate p-value	0.3553

OLS Regression Line (Blue)

OLS Regression Slope	10.5298
OLS Regression Intercept	-410,215.0643

Insufficient statistical evidence of a significant trend at the specified level of significance.

00654329

Mann-Kendall Trend Test- 50WW12

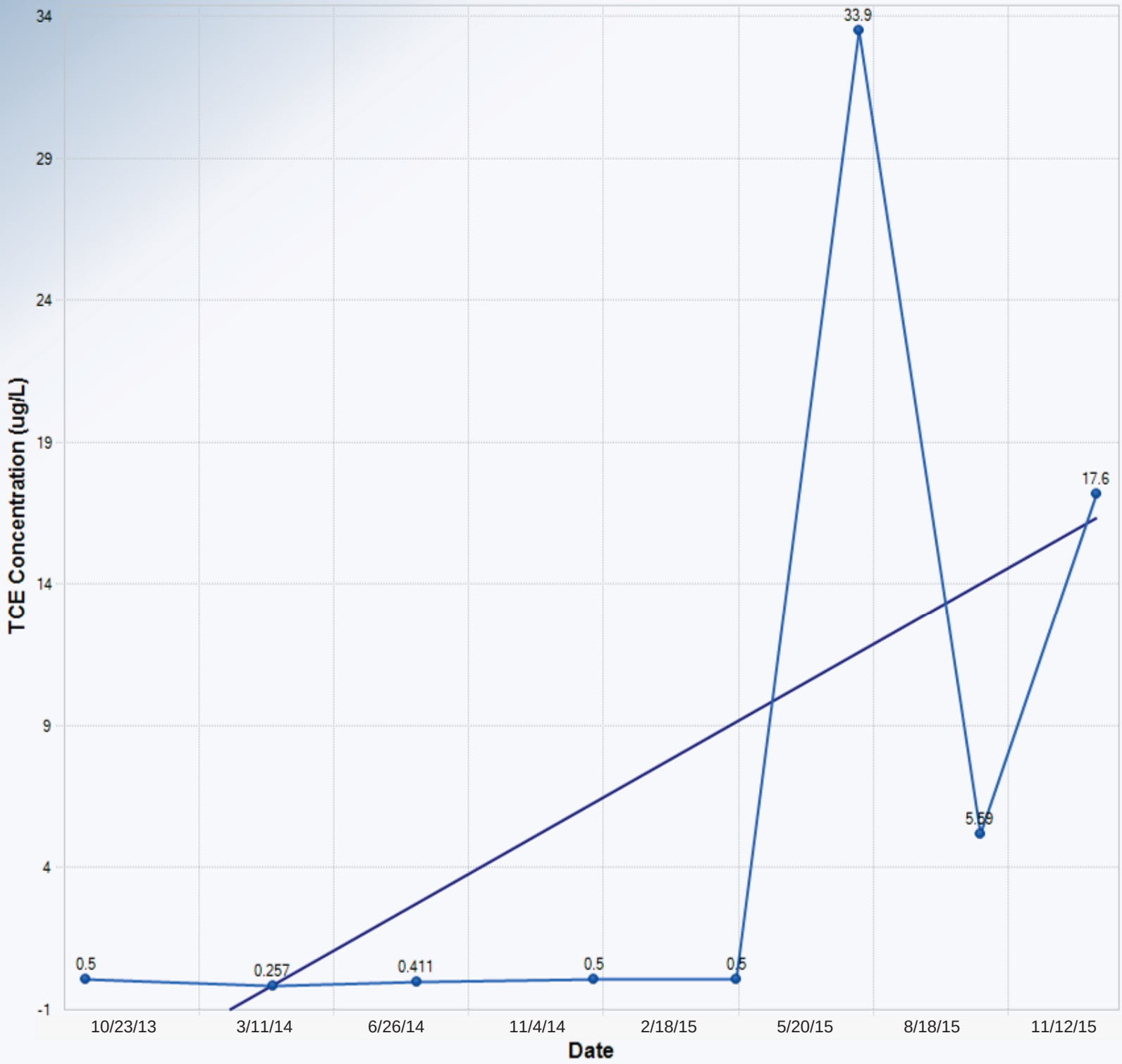

Mann-Kendall Trend Analysis

n	8
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	7.8528
Standardized Value of S	2.0375
Test Value (S)	17
Tabulated p-value	0.0310
Approximate p-value	0.0208

OLS Regression Line (Blue)

OLS Regression Slope	0.0270
OLS Regression Intercept	-1,124.7259

Statistically significant evidence of an increasing trend at the specified level of significance.

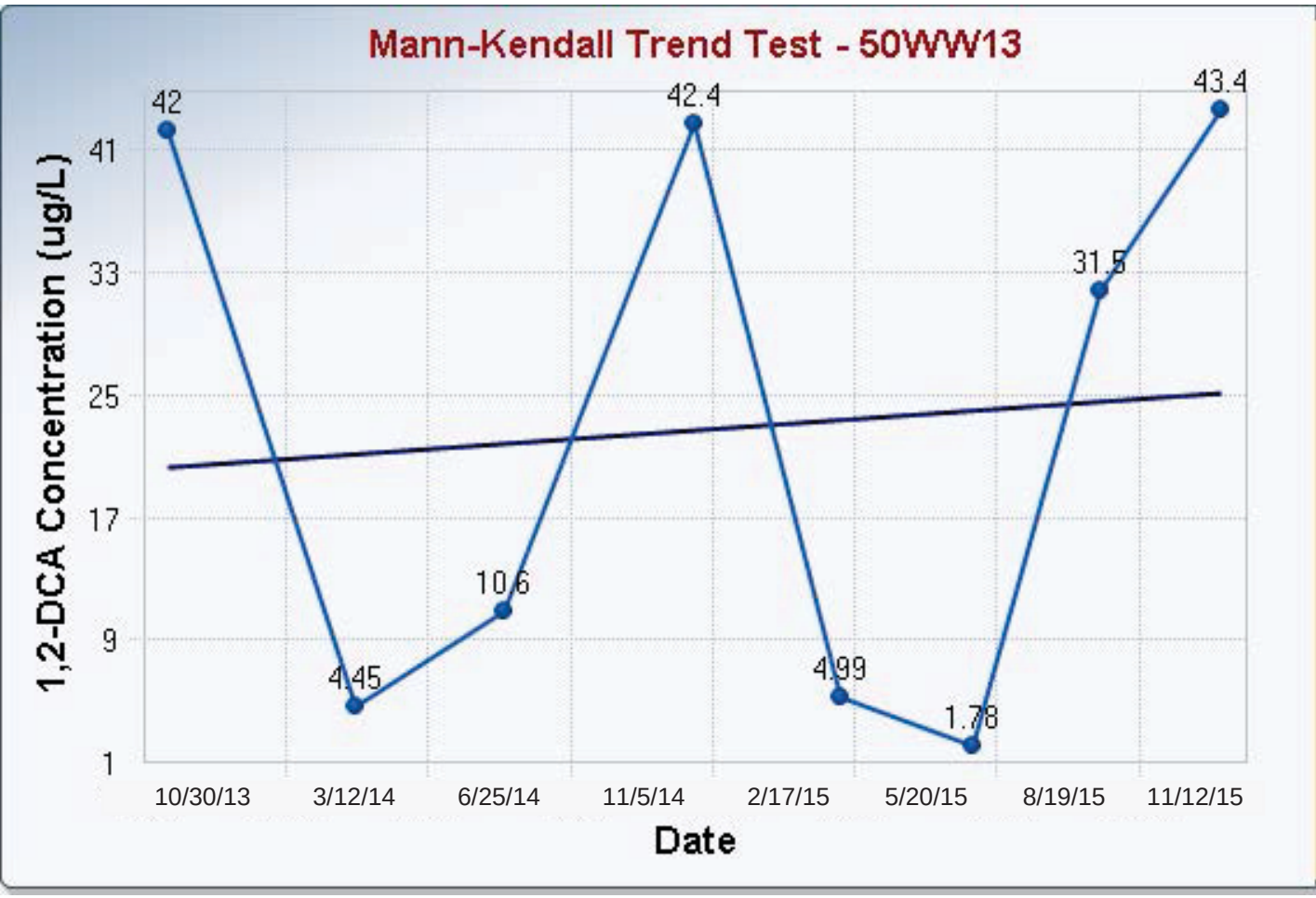

Mann-Kendall Trend Analysis

n	8
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	8.0829
Standardized Value of S	0.3712
Test Value (S)	4
Tabulated p-value	0.3600
Approximate p-value	0.3553

OLS Regression Line (Blue)

OLS Regression Slope	0.0065
OLS Regression Intercept	-249.7474

Insufficient statistical evidence of a significant trend at the specified level of significance.

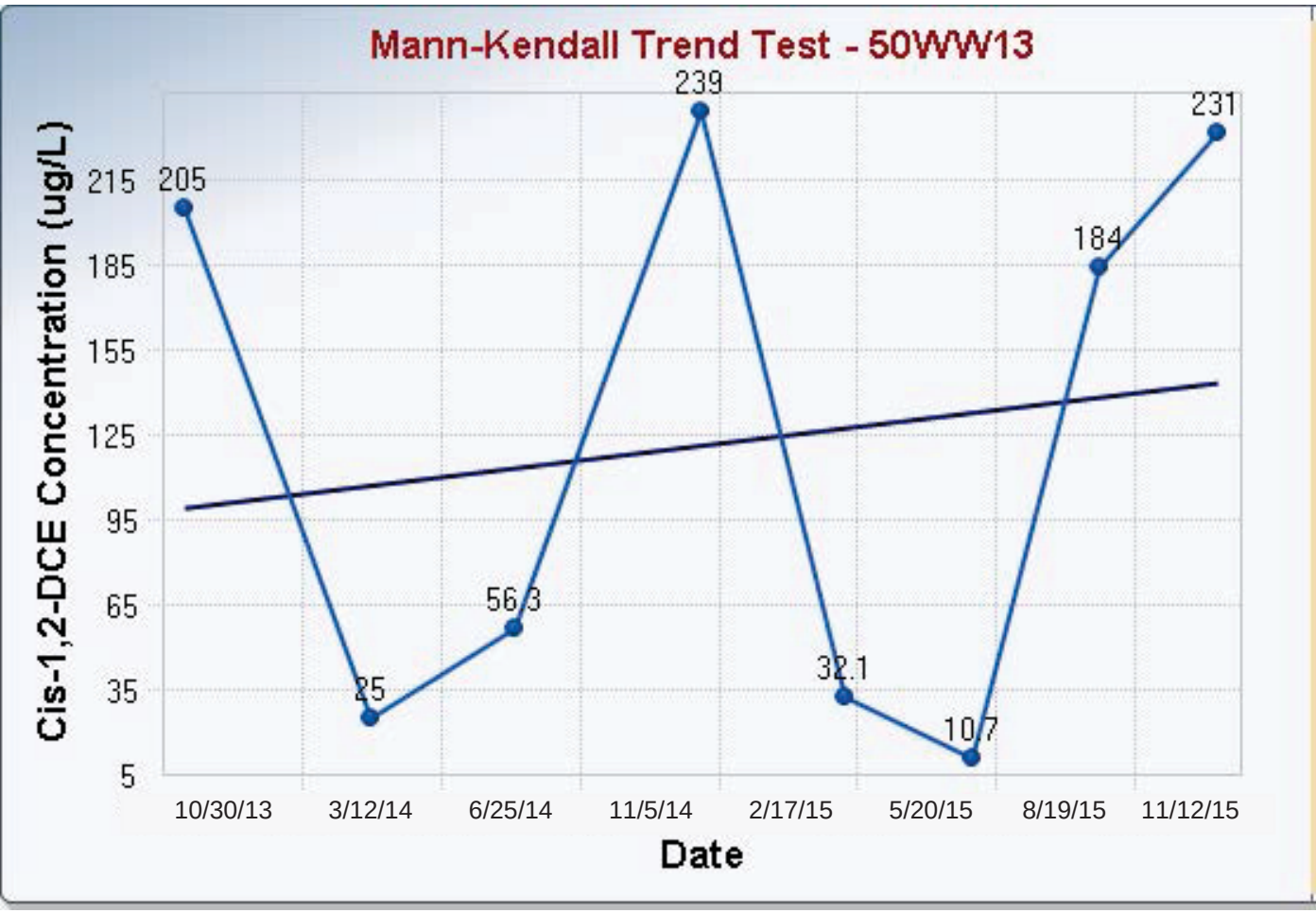

Mann-Kendall Trend Analysis

n	8
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	8.0829
Standardized Value of S	0.1237
Test Value (S)	2
Tabulated p-value	0.4520
Approximate p-value	0.4508

OLS Regression Line (Blue)

OLS Regression Slope	0.0588
OLS Regression Intercept	-2,347.2802

Insufficient statistical evidence of a significant trend at the specified level of significance.

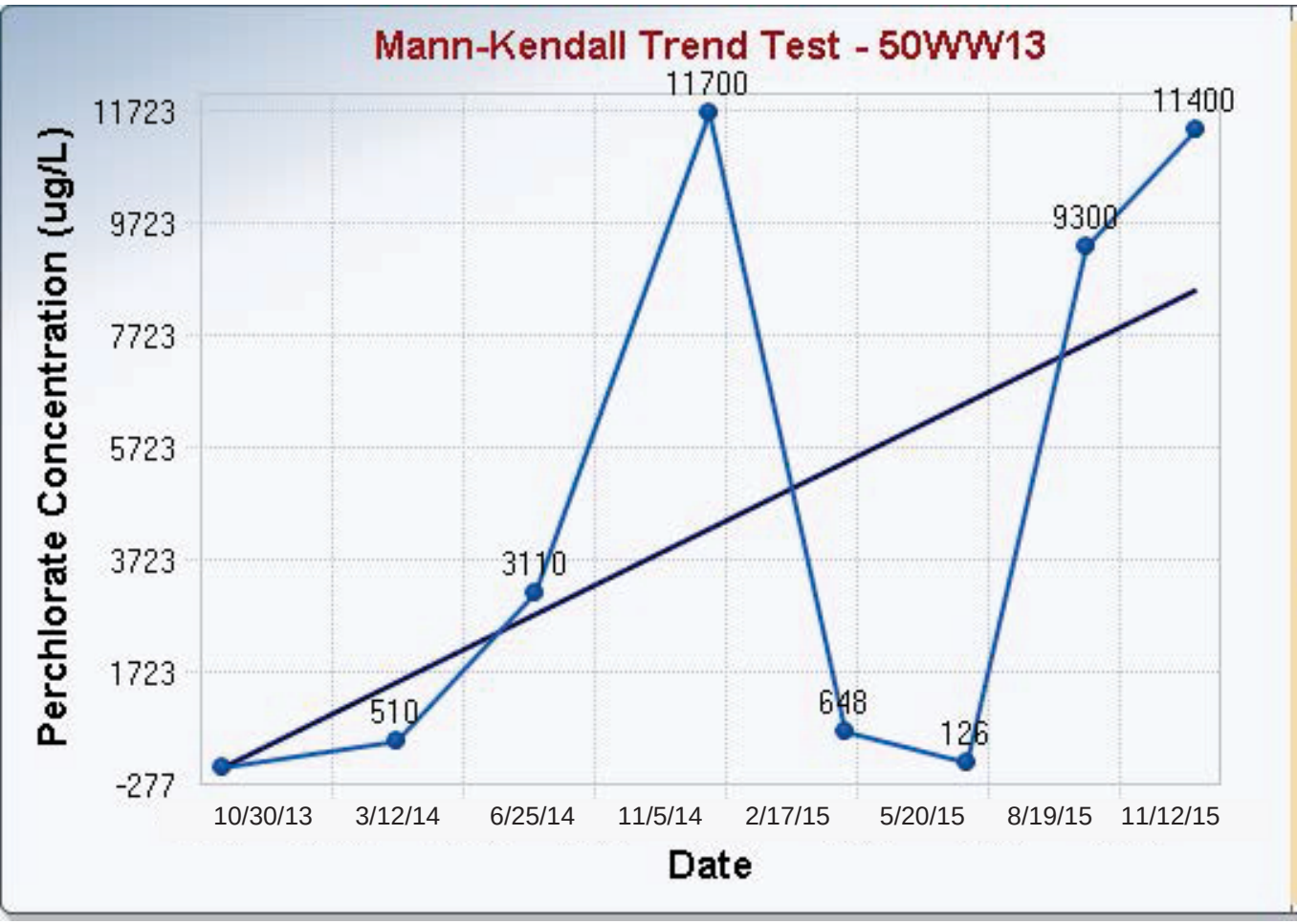

Mann-Kendall Trend Analysis

n	8
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	8.0829
Standardized Value of S	1.3609
Test Value (S)	12
Tabulated p-value	0.0890
Approximate p-value	0.0868

OLS Regression Line (Blue)

OLS Regression Slope	11.4753
OLS Regression Intercept	-477,076.8800

Insufficient statistical evidence of a significant trend at the specified level of significance.

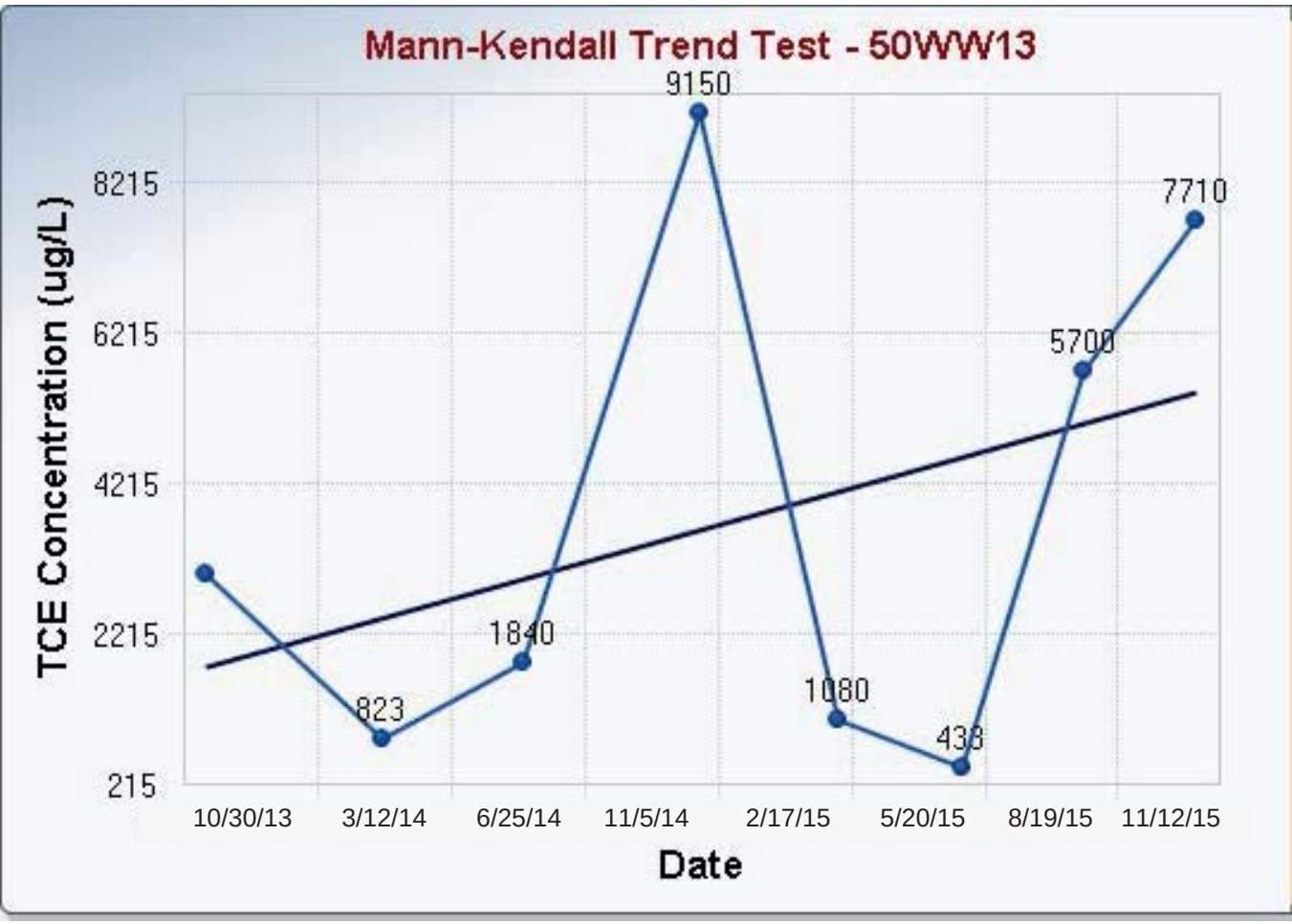

Mann-Kendall Trend Analysis

n	8
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	8.0829
Standardized Value of S	0.3712
Test Value (S)	4
Tabulated p-value	0.3600
Approximate p-value	0.3553

OLS Regression Line (Blue)

OLS Regression Slope	4.9174
OLS Regression Intercept	-202,690.0905

Insufficient statistical evidence of a significant trend at the specified level of significance.

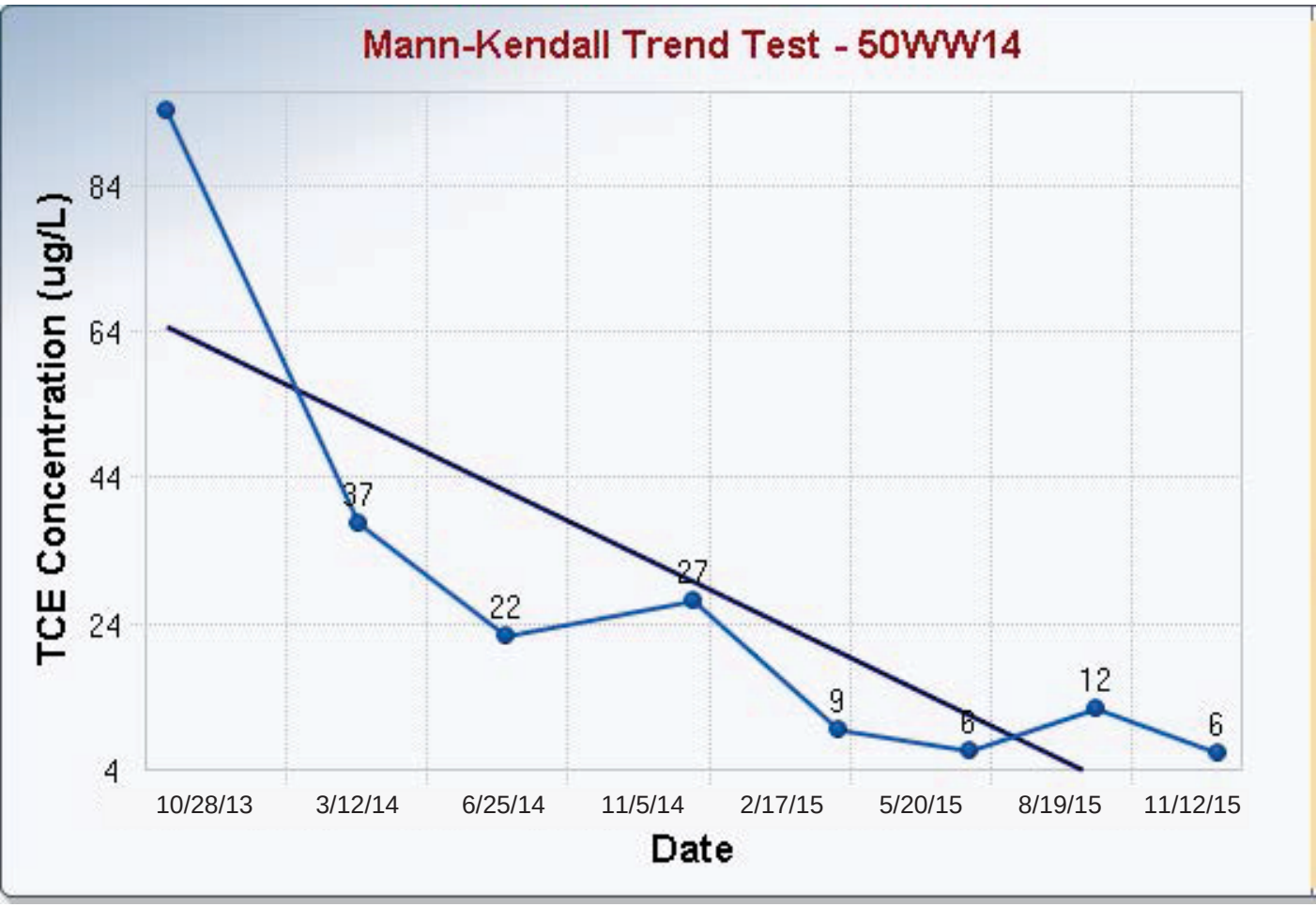

Mann-Kendall Trend Analysis

n	8
Confidence Coefficient	0.9500
Level of Significance	0.0500
Standard Deviation of S	8.0829
Standardized Value of S	-2.5981
Test Value (S)	-22
Tabulated p-value	0.0020
Approximate p-value	0.0047

OLS Regression Line (Blue)

OLS Regression Slope	-0.0938
OLS Regression Intercept	3,962.4013

Statistically significant evidence of a decreasing trend at the specified level of significance.

APPENDIX H: Regression Analysis

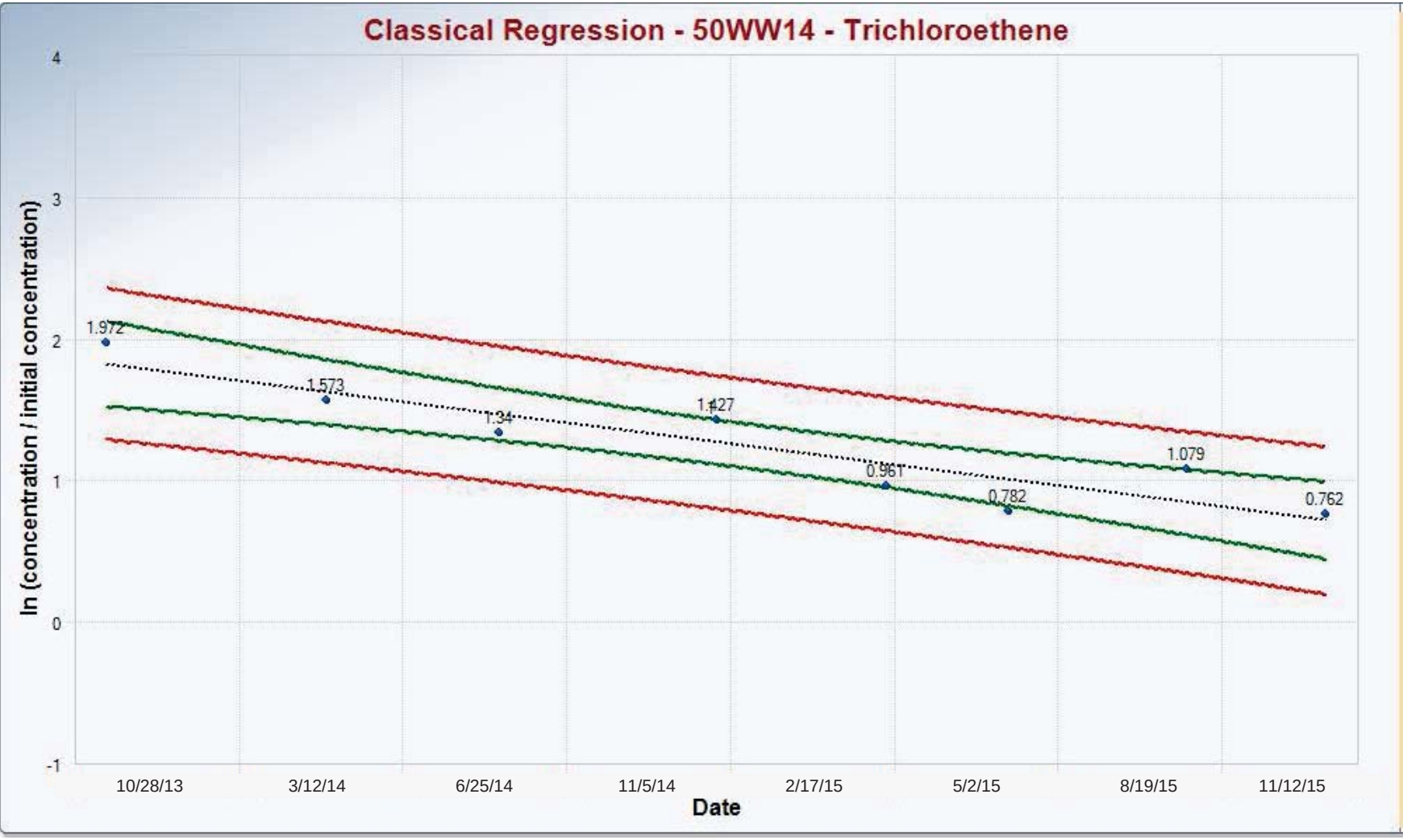

OLS	
n	8
Slope	-0.0015
Intercept	63.4746
R-sq	0.8408
R	-0.9169
Scale Estimate	0.1810
P-value (Reg)	0.0013
P-value (Slope)	0.0013

Mann-Kendall	
S	-22.0000
SD of S	8.0829
Standardized S	-2.5981
Approximate p-value	0.0047

Confidence Coefficient	0.9500

Red = Prediction Interval
Green = Confidence Interval

Subject: **Final Minutes, Monthly Managers' Meeting, Longhorn Army Ammunition Plant (LHAAP)**

Location of Meeting: **Teleconference – 888-369-1427, Passcode 4887611**
Date of Meeting: **November 17, 2016 – 10:00 AM**

Attendees:

Army BRAC:	Rose Zeiler (RMZ)
AEC:	Nick Smith (NS)
EPA:	Rich Mayer (RM), Kent Becher (KB) (USGS Liaison)
TCEQ:	April Palmie (AP)
AECOM:	Debra Richmann (DR), Elspeth Sharp (ES), JoLynn Snow (JS), Scott Beesinger (Aerotek subcontractor to AECOM)
USFWS:	Paul Bruckwicki (PB)

Welcome **RMZ**

Action Items
AECOM

- Distribute a replacement page for the Final LHAAP-47 PSI Work Plan that documents the protocol for determining if and after how much elapsed time a monitoring well boring may be considered a dry hole and can be abandoned. **In Progress** - The criteria were agreed to by the Army, EPA, and TCEQ; RMZ will provide the language for AECOM to use in the replacement page.
- Make arrangements for removal and disposal of a roll-off box containing IDW at LHAAP-67. **In Progress.**
- Determine if ponded water west of LHAAP-18/24 and north of LHAAP-17 is from runoff of irrigation water from LHAAP-18/24. **Complete -** RM confirmed the location of the ponding is immediately north of LHAAP-17. DR, RM RMZ, PB, and SB discussed photos provided as attachments to the agenda. SB indicated that this area is regularly ponded and has been since he started working at the LHAAP GWTP in 1997, so predates injection and irrigation of treated wastewater. RMZ said that based on historical reports, elevated perchlorate levels also predate injection and irrigation activities and prompted installation of the FBR at the GWTP. AP asked if the vegetation in the area is consistent with regular ponding, because from the photos, it doesn't look like typical marsh vegetation. RMZ said she couldn't speak to that, however she indicated that data exist for sediment samples collected along the drainages around Site LHAAP-17. RMZ also suggested that EPA/TCEQ can follow up with SB if they would like more information.

Army

- Army to discuss what to do with the existing temporary piezometer at LHAAP-47, located near monitoring well 47WW25. **To Be Discussed at December MMM**.
- RMZ to provide language concerning the criteria for determining if a boring intended for monitoring well installation should or should not be completed as a well. This language will be provided to AECOM to incorporate as a replacement page for the LHAAP-47 PSI Work Plan.

EPA

- KB and RM to further discuss the EPA comment on the LHAAP-29 RI Addendum concerning the unknown transport mechanism by which MC from the source area (soak out area near monitoring well 29WW16) migrated to the present location of DNAPL. The intent was to revise the comment to propose specific language to be included in the RI Addendum to close out the issue. **In Progress -** RM said they had a call with Army after the last MMM to discuss. RM voiced EPA's concern that there is some unknown source to the west of the DNAPL plume where there is more sand, less clay to impede path to the intermediate zone. RMZ will draft text to be included as a replacement page in the LHAAP-29 RI Addendum.
- RM to verify if RA-O sites are to be included in the schedule being prepared by the Army. **Complete –** RM spoke to his manager and confirmed the RA-O sites should be included in the schedule.

TCEQ

- No outstanding action items.

AEC

- No outstanding action items.

USFWS

- AW had requested a resource management plan for LHAAP (INRMP) to provide as GFI with the RFP for the follow-on PBR. PB was not aware of one. KB, RMZ said they have the EA, which would include a Finding of No Significant Impact (FONSI). **Complete.**

Defense Environmental Restoration Program (DERP) PBR Update AECOM

DR asked everyone to refer to the Document and Issue Tracker dated 11/17/16, which was distributed with the agenda. It includes currently projected dates for submittal of remaining project milestone deliverables to EPA and TCEQ.

- Item 1 (GWTP Quarterly Report) – Responses to regulatory agency comments on the Q4 2015 report were incorporated into the Q1 2016 GWTP report, which was submitted to EPA and TCEQ on 11/7/16.

- Item 2 (Revised Updated LHAAP-18/24 PSI Addendum) – Comments on the Draft Supplemental to the Updated PSI Addendum were received from TCEQ comments on 10/17/16 and from EPA on 11/3/16. AP mentioned schedule concerns about providing the final document as an appendix to the Final Revised FS, and suggested it might be better provided as a stand-alone document. RMZ said it would make sense, but AP then pointed out the FS already has all the Appendix B references that would need to be changed. RMZ indicated she would discuss both options with AW and decide. RM indicated EPA has no preference.

- Item 2-1 (LHAAP-18/24 Data Gap Sampling) - Complete.

- Item 2-2 (Previous Regulatory Comments on LHAAP-18/24 FS) – The RTCs are complete. However, they were not included in the draft revised FS submitted to EPA and TCEQ (they were provided as separate files). It was agreed the draft would not be revised and re-sent

now, but for the final revised FS, the RTCs will be included in the electronic and paper copies immediately after the cover page.

- Item 2-3 (LHAAP-18/24 Revised FS) – Received TCEQ comments on draft final revised FS on 11/16/16. RMZ, AP, RM and DR discussed TCEQ comments 2, 7 and 9. For comments 2 and 7, all agreed that monitoring wells MW-20 and 18CPTMW22R are both screened in a small perched unit above the potentiometric surface of the Shallow Zone and groundwater elevations in these wells will not be used when Figure 1-6 is revised. The text will also be revised accordingly. RMZ discussed historical perchlorate data and indicated perchlorate contamination in the Shallow Zone was present long before irrigation at the site commenced. For comment 9, RMZ said that the Army intends to maintain the cap on the UEP until conditions change and its protectiveness is in question. For instance, if the treatment system failed or if the groundwater level were to rise such that the waste under the cap was in the saturated zone, the soil removal option would be re-evaluated as a contingency option. AP, RM, and RMZ agreed the response to comment 9 would be re-worded to address soil removal as a contingency remedy, rather than being "deferred".

- Item 3-1 (LHAAP-37 RACR) – The Final RACR will be entered into the AR. RM said the Certificate of Completion letter is being held until the groundwater returns to its pre-test condition.

- Items 4 (LHAAP-46 RACR), 5 (LHAAP-50 RACR), 6 (LHAAP-58 RACR) - Complete.

- Item 7 (LHAAP-67 RACR) –The RACR became final on 8/20/16 and all that's left is for it to be entered into the AR.

- Item 8 (LHAAP-12 2015 Annual Report) – The Final LHAAP-12 2012 and 2015 Annual Reports will be entered into the AR with the Q3 2016 update.

- Item 8-1 (LHAAP-12 2016 RA-O Report) – Validated data package will be submitted to TCEQ and EPA.

- Item 9 (LHAAP-46 Yr. 2 RA-O Report) – Complete.

- Item 10-1 (LHAAP-67 Yr. 1 RA-O Report) – DR said the report is planned for submittal to EPA and TCEQ the week of 11/21/2016.

- Item 10-2 (LHAAP-67 Yr. 2 RA-O Report) – Same as Item 10-1.

- Item 11-1 (LHAAP-50 Yr. 1 RA-O) – DR said the electronic files for the Draft Final Year 1 report had just been submitted to TCEQ and EPA in the morning (11/17/16).

- Item 11-2 (LHAAP-50 Yr. 2 RA-O) – DR said the electronic files for the Draft Final Year 2 report would be submitted to EPA and TCEQ later in the day (11/17/16).

- Item 12-1 (LHAAP-58 RA-O) – Complete.

- Item 12-2 (LHAAP-58 Contingency Remedial Action Work Plan) – The Final LHAAP-58 Contingency RAWP will be entered into the AR with the Q3 2016 AR update. The implementation of the contingency plan remedy is being deferred to the next PBR contract.

- Item 13 (MMM) – DR said the Draft October 2016 MMM minutes were submitted to EPA and TCEQ on 11/7/16. One minor comment was received from TCEQ on 11/16/16. KB said he would review the minutes on behalf of EPA since RM participated by phone and was not to hear much of the discussion. The next MMM meeting will be held at 10:00 CST on Thursday 12/15/16 by teleconference.

- Item 14-1 (LHAAP-29 RI Addendum) – Complete.

- Item 14-2 (LHAAP-29 FS Addendum) – DR said work has continued on the FS Addendum and the expected date for submittal of the Draft FS Addendum to the regulators is still TBD.

- Item 15-1 (LHAAP-47 PSI Work Plan) – After AECOM receives and incorporates the replacement page with criteria for determining when a boring will be completed as a monitoring well or abandoned, based on the amount of water in the boring, the Final PSI Work Plan will be entered the Q3 2016 AR Update.

- Item 15-2 (LHAAP-16 RD) – The Draft RD was submitted to EPA and TCEQ on 10/12/2016. Comments were received from EPA on 11/15/16 and from TCEQ on 11/16/16. RTCs are due to EPA and TCEQ by 12/16/16.

- Item 15-2a (LHAAP-16 RD Post ROD Requirements) – The Army will provide the draft initial notice of contamination and LUCs to TCEQ and EPA for review prior to issuing the notice to Federal/State/Local entities and owner/occupants no later than 12/12/16.

- Items 15-3 (LHAAP-17 RD) – The Army is deferring this item to the next PBR contract.

- Item 15-3a (LHAAP-17 PDI WP) – The Draft Final PDI Work Plan is being revised to respond to EPA and TCEQ comments and will be submitted for the agency records later in the month.

- Item 15-3b (LHAAP-17 Post-ROD Requirements) – Similar to LHAAP-16, the Army will be providing the initial notice of contamination and LUCs to Federal/State/Local officials and owner/occupants by 12/12/16.

- Item 15-4 (LHAAP-001-R-01 RD/RDWP) – The LUC RD is being deferred to the follow-on PBR contract.

- Item 15-4a (LHAAP-001-R-01 Limited LTM) – The first of three rounds of annual groundwater samples were collected 9/29/2016. Data will be validated prior to 12/1/2016.

- Item 15-4b (LHAAP-001-R-01 Post-ROD Requirements) – Similar to LHAAP-16, the Army will be providing the initial notice of contamination and LUCs to Federal/State/Local officials and owner/occupants by 12/12/16.

- Item 15-5 (LHAAP-003-R-01 RD/RDWP) – The LUC RD is being deferred to the follow-on PBR contract.

- Item 15-5a (LHAAP-003-R-01 Limited LTM) – DR stated that only one round of groundwater samples is required by the ROD and they were collected 9/29/2016. All wells except 18WW16, which gets sampled during LHAAP-18/24 monitoring events, were redeveloped prior to sampling. Data will be validated prior to 12/1/2016.

- Item 15-5b (LHAAP-003-R-01 Post-ROD Requirements) – Similarly to LHAAP-16, the Army will be providing the initial notice of contamination and LUCs to Federal/State/Local officials and owner/occupants by 12/12/16.

- Item 15-6 (LHAAP-04 ROD) – The Army submitted the Draft Final ROD to EPA and TCEQ on 10/7/2016. Army submitted RTCs for EPA comments on the Draft Final ROD on 11/4/16.

- Item 15-7 (Site-wide LUC Management Plan) – The Army submitted the FY2016 Revision Log to EPA and TCEQ for electronic signature on 10/17/2016. Three copies were provided to KB so that EPA can sign and return copies to Army and to TCEQ. The signatures were all in place by 10/25/16.

- Item 16 (RAB/Website) – Held last quarterly RAB meeting on October 20th from 6:00-7:30 pm at the Karnack Community Center. Updated website with date/time of next RAB meeting (1/19/17) and approved July 2016 RAB meeting minutes on 10/31/16. The next RAB meeting will be at the Karnack Community Center on 1/19/17 beginning at 6:00 pm.

- Item 17-1 (GWTP O&M – GWTP Sampling and Optimization Memo) and Item 17-2 (GWTP Sampling and Analysis Plan) – AECOM submitted responses to comments on the Optimization Memo and the revised SAP to EPA and TCEQ on 11/10/16. The GWTP Sampling and Analysis Plan is scheduled to be finalized prior to 12/1/2016.

- Item 17-3 (GWTP Continuing O&M) – GWTP O&M continues.

- Item 18 (Admin. Record Update) – The Q2 2016 AR update was uploaded to the LHAAP website on 10/13/2016, and CDs were provided the week of 10/17/2016. The 2016 AR Q3 update currently in preparation.

- Item 19 (LHAAP-02) – The third round of semi-annual sampling was performed the week of 10/3/16. The Army directed AECOM to prepare a Tech Memo covering the first year (two rounds) of semi-annual sampling (10/15/15 and 4/29/16), which was provided to TCEQ and EPA on 10/27/16. RMZ said there is a figure showing the site and sampling locations as requested by TCEQ in the ROD. The results from the third round of sampling will be provided in a validated data package only (no annual tech memo/report). RMZ said the Army is not requesting EPA and TCEQ to review these data at this time.

- Item 20 (LHAAP-37 Geochemical Rebound) – Results for the first round of sampling were provided groundwater sampling results in the September 2016 validated data package distributed at the October 2016 MMM. Additional quarterly sampling is suspended because

the site groundwater has not adequately rebounded; future sampling will be conducted under the follow-on PBR contract.

- Item 21 (Smart Map) – AECOM continues to develop the Smart Map.

MMRP Update **Army**

- No update.

Other Environmental Restoration **Army**

- Quarterly Reporting and Requirements
  - GWTP Evaluation
  - Surface Water/Perimeter Well Quarterly Update
  - Administrative Record Update
  - Website Update
- Annual Reporting
  - LUC Management Plan Update (due September 2016)
  - CRP/CIP Revision (Biennial) – NS commented that revision of the plan will be funded under the new AEC contract.

USFWS Update **RMZ/PB**

- No update.

Schedule Next Managers' Meeting

- The December 2016 MMM will be held by teleconference at 10:00 CST on 12/15/16.

Adjourn

Attachments:

- **October 2016 Validated LHAAP Data:**
  - GWTP Effluent: Weekly, Bi-weekly, and Monthly Sampling (September/October 2016)
  - GWTP Influent: Monthly (September 2016)
  - LHAAP-001-R Groundwater Sampling (September 2016)
  - LHAAP-003-R Groundwater Sampling (September 2016)
- Photos of ponded water west of LHAAP-18/24 and north of LHAAP-17

ACRONYM LIST

AEC	United States Army Environmental Command
AECOM	AECOM Technical Services, Inc.
AP	April Palmie
AR	Administrative Record
AW	Aaron Williams
BRAC	Base Realignment and Closure
CIP	Community Involvement Plan
CRP	Community Relations Plan
CST	Central Standard Time
DERP	Defense Environmental Restoration Program
DNAPL	Dense Non-Aqueous Phase Liquid
DR	Debra Richmann
EPA	United States Environmental Protection Agency
ES	Elspeth Sharp
FBR	Fluidized Bed Reactor
FONSI	Finding of No Significant Impact
FS	Feasibility Study
GFI	Government Furnished Information
GWTP	Ground Water Treatment Plant
IDW	Investigation-Derived Waste
INRMP	Integrated Natural Resources Management Plan
JS	JoLynn Snow
KB	Kent Becher
LHAAP	Longhorn Army Ammunition Plant
LTM	Long-Term Monitoring
LUC	Land Use Control
MMM	Monthly Managers' Meeting
MMRP	Military Munitions Response Program
NS	Nick Smith
O&M	Operation and Maintenance
PB	Paul Bruckwicki
PBR	Performance-Based Remediation
PDI	Pre-Design Investigation
PSI	Post-Screening Investigation
RAB	Restoration Advisory Board
RACR	Remedial Action Completion Report
RA-O	Remedial Action Operation
RAWP	Remedial Action Work Plan
RD	Remedial Design
RFP	Request for Proposal
RI	Remedial Investigation
RM	Rich Mayer
RMZ	Rose M. Zeiler
ROD	Record of Decision
RTC	Response to Comments
SB	Scott Beesinger
TBD	To Be Determined
TCEQ	Texas Commission on Environmental Quality
UEP	Unlined Evaporation Pond

USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WP	Work Plan

LHAAP Data Validated
October 2016

GWTP Effluent *Weekly, Bi-weekly, and Monthly Sampling - September/October 2016*

Ammonia (350.1)	Metals (6010C)
Ortho-Phosphate (365.2)	Metals (6020A)
Organic Carbon (415.1)	Hexavalent Chromium (7196A)
Perchlorate (6850)	VOC (8260B)
1,4-Dioxane (8270D-SIM)	Anions (9056)

GWTP Influent *Monthly - September 2016*
Perchlorate (6850)
VOC (8260B)

LHAAP-001-R *Groundwater Sampling - September 2016*
Perchlorate (6850)

LHAAP-003-R *Groundwater Sampling - September 2016*
Perchlorate (6850)

GWTP Effluent Weekly Sampling - August/September/October 2016

Location ID: / Sample Date:	Units	Daily Maximum Conc	LH18/24-SP650-6387-GRAB 8/15/2016	LH18/24-SP650-6392-GRAB 9/6/2016	LH18/24-SP650-6394-GRAB 9/12/2016	LH18/24-SP650-6396-GRAB 9/19/2016	LH18/24-SP650-6397-GRAB 9/26/2016	LH18/24-SP650-6399-GRAB 10/3/2016	LH18/24-SP650-6401-GRAB 10/10/16
Location Description:			GWTP–Collected from a spigot on the discharge of effluent TK-650. Sampled Weekly.						
Ammonia as N (350.1)									
AMMONIA AS N	mg/L		9.93	7.39	7.74	10.9	3.55	14.3	NA
Ortho-Phosphate (365.2)									
ORTHO-PHOSPHATE	mg/L		1.47	0.943	1.58	2.8	2.81	2.54	NA
Organic Carbon (415.1)									
DISSOLVED ORGANIC CARBON	mg/L		40.4	NA	NA	NA	NA	NA	NA
TOTAL ORGANIC CARBON (TOC)	mg/L		38	34.2	63.6	27.9	27.8	29.9	NA
Perchlorate (6850)									
PERCHLORATE	ug/L	13	NA	124	NA	<0.2 U	<0.2 U	NA	13.5
Semi-Volatile Organic Compounds (8270D-SIM)									
1,4-DIOXANE*	ug/L	134.2	13.1	16.4	23.8	17.1	21.6	22.9	NA

* Calculated Effluent Limit

mg/L - milligrams per liter

NA - not analyzed

U - Undetected: The analyte was analyzed for, but not detected.

ug/L - micrograms per liter

GWTP Effluent Biweekly Sampling - September 2016

Location ID: / Sample Date:	Units	Daily Maximum Conc	LH18/24-SP650-6395-COMP 9/19/2016	LH18/24-SP650-6395-GRAB 9/19/2016
Location Description:			GWTP – Collected from holding jar accumulating aliquots of discharge from a TK-650 effluent spigot every few hours. Sampled Biweekly.	GWTP – Collected from a spigot on the discharge of effluent TK-650 Sampled Biweekly.
Metals (6010C)				
SELENIUM	mg/L	0.012	<0.02 U	<0.02 U
Metals (6020A)				
LEAD	mg/L	0.0046	<0.001 U	<0.001 U
SILVER	mg/L	0.003	<0.001 U	<0.001 U
Perchlorate (6850)				
PERCHLORATE	ug/L	13	<0.2 U	<0.2 U
Hexavalent Chromium (7196A)				
HEXAVALENT CHROMIUM	mg/L	0.1244	<0.01 U	<0.01 U
Volatile Organic Compounds (8260B)				
1,1,1,2-TETRACHLOROETHANE	ug/L		NA	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	7230	NA	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L		NA	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	216.9	NA	<0.5 U
1,1-DICHLOROETHANE	ug/L	14032	NA	<0.25 U
1,1-DICHLOROETHENE	ug/L	253	NA	<1 U
1,1-DICHLOROPROPENE	ug/L		NA	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L		NA	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L		NA	<1 U
1,2,4-TRICHLOROBENZENE	ug/L		NA	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L		NA	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L		NA	<2 U
1,2-DIBROMOETHANE	ug/L		NA	<0.5 U
1,2-DICHLOROBENZENE	ug/L		NA	<0.25 U
1,2-DICHLOROETHANE	ug/L	181	NA	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	NA	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L		NA	<0.5 U
1,3-DICHLOROBENZENE	ug/L		NA	<0.5 U
1,3-DICHLOROPROPANE	ug/L		NA	<0.4 U
1,4-DICHLOROBENZENE	ug/L		NA	<0.25 U
2,2-DICHLOROPROPANE	ug/L		NA	<0.5 U
2-BUTANONE	ug/L		NA	<5 U
2-CHLOROTOLUENE	ug/L		NA	<0.25 U
2-HEXANONE	ug/L		NA	<5 U
4-CHLOROTOLUENE	ug/L		NA	<0.5 U
4-METHYL-2-PENTANONE	ug/L		NA	<5 U

GWTP Effluent Biweekly Sampling - September 2016

Location ID: / Sample Date:	Units	Daily Maximum Conc	LH18/24-SP650-6395-COMP 9/19/2016	LH18/24-SP650-6395-GRAB 9/19/2016
ACETONE	ug/L	2395	NA	3.98 J
BENZENE	ug/L	181	NA	<0.25 U
BROMOBENZENE	ug/L		NA	<0.25 U
BROMOCHLOROMETHANE	ug/L		NA	<0.4 U
BROMODICHLOROMETHANE	ug/L		NA	<0.5 U
BROMOFORM	ug/L		NA	<1 U
BROMOMETHANE	ug/L		NA	<1 U
CARBON DISULFIDE	ug/L		NA	<1 U
CARBON TETRACHLORIDE	ug/L	181	NA	<0.5 U
CHLOROBENZENE	ug/L	47180	NA	<0.25 U
CHLOROETHANE	ug/L		NA	<1 U
CHLOROFORM	ug/L	3615	NA	<0.25 U
CHLOROMETHANE	ug/L		NA	<1 U
CIS-1,2-DICHLOROETHENE	ug/L		NA	13.5
CIS-1,3-DICHLOROPROPENE	ug/L		NA	<0.5 U
DIBROMOCHLOROMETHANE	ug/L		NA	<0.5 U
DIBROMOMETHANE	ug/L		NA	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L		NA	<0.5 U
ETHYLBENZENE	ug/L	57025	NA	<0.5 U
HEXACHLOROBUTADIENE	ug/L		NA	<0.5 U
ISOPROPYLBENZENE	ug/L		NA	<0.5 U
M,P-XYLENE	ug/L	83.6	NA	<1 U
METHYLENE CHLORIDE	ug/L	1699	NA	<0.5 U
NAPHTHALENE	ug/L		NA	<0.4 U
N-BUTYLBENZENE	ug/L		NA	<0.5 U
N-PROPYLBENZENE	ug/L		NA	<0.25 U
O-XYLENE	ug/L	83.6	NA	<0.5 U
P-ISOPROPYLTOLUENE	ug/L		NA	<0.5 U
SEC-BUTYLBENZENE	ug/L		NA	<0.5 U
STYRENE	ug/L	5987	NA	<0.25 U
TERT-BUTYLBENZENE	ug/L		NA	<0.5 U
TETRACHLOROETHENE	ug/L	180.7	NA	<0.5 U
TOLUENE	ug/L	4189	NA	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L		NA	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L		NA	<1 U
TRICHLOROETHENE	ug/L	181	NA	3.46
TRICHLOROFLUOROMETHANE	ug/L		NA	<0.5 U
VINYL CHLORIDE	ug/L	72	NA	<0.5 U
Anions (9056)				
CHLORIDE	mg/L		516	564
SULFATE	mg/L		50.3	25.4

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

mg/L - milligrams per liter

NA - not analyzed

U - Undetected: The analyte was analyzed for, but not detected.

ug/L - micrograms per liter

GWTP Effluent Monthly Sampling - September 2016

Location ID: Sample Date:	Units	Daily Maximum Conc	LH18/24-SP650-6393-GRAB 9/12/2016
Location Description:			GWTP – Collected from a spigot on the discharge of effluent TK-650. Sampled Monthly.
Metals (6010C)			
ALUMINUM	mg/L	1.644	<0.2 U
IRON	mg/L	2.395	0.154
SELENIUM	mg/L	0.012	<0.02 U
Metals (6020A)			
ANTIMONY	mg/L		0.000994 J
ARSENIC	mg/L	0.722	0.00195 J
BARIUM	mg/L	2	0.28 J
CADMIUM	mg/L	0.0034	<0.0006 U
CHROMIUM	mg/L	0.752	0.00195 J
COBALT	mg/L	11.495	0.00098 J
LEAD	mg/L	0.0046	<0.001 U
MANGANESE	mg/L	15.494	0.0338 J
NICKEL	mg/L	0.184	0.00338 J
SILVER	mg/L	0.003	<0.001 U
THALLIUM	mg/L		<0.0002 U
VANADIUM	mg/L	3.592	<0.001 U
ZINC	mg/L	0.31	<0.025 U

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

mg/L - milligrams per liter

U - Undetected: The analyte was analyzed for, but not detected.

GWTP Influent Monthly Sampling - September 2016

Location ID: / Sample Date:	Units	LH18/24-SP140-7393-GRAB 9/12/2016
Location Description:		GWTP – Collected from a spigot on the influent to TK-140. Sampled Monthly.
Perchlorate (6850)		
PERCHLORATE	ug/L	15200
Volatile Organic Compounds (8260B)		
1,1,1,2-TETRACHLOROETHANE	ug/L	<25 U
1,1,1-TRICHLOROETHANE	ug/L	<25 U
1,1,2,2-TETRACHLOROETHANE	ug/L	<20 U
1,1,2-TRICHLOROETHANE	ug/L	<25 U
1,1-DICHLOROETHANE	ug/L	<12.5 U
1,1-DICHLOROETHENE	ug/L	91.2 J
1,1-DICHLOROPROPENE	ug/L	<25 U
1,2,3-TRICHLOROBENZENE	ug/L	<15 U
1,2,3-TRICHLOROPROPANE	ug/L	<50 U
1,2,4-TRICHLOROBENZENE	ug/L	<20 U
1,2,4-TRIMETHYLBENZENE	ug/L	<25 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	<100 U
1,2-DIBROMOETHANE	ug/L	<25 U
1,2-DICHLOROBENZENE	ug/L	<12.5 U
1,2-DICHLOROETHANE	ug/L	70.6
1,2-DICHLOROPROPANE	ug/L	<20 U
1,3,5-TRIMETHYLBENZENE	ug/L	<25 U
1,3-DICHLOROBENZENE	ug/L	<25 U
1,3-DICHLOROPROPANE	ug/L	<20 U
1,4-DICHLOROBENZENE	ug/L	<12.5 U
2,2-DICHLOROPROPANE	ug/L	<25 U
2-BUTANONE	ug/L	<250 U
2-CHLOROTOLUENE	ug/L	<12.5 U
2-HEXANONE	ug/L	<250 U
4-CHLOROTOLUENE	ug/L	<25 U
4-METHYL-2-PENTANONE	ug/L	<250 U
ACETONE	ug/L	<250 U
BENZENE	ug/L	<12.5 U
BROMOBENZENE	ug/L	<12.5 U
BROMOCHLOROMETHANE	ug/L	<20 U
BROMODICHLOROMETHANE	ug/L	<25 U
BROMOFORM	ug/L	<50 U
BROMOMETHANE	ug/L	<50 U
CARBON DISULFIDE	ug/L	<50 U
CARBON TETRACHLORIDE	ug/L	<25 U
CHLOROBENZENE	ug/L	<12.5 U
CHLOROETHANE	ug/L	<50 U
CHLOROFORM	ug/L	18.9 J
CHLOROMETHANE	ug/L	<50 U

GWTP Influent Monthly Sampling - September 2016

Location ID: / Sample Date:	Units	LH18/24-SP140-7393-GRAB 9/12/2016
CIS-1,2-DICHLOROETHENE	ug/L	4730
CIS-1,3-DICHLOROPROPENE	ug/L	<25 U
DIBROMOCHLOROMETHANE	ug/L	<25 U
DIBROMOMETHANE	ug/L	<25 U
DICHLORODIFLUOROMETHANE	ug/L	<25 U
ETHYLBENZENE	ug/L	<25 U
HEXACHLOROBUTADIENE	ug/L	<25 U
ISOPROPYLBENZENE	ug/L	<25 U
M,P-XYLENE	ug/L	<50 U
METHYLENE CHLORIDE	ug/L	1750
NAPHTHALENE	ug/L	<20 U
N-BUTYLBENZENE	ug/L	<25 U
N-PROPYLBENZENE	ug/L	<12.5 U
O-XYLENE	ug/L	<25 U
P-ISOPROPYLTOLUENE	ug/L	<25 U
SEC-BUTYLBENZENE	ug/L	<25 U
STYRENE	ug/L	<12.5 U
TERT-BUTYLBENZENE	ug/L	<25 U
TETRACHLOROETHENE	ug/L	46.9 J
TOLUENE	ug/L	<25 U
TRANS-1,2-DICHLOROETHENE	ug/L	13.7 J
TRANS-1,3-DICHLOROPROPENE	ug/L	<50 U
TRICHLOROETHENE	ug/L	9870
TRICHLOROFLUOROMETHANE	ug/L	<25 U
VINYL CHLORIDE	ug/L	72.8

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

U - Undetected: The analyte was analyzed for, but not detected.

ug/L - micrograms per liter

LHAAP-001-R Groundwater Sampling Results - September 2016

Sample ID: Sample Date:	Units	PCL	131-092816 9/28/2016	132-092816 9/28/2016	132FD-092816 9/28/2016	27WW01-092816 9/28/2016	27WW02-092816 9/28/2016	27WW03-092816 9/28/2016	27WW04-092816 9/28/2016
Perchlorate (6850)									
PERCHLORATE	ug/L	17	<0.2 U	<0.2 U	<0.2 U	<0.2 U	0.705	<0.2 U	<0.2 U

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

ug/L - micrograms per liter

LHAAP-003-R Groundwater Sampling Results - September 2016

Sample ID: Sample Date:	Units	PCL	127-092916 9/29/2016	128-092916 9/29/2016	128FD-092916 9/29/2016	18WW16-092916 9/29/2016
Perchlorate (6850)						
PERCHLORATE	ug/L	17	<0.2 U	<0.2 U	<0.2 U	5.32

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

ug/L - micrograms per liter

Longhorn Army Ammunition Plant
Site Photos, November 9, 2016
Southwest of LHAAP-18/24, between LHAAP-17 and LHAAP-18/24

Photo # 1 – Access road at LHAAP-17. The water is standing with no flow.

Photo # 2 - This is on the west side of the access road just off of the road. Facing west, well 130 is approximately 5 feet to the left of photo view.

Longhorn Army Ammunition Plant
Site Photos, November 9, 2016
Southwest of LHAAP-18/24, between LHAAP-17 and LHAAP-18/24

Photo # 3 - East side of the access road just off of the road. Facing east

Photo # 4 - Approximately 40 ft. west of the access road

Longhorn Army Ammunition Plant
Site Photos, November 9, 2016
Southwest of LHAAP-18/24, between LHAAP-17 and LHAAP-18/24

Photo # 5 - Approximately 100 ft. west of the access road and also the end of the standing water on the west side

Photo # 6 - Approximately 100 ft. east of the access road and the end of the standing water on the east side.

Longhorn Army Ammunition Plant
Site Photos, November 9, 2016
Southwest of LHAAP-18/24, between LHAAP-17 and LHAAP-18/24

Photo # 7 - Ditch line exiting LHAAP-18/24 on the southwest side, which is dry.

Subject: **Final Minutes, Monthly Managers' Meeting, Longhorn Army Ammunition Plant (LHAAP)**

Location of Meeting: **Teleconference – 888-369-1427, Passcode 4887611**
Date of Meeting: **December 15, 2016 – 10:00 AM**

Attendees:

Army BRAC: Rose Zeiler (RMZ)
EPA: Rich Mayer (RM), Barry Forsythe (BF)
TCEQ: April Palmie (AP)
USACE: Aaron Williams (AW)
AECOM: Elspeth Sharp (ES), Debra Richmann (DR), JoLynn Snow (JS)

Welcome **RMZ**

Action Items
AECOM

- Replacement page for the Final LHAAP-47 PSI Work Plan. **Complete –** The replacement page was distributed on 12/14/16. RMZ went over the procedure that will be observed going forward to ensure a DPT boring intended for groundwater grab sampling is not abandoned prematurely due to smearing of clay during DPT advancement that retards groundwater flow into the borehole. AP and RM confirmed that the procedure is as they had agreed to and accepted the replacement page.
- Make arrangements for removal and disposal of a roll-off box containing IDW at LHAAP-67. **In Progress –** DR said AECOM submitted waste profiles for the roll-offs containing IDW at LHAAP-67, as well as at LHAAP-18/24 and LHAAP-37, using the same template that the landfill accepted in March, but this time the landfill rejected the profiles. AECOM was told the landfill needs more information on the processes generating the waste. The project geologist, Glenn Hilton (GH), will continue to work with the landfill to develop waste profiles that are acceptable to the facility.
- Determine if ponded water west of LHAAP-18/24 and north of LHAAP-17 is from runoff of irrigation water from LHAAP-18/24. **Complete –** RM confirmed that the ponding north of LHAAP-17 discussed during the November MMM is the area he observed and was interested in with respect to the source of the ponded water. There was some further discussion of the type of vegetation in the general area not looking like typical marsh or wetland vegetation. However, the group agreed that historical evidence demonstrates that ponding occurred in this area well before irrigation and past injection of treated groundwater first occurred at LHAAP-18/24, so natural sources of the water must be involved. The group agreed that this item is resolved.

Army

- RMZ discussed what to do with temporary piezometer at LHAAP-47 (near 47WW25). RMZ asked the group if they are ok with it remaining in place until the PSI is implemented under the next PBR contract. The group agreed, however, AECOM was given the action item to have Scott Beesinger (SB) visually confirm the piezometer is capped.

EPA

- Replacement page for the LHAAP-29 RI Addendum. **Complete** - Specific language was developed by the Army, and EPA and TCEQ concurrence was received on 12/7/16. Electronic copies of the replacement page were submitted to EPA and TCEQ on 12/14/16.
- RM verified RA-O sites are to be included in the schedule prepared by the Army. **Complete** – RMZ said that the Army will provide their schedule to EPA sometime after Christmas.

TCEQ

- No outstanding action items.

AEC

- No outstanding action items.

USFWS

- No outstanding action items.

Schedule Review **RMZ**

- Restoration – RMZ indicated a draft schedule will be provided after the first of the year (2017). AP and RM said that the last day they would be in their offices before the holidays is 12/22.
- Contract – AW said the RFP for the next PBR will be released after the holidays and that pending documents need to be finalized before release. AW, RM, AP and DR agreed that review and approval of the LHAAP-18/24 Revised FS is the top priority. AM said that EPA has only one outstanding issue concerning groundwater mounding at the site. DR indicated that the LHAAP Annual GWTP Evaluation Report for 2004 was emailed to RM and AP on 12/14/16; the document contains monthly groundwater surface potentiometric surface maps for 2004 that document the presence of mounding throughout that year. AW also sent copies of correspondence between the Army, TCEQ, and EPA to RM and AP concerning discharge of treated groundwater by irrigation, including a letter from TCEQ concurring with the recommendations for discharge presented in a memo from GWTP operator. Next priority is the LHAAP-16 RD. RMZ said the Army and AECOM are working to resolve some inconsistencies in the draft RD, and AW added that they will be having a call to discuss the LHAAP-16 RD with AECOM later today (12/15/16). AP said that for the remaining pending documents, TCEQ and EPA request they receive the RTCs and revised redline documents together, to make them easier to review. For the Draft Final LHAAP-18/24 Revised FS, the RTCs were sent separately, and the revised redline document has not been submitted yet.

Programmatic Issues **RMZ/RM/AP**

Defense Environmental Restoration Program (DERP) PBR Update **AECOM**

DR asked everyone to refer to the Document and Issue Tracker dated 12/15/16, which was distributed with the agenda. It includes currently projected dates for submittal of remaining project milestone deliverables to EPA and TCEQ.

- Item 1 (GWTP Quarterly Report) – Responses to agency comments on the Q4 2015 report were incorporated into the Q1 2016 GWTP report, which was submitted to EPA and TCEQ on 11/7/16.

- Item 2 (Revised Updated LHAAP-18/24 PSI Addendum) – JS indicated that the Draft Final Revised Updated LHAAP-18/24 PSI Addendum redline and RTCs are planned for submittal to EPA and TCEQ later today (12/15/16) or tomorrow.

- Item 2-1 (LHAAP-18/24 Data Gap Sampling) - Complete.

- Item 2-2 (Previous Regulatory Comments on LHAAP-18/24 FS) –During a conference call on 12/14/16 with EPA and TCEQ, EPA accepted all responses to their previous comments on the old FS except comment 21. RM said he would review the groundwater surface maps in the 2004 annual GWTP evaluation report provided by the Army and would provide EPA's final response by 12/16/16.

- Item 2-3 (LHAAP-18/24 Revised FS) – During the conference call on 12/14/16 to review RTCs for EPA's previous comments on the old FS, RTCs for TCEQ and EPA comments on the Draft Revised FS were also discussed. EPA and TCEQ accepted all responses except EPA comment 21. RM said he provide EPA's final response by 12/16/16.

- Item 3-1 (LHAAP-37 RACR) – The Final RACR has been entered into the AR. RM said the Certificate of Completion letter is being held until the groundwater returns to its pre-test condition.

- Items 4 (LHAAP-46 RACR), 5 (LHAAP-50 RACR), 6 (LHAAP-58 RACR), 7 (LHAAP-67 RACR), 8 (LHAAP-12 2015 Annual Report) - Complete. Items 7 and 8 were entered into the Administrative Record.

- Item 8-1 (LHAAP-12 2016 RA-O Report) – Annual groundwater samples for 2016 are collected in December. Only a validated data package will be submitted to TCEQ and EPA for December 2016 sampling event; no evaluation report will be provided.

- Item 9 (LHAAP-46 Yr. 2 RA-O Report) – Complete.

- Item 9-1 (LHAAP-46 Yr. 3 RA-O Report) – Submittal of the Draft Yr. 3 RA-O report to EPA and TCEQ is pending a decision from the Army.

- Item 10-1 (LHAAP-67 Yr. 1 RA-O Report) and Item 10-2 (LHAAP-67 Yr. 2. RA-O Report) – Comments on the Year 1 and Year 2 draft reports were received from EPA on 12/1/16 and from TCEQ on 12/6/16. RTCs are in preparation.

- Item 10-3 (LHAAP-67 Yr. 3 RA-O Report) - Submittal of the Draft Yr. 3 RA-O report to EPA and TCEQ is pending a decision from the Army.

- Item 11-1 (LHAAP-50 Yr. 1 RA-O) – DR said the Draft Final Yr. 1 report and RTCs received EPA approval without further comments on 12/12/16 and TCEQ approval was received that morning (12/15/16). This item is complete except for entering the Draft Final report and concurrence emails into the next AR update.

- Item 11-2 (LHAAP-50 Yr. 2 RA-O) – DR said the Draft Final Yr. 2 report and RTCs received EPA approval without further comments on 12/13/16 and TCEQ submitted one additional comment on 12/15/16. AP said the comment was to revise one figure using a

more current set of data. She suggested the comment could be addressed with a replacement page.

- Item 12-1 (LHAAP-58 RA-O) – Complete.

- Item 12-2 (LHAAP-58 Contingency Remedial Action Work Plan) – This item is complete except for entering the Final LHAAP-58 Contingency RAWP into the next AR update.

- Item 13 (MMM) – Draft October 2016 MMM minutes were finalized and will be entered into the next Admin Record update. Draft minutes from the November 2016 MMM to be submitted to TCEQ and EPA for review the week of 12/12/16. The next MMM meeting will be held at 10:00 CST on Thursday 1/19/17 at the LHAAP Army trailer.

- Item 14-1 (LHAAP-29 RI Addendum) – Complete.

- Item 14-2 (LHAAP-29 FS Addendum) – DR said a date for submittal of the Draft FS Addendum to the regulators is still TBD. Submittal of the Draft FS Addendum to EPA and TCEQ is pending a decision from the Army. AP and RM agreed it would be good to get this reviewed and approved by the agencies under the current contract, if possible.

- Item 15-1 (LHAAP-47 PSI Work Plan) – Submitted Draft Final to EPA and TCEQ on 12/14/16. The submittal included the agreed to replacement language concerning criteria for determining when/if a DPT boring intended for grab groundwater sampling can be abandoned due to inadequate volume of groundwater.

- Item 15-2 (LHAAP-16 RD) – The Draft RD was submitted to EPA and TCEQ on 10/12/2016. Comments were received from EPA on 11/15/16 and from TCEQ on 11/16/16. RTCs are due to EPA and TCEQ by 12/16/16.

- Item 15-2a (LHAAP-16 RD Post ROD Requirements) – DR said the initial LUC notice was sent to Federal/State/Local entities and owner/occupants on 12/8/16. Complete.

- Items 15-3 (LHAAP-17 RD) – The Army is deferring the RD to the next PBR contract.

- Item 15-3a (LHAAP-17 PDI WP) – Draft Final PDI Work Plan was submitted to EPA and TCEQ for their records on 11/29/16. Received email from RM confirming EPA approval as final on 12/14/16 and TCEQ acceptance on 12/15/16.

- Item 15-3b (LHAAP-17 Post-ROD Requirements) – DR said the initial LUC notice was sent to Federal/State/Local entities and owner/occupants on 12/8/16. Complete.

- Item 15-4 (LHAAP-001-R-01 RD/RDWP) – The Army is deferring the LUC RD to the follow-on PBR contract.

- Item 15-4a (LHAAP-001-R-01 Limited LTM) – The first of three rounds of annual groundwater samples was collected on 9/29/2016. Validated results were distributed in the Validated Data Package for the November 2016 MMM. Complete.

- Item 15-4b (LHAAP-001-R-01 Post-ROD Requirements) – DR said the initial LUC notice was sent to Federal/State/Local entities and owner/occupants on 12/8/16. Complete.

- Item 15-5 (LHAAP-003-R-01 RD/RDWP) – The Army is deferring the LUC RD to the follow-on PBR contract.

- Item 15-5a (LHAAP-003-R-01 Limited LTM) – DR stated that only one round of groundwater samples is required by the ROD and it was collected on 9/29/2016. All wells except 18WW16, which gets sampled during LHAAP-18/24 monitoring events, were redeveloped prior to sampling. Validated results were distributed in the Validated Data Package for the November 2016 MMM.

- Item 15-5b (LHAAP-003-R-01 Post-ROD Requirements) – DR said the initial LUC notice was sent to Federal/State/Local entities and owner/occupants on 12/8/16. Complete.

- Item 15-6 (LHAAP-04 ROD) – The Army submitted the Draft Final ROD to EPA and TCEQ on 10/7/2016. Army submitted RTCs for EPA comments on the Draft Final ROD on 11/4/16. The ROD and RTCs have been approved and the Army is just waiting for final signatures.

- Item 15-7 (Site-wide LUC Management Plan) – The FY2016 Revision Log and signed transmittal letters will be entered into the next Admin Record update.

- Item 16 (RAB/Website) –DR said the LHAAP website was updated with the date/time of next RAB meeting (1/19/17 from 6:00 – 7:30 pm) and approved July 2016 RAB meeting minutes on 10/31/16. The next RAB meeting will be at the Karnack Community Center. Draft minutes from the October RAB meeting will be submitted to the RAB members for review prior to the December meeting.

- Item 17-1 (GWTP O&M – GWTP Sampling and Optimization Memo) and Item 17-2 (GWTP Sampling and Analysis Plan) – AECOM submitted responses to comments on the Optimization Memo and the revised SAP to EPA and TCEQ on 11/10/16. Received TCEQ comments and marked up Table 2-1 on 12/12/16; held a conference call in the afternoon to review them together. During the MMM, AP indicated that for effluent sampling, a bi-weekly frequency would miss some of the excursions. She recommended that in the revised Table 2-1 for the updated SAP, weekly sampling, as is currently performed, should be retained. She also said that a specific statement should be included for perchlorate, because the FBR performance has been variable. She acknowledged that this would be conditional language, because new discharge limits will be established, and may be higher than current limits, thus alleviating some of the problems with perchlorate in the effluent. RTCs will be submitted in January 2017.

- Item 17-3 (GWTP Continuing O&M) – GWTP O&M is ongoing and will continue under the current PBR for the entire contract POP (through 9/30/17).

- Item 18 (Admin. Record Update) – The Q3 2016 AR update was uploaded to the LHAAP website on 12/14/16, and CDs will be provided later in the week. The 2016 AR Q4 update currently in preparation.

- Item 19 (LHAAP-02) – The third round of semi-annual sampling was performed the week of 10/3/16. The Army directed AECOM to prepare a Tech Memo covering the first year (two rounds) of semi-annual sampling (10/15/15 and 4/29/16), which was provided to TCEQ and EPA on 10/27/16. On 11/17/16, AP requested a figure showing the site and sampling locations. The requested figure was provided to AP and RM on 12/13/16. Received TCEQ approval on 12/15/16.

- Item 20 (LHAAP-37 Geochemical Rebound) – Results for the first round of sampling were provided groundwater sampling results in the September 2016 validated data package distributed at the October 2016 MMM. Additional quarterly sampling is suspended because the site groundwater has not adequately rebounded; future sampling will be conducted under the follow-on PBR contract. AECOM is currently preparing a tech memo to document the results of the September 2016 and previous sampling for MNA parameters. DR indicated the draft should be completed and submitted for Army review shortly after the holidays.

- Item 21 (Smart Map) – AECOM continues to develop the Smart Map. JS said that discussions with the Smart Map developers concerning how to transfer the site to the follow-on PBR contractor are ongoing. She also indicated a teleconference with the Army should be scheduled to discuss the details for the transfer.

November 2016 Validated LHAAP Data Package
DR and JS discussed a possibly mislabeled GWTP sample in November Validated Data Package. The sample for metals in what is currently identified as an influent sample is believed to be mislabeled and should probably be identified as an effluent sample. JS is consulting with the metals lab manager and will send a revised data package if the suspected error is confirmed.

MMRP Update **Army**

- Groundwater Tech Memo for LHAAP-003-R
    - DR discussed the perchlorate results, indicating that perchlorate was non-detect in two of the three wells samples, and was well below the TRRP Tier 1 Groundwater Residential PCL in the third well.
- Groundwater results for two sites
    - DR said that no perchlorate was detected in any of the six wells sampled at LHAAP-001-R in November 2016.

Other Environmental Restoration **Army**

- Quarterly Reporting and Requirements
    - GWTP Evaluation
    - Surface Water/Perimeter Well Quarterly Update
    - Administrative Record Update
    - Website Update
- Annual Reporting
    - LUC Management Plan Update - Signed Revision Log and transmittal letters will be entered into the 2016 Q4 AR update.
    - CRP/CIP Revision (Biennial) – A question was asked about the indicated biennial frequency of the CRP/CIP revision. RMZ indicated it should be revised next year and AW said it will be included in the next PBR PWS.

USFWS Update **RMZ/PB**

Schedule Next Managers' Meeting

- The January 2017 MMM will be held at the Army trailer at LHAAP on 1/19/17, at 10:00AM CST.

Adjourn

Attachments:

- **November 2016 Validated LHAAP Data:**
  - GWTP Effluent: Weekly and Bi-weekly Sampling (October 2016)
  - GWTP Influent: Monthly (October 2016)
  - LHAAP-02: Semi-annual Sampling (October 2016)
  - LHAAP-58: Semi-annual MNA Sampling (October 2016)

ACRONYM LIST

AEC	United States Army Environmental Command
AECOM	AECOM Technical Services, Inc.
AP	April Palmie
AR	Administrative Record
AW	Aaron Williams
BF	Barry Forsythe
BRAC	Base Realignment and Closure
CIP	Community Involvement Plan
CRP	Community Relations Plan
CST	Central Standard Time
DERP	Defense Environmental Restoration Program
DPT	Direct Push Technology
DR	Debra Richmann
EPA	United States Environmental Protection Agency
ES	Elspeth Sharp
FBR	Fluidized Bed Reactor
FS	Feasibility Study
GH	Glenn Hilton
GWTP	Ground Water Treatment Plant
IDW	Investigation-Derived Waste
JS	JoLynn Snow
LHAAP	Longhorn Army Ammunition Plant
LTM	Long-Term Monitoring
LUC	Land Use Control
MMM	Monthly Managers' Meeting
MMRP	Military Munitions Response Program
MNA	Monitored Natural Attenuation
O&M	Operation and Maintenance
PB	Paul Bruckwicki
PBR	Performance-Based Remediation
PCL	TRRP Tier 1 Groundwater Residential Protective Concentration Level
PDI	Pre-Design Investigation
PSI	Post-Screening Investigation
PWS	Project Work Schedule
RAB	Restoration Advisory Board

RACR	Remedial Action Completion Report
RA-O	Remedial Action Operation
RAWP	Remedial Action Work Plan
RD	Remedial Design
RFP	Request for Proposal
RI	Remedial Investigation
RM	Rich Mayer
RMZ	Rose M. Zeiler
ROD	Record of Decision
RTC	Response to Comments
SAP	Sampling and Analysis Plan
SB	Scott Beesinger
TBD	To Be Determined
TCEQ	Texas Commission on Environmental Quality
TRRP	Texas Risk Reduction Program
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
WP	Work Plan

LHAAP Data Validated
November 2016

GWTP Effluent *Weekly, Bi-weekly and Monthly Sampling - October 2016*

Ammonia (350.1)	Metals (6010C)
Ortho-Phosphate (365.2)	Metals (6020A)
Organic Carbon (415.1)	Hexavalent Chromium (7196A)
Perchlorate (6850)	VOC (8260B)
1,4-Dioxane (8270D-SIM)	Anions (9056)

GWTP Influent *Monthly - October 2016*

Perchlorate (6850)
VOC (8260B)

LHAAP-02 *Semi-Annual Sampling - October 2016*

Metals (6010C)	Mercury (7470A)
Metals (6020A)	

LHAAP-58 *Semi-Annual MNA Sampling - October 2016*

Alkalinity (310.2)	Anions (9056)
Phosphorus (365.4)	Dechlorinating Bacteria
Metals (6010C)	Dissolved Gases (RSK-175)
Metals (6020A)	Ferrous Iron (SM3500FE)
VOC (8260B)	Sulfide (SM-4500-S-(-2)-F-2000)
Metabolic Acids (830-MBA)	

GWTP Effluent Weekly Sampling - October 2016

Location ID: / Sample Date:	Units	Daily Maximum Conc	LH18/24-SP650-6401-GRAB 10/10/2016	LH18/24-SP650-6403-GRAB 10/17/2016	LH18/24-SP650-6404-GRAB 10/24/2016	LH18/24-SP650-6406-GRAB 10/31/2016
Location Description:			GWTP–Collected from a spigot on the discharge of effluent TK-650. Sampled Weekly.			
Ammonia as N (350.1)						
AMMONIA AS N	mg/L		8.72	7.32	7.16	14.8
Ortho-Phosphate (365.2)						
ORTHO-PHOSPHATE	mg/L		1.65	1.51	1.63	3.23
Organic Carbon (415.1)						
TOTAL ORGANIC CARBON (TOC)	mg/L		25.5	17.1	26.2	62.3
Perchlorate (6850)						
PERCHLORATE	ug/L	13	13.5	<0.2 U	98.5	0.817
Semi-Volatile Organic Compounds (8270D-SIM)						
1,4-DIOXANE*	ug/L	134.2	21.9	15.6	17.4	19

* Calculated Effluent Limit

mg/L - milligrams per liter

U - Undetected: The analyte was analyzed for, but not detected.

ug/L - micrograms per liter

GWTP Effluent Biweekly Sampling - October 2016

Location ID: / Sample Date:	Units	Daily Maximum Conc	LH18/24-SP650-6398-COMP 10/3/2016	LH18/24-SP650-6398-GRAB 10/3/2016	LH18/24-SP650-6402-COMP 10/17/2016	LH18/24-SP650-6402-GRAB 10/17/2016	LH18/24-SP650-6405-COMP 10/31/2016	LH18/24-SP650-6405-GRAB 10/31/2016
Location Description:			GWTP – Collected from holding jar accumulating aliquots of discharge from a TK-650 effluent spigot every few hours. Sampled Biweekly.	GWTP – Collected from a spigot on the discharge of effluent TK-650 Sampled Biweekly.	GWTP – Collected from holding jar accumulating aliquots of discharge from a TK-650 effluent spigot every few hours. Sampled Biweekly.	GWTP – Collected from a spigot on the discharge of effluent TK-650 Sampled Biweekly.	GWTP – Collected from holding jar accumulating aliquots of discharge from a TK-650 effluent spigot every few hours. Sampled Biweekly.	GWTP – Collected from a spigot on the discharge of effluent TK-650 Sampled Biweekly.
Metals (6010C)								
SELENIUM	mg/L	0.012	<0.02 U	<0.02 U	<0.02 U	<0.02 U	<0.02 U	<0.02 U
Metals (6020A)								
LEAD	mg/L	0.0046	<0.001 U	<0.001 U	<0.001 U	<0.001 U	<0.001 U	<0.001 U
SILVER	mg/L	0.003	<0.001 U	<0.001 U	<0.001 U	<0.001 U	<0.001 U	<0.001 U
Perchlorate (6850)								
PERCHLORATE	ug/L	13	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U	3.32
Hexavalent Chromium (7196A)								
HEXAVALENT CHROMIUM	mg/L	0.1244	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U
Volatile Organic Compounds (8260B)								
1,1,1,2-TETRACHLOROETHANE	ug/L		NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	7230	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L		NA	<0.4 U	NA	<0.4 U	NA	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	216.9	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,1-DICHLOROETHANE	ug/L	14032	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
1,1-DICHLOROETHENE	ug/L	253	NA	<1 U	NA	<1 U	NA	<1 U
1,1-DICHLOROPROPENE	ug/L		NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L		NA	<0.3 U	NA	<0.3 U	NA	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L		NA	<1 U	NA	<1 U	NA	<1 U
1,2,4-TRICHLOROBENZENE	ug/L		NA	<0.4 U	NA	<0.4 U	NA	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L		NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L		NA	<2 U	NA	<2 U	NA	<2 U
1,2-DIBROMOETHANE	ug/L		NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,2-DICHLOROBENZENE	ug/L		NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
1,2-DICHLOROETHANE	ug/L	181	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U

GWTP Effluent Biweekly Sampling - October 2016

Location ID: / Sample Date:	Units	Daily Maximum Conc	LH18/24-SP650-6398-COMP 10/3/2016	LH18/24-SP650-6398-GRAB 10/3/2016	LH18/24-SP650-6402-COMP 10/17/2016	LH18/24-SP650-6402-GRAB 10/17/2016	LH18/24-SP650-6405-COMP 10/31/2016	LH18/24-SP650-6405-GRAB 10/31/2016
1,2-DICHLOROPROPANE	ug/L	5	NA	<0.4 U	NA	<0.4 U	NA	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L		NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,3-DICHLOROBENZENE	ug/L		NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
1,3-DICHLOROPROPANE	ug/L		NA	<0.4 U	NA	<0.4 U	NA	<0.4 U
1,4-DICHLOROBENZENE	ug/L		NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
2,2-DICHLOROPROPANE	ug/L		NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
2-BUTANONE	ug/L		NA	<5 U	NA	<5 U	NA	<5 U
2-CHLOROTOLUENE	ug/L		NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
2-HEXANONE	ug/L		NA	<5 U	NA	<5 UJ	NA	<5 UJ
4-CHLOROTOLUENE	ug/L		NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
4-METHYL-2-PENTANONE	ug/L		NA	<5 U	NA	<5 U	NA	<5 U
ACETONE	ug/L	2395	NA	<5 U	NA	2.65 J	NA	3.32 J
BENZENE	ug/L	181	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
BROMOBENZENE	ug/L		NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
BROMOCHLOROMETHANE	ug/L		NA	<0.4 U	NA	<0.4 U	NA	<0.4 U
BROMODICHLOROMETHANE	ug/L		NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
BROMOFORM	ug/L		NA	<1 U	NA	<1 U	NA	<1 U
BROMOMETHANE	ug/L		NA	<1 U	NA	<1 U	NA	<1 U
CARBON DISULFIDE	ug/L		NA	<1 U	NA	<1 U	NA	<1 U
CARBON TETRACHLORIDE	ug/L	181	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
CHLOROBENZENE	ug/L	47180	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
CHLOROETHANE	ug/L		NA	<1 U	NA	<1 U	NA	<1 U
CHLOROFORM	ug/L	3615	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
CHLOROMETHANE	ug/L		NA	<1 U	NA	<1 U	NA	<1 U
CIS-1,2-DICHLOROETHENE	ug/L		NA	14.5	NA	12.1	NA	<0.5 U
CIS-1,3-DICHLOROPROPENE	ug/L		NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
DIBROMOCHLOROMETHANE	ug/L		NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
DIBROMOMETHANE	ug/L		NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L		NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
ETHYLBENZENE	ug/L	57025	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
HEXACHLOROBUTADIENE	ug/L		NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
ISOPROPYLBENZENE	ug/L		NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
M,P-XYLENE	ug/L	83.6	NA	<1 U	NA	<1 U	NA	<1 U
METHYLENE CHLORIDE	ug/L	1699	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
NAPHTHALENE	ug/L		NA	<0.4 U	NA	<0.4 U	NA	<0.4 U
N-BUTYLBENZENE	ug/L		NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
N-PROPYLBENZENE	ug/L		NA	<0.25 U	NA	<0.25 U	NA	<0.25 U
O-XYLENE	ug/L	83.6	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
P-ISOPROPYLTOLUENE	ug/L		NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
SEC-BUTYLBENZENE	ug/L		NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
STYRENE	ug/L	5987	NA	<0.25 U	NA	<0.25 U	NA	<0.25 U

GWTP Effluent Biweekly Sampling - October 2016

Location ID: / Sample Date:	Units	Daily Maximum Conc	LH18/24-SP650-6398-COMP 10/3/2016	LH18/24-SP650-6398-GRAB 10/3/2016	LH18/24-SP650-6402-COMP 10/17/2016	LH18/24-SP650-6402-GRAB 10/17/2016	LH18/24-SP650-6405-COMP 10/31/2016	LH18/24-SP650-6405-GRAB 10/31/2016
TERT-BUTYLBENZENE	ug/L		NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
TETRACHLOROETHENE	ug/L	180.7	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
TOLUENE	ug/L	4189	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L		NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L		NA	<1 U	NA	<1 U	NA	<1 U
TRICHLOROETHENE	ug/L	181	NA	4.48	NA	3.89	NA	3.32
TRICHLOROFLUOROMETHANE	ug/L		NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
VINYL CHLORIDE	ug/L	72	NA	<0.5 U	NA	<0.5 U	NA	0.276 J
Anions (9056)								
CHLORIDE	mg/L		546	547	511	494	917	874
SULFATE	mg/L		80.2	70.3	112	119	81.1	89.4

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

mg/L - milligrams per liter

NA - not analyzed

U - Undetected: The analyte was analyzed for, but not detected.

ug/L - micrograms per liter

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

GWTP Effluent Monthly Sampling - October 2016

Location ID: Sample Date:	Units	Daily Maximum Conc	LH18/24-SP650-6400-GRAB 10/10/2016
Location Description:			GWTP – Collected from a spigot on the discharge of effluent TK-650. Sampled Monthly.
Metals (6010C)			
ALUMINUM	mg/L	1.644	<0.2 U
IRON	mg/L	2.395	0.154
SELENIUM	mg/L	0.012	<0.02 U
Metals (6020A)			
ANTIMONY	mg/L		<0.001 U
ARSENIC	mg/L	0.722	0.00216
BARIUM	mg/L	2	0.311
CADMIUM	mg/L	0.0034	<0.0006 U
CHROMIUM	mg/L	0.752	<0.002 U
COBALT	mg/L	11.495	0.000993 J
LEAD	mg/L	0.0046	<0.001 U
MANGANESE	mg/L	15.494	0.0404 J
NICKEL	mg/L	0.184	0.00418 J
SILVER	mg/L	0.003	<0.001 U
THALLIUM	mg/L		<0.0002 U
VANADIUM	mg/L	3.592	<0.001 U
ZINC	mg/L	0.31	<0.025 U

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

mg/L - milligrams per liter

U - Undetected: The analyte was analyzed for, but not detected.

GWTP Influent Monthly Sampling - October 2016

Location ID: / Sample Date:	Units	LH18/24-SP140-7400-GRAB 10/10/2016
Location Description:		GWTP – Collected from a spigot on the influent to TK-140. Sampled Monthly.
Perchlorate (6850)		
PERCHLORATE	ug/L	13700
Volatile Organic Compounds (8260B)		
1,1,1,2-TETRACHLOROETHANE	ug/L	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	2.47
1,1,2,2-TETRACHLOROETHANE	ug/L	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	2.83
1,1-DICHLOROETHANE	ug/L	11.2
1,1-DICHLOROETHENE	ug/L	96.2
1,1-DICHLOROPROPENE	ug/L	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	0.523 J
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	<2 U
1,2-DIBROMOETHANE	ug/L	<0.5 U
1,2-DICHLOROBENZENE	ug/L	<0.25 U
1,2-DICHLOROETHANE	ug/L	70.6
1,2-DICHLOROPROPANE	ug/L	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	<0.5 U
1,3-DICHLOROBENZENE	ug/L	<0.5 U
1,3-DICHLOROPROPANE	ug/L	<0.4 U
1,4-DICHLOROBENZENE	ug/L	<0.25 U
2,2-DICHLOROPROPANE	ug/L	<0.5 U
2-BUTANONE	ug/L	<5 U
2-CHLOROTOLUENE	ug/L	<0.25 U
2-HEXANONE	ug/L	<5 U
4-CHLOROTOLUENE	ug/L	<0.5 U
4-METHYL-2-PENTANONE	ug/L	<5 U
ACETONE	ug/L	<5 U
BENZENE	ug/L	3.29
BROMOBENZENE	ug/L	<0.25 U
BROMOCHLOROMETHANE	ug/L	1.04
BROMODICHLOROMETHANE	ug/L	<0.5 U
BROMOFORM	ug/L	<1 U
BROMOMETHANE	ug/L	<1 U
CARBON DISULFIDE	ug/L	<1 U
CARBON TETRACHLORIDE	ug/L	6.08
CHLOROBENZENE	ug/L	<0.25 U
CHLOROETHANE	ug/L	<1 U
CHLOROFORM	ug/L	19.2
CHLOROMETHANE	ug/L	<1 UJ
CIS-1,2-DICHLOROETHENE	ug/L	4910

GWTP Influent Monthly Sampling - October 2016

Location ID: / Sample Date:	Units	LH18/24-SP140-7400-GRAB 10/10/2016
CIS-1,3-DICHLOROPROPENE	ug/L	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	<0.5 U
DIBROMOMETHANE	ug/L	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	<0.5 U
ETHYLBENZENE	ug/L	0.948 J
HEXACHLOROBUTADIENE	ug/L	<0.5 U
ISOPROPYLBENZENE	ug/L	<0.5 U
M,P-XYLENE	ug/L	1.41 J
METHYLENE CHLORIDE	ug/L	1320
NAPHTHALENE	ug/L	<0.4 U
N-BUTYLBENZENE	ug/L	<0.5 U
N-PROPYLBENZENE	ug/L	<0.25 U
O-XYLENE	ug/L	0.974 J
P-ISOPROPYLTOLUENE	ug/L	<0.5 U
SEC-BUTYLBENZENE	ug/L	<0.5 U
STYRENE	ug/L	0.895 J
TERT-BUTYLBENZENE	ug/L	<0.5 U
TETRACHLOROETHENE	ug/L	43.6
TOLUENE	ug/L	2.01
TRANS-1,2-DICHLOROETHENE	ug/L	16.9
TRANS-1,3-DICHLOROPROPENE	ug/L	<1 U
TRICHLOROETHENE	ug/L	8510
TRICHLOROFLUOROMETHANE	ug/L	2.75
VINYL CHLORIDE	ug/L	144

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

U - Undetected: The analyte was analyzed for, but not detected.

ug/L - micrograms per liter

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

LHAAP-02 Semi-Annual Sampling - October 2016

Location ID: / Sample Date:	Units	MCL/ PCL/ UTL	35AWW13F-100616 10/6/2016	35AWW13FDF-100616 10/6/2016
Location Description:			Shallow zone, unimpacted downgradient. Field filtered w/ 10 micron filter.	Shallow zone, unimpacted downgradient. Field filtered w/ 10 micron filter. Field duplicate.
Metals (6010C)				
ALUMINUM	mg/L	100	<0.2 U	<0.2 U
BERYLLIUM	mg/L	0.004	<0.002 U	<0.002 U
CALCIUM	mg/L		73.9	72.9
IRON	mg/L		0.145	0.178
MAGNESIUM	mg/L		58.8	58.2
POTASSIUM	mg/L		0.623 J	0.585 J
SELENIUM	mg/L	0.05	<0.02 U	<0.02 U
SODIUM	mg/L		237	234
Metals (6020A)				
ANTIMONY	mg/L	0.006	<0.001 U	<0.001 U
ARSENIC	mg/L	0.01	0.00173 J	0.00173 J
BARIUM	mg/L	2	0.0295	0.03
CADMIUM	mg/L	0.005	<0.0006 U	<0.0006 U
CHROMIUM	mg/L	0.1	<0.002 U	<0.002 U
COBALT	mg/L	6.1	0.00268	0.00262
COPPER	mg/L	1.3	0.00161 J	<0.002 U
LEAD	mg/L	0.015	<0.001 U	<0.001 U
MANGANESE	mg/L	1.1	0.348 J	0.353 J
NICKEL	mg/L	0.49	0.00777 J	0.00779 J
SILVER	mg/L	0.51	<0.001 U	<0.001 U
THALLIUM	mg/L	0.002	<0.0002 U	<0.0002 U
VANADIUM	mg/L	0.72	0.000621 J	0.000506 J
ZINC	mg/L	31	0.0713 J	<0.025 U
Mercury (7470A)				
MERCURY	mg/L	0.002	<0.0002 U	<0.0002 U

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Limit

mg/L - milligrams per liter

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UTL - Upper Tolerance Limit

LHAAP-58 Semi-Annual MNA Sampling - October 2016

Sample ID: / Sample Date:	Units	MCL/ PCL	03WW01-100416 10/4/2016	03WW01F-100416 10/4/2016	03WW01FF-100416 10/4/2016	35AWW01-100516 10/5/2016	35AWW05-100516 10/5/2016	35AWW06-100316 10/3/2016	35AWW06FF-100316 10/3/2016	35AWW08-100416 10/4/2016	35AWW08F-100416 10/4/2016	35AWW08FF-100416 10/4/2016	35AWW09-100316 10/3/2016
Location Description:			Site 58 - E, inside site boundary.	Site 58 - E, inside site boundary. Field filtered w/ 10 micron filter.	Site 58 - E, inside site boundary. Field filtered w/ 0.45 micron filter.	Site 58 - E, inside site boundary.	Site 58 - SW, outside the site boundary.	Site 58 - SW, outside the site boundary.	Site 58 - SW, outside the site boundary. Field filtered w/ 0.45 micron filter.	Site 58 - E, inside site boundary.	Site 58 - E, inside site boundary. Field filtered w/ 10 micron filter.	Site 58 - E, inside site boundary. Field filtered w/ 0.45 micron filter.	Site 58 - E, inside site boundary.
Alkalinity (310.2)													
ALKALINITY, TOTAL	mg/L		5500 J	NA	NA	NA	NA	621	NA	9160 J	NA	NA	241
Phosphorus (365.4)													
PHOSPHORUS	mg/L		2.06 J	NA	NA	NA	NA	0.208 J	NA	5.68	NA	NA	<0.2 U
Total Organic Carbon (415.1)													
TOTAL ORGANIC CARBON (TOC)	mg/L		292	NA	NA	NA	NA	28.8	NA	918	NA	NA	15.6
Metals (6010C)													
IRON	mg/L		NA	46.5	NA	NA	NA	0.182	NA	NA	33.3	NA	NA
Metals (6020A)													
MANGANESE	mg/L	1.1	NA	8.31	8.47	NA	NA	0.346	0.341	NA	7.97	9.38	NA
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U	NA	<5 U	NA	NA	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U	NA	<5 U	NA	NA	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<4 U	NA	NA	<0.4 U	<0.4 U	<0.4 U	NA	<4 U	NA	NA	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U	NA	<5 U	NA	NA	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	<2.5 U	NA	NA	<0.25 U	<0.25 U	1.77	NA	<2.5 U	NA	NA	0.506 J
1,1-DICHLOROETHENE	ug/L	7	<10 U	NA	NA	<1 U	<1 U	7.48	NA	<10 U	NA	NA	<1 U
1,1-DICHLOROPROPENE	ug/L	9.1	<5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U	NA	<5 U	NA	NA	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<3 U	NA	NA	<0.3 U	<0.3 U	<0.3 U	NA	<3 U	NA	NA	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<10 U	NA	NA	<1 U	<1 U	<1 U	NA	<10 U	NA	NA	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<4 U	NA	NA	<0.4 U	<0.4 U	<0.4 U	NA	<4 U	NA	NA	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U	NA	<5 U	NA	NA	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<20 U	NA	NA	<2 U	<2 U	<2 U	NA	<20 U	NA	NA	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	<5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U	NA	<5 U	NA	NA	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	<2.5 U	NA	NA	<0.25 U	<0.25 U	<0.25 U	NA	<2.5 U	NA	NA	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	<5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U	NA	<5 U	NA	NA	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	<4 U	NA	NA	<0.4 U	<0.4 U	<0.4 U	NA	<4 U	NA	NA	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U	NA	<5 U	NA	NA	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	<5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U	NA	<5 U	NA	NA	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	<4 U	NA	NA	<0.4 U	<0.4 U	<0.4 U	NA	<4 U	NA	NA	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	<2.5 U	NA	NA	<0.25 U	<0.25 U	<0.25 U	NA	<2.5 U	NA	NA	<0.25 U
2,2-DICHLOROPROPANE	ug/L	13	<5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U	NA	<5 U	NA	NA	<0.5 U
2-BUTANONE	ug/L	15000	<50 U	NA	NA	<5 UJ	<5 UJ	<5 U	NA	40.7 J	NA	NA	<5 U
2-CHLOROTOLUENE	ug/L	490	<2.5 U	NA	NA	<0.25 U	<0.25 U	<0.25 U	NA	<2.5 U	NA	NA	<0.25 U
2-HEXANONE	ug/L	120	<50 U	NA	NA	<5 UJ	<5 UJ	<5 U	NA	<50 U	NA	NA	<5 U
4-CHLOROTOLUENE	ug/L	490	<5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U	NA	<5 U	NA	NA	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	<50 U	NA	NA	<5 U	<5 U	<5 U	NA	<50 U	NA	NA	<5 U
ACETONE	ug/L	22000	73.4 J	NA	NA	<5 UJ	<5 UJ	3.19 J	NA	<50 UJ	NA	NA	3.78 J
BENZENE	ug/L	5	<2.5 U	NA	NA	<0.25 U	<0.25 U	<0.25 U	NA	<2.5 U	NA	NA	<0.25 U

LHAAP-58 Semi-Annual MNA Sampling - October 2016

Sample ID: / Sample Date:	Units	MCL/ PCL	03WW01-100416 10/4/2016	03WW01F-100416 10/4/2016	03WW01FF-100416 10/4/2016	35AWW01-100516 10/5/2016	35AWW05-100516 10/5/2016	35AWW06-100316 10/3/2016	35AWW06FF-100316 10/3/2016	35AWW08-100416 10/4/2016	35AWW08F-100416 10/4/2016	35AWW08FF-100416 10/4/2016	35AWW09-100316 10/3/2016
BROMOBENZENE	ug/L	200	<2.5 U	NA	NA	<0.25 U	<0.25 U	<0.25 U	NA	<2.5 U	NA	NA	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	<4 U	NA	NA	<0.4 U	<0.4 U	<0.4 U	NA	<4 U	NA	NA	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	<5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U	NA	<5 U	NA	NA	<0.5 U
BROMOFORM	ug/L	120	<10 U	NA	NA	<1 U	<1 U	<1 U	NA	<10 U	NA	NA	<1 U
BROMOMETHANE	ug/L	34	<10 U	NA	NA	<1 U	<1 U	<1 UJ	NA	<10 U	NA	NA	<1 UJ
CARBON DISULFIDE	ug/L	2400	<10 U	NA	NA	<1 U	<1 U	<1 U	NA	<10 U	NA	NA	<1 U
CARBON TETRACHLORIDE	ug/L	5	<5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U	NA	<5 U	NA	NA	<0.5 U
CHLOROBENZENE	ug/L	100	<2.5 U	NA	NA	<0.25 U	<0.25 U	<0.25 U	NA	<2.5 U	NA	NA	<0.25 U
CHLOROETHANE	ug/L	98000	<10 U	NA	NA	<1 U	<1 U	<1 U	NA	<10 U	NA	NA	<1 U
CHLOROFORM	ug/L	240	<2.5 U	NA	NA	<0.25 U	<0.25 U	<0.25 U	NA	<2.5 U	NA	NA	<0.25 U
CHLOROMETHANE	ug/L	70	<10 U	NA	NA	<1 U	<1 U	<1 U	NA	<10 U	NA	NA	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	<5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U	NA	41.7	NA	NA	0.437 J
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U	NA	<5 U	NA	NA	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	<5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U	NA	<5 U	NA	NA	<0.5 U
DIBROMOMETHANE	ug/L	120	<5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U	NA	<5 U	NA	NA	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U	NA	<5 U	NA	NA	<0.5 U
ETHYLBENZENE	ug/L	700	<5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U	NA	<5 U	NA	NA	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	<5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U	NA	<5 U	NA	NA	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	<5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U	NA	<5 U	NA	NA	<0.5 U
M,P-XYLENE	ug/L	10000	<10 U	NA	NA	<1 U	<1 U	<1 U	NA	<10 U	NA	NA	<1 U
METHYLENE CHLORIDE	ug/L	5	<5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U	NA	<5 U	NA	NA	<0.5 U
NAPHTHALENE	ug/L	490	<4 U	NA	NA	<0.4 U	<0.4 U	<0.4 U	NA	<4 U	NA	NA	<0.4 U
N-BUTYLBENZENE	ug/L	1200	<5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U	NA	<5 U	NA	NA	<0.5 U
N-PROPYLBENZENE	ug/L	980	<2.5 U	NA	NA	<0.25 U	<0.25 U	<0.25 U	NA	<2.5 U	NA	NA	<0.25 U
O-XYLENE	ug/L	10000	<5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U	NA	<5 U	NA	NA	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U	NA	<5 U	NA	NA	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	<5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U	NA	<5 U	NA	NA	<0.5 U
STYRENE	ug/L	100	<2.5 U	NA	NA	<0.25 U	<0.25 U	<0.25 U	NA	<2.5 U	NA	NA	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	<5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U	NA	<5 U	NA	NA	<0.5 U
TETRACHLOROETHENE	ug/L	5	<5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U	NA	36.9	NA	NA	173
TOLUENE	ug/L	1000	<5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U	NA	<5 U	NA	NA	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U	NA	<5 U	NA	NA	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<10 U	NA	NA	<1 U	<1 U	<1 U	NA	<10 U	NA	NA	<1 U
TRICHLOROETHENE	ug/L	5	<5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U	NA	235	NA	NA	48.2
TRICHLOROFLUOROMETHANE	ug/L	7300	<5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U	NA	<5 U	NA	NA	<0.5 U
VINYL CHLORIDE	ug/L	2	<5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U	NA	7.46 J	NA	NA	<0.5 U
Metabolic Acids (830-MBA)													
Acetic Acid	mg/L		33.2	NA	NA	NA	NA	NA	NA	156	NA	NA	<1 U
Butyric Acid	mg/L		<1 U	NA	NA	NA	NA	NA	NA	<1 U	NA	NA	<1 U
Lactic Acid	mg/L		<1 U	NA	NA	NA	NA	NA	NA	<1 U	NA	NA	<1 U
Propionic Acid	mg/L	51	<10 U	NA	NA	NA	NA	NA	NA	17.6 J	NA	NA	<10 U
Pyruvic Acid	mg/L		<0.1 U	NA	NA	NA	NA	NA	NA	<0.1 U	NA	NA	<0.1 U
Anions (9056)													
CHLORIDE	mg/L		762	NA	NA	NA	NA	948	NA	2000	NA	NA	1420
NITRATE	mg/L	10	<1 U	NA	NA	NA	NA	<4 U	NA	<2 U	NA	NA	<2 U
NITRITE	mg/L	1	<1 U	NA	NA	NA	NA	<4 U	NA	<2 U	NA	NA	<2 U
SULFATE	mg/L		<5 U	NA	NA	NA	NA	1450	NA	<10 U	NA	NA	951

LHAAP-58 Semi-Annual MNA Sampling - October 2016

Sample ID: Sample Date:	Units	MCL/ PCL	03WW01-100416 10/4/2016	03WW01F-100416 10/4/2016	03WW01FF-100416 10/4/2016	35AWW01-100516 10/5/2016	35AWW05-100516 10/5/2016	35AWW06-100316 10/3/2016	35AWW06FF-100316 10/3/2016	35AWW08-100416 10/4/2016	35AWW08F-100416 10/4/2016	35AWW08FF-100416 10/4/2016	35AWW09-100316 10/3/2016
Dechlorinating Bacteria													
BAV1 Vinyl Chloride Reductase	cells/mL		<3.30 U	NA	NA	NA	NA	NA	NA	<4.50 U	NA	NA	<1.50 U
Dehalobacter spp.	cells/mL		53300	NA	NA	NA	NA	NA	NA	625000	NA	NA	<15.20 U
Dehalococcoides	cells/mL		9460000	NA	NA	NA	NA	NA	NA	25600000	NA	NA	<1.50 U
tceA Reductase	cells/mL		<3.30 U	NA	NA	NA	NA	NA	NA	<4.50 U	NA	NA	<1.50 U
Vinyl Chloride Reductase	cells/mL		589000	NA	NA	NA	NA	NA	NA	1760000	NA	NA	<1.50 U
Dissolved Gases (RSK-175)													
CARBON DIOXIDE	ug/L		657000	NA	NA	NA	NA	997000	NA	424000	NA	NA	706000
ETHANE	ug/L		<20 U	NA	NA	NA	NA	<2 U	NA	<20 U	NA	NA	<2 U
ETHENE	ug/L		<20 U	NA	NA	NA	NA	<2 U	NA	<20 U	NA	NA	<2 U
METHANE	ug/L		5950	NA	NA	NA	NA	<2 U	NA	7350	NA	NA	7.57
Ferrous Iron (SM3500FE)													
FERROUS IRON	mg/L		8.02	NA	NA	NA	NA	0.0238 J	NA	17.6	NA	NA	<0.04 U
Sulfide (SM4500-S-(-2)-F-2000)													
SULFIDE	mg/L		<1 U	NA	NA	NA	NA	<1 U	NA	<1 U	NA	NA	3.68

Blue Highlighting Indicates concentrations above the MCL/PCL

Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

Metals results for "FF" samples are dissolved.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Limit

mg/L - milligrams per liter

NA - not analyzed

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

LHAAP-58 Semi-Annual MNA Sampling - October 2016

Sample ID: / Sample Date:	Units	MCL/ PCL	35AWW09F-100316 10/3/2016	35AWW09FF-100316 10/3/2016	35AWW10-100316 10/3/2016	35AWW10F-100316 10/3/2016	35AWW10FF-100316 10/3/2016	35AWW11-100316 10/3/2016	35AWW11F-100316 10/3/2016	35AWW11FF-100316 10/3/2016	35AWW12-100516 10/5/2016	35AWW12FD-100516 10/5/2016	35AWW13-100616 10/6/2016
Location Description:			Site 58 - E, inside site boundary. Field filtered w/ 10 micron filter.	Site 58 - E, inside site boundary. Field filtered w/ 0.45 micron filter.	Site 58 - ESE, inside site boundary.	Site 58 - ESE, inside site boundary. Field filtered w/ 10 micron filter.	Site 58 - ESE, inside site boundary. Field filtered w/ 0.45 micron filter.	Site 58 - SE, inside site boundary.	Site 58 - SE, inside site boundary. Field filtered w/ 10 micron filter.	Site 58 - SE, inside site boundary. Field filtered w/ 0.45 micron filter.	Site 58 - E, outside site boundary.	Site 58 - E, outside site boundary. Field duplicate.	Site 58 - NE, inside site boundary.
Alkalinity (310.2)													
ALKALINITY, TOTAL	mg/L		NA	NA	55.4	NA	NA	421	NA	NA	NA	NA	NA
Phosphorus (365.4)													
PHOSPHORUS	mg/L		NA	NA	<0.2 U	NA	NA	0.303 J	NA	NA	NA	NA	NA
Total Organic Carbon (415.1)													
TOTAL ORGANIC CARBON (TOC)	mg/L		NA	NA	7.43	NA	NA	25.6	NA	NA	NA	NA	NA
Metals (6010C)													
IRON	mg/L		0.913	NA	NA	<0.1 U	NA	NA	0.188	NA	NA	NA	NA
Metals (6020A)													
MANGANESE	mg/L	1.1	0.151	0.15	0.0748	0.077	NA	NA	0.525	0.487	NA	NA	NA
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/L	35	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	NA	NA	<0.4 U	NA	NA	<0.4 U	NA	NA	<0.4 U	<0.4 U	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	NA	NA	<0.25 U	NA	NA	0.458 J	NA	NA	<0.25 U	<0.25 U	<0.25 U
1,1-DICHLOROETHENE	ug/L	7	NA	NA	<1 U	NA	NA	16	NA	NA	<1 U	<1 U	<1 U
1,1-DICHLOROPROPENE	ug/L	9.1	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	NA	NA	<0.3 U	NA	NA	<0.3 U	NA	NA	<0.3 U	<0.3 U	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	NA	NA	<1 U	NA	NA	<1 U	NA	NA	<1 U	<1 U	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	NA	NA	<0.4 U	NA	NA	<0.4 U	NA	NA	<0.4 U	<0.4 U	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	NA	NA	<2 U	NA	NA	<2 U	NA	NA	<2 U	<2 U	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	NA	NA	<0.25 U	NA	NA	<0.25 U	NA	NA	<0.25 U	<0.25 U	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	NA	NA	<0.4 U	NA	NA	<0.4 U	NA	NA	<0.4 U	<0.4 U	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	NA	NA	<0.4 U	NA	NA	<0.4 U	NA	NA	<0.4 U	<0.4 U	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	NA	NA	<0.25 U	NA	NA	<0.25 U	NA	NA	<0.25 U	<0.25 U	<0.25 U
2,2-DICHLOROPROPANE	ug/L	13	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U
2-BUTANONE	ug/L	15000	NA	NA	<5 U	NA	NA	<5 U	NA	NA	<5 UJ	<5 UJ	<5 UJ
2-CHLOROTOLUENE	ug/L	490	NA	NA	<0.25 U	NA	NA	<0.25 U	NA	NA	<0.25 U	<0.25 U	<0.25 U
2-HEXANONE	ug/L	120	NA	NA	<5 U	NA	NA	<5 U	NA	NA	<5 UJ	<5 UJ	<5 UJ
4-CHLOROTOLUENE	ug/L	490	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	NA	NA	<5 U	NA	NA	<5 U	NA	NA	<5 U	<5 U	<5 U
ACETONE	ug/L	22000	NA	NA	<5 U	NA	NA	<5 U	NA	NA	3.59 J	<5 UJ	4.45 J
BENZENE	ug/L	5	NA	NA	<0.25 U	NA	NA	<0.25 U	NA	NA	<0.25 U	<0.25 U	<0.25 U

LHAAP-58 Semi-Annual MNA Sampling - October 2016

Sample ID: / Sample Date:	Units	MCL/ PCL	35AWW09F-100316 10/3/2016	35AWW09FF-100316 10/3/2016	35AWW10-100316 10/3/2016	35AWW10F-100316 10/3/2016	35AWW10FF-100316 10/3/2016	35AWW11-100316 10/3/2016	35AWW11F-100316 10/3/2016	35AWW11FF-100316 10/3/2016	35AWW12-100516 10/5/2016	35AWW12FD-100516 10/5/2016	35AWW13-100616 10/6/2016
BROMOBENZENE	ug/L	200	NA	NA	<0.25 U	NA	NA	<0.25 U	NA	NA	<0.25 U	<0.25 U	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	NA	NA	<0.4 U	NA	NA	<0.4 U	NA	NA	<0.4 U	<0.4 U	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U
BROMOFORM	ug/L	120	NA	NA	<1 U	NA	NA	<1 U	NA	NA	<1 U	<1 U	<1 U
BROMOMETHANE	ug/L	34	NA	NA	<1 UJ	NA	NA	<1 UJ	NA	NA	<1 U	<1 U	<1 U
CARBON DISULFIDE	ug/L	2400	NA	NA	<1 U	NA	NA	<1 U	NA	NA	<1 U	<1 U	<1 U
CARBON TETRACHLORIDE	ug/L	5	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U
CHLOROBENZENE	ug/L	100	NA	NA	<0.25 U	NA	NA	<0.25 U	NA	NA	<0.25 U	<0.25 U	<0.25 U
CHLOROETHANE	ug/L	98000	NA	NA	<1 U	NA	NA	<1 U	NA	NA	<1 U	<1 U	<1 U
CHLOROFORM	ug/L	240	NA	NA	<0.25 U	NA	NA	<0.25 U	NA	NA	<0.25 U	<0.25 U	<0.25 U
CHLOROMETHANE	ug/L	70	NA	NA	<1 U	NA	NA	<1 U	NA	NA	<1 U	0.543 J	0.667 J
CIS-1,2-DICHLOROETHENE	ug/L	70	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U
DIBROMOMETHANE	ug/L	120	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U
ETHYLBENZENE	ug/L	700	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U
M,P-XYLENE	ug/L	10000	NA	NA	<1 U	NA	NA	<1 U	NA	NA	<1 U	<1 U	<1 U
METHYLENE CHLORIDE	ug/L	5	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U
NAPHTHALENE	ug/L	490	NA	NA	<0.4 U	NA	NA	<0.4 U	NA	NA	<0.4 U	<0.4 U	<0.4 U
N-BUTYLBENZENE	ug/L	1200	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U
N-PROPYLBENZENE	ug/L	980	NA	NA	<0.25 U	NA	NA	<0.25 U	NA	NA	<0.25 U	<0.25 U	<0.25 U
O-XYLENE	ug/L	10000	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U
STYRENE	ug/L	100	NA	NA	<0.25 U	NA	NA	<0.25 U	NA	NA	<0.25 U	<0.25 U	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U
TOLUENE	ug/L	1000	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	NA	NA	<1 U	NA	NA	<1 U	NA	NA	<1 U	<1 U	<1 U
TRICHLOROETHENE	ug/L	5	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U
TRICHLOROFLUOROMETHANE	ug/L	7300	NA	NA	<0.5 U	NA	NA	<0.5 U	NA	NA	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	NA	NA	<0.5 U	NA	NA	0.328 J	NA	NA	<0.5 U	<0.5 U	<0.5 U
Metabolic Acids (830-MBA)													
Acetic Acid	mg/L		NA	NA	NA	NA	<1 U	NA	NA	NA	NA	NA	NA
Butyric Acid	mg/L		NA	NA	NA	NA	<1 U	NA	NA	NA	NA	NA	NA
Lactic Acid	mg/L		NA	NA	NA	NA	<1 U	NA	NA	NA	NA	NA	NA
Propionic Acid	mg/L	51	NA	NA	NA	NA	<10 U	NA	NA	NA	NA	NA	NA
Pyruvic Acid	mg/L		NA	NA	NA	NA	<0.1 U	NA	NA	NA	NA	NA	NA
Anions (9056)													
CHLORIDE	mg/L		NA	NA	6.37	NA	NA	2380	NA	NA	NA	NA	NA
NITRATE	mg/L	10	NA	NA	<0.2 U	NA	NA	<4 U	NA	NA	NA	NA	NA
NITRITE	mg/L	1	NA	NA	<0.2 U	NA	NA	<4 U	NA	NA	NA	NA	NA
SULFATE	mg/L		NA	NA	47	NA	NA	1160	NA	NA	NA	NA	NA

LHAAP-58 Semi-Annual MNA Sampling - October 2016

Sample ID: Sample Date:	Units	MCL/ PCL	35AWW09F-100316 10/3/2016	35AWW09FF-100316 10/3/2016	35AWW10-100316 10/3/2016	35AWW10F-100316 10/3/2016	35AWW10FF-100316 10/3/2016	35AWW11-100316 10/3/2016	35AWW11F-100316 10/3/2016	35AWW11FF-100316 10/3/2016	35AWW12-100516 10/5/2016	35AWW12FD-100516 10/5/2016	35AWW13-100616 10/6/2016
Dechlorinating Bacteria													
BAV1 Vinyl Chloride Reductase	cells/mL		NA	NA	<0.5 U	NA	NA	NA	NA	NA	NA	NA	NA
Dehalobacter spp.	cells/mL		NA	NA	<4.60 U	NA	NA	NA	NA	NA	NA	NA	NA
Dehalococcoides	cells/mL		NA	NA	<0.5 U	NA	NA	NA	NA	NA	NA	NA	NA
tceA Reductase	cells/mL		NA	NA	<0.5 U	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride Reductase	cells/mL		NA	NA	<0.5 U	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Gases (RSK-175)													
CARBON DIOXIDE	ug/L		NA	NA	525000	NA	NA	855000	NA	NA	NA	NA	NA
ETHANE	ug/L		NA	NA	<2 U	NA	NA	<2 U	NA	NA	NA	NA	NA
ETHENE	ug/L		NA	NA	<2 U	NA	NA	<2 U	NA	NA	NA	NA	NA
METHANE	ug/L		NA	NA	<2 U	NA	NA	<2 U	NA	NA	NA	NA	NA
Ferrous Iron (SM3500FE)													
FERROUS IRON	mg/L		NA	NA	<0.04 U	NA	NA	<0.04 U	NA	NA	NA	NA	NA
Sulfide (SM4500-S-(-2)-F-2000)													
SULFIDE	mg/L		NA	NA	<1 U	NA	NA	<1 U	NA	NA	NA	NA	NA

Blue Highlighting Indicates concentrations above the MCL/PCL

Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

Metals results for "FF" samples are dissolved.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Limit

mg/L - milligrams per liter

NA - not analyzed

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

LHAAP-58 Semi-Annual MNA Sampling - October 2016

Sample ID: / Sample Date:	Units	MCL/ PCL	35AWW14-100616 10/6/2016	35AWW15-100516 10/5/2016	35AWW16-100416 10/4/2016	35AWW16FD-100416 10/4/2016	35AWW17-100316 10/3/2016	35AWW18-100516 10/5/2016	35AWW19-100616 10/6/2016	35AWW20-100416 10/4/2016	35AWW20FF-100416 10/4/2016	35AWW21-100416 10/4/2016	35AWW21FD-100416 10/4/2016
Location Description:			Site 58 - SE, outside site boundary.	Site 58 - W, inside site boundary.	Site 58 - SW, outside site boundary, near Building 744-A.	Site 58 - SW, outside site boundary, near Building 744-A. Field duplicate.	Site 58 - SW, outside site boundary.	Site 58 - SSW, outside site boundary.	Site 58 - SSW, outside site boundary.	Site 58 - SW, inside site boundary, between Building 716 and 113.	Site 58 - SW, inside site boundary, between Building 716 and 113. Field filtered w/ 0.45 micron filter.	Site 58 - ESE, outside site boundary, beside Building 725.	Site 58 - ESE, outside site boundary, beside Building 725. Field duplicate.
Alkalinity (310.2)													
ALKALINITY, TOTAL	mg/L		NA	NA	NA	NA	NA	NA	NA	704	NA	NA	NA
Phosphorus (365.4)													
PHOSPHORUS	mg/L		NA	NA	NA	NA	NA	NA	NA	<0.2 U	NA	NA	NA
Total Organic Carbon (415.1)													
TOTAL ORGANIC CARBON (TOC)	mg/L		NA	NA	NA	NA	NA	NA	NA	31.8	NA	NA	NA
Metals (6010C)													
IRON	mg/L		NA	NA	NA	NA	NA	NA	NA	0.458	NA	NA	NA
Metals (6020A)													
MANGANESE	mg/L	1.1	NA	NA	NA	NA	NA	NA	NA	1.95	1.91	NA	NA
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U	NA	<0.5 U	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U	NA	<0.5 U	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<8 U	NA	<0.4 U	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	82.7	NA	<0.5 U	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	10.4	<0.25 U	<0.25 U	<0.25 U	<0.25 U	0.563 J	2.42	459	NA	<0.25 U	<0.25 U
1,1-DICHLOROETHENE	ug/L	7	10.4	<1 U	<1 U	<1 U	<1 U	0.97 J	12.9	3440	NA	<1 U	<1 U
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U	NA	<0.5 U	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<6 U	NA	<0.3 U	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<20 U	NA	<1 U	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<8 U	NA	<0.4 U	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U	NA	<0.5 U	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<40 U	NA	<2 U	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U	NA	<0.5 U	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	9.77 J	NA	<0.25 U	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	2.74	17.2 J	NA	<0.5 U	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<8 U	NA	<0.4 U	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U	NA	<0.5 U	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U	NA	<0.5 U	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<8 U	NA	<0.4 U	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<5 U	NA	<0.25 U	<0.25 U
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U	NA	<0.5 U	<0.5 U
2-BUTANONE	ug/L	15000	<5 UJ	<5 UJ	<5 U	<5 U	<5 U	<5 UJ	<5 U	<100 U	NA	<5 U	<5 U
2-CHLOROTOLUENE	ug/L	490	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<5 U	NA	<0.25 U	<0.25 U
2-HEXANONE	ug/L	120	<5 UJ	<5 UJ	<5 U	<5 U	<5 U	<5 UJ	<5 U	<100 U	NA	<5 U	<5 U
4-CHLOROTOLUENE	ug/L	490	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U	NA	<0.5 U	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<100 U	NA	<5 U	<5 U
ACETONE	ug/L	22000	4.01 J	4.49 J	2.82 J	<5 U	<5 U	3.72 J	4.19 J	<100 U	NA	<5 U	<5 U
BENZENE	ug/L	5	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	6.39 J	NA	<0.25 U	<0.25 U

LHAAP-58 Semi-Annual MNA Sampling - October 2016

Sample ID: / Sample Date:	Units	MCL/ PCL	35AWW14-100616 10/6/2016	35AWW15-100516 10/5/2016	35AWW16-100416 10/4/2016	35AWW16FD-100416 10/4/2016	35AWW17-100316 10/3/2016	35AWW18-100516 10/5/2016	35AWW19-100616 10/6/2016	35AWW20-100416 10/4/2016	35AWW20FF-100416 10/4/2016	35AWW21-100416 10/4/2016	35AWW21FD-100416 10/4/2016
BROMOBENZENE	ug/L	200	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<5 U	NA	<0.25 U	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<8 U	NA	<0.4 U	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U	NA	<0.5 U	<0.5 U
BROMOFORM	ug/L	120	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<20 U	NA	<1 U	<1 U
BROMOMETHANE	ug/L	34	<1 U	<1 U	<1 UJ	<1 UJ	<1 UJ	<1 U	<1 U	<20 UJ	NA	<1 UJ	<1 UJ
CARBON DISULFIDE	ug/L	2400	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<20 U	NA	<1 U	<1 U
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U	NA	<0.5 U	<0.5 U
CHLOROBENZENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<5 U	NA	<0.25 U	<0.25 U
CHLOROETHANE	ug/L	98000	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<20 U	NA	<1 U	<1 U
CHLOROFORM	ug/L	240	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<5 U	NA	<0.25 U	<0.25 U
CHLOROMETHANE	ug/L	70	<1 U	<1 U	<1 U	<1 U	<1 U	0.673 J	<1 U	<20 U	NA	<1 U	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	5.09	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	115	NA	<0.5 U	<0.5 U
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U	NA	<0.5 U	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U	NA	<0.5 U	<0.5 U
DIBROMOMETHANE	ug/L	120	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U	NA	<0.5 U	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U	NA	<0.5 U	<0.5 U
ETHYLBENZENE	ug/L	700	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U	NA	<0.5 U	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U	NA	<0.5 U	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U	NA	<0.5 U	<0.5 U
M,P-XYLENE	ug/L	10000	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<20 U	NA	<1 U	<1 U
METHYLENE CHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U	NA	<0.5 U	<0.5 U
NAPHTHALENE	ug/L	490	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<8 U	NA	<0.4 U	<0.4 U
N-BUTYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U	NA	<0.5 U	<0.5 U
N-PROPYLBENZENE	ug/L	980	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<5 U	NA	<0.25 U	<0.25 U
O-XYLENE	ug/L	10000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U	NA	<0.5 U	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U	NA	<0.5 U	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U	NA	<0.5 U	<0.5 U
STYRENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<5 U	NA	<0.25 U	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U	NA	<0.5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U	NA	<0.5 U	<0.5 U
TOLUENE	ug/L	1000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U	NA	<0.5 U	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<10 U	NA	<0.5 U	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<20 U	NA	<1 U	<1 U
TRICHLOROETHENE	ug/L	5	10.2	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	0.754 J	594	NA	<0.5 U	<0.5 U
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	<0.5 U	<0.5 U	<10 UJ	NA	<0.5 UJ	<0.5 UJ
VINYL CHLORIDE	ug/L	2	0.303 J	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	166	NA	<0.5 U	<0.5 U
Metabolic Acids (830-MBA)													
Acetic Acid	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butyric Acid	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lactic Acid	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Propionic Acid	mg/L	51	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyruvic Acid	mg/L		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anions (9056)													
CHLORIDE	mg/L		NA	NA	NA	NA	NA	NA	NA	1470	NA	NA	NA
NITRATE	mg/L	10	NA	NA	NA	NA	NA	NA	NA	<4 U	NA	NA	NA
NITRITE	mg/L	1	NA	NA	NA	NA	NA	NA	NA	<4 U	NA	NA	NA
SULFATE	mg/L		NA	NA	NA	NA	NA	NA	NA	1830	NA	NA	NA

LHAAP-58 Semi-Annual MNA Sampling - October 2016

Sample ID: Sample Date:	Units	MCL/ PCL	35AWW14-100616 10/6/2016	35AWW15-100516 10/5/2016	35AWW16-100416 10/4/2016	35AWW16FD-100416 10/4/2016	35AWW17-100316 10/3/2016	35AWW18-100516 10/5/2016	35AWW19-100616 10/6/2016	35AWW20-100416 10/4/2016	35AWW20FF-100416 10/4/2016	35AWW21-100416 10/4/2016	35AWW21FD-100416 10/4/2016
Dechlorinating Bacteria													
BAV1 Vinyl Chloride Reductase	cells/mL		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dehalobacter spp.	cells/mL		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dehalococcoides	cells/mL		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tceA Reductase	cells/mL		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride Reductase	cells/mL		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dissolved Gases (RSK-175)													
CARBON DIOXIDE	ug/L		NA	NA	NA	NA	NA	NA	NA	735000	NA	NA	NA
ETHANE	ug/L		NA	NA	NA	NA	NA	NA	NA	<2 U	NA	NA	NA
ETHENE	ug/L		NA	NA	NA	NA	NA	NA	NA	2.64 J	NA	NA	NA
METHANE	ug/L		NA	NA	NA	NA	NA	NA	NA	216	NA	NA	NA
Ferrous Iron (SM3500FE)													
FERROUS IRON	mg/L		NA	NA	NA	NA	NA	NA	NA	0.263	NA	NA	NA
Sulfide (SM4500-S-(-2)-F-2000)													
SULFIDE	mg/L		NA	NA	NA	NA	NA	NA	NA	0.87 J	NA	NA	NA

Blue Highlighting Indicates concentrations above the MCL/PCL

Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

Metals results for "FF" samples are dissolved.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Limit

mg/L - milligrams per liter

NA - not analyzed

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

LHAAP-58 Semi-Annual MNA Sampling - October 2016

Sample ID: / Sample Date:	Units	MCL/ PCL	35AWW22-100616 10/6/2016	LHSMW06-100616 10/6/2016	LHSMW07-100416 10/4/2016	LHSMW07FF-100416 10/4/2016
Location Description:			Site 58 - ENE, outside site boundary.	Site 58 - SW, inside site boundary, beside Building 715.	Site 58 - SW, outside site boundary.	Site 58 - SW, outside site boundary. Field filtered w/ 0.45 micron filter.
Alkalinity (310.2)						
ALKALINITY, TOTAL	mg/L		NA	NA	658	NA
Phosphorus (365.4)						
PHOSPHORUS	mg/L		NA	NA	<0.2 U	NA
Total Organic Carbon (415.1)						
TOTAL ORGANIC CARBON (TOC)	mg/L		NA	NA	41.6	NA
Metals (6010C)						
IRON	mg/L		NA	NA	1.34	NA
Metals (6020A)						
MANGANESE	mg/L	1.1	NA	NA	0.137	0.144
Volatile Organic Compounds (8260B)						
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	<0.5 U	<2.5 U	NA
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<0.5 U	NA	NA
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	<0.4 U	<2 U	NA
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	7.72	NA
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	6.75	96.2	NA
1,1-DICHLOROETHENE	ug/L	7	<1 U	19.2	701	NA
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	<0.5 U	<2.5 U	NA
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	<0.3 U	<1.5 U	NA
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	<1 U	<5 U	NA
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	<0.4 U	<2 U	NA
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<2.5 U	NA
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	<2 U	<10 U	NA
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	<0.5 U	<2.5 U	NA
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	<0.25 U	<1.25 U	NA
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	2.56 J	NA
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	<0.4 U	<2 U	NA
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<2.5 U	NA
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	<0.5 U	<2.5 U	NA
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	<0.4 U	<2 U	NA
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	<0.25 U	<1.25 U	NA
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	<0.5 U	<2.5 U	NA
2-BUTANONE	ug/L	15000	<5 UJ	<5 U	<25 U	NA
2-CHLOROTOLUENE	ug/L	490	<0.25 U	<0.25 U	<1.25 U	NA
2-HEXANONE	ug/L	120	<5 UJ	<5 U	<25 U	NA
4-CHLOROTOLUENE	ug/L	490	<0.5 U	<0.5 U	<2.5 U	NA
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	<5 U	<25 U	NA
ACETONE	ug/L	22000	<5 UJ	<5 U	<25 U	NA
BENZENE	ug/L	5	<0.25 U	<0.25 U	1.17 J	NA

LHAAP-58 Semi-Annual MNA Sampling - October 2016

Sample ID: / Sample Date:	Units	MCL/ PCL	35AWW22-100616 10/6/2016	LHSMW06-100616 10/6/2016	LHSMW07-100416 10/4/2016	LHSMW07FF-100416 10/4/2016
BROMOBENZENE	ug/L	200	<0.25 U	<0.25 U	<1.25 U	NA
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	<0.4 U	<2 U	NA
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	<0.5 U	<2.5 U	NA
BROMOFORM	ug/L	120	<1 U	<1 U	<5 U	NA
BROMOMETHANE	ug/L	34	<1 U	<1 U	<5 U	NA
CARBON DISULFIDE	ug/L	2400	<1 U	<1 U	<5 U	NA
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	<0.5 U	<2.5 U	NA
CHLOROBENZENE	ug/L	100	<0.25 U	<0.25 U	<1.25 U	NA
CHLOROETHANE	ug/L	98000	<1 U	<1 U	<5 U	NA
CHLOROFORM	ug/L	240	<0.25 U	<0.25 U	<1.25 U	NA
CHLOROMETHANE	ug/L	70	<1 U	<1 U	<5 U	NA
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	19	<2.5 U	NA
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	<0.5 U	<2.5 U	NA
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	<0.5 U	<2.5 U	NA
DIBROMOMETHANE	ug/L	120	<0.5 U	<0.5 U	<2.5 U	NA
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	<0.5 U	<2.5 U	NA
ETHYLBENZENE	ug/L	700	<0.5 U	<0.5 U	<2.5 U	NA
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	<0.5 U	<2.5 U	NA
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	<0.5 U	<2.5 U	NA
M,P-XYLENE	ug/L	10000	<1 U	<1 U	<5 U	NA
METHYLENE CHLORIDE	ug/L	5	<0.5 U	<0.5 U	<2.5 U	NA
NAPHTHALENE	ug/L	490	<0.4 U	<0.4 U	<2 U	NA
N-BUTYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<2.5 U	NA
N-PROPYLBENZENE	ug/L	980	<0.25 U	<0.25 U	<1.25 U	NA
O-XYLENE	ug/L	10000	<0.5 U	<0.5 U	<2.5 U	NA
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	<0.5 U	<2.5 U	NA
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<2.5 U	NA
STYRENE	ug/L	100	<0.25 U	<0.25 U	<1.25 U	NA
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<2.5 U	NA
TETRACHLOROETHENE	ug/L	5	<0.5 U	0.9 J	<2.5 U	NA
TOLUENE	ug/L	1000	<0.5 U	<0.5 U	<2.5 U	NA
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	0.391 J	<2.5 U	NA
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	<1 U	<5 U	NA
TRICHLOROETHENE	ug/L	5	<0.5 U	9.06	<2.5 U	NA
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	<0.5 U	<2.5 U	NA
VINYL CHLORIDE	ug/L	2	<0.5 U	2.94	21.8	NA
Metabolic Acids (830-MBA)						
Acetic Acid	mg/L		NA	NA	NA	NA
Butyric Acid	mg/L		NA	NA	NA	NA
Lactic Acid	mg/L		NA	NA	NA	NA
Propionic Acid	mg/L	51	NA	NA	NA	NA
Pyruvic Acid	mg/L		NA	NA	NA	NA
Anions (9056)						
CHLORIDE	mg/L		NA	NA	2280	NA
NITRATE	mg/L	10	NA	NA	<4 U	NA
NITRITE	mg/L	1	NA	NA	<4 U	NA
SULFATE	mg/L		NA	NA	2650	NA

LHAAP-58 Semi-Annual MNA Sampling - October 2016

Sample ID: Sample Date:	Units	MCL/ PCL	35AWW22-100616 10/6/2016	LHSMW06-100616 10/6/2016	LHSMW07-100416 10/4/2016	LHSMW07FF-100416 10/4/2016
Dechlorinating Bacteria						
BAV1 Vinyl Chloride Reductase	cells/mL		NA	NA	NA	NA
Dehalobacter spp.	cells/mL		NA	NA	NA	NA
Dehalococcoides	cells/mL		NA	NA	NA	NA
tceA Reductase	cells/mL		NA	NA	NA	NA
Vinyl Chloride Reductase	cells/mL		NA	NA	NA	NA
Dissolved Gases (RSK-175)						
CARBON DIOXIDE	ug/L		NA	NA	921000	NA
ETHANE	ug/L		NA	NA	<2 U	NA
ETHENE	ug/L		NA	NA	<2 U	NA
METHANE	ug/L		NA	NA	115	NA
Ferrous Iron (SM3500FE)						
FERROUS IRON	mg/L		NA	NA	0.26	NA
Sulfide (SM4500-S-(-2)-F-2000)						
SULFIDE	mg/L		NA	NA	<1 U	NA

Blue Highlighting Indicates concentrations above the MCL/PCL

Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

Metals results for "FF" samples are dissolved.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Limit

mg/L - milligrams per liter

NA - not analyzed

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

DEPARTMENT OF THE ARMY
LONGHORN ARMY AMMUNITION PLANT
POST OFFICE BOX 220
RATCLIFF, AR 72951

December 28, 2016

DAIM-ODB-LO

Mr. Rich Mayer
US Environmental Protection Agency
Federal Facilities Section R6
1445 Ross Avenue
Dallas, TX 75202-2733

Re: Draft Final Supplemental to the Updated Post-Screening Investigation Report for LHAAP-18/24, Burning Ground No. 3 and Unlined Evaporation Pond
Longhorn Army Ammunition Plant, Karnack, Texas

Dear Mr. Mayer,

The above-referenced document is being transmitted to you for your records and includes revisions based upon your comments on the Draft. In accordance with the FFA, the Draft Final will be considered Final after 30 days without further comment.

The document was prepared by AECOM on behalf of the Army as part of AECOMôs Performance Based Remediation contract for the facility. I ask that Debra Richmann, AECOMôs Project Manager, be copied on any communications related to the project.

The point of contact for this action is the undersigned. I may be contacted at 479-635-0110, or by email at rose.m.zeiler.civ@mail.mil.

Sincerely,

Rose M. Zeiler, Ph.D.
Longhorn AAP Site Manager

Copies furnished:
A. Palmie, TCEQ, Austin, TX
P. Bruckwicki, Caddo Lake NWR, TX
R. Smith, USACE, Tulsa District, OK
A. Williams, USACE, Tulsa District, OK
N. Smith, USAEC, San Antonio, TX
D. Richmann, AECOM ï San Antonio, TX (for project files)

DEPARTMENT OF THE ARMY
LONGHORN ARMY AMMUNITION PLANT
POST OFFICE BOX 220
RATCLIFF, AR 72951

December 28, 2016

DAIM-ODB-LO

Ms. April Palmie
Texas Commission on Environmental Quality Superfund Section, MC-136
12100 Park 35 Circle, Bldg D
Austin, TX 78753

Re: Draft Final Supplemental to the Updated Post-Screening Investigation Report for LHAAP-18/24, Burning Ground No. 3 and Unlined Evaporation Pond
Longhorn Army Ammunition Plant, Karnack, Texas

Dear Ms. Palmie,

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The point of contact for this action is the undersigned. I may be contacted at 479-635-0110, or by email at rose.m.zeiler.civ@mail.mil.

Sincerely,

Rose M. Zeiler, Ph.D.
Longhorn AAP Site Manager

Copies furnished:
R. Mayer, USEPA Region 6, Dallas, TX
P. Bruckwicki, Caddo Lake NWR, TX
R. Smith, USACE, Tulsa District, OK
A. Williams, USACE, Tulsa District, OK
N. Smith, USAEC, San Antonio, TX
D. Richmann, AECOM, San Antonio, TX (for project files)

Responses to Comments on
Draft Supplemental to the Updated Post-Screening Investigation Report for LHAAP-18/24, Burning Ground No. 3 and Unlined Evaporation Pond
Longhorn Army Ammunition Plant, Karnack, Texas

September 2016

Reviewer: Rich Mayer, EPA

Respondent: Marwan Salameh and Debra Richmann, AECOM

1. Respondent Concurs (C), Does Not Concur (D), Takes Exception (E), or Delete (X).
2. Commentor Agrees (A) with response, or Does not Agree (D) with response.

Comment #	Page	Section/ Paragraph	Comment	C, D, E or X[1]	Response	A or D[2]
1	viii	Third Paragraph	The text states ñThe elevated concentrations of perchlorate may represent perchlorate migrating via groundwater to this location prior to installation of the groundwater extraction system.ò EPA recommends adding that injection and irrigation has affected the groundwater flow paths on the site and there is potential for migration of the perchlorate around and below the ICT system.	E	Elevated levels of perchlorate in groundwater were present before irrigation and/or injection occurred. For example, perchlorate concentrations in nearby wells MW-7 and MW-8 were 105,000 Õg/L and 27,500 Õg/L, respectively, in May 2005; 89,400 Õg/L and 47,500 Õg/L in 2006; 37,500 Õg/L and 72,000 Õg/L in May 2013; and 22,000 Õg/L and 8,290 Õg/L in June 2016. The data demonstrate that perchlorate contamination was present before installation of the extraction system and there has been a decrease in perchlorate concentrations as a result of the operation of the groundwater extraction system. The text on page viii has been modified to incorporate these examples.	
2	vii	Delineation of Contaminated Soil	EPA recommends a statement in the paragraph that the MSC standard was used for the vadose zone soil. There were a couple of concentrations that exceeded the 7,200 mg/kg MSC, but appear to be in a saturated zone.	C	Text was added to page viii to specify vadose zone and saturated zone perchlorate concentrations were compared to the GWP-Ind MSC of 7,200 Õg/kg.	
3		Figure 1-4	Is the southwest corner known to be LHAAP-39? If not, please remove label from figures.	C	The LHAAP-39 label was removed from figures throughout the report.	
4	3-1	Section 3.1.1, 1st Paragraph	Text indicates VOCs concentrations were mostly nondetects. Please note when EPA observed sampling of cores the sampling team often left cores out in the sun for long periods of time before collecting VOC samples from the core. During one observation, the VOC sample was not collected until almost a half hour after core extraction. EPA recommends that for further sampling the VOCs need to be collected as soon as possible and to use an EnCore sampling method to prevent loss of VOCs in soils during sampling.	C/E	Agree, the samples observed by EPA were not collected in accordance with the SOP Subsurface Soil Sampling by Split Spoon and Continuous Split Barrel Samplers from the IWWP (AECOM, 2014). This SOP states in Section 5.3.5 that to limit the possible loss of volatiles, the soil sample should be obtained as quickly as possible from the sampler. This is the protocol that is normally followed and future samples will be collected in accordance with this SOP.	

Responses to Comments on
Draft Supplemental to the Updated Post-Screening Investigation Report for LHAAP-18/24, Burning Ground No. 3 and Unlined Evaporation Pond
Longhorn Army Ammunition Plant, Karnack, Texas

September 2016

Reviewer: Rich Mayer, EPA

Respondent: Marwan Salameh and Debra Richmann, AECOM

1. Respondent Concurs (C), Does Not Concur (D), Takes Exception (E), or Delete (X).
2. Commentor Agrees (A) with response, or Does not Agree (D) with response.

Comment #	Page	Section/ Paragraph	Comment	C, D, E or X[1]	Response	A or D[2]
5	3-4	Section 3.2	EPA recommends adding an explanation on why well 18WW25 was not sampled.	E	Well 18WW25 was sampled and the results are presented in the report. The text was corrected to remove the incorrect statements that 18WW25 was not sampled in Section 3.2 and on page ix.	
6	3-4	Section 3.2.1, First Paragraph	Well MW-20 is known to be in a perched zone. The new well 18CPTMW22R appears to also be completed in that small perched zone. EPA recommends not using these wells for groundwater level contouring.	C	Section 3.2.1 text and Figure 3-1 were revised to indicate groundwater at wells MW-20 and 18CPTMW22R is perched.	
7	3-4	Section 3.2.1	How were elevations determined at the new wells since earlier in the text it is mentioned that the wells have not been surveyed?	E	The wells were surveyed. The text of Section 2.3 has been updated to include the surveying results.	
8	3-6	Top of Page	EPA agrees that the lateral extend of the perchlorate in the upper Wilcox is delineated. However vertical extend of perchlorate is not known in the northwest (1 location) and northeast corners (1 location) of the site. EPA assumes additional wells will be drilled in the future to determine vertical extend in these areas.	C	Text was added at the top of page 3-6 (Section 3.2.2.1) that provides information about the lack of vertical delineation at MW-14 and 18CPTMW08DW.	
9	3-6	Section 3.2.2.2, First Paragraph	EPA agrees for the most part that the TCE in the shallow zone is delineated; however, MW-18 to the west had a detection of 14.1 which is still above the MCL. EPA recommends mentioning this detection in text. Newly planned activities at LHAAP-17 may help delineate the plume (just a little further to the west). One note, figure 2-2 in the LHAAP-17 report shows a 2009 sample collected at MW-18 and it was a nondetect. The recent result may indicate that the TCE plume is expanding.	C/D	Text was added to Section 3.2.2.2, Section 4.1, and page X discussing detection of TCE in MW-18. TCE has been detected historically in MW-18 above the MCL/PCL. Examples include 100 µg/L in May 2000 and 17 µg/L in December 1996. Therefore, we do not believe the TCE plume is necessarily expanding in this area.	

Responses to Comments on
Draft Supplemental to the Updated Post-Screening Investigation Report for LHAAP-18/24, Burning Ground No. 3 and Unlined Evaporation Pond
Longhorn Army Ammunition Plant, Karnack, Texas

September 2016

Reviewer: Rich Mayer, EPA

Respondent: Marwan Salameh and Debra Richmann, AECOM

1. Respondent Concurs (C), Does Not Concur (D), Takes Exception (E), or Delete (X).
2. Commentor Agrees (A) with response, or Does not Agree (D) with response.

Comment #	Page	Section/ Paragraph	Comment	C, D, E or X[1]	Response	A or D[2]
10	3-7	First Paragraph	Please define PCL in text and add to acronym list.	C/D	Added definition of PCL in the text in Section 3.2.2.4. PCL and TRRP are included and defined in the acronym list.	
11		Table 3-4	Please update table 3-3 with new well elevations, since it appears this table contains the data needed.	C	Table 3-3 was updated with surveying data.	
12	4-2	Number 13	Please see comment 9 above.	C	Please see response to comment 9.	
13	4-3	Second Bullet	This sentence seems awkward. One can say that these areas do not appear to be a source of perchlorate for Site 17. EPA assumes the intent might be that perchlorate is not migrating via the groundwater towards Site 17. Additional investigations at Site 17 may determine if there are comingling plumes from the two sites.	C/D	The intent of the second bullet is that perchlorate is not migrating via groundwater to site 17 from 18/24. We do not believe there are commingled plumes from site 17 and site 18/24 because perchlorate concentrations in 18CPTMW26, 18CPTMW26SW, and 18DP08 located between the two sites were very low or non-detectable. Text was added to the second bullet to clarify the sentence.	
14	4-3	Fourth Bullet	EPA agrees that the lateral extent of the COCs is mostly defined. However, the vertical extent has not been determined in few locations (i.e. MW-14 and 18CPTMW08DW).	C	Text added to the fourth bullet that indicates where delineation is not complete.	
15	4-3	Fifth Bullet	EPA recommends deleting this bullet. The previous bullet makes the same statement.	C	The fifth bullet removed from Section 4.2.	

Responses to Comments on
Draft Supplemental to the Updated Post-Screening Investigation Report for LHAAP-18/24, Burning Ground No. 3 and Unlined Evaporation Pond
Longhorn Army Ammunition Plant, Karnack, Texas

September 2016

Reviewer: April Palmie, TCEQ

Respondent: Marwan Salameh and Debra Richmann, AECOM

1. Respondent Concurs (C), Does Not Concur (D), Takes Exception (E), or Delete (X).
2. Commentor Agrees (A) with response, or Does not Agree (D) with response.

Comment #	Page	Section/ Paragraph	Comment	C, D, E or X[1]	Response	A or D[2]
1		18CPTMW22 Replacement pages	This log is really difficult to get meaningful information out of. The log should be redone from scratch. A note could be included to indicate the log replaces previous version in the other report.	C	A new log was created that shows the correct well construction information with a note that clarifies the new log is a revision. The original log will remain included for recordkeeping purposes, but an ñXò is put through the log to make it clear the log is no longer valid.	
2		Relevant to that log	Could you also please revise the cross section from the other PSI report for D-Dô to indicate the actual screen interval from 18CPTMW22. It would be very helpful to also include the 18CPTMW22 well logs (SW and DW) in this cross section. A note could be included to indicate the cross-section replaces previous version in the other report.	C	Cross-section D-Dô is updated by correcting the well screen for 18CPTMW22 and adding logs for 18CPTM22SW/DW. A new Section 3.3 was added to the report referencing cross-section D-Dô and indicating that it replaces a previous version in the Updated PSI report (Feb 2016).	
3	1-3	Section 3.2.1 Groundwater elevation discussion	It is my understanding that the new wells were not surveyed at the time of writing. This narrative should include notes to indicate interpretation could change based on survey elevations, especially when discussing slight upward or downward gradients.	E	All new wells were surveyed. Section 2.3 has been updated by providing survey information for the new wells and borings. Accordingly, no changes are needed for Section 3.2.1.	
4		All relevant figures (groundwater potentiometric) and Table 3-4	Should have notes regarding new wells not surveyed.	E	Please see response to comment #3.	
5		Figure 3-1	MW-20 and 18CPTMW22R have comparable groundwater elevations. It is still relevant to discard MW-20 as a data point? If so, shouldnôt the new well also be discarded?	C	Section 3.2.1 text and Figure 3-1 were revised to indicate groundwater at wells MW-20 and 18CPTMW22R is perched, and groundwater elevations in MW-20 and 18CPTMW22R were not used in contouring the Shallow Zone groundwater surface.	

From: April Palmie <april.palmie@tceq.texas.gov>
Sent: Tuesday, January 24, 2017 9:17 AM
To: Snow, JoLynn; Mayer, Richard
Cc: Williams, Aaron K CIV USARMY CESWT (US); Zeiler, Rose M CIV (US); nicholas.b.smith56.civ@mail.mil; Smith, Richard P CIV USARMY CESWF (US); Richmann, Debra; Sharp, Elspeth
Subject: RE: LHAAP-18/24 Draft Final Supplemental PSI Addendum Report

Good morning. I've reviewed the Draft Final Supplemental PSI Addendum Report for LHAAP 18/24 and accept all edits and comment responses. Thank you for fixing the X on old well log pages.

Sincerely,

April Palmie
Project and Grant Manager
Superfund Section
Remediation Division
Texas Commission on Environmental Quality
Phone: (512) 239-4152
Email: April.Palmie@tceq.texas.gov

From: Snow, JoLynn [mailto:JoLynn.Snow@aecom.com]
Sent: Monday, January 23, 2017 3:16 PM
To: April Palmie <april.palmie@tceq.texas.gov>; Mayer, Richard <mayer.richard@epa.gov>
Cc: Williams, Aaron K CIV USARMY CESWT (US) <Aaron.K.Williams@usace.army.mil>; Zeiler, Rose M CIV (US) <rose.m.zeiler.civ@mail.mil>; nicholas.b.smith56.civ@mail.mil; Smith, Richard P CIV USARMY CESWF (US) <Richard.P.Smith@usace.army.mil>; Richmann, Debra <debra.richmann@aecom.com>; Sharp, Elspeth <elspeth.sharp@aecom.com>
Subject: RE: LHAAP-18/24 Draft Final Supplemental PSI Addendum Report

Good afternoon April,

Please see the attached pages you requested showing the red X's. The link below is to the full PDF with lab data with these pages showing the X's as well, in case you need it for your files. I will enter this file in the Admin Record once we receive acceptance as Final from you and Rich. Please let me know if you need anything else.

JoLynn Snow has sent you 1 file using AECOM's File Transfer System.

This file will be available for download until 1/30/2017

File	Description	Size
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If you have any questions, please contact your project manager.

Thank you,
JoLynn

JoLynn Snow
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From: Snow, JoLynn
Sent: Wednesday, December 28, 2016 1:37 PM
To: April Palmie; Mayer, Richard
Cc: Williams, Aaron K CIV USARMY CESWT (US); Zeiler, Rose M CIV (US); nicholas.b.smith56.civ@mail.mil; Smith, Richard P CIV USARMY CESWF (US); Richmann, Debra; Sharp, Elspeth
Subject: LHAAP-18/24 Draft Final Supplemental PSI Addendum Report

Good afternoon,

Please see the link below to the Draft Final Supplemental PSI Addendum Report for LHAAP-18/24. Hard copies will follow via FedEx. Also attached is the redline document to assist in review. Please let me know if you need anything else.

JoLynn Snow has sent you 1 file using AECOM's File Transfer System.

This file will be available for download until 1/4/2017

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Thank you,
JoLynn

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From: Mayer, Richard <mayer.richard@epa.gov>
Sent: Thursday, January 26, 2017 8:47 AM
To: Zeiler, Rose M CIV USARMY HQDA ACSIM (US); Snow, JoLynn
Cc: Aaron.K.Williams@usace.army.mil; Smith, Nicholas B CIV USARMY IMCOM (US; 'Becher, Kent'; Tzhone, Stephen; 'Forsythe, Barry'; Burton, Terry; Turner, Philip; Richmann, Debra; Richard.P.Smith@usace.army.mil; April Palmie; paul_bruckwicki@fws.gov; Harrison, Dorelle; Sharp, Elspeth
Subject: EPA Approval of the Longhorn Site 18/24 Draft Final Supplemental PSI Addendum Report

Good Morning JoLynn/Rose, I've reviewed the Draft Final Supplemental PSI Addendum Report for Longhorn Site 18/24 and accept all edits and comment responses. Thank you for fixing Section 3.2. Also, EPA highly recommends that the EnCore sampling method be implemented during the next contracting period (for VOCs in soil).

From: April Palmie <april.palmie@tceq.texas.gov>
Sent: Thursday, January 26, 2017 9:01 AM
To: Mayer, Richard; Zeiler, Rose M CIV USARMY HQDA ACSIM (US); Snow, JoLynn
Cc: Aaron.K.Williams@usace.army.mil; Smith, Nicholas B CIV USARMY IMCOM (US; 'Becher, Kent'; Tzhone, Stephen; 'Forsythe, Barry'; Burton, Terry; Turner, Philip; Richmann, Debra; Richard.P.Smith@usace.army.mil; paul_bruckwicki@fws.gov; Harrison, Dorelle; Sharp, Elspeth
Subject: RE: EPA Approval of the Longhorn Site 18/24 Draft Final Supplemental PSI Addendum Report

TCEQ still accepts the document. Note on VOC sampling to follow under separate email.

From: Mayer, Richard [mailto:mayer.richard@epa.gov]
Sent: Thursday, January 26, 2017 8:47 AM
To: Zeiler, Rose M CIV USARMY HQDA ACSIM (US) <rose.m.zeiler.civ@mail.mil>; Snow, JoLynn <JoLynn.Snow@aecom.com>
Cc: Aaron.K.Williams@usace.army.mil; Smith, Nicholas B CIV USARMY IMCOM (US <nicholas.b.smith56.civ@mail.mil>; 'Becher, Kent' <kdbecher@usgs.gov>; Tzhone, Stephen <tzhone.stephen@epa.gov>; 'Forsythe, Barry' <barry_forsythe@fws.gov>; Burton, Terry <Burton.Terry@epa.gov>; Turner, Philip <Turner.Philip@epa.gov>; debra.richmann@aecom.com; Richard.P.Smith@usace.army.mil; April Palmie <april.palmie@tceq.texas.gov>; paul_bruckwicki@fws.gov; Harrison, Dorelle <harrison.dorelle@epa.gov>; Sharp, Elspeth <elspeth.sharp@aecom.com>
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DRAFT FINAL

SUPPLEMENTAL TO THE UPDATED POST-SCREENING INVESTIGATION REPORT FOR

LHAAP-18/24, BURNING GROUND NO. 3 AND UNLINED EVAPORATION POND

LONGHORN ARMY AMMUNITION PLANT

KARNACK, TEXAS

Prepared For:

U.S. Army Corps of Engineers

Tulsa District

Prepared By:

AECOM Technical Services, Inc.

December 2016

DRAFT FINAL

SUPPLEMENTAL TO THE UPDATED POST-SCREENING INVESTIGATION REPORT FOR

LHAAP-18/24, BURNING GROUND NO. 3 AND UNLINED EVAPORATION POND

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KARNACK, TEXAS

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Tulsa District

Prepared By:

AECOM Technical Services, Inc.

Contract No. W912DY-09-D-0059

Task Order No. DS01

December 2016

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Acronyms and Abbreviations

Õg/kg	micrograms per kilogram
ACD	air curtain destructor
AEC	Army Environmental Command
AECOM	AECOM Technical Services, Inc.
amsl	above mean sea level
bgs	below ground surface
BRAC	Base Realignment and Closure
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COC	contaminant of concern
CSM	Conceptual Site Model
DPT	direct push technology
ft	foot/feet
FS	Feasibility Study
GWTP	groundwater treatment plant
HSA	hollow-stem auger
ICT	interception-collection trench
IRA	Interim Remedial Action
IRP	Installation Restoration Program
LHAAP	Longhorn Army Ammunition Plant
MCL	Maximum Contaminant Level
MS	matrix spike
MSD	matrix spike duplicate
MSC	Medium Specific Concentration
PCL	TRRP Tier 1 Groundwater Residential Protective Concentration Level
PID	photoionization detector
PSI	Post-Screening Investigation
QA/QC	Quality Control/Quality Assurance
RA	Remedial Action
RCRA	Resource Conservation and Recovery Act
TCEQ	Texas Commission on Environmental Quality
TRRP	Texas Risk Reduction Program
UEP	unlined evaporation pond
U.S.	United States
U.S. Army	U.S. Department of the Army
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
VOC	volatile organic compound
WP	Work Plan

EXECUTIVE SUMMARY

This Supplemental to the Updated Post-Screening Investigation (PSI) Report was prepared on behalf of the United States (U.S.) Army Corps of Engineers (USACE) for sites LHAAP-18 (Burning Ground No. 3) and LHAAP-24 (Unlined Evaporation Pond [UEP]/Rocket Motor Washout Facility) at the former Longhorn Army Ammunition Plant (LHAAP) in Karnack, Texas. The purpose of this report is to summarize the results of the environmental investigations conducted at LHAAP-18/24 by AECOM Technical Services, Inc. (AECOM) between February 2016 and June 2016. This information will be used to fill data gaps identified in the Updated Post-Screening Investigation (PSI) Report for LHAAP-18/24 (AECOM, 2016), to respond to comments from the U.S. Environmental Protection Agency (USEPA) and the Texas Commission on Environmental Quality (TCEQ) on the PSI report, and to complete a Revised Feasibility Study (FS) for LHAAP-18/24 that includes evaluation of contingency remedies for 1,4-dioxane.

The investigation work and the information presented in this report are based on the LHAAP-18/24 Supplemental PSI Work Plan (WP) (AECOM, 2015) that was developed by AECOM on behalf of the U.S. Department of the Army (U.S. Army). The WP was reviewed by and concurrence was received from the TCEQ and the USEPA.

Background

LHAAP-18/24 is a 34.5 acre fenced, cleared area located in the southeastern section of LHAAP. The area was used for the treatment, storage, and disposal of solid and liquid explosive, pyrotechnic, and combustible solvent waste by open burning/open detonation, incineration, evaporation, and burial. Burning Ground No. 3 operated between 1955 and 1998. Historical waste management units include open burn pits, the UEP, stockpiles of solvent-soaked sawdust, an air curtain destructor (ACD), and suspected waste burial pits. A groundwater extraction system incorporating approximately 5,000 feet (ft) of interceptor-collection trenches (ICTs) and a groundwater treatment plant (GWTP) was installed in 1997 to control the migration of contaminated groundwater. The area within the ICTs is considered the containment area.

Field Investigation Scope of Work

The purpose of this investigation was to provide better definition of the presence and extent of contamination in soil and groundwater within specific areas of the site, as discussed below.

The following specific objectives were identified for this work:

- Assess the extent of the potential perchlorate source in the southern corner of the site
    - Determine the presence and extent of a potential perchlorate source in the Shallow Zone soil and groundwater in the vicinity of MW-7 extending south toward 18CPTMW22SW.
    - Determine if perchlorate in Shallow Zone groundwater extends from LHAAP-18/24 to LHAAP-17 in the southern part of LHAAP-18/24.
- Delineate perchlorate in specific groundwater areas where data gaps were identified in the Updated PSI report (AECOM, 2016). These areas include the southern portion of the site near 18CPTMW22SW; the northwest area in the vicinity of 18CPTMW23 and near Harrison Bayou; and in proximity to 18CPTMW19.

To achieve these objectives, vertical soil profiling of perchlorate and volatile organic compound (VOC) concentrations was conducted utilizing direct push technology (DPT), sonic, and hollow stem auger (HSA) drilling methods to recover soil cores. Soil samples from each soil boring were obtained at approximately 10 foot intervals from the ground surface to borehole terminus. Lateral extent of contamination in the Shallow Zone was also determined from the samples collected from the DPT borings.

Delineation of Contaminated Soil

The scope of work included advancing DPT borings and collecting soil samples from up to 30 soil borings as deep as 45 ft below ground surface (bgs) in the southern corner of the site in proximity of MW-7 and 18CPTMW22SW. Five initial soil borings were advanced around 18CPTMW22SW, which is the location of known high perchlorate concentrations in the saturated soil and groundwater. Based on the analytical results from the initial borings, step out borings were advanced at progressively greater distances from the impacted initial soil borings until concentrations of perchlorate and VOCs were below levels protective of groundwater GWP-Ind Medium Specifc Concentration (MSC) of 7,200 micrograms per kilogram (Õg/kg) for perchlorate and 100 times the Maximum Contaminant Level (MCL) for VOCs. The GWP-Ind MSC for perchlorate was used for both saturated and vadose zone soil samples. Using this approach for delineating the lateral extent of contamination, a total of 17 shallow soil borings were advanced and sampled.

Shallow Zone Groundwater Monitoring Wells

The scope of work for Shallow Zone groundwater included the following activities:

- Installation of a 4-inch diameter monitoring well to replace former monitoring well 18CPTMW22, including vertical soil profiling for perchlorate and VOCs in the Shallow Zone and Wilcox clay.
- Installation of a 4-inch diameter monitoring well approximately 250 ft west/southwest of former monitoring well 18CPTMW22 for delineation of perchlorate extent in the direction of LHAAP-17. Vertical soil profiling for perchlorate and VOCs in the Shallow Zone and Wilcox clay was also performed.
- Installation of a 4-inch diameter monitoring well approximately 100 ft north of monitoring well 18CPTMW23 for delineation of perchlorate extent toward Harrison Bayou. Vertical soil profiling for perchlorate and VOCs in the Shallow Zone formation and Wilcox clay was also performed.

Wilcox Formation Groundwater Monitoring Wells

The scope of work for Wilcox Formation groundwater included the following activities:

- Installation of a deep Wilcox 4-inch diameter monitoring well in proximity of monitoring well 18CPTMW22SW, and vertical soil profiling for perchlorate and VOCs in the Wilcox Clay and Wilcox Formation.
- Installation of a 4-inch monitoring well adjacent to monitoring well 18CPTMW23 for lateral and vertical perchlorate and VOCs delineation in the Wilcox Formation. The work included completion of vertical soil profiling for perchlorate and VOCs in the Shallow

Zone and upper Wilcox Formation. This well was installed deeper than 18CPTMW23 in a clean soil interval in the Wilcox Formation.

- Installation of an upper Wilcox 4-inch diameter monitoring well approximately 100 ft north of monitoring well 18CPTMW08SW and adjacent to 18CPTMW19 for vertical and lateral delineation of perchlorate and VOCs. Vertical soil profiling for perchlorate and VOCs in the Wilcox Formation was also performed.
- Installation of an upper Wilcox 4-inch diameter monitoring well approximately 250 ft west/southwest of former monitoring well 18CPTMW22 for perchlorate delineation toward LHAAP-17. Vertical soil profiling for perchlorate and VOCs (combined with the Shallow Zone soil profiling discussed above) into the upper Wilcox Formation.

The Revised Updated PSI Addendum field investigation was initiated using a DPT rig between February 22 and March 15, 2016 for perchlorate assessment in the Shallow Zone of the southern portion of the site. Between April 18, 2016 and June 27, 2016, seven additional monitoring wells were installed, four of which are located in the southern portion as part of the perchlorate assessment. Three of the monitoring wells, 18CPTMW23SW, 18WW24, and 18CPTMW19SW, were installed on the north side of the site beyond the containment area to complete the delineation of perchlorate in this area of the site.

Seventeen shallow soil borings were advanced using DPT in the southern corner of the site for perchlorate delineation, soil characterization, and soil sampling. In this report, the Shallow Zone is defined as the unsaturated and saturated soil from the ground surface to a depth of up to 45 ft bgs, which typically overlies a clay layer (identified as the Wilcox clay) that separates the Shallow Zone (alluvial deposits) from groundwater in the Wilcox Formation.

Three monitoring wells were installed in the Shallow Zone to an approximate depth of 35 ft bgs, three wells were installed in the Intermediate Zone to an approximate depth of 65 ft bgs, and one well was installed in the Deep Zone to an approximate depth of 90 ft bgs. Six of the borings for the monitoring wells were drilled using sonic drilling techniques and one shallow well boring was drilled using an HSA drill rig. The shallow wells were completed in the Shallow Zone groundwater. The intermediate wells were completed in the upper Wilcox and the deep well was completed in the lower Wilcox.

Temporary steel surface casing was used to isolate the deeper groundwater (Intermediate and Deep Zones) from the Shallow Zone groundwater to reduce the potential for cross contamination. Discrete soil samples were obtained from the monitoring well boreholes at intervals up to approximately 10 ft for vertical profiling of perchlorate and VOCs.

Field Investigation Findings

Southern Corner of Site

High perchlorate concentrations were identified in the Shallow Zone and upper Wilcox Formation in wells 18CPTMW22 and 18CPTMW22SW in the area just outside the southern corner of the site; however, the source of this perchlorate is unknown. Therefore, this additional soil investigation in the southern corner of the site was conducted to further determine the presence and source of perchlorate in this area of the site. Eighty-five discrete soil samples from 17 DPT soil borings were collected in the Shallow Zone. In addition, 25 discrete soil samples (12

from the Shallow Zone and 13 from the Wilcox Formation) were obtained from the boreholes of four monitoring wells outside the southern corner of the site.

The perchlorate concentrations in the vadose zone in the six DPT boreholes collected inside the containment area in the southern portion of the site revealed low to nondetectable concentrations of perchlorate, with the highest concentration found in 18DPT04 at 5-5.5 ft bgs at 101 Õg/kg, located adjacent to the former building X-25. These perchlorate concentrations are less than the GWP-Ind MSC of 7,200 Õg/kg used for the vadose zone soil. In the saturated zone inside the containment area, the concentration of perchlorate was elevated particularly in the Wilcox clay. The highest concentration of perchlorate in the Wilcox Clay was detected in 18DPT04 at 36.5-37.0 ft bgs at 3,200 Õg/kg. These perchlorate concentrations however are still less than the GWP-Ind MSC of 7,200 Õg/kg, which was used for perchlorate in saturated soil. Therefore, there is no particular source of perchlorate identified in the Shallow Zone (vadose and saturated) in this area of the site.

Outside the southern corner of the site, the concentration of perchlorate in the vadose zone ranged from low (5.53 Õg/kg) to nondetect. The low to nondetectable concentrations of perchlorate in the vadose zone would indicate that perchlorate is not sourced from a surface release in this area.

In the saturated Shallow Zone, the concentrations of perchlorate were typically low increasing in depth the closer the samples were to the Wilcox clay. The higher concentrations of perchlorate in the shallow saturated zone were detected in 18DPT03 (3,290 Õg/kg at 14.5-15 ft bgs) , 18DPT15 (3,440 Õg/kg at 21-21.5 ft bgs), and 18DPT11 (3,940 Õg/kg at 20-20.5 ft bgs). These concentrations of perchlorate were found in the coarser materials (sand) just above the Wilcox clay. The highest perchlorate concentrations in the Wilcox clay were detected above the GWP-Ind MSC of 7,200 Õg/kg in the borehole of monitoring well 18CPTMW22DW at 9,440 Õg/kg at 29.5-30 ft bgs and in 18DPT12 at 15,900 Õg/kg at 18-18.5 ft bgs. These samples were collected from saturated soils. The elevated concentrations of perchlorate in the Wilcox clay may represent perchlorate migrating via groundwater to this location prior to installation of the groundwater extraction system. For example, perchlorate concentrations in nearby wells MW-7 and MW-8 were 105,000 Õg/L and 27,500 Õg/L, respectively, in May 2005; 89,400 Õg/L, and 47,500 Õg/L in 2006; 37,500 Õg/L and 72,000 Õg/L in May 2013; and 22,000 Õg/L and 8,290 Õg/L in June 2016. These data demonstrate that perchlorate contamination was present before installation of the extraction system and there has been a decrease in perchlorate concentrations as a result of the operation of the groundwater extraction system.

Perchlorate concentrations for the 18CPTMW22 stepout borings were considerably lower or nondetect. Therefore, using a perchlorate GWP-Ind MSC of 7,200 Õg/kg for industrial land use scenario, these low or nondetect perchlorate concentrations provide delineation of extent of perchlorate in the vadose and saturated zones of the Shallow Zone and indicate that a source does not exist in this area of the site.

Data Gaps Northwest of the Containment Area

Other locations where data gaps were identified include northwest of the site in proximity to 18CPTMW19, in proximity to 18CPTMW23, and farther to the northwest from 18CPTMW23 adjacent to Harrison Bayou. To address the data gaps identified at these locations, soil samples from the following boreholes were analyzed to delineate the perchlorate impact:

- 18CPTMW19SW – perchlorate concentrations were below the detection limits at 5-5.5 ft bgs and 10-10.5 ft bgs. At 20-20.5 ft bgs 8.74 µg/kg was detected followed by no detections at 30-30.5 ft bgs. At 40-40.5 and 50-50.5 perchlorate was detected at 124 µg/kg and 170 µg/kg, followed by no detections at 60-61 ft bgs. Saturation at this location was encountered at approximately 10 ft bgs. The Wilcox clay appears to extend from 20.3 ft bgs to 41.4 ft bgs.
- 18CPTMW23SW – relatively low concentrations of perchlorate were detected at 5-5.5 ft bgs, 10-10.5 ft bgs and 20-20.5 ft bgs at 19.6 µg/kg, 1,920 µg/kg, and 29.3 µg/kg, respectively. At depths of 30-30.4 ft bgs, 40-40.5 ft bgs, 50-50.5 ft bgs, and 60-60.5 ft bgs perchlorate concentrations were below the detection limits. Saturated conditions were observed at the surface and throughout the borehole as the area had previously been subjected to flooding due to heavy rains. The Wilcox clay was not identified at this location.
- 18WW25 near Harrison Bayou – no perchlorate was detected in any of the analyzed soil samples at 3.5-4 ft bgs 9.5-10 ft bgs 14.5-15 ft bgs, 19.5-20 ft bgs, 22-22.5 ft bgs. Saturation at this location was encountered at approximately 2 ft bgs during drilling. The Wilcox clay was not identified.

Groundwater Results

A comprehensive sampling event for groundwater was conducted in June 2016 after the monitoring wells were installed. A comprehensive groundwater level gauging event was conducted on June 9, 2016, except for monitoring well 18WW25, which was not installed until June 27, 2016, after the gauging event (well 18WW25 was however sampled on June 29, 2016 and analyzed for COCs). The Shallow Zone groundwater potentiometric results indicate the presence of a localized groundwater high in the northern portion of the site near monitoring wells AWD-1 and 123, as has been observed historically. The new monitoring well 18CPTMW22R, just outside the containment area to the south of the site, indicated the presence of a groundwater high. The Wilcox Formation potentiometric results indicate the presence of a groundwater high in the vicinity of MW-14 in the northwest area of the site, consistent with previous observations.

Shallow Zone monitoring well 18CPTMW26 had insufficient amount of water and was not sampled. Shallow Zone monitoring well 18CPTMW22R to the south of the site, which is screened between 4.8 ft bgs and 14.3 ft bgs, had a perchlorate concentration of 0.917 µg/L. The low perchlorate concentration in the groundwater corroborates the < 2.8 µg/kg of perchlorate in the soil samples collected at this location to a depth of 15.5 ft bgs. This low perchlorate result in 18CPTMW22R contrasts with the high perchlorate concentration in plugged Shallow Zone well 18CPTMW22, which had perchlorate of 106,000 µg/L in June 2014. Shallow Zone well 18CPTMW22 was screened between 19 and 28 ft bgs through a highly impacted Wilcox clay zone. Soil samples from 18CPTMW22DW drilled in April 2016 indicated the presence of perchlorate at 5,400 µg/kg at a depth of 20 to 20.5 ft bgs. Soil samples collected from 18CPTMW22SW had perchlorate concentrations of 10,600 µg/kg at a depth of 24 ft bgs and 10,200 µg/kg at a depth of 26.5 ft bgs. These high concentrations of perchlorate in soil across the screened interval of 18CPTMW22 coincide with the high groundwater perchlorate concentration reported in plugged well 18CPTMW22.

Perchlorate was not detected in new Shallow Zone monitoring well 18WW25 near Harrison Bayou to the northwest. Similarly, no detections of 1,4-dioxane (< 1 μg/L), TCE (< 0.5 μg/L), or MC (< 0.5 μg/L) were observed in this well. No detections of 1,4-dioxane (< 1 μg/L), TCE (< 0.5 μg/L), or MC (< 0.5 μg/L) were observed in new Shallow Zone monitoring well 18CPTMW22R.

Upper Wilcox Formation monitoring well 18CPTMW22SW, co-located with Shallow Zone well 18CPTMW22R and Lower Wilcox Formation well 18CPTMW22DW had a perchlorate concentration of 10,200 μg/L, a methylene chloride concentration of 0.534 J μg/L, a TCE concentration of 0.633 J μg/L, and a 1,4-dioxane concentration of < 0.5 μg/L. Monitoring well 18CPTMW26SW had a perchlorate concentration of 6.42 μg/L but no detections of 1,4-dioxane (< 1 μg/L), TCE (< 0.5 μg/L), or MC (< 0.5 μg/L). This well is located between LHAAP-18/24 and LHAAP-17 and indicates that little migration of perchlorate has occurred toward this location.

New upper Wilcox Formation wells, 18CPTMW19SW and 18CPTMW23SW, located in the northwest of the containment had no detection of 1,4-dioxane (< 1 μg/L), TCE (< 0.5 μg/L), or MC (< 0.5 μg/L) and low concentrations of perchlorate (1.25 μg/L in 18CPTMW19SW and 0.407 μg/L in 18CPTMW23SW). These wells provide delineation of these constituents in the north/northwest area of the site.

In general, the lateral extent of perchlorate, TCE, MC, and 1,4-dioxane in the Shallow Zone and in the Wilcox Formation has been determined with two exceptions. 1,4-Dioxane in MW-16 near Harrison Bayou had a concentration of 18 μg/L, exceeding the 1,4-dioxane Groundwater Residential Protective Concentration Level (PCL) of 9.1 μg/L. The TCE result of 14.1 μg/L at MW-18, located to the southwest of the site, exceeded the MCL of 5 μg/L.

1 INTRODUCTION

AECOM Technical Services, Inc. (AECOM) has been contracted by the USACE, Tulsa District, to complete the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Remedial Action (RA) at the Longhorn Army Ammunition (LHAAP) site LHAAP-18/24 (Burning Grounds #3 and Unlined Evaporation Pond [UEP]), located in Karnack, Texas. The U.S. Army Base Realignment and Closure (BRAC) Division received administrative control of LHAAP in October 2002. The U.S. Army Environmental Command (AEC) is responsible for funding the Installation Restoration Program (IRP) and Military Munitions Response Programs at LHAAP.

This document describes the targeted investigation activities at LHAAP-18/24 (site) to supplement the data collected under the Post-Screening Investigation (2013 investigation) (AECOM, 2013) and Updated PSI Report (2014 investigation) (AECOM, 2016). The purpose of this work is to fill data gaps at site LHAAP-18 (Burning Ground No. 3) in support of completing the Feasibility Study (FS) for the site. These data gaps were identified in the Final Updated PSI Report (AECOM, 2016), and from U. S. Environmental Protection Agency (USEPA) and Texas Commission on Environmental Quality (TCEQ) comments on the report. The scope of this work was developed during the monthly managers meeting held on October 29, 2015, documented in a Supplemental PSI Work Plan (WP) (AECOM, 2015), and approved by USEPA and TCEQ on December 21, 2015 and December 16, 2015, respectively.

1.1 LHAAP Background

The LHAAP is an inactive, government-owned, formerly contractor-operated and maintained industrial facility located in central-east Texas in the northeastern corner of Harrison County. The facility occupies approximately 1,400 of its former 8,416 acres located between State Highway 43 in Karnack, Texas, and the western shore of Caddo Lake as shown in **Figure 1-1**. LHAAP was listed as a National Priorities List site on August 9, 1990, due to threatened releases of hazardous substances, pollutants, or contaminants. The USEPA, the Texas Water Commission (now the TCEQ), and the U.S. Army signed a Federal Facilities Agreement on December 30, 1991.

The nearest cities are Marshall, Texas, approximately 14 miles to the southwest, and Shreveport, Louisiana, approximately 40 miles to the southeast.

1.2 LHAAP-18/24 Background

LHAAP-18/24 is a 34.5 acre fenced, cleared area (with an interim remedy that includes a containment area) located in the southeastern section of LHAAP (**Figure 1-2**). The site is between Avenue Q to the southeast and Harrison Bayou to the northwest. LHAAP-17 (Burning Ground No. 2) is to the southwest (**Figures 1-2** and **1-3**), and heavily wooded areas lie to the east and northeast. The area had been used for the treatment, storage, and disposal of solid and liquid explosive, pyrotechnic, and combustible solvent waste by open burning/open detonation, incineration, evaporation, and burial. LHAAP-18/24 encompasses a number of Defense Environmental Restoration Program Management Information System sites:

- Burning Ground No. 3;
- Rocket Motor Washout Pond;

- Former UEP;
- 24-X Holding Area;
- 25-X Washout Pad;
- Air Curtain Destructor;
- Three Open Burning Cages (003, 155, 156);
- Two Open Burning Pans (157, 158);
- Building 41-X; and
- Building 43-X.

The locations of these sites within LHAAP-18/24 are presented in the Environmental Site Assessment (Plexus, 2005) and identified in **Figure 1-3**. The former UEP/Rocket Motor Washout Facility is located within the northern corner of LHAAP-18/24.

LHAAP-18/24 is generally vegetated with grass and weeds and is crossed by a number of paved roads. It is situated on a natural topographic high slightly west of the crest of a small topographic divide between Harrison Bayou and Saunder's Branch. The topography of the site has been greatly altered by operations over the past 35 years. LHAAP- 18/24 is mostly level, with more relief near the western corner that contained the air-curtain destructor until 2003 and near the northern corner that contains the mounded surface of the former UEP. No signs of substantial erosion are visible.

Burning Ground No. 3 operated between 1955 and 1998. Historical waste management units include open burn pits, the UEP, stockpiles of solvent-soaked sawdust, and suspected waste burial pits. The UEP was constructed at the burning ground in 1963 as a holding pond to store explosive wastes resulting from the washout of rocket motor casings. In 1973, the pond also began receiving waste water containing solvent residues and solids. An air curtain destructor (ACD) was built in 1979 for the purpose of disposing of explosive and explosive-contaminated wastes by burning.

Use of burn pit and trenches was reportedly discontinued in 1984, and the use of the UEP was also discontinued in 1984 when it was discovered that the pond was contaminating groundwater beneath the site. The UEP was closed as a Resource Conservation and Recovery Act (RCRA) interim status surface impoundment in 1986 by removing all waste and capping the impoundment. The last burning cage was removed in 1998.

Wastes removed during the closure of the UEP were disposed of off-site at a RCRA certified disposal facility. As part of the LHAAP-18/24 Interim Remedial Action (IRA), approximately 32,000 cubic yards of source area soil were excavated and treated by low temperature thermal desorption. Some of the treated soil was placed at LHAAP-12 and LHAAP-16.

A groundwater extraction system incorporating approximately 5,000 ft of ICTs and a groundwater treatment plant (GWTP) was installed in 1997 to control the migration of contaminated groundwater in the shallow groundwater zone. The treated water is primarily planned to be released to Harrison Bayou with occasional release of treated water as irrigation water on LHAAP-18/24, or to a holding pond (INF Pond). However, due to drought conditions

between 2011 and 2014, flow in Harrison Bayou did not support discharge to Harrison Bayou. Instead, the majority of the treated water was released via irrigation.

1.2.1 Surface Water Hydrology

Harrison Bayou flows within approximately 200 ft of the western corner of LHAAP-18/24. There are no surface water bodies or watercourses running through the site. Surface drainage occurs in all directions, but flow is generally directed toward Harrison Bayou to the West and by both natural and manmade ditches and drainage swales to the north. Harrison Bayou drains into Caddo Lake, which is located approximately one mile northeast of LHAAP-18/24. The extreme western corner of the site is located within the 100-year floodplain of Harrison Bayou.

1.2.2 Hydrogeology

Until 2012, the existing Conceptual Site Model (CSM) described three groundwater zones at LHAAP-18/24: shallow, intermediate, and deep. The three groundwater zones were described as somewhat separated by non-uniform, non-contiguous clay or silty clay layers. The separation between aquifer zones is therefore primarily descriptive and defined by the intervals in which groups of monitoring wells have been completed. The depths of monitoring wells screened in the shallow groundwater zone are typically between 10 and 53 feet (ft) below ground surface (bgs). The depths of monitoring wells in the intermediate groundwater zone are typically between 44 and 80 ft bgs. The depths of monitoring wells in the deep groundwater zone are between 98 and 185 ft bgs.

The CSM was updated on October 18, 2012. The updated CSM describes the presence of two units at LHAAP-18/24: a shallow unit up to a depth of approximately 45 ft bgs (Shallow Zone), and a deep unit below the shallow zone (Wilcox Formation). Generally, these two units are separated by a contiguous clay layer which is believed to be present across the entire site with the exception of the area to the west and northwest towards Harrison Bayou (i.e., within the floodplain of Harrison Bayou). As an example, it appears that the Shallow Zone and Wilcox Formation are well separated beyond the eastern edge of the site (e.g., near 18WW17 and 18WW18), while there is no separation at all just beyond the western corner (i.e., in the vicinity of 18WW02 and 18WW06). In between, the clay layer beneath the shallow zone varies considerably in depth and thickness. Generally, based on the updated CSM, the shallow and shallow/intermediate-screened wells are identified in the Shallow Zone (up to a depth of 40 ft bgs) and the intermediate and deep-screened wells are identified in the Wilcox Formation (generally below approximately 45 ft bgs). The intermediate wells are generally screened in the upper (shallow) Wilcox Formation and the deep wells are generally screened in the lower (deep) Wilcox Formation. Upper Wilcox and shallow Wilcox are used interchangeably and refer to the portion of the Wilcox Formation just below the Wilcox clay at an approximate depth of 50 to 80 ft bgs. Similarly, lower Wilcox and deep Wilcox are used interchangeably and refer to the portion of the Wilcox Formation at approximately 80 ft or more bgs.

Figure 1-4 shows the shallow groundwater elevations for March 2016 (prior to the current investigation), indicating the groundwater flow in the shallow zone to occur outwardly from the site in a radial direction. Localized influence of groundwater extraction and reinjection can be observed in the shallow aquifer. The gradient and direction of flow in the Wilcox Formation in the northern portion of the site seem to be similar to the shallow zone; toward Harrison Bayou (**Figure 1-5**).

Groundwater in the deep zone near LHAAP is currently used as a drinking water source. As of May 2015, six active water supply wells near the LHAAP were identified (**Figure 1-2**). All these public water supply wells are located greater than two miles from the LHAAP-18/24 site. Karnack Water Supply Corporation operates two Public Water Supply Wells servicing the town of Karnack. These wells were completed in 1905 to depths of 287 and 285 ft bgs and are located hydraulically upgradient approximately one-quarter mile northwest and one-half mile southwest of the town center, respectively. Caddo Lake Water Supply Corporation operates three source wells located north and northwest of LHAAP that have been in use since 1905. These wells are hydraulically upgradient of LHAAP (Jacobs, 2002) with completion depths of 244, 185 and 310 ft bgs. Caddo Lake State Park operates one source well located approximately 1.6 miles northwest upgradient of LHAAP. This well was installed in 1905 with a total depth of 292 ft. Due to the large distance between these wells and LHAAP, water removal from these wells is not expected to affect groundwater flow at the site. In addition, there are several livestock and domestic wells (shown as Groundwater Wells on **Figure 1-2**) located in the vicinity of LHAAP with depths averaging 250 ft (**Figure 1-2**). There are three water supply wells located within LHAAP (see **Figure 1-2**) upgradient of LHAAP-18/24. These water wells supply water to buildings currently in use on the installation. Their approximate locations and depths are as follows:

- 150 ft south-southeast of the fire station approximately 2 miles from LHAAP-18/24; 128 ft deep
- İ mile southwest of the fire station approximately 2 miles from LHAAP-18/24; 195 ft deep
- At the U.S. Fish and Wildlife Service facility approximately 2.6 miles from LHAAP-18/24; 220 ft deep

None of these wells are close to LHAAP-18/24, and none of these wells are used for drinking water. Two additional wells that had previously supplied water to the installation have been plugged and abandoned. None of the water supply wells are associated with or are in imminent danger from the localized contaminated groundwater at LHAAP-18/24.

1.3 Previous Investigations and Remedial Actions

The environmental media (e.g., soil, groundwater, surface water, and sediment) at LHAAP-18/24 have been the subject of numerous investigations to identify potential contamination. Those investigations are summarized in the Updated PSI Report for LHAAP-18/24 (AECOM, 2016).

In addition to the IRAs described above, several remedial actions have been conducted at LHAAP-18/24. These are summarized in the Updated PSI Report for LHAAP-18/24 (AECOM, 2016).

1.4 Organization of Report

This report has been organized in the following sections:

- *Section 1: Introduction* - summarizes the site background including previous investigation and remediation activities, and provides the purpose, scope of work, and objectives of the WP

- *Section 2: Investigation Activities* - describes the completed scope of work and the sampling and analysis methodology to address the site data gaps. Deviations from the Supplemental PSI WP (AECOM, 2015) are presented in this Section
- *Section 3: Investigation Findings* ï provides a presentation of the data, updates to the CSM, analysis of the data gaps, and discussion of the findings
- *Section 4: Conclusions and Recommendations* ï Provides main conclusions and recommendations
- *Section 5: References* - provides a list of references cited in the document.

This Revised Updated PSI Addendum Report also includes a number of appendices supporting the main text:

- Appendix A: Field Boring Logs and Monitoring Well Construction Logs
- Appendix B: Quality Control Summary Report & Laboratory Analytical Reports.
- Appendix C: Groundwater Sampling Forms.

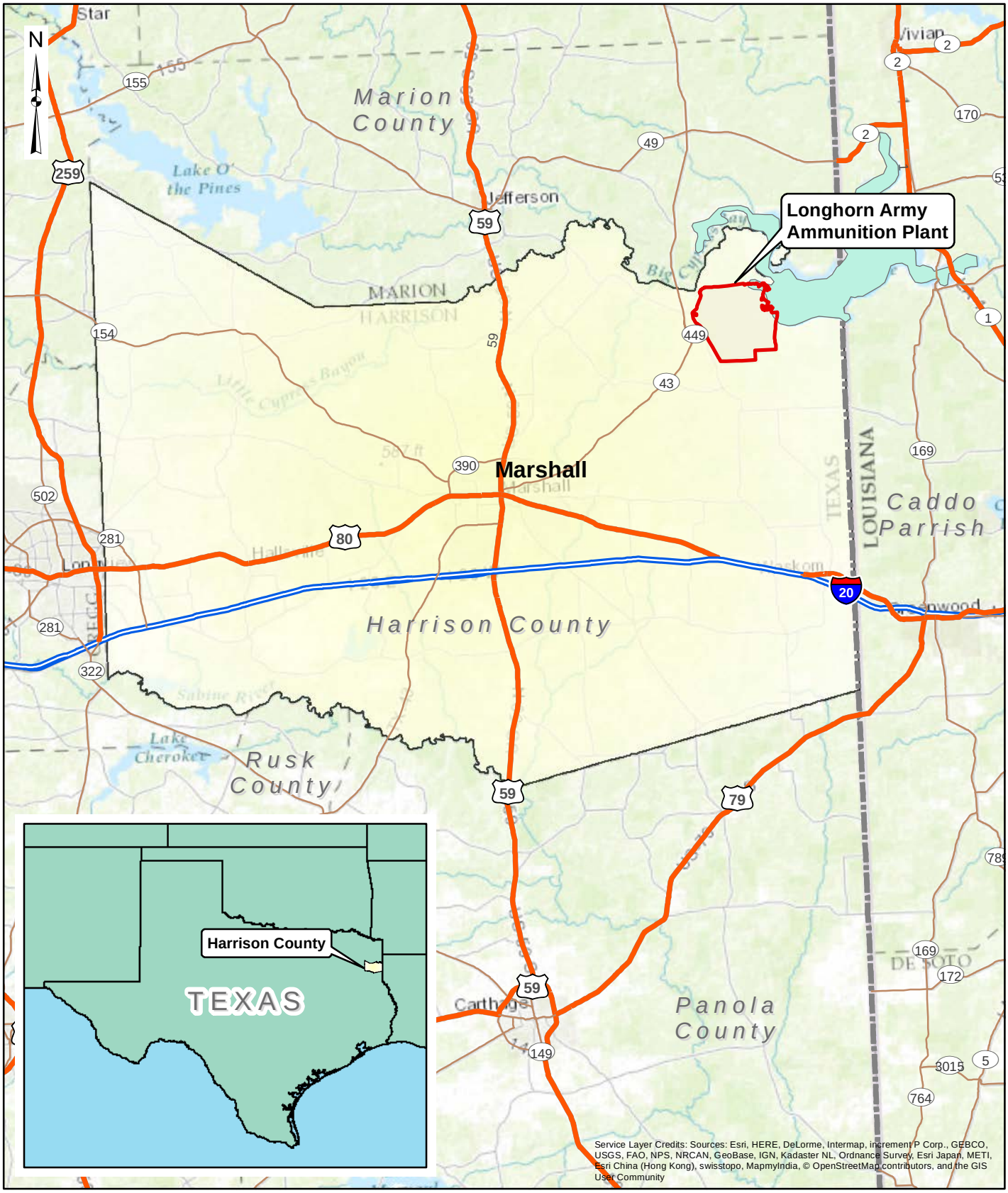

0 3.5 7 14 Miles

AECOM

Figure 1-1
LHAAP Location Map
LHAAP-18/24

Longhorn Army Ammunition Plant
60256135 Karnack, Texas December 2016

L:\AGEIGIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP18_24\PSI_Addendum\Fig 1-1 LHAAP Location.mxd

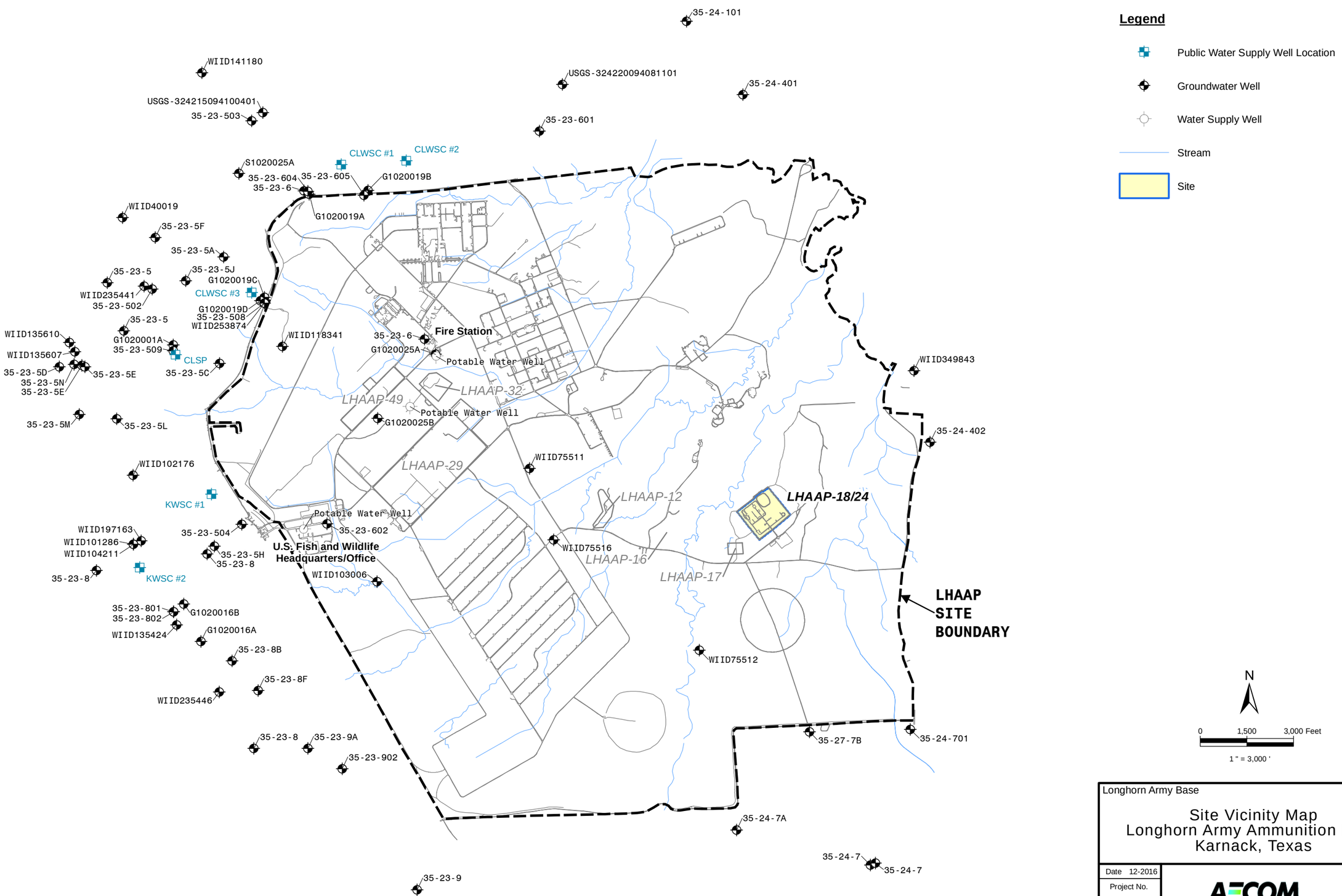

Longhorn Army Base

Site Vicinity Map
Longhorn Army Ammunition Plant
Karnack, Texas

Date 12-2016	AECOM	Figure
Project No. 60263702		1-2

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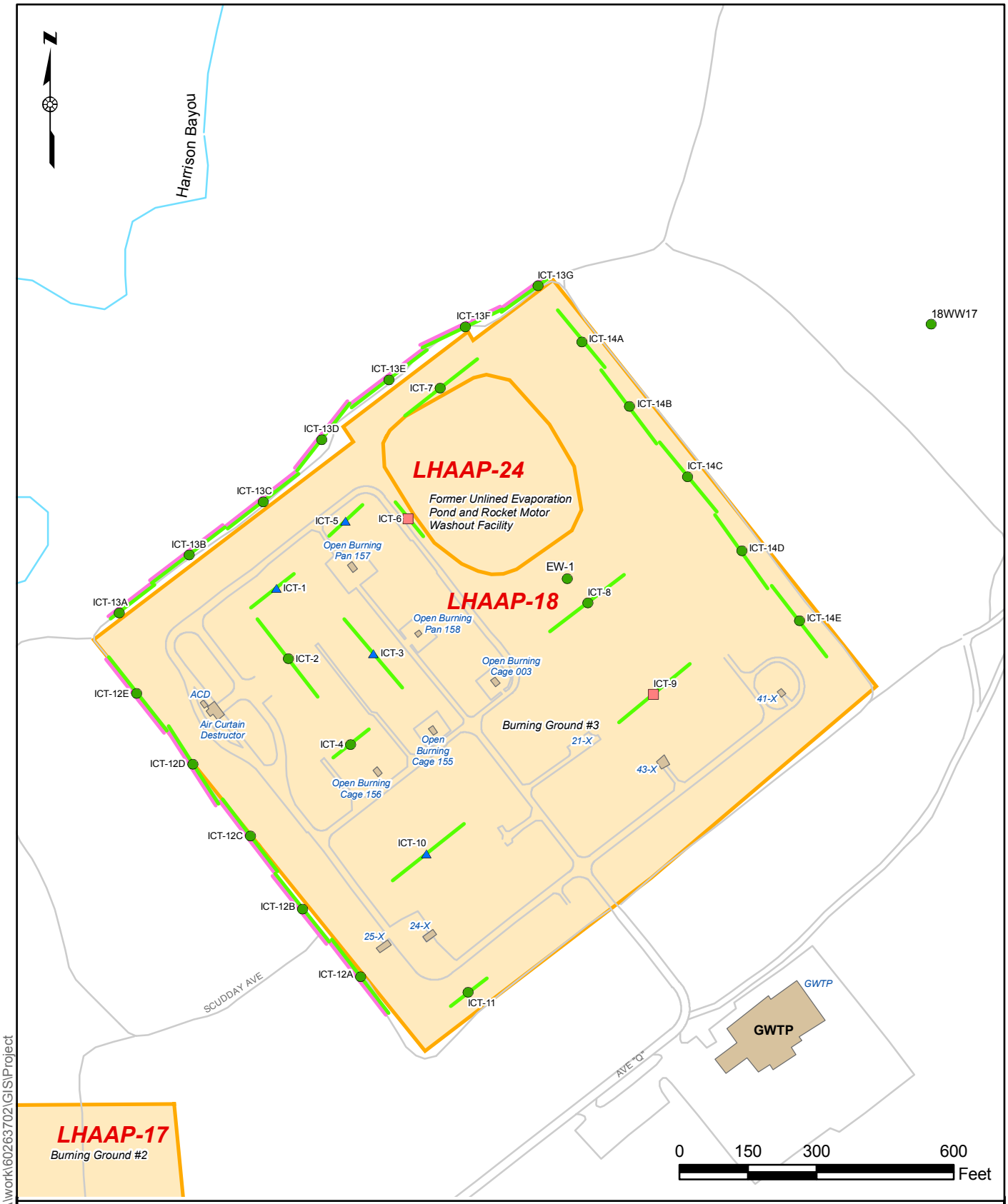

LEGEND

- Extraction Location
- Deactivated ICT Sump
- Injection Point
- ICT Location
- HDPE Liner Installed on the Outside of the ICT
- Stream
- Road
- Building or Pad
- Site

AECOM

U.S. ARMY CORPS OF ENGINEERS
TULSA DISTRICT
TULSA, OKLAHOMA

Figure 1-3
Site Layout
LHAAP-18/24
Longhorn Army Ammunition Plant, Karnack, TX

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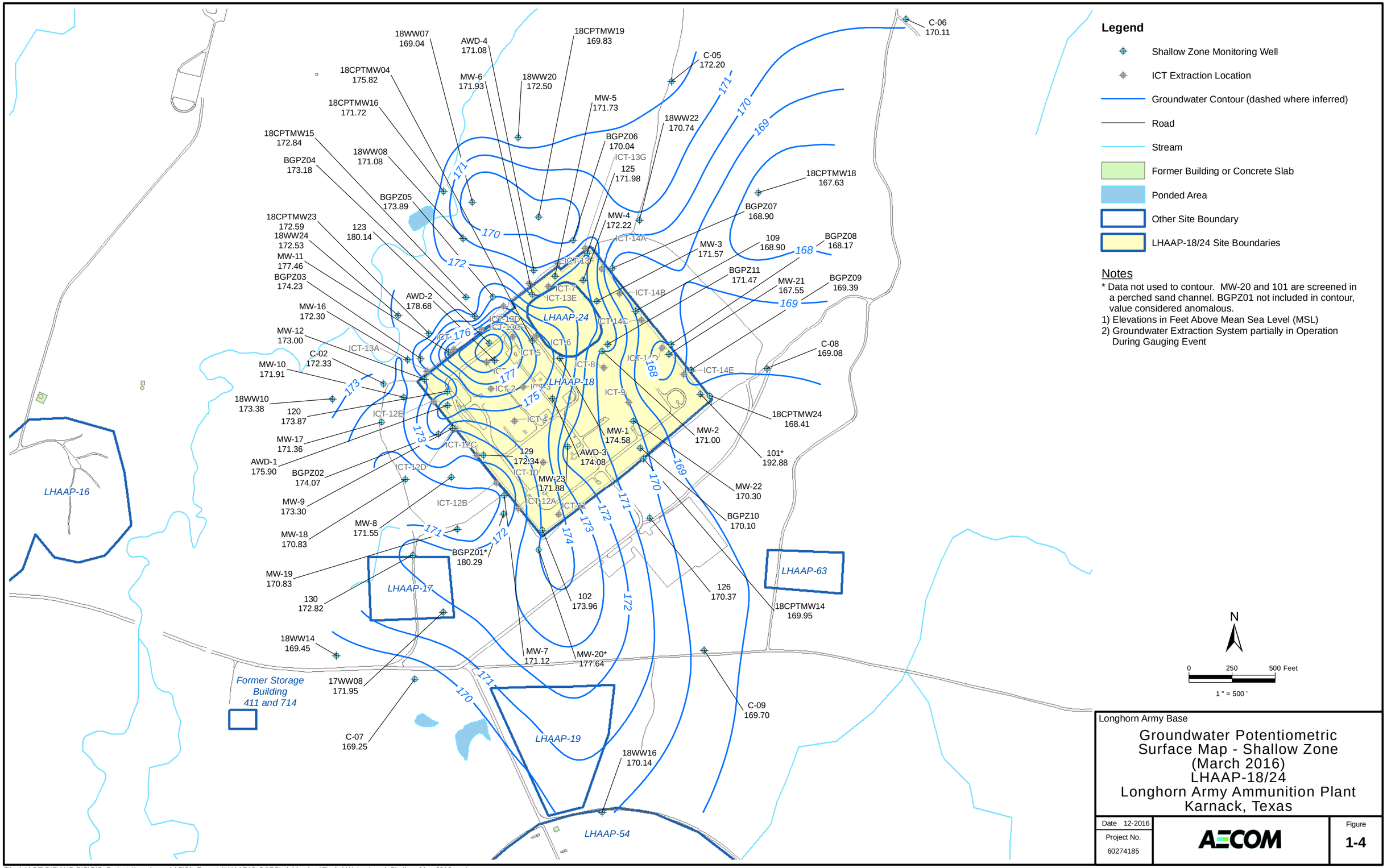

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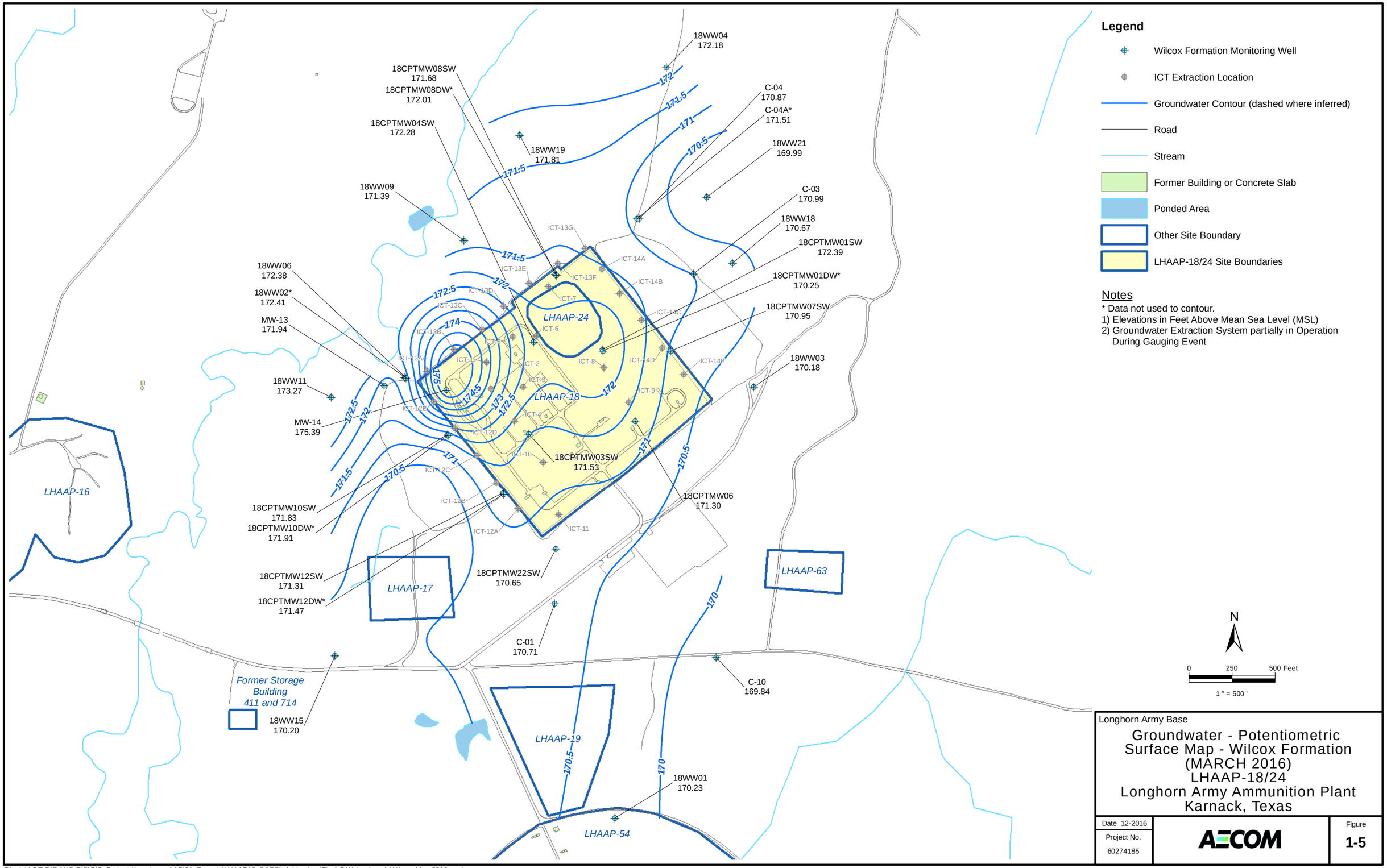

Longhorn Army Base

Groundwater - Potentiometric Surface Map - Wilcox Formation (MARCH 2016) LHAAP-18/24 Longhorn Army Ammunition Plant Karnack, Texas

Date 12-2016	AECOM	Figure
Project No. 60274185		1-5

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2 INVESTIGATION ACTIVITIES

This section presents the completed investigation scope of work, the sampling and analysis methodology, and deviations from the Supplemental PSI WP (AECOM, December 2015).

2.1 Data Gaps and Proposed Investigation Scope of Work

To address the data gaps identified in the Final Updated PSI Report (AECOM, 2016), the specific areas that were investigated are presented below.

2.1.1 Potential Perchlorate Source Extent Assessment in the Southern Corner of the Site

The following specific objectives were identified for this work:

- Determine the presence and extent of a potential perchlorate source in the Shallow Zone groundwater in the southern area of the site. This area is in the vicinity of MW-07 extending southeast to the vicinity of 18CPTMW22SW.
- Determine if perchlorate in Shallow Zone groundwater extends from LHAAP-18/24 to LHAAP-17 in the southern area of LHAAP-18/24.

2.1.2 Shallow Zone Groundwater Monitoring Wells

The scope of work in the Shallow Zone groundwater included the following activities:

- Installation of a 4-inch diameter monitoring well to replace former monitoring well 18CPTMW22, including completion of vertical soil profiling for perchlorate and volatile organic compounds (VOCs) in the shallow zone formation into the Wilcox clay.
- Installation of a 4-inch diameter monitoring well approximately 250 ft west/southwest of former monitoring well 18CPTMW22 for perchlorate delineation towards LHAAP-17 including completion of vertical soil profiling for perchlorate and VOCs in the Shallow Zone into the Wilcox clay.
- Installation of a 4-inch diameter monitoring well approximately 100 ft north of monitoring well 18CPTMW23 for perchlorate delineation towards Harrison Bayou including completion of vertical soil profiling for perchlorate and VOCs in the shallow zone formation into the Wilcox sand.

2.1.3 Wilcox Formation Groundwater Monitoring Wells

The scope of work in the Wilcox Formation groundwater included the following activities:

- Installation of a deep Wilcox 4-inch diameter monitoring well approximately 30 ft south of monitoring well 18CPTMW22SW including completion of vertical soil profiling for perchlorate and VOCs in the Wilcox Clay and Wilcox Formation.
- Installation of a 4-inch monitoring well adjacent to monitoring well 18CPTMW23 for lateral and vertical perchlorate and VOCs delineation in the Wilcox Formation including completion of vertical soil profiling for perchlorate and VOCs in the shallow zone formation and into the Wilcox Formation.

- Installation of an upper Wilcox 4-inch diameter monitoring well approximately 100 ft north of monitoring well 18CPTMW08SW and adjacent to 18CPTMW19 for vertical and lateral perchlorate and VOC delineation including completion of vertical soil profiling for perchlorate and VOCs in the Wilcox Formation.
- Installation of a 4-inch diameter monitoring well approximately 250 ft west/southwest of former monitoring well 18CPTMW22 for perchlorate delineation in the upper Wilcox Formation towards LHAAP-17 including completion of vertical soil profiling for perchlorate and VOCs (combined with the shallow zone formation profiling discussed above) into the upper Wilcox Formation.

Although the previous investigations identified data gaps in the soil and groundwater, this report discusses the data gaps identified in the soils. The groundwater data gaps, which included the installation of monitoring wells completed during this effort, will be addressed as part of the site semi-annual sampling program.

2.2 Summary of Site Investigation

The investigation activities completed to collect necessary data to address the identified data gaps are presented below.

The purpose of this investigation was to assess and potentially identify the source of perchlorate detected in the southern corner of the site and update the CSM in this area. The investigation involved the drilling and sampling of 17 soil boring locations using direct push technology (DPT) drilling techniques. The shallow subsurface field investigation was conducted between February 22 and March 15, 2016.

Additional investigation activities occurred between April 18 and June 27, 2016 involving the drilling and installation of 7 monitoring wells. Four of these monitoring wells (18CPTMW22R, 18CPTMW22DW, 18CPTMW26, and 18CPTMW26SW) were completed in the southern portion of the site to assist in the horizontal and vertical delineation of perchlorate in the subsurface. The other three monitoring wells were placed where data gaps were observed; 18CPTMW23SW, 18WW25, and 18CPTMW19SW were installed north-northwest of the site for lateral and vertical extent determination of perchlorate in groundwater.

Prior to conducting drilling and other subsurface activities during this investigation, the Texas One Call System was notified to locate underground utilities. The Texas One Call System was periodically updated during the course of the investigation.

2.2.1 Subsurface Soil Assessment

The Shallow Zone soils in the southern portion of the site were assessed by drilling and soil sampling using a DPT rig at the locations identified in the Supplemental PSI WP. The initial soil borings 18DPT01 through 18DPT05 were drilled, sampled, and analyzed for perchlorate and VOCs. Stepout soil borings in ordinate directions approximately 100 ft away from the impacted soil borings were completed in areas where contaminant of concern (COC) concentrations indicated the presence of contamination. Additional stepout soil borings were advanced and sampled until the concentrations of the COCs in soil were below soil GWP-Ind MSC or were below detection limits. The Shallow Zone soil borings terminated at the ñWilcox clay.ò During the course of this investigation, the Wilcox clay was interpreted to vary in depth from

approximately 11.5 to 36 ft bgs in the southern portion of the site. It was typically shallower in the soil borings located farther to the south. The proposed number of soil samples stated in the Supplemental PSI WP was five per borehole location; however due to the variations in borehole depths, the number of soil samples ranged between 4 soil samples and 7 soil samples. **Figure 2-1** presents the location of completed boreholes. The soil boring logs are provided in **Appendix A**.

Additional assessment in the southern portion of the site was accomplished by sampling the soil during the drilling and installation of monitoring wells 18CPTMW22R, 18CPTMW22DW, 18CPTMW26, and 18CPTMW26SW. Sonic drilling methods were used in the drilling and installation of these monitoring wells. 18CPTMW22R was drilled and completed as a replacement to plugged and abandoned monitoring well 18CPTMW22. Monitoring wells 18CPTMW26 and 18CPTMW26SW were drilled and sampled to delineate the COCs in the shallow and upper Wilcox zone, respectively to the west of LHAAP-18/24 towards LHAAP-17. Monitoring well 18CPTMW22DW was drilled to a depth of 90 ft bgs and used to vertically delineate the COCs in the lower Wilcox Formation. The borehole locations for these monitoring wells are presented in **Figure 2-1**.

A data gap existed with respect to the delineation of perchlorate and VOCs in the shallow zone, north of 18CPTMW23 near Harrison Bayou. To complete the vertical soil profile of perchlorate and VOCs in the shallow zone formation north of 18CPTMW23 towards Harrison Bayou, the borehole for monitoring well 18WW25 was drilled and sampled using a hollow stem auger drill rig near Harrison Bayou to a depth of 24 ft bgs. Soil samples were obtained at approximately 5-foot intervals. The Wilcox clay was not identified during drilling and sampling activities of this borehole. **Figure 2-2** provides the location of this well.

A data gap existed northwest of the site with respect to vertical delineation of perchlorate and VOC in the Wilcox Formation in proximity to monitoring well 18CPTMW23. Sonic drilling methods were used to drill and sample the soil boring and install monitoring well 18CPTMW23SW into the upper Wilcox Formation and complete the vertical soil profile for perchlorate and VOCs. Soil samples were obtained at approximately 10 ft intervals. The Wilcox clay was not identified during the drilling and sampling of the borehole. **Figure 2-2** provides the location of this well.

A data gap existed northwest of the site approximately 100 ft north of monitoring well 18CPTMW08SW adjacent to 18CPTMW19 in the Wilcox Formation. Sonic drilling methods were used to drill and sample the soil boring and install monitoring well 18CPTMW19SW into the upper Wilcox Formation and complete the vertical soil profile for perchlorate and VOCs. Soil samples were obtained at approximately 10 ft intervals. The Wilcox clay was identified at 20.3 ft bgs extending to a depth of 41.4 ft bgs. **Figure 2-2** provides the location of this well.

2.2.1.1 DPT

DPT drilling methods were used between February 22 and March 25, 2016 to drill 17 boreholes (18DPT01 through 18DPT17) located at the southern corner of the site to identify and delineate perchlorate in the Shallow Zone . The borehole locations are depicted in **Figure 2-1**.

Continuous soil samples were collected by pushing a 5-foot sample barrel at 5-foot increments. After the core barrel is advanced five ft (occasionally 2.5-ft increments were implemented due to flowing sands), the drill rods are removed from the borehole and the acetate sleeve containing the soil is removed from the sample barrel. Discrete soil samples were collected from each soil

boring location and analyzed for perchlorate and VOCs on an accelerated turnaround basis to allow rapid decisions on additional data collection. The discrete soil samples were collected at approximately 5-foot intervals, where significant photoionization detector (PID) readings were recorded, or at lithology changes. Samples were collected from the vadose zone, the saturated Shallow Zone, and in the Wilcox clay. In some instances where the Wilcox clay was not identified soil samples may have been obtained in the upper Wilcox sand. The general procedures used in DPT drilling are described in AECOM SOP 16 presented in the Final Installation-Wide Work Plan (AECOM, 2014).

A biased sampling approach was used to determine the source and extent of perchlorate in the Shallow Zone. Five borings were initially identified to start the investigation as shown in **Figure 2-1** by the orange-colored borehole symbols. Two initial DPT soil borings, one at the former Building 25-X (18DPT04) and one located midway between 18CPTMW22SW and 18DPT04 (18DPT05) were drilled and sampled to determine if building 25-X was contributing to the perchlorate in the subsurface. Since perchlorate was previously identified in 18CPTMW22SW, three initial DPT soil borings (18DPT01, 18DPT02, and 18DPT03) were drilled and sampled approximately 100 ft to the east, south, and west, respectively.

Based on the results of the five initial soil borings, additional soil borings at approximately 100 ft stepouts were advanced to the Wilcox Clay to delineate the perchlorate impact. The offset soil borings associated with each initial borehole are as follows:

- Initial boring 18DPT04; offset soil borings 18DPT06 (north), 18DPT07 (east), 18DPT15 (west), and 18DPT17 (south)
- Initial boring 18DPT05; offset soil boring 18DPT12 (southwest)
- Initial boring 18DPT01; offset soil borings 18DPT11 (north), 18DPT10 (east), and 18DPT14 (south)
- Initial borehole 18DPT02; offset soil borings 18DPT14 (east), 18DPT13 (south), 18DPT09 (west); and,
- Initial borehole 18DPT03; offset soil borings 18DPT09 (south), 18DPT08 (west), and 18DPT12 (north)

Per the direction of the USACE, soil borings 18DPT16, 18DPT15, and 18DPT17 were located in proximity to the former X-25 building location to determine if the former building is a source for perchlorate in the subsurface.

2.2.1.2 Sonic Drilling

Sonic drilling was primarily used to drill the boreholes beyond the reach of the DPT rig and for the installation of the monitoring wells. The well locations are depicted in **Figures 2-1 and 2-2**. Due to its versatility of using different diameter drill pipes, the sonic rig is able to install a temporary 8-inch surface casing in the shallow zone, to isolate the soil boring from the shallow zone while continuing to drill deeper into the subsurface. A 10-ft long 4-inch diameter core barrel was used to obtain the soil samples by advancing the core barrel into the subsurface by vibration which was followed with a 7-inch drill pipe to keep the hole from collapsing and isolating it from the surrounding lithology. Once the core barrel was advanced to a sufficient depth it was retrieved to the surface and the soil vibrated out into elongated plastic bags for

logging and sampling. When drilling below the Shallow Zone, a temporary 8-inch surface casing was installed into the clay to isolate the borehole from the Shallow Zone. Hydrated bentonite was used to seal the bottom of the temporary surface casing. The surface casing was then removed once the well was completed.

Further delineation south of the site was accomplished by sampling the soil during the drilling and installation of monitoring wells 18CPTMW22R, 18CPTMW22DW, 18CPTMW26, and 18CPTMW26SW. To address the other data gaps identified in the Final Updated PSI Report (AECOM, 2016), monitoring wells 18CPTMW19SW and 18CPTMW23SWwere drilled and sampled using a sonic drill rig; however, a hollow-stem auger (HSA) was used to drill Shallow Zone well 18WW25 as the area to the north of the site near Harrison Bayou was flooded and inaccessible at the time the sonic rig was available. Eight-and-a-quarter-inch diameter hollow stem augers were used to drill and install monitoring well 18WW25. A 5-foot long core barrel was used to continuously sample the borehole.

2.2.1.3 Subsurface Soil Samples

Seventy-eight discrete soil samples from 17 soil borings were collected for perchlorate and VOC analysis from the area on the south side of the site. During the investigation, the soil samples were obtained using DPT drilling techniques within the upper 45 ft of the subsurface (Shallow Zone groundwater). The soil samples were generally selected based on a combination of elevated PID results and soil type; however, soil samples were also selected where PID responses were low in various soil types to confirm non-detect/low concentrations of VOCs.

To augment the soil samples collected and analyzed during the DPT subsurface investigation, 23 discrete soil samples (12 shallow and 11 deep) were collected using the same criteria as the DPT investigation while drilling the soil borings for the monitoring wells. The soil samples from these soil borings further delineate the COCs horizontally as well as vertically (up to 90 ft bgs) in the southern portion of the site. Monitoring well 18CPTMW22R and 18CPTMW26 were drilled and installed in the Shallow Zone. 18CPTMW22R was drilled and installed as a replacement of plugged and abandoned well 18CPTMW22. Monitoring well 18CPTMW26SW was drilled and installed in the upper portion of the Wilcox sand; whereas 18SCPMW22DW was drilled and installed in the lower portion of the Wilcox sand. Eight-inch diameter temporary surface casing was used in both holes to isolate them from the Shallow Zone while drilling continued into the Wilcox sand.

North of the containment area soil borings for monitoring wells 18CPTMW19SW and 18CPTMW23SW were drilled and sampled to 64 ft bgs into the upper Wilcox Formation using sonic drilling techniques. A total of 14 soil samples, seven from 18CPTMW19SW and seven from 18CPTMW23SW were used to vertically profile the COCs in these soil borings. The soil boring for monitoring well 18WW25 was drilled and sampled within the shallow zone using a HSA drill rig. Five soil samples were obtained and analyzed to vertically profile the COCs within this soil boring. The methodology used to obtain subsurface soil samples followed the procedures described in AECOM SOP 05 presented in the Final Installation-Wide Work Plan (AECOM, 2014).

The soil samples were submitted to Microbac Laboratory, a Texas-licensed laboratory located in Marietta, Ohio for chemical analyses. The packaging and shipment of soil samples to the

laboratory followed the procedures described in AECOM SOP 08 presented in the Final Installation-Wide Work Plan (AECOM, 2014).

2.2.2 Groundwater Sampling

A comprehensive sampling event for groundwater was conducted in June 2016 after the monitoring wells were installed. A comprehensive groundwater gauging event was conducted on June 9, 2016 except for monitoring well 18WW25, which was not installed at the time the wells were gauged at the site on June 9, 2016. The gauging and sampling procedures followed the procedures described in the Installation-Wide Work Plan (AECOM, July 2014).

2.2.3 Field Quality Control Samples

2.2.3.1 Assessment of Field Procedures

As part of the Quality Control/Quality Assurance (QA/QC) procedures used during the field investigation, field quality control samples were obtained during sampling activities. The quality control samples included equipment blanks, trip blanks, and temperature blanks.

For each cooler containing samples for VOC analysis to be transported to the laboratory, a trip blank was included. The trip blank consisted of two laboratory-provided 40-milliliter VOA vials containing deionized water. This trip blank was used to determine whether the sample shipment may have been contaminated during transit from the field to the laboratory. The trip blanks were analyzed for VOCs.

A temperature blank was included in each cooler shipped to the laboratory. The temperature blank consists of a small laboratory-provided container containing water. It was used by the laboratory to confirm that the cooler arrived at the appropriate temperature.

2.2.3.2 Assessment of Field Variability

To evaluate or determine the source of measurement error arising from cumulative effects of both field and laboratory bias, duplicate samples were collected and submitted to the laboratory for analyses. One field duplicate was collected for approximately every 10 samples collected from each medium. The duplicate samples were analyzed for the same parameters as the media being sampled.

Laboratory control samples such as matrix spike (MS) and matrix spike duplicate (MSD) were collected during the sampling activities. These samples were evaluated by the laboratory to assess contamination introduced during sample preparation activities and/or from instrument contamination. One MS and MSD sample was collected approximately every 20 samples collected from each medium.

2.3 Surveying

The wells and boreholes were surveyed, and the results are presented in Exhibits 1 and 2.

Exhibit 1: New Monitoring Wells Surveying Information

Well ID	Northing	Easting	Latitude	Longitude	TOC Elevation (ft amsl)	Top of Concrete Elevation (ft amsl)	Natural Ground Elevation (ft amsl)
18CPTMW19SW	6,954,782.80ô	3,316,537,.88ô	32.6699222ô	94.1178376ô	193.29	190.89	190.83
18CPTMW22DW	6,952,861.64ô	3,316,563,.20ô	32.6646431ô	94.1180158ô	188.00	185.24	185.20
18CPTMW22R	6,952,856.90	3,316,555.70ô	32.6646309ô	94.1180408ô	187.23	185.08	185.00
18CPTMW23SW	6,954,099.96	3,315,914.48ô	32.6681183ô	94.1199543ô	177.43	175.10	174.77
18CPTMW26	6,952,788.65	3,316,359.05ô	32.6644660ô	94.1186885ô	182.80	180.14	180.06
18CPTMW26SW	6,952,797.18	3,316,360.70ô	32.6644660ô	94.1186820ô	182.00	179.53	179.62
18WW25	6,954,509.12	3,315,810.90ô	32.6692538ô	94.1202352ô	175.15	172.69	172.34

TOC ï top of casing
Ft amsl ï feet above mean sea level

Exhibit 2: New Borings Surveying Information

Boring ID	Northing	Easting	Latitude	Longitude	Natural Ground Elevation (ft amsl)
DPT01	6,952,853.46ô	3,316,640,.46ô	32.6646117ô	94.1177660ô	188.19
DPT02	6,952,750.33ô	3,316,538.61ô	32.6643402ô	94.1181107ô	184.85
DPT03	6,952,852.27ô	3,316,447,39ô	32.6646306ô	94.1183931ô	180.46
DPT04	6,953,151.50ô	3,316,473.73ô	32.6654494ô	94.1182670ô	190.719
DPT05	6,953,021.64ô	3,316,570,.25ô	32.6650878ô	94.1181433ô	188.67
DPT06	6,953,283.58ô	3,316,477.05ô	32.6658117ô	94.1182383ô	195.30
DPT07	6,953,152.22ô	3,316,567.82ô	32.6654406ô	94.1179614ô	192.50
DPT08	6,952,873.15ô	3,316,335.96ô	32.6647007ô	94.1187520ô	178.48
DPT09	6,952,758.80ô	3,316,443.40ô	32.6643744ô	94.1184187ô	181.22
DPT10	6,952,824.51ô	3,316,730.80	32.6645219ô	94.1174766ô	191.67
DPT11	6,952,953.18ô	3,316,644.72ô	32.6648851ô	94.1177387ô	192.62
DPT12	6,952,95182ô	3,316,444.33ô	32.6649044ô	94.1183895ô	181.26
DPT13	6,952,652.49ô	3,316,349,32ô	32.6640703ô	94.1180892ô	188.82
DPT14	6,952,753.32ô	3,316,644.45ô	32.6643363ô	94.1177666ô	187.26
DPT15	6,953,122.28ô	3,316,381.12ô	32.6653798ô	94.1185716ô	185.62
DPT16	6,953,134.12ô	3,316,487.64ô	32.6654001ô	94.1182242ô	190.80
DPT17	6,953,092.55ô	3,316,466.99ô	32.6652883ô	94.1182969ô	187.88

Ft amsl ï feet above mean sea level

2.4 Investigation Derived Waste

The investigation derived soil cuttings were placed in a roll-off box. The soil will be sampled, profiled and disposed in accordance with regulatory requirements. Water generated during drilling activities was added to the GWTP influent, treated, and disposed of accordingly. Other solid waste was disposed as municipal solid waste (i.e., trash).

2.5 Comparison of Planned and Actual Work Completed

There were no deviations from the Supplemental PSI WP.

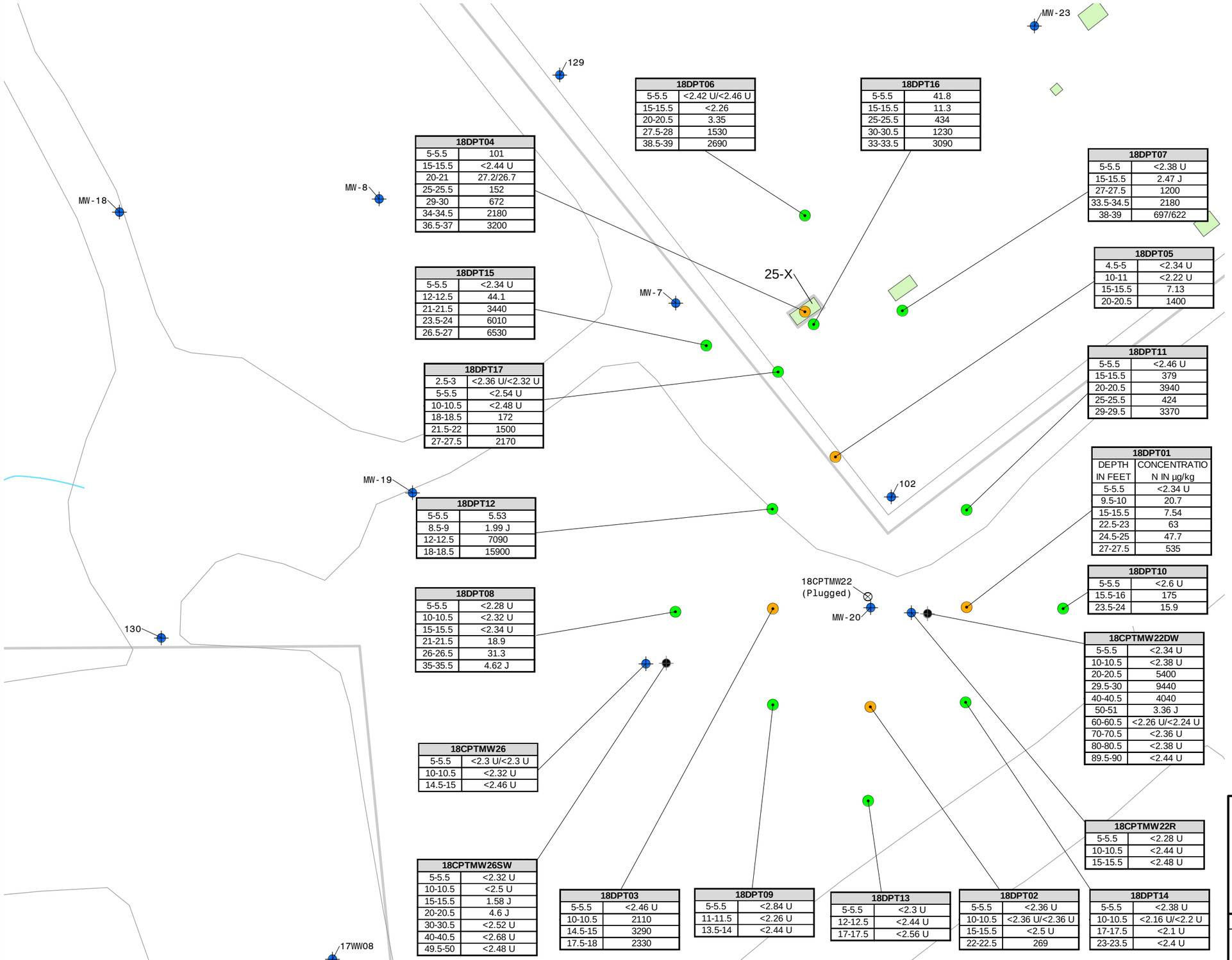

18DPT06	
5-5.5	<2.42 U/<2.46 U
15-15.5	<2.26
20-20.5	3.35
27.5-28	1530
38.5-39	2690

18DPT16	
5-5.5	41.8
15-15.5	11.3
25-25.5	434
30-30.5	1230
33-33.5	3090

18DPT04	
5-5.5	101
15-15.5	<2.44 U
20-21	27.2/26.7
25-25.5	152
29-30	672
34-34.5	2180
36.5-37	3200

18DPT07	
5-5.5	<2.38 U
15-15.5	2.47 J
27-27.5	1200
33.5-34.5	2180
38-39	697/622

18DPT05	
4.5-5	<2.34 U
10-11	<2.22 U
15-15.5	7.13
20-20.5	1400

18DPT15	
5-5.5	<2.34 U
12-12.5	44.1
21-21.5	3440
23.5-24	6010
26.5-27	6530

18DPT11	
5-5.5	<2.46 U
15-15.5	379
20-20.5	3940
25-25.5	424
29-29.5	3370

18DPT17	
2.5-3	<2.36 U/<2.32 U
5-5.5	<2.54 U
10-10.5	<2.48 U
18-18.5	172
21.5-22	1500
27-27.5	2170

18DPT01	
DEPTH IN FEET	CONCENTRATION IN µg/kg
5-5.5	<2.34 U
9.5-10	20.7
15-15.5	7.54
22.5-23	63
24.5-25	47.7
27-27.5	535

18DPT12	
5-5.5	5.53
8.5-9	1.99 J
12-12.5	7090
18-18.5	15900

18DPT10	
5-5.5	<2.6 U
15.5-16	175
23.5-24	15.9

18DPT08	
5-5.5	<2.28 U
10-10.5	<2.32 U
15-15.5	<2.34 U
21-21.5	18.9
26-26.5	31.3
35-35.5	4.62 J

18CPTMW22DW	
5-5.5	<2.34 U
10-10.5	<2.38 U
20-20.5	5400
29.5-30	9440
40-40.5	4040
50-51	3.36 J
60-60.5	<2.26 U/<2.24 U
70-70.5	<2.36 U
80-80.5	<2.38 U
89.5-90	<2.44 U

18CPTMW26	
5-5.5	<2.3 U/<2.3 U
10-10.5	<2.32 U
14.5-15	<2.46 U

18CPTMW22R	
5-5.5	<2.28 U
10-10.5	<2.44 U
15-15.5	<2.48 U

18CPTMW26SW	
5-5.5	<2.32 U
10-10.5	<2.5 U
15-15.5	1.58 J
20-20.5	4.6 J
30-30.5	<2.52 U
40-40.5	<2.68 U
49.5-50	<2.48 U

18DPT03	
5-5.5	<2.46 U
10-10.5	2110
14.5-15	3290
17.5-18	2330

18DPT09	
5-5.5	<2.84 U
11-11.5	<2.26 U
13.5-14	<2.44 U

18DPT13	
5-5.5	<2.3 U
12-12.5	<2.44 U
17-17.5	<2.56 U

18DPT02	
5-5.5	<2.36 U
10-10.5	<2.36 U/<2.36 U
15-15.5	<2.5 U
22-22.5	269

18DPT14	
5-5.5	<2.38 U
10-10.5	<2.16 U/<2.2 U
17-17.5	<2.1 U
23-23.5	<2.4 U

Legend

- Shallow Zone Monitoring Well
- Wilcox Formation Monitoring Well
- First Set of Direct Push Location
- Stepout Direct Push Location
- Plugged Monitoring Well
- Road
- Stream
- Former Building or Concrete Slab

Notes

- µg/kg — Micrograms per Kilogram
- < — Not Detected at or Above the Laboratory Reporting Limit
- / — Duplicate Sample
- J — Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
- U — Undetected: The analyte was analyzed for, but not detected.

N

0 50 100 Feet

1 " = 100 '

Longhorn Army Base

Concentration of Perchlorate in Soil with Depth LHAAP-18/24 Longhorn Army Ammunition Plant Karnack, Texas

Date 12-2016

Project No. 60274185

AECOM

Figure 2-1

File: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP18_24\PSI_Addendum\Fig 2-1 Perch in SO.mxd
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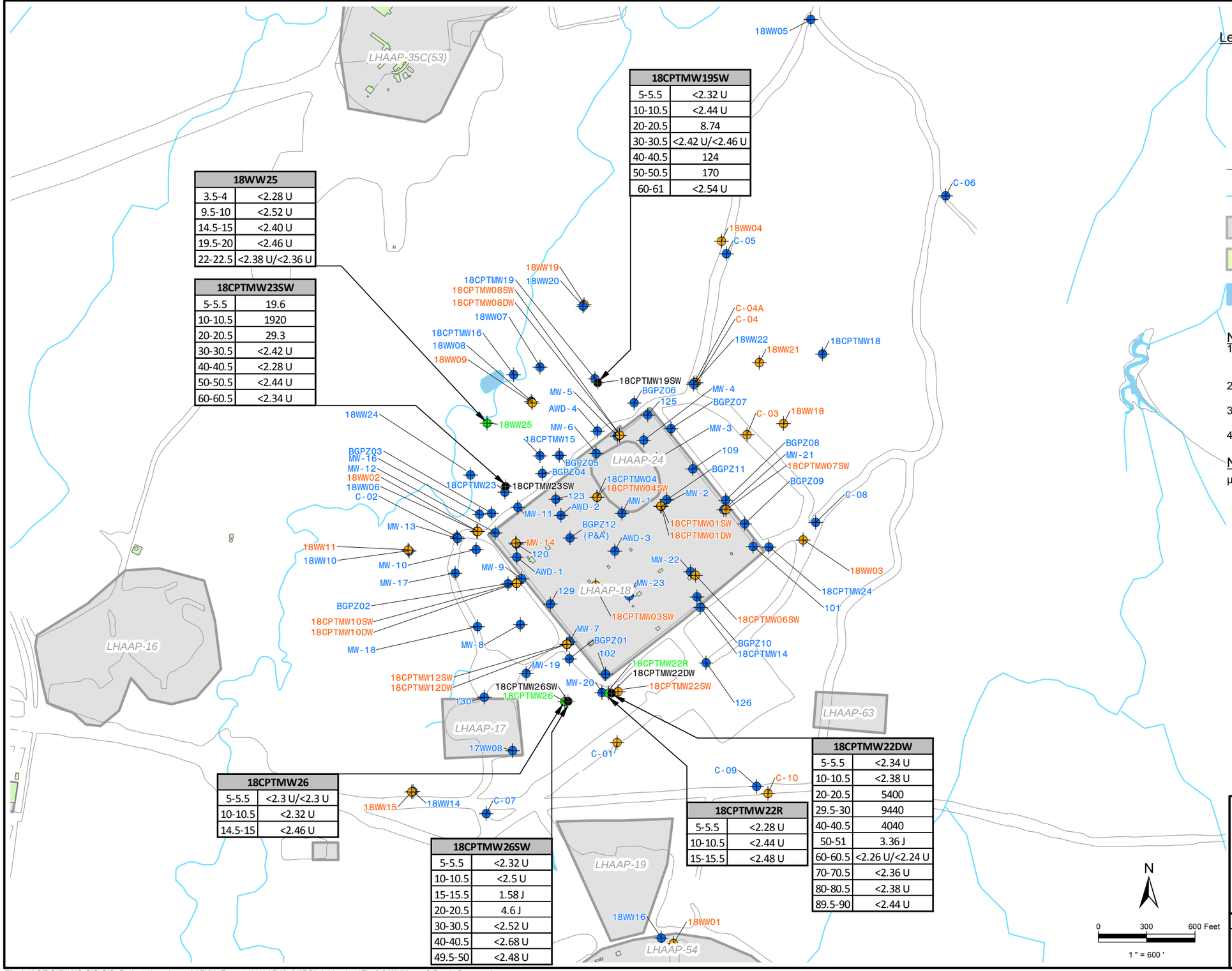

Legend

- Shallow Zone Monitoring Well
- Wilcox Formation Monitoring Well
- New Shallow Zone Monitoring Well
- New Wilcox Formation Monitoring Well
- Road
- Stream
- Site
- Former Building or Concrete Slab
- Ponded Area

Notes

1) All monitoring wells installed in 2013 have nomenclature beginning with "18CPT" with the exception of 18WW22 which was also installed in 2013.
2) "SW" at the end of well nomenclature indicates a shallow Wilcox Formation monitoring well (i.e., to a depth of 70 feet bgs).
3) "DW" at the end of well nomenclature indicates a deep Wilcox Formation monitoring well (i.e., to a depth of 100 feet bgs).
4) "P&A" - Plugged and Abandoned

Notes

µg/kg	Micrograms per Kilogram
<	Not Detected at or Above the Laboratory Reporting Limit
/	Duplicate Sample
J	Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
U	Undetected: The analyte was analyzed for, but not detected.

18CPTMW19SW

DEPTH IN FEET	CONCENTRATION IN µg/kg
5-5.5	<2.32 U
10-10.5	<2.44 U
20-20.5	8.74
30-30.5	<2.42 U
40-40.5	124
50-50.5	170
60-61	<2.54 U

18WW25

3.5-4	<2.28 U
9.5-10	<2.52 U
14.5-15	<2.40 U
19.5-20	<2.46 U
22-22.5	<2.38 U/<2.36 U

18CPTMW23SW

5-5.5	19.6
10-10.5	1920
20-20.5	29.3
30-30.5	<2.42 U
40-40.5	<2.28 U
50-50.5	<2.44 U
60-60.5	<2.34 U

18CPTMW26

5-5.5	<2.3 U/<2.3 U
10-10.5	<2.32 U
14.5-15	<2.46 U

18CPTMW26SW

5-5.5	<2.32 U
10-10.5	<2.5 U
15-15.5	1.58 J
20-20.5	4.6 J
30-30.5	<2.52 U
40-40.5	<2.68 U
49.5-50	<2.48 U

18CPTMW22R

5-5.5	<2.28 U
10-10.5	<2.44 U
15-15.5	<2.48 U

18CPTMW22DW

5-5.5	<2.34 U
10-10.5	<2.38 U
20-20.5	5400
29.5-30	9440
40-40.5	4040
50-51	3.36 J
60-60.5	<2.26 U/<2.24 U
70-70.5	<2.36 U
80-80.5	<2.38 U
89.5-90	<2.44 U

Longhorn Army Base

Well Location Map and Perchlorate Concentrations in Soil LHAAP-18/24 Longhorn Army Ammunition Plant Karnack, Texas

Date 12-2016

Project No. 60274185

AECOM

Figure 2-2

File: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP18_24\PSI_Addendum\Fig 2-2 Well Locs & Perch Conc.mxd
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3 INVESTIGATION FINDINGS

This section presents the data collected during this investigation in the context of addressing identified data gaps. This additional information is intended to improve the overall site conceptual model associated with hydrogeology, contaminant sources, and contaminant distribution in targeted areas of the site.

3.1 Hydrogeology

The subsurface investigation was conducted based on the LHAAP-18/24 Supplemental PSI WP (AECOM, 2015). Discrete soil samples were collected and tested for contaminant concentrations. Monitoring wells were installed in the shallow and Wilcox Formation to collect groundwater data.

3.1.1 Perchlorate Distribution in the Shallow Zone Soil at the Southern Area of Site

The soil data collected from DPT soil borings and the soil borings used to install the new groundwater monitoring wells for perchlorate, expanded the understanding of perchlorate presence and distribution within and outside the containment area in the Shallow Zone and Wilcox Formation. The location and concentration of perchlorate in these soil borings are depicted in **Figure 2-1**. The analytical results are presented in **Table 3-1**. **Table 3-1** also provides analytical results for VOCs. However, VOC concentrations were mostly nondetect with all concentrations reported above the detection limit below the MSC. **Table 3-1** also provides information about where the samples were collected from; the unsaturated Shallow Zone, saturated Shallow Zone, Wilcox clay, or Wilcox sand.

The perchlorate concentrations in the six DPT boreholes collected inside the containment area (18DPT04, 18DPT05, 18DPT06, 18DPT07, 18DPT16, and 18DPT17) in the southern portion of the site revealed perchlorate concentrations in the vadose zone were well below the MSC of 7,200 micrograms per kilogram (Õg/kg), with the highest concentration found in 18DPT04 at 5-5.5 ft bgs at 101 Õg/kg, followed by 18DPT16 at 5-5.5 ft bgs at 41.8 Õg/kg located adjacent to the former building X-25. These relatively low concentrations of perchlorate would indicate that perchlorate is not sourced from the surface release in this area or has since been flushed out of the shallow soil and no longer represent a source.

In the saturated zone within the containment area, the concentration of perchlorate was elevated particularly in the Wilcox clay, which is in direct contact with the base of the Shallow Zone soil. The highest concentration of perchlorate was detected in 18DPT04 at 36.5-37.0 ft bgs at 3,200 Õg/kg. This concentration is less than the GWP-Ind MSC of 7,200 Õg/kg. Therefore, there is no particular source of perchlorate identified in the Shallow Zone in this area of the site.

Outside the southern corner of the site, the concentration of perchlorate in the vadose zone ranged from a low 5.53 Õg/kg found in 18DPT12 at 5-5.5 ft bgs to nondetect found in all of the other soil borings. This lack of perchlorate in the vadose zone outside the containment indicates that perchlorate is not sourced from a surface release in this area.

Outside the southern corner in the shallow saturated zone, the concentrations of perchlorate were typically low, increasing in depth the closer the samples were to the Wilcox clay. The higher

concentrations of perchlorate in the shallow saturated zone were detected in 18DPT03 (3,290 Õg/kg at 14.5-15 ft bgs) , 18DPT15 (3,440 Õg/kg at 21-21.5 ft bgs), and 18DPT11 (3,940 Õg/kg at 20-20.5 ft bgs). These elevated concentrations of perchlorate were found in the coarser materials (sand) just above the Wilcox clay. The highest perchlorate concentrations in the Wilcox clay were detected in the borehole of monitoring well 18CPTMW22DW at 9,440 Õg/kg at 29.5-30 ft bgs and 18DPT12 at 15,900 Õg/kg at 18-18.5 ft bgs. These two results for perchlorate represent the only two soil samples exceeding the perchlorate MSC of 7,200 Õg/kg. The analytical results for the soil samples obtained from the boreholes of the monitoring wells are presented in **Table 3-2**. The elevated concentrations of perchlorate in 18DPT12 in the Wilcox clay may represent perchlorate that had migrated via groundwater to this location prior to installation of the groundwater extraction system.

The perchlorate concentrations for the stepout borings were considerably lower or nondetect. Therefore, the concentration of perchlorate in the Shallow Zone is considered delineated outside of the southern corner of the site to the southeast, south, and southwest. The results also support the absence of a perchlorate source in this area of the site. The soil boring data from the drilling and sampling of monitoring well 18CPTMW26 and boring 18DPT08 supported the delineation of perchlorate in the Shallow Zone to the southwest toward LHAAP-17.

The perchlorate concentration in the southern corner of the site is presented in **Figures 2-1.** A quality control summary and laboratory analytical reports (provided on compact disc) are presented in **Appendix B**.

3.1.2 Perchlorate Distribution in the Wilcox Formation Soil at Southern Area of Site

Soil samples from two borings drilled for the installation of Wilcox Zone monitoring wells (18CPTMW26SW and 18CPTMW22DW) were collected and analyzed to determine the extent of perchlorate in the Wilcox Formation. Additionally, due to the lack of Wilcox clay in boring 18DPT08, it would appear that soil samples obtained and analyzed at depth were from the Wilcox Formation.

The analytical results from 18CPTMW26SW and 18DPT08 reveal concentrations of perchlorate at low concentrations with the highest detected in 18DPT08 at 31.3 Õg/kg at a depth of 26-26.5 ft bgs. The highest concentration detected in 18CPTMW26SW was 4.6J Õg/kg at a depth of 20-20.5 ft bgs. The paucity of perchlorate concentrations in 18CPTMW26SW and 18DPT08 delineates the perchlorate in the Wilcox Zone to the southwest towards LHAAP-17.

The soil boring for 18CPTMW22DW was drilled and sampled to a depth of 90 ft bgs. The Wilcox clay appears to extend to a depth of 32.5 ft bgs, below which, sand with occasional thin clay layers are present. The highest concentration of perchlorate was detected in the Wilcox clay at 29.5-30 ft bgs at a concentration of 9,440 Õg/kg. Another soil sample obtained at 40-40.5 ft bgs in a small clay layer contained perchlorate at 4,040 Õg/kg. Perchlorate concentrations of samples obtained at depths of 50-51 ft revealed trace amounts of perchlorate (3.36J Õg/kg). Soil samples obtained at 60-60.5 ft, 70-70.5 ft, 80-80.5 ft and 89.5-90 ft bgs revealed no concentrations of perchlorate above the laboratory detection level, providing vertical extent determination of perchlorate in the Wilcox Formation. **Table 3-3** provides information about the monitoring wells. A quality control summary and laboratory analytical reports (provided on compact disc) are presented in **Appendix B**.

3.1.3 Perchlorate Data Gaps in the Soil Outside Containment Area to the Northwest

The soil boring locations for the monitoring wells as well as the concentration of perchlorate in the soils is presented in **Figure 2-2**. The boring logs are presented in **Appendix A**. The analytical results are summarized in **Table 3-2** and the analytical reports are presented in **Appendix B**. **Table 3-3** provides information about the monitoring wells.

Analytical results associated with locations near the southern corner are incorporated into the discussion in Section 3.1.2. Three monitoring well installations on the northwest side that included soil sampling and analysis are discussed below.

Monitoring Well 18CPTMW19SW

Saturated soil conditions were observed at approximately 10 ft bgs in the soil boring for monitoring well 18CPTMW19SW. This soil boring was drilled and sampled into the upper Wilcox Formation to a depth of 65 ft bgs. Perchlorate concentrations were below the detection limits in soil samples obtained at 5-5.5 ft bgs and 10-10.5 ft bgs. At 20-20.5 ft bgs perchlorate was present at 8.74 Õg/kg followed by no detection of perchlorate at 30-30.5 ft bgs. At 40-40.5 and 50-50.5 ft bgs perchlorate was detected at 124 Õg/kg and 170 Õg/kg, followed by no detections at 60-61 ft bgs (< 2.54 Õg/kg), providing vertical delineation of perchlorate at this location. The Wilcox clay appears to extend from 20.3 ft bgs to 41.4 ft bgs.

Monitoring Well 18CPTMW23SW

Saturated soil conditions were observed beginning at the surface in the soil boring for monitoring well 18CPTMW19SW as the area was subjected to flooding during this investigation associated with heavy rains. This soil boring was drilled and sampled into the upper Wilcox Formation to a depth of 65 ft bgs. Relatively low concentrations of perchlorate were detected in soil samples obtained at 5-5.5 ft bgs, 10-10.5 ft bgs and 20-20.5 ft bgs at 19.6 Õg/kg , 1,920 Õg/kg , and 29.3 Õg/kg, respectively. At depths of 30-30.4 ft bgs, 40-40.5 ft bgs, 50-50.5 ft bgs, and 60-60.5 ft bgs perchlorate concentrations were below the detection limits, providing vertical delineation of perchlorate at this location. The Wilcox clay was not identified in this soil boring.

Monitoring Well 18WW25

Soil was observed to be saturated at approximately 2 ft bgs within the soil boring for monitoring well 18WW25. Soil samples obtained and analyzed for perchlorate at 3.5-4 ft bgs 9.5-10 ft bgs, 14.5-15 ft bgs, 19.5-20 ft bgs, and 22-22.5 ft bgs were found to be below the laboratory detection limits, providing lateral delineation of perchlorate at this location. The Wilcox clay was not identified within the borehole at this location.

3.1.4 Soil VOC Results

The purpose of this work was mostly associated with perchlorate extent determination. However, VOC data was analyzed from the same soil samples collected for perchlorate analysis. The results indicated sporadic detection of VOCs with all concentrations below the VOC MSCs. **Tables 3-1 and 3-2** provide VOC results for the soil samples.

3.2 Groundwater Results

A comprehensive sampling event for groundwater was conducted in June 2016 after the monitoring wells were installed. A comprehensive groundwater level gauging event was conducted on June 9, 2016 except for well 18WW25, which was not installed until June 27, 2016, after the gauging event (well 18WW25 was however sampled on June 29, 2016 and analyzed for COCs). The results are described below.

3.2.1 Groundwater Elevation

Potentiometric surface maps for the Shallow Zone (**Figure 3-1**) and Wilcox Formation (**Figure 3-2**) were developed from monitoring well gauging data presented in **Table 3-4**. The Shallow Zone groundwater elevations indicate the presence of a localized groundwater high in the northern portion of the site, near monitoring wells AWD-1 and 123, similar to historical observations. The new monitoring well 18CPTMW22R, just outside the containment area to the south of the site, indicated the presence of a groundwater high. The groundwater elevation in 18CPTMW22R substantiates the historically high groundwater elevations observed in adjacent well MW-20, which represent the surface of a small perched groundwater. Therefore, the groundwater elevations in MW-20 and 18CPTMW22R were not used in contouring the Shallow Zone groundwater surface (Figure 3-1). New well 18CPTMW26 to the west of 18CPTMW22R had the lowest groundwater elevation in this area of the site at 167.08 ft above mean sea level (amsl).

The Wilcox Formation potentiometric results indicate the presence of a groundwater high in the vicinity of MW-14 in the northwest area of the site consistent with previous observations. New Wilcox Formation monitoring well 18CPTMW23SW north of MW-14 outside the containment has a groundwater elevation of 167.90 ft amsl, which is 5.76 lower than in MW-14 with a groundwater elevation of 173.66 ft amsl, indicating the presence of a horizontal gradient between MW-14 and 18CPTMW23SW. Groundwater elevation in new Wilcox Formation monitoring well 18CPTMW23SW is 2.18 ft lower than co-located monitoring Shallow Zone monitoring well 18CPTMW23, indicating the presence of a downward vertical gradient. A downward vertical gradient is also observed between Shallow Zone monitoring well 18CPTMW19 at an elevation of 171.70 ft amsl and new Wilcox Formation monitoring well 18CPTMW19SW at an elevation of 170.33 ft amsl.

To the south of the containment, new deep Wilcox Formation monitoring well 18CPTMW22DW has a groundwater elevation of 170.88 ft amsl, which is approximately 1 foot higher than the new upper Wilcox Formation monitoring well 18CPTMW22SW, indicating a slight upward gradient. The lateral gradient in the upper Wilcox Formation between new monitoring well 18CPTMW26SW and monitoring well 18CPTMW22SW appears to be to the east toward 18CPTMW22SW with an elevation difference between these wells of 0.42 ft. The vertical gradient appears to be upward between new upper Wilcox Formation monitoring well 18CPTMW26SW with a groundwater elevation of 170.29 ft amsl and new Shallow Zone monitoring well 18CPTMW26 with a groundwater elevation of 167.08 ft amsl.

3.2.2 Groundwater COC Concentrations

The June 2016 groundwater analytical results are presented in **Table 3-5**. A quality control summary and laboratory analytical reports (provided on compact disc) are presented in **Appendix B**. Groundwater sampling forms for June 2016 are presented in **Appendix C**.

3.2.2.1 Perchlorate

Figures 3-3 and 3-4 display the isoconcentration contours for perchlorate in the Shallow Zone and the Wilcox Formation, respectively. In the Shallow Zone, the highest concentrations of perchlorate occur in the vicinity of the UEP extending to the northeast outside the containment to 18WW17, which is bounded by non-detect results at wells 18CPTMW18 to the northeast and C-08 to the east. Monitoring well 18WW22, with a perchlorate concentration of 1.53 µg/L, defines the extent of this perchlorate hot spot to the north. Another area of high perchlorate extends from the ACD area to the south to include monitoring wells MW-7 and MW-23. The extent of perchlorate in the Shallow Zone groundwater is defined in all directions. To the south of the site outside the containment, new Shallow Zone monitoring well 18CPTMW22R had a low perchlorate concentration at 0.917 µg/L in contrast to the concentration in plugged monitoring well 18CPTMW22, which had a perchlorate concentration of 106,000 µg/L in June 2014. 18CPTMW22 was screened in the Wilcox clay between a depth of 19 and 28.5 ft bgs (see **Appendix A** for corrected 18CPTMW22 well log), where the highest concentrations of perchlorate occur, based on discrete soil sample data (see **Figure 2-2**). Wilcox clay in this area of the site occurs at a depth of approximately 12 feet bgs. New monitoring well 18CPTMW22R is screened between 4.8 ft and 14.3 ft bgs and partially penetrates Wilcox clay. Soil data from 18CPTMW22R indicates < 2.8 µg/kg of perchlorate in the soil to a depth of 15.5 ft bgs. The nondetect levels of perchlorate in the shallow soil reflect the very low concentration in 18CPTMW22 groundwater at 0.917 µg/L. In contrast, soil data from 18CPTMW22DW drilled in April 2016 indicates the presence of perchlorate at 5,400 µg/kg at a depth of 20 to 20.5 ft bgs. Soil samples collected from 18CPTMW22SW had perchlorate concentrations of 10,600 µg/kg at a depth of 24 ft bgs and 10,200 µg/kg at a depth of 26.5 ft bgs. These high concentrations of perchlorate in soil between 20 and 26.5 ft bgs coincide with the high perchlorate concentration reported in 18CPTMW22 screened across this soil interval.

New Shallow Zone monitoring well 18CPTMW26 located to the west of 18CPTMW22R between LHAAP-17 and LHAAP-18/24 had insufficient water to collect groundwater samples. New Shallow Zone monitoring well 18WW25 to the northwest adjacent to Harrison Bayou had a perchlorate concentration of < 0.20 µg/L, indicating that the perchlorate plume in this area of the site does not extend to Harrison Bayou.

In the Wilcox Formation, similar to previous results, the highest perchlorate concentrations were observed in the vicinity of 18CPTMW08SW (35,000 µg/L), near MW-5 to the north of the UEP, near the ACD in MW-14 (177,000 µg/L to 229,000 ug/L) northwest of the containment area, and to the south outside the containment in monitoring well 18CPTMW22SW (10,200 µg/L). All these wells are screened in the upper Wilcox Formation. New upper Wilcox Formation monitoring well 18CPTMW26SW, located to the west of 18CPTMW22SW (screen interval of 44.5 to 54.1 ft bgs) had a perchlorate concentration of 6.42 µg/L. This well defines the extent of perchlorate in the upper Wilcox Formation between sites LHAAP-17 and LHAAP-18/24. The perchlorate concentration in new deep Wilcox Formation monitoring well 18CPTMW22DW, screened between 72.7 to 82.3 ft bgs, was 1.21 J µg/L and defines the vertical extent of perchlorate at this location. New upper Wilcox Formation monitoring wells 18CPTMW19SW and 18CPTMW23SW in the northwest area had perchlorate concentrations of 1.25 µg/L and 0.407 µg/L, respectively. Along with wells 18WW19, 18WW09, and 18WW02, these wells provide lateral delineation of the extent of perchlorate in the upper Wilcox Formation. The extent

of perchlorate in the Wilcox Formation is defined in all directions. The extent of perchlorate is delineated vertically except at two locations in the Wilcox Formation at MW-14 and 18CPTMW08DW.

3.2.2.2 Trichloroethylene

Figures 3-5 and 3-6 display the isoconcentration contours for TCE in the Shallow Zone and the Wilcox Formation, respectively. In the Shallow Zone, the highest concentrations of TCE occur in the vicinity of the ACD in monitoring well 120 in the western area of the site, and in the area to the south of the UEP in monitoring well MW-2. TCE concentrations decrease with distance from MW-2 and 120, but remain above 1,000 μg/L in a large area of the site toward wells MW-21, 18CPTMW04, MW-23, MW-7, 129, MW-9, and AWD-1. The extent of TCE in the Shallow Zone is defined in all directions with the exception of TCE in MW-18 to the southwest of the site, which exceeded the Maximum Contaminant Level (MCL) of 5 μg/L with a concentration of 14.1 μg/L. To the south of the site outside the containment, new Shallow Zone monitoring well 18CPTMW22R had a TCE concentration < 0.2 μg/L in contrast to the concentration in plugged monitoring well 18CPTMW22, which had a TCE concentration of 58.9 μg/L in June 2014. 18CPTMW22 was screened in the Wilcox clay between a depth of 19 ft bgs and 28.5 feet bgs whereas new monitoring well 18CPTMW22R is screened to 14.3 ft bgs.

New Shallow Zone monitoring well 18CPTMW26, located to the west of 18CPTMW22R between LHAAP-17 and LHAAP-18/24, had insufficient water to collect a groundwater sample. New Shallow Zone monitoring well 18WW25 to the northwest adjacent to Harrison Bayou had a TCE concentration of < 0.5 μg/L, defining the extent of TCE in this area of the site and confirming that TCE from groundwater is not being released to Harrison Bayou.

In the Wilcox Formation, similar to previous results, the highest TCE concentrations were observed near the ACD in MW-14 (12,700 μg/L to 15,900 ug/L) northwest of the containment area, in the UEP area between 18CPTMW08SW (74.2 μg/L) and 18CPTMW01SW (46.5 μg/L), and in the central western portion of the site in 18CPTMW03SW. All these wells are screened in the upper Wilcox Formation. New upper Wilcox Formation monitoring well 18CPTMW26SW, located to the west of 18CPTMW22SW, had a TCE concentration of < 0.5 μg/L. This well defines the extent of TCE in the upper Wilcox Formation between sites LHAAP-17 and LHAAP-18/24. The TCE concentration in new deep Wilcox Formation monitoring well 18CPTMW22DW, screened between 72.7 to 82.3 ft bgs, was < 0.5 μg/L and defines the vertical extent of TCE at this location. New upper Wilcox Formation monitoring wells 18CPTMW19SW and 18CPTMW23SW in the northwest area had non-detectable TCE concentrations of < 0.5 μg/L. Along with wells 18WW19, 18WW09, and 18WW02, these wells define the lateral extent of TCE in the upper Wilcox Formation. The extent of TCE in the Wilcox Formation is defined in all directions.

3.2.2.3 Methylene Chloride

Figures 3-7 and 3-8 display the isoconcentration contours for MC in the Shallow Zone and the Wilcox Formation, respectively. In the Shallow Zone, the highest concentrations of MC occur in the vicinity of the ACD in monitoring well AWD-1 in the western area of the site, and in the area to the south of the UEP in monitoring well MW-2. MC concentrations decrease with distance from MW-2 and 120 to below detection levels in adjacent wells such as MW-21, MW-1,

18CPTMW04, MW-3, 109, MW-22, MW-9, and MW-12. The extent of MC in the Shallow Zone is defined in all directions. To the south of the site outside the containment, new Shallow Zone monitoring well 18CPTMW22R had an MC concentration < 0.2 μg/L, the same as the June 2014 concentration of MC in plugged monitoring well 18CPTMW22.

New Shallow Zone monitoring well 18CPTMW26, located to the west of 18CPTMW22R between LHAAP-17 and LHAAP-18/24, did not have sufficient water to collect a groundwater sample. New Shallow Zone monitoring well 18WW25, to the northwest adjacent to Harrison Bayou, had an MC concentration of < 0.5 μg/L, defining the lateral extent of MC in this area of the site and confirming that MC in Shallow Zone groundwater is not being released to Harrison Bayou.

In the Wilcox Formation, similar to previous results, the highest MC concentrations were observed near the ACD in MW-14 (53.5 J ug/L) northwest of the containment area, and to the south of the UEP area in 18CPTMW01SW (746 μg/L). These wells are screened in the upper Wilcox Formation. New upper Wilcox Formation monitoring well 18CPTMW26SW, located to the west of 18CPTMW22SW had an MC concentration of < 0.5 μg/L. This well defines the extent of MC in the upper Wilcox Formation between sites LHAAP-17 and LHAAP-18/24. The MC concentration in new deep Wilcox Formation monitoring well 18CPTMW22DW was < 0.5 μg/L and defines the vertical extent of MC at this location. New upper Wilcox Formation monitoring wells 18CPTMW19SW and 18CPTMW23SW in the northwest area had MC concentrations of < 0.5 μg/L. Along with wells 18WW19, 18WW09, and 18WW02, these wells define the lateral extent of MC in the upper Wilcox Formation. The extent of MC in the Wilcox Formation is defined in all directions.

3.2.2.4 1,4-Dioxane

Figures 3-9 and 3-10 display the isoconcentration contours for 1,4-dioxane in the Shallow Zone and the Wilcox Formation, respectively. In the Shallow Zone, the highest concentrations of 1,4-dioxane occur in the vicinity of the ACD in monitoring well 120 in the western area of the site, to the south of the ACD in monitoring well MW-7, and in the area to the south of the UEP in monitoring well MW-2. The maximum 1,4-dioxane concentration occurred in monitoring well 120 at a concentration 220 μg/L, and the second highest concentration was observed in MW-16 to the north of 120 toward Harrison Bayou at a concentration of 18 μg/L. MW-7 had a concentration of 13.4 μg/L, and 129 to the north of MW-7 had a 1,4-dioxane concentration of 6.52 μg/L. The 1,4-dioxane concentration in MW-2 was 7.58 μg/L. The extent of 1,4-dioxane in the Shallow Zone is defined in all directions, except for the area around MW-16, where the concentration of 1,4-dioxane exceeds the Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level (PCL) of 9.1 μg/L. To the south of the site outside the containment, new Shallow Zone monitoring well 18CPTMW22R had a 1,4-dioxane concentration < 1 μg/L.

New Shallow Zone monitoring well 18CPTMW26, located to the west of 18CPTMW22R between LHAAP-17 and LHAAP-18/24, did not have sufficient water to collect a groundwater sample. New Shallow Zone monitoring well 18WW25 to the northwest adjacent to Harrison Bayou had a 1,4-dioxane concentration of < 1 μg/L, defining the extent of 1,4-dioxane in this area of the site and confirming that 1,4-dioxane in Shallow Zone groundwater is not being released to Harrison Bayou at that location.

In the Wilcox Formation, similar to previous results, the highest 1,4-dioxane concentrations were observed near the ACD in MW-14 (390 to 412 ug/L) northwest of the containment area. MW-14 is screened in the upper Wilcox Formation. New upper Wilcox Formation monitoring well 18CPTMW26SW, located to the west of 18CPTMW22SW, had a 1,4-dioxane concentration of < 1 μg/L. This well defines the extent of 1,4-dioxane in the upper Wilcox Formation between sites LHAAP-17 and LHAAP-18/24. 1,4-Dioxane concentration in new deep Wilcox Formation monitoring well 18CPTMW22DW was < 1 μg/L, similar to the concentrations in co-located upper Wilcox Formation well 18CPTMW22SW. New upper Wilcox Formation monitoring wells 18CPTMW19SW and 18CPTMW23SW in the northwest area had 1,4-dioxane concentrations of < 1 μg/L. Along with wells 18WW09 and 18WW02, these wells define the lateral extent of 1,4-dioxane in the upper Wilcox Formation. The extent of 1,4-dioxane in the Wilcox Formation is defined in all directions.

3.2.2.5 Metals

Figures 3-11 and 3-12 display the metal exceedance concentrations in the Shallow Zone and the Wilcox Formation, respectively. In the Shallow Zone, the following metals were detected above the MCLs/PCLs in one or more monitoring wells: arsenic, barium, beryllium, cadmium, chromium, lead, manganese, and nickel. Fifteen monitoring wells were reported to have one or more metals above the MCLs/PCLs. The detections of metals above MCLs/PCLs in Shallow Zone groundwater is sporadic and does not suggest the presence of a source of metal COCs.

In the Wilcox Formation, three monitoring wells had metal concentrations above the MCL/PCL. Arsenic in 18CPTMW01SW and manganese in C-03 and 18WW18 were reported above the MCL/PCL.

3.3 Update to Cross-Section D-D’

An update to cross-section D-Dô that was originally presented in the *Final Updated Post-Screening Investigation Report for LHAAP-18/24, Burning Ground No. 3 and Unlined Evaporation Pond* (AECOM, 2016) is provided in **Appendix A**. The updated cross-section corrects the 18CPTMW22 well screen and adds information for boring/well logs 18CPTMW22SW and 18CPTMW22DW.

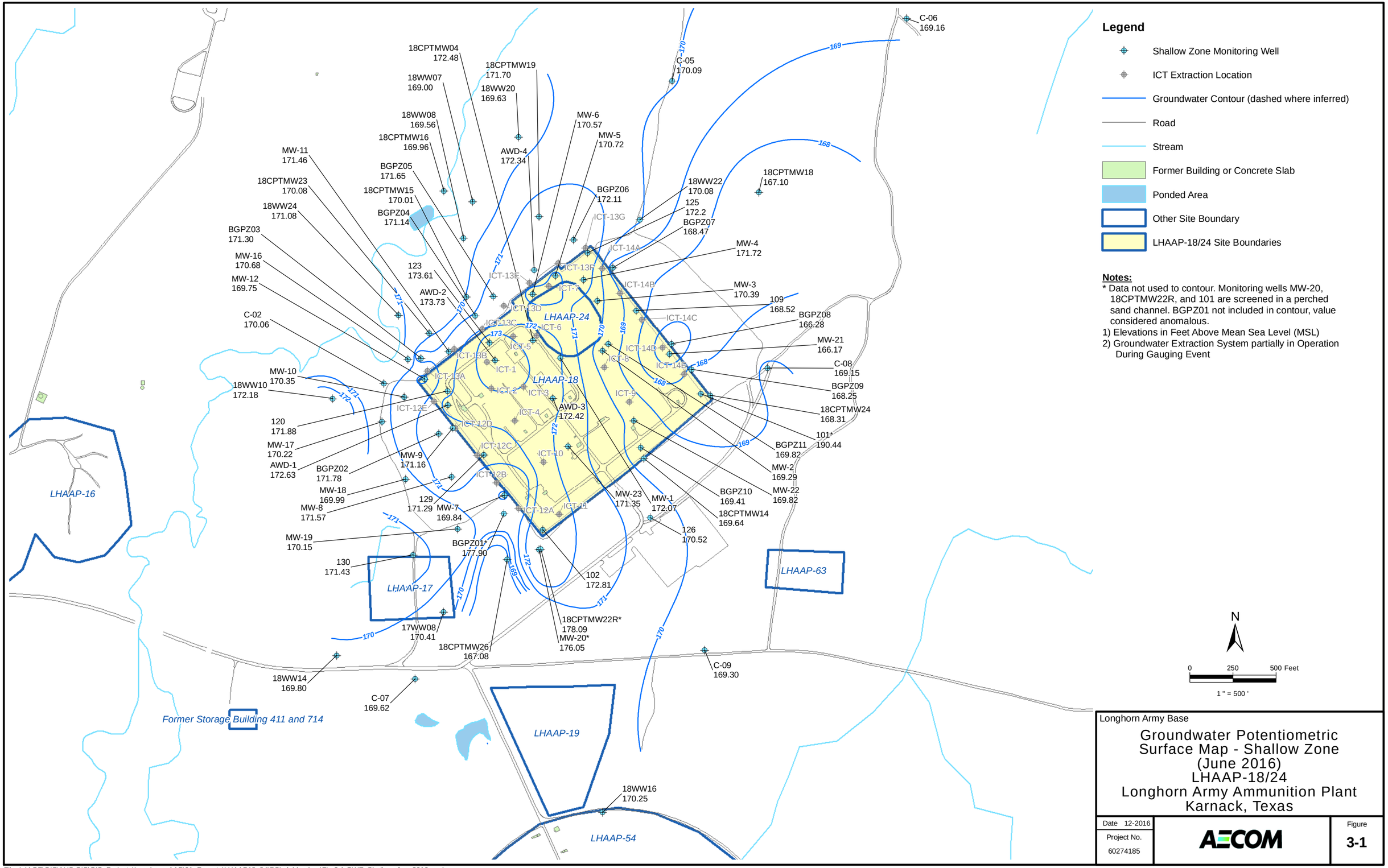

Longhorn Army Base

Groundwater Potentiometric Surface Map - Shallow Zone (June 2016) LHAAP-18/24 Longhorn Army Ammunition Plant Karnack, Texas

Date 12-2016	AECOM	Figure
Project No. 60274185		3-1

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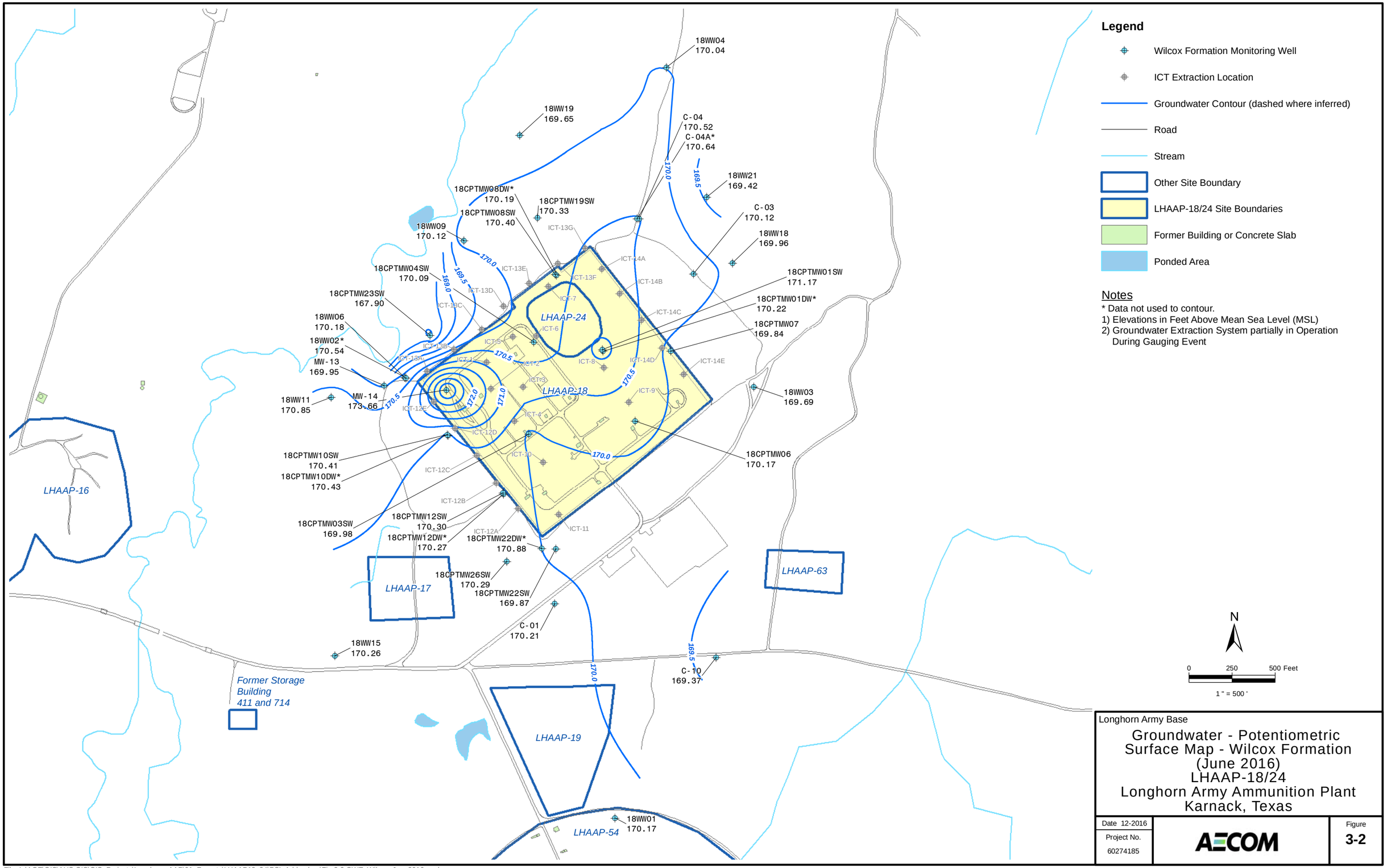

Longhorn Army Base

Groundwater - Potentiometric Surface Map - Wilcox Formation (June 2016)
LHAAP-18/24
Longhorn Army Ammunition Plant
Karnack, Texas

Date 12-2016	AECOM	Figure
Project No. 60274185		3-2

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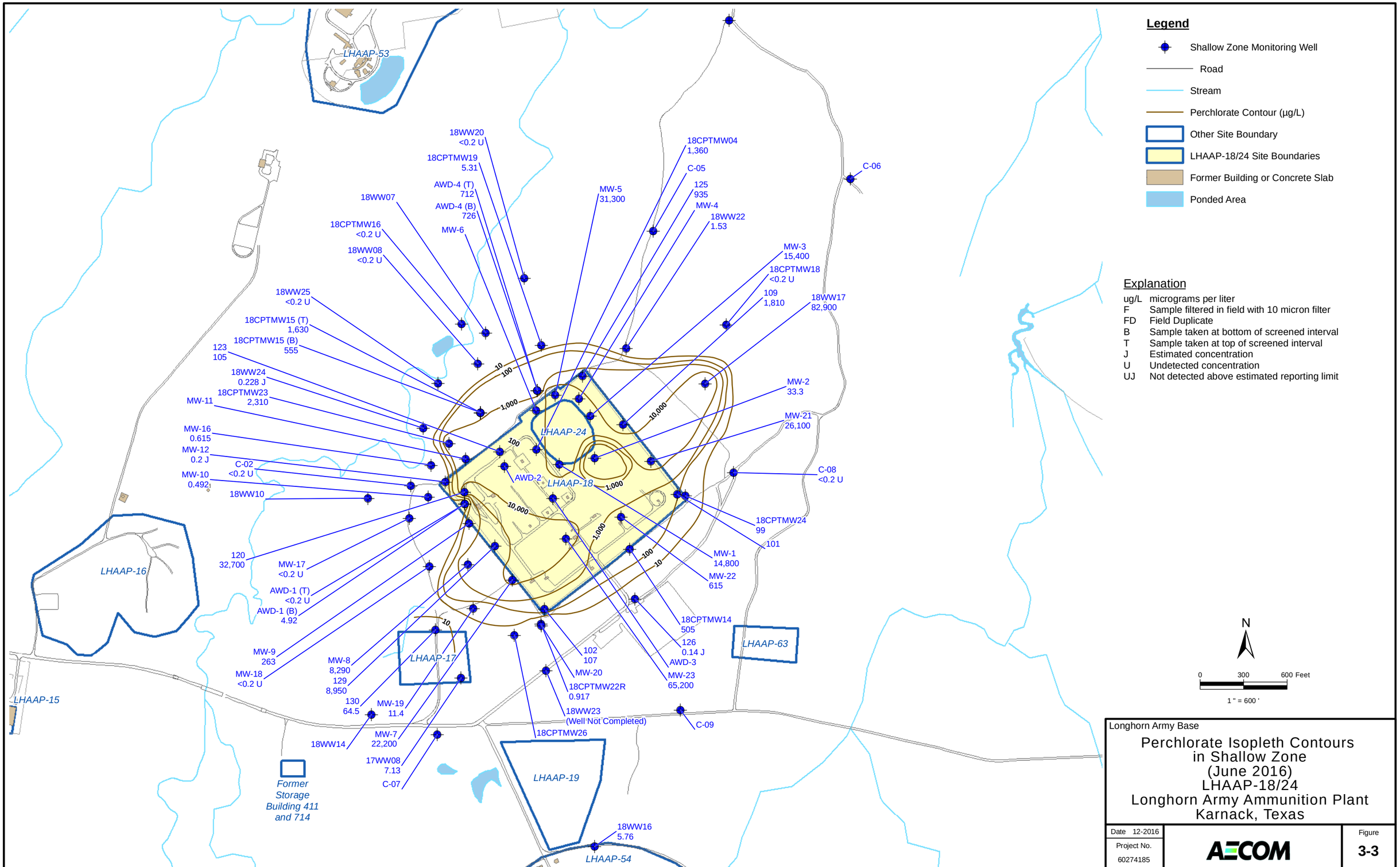

Longhorn Army Base

Perchlorate Isopleth Contours in Shallow Zone (June 2016) LHAAP-18/24 Longhorn Army Ammunition Plant Karnack, Texas

Date 12-2016	AECOM	Figure
Project No. 60274185		3-3

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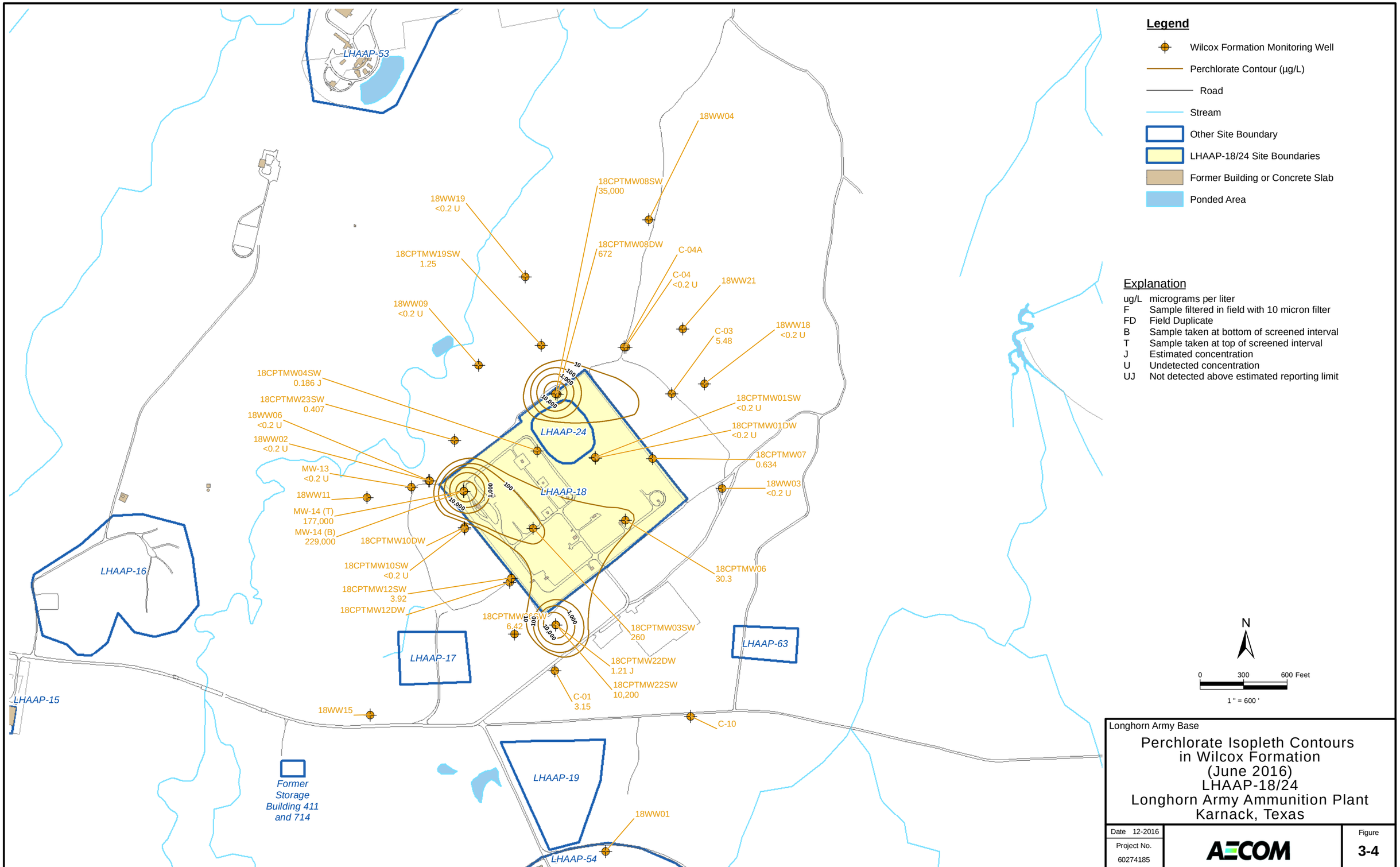

Longhorn Army Base

Perchlorate Isopleth Contours in Wilcox Formation (June 2016) LHAAP-18/24 Longhorn Army Ammunition Plant Karnack, Texas

Date 12-2016	AECOM	Figure
Project No. 60274185		3-4

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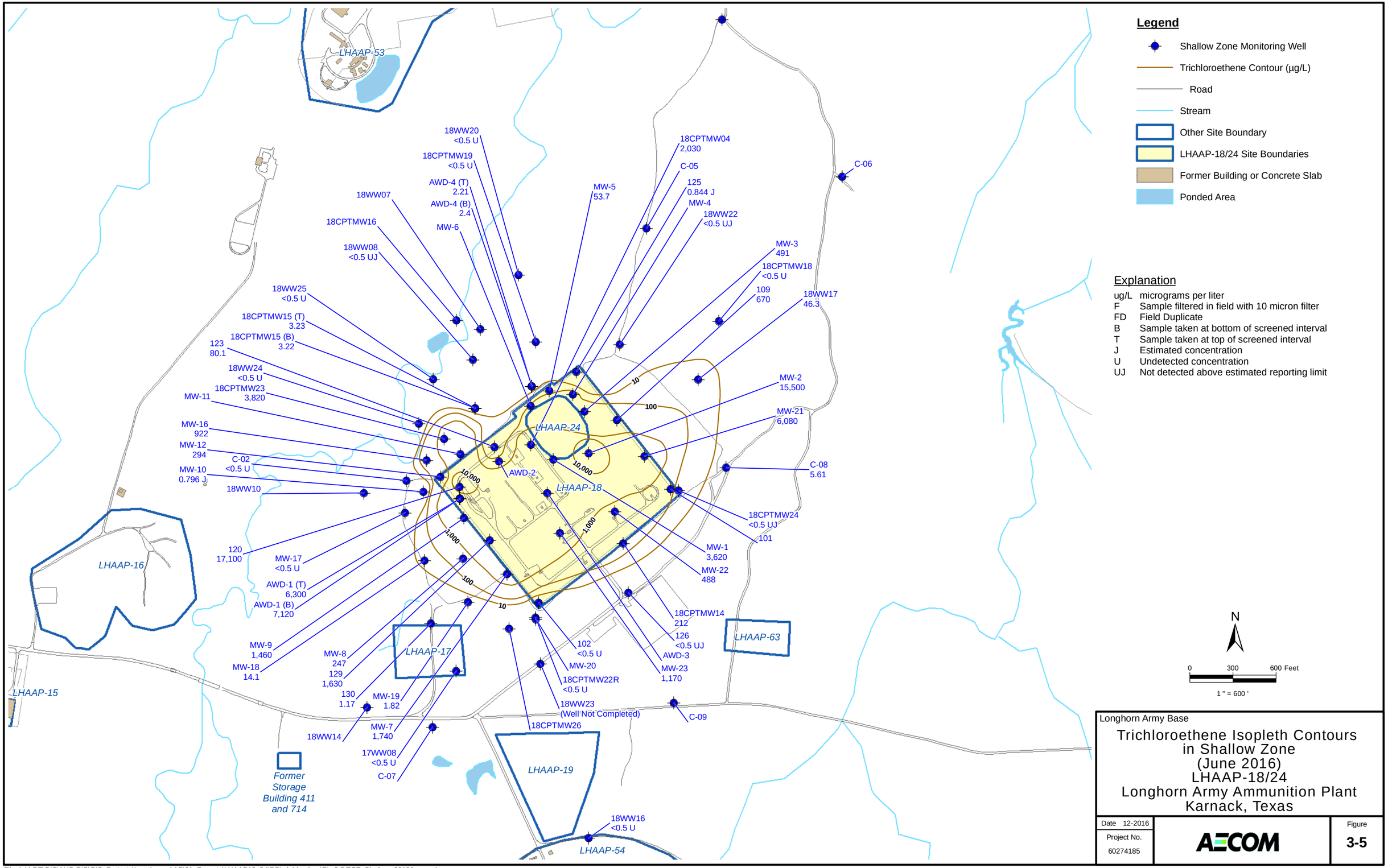

Longhorn Army Base

Trichloroethene Isopleth Contours in Shallow Zone (June 2016) LHAAP-18/24 Longhorn Army Ammunition Plant Karnack, Texas

Date 12-2016	AECOM	Figure
Project No. 60274185		3-5

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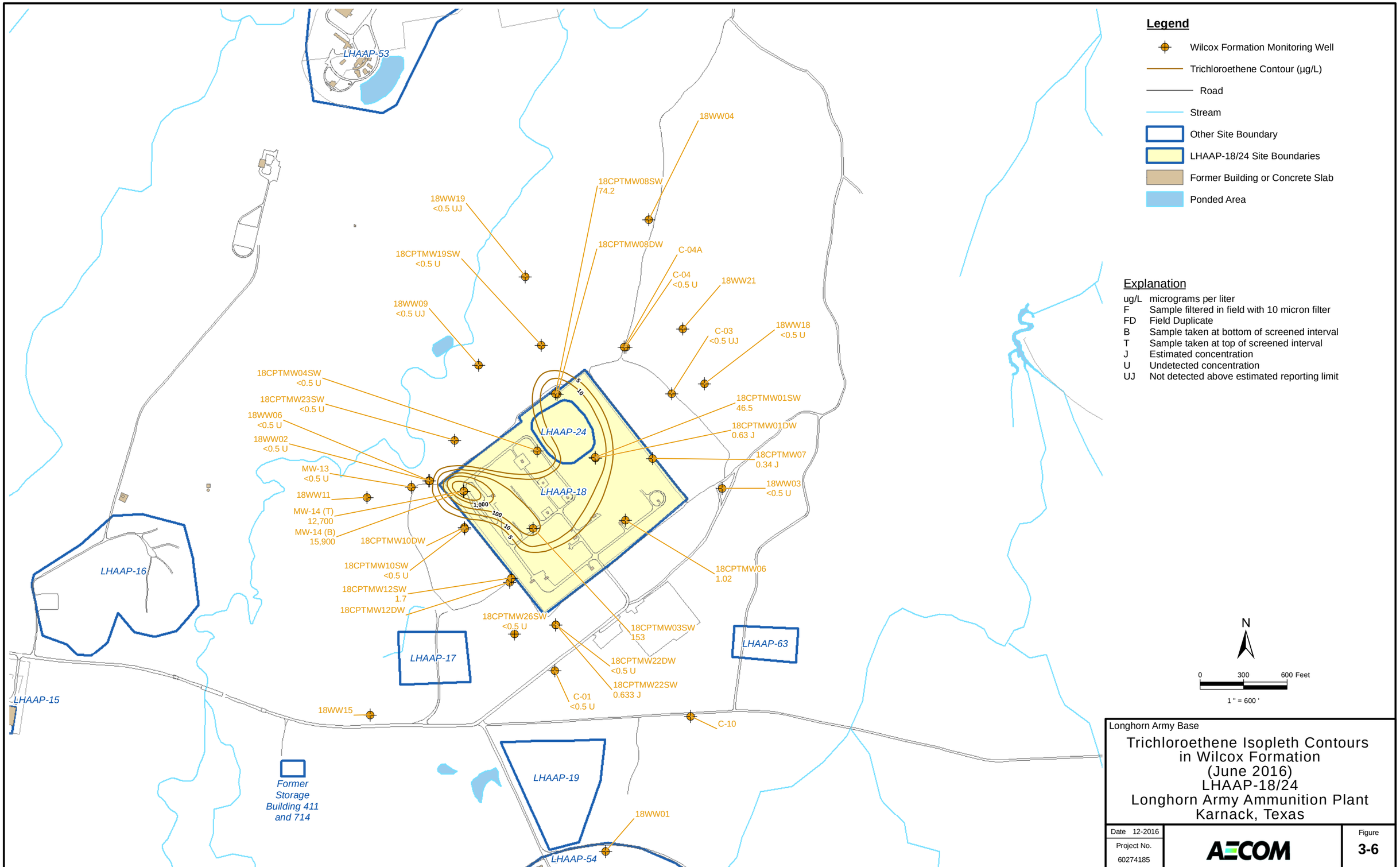

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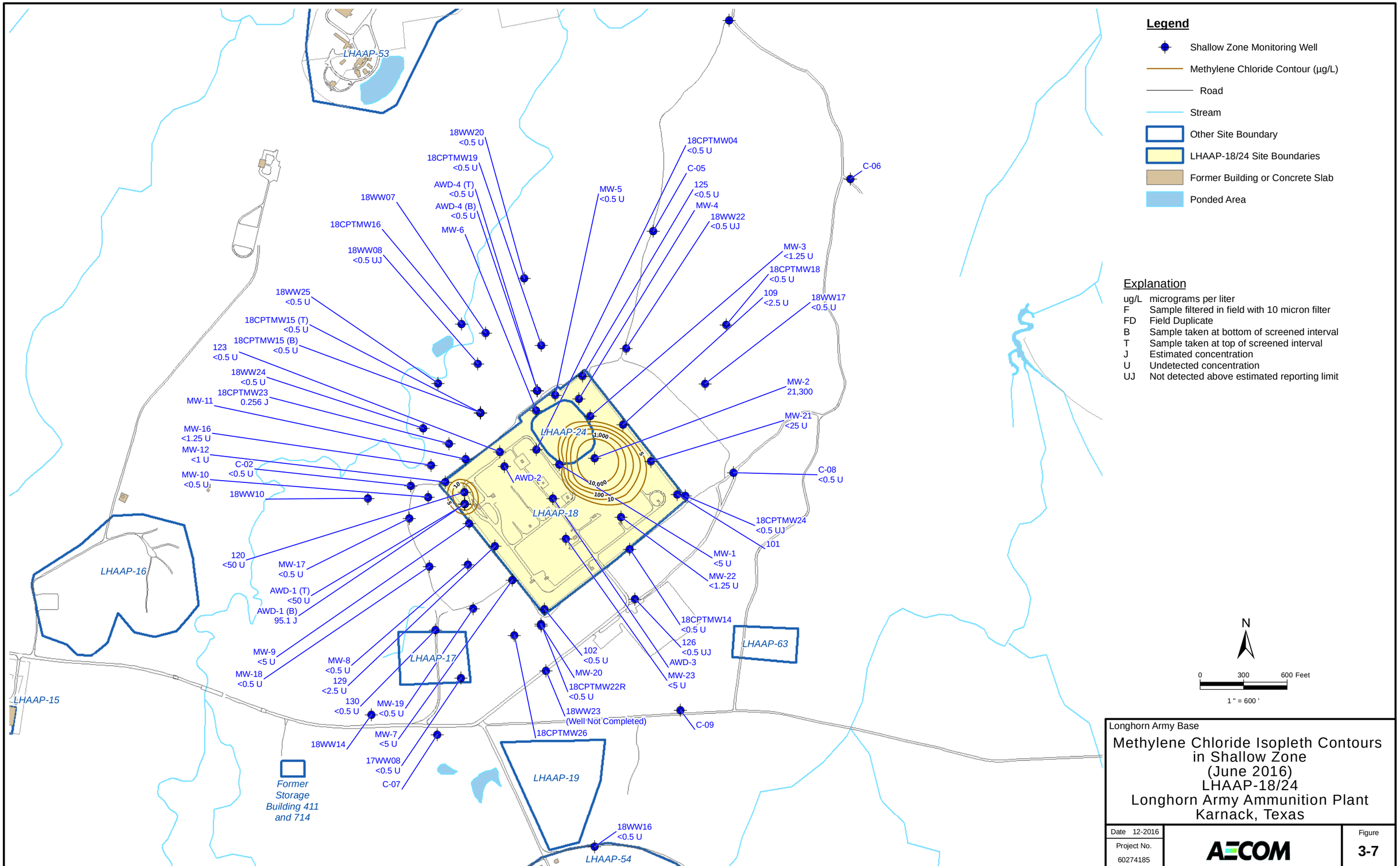

Longhorn Army Base

Methylene Chloride Isopleth Contours in Shallow Zone (June 2016) LHAAP-18/24 Longhorn Army Ammunition Plant Karnack, Texas

Date 12-2016	AECOM	Figure
Project No. 60274185		3-7

File: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP18_24\PSI_Addendum\Fig 3-7 MethChlor_Shallow_2016Jun.mxd
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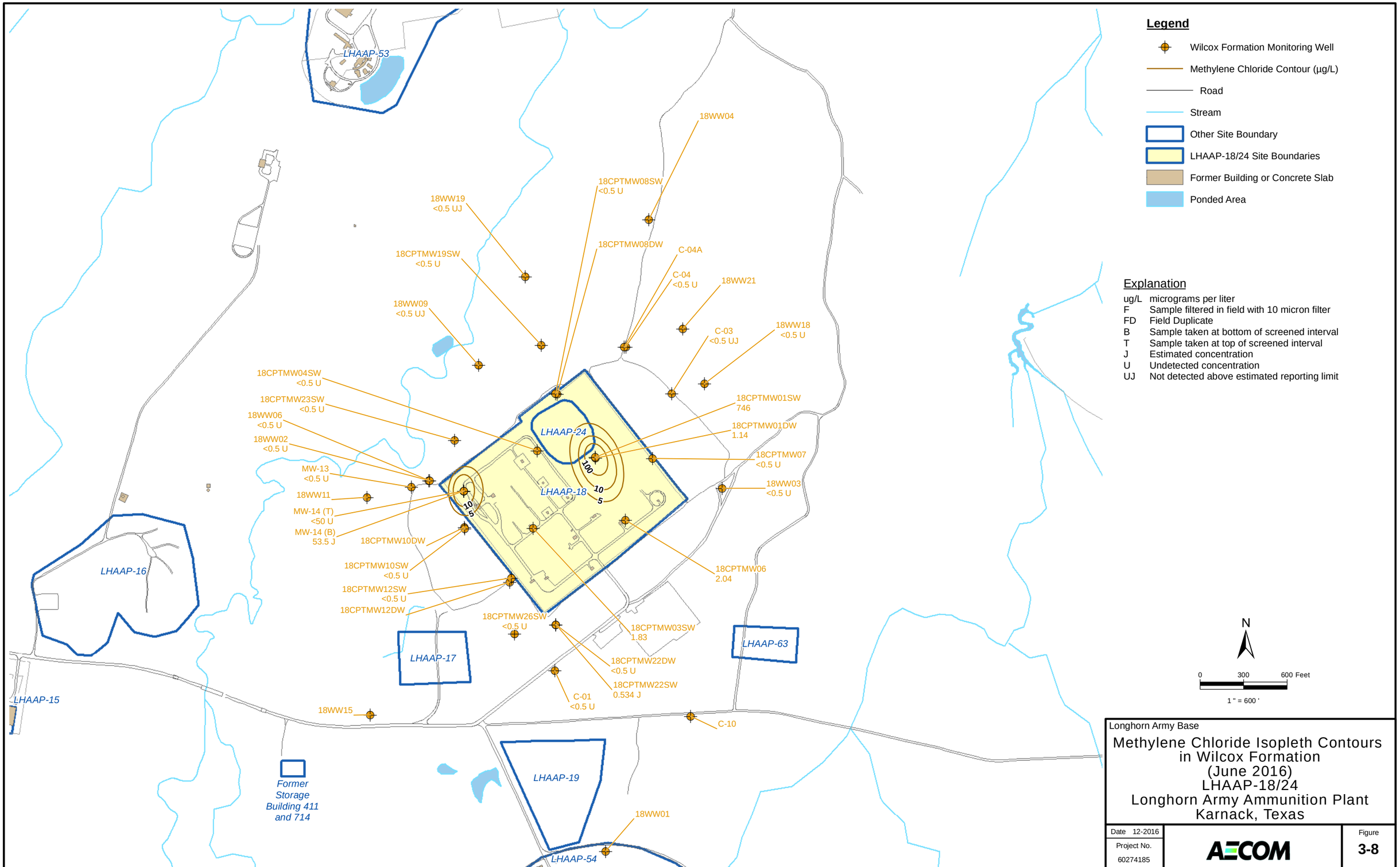

Longhorn Army Base

Methylene Chloride Isopleth Contours in Wilcox Formation (June 2016) LHAAP-18/24 Longhorn Army Ammunition Plant Karnack, Texas

Date 12-2016	AECOM	Figure
Project No. 60274185		3-8

File: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP18_24\PSI_Addendum\Fig 3-8 MethChlor_Wilcox_2016Jun.mxd
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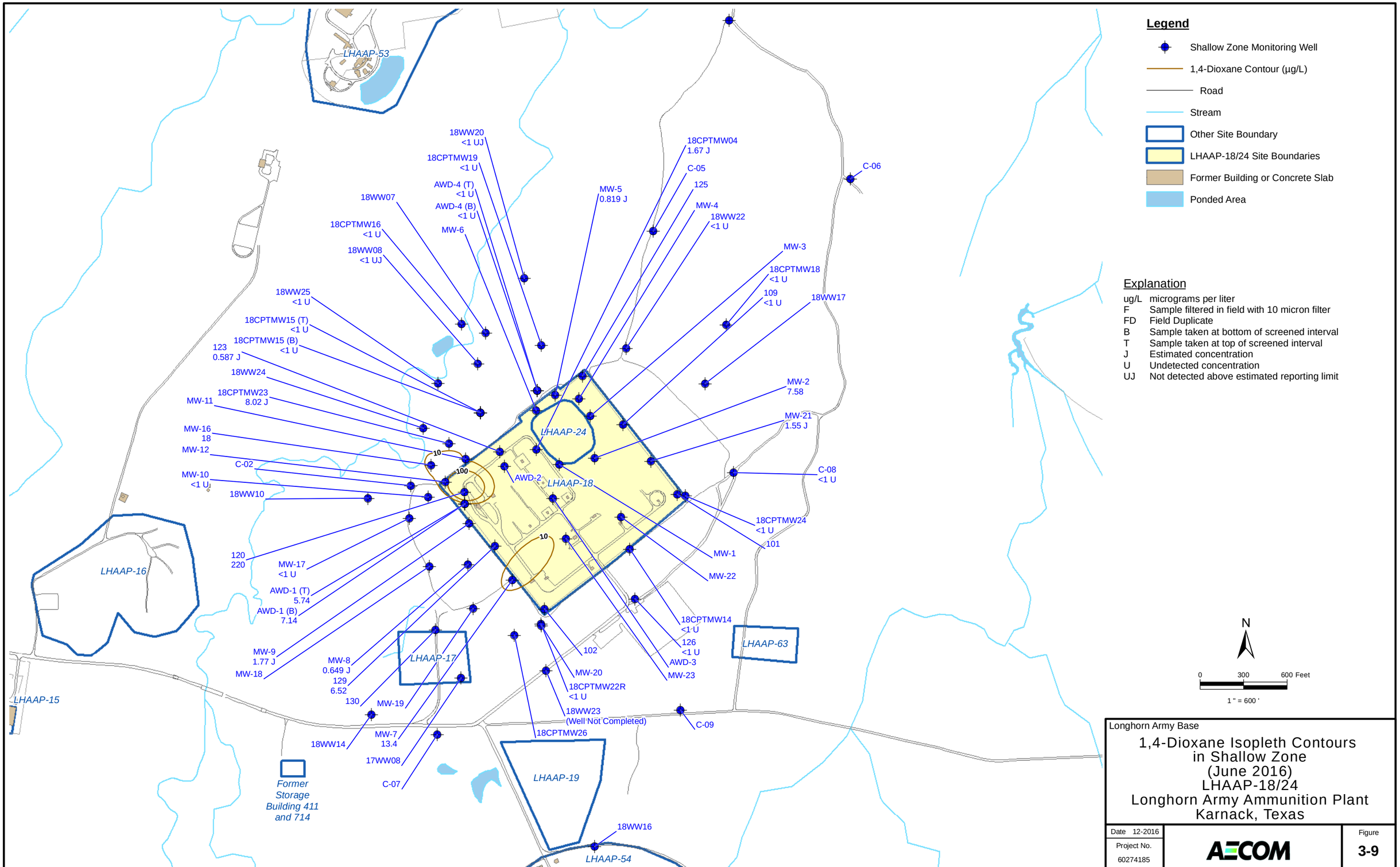

Longhorn Army Base

1,4-Dioxane Isopleth Contours in Shallow Zone (June 2016) LHAAP-18/24 Longhorn Army Ammunition Plant Karnack, Texas

Date 12-2016	AECOM	Figure
Project No. 60274185		3-9

File: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP18_24\PSI_Addendum\Fig 3-9 Dioxane_Shallow_2016Jun.mxd
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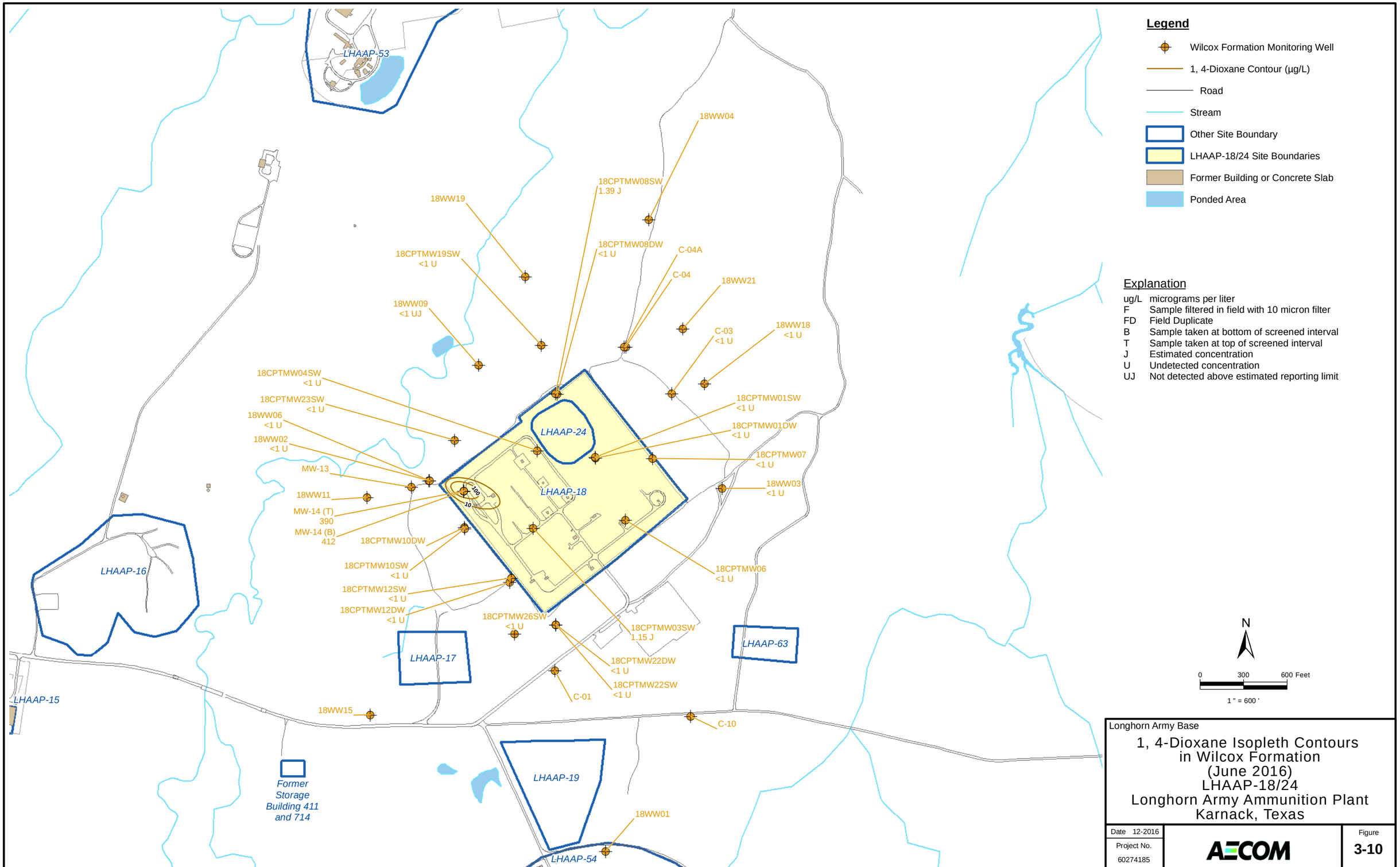

Longhorn Army Base

1, 4-Dioxane Isopleth Contours in Wilcox Formation (June 2016) LHAAP-18/24 Longhorn Army Ammunition Plant Karnack, Texas

Date 12-2016	AECOM	Figure
Project No. 60274185		3-10

File: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP18_24\PSI_Addendum\Fig 3-10 Dioxane_Wilcox_2016Jun.mxd
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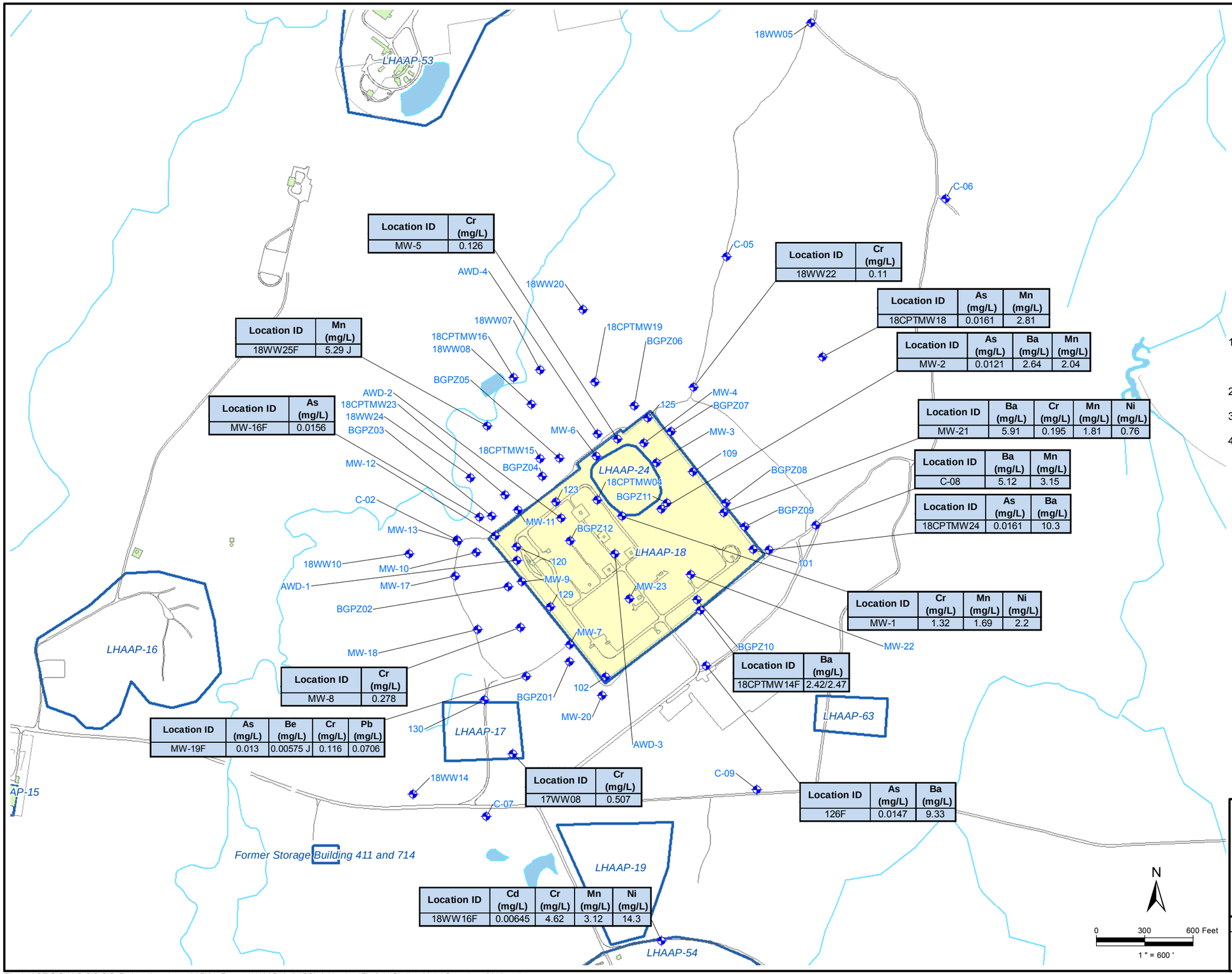

Location ID	Cr (mg/L)
MW-5	0.126

Location ID	Cr (mg/L)
18WW22	0.11

Location ID	As (mg/L)	Mn (mg/L)
18CPTMW18	0.0161	2.81

Location ID	As (mg/L)	Ba (mg/L)	Mn (mg/L)
MW-2	0.0121	2.64	2.04

Location ID	Mn (mg/L)
18WW25F	5.29 J

Location ID	As (mg/L)
MW-16F	0.0156

Location ID	Ba (mg/L)	Cr (mg/L)	Mn (mg/L)	Ni (mg/L)
MW-21	5.91	0.195	1.81	0.76

Location ID	Ba (mg/L)	Mn (mg/L)
C-08	5.12	3.15

Location ID	As (mg/L)	Ba (mg/L)
18CPTMW24	0.0161	10.3

Location ID	Cr (mg/L)	Mn (mg/L)	Ni (mg/L)
MW-1	1.32	1.69	2.2

Location ID	Ba (mg/L)
18CPTMW14F	2.42/2.47

Location ID	Cr (mg/L)
MW-8	0.278

Location ID	As (mg/L)	Be (mg/L)	Cr (mg/L)	Pb (mg/L)
MW-19F	0.013	0.00575 J	0.116	0.0706

Location ID	Cr (mg/L)
17WW08	0.507

Location ID	As (mg/L)	Ba (mg/L)
126F	0.0147	9.33

Location ID	Cd (mg/L)	Cr (mg/L)	Mn (mg/L)	Ni (mg/L)
18WW16F	0.00645	4.62	3.12	14.3

Legend

- Shallow Zone Monitoring Well
- Road
- Stream
- Other Site Boundary
- LHAAP-18/24 Site Boundaries
- Ponded Area
- Groundwater Result

Notes

1) All monitoring wells installed in 2013 and 2014 have nomenclature beginning with "18CPT" with the exception of 18WW22 and 18WW24 which were also installed in 2013 and 2014, respectively.
2) "SW" at the end of well nomenclature indicates a shallow Wilcox Formation monitoring well (i.e., to a depth of 70 feet bgs).
3) "DW" at the end of well nomenclature indicates a deep Wilcox Formation monitoring well (i.e., to a depth of 100 feet bgs).
4) Only values exceeding the MCL or MSC have been included. MSC for Ni = 2.0 mg/L.

Abbreviations

As	Arsenic
Ba	Barium
Be	Beryllium
Cd	Cadmium
Cr	Chromium
Mn	Manganese
Ni	Nickel
Pb	Lead
mg/L	milligrams per liter
MCL	Maximum Contaminant Level
PCL	Texas Residential Groundwater Protective Concentration Level
F	Filtered

Chemical	MCL/PCL (mg/L)
Arsenic	0.01
Barium	2
Beryllium	0.004
Cadmium	0.005
Chromium	0.1
Lead	0.015
Maganese	1.1
Nickel	0.49

Longhorn Army Base

Metal Exceedance Concentrations in Groundwater Shallow Zone (June 2016) LHAAP-18/24 Longhorn Army Ammunition Plant Karnack, Texas

Date 12-2016

Project No. 60274185

AECOM

Figure 3-11

File: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP18_24\PSI_Addendum\Fig 3-11 Shallow Metal Conc June 2016.mxd
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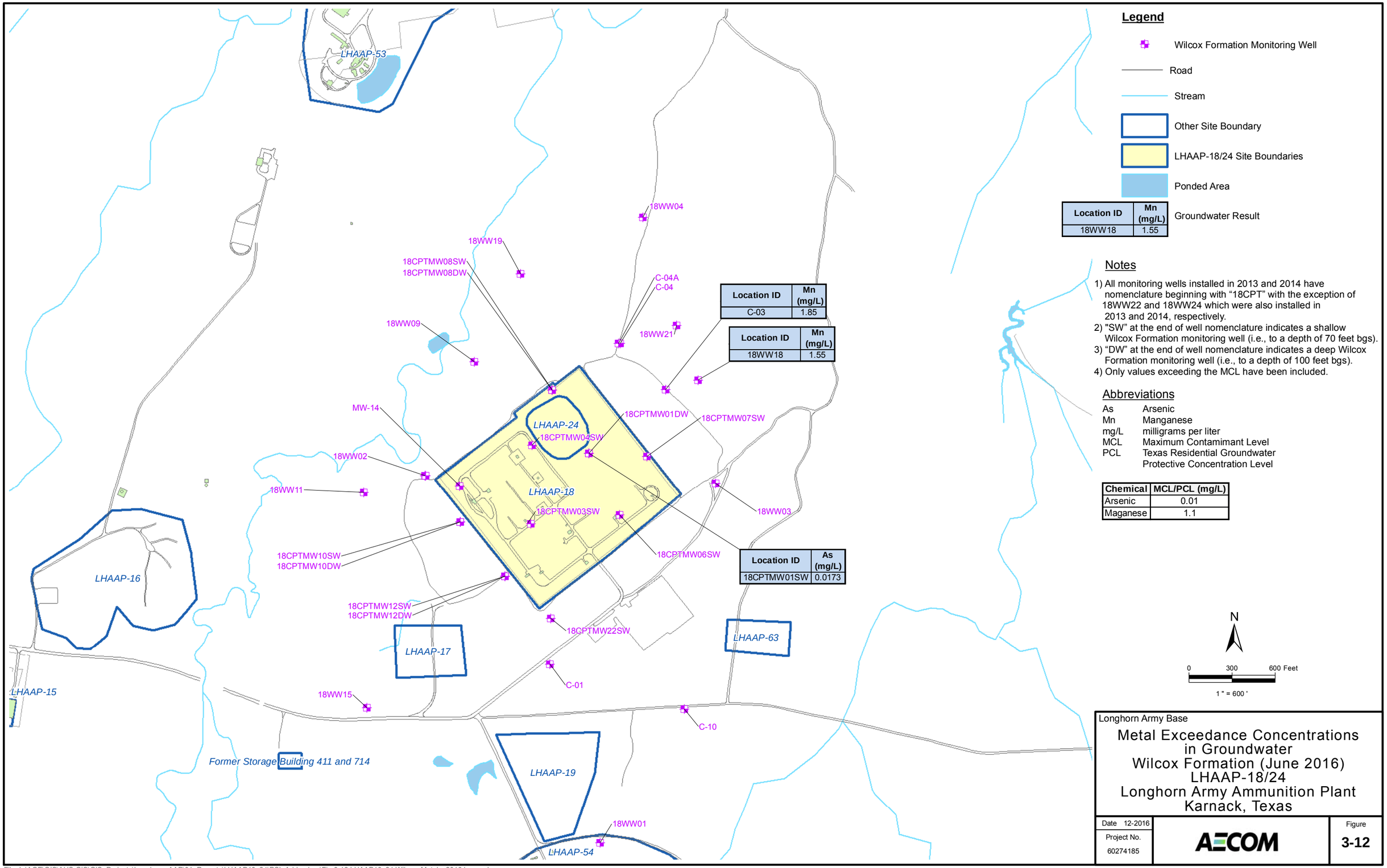

File: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP18_24\PSI_Addendum\Fig 3-12 LHAAP18_24 Wilcox_Metals_2016Jun.mxd
Date: Tuesday, December 13, 2016 10:25:50 AM

Table 3-1: LHAAP-18/24 DPT Soil Analytical Results - February/March 2016

Sample ID: / Sample Date:	Units	MSC	18DPT01 (5-5.5) 250216 2/25/2016	18DPT01 (9.5-10) 250216 2/25/2016	18DPT01 (15-15.5) 250216 2/25/2016	18DPT01 (22.5-23) 250216 2/25/2016	18DPT01 (24.5-25) 250216 2/25/2016	18DPT01 (27-27.5) 250216 2/25/2016	18DPT02 (5-5.5) 260216 2/26/2016	18DPT02 (10-10.5) 260216 2/26/2016	18DPT02 (10-10.5) 260216FD 2/26/2016	18DPT02 (15-15.5) 260216 2/26/2016	18DPT02 (22-22.5) 260216 2/26/2016
Sample Saturation:			**Unsaturated**	**Unsaturated**	**Unsaturated**	**Saturated**	**Saturated**	**Unsaturated**	**Unsaturated**	**Saturated**	**Saturated**	**Saturated**	**Unsaturated**
Formation:			**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Wilcox Clay**	**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Wilcox Clay**
Perchlorate (6850)													
PERCHLORATE	ug/kg	7200	<2.34 U	20.7	7.54	63	47.7	535	<2.36 U	<2.36 U	<2.36 U	<2.5 U	269
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/kg	11000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
1,1,1-TRICHLOROETHANE	ug/kg	20000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
1,1,2,2-TETRACHLOROETHANE	ug/kg	1400	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
1,1,2-TRICHLOROETHANE	ug/kg	500	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
1,1-DICHLOROETHANE	ug/kg	1000000	<2.5 U	<2.18 U	<2.22 U	<2.24 U	<2.22 U	<2.54 U	<2.48 U	<2.4 U	<2.48 U	<2.38 U	<2.68 U
1,1-DICHLOROETHENE	ug/kg	700	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
1,1-DICHLOROPROPENE	ug/kg	290	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
1,2,3-TRICHLOROBENZENE	ug/kg	31000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
1,2,3-TRICHLOROPROPANE	ug/kg	4.1	<2.5 U	<2.18 U	<2.22 U	<2.24 U	<2.22 U	<2.54 U	<2.48 U	<2.4 U	<2.48 U	<2.38 U	<2.68 U
1,2,4-TRICHLOROBENZENE	ug/kg	7000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
1,2,4-TRIMETHYLBENZENE	ug/kg	510000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/kg	20	<5 U	<4.34 U	<4.46 U	<4.46 U	<4.42 U	<5.08 U	<4.96 U	<4.82 U	<4.96 U	<4.76 U	<5.36 U
1,2-DIBROMOETHANE	ug/kg	5	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
1,2-DICHLOROBENZENE	ug/kg	60000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
1,2-DICHLOROETHANE	ug/kg	500	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
1,2-DICHLOROPROPANE	ug/kg	500	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
1,3,5-TRIMETHYLBENZENE	ug/kg	510000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
1,3-DICHLOROBENZENE	ug/kg	310000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
1,3-DICHLOROPROPANE	ug/kg	2900	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
1,4-DICHLOROBENZENE	ug/kg	7500	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
2,2-DICHLOROPROPANE	ug/kg	4200	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
2-BUTANONE	ug/kg	6100000	<6.24 U	<5.42 U	<5.58 U	<5.58 U	<5.52 U	<6.34 U	<6.18 U	<6.02 U	<6.2 U	<5.94 U	<6.7 U
2-CHLOROTOLUENE	ug/kg	200000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
2-HEXANONE	ug/kg	610000	<6.24 U	<5.42 U	<5.58 U	<5.58 U	<5.52 U	<6.34 U	<6.18 U	<6.02 U	<6.2 U	<5.94 U	<6.7 U
4-CHLOROTOLUENE	ug/kg	200000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
4-METHYL-2-PENTANONE	ug/kg	820000	<6.24 U	<5.42 U	<5.58 U	<5.58 U	<5.52 U	<6.34 U	<6.18 U	<6.02 U	<6.2 U	<5.94 U	<6.7 U
ACETONE	ug/kg	920000	7.78 J	<10.9 U	<11.1 U	9.77 J	<11.1 U	<12.7 U	22.8 J	7.17 J	17.3 J	8.14 J	<13.4 U
BENZENE	ug/kg	500	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
BROMOBENZENE	ug/kg	200000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
BROMOCHLOROMETHANE	ug/kg	410000	<2.5 U	<2.18 U	<2.22 U	<2.24 U	<2.22 U	<2.54 U	<2.48 U	<2.4 U	<2.48 U	<2.38 U	<2.68 U
BROMODICHLOROMETHANE	ug/kg	460	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
BROMOFORM	ug/kg	3600	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
BROMOMETHANE	ug/kg	14000	<2.5 U	<2.18 U	<2.22 U	<2.24 U	<2.22 U	<2.54 U	<2.48 U	<2.4 U	<2.48 U	<2.38 U	<2.68 U
CARBON DISULFIDE	ug/kg	1000000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
CARBON TETRACHLORIDE	ug/kg	500	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
CHLOROBENZENE	ug/kg	10000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
CHLOROETHANE	ug/kg	4100000	<2.5 U	<2.18 U	<2.22 U	<2.24 U	<2.22 U	<2.54 U	<2.48 U	<2.4 U	<2.48 U	<2.38 U	<2.68 U
CHLOROFORM	ug/kg	100000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
CHLOROMETHANE	ug/kg	22000	<5 U	<4.34 U	<4.46 U	<4.46 U	<4.42 U	<5.08 U	<4.96 U	<4.82 U	<4.96 U	<4.76 U	<5.36 U
CIS-1,2-DICHLOROETHENE	ug/kg	7000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
CIS-1,3-DICHLOROPROPENE	ug/kg	530	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
DIBROMOCHLOROMETHANE	ug/kg	3400	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
DIBROMOMETHANE	ug/kg	38000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
DICHLORODIFLUOROMETHANE	ug/kg	2000000	<2.5 U	<2.18 U	<2.22 U	<2.24 U	<2.22 U	<2.54 U	<2.48 U	<2.4 U	<2.48 U	<2.38 U	<2.68 U

Table 3-1: LHAAP-18/24 DPT Soil Analytical Results - February/March 2016

Sample ID: / Sample Date:	Units	MSC	18DPT01 (5-5.5) 250216 2/25/2016	18DPT01 (9.5-10) 250216 2/25/2016	18DPT01 (15-15.5) 250216 2/25/2016	18DPT01 (22.5-23) 250216 2/25/2016	18DPT01 (24.5-25) 250216 2/25/2016	18DPT01 (27-27.5) 250216 2/25/2016	18DPT02 (5-5.5) 260216 2/26/2016	18DPT02 (10-10.5) 260216 2/26/2016	18DPT02 (10-10.5) 260216FD 2/26/2016	18DPT02 (15-15.5) 260216 2/26/2016	18DPT02 (22-22.5) 260216 2/26/2016
ETHYLBENZENE	ug/kg	70000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
HEXACHLOROBUTADIENE	ug/kg	2000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
ISOPROPYLBENZENE	ug/kg	1000000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
M,P-XYLENE	ug/kg	1000000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
METHYLENE CHLORIDE	ug/kg	500	<2.5 U	<2.18 U	<2.22 U	<2.24 U	<2.22 U	<2.54 U	<2.48 U	<2.4 U	<2.48 U	<2.38 U	<2.68 U
NAPHTHALENE	ug/kg	200000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
N-BUTYLBENZENE	ug/kg	410000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
N-PROPYLBENZENE	ug/kg	410000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
O-XYLENE	ug/kg	1000000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
P-ISOPROPYLTOLUENE	ug/kg	1000000	21.8	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	1.98 J	<1.2 U	4.08 J	1.35 J	<1.34 U
SEC-BUTYLBENZENE	ug/kg	410000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
STYRENE	ug/kg	10000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
TERT-BUTYLBENZENE	ug/kg	410000	0.778 J	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
TETRACHLOROETHENE	ug/kg	500	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
TOLUENE	ug/kg	100000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
TRANS-1,2-DICHLOROETHENE	ug/kg	10000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
TRANS-1,3-DICHLOROPROPENE	ug/kg	2900	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
TRICHLOROETHENE	ug/kg	500	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
TRICHLOROFLUOROMETHANE	ug/kg	3100000	<2.5 U	<2.18 U	<2.22 U	<2.24 U	<2.22 U	<2.54 U	<2.48 U	<2.4 U	<2.48 U	<2.38 U	<2.68 U
VINYL CHLORIDE	ug/kg	200	<2.5 U	<2.18 U	<2.22 U	<2.24 U	<2.22 U	<2.54 U	<2.48 U	<2.4 U	<2.48 U	<2.38 U	<2.68 U

Blue Highlighting Indicates concentrations above the MSC

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MSC - Medium-Specific Concentrations

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

ug/kg - micrograms per kilogram

Table 3-1: LHAAP-18/24 DPT Soil Analytical Results - February/March 2016

Sample ID: / Sample Date:	Units	MSC	18DPT03 (5-5.5) 260216 2/26/2016	18DPT03 (10-10.5) 260216 2/26/2016	18DPT03 (14.5-15) 260216 2/26/2016	18DPT03 (17.5-18) 260216 2/26/2016	18DPT04 (5-5.5) 240216 2/24/2016	18DPT04 (15-15.5) 240216 2/24/2016	18DPT04 (20-21) 240216 2/24/2016	18DPT04 (20-21) 240216FD 2/24/2016	18DPT04 (25-25.5) 240216 2/24/2016	18DPT04 (29-30) 240216 2/24/2016	18DPT04 (34-34.5) 240216 2/24/2016
Sample Saturation:			**Unsaturated**	**Unsaturated**	**Saturated**	**Unsaturated**	**Unsaturated**	**Unsaturated**	**Saturated**	**Saturated**	**Saturated**	**Saturated**	**Saturated**
Formation:			**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Wilcox Clay**	**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Wilcox Clay**	**Wilcox Clay**
Perchlorate (6850)													
PERCHLORATE	ug/kg	7200	<2.46 U	2110	3290	2330	101	<2.44 U	27.2	26.7	152	672	2180
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/kg	11000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
1,1,1-TRICHLOROETHANE	ug/kg	20000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
1,1,2,2-TETRACHLOROETHANE	ug/kg	1400	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
1,1,2-TRICHLOROETHANE	ug/kg	500	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
1,1-DICHLOROETHANE	ug/kg	1000000	<2.5 U	<2.28 U	<2.42 U	<2.66 U	<2.7 U	<2.64 U	<2.56 U	<2.56 U	<2.5 U	<2.38 U	<2.5 U
1,1-DICHLOROETHENE	ug/kg	700	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
1,1-DICHLOROPROPENE	ug/kg	290	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
1,2,3-TRICHLOROBENZENE	ug/kg	31000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
1,2,3-TRICHLOROPROPANE	ug/kg	4.1	<2.5 U	<2.28 U	<2.42 U	<2.66 U	<2.7 U	<2.64 U	<2.56 U	<2.56 U	<2.5 U	<2.38 U	<2.5 U
1,2,4-TRICHLOROBENZENE	ug/kg	7000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
1,2,4-TRIMETHYLBENZENE	ug/kg	510000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/kg	20	<5 U	<4.56 U	<4.86 U	<5.34 U	<5.38 U	<5.3 U	<5.1 U	<5.12 U	<5 U	<4.76 U	<5.02 U
1,2-DIBROMOETHANE	ug/kg	5	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
1,2-DICHLOROBENZENE	ug/kg	60000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
1,2-DICHLOROETHANE	ug/kg	500	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
1,2-DICHLOROPROPANE	ug/kg	500	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
1,3,5-TRIMETHYLBENZENE	ug/kg	510000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
1,3-DICHLOROBENZENE	ug/kg	310000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
1,3-DICHLOROPROPANE	ug/kg	2900	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
1,4-DICHLOROBENZENE	ug/kg	7500	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
2,2-DICHLOROPROPANE	ug/kg	4200	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
2-BUTANONE	ug/kg	6100000	<6.26 U	<5.7 U	<6.08 U	<6.68 U	<6.72 U	<6.62 U	<6.38 U	<6.4 U	<6.24 U	<5.94 U	<6.28 U
2-CHLOROTOLUENE	ug/kg	200000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
2-HEXANONE	ug/kg	610000	<6.26 U	<5.7 U	<6.08 U	<6.68 U	<6.72 U	<6.62 U	<6.38 U	<6.4 U	<6.24 U	<5.94 U	<6.28 U
4-CHLOROTOLUENE	ug/kg	200000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
4-METHYL-2-PENTANONE	ug/kg	820000	<6.26 U	<5.7 U	<6.08 U	<6.68 U	<6.72 U	<6.62 U	<6.38 U	<6.4 U	<6.24 U	<5.94 U	<6.28 U
ACETONE	ug/kg	920000	<12.5 U	<11.4 U	<12.1 U	<13.3 U	<13.5 U	7.38 J	<12.8 U	<12.8 U	<12.5 U	<11.9 U	<12.5 U
BENZENE	ug/kg	500	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
BROMOBENZENE	ug/kg	200000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
BROMOCHLOROMETHANE	ug/kg	410000	<2.5 U	<2.28 U	<2.42 U	<2.66 U	<2.7 U	<2.64 U	<2.56 U	<2.56 U	<2.5 U	<2.38 U	<2.5 U
BROMODICHLOROMETHANE	ug/kg	460	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
BROMOFORM	ug/kg	3600	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
BROMOMETHANE	ug/kg	14000	<2.5 U	<2.28 U	<2.42 U	<2.66 U	<2.7 U	<2.64 U	<2.56 U	<2.56 U	<2.5 U	<2.38 U	<2.5 U
CARBON DISULFIDE	ug/kg	1000000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
CARBON TETRACHLORIDE	ug/kg	500	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
CHLOROBENZENE	ug/kg	10000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
CHLOROETHANE	ug/kg	4100000	<2.5 U	<2.28 U	<2.42 U	<2.66 U	<2.7 U	<2.64 U	<2.56 U	<2.56 U	<2.5 U	<2.38 U	<2.5 U
CHLOROFORM	ug/kg	100000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
CHLOROMETHANE	ug/kg	22000	<5 U	<4.56 U	<4.86 U	<5.34 U	<5.38 U	<5.3 U	<5.1 U	<5.12 U	<5 U	<4.76 U	<5.02 U
CIS-1,2-DICHLOROETHENE	ug/kg	7000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
CIS-1,3-DICHLOROPROPENE	ug/kg	530	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
DIBROMOCHLOROMETHANE	ug/kg	3400	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
DIBROMOMETHANE	ug/kg	38000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
DICHLORODIFLUOROMETHANE	ug/kg	2000000	<2.5 U	<2.28 U	<2.42 U	<2.66 U	<2.7 U	<2.64 U	<2.56 U	<2.56 U	<2.5 U	<2.38 U	<2.5 U

Table 3-1: LHAAP-18/24 DPT Soil Analytical Results - February/March 2016

Sample ID: / Sample Date:	Units	MSC	18DPT03 (5-5.5) 260216 2/26/2016	18DPT03 (10-10.5) 260216 2/26/2016	18DPT03 (14.5-15) 260216 2/26/2016	18DPT03 (17.5-18) 260216 2/26/2016	18DPT04 (5-5.5) 240216 2/24/2016	18DPT04 (15-15.5) 240216 2/24/2016	18DPT04 (20-21) 240216 2/24/2016	18DPT04 (20-21) 240216FD 2/24/2016	18DPT04 (25-25.5) 240216 2/24/2016	18DPT04 (29-30) 240216 2/24/2016	18DPT04 (34-34.5) 240216 2/24/2016
ETHYLBENZENE	ug/kg	70000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
HEXACHLOROBUTADIENE	ug/kg	2000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
ISOPROPYLBENZENE	ug/kg	1000000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
M,P-XYLENE	ug/kg	1000000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
METHYLENE CHLORIDE	ug/kg	500	<2.5 U	<2.28 U	<2.42 U	<2.66 U	<2.7 U	<2.64 U	<2.56 U	<2.56 U	<2.5 U	<2.38 U	<2.5 U
NAPHTHALENE	ug/kg	200000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
N-BUTYLBENZENE	ug/kg	410000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
N-PROPYLBENZENE	ug/kg	410000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
O-XYLENE	ug/kg	1000000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
P-ISOPROPYLTOLUENE	ug/kg	1000000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
SEC-BUTYLBENZENE	ug/kg	410000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
STYRENE	ug/kg	10000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
TERT-BUTYLBENZENE	ug/kg	410000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
TETRACHLOROETHENE	ug/kg	500	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
TOLUENE	ug/kg	100000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
TRANS-1,2-DICHLOROETHENE	ug/kg	10000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
TRANS-1,3-DICHLOROPROPENE	ug/kg	2900	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
TRICHLOROETHENE	ug/kg	500	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
TRICHLOROFLUOROMETHANE	ug/kg	3100000	<2.5 U	<2.28 U	<2.42 U	<2.66 U	<2.7 U	<2.64 U	<2.56 U	<2.56 U	<2.5 U	<2.38 U	<2.5 U
VINYL CHLORIDE	ug/kg	200	<2.5 U	<2.28 U	<2.42 U	<2.66 U	<2.7 U	<2.64 U	<2.56 U	<2.56 U	<2.5 U	<2.38 U	<2.5 U

Blue Highlighting Indicates concentrations above the MSC

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MSC - Medium-Specific Concentrations

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

ug/kg - micrograms per kilogram

Table 3-1: LHAAP-18/24 DPT Soil Analytical Results - February/March 2016

Sample ID: / Sample Date:	Units	MSC	18DPT04 (36.5-37) 240216 2/24/2016	18DPT05 (4.5-5) 250216 2/25/2016	18DPT05 (10-11) 250216 2/25/2016	18DPT05 (15-15.5) 250216 2/25/2016	18DPT05 (20-20.5) 250216 2/25/2016	18DPT06 (5-5.5) 020316 3/2/2016	18DPT06 (5-5.5) 020316FD 3/2/2016	18DPT06 (15-15.5) 020316 3/2/2016	18DPT06 (20-20.5) 020316 3/2/2016	18DPT06 (27.5-28) 020316 3/2/2016	18DPT06 (38.5-39) 020316 3/2/2016
Sample Saturation:			**Saturated**	**Unsaturated**	**Unsaturated**	**Saturated**	**Unsaturated**	**Unsaturated**	**Unsaturated**	**Saturated**	**Saturated**	**Saturated**	**Unsaturated**
Formation:			**Wilcox Sand**	**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Wilcox Clay**	**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Wilcox Clay**
Perchlorate (6850)													
PERCHLORATE	ug/kg	7200	3200	<2.34 U	<2.22 U	7.13	1400	<2.42 U	<2.46 U	<2.26 U	3.35 J	1530	2690
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/kg	11000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
1,1,1-TRICHLOROETHANE	ug/kg	20000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
1,1,2,2-TETRACHLOROETHANE	ug/kg	1400	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
1,1,2-TRICHLOROETHANE	ug/kg	500	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
1,1-DICHLOROETHANE	ug/kg	1000000	<2.42 U	<2.52 U	<2.4 U	<2.52 U	<2.44 U	<2.68 U	<2.4 U	<2.3 U	<2.56 U	<2.6 U	<2.62 U
1,1-DICHLOROETHENE	ug/kg	700	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
1,1-DICHLOROPROPENE	ug/kg	290	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
1,2,3-TRICHLOROBENZENE	ug/kg	31000	<1.21 U	<1.26 UJ	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
1,2,3-TRICHLOROPROPANE	ug/kg	4.1	<2.42 U	<2.52 U	<2.4 U	<2.52 U	<2.44 U	<2.68 U	<2.4 U	<2.3 U	<2.56 U	<2.6 U	<2.62 U
1,2,4-TRICHLOROBENZENE	ug/kg	7000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
1,2,4-TRIMETHYLBENZENE	ug/kg	510000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/kg	20	<4.84 U	<5.04 UJ	<4.78 U	<5.04 U	<4.9 U	<5.36 U	<4.78 U	<4.6 U	<5.12 U	<5.18 U	<5.24 U
1,2-DIBROMOETHANE	ug/kg	5	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
1,2-DICHLOROBENZENE	ug/kg	60000	<1.21 U	<1.26 UJ	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
1,2-DICHLOROETHANE	ug/kg	500	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	1.07 J	<1.31 U
1,2-DICHLOROPROPANE	ug/kg	500	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
1,3,5-TRIMETHYLBENZENE	ug/kg	510000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
1,3-DICHLOROBENZENE	ug/kg	310000	<1.21 U	<1.26 UJ	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
1,3-DICHLOROPROPANE	ug/kg	2900	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
1,4-DICHLOROBENZENE	ug/kg	7500	<1.21 U	<1.26 UJ	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
2,2-DICHLOROPROPANE	ug/kg	4200	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
2-BUTANONE	ug/kg	6100000	<6.04 U	<6.3 U	<5.98 U	<6.3 U	<6.12 U	<6.7 U	<5.98 U	<5.74 U	<6.4 U	<6.48 U	<6.54 U
2-CHLOROTOLUENE	ug/kg	200000	<1.21 U	<1.26 UJ	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
2-HEXANONE	ug/kg	610000	<6.04 U	<6.3 U	<5.98 U	<6.3 U	<6.12 U	<6.7 U	<5.98 U	<5.74 U	<6.4 U	<6.48 U	<6.54 U
4-CHLOROTOLUENE	ug/kg	200000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
4-METHYL-2-PENTANONE	ug/kg	820000	<6.04 U	<6.3 U	<5.98 U	<6.3 U	<6.12 U	<6.7 U	<5.98 U	<5.74 U	<6.4 U	<6.48 U	<6.54 U
ACETONE	ug/kg	920000	<12.1 U	<12.6 U	<12 U	<12.6 U	<12.2 U	<13.4 U	<12 U	<11.5 U	<12.8 U	<13 U	<13.1 U
BENZENE	ug/kg	500	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
BROMOBENZENE	ug/kg	200000	<1.21 U	<1.26 UJ	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
BROMOCHLOROMETHANE	ug/kg	410000	<2.42 U	<2.52 U	<2.4 U	<2.52 U	<2.44 U	<2.68 U	<2.4 U	<2.3 U	<2.56 U	<2.6 U	<2.62 U
BROMODICHLOROMETHANE	ug/kg	460	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
BROMOFORM	ug/kg	3600	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
BROMOMETHANE	ug/kg	14000	<2.42 U	<2.52 U	<2.4 U	<2.52 U	<2.44 U	<2.68 U	<2.4 U	<2.3 U	<2.56 U	<2.6 U	<2.62 U
CARBON DISULFIDE	ug/kg	1000000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
CARBON TETRACHLORIDE	ug/kg	500	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
CHLOROBENZENE	ug/kg	10000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
CHLOROETHANE	ug/kg	4100000	<2.42 U	<2.52 U	<2.4 U	<2.52 U	<2.44 U	<2.68 U	<2.4 U	<2.3 U	<2.56 U	<2.6 U	<2.62 U
CHLOROFORM	ug/kg	100000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
CHLOROMETHANE	ug/kg	22000	<4.84 U	<5.04 U	<4.78 U	<5.04 U	<4.9 U	<5.36 U	<4.78 U	<4.6 U	<5.12 U	<5.18 U	<5.24 U
CIS-1,2-DICHLOROETHENE	ug/kg	7000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
CIS-1,3-DICHLOROPROPENE	ug/kg	530	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
DIBROMOCHLOROMETHANE	ug/kg	3400	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
DIBROMOMETHANE	ug/kg	38000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
DICHLORODIFLUOROMETHANE	ug/kg	2000000	<2.42 U	<2.52 U	<2.4 U	<2.52 U	<2.44 U	<2.68 U	<2.4 U	<2.3 U	<2.56 U	<2.6 U	<2.62 U

Table 3-1: LHAAP-18/24 DPT Soil Analytical Results - February/March 2016

Sample ID: / Sample Date:	Units	MSC	18DPT04 (36.5-37) 240216 2/24/2016	18DPT05 (4.5-5) 250216 2/25/2016	18DPT05 (10-11) 250216 2/25/2016	18DPT05 (15-15.5) 250216 2/25/2016	18DPT05 (20-20.5) 250216 2/25/2016	18DPT06 (5-5.5) 020316 3/2/2016	18DPT06 (5-5.5) 020316FD 3/2/2016	18DPT06 (15-15.5) 020316 3/2/2016	18DPT06 (20-20.5) 020316 3/2/2016	18DPT06 (27.5-28) 020316 3/2/2016	18DPT06 (38.5-39) 020316 3/2/2016
ETHYLBENZENE	ug/kg	70000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
HEXACHLOROBUTADIENE	ug/kg	2000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
ISOPROPYLBENZENE	ug/kg	1000000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
M,P-XYLENE	ug/kg	1000000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
METHYLENE CHLORIDE	ug/kg	500	<2.42 U	<2.52 U	<2.4 U	<2.52 U	<2.44 U	<2.68 U	<2.4 U	<2.3 U	<2.56 U	<2.6 U	<2.62 U
NAPHTHALENE	ug/kg	200000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
N-BUTYLBENZENE	ug/kg	410000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
N-PROPYLBENZENE	ug/kg	410000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
O-XYLENE	ug/kg	1000000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
P-ISOPROPYLTOLUENE	ug/kg	1000000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
SEC-BUTYLBENZENE	ug/kg	410000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
STYRENE	ug/kg	10000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
TERT-BUTYLBENZENE	ug/kg	410000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
TETRACHLOROETHENE	ug/kg	500	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
TOLUENE	ug/kg	100000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
TRANS-1,2-DICHLOROETHENE	ug/kg	10000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
TRANS-1,3-DICHLOROPROPENE	ug/kg	2900	<1.21 U	<1.26 UJ	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
TRICHLOROETHENE	ug/kg	500	3.2 J	<1.26 U	<1.2 U	<1.26 U	1.17 J	<1.34 U	<1.2 U	<1.15 U	<1.28 U	57.1	0.747 J
TRICHLOROFLUOROMETHANE	ug/kg	3100000	<2.42 U	<2.52 U	<2.4 U	<2.52 U	<2.44 U	<2.68 U	<2.4 U	<2.3 U	<2.56 U	<2.6 U	<2.62 U
VINYL CHLORIDE	ug/kg	200	<2.42 U	<2.52 U	<2.4 U	<2.52 U	<2.44 U	<2.68 U	<2.4 U	<2.3 U	<2.56 U	<2.6 U	<2.62 U

Blue Highlighting Indicates concentrations above the MSC

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MSC - Medium-Specific Concentrations

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

ug/kg - micrograms per kilogram

Table 3-1: LHAAP-18/24 DPT Soil Analytical Results - February/March 2016

Sample ID: / Sample Date:	Units	MSC	18DPT07 (5-5.5) 020316 3/2/2016	18DPT07 (15-15.5) 020316 3/2/2016	18DPT07 (27-27.5) 030316 3/3/2016	18DPT07 (33.5-34.5) 030316 3/3/2016	18DPT07 (38-39) 030316 3/3/2016	18DPT07 (38-39) 030316FD 3/3/2016	18DPT08 (5-5.5) 030316 3/3/2016	18DPT08 (10-10.5) 030316 3/3/2016	18DPT08 (15-15.5) 030316 3/3/2016	18DPT08 (21-21.5) 030316 3/3/2016	18DPT08 (26-26.5) 030316 3/3/2016
Sample Saturation:			**Unsaturated**	**Unsaturated**	**Saturated**	**Saturated**	**Unsaturated**	**Unsaturated**	**Unsaturated**	**Unsaturated**	**Unsaturated**	**Saturated**	**Saturated**
Formation:			**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Wilcox Clay**	**Wilcox Clay**	**Shallow Zone**	**Shallow Zone**	**Wilcox Clay**	**Wilcox Sand**	**Wilcox Sand**
Perchlorate (6850)													
PERCHLORATE	ug/kg	7200	<2.38 U	2.47 J	1200	2180	697	622	<2.28 U	<2.32 U	<2.34 U	18.9	31.3
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/kg	11000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
1,1,1-TRICHLOROETHANE	ug/kg	20000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
1,1,2,2-TETRACHLOROETHANE	ug/kg	1400	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
1,1,2-TRICHLOROETHANE	ug/kg	500	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
1,1-DICHLOROETHANE	ug/kg	1000000	<2.46 U	<2.5 U	<2.3 U	<2.22 U	<2.56 U	<2.86 U	<2.6 U	<2.48 U	<2.58 U	<2.62 U	<2.5 U
1,1-DICHLOROETHENE	ug/kg	700	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
1,1-DICHLOROPROPENE	ug/kg	290	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
1,2,3-TRICHLOROBENZENE	ug/kg	31000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
1,2,3-TRICHLOROPROPANE	ug/kg	4.1	<2.46 U	<2.5 U	<2.3 U	<2.22 U	<2.56 U	<2.86 U	<2.6 U	<2.48 U	<2.58 U	<2.62 U	<2.5 U
1,2,4-TRICHLOROBENZENE	ug/kg	7000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
1,2,4-TRIMETHYLBENZENE	ug/kg	510000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/kg	20	<4.94 U	<4.98 U	<4.6 U	<4.44 U	<5.12 U	<5.7 U	<5.2 U	<4.94 U	<5.18 U	<5.26 U	<5 U
1,2-DIBROMOETHANE	ug/kg	5	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
1,2-DICHLOROBENZENE	ug/kg	60000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
1,2-DICHLOROETHANE	ug/kg	500	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
1,2-DICHLOROPROPANE	ug/kg	500	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
1,3,5-TRIMETHYLBENZENE	ug/kg	510000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
1,3-DICHLOROBENZENE	ug/kg	310000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
1,3-DICHLOROPROPANE	ug/kg	2900	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
1,4-DICHLOROBENZENE	ug/kg	7500	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
2,2-DICHLOROPROPANE	ug/kg	4200	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
2-BUTANONE	ug/kg	6100000	<6.18 U	<6.24 U	<5.74 U	<5.56 U	<6.4 U	<7.12 U	<6.5 U	<6.18 U	<6.46 U	<6.58 U	<6.24 U
2-CHLOROTOLUENE	ug/kg	200000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
2-HEXANONE	ug/kg	610000	<6.18 U	<6.24 U	<5.74 U	<5.56 U	<6.4 U	<7.12 U	<6.5 U	<6.18 U	<6.46 U	<6.58 U	<6.24 U
4-CHLOROTOLUENE	ug/kg	200000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
4-METHYL-2-PENTANONE	ug/kg	820000	<6.18 U	<6.24 U	<5.74 U	<5.56 U	<6.4 U	<7.12 U	<6.5 U	<6.18 U	<6.46 U	<6.58 U	<6.24 U
ACETONE	ug/kg	920000	20.8 J	<12.5 U	<11.5 U	<11.1 U	15.3 J	16 J	<13 U	<12.4 U	<12.9 U	<13.1 U	6.26 J
BENZENE	ug/kg	500	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
BROMOBENZENE	ug/kg	200000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
BROMOCHLOROMETHANE	ug/kg	410000	<2.46 U	<2.5 U	<2.3 U	<2.22 U	<2.56 U	<2.86 U	<2.6 U	<2.48 U	<2.58 U	<2.62 U	<2.5 U
BROMODICHLOROMETHANE	ug/kg	460	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
BROMOFORM	ug/kg	3600	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
BROMOMETHANE	ug/kg	14000	<2.46 U	<2.5 U	<2.3 U	<2.22 U	<2.56 U	<2.86 U	<2.6 U	<2.48 U	<2.58 U	<2.62 U	<2.5 U
CARBON DISULFIDE	ug/kg	1000000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
CARBON TETRACHLORIDE	ug/kg	500	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
CHLOROBENZENE	ug/kg	10000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
CHLOROETHANE	ug/kg	4100000	<2.46 U	<2.5 U	<2.3 U	<2.22 U	<2.56 U	<2.86 U	<2.6 U	<2.48 U	<2.58 U	<2.62 U	<2.5 U
CHLOROFORM	ug/kg	100000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
CHLOROMETHANE	ug/kg	22000	<4.94 U	<4.98 U	<4.6 U	<4.44 U	<5.12 U	<5.7 U	<5.2 U	<4.94 U	<5.18 U	<5.26 U	<5 U
CIS-1,2-DICHLOROETHENE	ug/kg	7000	<1.23 U	1.36 J	2.8 J	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
CIS-1,3-DICHLOROPROPENE	ug/kg	530	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
DIBROMOCHLOROMETHANE	ug/kg	3400	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
DIBROMOMETHANE	ug/kg	38000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
DICHLORODIFLUOROMETHANE	ug/kg	2000000	<2.46 U	<2.5 U	<2.3 U	<2.22 U	<2.56 U	<2.86 U	<2.6 U	<2.48 U	<2.58 U	<2.62 U	<2.5 U

Table 3-1: LHAAP-18/24 DPT Soil Analytical Results - February/March 2016

Sample ID: / Sample Date:	Units	MSC	18DPT07 (5-5.5) 020316 3/2/2016	18DPT07 (15-15.5) 020316 3/2/2016	18DPT07 (27-27.5) 030316 3/3/2016	18DPT07 (33.5-34.5) 030316 3/3/2016	18DPT07 (38-39) 030316 3/3/2016	18DPT07 (38-39) 030316FD 3/3/2016	18DPT08 (5-5.5) 030316 3/3/2016	18DPT08 (10-10.5) 030316 3/3/2016	18DPT08 (15-15.5) 030316 3/3/2016	18DPT08 (21-21.5) 030316 3/3/2016	18DPT08 (26-26.5) 030316 3/3/2016
ETHYLBENZENE	ug/kg	70000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
HEXACHLOROBUTADIENE	ug/kg	2000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
ISOPROPYLBENZENE	ug/kg	1000000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
M,P-XYLENE	ug/kg	1000000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
METHYLENE CHLORIDE	ug/kg	500	<2.46 U	<2.5 U	<2.3 U	<2.22 U	<2.56 U	<2.86 U	<2.6 U	<2.48 U	<2.58 U	<2.62 U	<2.5 U
NAPHTHALENE	ug/kg	200000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
N-BUTYLBENZENE	ug/kg	410000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
N-PROPYLBENZENE	ug/kg	410000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
O-XYLENE	ug/kg	1000000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
P-ISOPROPYLTOLUENE	ug/kg	1000000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
SEC-BUTYLBENZENE	ug/kg	410000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
STYRENE	ug/kg	10000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
TERT-BUTYLBENZENE	ug/kg	410000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
TETRACHLOROETHENE	ug/kg	500	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
TOLUENE	ug/kg	100000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
TRANS-1,2-DICHLOROETHENE	ug/kg	10000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
TRANS-1,3-DICHLOROPROPENE	ug/kg	2900	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
TRICHLOROETHENE	ug/kg	500	<1.23 U	2.73 J	3 J	5.03 J	20.9	17.4	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
TRICHLOROFLUOROMETHANE	ug/kg	3100000	<2.46 U	<2.5 U	<2.3 U	<2.22 U	<2.56 U	<2.86 U	<2.6 U	<2.48 U	<2.58 U	<2.62 U	<2.5 U
VINYL CHLORIDE	ug/kg	200	<2.46 U	<2.5 U	<2.3 U	<2.22 U	<2.56 U	<2.86 U	<2.6 U	<2.48 U	<2.58 U	<2.62 U	<2.5 U

Blue Highlighting Indicates concentrations above the MSC

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MSC - Medium-Specific Concentrations

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

ug/kg - micrograms per kilogram

Table 3-1: LHAAP-18/24 DPT Soil Analytical Results - February/March 2016

Sample ID: / Sample Date:	Units	MSC	18DPT08 (35-35.5) 030316 3/3/2016	18DPT09 (5-5.5) 040316 3/4/2016	18DPT09 (11-11.5) 040316 3/4/2016	18DPT09 (13.5-14) 040316 3/4/2016	18DPT10 (5-5.5) 040316 3/4/2016	18DPT10 (15.5-16) 040316 3/4/2016	18DPT10 (23.5-24) 040316 3/4/2016	18DPT11 (5-5.5) 040316 3/4/2016	18DPT11 (15-15.5) 040316 3/4/2016	18DPT11 (20-20.5) 070316 3/7/2016	18DPT11 (25-25.5) 070316 3/7/2016
Sample Saturation:			**Saturated**	**Unsaturated**	**Unsaturated**	**Unsaturated**	**Unsaturated**	**Unsaturated**	**Unsaturated**	**Unsaturated**	**Unsaturated**	**Unsaturated**	**Unsaturated**
Formation:			**Wilcox Sand**	**Shallow Zone**	**Shallow Zone**	**Wilcox Clay**	**Shallow Zone**	**Wilcox Clay**	**Wilcox Sand**	**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Wilcox Clay**
Perchlorate (6850)													
PERCHLORATE	ug/kg	7200	4.62 J	<2.84 U	<2.26 U	<2.44 U	<2.6 U	175	15.9	<2.46 U	379	3940	424
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/kg	11000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
1,1,1-TRICHLOROETHANE	ug/kg	20000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
1,1,2,2-TETRACHLOROETHANE	ug/kg	1400	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
1,1,2-TRICHLOROETHANE	ug/kg	500	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
1,1-DICHLOROETHANE	ug/kg	1000000	<2.48 U	<3.14 U	<2.5 U	<2.72 U	<2.62 U	<2.3 U	<2.28 U	<2.54 U	<2.66 U	<2.5 U	<2.74 U
1,1-DICHLOROETHENE	ug/kg	700	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
1,1-DICHLOROPROPENE	ug/kg	290	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
1,2,3-TRICHLOROBENZENE	ug/kg	31000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
1,2,3-TRICHLOROPROPANE	ug/kg	4.1	<2.48 U	<3.14 U	<2.5 U	<2.72 U	<2.62 U	<2.3 U	<2.28 U	<2.54 U	<2.66 U	<2.5 U	<2.74 U
1,2,4-TRICHLOROBENZENE	ug/kg	7000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
1,2,4-TRIMETHYLBENZENE	ug/kg	510000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/kg	20	<4.96 U	<6.28 U	<5 U	<5.42 U	<5.24 U	<4.58 U	<4.58 U	<5.08 U	<5.34 U	<5 U	<5.5 U
1,2-DIBROMOETHANE	ug/kg	5	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
1,2-DICHLOROBENZENE	ug/kg	60000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
1,2-DICHLOROETHANE	ug/kg	500	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
1,2-DICHLOROPROPANE	ug/kg	500	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
1,3,5-TRIMETHYLBENZENE	ug/kg	510000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
1,3-DICHLOROBENZENE	ug/kg	310000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
1,3-DICHLOROPROPANE	ug/kg	2900	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
1,4-DICHLOROBENZENE	ug/kg	7500	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
2,2-DICHLOROPROPANE	ug/kg	4200	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
2-BUTANONE	ug/kg	6100000	<6.2 U	<7.86 U	<6.24 U	<6.78 U	<6.56 U	<5.74 U	<5.72 U	<6.36 U	<6.66 U	<6.26 U	<6.88 U
2-CHLOROTOLUENE	ug/kg	200000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
2-HEXANONE	ug/kg	610000	<6.2 U	<7.86 U	<6.24 U	<6.78 U	<6.56 U	<5.74 U	<5.72 U	<6.36 U	<6.66 U	<6.26 U	<6.88 U
4-CHLOROTOLUENE	ug/kg	200000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
4-METHYL-2-PENTANONE	ug/kg	820000	<6.2 U	<7.86 U	<6.24 U	<6.78 U	<6.56 U	<5.74 U	<5.72 U	<6.36 U	<6.66 U	<6.26 U	<6.88 U
ACETONE	ug/kg	920000	<12.4 U	<15.7 U	<12.5 U	<13.6 U	<13.1 U	<11.5 U	<11.4 U	<12.7 U	<13.3 U	<12.5 U	<13.7 U
BENZENE	ug/kg	500	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
BROMOBENZENE	ug/kg	200000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
BROMOCHLOROMETHANE	ug/kg	410000	<2.48 U	<3.14 U	<2.5 U	<2.72 U	<2.62 U	<2.3 U	<2.28 U	<2.54 U	<2.66 U	<2.5 U	<2.74 U
BROMODICHLOROMETHANE	ug/kg	460	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
BROMOFORM	ug/kg	3600	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
BROMOMETHANE	ug/kg	14000	<2.48 U	<3.14 U	<2.5 U	<2.72 U	<2.62 U	<2.3 U	<2.28 U	<2.54 U	<2.66 U	<2.5 U	<2.74 U
CARBON DISULFIDE	ug/kg	1000000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
CARBON TETRACHLORIDE	ug/kg	500	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
CHLOROBENZENE	ug/kg	10000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
CHLOROETHANE	ug/kg	4100000	<2.48 U	<3.14 U	<2.5 U	<2.72 U	<2.62 U	<2.3 U	<2.28 U	<2.54 U	<2.66 U	<2.5 U	<2.74 U
CHLOROFORM	ug/kg	100000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
CHLOROMETHANE	ug/kg	22000	<4.96 U	<6.28 U	<5 U	<5.42 U	<5.24 U	<4.58 U	<4.58 U	<5.08 U	<5.34 U	<5 U	<5.5 U
CIS-1,2-DICHLOROETHENE	ug/kg	7000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
CIS-1,3-DICHLOROPROPENE	ug/kg	530	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
DIBROMOCHLOROMETHANE	ug/kg	3400	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
DIBROMOMETHANE	ug/kg	38000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
DICHLORODIFLUOROMETHANE	ug/kg	2000000	<2.48 U	<3.14 U	<2.5 U	<2.72 U	<2.62 U	<2.3 U	<2.28 U	<2.54 U	<2.66 U	<2.5 U	<2.74 U

Table 3-1: LHAAP-18/24 DPT Soil Analytical Results - February/March 2016

Sample ID: / Sample Date:	Units	MSC	18DPT08 (35-35.5) 030316 3/3/2016	18DPT09 (5-5.5) 040316 3/4/2016	18DPT09 (11-11.5) 040316 3/4/2016	18DPT09 (13.5-14) 040316 3/4/2016	18DPT10 (5-5.5) 040316 3/4/2016	18DPT10 (15.5-16) 040316 3/4/2016	18DPT10 (23.5-24) 040316 3/4/2016	18DPT11 (5-5.5) 040316 3/4/2016	18DPT11 (15-15.5) 040316 3/4/2016	18DPT11 (20-20.5) 070316 3/7/2016	18DPT11 (25-25.5) 070316 3/7/2016
ETHYLBENZENE	ug/kg	70000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
HEXACHLOROBUTADIENE	ug/kg	2000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
ISOPROPYLBENZENE	ug/kg	1000000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
M,P-XYLENE	ug/kg	1000000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
METHYLENE CHLORIDE	ug/kg	500	<2.48 U	<3.14 U	<2.5 U	<2.72 U	<2.62 U	<2.3 U	<2.28 U	<2.54 U	<2.66 U	<2.5 U	<2.74 U
NAPHTHALENE	ug/kg	200000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
N-BUTYLBENZENE	ug/kg	410000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
N-PROPYLBENZENE	ug/kg	410000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
O-XYLENE	ug/kg	1000000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
P-ISOPROPYLTOLUENE	ug/kg	1000000	<1.24 U	1.47 J	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
SEC-BUTYLBENZENE	ug/kg	410000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
STYRENE	ug/kg	10000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
TERT-BUTYLBENZENE	ug/kg	410000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
TETRACHLOROETHENE	ug/kg	500	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
TOLUENE	ug/kg	100000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
TRANS-1,2-DICHLOROETHENE	ug/kg	10000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
TRANS-1,3-DICHLOROPROPENE	ug/kg	2900	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
TRICHLOROETHENE	ug/kg	500	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
TRICHLOROFLUOROMETHANE	ug/kg	3100000	<2.48 U	<3.14 U	<2.5 U	<2.72 U	<2.62 U	<2.3 U	<2.28 U	<2.54 U	<2.66 U	<2.5 U	<2.74 U
VINYL CHLORIDE	ug/kg	200	<2.48 U	<3.14 U	<2.5 U	<2.72 U	<2.62 U	<2.3 U	<2.28 U	<2.54 U	<2.66 U	<2.5 U	<2.74 U

Blue Highlighting Indicates concentrations above the MSC

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MSC - Medium-Specific Concentrations

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

ug/kg - micrograms per kilogram

Table 3-1: LHAAP-18/24 DPT Soil Analytical Results - February/March 2016

Sample ID: / Sample Date:	Units	MSC	18DPT11 (29-29.5) 070316 3/7/2016	18DPT12 (5-5.5) 070316 3/7/2016	18DPT12 (8.5-9) 070316 3/7/2016	18DPT12 (12-12.5) 070316 3/7/2016	18DPT12 (18-18.5) 070316 3/7/2016	18DPT13 (5-5.5) 070316 3/7/2016	18DPT13 (12-12.5) 070316 3/7/2016	18DPT13 (17-17.5) 070316 3/7/2016	18DPT14 (5-5.5) 140316 3/14/2016	18DPT14 (10-10.5) 140316 3/14/2016	18DPT14 (10-10.5) 140316FD 3/14/2016
Sample Saturation:			**Unsaturated**	**Unsaturated**	**Unsaturated**	**Unsaturated**	**Unsaturated**	**Unsaturated**	**Saturated**	**Unsaturated**	**Unsaturated**	**Unsaturated**	**Unsaturated**
Formation:			**Wilcox Clay**	**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Wilcox Clay**	**Shallow Zone**	**Shallow Zone**	**Wilcox Clay**	**Shallow Zone**	**Shallow Zone**	**Shallow Zone**
Perchlorate (6850)													
PERCHLORATE	ug/kg	7200	3370	5.53	1.99 J	7090	15900	<2.3 U	<2.44 U	<2.56 U	<2.38 U	<2.16 U	<2.2 U
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/kg	11000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
1,1,1-TRICHLOROETHANE	ug/kg	20000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
1,1,2,2-TETRACHLOROETHANE	ug/kg	1400	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
1,1,2-TRICHLOROETHANE	ug/kg	500	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
1,1-DICHLOROETHANE	ug/kg	1000000	<2.6 U	<2.38 U	<2.62 U	<2.7 U	<2.66 U	<2.5 U	<2.26 U	<2.82 U	<2.56 U	<2.32 U	<2.36 U
1,1-DICHLOROETHENE	ug/kg	700	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
1,1-DICHLOROPROPENE	ug/kg	290	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
1,2,3-TRICHLOROBENZENE	ug/kg	31000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
1,2,3-TRICHLOROPROPANE	ug/kg	4.1	<2.6 U	<2.38 U	<2.62 U	<2.7 U	<2.66 U	<2.5 U	<2.26 U	<2.82 U	<2.56 U	<2.32 U	<2.36 U
1,2,4-TRICHLOROBENZENE	ug/kg	7000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
1,2,4-TRIMETHYLBENZENE	ug/kg	510000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	0.941 J
1,2-DIBROMO-3-CHLOROPROPANE	ug/kg	20	<5.22 U	<4.74 U	<5.26 U	<5.4 U	<5.34 U	<5 U	<4.52 U	<5.62 U	<5.14 U	<4.66 U	<4.7 U
1,2-DIBROMOETHANE	ug/kg	5	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
1,2-DICHLOROBENZENE	ug/kg	60000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
1,2-DICHLOROETHANE	ug/kg	500	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
1,2-DICHLOROPROPANE	ug/kg	500	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
1,3,5-TRIMETHYLBENZENE	ug/kg	510000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
1,3-DICHLOROBENZENE	ug/kg	310000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
1,3-DICHLOROPROPANE	ug/kg	2900	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
1,4-DICHLOROBENZENE	ug/kg	7500	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
2,2-DICHLOROPROPANE	ug/kg	4200	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
2-BUTANONE	ug/kg	6100000	<6.52 U	<5.94 U	<6.56 U	<6.76 U	<6.66 U	<6.24 U	<5.64 U	<7.04 U	<6.42 U	<5.82 U	<5.88 U
2-CHLOROTOLUENE	ug/kg	200000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
2-HEXANONE	ug/kg	610000	<6.52 U	<5.94 U	<6.56 U	<6.76 U	<6.66 U	<6.24 U	<5.64 U	<7.04 U	<6.42 U	<5.82 U	<5.88 U
4-CHLOROTOLUENE	ug/kg	200000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
4-METHYL-2-PENTANONE	ug/kg	820000	<6.52 U	<5.94 U	<6.56 U	<6.76 U	<6.66 U	<6.24 U	<5.64 U	<7.04 U	<6.42 U	<5.82 U	<5.88 U
ACETONE	ug/kg	920000	<13 U	<11.9 U	<13.1 U	<13.5 U	<13.3 U	<12.5 U	<11.3 U	<14.1 U	<12.8 U	<11.6 U	9.15 J
BENZENE	ug/kg	500	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
BROMOBENZENE	ug/kg	200000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
BROMOCHLOROMETHANE	ug/kg	410000	<2.6 U	<2.38 U	<2.62 U	<2.7 U	<2.66 U	<2.5 U	<2.26 U	<2.82 U	<2.56 U	<2.32 U	<2.36 U
BROMODICHLOROMETHANE	ug/kg	460	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
BROMOFORM	ug/kg	3600	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
BROMOMETHANE	ug/kg	14000	<2.6 U	<2.38 U	<2.62 U	<2.7 U	<2.66 U	<2.5 U	<2.26 U	<2.82 U	<2.56 U	<2.32 U	<2.36 U
CARBON DISULFIDE	ug/kg	1000000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
CARBON TETRACHLORIDE	ug/kg	500	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
CHLOROBENZENE	ug/kg	10000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
CHLOROETHANE	ug/kg	4100000	<2.6 U	<2.38 U	<2.62 U	<2.7 U	<2.66 U	<2.5 U	<2.26 U	<2.82 U	<2.56 U	<2.32 U	<2.36 U
CHLOROFORM	ug/kg	100000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
CHLOROMETHANE	ug/kg	22000	<5.22 U	<4.74 U	<5.26 U	<5.4 U	<5.34 U	<5 U	<4.52 U	<5.62 U	<5.14 UJ	<4.66 UJ	<4.7 UJ
CIS-1,2-DICHLOROETHENE	ug/kg	7000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
CIS-1,3-DICHLOROPROPENE	ug/kg	530	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
DIBROMOCHLOROMETHANE	ug/kg	3400	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
DIBROMOMETHANE	ug/kg	38000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
DICHLORODIFLUOROMETHANE	ug/kg	2000000	<2.6 U	<2.38 U	<2.62 U	<2.7 U	<2.66 U	<2.5 U	<2.26 U	<2.82 U	<2.56 U	<2.32 U	<2.36 U

Table 3-1: LHAAP-18/24 DPT Soil Analytical Results - February/March 2016

Sample ID: / Sample Date:	Units	MSC	18DPT11 (29-29.5) 070316 3/7/2016	18DPT12 (5-5.5) 070316 3/7/2016	18DPT12 (8.5-9) 070316 3/7/2016	18DPT12 (12-12.5) 070316 3/7/2016	18DPT12 (18-18.5) 070316 3/7/2016	18DPT13 (5-5.5) 070316 3/7/2016	18DPT13 (12-12.5) 070316 3/7/2016	18DPT13 (17-17.5) 070316 3/7/2016	18DPT14 (5-5.5) 140316 3/14/2016	18DPT14 (10-10.5) 140316 3/14/2016	18DPT14 (10-10.5) 140316FD 3/14/2016
ETHYLBENZENE	ug/kg	70000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
HEXACHLOROBUTADIENE	ug/kg	2000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
ISOPROPYLBENZENE	ug/kg	1000000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
M,P-XYLENE	ug/kg	1000000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
METHYLENE CHLORIDE	ug/kg	500	<2.6 U	<2.38 U	<2.62 U	<2.7 U	<2.66 U	<2.5 U	<2.26 U	<2.82 U	<2.56 U	<2.32 U	<2.36 U
NAPHTHALENE	ug/kg	200000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
N-BUTYLBENZENE	ug/kg	410000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
N-PROPYLBENZENE	ug/kg	410000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
O-XYLENE	ug/kg	1000000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
P-ISOPROPYLTOLUENE	ug/kg	1000000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
SEC-BUTYLBENZENE	ug/kg	410000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
STYRENE	ug/kg	10000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
TERT-BUTYLBENZENE	ug/kg	410000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
TETRACHLOROETHENE	ug/kg	500	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
TOLUENE	ug/kg	100000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
TRANS-1,2-DICHLOROETHENE	ug/kg	10000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
TRANS-1,3-DICHLOROPROPENE	ug/kg	2900	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
TRICHLOROETHENE	ug/kg	500	<1.3 U	<1.19 U	<1.31 U	6.14 J	50	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
TRICHLOROFLUOROMETHANE	ug/kg	3100000	<2.6 U	<2.38 U	<2.62 U	<2.7 U	<2.66 U	<2.5 U	<2.26 U	<2.82 U	<2.56 U	<2.32 U	<2.36 U
VINYL CHLORIDE	ug/kg	200	<2.6 U	<2.38 U	<2.62 U	<2.7 U	<2.66 U	<2.5 U	<2.26 U	<2.82 U	<2.56 U	<2.32 U	<2.36 U

Blue Highlighting Indicates concentrations above the MSC

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MSC - Medium-Specific Concentrations

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

ug/kg - micrograms per kilogram

Table 3-1: LHAAP-18/24 DPT Soil Analytical Results - February/March 2016

Sample ID: Sample Date:	Units	MSC	18DPT14 (17-17.5) 140316 3/14/2016	18DPT14 (23-23.5) 140316 3/14/2016	18DPT15 (5-5.5) 140316 3/14/2016	18DPT15 (12-12.5) 140316 3/14/2016	18DPT15 (21-21.5) 140316 3/14/2016	18DPT15 (23.5-24) 140316 3/14/2016	18DPT15 (26.5-27) 140316 3/14/2016	18DPT16 (5-5.5) 150316 3/15/2016	18DPT16 (15-15.5) 150316 3/15/2016	18DPT16 (25-25.5) 150316 3/15/2016	18DPT16 (30-30.5) 150316 3/15/2016
Sample Saturation:			**Saturated**	**Unsaturated**	**Unsaturated**	**Saturated**	**Saturated**	**Saturated**	**Unsaturated**	**Unsaturated**	**Saturated**	**Saturated**	**Saturated**
Formation:			**Shallow Zone**	**Wilcox Clay**	**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Wilcox Clay**	**Wilcox Clay**	**Shallow Zone**	**Shallow Zone**	**Wilcox Clay**	**Wilcox Sand**
Perchlorate (6850)													
PERCHLORATE	ug/kg	7200	<2.1 U	<2.4 U	<2.34 U	44.1	3440	6010	6530	41.8	11.3	434	1230
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/kg	11000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
1,1,1-TRICHLOROETHANE	ug/kg	20000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
1,1,2,2-TETRACHLOROETHANE	ug/kg	1400	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
1,1,2-TRICHLOROETHANE	ug/kg	500	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
1,1-DICHLOROETHANE	ug/kg	1000000	<2.16 U	<2.54 U	<2.22 U	<2.48 U	<2.38 U	<2.36 U	<2.56 U	<2.54 U	<2.34 U	<2.64 U	<2.48 U
1,1-DICHLOROETHENE	ug/kg	700	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
1,1-DICHLOROPROPENE	ug/kg	290	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
1,2,3-TRICHLOROBENZENE	ug/kg	31000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
1,2,3-TRICHLOROPROPANE	ug/kg	4.1	<2.16 U	<2.54 U	<2.22 U	<2.48 U	<2.38 U	<2.36 U	<2.56 U	<2.54 U	<2.34 U	<2.64 U	<2.48 U
1,2,4-TRICHLOROBENZENE	ug/kg	7000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
1,2,4-TRIMETHYLBENZENE	ug/kg	510000	<1.08 U	0.752 J	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/kg	20	<4.32 U	<5.08 U	<4.46 U	<4.98 U	<4.76 U	<4.7 U	<5.12 U	<5.08 U	<4.68 U	<5.26 U	<4.96 U
1,2-DIBROMOETHANE	ug/kg	5	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
1,2-DICHLOROBENZENE	ug/kg	60000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
1,2-DICHLOROETHANE	ug/kg	500	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	3.58 J	1.11 J	<1.27 U	<1.17 U	<1.32 U	<1.24 U
1,2-DICHLOROPROPANE	ug/kg	500	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
1,3,5-TRIMETHYLBENZENE	ug/kg	510000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
1,3-DICHLOROBENZENE	ug/kg	310000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
1,3-DICHLOROPROPANE	ug/kg	2900	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
1,4-DICHLOROBENZENE	ug/kg	7500	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
2,2-DICHLOROPROPANE	ug/kg	4200	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
2-BUTANONE	ug/kg	6100000	<5.38 U	<6.34 U	<5.58 U	<6.22 U	<5.94 U	<5.88 U	<6.38 U	<6.36 U	<5.84 U	<6.58 U	<6.2 U
2-CHLOROTOLUENE	ug/kg	200000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
2-HEXANONE	ug/kg	610000	<5.38 U	<6.34 U	<5.58 U	<6.22 U	<5.94 U	<5.88 U	<6.38 U	<6.36 U	<5.84 U	<6.58 U	<6.2 U
4-CHLOROTOLUENE	ug/kg	200000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
4-METHYL-2-PENTANONE	ug/kg	820000	<5.38 U	<6.34 U	<5.58 U	<6.22 U	<5.94 U	<5.88 U	<6.38 U	<6.36 U	<5.84 U	<6.58 U	<6.2 U
ACETONE	ug/kg	920000	5.95 J	12.9 J	<11.1 U	<12.4 U	<11.9 U	<11.8 U	<12.8 U	<12.7 U	6.34 J	<13.2 U	<12.4 U
BENZENE	ug/kg	500	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
BROMOBENZENE	ug/kg	200000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
BROMOCHLOROMETHANE	ug/kg	410000	<2.16 U	<2.54 U	<2.22 U	<2.48 U	<2.38 U	<2.36 U	<2.56 U	<2.54 U	<2.34 U	<2.64 U	<2.48 U
BROMODICHLOROMETHANE	ug/kg	460	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
BROMOFORM	ug/kg	3600	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
BROMOMETHANE	ug/kg	14000	<2.16 U	<2.54 U	<2.22 U	<2.48 U	<2.38 U	<2.36 U	<2.56 U	<2.54 U	<2.34 U	<2.64 U	<2.48 U
CARBON DISULFIDE	ug/kg	1000000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
CARBON TETRACHLORIDE	ug/kg	500	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
CHLOROBENZENE	ug/kg	10000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
CHLOROETHANE	ug/kg	4100000	<2.16 U	<2.54 U	<2.22 U	<2.48 U	<2.38 U	<2.36 U	<2.56 U	<2.54 U	<2.34 U	<2.64 U	<2.48 U
CHLOROFORM	ug/kg	100000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	0.714 J	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
CHLOROMETHANE	ug/kg	22000	<4.32 UJ	<5.08 U	<4.46 UJ	<4.98 UJ	<4.76 UJ	<4.7 UJ	<5.12 UJ	<5.08 UJ	<4.68 UJ	<5.26 UJ	<4.96 UJ
CIS-1,2-DICHLOROETHENE	ug/kg	7000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
CIS-1,3-DICHLOROPROPENE	ug/kg	530	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
DIBROMOCHLOROMETHANE	ug/kg	3400	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
DIBROMOMETHANE	ug/kg	38000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
DICHLORODIFLUOROMETHANE	ug/kg	2000000	<2.16 U	<2.54 U	<2.22 U	<2.48 U	<2.38 U	<2.36 U	<2.56 U	<2.54 U	<2.34 U	<2.64 U	<2.48 U

Table 3-1: LHAAP-18/24 DPT Soil Analytical Results - February/March 2016

Sample ID: / Sample Date:	Units	MSC	18DPT14 (17-17.5) 140316 3/14/2016	18DPT14 (23-23.5) 140316 3/14/2016	18DPT15 (5-5.5) 140316 3/14/2016	18DPT15 (12-12.5) 140316 3/14/2016	18DPT15 (21-21.5) 140316 3/14/2016	18DPT15 (23.5-24) 140316 3/14/2016	18DPT15 (26.5-27) 140316 3/14/2016	18DPT16 (5-5.5) 150316 3/15/2016	18DPT16 (15-15.5) 150316 3/15/2016	18DPT16 (25-25.5) 150316 3/15/2016	18DPT16 (30-30.5) 150316 3/15/2016
ETHYLBENZENE	ug/kg	70000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
HEXACHLOROBUTADIENE	ug/kg	2000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
ISOPROPYLBENZENE	ug/kg	1000000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
M,P-XYLENE	ug/kg	1000000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
METHYLENE CHLORIDE	ug/kg	500	<2.16 U	<2.54 U	<2.22 U	<2.48 U	<2.38 U	<2.36 U	<2.56 U	<2.54 U	<2.34 U	<2.64 U	<2.48 U
NAPHTHALENE	ug/kg	200000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
N-BUTYLBENZENE	ug/kg	410000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
N-PROPYLBENZENE	ug/kg	410000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
O-XYLENE	ug/kg	1000000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
P-ISOPROPYLTOLUENE	ug/kg	1000000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
SEC-BUTYLBENZENE	ug/kg	410000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
STYRENE	ug/kg	10000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
TERT-BUTYLBENZENE	ug/kg	410000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
TETRACHLOROETHENE	ug/kg	500	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
TOLUENE	ug/kg	100000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
TRANS-1,2-DICHLOROETHENE	ug/kg	10000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
TRANS-1,3-DICHLOROPROPENE	ug/kg	2900	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
TRICHLOROETHENE	ug/kg	500	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	58.8	18.9	<1.27 U	<1.17 U	<1.32 U	2.94 J
TRICHLOROFLUOROMETHANE	ug/kg	3100000	<2.16 U	<2.54 U	<2.22 U	<2.48 U	<2.38 U	<2.36 U	<2.56 U	<2.54 U	<2.34 U	<2.64 U	<2.48 U
VINYL CHLORIDE	ug/kg	200	<2.16 U	<2.54 U	<2.22 U	<2.48 U	<2.38 U	<2.36 U	<2.56 U	<2.54 U	<2.34 U	<2.64 U	<2.48 U

Blue Highlighting Indicates concentrations above the MSC

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MSC - Medium-Specific Concentrations

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

ug/kg - micrograms per kilogram

Table 3-1: LHAAP-18/24 DPT Soil Analytical Results - February/March 2016

Sample ID: / Sample Date:	Units	MSC	18DPT16 (33-33.5) 150316 3/15/2016	18DPT17 (2.5-3) 150316 3/15/2016	18DPT17 (2.5-3) 150316FD 3/15/2016	18DPT17 (5-5.5) 150316 3/15/2016	18DPT17 (10-10.5) 150316 3/15/2016	18DPT17 (18-18.5) 150316 3/15/2016	18DPT17 (21.5-22) 150316 3/15/2016	18DPT17 (27-27.5) 150316 3/15/2016
Sample Saturation:			**Saturated**	**Unsaturated**	**Unsaturated**	**Unsaturated**	**Unsaturated**	**Unsaturated**	**Saturated**	**Saturated**
Formation:			**Wilcox Sand**	**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Wilcox Clay**	**Wilcox Sand**	**Wilcox Sand**
Perchlorate (6850)										
PERCHLORATE	ug/kg	7200	3090	<2.36 U	<2.32 U	<2.54 U	<2.48 U	172	1500	2170
Volatile Organic Compounds (8260B)										
1,1,1,2-TETRACHLOROETHANE	ug/kg	11000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
1,1,1-TRICHLOROETHANE	ug/kg	20000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
1,1,2,2-TETRACHLOROETHANE	ug/kg	1400	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
1,1,2-TRICHLOROETHANE	ug/kg	500	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
1,1-DICHLOROETHANE	ug/kg	1000000	<2.68 U	<2.2 U	<2.34 U	<2.62 U	<2.48 U	<2.38 U	<2.3 U	<2.48 U
1,1-DICHLOROETHENE	ug/kg	700	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
1,1-DICHLOROPROPENE	ug/kg	290	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
1,2,3-TRICHLOROBENZENE	ug/kg	31000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
1,2,3-TRICHLOROPROPANE	ug/kg	4.1	<2.68 U	<2.2 U	<2.34 U	<2.62 U	<2.48 U	<2.38 U	<2.3 U	<2.48 U
1,2,4-TRICHLOROBENZENE	ug/kg	7000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
1,2,4-TRIMETHYLBENZENE	ug/kg	510000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/kg	20	<5.38 U	<4.4 U	<4.66 U	<5.26 U	<4.94 U	<4.78 U	<4.58 U	<4.98 U
1,2-DIBROMOETHANE	ug/kg	5	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
1,2-DICHLOROBENZENE	ug/kg	60000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
1,2-DICHLOROETHANE	ug/kg	500	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
1,2-DICHLOROPROPANE	ug/kg	500	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
1,3,5-TRIMETHYLBENZENE	ug/kg	510000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
1,3-DICHLOROBENZENE	ug/kg	310000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
1,3-DICHLOROPROPANE	ug/kg	2900	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
1,4-DICHLOROBENZENE	ug/kg	7500	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
2,2-DICHLOROPROPANE	ug/kg	4200	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
2-BUTANONE	ug/kg	6100000	<6.72 U	<5.5 U	<5.82 U	<6.56 U	<6.18 U	<5.96 U	<5.72 U	<6.22 U
2-CHLOROTOLUENE	ug/kg	200000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
2-HEXANONE	ug/kg	610000	<6.72 U	<5.5 U	<5.82 U	<6.56 U	<6.18 U	<5.96 U	<5.72 U	<6.22 U
4-CHLOROTOLUENE	ug/kg	200000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
4-METHYL-2-PENTANONE	ug/kg	820000	<6.72 U	<5.5 U	<5.82 U	<6.56 U	<6.18 U	<5.96 U	<5.72 U	<6.22 U
ACETONE	ug/kg	920000	<13.4 U	<11 U	<11.7 U	<13.1 U	11.8 J	11.4 J	<11.5 U	6.75 J
BENZENE	ug/kg	500	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
BROMOBENZENE	ug/kg	200000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
BROMOCHLOROMETHANE	ug/kg	410000	<2.68 U	<2.2 U	<2.34 U	<2.62 U	<2.48 U	<2.38 U	<2.3 U	<2.48 U
BROMODICHLOROMETHANE	ug/kg	460	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
BROMOFORM	ug/kg	3600	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
BROMOMETHANE	ug/kg	14000	<2.68 U	<2.2 U	<2.34 U	<2.62 U	<2.48 U	<2.38 U	<2.3 U	<2.48 U
CARBON DISULFIDE	ug/kg	1000000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
CARBON TETRACHLORIDE	ug/kg	500	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
CHLOROBENZENE	ug/kg	10000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
CHLOROETHANE	ug/kg	4100000	<2.68 U	<2.2 U	<2.34 U	<2.62 U	<2.48 U	<2.38 U	<2.3 U	<2.48 U
CHLOROFORM	ug/kg	100000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
CHLOROMETHANE	ug/kg	22000	<5.38 UJ	<4.4 UJ	<4.66 UJ	<5.26 UJ	<4.94 UJ	<4.78 UJ	<4.58 UJ	<4.98 UJ
CIS-1,2-DICHLOROETHENE	ug/kg	7000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
CIS-1,3-DICHLOROPROPENE	ug/kg	530	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
DIBROMOCHLOROMETHANE	ug/kg	3400	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
DIBROMOMETHANE	ug/kg	38000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
DICHLORODIFLUOROMETHANE	ug/kg	2000000	<2.68 U	<2.2 U	<2.34 U	<2.62 U	<2.48 U	<2.38 U	<2.3 U	<2.48 U

Table 3-1: LHAAP-18/24 DPT Soil Analytical Results - February/March 2016

Sample ID: / Sample Date:	Units	MSC	18DPT16 (33-33.5) 150316 3/15/2016	18DPT17 (2.5-3) 150316 3/15/2016	18DPT17 (2.5-3) 150316FD 3/15/2016	18DPT17 (5-5.5) 150316 3/15/2016	18DPT17 (10-10.5) 150316 3/15/2016	18DPT17 (18-18.5) 150316 3/15/2016	18DPT17 (21.5-22) 150316 3/15/2016	18DPT17 (27-27.5) 150316 3/15/2016
ETHYLBENZENE	ug/kg	70000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
HEXACHLOROBUTADIENE	ug/kg	2000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
ISOPROPYLBENZENE	ug/kg	1000000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
M,P-XYLENE	ug/kg	1000000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
METHYLENE CHLORIDE	ug/kg	500	<2.68 U	<2.2 U	<2.34 U	<2.62 U	<2.48 U	<2.38 U	<2.3 U	<2.48 U
NAPHTHALENE	ug/kg	200000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
N-BUTYLBENZENE	ug/kg	410000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
N-PROPYLBENZENE	ug/kg	410000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
O-XYLENE	ug/kg	1000000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
P-ISOPROPYLTOLUENE	ug/kg	1000000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
SEC-BUTYLBENZENE	ug/kg	410000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
STYRENE	ug/kg	10000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
TERT-BUTYLBENZENE	ug/kg	410000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
TETRACHLOROETHENE	ug/kg	500	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
TOLUENE	ug/kg	100000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
TRANS-1,2-DICHLOROETHENE	ug/kg	10000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
TRANS-1,3-DICHLOROPROPENE	ug/kg	2900	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
TRICHLOROETHENE	ug/kg	500	5.26 J	<1.1 U	<1.17 U	<1.31 U	<1.24 U	0.855 J	0.995 J	8.36
TRICHLOROFLUOROMETHANE	ug/kg	3100000	<2.68 U	<2.2 U	<2.34 U	<2.62 U	<2.48 U	<2.38 U	<2.3 U	<2.48 U
VINYL CHLORIDE	ug/kg	200	<2.68 U	<2.2 U	<2.34 U	<2.62 U	<2.48 U	<2.38 U	<2.3 U	<2.48 U

Blue Highlighting Indicates concentrations above the MSC

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MSC - Medium-Specific Concentrations

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

ug/kg - micrograms per kilogram

Table 3-2: LHAAP-18/24 Soil Analytical Results from MW Boreholes - April 2016

Sample ID: / Sample Date:	Units	MSC	18CPTMW19SW (5-5.5) 210416 4/21/2016	18CPTMW19SW (10-10.5) 210416 4/21/2016	18CPTMW19SW (20-20.5) 220416 4/21/2016	18CPTMW19SW (30-30.5) 220416 4/22/2016	18CPTMW19SW (30-30.5) 220416DUP 4/22/2016	18CPTMW19SW (40-40.5) 220416 4/22/2016	18CPTMW19SW (50-50.5) 220416 4/22/2016	18CPTMW19SW (60-61) 220416 4/22/2016	18CPTMW22DW (5-5.5) 260416 4/26/2016	18CPTMW22DW (10-10.5) 260416 4/26/2016
Sample Saturation:			**Unsaturated**	**Unsaturated**	**Unsaturated**	**Saturated**	**Saturated**	**Saturated**	**Saturated**	**Saturated**	**Unsaturated**	**Unsaturated**
Formation:			**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Wilcox Clay**	**Wilcox Clay**	**Wilcox Clay**	**Wilcox Formation**	**Wilcox Formation**	**Shallow Zone**	**Shallow Zone**
Perchlorate (6850)												
PERCHLORATE	ug/kg	7200	<2.32 U	<2.44 U	8.74	<2.42 U	<2.46 U	124	170	<2.54 U	<2.34 U	<2.38 U
Volatile Organic Compounds (8260B)												
1,1,1,2-TETRACHLOROETHANE	ug/kg	11000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
1,1,1-TRICHLOROETHANE	ug/kg	20000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
1,1,2,2-TETRACHLOROETHANE	ug/kg	1400	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
1,1,2-TRICHLOROETHANE	ug/kg	500	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
1,1-DICHLOROETHANE	ug/kg	1000000	<2.44 U	<2.34 U	<2.72 U	<2.54 U	<2.56 U	<2.32 U	<2.54 U	<2.6 U	<2.44 U	<2.48 U
1,1-DICHLOROETHENE	ug/kg	700	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
1,1-DICHLOROPROPENE	ug/kg	290	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
1,2,3-TRICHLOROBENZENE	ug/kg	31000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
1,2,3-TRICHLOROPROPANE	ug/kg	4.1	<2.44 U	<2.34 U	<2.72 U	<2.54 U	<2.56 U	<2.32 U	<2.54 U	<2.6 U	<2.44 U	<2.48 U
1,2,4-TRICHLOROBENZENE	ug/kg	7000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
1,2,4-TRIMETHYLBENZENE	ug/kg	510000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/kg	20	<4.86 U	<4.68 U	<5.46 U	<5.08 U	<5.12 U	<4.62 U	<5.08 U	<5.2 U	<4.9 U	<4.98 U
1,2-DIBROMOETHANE	ug/kg	5	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
1,2-DICHLOROBENZENE	ug/kg	60000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
1,2-DICHLOROETHANE	ug/kg	500	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
1,2-DICHLOROPROPANE	ug/kg	500	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
1,3,5-TRIMETHYLBENZENE	ug/kg	510000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
1,3-DICHLOROBENZENE	ug/kg	310000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
1,3-DICHLOROPROPANE	ug/kg	2900	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
1,4-DICHLOROBENZENE	ug/kg	7500	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
2,2-DICHLOROPROPANE	ug/kg	4200	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
2-BUTANONE	ug/kg	6100000	<6.08 U	4.2 J	<6.82 U	<6.34 U	<6.4 U	<5.78 U	<6.34 U	<6.5 U	<6.12 U	<6.22 U
2-CHLOROTOLUENE	ug/kg	200000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
2-HEXANONE	ug/kg	610000	<6.08 U	<5.84 U	<6.82 U	<6.34 U	<6.4 U	<5.78 U	<6.34 U	<6.5 U	<6.12 U	<6.22 U
4-CHLOROTOLUENE	ug/kg	200000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
4-METHYL-2-PENTANONE	ug/kg	820000	<6.08 U	<5.84 U	<6.82 U	<6.34 U	<6.4 U	<5.78 U	<6.34 U	<6.5 U	<6.12 U	<6.22 U
ACETONE	ug/kg	920000	<12.2 U	24.3	<13.6 U	<12.7 U	<12.8 U	<11.6 U	8.75 J	8.63 J	<12.2 U	<12.4 U
BENZENE	ug/kg	500	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
BROMOBENZENE	ug/kg	200000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
BROMOCHLOROMETHANE	ug/kg	410000	<2.44 U	<2.34 U	<2.72 U	<2.54 U	<2.56 U	<2.32 U	<2.54 U	<2.6 U	<2.44 U	<2.48 U
BROMODICHLOROMETHANE	ug/kg	460	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
BROMOFORM	ug/kg	3600	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
BROMOMETHANE	ug/kg	14000	<2.44 U	<2.34 U	<2.72 U	<2.54 U	<2.56 U	<2.32 U	<2.54 U	<2.6 U	<2.44 U	<2.48 U
CARBON DISULFIDE	ug/kg	1000000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
CARBON TETRACHLORIDE	ug/kg	500	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
CHLOROBENZENE	ug/kg	10000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
CHLOROETHANE	ug/kg	4100000	<2.44 U	<2.34 U	<2.72 U	<2.54 U	<2.56 U	<2.32 U	<2.54 U	<2.6 U	<2.44 U	<2.48 U
CHLOROFORM	ug/kg	100000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
CHLOROMETHANE	ug/kg	22000	<4.86 U	<4.68 U	<5.46 U	<5.08 U	<5.12 U	<4.62 U	<5.08 U	<5.2 U	<4.9 U	<4.98 U
CIS-1,2-DICHLOROETHENE	ug/kg	7000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
CIS-1,3-DICHLOROPROPENE	ug/kg	530	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
DIBROMOCHLOROMETHANE	ug/kg	3400	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
DIBROMOMETHANE	ug/kg	38000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
DICHLORODIFLUOROMETHANE	ug/kg	2000000	<2.44 U	<2.34 U	<2.72 U	<2.54 U	<2.56 U	<2.32 U	<2.54 U	<2.6 U	<2.44 U	<2.48 U
ETHYLBENZENE	ug/kg	70000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
HEXACHLOROBUTADIENE	ug/kg	2000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U

Table 3-2: LHAAP-18/24 Soil Analytical Results from MW Boreholes - April 2016

Sample ID: / Sample Date:	Units	MSC	18CPTMW19SW (5-5.5) 210416 4/21/2016	18CPTMW19SW (10-10.5) 210416 4/21/2016	18CPTMW19SW (20-20.5) 220416 4/21/2016	18CPTMW19SW (30-30.5) 220416 4/22/2016	18CPTMW19SW (30-30.5) 220416DUP 4/22/2016	18CPTMW19SW (40-40.5) 220416 4/22/2016	18CPTMW19SW (50-50.5) 220416 4/22/2016	18CPTMW19SW (60-61) 220416 4/22/2016	18CPTMW22DW (5-5.5) 260416 4/26/2016	18CPTMW22DW (10-10.5) 260416 4/26/2016
ISOPROPYLBENZENE	ug/kg	1000000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
M,P-XYLENE	ug/kg	1000000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
METHYLENE CHLORIDE	ug/kg	500	<2.44 U	<2.34 U	<2.72 U	<2.54 U	<2.56 U	<2.32 U	<2.54 U	<2.6 U	<2.44 U	<2.48 U
NAPHTHALENE	ug/kg	200000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
N-BUTYLBENZENE	ug/kg	410000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
N-PROPYLBENZENE	ug/kg	410000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
O-XYLENE	ug/kg	1000000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
P-ISOPROPYLTOLUENE	ug/kg	1000000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
SEC-BUTYLBENZENE	ug/kg	410000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
STYRENE	ug/kg	10000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
TERT-BUTYLBENZENE	ug/kg	410000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
TETRACHLOROETHENE	ug/kg	500	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
TOLUENE	ug/kg	100000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
TRANS-1,2-DICHLOROETHENE	ug/kg	10000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
TRANS-1,3-DICHLOROPROPENE	ug/kg	2900	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
TRICHLOROETHENE	ug/kg	500	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
TRICHLOROFLUOROMETHANE	ug/kg	3100000	<2.44 U	<2.34 U	<2.72 U	<2.54 U	<2.56 U	<2.32 U	<2.54 U	<2.6 U	<2.44 U	<2.48 U
VINYL CHLORIDE	ug/kg	200	<2.44 U	<2.34 U	<2.72 U	<2.54 U	<2.56 U	<2.32 U	<2.54 U	<2.6 U	<2.44 U	<2.48 U

Blue Highlighting Indicates concentrations above the MSC

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MSC - Medium-Specific Concentrations

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/kg - micrograms per kilogram

Table 3-2: LHAAP-18/24 Soil Analytical Results from MW Boreholes - April 2016

Sample ID: / Sample Date:	Units	MSC	18CPTMW22DW (20-20.5) 260416 4/26/2016	18CPTMW22DW (29.5-30) 260416 4/26/2016	18CPTMW22DW (40-40.5) 260416 4/26/2016	18CPTMW22DW (50-51) 260416 4/26/2016	18CPTMW22DW (60-60.5) 260416 4/26/2016	18CPTMW22DW (60-60.5) 260416DUP 4/26/2016	18CPTMW22DW (70-70.5) 260416 4/26/2016	18CPTMW22DW (80-80.5) 260416 4/26/2016	18CPTMW22DW (89.5-90) 260416 4/26/2016	18CPTMW22R (5-5.5) 230416 4/23/2016
Sample Saturation:			**Saturated**	**Saturated**	**Saturated**	**Saturated**	**Saturated**	**Saturated**	**Saturated**	**Saturated**	**Saturated**	**Unsaturated**
Formation:			**Wilcox Clay**	**Wilcox Formation**	**Wilcox Formation**	**Wilcox Formation**	**Wilcox Formation**	**Wilcox Formation**	**Wilcox Formation**	**Wilcox Formation**	**Deep Wilcox**	**Shallow Zone**
Perchlorate (6850)												
PERCHLORATE	ug/kg	7200	5400	9440	4040	3.36 J	<2.26 U	<2.24 U	<2.36 U	<2.38 U	<2.44 U	<2.28 U
Volatile Organic Compounds (8260B)												
1,1,1,2-TETRACHLOROETHANE	ug/kg	11000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
1,1,1-TRICHLOROETHANE	ug/kg	20000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
1,1,2,2-TETRACHLOROETHANE	ug/kg	1400	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
1,1,2-TRICHLOROETHANE	ug/kg	500	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
1,1-DICHLOROETHANE	ug/kg	1000000	<2.7 U	<2.7 U	<2.4 U	<2.34 U	<2.42 U	<2.46 U	<2.42 U	<2.52 U	<2.54 U	<2.44 U
1,1-DICHLOROETHENE	ug/kg	700	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
1,1-DICHLOROPROPENE	ug/kg	290	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
1,2,3-TRICHLOROBENZENE	ug/kg	31000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
1,2,3-TRICHLOROPROPANE	ug/kg	4.1	<2.7 U	<2.7 U	<2.4 U	<2.34 U	<2.42 U	<2.46 U	<2.42 U	<2.52 U	<2.54 U	<2.44 U
1,2,4-TRICHLOROBENZENE	ug/kg	7000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
1,2,4-TRIMETHYLBENZENE	ug/kg	510000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/kg	20	<5.4 U	<5.38 U	<4.8 U	<4.66 U	<4.84 U	<4.94 U	<4.86 U	<5.04 U	<5.08 U	<4.86 U
1,2-DIBROMOETHANE	ug/kg	5	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
1,2-DICHLOROBENZENE	ug/kg	60000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
1,2-DICHLOROETHANE	ug/kg	500	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
1,2-DICHLOROPROPANE	ug/kg	500	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
1,3,5-TRIMETHYLBENZENE	ug/kg	510000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
1,3-DICHLOROBENZENE	ug/kg	310000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
1,3-DICHLOROPROPANE	ug/kg	2900	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
1,4-DICHLOROBENZENE	ug/kg	7500	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
2,2-DICHLOROPROPANE	ug/kg	4200	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
2-BUTANONE	ug/kg	6100000	<6.74 U	<6.74 U	<6 U	<5.82 U	<6.06 U	<6.18 U	<6.08 U	<6.3 U	<6.34 U	<6.08 U
2-CHLOROTOLUENE	ug/kg	200000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
2-HEXANONE	ug/kg	610000	<6.74 U	<6.74 U	<6 U	<5.82 U	<6.06 U	<6.18 U	<6.08 U	<6.3 U	<6.34 U	<6.08 U
4-CHLOROTOLUENE	ug/kg	200000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
4-METHYL-2-PENTANONE	ug/kg	820000	<6.74 U	<6.74 U	<6 U	<5.82 U	<6.06 U	<6.18 U	<6.08 U	<6.3 U	<6.34 U	<6.08 U
ACETONE	ug/kg	920000	<13.5 U	<13.5 U	<12 U	6.11 J	18.4 J	20.8 J	7.02 J	9.31 J	9.42 J	<12.2 U
BENZENE	ug/kg	500	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
BROMOBENZENE	ug/kg	200000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
BROMOCHLOROMETHANE	ug/kg	410000	<2.7 U	<2.7 U	<2.4 U	<2.34 U	<2.42 U	<2.46 U	<2.42 U	<2.52 U	<2.54 U	<2.44 U
BROMODICHLOROMETHANE	ug/kg	460	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
BROMOFORM	ug/kg	3600	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
BROMOMETHANE	ug/kg	14000	<2.7 U	<2.7 U	<2.4 U	<2.34 U	<2.42 U	<2.46 U	<2.42 U	<2.52 U	<2.54 U	<2.44 U
CARBON DISULFIDE	ug/kg	1000000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	0.638 J	<1.21 U	0.825 J	1.47 J	<1.22 U
CARBON TETRACHLORIDE	ug/kg	500	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
CHLOROBENZENE	ug/kg	10000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
CHLOROETHANE	ug/kg	4100000	<2.7 U	<2.7 U	<2.4 U	<2.34 U	<2.42 U	<2.46 U	<2.42 U	<2.52 U	<2.54 U	<2.44 U
CHLOROFORM	ug/kg	100000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
CHLOROMETHANE	ug/kg	22000	<5.4 U	<5.38 U	<4.8 U	<4.66 U	<4.84 U	<4.94 U	<4.86 U	<5.04 U	<5.08 U	<4.86 U
CIS-1,2-DICHLOROETHENE	ug/kg	7000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
CIS-1,3-DICHLOROPROPENE	ug/kg	530	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
DIBROMOCHLOROMETHANE	ug/kg	3400	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
DIBROMOMETHANE	ug/kg	38000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
DICHLORODIFLUOROMETHANE	ug/kg	2000000	<2.7 U	<2.7 U	<2.4 U	<2.34 U	<2.42 U	<2.46 U	<2.42 U	<2.52 U	<2.54 U	<2.44 U
ETHYLBENZENE	ug/kg	70000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
HEXACHLOROBUTADIENE	ug/kg	2000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U

Table 3-2: LHAAP-18/24 Soil Analytical Results from MW Boreholes - April 2016

Sample ID: / Sample Date:	Units	MSC	18CPTMW22DW (20-20.5) 260416 4/26/2016	18CPTMW22DW (29.5-30) 260416 4/26/2016	18CPTMW22DW (40-40.5) 260416 4/26/2016	18CPTMW22DW (50-51) 260416 4/26/2016	18CPTMW22DW (60-60.5) 260416 4/26/2016	18CPTMW22DW (60-60.5) 260416DUP 4/26/2016	18CPTMW22DW (70-70.5) 260416 4/26/2016	18CPTMW22DW (80-80.5) 260416 4/26/2016	18CPTMW22DW (89.5-90) 260416 4/26/2016	18CPTMW22R (5-5.5) 230416 4/23/2016
ISOPROPYLBENZENE	ug/kg	1000000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
M,P-XYLENE	ug/kg	1000000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
METHYLENE CHLORIDE	ug/kg	500	<2.7 U	<2.7 U	<2.4 U	<2.34 U	<2.42 U	<2.46 U	<2.42 U	<2.52 U	<2.54 U	<2.44 U
NAPHTHALENE	ug/kg	200000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
N-BUTYLBENZENE	ug/kg	410000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
N-PROPYLBENZENE	ug/kg	410000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
O-XYLENE	ug/kg	1000000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
P-ISOPROPYLTOLUENE	ug/kg	1000000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
SEC-BUTYLBENZENE	ug/kg	410000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
STYRENE	ug/kg	10000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
TERT-BUTYLBENZENE	ug/kg	410000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
TETRACHLOROETHENE	ug/kg	500	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
TOLUENE	ug/kg	100000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
TRANS-1,2-DICHLOROETHENE	ug/kg	10000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
TRANS-1,3-DICHLOROPROPENE	ug/kg	2900	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
TRICHLOROETHENE	ug/kg	500	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
TRICHLOROFLUOROMETHANE	ug/kg	3100000	<2.7 U	<2.7 U	<2.4 U	<2.34 U	<2.42 U	<2.46 U	<2.42 U	<2.52 U	<2.54 U	<2.44 U
VINYL CHLORIDE	ug/kg	200	<2.7 U	<2.7 U	<2.4 U	<2.34 U	<2.42 U	<2.46 U	<2.42 U	<2.52 U	<2.54 U	<2.44 U

Blue Highlighting Indicates concentrations above the MSC

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MSC - Medium-Specific Concentrations

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/kg - micrograms per kilogram

Table 3-2: LHAAP-18/24 Soil Analytical Results from MW Boreholes - April 2016

Sample ID: / Sample Date:	Units	MSC	18CPTMW22R (10-10.5) 230416 4/23/2016	18CPTMW22R (15-15.5) 230416 4/23/2016	18CPTMW23SW (5-5.5) 4/27/2016	18CPTMW23SW (10-10.5) 4/27/2016	18CPTMW23SW (20-20.5) 4/27/2016	18CPTMW23SW (30-30.5) 4/27/2016	18CPTMW23SW (40-40.5) 4/27/2016	18CPTMW23SW (50-50.5) 4/27/2016	18CPTMW23SW (60-60.5) 4/27/2016	18CPTMW26 (5-5.5) 230416 4/23/2016
Sample Saturation:			**Unsaturated**	**Unsaturated**	**Unsaturated**	**Saturated**	**Saturated**	**Saturated**	**Saturated**	**Saturated**	**Saturated**	**Unsaturated**
Formation:			**Shallow Zone**	**Wilcox Clay**	**Upper Wilcox**	**Shallow Zone**	**Upper Wilcox**	**Upper Wilcox**	**Upper Wilcox**	**Upper Wilcox**	**Upper Wilcox**	**Shallow Zone**
Perchlorate (6850)												
PERCHLORATE	ug/kg	7200	<2.44 U	<2.48 U	19.6	1920	29.3	<2.42 U	<2.28 U	<2.44 U	<2.34 U	<2.3 U
Volatile Organic Compounds (8260B)												
1,1,1,2-TETRACHLOROETHANE	ug/kg	11000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
1,1,1-TRICHLOROETHANE	ug/kg	20000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
1,1,2,2-TETRACHLOROETHANE	ug/kg	1400	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
1,1,2-TRICHLOROETHANE	ug/kg	500	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
1,1-DICHLOROETHANE	ug/kg	1000000	<2.62 U	<2.66 U	<2.94 U	<2.48 U	<2.36 U	<2.58 U	<2.42 U	<2.48 U	<2.44 U	<2.62 U
1,1-DICHLOROETHENE	ug/kg	700	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
1,1-DICHLOROPROPENE	ug/kg	290	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
1,2,3-TRICHLOROBENZENE	ug/kg	31000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
1,2,3-TRICHLOROPROPANE	ug/kg	4.1	<2.62 U	<2.66 U	<2.94 U	<2.48 U	<2.36 U	<2.58 U	<2.42 U	<2.48 U	<2.44 U	<2.62 U
1,2,4-TRICHLOROBENZENE	ug/kg	7000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
1,2,4-TRIMETHYLBENZENE	ug/kg	510000	<1.31 U	<1.33 U	2.29 J	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/kg	20	<5.24 U	<5.3 U	<5.86 U	<4.96 U	<4.74 U	<5.18 U	<4.82 U	<4.96 U	<4.86 U	<5.24 U
1,2-DIBROMOETHANE	ug/kg	5	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
1,2-DICHLOROBENZENE	ug/kg	60000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
1,2-DICHLOROETHANE	ug/kg	500	<1.31 U	<1.33 U	4.13 J	26.3	1.64 J	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
1,2-DICHLOROPROPANE	ug/kg	500	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
1,3,5-TRIMETHYLBENZENE	ug/kg	510000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
1,3-DICHLOROBENZENE	ug/kg	310000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
1,3-DICHLOROPROPANE	ug/kg	2900	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
1,4-DICHLOROBENZENE	ug/kg	7500	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
2,2-DICHLOROPROPANE	ug/kg	4200	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
2-BUTANONE	ug/kg	6100000	<6.56 U	<6.64 U	<7.34 U	<6.2 U	<5.92 U	<6.48 U	<6.02 U	<6.2 U	<6.08 U	<6.56 U
2-CHLOROTOLUENE	ug/kg	200000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
2-HEXANONE	ug/kg	610000	<6.56 U	<6.64 U	<7.34 U	<6.2 U	<5.92 U	<6.48 U	<6.02 U	<6.2 U	<6.08 U	<6.56 U
4-CHLOROTOLUENE	ug/kg	200000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
4-METHYL-2-PENTANONE	ug/kg	820000	<6.56 U	<6.64 U	<7.34 UJ	<6.2 UJ	<5.92 UJ	<6.48 UJ	<6.02 UJ	<6.2 UJ	<6.08 UJ	<6.56 U
ACETONE	ug/kg	920000	<13.1 U	<13.3 U	<14.7 U	<12.4 U	13.1 J	18.9 J	15.4 J	8.65 J	9.75 J	<13.1 U
BENZENE	ug/kg	500	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
BROMOBENZENE	ug/kg	200000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
BROMOCHLOROMETHANE	ug/kg	410000	<2.62 U	<2.66 U	<2.94 U	<2.48 U	<2.36 U	<2.58 U	<2.42 U	<2.48 U	<2.44 U	<2.62 U
BROMODICHLOROMETHANE	ug/kg	460	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
BROMOFORM	ug/kg	3600	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
BROMOMETHANE	ug/kg	14000	<2.62 U	<2.66 U	<2.94 U	<2.48 U	<2.36 U	<2.58 U	<2.42 U	<2.48 U	<2.44 U	<2.62 U
CARBON DISULFIDE	ug/kg	1000000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	2.62 J	<1.21 U	<1.24 U	<1.22 U	<1.31 U
CARBON TETRACHLORIDE	ug/kg	500	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
CHLOROBENZENE	ug/kg	10000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
CHLOROETHANE	ug/kg	4100000	<2.62 U	<2.66 U	<2.94 U	<2.48 U	<2.36 U	<2.58 U	<2.42 U	<2.48 U	<2.44 U	<2.62 U
CHLOROFORM	ug/kg	100000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
CHLOROMETHANE	ug/kg	22000	<5.24 U	<5.3 U	<5.86 U	<4.96 U	<4.74 U	<5.18 U	<4.82 U	<4.96 U	<4.86 U	<5.24 U
CIS-1,2-DICHLOROETHENE	ug/kg	7000	<1.31 U	<1.33 U	9.99	10.9	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
CIS-1,3-DICHLOROPROPENE	ug/kg	530	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
DIBROMOCHLOROMETHANE	ug/kg	3400	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
DIBROMOMETHANE	ug/kg	38000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
DICHLORODIFLUOROMETHANE	ug/kg	2000000	<2.62 U	<2.66 U	<2.94 U	<2.48 U	<2.36 U	<2.58 U	<2.42 U	<2.48 U	<2.44 U	<2.62 U
ETHYLBENZENE	ug/kg	70000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
HEXACHLOROBUTADIENE	ug/kg	2000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U

Table 3-2: LHAAP-18/24 Soil Analytical Results from MW Boreholes - April 2016

Sample ID: / Sample Date:	Units	MSC	18CPTMW22R (10-10.5) 230416 4/23/2016	18CPTMW22R (15-15.5) 230416 4/23/2016	18CPTMW23SW (5-5.5) 4/27/2016	18CPTMW23SW (10-10.5) 4/27/2016	18CPTMW23SW (20-20.5) 4/27/2016	18CPTMW23SW (30-30.5) 4/27/2016	18CPTMW23SW (40-40.5) 4/27/2016	18CPTMW23SW (50-50.5) 4/27/2016	18CPTMW23SW (60-60.5) 4/27/2016	18CPTMW26 (5-5.5) 230416 4/23/2016
ISOPROPYLBENZENE	ug/kg	1000000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
M,P-XYLENE	ug/kg	1000000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
METHYLENE CHLORIDE	ug/kg	500	<2.62 U	<2.66 U	<2.94 U	<2.48 U	<2.36 U	<2.58 U	<2.42 U	<2.48 U	<2.44 U	<2.62 U
NAPHTHALENE	ug/kg	200000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
N-BUTYLBENZENE	ug/kg	410000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
N-PROPYLBENZENE	ug/kg	410000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
O-XYLENE	ug/kg	1000000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
P-ISOPROPYLTOLUENE	ug/kg	1000000	<1.31 U	<1.33 U	4.51 J	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
SEC-BUTYLBENZENE	ug/kg	410000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
STYRENE	ug/kg	10000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
TERT-BUTYLBENZENE	ug/kg	410000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
TETRACHLOROETHENE	ug/kg	500	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
TOLUENE	ug/kg	100000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
TRANS-1,2-DICHLOROETHENE	ug/kg	10000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
TRANS-1,3-DICHLOROPROPENE	ug/kg	2900	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
TRICHLOROETHENE	ug/kg	500	<1.31 U	<1.33 U	47.6	187	11.7	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
TRICHLOROFLUOROMETHANE	ug/kg	3100000	<2.62 U	<2.66 U	<2.94 U	<2.48 U	<2.36 U	<2.58 U	<2.42 U	<2.48 U	<2.44 U	<2.62 U
VINYL CHLORIDE	ug/kg	200	<2.62 U	<2.66 U	<2.94 U	<2.48 U	<2.36 U	<2.58 U	<2.42 U	<2.48 U	<2.44 U	<2.62 U

Blue Highlighting Indicates concentrations above the MSC

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MSC - Medium-Specific Concentrations

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/kg - micrograms per kilogram

Table 3-2: LHAAP-18/24 Soil Analytical Results from MW Boreholes - April 2016

Sample ID: / Sample Date:	Units	MSC	18CPTMW26 (5-5.5) 230416DUP 4/23/2016	18CPTMW26 (10-10.5) 230416 4/23/2016	18CPTMW26 (14.5-15) 230416 4/23/2016	18CPTMW26SW (5-5.5) 250416 4/25/2016	18CPTMW26SW (10-10.5) 250416 4/25/2016	18CPTMW26SW (15-15.5) 250416 4/25/2016	18CPTMW26SW (20-20.5) 250416 4/25/2016	18CPTMW26SW (30-30.5) 250416 4/25/2016	18CPTMW26SW (40-40.5) 250416 4/25/2016	18CPTMW26SW (49.5-50) 250416 4/25/2016
Sample Saturation:			**Unsaturated**	**Unsaturated**	**Unsaturated**	**Unsaturated**	**Unsaturated**	**Saturated**	**Saturated**	**Saturated**	**Saturated**	**Saturated**
Formation:			**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Upper Wilcox**	**Upper Wilcox**	**Upper Wilcox**	**Upper Wilcox**	**Upper Wilcox**
Perchlorate (6850)												
PERCHLORATE	ug/kg	7200	<2.3 U	<2.32 U	<2.46 U	<2.32 U	<2.5 U	1.58 J	4.6 J	<2.52 U	<2.68 U	<2.48 U
Volatile Organic Compounds (8260B)												
1,1,1,2-TETRACHLOROETHANE	ug/kg	11000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
1,1,1-TRICHLOROETHANE	ug/kg	20000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
1,1,2,2-TETRACHLOROETHANE	ug/kg	1400	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
1,1,2-TRICHLOROETHANE	ug/kg	500	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
1,1-DICHLOROETHANE	ug/kg	1000000	<2.5 U	<2.56 U	<2.42 U	<2.4 U	<2.78 U	<2.38 U	<2.58 U	<2.44 U	<2.96 U	<2.66 U
1,1-DICHLOROETHENE	ug/kg	700	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
1,1-DICHLOROPROPENE	ug/kg	290	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
1,2,3-TRICHLOROBENZENE	ug/kg	31000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
1,2,3-TRICHLOROPROPANE	ug/kg	4.1	<2.5 U	<2.56 U	<2.42 U	<2.4 U	<2.78 U	<2.38 U	<2.58 U	<2.44 U	<2.96 U	<2.66 U
1,2,4-TRICHLOROBENZENE	ug/kg	7000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
1,2,4-TRIMETHYLBENZENE	ug/kg	510000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/kg	20	<4.98 U	<5.1 U	<4.84 U	<4.8 U	<5.54 U	<4.76 U	<5.18 U	<4.88 U	<5.94 U	<5.32 U
1,2-DIBROMOETHANE	ug/kg	5	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
1,2-DICHLOROBENZENE	ug/kg	60000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
1,2-DICHLOROETHANE	ug/kg	500	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
1,2-DICHLOROPROPANE	ug/kg	500	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
1,3,5-TRIMETHYLBENZENE	ug/kg	510000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
1,3-DICHLOROBENZENE	ug/kg	310000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
1,3-DICHLOROPROPANE	ug/kg	2900	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
1,4-DICHLOROBENZENE	ug/kg	7500	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
2,2-DICHLOROPROPANE	ug/kg	4200	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
2-BUTANONE	ug/kg	6100000	<6.24 U	<6.38 U	<6.04 U	<6 U	<6.92 U	<5.94 U	<6.46 U	<6.12 U	<7.42 U	<6.64 U
2-CHLOROTOLUENE	ug/kg	200000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
2-HEXANONE	ug/kg	610000	<6.24 U	<6.38 U	<6.04 U	<6 U	<6.92 U	<5.94 U	<6.46 U	<6.12 U	<7.42 U	<6.64 U
4-CHLOROTOLUENE	ug/kg	200000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
4-METHYL-2-PENTANONE	ug/kg	820000	<6.24 U	<6.38 U	<6.04 U	<6 U	<6.92 U	<5.94 U	<6.46 U	<6.12 U	<7.42 U	<6.64 U
ACETONE	ug/kg	920000	<12.5 U	<12.8 U	<12.1 U	<12 U	<13.9 U	<11.9 U	<12.9 U	<12.2 U	<14.8 U	<13.3 U
BENZENE	ug/kg	500	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
BROMOBENZENE	ug/kg	200000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
BROMOCHLOROMETHANE	ug/kg	410000	<2.5 U	<2.56 U	<2.42 U	<2.4 U	<2.78 U	<2.38 U	<2.58 U	<2.44 U	<2.96 U	<2.66 U
BROMODICHLOROMETHANE	ug/kg	460	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
BROMOFORM	ug/kg	3600	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
BROMOMETHANE	ug/kg	14000	<2.5 U	<2.56 U	<2.42 U	<2.4 U	<2.78 U	<2.38 U	<2.58 U	<2.44 U	<2.96 U	<2.66 U
CARBON DISULFIDE	ug/kg	1000000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
CARBON TETRACHLORIDE	ug/kg	500	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
CHLOROBENZENE	ug/kg	10000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
CHLOROETHANE	ug/kg	4100000	<2.5 U	<2.56 U	<2.42 U	<2.4 U	<2.78 U	<2.38 U	<2.58 U	<2.44 U	<2.96 U	<2.66 U
CHLOROFORM	ug/kg	100000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
CHLOROMETHANE	ug/kg	22000	<4.98 U	<5.1 U	<4.84 U	<4.8 U	<5.54 U	<4.76 U	<5.18 U	<4.88 U	<5.94 U	<5.32 U
CIS-1,2-DICHLOROETHENE	ug/kg	7000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
CIS-1,3-DICHLOROPROPENE	ug/kg	530	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
DIBROMOCHLOROMETHANE	ug/kg	3400	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
DIBROMOMETHANE	ug/kg	38000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
DICHLORODIFLUOROMETHANE	ug/kg	2000000	<2.5 U	<2.56 U	<2.42 U	<2.4 U	<2.78 U	<2.38 U	<2.58 U	<2.44 U	<2.96 U	<2.66 U
ETHYLBENZENE	ug/kg	70000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
HEXACHLOROBUTADIENE	ug/kg	2000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U

Table 3-2: LHAAP-18/24 Soil Analytical Results from MW Boreholes - April 2016

Sample ID: Sample Date:	Units	MSC	18CPTMW26 (5-5.5) 230416DUP 4/23/2016	18CPTMW26 (10-10.5) 230416 4/23/2016	18CPTMW26 (14.5-15) 230416 4/23/2016	18CPTMW26SW (5-5.5) 250416 4/25/2016	18CPTMW26SW (10-10.5) 250416 4/25/2016	18CPTMW26SW (15-15.5) 250416 4/25/2016	18CPTMW26SW (20-20.5) 250416 4/25/2016	18CPTMW26SW (30-30.5) 250416 4/25/2016	18CPTMW26SW (40-40.5) 250416 4/25/2016	18CPTMW26SW (49.5-50) 250416 4/25/2016
ISOPROPYLBENZENE	ug/kg	1000000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
M,P-XYLENE	ug/kg	1000000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
METHYLENE CHLORIDE	ug/kg	500	<2.5 U	<2.56 U	<2.42 U	<2.4 U	<2.78 U	<2.38 U	<2.58 U	<2.44 U	<2.96 U	<2.66 U
NAPHTHALENE	ug/kg	200000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
N-BUTYLBENZENE	ug/kg	410000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
N-PROPYLBENZENE	ug/kg	410000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
O-XYLENE	ug/kg	1000000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
P-ISOPROPYLTOLUENE	ug/kg	1000000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
SEC-BUTYLBENZENE	ug/kg	410000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
STYRENE	ug/kg	10000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
TERT-BUTYLBENZENE	ug/kg	410000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
TETRACHLOROETHENE	ug/kg	500	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
TOLUENE	ug/kg	100000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
TRANS-1,2-DICHLOROETHENE	ug/kg	10000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
TRANS-1,3-DICHLOROPROPENE	ug/kg	2900	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
TRICHLOROETHENE	ug/kg	500	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
TRICHLOROFLUOROMETHANE	ug/kg	3100000	<2.5 U	<2.56 U	<2.42 U	<2.4 U	<2.78 U	<2.38 U	<2.58 U	<2.44 U	<2.96 U	<2.66 U
VINYL CHLORIDE	ug/kg	200	<2.5 U	<2.56 U	<2.42 U	<2.4 U	<2.78 U	<2.38 U	<2.58 U	<2.44 U	<2.96 U	<2.66 U

Blue Highlighting Indicates concentrations above the MSC

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MSC - Medium-Specific Concentrations

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/kg - micrograms per kilogram

Table 3-2: LHAAP-18/24 Soil Analytical Results from MW Boreholes - April 2016

Sample ID: Sample Date:	Units	MSC	18WW25 (3.5-4) 270616 6/27/2016	18WW25 (9.5-10) 270616 6/27/2016	18WW25 (14.5-15) 270616 6/27/2016	18WW25 (19.5-20) 270616 6/27/2016	18WW25 (22-22.5) 270616 6/27/2016	18WW25 (22-22.5) 270616 DUP 6/27/2016
Sample Saturation:			**Saturated**	**Saturated**	**Saturated**	**Saturated**	**Saturated**	**Saturated**
Formation:			**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Shallow Zone**
Perchlorate (6850)								
PERCHLORATE	ug/kg	7200	<2.28 U	<2.52 U	<2.4 U	<2.46 U	<2.38 U	<2.36 U
Volatile Organic Compounds (8260B)								
1,1,1,2-TETRACHLOROETHANE	ug/kg	11000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
1,1,1-TRICHLOROETHANE	ug/kg	20000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
1,1,2,2-TETRACHLOROETHANE	ug/kg	1400	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
1,1,2-TRICHLOROETHANE	ug/kg	500	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
1,1-DICHLOROETHANE	ug/kg	1000000	<2.32 U	<2.52 U	<2.5 U	<2.44 U	<2.4 UJ	<2.3 U
1,1-DICHLOROETHENE	ug/kg	700	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
1,1-DICHLOROPROPENE	ug/kg	290	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
1,2,3-TRICHLOROBENZENE	ug/kg	31000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
1,2,3-TRICHLOROPROPANE	ug/kg	4.1	<2.32 U	<2.52 U	<2.5 U	<2.44 U	<2.4 UJ	<2.3 U
1,2,4-TRICHLOROBENZENE	ug/kg	7000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
1,2,4-TRIMETHYLBENZENE	ug/kg	510000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/kg	20	<4.64 U	<5.06 U	<4.98 U	<4.9 U	<4.8 UJ	<4.62 U
1,2-DIBROMOETHANE	ug/kg	5	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
1,2-DICHLOROBENZENE	ug/kg	60000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
1,2-DICHLOROETHANE	ug/kg	500	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
1,2-DICHLOROPROPANE	ug/kg	500	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
1,3,5-TRIMETHYLBENZENE	ug/kg	510000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
1,3-DICHLOROBENZENE	ug/kg	310000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
1,3-DICHLOROPROPANE	ug/kg	2900	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
1,4-DICHLOROBENZENE	ug/kg	7500	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
2,2-DICHLOROPROPANE	ug/kg	4200	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
2-BUTANONE	ug/kg	6100000	<5.8 U	<6.32 U	<6.24 U	<6.12 U	<6 UJ	<5.76 U
2-CHLOROTOLUENE	ug/kg	200000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
2-HEXANONE	ug/kg	610000	<5.8 U	<6.32 U	<6.24 U	<6.12 U	<6 UJ	<5.76 U
4-CHLOROTOLUENE	ug/kg	200000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
4-METHYL-2-PENTANONE	ug/kg	820000	<5.8 U	<6.32 U	<6.24 U	<6.12 U	<6 UJ	<5.76 U
ACETONE	ug/kg	920000	<11.6 U	<12.6 U	11.5 J	15.7 J	18.8 J	15.9 J
BENZENE	ug/kg	500	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
BROMOBENZENE	ug/kg	200000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
BROMOCHLOROMETHANE	ug/kg	410000	<2.32 U	<2.52 U	<2.5 U	<2.44 U	<2.4 UJ	<2.3 U
BROMODICHLOROMETHANE	ug/kg	460	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
BROMOFORM	ug/kg	3600	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
BROMOMETHANE	ug/kg	14000	<2.32 U	<2.52 U	<2.5 U	<2.44 U	<2.4 UJ	<2.3 U
CARBON DISULFIDE	ug/kg	1000000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
CARBON TETRACHLORIDE	ug/kg	500	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
CHLOROBENZENE	ug/kg	10000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
CHLOROETHANE	ug/kg	4100000	<2.32 U	<2.52 U	<2.5 U	<2.44 U	<2.4 UJ	<2.3 U
CHLOROFORM	ug/kg	100000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
CHLOROMETHANE	ug/kg	22000	<4.64 U	<5.06 U	<4.98 U	<4.9 U	<4.8 UJ	<4.62 U
CIS-1,2-DICHLOROETHENE	ug/kg	7000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
CIS-1,3-DICHLOROPROPENE	ug/kg	530	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
DIBROMOCHLOROMETHANE	ug/kg	3400	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
DIBROMOMETHANE	ug/kg	38000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
DICHLORODIFLUOROMETHANE	ug/kg	2000000	<2.32 U	<2.52 U	<2.5 U	<2.44 U	<2.4 UJ	<2.3 U
ETHYLBENZENE	ug/kg	70000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
HEXACHLOROBUTADIENE	ug/kg	2000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U

Table 3-2: LHAAP-18/24 Soil Analytical Results from MW Boreholes - April 2016

Sample ID: / Sample Date:	Units	MSC	18WW25 (3.5-4) 270616 6/27/2016	18WW25 (9.5-10) 270616 6/27/2016	18WW25 (14.5-15) 270616 6/27/2016	18WW25 (19.5-20) 270616 6/27/2016	18WW25 (22-22.5) 270616 6/27/2016	18WW25 (22-22.5) 270616 DUP 6/27/2016
ISOPROPYLBENZENE	ug/kg	1000000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
M,P-XYLENE	ug/kg	1000000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
METHYLENE CHLORIDE	ug/kg	500	<2.32 U	<2.52 U	<2.5 U	<2.44 U	<2.4 UJ	<2.3 U
NAPHTHALENE	ug/kg	200000	0.612 J	<1.24 U	<1.17 U	<1.31 U	<1.23 U	<1.17 U
N-BUTYLBENZENE	ug/kg	410000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
N-PROPYLBENZENE	ug/kg	410000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
O-XYLENE	ug/kg	1000000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
P-ISOPROPYLTOLUENE	ug/kg	1000000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
SEC-BUTYLBENZENE	ug/kg	410000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
STYRENE	ug/kg	10000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
TERT-BUTYLBENZENE	ug/kg	410000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
TETRACHLOROETHENE	ug/kg	500	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
TOLUENE	ug/kg	100000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
TRANS-1,2-DICHLOROETHENE	ug/kg	10000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
TRANS-1,3-DICHLOROPROPENE	ug/kg	2900	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
TRICHLOROETHENE	ug/kg	500	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
TRICHLOROFLUOROMETHANE	ug/kg	3100000	<2.32 U	<2.52 U	<2.5 U	<2.44 U	<2.4 UJ	<2.3 U
VINYL CHLORIDE	ug/kg	200	<2.32 U	<2.52 U	<2.5 U	<2.44 U	<2.4 UJ	<2.3 U

Blue Highlighting Indicates concentrations above the MSC

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MSC - Medium-Specific Concentrations

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/kg - micrograms per kilogram

Table 3-3: LHAAP-18/24 Monitoring Well Specifications

Monitoring Well	Formation Designation	Well Diameter (Inches)	Ground Surface Elevation (ft amsl)	Top of Casing Elevation (feet amsl)	Delta TOC and Ground Surface	Borehole Depth	Casing Depth	Screened Interval	Surface Casing
						(In Feet from Ground Surface)			
18CPTMW19SW	Upper Wilcox	4	190.83	193.29	2.46	65.0	65.0	55.0-64.6	None
18CPTMW22R	Shallow Zone	4	185	187.23	2.23	16.0	14.4	4.4-14.0	None
18CPTMW22DW	Lower Wilcox	4	185.2	188	2.8	90.0	83.0	72.7-82.3	29.5
18CPTMW23SW	Upper Wilcox	4	174.77	177.43	2.66	65.7	65.7	55.3-65.0	30.0
18CPTMW26	Shallow Zone	4	180.06	182.8	2.74	15.0	14.7	4.7-14.3	None
18CPTMW26SW	Upper Wilcox	4	179.62	182	2.38	50.1	50.1	40.1-49.7	15.0
18WW25	Shallow Zone	4	172.34	175.15	2.81	24.2	24.2	14.2-23.8	None

amsl - above mean sea level

NS - not surveyed

TOC - top of casing

Table 3-4: LHAAP-18/24 Groundwater Elevation Data - June 2016

PIEZOMETER LEVELS

Piezometers	Date	Reference Elevation (feet amsl)	Depth to Water (feet)	Groundwater Elevation (feet amsl)
BGPZ-1	06/09/2016	184.99	7.09	177.90
BGPZ-2	06/09/2016	184.39	12.61	171.78
BGPZ-3	06/09/2016	180.35	9.05	171.30
BGPZ-4	06/09/2016	177.77	6.63	171.14
BGPZ-5	06/09/2016	180.76	9.11	171.65
BGPZ-6	06/09/2016	197.82	25.71	172.11
BGPZ-7	06/09/2016	195.96	27.49	168.47
BGPZ-8	06/09/2016	197.08	30.80	166.28
BGPZ-9	06/09/2016	196.45	28.20	168.25
BGPZ-10	06/09/2016	197.00	27.59	169.41
BGPZ-11	06/09/2016	196.99	27.17	169.82
BGPZ-12	06/09/2016	188.17	NA	Plugged

MONITORING WELL LEVELS

Monitoring Wells	Date	Reference Elevation (feet amsl)	Depth to Water (feet)	Groundwater Elevation (feet amsl)
AWD-1	06/09/2016	182.27	9.64	172.63
AWD-2	06/09/2016	186.78	13.05	173.73
AWD-3	06/09/2016	200.13	27.71	172.42
AWD-4	06/09/2016	193.89	21.55	172.34
MW-1	06/09/2016	199.22	27.15	172.07
MW-2	06/09/2016	196.73	27.44	169.29
MW-3	06/09/2016	196.54	26.15	170.39
MW-4	06/09/2016	197.27	25.55	171.72
MW-5	06/09/2016	194.97	24.25	170.72
MW-6	06/09/2016	192.18	21.61	170.57
MW-7	06/09/2016	188.47	18.63	169.84
MW-8	06/09/2016	187.13	15.56	171.57
MW-9	06/09/2016	184.73	13.57	171.16
MW-10	06/09/2016	178.12	7.77	170.35
MW-11	06/09/2016	184.65	13.19	171.46
MW-12	06/09/2016	178.33	8.58	169.75
MW-13	06/09/2016	176.72	6.77	169.95
MW-14	06/09/2016	186.19	12.53	173.66
MW-16	06/09/2016	178.59	7.91	170.68
MW-17	06/09/2016	179.03	8.81	170.22
MW-18	06/09/2016	178.58	8.59	169.99
MW-19	06/09/2016	178.60	8.45	170.15
MW-20	06/09/2016	186.64	10.59	176.05
MW-21	06/09/2016	198.70	32.53	166.17
MW-22	06/09/2016	197.51	27.69	169.82
MW-23	06/09/2016	198.79	27.44	171.35
101	06/09/2016	197.53	7.09	190.44

Table 3-4: LHAAP-18/24 Groundwater Elevation Data - June 2016

Monitoring Wells	Date	Reference Elevation (feet amsl)	Depth to Water (feet)	Groundwater Elevation (feet amsl)
102	06/09/2016	193.94	21.13	172.81
109	06/09/2016	197.02	28.50	168.52
120	06/09/2016	184.19	12.31	171.88
123	06/09/2016	186.21	12.60	173.61
125	06/09/2016	196.28	24.08	172.20
126	06/09/2016	199.37	28.85	170.52
129	06/09/2016	197.24	25.95	171.29
130	06/09/2016	177.73	6.30	171.43
C-01	06/09/2016	193.89	23.68	170.21
C-02	06/09/2016	175.95	5.89	170.06
C-03	06/09/2016	196.34	26.22	170.12
C-04	06/09/2016	194.64	24.12	170.52
C-04A	06/09/2016	194.61	23.97	170.64
C-05	06/09/2016	180.74	10.65	170.09
C-06	06/09/2016	192.22	23.06	169.16
C-07	06/09/2016	196.80	27.18	169.62
C-08	06/09/2016	193.10	23.95	169.15
C-09	06/09/2016	202.35	33.05	169.30
C-10	06/09/2016	201.86	32.49	169.37
17WW08	06/09/2016	179.72	9.31	170.41
18WW01	06/09/2016	201.31	31.14	170.17
18WW02	06/09/2016	179.30	8.76	170.54
18WW03	06/09/2016	195.59	25.90	169.69
18WW04	06/09/2016	183.74	13.70	170.04
18WW05	06/09/2016	189.59	19.10	170.49
18WW06	06/09/2016	179.70	9.52	170.18
18WW07	06/09/2016	183.67	14.67	169.00
18WW08	06/09/2016	177.77	8.21	169.56
18WW09	06/09/2016	177.51	7.39	170.12
18WW10	06/09/2016	182.26	10.08	172.18
18WW11	06/09/2016	182.29	11.44	170.85
18WW14	06/09/2016	186.47	16.67	169.80
18WW15	06/09/2016	186.24	15.98	170.26
18WW16	06/09/2016	201.88	31.63	170.25
18WW18	06/09/2016	196.82	26.86	169.96
18WW19	06/09/2016	179.56	9.91	169.65
18WW20	06/09/2016	180.42	10.79	169.63
18WW21	06/09/2016	195.20	25.78	169.42
18WW22	06/09/2016	195.37	25.29	170.08
18WW24	06/09/2016	176.40	5.32	171.08
18CPTMW01SW	06/09/2016	198.20	27.03	171.17
18CPTMW01DW	06/09/2016	197.92	27.70	170.22
18CPTMW03SW	06/09/2016	198.53	28.55	169.98
18CPTMW04	06/09/2016	196.60	24.12	172.48

Table 3-4: LHAAP-18/24 Groundwater Elevation Data - June 2016

Monitoring Wells	Date	Reference Elevation (feet amsl)	Depth to Water (feet)	Groundwater Elevation (feet amsl)
18CPTMW04SW	06/09/2016	196.42	26.33	170.09
18CPTMW06	06/09/2016	198.12	27.95	170.17
18CPTMW07	06/09/2016	197.32	27.48	169.84
18CPTMW08SW	06/09/2016	196.38	25.98	170.40
18CPTMW08DW	06/09/2016	196.59	26.40	170.19
18CPTMW10SW	06/09/2016	186.98	16.57	170.41
18CPTMW10DW	06/09/2016	187.38	16.95	170.43
18CPTMW12SW	06/09/2016	190.90	20.60	170.30
18CPTMW12DW	06/09/2016	190.25	19.98	170.27
18CPTMW14	06/09/2016	196.69	27.05	169.64
18CPTMW15	06/09/2016	179.79	9.78	170.01
18CPTMW16	06/09/2016	175.37	5.41	169.96
18CPTMW18	06/09/2016	194.53	27.43	167.10
18CPTMW19	06/09/2016	193.59	21.89	171.70
18CPTMW19SW	06/09/2016	193.29	22.96	170.33
18CPTMW22SW	06/09/2016	187.79	17.92	169.87
18CPTMW22R	06/09/2016	187.23	9.14	178.09
18CPTMW22DW	06/09/2016	188.00	17.72	170.28
18CPTMW23	06/09/2016	177.47	7.39	170.08
18CPTMW23SW	06/09/2016	177.43	7.07	170.36
18CPTMW24	06/09/2016	194.89	26.58	168.31
18CPTMW26	06/09/2016	182.80	15.72	167.08
18CPTMW26SW	06/09/2016	182.00	11.71	170.29

Table 3-5: LHAAP-18/24 Semi-Annual Sampling - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	102-061616 6/16/2016	109-062216 6/22/2016	120-061616 6/16/2016	120F-061616 6/16/2016	123-061616 6/16/2016	125-062216 6/22/2016	126-061416 6/14/2016	126F-061416 6/14/2016	129-061616 6/16/2016	130-061016 6/10/2016	130FD-061016 6/10/2016	18CPTMW01DW-062416 6/24/2016	18CPTMW01SW-062416 6/24/2016	18CPTMW03SW-060816 6/8/2016
Metals (6010C)																
ALUMINUM	mg/L	100	NA	3.62	NA	1.53	1.42	NA	NA	<0.1 U	0.644	NA	NA	NA	<0.1 U	NA
BERYLLIUM	mg/L	0.004	NA	<0.01 U	NA	<0.01 U	<0.01 U	NA	NA	<0.01 U	<0.01 U	NA	NA	NA	<0.01 U	NA
CALCIUM	mg/L		NA	2.3	NA	6.89	8.16	NA	NA	296	13.2	NA	NA	NA	29.4	NA
IRON	mg/L		NA	3.98	NA	2.04	1.66	NA	NA	5.93	1.18	NA	NA	NA	54	NA
MAGNESIUM	mg/L		NA	1.9	NA	7.27	4.83	NA	NA	235	10.4	NA	NA	NA	20.1	NA
POTASSIUM	mg/L		NA	0.692 J	NA	1.55 J	0.713 J	NA	NA	4.36	0.716 J	NA	NA	NA	4.98	NA
SELENIUM	mg/L	0.05	NA	0.00538 J	NA	<0.01 U	<0.01 U	NA	NA	<0.01 U	<0.01 U	NA	NA	NA	<0.01 U	NA
SODIUM	mg/L		NA	33.8	NA	303	26	NA	NA	829	146	NA	NA	NA	102	NA
Metals (6020A)																
ANTIMONY	mg/L	0.006	NA	<0.001 U	NA	<0.001 U	<0.001 U	NA	NA	<0.001 U	<0.001 U	NA	NA	NA	<0.001 U	NA
ARSENIC	mg/L	0.01	NA	0.00137 J	NA	0.00356	0.000767 J	NA	NA	0.0147	0.0011 J	NA	NA	NA	0.0173	NA
BARIUM	mg/L	2	NA	0.0812	NA	0.0452	0.136	NA	NA	9.33	0.293	NA	NA	NA	0.894	NA
CADMIUM	mg/L	0.005	NA	<0.0006 U	NA	<0.0006 U	<0.0006 U	NA	NA	<0.0006 U	0.000383 J	NA	NA	NA	<0.0006 U	NA
CHROMIUM	mg/L	0.1	NA	0.00387 J	NA	0.012	0.00177 J	NA	NA	0.00231 J	0.00415	NA	NA	NA	0.00204 J	NA
COBALT	mg/L	6.1	NA	0.00149 J	NA	0.0151	0.0025	NA	NA	0.0656	0.00182 J	NA	NA	NA	0.00176 J	NA
COPPER	mg/L	1.3	NA	0.00212 J	NA	0.00476	0.00142 J	NA	NA	0.00314 J	0.00173 J	NA	NA	NA	<0.002 U	NA
LEAD	mg/L	0.015	NA	0.00176 J	NA	0.00162 J	0.00104 J	NA	NA	<0.001 U	0.000875 J	NA	NA	NA	<0.001 U	NA
MANGANESE	mg/L	1.1	NA	0.028	NA	0.186	0.0161	NA	NA	1.07	0.0478	NA	NA	NA	0.589	NA
NICKEL	mg/L	0.49	NA	0.00389 J	NA	0.0755	0.00319 J	NA	NA	0.0313	0.00956	NA	NA	NA	0.00341 J	NA
SILVER	mg/L	0.51	NA	<0.001 U	NA	<0.001 U	<0.001 U	NA	NA	<0.001 U	<0.001 U	NA	NA	NA	<0.001 U	NA
THALLIUM	mg/L	0.002	NA	<0.0002 U	NA	<0.0002 U	<0.0002 U	NA	NA	<0.0002 U	<0.0002 U	NA	NA	NA	<0.0002 U	NA
VANADIUM	mg/L	0.72	NA	0.00678	NA	0.0105	0.00241	NA	NA	0.000584 J	0.00246	NA	NA	NA	0.00094 J	NA
ZINC	mg/L	31	NA	0.0126 J	NA	0.0659	<0.025 U	NA	NA	0.0168 J	<0.025 U	NA	NA	NA	<0.025 U	NA
Perchlorate (6850)																
PERCHLORATE	ug/L	17	107	1810	32700	NA	105	935	0.14 J	NA	8950	64.5	62.5	<0.2 U	<0.2 U	260
Mercury (7470A)																
MERCURY	mg/L	0.002	NA	<0.0002 U	NA	<0.0002 U	<0.0002 U	NA	NA	<0.0002 U	<0.0002 U	NA	NA	NA	<0.0002 U	NA
Volatile Organic Compounds (8260B)																
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	<2 U	<40 U	NA	<0.4 U	<0.4 U	<0.4 UJ	NA	<2 U	<0.4 U	<0.4 U	<0.4 U	<4 U	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	0.884 J	<25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	NA	<1.25 U	<0.25 U	<0.25 U	<0.25 U	<2.5 U	0.304 J
1,1-DICHLOROETHENE	ug/L	7	<1 U	<5 U	134 J	NA	<1 U	<1 UJ	<1 UJ	NA	<5 U	<1 U	<1 U	<1 UJ	<10 U	<1 U
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	<1.5 U	<30 U	NA	<0.3 U	<0.3 U	<0.3 UJ	NA	<1.5 U	<0.3 U	<0.3 U	<0.3 U	<3 U	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	<5 U	<100 U	NA	<1 U	<1 U	<1 UJ	NA	<5 U	<1 U	<1 U	<1 U	<10 U	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	<2 U	<40 U	NA	<0.4 U	<0.4 U	<0.4 UJ	NA	<2 U	<0.4 U	<0.4 U	<0.4 U	<4 U	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	<10 UJ	<200 U	NA	<2 U	<2 U	<2 UJ	NA	<10 U	<2 U	<2 U	<2 U	<20 U	<2 UJ
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	<1.25 U	<25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	NA	<1.25 U	<0.25 U	<0.25 U	<0.25 U	<2.5 U	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<2.5 U	32.1 J	NA	1.2	<0.5 U	<0.5 UJ	NA	25.4	<0.5 U	<0.5 U	<0.5 U	<5 U	13
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	<2 U	<40 U	NA	<0.4 U	<0.4 U	<0.4 UJ	NA	<2 U	<0.4 U	<0.4 U	<0.4 U	<4 U	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	<2 U	<40 U	NA	<0.4 U	<0.4 U	<0.4 UJ	NA	<2 U	<0.4 U	<0.4 U	<0.4 U	<4 U	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	<1.25 U	<25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	NA	<1.25 U	<0.25 U	<0.25 U	<0.25 U	<2.5 U	<0.25 U
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	<2.5 UJ	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	<0.5 U
2-BUTANONE	ug/L	15000	<5 U	<25 U	<500 U	NA	<5 U	<5 UJ	<5 UJ	NA	<25 U	<5 U	<5 U	<5 UJ	<50 U	<5 UJ
2-CHLOROTOLUENE	ug/L	490	<0.25 U	<1.25 U	<25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	NA	<1.25 U	<0.25 U	<0.25 U	<0.25 U	<2.5 U	<0.25 U
2-HEXANONE	ug/L	120	<5 UJ	<25 UJ	<500 UJ	NA	<5 UJ	<5 U	<5 UJ	NA	<25 UJ	<5 U	<5 U	<5 U	<50 UJ	<5 UJ
4-CHLOROTOLUENE	ug/L	490	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	<25 U	<500 U	NA	<5 U	<5 U	<5 UJ	NA	<25 U	<5 U	<5 U	<5 U	<50 U	<5 U
ACETONE	ug/L	22000	<5 U	<25 UJ	<500 U	NA	<5 U	<5 UJ	<5 UJ	NA	<25 U	<5 U	<5 U	<5 UJ	<50 U	7.3 J
BENZENE	ug/L	5	<0.25 U	<1.25 U	<25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	NA	<1.25 U	<0.25 U	<0.25 U	<0.25 U	5.49 J	6.13
BROMOBENZENE	ug/L	200	<0.25 U	<1.25 U	<25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	NA	<1.25 U	<0.25 U	<0.25 U	<0.25 U	<2.5 U	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	<2 U	<40 U	NA	<0.4 U	<0.4 U	<0.4 UJ	NA	<2 U	<0.4 U	<0.4 U	<0.4 U	<4 U	<0.4 U

Table 3-5: LHAAP-18/24 Semi-Annual Sampling - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	102- 061616 6/16/2016	109- 062216 6/22/2016	120- 061616 6/16/2016	120F- 061616 6/16/2016	123- 061616 6/16/2016	125- 062216 6/22/2016	126- 061416 6/14/2016	126F- 061416 6/14/2016	129- 061616 6/16/2016	130- 061016 6/10/2016	130FD- 061016 6/10/2016	18CPTMW01DW- 062416 6/24/2016	18CPTMW01SW- 062416 6/24/2016	18CPTMW03SW- 060816 6/8/2016
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	<0.5 U
BROMOFORM	ug/L	120	<1 U	<5 U	<100 U	NA	<1 U	<1 U	<1 UJ	NA	<5 U	<1 U	<1 U	<1 U	<10 U	<1 U
BROMOMETHANE	ug/L	34	<1 U	<5 U	<100 U	NA	<1 U	<1 U	<1 UJ	NA	<5 U	<1 U	<1 U	<1 U	<10 U	<1 U
CARBON DISULFIDE	ug/L	2400	<1 U	<5 U	<100 U	NA	<1 U	<1 U	<1 UJ	NA	<5 U	<1 U	<1 U	1.27 J	<10 U	<1 U
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	<0.5 U
CHLOROBENZENE	ug/L	100	<0.25 U	<1.25 U	<25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	NA	<1.25 U	<0.25 U	<0.25 U	<0.25 U	<2.5 U	<0.25 U
CHLOROETHANE	ug/L	98000	<1 U	<5 U	<100 U	NA	<1 U	<1 U	<1 UJ	NA	<5 U	<1 U	<1 U	<1 U	<10 U	<1 U
CHLOROFORM	ug/L	240	<0.25 U	1.61 J	38 J	NA	<0.25 U	<0.25 U	<0.25 UJ	NA	3.28 J	<0.25 U	<0.25 U	<0.25 U	<2.5 U	<0.25 U
CHLOROMETHANE	ug/L	70	<1 U	<5 U	<100 U	NA	<1 U	<1 UJ	<1 UJ	NA	<5 U	<1 U	<1 U	<1 UJ	<10 U	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	149	1510	NA	14.4	<0.5 U	<0.5 UJ	NA	5.02	<0.5 U	<0.5 U	0.331 J	2.99 J	19.4
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	<0.5 U
DIBROMOMETHANE	ug/L	120	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 UJ	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 UJ	<5 U	<0.5 U
ETHYLBENZENE	ug/L	700	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	<0.5 U
M,P-XYLENE	ug/L	10000	<1 U	<5 U	<100 U	NA	<1 U	<1 U	<1 UJ	NA	<5 U	<1 U	<1 U	<1 U	<10 U	<1 U
METHYLENE CHLORIDE	ug/L	5	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	1.14	746	1.83
NAPHTHALENE	ug/L	490	<0.4 U	<2 U	<40 U	NA	<0.4 U	<0.4 U	<0.4 UJ	NA	<2 U	<0.4 U	<0.4 U	<0.4 U	<4 U	<0.4 U
N-BUTYLBENZENE	ug/L	1200	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	<0.5 U
N-PROPYLBENZENE	ug/L	980	<0.25 U	<1.25 U	<25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	NA	<1.25 U	<0.25 U	<0.25 U	<0.25 U	<2.5 U	<0.25 U
O-XYLENE	ug/L	10000	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	<0.5 U
STYRENE	ug/L	100	<0.25 U	<1.25 U	<25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	NA	<1.25 U	<0.25 U	<0.25 U	<0.25 U	<2.5 U	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	<0.5 U
TOLUENE	ug/L	1000	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	4.07 J	0.457 J
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	1.69 J	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	4.5
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	<5 U	<100 U	NA	<1 U	<1 U	<1 UJ	NA	<5 U	<1 U	<1 U	<1 U	<10 U	<1 U
TRICHLOROETHENE	ug/L	5	<0.5 U	670	17100	NA	80.1	0.844 J	<0.5 UJ	NA	1630	1.17	1.19	0.63 J	46.5	153
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	22.5	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	<2.5 U	88.7 J	NA	<0.5 U	<0.5 UJ	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 UJ	<5 U	1.12
1,4-Dioxane (8270D-SIM)																
1,4-DIOXANE	ug/L	9.1	NA	<1 U	220	NA	0.587 J	NA	<1 U	NA	6.52	NA	NA	<1 U	<1 U	1.15 J

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter.

Location IDs containing "FD" indicate duplicate samples.

Location IDs containing "B" indicate sample taken at bottom of screened interval and "T" indicate sample taken at top of screened interval.

Blue Highlighting Indicates Analyte Detected Above MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Level

mg/L - milligrams per liter

NA - not analyzed

PCL – Texas Residential Groundwater protective concentration level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 3-5: LHAAP-18/24 Semi-Annual Sampling - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	18CPTMW04-061416 6/14/2016	18CPTMW04FD-061416 6/14/2016	18CPTMW04SW-061416 6/14/2016	18CPTMW06-060816 6/8/2016	18CPTMW07-062216 6/22/2016	18CPTMW08DW-060816 6/8/2016	18CPTMW08SW-060816 6/8/2016	18CPTMW10SW-062216 6/22/2016	18CPTMW12DW-062416 6/24/2016	18CPTMW12SW-062416 6/24/2016	18CPTMW14-061316 6/13/2016	18CPTMW14FD-061316 6/13/2016	18CPTMW15B-060716 6/7/2016
Metals (6010C)															
ALUMINUM	mg/L	100	NA	NA	0.0639 J	NA	NA	NA	NA	NA	NA	0.0712 J	0.4	0.377	NA
BERYLLIUM	mg/L	0.004	NA	NA	<0.01 U	NA	NA	NA	NA	NA	NA	<0.01 U	<0.01 U	<0.01 U	NA
CALCIUM	mg/L		NA	NA	38.2	NA	NA	NA	NA	NA	NA	45.3	490	477	NA
IRON	mg/L		NA	NA	6.72	NA	NA	NA	NA	NA	NA	3.46	0.0599 J	0.0756 J	NA
MAGNESIUM	mg/L		NA	NA	19.1	NA	NA	NA	NA	NA	NA	32.8	12.5	13.5	NA
POTASSIUM	mg/L		NA	NA	64.8	NA	NA	NA	NA	NA	NA	82	33.5	33.6	NA
SELENIUM	mg/L	0.05	NA	NA	<0.01 U	NA	NA	NA	NA	NA	NA	<0.01 U	<0.01 U	<0.01 U	NA
SODIUM	mg/L		NA	NA	117	NA	NA	NA	NA	NA	NA	235	378	373	NA
Metals (6020A)															
ANTIMONY	mg/L	0.006	NA	NA	<0.001 U	NA	NA	NA	NA	NA	NA	<0.001 U	<0.001 U	<0.001 U	NA
ARSENIC	mg/L	0.01	NA	NA	0.00407	NA	NA	NA	NA	NA	NA	0.00647	0.00659	0.00731	NA
BARIUM	mg/L	2	NA	NA	0.936	NA	NA	NA	NA	NA	NA	0.667	2.42	2.47	NA
CADMIUM	mg/L	0.005	NA	NA	<0.0006 U	NA	NA	NA	NA	NA	NA	<0.0006 U	<0.0006 U	<0.0006 U	NA
CHROMIUM	mg/L	0.1	NA	NA	0.0095	NA	NA	NA	NA	NA	NA	0.00727	0.0803	0.0794	NA
COBALT	mg/L	6.1	NA	NA	0.00368	NA	NA	NA	NA	NA	NA	0.00964	0.00346	0.00333	NA
COPPER	mg/L	1.3	NA	NA	<0.002 U	NA	NA	NA	NA	NA	NA	<0.002 U	0.00404	0.0042	NA
LEAD	mg/L	0.015	NA	NA	<0.001 U	NA	NA	NA	NA	NA	NA	<0.001 U	<0.001 U	<0.001 U	NA
MANGANESE	mg/L	1.1	NA	NA	0.213	NA	NA	NA	NA	NA	NA	0.893	0.00644	0.00655	NA
NICKEL	mg/L	0.49	NA	NA	0.00574 J	NA	NA	NA	NA	NA	NA	0.00744 J	0.0116	0.0113	NA
SILVER	mg/L	0.51	NA	NA	<0.001 U	NA	NA	NA	NA	NA	NA	<0.001 U	<0.001 U	<0.001 U	NA
THALLIUM	mg/L	0.002	NA	NA	<0.0002 U	NA	NA	NA	NA	NA	NA	<0.0002 U	<0.0002 U	<0.0002 U	NA
VANADIUM	mg/L	0.72	NA	NA	<0.001 U	NA	NA	NA	NA	NA	NA	0.000779 J	0.00697	0.00668	NA
ZINC	mg/L	31	NA	NA	<0.025 U	NA	NA	NA	NA	NA	NA	0.0132 J	<0.025 U	<0.025 U	NA
Perchlorate (6850)															
PERCHLORATE	ug/L	17	1360	1380	0.186 J	30.3	0.634	672	35000	<0.2 U	NA	3.92	505	520	555
Mercury (7470A)															
MERCURY	mg/L	0.002	NA	NA	<0.0002 U	NA	NA	NA	NA	NA	NA	<0.0002 U	<0.0002 U	<0.0002 U	NA
Volatile Organic Compounds (8260B)															
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	0.314 J	0.311 J	<0.25 U	<0.25 U	<0.25 U	NA	4.43	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,1-DICHLOROETHENE	ug/L	7	5.87	5.76	<1 U	<1 U	<1 U	NA	0.989 J	<1 UJ	NA	<1 UJ	<1 U	<1 U	<1 U
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	NA	<0.3 U	<0.3 U	NA	<0.3 U	<0.3 U	<0.3 U	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	<1 U	<1 U	<1 U	<1 U	NA	<1 U	<1 U	NA	<1 U	<1 U	<1 U	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	<2 U	<2 U	<2 U	<2 UJ	NA	<2 UJ	<2 U	NA	<2 U	<2 U	<2 U	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	4.87	4.84	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	1.66	1.52	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	0.491 J	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
2-BUTANONE	ug/L	15000	<5 U	<5 U	<5 U	<5 U	<5 U	NA	<5 UJ	<5 U	NA	<5 UJ	<5 U	<5 U	<5 U
2-CHLOROTOLUENE	ug/L	490	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U
2-HEXANONE	ug/L	120	<5 U	<5 U	<5 U	<5 U	<5 UJ	NA	<5 UJ	<5 U	NA	<5 U	<5 U	<5 U	<5 U
4-CHLOROTOLUENE	ug/L	490	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	<5 U	<5 U	<5 U	<5 U	NA	<5 U	<5 U	NA	<5 U	<5 U	<5 U	<5 U
ACETONE	ug/L	22000	<5 U	<5 U	<5 U	<5 U	<5 UJ	NA	<5 UJ	<5 U	NA	<5 UJ	<5 U	<5 U	<5 U
BENZENE	ug/L	5	0.618 J	0.612 J	<0.25 U	<0.25 U	<0.25 U	NA	0.173 J	<0.25 U	NA	<0.25 U	0.524 J	0.509 J	<0.25 U
BROMOBENZENE	ug/L	200	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U

Table 3-5: LHAAP-18/24 Semi-Annual Sampling - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	18CPTMW04-061416 6/14/2016	18CPTMW04FD-061416 6/14/2016	18CPTMW04SW-061416 6/14/2016	18CPTMW06-060816 6/8/2016	18CPTMW07-062216 6/22/2016	18CPTMW08DW-060816 6/8/2016	18CPTMW08SW-060816 6/8/2016	18CPTMW10SW-062216 6/22/2016	18CPTMW12DW-062416 6/24/2016	18CPTMW12SW-062416 6/24/2016	18CPTMW14-061316 6/13/2016	18CPTMW14FD-061316 6/13/2016	18CPTMW15B-060716 6/7/2016
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
BROMOFORM	ug/L	120	<1 U	<1 U	<1 U	<1 U	<1 U	NA	<1 U	<1 U	NA	<1 U	<1 U	<1 U	<1 U
BROMOMETHANE	ug/L	34	<1 U	<1 U	<1 U	<1 U	<1 U	NA	<1 U	<1 U	NA	<1 U	<1 UJ	<1 UJ	<1 UJ
CARBON DISULFIDE	ug/L	2400	<1 U	<1 U	<1 U	<1 U	<1 U	NA	<1 U	<1 U	NA	<1 U	<1 U	<1 U	<1 U
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CHLOROBENZENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U
CHLOROETHANE	ug/L	98000	<1 U	<1 U	<1 U	<1 U	<1 U	NA	<1 U	<1 U	NA	<1 U	<1 U	<1 U	<1 U
CHLOROFORM	ug/L	240	3.39	3.33	<0.25 U	<0.25 U	<0.25 U	NA	0.508 J	<0.25 U	NA	<0.25 U	2.2	2.13	<0.25 U
CHLOROMETHANE	ug/L	70	<1 U	<1 U	<1 U	<1 U	<1 U	NA	<1 U	<1 U	NA	<1 UJ	<1 U	<1 U	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	76.9	76.2	<0.5 U	<0.5 U	<0.5 U	NA	17.4	<0.5 U	NA	<0.5 U	25.7	25.1	0.532 J
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOMETHANE	ug/L	120	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 UJ	<0.5 U	<0.5 U	<0.5 U
ETHYLBENZENE	ug/L	700	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
M,P-XYLENE	ug/L	10000	<1 U	<1 U	<1 U	<1 U	<1 U	NA	<1 U	<1 U	NA	<1 U	<1 U	<1 U	<1 U
METHYLENE CHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	2.04	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
NAPHTHALENE	ug/L	490	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 UJ
N-BUTYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
N-PROPYLBENZENE	ug/L	980	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U
O-XYLENE	ug/L	10000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
STYRENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	0.494 J	0.528 J	<0.5 U	<0.5 U	<0.5 U	NA	0.29 J	<0.5 U	NA	<0.5 U	0.422 J	0.464 J	<0.5 U
TOLUENE	ug/L	1000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	0.593 J	0.671 J	<0.5 U	<0.5 U	<0.5 U	NA	0.347 J	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	<1 U	<1 U	<1 U	<1 U	NA	<1 U	<1 U	NA	<1 U	<1 U	<1 U	<1 U
TRICHLOROETHENE	ug/L	5	2030	1960	<0.5 U	1.02	0.34 J	NA	74.2	<0.5 U	NA	1.7	212	208	3.22
TRICHLOROFLUOROMETHANE	ug/L	7300	1.09	1.1	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	0.617 J	0.631 J	<0.5 U	<0.5 U	<0.5 U	NA	8.97	<0.5 U	NA	<0.5 UJ	<0.5 U	<0.5 U	0.319 J
1,4-Dioxane (8270D-SIM)															
1,4-DIOXANE	ug/L	9.1	1.67 J	2.01	<1 U	<1 U	<1 U	<1 U	1.39 J	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter.

Location IDs containing "FD" indicate duplicate samples.

Location IDs containing "B" indicate sample taken at bottom of screened interval and "T" indicate sample taken at top of screened interval.

Blue Highlighting Indicates Analyte Detected Above MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Level

mg/L - milligrams per liter

NA - not analyzed

PCL – Texas Residential Groundwater protective concentration level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 3-5: LHAAP-18/24 Semi-Annual Sampling - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	18CPTMW15T-060716 6/7/2016	18CPTMW16-062116 6/21/2016	18CPTMW18-062116 6/21/2016	18CPTMW19-061516 6/15/2016	18CPTMW19SW-061516 6/15/2016	18CPTMW22DW-060916 6/9/2016	18CPTMW22DW FD-060916 6/9/2016	18CPTMW22R-060916 6/9/2016	18CPTMW22SW-060916 6/9/2016	18CPTMW23-061516 6/15/2016	18CPTMW23SW-061516 6/15/2016	18CPTMW24-061316 6/13/2016	18CPTMW26SW-060916 6/9/2016
Metals (6010C)															
ALUMINUM	mg/L	100	NA	NA	<0.1 U	NA	NA	NA	NA	NA	NA	NA	NA	0.109 J	0.158 J
BERYLLIUM	mg/L	0.004	NA	NA	<0.01 U	NA	NA	NA	NA	NA	NA	NA	NA	<0.01 U	<0.01 U
CALCIUM	mg/L		NA	NA	337	NA	NA	NA	NA	NA	NA	NA	NA	431	61.4
IRON	mg/L		NA	NA	2.44	NA	NA	NA	NA	NA	NA	NA	NA	9.62	72.2
MAGNESIUM	mg/L		NA	NA	203	NA	NA	NA	NA	NA	NA	NA	NA	265	34.1
POTASSIUM	mg/L		NA	NA	7.88	NA	NA	NA	NA	NA	NA	NA	NA	5.86	3.46
SELENIUM	mg/L	0.05	NA	NA	0.0077 J	NA	NA	NA	NA	NA	NA	NA	NA	<0.01 U	0.00586 J
SODIUM	mg/L		NA	NA	849	NA	NA	NA	NA	NA	NA	NA	NA	1090	320
Metals (6020A)															
ANTIMONY	mg/L	0.006	NA	NA	<0.001 U	NA	NA	NA	NA	NA	NA	NA	NA	<0.001 U	<0.001 U
ARSENIC	mg/L	0.01	NA	NA	0.0161	NA	NA	NA	NA	NA	NA	NA	NA	0.0161	0.0064
BARIUM	mg/L	2	NA	NA	0.713	NA	NA	NA	NA	NA	NA	NA	NA	10.3	0.635
CADMIUM	mg/L	0.005	NA	NA	<0.0006 U	NA	NA	NA	NA	NA	NA	NA	NA	<0.0006 U	<0.0006 U
CHROMIUM	mg/L	0.1	NA	NA	0.013	NA	NA	NA	NA	NA	NA	NA	NA	0.00409	0.00237 J
COBALT	mg/L	6.1	NA	NA	0.0229	NA	NA	NA	NA	NA	NA	NA	NA	0.00662	0.000803 J
COPPER	mg/L	1.3	NA	NA	0.00266 J	NA	NA	NA	NA	NA	NA	NA	NA	0.00296 J	0.00116 J
LEAD	mg/L	0.015	NA	NA	<0.001 U	NA	NA	NA	NA	NA	NA	NA	NA	<0.001 U	<0.001 U
MANGANESE	mg/L	1.1	NA	NA	2.81	NA	NA	NA	NA	NA	NA	NA	NA	0.563	1.7
NICKEL	mg/L	0.49	NA	NA	0.027	NA	NA	NA	NA	NA	NA	NA	NA	0.0163	0.00238 J
SILVER	mg/L	0.51	NA	NA	<0.001 U	NA	NA	NA	NA	NA	NA	NA	NA	<0.001 U	<0.001 U
THALLIUM	mg/L	0.002	NA	NA	0.000115 J	NA	NA	NA	NA	NA	NA	NA	NA	<0.0002 U	<0.0002 U
VANADIUM	mg/L	0.72	NA	NA	0.00313	NA	NA	NA	NA	NA	NA	NA	NA	0.00192 J	0.00101 J
ZINC	mg/L	31	NA	NA	0.0175 J	NA	NA	NA	NA	NA	NA	NA	NA	<0.025 U	<0.025 U
Perchlorate (6850)															
PERCHLORATE	ug/L	17	1630	<0.2 U	<0.2 U	5.31	1.25	1.21 J	0.473 J	0.917	10200	2310	0.407	99	6.42
Mercury (7470A)															
MERCURY	mg/L	0.002	NA	NA	<0.0002 U	NA	NA	NA	NA	NA	NA	NA	NA	<0.0002 U	<0.0002 U
Volatile Organic Compounds (8260B)															
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 UJ	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	0.858 J	<0.5 U	<0.5 UJ	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	1.06	<0.25 U	<0.25 UJ	<0.25 U
1,1-DICHLOROETHENE	ug/L	7	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	10.1	<1 U	<1 UJ	<1 U
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	NA	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 UJ	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 UJ	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	NA	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 UJ	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	214	<0.5 U	<0.5 UJ	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 UJ	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 UJ	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
2-BUTANONE	ug/L	15000	<5 U	NA	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 UJ	<5 U
2-CHLOROTOLUENE	ug/L	490	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U
2-HEXANONE	ug/L	120	<5 U	NA	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 UJ	<5 U
4-CHLOROTOLUENE	ug/L	490	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	NA	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 UJ	<5 U
ACETONE	ug/L	22000	<5 U	NA	3.39 J	<5 U	<5 U	<5 U	<5 U	<5 U	15.4	<5 U	9.67 J	<5 UJ	7.39 J
BENZENE	ug/L	5	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	1.59	<0.25 U	<0.25 UJ	<0.25 U
BROMOBENZENE	ug/L	200	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	NA	<0.4 U	<0.4 U	0.388 J	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 UJ	<0.4 U

Table 3-5: LHAAP-18/24 Semi-Annual Sampling - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	18CPTMW15T-060716 6/7/2016	18CPTMW16-062116 6/21/2016	18CPTMW18-062116 6/21/2016	18CPTMW19-061516 6/15/2016	18CPTMW19SW-061516 6/15/2016	18CPTMW22DW-060916 6/9/2016	18CPTMW22DW FD-060916 6/9/2016	18CPTMW22R-060916 6/9/2016	18CPTMW22SW-060916 6/9/2016	18CPTMW23-061516 6/15/2016	18CPTMW23SW-061516 6/15/2016	18CPTMW24-061316 6/13/2016	18CPTMW26SW-060916 6/9/2016
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
BROMOFORM	ug/L	120	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 U
BROMOMETHANE	ug/L	34	<1 UJ	NA	<1 U	<1 UJ	<1 U	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1 U	<1 U	<1 UJ	<1 UJ
CARBON DISULFIDE	ug/L	2400	<1 U	NA	<1 U	<1 U	0.599 J	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 U
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
CHLOROBENZENE	ug/L	100	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U
CHLOROETHANE	ug/L	98000	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 U
CHLOROFORM	ug/L	240	<0.25 U	NA	<0.25 U	<0.25 U	0.25 J	<0.25 U	<0.25 U	<0.25 U	<0.25 U	5.45	<0.25 U	<0.25 UJ	<0.25 U
CHLOROMETHANE	ug/L	70	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	0.566 J	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	232	<0.5 U	<0.5 UJ	<0.5 U
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
DIBROMOMETHANE	ug/L	120	<0.5 U	NA	<0.5 U	<0.5 U	0.506 J	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
ETHYLBENZENE	ug/L	700	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
M,P-XYLENE	ug/L	10000	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 U
METHYLENE CHLORIDE	ug/L	5	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	0.534 J	0.256 J	<0.5 U	<0.5 UJ	<0.5 U
NAPHTHALENE	ug/L	490	<0.4 UJ	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 UJ	<0.4 U
N-BUTYLBENZENE	ug/L	1200	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
N-PROPYLBENZENE	ug/L	980	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U
O-XYLENE	ug/L	10000	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
STYRENE	ug/L	100	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	1.22	<0.5 U	<0.5 UJ	<0.5 U
TOLUENE	ug/L	1000	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	4.09	<0.5 U	<0.5 UJ	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 U
TRICHLOROETHENE	ug/L	5	3.23	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	0.633 J	3820	<0.5 U	<0.5 UJ	<0.5 U
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	NA	<0.5 U	<0.5 U	0.484 J	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
VINYL CHLORIDE	ug/L	2	0.311 J	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	5.89	<0.5 U	<0.5 UJ	<0.5 U
1,4-Dioxane (8270D-SIM)															
1,4-DIOXANE	ug/L	9.1	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	8.02 J	<1 U	<1 U	<1 U

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter.

Location IDs containing "FD" indicate duplicate samples.

Location IDs containing "B" indicate sample taken at bottom of screened interval and "T" indicate sample taken at top of screened interval.

Blue Highlighting Indicates Analyte Detected Above MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Level

mg/L - milligrams per liter

NA - not analyzed

PCL – Texas Residential Groundwater protective concentration level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 3-5: LHAAP-18/24 Semi-Annual Sampling - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	17WW08-061016 6/10/2016	18WW02-062216 6/22/2016	18WW02F-062216 6/22/2016	18WW03-061416 6/14/2016	18WW03F-061416 6/14/2016	18WW06-062016 6/20/2016	18WW06FD-062016 6/20/2016	18WW08-062016 6/20/2016	18WW09-062016 6/20/2016	18WW16-061616 6/16/2016	18WW16F-061616 6/16/2016	18WW17-062116 6/21/2016	18WW18-062116 6/21/2016	18WW19-062016 6/20/2016
Metals (6010C)																
ALUMINUM	mg/L	100	1.01	NA	1.12	NA	<0.1 U	NA	NA	NA	NA	NA	0.331	NA	<0.1 U	NA
BERYLLIUM	mg/L	0.004	<0.01 U	NA	<0.01 U	NA	<0.01 U	NA	NA	NA	NA	NA	<0.01 U	NA	<0.01 U	NA
CALCIUM	mg/L		20.5	NA	7.09	NA	8.25	NA	NA	NA	NA	NA	195	NA	49.5	NA
IRON	mg/L		12.8	NA	1.61	NA	2.77	NA	NA	NA	NA	NA	21.5	NA	78	NA
MAGNESIUM	mg/L		12.3	NA	1.34	NA	5.84	NA	NA	NA	NA	NA	146	NA	34	NA
POTASSIUM	mg/L		1.94 J	NA	2.24	NA	2.16	NA	NA	NA	NA	NA	13	NA	3.75	NA
SELENIUM	mg/L	0.05	<0.01 U	NA	<0.01 U	NA	<0.01 U	NA	NA	NA	NA	NA	<0.01 U	NA	<0.01 U	NA
SODIUM	mg/L		136	NA	14.1	NA	109	NA	NA	NA	NA	NA	587	NA	146	NA
Metals (6020A)																
ANTIMONY	mg/L	0.006	<0.001 U	NA	<0.001 U	NA	<0.001 U	NA	NA	NA	NA	NA	0.00134 J	NA	<0.001 U	NA
ARSENIC	mg/L	0.01	0.00435	NA	0.000926 J	NA	0.000919 J	NA	NA	NA	NA	NA	0.00894	NA	0.00541	NA
BARIUM	mg/L	2	0.148	NA	0.0479	NA	0.173	NA	NA	NA	NA	NA	0.186	NA	1.01	NA
CADMIUM	mg/L	0.005	0.00131	NA	<0.0006 U	NA	<0.0006 U	NA	NA	NA	NA	NA	0.00645	NA	<0.0006 U	NA
CHROMIUM	mg/L	0.1	0.507	NA	0.00315 J	NA	<0.002 U	NA	NA	NA	NA	NA	4.62	NA	0.00126 J	NA
COBALT	mg/L	6.1	0.00709	NA	<0.001 U	NA	<0.001 U	NA	NA	NA	NA	NA	0.355	NA	<0.001 U	NA
COPPER	mg/L	1.3	0.017	NA	0.00608	NA	<0.002 U	NA	NA	NA	NA	NA	0.828	NA	0.00107 J	NA
LEAD	mg/L	0.015	0.00133 J	NA	0.00127 J	NA	<0.001 U	NA	NA	NA	NA	NA	<0.001 U	NA	<0.001 U	NA
MANGANESE	mg/L	1.1	0.422	NA	0.0851	NA	0.096	NA	NA	NA	NA	NA	3.12	NA	1.55	NA
NICKEL	mg/L	0.49	0.111	NA	0.00419 J	NA	<0.004 U	NA	NA	NA	NA	NA	14.3	NA	0.0497	NA
SILVER	mg/L	0.51	<0.001 U	NA	<0.001 U	NA	<0.001 U	NA	NA	NA	NA	NA	<0.001 U	NA	<0.001 U	NA
THALLIUM	mg/L	0.002	<0.0002 U	NA	<0.0002 U	NA	<0.0002 U	NA	NA	NA	NA	NA	<0.0002 U	NA	<0.0002 U	NA
VANADIUM	mg/L	0.72	<0.001 U	NA	0.00226	NA	<0.001 U	NA	NA	NA	NA	NA	<0.02 U	NA	<0.001 U	NA
ZINC	mg/L	31	0.0388 J	NA	<0.025 U	NA	<0.025 U	NA	NA	NA	NA	NA	0.158	NA	<0.025 U	NA
Perchlorate (6850)																
PERCHLORATE	ug/L	17	7.13	<0.2 U	NA	<0.2 U	NA	<0.2 U	<0.2 U	<0.2 U	<0.2 U	5.76	NA	82900	<0.2 U	<0.2 U
Mercury (7470A)																
MERCURY	mg/L	0.002	<0.0002 U	NA	<0.0002 U	NA	<0.0002 U	NA	NA	NA	NA	NA	<0.0002 U	NA	<0.0002 U	NA
Volatile Organic Compounds (8260B)																
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	<0.4 U	NA	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 UJ	<0.4 UJ	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 UJ
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	<0.25 UJ	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ
1,1-DICHLOROETHENE	ug/L	7	<1 U	<1 UJ	NA	<1 U	NA	<1 U	<1 U	<1 UJ	<1 UJ	<1 U	NA	<1 U	<1 U	<1 UJ
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	<0.3 U	NA	<0.3 U	NA	<0.3 U	<0.3 U	<0.3 UJ	<0.3 UJ	<0.3 U	NA	<0.3 U	<0.3 U	<0.3 UJ
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	<1 U	NA	<1 U	NA	<1 U	<1 U	<1 UJ	<1 UJ	<1 U	NA	<1 U	<1 U	<1 UJ
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	<0.4 U	NA	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 UJ	<0.4 UJ	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 UJ
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	<2 U	NA	<2 U	NA	<2 U	<2 U	<2 UJ	<2 UJ	<2 U	NA	<2 U	<2 U	<2 UJ
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	<0.25 UJ	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	<0.4 U	NA	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 UJ	<0.4 UJ	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 UJ
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	<0.4 U	NA	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 UJ	<0.4 UJ	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 UJ
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	<0.25 UJ	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
2-BUTANONE	ug/L	15000	<5 U	<5 U	NA	<5 U	NA	<5 U	<5 U	<5 UJ	<5 UJ	<5 U	NA	<5 U	<5 U	<5 UJ
2-CHLOROTOLUENE	ug/L	490	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	<0.25 UJ	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ
2-HEXANONE	ug/L	120	<5 U	<5 U	NA	<5 U	NA	<5 U	<5 U	<5 UJ	<5 UJ	<5 UJ	NA	<5 U	<5 U	<5 UJ
4-CHLOROTOLUENE	ug/L	490	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	<5 U	NA	<5 U	NA	<5 U	<5 U	<5 UJ	<5 UJ	<5 U	NA	<5 U	<5 U	<5 UJ
ACETONE	ug/L	22000	<5 U	4.31 J	NA	<5 U	NA	<5 U	<5 U	<5 UJ	<5 UJ	<5 U	NA	<5 U	4.41 J	<5 UJ
BENZENE	ug/L	5	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	<0.25 UJ	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ
BROMOBENZENE	ug/L	200	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	<0.25 UJ	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	<0.4 U	NA	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 UJ	<0.4 UJ	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 UJ

Table 3-5: LHAAP-18/24 Semi-Annual Sampling - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	17WW08-061016 6/10/2016	18WW02-062216 6/22/2016	18WW02F-062216 6/22/2016	18WW03-061416 6/14/2016	18WW03F-061416 6/14/2016	18WW06-062016 6/20/2016	18WW06FD-062016 6/20/2016	18WW08-062016 6/20/2016	18WW09-062016 6/20/2016	18WW16-061616 6/16/2016	18WW16F-061616 6/16/2016	18WW17-062116 6/21/2016	18WW18-062116 6/21/2016	18WW19-062016 6/20/2016
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
BROMOFORM	ug/L	120	<1 U	<1 U	NA	<1 U	NA	<1 U	<1 U	<1 UJ	<1 UJ	<1 U	NA	<1 U	<1 U	<1 UJ
BROMOMETHANE	ug/L	34	<1 U	<1 U	NA	<1 U	NA	<1 U	<1 U	<1 UJ	<1 UJ	<1 U	NA	<1 U	<1 U	<1 UJ
CARBON DISULFIDE	ug/L	2400	<1 U	<1 U	NA	<1 U	NA	<1 U	<1 U	<1 UJ	<1 UJ	<1 U	NA	<1 U	<1 U	<1 UJ
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
CHLOROBENZENE	ug/L	100	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	<0.25 UJ	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ
CHLOROETHANE	ug/L	98000	<1 U	<1 U	NA	<1 U	NA	<1 U	<1 U	<1 UJ	<1 UJ	<1 U	NA	<1 U	<1 U	<1 UJ
CHLOROFORM	ug/L	240	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	<0.25 UJ	<0.25 U	NA	0.275 J	<0.25 U	<0.25 UJ
CHLOROMETHANE	ug/L	70	<1 U	<1 U	NA	<1 U	NA	<1 U	<1 U	<1 UJ	<1 UJ	0.605 J	NA	<1 U	<1 U	<1 UJ
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	0.703 J	<0.5 U	<0.5 UJ
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
DIBROMOMETHANE	ug/L	120	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
ETHYLBENZENE	ug/L	700	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
M,P-XYLENE	ug/L	10000	<1 U	<1 U	NA	<1 U	NA	<1 U	<1 U	<1 UJ	<1 UJ	<1 U	NA	<1 U	<1 U	<1 UJ
METHYLENE CHLORIDE	ug/L	5	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
NAPHTHALENE	ug/L	490	<0.4 U	<0.4 U	NA	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 UJ	<0.4 UJ	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 UJ
N-BUTYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
N-PROPYLBENZENE	ug/L	980	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	<0.25 UJ	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ
O-XYLENE	ug/L	10000	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
STYRENE	ug/L	100	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	<0.25 UJ	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
TETRACHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
TOLUENE	ug/L	1000	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	<1 U	NA	<1 U	NA	<1 U	<1 U	<1 UJ	<1 UJ	<1 U	NA	<1 U	<1 U	<1 UJ
TRICHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	46.3	<0.5 U	<0.5 UJ
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
1,4-Dioxane (8270D-SIM)																
1,4-DIOXANE	ug/L	9.1	NA	<1 U	NA	<1 U	NA	<1 U	<1 U	<1 UJ	<1 UJ	NA	NA	NA	<1 U	NA

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter.

Location IDs containing "FD" indicate duplicate samples.

Location IDs containing "B" indicate sample taken at bottom of screened interval and "T" indicate sample taken at top of screened interval.

Blue Highlighting Indicates Analyte Detected Above MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Level

mg/L - milligrams per liter

NA - not analyzed

PCL – Texas Residential Groundwater protective concentration level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 3-5: LHAAP-18/24 Semi-Annual Sampling - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	18WW19F-062016 6/20/2016	18WW19FD-062016 6/20/2016	18WW19FFD-062016 6/20/2016	18WW20-062016 6/20/2016	18WW22-062116 6/21/2016	18WW24-061016 6/10/2016	18WW24F-061016 6/10/2016	18WW25-062916 6/29/2016	18WW25F-062916 6/29/2016	AWD1B-060716 6/7/2016	AWD1T-060716 6/7/2016	AWD4B-060716 6/7/2016	AWD4T-060716 6/7/2016	C01-061716 6/17/2016
Metals (6010C)																
ALUMINUM	mg/L	100	0.342	NA	0.369	0.0733 J	2.57	NA	0.466	NA	0.12 J	NA	NA	5.34	5.71	<0.1 U
BERYLLIUM	mg/L	0.004	<0.01 U	NA	<0.01 U	<0.01 U	<0.01 U	NA	<0.01 U	NA	<0.01 U	NA	NA	<0.01 U	<0.01 U	<0.01 U
CALCIUM	mg/L		8.66	NA	8.45	2.78	193	NA	6.94	NA	32	NA	NA	8.65	8.62	91
IRON	mg/L		4.86	NA	4.92	5.75	<0.1 U	NA	0.284	NA	19.6	NA	NA	4.64	5.13	0.189 J
MAGNESIUM	mg/L		1.59	NA	1.46	2.14	1.09	NA	4.4	NA	19.6	NA	NA	5.75	5.98	68.5
POTASSIUM	mg/L		1.85 J	NA	1.74 J	1.32 J	8.42	NA	1.58 J	NA	2.44	NA	NA	<1 U	<1 U	2.11
SELENIUM	mg/L	0.05	<0.01 U	NA	<0.01 U	<0.01 U	0.00528 J	NA	<0.01 U	NA	<0.01 U	NA	NA	<0.01 U	<0.01 U	<0.01 U
SODIUM	mg/L		5.07	NA	4.86	24.6	60.6	NA	131	NA	44	NA	NA	72	70.6	334
Metals (6020A)																
ANTIMONY	mg/L	0.006	<0.001 U	NA	<0.001 U	<0.001 U	<0.001 U	NA	<0.001 U	NA	<0.001 U	NA	NA	<0.001 U	<0.001 U	<0.001 U
ARSENIC	mg/L	0.01	0.000865 J	NA	0.00091 J	<0.001 U	0.00523	NA	0.00248	NA	0.00243	NA	NA	0.00124 J	0.0017 J	0.00438
BARIUM	mg/L	2	0.0557	NA	0.0588	0.0918	0.353	NA	0.0968	NA	0.391 J	NA	NA	0.195	0.205	0.441
CADMIUM	mg/L	0.005	<0.0006 U	NA	<0.0006 U	<0.0006 U	<0.0006 U	NA	<0.0006 U	NA	<0.0006 U	NA	NA	<0.0006 U	<0.0006 U	0.000345 J
CHROMIUM	mg/L	0.1	0.00184 J	NA	0.00219 J	0.00274 J	0.114	NA	0.00142 J	NA	<0.002 U	NA	NA	0.0892	0.0946	0.00251 J
COBALT	mg/L	6.1	0.00116 J	NA	0.00119 J	0.00808	0.0011 J	NA	0.00207	NA	0.0135	NA	NA	0.00687	0.0065	0.00101 J
COPPER	mg/L	1.3	0.00117 J	NA	0.00131 J	<0.002 U	0.00449	NA	0.002 J	NA	<0.002 U	NA	NA	0.00717	0.00851	0.00135 J
LEAD	mg/L	0.015	<0.001 U	NA	<0.001 U	<0.001 U	<0.001 U	NA	<0.001 U	NA	<0.001 U	NA	NA	0.00258	0.00305	<0.001 U
MANGANESE	mg/L	1.1	0.221	NA	0.221	0.279	0.00227 J	NA	0.609	NA	5.29 J	NA	NA	0.0529	0.0466	0.0324
NICKEL	mg/L	0.49	0.00429 J	NA	0.00449 J	0.00996	0.00569 J	NA	0.022	NA	0.00596 J	NA	NA	0.283	0.23	0.00428 J
SILVER	mg/L	0.51	<0.001 U	NA	<0.001 U	<0.001 U	<0.001 U	NA	<0.001 U	NA	<0.001 U	NA	NA	<0.001 U	<0.001 U	<0.001 U
THALLIUM	mg/L	0.002	<0.0002 U	NA	<0.0002 U	<0.0002 U	<0.0002 U	NA	<0.0002 U	NA	<0.0002 U	NA	NA	<0.0002 U	0.00012 J	<0.0002 U
VANADIUM	mg/L	0.72	0.0017 J	NA	0.00184 J	<0.001 U	0.0767	NA	0.00093 J	NA	<0.001 U	NA	NA	0.0124	0.0174	0.00242
ZINC	mg/L	31	<0.025 U	NA	<0.025 U	<0.025 U	<0.025 U	NA	0.075	NA	<0.025 U	NA	NA	0.026 J	0.0348 J	<0.025 U
Perchlorate (6850)																
PERCHLORATE	ug/L	17	NA	<0.2 U	NA	<0.2 U	1.53	0.228 J	NA	<0.2 U	NA	4.92	<0.2 U	726	712	3.15
Mercury (7470A)																
MERCURY	mg/L	0.002	<0.0002 U	NA	<0.0002 U	<0.0002 U	<0.0002 U	NA	<0.0002 U	NA	<0.0002 U	NA	NA	<0.0002 U	<0.0002 U	<0.0002 U
Volatile Organic Compounds (8260B)																
1,1,1,2-TETRACHLOROETHANE	ug/L	35	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	NA	<0.4 U	NA	<0.4 U	<0.4 UJ	<0.4 U	NA	<0.4 U	NA	<40 U	<40 U	<0.4 U	<0.4 U	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	NA	<0.25 U	NA	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U	NA	113	90.5 J	<0.25 U	<0.25 U	<0.25 U
1,1-DICHLOROETHENE	ug/L	7	NA	<1 U	NA	<1 U	<1 UJ	<1 U	NA	<1 U	NA	158 J	114 J	<1 U	<1 U	<1 U
1,1-DICHLOROPROPENE	ug/L	9.1	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	NA	<0.3 U	NA	<0.3 U	<0.3 UJ	<0.3 U	NA	<0.3 U	NA	<30 U	<30 U	<0.3 U	<0.3 U	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	NA	<1 U	NA	<1 U	<1 UJ	<1 U	NA	<1 U	NA	<100 U	<100 U	<1 U	<1 U	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	NA	<0.4 U	NA	<0.4 U	<0.4 UJ	<0.4 U	NA	<0.4 U	NA	<40 U	<40 U	<0.4 U	<0.4 U	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	NA	<2 U	NA	<2 U	<2 UJ	<2 U	NA	<2 U	NA	<200 U	<200 U	<2 U	<2 U	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	NA	<0.25 U	NA	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U	NA	<25 U	<25 U	<0.25 U	<0.25 U	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	158	143	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	NA	<0.4 U	NA	<0.4 U	<0.4 UJ	<0.4 U	NA	<0.4 U	NA	<40 U	<40 U	<0.4 U	<0.4 U	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	NA	<0.4 U	NA	<0.4 U	<0.4 UJ	<0.4 U	NA	<0.4 U	NA	<40 U	<40 U	<0.4 U	<0.4 U	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	NA	<0.25 U	NA	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U	NA	<25 U	<25 U	<0.25 U	<0.25 U	<0.25 U
2,2-DICHLOROPROPANE	ug/L	13	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
2-BUTANONE	ug/L	15000	NA	<5 U	NA	<5 U	<5 UJ	<5 U	NA	<5 U	NA	<500 U	<500 U	<5 U	<5 U	<5 U
2-CHLOROTOLUENE	ug/L	490	NA	<0.25 U	NA	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U	NA	<25 U	<25 U	<0.25 U	<0.25 U	<0.25 U
2-HEXANONE	ug/L	120	NA	<5 U	NA	<5 U	<5 UJ	<5 U	NA	<5 U	NA	<500 U	<500 U	<5 U	<5 U	<5 U
4-CHLOROTOLUENE	ug/L	490	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	NA	<5 U	NA	<5 U	<5 UJ	<5 U	NA	<5 U	NA	<500 U	<500 U	<5 U	<5 U	<5 U
ACETONE	ug/L	22000	NA	<5 U	NA	<5 U	<5 UJ	<5 U	NA	2.89 J	NA	<500 U	<500 U	<5 U	<5 U	<5 U
BENZENE	ug/L	5	NA	<0.25 U	NA	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U	NA	<25 U	<25 U	<0.25 U	<0.25 U	<0.25 U
BROMOBENZENE	ug/L	200	NA	<0.25 U	NA	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U	NA	<25 U	<25 U	<0.25 U	<0.25 U	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	NA	<0.4 U	NA	<0.4 U	<0.4 UJ	<0.4 U	NA	<0.4 U	NA	<40 U	<40 U	<0.4 U	<0.4 U	<0.4 U

Table 3-5: LHAAP-18/24 Semi-Annual Sampling - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	18WW19F-062016 6/20/2016	18WW19FD-062016 6/20/2016	18WW19FFD-062016 6/20/2016	18WW20-062016 6/20/2016	18WW22-062116 6/21/2016	18WW24-061016 6/10/2016	18WW24F-061016 6/10/2016	18WW25-062916 6/29/2016	18WW25F-062916 6/29/2016	AWD1B-060716 6/7/2016	AWD1T-060716 6/7/2016	AWD4B-060716 6/7/2016	AWD4T-060716 6/7/2016	C01-061716 6/17/2016
BROMODICHLOROMETHANE	ug/L	15	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
BROMOFORM	ug/L	120	NA	<1 U	NA	<1 U	<1 UJ	<1 U	NA	<1 U	NA	<100 U	<100 U	<1 U	<1 U	<1 U
BROMOMETHANE	ug/L	34	NA	<1 U	NA	<1 U	<1 UJ	<1 U	NA	<1 UJ	NA	<100 U	<100 U	<1 UJ	<1 UJ	<1 U
CARBON DISULFIDE	ug/L	2400	NA	<1 U	NA	<1 U	<1 UJ	<1 U	NA	<1 U	NA	<100 U	<100 U	<1 U	<1 U	<1 U
CARBON TETRACHLORIDE	ug/L	5	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
CHLOROBENZENE	ug/L	100	NA	<0.25 U	NA	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U	NA	<25 U	<25 U	<0.25 U	<0.25 U	<0.25 U
CHLOROETHANE	ug/L	98000	NA	<1 U	NA	<1 U	<1 UJ	<1 U	NA	<1 U	NA	<100 U	<100 U	<1 U	<1 U	<1 U
CHLOROFORM	ug/L	240	NA	<0.25 U	NA	<0.25 U	<0.25 UJ	<0.25 U	NA	0.45 J	NA	<25 U	<25 U	<0.25 U	<0.25 U	<0.25 U
CHLOROMETHANE	ug/L	70	NA	<1 U	NA	<1 U	<1 UJ	<1 U	NA	<1 U	NA	<100 U	<100 U	<1 U	<1 U	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	14100	12000	0.338 J	0.274 J	<0.5 U
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOMETHANE	ug/L	120	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
ETHYLBENZENE	ug/L	700	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
M,P-XYLENE	ug/L	10000	NA	<1 U	NA	<1 U	<1 UJ	<1 U	NA	<1 U	NA	<100 U	<100 U	<1 U	<1 U	<1 U
METHYLENE CHLORIDE	ug/L	5	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	95.1 J	<50 U	<0.5 U	<0.5 U	<0.5 U
NAPHTHALENE	ug/L	490	NA	<0.4 U	NA	<0.4 U	<0.4 UJ	<0.4 U	NA	<0.4 U	NA	<40 U	<40 U	<0.4 UJ	<0.4 UJ	<0.4 U
N-BUTYLBENZENE	ug/L	1200	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
N-PROPYLBENZENE	ug/L	980	NA	<0.25 U	NA	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U	NA	<25 U	<25 U	<0.25 U	<0.25 U	<0.25 U
O-XYLENE	ug/L	10000	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
STYRENE	ug/L	100	NA	<0.25 U	NA	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U	NA	<25 U	<25 U	<0.25 U	<0.25 U	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
TOLUENE	ug/L	1000	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	NA	<1 U	NA	<1 U	<1 UJ	<1 U	NA	<1 U	NA	<100 U	<100 U	<1 U	<1 U	<1 U
TRICHLOROETHENE	ug/L	5	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	7120	6300	2.4	2.21	<0.5 U
TRICHLOROFLUOROMETHANE	ug/L	7300	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	256	177	<0.5 U	<0.5 U	<0.5 U
1,4-Dioxane (8270D-SIM)																
1,4-DIOXANE	ug/L	9.1	NA	NA	NA	<1 UJ	<1 U	NA	NA	<1 U	NA	7.14	5.74	<1 U	<1 U	NA

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter.

Location IDs containing "FD" indicate duplicate samples.

Location IDs containing "B" indicate sample taken at bottom of screened interval and "T" indicate sample taken at top of screened interval.

Blue Highlighting Indicates Analyte Detected Above MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Level

mg/L - milligrams per liter

NA - not analyzed

PCL – Texas Residential Groundwater protective concentration level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 3-5: LHAAP-18/24 Semi-Annual Sampling - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	C01FD-061716 6/17/2016	C02-061716 6/17/2016	C03-061416 6/14/2016	C04-062116 6/21/2016	C04F-062116 6/21/2016	C04FD-062116 6/21/2016	C04FFD-062116 6/21/2016	C08-061416 6/14/2016	MW1-061016 6/10/2016	MW2-062416 6/24/2016	MW3-061016 6/10/2016	MW5-060816 6/8/2016	MW7-062416 6/24/2016	MW8-060916 6/9/2016
Metals (6010C)																
ALUMINUM	mg/L	100	<0.1 U	NA	<0.1 U	NA	<0.1 U	NA	<0.1 U	0.114 J	0.0763 J	<0.1 U	<0.1 U	0.0635 J	NA	0.122 J
BERYLLIUM	mg/L	0.004	<0.01 U	NA	<0.01 U	NA	<0.01 U	NA	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	NA	<0.01 U
CALCIUM	mg/L		90.3	NA	55.4	NA	13.9	NA	14	239	47.2	41.9	30.2	24.9	NA	8.3
IRON	mg/L		0.18 J	NA	101	NA	7.76	NA	7.21	0.627	20.2	4.01	0.418	1	NA	0.888
MAGNESIUM	mg/L		66.6	NA	35.8	NA	7.73	NA	7.47	143	41.4	30.2	20.3	26.1	NA	7.45
POTASSIUM	mg/L		2.16	NA	4.01	NA	1.89 J	NA	1.89 J	2.18	3.24	3.43	2.1	2.42	NA	0.503 J
SELENIUM	mg/L	0.05	<0.01 U	NA	<0.01 U	NA	<0.01 U	NA	0.00539 J	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	NA	0.00533 J
SODIUM	mg/L		336	NA	169	NA	27.9	NA	27.5	761	299	118	260	124	NA	191
Metals (6020A)																
ANTIMONY	mg/L	0.006	<0.001 U	NA	<0.001 U	NA	<0.001 U	NA	<0.001 U	<0.001 U	<0.001 U	<0.001 U	<0.001 U	<0.001 U	NA	<0.001 U
ARSENIC	mg/L	0.01	0.00431	NA	0.00684	NA	0.000967 J	NA	0.000991 J	0.00829	<0.001 U	0.0121	<0.001 U	0.00122 J	NA	<0.001 U
BARIUM	mg/L	2	0.471	NA	1.56	NA	0.311	NA	0.288	5.12	1.35	2.64	0.445	0.96	NA	0.144
CADMIUM	mg/L	0.005	0.00034 J	NA	<0.0006 U	NA	<0.0006 U	NA	<0.0006 U	0.000385 J	0.000424 J	<0.0006 U	<0.0006 U	0.000758 J	NA	0.000344 J
CHROMIUM	mg/L	0.1	0.00247 J	NA	<0.002 U	NA	0.00355 J	NA	0.00186 J	0.00247 J	1.32	0.0145	0.00398 J	0.126	NA	0.278
COBALT	mg/L	6.1	0.000974 J	NA	0.000578 J	NA	<0.001 U	NA	<0.001 U	0.00683	0.0563	0.0571	0.00108 J	0.00267	NA	0.0414
COPPER	mg/L	1.3	0.00128 J	NA	<0.002 U	NA	<0.002 U	NA	<0.002 U	0.00295 J	0.00432	0.00159 J	0.00151 J	0.00218 J	NA	0.0107
LEAD	mg/L	0.015	<0.001 U	NA	<0.001 U	NA	<0.001 U	NA	<0.001 U	<0.001 U	<0.001 U	<0.001 U	<0.001 U	<0.001 U	NA	<0.001 U
MANGANESE	mg/L	1.1	0.0318	NA	1.85	NA	0.287	NA	0.247	3.15	1.69	2.04	0.52	0.102	NA	0.35
NICKEL	mg/L	0.49	0.00424 J	NA	<0.004 U	NA	<0.004 U	NA	<0.004 U	0.0138	2.2	0.0432	0.00463 J	0.0777	NA	0.447
SILVER	mg/L	0.51	<0.001 U	NA	<0.001 U	NA	<0.001 U	NA	<0.001 U	<0.001 U	<0.001 U	<0.001 U	<0.001 U	<0.001 U	NA	<0.001 U
THALLIUM	mg/L	0.002	<0.0002 U	NA	<0.0002 U	NA	<0.0002 U	NA	<0.0002 U	<0.0002 U	<0.0002 U	<0.0002 U	<0.0002 U	<0.0002 U	NA	0.000105 J
VANADIUM	mg/L	0.72	0.00266	NA	<0.001 U	NA	<0.001 U	NA	<0.001 U	0.00101 J	0.00922	0.00185 J	<0.001 U	0.00158 J	NA	<0.001 U
ZINC	mg/L	31	<0.025 U	NA	0.0153 J	NA	<0.025 U	NA	<0.025 U	<0.025 U	<0.025 U	0.127	<0.025 U	0.0231 J	NA	0.0267 J
Perchlorate (6850)																
PERCHLORATE	ug/L	17	3.02	<0.2 U	5.48	<0.2 U	NA	<0.2 U	NA	<0.2 U	14800	33.3	15400	31300	22200	8290
Mercury (7470A)																
MERCURY	mg/L	0.002	<0.0002 U	NA	<0.0002 U	NA	<0.0002 U	NA	<0.0002 U	<0.0002 U	<0.0002 U	<0.0002 U	<0.0002 U	<0.0002 U	NA	<0.0002 U
Volatile Organic Compounds (8260B)																
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	<0.4 U	<0.4 UJ	<0.4 U	NA	<0.4 U	NA	<0.4 U	<4 U	<100 U	<1 U	<0.4 U	<4 U	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U	NA	<0.25 U	<2.5 U	<62.6 U	4.57	3.44	<2.5 U	<0.25 U
1,1-DICHLOROETHENE	ug/L	7	<1 U	<1 U	<1 UJ	<1 U	NA	<1 U	NA	<1 U	7.5 J	505	32.8	1.01 J	5.8 J	<1 U
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	<0.3 U	<0.3 UJ	<0.3 U	NA	<0.3 U	NA	<0.3 U	<3 U	<75 U	<0.75 U	<0.3 U	<3 U	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	<1 U	<1 UJ	<1 U	NA	<1 U	NA	<1 U	<10 U	<250 U	<2.5 U	<1 U	<10 U	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	<0.4 U	<0.4 UJ	<0.4 U	NA	<0.4 U	NA	<0.4 U	<4 U	<100 U	<1 U	<0.4 U	<4 U	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	<2 U	<2 UJ	<2 U	NA	<2 U	NA	<2 U	<20 U	<500 U	<5 U	<2 UJ	<20 U	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U	NA	<0.25 U	<2.5 U	<62.6 U	<0.626 U	<0.25 U	<2.5 U	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	138	<125 U	<1.25 U	<0.5 U	28	0.592 J
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	<0.4 U	<0.4 UJ	<0.4 U	NA	<0.4 U	NA	<0.4 U	<4 U	<100 U	<1 U	<0.4 U	<4 U	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	<125 U	<1.25 U	0.565 J	<5 U	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	<0.4 U	<0.4 UJ	<0.4 U	NA	<0.4 U	NA	<0.4 U	<4 U	<100 U	<1 U	<0.4 U	<4 U	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U	NA	<0.25 U	<2.5 U	<62.6 U	<0.626 U	<0.25 U	<2.5 U	<0.25 U
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U
2-BUTANONE	ug/L	15000	<5 U	<5 U	<5 UJ	<5 U	NA	<5 U	NA	<5 U	<50 U	<1250 U	<12.5 U	<5 UJ	<50 UJ	<5 U
2-CHLOROTOLUENE	ug/L	490	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U	NA	<0.25 U	<2.5 U	<62.6 U	<0.626 U	<0.25 U	<2.5 U	<0.25 U
2-HEXANONE	ug/L	120	<5 U	<5 U	<5 UJ	<5 U	NA	<5 U	NA	<5 U	<50 UJ	<1250 UJ	<12.5 UJ	<5 UJ	<50 U	<5 U
4-CHLOROTOLUENE	ug/L	490	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	<5 U	<5 UJ	<5 U	NA	<5 U	NA	<5 U	<50 U	<1250 U	<12.5 U	<5 U	<50 U	<5 U
ACETONE	ug/L	22000	<5 U	<5 U	<5 UJ	3.24 J	NA	<5 U	NA	<5 U	<50 U	<1250 U	48.4	<5 UJ	<50 UJ	<5 U
BENZENE	ug/L	5	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U	NA	<0.25 U	2.09 J	<62.6 U	<0.626 U	<0.25 U	<2.5 U	<0.25 U
BROMOBENZENE	ug/L	200	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U	NA	<0.25 U	<2.5 U	<62.6 U	<0.626 U	<0.25 U	<2.5 U	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	<0.4 U	<0.4 UJ	<0.4 U	NA	<0.4 U	NA	<0.4 U	<4 U	<100 U	<1 U	<0.4 U	<4 U	<0.4 U

Table 3-5: LHAAP-18/24 Semi-Annual Sampling - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	C01FD-061716 6/17/2016	C02-061716 6/17/2016	C03-061416 6/14/2016	C04-062116 6/21/2016	C04F-062116 6/21/2016	C04FD-062116 6/21/2016	C04FFD-062116 6/21/2016	C08-061416 6/14/2016	MW1-061016 6/10/2016	MW2-062416 6/24/2016	MW3-061016 6/10/2016	MW5-060816 6/8/2016	MW7-062416 6/24/2016	MW8-060916 6/9/2016
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U
BROMOFORM	ug/L	120	<1 U	<1 U	<1 UJ	<1 U	NA	<1 U	NA	<1 U	<10 U	<250 U	<2.5 U	<1 U	<10 U	<1 U
BROMOMETHANE	ug/L	34	<1 U	<1 U	<1 UJ	<1 U	NA	<1 U	NA	<1 UJ	<10 U	<250 U	<2.5 U	<1 U	<10 U	<1 UJ
CARBON DISULFIDE	ug/L	2400	<1 U	<1 U	<1 UJ	<1 U	NA	<1 U	NA	<1 U	<10 U	<250 U	<2.5 U	<1 U	<10 U	<1 U
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	2.77 J	<0.5 U
CHLOROBENZENE	ug/L	100	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U	NA	<0.25 U	<2.5 U	<62.6 U	<0.626 U	<0.25 U	<2.5 U	<0.25 U
CHLOROETHANE	ug/L	98000	<1 U	<1 U	<1 UJ	<1 U	NA	<1 U	NA	<1 U	<10 U	<250 U	<2.5 U	<1 U	<10 U	<1 U
CHLOROFORM	ug/L	240	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U	NA	<0.25 U	5.62 J	58.1 J	1.96 J	0.43 J	14.1	0.607 J
CHLOROMETHANE	ug/L	70	<1 U	<1 U	<1 UJ	<1 U	NA	<1 U	NA	<1 U	<10 U	<250 U	<2.5 U	<1 U	<10 UJ	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	1120	43600	85.2	13.4	13.8	0.867 J
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U
DIBROMOMETHANE	ug/L	120	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	<125 U	2.56	<0.5 U	<5 UJ	<0.5 U
ETHYLBENZENE	ug/L	700	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	159 J	<1.25 U	<0.5 U	<5 U	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U
M,P-XYLENE	ug/L	10000	<1 U	<1 U	<1 UJ	<1 U	NA	<1 U	NA	<1 U	<10 U	<250 U	<2.5 U	<1 U	<10 U	<1 U
METHYLENE CHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	21300	<1.25 U	<0.5 U	<5 U	<0.5 U
NAPHTHALENE	ug/L	490	<0.4 U	<0.4 U	<0.4 UJ	<0.4 U	NA	<0.4 U	NA	<0.4 U	<4 U	<100 U	<1 U	<0.4 U	<4 U	<0.4 U
N-BUTYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U
N-PROPYLBENZENE	ug/L	980	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U	NA	<0.25 U	<2.5 U	<62.6 U	<0.626 U	<0.25 U	<2.5 U	<0.25 U
O-XYLENE	ug/L	10000	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U
STYRENE	ug/L	100	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U	NA	<0.25 U	<2.5 U	<62.6 U	<0.626 U	<0.25 U	<2.5 U	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	85.1 J	0.992 J	<0.5 U	<5 U	<0.5 U
TOLUENE	ug/L	1000	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	3.11 J	80.2 J	3.3	0.254 J	<5 U	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	<1 U	<1 UJ	<1 U	NA	<1 U	NA	<1 U	<10 U	<250 U	<2.5 U	<1 U	<10 U	<1 U
TRICHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	5.61	3620	15500	491	53.7	1740	247
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<10 U	<125 U	0.74 J	<0.5 U	<5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	6.08 J	<125 U	10.2	4.91	<5 UJ	<0.5 U
1,4-Dioxane (8270D-SIM)																
1,4-DIOXANE	ug/L	9.1	NA	NA	<1 U	NA	NA	NA	NA	<1 U	NA	7.58	NA	0.819 J	13.4	0.649 J

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter.

Location IDs containing "FD" indicate duplicate samples.

Location IDs containing "B" indicate sample taken at bottom of screened interval and "T" indicate sample taken at top of screened interval.

Blue Highlighting Indicates Analyte Detected Above MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Level

mg/L - milligrams per liter

NA - not analyzed

PCL – Texas Residential Groundwater protective concentration level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 3-5: LHAAP-18/24 Semi-Annual Sampling - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	MW9-062216 6/22/2016	MW10-060916 6/9/2016	MW10F-060916 6/9/2016	MW12-061016 6/10/2016	MW13-061716 6/17/2016	MW14B-060716 6/7/2016	MW14T-060716 6/7/2016	MW16-062116 6/21/2016	MW16F-062116 6/21/2016	MW17-062016 6/20/2016	MW18-061716 6/17/2016	MW18F-061716 6/17/2016	MW19-061716 6/17/2016	MW19F-061716 6/17/2016
Metals (6010C)																
ALUMINUM	mg/L	100	NA	NA	0.0804 J	NA	NA	NA	NA	NA	<0.1 U	NA	NA	1.91	NA	35.6
BERYLLIUM	mg/L	0.004	NA	NA	<0.01 U	NA	NA	NA	NA	NA	<0.01 U	NA	NA	<0.01 U	NA	0.00575 J
CALCIUM	mg/L		NA	NA	7.72	NA	NA	NA	NA	NA	23.7	NA	NA	14.1	NA	18.9
IRON	mg/L		NA	NA	5.73	NA	NA	NA	NA	NA	38.8	NA	NA	12.6	NA	50
MAGNESIUM	mg/L		NA	NA	2.22	NA	NA	NA	NA	NA	17.3	NA	NA	6.42	NA	9.83
POTASSIUM	mg/L		NA	NA	2.09	NA	NA	NA	NA	NA	4.1	NA	NA	2.19	NA	3.84
SELENIUM	mg/L	0.05	NA	NA	<0.01 U	NA	NA	NA	NA	NA	0.00641 J	NA	NA	<0.01 U	NA	<0.01 U
SODIUM	mg/L		NA	NA	9.56	NA	NA	NA	NA	NA	142	NA	NA	249 J	NA	20.5
Metals (6020A)																
ANTIMONY	mg/L	0.006	NA	NA	<0.001 U	NA	NA	NA	NA	NA	<0.001 U	NA	NA	0.00149 J	NA	<0.001 U
ARSENIC	mg/L	0.01	NA	NA	<0.001 U	NA	NA	NA	NA	NA	0.0156	NA	NA	0.00583	NA	0.013
BARIUM	mg/L	2	NA	NA	0.0526	NA	NA	NA	NA	NA	0.411	NA	NA	0.157 J	NA	0.695
CADMIUM	mg/L	0.005	NA	NA	0.000376 J	NA	NA	NA	NA	NA	0.000563 J	NA	NA	0.00225	NA	0.00495
CHROMIUM	mg/L	0.1	NA	NA	0.00283 J	NA	NA	NA	NA	NA	0.00236 J	NA	NA	0.0138 J	NA	0.116
COBALT	mg/L	6.1	NA	NA	0.00127 J	NA	NA	NA	NA	NA	0.00976	NA	NA	0.00915	NA	0.0274
COPPER	mg/L	1.3	NA	NA	0.00144 J	NA	NA	NA	NA	NA	<0.002 U	NA	NA	0.00447	NA	0.127
LEAD	mg/L	0.015	NA	NA	<0.001 U	NA	NA	NA	NA	NA	<0.001 U	NA	NA	0.00227	NA	0.0706
MANGANESE	mg/L	1.1	NA	NA	0.3	NA	NA	NA	NA	NA	0.659	NA	NA	0.36 J	NA	1.09
NICKEL	mg/L	0.49	NA	NA	0.00494 J	NA	NA	NA	NA	NA	0.0181	NA	NA	0.063	NA	0.0997
SILVER	mg/L	0.51	NA	NA	<0.001 U	NA	NA	NA	NA	NA	<0.001 U	NA	NA	<0.001 U	NA	<0.001 U
THALLIUM	mg/L	0.002	NA	NA	<0.0002 U	NA	NA	NA	NA	NA	<0.0002 U	NA	NA	0.000127 J	NA	0.000821
VANADIUM	mg/L	0.72	NA	NA	<0.001 U	NA	NA	NA	NA	NA	0.000902 J	NA	NA	0.0105	NA	0.152
ZINC	mg/L	31	NA	NA	<0.025 U	NA	NA	NA	NA	NA	0.0293 J	NA	NA	0.0491 J	NA	1.09
Perchlorate (6850)																
PERCHLORATE	ug/L	17	263	0.492	NA	0.2 J	<0.2 U	229000	177000	0.615	NA	<0.2 U	<0.2 U	NA	11.4	NA
Mercury (7470A)																
MERCURY	mg/L	0.002	NA	NA	<0.0002 U	NA	NA	NA	NA	NA	<0.0002 U	NA	NA	<0.0002 U	NA	0.000381 J
Volatile Organic Compounds (8260B)																
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
1,1,1-TRICHLOROETHANE	ug/L	200	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<4 U	<0.4 U	NA	<0.8 U	<0.4 U	<40 U	<40 U	<1 U	NA	<0.4 U	<0.4 U	NA	<0.4 U	NA
1,1,2-TRICHLOROETHANE	ug/L	5	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
1,1-DICHLOROETHANE	ug/L	4900	<2.5 U	<0.25 U	NA	1.71 J	<0.25 U	37.3 J	34.7 J	1.73 J	NA	<0.25 U	<0.25 U	NA	<0.25 U	NA
1,1-DICHLOROETHENE	ug/L	7	<10 UJ	<1 U	NA	3.41 J	<1 U	195 J	154 J	9	NA	<1 U	<1 U	NA	<1 U	NA
1,1-DICHLOROPROPENE	ug/L	9.1	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
1,2,3-TRICHLOROBENZENE	ug/L	73	<3 U	<0.3 U	NA	<0.6 U	<0.3 U	<30 U	<30 U	<0.75 U	NA	<0.3 U	<0.3 U	NA	<0.3 U	NA
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<10 U	<1 U	NA	<2 U	<1 U	<100 U	<100 U	<2.5 U	NA	<1 U	<1 U	NA	<1 U	NA
1,2,4-TRICHLOROBENZENE	ug/L	70	<4 U	<0.4 U	NA	<0.8 U	<0.4 U	<40 U	<40 U	<1 U	NA	<0.4 U	<0.4 U	NA	<0.4 U	NA
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<20 U	<2 U	NA	<4 U	<2 U	<200 U	<200 U	<5 UJ	NA	<2 U	<2 U	NA	<2 U	NA
1,2-DIBROMOETHANE	ug/L	0.05	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
1,2-DICHLOROBENZENE	ug/L	600	<2.5 U	<0.25 U	NA	<0.5 U	<0.25 U	<25 U	<25 U	<0.626 U	NA	<0.25 U	<0.25 U	NA	<0.25 U	NA
1,2-DICHLOROETHANE	ug/L	5	<5 U	<0.5 U	NA	1.82 J	<0.5 U	140	114	<1.25 UJ	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
1,2-DICHLOROPROPANE	ug/L	5	<4 U	<0.4 U	NA	<0.8 U	<0.4 U	<40 U	<40 U	<1 U	NA	<0.4 U	<0.4 U	NA	<0.4 U	NA
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
1,3-DICHLOROBENZENE	ug/L	730	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
1,3-DICHLOROPROPANE	ug/L	9.1	<4 U	<0.4 U	NA	<0.8 U	<0.4 U	<40 U	<40 U	<1 U	NA	<0.4 U	<0.4 U	NA	<0.4 U	NA
1,4-DICHLOROBENZENE	ug/L	75	<2.5 U	<0.25 U	NA	<0.5 U	<0.25 U	<25 U	<25 U	<0.626 U	NA	<0.25 U	<0.25 U	NA	<0.25 U	NA
2,2-DICHLOROPROPANE	ug/L	13	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 UJ	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
2-BUTANONE	ug/L	15000	<50 U	<5 U	NA	<10 U	<5 U	<500 U	<500 U	<12.5 UJ	NA	<5 U	<5 U	NA	<5 U	NA
2-CHLOROTOLUENE	ug/L	490	<2.5 U	<0.25 U	NA	<0.5 U	<0.25 U	<25 U	<25 U	<0.626 U	NA	<0.25 U	<0.25 U	NA	<0.25 U	NA
2-HEXANONE	ug/L	120	<50 U	<5 U	NA	<10 U	<5 U	<500 U	<500 U	<12.5 UJ	NA	<5 U	<5 U	NA	<5 U	NA
4-CHLOROTOLUENE	ug/L	490	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
4-METHYL-2-PENTANONE	ug/L	2000	<50 U	<5 U	NA	<10 U	<5 U	<500 U	<500 U	<12.5 U	NA	<5 U	<5 U	NA	<5 U	NA
ACETONE	ug/L	22000	<50 U	<5 U	NA	<10 U	<5 U	<500 U	<500 U	<12.5 UJ	NA	<5 U	<5 U	NA	<5 U	NA
BENZENE	ug/L	5	<2.5 U	<0.25 U	NA	<0.5 U	<0.25 U	<25 U	<25 U	0.352 J	NA	<0.25 U	<0.25 U	NA	<0.25 U	NA
BROMOBENZENE	ug/L	200	<2.5 U	<0.25 U	NA	<0.5 U	<0.25 U	<25 U	<25 U	<0.626 U	NA	<0.25 U	<0.25 U	NA	<0.25 U	NA
BROMOCHLOROMETHANE	ug/L	980	<4 U	<0.4 U	NA	<0.8 U	<0.4 U	<40 U	<40 U	<1 U	NA	<0.4 U	<0.4 U	NA	<0.4 U	NA

Table 3-5: LHAAP-18/24 Semi-Annual Sampling - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	MW9- 062216 6/22/2016	MW10- 060916 6/9/2016	MW10F- 060916 6/9/2016	MW12- 061016 6/10/2016	MW13- 061716 6/17/2016	MW14B- 060716 6/7/2016	MW14T- 060716 6/7/2016	MW16- 062116 6/21/2016	MW16F- 062116 6/21/2016	MW17- 062016 6/20/2016	MW18- 061716 6/17/2016	MW18F- 061716 6/17/2016	MW19- 061716 6/17/2016	MW19F- 061716 6/17/2016
BROMODICHLOROMETHANE	ug/L	15	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
BROMOFORM	ug/L	120	<10 U	<1 U	NA	<2 U	<1 U	<100 U	<100 U	<2.5 U	NA	<1 U	<1 U	NA	<1 U	NA
BROMOMETHANE	ug/L	34	<10 U	<1 UJ	NA	<2 U	<1 U	<100 U	<100 U	<2.5 U	NA	<1 U	<1 U	NA	<1 U	NA
CARBON DISULFIDE	ug/L	2400	<10 U	<1 U	NA	<2 U	<1 U	<100 U	<100 U	<2.5 U	NA	<1 U	<1 U	NA	<1 U	NA
CARBON TETRACHLORIDE	ug/L	5	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
CHLOROBENZENE	ug/L	100	<2.5 U	<0.25 U	NA	<0.5 U	<0.25 U	<25 U	<25 U	<0.626 U	NA	<0.25 U	<0.25 U	NA	<0.25 U	NA
CHLOROETHANE	ug/L	98000	<10 U	<1 U	NA	<2 U	<1 U	<100 U	<100 U	<2.5 U	NA	<1 U	<1 U	NA	<1 U	NA
CHLOROFORM	ug/L	240	3.97 J	<0.25 U	NA	<0.5 U	<0.25 U	13.2 J	<25 U	<0.626 U	NA	<0.25 U	<0.25 U	NA	<0.25 U	NA
CHLOROMETHANE	ug/L	70	<10 U	<1 U	NA	<2 U	<1 U	<100 U	<100 U	<2.5 U	NA	<1 U	<1 U	NA	<1 U	NA
CIS-1,2-DICHLOROETHENE	ug/L	70	64.7	<0.5 U	NA	42.6	<0.5 U	2550	2600	31.2	NA	0.41 J	1.11	NA	0.345 J	NA
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
DIBROMOCHLOROMETHANE	ug/L	11	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
DIBROMOMETHANE	ug/L	120	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
DICHLORODIFLUOROMETHANE	ug/L	4900	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
ETHYLBENZENE	ug/L	700	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
HEXACHLOROBUTADIENE	ug/L	12	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
ISOPROPYLBENZENE	ug/L	2400	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
M,P-XYLENE	ug/L	10000	<10 U	<1 U	NA	<2 U	<1 U	<100 U	<100 U	<2.5 U	NA	<1 U	<1 U	NA	<1 U	NA
METHYLENE CHLORIDE	ug/L	5	<5 U	<0.5 U	NA	<1 U	<0.5 U	53.5 J	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
NAPHTHALENE	ug/L	490	<4 U	<0.4 U	NA	<0.8 U	<0.4 U	<40 U	<40 U	<1 U	NA	<0.4 U	<0.4 U	NA	<0.4 U	NA
N-BUTYLBENZENE	ug/L	1200	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
N-PROPYLBENZENE	ug/L	980	<2.5 U	<0.25 U	NA	<0.5 U	<0.25 U	<25 U	<25 U	<0.626 U	NA	<0.25 U	<0.25 U	NA	<0.25 U	NA
O-XYLENE	ug/L	10000	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
P-ISOPROPYLTOLUENE	ug/L	2400	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
SEC-BUTYLBENZENE	ug/L	980	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
STYRENE	ug/L	100	<2.5 U	<0.25 U	NA	<0.5 U	<0.25 U	<25 U	<25 U	<0.626 U	NA	<0.25 U	<0.25 U	NA	<0.25 U	NA
TERT-BUTYLBENZENE	ug/L	980	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
TETRACHLOROETHENE	ug/L	5	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	0.786 J	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
TOLUENE	ug/L	1000	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
TRANS-1,2-DICHLOROETHENE	ug/L	100	<5 U	<0.5 U	NA	0.758 J	<0.5 U	<50 U	<50 U	0.747 J	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<10 U	<1 U	NA	<2 U	<1 U	<100 U	<100 U	<2.5 U	NA	<1 U	<1 U	NA	<1 U	NA
TRICHLOROETHENE	ug/L	5	1460	0.796 J	NA	294	<0.5 U	15900	12700	922	NA	<0.5 U	14.1	NA	1.82	NA
TRICHLOROFLUOROMETHANE	ug/L	7300	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
VINYL CHLORIDE	ug/L	2	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
1,4-Dioxane (8270D-SIM)																
1,4-DIOXANE	ug/L	9.1	1.77 J	<1 U	NA	NA	NA	412	390	18	NA	<1 U	NA	NA	NA	NA

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter.

Location IDs containing "FD" indicate duplicate samples.

Location IDs containing "B" indicate sample taken at bottom of screened interval and "T" indicate sample taken at top of screened interval.

Blue Highlighting Indicates Analyte Detected Above MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Level

mg/L - milligrams per liter

NA - not analyzed

PCL – Texas Residential Groundwater protective concentration level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 3-5: LHAAP-18/24 Semi-Annual Sampling - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	MW21-062216 6/22/2016	MW22-060816 6/8/2016	MW23-061716 6/17/2016
Metals (6010C)					
ALUMINUM	mg/L	100	<0.1 U	NA	NA
BERYLLIUM	mg/L	0.004	<0.01 U	NA	NA
CALCIUM	mg/L		213	NA	NA
IRON	mg/L		1.03	NA	NA
MAGNESIUM	mg/L		163	NA	NA
POTASSIUM	mg/L		2.61	NA	NA
SELENIUM	mg/L	0.05	<0.01 U	NA	NA
SODIUM	mg/L		580	NA	NA
Metals (6020A)					
ANTIMONY	mg/L	0.006	<0.001 U	NA	NA
ARSENIC	mg/L	0.01	0.00812	NA	NA
BARIUM	mg/L	2	5.91	NA	NA
CADMIUM	mg/L	0.005	0.00132	NA	NA
CHROMIUM	mg/L	0.1	0.195	NA	NA
COBALT	mg/L	6.1	0.0569	NA	NA
COPPER	mg/L	1.3	0.0261	NA	NA
LEAD	mg/L	0.015	<0.001 U	NA	NA
MANGANESE	mg/L	1.1	1.81	NA	NA
NICKEL	mg/L	0.49	0.76	NA	NA
SILVER	mg/L	0.51	<0.001 U	NA	NA
THALLIUM	mg/L	0.002	<0.0002 U	NA	NA
VANADIUM	mg/L	0.72	0.00262	NA	NA
ZINC	mg/L	31	0.023 J	NA	NA
Perchlorate (6850)					
PERCHLORATE	ug/L	17	26100	615	65200
Mercury (7470A)					
MERCURY	mg/L	0.002	<0.0002 U	NA	NA
Volatile Organic Compounds (8260B)					
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<25 U	<1.25 U	<5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<25 U	<1.25 U	<5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<20 U	<1 U	<4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<25 U	<1.25 U	<5 U
1,1-DICHLOROETHANE	ug/L	4900	<12.5 U	<0.626 U	<2.5 U
1,1-DICHLOROETHENE	ug/L	7	<50 UJ	1.37 J	<10 U
1,1-DICHLOROPROPENE	ug/L	9.1	<25 U	<1.25 U	<5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<15 U	<0.75 U	<3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<50 U	<2.5 U	<10 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<20 U	<1 U	<4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<25 U	<1.25 U	<5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<100 U	<5 U	<20 U
1,2-DIBROMOETHANE	ug/L	0.05	<25 U	<1.25 U	<5 U
1,2-DICHLOROBENZENE	ug/L	600	<12.5 U	<0.626 U	<2.5 U
1,2-DICHLOROETHANE	ug/L	5	35.2 J	5.5	50.5
1,2-DICHLOROPROPANE	ug/L	5	<20 U	<1 U	<4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<25 U	<1.25 U	<5 U
1,3-DICHLOROBENZENE	ug/L	730	<25 U	<1.25 U	<5 U
1,3-DICHLOROPROPANE	ug/L	9.1	<20 U	<1 U	<4 U
1,4-DICHLOROBENZENE	ug/L	75	<12.5 U	<0.626 U	<2.5 U
2,2-DICHLOROPROPANE	ug/L	13	<25 U	<1.25 U	<5 U
2-BUTANONE	ug/L	15000	<250 U	<12.5 U	<50 U
2-CHLOROTOLUENE	ug/L	490	<12.5 U	<0.626 U	<2.5 U
2-HEXANONE	ug/L	120	<250 U	<12.5 U	<50 U
4-CHLOROTOLUENE	ug/L	490	<25 U	<1.25 U	<5 U
4-METHYL-2-PENTANONE	ug/L	2000	<250 U	<12.5 U	<50 U
ACETONE	ug/L	22000	<250 U	<12.5 U	<50 U
BENZENE	ug/L	5	<12.5 U	2.51	<2.5 U
BROMOBENZENE	ug/L	200	<12.5 U	<0.626 U	<2.5 U
BROMOCHLOROMETHANE	ug/L	980	<20 U	<1 U	<4 U

Table 3-5: LHAAP-18/24 Semi-Annual Sampling - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	MW21-062216 6/22/2016	MW22-060816 6/8/2016	MW23-061716 6/17/2016
BROMODICHLOROMETHANE	ug/L	15	<25 U	<1.25 U	<5 U
BROMOFORM	ug/L	120	<50 U	<2.5 U	<10 U
BROMOMETHANE	ug/L	34	<50 U	<2.5 U	<10 U
CARBON DISULFIDE	ug/L	2400	<50 U	<2.5 U	<10 U
CARBON TETRACHLORIDE	ug/L	5	<25 U	<1.25 U	<5 U
CHLOROBENZENE	ug/L	100	<12.5 U	<0.626 U	<2.5 U
CHLOROETHANE	ug/L	98000	<50 U	<2.5 U	<10 U
CHLOROFORM	ug/L	240	13.5 J	4.77	4.78 J
CHLOROMETHANE	ug/L	70	<50 U	<2.5 U	<10 U
CIS-1,2-DICHLOROETHENE	ug/L	70	112	5.7	7.33 J
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<25 U	<1.25 U	<5 U
DIBROMOCHLOROMETHANE	ug/L	11	<25 U	<1.25 U	<5 U
DIBROMOMETHANE	ug/L	120	<25 U	<1.25 U	<5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<25 U	<1.25 U	<5 U
ETHYLBENZENE	ug/L	700	<25 U	<1.25 U	<5 U
HEXACHLOROBUTADIENE	ug/L	12	<25 U	<1.25 U	<5 U
ISOPROPYLBENZENE	ug/L	2400	<25 U	<1.25 U	<5 U
M,P-XYLENE	ug/L	10000	<50 U	<2.5 U	<10 U
METHYLENE CHLORIDE	ug/L	5	<25 U	<1.25 U	<5 U
NAPHTHALENE	ug/L	490	<20 U	<1 U	<4 U
N-BUTYLBENZENE	ug/L	1200	<25 U	<1.25 U	<5 U
N-PROPYLBENZENE	ug/L	980	<12.5 U	<0.626 U	<2.5 U
O-XYLENE	ug/L	10000	<25 U	<1.25 U	<5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<25 U	<1.25 U	<5 U
SEC-BUTYLBENZENE	ug/L	980	<25 U	<1.25 U	<5 U
STYRENE	ug/L	100	<12.5 U	<0.626 U	<2.5 U
TERT-BUTYLBENZENE	ug/L	980	<25 U	<1.25 U	<5 U
TETRACHLOROETHENE	ug/L	5	<25 U	<1.25 U	<5 U
TOLUENE	ug/L	1000	<25 U	<1.25 U	<5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<25 U	<1.25 U	<5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<50 U	<2.5 U	<10 U
TRICHLOROETHENE	ug/L	5	6080	488	1170
TRICHLOROFLUOROMETHANE	ug/L	7300	<25 U	<1.25 U	<5 U
VINYL CHLORIDE	ug/L	2	46.2 J	<1.25 U	<5 U
1,4-Dioxane (8270D-SIM)					
1,4-DIOXANE	ug/L	9.1	1.55 J	NA	NA

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter.

Location IDs containing "FD" indicate duplicate samples.

Location IDs containing "B" indicate sample taken at bottom of screened interval and "T" indicate sample taken at top of screened interval.

Blue Highlighting Indicates Analyte Detected Above MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Level

mg/L - milligrams per liter

NA - not analyzed

PCL – Texas Residential Groundwater protective concentration level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

4 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The information presented in this report was based on the LHAAP-18/24 Supplemental PSI WP (AECOM, 2015) that was reviewed by and concurrence was obtained from the TCEQ and the USEPA before implementation.

4.1 Summary

The following conclusions can be drawn from this investigation:

1. The information collected during this investigation achieved the objectives of the Supplemental PSI WP.
2. The lithology data collected in 2016 confirmed the updated CSM model and presence of Wilcox clay layer in the southern corner of the site, as well as northwest of the site in 18CPTMW19SW. The depth to the clay varied in the southern investigation area of the site from approximately 36 ft in the north (18DPT07) to 11.5 ft to the south (18DPT09). In the northwest area of the site in 18CPTMW23SW and 18WW25 in proximity to Harrison Bayou, the Wilcox clay layer was not encountered.
3. Discrete soil data in the southern portion of the site within the containment area revealed relatively low (101 Õg/kg in 18DPT04 at 5.5 ft bgs) to nondetectable concentrations of perchlorate in the vadose zone. In the shallow saturated zone, the highest concentration of perchlorate was detected in 18DPT04 at 36.5-37.0 ft bgs at 3,200 Õg/kg and below the MSC of 7,200 Õg/kg. Therefore, there is no particular source of perchlorate identified in the vadose or shallow saturated zone in the southern portion of the containment area.
4. Discrete soil data outside the southern portion of the containment area revealed relatively low (5.53 Õg/kg in 18DPT12 at 5-5.5 ft bgs) to nondetectable concentrations of perchlorate in the vadose zone. In the shallow saturated zone, the concentrations of perchlorate were typically low increasing in depth the closer the samples were to the Wilcox clay. The higher concentrations of perchlorate in the shallow saturated zone were detected in 18DPT03 (3,290 Õg/kg at 14.5-15 ft bgs), 18DPT15 (3,440 Õg/kg at 21-21.5 ft bgs), and 18DPT11 (3,940 Õg/kg at 20-20.5 ft bgs). These elevated concentrations of perchlorate were found in the coarser materials (sand) just above the Wilcox clay, but were below the MSC of 7,200 Õg/kg. Therefore, there is no particular source of perchlorate identified in the vadose or shallow saturated zone outside the southern portion of the containment area.
5. The highest perchlorate concentrations in the Wilcox clay were detected in the borehole of monitoring well 18CPTMW22DW at 9,440 Õg/kg at 29.5-30 ft bgs and 18DPT12 at 15,900 Õg/kg at 18-18.5 ft bgs (exceeding MSC of 7,200 Õg/kg). The elevated concentrations of perchlorate in 18DPT12 in the Wilcox clay may represent perchlorate that had migrated via groundwater to this location prior to installation of the groundwater extraction system.
6. Below the Wilcox clay and within the Wilcox sands in the southern portion of the site, the concentration of perchlorate generally decreases with the exception of 18DPT17 located within the containment area adjacent to the southwestern boundary.

7. Monitoring Well 18CPTMW19SW ï Low concentrations of perchlorate were reported in this boring with the highest concentration reported at 50-50.5 ft bgs at 170 Õg/kg in the Wilcox sand. The Wilcox clay appears to extend from 20.3 ft bgs to 41.4 ft bgs. The bottom soil sample at 60-61 ft bgs was < 2.54 Õg/kg for perchlorate providing vertical delineation.

8. Monitoring Well 18CPTMW23SW - relatively low concentrations of perchlorate were detected at 5-5.5 ft bgs, 10-10.5 ft bgs and 20-20.5 ft bgs at 19.6 Õg/kg , 1,920 Õg/kg, and 29.3 Õg/kg, respectively. At depths of 30-30.4 ft bgs, 40-40.5 ft bgs, 50-50.5 ft bgs, and 60-60.5 ft bgs perchlorate concentrations were below the detection limits, providing vertical delineation. Saturated conditions were observed at the surface and throughout the borehole as the area had previously been subjected to flooding due to heavy rains. Wilcox clay was not identified in this area of the site.

9. 18WW25 ï no perchlorate was detected in any of the analyzed soil samples at 3.5-4 ft bgs, 9.5-10 ft bgs, 14.5-15 ft bgs, 19.5-20 ft bgs, and 22-22.5 ft bgs. This well provides lateral extent delineation. Saturation at this location was encountered at approximately 2 ft bgs during drilling. The Wilcox clay was not identified.

10. VOC data was analyzed from the same soil samples collected for perchlorate analysis. The results indicated sporadic detection of VOCs with all concentrations below the VOC MSCs.

11. Groundwater elevation data in the Shallow Zone confirmed the presence of a groundwater high near AWD-2/123, similar to previous observations. Another groundwater high was identified to the south of the site in new Shallow Zone monitoring well 18CPTMW22R. This groundwater high substantiated the high historical groundwater elevations observed in adjacent well MW-20. The Wilcox Formation groundwater elevations indicate the presence of a groundwater high in the vicinity of MW-14 in the northwest area of the site, also consistent with previous observations.

12. New upper Wilcox Formation wells 18CPTMW19SW and 18CPTMW23SW and deep Wilcox Formation well 18CPTMW22DW provided additional vertical groundwater gradient information. Downward vertical gradients were observed between the Shallow Zone and upper Wilcox Formation in co-located wells 18CPTMW19/18CPTMW19SW and 18CPTMW23/18CPTMW23SW. However, an upward vertical gradient was observed between 18CPTMW22DW and new upper Wilcox Formation well 18CPTMW22SW.

13. Groundwater concentration data for perchlorate, TCE, MC, and 1,4-dioxane were collected and displayed as isoconcentration maps. The lateral extent of perchlorate, TCE, MC, and 1,4-dioxane in the Shallow Zone and in the Wilcox Formation has been determined with two exceptions. 1,4-Dioxane in MW-16 near Harrison Bayou had a concentration of 18 µg/L, exceeding the 1,4-dioxane PCL of 9.1 µg/L. The TCE result of 14.1 µg/L at MW-18, located to the southwest of the site, exceeded the MCL of 5 µg/L. New Shallow Zone monitoring well 18CPTMW26 located between LHAAP-18/24 and LHAAP-17 did not have sufficient water to collect a groundwater sample.

4.2 Conclusions

The following conclusions can be made based on the results of this investigation:

- No source of perchlorate was identified in the vadose zone soil or Shallow Zone groundwater outside or within the southern portion of the containment area.
- Perchlorate did not migrate to LHAAP-17 from LHAAP-18/24, based on low or non-detectable soil concentrations from 18CPTMW26, 18CPTMW26SW, and 18DP08.
- All VOC concentrations in soil were below the soil MSCs. Therefore, VOCs in the soil are not considered COCs in the southern area of the site.
- The Shallow Zone and Wilcox Formation wells define the lateral and vertical extent of perchlorate and VOCs above PCLs/MCLs in Shallow Zone and Wilcox Formation groundwater with the following exceptions: lateral extent of TCE in MW-18 in the Shallow Zone; vertical extent of perchlorate in the Wilcox Formation in MW-14 and 18CPTMW08DW.

4.3 Recommendations

The soil investigation results achieved the objectives of the work and no data gaps are identified. Accordingly, no further investigation of perchlorate concentrations in soil is recommended. The groundwater investigation results achieved the objectives of the work and provided lateral and vertical delineation of COCs in Shallow Zone and Wilcox Formation groundwater in the vicinity of the seven new wells. Groundwater samples will be collected from the site including monitoring well 18CPTMW26 during future semi-annual sampling events.

5 REFERENCES

AECOM, 2013. *Final Post-Screening Investigation Report, LHAAP-18/24, Longhorn Ammunition Plant, Karnack, Texas*, December.

AECOM, 2014. *Final Installation-Wide Work Plan for Longhorn Army Ammunition Plant, Karnack, Texas*, July.

AECOM, 2015. *Final LHAAP-18/24 Supplemental Post-Screening Investigation Work Plan, Longhorn Ammunition Plant, Karnack, Texas*, December.

AECOM, 2016. *Final Updated Post-Screening Investigation Report for LHAAP-18/24, Burning Ground No. 3 and Unlined Evaporation Pond, Longhorn Army Ammunition Plant, Karnack, Texas.* February.

Jacobs Engineering Corporation (Jacobs), 2002. *Baseline Risk Assessment Report for the Group 2 Sites Remedial Investigation (Sites 12, 17, 18/24, 29, and 32) at the Longhorn Army Ammunition Plant (LHAAP), Karnack, Texas, Final*, St. Louis, Missouri.

Plexus Scientific Corporation, 2005. *Final Environmental Site Assessment, Phase I and II Report, Production Areas, Longhorn Ammunition Plant, Karnack, Texas*, Columbia, Maryland, February.

APPENDIX A: Field Boring Logs & Well Construction Logs

AECOM

Client: USACE			BORING ID: 18DPT01
Project Number: 60274185			
Site Location: LHAAP Site 18/24			
Coordinates:	Elevation		Sheet 1 of 2
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' Core Barrel	Boring Diameter: 2 1/4"		Screened Interval:
Weather: Sunny 40's	Logged By: GH	Date/Time Started: 2/25/16	Depth of Boring: 28'
Drilling Contractor: FUGRO	Ground Elevation:	Date/Time Finished: 2/25/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
1						SM	SILTY FINE SAND, BROWN, WET		
2				48"/60"	6.2	CL	0.2' SILTY CLAY, MOTTLED REDDISH BROWN & GRAY, DAMP, MED. STIFF, MED. PLASTICITY		
3							3.7 SAA, INCREASE IN SILT, MOTTLED YELLOWISH ~~GRAY~~ & BROWN		
4									
5	X	5-5.5		—	7.3	X			
6							5.0 SILTY CLAY, MOTTLED YELLOWISH BROWN & GRAY, DAMP, STIFF, LOW-MED. PLASTICITY		
7				59"/60"	4.4	CL			
8									
9									
10	X	9.5-10		—	11.2				
11				21"/30"		ML/CL	10.0 CLAYEY SILT/SILTY CLAY, YELLOWISH BROWN & LT. GRAY, DAMP, MED. STIFF, LOW PLASTICITY		
12					4.8 ~~13.8~~	X			
13				26"/30"		CL	12.5 SILTY CLAY, YELLOWISH BROWN TO LT. GRAY, DAMP, MED. STIFF, LOW PLASTICITY		
14						SM	13.3 SILTY FINE SAND, LT GRAY & YELLOWISH BROWN, DAMP		
15					4.5	X			
16				23"/30"		SM	15.0 SAA, MOSTLY GRAY W/ Fe STAINING		
17						X	17.5 ~~18.0~~ SILTY CLAY, BROWN W/ REDDISH BROWN STREAKS, DAMP, STIFF, MED. PLASTIC		
18				24"/30"	6.6	CL			
19						SM/SP	18.0 SILTY FINE SAND/FINE SAND, LT. GRAY W/ Fe STAINS MOIST		
20									

NOTES: TREMIED PORTLAND CEMENT W/ BENTONITE GEL TO 26' BGS

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18DPT01
Project Number: CHAAP SITE 18/24			
Site Location: 60274185			
Coordinates:	Elevation		Sheet 2 of 2
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' Core Barrel	Boring Diameter: 2 1/4"		Screened Interval:
Weather: Sunny, 40s	Logged By: GH	Date/Time Started: 2/25/16	Depth of Boring: 28'
Drilling Contractor: FUGRO	Ground Elevation:	Date/Time Finished:	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
21				30"/30"	9.0		SILTY FINE SAND, LT. GRAY w/ YELLOWISH BROWN ZONES, WET		
22		22.5–23			4.0 ~~NA~~	SM			
23	X			26"/30"					
24		24.5–25							
25	X				NA		25.0' SILTY CLAY, GRAY w/ YELLOWISH BROWN ~~wf~~ ZONES, ~DAMP VERY STIFF, LOW PLASTICITY		
26				36"/36"		CL			
27	X	27–27.5			NA				
28							TD = 28'		
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18DPT02
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 1 of 2
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' Core Barrel	Boring Diameter: 2 1/4"		Screened Interval:
Weather: Sunny 30	Logged By: GH	Date/Time Started: 2/26/16	Depth of Boring: 25'
Drilling Contractor: FUGRO	Ground Elevation:	Date/Time Finished: 2/26/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
1						SM	SILTY FINE SAND, LT. BROWN, WET		
2				58"/60"			0.7 SILTY CLAY, REDDISH BROWN W/ SOME LT. GRAY MOTTLING, DAMP, STIFF, LOW-MED. PLASTICITY		
3					3.7	CL			
4									
5		5-5.5			20.1	X			
6							5.9 SILTY FINE SAND, MOTTLED REDDISH BROWN & LT. GRAY, DAMP, W/ OCCASIONAL SILTY CLAY (LT. GRAY) LAMINAE UP TO 1" THICK		
7				58"/60"					
8					4.3				
9									
10		10-10.5			9.3	SM	8.5 SAA, MOIST/WET		
11							10.0 SILTY FINE SAND, YELLOWISH BROWN W/ OCCASIONAL LT GRAY FINE SAND LAMINAE TO 1" THICK WET		
12				58"/60"					
13					4.1				
14									
15		15-15.5			3.6				
16									
17				56"/60"			16.7 SILTY CLAY, LT. GRAY, VERY STIFF, DAMP, MED. PLASTICITY		
18					4.3	CL	18.2 FINE SAND, LT. GRAY, WET		
19						SP	18.9 SILTY CLAY, LT. GRAY W/ YELLOWISH BROWN STREAKS, DAMP, STIFF		
20					1.1	CL			

NOTES: TREMIED PORTLAND CEMENT W/ BENTONITE GEL TO 25' BGS

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 1BDPT02
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 2 of 2
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' CONE BARREL	Boring Diameter: 2 1/4"		Screened Interval:
Weather: SUNNY, 30	Logged By: GH	Date/Time Started: 2/26/16	Depth of Boring: 25
Drilling Contractor: FUGRO	Ground Elevation:	Date/Time Finished: 2/26/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
21							SILTY CLAY, LT. GRAY & YELLOWISH BROWN, DAMP, VERY STIFF, LOW-MOD. PLASTICITY		
22	X	22-22.5		43"/60"	2.2	CL			
23						SM	22.9 SILTY FINE SAND, LT. GRAY & YELLOWISH BROWN, WET		
24						X			
25									
26									
27							TD = 25'		
28									
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18DPT03
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 1 of 2
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' Core Barrel	Boring Diameter: 2 1/4"		Screened Interval:
Weather: SUNNY 40	Logged By: GH	Date/Time Started: 2/26/16	Depth of Boring: 25
Drilling Contractor: FUGRO	Ground Elevation:	Date/Time Finished: 2/26/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
						SM	SILTY FINE SAND, BROWN, WET		
1							0.5 SILTY CLAY, MOTTLED GRAY & BROWN, SOFT, WET		
2				35"/60"		CL			
3					1.5				
4									
5		5-5.5			5.4		5.0 SILTY CLAY, GRAY TO LT. GRAY & YELLOWISH BROWN, DAMP, VERY STIFF LOW PLASTICITY, BROWNISH SAND AT 6.5'		
6				57"/60"		CL			
7					8.5	ML/SM	7.0 SILTY FINE SAND / SANDY SILT W/ OCCASIONAL 1" CLAY LAYERS, MOTTLED GRAY & YELLOWISH BROWN, DAMP		
8									
9									
10		10-10.5			3.3		10.0 SILTY FINE SAND, BROWNISH GRAY, MOIST		
11				60"/60"					
12					5.4	SM			
13							13.5 SILT, YELLOWISH BROWN, MOIST/WET		
14		14.5-15				ML	14.2 SILTY FINE SAND, LT. GRAY, WET		
15					4.8	SM	15.0 SILTY CLAY, LT. GRAY W/ YELLOWISH BROWN MOTTLING, DAMP, VERY STIFF, LOW-MOD. PLASTICITY, OCCASIONAL SILTY FINE SAND TO 1/2"		
16				42"/60"		CL			
17		17.5-18			NA				
18									
19									
20									

NOTES: ORIGINALLY ONLY 24" RECOVERY FOR 15-20' SAMPLES, STEPPED OUT ~1' AND RESAMPLED 15-20' ZONE AND RECOVERED 42".

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18DPT03
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 2 of 2
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' CONS BARREL	Boring Diameter: 2 1/4"		Screened Interval:
Weather: SUNNY 40	Logged By: GH	Date/Time Started: 2/26/14	Depth of Boring: 25'
Drilling Contractor: MUGNO	Ground Elevation:	Date/Time Finished: 2/26/14	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
21				48"/60"	4.8	SM/SP	SILTY SAND / FINE SAND, YELLOWISH BROWN, WET, AREAS W/ FINE-MED. GRAINED SAND		
22									
23									
24							23.9 SILTY CLAY, MOTTED GRAY & YELLOWISH BROWN, MOIST, MED. STIFF		
25									
26									
27							TD = 25'		
28									
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									

NOTES: TREMIED PORTLAND CEMENT W/ BENTONITE GEL TO 20' BGS.

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18DPT04
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 1 of 2
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' CONS BARREL	Boring Diameter: 2 1/4"		Screened Interval:
Weather: SUNNY 40	Logged By: GH	Date/Time Started: 2/24/16	Depth of Boring: 40'
Drilling Contractor: FUGRO	Ground Elevation:	Date/Time Finished: 2/24/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
1						SM	SILTY FINE SAND, BROWN, MOIST TO WET		
2				48"/60"			1.5 SILTY CLAY, REDDISH BROWN, DAMP MOD. STIFF, PLASTIC		
3					4.0	CH			
4									
5		5-5.5			8.0		SAA		
6				60"/60"		CL			
7					6.0		7.0 SANDY CLAY, GRAY + YELLOWISH BROWN, DAMP, MOD. STIFF, LOW-MOD. PLASTICITY		
8									
9						CL	8.8 SILTY FINE SAND, MOTTLED REDDISH BROWN, GRAY + YELLOWISH BROWN		
10					NA	SM / CL	9.6 SILTY CLAY, MOTTLED YELLOWISH BROWN + GRAY, DAMP, STIFF, LOW PLASTICITY		
11									
12				6"/60"	NA		10.0-14.5 SLEEVE JAMMED COULD NOT RECOVER SAMPLE		
13									
14									
15		15-15.5			5.8	SM	14.5 SILTY FINE SAND, YELLOWISH BROWN, WET		
16				26"/30"		CL	15.0 SILTY CLAY W/ FINE SAND LAMINATIONS TO 1", DAMP, STIFF, LOW-MED. PLASTICITY		
17					5.9				
18				30"/30"		CL	17.5 SAA, LESS SAND LAMINATIONS		
19									
20					4.0				

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18DPT04
Project Number: 60274185			
Site Location: CHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 2 of 2
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' CONE BARREL	Boring Diameter: 2¼"		Screened Interval:
Weather: SUNNY 40's	Logged By: GH	Date/Time Started: 2/24/16	Depth of Boring: 40'
Drilling Contractor: FUGRO	Ground Elevation:	Date/Time Finished: 2/24/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
21	X	20-21		30"/30"	3.2	ML/SM	SANDY SILT / SILTY FINE SAND, YELLOWISH BROWN, WET		
22									
23				24"/30"		CL	23.0 SANDY CLAY, YELLOWISH BROWN, DAMP, STIFF		
24						SM	24.0 SILTY FINE SAND, GRAY, WET		
25	X	25-25.5		30"/30"	6.3	SM	SAA		
26						CL	26.0 SILTY CLAY, MOTTLED GRAY & YELLOWISH BROWN, DAMP, V. STIFF		
27					6.8		26.5 SILTY FINE SAND, YELLOWISH BROWN, WET		
28				30"/30"		SM			
29	X	29-30			6.0		29.0 SAA, MOTTLED GRAY & YELLOWISH BROWN, WET		
30									
31				22"/30"					
32					4.0	X	32.5 SAA, W/ OCCASIONAL CLAY LAYERS TO 2"		
33				24"/30"		SM			
34	X	34-34.5			3.8	X	35.0 SILTY CLAY, GRAYISH BROWN, DAMP, MOD. STIFF, PLASTIC		
35				26"/30"		CH			
36	X	36.5-37			NA	X	37.0 SILTY FINE SAND, YELLOWISH BROWN, WET		
37				30"/30"	NA	SM			
38									
39									
40									

NOTES: TREMIED PORTLAND CEMENT W/ BENTONITE GEL TO 36' BGS.

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18DPT05
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 1 of 2
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' Cone Barrel	Boring Diameter: 2 1/4"		Screened Interval:
Weather: Sunny 30's	Logged By: GH	Date/Time Started: 2/25/16	Depth of Boring: 25
Drilling Contractor: FUGRO	Ground Elevation:	Date/Time Finished: 2/25/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
1				60"/60"		SM	SILTY FINE SAND, BROWN, MOIST-WET		
2							0.8 SILTY CLAY, MOTTLED, LT. GRAY & REDDISH BROWN, DAMP, MOD STIFF, MOD. PLASTIC		
3					5.2				
4		4.5-				CL	4.0 SAA, MORE LT. GRAY		
5	X	5.0			6.0				
6							6.6 INCREASE IN SAND		
7				53"/60"					
8					8.5				
9						SM	8.3 SILTY FINE SAND, YELLOWISH BROWN, MOIST		
10	X	10-			6.7	X			
11	X	11		36"/60"		SM/SP	10.0 SILTY FINE SAND / FINE SAND, YELLOWISH BROWN, MOIST, OCCASIONAL CLAY LAYERS TO 1", MOTTLED GRAY & ORANGE BROWN		
12					4.0				
13						X			
14									
15	X	15-15.5			11.0	SM/SP	SAA, WET		
16				60"/60"		CL	15.5 SILTY CLAY, LT. GRAY W/ ORANGE BROWN LAMINATIONS, DAMP, STIFF, LOW-MOD. PLASTICITY		
17						SM			
18					5.6		16.3 SILTY FINE SAND, MOTTLED LT. GRAY & YELLOWISH BROWN, WET		
19						CL	16.8 SILTY CLAY, MOTTLED LT. GRAY & YELLOWISH BROWN, DAMP, VERY STIFF, MOD. PLASTICITY		
20	X	19.5-20			11.0				

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18CPT05
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 2 of 2
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' Core Barrel	Boring Diameter: 2 1/4"		Screened Interval:
Weather: SUNNY, 30's	Logged By: GF	Date/Time Started: 2/25/10	Depth of Boring: 25
Drilling Contractor: FUGRO	Ground Elevation:	Date/Time Finished: 2/25/10	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
21				42" / 60"	NA	CL	SILTY CLAY, MOTTLED LT. GRAY & YELLOWISH BROWN, DAMP, V. STIFF LOW-MOD. PLASTICITY		
22									
23						SM	21.8 SAA, LT. GRAY		
24							22.2 SILTY FINE SAND, GRADE TO YELLOWISH BROWN, WET		
25									
26									
27							TD = 25'		
28									
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									

NOTES: PROVIDED PORTLAND CEMENT W/ BENTONITE GEL TO 25' BGS

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18DPT06
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 1 of 2
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' Core Barrel	Boring Diameter: 2 1/4"		Screened Interval:
Weather: SUNNY 38	Logged By: GH	Date/Time Started: 3/2/16	Depth of Boring: 40'
Drilling Contractor: FUGRO	Ground Elevation:	Date/Time Finished: 3/2/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
						SM	SILTY FINE SAND, BROWN, MOIST		
1				60"/60"			0.1 SILTY CLAY, REDDISH BROWN, DAMP, STIFF, MED. PLASTICITY		
2									
3					8.6		1.8 SAA, MOTTLED GRAY + REDDISH BROWN		
4									
5		5.0-5.5			5.4	CL	5.5 SANDY CLAY, YELLOWISH BROWN, DAMP, STIFF, MED. PLASTICITY OCCASIONAL SILTY FINE SAND TO 1" LAYERS		
6									
7				37"/60"					
8					6.3		7.9 SILTY FINE SAND, MOTTLED GRAY + LT BROWN + REDDISH BROWN, DAMP		
9									
10					0.0		10 SILTY CLAY, GRAY W/ YELLOWISH BROWN MOTTLING, DAMP, VERY STIFF, MED. PLASTICITY		
11				26"/30"		CL			
12						SM	11.5 INCREASE IN SAND		
13					3.0		11.7 SILTY FINE SAND, YELLOWISH BROWN, MOIST		
14				30"/30"		SM/SP	12.5 SILTY FINE SAND / FINE SAND, LT. GRAY + YELLOWISH BROWN, WET W/ OCCASIONAL SILTY CLAY LAYERS TO 1"		
15		15-15.5			5.7				
16				24"/30"		SM	14.2 SILTY FINE SAND, YELLOWISH BROWN, WET, W/ OCCASIONAL SILTY CLAY LAYERS TO 1".		
17					NA				
18				22"/30"	4.4	SM	SAA		
19									
20									

NOTES: SAMPLE BARREL JAMMED AT 10-15'. STEPPED RIG OVER @ 1' TO RESAMPLE 10-15' ZONE

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18DPT06
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 2 of 2
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' Core Barrel	Boring Diameter: 2 1/4"		Screened Interval:
Weather: Sunny 50's	Logged By: GH	Date/Time Started: 3/2/16	Depth of Boring: 40'
Drilling Contractor:	Ground Elevation:	Date/Time Finished: 3/2/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
		20-20.5		24"/30"		SM	SILTY FINE SAND, YELLOWISH BROWN, WET		
21						CL	20.7 SILTY CLAY, GRAY W/ FEW YELLOWISH BROWN LAMINATIONS, DAMP, STIFF		
22									
23				30"/30"	2.6	SM/SP	22.5 SILTY FINE SAND / FINE SAND, YELLOWISH BROWN, WET		
24						CL	24.0 SILTY CLAY, GRAY W/ YELLOWISH BROWN LAMINATIONS, DAMP, STIFF MED. PLASTICITY		
25					2.6	SM/SP	24.3 SILTY FINE SAND / FINE SAND, YELLOWISH BROWN WET		
26				30"/30"		CL/SC	25.2 SANDY CLAY / CLAYEY FINE SAND, GRAY, MOIST - WET		
27		27-27.5							
28					2.7				
29				20"/30"		SM	28.2 SILTY FINE SAND, GRAY, WET W/ OCCASIONAL CLAYEY ZONES		
30					0.7		30 SILTY FINE SAND, YELLOWISH BROWN, WET, W/ OCCASIONAL CLAYEY ZONES		
31				26"/30"		SM			
32						CL	31.7 SILTY CLAY, LT. YELLOWISH BROWN, DAMP, STIFF, MED. PLASTICITY		
33					6.5	CL	32.5 SILTY CLAY, LT. YELLOWISH BROWN, MOIST - WET, STIFF LOW-MED. PLASTICITY W/ SOME LAMINATIONS OF FINE SAND		
34				24"/30"		SM	34.0 SILTY FINE SAND, YELLOWISH BROWN, WET		
35					5.3				
36				25"/30"		SM	35.0 SILTY FINE SAND W/ TRACE OF CLAY, YELLOWISH BROWN, WET		
37						CL	36.2 SILTY CLAY, YELLOWISH BROWN MOIST - WET, MED. STIFF, MED. PLASTICITY		
38		38.5-39		18"/30"	2.0	CL	37.5 SILTY CLAY, GRAY W/ YELLOWISH BROWN, DAMP, STIFF, MED PLASTICITY		
39					3.1				
40									

NOTES: TREMIES PORTLAND CEMENT W/ BENTONITE GEL TO 40' BGS TD = 40'

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18DPT07
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 1 of 2
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' CORE BARREL	Boring Diameter: 2 1/4"		Screened Interval:
Weather: SUNNY 50'S	Logged By: GH	Date/Time Started: 3/2/16	Depth of Boring: 40'
Drilling Contractor: FUGRO	Ground Elevation:	Date/Time Finished: 3/3/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
							ASPHALT		
1				38"/60"			0.5 SILTY CLAY, MOTTLED GRAY & YELLOWISH BROWN, DAMP, STIFF, MED. PLASTICITY		
2						CL			
3					0.3				
4									
5		5-5.5			4.0		5' SILTY CLAY, MOTTLED LT. GRAY & YELLOWISH BROWN, DAMP, STIFF, MED. PLASTICITY		
6						CL			
7				54"/60"					
8					2.3	SC	7.7' CLAYEY SAND, MOTTLED LT. GRAY & YELLOWISH BROWN, DAMP		
9						CL	8.1' SILTY CLAY, MOTTLED LT. GRAY & YELLOWISH BROWN, DAMP, STIFF, MED. PLASTICITY		
10					1.3				
11							SAA		
12				35"/60"		CL			
13					5.1				
14									
15		15-15.5			4.1	CL			
16						SM	15.8 SILTY FINE SAND, YELLOWISH BROWN, MOIST		
17				39"/60"		CL	16.4 SILTY CLAY, MOTTLED LT. GRAY & YELLOWISH BROWN		
18					8.5	SM/SP	16.7 SILTY FINE SAND / FINE SAND, YELLOWISH BROWN, MOIST		
19						ML	17.7 SILT, YELLOWISH BROWN, DAMP		
20									

NOTES: @4:30 LOST CORE BARREL AT ~~18~~-20'.

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18DPT07
Project Number: 60274185			
Site Location: LHAAP Site 18/24			
Coordinates:	Elevation		Sheet 2 of 2
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' Cores Barrel	Boring Diameter: 2 1/4"		Screened Interval:
Weather: Drizzly 3/3/16	Logged By: GH	Date/Time Started: 3/2/16	Depth of Boring: 40'
Drilling Contractor: FUGRO	Ground Elevation:	Date/Time Finished: 3/3/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
21				12"/60"	14.2	SC	CLAYEY FINE SAND, YELLOWISH BROWN & LT. GRAY		
						CL	20.8 SILTY CLAY, YELLOWISH BROWN W/ LT. GRAY MOTTLING, DAMP, MED STIFF, MED. PLASTICITY		
22					NA				
23									
24									
25									
26				36"/60"	5.2	CL	25 SILTY CLAY, MOTTLED YELLOWISH BROWN & LT. GRAY, DAMP, MED-STIFF, MED. PLASTICITY		
27		27-27.5							
28					4.2	SM/SP	26.7 SILTY FINE SAND / FINE SAND, YELLOWISH BROWN & LT. GRAY, WET		
29									
30									
31				55"/60"	9.6	SM	30 SILTY FINE SAND, YELLOWISH BROWN TO LT. BROWN, MOIST TO WET		
32						SP	31.0 FINE SAND, LT. BROWN TO YELLOWISH BROWN, WET		
33					4.2	CH	32.5 SILTY CLAY, GRAYISH BROWN, DAMP, VERY STIFF, PLASTIC		
34		33.5-34.5				SP	32.8 FINE SAND, YELLOWISH BROWN TO LT. BROWN, WET		
35									
36				48"/60"	3.5	SM & CL	35.0 INTERBEDDED SILTY FINE SAND & SILTY CLAY 1-2" THICK, YELLOWISH BROWN & GRAY		
37					4.9	CL/CH	36.0 SILTY CLAY, GRAY TO DARK GRAY, STIFF, DAMP, MED-HIGH PLASTICITY		
38		38-39.0							
39									
40							TD = 40'		

NOTES: BEGAN DRILLING 3/3/16 STARTING AT 20'.
TREMIED PORTLAND CEMENT & BENTONITE GEL TO 36'

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18DPT08
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 1 of 2
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' Core Barrel	Boring Diameter: 2 1/4"		Screened Interval:
Weather: Sunny, 75	Logged By: GH	Date/Time Started: 3/3/16	Depth of Boring: 40
Drilling Contractor: Fugro	Ground Elevation:	Date/Time Finished: 3/3/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
1						ML	SANDY SILT, MOTTLED YELLOWISH BROWN & BROWN, WET		
2				42"/60"		ML	1.0 SILT, GRAY, MOIST		
3					1.6	CL	1.7 SILTY CLAY, DARK GRAY, DAMP, VERY STIFF, LOW PLASTICITY		
4									
5		5-5.5							
6					4.0		6.1 SILTY CLAY, DARK GRAYISH BROWN, DAMP, VERY STIFF, LOW PLASTICITY		
7				60"/60"					
8					4.1	CL			
9									
10		10-10.5							
11					3.3				
12				46"/60"		SC	12.0 CLAYEY FINE SAND, BROWN, MOIST-WET		
13					4.5	CL	12.4 SILTY CLAY, GRAY W/ ORANGE BROWN MOTTLES, DAMP, LOW PLASTICITY		
14									
15		15-15.5			8.3	CL	SAA		
16				46"/60"			15.5 CLAYEY SILT, MOTTLED LT. GRAY & YELLOWISH BROWN, MOIST TO WET, MOD. STIFF, LOW PLASTICITY		
17					6.6	ML			
18									
19									
20									

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18DPT08
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 2 of 2
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' Cons Barrel	Boring Diameter: 2 1/4"		Screened Interval:
Weather: Sunny 75	Logged By: GH	Date/Time Started: 3/3/16	Depth of Boring: 40'
Drilling Contractor: FUGRO	Ground Elevation:	Date/Time Finished: 3/3/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
21		21-21.5		46"/60"	2.3	ML	CLAYEY SILT, MOTTLED LT. GRAY & YELLOWISH BROWN, MOIST, MOD. STIFF, LOW PLASTICITY		
22					3.4	SM/SP	21.0 SILTY FINE SAND / FINE SAND, LT. GRAY, ~~WET~~ W/ OCCASIONAL YELLOWISH BROWN, WET		
23									
24									
25					2.1		25 SILTY FINE SAND, YELLOWISH BROWN, WET		
26		26-26.5		34"/60"		SM			
27					2.2				
28									
29									
30					2.0		30 SILTY FINE SAND, YELLOWISH BROWN, WET		
31				24"/60"		SM			
32					NA				
33									
34									
35		35-35.5		46"/60"	3.3		35 SILTY FINE SAND, LT. BROWN, WET, W/ OCCASIONAL SILTY CLAY, LT. GRAY TO 1".		
36						SM			
37					1.5				
38									
39									
40							TD = 40'		

NOTES: COULD NOT ACCESS BOREHOLE W/ TRACTOR & GROUT TRAILER DUE TO WET SOFT CONDITIONS. POURED PORTLAND CEMENT, W/ BENTONITE GEL IN OPEN HOLE TO 20' BGS.

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18DPT09
Project Number: 60027 4185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 1 of 1
Drilling Method: DPT			Monitoring Well Installed: NO
Sample Type(s): 5' Core Barrel	Boring Diameter: 2 1/4"		Screened Interval:
Weather: Sunny 38°F	Logged By: GH	Date/Time Started: 3/4/16	Depth of Boring: 15'
Drilling Contractor: Fexro	Ground Elevation:	Date/Time Finished: 3/4/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
1				32"/60"			SILTY FINE SAND, BROWN, WET		
2							1.5 SILTY FINE SAND, MOTTLED LT. GRAY & ORANGE BROWN, WET		
3					9.9				
4									
5		5-5.5							
6					7.7	CL/SC	5.0 SANDY CLAY / CLAYEY SAND, MOTTLED GRAY, REDDISH BROWN & YELLOWISH BROWN, DAMP,		
7				52"/60"			6.8 SILTY FINE SAND, LT. GRAY & YELLOWISH BROWN, MOIST		
8					7.4	SM			
9									
10					2.1				
11		11-11.5		48"/60"		SM	SAA		
12							11.5 SILTY CLAY, MOTTLED LT. GRAY & YELLOWISH BROWN, DAMP, VERY STIFF, MOD. PLASTICITY		
13					5.6	CL			
14		13.5-14							
15									
16									
17							TD = 15'		
18									
19									
20									

NOTES:
TREMIED PORTLAND CEMENT & BENTONITE GROUT TO 15' BGS

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18DPT10
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 1 of 2
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' CONE BREAKER	Boring Diameter: 2 1/4"		Screened Interval:
Weather: SUNNY ~60'S	Logged By: GH	Date/Time Started: 3/4/16	Depth of Boring: 25
Drilling Contractor: HGRO	Ground Elevation:	Date/Time Finished: 3/4/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
1							SILTY FINE SAND, BROWN, MOIST-WET		
2				54"/60"	2.5	SM			
3							1.7 SILTY CLAY, REDDISH BROWN DAMP, SOFT, LOW-MOD. PLASTICITY		
4						CL	3.5 SAA, MOTTLED REDDISH BROWN + GRAY, DAMP, MOD. STIFF, MOD. PLASTICITY		
5		5-5.5			5.0		5.0 SAA, MOTTLED YELLOWISH BROWN, + LT. GRAY		
6				54"/60"		CL			
7					2.4		7.4 SILTY FINE SAND, MOTTLED YELLOWISH BROWN + LT GRAY, DAMP		
8						SM			
9									
10					8.1		10.0 SANDY CLAY, LT. GRAY + YELLOWISH BROWN, DAMP TO DRY, HARD, LOW PLASTICITY		
11				24"/60"		CL			
12									
13					NA				
14									
15		15.5-16.0			6.3	CL	15.0' SILTY CLAY, MOTTLED ORANGE BROWN + LT. GRAY, DAMP, V. STIFF		
16				32"/60"		SM	15.3' SILTY FINE SAND, LT. GRAY W/ YELLOWISH BROWN LAMINATIONS, DAMP TO DRY		
17					4.5				
18									
19									
20									

NOTES: TREMIED PORTLAND CEMENT W/ BENTONITE GEL TO 25' BGS

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE		BORING ID: 18DPT10
Project Number: 60274185		
Site Location: LHAAP SITE 18/24		
Coordinates:	Elevation	Sheet 2 of 2
Drilling Method: DPT		Monitoring Well Installed:
Sample Type(s): 5' Core Barrel	Boring Diameter: 2 1/4"	Screened Interval:
Weather: SUNNY 60'S	Logged By: GH	Date/Time Started: 3/4/16
Drilling Contractor: FUGRO	Ground Elevation:	Date/Time Finished: 3/4/16
		Depth of Boring: 25
		Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
21				20"/30"	5.6	SM	SILTY FINE SAND, YELLOWISH BROWN, DAMP		
22						CL	20.8 SILTY CLAY, MOTTLED LT. GRAY & YELLOWISH BROWN & REDDISH BROWN, DAMP, VERY STIFF, MOD. PLASTICITY		
23		23.5-		24"/30"	3.7	CL	22.5 SILTY CLAY, MOTTLED REDDISH BROWN & LT. GRAY, DAMP, VERY STIFF, MOD. PLASTICITY		
24		24				SM	23.9 SILTY FINE SAND, LT. GRAY W/ YELLOWISH BROWN MOTTLES, DAMP		
25						CL	24.3 SILTY CLAY, LT. GRAY W/ YELLOWISH BROWN MOTTLES, DAMP, VERY STIFF, MOD. ~~STIFF~~ PLASTICITY		
26									
27									
28							TD=25'		
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18DPT11
Project Number: 60274185			
Site Location: LHAAP Site 18/24			
Coordinates:	Elevation		Sheet 1 of 2
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' Core Barrel	Boring Diameter: 2 1/4"		Screened Interval:
Weather: Sunny 70's	Logged By: GM	Date/Time Started: 3/4/16	Depth of Boring: 30'
Drilling Contractor: Fugro	Ground Elevation:	Date Time Finished: 3/7/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
1				60"		Fill	Silty Clay, mottled Yellowish Brown & Reddish Brown, Damp, Stiff, Med. Plastic		
2							1.7 – Black Liner		
3				60"	1.0		– Increase in Reddish Brown		
4							3.5 Silty Clay, mottled Reddish Brown & Gray, Damp, Stiff, Med. Plastic		
5		5–5.5			1.5				
6							5.5 Silty Clay, mottled Lt. Gray & Yellowish Brown, Damp, Stiff, Med. Plastic		
7				60"					
8					2.3	CL			
9				60"					
10					2.4		SAA		
11									
12				38"					
13					1.8				
14				60"					
15		15–15.5					Silty Clay, mottled Lt. Gray & Yellowish Brown, Damp, Medium Stiff		
16						CL	-16.0 Increase in Sand		
17				32"		SM	16.6 Silty Fine Sand, Yellowish Brown, moist		
18						CL	17.0 Sandy Clay, Yellowish Brown & Lt. Gray Layers, Med. Stiff, Low-Med. Plasticity		
19				60"					
20									

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18DPT11
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 2 of 2
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' CONS BARREL	Boring Diameter: 2 1/4"		Screened Interval:
Weather: 3/7/16 - CLOUDY 60's	Logged By: GH	Date/Time Started: 3/4/16	Depth of Boring: 30'
Drilling Contractor: FUGRO	Ground Elevation:	Date/Time Finished: 3/7/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
21	X	20-20.5			1.0	SM	SILTY FINE SAND, MOTTLED GRAY & YELLOWISH BROWN, MOIST		
22				40"/60"		CL	20.9 SILTY CLAY, MOTTLED GRAY & YELLOWISH BROWN, DAMP, VERY STIFF, MOD. PLASTICITY W/ OCCASIONAL LAMINAS OF SILTY FINE SAND, MOIST		
						SM			
23					1.9	CL			
						SM			
24						CL			
25	X	25-25.5			2.4				
26						CL	SILTY CLAY, MOTTLED GRAY & YELLOWISH BROWN, DAMP, VERY STIFF, MOD PLASTIC W/ OCCASIONAL LAMINAS OF SILTY FINE SAND TO 1", GRAY, MOIST		
27				56"/60"					
28					1.7	SM			
						CL			
						SM			
29	X	29-29.5				CL			
30						X			
31									
32							TD = 30'		
33									
34									
35									
36									
37									
38									
39									
40									

NOTES: CONTINUED DRILLING ON 3/7/16 AT 20'

TREMIED PORTLAND CEMENT W/ BENTONITE GEL TO 30'

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM	Client: USACE		BORING ID: 18DPT12
	Project Number: 60274185		
	Site Location: LHAAP SITE 18/24		
	Coordinates:	Elevation	Sheet 1 of 1
	Drilling Method: DPT		Monitoring Well Installed: No
	Sample Type(s): 5' CONS BARREL	Boring Diameter: 2 1/4"	Screened Interval
Weather: CLOUDY 60's	Logged By: GH	Date/Time Started: 3/7/16	Depth of Boring: 20'
Drilling Contractor: FUGRO	Ground Elevation	Date/Time Finished	Water Level

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
1						SM	SILTY FINE SAND W/TRACE OF CLAY, REDDISH BROWN, MOIST		
2				56"/60"	2.9				
3						ML	2.4 SILT, LT. BROWN, MOIST		
4						CL	2.7 SANDY CLAY, MOTTLED GRAY + YELLOWISH BROWN, DAMP, STIFF LOW-MED. PLASTICITY		
5		5-5.5			2.1				
6							SAA		
7				56"/60"	2.6	CL			
8							8.3 SILTY FINE SAND W/ TRACE OF CLAY, MOTTLED GRAY + YELLOWISH BROWN		
9		8.5-9.0				SM			
10					4.7		10 SILTY CLAY, YELLOWISH BROWN W/ GRAY LAYERS, DAMP, VERY STIFF, MED-HIGH PLASTICITY		
11						CL/CH			
12		12-12.5		30"/60"	4.2				
13									
14									
15							15 SILTY CLAY, GRAY W/ FEW YELLOWISH MOTTLES, DAMP, VERY STIFF, MED-HIGH PLASTICITY (SAMPLE BARREL IS WET)		
16				46"/60"		CL/CH			
17									
18		18-18.5							
19							TD = 20'		
20									

NOTES: TREMIED PORTLAND CEMENT W/ BENTONITE GEL TO 20' BGS

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18DPT13
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation:		Sheet 1 of
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5 CORE BARREL	Boring Diameter: 2 1/4"		Screened Interval:
Weather: CLOUDY 60'S	Logged By: GH	Date/Time Started: 3/7/16	Depth of Boring: 20'
Drilling Contractor: FUGRO	Ground Elevation:	Date/Time Finished: 3/7/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
1				56"/60"	0.9	CL	SILTY CLAY, MOTTLED REDDISH BROWN + GRAY, DAMP, MED. STIFF, LOW-MED. PLASTICITY		
2									
3							3.1 BECOMMING SANDIER		
4						SM	3.4 SILTY FINE SAND, REDDISH BROWN, DAMP		
5		5-5.5			2.7				
6				60"/60"		SM	SAA		
7						CL	6.1 SILTY CLAY, LT. GRAY W/ YELLOWISH BROWN MOTTLES, DAMP, STIFF, LOW-MED. PLASTICITY		
8					5.7	SM	6.7 SILTY FINE SAND, MOTTLED LT. GRAY + YELLOWISH BROWN, DAMP		
9						SP	7.0 FINE SAND, YELLOWISH BROWN, DAMP TO MOIST		
10					7.0				
11									
12		12-12.5		40"/60"	4.8	SP	12' SAA, WET		
13									
14									
15					2.8				
16				33"/60"		CL/CH	SILTY CLAY, PALE BROWN W/ GRAY STREAKS, DAMP, VERY STIFF, MED. TO HIGH PLASTICITY		
17		17-17.5			2.6				
18									
19							TD = 20'		
20									

NOTES: HOLE OPEN TO 15', POURED PORTLAND CEMENT W/ BENTONITE GEL.

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE		BORING ID: 18DPT14
Project Number: 60274185		
Site Location: LHAAP SITE 18/24		
Coordinates:	Elevation	Sheet 1 of 2
Drilling Method: DPT		Monitoring Well Installed: No
Sample Type(s): 5' Core Barrel	Boring Diameter: 2'/4"	Screened Interval:
Weather: Sunny, Upper 60's / Logged By: GH	Date/Time Started: 3/14/16	Depth of Boring: 25'
Drilling Contractor: Fugro / Ground Elevation:	Date/Time Finished: 3/14/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
1				33"/60"	5.2	CL	SILTY CLAY, MOTTLED GRAY & REDDISH BROWN, DAMP, MOD. STIFF, MOD. PLASTICITY		
2									
3									
4									
5	X	5-5.5		45"/60"	2.1	SC	CLAYEY SAND, MOTTLED YELLOWISH BROWN & LT. GRAY, MOIST		
6							6.5 SILTY FINE SAND, MOTTLED YELLOWISH BROWN & LT. GRAY, WET		
7					1.6	SM			
8							8.3 SILTY CLAY, MOTTLED YELLOWISH BROWN & GRAY, DAMP, VERY STIFF, LOW-MOD. PLASTICITY		
9						CL			
10	X	10-10.5		48"/60"	1.2	ML/SM	FINE SANDY SILT / SILTY FINE SAND, LT. GRAY W/ SOME YELLOWISH BROWN LAYERS, DAMP		
11									
12					1.2				
13									
14									
15					2.4	SP	FINE-MED. SAND, LT. GRAY W/ OCCASIONAL YELLOWISH BROWN ZONES, WET		
16				37"/60"					
17	X	17-17.5			2.4		17.8 SAA, YELLOWISH BROWN		
18							18.0 SILTY CLAY, GRAY, DAMP, VERY STIFF, MOD-HIGH PLASTICITY		
19									
20									

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18DPT 14
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 2 of
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' CORE BARREL	Boring Diameter: 2 1/4"		Screened Interval:
Weather: SUNNY UPPER 60s	Logged By: GH	Date/Time Started: 3/14/16	Depth of Boring: 25'
Drilling Contractor: FUGRO	Ground Elevation:	Date/Time Finished: 3/14/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
21					2.7		SILTY CLAY, MOTTLED GRAY & YELLOWISH BROWN, DAMP, VERY STIFF, MED-HIGH PLASTICITY		
22				42"/60"		CH/CL			
23		23-23.5			2.4				
24	X					X			
25							TD = 25'		
26									
27									
28									
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									

NOTES: TREMIED PORTLAND CEMENT AND BENTONITE GEL TO 20' BGS.

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 1BDPT15
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 1 of 2
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' CONE BARREL	Boring Diameter: 2 1/4"		Screened Interval:
Weather: SUNNY, 80'S	Logged By: GH	Date/Time Started: 3/14/16	Depth of Boring: 30'
Drilling Contractor: FUGRO	Ground Elevation:	Date/Time Finished: 3/14/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
1						ML/SM	SANDY SILT / SILTY FINE SAND, MOTTLED BROWN, YELLOWISH BROWN + GRAY, MOIST	POSSIBLE FILL	
2				55"/60"					
3					1.1	CL	2.2 SILTY CLAY, REDDISH BROWN, DAMP, MED. STIFF, MED. PLASTICITY		
4							3.9 SAA, MOTTLED REDDISH BROWN + GRAY		
5		5-5.5							
6					0.8		SILTY CLAY, YELLOWISH BROWN W/ GRAY VEINS, DAMP, MED. STIFF, MED. PLASTICITY		
7				51"/60"	0.5	CL			
8									
9									
10					1.5		SAA, MED-HIGH PLASTICITY		
11						CH/CL			
12		12-12.5		30"/60"	3.7	SM	11.9 SILTY FINE SAND, YELLOWISH BROWN, WET		
13									
14									
15					1.0	CL/SC	SANDY CLAY / CLAYEY SAND, YELLOWISH BROWN W/ OCCASIONAL GRAY STREAKS, MOIST, MED. STIFF, LOW PLASTICITY		
16				36"/60"					
17					2.0	SM/SP	17.0' SILTY FINE SAND / FINE SAND, LT. GRAY W/ YELLOWISH BROWN ZONES, WET		
18									
19									
20									

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18DPT15
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 2 of
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' CONS BARREL	Boring Diameter: 2 1/4"		Screened Interval:
Weather: SUNNY 80'S	Logged By: GH	Date/Time Started: 3/14/10	Depth of Boring: 30'
Drilling Contractor: FUGRO	Ground Elevation:	Date/Time Finished: 3/14/10	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
21	X	21-21.5		48"/60"	2.8	SP	FINE-MED SAND, BROWN TO YELLOWISH BROWN, WET, W/ OCCASIONAL CLAY LAYER TO 1/2"		
22									
23					15.0	CL	21.5 SILTY CLAY, GRAY W/ YELLOWISH BROWN ZONES, DAMP, VERY STIFF MOD-HIGH PLASTICITY, W/ OCCASIONAL FINE SAND LAYERS TO 1", WET		
24	X	23.5-24							
25						X	2"		
26					10.1	CH/SM	INTERBEDDED SILTY CLAY, GRAY, STIFF, DAMP, MOD-HIGH PLASTICITY AND SILTY FINE SAND, YELLOWISH BROWN, MOIST TO WET		
27	X	26.5-27		48"/60"		CH	26.2 SILTY CLAY, GRAY & YELLOWISH BROWN, DAMP, VERY STIFF, PLASTIC		
28					6.0	CH/SM	27.2 INTERBEDDED (2") SILTY CLAY, GRAY, DAMP, VERY STIFF, PLASTIC, AND SILTY FINE SAND, YELLOWISH BROWN, WET		
29						X			
30									
31							TD = 30'		
32									
33									
34									
35									
36									
37									
38									
39									
40									

NOTES: TREMIED PORTLAND CEMENT AND BENTONITE GRUT TO 30' BGS

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18DPT16
Project Number: 60274185			
Site Location: LHAAP Site 18/24			
Coordinates:	Elevation		Sheet 1 of 2
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' Core Barrel	Boring Diameter: 2 1/4"		Screened Interval:
Weather: Sunny 68°	Logged By: GH	Date/Time Started: 3/15/16	Depth of Boring: 35'
Drilling Contractor: Fugro	Ground Elevation:	Date/Time Finished: 3/15/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
1				49"/60"		ML/SM	SANDY SILT / SILTY FINE SAND, REDDISH BROWN TO BROWN, MOIST		
2							1.4 SILTY CLAY, MOTTLED REDDISH BROWN & GRAY, DAMP, MED. STIFF, LOW-MED. PLASTICITY		
3					0.1	CL			
4									
5		5-6.0					SAA		
6				58"/60"	1.5	CL	5.7 SILTY CLAY, MOTTLED YELLOWISH BROWN & GRAY, DAMP, STIFF, LOW-MED. PLASTICITY		
7									
8					1.8	SM	7.3 SILTY FINE SAND, YELLOWISH BROWN W/ SOME REDDISH BROWN MOTTLING, MOIST		
9									
10					1.2	CH/CL	SILTY CLAY, MOTTLED GRAY & YELLOWISH BROWN, DAMP, STIFF, MED-HIGH PLASTICITY		
11				37"/60"					
12						SM	10.8 SILTY FINE SAND, YELLOWISH BROWN, WET		
13					1.4				
14									
15		15-15.5			1.6	SM	SAA		
16									
17				42"/60"		CL	15.8 SILTY CLAY, MOTTLED GRAY & YELLOWISH BROWN, DAMP, MED. STIFF, MED. PLASTIC, W/ FINE SAND LAMINATIONS		
18					1.5				
19									
20									

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18DPT16
Project Number: 60274185			
Site Location: LHAAP Site 18/24			
Coordinates:	Elevation		Sheet 2 of 2
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' Core Barrel	Boring Diameter: 2 1/4"		Screened Interval:
Weather: Sunny 68°	Logged By: GH	Date/Time Started: 3/15/16	Depth of Boring: 35'
Drilling Contractor: FUGRO	Ground Elevation:	Date/Time Finished: 3/15/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
					2.2	SP	FINE-MED. SAND, YELLOWISH BROWN, WET		
21							20.3 SILTY CLAY, GRAY, DAMP, STIFF, MED. PLASTICITY		
22				38"/60"		CL	21.4 SAA, YELLOWISH BROWN		
							22.1 SAA, GRAY		
23					3.0		22.4 INCREASE IN SAND		
24						SM/SP	23.0 SILTY FINE SAND / FINE SAND, YELLOWISH BROWN, WET		
25		25-25.5			3.5	CL	SILTY CLAY W/ SAND SEAMS TO 1/4", YELLOWISH BROWN, MOIST-WET		
26						ML/SM	25.5 SANDY SILT / SILTY FINE SAND, YELLOWISH BROWN, WET		
27				49"/60"			27.0 INTERBEDDED (TO 2") SILTY CLAY GRAY & GRAYISH BROWN, DAMP, STIFF MED. PLASTICITY AND SILTY FINE SAND BROWN TO YELLOWISH BROWN, WET		
28					3.7	CL & SM			
29									
30		30-30.5			3.5	SM	SILTY FINE SAND, YELLOWISH BROWN, WET		
31									
32				42"/60"		CH & SM	31.6 INTERBEDDED (1") SILTY CLAY, GRAY TO BROWNISH GRAY, DAMP, STIFF, PLASTIC AND SILTY FINE SAND, YELLOWISH BROWN, WET		
33		33-33.5			3.1				
34									
35							TD = 35		
36									
37									
38									
39									
40									

NOTES: LOST CORE BARREL AT 25-30', OFFSET HOLE 1' AND CONTINUED DRILLING TO 35'

TREMIES PORTLAND CEMENT & BENTONITE GEL TO 32' BGS.

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18DPT17
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 1 of 2
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' CONS BRASS	Boring Diameter: 2 1/4"		Screened Interval:
Weather: SUNNY 70'S	Logged By: GAT	Date/Time Started: 3/15/16	Depth of Boring: 30'
Drilling Contractor: MUSRO	Ground Elevation:	Date/Time Finished: 3/15/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
1				54" / 60"		SM	SILTY FINE SAND W/ TRACE OF CLAY, BROWN, MOIST TO WET	POSSIBLE FILL TO 2.9'	
2						CL	1.5 SILTY CLAY, REDDISH BROWN W/ FEW SPECKS OF GRAY, DAMP, MED. STIFF LOW PLASTICITY		
3	X	2.5-3.0			2.5	SM	2.9 SILTY FINE SAND, BROWNISH GRAY, WET		
4						CH	3.4 SILTY CLAY, MOTTLED, BROWN, GRAY & REDDISH BROWN, MOIST, MED. STIFF, PLASTIC		
5	X	5-5.5			0.9	X			
6				59" / 60"		CL	SILTY CLAY, MOTTLED REDDISH BROWN & GRAY, MOIST, MED. STIFF, MED. PLASTIC		
7							7.1 CLAYEY FINE SAND, GRAY, MOIST		
8					1.9	CH	7.2 SILTY CLAY, MOTTLED YELLOWISH BROWN & GRAY, MED. STIFF, PLASTIC		
9									
10	X	10-10.5			3.6		SAA		
11						CH			
12				35" / 60"					
13					2.4				
14						X			
15									
16					2.0	CH	SAA		
17				44" / 60"		SM	15.7 SILTY FINE SAND, PALE BROWN & YELLOWISH BROWN, WET		
18	X	18-18.5			0.1	CL	16.8 SILTY CLAY, YELLOWISH BROWN W/ GRAY ZONES, DAMP, VERY STIFF, MED. PLASTIC		
19						X	18 SAA, GRAY W/ SOME YELLOWISH BROWN		
20									

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18DPT 17
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 2 of 2
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' CONE BARREL	Boring Diameter: 2 1/4"		Screened Interval:
Weather: SUNNY 70'S	Logged By: GH	Date/Time Started: 3/15/16	Depth of Boring: 30'
Drilling Contractor: FUGRO	Ground Elevation:	Date/Time Finished: 3/15/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
21						SM	SILTY FINE SAND, YELLOWISH BROWN W/ SOME GRAY ZONES, WET		
22	X	21.5-22		54"/60"		CL	21.9 SILTY CLAY, GRAY W/ YELLOWISH BROWN MOTTLES, DAMP, VERY STIFF MED. PLASTICITY		
23					0.1	ML	22.4 SILT, BROWNISH GRAY, WET		
24						CL	23.3 SILTY CLAY, GRAY W/ YELLOWISH BROWN MOTTLES, DAMP, VERY STIFF, MED PLASTICITY		
						SP	24 FINE ~~SAND~~ TO MED. SAND, YELLOWISH BROWN, WET		
25					2.8	X			
26						SP	SAND		
27	X	27-29.5		35"/60'	1.0				
28						X			
29									
30							TD = 30'		
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									

NOTES: TREMIED PORTLAND CEMENT & BENTONITE GEL TO 27' BGS

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18CPTMW19SW
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 1 of 4
Drilling Method: SONIC DRILL RIG			Monitoring Well Installed:
Sample Type(s): SAMPLE BARREL	Boring Diameter: 8"		Screened Interval:
Weather: PARTLY SUNNY 70'S	Logged By: GH, SH	Date/Time Started: 4/21/16	Depth of Boring: 65'
Drilling Contractor: AEI	Ground Elevation:	Date/Time Finished: 4/22/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
1						SM	SILTY FINE SAND, BROWN, WET		
2				4.3'/5.0'		CL	1.1 SILTY CLAY, YELLOWISH BROWN, DAMP, MED. STIFF, MED. PLASTICITY		
3					0.8		1.6 SAA, LAMINATED REDDISH BROWN, STIFF		
4						SC/SM	3.0 CLAYEY SAND/SILTY FINE SAND, LAMINATED YELLOWISH BROWN + GRAY, DAMP, MED. STIFF, LOW-MED. PLASTICITY		
5	5-5.5								
6					0.4		5.0 SILTY FINE SAND, GRAY W/YELLOWISH BROWN LAMINS, MOIST		
7				4.2'/5'		SM			
8					1.5				
9						CL-SM	8.8 INTERLAYERED SILTY CLAY (YELLOWISH BROWN) AND SILTY FINE SAND (GRAY)		
10	10-10.5				1.8				
11							10.0 SILTY FINE SAND, MOTTLED YELLOWISH BROWN + LIGHT GRAY, WET		
12									
13					1.6	SM	12.0' SAA, LIGHT GRAY W/OCCASIONAL YELLOWISH BROWN		
14				7.5'/10'					
15					1.5				
16									
17							17.0'		
18					1.9	SP	FINE SAND, LIGHT BROWN, MOIST		
19									
20					2.7				

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18CPTMW19SW
Project Number: 60274185			
Site Location: LHAAP Site 18/24			
Coordinates:	Elevation		Sheet 2 of 4
Drilling Method: Sonic Drill Rig			Monitoring Well Installed:
Sample Type(s): Sample Barrel	Boring Diameter: 8"		Screened Interval:
Weather: Partly Sunny 70's	Logged By: GH, SH	Date/Time Started: 4/21/16	Depth of Boring: 65'
Drilling Contractor: AE1	Ground Elevation:	Date/Time Finished: 4/22/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
	X	20-20.5				SM	SILTY FINE SAND, LIGHT BROWN, MOIST		
21						CL	20.3 SILTY CLAY, LIGHT GRAY, MOIST, MED. STIFF, MED. PLASTIC		
22						SM	21.3 SILTY FINE-MED. SAND, BROWN, WET		
23					3.3		22.2 SILTY CLAY, MOTTLED LT. BROWN + LT. GRAY, MOIST, SOFT, MED. PLASTICITY		
24				9'/10'					
25					2.8	CL			
26									
27									
28					1.2				
29									
30	X	30-30.5			1.9	X	30.0 SILTY CLAY, YELLOWISH BROWN W/ LT. GRAY MOTTLES, DAMP, MED. STIFF, HIGH PLASTICITY		
31									
32									
33					1.1		31.4 SAA, GRAY + LT. BROWNISH GRAY		
34				10'/10'		CH			
35					1.1				
36							35.8 SAA, GRAY W/ YELLOWISH BROWN MOTTLING		
37									
38					2.2				
39									
40									

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18CPTMW19SW
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			Sheet 3 of 4
Coordinates:	Elevation		Monitoring Well Installed:
Drilling Method: SONIC DRILL RIG			Screened Interval.
Sample Type(s): SAMPLE BARREL	Boring Diameter: 8"		Depth of Boring: 65'
Weather: PARTLY SUNNY, 70'S	Logged By: GH	Date/Time Started: 4/4/16	Water Level:
Drilling Contractor: AET	Ground Elevation:	Date/Time Finished: 4/22/16	

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID
41	X	40-40.5			2.6	CH		
42							41.4 FINE SAND, YELLOWISH BROWN, WET	
43					1.9			
44				9.8'/10'				
45					1.9	SP		
46								
47								
48					1.3		47.7 FINE-MED. SAND, GRAY, WET	
49							49.3 1/2" CLAY LAYER, LT. GRAY	
50	X	50-50.5			2.1	X		
51						SP	50.7 FINE-MED. SAND, OLIVE GREEN, WET	
52							52.0 1/4" SANDSTONE LAYER, YELLOWISH BROWN	
53					1.6	CS	52.3 CLAYEY SAND, YELLOWISH BROWN, WET	
54				10'/10'		SP	53.0 FINE-MED. SAND, DARK GRAY, WET 54.4 2" SANDSTONE LAYER, YELLOWISH BROWN	
55					2.6	SM	54.6 SILTY FINE SAND, LT. GRAY, WET	
56						SP	55.6 FINE SAND, LT. GRAY, WET	
57					2.4			
58							57.4 SILTY FINE SAND, LT. GRAY, WET	
59						SM	0.01" SLOTTED SCREEN	
60					1.9			

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18CPTMW19SW
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 4 of 4
Drilling Method: SONIC DRILL RIG			Monitoring Well Installed:
Sample Type(s):	Boring Diameter: 8"		Screened Interval:
Weather: PARTLY SUNNY 70's	Logged By: GH SH	Date/Time Started: 4/21/16	Depth of Boring: 65'
Drilling Contractor:	Ground Elevation:	Date/Time Finished: 4/22/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
61	X	60-61		5'/5'	1.9	SM	60.8 FINE SAND, LT. GRAY, WET		
62						SP	62.2 SILTY FINE SAND, LT. GRAY, WET		
63					2.1	SM	62.7 FINE SAND W/ SILT LAMINATIONS, LT. GRAY + DK GRAY MOTTLING, WET		
64						SP			
65					0.8		TD = 65'		
66									
67									
68									
69									
70									
71									
72									
73									
74									
75									
76									
77									
78									
79									
80									

NOTES: MIXED 6 BAGS TYPE I/II PORTLAND CEMENT W/ 15# OF BENTONITE QUICKGEL FOR GROUT TOTALING 100 GALLONS
USED 6 BAGS OF 12/20 SILICA SAND + 1 1/2 BAGS OF BENTONITE CHIPS

Checked by: Date:

Date	Time	Depth to groundwater while drilling

AECOM

Client: USACE		BORING ID: 18CPTMW22
Project Number: 60274185		
Site Location: LHAAP SITE 18/24		
Coordinates:	Elevation	Sheet 1 of 2
Drilling Method: HSA		Monitoring Well Installed: 4/25
Sample Type(s): NA	Boring Diameter: 10 1/4"	Screened Interval: 19-28.5
Weather:	Logged By:	Date/Time Started: 4/2/13
Drilling Contractor: ETTL	Ground Elevation:	Date/Time Finished: 4/2/13
		Depth of Boring: 29'
		Water Level: NA

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known) ~3' STICK UP	Lab Sample ID	Lab Sample Depth (ft)
1							FOR LITHOLOGY DESCRIPTION SEE 18CPT22		
2									
3									
4							4" DIAM. SCH 40 PVC CASING		
5									
6									
7							TYPE I/II PORTLAND CEMENT W/ BENTONITE GROUT		
8									
9									
10									
11									
12									
13									
14									14
15							3/8" BENTONITE PELLETS		
16									
17							20/40 SILICA SAND		17
18									
19							0.01" SCH 40 PVC SLOTTED SCREEN		19
20									

NOTES: Revision 1 corrects errors in well construction details on original log (attached). Correct well construction details for Revision 1 are from LHAAP-18/24 field logbook page 12, August 23, 2014, entry from Brian Ho. Field notes were recorded during abandonment of 18CPTMW22.

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE		BORING ID: 18CPTMW22
Project Number: 60274185		
Site Location: LHAAP SITE 18/24		
Coordinates:	Elevation	Sheet 2 of 2
Drilling Method: HSA		Monitoring Well Installed: YES
Sample Type(s): NA	Boring Diameter: 10 1/4"	Screened Interval: 19-28.5
Weather:	Logged By:	Date/Time Started: 4/2/13
Drilling Contractor: ETTL	Ground Elevation:	Date/Time Finished: 4/2/13
		Depth of Boring: 29'
		Water Level: NA

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
21									
22							20/40 SILICA SAND		
23									
24							0.01" SCH 40 PVC		
25							SLOTTED SCREEN		
26									
27									
28									28.5
29									29'
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									

NOTES:

Revision 1 corrects errors in well construction details on original log (attached). Correct well construction details for Revision 1 are from LHAAP-18/24 field logbook page 12, August 23, 2014, entry from Brian Ho. Field notes were recorded during abandonment of 18CPTMW22.

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18CPT MW 22
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation:		Sheet: 1 of 2
Drilling Method: HSA			Monitoring Well Installed: YES
Sample Type(s): NA	Boring Diameter: 10 1/4"		Screened Interval: 9-28.5
Weather:	Logged By:	Date/Time Started: 4/2/13	Depth of Boring: 29
Drilling Contractor: ETIL	Ground Elevation:	Date/Time Finished:	Water Level: NA

Depth (ft)	Geologic sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)	Lab Sample ID	Lab Sample Depth (Ft.)
1							FOR LITHOLOGY DESCRIPTION SEE BORING LOG FOR MW-22		
2									
3									
4							TYPE I/II PORTLAND CEMENT W/BENTONITE GROUT		4.0'
5									
6							3/8" BENTONITE PELLETS		
7									7.0'
8							20/40 SILICA SAND		
9									9.0'
10									
11							10 1/4" BORE HOLE		
12									
13									
14									
15							0.01" SCH. 40 PVC SLOTTED SCREEN		
16									
17									
18									
19									
20									

NOTES:

November 5, 2016 note: See Revision 1 for corrected log.

Date	Time	Depth to groundwater while drilling

Checked by Date:

AECOM

Client: USACE			BORING ID: 18CPT MW 22
Project Number:			
Site Location:			
Coordinates:	Elevation:		Sheet: 2 of 2
Drilling Method:			Monitoring Well Installed: YES
Sample Type(s):	Boring Diameter:		Screened Interval: 9-28.5
Weather:	Logged By:	Date/Time Started:	Depth of Boring: 29
Drilling Contractor:	Ground Elevation:	Date/Time Finished:	Water Level: NA

Depth (ft)	Geologic sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)	Lab Sample ID	Lab Sample Depth (Ft.)
20									
1							FOR LITHOLOGY DESCRIPTION SEE BORING LOG FOR MW-22		
2									
3									
4									
5									
6									
7									
8									
9									28.5
30									29'
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

NOTES: November 5, 2016 note: See Revision 1 for corrected log.

Date	Time	Depth to groundwater while drilling

Checked by Date:

CPT Data (Preliminary)

FUGRO

Job Number	04. 1013-0010	CPT Number	18cpt22	Location	Karnack,Tx
Operator	Albert Fonseca	Date and Time	28-Feb-2013	Cone Num	A15F2.5CKE2HAW2/B1519
Client	Aecom	Elevation:		Coridinates:	
Totol Depth :					

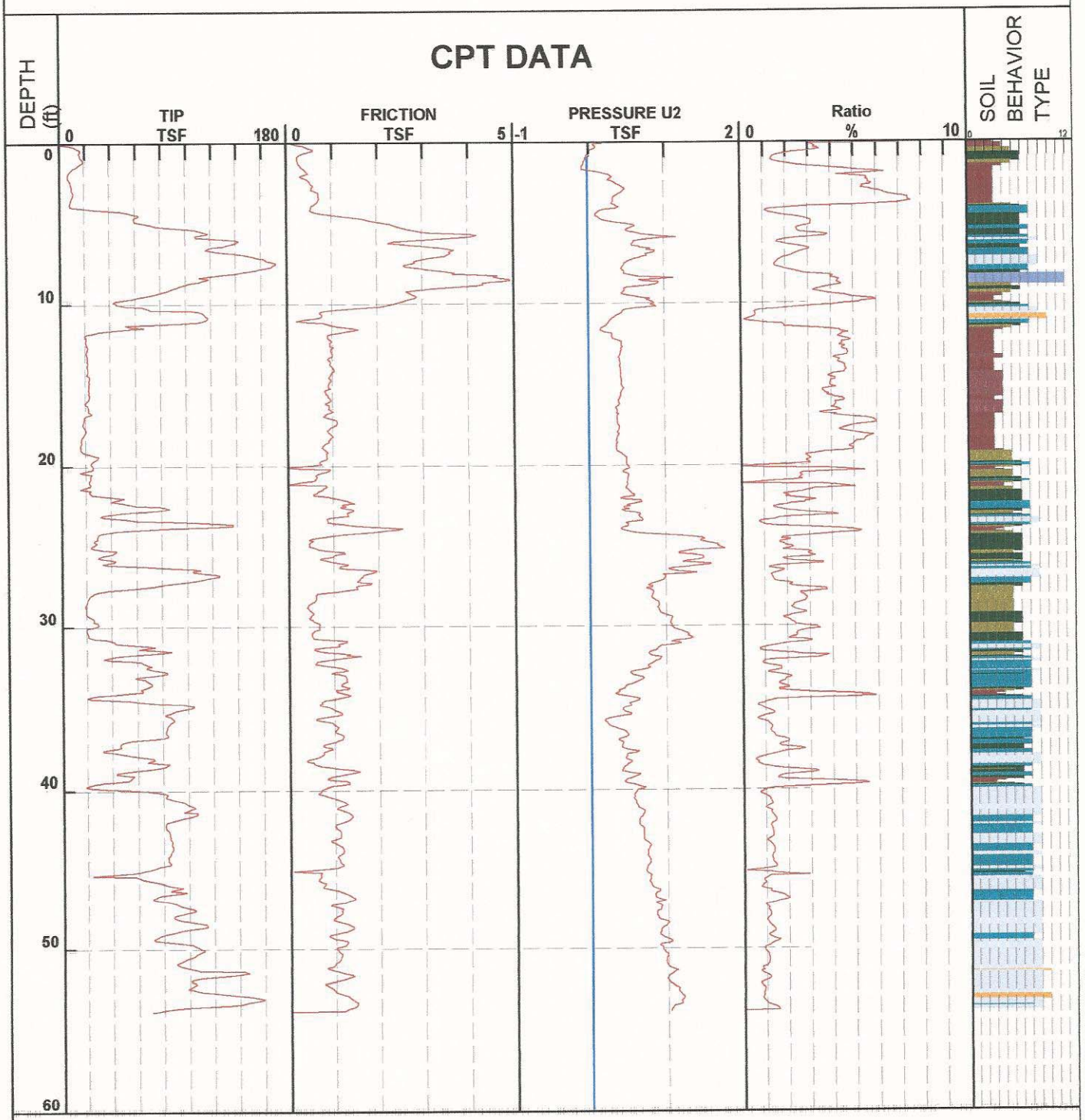

1 - sensitive fine grained	4 - silty clay to clay	7 - silty sand to sandy silt	10 - gravelly sand to sand
2 - organic material	5 - clayey silt to silty clay	8 - sand to silty sand	11 - very stiff fine grained (*)
3 - clay	6 - sandy silt to clayey silt	9 - sand	12 - sand to clayey sand (*)

Robertson et al. 1986 * Overconsolidated or Cemented

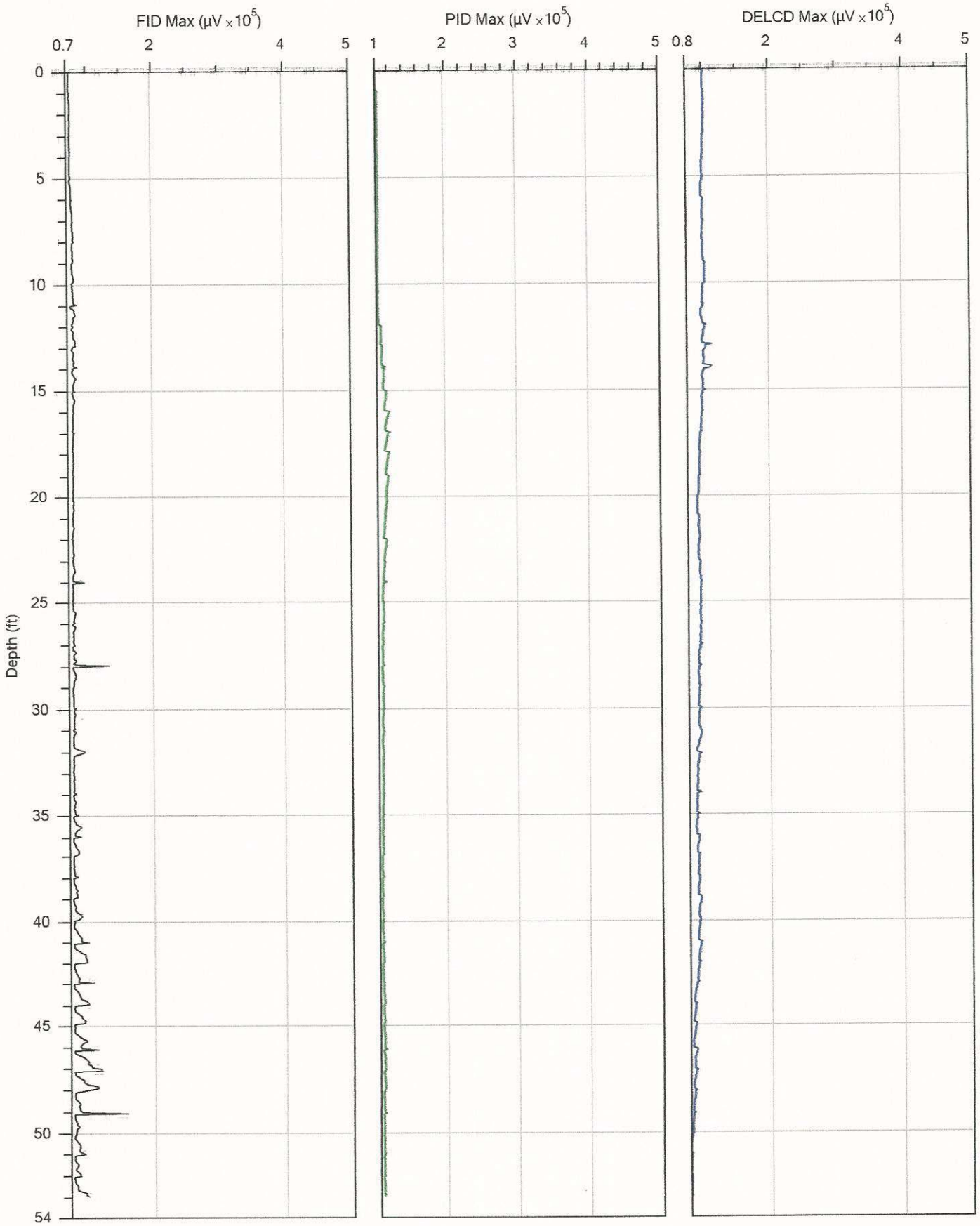

FUGRO			File: 18MIP22.MIP
Company: Fugro Consultants Inc.	Operator: Albert Fonseca		Date: 2/28/2013
Project ID: 04-1012-0050	Client: SSCI		Location:

Cross-Section D-D'

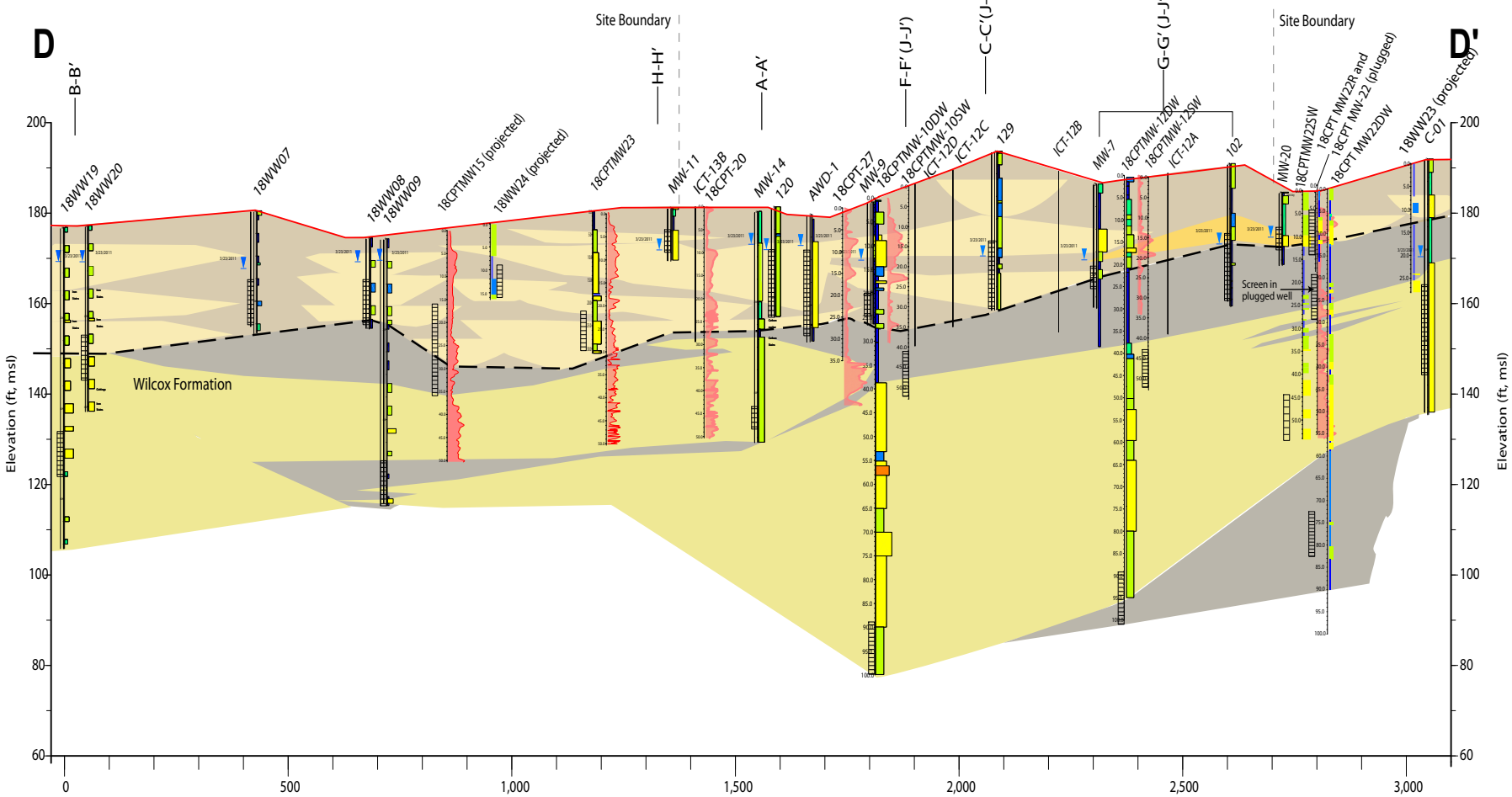

Down-hole Data Legend

Monitoring Well Data Explanation

Groundwater Level and Date Collected 3/23/2011

Monitoring Well Screen

CPT

Tip Resistance Curve

Lithofacies

Fill Material (coarse)

Sand Lithofacies

Channel and point bar deposits

Levee and splay deposits

Wilcox Fm.marine and deltaic sands (Eocene)

Silt/Clay Lithofacies

Fine overbank deposition (flood plain silts and clays)

Wilcox Fm.marine and deltaic clays and silts (Eocene)

Grain Size Log

Clay
Silt-Sandy Silt
Fine Sand w/fines
Fine Sand
Medium Sand w/fines
Medium Sand
Coarse Sand w/fines
Coarse Sand
Gravel

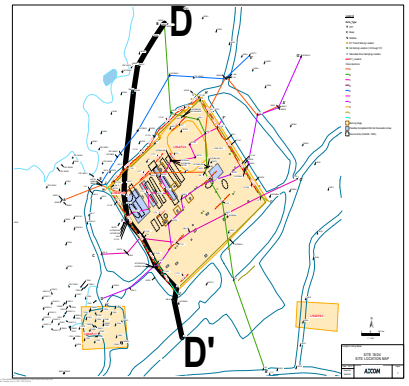

Erosional Contact alluvium and Wilcox

AECOM	Longhorn Army Ammunition Plant Marshall, TX		
LHAAP 18/24			
Cross Section D-D'			
PROJECT NO. 60274185	DRAWN BY: CPP	DATE: 12/09/2015	FIGURE C-4

AECOM

Client: USACE		BORING ID: 18CPTMW22R
Project Number: 60274185		
Site Location: LHAAP SITE 18/24		
Coordinates:	Elevation	Sheet 1 of 1
Drilling Method: SONIC DRILL RIG		Monitoring Well Installed:
Sample Type(s): SAMPLE BARREL	Boring Diameter: 8"	Screened Interval:
Weather: SUNNY	Logged By: GALSH	Date/Time Started: 4/23/16
Drilling Contractor: AEI	Ground Elevation:	Date/Time Finished: 4/23/16
		Depth of Boring: 16'
		Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
1						SC	CLAYEY FINE SAND, BROWN TO REDDISH BROWN, WET ABUNDANT ROOTS		
2					0.5				
3						CL	2.0 SANDY CLAY, MOTTLED LT. GRAY, REDDISH BROWN & YELLOWISH BROWN, DAMP, V. STIFF, MED. PLASTICITY		
4				9.2'/10'					
5	X	5-5.5			1.2		12/20 SILICA SAND		
6						SM	6.0' SILTY FINE SAND, MOTTLED LT. GRAY & YELLOWISH BROWN, DAMP		
7					1.7	SP	6.5 FINE SAND W/ TRACE OF SILT, MOTTLED LT. GRAY & YELLOWISH BROWN, DAMP TO MOIST		
8									
9									
10	X	10-10.5			1.9	CL	10.0' SILTY CLAY, MOTTLED LT. GRAY & YELLOWISH BROWN, STIFF-V. STIFF, MED. PLASTIC		
11						SM			
12						SP	10.9 SILTY FINE SAND, BROWN, WET		
13				6'/6'	2.5		11.3 FINE TO MED. SAND, BROWN, WET		
14						CL	12.0 SILTY CLAY, LT. GRAY, DAMP, MED. STIFF, MED. PLASTIC		
15	X	15-15.5			1.7		12.5 SAA, MOTTLED LT. GRAY & YELLOWISH BROWN, DAMP, MED. STIFF, MED. PLASTICITY		
16									
17									
18							TD = 16'		
19									
20									

NOTES: USED 1/2 BAG BENTONITE CHIPS
6 1/2 BAGS OF 12/20 SILICA SAND

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE		BORING ID: 18CPTMWS22DW
Project Number: 60274185		
Site Location: LHAAP site 18/24		
Coordinates:	Elevation	Sheet 1 of 5
Drilling Method: Sonic		Monitoring Well Installed: yes
Sample Type(s): Sample Barrel	Boring Diameter: 8" 4.25"	Screened Interval:
Weather: 80's, sunny	Logged By: GH, SH, KW	Date/Time Started: 4/26/16 810
Drilling Contractor: AEI	Ground Elevation:	Date/Time Finished: 930 4/27/16
		Depth of Boring: 90'
		Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
							0.0'- silty fine sand, brown, damp		
							0.5'- SAA, reddish brown to red, damp		
1						SM	1.4'- SAA, brown, damp		
2					2.0		2.5'- silty clay - mottled yellowish brown + reddish brown, moist, low plasticity, soft		
3				5'/5'		CL			
4							3.5'- SAA, mottled gray + yellowish brown, damp, low to medium plasticity, stiff		
5		5'-5.5'			0.6		5.5'- sandy silt - mottled lt. gray + yellowish brown, wet		
						ML			
6							6.2'- clayey sand - mottled lt. gray + yellowish brown,		
						SC	7.0'- moist, trace black carbonaceous material		
7				5'/5'	1.9		7.3'- SAA w/ trace sand w/ clay, mottled, sand is yellowish brown + clay is lt. gray, moist, medium stiff, black carbonaceous material to 7.5' (trace)		
						SM			
8							8.0'- fine sand, mostly yellowish brown w/ some lt. gray mottling, moist to wet		
						SP			
9									
10		10'-10.5'			2.4				
11									
12					2.0		12.5'- clayey sand - mottled brown + reddish brown, moist		
						SC	12.8'- clay, mottled lt. gray + reddish brown, moist, medium stiff, low plasticity		
13				10'/10'		CL	13.7'- SAA, mottled lt. gray + yellowish brown		
14							14.1'- SAA, medium stiff, damp to moist		
15					2.0				
16									
17					2.3		19.0'- SAA, very stiff, w/ some black staining ~ 18.5'		
18									
19							19.5'- SAA, lt. greenish gray, moist		
20									

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by:

AECOM

Client: USACE		BORING ID: 18CPTMW22DW
Project Number: 60274185		
Site Location: LHAAP Site 18/24		
Coordinates:	Elevation	Sheet 2 of 5
Drilling Method: Sonic		Monitoring Well Installed: yes
Sample Type(s): Sample Barrel	Boring Diameter: 8" to 29.5' 7" 29.5'-90'	Screened Interval:
Weather: 80s, sunny	Logged By: GH, SH, KW	Date/Time Started: 4/26/16 810	Depth of Boring: 90'
Drilling Contractor: AEI	Ground Elevation:	Date/Time Finished: 930/4/27/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
		20-20.5'			3.1	CH	20.0' - Clay - mottled lt. greenish gray + yellowish brown, medium stiff, damp, high plasticity		
21						SM	21.0' - Silty fine sand, brown, wet		
22					3.9	CH	21.8' - clay - lt. greenish gray w/ yellowish brown staining, medium stiff, high plasticity, moist		
23						SP	22.4' - fine sand, pale brown, wet, w/ some clay inclusions btw 23 + 23.5', clay is yellowish brown, soft, high plasticity, moist		
24						CL	23.5' - clay - yellowish brown, medium stiff, low plasticity, moist		
						CL/ML	23.7' - silty clay/clayey silt, yellowish brown, moist, soft, low plasticity, w/ up to 1/4" clay layers, yellowish brown, medium stiff, damp, moist		
25				10/10'	2.3	CL			
						CL/ML	24.0' - clay - very stiff, yellowish brown, damp, medium to high plasticity		
26						CL	24.8' - silty clay/clayey silt, yellowish brown, moist		
						SM	25.0' - clay - mottled lt. greenish gray + yellowish brown, stiff, damp, low plasticity		
						CS			
27					2.2	SM	25.5' - silty sand, brown, wet		
						CL	26.0' - sandy clay, mottled lt. greenish gray + yellowish brown, stiff, low plasticity, damp		
28						SP	26.2' - silty fine sand, yellowish brown, wet		
29						CL/ML	27.0' - clay, lt. greenish gray, medium stiff, high plasticity, moist		
						SM	27.25 - fine sand, brown, moist		
30		29.5'-30'			1.9	CH	27.5' - SAA w/ clay layers, lt. greenish gray, moist, soft, 28.5' - silty clay/clayey silt, yellowish brown, moist		
31							28.9' - concretion of silty sand ~1/8" thick, yellowish brown to reddish brown		
							29.0' - clay - pale brown to gray w/ some yellowish brown mottling, medium stiff, damp, high plasticity		
32				7.5'/7.5'	1.6	SM	32.5' - silty fine sand, brown, wet		
33									
34					2.2				
35									
36									
37					2.2	SM	37.5' - silty sand/sandy silt, brown, wet		
38				2.5'/2.5'					
39						SP	38.8' - silty fine sand, yellowish brown, wet		
40					2.5		39.0' - SAA, pale brown, wet		

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE		BORING ID: 18CPTMW22DW
Project Number: 60274185		
Site Location: LHAAP Site 18/24		
Coordinates:	Elevation	Sheet 3 of 5
Drilling Method: Sonic		Monitoring Well Installed: yes
Sample Type(s): Sonic & Barrel	Boring Diameter: 8" to 29.5' 7" 29.5'-90'	Screened Interval:
Weather: 80s, sunny	Logged By: GH, SH, KW	Date/Time Started: 4/26/16	Depth of Boring: 90'
Drilling Contractor: AEI	Ground Elevation:	Date/Time Finished: 930/4/27/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
		40-40.5'				SP CH	40.5'-clay-brown, moist, soft, highly plastic		
41									
42					0.3	SM	41.7'-silty fine sand, lt. yellowish brown, wet		
43									
44							44.0'-fine sand, lt. yellowish brown, wet		
45				10'/10'	2.2	SP			
46									
47					2.2				
48							48.2'-SAA, yellowish brown, wet		
49							48.9'-SAA, lt. gray, wet 49.1'-SAA, yellowish brown, wet		
50		50'-51'			1.8		49.8'-SAA, lt. gray, fine to medium grains wet		
51									
52					1.6				
53									
54				10'/10'			54.1'-SAA, brown w/ occasional pebbles/concretions <0.25", wet		
55					1.2		55.2'-SAA, lt. gray, wet		
56							56.0'-SAA, brown, wet		
57					1.5	CH	56.5'-clay w/ some pebbles, gray, soft, high plasticity, moist, some black carbonaceous material		
58						SP	57.0'-fine to medium sand, brown, wet 57.5'-SAA, medium to coarse grains 58.0'-SAA w/ interbedded clays up to 1/4" thick, gray w/ black carbonaceous inclusions, some pebbles + cobbles of siltstone, wet, siltstone is brown		
59						CH	58.5'-clay, gray, moist, medium stiff, high plasticity w/ black carbonaceous material		
60					0.8	SC	59.0-clayey sand, fine grains, lt. gray, wet 59.5'-SAA, brown, medium grains w/ sandstone inclusions ~1/2" thick, wet, gravelly		

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE	BORING ID: 18CPTMW22DW
Project Number: 60274185	
Site Location: LHAAP Site 18/24	Sheet 4 of 5
Coordinates: / Elevation	Monitoring Well Installed: yes
Drilling Method: Sonic	Screened Interval:
Sample Type(s): Sample Barrel / Boring Diameter: 8" to 29.5' 7" 29.5'-90'	Depth of Boring: 90'
Weather: 80s Sunny / Logged By: GH, SH, KW / Date/Time Started: 8/0/4/26/16	Water Level:
Drilling Contractor: AGT / Ground Elevation: / Date/Time Finished: 930/4/27/16	

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
		60'-60.5'				SC / SC/SM	60.5'- ~~silty fine sand & clayey sand, greenish~~ gray, appears as one unit, no variation in color or texture,		
61									
62					1.5				
63									
64				10'/10'					
65					1.7				
66									
67					1.9				
68									
69									
70		70'-70.5'			2.3				
71									
72					1.3				
73				10'/10'					
74						SM	73.7'-silty fine sand, greenish gray, wet		
						CL/ML	74.1'- silty clay to clayey silty-fine sand w/clay, greenish gray, wet		
75					1.5	SM	75.0'-silty fine sand, greenish gray, wet		
76						SC/SM	75.5'- clayey sand/silty-fine sand, greenish gray, wet		
77					1.9				
78									
79									
80					1.2				

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18CPT MW22 DW
Project Number: 60274185			
Site Location: LHAAP Site 18/24			
Coordinates:	Elevation		Sheet 5 of 5
Drilling Method: Sonic			Monitoring Well Installed: yes
Sample Type(s):	Boring Diameter: 8" to 29.5' + 7" 29.5'-90'		Screened Interval:
Weather: 80s Sunny	Logged By: GH, SH, KW	Date/Time Started: 810 / 4/26/16	Depth of Boring: 90'
Drilling Contractor:	Ground Elevation:	Date/Time Finished: 930/4/27/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
81		80.0'-80.5'				SM	80.0'- Silty fine sand w/ clay, greenish gray, moist		
82					1.6		- 82.0' - SAA, moist		
83							83.0' - silty clay, dark gray, moist, hard, fissile, low plasticity		
84						CL			
85				10'/10'	0.6		- 85.1' - SAA w/ silty laminations increasing w/ depth, silt is lt. gray, dry, low plasticity		
86									
87					1.4				
88									
89									
90		89.5'-90.0'			1.5				
91									
92									
93									
94									
95									
96									
97									
98									
99									
100									

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE		BORING ID: 18CPTMW23SW
Project Number: 60274185		
Site Location: LHAAP Site 18/24		
Coordinates:	Elevation	Sheet 1 of 4
Drilling Method: Sonic		Monitoring Well Installed: yes
Sample Type(s):	Boring Diameter: 8" to 30' 7" 30'-65'	Screened Interval:
Weather: Clear, 80s	Logged By: KW, SH	Date/Time Started: 11:00/4/27/16 Depth of Boring: ~65'
Drilling Contractor: AEI	Ground Elevation:	Date/Time Finished: 1125/4/28/16 Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
						SM	0.0'-silty fine sand, brown, wet, abundant roots		
1						ML	0.25' Clayey silt, mottled very dark gray + brown, wet, abundant roots		
							1.25'-silty clay, mottled yellowish brown + lt. gray, wet, low plasticity		
2				4'/4'	1.0	CL	2.5'-SAA w/ some black carbonaceous material + roots		
3							3.5'-silty fine sand, mottled lt. gray + yellowish brown, wet		
4						SM	4.0'-very fine sand, brown, wet		
						SP			
5		5.0-5.5'			1.0				
6									
7				6'/6'					
8					2.5				
9									
10		10.0-10.5'			2.7				
11									
12									
					2.8				
13							13.0'-SAA w/ some clay inclusions, ~1/2", gray, soft, wet		
14				8.5'/8.5'					
15					3.1				
16									
17							16.5'-SAA, lt. gray, wet		
					NA		17.5'-clayey sand, lt. gray, wet		
18						SC	18.5'-fine sand, mottled yellowish brown + lt. gray, wet		
						SP			
19				1.5'/1.5'			19.5'-silty fine sand, mottled lt. gray + yellowish brown, wet		
20						SM			

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by. Date:

AECOM

Client: USACE		BORING ID: 18CPTMW23SW
Project Number: 60274185		
Site Location: LHAAP Site 18/24		
Coordinates:	Elevation	Sheet 2 of 4
Drilling Method: Sonic		Monitoring Well Installed: yes
Sample Type(s):	Boring Diameter: 8" to 30' + 7" 30-65'	Screened Interval:
Weather: Clear, 80s / Logged By: KW, SH	Date/Time Started: 1100/4/27/16	Depth of Boring: ~65.3
Drilling Contractor: AEI / Ground Elevation:	Date/Time Finished: 1125/4/28/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
		20.0-20.5'			0.8		20.0'-SAA w/some clay, gray, w/some black streaks, wet		
21						SM			
22									
23					1.0	SP	22.5'-fine sand, lt brown w/ yellowish brown staining, wet 22.75'-SAA, fine to medium grains, w/some black streaks, wet		
24				10'/10'					
25					1.2		24.5'-SAA, dark gray, wet		
26							26.0'-SAA w/some black carbonaceous inclusions to ~26.5' wet		
27									
28					1.0				
29							28.75'-SAA, fine grains w/ >50% black carbonaceous material, dark gray, wet		
30		30.0-30.5'			0.1		30.0'-SAA - fine to medium grains, very dark brown, wet		
31				5'/5'					
32					0.0		32.5'-SAA, dark grayish brown, wet		
33									
34									
35					0.3				
36							36.0'-SAA, grayish brown w/ occasional quartz pebbles up to 1/4", moist		
37				5'/5'	0.6		37.0'-SAA w/ some black carbonaceous material, moist		
38									
39							39.0'-SAA, pale brown, moist		
40									

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18CPTMW23SW
Project Number: 60274185			
Site Location: LHAAP Site 18/24			
Coordinates:	Elevation		Sheet 3 of 4
Drilling Method: Sonic			Monitoring Well Installed: yes
Sample Type(s):	Boring Diameter: 8" to 30' & 7" 30'-65'		Screened Interval
Weather: Clear, 80s	Logged By: KW, SH	Date/Time Started: 1100/4/27/16	Depth of Boring: 65.3
Drilling Contractor: AEI	Ground Elevation:	Date/Time Finished: 1125/4/28/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
		40.0'-40.5'			0.1				
41							41.0'-SAA, fine to coarse grains w/some gravel, brown, wet		
42						GP			
					0.0		42.75'-silty clay, gray, wet, soft, low to medium plasticity		
43						CL	43.0'-fine to coarse gravel w/fine to coarse sand + clay chunks, angular gravel, brown, wet, clay is dark gray, soft, high plast., wet		
44						GC	43.25'-SAA w/some black carbonaceous material to ~43.75', wet		
				10'/10'					
45					0.8	SP	44.5'-fine to medium sand, brown, wet		
						CL	45.5'-clay, dark gray, wet, soft, medium plasticity		
46						SM	46.0'-silty fine sand, gray, wet		
47						GC	46.5'-fine to coarse gravel w/coarse sand + clay chunks angular to subangular gravel, cobble-sized clay chunks, brown, wet, clay is dark gray, soft, wet, high plasticity		
48					1.1				
						CL	48.0' ~1/4" black carbonaceous layer followed by silty clay, dark gray w/black streaks, medium stiff, medium to low plasticity, wet		
49						GC	48.4'-fine to coarse gravel w/coarse sand + clay chunks angular subangular gravel, cobble-sized clay chunks are dark gray, soft, wet, high plasticity, sand is reddish brown, wet		
50		50.0'-50.5'			0.9	SP	49.5'-fine sand, gray, moist 50.0'-SAA w/some black streaks ~50.5', wet		
51									
52									
53					1.3				
54				10'/10'					
55					1.6				
56									
57							56.75'-SAA, fine to medium grains, grayish brown, wet 57.25'-SAA, fine grains, w/some black streaks, wet		
58					0.7				
59							58.5'-SAA, fine to medium grains, gray, wet 58.6'-SAA, fine grains w/some black streaks, ~59.0', wet 59.25'-SAA, fine to medium grains, wet		
60									

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18CPTMW23SW
Project Number: 60274185			
Site Location: LHAAP Site 18/24			
Coordinates:	Elevation		Sheet 4 of 4
Drilling Method: Sonic			Monitoring Well Installed: Yes
Sample Type(s):	Boring Diameter: 8" to 30'+ 7" 30'-65'		Screened Interval:
Weather: Clear, 80s	Logged By: KW, SH	Date/Time Started: 1100/4/27/16	Depth of Boring: 65.3
Drilling Contractor: AEI	Ground Elevation:	Date/Time Finished: 1125/4/28/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
		60'-60.5'			0.5				
61						SP	-61.25'-SAA w/ some clay		
62				5'/5'	0.5	SM	62.2'-silty fine sand, gray, wet		
63									
64						SP	63.75'-fine sand, gray, wet		
						SM/CL	64.0'-finely interbedded silty sand + silty clay, sand is lt gray + clay is dark gray, some black streaks, wet		
65					0.7	SP	64.5'-fine sand, gray, wet		
66									
67									
68									
69									
70									
71									
72									
73									
74									
75									
76									
77									
78									
79									
80									

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE		BORING ID: 18CPTMW26
Project Number: 60274185		
Site Location: LHAAP SITE 18/24		
Coordinates:	Elevation	Sheet 1 of 1
Drilling Method: SONIC DRILL RIG		Monitoring Well Installed:
Sample Type(s): SAMPLE BARREL	Boring Diameter: 8"	Screened Interval: 5.2-14.8
Weather: SUNNY 70S / Logged By: GH, SH	Date/Time Started: 4/23/16	Depth of Boring: 15.2'
Drilling Contractor: AEI / Ground Elevation:	Date/Time Finished: 4/23/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
1						SM	SILTY FINE SAND, DARK BROWN, MOIST, ABUNDANT ROOTS		
2				5'/5'			1.7' SILT, BROWN, WET		
3					0.6	ML			
4							3.2' SILTY CLAY, BROWN, MOIST TO WET, SOFT, LOW PLASTICITY		
5	X	5-5.5			1.7		3.9' SAA, GRAY, DAMP, MED. STIFF, LOW PLASTICITY		
6							5.0' SAA, VERY DARK GRAYISH BROWN, DAMP, MED. STIFF, LOW PLASTICITY		
7				5'/5'					
8					2.1		6.5' SAA, MOTTLED DARK GRAY, BROWN, AND YELLOWISH BROWN, DAMP, LOW PLASTICITY		
9						CL			
10	X	10-10.5			2.3		10' SAA, GRAY W/ REDDISH BROWN MOTTLING, DAMP, VERY STIFF, LOW PLASTICITY		
11									
12				5'/5'			12' SAA, MOTTLED GRAY & YELLOWISH BROWN, DAMP, MED. PLASTICITY		
13					1.7				
14							13.5 SAA, MOTTLED YELLOWISH BROWN & GREENISH GRAY, DAMP, V. STIFF & MED. PLASTICITY		
15	X	14.5-15			2.7				
16									
17									
18									
19									
20									

4" SCH 40 PVC WELL CASING

3/8" BENTONITE CHIPS

12/20 SILICA SAND

0.01" SLOTTED SCREEN

TD = 15.2

TD = 15.2

NOTES: USED 6 BAGS OF SILICA SAND (12/20)
1 BAG 3/8" BENTONITE CHIPS

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE		BORING ID: 18CPTMW26SW
Project Number: 60274185		
Site Location: LHAAP SITE 18/24		
Coordinates:	Elevation	Sheet 1 of 3
Drilling Method: Sonic Drill Rig		Monitoring Well Installed:
Sample Type(s): Sample Barrel	Boring Diameter: 7"x8"	Screened Interval:
Weather: Cloudy 60's	Logged By: GH/SH	Date/Time Started: 4/25/16
Drilling Contractor: AET	Ground Elevation:	Date/Time Finished: 4/25/16
		Depth of Boring: 50
		Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
1							SILT, BROWN, WET		
2				5'/5'	0.3	ML	1.2 SAA, MOTTLED LT. GRAY & YELLOWISH BROWN, DAMP		
3									
4							3.3' SILTY CLAY, DARK GRAY, DAMP, MED. STIFF, MED. PLASTICITY		
5		5-5.5			0.6	CL	4.5 SAA, DARK BROWN		
6									
7				5'/5'	1.8		6.0' SAA, BROWN, DAMP, V. STIFF, MED. PLASTICITY		
8									
9							8.0' SILTY CLAY, GRAY w/ YELLOWISH BROWN MOTTLING, DAMP, MED. STIFF, MED. TO HIGH PLASTICITY		
10		10-10.5			1.5	CL/CH	9.0' SAA, GREENISH GRAY w/ SOME YELLOWISH BROWN MOTTLING, DAMP, MED. STIFF TO V. STIFF, MED. TO HIGH PLASTICITY		
11									
12				5'/5'	2.6				
13									
14							13.6' SILTY FINE SAND w/ TRACE OF CLAY, YELLOWISH BROWN, MOIST TO WET		
15		15-15.5			0.4		15' SAA, LESS CLAY		
16									
17				4'/5'	1.4	SM			
18									
19									
20									

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18CPTMW26SW
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 2 of 3
Drilling Method: SONIC DRILL RIG			Monitoring Well Installed:
Sample Type(s): SAMPLE BARREL	Boring Diameter: 7" x 8"		Screened Interval:
Weather: CLOUDY 60'S	Logged By: GH, SH	Date/Time Started: 4/25/16	Depth of Boring: 50'
Drilling Contractor: AET	Ground Elevation:	Date/Time Finished: 4/25/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
21	X	20-20.5			1.3	SM	SILTY FINE SAND, YELLOWISH BROWN, WET		
22									
23					1.9		22.8' SILT, YELLOWISH BROWN, WET		
24				10'/10'		ML / CH	23.2' SILTY CLAY, YELLOWISH BROWN, MOIST, SOFT-MOD. STIFF, HIGH PLASTICITY		
25	X	25-25.5 (HOLD)			1.4	SM	23.9' SILTY FINE SAND, YELLOWISH BROWN, WET		
26						SP	24.8 FINE SAND, YELLOWISH BROWN, WET		
27					1.7		26.5-28' LT. BROWN		
28									
29									
30	X	30-30.5			2.0	SM	30.0' SILTY FINE SAND, YELLOWISH BROWN, WET		
31									
32					2.1		31.7' FINE SAND, YELLOWISH BROWN, WET		
33									
34							33.8' SAA, LT. GRAY, WET, W/ OCCASIONAL 1" THICK LT. GRAY CLAY LAYERS		
35				10'/10'	1.8	SP	34.8 1" CLAY LAYER		
36									
37									
38					1.8				
39							39.2 1/2" CLAY LAYER 39.5 1" CLAY LAYER		
40					1.5				

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18CPTMW26SW
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 3 of 3
Drilling Method: SONIC DRILL RIG			Monitoring Well Installed:
Sample Type(s): SAMPLE BARREL	Boring Diameter: 7.8"		Screened Interval: ,
Weather: CLOUDY 60'S	Logged By: GA. SH	Date/Time Started: 4/25/16	Depth of Boring: 50'
Drilling Contractor: ACT	Ground Elevation:	Date/Time Finished: 4/25/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
41	X	40-40.5					FINE SAND, BROWN, WET		
42									
43					2.5				
44				10'/10'			43.8' SAA, YELLOWISH BROWN		
45					2.8	SP	44.9' 1" GRAY CLAY LAYER		
46							45.0' FINE SAND, GRAY, WET		
47									
48					2.9		47.3' SAA, BROWN		
49							47.5' SAA, GRAY		
50	X	49.5-50.0			2.4		48.5 SAA, BROWN 49.5 SAA, GRAY		
51									
52							TD = 50'		
53									
54									
55									
56									
57									
58									
59									
60									

NOTES: USED 4 BAGS OF TYPE I/II PORTLAND CEMENT AND 12 lbs BENTONITE QUICKGEL FOR GROUT TOTALING ~ 50 GALLONS
3 1/2 BAGS OF 12/20 SAND + 3/4 BAG BENTONITE CHIPS

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE		BORING ID: 18WW25
Project Number: 60274185		
Site Location: LHAAP Site 18/24		
Coordinates:	Elevation	Sheet 1 of 2
Drilling Method: HSA		Monitoring Well Installed:
Sample Type(s): Split Spoon + Cone Barrel	Boring Diameter: 8"	Screened Interval: 14.2-23.8'
Weather: Sunny 90's / Logged By: SH	Date/Time Started: 6/27/16	Depth of Boring: 24.2'
Drilling Contractor: ETTL / Ground Elevation:	Date/Time Finished: 6/27/16	Water Level: NA

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
1				16"/24"		CL	SANDY CLAY, DARK BROWN, DAMP, W/ ORGANICS		
2							0.3 - SILTY CLAY, BROWN W/ YELLOWISH RED MOTTLING, DAMP TO MOIST, SOFT, LOW PLASTICITY		
3				24"/24"	13.1*	CL	2.0 - SAA, WET		
4		3.5'-4.0'				SM	3.0' - SILTY FINE SAND, GRAY, W/ VERY DARK BROWN CONCRETIONS, WET		
5				0"/60"	NM				
6									
7									
8					NM				
9							9.0' - FINE SAND, BROWN, WET		
10		9.5'-10.0'			0.0	SP	9.8' - FINE TO MEDIUM SAND, GRAY, WET		
11				25"/60"			10.8' - FINE SAND, LIGHT BROWN W/ GRAY, WET		
12					NM				
13									
14							14.0' - SAA,		
15		14.5'-15.0'			0.0	SP / SM	14.5' - SILTY FINE SAND, LIGHT BROWN, YELLOWISH BROWN + GRAY, WET		
16				36"/60"		SP	15.3' - FINE SAND, GRAY TO DARK GRAY, WET		
17									
18					NM				
19							19.0' - FINE SAND, GRAY, WET		
20		19.5'-20.0'				SP			

NOTES: USED 2' SPLIT SPOON TO SAMPLE UPPER 4' OF SOIL BORING, UTILIZED 5' CONE BARREL FROM 4' TO 24'

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE		BORING ID: 18WW25
Project Number: 60274185		
Site Location: LHAAP SITE 18/24		
Coordinates:	Elevation	Sheet 2 of 2
Drilling Method: HSA		Monitoring Well Installed:
Sample Type(s): SPLITSPOON & CONTINUOUS	Boring Diameter: 8"	Screened Interval: 14.2-23.8'
Weather: SUNNY 90's	Logged By: SH	Date/Time Started: 6/27/16
Drilling Contractor: ETTL	Ground Elevation:	Date/Time Finished: 6/27/16

Depth of Boring: 24.2
Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
21				42"/60"		SP	FINE SAND, BROWN, WET		
22	X	22.0'-22.5'			3.7				
23						X			
24									
25							TD = 24.2'		
26									
27									
28									
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE		WELL ID: 18CPT MW19SW
Project Number: 60274185		
Site Location: LHAAP SITE 18/24		Date Installed: 4/21/16-4/22/16
Well Location:	Coords:	Borehole Diameter: 8"
Method: Sonic Drill Rig		Contractor: AEI

MONITORING WELL CONSTRUCTION DETAIL

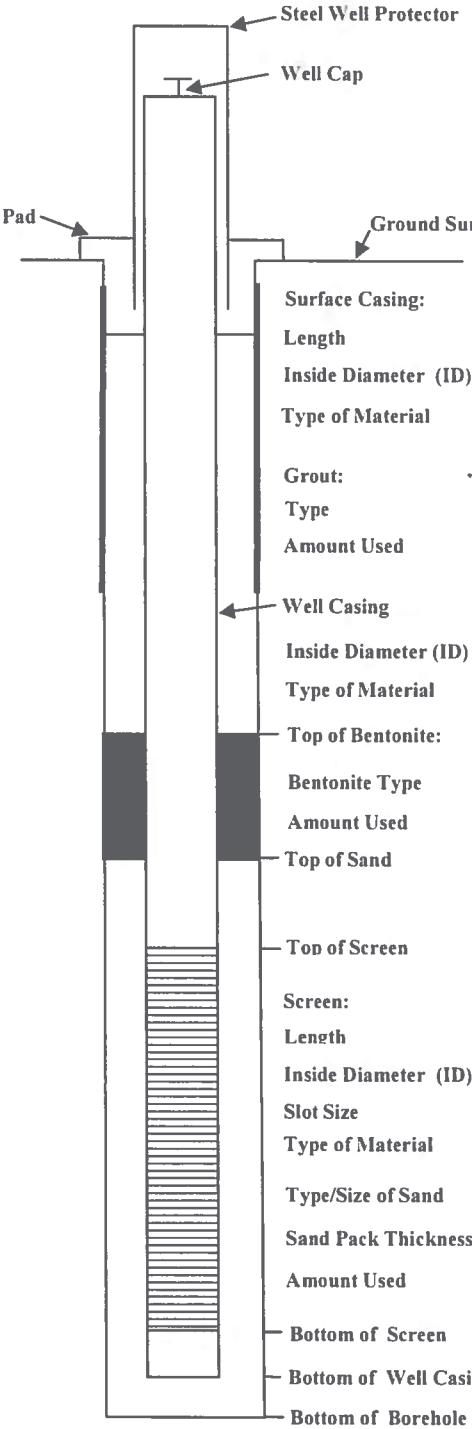

Depth from G.S. (feet)

Surface Casing:
- Length: NA
- Inside Diameter (ID): NA
- Type of Material: NA

Grout:
- Type: TYPE I & II PORTLAND & BENTONITE QUICKGEL
- Amount Used: 100 gallons

Well Casing
- Inside Diameter (ID): 4"
- Type of Material: SCH. 40 PVC

Top of Bentonite: 50'
- Bentonite Type: 3/8" CHIPS
- Amount Used: 1.5 BAGS

Top of Sand: 53'

Top of Screen: 55'

Screen:
- Length: 9.6'
- Inside Diameter (ID): 4"
- Slot Size: 0.01"
- Type of Material: SCH. 40 PVC
- Type/Size of Sand: 12/20
- Sand Pack Thickness: 12'
- Amount Used: 6 BAGS

Bottom of Screen: 64.6'

Bottom of Well Casing: 65.0'

Bottom of Borehole: 65.0'

Borehole Diameter: 8"

Comments:

Installation Observed By: B. Hilton

AECOM

Client: USACE		WELL ID: 18CPTMW22R
Project Number: 60274185		
Site Location: LHAAP SITE 18/24		Date Installed: 4/23/16
Well Location:	Coords:	Borehole Diameter: 8"
Method: Sonic Drill Rig		Contractor: AEI

MONITORING WELL CONSTRUCTION DETAIL

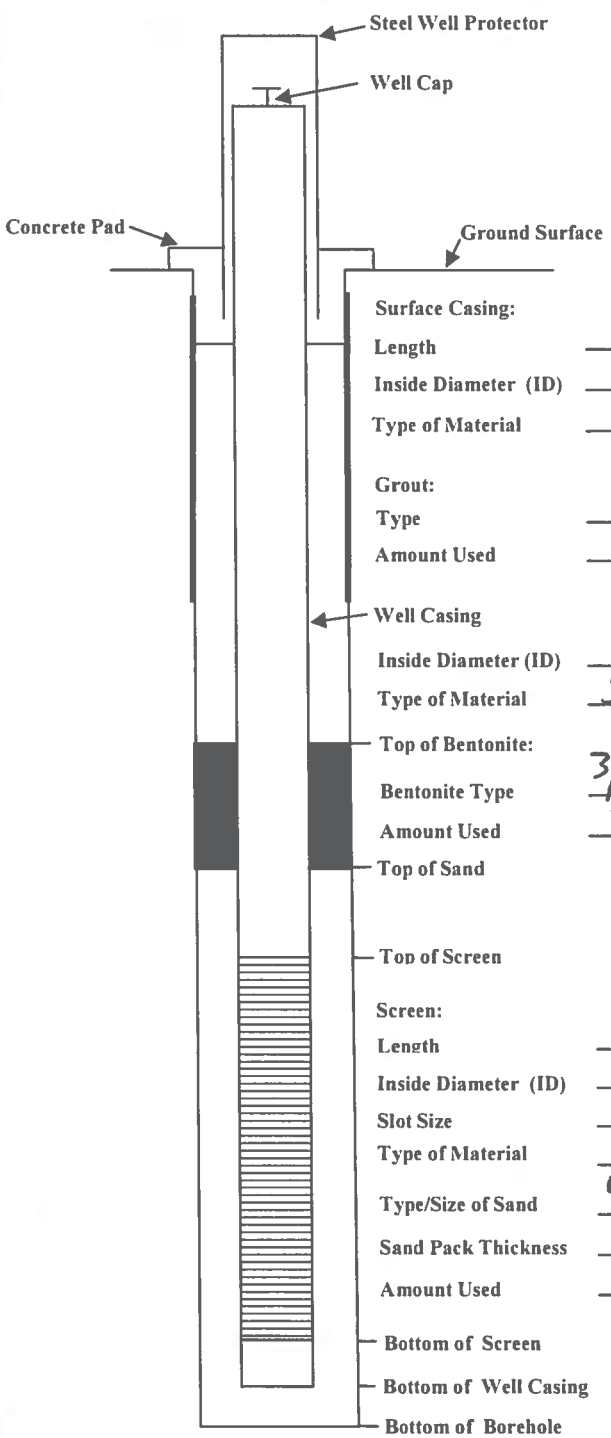

Depth from G.S. (feet)

Surface Casing:
- Length: NA
- Inside Diameter (ID): NA
- Type of Material: NA

Grout:
- Type: NA
- Amount Used: NA

Well Casing
- Inside Diameter (ID): 4"
- Type of Material: SCH. 40 PVC

Top of Bentonite: 1.0'
- Bentonite Type: 3/8" CHIPS
- Amount Used: 1/2 BAG

Top of Sand: 3.0'

Top of Screen: 4.4'

Screen:
- Length: 9.6'
- Inside Diameter (ID): 4"
- Slot Size: 0.01"
- Type of Material: SCH. 40 PVC
- Type/Size of Sand: 12/20 SILICA SAND
- Sand Pack Thickness: 11.4'
- Amount Used: 6.5 BAGS

Bottom of Screen: 14.0'

Bottom of Well Casing: 14.4'

Bottom of Borehole: 16'

Borehole Diameter: 8"

Comments: SLOUGH BETWEEN WELL CASING & BOREHOLE

Installation Observed By: G. HILTON

AECOM

Client: USACE	WELL ID: 18CPT MW22 DW
Project Number: 60274185	
Site Location: LHAAP SITE 18/24	Date Installed: 4/26/16
Well Location: Coords:	Borehole Diameter: 8" 0-29.5 7" 29.5-90
Method: SONIC DRILL RIG	Contractor: AEI

MONITORING WELL CONSTRUCTION DETAIL

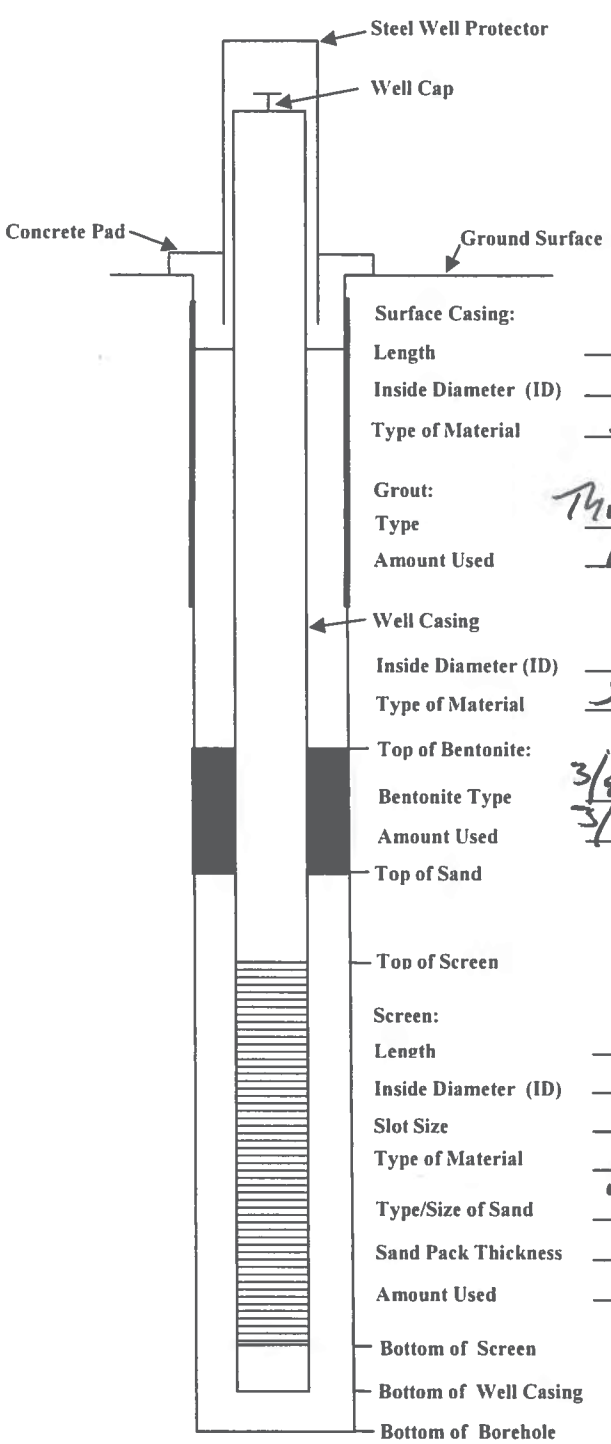

Depth from G.S. (feet)

Surface Casing:
- Length: 29.5'
- Inside Diameter (ID): 8"
- Type of Material: STEEL

TEMPORARY – REMOVED AFTER WELL SET

Grout:
- Type: TYPE I + II PORTLAND CEMENT + BENTONITE GEL
- Amount Used: 100 gal

Well Casing
- Inside Diameter (ID): 4.0"
- Type of Material: SCH. 40 PVC

Top of Bentonite: 68'
- Bentonite Type: 3/8" CHIPS
- Amount Used: 3/4 BAG (50# BAG)

Top of Sand: 71'

Top of Screen: 72.7'

Screen:
- Length: 9.6
- Inside Diameter (ID): 4"
- Slot Size: 0.01"
- Type of Material: SCH. 40 PVC
- Type/Size of Sand: 12/20 SILICA SAND
- Sand Pack Thickness: 13'
- Amount Used: 5 3/4 BAGS (94# BAGS)

Bottom of Screen: 82.3'

Bottom of Well Casing: 83.0'

Bottom of Borehole: 90'

Borehole Diameter: 7"

Comments: 3/8" BENTONITE CHIPS FROM 90 - 84
SAND FROM 84 - 71

Installation Observed By: KURT WEBBER

AECOM

Client: USACE		WELL ID: 18CPT MW23 SW
Project Number: 60274185		
Site Location: LHAAP SITE 18/24		Date Installed: 4/27/16
Well Location:	Coords:	Borehole Diameter: 8" 0-30', 7" 30-
Method: SONIC DRILLING RIG		Contractor: AEI

MONITORING WELL CONSTRUCTION DETAIL

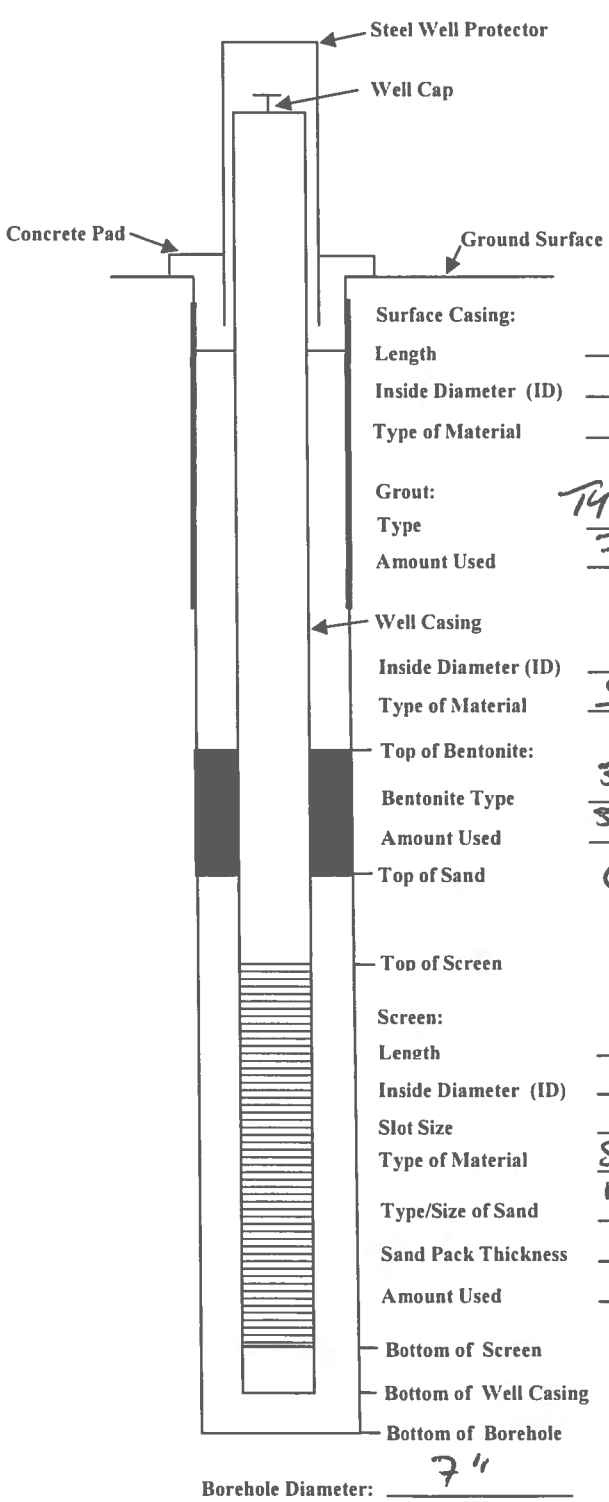

Depth from G.S. (feet)

Surface Casing:
- Length: 30'
- Inside Diameter (ID): 8"
- Type of Material: STEEL

TEMPORARY CASING USED WHILE DRILLING - REMOVED AFTER WELL SET

Grout:
- Type: TYPE I + II PORTLAND CEMENT & BENTONITE GEL
- Amount Used: 70 gal

Well Casing:
- Inside Diameter (ID): 4"
- Type of Material: SCH. 40 PVC

Top of Bentonite: 49.4
- Bentonite Type: 3/8" CHIPS
- Amount Used: 3/4 BAG (50# BAG)

Top of Sand: 52.4

Top of Screen: 55.3

Screen:
- Length: 9.7
- Inside Diameter (ID): 4"
- Slot Size: 0.01"
- Type of Material: SCH. 40 PVC
- Type/Size of Sand: 12/20 SILICA SAND
- Sand Pack Thickness: 13.3'
- Amount Used: 4.5 BAGS (94# BAGS)

Bottom of Screen: 65.0

Bottom of Well Casing: 65.7

Bottom of Borehole: 65.7

Borehole Diameter: 7"

Comments:

Installation Observed By: KURT WEBBER

AECOM	Client: USACE	WELL ID: 18CPTMW26
	Project Number: 60274185	
	Site Location: LHAAP Site 18/24	Date Installed: 4/23/16
	Well Location: Coords:	Borehole Diameter: 8"
	Method: Sonic Drill Rig	Contractor: AEI

MONITORING WELL CONSTRUCTION DETAIL

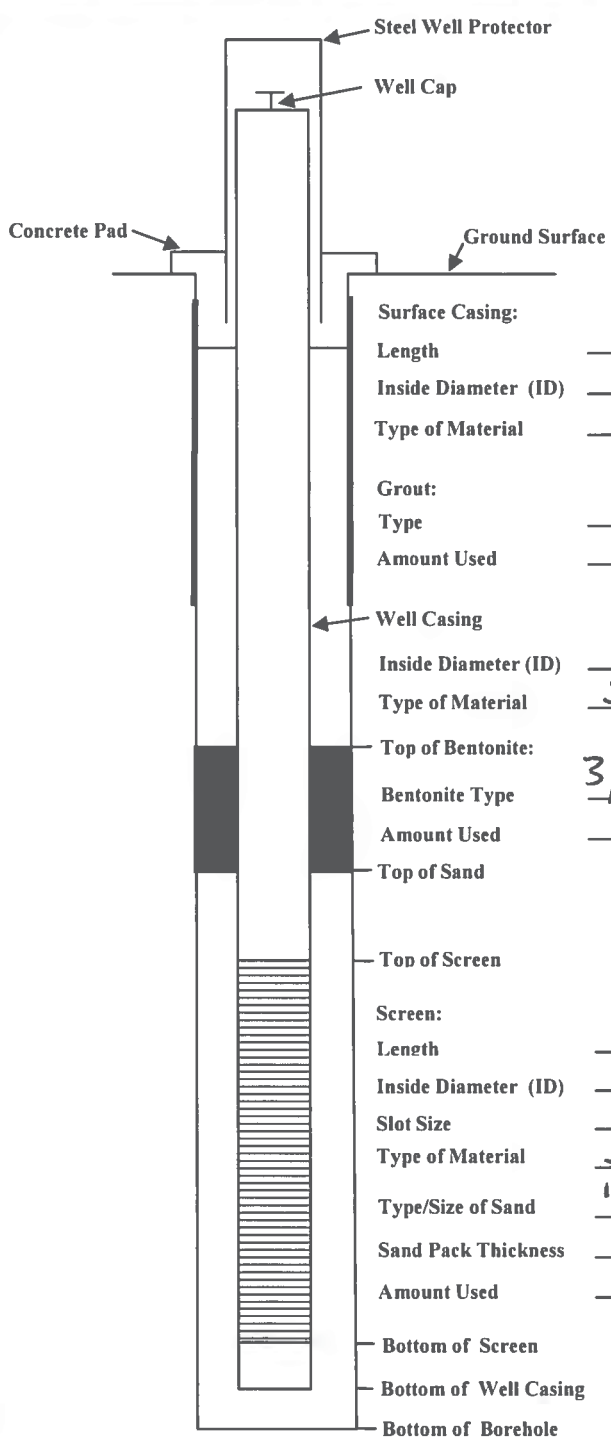

Depth from G.S. (feet)

Surface Casing:
- Length: NA
- Inside Diameter (ID): NA
- Type of Material: NA

Grout:
- Type: NA
- Amount Used: NA

Well Casing
- Inside Diameter (ID): 4"
- Type of Material: Sch. 40 PVC

Top of Bentonite: 2.0
- Bentonite Type: 3/8" CHIPS
- Amount Used: 1 BAG

Top of Sand: 4.5'

Top of Screen: 4.7'

Screen:
- Length: 9.6
- Inside Diameter (ID): 4"
- Slot Size: 0.01"
- Type of Material: Sch. 40 PVC

Type/Size of Sand: 12/20 Silica Sand
- Sand Pack Thickness: 10.2'
- Amount Used: 6 BAGS

Bottom of Screen: 14.3'

Bottom of Well Casing: 14.7'

Bottom of Borehole: 15.0'

Borehole Diameter: 8"

Comments: Slough between bottom of casing and borehole

Installation Observed By: G. Hilton

AECOM

Client: USACE	WELL ID: 18CPT MW26 SW
Project Number: 60274185	
Site Location: LHAAP SITE 18/24	Date Installed: 4/25/16
Well Location: Coords:	Borehole Diameter: 7"
Method: SONIC DRILL RIG	Contractor: AEI

MONITORING WELL CONSTRUCTION DETAIL

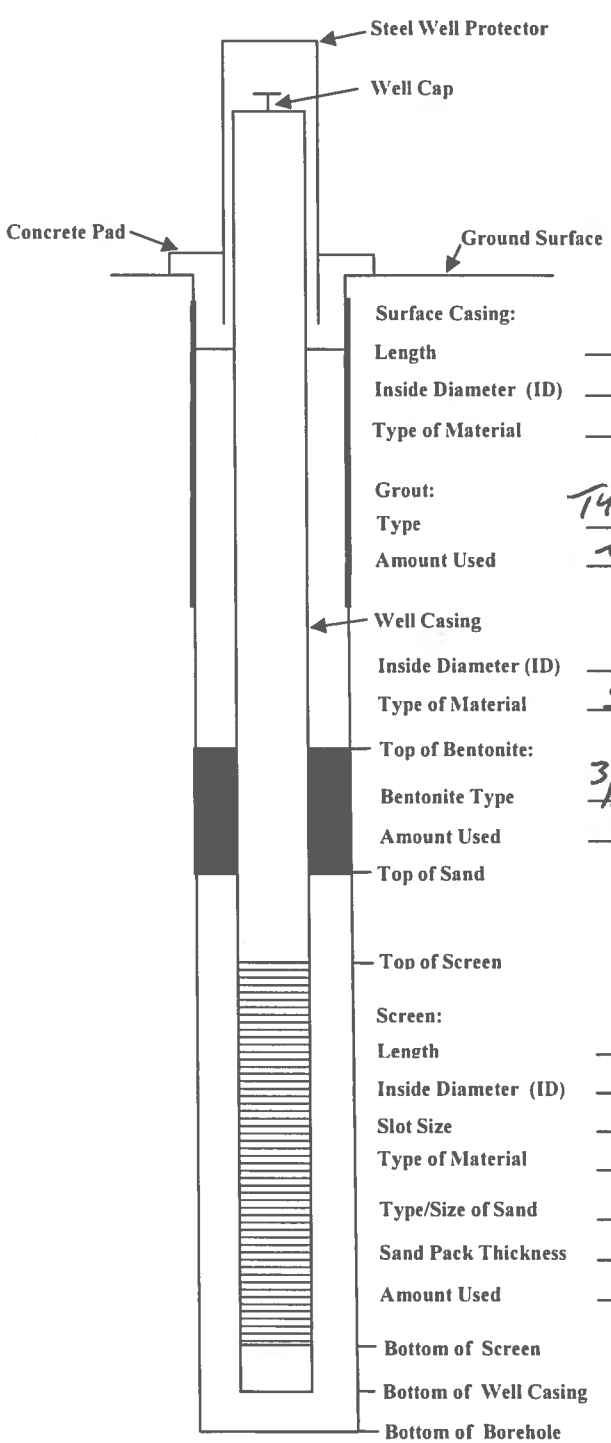

Depth from G.S. (feet)

Surface Casing:
- Length: 15'
- Inside Diameter (ID): 8"
- Type of Material: STEEL

TEMPORARY STEEL CASING USED DURING DRILLING

Grout:
- Type: TYPE I & II PORTLAND CEMENT & BENTONITE GEL
- Amount Used: ~50 gal

Well Casing
- Inside Diameter (ID): 4"
- Type of Material: SCH. 40 PVC

Top of Bentonite: 34'
- Bentonite Type: 3/8" CHIPS
- Amount Used: 3/4 BAG

Top of Sand 38'

Top of Screen 40.1'

Screen:
- Length: 9.6
- Inside Diameter (ID): 4"
- Slot Size: 0.01"
- Type of Material: SCH. 40 PVC
- Type/Size of Sand: 12/20 SILICA SAND
- Sand Pack Thickness: 12.1'
- Amount Used: 3 1/2 BAGS

Bottom of Screen 49.7

Bottom of Well Casing 50.1

Bottom of Borehole 50.1

Borehole Diameter: 7"

Comments:

Installation Observed By: G. HILTON

AECOM

Client: USACE	WELL ID: 18WW25
Project Number: 60274185	
Site Location: LHAAP SITE 18/24	Date Installed: 6/27/16
Well Location: Coords:	Borehole Diameter: 8"
Method: HOLLOW STEM AUGER	Contractor: ETR

MONITORING WELL CONSTRUCTION DETAIL

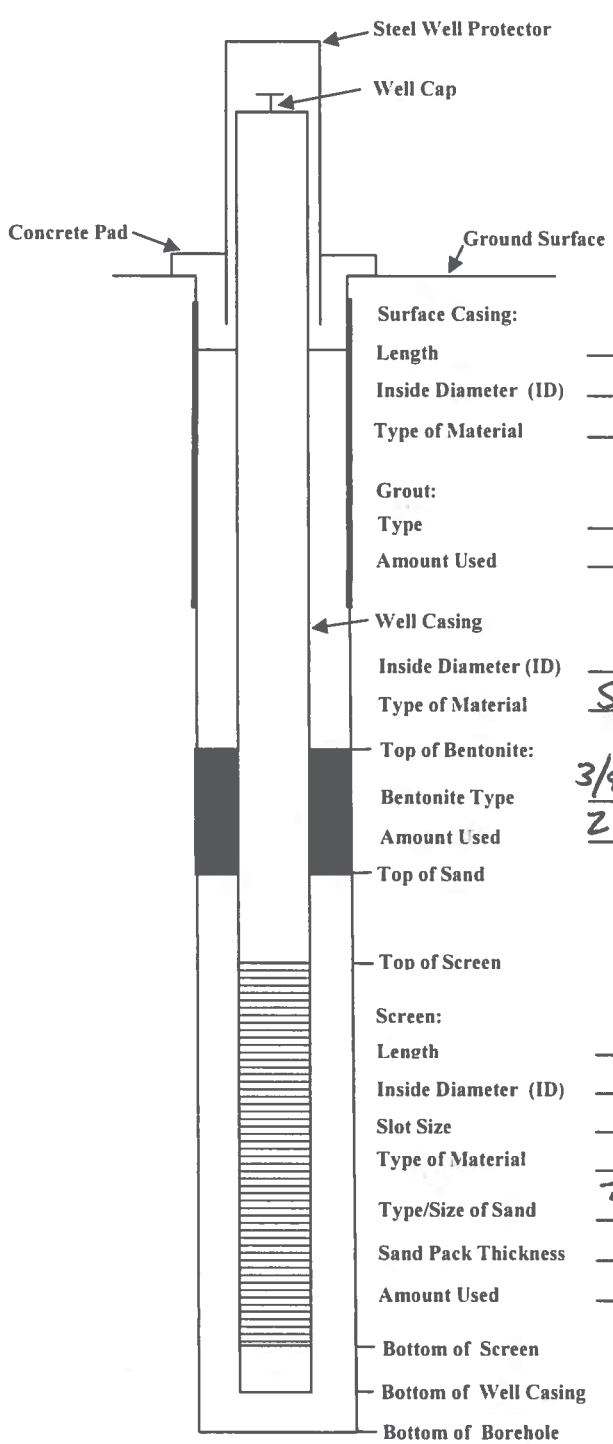

Depth from G.S. (feet)

Surface Casing:
- Length: NA
- Inside Diameter (ID): NA
- Type of Material: NA

Grout:
- Type: NA
- Amount Used: NA

Well Casing
- Inside Diameter (ID): 4"
- Type of Material: SCH. 40 PVC

Top of Bentonite: 1.0'
- Bentonite Type: 3/8" CHIPS + PELLETS
- Amount Used: 2 BAGS CHIPS + 1 BUCKET PELLETS

Top of Sand: 9.0'

Top of Screen: 14.2'

Screen:
- Length: 9.6'
- Inside Diameter (ID): 4"
- Slot Size: 0.01"
- Type of Material: SCH. 40 PVC
- Type/Size of Sand: 20/40 SILICA SAND
- Sand Pack Thickness: 15.2'
- Amount Used: 10 BAGS

Bottom of Screen: 23.8

Bottom of Well Casing: 24.2

Bottom of Borehole: 24.2

Borehole Diameter: 8"

Comments:

Installation Observed By: G. HILTON

APPENDIX B: Quality Control Summary Report & Laboratory Analytical Reports

QUALITY CONTROL SUMMARY REPORT
DPT Investigation and Quarterly Sampling
(February – June 2016)
FOR
LHAAP-18/24
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

Prepared For:

U.S. Army Corps of Engineers
Tulsa District

Prepared By:

AECOM Technical Services

September 2016

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1 INTRODUCTION

AECOM reviewed 37 data packages from Microbac Laboratory Services, Marietta, OH. Groundwater and soil samples were collected February 24 through June 29, 2016 at LHAAP-18/24 at Longhorn Army Ammunition Plant (LHAAP), Karnack, Texas. Data were reviewed for conformance to the requirements of the following guidance documents: Automated Data Review by Laboratory Data Consultants (ADR.net), United States Environmental Protection Agency (EPA) Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, (EPA, July 2002), and EPA Contract Laboratory Program National Functional Guidelines for Low Concentration Organic Data Review, (EPA, June 2001).

1.1 Intended Use of Data

The objective of this sampling event was to collect data to determine the extent of contaminants of concern at LHAAP-18/24.

Analyses requested included:

- SW6850 ï Perchlorates by LC/MS/MS
- SW8260- Volatiles by GC/MS
- SW6010 ï Al, Se, and Fe by ICP
- SW6020 ï As, Ba, Cd, Cr, Co, Pb, Mn, Ni, Ag, Se, V, Zn by ICP/MS
- 7470A- Hg by cold vapor atomic absorption
- SW8270- 1,4-dioxane by GC/MS

Table 2 lists the sample identifications and their associated laboratory identifications. **Table 3** lists qualified results with the associated quality control parameter that was exceeded.

1.2 Preservation and Holding Times

Sample identification data were evaluated for agreement with the chain-of-custody (COC). All samples were received in appropriate containers, within the proper temperature range, in good condition, and with the required signatures.

Sample L16061142-07 was analyzed 23 days after collection and therefore concentrations of all analytes are estimated (UJ/J).

Table 3 shows qualified analytical data.

1.3 Calibrations

Initial calibration criteria modification includes RSD< or = to 30%, two compounds allowed up to 40%. If the continuing calibration verification (CCV) compound exceeds 30% drift, the compound is checked in the LCS, if both are outside recovery limits, the compound is rejected, R. If only the CCV exceeds recovery criteria and is less than Ñ40% drift, then the compound is qualified J or UJ.

Table 3 shows qualified analytical data.

1.3.1 Continuing Calibration Verification (CCV)

1.3.1.1 SW8260

CCV WG572347-02 in SDG L16060411 has recoveries for bromomethane and naphthalene of 72% and 79.8%, respectively. These recoveries are below the 80% criteria for CCVs. The associated samples did not have reported concentrations of these analytes above the limit of detection (LOD) and therefore the concentrations are estimated (UJ).

CCV WG572507-02 in SDG L16060504 has recoveries for acetone, 2-butanone, 1,2-dibromo-3-chloropropane, and 2-hexanone of 65.4%, 70.8%, 69.6%, and 75.4%, respectively. These recoveries are below the 80% criteria for CCVs. The associated samples did not have reported concentrations of these analytes above the limit of detection (LOD) and therefore the concentrations are estimated (UJ).

CCV WG572735-02 in SDGs L16060615 and L16060616 has a recovery for bromomethane of 77.2%. This is below the 80% criteria for CCVs. The associated samples did not have reported concentrations of bromomethane above the limit of detection (LOD) and therefore the concentrations are estimated (UJ).

CCV WG573037-02 in SDGs L16060616, L16060730, and L16060823 has a recovery for bromomethane of 74%. This is below the 80% criteria for CCVs. The associated samples did not have reported concentrations of bromomethane above the limit of detection (LOD) and therefore the concentrations are estimated (UJ).

CCV WG573258-02 in SDG L16060650 has a recovery for 2-hexanone of 78.6%. This is below the 80% criteria for CCVs. The associated samples did not have reported concentrations of bromomethane above the limit of detection (LOD) and therefore the concentrations are estimated (UJ).

CCV WG573770-02 in SDG L16060927 has a recovery for bromomethane of 73.4%. This is below the 80% criteria for CCVs. The associated samples did not have reported concentrations of bromomethane above the limit of detection (LOD) and therefore the concentrations are estimated (UJ).

CCV WG573773-02 in SDG L16061026 has a recovery for 2-hexanone of 77.4%. This is below the 80% criteria for CCVs. The associated samples did not have reported concentrations of bromomethane above the limit of detection (LOD) and therefore the concentrations are estimated (UJ).

CCV WG575085-02 in SDG L16061290 has recoveries for acetone, 2-butanone, 1,2-dibromo-3-chloropropane, 1,2-dichloroethane and 2-hexanone of 66.6%, 71.4%, 74.6%, 78.8% and 71.8%, respectively. These recoveries are below the 80% criteria for CCVs. The associated samples did not have reported concentrations of these analytes above the limit of detection (LOD) and therefore the concentrations are estimated (UJ).

CCV WG575198-02 in SDGs L16061290, L16061452 and L16061453 has recoveries for acetone and 2-butanone of 78.8% and 79.4%, respectively. This is below the 80% criteria for CCVs. The associated samples did not have reported concentrations of bromomethane above the limit of detection (LOD) and therefore the concentrations are estimated (UJ).

CCV WG575663-02 in SDG L16061648 has a recovery for bromomethane of 79%. This is below the 80% criteria for CCVs. The associated samples did not have reported concentrations of bromomethane above the limit of detection (LOD) and therefore the concentrations are estimated (UJ).

Table 3 shows qualified analytical data.

1.4 Blanks

Where contamination by a target analyte of one of the various blanks was found, if the sample result for an associated sample was non-detect or less than 5X (10X for common laboratory contaminants) the analyte concentration in the blank, the corresponding sample result for the analyte was qualified B. Where the sample result for the affected analyte was greater than 5X the amount in the blank, no qualifier was applied.

All blanks are within criteria.

1.5 Surrogates

A recovery of 121% was reported for surrogate 1,2-dichloroethane-d4 in samples L16060730-03, L16060823-01, and L16060823-04 in SDGs L16060730 and L16060823. Recoveries are above the upper control limit of 120% and therefore reported concentrations for all analytes are estimated (UJ/J).

A recovery of 122% was reported for surrogate 1,2-dichloroethane-d4 in samples L16061142-02, L16061142-06 in SDGL16061142. Recoveries are above the upper control limit of 120% and therefore reported concentrations for all analytes are estimated (UJ/J).

A recovery of 123% was reported for surrogate 1,2-dichloroethane-d4 in sample L16061144-02 in SDG L16061144. Recoveries are above the upper control limit of 120% and therefore reported concentrations for all analytes are estimated (UJ/J).

Table 3 shows qualified analytical data.

1.6 Laboratory Control Sample (LCS)

The relative percent difference (RPD) for 1,4-dioxne between LCS WG573812-02 and LCSD WG573812-03 in SDGs L16061142 and L16061144 was 61.5% which is greater than the RPD limit of 30%. The associated samples reported concentrations below the LOD and therefore concentrations are estimated (UJ).

The percent recovery (%R) for 1,1-dichloroethene in LCS WG575129-02 was 69.5% in SDG L16061289. The lower control limit for 1,1-dichloroethene is 70% and the associated sample reported a concentration below the LOD, therefore the concentration is estimated (UJ).

The percent recoveries (%R) for 1,1-dichloroethene in LCS WG575199-02 and LCSD WG575199-03 were 54.9% and 54.7%, respectively, in SDGs L16061290, L16061452 and L1606143. The lower control limit for 1,1-dichloroethene is 70% and the associated samples reported concentrations below the LOD, therefore concentrations are estimated (UJ).

The percent recoveries (%R) for dichlorodifluoromethane in LCS WG575199-02 and LCSD WG575199-03 were 10.7% and 10.5%, respectively, in SDGs L16061290, L16061452 and

L1606143. The lower control limit for dichlorodifluoromethane is 30% and the associated samples reported concentrations below the LOD, therefore concentrations are estimated (UJ).

The percent recoveries (%R) for 2,2-dichloropropane in LCS WG575086-02 and LCSD WG575086-03 were 67.2% and 68.8%, respectively, in SDG L16061290. The lower control limit for 2,2-dichloropropane is 70% and the associated samples reported concentrations below the LOD, therefore concentrations are estimated (UJ).

The percent recoveries (%R) for chloromethane in LCS WG575199-02 and LCSD WG575199-03 were 31.1% and 30.9%, respectively, in SDGs L16061452 and L16061453. The lower control limit for chloromethane is 40% and the associated samples reported concentrations below the LOD, therefore concentrations are estimated (UJ).

The percent recoveries (%R) for vinyl chloride in LCS WG575199-02 and LCSD WG575199-03 were 31.1% and 30.9%, respectively, in SDGs L16061452 and L16061453. The lower control limit for vinyl chloride is 50% and the associated samples reported concentrations below the LOD, therefore concentrations are estimated (UJ).

Table 3 shows qualified analytical data.

1.7 Duplicates

Field duplicates were taken at a rate of 1 per every 20 samples. All duplicate recoveries were within the acceptable range of ≤30% for groundwater matrices and ≤50% for soil matrices.

1.7.1.1 Matrix Spike/Matrix Spike Duplicate (MS/MSD)

The MS/MSD for sample L16021306-02 in SDG L16021306 had RPDs that were outside of control limits for 1,1,2,2-tetrachloroethane, 1,2,3-trichlorobenzene, 1,2,4-trichlorobenzene, 1,2,4-trimethylbenzene, 1,2-dibromo-3-chloropropane, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 2-chlorotoluene and bromobenzene. L16021306-02 had concentrations of these analytes below the LOD and therefore the concentrations are estimated (UJ).

The MS/MSD for sample L16061068-13 in SDG L16061068 had RPDs that were outside of control limits for sodium, chromium, barium, and manganese and therefore reported concentrations are estimated (UJ/J).

Table 3 shows qualified analytical data.

2 DATA USABILITY SUMMARY

The data are usable for the intended purposes of the project. The data quality objectives have been met for the project.

Table 1: Completeness by Method

Method	No. of Rejected Results	% Completeness
SW6850	0	100
SW8260	0	100
SW6010	0	100
SW6020	0	100
7470A	0	100
SW8270	0	100

Table 2: Field Sample Identification and Laboratory Identification

ClientSampleID	LabSampleID	SW6850	SW8260	SW6010	SW6020	SW7470A	SW8270
L16021240-01	18DPT04(5-5.5)240216	X	X				
L16021240-02	18DPT04(15-15.5)240216	X	X				
L16021240-03	18DPT04(20-21)240216	X	X				
L16021240-04	18DPT04(20-21)240216FD	X	X				
L16021240-05	18DPT04(25-25.5)240216	X	X				
L16021240-06	18DPT04(29-30)240216	X	X				
L16021240-07	18DPT04(36.5-37)240216	X	X				
L16021240-08	18DPT04(34-34.5)240216	X	X				
L16021306-01	18DPT05(4.5-5)250216	X	X				
L16021306-02	18DPT05(10-11)250216	X	X				
L16021306-03	18DPT05(10-11)250216MS	X	X				
L16021306-04	18DPT05(10-11)250216MSD	X	X				
L16021306-05	18DPT05(15-15.5)250216	X	X				
L16021306-06	18DPT05(20-20.5)250216	X	X				
L16021357-01	18DPT01(5-5.5)250216	X	X				
L16021357-02	18DPT01(9.5-10)250216	X	X				
L16021357-03	18DPT01(15-15.5)250216	X	X				
L16021357-04	18DPT01(22.5-23)250216	X	X				
L16021357-05	18DPT01(24.5-25)250216	X	X				
L16021357-06	18DPT01(27-27.5)250216	X	X				
L16021358-01	18DPT02(5-5.5)260216	X	X				
L16021358-02	18DPT02(10-10.5)260216	X	X				
L16021358-03	18DPT02(10-10.5)260216FD	X	X				
L16021358-04	18DPT02(15-15.5)260216	X	X				
L16021358-05	18DPT02(22-22.5)260216	X	X				
L16021358-06	18DPT03(5-5.5)260216	X	X				
L16021358-07	18DPT03(10-10.5)260216	X	X				
L16021358-08	18DPT03(14.5-15)260216	X	X				
L16021358-09	18DPT03(17.5-18)260216	X	X				
L16030134-01	18DPT06(5-5.5)020316	X	X				
L16030134-02	18DPT06(5-5.5)020316FD	X	X				
L16030134-03	18DPT06(15-15.5)020316	X	X				
L16030134-04	18DPT06(20-20.5)020316	X	X				

ClientSampleID	LabSampleID	SW6850	SW8260	SW6010	SW6020	SW7470A	SW8270
L16030134-05	18DPT06(27.5-28)020316	X	X				
L16030134-06	18DPT06(38.5-39)020316	X	X				
L16030234-01	18DPT08(5-5.5)030316	X	X				
L16030234-02	18DPT08(15-15.5)030316	X	X				
L16030234-03	18DPT08(10-10.5)030316	X	X				
L16030234-04	18DPT08(21-21.5)030316	X	X				
L16030234-05	18DPT08(26-26.5)030316	X	X				
L16030234-06	18DPT08(35-35.5)030316	X	X				
L16030235-01	18DPT07(5-5.5)020316	X	X				
L16030235-02	18DPT07(15-15.5)020316	X	X				
L16030235-03	18DPT07(33.5-34.5)030316	X	X				
L16030235-04	18DPT07(33.5-34.5)030316MS	X	X				
L16030235-05	18DPT07(33.5-34.5)030316MSD	X	X				
L16030235-06	18DPT07(38-39)030316	X	X				
L16030235-07	18DPT07(38-39)030316FD	X	X				
L16030235-08	18DPT07(27-27.5)030316	X	X				
L16030323-01	18DPT09(5-5.5)040316	X	X				
L16030323-02	18DPT09(11-11.5)040316	X	X				
L16030323-03	18DPT09(13.5-14)040316	X	X				
L16030323-04	18DPT10(5-5.5)040316	X	X				
L16030323-05	18DPT10(15.5-16)040316	X	X				
L16030323-06	18DPT10(23.5-24)040316	X	X				
L16030366-01	18DPT11(5-5.5)040316	X	X				
L16030366-02	18DPT11(15-15.5)040316	X	X				
L16030366-03	18DPT11(20-20.5)070316	X	X				
L16030366-04	18DPT11(29-29.5)070316	X	X				
L16030366-05	18DPT11(25.25.5)070316	X	X				
L16030366-06	18DPT12(5-5.5)070316	X	X				
L16030366-07	18DPT12(8.5-9)070316	X	X				
L16030366-08	18DPT12(18-18.5)070316	X	X				
L16030366-09	18DPT12(12-12.5)070316	X	X				
L16030366-10	18DPT13(5-5.5)070316	X	X				
L16030366-11	18DPT13(12-12.5)070316	X	X				
L16030861-01	18DPT14(5-5.5)140316	X	X				

ClientSampleID	LabSampleID	SW6850	SW8260	SW6010	SW6020	SW7470A	SW8270
L16030861-02	18DPT14(10-10.5)140316	X	X				
L16030861-03	18DPT14(10-10.5)140316FD	X	X				
L16030861-04	18DPT14(17-17.5)140316	X	X				
L16030861-05	18DPT14(23-23.5)140316	X	X				
L16030861-06	18DPT15(5-5.5)140316	X	X				
L16030861-07	18DPT15(12-12.5)140316	X	X				
L16030861-08	18DPT15(21-21.5)140316	X	X				
L16030861-09	18DPT15(23.5-24)140316	X	X				
L16030861-10	18DPT15(26.5-27)140316	X	X				
L16030863-01	18DPT16(5-5.5)150316	X	X				
L16030863-02	18DPT16(5-5.5)150316MS	X	X				
L16030863-03	18DPT16(5-5.5)150316MSD	X	X				
L16030863-04	18DPT16(15-15.5)150316	X	X				
L16030863-05	18DPT16(25-25.5)150316	X	X				
L16030863-06	18DPT16(30-30.5)150316	X	X				
L16030863-07	18DPT16(33.33.5)150316	X	X				
L16030863-08	18DPT17(2.5-3)150316	X	X				
L16030863-09	18DPT17(2.5-3)150316FD	X	X				
L16030863-10	18DPT17(5-5.5)150316	X	X				
L16030863-11	18DPT17(10-10.5)150316	X	X				
L16030863-12	18DPT17(18-18.5)150316	X	X				
L16030863-13	18DPT17(27-27.5)150316	X	X				
L16030863-14	18DPT17(21.5-22)150316	X	X				
L16041344-01	18CPTMW22R(5-5.5)230416	X	X				
L16041344-02	18CPTMW22R(10-10.5)230416	X	X				
L16041344-03	18CPTMW22R(15-15.5)230416	X	X				
L16041344-04	18CPTMW26(5-5.5)230416	X	X				
L16041344-05	18CPTMW26(5-5.5)230416dup	X	X				
L16041344-06	18CPTMW26(10-10.5)230416	X	X				
L16041344-07	18CPTMW26(14.5-15)230416	X	X				
L16041344-08	18CPTMW26SW(5-5.5)250416	X	X				
L16041344-09	18CPTMW26SW(10-10.5)250416	X	X				
L16041344-10	18CPTMW26SW(15-15.5)250416	X	X				
L16041344-11	18CPTMW26SW(20-20.5)250416	X	X				

ClientSampleID	LabSampleID	SW6850	SW8260	SW6010	SW6020	SW7470A	SW8270
L16041344-12	18CPTMW26SW(30-30.5)250416	X	X				
L16041344-13	18CPTMW26SW(40-40.5)250416	X	X				
L16041344-14	18CPTMW26SW(49.5-50)250416	X	X				
L16041363-01	18CPTMW19SW(5-5.5)210416	X	X				
L16041363-02	18CPTMW19SW(10-10.5)210416	X	X				
L16041363-03	18CPTMW19SW(30-30.5)220416	X	X				
L16041363-04	18CPTMW19SW(30-30.5)220416Dup	X	X				
L16041363-05	18CPTMW19SW(40-40.5)220416	X	X				
L16041363-06	18CPTMW19SW(20-20.5)220416	X	X				
L16041363-07	18CPTMW19SW(60-61)220416	X	X				
L16041363-08	18CPTMW19SW(60-61)220416MS	X	X				
L16041363-09	18CPTMW19SW(60-61)220416MSD	X	X				
L16041363-10	18CPTMW19SW(50-50.5)220416	X	X				
L16041580-01	18CPTMW22DW(5-5.5)260416	X	X				
L16041580-02	18CPTMW22DW(10-10.5)260416	X	X				
L16041580-03	18CPTMW22DW(20-20.5)260416	X	X				
L16041580-04	18CPTMW22DW(29.5-30)260416	X	X				
L16041580-05	18CPTMW22DW(40-40.5)260416	X	X				
L16041580-06	18CPTMW22DW(50-51)260416	X	X				
L16041580-07	18CPTMW22DW(50-51)260416MS	X	X				
L16041580-08	18CPTMW22DW(50-51)260416MSD	X	X				
L16041580-09	18CPTMW22DW(60-60.5)260416	X	X				
L16041580-10	18CPTMW22DW(60-60.5)260416D	X	X				
L16041580-11	18CPTMW22DW(70-70.5)260416	X	X				
L16041580-12	18CPTMW22D(80-80.5)260416	X	X				
L16041580-13	18CPTMW22DW(89.5-90)260416	X	X				
L16041580-14	Equipment blank	X	X				
L16041582-01	18CPTMW23SW(5-5.5)	X	X				
L16041582-02	18CPTMW23SW(10-10.5)	X	X				
L16041582-03	18CPTMW23SW(20-20.5)	X	X				
L16041582-04	18CPTMW23SW(30-30.5)	X	X				
L16041582-05	18CPTMW23SW(40-40.5)	X	X				
L16041582-06	18CPTMW23SW(60-60.5)	X	X				
L16041582-07	18CPTMW23SW(50-50.5)	X	X				

ClientSampleID	LabSampleID	SW6850	SW8260	SW6010	SW6020	SW7470A	SW8270
L16060411-01	18CPTMW15T-060716	X	X				X
L16060411-02	18CPTMW15B-060716	X	X				X
L16060411-03	AWD4T-060716	X	X	X	X	X	X
L16060411-04	AWD4B-060716	X	X	X	X	X	X
L16060411-05	Trip blank		X				
L16060414-01	AWD1T-060716	X	X				X
L16060414-02	AWD1B-060716	X	X				X
L16060414-03	MW14T-060716	X	X				X
L16060414-04	MW14B-060716	X	X				X
L16060414-05	Trip blank		X				
L16060497-01	18CPTMW06-060816	X	X				X
L16060497-02	18CPTMW06MS-060816	X	X				X
L16060497-03	18CPTMW06MSD-060816	X	X				X
L16060497-04	MW22-060816	X	X				X
L16060497-05	Trip blank		X				
L16060504-01	18CPTMW08SW-060816	X	X				X
L16060504-02	18CPTMW08DW-060816	X					X
L16060504-03	MW5-060816	X	X	X	X	X	X
L16060504-04	18CPTMW03SW-060816	X	X				X
L16060504-05	Trip blank		X				
L16060615-01	18CPTMW22R-060916	X	X				X
L16060615-02	18CPTMW22DW-060916	X	X				X
L16060615-03	18CPTMW22DWFD-060916	X	X				X
L16060615-04	18CPTMW22SW-060916	X	X				X
L16060615-05	Trip blank		X				
L16060616-01	MW8-060916	X	X	X	X	X	X
L16060616-02	18CPTMW26SW-060916	X	X	X	X	X	X
L16060616-03	MW10-060916	X	X				X
L16060616-04	MW10F-060916			X	X	X	
L16060616-05	Trip blank		X				
L16060650-01	MW1-061016	X	X	X	X	X	
L16060650-02	MW3-061016	X	X	X	X	X	
L16060650-03	17WW08-061016	X	X	X	X	X	
L16060650-04	130-061016	X	X				

ClientSampleID	LabSampleID	SW6850	SW8260	SW6010	SW6020	SW7470A	SW8270
L16060650-05	130FD-061016	X	X				
L16060650-06	MW12-061016	X	X				
L16060650-07	18WW24-061016	X	X				
L16060650-08	18WW24F-061016	X	X				
L16060650-09	Trip blank		X				
L16060730-01	18CPTMW14-061316	X	X				X
L16060730-02	18CPTMW14FD-061316	X	X				X
L16060730-03	18CPTMW24-061316	X	X				X
L16060730-04	Trip blank		X				
L16060822-01	18WW03-061416	X	X				X
L16060822-02	18WW03F-061416			X	X	X	
L16060822-03	18CPTMW04SW-061416	X	X	X	X	X	X
L16060822-04	18CPTMW04-061416	X	X				X
L16060822-05	18CPTMW04FD-061416	X	X				X
L16060822-06	Trip blank		X				
L16060823-01	126-061416	X	X				X
L16060823-02	126F-061416			X	X	X	
L16060823-03	C08-061416	X	X	X	X	X	X
L16060823-04	C03-061416	X	X	X	X	X	X
L16060823-05	Trip blank		X				
L16060927-01	18CPTMW23SW-061516	X	X				X
L16060927-02	18CPTMW23-061516	X	X				X
L16060927-03	18CPTMW19SW-061516	X	X				X
L16060927-04	18CPTMW19-061516	X	X				X
L16060927-05	Trip blank		X				
L16061026-01	18WW16-061616	X	X				
L16061026-02	18WW16F-061616			X	X	X	
L16061026-03	102-061616	X	X				
L16061026-04	129-061616	X	X	X	X	X	X
L16061026-05	120-061616	X	X				X
L16061026-06	120F-061616			X	X	X	
L16061026-07	123-061616	X	X	X	X	X	X
L16061026-08	Trip blank		X				
L16061068-01	MW23-061716	X	X				

ClientSampleID	LabSampleID	SW6850	SW8260	SW6010	SW6020	SW7470A	SW8270
L16061068-02	MW23MS-061716	X	X				
L16061068-03	MW23MSD-061716	X	X				
L16061068-04	C01-061716	X	X	X	X	X	
L16061068-05	C01FD-061716	X	X	X	X	X	
L16061068-06	MW13-061716	X	X				
L16061068-07	C02-061716	X	X				
L16061068-08	C02MS-061716	X	X				
L16061068-09	C02MSD-061716	X	X				
L16061068-10	MW19-061716	X	X				
L16061068-11	MW19F-061716			X	X	X	
L16061068-12	MW18-061716	X	X				
L16061068-13	MW18F-061716			X	X	X	
L16061068-14	MW18MS-061716	X	X				
L16061068-15	MW18FMS-061716			X	X	X	
L16061068-16	MW18MSD-061716	X	X				
L16061068-17	MW18FMSD-061716			X	X	X	
L16061068-18	Trip blank		X				
L16061142-01	18WW20-062016	X	X	X	X	X	X
L16061142-02	18WW19-062016	X	X				
L16061142-03	18WW19F-062016			X	X	X	
L16061142-04	18WW19FD-062016	X	X				
L16061142-05	18WW19FFD-062016			X	X	X	
L16061142-06	18WW08-062016	X	X				X
L16061142-07	18WW09-062016	X	X				X
L16061142-08	Trip blank		X				
L16061144-01	18WW06-062016	X	X				X
L16061144-02	18WW06FD-062016	X	X				X
L16061144-03	MW17-062016	X	X				X
L16061144-04	Trip blank		X				
L16061227-01	18WW22-062116	X	X	X	X	X	X
L16061227-02	C04-062116	X	X				X
L16061227-03	C04F-062116			X	X	X	
L16061227-04	C04FD-062116	X	X				X
L16061227-05	C045FFD-062116			X	X	X	

ClientSampleID	LabSampleID	SW6850	SW8260	SW6010	SW6020	SW7470A	SW8270
L16061227-06	18CPTMW18-062116	X	X	X	X	X	X
L16061227-07	18WW18-062116	X	X	X	X	X	X
L16061227-08	18WW17-062116	X	X				
L16061227-09	Trip blank		X				
L16061289-01	MW21-062216	X	X	X	X	X	X
L16061289-02	MW9-062216	X	X				X
L16061289-03	18WW02-062216	X	X				X
L16061289-04	18WW02F-062216			X	X	X	
L16061289-05	18CPTMW10SW-062216	X	X				X
L16061289-06	Trip blank		X				
L16061290-01	18CPTMW16-062116		X				X
L16061290-02	MW16-062116		X				X
L16061290-03	MW16F-062116			X	X	X	
L16061290-04	125-062216	X	X				
L16061290-05	109-062216	X	X	X	X	X	X
L16061290-06	18CPTMW07-062216	X	X				X
L16061290-07	Trip blank		X				
L16061452-01	18CPTMW12SW-062416	X	X	X	X	X	X
L16061452-02	18CPTMW12DW-062416						X
L16061452-03	MW7-062416	X	X				X
L16061452-04	Trip blank		X				
L16061453-01	MW2-062416	X	X	X	X	X	X
L16061453-02	18CPTMW01DW-062416	X	X				X
L16061453-03	18CPTMW01SW-062416	X	X	X	X	X	X
L16061453-04	Trip blank		X				
L16061593-01	18WW25(3.5-4)270616	X	X				
L16061593-02	18WW25(9.5-10)270616	X	X				
L16061593-03	18WW25(14.5-15)270616	X	X				
L16061593-04	18WW25(19.5-20)270616	X	X				
L16061593-05	18WW25(22-22.5)270616	X	X				
L16061593-06	18WW25(22-22.5)270616Dup	X	X				
L16061648-01	18WW25-062916	X	X				X
L16061648-02	18WW25F-062916			X	X	X	
L16061648-03	Trip blank		X				

Table 3: Qualified Analytical Data

ClientSampleID	LabSampleID	Analyte Name	DVQualOverall	Reason
L16021306-02	18DPT05(10-11)250216	1,1,2,2-tetrachloroethane	UJ	MS/MSD RPD Failure
		1,2,3-trichlorobenzene	UJ	MS/MSD RPD Failure
		1,2,4-trichlorobenzene	UJ	MS/MSD RPD Failure
		1,2,4-trimethylbenzene	UJ	MS/MSD RPD Failure
		1,2-dibromo-3-chloropropane	UJ	MS/MSD RPD Failure
		1,2-dichlorobenzene	UJ	MS/MSD RPD Failure
		1,3-dichlorobenzene	UJ	MS/MSD RPD Failure
		1,4-dichlorobenzene	UJ	MS/MSD RPD Failure
		2-chlorotoluene	UJ	MS/MSD RPD Failure
		Bromobenzene.	UJ	MS/MSD RPD Failure
L16060411-01	18CPTMW15T-060716	Bromomethane	UJ	CCV %Recovery Failure
		Naphthalene	UJ	CCV %Recovery Failure
L16060411-02	18CPTMW15B-060716	Bromomethane	UJ	CCV %Recovery Failure
		Naphthalene	UJ	CCV %Recovery Failure
L16060411-03	AWD4T-060716	Bromomethane	UJ	CCV %Recovery Failure
		Naphthalene	UJ	CCV %Recovery Failure
L16060411-04	AWD4B-060716	Bromomethane	UJ	CCV %Recovery Failure
		Naphthalene	UJ	CCV %Recovery Failure
L16060504-01	18CPTMW08SW-060816	Acetone	UJ	CCV %Recovery Failure
		2-butanone	UJ	CCV %Recovery Failure
		1,2-dibromo-3-chloropropane	UJ	CCV %Recovery Failure
		2-hexanone	UJ	CCV %Recovery Failure
L16060504-02	18CPTMW08DW-060816	Acetone	UJ	CCV %Recovery Failure
		2-butanone	UJ	CCV %Recovery Failure
		1,2-dibromo-3-chloropropane	UJ	CCV %Recovery Failure
		2-hexanone	UJ	CCV %Recovery Failure

ClientSampleID	LabSampleID	Analyte Name	DVQualOverall	Reason
L16060504-03	MW5-060816	Acetone	UJ	CCV %Recovery Failure
		2-butanone	UJ	CCV %Recovery Failure
		1,2-dibromo-3-chloropropane	UJ	CCV %Recovery Failure
		2-hexanone	UJ	CCV %Recovery Failure
L16060504-04	18CPTMW03SW-060816	Acetone	UJ	CCV %Recovery Failure
		2-butanone	UJ	CCV %Recovery Failure
		1,2-dibromo-3-chloropropane	UJ	CCV %Recovery Failure
		2-hexanone	UJ	CCV %Recovery Failure
L16060615-01	18CPTMW22R-060916	Bromomethane	UJ	CCV %Recovery Failure
L16060615-02	18CPTMW22DW-060916	Bromomethane	UJ	CCV %Recovery Failure
L16060615-03	18CPTMW22DWFD-060916	Bromomethane	UJ	CCV %Recovery Failure
L16060615-04	18CPTMW22SW-060916	Bromomethane	UJ	CCV %Recovery Failure
L16060616-01	MW8-060916	Bromomethane	UJ	CCV %Recovery Failure
L16060616-02	18CPTMW26SW-060916	Bromomethane	UJ	CCV %Recovery Failure
L16060616-03	MW10-060916	Bromomethane	UJ	CCV %Recovery Failure
L16060650-01	MW1-061016	2-hexanone	UJ	CCV %Recovery Failure
L16060650-02	MW3-061016	2-hexanone	UJ	CCV %Recovery Failure
L16060730-01	18CPTMW14-061316	Bromomethane	UJ	CCV %Recovery Failure
L16060730-02	18CPTMW14FD-061316	Bromomethane	UJ	CCV %Recovery Failure
L16060730-03	18CPTMW24-061316	All VOCs	UJ/J	Surrogate Recovery Failure
L16060823-01	126-061416	All VOCs	UJ/J	Surrogate Recovery Failure
L16060823-03	C08-061416	Bromomethane	UJ	CCV %Recovery Failure
L16060823-04	C03-061416	All VOCs	UJ/J	Surrogate Recovery Failure
L16060927-02	18CPTMW23-061516	Bromomethane	UJ	CCV %Recovery Failure
L16061026-01	18WW16-061616	2-hexanone	UJ	CCV %Recovery Failure
L16061026-03	102-061616	2-hexanone	UJ	CCV %Recovery Failure
L16061026-04	129-061616	2-hexanone	UJ	CCV %Recovery Failure
L16061026-05	120-061616	2-hexanone	UJ	CCV %Recovery Failure

ClientSampleID	LabSampleID	Analyte Name	DVQualOverall	Reason
L16061026-07	123-061616	2-hexanone	UJ	CCV %Recovery Failure
L16061068-13	MW18F-061716	Sodium	UJ	MS/MSD RPD Failure
		Chromium	J	MS/MSD RPD Failure
		Barium	J	MS/MSD RPD Failure
		Manganese	J	MS/MSD RPD Failure
L16061142-01	18WW20-062016	1,4-dioxane	UJ	LCS/LCSD RPD Failure
L16061142-02	18WW19-062016	All VOCs	UJ/J	Surrogate Recovery Failure
L16061142-06	18WW08-062016	All VOCs	UJ/J	Surrogate Recovery Failure
		1,4-dioxane	UJ	LCS/LCSD RPD Failure
L16061142-07	18WW09-062016	All VOCs	UJ/J	Analyzed out of Hold
		1,4-dioxane	UJ	LCS/LCSD RPD Failure
L16061144-01	18WW06-062016	1,4-dioxane	UJ	LCS/LCSD RPD Failure
L16061144-02	18WW06FD-062016	1,4-dioxane	UJ	LCS/LCSD RPD Failure
L16061144-03	MW17-062016	1,4-dioxane	UJ	LCS/LCSD RPD Failure
L16061289-01	MW21-062216	1,1-dichloroethene	UJ	LCS %Recovery Failure
L16061290-02	MW16-062116	Acetone	UJ	CCV %Recovery Failure
		2-butanone	UJ	CCV %Recovery Failure
		1,2-dibromo-3-chloropropane	UJ	CCV %Recovery Failure
		1,2-dichloroethane	UJ	CCV %Recovery Failure
		2-hexanone	UJ	CCV %Recovery Failure
		2,2-dichloropropane	UJ	LCS %Recovery Failure
L16061290-04	125-062216	Acetone	UJ	CCV %Recovery Failure
		2-butanone	UJ	CCV %Recovery Failure
		1,1-dichloroethene	UJ	LCS %Recovery Failure
		dichlorodifluromethane	UJ	LCS %Recovery Failure
L16061290-05	109-062216	Acetone	UJ	CCV %Recovery Failure
		2-butanone	UJ	CCV %Recovery Failure
		1,2-dibromo-3-chloropropane	UJ	CCV %Recovery Failure

ClientSampleID	LabSampleID	Analyte Name	DVQualOverall	Reason
		1,2-dichloroethane	UJ	CCV %Recovery Failure
		2-hexanone	UJ	CCV %Recovery Failure
		2,2-dichloropropane	UJ	LCS %Recovery Failure
L16061452-01	18CPTMW12SW-062416	1,1-dichloroethene	UJ	LCS %Recovery Failure
		Chloromethane	UJ	LCS %Recovery Failure
		Dichlorodifluoromethane	UJ	LCS %Recovery Failure
		Vinyl Chloride	UJ	LCS %Recovery Failure
		Acetone	UJ	CCV %Recovery Failure
		2-butanone	UJ	CCV %Recovery Failure
L16061452-03	MW7-062416	1,1-dichloroethene	UJ	LCS %Recovery Failure
		Chloromethane	UJ	LCS %Recovery Failure
		Dichlorodifluoromethane	UJ	LCS %Recovery Failure
		Vinyl Chloride	UJ	LCS %Recovery Failure
		Acetone	UJ	CCV %Recovery Failure
		2-butanone	UJ	CCV %Recovery Failure
L16061453-02	18CPTMW01DW-062416	1,1-dichloroethene	UJ	LCS %Recovery Failure
		Chloromethane	UJ	LCS %Recovery Failure
		Dichlorodifluoromethane	UJ	LCS %Recovery Failure
		Vinyl Chloride	UJ	LCS %Recovery Failure
		Acetone	UJ	CCV %Recovery Failure
		2-butanone	UJ	CCV %Recovery Failure
L16061648-01	18WW25-062916	Bromomethane	UJ	CCV %Recovery Failure
L16061648-02	18WW25F-062916	Bromomethane	UJ	CCV %Recovery Failure

Microbac

Laboratory Report Number: L16021240

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on March 02 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00112730	I	0.0		J4599413984	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	NA
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	NA

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18CPT04(5-5.5)240216	L16021240-01	02/24/2016 10:00	02/25/2016 09:39
18DPT04(15-15.5)240216	L16021240-02	02/24/2016 10:28	02/25/2016 09:39
18CPT04(20-21)240216	L16021240-03	02/24/2016 10:55	02/25/2016 09:39
18CPT04(20-21)240216FD	L16021240-04	02/24/2016 10:55	02/25/2016 09:39
18DPT04(25-25.5)240216	L16021240-05	02/24/2016 11:22	02/25/2016 09:39
18DPT04(29-30)240216	L16021240-06	02/24/2016 12:00	02/25/2016 09:39
18DPT04(36.5-37)240216	L16021240-07	02/24/2016 15:15	02/25/2016 09:39
18DPT04(34-34.5)240216	L16021240-08	02/24/2016 15:15	02/25/2016 09:39

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Microbac REPORT L16021240
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.0 Summary Data

1.1 Narratives

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021240
Project Name:		**Method:**	8260
Prep Batch Number(s):	558910,559002	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-02-29 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2016-02-29 22:30:48

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021240
Project Name:		**Method:**	8260
Prep Batch Number(s):	558910,559002	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-02-29 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				
Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021240
Project Name:		**Method:**	8260
Prep Batch Number(s):	558910,559002	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-02-29 00:00:00		

Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		X			1
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				
Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				

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Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021240
Project Name:		**Method:**	8260
Prep Batch Number(s):	558910,559002	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-02-29 00:00:00		

Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?		X			2
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					
Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021240
Project Name:		**Method:**	8260
Prep Batch Number(s):	558910,559002	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-02-29 00:00:00		

Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1)Dichlorodifluoromethane and Vinyl chloride exceeded the UCL in the LCS/LCS2 analyzed 02/26/16 on HPMS9. Dichlorodifluoromethane exceeded the UCL in the LCS analyzed 02/28/16 on HPMS9.
2)Dichlorodifluoromethane exceeded the UCL in ICV analyzed 02/25/16 on HPMS9.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021240
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG558779	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-02-29 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-02-29 15:52:01

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021240
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG558779	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-02-29 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021240
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG558779	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-02-29 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			1
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021240
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG558779	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-02-29 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021240
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG558779	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-02-29 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021240
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG558779	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-02-29 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. The MS failed high and the MSD failed low, due to the presence of a large amount of perchlorate in the reference sample.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021240
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG558757	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-26 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2016-02-26 16:24:32

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021240
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG558757	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-26 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?			X		
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?			X		
Were sample detection limits reported for all analytes not detected?			X		
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?			X		
Were blanks analyzed at the appropriate frequency?			X		
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?			X		
Were blank concentrations < MQL?			X		
Laboratory control samples (LCS):			X		
Were all COCs included in the LCS?			X		

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021240
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG558757	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-26 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?			X		
Were LCSs analyzed at the required frequency?			X		
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?			X		
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?			X		
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?			X		
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?			X		
Are unadjusted MQLs and DCSs included in the laboratory data package?			X		
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?			X		
Were percent RSDs or correlation coefficient criteria met?			X		

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021240
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG558757	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-26 00:00:00		

Was the number of standards recommended in the method used for all analytes?			X		
Were all points generated between the lowest and highest standard used to calculate the curve?			X		
Are ICAL data available for all instruments used?			X		
Has the initial calibration curve been verified using an appropriate second source standard?			X		
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021240
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG558757	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-26 00:00:00		

Was a MDL study performed for each reported analyte?			X		
Is the MDL either adjusted or supported by the analysis of DCSs?			X		
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?			X		
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021240
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG558757	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-26 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021240-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPT04(5-5.5)240216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/26/2016 14:09
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG558910	**Analyst:**	ADC	**Run Date:**	02/26/2016 21:20
Collect Date:	02/24/2016 10:00	**Dilution:**	1	**File ID:**	9M972923
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.5	U	26.9	13.5	6.73
Benzene	71-43-2	1.35	U	6.73	1.35	0.673
Bromobenzene	108-86-1	1.35	U	6.73	1.35	0.673
Bromochloromethane	74-97-5	2.70	U	6.73	2.70	1.35
Bromodichloromethane	75-27-4	1.35	U	6.73	1.35	0.673
Bromoform	75-25-2	1.35	U	6.73	1.35	0.673
Bromomethane	74-83-9	2.70	U	6.73	2.70	1.35
2-Butanone	78-93-3	6.72	U	13.5	6.72	3.36
n-Butylbenzene	104-51-8	1.35	U	6.73	1.35	0.673
sec-Butylbenzene	135-98-8	1.35	U	6.73	1.35	0.673
tert-Butylbenzene	98-06-6	1.35	U	6.73	1.35	0.673
Carbon disulfide	75-15-0	1.35	U	6.73	1.35	0.673
Carbon tetrachloride	56-23-5	1.35	U	6.73	1.35	0.673
Chlorobenzene	108-90-7	1.35	U	6.73	1.35	0.673
Chlorodibromomethane	124-48-1	1.35	U	6.73	1.35	0.673
Chloroethane	75-00-3	2.70	U	6.73	2.70	1.35
Chloroform	67-66-3	1.35	U	6.73	1.35	0.673
Chloromethane	74-87-3	5.38	U	13.5	5.38	2.69
2-Chlorotoluene	95-49-8	1.35	U	6.73	1.35	0.673
4-Chlorotoluene	106-43-4	1.35	U	6.73	1.35	0.673
1,2-Dibromo-3-chloropropane	96-12-8	5.38	U	13.5	5.38	2.69
1,2-Dibromoethane	106-93-4	1.35	U	6.73	1.35	0.673
Dibromomethane	74-95-3	1.35	U	6.73	1.35	0.673
1,2-Dichlorobenzene	95-50-1	1.35	U	6.73	1.35	0.673
1,3-Dichlorobenzene	541-73-1	1.35	U	6.73	1.35	0.673
1,4-Dichlorobenzene	106-46-7	1.35	U	6.73	1.35	0.673
Dichlorodifluoromethane	75-71-8	2.70	U	6.73	2.70	1.35
1,1-Dichloroethane	75-34-3	2.70	U	6.73	2.70	1.35
1,2-Dichloroethane	107-06-2	1.35	U	6.73	1.35	0.673
1,1-Dichloroethene	75-35-4	1.35	U	6.73	1.35	0.673
cis-1,2-Dichloroethene	156-59-2	1.35	U	6.73	1.35	0.673
trans-1,2-Dichloroethene	156-60-5	1.35	U	6.73	1.35	0.673

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Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.35	U	6.73	1.35	0.673
1,3-Dichloropropane	142-28-9	1.35	U	6.73	1.35	0.673
2,2-Dichloropropane	594-20-7	1.35	U	6.73	1.35	0.673
cis-1,3-Dichloropropene	10061-01-5	1.35	U	6.73	1.35	0.673
trans-1,3-Dichloropropene	10061-02-6	1.35	U	6.73	1.35	0.673
1,1-Dichloropropene	563-58-6	1.35	U	6.73	1.35	0.673
Ethylbenzene	100-41-4	1.35	U	6.73	1.35	0.673
2-Hexanone	591-78-6	6.72	U	13.5	6.72	3.36
Hexachlorobutadiene	87-68-3	1.35	U	6.73	1.35	0.673
Isopropylbenzene	98-82-8	1.35	U	6.73	1.35	0.673
p-Isopropyltoluene	99-87-6	1.35	U	6.73	1.35	0.673
4-Methyl-2-pentanone	108-10-1	6.72	U	13.5	6.72	3.36
Methylene chloride	75-09-2	2.70	U	6.73	2.70	1.35
Naphthalene	91-20-3	1.35	U	6.73	1.35	0.673
n-Propylbenzene	103-65-1	1.35	U	6.73	1.35	0.673
Styrene	100-42-5	1.35	U	6.73	1.35	0.673
1,1,1,2-Tetrachloroethane	630-20-6	1.35	U	6.73	1.35	0.673
1,1,2,2-Tetrachloroethane	79-34-5	1.35	U	6.73	1.35	0.673
Tetrachloroethene	127-18-4	1.35	U	6.73	1.35	0.673
Toluene	108-88-3	1.35	U	6.73	1.35	0.673
1,2,3-Trichlorobenzene	87-61-6	1.35	U	6.73	1.35	0.673
1,2,4-Trichlorobenzene	120-82-1	1.35	U	6.73	1.35	0.673
1,1,1-Trichloroethane	71-55-6	1.35	U	6.73	1.35	0.673
1,1,2-Trichloroethane	79-00-5	1.35	U	6.73	1.35	0.673
Trichloroethene	79-01-6	1.35	U	6.73	1.35	0.673
Trichlorofluoromethane	75-69-4	2.70	U	6.73	2.70	1.35
1,2,3-Trichloropropane	96-18-4	2.70	U	6.73	2.70	1.35
1,2,4-Trimethylbenzene	95-63-6	1.35	U	6.73	1.35	0.673
1,3,5-Trimethylbenzene	108-67-8	1.35	U	6.73	1.35	0.673
Vinyl chloride	75-01-4	2.70	U	6.73	2.70	1.35
o-Xylene	95-47-6	1.35	U	6.73	1.35	0.673
m-,p-Xylene	179601-23-1	1.35	U	6.73	1.35	0.673

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.7	80	120	
1,2-Dichloroethane-d4	94.6	80	120	
Toluene-d8	108	85	115	
4-Bromofluorobenzene	111	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021240-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPT04(5-5.5)240216	**Prep Method:**	6850	**Prep Date:**	02/25/2016 14:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558779	**Analyst:**	JWR	**Run Date:**	02/25/2016 23:58
Collect Date:	02/24/2016 10:00	**Dilution:**	1	**File ID:**	1LM.LM33375
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	101		4.93	2.46	1.23

Certificate of Analysis

Sample #:	L16021240-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT04(15-15.5)240216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/26/2016 14:10
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG558910	**Analyst:**	ADC	**Run Date:**	02/26/2016 21:50
Collect Date:	02/24/2016 10:28	**Dilution:**	1	**File ID:**	9M972924
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	7.38	J	26.5	13.2	6.61
Benzene	71-43-2	1.32	U	6.61	1.32	0.661
Bromobenzene	108-86-1	1.32	U	6.61	1.32	0.661
Bromochloromethane	74-97-5	2.64	U	6.61	2.64	1.32
Bromodichloromethane	75-27-4	1.32	U	6.61	1.32	0.661
Bromoform	75-25-2	1.32	U	6.61	1.32	0.661
Bromomethane	74-83-9	2.64	U	6.61	2.64	1.32
2-Butanone	78-93-3	6.62	U	13.2	6.62	3.31
n-Butylbenzene	104-51-8	1.32	U	6.61	1.32	0.661
sec-Butylbenzene	135-98-8	1.32	U	6.61	1.32	0.661
tert-Butylbenzene	98-06-6	1.32	U	6.61	1.32	0.661
Carbon disulfide	75-15-0	1.32	U	6.61	1.32	0.661
Carbon tetrachloride	56-23-5	1.32	U	6.61	1.32	0.661
Chlorobenzene	108-90-7	1.32	U	6.61	1.32	0.661
Chlorodibromomethane	124-48-1	1.32	U	6.61	1.32	0.661
Chloroethane	75-00-3	2.64	U	6.61	2.64	1.32
Chloroform	67-66-3	1.32	U	6.61	1.32	0.661
Chloromethane	74-87-3	5.30	U	13.2	5.30	2.65
2-Chlorotoluene	95-49-8	1.32	U	6.61	1.32	0.661
4-Chlorotoluene	106-43-4	1.32	U	6.61	1.32	0.661

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	5.30	U	13.2	5.30	2.65
1,2-Dibromoethane	106-93-4	1.32	U	6.61	1.32	0.661
Dibromomethane	74-95-3	1.32	U	6.61	1.32	0.661
1,2-Dichlorobenzene	95-50-1	1.32	U	6.61	1.32	0.661
1,3-Dichlorobenzene	541-73-1	1.32	U	6.61	1.32	0.661
1,4-Dichlorobenzene	106-46-7	1.32	U	6.61	1.32	0.661
Dichlorodifluoromethane	75-71-8	2.64	U	6.61	2.64	1.32
1,1-Dichloroethane	75-34-3	2.64	U	6.61	2.64	1.32
1,2-Dichloroethane	107-06-2	1.32	U	6.61	1.32	0.661
1,1-Dichloroethene	75-35-4	1.32	U	6.61	1.32	0.661
cis-1,2-Dichloroethene	156-59-2	1.32	U	6.61	1.32	0.661
trans-1,2-Dichloroethene	156-60-5	1.32	U	6.61	1.32	0.661
1,2-Dichloropropane	78-87-5	1.32	U	6.61	1.32	0.661
1,3-Dichloropropane	142-28-9	1.32	U	6.61	1.32	0.661
2,2-Dichloropropane	594-20-7	1.32	U	6.61	1.32	0.661
cis-1,3-Dichloropropene	10061-01-5	1.32	U	6.61	1.32	0.661
trans-1,3-Dichloropropene	10061-02-6	1.32	U	6.61	1.32	0.661
1,1-Dichloropropene	563-58-6	1.32	U	6.61	1.32	0.661
Ethylbenzene	100-41-4	1.32	U	6.61	1.32	0.661
2-Hexanone	591-78-6	6.62	U	13.2	6.62	3.31
Hexachlorobutadiene	87-68-3	1.32	U	6.61	1.32	0.661
Isopropylbenzene	98-82-8	1.32	U	6.61	1.32	0.661
p-Isopropyltoluene	99-87-6	1.32	U	6.61	1.32	0.661
4-Methyl-2-pentanone	108-10-1	6.62	U	13.2	6.62	3.31
Methylene chloride	75-09-2	2.64	U	6.61	2.64	1.32
Naphthalene	91-20-3	1.32	U	6.61	1.32	0.661
n-Propylbenzene	103-65-1	1.32	U	6.61	1.32	0.661
Styrene	100-42-5	1.32	U	6.61	1.32	0.661
1,1,1,2-Tetrachloroethane	630-20-6	1.32	U	6.61	1.32	0.661
1,1,2,2-Tetrachloroethane	79-34-5	1.32	U	6.61	1.32	0.661
Tetrachloroethene	127-18-4	1.32	U	6.61	1.32	0.661
Toluene	108-88-3	1.32	U	6.61	1.32	0.661
1,2,3-Trichlorobenzene	87-61-6	1.32	U	6.61	1.32	0.661
1,2,4-Trichlorobenzene	120-82-1	1.32	U	6.61	1.32	0.661
1,1,1-Trichloroethane	71-55-6	1.32	U	6.61	1.32	0.661
1,1,2-Trichloroethane	79-00-5	1.32	U	6.61	1.32	0.661
Trichloroethene	79-01-6	1.32	U	6.61	1.32	0.661
Trichlorofluoromethane	75-69-4	2.64	U	6.61	2.64	1.32
1,2,3-Trichloropropane	96-18-4	2.64	U	6.61	2.64	1.32

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Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.32	U	6.61	1.32	0.661
1,3,5-Trimethylbenzene	108-67-8	1.32	U	6.61	1.32	0.661
Vinyl chloride	75-01-4	2.64	U	6.61	2.64	1.32
o-Xylene	95-47-6	1.32	U	6.61	1.32	0.661
m-,p-Xylene	179601-23-1	1.32	U	6.61	1.32	0.661

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.4	80	120	
1,2-Dichloroethane-d4	93.6	80	120	
Toluene-d8	111	85	115	
4-Bromofluorobenzene	114	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021240-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT04(15-15.5)240216	**Prep Method:**	6850	**Prep Date:**	02/25/2016 14:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558779	**Analyst:**	JWR	**Run Date:**	02/26/2016 00:17
Collect Date:	02/24/2016 10:28	**Dilution:**	1	**File ID:**	1LM.LM33376
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.44	U	4.90	2.44	1.22

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021240-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPT04(20-21)240216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/26/2016 14:10
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG558910	**Analyst:**	ADC	**Run Date:**	02/26/2016 22:21
Collect Date:	02/24/2016 10:55	**Dilution:**	1	**File ID:**	9M972925
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.8	U	25.5	12.8	6.38
Benzene	71-43-2	1.28	U	6.38	1.28	0.638
Bromobenzene	108-86-1	1.28	U	6.38	1.28	0.638
Bromochloromethane	74-97-5	2.56	U	6.38	2.56	1.28
Bromodichloromethane	75-27-4	1.28	U	6.38	1.28	0.638
Bromoform	75-25-2	1.28	U	6.38	1.28	0.638
Bromomethane	74-83-9	2.56	U	6.38	2.56	1.28
2-Butanone	78-93-3	6.38	U	12.8	6.38	3.19
n-Butylbenzene	104-51-8	1.28	U	6.38	1.28	0.638
sec-Butylbenzene	135-98-8	1.28	U	6.38	1.28	0.638
tert-Butylbenzene	98-06-6	1.28	U	6.38	1.28	0.638
Carbon disulfide	75-15-0	1.28	U	6.38	1.28	0.638
Carbon tetrachloride	56-23-5	1.28	U	6.38	1.28	0.638
Chlorobenzene	108-90-7	1.28	U	6.38	1.28	0.638
Chlorodibromomethane	124-48-1	1.28	U	6.38	1.28	0.638
Chloroethane	75-00-3	2.56	U	6.38	2.56	1.28
Chloroform	67-66-3	1.28	U	6.38	1.28	0.638
Chloromethane	74-87-3	5.10	U	12.8	5.10	2.55
2-Chlorotoluene	95-49-8	1.28	U	6.38	1.28	0.638
4-Chlorotoluene	106-43-4	1.28	U	6.38	1.28	0.638
1,2-Dibromo-3-chloropropane	96-12-8	5.10	U	12.8	5.10	2.55
1,2-Dibromoethane	106-93-4	1.28	U	6.38	1.28	0.638
Dibromomethane	74-95-3	1.28	U	6.38	1.28	0.638
1,2-Dichlorobenzene	95-50-1	1.28	U	6.38	1.28	0.638
1,3-Dichlorobenzene	541-73-1	1.28	U	6.38	1.28	0.638
1,4-Dichlorobenzene	106-46-7	1.28	U	6.38	1.28	0.638
Dichlorodifluoromethane	75-71-8	2.56	U	6.38	2.56	1.28
1,1-Dichloroethane	75-34-3	2.56	U	6.38	2.56	1.28
1,2-Dichloroethane	107-06-2	1.28	U	6.38	1.28	0.638
1,1-Dichloroethene	75-35-4	1.28	U	6.38	1.28	0.638
cis-1,2-Dichloroethene	156-59-2	1.28	U	6.38	1.28	0.638

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Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.28	U	6.38	1.28	0.638
1,2-Dichloropropane	78-87-5	1.28	U	6.38	1.28	0.638
1,3-Dichloropropane	142-28-9	1.28	U	6.38	1.28	0.638
2,2-Dichloropropane	594-20-7	1.28	U	6.38	1.28	0.638
cis-1,3-Dichloropropene	10061-01-5	1.28	U	6.38	1.28	0.638
trans-1,3-Dichloropropene	10061-02-6	1.28	U	6.38	1.28	0.638
1,1-Dichloropropene	563-58-6	1.28	U	6.38	1.28	0.638
Ethylbenzene	100-41-4	1.28	U	6.38	1.28	0.638
2-Hexanone	591-78-6	6.38	U	12.8	6.38	3.19
Hexachlorobutadiene	87-68-3	1.28	U	6.38	1.28	0.638
Isopropylbenzene	98-82-8	1.28	U	6.38	1.28	0.638
p-Isopropyltoluene	99-87-6	1.28	U	6.38	1.28	0.638
4-Methyl-2-pentanone	108-10-1	6.38	U	12.8	6.38	3.19
Methylene chloride	75-09-2	2.56	U	6.38	2.56	1.28
Naphthalene	91-20-3	1.28	U	6.38	1.28	0.638
n-Propylbenzene	103-65-1	1.28	U	6.38	1.28	0.638
Styrene	100-42-5	1.28	U	6.38	1.28	0.638
1,1,1,2-Tetrachloroethane	630-20-6	1.28	U	6.38	1.28	0.638
1,1,2,2-Tetrachloroethane	79-34-5	1.28	U	6.38	1.28	0.638
Tetrachloroethene	127-18-4	1.28	U	6.38	1.28	0.638
Toluene	108-88-3	1.28	U	6.38	1.28	0.638
1,2,3-Trichlorobenzene	87-61-6	1.28	U	6.38	1.28	0.638
1,2,4-Trichlorobenzene	120-82-1	1.28	U	6.38	1.28	0.638
1,1,1-Trichloroethane	71-55-6	1.28	U	6.38	1.28	0.638
1,1,2-Trichloroethane	79-00-5	1.28	U	6.38	1.28	0.638
Trichloroethene	79-01-6	1.28	U	6.38	1.28	0.638
Trichlorofluoromethane	75-69-4	2.56	U	6.38	2.56	1.28
1,2,3-Trichloropropane	96-18-4	2.56	U	6.38	2.56	1.28
1,2,4-Trimethylbenzene	95-63-6	1.28	U	6.38	1.28	0.638
1,3,5-Trimethylbenzene	108-67-8	1.28	U	6.38	1.28	0.638
Vinyl chloride	75-01-4	2.56	U	6.38	2.56	1.28
o-Xylene	95-47-6	1.28	U	6.38	1.28	0.638
m-,p-Xylene	179601-23-1	1.28	U	6.38	1.28	0.638

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	80	120	
1,2-Dichloroethane-d4	95.2	80	120	
Toluene-d8	113	85	115	
4-Bromofluorobenzene	114	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021240-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPT04(20-21)240216	**Prep Method:**	6850	**Prep Date:**	02/25/2016 14:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558779	**Analyst:**	JWR	**Run Date:**	02/26/2016 00:36
Collect Date:	02/24/2016 10:55	**Dilution:**	1	**File ID:**	1LM.LM33377
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	27.2		4.62	2.30	1.15

Certificate of Analysis

Sample #:	L16021240-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPT04(20-21)240216FD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/28/2016 12:34
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559002	**Analyst:**	FJB	**Run Date:**	02/28/2016 23:22
Collect Date:	02/24/2016 10:55	**Dilution:**	1	**File ID:**	9M972958
Sample Tag:	02	**Units:**	ug/kg	**Percent Solid:**	85.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.8	U	25.6	12.8	6.41
Benzene	71-43-2	1.28	U	6.41	1.28	0.641
Bromobenzene	108-86-1	1.28	U	6.41	1.28	0.641
Bromochloromethane	74-97-5	2.56	U	6.41	2.56	1.28
Bromodichloromethane	75-27-4	1.28	U	6.41	1.28	0.641
Bromoform	75-25-2	1.28	U	6.41	1.28	0.641
Bromomethane	74-83-9	2.56	U	6.41	2.56	1.28
2-Butanone	78-93-3	6.40	U	12.8	6.40	3.20
n-Butylbenzene	104-51-8	1.28	U	6.41	1.28	0.641
sec-Butylbenzene	135-98-8	1.28	U	6.41	1.28	0.641
tert-Butylbenzene	98-06-6	1.28	U	6.41	1.28	0.641
Carbon disulfide	75-15-0	1.28	U	6.41	1.28	0.641
Carbon tetrachloride	56-23-5	1.28	U	6.41	1.28	0.641
Chlorobenzene	108-90-7	1.28	U	6.41	1.28	0.641
Chlorodibromomethane	124-48-1	1.28	U	6.41	1.28	0.641
Chloroethane	75-00-3	2.56	U	6.41	2.56	1.28
Chloroform	67-66-3	1.28	U	6.41	1.28	0.641
Chloromethane	74-87-3	5.12	U	12.8	5.12	2.56
2-Chlorotoluene	95-49-8	1.28	U	6.41	1.28	0.641
4-Chlorotoluene	106-43-4	1.28	U	6.41	1.28	0.641

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	5.12	U	12.8	5.12	2.56
1,2-Dibromoethane	106-93-4	1.28	U	6.41	1.28	0.641
Dibromomethane	74-95-3	1.28	U	6.41	1.28	0.641
1,2-Dichlorobenzene	95-50-1	1.28	U	6.41	1.28	0.641
1,3-Dichlorobenzene	541-73-1	1.28	U	6.41	1.28	0.641
1,4-Dichlorobenzene	106-46-7	1.28	U	6.41	1.28	0.641
Dichlorodifluoromethane	75-71-8	2.56	U	6.41	2.56	1.28
1,1-Dichloroethane	75-34-3	2.56	U	6.41	2.56	1.28
1,2-Dichloroethane	107-06-2	1.28	U	6.41	1.28	0.641
1,1-Dichloroethene	75-35-4	1.28	U	6.41	1.28	0.641
cis-1,2-Dichloroethene	156-59-2	1.28	U	6.41	1.28	0.641
trans-1,2-Dichloroethene	156-60-5	1.28	U	6.41	1.28	0.641
1,2-Dichloropropane	78-87-5	1.28	U	6.41	1.28	0.641
1,3-Dichloropropane	142-28-9	1.28	U	6.41	1.28	0.641
2,2-Dichloropropane	594-20-7	1.28	U	6.41	1.28	0.641
cis-1,3-Dichloropropene	10061-01-5	1.28	U	6.41	1.28	0.641
trans-1,3-Dichloropropene	10061-02-6	1.28	U	6.41	1.28	0.641
1,1-Dichloropropene	563-58-6	1.28	U	6.41	1.28	0.641
Ethylbenzene	100-41-4	1.28	U	6.41	1.28	0.641
2-Hexanone	591-78-6	6.40	U	12.8	6.40	3.20
Hexachlorobutadiene	87-68-3	1.28	U	6.41	1.28	0.641
Isopropylbenzene	98-82-8	1.28	U	6.41	1.28	0.641
p-Isopropyltoluene	99-87-6	1.28	U	6.41	1.28	0.641
4-Methyl-2-pentanone	108-10-1	6.40	U	12.8	6.40	3.20
Methylene chloride	75-09-2	2.56	U	6.41	2.56	1.28
Naphthalene	91-20-3	1.28	U	6.41	1.28	0.641
n-Propylbenzene	103-65-1	1.28	U	6.41	1.28	0.641
Styrene	100-42-5	1.28	U	6.41	1.28	0.641
1,1,1,2-Tetrachloroethane	630-20-6	1.28	U	6.41	1.28	0.641
1,1,2,2-Tetrachloroethane	79-34-5	1.28	U	6.41	1.28	0.641
Tetrachloroethene	127-18-4	1.28	U	6.41	1.28	0.641
Toluene	108-88-3	1.28	U	6.41	1.28	0.641
1,2,3-Trichlorobenzene	87-61-6	1.28	U	6.41	1.28	0.641
1,2,4-Trichlorobenzene	120-82-1	1.28	U	6.41	1.28	0.641
1,1,1-Trichloroethane	71-55-6	1.28	U	6.41	1.28	0.641
1,1,2-Trichloroethane	79-00-5	1.28	U	6.41	1.28	0.641
Trichloroethene	79-01-6	1.28	U	6.41	1.28	0.641
Trichlorofluoromethane	75-69-4	2.56	U	6.41	2.56	1.28
1,2,3-Trichloropropane	96-18-4	2.56	U	6.41	2.56	1.28

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.28	U	6.41	1.28	0.641
1,3,5-Trimethylbenzene	108-67-8	1.28	U	6.41	1.28	0.641
Vinyl chloride	75-01-4	2.56	U	6.41	2.56	1.28
o-Xylene	95-47-6	1.28	U	6.41	1.28	0.641
m-,p-Xylene	179601-23-1	1.28	U	6.41	1.28	0.641

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.2	80	120	
1,2-Dichloroethane-d4	97.9	80	120	
Toluene-d8	110	85	115	
4-Bromofluorobenzene	114	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021240-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPT04(20-21)240216FD	**Prep Method:**	6850	**Prep Date:**	02/25/2016 14:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558779	**Analyst:**	JWR	**Run Date:**	02/26/2016 00:55
Collect Date:	02/24/2016 10:55	**Dilution:**	1	**File ID:**	1LM.LM33378
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	26.7		4.58	2.30	1.15

Certificate of Analysis

Sample #:	L16021240-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT04(25-25.5)240216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/26/2016 14:11
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG558910	**Analyst:**	ADC	**Run Date:**	02/26/2016 23:22
Collect Date:	02/24/2016 11:22	**Dilution:**	1	**File ID:**	9M972927
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	25.0	12.5	6.24
Benzene	71-43-2	1.25	U	6.24	1.25	0.624
Bromobenzene	108-86-1	1.25	U	6.24	1.25	0.624
Bromochloromethane	74-97-5	2.50	U	6.24	2.50	1.25
Bromodichloromethane	75-27-4	1.25	U	6.24	1.25	0.624
Bromoform	75-25-2	1.25	U	6.24	1.25	0.624
Bromomethane	74-83-9	2.50	U	6.24	2.50	1.25
2-Butanone	78-93-3	6.24	U	12.5	6.24	3.12
n-Butylbenzene	104-51-8	1.25	U	6.24	1.25	0.624
sec-Butylbenzene	135-98-8	1.25	U	6.24	1.25	0.624
tert-Butylbenzene	98-06-6	1.25	U	6.24	1.25	0.624
Carbon disulfide	75-15-0	1.25	U	6.24	1.25	0.624
Carbon tetrachloride	56-23-5	1.25	U	6.24	1.25	0.624
Chlorobenzene	108-90-7	1.25	U	6.24	1.25	0.624
Chlorodibromomethane	124-48-1	1.25	U	6.24	1.25	0.624
Chloroethane	75-00-3	2.50	U	6.24	2.50	1.25
Chloroform	67-66-3	1.25	U	6.24	1.25	0.624
Chloromethane	74-87-3	5.00	U	12.5	5.00	2.50
2-Chlorotoluene	95-49-8	1.25	U	6.24	1.25	0.624
4-Chlorotoluene	106-43-4	1.25	U	6.24	1.25	0.624

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	5.00	U	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	6.24	1.25	0.624
Dibromomethane	74-95-3	1.25	U	6.24	1.25	0.624
1,2-Dichlorobenzene	95-50-1	1.25	U	6.24	1.25	0.624
1,3-Dichlorobenzene	541-73-1	1.25	U	6.24	1.25	0.624
1,4-Dichlorobenzene	106-46-7	1.25	U	6.24	1.25	0.624
Dichlorodifluoromethane	75-71-8	2.50	U	6.24	2.50	1.25
1,1-Dichloroethane	75-34-3	2.50	U	6.24	2.50	1.25
1,2-Dichloroethane	107-06-2	1.25	U	6.24	1.25	0.624
1,1-Dichloroethene	75-35-4	1.25	U	6.24	1.25	0.624
cis-1,2-Dichloroethene	156-59-2	1.25	U	6.24	1.25	0.624
trans-1,2-Dichloroethene	156-60-5	1.25	U	6.24	1.25	0.624
1,2-Dichloropropane	78-87-5	1.25	U	6.24	1.25	0.624
1,3-Dichloropropane	142-28-9	1.25	U	6.24	1.25	0.624
2,2-Dichloropropane	594-20-7	1.25	U	6.24	1.25	0.624
cis-1,3-Dichloropropene	10061-01-5	1.25	U	6.24	1.25	0.624
trans-1,3-Dichloropropene	10061-02-6	1.25	U	6.24	1.25	0.624
1,1-Dichloropropene	563-58-6	1.25	U	6.24	1.25	0.624
Ethylbenzene	100-41-4	1.25	U	6.24	1.25	0.624
2-Hexanone	591-78-6	6.24	U	12.5	6.24	3.12
Hexachlorobutadiene	87-68-3	1.25	U	6.24	1.25	0.624
Isopropylbenzene	98-82-8	1.25	U	6.24	1.25	0.624
p-Isopropyltoluene	99-87-6	1.25	U	6.24	1.25	0.624
4-Methyl-2-pentanone	108-10-1	6.24	U	12.5	6.24	3.12
Methylene chloride	75-09-2	2.50	U	6.24	2.50	1.25
Naphthalene	91-20-3	1.25	U	6.24	1.25	0.624
n-Propylbenzene	103-65-1	1.25	U	6.24	1.25	0.624
Styrene	100-42-5	1.25	U	6.24	1.25	0.624
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	6.24	1.25	0.624
1,1,2,2-Tetrachloroethane	79-34-5	1.25	U	6.24	1.25	0.624
Tetrachloroethene	127-18-4	1.25	U	6.24	1.25	0.624
Toluene	108-88-3	1.25	U	6.24	1.25	0.624
1,2,3-Trichlorobenzene	87-61-6	1.25	U	6.24	1.25	0.624
1,2,4-Trichlorobenzene	120-82-1	1.25	U	6.24	1.25	0.624
1,1,1-Trichloroethane	71-55-6	1.25	U	6.24	1.25	0.624
1,1,2-Trichloroethane	79-00-5	1.25	U	6.24	1.25	0.624
Trichloroethene	79-01-6	1.25	U	6.24	1.25	0.624
Trichlorofluoromethane	75-69-4	2.50	U	6.24	2.50	1.25
1,2,3-Trichloropropane	96-18-4	2.50	U	6.24	2.50	1.25

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Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.25	U	6.24	1.25	0.624
1,3,5-Trimethylbenzene	108-67-8	1.25	U	6.24	1.25	0.624
Vinyl chloride	75-01-4	2.50	U	6.24	2.50	1.25
o-Xylene	95-47-6	1.25	U	6.24	1.25	0.624
m-,p-Xylene	179601-23-1	1.25	U	6.24	1.25	0.624

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	80	120	
1,2-Dichloroethane-d4	101	80	120	
Toluene-d8	109	85	115	
4-Bromofluorobenzene	111	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021240-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT04(25-25.5)240216	**Prep Method:**	6850	**Prep Date:**	02/25/2016 14:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558779	**Analyst:**	JWR	**Run Date:**	02/26/2016 13:21
Collect Date:	02/24/2016 11:22	**Dilution:**	5	**File ID:**	1LM.LM33394
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	83.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	152		23.2	11.6	5.80

Certificate of Analysis

Sample #:	L16021240-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT04(29-30)240216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/26/2016 14:12
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG558910	**Analyst:**	ADC	**Run Date:**	02/26/2016 23:53
Collect Date:	02/24/2016 12:00	**Dilution:**	1	**File ID:**	9M972928
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.9	U	23.8	11.9	5.94
Benzene	71-43-2	1.19	U	5.94	1.19	0.594
Bromobenzene	108-86-1	1.19	U	5.94	1.19	0.594
Bromochloromethane	74-97-5	2.38	U	5.94	2.38	1.19
Bromodichloromethane	75-27-4	1.19	U	5.94	1.19	0.594
Bromoform	75-25-2	1.19	U	5.94	1.19	0.594
Bromomethane	74-83-9	2.38	U	5.94	2.38	1.19
2-Butanone	78-93-3	5.94	U	11.9	5.94	2.97
n-Butylbenzene	104-51-8	1.19	U	5.94	1.19	0.594
sec-Butylbenzene	135-98-8	1.19	U	5.94	1.19	0.594
tert-Butylbenzene	98-06-6	1.19	U	5.94	1.19	0.594
Carbon disulfide	75-15-0	1.19	U	5.94	1.19	0.594
Carbon tetrachloride	56-23-5	1.19	U	5.94	1.19	0.594
Chlorobenzene	108-90-7	1.19	U	5.94	1.19	0.594
Chlorodibromomethane	124-48-1	1.19	U	5.94	1.19	0.594
Chloroethane	75-00-3	2.38	U	5.94	2.38	1.19
Chloroform	67-66-3	1.19	U	5.94	1.19	0.594
Chloromethane	74-87-3	4.76	U	11.9	4.76	2.38
2-Chlorotoluene	95-49-8	1.19	U	5.94	1.19	0.594
4-Chlorotoluene	106-43-4	1.19	U	5.94	1.19	0.594

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Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	4.76	U	11.9	4.76	2.38
1,2-Dibromoethane	106-93-4	1.19	U	5.94	1.19	0.594
Dibromomethane	74-95-3	1.19	U	5.94	1.19	0.594
1,2-Dichlorobenzene	95-50-1	1.19	U	5.94	1.19	0.594
1,3-Dichlorobenzene	541-73-1	1.19	U	5.94	1.19	0.594
1,4-Dichlorobenzene	106-46-7	1.19	U	5.94	1.19	0.594
Dichlorodifluoromethane	75-71-8	2.38	U	5.94	2.38	1.19
1,1-Dichloroethane	75-34-3	2.38	U	5.94	2.38	1.19
1,2-Dichloroethane	107-06-2	1.19	U	5.94	1.19	0.594
1,1-Dichloroethene	75-35-4	1.19	U	5.94	1.19	0.594
cis-1,2-Dichloroethene	156-59-2	1.19	U	5.94	1.19	0.594
trans-1,2-Dichloroethene	156-60-5	1.19	U	5.94	1.19	0.594
1,2-Dichloropropane	78-87-5	1.19	U	5.94	1.19	0.594
1,3-Dichloropropane	142-28-9	1.19	U	5.94	1.19	0.594
2,2-Dichloropropane	594-20-7	1.19	U	5.94	1.19	0.594
cis-1,3-Dichloropropene	10061-01-5	1.19	U	5.94	1.19	0.594
trans-1,3-Dichloropropene	10061-02-6	1.19	U	5.94	1.19	0.594
1,1-Dichloropropene	563-58-6	1.19	U	5.94	1.19	0.594
Ethylbenzene	100-41-4	1.19	U	5.94	1.19	0.594
2-Hexanone	591-78-6	5.94	U	11.9	5.94	2.97
Hexachlorobutadiene	87-68-3	1.19	U	5.94	1.19	0.594
Isopropylbenzene	98-82-8	1.19	U	5.94	1.19	0.594
p-Isopropyltoluene	99-87-6	1.19	U	5.94	1.19	0.594
4-Methyl-2-pentanone	108-10-1	5.94	U	11.9	5.94	2.97
Methylene chloride	75-09-2	2.38	U	5.94	2.38	1.19
Naphthalene	91-20-3	1.19	U	5.94	1.19	0.594
n-Propylbenzene	103-65-1	1.19	U	5.94	1.19	0.594
Styrene	100-42-5	1.19	U	5.94	1.19	0.594
1,1,1,2-Tetrachloroethane	630-20-6	1.19	U	5.94	1.19	0.594
1,1,2,2-Tetrachloroethane	79-34-5	1.19	U	5.94	1.19	0.594
Tetrachloroethene	127-18-4	1.19	U	5.94	1.19	0.594
Toluene	108-88-3	1.19	U	5.94	1.19	0.594
1,2,3-Trichlorobenzene	87-61-6	1.19	U	5.94	1.19	0.594
1,2,4-Trichlorobenzene	120-82-1	1.19	U	5.94	1.19	0.594
1,1,1-Trichloroethane	71-55-6	1.19	U	5.94	1.19	0.594
1,1,2-Trichloroethane	79-00-5	1.19	U	5.94	1.19	0.594
Trichloroethene	79-01-6	1.19	U	5.94	1.19	0.594
Trichlorofluoromethane	75-69-4	2.38	U	5.94	2.38	1.19
1,2,3-Trichloropropane	96-18-4	2.38	U	5.94	2.38	1.19

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Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.19	U	5.94	1.19	0.594
1,3,5-Trimethylbenzene	108-67-8	1.19	U	5.94	1.19	0.594
Vinyl chloride	75-01-4	2.38	U	5.94	2.38	1.19
o-Xylene	95-47-6	1.19	U	5.94	1.19	0.594
m-,p-Xylene	179601-23-1	1.19	U	5.94	1.19	0.594

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.7	80	120	
1,2-Dichloroethane-d4	93.4	80	120	
Toluene-d8	109	85	115	
4-Bromofluorobenzene	111	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021240-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT04(29-30)240216	**Prep Method:**	6850	**Prep Date:**	02/25/2016 14:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558779	**Analyst:**	JWR	**Run Date:**	02/26/2016 13:40
Collect Date:	02/24/2016 12:00	**Dilution:**	20	**File ID:**	1LM.LM33395
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	79.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	672		97.4	48.6	24.3

Certificate of Analysis

Sample #:	L16021240-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT04(36.5-37)240216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/26/2016 14:13
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG558910	**Analyst:**	ADC	**Run Date:**	02/27/2016 00:23
Collect Date:	02/24/2016 15:15	**Dilution:**	1	**File ID:**	9M972929
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.1	U	24.2	12.1	6.04
Benzene	71-43-2	1.21	U	6.04	1.21	0.604
Bromobenzene	108-86-1	1.21	U	6.04	1.21	0.604
Bromochloromethane	74-97-5	2.42	U	6.04	2.42	1.21
Bromodichloromethane	75-27-4	1.21	U	6.04	1.21	0.604
Bromoform	75-25-2	1.21	U	6.04	1.21	0.604
Bromomethane	74-83-9	2.42	U	6.04	2.42	1.21
2-Butanone	78-93-3	6.04	U	12.1	6.04	3.02
n-Butylbenzene	104-51-8	1.21	U	6.04	1.21	0.604
sec-Butylbenzene	135-98-8	1.21	U	6.04	1.21	0.604
tert-Butylbenzene	98-06-6	1.21	U	6.04	1.21	0.604
Carbon disulfide	75-15-0	1.21	U	6.04	1.21	0.604
Carbon tetrachloride	56-23-5	1.21	U	6.04	1.21	0.604
Chlorobenzene	108-90-7	1.21	U	6.04	1.21	0.604
Chlorodibromomethane	124-48-1	1.21	U	6.04	1.21	0.604
Chloroethane	75-00-3	2.42	U	6.04	2.42	1.21
Chloroform	67-66-3	1.21	U	6.04	1.21	0.604
Chloromethane	74-87-3	4.84	U	12.1	4.84	2.42
2-Chlorotoluene	95-49-8	1.21	U	6.04	1.21	0.604
4-Chlorotoluene	106-43-4	1.21	U	6.04	1.21	0.604

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Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	4.84	U	12.1	4.84	2.42
1,2-Dibromoethane	106-93-4	1.21	U	6.04	1.21	0.604
Dibromomethane	74-95-3	1.21	U	6.04	1.21	0.604
1,2-Dichlorobenzene	95-50-1	1.21	U	6.04	1.21	0.604
1,3-Dichlorobenzene	541-73-1	1.21	U	6.04	1.21	0.604
1,4-Dichlorobenzene	106-46-7	1.21	U	6.04	1.21	0.604
Dichlorodifluoromethane	75-71-8	2.42	U	6.04	2.42	1.21
1,1-Dichloroethane	75-34-3	2.42	U	6.04	2.42	1.21
1,2-Dichloroethane	107-06-2	1.21	U	6.04	1.21	0.604
1,1-Dichloroethene	75-35-4	1.21	U	6.04	1.21	0.604
cis-1,2-Dichloroethene	156-59-2	1.21	U	6.04	1.21	0.604
trans-1,2-Dichloroethene	156-60-5	1.21	U	6.04	1.21	0.604
1,2-Dichloropropane	78-87-5	1.21	U	6.04	1.21	0.604
1,3-Dichloropropane	142-28-9	1.21	U	6.04	1.21	0.604
2,2-Dichloropropane	594-20-7	1.21	U	6.04	1.21	0.604
cis-1,3-Dichloropropene	10061-01-5	1.21	U	6.04	1.21	0.604
trans-1,3-Dichloropropene	10061-02-6	1.21	U	6.04	1.21	0.604
1,1-Dichloropropene	563-58-6	1.21	U	6.04	1.21	0.604
Ethylbenzene	100-41-4	1.21	U	6.04	1.21	0.604
2-Hexanone	591-78-6	6.04	U	12.1	6.04	3.02
Hexachlorobutadiene	87-68-3	1.21	U	6.04	1.21	0.604
Isopropylbenzene	98-82-8	1.21	U	6.04	1.21	0.604
p-Isopropyltoluene	99-87-6	1.21	U	6.04	1.21	0.604
4-Methyl-2-pentanone	108-10-1	6.04	U	12.1	6.04	3.02
Methylene chloride	75-09-2	2.42	U	6.04	2.42	1.21
Naphthalene	91-20-3	1.21	U	6.04	1.21	0.604
n-Propylbenzene	103-65-1	1.21	U	6.04	1.21	0.604
Styrene	100-42-5	1.21	U	6.04	1.21	0.604
1,1,1,2-Tetrachloroethane	630-20-6	1.21	U	6.04	1.21	0.604
1,1,2,2-Tetrachloroethane	79-34-5	1.21	U	6.04	1.21	0.604
Tetrachloroethene	127-18-4	1.21	U	6.04	1.21	0.604
Toluene	108-88-3	1.21	U	6.04	1.21	0.604
1,2,3-Trichlorobenzene	87-61-6	1.21	U	6.04	1.21	0.604
1,2,4-Trichlorobenzene	120-82-1	1.21	U	6.04	1.21	0.604
1,1,1-Trichloroethane	71-55-6	1.21	U	6.04	1.21	0.604
1,1,2-Trichloroethane	79-00-5	1.21	U	6.04	1.21	0.604
Trichloroethene	79-01-6	3.20	J	6.04	1.21	0.604
Trichlorofluoromethane	75-69-4	2.42	U	6.04	2.42	1.21
1,2,3-Trichloropropane	96-18-4	2.42	U	6.04	2.42	1.21

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Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.21	U	6.04	1.21	0.604
1,3,5-Trimethylbenzene	108-67-8	1.21	U	6.04	1.21	0.604
Vinyl chloride	75-01-4	2.42	U	6.04	2.42	1.21
o-Xylene	95-47-6	1.21	U	6.04	1.21	0.604
m-,p-Xylene	179601-23-1	1.21	U	6.04	1.21	0.604

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	80	120	
1,2-Dichloroethane-d4	102	80	120	
Toluene-d8	106	85	115	
4-Bromofluorobenzene	110	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021240-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT04(36.5-37)240216	**Prep Method:**	6850	**Prep Date:**	02/25/2016 14:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558779	**Analyst:**	JWR	**Run Date:**	02/26/2016 13:59
Collect Date:	02/24/2016 15:15	**Dilution:**	50	**File ID:**	1LM.LM33396
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	79.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3200		248	124	62.0

Certificate of Analysis

Sample #:	L16021240-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT04(34-34.5)240216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/26/2016 14:13
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG558910	**Analyst:**	ADC	**Run Date:**	02/27/2016 00:53
Collect Date:	02/24/2016 15:15	**Dilution:**	1	**File ID:**	9M972930
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	25.1	12.5	6.27
Benzene	71-43-2	1.25	U	6.27	1.25	0.627
Bromobenzene	108-86-1	1.25	U	6.27	1.25	0.627
Bromochloromethane	74-97-5	2.50	U	6.27	2.50	1.25
Bromodichloromethane	75-27-4	1.25	U	6.27	1.25	0.627
Bromoform	75-25-2	1.25	U	6.27	1.25	0.627
Bromomethane	74-83-9	2.50	U	6.27	2.50	1.25
2-Butanone	78-93-3	6.28	U	12.5	6.28	3.14
n-Butylbenzene	104-51-8	1.25	U	6.27	1.25	0.627
sec-Butylbenzene	135-98-8	1.25	U	6.27	1.25	0.627
tert-Butylbenzene	98-06-6	1.25	U	6.27	1.25	0.627
Carbon disulfide	75-15-0	1.25	U	6.27	1.25	0.627
Carbon tetrachloride	56-23-5	1.25	U	6.27	1.25	0.627
Chlorobenzene	108-90-7	1.25	U	6.27	1.25	0.627
Chlorodibromomethane	124-48-1	1.25	U	6.27	1.25	0.627
Chloroethane	75-00-3	2.50	U	6.27	2.50	1.25
Chloroform	67-66-3	1.25	U	6.27	1.25	0.627
Chloromethane	74-87-3	5.02	U	12.5	5.02	2.51
2-Chlorotoluene	95-49-8	1.25	U	6.27	1.25	0.627
4-Chlorotoluene	106-43-4	1.25	U	6.27	1.25	0.627

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Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	5.02	U	12.5	5.02	2.51
1,2-Dibromoethane	106-93-4	1.25	U	6.27	1.25	0.627
Dibromomethane	74-95-3	1.25	U	6.27	1.25	0.627
1,2-Dichlorobenzene	95-50-1	1.25	U	6.27	1.25	0.627
1,3-Dichlorobenzene	541-73-1	1.25	U	6.27	1.25	0.627
1,4-Dichlorobenzene	106-46-7	1.25	U	6.27	1.25	0.627
Dichlorodifluoromethane	75-71-8	2.50	U	6.27	2.50	1.25
1,1-Dichloroethane	75-34-3	2.50	U	6.27	2.50	1.25
1,2-Dichloroethane	107-06-2	1.25	U	6.27	1.25	0.627
1,1-Dichloroethene	75-35-4	1.25	U	6.27	1.25	0.627
cis-1,2-Dichloroethene	156-59-2	1.25	U	6.27	1.25	0.627
trans-1,2-Dichloroethene	156-60-5	1.25	U	6.27	1.25	0.627
1,2-Dichloropropane	78-87-5	1.25	U	6.27	1.25	0.627
1,3-Dichloropropane	142-28-9	1.25	U	6.27	1.25	0.627
2,2-Dichloropropane	594-20-7	1.25	U	6.27	1.25	0.627
cis-1,3-Dichloropropene	10061-01-5	1.25	U	6.27	1.25	0.627
trans-1,3-Dichloropropene	10061-02-6	1.25	U	6.27	1.25	0.627
1,1-Dichloropropene	563-58-6	1.25	U	6.27	1.25	0.627
Ethylbenzene	100-41-4	1.25	U	6.27	1.25	0.627
2-Hexanone	591-78-6	6.28	U	12.5	6.28	3.14
Hexachlorobutadiene	87-68-3	1.25	U	6.27	1.25	0.627
Isopropylbenzene	98-82-8	1.25	U	6.27	1.25	0.627
p-Isopropyltoluene	99-87-6	1.25	U	6.27	1.25	0.627
4-Methyl-2-pentanone	108-10-1	6.28	U	12.5	6.28	3.14
Methylene chloride	75-09-2	2.50	U	6.27	2.50	1.25
Naphthalene	91-20-3	1.25	U	6.27	1.25	0.627
n-Propylbenzene	103-65-1	1.25	U	6.27	1.25	0.627
Styrene	100-42-5	1.25	U	6.27	1.25	0.627
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	6.27	1.25	0.627
1,1,2,2-Tetrachloroethane	79-34-5	1.25	U	6.27	1.25	0.627
Tetrachloroethene	127-18-4	1.25	U	6.27	1.25	0.627
Toluene	108-88-3	1.25	U	6.27	1.25	0.627
1,2,3-Trichlorobenzene	87-61-6	1.25	U	6.27	1.25	0.627
1,2,4-Trichlorobenzene	120-82-1	1.25	U	6.27	1.25	0.627
1,1,1-Trichloroethane	71-55-6	1.25	U	6.27	1.25	0.627
1,1,2-Trichloroethane	79-00-5	1.25	U	6.27	1.25	0.627
Trichloroethene	79-01-6	1.25	U	6.27	1.25	0.627
Trichlorofluoromethane	75-69-4	2.50	U	6.27	2.50	1.25
1,2,3-Trichloropropane	96-18-4	2.50	U	6.27	2.50	1.25

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Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.25	U	6.27	1.25	0.627
1,3,5-Trimethylbenzene	108-67-8	1.25	U	6.27	1.25	0.627
Vinyl chloride	75-01-4	2.50	U	6.27	2.50	1.25
o-Xylene	95-47-6	1.25	U	6.27	1.25	0.627
m-,p-Xylene	179601-23-1	1.25	U	6.27	1.25	0.627

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.0	80	120	
1,2-Dichloroethane-d4	95.6	80	120	
Toluene-d8	107	85	115	
4-Bromofluorobenzene	110	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021240-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT04(34-34.5)240216	**Prep Method:**	6850	**Prep Date:**	02/25/2016 14:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558779	**Analyst:**	JWR	**Run Date:**	02/26/2016 12:24
Collect Date:	02/24/2016 15:15	**Dilution:**	50	**File ID:**	1LM.LM33391
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	84.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2180		232	116	57.9

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Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #: L16021240-01 **Client ID:** 18CPT04(5-5.5)240216 **Matrix:** Soil **Collect Date:** 02/24/2016 10:00

Analyte	Result	Units	Qualifier
Percent Solids	79.9	weight %	

Sample #: L16021240-02 **Client ID:** 18DPT04(15-15.5)240216 **Matrix:** Soil **Collect Date:** 02/24/2016 10:28

Analyte	Result	Units	Qualifier
Percent Solids	80.1	weight %	

Sample #: L16021240-03 **Client ID:** 18CPT04(20-21)240216 **Matrix:** Soil **Collect Date:** 02/24/2016 10:55

Analyte	Result	Units	Qualifier
Percent Solids	84.5	weight %	

Sample #: L16021240-04 **Client ID:** 18CPT04(20-21)240216FD **Matrix:** Soil **Collect Date:** 02/24/2016 10:55

Analyte	Result	Units	Qualifier
Percent Solids	85.0	weight %	

Sample #: L16021240-05 **Client ID:** 18DPT04(25-25.5)240216 **Matrix:** Soil **Collect Date:** 02/24/2016 11:22

Analyte	Result	Units	Qualifier
Percent Solids	83.6	weight %	

Sample #: L16021240-06 **Client ID:** 18DPT04(29-30)240216 **Matrix:** Soil **Collect Date:** 02/24/2016 12:00

Analyte	Result	Units	Qualifier
Percent Solids	79.2	weight %	

Sample #: L16021240-07 **Client ID:** 18DPT04(36.5-37)240216 **Matrix:** Soil **Collect Date:** 02/24/2016 15:15

Analyte	Result	Units	Qualifier
Percent Solids	79.7	weight %	

Sample #: L16021240-08 **Client ID:** 18DPT04(34-34.5)240216 **Matrix:** Soil **Collect Date:** 02/24/2016 15:15

Analyte	Result	Units	Qualifier
Percent Solids	84.6	weight %	

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

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Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021240-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPT04(5-5.5)240216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/26/2016 14:09
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG558910	**Analyst:**	ADC	**Run Date:**	02/26/2016 21:20
Collect Date:	02/24/2016 10:00	**Dilution:**	1	**File ID:**	9M972923
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.5	U	26.9	13.5	6.73
Benzene	71-43-2	1.35	U	6.73	1.35	0.673
Bromobenzene	108-86-1	1.35	U	6.73	1.35	0.673
Bromochloromethane	74-97-5	2.70	U	6.73	2.70	1.35
Bromodichloromethane	75-27-4	1.35	U	6.73	1.35	0.673
Bromoform	75-25-2	1.35	U	6.73	1.35	0.673
Bromomethane	74-83-9	2.70	U	6.73	2.70	1.35
2-Butanone	78-93-3	6.72	U	13.5	6.72	3.36
n-Butylbenzene	104-51-8	1.35	U	6.73	1.35	0.673
sec-Butylbenzene	135-98-8	1.35	U	6.73	1.35	0.673
tert-Butylbenzene	98-06-6	1.35	U	6.73	1.35	0.673
Carbon disulfide	75-15-0	1.35	U	6.73	1.35	0.673
Carbon tetrachloride	56-23-5	1.35	U	6.73	1.35	0.673
Chlorobenzene	108-90-7	1.35	U	6.73	1.35	0.673
Chlorodibromomethane	124-48-1	1.35	U	6.73	1.35	0.673
Chloroethane	75-00-3	2.70	U	6.73	2.70	1.35
Chloroform	67-66-3	1.35	U	6.73	1.35	0.673
Chloromethane	74-87-3	5.38	U	13.5	5.38	2.69
2-Chlorotoluene	95-49-8	1.35	U	6.73	1.35	0.673
4-Chlorotoluene	106-43-4	1.35	U	6.73	1.35	0.673
1,2-Dibromo-3-chloropropane	96-12-8	5.38	U	13.5	5.38	2.69
1,2-Dibromoethane	106-93-4	1.35	U	6.73	1.35	0.673
Dibromomethane	74-95-3	1.35	U	6.73	1.35	0.673
1,2-Dichlorobenzene	95-50-1	1.35	U	6.73	1.35	0.673
1,3-Dichlorobenzene	541-73-1	1.35	U	6.73	1.35	0.673
1,4-Dichlorobenzene	106-46-7	1.35	U	6.73	1.35	0.673
Dichlorodifluoromethane	75-71-8	2.70	U	6.73	2.70	1.35
1,1-Dichloroethane	75-34-3	2.70	U	6.73	2.70	1.35
1,2-Dichloroethane	107-06-2	1.35	U	6.73	1.35	0.673
1,1-Dichloroethene	75-35-4	1.35	U	6.73	1.35	0.673
cis-1,2-Dichloroethene	156-59-2	1.35	U	6.73	1.35	0.673
trans-1,2-Dichloroethene	156-60-5	1.35	U	6.73	1.35	0.673

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Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.35	U	6.73	1.35	0.673
1,3-Dichloropropane	142-28-9	1.35	U	6.73	1.35	0.673
2,2-Dichloropropane	594-20-7	1.35	U	6.73	1.35	0.673
cis-1,3-Dichloropropene	10061-01-5	1.35	U	6.73	1.35	0.673
trans-1,3-Dichloropropene	10061-02-6	1.35	U	6.73	1.35	0.673
1,1-Dichloropropene	563-58-6	1.35	U	6.73	1.35	0.673
Ethylbenzene	100-41-4	1.35	U	6.73	1.35	0.673
2-Hexanone	591-78-6	6.72	U	13.5	6.72	3.36
Hexachlorobutadiene	87-68-3	1.35	U	6.73	1.35	0.673
Isopropylbenzene	98-82-8	1.35	U	6.73	1.35	0.673
p-Isopropyltoluene	99-87-6	1.35	U	6.73	1.35	0.673
4-Methyl-2-pentanone	108-10-1	6.72	U	13.5	6.72	3.36
Methylene chloride	75-09-2	2.70	U	6.73	2.70	1.35
Naphthalene	91-20-3	1.35	U	6.73	1.35	0.673
n-Propylbenzene	103-65-1	1.35	U	6.73	1.35	0.673
Styrene	100-42-5	1.35	U	6.73	1.35	0.673
1,1,1,2-Tetrachloroethane	630-20-6	1.35	U	6.73	1.35	0.673
1,1,2,2-Tetrachloroethane	79-34-5	1.35	U	6.73	1.35	0.673
Tetrachloroethene	127-18-4	1.35	U	6.73	1.35	0.673
Toluene	108-88-3	1.35	U	6.73	1.35	0.673
1,2,3-Trichlorobenzene	87-61-6	1.35	U	6.73	1.35	0.673
1,2,4-Trichlorobenzene	120-82-1	1.35	U	6.73	1.35	0.673
1,1,1-Trichloroethane	71-55-6	1.35	U	6.73	1.35	0.673
1,1,2-Trichloroethane	79-00-5	1.35	U	6.73	1.35	0.673
Trichloroethene	79-01-6	1.35	U	6.73	1.35	0.673
Trichlorofluoromethane	75-69-4	2.70	U	6.73	2.70	1.35
1,2,3-Trichloropropane	96-18-4	2.70	U	6.73	2.70	1.35
1,2,4-Trimethylbenzene	95-63-6	1.35	U	6.73	1.35	0.673
1,3,5-Trimethylbenzene	108-67-8	1.35	U	6.73	1.35	0.673
Vinyl chloride	75-01-4	2.70	U	6.73	2.70	1.35
o-Xylene	95-47-6	1.35	U	6.73	1.35	0.673
m-,p-Xylene	179601-23-1	1.35	U	6.73	1.35	0.673

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.7	80	120	
1,2-Dichloroethane-d4	94.6	80	120	
Toluene-d8	108	85	115	
4-Bromofluorobenzene	111	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021240-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT04(15-15.5)240216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/26/2016 14:10
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG558910	**Analyst:**	ADC	**Run Date:**	02/26/2016 21:50
Collect Date:	02/24/2016 10:28	**Dilution:**	1	**File ID:**	9M972924
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	7.38	J	26.5	13.2	6.61
Benzene	71-43-2	1.32	U	6.61	1.32	0.661
Bromobenzene	108-86-1	1.32	U	6.61	1.32	0.661
Bromochloromethane	74-97-5	2.64	U	6.61	2.64	1.32
Bromodichloromethane	75-27-4	1.32	U	6.61	1.32	0.661
Bromoform	75-25-2	1.32	U	6.61	1.32	0.661
Bromomethane	74-83-9	2.64	U	6.61	2.64	1.32
2-Butanone	78-93-3	6.62	U	13.2	6.62	3.31
n-Butylbenzene	104-51-8	1.32	U	6.61	1.32	0.661
sec-Butylbenzene	135-98-8	1.32	U	6.61	1.32	0.661
tert-Butylbenzene	98-06-6	1.32	U	6.61	1.32	0.661
Carbon disulfide	75-15-0	1.32	U	6.61	1.32	0.661
Carbon tetrachloride	56-23-5	1.32	U	6.61	1.32	0.661
Chlorobenzene	108-90-7	1.32	U	6.61	1.32	0.661
Chlorodibromomethane	124-48-1	1.32	U	6.61	1.32	0.661
Chloroethane	75-00-3	2.64	U	6.61	2.64	1.32
Chloroform	67-66-3	1.32	U	6.61	1.32	0.661
Chloromethane	74-87-3	5.30	U	13.2	5.30	2.65
2-Chlorotoluene	95-49-8	1.32	U	6.61	1.32	0.661
4-Chlorotoluene	106-43-4	1.32	U	6.61	1.32	0.661
1,2-Dibromo-3-chloropropane	96-12-8	5.30	U	13.2	5.30	2.65
1,2-Dibromoethane	106-93-4	1.32	U	6.61	1.32	0.661
Dibromomethane	74-95-3	1.32	U	6.61	1.32	0.661
1,2-Dichlorobenzene	95-50-1	1.32	U	6.61	1.32	0.661
1,3-Dichlorobenzene	541-73-1	1.32	U	6.61	1.32	0.661
1,4-Dichlorobenzene	106-46-7	1.32	U	6.61	1.32	0.661
Dichlorodifluoromethane	75-71-8	2.64	U	6.61	2.64	1.32
1,1-Dichloroethane	75-34-3	2.64	U	6.61	2.64	1.32
1,2-Dichloroethane	107-06-2	1.32	U	6.61	1.32	0.661
1,1-Dichloroethene	75-35-4	1.32	U	6.61	1.32	0.661
cis-1,2-Dichloroethene	156-59-2	1.32	U	6.61	1.32	0.661

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.32	U	6.61	1.32	0.661
1,2-Dichloropropane	78-87-5	1.32	U	6.61	1.32	0.661
1,3-Dichloropropane	142-28-9	1.32	U	6.61	1.32	0.661
2,2-Dichloropropane	594-20-7	1.32	U	6.61	1.32	0.661
cis-1,3-Dichloropropene	10061-01-5	1.32	U	6.61	1.32	0.661
trans-1,3-Dichloropropene	10061-02-6	1.32	U	6.61	1.32	0.661
1,1-Dichloropropene	563-58-6	1.32	U	6.61	1.32	0.661
Ethylbenzene	100-41-4	1.32	U	6.61	1.32	0.661
2-Hexanone	591-78-6	6.62	U	13.2	6.62	3.31
Hexachlorobutadiene	87-68-3	1.32	U	6.61	1.32	0.661
Isopropylbenzene	98-82-8	1.32	U	6.61	1.32	0.661
p-Isopropyltoluene	99-87-6	1.32	U	6.61	1.32	0.661
4-Methyl-2-pentanone	108-10-1	6.62	U	13.2	6.62	3.31
Methylene chloride	75-09-2	2.64	U	6.61	2.64	1.32
Naphthalene	91-20-3	1.32	U	6.61	1.32	0.661
n-Propylbenzene	103-65-1	1.32	U	6.61	1.32	0.661
Styrene	100-42-5	1.32	U	6.61	1.32	0.661
1,1,1,2-Tetrachloroethane	630-20-6	1.32	U	6.61	1.32	0.661
1,1,2,2-Tetrachloroethane	79-34-5	1.32	U	6.61	1.32	0.661
Tetrachloroethene	127-18-4	1.32	U	6.61	1.32	0.661
Toluene	108-88-3	1.32	U	6.61	1.32	0.661
1,2,3-Trichlorobenzene	87-61-6	1.32	U	6.61	1.32	0.661
1,2,4-Trichlorobenzene	120-82-1	1.32	U	6.61	1.32	0.661
1,1,1-Trichloroethane	71-55-6	1.32	U	6.61	1.32	0.661
1,1,2-Trichloroethane	79-00-5	1.32	U	6.61	1.32	0.661
Trichloroethene	79-01-6	1.32	U	6.61	1.32	0.661
Trichlorofluoromethane	75-69-4	2.64	U	6.61	2.64	1.32
1,2,3-Trichloropropane	96-18-4	2.64	U	6.61	2.64	1.32
1,2,4-Trimethylbenzene	95-63-6	1.32	U	6.61	1.32	0.661
1,3,5-Trimethylbenzene	108-67-8	1.32	U	6.61	1.32	0.661
Vinyl chloride	75-01-4	2.64	U	6.61	2.64	1.32
o-Xylene	95-47-6	1.32	U	6.61	1.32	0.661
m-,p-Xylene	179601-23-1	1.32	U	6.61	1.32	0.661

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.4	80	120	
1,2-Dichloroethane-d4	93.6	80	120	
Toluene-d8	111	85	115	
4-Bromofluorobenzene	114	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021240-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPT04(20-21)240216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/26/2016 14:10
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG558910	**Analyst:**	ADC	**Run Date:**	02/26/2016 22:21
Collect Date:	02/24/2016 10:55	**Dilution:**	1	**File ID:**	9M972925
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.8	U	25.5	12.8	6.38
Benzene	71-43-2	1.28	U	6.38	1.28	0.638
Bromobenzene	108-86-1	1.28	U	6.38	1.28	0.638
Bromochloromethane	74-97-5	2.56	U	6.38	2.56	1.28
Bromodichloromethane	75-27-4	1.28	U	6.38	1.28	0.638
Bromoform	75-25-2	1.28	U	6.38	1.28	0.638
Bromomethane	74-83-9	2.56	U	6.38	2.56	1.28
2-Butanone	78-93-3	6.38	U	12.8	6.38	3.19
n-Butylbenzene	104-51-8	1.28	U	6.38	1.28	0.638
sec-Butylbenzene	135-98-8	1.28	U	6.38	1.28	0.638
tert-Butylbenzene	98-06-6	1.28	U	6.38	1.28	0.638
Carbon disulfide	75-15-0	1.28	U	6.38	1.28	0.638
Carbon tetrachloride	56-23-5	1.28	U	6.38	1.28	0.638
Chlorobenzene	108-90-7	1.28	U	6.38	1.28	0.638
Chlorodibromomethane	124-48-1	1.28	U	6.38	1.28	0.638
Chloroethane	75-00-3	2.56	U	6.38	2.56	1.28
Chloroform	67-66-3	1.28	U	6.38	1.28	0.638
Chloromethane	74-87-3	5.10	U	12.8	5.10	2.55
2-Chlorotoluene	95-49-8	1.28	U	6.38	1.28	0.638
4-Chlorotoluene	106-43-4	1.28	U	6.38	1.28	0.638
1,2-Dibromo-3-chloropropane	96-12-8	5.10	U	12.8	5.10	2.55
1,2-Dibromoethane	106-93-4	1.28	U	6.38	1.28	0.638
Dibromomethane	74-95-3	1.28	U	6.38	1.28	0.638
1,2-Dichlorobenzene	95-50-1	1.28	U	6.38	1.28	0.638
1,3-Dichlorobenzene	541-73-1	1.28	U	6.38	1.28	0.638
1,4-Dichlorobenzene	106-46-7	1.28	U	6.38	1.28	0.638
Dichlorodifluoromethane	75-71-8	2.56	U	6.38	2.56	1.28
1,1-Dichloroethane	75-34-3	2.56	U	6.38	2.56	1.28
1,2-Dichloroethane	107-06-2	1.28	U	6.38	1.28	0.638
1,1-Dichloroethene	75-35-4	1.28	U	6.38	1.28	0.638
cis-1,2-Dichloroethene	156-59-2	1.28	U	6.38	1.28	0.638

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Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.28	U	6.38	1.28	0.638
1,2-Dichloropropane	78-87-5	1.28	U	6.38	1.28	0.638
1,3-Dichloropropane	142-28-9	1.28	U	6.38	1.28	0.638
2,2-Dichloropropane	594-20-7	1.28	U	6.38	1.28	0.638
cis-1,3-Dichloropropene	10061-01-5	1.28	U	6.38	1.28	0.638
trans-1,3-Dichloropropene	10061-02-6	1.28	U	6.38	1.28	0.638
1,1-Dichloropropene	563-58-6	1.28	U	6.38	1.28	0.638
Ethylbenzene	100-41-4	1.28	U	6.38	1.28	0.638
2-Hexanone	591-78-6	6.38	U	12.8	6.38	3.19
Hexachlorobutadiene	87-68-3	1.28	U	6.38	1.28	0.638
Isopropylbenzene	98-82-8	1.28	U	6.38	1.28	0.638
p-Isopropyltoluene	99-87-6	1.28	U	6.38	1.28	0.638
4-Methyl-2-pentanone	108-10-1	6.38	U	12.8	6.38	3.19
Methylene chloride	75-09-2	2.56	U	6.38	2.56	1.28
Naphthalene	91-20-3	1.28	U	6.38	1.28	0.638
n-Propylbenzene	103-65-1	1.28	U	6.38	1.28	0.638
Styrene	100-42-5	1.28	U	6.38	1.28	0.638
1,1,1,2-Tetrachloroethane	630-20-6	1.28	U	6.38	1.28	0.638
1,1,2,2-Tetrachloroethane	79-34-5	1.28	U	6.38	1.28	0.638
Tetrachloroethene	127-18-4	1.28	U	6.38	1.28	0.638
Toluene	108-88-3	1.28	U	6.38	1.28	0.638
1,2,3-Trichlorobenzene	87-61-6	1.28	U	6.38	1.28	0.638
1,2,4-Trichlorobenzene	120-82-1	1.28	U	6.38	1.28	0.638
1,1,1-Trichloroethane	71-55-6	1.28	U	6.38	1.28	0.638
1,1,2-Trichloroethane	79-00-5	1.28	U	6.38	1.28	0.638
Trichloroethene	79-01-6	1.28	U	6.38	1.28	0.638
Trichlorofluoromethane	75-69-4	2.56	U	6.38	2.56	1.28
1,2,3-Trichloropropane	96-18-4	2.56	U	6.38	2.56	1.28
1,2,4-Trimethylbenzene	95-63-6	1.28	U	6.38	1.28	0.638
1,3,5-Trimethylbenzene	108-67-8	1.28	U	6.38	1.28	0.638
Vinyl chloride	75-01-4	2.56	U	6.38	2.56	1.28
o-Xylene	95-47-6	1.28	U	6.38	1.28	0.638
m-,p-Xylene	179601-23-1	1.28	U	6.38	1.28	0.638

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	80	120	
1,2-Dichloroethane-d4	95.2	80	120	
Toluene-d8	113	85	115	
4-Bromofluorobenzene	114	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021240-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPT04(20-21)240216FD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/28/2016 12:34
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559002	**Analyst:**	FJB	**Run Date:**	02/28/2016 23:22
Collect Date:	02/24/2016 10:55	**Dilution:**	1	**File ID:**	9M972958
Sample Tag:	02	**Units:**	ug/kg	**Percent Solid:**	85.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.8	U	25.6	12.8	6.41
Benzene	71-43-2	1.28	U	6.41	1.28	0.641
Bromobenzene	108-86-1	1.28	U	6.41	1.28	0.641
Bromochloromethane	74-97-5	2.56	U	6.41	2.56	1.28
Bromodichloromethane	75-27-4	1.28	U	6.41	1.28	0.641
Bromoform	75-25-2	1.28	U	6.41	1.28	0.641
Bromomethane	74-83-9	2.56	U	6.41	2.56	1.28
2-Butanone	78-93-3	6.40	U	12.8	6.40	3.20
n-Butylbenzene	104-51-8	1.28	U	6.41	1.28	0.641
sec-Butylbenzene	135-98-8	1.28	U	6.41	1.28	0.641
tert-Butylbenzene	98-06-6	1.28	U	6.41	1.28	0.641
Carbon disulfide	75-15-0	1.28	U	6.41	1.28	0.641
Carbon tetrachloride	56-23-5	1.28	U	6.41	1.28	0.641
Chlorobenzene	108-90-7	1.28	U	6.41	1.28	0.641
Chlorodibromomethane	124-48-1	1.28	U	6.41	1.28	0.641
Chloroethane	75-00-3	2.56	U	6.41	2.56	1.28
Chloroform	67-66-3	1.28	U	6.41	1.28	0.641
Chloromethane	74-87-3	5.12	U	12.8	5.12	2.56
2-Chlorotoluene	95-49-8	1.28	U	6.41	1.28	0.641
4-Chlorotoluene	106-43-4	1.28	U	6.41	1.28	0.641
1,2-Dibromo-3-chloropropane	96-12-8	5.12	U	12.8	5.12	2.56
1,2-Dibromoethane	106-93-4	1.28	U	6.41	1.28	0.641
Dibromomethane	74-95-3	1.28	U	6.41	1.28	0.641
1,2-Dichlorobenzene	95-50-1	1.28	U	6.41	1.28	0.641
1,3-Dichlorobenzene	541-73-1	1.28	U	6.41	1.28	0.641
1,4-Dichlorobenzene	106-46-7	1.28	U	6.41	1.28	0.641
Dichlorodifluoromethane	75-71-8	2.56	U	6.41	2.56	1.28
1,1-Dichloroethane	75-34-3	2.56	U	6.41	2.56	1.28
1,2-Dichloroethane	107-06-2	1.28	U	6.41	1.28	0.641
1,1-Dichloroethene	75-35-4	1.28	U	6.41	1.28	0.641
cis-1,2-Dichloroethene	156-59-2	1.28	U	6.41	1.28	0.641

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Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.28	U	6.41	1.28	0.641
1,2-Dichloropropane	78-87-5	1.28	U	6.41	1.28	0.641
1,3-Dichloropropane	142-28-9	1.28	U	6.41	1.28	0.641
2,2-Dichloropropane	594-20-7	1.28	U	6.41	1.28	0.641
cis-1,3-Dichloropropene	10061-01-5	1.28	U	6.41	1.28	0.641
trans-1,3-Dichloropropene	10061-02-6	1.28	U	6.41	1.28	0.641
1,1-Dichloropropene	563-58-6	1.28	U	6.41	1.28	0.641
Ethylbenzene	100-41-4	1.28	U	6.41	1.28	0.641
2-Hexanone	591-78-6	6.40	U	12.8	6.40	3.20
Hexachlorobutadiene	87-68-3	1.28	U	6.41	1.28	0.641
Isopropylbenzene	98-82-8	1.28	U	6.41	1.28	0.641
p-Isopropyltoluene	99-87-6	1.28	U	6.41	1.28	0.641
4-Methyl-2-pentanone	108-10-1	6.40	U	12.8	6.40	3.20
Methylene chloride	75-09-2	2.56	U	6.41	2.56	1.28
Naphthalene	91-20-3	1.28	U	6.41	1.28	0.641
n-Propylbenzene	103-65-1	1.28	U	6.41	1.28	0.641
Styrene	100-42-5	1.28	U	6.41	1.28	0.641
1,1,1,2-Tetrachloroethane	630-20-6	1.28	U	6.41	1.28	0.641
1,1,2,2-Tetrachloroethane	79-34-5	1.28	U	6.41	1.28	0.641
Tetrachloroethene	127-18-4	1.28	U	6.41	1.28	0.641
Toluene	108-88-3	1.28	U	6.41	1.28	0.641
1,2,3-Trichlorobenzene	87-61-6	1.28	U	6.41	1.28	0.641
1,2,4-Trichlorobenzene	120-82-1	1.28	U	6.41	1.28	0.641
1,1,1-Trichloroethane	71-55-6	1.28	U	6.41	1.28	0.641
1,1,2-Trichloroethane	79-00-5	1.28	U	6.41	1.28	0.641
Trichloroethene	79-01-6	1.28	U	6.41	1.28	0.641
Trichlorofluoromethane	75-69-4	2.56	U	6.41	2.56	1.28
1,2,3-Trichloropropane	96-18-4	2.56	U	6.41	2.56	1.28
1,2,4-Trimethylbenzene	95-63-6	1.28	U	6.41	1.28	0.641
1,3,5-Trimethylbenzene	108-67-8	1.28	U	6.41	1.28	0.641
Vinyl chloride	75-01-4	2.56	U	6.41	2.56	1.28
o-Xylene	95-47-6	1.28	U	6.41	1.28	0.641
m-,p-Xylene	179601-23-1	1.28	U	6.41	1.28	0.641

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.2	80	120	
1,2-Dichloroethane-d4	97.9	80	120	
Toluene-d8	110	85	115	
4-Bromofluorobenzene	114	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021240-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT04(25-25.5)240216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/26/2016 14:11
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG558910	**Analyst:**	ADC	**Run Date:**	02/26/2016 23:22
Collect Date:	02/24/2016 11:22	**Dilution:**	1	**File ID:**	9M972927
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	25.0	12.5	6.24
Benzene	71-43-2	1.25	U	6.24	1.25	0.624
Bromobenzene	108-86-1	1.25	U	6.24	1.25	0.624
Bromochloromethane	74-97-5	2.50	U	6.24	2.50	1.25
Bromodichloromethane	75-27-4	1.25	U	6.24	1.25	0.624
Bromoform	75-25-2	1.25	U	6.24	1.25	0.624
Bromomethane	74-83-9	2.50	U	6.24	2.50	1.25
2-Butanone	78-93-3	6.24	U	12.5	6.24	3.12
n-Butylbenzene	104-51-8	1.25	U	6.24	1.25	0.624
sec-Butylbenzene	135-98-8	1.25	U	6.24	1.25	0.624
tert-Butylbenzene	98-06-6	1.25	U	6.24	1.25	0.624
Carbon disulfide	75-15-0	1.25	U	6.24	1.25	0.624
Carbon tetrachloride	56-23-5	1.25	U	6.24	1.25	0.624
Chlorobenzene	108-90-7	1.25	U	6.24	1.25	0.624
Chlorodibromomethane	124-48-1	1.25	U	6.24	1.25	0.624
Chloroethane	75-00-3	2.50	U	6.24	2.50	1.25
Chloroform	67-66-3	1.25	U	6.24	1.25	0.624
Chloromethane	74-87-3	5.00	U	12.5	5.00	2.50
2-Chlorotoluene	95-49-8	1.25	U	6.24	1.25	0.624
4-Chlorotoluene	106-43-4	1.25	U	6.24	1.25	0.624
1,2-Dibromo-3-chloropropane	96-12-8	5.00	U	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	6.24	1.25	0.624
Dibromomethane	74-95-3	1.25	U	6.24	1.25	0.624
1,2-Dichlorobenzene	95-50-1	1.25	U	6.24	1.25	0.624
1,3-Dichlorobenzene	541-73-1	1.25	U	6.24	1.25	0.624
1,4-Dichlorobenzene	106-46-7	1.25	U	6.24	1.25	0.624
Dichlorodifluoromethane	75-71-8	2.50	U	6.24	2.50	1.25
1,1-Dichloroethane	75-34-3	2.50	U	6.24	2.50	1.25
1,2-Dichloroethane	107-06-2	1.25	U	6.24	1.25	0.624
1,1-Dichloroethene	75-35-4	1.25	U	6.24	1.25	0.624
cis-1,2-Dichloroethene	156-59-2	1.25	U	6.24	1.25	0.624

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.25	U	6.24	1.25	0.624
1,2-Dichloropropane	78-87-5	1.25	U	6.24	1.25	0.624
1,3-Dichloropropane	142-28-9	1.25	U	6.24	1.25	0.624
2,2-Dichloropropane	594-20-7	1.25	U	6.24	1.25	0.624
cis-1,3-Dichloropropene	10061-01-5	1.25	U	6.24	1.25	0.624
trans-1,3-Dichloropropene	10061-02-6	1.25	U	6.24	1.25	0.624
1,1-Dichloropropene	563-58-6	1.25	U	6.24	1.25	0.624
Ethylbenzene	100-41-4	1.25	U	6.24	1.25	0.624
2-Hexanone	591-78-6	6.24	U	12.5	6.24	3.12
Hexachlorobutadiene	87-68-3	1.25	U	6.24	1.25	0.624
Isopropylbenzene	98-82-8	1.25	U	6.24	1.25	0.624
p-Isopropyltoluene	99-87-6	1.25	U	6.24	1.25	0.624
4-Methyl-2-pentanone	108-10-1	6.24	U	12.5	6.24	3.12
Methylene chloride	75-09-2	2.50	U	6.24	2.50	1.25
Naphthalene	91-20-3	1.25	U	6.24	1.25	0.624
n-Propylbenzene	103-65-1	1.25	U	6.24	1.25	0.624
Styrene	100-42-5	1.25	U	6.24	1.25	0.624
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	6.24	1.25	0.624
1,1,2,2-Tetrachloroethane	79-34-5	1.25	U	6.24	1.25	0.624
Tetrachloroethene	127-18-4	1.25	U	6.24	1.25	0.624
Toluene	108-88-3	1.25	U	6.24	1.25	0.624
1,2,3-Trichlorobenzene	87-61-6	1.25	U	6.24	1.25	0.624
1,2,4-Trichlorobenzene	120-82-1	1.25	U	6.24	1.25	0.624
1,1,1-Trichloroethane	71-55-6	1.25	U	6.24	1.25	0.624
1,1,2-Trichloroethane	79-00-5	1.25	U	6.24	1.25	0.624
Trichloroethene	79-01-6	1.25	U	6.24	1.25	0.624
Trichlorofluoromethane	75-69-4	2.50	U	6.24	2.50	1.25
1,2,3-Trichloropropane	96-18-4	2.50	U	6.24	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	6.24	1.25	0.624
1,3,5-Trimethylbenzene	108-67-8	1.25	U	6.24	1.25	0.624
Vinyl chloride	75-01-4	2.50	U	6.24	2.50	1.25
o-Xylene	95-47-6	1.25	U	6.24	1.25	0.624
m-,p-Xylene	179601-23-1	1.25	U	6.24	1.25	0.624

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	80	120	
1,2-Dichloroethane-d4	101	80	120	
Toluene-d8	109	85	115	
4-Bromofluorobenzene	111	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021240-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT04(29-30)240216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/26/2016 14:12
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG558910	**Analyst:**	ADC	**Run Date:**	02/26/2016 23:53
Collect Date:	02/24/2016 12:00	**Dilution:**	1	**File ID:**	9M972928
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.9	U	23.8	11.9	5.94
Benzene	71-43-2	1.19	U	5.94	1.19	0.594
Bromobenzene	108-86-1	1.19	U	5.94	1.19	0.594
Bromochloromethane	74-97-5	2.38	U	5.94	2.38	1.19
Bromodichloromethane	75-27-4	1.19	U	5.94	1.19	0.594
Bromoform	75-25-2	1.19	U	5.94	1.19	0.594
Bromomethane	74-83-9	2.38	U	5.94	2.38	1.19
2-Butanone	78-93-3	5.94	U	11.9	5.94	2.97
n-Butylbenzene	104-51-8	1.19	U	5.94	1.19	0.594
sec-Butylbenzene	135-98-8	1.19	U	5.94	1.19	0.594
tert-Butylbenzene	98-06-6	1.19	U	5.94	1.19	0.594
Carbon disulfide	75-15-0	1.19	U	5.94	1.19	0.594
Carbon tetrachloride	56-23-5	1.19	U	5.94	1.19	0.594
Chlorobenzene	108-90-7	1.19	U	5.94	1.19	0.594
Chlorodibromomethane	124-48-1	1.19	U	5.94	1.19	0.594
Chloroethane	75-00-3	2.38	U	5.94	2.38	1.19
Chloroform	67-66-3	1.19	U	5.94	1.19	0.594
Chloromethane	74-87-3	4.76	U	11.9	4.76	2.38
2-Chlorotoluene	95-49-8	1.19	U	5.94	1.19	0.594
4-Chlorotoluene	106-43-4	1.19	U	5.94	1.19	0.594
1,2-Dibromo-3-chloropropane	96-12-8	4.76	U	11.9	4.76	2.38
1,2-Dibromoethane	106-93-4	1.19	U	5.94	1.19	0.594
Dibromomethane	74-95-3	1.19	U	5.94	1.19	0.594
1,2-Dichlorobenzene	95-50-1	1.19	U	5.94	1.19	0.594
1,3-Dichlorobenzene	541-73-1	1.19	U	5.94	1.19	0.594
1,4-Dichlorobenzene	106-46-7	1.19	U	5.94	1.19	0.594
Dichlorodifluoromethane	75-71-8	2.38	U	5.94	2.38	1.19
1,1-Dichloroethane	75-34-3	2.38	U	5.94	2.38	1.19
1,2-Dichloroethane	107-06-2	1.19	U	5.94	1.19	0.594
1,1-Dichloroethene	75-35-4	1.19	U	5.94	1.19	0.594
cis-1,2-Dichloroethene	156-59-2	1.19	U	5.94	1.19	0.594

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Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.19	U	5.94	1.19	0.594
1,2-Dichloropropane	78-87-5	1.19	U	5.94	1.19	0.594
1,3-Dichloropropane	142-28-9	1.19	U	5.94	1.19	0.594
2,2-Dichloropropane	594-20-7	1.19	U	5.94	1.19	0.594
cis-1,3-Dichloropropene	10061-01-5	1.19	U	5.94	1.19	0.594
trans-1,3-Dichloropropene	10061-02-6	1.19	U	5.94	1.19	0.594
1,1-Dichloropropene	563-58-6	1.19	U	5.94	1.19	0.594
Ethylbenzene	100-41-4	1.19	U	5.94	1.19	0.594
2-Hexanone	591-78-6	5.94	U	11.9	5.94	2.97
Hexachlorobutadiene	87-68-3	1.19	U	5.94	1.19	0.594
Isopropylbenzene	98-82-8	1.19	U	5.94	1.19	0.594
p-Isopropyltoluene	99-87-6	1.19	U	5.94	1.19	0.594
4-Methyl-2-pentanone	108-10-1	5.94	U	11.9	5.94	2.97
Methylene chloride	75-09-2	2.38	U	5.94	2.38	1.19
Naphthalene	91-20-3	1.19	U	5.94	1.19	0.594
n-Propylbenzene	103-65-1	1.19	U	5.94	1.19	0.594
Styrene	100-42-5	1.19	U	5.94	1.19	0.594
1,1,1,2-Tetrachloroethane	630-20-6	1.19	U	5.94	1.19	0.594
1,1,2,2-Tetrachloroethane	79-34-5	1.19	U	5.94	1.19	0.594
Tetrachloroethene	127-18-4	1.19	U	5.94	1.19	0.594
Toluene	108-88-3	1.19	U	5.94	1.19	0.594
1,2,3-Trichlorobenzene	87-61-6	1.19	U	5.94	1.19	0.594
1,2,4-Trichlorobenzene	120-82-1	1.19	U	5.94	1.19	0.594
1,1,1-Trichloroethane	71-55-6	1.19	U	5.94	1.19	0.594
1,1,2-Trichloroethane	79-00-5	1.19	U	5.94	1.19	0.594
Trichloroethene	79-01-6	1.19	U	5.94	1.19	0.594
Trichlorofluoromethane	75-69-4	2.38	U	5.94	2.38	1.19
1,2,3-Trichloropropane	96-18-4	2.38	U	5.94	2.38	1.19
1,2,4-Trimethylbenzene	95-63-6	1.19	U	5.94	1.19	0.594
1,3,5-Trimethylbenzene	108-67-8	1.19	U	5.94	1.19	0.594
Vinyl chloride	75-01-4	2.38	U	5.94	2.38	1.19
o-Xylene	95-47-6	1.19	U	5.94	1.19	0.594
m-,p-Xylene	179601-23-1	1.19	U	5.94	1.19	0.594

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.7	80	120	
1,2-Dichloroethane-d4	93.4	80	120	
Toluene-d8	109	85	115	
4-Bromofluorobenzene	111	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021240-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT04(36.5-37)240216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/26/2016 14:13
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG558910	**Analyst:**	ADC	**Run Date:**	02/27/2016 00:23
Collect Date:	02/24/2016 15:15	**Dilution:**	1	**File ID:**	9M972929
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.1	U	24.2	12.1	6.04
Benzene	71-43-2	1.21	U	6.04	1.21	0.604
Bromobenzene	108-86-1	1.21	U	6.04	1.21	0.604
Bromochloromethane	74-97-5	2.42	U	6.04	2.42	1.21
Bromodichloromethane	75-27-4	1.21	U	6.04	1.21	0.604
Bromoform	75-25-2	1.21	U	6.04	1.21	0.604
Bromomethane	74-83-9	2.42	U	6.04	2.42	1.21
2-Butanone	78-93-3	6.04	U	12.1	6.04	3.02
n-Butylbenzene	104-51-8	1.21	U	6.04	1.21	0.604
sec-Butylbenzene	135-98-8	1.21	U	6.04	1.21	0.604
tert-Butylbenzene	98-06-6	1.21	U	6.04	1.21	0.604
Carbon disulfide	75-15-0	1.21	U	6.04	1.21	0.604
Carbon tetrachloride	56-23-5	1.21	U	6.04	1.21	0.604
Chlorobenzene	108-90-7	1.21	U	6.04	1.21	0.604
Chlorodibromomethane	124-48-1	1.21	U	6.04	1.21	0.604
Chloroethane	75-00-3	2.42	U	6.04	2.42	1.21
Chloroform	67-66-3	1.21	U	6.04	1.21	0.604
Chloromethane	74-87-3	4.84	U	12.1	4.84	2.42
2-Chlorotoluene	95-49-8	1.21	U	6.04	1.21	0.604
4-Chlorotoluene	106-43-4	1.21	U	6.04	1.21	0.604
1,2-Dibromo-3-chloropropane	96-12-8	4.84	U	12.1	4.84	2.42
1,2-Dibromoethane	106-93-4	1.21	U	6.04	1.21	0.604
Dibromomethane	74-95-3	1.21	U	6.04	1.21	0.604
1,2-Dichlorobenzene	95-50-1	1.21	U	6.04	1.21	0.604
1,3-Dichlorobenzene	541-73-1	1.21	U	6.04	1.21	0.604
1,4-Dichlorobenzene	106-46-7	1.21	U	6.04	1.21	0.604
Dichlorodifluoromethane	75-71-8	2.42	U	6.04	2.42	1.21
1,1-Dichloroethane	75-34-3	2.42	U	6.04	2.42	1.21
1,2-Dichloroethane	107-06-2	1.21	U	6.04	1.21	0.604
1,1-Dichloroethene	75-35-4	1.21	U	6.04	1.21	0.604
cis-1,2-Dichloroethene	156-59-2	1.21	U	6.04	1.21	0.604

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Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.21	U	6.04	1.21	0.604
1,2-Dichloropropane	78-87-5	1.21	U	6.04	1.21	0.604
1,3-Dichloropropane	142-28-9	1.21	U	6.04	1.21	0.604
2,2-Dichloropropane	594-20-7	1.21	U	6.04	1.21	0.604
cis-1,3-Dichloropropene	10061-01-5	1.21	U	6.04	1.21	0.604
trans-1,3-Dichloropropene	10061-02-6	1.21	U	6.04	1.21	0.604
1,1-Dichloropropene	563-58-6	1.21	U	6.04	1.21	0.604
Ethylbenzene	100-41-4	1.21	U	6.04	1.21	0.604
2-Hexanone	591-78-6	6.04	U	12.1	6.04	3.02
Hexachlorobutadiene	87-68-3	1.21	U	6.04	1.21	0.604
Isopropylbenzene	98-82-8	1.21	U	6.04	1.21	0.604
p-Isopropyltoluene	99-87-6	1.21	U	6.04	1.21	0.604
4-Methyl-2-pentanone	108-10-1	6.04	U	12.1	6.04	3.02
Methylene chloride	75-09-2	2.42	U	6.04	2.42	1.21
Naphthalene	91-20-3	1.21	U	6.04	1.21	0.604
n-Propylbenzene	103-65-1	1.21	U	6.04	1.21	0.604
Styrene	100-42-5	1.21	U	6.04	1.21	0.604
1,1,1,2-Tetrachloroethane	630-20-6	1.21	U	6.04	1.21	0.604
1,1,2,2-Tetrachloroethane	79-34-5	1.21	U	6.04	1.21	0.604
Tetrachloroethene	127-18-4	1.21	U	6.04	1.21	0.604
Toluene	108-88-3	1.21	U	6.04	1.21	0.604
1,2,3-Trichlorobenzene	87-61-6	1.21	U	6.04	1.21	0.604
1,2,4-Trichlorobenzene	120-82-1	1.21	U	6.04	1.21	0.604
1,1,1-Trichloroethane	71-55-6	1.21	U	6.04	1.21	0.604
1,1,2-Trichloroethane	79-00-5	1.21	U	6.04	1.21	0.604
Trichloroethene	79-01-6	3.20	J	6.04	1.21	0.604
Trichlorofluoromethane	75-69-4	2.42	U	6.04	2.42	1.21
1,2,3-Trichloropropane	96-18-4	2.42	U	6.04	2.42	1.21
1,2,4-Trimethylbenzene	95-63-6	1.21	U	6.04	1.21	0.604
1,3,5-Trimethylbenzene	108-67-8	1.21	U	6.04	1.21	0.604
Vinyl chloride	75-01-4	2.42	U	6.04	2.42	1.21
o-Xylene	95-47-6	1.21	U	6.04	1.21	0.604
m-,p-Xylene	179601-23-1	1.21	U	6.04	1.21	0.604

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	80	120	
1,2-Dichloroethane-d4	102	80	120	
Toluene-d8	106	85	115	
4-Bromofluorobenzene	110	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021240-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT04(34-34.5)240216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/26/2016 14:13
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG558910	**Analyst:**	ADC	**Run Date:**	02/27/2016 00:53
Collect Date:	02/24/2016 15:15	**Dilution:**	1	**File ID:**	9M972930
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	25.1	12.5	6.27
Benzene	71-43-2	1.25	U	6.27	1.25	0.627
Bromobenzene	108-86-1	1.25	U	6.27	1.25	0.627
Bromochloromethane	74-97-5	2.50	U	6.27	2.50	1.25
Bromodichloromethane	75-27-4	1.25	U	6.27	1.25	0.627
Bromoform	75-25-2	1.25	U	6.27	1.25	0.627
Bromomethane	74-83-9	2.50	U	6.27	2.50	1.25
2-Butanone	78-93-3	6.28	U	12.5	6.28	3.14
n-Butylbenzene	104-51-8	1.25	U	6.27	1.25	0.627
sec-Butylbenzene	135-98-8	1.25	U	6.27	1.25	0.627
tert-Butylbenzene	98-06-6	1.25	U	6.27	1.25	0.627
Carbon disulfide	75-15-0	1.25	U	6.27	1.25	0.627
Carbon tetrachloride	56-23-5	1.25	U	6.27	1.25	0.627
Chlorobenzene	108-90-7	1.25	U	6.27	1.25	0.627
Chlorodibromomethane	124-48-1	1.25	U	6.27	1.25	0.627
Chloroethane	75-00-3	2.50	U	6.27	2.50	1.25
Chloroform	67-66-3	1.25	U	6.27	1.25	0.627
Chloromethane	74-87-3	5.02	U	12.5	5.02	2.51
2-Chlorotoluene	95-49-8	1.25	U	6.27	1.25	0.627
4-Chlorotoluene	106-43-4	1.25	U	6.27	1.25	0.627
1,2-Dibromo-3-chloropropane	96-12-8	5.02	U	12.5	5.02	2.51
1,2-Dibromoethane	106-93-4	1.25	U	6.27	1.25	0.627
Dibromomethane	74-95-3	1.25	U	6.27	1.25	0.627
1,2-Dichlorobenzene	95-50-1	1.25	U	6.27	1.25	0.627
1,3-Dichlorobenzene	541-73-1	1.25	U	6.27	1.25	0.627
1,4-Dichlorobenzene	106-46-7	1.25	U	6.27	1.25	0.627
Dichlorodifluoromethane	75-71-8	2.50	U	6.27	2.50	1.25
1,1-Dichloroethane	75-34-3	2.50	U	6.27	2.50	1.25
1,2-Dichloroethane	107-06-2	1.25	U	6.27	1.25	0.627
1,1-Dichloroethene	75-35-4	1.25	U	6.27	1.25	0.627
cis-1,2-Dichloroethene	156-59-2	1.25	U	6.27	1.25	0.627

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Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.25	U	6.27	1.25	0.627
1,2-Dichloropropane	78-87-5	1.25	U	6.27	1.25	0.627
1,3-Dichloropropane	142-28-9	1.25	U	6.27	1.25	0.627
2,2-Dichloropropane	594-20-7	1.25	U	6.27	1.25	0.627
cis-1,3-Dichloropropene	10061-01-5	1.25	U	6.27	1.25	0.627
trans-1,3-Dichloropropene	10061-02-6	1.25	U	6.27	1.25	0.627
1,1-Dichloropropene	563-58-6	1.25	U	6.27	1.25	0.627
Ethylbenzene	100-41-4	1.25	U	6.27	1.25	0.627
2-Hexanone	591-78-6	6.28	U	12.5	6.28	3.14
Hexachlorobutadiene	87-68-3	1.25	U	6.27	1.25	0.627
Isopropylbenzene	98-82-8	1.25	U	6.27	1.25	0.627
p-Isopropyltoluene	99-87-6	1.25	U	6.27	1.25	0.627
4-Methyl-2-pentanone	108-10-1	6.28	U	12.5	6.28	3.14
Methylene chloride	75-09-2	2.50	U	6.27	2.50	1.25
Naphthalene	91-20-3	1.25	U	6.27	1.25	0.627
n-Propylbenzene	103-65-1	1.25	U	6.27	1.25	0.627
Styrene	100-42-5	1.25	U	6.27	1.25	0.627
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	6.27	1.25	0.627
1,1,2,2-Tetrachloroethane	79-34-5	1.25	U	6.27	1.25	0.627
Tetrachloroethene	127-18-4	1.25	U	6.27	1.25	0.627
Toluene	108-88-3	1.25	U	6.27	1.25	0.627
1,2,3-Trichlorobenzene	87-61-6	1.25	U	6.27	1.25	0.627
1,2,4-Trichlorobenzene	120-82-1	1.25	U	6.27	1.25	0.627
1,1,1-Trichloroethane	71-55-6	1.25	U	6.27	1.25	0.627
1,1,2-Trichloroethane	79-00-5	1.25	U	6.27	1.25	0.627
Trichloroethene	79-01-6	1.25	U	6.27	1.25	0.627
Trichlorofluoromethane	75-69-4	2.50	U	6.27	2.50	1.25
1,2,3-Trichloropropane	96-18-4	2.50	U	6.27	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	6.27	1.25	0.627
1,3,5-Trimethylbenzene	108-67-8	1.25	U	6.27	1.25	0.627
Vinyl chloride	75-01-4	2.50	U	6.27	2.50	1.25
o-Xylene	95-47-6	1.25	U	6.27	1.25	0.627
m-,p-Xylene	179601-23-1	1.25	U	6.27	1.25	0.627

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.0	80	120	
1,2-Dichloroethane-d4	95.6	80	120	
Toluene-d8	107	85	115	
4-Bromofluorobenzene	110	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.
VOA Preparation/Preservation/Extraction Log

Batch #: WG558996
Analyst: AWE
Method: 5030B/5030C/5035
Run Date: 02/28/2016 12:31
Product: 8260
Purge and trap methanol COA18540
Purified Lab Sand Lot # COA18552

SAMPLE #	Fraction	Collected	Preserved	PCT-S	Tare Wt	Total Wt	Sample Wt	Water	MeOH	Vt	Comments
L16021186-01	A	02/24/16 08:30	02/28/16 12:31	100			0.98	5		5	
L16021186-02	A	02/24/16 08:30	02/28/16 12:32	100			4.57	5		5	
L16021236-01	A	02/11/16 11:50	02/28/16 12:33	85.7			5.45	5		5	
L16021240-04	A	02/24/16 10:55	02/28/16 12:34	85.0			4.59	5		5	

Comments:
1 = improperly sealed cap
2 = preserved out of hold
3 = effervesced
4 = preserved with NaHSO4
5 = preserved by freezing
6 = preserved in field

Analyst: Andrew Baird

VOA_EXT - Modified 05/22/2008
PDF ID: 4649636
Report generated: 02/28/2016 12:34

Microbac Laboratories Inc.
VOA Preparation/Preservation/Extraction Log

Batch #: WG558938
Method: 5030B/5030C/5035
Product: 8260

Analyst: AWE
Run Date: 02/26/2016 14:06
Purge and trap methanol COA18540
Purified Lab Sand Lot # COA18552

SAMPLE #	Fraction	Collected	Preserved	PCT-S	Tare Wt	Total Wt	Sample Wt	Water	MeOH	Vt	Comments
L16021186-01	A	02/24/16 08:30	02/26/16 14:06	100			4.68	5		5	
L16021186-02	A	02/24/16 08:30	02/26/16 14:07	100			5.01	5		5	
L16021236-01	A	02/11/16 11:50	02/26/16 14:08	85.7			4.64	5		5	
L16021240-01	A	02/24/16 10:00	02/26/16 14:09	79.9			4.65	5		5	
L16021240-02	A	02/24/16 10:28	02/26/16 14:10	80.1			4.72	5		5	
L16021240-03	A	02/24/16 10:55	02/26/16 14:10	84.5			4.64	5		5	
L16021240-04	A	02/24/16 10:55	02/26/16 14:11	85.0			4.54	5		5	
L16021240-05	A	02/24/16 11:22	02/26/16 14:11	83.6			4.79	5		5	
L16021240-06	A	02/24/16 12:00	02/26/16 14:12	79.2			5.31	5		5	
L16021240-07	A	02/24/16 15:15	02/26/16 14:13	79.7			5.19	5		5	
L16021240-08	A	02/24/16 15:15	02/26/16 14:13	84.6			4.71	5		5	
WG558938-01	A		02/26/16 14:13	79.9			4.71	5		5	
WG558938-02	A		02/26/16 14:14	79.9			5.31	5		5	
WG558938-03	A		02/26/16 14:14	79.9			5.49	5		5	

Comments:
1 = improperly sealed cap
2 = preserved out of hold
3 = effervesced
4 = preserved with NaHSO4
5 = preserved by freezing
6 = preserved in field

Analyst: Andrew Baeg

VOA_EXT - Modified 05/22/2008
PDF ID: 4648955
Report generated: 02/26/2016 14:15

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 012516
Analyst1: ADC Analyst2: NA
Method: 8260B/8260C SOP: MSV01(-C) Rev: 23 (2)
Method: 5030B/5030C/5035 SOP: PAT01 Rev: 18
Method: 624 SOP: MSV10 Rev: 12
Maintenance Log ID:

Internal Standard: STD74414 Surrogate Standard: STD74126
CCV: STD74488 LCS: STD74459 MS/MSD: STD74459

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG555000 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M972470	WG555000-01 BFB 50ng A9	NA	7	1	STD74202	01/25/16 10:27
9M972471	RINSE	NA	7	1		01/25/16 10:52
9M972472	WG555000-02 5ug/Kg STD A9	NA	7	1	STD74406	01/25/16 11:22
9M972473	WG555000-03 20ug/Kg STD A9	NA	7	1	STD74406	01/25/16 11:52
9M972474	WG555000-04 50ug/Kg STD A9	NA	7	1	STD74406	01/25/16 12:23
9M972475	WG555000-05 100ug/Kg STD A9	NA	7	1	STD74406	01/25/16 12:53
9M972476	WG555000-06 200ug/Kg STD A9	NA	7	1	STD74406	01/25/16 13:23
9M972477	WG555000-07 300ug/Kg STD A9	NA	7	1	STD74406	01/25/16 13:54
9M972478	WG555000-08 400ug/Kg STD A9	NA	7	1	STD74406	01/25/16 14:25
9M972479	WG555000-09 500ug/Kg STD A9	NA	7	1	STD74406	01/25/16 14:56
9M972480	RINSE	NA	7	1		01/25/16 15:26
9M972481	WG555000-10 100ug/Kg ICV A9	NA	7	1	STD74461	01/25/16 15:56
9M972482	RINSE	NA	7	1		01/25/16 16:28

Approved: January 29, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 022516
Analyst1: ADC Analyst2: NA
Method: 8260 SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD74726 Surrogate Standard: STD74815
CCV: STD74488 LCS: STD74755 MS/MSD: STD74755

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG558732 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M972892	WG558732-01 BFB 50ng	NA	7	1	STD74773	02/25/16 14:26
9M972894	WG558732-01 BFB 50ng	NA	7	1	STD74773	02/25/16 14:45
9M972895	WG558732-02 50ug/L CCV 8260C	NA	7	1	STD74773	02/25/16 15:11
9M972896	WG558732-02 50ug/L CCV 8260C	NA	7	1	STD74773	02/25/16 15:48
9M972897	RINSE	NA	7	1		02/25/16 16:25
9M972898	WG558732-03 0.5ug/kg STD	NA	7	1	STD74773	02/25/16 16:55
9M972899	WG558732-04 1.0ug/kg STD	NA	7	1	STD74773	02/25/16 17:27
9M972900	WG558732-05 2.0ug/kg STD	NA	7	1	STD74773	02/25/16 17:57
9M972901	WG558732-06 5.0ug/kg STD	NA	7	1	STD74773	02/25/16 18:28
9M972902	WG558732-07 20.0ug/kg STD	NA	7	1	STD74773	02/25/16 18:59
9M972903	WG558732-08 100.0ug/kg STD	NA	7	1	STD74773	02/25/16 19:29
9M972904	WG558732-09 200.0ug/kg STD	NA	7	1	STD74773	02/25/16 20:00
9M972905	WG558732-10 300.0ug/kg STD	NA	7	1	STD74773	02/25/16 20:30
9M972906	RINSE	NA	7	1	STD74773	02/25/16 21:01
9M972907	WG558732-11 50.0ug/kg ALTSRC	NA	7	1	STD74755	02/25/16 21:31

Approved: February 29, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 022616
Analyst1: ADC Analyst2: NA
Method: 8260 SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD74726 Surrogate Standard: STD74815
CCV: STD74488 LCS: STD74755 MS/MSD: STD74755

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG558910

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M972908	WG558909-01 BFB 50ng	NA	7	1	STD74202	02/26/16 13:44
9M972909	WG558909-02 50ug/L CCV 8260C	NA	7	1	STD74773	02/26/16 14:10
9M972910	WG558909-02 50ug/L CCV 8260C	NA	7	1	STD74773	02/26/16 14:40
9M972911	WGXXXXXX-01 100.0ug/kg A9FOO	NA	7	1	STD74755	02/26/16 15:11
9M972912	WG558910-01 VBLK 8260	NA	7	1		02/26/16 15:42
9M972913	WG558910-02 20.0ug/kg LCS	NA	7	1	STD74755	02/26/16 16:13
9M972914	WG558910-03 20.0ug/kg LCSDUP	NA	7	1	STD74755	02/26/16 16:43
9M972915	WG558910-04 20.0ug/kg LCSP\&A	NA	7	1	STD74755	02/26/16 17:14
9M972916	WG558910-05 20.0ug/kg LCSP\&A	NA	7	1	STD74755	02/26/16 17:45
9M972917	L16021186-01 A 8260 4.68g	NA	7	1		02/26/16 18:16
9M972918	L16021186-02 A 8260 5.01g	NA	7	1		02/26/16 18:47
9M972919	L16021162-02 A 8260	NA	7	1		02/26/16 19:17
9M972920	L16021162-03 A 8260	NA	7	1		02/26/16 19:47
9M972921	L16021162-04 A 8260	NA	7	1		02/26/16 20:18
9M972922	L16021162-05 A 8260	NA	7	1		02/26/16 20:49
9M972923	L16021240-01 A 8260 4.65g	NA	7	1		02/26/16 21:20
9M972924	L16021240-02 A 8260 4.72g	NA	7	1		02/26/16 21:50
9M972925	L16021240-03 A 8260 4.64g	NA	7	1		02/26/16 22:21
9M972926	L16021240-04 A 8260 4.54g	NA	7	1		02/26/16 22:51
9M972927	L16021240-05 A 8260 4.79g	NA	7	1		02/26/16 23:22
9M972928	L16021240-06 A 8260 5.31g	NA	7	1		02/26/16 23:53
9M972929	L16021240-07 A 8260 5.19g	NA	7	1		02/27/16 00:23
9M972930	WG558938-01 L16021240-08 A 8260 4.71g	NA	7	1		02/27/16 00:53
9M972931	L16021236-01 A 8260 4.64g	NA	7	1		02/27/16 01:24
9M972932	WG558938-02 A MS 8260 5.31g	NA	7	1		02/27/16 01:53
9M972933	WG558938-03 A MSD 8260 5.49g	NA	7	1		02/27/16 02:24
9M972934	RINSE	NA	7	1		02/27/16 02:54
9M972935	SCREEN 100X 1306-01	NA	7	1		02/27/16 03:25
9M972936	SCREEN 100X 1306-02	NA	7	1		02/27/16 03:55
9M972937	SCREEN 100X 1306-03	NA	7	1		02/27/16 04:25
9M972938	SCREEN 100X 1306-04	NA	7	1		02/27/16 04:55
9M972939	SCREEN 100X 1306-05	NA	7	1		02/27/16 05:27
9M972940	SCREEN 100X 1306-06	NA	7	1		02/27/16 05:57
9M972941	RINSE	NA	7	1		02/27/16 06:27

Approved: February 29, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 022616
Analyst1: ADC Analyst2: NA
Method: 8260 SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD74726 Surrogate Standard: STD74815
CCV: STD74488 LCS: STD74755 MS/MSD: STD74755

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG558910

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
10	X	5	Over Calibration Range	acetone, 2-butanone
File ID: 9M972917				
	L16021186-01 IS/SS out as well			
11	X	1	Carry-over contamination	
File ID: 9M972918				
	L16021186-02			
12	X	1	Carry-over contamination	
File ID: 9M972919				
	L16021162-02			
15	X	1	Internal standard and surrogate standard failure	
File ID: 9M972922				
	L16021162-05			
19	X	1	Internal standard failure	
File ID: 9M972926				
	L16021240-04			
24	X	1	Surrogate standard failure	
File ID: 9M972931				
	L16021236-01			

Approved: February 29, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 022816
Analyst1: ADC Analyst2: NA
Method: 8260 SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD74726 Surrogate Standard: STD74815
CCV: STD74488 LCS: STD74755 MS/MSD: STD74755

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG559002

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M972942	WG559001-01 BFB 50ng 8260	NA	7	1	STD74606	02/28/16 15:15
9M972943	WG559001-02 50ug/Kg CCV 8260	NA	7	1	STD74773	02/28/16 15:39
9M972944	RINSE	NA	7	1		02/28/16 16:09
9M972945	WG559002-01 VBLK0228 BLANK 8260	NA	7	1		02/28/16 16:39
9M972946	WG559002-02 20ug/Kg LCS 8260	NA	7	1	STD74755	02/28/16 17:10
9M972947	L16021306-03 MS 8260 5.35g	NA	7	1	STD74755	02/28/16 17:41
9M972948	L16021306-04 MSD 8260 5.38g	NA	7	1	STD74755	02/28/16 18:12
9M972949	RINSE	NA	7	1		02/28/16 18:42
9M972950	L16020640-06 A 826-REF-BLK	NA	7	1		02/28/16 19:13
9M972951	L16020640-07 A 826-REF-BLK	NA	7	1		02/28/16 19:44
9M972952	L16020640-08 A 826-REF-BLK	NA	7	1		02/28/16 20:15
9M972953	L16020640-09 A 826-REF-BLK	NA	7	1		02/28/16 20:47
9M972954	L16021162-02 B 8260	NA	7	1		02/28/16 21:18
9M972955	L16021162-05 B 8260	NA	7	1		02/28/16 21:49
9M972956	L16021186-02 8260 4.57g	NA	7	1		02/28/16 22:21
9M972957	L16021236-01 8260 5.45g	NA	7	1		02/28/16 22:51
9M972958	L16021240-04 8260 4.59g	NA	7	1		02/28/16 23:22
9M972959	L16021306-01 8260 4.73g	NA	7	1		02/28/16 23:54
9M972960	L16021306-02 REF 8260 4.75g	NA	7	1		02/29/16 00:25
9M972961	L16021306-05 8260 4.66g	NA	7	1		02/29/16 00:57
9M972962	L16021306-06 8260 5.11g	NA	7	1		02/29/16 01:29
9M972963	L16021186-01 8260 0.98g	NA	7	1		02/29/16 02:00
9M972964	RINSE	NA	7	1		02/29/16 02:30
9M972965	RINSE	NA	7	1		02/29/16 03:01

Approved: February 29, 2016

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Microbac Laboratories Inc.

Data Checklist

Date: 25-JAN-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 72995
Analytical Workgroups: WG555000

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
28-JAN-2016

Secondary Reviewer:
29-JAN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JAN-29-2016 16:00:23

Microbac Laboratories Inc.

Data Checklist

Date: 25-FEB-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 73547
Analytical Workgroups: WG558732

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
29-FEB-2016

Secondary Reviewer:
29-FEB-2016

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-29-2016 15:30:51

Microbac Laboratories Inc.

Data Checklist

Date: 29-FEB-2016
Analyst: ADC
Analyst: NA
Method: 8260B
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 73540
Analytical Workgroups: WG558910

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	X
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
29-FEB-2016

Secondary Reviewer:
29-FEB-2016

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-29-2016 15:20:17

Microbac Laboratories Inc.

Data Checklist

Date: 28-FEB-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 73549
Analytical Workgroups: WG559002

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
29-FEB-2016

Secondary Reviewer:
29-FEB-2016

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-29-2016 15:49:00

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG558910

Login Number: L16021240

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPT04(5-5.5)240216	01	02/24/16					02/26/2016	2.2	14		02/26/16	2.5	14	
18DPT04(15-15.5)240216	02	02/24/16					02/26/2016	2.2	14		02/26/16	2.5	14	
18CPT04(20-21)240216	03	02/24/16					02/26/2016	2.1	14		02/26/16	2.5	14	
18DPT04(25-25.5)240216	05	02/24/16					02/26/2016	2.1	14		02/26/16	2.5	14	
18DPT04(29-30)240216	06	02/24/16					02/26/2016	2.1	14		02/26/16	2.5	14	
18DPT04(36.5-37)240216	07	02/24/16					02/26/2016	2	14		02/27/16	2.4	14	
18DPT04(34-34.5)240216	08	02/24/16					02/26/2016	2	14		02/27/16	2.4	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4651867
Report generated 02/29/2016 16:47

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG559002

Login Number: L16021240

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPT04(20-21)240216FD	04	02/24/16					02/28/2016	4.1	14		02/28/16	4.5	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4651867
Report generated 02/29/2016 16:47

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16021240
Instrument Id: HPMS9
Workgroup (AAB#): WG558910

Method: 8260
CAL ID: HPMS9-25-FEB-16
Matrix: Soil

Sample Number	Dilution	Tag	1	2	3	4
L16021240-01	1.00	01	94.6	99.7	111	108
L16021240-02	1.00	01	93.6	99.4	114	111
L16021240-03	1.00	01	95.2	102	114	113
L16021240-05	1.00	01	101	102	111	109
L16021240-06	1.00	01	93.4	98.7	111	109
L16021240-07	1.00	01	102	102	110	106
L16021240-08	1.00	01	95.6	97.0	110	107
WG558910-01	1.00	01	99.8	102	114	111
WG558910-02	1.00	01	96.1	102	112	107
WG558910-03	1.00	01	101	103	112	108
WG558910-04	1.00	01	98.7	103	112	107
WG558910-05	1.00	01	96.7	102	111	108

Surrogates	Surrogate Limits
1 - 1,2-Dichloroethane-d4	80 - 120
2 - Dibromofluoromethane	80 - 120
3 - 4-Bromofluorobenzene	85 - 120
4 - Toluene-d8	85 - 115

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4651875
Report generated: 02/29/2016 16:47

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16021240
Instrument Id: HPMS9
Workgroup (AAB#): WG559002

Method: 8260
CAL ID: HPMS9-25-FEB-16
Matrix: Soil

Sample Number	Dilution	Tag	1	2	3	4
L16021240-04	1.00	02	97.9	99.2	114	110
WG559002-01	1.00	01	104	102	113	111
WG559002-02	1.00	01	100	100	111	108

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	80	-	120
2 - Dibromofluoromethane	80	-	120
3 - 4-Bromofluorobenzene	85	-	120
4 - Toluene-d8	85	-	115

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4651875
Report generated: 02/29/2016 16:47

METHOD BLANK SUMMARY

Login Number: L16021240
Blank File ID: 9M972912
Prep Date: 02/26/16 15:42
Analyzed Date: 02/26/16 15:42
Analyst: ADC

Work Group: WG558910
Blank Sample ID: WG558910-01
Instrument ID: HPMS9
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG558910-02	9M972913	02/26/16 16:13	01
LCS2	WG558910-03	9M972914	02/26/16 16:43	01
LCS-P_A	WG558910-04	9M972915	02/26/16 17:14	01
LCS-P_A	WG558910-05	9M972916	02/26/16 17:45	01
18CPT04(5-5.5)240216	L16021240-01	9M972923	02/26/16 21:20	01
18DPT04(15-15.5)240216	L16021240-02	9M972924	02/26/16 21:50	01
18CPT04(20-21)240216	L16021240-03	9M972925	02/26/16 22:21	01
18DPT04(25-25.5)240216	L16021240-05	9M972927	02/26/16 23:22	01
18DPT04(29-30)240216	L16021240-06	9M972928	02/26/16 23:53	01
18DPT04(36.5-37)240216	L16021240-07	9M972929	02/27/16 00:23	01
18DPT04(34-34.5)240216	L16021240-08	9M972930	02/27/16 00:53	01

Report Name: BLANK_SUMMARY
PDF File ID: 4651868
Report generated 02/29/2016 16:47

METHOD BLANK SUMMARY

Login Number: L16021240
Blank File ID: 9M972945
Prep Date: 02/28/16 16:39
Analyzed Date: 02/28/16 16:39
Analyst: FJB

Work Group: WG559002
Blank Sample ID: WG559002-01
Instrument ID: HPMS9
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG559002-02	9M972946	02/28/16 17:10	01
18CPT04(20-21)240216FD	L16021240-04	9M972958	02/28/16 23:22	02

Report Name: BLANK_SUMMARY
PDF File ID: 4651868
Report generated 02/29/2016 16:47

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16021240 Prep Date: 02/26/16 15:42 Sample ID: WG558910-01
Instrument ID: HPMS9 Run Date: 02/26/16 15:42 Prep Method: 5030B/5030C/503
File ID: 9M972912 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG558910 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-25-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	5.00	20.0	5.00	1	U
Benzene	0.500	5.00	0.500	1	U
Bromobenzene	0.500	5.00	0.500	1	U
Bromochloromethane	1.00	5.00	1.00	1	U
Bromodichloromethane	0.500	5.00	0.500	1	U
Bromoform	0.500	5.00	0.500	1	U
Bromomethane	1.00	5.00	1.00	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.500	5.00	0.500	1	U
sec-Butylbenzene	0.500	5.00	0.500	1	U
tert-Butylbenzene	0.500	5.00	0.500	1	U
Carbon disulfide	0.500	5.00	0.500	1	U
Carbon tetrachloride	0.500	5.00	0.500	1	U
Chlorobenzene	0.500	5.00	0.500	1	U
Chlorodibromomethane	0.500	5.00	0.500	1	U
Chloroethane	1.00	5.00	1.00	1	U
Chloroform	0.500	5.00	0.500	1	U
Chloromethane	2.00	10.0	2.00	1	U
2-Chlorotoluene	0.500	5.00	0.500	1	U
4-Chlorotoluene	0.500	5.00	0.500	1	U
1,2-Dibromo-3-chloropropane	2.00	10.0	2.00	1	U
1,2-Dibromoethane	0.500	5.00	0.500	1	U
Dibromomethane	0.500	5.00	0.500	1	U
1,2-Dichlorobenzene	0.500	5.00	0.500	1	U
1,3-Dichlorobenzene	0.500	5.00	0.500	1	U
1,4-Dichlorobenzene	0.500	5.00	0.500	1	U
Dichlorodifluoromethane	1.00	5.00	1.00	1	U
1,1-Dichloroethane	1.00	5.00	1.00	1	U
1,2-Dichloroethane	0.500	5.00	0.500	1	U
1,1-Dichloroethene	0.500	5.00	0.500	1	U
cis-1,2-Dichloroethene	0.500	5.00	0.500	1	U
trans-1,2-Dichloroethene	0.500	5.00	0.500	1	U
1,2-Dichloropropane	0.500	5.00	0.500	1	U
1,3-Dichloropropane	0.500	5.00	0.500	1	U
2,2-Dichloropropane	0.500	5.00	0.500	1	U
cis-1,3-Dichloropropene	0.500	5.00	0.500	1	U
trans-1,3-Dichloropropene	0.500	5.00	0.500	1	U
1,1-Dichloropropene	0.500	5.00	0.500	1	U
Ethylbenzene	0.500	5.00	0.500	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.500	5.00	0.500	1	U
Isopropylbenzene	0.500	5.00	0.500	1	U

Report Name: BLANK
PDF ID: 4651869
29-FEB-2016 16:47

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16021240 Prep Date: 02/26/16 15:42 Sample ID: WG558910-01
Instrument ID: HPMS9 Run Date: 02/26/16 15:42 Prep Method: 5030B/5030C/503
File ID: 9M972912 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG558910 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-25-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.500	5.00	0.500	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	1.00	5.00	1.00	1	U
Naphthalene	0.500	5.00	0.683	1	J
n-Propylbenzene	0.500	5.00	0.500	1	U
Styrene	0.500	5.00	0.500	1	U
1,1,1,2-Tetrachloroethane	0.500	5.00	0.500	1	U
1,1,2,2-Tetrachloroethane	0.500	5.00	0.500	1	U
Tetrachloroethene	0.500	5.00	0.500	1	U
Toluene	0.500	5.00	0.500	1	U
1,2,3-Trichlorobenzene	0.500	5.00	0.604	1	J
1,2,4-Trichlorobenzene	0.500	5.00	0.645	1	J
1,1,1-Trichloroethane	0.500	5.00	0.500	1	U
1,1,2-Trichloroethane	0.500	5.00	0.500	1	U
Trichloroethene	0.500	5.00	0.500	1	U
Trichlorofluoromethane	1.00	5.00	1.00	1	U
1,2,3-Trichloropropane	1.00	5.00	1.00	1	U
1,2,4-Trimethylbenzene	0.500	5.00	0.500	1	U
1,3,5-Trimethylbenzene	0.500	5.00	0.500	1	U
Vinyl chloride	1.00	5.00	1.00	1	U
o-Xylene	0.500	5.00	0.500	1	U
m-,p-Xylene	0.500	5.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	102	80 - 120	PASS
1,2-Dichloroethane-d4	99.8	80 - 120	PASS
Toluene-d8	111	85 - 115	PASS
4-Bromofluorobenzene	114	85 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4651869
29-FEB-2016 16:47

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16021240 Prep Date: 02/28/16 16:39 Sample ID: WG559002-01
Instrument ID: HPMS9 Run Date: 02/28/16 16:39 Prep Method: 5030B/5030C/503
File ID: 9M972945 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG559002 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-25-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	5.00	20.0	5.00	1	U
Benzene	0.500	5.00	0.500	1	U
Bromobenzene	0.500	5.00	0.500	1	U
Bromochloromethane	1.00	5.00	1.00	1	U
Bromodichloromethane	0.500	5.00	0.500	1	U
Bromoform	0.500	5.00	0.500	1	U
Bromomethane	1.00	5.00	1.00	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.500	5.00	0.500	1	U
sec-Butylbenzene	0.500	5.00	0.500	1	U
tert-Butylbenzene	0.500	5.00	0.500	1	U
Carbon disulfide	0.500	5.00	0.500	1	U
Carbon tetrachloride	0.500	5.00	0.500	1	U
Chlorobenzene	0.500	5.00	0.500	1	U
Chlorodibromomethane	0.500	5.00	0.500	1	U
Chloroethane	1.00	5.00	1.00	1	U
Chloroform	0.500	5.00	0.500	1	U
Chloromethane	2.00	10.0	2.00	1	U
2-Chlorotoluene	0.500	5.00	0.500	1	U
4-Chlorotoluene	0.500	5.00	0.500	1	U
1,2-Dibromo-3-chloropropane	2.00	10.0	2.00	1	U
1,2-Dibromoethane	0.500	5.00	0.500	1	U
Dibromomethane	0.500	5.00	0.500	1	U
1,2-Dichlorobenzene	0.500	5.00	0.500	1	U
1,3-Dichlorobenzene	0.500	5.00	0.500	1	U
1,4-Dichlorobenzene	0.500	5.00	0.500	1	U
Dichlorodifluoromethane	1.00	5.00	1.00	1	U
1,1-Dichloroethane	1.00	5.00	1.00	1	U
1,2-Dichloroethane	0.500	5.00	0.500	1	U
1,1-Dichloroethene	0.500	5.00	0.500	1	U
cis-1,2-Dichloroethene	0.500	5.00	0.500	1	U
trans-1,2-Dichloroethene	0.500	5.00	0.500	1	U
1,2-Dichloropropane	0.500	5.00	0.500	1	U
1,3-Dichloropropane	0.500	5.00	0.500	1	U
2,2-Dichloropropane	0.500	5.00	0.500	1	U
cis-1,3-Dichloropropene	0.500	5.00	0.500	1	U
trans-1,3-Dichloropropene	0.500	5.00	0.500	1	U
1,1-Dichloropropene	0.500	5.00	0.500	1	U
Ethylbenzene	0.500	5.00	0.500	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.500	5.00	0.500	1	U
Isopropylbenzene	0.500	5.00	0.500	1	U

Report Name:BLANK
PDF ID: 4651869
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Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16021240 Prep Date: 02/28/16 16:39 Sample ID: WG559002-01
Instrument ID: HPMS9 Run Date: 02/28/16 16:39 Prep Method: 5030B/5030C/503
File ID: 9M972945 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG559002 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-25-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.500	5.00	0.500	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	1.00	5.00	1.00	1	U
Naphthalene	0.500	5.00	0.500	1	U
n-Propylbenzene	0.500	5.00	0.500	1	U
Styrene	0.500	5.00	0.500	1	U
1,1,1,2-Tetrachloroethane	0.500	5.00	0.500	1	U
1,1,2,2-Tetrachloroethane	0.500	5.00	0.500	1	U
Tetrachloroethene	0.500	5.00	0.500	1	U
Toluene	0.500	5.00	0.500	1	U
1,2,3-Trichlorobenzene	0.500	5.00	0.500	1	U
1,2,4-Trichlorobenzene	0.500	5.00	0.500	1	U
1,1,1-Trichloroethane	0.500	5.00	0.500	1	U
1,1,2-Trichloroethane	0.500	5.00	0.500	1	U
Trichloroethene	0.500	5.00	0.500	1	U
Trichlorofluoromethane	1.00	5.00	1.00	1	U
1,2,3-Trichloropropane	1.00	5.00	1.00	1	U
1,2,4-Trimethylbenzene	0.500	5.00	0.500	1	U
1,3,5-Trimethylbenzene	0.500	5.00	0.500	1	U
Vinyl chloride	1.00	5.00	1.00	1	U
o-Xylene	0.500	5.00	0.500	1	U
m-,p-Xylene	0.500	5.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	102	80 - 120	PASS
1,2-Dichloroethane-d4	104	80 - 120	PASS
Toluene-d8	111	85 - 115	PASS
4-Bromofluorobenzene	113	85 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4651869
29-FEB-2016 16:47

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16021240 | Run Date: 02/28/2016 | Sample ID: WG559002-02
Instrument ID: HPMS9 | Run Time: 17:10 | Prep Method: 5030B/5030C/503
File ID: 9M972946 | Analyst: FJB | Method: 8260B
Workgroup (AAB#): WG559002 | Matrix: Soil | Units: ug/kg
QC Key: DOD4 | Lot#: STD74755 | Cal ID: HPMS9-25-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	20.1	101	20 - 160	
Benzene	20.0	21.9	110	75 - 125	
Bromobenzene	20.0	22.1	111	65 - 120	
Bromochloromethane	20.0	21.6	108	70 - 125	
Bromodichloromethane	20.0	20.8	104	70 - 130	
Bromoform	20.0	19.0	94.8	55 - 135	
Bromomethane	20.0	21.0	105	30 - 160	
2-Butanone	20.0	20.6	103	30 - 160	
n-Butylbenzene	20.0	20.6	103	65 - 140	
sec-Butylbenzene	20.0	22.2	111	65 - 130	
tert-Butylbenzene	20.0	23.1	116	65 - 130	
Carbon disulfide	20.0	19.5	97.6	45 - 160	
Carbon tetrachloride	20.0	19.9	99.4	65 - 135	
Chlorobenzene	20.0	22.7	114	75 - 125	
Chlorodibromomethane	20.0	20.6	103	65 - 130	
Chloroethane	20.0	22.5	112	40 - 155	
Chloroform	20.0	20.0	100	70 - 125	
Chloromethane	20.0	22.8	114	50 - 130	
2-Chlorotoluene	20.0	23.8	119	70 - 130	
4-Chlorotoluene	20.0	21.8	109	75 - 125	
1,2-Dibromo-3-chloropropane	20.0	20.7	104	40 - 135	
1,2-Dibromoethane	20.0	22.0	110	70 - 125	
Dibromomethane	20.0	20.6	103	75 - 130	
1,2-Dichlorobenzene	20.0	22.2	111	75 - 120	
1,3-Dichlorobenzene	20.0	21.3	107	70 - 125	
1,4-Dichlorobenzene	20.0	21.6	108	70 - 125	
Dichlorodifluoromethane	20.0	28.6	143	35 - 135	*
1,1-Dichloroethane	20.0	20.6	103	75 - 125	
1,2-Dichloroethane	20.0	21.9	109	70 - 135	
1,1-Dichloroethene	20.0	21.2	106	65 - 135	
cis-1,2-Dichloroethene	20.0	22.6	113	65 - 125	
trans-1,2-Dichloroethene	20.0	22.8	114	65 - 135	
1,2-Dichloropropane	20.0	23.2	116	70 - 120	
1,3-Dichloropropane	20.0	23.4	117	75 - 125	
2,2-Dichloropropane	20.0	21.6	108	65 - 135	
cis-1,3-Dichloropropene	20.0	23.1	115	70 - 125	
trans-1,3-Dichloropropene	20.0	22.2	111	65 - 125	
1,1-Dichloropropene	20.0	20.6	103	70 - 135	
Ethylbenzene	20.0	22.9	115	75 - 125	
2-Hexanone	20.0	21.9	109	45 - 145	
Hexachlorobutadiene	20.0	18.4	92.0	55 - 140	

LCS - Modified 03/06/2008
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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16021240 Run Date: 02/28/2016 Sample ID: WG559002-02
Instrument ID: HPMS9 Run Time: 17:10 Prep Method: 5030B/5030C/503
File ID: 9M972946 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG559002 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD74755 Cal ID: HPMS9-25-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	22.6	113	75 - 130	
p-Isopropyltoluene	20.0	22.0	110	75 - 135	
4-Methyl-2-pentanone	20.0	22.0	110	45 - 145	
Methylene chloride	20.0	21.6	108	55 - 140	
Naphthalene	20.0	19.8	99.1	40 - 125	
n-Propylbenzene	20.0	23.3	116	65 - 135	
Styrene	20.0	22.7	113	75 - 125	
1,1,1,2-Tetrachloroethane	20.0	21.4	107	75 - 125	
1,1,2,2-Tetrachloroethane	20.0	21.5	107	55 - 130	
Tetrachloroethene	20.0	21.4	107	65 - 140	
Toluene	20.0	22.4	112	70 - 125	
1,2,3-Trichlorobenzene	20.0	20.3	102	60 - 135	
1,2,4-Trichlorobenzene	20.0	19.5	97.7	65 - 130	
1,1,1-Trichloroethane	20.0	20.7	103	70 - 135	
1,1,2-Trichloroethane	20.0	23.1	115	60 - 125	
Trichloroethene	20.0	22.1	111	75 - 125	
Trichlorofluoromethane	20.0	20.9	105	25 - 185	
1,2,3-Trichloropropane	20.0	23.5	117	65 - 130	
1,2,4-Trimethylbenzene	20.0	21.4	107	65 - 135	
1,3,5-Trimethylbenzene	20.0	23.1	115	65 - 135	
Vinyl chloride	20.0	23.8	119	60 - 125	
o-Xylene	20.0	23.2	116	75 - 125	
m-,p-Xylene	40.0	44.8	112	80 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	100	80 - 120	PASS
1,2-Dichloroethane-d4	100	80 - 120	PASS
Toluene-d8	108	85 - 115	PASS
4-Bromofluorobenzene	111	85 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4651877
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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16021240 Analyst: ADC Prep Method: 5030B/5030C/503
Instrument ID: HPMS9 Matrix: Soil Method: 8260B
Workgroup (AAB#): WG558910 Units: ug/kg
QC Key: DOD4 Lot #:

Sample ID: WG558910-02 LCS File ID: 9M972913 Run Date: 02/26/2016 16:13
Sample ID: WG558910-03 LCS2 File ID: 9M972914 Run Date: 02/26/2016 16:43

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	21.4	107	20.0	21.4	107	0.201	75 - 125	30	
1,1,1-Trichloroethane	20.0	20.6	103	20.0	19.7	98.5	4.63	70 - 135	30	
1,1,2,2-Tetrachloroethane	20.0	21.7	109	20.0	21.8	109	0.552	55 - 130	30	
1,1,2-Trichloroethane	20.0	22.1	110	20.0	21.7	109	1.51	60 - 125	30	
1,1-Dichloroethane	20.0	20.4	102	20.0	19.4	97.2	4.72	75 - 125	30	
1,1-Dichloroethene	20.0	20.1	101	20.0	19.2	96.2	4.57	65 - 135	30	
1,1-Dichloropropene	20.0	20.6	103	20.0	19.7	98.4	4.57	70 - 135	30	
1,2,3-Trichlorobenzene	20.0	20.6	103	20.0	19.3	96.4	6.55	60 - 135	30	
1,2,3-Trichloropropane	20.0	21.9	109	20.0	21.3	106	2.84	65 - 130	30	
1,2,4-Trichlorobenzene	20.0	20.8	104	20.0	20.1	101	3.15	65 - 130	30	
1,2,4-Trimethylbenzene	20.0	22.4	112	20.0	21.7	109	2.96	65 - 135	30	
1,2-Dibromo-3-chloropropane	20.0	20.1	101	20.0	19.2	95.9	4.86	40 - 135	30	
1,2-Dibromoethane	20.0	21.0	105	20.0	20.7	103	1.27	70 - 125	30	
1,2-Dichlorobenzene	20.0	22.2	111	20.0	21.5	108	3.16	75 - 120	30	
1,2-Dichloroethane	20.0	20.9	105	20.0	19.8	99.2	5.19	70 - 135	30	
1,2-Dichloropropane	20.0	22.1	110	20.0	22.3	111	0.967	70 - 120	30	
1,3,5-Trimethylbenzene	20.0	23.8	119	20.0	22.8	114	4.18	65 - 135	30	
1,3-Dichlorobenzene	20.0	22.3	111	20.0	21.0	105	5.80	70 - 125	30	
1,3-Dichloropropane	20.0	22.7	114	20.0	22.0	110	3.40	75 - 125	30	
1,4-Dichlorobenzene	20.0	22.8	114	20.0	21.7	109	4.75	70 - 125	30	
2,2-Dichloropropane	20.0	20.8	104	20.0	19.9	99.4	4.66	65 - 135	30	
2-Butanone	20.0	19.3	96.7	20.0	20.4	102	5.39	30 - 160	30	
2-Chlorotoluene	20.0	24.5	123	20.0	23.2	116	5.31	70 - 130	30	
2-Hexanone	20.0	20.1	100	20.0	19.7	98.7	1.78	45 - 145	30	
4-Chlorotoluene	20.0	22.7	114	20.0	22.5	112	1.15	75 - 125	30	
4-Methyl-2-pentanone	20.0	20.5	102	20.0	20.0	100	2.18	45 - 145	30	
Acetone	20.0	17.9	89.7	20.0	18.9	94.7	5.35	20 - 160	30	
Benzene	20.0	21.1	105	20.0	20.8	104	1.17	75 - 125	30	
Bromobenzene	20.0	21.8	109	20.0	21.5	107	1.58	65 - 120	30	
Bromochloromethane	20.0	21.5	107	20.0	20.5	102	4.74	70 - 125	30	
Bromodichloromethane	20.0	19.8	98.9	20.0	19.7	98.7	0.168	70 - 130	30	
Bromoform	20.0	18.1	90.6	20.0	19.0	94.9	4.67	55 - 135	30	
Bromomethane	20.0	21.1	106	20.0	20.0	100	5.52	30 - 160	30	
Carbon disulfide	20.0	19.4	97.1	20.0	18.9	94.6	2.59	45 - 160	30	
Carbon tetrachloride	20.0	19.7	98.3	20.0	19.1	95.3	3.11	65 - 135	30	
Chlorobenzene	20.0	22.3	111	20.0	22.2	111	0.369	75 - 125	30	
Chloroethane	20.0	22.6	113	20.0	21.0	105	7.22	40 - 155	30	
Chloroform	20.0	20.5	102	20.0	20.1	101	1.80	70 - 125	30	
Chloromethane	20.0	22.4	112	20.0	21.1	106	6.08	50 - 130	30	
cis-1,2-Dichloroethene	20.0	22.6	113	20.0	22.2	111	1.64	65 - 125	30	

LCS_LCS2 - Modified 03/06/2008
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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16021240 Analyst: ADC Prep Method: 5030B/5030C/503
Instrument ID: HPMS9 Matrix: Soil Method: 8260B
Workgroup (AAB#): WG558910 Units: ug/kg
QC Key: DOD4 Lot #:

Sample ID: WG558910-02 LCS File ID: 9M972913 Run Date: 02/26/2016 16:13
Sample ID: WG558910-03 LCS2 File ID: 9M972914 Run Date: 02/26/2016 16:43

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	22.6	113	20.0	22.2	111	1.83	70 - 125	30	
Chlorodibromomethane	20.0	19.8	98.8	20.0	19.4	96.9	1.97	65 - 130	30	
Dibromomethane	20.0	19.9	99.3	20.0	20.1	100	1.13	75 - 130	30	
Dichlorodifluoromethane	20.0	27.5	138	20.0	23.6	118	15.2	35 - 135	30	*
Ethylbenzene	20.0	22.7	114	20.0	22.3	111	1.94	75 - 125	30	
Hexachlorobutadiene	20.0	20.6	103	20.0	19.2	95.9	7.19	55 - 140	30	
Isopropylbenzene	20.0	22.7	113	20.0	21.9	110	3.36	75 - 130	30	
m-,p-Xylene	40.0	45.1	113	40.0	45.0	113	0.0482	80 - 125	30	
Methylene chloride	20.0	20.6	103	20.0	20.3	102	1.31	55 - 140	30	
n-Butylbenzene	20.0	21.7	108	20.0	20.2	101	7.21	65 - 140	30	
n-Propylbenzene	20.0	24.0	120	20.0	23.0	115	3.98	65 - 135	30	
Naphthalene	20.0	19.1	95.5	20.0	18.7	93.4	2.27	40 - 125	30	
o-Xylene	20.0	23.2	116	20.0	23.0	115	1.02	75 - 125	30	
p-Isopropyltoluene	20.0	23.4	117	20.0	21.6	108	7.75	75 - 135	30	
sec-Butylbenzene	20.0	23.4	117	20.0	22.1	111	5.40	65 - 130	30	
Styrene	20.0	22.6	113	20.0	21.8	109	3.43	75 - 125	30	
tert-Butylbenzene	20.0	25.0	125	20.0	23.6	118	5.54	65 - 130	30	
Tetrachloroethene	20.0	21.6	108	20.0	20.7	103	4.51	65 - 140	30	
Toluene	20.0	22.4	112	20.0	21.7	109	2.87	70 - 125	30	
trans-1,2-Dichloroethene	20.0	21.9	109	20.0	20.8	104	4.86	65 - 135	30	
trans-1,3-Dichloropropene	20.0	21.1	106	20.0	20.5	102	3.21	65 - 125	30	
Trichloroethene	20.0	21.8	109	20.0	20.5	102	6.44	75 - 125	30	
Trichlorofluoromethane	20.0	20.5	103	20.0	18.9	94.4	8.30	25 - 185	30	
Vinyl chloride	20.0	25.7	129	20.0	23.5	118	8.97	60 - 125	30	*

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	96.1	101	80 - 120	PASS
Dibromofluoromethane	102	103	80 - 120	PASS
4-Bromofluorobenzene	112	112	85 - 120	PASS
Toluene-d8	107	108	85 - 115	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4651870
Report generated: 02/29/2016 16:47

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16021240
Instrument: HPMS9
Analyst: FJB
Workgroup: WG555000

Tune ID: WG555000-01
Run Date: 01/25/2016
Run Time: 10:27
File ID: 9M972470
Cal ID: HPMS9 - 25-JAN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	23.0	10289	PASS
75.0	95.0	30.0	60.0	49.3	22030	PASS
95.0	95.0	100	100	100	44728	PASS
96.0	95.0	5.00	9.00	6.98	3122	PASS
173	174	0	2.00	0.381	160	PASS
174	95.0	50.0	100	93.9	41989	PASS
175	174	5.00	9.00	6.62	2778	PASS
176	174	95.0	101	95.6	40133	PASS
177	176	5.00	9.00	6.39	2564	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG555000-02	STD-S	01	01/25/2016 11:22	
WG555000-03	STD-S	01	01/25/2016 11:52	
WG555000-04	STD-S	01	01/25/2016 12:23	
WG555000-05	STD-CCV-S	01	01/25/2016 12:53	
WG555000-06	STD-S	01	01/25/2016 13:23	
WG555000-07	STD-S	01	01/25/2016 13:54	
WG555000-08	STD-S	01	01/25/2016 14:25	
WG555000-09	STD-S	01	01/25/2016 14:56	
WG555000-10	SSCV-S	01	01/25/2016 15:56	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4651872
Report generated 02/29/2016 16:47

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16021240
Instrument: HPMS9
Analyst: ADC
Workgroup: WG558732

Tune ID: WG558732-01
Run Date: 02/25/2016
Run Time: 14:45
File ID: 9M972894
Cal ID: HPMS9 - 25-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.2	5378	PASS
75.0	95.0	30.0	60.0	49.1	13067	PASS
95.0	95.0	100	100	100	26621	PASS
96.0	95.0	5.00	9.00	6.32	1683	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	85.8	22851	PASS
175	174	5.00	9.00	6.50	1485	PASS
176	174	95.0	101	98.3	22461	PASS
177	176	5.00	9.00	7.21	1619	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG558732-02	STD-CCV-S	01	02/25/2016 15:48	
WG558732-03	STD-S	01	02/25/2016 16:55	
WG558732-04	STD-S	01	02/25/2016 17:27	
WG558732-05	STD-S	01	02/25/2016 17:57	
WG558732-06	STD-S	01	02/25/2016 18:28	
WG558732-07	STD-S	01	02/25/2016 18:59	
WG558732-08	STD-S	01	02/25/2016 19:29	
WG558732-09	STD-S	01	02/25/2016 20:00	
WG558732-10	STD-S	01	02/25/2016 20:30	
WG558732-11	SSCV-S	01	02/25/2016 21:31	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4651872
Report generated 02/29/2016 16:47

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16021240
Instrument: HPMS9
Analyst: ADC
Workgroup: WG558909

Tune ID: WG558909-01
Run Date: 02/26/2016
Run Time: 13:44
File ID: 9M972908
Cal ID: HPMS9 - 25-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.5	7293	PASS
75.0	95.0	30.0	60.0	50.4	16315	PASS
95.0	95.0	100	100	100	32352	PASS
96.0	95.0	5.00	9.00	7.11	2301	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	78.1	25282	PASS
175	174	5.00	9.00	6.70	1693	PASS
176	174	95.0	101	98.1	24798	PASS
177	176	5.00	9.00	5.66	1403	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG558909-02	CCV-S	01	02/26/2016 14:40	
WG558910-01	BLANK	01	02/26/2016 15:42	
WG558910-02	LCS	01	02/26/2016 16:13	
WG558910-03	LCS2	01	02/26/2016 16:43	
WG558910-04	LCS-P_A	01	02/26/2016 17:14	
WG558910-05	LCS-P_A	01	02/26/2016 17:45	
L16021240-01	18CPT04(5-5.5)240216	01	02/26/2016 21:20	
L16021240-02	18DPT04(15-15.5)240216	01	02/26/2016 21:50	
L16021240-03	18CPT04(20-21)240216	01	02/26/2016 22:21	
L16021240-05	18DPT04(25-25.5)240216	01	02/26/2016 23:22	
L16021240-06	18DPT04(29-30)240216	01	02/26/2016 23:53	
L16021240-07	18DPT04(36.5-37)240216	01	02/27/2016 00:23	
L16021240-08	18DPT04(34-34.5)240216	01	02/27/2016 00:53	
WG558938-02	MS	01	02/27/2016 01:53	*
WG558938-03	MSD	01	02/27/2016 02:24	*

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4651872
Report generated 02/29/2016 16:47

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16021240
Instrument: HPMS9
Analyst: FJB
Workgroup: WG559001

Tune ID: WG559001-01
Run Date: 02/28/2016
Run Time: 15:15
File ID: 9M972942
Cal ID: HPMS9 - 25-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.8	9950	PASS
75.0	95.0	30.0	60.0	48.0	22972	PASS
95.0	95.0	100	100	100	47813	PASS
96.0	95.0	5.00	9.00	6.60	3156	PASS
173	174	0	2.00	0.277	115	PASS
174	95.0	50.0	100	86.9	41573	PASS
175	174	5.00	9.00	6.30	2621	PASS
176	174	95.0	101	95.5	39704	PASS
177	176	5.00	9.00	6.04	2399	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG559001-02	CCV-S	01	02/28/2016 15:39	
WG559002-01	BLANK	01	02/28/2016 16:39	
WG559002-02	LCS	01	02/28/2016 17:10	
L16021240-04	18CPT04(20-21)240216FD	02	02/28/2016 23:22	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4651872
Report generated 02/29/2016 16:47

Calibration Table Report
Method: A9FOO_SL.M
Title: FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Calibration: Wed Jan 27 09:49:02 2016
Curve: WG555000
Calibration Files

Compound	5 9M972472.D	20 9M972473.D	50 9M972474.D	100 9M972475.D	200 9M972476.D	300 9M972477.D	400 9M972478.D	500 9M972479.D	Avg	%RSD	R^2 Linear
Fluorobenzene	ISTD										
Acetonitrile		0.053	0.046	0.048	0.052	0.046	0.052	0.054	0.050	6.657	
3-Chloro-1-propene	0.498	0.524	0.450	0.519	0.514	0.434	0.507	0.503	0.494	6.719	
2-Chloro-1,3-butadiene	0.534	0.576	0.519	0.592	0.585	0.509	0.593	0.584	0.561	6.202	
Ethyl Acetate		0.333	0.313	0.339	0.338	0.300	0.341	0.344	0.330	5.124	
Methacrylonitrile	0.102	0.109	0.101	0.112	0.110	0.096	0.112	0.112	0.107	5.912	
Isobutyl Alcohol	0.014	0.018	0.018	0.021	0.024	0.021	0.025	0.025	0.021	18.016	0.993
1-Butanol		0.010	0.013	0.015	0.017	0.015	0.018	0.018	0.015	17.838	0.992
Methyl methacrylate	0.236	0.246	0.231	0.265	0.265	0.231	0.271	0.269	0.252	7.005	
2-Nitropropane	0.069	0.073	0.074	0.083	0.089	0.079	0.093	0.095	0.082	12.090	
Chlorobenzene-d5	ISTD										
Cyclohexanone		0.020	0.022	0.025	0.028	0.023	0.027	0.028	0.025	12.963	
1,4-Dichlorobenzene-d4	ISTD										

Wed Jan 27 10:01:56 2016

Calibration Table Report
Method: 8260SL.M
Title: 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Calibration: Fri Feb 26 11:38:33 2016
Curve: WG558732
Calibration Files

Compound	0.5 9M972898.D	1 9M972899.D	2 9M972900.D	5 9M972901.D	20 9M972902.D	50 9M972896.D	100 9M972903.D	200 9M972904.D	300 9M972905.D	Avg	%RSD	R^2 Linear	Quadratic
Fluorobenzene	ISTD												
Dichlorodifluoromethane			0.338	0.271	0.399	0.396	0.318	0.357	0.307	0.341	13.734		
Chloromethane			0.372	0.280	0.331	0.361	0.296	0.346	0.304	0.327	10.674		
Vinyl Chloride		0.250	0.318	0.314	0.373	0.372	0.342	0.355	0.296	0.327	12.768		
1,3-Butadiene			0.347	0.266	0.328	0.330	0.297	0.321	0.293	0.312	8.837		
Bromomethane		0.236	0.267	0.181	0.206	0.208	0.186	0.217	0.199	0.213	13.250		
Chloroethane			0.127	0.116	0.142	0.165	0.139	0.173	0.160	0.146	14.271		
Trichlorofluoromethane		0.519	0.518	0.416	0.503	0.514	0.470	0.517	0.473	0.491	7.357		
Diethyl ether		0.215	0.246	0.217	0.243	0.241	0.214		0.231	0.230	6.215		
Isoprene			0.302	0.251	0.303	0.302	0.282	0.318	0.295	0.293	7.364		
Acrolein		0.041	0.046	0.045	0.046	0.048	0.046		0.050	0.046	6.212		
1,1,2-Trichloro-1,2,2-Trifluoroethane			0.252	0.234	0.255	0.261	0.248	0.273	0.251	0.253	4.699		
Acetone				0.179	0.138	0.128	0.119	0.124		0.138	17.810	0.999	
1,1-Dichloroethene		0.464	0.511	0.400	0.482	0.471	0.454	0.500	0.456	0.467	7.277		
Tert-Butyl Alcohol			0.057	0.046	0.055	0.051	0.047			0.051	8.698		
Dimethyl Sulfide		0.150	0.203	0.186	0.207	0.211	0.196	0.224	0.203	0.197	11.169		
Iodomethane				0.076	0.109	0.154	0.126	0.157	0.142	0.127	24.315	0.993	
Methyl acetate			0.282	0.223	0.279	0.262	0.240	0.258	0.234	0.254	8.867		
Methylene Chloride			0.271	0.217	0.263	0.261	0.240	0.280	0.249	0.254	8.252		
Carbon Disulfide			0.795	0.626	0.740	0.737	0.678	0.761	0.702	0.720	7.788		
Acrylonitrile		0.117	0.127	0.114	0.130	0.135	0.123		0.134	0.126	6.412		
Methyl Tert Butyl Ether		0.669	0.722	0.642	0.760	0.786	0.713	0.788	0.718	0.725	7.239		
trans-1,2-Dichloroethene		0.400	0.422	0.377	0.430	0.438	0.407	0.446	0.412	0.416	5.376		
n-Hexane			0.456	0.385	0.420	0.424	0.429	0.464	0.428	0.430	5.986		
Diisopropyl ether		0.938	1.068	0.928	1.071	1.051	0.931		0.995	0.998	6.627		
Vinyl Acetate			0.593	0.519	0.545	0.602	0.554	0.608	0.558	0.569	5.855		
1,1-Dichloroethane		0.548	0.558	0.445	0.532	0.549	0.499	0.553	0.500	0.523	7.454		
Ethyl-Tert-Butyl ether		0.871	0.992	0.852	0.990	0.988	0.865		0.934	0.928	6.918		
2-Butanone			0.177	0.152	0.156	0.166	0.156	0.172	0.149	0.161	6.650		
Propionitrile		0.042	0.055	0.048	0.053	0.051	0.048		0.049	0.049	8.494		
2,2-Dichloropropane			0.428	0.330	0.377	0.415	0.383	0.417	0.383	0.390	8.575		
cis-1,2-Dichloroethene		0.247	0.257	0.248	0.287	0.297	0.273	0.299	0.277	0.273	7.647		
Chloroform		0.473	0.530	0.432	0.482	0.509	0.459	0.505	0.454	0.480	6.746		
1-Bromopropane			0.011	0.041	0.042	0.043	0.040	0.045	0.041	0.038	31.434	0.997	
Bromochloromethane		0.131	0.173	0.169	0.194	0.199	0.179	0.197	0.178	0.177	12.275		
Tetrahydrofuran			0.111	0.099	0.110	0.110	0.097		0.097	0.104	6.802		
Dibromofluoromethane				0.267	0.243	0.286	0.286	0.274		0.271	6.547		
1,1,1-Trichloroethane		0.426	0.436	0.385	0.438	0.470	0.425	0.470	0.427	0.434	6.319		
Cyclohexane		0.465	0.495	0.425	0.494	0.478	0.465	0.503	0.464	0.474	5.302		
1,1-Dichloropropene		0.353	0.359	0.300	0.344	0.352	0.333	0.360	0.335	0.342	5.748		
Tert-Amyl-Methyl ether		0.631	0.709	0.631	0.716	0.716	0.632		0.684	0.674	6.133		
Carbon Tetrachloride			0.41939	0.34041	0.40512	0.42742	0.39181	0.43819	0.39737	0.40282	7.96886		
1,2-Dichloroethane-d4				0.34995	0.30686	0.35494	0.35835	0.33017		0.34005	6.33015		
Heptane										0	0		
1,2-Dichloroethane		0.36551	0.44947	0.39601	0.44224	0.45938	0.41291	0.4496	0.40581	0.42262	7.76179		
Benzene	1.14079	0.92872	1.03015	0.83328	0.97121	0.9721	0.88431	0.97127	0.88279	0.95718	9.53654		
Trichloroethene		0.30364	0.32158	0.26212	0.31219	0.31666	0.29597	0.321	0.29314	0.30329	6.54492		
Methylcyclohexane		0.31249	0.39837	0.32203	0.40419	0.39506	0.39323	0.42525	0.39247	0.38039	10.6291		
1,2-Dichloropropane		0.23004	0.27101	0.24016	0.27676	0.28593	0.2555	0.28277	0.26062	0.26285	7.66268		
1,4-Dioxane			0.0041	0.00361	0.00449	0.00376	0.00356		0.00414	0.00394	9.17892		
Bromodichloromethane			0.37851	0.33087	0.3725	0.39384	0.35929	0.397	0.36103	0.37044	6.13725		
Dibromomethane		0.15103	0.18915	0.16523	0.1825	0.18519	0.16707	0.1849	0.1682	0.17416	7.61692		
2-Chloroethyl Vinyl Ether				0.04535	0.05625	0.07439	0.06667	0.08013	0.07633	0.06652	20.1377	0.996	
4-Methyl-2-Pentanone				0.08933	0.11327	0.12554	0.11786	0.12977	0.11644	0.11537	12.2612		
cis-1,3-Dichloropropene			0.37321	0.33699	0.39477	0.41098	0.38072	0.42291	0.38195	0.38594	7.23123		
Dimethyl Disulfide			0.30882	0.3269	0.39409	0.4245	0.40234	0.4579	0.40032	0.38784	13.5683		
Chlorobenzene-d5	ISTD												
Toluene-d8				1.21266	1.14503	1.34974	1.34798	1.26813		1.26471	6.98417		
Toluene	1.57001	1.40445	1.51648	1.23448	1.46732	1.48749	1.3712	1.4823	1.3236	1.42859	7.34792		
Ethyl Methacrylate				0.31749	0.4112	0.4195	0.39758	0.44016	0.38999	0.39599	10.6751		
trans-1,3-Dichloropropene			0.50304	0.44978	0.5157	0.56049	0.50648	0.56248	0.50379	0.51454	7.49294		
1,1,2-Trichloroethane		0.27692	0.29584	0.27194	0.31787	0.32454	0.3	0.32173	0.292	0.3001	6.65768		
2-Hexanone				0.26013	0.28088	0.31451	0.30524	0.34734	0.28972	0.29964	10.056		
1,3-Dichloropropane		0.46617	0.55761	0.45639	0.51068	0.53187	0.47698	0.53043	0.47034	0.50006	7.49429		
Tetrachloroethene		0.33351	0.31568	0.26327	0.31051	0.30894	0.30156	0.32634	0.29026	0.30626	7.18201		
Dibromochloromethane			0.45014	0.36113	0.41394	0.44566	0.40515	0.45572	0.40415	0.41941	8.03547		
1,2-Dibromoethane				0.31086	0.34005	0.35035	0.32626	0.35324	0.31647	0.33287	5.32182		
1-Chlorohexane		0.39643	0.40929	0.33097	0.45098	0.44465	0.43807	0.477	0.42289	0.42128	10.5148		
Chlorobenzene		1.02904	1.08596	0.91908	1.05295	1.05625	0.95434	1.02465	0.91009	1.00405	6.67004		
1,1,1,2-Tetrachloroethane			0.37536	0.32525	0.38767	0.40783	0.37127	0.40937	0.36265	0.37706	7.67975		
Ethylbenzene	0.5157	0.51658	0.53164	0.45493	0.54391	0.54636	0.50916	0.54884	0.48836	0.51728	5.93862		
m-,p-Xylene	0.67213	0.61926	0.69794	0.58569	0.67162	0.65634	0.61182	0.65803	0.57657	0.63882	6.58722		
o-Xylene	0.61273	0.56415	0.61379	0.55512	0.6465	0.65334	0.60899	0.67127	0.59158	0.61305	6.41073		
Styrene		0.95813	1.06028	0.90308	1.08018	1.12326	1.04689	1.15897	1.02088	1.04396	8.002		
Bromoform			0.22872	0.23892	0.27832	0.30617	0.27263	0.32232	0.28054	0.27538	12.1348		
Isopropylbenzene		1.53891	1.69742	1.42189	1.74341	1.73716	1.64433	1.81019	1.57289	1.64577	7.76922		
1,4-Dichlorobenzene-d4	ISTD												
1,1,2,2-Tetrachloroethane		0.61571	0.83634	0.73739	0.79769	0.80854	0.74616	0.78083	0.74513	0.75847	8.88143		
p-Bromofluorobenzene				0.91653	0.87561	1.04735	1.0775	0.95104		0.97361	8.83571		
1,2,3-Trichloropropane		0.24645	0.29476	0.28329	0.29208	0.30442	0.29453	0.30315	0.28248	0.28764	6.41284		

trans-1,4-Dichloro-2-Butene		0.22501	0.23725	0.31415	0.3034	0.3105	0.33164	0.30766	0.28994	14.2446
n-Propylbenzene	3.98718	4.09811	3.61454	4.21971	4.10826	3.88939	3.82307	3.70205	3.93029	5.36989
Bromobenzene	0.84385	1.11565	0.86076	0.97118	0.9688	0.89248	0.89548	0.87446	0.92783	9.59949
1,3,5-Trimethylbenzene			2.76735	3.16086	3.10843	2.93606	2.91239	2.81635	2.95024	5.30322
2-Chlorotoluene		2.99265	2.31448	2.81057	2.64897	2.50142	2.61378	2.57101	2.63612	8.25378
4-Chlorotoluene	2.56339	2.5861	2.29006	2.55177	2.63031	2.41864	2.2799	2.17747	2.4372	6.98222
a-Methylstyrene			1.12025	1.41688	1.39756	1.35572	1.41986	1.35543	1.34428	8.43365
tert-Butylbenzene			0.56026	0.65003	0.66483	0.62531	0.61977	0.59094	0.61853	6.19423
1,2,4-Trimethylbenzene	3.41485	3.20381	2.86379	3.24429	3.17284	3.0014	2.96997	2.8463	3.08966	6.49589
sec-Butylbenzene	3.92127	3.95846	3.39254	3.98281	3.96896	3.8029	3.77812	3.59297	3.79976	5.54855
p-Isopropyltoluene			2.97918	3.35219	3.3501	3.24235	3.24339	3.07285	3.20668	4.70949
1,3-Dichlorobenzene	2.09668	2.18083	1.63464	1.82169	1.84149	1.71899	1.77783	1.67989	1.84401	10.6223
1,4-Dichlorobenzene	2.13498	2.06617	1.68605	1.85221	1.83159	1.72549	1.79434	1.65691	1.84347	9.41157
n-Butylbenzene	3.12981	3.1425	2.56827	2.96652	3.08072	3.01911	3.06733	2.87744	2.98146	6.31771
1,2-Dichlorobenzene	1.80685	1.84212	1.52596	1.70901	1.74915	1.66133	1.78603	1.60751	1.71099	6.28256
1,2-Dibromo-3-Chloropropane			0.17584	0.21007	0.23479	0.23723	0.24208	0.21787	0.21965	11.2549
1,2,4-Trichlorobenzene	1.3714	1.33063	1.02655	1.15029	1.2163	1.24479	1.25089	1.12609	1.21462	9.21088
Hexachlorobutadiene	0.57233	0.7279	0.53741	0.61674	0.64289	0.67353	0.72181	0.62948	0.64026	10.4449
Naphthalene		3.19632	2.63671	3.04494	3.29135	3.2233	3.14196	2.79099	3.04651	7.99534
1,2,3-Trichlorobenzene	1.32324	1.26566	0.99788	1.12352	1.21351	1.21702	1.20507	1.0788	1.17809	8.93408

Fri Feb 26 11:40:14 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16021240 Run Date: 02/25/2016 Sample ID: WG558732-11
Instrument ID: HPMS9 Run Time: 21:31 Method: 8260B
File ID: 9M972907 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG558732 Cal ID: HPMS9 - 25-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	48.0	ug/kg	0.461	4.00	20	
1,1-Dichloroethene	CCC	50.0	48.6	ug/kg	0.454	2.90	20	
1,2-Dichloropropane	CCC	50.0	52.3	ug/kg	0.275	4.60	20	
Ethylbenzene	CCC	50.0	51.3	ug/kg	0.531	2.60	20	
Toluene	CCC	50.0	50.7	ug/kg	1.45	1.50	20	
Vinyl Chloride	CCC	50.0	59.8	ug/kg	0.392	19.7	20	
Bromoform	SPCC	50.0	47.3	ug/kg	0.261	5.40	20	
Chlorobenzene	SPCC	50.0	51.2	ug/kg	1.03	2.40	20	
Chloromethane	SPCC	50.0	52.7	ug/kg	0.345	5.40	20	
1,1-Dichloroethane	SPCC	50.0	46.4	ug/kg	0.485	7.20	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	52.0	ug/kg	0.789	4.00	20	
Acetone		50.0	43.9	ug/kg	0.112	12.2	20	
Benzene		50.0	49.0	ug/kg	0.937	2.10	20	
Bromobenzene		50.0	52.2	ug/kg	0.968	4.40	20	
Bromochloromethane		50.0	51.5	ug/kg	0.183	3.00	20	
Bromodichloromethane		50.0	47.6	ug/kg	0.352	4.90	20	
Bromomethane		50.0	49.0	ug/kg	0.208	2.10	20	
2-Butanone		50.0	47.4	ug/kg	0.153	5.20	20	
n-Butylbenzene		50.0	52.5	ug/kg	3.13	4.90	20	
sec-Butylbenzene		50.0	54.7	ug/kg	4.16	9.50	20	
tert-Butylbenzene		50.0	55.4	ug/kg	0.685	10.8	20	
Carbon Disulfide		50.0	44.1	ug/kg	0.635	11.7	20	
Carbon Tetrachloride		50.0	46.5	ug/kg	0.375	7.00	20	
Dibromochloromethane		50.0	48.5	ug/kg	0.407	3.10	20	
Chloroethane		50.0	54.2	ug/kg	0.158	8.30	20	
2-Chlorotoluene		50.0	54.2	ug/kg	2.86	8.40	20	
4-Chlorotoluene		50.0	53.0	ug/kg	2.59	6.10	20	
1,2-Dibromo-3-Chloropropane		50.0	54.5	ug/kg	0.239	8.90	20	
1,2-Dibromoethane		50.0	50.8	ug/kg	0.338	1.50	20	
Dibromomethane		50.0	47.0	ug/kg	0.164	6.10	20	
1,2-Dichlorobenzene		50.0	52.7	ug/kg	1.81	5.50	20	
1,3-Dichlorobenzene		50.0	50.8	ug/kg	1.87	1.60	20	
1,4-Dichlorobenzene		50.0	51.1	ug/kg	1.88	2.20	20	
Dichlorodifluoromethane		50.0	63.4	ug/kg	0.432	26.7	20	*
1,2-Dichloroethane		50.0	49.2	ug/kg	0.416	1.60	20	
cis-1,2-Dichloroethene		50.0	52.6	ug/kg	0.287	5.20	20	
trans-1,2-Dichloroethene		50.0	50.6	ug/kg	0.422	1.20	20	
1,3-Dichloropropane		50.0	53.8	ug/kg	0.538	7.60	20	
2,2-Dichloropropane		50.0	47.1	ug/kg	0.368	5.90	20	
cis-1,3-Dichloropropene		50.0	53.2	ug/kg	0.411	6.40	20	
trans-1,3-Dichloropropene		50.0	50.0	ug/kg	0.515	0.100	20	
1,1-Dichloropropene		50.0	48.5	ug/kg	0.332	2.90	20	

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Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16021240 Run Date: 02/25/2016 Sample ID: WG558732-11
Instrument ID: HPMS9 Run Time: 21:31 Method: 8260B
File ID: 9M972907 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG558732 Cal ID: HPMS9 - 25-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	48.2	ug/kg	0.289	3.60	20	
Hexachlorobutadiene		50.0	54.5	ug/kg	0.698	9.00	20	
Isopropylbenzene		50.0	52.0	ug/kg	1.71	4.00	20	
p-Isopropyltoluene		50.0	54.1	ug/kg	3.47	8.10	20	
4-Methyl-2-Pentanone		50.0	47.8	ug/kg	0.110	4.40	20	
Methylene Chloride		50.0	49.8	ug/kg	0.254	0.400	20	
Naphthalene		50.0	50.8	ug/kg	3.10	1.70	20	
n-Propylbenzene		50.0	54.9	ug/kg	4.32	9.80	20	
Styrene		50.0	52.8	ug/kg	1.10	5.60	20	
1,1,1,2-Tetrachloroethane		50.0	49.7	ug/kg	0.375	0.600	20	
Tetrachloroethene		50.0	49.8	ug/kg	0.305	0.400	20	
1,2,3-Trichlorobenzene		50.0	52.6	ug/kg	1.24	5.20	20	
1,2,4-Trichlorobenzene		50.0	51.7	ug/kg	1.26	3.40	20	
1,1,1-Trichloroethane		50.0	46.7	ug/kg	0.406	6.50	20	
1,1,2-Trichloroethane		50.0	51.5	ug/kg	0.309	3.00	20	
Trichloroethene		50.0	49.4	ug/kg	0.300	1.20	20	
Trichlorofluoromethane		50.0	47.6	ug/kg	0.467	4.90	20	
1,2,3-Trichloropropane		50.0	54.2	ug/kg	0.312	8.40	20	
1,2,4-Trimethylbenzene		50.0	51.5	ug/kg	3.18	3.10	20	
1,3,5-Trimethylbenzene		50.0	54.3	ug/kg	3.21	8.60	20	
o-Xylene		50.0	53.6	ug/kg	0.657	7.10	20	
m-,p-Xylene		100	103	ug/kg	0.655	2.60	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

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Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021240 Run Date: 02/26/2016 Sample ID: WG558909-02
Instrument ID: HPMS9 Run Time: 14:40 Method: 8260B
File ID: 9M972910 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG558910 Cal ID: HPMS9 - 25-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	45.3	ug/kg	0.436	9.36	20	
1,1-Dichloroethene	CCC	50.0	46.5	ug/kg	0.435	6.93	20	
1,2-Dichloropropane	CCC	50.0	47.8	ug/kg	0.251	4.45	20	
Ethylbenzene	CCC	50.0	49.6	ug/kg	0.513	0.744	20	
Toluene	CCC	50.0	48.0	ug/kg	1.37	3.95	20	
Vinyl Chloride	CCC	50.0	52.7	ug/kg	0.345	5.46	20	
Bromoform	SPCC	50.0	46.7	ug/kg	0.257	6.68	20	
Chlorobenzene	SPCC	50.0	47.1	ug/kg	0.946	5.78	20	
Chloromethane	SPCC	50.0	46.5	ug/kg	0.304	6.97	20	
1,1-Dichloroethane	SPCC	50.0	46.7	ug/kg	0.488	6.68	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	47.5	ug/kg	0.721	4.95	20	
Xylenes		150	145	ug/kg	0.607	3.43	40	
Acetone		50.0	42.3	ug/kg	0.108	15.3	20	
Benzene		50.0	46.5	ug/kg	0.890	7.00	20	
Bromobenzene		50.0	46.8	ug/kg	0.868	6.41	20	
Bromochloromethane		50.0	48.9	ug/kg	0.174	2.16	20	
Bromodichloromethane		50.0	45.5	ug/kg	0.337	9.07	20	
Bromomethane		50.0	44.4	ug/kg	0.189	11.1	20	
2-Butanone		50.0	45.6	ug/kg	0.147	8.86	20	
n-Butylbenzene		50.0	50.0	ug/kg	2.98	0.0836	20	
sec-Butylbenzene		50.0	49.2	ug/kg	3.74	1.60	20	
tert-Butylbenzene		50.0	48.6	ug/kg	0.601	2.76	20	
Carbon Disulfide		50.0	52.0	ug/kg	0.749	4.04	20	
Carbon Tetrachloride		50.0	46.3	ug/kg	0.373	7.42	20	
Dibromochloromethane		50.0	46.2	ug/kg	0.388	7.54	20	
Chloroethane		50.0	49.6	ug/kg	0.145	0.796	20	
2-Chlorotoluene		50.0	49.9	ug/kg	2.63	0.114	20	
4-Chlorotoluene		50.0	46.0	ug/kg	2.24	8.00	20	
1,2-Dibromo-3-Chloropropane		50.0	44.4	ug/kg	0.195	11.2	20	
1,2-Dibromoethane		50.0	46.8	ug/kg	0.312	6.36	20	
Dibromomethane		50.0	47.6	ug/kg	0.166	4.80	20	
1,2-Dichlorobenzene		50.0	46.2	ug/kg	1.58	7.70	20	
1,3-Dichlorobenzene		50.0	45.7	ug/kg	1.69	8.52	20	
1,4-Dichlorobenzene		50.0	45.7	ug/kg	1.68	8.70	20	
Dichlorodifluoromethane		50.0	52.8	ug/kg	0.360	5.56	20	
1,2-Dichloroethane		50.0	46.7	ug/kg	0.394	6.68	20	
cis-1,2-Dichloroethene		50.0	48.7	ug/kg	0.266	2.60	20	
trans-1,2-Dichloroethene		50.0	47.5	ug/kg	0.395	5.04	20	
1,3-Dichloropropane		50.0	46.8	ug/kg	0.468	6.32	20	
2,2-Dichloropropane		50.0	48.3	ug/kg	0.377	3.39	20	
cis-1,3-Dichloropropene		50.0	47.8	ug/kg	0.369	4.41	20	
trans-1,3-Dichloropropene		50.0	48.1	ug/kg	0.495	3.86	20	

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Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021240 Run Date: 02/26/2016 Sample ID: WG558909-02
Instrument ID: HPMS9 Run Time: 14:40 Method: 8260B
File ID: 9M972910 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG558910 Cal ID: HPMS9 - 25-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	47.6	ug/kg	0.326	4.75	20	
2-Hexanone		50.0	46.6	ug/kg	0.279	6.83	20	
Hexachlorobutadiene		50.0	48.2	ug/kg	0.617	3.68	20	
Isopropylbenzene		50.0	49.3	ug/kg	1.62	1.41	20	
p-Isopropyltoluene		50.0	50.0	ug/kg	3.20	0.0922	20	
4-Methyl-2-Pentanone		50.0	48.3	ug/kg	0.111	3.41	20	
Methylene Chloride		50.0	47.0	ug/kg	0.239	6.06	20	
Naphthalene		50.0	48.6	ug/kg	2.96	2.72	20	
n-Propylbenzene		50.0	49.8	ug/kg	3.92	0.363	20	
Styrene		50.0	49.1	ug/kg	1.03	1.72	20	
1,1,1,2-Tetrachloroethane		50.0	46.9	ug/kg	0.354	6.18	20	
Tetrachloroethene		50.0	48.5	ug/kg	0.297	2.94	20	
1,2,3-Trichlorobenzene		50.0	46.8	ug/kg	1.10	6.47	20	
1,2,4-Trichlorobenzene		50.0	47.3	ug/kg	1.15	5.32	20	
1,1,1-Trichloroethane		50.0	46.8	ug/kg	0.407	6.32	20	
1,1,2-Trichloroethane		50.0	48.0	ug/kg	0.288	3.93	20	
Trichloroethene		50.0	47.3	ug/kg	0.287	5.42	20	
Trichlorofluoromethane		50.0	47.3	ug/kg	0.465	5.43	20	
1,2,3-Trichloropropane		50.0	47.4	ug/kg	0.273	5.14	20	
1,2,4-Trimethylbenzene		50.0	48.0	ug/kg	2.97	4.03	20	
1,3,5-Trimethylbenzene		50.0	49.1	ug/kg	2.90	1.74	20	
o-Xylene		50.0	49.0	ug/kg	0.601	1.96	20	
m-,p-Xylene		100	95.8	ug/kg	0.612	4.17	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021240 Run Date: 02/28/2016 Sample ID: WG559001-02
Instrument ID: HPMS9 Run Time: 15:39 Method: 8260B
File ID: 9M972943 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG559002 Cal ID: HPMS9 - 25-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.8	ug/kg	0.488	1.66	20	
1,1-Dichloroethene	CCC	50.0	51.1	ug/kg	0.478	2.26	20	
1,2-Dichloropropane	CCC	50.0	53.6	ug/kg	0.282	7.20	20	
Ethylbenzene	CCC	50.0	54.8	ug/kg	0.567	9.67	20	
Toluene	CCC	50.0	52.7	ug/kg	1.51	5.37	20	
Vinyl Chloride	CCC	50.0	58.7	ug/kg	0.384	17.4	20	
Bromoform	SPCC	50.0	50.7	ug/kg	0.279	1.36	20	
Chlorobenzene	SPCC	50.0	51.9	ug/kg	1.04	3.70	20	
Chloromethane	SPCC	50.0	49.6	ug/kg	0.325	0.769	20	
1,1-Dichloroethane	SPCC	50.0	52.8	ug/kg	0.552	5.62	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	51.3	ug/kg	0.779	2.65	20	
Xylenes		150	157	ug/kg	0.658	4.90	40	
Acetone		50.0	44.5	ug/kg	0.113	10.9	20	
Benzene		50.0	51.9	ug/kg	0.993	3.70	20	
Bromobenzene		50.0	52.4	ug/kg	0.973	4.89	20	
Bromochloromethane		50.0	52.6	ug/kg	0.187	5.20	20	
Bromodichloromethane		50.0	49.7	ug/kg	0.368	0.545	20	
Bromomethane		50.0	46.4	ug/kg	0.197	7.27	20	
2-Butanone		50.0	46.4	ug/kg	0.150	7.26	20	
n-Butylbenzene		50.0	54.5	ug/kg	3.25	9.02	20	
sec-Butylbenzene		50.0	55.7	ug/kg	4.23	11.4	20	
tert-Butylbenzene		50.0	56.8	ug/kg	0.702	13.6	20	
Carbon Disulfide		50.0	54.1	ug/kg	0.778	8.13	20	
Carbon Tetrachloride		50.0	51.9	ug/kg	0.418	3.86	20	
Dibromochloromethane		50.0	49.2	ug/kg	0.412	1.68	20	
Chloroethane		50.0	56.7	ug/kg	0.166	13.4	20	
2-Chlorotoluene		50.0	52.3	ug/kg	2.76	4.60	20	
4-Chlorotoluene		50.0	55.6	ug/kg	2.71	11.2	20	
1,2-Dibromo-3-Chloropropane		50.0	47.2	ug/kg	0.207	5.63	20	
1,2-Dibromoethane		50.0	49.4	ug/kg	0.329	1.19	20	
Dibromomethane		50.0	50.4	ug/kg	0.176	0.750	20	
1,2-Dichlorobenzene		50.0	51.4	ug/kg	1.76	2.80	20	
1,3-Dichlorobenzene		50.0	51.5	ug/kg	1.90	2.94	20	
1,4-Dichlorobenzene		50.0	51.0	ug/kg	1.88	1.96	20	
Dichlorodifluoromethane		50.0	51.2	ug/kg	0.349	2.38	20	
1,2-Dichloroethane		50.0	51.2	ug/kg	0.433	2.43	20	
cis-1,2-Dichloroethene		50.0	53.7	ug/kg	0.293	7.31	20	
trans-1,2-Dichloroethene		50.0	54.7	ug/kg	0.455	9.32	20	
1,3-Dichloropropane		50.0	51.7	ug/kg	0.517	3.35	20	
2,2-Dichloropropane		50.0	55.9	ug/kg	0.436	11.8	20	
cis-1,3-Dichloropropene		50.0	52.2	ug/kg	0.403	4.31	20	
trans-1,3-Dichloropropene		50.0	51.7	ug/kg	0.532	3.37	20	

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021240 Run Date: 02/28/2016 Sample ID: WG559001-02
Instrument ID: HPMS9 Run Time: 15:39 Method: 8260B
File ID: 9M972943 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG559002 Cal ID: HPMS9 - 25-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	53.5	ug/kg	0.366	6.98	20	
2-Hexanone		50.0	49.1	ug/kg	0.294	1.82	20	
Hexachlorobutadiene		50.0	52.5	ug/kg	0.672	4.92	20	
Isopropylbenzene		50.0	53.6	ug/kg	1.76	7.24	20	
p-Isopropyltoluene		50.0	55.0	ug/kg	3.53	9.95	20	
4-Methyl-2-Pentanone		50.0	49.0	ug/kg	0.113	2.01	20	
Methylene Chloride		50.0	51.6	ug/kg	0.262	3.10	20	
Naphthalene		50.0	48.5	ug/kg	2.96	2.90	20	
n-Propylbenzene		50.0	56.0	ug/kg	4.40	12.0	20	
Styrene		50.0	53.6	ug/kg	1.12	7.30	20	
1,1,1,2-Tetrachloroethane		50.0	52.0	ug/kg	0.392	3.96	20	
Tetrachloroethene		50.0	52.9	ug/kg	0.324	5.75	20	
1,2,3-Trichlorobenzene		50.0	50.5	ug/kg	1.19	1.07	20	
1,2,4-Trichlorobenzene		50.0	51.1	ug/kg	1.24	2.15	20	
1,1,1-Trichloroethane		50.0	52.5	ug/kg	0.457	5.06	20	
1,1,2-Trichloroethane		50.0	51.7	ug/kg	0.310	3.33	20	
Trichloroethene		50.0	54.1	ug/kg	0.328	8.14	20	
Trichlorofluoromethane		50.0	52.5	ug/kg	0.516	5.04	20	
1,2,3-Trichloropropane		50.0	52.2	ug/kg	0.301	4.50	20	
1,2,4-Trimethylbenzene		50.0	53.4	ug/kg	3.30	6.83	20	
1,3,5-Trimethylbenzene		50.0	55.3	ug/kg	3.26	10.6	20	
o-Xylene		50.0	53.1	ug/kg	0.651	6.13	20	
m-,p-Xylene		100	104	ug/kg	0.666	4.29	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
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Report generated 02/29/2016 16:47

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16021240
Instrument ID: HPMS9
Workgroup (AAB#): WG558910

ICAL CCV Number: WG558732-02
CAL ID: HPMS9-25-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558732-02	NA	NA	183008	378926	517775
Upper Limit	NA	NA	366016	757852	1035550
Lower Limit	NA	NA	91504	189463	258888
L16021240-01	1.00	01	174094	374087	525422
L16021240-02	1.00	01	188921	421343	602019
L16021240-03	1.00	01	167533	366928	524643
L16021240-05	1.00	01	173557	379210	528471
L16021240-06	1.00	01	165690	375738	535463
L16021240-07	1.00	01	191119	411796	569241
L16021240-08	1.00	01	197692	430665	612123
WG558910-01	1.00	01	194102	423405	602902
WG558910-02	1.00	01	184187	403042	563717
WG558910-03	1.00	01	205574	445879	620699

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4651874
Report generated 02/29/2016 16:47

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16021240
Instrument ID: HPMS9
Workgroup (AAB#): WG559002

ICAL CCV Number: WG558732-02
CAL ID: HPMS9 - 25-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558732-02	NA	NA	183008	378926	517775
Upper Limit	NA	NA	366016	757852	1035550
Lower Limit	NA	NA	91504	189463	258888
L16021240-04	1.00	02	129736	287238	408640
WG559002-01	1.00	01	204353	441195	620113
WG559002-02	1.00	01	193426	413544	577816

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4651874
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Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16021240
Instrument ID: HPMS9
Workgroup (AAB#): WG558910

ICAL CCV Number: WG558732-02
CAL ID: HPMS9-25-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558732-02	NA	NA	17.76	14.73	10.85
Upper Limit	NA	NA	18.26	15.23	11.35
Lower Limit	NA	NA	17.26	14.23	10.35
L16021240-01	1.00	01	17.75	14.72	10.85
L16021240-02	1.00	01	17.75	14.72	10.85
L16021240-03	1.00	01	17.75	14.72	10.85
L16021240-05	1.00	01	17.75	14.72	10.85
L16021240-06	1.00	01	17.75	14.72	10.85
L16021240-07	1.00	01	17.75	14.72	10.85
L16021240-08	1.00	01	17.75	14.72	10.85
WG558910-01	1.00	01	17.75	14.72	10.85
WG558910-02	1.00	01	17.75	14.72	10.85
WG558910-03	1.00	01	17.75	14.72	10.85

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4651876
Report generated: 02/29/2016 16:47

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16021240
Instrument ID: HPMS9
Workgroup (AAB#): WG559002

ICAL CCV Number: WG558732-02
CAL ID: HPMS9 - 25-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558732-02	NA	NA	17.76	14.73	10.85
Upper Limit	NA	NA	18.26	15.23	11.35
Lower Limit	NA	NA	17.26	14.23	10.35
L16021240-04	1.00	02	17.75	14.73	10.85
WG559002-01	1.00	01	17.75	14.72	10.85
WG559002-02	1.00	01	17.75	14.72	10.85

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4651876
Report generated: 02/29/2016 16:47

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\9M972923.D Vial: 14
Acq On : 26 Feb 2016 21:20 Operator: ADC
Sample : L16021240-01 A 8260 4.65g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 11:43:13 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	525422	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	374087	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	174094	50.00 ug/kg	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.80	111	142010	49.8621 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.72%		
43) 1,2-Dichloroethane-d4	10.45	65	169036	47.3034 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.60%		
58) Toluene-d8	12.82	98	510240	53.9240 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 107.84%		
79) p-Bromofluorobenzene	16.23	95	188940	55.7349 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 111.46%		
Target Compounds					Qvalue
13) Acetone	6.42	43	4993	1.4360 ug/kg	99
17) Iodomethane	7.14	142	214	2.9368 ug/kg#	34
56) Dimethyl Disulfide	12.82	94	15293	3.7523 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972923.D 8260SL.M Mon Feb 29 11:43:13 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\9M972923.D Vial: 14
Acq On : 26 Feb 2016 21:20 Operator: ADC
Sample : L16021240-01 A 8260 4.65g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 11:43 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

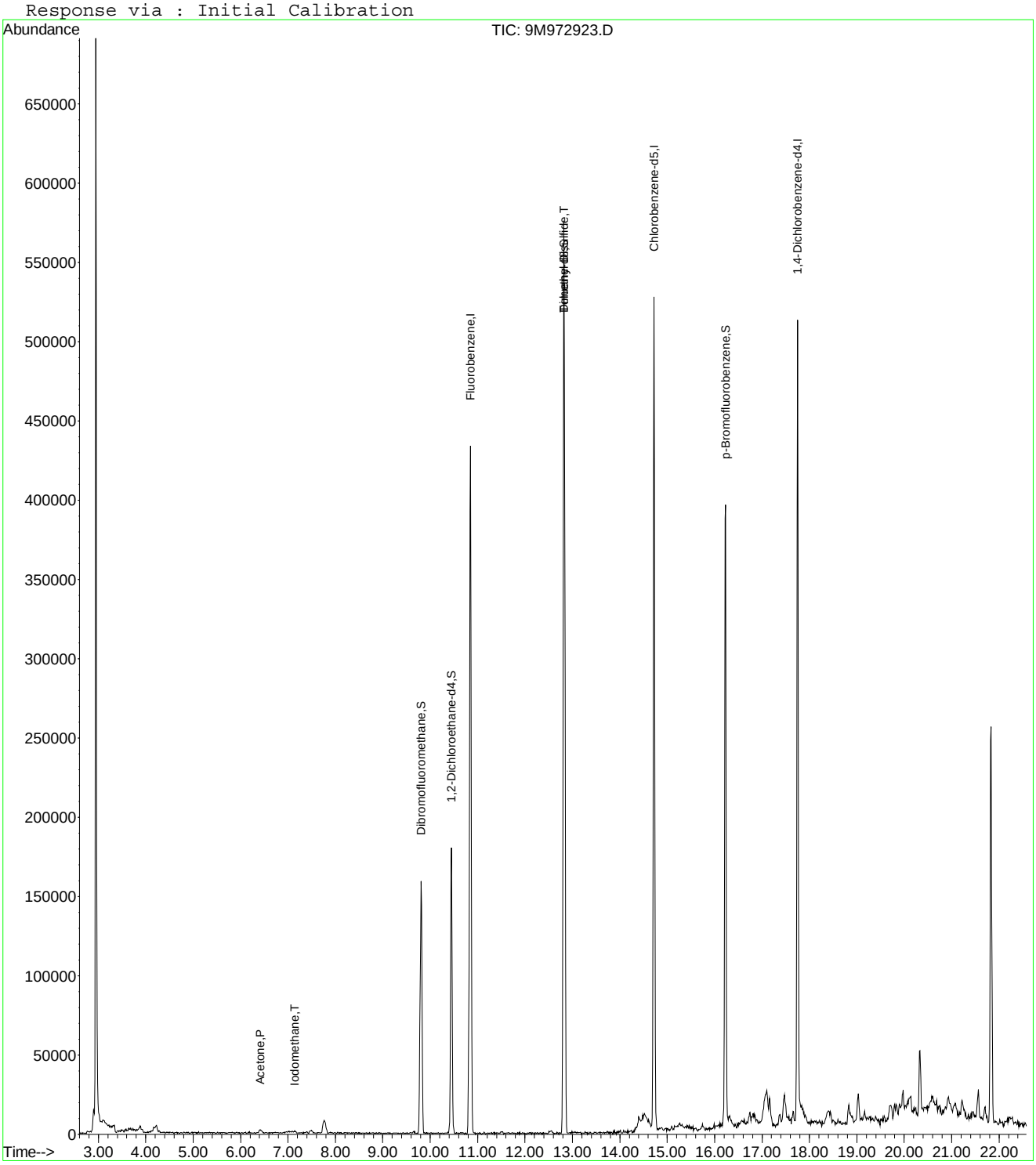

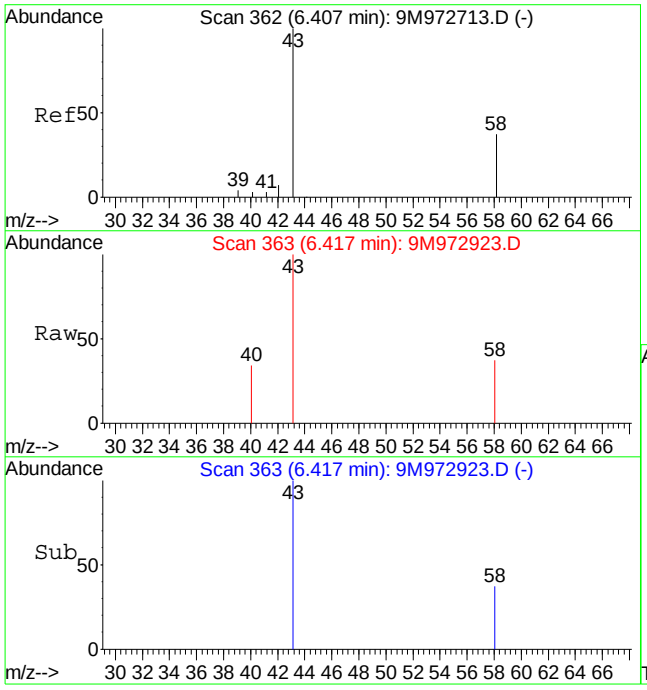

#13
Acetone
Concen: 1.44 ug/kg
RT: 6.42 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M972923.D
Acq: 26 Feb 2016 21:20

Tgt Ion: 43 Resp: 4993

Ion	Ratio	Lower	Upper
43	100		
58	28.5	16.9	39.3

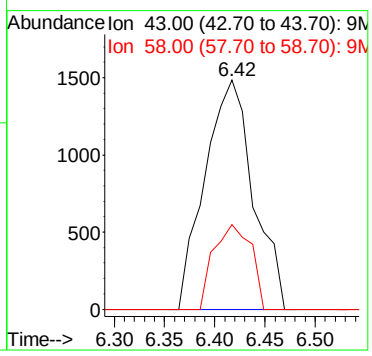

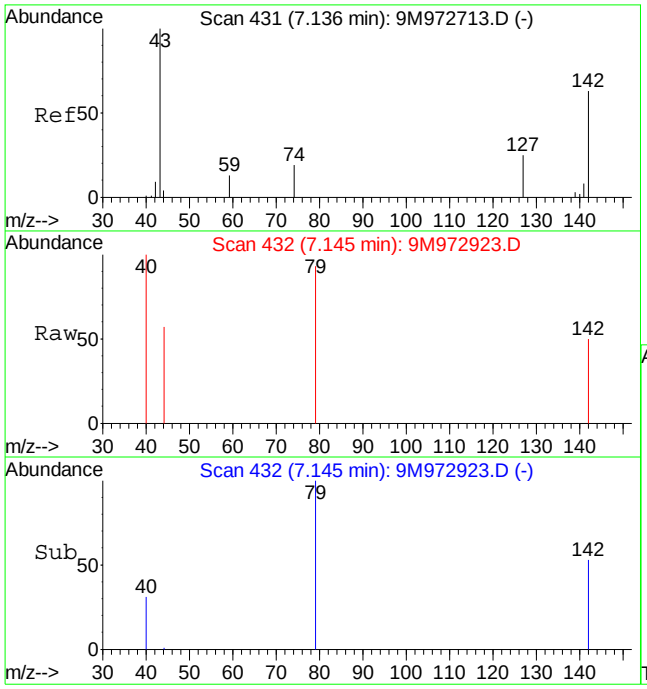

#17
Iodomethane
Concen: 2.94 ug/kg
RT: 7.14 min Scan# 432
Delta R.T. 0.01 min
Lab File: 9M972923.D
Acq: 26 Feb 2016 21:20

Tgt Ion:142 Resp: 214

Ion	Ratio	Lower	Upper
142	100		
127	0.0	25.1	58.7#

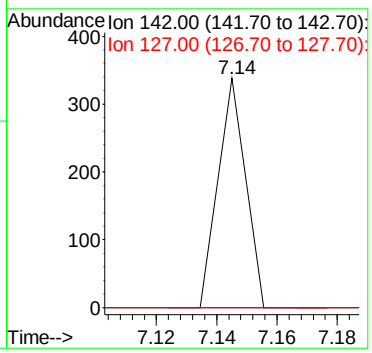

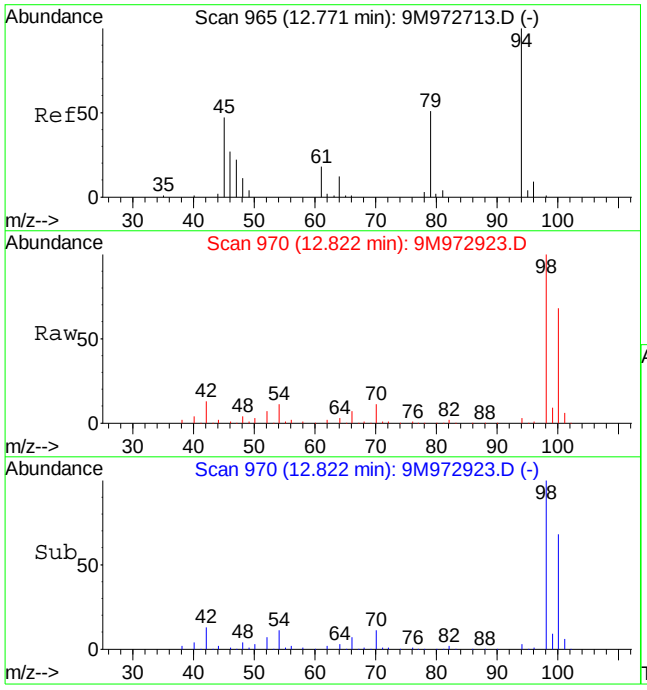

#56
Dimethyl Disulfide
Concen: 3.75 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M972923.D
Acq: 26 Feb 2016 21:20

Tgt Ion: 94 Resp: 15293

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

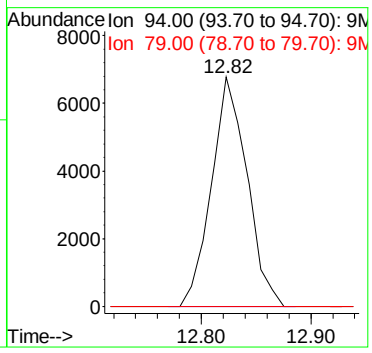

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\9M972924.D Vial: 15
Acq On : 26 Feb 2016 21:50 Operator: ADC
Sample : L16021240-02 A 8260 4.72g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 11:43:14 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	602019	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	421343	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.75	152	188921	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	162227	49.7133 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.42%		
43) 1,2-Dichloroethane-d4	10.45	65	191658	46.8100 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.62%		
58) Toluene-d8	12.83	98	592622	55.6060 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 111.22%		
79) p-Bromofluorobenzene	16.23	95	209156	56.8562 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 113.72%		

Target Compounds

					Qvalue
6) Bromomethane	4.89	94	1044	0.4077 ug/kg	68
13) Acetone	6.41	43	11726	5.5811 ug/kg	89
17) Iodomethane	7.14	142	1250	3.5042 ug/kg#	34
29) 2-Butanone	9.03	43	1234	0.6356 ug/kg#	58
56) Dimethyl Disulfide	12.82	94	15717	3.3657 ug/kg#	29
91) p-Isopropyltoluene	17.46	119	5247	0.4331 ug/kg	98

(#) = qualifier out of range (m) = manual integration
9M972924.D 8260SL.M Mon Feb 29 11:43:14 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\9M972924.D Vial: 15
Acq On : 26 Feb 2016 21:50 Operator: ADC
Sample : L16021240-02 A 8260 4.72g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 11:43 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

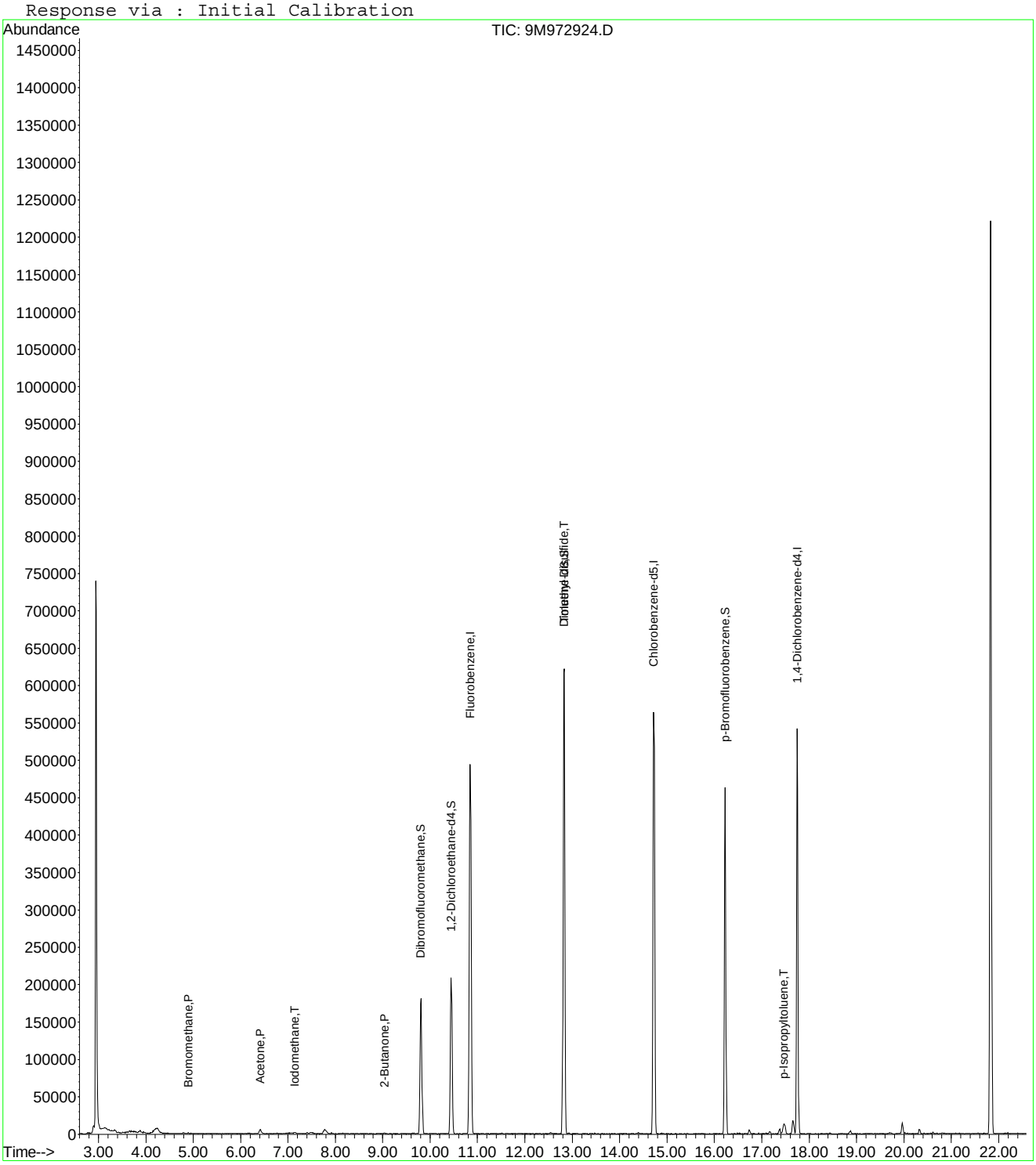

9M972924.D 8260SL.M Mon Feb 29 11:43:14 2016 Page 2

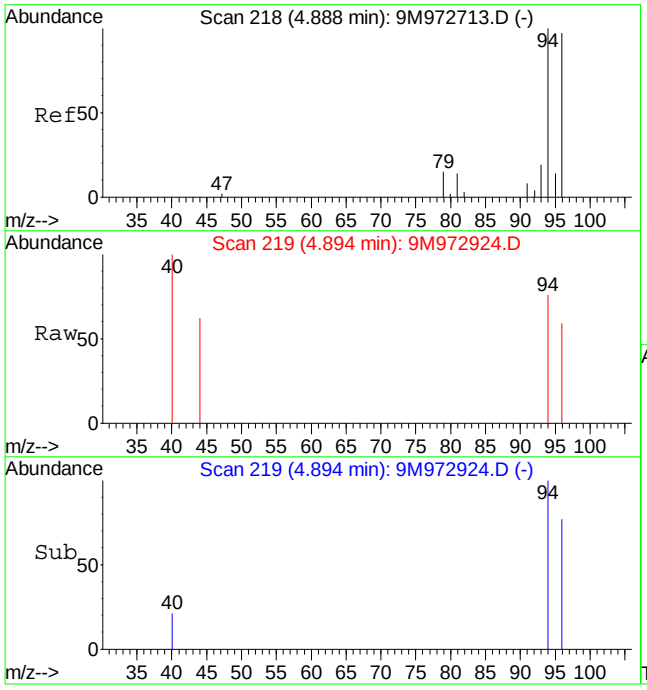

#6
Bromomethane
Concen: 0.41 ug/kg
RT: 4.89 min Scan# 219
Delta R.T. 0.01 min
Lab File: 9M972924.D
Acq: 26 Feb 2016 21:50

Tgt Ion: 94 Resp: 1044

Ion	Ratio	Lower	Upper
94	100		
96	64.4	57.2	133.6

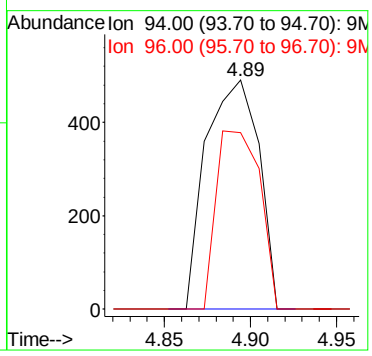

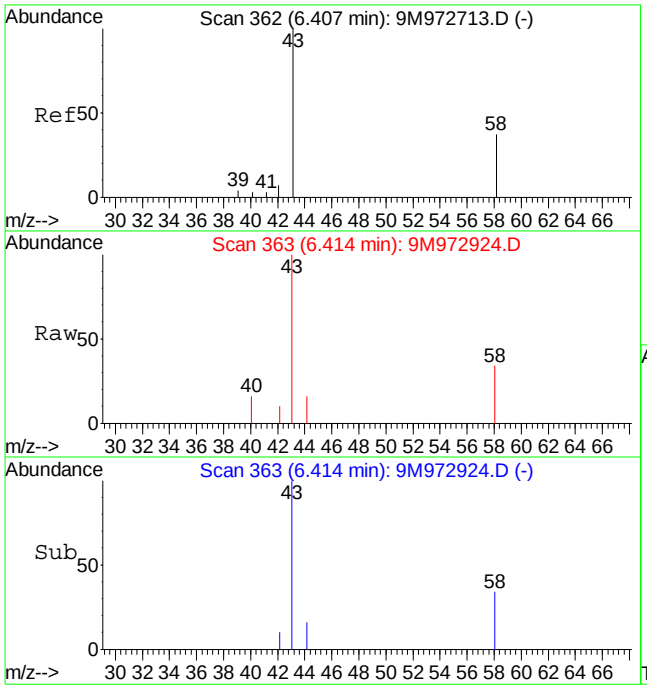

#13
Acetone
Concen: 5.58 ug/kg
RT: 6.41 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M972924.D
Acq: 26 Feb 2016 21:50

Tgt Ion: 43 Resp: 11726

Ion	Ratio	Lower	Upper
43	100		
58	33.8	16.9	39.3

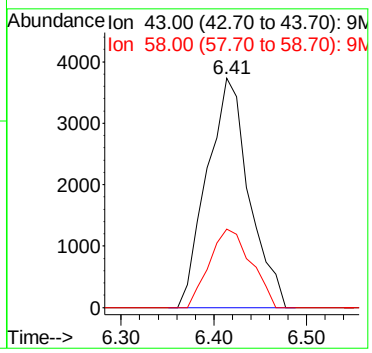

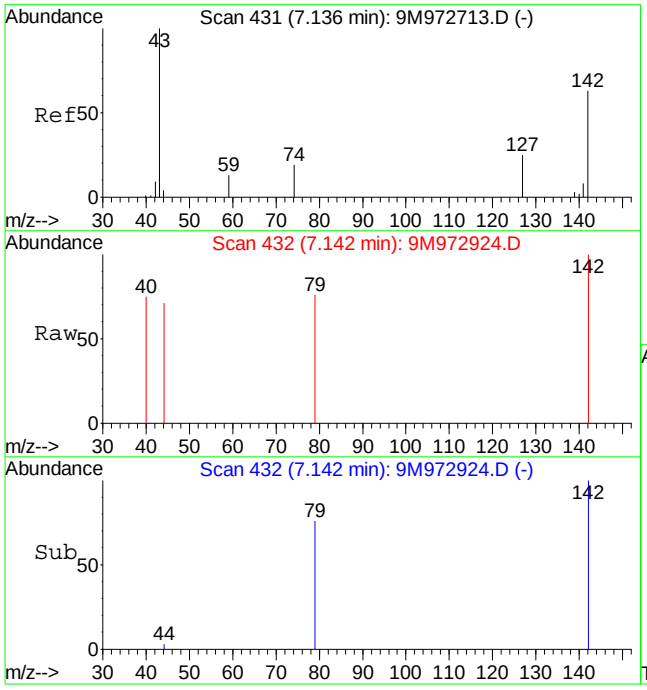

#17
Iodomethane
Concen: 3.50 ug/kg
RT: 7.14 min Scan# 432
Delta R.T. 0.01 min
Lab File: 9M972924.D
Acq: 26 Feb 2016 21:50

Tgt Ion:142 Resp: 1250

Ion	Ratio	Lower	Upper
142	100		
127	0.0	25.1	58.7#

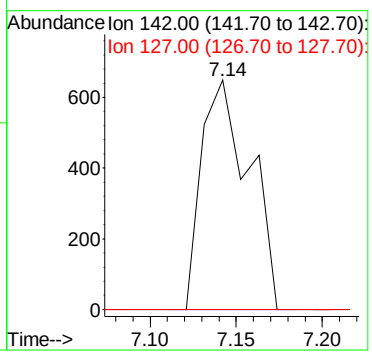

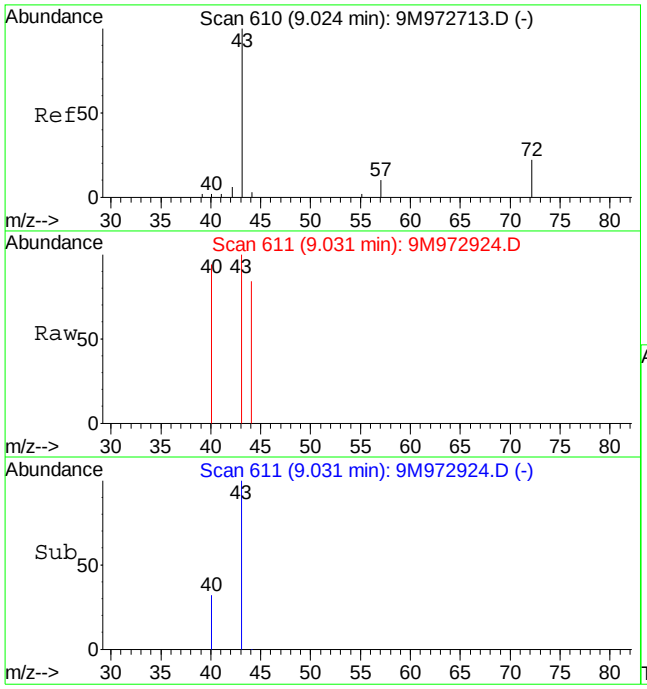

#29
2-Butanone
Concen: 0.64 ug/kg
RT: 9.03 min Scan# 611
Delta R.T. 0.00 min
Lab File: 9M972924.D
Acq: 26 Feb 2016 21:50

Tgt Ion: 43 Resp: 1234

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

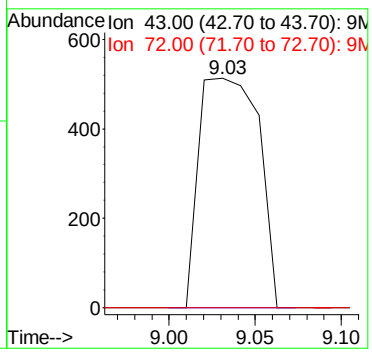

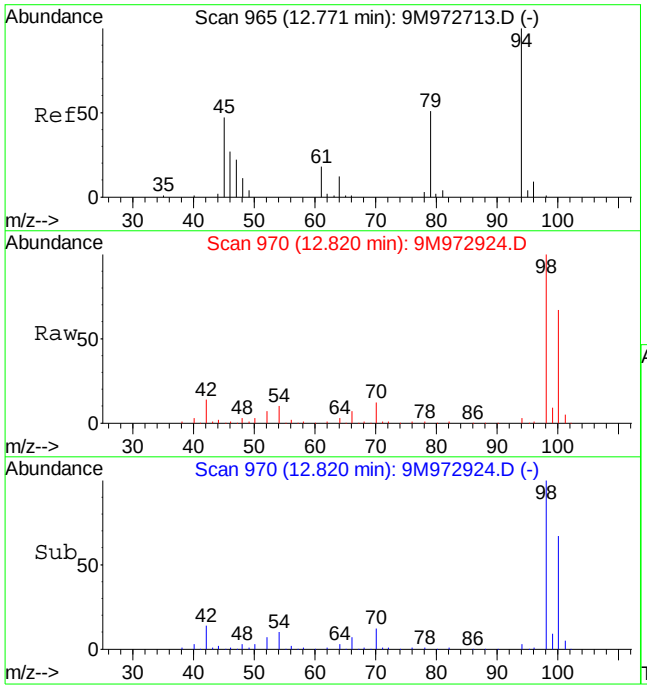

#56
Dimethyl Disulfide
Concen: 3.37 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M972924.D
Acq: 26 Feb 2016 21:50

Tgt Ion: 94 Resp: 15717

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

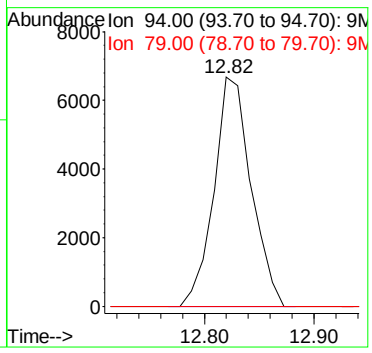

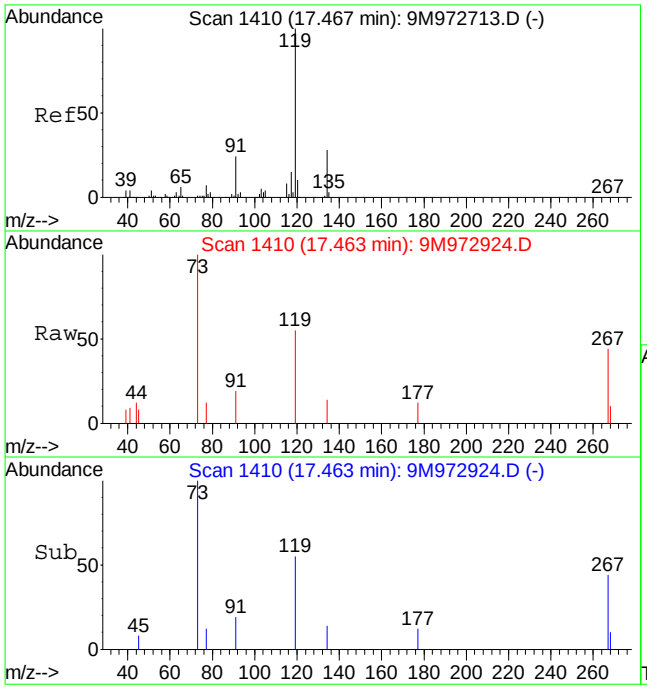

#91
p-Isopropyltoluene
Concen: 0.43 ug/kg
RT: 17.46 min Scan# 1410
Delta R.T. 0.00 min
Lab File: 9M972924.D
Acq: 26 Feb 2016 21:50

Tgt Ion:119 Resp: 5247

Ion	Ratio	Lower	Upper
119	100		
134	24.9	15.7	36.5

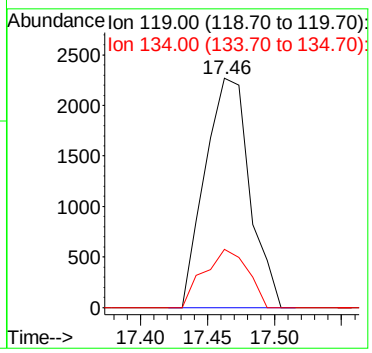

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\9M972925.D Vial: 16
Acq On : 26 Feb 2016 22:21 Operator: ADC
Sample : L16021240-03 A 8260 4.64g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 11:43:15 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	524643	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	366928	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	167533	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	145657	51.2185 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 102.44%		
43) 1,2-Dichloroethane-d4	10.45	65	169760	47.5766 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.16%		
58) Toluene-d8	12.82	98	522422	56.2886 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 112.58%		
79) p-Bromofluorobenzene	16.23	95	185717	56.9297 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 113.86%		

Target Compounds

					Qvalue
13) Acetone	6.41	43	4946	1.4047 ug/kg	98
17) Iodomethane	7.13	142	458	3.0951 ug/kg#	34
56) Dimethyl Disulfide	12.83	94	13467	3.3092 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972925.D 8260SL.M Mon Feb 29 11:43:15 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\9M972925.D Vial: 16
Acq On : 26 Feb 2016 22:21 Operator: ADC
Sample : L16021240-03 A 8260 4.64g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 11:43 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

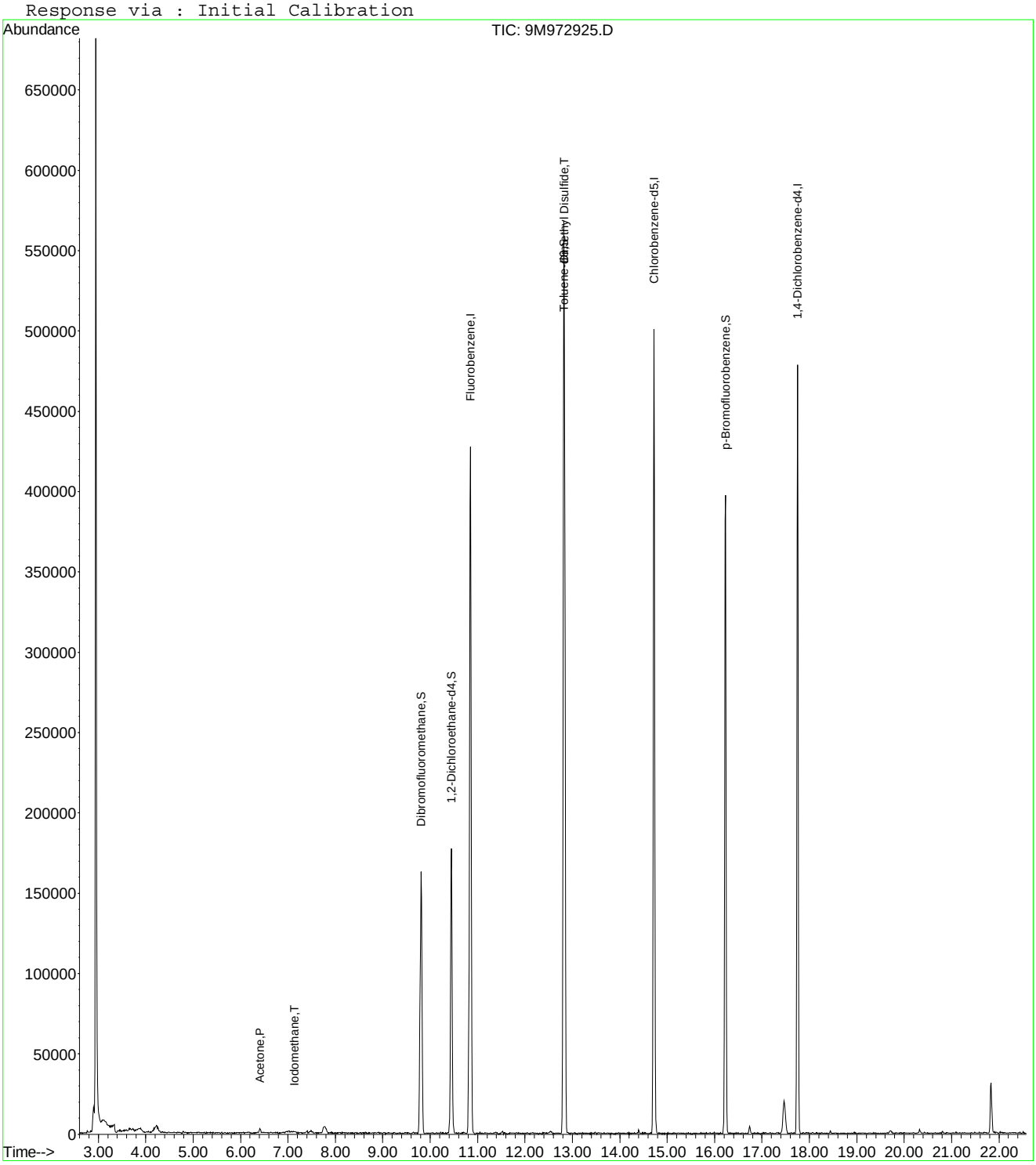

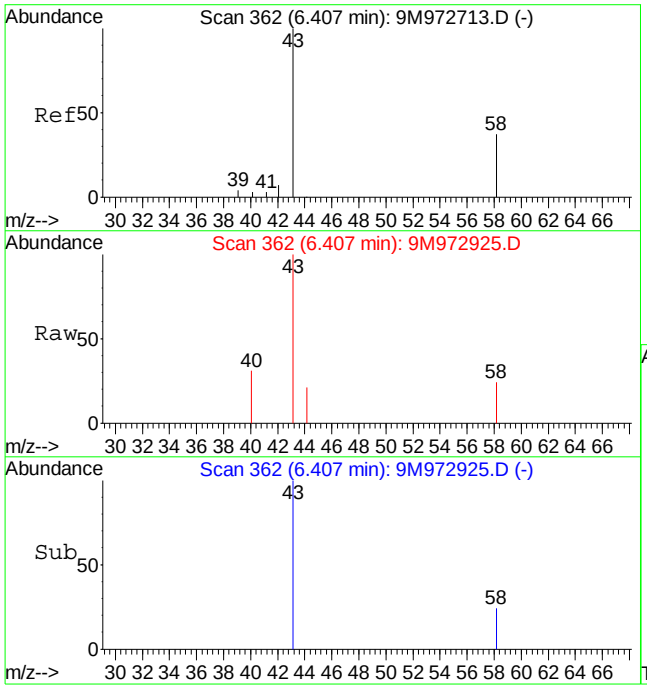

#13
Acetone
Concen: 1.40 ug/kg
RT: 6.41 min Scan# 362
Delta R.T. -0.01 min
Lab File: 9M972925.D
Acq: 26 Feb 2016 22:21

Tgt Ion: 43 Resp: 4946

Ion	Ratio	Lower	Upper
43	100		
58	29.2	16.9	39.3

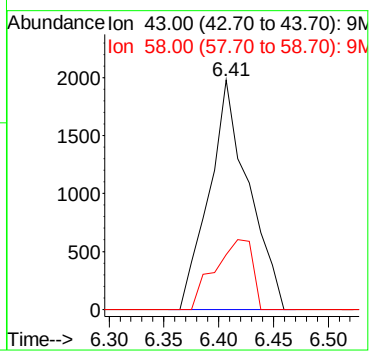

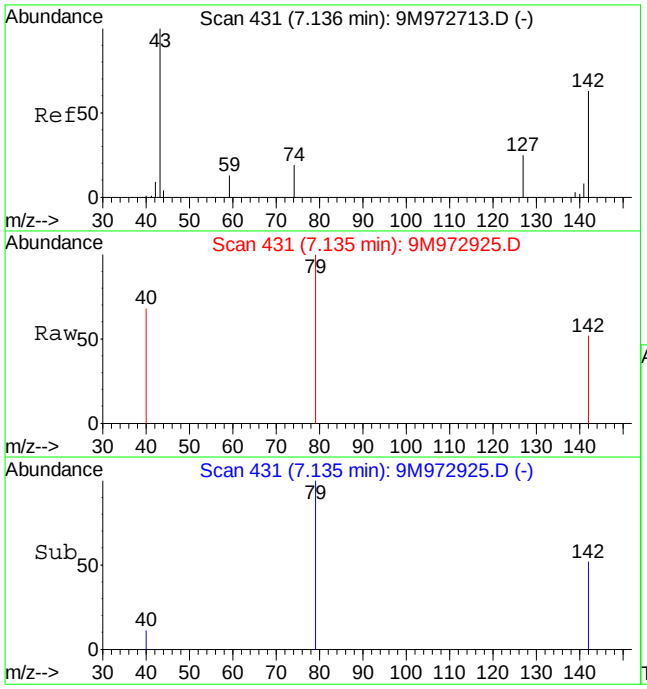

#17
Iodomethane
Concen: 3.10 ug/kg
RT: 7.13 min Scan# 431
Delta R.T. 0.00 min
Lab File: 9M972925.D
Acq: 26 Feb 2016 22:21

Tgt Ion:142 Resp: 458

Ion	Ratio	Lower	Upper
142	100		
127	0.0	25.1	58.7#

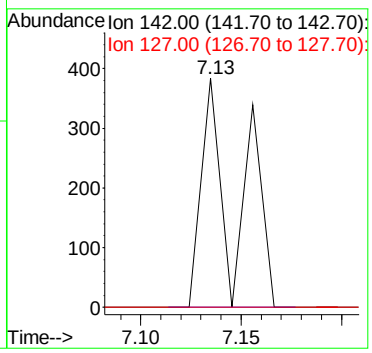

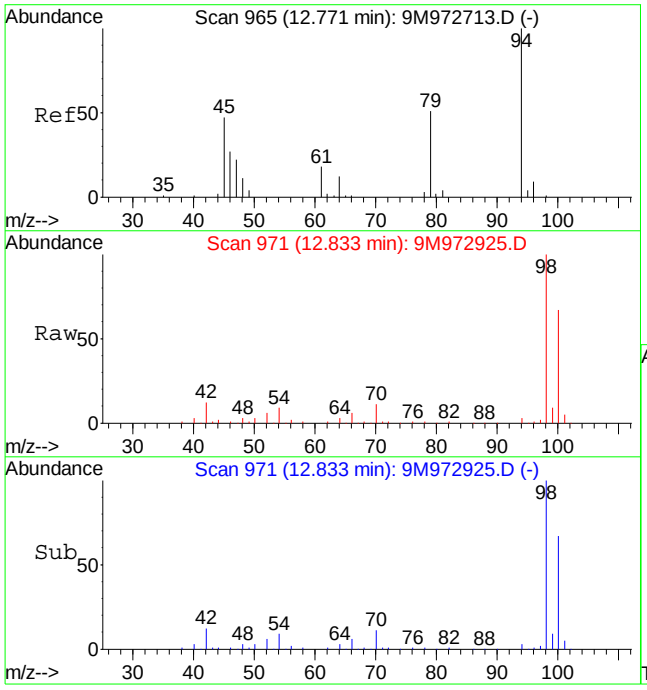

#56
Dimethyl Disulfide
Concen: 3.31 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.07 min
Lab File: 9M972925.D
Acq: 26 Feb 2016 22:21

Tgt Ion: 94 Resp: 13467

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

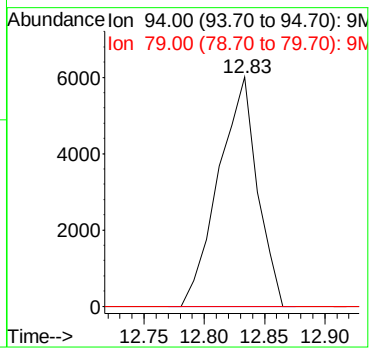

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022816\9M972958.D Vial: 16
Acq On : 28 Feb 2016 23:22 Operator: FJB
Sample : L16021240-04 8260 4.59g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 13:25:59 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	408640	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.73	117	287238	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	129736	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	109892	49.6118 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.22%		
43) 1,2-Dichloroethane-d4	10.45	65	135988	48.9307 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.86%		
58) Toluene-d8	12.83	98	398839	54.8954 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 109.80%		
79) p-Bromofluorobenzene	16.23	95	144353	57.1416 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 114.28%		

Target Compounds					Qvalue
13) Acetone	6.39	43	3611	1.1592 ug/kg#	70
56) Dimethyl Disulfide	12.82	94	10528	3.3214 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972958.D 8260SL.M Mon Feb 29 13:26:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022816\9M972958.D Vial: 16
Acq On : 28 Feb 2016 23:22 Operator: FJB
Sample : L16021240-04 8260 4.59g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 13:26 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

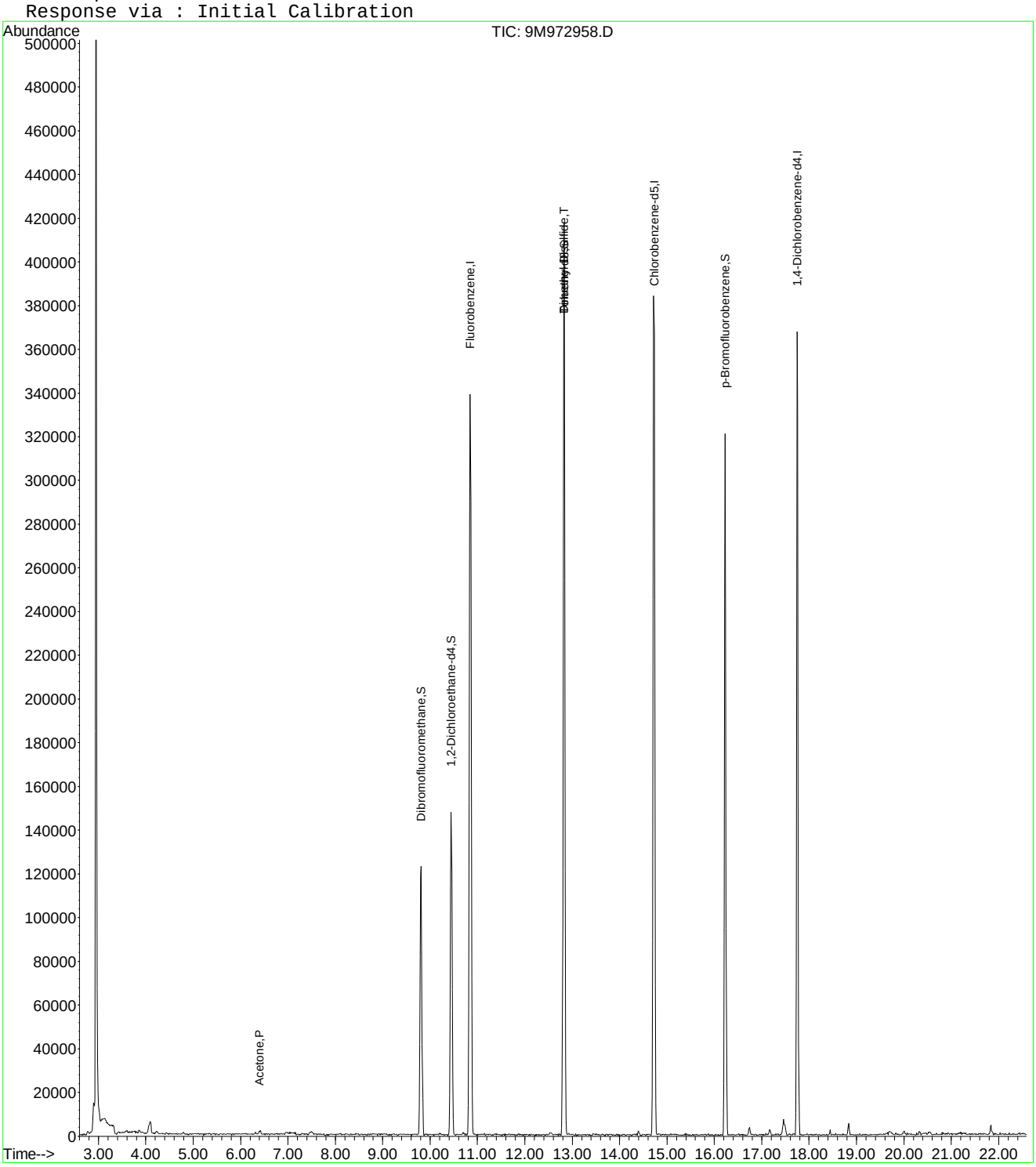

9M972958.D 8260SL.M Mon Feb 29 13:26:00 2016 Page 2

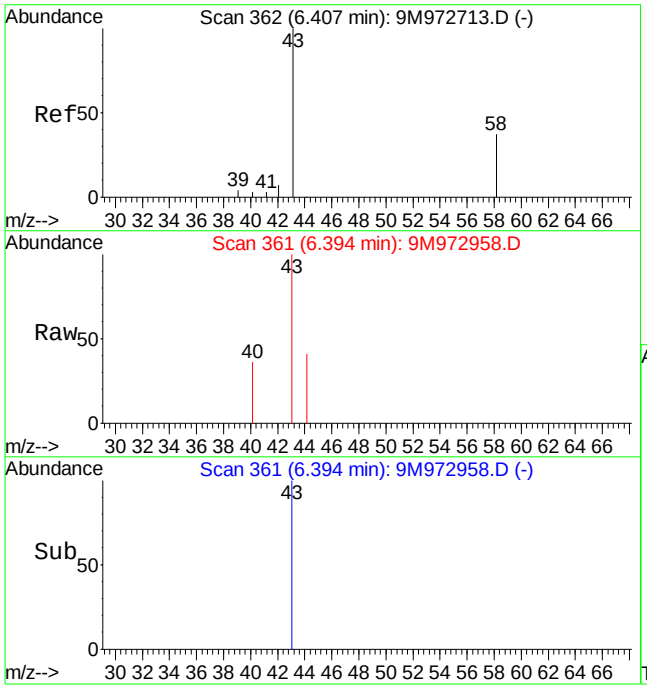

#13
Acetone
Concen: 1.16 ug/kg
RT: 6.39 min Scan# 361
Delta R.T. -0.02 min
Lab File: 9M972958.D
Acq: 28 Feb 2016 23:22

Tgt Ion: 43 Resp: 3611

Ion	Ratio	Lower	Upper
43	100		
58	12.5	16.9	39.3#

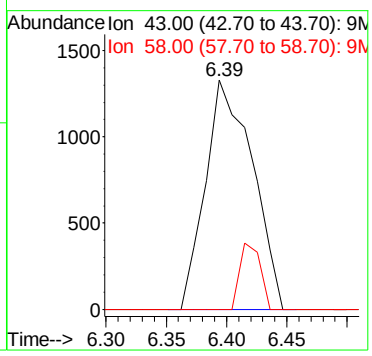

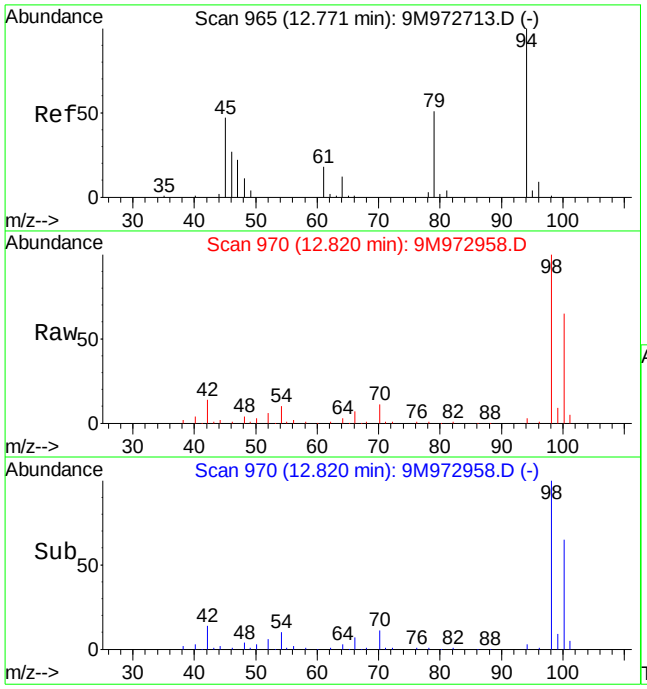

#56
Dimethyl Disulfide
Concen: 3.32 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M972958.D
Acq: 28 Feb 2016 23:22

Tgt Ion: 94 Resp: 10528

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

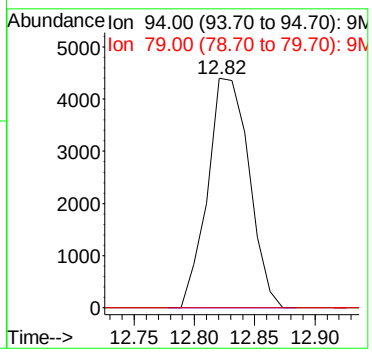

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\9M972927.D Vial: 18
Acq On : 26 Feb 2016 23:22 Operator: ADC
Sample : L16021240-05 A 8260 4.79g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 11:43:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	528471	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	379210	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	173557	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	146305	51.0737 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 102.14%		
43) 1,2-Dichloroethane-d4	10.45	65	182371	50.7407 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 101.48%		
58) Toluene-d8	12.83	98	521393	54.3582 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 108.72%		
79) p-Bromofluorobenzene	16.23	95	188387	55.7437 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 111.48%		

Target Compounds

					Qvalue
13) Acetone	6.41	43	4711	1.1915 ug/kg	99
17) Iodomethane	7.14	142	640	3.2100 ug/kg#	34
56) Dimethyl Disulfide	12.83	94	15170	3.7007 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972927.D 8260SL.M Mon Feb 29 11:43:17 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\9M972927.D Vial: 18
Acq On : 26 Feb 2016 23:22 Operator: ADC
Sample : L16021240-05 A 8260 4.79g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 11:43 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

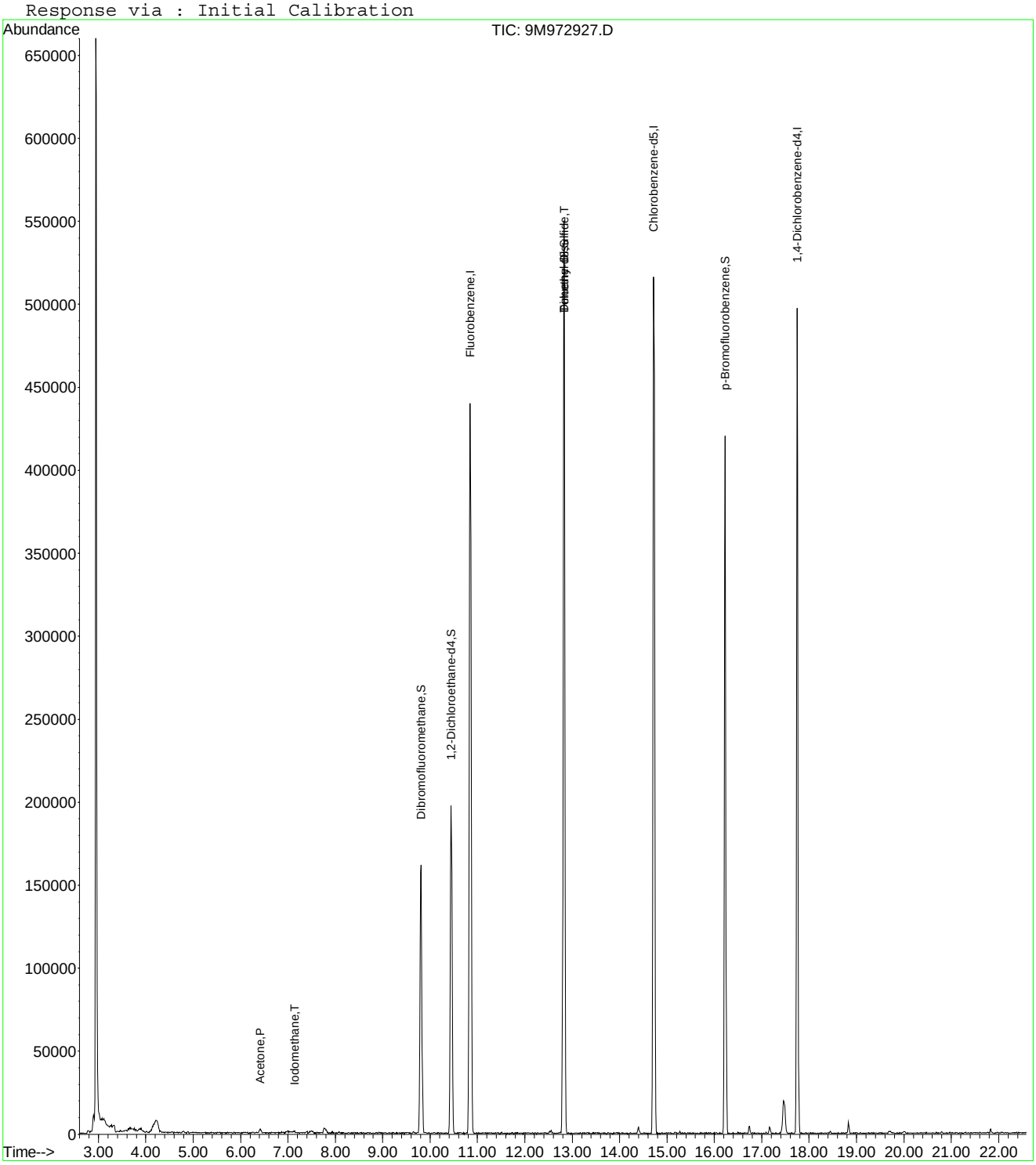

9M972927.D 8260SL.M Mon Feb 29 11:43:17 2016 Page 2

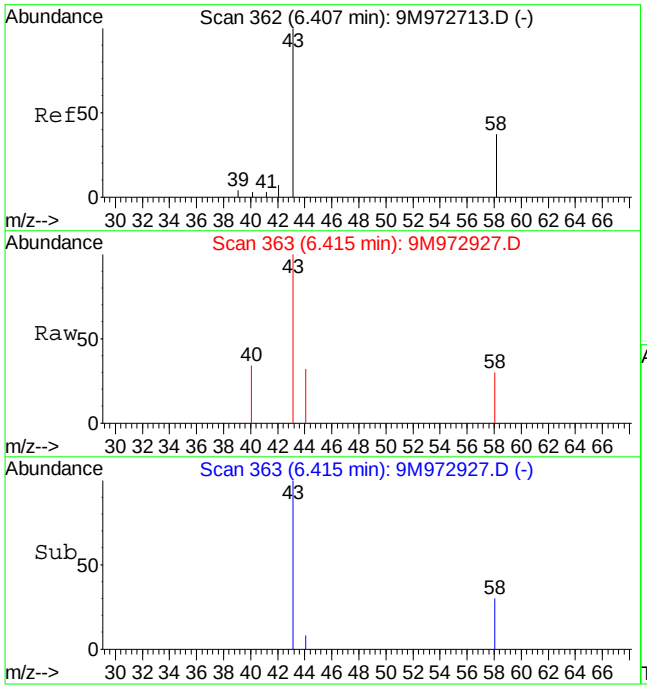

#13
Acetone
Concen: 1.19 ug/kg
RT: 6.41 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M972927.D
Acq: 26 Feb 2016 23:22

Tgt Ion: 43 Resp: 4711

Ion	Ratio	Lower	Upper
43	100		
58	27.7	16.9	39.3

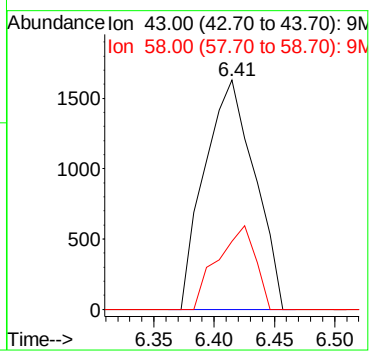

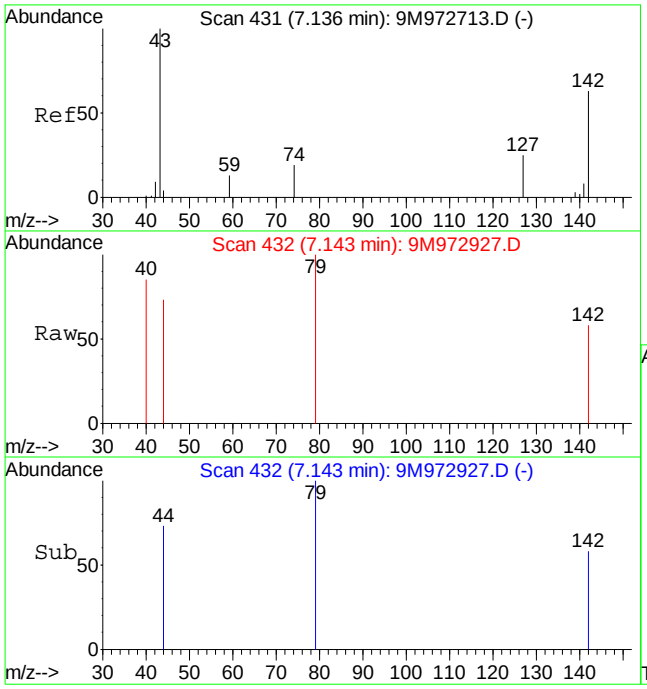

#17
Iodomethane
Concen: 3.21 ug/kg
RT: 7.14 min Scan# 432
Delta R.T. 0.01 min
Lab File: 9M972927.D
Acq: 26 Feb 2016 23:22

Tgt Ion:142 Resp: 640

Ion	Ratio	Lower	Upper
142	100		
127	0.0	25.1	58.7#

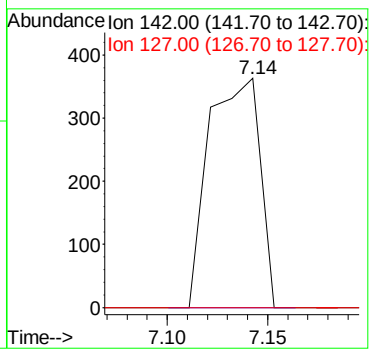

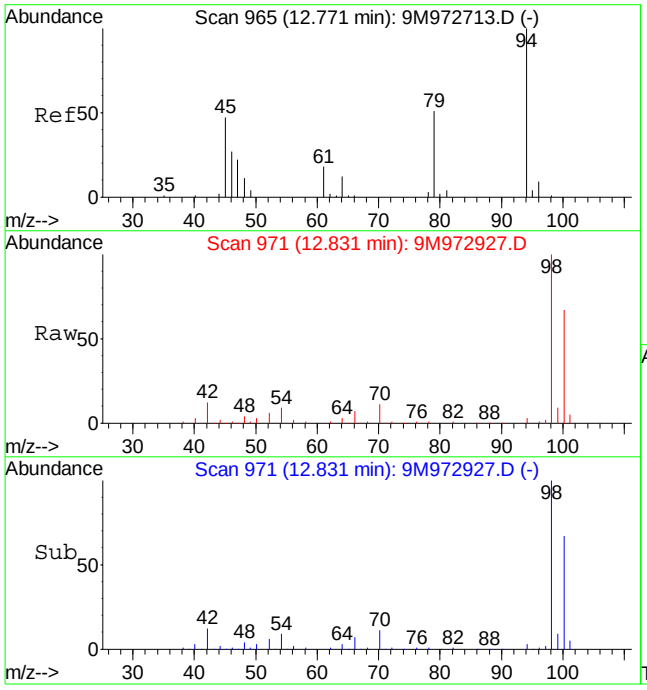

#56
Dimethyl Disulfide
Concen: 3.70 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.06 min
Lab File: 9M972927.D
Acq: 26 Feb 2016 23:22

Tgt Ion: 94 Resp: 15170

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

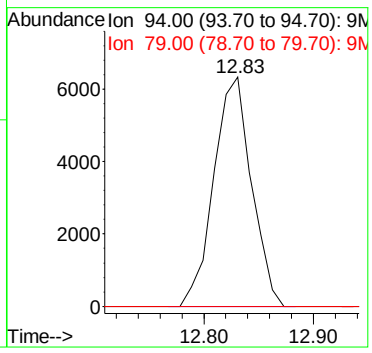

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\9M972928.D Vial: 19
Acq On : 26 Feb 2016 23:53 Operator: ADC
Sample : L16021240-06 A 8260 5.31g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 11:43:17 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	535463	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	375738	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	165690	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	143273	49.3622 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.72%		
43) 1,2-Dichloroethane-d4	10.45	65	170021	46.6869 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.38%		
58) Toluene-d8	12.82	98	517496	54.4505 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 108.90%		
79) p-Bromofluorobenzene	16.23	95	178455	55.3121 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 110.62%		

Target Compounds

					Qvalue
13) Acetone	6.43	43	6779	2.7480 ug/kg	95
17) Iodomethane	7.14	142	404	3.0548 ug/kg#	34
36) Tetrahydrofuran	9.78	42	476	0.4277 ug/kg#	43
56) Dimethyl Disulfide	12.82	94	15158	3.6495 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972928.D 8260SL.M Mon Feb 29 11:43:18 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\9M972928.D Vial: 19
Acq On : 26 Feb 2016 23:53 Operator: ADC
Sample : L16021240-06 A 8260 5.31g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 11:43 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

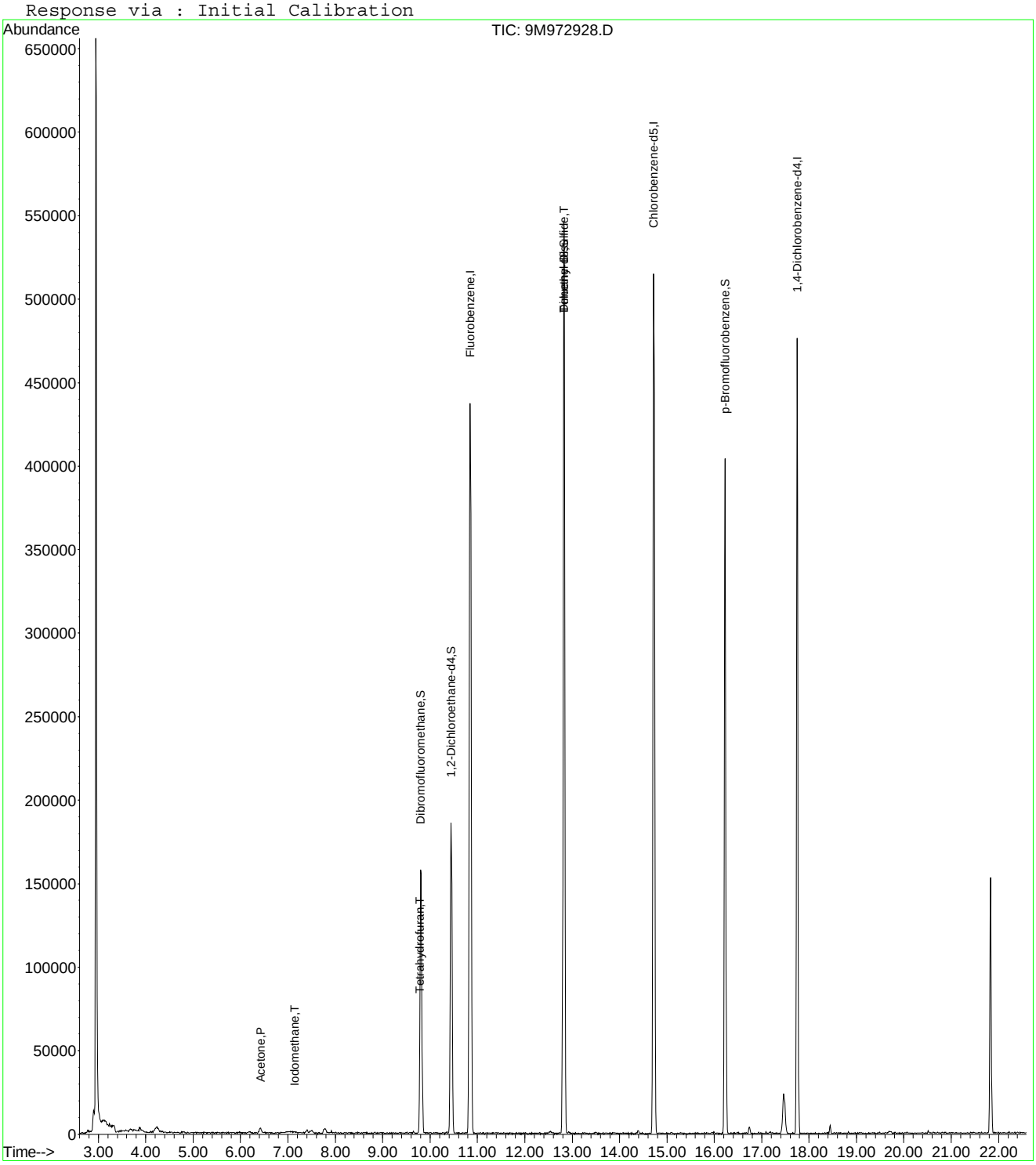

9M972928.D 8260SL.M Mon Feb 29 11:43:18 2016 Page 2

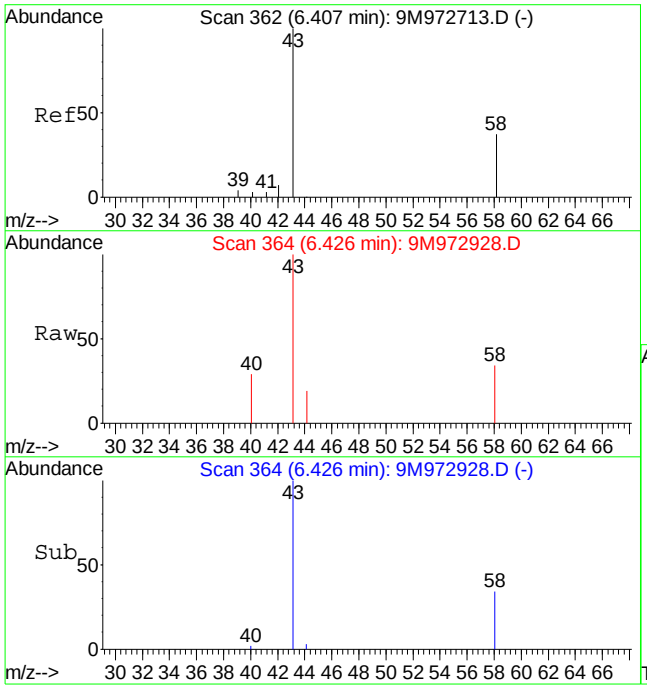

#13
Acetone
Concen: 2.75 ug/kg
RT: 6.43 min Scan# 364
Delta R.T. 0.01 min
Lab File: 9M972928.D
Acq: 26 Feb 2016 23:53

Tgt Ion: 43 Resp: 6779

Ion	Ratio	Lower	Upper
43	100		
58	30.6	16.9	39.3

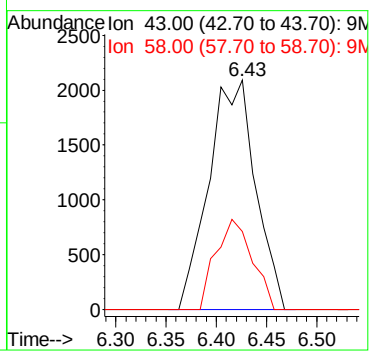

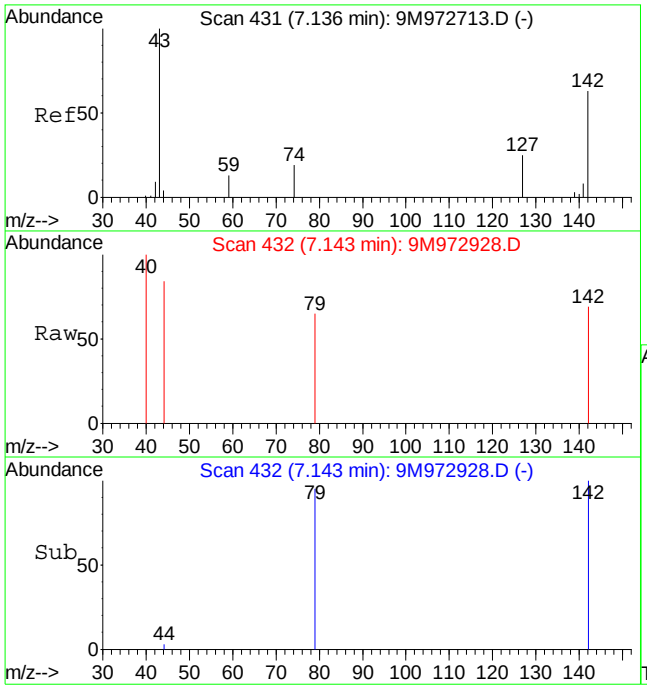

#17
Iodomethane
Concen: 3.05 ug/kg
RT: 7.14 min Scan# 432
Delta R.T. 0.01 min
Lab File: 9M972928.D
Acq: 26 Feb 2016 23:53

Tgt Ion:142 Resp: 404

Ion	Ratio	Lower	Upper
142	100		
127	0.0	25.1	58.7#

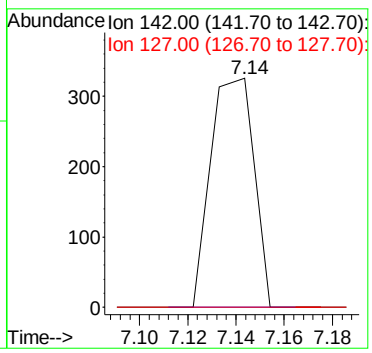

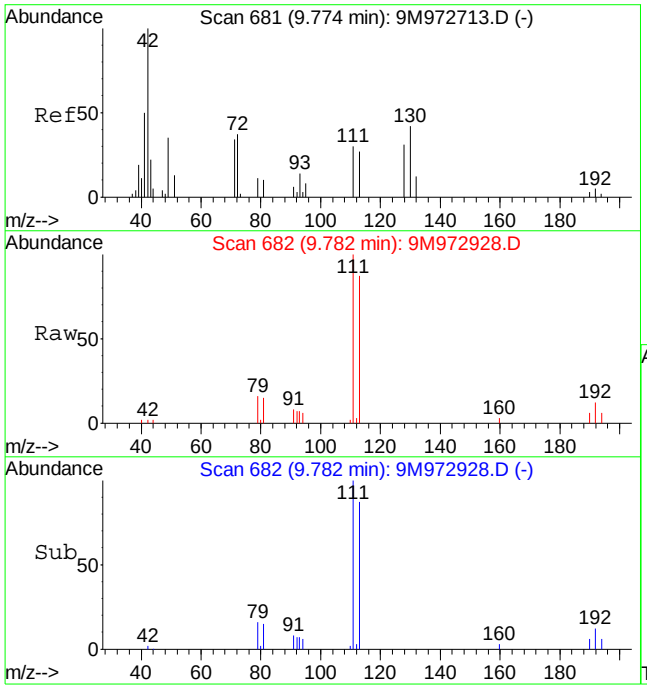

#36
Tetrahydrofuran
Concen: 0.43 ug/kg
RT: 9.78 min Scan# 682
Delta R.T. 0.00 min
Lab File: 9M972928.D
Acq: 26 Feb 2016 23:53

Tgt Ion: 42 Resp: 476

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

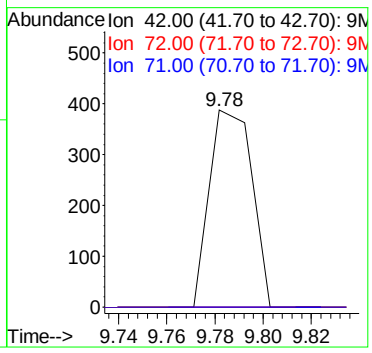

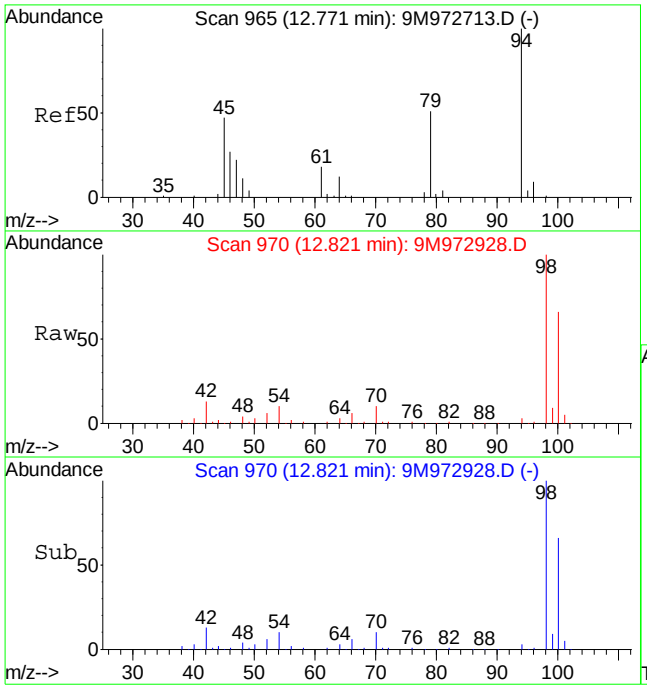

#56
Dimethyl Disulfide
Concen: 3.65 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M972928.D
Acq: 26 Feb 2016 23:53

Tgt Ion: 94 Resp: 15158

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

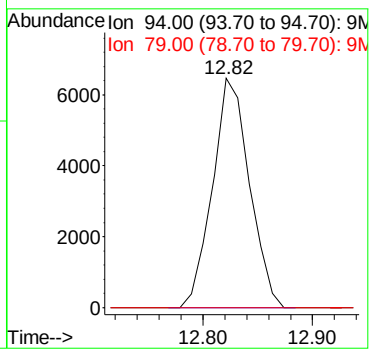

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\9M972929.D Vial: 20
Acq On : 27 Feb 2016 00:23 Operator: ADC
Sample : L16021240-07 A 8260 5.19g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 11:43:18 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	569241	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	411796	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	191119	50.00 ug/kg	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.80	111	156666	50.7736 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 101.54%		
43) 1,2-Dichloroethane-d4	10.45	65	197703	51.0668 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 102.14%		
58) Toluene-d8	12.82	98	552567	53.0497 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.10%		
79) p-Bromofluorobenzene	16.23	95	204573	54.9708 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 109.94%		

Target Compounds					Qvalue
13) Acetone	6.42	43	6045	1.9000 ug/kg#	72
17) Iodomethane	7.15	142	643	3.1823 ug/kg#	34
47) Trichloroethene	11.36	130	9131	2.6445 ug/kg	98
56) Dimethyl Disulfide	12.82	94	15245	3.4526 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972929.D 8260SL.M Mon Feb 29 11:43:19 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\9M972929.D Vial: 20
Acq On : 27 Feb 2016 00:23 Operator: ADC
Sample : L16021240-07 A 8260 5.19g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 11:43 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

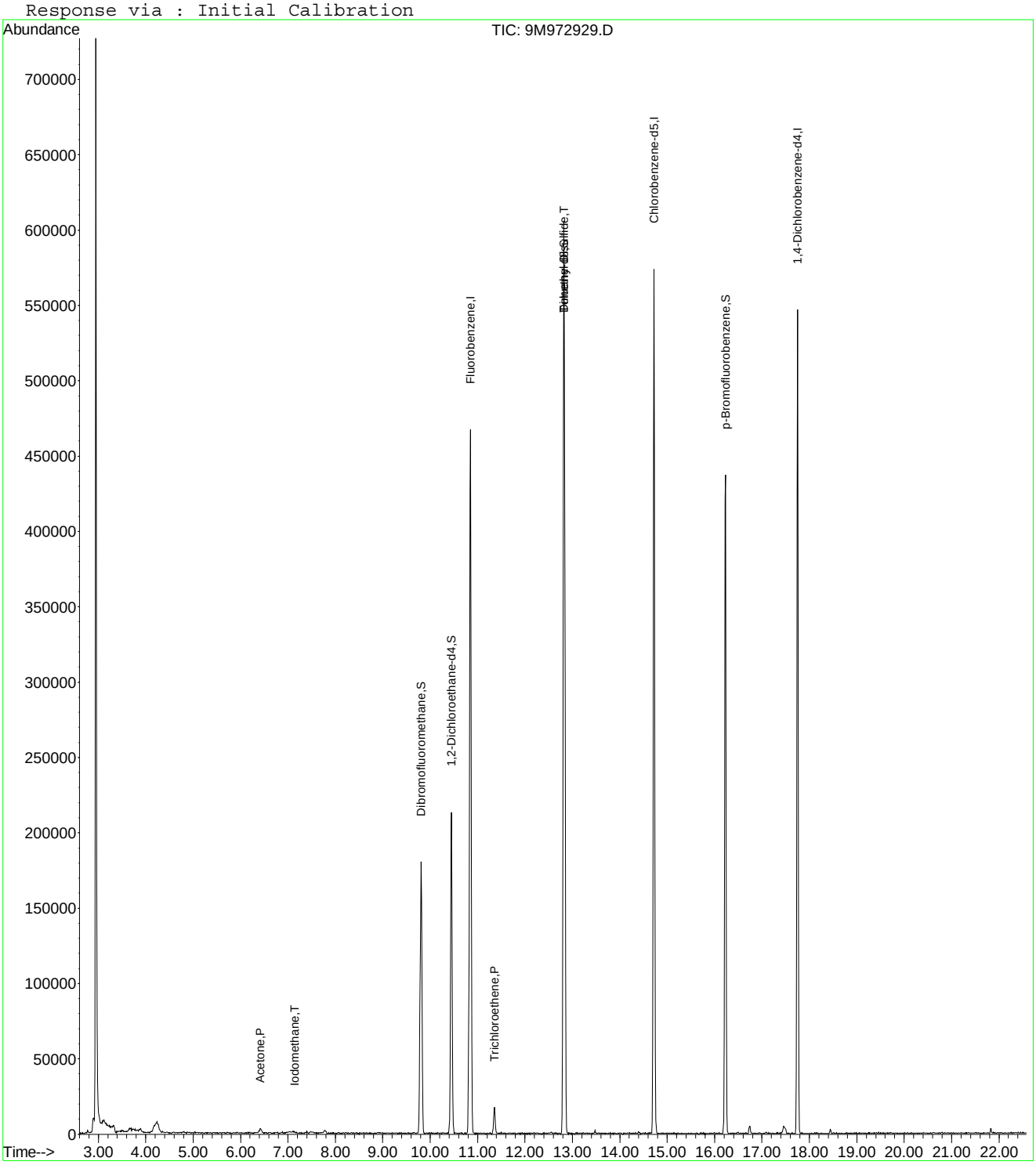

9M972929.D 8260SL.M Mon Feb 29 11:43:19 2016 Page 2

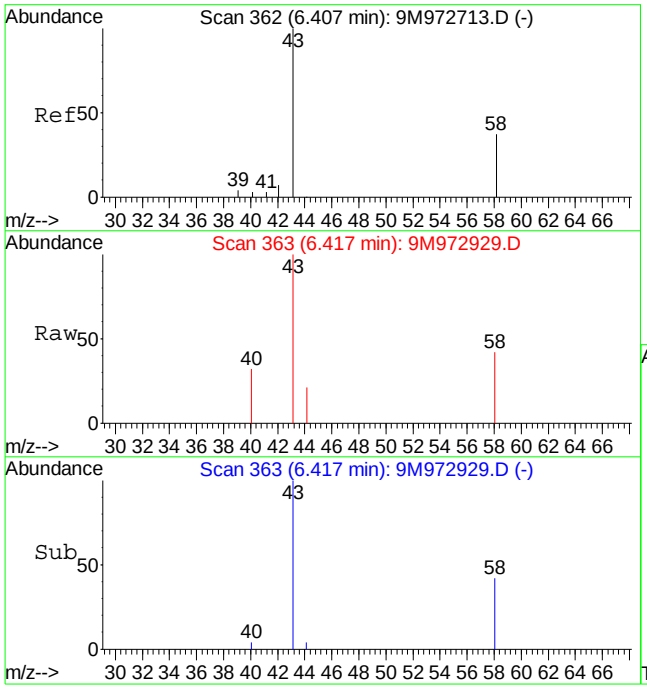

#13
Acetone
Concen: 1.90 ug/kg
RT: 6.42 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M972929.D
Acq: 27 Feb 2016 00:23

Tgt Ion: 43 Resp: 6045

Ion	Ratio	Lower	Upper
43	100		
58	42.8	16.9	39.3#

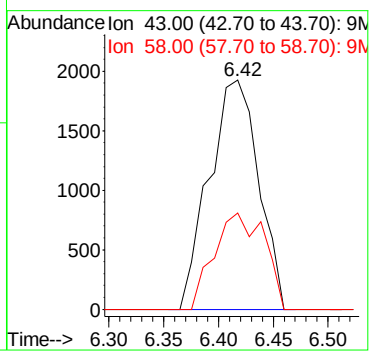

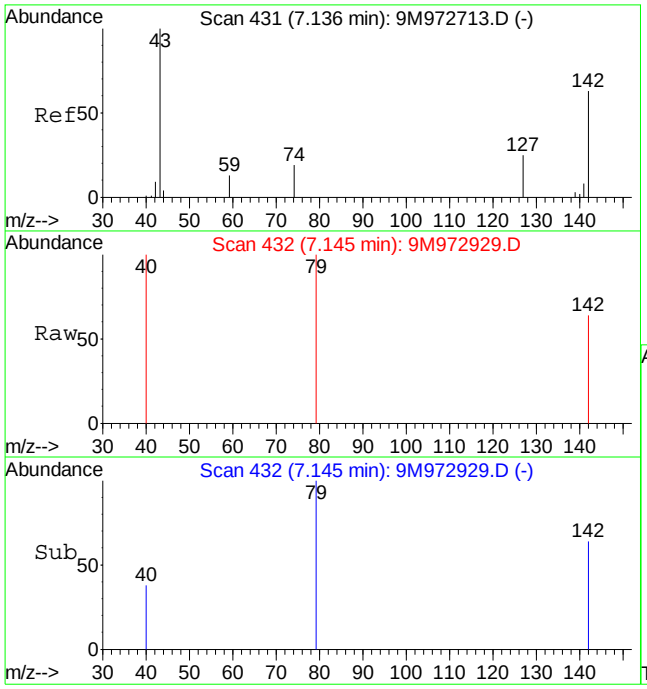

#17
Iodomethane
Concen: 3.18 ug/kg
RT: 7.15 min Scan# 432
Delta R.T. 0.01 min
Lab File: 9M972929.D
Acq: 27 Feb 2016 00:23

Tgt Ion:142 Resp: 643

Ion	Ratio	Lower	Upper
142	100		
127	0.0	25.1	58.7#

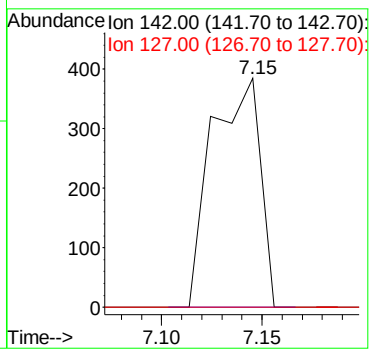

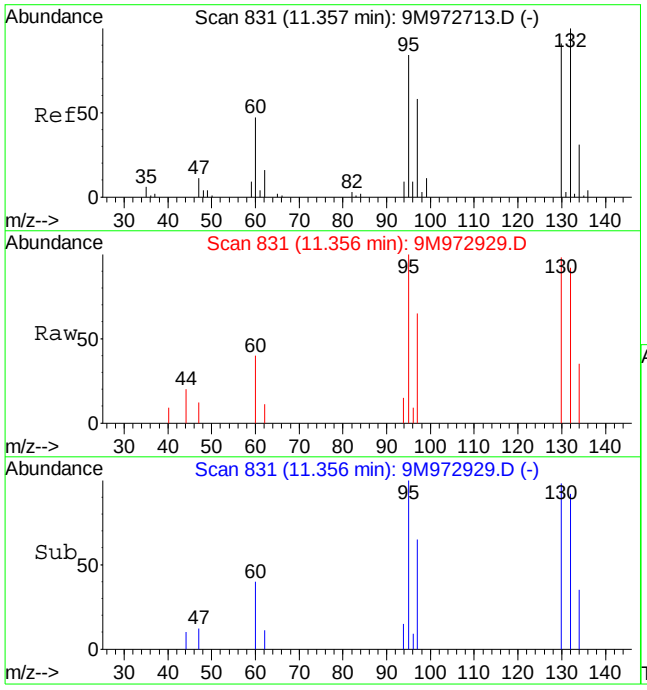

#47
Trichloroethene
Concen: 2.64 ug/kg
RT: 11.36 min Scan# 831
Delta R.T. 0.00 min
Lab File: 9M972929.D
Acq: 27 Feb 2016 00:23

Tgt Ion:130 Resp: 9131

Ion	Ratio	Lower	Upper
130	100		
132	90.8	56.5	131.7
95	93.7	55.4	129.4

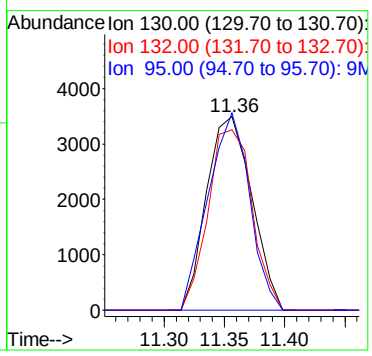

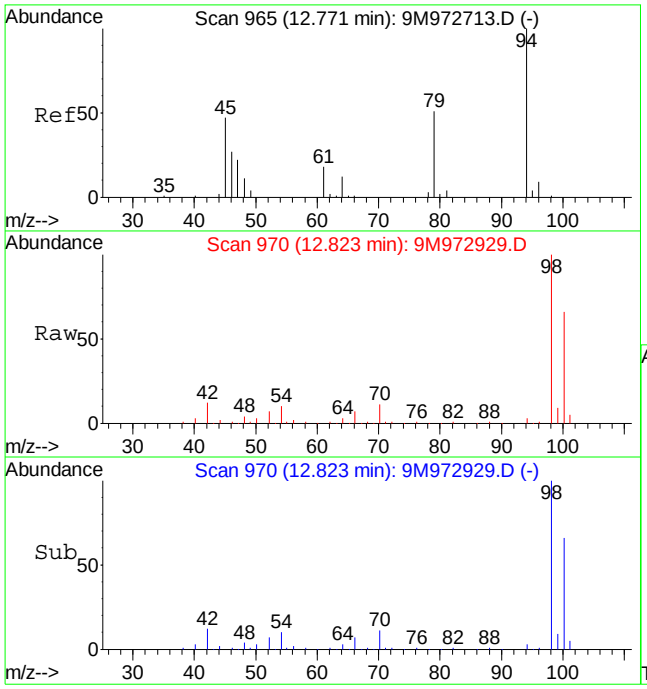

#56
Dimethyl Disulfide
Concen: 3.45 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M972929.D
Acq: 27 Feb 2016 00:23

Tgt Ion: 94 Resp: 15245

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

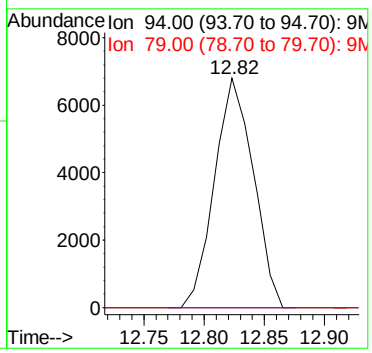

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\9M972930.D Vial: 21
Acq On : 27 Feb 2016 00:53 Operator: ADC
Sample : WG558938-01 L16021240-08 A 8260 4.71g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 11:43:19 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	612123	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	430665	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	197692	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	160913	48.4967 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.00%		
43) 1,2-Dichloroethane-d4	10.45	65	199077	47.8194 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.64%		
58) Toluene-d8	12.82	98	583376	53.5536 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 107.10%		
79) p-Bromofluorobenzene	16.23	95	211856	55.0350 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 110.08%		

Target Compounds					Qvalue
13) Acetone	6.42	43	5554	1.2575 ug/kg	83
17) Iodomethane	7.13	142	257	2.9410 ug/kg#	34
56) Dimethyl Disulfide	12.83	94	16023	3.3746 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972930.D 8260SL.M Mon Feb 29 11:43:20 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\9M972930.D Vial: 21
Acq On : 27 Feb 2016 00:53 Operator: ADC
Sample : WG558938-01 L16021240-08 A 8260 4.71g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 11:43 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

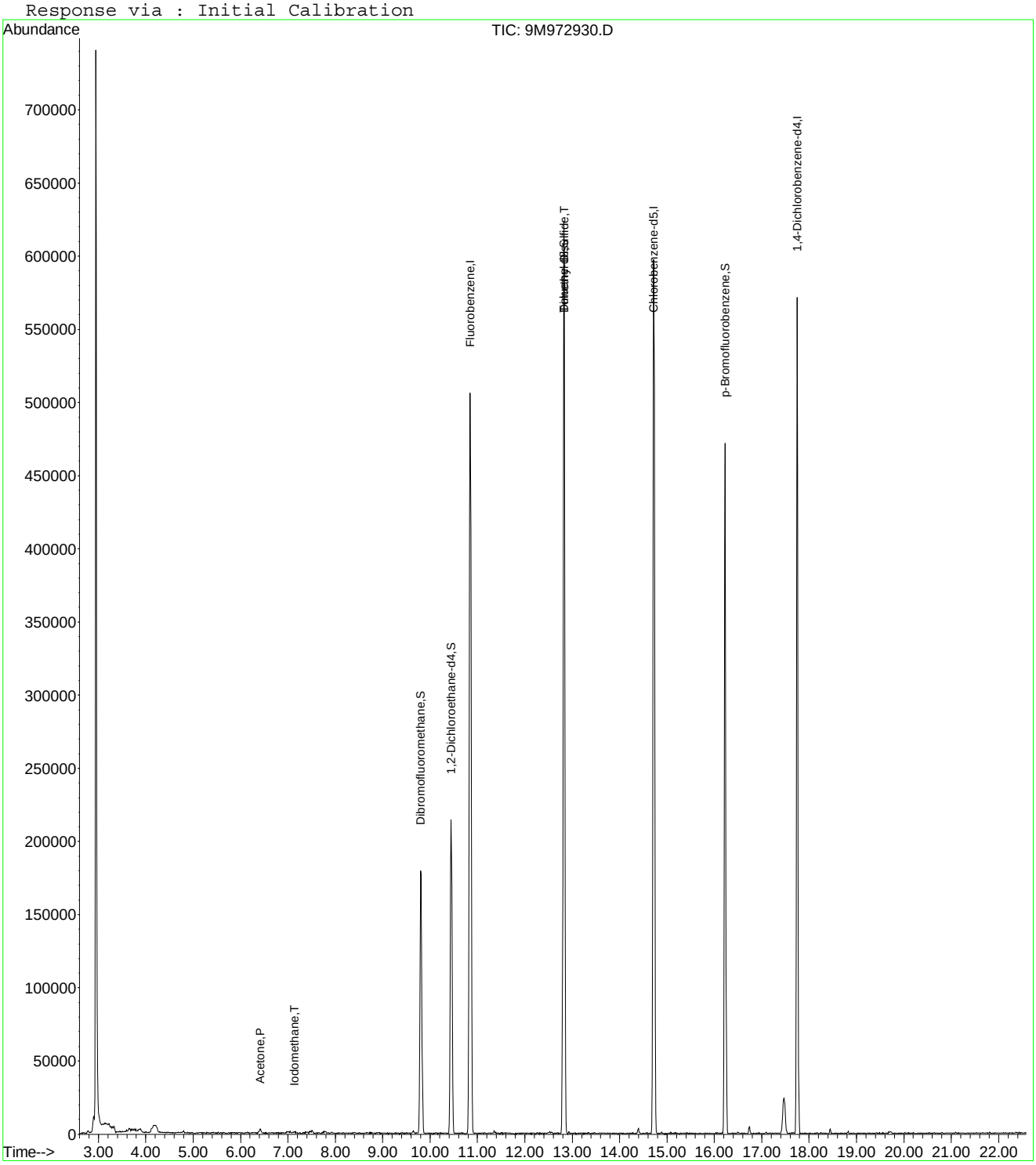

9M972930.D 8260SL.M Mon Feb 29 11:43:20 2016 Page 2

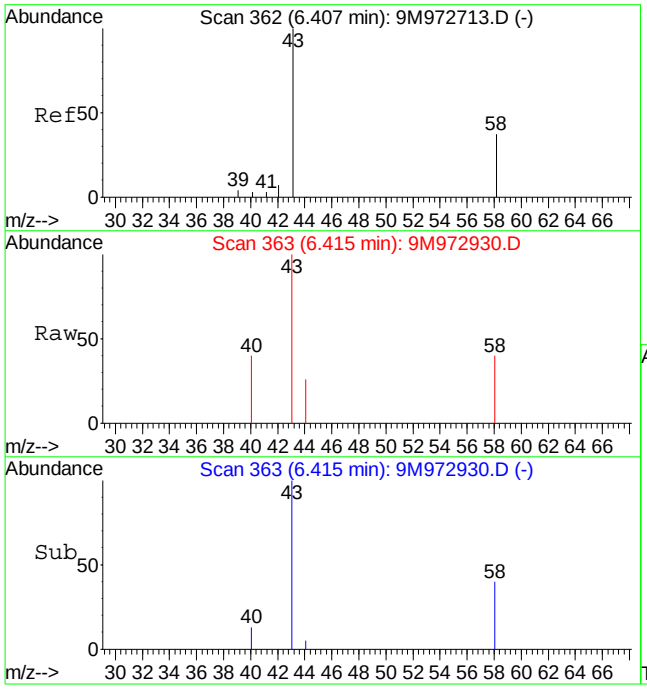

#13
Acetone
Concen: 1.26 ug/kg
RT: 6.42 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M972930.D
Acq: 27 Feb 2016 00:53

Tgt Ion: 43 Resp: 5554

Ion	Ratio	Lower	Upper
43	100		
58	37.3	16.9	39.3

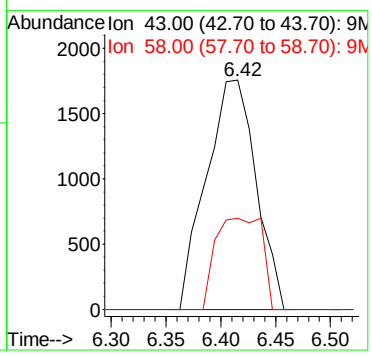

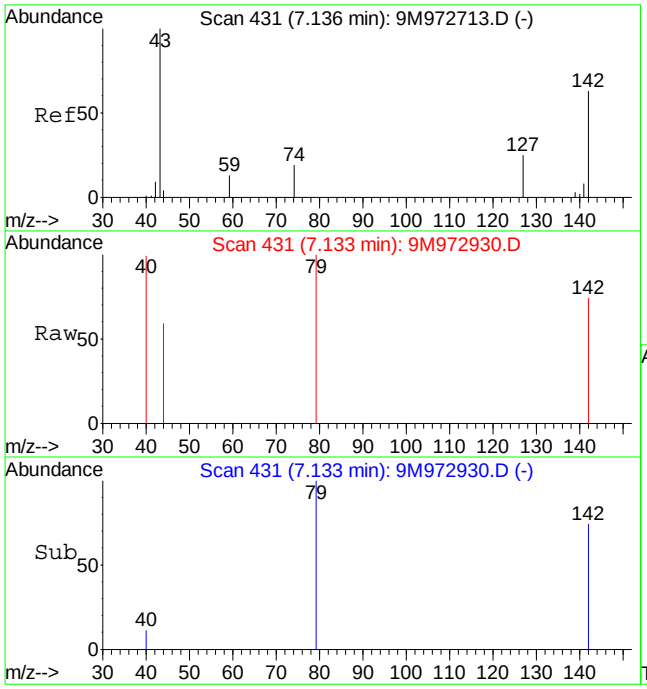

#17
Iodomethane
Concen: 2.94 ug/kg
RT: 7.13 min Scan# 431
Delta R.T. 0.00 min
Lab File: 9M972930.D
Acq: 27 Feb 2016 00:53

Tgt Ion:142 Resp: 257

Ion	Ratio	Lower	Upper
142	100		
127	0.0	25.1	58.7#

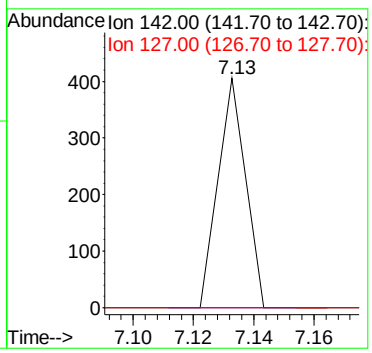

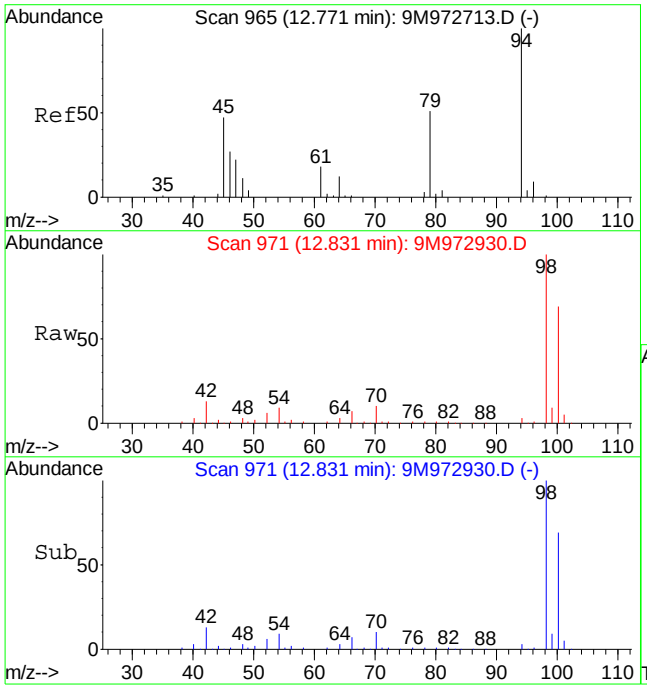

#56
Dimethyl Disulfide
Concen: 3.37 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.07 min
Lab File: 9M972930.D
Acq: 27 Feb 2016 00:53

Tgt Ion: 94 Resp: 16023

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

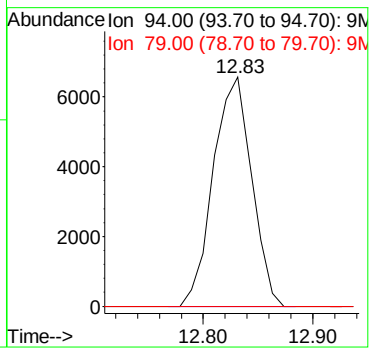

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972472.D Vial: 3
Acq On : 25 Jan 2016 11:22 Operator: FJB
Sample : WG555000-02 5ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:05 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	367739	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	266763	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.77	152	148882	50.00 ug/kg	0.01

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	1974	5.3580 ug/kg#	1
3) 3-Chloro-1-propene	7.23	41	18322	5.0468 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	19639	4.7564 ug/kg	98
5) Ethyl Acetate	9.24	43	12755	5.2595 ug/kg	91
6) Methacrylonitrile	9.40	67	3744	4.7691 ug/kg	95
7) Isobutyl Alcohol	9.42	43	1055	12.9700 ug/kg#	62
8) 1-Butanol	10.36	56	203	11.8711 ug/kg#	26
9) Methyl methacrylate	11.56	41	8689	4.6908 ug/kg	95
10) 2-Nitropropane	11.90	43	2531	4.2058 ug/kg	96

(#) = qualifier out of range (m) = manual integration
9M972472.D A9FOO_SL.M Wed Jan 27 11:22:42 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972472.D Vial: 3
Acq On : 25 Jan 2016 11:22 Operator: FJB
Sample : WG555000-02 5ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

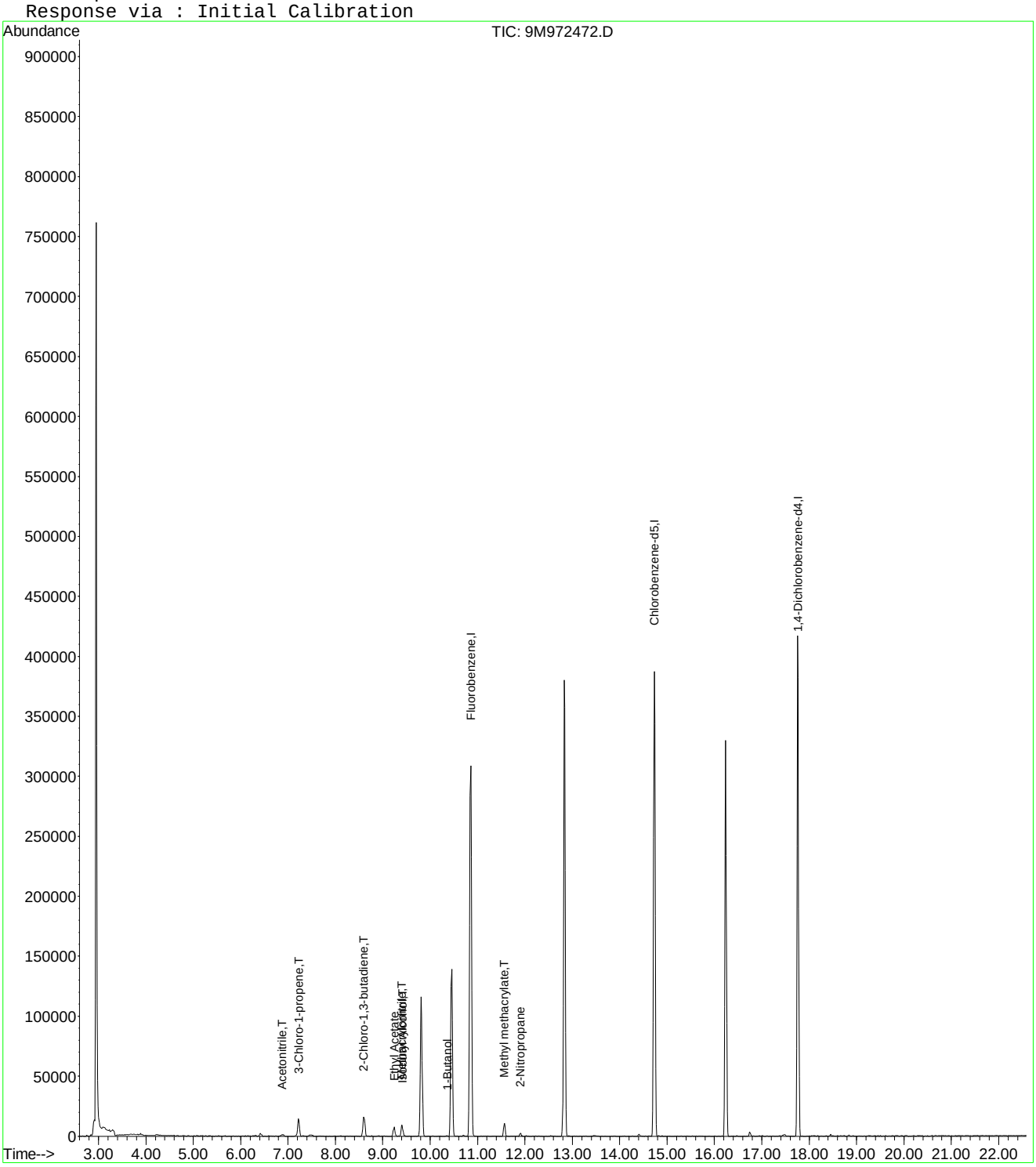

9M972472.D A9FOO_SL.M Wed Jan 27 11:22:42 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972473.D Vial: 4
Acq On : 25 Jan 2016 11:52 Operator: FJB
Sample : WG555000-03 20ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:05 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	359691	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	265773	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	149223	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	7669	21.2815 ug/kg#	77
3) 3-Chloro-1-propene	7.23	41	75360	21.2224 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	82865	20.5181 ug/kg	100
5) Ethyl Acetate	9.23	43	47912	20.1986 ug/kg	97
6) Methacrylonitrile	9.40	67	15740	20.4980 ug/kg	98
7) Isobutyl Alcohol	9.42	43	5287	37.9280 ug/kg	95
8) 1-Butanol	10.35	56	1509	22.3153 ug/kg#	81
9) Methyl methacrylate	11.56	41	35437	19.5588 ug/kg	98
10) 2-Nitropropane	11.90	43	10433	17.7247 ug/kg	98
12) Cyclohexanone	16.01	55	2157	16.3929 ug/kg#	86

(#) = qualifier out of range (m) = manual integration
9M972473.D A9FOO_SL.M Wed Jan 27 11:22:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972473.D Vial: 4
Acq On : 25 Jan 2016 11:52 Operator: FJB
Sample : WG555000-03 20ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

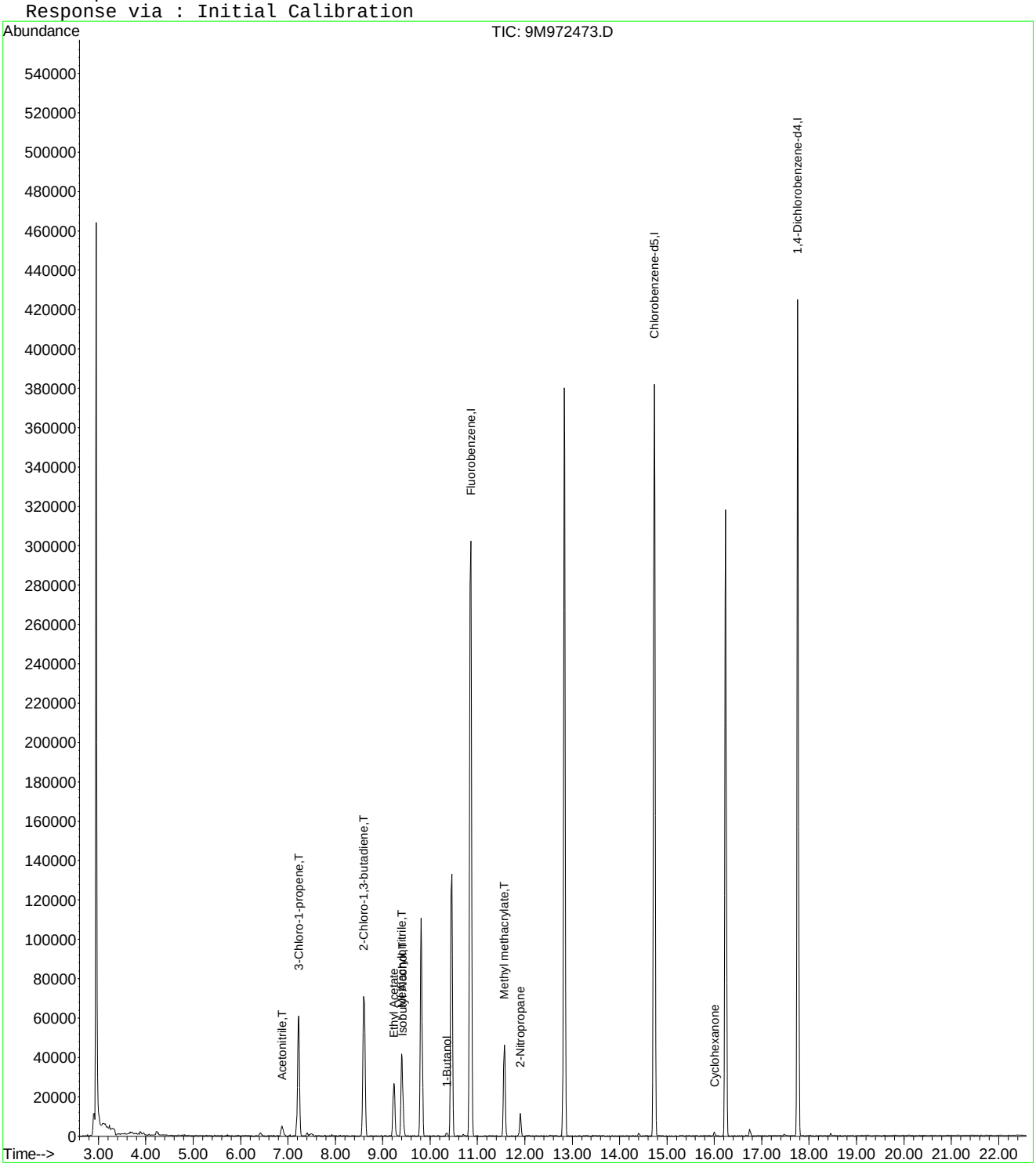

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972474.D Vial: 5
Acq On : 25 Jan 2016 12:23 Operator: FJB
Sample : WG555000-04 50ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:06 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	356886	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	259679	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	147334	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	16583	46.3795 ug/kg#	94
3) 3-Chloro-1-propene	7.23	41	160601	45.5828 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.61	53	185316	46.2464 ug/kg	99
5) Ethyl Acetate	9.23	43	111538	47.3915 ug/kg	99
6) Methacrylonitrile	9.40	67	36081	47.3572 ug/kg	99
7) Isobutyl Alcohol	9.42	43	12624	81.5447 ug/kg	95
8) 1-Butanol	10.35	56	4707	48.0983 ug/kg#	50
9) Methyl methacrylate	11.56	41	82406	45.8400 ug/kg	99
10) 2-Nitropropane	11.90	43	26302	45.0359 ug/kg	97
12) Cyclohexanone	16.01	55	5625	43.7525 ug/kg	93

(#) = qualifier out of range (m) = manual integration
9M972474.D A9FOO_SL.M Wed Jan 27 11:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972474.D Vial: 5
Acq On : 25 Jan 2016 12:23 Operator: FJB
Sample : WG555000-04 50ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

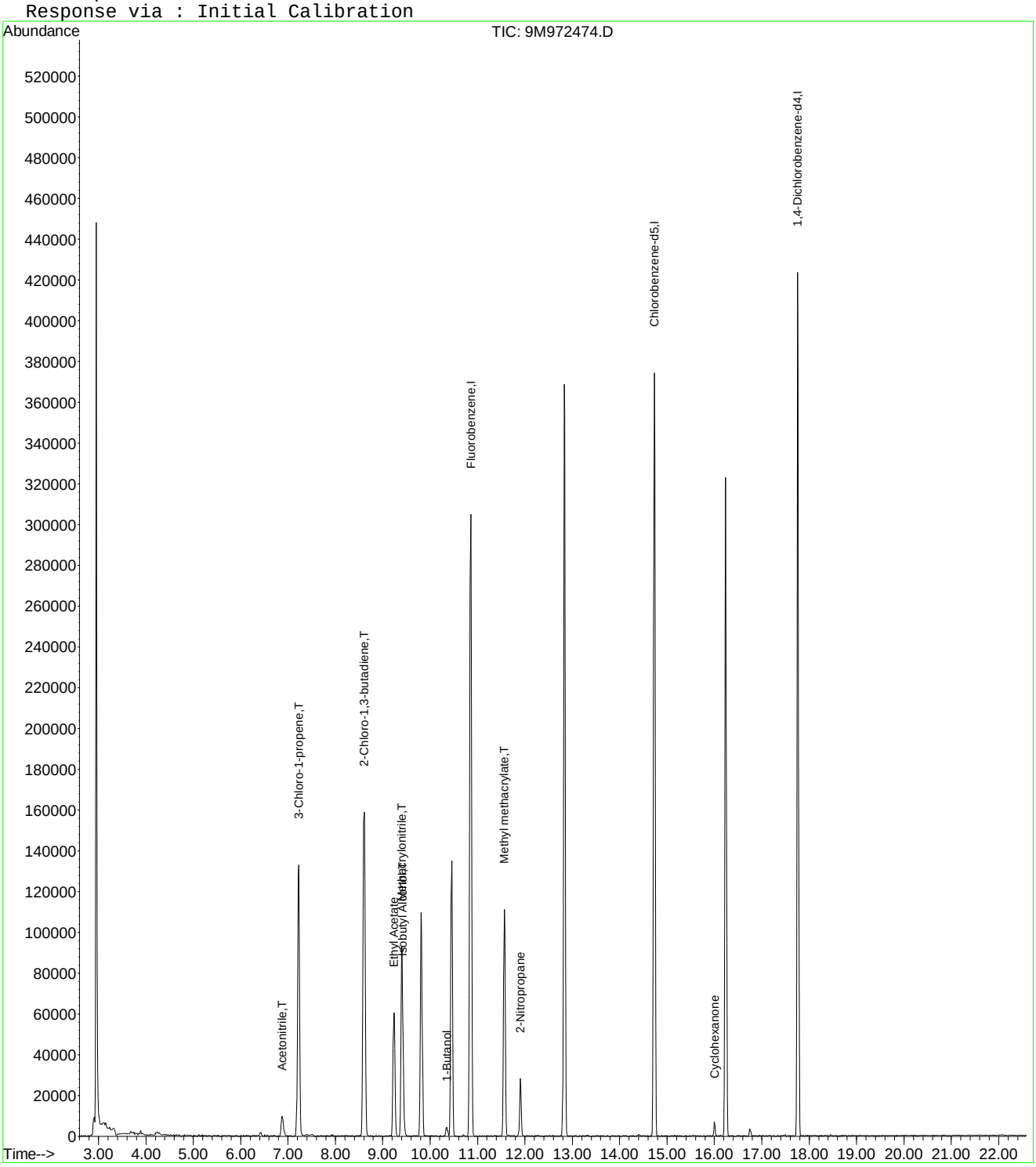

9M972474.D A9FOO_SL.M Wed Jan 27 11:22:51 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972475.D Vial: 6
Acq On : 25 Jan 2016 12:53 Operator: FJB
Sample : WG555000-05 100ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:06 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	394669	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	285851	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	161505	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	37767	95.5151	ug/kg#	100
3) 3-Chloro-1-propene	7.23	41	409870	105.1952	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.61	53	467514	105.5010	ug/kg	100
5) Ethyl Acetate	9.23	43	267513	102.7824	ug/kg	100
6) Methacrylonitrile	9.40	67	88054	104.5088	ug/kg	100
7) Isobutyl Alcohol	9.42	43	33721	187.1766	ug/kg	100
8) 1-Butanol	10.36	56	11671	95.0627	ug/kg	100
9) Methyl methacrylate	11.56	41	209503	105.3834	ug/kg	100
10) 2-Nitropropane	11.90	43	65435	101.3157	ug/kg	100
12) Cyclohexanone	16.01	55	14062	99.3630	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972475.D A9FOO_SL.M Wed Jan 27 11:22:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972475.D Vial: 6
Acq On : 25 Jan 2016 12:53 Operator: FJB
Sample : WG555000-05 100ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

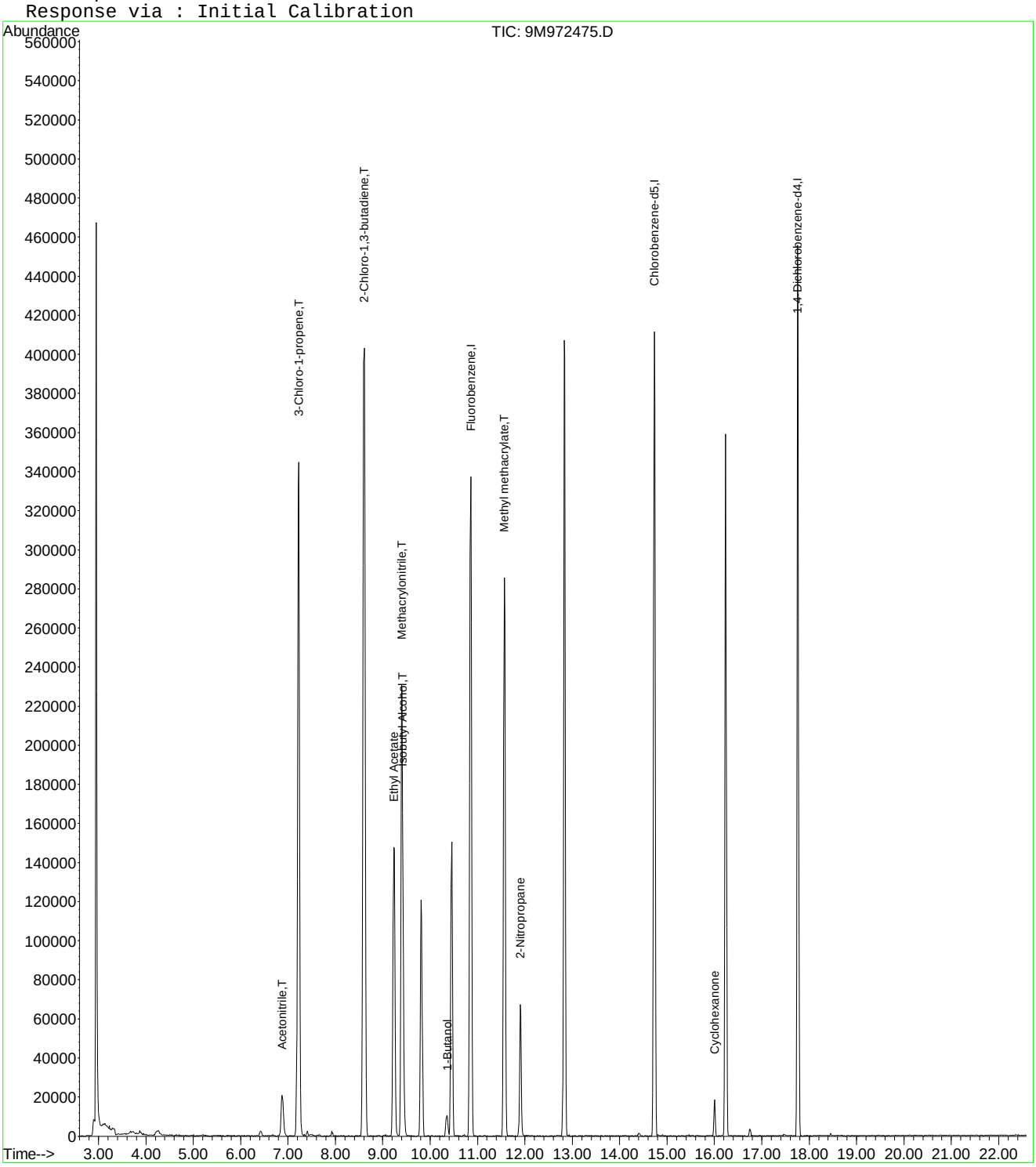

9M972475.D A9FOO_SL.M Wed Jan 27 11:22:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972476.D Vial: 7
Acq On : 25 Jan 2016 13:23 Operator: FJB
Sample : WG555000-06 200ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 09:51:10 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	361792	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	264283	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	150478	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.87	41	75099	207.1896	ug/kg#	94
3) 3-Chloro-1-propene	7.22	41	743262	208.0969	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	846271	208.3269	ug/kg	100
5) Ethyl Acetate	9.23	43	489855	205.3125	ug/kg	100
6) Methacrylonitrile	9.40	67	159879	206.9995	ug/kg	100
7) Isobutyl Alcohol	9.42	43	68551	406.6640	ug/kg	99
8) 1-Butanol	10.35	56	24111	201.3375	ug/kg	97
9) Methyl methacrylate	11.57	41	382820	210.0636	ug/kg	99
10) 2-Nitropropane	11.90	43	129000	217.8866	ug/kg	95
12) Cyclohexanone	16.00	55	30065	229.7785	ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972476.D A9FOO_SL.M Wed Jan 27 09:51:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972476.D Vial: 7
Acq On : 25 Jan 2016 13:23 Operator: FJB
Sample : WG555000-06 200ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 9:51 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

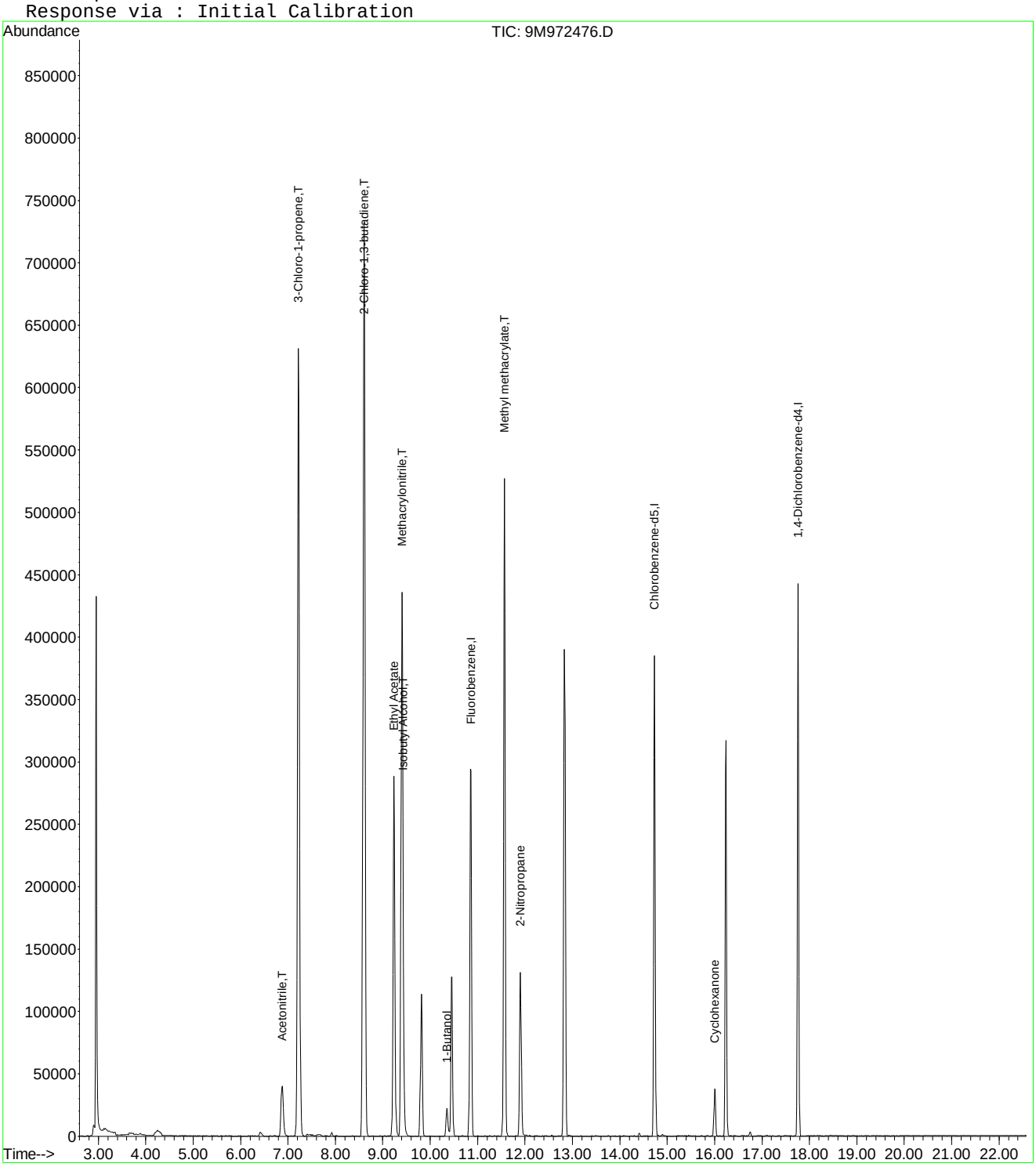

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972477.D Vial: 8
Acq On : 25 Jan 2016 13:54 Operator: FJB
Sample : WG555000-07 300ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:07 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.85	96	362779	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	265659	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	153468	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	99618	274.0870	ug/kg#	97
3) 3-Chloro-1-propene	7.22	41	944879	263.8255	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	1107217	271.8226	ug/kg	99
5) Ethyl Acetate	9.24	43	652386	272.6900	ug/kg	99
6) Methacrylonitrile	9.40	67	208153	268.7679	ug/kg	98
7) Isobutyl Alcohol	9.43	43	89707	528.6093	ug/kg#	99
8) 1-Butanol	10.35	56	31640	260.3131	ug/kg	98
9) Methyl methacrylate	11.57	41	502506	274.9883	ug/kg	98
10) 2-Nitropropane	11.90	43	172692	290.8907	ug/kg	95
12) Cyclohexanone	16.00	55	36951	280.9436	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972477.D A9FOO_SL.M Wed Jan 27 11:23:05 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972477.D Vial: 8
Acq On : 25 Jan 2016 13:54 Operator: FJB
Sample : WG555000-07 300ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

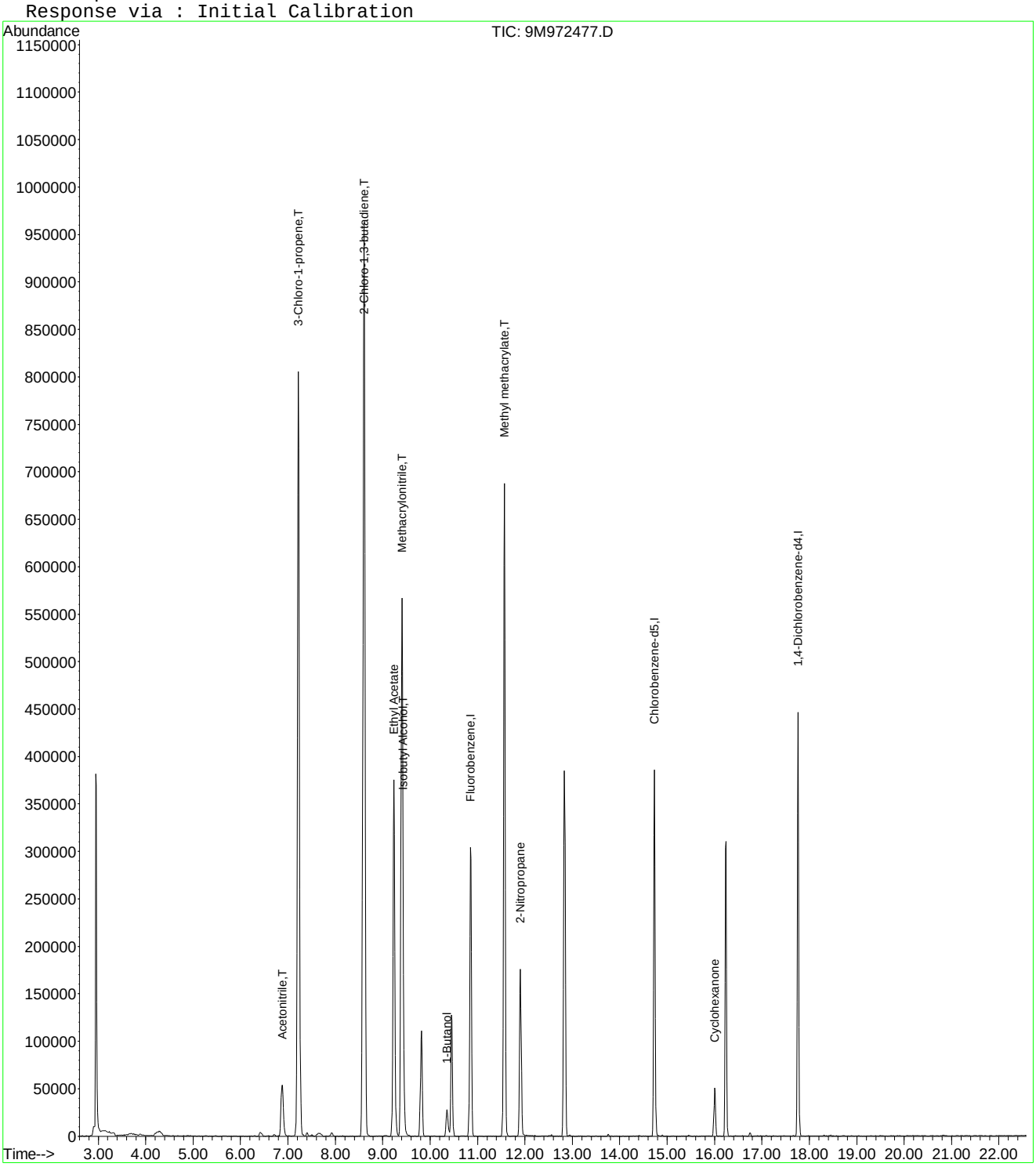

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972478.D Vial: 9
Acq On : 25 Jan 2016 14:25 Operator: FJB
Sample : WG555000-08 400ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 09:51:10 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	359343	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	261674	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	149058	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.89	41	148074	411.3034	ug/kg#	96
3) 3-Chloro-1-propene	7.22	41	1457717	410.9100	ug/kg	99
4) 2-Chloro-1,3-butadiene	8.61	53	1703971	422.3261	ug/kg	100
5) Ethyl Acetate	9.23	43	980479	413.7480	ug/kg	100
6) Methacrylonitrile	9.40	67	321602	419.2243	ug/kg	99
7) Isobutyl Alcohol	9.43	43	142361	842.7355	ug/kg#	98
8) 1-Butanol	10.36	56	51732	422.9922	ug/kg	99
9) Methyl methacrylate	11.56	41	779879	430.8570	ug/kg	98
10) 2-Nitropropane	11.90	43	267565	455.0088	ug/kg	96
12) Cyclohexanone	16.01	55	56623	437.0688	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972478.D A9FOO_SL.M Wed Jan 27 09:51:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972478.D Vial: 9
Acq On : 25 Jan 2016 14:25 Operator: FJB
Sample : WG555000-08 400ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 9:51 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

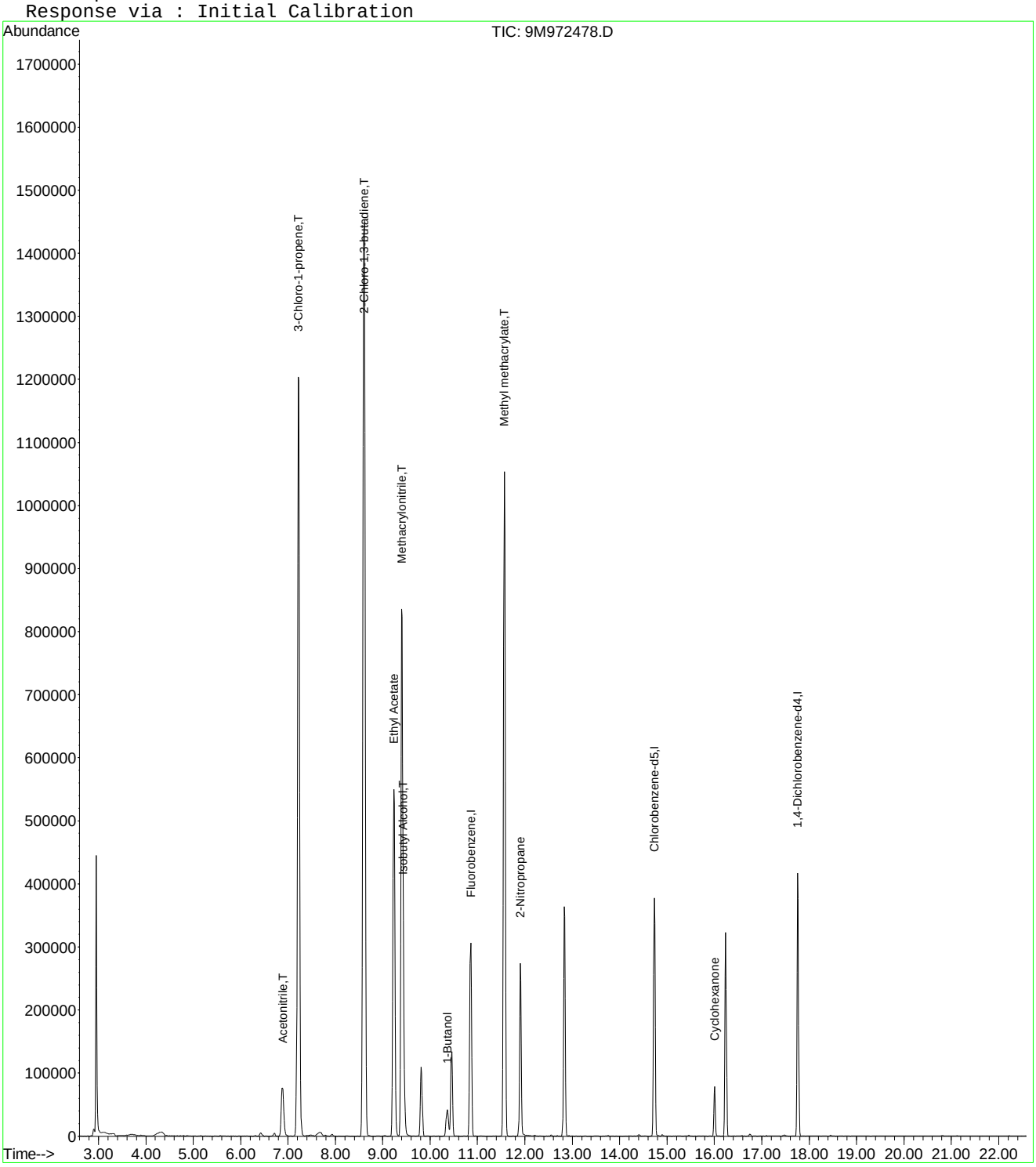

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972479.D Vial: 10
Acq On : 25 Jan 2016 14:56 Operator: FJB
Sample : WG555000-09 500ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:08 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	364474	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	266311	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	151707	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	196334	537.6773	ug/kg#	94
3) 3-Chloro-1-propene	7.22	41	1832802	509.3680	ug/kg	99
4) 2-Chloro-1,3-butadiene	8.60	53	2126710	519.6807	ug/kg	100
5) Ethyl Acetate	9.23	43	1255294	522.2587	ug/kg	100
6) Methacrylonitrile	9.40	67	408537	525.0513	ug/kg	100
7) Isobutyl Alcohol	9.43	43	180610	1052.3719	ug/kg	98
8) 1-Butanol	10.36	56	64789	519.8809	ug/kg	97
9) Methyl methacrylate	11.56	41	981460	534.5904	ug/kg	100
10) 2-Nitropropane	11.90	43	346571	581.0659	ug/kg	97
12) Cyclohexanone	16.01	55	74733	566.8143	ug/kg	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972479.D Vial: 10
Acq On : 25 Jan 2016 14:56 Operator: FJB
Sample : WG555000-09 500ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

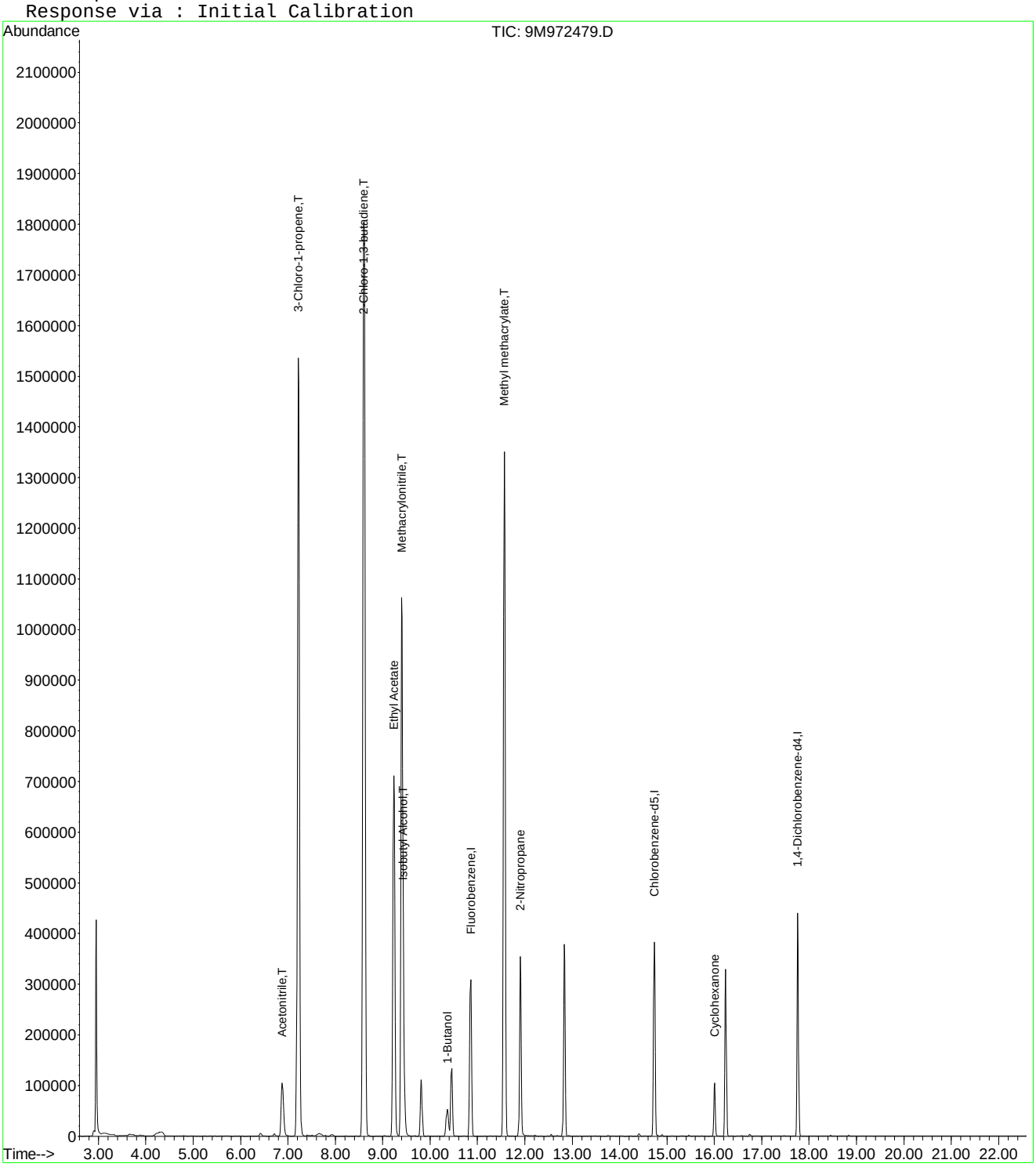

9M972479.D A9FOO_SL.M Wed Jan 27 11:30:29 2016 Page 2

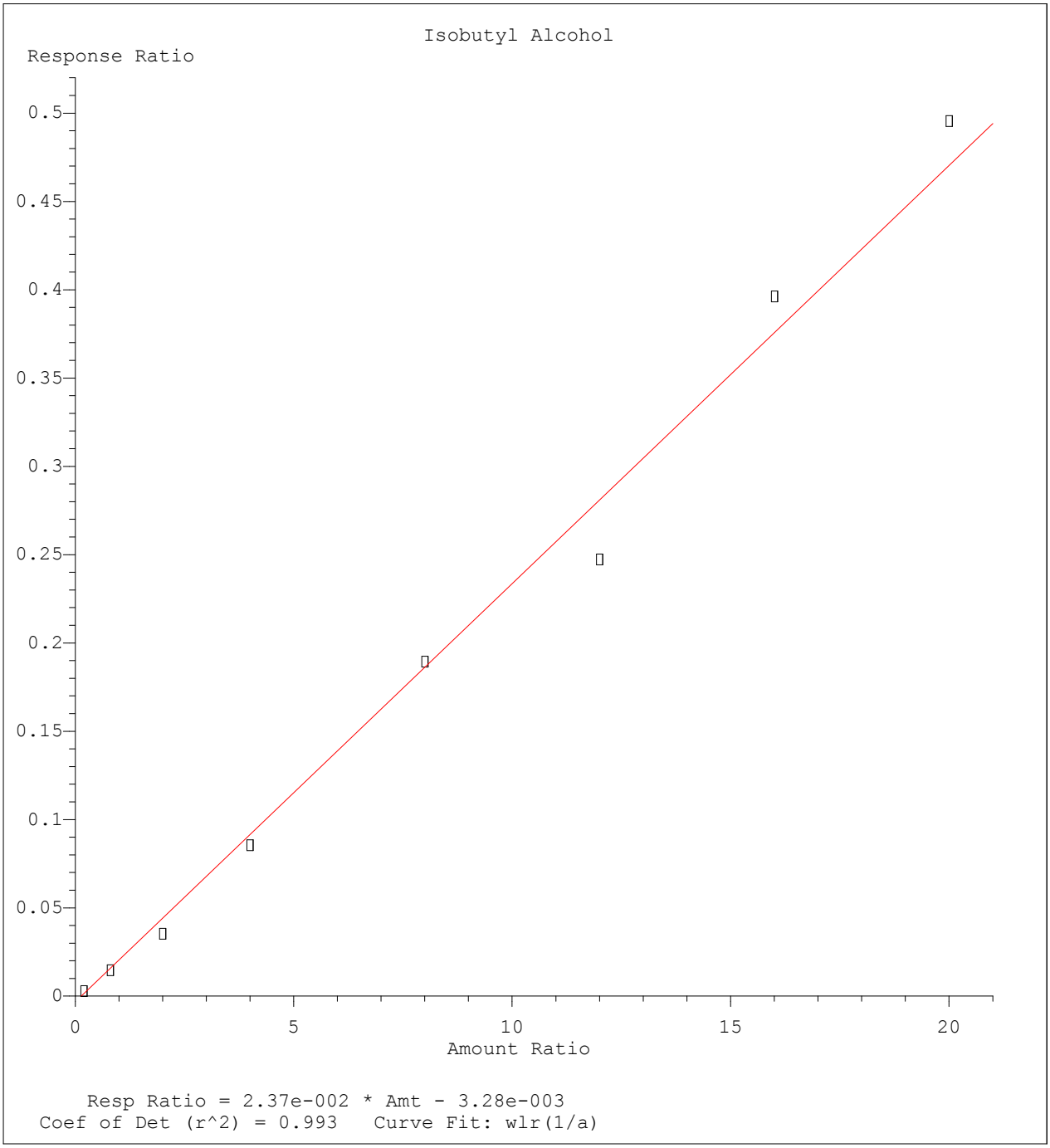

Method Name: C:\MSDCHEM\1\METHODS\A9FOO_SL.M
Calibration Table Last Updated: Wed Jan 27 09:49:02 2016

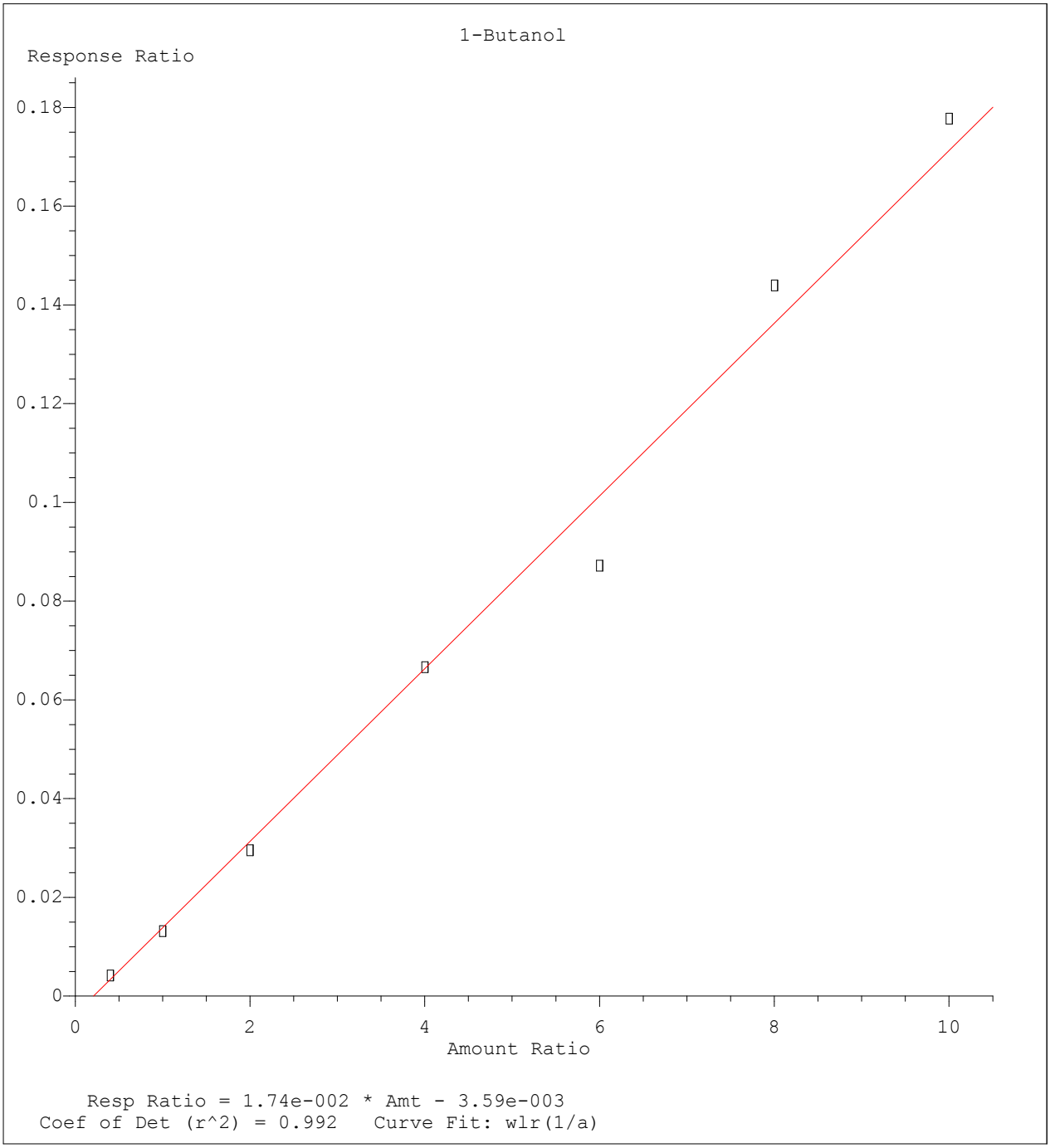

Method Name: C:\MSDCHEM\1\METHODS\A9FOO_SL.M
Calibration Table Last Updated: Wed Jan 27 09:49:02 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:09 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	394765	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	285754	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	159586	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	40054	101.2745 ug/kg#	100
3) 3-Chloro-1-propene	7.22	41	402890	103.3786 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	572568	129.1764 ug/kg	99
5) Ethyl Acetate	9.23	43	275962	106.0028 ug/kg	99
6) Methacrylonitrile	9.40	67	90289	107.1354 ug/kg	96
7) Isobutyl Alcohol	9.42	43	34031	188.7895 ug/kg	99
8) 1-Butanol	10.35	56	12038	97.7072 ug/kg	97
9) Methyl methacrylate	11.56	41	219363	110.3163 ug/kg	100
10) 2-Nitropropane	11.90	43	69288	107.2554 ug/kg	93
12) Cyclohexanone	16.01	55	14203	100.3934 ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972481.D A9FOO_SL.M Wed Jan 27 11:15:09 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

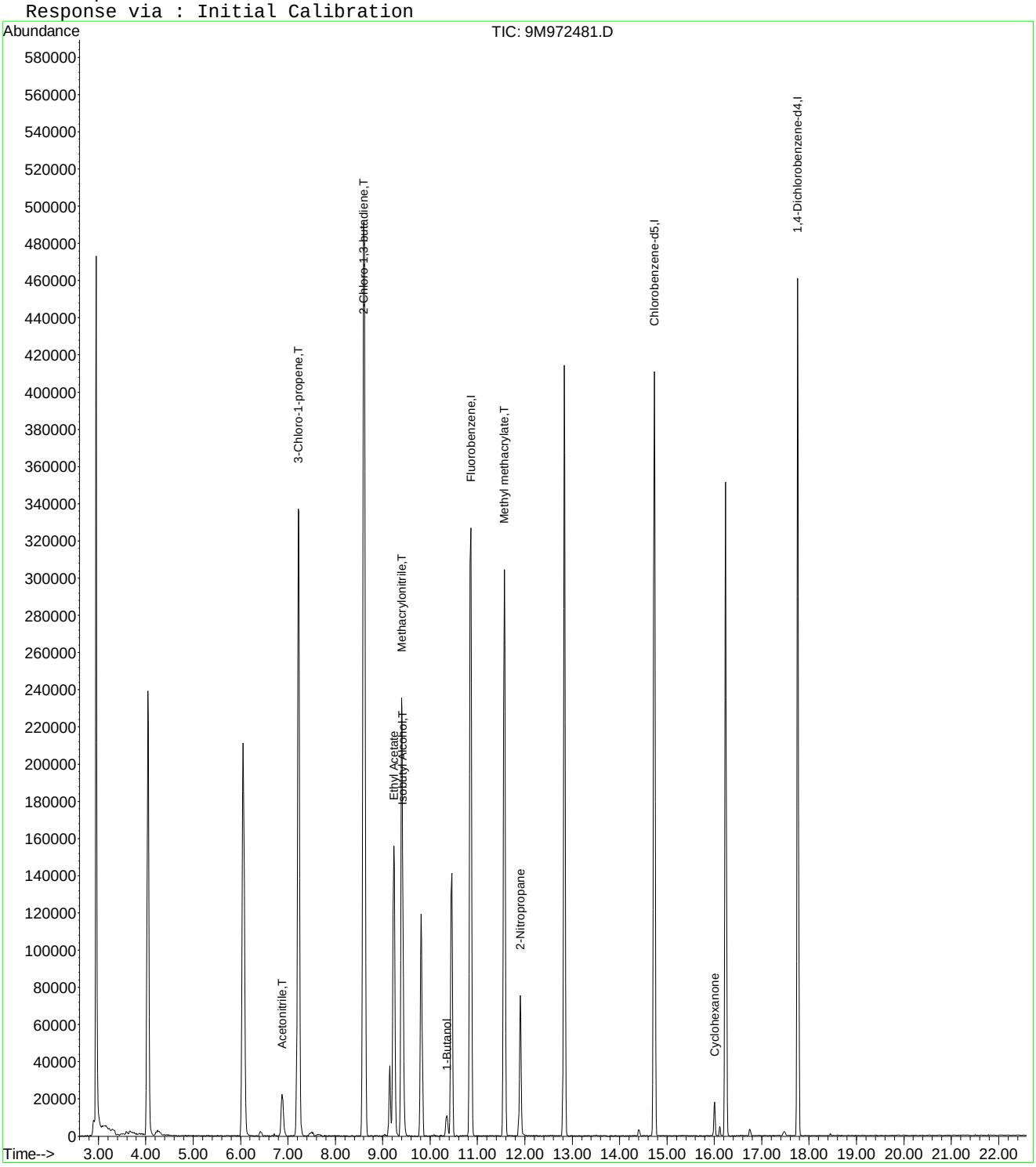

9M972481.D A9FOO_SL.M Wed Jan 27 11:15:09 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	101.2745	-1.3	106	0.00
3	T	3-Chloro-1-propene	100.0000	103.3786	-3.4	98	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	129.1764	-29.2	122	0.00
5		Ethyl Acetate	100.0000	106.0028	-6.0	103	0.00
6	T	Methacrylonitrile	100.0000	107.1354	-7.1	103	0.00
7	T	Isobutyl Alcohol	200.0000	188.7895	5.6	101	0.00
8		1-Butanol	100.0000	97.7072	2.3	103	0.00
9	T	Methyl methacrylate	100.0000	110.3163	-10.3	105	0.00
10		2-Nitropropane	100.0000	107.2554	-7.3	106	0.00
11	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
12		Cyclohexanone	100.0000	100.3934	-0.4	101	0.00
13	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	99	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972481.D A9FOO_SL.M Wed Jan 27 11:32:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972896.D Vial: 3
Acq On : 25 Feb 2016 15:48 Operator: ADC
Sample : WG558732-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:54 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260B_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	517775	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.73	117	378926	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.76	152	183008	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	147955	52.7167 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.44%		
43) 1,2-Dichloroethane-d4	10.44	65	183779	52.1887 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.38%		
58) Toluene-d8	12.83	98	511451	53.3617 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.72%		
79) p-Bromofluorobenzene	16.23	95	191673	53.7871 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 107.58%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.28	85	204882	57.9763 ug/kg	100
3) Chloromethane	3.74	50	183152	54.0664 ug/kg	100
4) Vinyl Chloride	3.99	62	192536	56.7764 ug/kg	100
5) 1,3-Butadiene	4.04	54	170907	52.9740 ug/kg	100
6) Bromomethane	4.88	94	107911	48.9956 ug/kg	100
7) Chloroethane	5.04	64	85391	56.5213 ug/kg	100
8) Trichlorofluoromethane	5.53	101	265962	52.2923 ug/kg	100
9) Diethyl ether	6.04	59	249400	104.8955 ug/kg	100
10) Isoprene	6.09	67	156373	51.4980 ug/kg	100
11) Acrolein	6.30	56	24630	51.9520 ug/kg	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	135036	51.4825 ug/kg	100
13) Acetone	6.41	43	66195	50.6135 ug/kg	100
14) 1,1-Dichloroethene	6.61	61	244051	50.4389 ug/kg	100
15) Tert-Butyl Alcohol	6.76	59	110494	208.7036 ug/kg	98
16) Dimethyl Sulfide	6.88	62	109294	53.4455 ug/kg	100
17) Iodomethane	7.13	142	79749	55.1586 ug/kg	100
18) Methyl acetate	7.14	43	135648	51.5699 ug/kg	100
19) Methylene Chloride	7.40	84	135280	51.3362 ug/kg	100
20) Carbon Disulfide	7.45	76	381814	51.2249 ug/kg	100
21) Acrylonitrile	7.59	53	69697	53.5624 ug/kg	100
22) Methyl Tert Butyl Ether	7.61	73	407131	54.2460 ug/kg	100
23) trans-1,2-Dichloroethene	7.85	61	226890	52.6160 ug/kg	100
24) n-Hexane	7.91	57	219597	49.3729 ug/kg	100
25) Diisopropyl ether	8.26	45	1088740	105.3973 ug/kg	100
26) Vinyl Acetate	8.43	43	311838	52.9553 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	284391	52.5076 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	1023392	106.5502 ug/kg	100
29) 2-Butanone	9.03	43	86123	51.5803 ug/kg	100
30) Propionitrile	9.14	54	53253	104.2214 ug/kg	100
31) 2,2-Dichloropropane	9.24	77	215042	53.1943 ug/kg	100
32) cis-1,2-Dichloroethene	9.31	96	153722	54.3532 ug/kg	100
33) Chloroform	9.52	83	263571	52.9749 ug/kg	100
34) 1-Bromopropane	9.65	122	22164	51.3817 ug/kg	100
35) Bromochloromethane	9.75	130	102780	55.9453 ug/kg	100
36) Tetrahydrofuran	9.78	42	113791	105.7289 ug/kg	100
38) 1,1,1-Trichloroethane	10.04	97	243452	54.1074 ug/kg	100
39) Cyclohexane	10.08	56	247641	50.4821 ug/kg	100
40) 1,1-Dichloropropene	10.24	75	182199	51.4612 ug/kg	100
41) Tert-Amyl-Methyl ether	10.34	73	741165	106.1603 ug/kg	100
42) Carbon Tetrachloride	10.39	117	221306	53.0537 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972896.D Vial: 3
Acq On : 25 Feb 2016 15:48 Operator: ADC
Sample : WG558732-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:54 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260B_SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	237857	54.3500	ug/kg	100
46)	Benzene	10.60	78	503328	50.7793	ug/kg	100
47)	Trichloroethene	11.35	130	163959	52.2047	ug/kg	100
48)	Methylcyclohexane	11.44	83	204551	51.9284	ug/kg	100
49)	1,2-Dichloropropane	11.56	63	148045	54.3898	ug/kg	100
50)	1,4-Dioxane	11.88	88	7789	190.7454	ug/kg	100
51)	Bromodichloromethane	11.87	83	203922	53.1595	ug/kg	100
52)	Dibromomethane	11.96	174	95887	53.1673	ug/kg	100
53)	2-Chloroethyl Vinyl Ether	12.17	63	38515	51.1377	ug/kg	100
54)	4-Methyl-2-Pentanone	12.19	58	64999	54.4056	ug/kg	100
55)	cis-1,3-Dichloropropene	12.50	75	212797	53.2452	ug/kg	100
56)	Dimethyl Disulfide	12.77	94	219798	54.7267	ug/kg	100
59)	Toluene	12.92	91	563647	52.0613	ug/kg	100
60)	Ethyl Methacrylate	13.02	69	158958	52.9687	ug/kg	100
61)	trans-1,3-Dichloropropene	13.10	75	212386	54.4657	ug/kg	100
62)	1,1,2-Trichloroethane	13.33	97	122975	54.0706	ug/kg	100
63)	2-Hexanone	13.25	43	119176	52.4822	ug/kg	100
64)	1,3-Dichloropropane	13.63	76	201541	53.1810	ug/kg	100
65)	Tetrachloroethene	13.75	164	117066	50.4378	ug/kg	100
66)	Dibromochloromethane	14.01	129	168874	53.1294	ug/kg	100
67)	1,2-Dibromoethane	14.28	107	132755	52.6249	ug/kg	100
68)	1-Chlorohexane	14.35	91	168490	52.7733	ug/kg	100
69)	Chlorobenzene	14.77	112	400241	52.5998	ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.80	131	154536	54.0800	ug/kg	100
71)	Ethylbenzene	14.80	106	207031	52.8117	ug/kg	100
72)	m-,p-Xylene	14.89	106	497405	102.7415	ug/kg	100
73)	o-Xylene	15.45	106	247567	53.2858	ug/kg	100
74)	Styrene	15.49	104	425634	53.7983	ug/kg	100
75)	Bromoform	16.00	173	116015	55.5910	ug/kg	100
76)	Isopropylbenzene	15.88	105	658255	52.7764	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.10	83	147970	53.3007	ug/kg	100
80)	1,2,3-Trichloropropane	16.29	110	55711	52.9159	ug/kg	100
81)	trans-1,4-Dichloro-2-Buten	16.33	53	55525	52.3210	ug/kg	100
82)	n-Propylbenzene	16.39	91	751844	52.2641	ug/kg	100
83)	Bromobenzene	16.52	156	177299	52.2079	ug/kg	100
84)	1,3,5-Trimethylbenzene	16.58	105	568867	52.6809	ug/kg	100
85)	2-Chlorotoluene	16.66	91	484783	50.2437	ug/kg	100
86)	4-Chlorotoluene	16.70	91	481367	53.9615	ug/kg	100
87)	a-Methylstyrene	16.98	118	255765	51.9817	ug/kg	100
88)	tert-Butylbenzene	17.04	134	121669	53.7430	ug/kg	100
89)	1,2,4-Trimethylbenzene	17.09	105	580656	51.3463	ug/kg	100
90)	sec-Butylbenzene	17.30	105	726352	52.2266	ug/kg	100
91)	p-Isopropyltoluene	17.46	119	613096	52.2364	ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	337008	49.9319	ug/kg	100
93)	1,4-Dichlorobenzene	17.80	146	335195	49.6777	ug/kg	100
94)	n-Butylbenzene	17.99	91	563797	51.6647	ug/kg	100
95)	1,2-Dichlorobenzene	18.30	146	320108	51.1150	ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.30	157	42968	53.4468	ug/kg	100
97)	1,2,4-Trichlorobenzene	20.44	180	222592	50.0691	ug/kg	100
98)	Hexachlorobutadiene	20.59	225	117654	50.2053	ug/kg	100
99)	Naphthalene	20.81	128	602344	54.0184	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	222082	51.5034	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972896.D 8260SL.M Fri Feb 26 11:21:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972896.D Vial: 3
Acq On : 25 Feb 2016 15:48 Operator: ADC
Sample : WG558732-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

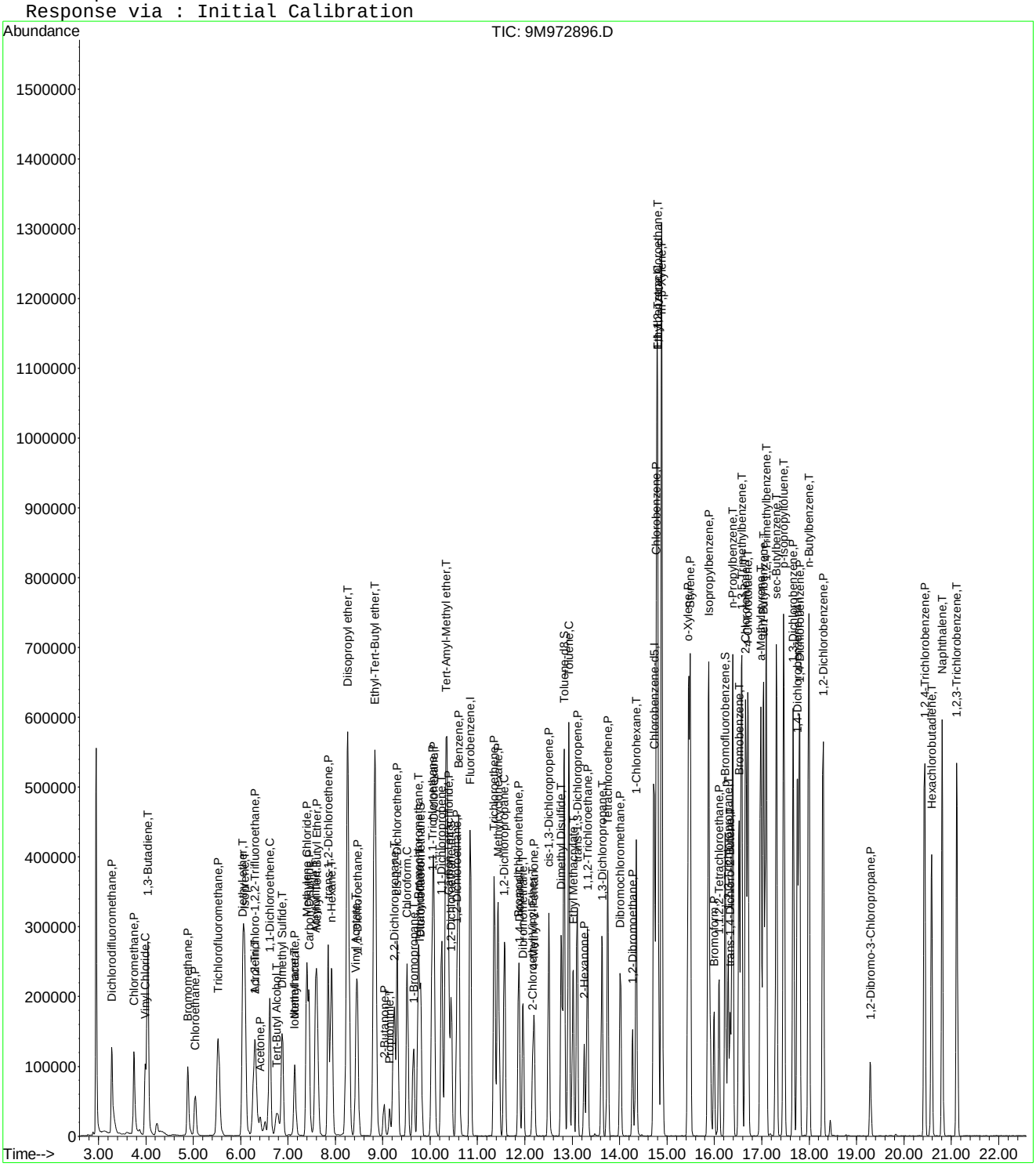

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:15 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	491503	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	353502	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	169028	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.83	98	923	0.1032 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.20%#	
79) p-Bromofluorobenzene	16.22	95	770	0.2339 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.46%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	1359	0.4051 ug/kg#	69
3) Chloromethane	3.75	50	2926	0.9099 ug/kg	95
4) Vinyl Chloride	3.98	62	1474	0.4579 ug/kg#	67
5) 1,3-Butadiene	4.03	54	1519	0.4960 ug/kg	82
6) Bromomethane	4.89	94	2071	0.9906 ug/kg	100
8) Trichlorofluoromethane	5.53	101	2609	0.5404 ug/kg#	51
10) Isoprene	6.08	67	1239	0.4298 ug/kg	70
13) Acetone	6.43	43	4251	5.5216 ug/kg#	75
14) 1,1-Dichloroethene	6.63	61	2149	0.4679 ug/kg#	66
17) Iodomethane	7.14	142	943	3.4505 ug/kg#	34
18) Methyl acetate	7.16	43	1334	0.5343 ug/kg#	45
19) Methylene Chloride	7.40	84	1287	0.5145 ug/kg	81
20) Carbon Disulfide	7.44	76	6762	0.9557 ug/kg#	76
23) trans-1,2-Dichloroethene	7.84	61	2196	0.5365 ug/kg	86
24) n-Hexane	7.92	57	2239	0.5303 ug/kg#	62
26) Vinyl Acetate	8.44	43	2494	0.4462 ug/kg#	78
27) 1,1-Dichloroethane	8.48	63	2396	0.4660 ug/kg#	63
29) 2-Butanone	9.02	43	778	0.4909 ug/kg#	58
31) 2,2-Dichloropropane	9.24	77	1877	0.4891 ug/kg#	42
32) cis-1,2-Dichloroethene	9.32	96	1178	0.4388 ug/kg	74
33) Chloroform	9.52	83	2007	0.4249 ug/kg	81
35) Bromochloromethane	9.74	130	828	0.4748 ug/kg#	68
36) Tetrahydrofuran	9.76	42	1603	1.5690 ug/kg#	57
38) 1,1,1-Trichloroethane	10.05	97	1773	0.4151 ug/kg	92
40) 1,1-Dichloropropene	10.25	75	1521	0.4526 ug/kg#	38
42) Carbon Tetrachloride	10.40	117	1765	0.4457 ug/kg#	85
45) 1,2-Dichloroethane	10.57	62	1885	0.4537 ug/kg#	68
46) Benzene	10.61	78	5607	0.5959 ug/kg#	83
47) Trichloroethene	11.36	130	1808	0.6064 ug/kg	88
48) Methylcyclohexane	11.44	83	1930	0.5161 ug/kg	96
55) cis-1,3-Dichloropropene	12.51	75	1714	0.4518 ug/kg#	51
59) Toluene	12.93	91	5550	0.5495 ug/kg	88
61) trans-1,3-Dichloropropene	13.10	75	1920	0.5278 ug/kg#	51
63) 2-Hexanone	13.25	43	877	0.4140 ug/kg#	63
64) 1,3-Dichloropropane	13.63	76	1615	0.4568 ug/kg	91
65) Tetrachloroethene	13.75	164	1154	0.5330 ug/kg#	74
67) 1,2-Dibromoethane	14.27	107	988	0.4198 ug/kg	87
68) 1-Chlorohexane	14.35	91	1436	0.4821 ug/kg	83
69) Chlorobenzene	14.78	112	4578	0.6449 ug/kg	87
70) 1,1,1,2-Tetrachloroethane	14.81	131	1078	0.4044 ug/kg	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:15 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
71)	Ethylbenzene	14.80	106	1823	0.4985 ug/kg	68
72)	m-,p-Xylene	14.88	106	4752	1.0521 ug/kg	95
73)	o-Xylene	15.44	106	2166	0.4997 ug/kg	94
74)	Styrene	15.49	104	3544	0.4802 ug/kg	91
76)	Isopropylbenzene	15.87	105	6349	0.5456 ug/kg	97
78)	1,1,2,2-Tetrachloroethane	16.09	83	1326	0.5171 ug/kg#	89
82)	n-Propylbenzene	16.38	91	7679	0.5780 ug/kg	98
83)	Bromobenzene	16.52	156	1798	0.5732 ug/kg	88
84)	1,3,5-Trimethylbenzene	16.57	105	4554	0.4566 ug/kg	92
85)	2-Chlorotoluene	16.66	91	5237	0.5877 ug/kg	84
86)	4-Chlorotoluene	16.71	91	5645	0.6851 ug/kg	93
87)	a-Methylstyrene	16.97	118	2091	0.4601 ug/kg	93
89)	1,2,4-Trimethylbenzene	17.09	105	6291	0.6023 ug/kg	84
90)	sec-Butylbenzene	17.31	105	7013	0.5460 ug/kg	93
91)	p-Isopropyltoluene	17.47	119	5681	0.5241 ug/kg	95
92)	1,3-Dichlorobenzene	17.67	146	4446	0.7132 ug/kg	91
93)	1,4-Dichlorobenzene	17.79	146	4603	0.7386 ug/kg#	73
94)	n-Butylbenzene	17.99	91	6750	0.6697 ug/kg#	90
95)	1,2-Dichlorobenzene	18.29	146	3889	0.6724 ug/kg	82
97)	1,2,4-Trichlorobenzene	20.43	180	3506	0.8539 ug/kg	94
98)	Hexachlorobutadiene	20.58	225	1493	0.6898 ug/kg#	70
99)	Naphthalene	20.81	128	10277	0.9979 ug/kg	93
100)	1,2,3-Trichlorobenzene	21.12	180	3961	0.9946 ug/kg	80

(#) = qualifier out of range (m) = manual integration
9M972898.D 8260SL.M Fri Feb 26 11:11:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration

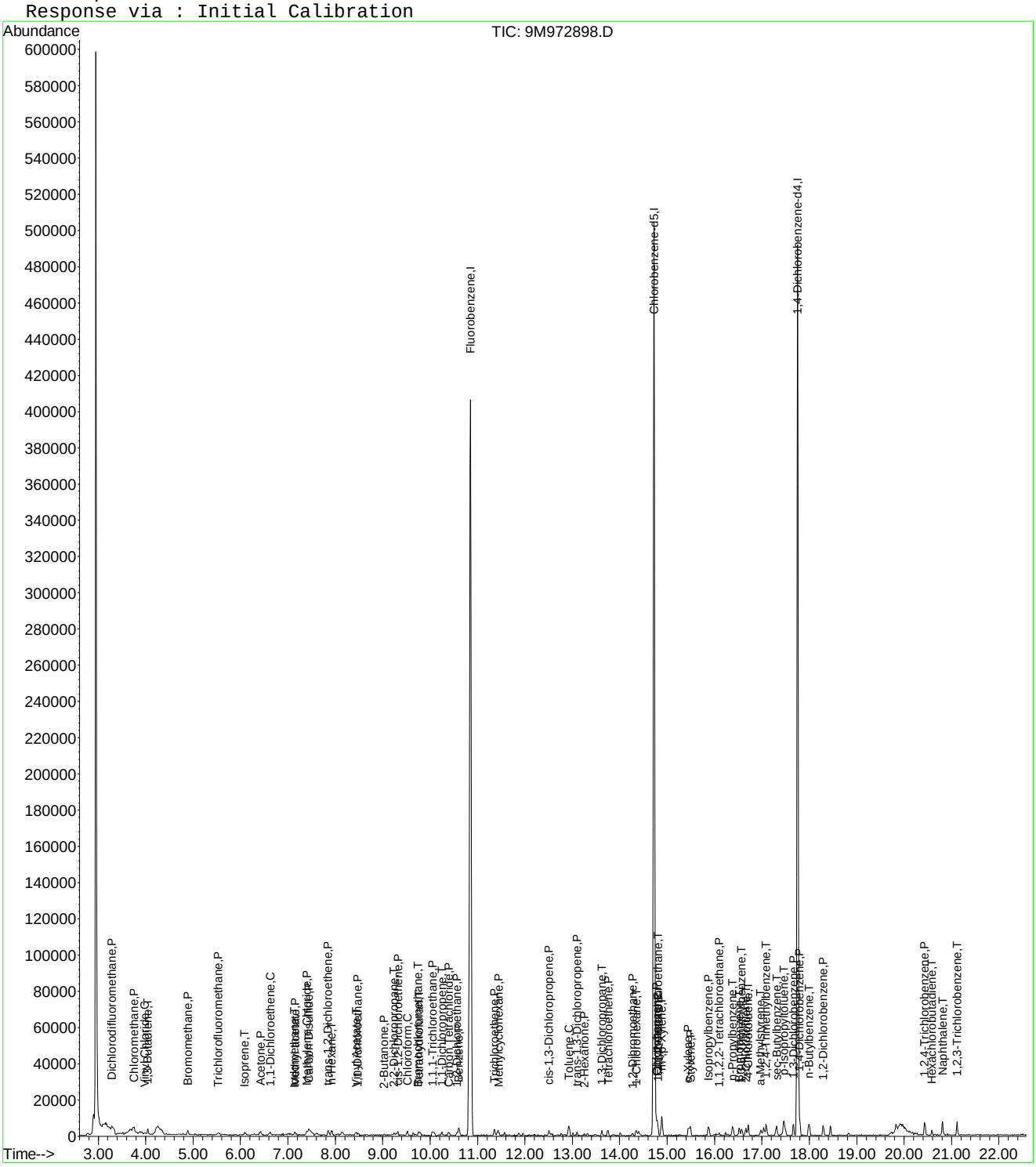

9M972898.D 8260SL.M Fri Feb 26 11:11:55 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	0.4051	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.9099	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.4579	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	0.4960	0.0	0	0.00
6	P	Bromomethane	-1.0000	0.9906	0.0	100	0.00
7	P	Chloroethane	-1.0000	0.2845	0.0	100	0.01
8	P	Trichlorofluoromethane	-1.0000	0.5404	0.0	100	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.04#
10	T	Isoprene	-1.0000	0.4298	0.0	0	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.30#
12	P	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.0779	0.0	100	0.00
13	P	Acetone	-1.0000	5.5216	0.0	0	0.02
14	C	1,1-Dichloroethene	-1.0000	0.4679	0.0	100	0.01
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.76#
16	T	Dimethyl Sulfide	-1.0000	0.1242	0.0	0	0.01
17	T	Iodomethane	-1.0000	3.4505	0.0	0	0.00
18	P	Methyl acetate	-1.0000	0.5343	0.0	0	0.02
19	P	Methylene Chloride	-1.0000	0.5145	0.0	100	0.00
20	P	Carbon Disulfide	-1.0000	0.9557	0.0	0	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.59#
22	P	Methyl Tert Butyl Ether	-1.0000	0.3878	0.0	100	0.00
23	P	trans-1,2-Dichloroethene	-1.0000	0.5365	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.5303	0.0	0	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.26#
26	T	Vinyl Acetate	-1.0000	0.4462	0.0	100	0.01
27	P	1,1-Dichloroethane	-1.0000	0.4660	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.83#
29	P	2-Butanone	-1.0000	0.4909	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.14#
31	T	2,2-Dichloropropane	-1.0000	0.4891	0.0	100	0.00
32	P	cis-1,2-Dichloroethene	-1.0000	0.4388	0.0	100	0.01
33	C	Chloroform	-1.0000	0.4249	0.0	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.65#
35	T	Bromochloromethane	-1.0000	0.4748	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	1.5690	0.0	100	-0.02
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	-1.0000	0.4151	0.0	100	0.00
39	P	Cyclohexane	-1.0000	0.3314	0.0	0	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4526	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.34#
42	P	Carbon Tetrachloride	-1.0000	0.4457	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	-1.0000	0.4537	0.0	100	0.00
46	P	Benzene	0.5000	0.5959	-19.2	100	0.00
47	P	Trichloroethene	-1.0000	0.6064	0.0	100	0.00
48	P	Methylcyclohexane	-1.0000	0.5161	0.0	0	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2930	0.0	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.88#
51	P	Bromodichloromethane	-1.0000	0.3238	0.0	100	0.00
52	T	Dibromomethane	-1.0000	0.1630	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.0000	0.0	0	-12.16#
54	P	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.19#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	-1.0000	0.4518	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2529	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.1032	0.0	100	0.00
59	C	Toluene	0.5000	0.5495	-9.9	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2340	0.0	0	0.00
61	P	trans-1,3-Dichloropropene	-1.0000	0.5278	0.0	100	0.00
62	P	1,1,2-Trichloroethane	-1.0000	0.3964	0.0	100	0.00
63	P	2-Hexanone	-1.0000	0.4140	0.0	100	0.00
64	T	1,3-Dichloropropane	-1.0000	0.4568	0.0	100	0.00
65	P	Tetrachloroethene	-1.0000	0.5330	0.0	100	0.00
66	P	Dibromochloromethane	-1.0000	0.3541	0.0	100	0.00
67	P	1,2-Dibromoethane	-1.0000	0.4198	0.0	100	0.00
68	T	1-Chlorohexane	-1.0000	0.4821	0.0	0	0.00
69	P	Chlorobenzene	-1.0000	0.6449	0.0	100	0.00
70	T	1,1,1,2-Tetrachloroethane	-1.0000	0.4044	0.0	100	0.00
71	C	Ethylbenzene	0.5000	0.4985	0.3	100	0.00
72	P	m-,p-Xylene	1.0000	1.0521	-5.2	100	0.00
73	P	o-Xylene	0.5000	0.4997	0.1	100	0.00
74	P	Styrene	-1.0000	0.4802	0.0	100	0.00
75	P	Bromoform	-1.0000	0.3955	0.0	100	0.00
76	P	Isopropylbenzene	-1.0000	0.5456	0.0	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	-1.0000	0.5171	0.0	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.2339	0.0	100	0.00
80	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.29#
81	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.33#
82	T	n-Propylbenzene	-1.0000	0.5780	0.0	100	0.00
83	T	Bromobenzene	-1.0000	0.5732	0.0	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	0.4566	0.0	100	0.00
85	T	2-Chlorotoluene	-1.0000	0.5877	0.0	100	0.00
86	T	4-Chlorotoluene	-1.0000	0.6851	0.0	100	0.00
87	T	a-Methylstyrene	-1.0000	0.4601	0.0	0	0.00
88	T	tert-Butylbenzene	-1.0000	0.2860	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	-1.0000	0.6023	0.0	100	0.00
90	T	sec-Butylbenzene	-1.0000	0.5460	0.0	100	0.00
91	T	p-Isopropyltoluene	-1.0000	0.5241	0.0	100	0.00
92	P	1,3-Dichlorobenzene	-1.0000	0.7132	0.0	100	0.00
93	P	1,4-Dichlorobenzene	-1.0000	0.7386	0.0	100	0.00
94	T	n-Butylbenzene	-1.0000	0.6697	0.0	100	0.00
95	P	1,2-Dichlorobenzene	-1.0000	0.6724	0.0	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.30#
97	P	1,2,4-Trichlorobenzene	-1.0000	0.8539	0.0	100	0.00
98	T	Hexachlorobutadiene	-1.0000	0.6898	0.0	100	0.00
99	T	Naphthalene	-1.0000	0.9979	0.0	100	0.00
100	T	1,2,3-Trichlorobenzene	-1.0000	0.9946	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972898.D 8260SL.M Fri Feb 26 11:11:52 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	536651	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	387839	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	177519	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.82	98	959	0.0978 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.20%#	
79) p-Bromofluorobenzene	16.22	95	467	0.1351 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	3486	0.9518 ug/kg#	85
3) Chloromethane	3.74	50	4175	1.1891 ug/kg	88
4) Vinyl Chloride	3.98	62	2686	0.7642 ug/kg	80
5) 1,3-Butadiene	4.03	54	3056	0.9139 ug/kg	91
6) Bromomethane	4.89	94	2537	1.1114 ug/kg	94
7) Chloroethane	5.05	64	1264	0.8072 ug/kg#	45
8) Trichlorofluoromethane	5.53	101	5567	1.0561 ug/kg#	93
9) Diethyl ether	6.05	59	11529	4.6784 ug/kg	97
10) Isoprene	6.08	67	2965	0.9421 ug/kg	97
11) Acrolein	6.29	56	1087	2.2122 ug/kg#	35
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	1939	0.7132 ug/kg	88
13) Acetone	6.41	43	5231	5.8863 ug/kg	95
14) 1,1-Dichloroethene	6.62	61	4981	0.9932 ug/kg	92
15) Tert-Butyl Alcohol	6.77	59	5682	10.3548 ug/kg#	63
16) Dimethyl Sulfide	6.88	62	1614	0.7615 ug/kg	91
17) Iodomethane	7.15	142	941	3.3944 ug/kg#	66
18) Methyl acetate	7.16	43	2553	0.9364 ug/kg#	65
19) Methylene Chloride	7.40	84	2963	1.0849 ug/kg	92
20) Carbon Disulfide	7.45	76	9749	1.2619 ug/kg	95
21) Acrylonitrile	7.58	53	3140	2.3282 ug/kg	85
22) Methyl Tert Butyl Ether	7.61	73	7179	0.9229 ug/kg	83
23) trans-1,2-Dichloroethene	7.85	61	4296	0.9612 ug/kg	95
24) n-Hexane	7.93	57	4481	0.9720 ug/kg	95
25) Diisopropyl ether	8.26	45	50344	4.7022 ug/kg	98
26) Vinyl Acetate	8.43	43	5247	0.8597 ug/kg#	90
27) 1,1-Dichloroethane	8.48	63	5885	1.0483 ug/kg#	85
28) Ethyl-Tert-Butyl ether	8.83	59	46767	4.6979 ug/kg	99
29) 2-Butanone	9.03	43	1776	1.0263 ug/kg#	58
30) Propionitrile	9.14	54	2256	4.2599 ug/kg#	60
31) 2,2-Dichloropropane	9.24	77	4402	1.0506 ug/kg#	71
32) cis-1,2-Dichloroethene	9.31	96	2650	0.9040 ug/kg	94
33) Chloroform	9.51	83	5072	0.9836 ug/kg	96
35) Bromochloromethane	9.75	130	1408	0.7394 ug/kg	86
36) Tetrahydrofuran	9.77	42	6699	6.0054 ug/kg	95
38) 1,1,1-Trichloroethane	10.05	97	4567	0.9793 ug/kg	91
39) Cyclohexane	10.08	56	4992	0.9818 ug/kg#	85
40) 1,1-Dichloropropene	10.24	75	3785	1.0315 ug/kg	90
41) Tert-Amyl-Methyl ether	10.34	73	33850	4.6779 ug/kg	95
42) Carbon Tetrachloride	10.40	117	4297	0.9939 ug/kg#	90
45) 1,2-Dichloroethane	10.55	62	3923	0.8649 ug/kg	93

(#) = qualifier out of range (m) = manual integration
9M972899.D 8260SL.M Fri Feb 26 11:12:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
46)	Benzene	10.61	78	9968	0.9703 ug/kg	96
47)	Trichloroethene	11.36	130	3259	1.0012 ug/kg	99
48)	Methylcyclohexane	11.43	83	3354	0.8215 ug/kg	76
49)	1,2-Dichloropropane	11.57	63	2469	0.8752 ug/kg	94
51)	Bromodichloromethane	11.87	83	3657	0.9198 ug/kg#	94
52)	Dibromomethane	11.96	174	1621	0.8672 ug/kg	93
53)	2-Chloroethyl Vinyl Ether	12.16	63	210	3.0851 ug/kg#	47
54)	4-Methyl-2-Pentanone	12.20	58	738	0.5960 ug/kg#	40
55)	cis-1,3-Dichloropropene	12.51	75	3714	0.8966 ug/kg	86
56)	Dimethyl Disulfide	12.77	94	3075	0.7387 ug/kg	83
59)	Toluene	12.93	91	10894	0.9831 ug/kg	97
60)	Ethyl Methacrylate	13.01	69	1966	0.6401 ug/kg#	53
61)	trans-1,3-Dichloropropene	13.11	75	3837	0.9614 ug/kg#	79
62)	1,1,2-Trichloroethane	13.32	97	2148	0.9227 ug/kg	94
63)	2-Hexanone	13.26	43	1796	0.7727 ug/kg#	80
64)	1,3-Dichloropropane	13.63	76	3616	0.9322 ug/kg	99
65)	Tetrachloroethene	13.75	164	2587	1.0890 ug/kg	79
66)	Dibromochloromethane	14.02	129	3318	1.0199 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	2336	0.9047 ug/kg	97
68)	1-Chlorohexane	14.34	91	3075	0.9410 ug/kg	85
69)	Chlorobenzene	14.78	112	7982	1.0249 ug/kg	88
70)	1,1,1,2-Tetrachloroethane	14.81	131	2589	0.8852 ug/kg	86
71)	Ethylbenzene	14.80	106	4007	0.9987 ug/kg	89
72)	m-,p-Xylene	14.88	106	9607	1.9388 ug/kg	98
73)	o-Xylene	15.45	106	4376	0.9202 ug/kg	99
74)	Styrene	15.49	104	7432	0.9178 ug/kg	92
75)	Bromoform	16.00	173	1759	0.8235 ug/kg#	79
76)	Isopropylbenzene	15.87	105	11937	0.9351 ug/kg	98
78)	1,1,2,2-Tetrachloroethane	16.09	83	2186	0.8118 ug/kg#	83
80)	1,2,3-Trichloropropane	16.28	110	875	0.8568 ug/kg#	81
81)	trans-1,4-Dichloro-2-Buten	16.34	53	831	0.8073 ug/kg#	74
82)	n-Propylbenzene	16.38	91	14156	1.0145 ug/kg	99
83)	Bromobenzene	16.53	156	2996	0.9095 ug/kg#	39
84)	1,3,5-Trimethylbenzene	16.57	105	11008	1.0509 ug/kg	88
85)	2-Chlorotoluene	16.65	91	10606	1.1332 ug/kg	84
86)	4-Chlorotoluene	16.71	91	9101	1.0518 ug/kg	95
87)	a-Methylstyrene	16.98	118	4078	0.8544 ug/kg	85
88)	tert-Butylbenzene	17.03	134	2095	0.9540 ug/kg	74
89)	1,2,4-Trimethylbenzene	17.09	105	12124	1.1053 ug/kg	83
90)	sec-Butylbenzene	17.31	105	13922	1.0320 ug/kg	100
91)	p-Isopropyltoluene	17.47	119	10153	0.8918 ug/kg	98
92)	1,3-Dichlorobenzene	17.67	146	7444	1.1370 ug/kg	90
93)	1,4-Dichlorobenzene	17.79	146	7580	1.1581 ug/kg	92
94)	n-Butylbenzene	17.99	91	11112	1.0498 ug/kg	91
95)	1,2-Dichlorobenzene	18.29	146	6415	1.0560 ug/kg	97
97)	1,2,4-Trichlorobenzene	20.43	180	4869	1.1291 ug/kg	98
98)	Hexachlorobutadiene	20.59	225	2032	0.8939 ug/kg	87
99)	Naphthalene	20.81	128	11710	1.0826 ug/kg	92
100)	1,2,3-Trichlorobenzene	21.12	180	4698	1.1232 ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972899.D 8260SL.M Fri Feb 26 11:12:33 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration

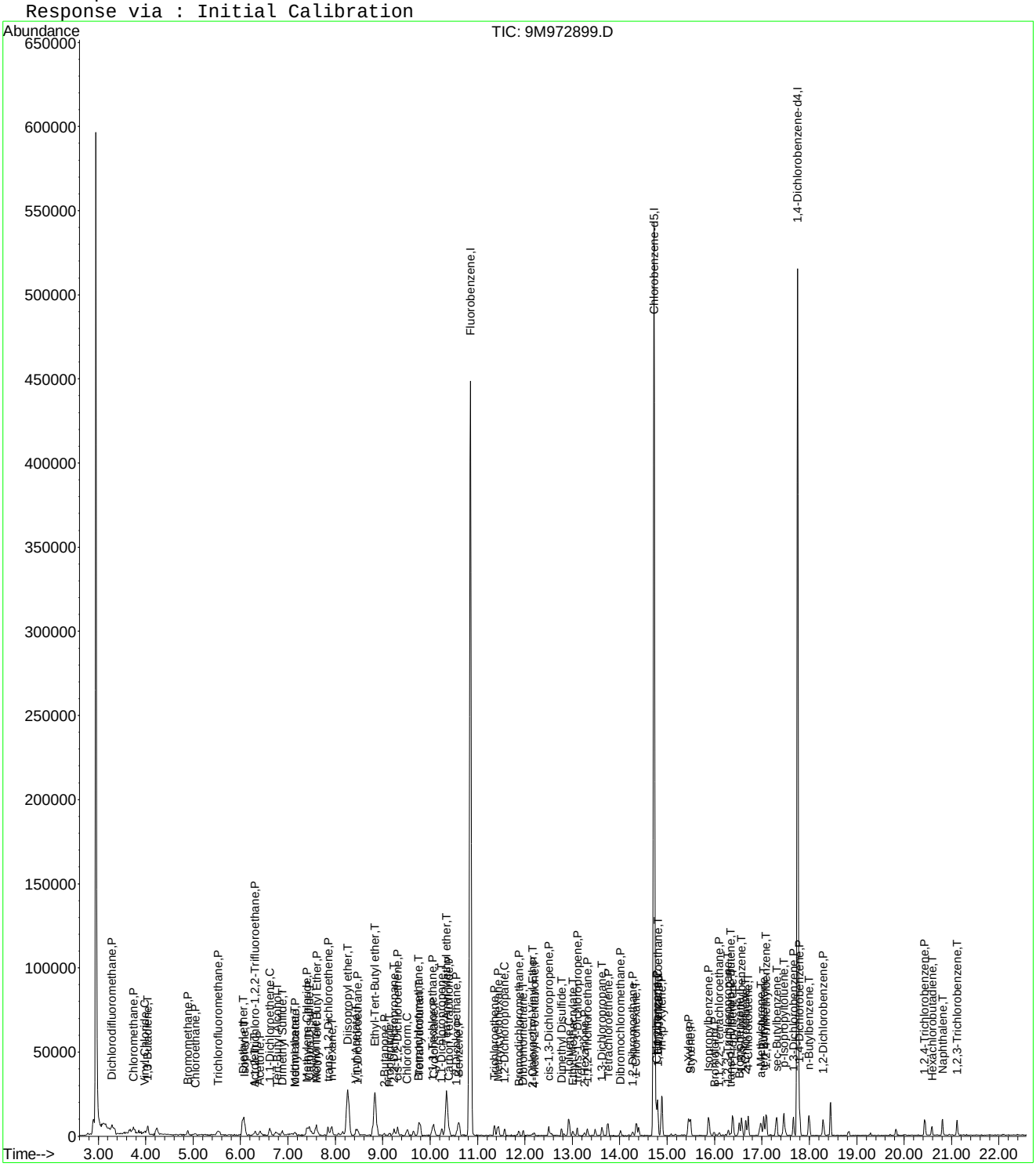

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	0.9518	0.0	100	0.00
3	P	Chloromethane	-1.0000	1.1891	0.0	100	0.00
4	C	Vinyl Chloride	1.0000	0.7642	23.6#	100	0.00
5	T	1,3-Butadiene	-1.0000	0.9139	0.0	0	0.00
6	P	Bromomethane	1.0000	1.1114	-11.1	100	0.00
7	P	Chloroethane	-1.0000	0.8072	0.0	100	0.00
8	P	Trichlorofluoromethane	1.0000	1.0561	-5.6	100	0.00
9	T	Diethyl ether	5.0000	4.6784	6.4	100	0.00
10	T	Isoprene	-1.0000	0.9421	0.0	0	0.00
11	T	Acrolein	2.5000	2.2122	11.5	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.7132	0.0	100	0.00
13	P	Acetone	-1.0000	5.8863	0.0	0	0.00
14	C	1,1-Dichloroethene	1.0000	0.9932	0.7	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	10.3548	0.0	100	0.00
16	T	Dimethyl Sulfide	1.0000	0.7615	23.9	100	0.00
17	T	Iodomethane	-1.0000	3.3944	0.0	0	0.01
18	P	Methyl acetate	-1.0000	0.9364	0.0	0	0.02
19	P	Methylene Chloride	-1.0000	1.0849	0.0	100	0.00
20	P	Carbon Disulfide	-1.0000	1.2619	0.0	0	0.00
21	T	Acrylonitrile	2.5000	2.3282	6.9	100	0.00
22	P	Methyl Tert Butyl Ether	1.0000	0.9229	7.7	100	0.00
23	P	trans-1,2-Dichloroethene	1.0000	0.9612	3.9	100	0.00
24	T	n-Hexane	-1.0000	0.9720	0.0	0	0.01
25	T	Diisopropyl ether	5.0000	4.7022	6.0	100	0.00
26	T	Vinyl Acetate	-1.0000	0.8597	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0483	-4.8	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.6979	6.0	100	0.00
29	P	2-Butanone	-1.0000	1.0263	0.0	100	0.00
30	T	Propionitrile	5.0000	4.2599	14.8	100	0.00
31	T	2,2-Dichloropropane	-1.0000	1.0506	0.0	100	0.00
32	P	cis-1,2-Dichloroethene	1.0000	0.9040	9.6	100	0.00
33	C	Chloroform	1.0000	0.9836	1.6	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.65#
35	T	Bromochloromethane	1.0000	0.7395	26.1#	100	0.00
36	T	Tetrahydrofuran	-1.0000	6.0054	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	1.0000	0.9793	2.1	100	0.00
39	P	Cyclohexane	1.0000	0.9818	1.8	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0315	-3.1	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	4.6780	6.4	100	0.00
42	P	Carbon Tetrachloride	-1.0000	0.9939	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	1.0000	0.8649	13.5	100	0.00
46	P	Benzene	1.0000	0.9703	3.0	100	0.00
47	P	Trichloroethene	1.0000	1.0012	-0.1	100	0.00
48	P	Methylcyclohexane	1.0000	0.8215	17.8	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.8752	12.5	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.88#
51	P	Bromodichloromethane	-1.0000	0.9198	0.0	100	0.00
52	T	Dibromomethane	1.0000	0.8672	13.3	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	3.0851	0.0	0	0.00
54	P	4-Methyl-2-Pentanone	-1.0000	0.5960	0.0	100	0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	-1.0000	0.8966	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.7387	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0978	0.0	100	0.00
59	C	Toluene	1.0000	0.9831	1.7	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.6401	0.0	0	0.00
61	P	trans-1,3-Dichloropropene	-1.0000	0.9614	0.0	100	0.00
62	P	1,1,2-Trichloroethane	1.0000	0.9227	7.7	100	0.00
63	P	2-Hexanone	-1.0000	0.7727	0.0	100	0.00
64	T	1,3-Dichloropropane	1.0000	0.9322	6.8	100	0.00
65	P	Tetrachloroethene	1.0000	1.0890	-8.9	100	0.00
66	P	Dibromochloromethane	-1.0000	1.0199	0.0	100	0.00
67	P	1,2-Dibromoethane	-1.0000	0.9047	0.0	100	0.00
68	T	1-Chlorohexane	1.0000	0.9410	5.9	100	0.00
69	P	Chlorobenzene	1.0000	1.0249	-2.5	100	0.00
70	T	1,1,1,2-Tetrachloroethane	-1.0000	0.8852	0.0	100	0.00
71	C	Ethylbenzene	1.0000	0.9987	0.1	100	0.00
72	P	m-,p-Xylene	2.0000	1.9388	3.1	100	0.00
73	P	o-Xylene	1.0000	0.9202	8.0	100	0.00
74	P	Styrene	1.0000	0.9178	8.2	100	0.00
75	P	Bromoform	-1.0000	0.8235	0.0	100	0.00
76	P	Isopropylbenzene	1.0000	0.9351	6.5	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	1.0000	0.8118	18.8	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.1351	0.0	100	0.00
80	T	1,2,3-Trichloropropane	1.0000	0.8568	14.3	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.8073	0.0	0	0.00
82	T	n-Propylbenzene	1.0000	1.0145	-1.4	100	0.00
83	T	Bromobenzene	1.0000	0.9095	9.1	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	1.0509	0.0	100	0.00
85	T	2-Chlorotoluene	-1.0000	1.1332	0.0	100	0.00
86	T	4-Chlorotoluene	1.0000	1.0518	-5.2	100	0.00
87	T	a-Methylstyrene	-1.0000	0.8544	0.0	0	0.00
88	T	tert-Butylbenzene	-1.0000	0.9540	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	1.0000	1.1053	-10.5	100	0.00
90	T	sec-Butylbenzene	1.0000	1.0320	-3.2	100	0.00
91	T	p-Isopropyltoluene	-1.0000	0.8918	0.0	100	0.00
92	P	1,3-Dichlorobenzene	1.0000	1.1370	-13.7	100	0.00
93	P	1,4-Dichlorobenzene	1.0000	1.1581	-15.8	100	0.00
94	T	n-Butylbenzene	1.0000	1.0498	-5.0	100	0.00
95	P	1,2-Dichlorobenzene	1.0000	1.0560	-5.6	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	0.3514	0.0	100	0.00
97	P	1,2,4-Trichlorobenzene	1.0000	1.1291	-12.9	100	0.00
98	T	Hexachlorobutadiene	1.0000	0.8939	10.6	100	0.00
99	T	Naphthalene	-1.0000	1.0826	0.0	100	0.00
100	T	1,2,3-Trichlorobenzene	1.0000	1.1232	-12.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1
9M972899.D 8260SL.M Fri Feb 26 11:12:31 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	472115	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	342668	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	156993	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.83	98	772	0.0891 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.18%#	
79) p-Bromofluorobenzene	16.23	95	570	0.1865 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.38%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.29	85	6383	1.9809 ug/kg#	78
3) Chloromethane	3.74	50	7027	2.2750 ug/kg	100
4) Vinyl Chloride	4.00	62	6001	1.9408 ug/kg	97
5) 1,3-Butadiene	4.04	54	6545	2.2249 ug/kg	95
6) Bromomethane	4.90	94	5050	2.5146 ug/kg	81
7) Chloroethane	5.04	64	2391	1.7357 ug/kg#	70
8) Trichlorofluoromethane	5.54	101	9777	2.1082 ug/kg#	94
9) Diethyl ether	6.06	59	58156	26.8255 ug/kg	97
10) Isoprene	6.09	67	5698	2.0580 ug/kg	89
11) Acrolein	6.30	56	5427	12.5543 ug/kg	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	4756	1.9886 ug/kg	93
13) Acetone	6.40	43	6167	6.9886 ug/kg	93
14) 1,1-Dichloroethene	6.62	61	9652	2.1877 ug/kg	91
15) Tert-Butyl Alcohol	6.75	59	26757	55.4271 ug/kg#	91
16) Dimethyl Sulfide	6.89	62	3840	2.0594 ug/kg	97
17) Iodomethane	7.14	142	1541	3.9079 ug/kg#	56
18) Methyl acetate	7.15	43	5334	2.2240 ug/kg#	69
19) Methylene Chloride	7.40	84	5116	2.1292 ug/kg	98
20) Carbon Disulfide	7.44	76	15010	2.2085 ug/kg	94
21) Acrylonitrile	7.59	53	14961	12.6096 ug/kg	100
22) Methyl Tert Butyl Ether	7.61	73	13630	1.9917 ug/kg	93
23) trans-1,2-Dichloroethene	7.85	61	7964	2.0255 ug/kg	100
24) n-Hexane	7.92	57	8619	2.1253 ug/kg	100
25) Diisopropyl ether	8.26	45	252190	26.7748 ug/kg	99
26) Vinyl Acetate	8.43	43	11207	2.0872 ug/kg	95
27) 1,1-Dichloroethane	8.47	63	10529	2.1320 ug/kg#	93
28) Ethyl-Tert-Butyl ether	8.83	59	234163	26.7377 ug/kg	99
29) 2-Butanone	9.03	43	3346	2.1978 ug/kg#	76
30) Propionitrile	9.14	54	12899	27.6861 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	8085	2.1934 ug/kg	88
32) cis-1,2-Dichloroethene	9.32	96	4861	1.8850 ug/kg	98
33) Chloroform	9.53	83	10005	2.2054 ug/kg	95
34) 1-Bromopropane	9.64	122	209	1.5465 ug/kg	96
35) Bromochloromethane	9.75	130	3273	1.9539 ug/kg	81
36) Tetrahydrofuran	9.78	42	26192	26.6900 ug/kg	94
38) 1,1,1-Trichloroethane	10.04	97	8229	2.0058 ug/kg	97
39) Cyclohexane	10.09	56	9354	2.0912 ug/kg	96
40) 1,1-Dichloropropene	10.23	75	6787	2.1024 ug/kg	88
41) Tert-Amyl-Methyl ether	10.34	73	167275	26.2768 ug/kg	98
42) Carbon Tetrachloride	10.39	117	7920	2.0823 ug/kg#	95

(#) = qualifier out of range (m) = manual integration
9M972900.D 8260SL.M Fri Feb 26 11:13:39 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	8488	2.1271 ug/kg	89
46)	Benzene	10.60	78	19454	2.1525 ug/kg	96
47)	Trichloroethene	11.35	130	6073	2.1207 ug/kg	96
48)	Methylcyclohexane	11.44	83	7523	2.0945 ug/kg	95
49)	1,2-Dichloropropane	11.58	63	5118	2.0621 ug/kg	93
50)	1,4-Dioxane	11.88	88	1938	52.0499 ug/kg	84
51)	Bromodichloromethane	11.87	83	7148	2.0436 ug/kg#	95
52)	Dibromomethane	11.97	174	3572	2.1721 ug/kg	91
53)	2-Chloroethyl Vinyl Ether	12.17	63	474	3.4830 ug/kg#	47
54)	4-Methyl-2-Pentanone	12.19	58	2111	1.9378 ug/kg#	64
55)	cis-1,3-Dichloropropene	12.50	75	7048	1.9341 ug/kg	92
56)	Dimethyl Disulfide	12.77	94	5832	1.5925 ug/kg	95
59)	Toluene	12.93	91	20786	2.1230 ug/kg	97
60)	Ethyl Methacrylate	13.01	69	4184	1.5417 ug/kg	98
61)	trans-1,3-Dichloropropene	13.11	75	6895	1.9553 ug/kg	92
62)	1,1,2-Trichloroethane	13.33	97	4055	1.9716 ug/kg	86
63)	2-Hexanone	13.25	43	3773	1.8373 ug/kg#	82
64)	1,3-Dichloropropane	13.62	76	7643	2.2302 ug/kg	97
65)	Tetrachloroethene	13.75	164	4327	2.0615 ug/kg	94
66)	Dibromochloromethane	14.01	129	6170	2.1465 ug/kg	87
67)	1,2-Dibromoethane	14.28	107	4656	2.0410 ug/kg	88
68)	1-Chlorohexane	14.35	91	5610	1.9430 ug/kg	97
69)	Chlorobenzene	14.77	112	14885	2.1632 ug/kg	95
70)	1,1,1,2-Tetrachloroethane	14.80	131	5145	1.9910 ug/kg	86
71)	Ethylbenzene	14.79	106	7287	2.0555 ug/kg	99
72)	m-,p-Xylene	14.89	106	19133	4.3702 ug/kg	93
73)	o-Xylene	15.45	106	8413	2.0024 ug/kg	94
74)	Styrene	15.49	104	14533	2.0313 ug/kg	97
75)	Bromoform	15.99	173	3135	1.6611 ug/kg	97
76)	Isopropylbenzene	15.87	105	23266	2.0628 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	5252	2.2053 ug/kg#	89
80)	1,2,3-Trichloropropane	16.28	110	1851	2.0495 ug/kg#	89
81)	trans-1,4-Dichloro-2-Buten	16.33	53	1413	1.5521 ug/kg	47
82)	n-Propylbenzene	16.38	91	25735	2.0854 ug/kg	99
83)	Bromobenzene	16.52	156	7006	2.4049 ug/kg	83
84)	1,3,5-Trimethylbenzene	16.57	105	18571	2.0048 ug/kg	99
85)	2-Chlorotoluene	16.66	91	18793	2.2705 ug/kg	97
86)	4-Chlorotoluene	16.70	91	16240	2.1222 ug/kg	96
87)	a-Methylstyrene	16.98	118	7524	1.7826 ug/kg	97
88)	tert-Butylbenzene	17.04	134	3654	1.8815 ug/kg	64
89)	1,2,4-Trimethylbenzene	17.09	105	20119	2.0739 ug/kg	99
90)	sec-Butylbenzene	17.31	105	24858	2.0835 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	20956	2.0813 ug/kg	96
92)	1,3-Dichlorobenzene	17.66	146	13695	2.3653 ug/kg	94
93)	1,4-Dichlorobenzene	17.79	146	12975	2.2416 ug/kg	82
94)	n-Butylbenzene	17.99	91	19734	2.1080 ug/kg	95
95)	1,2-Dichlorobenzene	18.30	146	11568	2.1533 ug/kg	91
96)	1,2-Dibromo-3-Chloropropan	19.30	157	941	1.3644 ug/kg	84
97)	1,2,4-Trichlorobenzene	20.44	180	8356	2.1910 ug/kg	98
98)	Hexachlorobutadiene	20.59	225	4571	2.2738 ug/kg	87
99)	Naphthalene	20.81	128	20072	2.0983 ug/kg	96
100)	1,2,3-Trichlorobenzene	21.11	180	7948	2.1487 ug/kg	96

(#) = qualifier out of range (m) = manual integration
9M972900.D 8260SL.M Fri Feb 26 11:13:39 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration

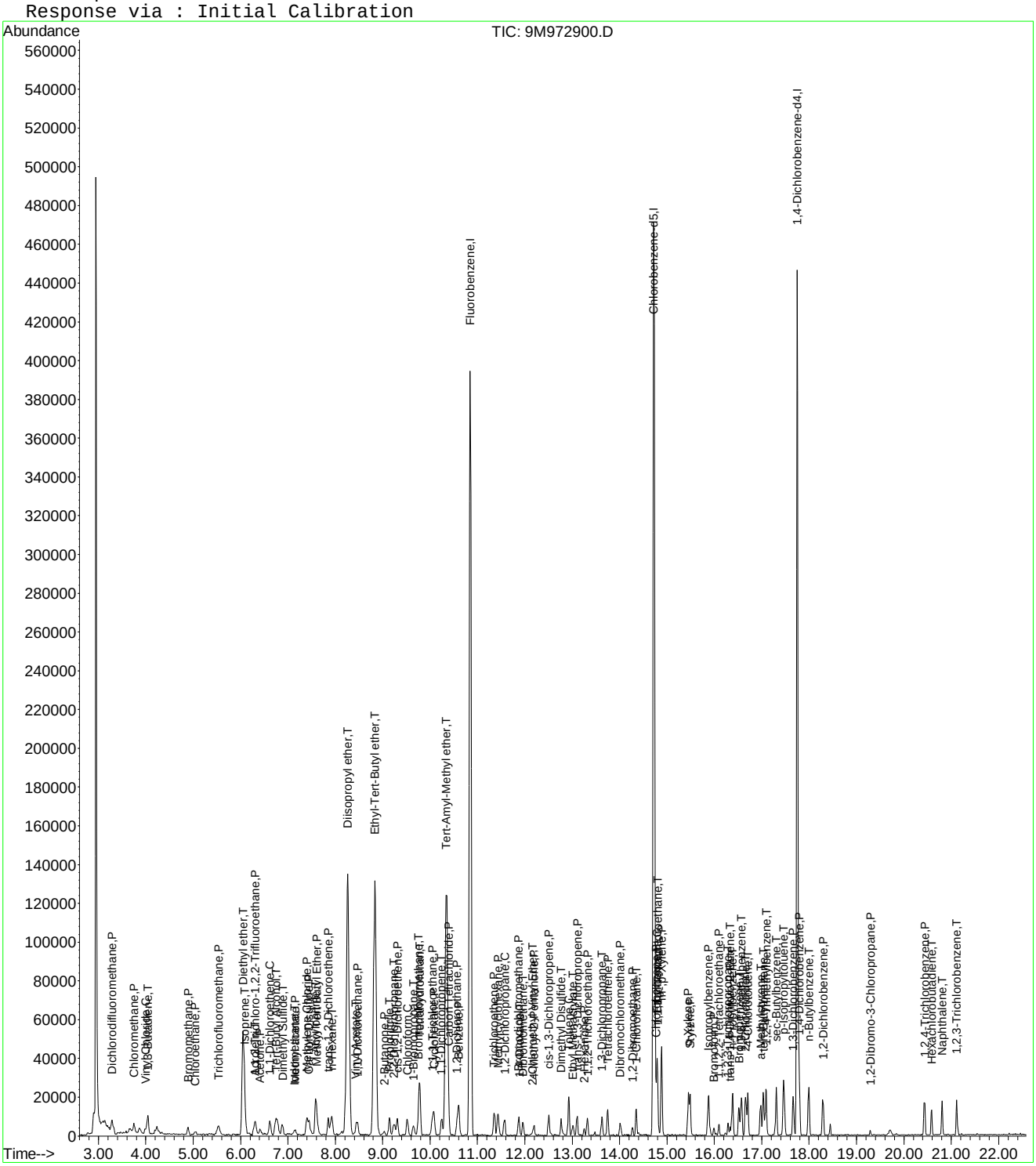

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	1.9809	0.0	100	0.01
3	P	Chloromethane	2.0000	2.2750	-13.7	100	0.00
4	C	Vinyl Chloride	2.0000	1.9408	3.0	100	0.01
5	T	1,3-Butadiene	2.0000	2.2249	-11.2	100	0.00
6	P	Bromomethane	2.0000	2.5146	-25.7#	100	0.01
7	P	Chloroethane	2.0000	1.7357	13.2	100	0.00
8	P	Trichlorofluoromethane	2.0000	2.1082	-5.4	100	0.01
9	T	Diethyl ether	25.0000	26.8255	-7.3	100	0.01
10	T	Isoprene	2.0000	2.0580	-2.9	100	0.00
11	T	Acrolein	12.5000	12.5543	-0.4	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.9886	0.6	100	0.01
13	P	Acetone	-1.0000	6.9886	0.0	0	0.00
14	C	1,1-Dichloroethene	2.0000	2.1877	-9.4	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	55.4271	-10.9	100	0.00
16	T	Dimethyl Sulfide	2.0000	2.0594	-3.0	100	0.01
17	T	Iodomethane	-1.0000	3.9079	0.0	0	0.01
18	P	Methyl acetate	2.0000	2.2240	-11.2	100	0.01
19	P	Methylene Chloride	2.0000	2.1292	-6.5	100	0.00
20	P	Carbon Disulfide	2.0000	2.2085	-10.4	100	0.00
21	T	Acrylonitrile	12.5000	12.6096	-0.9	100	0.00
22	P	Methyl Tert Butyl Ether	2.0000	1.9917	0.4	100	0.00
23	P	trans-1,2-Dichloroethene	2.0000	2.0255	-1.3	100	0.00
24	T	n-Hexane	2.0000	2.1253	-6.3	100	0.01
25	T	Diisopropyl ether	25.0000	26.7748	-7.1	100	0.00
26	T	Vinyl Acetate	2.0000	2.0872	-4.4	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.1320	-6.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	26.7377	-7.0	100	0.00
29	P	2-Butanone	2.0000	2.1978	-9.9	100	0.00
30	T	Propionitrile	25.0000	27.6861	-10.7	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1934	-9.7	100	0.00
32	P	cis-1,2-Dichloroethene	2.0000	1.8850	5.8	100	0.01
33	C	Chloroform	2.0000	2.2054	-10.3	100	0.01
34	T	1-Bromopropane	2.0000	1.5465	22.7	100	0.00
35	T	Bromochloromethane	2.0000	1.9539	2.3	100	0.00
36	T	Tetrahydrofuran	25.0000	26.6900	-6.8	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	2.0000	2.0058	-0.3	100	0.00
39	P	Cyclohexane	2.0000	2.0913	-4.6	100	0.01
40	T	1,1-Dichloropropene	2.0000	2.1023	-5.1	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	26.2768	-5.1	100	0.00
42	P	Carbon Tetrachloride	2.0000	2.0823	-4.1	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	2.0000	2.1271	-6.4	100	0.00
46	P	Benzene	2.0000	2.1525	-7.6	100	0.00
47	P	Trichloroethene	2.0000	2.1207	-6.0	100	0.00
48	P	Methylcyclohexane	2.0000	2.0945	-4.7	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0621	-3.1	100	0.01
50	T	1,4-Dioxane	50.0000	52.0499	-4.1	100	0.00
51	P	Bromodichloromethane	2.0000	2.0436	-2.2	100	0.00
52	T	Dibromomethane	2.0000	2.1721	-8.6	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	3.4830	0.0	0	0.00
54	P	4-Methyl-2-Pentanone	-1.0000	1.9378	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	2.0000	1.9341	3.3	100	0.00
56	T	Dimethyl Disulfide	2.0000	1.5925	20.4	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0891	0.0	100	0.00
59	C	Toluene	2.0000	2.1230	-6.2	100	0.00
60	T	Ethyl Methacrylate	-1.0000	1.5417	0.0	0	0.00
61	P	trans-1,3-Dichloropropene	2.0000	1.9553	2.2	100	0.00
62	P	1,1,2-Trichloroethane	2.0000	1.9716	1.4	100	0.00
63	P	2-Hexanone	-1.0000	1.8373	0.0	100	0.00
64	T	1,3-Dichloropropane	2.0000	2.2302	-11.5	100	0.00
65	P	Tetrachloroethene	2.0000	2.0616	-3.1	100	0.00
66	P	Dibromochloromethane	2.0000	2.1465	-7.3	100	0.00
67	P	1,2-Dibromoethane	-1.0000	2.0410	0.0	100	0.00
68	T	1-Chlorohexane	2.0000	1.9430	2.8	100	0.00
69	P	Chlorobenzene	2.0000	2.1632	-8.2	100	0.00
70	T	1,1,1,2-Tetrachloroethane	2.0000	1.9910	0.4	100	0.00
71	C	Ethylbenzene	2.0000	2.0555	-2.8	100	0.00
72	P	m-,p-Xylene	4.0000	4.3702	-9.3	100	0.00
73	P	o-Xylene	2.0000	2.0024	-0.1	100	0.00
74	P	Styrene	2.0000	2.0313	-1.6	100	0.00
75	P	Bromoform	2.0000	1.6611	16.9	100	0.00
76	P	Isopropylbenzene	2.0000	2.0628	-3.1	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	2.0000	2.2053	-10.3	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.1865	0.0	100	0.00
80	T	1,2,3-Trichloropropane	2.0000	2.0495	-2.5	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	2.0000	1.5521	22.4	100	0.00
82	T	n-Propylbenzene	2.0000	2.0854	-4.3	100	0.00
83	T	Bromobenzene	2.0000	2.4049	-20.2	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	2.0048	0.0	100	0.00
85	T	2-Chlorotoluene	2.0000	2.2705	-13.5	100	0.00
86	T	4-Chlorotoluene	2.0000	2.1222	-6.1	100	0.00
87	T	a-Methylstyrene	-1.0000	1.7826	0.0	0	0.00
88	T	tert-Butylbenzene	-1.0000	1.8815	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	2.0000	2.0739	-3.7	100	0.00
90	T	sec-Butylbenzene	2.0000	2.0835	-4.2	100	0.00
91	T	p-Isopropyltoluene	-1.0000	2.0813	0.0	100	0.00
92	P	1,3-Dichlorobenzene	2.0000	2.3653	-18.3	100	0.00
93	P	1,4-Dichlorobenzene	2.0000	2.2416	-12.1	100	0.00
94	T	n-Butylbenzene	2.0000	2.1080	-5.4	100	0.00
95	P	1,2-Dichlorobenzene	2.0000	2.1533	-7.7	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	1.3644	0.0	100	0.00
97	P	1,2,4-Trichlorobenzene	2.0000	2.1910	-9.6	100	0.00
98	T	Hexachlorobutadiene	2.0000	2.2738	-13.7	100	0.00
99	T	Naphthalene	2.0000	2.0983	-4.9	100	0.00
100	T	1,2,3-Trichlorobenzene	2.0000	2.1487	-7.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972900.D 8260SL.M Fri Feb 26 11:13:36 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	544259	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	391881	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.76	152	178969	50.00 ug/kg	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.81	111	29036	9.8422 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 19.68%#		
43) 1,2-Dichloroethane-d4	10.44	65	38093	10.2911 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 20.58%#		
58) Toluene-d8	12.83	98	95044	9.5885 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 19.18%#		
79) p-Bromofluorobenzene	16.23	95	32806	9.4138 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 18.82%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	14756	3.9724 ug/kg	92
3) Chloromethane	3.74	50	15227	4.2763 ug/kg	91
4) Vinyl Chloride	3.99	62	17097	4.7964 ug/kg	89
5) 1,3-Butadiene	4.04	54	14484	4.2710 ug/kg	97
6) Bromomethane	4.89	94	9847	4.2533 ug/kg	95
7) Chloroethane	5.04	64	6311	3.9741 ug/kg	93
8) Trichlorofluoromethane	5.53	101	22668	4.2400 ug/kg	100
9) Diethyl ether	6.05	59	118004	47.2164 ug/kg	99
10) Isoprene	6.10	67	13644	4.2747 ug/kg	95
11) Acrolein	6.30	56	12131	24.3428 ug/kg	84
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	12752	4.6251 ug/kg	95
13) Acetone	6.41	43	9765	4.9429 ug/kg	94
14) 1,1-Dichloroethene	6.62	61	21760	4.2784 ug/kg	99
15) Tert-Butyl Alcohol	6.76	59	50500	90.7440 ug/kg	98
16) Dimethyl Sulfide	6.88	62	10098	4.6977 ug/kg	87
17) Iodomethane	7.13	142	4147	5.3886 ug/kg	97
18) Methyl acetate	7.15	43	12159	4.3976 ug/kg#	87
19) Methylene Chloride	7.41	84	11825	4.2690 ug/kg	99
20) Carbon Disulfide	7.45	76	34078	4.3495 ug/kg	94
21) Acrylonitrile	7.58	53	31012	22.6731 ug/kg	100
22) Methyl Tert Butyl Ether	7.61	73	34936	4.4284 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	20503	4.5233 ug/kg	95
24) n-Hexane	7.92	57	20970	4.4853 ug/kg	98
25) Diisopropyl ether	8.26	45	505084	46.5162 ug/kg	100
26) Vinyl Acetate	8.44	43	28253	4.5644 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	24239	4.2575 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	463447	45.9037 ug/kg	99
29) 2-Butanone	9.03	43	8265	4.7092 ug/kg	88
30) Propionitrile	9.15	54	25938	48.2931 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	17954	4.2251 ug/kg	91
32) cis-1,2-Dichloroethene	9.32	96	13479	4.5340 ug/kg	84
33) Chloroform	9.52	83	23525	4.4982 ug/kg	95
34) 1-Bromopropane	9.65	122	2239	5.8652 ug/kg	90
35) Bromochloromethane	9.75	130	9205	4.7667 ug/kg	97
36) Tetrahydrofuran	9.78	42	53635	47.4100 ug/kg	99
38) 1,1,1-Trichloroethane	10.04	97	20945	4.4285 ug/kg	91
39) Cyclohexane	10.09	56	23110	4.4818 ug/kg	98
40) 1,1-Dichloropropene	10.24	75	16349	4.3930 ug/kg	99
41) Tert-Amyl-Methyl ether	10.35	73	343692	46.8330 ug/kg	98
42) Carbon Tetrachloride	10.39	117	18527	4.2254 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	21553	4.6852 ug/kg	99
46)	Benzene	10.60	78	45352	4.3528 ug/kg	99
47)	Trichloroethene	11.35	130	14266	4.3213 ug/kg	97
48)	Methylcyclohexane	11.44	83	17527	4.2330 ug/kg	97
49)	1,2-Dichloropropane	11.56	63	13071	4.5684 ug/kg	100
50)	1,4-Dioxane	11.88	88	3926	91.4657 ug/kg	99
51)	Bromodichloromethane	11.87	83	18008	4.4660 ug/kg	97
52)	Dibromomethane	11.96	174	8993	4.7438 ug/kg	95
53)	2-Chloroethyl Vinyl Ether	12.16	63	2468	5.7758 ug/kg#	66
54)	4-Methyl-2-Pentanone	12.19	58	4862	3.8716 ug/kg	95
55)	cis-1,3-Dichloropropene	12.50	75	18341	4.3659 ug/kg	96
56)	Dimethyl Disulfide	12.77	94	17792	4.2144 ug/kg	91
59)	Toluene	12.92	91	48377	4.3206 ug/kg	96
60)	Ethyl Methacrylate	13.02	69	12442	4.0089 ug/kg	96
61)	trans-1,3-Dichloropropene	13.10	75	17626	4.3707 ug/kg	95
62)	1,1,2-Trichloroethane	13.33	97	10657	4.5308 ug/kg	99
63)	2-Hexanone	13.25	43	10194	4.3408 ug/kg	96
64)	1,3-Dichloropropane	13.62	76	17885	4.5633 ug/kg	100
65)	Tetrachloroethene	13.75	164	10317	4.2981 ug/kg	97
66)	Dibromochloromethane	14.01	129	14152	4.3052 ug/kg	98
67)	1,2-Dibromoethane	14.28	107	12182	4.6694 ug/kg	99
68)	1-Chlorohexane	14.35	91	12970	3.9281 ug/kg	87
69)	Chlorobenzene	14.77	112	36017	4.5769 ug/kg	85
70)	1,1,1,2-Tetrachloroethane	14.80	131	12746	4.3130 ug/kg	95
71)	Ethylbenzene	14.80	106	17828	4.3974 ug/kg	92
72)	m-,p-Xylene	14.89	106	45904	9.1683 ug/kg	95
73)	o-Xylene	15.46	106	21754	4.5275 ug/kg	91
74)	Styrene	15.49	104	35390	4.3253 ug/kg	98
75)	Bromoform	15.98	173	9363	4.3382 ug/kg	96
76)	Isopropylbenzene	15.88	105	55721	4.3198 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	13197	4.8610 ug/kg	97
80)	1,2,3-Trichloropropane	16.29	110	5070	4.9243 ug/kg#	28
81)	trans-1,4-Dichloro-2-Buten	16.33	53	4246	4.0913 ug/kg#	39
82)	n-Propylbenzene	16.39	91	64689	4.5983 ug/kg	100
83)	Bromobenzene	16.52	156	15405	4.6386 ug/kg	90
84)	1,3,5-Trimethylbenzene	16.58	105	49527	4.6900 ug/kg	98
85)	2-Chlorotoluene	16.66	91	41422	4.3899 ug/kg	97
86)	4-Chlorotoluene	16.70	91	40985	4.6981 ug/kg	99
87)	a-Methylstyrene	16.98	118	20049	4.1667 ug/kg	90
88)	tert-Butylbenzene	17.04	134	10027	4.5290 ug/kg	84
89)	1,2,4-Trimethylbenzene	17.09	105	51253	4.6345 ug/kg	98
90)	sec-Butylbenzene	17.30	105	60716	4.4642 ug/kg	98
91)	p-Isopropyltoluene	17.46	119	53318	4.6453 ug/kg	98
92)	1,3-Dichlorobenzene	17.66	146	29255	4.4323 ug/kg	98
93)	1,4-Dichlorobenzene	17.79	146	30175	4.5730 ug/kg	91
94)	n-Butylbenzene	17.99	91	45964	4.3071 ug/kg	98
95)	1,2-Dichlorobenzene	18.30	146	27310	4.4593 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.30	157	3147	4.0028 ug/kg	87
97)	1,2,4-Trichlorobenzene	20.44	180	18372	4.2258 ug/kg	95
98)	Hexachlorobutadiene	20.59	225	9618	4.1968 ug/kg	90
99)	Naphthalene	20.81	128	47189	4.3274 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.11	180	17859	4.2352 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972901.D 8260SL.M Fri Feb 26 11:21:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

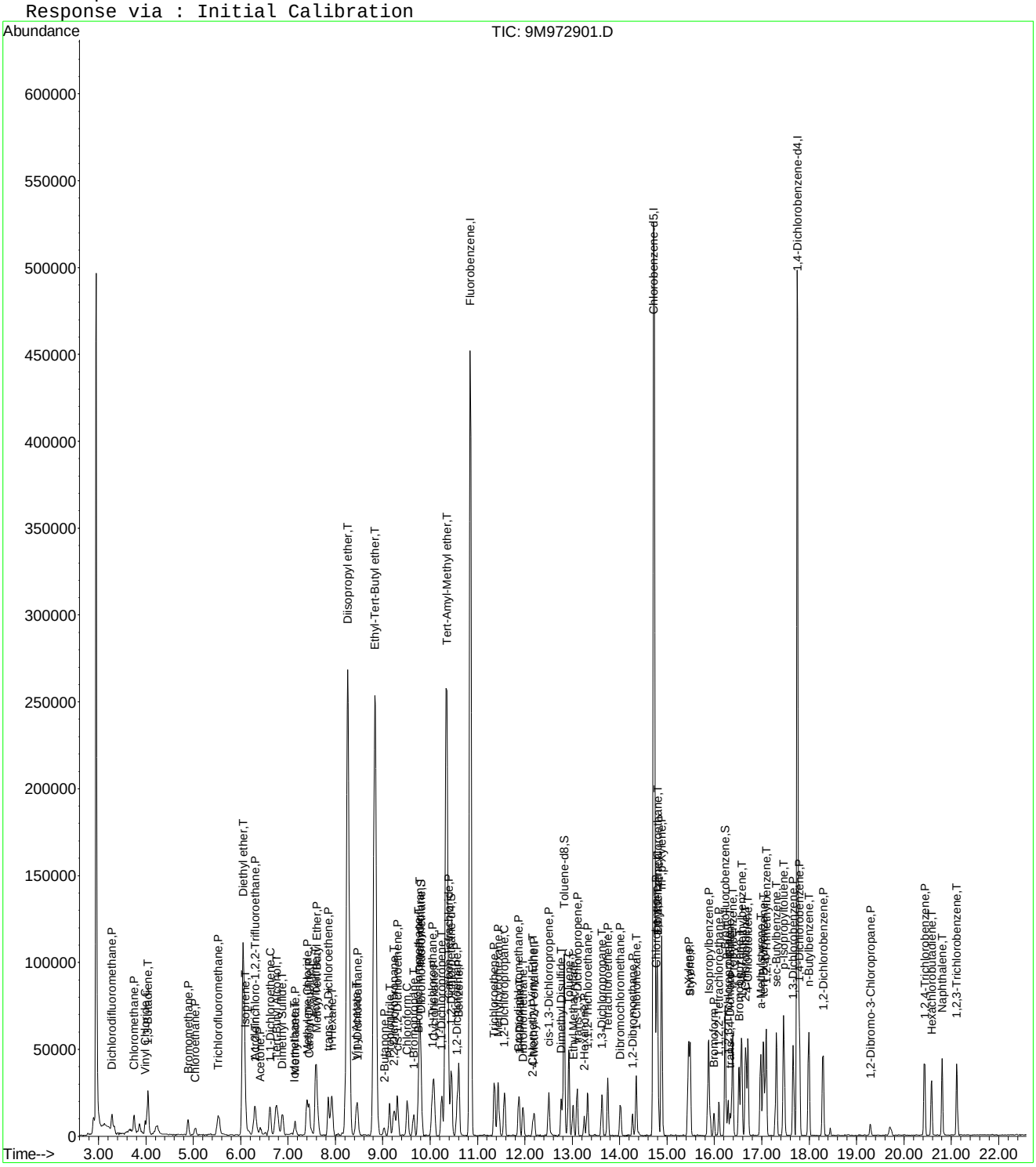

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	5.0000	3.9724	20.6	100	0.00
3	P	Chloromethane	5.0000	4.2763	14.5	100	0.00
4	C	Vinyl Chloride	5.0000	4.7964	4.1	100	0.00
5	T	1,3-Butadiene	5.0000	4.2710	14.6	100	0.00
6	P	Bromomethane	5.0000	4.2534	14.9	100	0.00
7	P	Chloroethane	5.0000	3.9741	20.5	100	0.00
8	P	Trichlorofluoromethane	5.0000	4.2400	15.2	100	0.00
9	T	Diethyl ether	50.0000	47.2164	5.6	100	0.00
10	T	Isoprene	5.0000	4.2747	14.5	100	0.01
11	T	Acrolein	25.0000	24.3428	2.6	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.6251	7.5	100	0.00
13	P	Acetone	5.0000	4.9429	1.1	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.2784	14.4	100	0.01
15	T	Tert-Butyl Alcohol	100.0000	90.7440	9.3	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.6977	6.0	100	0.00
17	T	Iodomethane	5.0000	5.3886	-7.8	100	0.00
18	P	Methyl acetate	5.0000	4.3976	12.0	100	0.01
19	P	Methylene Chloride	5.0000	4.2690	14.6	100	0.00
20	P	Carbon Disulfide	5.0000	4.3495	13.0	100	0.00
21	T	Acrylonitrile	25.0000	22.6731	9.3	100	0.00
22	P	Methyl Tert Butyl Ether	5.0000	4.4284	11.4	100	0.00
23	P	trans-1,2-Dichloroethene	5.0000	4.5233	9.5	100	0.00
24	T	n-Hexane	5.0000	4.4854	10.3	100	0.01
25	T	Diisopropyl ether	50.0000	46.5162	7.0	100	0.00
26	T	Vinyl Acetate	5.0000	4.5644	8.7	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.2575	14.8	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	45.9037	8.2	100	0.00
29	P	2-Butanone	5.0000	4.7092	5.8	100	0.00
30	T	Propionitrile	50.0000	48.2931	3.4	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.2251	15.5	100	-0.01
32	P	cis-1,2-Dichloroethene	5.0000	4.5340	9.3	100	0.00
33	C	Chloroform	5.0000	4.4982	10.0	100	0.00
34	T	1-Bromopropane	5.0000	5.8651	-17.3	100	0.00
35	T	Bromochloromethane	5.0000	4.7667	4.7	100	0.00
36	T	Tetrahydrofuran	50.0000	47.4100	5.2	100	0.00
37	S	Dibromofluoromethane	10.0000	9.8422	1.6	100	0.00
38	P	1,1,1-Trichloroethane	5.0000	4.4285	11.4	100	0.00
39	P	Cyclohexane	5.0000	4.4818	10.4	100	0.01
40	T	1,1-Dichloropropene	5.0000	4.3930	12.1	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	46.8330	6.3	100	0.00
42	P	Carbon Tetrachloride	5.0000	4.2254	15.5	100	0.00
43	S	1,2-Dichloroethane-d4	10.0000	10.2911	-2.9	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	5.0000	4.6852	6.3	100	0.00
46	P	Benzene	5.0000	4.3528	12.9	100	0.00
47	P	Trichloroethene	5.0000	4.3213	13.6	100	0.00
48	P	Methylcyclohexane	5.0000	4.2330	15.3	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.5684	8.6	100	0.00
50	T	1,4-Dioxane	100.0000	91.4657	8.5	100	0.00
51	P	Bromodichloromethane	5.0000	4.4660	10.7	100	0.00
52	T	Dibromomethane	5.0000	4.7438	5.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	5.7758	-15.5	100	0.00
54	P	4-Methyl-2-Pentanone	5.0000	3.8716	22.6	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	5.0000	4.3659	12.7	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.2144	15.7	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	-0.01
58	S	Toluene-d8	10.0000	9.5885	4.1	100	0.00
59	C	Toluene	5.0000	4.3206	13.6	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.0089	19.8	100	0.00
61	P	trans-1,3-Dichloropropene	5.0000	4.3707	12.6	100	0.00
62	P	1,1,2-Trichloroethane	5.0000	4.5309	9.4	100	0.00
63	P	2-Hexanone	5.0000	4.3408	13.2	100	0.00
64	T	1,3-Dichloropropane	5.0000	4.5633	8.7	100	-0.01
65	P	Tetrachloroethene	5.0000	4.2981	14.0	100	0.00
66	P	Dibromochloromethane	5.0000	4.3052	13.9	100	0.00
67	P	1,2-Dibromoethane	5.0000	4.6694	6.6	100	0.00
68	T	1-Chlorohexane	5.0000	3.9281	21.4	100	0.00
69	P	Chlorobenzene	5.0000	4.5769	8.5	100	0.00
70	T	1,1,1,2-Tetrachloroethane	5.0000	4.3130	13.7	100	0.00
71	C	Ethylbenzene	5.0000	4.3974	12.1	100	0.00
72	P	m-,p-Xylene	10.0000	9.1683	8.3	100	0.00
73	P	o-Xylene	5.0000	4.5275	9.5	100	0.00
74	P	Styrene	5.0000	4.3253	13.5	100	0.00
75	P	Bromoform	5.0000	4.3382	13.2	100	-0.01
76	P	Isopropylbenzene	5.0000	4.3198	13.6	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	5.0000	4.8610	2.8	100	-0.01
79	S	p-Bromofluorobenzene	10.0000	9.4138	5.9	100	0.00
80	T	1,2,3-Trichloropropane	5.0000	4.9243	1.5	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	5.0000	4.0913	18.2	100	0.00
82	T	n-Propylbenzene	5.0000	4.5983	8.0	100	0.00
83	T	Bromobenzene	5.0000	4.6386	7.2	100	0.00
84	T	1,3,5-Trimethylbenzene	5.0000	4.6900	6.2	100	0.00
85	T	2-Chlorotoluene	5.0000	4.3899	12.2	100	0.00
86	T	4-Chlorotoluene	5.0000	4.6981	6.0	100	0.00
87	T	a-Methylstyrene	5.0000	4.1667	16.7	100	0.00
88	T	tert-Butylbenzene	5.0000	4.5290	9.4	100	0.00
89	T	1,2,4-Trimethylbenzene	5.0000	4.6345	7.3	100	0.00
90	T	sec-Butylbenzene	5.0000	4.4642	10.7	100	0.00
91	T	p-Isopropyltoluene	5.0000	4.6453	7.1	100	0.00
92	P	1,3-Dichlorobenzene	5.0000	4.4323	11.4	100	0.00
93	P	1,4-Dichlorobenzene	5.0000	4.5730	8.5	100	-0.01
94	T	n-Butylbenzene	5.0000	4.3071	13.9	100	0.00
95	P	1,2-Dichlorobenzene	5.0000	4.4593	10.8	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	5.0000	4.0028	19.9	100	0.00
97	P	1,2,4-Trichlorobenzene	5.0000	4.2258	15.5	100	0.00
98	T	Hexachlorobutadiene	5.0000	4.1968	16.1	100	0.00
99	T	Naphthalene	5.0000	4.3274	13.5	100	0.00
100	T	1,2,3-Trichlorobenzene	5.0000	4.2352	15.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972901.D 8260SL.M Fri Feb 26 11:21:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972902.D Vial: 7
Acq On : 25 Feb 2016 18:59 Operator: ADC
Sample : WG558732-07 20.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	491006	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	357658	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	168257	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	47666	17.9094 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 35.82%#		
43) 1,2-Dichloroethane-d4	10.45	65	60269	18.0480 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 36.10%#		
58) Toluene-d8	12.82	98	163811	18.1074 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 36.22%#		
79) p-Bromofluorobenzene	16.23	95	58931	17.9870 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 35.98%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	78283	23.3598 ug/kg	99
3) Chloromethane	3.75	50	64951	20.2188 ug/kg	98
4) Vinyl Chloride	3.99	62	73167	22.7523 ug/kg	97
5) 1,3-Butadiene	4.04	54	64372	21.0404 ug/kg	98
6) Bromomethane	4.88	94	40556	19.4178 ug/kg	97
7) Chloroethane	5.04	64	27981	19.5307 ug/kg	97
8) Trichlorofluoromethane	5.53	101	98871	20.4994 ug/kg	98
9) Diethyl ether	6.06	59	191078	84.7472 ug/kg	99
10) Isoprene	6.10	67	59437	20.6414 ug/kg	98
11) Acrolein	6.30	56	18057	40.1641 ug/kg	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	50002	20.1026 ug/kg	100
13) Acetone	6.42	43	27164	20.4768 ug/kg	100
14) 1,1-Dichloroethene	6.62	61	94732	20.6460 ug/kg	98
15) Tert-Butyl Alcohol	6.75	59	85695	170.6872 ug/kg	97
16) Dimethyl Sulfide	6.88	62	40580	20.9258 ug/kg	99
17) Iodomethane	7.13	142	21330	17.5663 ug/kg	96
18) Methyl acetate	7.15	43	54770	21.9573 ug/kg	99
19) Methylene Chloride	7.41	84	51619	20.6564 ug/kg	95
20) Carbon Disulfide	7.45	76	145286	20.5545 ug/kg	97
21) Acrylonitrile	7.59	53	50918	41.2640 ug/kg	97
22) Methyl Tert Butyl Ether	7.61	73	149271	20.9731 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	84416	20.6434 ug/kg	98
24) n-Hexane	7.92	57	82582	19.5795 ug/kg	98
25) Diisopropyl ether	8.26	45	841729	85.9275 ug/kg	99
26) Vinyl Acetate	8.44	43	107114	19.1814 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	104490	20.3440 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	777976	85.4147 ug/kg	99
29) 2-Butanone	9.02	43	30691	19.3834 ug/kg	100
30) Propionitrile	9.14	54	41719	86.0996 ug/kg	99
31) 2,2-Dichloropropane	9.24	77	73960	19.2927 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	56404	21.0307 ug/kg	100
33) Chloroform	9.52	83	94621	20.0546 ug/kg	98
34) 1-Bromopropane	9.65	122	8251	20.7938 ug/kg	98
35) Bromochloromethane	9.75	130	38059	21.8457 ug/kg	99
36) Tetrahydrofuran	9.77	42	86589	84.8405 ug/kg	100
38) 1,1,1-Trichloroethane	10.05	97	85938	20.1411 ug/kg	99
39) Cyclohexane	10.09	56	96933	20.8373 ug/kg	98
40) 1,1-Dichloropropene	10.25	75	67544	20.1175 ug/kg	96
41) Tert-Amyl-Methyl ether	10.34	73	562826	85.0111 ug/kg	99
42) Carbon Tetrachloride	10.39	117	79566	20.1143 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972902.D Vial: 7
Acq On : 25 Feb 2016 18:59 Operator: ADC
Sample : WG558732-07 20.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	86857	20.9287 ug/kg	98
46)	Benzene	10.60	78	190747	20.2931 ug/kg	98
47)	Trichloroethene	11.35	130	61315	20.5871 ug/kg	99
48)	Methylcyclohexane	11.44	83	79384	21.2516 ug/kg	99
49)	1,2-Dichloropropane	11.56	63	54356	21.0584 ug/kg	98
50)	1,4-Dioxane	11.88	88	7054	182.1639 ug/kg	93
51)	Bromodichloromethane	11.87	83	73160	20.1115 ug/kg	99
52)	Dibromomethane	11.97	174	35844	20.9583 ug/kg	97
53)	2-Chloroethyl Vinyl Ether	12.17	63	11048	17.4432 ug/kg	94
54)	4-Methyl-2-Pentanone	12.20	58	22247	19.6364 ug/kg	96
55)	cis-1,3-Dichloropropene	12.50	75	77533	20.4577 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	77400	20.3222 ug/kg	99
59)	Toluene	12.93	91	209919	20.5421 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	58827	20.7683 ug/kg	99
61)	trans-1,3-Dichloropropene	13.11	75	73778	20.0452 ug/kg	98
62)	1,1,2-Trichloroethane	13.32	97	45475	21.1838 ug/kg	98
63)	2-Hexanone	13.25	43	40183	18.7479 ug/kg	97
64)	1,3-Dichloropropane	13.62	76	73060	20.4249 ug/kg	95
65)	Tetrachloroethene	13.75	164	44423	20.2778 ug/kg	96
66)	Dibromochloromethane	14.01	129	59220	19.7391 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	48648	20.4311 ug/kg	97
68)	1-Chlorohexane	14.35	91	64519	21.4099 ug/kg	96
69)	Chlorobenzene	14.77	112	150639	20.9742 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	55462	20.5631 ug/kg	99
71)	Ethylbenzene	14.79	106	77813	21.0297 ug/kg	100
72)	m-,p-Xylene	14.89	106	192168	42.0536 ug/kg	98
73)	o-Xylene	15.45	106	92490	21.0911 ug/kg	98
74)	Styrene	15.49	104	154534	20.6939 ug/kg	100
75)	Bromoform	16.00	173	39818	20.2142 ug/kg	98
76)	Isopropylbenzene	15.87	105	249418	21.1865 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	53687	21.0342 ug/kg	98
80)	1,2,3-Trichloropropane	16.28	110	19658	20.3087 ug/kg	98
81)	trans-1,4-Dichloro-2-Buten	16.33	53	21143	21.6696 ug/kg	89
82)	n-Propylbenzene	16.39	91	283998	21.4728 ug/kg	98
83)	Bromobenzene	16.52	156	65363	20.9343 ug/kg	95
84)	1,3,5-Trimethylbenzene	16.57	105	212735	21.4278 ug/kg	99
85)	2-Chlorotoluene	16.66	91	189159	21.3235 ug/kg	99
86)	4-Chlorotoluene	16.70	91	171741	20.9401 ug/kg	99
87)	a-Methylstyrene	16.98	118	95360	21.0801 ug/kg	99
88)	tert-Butylbenzene	17.03	134	43749	21.0188 ug/kg	90
89)	1,2,4-Trimethylbenzene	17.08	105	218350	21.0010 ug/kg	99
90)	sec-Butylbenzene	17.31	105	268054	20.9635 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	225612	20.9076 ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	122605	19.7580 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	124659	20.0949 ug/kg	99
94)	n-Butylbenzene	17.99	91	199655	19.8998 ug/kg	99
95)	1,2-Dichlorobenzene	18.30	146	115021	19.9768 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	14138	19.1277 ug/kg	95
97)	1,2,4-Trichlorobenzene	20.43	180	77418	18.9408 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	41508	19.2651 ug/kg	96
99)	Naphthalene	20.81	128	204933	19.9897 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.12	180	75616	19.0736 ug/kg	98

(#) = qualifier out of range (m) = manual integration
9M972902.D 8260SL.M Fri Feb 26 11:21:57 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972902.D Vial: 7
Acq On : 25 Feb 2016 18:59 Operator: ADC
Sample : WG558732-07 20.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

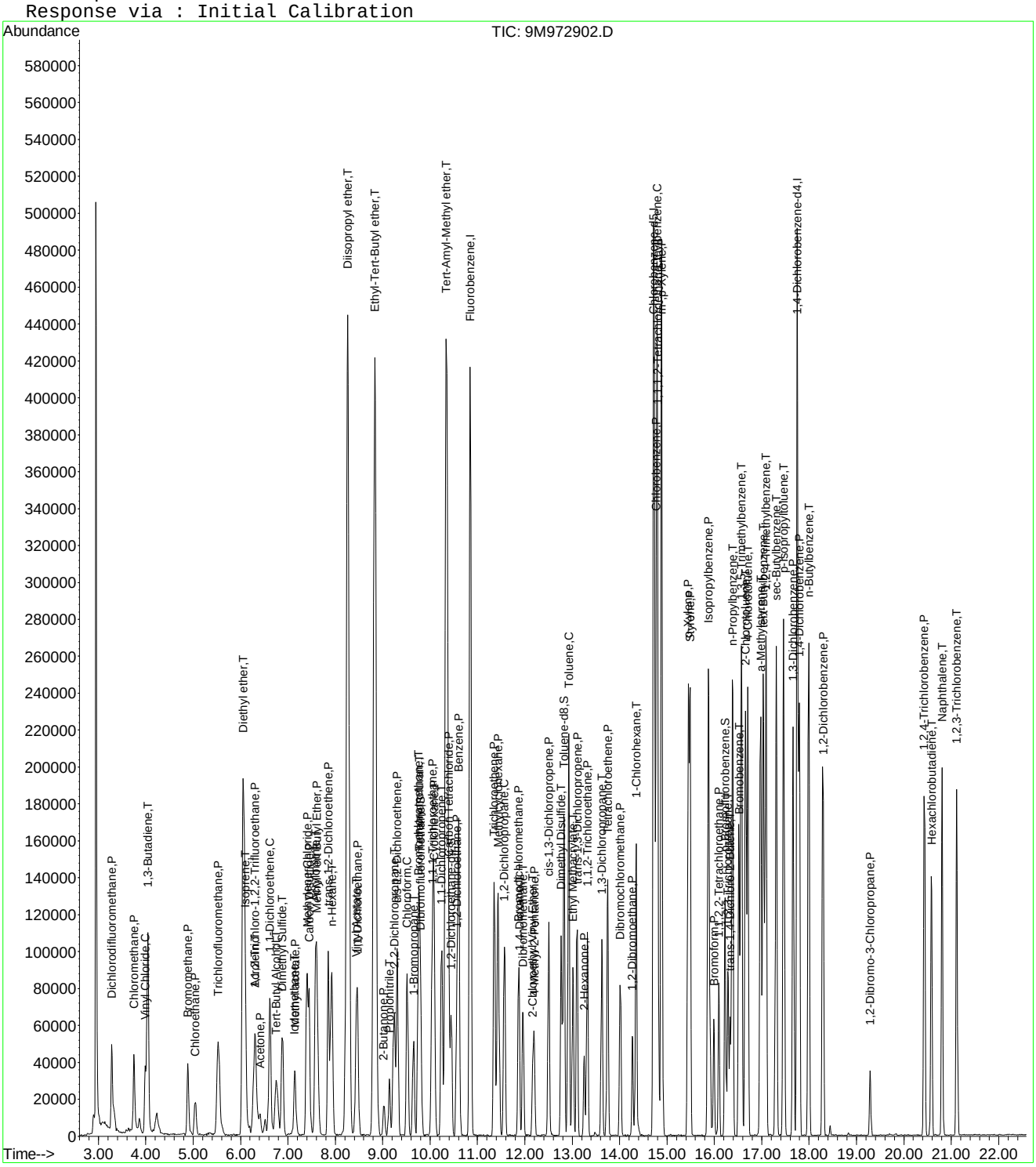

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972903.D Vial: 8
Acq On : 25 Feb 2016 19:29 Operator: ADC
Sample : WG558732-08 100.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:57 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	535022	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	390279	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.75	152	187456	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	305515	105.3466 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 210.70%#		
43) 1,2-Dichloroethane-d4	10.45	65	383447	105.3793 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 210.76%#		
58) Toluene-d8	12.83	98	1052175	106.5842 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 213.16%#		
79) p-Bromofluorobenzene	16.23	95	403966	110.6707 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 221.34%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	340079	93.1314 ug/kg	98
3) Chloromethane	3.74	50	316834	90.5143 ug/kg	100
4) Vinyl Chloride	3.99	62	366384	104.5591 ug/kg	99
5) 1,3-Butadiene	4.04	54	317949	95.3739 ug/kg	98
6) Bromomethane	4.88	94	198493	87.2180 ug/kg	99
7) Chloroethane	5.04	64	148539	95.1503 ug/kg	96
8) Trichlorofluoromethane	5.53	101	502703	95.6532 ug/kg	99
9) Diethyl ether	6.06	59	457873	186.3696 ug/kg	99
10) Isoprene	6.09	67	302269	96.3367 ug/kg	100
11) Acrolein	6.30	56	49319	100.6749 ug/kg	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	264925	97.7467 ug/kg	100
13) Acetone	6.41	43	126959	96.0965 ug/kg	97
14) 1,1-Dichloroethene	6.61	61	485466	97.0986 ug/kg	99
15) Tert-Butyl Alcohol	6.77	59	202804	370.7125 ug/kg	97
16) Dimethyl Sulfide	6.88	62	209613	99.1979 ug/kg	97
17) Iodomethane	7.14	142	134789	88.4431 ug/kg	96
18) Methyl acetate	7.15	43	256770	94.4705 ug/kg	99
19) Methylene Chloride	7.40	84	256919	94.3530 ug/kg	100
20) Carbon Disulfide	7.45	76	725343	94.1764 ug/kg	99
21) Acrylonitrile	7.59	53	131913	98.1077 ug/kg	97
22) Methyl Tert Butyl Ether	7.61	73	763125	98.4009 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	435514	97.7404 ug/kg	99
24) n-Hexane	7.92	57	458951	99.8615 ug/kg	98
25) Diisopropyl ether	8.26	45	1991599	186.5850 ug/kg	99
26) Vinyl Acetate	8.44	43	593217	97.4908 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	533571	95.3384 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	1850360	186.4394 ug/kg	100
29) 2-Butanone	9.03	43	167064	96.8316 ug/kg	99
30) Propionitrile	9.14	54	102467	194.0735 ug/kg	99
31) 2,2-Dichloropropane	9.24	77	409808	98.1051 ug/kg	98
32) cis-1,2-Dichloroethene	9.31	96	291782	99.8428 ug/kg	100
33) Chloroform	9.52	83	491651	95.6310 ug/kg	100
34) 1-Bromopropane	9.65	122	43084	95.7559 ug/kg	98
35) Bromochloromethane	9.75	130	191150	100.6929 ug/kg	97
36) Tetrahydrofuran	9.78	42	206962	186.0999 ug/kg	99
38) 1,1,1-Trichloroethane	10.04	97	454248	97.7025 ug/kg	99
39) Cyclohexane	10.08	56	497594	98.1657 ug/kg	99
40) 1,1-Dichloropropene	10.24	75	355996	97.3080 ug/kg	98
41) Tert-Amyl-Methyl ether	10.35	73	1353122	187.5659 ug/kg	99
42) Carbon Tetrachloride	10.39	117	419252	97.2674 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972903.D 8260SL.M Fri Feb 26 11:21:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972903.D Vial: 8
Acq On : 25 Feb 2016 19:29 Operator: ADC
Sample : WG558732-08 100.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:57 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	441828	97.7027	ug/kg	98
46)	Benzene	10.60	78	946247	92.3868	ug/kg	100
47)	Trichloroethene	11.35	130	316701	97.5872	ug/kg	98
48)	Methylcyclohexane	11.44	83	420776	103.3770	ug/kg	100
49)	1,2-Dichloropropane	11.56	63	273398	97.2049	ug/kg	97
50)	1,4-Dioxane	11.89	88	15240	361.1826	ug/kg	95
51)	Bromodichloromethane	11.87	83	384453	96.9905	ug/kg	100
52)	Dibromomethane	11.96	174	178770	95.9288	ug/kg	100
53)	2-Chloroethyl Vinyl Ether	12.17	63	71336	89.4187	ug/kg	97
54)	4-Methyl-2-Pentanone	12.19	58	126118	102.1606	ug/kg	99
55)	cis-1,3-Dichloropropene	12.50	75	407392	98.6500	ug/kg	99
56)	Dimethyl Disulfide	12.77	94	430523	103.7388	ug/kg	99
59)	Toluene	12.93	91	1070303	95.9828	ug/kg	100
60)	Ethyl Methacrylate	13.01	69	310336	100.4033	ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	395340	98.4345	ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	234168	99.9657	ug/kg	97
63)	2-Hexanone	13.25	43	238254	101.8692	ug/kg	99
64)	1,3-Dichloropropane	13.62	76	372307	95.3836	ug/kg	98
65)	Tetrachloroethene	13.75	164	235384	98.4650	ug/kg	97
66)	Dibromochloromethane	14.01	129	316240	96.5980	ug/kg	100
67)	1,2-Dibromoethane	14.28	107	254663	98.0133	ug/kg	98
68)	1-Chlorohexane	14.35	91	341938	103.9841	ug/kg	98
69)	Chlorobenzene	14.77	112	744916	95.0493	ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.80	131	289798	98.4650	ug/kg	98
71)	Ethylbenzene	14.79	106	397428	98.4311	ug/kg	99
72)	m-,p-Xylene	14.89	106	955121	191.5462	ug/kg	97
73)	o-Xylene	15.45	106	475355	99.3381	ug/kg	100
74)	Styrene	15.49	104	817155	100.2803	ug/kg	100
75)	Bromoform	15.99	173	212807	99.0046	ug/kg	98
76)	Isopropylbenzene	15.88	105	1283494	99.9122	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	279744	98.3764	ug/kg	100
80)	1,2,3-Trichloropropane	16.29	110	110421	102.3924	ug/kg	94
81)	trans-1,4-Dichloro-2-Buten	16.33	53	116410	107.0899	ug/kg	87
82)	n-Propylbenzene	16.39	91	1458178	98.9594	ug/kg	99
83)	Bromobenzene	16.52	156	334600	96.1892	ug/kg	97
84)	1,3,5-Trimethylbenzene	16.57	105	1100766	99.5195	ug/kg	99
85)	2-Chlorotoluene	16.66	91	937812	94.8900	ug/kg	100
86)	4-Chlorotoluene	16.70	91	906777	99.2383	ug/kg	100
87)	a-Methylstyrene	16.98	118	508276	100.8508	ug/kg	99
88)	tert-Butylbenzene	17.04	134	234437	101.0972	ug/kg	99
89)	1,2,4-Trimethylbenzene	17.09	105	1125260	97.1435	ug/kg	99
90)	sec-Butylbenzene	17.30	105	1425754	100.0828	ug/kg	100
91)	p-Isopropyltoluene	17.46	119	1215596	101.1125	ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	644471	93.2206	ug/kg	100
93)	1,4-Dichlorobenzene	17.79	146	646907	93.6002	ug/kg	99
94)	n-Butylbenzene	17.99	91	1131901	101.2628	ug/kg	99
95)	1,2-Dichlorobenzene	18.30	146	622851	97.0971	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.30	157	88939	108.0040	ug/kg	99
97)	1,2,4-Trichlorobenzene	20.44	180	466688	102.4843	ug/kg	99
98)	Hexachlorobutadiene	20.59	225	252514	105.1960	ug/kg	99
99)	Naphthalene	20.81	128	1208454	105.8030	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	456274	103.3044	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972903.D 8260SL.M Fri Feb 26 11:21:58 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972903.D Vial: 8
Acq On : 25 Feb 2016 19:29 Operator: ADC
Sample : WG558732-08 100.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

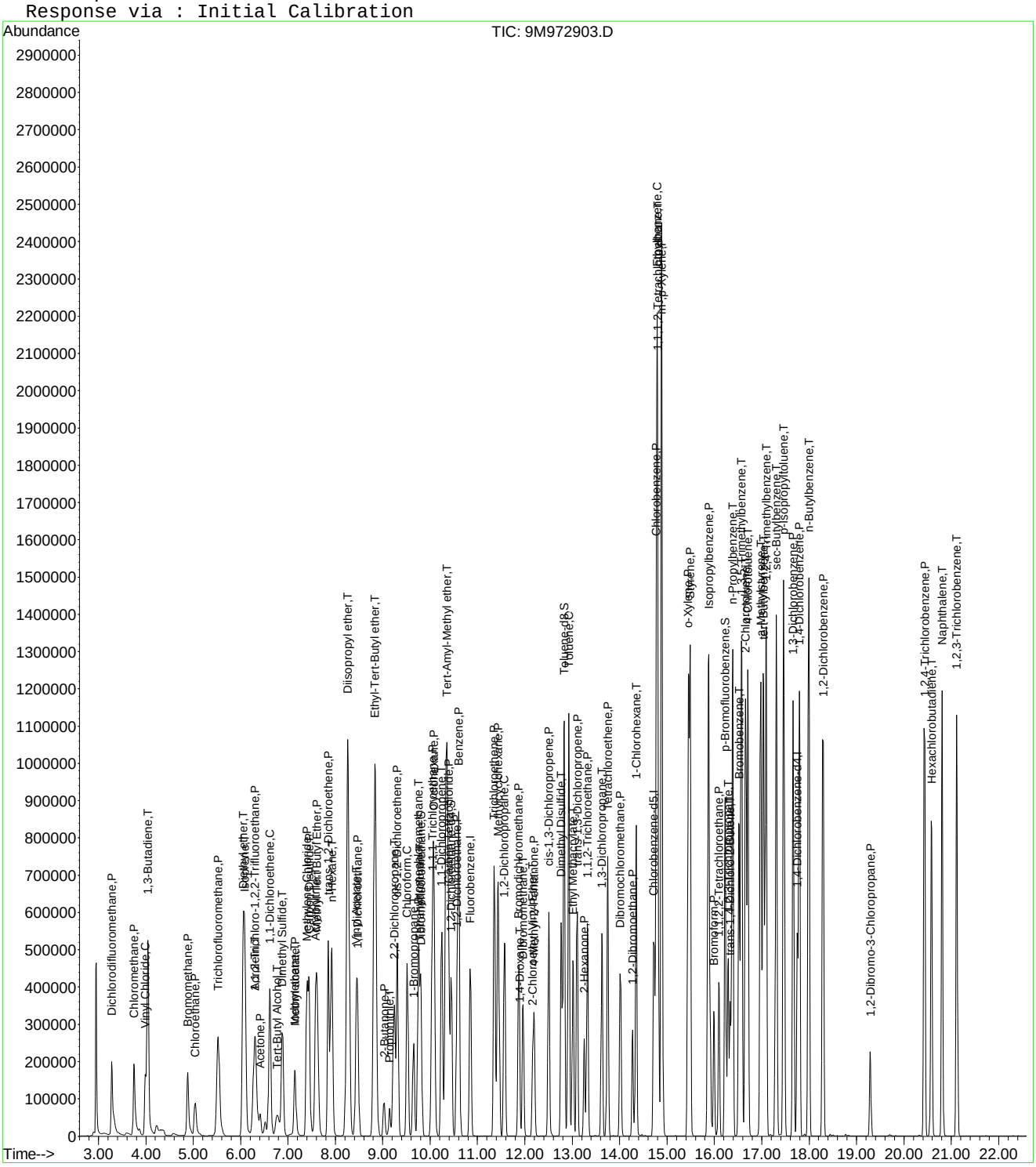

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972904.D Vial: 9
Acq On : 25 Feb 2016 20:00 Operator: ADC
Sample : WG558732-09 200.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:58 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	542388	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	396894	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	212175	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	595362	202.5026 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 405.00%#		
43) 1,2-Dichloroethane-d4	10.45	65	716316	194.1852 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 388.38%#		
58) Toluene-d8	12.82	98	2013255	200.5415 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 401.08%#		
79) p-Bromofluorobenzene	16.23	95	807150	195.3653 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 390.74%#		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.28	85	774894	209.3245 ug/kg	100
3) Chloromethane	3.75	50	750862	211.5959 ug/kg	100
4) Vinyl Chloride	3.99	62	770550	216.9141 ug/kg	100
5) 1,3-Butadiene	4.04	54	695631	205.8318 ug/kg	99
6) Bromomethane	4.88	94	470946	204.1239 ug/kg	97
7) Chloroethane	5.04	64	374502	236.6386 ug/kg	98
8) Trichlorofluoromethane	5.52	101	1120886	210.3832 ug/kg	99
10) Isoprene	6.09	67	690766	217.1654 ug/kg	97
11) Acrolein	6.31	56	2288	4.6071 ug/kg	86
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	592415	215.6090 ug/kg	100
13) Acetone	6.42	43	268070	202.8703 ug/kg	99
14) 1,1-Dichloroethene	6.62	61	1084122	213.8917 ug/kg	99
15) Tert-Butyl Alcohol	6.78	59	290	0.5229 ug/kg#	58
16) Dimethyl Sulfide	6.88	62	486231	226.9805 ug/kg	99
17) Iodomethane	7.14	142	341644	216.9305 ug/kg	98
18) Methyl acetate	7.15	43	558766	202.7886 ug/kg	97
19) Methylene Chloride	7.40	84	606998	219.8913 ug/kg	98
20) Carbon Disulfide	7.44	76	1650167	211.3432 ug/kg	98
21) Acrylonitrile	7.61	53	18860	13.8363 ug/kg#	28
22) Methyl Tert Butyl Ether	7.61	73	1710517	217.5666 ug/kg	99
23) trans-1,2-Dichloroethene	7.84	61	967656	214.2173 ug/kg	99
24) n-Hexane	7.92	57	1006142	215.9497 ug/kg	97
26) Vinyl Acetate	8.43	43	1320060	213.9959 ug/kg	98
27) 1,1-Dichloroethane	8.46	63	1199515	211.4185 ug/kg	100
29) 2-Butanone	9.02	43	373284	213.4201 ug/kg	100
31) 2,2-Dichloropropane	9.24	77	904865	213.6764 ug/kg	100
32) cis-1,2-Dichloroethene	9.31	96	649726	219.3058 ug/kg	100
33) Chloroform	9.52	83	1094765	210.0507 ug/kg	100
34) 1-Bromopropane	9.66	122	98189	213.9851 ug/kg	100
35) Bromochloromethane	9.75	130	427351	222.0603 ug/kg	99
36) Tetrahydrofuran	9.77	42	2491	2.2095 ug/kg	93
38) 1,1,1-Trichloroethane	10.05	97	1020636	216.5435 ug/kg	100
39) Cyclohexane	10.08	56	1092323	212.5677 ug/kg	98
40) 1,1-Dichloropropene	10.24	75	780375	210.4109 ug/kg	98
42) Carbon Tetrachloride	10.39	117	950685	217.5657 ug/kg	100
45) 1,2-Dichloroethane	10.56	62	975428	212.7698 ug/kg	98
46) Benzene	10.61	78	2107212	202.9435 ug/kg	100
47) Trichloroethene	11.36	130	696420	211.6783 ug/kg	98
48) Methylcyclohexane	11.43	83	922594	223.5862 ug/kg	100
49) 1,2-Dichloropropane	11.57	63	613480	215.1567 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972904.D Vial: 9
Acq On : 25 Feb 2016 20:00 Operator: ADC
Sample : WG558732-09 200.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:58 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
50)	1,4-Dioxane	11.86	88	821	19.1932	ug/kg#	7
51)	Bromodichloromethane	11.87	83	861318	214.3439	ug/kg	99
52)	Dibromomethane	11.96	174	401145	212.3328	ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	173854	210.9891	ug/kg	98
54)	4-Methyl-2-Pentanone	12.19	58	281550	224.9694	ug/kg	99
55)	cis-1,3-Dichloropropene	12.51	75	917528	219.1621	ug/kg	100
56)	Dimethyl Disulfide	12.77	94	993447	236.1300	ug/kg	99
59)	Toluene	12.93	91	2353264	207.5190	ug/kg	100
60)	Ethyl Methacrylate	13.01	69	698780	222.3090	ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	892986	218.6361	ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	510766	214.4105	ug/kg	98
63)	2-Hexanone	13.26	43	551431	231.8433	ug/kg	99
64)	1,3-Dichloropropane	13.63	76	842104	212.1481	ug/kg	99
65)	Tetrachloroethene	13.75	164	518091	213.1138	ug/kg	97
66)	Dibromochloromethane	14.02	129	723489	217.3121	ug/kg	99
67)	1,2-Dibromoethane	14.27	107	560802	212.2411	ug/kg	99
68)	1-Chlorohexane	14.35	91	757279	226.4519	ug/kg	100
69)	Chlorobenzene	14.78	112	1626715	204.1050	ug/kg	98
70)	1,1,1,2-Tetrachloroethane	14.81	131	649903	217.1378	ug/kg	97
71)	Ethylbenzene	14.80	106	871321	212.2035	ug/kg	99
72)	m-,p-Xylene	14.89	106	2089330	412.0243	ug/kg	98
73)	o-Xylene	15.45	106	1065692	218.9929	ug/kg	98
74)	Styrene	15.49	104	1839951	222.0334	ug/kg	100
75)	Bromoform	15.99	173	511700	234.0915	ug/kg	99
76)	Isopropylbenzene	15.87	105	2873816	219.9805	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	662688	205.8943	ug/kg	99
80)	1,2,3-Trichloropropane	16.29	110	257281	210.7797	ug/kg	98
81)	trans-1,4-Dichloro-2-Buten	16.34	53	281460	228.7601	ug/kg	90
82)	n-Propylbenzene	16.38	91	3244636	194.5439	ug/kg	100
83)	Bromobenzene	16.52	156	759998	193.0269	ug/kg	95
84)	1,3,5-Trimethylbenzene	16.57	105	2471747	197.4342	ug/kg	99
85)	2-Chlorotoluene	16.66	91	2218317	198.3049	ug/kg	100
86)	4-Chlorotoluene	16.71	91	1934954	187.0917	ug/kg	100
87)	a-Methylstyrene	16.98	118	1205032	211.2436	ug/kg	99
88)	tert-Butylbenzene	17.03	134	526001	200.4032	ug/kg	87
89)	1,2,4-Trimethylbenzene	17.09	105	2520611	192.2523	ug/kg	100
90)	sec-Butylbenzene	17.31	105	3206494	198.8615	ug/kg	100
91)	p-Isopropyltoluene	17.47	119	2752661	202.2895	ug/kg	100
92)	1,3-Dichlorobenzene	17.67	146	1508843	192.8225	ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	1522857	194.6701	ug/kg	99
94)	n-Butylbenzene	17.99	91	2603240	205.7600	ug/kg	100
95)	1,2-Dichlorobenzene	18.29	146	1515803	208.7710	ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	205456	220.4304	ug/kg	98
97)	1,2,4-Trichlorobenzene	20.43	180	1061631	205.9726	ug/kg	99
98)	Hexachlorobutadiene	20.58	225	612598	225.4729	ug/kg	100
99)	Naphthalene	20.81	128	2666581	206.2661	ug/kg	99
100)	1,2,3-Trichlorobenzene	21.12	180	1022740	204.5802	ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972904.D Vial: 9
Acq On : 25 Feb 2016 20:00 Operator: ADC
Sample : WG558732-09 200.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

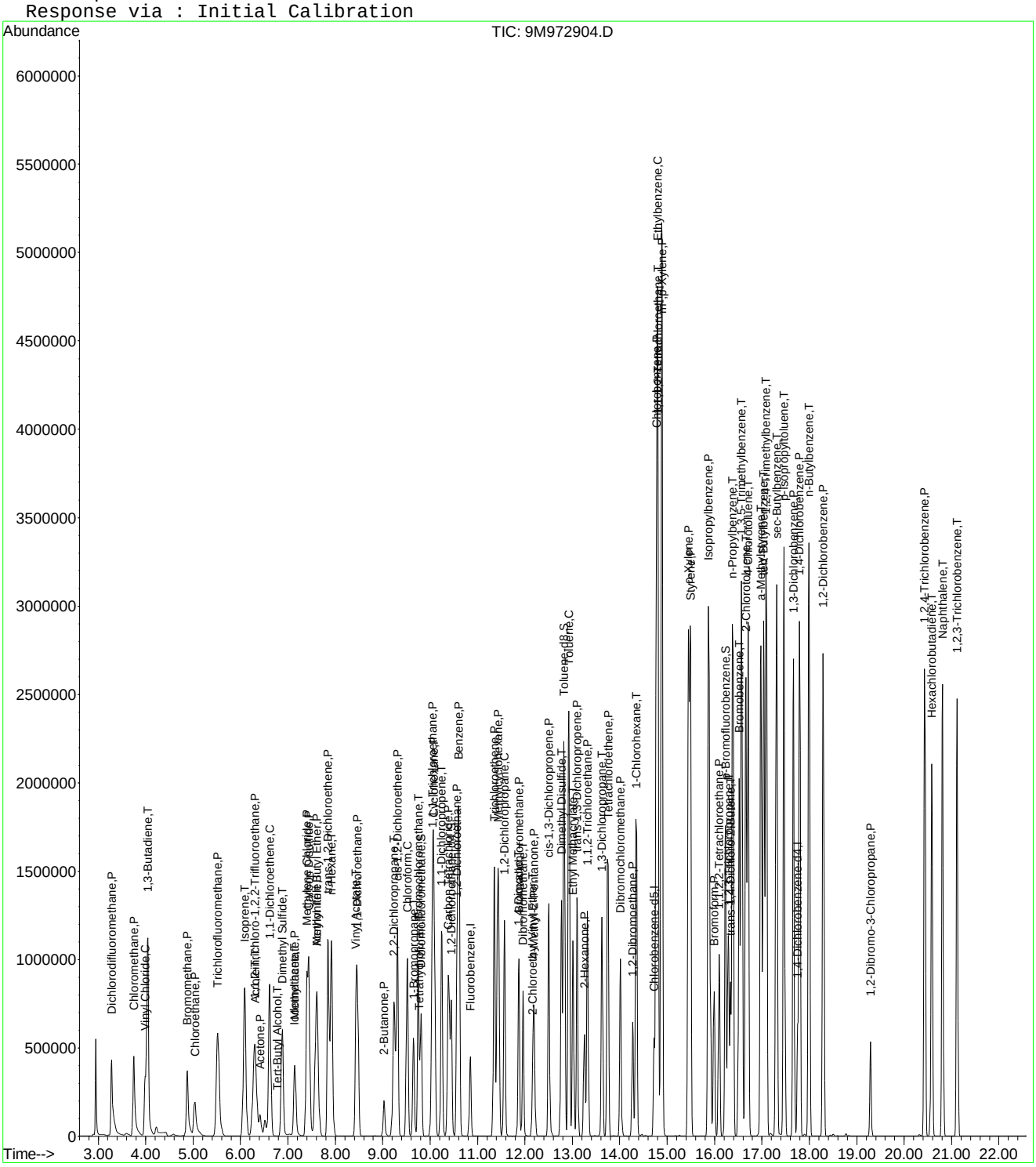

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972905.D Vial: 10
Acq On : 25 Feb 2016 20:30 Operator: ADC
Sample : WG558732-10 300.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:59 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	626979	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	468521	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	224223	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	520	0.1530 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.30%#	
43) 1,2-Dichloroethane-d4	10.45	65	1794	0.4207 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.84%#	
58) Toluene-d8	12.82	98	7789	0.6573 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	1.32%#	
79) p-Bromofluorobenzene	16.23	95	6216	1.4237 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	2.84%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	1155483	270.0216 ug/kg	98
3) Chloromethane	3.75	50	1142773	278.5891 ug/kg	100
4) Vinyl Chloride	3.98	62	1112221	270.8539 ug/kg	99
5) 1,3-Butadiene	4.03	54	1100483	281.6917 ug/kg	98
6) Bromomethane	4.87	94	749711	281.1083 ug/kg	98
7) Chloroethane	5.04	64	601337	328.7051 ug/kg	98
8) Trichlorofluoromethane	5.52	101	1778447	288.7670 ug/kg	99
9) Diethyl ether	6.06	59	869609	302.0457 ug/kg	99
10) Isoprene	6.08	67	1108410	301.4513 ug/kg	98
11) Acrolein	6.30	56	93621	163.0794 ug/kg	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	943691	297.1172 ug/kg	99
13) Acetone	6.42	43	369915	242.6618 ug/kg	95
14) 1,1-Dichloroethene	6.61	61	1715009	292.7111 ug/kg	98
15) Tert-Butyl Alcohol	6.80	59	188151	293.4850 ug/kg	89
16) Dimethyl Sulfide	6.88	62	763075	308.1557 ug/kg	99
17) Iodomethane	7.14	142	532480	291.5128 ug/kg	99
18) Methyl acetate	7.15	43	879657	276.1748 ug/kg	98
19) Methylene Chloride	7.40	84	937262	293.7237 ug/kg	96
20) Carbon Disulfide	7.44	76	2640380	292.5391 ug/kg	98
21) Acrylonitrile	7.59	53	252681	160.3640 ug/kg	94
22) Methyl Tert Butyl Ether	7.61	73	2699681	297.0533 ug/kg	98
23) trans-1,2-Dichloroethene	7.84	61	1548353	296.5245 ug/kg	100
24) n-Hexane	7.92	57	1608467	298.6501 ug/kg	98
25) Diisopropyl ether	8.26	45	3742238	299.1747 ug/kg	100
26) Vinyl Acetate	8.43	43	2097407	294.1383 ug/kg	99
27) 1,1-Dichloroethane	8.47	63	1881635	286.8995 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	3515202	302.2390 ug/kg	99
29) 2-Butanone	9.02	43	559900	276.9258 ug/kg	100
30) Propionitrile	9.14	54	182998	295.7653 ug/kg	100
31) 2,2-Dichloropropane	9.24	77	1439671	294.0988 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	1040893	303.9366 ug/kg	99
33) Chloroform	9.52	83	1708608	283.5977 ug/kg	99
34) 1-Bromopropane	9.65	122	152776	287.6719 ug/kg	98
35) Bromochloromethane	9.75	130	668631	300.5590 ug/kg	98
36) Tetrahydrofuran	9.77	42	365915	280.7723 ug/kg	97
38) 1,1,1-Trichloroethane	10.05	97	1606962	294.9423 ug/kg	100
39) Cyclohexane	10.08	56	1746722	294.0540 ug/kg	99
40) 1,1-Dichloropropene	10.24	75	1258569	293.5615 ug/kg	98
41) Tert-Amyl-Methyl ether	10.34	73	2573262	304.3824 ug/kg	98
42) Carbon Tetrachloride	10.39	117	1494872	295.9476 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972905.D Vial: 10
Acq On : 25 Feb 2016 20:30 Operator: ADC
Sample : WG558732-10 300.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:59 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.57	62	1526616	288.0725 ug/kg	98
46)	Benzene	10.61	78	3320959	276.6861 ug/kg	99
47)	Trichloroethene	11.36	130	1102750	289.9607 ug/kg	98
48)	Methylcyclohexane	11.43	83	1476436	309.5324 ug/kg	98
49)	1,2-Dichloropropane	11.57	63	980423	297.4576 ug/kg	99
50)	1,4-Dioxane	11.89	88	31126	629.4828 ug/kg	81
51)	Bromodichloromethane	11.87	83	1358159	292.3851 ug/kg	99
52)	Dibromomethane	11.96	174	632731	289.7290 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	287132	300.2354 ug/kg	96
54)	4-Methyl-2-Pentanone	12.19	58	438042	302.7895 ug/kg	99
55)	cis-1,3-Dichloropropene	12.51	75	1436858	296.9047 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	1505953	309.6528 ug/kg	95
59)	Toluene	12.93	91	3720819	277.9530 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	1096301	295.4554 ug/kg	100
61)	trans-1,3-Dichloropropene	13.10	75	1416217	293.7329 ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	820836	291.8946 ug/kg	99
63)	2-Hexanone	13.26	43	814427	290.0688 ug/kg	100
64)	1,3-Dichloropropane	13.63	76	1322191	282.1714 ug/kg	100
65)	Tetrachloroethene	13.75	164	815946	284.3233 ug/kg	98
66)	Dibromochloromethane	14.02	129	1136128	289.0845 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	889642	285.2204 ug/kg	99
68)	1-Chlorohexane	14.34	91	1188786	301.1405 ug/kg	99
69)	Chlorobenzene	14.78	112	2558374	271.9265 ug/kg	97
70)	1,1,1,2-Tetrachloroethane	14.81	131	1019464	288.5389 ug/kg	97
71)	Ethylbenzene	14.80	106	1372834	283.2291 ug/kg	97
72)	m-,p-Xylene	14.89	106	3241616	541.5304 ug/kg	97
73)	o-Xylene	15.45	106	1663016	289.4945 ug/kg	99
74)	Styrene	15.49	104	2869824	293.3680 ug/kg	99
75)	Bromoform	15.99	173	788638	305.6282 ug/kg	99
76)	Isopropylbenzene	15.87	105	4421589	286.7141 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	1002445	294.7201 ug/kg	99
80)	1,2,3-Trichloropropane	16.28	110	380025	294.6098 ug/kg	66
81)	trans-1,4-Dichloro-2-Buten	16.34	53	413901	318.3274 ug/kg	57
82)	n-Propylbenzene	16.38	91	4980503	282.5783 ug/kg	99
83)	Bromobenzene	16.52	156	1176440	282.7414 ug/kg	93
84)	1,3,5-Trimethylbenzene	16.57	105	3788936	286.3846 ug/kg	99
85)	2-Chlorotoluene	16.66	91	3458872	292.5892 ug/kg	100
86)	4-Chlorotoluene	16.71	91	2929432	268.0287 ug/kg	100
87)	a-Methylstyrene	16.98	118	1823514	302.4880 ug/kg	100
88)	tert-Butylbenzene	17.03	134	795019	286.6221 ug/kg	86
89)	1,2,4-Trimethylbenzene	17.09	105	3829230	276.3702 ug/kg	100
90)	sec-Butylbenzene	17.31	105	4833765	283.6742 ug/kg	99
91)	p-Isopropyltoluene	17.47	119	4134027	287.4802 ug/kg	99
92)	1,3-Dichlorobenzene	17.67	146	2260017	273.2999 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	2229106	269.6404 ug/kg	99
94)	n-Butylbenzene	17.99	91	3871124	289.5329 ug/kg	100
95)	1,2-Dichlorobenzene	18.29	146	2162642	281.8552 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	293112	297.5776 ug/kg	98
97)	1,2,4-Trichlorobenzene	20.43	180	1514973	278.1345 ug/kg	100
98)	Hexachlorobutadiene	20.58	225	846867	294.9498 ug/kg	99
99)	Naphthalene	20.81	128	3754823	274.8379 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.12	180	1451357	274.7177 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972905.D 8260SL.M Fri Feb 26 11:21:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972905.D Vial: 10
Acq On : 25 Feb 2016 20:30 Operator: ADC
Sample : WG558732-10 300.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

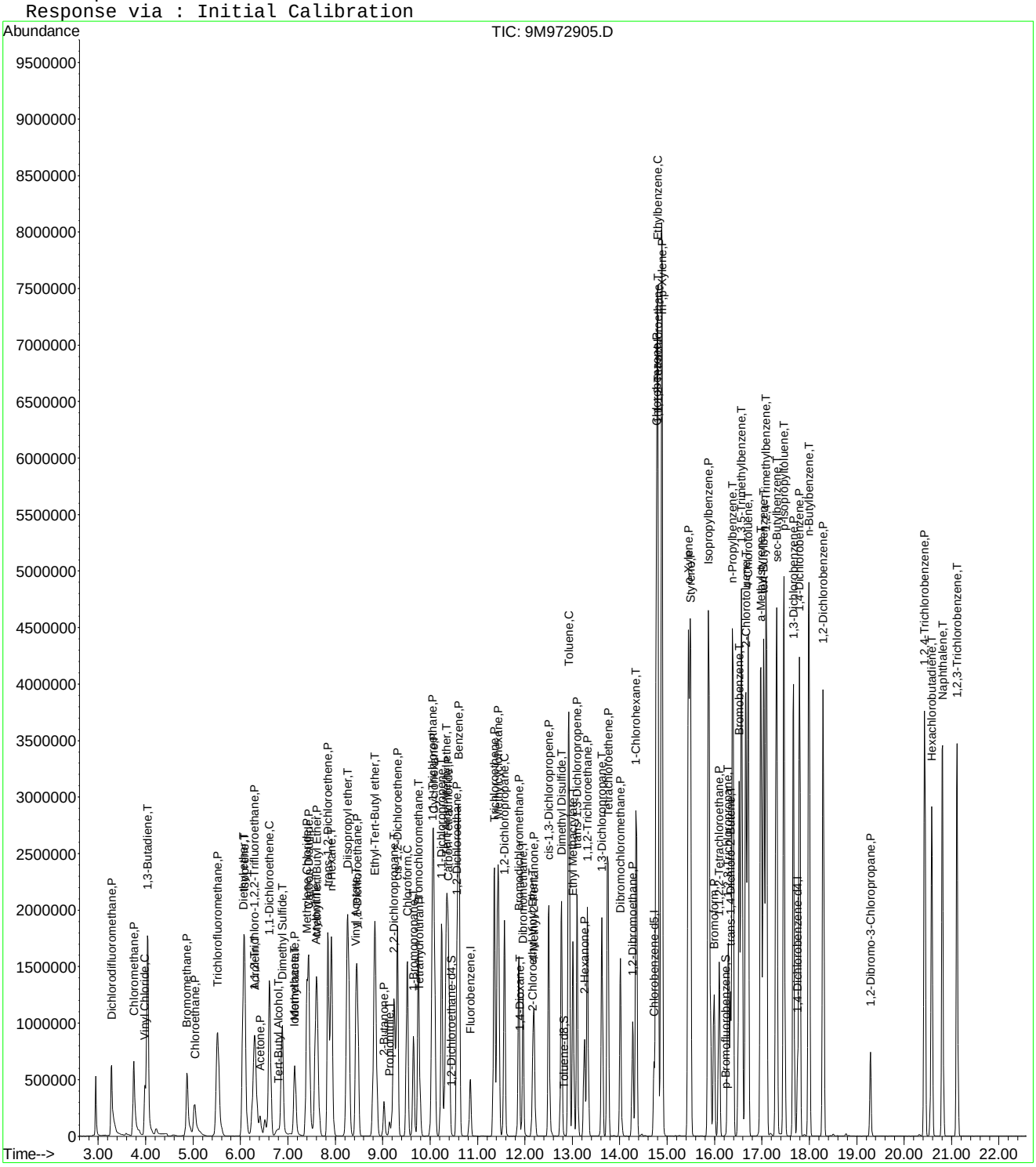

9M972905.D 8260SL.M Fri Feb 26 11:21:59 2016 Page 3

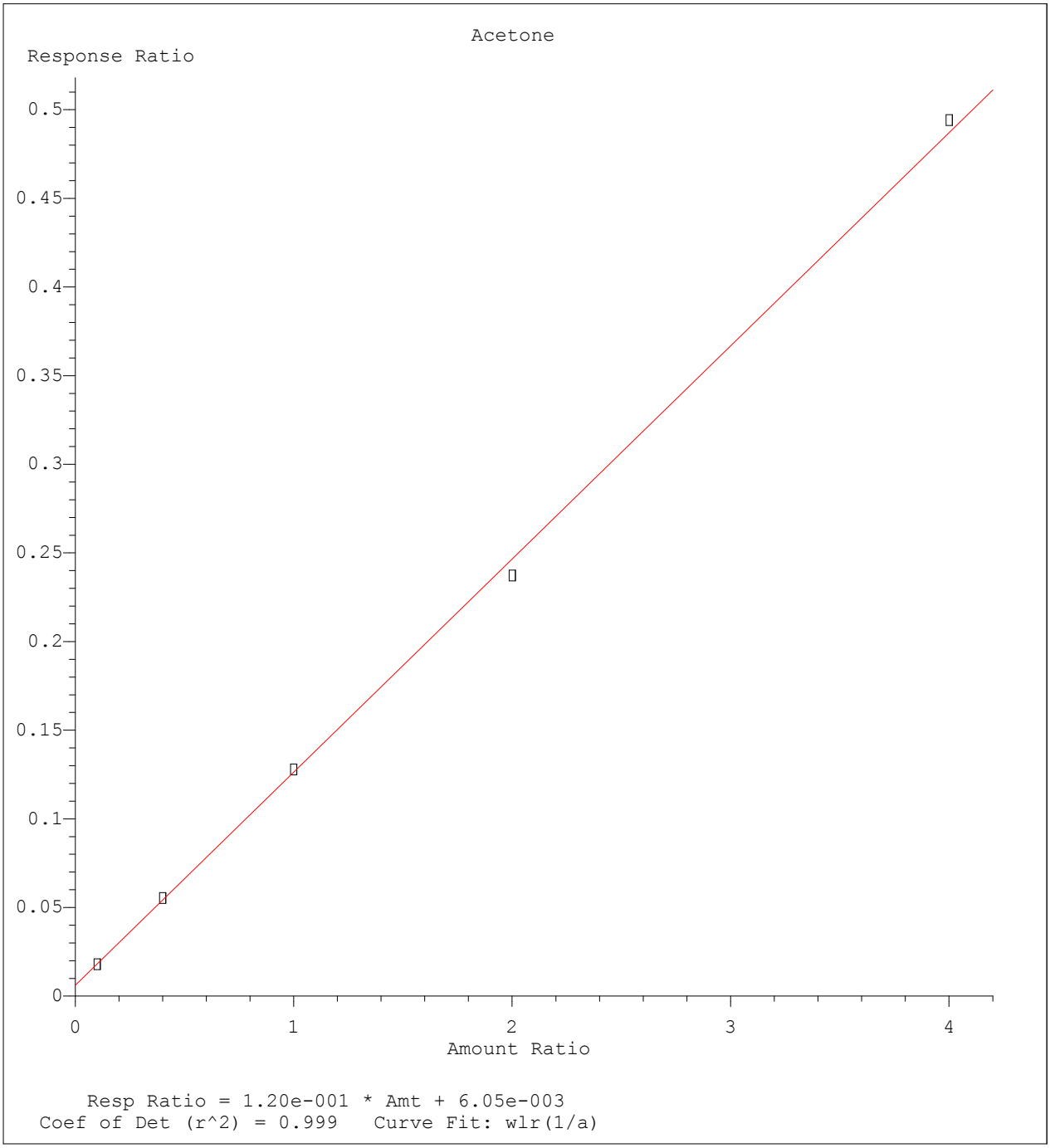

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

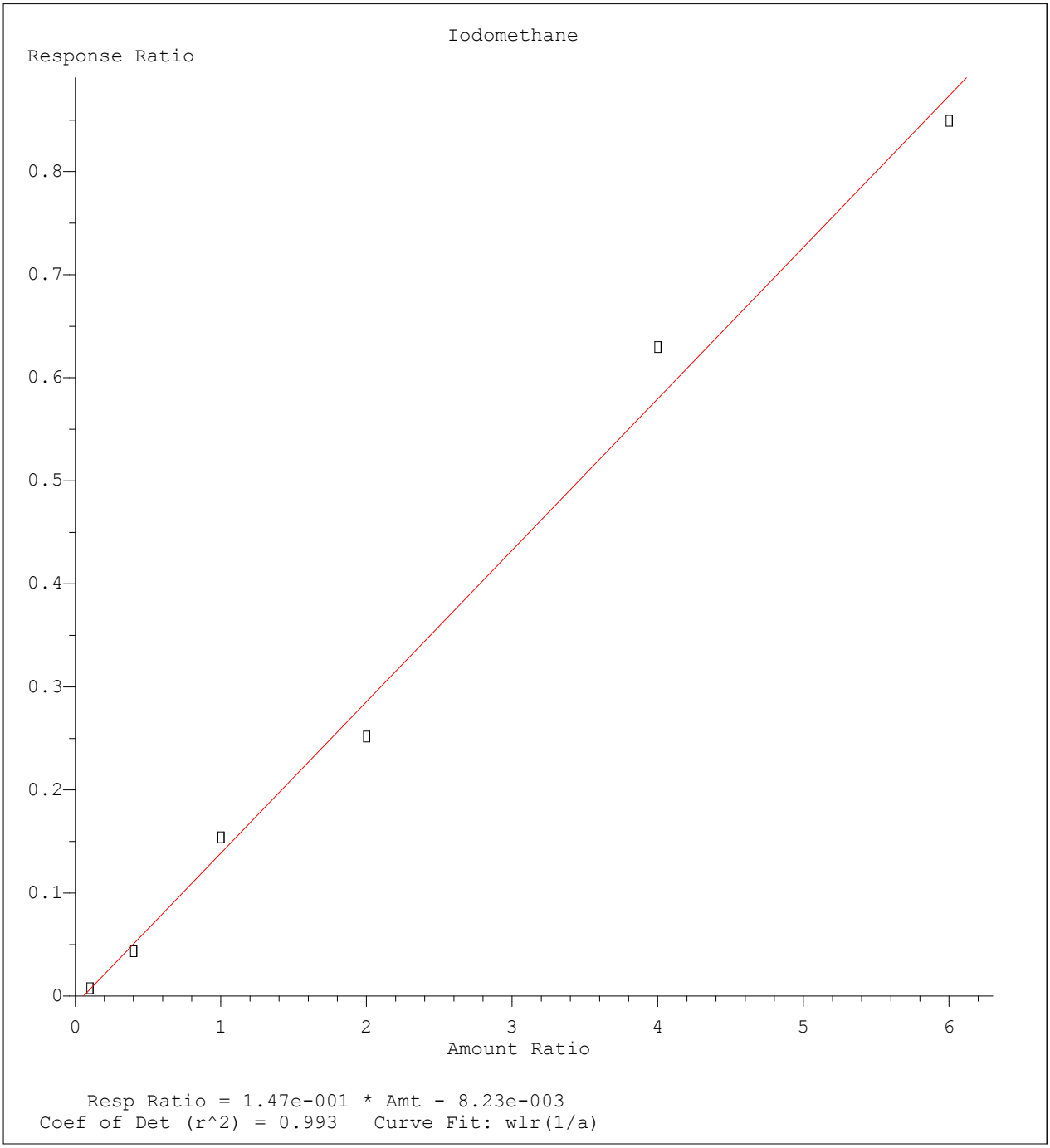

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

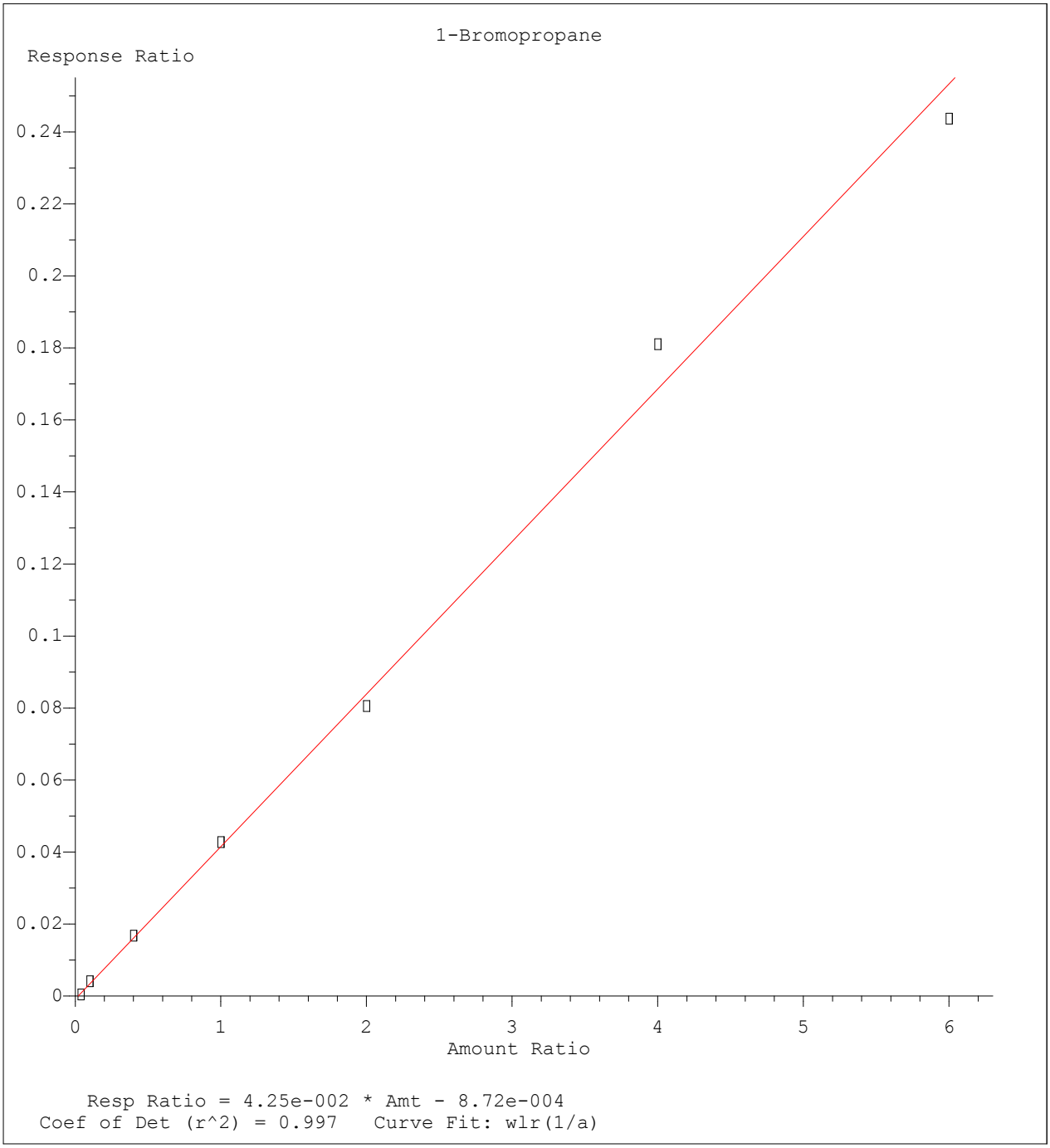

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

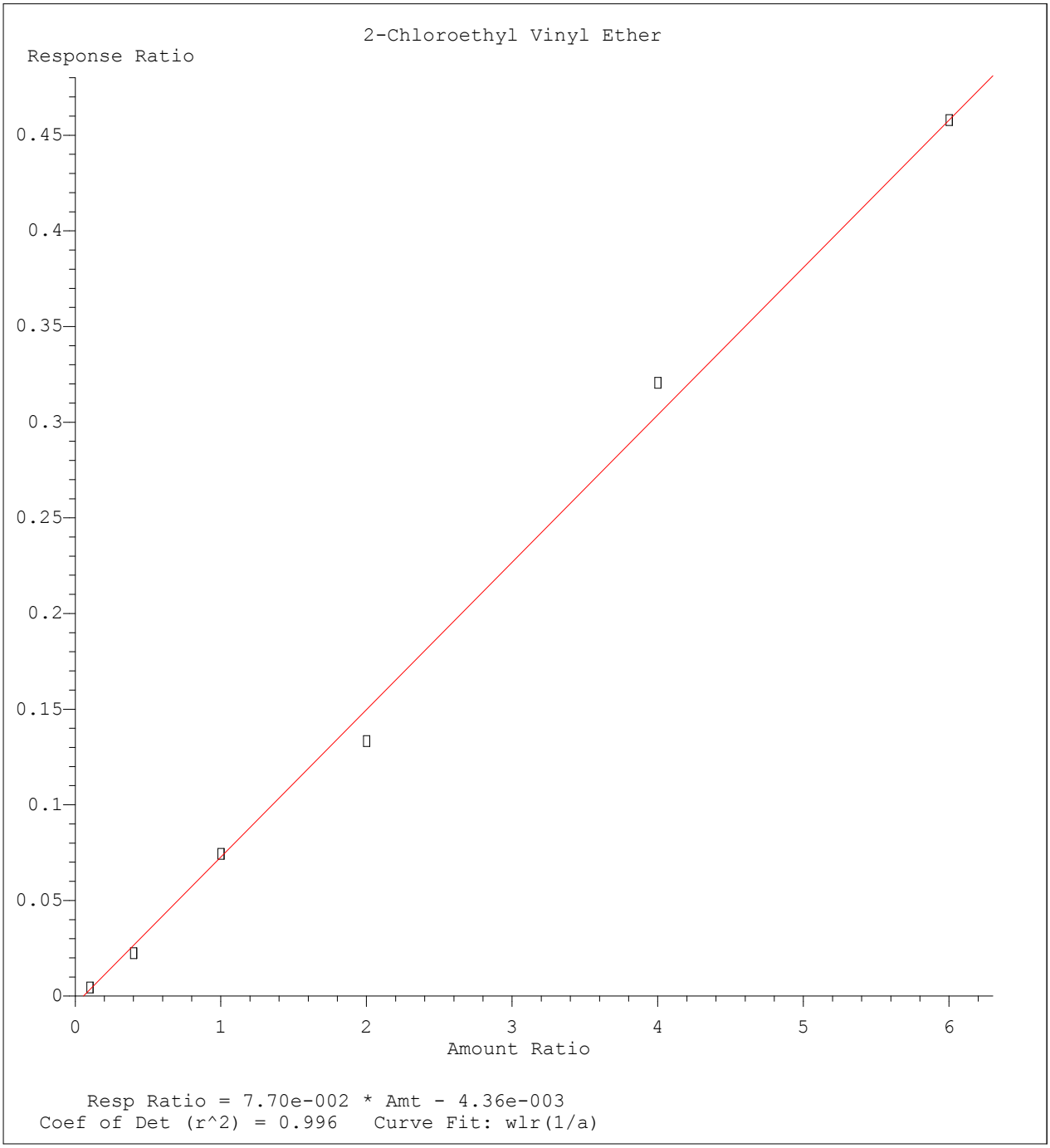

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:39:12 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	582126	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	421408	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	194909	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	163260	51.7395 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 103.48%		
43) 1,2-Dichloroethane-d4	10.45	65	197344	49.8458 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.70%		
58) Toluene-d8	12.82	98	564883	52.9951 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.00%		
79) p-Bromofluorobenzene	16.23	95	212358	55.9531 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 111.90%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	251431	63.3698 ug/kg	100
3) Chloromethane	3.74	50	200793	52.7216 ug/kg	100
4) Vinyl Chloride	3.99	62	228101	59.8284 ug/kg	99
5) 1,3-Butadiene	4.04	54	19055	5.2533 ug/kg	94
6) Bromomethane	4.88	94	121270	48.9744 ug/kg	100
7) Chloroethane	5.04	64	92003	54.1660 ug/kg	100
8) Trichlorofluoromethane	5.52	101	271981	47.5643 ug/kg	98
9) Diethyl ether	6.06	59	198146	74.1259 ug/kg	98
10) Isoprene	6.09	67	201645	59.0663 ug/kg	95
11) Acrolein	6.30	56	34569	64.8558 ug/kg	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	151498	51.3737 ug/kg	99
13) Acetone	6.41	43	65044	43.9190 ug/kg	98
14) 1,1-Dichloroethene	6.62	61	264179	48.5632 ug/kg	99
15) Tert-Butyl Alcohol	6.77	59	122141	205.1997 ug/kg	96
16) Dimethyl Sulfide	6.88	62	168266	73.1872 ug/kg	98
17) Iodomethane	7.13	142	81070	50.1419 ug/kg	99
18) Methyl acetate	7.15	43	155780	52.6767 ug/kg	99
19) Methylene Chloride	7.41	84	147546	49.8014 ug/kg	97
20) Carbon Disulfide	7.45	76	369798	44.1284 ug/kg	98
21) Acrylonitrile	7.59	53	71462	48.8478 ug/kg	99
22) Methyl Tert Butyl Ether	7.61	73	402298	47.6767 ug/kg	100
23) trans-1,2-Dichloroethene	7.85	61	245432	50.6242 ug/kg	100
24) n-Hexane	7.91	57	240056	48.0064 ug/kg	97
25) Diisopropyl ether	8.26	45	951889	81.9626 ug/kg	100
26) Vinyl Acetate	8.44	43	224385	33.8921 ug/kg	98
27) 1,1-Dichloroethane	8.47	63	282537	46.3987 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	854399	79.1219 ug/kg	99
29) 2-Butanone	9.03	43	88970	47.3950 ug/kg	99
30) Propionitrile	9.14	54	53106	92.4444 ug/kg	97
31) 2,2-Dichloropropane	9.24	77	213921	47.0673 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	167198	52.5828 ug/kg	96
33) Chloroform	9.52	83	268532	48.0056 ug/kg	99
34) 1-Bromopropane	9.65	122	36381	74.5451 ug/kg	96
35) Bromochloromethane	9.75	130	106386	51.5067 ug/kg	96
36) Tetrahydrofuran	9.78	42	101921	84.2313 ug/kg	98
38) 1,1,1-Trichloroethane	10.04	97	236420	46.7360 ug/kg	100
39) Cyclohexane	10.08	56	267623	48.5247 ug/kg	98
40) 1,1-Dichloropropene	10.25	75	193208	48.5381 ug/kg	99
41) Tert-Amyl-Methyl ether	10.34	73	688412	87.7041 ug/kg	100
42) Carbon Tetrachloride	10.39	117	218086	46.5023 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:39:12 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	241996	49.1831 ug/kg	99
46)	Benzene	10.60	78	545692	48.9674 ug/kg	99
47)	Trichloroethene	11.35	130	174371	49.3824 ug/kg	96
48)	Methylcyclohexane	11.44	83	228572	51.6120 ug/kg	98
49)	1,2-Dichloropropane	11.56	63	160075	52.3084 ug/kg	99
50)	1,4-Dioxane	11.88	88	7749	168.7883 ug/kg	88
51)	Bromodichloromethane	11.87	83	205164	47.5709 ug/kg	100
52)	Dibromomethane	11.96	174	95223	46.9624 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	36447	43.4907 ug/kg	97
54)	4-Methyl-2-Pentanone	12.19	58	64228	47.8173 ug/kg	96
55)	cis-1,3-Dichloropropene	12.50	75	238969	53.1840 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	243519	53.9302 ug/kg	99
59)	Toluene	12.93	91	610944	50.7412 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	172650	51.7315 ug/kg	99
61)	trans-1,3-Dichloropropene	13.11	75	216958	50.0293 ug/kg	98
62)	1,1,2-Trichloroethane	13.32	97	130293	51.5130 ug/kg	96
63)	2-Hexanone	13.25	43	121727	48.2017 ug/kg	99
64)	1,3-Dichloropropane	13.62	76	226811	53.8157 ug/kg	99
65)	Tetrachloroethene	13.75	164	128602	49.8224 ug/kg	96
66)	Dibromochloromethane	14.01	129	171284	48.4552 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	142409	50.7609 ug/kg	97
68)	1-Chlorohexane	14.35	91	184711	52.0217 ug/kg	98
69)	Chlorobenzene	14.77	112	433181	51.1898 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	157986	49.7138 ug/kg	100
71)	Ethylbenzene	14.79	106	223582	51.2841 ug/kg	100
72)	m-,p-Xylene	14.89	106	552299	102.5798 ug/kg	98
73)	o-Xylene	15.45	106	276739	53.5600 ug/kg	99
74)	Styrene	15.49	104	464515	52.7939 ug/kg	99
75)	Bromoform	15.99	173	109809	47.3129 ug/kg	99
76)	Isopropylbenzene	15.87	105	721376	52.0066 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	153818	52.0241 ug/kg	97
80)	1,2,3-Trichloropropane	16.29	110	60794	54.2181 ug/kg	92
81)	trans-1,4-Dichloro-2-Buten	16.33	53	48561	42.9649 ug/kg	74
82)	n-Propylbenzene	16.39	91	841260	54.9091 ug/kg	100
83)	Bromobenzene	16.52	156	188730	52.1806 ug/kg	96
84)	1,3,5-Trimethylbenzene	16.57	105	624761	54.3244 ug/kg	99
85)	2-Chlorotoluene	16.66	91	556729	54.1771 ug/kg	100
86)	4-Chlorotoluene	16.70	91	503918	53.0403 ug/kg	99
87)	a-Methylstyrene	16.98	118	305038	58.2105 ug/kg	98
88)	tert-Butylbenzene	17.03	134	133555	55.3912 ug/kg	90
89)	1,2,4-Trimethylbenzene	17.08	105	620621	51.5293 ug/kg	99
90)	sec-Butylbenzene	17.31	105	810765	54.7366 ug/kg	99
91)	p-Isopropyltoluene	17.46	119	675672	54.0529 ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	365216	50.8073 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	367190	51.0968 ug/kg	99
94)	n-Butylbenzene	17.99	91	609687	52.4585 ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	351826	52.7494 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	46623	54.4522 ug/kg	96
97)	1,2,4-Trichlorobenzene	20.43	180	244804	51.7031 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	136025	54.5004 ug/kg	99
99)	Naphthalene	20.81	128	603753	50.8387 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	241600	52.6087 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972907.D 8260SL.M Fri Feb 26 11:39:13 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:39 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

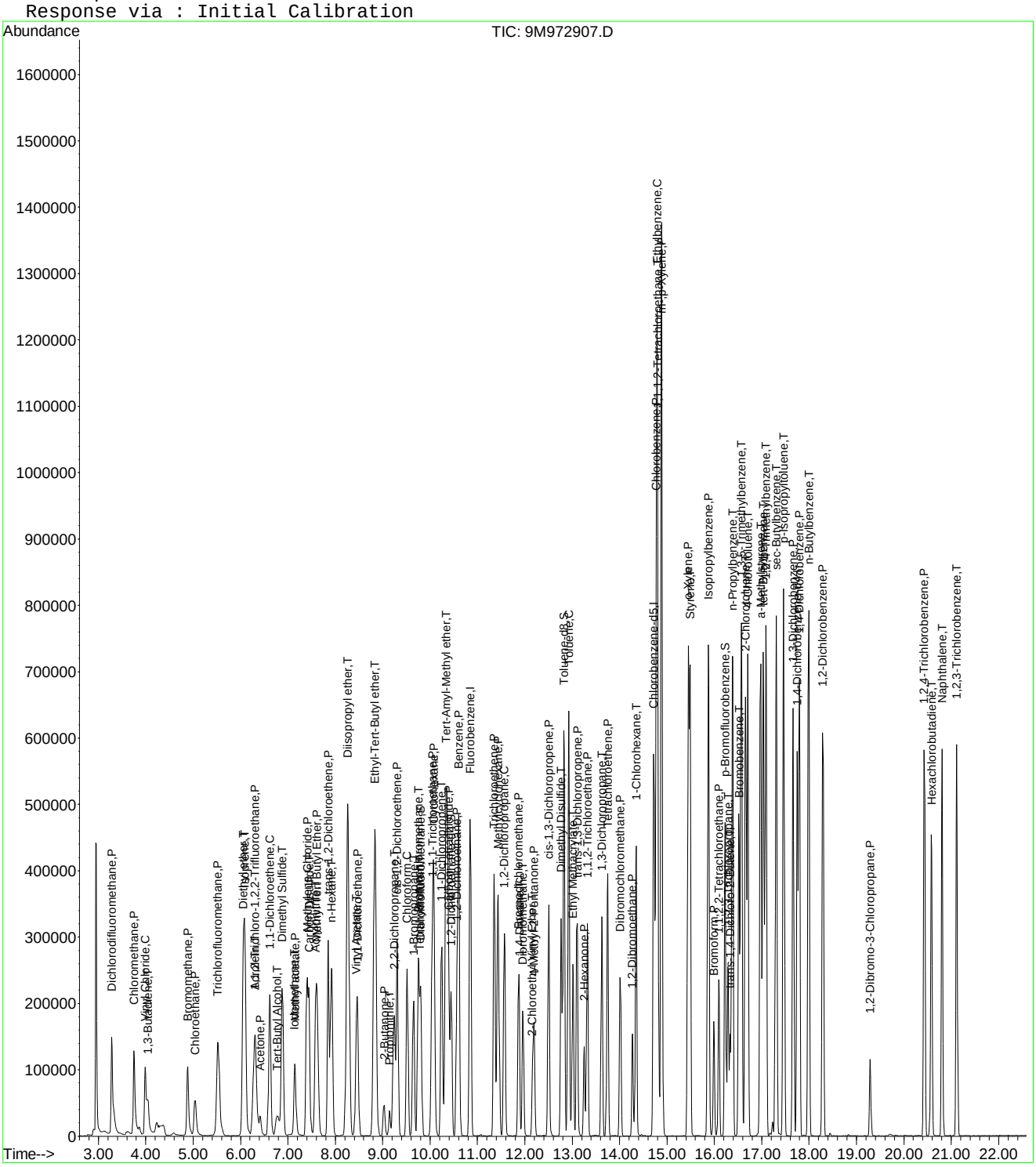

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	112	0.00
2	P	Dichlorodifluoromethane	50.0000	63.3698	-26.7#	123	0.00
3	P	Chloromethane	50.0000	52.7216	-5.4	107	0.00
4	C	Vinyl Chloride	50.0000	59.8284	-19.7	118	0.00
5	T	1,3-Butadiene	50.0000	5.2533	89.5#	11	0.00
6	P	Bromomethane	50.0000	48.9744	2.1	112	0.00
7	P	Chloroethane	50.0000	54.1660	-8.3	108	0.00
8	P	Trichlorofluoromethane	50.0000	47.5643	4.9	102	0.00
9	T	Diethyl ether	100.0000	74.1259	25.9#	79	0.01
10	T	Isoprene	50.0000	59.0664	-18.1	129	0.00
11	T	Acrolein	50.0000	64.8558	-29.7#	140	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	51.3737	-2.7	112	0.00
13	P	Acetone	50.0000	43.9190	12.2	98	0.00
14	C	1,1-Dichloroethene	50.0000	48.5632	2.9	108	0.00
15	T	Tert-Butyl Alcohol	200.0000	205.1997	-2.6	116	0.01
16	T	Dimethyl Sulfide	50.0000	73.1872	-46.4#	154	0.00
17	T	Iodomethane	50.0000	50.1419	-0.3	102	0.00
18	P	Methyl acetate	50.0000	52.6767	-5.4	115	0.01
19	P	Methylene Chloride	50.0000	49.8014	0.4	109	0.01
20	P	Carbon Disulfide	50.0000	44.1284	11.7	97	0.00
21	T	Acrylonitrile	50.0000	48.8478	2.3	103	0.00
22	P	Methyl Tert Butyl Ether	50.0000	47.6767	4.6	99	0.00
23	P	trans-1,2-Dichloroethene	50.0000	50.6242	-1.2	108	0.00
24	T	n-Hexane	50.0000	48.0064	4.0	109	0.00
25	T	Diisopropyl ether	100.0000	81.9626	18.0	87	0.00
26	T	Vinyl Acetate	50.0000	33.8921	32.2#	72	0.01
27	P	1,1-Dichloroethane	50.0000	46.3987	7.2	99	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	79.1219	20.9	83	0.00
29	P	2-Butanone	50.0000	47.3950	5.2	103	0.00
30	T	Propionitrile	100.0000	92.4444	7.6	100	0.00
31	T	2,2-Dichloropropane	50.0000	47.0673	5.9	99	0.00
32	P	cis-1,2-Dichloroethene	50.0000	52.5828	-5.2	109	0.00
33	C	Chloroform	50.0000	48.0057	4.0	102	0.00
34	T	1-Bromopropane	50.0000	74.5451	-49.1#	164	0.00
35	T	Bromochloromethane	50.0000	51.5067	-3.0	104	0.00
36	T	Tetrahydrofuran	100.0000	84.2314	15.8	90	0.00
37	S	Dibromofluoromethane	50.0000	51.7395	-3.5	110	0.00
38	P	1,1,1-Trichloroethane	50.0000	46.7360	6.5	97	0.00
39	P	Cyclohexane	50.0000	48.5247	3.0	108	0.00
40	T	1,1-Dichloropropene	50.0000	48.5381	2.9	106	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	87.7041	12.3	93	0.00
42	P	Carbon Tetrachloride	50.0000	46.5023	7.0	99	0.00
43	S	1,2-Dichloroethane-d4	50.0000	49.8458	0.3	107	0.00
44		Heptane	-1.0000	0.0000	0.0	104	0.00
45	P	1,2-Dichloroethane	50.0000	49.1831	1.6	102	0.00
46	P	Benzene	50.0000	48.9674	2.1	108	0.00
47	P	Trichloroethene	50.0000	49.3824	1.2	106	0.00
48	P	Methylcyclohexane	50.0000	51.6120	-3.2	112	0.00
49	C	1,2-Dichloropropane	50.0000	52.3083	-4.6	108	0.00
50	T	1,4-Dioxane	200.0000	168.7883	15.6	99	0.00
51	P	Bromodichloromethane	50.0000	47.5710	4.9	101	0.00
52	T	Dibromomethane	50.0000	46.9624	6.1	99	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	43.4907	13.0	95	0.00
54	P	4-Methyl-2-Pentanone	50.0000	47.8173	4.4	99	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	53.1840	-6.4	112	0.00
56	T	Dimethyl Disulfide	50.0000	53.9302	-7.9	111	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	111	0.00
58	S	Toluene-d8	50.0000	52.9951	-6.0	110	0.00
59	C	Toluene	50.0000	50.7412	-1.5	108	0.00
60	T	Ethyl Methacrylate	50.0000	51.7315	-3.5	109	0.00
61	P	trans-1,3-Dichloropropene	50.0000	50.0293	-0.1	102	0.00
62	P	1,1,2-Trichloroethane	50.0000	51.5130	-3.0	106	0.00
63	P	2-Hexanone	50.0000	48.2017	3.6	102	0.00
64	T	1,3-Dichloropropane	50.0000	53.8157	-7.6	113	0.00
65	P	Tetrachloroethene	50.0000	49.8224	0.4	110	0.00
66	P	Dibromochloromethane	50.0000	48.4552	3.1	101	0.00
67	P	1,2-Dibromoethane	50.0000	50.7609	-1.5	107	0.00
68	T	1-Chlorohexane	50.0000	52.0217	-4.0	110	0.00
69	P	Chlorobenzene	50.0000	51.1898	-2.4	108	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	49.7138	0.6	102	0.00
71	C	Ethylbenzene	50.0000	51.2841	-2.6	108	0.00
72	P	m-,p-Xylene	100.0000	102.5798	-2.6	111	0.00
73	P	o-Xylene	50.0000	53.5600	-7.1	112	0.00
74	P	Styrene	50.0000	52.7939	-5.6	109	0.00
75	P	Bromoform	50.0000	47.3129	5.4	95	0.00
76	P	Isopropylbenzene	50.0000	52.0066	-4.0	110	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	107	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	52.0241	-4.0	104	0.00
79	S	p-Bromofluorobenzene	50.0000	55.9531	-11.9	111	0.00
80	T	1,2,3-Trichloropropane	50.0000	54.2181	-8.4	109	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	42.9649	14.1	87	0.00
82	T	n-Propylbenzene	50.0000	54.9091	-9.8	112	0.00
83	T	Bromobenzene	50.0000	52.1806	-4.4	106	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	54.3244	-8.6	110	0.00
85	T	2-Chlorotoluene	50.0000	54.1771	-8.4	115	0.00
86	T	4-Chlorotoluene	50.0000	53.0403	-6.1	105	0.00
87	T	a-Methylstyrene	50.0000	58.2105	-16.4	119	0.00
88	T	tert-Butylbenzene	50.0000	55.3912	-10.8	110	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	51.5293	-3.1	107	0.00
90	T	sec-Butylbenzene	50.0000	54.7366	-9.5	112	0.00
91	T	p-Isopropyltoluene	50.0000	54.0529	-8.1	110	0.00
92	P	1,3-Dichlorobenzene	50.0000	50.8073	-1.6	108	0.00
93	P	1,4-Dichlorobenzene	50.0000	51.0968	-2.2	110	0.00
94	T	n-Butylbenzene	50.0000	52.4585	-4.9	108	0.00
95	P	1,2-Dichlorobenzene	50.0000	52.7494	-5.5	110	0.00
96	P	1,2-Dibromo-3-Chloropropane	50.0000	54.4522	-8.9	109	0.00
97	P	1,2,4-Trichlorobenzene	50.0000	51.7031	-3.4	110	0.00
98	T	Hexachlorobutadiene	50.0000	54.5004	-9.0	116	0.00
99	T	Naphthalene	50.0000	50.8387	-1.7	100	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	52.6087	-5.2	109	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972907.D 8260SL.M Fri Feb 26 11:39:16 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022616\9M972910.D Vial: 2
Acq On : 26 Feb 2016 14:40 Operator: ADC
Sample : WG558909-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 15:03:22 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	579320	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	423745	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	203129	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	165876	52.8232 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.64%		
43) 1,2-Dichloroethane-d4	10.45	65	201046	51.0268 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 102.06%		
58) Toluene-d8	12.82	98	572554	53.4185 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.84%		
79) p-Bromofluorobenzene	16.23	95	217246	54.9246 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 109.84%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.28	85	208404	52.7798 ug/kg	100
3) Chloromethane	3.75	50	176303	46.5156 ug/kg	98
4) Vinyl Chloride	3.99	62	200066	52.7293 ug/kg	100
5) 1,3-Butadiene	4.04	54	193448	53.5907 ug/kg	99
6) Bromomethane	4.89	94	109502	44.4361 ug/kg	96
7) Chloroethane	5.04	64	83845	49.6021 ug/kg	98
8) Trichlorofluoromethane	5.53	101	269086	47.2860 ug/kg	98
9) Diethyl ether	6.06	59	259115	97.4037 ug/kg	99
10) Isoprene	6.09	67	191872	56.4758 ug/kg	96
11) Acrolein	6.30	56	27653	52.1318 ug/kg	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	145784	49.6755 ug/kg	98
13) Acetone	6.40	43	62522	42.3349 ug/kg	99
14) 1,1-Dichloroethene	6.62	61	251920	46.5339 ug/kg	98
15) Tert-Butyl Alcohol	6.74	59	110106	185.8766 ug/kg	98
16) Dimethyl Sulfide	6.88	62	107705	47.0732 ug/kg	99
17) Iodomethane	7.14	142	80770	50.1952 ug/kg	99
18) Methyl acetate	7.14	43	145340	49.3845 ug/kg	97
19) Methylene Chloride	7.40	84	138494	46.9725 ug/kg	97
20) Carbon Disulfide	7.45	76	433809	52.0176 ug/kg	98
21) Acrylonitrile	7.58	53	73741	50.6498 ug/kg	99
22) Methyl Tert Butyl Ether	7.60	73	406940	48.4604 ug/kg	100
23) trans-1,2-Dichloroethene	7.85	61	229090	47.4822 ug/kg	98
24) n-Hexane	7.92	57	270051	54.2664 ug/kg	98
25) Diisopropyl ether	8.26	45	1121933	97.0722 ug/kg	99
26) Vinyl Acetate	8.43	43	315737	47.9213 ug/kg	98
27) 1,1-Dichloroethane	8.47	63	282758	46.6599 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	1039087	96.6911 ug/kg	99
29) 2-Butanone	9.02	43	85136	45.5723 ug/kg	99
30) Propionitrile	9.14	54	56493	98.8166 ug/kg	98
31) 2,2-Dichloropropane	9.24	77	218493	48.3061 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	154105	48.6999 ug/kg	100
33) Chloroform	9.52	83	252292	45.3209 ug/kg	99
34) 1-Bromopropane	9.66	122	22686	47.0920 ug/kg	95
35) Bromochloromethane	9.75	130	100561	48.9224 ug/kg	98
36) Tetrahydrofuran	9.77	42	114829	95.3587 ug/kg	95
38) 1,1,1-Trichloroethane	10.05	97	235806	46.8404 ug/kg	99
39) Cyclohexane	10.08	56	283343	51.6238 ug/kg	99
40) 1,1-Dichloropropene	10.25	75	188663	47.6259 ug/kg	99
41) Tert-Amyl-Methyl ether	10.34	73	765322	97.9747 ug/kg	99
42) Carbon Tetrachloride	10.39	117	216043	46.2898 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022616\9M972910.D Vial: 2
Acq On : 26 Feb 2016 14:40 Operator: ADC
Sample : WG558909-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 15:03:22 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	228467	46.6584 ug/kg	99
46)	Benzene	10.61	78	515702	46.5005 ug/kg	99
47)	Trichloroethene	11.36	130	166184	47.2918 ug/kg	98
48)	Methylcyclohexane	11.43	83	241086	54.7013 ug/kg	99
49)	1,2-Dichloropropane	11.57	63	145495	47.7743 ug/kg	100
50)	1,4-Dioxane	11.87	88	9798	214.4532 ug/kg	92
51)	Bromodichloromethane	11.87	83	195143	45.4666 ug/kg	99
52)	Dibromomethane	11.96	174	96052	47.6007 ug/kg	98
53)	2-Chloroethyl Vinyl Ether	12.17	63	34237	41.2102 ug/kg	94
54)	4-Methyl-2-Pentanone	12.19	58	64556	48.2943 ug/kg	97
55)	cis-1,3-Dichloropropene	12.51	75	213726	47.7964 ug/kg	100
56)	Dimethyl Disulfide	12.77	94	243395	54.1639 ug/kg	99
59)	Toluene	12.93	91	581459	48.0260 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	172427	51.3797 ug/kg	100
61)	trans-1,3-Dichloropropene	13.10	75	209619	48.0704 ug/kg	99
62)	1,1,2-Trichloroethane	13.32	97	122172	48.0359 ug/kg	98
63)	2-Hexanone	13.25	43	118296	46.5847 ug/kg	100
64)	1,3-Dichloropropane	13.62	76	198499	46.8384 ug/kg	100
65)	Tetrachloroethene	13.75	164	125963	48.5309 ug/kg	96
66)	Dibromochloromethane	14.01	129	164319	46.2285 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	132086	46.8216 ug/kg	99
68)	1-Chlorohexane	14.35	91	195947	54.8818 ug/kg	98
69)	Chlorobenzene	14.77	112	400876	47.1110 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.81	131	149901	46.9096 ug/kg	99
71)	Ethylbenzene	14.80	106	217561	49.6278 ug/kg	97
72)	m-,p-Xylene	14.89	106	518841	95.8341 ug/kg	98
73)	o-Xylene	15.45	106	254692	49.0212 ug/kg	99
74)	Styrene	15.49	104	434759	49.1395 ug/kg	100
75)	Bromoform	15.99	173	108889	46.6578 ug/kg	99
76)	Isopropylbenzene	15.87	105	687539	49.2938 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	146443	47.5254 ug/kg	99
80)	1,2,3-Trichloropropane	16.28	110	55427	47.4313 ug/kg#	35
81)	trans-1,4-Dichloro-2-Buten	16.34	53	62270	52.8646 ug/kg#	1
82)	n-Propylbenzene	16.38	91	795455	49.8184 ug/kg	99
83)	Bromobenzene	16.52	156	176392	46.7958 ug/kg	75
84)	1,3,5-Trimethylbenzene	16.57	105	588851	49.1299 ug/kg	99
85)	2-Chlorotoluene	16.66	91	534863	49.9430 ug/kg	99
86)	4-Chlorotoluene	16.71	91	455474	46.0013 ug/kg	99
87)	a-Methylstyrene	16.98	118	291760	53.4236 ug/kg	98
88)	tert-Butylbenzene	17.03	134	122167	48.6177 ug/kg	87
89)	1,2,4-Trimethylbenzene	17.09	105	602308	47.9851 ug/kg	99
90)	sec-Butylbenzene	17.31	105	759463	49.1982 ug/kg	100
91)	p-Isopropyltoluene	17.47	119	650769	49.9539 ug/kg	100
92)	1,3-Dichlorobenzene	17.67	146	342670	45.7417 ug/kg	100
93)	1,4-Dichlorobenzene	17.79	146	341897	45.6518 ug/kg	99
94)	n-Butylbenzene	17.99	91	606127	50.0418 ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	320791	46.1500 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	39616	44.3962 ug/kg	96
97)	1,2,4-Trichlorobenzene	20.43	180	233609	47.3421 ug/kg	99
98)	Hexachlorobutadiene	20.58	225	125274	48.1617 ug/kg	99
99)	Naphthalene	20.81	128	601976	48.6379 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.12	180	223814	46.7636 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972910.D 8260SL.M Fri Feb 26 15:03:23 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022616\9M972910.D Vial: 2
Acq On : 26 Feb 2016 14:40 Operator: ADC
Sample : WG558909-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 15:03 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

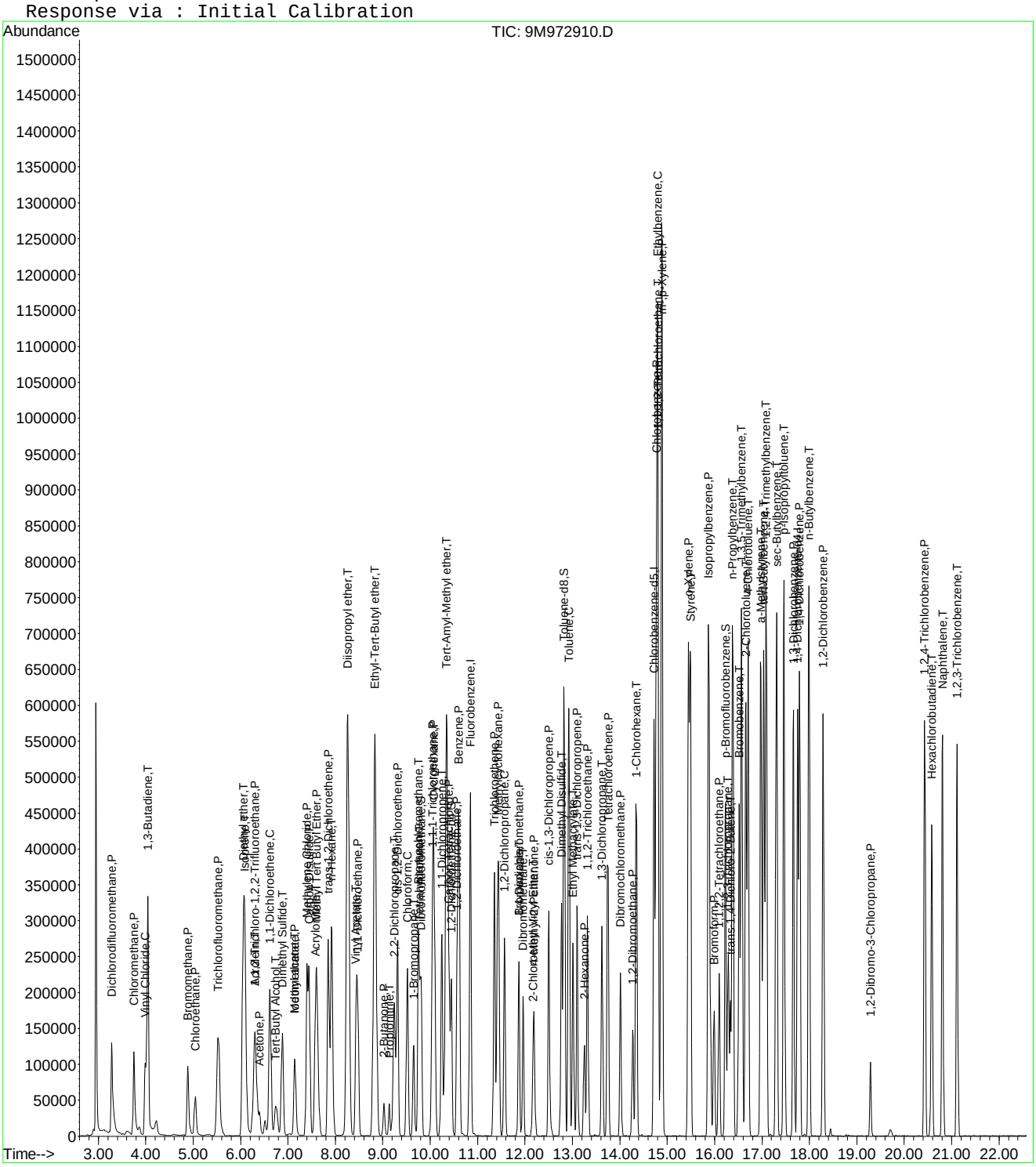

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\9M972910.D Vial: 2
Acq On : 26 Feb 2016 14:40 Operator: ADC
Sample : WG558909-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	112	0.00
2	P	Dichlorodifluoromethane	0.3408	0.3597	-5.6	102	0.00
3	P	Chloromethane	0.3271	0.3043	7.0	94	0.00
4	C	Vinyl Chloride	0.3275	0.3453	-5.5	104	0.00
5	T	1,3-Butadiene	0.3115	0.3339	-7.2	113	0.00
6	P	Bromomethane	0.2127	0.1890	11.1	101	0.00
7	P	Chloroethane	0.1459	0.1447	0.8	98	0.00
8	P	Trichlorofluoromethane	0.4911	0.4645	5.4	101	0.00
9	T	Diethyl ether	0.2296	0.2236	2.6	104	0.01
10	T	Isoprene	0.2932	0.3312	-13.0	123	0.00
11	T	Acrolein	0.0458	0.0477	-4.3	112	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	0.2533	0.2516	0.6	108	0.00
13	P	Acetone	0.1376	0.1079	21.5	94	-0.02
14	C	1,1-Dichloroethene	0.4672	0.4349	6.9	103	0.00
15	T	Tert-Butyl Alcohol	0.0511	0.0475	7.1	105	-0.02
16	T	Dimethyl Sulfide	0.1975	0.1859	5.9	99	0.00
17	T	Iodomethane	0.1273	0.1394	-9.5	101	0.01
18	P	Methyl acetate	0.2540	0.2509	1.2	107	0.00
19	P	Methylene Chloride	0.2545	0.2391	6.1	102	0.00
20	P	Carbon Disulfide	0.7198	0.7488	-4.0	114	0.00
21	T	Acrylonitrile	0.1257	0.1273	-1.3	106	0.00
22	P	Methyl Tert Butyl Ether	0.7248	0.7024	3.1	100	0.00
23	P	trans-1,2-Dichloroethene	0.4164	0.3955	5.0	101	0.00
24	T	n-Hexane	0.4295	0.4662	-8.5	123	0.00
25	T	Diisopropyl ether	0.9975	0.9683	2.9	103	0.00
26	T	Vinyl Acetate	0.5686	0.5450	4.2	101	0.00
27	P	1,1-Dichloroethane	0.5230	0.4881	6.7	99	0.00
28	T	Ethyl-Tert-Butyl ether	0.9275	0.8968	3.3	102	0.00
29	P	2-Butanone	0.1612	0.1470	8.9	99	0.00
30	T	Propionitrile	0.0493	0.0488	1.2	106	0.00
31	T	2,2-Dichloropropane	0.3904	0.3771	3.4	102	0.00
32	P	cis-1,2-Dichloroethene	0.2731	0.2660	2.6	100	0.00
33	C	Chloroform	0.4805	0.4355	9.4	96	0.00
34	T	1-Bromopropane	0.0376	0.0392	-4.2	102	0.00
35	T	Bromochloromethane	0.1774	0.1736	2.2	98	0.00
36	T	Tetrahydrofuran	0.1039	0.0991	4.6	101	0.00
37	S	Dibromofluoromethane	0.2710	0.2863	-5.6	112	0.00
38	P	1,1,1-Trichloroethane	0.4345	0.4070	6.3	97	0.00
39	P	Cyclohexane	0.4737	0.4891	-3.2	114	0.00
40	T	1,1-Dichloropropene	0.3419	0.3257	4.7	104	0.00
41	T	Tert-Amyl-Methyl ether	0.6742	0.6605	2.0	103	0.00
42	P	Carbon Tetrachloride	0.4028	0.3729	7.4	98	0.00
43	S	1,2-Dichloroethane-d4	0.3401	0.3470	-2.1	109	0.00
44		Heptane	0.0000	0.0000	0.0	109	0.00
45	P	1,2-Dichloroethane	0.4226	0.3944	6.7	96	0.00
46	P	Benzene	0.9572	0.8902	7.0	102	0.00
47	P	Trichloroethene	0.3033	0.2869	5.4	101	0.00
48	P	Methylcyclohexane	0.3804	0.4162	-9.4	118	0.00
49	C	1,2-Dichloropropane	0.2628	0.2511	4.5	98	0.00
50	T	1,4-Dioxane	0.0039	0.0042	-7.4	126	0.00
51	P	Bromodichloromethane	0.3704	0.3368	9.1	96	0.00
52	T	Dibromomethane	0.1742	0.1658	4.8	100	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0665	0.0591	11.2	89	0.00
54	P	4-Methyl-2-Pentanone	0.1154	0.1114	3.4	99	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\9M972910.D Vial: 2
Acq On : 26 Feb 2016 14:40 Operator: ADC
Sample : WG558909-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	0.3859	0.3689	4.4	100	0.00
56	T	Dimethyl Disulfide	0.3878	0.4201	-8.3	111	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	112	0.00
58	S	Toluene-d8	1.2647	1.3512	-6.8	112	0.00
59	C	Toluene	1.4286	1.3722	3.9	103	0.00
60	T	Ethyl Methacrylate	0.3960	0.4069	-2.8	108	0.00
61	P	trans-1,3-Dichloropropene	0.5145	0.4947	3.9	99	0.00
62	P	1,1,2-Trichloroethane	0.3001	0.2883	3.9	99	0.00
63	P	2-Hexanone	0.2996	0.2792	6.8	99	0.00
64	T	1,3-Dichloropropane	0.5001	0.4684	6.3	98	0.00
65	P	Tetrachloroethene	0.3063	0.2973	2.9	108	0.00
66	P	Dibromochloromethane	0.4194	0.3878	7.5	97	0.00
67	P	1,2-Dibromoethane	0.3329	0.3117	6.4	99	0.00
68	T	1-Chlorohexane	0.4213	0.4624	-9.8	116	0.00
69	P	Chlorobenzene	1.0041	0.9460	5.8	100	0.00
70	T	1,1,1,2-Tetrachloroethane	0.3771	0.3538	6.2	97	0.00
71	C	Ethylbenzene	0.5173	0.5134	0.7	105	0.00
72	P	m-,p-Xylene	0.6388	0.6122	4.2	104	0.00
73	P	o-Xylene	0.6130	0.6010	2.0	103	0.00
74	P	Styrene	1.0440	1.0260	1.7	102	0.00
75	P	Bromoform	0.2754	0.2570	6.7	94	0.00
76	P	Isopropylbenzene	1.6458	1.6225	1.4	104	0.00
77	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	111	0.00
78	P	1,1,2,2-Tetrachloroethane	0.7585	0.7209	4.9	99	0.00
79	S	p-Bromofluorobenzene	0.9736	1.0695	-9.9	113	0.00
80	T	1,2,3-Trichloropropane	0.2876	0.2729	5.1	99	0.00
81	T	trans-1,4-Dichloro-2-Butene	0.2899	0.3065	-5.7	112	0.00
82	T	n-Propylbenzene	3.9303	3.9160	0.4	106	0.00
83	T	Bromobenzene	0.9278	0.8684	6.4	99	0.00
84	T	1,3,5-Trimethylbenzene	2.9502	2.8989	1.7	104	0.00
85	T	2-Chlorotoluene	2.6361	2.6331	0.1	110	0.00
86	T	4-Chlorotoluene	2.4372	2.2423	8.0	95	0.00
87	T	a-Methylstyrene	1.3443	1.4363	-6.8	114	0.00
88	T	tert-Butylbenzene	0.6185	0.6014	2.8	100	0.00
89	T	1,2,4-Trimethylbenzene	3.0897	2.9652	4.0	104	0.00
90	T	sec-Butylbenzene	3.7998	3.7388	1.6	105	0.00
91	T	p-Isopropyltoluene	3.2067	3.2037	0.1	106	0.00
92	P	1,3-Dichlorobenzene	1.8440	1.6870	8.5	102	0.00
93	P	1,4-Dichlorobenzene	1.8435	1.6831	8.7	102	0.00
94	T	n-Butylbenzene	2.9815	2.9840	-0.1	108	0.00
95	P	1,2-Dichlorobenzene	1.7110	1.5793	7.7	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	0.2197	0.1950	11.2	92	0.00
97	P	1,2,4-Trichlorobenzene	1.2146	1.1501	5.3	105	0.00
98	T	Hexachlorobutadiene	0.6403	0.6167	3.7	106	0.00
99	T	Naphthalene	3.0465	2.9635	2.7	100	0.00
100	T	1,2,3-Trichlorobenzene	1.1781	1.1018	6.5	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\9M972910.D Vial: 2
Acq On : 26 Feb 2016 14:40 Operator: ADC
Sample : WG558909-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	112	0.00
2	P	Dichlorodifluoromethane	50.0000	52.7798	-5.6	102	0.00
3	P	Chloromethane	50.0000	46.5156	7.0	94	0.00
4	C	Vinyl Chloride	50.0000	52.7293	-5.5	104	0.00
5	T	1,3-Butadiene	50.0000	53.5907	-7.2	113	0.00
6	P	Bromomethane	50.0000	44.4361	11.1	101	0.00
7	P	Chloroethane	50.0000	49.6021	0.8	98	0.00
8	P	Trichlorofluoromethane	50.0000	47.2860	5.4	101	0.00
9	T	Diethyl ether	100.0000	97.4037	2.6	104	0.01
10	T	Isoprene	50.0000	56.4758	-13.0	123	0.00
11	T	Acrolein	50.0000	52.1318	-4.3	112	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	49.6755	0.6	108	0.00
13	P	Acetone	50.0000	42.3349	15.3	94	-0.02
14	C	1,1-Dichloroethene	50.0000	46.5339	6.9	103	0.00
15	T	Tert-Butyl Alcohol	200.0000	185.8766	7.1	105	-0.02
16	T	Dimethyl Sulfide	50.0000	47.0732	5.9	99	0.00
17	T	Iodomethane	50.0000	50.1952	-0.4	101	0.01
18	P	Methyl acetate	50.0000	49.3845	1.2	107	0.00
19	P	Methylene Chloride	50.0000	46.9725	6.1	102	0.00
20	P	Carbon Disulfide	50.0000	52.0176	-4.0	114	0.00
21	T	Acrylonitrile	50.0000	50.6498	-1.3	106	0.00
22	P	Methyl Tert Butyl Ether	50.0000	48.4604	3.1	100	0.00
23	P	trans-1,2-Dichloroethene	50.0000	47.4823	5.0	101	0.00
24	T	n-Hexane	50.0000	54.2664	-8.5	123	0.00
25	T	Diisopropyl ether	100.0000	97.0722	2.9	103	0.00
26	T	Vinyl Acetate	50.0000	47.9213	4.2	101	0.00
27	P	1,1-Dichloroethane	50.0000	46.6599	6.7	99	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	96.6911	3.3	102	0.00
29	P	2-Butanone	50.0000	45.5723	8.9	99	0.00
30	T	Propionitrile	100.0000	98.8166	1.2	106	0.00
31	T	2,2-Dichloropropane	50.0000	48.3061	3.4	102	0.00
32	P	cis-1,2-Dichloroethene	50.0000	48.6999	2.6	100	0.00
33	C	Chloroform	50.0000	45.3209	9.4	96	0.00
34	T	1-Bromopropane	50.0000	47.0920	5.8	102	0.00
35	T	Bromochloromethane	50.0000	48.9224	2.2	98	0.00
36	T	Tetrahydrofuran	100.0000	95.3587	4.6	101	0.00
37	S	Dibromofluoromethane	50.0000	52.8232	-5.6	112	0.00
38	P	1,1,1-Trichloroethane	50.0000	46.8404	6.3	97	0.00
39	P	Cyclohexane	50.0000	51.6238	-3.2	114	0.00
40	T	1,1-Dichloropropene	50.0000	47.6259	4.7	104	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	97.9748	2.0	103	0.00
42	P	Carbon Tetrachloride	50.0000	46.2898	7.4	98	0.00
43	S	1,2-Dichloroethane-d4	50.0000	51.0268	-2.1	109	0.00
44		Heptane	-1.0000	0.0000	0.0	109	0.00
45	P	1,2-Dichloroethane	50.0000	46.6584	6.7	96	0.00
46	P	Benzene	50.0000	46.5005	7.0	102	0.00
47	P	Trichloroethene	50.0000	47.2918	5.4	101	0.00
48	P	Methylcyclohexane	50.0000	54.7013	-9.4	118	0.00
49	C	1,2-Dichloropropane	50.0000	47.7743	4.5	98	0.00
50	T	1,4-Dioxane	200.0000	214.4532	-7.2	126	0.00
51	P	Bromodichloromethane	50.0000	45.4666	9.1	96	0.00
52	T	Dibromomethane	50.0000	47.6007	4.8	100	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	41.2102	17.6	89	0.00
54	P	4-Methyl-2-Pentanone	50.0000	48.2943	3.4	99	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\9M972910.D Vial: 2
Acq On : 26 Feb 2016 14:40 Operator: ADC
Sample : WG558909-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	47.7964	4.4	100	0.00
56	T	Dimethyl Disulfide	50.0000	54.1639	-8.3	111	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	112	0.00
58	S	Toluene-d8	50.0000	53.4185	-6.8	112	0.00
59	C	Toluene	50.0000	48.0260	3.9	103	0.00
60	T	Ethyl Methacrylate	50.0000	51.3797	-2.8	108	0.00
61	P	trans-1,3-Dichloropropene	50.0000	48.0704	3.9	99	0.00
62	P	1,1,2-Trichloroethane	50.0000	48.0359	3.9	99	0.00
63	P	2-Hexanone	50.0000	46.5847	6.8	99	0.00
64	T	1,3-Dichloropropane	50.0000	46.8383	6.3	98	0.00
65	P	Tetrachloroethene	50.0000	48.5309	2.9	108	0.00
66	P	Dibromochloromethane	50.0000	46.2285	7.5	97	0.00
67	P	1,2-Dibromoethane	50.0000	46.8216	6.4	99	0.00
68	T	1-Chlorohexane	50.0000	54.8818	-9.8	116	0.00
69	P	Chlorobenzene	50.0000	47.1110	5.8	100	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	46.9096	6.2	97	0.00
71	C	Ethylbenzene	50.0000	49.6278	0.7	105	0.00
72	P	m-,p-Xylene	100.0000	95.8341	4.2	104	0.00
73	P	o-Xylene	50.0000	49.0212	2.0	103	0.00
74	P	Styrene	50.0000	49.1395	1.7	102	0.00
75	P	Bromoform	50.0000	46.6578	6.7	94	0.00
76	P	Isopropylbenzene	50.0000	49.2938	1.4	104	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	111	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	47.5254	4.9	99	0.00
79	S	p-Bromofluorobenzene	50.0000	54.9246	-9.8	113	0.00
80	T	1,2,3-Trichloropropane	50.0000	47.4313	5.1	99	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	52.8646	-5.7	112	0.00
82	T	n-Propylbenzene	50.0000	49.8184	0.4	106	0.00
83	T	Bromobenzene	50.0000	46.7958	6.4	99	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	49.1299	1.7	104	0.00
85	T	2-Chlorotoluene	50.0000	49.9430	0.1	110	0.00
86	T	4-Chlorotoluene	50.0000	46.0013	8.0	95	0.00
87	T	a-Methylstyrene	50.0000	53.4236	-6.8	114	0.00
88	T	tert-Butylbenzene	50.0000	48.6177	2.8	100	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	47.9851	4.0	104	0.00
90	T	sec-Butylbenzene	50.0000	49.1982	1.6	105	0.00
91	T	p-Isopropyltoluene	50.0000	49.9539	0.1	106	0.00
92	P	1,3-Dichlorobenzene	50.0000	45.7417	8.5	102	0.00
93	P	1,4-Dichlorobenzene	50.0000	45.6518	8.7	102	0.00
94	T	n-Butylbenzene	50.0000	50.0418	-0.1	108	0.00
95	P	1,2-Dichlorobenzene	50.0000	46.1500	7.7	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	50.0000	44.3962	11.2	92	0.00
97	P	1,2,4-Trichlorobenzene	50.0000	47.3421	5.3	105	0.00
98	T	Hexachlorobutadiene	50.0000	48.1617	3.7	106	0.00
99	T	Naphthalene	50.0000	48.6379	2.7	100	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	46.7636	6.5	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972910.D 8260SL.M Sun Feb 28 11:48:39 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022816\9M972943.D Vial: 1
Acq On : 28 Feb 2016 15:39 Operator: FJB
Sample : WG559001-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 28 16:01:54 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	732812	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.73	117	530822	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.76	152	244479	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	195655	49.2559 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.52%		
43) 1,2-Dichloroethane-d4	10.45	65	235275	47.2068 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.42%		
58) Toluene-d8	12.83	98	679948	50.6415 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.28%		
79) p-Bromofluorobenzene	16.23	95	253762	53.3055 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 106.62%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	255669	51.1877 ug/kg	98
3) Chloromethane	3.74	50	237878	49.6157 ug/kg	99
4) Vinyl Chloride	3.99	62	281647	58.6826 ug/kg	97
5) 1,3-Butadiene	4.04	54	277289	60.7273 ug/kg	100
6) Bromomethane	4.88	94	144526	46.3646 ug/kg	97
7) Chloroethane	5.03	64	121259	56.7104 ug/kg	100
8) Trichlorofluoromethane	5.53	101	378043	52.5180 ug/kg	98
9) Diethyl ether	6.05	59	347080	103.1427 ug/kg	98
10) Isoprene	6.09	67	252186	58.6811 ug/kg	98
11) Acrolein	6.30	56	35961	53.5942 ug/kg	89
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	206090	55.5156 ug/kg	97
13) Acetone	6.40	43	82979	44.5417 ug/kg	96
14) 1,1-Dichloroethene	6.61	61	350129	51.1283 ug/kg	100
15) Tert-Butyl Alcohol	6.75	59	129255	172.4992 ug/kg	100
16) Dimethyl Sulfide	6.88	62	153089	52.8941 ug/kg	100
17) Iodomethane	7.13	142	119269	58.1274 ug/kg	99
18) Methyl acetate	7.14	43	189178	50.8161 ug/kg	98
19) Methylene Chloride	7.40	84	192261	51.5501 ug/kg	100
20) Carbon Disulfide	7.44	76	570333	54.0638 ug/kg	99
21) Acrylonitrile	7.59	53	93884	50.9784 ug/kg	100
22) Methyl Tert Butyl Ether	7.60	73	550471	51.8223 ug/kg	98
23) trans-1,2-Dichloroethene	7.85	61	333591	54.6595 ug/kg	99
24) n-Hexane	7.91	57	329962	52.4173 ug/kg	99
25) Diisopropyl ether	8.26	45	1547882	105.8746 ug/kg	100
26) Vinyl Acetate	8.43	43	415947	49.9077 ug/kg	99
27) 1,1-Dichloroethane	8.46	63	404833	52.8118 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	1414220	104.0345 ug/kg	99
29) 2-Butanone	9.02	43	109584	46.3725 ug/kg	99
30) Propionitrile	9.14	54	69360	95.9114 ug/kg	99
31) 2,2-Dichloropropane	9.24	77	319816	55.8973 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	214776	53.6566 ug/kg	100
33) Chloroform	9.52	83	357914	50.8276 ug/kg	100
34) 1-Bromopropane	9.65	122	29428	48.2660 ug/kg	94
35) Bromochloromethane	9.75	130	136766	52.5995 ug/kg	95
36) Tetrahydrofuran	9.77	42	143735	94.3620 ug/kg	98
38) 1,1,1-Trichloroethane	10.04	97	334516	52.5302 ug/kg	97
39) Cyclohexane	10.08	56	363229	52.3172 ug/kg	98
40) 1,1-Dichloropropene	10.25	75	268036	53.4904 ug/kg	99
41) Tert-Amyl-Methyl ether	10.34	73	1012333	102.4517 ug/kg	99
42) Carbon Tetrachloride	10.39	117	306580	51.9296 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972943.D 8260SL.M Sun Feb 28 16:01:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022816\9M972943.D Vial: 1
Acq On : 28 Feb 2016 15:39 Operator: FJB
Sample : WG559001-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 28 16:01:54 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	317216	51.2139 ug/kg	98
46)	Benzene	10.60	78	727414	51.8521 ug/kg	99
47)	Trichloroethene	11.35	130	240348	54.0708 ug/kg	100
48)	Methylcyclohexane	11.44	83	300727	53.9417 ug/kg	99
49)	1,2-Dichloropropane	11.56	63	206485	53.5995 ug/kg	100
50)	1,4-Dioxane	11.88	88	12097	209.3142 ug/kg	87
51)	Bromodichloromethane	11.87	83	269979	49.7273 ug/kg	100
52)	Dibromomethane	11.97	174	128582	50.3748 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.17	63	43438	41.3253 ug/kg	100
54)	4-Methyl-2-Pentanone	12.19	58	82842	48.9932 ug/kg	98
55)	cis-1,3-Dichloropropene	12.50	75	295012	52.1559 ug/kg	100
56)	Dimethyl Disulfide	12.77	94	315072	55.4286 ug/kg	99
59)	Toluene	12.93	91	799044	52.6846 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	221989	52.8048 ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	282331	51.6846 ug/kg	98
62)	1,1,2-Trichloroethane	13.32	97	164612	51.6668 ug/kg	97
63)	2-Hexanone	13.25	43	156155	49.0891 ug/kg	100
64)	1,3-Dichloropropane	13.62	76	274333	51.6746 ug/kg	99
65)	Tetrachloroethene	13.75	164	171910	52.8728 ug/kg	98
66)	Dibromochloromethane	14.01	129	218895	49.1602 ug/kg	100
67)	1,2-Dibromoethane	14.28	107	174593	49.4052 ug/kg	100
68)	1-Chlorohexane	14.35	91	249869	55.8673 ug/kg	99
69)	Chlorobenzene	14.77	112	552693	51.8503 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	208071	51.9786 ug/kg	96
71)	Ethylbenzene	14.79	106	301134	54.8352 ug/kg	96
72)	m-,p-Xylene	14.89	106	707295	104.2898 ug/kg	98
73)	o-Xylene	15.46	106	345370	53.0651 ug/kg	98
74)	Styrene	15.49	104	594591	53.6483 ug/kg	99
75)	Bromoform	16.00	173	148169	50.6819 ug/kg	99
76)	Isopropylbenzene	15.88	105	936851	53.6193 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.10	83	190339	51.3234 ug/kg	99
80)	1,2,3-Trichloropropane	16.29	110	73485	52.2483 ug/kg	99
81)	trans-1,4-Dichloro-2-Buten	16.33	53	81443	57.4473 ug/kg	87
82)	n-Propylbenzene	16.39	91	1076349	56.0089 ug/kg	100
83)	Bromobenzene	16.52	156	237935	52.4465 ug/kg	96
84)	1,3,5-Trimethylbenzene	16.58	105	797381	55.2760 ug/kg	99
85)	2-Chlorotoluene	16.66	91	674103	52.2984 ug/kg	99
86)	4-Chlorotoluene	16.70	91	662318	55.5780 ug/kg	99
87)	a-Methylstyrene	16.98	118	384287	58.4646 ug/kg	100
88)	tert-Butylbenzene	17.04	134	171725	56.7812 ug/kg	98
89)	1,2,4-Trimethylbenzene	17.09	105	806963	53.4161 ug/kg	100
90)	sec-Butylbenzene	17.30	105	1035118	55.7138 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	862001	54.9770 ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	464056	51.4679 ug/kg	99
93)	1,4-Dichlorobenzene	17.80	146	459544	50.9824 ug/kg	100
94)	n-Butylbenzene	17.99	91	794680	54.5119 ug/kg	99
95)	1,2-Dichlorobenzene	18.30	146	430011	51.3996 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	50673	47.1826 ug/kg	98
97)	1,2,4-Trichlorobenzene	20.44	180	303332	51.0748 ug/kg	100
98)	Hexachlorobutadiene	20.59	225	164229	52.4592 ug/kg	100
99)	Naphthalene	20.81	128	723204	48.5497 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	291110	50.5368 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972943.D 8260SL.M Sun Feb 28 16:01:54 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022816\9M972943.D Vial: 1
Acq On : 28 Feb 2016 15:39 Operator: FJB
Sample : WG559001-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 28 16:01 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

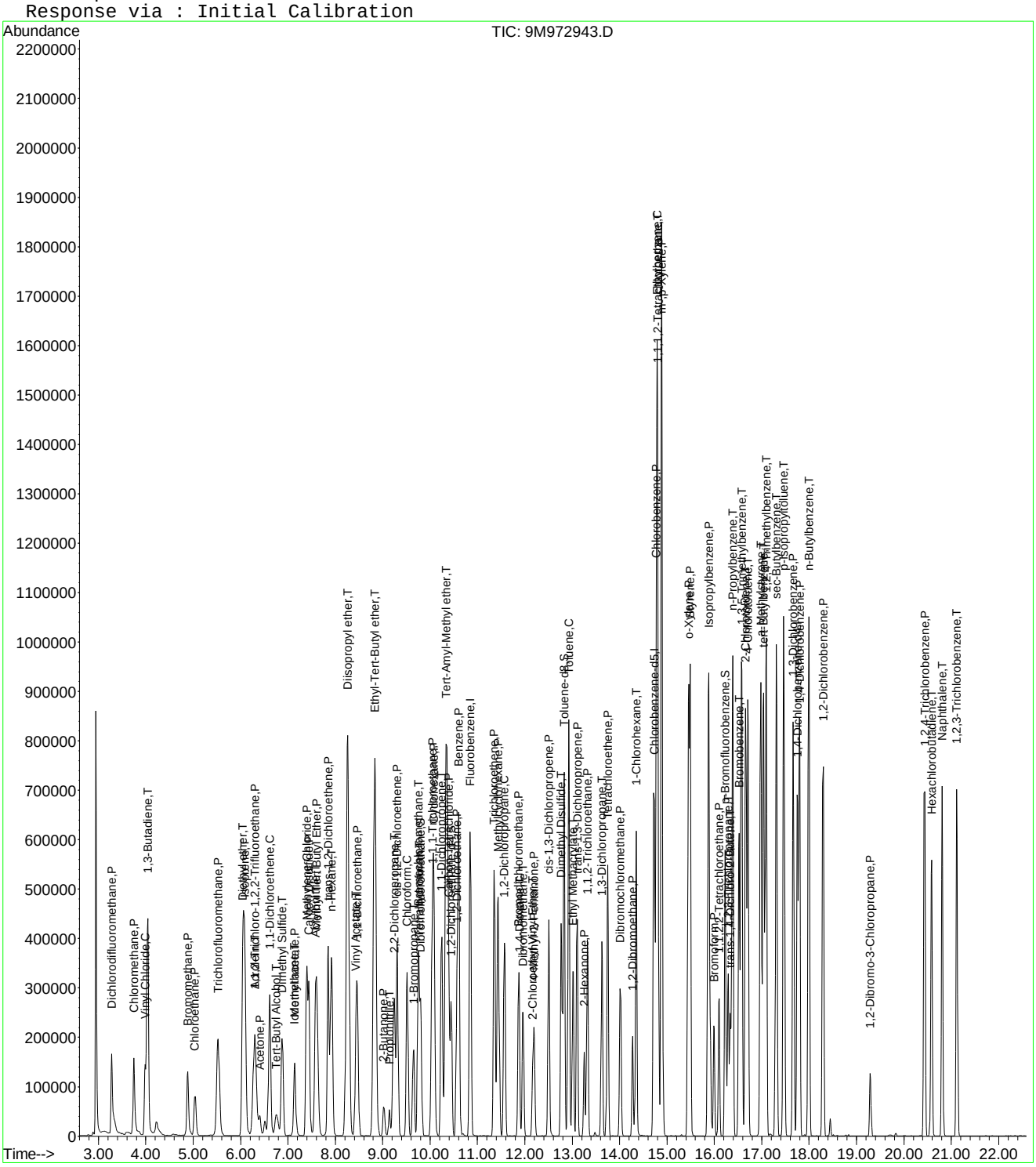

9M972943.D 8260SL.M Sun Feb 28 16:01:54 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022816\9M972943.D Vial: 1
Acq On : 28 Feb 2016 15:39 Operator: FJB
Sample : WG559001-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	142	0.00
2	P	Dichlorodifluoromethane	0.3408	0.3489	-2.4	125	0.00
3	P	Chloromethane	0.3271	0.3246	0.8	127	0.00
4	C	Vinyl Chloride	0.3275	0.3843	-17.4	146	0.00
5	T	1,3-Butadiene	0.3115	0.3784	-21.5	162	0.00
6	P	Bromomethane	0.2127	0.1972	7.3	134	0.00
7	P	Chloroethane	0.1459	0.1655	-13.4	142	0.00
8	P	Trichlorofluoromethane	0.4911	0.5159	-5.0	142	0.00
9	T	Diethyl ether	0.2296	0.2368	-3.1	139	0.00
10	T	Isoprene	0.2932	0.3441	-17.4	161	0.00
11	T	Acrolein	0.0458	0.0491	-7.2	146	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	0.2533	0.2812	-11.0	153	0.00
13	P	Acetone	0.1376	0.1132	17.7	125	0.00
14	C	1,1-Dichloroethene	0.4672	0.4778	-2.3	143	0.00
15	T	Tert-Butyl Alcohol	0.0511	0.0441	13.7	123	0.00
16	T	Dimethyl Sulfide	0.1975	0.2089	-5.8	140	0.00
17	T	Iodomethane	0.1273	0.1628	-27.9#	150	0.00
18	P	Methyl acetate	0.2540	0.2581	-1.6	139	0.00
19	P	Methylene Chloride	0.2545	0.2624	-3.1	142	0.00
20	P	Carbon Disulfide	0.7198	0.7783	-8.1	149	0.00
21	T	Acrylonitrile	0.1257	0.1281	-1.9	135	0.00
22	P	Methyl Tert Butyl Ether	0.7248	0.7512	-3.6	135	0.00
23	P	trans-1,2-Dichloroethene	0.4164	0.4552	-9.3	147	0.00
24	T	n-Hexane	0.4295	0.4503	-4.8	150	0.00
25	T	Diisopropyl ether	0.9975	1.0561	-5.9	142	0.00
26	T	Vinyl Acetate	0.5686	0.5676	0.2	133	0.00
27	P	1,1-Dichloroethane	0.5230	0.5524	-5.6	142	0.00
28	T	Ethyl-Tert-Butyl ether	0.9275	0.9649	-4.0	138	0.00
29	P	2-Butanone	0.1612	0.1495	7.3	127	0.00
30	T	Propionitrile	0.0493	0.0473	4.1	130	0.00
31	T	2,2-Dichloropropane	0.3904	0.4364	-11.8	149	0.00
32	P	cis-1,2-Dichloroethene	0.2731	0.2931	-7.3	140	0.00
33	C	Chloroform	0.4805	0.4884	-1.7	136	0.00
34	T	1-Bromopropane	0.0376	0.0402	-6.8	133	0.00
35	T	Bromochloromethane	0.1774	0.1866	-5.2	133	0.00
36	T	Tetrahydrofuran	0.1039	0.0981	5.6	126	0.00
37	S	Dibromofluoromethane	0.2710	0.2670	1.5	132	0.00
38	P	1,1,1-Trichloroethane	0.4345	0.4565	-5.1	137	0.00
39	P	Cyclohexane	0.4737	0.4957	-4.6	147	0.00
40	T	1,1-Dichloropropene	0.3419	0.3658	-7.0	147	0.00
41	T	Tert-Amyl-Methyl ether	0.6742	0.6907	-2.5	137	0.00
42	P	Carbon Tetrachloride	0.4028	0.4184	-3.9	139	0.00
43	S	1,2-Dichloroethane-d4	0.3401	0.3211	5.6	128	0.00
44		Heptane	0.0000	0.0000	0.0	139	0.00
45	P	1,2-Dichloroethane	0.4226	0.4329	-2.4	133	0.00
46	P	Benzene	0.9572	0.9926	-3.7	145	0.00
47	P	Trichloroethene	0.3033	0.3280	-8.1	147	0.00
48	P	Methylcyclohexane	0.3804	0.4104	-7.9	147	0.00
49	C	1,2-Dichloropropane	0.2628	0.2818	-7.2	139	0.00
50	T	1,4-Dioxane	0.0039	0.0041	-4.8	155	0.00
51	P	Bromodichloromethane	0.3704	0.3684	0.5	132	0.00
52	T	Dibromomethane	0.1742	0.1755	-0.7	134	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0665	0.0593	10.9	113	0.00
54	P	4-Methyl-2-Pentanone	0.1154	0.1131	2.0	127	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022816\9M972943.D Vial: 1
Acq On : 28 Feb 2016 15:39 Operator: FJB
Sample : WG559001-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	0.3859	0.4026	-4.3	139	0.00
56	T	Dimethyl Disulfide	0.3878	0.4300	-10.9	143	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	140	0.00
58	S	Toluene-d8	1.2647	1.2809	-1.3	133	0.00
59	C	Toluene	1.4286	1.5053	-5.4	142	0.00
60	T	Ethyl Methacrylate	0.3960	0.4182	-5.6	140	0.00
61	P	trans-1,3-Dichloropropene	0.5145	0.5319	-3.4	133	0.00
62	P	1,1,2-Trichloroethane	0.3001	0.3101	-3.3	134	0.00
63	P	2-Hexanone	0.2996	0.2942	1.8	131	0.00
64	T	1,3-Dichloropropane	0.5001	0.5168	-3.3	136	0.00
65	P	Tetrachloroethene	0.3063	0.3239	-5.7	147	0.00
66	P	Dibromochloromethane	0.4194	0.4124	1.7	130	0.00
67	P	1,2-Dibromoethane	0.3329	0.3289	1.2	132	0.00
68	T	1-Chlorohexane	0.4213	0.4707	-11.7	148	0.00
69	P	Chlorobenzene	1.0041	1.0412	-3.7	138	0.00
70	T	1,1,1,2-Tetrachloroethane	0.3771	0.3920	-4.0	135	0.00
71	C	Ethylbenzene	0.5173	0.5673	-9.7	145	0.00
72	P	m-,p-Xylene	0.6388	0.6662	-4.3	142	0.00
73	P	o-Xylene	0.6130	0.6506	-6.1	140	0.01
74	P	Styrene	1.0440	1.1201	-7.3	140	0.00
75	P	Bromoform	0.2754	0.2791	-1.4	128	0.00
76	P	Isopropylbenzene	1.6458	1.7649	-7.2	142	0.00
77	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	134	0.00
78	P	1,1,2,2-Tetrachloroethane	0.7585	0.7785	-2.6	129	0.00
79	S	p-Bromofluorobenzene	0.9736	1.0380	-6.6	132	0.00
80	T	1,2,3-Trichloropropane	0.2876	0.3006	-4.5	132	0.00
81	T	trans-1,4-Dichloro-2-Butene	0.2899	0.3331	-14.9	147	0.00
82	T	n-Propylbenzene	3.9303	4.4026	-12.0	143	0.00
83	T	Bromobenzene	0.9278	0.9732	-4.9	134	0.00
84	T	1,3,5-Trimethylbenzene	2.9502	3.2616	-10.6	140	0.00
85	T	2-Chlorotoluene	2.6361	2.7573	-4.6	139	0.00
86	T	4-Chlorotoluene	2.4372	2.7091	-11.2	138	0.00
87	T	a-Methylstyrene	1.3443	1.5719	-16.9	150	0.00
88	T	tert-Butylbenzene	0.6185	0.7024	-13.6	141	0.00
89	T	1,2,4-Trimethylbenzene	3.0897	3.3007	-6.8	139	0.00
90	T	sec-Butylbenzene	3.7998	4.2340	-11.4	143	0.00
91	T	p-Isopropyltoluene	3.2067	3.5259	-10.0	141	0.00
92	P	1,3-Dichlorobenzene	1.8440	1.8981	-2.9	138	0.00
93	P	1,4-Dichlorobenzene	1.8435	1.8797	-2.0	137	0.00
94	T	n-Butylbenzene	2.9815	3.2505	-9.0	141	0.00
95	P	1,2-Dichlorobenzene	1.7110	1.7589	-2.8	134	0.00
96	P	1,2-Dibromo-3-Chloropropane	0.2197	0.2073	5.6	118	0.00
97	P	1,2,4-Trichlorobenzene	1.2146	1.2407	-2.1	136	0.00
98	T	Hexachlorobutadiene	0.6403	0.6717	-4.9	140	0.00
99	T	Naphthalene	3.0465	2.9581	2.9	120	0.00
100	T	1,2,3-Trichlorobenzene	1.1781	1.1907	-1.1	131	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972943.D 8260SL.M Mon Feb 29 09:26:19 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022816\9M972943.D Vial: 1
Acq On : 28 Feb 2016 15:39 Operator: FJB
Sample : WG559001-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	142	0.00
2	P	Dichlorodifluoromethane	50.0000	51.1877	-2.4	125	0.00
3	P	Chloromethane	50.0000	49.6157	0.8	127	0.00
4	C	Vinyl Chloride	50.0000	58.6826	-17.4	146	0.00
5	T	1,3-Butadiene	50.0000	60.7273	-21.5	162	0.00
6	P	Bromomethane	50.0000	46.3646	7.3	134	0.00
7	P	Chloroethane	50.0000	56.7104	-13.4	142	0.00
8	P	Trichlorofluoromethane	50.0000	52.5180	-5.0	142	0.00
9	T	Diethyl ether	100.0000	103.1427	-3.1	139	0.00
10	T	Isoprene	50.0000	58.6811	-17.4	161	0.00
11	T	Acrolein	50.0000	53.5942	-7.2	146	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	55.5156	-11.0	153	0.00
13	P	Acetone	50.0000	44.5417	10.9	125	0.00
14	C	1,1-Dichloroethene	50.0000	51.1283	-2.3	143	0.00
15	T	Tert-Butyl Alcohol	200.0000	172.4992	13.8	123	0.00
16	T	Dimethyl Sulfide	50.0000	52.8941	-5.8	140	0.00
17	T	Iodomethane	50.0000	58.1274	-16.3	150	0.00
18	P	Methyl acetate	50.0000	50.8161	-1.6	139	0.00
19	P	Methylene Chloride	50.0000	51.5501	-3.1	142	0.00
20	P	Carbon Disulfide	50.0000	54.0638	-8.1	149	0.00
21	T	Acrylonitrile	50.0000	50.9784	-2.0	135	0.00
22	P	Methyl Tert Butyl Ether	50.0000	51.8223	-3.6	135	0.00
23	P	trans-1,2-Dichloroethene	50.0000	54.6595	-9.3	147	0.00
24	T	n-Hexane	50.0000	52.4173	-4.8	150	0.00
25	T	Diisopropyl ether	100.0000	105.8746	-5.9	142	0.00
26	T	Vinyl Acetate	50.0000	49.9077	0.2	133	0.00
27	P	1,1-Dichloroethane	50.0000	52.8118	-5.6	142	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	104.0346	-4.0	138	0.00
29	P	2-Butanone	50.0000	46.3725	7.3	127	0.00
30	T	Propionitrile	100.0000	95.9114	4.1	130	0.00
31	T	2,2-Dichloropropane	50.0000	55.8973	-11.8	149	0.00
32	P	cis-1,2-Dichloroethene	50.0000	53.6566	-7.3	140	0.00
33	C	Chloroform	50.0000	50.8276	-1.7	136	0.00
34	T	1-Bromopropane	50.0000	48.2660	3.5	133	0.00
35	T	Bromochloromethane	50.0000	52.5995	-5.2	133	0.00
36	T	Tetrahydrofuran	100.0000	94.3620	5.6	126	0.00
37	S	Dibromofluoromethane	50.0000	49.2559	1.5	132	0.00
38	P	1,1,1-Trichloroethane	50.0000	52.5302	-5.1	137	0.00
39	P	Cyclohexane	50.0000	52.3172	-4.6	147	0.00
40	T	1,1-Dichloropropene	50.0000	53.4904	-7.0	147	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	102.4517	-2.5	137	0.00
42	P	Carbon Tetrachloride	50.0000	51.9296	-3.9	139	0.00
43	S	1,2-Dichloroethane-d4	50.0000	47.2068	5.6	128	0.00
44		Heptane	-1.0000	0.0000	0.0	139	0.00
45	P	1,2-Dichloroethane	50.0000	51.2139	-2.4	133	0.00
46	P	Benzene	50.0000	51.8521	-3.7	145	0.00
47	P	Trichloroethene	50.0000	54.0708	-8.1	147	0.00
48	P	Methylcyclohexane	50.0000	53.9417	-7.9	147	0.00
49	C	1,2-Dichloropropane	50.0000	53.5995	-7.2	139	0.00
50	T	1,4-Dioxane	200.0000	209.3142	-4.7	155	0.00
51	P	Bromodichloromethane	50.0000	49.7273	0.5	132	0.00
52	T	Dibromomethane	50.0000	50.3748	-0.7	134	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	41.3253	17.3	113	0.00
54	P	4-Methyl-2-Pentanone	50.0000	48.9932	2.0	127	0.00

(#) = Out of Range
9M972943.D 8260SL.M Mon Feb 29 09:26:18 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022816\9M972943.D Vial: 1
Acq On : 28 Feb 2016 15:39 Operator: FJB
Sample : WG559001-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	52.1559	-4.3	139	0.00
56	T	Dimethyl Disulfide	50.0000	55.4286	-10.9	143	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	140	0.00
58	S	Toluene-d8	50.0000	50.6415	-1.3	133	0.00
59	C	Toluene	50.0000	52.6846	-5.4	142	0.00
60	T	Ethyl Methacrylate	50.0000	52.8048	-5.6	140	0.00
61	P	trans-1,3-Dichloropropene	50.0000	51.6846	-3.4	133	0.00
62	P	1,1,2-Trichloroethane	50.0000	51.6668	-3.3	134	0.00
63	P	2-Hexanone	50.0000	49.0891	1.8	131	0.00
64	T	1,3-Dichloropropane	50.0000	51.6746	-3.3	136	0.00
65	P	Tetrachloroethene	50.0000	52.8728	-5.7	147	0.00
66	P	Dibromochloromethane	50.0000	49.1602	1.7	130	0.00
67	P	1,2-Dibromoethane	50.0000	49.4052	1.2	132	0.00
68	T	1-Chlorohexane	50.0000	55.8674	-11.7	148	0.00
69	P	Chlorobenzene	50.0000	51.8503	-3.7	138	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	51.9785	-4.0	135	0.00
71	C	Ethylbenzene	50.0000	54.8352	-9.7	145	0.00
72	P	m-,p-Xylene	100.0000	104.2899	-4.3	142	0.00
73	P	o-Xylene	50.0000	53.0650	-6.1	140	0.01
74	P	Styrene	50.0000	53.6483	-7.3	140	0.00
75	P	Bromoform	50.0000	50.6819	-1.4	128	0.00
76	P	Isopropylbenzene	50.0000	53.6193	-7.2	142	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	134	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	51.3234	-2.6	129	0.00
79	S	p-Bromofluorobenzene	50.0000	53.3055	-6.6	132	0.00
80	T	1,2,3-Trichloropropane	50.0000	52.2483	-4.5	132	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	57.4474	-14.9	147	0.00
82	T	n-Propylbenzene	50.0000	56.0089	-12.0	143	0.00
83	T	Bromobenzene	50.0000	52.4465	-4.9	134	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	55.2760	-10.6	140	0.00
85	T	2-Chlorotoluene	50.0000	52.2984	-4.6	139	0.00
86	T	4-Chlorotoluene	50.0000	55.5780	-11.2	138	0.00
87	T	a-Methylstyrene	50.0000	58.4646	-16.9	150	0.00
88	T	tert-Butylbenzene	50.0000	56.7811	-13.6	141	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	53.4161	-6.8	139	0.00
90	T	sec-Butylbenzene	50.0000	55.7138	-11.4	143	0.00
91	T	p-Isopropyltoluene	50.0000	54.9770	-10.0	141	0.00
92	P	1,3-Dichlorobenzene	50.0000	51.4679	-2.9	138	0.00
93	P	1,4-Dichlorobenzene	50.0000	50.9824	-2.0	137	0.00
94	T	n-Butylbenzene	50.0000	54.5119	-9.0	141	0.00
95	P	1,2-Dichlorobenzene	50.0000	51.3996	-2.8	134	0.00
96	P	1,2-Dibromo-3-Chloropropane	50.0000	47.1826	5.6	118	0.00
97	P	1,2,4-Trichlorobenzene	50.0000	51.0748	-2.1	136	0.00
98	T	Hexachlorobutadiene	50.0000	52.4592	-4.9	140	0.00
99	T	Naphthalene	50.0000	48.5497	2.9	120	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	50.5368	-1.1	131	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972943.D 8260SL.M Mon Feb 29 09:26:18 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\1\DATA\022516\9M972894.D          Vial: 3
Acq On    : 25 Feb 2016  14:45                       Operator: ADC
Sample    : WG558732-01 BFB 50ng                     Inst    : hpms9
Misc      : 7,1 STD74773                             Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 02/15/16  HPMS9
```

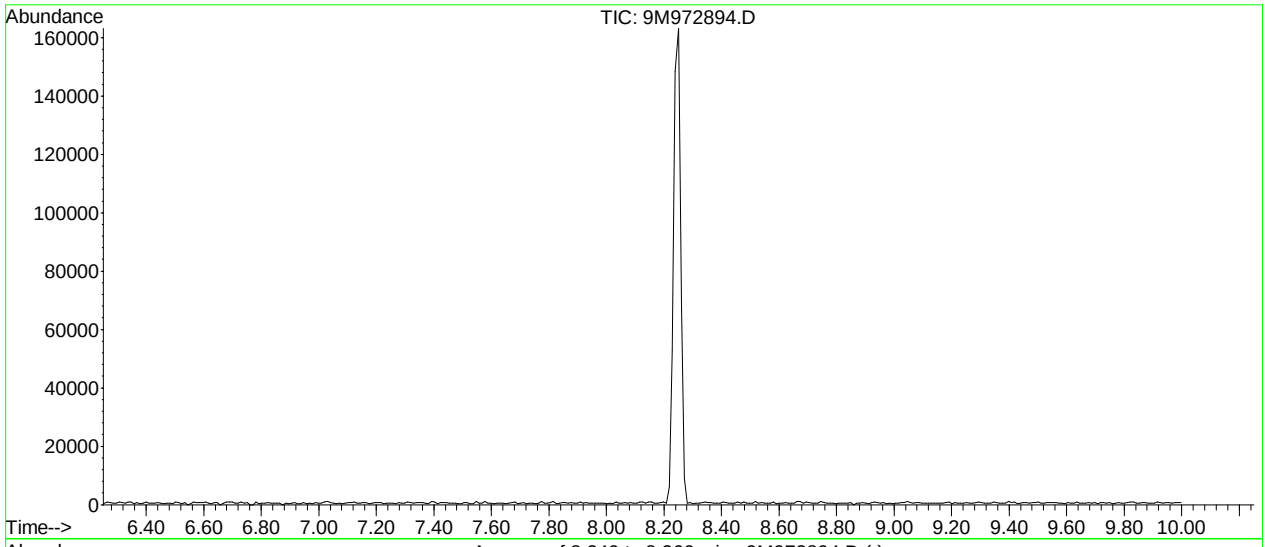

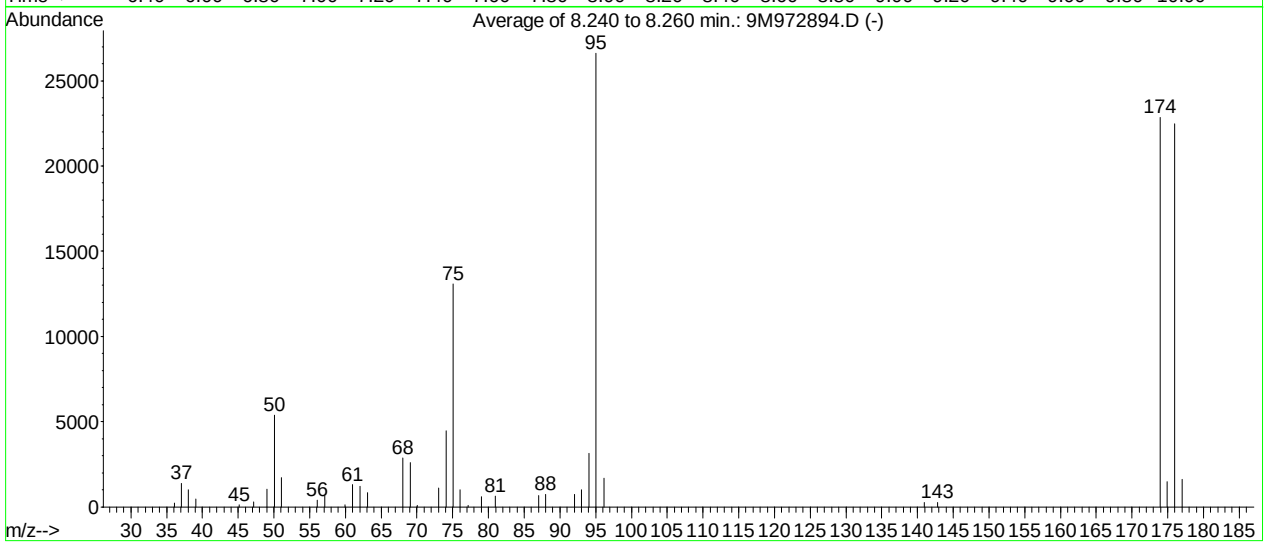

AutoFind: Scans 305, 306, 307; Background Corrected with Scan 300

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.2	5378	PASS
75	95	30	60	49.1	13067	PASS
95	95	100	100	100.0	26621	PASS
96	95	5	9	6.3	1683	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	85.8	22851	PASS
175	174	5	9	6.5	1485	PASS
176	174	95	101	98.3	22461	PASS
177	176	5	9	7.2	1619	PASS

9M972894.D 8260SL.M Fri Feb 26 11:11:03 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\022616\9M972908.D          Vial: 1
Acq On    : 26 Feb 2016  13:44                       Operator: ADC
Sample    : WG558909-01 BFB 50ng                     Inst    : hpms9
Misc      : 7,1 STD74202                             Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 02/15/16  HPMS9
```

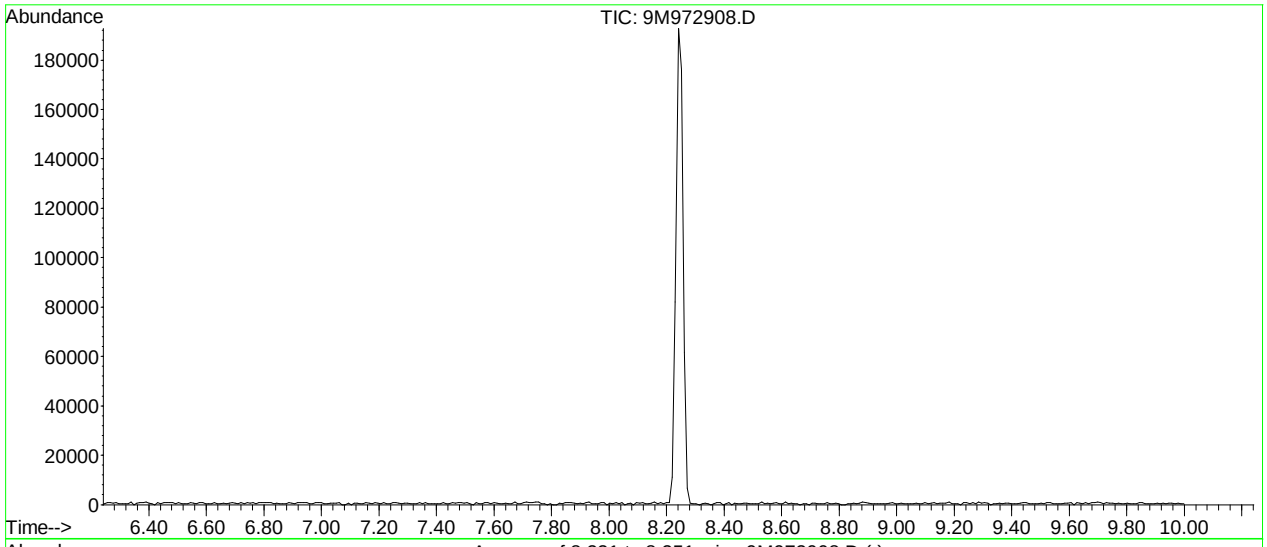

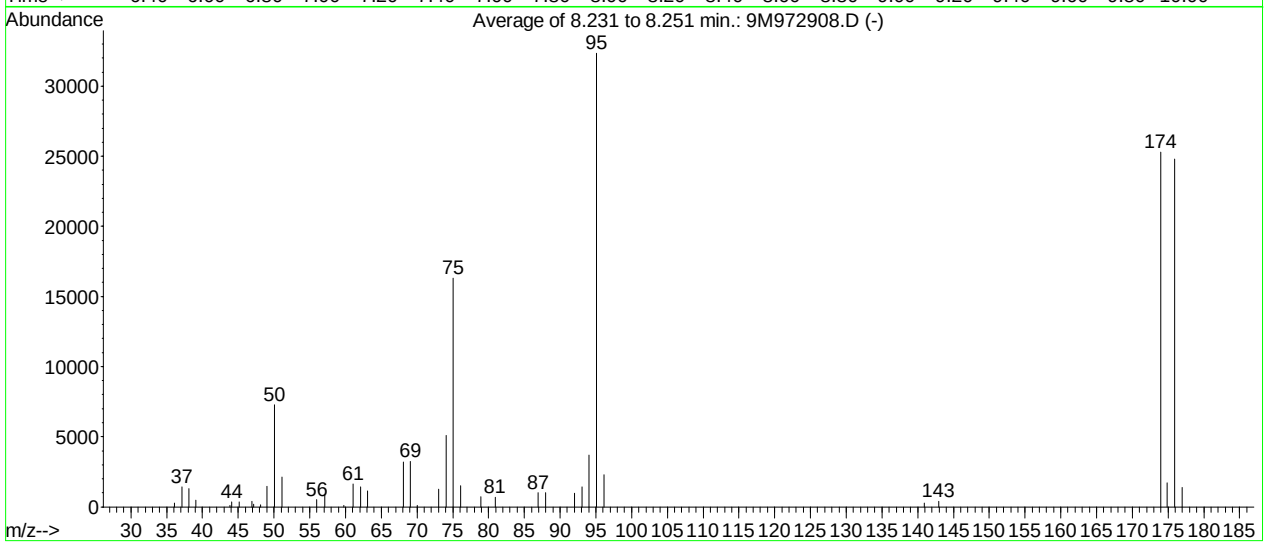

AutoFind: Scans 304, 305, 306; Background Corrected with Scan 300

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.5	7293	PASS
75	95	30	60	50.4	16315	PASS
95	95	100	100	100.0	32352	PASS
96	95	5	9	7.1	2301	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	78.1	25282	PASS
175	174	5	9	6.7	1693	PASS
176	174	95	101	98.1	24798	PASS
177	176	5	9	5.7	1403	PASS

9M972908.D 8260SL.M Sun Feb 28 11:48:21 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\022816\9M972942.D          Vial: 1
Acq On    : 28 Feb 2016  15:15                       Operator: FJB
Sample    : WG559001-01 BFB 50ng 8260                Inst    : hpms9
Misc      : 7,1 STD74606                             Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 02/25/16  HPMS9
```

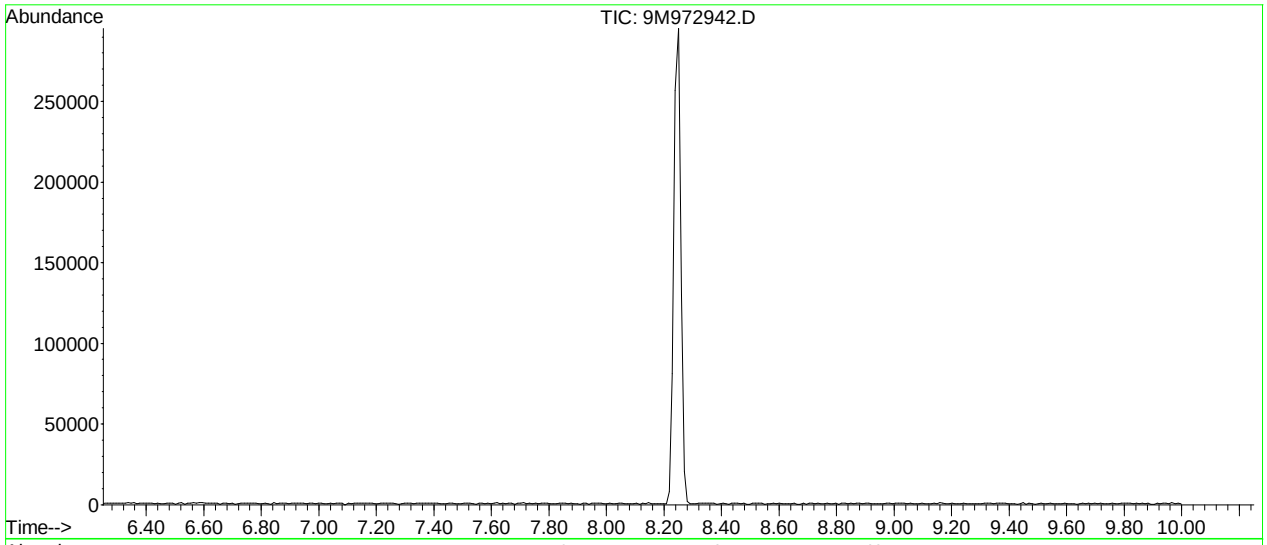

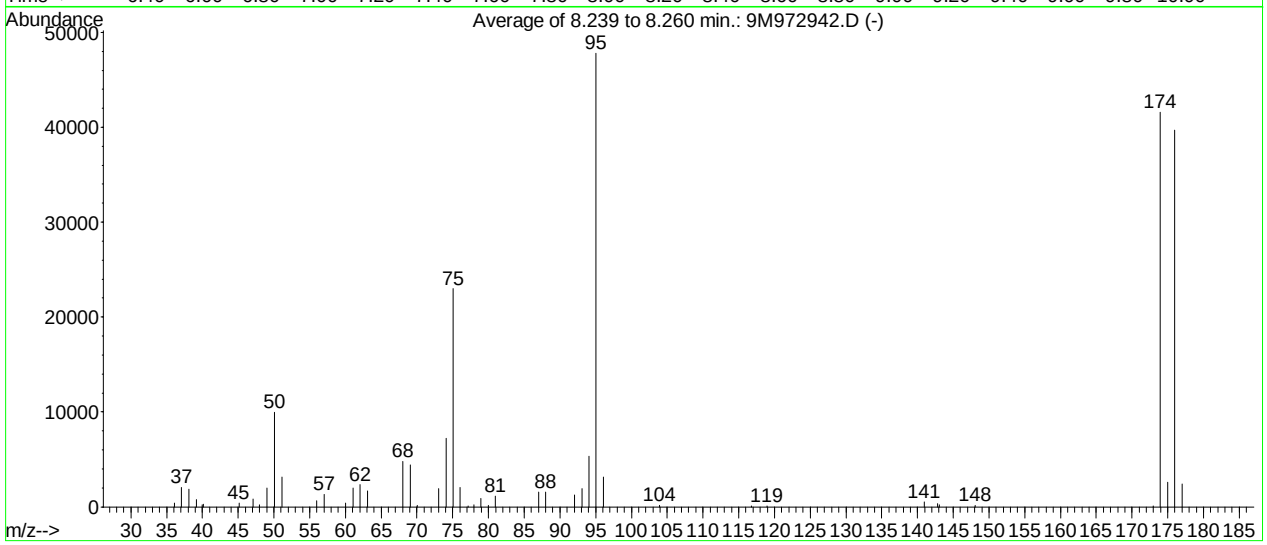

AutoFind: Scans 305, 306, 307; Background Corrected with Scan 300

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.8	9950	PASS
75	95	30	60	48.0	22972	PASS
95	95	100	100	100.0	47813	PASS
96	95	5	9	6.6	3156	PASS
173	174	0.00	2	0.3	115	PASS
174	95	50	100	86.9	41573	PASS
175	174	5	9	6.3	2621	PASS
176	174	95	101	95.5	39704	PASS
177	176	5	9	6.0	2399	PASS

9M972942.D 8260SL.M Mon Feb 29 09:26:07 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\9M972912.D Vial: 3
Acq On : 26 Feb 2016 15:42 Operator: ADC
Sample : WG558910-01 VBLK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 11:43:01 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	602902	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	423405	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	194102	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	167287	51.1888 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 102.38%		
43) 1,2-Dichloroethane-d4	10.45	65	204591	49.8955 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.80%		
58) Toluene-d8	12.83	98	592942	55.3651 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 110.74%		
79) p-Bromofluorobenzene	16.23	95	215903	57.1237 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 114.24%		

Target Compounds

					Qvalue
13) Acetone	6.41	43	5153	1.0388 ug/kg	96
17) Iodomethane	7.13	142	771	3.2330 ug/kg#	34
19) Methylene Chloride	7.41	84	1411	0.4598 ug/kg	74
56) Dimethyl Disulfide	12.82	94	16454	3.5184 ug/kg#	29
97) 1,2,4-Trichlorobenzene	20.43	180	3039	0.6445 ug/kg#	86
99) Naphthalene	20.81	128	8079	0.6831 ug/kg	96
100) 1,2,3-Trichlorobenzene	21.11	180	2762	0.6039 ug/kg	92

(#) = qualifier out of range (m) = manual integration
9M972912.D 8260SL.M Mon Feb 29 11:43:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\9M972912.D Vial: 3
Acq On : 26 Feb 2016 15:42 Operator: ADC
Sample : WG558910-01 VBLK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 11:43 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

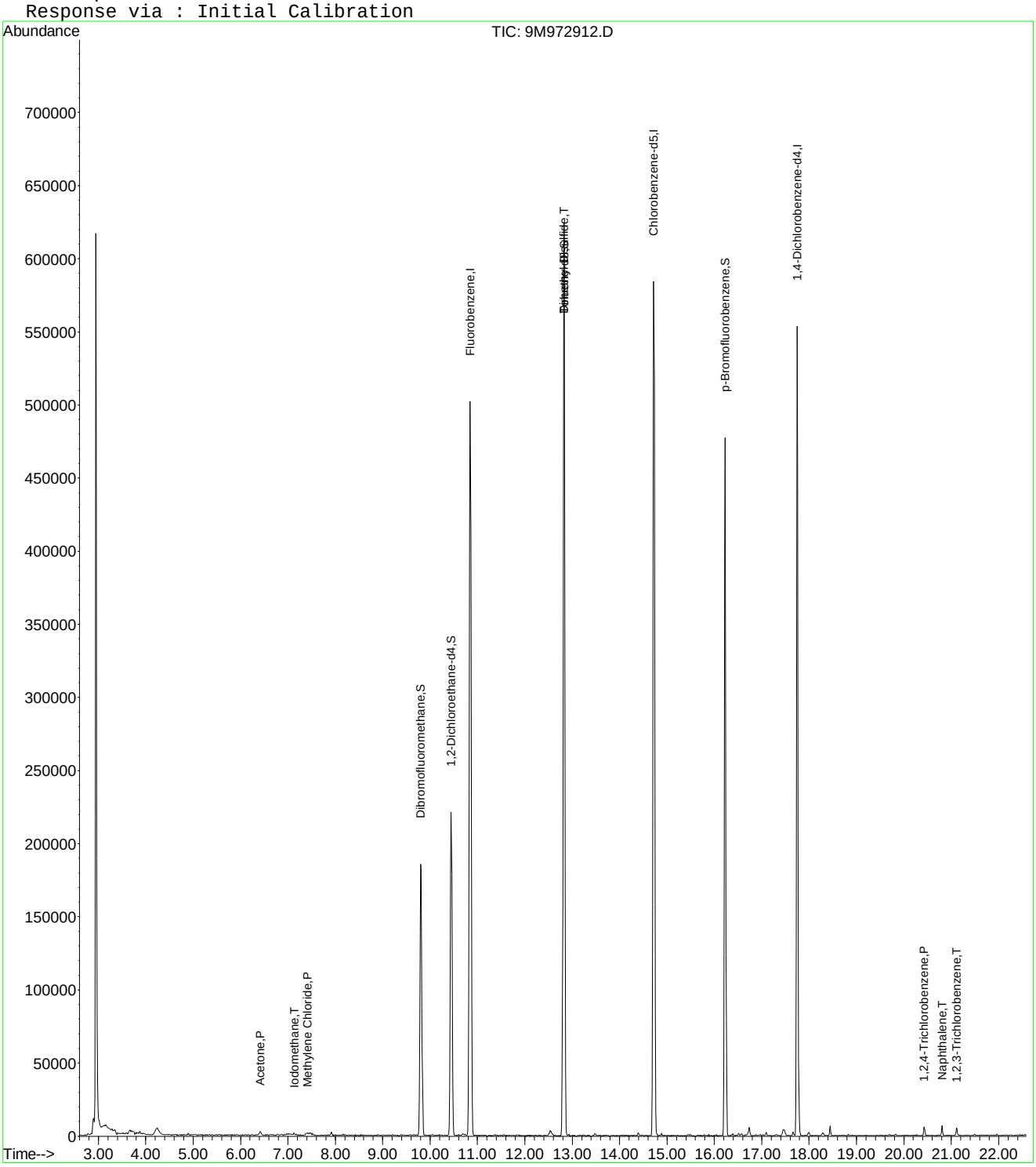

9M972912.D 8260SL.M Mon Feb 29 11:43:01 2016 Page 2

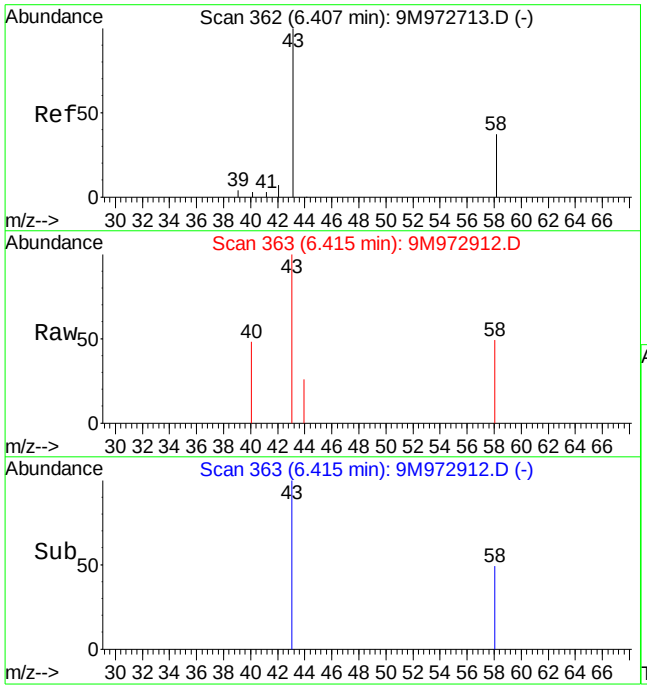

#13
Acetone
Concen: 1.04 ug/kg
RT: 6.41 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M972912.D
Acq: 26 Feb 2016 15:42

Tgt Ion: 43 Resp: 5153

Ion	Ratio	Lower	Upper
43	100		
58	30.3	16.9	39.3

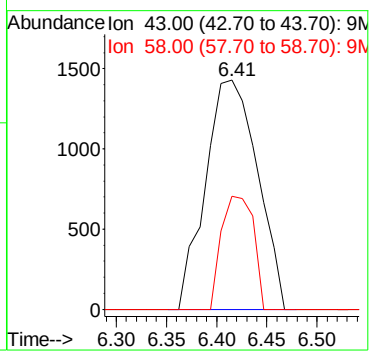

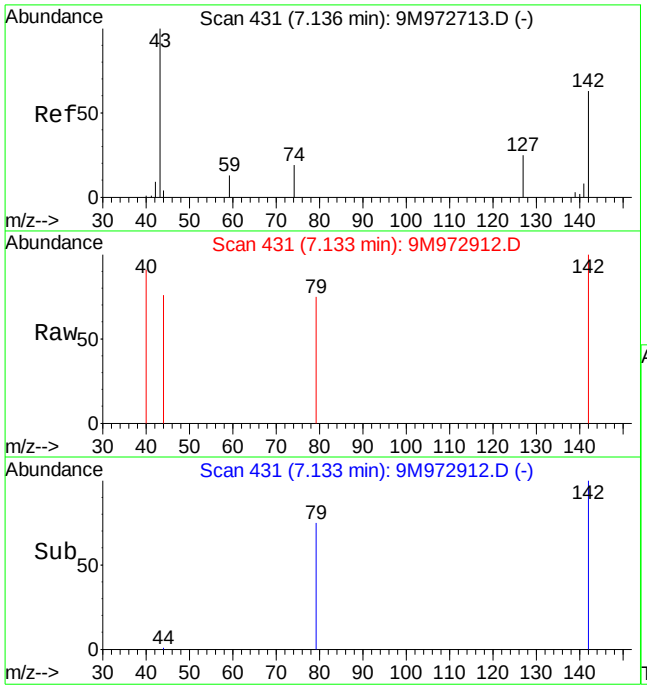

#17
Iodomethane
Concen: 3.23 ug/kg
RT: 7.13 min Scan# 431
Delta R.T. 0.00 min
Lab File: 9M972912.D
Acq: 26 Feb 2016 15:42

Tgt Ion:142 Resp: 771

Ion	Ratio	Lower	Upper
142	100		
127	0.0	25.1	58.7#

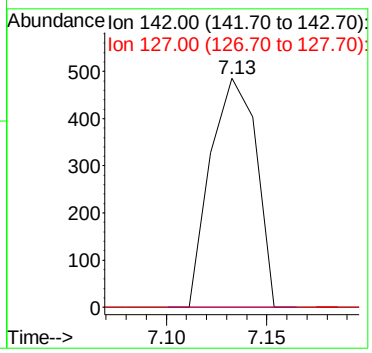

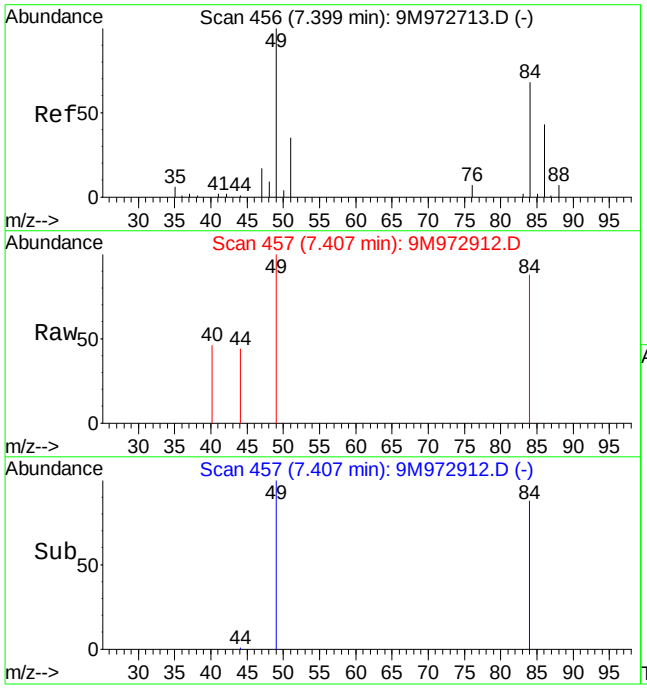

#19
Methylene Chloride
Concen: 0.46 ug/kg
RT: 7.41 min Scan# 457
Delta R.T. 0.01 min
Lab File: 9M972912.D
Acq: 26 Feb 2016 15:42

Tgt Ion: 84 Resp: 1411

Ion	Ratio	Lower	Upper
84	100		
49	134.4	101.8	237.4

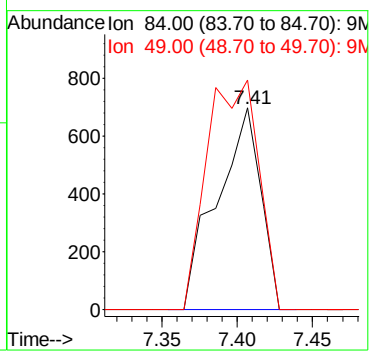

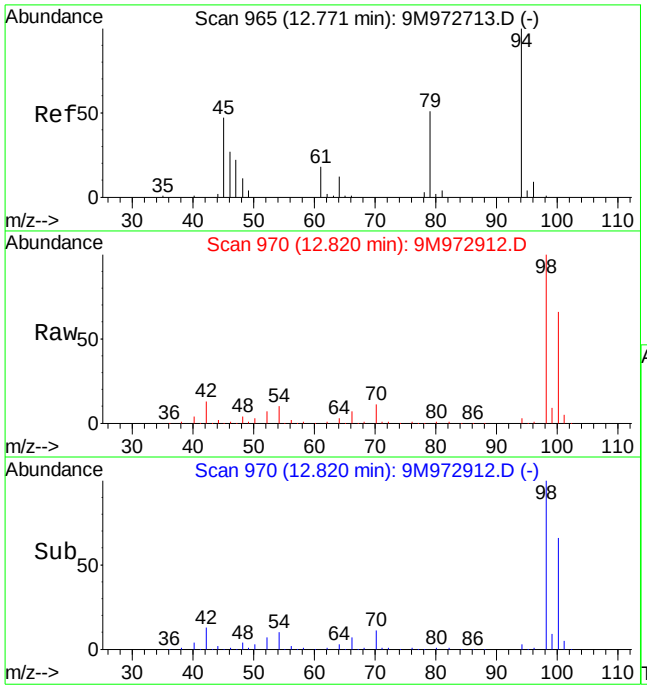

#56
Dimethyl Disulfide
Concen: 3.52 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M972912.D
Acq: 26 Feb 2016 15:42

Tgt Ion: 94 Resp: 16454

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

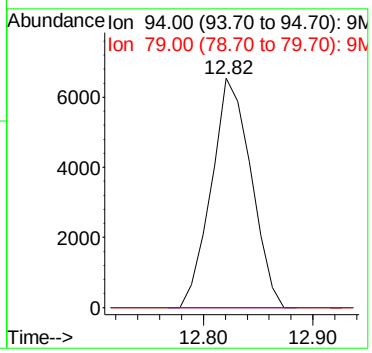

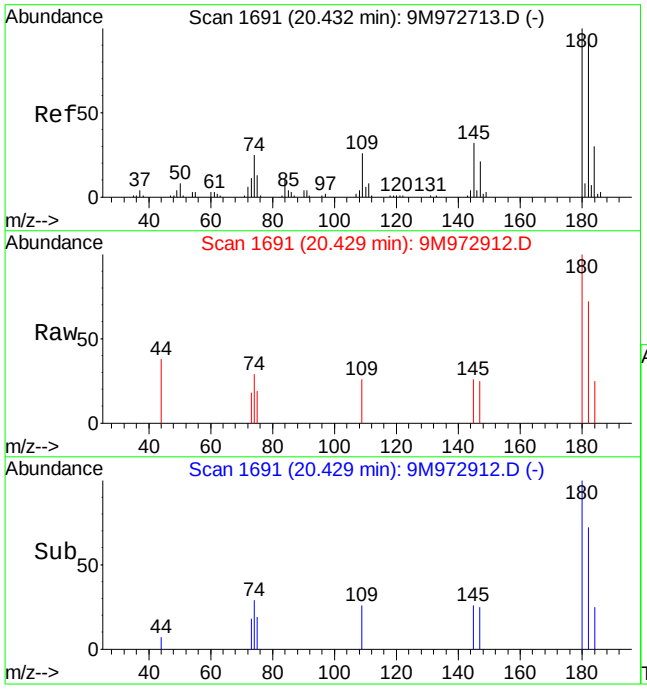

#97
1,2,4-Trichlorobenzene
Concen: 0.64 ug/kg
RT: 20.43 min Scan# 1691
Delta R.T. -0.01 min
Lab File: 9M972912.D
Acq: 26 Feb 2016 15:42

Tgt Ion:180 Resp: 3039

Ion	Ratio	Lower	Upper
180	100		
182	87.4	57.5	134.1
145	15.6	19.3	45.1#

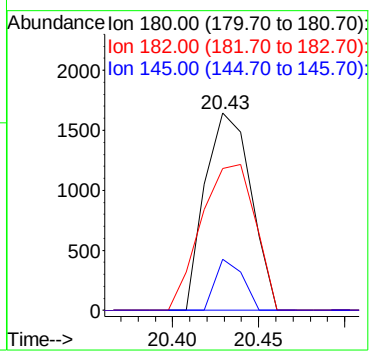

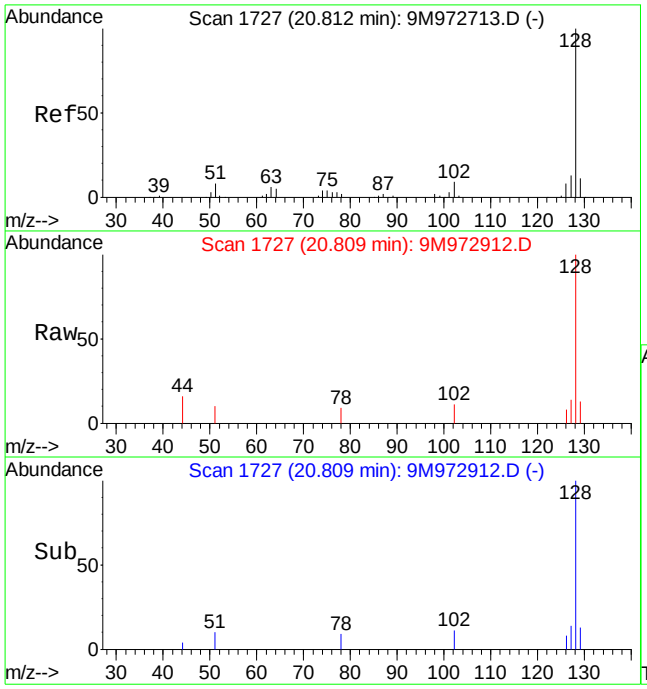

#99
Naphthalene
Concen: 0.68 ug/kg
RT: 20.81 min Scan# 1727
Delta R.T. 0.00 min
Lab File: 9M972912.D
Acq: 26 Feb 2016 15:42

Tgt Ion:128 Resp: 8079

Ion	Ratio	Lower	Upper
128	100		
127	11.1	7.7	17.9

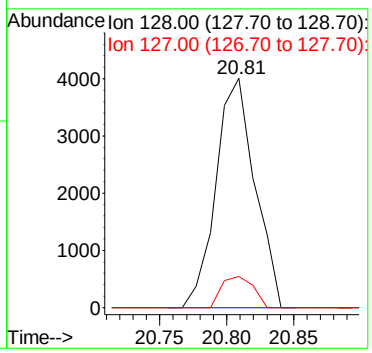

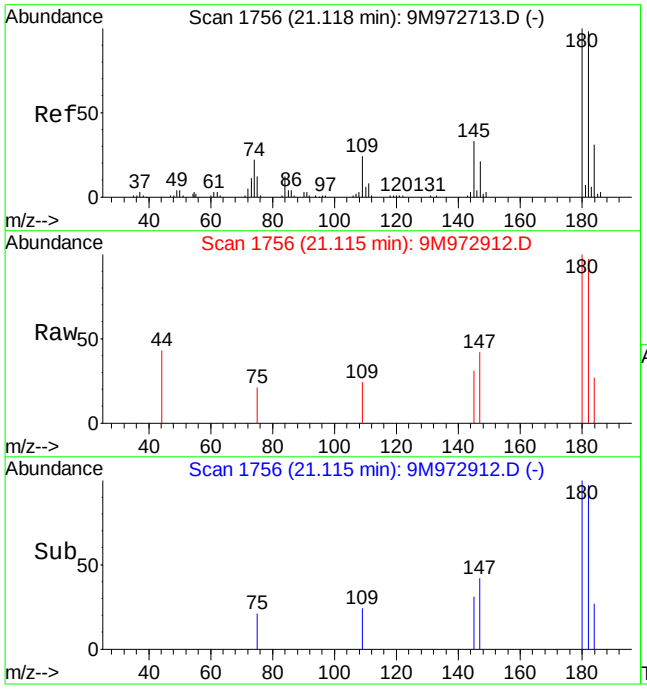

#100
1,2,3-Trichlorobenzene
Concen: 0.60 ug/kg
RT: 21.11 min Scan# 1756
Delta R.T. 0.00 min
Lab File: 9M972912.D
Acq: 26 Feb 2016 15:42

Tgt Ion:180 Resp: 2762

Ion	Ratio	Lower	Upper
180	100		
182	106.1	57.6	134.4
145	34.9	20.2	47.0

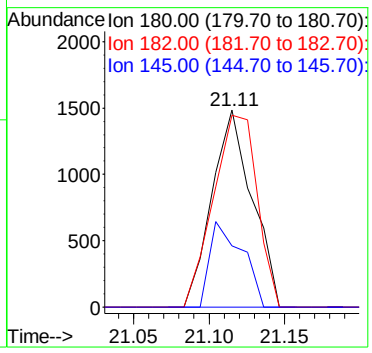

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022816\9M972945.D Vial: 3
Acq On : 28 Feb 2016 16:39 Operator: FJB
Sample : WG559002-01 VBLK0228 BLANK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 13:25:49 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	620113	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	441195	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	204353	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	171981	51.1646 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 102.32%		
43) 1,2-Dichloroethane-d4	10.45	65	220352	52.2478 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.50%		
58) Toluene-d8	12.83	98	616842	55.2743 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 110.54%		
79) p-Bromofluorobenzene	16.23	95	224016	56.2970 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 112.60%		

Target Compounds					Qvalue
6) Bromomethane	4.90	94	1094	0.4147 ug/kg#	52
13) Acetone	6.42	43	3635	Below Cal	95
17) Iodomethane	7.13	142	1078	3.3893 ug/kg#	34
36) Tetrahydrofuran	9.78	42	581	0.4507 ug/kg#	65
56) Dimethyl Disulfide	12.83	94	18043	3.7511 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972945.D 8260SL.M Mon Feb 29 13:25:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022816\9M972945.D Vial: 3
Acq On : 28 Feb 2016 16:39 Operator: FJB
Sample : WG559002-01 VBLK0228 BLANK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 13:25 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

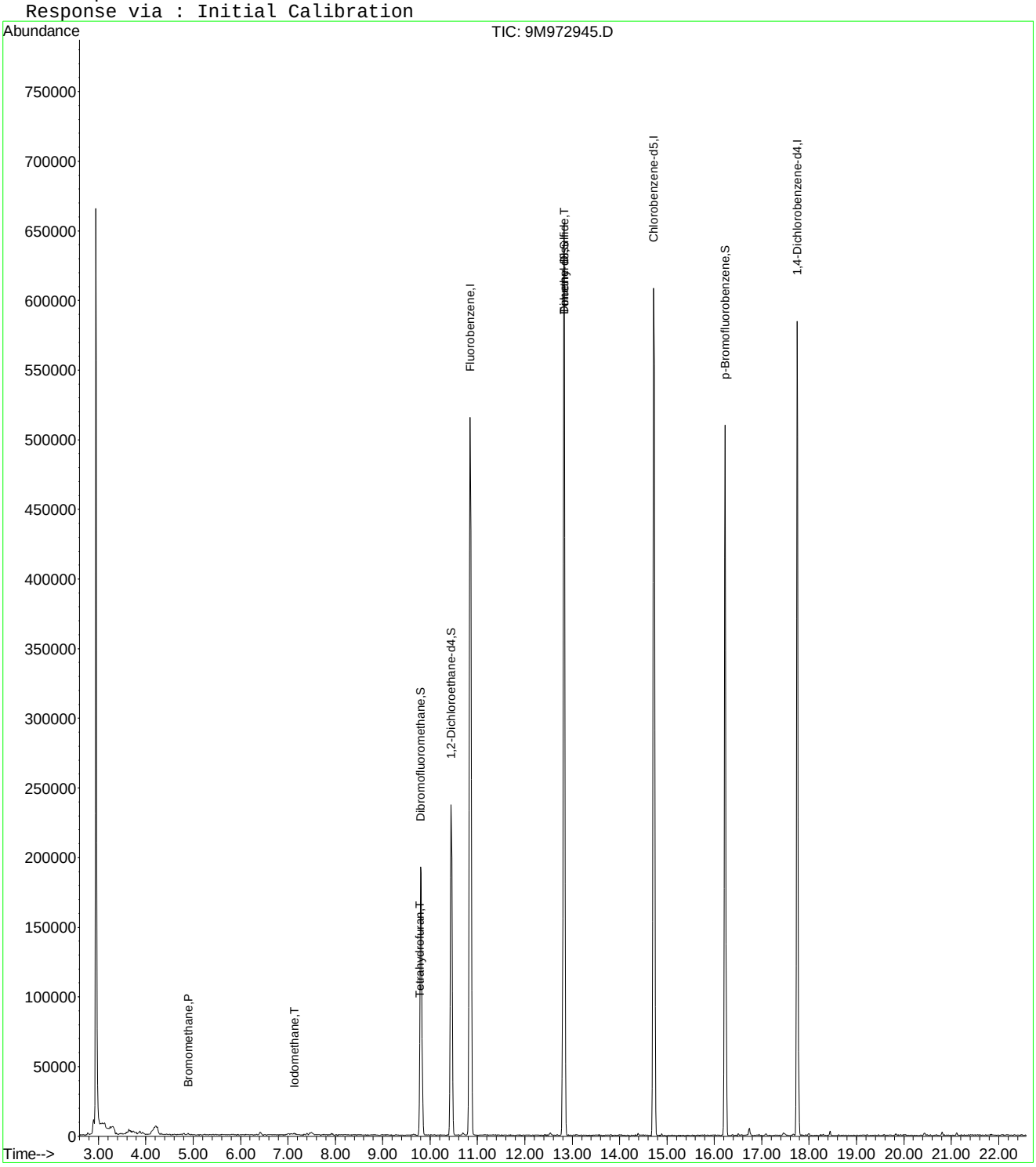

9M972945.D 8260SL.M Mon Feb 29 13:25:49 2016 Page 2

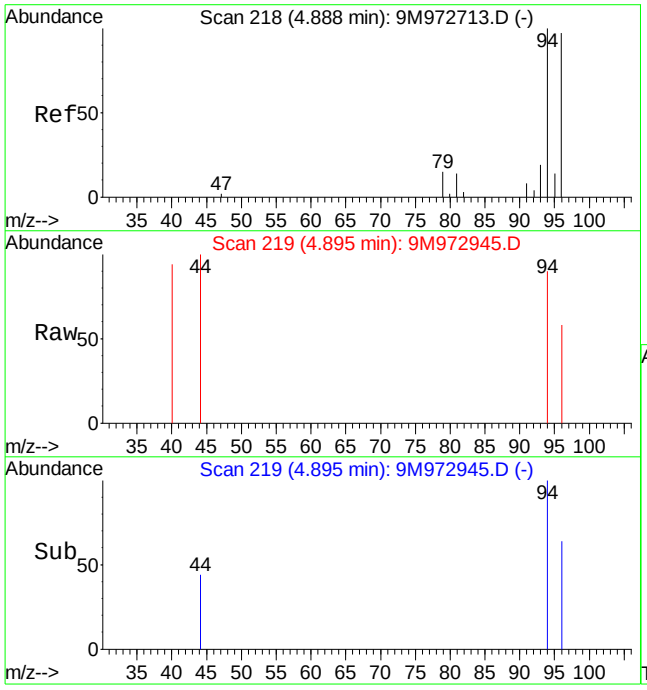

#6
Bromomethane
Concen: 0.41 ug/kg
RT: 4.90 min Scan# 219
Delta R.T. 0.01 min
Lab File: 9M972945.D
Acq: 28 Feb 2016 16:39

Tgt Ion: 94 Resp: 1094

Ion	Ratio	Lower	Upper
94	100		
96	48.9	57.2	133.6#

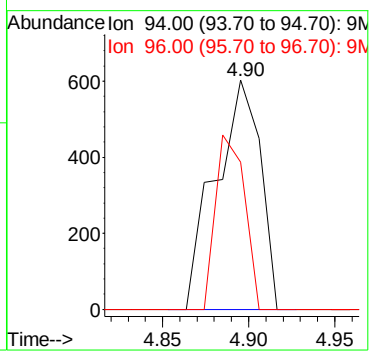

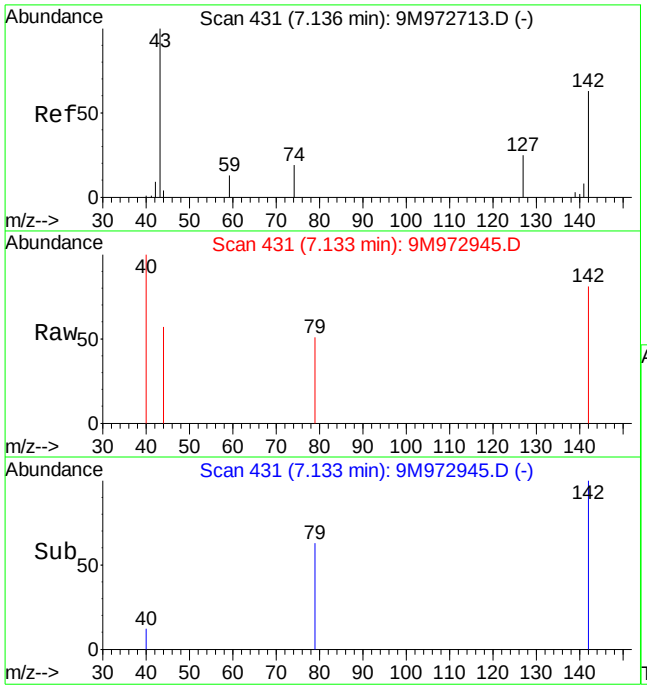

#17
Iodomethane
Concen: 3.39 ug/kg
RT: 7.13 min Scan# 431
Delta R.T. 0.00 min
Lab File: 9M972945.D
Acq: 28 Feb 2016 16:39

Tgt Ion:142 Resp: 1078

Ion	Ratio	Lower	Upper
142	100		
127	0.0	25.1	58.7#

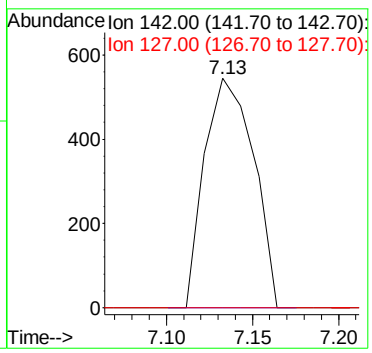

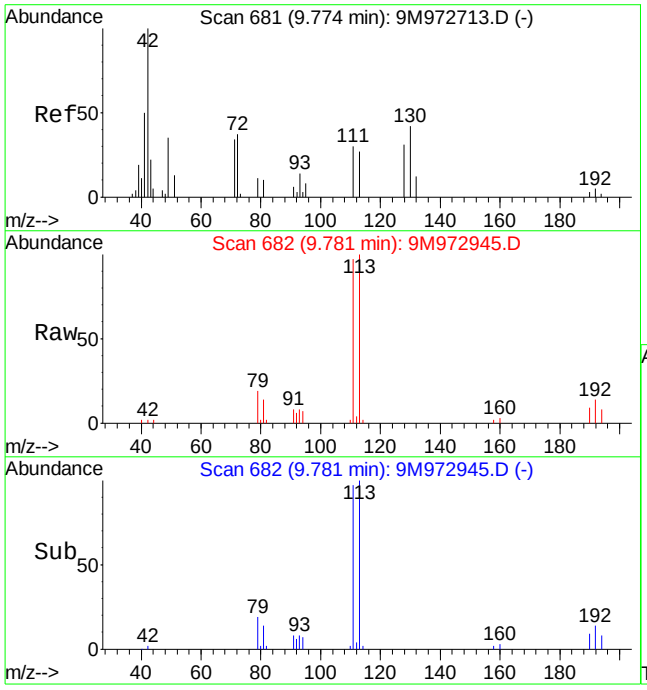

#36
Tetrahydrofuran
Concen: 0.45 ug/kg
RT: 9.78 min Scan# 682
Delta R.T. 0.00 min
Lab File: 9M972945.D
Acq: 28 Feb 2016 16:39

Tgt Ion: 42 Resp: 581

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	35.3	18.3	42.7

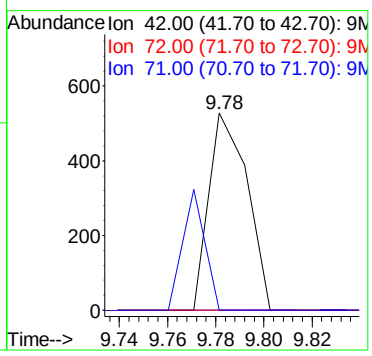

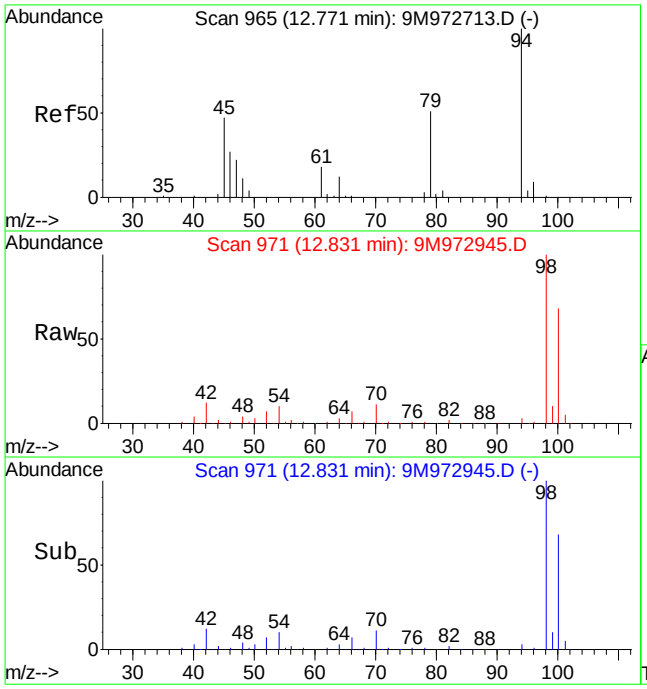

#56
Dimethyl Disulfide
Concen: 3.75 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.07 min
Lab File: 9M972945.D
Acq: 28 Feb 2016 16:39

Tgt Ion: 94 Resp: 18043

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

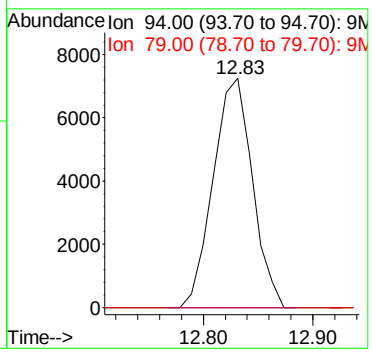

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022616\9M972913.D Vial: 4
Acq On : 26 Feb 2016 16:13 Operator: JDS
Sample : WG558910-02 20.0ug/kg LCS Inst : hpms9
Misc : 7,1 STD74755 JDS Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 16:35:46 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	563717	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	403042	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	184187	50.00 ug/kg	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.80	111	155107	50.7610 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 101.52%		
43) 1,2-Dichloroethane-d4	10.45	65	184204	48.0462 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.10%		
58) Toluene-d8	12.82	98	544647	53.4250 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.86%		
79) p-Bromofluorobenzene	16.23	95	200617	55.9366 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 111.88%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	105712	27.5134 ug/kg	98
3) Chloromethane	3.75	50	82721	22.4291 ug/kg	99
4) Vinyl Chloride	3.99	62	95032	25.7398 ug/kg	98
5) 1,3-Butadiene	4.04	54	6679	1.9015 ug/kg	92
6) Bromomethane	4.89	94	50663	21.1282 ug/kg	98
7) Chloroethane	5.04	64	37167	22.5963 ug/kg	97
8) Trichlorofluoromethane	5.53	101	113636	20.5218 ug/kg	99
9) Diethyl ether	6.06	59	206005	79.5826 ug/kg	99
10) Isoprene	6.09	67	86797	26.2551 ug/kg	97
11) Acrolein	6.30	56	40280	78.0382 ug/kg	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	65014	22.7665 ug/kg	96
13) Acetone	6.41	43	27758	17.9493 ug/kg	96
14) 1,1-Dichloroethene	6.62	61	106072	20.1356 ug/kg	98
15) Tert-Butyl Alcohol	6.75	59	118823	206.1445 ug/kg	97
16) Dimethyl Sulfide	6.88	62	71025	31.9011 ug/kg	98
17) Iodomethane	7.13	142	32777	22.5647 ug/kg	96
18) Methyl acetate	7.14	43	63383	22.1327 ug/kg	99
19) Methylene Chloride	7.40	84	59152	20.6177 ug/kg	99
20) Carbon Disulfide	7.44	76	157544	19.4138 ug/kg	99
21) Acrylonitrile	7.59	53	28352	20.0129 ug/kg	97
22) Methyl Tert Butyl Ether	7.61	73	170647	20.8839 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	102602	21.8544 ug/kg	99
24) n-Hexane	7.91	57	101184	20.8956 ug/kg	96
25) Diisopropyl ether	8.26	45	1083613	96.3517 ug/kg	99
26) Vinyl Acetate	8.43	43	93225	14.5410 ug/kg	98
27) 1,1-Dichloroethane	8.46	63	120116	20.3698 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	957331	91.5491 ug/kg	100
29) 2-Butanone	9.02	43	35175	19.3499 ug/kg	100
30) Propionitrile	9.14	54	53309	95.8282 ug/kg	97
31) 2,2-Dichloropropane	9.23	77	91646	20.8226 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	69599	22.6033 ug/kg	97
33) Chloroform	9.52	83	110961	20.4844 ug/kg	100
34) 1-Bromopropane	9.66	122	15633	33.6488 ug/kg	98
35) Bromochloromethane	9.75	130	42986	21.4913 ug/kg	96
36) Tetrahydrofuran	9.77	42	102538	87.5086 ug/kg	99
38) 1,1,1-Trichloroethane	10.05	97	101099	20.6381 ug/kg	100
39) Cyclohexane	10.08	56	118425	22.1737 ug/kg	99
40) 1,1-Dichloropropene	10.25	75	79418	20.6031 ug/kg	98
41) Tert-Amyl-Methyl ether	10.34	73	784257	103.1777 ug/kg	99
42) Carbon Tetrachloride	10.38	117	89302	19.6636 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022616\9M972913.D Vial: 4
Acq On : 26 Feb 2016 16:13 Operator: JDS
Sample : WG558910-02 20.0ug/kg LCS Inst : hpms9
Misc : 7,1 STD74755 JDS Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 16:35:46 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	99612	20.9062 ug/kg	98
46)	Benzene	10.61	78	227484	21.0798 ug/kg	98
47)	Trichloroethene	11.36	130	74656	21.8333 ug/kg	97
48)	Methylcyclohexane	11.44	83	96736	22.5565 ug/kg	100
49)	1,2-Dichloropropane	11.57	63	65398	22.0682 ug/kg	100
50)	1,4-Dioxane	11.87	88	9920	223.1331 ug/kg	98
51)	Bromodichloromethane	11.87	83	82575	19.7717 ug/kg	99
52)	Dibromomethane	11.96	174	39009	19.8669 ug/kg	97
53)	2-Chloroethyl Vinyl Ether	12.16	63	12886	17.6759 ug/kg	93
54)	4-Methyl-2-Pentanone	12.19	58	26612	20.4595 ug/kg	97
55)	cis-1,3-Dichloropropene	12.51	75	98506	22.6390 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	106980	24.4657 ug/kg	95
59)	Toluene	12.93	91	257564	22.3664 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	71529	22.4090 ug/kg	98
61)	trans-1,3-Dichloropropene	13.10	75	87681	21.1401 ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	53372	22.0629 ug/kg	100
63)	2-Hexanone	13.25	43	48511	20.0848 ug/kg	98
64)	1,3-Dichloropropane	13.62	76	91607	22.7262 ug/kg	98
65)	Tetrachloroethene	13.75	164	53411	21.6352 ug/kg	98
66)	Dibromochloromethane	14.01	129	66795	19.7570 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	56221	20.9528 ug/kg	96
68)	1-Chlorohexane	14.34	91	77468	22.8122 ug/kg	98
69)	Chlorobenzene	14.77	112	180461	22.2972 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.81	131	65121	21.4256 ug/kg	97
71)	Ethylbenzene	14.80	106	94652	22.7001 ug/kg	100
72)	m-,p-Xylene	14.89	106	232073	45.0676 ug/kg	100
73)	o-Xylene	15.45	106	114788	23.2284 ug/kg	98
74)	Styrene	15.49	104	190224	22.6048 ug/kg	99
75)	Bromoform	15.99	173	40222	18.1200 ug/kg	98
76)	Isopropylbenzene	15.87	105	301087	22.6956 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	60648	21.7064 ug/kg	100
80)	1,2,3-Trichloropropane	16.29	110	23203	21.8978 ug/kg	85
81)	trans-1,4-Dichloro-2-Buten	16.34	53	19942	18.6710 ug/kg	93
82)	n-Propylbenzene	16.38	91	346958	23.9642 ug/kg	99
83)	Bromobenzene	16.52	156	74550	21.8116 ug/kg	72
84)	1,3,5-Trimethylbenzene	16.57	105	258707	23.8046 ug/kg	98
85)	2-Chlorotoluene	16.66	91	237943	24.5029 ug/kg	99
86)	4-Chlorotoluene	16.71	91	204226	22.7473 ug/kg	98
87)	a-Methylstyrene	16.98	118	132527	26.7624 ug/kg	95
88)	tert-Butylbenzene	17.03	134	56856	24.9534 ug/kg	90
89)	1,2,4-Trimethylbenzene	17.09	105	254741	22.3821 ug/kg	99
90)	sec-Butylbenzene	17.31	105	327123	23.3704 ug/kg	99
91)	p-Isopropyltoluene	17.47	119	276196	23.3815 ug/kg	99
92)	1,3-Dichlorobenzene	17.67	146	151266	22.2685 ug/kg	98
93)	1,4-Dichlorobenzene	17.79	146	154634	22.7709 ug/kg	99
94)	n-Butylbenzene	17.99	91	238041	21.6737 ug/kg	98
95)	1,2-Dichlorobenzene	18.29	146	140172	22.2394 ug/kg	98
96)	1,2-Dibromo-3-Chloropropan	19.29	157	16295	20.1392 ug/kg	96
97)	1,2,4-Trichlorobenzene	20.43	180	92876	20.7575 ug/kg	100
98)	Hexachlorobutadiene	20.58	225	48600	20.6058 ug/kg	98
99)	Naphthalene	20.81	128	214410	19.1053 ug/kg	99
100)	1,2,3-Trichlorobenzene	21.12	180	89314	20.5804 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022616\9M972913.D Vial: 4
Acq On : 26 Feb 2016 16:13 Operator: JDS
Sample : WG558910-02 20.0ug/kg LCS Inst : hpms9
Misc : 7,1 STD74755 JDS Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 16:35 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

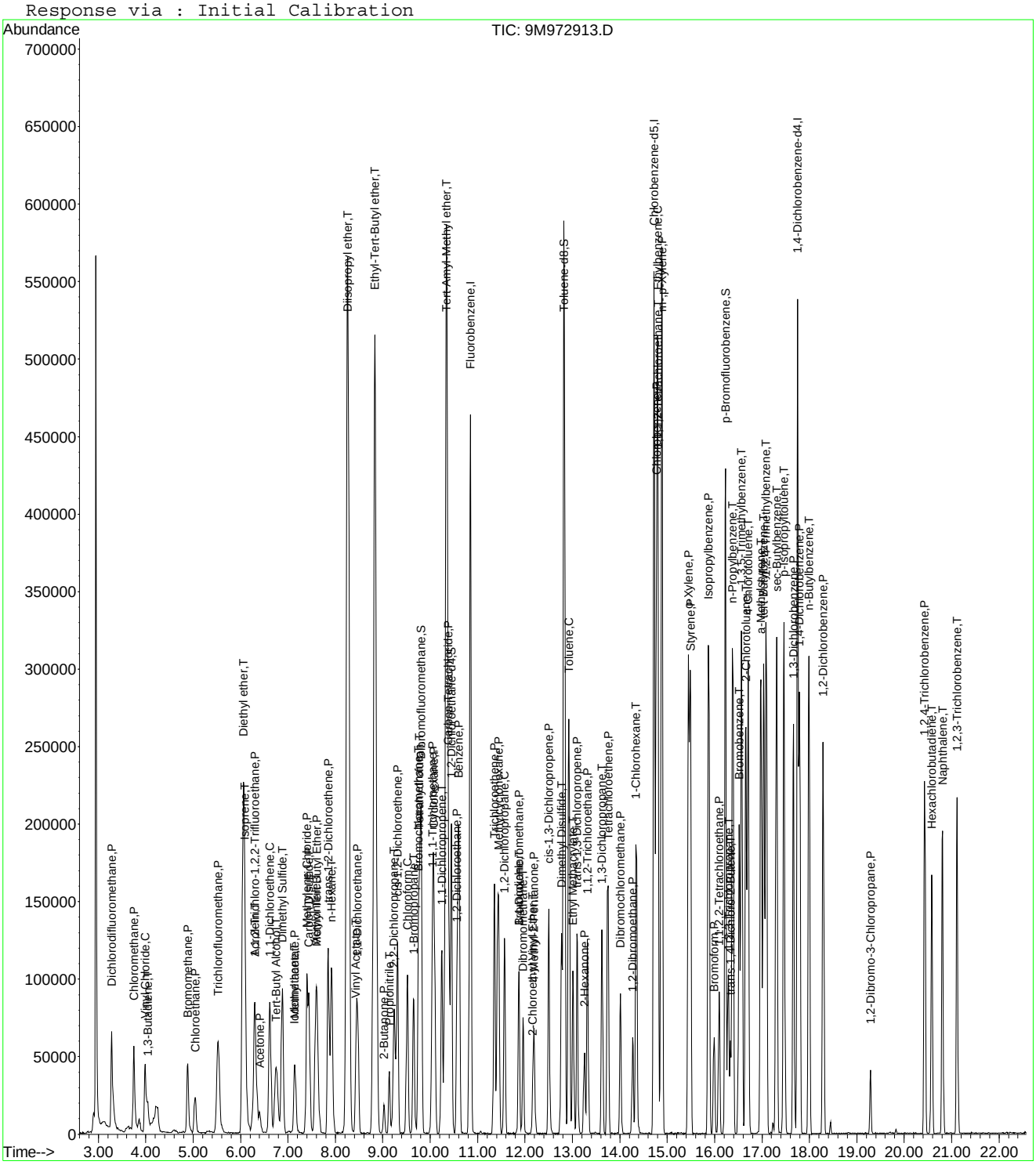

9M972913.D 8260SL.M Fri Feb 26 16:35:46 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022816\9M972946.D Vial: 4
Acq On : 28 Feb 2016 17:10 Operator: FJB
Sample : WG559002-02 20ug/Kg LCS 8260 Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 28 17:33:06 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	577816	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	413544	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	193426	50.00 ug/kg	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.80	111	157266	50.2117 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.42%		
43) 1,2-Dichloroethane-d4	10.45	65	196539	50.0127 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.02%		
58) Toluene-d8	12.82	98	565274	54.0402 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 108.08%		
79) p-Bromofluorobenzene	16.23	95	208942	55.4751 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 110.96%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	112624	28.5971 ug/kg	97
3) Chloromethane	3.75	50	86254	22.8164 ug/kg	100
4) Vinyl Chloride	3.98	62	89993	23.7802 ug/kg	97
5) 1,3-Butadiene	4.03	54	80500	22.3589 ug/kg	95
6) Bromomethane	4.88	94	51594	20.9914 ug/kg	99
7) Chloroethane	5.03	64	37911	22.4863 ug/kg	97
8) Trichlorofluoromethane	5.52	101	118730	20.9185 ug/kg	100
9) Diethyl ether	6.05	59	195802	73.7954 ug/kg	99
10) Isoprene	6.08	67	93338	27.5447 ug/kg	96
11) Acrolein	6.30	56	38044	71.9077 ug/kg	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	69258	23.6609 ug/kg	96
13) Acetone	6.42	43	31456	20.1096 ug/kg	95
14) 1,1-Dichloroethene	6.62	61	114583	21.2205 ug/kg	99
15) Tert-Butyl Alcohol	6.75	59	142519	241.2212 ug/kg	100
16) Dimethyl Sulfide	6.88	62	74435	32.6170 ug/kg	98
17) Iodomethane	7.13	142	31651	21.4199 ug/kg	98
18) Methyl acetate	7.15	43	59108	20.1363 ug/kg	99
19) Methylene Chloride	7.40	84	63387	21.5547 ug/kg	98
20) Carbon Disulfide	7.44	76	162423	19.5267 ug/kg	100
21) Acrylonitrile	7.58	53	32005	22.0402 ug/kg	94
22) Methyl Tert Butyl Ether	7.60	73	180961	21.6058 ug/kg	100
23) trans-1,2-Dichloroethene	7.84	61	109495	22.7535 ug/kg	99
24) n-Hexane	7.92	57	109240	22.0088 ug/kg	98
25) Diisopropyl ether	8.26	45	1088401	94.4160 ug/kg	100
26) Vinyl Acetate	8.43	43	146654	22.3165 ug/kg	99
27) 1,1-Dichloroethane	8.46	63	124545	20.6055 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	967839	90.2956 ug/kg	99
29) 2-Butanone	9.02	43	38299	20.5544 ug/kg	97
30) Propionitrile	9.14	54	59759	104.8015 ug/kg	100
31) 2,2-Dichloropropane	9.23	77	97470	21.6055 ug/kg	97
32) cis-1,2-Dichloroethene	9.31	96	71396	22.6211 ug/kg	99
33) Chloroform	9.52	83	111216	20.0305 ug/kg	96
34) 1-Bromopropane	9.66	122	16414	34.4428 ug/kg	98
35) Bromochloromethane	9.75	130	44238	21.5776 ug/kg	96
36) Tetrahydrofuran	9.77	42	114876	95.6460 ug/kg	99
38) 1,1,1-Trichloroethane	10.05	97	103902	20.6928 ug/kg	98
39) Cyclohexane	10.08	56	123492	22.5583 ug/kg	98
40) 1,1-Dichloropropene	10.24	75	81491	20.6251 ug/kg	95
41) Tert-Amyl-Methyl ether	10.34	73	787695	101.1014 ug/kg	100
42) Carbon Tetrachloride	10.38	117	92585	19.8891 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972946.D 8260SL.M Sun Feb 28 17:33:07 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022816\9M972946.D Vial: 4
Acq On : 28 Feb 2016 17:10 Operator: FJB
Sample : WG559002-02 20ug/Kg LCS 8260 Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 28 17:33:06 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	106774	21.8626 ug/kg	99
46)	Benzene	10.61	78	242250	21.9004 ug/kg	99
47)	Trichloroethene	11.36	130	77578	22.1342 ug/kg	98
48)	Methylcyclohexane	11.44	83	102065	23.2184 ug/kg	99
49)	1,2-Dichloropropane	11.57	63	70388	23.1725 ug/kg	100
50)	1,4-Dioxane	11.87	88	13650	299.5413 ug/kg	94
51)	Bromodichloromethane	11.87	83	88989	20.7876 ug/kg	100
52)	Dibromomethane	11.96	174	41532	20.6357 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	15982	20.7933 ug/kg	93
54)	4-Methyl-2-Pentanone	12.19	58	29277	21.9591 ug/kg	97
55)	cis-1,3-Dichloropropene	12.51	75	102855	23.0617 ug/kg	100
56)	Dimethyl Disulfide	12.77	94	108953	24.3089 ug/kg	92
59)	Toluene	12.93	91	264634	22.3968 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	75270	22.9822 ug/kg	98
61)	trans-1,3-Dichloropropene	13.10	75	94311	22.1612 ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	57316	23.0915 ug/kg	95
63)	2-Hexanone	13.26	43	54235	21.8845 ug/kg	100
64)	1,3-Dichloropropane	13.62	76	96660	23.3708 ug/kg	99
65)	Tetrachloroethene	13.75	164	54221	21.4055 ug/kg	97
66)	Dibromochloromethane	14.02	129	71622	20.6467 ug/kg	98
67)	1,2-Dibromoethane	14.27	107	60635	22.0240 ug/kg	96
68)	1-Chlorohexane	14.34	91	77741	22.3112 ug/kg	96
69)	Chlorobenzene	14.77	112	188889	22.7458 ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.81	131	66825	21.4279 ug/kg	100
71)	Ethylbenzene	14.80	106	97995	22.9050 ug/kg	98
72)	m-,p-Xylene	14.89	106	236799	44.8176 ug/kg	100
73)	o-Xylene	15.45	106	117789	23.2304 ug/kg	99
74)	Styrene	15.49	104	195725	22.6679 ug/kg	100
75)	Bromoform	15.99	173	43183	18.9599 ug/kg	98
76)	Isopropylbenzene	15.87	105	307619	22.5991 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	63025	21.4797 ug/kg	99
80)	1,2,3-Trichloropropane	16.28	110	26129	23.4814 ug/kg	83
81)	trans-1,4-Dichloro-2-Buten	16.34	53	21991	19.6060 ug/kg	92
82)	n-Propylbenzene	16.38	91	353827	23.2714 ug/kg	99
83)	Bromobenzene	16.52	156	79402	22.1216 ug/kg	74
84)	1,3,5-Trimethylbenzene	16.57	105	263372	23.0764 ug/kg	99
85)	2-Chlorotoluene	16.66	91	242282	23.7580 ug/kg	100
86)	4-Chlorotoluene	16.71	91	205505	21.7964 ug/kg	99
87)	a-Methylstyrene	16.98	118	130025	25.0029 ug/kg	97
88)	tert-Butylbenzene	17.03	134	55352	23.1329 ug/kg	89
89)	1,2,4-Trimethylbenzene	17.09	105	256289	21.4425 ug/kg	100
90)	sec-Butylbenzene	17.31	105	326775	22.2305 ug/kg	99
91)	p-Isopropyltoluene	17.47	119	272853	21.9952 ug/kg	100
92)	1,3-Dichlorobenzene	17.67	146	151965	21.3028 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	153934	21.5851 ug/kg	99
94)	n-Butylbenzene	17.99	91	237969	20.6322 ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	146690	22.1619 ug/kg	98
96)	1,2-Dibromo-3-Chloropropan	19.29	157	17591	20.7025 ug/kg	96
97)	1,2,4-Trichlorobenzene	20.43	180	91846	19.5468 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	45592	18.4072 ug/kg	100
99)	Naphthalene	20.81	128	233516	19.8139 ug/kg	99
100)	1,2,3-Trichlorobenzene	21.12	180	92739	20.3489 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972946.D 8260SL.M Sun Feb 28 17:33:07 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022816\9M972946.D Vial: 4
Acq On : 28 Feb 2016 17:10 Operator: FJB
Sample : WG559002-02 20ug/Kg LCS 8260 Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 28 17:33 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

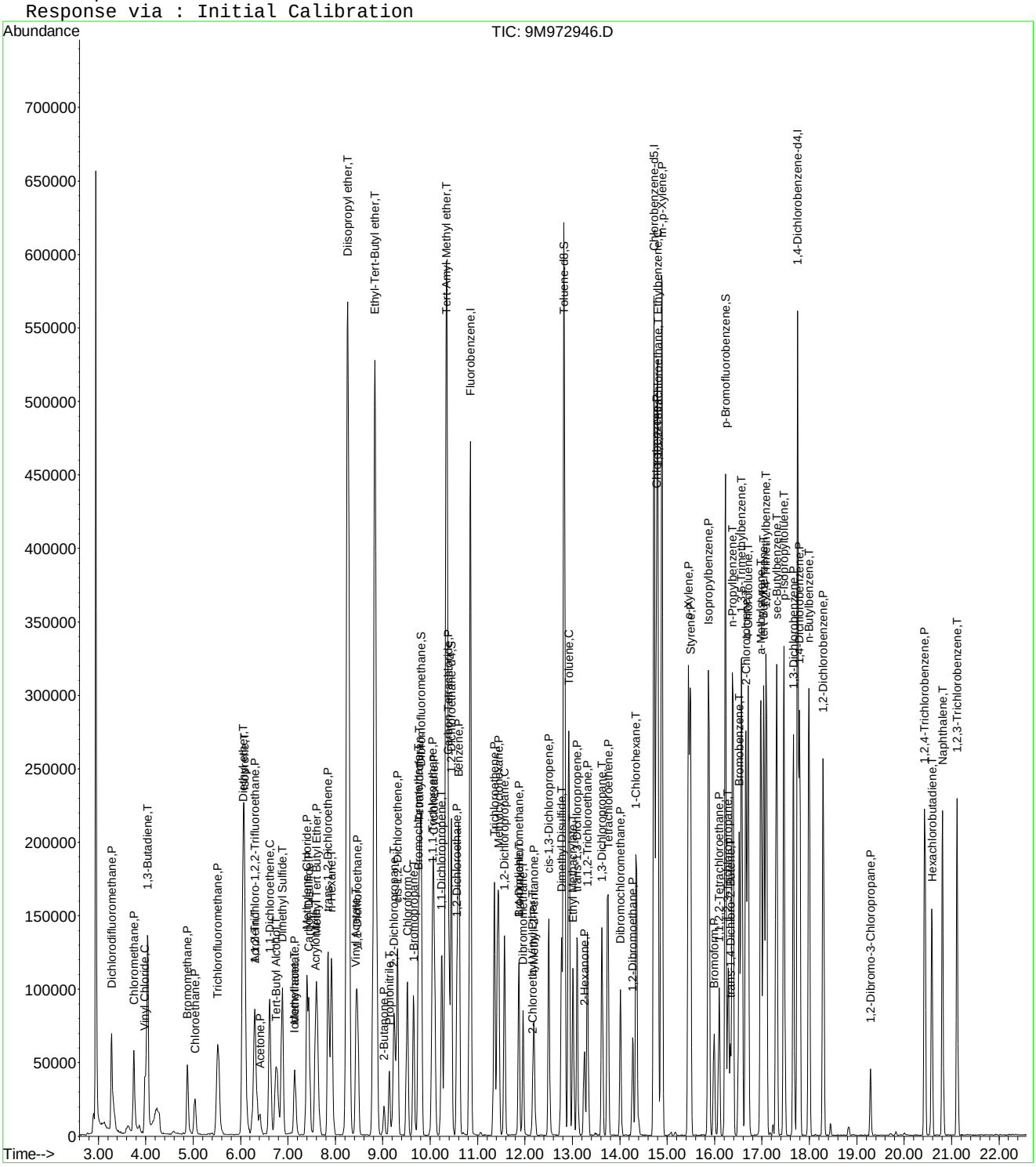

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022616\9M972915.D Vial: 6
Acq On : 26 Feb 2016 17:14 Operator: JDS
Sample : WG558910-04 20.0ug/kg LCSP&A Inst : hpms9
Misc : 7,1 STD74755 JDS Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 17:37:35 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	636072	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	455148	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	207360	50.00 ug/kg	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.80	111	177540	51.4932 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 102.98%		
43) 1,2-Dichloroethane-d4	10.45	65	213450	49.3414 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.68%		
58) Toluene-d8	12.82	98	614569	53.3824 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.76%		
79) p-Bromofluorobenzene	16.23	95	226963	56.2105 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 112.42%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	112096	25.8562 ug/kg	100
3) Chloromethane	3.75	50	88944	21.3731 ug/kg	99
4) Vinyl Chloride	3.99	62	101417	24.3445 ug/kg	98
5) 1,3-Butadiene	4.04	54	6562	1.6557 ug/kg	89
6) Bromomethane	4.89	94	53330	19.7105 ug/kg	97
7) Chloroethane	5.05	64	39165	21.1025 ug/kg	96
8) Trichlorofluoromethane	5.52	101	123594	19.7811 ug/kg	99
9) Diethyl ether	6.06	59	230519	78.9227 ug/kg	98
10) Isoprene	6.09	67	96401	25.8431 ug/kg	97
11) Acrolein	6.30	56	43510	74.7070 ug/kg	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	69004	21.4150 ug/kg	98
13) Acetone	6.41	43	31091	17.7992 ug/kg	97
14) 1,1-Dichloroethene	6.62	61	117918	19.8381 ug/kg	97
15) Tert-Butyl Alcohol	6.75	59	133190	204.7848 ug/kg	98
16) Dimethyl Sulfide	6.88	62	79993	31.8421 ug/kg	97
17) Iodomethane	7.13	142	36451	22.2798 ug/kg	96
18) Methyl acetate	7.15	43	69914	21.6362 ug/kg	97
19) Methylene Chloride	7.40	84	67518	20.8566 ug/kg	95
20) Carbon Disulfide	7.44	76	178775	19.5241 ug/kg	98
21) Acrylonitrile	7.59	53	31948	19.9859 ug/kg	96
22) Methyl Tert Butyl Ether	7.61	73	191918	20.8154 ug/kg	98
23) trans-1,2-Dichloroethene	7.85	61	112156	21.1719 ug/kg	98
24) n-Hexane	7.92	57	112175	20.5302 ug/kg	94
25) Diisopropyl ether	8.26	45	1188590	93.6639 ug/kg	99
26) Vinyl Acetate	8.43	43	111646	15.4333 ug/kg	99
27) 1,1-Dichloroethane	8.47	63	130788	19.6566 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	1071549	90.8153 ug/kg	100
29) 2-Butanone	9.02	43	38875	18.9527 ug/kg	97
30) Propionitrile	9.14	54	57776	92.0439 ug/kg	98
31) 2,2-Dichloropropane	9.25	77	100068	20.1499 ug/kg	100
32) cis-1,2-Dichloroethene	9.31	96	75581	21.7539 ug/kg	100
33) Chloroform	9.52	83	120804	19.7646 ug/kg	98
34) 1-Bromopropane	9.66	122	16884	32.2515 ug/kg	95
35) Bromochloromethane	9.75	130	46093	20.4233 ug/kg	97
36) Tetrahydrofuran	9.78	42	111919	84.6495 ug/kg	95
38) 1,1,1-Trichloroethane	10.05	97	111705	20.2093 ug/kg	97
39) Cyclohexane	10.08	56	132168	21.9319 ug/kg	99
40) 1,1-Dichloropropene	10.25	75	87562	20.1319 ug/kg	99
41) Tert-Amyl-Methyl ether	10.34	73	880028	102.6074 ug/kg	99
42) Carbon Tetrachloride	10.40	117	96966	18.9224 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022616\9M972915.D Vial: 6
Acq On : 26 Feb 2016 17:14 Operator: JDS
Sample : WG558910-04 20.0ug/kg LCSP&A Inst : hpms9
Misc : 7,1 STD74755 JDS Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 17:37:35 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	110350	20.5254 ug/kg	98
46)	Benzene	10.61	78	253594	20.8262 ug/kg	97
47)	Trichloroethene	11.36	130	81482	21.1189 ug/kg	99
48)	Methylcyclohexane	11.44	83	108819	22.4876 ug/kg	98
49)	1,2-Dichloropropane	11.57	63	74685	22.3353 ug/kg	98
50)	1,4-Dioxane	11.88	88	9690	193.1662 ug/kg	94
51)	Bromodichloromethane	11.87	83	91667	19.4520 ug/kg	99
52)	Dibromomethane	11.96	174	41869	18.8978 ug/kg	98
53)	2-Chloroethyl Vinyl Ether	12.16	63	14168	17.2961 ug/kg	98
54)	4-Methyl-2-Pentanone	12.19	58	28891	19.6850 ug/kg	96
55)	cis-1,3-Dichloropropene	12.51	75	108559	22.1114 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	118783	24.0749 ug/kg	95
59)	Toluene	12.93	91	277871	21.3674 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	80461	22.3215 ug/kg	100
61)	trans-1,3-Dichloropropene	13.11	75	98722	21.0772 ug/kg	99
62)	1,1,2-Trichloroethane	13.32	97	58025	21.2403 ug/kg	96
63)	2-Hexanone	13.26	43	51503	18.8824 ug/kg	97
64)	1,3-Dichloropropane	13.62	76	100841	22.1530 ug/kg	100
65)	Tetrachloroethene	13.75	164	55939	20.0651 ug/kg	99
66)	Dibromochloromethane	14.01	129	75147	19.6827 ug/kg	98
67)	1,2-Dibromoethane	14.27	107	62201	20.5276 ug/kg	100
68)	1-Chlorohexane	14.35	91	84940	22.1490 ug/kg	99
69)	Chlorobenzene	14.77	112	197926	21.6554 ug/kg	98
70)	1,1,1,2-Tetrachloroethane	14.81	131	72784	21.2053 ug/kg	98
71)	Ethylbenzene	14.80	106	101895	21.6396 ug/kg	99
72)	m-,p-Xylene	14.88	106	253894	43.6606 ug/kg	98
73)	o-Xylene	15.45	106	125573	22.5018 ug/kg	100
74)	Styrene	15.49	104	205688	21.6443 ug/kg	100
75)	Bromoform	15.99	173	45838	18.2860 ug/kg	99
76)	Isopropylbenzene	15.87	105	330738	22.0766 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	65833	20.9290 ug/kg	96
80)	1,2,3-Trichloropropane	16.28	110	27203	22.8038 ug/kg	80
81)	trans-1,4-Dichloro-2-Buten	16.34	53	22448	18.6685 ug/kg	93
82)	n-Propylbenzene	16.38	91	379144	23.2608 ug/kg	99
83)	Bromobenzene	16.52	156	83993	21.8282 ug/kg	74
84)	1,3,5-Trimethylbenzene	16.57	105	284247	23.2318 ug/kg	99
85)	2-Chlorotoluene	16.66	91	261289	23.9001 ug/kg	100
86)	4-Chlorotoluene	16.71	91	218365	21.6041 ug/kg	98
87)	a-Methylstyrene	16.98	118	139914	25.0966 ug/kg	97
88)	tert-Butylbenzene	17.03	134	59513	23.2006 ug/kg	89
89)	1,2,4-Trimethylbenzene	17.09	105	280301	21.8756 ug/kg	99
90)	sec-Butylbenzene	17.31	105	356068	22.5955 ug/kg	100
91)	p-Isopropyltoluene	17.47	119	287341	21.6066 ug/kg	98
92)	1,3-Dichlorobenzene	17.67	146	159369	20.8395 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	162461	21.2500 ug/kg	98
94)	n-Butylbenzene	17.99	91	252563	20.4261 ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	155360	21.8945 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	17506	19.2180 ug/kg	96
97)	1,2,4-Trichlorobenzene	20.43	180	97899	19.4349 ug/kg	99
98)	Hexachlorobutadiene	20.58	225	54416	20.4934 ug/kg	99
99)	Naphthalene	20.81	128	233492	18.4805 ug/kg	99
100)	1,2,3-Trichlorobenzene	21.12	180	95571	19.5611 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022616\9M972915.D Vial: 6
Acq On : 26 Feb 2016 17:14 Operator: JDS
Sample : WG558910-04 20.0ug/kg LCSP&A Inst : hpms9
Misc : 7,1 STD74755 JDS Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 17:37 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

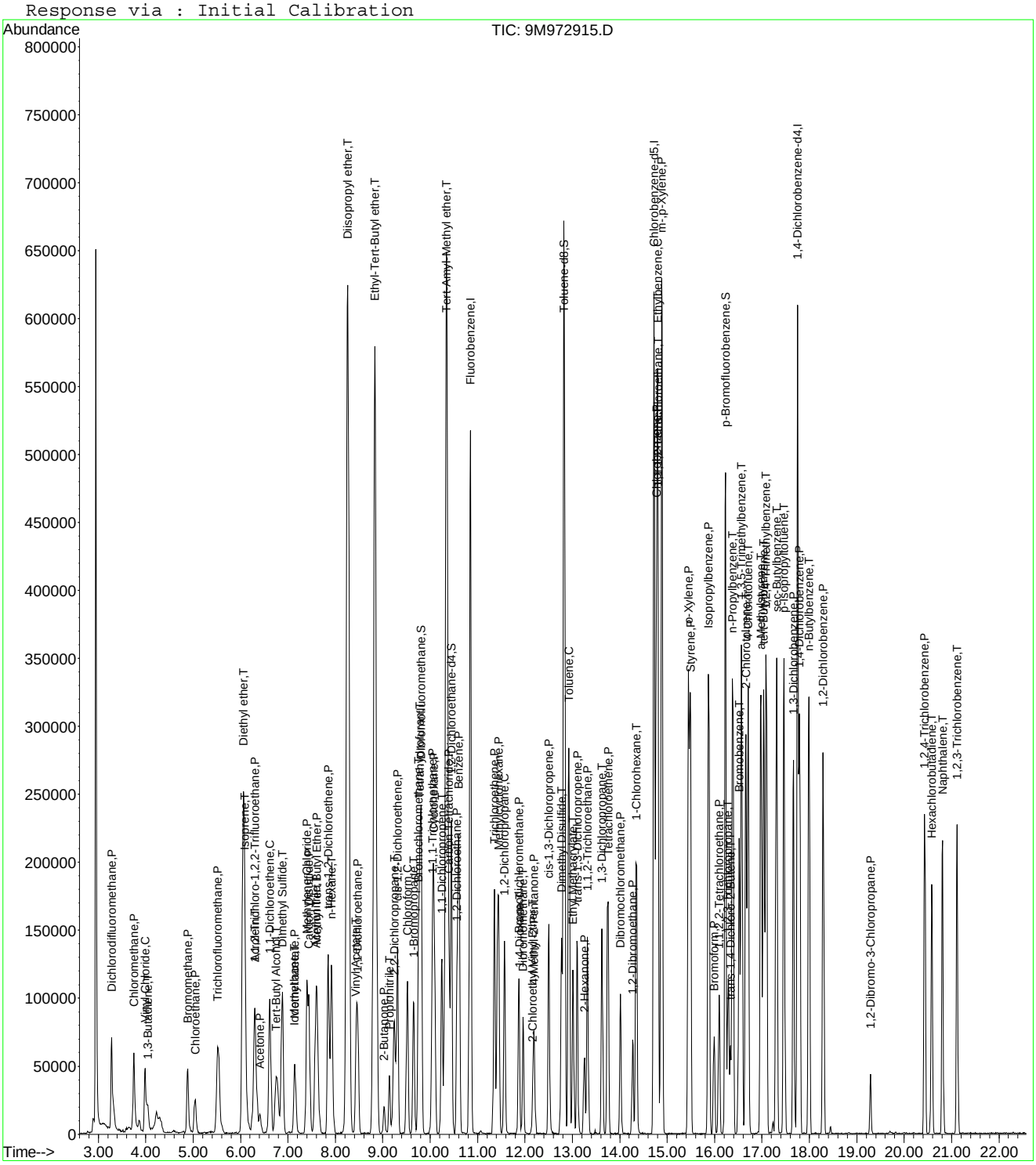

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022616\9M972916.D Vial: 7
Acq On : 26 Feb 2016 17:45 Operator: JDS
Sample : WG558910-05 20.0ug/kg LCSP&A Inst : hpms9
Misc : 7,1 STD74755 JDS Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 18:08:03 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	521516	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	368969	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.75	152	171493	50.00 ug/kg	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.80	111	143998	50.9388 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 101.88%		
43) 1,2-Dichloroethane-d4	10.45	65	171526	48.3597 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.72%		
58) Toluene-d8	12.83	98	503824	53.9845 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 107.96%		
79) p-Bromofluorobenzene	16.23	95	185163	55.4492 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 110.90%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	97237	27.3555 ug/kg	99
3) Chloromethane	3.74	50	75833	22.2253 ug/kg	97
4) Vinyl Chloride	3.99	62	77764	22.7671 ug/kg	98
5) 1,3-Butadiene	4.03	54	3674	1.1306 ug/kg	91
6) Bromomethane	4.88	94	45606	20.5583 ug/kg	97
7) Chloroethane	5.04	64	32487	21.3493 ug/kg	99
8) Trichlorofluoromethane	5.52	101	97315	18.9964 ug/kg	97
9) Diethyl ether	6.06	59	189076	78.9533 ug/kg	99
10) Isoprene	6.09	67	77916	25.4758 ug/kg	96
11) Acrolein	6.30	56	30981	64.8794 ug/kg	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	54177	20.5068 ug/kg	99
13) Acetone	6.40	43	24387	16.9191 ug/kg	100
14) 1,1-Dichloroethene	6.61	61	96191	19.7375 ug/kg	97
15) Tert-Butyl Alcohol	6.73	59	106856	200.3842 ug/kg	96
16) Dimethyl Sulfide	6.88	62	66318	32.1973 ug/kg	97
17) Iodomethane	7.13	142	31194	23.1323 ug/kg	96
18) Methyl acetate	7.14	43	55878	21.0910 ug/kg	99
19) Methylene Chloride	7.41	84	56261	21.1968 ug/kg	95
20) Carbon Disulfide	7.44	76	142548	18.9873 ug/kg	98
21) Acrylonitrile	7.59	53	27348	20.8663 ug/kg	93
22) Methyl Tert Butyl Ether	7.61	73	156161	20.6576 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	93304	21.4821 ug/kg	99
24) n-Hexane	7.92	57	88400	19.7328 ug/kg	98
25) Diisopropyl ether	8.26	45	977581	93.9575 ug/kg	99
26) Vinyl Acetate	8.43	43	80421	13.5589 ug/kg	99
27) 1,1-Dichloroethane	8.47	63	107418	19.6905 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	876768	90.6296 ug/kg	100
29) 2-Butanone	9.02	43	31975	19.0129 ug/kg	99
30) Propionitrile	9.13	54	46691	90.7234 ug/kg	97
31) 2,2-Dichloropropane	9.24	77	79635	19.5578 ug/kg	98
32) cis-1,2-Dichloroethene	9.31	96	61035	21.4260 ug/kg	99
33) Chloroform	9.52	83	100313	20.0172 ug/kg	98
34) 1-Bromopropane	9.65	122	15045	34.9624 ug/kg	97
35) Bromochloromethane	9.75	130	38587	20.8531 ug/kg	98
36) Tetrahydrofuran	9.77	42	91871	84.7496 ug/kg	96
38) 1,1,1-Trichloroethane	10.04	97	89052	19.6499 ug/kg	99
39) Cyclohexane	10.08	56	104443	21.1382 ug/kg	98
40) 1,1-Dichloropropene	10.24	75	69180	19.3994 ug/kg	99
41) Tert-Amyl-Methyl ether	10.34	73	706405	100.4557 ug/kg	99
42) Carbon Tetrachloride	10.39	117	79480	18.9171 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972916.D 8260SL.M Fri Feb 26 18:08:03 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022616\9M972916.D Vial: 7
Acq On : 26 Feb 2016 17:45 Operator: JDS
Sample : WG558910-05 20.0ug/kg LCSP&A Inst : hpms9
Misc : 7,1 STD74755 JDS Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 18:08:03 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	90527	20.5369 ug/kg	98
46)	Benzene	10.60	78	208333	20.8674 ug/kg	99
47)	Trichloroethene	11.35	130	66997	21.1789 ug/kg	99
48)	Methylcyclohexane	11.44	83	86526	21.8084 ug/kg	99
49)	1,2-Dichloropropane	11.56	63	60434	22.0434 ug/kg	98
50)	1,4-Dioxane	11.86	88	9895	240.5812 ug/kg	93
51)	Bromodichloromethane	11.87	83	75135	19.4461 ug/kg	97
52)	Dibromomethane	11.95	174	35322	19.4448 ug/kg	97
53)	2-Chloroethyl Vinyl Ether	12.17	63	12091	17.8871 ug/kg	95
54)	4-Methyl-2-Pentanone	12.19	58	24115	20.0400 ug/kg	96
55)	cis-1,3-Dichloropropene	12.50	75	87149	21.6497 ug/kg	100
56)	Dimethyl Disulfide	12.77	94	98494	24.3477 ug/kg	93
59)	Toluene	12.93	91	232488	22.0532 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	64697	22.1404 ug/kg	98
61)	trans-1,3-Dichloropropene	13.10	75	82572	21.7468 ug/kg	99
62)	1,1,2-Trichloroethane	13.32	97	48550	21.9229 ug/kg	99
63)	2-Hexanone	13.25	43	44207	19.9930 ug/kg	98
64)	1,3-Dichloropropane	13.62	76	81263	22.0217 ug/kg	100
65)	Tetrachloroethene	13.75	164	45917	20.3172 ug/kg	98
66)	Dibromochloromethane	14.01	129	61015	19.7139 ug/kg	98
67)	1,2-Dibromoethane	14.28	107	51513	20.9711 ug/kg	96
68)	1-Chlorohexane	14.35	91	70095	22.5472 ug/kg	96
69)	Chlorobenzene	14.77	112	163223	22.0297 ug/kg	98
70)	1,1,1,2-Tetrachloroethane	14.80	131	59305	21.3139 ug/kg	97
71)	Ethylbenzene	14.79	106	86657	22.7019 ug/kg	97
72)	m-,p-Xylene	14.89	106	210062	44.5603 ug/kg	98
73)	o-Xylene	15.45	106	101843	22.5120 ug/kg	99
74)	Styrene	15.49	104	171375	22.2456 ug/kg	98
75)	Bromoform	15.99	173	38784	19.0857 ug/kg	98
76)	Isopropylbenzene	15.87	105	270256	22.2528 ug/kg	98
78)	1,1,2,2-Tetrachloroethane	16.09	83	55165	21.2054 ug/kg	99
80)	1,2,3-Trichloropropane	16.29	110	21260	21.5492 ug/kg	86
81)	trans-1,4-Dichloro-2-Buten	16.33	53	18165	18.2661 ug/kg	90
82)	n-Propylbenzene	16.39	91	310578	23.0393 ug/kg	99
83)	Bromobenzene	16.52	156	68613	21.5605 ug/kg	95
84)	1,3,5-Trimethylbenzene	16.57	105	233562	23.0817 ug/kg	100
85)	2-Chlorotoluene	16.66	91	209939	23.2194 ug/kg	100
86)	4-Chlorotoluene	16.70	91	187859	22.4731 ug/kg	99
87)	a-Methylstyrene	16.98	118	114587	24.8524 ug/kg	99
88)	tert-Butylbenzene	17.03	134	50773	23.9331 ug/kg	94
89)	1,2,4-Trimethylbenzene	17.08	105	234903	22.1668 ug/kg	100
90)	sec-Butylbenzene	17.30	105	293208	22.4980 ug/kg	99
91)	p-Isopropyltoluene	17.46	119	241644	21.9707 ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	133680	21.1362 ug/kg	100
93)	1,4-Dichlorobenzene	17.79	146	139858	22.1195 ug/kg	98
94)	n-Butylbenzene	17.99	91	214899	21.0150 ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	127494	21.7253 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	14709	19.5247 ug/kg	98
97)	1,2,4-Trichlorobenzene	20.43	180	84305	20.2366 ug/kg	97
98)	Hexachlorobutadiene	20.59	225	43374	19.7513 ug/kg	98
99)	Naphthalene	20.81	128	209756	20.0741 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	83450	20.6525 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022616\9M972916.D Vial: 7
Acq On : 26 Feb 2016 17:45 Operator: JDS
Sample : WG558910-05 20.0ug/kg LCSP&A Inst : hpms9
Misc : 7,1 STD74755 JDS Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 18:08 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

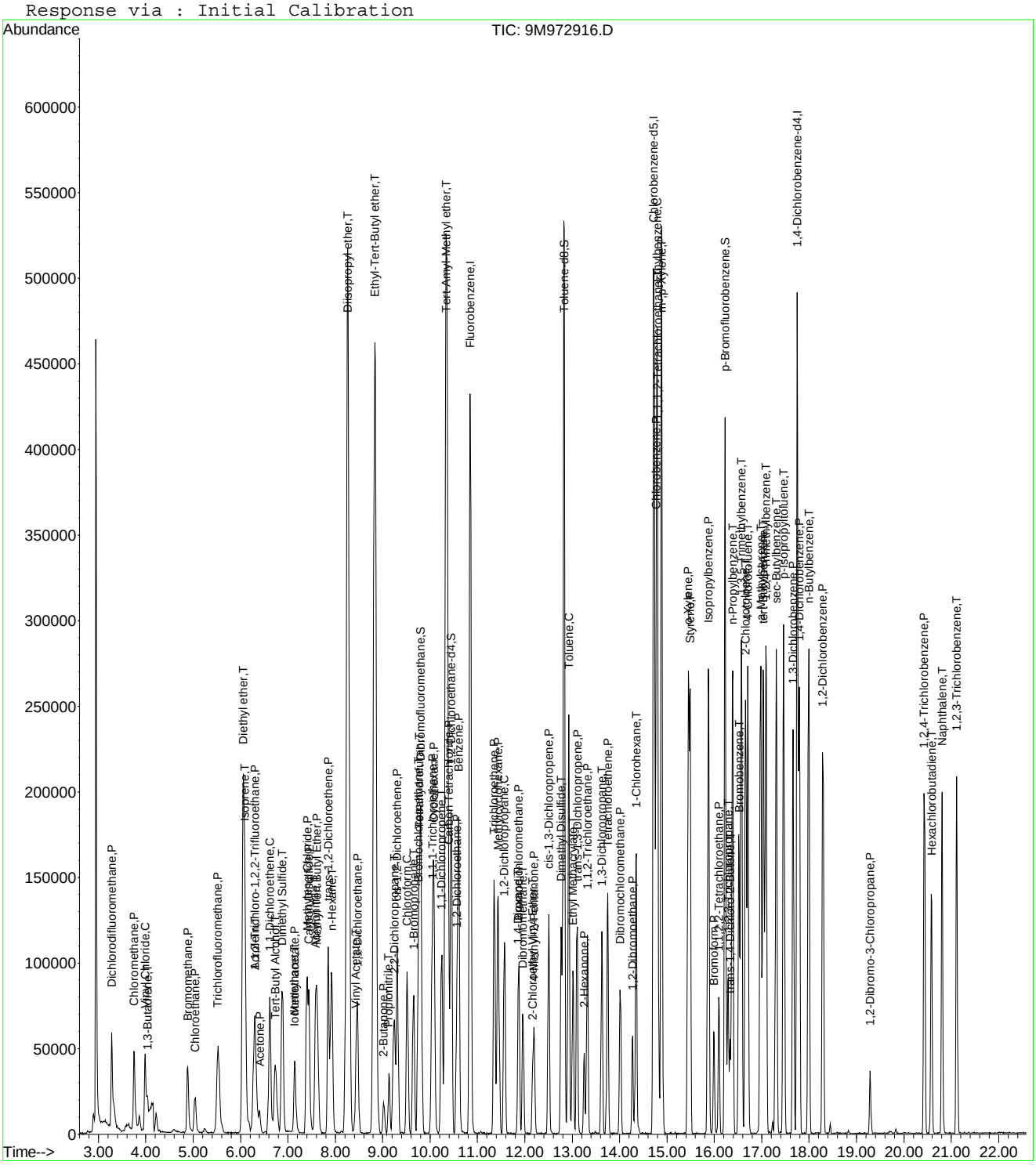

9M972916.D 8260SL.M Fri Feb 26 18:08:03 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022616\9M972914.D Vial: 5
Acq On : 26 Feb 2016 16:43 Operator: JDS
Sample : WG558910-03 20.0ug/kg LCSDUP Inst : hpms9
Misc : 7,1 STD74755 JDS Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 17:06:08 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	620699	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	445879	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	205574	50.00 ug/kg	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.80	111	172594	51.2984 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 102.60%		
43) 1,2-Dichloroethane-d4	10.45	65	212529	50.3453 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.70%		
58) Toluene-d8	12.82	98	607918	53.9024 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 107.80%		
79) p-Bromofluorobenzene	16.23	95	223309	55.7860 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 111.58%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	99939	23.6230 ug/kg	99
3) Chloromethane	3.75	50	85710	21.1061 ug/kg	100
4) Vinyl Chloride	3.99	62	95655	23.5301 ug/kg	99
5) 1,3-Butadiene	4.04	54	6449	1.6675 ug/kg	90
6) Bromomethane	4.89	94	52788	19.9934 ug/kg	96
7) Chloroethane	5.04	64	38071	21.0211 ug/kg	100
8) Trichlorofluoromethane	5.53	101	115147	18.8856 ug/kg	100
9) Diethyl ether	6.06	59	222627	78.1085 ug/kg	99
10) Isoprene	6.10	67	89636	24.6247 ug/kg	97
11) Acrolein	6.30	56	41070	72.2641 ug/kg	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	62864	19.9927 ug/kg	99
13) Acetone	6.42	43	32039	18.9369 ug/kg	96
14) 1,1-Dichloroethene	6.62	61	111575	19.2359 ug/kg	95
15) Tert-Butyl Alcohol	6.76	59	132205	208.3047 ug/kg	98
16) Dimethyl Sulfide	6.88	62	76954	31.3911 ug/kg	97
17) Iodomethane	7.14	142	34256	21.5601 ug/kg	97
18) Methyl acetate	7.14	43	70940	22.4975 ug/kg	98
19) Methylene Chloride	7.40	84	64281	20.3485 ug/kg	98
20) Carbon Disulfide	7.44	76	169037	18.9178 ug/kg	98
21) Acrylonitrile	7.59	53	32296	20.7040 ug/kg	94
22) Methyl Tert Butyl Ether	7.61	73	189118	21.0197 ug/kg	100
23) trans-1,2-Dichloroethene	7.85	61	107612	20.8172 ug/kg	99
24) n-Hexane	7.92	57	103017	19.3211 ug/kg	98
25) Diisopropyl ether	8.26	45	1147560	92.6704 ug/kg	100
26) Vinyl Acetate	8.43	43	110640	15.6730 ug/kg	97
27) 1,1-Dichloroethane	8.46	63	126159	19.4305 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	1032372	89.6620 ug/kg	100
29) 2-Butanone	9.02	43	40878	20.4228 ug/kg	94
30) Propionitrile	9.14	54	57186	93.3604 ug/kg	97
31) 2,2-Dichloropropane	9.24	77	96311	19.8737 ug/kg	97
32) cis-1,2-Dichloroethene	9.31	96	75389	22.2360 ug/kg	85
33) Chloroform	9.52	83	119994	20.1183 ug/kg	100
34) 1-Bromopropane	9.66	122	15993	31.3362 ug/kg	85
35) Bromochloromethane	9.75	130	45138	20.4955 ug/kg	98
36) Tetrahydrofuran	9.78	42	111940	86.7624 ug/kg	96
38) 1,1,1-Trichloroethane	10.05	97	106279	19.7038 ug/kg	99
39) Cyclohexane	10.08	56	121871	20.7241 ug/kg	100
40) 1,1-Dichloropropene	10.25	75	83540	19.6829 ug/kg	98
41) Tert-Amyl-Methyl ether	10.34	73	839148	100.2642 ug/kg	99
42) Carbon Tetrachloride	10.39	117	95316	19.0611 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022616\9M972914.D Vial: 5
Acq On : 26 Feb 2016 16:43 Operator: JDS
Sample : WG558910-03 20.0ug/kg LCSDUP Inst : hpms9
Misc : 7,1 STD74755 JDS Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 17:06:08 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	104129	19.8479	ug/kg	95
46)	Benzene	10.61	78	247574	20.8354	ug/kg	98
47)	Trichloroethene	11.35	130	77072	20.4706	ug/kg	96
48)	Methylcyclohexane	11.44	83	98136	20.7822	ug/kg	99
49)	1,2-Dichloropropane	11.57	63	72708	22.2826	ug/kg	95
50)	1,4-Dioxane	11.88	88	9609	196.2957	ug/kg	94
51)	Bromodichloromethane	11.87	83	90769	19.7385	ug/kg	100
52)	Dibromomethane	11.96	174	43439	20.0921	ug/kg	96
53)	2-Chloroethyl Vinyl Ether	12.17	63	15040	18.5667	ug/kg	93
54)	4-Methyl-2-Pentanone	12.20	58	28669	20.0175	ug/kg	96
55)	cis-1,3-Dichloropropene	12.50	75	106495	22.2282	ug/kg	100
56)	Dimethyl Disulfide	12.77	94	119669	24.8552	ug/kg	93
59)	Toluene	12.93	91	276879	21.7338	ug/kg	99
60)	Ethyl Methacrylate	13.01	69	79838	22.6091	ug/kg	97
61)	trans-1,3-Dichloropropene	13.11	75	93938	20.4727	ug/kg	96
62)	1,1,2-Trichloroethane	13.32	97	58157	21.7312	ug/kg	100
63)	2-Hexanone	13.25	43	52720	19.7304	ug/kg	99
64)	1,3-Dichloropropane	13.62	76	97955	21.9663	ug/kg	100
65)	Tetrachloroethene	13.75	164	56482	20.6811	ug/kg	94
66)	Dibromochloromethane	14.01	129	72452	19.3714	ug/kg	100
67)	1,2-Dibromoethane	14.27	107	61409	20.6876	ug/kg	100
68)	1-Chlorohexane	14.35	91	82008	21.8290	ug/kg	98
69)	Chlorobenzene	14.77	112	198906	22.2151	ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.81	131	71898	21.3826	ug/kg	98
71)	Ethylbenzene	14.79	106	102700	22.2640	ug/kg	97
72)	m-,p-Xylene	14.89	106	256615	45.0459	ug/kg	96
73)	o-Xylene	15.45	106	125697	22.9922	ug/kg	97
74)	Styrene	15.49	104	203346	21.8426	ug/kg	100
75)	Bromoform	15.99	173	46626	18.9870	ug/kg	98
76)	Isopropylbenzene	15.87	105	322074	21.9451	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	68065	21.8265	ug/kg	100
80)	1,2,3-Trichloropropane	16.28	110	25173	21.2854	ug/kg	87
81)	trans-1,4-Dichloro-2-Buten	16.34	53	21611	18.1286	ug/kg	90
82)	n-Propylbenzene	16.38	91	372144	23.0297	ug/kg	99
83)	Bromobenzene	16.53	156	81902	21.4697	ug/kg	94
84)	1,3,5-Trimethylbenzene	16.57	105	276918	22.8295	ug/kg	98
85)	2-Chlorotoluene	16.66	91	251839	23.2359	ug/kg	99
86)	4-Chlorotoluene	16.70	91	225336	22.4875	ug/kg	98
87)	a-Methylstyrene	16.98	118	138841	25.1205	ug/kg	99
88)	tert-Butylbenzene	17.03	134	60038	23.6086	ug/kg	98
89)	1,2,4-Trimethylbenzene	17.08	105	276017	21.7284	ug/kg	87
90)	sec-Butylbenzene	17.31	105	345899	22.1409	ug/kg	100
91)	p-Isopropyltoluene	17.46	119	285280	21.6380	ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	159315	21.0134	ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	164589	21.7154	ug/kg	100
94)	n-Butylbenzene	17.99	91	247203	20.1663	ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	151576	21.5469	ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	17324	19.1835	ug/kg	97
97)	1,2,4-Trichlorobenzene	20.43	180	100441	20.1128	ug/kg	96
98)	Hexachlorobutadiene	20.58	225	50480	19.1763	ug/kg	98
99)	Naphthalene	20.81	128	233927	18.6758	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.12	180	93358	19.2742	ug/kg	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022616\9M972914.D Vial: 5
Acq On : 26 Feb 2016 16:43 Operator: JDS
Sample : WG558910-03 20.0ug/kg LCSDUP Inst : hpms9
Misc : 7,1 STD74755 JDS Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 17:06 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

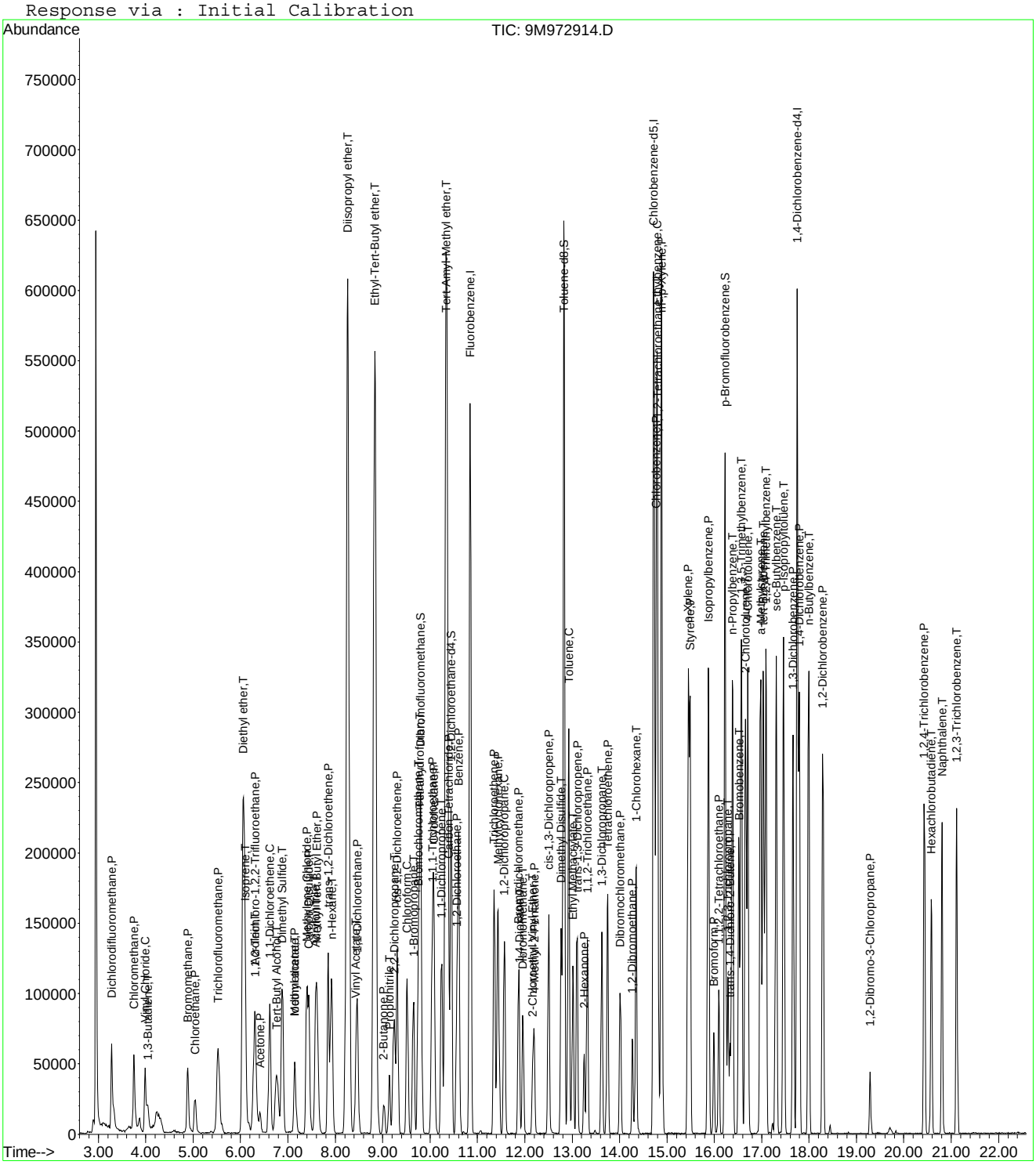

9M972914.D 8260SL.M Fri Feb 26 17:06:08 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022616\9M972932.D Vial: 23
Acq On : 27 Feb 2016 1:53 Operator: ADC
Sample : WG558938-02 A MS 8260 5.31g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 27 02:16:32 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	631535	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	451174	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	208227	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	170064	49.6792 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.36%		
43) 1,2-Dichloroethane-d4	10.45	65	199896	46.5402 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.08%		
58) Toluene-d8	12.83	98	615442	53.9291 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 107.86%		
79) p-Bromofluorobenzene	16.23	95	224331	55.3273 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 110.66%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	70009	16.2644 ug/kg	99
3) Chloromethane	3.74	50	74151	17.9464 ug/kg	100
4) Vinyl Chloride	3.99	62	90151	21.7957 ug/kg	100
6) Bromomethane	4.88	94	49224	18.3237 ug/kg	98
7) Chloroethane	5.04	64	36552	19.8360 ug/kg	99
8) Trichlorofluoromethane	5.53	101	114319	18.4281 ug/kg	100
9) Diethyl ether	6.07	59	1660	0.5724 ug/kg	83
10) Isoprene	6.09	67	87114	23.5212 ug/kg	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	66379	20.7484 ug/kg	98
13) Acetone	6.40	43	26066	14.6386 ug/kg	93
14) 1,1-Dichloroethene	6.62	61	109011	18.4714 ug/kg	95
16) Dimethyl Sulfide	6.88	62	69955	28.0464 ug/kg	99
17) Iodomethane	7.14	142	29539	18.6990 ug/kg	100
18) Methyl acetate	7.14	43	47733	14.8780 ug/kg	98
19) Methylene Chloride	7.40	84	61692	19.1939 ug/kg	99
20) Carbon Disulfide	7.45	76	159618	17.5572 ug/kg	100
21) Acrylonitrile	7.59	53	27359	17.2381 ug/kg	93
22) Methyl Tert Butyl Ether	7.61	73	166294	18.1658 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	106127	20.1777 ug/kg	99
24) n-Hexane	7.91	57	109688	20.2193 ug/kg	96
27) 1,1-Dichloroethane	8.46	63	124186	18.7985 ug/kg	99
29) 2-Butanone	9.03	43	30135	14.7972 ug/kg	99
31) 2,2-Dichloropropane	9.24	77	87582	17.7623 ug/kg	100
32) cis-1,2-Dichloroethene	9.31	96	71379	20.6920 ug/kg	99
33) Chloroform	9.52	83	114180	18.8151 ug/kg	99
34) 1-Bromopropane	9.64	122	16797	32.3138 ug/kg	92
35) Bromochloromethane	9.75	130	43279	19.3142 ug/kg	98
38) 1,1,1-Trichloroethane	10.04	97	105757	19.2706 ug/kg	98
39) Cyclohexane	10.08	56	125682	21.0054 ug/kg	98
40) 1,1-Dichloropropene	10.25	75	81569	18.8887 ug/kg	97
42) Carbon Tetrachloride	10.39	117	92282	18.1378 ug/kg	100
45) 1,2-Dichloroethane	10.56	62	103038	19.3030 ug/kg	97
46) Benzene	10.60	78	245004	20.2653 ug/kg	98
47) Trichloroethene	11.35	130	78638	20.5282 ug/kg	97
48) Methylcyclohexane	11.44	83	102507	21.3354 ug/kg	99
49) 1,2-Dichloropropane	11.56	63	68070	20.5033 ug/kg	98
51) Bromodichloromethane	11.87	83	86499	18.4872 ug/kg	99
52) Dibromomethane	11.95	174	38551	17.5252 ug/kg	98
53) 2-Chloroethyl Vinyl Ether	12.17	63	12149	15.3239 ug/kg	96
54) 4-Methyl-2-Pentanone	12.19	58	23691	16.2579 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022616\9M972932.D Vial: 23
Acq On : 27 Feb 2016 1:53 Operator: ADC
Sample : WG558938-02 A MS 8260 5.31g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 27 02:16:32 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
55)	cis-1,3-Dichloropropene	12.50	75	97668	20.0360	ug/kg	99
56)	Dimethyl Disulfide	12.77	94	104475	21.3271	ug/kg	94
59)	Toluene	12.93	91	270827	21.0092	ug/kg	99
60)	Ethyl Methacrylate	13.01	69	66337	18.5653	ug/kg	99
61)	trans-1,3-Dichloropropene	13.11	75	86274	18.5818	ug/kg	99
62)	1,1,2-Trichloroethane	13.32	97	54211	20.0190	ug/kg	96
63)	2-Hexanone	13.25	43	43054	15.9238	ug/kg	98
64)	1,3-Dichloropropane	13.62	76	91149	20.2002	ug/kg	99
65)	Tetrachloroethene	13.75	164	54071	19.5659	ug/kg	98
66)	Dibromochloromethane	14.01	129	68811	18.1819	ug/kg	100
67)	1,2-Dibromoethane	14.28	107	56886	18.9389	ug/kg	98
68)	1-Chlorohexane	14.35	91	82783	21.7767	ug/kg	98
69)	Chlorobenzene	14.77	112	189796	20.9488	ug/kg	98
70)	1,1,1,2-Tetrachloroethane	14.80	131	70003	20.5747	ug/kg	98
71)	Ethylbenzene	14.79	106	98799	21.1669	ug/kg	98
72)	m-,p-Xylene	14.89	106	242456	42.0610	ug/kg	99
73)	o-Xylene	15.45	106	120574	21.7963	ug/kg	98
74)	Styrene	15.49	104	194038	20.5982	ug/kg	99
75)	Bromoform	15.99	173	41284	16.6143	ug/kg	99
76)	Isopropylbenzene	15.87	105	318244	21.4297	ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	58358	18.4754	ug/kg	99
80)	1,2,3-Trichloropropane	16.28	110	23169	19.3413	ug/kg	84
81)	trans-1,4-Dichloro-2-Buten	16.33	53	18671	15.4628	ug/kg	83
82)	n-Propylbenzene	16.39	91	365150	22.3090	ug/kg	100
83)	Bromobenzene	16.52	156	77057	19.9423	ug/kg	93
84)	1,3,5-Trimethylbenzene	16.57	105	271192	22.0725	ug/kg	98
85)	2-Chlorotoluene	16.66	91	239286	21.7964	ug/kg	99
86)	4-Chlorotoluene	16.70	91	212963	20.9819	ug/kg	99
87)	a-Methylstyrene	16.98	118	128436	22.9419	ug/kg	94
88)	tert-Butylbenzene	17.03	134	60171	23.3594	ug/kg	89
89)	1,2,4-Trimethylbenzene	17.08	105	258593	20.0974	ug/kg	98
90)	sec-Butylbenzene	17.31	105	354301	22.3898	ug/kg	98
91)	p-Isopropyltoluene	17.46	119	283489	21.2282	ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	148859	19.3841	ug/kg	100
93)	1,4-Dichlorobenzene	17.79	146	150065	19.5468	ug/kg	100
94)	n-Butylbenzene	17.99	91	245050	19.7360	ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	140837	19.7652	ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	14138	15.4560	ug/kg	96
97)	1,2,4-Trichlorobenzene	20.43	180	83999	16.6061	ug/kg	98
98)	Hexachlorobutadiene	20.58	225	53375	20.0177	ug/kg	97
99)	Naphthalene	20.81	128	196510	15.4887	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	82254	16.7653	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022616\9M972932.D Vial: 23
Acq On : 27 Feb 2016 1:53 Operator: ADC
Sample : WG558938-02 A MS 8260 5.31g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 27 2:16 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

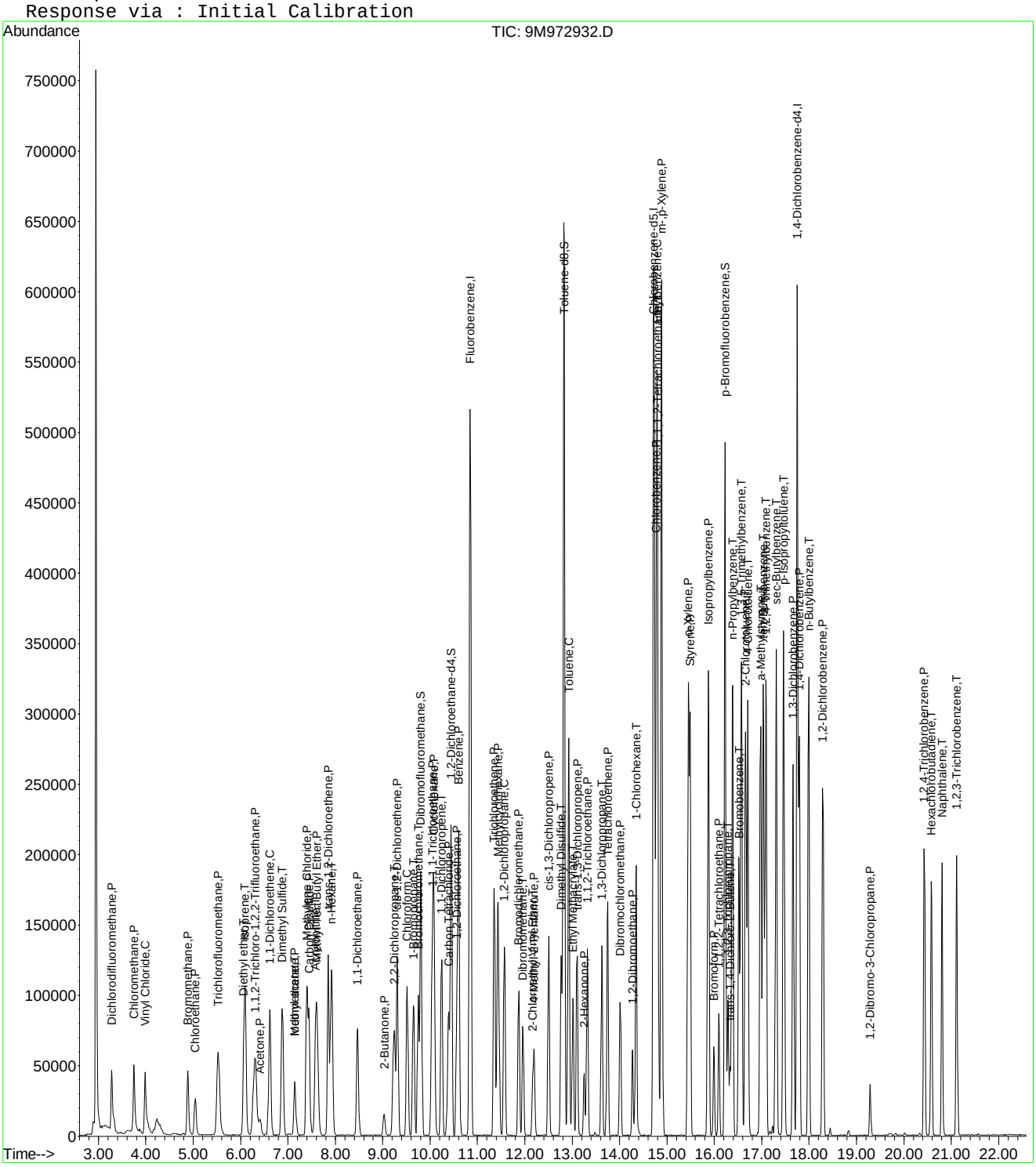

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022616\9M972933.D Vial: 24
Acq On : 27 Feb 2016 2:24 Operator: ADC
Sample : WG558938-03 A MSD 8260 5.49g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 27 02:46:42 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	638726	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	458671	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	210888	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	170571	49.2663 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.54%		
43) 1,2-Dichloroethane-d4	10.45	65	202689	46.6592 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.32%		
58) Toluene-d8	12.83	98	621690	53.5861 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 107.18%		
79) p-Bromofluorobenzene	16.23	95	230416	56.1110 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 112.22%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	76780	17.6366 ug/kg	97
3) Chloromethane	3.74	50	74954	17.9365 ug/kg	98
4) Vinyl Chloride	3.99	62	95152	22.7458 ug/kg	98
6) Bromomethane	4.88	94	50954	18.7541 ug/kg	98
7) Chloroethane	5.04	64	38928	20.8876 ug/kg	98
8) Trichlorofluoromethane	5.53	101	121904	19.4296 ug/kg	97
9) Diethyl ether	6.07	59	1471	0.5015 ug/kg	93
10) Isoprene	6.09	67	97144	25.9341 ug/kg	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	70390	21.7544 ug/kg	96
13) Acetone	6.40	43	28367	15.9426 ug/kg	96
14) 1,1-Dichloroethene	6.61	61	120025	20.1086 ug/kg	99
16) Dimethyl Sulfide	6.88	62	78814	31.2424 ug/kg	98
17) Iodomethane	7.14	142	35673	21.7847 ug/kg	97
18) Methyl acetate	7.15	43	52104	16.0576 ug/kg	97
19) Methylene Chloride	7.41	84	70100	21.5642 ug/kg	92
20) Carbon Disulfide	7.45	76	174164	18.9415 ug/kg	98
21) Acrylonitrile	7.59	53	28310	17.6365 ug/kg	97
22) Methyl Tert Butyl Ether	7.61	73	185396	20.0245 ug/kg	97
23) trans-1,2-Dichloroethene	7.85	61	114404	21.5065 ug/kg	100
24) n-Hexane	7.92	57	117482	21.4121 ug/kg	98
27) 1,1-Dichloroethane	8.47	63	132767	19.8711 ug/kg	99
29) 2-Butanone	9.02	43	33430	16.2303 ug/kg	99
31) 2,2-Dichloropropane	9.24	77	91975	18.4433 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	76867	22.0321 ug/kg	98
33) Chloroform	9.52	83	122334	19.9318 ug/kg	99
34) 1-Bromopropane	9.65	122	18272	34.6781 ug/kg	99
35) Bromochloromethane	9.75	130	45787	20.2034 ug/kg	98
38) 1,1,1-Trichloroethane	10.04	97	111673	20.1195 ug/kg	99
39) Cyclohexane	10.08	56	135265	22.3526 ug/kg	99
40) 1,1-Dichloropropene	10.25	75	88334	20.2250 ug/kg	99
41) Tert-Amyl-Methyl ether	10.25	73	12174	1.4135 ug/kg#	45
42) Carbon Tetrachloride	10.39	117	98217	19.0869 ug/kg	100
45) 1,2-Dichloroethane	10.56	62	108338	20.0674 ug/kg	97
46) Benzene	10.60	78	257261	21.0395 ug/kg	100
47) Trichloroethene	11.35	130	82861	21.3870 ug/kg	95
48) Methylcyclohexane	11.44	83	114418	23.5464 ug/kg	98
49) 1,2-Dichloropropane	11.57	63	74762	22.2654 ug/kg	99
51) Bromodichloromethane	11.87	83	92743	19.5986 ug/kg	100
52) Dibromomethane	11.97	174	41551	18.6764 ug/kg	99
53) 2-Chloroethyl Vinyl Ether	12.17	63	12352	15.3896 ug/kg	98

(#) = qualifier out of range (m) = manual integration
9M972933.D 8260SL.M Sat Feb 27 02:46:42 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022616\9M972933.D Vial: 24
Acq On : 27 Feb 2016 2:24 Operator: ADC
Sample : WG558938-03 A MSD 8260 5.49g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 27 02:46:42 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
54)	4-Methyl-2-Pentanone	12.20	58	27242	18.4843 ug/kg	97
55)	cis-1,3-Dichloropropene	12.50	75	105474	21.3938 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	118286	23.8746 ug/kg	93
59)	Toluene	12.93	91	290794	22.1894 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	76622	21.0932 ug/kg	96
61)	trans-1,3-Dichloropropene	13.10	75	93455	19.7994 ug/kg	99
62)	1,1,2-Trichloroethane	13.32	97	57942	21.0470 ug/kg	99
63)	2-Hexanone	13.25	43	47470	17.2701 ug/kg	97
64)	1,3-Dichloropropane	13.62	76	97469	21.2478 ug/kg	98
65)	Tetrachloroethene	13.75	164	58895	20.9632 ug/kg	96
66)	Dibromochloromethane	14.01	129	75217	19.5498 ug/kg	96
67)	1,2-Dibromoethane	14.28	107	59512	19.4894 ug/kg	98
68)	1-Chlorohexane	14.35	91	88582	22.9213 ug/kg	96
69)	Chlorobenzene	14.77	112	202605	21.9971 ug/kg	97
70)	1,1,1,2-Tetrachloroethane	14.80	131	73554	21.2651 ug/kg	100
71)	Ethylbenzene	14.79	106	106043	22.3475 ug/kg	99
72)	m-,p-Xylene	14.89	106	260166	44.3956 ug/kg	100
73)	o-Xylene	15.45	106	129463	23.0206 ug/kg	99
74)	Styrene	15.49	104	211472	22.0820 ug/kg	99
75)	Bromoform	15.99	173	44620	17.6633 ug/kg	98
76)	Isopropylbenzene	15.87	105	341455	22.6168 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	64159	20.0556 ug/kg	100
80)	1,2,3-Trichloropropane	16.29	110	23681	19.5193 ug/kg	90
81)	trans-1,4-Dichloro-2-Buten	16.33	53	18895	15.4509 ug/kg	76
82)	n-Propylbenzene	16.38	91	390630	23.5646 ug/kg	99
83)	Bromobenzene	16.52	156	83303	21.2867 ug/kg	95
84)	1,3,5-Trimethylbenzene	16.57	105	291936	23.4611 ug/kg	99
85)	2-Chlorotoluene	16.66	91	253697	22.8175 ug/kg	100
86)	4-Chlorotoluene	16.70	91	228339	22.2130 ug/kg	98
87)	a-Methylstyrene	16.98	118	140119	24.7129 ug/kg	99
88)	tert-Butylbenzene	17.03	134	62957	24.1326 ug/kg	88
89)	1,2,4-Trimethylbenzene	17.08	105	286312	21.9709 ug/kg	100
90)	sec-Butylbenzene	17.30	105	375502	23.4301 ug/kg	99
91)	p-Isopropyltoluene	17.46	119	303793	22.4616 ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	159501	20.5078 ug/kg	98
93)	1,4-Dichlorobenzene	17.79	146	160929	20.6974 ug/kg	98
94)	n-Butylbenzene	17.99	91	264921	21.0671 ug/kg	99
95)	1,2-Dichlorobenzene	18.30	146	153811	21.3136 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.30	157	15097	16.2962 ug/kg	99
97)	1,2,4-Trichlorobenzene	20.44	180	95403	18.6226 ug/kg	98
98)	Hexachlorobutadiene	20.59	225	58935	21.8240 ug/kg	98
99)	Naphthalene	20.81	128	219097	17.0511 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	92847	18.6857 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022616\9M972933.D Vial: 24
Acq On : 27 Feb 2016 2:24 Operator: ADC
Sample : WG558938-03 A MSD 8260 5.49g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 27 2:46 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

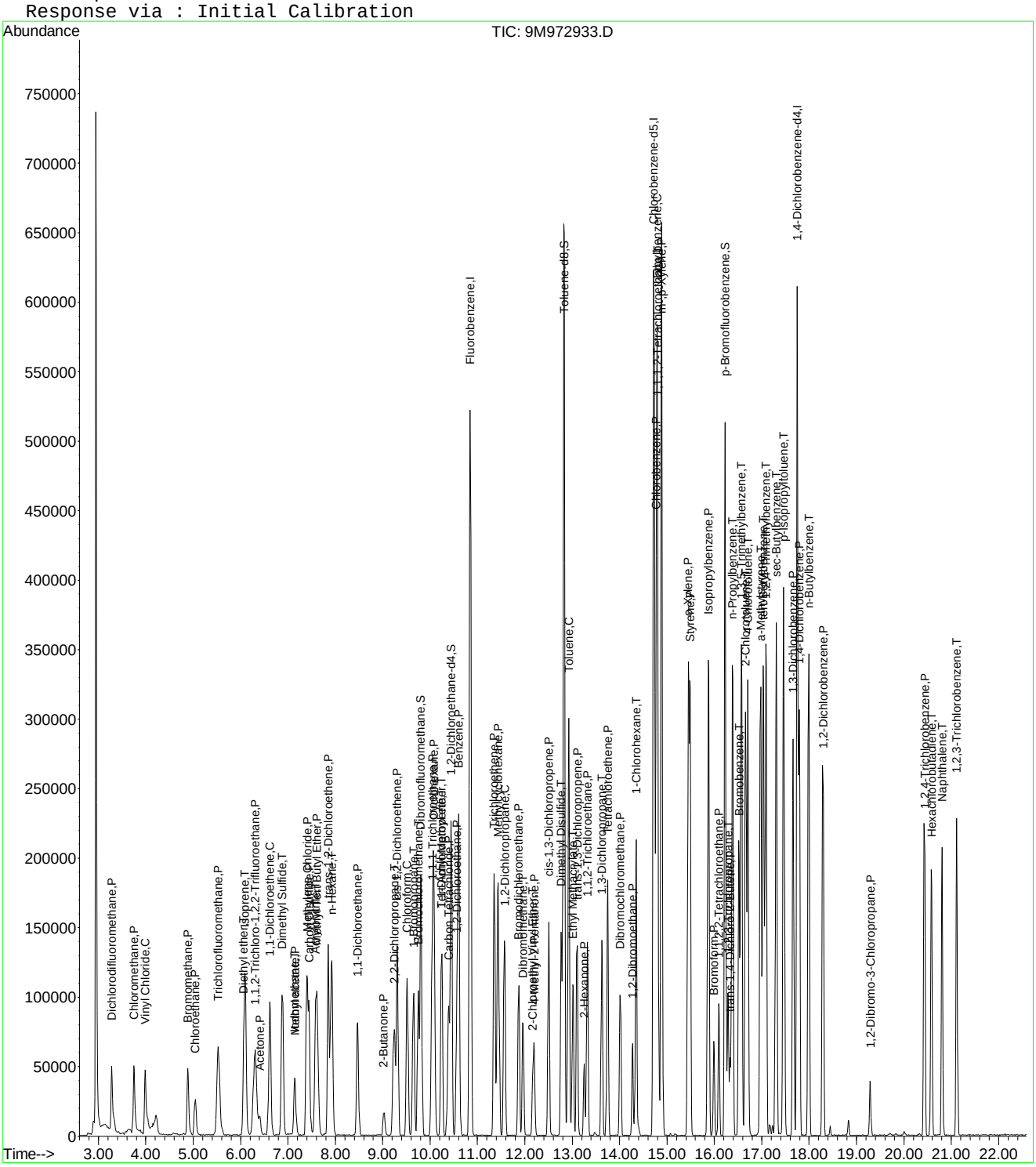

2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021240-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPT04(5-5.5)240216	**Prep Method:**	6850	**Prep Date:**	02/25/2016 14:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558779	**Analyst:**	JWR	**Run Date:**	02/25/2016 23:58
Collect Date:	02/24/2016 10:00	**Dilution:**	1	**File ID:**	1LM.LM33375
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	101		4.93	2.46	1.23

Certificate of Analysis

Sample #:	L16021240-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT04(15-15.5)240216	**Prep Method:**	6850	**Prep Date:**	02/25/2016 14:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558779	**Analyst:**	JWR	**Run Date:**	02/26/2016 00:17
Collect Date:	02/24/2016 10:28	**Dilution:**	1	**File ID:**	1LM.LM33376
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.44	U	4.90	2.44	1.22

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021240-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPT04(20-21)240216	**Prep Method:**	6850	**Prep Date:**	02/25/2016 14:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558779	**Analyst:**	JWR	**Run Date:**	02/26/2016 00:36
Collect Date:	02/24/2016 10:55	**Dilution:**	1	**File ID:**	1LM.LM33377
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	27.2		4.62	2.30	1.15

Certificate of Analysis

Sample #:	L16021240-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPT04(20-21)240216FD	**Prep Method:**	6850	**Prep Date:**	02/25/2016 14:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558779	**Analyst:**	JWR	**Run Date:**	02/26/2016 00:55
Collect Date:	02/24/2016 10:55	**Dilution:**	1	**File ID:**	1LM.LM33378
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	26.7		4.58	2.30	1.15

Certificate of Analysis

Sample #:	L16021240-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT04(25-25.5)240216	**Prep Method:**	6850	**Prep Date:**	02/25/2016 14:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558779	**Analyst:**	JWR	**Run Date:**	02/26/2016 13:21
Collect Date:	02/24/2016 11:22	**Dilution:**	5	**File ID:**	1LM.LM33394
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	83.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	152		23.2	11.6	5.80

Certificate of Analysis

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L16021240-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT04(29-30)240216	**Prep Method:**	6850	**Prep Date:**	02/25/2016 14:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558779	**Analyst:**	JWR	**Run Date:**	02/26/2016 13:40
Collect Date:	02/24/2016 12:00	**Dilution:**	20	**File ID:**	1LM.LM33395
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	79.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	672		97.4	48.6	24.3

Certificate of Analysis

Sample #:	L16021240-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT04(36.5-37)240216	**Prep Method:**	6850	**Prep Date:**	02/25/2016 14:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558779	**Analyst:**	JWR	**Run Date:**	02/26/2016 13:59
Collect Date:	02/24/2016 15:15	**Dilution:**	50	**File ID:**	1LM.LM33396
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	79.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3200		248	124	62.0

Certificate of Analysis

Sample #:	L16021240-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT04(34-34.5)240216	**Prep Method:**	6850	**Prep Date:**	02/25/2016 14:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558779	**Analyst:**	JWR	**Run Date:**	02/26/2016 12:24
Collect Date:	02/24/2016 15:15	**Dilution:**	50	**File ID:**	1LM.LM33391
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	84.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2180		232	116	57.9

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

MICROBAC

Semivolatile Sample Extract Log

Parameter: Perchlorate
SOP #: HPLC 06
Analyst: JWR
Spike/Surrogate analyst: JWR, ~~MD~~, ADC
Surrogate #: NA
Spike # A: STD72686
Ext Solvent: DI-H2O
Ext Solvent: NA
Ext Disk: NA

Matrix: Soils
Rev #: 07
Date/Time Extracted: 02/25/16/1430
Witness:
Spike # B: NA
Lot #: NA
Lot #: NA
Lot #: NA

Extraction Work Group: WG558774
Analytical Work Group: WG558779
Run ID: R4473230
Pipetter(s): Eppendorf #403
Analytical Balance ID: BAL017
Reagent: Tubes Lot #: RGT34011
Reagent: Sand Lot #: C0A16150
Other: IS Lot #: C0A18071

Color Code
T = Transparent
C = Colored
O = Opaque

	Sample ID	Test Code	pH	Initial Wt / Vol	JWR ~~Surrogate~~ Amount IS	Amount Spike	Final Volume	Extract Color	Comments
1	WG558774-01	6850		5.004 g	0.250 ml	1.0 ml	50 ml		MCT (2 ug/kg) (10,000 us)
2	WG558774-02			5.018 g		NA			Blank
3	WG558774-03			5.012 g		1.0 ml			LCS (2 ug/kg)
4	L16021240-01			5.078 g		NA			
5	-02			5.099 g		NA			
6	-03			5.128 g		NA			
7	-04			5.134 g		NA			
8	-05			5.153 g		NA			
9	-06			5.183 g		NA			
10	-07			5.056 g		NA			
11	Ref -08			5.101 g		NA			WG558774-04 Ref
12	MS -08			5.109 g		1.0 ml			WG558774-05 MS (@2 ug/kg)
13	MSD -08			5.108 g		1.0 ml			WG558774-06 MSD (@2 ug/kg)
14	L16021061-01			5.090 g	0.250 mL	1.0 mL	50 mL		P&A-ADC (2 ug/kg)
15	-02			5.057 g					P&A-ADC (2 ug/kg)
16	-03			5.006 g					P&A-ADC (2 ug/kg)
17	-04			5.007 g					P&A-ADC (2 ug/kg)
18	L16021192-01			5.033 g	0.250 ml	1.0 ml	50 ml		P&A-WTD (2 ug/kg)
19	-02			5.003 g					P&A-WTD (2 ug/kg)
20	-03			5.079 g					P&A-WTD (2 ug/kg)
21	-04			5.069 g					P&A-WTD (2 ug/kg)
22									
23									
24									

Reviewed by: [signature]

Analytical WG558779 (soils)

Perchlorate Conductivity Check

(perchlorate1)

Conductivity Probe Calibration Check: 1374 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG558774-01 MCT	9,770.	
-02 Blank	1.23	
-03 LCS	1.22	
L16021061-01 P&A-ADC	5.41	
-02 P&A-ADC	5.92	
-03 P&A-ADC	5.96	
-04 P&A-ADC	5.68	
L16021192-01 P&A-WTD	5.83	
-02 P&A-WTD	5.47	
-03 P&A-WTD	5.61	
-04 P&A-WTD	5.57	
L16021240-01	14.91	
-02	3.75	
-03	4.37	
-04	4.28	
-05	4.44	
-06	5.31	
-07	9.37	
-08 Ref	6.50	
-08 MS	6.62	
-08 MSD	6.02	

Analyst: John Richards

Date/Time: 02/26/16 / 1400

DCN#116897

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 021716_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG557864 (waters)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 MS/MSD STD: NA

Comments: ICAL WG557856 : Alternate Source STD72685
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM33244	WG557856-01 CCB	1	1		02/17/16 19:12
2	1LM.LM33245	WG557856-02 STD (0.1 ug/L)	1	1	STD72683	02/17/16 19:31
3	1LM.LM33246	WG557856-03 STD (0.2 ug/L)	1	1	STD72683	02/17/16 19:50
4	1LM.LM33247	WG557856-04 STD (0.5 ug/L)	1	1	STD72683	02/17/16 20:08
5	1LM.LM33248	WG557856-05 STD (1.0 ug/L)	1	1	STD72683	02/17/16 20:27
6	1LM.LM33249	WG557856-06 STD (2.0 ug/L)	1	1	STD72683	02/17/16 20:46
7	1LM.LM33250	WG557856-07 STD (5.0 ug/L)	1	1	STD72683	02/17/16 21:05
8	1LM.LM33251	WG557856-08 STD (10 ug/L)	1	1	STD72683	02/17/16 21:24
9	1LM.LM33252	WG557856-09 SSCV (1.0 ug/L)	1	1	STD72685	02/17/16 21:43
10	1LM.LM33253	WG557868-01 CCB	1	1		02/17/16 22:02
11	1LM.LM33254	WG557868-02 CCV (1.0ug/L)	1	1	STD72683	02/17/16 22:21
12	1LM.LM33255	WG557864-05 MRL (0.2ug/L)	1	1	STD72683	02/17/16 22:40
13	1LM.LM33256	WG557864-01 MCT (0.2ug/L)	1	1	STD72685	02/17/16 22:59
14	1LM.LM33257	WG557864-02 BLANK	1	1		02/17/16 23:18
15	1LM.LM33258	WG557864-03 LCS (0.2ug/L)	1	1	STD72685	02/17/16 23:37
16	1LM.LM33259	WG557864-04 LCS2 (0.2ug/L)	1	1	STD72685	02/17/16 23:56
17	1LM.LM33260	L16020819-01 (1000x) (NR)	1	1000		02/18/16 00:15
18	1LM.LM33261	L16020819-01 (100x) (NR)	1	100		02/18/16 00:34
19	1LM.LM33262	L16020819-01 (10x) (NR)	1	10		02/18/16 00:53
20	1LM.LM33263	L16020819-01 Neat	1	1		02/18/16 01:11
21	1LM.LM33264	Blank Rinse	1	1		02/18/16 01:30
22	1LM.LM33265	Blank Rinse	1	1		02/18/16 01:49
23	1LM.LM33266	WG557868-03 CCV (1.0ug/L)	1	1	STD72683	02/18/16 02:08
24	1LM.LM33267	WG557864-06 MRL (0.2ug/L)	1	1	STD72683	02/18/16 02:27
25	1LM.LM33268	WG557868-04 CCB	1	1		02/18/16 02:46

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17	X	1	Analyzed too dilute	
	L16020819-01 (1000x) (NR) : Results from this sample at this dilution are not needed.			
18	X	1	Analyzed too dilute	
	L16020819-01 (100x) (NR) : Results from this sample at this dilution are not needed.			
19	X	1	Analyzed too dilute	

Page: 1 Approved: 18-FEB-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 021716_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG557864 (waters)

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 NA

Comments

Seq.	Rerun	Dil.	Reason	Analytes
	L16020819-01 (10x) (NR) : Results from this sample at this dilution are not needed.			

Page: 2 Approved: 18-FEB-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 022516_JWR.TXT
Analyst1: JWR Analyst2: WTD/ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG558779 (SOILS)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 MS/MSD STD: STD72685

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM33355	WG558803-01 CCB	1	1		02/25/16 17:40
2	1LM.LM33356	WG558803-02 CCV (1.0ug/L)	1	1	STD72683	02/25/16 17:58
3	1LM.LM33357	WG558779-07 MRL (2.0ug/kg)	7	1	STD72683	02/25/16 18:17
4	1LM.LM33358	WG558779-01 MCT (2.0ug/kg)	7	1	STD72685	02/25/16 18:36
5	1LM.LM33359	WG558779-02 BLANK	7	1		02/25/16 18:55
6	1LM.LM33360	WG558779-03 LCS (2.0ug/kg)	7	1	STD72685	02/25/16 19:14
7	1LM.LM33361	L16021061-01 ADC-P\&A (2.0ug/kg)	7	1	STD72685	02/25/16 19:33
8	1LM.LM33362	L16021061-02 ADC-P\&A (2.0ug/kg)	7	1	STD72685	02/25/16 19:52
9	1LM.LM33363	L16021061-03 ADC-P\&A (2.0ug/kg)	7	1	STD72685	02/25/16 20:11
10	1LM.LM33364	L16021061-04 ADC-P\&A (2.0ug/kg)	7	1	STD72685	02/25/16 20:30
11	1LM.LM33365	L16021192-01 WTD-P\&A (2.0ug/kg)	7	1	STD72685	02/25/16 20:49
12	1LM.LM33366	L16021192-02 WTD-P\&A (2.0ug/kg)	7	1	STD72685	02/25/16 21:08
13	1LM.LM33367	L16021192-03 WTD-P\&A (2.0ug/kg)	7	1	STD72685	02/25/16 21:27
14	1LM.LM33368	WG558803-03 CCV (1.0ug/L)	1	1	STD72683	02/25/16 21:46
15	1LM.LM33369	WG558779-08 MRL (2.0ug/kg)	7	1	STD72683	02/25/16 22:05
16	1LM.LM33370	WG558803-04 CCB	1	1		02/25/16 22:24
17	1LM.LM33371	L16021192-04 WTD-P\&A (2.0ug/kg)	7	1	STD72685	02/25/16 22:42
18	1LM.LM33372	L16021240-08 REF (NR)	7	1		02/25/16 23:01
19	1LM.LM33373	L16021240-08 MS (NR)	7	1	STD72685	02/25/16 23:20
20	1LM.LM33374	L16021240-08 MSD (NR)	7	1	STD72685	02/25/16 23:39
21	1LM.LM33375	L16021240-01	7	1		02/25/16 23:58
22	1LM.LM33376	L16021240-02	7	1		02/26/16 00:17
23	1LM.LM33377	L16021240-03	7	1		02/26/16 00:36
24	1LM.LM33378	L16021240-04	7	1		02/26/16 00:55
25	1LM.LM33379	L16021240-05 (NR)	7	1		02/26/16 01:14
26	1LM.LM33380	L16021240-06 (NR)	7	1		02/26/16 01:33
27	1LM.LM33381	WG558803-05 CCV (1.0ug/L)	1	1	STD72683	02/26/16 01:52
28	1LM.LM33382	WG558779-09 MRL (2.0ug/kg)	7	1	STD72683	02/26/16 02:11
29	1LM.LM33383	WG558803-06 CCB	1	1		02/26/16 02:30
30	1LM.LM33384	L16021240-07 (NR)	7	1		02/26/16 02:49
31	1LM.LM33385	WG558803-07 CCV (1.0ug/L)	1	1	STD72683	02/26/16 03:08
32	1LM.LM33386	WG558779-10 MRL (2.0ug/kg)	7	1	STD72683	02/26/16 03:26
33	1LM.LM33387	WG558803-08 CCB	1	1		02/26/16 03:45

Page: 1 Approved: 29-FEB-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 022516_JWR.TXT
Analyst1: JWR Analyst2: WTD/ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG558779 (SOILS)

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM33388	WG558803-09 CCV (1.0ug/L)	1	1	STD72683	02/26/16 11:27
35	1LM.LM33389	WG558779-11 MRL (2.0ug/kg)	7	1	STD72683	02/26/16 11:46
36	1LM.LM33390	WG558803-10 CCB	1	1		02/26/16 12:05
37	1LM.LM33391	L16021240-08 REF (RR 50x)	7	50		02/26/16 12:24
38	1LM.LM33392	L16021240-08 MS (RR 50x)	7	50	STD72685	02/26/16 12:43
39	1LM.LM33393	L16021240-08 MSD (RR 50x)	7	50	STD72685	02/26/16 13:02
40	1LM.LM33394	L16021240-05 (RR 5x)	7	5		02/26/16 13:21
41	1LM.LM33395	L16021240-06 (RR 20x)	7	20		02/26/16 13:40
42	1LM.LM33396	L16021240-07 (RR 50x)	7	50		02/26/16 13:59
43	1LM.LM33397	WG558803-11 CCV (1.0ug/L)	1	1	STD72683	02/26/16 14:18
44	1LM.LM33398	WG558779-12 MRL (2.0ug/kg)	7	1	STD72683	02/26/16 14:36
45	1LM.LM33399	WG558803-12 CCB	1	1		02/26/16 14:55

Comments

Seq.	Rerun	Dil.	Reason	Analytes
38				
	L16021240-08 MS (RR 50x) : The MS %Rec is above the advisory limit. The parent sample for this MS had a perchlorate result greater than 10 times that of the spiked amount.			
39				
	L16021240-08 MSD (RR 50x) : The MSD %Rec is below the advisory limit. The parent sample for this MSD had a perchlorate result greater than 10 times that of the spiked amount.			

Page: 2 Approved: 29-FEB-16

Wadei D

Microbac Laboratories Inc.

Data Checklist

Date: 17-FEB-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG557856
Runlog ID: 73366
Analytical Workgroups: L16020819

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 18-FEB-2016 John Richards

Secondary Reviewer: 18-FEB-2016 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-18-2016 16:36:00

Microbac Laboratories Inc.

Data Checklist

Date: 25-FEB-2016
Analyst: JWR
Analyst: WTD/ADC
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 73514
Analytical Workgroups: L16021061(ADC-DOC'S), 1192(WTD-DOC'S), 1240 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 26-FEB-2016 John Richards

Secondary Reviewer: 29-FEB-2016 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-29-2016 07:26:57

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG558779

Login Number: L16021240

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPT04(5-5.5)240216	01	02/24/16					02/25/2016	1.2	28		02/25/16	.4	28	
18DPT04(15-15.5)240216	02	02/24/16					02/25/2016	1.2	28		02/26/16	.4	28	
18CPT04(20-21)240216	03	02/24/16					02/25/2016	1.1	28		02/26/16	.4	28	
18CPT04(20-21)240216FD	04	02/24/16					02/25/2016	1.1	28		02/26/16	.4	28	
18DPT04(25-25.5)240216	05	02/24/16					02/25/2016	1.1	28		02/26/16	1	28	
18DPT04(29-30)240216	06	02/24/16					02/25/2016	1.1	28		02/26/16	1	28	
18DPT04(36.5-37)240216	07	02/24/16					02/25/2016	1	28		02/26/16	1	28	
18DPT04(34-34.5)240216	08	02/24/16					02/25/2016	1	28		02/26/16	.9	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4649479
Report generated 02/29/2016 08:28

METHOD BLANK SUMMARY

Login Number: L16021240
Blank File ID: 1LM.LM33359
Prep Date: 02/25/16 14:30
Analyzed Date: 02/25/16 18:55
Analyst: JWR

Work Group: WG558779
Blank Sample ID: WG558779-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG558779-07	1LM.LM33357	02/25/16 18:17	01
MCT	WG558779-01	1LM.LM33358	02/25/16 18:36	01
LCS	WG558779-03	1LM.LM33360	02/25/16 19:14	01
QCMRL	WG558779-08	1LM.LM33369	02/25/16 22:05	01
18CPT04(5-5.5)240216	L16021240-01	1LM.LM33375	02/25/16 23:58	01
18DPT04(15-15.5)240216	L16021240-02	1LM.LM33376	02/26/16 00:17	01
18CPT04(20-21)240216	L16021240-03	1LM.LM33377	02/26/16 00:36	01
18CPT04(20-21)240216FD	L16021240-04	1LM.LM33378	02/26/16 00:55	01
QCMRL	WG558779-09	1LM.LM33382	02/26/16 02:11	01
QCMRL	WG558779-10	1LM.LM33386	02/26/16 03:26	01
QCMRL	WG558779-11	1LM.LM33389	02/26/16 11:46	01
18DPT04(34-34.5)240216	L16021240-08	1LM.LM33391	02/26/16 12:24	DL01
18DPT04(25-25.5)240216	L16021240-05	1LM.LM33394	02/26/16 13:21	DL01
18DPT04(29-30)240216	L16021240-06	1LM.LM33395	02/26/16 13:40	DL01
18DPT04(36.5-37)240216	L16021240-07	1LM.LM33396	02/26/16 13:59	DL01
QCMRL	WG558779-12	1LM.LM33398	02/26/16 14:36	01

Report Name: BLANK_SUMMARY
PDF File ID: 4649480
Report generated 02/29/2016 08:28

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16021240 Prep Date: 02/25/16 14:30 Sample ID: WG558779-02
Instrument ID: LCMS1 Run Date: 02/25/16 18:55 Prep Method: 6850
File ID: 1LM.LM33359 Analyst: JWR Method: 6850
Workgroup (AAB#): WG558779 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-17-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.996	3.99	0.996	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4649481
29-FEB-2016 08:28

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16021240 Run Date: 02/25/2016 Sample ID: WG558779-03
Instrument ID: LCMS1 Run Time: 19:14 Prep Method: 6850
File ID: 1LM.LM33360 Analyst: JWR Method: 6850
Workgroup (AAB#): WG558779 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD72685 Cal ID: LCMS1-17-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	2.00	2.04	102	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4649482
Report generated: 02/29/2016 08:28

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16021240 Cal ID: LCMS1 - Worknum: WG558779
Instrument ID: LCMS1 Contract #: Method: 6850
Parent ID: WG558779-04 File ID: 1LM.LM33391 Dil: 50 Matrix: SOLID
Sample ID: WG558779-05 MS File ID: 1LM.LM33392 Dil: 50 Units: ug/kg
Sample ID: WG558779-06 MSD File ID: 1LM.LM33393 Dil: 50 Percent Solid: 84.6

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Perchlorate	2180	2.31	2360	7850	2.31	2090	-4130	12.4	80 - 120	15	*

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4649483
Report generated 02/29/2016 08:28

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16021240
Analytical Method: 6850
ICAL Workgroup: WG557856

Instrument ID: LCMS1
Initial Calibration Date: 17-FEB-16 21:24
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.628	7.83	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4649689
Report generated 02/29/2016 08:29

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16021240

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 17-FEB-16 21:24

Column ID: F

Analyte	WG557856-02			WG557856-03			WG557856-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	18800.0000	1.692	0.200	38700.0000	1.755	0.500	91400.0000	1.644

INT_CAL - Modified 03/06/2008
PDF File ID: 4649689
Report generated 02/29/2016 08:29

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16021240

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 17-FEB-16 21:24

Column ID: F

Analyte	WG557856-05			WG557856-06			WG557856-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	178000.000	1.625	2.00	350000.000	1.604	5.00	826000.000	1.554

INT_CAL - Modified 03/06/2008
PDF File ID: 4649689
Report generated 02/29/2016 08:29

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16021240

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 17-FEB-16 21:24

Column ID: F

Analyte	WG557856-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.521

INT_CAL - Modified 03/06/2008
PDF File ID: 4649689
Report generated 02/29/2016 08:29

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16021240 Run Date: 02/17/2016 Sample ID: WG557856-09
Instrument ID: LCMS1 Run Time: 21:43 Method: 6850
File ID: 1LM.LM33252 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG557856 Cal ID: LCMS1 - 17-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	1.05	ug/L	1.65	5.00	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4649690
Report generated 02/29/2016 08:29

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16021240
Run Date: 02/25/2016
Sample ID: WG558803-01
Instrument ID: LCMS1
Run Time: 17:40
Method: 6850
File ID: 1LM.LM33355
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG558779
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4649486
Report generated 02/29/2016 08:29

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16021240
Run Date: 02/25/2016
Sample ID: WG558803-04
Instrument ID: LCMS1
Run Time: 22:24
Method: 6850
File ID: 1LM.LM33370
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG558779
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4649486
Report generated 02/29/2016 08:29

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16021240
Run Date: 02/26/2016
Sample ID: WG558803-06
Instrument ID: LCMS1
Run Time: 02:30
Method: 6850
File ID: 1LM.LM33383
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG558779
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4649486
Report generated 02/29/2016 08:29

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16021240
Run Date: 02/26/2016
Sample ID: WG558803-08
Instrument ID: LCMS1
Run Time: 03:45
Method: 6850
File ID: 1LM.LM33387
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG558779
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4649486
Report generated 02/29/2016 08:29

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16021240
Run Date: 02/26/2016
Sample ID: WG558803-10
Instrument ID: LCMS1
Run Time: 12:05
Method: 6850
File ID: 1LM.LM33390
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG558779
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4649486
Report generated 02/29/2016 08:29

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16021240
Run Date: 02/26/2016
Sample ID: WG558803-12
Instrument ID: LCMS1
Run Time: 14:55
Method: 6850
File ID: 1LM.LM33399
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG558779
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4649486
Report generated 02/29/2016 08:29

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021240
Run Date: 02/25/2016
Sample ID: WG558803-02
Instrument ID: LCMS1
Run Time: 17:58
Method: 6850
File ID: 1LM.LM33356
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG558779
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.07	ug/kg	1.68	7.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4649485
Report generated 02/29/2016 08:29

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021240 Run Date: 02/25/2016 Sample ID: WG558803-03
Instrument ID: LCMS1 Run Time: 21:46 Method: 6850
File ID: 1LM.LM33368 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG558779 Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.11	ug/kg	1.74	11.0	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4649485
Report generated 02/29/2016 08:29

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021240
Run Date: 02/26/2016
Sample ID: WG558803-05
Instrument ID: LCMS1
Run Time: 01:52
Method: 6850
File ID: 1LM.LM33381
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG558779
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.09	ug/kg	1.71	9.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4649485
Report generated 02/29/2016 08:29

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021240
Run Date: 02/26/2016
Sample ID: WG558803-07
Instrument ID: LCMS1
Run Time: 03:08
Method: 6850
File ID: 1LM.LM33385
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG558779
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.08	ug/kg	1.69	8.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4649485
Report generated 02/29/2016 08:29

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021240
Run Date: 02/26/2016
Sample ID: WG558803-09
Instrument ID: LCMS1
Run Time: 11:27
Method: 6850
File ID: 1LM.LM33388
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG558779
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.09	ug/kg	1.71	9.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4649485
Report generated 02/29/2016 08:29

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021240 Run Date: 02/26/2016 Sample ID: WG558803-11
Instrument ID: LCMS1 Run Time: 14:18 Method: 6850
File ID: 1LM.LM33397 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG558779 Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.12	ug/kg	1.76	12.0	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4649485
Report generated 02/29/2016 08:29

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16021240 Run Date: 02/25/2016 Sample ID: WG558779-07
Instrument ID: LCMS1 Run Time: 18:17 Prep Method: 6850
File ID: 1LM.LM33357 Analyst: JWR Method: 6850
Workgroup (AAB#): WG558779 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-17-FEB-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.02	101	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4649484
Report generated 02/29/2016 08:29

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16021240 Run Date: 02/25/2016 Sample ID: WG558779-08
Instrument ID: LCMS1 Run Time: 22:05 Prep Method: 6850
File ID: 1LM.LM33369 Analyst: JWR Method: 6850
Workgroup (AAB#): WG558779 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-17-FEB-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.15	108	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4649484
Report generated 02/29/2016 08:29

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16021240 Run Date: 02/26/2016 Sample ID: WG558779-09
Instrument ID: LCMS1 Run Time: 02:11 Prep Method: 6850
File ID: 1LM.LM33382 Analyst: JWR Method: 6850
Workgroup (AAB#): WG558779 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-17-FEB-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.14	107	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4649484
Report generated 02/29/2016 08:29

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16021240 Run Date: 02/26/2016 Sample ID: WG558779-10
Instrument ID: LCMS1 Run Time: 03:26 Prep Method: 6850
File ID: 1LM.LM33386 Analyst: JWR Method: 6850
Workgroup (AAB#): WG558779 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-17-FEB-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.11	106	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4649484
Report generated 02/29/2016 08:29

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16021240 Run Date: 02/26/2016 Sample ID: WG558779-11
Instrument ID: LCMS1 Run Time: 11:46 Prep Method: 6850
File ID: 1LM.LM33389 Analyst: JWR Method: 6850
Workgroup (AAB#): WG558779 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-17-FEB-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.06	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4649484
Report generated 02/29/2016 08:29

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16021240 Run Date: 02/26/2016 Sample ID: WG558779-12
Instrument ID: LCMS1 Run Time: 14:36 Prep Method: 6850
File ID: 1LM.LM33398 Analyst: JWR Method: 6850
Workgroup (AAB#): WG558779 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-17-FEB-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.20	110	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4649484
Report generated 02/29/2016 08:29

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16021240
Instrument ID: LCMS1
Workgroup (AAB#): WG558779

ICAL CCV Number: WG557856-05
CAL ID: LCMS1-17-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1
WG557856	NA	NA	542000
Upper Limit	NA	NA	813000
Lower Limit	NA	NA	271000
L16021240-01	1.00	01	469000
L16021240-02	1.00	01	515000
L16021240-03	1.00	01	512000
L16021240-04	1.00	01	511000
L16021240-05	5.00	DL01	495000
L16021240-06	20.0	DL01	503000
L16021240-07	50.0	DL01	499000
L16021240-08	50.0	DL01	479000
WG558779-02	1.00	01	492000
WG558779-03	1.00	01	500000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4649487
Report generated 02/29/2016 08:29

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**	6850	**Samplenum:**	L16021240-01
Instrument:	LCMS1	**Prep Date:**	02/25/2016 14:30	**File ID:**	1LM.LM33375
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558779	**Analysis Date:**	02/25/2016 23:58	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1190000	395000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**	6850	**Samplenum:**	L16021240-02
Instrument:	LCMS1	**Prep Date:**	02/25/2016 14:30	**File ID:**	1LM.LM33376
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558779	**Analysis Date:**	02/26/2016 00:17	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	12700	4460	2.85	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**	6850	**Samplenum:**	L16021240-03
Instrument:	LCMS1	**Prep Date:**	02/25/2016 14:30	**File ID:**	1LM.LM33377
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558779	**Analysis Date:**	02/26/2016 00:36	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	375000	122000	3.07	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**	6850	**Samplenum:**	L16021240-04
Instrument:	LCMS1	**Prep Date:**	02/25/2016 14:30	**File ID:**	1LM.LM33378
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558779	**Analysis Date:**	02/26/2016 00:55	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	369000	118000	3.13	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**	6850	**Samplenum:**	L16021240-05
Instrument:	LCMS1	**Prep Date:**	02/25/2016 14:30	**File ID:**	1LM.LM33394
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558779	**Analysis Date:**	02/26/2016 13:21	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	403000	136000	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**	6850	**Samplenum:**	L16021240-06
Instrument:	LCMS1	**Prep Date:**	02/25/2016 14:30	**File ID:**	1LM.LM33395
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558779	**Analysis Date:**	02/26/2016 13:40	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	429000	146000	2.94	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**	6850	**Samplenum:**	L16021240-07
Instrument:	LCMS1	**Prep Date:**	02/25/2016 14:30	**File ID:**	1LM.LM33396
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558779	**Analysis Date:**	02/26/2016 13:59	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	796000	264000	3.02	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**	6850	**Samplenum:**	L16021240-08
Instrument:	LCMS1	**Prep Date:**	02/25/2016 14:30	**File ID:**	1LM.LM33391
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558779	**Analysis Date:**	02/26/2016 12:24	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	558000	184000	3.03	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**		**Samplenum:**	WG557856-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33245
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558779	**Analysis Date:**	02/17/2016 19:31	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	18800	6990	2.69	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**		**Samplenum:**	WG557856-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33246
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558779	**Analysis Date:**	02/17/2016 19:50	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38700	14200	2.73	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**		**Samplenum:**	WG557856-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33247
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558779	**Analysis Date:**	02/17/2016 20:08	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	91400	32900	2.78	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**		**Samplenum:**	WG557856-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33248
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558779	**Analysis Date:**	02/17/2016 20:27	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	178000	63900	2.79	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**		**Samplenum:**	WG557856-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33249
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558779	**Analysis Date:**	02/17/2016 20:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	350000	126000	2.78	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**		**Samplenum:**	WG557856-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33250
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558779	**Analysis Date:**	02/17/2016 21:05	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	826000	293000	2.82	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**		**Samplenum:**	WG557856-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33251
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558779	**Analysis Date:**	02/17/2016 21:24	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	562000	2.72	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**		**Samplenum:**	WG557856-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33252
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558779	**Analysis Date:**	02/17/2016 21:43	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	179000	63600	2.81	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**	6850	**Samplenum:**	WG558779-01
Instrument:	LCMS1	**Prep Date:**	02/25/2016 14:30	**File ID:**	1LM.LM33358
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558779	**Analysis Date:**	02/25/2016 18:36	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	33300	11900	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**	6850	**Samplenum:**	WG558779-02
Instrument:	LCMS1	**Prep Date:**	02/25/2016 14:30	**File ID:**	1LM.LM33359
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558779	**Analysis Date:**	02/25/2016 18:55	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	780	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**	6850	**Samplenum:**	WG558779-03
Instrument:	LCMS1	**Prep Date:**	02/25/2016 14:30	**File ID:**	1LM.LM33360
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558779	**Analysis Date:**	02/25/2016 19:14	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34600	11800	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**	6850	**Samplenum:**	WG558779-05
Instrument:	LCMS1	**Prep Date:**	02/25/2016 14:30	**File ID:**	1LM.LM33392
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558779	**Analysis Date:**	02/26/2016 12:43	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	607000	200000	3.04	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**	6850	**Samplenum:**	WG558779-06
Instrument:	LCMS1	**Prep Date:**	02/25/2016 14:30	**File ID:**	1LM.LM33393
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558779	**Analysis Date:**	02/26/2016 13:02	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	548000	182000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**	6850	**Samplenum:**	WG558779-07
Instrument:	LCMS1	**Prep Date:**	02/25/2016 14:30	**File ID:**	1LM.LM33357
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558779	**Analysis Date:**	02/25/2016 18:17	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	33900	12500	2.71	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**	6850	**Samplenum:**	WG558779-08
Instrument:	LCMS1	**Prep Date:**	02/25/2016 14:30	**File ID:**	1LM.LM33369
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558779	**Analysis Date:**	02/25/2016 22:05	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	39400	12500	3.15	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**	6850	**Samplenum:**	WG558779-09
Instrument:	LCMS1	**Prep Date:**	02/25/2016 14:30	**File ID:**	1LM.LM33382
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558779	**Analysis Date:**	02/26/2016 02:11	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	39300	13400	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**	6850	**Samplenum:**	WG558779-10
Instrument:	LCMS1	**Prep Date:**	02/25/2016 14:30	**File ID:**	1LM.LM33386
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558779	**Analysis Date:**	02/26/2016 03:26	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38300	12800	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**	6850	**Samplenum:**	WG558779-11
Instrument:	LCMS1	**Prep Date:**	02/25/2016 14:30	**File ID:**	1LM.LM33389
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558779	**Analysis Date:**	02/26/2016 11:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34700	12400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**	6850	**Samplenum:**	WG558779-12
Instrument:	LCMS1	**Prep Date:**	02/25/2016 14:30	**File ID:**	1LM.LM33398
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558779	**Analysis Date:**	02/26/2016 14:36	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	41100	13300	3.09	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**		**Samplenum:**	WG558803-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33355
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558779	**Analysis Date:**	02/25/2016 17:40	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**		**Samplenum:**	WG558803-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33356
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558779	**Analysis Date:**	02/25/2016 17:58	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	164000	54100	3.03	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**		**Samplenum:**	WG558803-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33368
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558779	**Analysis Date:**	02/25/2016 21:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	187000	62100	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**		**Samplenum:**	WG558803-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33370
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558779	**Analysis Date:**	02/25/2016 22:24	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	495	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**		**Samplenum:**	WG558803-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33381
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558779	**Analysis Date:**	02/26/2016 01:52	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	185000	59000	3.14	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**		**Samplenum:**	WG558803-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33383
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558779	**Analysis Date:**	02/26/2016 02:30	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**		**Samplenum:**	WG558803-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33385
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558779	**Analysis Date:**	02/26/2016 03:08	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	183000	61000	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**		**Samplenum:**	WG558803-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33387
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558779	**Analysis Date:**	02/26/2016 03:45	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	571	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**		**Samplenum:**	WG558803-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33388
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558779	**Analysis Date:**	02/26/2016 11:27	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	163000	54400	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**		**Samplenum:**	WG558803-10
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33390
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558779	**Analysis Date:**	02/26/2016 12:05	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**		**Samplenum:**	WG558803-11
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33397
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558779	**Analysis Date:**	02/26/2016 14:18	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	195000	62900	3.10	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**		**Samplenum:**	WG558803-12
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33399
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558779	**Analysis Date:**	02/26/2016 14:55	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	973	0.000	2.3	3.8	*

2.2.1.3 Sample Data

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Printed: 2/26/2016 4:03 PM

Data File	LM33375.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/25/2016 11:58:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021240-01	**Injection Vial**	18.00
Data File	LM33375.wiff	**Injection Volume**	10.00
Acquisition Date	2/25/2016 11:58:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	L16021240-01	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.690e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.190e+06	9.96	N/A	8.23
Perchlorate conf	3.950e+05	9.94	N/A	7.52

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

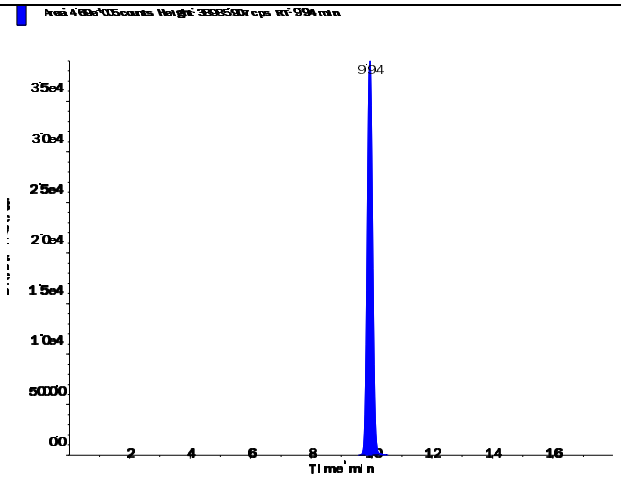

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.96 (9.94) min Calculated conc: 8.23 ng/ml Area Ratio: 2.54 Sample Type: (Unknown)	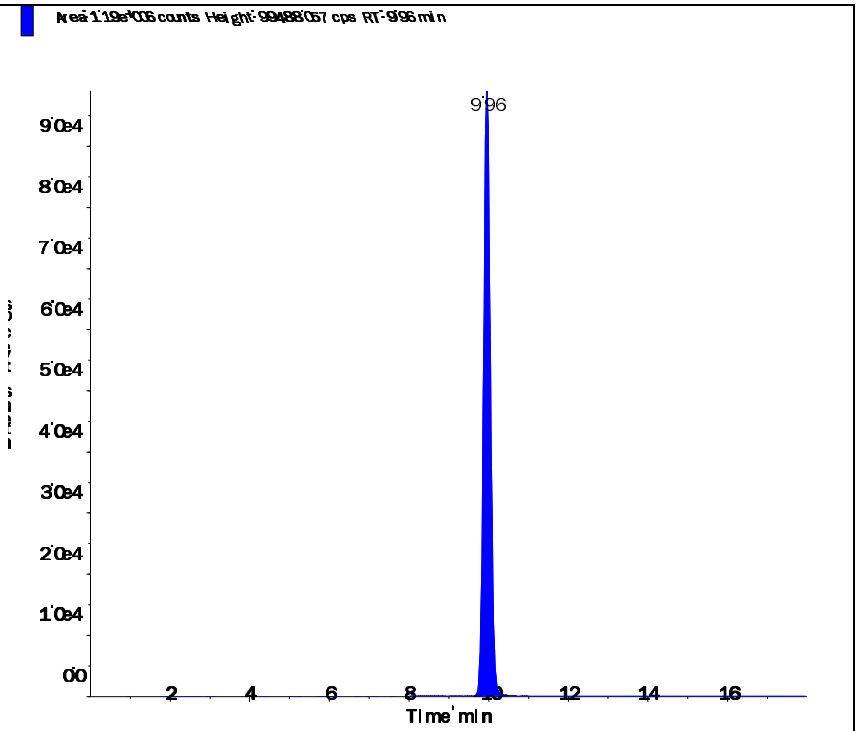
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.94 (9.92) min Calculated conc: 7.52 ng/ml Area Ratio: 0.841 Sample Type: (Unknown)	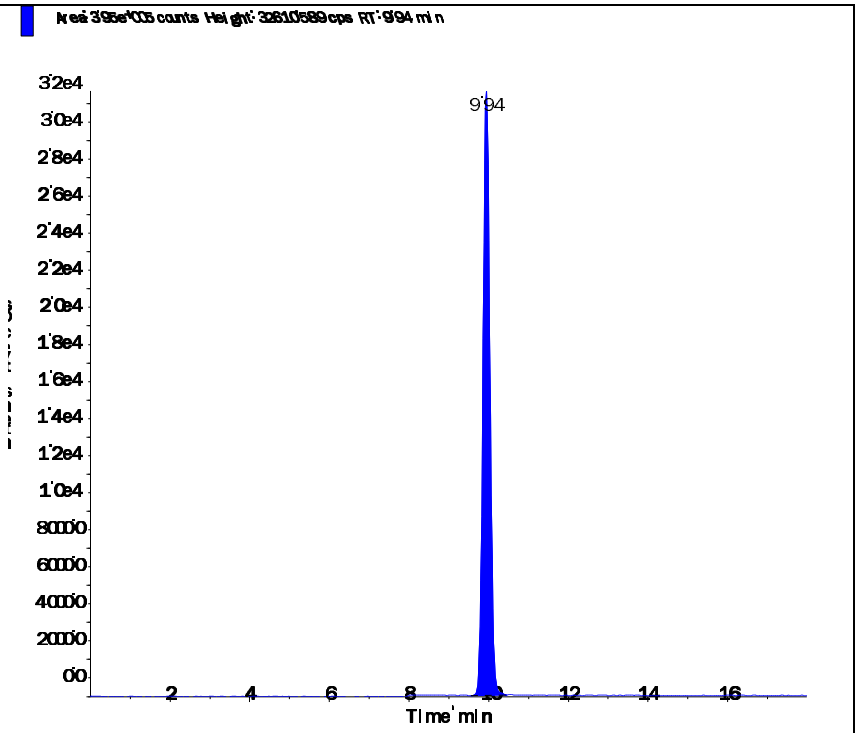

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Printed: 2/26/2016 4:03 PM

Data File	LM33376.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/26/2016 12:17:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021240-02	**Injection Vial**	19.00
Data File	LM33376.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 12:17:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	L16021240-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.150e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.270e+04	9.99	N/A	0.0586
Perchlorate conf	4.460e+03	9.97	N/A	0.0553

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

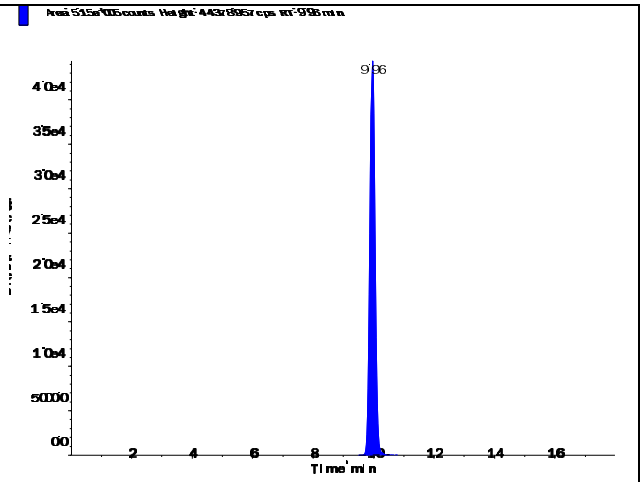

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.99 (9.94) min Calculated conc: 0.0586 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	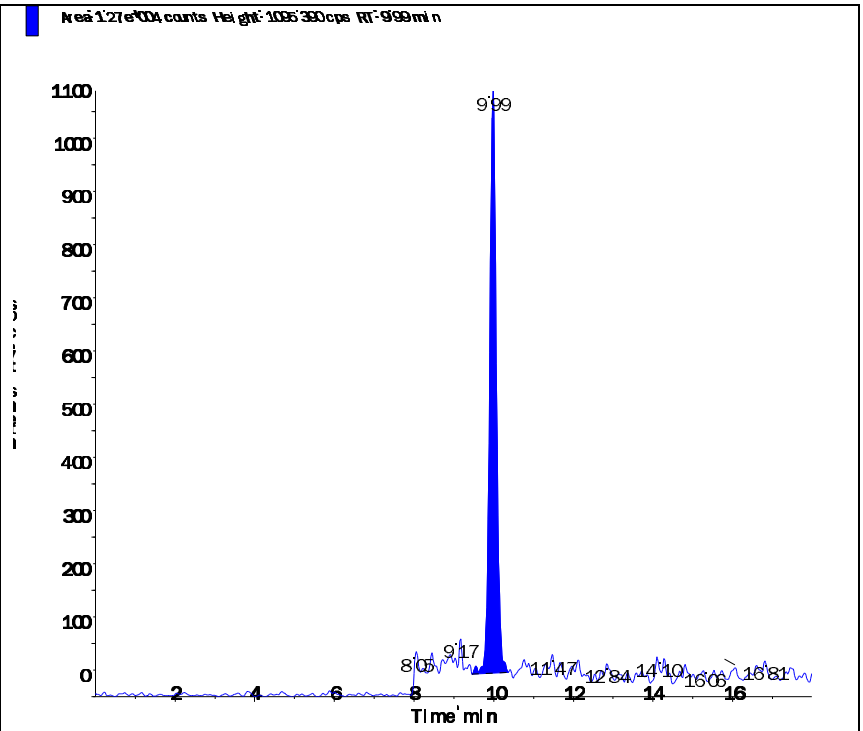
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.97 (9.92) min Calculated conc: 0.0553 ng/ml Area Ratio: 0.009 Sample Type: (Unknown)	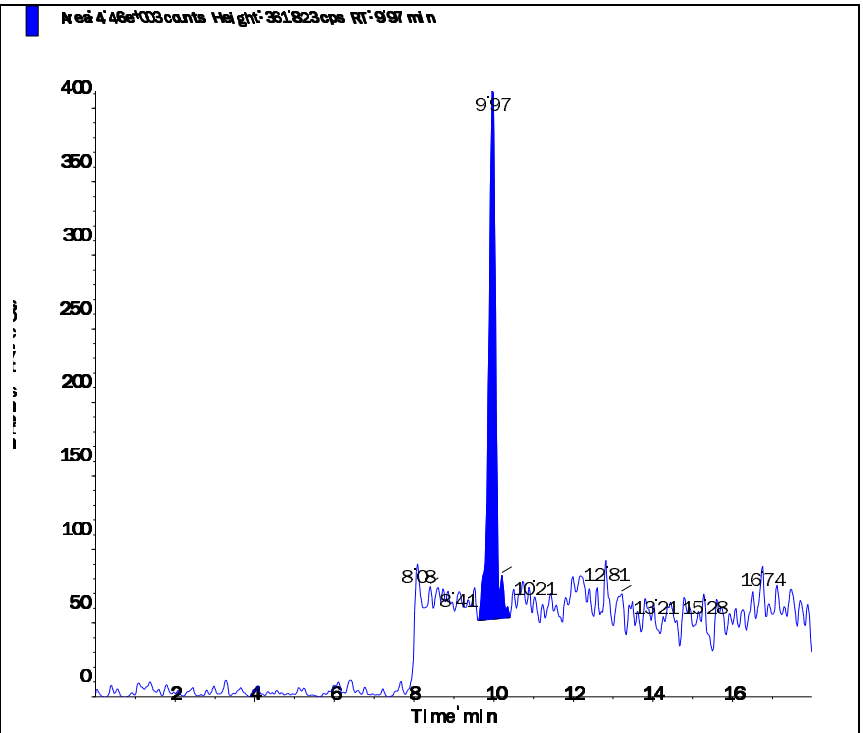

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Data File	LM33377.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/26/2016 12:36:34 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021240-03	**Injection Vial**	20.00
Data File	LM33377.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 12:36:34 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	L16021240-03	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.120e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.750e+05	9.96	N/A	2.36
Perchlorate conf	1.220e+05	9.95	N/A	2.11

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

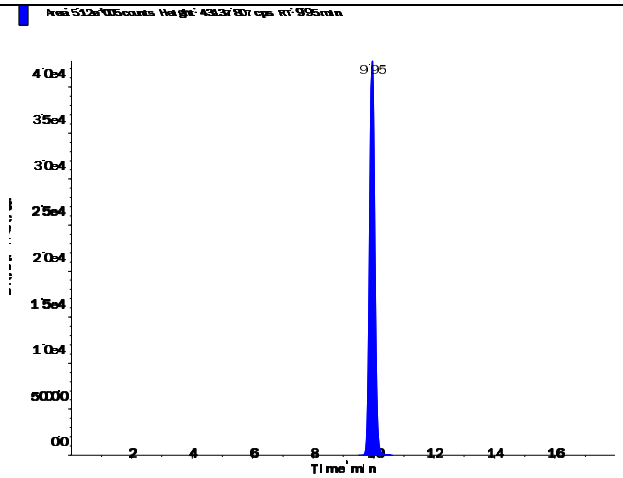

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	2.36 ng/ml
Area Ratio:	0.731
Sample Type:	(Unknown)

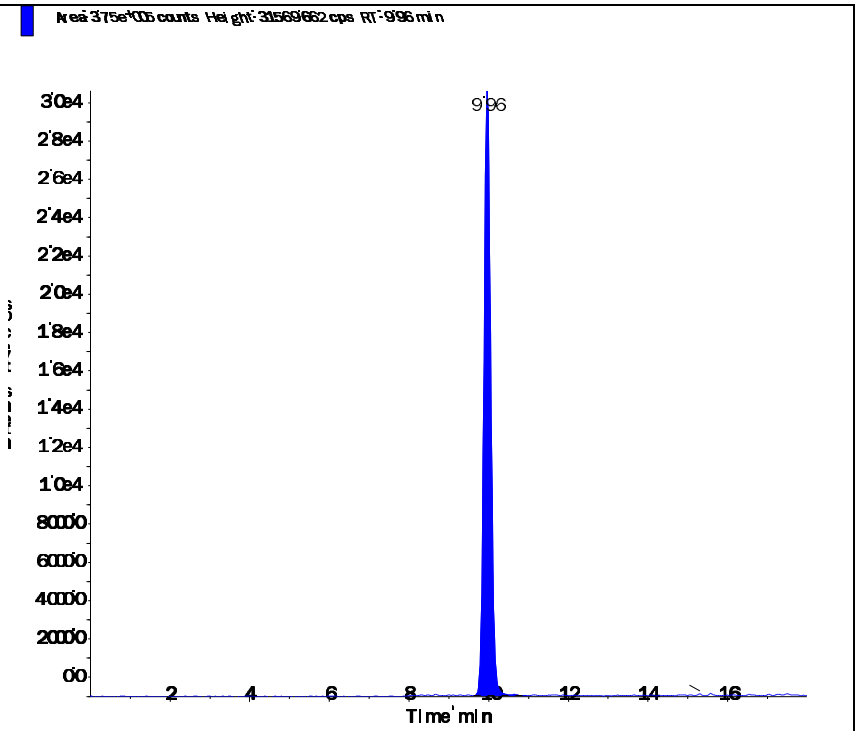

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.95 (9.92) min
Calculated conc:	2.11 ng/ml
Area Ratio:	0.238
Sample Type:	(Unknown)

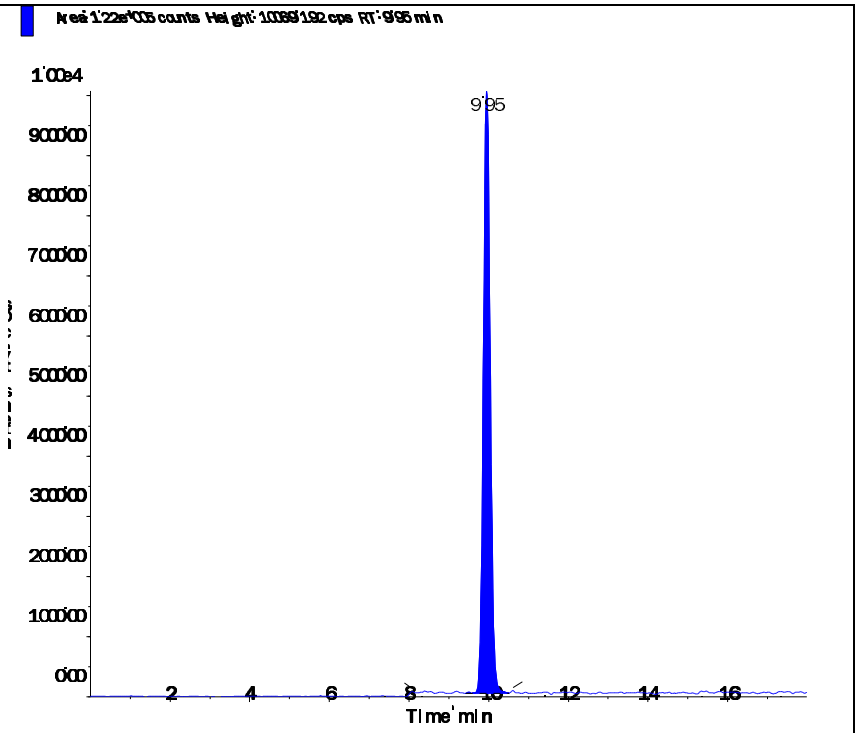

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Data File	LM33378.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/26/2016 12:55:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021240-04	**Injection Vial**	21.00
Data File	LM33378.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 12:55:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	L16021240-04	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.690e+05	9.98	N/A	2.33
Perchlorate conf	1.180e+05	9.96	N/A	2.05

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

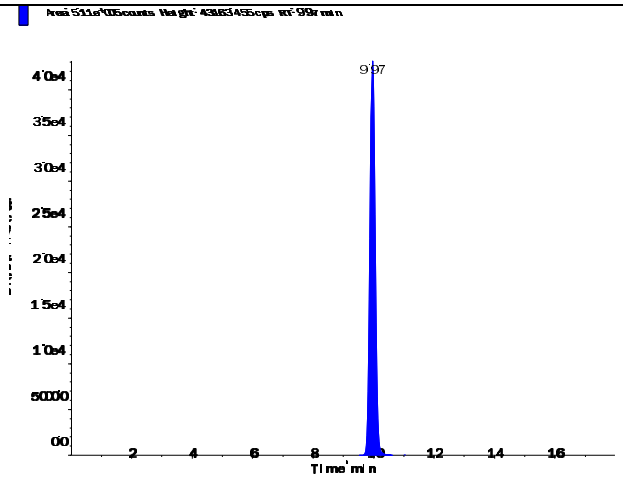

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.98 (9.94) min
Calculated conc:	2.33 ng/ml
Area Ratio:	0.722
Sample Type:	(Unknown)

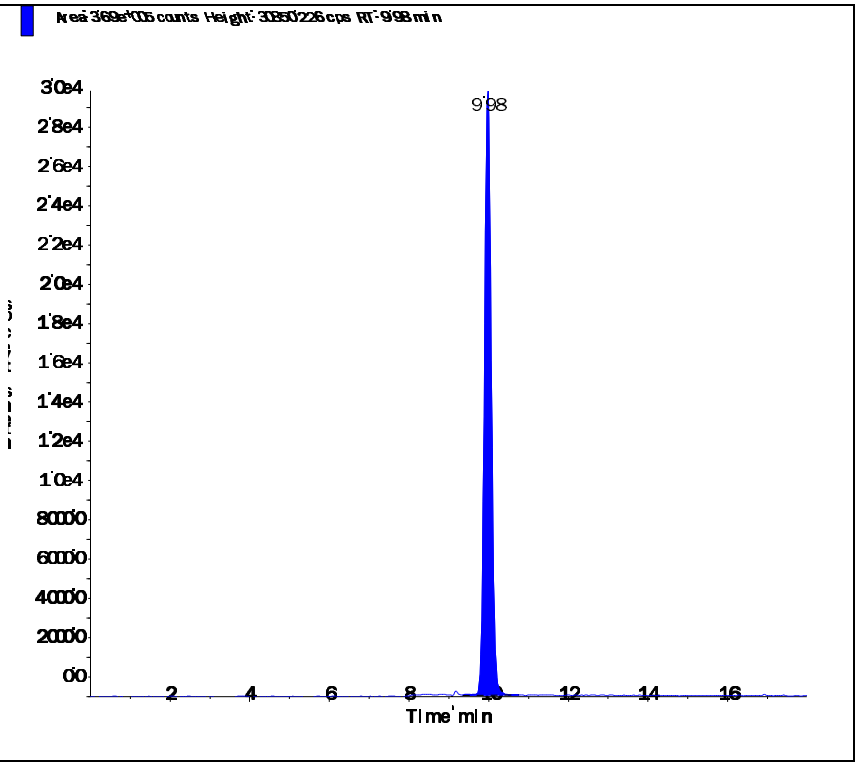

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.96 (9.92) min
Calculated conc:	2.05 ng/ml
Area Ratio:	0.232
Sample Type:	(Unknown)

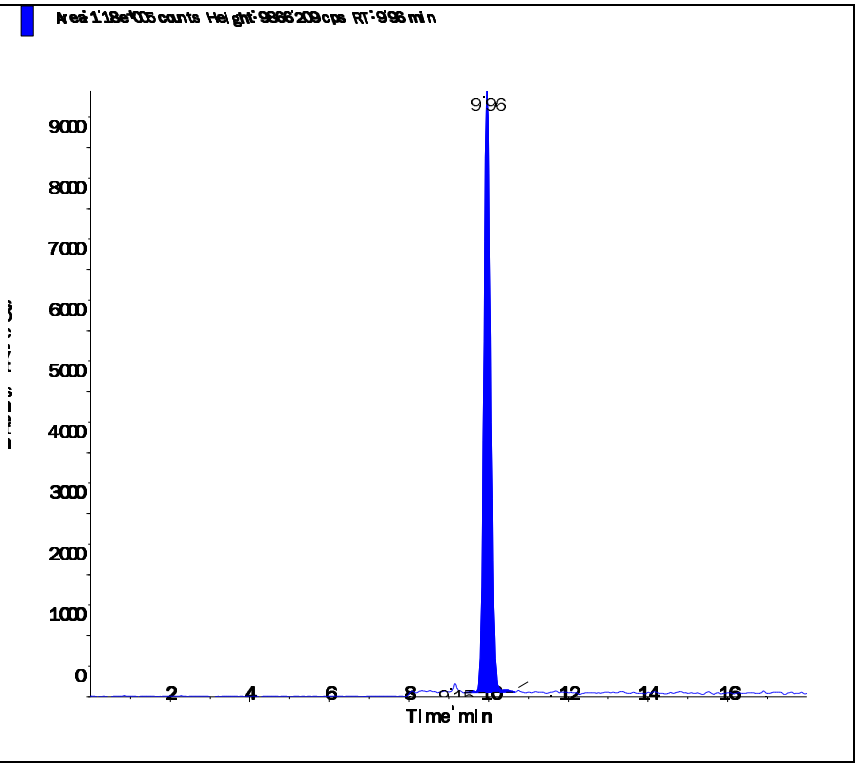

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Printed: 2/26/2016 4:09 PM

Data File	LM33394.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/26/2016 1:21:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021240-05 (RR 5x)	**Injection Vial**	28.00
Data File	LM33394.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 1:21:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	L16021240-05	**Dilution Factor**	1.00
Sample Comment	75.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.030e+05	9.96	N/A	2.62
Perchlorate conf	1.360e+05	9.95	N/A	2.44

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

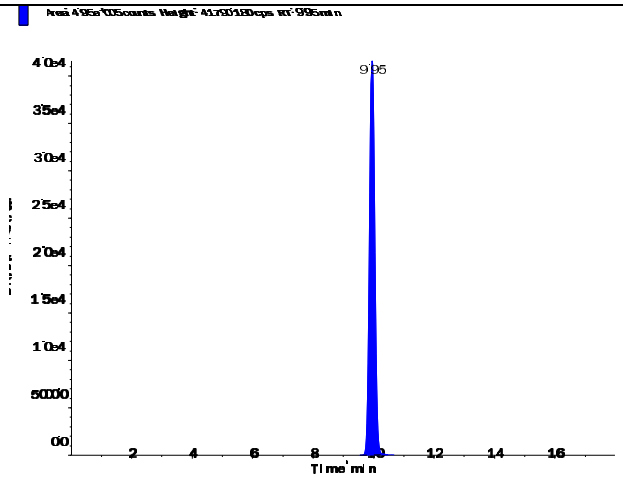

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	2.62 ng/ml
Area Ratio:	0.813
Sample Type:	(Unknown)

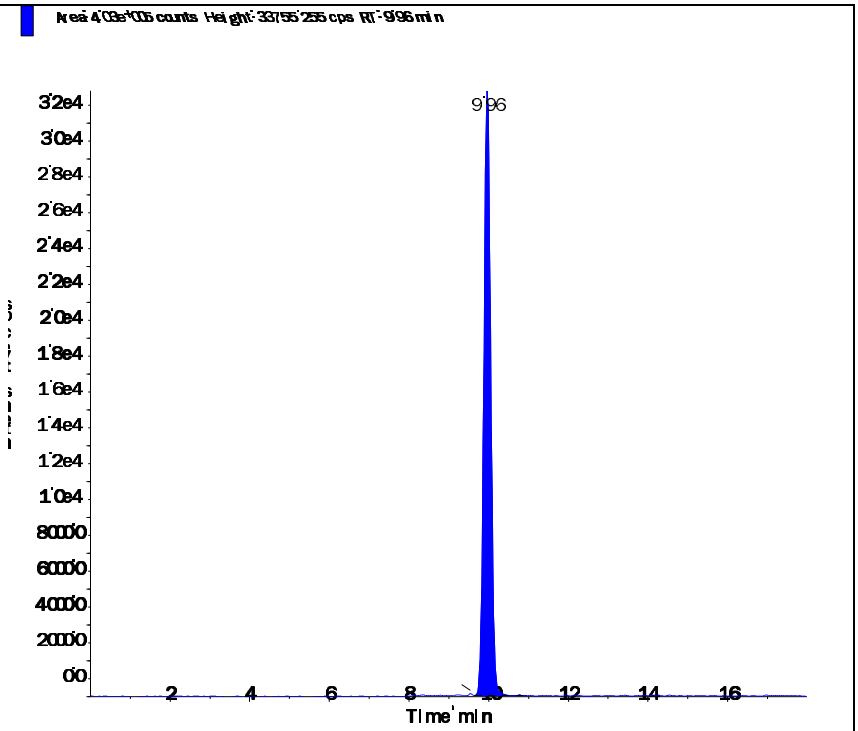

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.95 (9.92) min
Calculated conc:	2.44 ng/ml
Area Ratio:	0.275
Sample Type:	(Unknown)

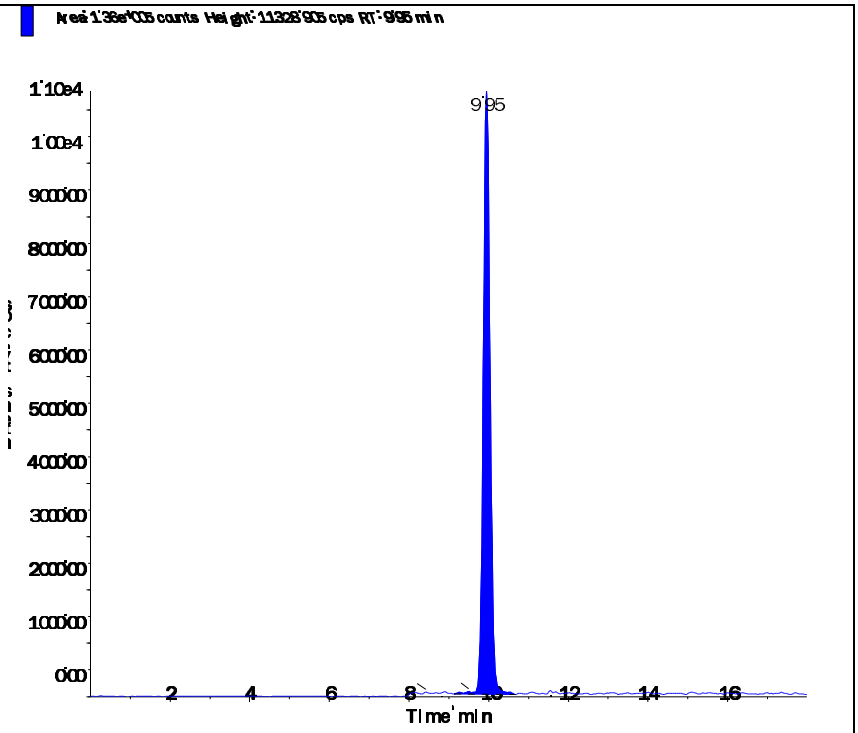

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Data File	LM33395.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/26/2016 1:40:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021240-06 (RR 20x)	**Injection Vial**	29.00
Data File	LM33395.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 1:40:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	L16021240-06	**Dilution Factor**	1.00
Sample Comment	720.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.030e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.290e+05	9.97	N/A	2.76
Perchlorate conf	1.460e+05	9.96	N/A	2.58

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

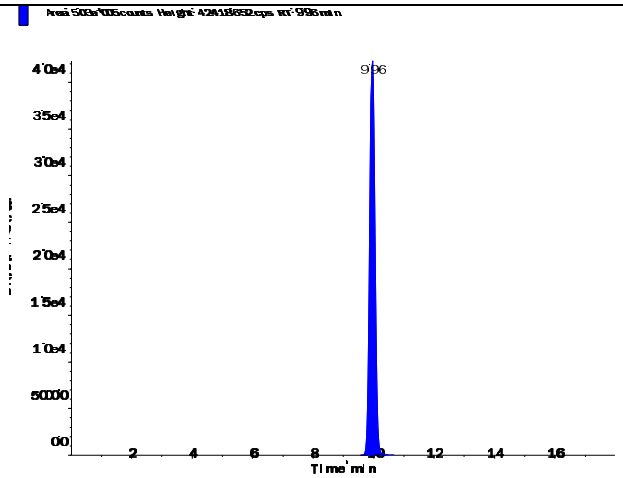

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.97 (9.94) min
Calculated conc:	2.76 ng/ml
Area Ratio:	0.854
Sample Type:	(Unknown)

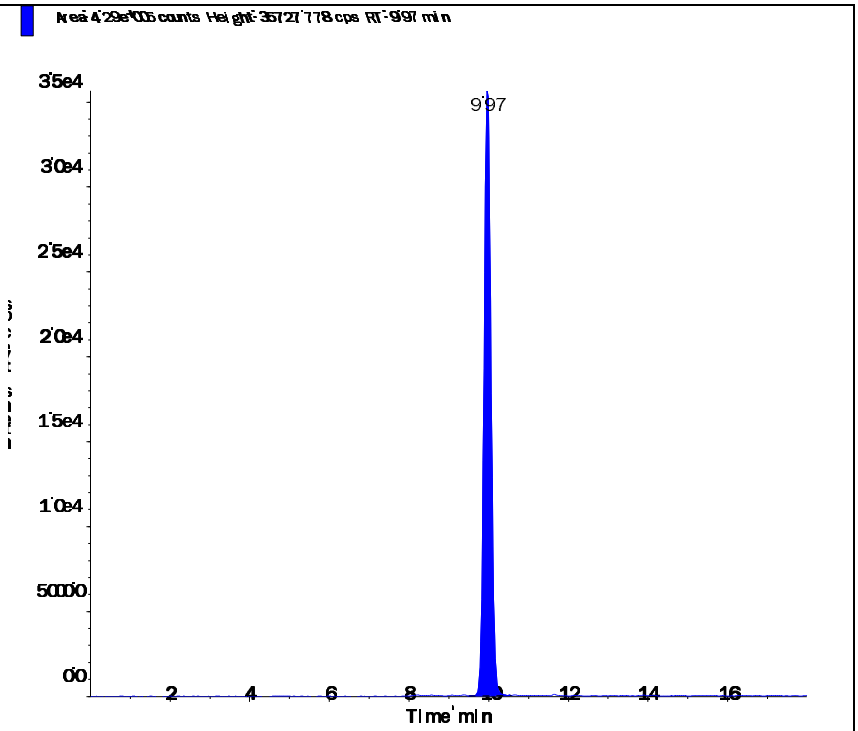

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.96 (9.92) min
Calculated conc:	2.58 ng/ml
Area Ratio:	0.29
Sample Type:	(Unknown)

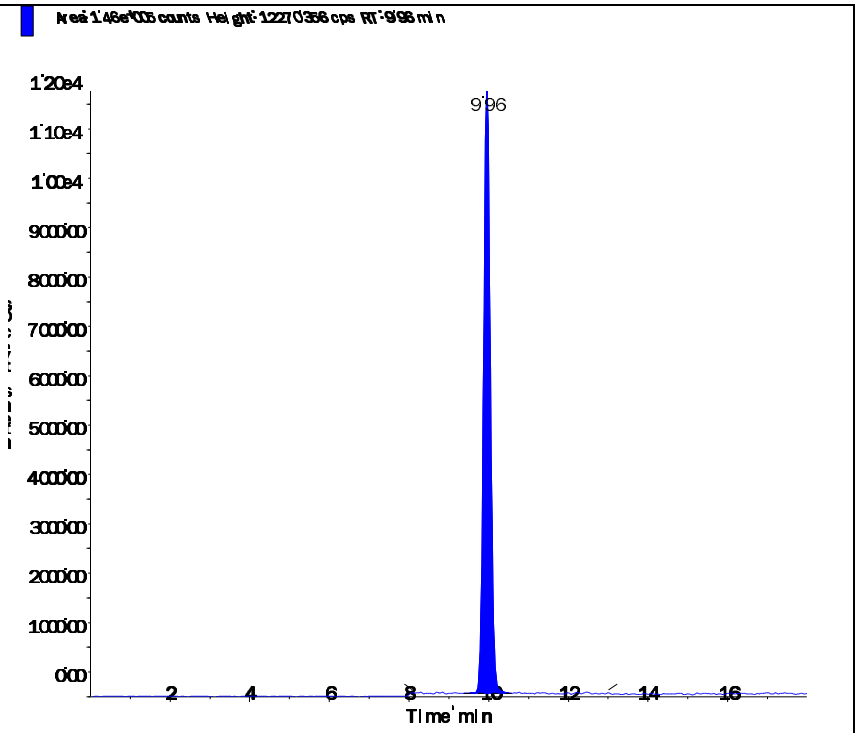

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Data File	LM33396.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/26/2016 1:59:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021240-07 (RR 50x)	**Injection Vial**	30.00
Data File	LM33396.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 1:59:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	L16021240-07	**Dilution Factor**	1.00
Sample Comment	750.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.990e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.960e+05	9.97	N/A	5.16
Perchlorate conf	2.640e+05	9.95	N/A	4.73

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

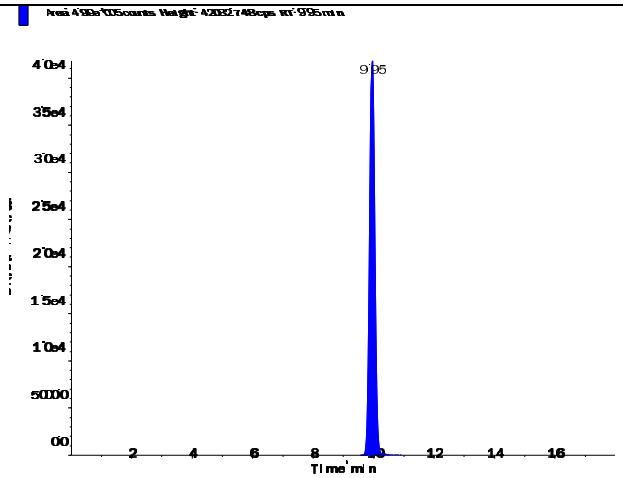

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.97 (9.94) min Calculated conc: 5.16 ng/ml Area Ratio: 1.594 Sample Type: (Unknown)	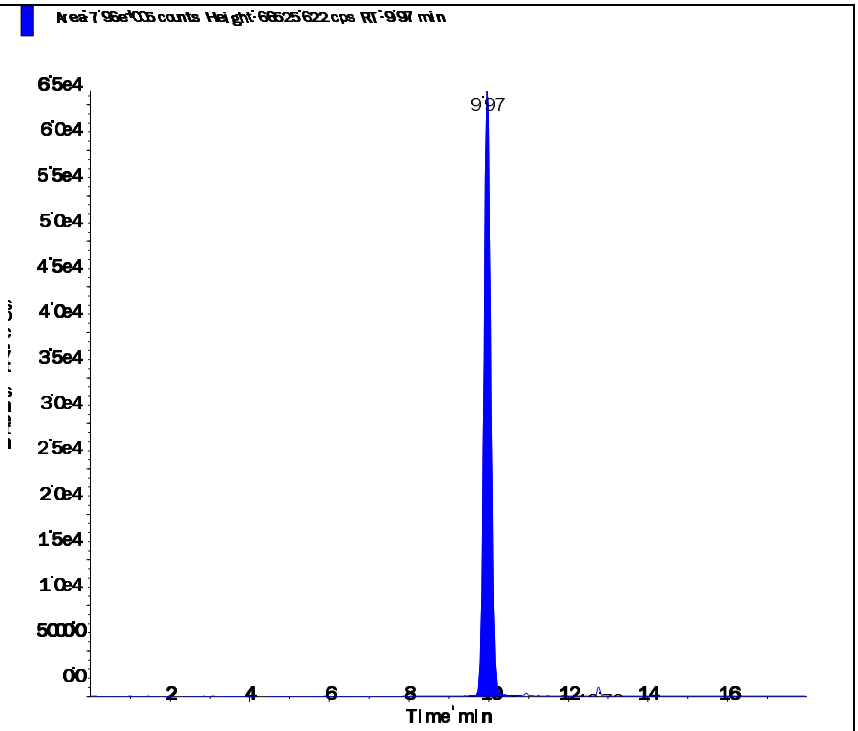
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.95 (9.92) min Calculated conc: 4.73 ng/ml Area Ratio: 0.53 Sample Type: (Unknown)	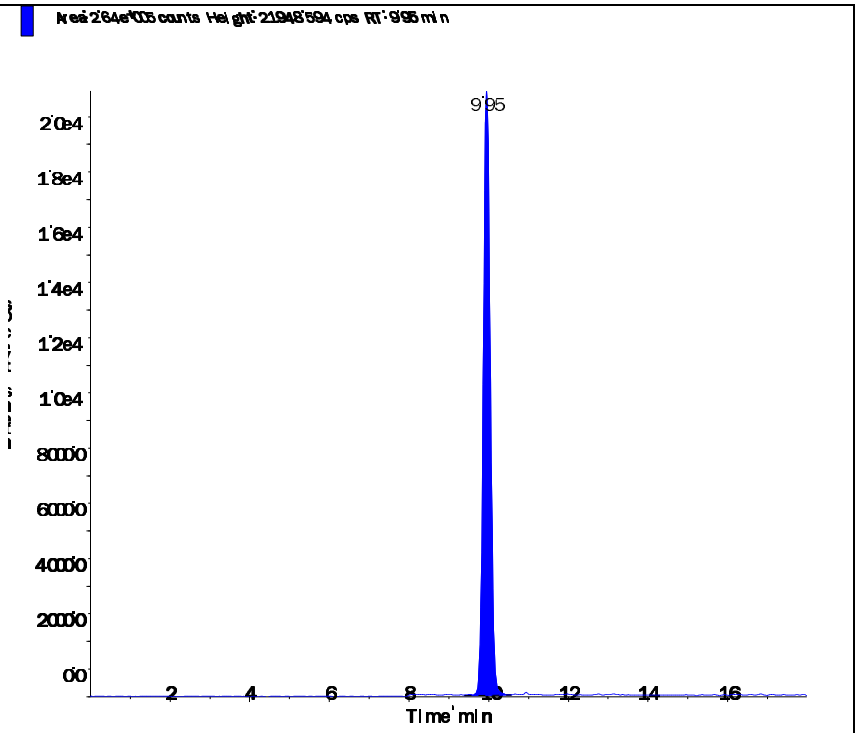

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Data File	LM33391.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/26/2016 12:24:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021240-08 REF (RR 50x)	**Injection Vial**	25.00
Data File	LM33391.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 12:24:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	WG558779-04	**Dilution Factor**	1.00
Sample Comment	750.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.790e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.580e+05	9.97	N/A	3.77
Perchlorate conf	1.840e+05	9.96	N/A	3.42

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

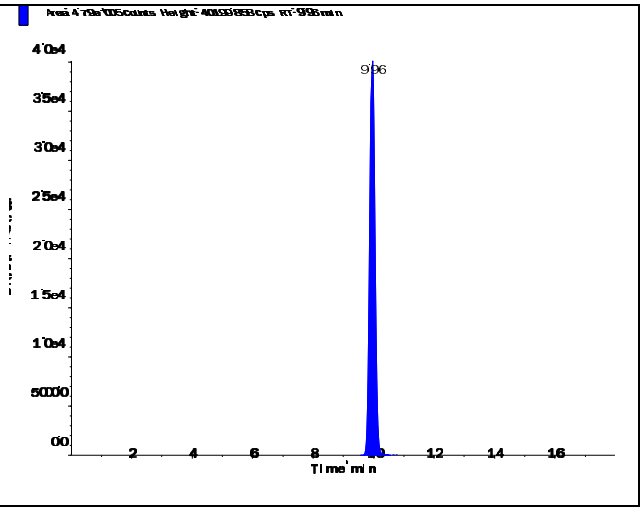

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.97 (9.94) min
Calculated conc:	3.77 ng/ml
Area Ratio:	1.166
Sample Type:	(Unknown)

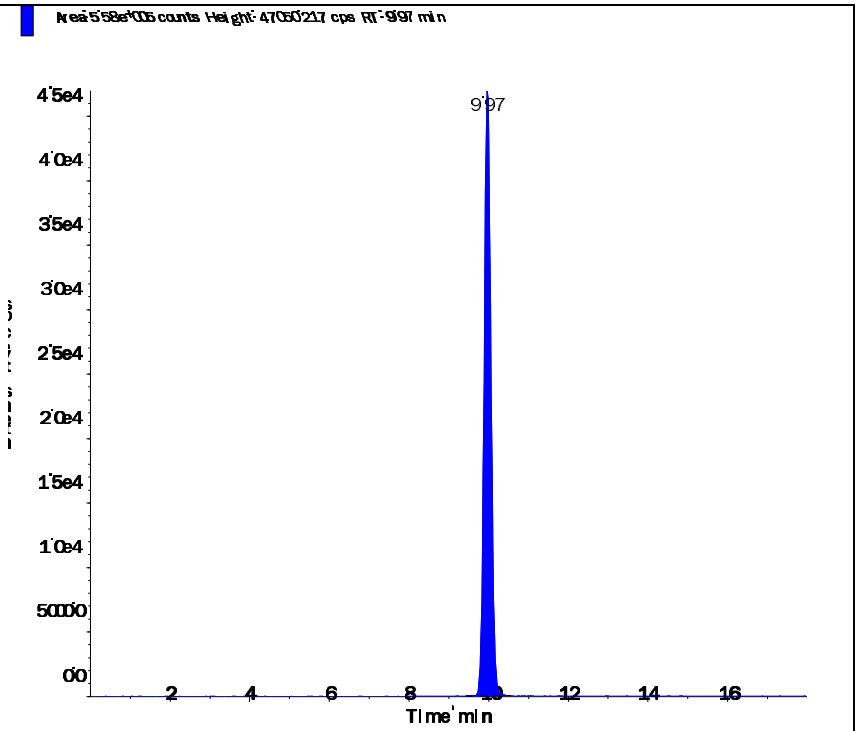

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.96 (9.92) min
Calculated conc:	3.42 ng/ml
Area Ratio:	0.383
Sample Type:	(Unknown)

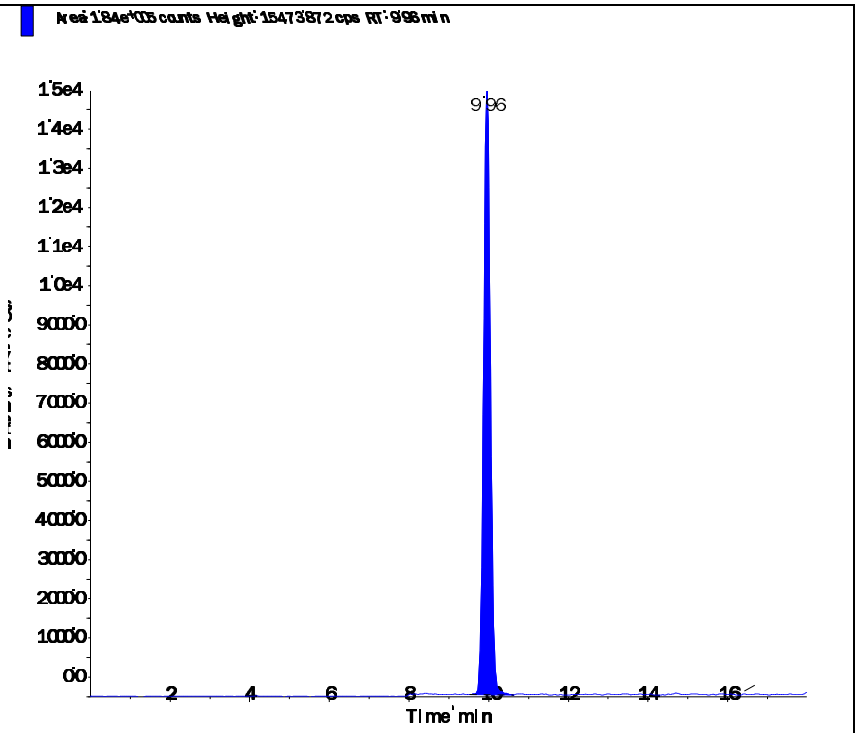

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2.2.1.4 Standards Data

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Data File	LM33244.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/17/2016 7:12:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-01 CCB	**Injection Vial**	1.00
Data File	LM33244.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 7:12:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG557856-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.570e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.560e+03	9.97	N/A	< 0
Perchlorate conf	1.050e+03	9.97	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

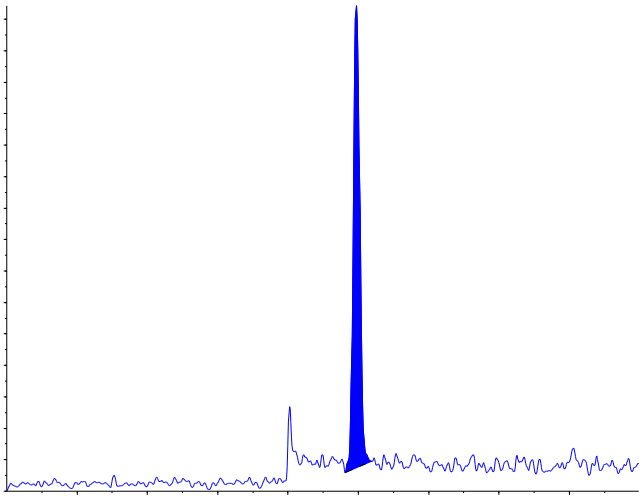

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.97 (9.94) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.005
Sample Type:	(Unknown)

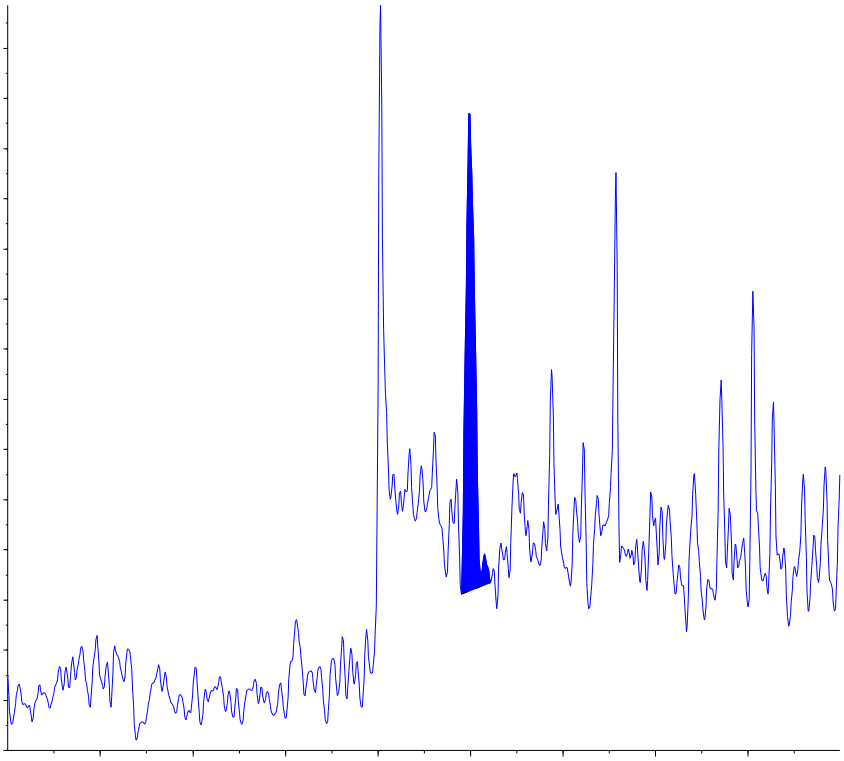

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.97 (9.92) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

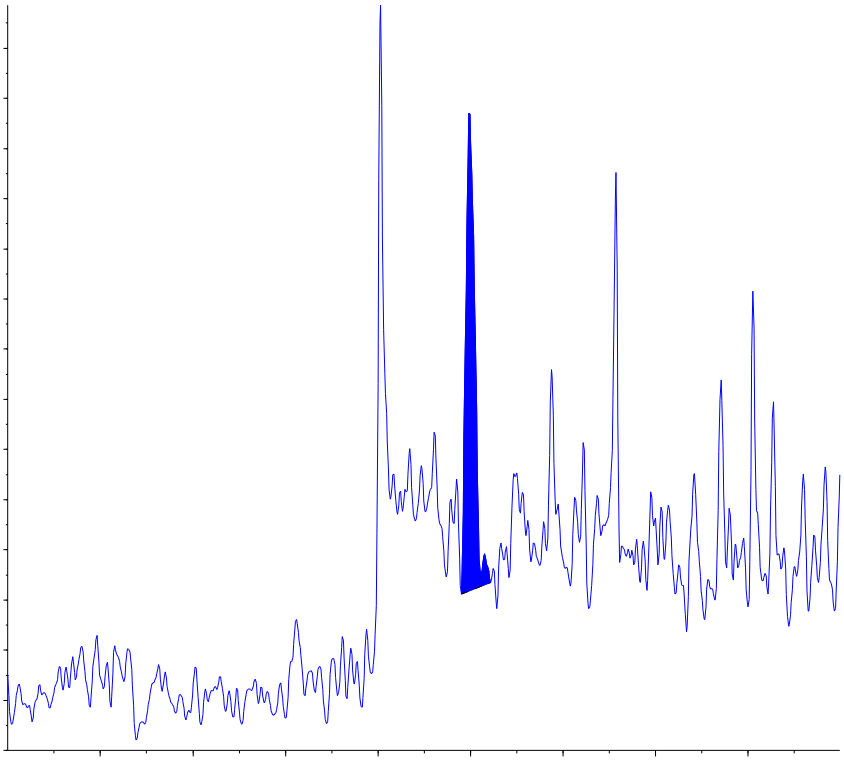

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Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM33244.wiff	**Result Table**	021716_JWR.rdb
Acquisition Date	2/17/2016 7:12:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.54 x + 0.00666 (r = 0.9998)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	88.4	N/A	N/A
0.20	1	0.21	103.3	N/A	N/A
0.50	1	0.51	102.6	N/A	N/A
1.00	1	1.03	103.4	N/A	N/A
2.00	1	2.06	103.1	N/A	N/A
5.00	1	5.03	100.6	N/A	N/A
10.00	1	9.87	98.7	N/A	N/A

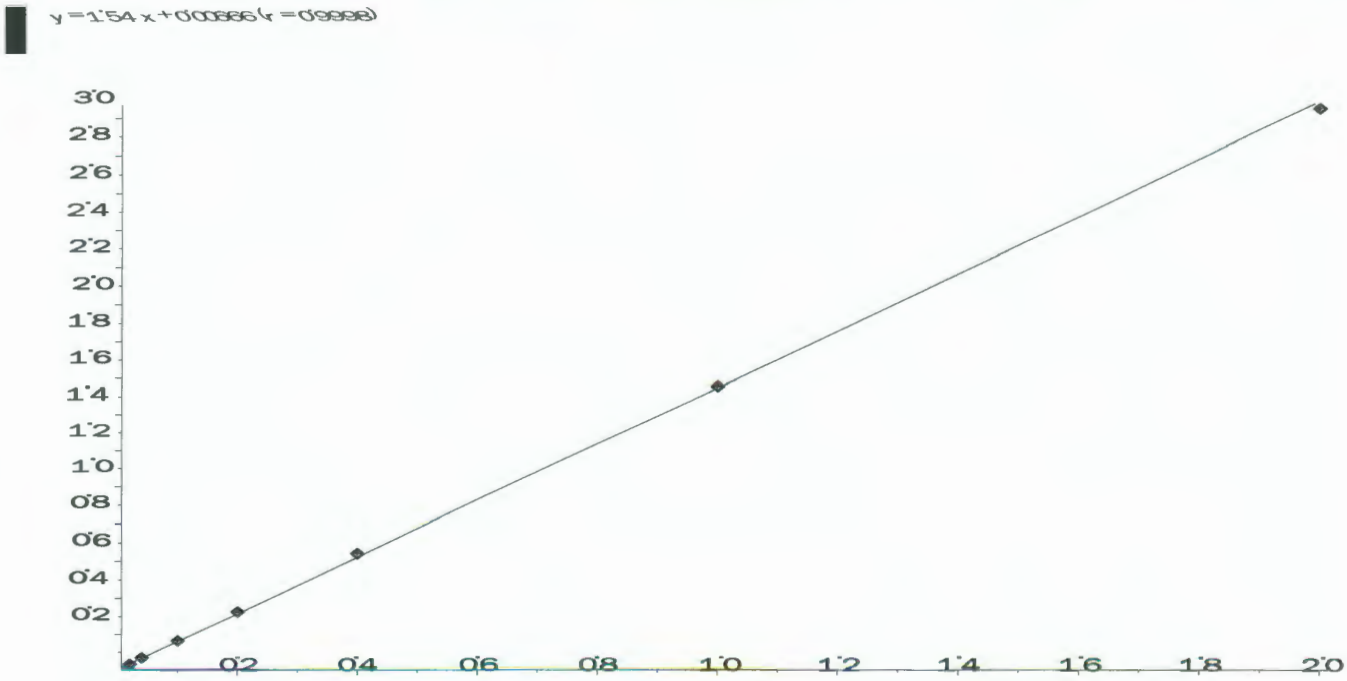

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Printed: 2/18/2016 2:15 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM33244.wiff	**Result Table**	021716_JWR.rdb
Acquisition Date	2/17/2016 7:12:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.557 x + 0.00249 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	90.6	N/A	N/A
0.20	1	0.21	104.9	N/A	N/A
0.50	1	0.51	101.7	N/A	N/A
1.00	1	1.02	102.2	N/A	N/A
2.00	1	2.04	102.1	N/A	N/A
5.00	1	4.93	98.6	N/A	N/A
10.00	1	10.00	100.0	N/A	N/A

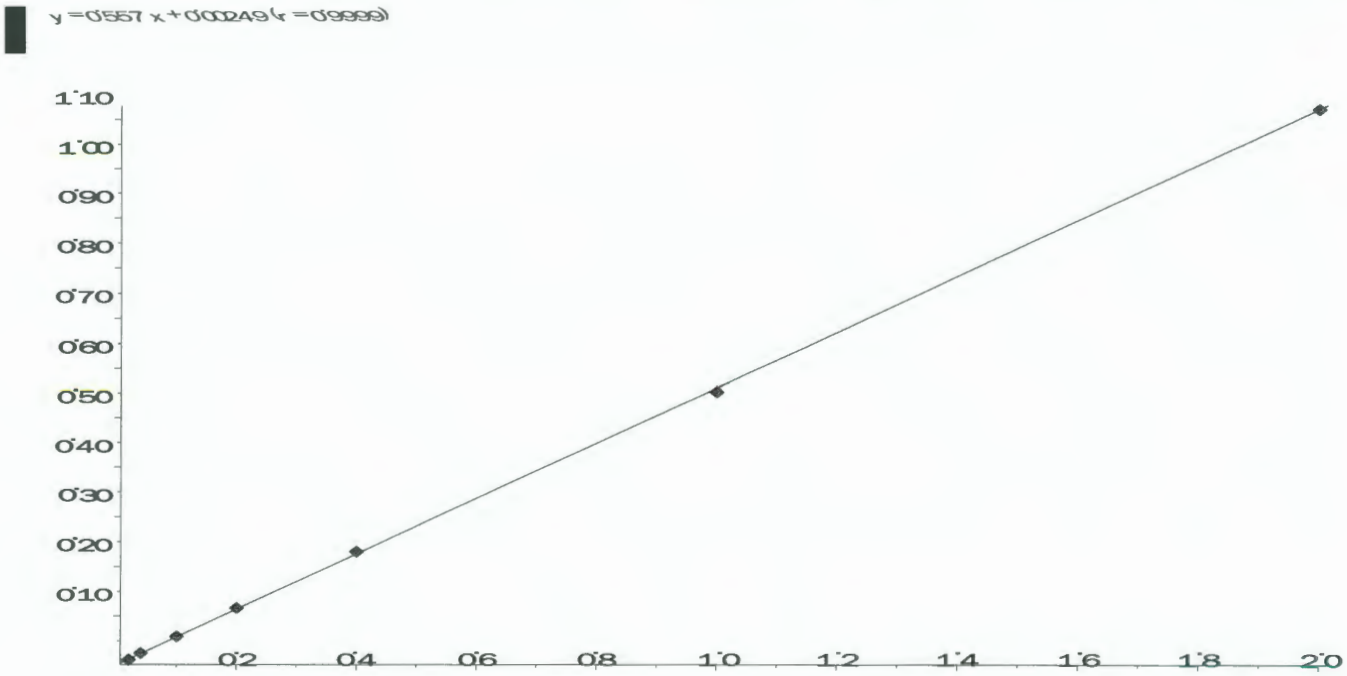

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Data File	LM33245.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/17/2016 7:31:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM33245.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 7:31:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG557856-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.550e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.880e+04	9.94	0.10	0.0884
Perchlorate conf	6.990e+03	9.93	0.10	0.0906

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

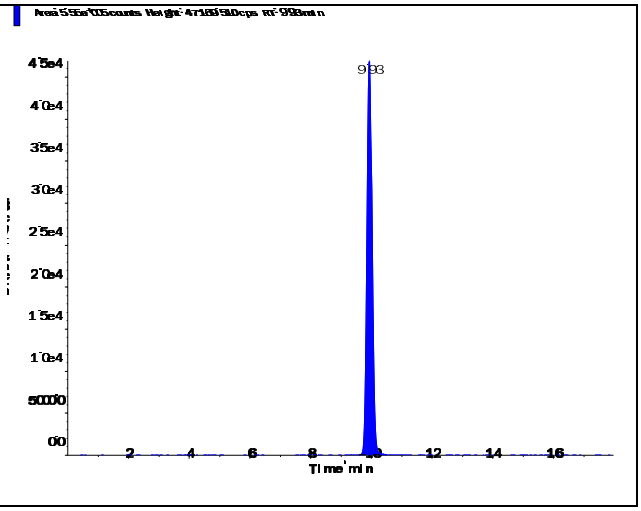

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.0884 ng/ml
Area Ratio:	0.034
Sample Type:	(Standard)

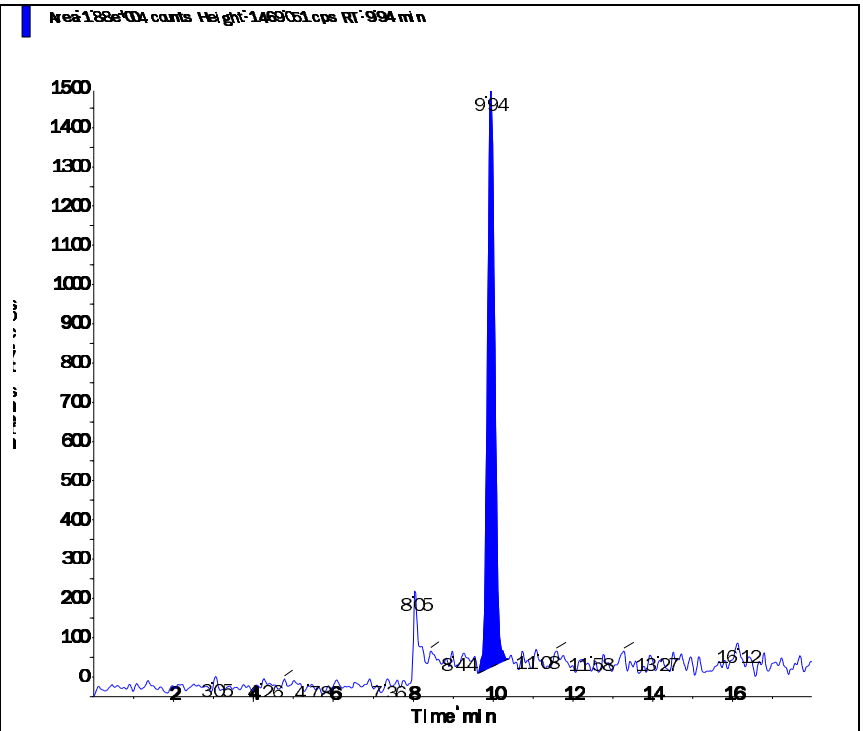

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	0.0906 ng/ml
Area Ratio:	0.013
Sample Type:	(Standard)

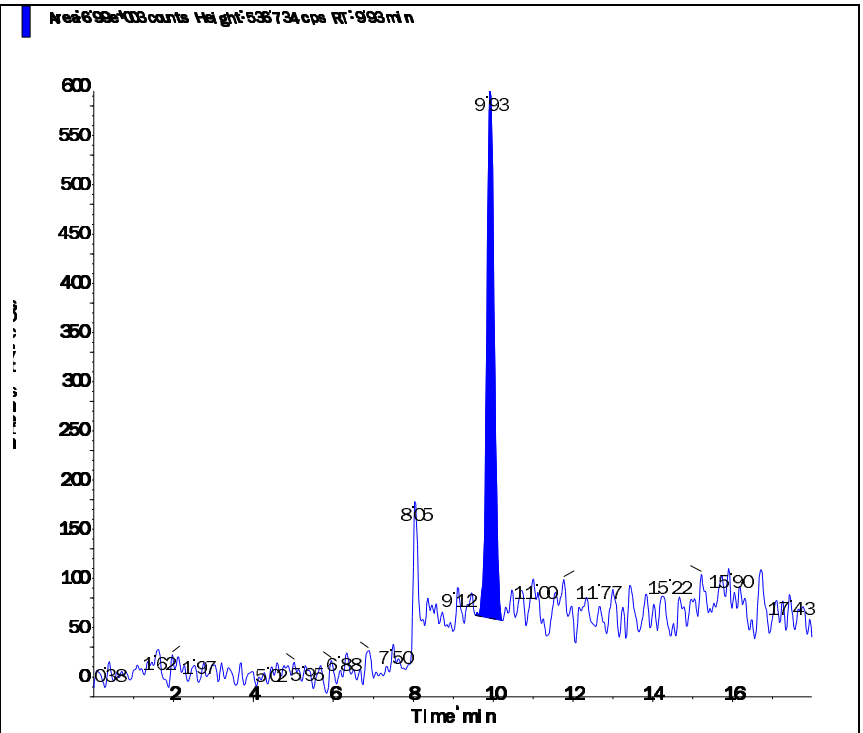

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Data File	LM33246.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/17/2016 7:50:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM33246.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 7:50:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG557856-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.510e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.870e+04	9.94	0.20	0.207
Perchlorate conf	1.420e+04	9.93	0.20	0.21

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

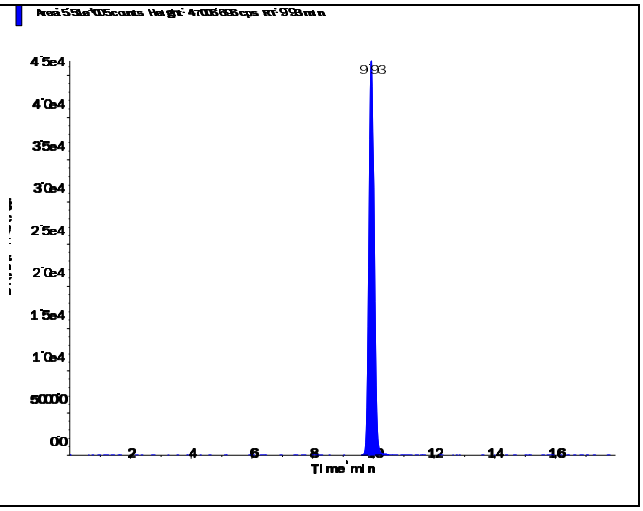

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.07
Sample Type:	(Standard)

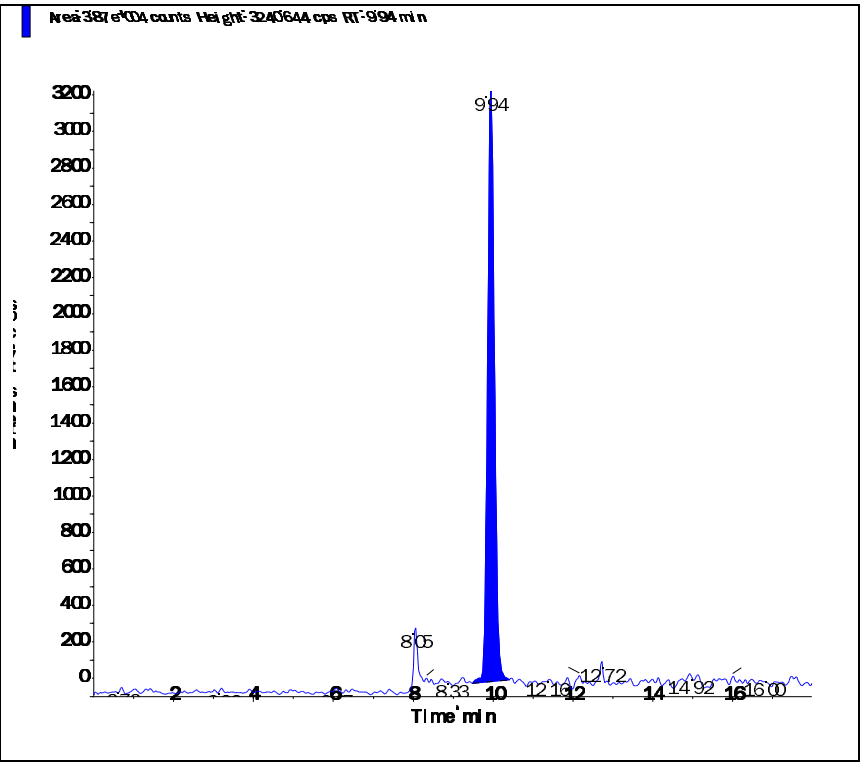

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.026
Sample Type:	(Standard)

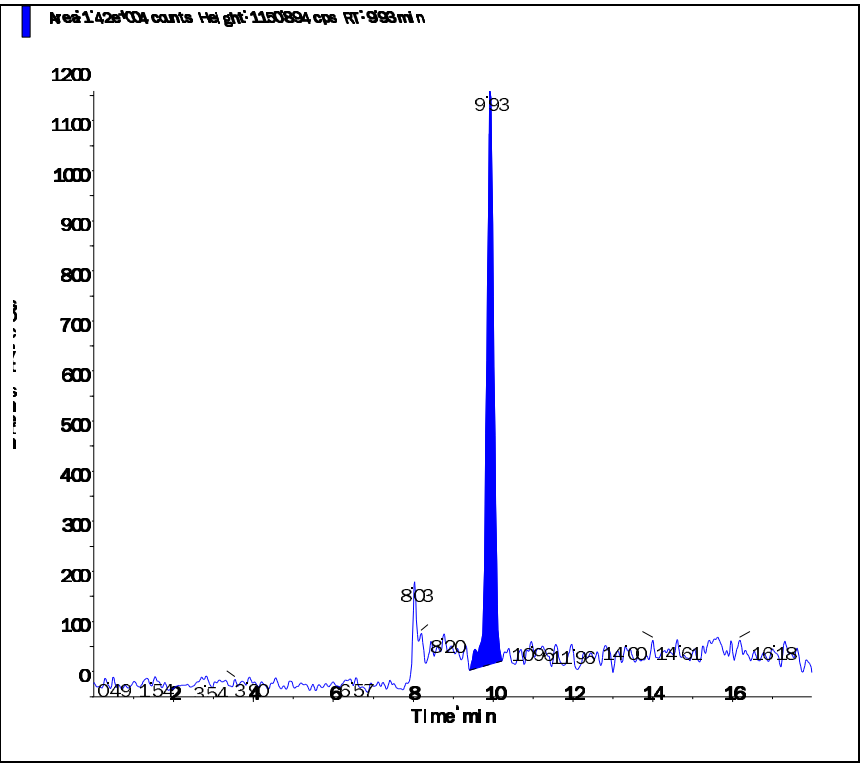

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Printed: 2/27/2016 1:55 PM

Data File	LM33247.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/17/2016 8:08:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM33247.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 8:08:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG557856-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.560e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	9.140e+04	9.94	0.50	0.513
Perchlorate conf	3.290e+04	9.93	0.50	0.508

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

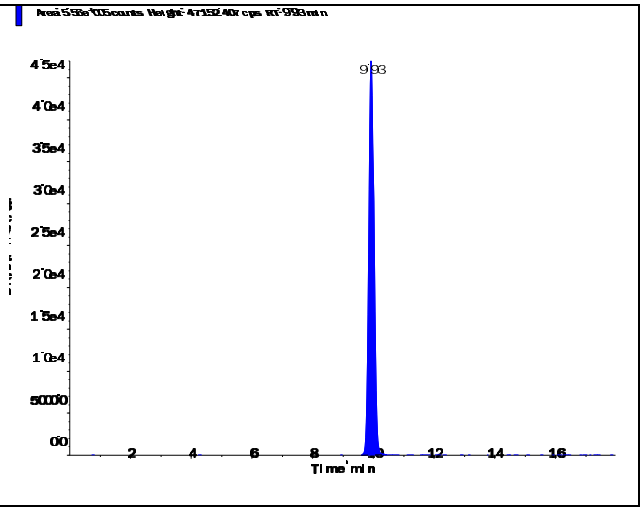

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.513 ng/ml
Area Ratio:	0.164
Sample Type:	(Standard)

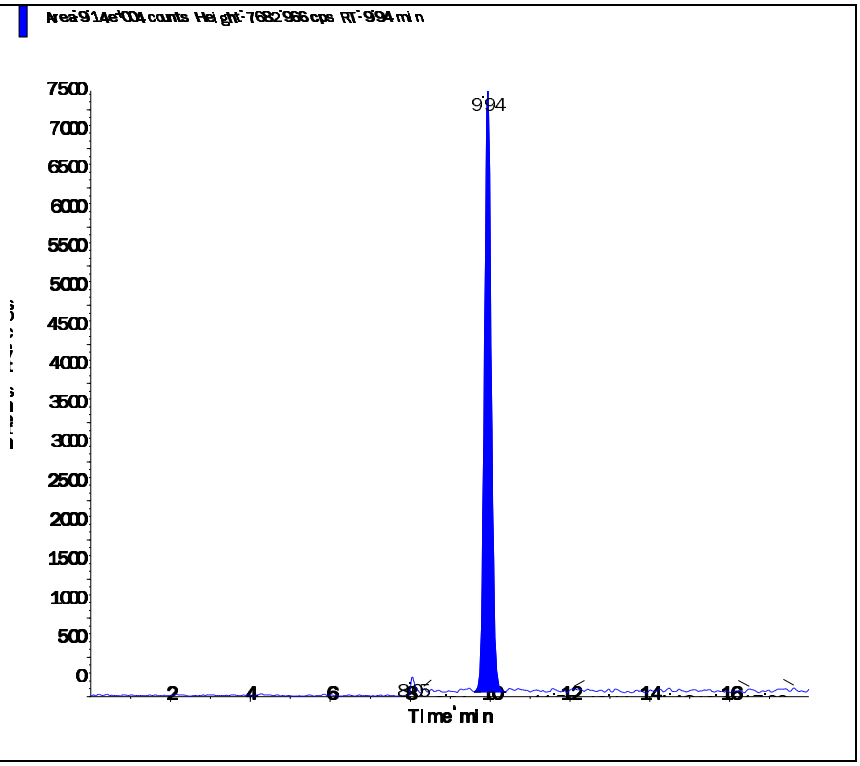

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	0.508 ng/ml
Area Ratio:	0.059
Sample Type:	(Standard)

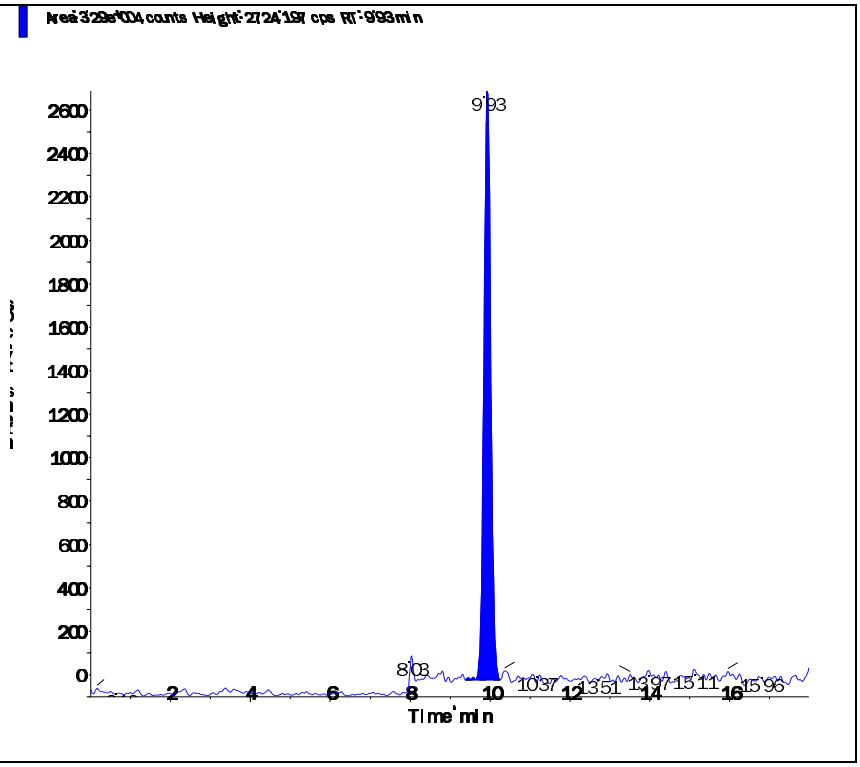

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Data File	LM33248.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/17/2016 8:27:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM33248.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 8:27:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG557856-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.490e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.780e+05	9.95	1.00	1.03
Perchlorate conf	6.390e+04	9.94	1.00	1.02

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

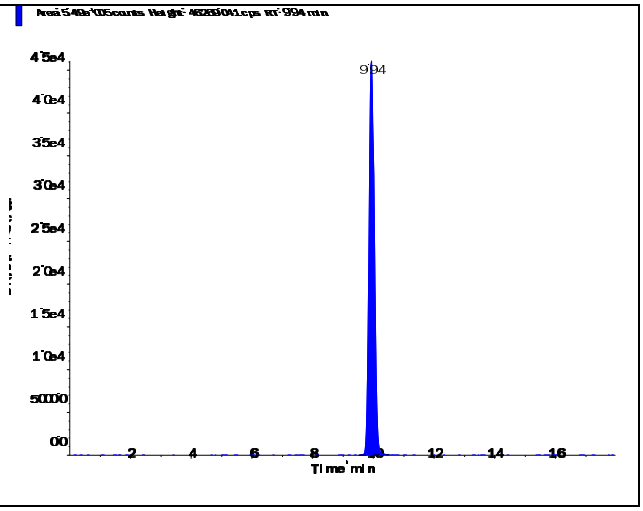

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.95 (9.94) min Calculated conc: 1.03 ng/ml Area Ratio: 0.325 Sample Type: (Standard)	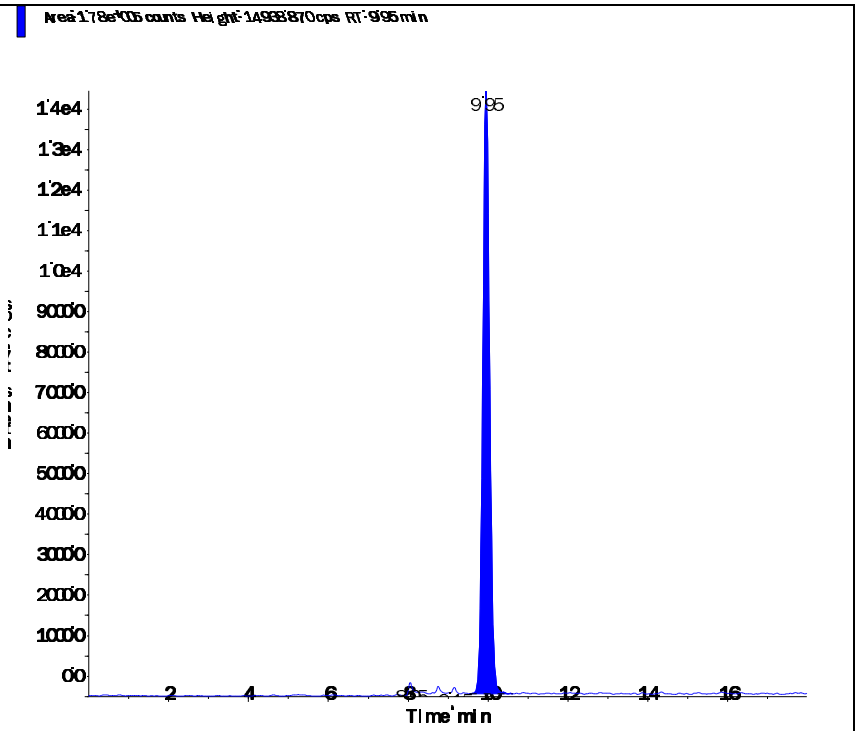
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.94 (9.92) min Calculated conc: 1.02 ng/ml Area Ratio: 0.116 Sample Type: (Standard)	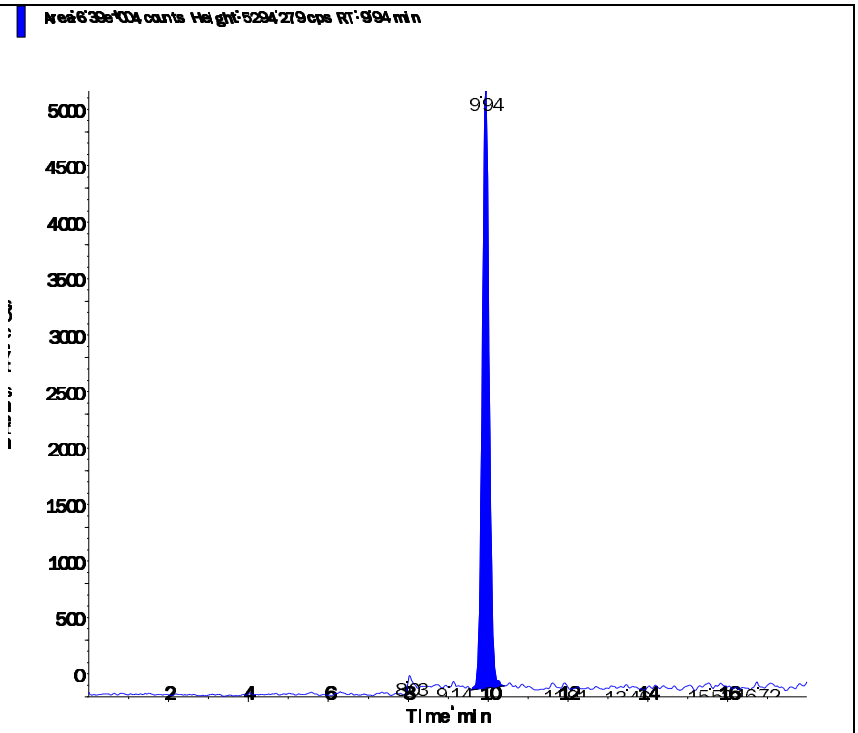

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Data File	LM33249.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/17/2016 8:46:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM33249.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 8:46:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG557856-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.460e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.500e+05	9.94	2.00	2.06
Perchlorate conf	1.260e+05	9.93	2.00	2.04

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

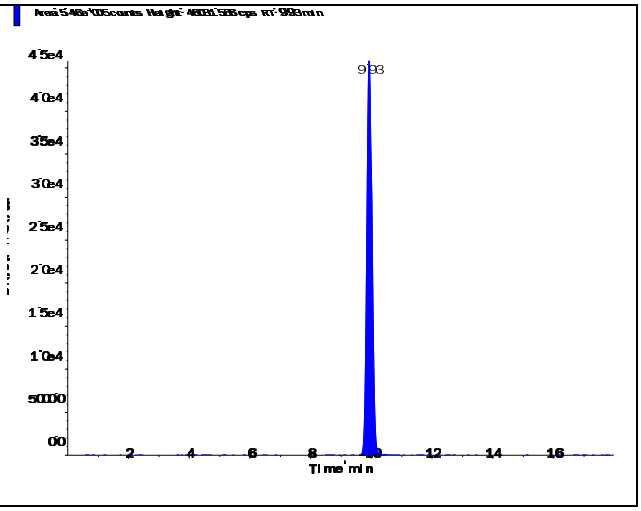

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	2.06 ng/ml
Area Ratio:	0.641
Sample Type:	(Standard)

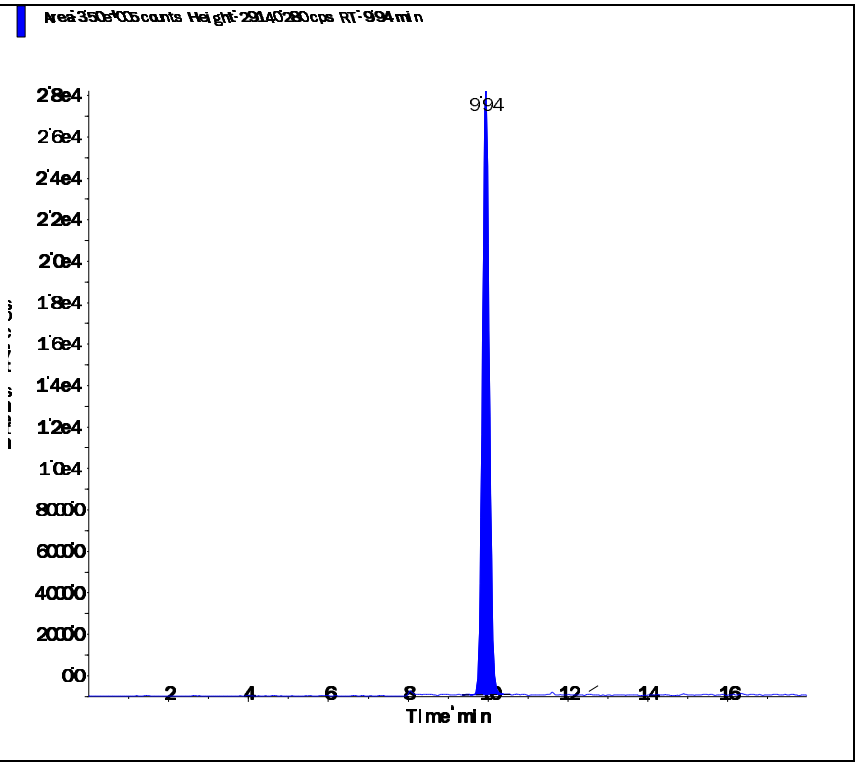

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	2.04 ng/ml
Area Ratio:	0.23
Sample Type:	(Standard)

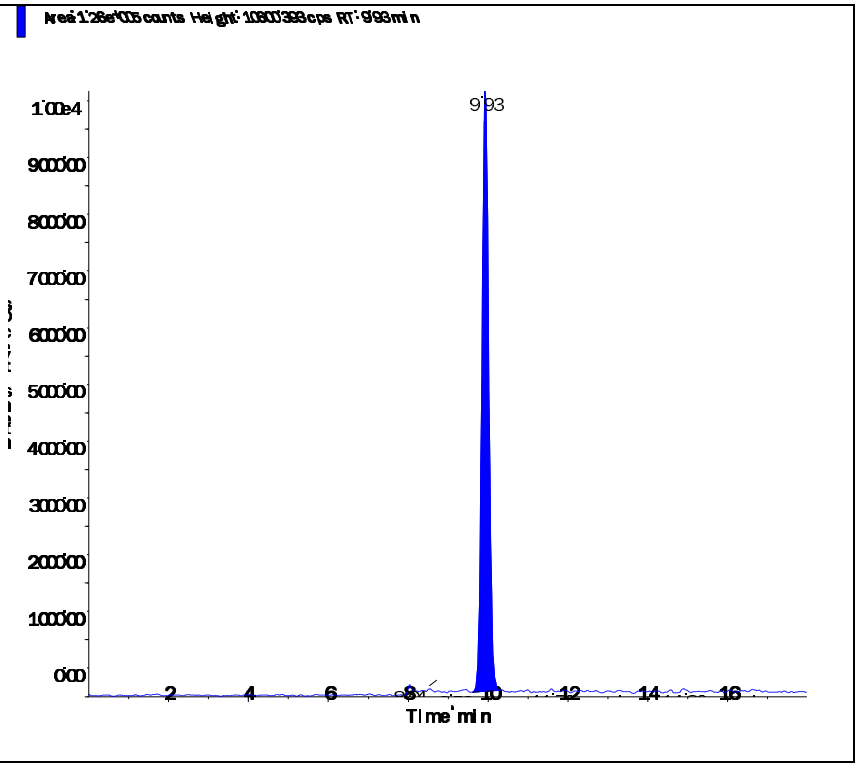

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Data File	LM33250.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/17/2016 9:05:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM33250.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 9:05:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG557856-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.320e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.260e+05	9.96	5.00	5.03
Perchlorate conf	2.930e+05	9.94	5.00	4.93

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

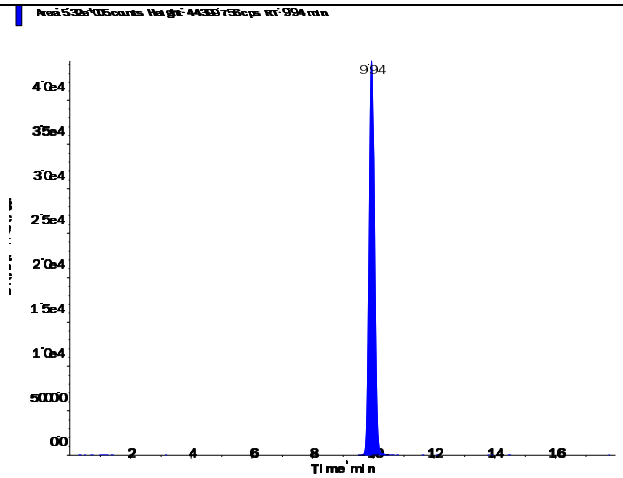

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	5.03 ng/ml
Area Ratio:	1.554
Sample Type:	(Standard)

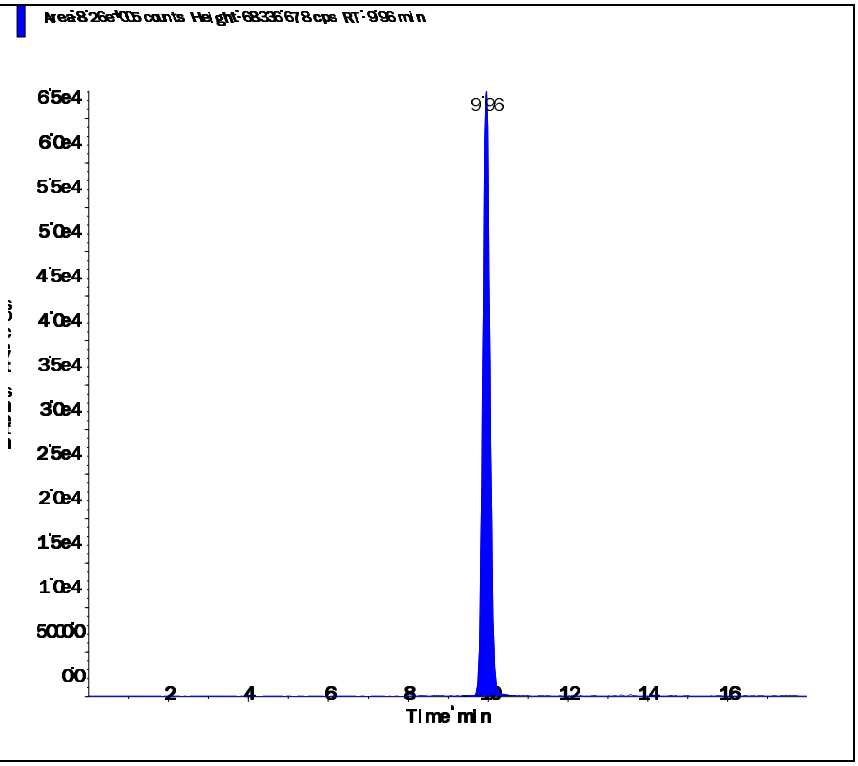

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	4.93 ng/ml
Area Ratio:	0.552
Sample Type:	(Standard)

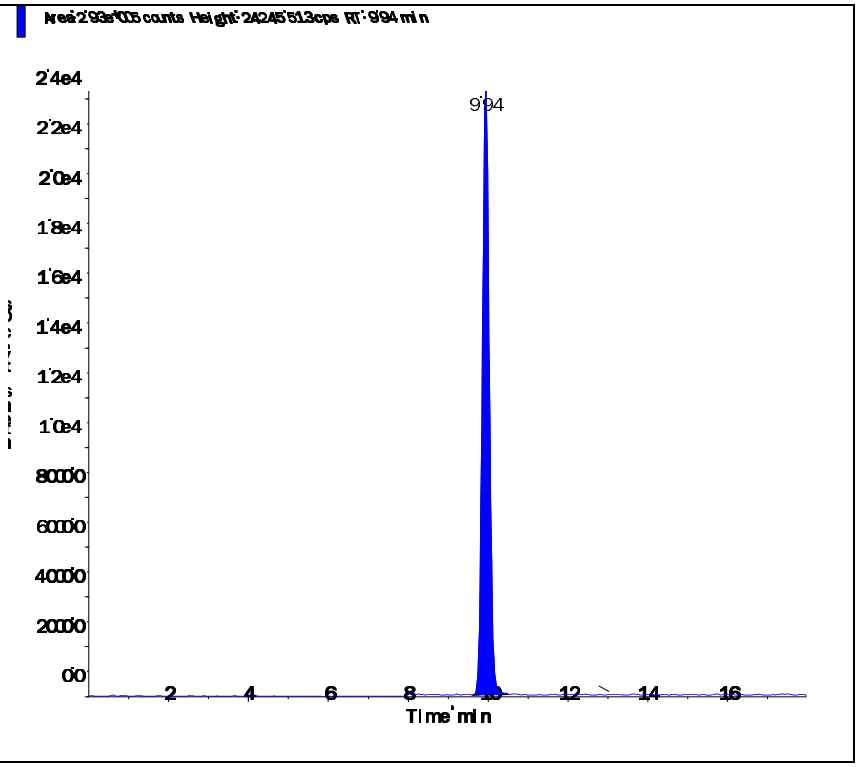

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Data File	LM33251.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/17/2016 9:24:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM33251.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 9:24:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG557856-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.030e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.94	10.00	9.87
Perchlorate conf	5.620e+05	9.93	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

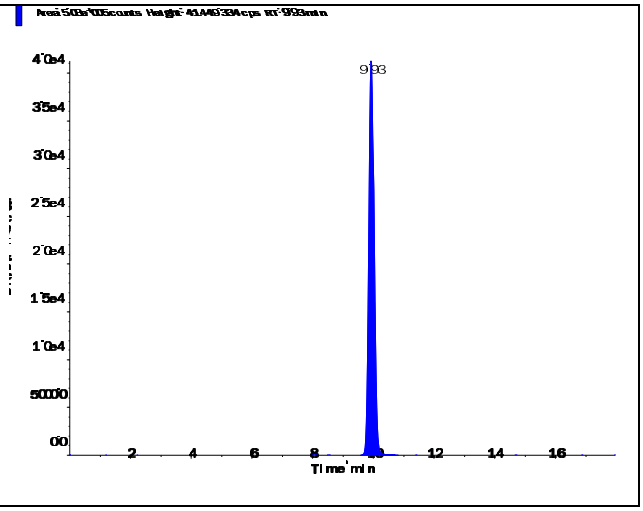

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	9.87 ng/ml
Area Ratio:	3.043
Sample Type:	(Standard)

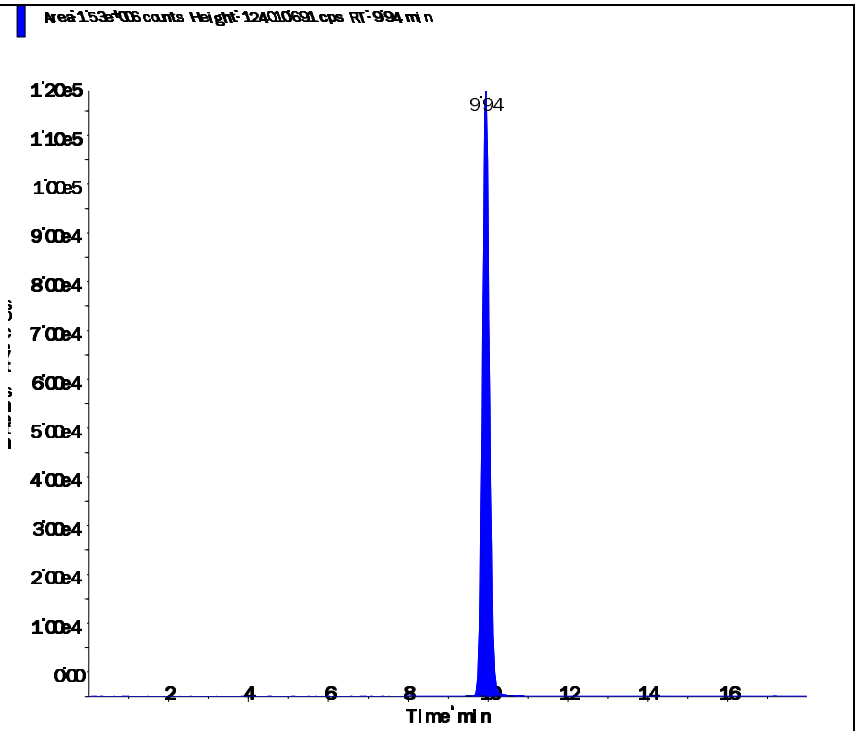

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	10.00 ng/ml
Area Ratio:	1.117
Sample Type:	(Standard)

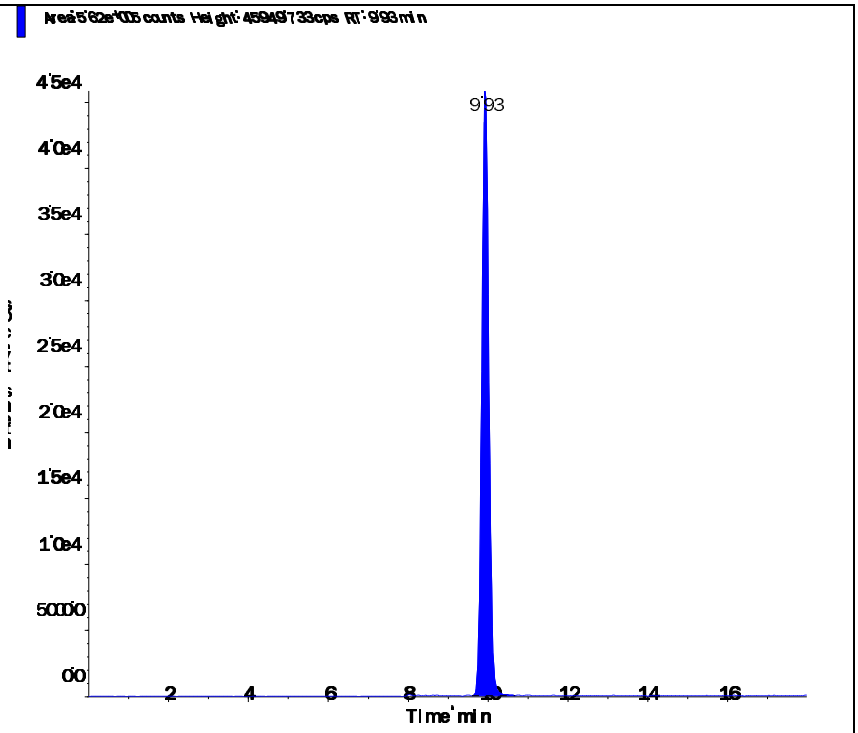

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Data File	LM33252.wiff	**Result Table**	021716_JWR.rdb
Acquisition Date	2/17/2016 9:43:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM33252.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 9:43:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	021716_JWR.rdb
Sample ID	WG557856-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.420e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+05	9.93	1.00	1.05
Perchlorate conf	6.360e+04	9.92	1.00	1.03

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

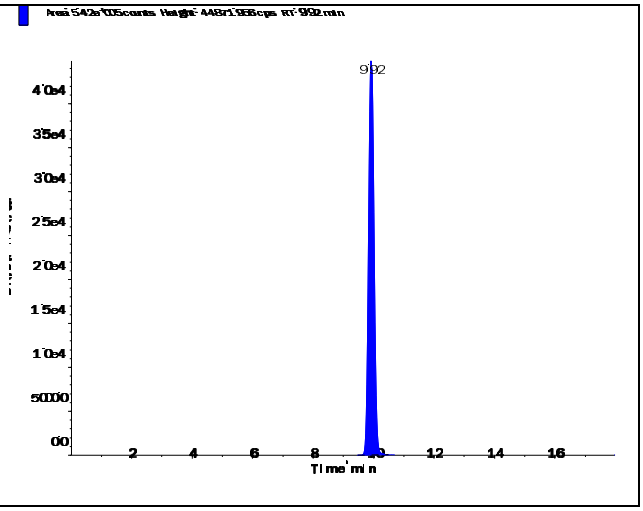

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.33
Sample Type:	(Quality Control)

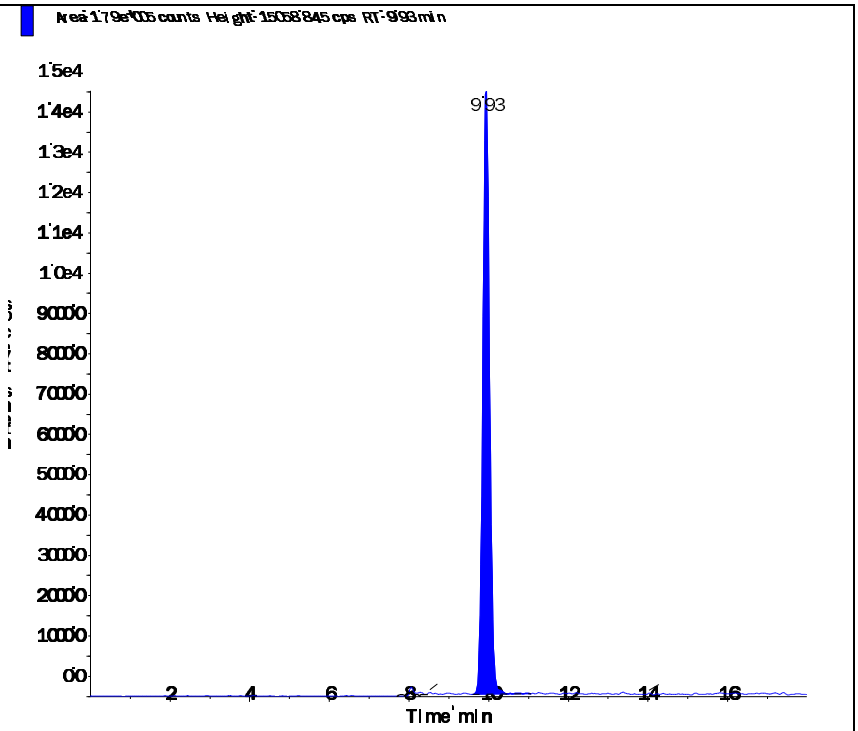

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.117
Sample Type:	(Quality Control)

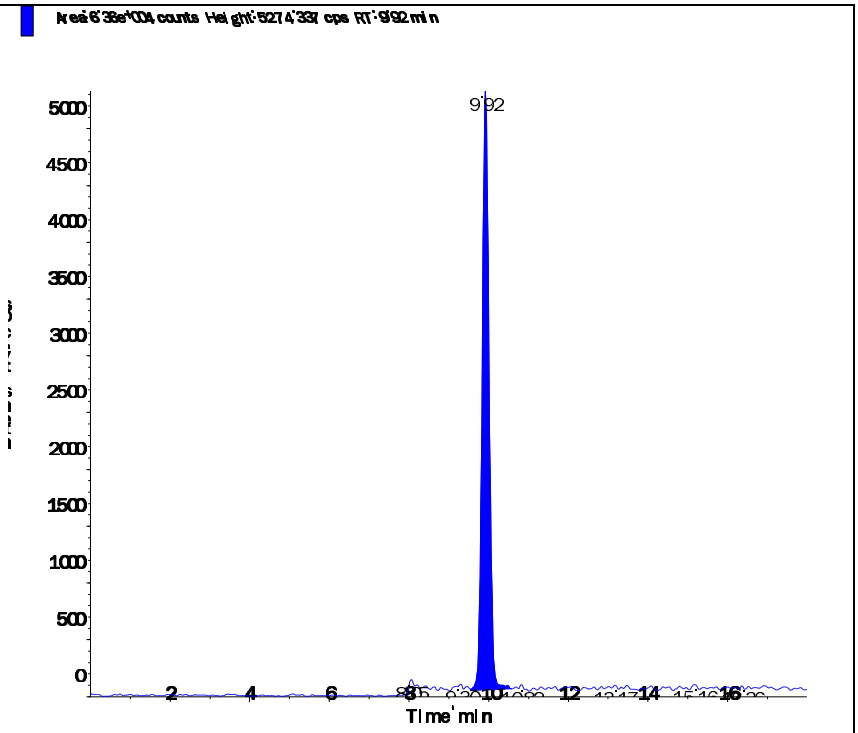

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Data File	LM33356.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/25/2016 5:58:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558803-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33356.wiff	**Injection Volume**	10.00
Acquisition Date	2/25/2016 5:58:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	WG558803-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.890e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.640e+05	9.95	1.00	1.07
Perchlorate conf	5.410e+04	9.93	1.00	0.971

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

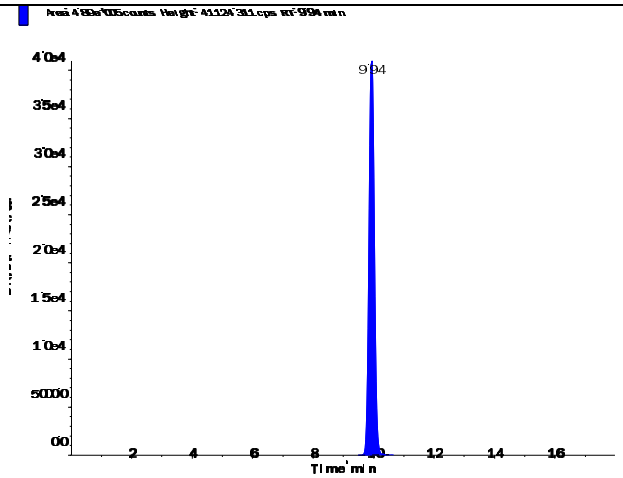

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	1.07 ng/ml
Area Ratio:	0.335
Sample Type:	(Quality Control)

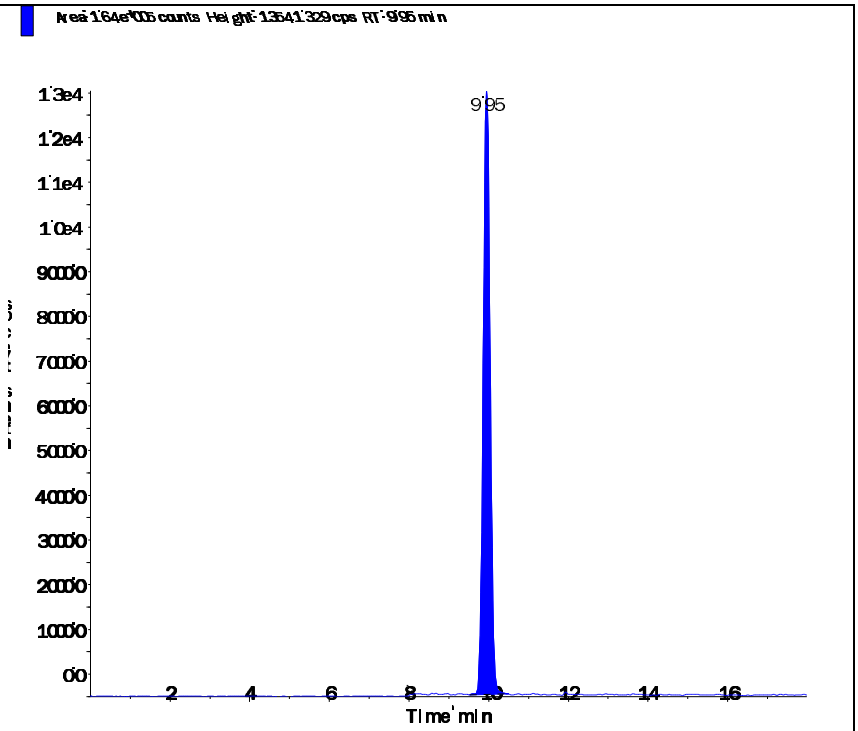

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	0.971 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

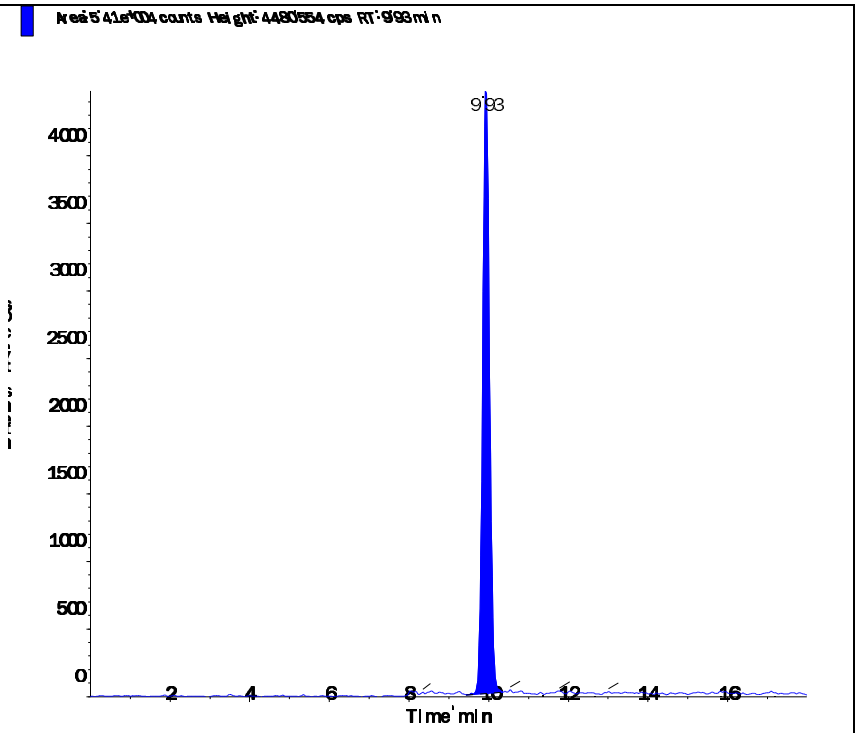

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Data File	LM33368.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/25/2016 9:46:07 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558803-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33368.wiff	**Injection Volume**	10.00
Acquisition Date	2/25/2016 9:46:07 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	WG558803-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.350e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.870e+05	9.96	1.00	1.11
Perchlorate conf	6.210e+04	9.95	1.00	1.02

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

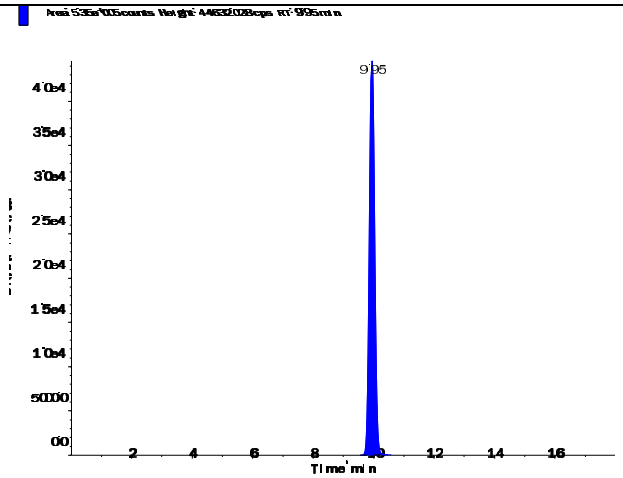

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	1.11 ng/ml
Area Ratio:	0.349
Sample Type:	(Quality Control)

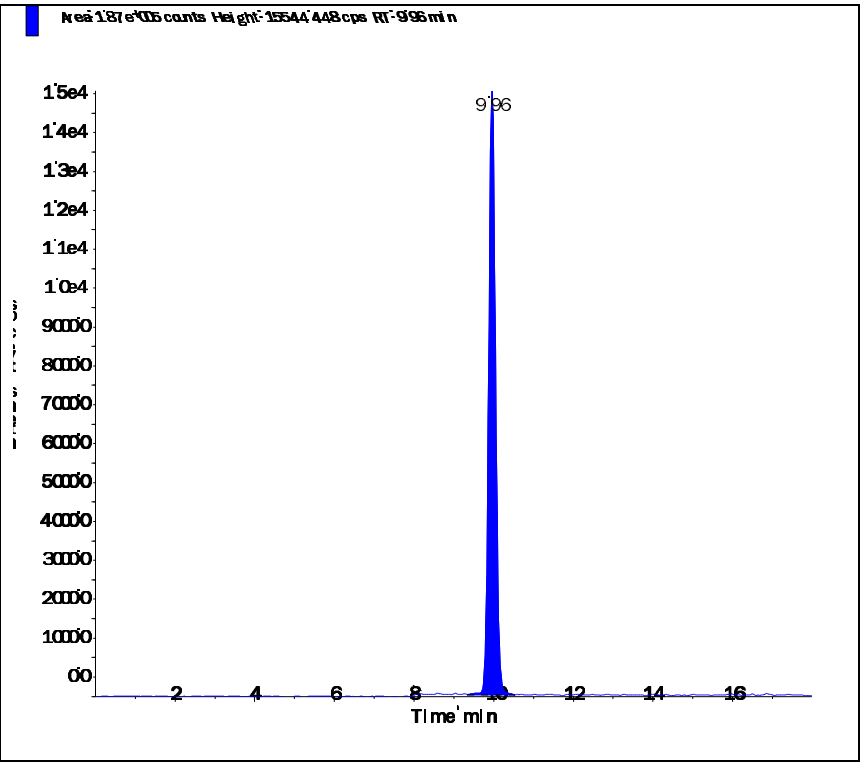

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.95 (9.92) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.116
Sample Type:	(Quality Control)

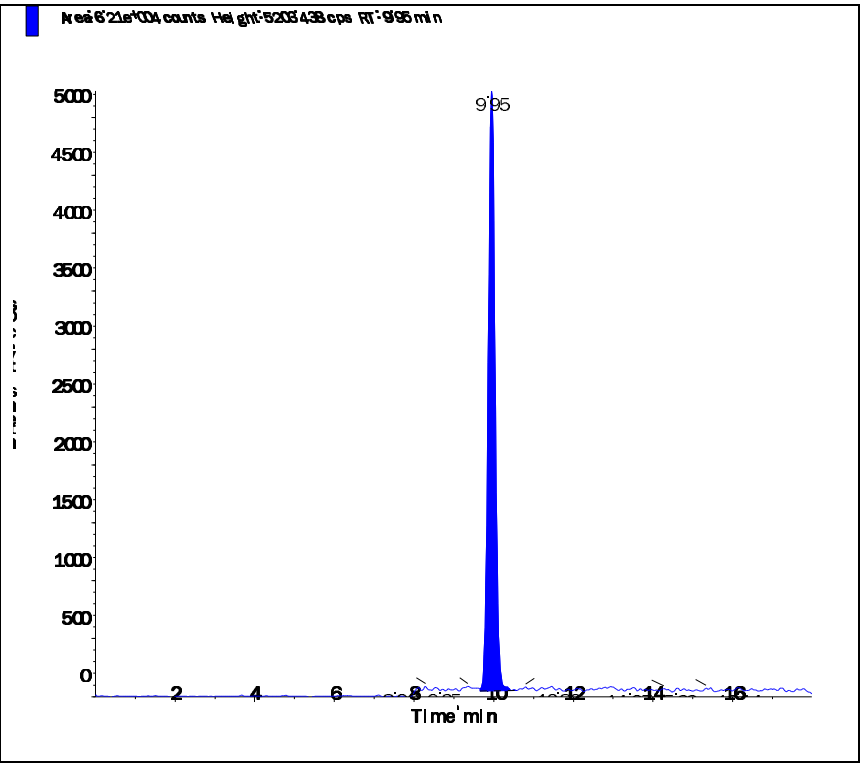

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Data File	LM33381.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/26/2016 1:52:18 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558803-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33381.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 1:52:18 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	WG558803-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.410e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.850e+05	9.95	1.00	1.09
Perchlorate conf	5.900e+04	9.94	1.00	0.955

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

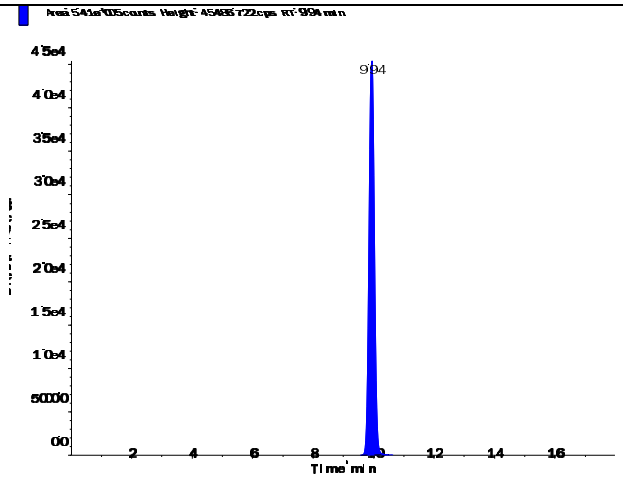

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	1.09 ng/ml
Area Ratio:	0.343
Sample Type:	(Quality Control)

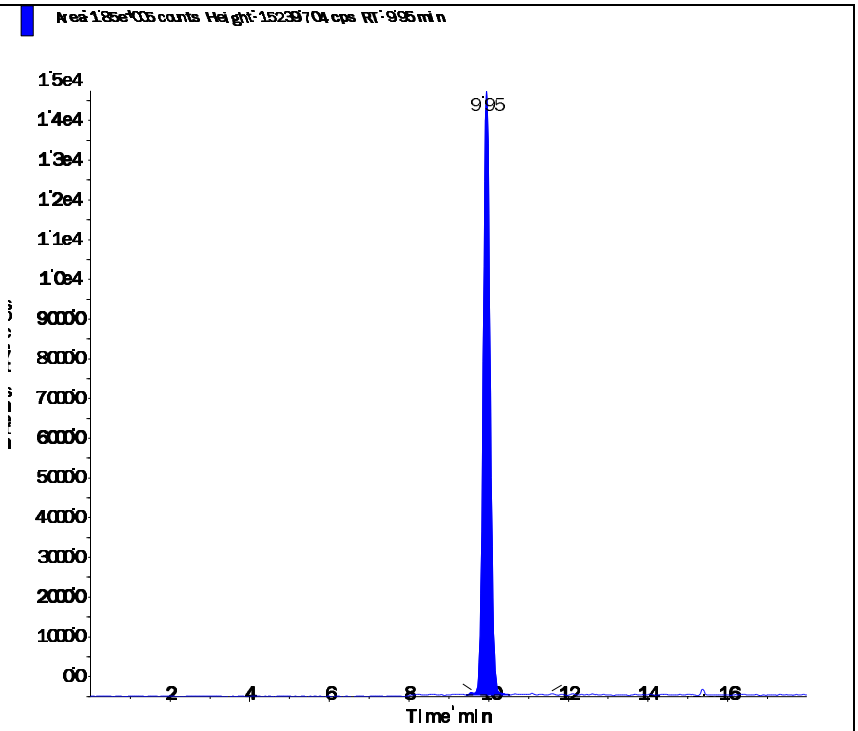

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.955 ng/ml
Area Ratio:	0.109
Sample Type:	(Quality Control)

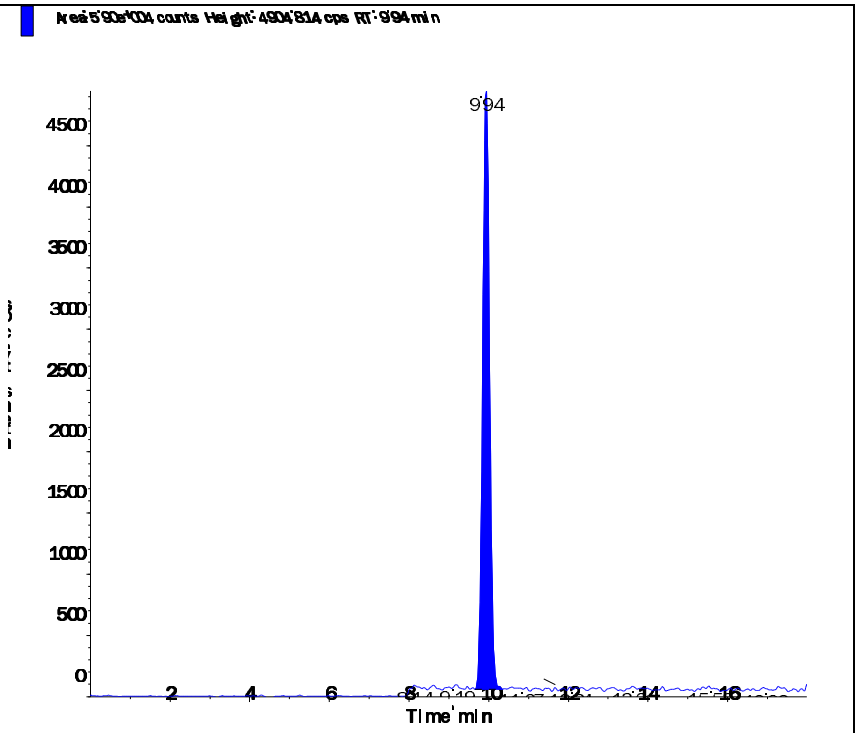

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Data File	LM33385.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/26/2016 3:08:02 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558803-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33385.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 3:08:02 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	WG558803-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.400e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.830e+05	9.95	1.00	1.08
Perchlorate conf	6.100e+04	9.94	1.00	0.99

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

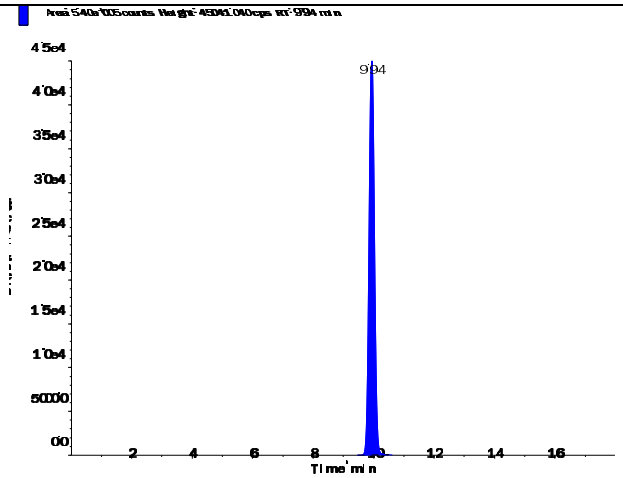

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	1.08 ng/ml
Area Ratio:	0.338
Sample Type:	(Quality Control)

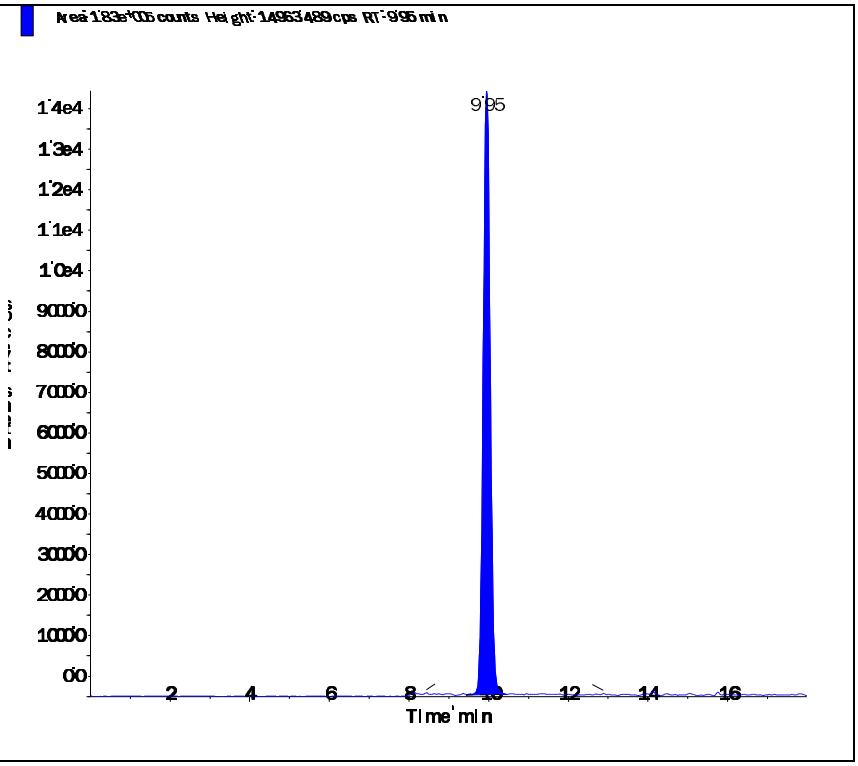

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.99 ng/ml
Area Ratio:	0.113
Sample Type:	(Quality Control)

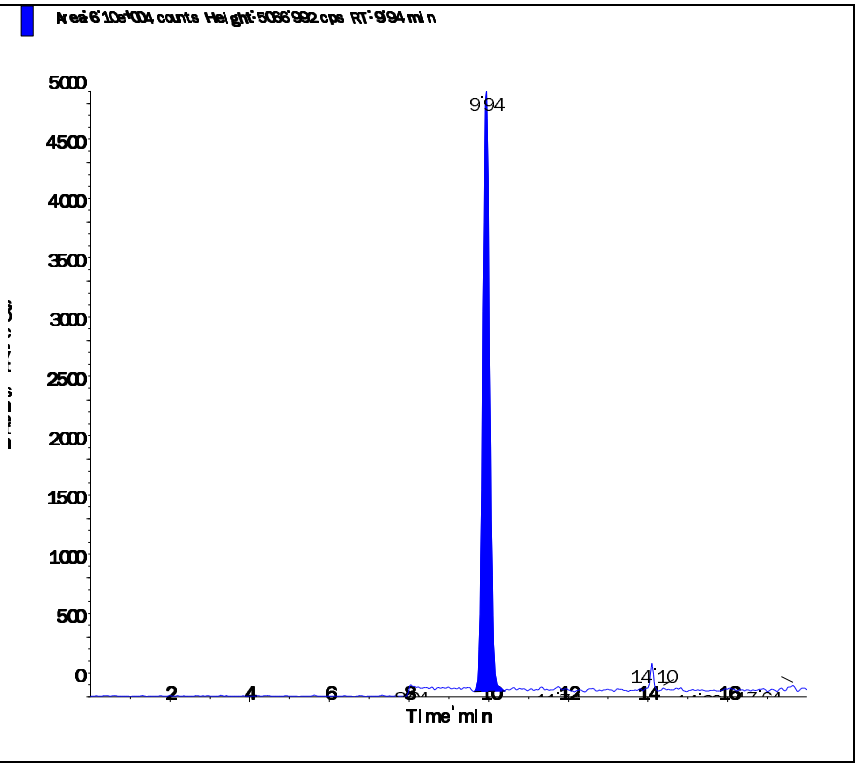

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Data File	LM33388.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/26/2016 11:27:35 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558803-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33388.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 11:27:35 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	WG558803-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.760e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.630e+05	9.97	1.00	1.09
Perchlorate conf	5.440e+04	9.96	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

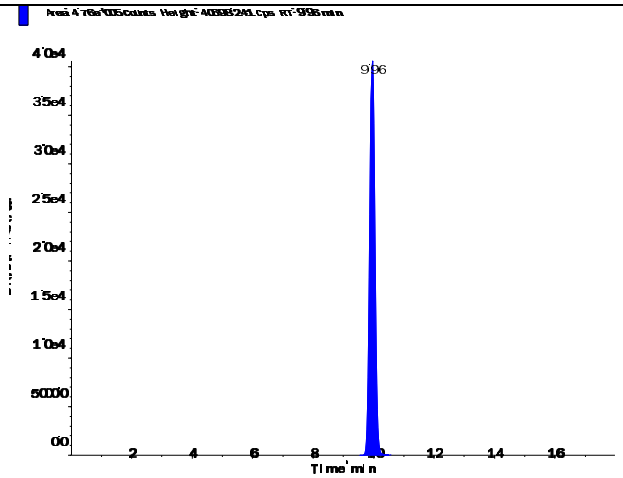

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.97 (9.94) min
Calculated conc:	1.09 ng/ml
Area Ratio:	0.342
Sample Type:	(Quality Control)

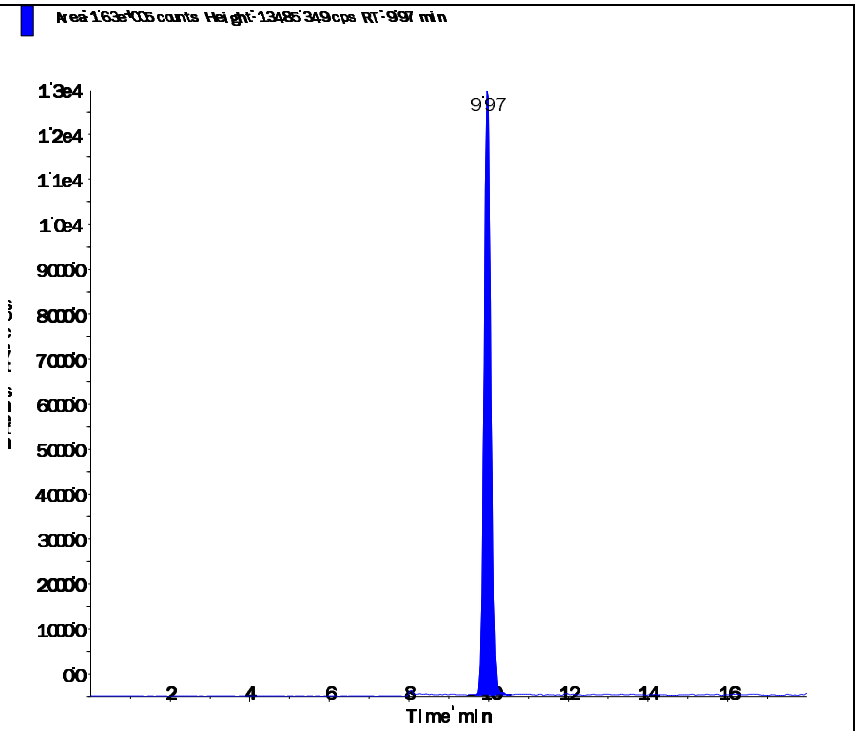

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.96 (9.92) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Quality Control)

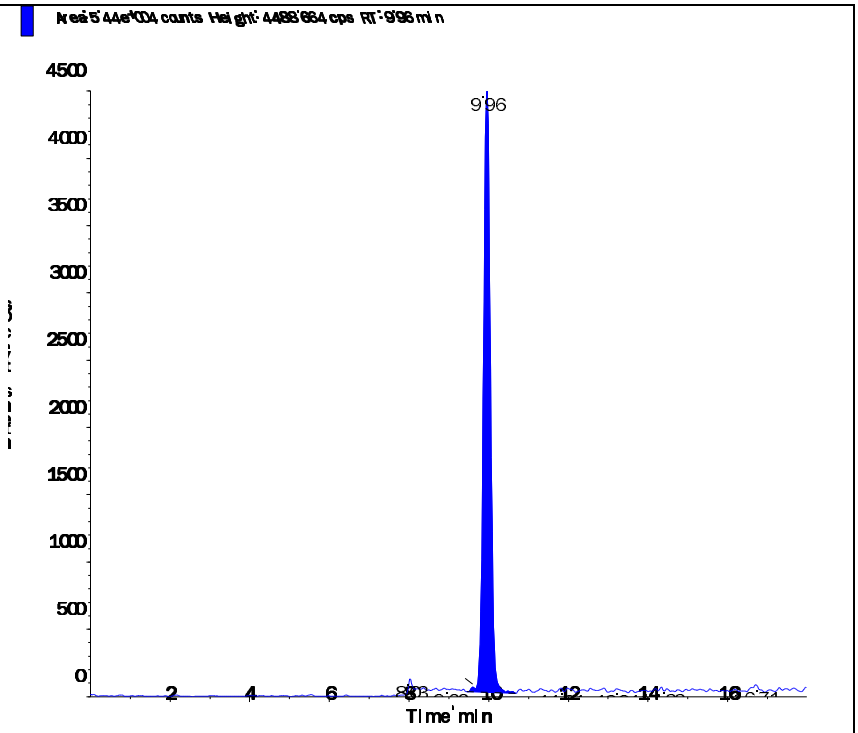

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Data File	LM33397.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/26/2016 2:18:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558803-11 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33397.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 2:18:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	WG558803-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.520e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.950e+05	9.96	1.00	1.12
Perchlorate conf	6.290e+04	9.94	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

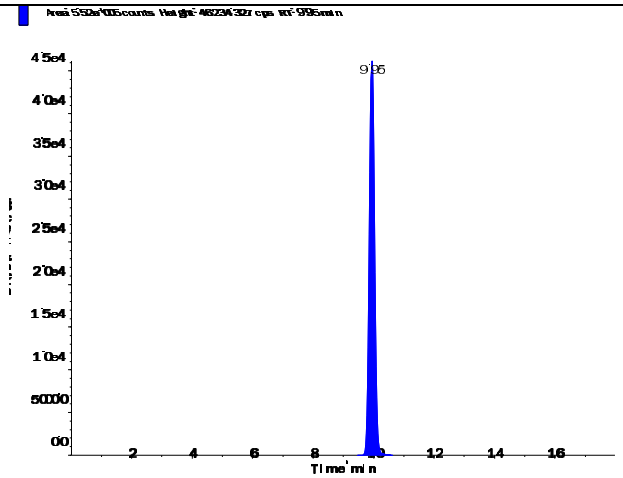

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	1.12 ng/ml
Area Ratio:	0.353
Sample Type:	(Quality Control)

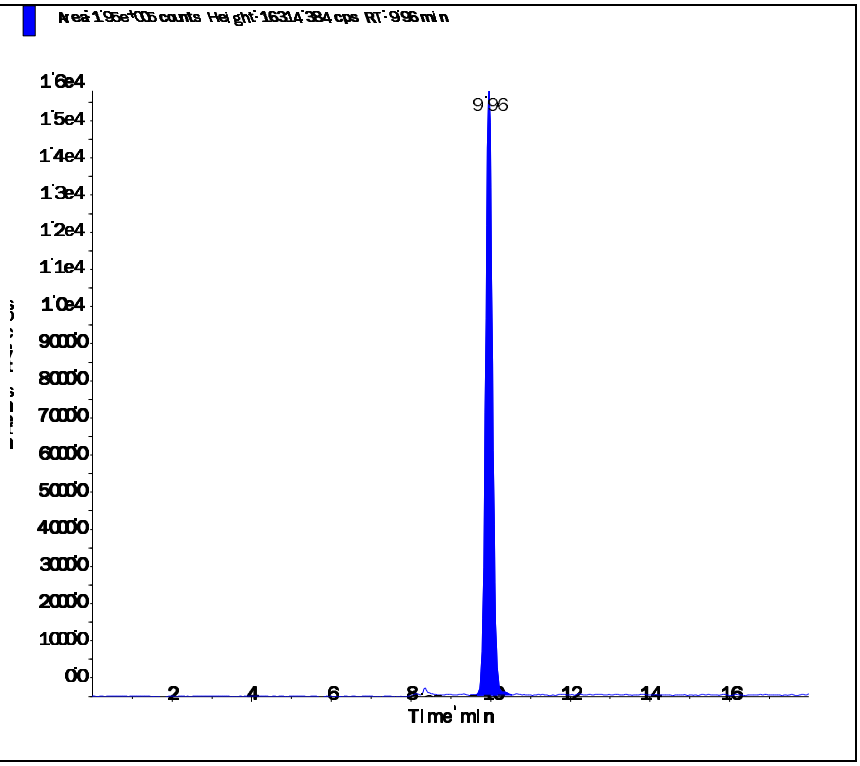

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Quality Control)

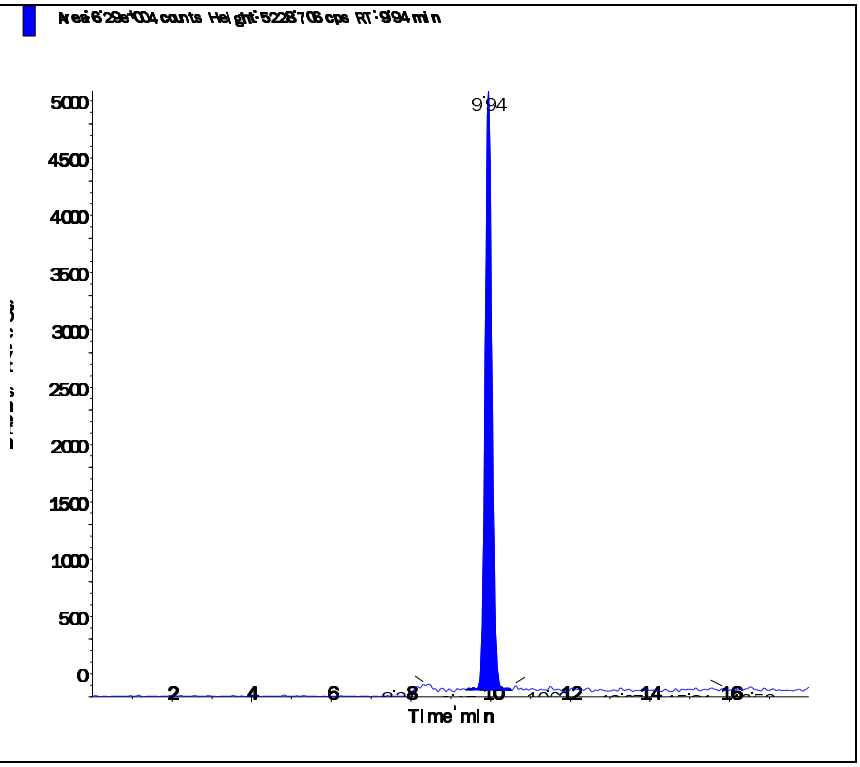

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Data File	LM33357.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/25/2016 6:17:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558779-07 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33357.wiff	**Injection Volume**	10.00
Acquisition Date	2/25/2016 6:17:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	WG558779-07	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.390e+04	9.95	N/A	0.202
Perchlorate conf	1.250e+04	9.94	N/A	0.205

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

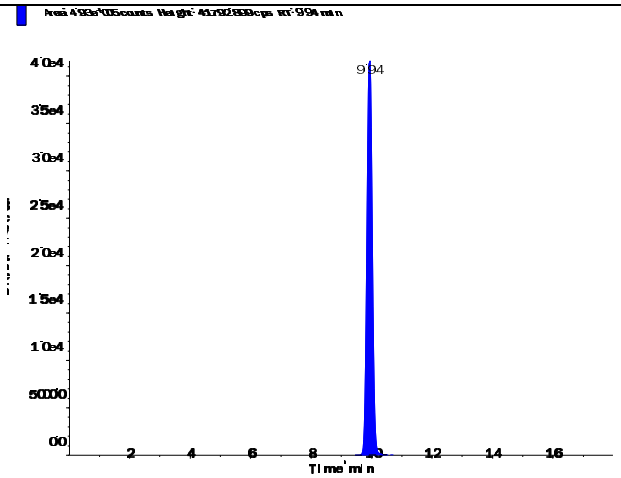

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	0.202 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

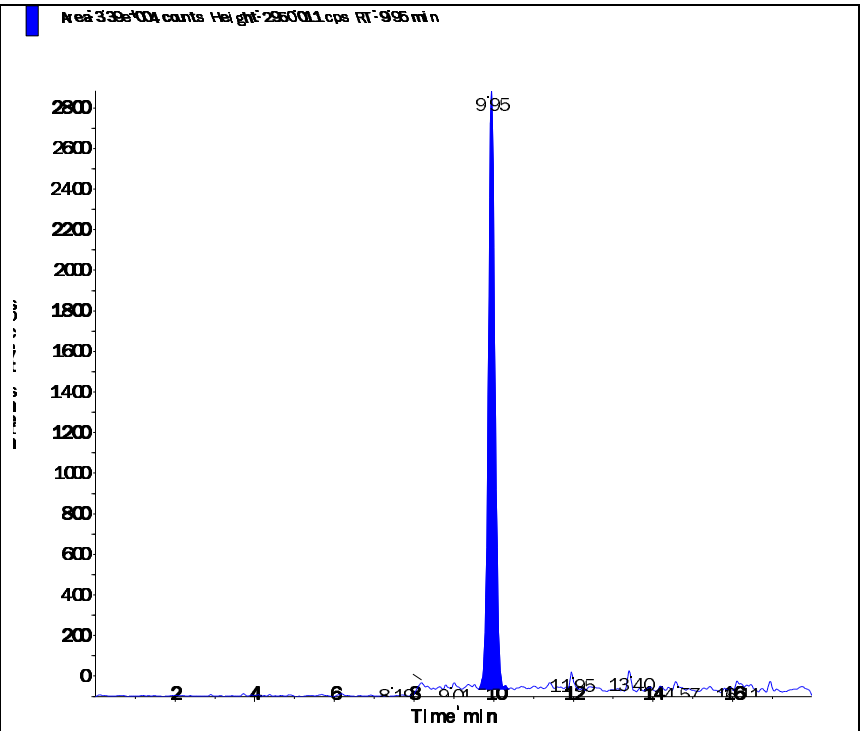

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.205 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

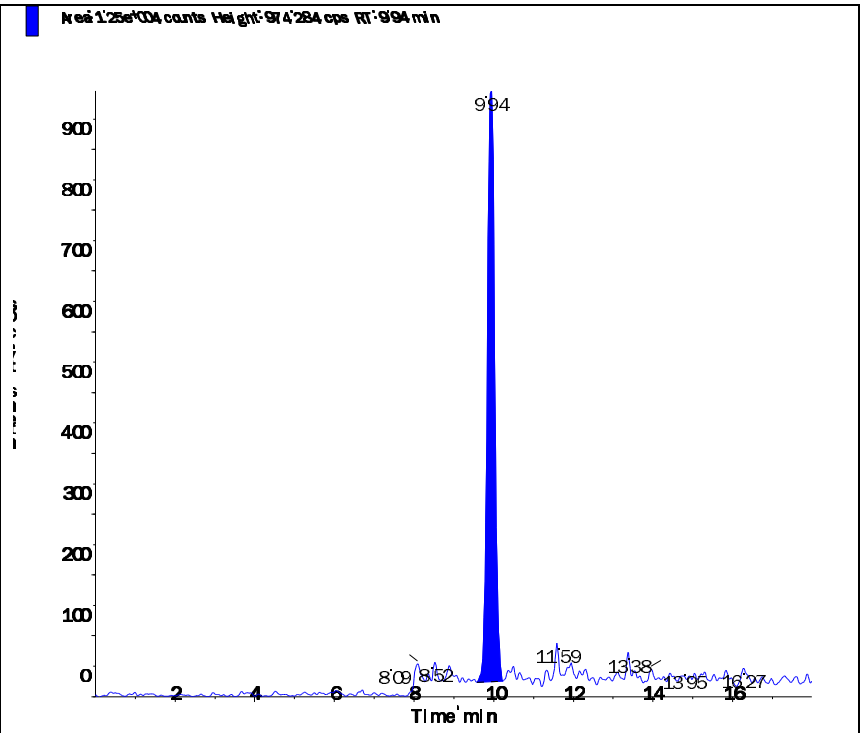

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Data File	LM33369.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/25/2016 10:05:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558779-08 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33369.wiff	**Injection Volume**	10.00
Acquisition Date	2/25/2016 10:05:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	WG558779-08	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.410e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.940e+04	9.97	N/A	0.215
Perchlorate conf	1.250e+04	9.95	N/A	0.185

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

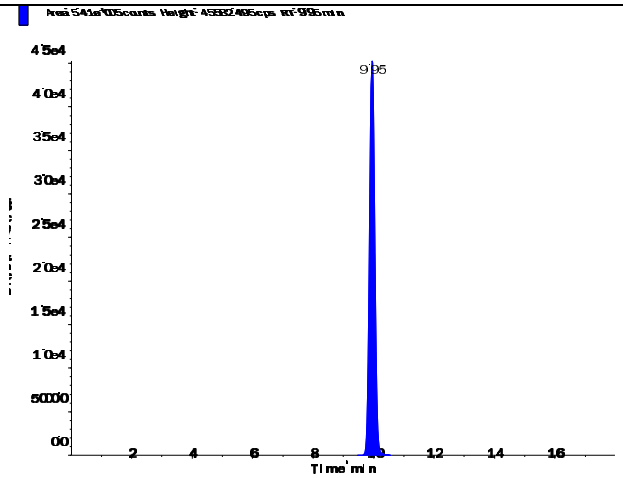

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.97 (9.94) min
Calculated conc:	0.215 ng/ml
Area Ratio:	0.073
Sample Type:	(Unknown)

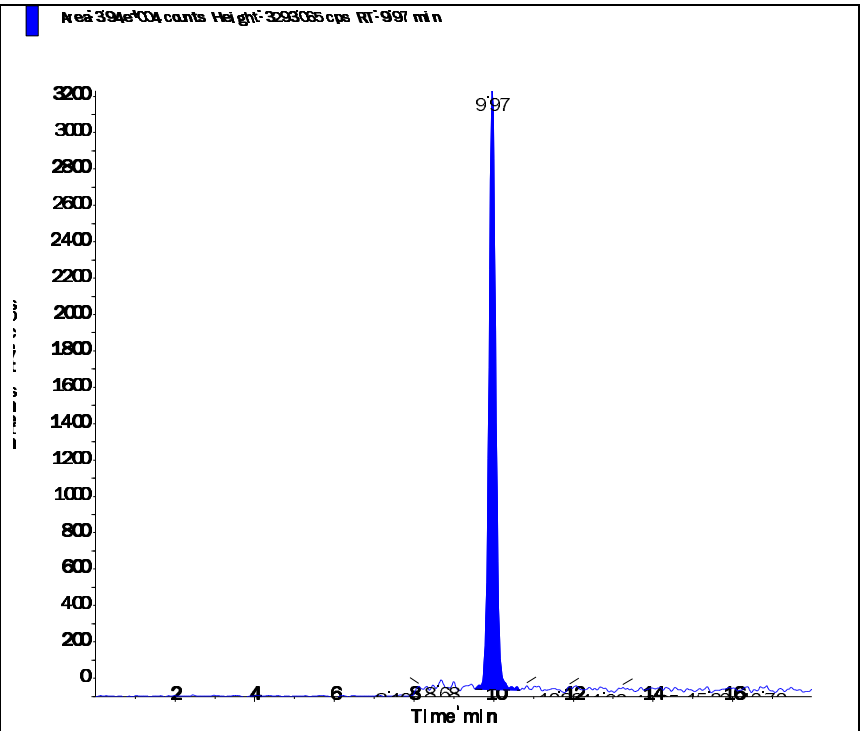

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.95 (9.92) min
Calculated conc:	0.185 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

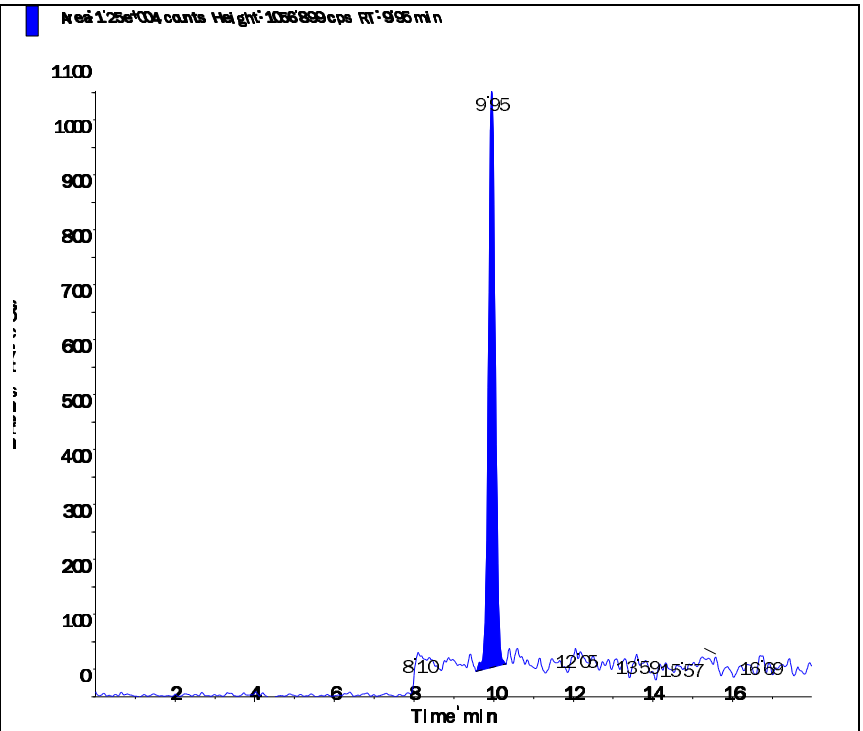

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Data File	LM33382.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/26/2016 2:11:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558779-09 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33382.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 2:11:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	WG558779-09	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.410e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.930e+04	9.95	N/A	0.214
Perchlorate conf	1.340e+04	9.94	N/A	0.20

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

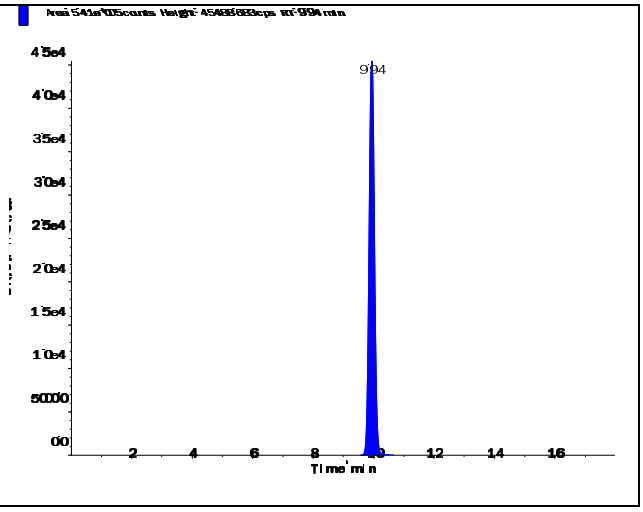

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	0.214 ng/ml
Area Ratio:	0.073
Sample Type:	(Unknown)

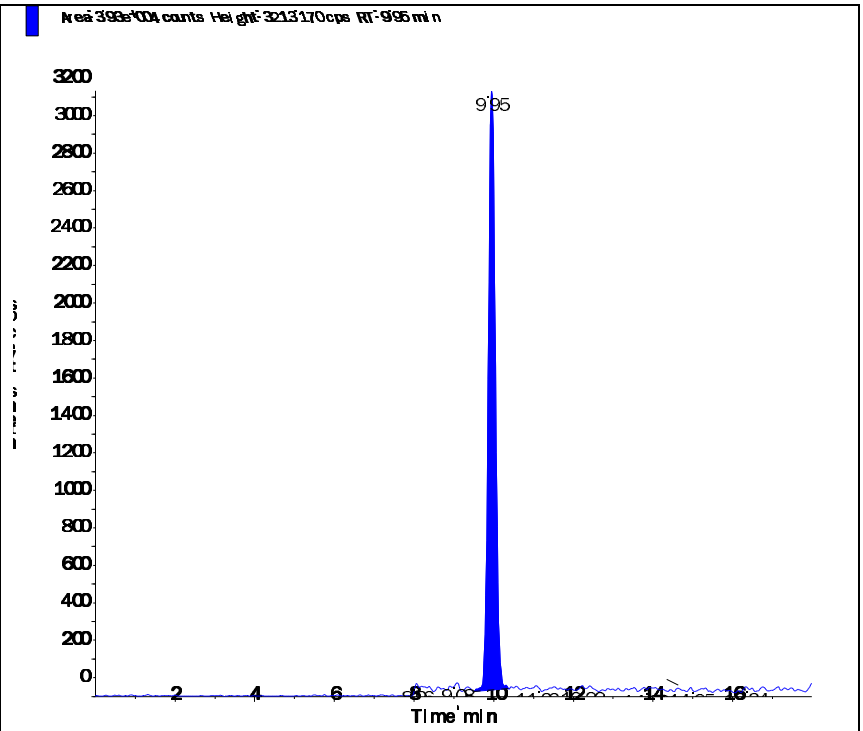

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.20 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

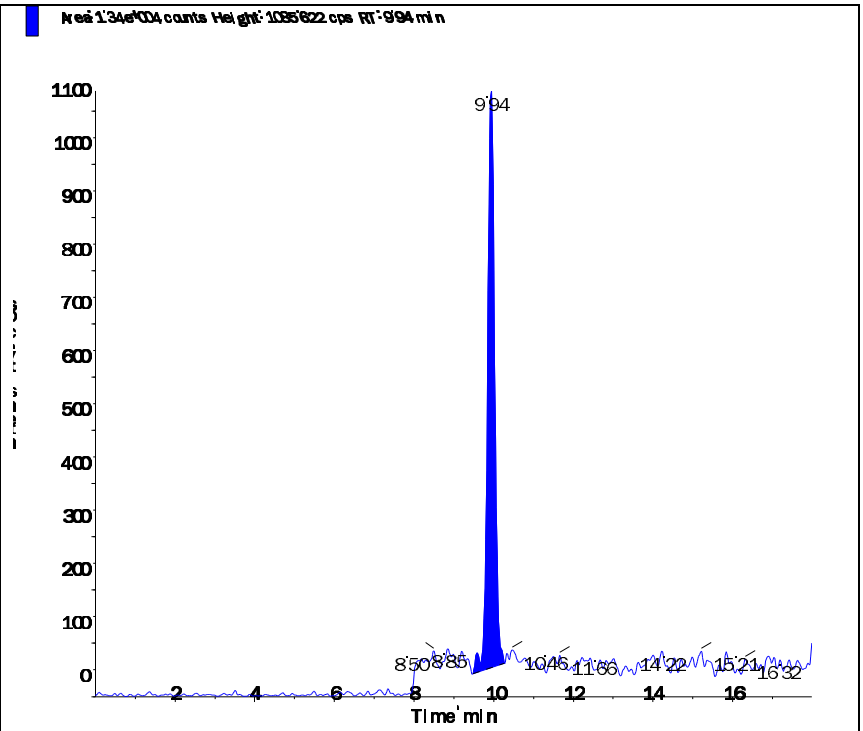

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Data File	LM33386.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/26/2016 3:26:59 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558779-10 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33386.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 3:26:59 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	WG558779-10	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.340e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.830e+04	9.96	N/A	0.211
Perchlorate conf	1.280e+04	9.95	N/A	0.193

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

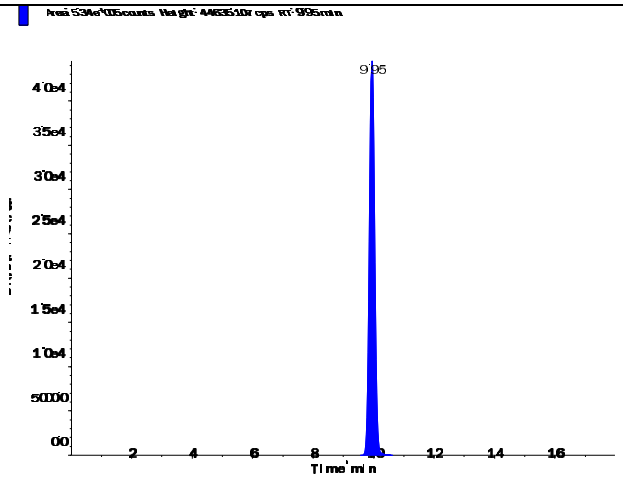

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	0.211 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

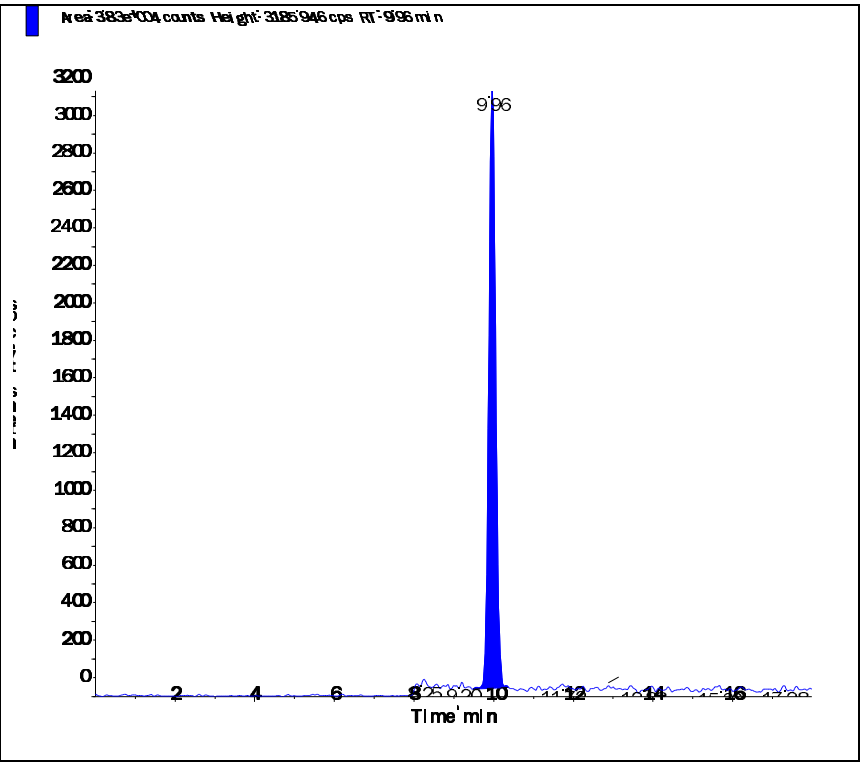

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.95 (9.92) min
Calculated conc:	0.193 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

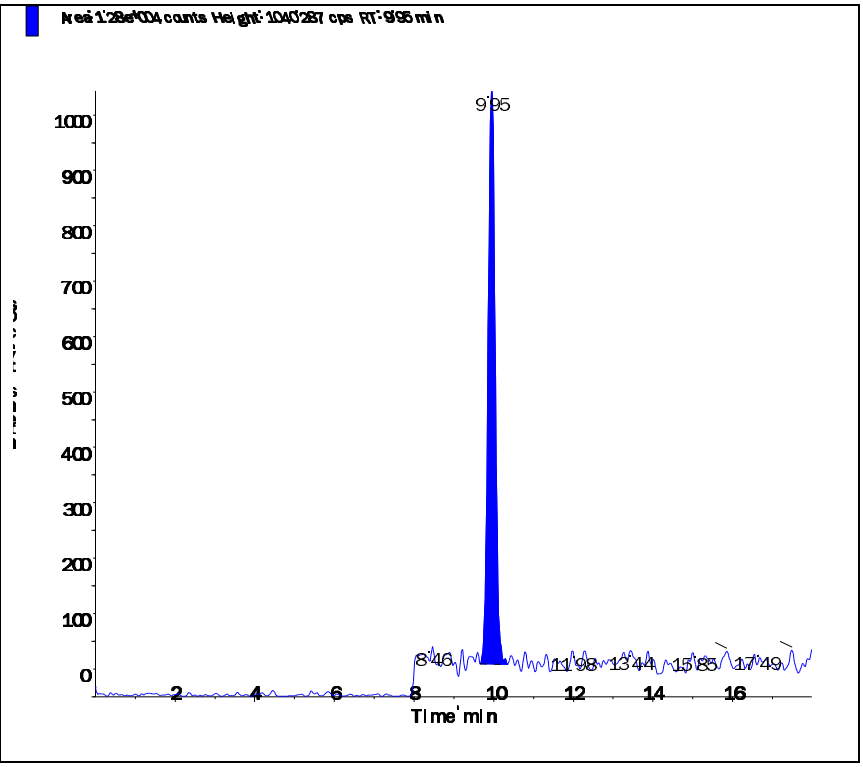

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Printed: 2/26/2016 4:07 PM

Data File	LM33389.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/26/2016 11:46:27 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558779-11 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33389.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 11:46:27 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	WG558779-11	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.940e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.470e+04	9.96	N/A	0.206
Perchlorate conf	1.240e+04	9.95	N/A	0.202

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

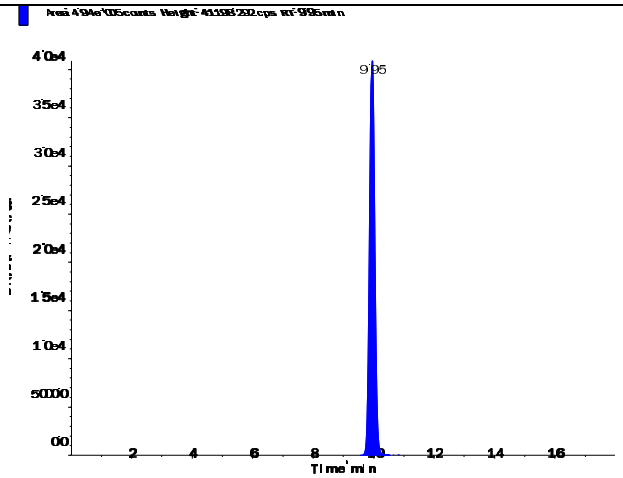

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

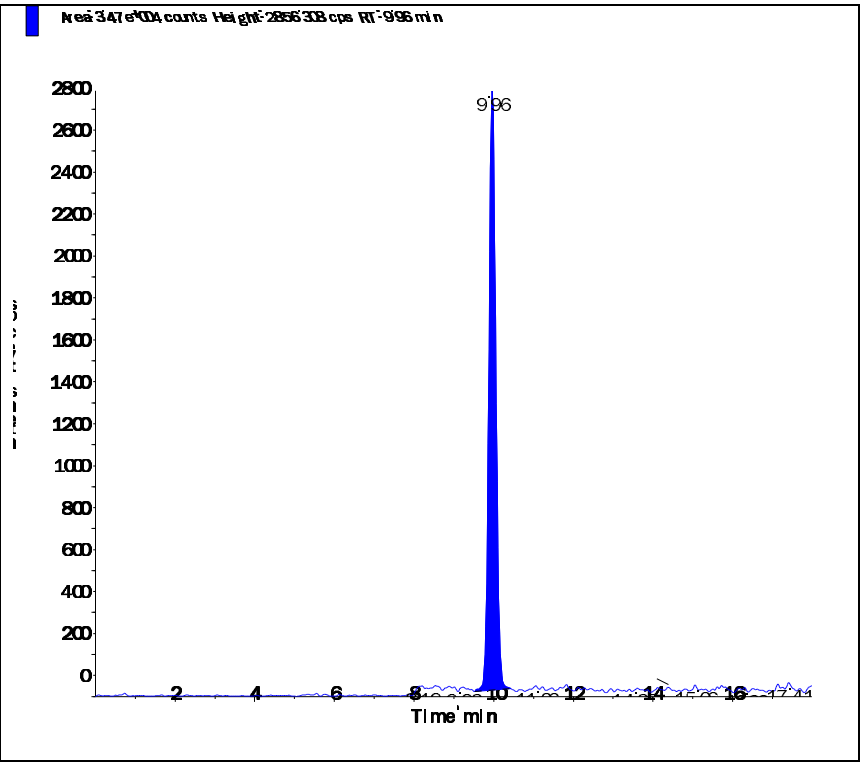

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.95 (9.92) min
Calculated conc:	0.202 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

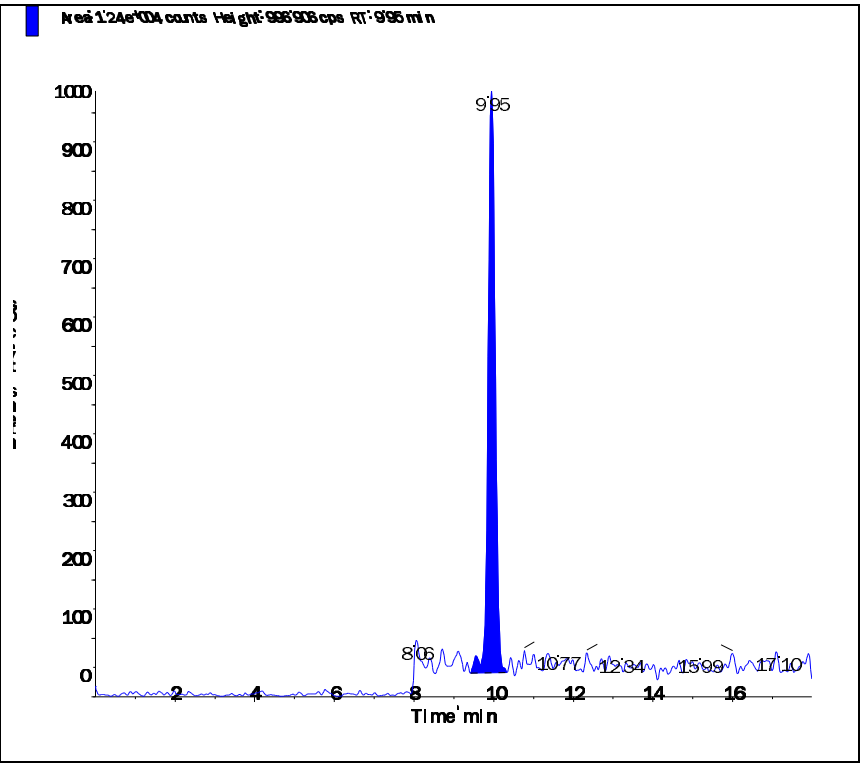

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Data File	LM33398.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/26/2016 2:36:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558779-12 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33398.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 2:36:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	WG558779-12	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.530e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.110e+04	9.96	N/A	0.22
Perchlorate conf	1.330e+04	9.94	N/A	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

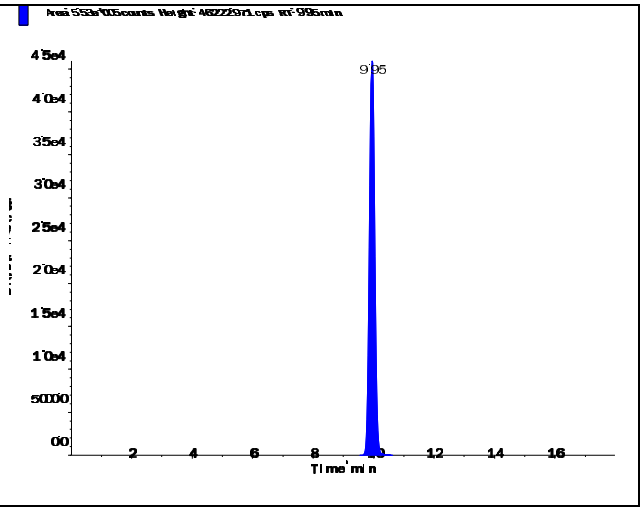

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	0.22 ng/ml
Area Ratio:	0.074
Sample Type:	(Unknown)

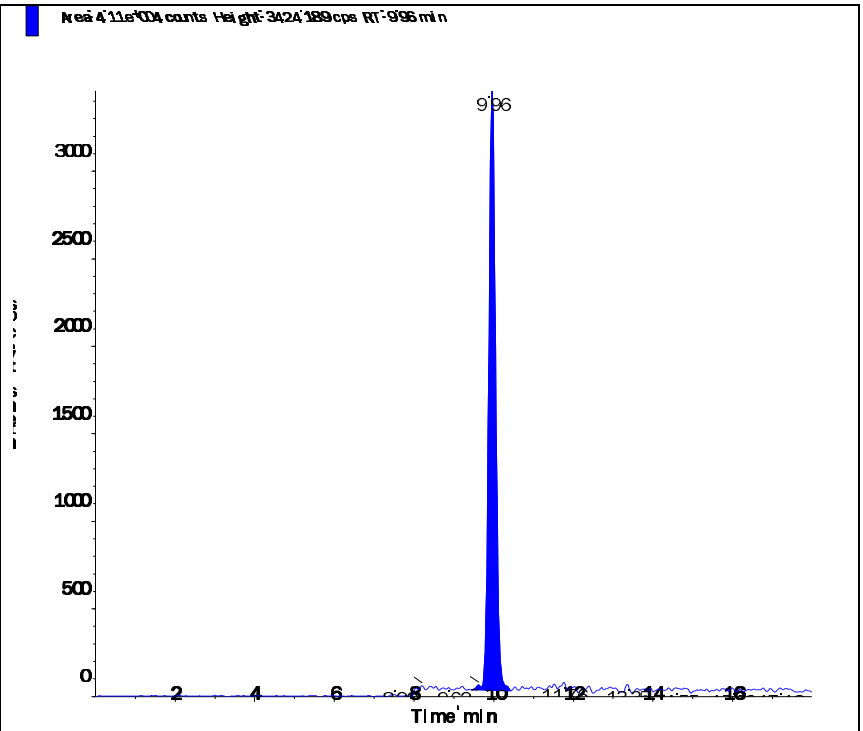

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

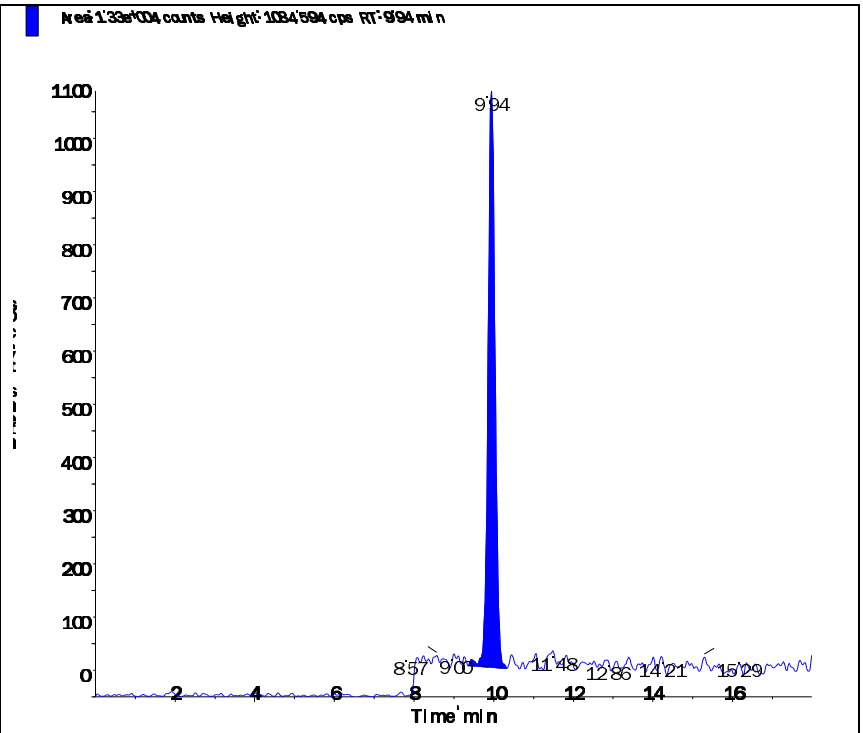

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Data File	LM33355.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/25/2016 5:40:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558803-01 CCB	**Injection Vial**	1.00
Data File	LM33355.wiff	**Injection Volume**	10.00
Acquisition Date	2/25/2016 5:40:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	WG558803-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

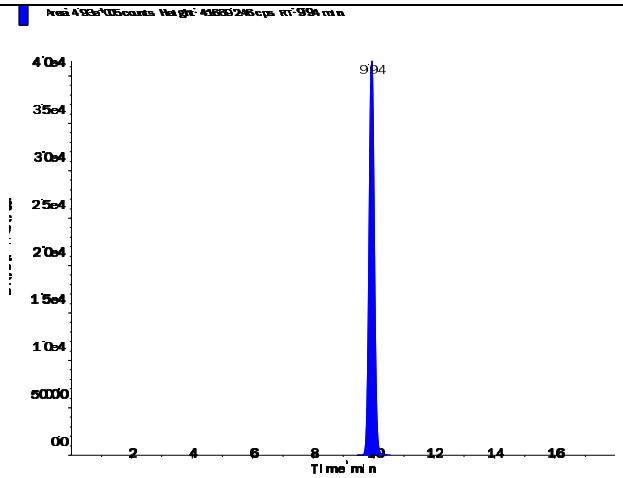

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

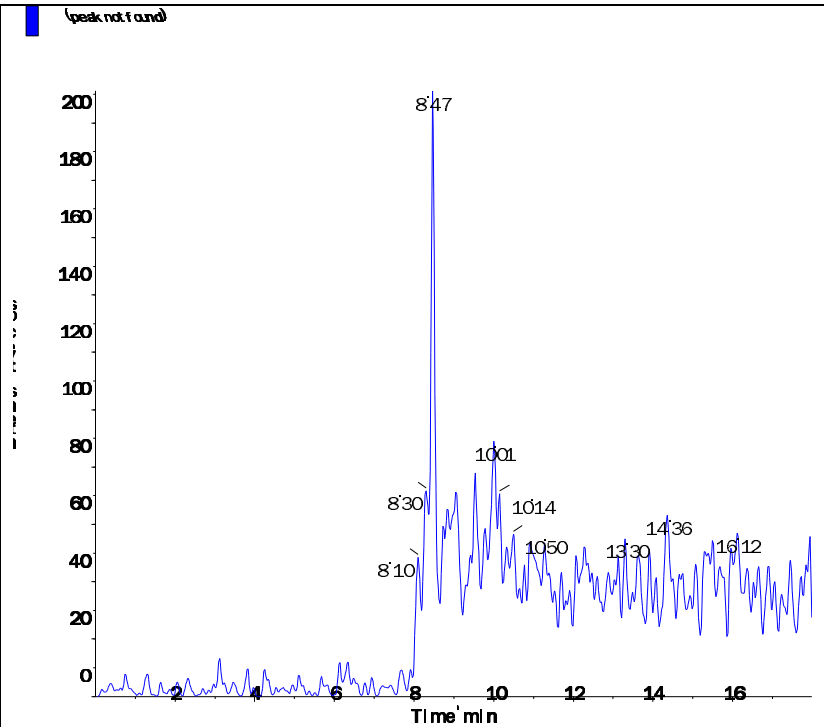

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

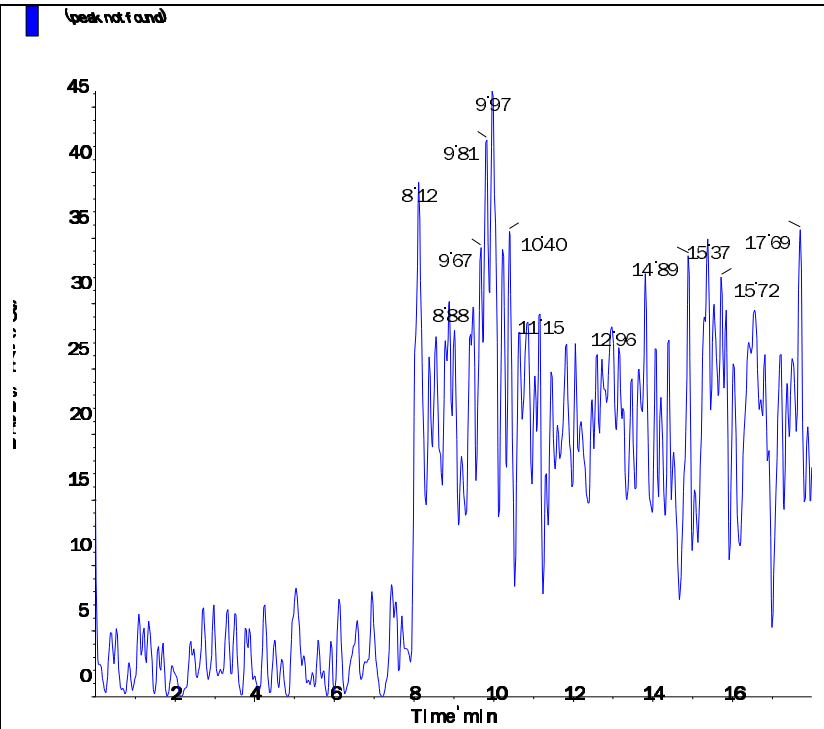

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Data File	LM33370.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/25/2016 10:24:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558803-04 CCB	**Injection Vial**	1.00
Data File	LM33370.wiff	**Injection Volume**	10.00
Acquisition Date	2/25/2016 10:24:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	WG558803-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.560e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	4.950e+02	10.10	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

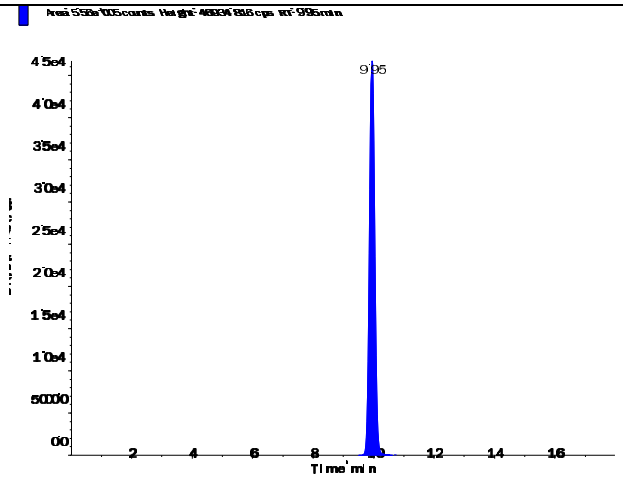

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

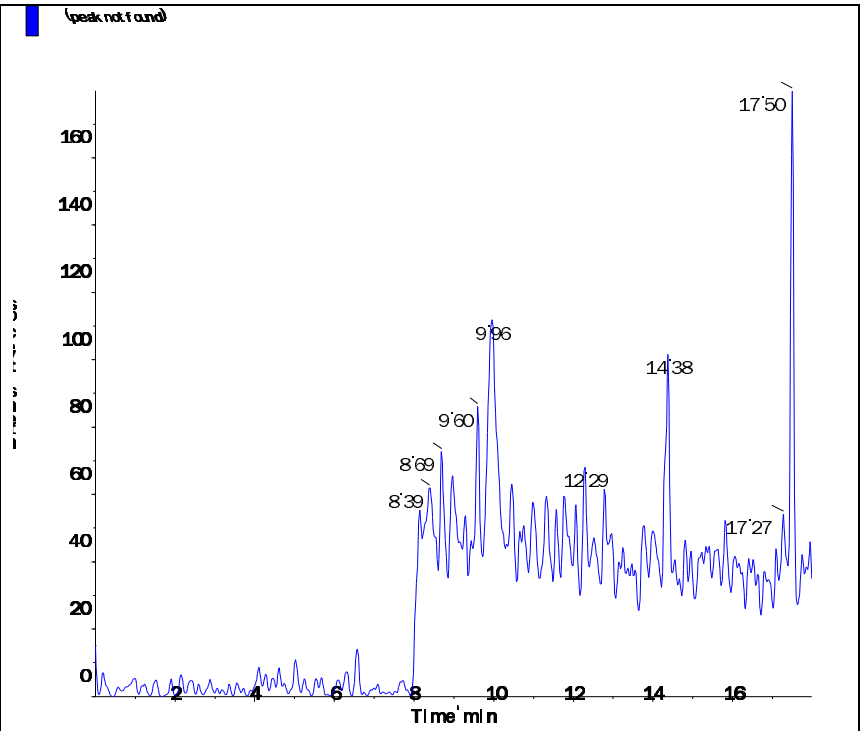

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.10 (9.92) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

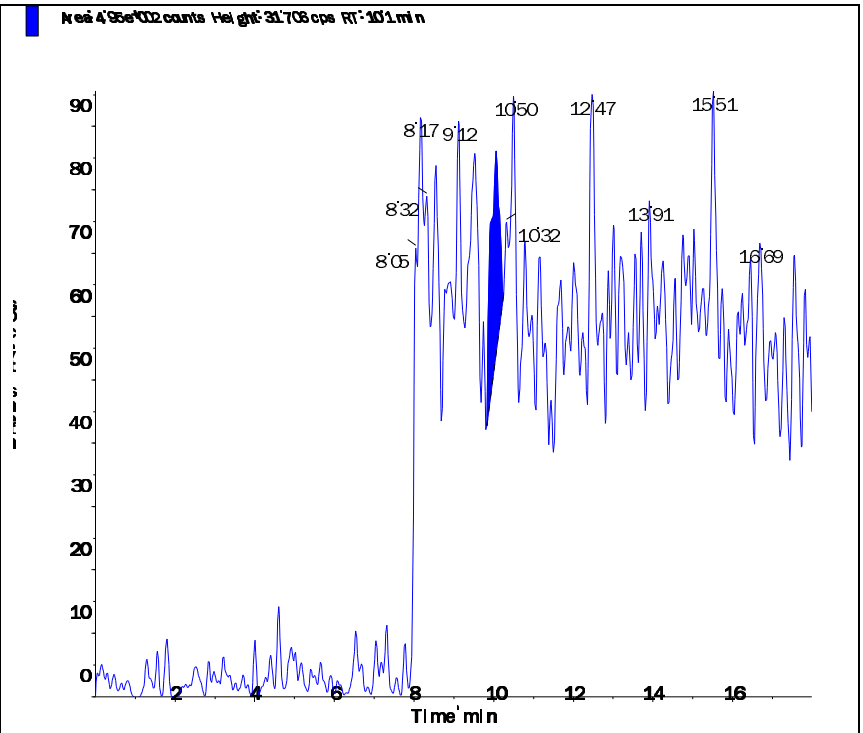

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Data File	LM33383.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/26/2016 2:30:10 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558803-06 CCB	**Injection Vial**	1.00
Data File	LM33383.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 2:30:10 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	WG558803-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.560e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

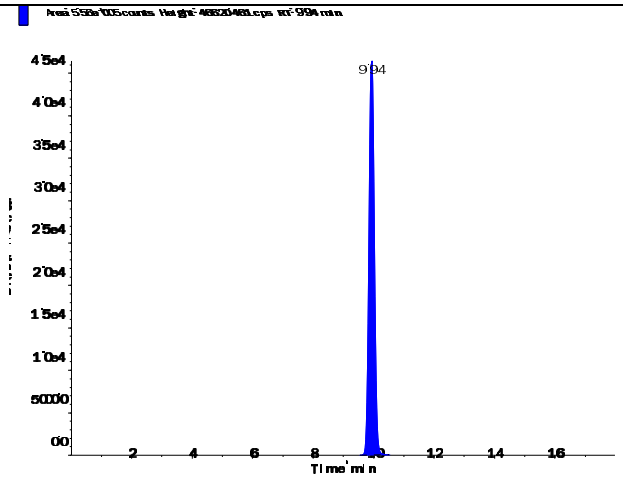

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

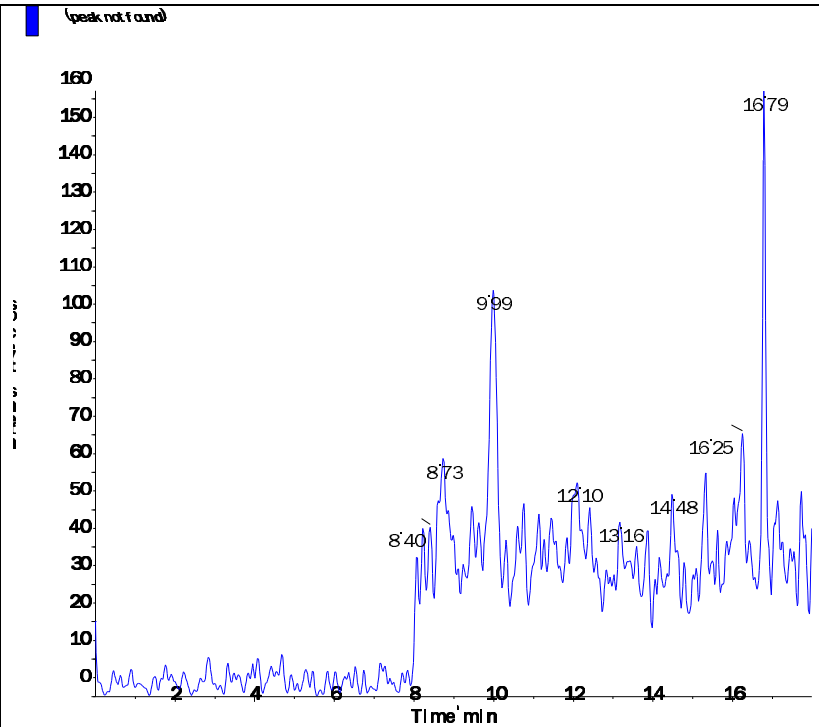

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

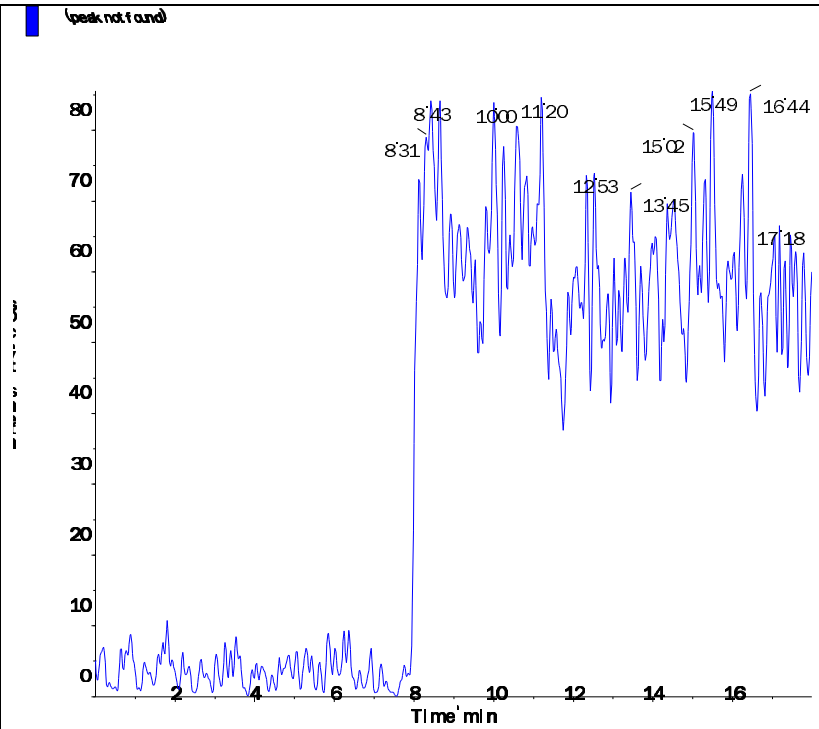

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Data File	LM33387.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/26/2016 3:45:55 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558803-08 CCB	**Injection Vial**	1.00
Data File	LM33387.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 3:45:55 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	WG558803-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.490e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	5.710e+02	9.96	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

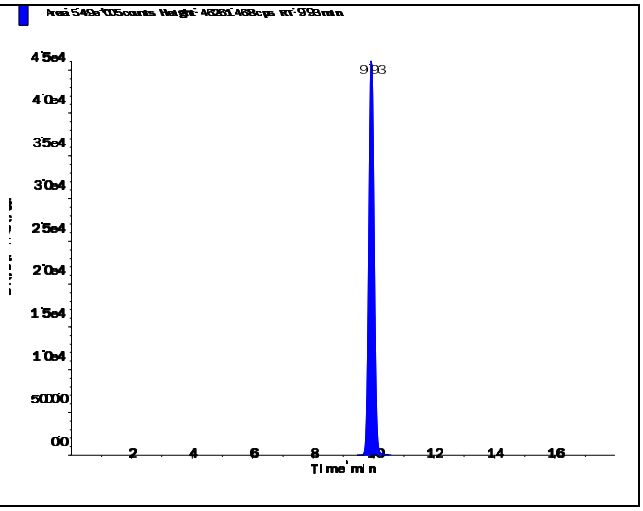

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

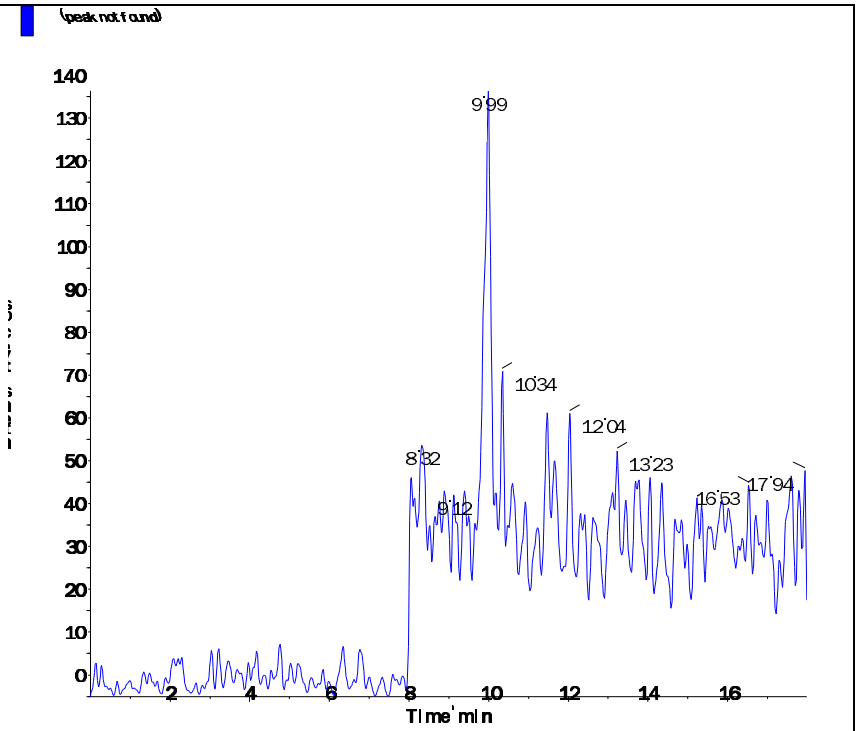

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.96 (9.92) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

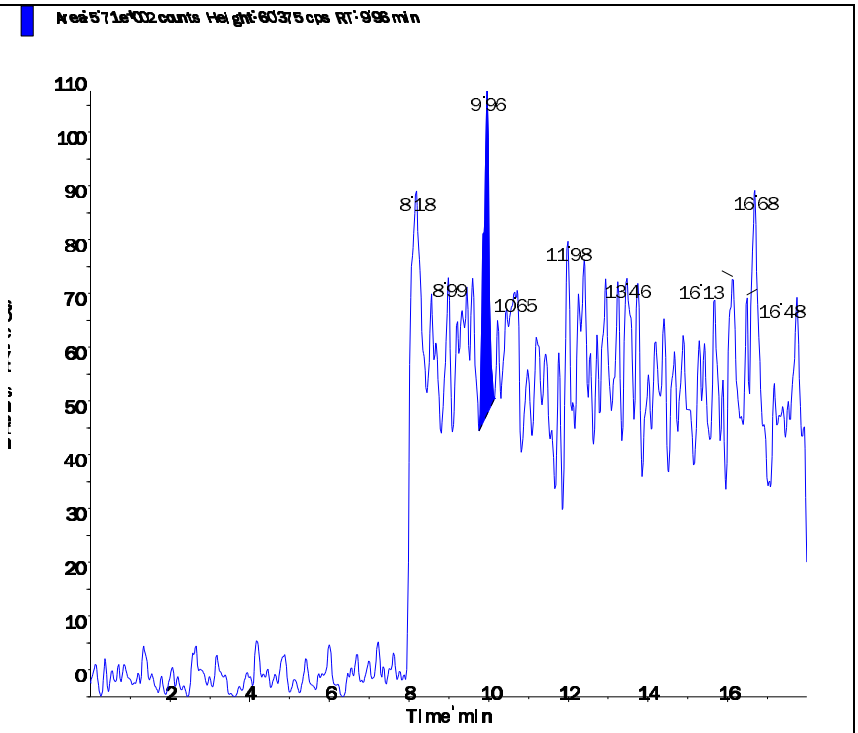

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Data File	LM33390.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/26/2016 12:05:23 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558803-10 CCB	**Injection Vial**	1.00
Data File	LM33390.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 12:05:23 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	WG558803-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.090e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

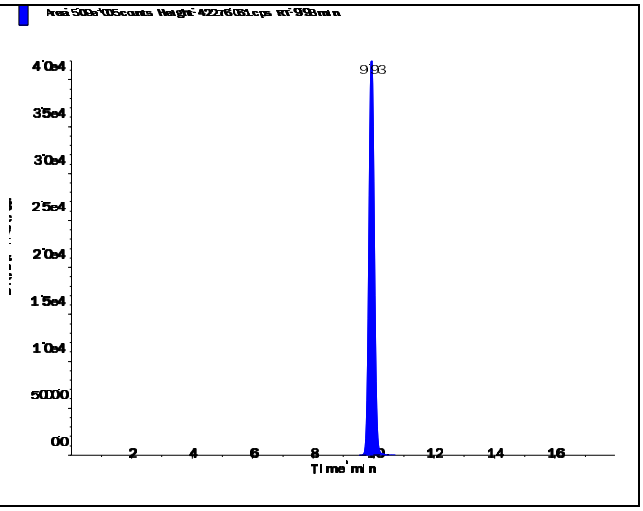

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

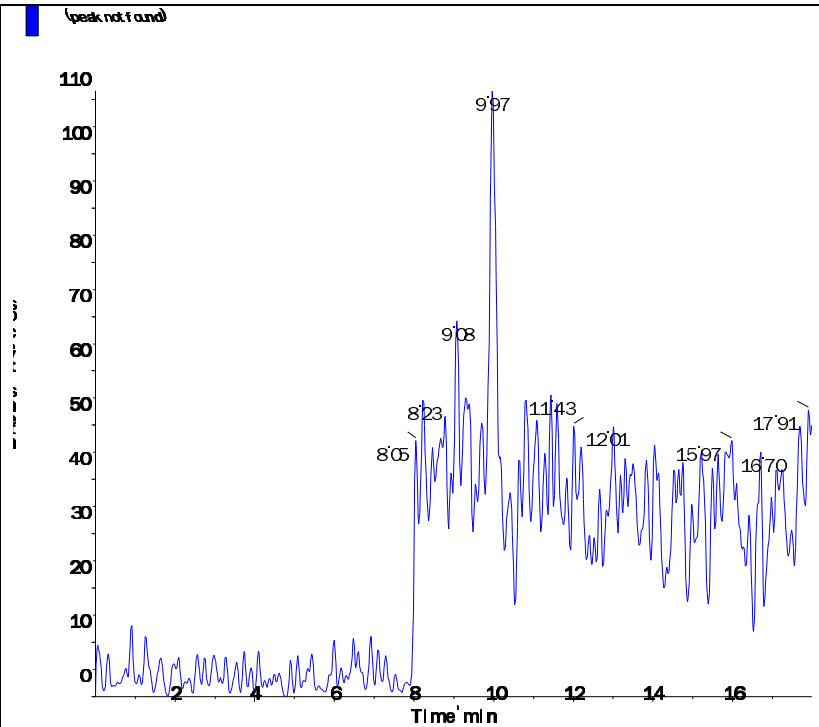

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

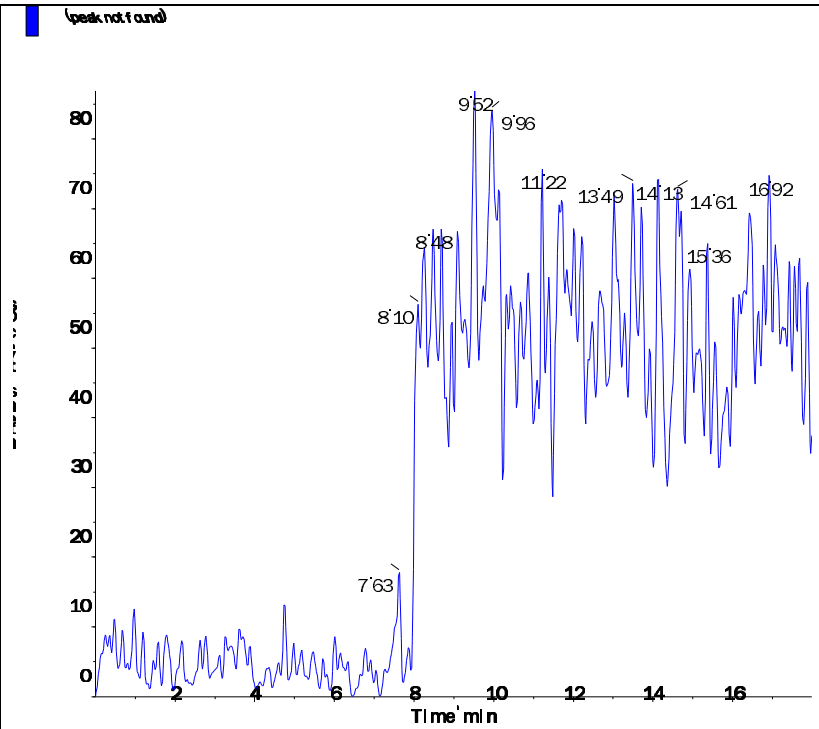

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Data File	LM33399.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/26/2016 2:55:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558803-12 CCB	**Injection Vial**	1.00
Data File	LM33399.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 2:55:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	WG558803-12	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.580e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	9.730e+02	9.98	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

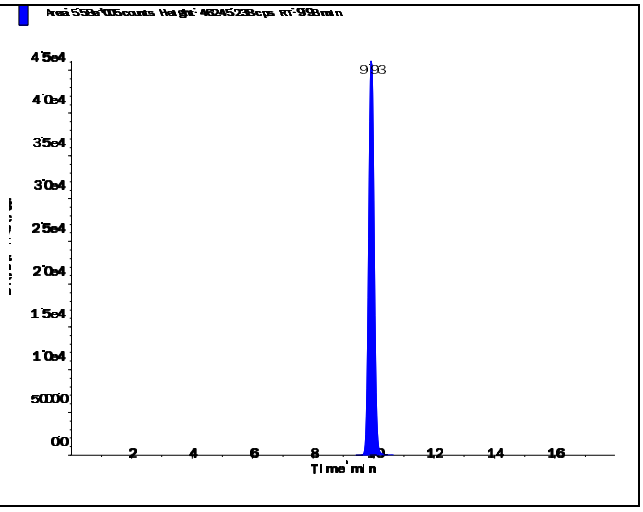

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

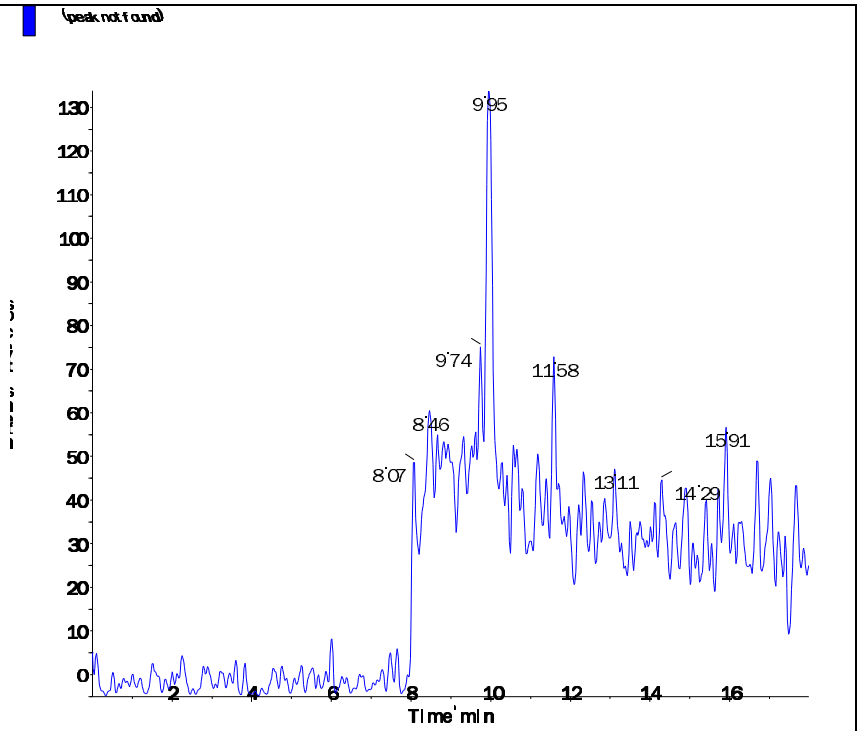

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.98 (9.92) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

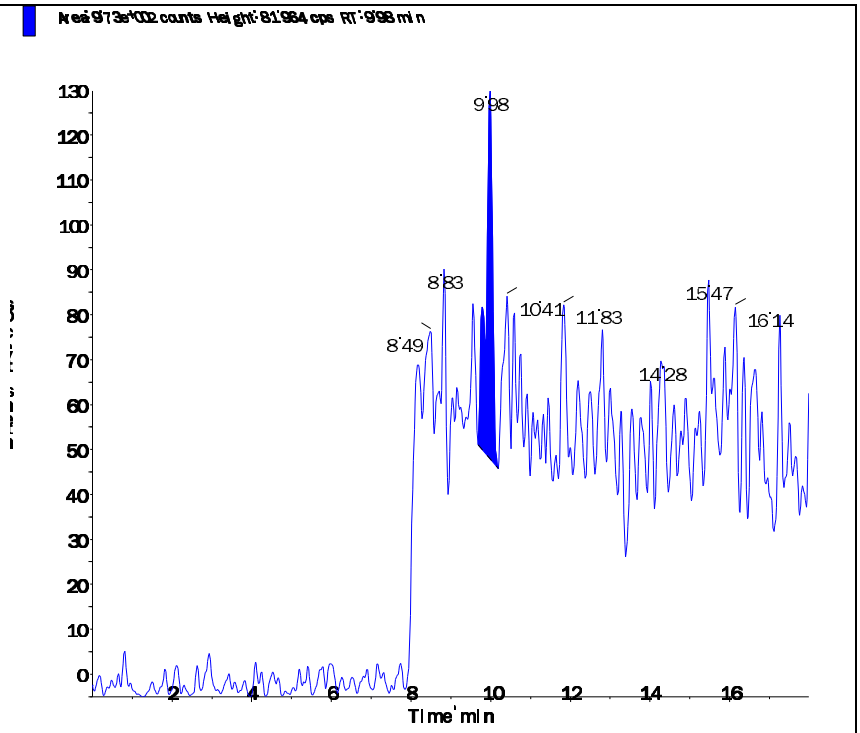

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Data File	LM33358.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/25/2016 6:36:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558779-01 MCT (2.0ug/kg)	**Injection Vial**	4.00
Data File	LM33358.wiff	**Injection Volume**	10.00
Acquisition Date	2/25/2016 6:36:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	WG558779-01	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.870e+05	9.55	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.330e+04	9.56	N/A	0.20
Perchlorate conf	1.190e+04	9.54	N/A	0.197

O18LP (Internal Standard)

RT (Exp. RT): 9.55(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

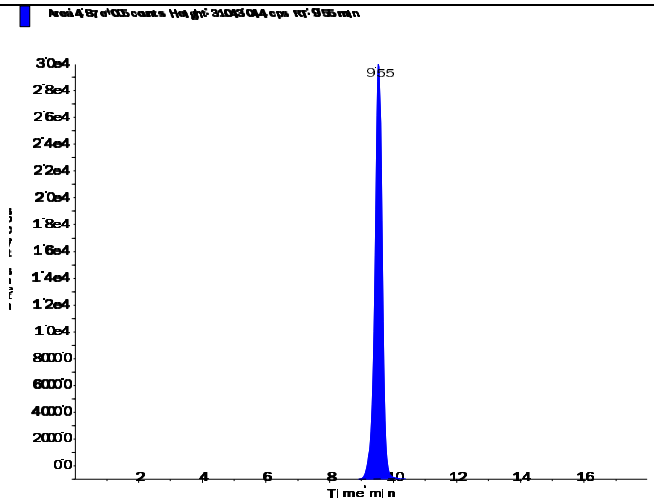

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.56 (9.94) min
Calculated conc:	0.20 ng/ml
Area Ratio:	0.068
Sample Type:	(Unknown)

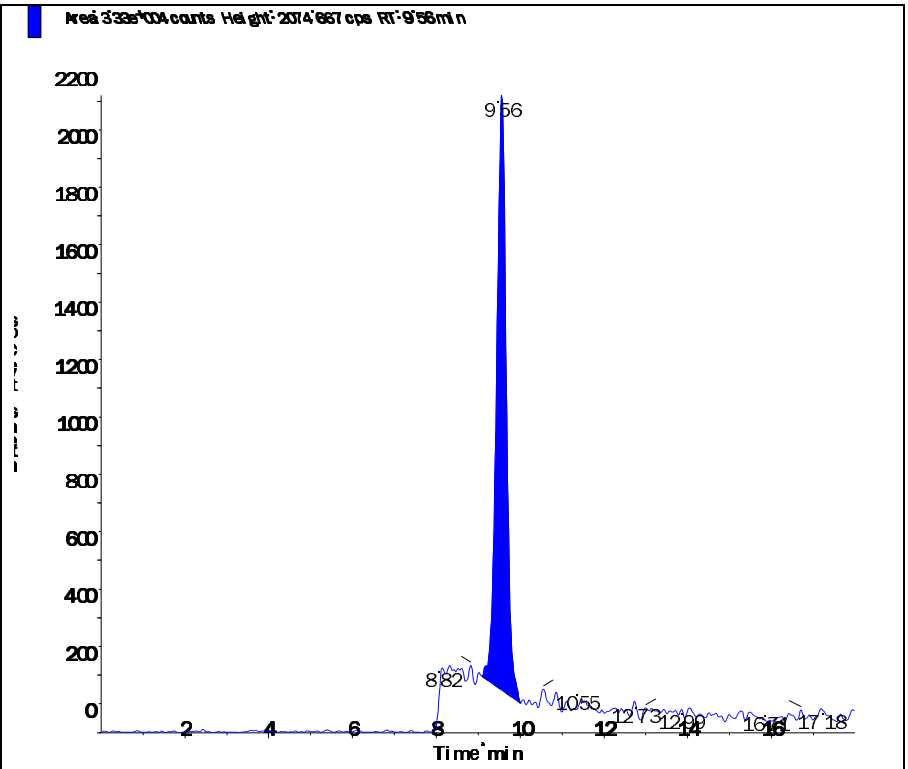

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.54 (9.92) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

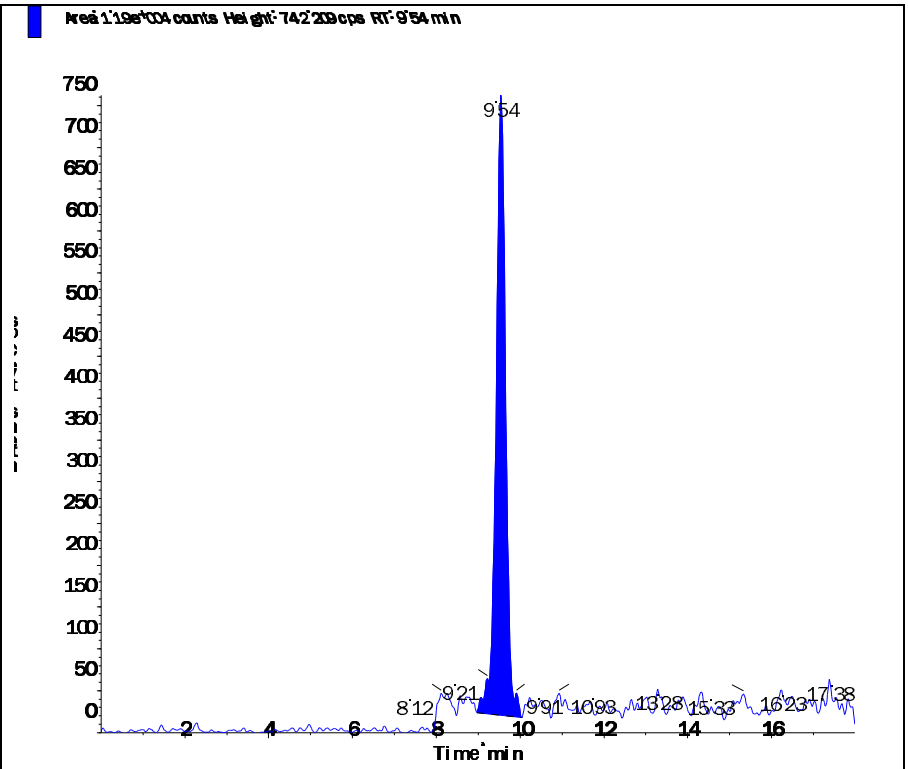

Printing Time: 4:47:26 PM
Printing Date: Friday, February 26, 2016

Sample Name: "WG558779-01 MCT (2.0ug/kg)" Sample ID: "WG558779-01" File: "LM33358.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "7,1 STD72685" Annotation: ""

Sample Index:	2	
Sample Type:	Unknown	
Concentration:	N/A	
Calculated Conc:	0.238	ug/L
Acq. Date:	2/25/2016	
Acq. Time:	6:36:46 PM	
Modified:	No	
Proc. Algorithm:	Analyst Classic	
Bunching Factor:	3	
Noise Threshold:	18.48	cps
Area Threshold:	92.40	cps
Num. Smooths:	5	
Sep. Width:	0.20	
Sep. Height:	0.01	
Exp. Peak Ratio:	5.00	
Exp. Adj. Ratio:	4.00	
Exp. Val. Ratio:	3.00	
RT Window:	30.000	sec
Expected RT:	9.94	min
Use Relative RT:	Yes	
Int. Type:	Valley	
Retention Time:	9.56	min
Area:	3.88e+004	counts
Height:	2146.971	cps
Start Time:	8.831	min
End Time:	10.126	min

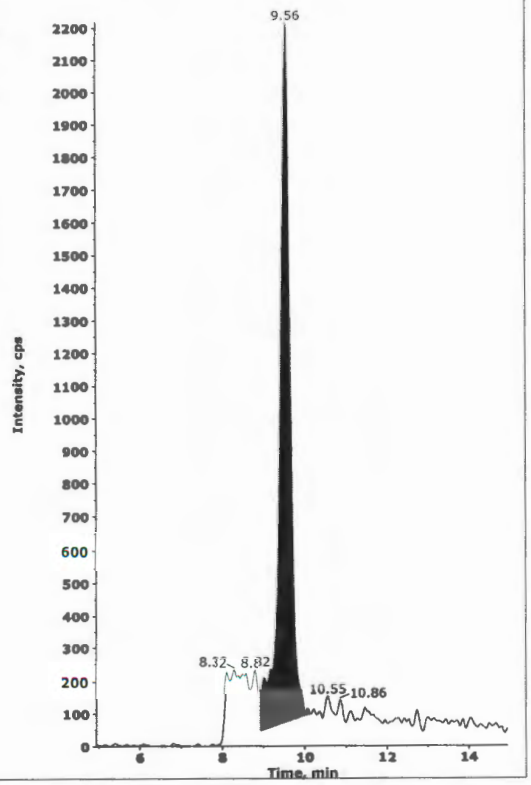

Collected by: N/A
Electronic Signature: no
Operator: lcms1

Printing Time: 4:46:41 PM
Printing Date: Friday, February 26, 2016

Sample Name: "WG558779-01 MCT (2.0ug/kg)" Sample ID: "WG558779-01" File: "LM33358.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "7,1 STD72685" Annotation: ""

Sample Index:	2
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.200 ug/L
Acq. Date:	2/25/2016
Acq. Time:	6:36:46 PM
Modified:	Yes
Proc. Algorithm:	Analyst Classic
Bunching Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Sep. Width:	0.20
Sep. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.54 min
Use Relative RT:	Yes
Int. Type:	Base To Base
Retention Time:	9.56 min
Area:	3.33e+004 counts
Height:	2074.667 cps
Start Time:	9.083 min
End Time:	10.004 min

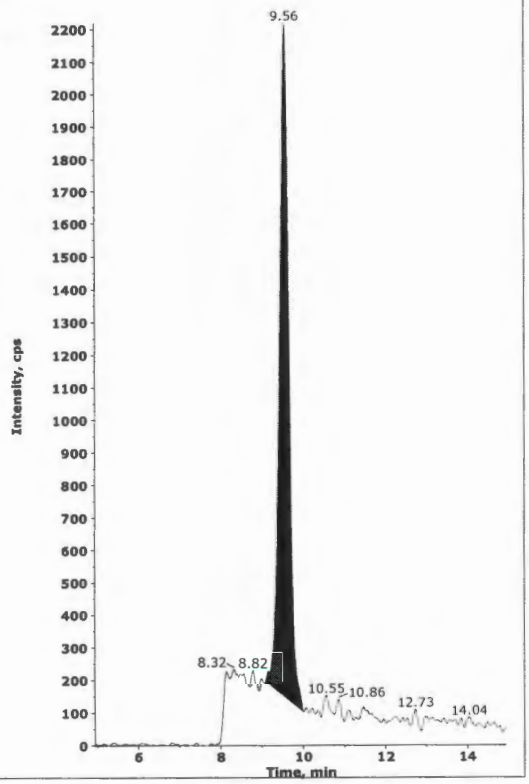

#4
JWR/02/26/16

✓ WP
2-29-16

ollected by: N/A
lectronic Signature: no
perator: lcmsl

2.2.1.5 Raw QC Data

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Data File	LM33359.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/25/2016 6:55:41 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558779-02 BLANK	**Injection Vial**	5.00
Data File	LM33359.wiff	**Injection Volume**	10.00
Acquisition Date	2/25/2016 6:55:41 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	WG558779-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.920e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	7.800e+02	10.00	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

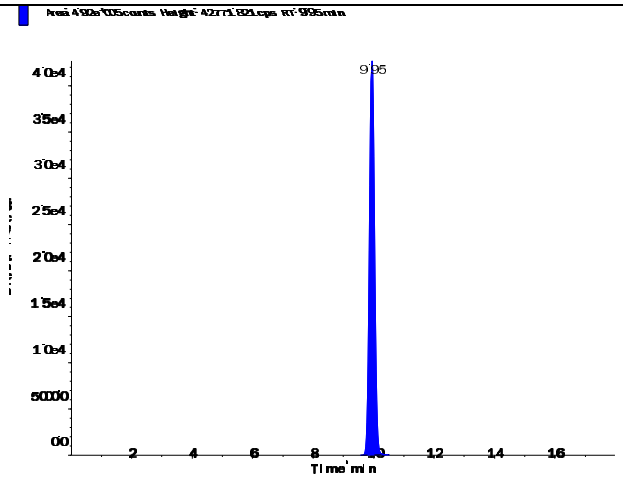

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

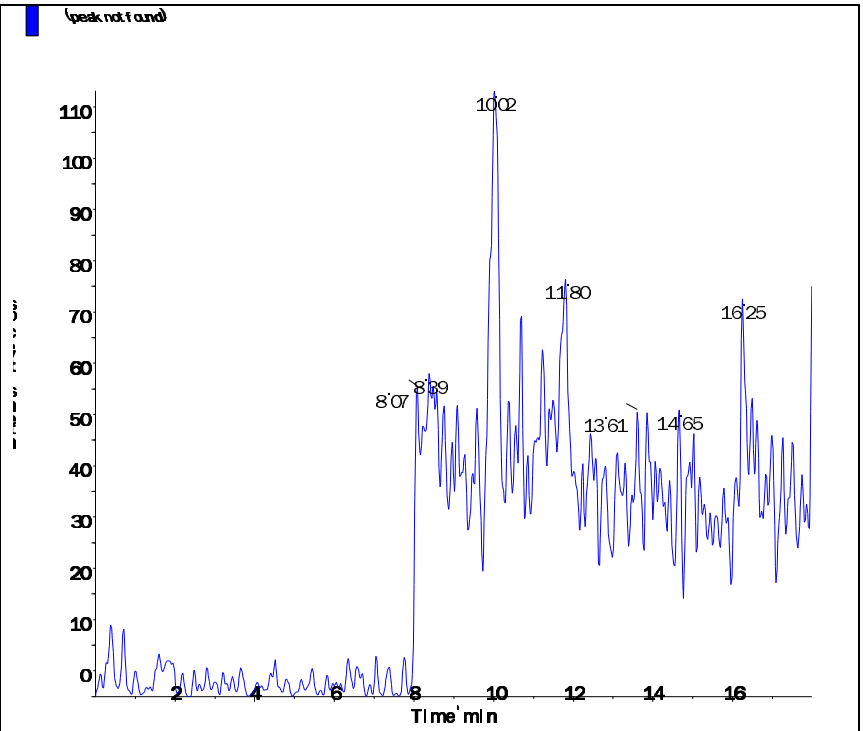

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.00 (9.92) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

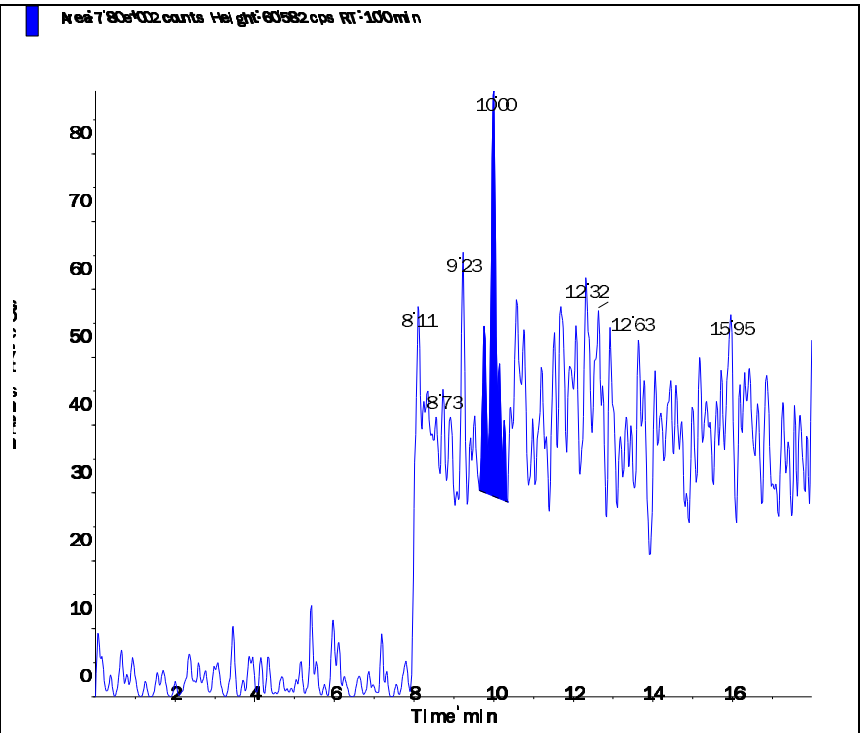

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Data File	LM33360.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/25/2016 7:14:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558779-03 LCS (2.0ug/kg)	**Injection Vial**	6.00
Data File	LM33360.wiff	**Injection Volume**	10.00
Acquisition Date	2/25/2016 7:14:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	WG558779-03	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.460e+04	9.96	N/A	0.204
Perchlorate conf	1.180e+04	9.95	N/A	0.189

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

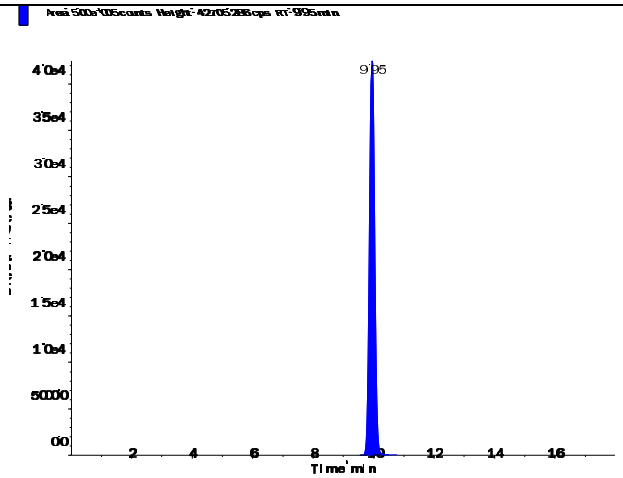

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Printed: 2/26/2016 3:57 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	0.204 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

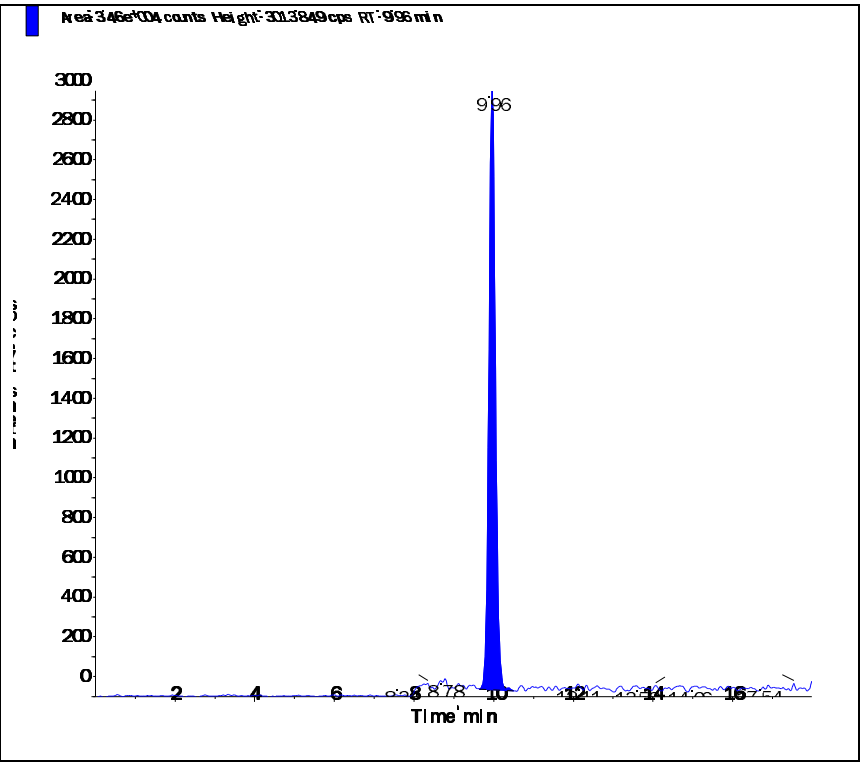

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.95 (9.92) min
Calculated conc:	0.189 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

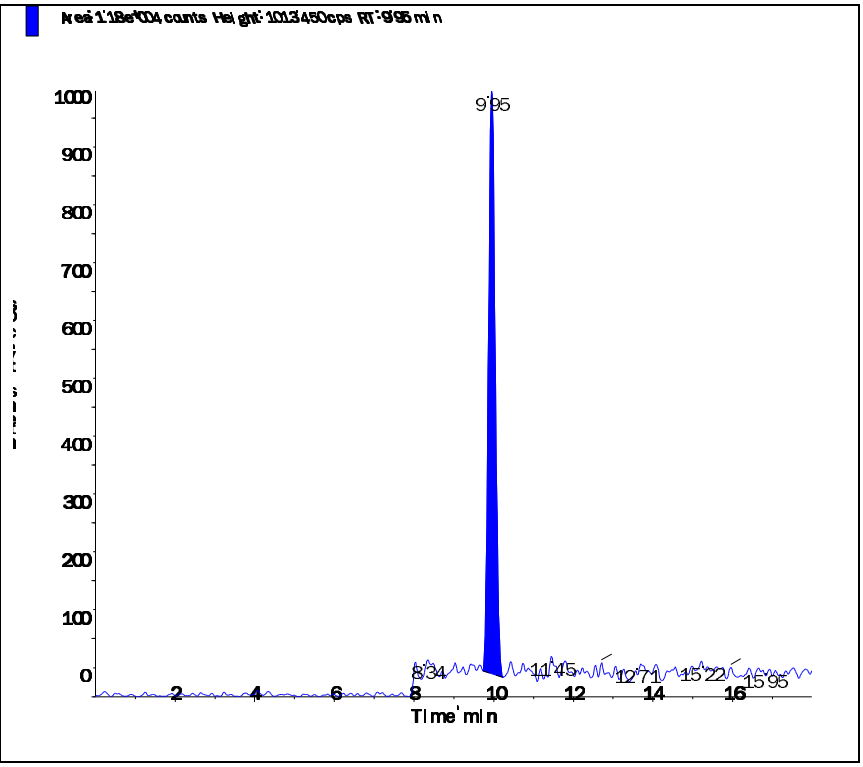

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Data File	LM33392.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/26/2016 12:43:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021240-08 MS (RR 50x)	**Injection Vial**	26.00
Data File	LM33392.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 12:43:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	WG558779-05	**Dilution Factor**	1.00
Sample Comment	7,50 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.800e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	6.070e+05	9.98	N/A	4.09
Perchlorate conf	2.000e+05	9.96	N/A	3.72

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

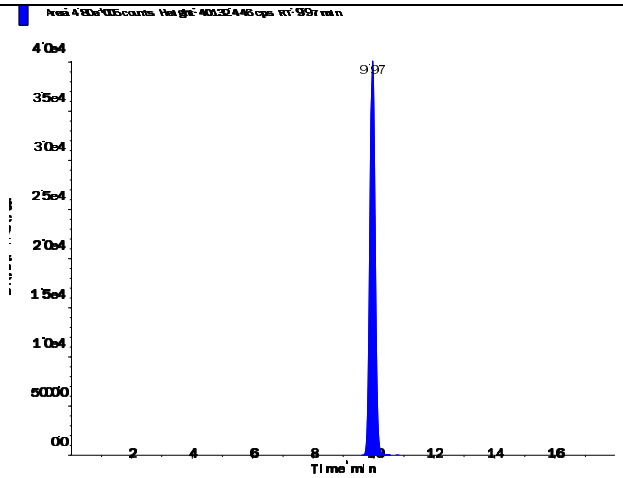

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.98 (9.94) min Calculated conc: 4.09 ng/ml Area Ratio: 1.265 Sample Type: (Unknown)	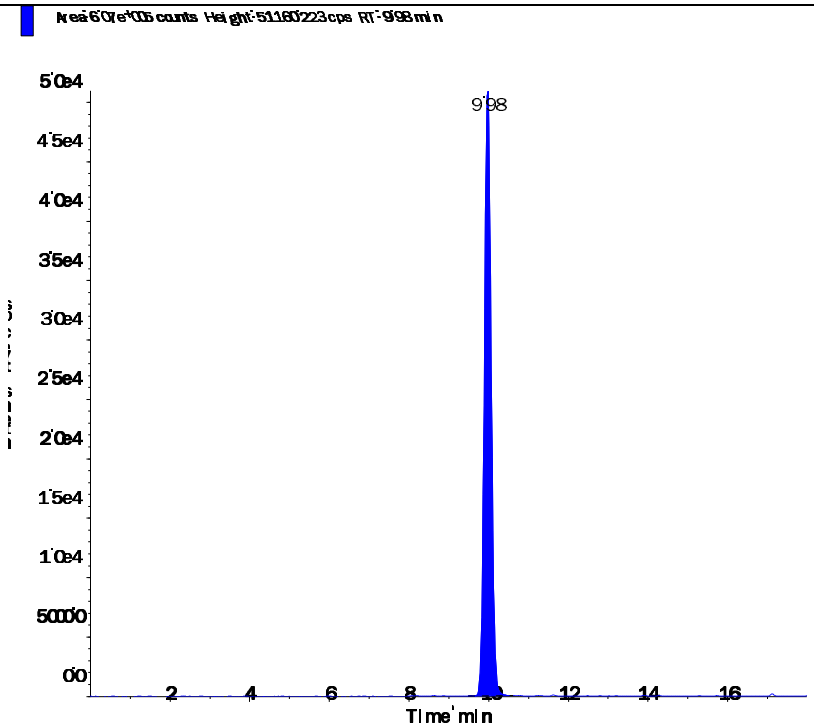
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.96 (9.92) min Calculated conc: 3.72 ng/ml Area Ratio: 0.417 Sample Type: (Unknown)	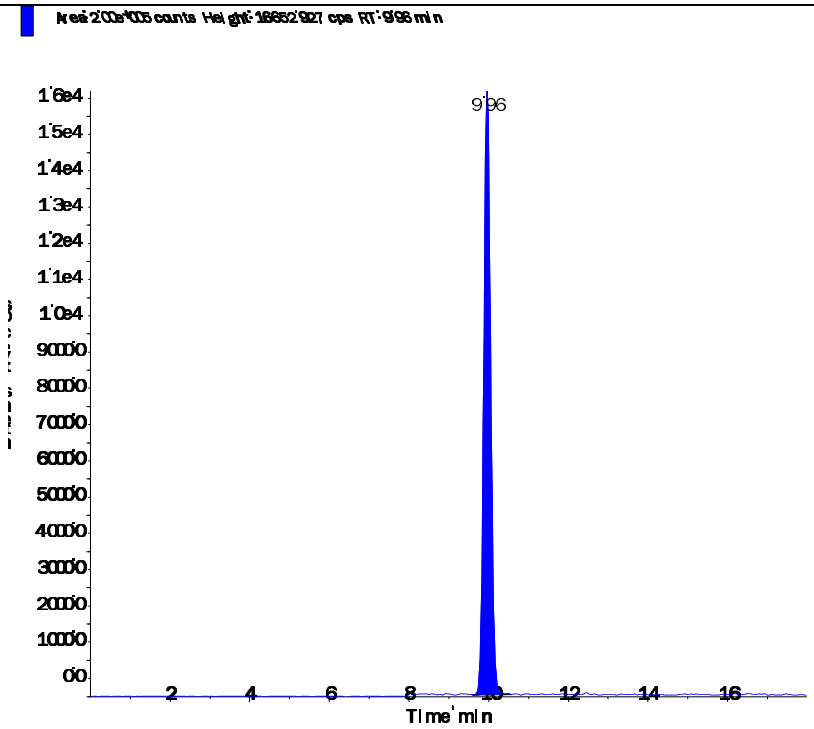

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Data File	LM33393.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/26/2016 1:02:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021240-08 MSD (RR 50x)	**Injection Vial**	27.00
Data File	LM33393.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 1:02:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	WG558779-06	**Dilution Factor**	1.00
Sample Comment	7,50 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.900e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.480e+05	9.97	N/A	3.61
Perchlorate conf	1.820e+05	9.96	N/A	3.31

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

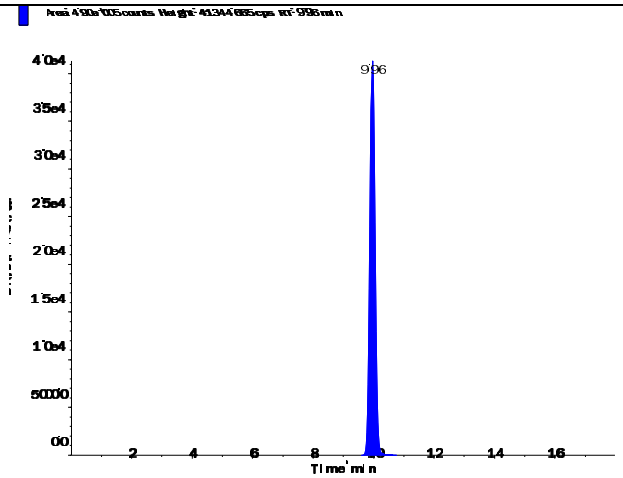

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.97 (9.94) min
Calculated conc:	3.61 ng/ml
Area Ratio:	1.118
Sample Type:	(Unknown)

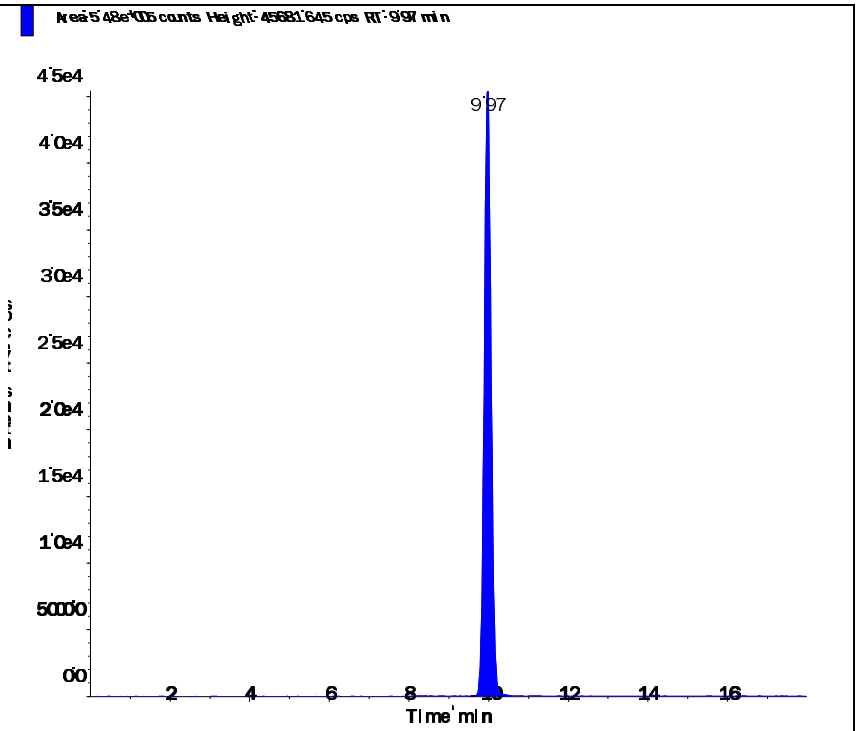

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.96 (9.92) min
Calculated conc:	3.31 ng/ml
Area Ratio:	0.372
Sample Type:	(Unknown)

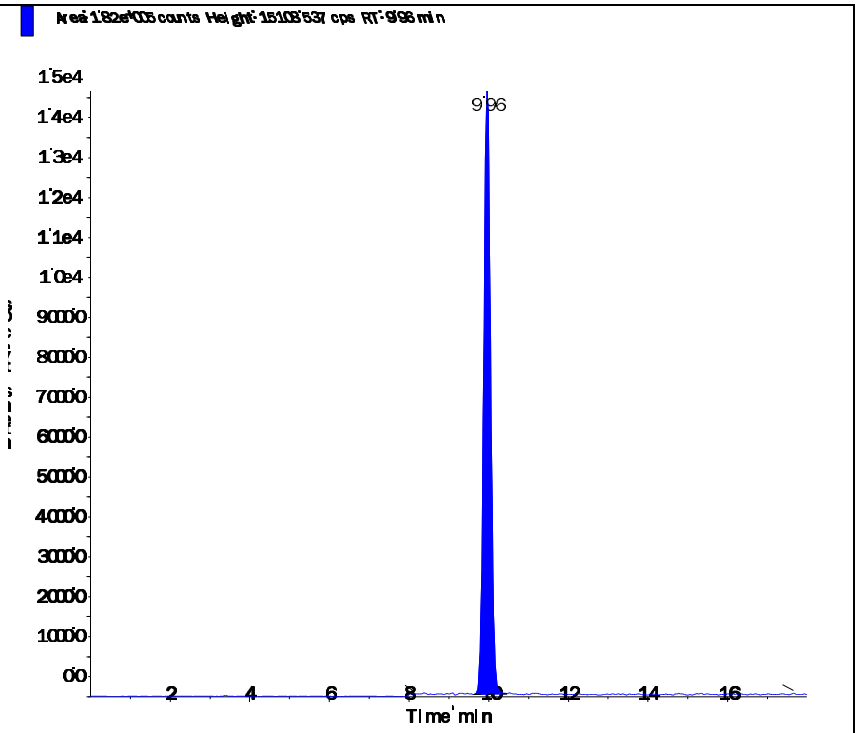

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2.3 General Chemistry Data

2.3.1 Percent Solids Data

2.3.1.1 Raw Data

Example Percent Solids Calculations

1.0 Calculating the percent solids of a sample.

$$\%Solids = \frac{WT3 - WT1}{WT2 - WT1} \times F$$

Where:	
WT1 = Weight, in grams, of the empty container	1.30 g
WT2 = Weight, in grams, of the container and wet sample	21.274 g
WT3 = Weight, in grams, of the container and dried sample	5.21 g
F = Factor to get units as percent weight	100
%Solids = Percent solids present in sample.	19.58%

2.0 Calculating the percent moisture of a sample.

% Moisture = 100 - % Solids from 1.0 calculation

Microbac Laboratories Inc.

PERCENT SOLIDS

Workgroup (AAB#): WG558757 Analyst: AC ADT(on): 02/25/2016 13:48
Method: D2216-90 Instrument: BAL021 ADT(off): 02/26/2016 07:36
SOP: K0003 Rev: 14

SAMPLE NUMBER	EMPTY PAN WT 1	WET WT 2	DRY WT 3A	DRY WT 3B	DRY WT 3C	PERCENT SOLID	PERCENT MOISTURE
L16021194-01	1.297	26.131	22.846			86.77	
L16021194-02	1.289	28.802	25.034			86.30	
L16021194-03	1.299	24.745	21.532			86.30	
L16021194-04	1.3	22.871	19.972			86.56	
L16021194-05	1.289	30.636	27.814			90.38	
L16021194-06	1.292	23.804	21.094			87.96	
L16021194-07	1.288	27.456	24.389			88.28	
L16021194-08	1.281	23.842	21.019			87.49	
L16021194-09	1.297	22.232	19.909			88.90	
L16021194-10	1.297	22.232	19.909			88.90	
L16021194-11	1.297	22.232	19.909			88.90	
L16021206-01	1.296	21.241	18.101			84.26	
L16021206-02	1.304	24.449	20.714			83.86	
L16021207-01	1.301	16.743	1.699			2.577	
L16021236-01	1.298	30.587	26.394			85.68	
L16021240-01	1.296	22.3	18.086			79.94	
L16021240-02	1.285	20.179	16.417			80.09	
L16021240-03	1.292	21.64	18.487			84.50	
L16021240-04	1.289	20.242	17.4			85.01	
L16021240-05	1.296	21.709	18.36			83.59	
L16021240-06	1.293	24.752	19.882			79.24	
L16021240-07	1.293	20.235	16.397			79.74	
L16021240-08	1.291	22.73	19.434			84.63	
WG558757-01	1.281	23.842	21.019			87.49	12.51
WG558757-02	1.293	20.235	16.397			79.74	20.26
WG558757-03	1.3	23.135	20.3			87.02	12.98
WG558757-04	1.293	23.439	18.371			77.12	22.88

Analyst: Andrew R Cochrane

PERCENT_SOLIDS - Modified 04/24/2008
PDF ID: 4647248
Report generated: 02/26/2016 07:42

Microbac

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
March 2, 2016

001 - BIO-CHEM TESTING WVDEP 220	002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental	004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES	006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES	008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND	AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER	ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS	ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG	AZH - AFTER HOURS
BJO - BRIAN J. OGDEN	BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT	BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN	CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES	CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD	CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS	CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL	DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE	DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON	DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE	DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR	ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK	ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN	JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON	JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE	JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG	JLL - JOHN L. LENT
JMW - JEANA M. WHITE	JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS	JWS - JACK W. SHEAVES
JYH - JI Y. HU	KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER	KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES	KHR - KIM H. RHODES
KKB - KERRI K. BUCK	KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER	KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER	LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS	LSB - LESLIE S. BUCINA
MBK - MORGAN B. KNOWLTON	MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN	MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE	MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR	MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS	PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB	PSW - PEGGY S. WEBB
QX - QIN XU	RAH - ROY A. HALSTEAD
REK - BOB E. KYER	RLB - BOB BUCHANAN
RM - RAYMOND MALEKE	RNP - RICK N. PETTY
RST - ROBIN S. TURNER	SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN	SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG	SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE	TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY	TMM - TAMMY M. MORRIS
VC - VICKI COLLIER	WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS	WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT	

Microbac Laboratories Inc.
List of Valid Qualifiers
March 02, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
March 02, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Stephanie Mossburg	Project Manager: Debra Richmon	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): KAYLA DALLANES	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Kayla Dallanes	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205			
Turn Around Time: STANDARD	pH:	Program:	
Project Name/Location: Longhorn			
Project Number: 60274185 . 0013BM418Z4		ERPIMS REQUIRED FIELDS	

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp-	Grab	Matrix	Number of Containers	VOC 8260	PERCHLORATE 6850	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
	18DPT04(5-5.5)240216			2/24/16	1000		X	S	2	X	X					
	18DPT04(15-15.5)240216			2/24/16	1028		X	S	2	X	X					
	18DPT04(20-21)240216			2/24/16	1055		X	S	2	X	X					
	18DPT04(20-21)240216FD			2/24/16	1055		X	S	2	X	X					
	18DPT04(25-25.5)240216			2/24/16	1122		X	S	2	X	X					
	18DPT04(29-30)240216			2/24/16	1200		X	S	2	X	X					
	~~18DPT04(34.5-35)240216~~			~~2/24/16~~	~~0315~~		~~X~~	~~S~~	~~2~~	~~X~~	~~X~~					
	~~18DPT04(37-37.5)240216~~			~~2/24/16~~	~~0315~~		~~X~~	~~S~~	~~2~~	~~X~~	~~X~~					
	18DPT04(36.5-37)240216			2/24/16	~~0315~~	1515	X	S	2	X	X					
	18DPT04(34-34.5)240216			2/24/16	~~0315~~	1515	X	S	2	X	X					

Comments: ~~STANDARD TAT~~ 48HRTAT

	Date	Time	Received by: (Signature)		Time	Relinquished by: (Signature)
Relinquished by: (Signature) Kayla Dallanes	2/24/16	1600				
Relinquished by: (Signature)	Date	Time	Received by: (Signature)		Time	Remarks:

Microbac OVD
Received: 02/25/2016 09:39
By: BRENDA GREGORY
221000082443

Brenda Gregory

•Homogenize all composite samples prior to analysis

ger, Pink QA/QC Manager

00655030

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16021240
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 29-FEB-2016

Samplenum	Container ID	Products
L16021240-01	705510	8260 G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	25-FEB-2016 10:00	CLS		
2	ANALYZ	V1	ORG4	25-FEB-2016 11:31	JDS	CLS	

Samplenum	Container ID	Products
L16021240-01	705511	PCT-S 6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	25-FEB-2016 10:00	CLS		
2	ANALYZ	W1	SEM	25-FEB-2016 11:43	JWR	CLS	
3	STORE	SEM	A1	26-FEB-2016 15:01	CLS	JWR	

Samplenum	Container ID	Products
L16021240-02	705512	8260 G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	25-FEB-2016 10:00	CLS		
2	ANALYZ	V1	ORG4	25-FEB-2016 11:31	JDS	CLS	

Samplenum	Container ID	Products
L16021240-02	705513	6850 PCT-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	25-FEB-2016 10:00	CLS		
2	ANALYZ	W1	SEM	25-FEB-2016 11:43	JWR	CLS	
3	STORE	SEM	A1	26-FEB-2016 15:01	CLS	JWR	

Samplenum	Container ID	Products
L16021240-03	705514	8260 G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	25-FEB-2016 10:00	CLS		
2	ANALYZ	V1	ORG4	25-FEB-2016 11:31	JDS	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16021240
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 29-FEB-2016

Samplenum	Container ID	Products
L16021240-03	705515	6850 PCT-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	25-FEB-2016 10:00	CLS		
2	ANALYZ	W1	SEM	25-FEB-2016 11:43	JWR	CLS	
3	STORE	SEM	A1	26-FEB-2016 15:01	CLS	JWR	

Samplenum	Container ID	Products
L16021240-04	705516	8260 G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	25-FEB-2016 10:00	CLS		
2	ANALYZ	V1	ORG4	25-FEB-2016 11:31	JDS	CLS	

Samplenum	Container ID	Products
L16021240-04	705517	6850 PCT-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	25-FEB-2016 10:00	CLS		
2	ANALYZ	W1	SEM	25-FEB-2016 11:43	JWR	CLS	
3	STORE	SEM	A1	26-FEB-2016 15:01	CLS	JWR	

Samplenum	Container ID	Products
L16021240-05	705518	8260 G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	25-FEB-2016 10:00	CLS		
2	ANALYZ	V1	ORG4	25-FEB-2016 11:31	JDS	CLS	

Samplenum	Container ID	Products
L16021240-05	705519	6850 PCT-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	25-FEB-2016 10:00	CLS		
2	ANALYZ	W1	SEM	25-FEB-2016 11:43	JWR	CLS	
3	STORE	SEM	A1	26-FEB-2016 15:01	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16021240
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 29-FEB-2016

Samplenum	Container ID	Products
L16021240-06	705520	8260 G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	25-FEB-2016 10:00	CLS		
2	ANALYZ	V1	ORG4	25-FEB-2016 11:31	JDS	CLS	

Samplenum	Container ID	Products
L16021240-06	705521	6850 PCT-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	25-FEB-2016 10:00	CLS		
2	ANALYZ	W1	SEM	25-FEB-2016 11:43	JWR	CLS	
3	STORE	SEM	A1	26-FEB-2016 15:01	CLS	JWR	

Samplenum	Container ID	Products
L16021240-07	705522	8260 G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	25-FEB-2016 10:00	CLS		
2	ANALYZ	V1	ORG4	25-FEB-2016 11:30	JDS	CLS	

Samplenum	Container ID	Products
L16021240-07	705523	6850 PCT-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	25-FEB-2016 10:00	CLS		
2	ANALYZ	W1	SEM	25-FEB-2016 11:43	JWR	CLS	
3	STORE	SEM	A1	26-FEB-2016 15:01	CLS	JWR	

Samplenum	Container ID	Products
L16021240-08	705524	8260 G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	25-FEB-2016 10:00	CLS		
2	ANALYZ	V1	ORG4	25-FEB-2016 11:30	JDS	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16021240
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 29-FEB-2016

Samplenum	Container ID	Products
L16021240-08	705525	6850 PCT-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	25-FEB-2016 10:00	CLS		
2	ANALYZ	W1	SEM	25-FEB-2016 11:43	JWR	CLS	
3	STORE	SEM	A1	26-FEB-2016 15:01	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16021306

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on March 02 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

The following discrepancies were noted:

Discrepancy	Resolution
18DPT05(20-20.5)250216 on the chain of custody, but the labels says (19.5-20). CLS	Please log per the COC. SLM

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00112756	I	0.0		J2317165947	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	No
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	NA
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	NA

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18DPT05(4.5-5)250216	L16021306-01	02/25/2016 09:30	02/26/2016 09:52
18DPT05(10-11)250216	L16021306-02	02/25/2016 09:40	02/26/2016 09:52
18DPT05(10-11)250216 MS	L16021306-03	02/25/2016 09:40	02/26/2016 09:52
18DPT05(10-11)250216 MSD	L16021306-04	02/25/2016 09:40	02/26/2016 09:52
18DPT05(15-15.5)250216	L16021306-05	02/25/2016 09:50	02/26/2016 09:52
18DPT05(20-20.5)250216	L16021306-06	02/25/2016 09:45	02/26/2016 09:52

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Microbac REPORT L16021306
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.0 Summary Data

1.1 Narratives

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021306
Project Name:		**Method:**	8260
Prep Batch Number(s):	559002	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-02-29 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2016-02-29 22:12:03

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021306
Project Name:		**Method:**	8260
Prep Batch Number(s):	559002	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-02-29 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021306
Project Name:		**Method:**	8260
Prep Batch Number(s):	559002	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-02-29 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		X			1
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data			X		
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			2
Were MS/MSD RPDs within laboratory QC limits?		X			3
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021306
Project Name:		**Method:**	8260
Prep Batch Number(s):	559002	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-02-29 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?		X			4
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021306
Project Name:		**Method:**	8260
Prep Batch Number(s):	559002	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-02-29 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021306
Project Name:		**Method:**	8260
Prep Batch Number(s):	559002	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-02-29 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1)Dichlorodifluoromethane excceded the UCL in the LCS.
2)Dichlorodifluoromethane and Vinyl chloride exceeded the percent recovery in the MS/MSD.
3)1,1,2,2-Tetrachloroethane, 1,2,4-Trichlorobenzene, 1,2,4-Trimethylbenzene, 1,2-Dibromo-3-chloropropane, 1,2,3-Trichlorobenzene, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 2-Chlorotoluene, Bromobenzene, trans-1,3-Dichloropropene exceeds RPD limits in the MS/MSD.
4)Dichlorodifluoromethane exceeded the UCL in the ICV.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021306
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG558991	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-02-29 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-02-29 15:44:30

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021306
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG558991	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-02-29 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021306
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG558991	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-02-29 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			1
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021306
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG558991	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-02-29 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021306
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG558991	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-02-29 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021306
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG558991	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-02-29 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. The MSD yielded a recovery for perchlorate that was marginally above the acceptance limit.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021306
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG558918	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-29 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2016-02-29 16:54:21

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021306
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG558918	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-29 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?			X		
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?			X		
Were sample detection limits reported for all analytes not detected?			X		
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?			X		
Were blanks analyzed at the appropriate frequency?			X		
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?			X		
Were blank concentrations < MQL?			X		
Laboratory control samples (LCS):			X		
Were all COCs included in the LCS?			X		

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021306
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG558918	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-29 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?			X		
Were LCSs analyzed at the required frequency?			X		
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?			X		
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?			X		
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?			X		
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?			X		
Are unadjusted MQLs and DCSs included in the laboratory data package?			X		
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?			X		
Were percent RSDs or correlation coefficient criteria met?			X		

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021306
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG558918	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-29 00:00:00		

Was the number of standards recommended in the method used for all analytes?			X		
Were all points generated between the lowest and highest standard used to calculate the curve?			X		
Are ICAL data available for all instruments used?			X		
Has the initial calibration curve been verified using an appropriate second source standard?			X		
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021306
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG558918	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-29 00:00:00		

Was a MDL study performed for each reported analyte?			X		
Is the MDL either adjusted or supported by the analysis of DCSs?			X		
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?			X		
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021306
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG558918	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-29 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021306-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT05(4.5-5)250216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/28/2016 13:09
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559002	**Analyst:**	FJB	**Run Date:**	02/28/2016 23:54
Collect Date:	02/25/2016 09:30	**Dilution:**	1	**File ID:**	9M972959
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.6	U	25.2	12.6	6.29
Benzene	71-43-2	1.26	U	6.29	1.26	0.629
Bromobenzene	108-86-1	1.26	U	6.29	1.26	0.629
Bromochloromethane	74-97-5	2.52	U	6.29	2.52	1.26
Bromodichloromethane	75-27-4	1.26	U	6.29	1.26	0.629
Bromoform	75-25-2	1.26	U	6.29	1.26	0.629
Bromomethane	74-83-9	2.52	U	6.29	2.52	1.26
2-Butanone	78-93-3	6.30	U	12.6	6.30	3.15
n-Butylbenzene	104-51-8	1.26	U	6.29	1.26	0.629
sec-Butylbenzene	135-98-8	1.26	U	6.29	1.26	0.629
tert-Butylbenzene	98-06-6	1.26	U	6.29	1.26	0.629
Carbon disulfide	75-15-0	1.26	U	6.29	1.26	0.629
Carbon tetrachloride	56-23-5	1.26	U	6.29	1.26	0.629
Chlorobenzene	108-90-7	1.26	U	6.29	1.26	0.629
Chlorodibromomethane	124-48-1	1.26	U	6.29	1.26	0.629
Chloroethane	75-00-3	2.52	U	6.29	2.52	1.26
Chloroform	67-66-3	1.26	U	6.29	1.26	0.629
Chloromethane	74-87-3	5.04	U	12.6	5.04	2.52
2-Chlorotoluene	95-49-8	1.26	U	6.29	1.26	0.629
4-Chlorotoluene	106-43-4	1.26	U	6.29	1.26	0.629
1,2-Dibromo-3-chloropropane	96-12-8	5.04	U	12.6	5.04	2.52
1,2-Dibromoethane	106-93-4	1.26	U	6.29	1.26	0.629
Dibromomethane	74-95-3	1.26	U	6.29	1.26	0.629
1,2-Dichlorobenzene	95-50-1	1.26	U	6.29	1.26	0.629
1,3-Dichlorobenzene	541-73-1	1.26	U	6.29	1.26	0.629
1,4-Dichlorobenzene	106-46-7	1.26	U	6.29	1.26	0.629
Dichlorodifluoromethane	75-71-8	2.52	U	6.29	2.52	1.26
1,1-Dichloroethane	75-34-3	2.52	U	6.29	2.52	1.26
1,2-Dichloroethane	107-06-2	1.26	U	6.29	1.26	0.629
1,1-Dichloroethene	75-35-4	1.26	U	6.29	1.26	0.629
cis-1,2-Dichloroethene	156-59-2	1.26	U	6.29	1.26	0.629
trans-1,2-Dichloroethene	156-60-5	1.26	U	6.29	1.26	0.629

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.26	U	6.29	1.26	0.629
1,3-Dichloropropane	142-28-9	1.26	U	6.29	1.26	0.629
2,2-Dichloropropane	594-20-7	1.26	U	6.29	1.26	0.629
cis-1,3-Dichloropropene	10061-01-5	1.26	U	6.29	1.26	0.629
trans-1,3-Dichloropropene	10061-02-6	1.26	U	6.29	1.26	0.629
1,1-Dichloropropene	563-58-6	1.26	U	6.29	1.26	0.629
Ethylbenzene	100-41-4	1.26	U	6.29	1.26	0.629
2-Hexanone	591-78-6	6.30	U	12.6	6.30	3.15
Hexachlorobutadiene	87-68-3	1.26	U	6.29	1.26	0.629
Isopropylbenzene	98-82-8	1.26	U	6.29	1.26	0.629
p-Isopropyltoluene	99-87-6	1.26	U	6.29	1.26	0.629
4-Methyl-2-pentanone	108-10-1	6.30	U	12.6	6.30	3.15
Methylene chloride	75-09-2	2.52	U	6.29	2.52	1.26
Naphthalene	91-20-3	1.26	U	6.29	1.26	0.629
n-Propylbenzene	103-65-1	1.26	U	6.29	1.26	0.629
Styrene	100-42-5	1.26	U	6.29	1.26	0.629
1,1,1,2-Tetrachloroethane	630-20-6	1.26	U	6.29	1.26	0.629
1,1,2,2-Tetrachloroethane	79-34-5	1.26	U	6.29	1.26	0.629
Tetrachloroethene	127-18-4	1.26	U	6.29	1.26	0.629
Toluene	108-88-3	1.26	U	6.29	1.26	0.629
1,2,3-Trichlorobenzene	87-61-6	1.26	U	6.29	1.26	0.629
1,2,4-Trichlorobenzene	120-82-1	1.26	U	6.29	1.26	0.629
1,1,1-Trichloroethane	71-55-6	1.26	U	6.29	1.26	0.629
1,1,2-Trichloroethane	79-00-5	1.26	U	6.29	1.26	0.629
Trichloroethene	79-01-6	1.26	U	6.29	1.26	0.629
Trichlorofluoromethane	75-69-4	2.52	U	6.29	2.52	1.26
1,2,3-Trichloropropane	96-18-4	2.52	U	6.29	2.52	1.26
1,2,4-Trimethylbenzene	95-63-6	1.26	U	6.29	1.26	0.629
1,3,5-Trimethylbenzene	108-67-8	1.26	U	6.29	1.26	0.629
Vinyl chloride	75-01-4	2.52	U	6.29	2.52	1.26
o-Xylene	95-47-6	1.26	U	6.29	1.26	0.629
m-,p-Xylene	179601-23-1	1.26	U	6.29	1.26	0.629

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.9	80	120	
1,2-Dichloroethane-d4	95.6	80	120	
Toluene-d8	107	85	115	
4-Bromofluorobenzene	112	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021306-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT05(4.5-5)250216	**Prep Method:**	6850	**Prep Date:**	02/26/2016 17:44
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558991	**Analyst:**	JWR	**Run Date:**	02/27/2016 01:40
Collect Date:	02/25/2016 09:30	**Dilution:**	1	**File ID:**	1LM.LM33425
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.34	U	4.67	2.34	1.17

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021306-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT05(10-11)250216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/28/2016 13:09
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559002	**Analyst:**	FJB	**Run Date:**	02/29/2016 00:25
Collect Date:	02/25/2016 09:40	**Dilution:**	1	**File ID:**	9M972960
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	88.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.0	U	23.9	12.0	5.98
Benzene	71-43-2	1.20	U	5.98	1.20	0.598
Bromobenzene	108-86-1	1.20	U	5.98	1.20	0.598
Bromochloromethane	74-97-5	2.40	U	5.98	2.40	1.20
Bromodichloromethane	75-27-4	1.20	U	5.98	1.20	0.598
Bromoform	75-25-2	1.20	U	5.98	1.20	0.598
Bromomethane	74-83-9	2.40	U	5.98	2.40	1.20
2-Butanone	78-93-3	5.98	U	12.0	5.98	2.99
n-Butylbenzene	104-51-8	1.20	U	5.98	1.20	0.598
sec-Butylbenzene	135-98-8	1.20	U	5.98	1.20	0.598
tert-Butylbenzene	98-06-6	1.20	U	5.98	1.20	0.598
Carbon disulfide	75-15-0	1.20	U	5.98	1.20	0.598
Carbon tetrachloride	56-23-5	1.20	U	5.98	1.20	0.598
Chlorobenzene	108-90-7	1.20	U	5.98	1.20	0.598
Chlorodibromomethane	124-48-1	1.20	U	5.98	1.20	0.598
Chloroethane	75-00-3	2.40	U	5.98	2.40	1.20
Chloroform	67-66-3	1.20	U	5.98	1.20	0.598
Chloromethane	74-87-3	4.78	U	12.0	4.78	2.39
2-Chlorotoluene	95-49-8	1.20	U	5.98	1.20	0.598
4-Chlorotoluene	106-43-4	1.20	U	5.98	1.20	0.598
1,2-Dibromo-3-chloropropane	96-12-8	4.78	U	12.0	4.78	2.39
1,2-Dibromoethane	106-93-4	1.20	U	5.98	1.20	0.598
Dibromomethane	74-95-3	1.20	U	5.98	1.20	0.598
1,2-Dichlorobenzene	95-50-1	1.20	U	5.98	1.20	0.598
1,3-Dichlorobenzene	541-73-1	1.20	U	5.98	1.20	0.598
1,4-Dichlorobenzene	106-46-7	1.20	U	5.98	1.20	0.598
Dichlorodifluoromethane	75-71-8	2.40	U	5.98	2.40	1.20
1,1-Dichloroethane	75-34-3	2.40	U	5.98	2.40	1.20
1,2-Dichloroethane	107-06-2	1.20	U	5.98	1.20	0.598
1,1-Dichloroethene	75-35-4	1.20	U	5.98	1.20	0.598
cis-1,2-Dichloroethene	156-59-2	1.20	U	5.98	1.20	0.598

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.20	U	5.98	1.20	0.598
1,2-Dichloropropane	78-87-5	1.20	U	5.98	1.20	0.598
1,3-Dichloropropane	142-28-9	1.20	U	5.98	1.20	0.598
2,2-Dichloropropane	594-20-7	1.20	U	5.98	1.20	0.598
cis-1,3-Dichloropropene	10061-01-5	1.20	U	5.98	1.20	0.598
trans-1,3-Dichloropropene	10061-02-6	1.20	U	5.98	1.20	0.598
1,1-Dichloropropene	563-58-6	1.20	U	5.98	1.20	0.598
Ethylbenzene	100-41-4	1.20	U	5.98	1.20	0.598
2-Hexanone	591-78-6	5.98	U	12.0	5.98	2.99
Hexachlorobutadiene	87-68-3	1.20	U	5.98	1.20	0.598
Isopropylbenzene	98-82-8	1.20	U	5.98	1.20	0.598
p-Isopropyltoluene	99-87-6	1.20	U	5.98	1.20	0.598
4-Methyl-2-pentanone	108-10-1	5.98	U	12.0	5.98	2.99
Methylene chloride	75-09-2	2.40	U	5.98	2.40	1.20
Naphthalene	91-20-3	1.20	U	5.98	1.20	0.598
n-Propylbenzene	103-65-1	1.20	U	5.98	1.20	0.598
Styrene	100-42-5	1.20	U	5.98	1.20	0.598
1,1,1,2-Tetrachloroethane	630-20-6	1.20	U	5.98	1.20	0.598
1,1,2,2-Tetrachloroethane	79-34-5	1.20	U	5.98	1.20	0.598
Tetrachloroethene	127-18-4	1.20	U	5.98	1.20	0.598
Toluene	108-88-3	1.20	U	5.98	1.20	0.598
1,2,3-Trichlorobenzene	87-61-6	1.20	U	5.98	1.20	0.598
1,2,4-Trichlorobenzene	120-82-1	1.20	U	5.98	1.20	0.598
1,1,1-Trichloroethane	71-55-6	1.20	U	5.98	1.20	0.598
1,1,2-Trichloroethane	79-00-5	1.20	U	5.98	1.20	0.598
Trichloroethene	79-01-6	1.20	U	5.98	1.20	0.598
Trichlorofluoromethane	75-69-4	2.40	U	5.98	2.40	1.20
1,2,3-Trichloropropane	96-18-4	2.40	U	5.98	2.40	1.20
1,2,4-Trimethylbenzene	95-63-6	1.20	U	5.98	1.20	0.598
1,3,5-Trimethylbenzene	108-67-8	1.20	U	5.98	1.20	0.598
Vinyl chloride	75-01-4	2.40	U	5.98	2.40	1.20
o-Xylene	95-47-6	1.20	U	5.98	1.20	0.598
m-,p-Xylene	179601-23-1	1.20	U	5.98	1.20	0.598

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.7	80	120	
1,2-Dichloroethane-d4	97.1	80	120	
Toluene-d8	106	85	115	
4-Bromofluorobenzene	111	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021306-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT05(10-11)250216	**Prep Method:**	6850	**Prep Date:**	02/26/2016 17:44
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558991	**Analyst:**	JWR	**Run Date:**	02/27/2016 00:43
Collect Date:	02/25/2016 09:40	**Dilution:**	1	**File ID:**	1LM.LM33422
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	88.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.22	U	4.42	2.22	1.11

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021306-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT05(10-11)250216 MS	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/28/2016 13:09
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559002	**Analyst:**	FJB	**Run Date:**	02/28/2016 17:41
Collect Date:	02/25/2016 09:40	**Dilution:**	1	**File ID:**	9M972947
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	88.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	20.4	J	21.2	10.6	5.31
Benzene	71-43-2	23.2		5.31	1.06	0.531
Bromobenzene	108-86-1	23.6		5.31	1.06	0.531
Bromochloromethane	74-97-5	22.0		5.31	2.12	1.06
Bromodichloromethane	75-27-4	21.3		5.31	1.06	0.531
Bromoform	75-25-2	18.0		5.31	1.06	0.531
Bromomethane	74-83-9	22.8		5.31	2.12	1.06
2-Butanone	78-93-3	18.9		10.6	5.30	2.65
n-Butylbenzene	104-51-8	24.1		5.31	1.06	0.531
sec-Butylbenzene	135-98-8	25.5		5.31	1.06	0.531
tert-Butylbenzene	98-06-6	26.6		5.31	1.06	0.531
Carbon disulfide	75-15-0	20.5		5.31	1.06	0.531
Carbon tetrachloride	56-23-5	21.9		5.31	1.06	0.531
Chlorobenzene	108-90-7	23.9		5.31	1.06	0.531
Chlorodibromomethane	124-48-1	20.6		5.31	1.06	0.531
Chloroethane	75-00-3	24.0		5.31	2.12	1.06
Chloroform	67-66-3	22.1		5.31	1.06	0.531
Chloromethane	74-87-3	24.4		10.6	4.24	2.12
2-Chlorotoluene	95-49-8	25.8		5.31	1.06	0.531
4-Chlorotoluene	106-43-4	24.0		5.31	1.06	0.531
1,2-Dibromo-3-chloropropane	96-12-8	20.8		10.6	4.24	2.12
1,2-Dibromoethane	106-93-4	21.7		5.31	1.06	0.531
Dibromomethane	74-95-3	20.2		5.31	1.06	0.531
1,2-Dichlorobenzene	95-50-1	23.1		5.31	1.06	0.531
1,3-Dichlorobenzene	541-73-1	22.6		5.31	1.06	0.531
1,4-Dichlorobenzene	106-46-7	22.9		5.31	1.06	0.531
Dichlorodifluoromethane	75-71-8	31.3		5.31	2.12	1.06
1,1-Dichloroethane	75-34-3	21.4		5.31	2.12	1.06
1,2-Dichloroethane	107-06-2	21.5		5.31	1.06	0.531
1,1-Dichloroethene	75-35-4	21.9		5.31	1.06	0.531
cis-1,2-Dichloroethene	156-59-2	24.2		5.31	1.06	0.531

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Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	24.0		5.31	1.06	0.531
1,2-Dichloropropane	78-87-5	24.0		5.31	1.06	0.531
1,3-Dichloropropane	142-28-9	23.5		5.31	1.06	0.531
2,2-Dichloropropane	594-20-7	23.2		5.31	1.06	0.531
cis-1,3-Dichloropropene	10061-01-5	23.4		5.31	1.06	0.531
trans-1,3-Dichloropropene	10061-02-6	22.3		5.31	1.06	0.531
1,1-Dichloropropene	563-58-6	22.9		5.31	1.06	0.531
Ethylbenzene	100-41-4	24.4		5.31	1.06	0.531
2-Hexanone	591-78-6	19.9		10.6	5.30	2.65
Hexachlorobutadiene	87-68-3	22.4		5.31	1.06	0.531
Isopropylbenzene	98-82-8	24.3		5.31	1.06	0.531
p-Isopropyltoluene	99-87-6	25.0		5.31	1.06	0.531
4-Methyl-2-pentanone	108-10-1	20.2		10.6	5.30	2.65
Methylene chloride	75-09-2	22.8		5.31	2.12	1.06
Naphthalene	91-20-3	19.8		5.31	1.06	0.531
n-Propylbenzene	103-65-1	26.4		5.31	1.06	0.531
Styrene	100-42-5	23.4		5.31	1.06	0.531
1,1,1,2-Tetrachloroethane	630-20-6	22.4		5.31	1.06	0.531
1,1,2,2-Tetrachloroethane	79-34-5	22.7		5.31	1.06	0.531
Tetrachloroethene	127-18-4	24.0		5.31	1.06	0.531
Toluene	108-88-3	23.9		5.31	1.06	0.531
1,2,3-Trichlorobenzene	87-61-6	21.0		5.31	1.06	0.531
1,2,4-Trichlorobenzene	120-82-1	21.1		5.31	1.06	0.531
1,1,1-Trichloroethane	71-55-6	22.5		5.31	1.06	0.531
1,1,2-Trichloroethane	79-00-5	22.5		5.31	1.06	0.531
Trichloroethene	79-01-6	23.2		5.31	1.06	0.531
Trichlorofluoromethane	75-69-4	22.5		5.31	2.12	1.06
1,2,3-Trichloropropane	96-18-4	23.1		5.31	2.12	1.06
1,2,4-Trimethylbenzene	95-63-6	24.0		5.31	1.06	0.531
1,3,5-Trimethylbenzene	108-67-8	25.2		5.31	1.06	0.531
Vinyl chloride	75-01-4	27.5		5.31	2.12	1.06
o-Xylene	95-47-6	24.3		5.31	1.06	0.531
m-,p-Xylene	179601-23-1	48.6		5.31	1.06	0.531

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	80	120	
1,2-Dichloroethane-d4	95.7	80	120	
Toluene-d8	107	85	115	
4-Bromofluorobenzene	114	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021306-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT05(10-11)250216 MS	**Prep Method:**	6850	**Prep Date:**	02/26/2016 17:44
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558991	**Analyst:**	JWR	**Run Date:**	02/27/2016 01:02
Collect Date:	02/25/2016 09:40	**Dilution:**	1	**File ID:**	1LM.LM33423
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	88.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.57	J	4.42	2.20	1.10

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021306-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT05(10-11)250216 MSD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/28/2016 13:10
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559002	**Analyst:**	FJB	**Run Date:**	02/28/2016 18:12
Collect Date:	02/25/2016 09:40	**Dilution:**	1	**File ID:**	9M972948
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	88.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	18.5	J	21.1	10.6	5.28
Benzene	71-43-2	18.9		5.28	1.06	0.528
Bromobenzene	108-86-1	16.8		5.28	1.06	0.528
Bromochloromethane	74-97-5	17.4		5.28	2.12	1.06
Bromodichloromethane	75-27-4	16.4		5.28	1.06	0.528
Bromoform	75-25-2	14.4		5.28	1.06	0.528
Bromomethane	74-83-9	17.8		5.28	2.12	1.06
2-Butanone	78-93-3	16.3		10.6	5.28	2.64
n-Butylbenzene	104-51-8	17.2		5.28	1.06	0.528
sec-Butylbenzene	135-98-8	19.7		5.28	1.06	0.528
tert-Butylbenzene	98-06-6	20.4		5.28	1.06	0.528
Carbon disulfide	75-15-0	16.5		5.28	1.06	0.528
Carbon tetrachloride	56-23-5	17.7		5.28	1.06	0.528
Chlorobenzene	108-90-7	18.5		5.28	1.06	0.528
Chlorodibromomethane	124-48-1	15.3		5.28	1.06	0.528
Chloroethane	75-00-3	19.7		5.28	2.12	1.06
Chloroform	67-66-3	17.6		5.28	1.06	0.528
Chloromethane	74-87-3	19.9		10.6	4.22	2.11
2-Chlorotoluene	95-49-8	18.4		5.28	1.06	0.528
4-Chlorotoluene	106-43-4	18.8		5.28	1.06	0.528
1,2-Dibromo-3-chloropropane	96-12-8	15.2		10.6	4.22	2.11
1,2-Dibromoethane	106-93-4	16.2		5.28	1.06	0.528
Dibromomethane	74-95-3	16.0		5.28	1.06	0.528
1,2-Dichlorobenzene	95-50-1	16.7		5.28	1.06	0.528
1,3-Dichlorobenzene	541-73-1	16.4		5.28	1.06	0.528
1,4-Dichlorobenzene	106-46-7	16.5		5.28	1.06	0.528
Dichlorodifluoromethane	75-71-8	26.7		5.28	2.12	1.06
1,1-Dichloroethane	75-34-3	17.5		5.28	2.12	1.06
1,2-Dichloroethane	107-06-2	17.0		5.28	1.06	0.528
1,1-Dichloroethene	75-35-4	19.7		5.28	1.06	0.528
cis-1,2-Dichloroethene	156-59-2	19.1		5.28	1.06	0.528

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	20.5		5.28	1.06	0.528
1,2-Dichloropropane	78-87-5	18.8		5.28	1.06	0.528
1,3-Dichloropropane	142-28-9	18.3		5.28	1.06	0.528
2,2-Dichloropropane	594-20-7	19.4		5.28	1.06	0.528
cis-1,3-Dichloropropene	10061-01-5	18.5		5.28	1.06	0.528
trans-1,3-Dichloropropene	10061-02-6	16.5		5.28	1.06	0.528
1,1-Dichloropropene	563-58-6	19.3		5.28	1.06	0.528
Ethylbenzene	100-41-4	18.8		5.28	1.06	0.528
2-Hexanone	591-78-6	15.9		10.6	5.28	2.64
Hexachlorobutadiene	87-68-3	16.0		5.28	1.06	0.528
Isopropylbenzene	98-82-8	19.2		5.28	1.06	0.528
p-Isopropyltoluene	99-87-6	18.8		5.28	1.06	0.528
4-Methyl-2-pentanone	108-10-1	16.6		10.6	5.28	2.64
Methylene chloride	75-09-2	18.0		5.28	2.12	1.06
Naphthalene	91-20-3	13.7		5.28	1.06	0.528
n-Propylbenzene	103-65-1	19.7		5.28	1.06	0.528
Styrene	100-42-5	17.8		5.28	1.06	0.528
1,1,1,2-Tetrachloroethane	630-20-6	17.2		5.28	1.06	0.528
1,1,2,2-Tetrachloroethane	79-34-5	16.3		5.28	1.06	0.528
Tetrachloroethene	127-18-4	18.9		5.28	1.06	0.528
Toluene	108-88-3	19.1		5.28	1.06	0.528
1,2,3-Trichlorobenzene	87-61-6	13.6		5.28	1.06	0.528
1,2,4-Trichlorobenzene	120-82-1	14.0		5.28	1.06	0.528
1,1,1-Trichloroethane	71-55-6	18.4		5.28	1.06	0.528
1,1,2-Trichloroethane	79-00-5	17.4		5.28	1.06	0.528
Trichloroethene	79-01-6	18.9		5.28	1.06	0.528
Trichlorofluoromethane	75-69-4	19.6		5.28	2.12	1.06
1,2,3-Trichloropropane	96-18-4	17.9		5.28	2.12	1.06
1,2,4-Trimethylbenzene	95-63-6	17.5		5.28	1.06	0.528
1,3,5-Trimethylbenzene	108-67-8	18.8		5.28	1.06	0.528
Vinyl chloride	75-01-4	24.1		5.28	2.12	1.06
o-Xylene	95-47-6	19.2		5.28	1.06	0.528
m-,p-Xylene	179601-23-1	38.5		5.28	1.06	0.528

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	80	120	
1,2-Dichloroethane-d4	101	80	120	
Toluene-d8	106	85	115	
4-Bromofluorobenzene	113	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021306-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT05(10-11)250216 MSD	**Prep Method:**	6850	**Prep Date:**	02/26/2016 17:44
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558991	**Analyst:**	JWR	**Run Date:**	02/27/2016 01:21
Collect Date:	02/25/2016 09:40	**Dilution:**	1	**File ID:**	1LM.LM33424
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	88.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.67	J	4.42	2.20	1.10

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021306-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT05(15-15.5)250216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/28/2016 13:10
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559002	**Analyst:**	FJB	**Run Date:**	02/29/2016 00:57
Collect Date:	02/25/2016 09:50	**Dilution:**	1	**File ID:**	9M972961
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.6	U	25.2	12.6	6.30
Benzene	71-43-2	1.26	U	6.30	1.26	0.630
Bromobenzene	108-86-1	1.26	U	6.30	1.26	0.630
Bromochloromethane	74-97-5	2.52	U	6.30	2.52	1.26
Bromodichloromethane	75-27-4	1.26	U	6.30	1.26	0.630
Bromoform	75-25-2	1.26	U	6.30	1.26	0.630
Bromomethane	74-83-9	2.52	U	6.30	2.52	1.26
2-Butanone	78-93-3	6.30	U	12.6	6.30	3.15
n-Butylbenzene	104-51-8	1.26	U	6.30	1.26	0.630
sec-Butylbenzene	135-98-8	1.26	U	6.30	1.26	0.630
tert-Butylbenzene	98-06-6	1.26	U	6.30	1.26	0.630
Carbon disulfide	75-15-0	1.26	U	6.30	1.26	0.630
Carbon tetrachloride	56-23-5	1.26	U	6.30	1.26	0.630
Chlorobenzene	108-90-7	1.26	U	6.30	1.26	0.630
Chlorodibromomethane	124-48-1	1.26	U	6.30	1.26	0.630
Chloroethane	75-00-3	2.52	U	6.30	2.52	1.26
Chloroform	67-66-3	1.26	U	6.30	1.26	0.630
Chloromethane	74-87-3	5.04	U	12.6	5.04	2.52
2-Chlorotoluene	95-49-8	1.26	U	6.30	1.26	0.630
4-Chlorotoluene	106-43-4	1.26	U	6.30	1.26	0.630
1,2-Dibromo-3-chloropropane	96-12-8	5.04	U	12.6	5.04	2.52
1,2-Dibromoethane	106-93-4	1.26	U	6.30	1.26	0.630
Dibromomethane	74-95-3	1.26	U	6.30	1.26	0.630
1,2-Dichlorobenzene	95-50-1	1.26	U	6.30	1.26	0.630
1,3-Dichlorobenzene	541-73-1	1.26	U	6.30	1.26	0.630
1,4-Dichlorobenzene	106-46-7	1.26	U	6.30	1.26	0.630
Dichlorodifluoromethane	75-71-8	2.52	U	6.30	2.52	1.26
1,1-Dichloroethane	75-34-3	2.52	U	6.30	2.52	1.26
1,2-Dichloroethane	107-06-2	1.26	U	6.30	1.26	0.630
1,1-Dichloroethene	75-35-4	1.26	U	6.30	1.26	0.630
cis-1,2-Dichloroethene	156-59-2	1.26	U	6.30	1.26	0.630

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.26	U	6.30	1.26	0.630
1,2-Dichloropropane	78-87-5	1.26	U	6.30	1.26	0.630
1,3-Dichloropropane	142-28-9	1.26	U	6.30	1.26	0.630
2,2-Dichloropropane	594-20-7	1.26	U	6.30	1.26	0.630
cis-1,3-Dichloropropene	10061-01-5	1.26	U	6.30	1.26	0.630
trans-1,3-Dichloropropene	10061-02-6	1.26	U	6.30	1.26	0.630
1,1-Dichloropropene	563-58-6	1.26	U	6.30	1.26	0.630
Ethylbenzene	100-41-4	1.26	U	6.30	1.26	0.630
2-Hexanone	591-78-6	6.30	U	12.6	6.30	3.15
Hexachlorobutadiene	87-68-3	1.26	U	6.30	1.26	0.630
Isopropylbenzene	98-82-8	1.26	U	6.30	1.26	0.630
p-Isopropyltoluene	99-87-6	1.26	U	6.30	1.26	0.630
4-Methyl-2-pentanone	108-10-1	6.30	U	12.6	6.30	3.15
Methylene chloride	75-09-2	2.52	U	6.30	2.52	1.26
Naphthalene	91-20-3	1.26	U	6.30	1.26	0.630
n-Propylbenzene	103-65-1	1.26	U	6.30	1.26	0.630
Styrene	100-42-5	1.26	U	6.30	1.26	0.630
1,1,1,2-Tetrachloroethane	630-20-6	1.26	U	6.30	1.26	0.630
1,1,2,2-Tetrachloroethane	79-34-5	1.26	U	6.30	1.26	0.630
Tetrachloroethene	127-18-4	1.26	U	6.30	1.26	0.630
Toluene	108-88-3	1.26	U	6.30	1.26	0.630
1,2,3-Trichlorobenzene	87-61-6	1.26	U	6.30	1.26	0.630
1,2,4-Trichlorobenzene	120-82-1	1.26	U	6.30	1.26	0.630
1,1,1-Trichloroethane	71-55-6	1.26	U	6.30	1.26	0.630
1,1,2-Trichloroethane	79-00-5	1.26	U	6.30	1.26	0.630
Trichloroethene	79-01-6	1.26	U	6.30	1.26	0.630
Trichlorofluoromethane	75-69-4	2.52	U	6.30	2.52	1.26
1,2,3-Trichloropropane	96-18-4	2.52	U	6.30	2.52	1.26
1,2,4-Trimethylbenzene	95-63-6	1.26	U	6.30	1.26	0.630
1,3,5-Trimethylbenzene	108-67-8	1.26	U	6.30	1.26	0.630
Vinyl chloride	75-01-4	2.52	U	6.30	2.52	1.26
o-Xylene	95-47-6	1.26	U	6.30	1.26	0.630
m-,p-Xylene	179601-23-1	1.26	U	6.30	1.26	0.630

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.8	80	120	
1,2-Dichloroethane-d4	97.9	80	120	
Toluene-d8	107	85	115	
4-Bromofluorobenzene	117	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021306-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT05(15-15.5)250216	**Prep Method:**	6850	**Prep Date:**	02/26/2016 17:44
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558991	**Analyst:**	JWR	**Run Date:**	02/27/2016 01:59
Collect Date:	02/25/2016 09:50	**Dilution:**	1	**File ID:**	1LM.LM33426
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	7.13		4.56	2.28	1.14

Certificate of Analysis

Sample #:	L16021306-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT05(20-20.5)250216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/28/2016 13:12
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559002	**Analyst:**	FJB	**Run Date:**	02/29/2016 01:29
Collect Date:	02/25/2016 09:45	**Dilution:**	1	**File ID:**	9M972962
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.2	U	24.5	12.2	6.12
Benzene	71-43-2	1.22	U	6.12	1.22	0.612
Bromobenzene	108-86-1	1.22	U	6.12	1.22	0.612
Bromochloromethane	74-97-5	2.44	U	6.12	2.44	1.22
Bromodichloromethane	75-27-4	1.22	U	6.12	1.22	0.612
Bromoform	75-25-2	1.22	U	6.12	1.22	0.612
Bromomethane	74-83-9	2.44	U	6.12	2.44	1.22
2-Butanone	78-93-3	6.12	U	12.2	6.12	3.06
n-Butylbenzene	104-51-8	1.22	U	6.12	1.22	0.612
sec-Butylbenzene	135-98-8	1.22	U	6.12	1.22	0.612
tert-Butylbenzene	98-06-6	1.22	U	6.12	1.22	0.612
Carbon disulfide	75-15-0	1.22	U	6.12	1.22	0.612
Carbon tetrachloride	56-23-5	1.22	U	6.12	1.22	0.612
Chlorobenzene	108-90-7	1.22	U	6.12	1.22	0.612
Chlorodibromomethane	124-48-1	1.22	U	6.12	1.22	0.612
Chloroethane	75-00-3	2.44	U	6.12	2.44	1.22
Chloroform	67-66-3	1.22	U	6.12	1.22	0.612
Chloromethane	74-87-3	4.90	U	12.2	4.90	2.45
2-Chlorotoluene	95-49-8	1.22	U	6.12	1.22	0.612
4-Chlorotoluene	106-43-4	1.22	U	6.12	1.22	0.612

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	4.90	U	12.2	4.90	2.45
1,2-Dibromoethane	106-93-4	1.22	U	6.12	1.22	0.612
Dibromomethane	74-95-3	1.22	U	6.12	1.22	0.612
1,2-Dichlorobenzene	95-50-1	1.22	U	6.12	1.22	0.612
1,3-Dichlorobenzene	541-73-1	1.22	U	6.12	1.22	0.612
1,4-Dichlorobenzene	106-46-7	1.22	U	6.12	1.22	0.612
Dichlorodifluoromethane	75-71-8	2.44	U	6.12	2.44	1.22
1,1-Dichloroethane	75-34-3	2.44	U	6.12	2.44	1.22
1,2-Dichloroethane	107-06-2	1.22	U	6.12	1.22	0.612
1,1-Dichloroethene	75-35-4	1.22	U	6.12	1.22	0.612
cis-1,2-Dichloroethene	156-59-2	1.22	U	6.12	1.22	0.612
trans-1,2-Dichloroethene	156-60-5	1.22	U	6.12	1.22	0.612
1,2-Dichloropropane	78-87-5	1.22	U	6.12	1.22	0.612
1,3-Dichloropropane	142-28-9	1.22	U	6.12	1.22	0.612
2,2-Dichloropropane	594-20-7	1.22	U	6.12	1.22	0.612
cis-1,3-Dichloropropene	10061-01-5	1.22	U	6.12	1.22	0.612
trans-1,3-Dichloropropene	10061-02-6	1.22	U	6.12	1.22	0.612
1,1-Dichloropropene	563-58-6	1.22	U	6.12	1.22	0.612
Ethylbenzene	100-41-4	1.22	U	6.12	1.22	0.612
2-Hexanone	591-78-6	6.12	U	12.2	6.12	3.06
Hexachlorobutadiene	87-68-3	1.22	U	6.12	1.22	0.612
Isopropylbenzene	98-82-8	1.22	U	6.12	1.22	0.612
p-Isopropyltoluene	99-87-6	1.22	U	6.12	1.22	0.612
4-Methyl-2-pentanone	108-10-1	6.12	U	12.2	6.12	3.06
Methylene chloride	75-09-2	2.44	U	6.12	2.44	1.22
Naphthalene	91-20-3	1.22	U	6.12	1.22	0.612
n-Propylbenzene	103-65-1	1.22	U	6.12	1.22	0.612
Styrene	100-42-5	1.22	U	6.12	1.22	0.612
1,1,1,2-Tetrachloroethane	630-20-6	1.22	U	6.12	1.22	0.612
1,1,2,2-Tetrachloroethane	79-34-5	1.22	U	6.12	1.22	0.612
Tetrachloroethene	127-18-4	1.22	U	6.12	1.22	0.612
Toluene	108-88-3	1.22	U	6.12	1.22	0.612
1,2,3-Trichlorobenzene	87-61-6	1.22	U	6.12	1.22	0.612
1,2,4-Trichlorobenzene	120-82-1	1.22	U	6.12	1.22	0.612
1,1,1-Trichloroethane	71-55-6	1.22	U	6.12	1.22	0.612
1,1,2-Trichloroethane	79-00-5	1.22	U	6.12	1.22	0.612
Trichloroethene	79-01-6	1.17	J	6.12	1.22	0.612
Trichlorofluoromethane	75-69-4	2.44	U	6.12	2.44	1.22
1,2,3-Trichloropropane	96-18-4	2.44	U	6.12	2.44	1.22

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.22	U	6.12	1.22	0.612
1,3,5-Trimethylbenzene	108-67-8	1.22	U	6.12	1.22	0.612
Vinyl chloride	75-01-4	2.44	U	6.12	2.44	1.22
o-Xylene	95-47-6	1.22	U	6.12	1.22	0.612
m-,p-Xylene	179601-23-1	1.22	U	6.12	1.22	0.612

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.5	80	120	
1,2-Dichloroethane-d4	106	80	120	
Toluene-d8	104	85	115	
4-Bromofluorobenzene	107	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021306-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT05(20-20.5)250216	**Prep Method:**	6850	**Prep Date:**	02/26/2016 17:44
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558991	**Analyst:**	JWR	**Run Date:**	02/27/2016 11:35
Collect Date:	02/25/2016 09:45	**Dilution:**	50	**File ID:**	1LM.LM33435
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	80.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1400		243	121	60.7

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #: L16021306-01 **Client ID:** 18DPT05(4.5-5)250216 **Matrix:** Soil **Collect Date:** 02/25/2016 09:30

Analyte	Result	Units	Qualifier
Percent Solids	84.0	weight %	

Sample #: L16021306-02 **Client ID:** 18DPT05(10-11)250216 **Matrix:** Soil **Collect Date:** 02/25/2016 09:40

Analyte	Result	Units	Qualifier
Percent Solids	88.0	weight %	

Sample #: L16021306-03 **Client ID:** 18DPT05(10-11)250216 MS **Matrix:** Soil **Collect Date:** 02/25/2016 09:40

Analyte	Result	Units	Qualifier
Percent Solids	88.0	weight %	

Sample #: L16021306-04 **Client ID:** 18DPT05(10-11)250216 MSD **Matrix:** Soil **Collect Date:** 02/25/2016 09:40

Analyte	Result	Units	Qualifier
Percent Solids	88.0	weight %	

Sample #: L16021306-05 **Client ID:** 18DPT05(15-15.5)250216 **Matrix:** Soil **Collect Date:** 02/25/2016 09:50

Analyte	Result	Units	Qualifier
Percent Solids	85.2	weight %	

Sample #: L16021306-06 **Client ID:** 18DPT05(20-20.5)250216 **Matrix:** Soil **Collect Date:** 02/25/2016 09:45

Analyte	Result	Units	Qualifier
Percent Solids	80.0	weight %	

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021306-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT05(4.5-5)250216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/28/2016 13:09
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559002	**Analyst:**	FJB	**Run Date:**	02/28/2016 23:54
Collect Date:	02/25/2016 09:30	**Dilution:**	1	**File ID:**	9M972959
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.6	U	25.2	12.6	6.29
Benzene	71-43-2	1.26	U	6.29	1.26	0.629
Bromobenzene	108-86-1	1.26	U	6.29	1.26	0.629
Bromochloromethane	74-97-5	2.52	U	6.29	2.52	1.26
Bromodichloromethane	75-27-4	1.26	U	6.29	1.26	0.629
Bromoform	75-25-2	1.26	U	6.29	1.26	0.629
Bromomethane	74-83-9	2.52	U	6.29	2.52	1.26
2-Butanone	78-93-3	6.30	U	12.6	6.30	3.15
n-Butylbenzene	104-51-8	1.26	U	6.29	1.26	0.629
sec-Butylbenzene	135-98-8	1.26	U	6.29	1.26	0.629
tert-Butylbenzene	98-06-6	1.26	U	6.29	1.26	0.629
Carbon disulfide	75-15-0	1.26	U	6.29	1.26	0.629
Carbon tetrachloride	56-23-5	1.26	U	6.29	1.26	0.629
Chlorobenzene	108-90-7	1.26	U	6.29	1.26	0.629
Chlorodibromomethane	124-48-1	1.26	U	6.29	1.26	0.629
Chloroethane	75-00-3	2.52	U	6.29	2.52	1.26
Chloroform	67-66-3	1.26	U	6.29	1.26	0.629
Chloromethane	74-87-3	5.04	U	12.6	5.04	2.52
2-Chlorotoluene	95-49-8	1.26	U	6.29	1.26	0.629
4-Chlorotoluene	106-43-4	1.26	U	6.29	1.26	0.629
1,2-Dibromo-3-chloropropane	96-12-8	5.04	U	12.6	5.04	2.52
1,2-Dibromoethane	106-93-4	1.26	U	6.29	1.26	0.629
Dibromomethane	74-95-3	1.26	U	6.29	1.26	0.629
1,2-Dichlorobenzene	95-50-1	1.26	U	6.29	1.26	0.629
1,3-Dichlorobenzene	541-73-1	1.26	U	6.29	1.26	0.629
1,4-Dichlorobenzene	106-46-7	1.26	U	6.29	1.26	0.629
Dichlorodifluoromethane	75-71-8	2.52	U	6.29	2.52	1.26
1,1-Dichloroethane	75-34-3	2.52	U	6.29	2.52	1.26
1,2-Dichloroethane	107-06-2	1.26	U	6.29	1.26	0.629
1,1-Dichloroethene	75-35-4	1.26	U	6.29	1.26	0.629
cis-1,2-Dichloroethene	156-59-2	1.26	U	6.29	1.26	0.629
trans-1,2-Dichloroethene	156-60-5	1.26	U	6.29	1.26	0.629

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Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.26	U	6.29	1.26	0.629
1,3-Dichloropropane	142-28-9	1.26	U	6.29	1.26	0.629
2,2-Dichloropropane	594-20-7	1.26	U	6.29	1.26	0.629
cis-1,3-Dichloropropene	10061-01-5	1.26	U	6.29	1.26	0.629
trans-1,3-Dichloropropene	10061-02-6	1.26	U	6.29	1.26	0.629
1,1-Dichloropropene	563-58-6	1.26	U	6.29	1.26	0.629
Ethylbenzene	100-41-4	1.26	U	6.29	1.26	0.629
2-Hexanone	591-78-6	6.30	U	12.6	6.30	3.15
Hexachlorobutadiene	87-68-3	1.26	U	6.29	1.26	0.629
Isopropylbenzene	98-82-8	1.26	U	6.29	1.26	0.629
p-Isopropyltoluene	99-87-6	1.26	U	6.29	1.26	0.629
4-Methyl-2-pentanone	108-10-1	6.30	U	12.6	6.30	3.15
Methylene chloride	75-09-2	2.52	U	6.29	2.52	1.26
Naphthalene	91-20-3	1.26	U	6.29	1.26	0.629
n-Propylbenzene	103-65-1	1.26	U	6.29	1.26	0.629
Styrene	100-42-5	1.26	U	6.29	1.26	0.629
1,1,1,2-Tetrachloroethane	630-20-6	1.26	U	6.29	1.26	0.629
1,1,2,2-Tetrachloroethane	79-34-5	1.26	U	6.29	1.26	0.629
Tetrachloroethene	127-18-4	1.26	U	6.29	1.26	0.629
Toluene	108-88-3	1.26	U	6.29	1.26	0.629
1,2,3-Trichlorobenzene	87-61-6	1.26	U	6.29	1.26	0.629
1,2,4-Trichlorobenzene	120-82-1	1.26	U	6.29	1.26	0.629
1,1,1-Trichloroethane	71-55-6	1.26	U	6.29	1.26	0.629
1,1,2-Trichloroethane	79-00-5	1.26	U	6.29	1.26	0.629
Trichloroethene	79-01-6	1.26	U	6.29	1.26	0.629
Trichlorofluoromethane	75-69-4	2.52	U	6.29	2.52	1.26
1,2,3-Trichloropropane	96-18-4	2.52	U	6.29	2.52	1.26
1,2,4-Trimethylbenzene	95-63-6	1.26	U	6.29	1.26	0.629
1,3,5-Trimethylbenzene	108-67-8	1.26	U	6.29	1.26	0.629
Vinyl chloride	75-01-4	2.52	U	6.29	2.52	1.26
o-Xylene	95-47-6	1.26	U	6.29	1.26	0.629
m-,p-Xylene	179601-23-1	1.26	U	6.29	1.26	0.629

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.9	80	120	
1,2-Dichloroethane-d4	95.6	80	120	
Toluene-d8	107	85	115	
4-Bromofluorobenzene	112	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021306-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT05(10-11)250216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/28/2016 13:09
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559002	**Analyst:**	FJB	**Run Date:**	02/29/2016 00:25
Collect Date:	02/25/2016 09:40	**Dilution:**	1	**File ID:**	9M972960
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	88.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.0	U	23.9	12.0	5.98
Benzene	71-43-2	1.20	U	5.98	1.20	0.598
Bromobenzene	108-86-1	1.20	U	5.98	1.20	0.598
Bromochloromethane	74-97-5	2.40	U	5.98	2.40	1.20
Bromodichloromethane	75-27-4	1.20	U	5.98	1.20	0.598
Bromoform	75-25-2	1.20	U	5.98	1.20	0.598
Bromomethane	74-83-9	2.40	U	5.98	2.40	1.20
2-Butanone	78-93-3	5.98	U	12.0	5.98	2.99
n-Butylbenzene	104-51-8	1.20	U	5.98	1.20	0.598
sec-Butylbenzene	135-98-8	1.20	U	5.98	1.20	0.598
tert-Butylbenzene	98-06-6	1.20	U	5.98	1.20	0.598
Carbon disulfide	75-15-0	1.20	U	5.98	1.20	0.598
Carbon tetrachloride	56-23-5	1.20	U	5.98	1.20	0.598
Chlorobenzene	108-90-7	1.20	U	5.98	1.20	0.598
Chlorodibromomethane	124-48-1	1.20	U	5.98	1.20	0.598
Chloroethane	75-00-3	2.40	U	5.98	2.40	1.20
Chloroform	67-66-3	1.20	U	5.98	1.20	0.598
Chloromethane	74-87-3	4.78	U	12.0	4.78	2.39
2-Chlorotoluene	95-49-8	1.20	U	5.98	1.20	0.598
4-Chlorotoluene	106-43-4	1.20	U	5.98	1.20	0.598
1,2-Dibromo-3-chloropropane	96-12-8	4.78	U	12.0	4.78	2.39
1,2-Dibromoethane	106-93-4	1.20	U	5.98	1.20	0.598
Dibromomethane	74-95-3	1.20	U	5.98	1.20	0.598
1,2-Dichlorobenzene	95-50-1	1.20	U	5.98	1.20	0.598
1,3-Dichlorobenzene	541-73-1	1.20	U	5.98	1.20	0.598
1,4-Dichlorobenzene	106-46-7	1.20	U	5.98	1.20	0.598
Dichlorodifluoromethane	75-71-8	2.40	U	5.98	2.40	1.20
1,1-Dichloroethane	75-34-3	2.40	U	5.98	2.40	1.20
1,2-Dichloroethane	107-06-2	1.20	U	5.98	1.20	0.598
1,1-Dichloroethene	75-35-4	1.20	U	5.98	1.20	0.598
cis-1,2-Dichloroethene	156-59-2	1.20	U	5.98	1.20	0.598

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Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.20	U	5.98	1.20	0.598
1,2-Dichloropropane	78-87-5	1.20	U	5.98	1.20	0.598
1,3-Dichloropropane	142-28-9	1.20	U	5.98	1.20	0.598
2,2-Dichloropropane	594-20-7	1.20	U	5.98	1.20	0.598
cis-1,3-Dichloropropene	10061-01-5	1.20	U	5.98	1.20	0.598
trans-1,3-Dichloropropene	10061-02-6	1.20	U	5.98	1.20	0.598
1,1-Dichloropropene	563-58-6	1.20	U	5.98	1.20	0.598
Ethylbenzene	100-41-4	1.20	U	5.98	1.20	0.598
2-Hexanone	591-78-6	5.98	U	12.0	5.98	2.99
Hexachlorobutadiene	87-68-3	1.20	U	5.98	1.20	0.598
Isopropylbenzene	98-82-8	1.20	U	5.98	1.20	0.598
p-Isopropyltoluene	99-87-6	1.20	U	5.98	1.20	0.598
4-Methyl-2-pentanone	108-10-1	5.98	U	12.0	5.98	2.99
Methylene chloride	75-09-2	2.40	U	5.98	2.40	1.20
Naphthalene	91-20-3	1.20	U	5.98	1.20	0.598
n-Propylbenzene	103-65-1	1.20	U	5.98	1.20	0.598
Styrene	100-42-5	1.20	U	5.98	1.20	0.598
1,1,1,2-Tetrachloroethane	630-20-6	1.20	U	5.98	1.20	0.598
1,1,2,2-Tetrachloroethane	79-34-5	1.20	U	5.98	1.20	0.598
Tetrachloroethene	127-18-4	1.20	U	5.98	1.20	0.598
Toluene	108-88-3	1.20	U	5.98	1.20	0.598
1,2,3-Trichlorobenzene	87-61-6	1.20	U	5.98	1.20	0.598
1,2,4-Trichlorobenzene	120-82-1	1.20	U	5.98	1.20	0.598
1,1,1-Trichloroethane	71-55-6	1.20	U	5.98	1.20	0.598
1,1,2-Trichloroethane	79-00-5	1.20	U	5.98	1.20	0.598
Trichloroethene	79-01-6	1.20	U	5.98	1.20	0.598
Trichlorofluoromethane	75-69-4	2.40	U	5.98	2.40	1.20
1,2,3-Trichloropropane	96-18-4	2.40	U	5.98	2.40	1.20
1,2,4-Trimethylbenzene	95-63-6	1.20	U	5.98	1.20	0.598
1,3,5-Trimethylbenzene	108-67-8	1.20	U	5.98	1.20	0.598
Vinyl chloride	75-01-4	2.40	U	5.98	2.40	1.20
o-Xylene	95-47-6	1.20	U	5.98	1.20	0.598
m-,p-Xylene	179601-23-1	1.20	U	5.98	1.20	0.598

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.7	80	120	
1,2-Dichloroethane-d4	97.1	80	120	
Toluene-d8	106	85	115	
4-Bromofluorobenzene	111	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021306-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT05(10-11)250216 MS	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/28/2016 13:09
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559002	**Analyst:**	FJB	**Run Date:**	02/28/2016 17:41
Collect Date:	02/25/2016 09:40	**Dilution:**	1	**File ID:**	9M972947
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	88.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	20.4	J	21.2	10.6	5.31
Benzene	71-43-2	23.2		5.31	1.06	0.531
Bromobenzene	108-86-1	23.6		5.31	1.06	0.531
Bromochloromethane	74-97-5	22.0		5.31	2.12	1.06
Bromodichloromethane	75-27-4	21.3		5.31	1.06	0.531
Bromoform	75-25-2	18.0		5.31	1.06	0.531
Bromomethane	74-83-9	22.8		5.31	2.12	1.06
2-Butanone	78-93-3	18.9		10.6	5.30	2.65
n-Butylbenzene	104-51-8	24.1		5.31	1.06	0.531
sec-Butylbenzene	135-98-8	25.5		5.31	1.06	0.531
tert-Butylbenzene	98-06-6	26.6		5.31	1.06	0.531
Carbon disulfide	75-15-0	20.5		5.31	1.06	0.531
Carbon tetrachloride	56-23-5	21.9		5.31	1.06	0.531
Chlorobenzene	108-90-7	23.9		5.31	1.06	0.531
Chlorodibromomethane	124-48-1	20.6		5.31	1.06	0.531
Chloroethane	75-00-3	24.0		5.31	2.12	1.06
Chloroform	67-66-3	22.1		5.31	1.06	0.531
Chloromethane	74-87-3	24.4		10.6	4.24	2.12
2-Chlorotoluene	95-49-8	25.8		5.31	1.06	0.531
4-Chlorotoluene	106-43-4	24.0		5.31	1.06	0.531
1,2-Dibromo-3-chloropropane	96-12-8	20.8		10.6	4.24	2.12
1,2-Dibromoethane	106-93-4	21.7		5.31	1.06	0.531
Dibromomethane	74-95-3	20.2		5.31	1.06	0.531
1,2-Dichlorobenzene	95-50-1	23.1		5.31	1.06	0.531
1,3-Dichlorobenzene	541-73-1	22.6		5.31	1.06	0.531
1,4-Dichlorobenzene	106-46-7	22.9		5.31	1.06	0.531
Dichlorodifluoromethane	75-71-8	31.3		5.31	2.12	1.06
1,1-Dichloroethane	75-34-3	21.4		5.31	2.12	1.06
1,2-Dichloroethane	107-06-2	21.5		5.31	1.06	0.531
1,1-Dichloroethene	75-35-4	21.9		5.31	1.06	0.531
cis-1,2-Dichloroethene	156-59-2	24.2		5.31	1.06	0.531

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Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	24.0		5.31	1.06	0.531
1,2-Dichloropropane	78-87-5	24.0		5.31	1.06	0.531
1,3-Dichloropropane	142-28-9	23.5		5.31	1.06	0.531
2,2-Dichloropropane	594-20-7	23.2		5.31	1.06	0.531
cis-1,3-Dichloropropene	10061-01-5	23.4		5.31	1.06	0.531
trans-1,3-Dichloropropene	10061-02-6	22.3		5.31	1.06	0.531
1,1-Dichloropropene	563-58-6	22.9		5.31	1.06	0.531
Ethylbenzene	100-41-4	24.4		5.31	1.06	0.531
2-Hexanone	591-78-6	19.9		10.6	5.30	2.65
Hexachlorobutadiene	87-68-3	22.4		5.31	1.06	0.531
Isopropylbenzene	98-82-8	24.3		5.31	1.06	0.531
p-Isopropyltoluene	99-87-6	25.0		5.31	1.06	0.531
4-Methyl-2-pentanone	108-10-1	20.2		10.6	5.30	2.65
Methylene chloride	75-09-2	22.8		5.31	2.12	1.06
Naphthalene	91-20-3	19.8		5.31	1.06	0.531
n-Propylbenzene	103-65-1	26.4		5.31	1.06	0.531
Styrene	100-42-5	23.4		5.31	1.06	0.531
1,1,1,2-Tetrachloroethane	630-20-6	22.4		5.31	1.06	0.531
1,1,2,2-Tetrachloroethane	79-34-5	22.7		5.31	1.06	0.531
Tetrachloroethene	127-18-4	24.0		5.31	1.06	0.531
Toluene	108-88-3	23.9		5.31	1.06	0.531
1,2,3-Trichlorobenzene	87-61-6	21.0		5.31	1.06	0.531
1,2,4-Trichlorobenzene	120-82-1	21.1		5.31	1.06	0.531
1,1,1-Trichloroethane	71-55-6	22.5		5.31	1.06	0.531
1,1,2-Trichloroethane	79-00-5	22.5		5.31	1.06	0.531
Trichloroethene	79-01-6	23.2		5.31	1.06	0.531
Trichlorofluoromethane	75-69-4	22.5		5.31	2.12	1.06
1,2,3-Trichloropropane	96-18-4	23.1		5.31	2.12	1.06
1,2,4-Trimethylbenzene	95-63-6	24.0		5.31	1.06	0.531
1,3,5-Trimethylbenzene	108-67-8	25.2		5.31	1.06	0.531
Vinyl chloride	75-01-4	27.5		5.31	2.12	1.06
o-Xylene	95-47-6	24.3		5.31	1.06	0.531
m-,p-Xylene	179601-23-1	48.6		5.31	1.06	0.531

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	80	120	
1,2-Dichloroethane-d4	95.7	80	120	
Toluene-d8	107	85	115	
4-Bromofluorobenzene	114	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

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Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021306-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT05(10-11)250216 MSD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/28/2016 13:10
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559002	**Analyst:**	FJB	**Run Date:**	02/28/2016 18:12
Collect Date:	02/25/2016 09:40	**Dilution:**	1	**File ID:**	9M972948
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	88.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	18.5	J	21.1	10.6	5.28
Benzene	71-43-2	18.9		5.28	1.06	0.528
Bromobenzene	108-86-1	16.8		5.28	1.06	0.528
Bromochloromethane	74-97-5	17.4		5.28	2.12	1.06
Bromodichloromethane	75-27-4	16.4		5.28	1.06	0.528
Bromoform	75-25-2	14.4		5.28	1.06	0.528
Bromomethane	74-83-9	17.8		5.28	2.12	1.06
2-Butanone	78-93-3	16.3		10.6	5.28	2.64
n-Butylbenzene	104-51-8	17.2		5.28	1.06	0.528
sec-Butylbenzene	135-98-8	19.7		5.28	1.06	0.528
tert-Butylbenzene	98-06-6	20.4		5.28	1.06	0.528
Carbon disulfide	75-15-0	16.5		5.28	1.06	0.528
Carbon tetrachloride	56-23-5	17.7		5.28	1.06	0.528
Chlorobenzene	108-90-7	18.5		5.28	1.06	0.528
Chlorodibromomethane	124-48-1	15.3		5.28	1.06	0.528
Chloroethane	75-00-3	19.7		5.28	2.12	1.06
Chloroform	67-66-3	17.6		5.28	1.06	0.528
Chloromethane	74-87-3	19.9		10.6	4.22	2.11
2-Chlorotoluene	95-49-8	18.4		5.28	1.06	0.528
4-Chlorotoluene	106-43-4	18.8		5.28	1.06	0.528
1,2-Dibromo-3-chloropropane	96-12-8	15.2		10.6	4.22	2.11
1,2-Dibromoethane	106-93-4	16.2		5.28	1.06	0.528
Dibromomethane	74-95-3	16.0		5.28	1.06	0.528
1,2-Dichlorobenzene	95-50-1	16.7		5.28	1.06	0.528
1,3-Dichlorobenzene	541-73-1	16.4		5.28	1.06	0.528
1,4-Dichlorobenzene	106-46-7	16.5		5.28	1.06	0.528
Dichlorodifluoromethane	75-71-8	26.7		5.28	2.12	1.06
1,1-Dichloroethane	75-34-3	17.5		5.28	2.12	1.06
1,2-Dichloroethane	107-06-2	17.0		5.28	1.06	0.528
1,1-Dichloroethene	75-35-4	19.7		5.28	1.06	0.528
cis-1,2-Dichloroethene	156-59-2	19.1		5.28	1.06	0.528

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Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	20.5		5.28	1.06	0.528
1,2-Dichloropropane	78-87-5	18.8		5.28	1.06	0.528
1,3-Dichloropropane	142-28-9	18.3		5.28	1.06	0.528
2,2-Dichloropropane	594-20-7	19.4		5.28	1.06	0.528
cis-1,3-Dichloropropene	10061-01-5	18.5		5.28	1.06	0.528
trans-1,3-Dichloropropene	10061-02-6	16.5		5.28	1.06	0.528
1,1-Dichloropropene	563-58-6	19.3		5.28	1.06	0.528
Ethylbenzene	100-41-4	18.8		5.28	1.06	0.528
2-Hexanone	591-78-6	15.9		10.6	5.28	2.64
Hexachlorobutadiene	87-68-3	16.0		5.28	1.06	0.528
Isopropylbenzene	98-82-8	19.2		5.28	1.06	0.528
p-Isopropyltoluene	99-87-6	18.8		5.28	1.06	0.528
4-Methyl-2-pentanone	108-10-1	16.6		10.6	5.28	2.64
Methylene chloride	75-09-2	18.0		5.28	2.12	1.06
Naphthalene	91-20-3	13.7		5.28	1.06	0.528
n-Propylbenzene	103-65-1	19.7		5.28	1.06	0.528
Styrene	100-42-5	17.8		5.28	1.06	0.528
1,1,1,2-Tetrachloroethane	630-20-6	17.2		5.28	1.06	0.528
1,1,2,2-Tetrachloroethane	79-34-5	16.3		5.28	1.06	0.528
Tetrachloroethene	127-18-4	18.9		5.28	1.06	0.528
Toluene	108-88-3	19.1		5.28	1.06	0.528
1,2,3-Trichlorobenzene	87-61-6	13.6		5.28	1.06	0.528
1,2,4-Trichlorobenzene	120-82-1	14.0		5.28	1.06	0.528
1,1,1-Trichloroethane	71-55-6	18.4		5.28	1.06	0.528
1,1,2-Trichloroethane	79-00-5	17.4		5.28	1.06	0.528
Trichloroethene	79-01-6	18.9		5.28	1.06	0.528
Trichlorofluoromethane	75-69-4	19.6		5.28	2.12	1.06
1,2,3-Trichloropropane	96-18-4	17.9		5.28	2.12	1.06
1,2,4-Trimethylbenzene	95-63-6	17.5		5.28	1.06	0.528
1,3,5-Trimethylbenzene	108-67-8	18.8		5.28	1.06	0.528
Vinyl chloride	75-01-4	24.1		5.28	2.12	1.06
o-Xylene	95-47-6	19.2		5.28	1.06	0.528
m-,p-Xylene	179601-23-1	38.5		5.28	1.06	0.528

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	80	120	
1,2-Dichloroethane-d4	101	80	120	
Toluene-d8	106	85	115	
4-Bromofluorobenzene	113	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021306-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT05(15-15.5)250216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/28/2016 13:10
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559002	**Analyst:**	FJB	**Run Date:**	02/29/2016 00:57
Collect Date:	02/25/2016 09:50	**Dilution:**	1	**File ID:**	9M972961
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.6	U	25.2	12.6	6.30
Benzene	71-43-2	1.26	U	6.30	1.26	0.630
Bromobenzene	108-86-1	1.26	U	6.30	1.26	0.630
Bromochloromethane	74-97-5	2.52	U	6.30	2.52	1.26
Bromodichloromethane	75-27-4	1.26	U	6.30	1.26	0.630
Bromoform	75-25-2	1.26	U	6.30	1.26	0.630
Bromomethane	74-83-9	2.52	U	6.30	2.52	1.26
2-Butanone	78-93-3	6.30	U	12.6	6.30	3.15
n-Butylbenzene	104-51-8	1.26	U	6.30	1.26	0.630
sec-Butylbenzene	135-98-8	1.26	U	6.30	1.26	0.630
tert-Butylbenzene	98-06-6	1.26	U	6.30	1.26	0.630
Carbon disulfide	75-15-0	1.26	U	6.30	1.26	0.630
Carbon tetrachloride	56-23-5	1.26	U	6.30	1.26	0.630
Chlorobenzene	108-90-7	1.26	U	6.30	1.26	0.630
Chlorodibromomethane	124-48-1	1.26	U	6.30	1.26	0.630
Chloroethane	75-00-3	2.52	U	6.30	2.52	1.26
Chloroform	67-66-3	1.26	U	6.30	1.26	0.630
Chloromethane	74-87-3	5.04	U	12.6	5.04	2.52
2-Chlorotoluene	95-49-8	1.26	U	6.30	1.26	0.630
4-Chlorotoluene	106-43-4	1.26	U	6.30	1.26	0.630
1,2-Dibromo-3-chloropropane	96-12-8	5.04	U	12.6	5.04	2.52
1,2-Dibromoethane	106-93-4	1.26	U	6.30	1.26	0.630
Dibromomethane	74-95-3	1.26	U	6.30	1.26	0.630
1,2-Dichlorobenzene	95-50-1	1.26	U	6.30	1.26	0.630
1,3-Dichlorobenzene	541-73-1	1.26	U	6.30	1.26	0.630
1,4-Dichlorobenzene	106-46-7	1.26	U	6.30	1.26	0.630
Dichlorodifluoromethane	75-71-8	2.52	U	6.30	2.52	1.26
1,1-Dichloroethane	75-34-3	2.52	U	6.30	2.52	1.26
1,2-Dichloroethane	107-06-2	1.26	U	6.30	1.26	0.630
1,1-Dichloroethene	75-35-4	1.26	U	6.30	1.26	0.630
cis-1,2-Dichloroethene	156-59-2	1.26	U	6.30	1.26	0.630

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Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.26	U	6.30	1.26	0.630
1,2-Dichloropropane	78-87-5	1.26	U	6.30	1.26	0.630
1,3-Dichloropropane	142-28-9	1.26	U	6.30	1.26	0.630
2,2-Dichloropropane	594-20-7	1.26	U	6.30	1.26	0.630
cis-1,3-Dichloropropene	10061-01-5	1.26	U	6.30	1.26	0.630
trans-1,3-Dichloropropene	10061-02-6	1.26	U	6.30	1.26	0.630
1,1-Dichloropropene	563-58-6	1.26	U	6.30	1.26	0.630
Ethylbenzene	100-41-4	1.26	U	6.30	1.26	0.630
2-Hexanone	591-78-6	6.30	U	12.6	6.30	3.15
Hexachlorobutadiene	87-68-3	1.26	U	6.30	1.26	0.630
Isopropylbenzene	98-82-8	1.26	U	6.30	1.26	0.630
p-Isopropyltoluene	99-87-6	1.26	U	6.30	1.26	0.630
4-Methyl-2-pentanone	108-10-1	6.30	U	12.6	6.30	3.15
Methylene chloride	75-09-2	2.52	U	6.30	2.52	1.26
Naphthalene	91-20-3	1.26	U	6.30	1.26	0.630
n-Propylbenzene	103-65-1	1.26	U	6.30	1.26	0.630
Styrene	100-42-5	1.26	U	6.30	1.26	0.630
1,1,1,2-Tetrachloroethane	630-20-6	1.26	U	6.30	1.26	0.630
1,1,2,2-Tetrachloroethane	79-34-5	1.26	U	6.30	1.26	0.630
Tetrachloroethene	127-18-4	1.26	U	6.30	1.26	0.630
Toluene	108-88-3	1.26	U	6.30	1.26	0.630
1,2,3-Trichlorobenzene	87-61-6	1.26	U	6.30	1.26	0.630
1,2,4-Trichlorobenzene	120-82-1	1.26	U	6.30	1.26	0.630
1,1,1-Trichloroethane	71-55-6	1.26	U	6.30	1.26	0.630
1,1,2-Trichloroethane	79-00-5	1.26	U	6.30	1.26	0.630
Trichloroethene	79-01-6	1.26	U	6.30	1.26	0.630
Trichlorofluoromethane	75-69-4	2.52	U	6.30	2.52	1.26
1,2,3-Trichloropropane	96-18-4	2.52	U	6.30	2.52	1.26
1,2,4-Trimethylbenzene	95-63-6	1.26	U	6.30	1.26	0.630
1,3,5-Trimethylbenzene	108-67-8	1.26	U	6.30	1.26	0.630
Vinyl chloride	75-01-4	2.52	U	6.30	2.52	1.26
o-Xylene	95-47-6	1.26	U	6.30	1.26	0.630
m-,p-Xylene	179601-23-1	1.26	U	6.30	1.26	0.630

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.8	80	120	
1,2-Dichloroethane-d4	97.9	80	120	
Toluene-d8	107	85	115	
4-Bromofluorobenzene	117	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021306-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT05(20-20.5)250216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/28/2016 13:12
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559002	**Analyst:**	FJB	**Run Date:**	02/29/2016 01:29
Collect Date:	02/25/2016 09:45	**Dilution:**	1	**File ID:**	9M972962
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.2	U	24.5	12.2	6.12
Benzene	71-43-2	1.22	U	6.12	1.22	0.612
Bromobenzene	108-86-1	1.22	U	6.12	1.22	0.612
Bromochloromethane	74-97-5	2.44	U	6.12	2.44	1.22
Bromodichloromethane	75-27-4	1.22	U	6.12	1.22	0.612
Bromoform	75-25-2	1.22	U	6.12	1.22	0.612
Bromomethane	74-83-9	2.44	U	6.12	2.44	1.22
2-Butanone	78-93-3	6.12	U	12.2	6.12	3.06
n-Butylbenzene	104-51-8	1.22	U	6.12	1.22	0.612
sec-Butylbenzene	135-98-8	1.22	U	6.12	1.22	0.612
tert-Butylbenzene	98-06-6	1.22	U	6.12	1.22	0.612
Carbon disulfide	75-15-0	1.22	U	6.12	1.22	0.612
Carbon tetrachloride	56-23-5	1.22	U	6.12	1.22	0.612
Chlorobenzene	108-90-7	1.22	U	6.12	1.22	0.612
Chlorodibromomethane	124-48-1	1.22	U	6.12	1.22	0.612
Chloroethane	75-00-3	2.44	U	6.12	2.44	1.22
Chloroform	67-66-3	1.22	U	6.12	1.22	0.612
Chloromethane	74-87-3	4.90	U	12.2	4.90	2.45
2-Chlorotoluene	95-49-8	1.22	U	6.12	1.22	0.612
4-Chlorotoluene	106-43-4	1.22	U	6.12	1.22	0.612
1,2-Dibromo-3-chloropropane	96-12-8	4.90	U	12.2	4.90	2.45
1,2-Dibromoethane	106-93-4	1.22	U	6.12	1.22	0.612
Dibromomethane	74-95-3	1.22	U	6.12	1.22	0.612
1,2-Dichlorobenzene	95-50-1	1.22	U	6.12	1.22	0.612
1,3-Dichlorobenzene	541-73-1	1.22	U	6.12	1.22	0.612
1,4-Dichlorobenzene	106-46-7	1.22	U	6.12	1.22	0.612
Dichlorodifluoromethane	75-71-8	2.44	U	6.12	2.44	1.22
1,1-Dichloroethane	75-34-3	2.44	U	6.12	2.44	1.22
1,2-Dichloroethane	107-06-2	1.22	U	6.12	1.22	0.612
1,1-Dichloroethene	75-35-4	1.22	U	6.12	1.22	0.612
cis-1,2-Dichloroethene	156-59-2	1.22	U	6.12	1.22	0.612

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Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.22	U	6.12	1.22	0.612
1,2-Dichloropropane	78-87-5	1.22	U	6.12	1.22	0.612
1,3-Dichloropropane	142-28-9	1.22	U	6.12	1.22	0.612
2,2-Dichloropropane	594-20-7	1.22	U	6.12	1.22	0.612
cis-1,3-Dichloropropene	10061-01-5	1.22	U	6.12	1.22	0.612
trans-1,3-Dichloropropene	10061-02-6	1.22	U	6.12	1.22	0.612
1,1-Dichloropropene	563-58-6	1.22	U	6.12	1.22	0.612
Ethylbenzene	100-41-4	1.22	U	6.12	1.22	0.612
2-Hexanone	591-78-6	6.12	U	12.2	6.12	3.06
Hexachlorobutadiene	87-68-3	1.22	U	6.12	1.22	0.612
Isopropylbenzene	98-82-8	1.22	U	6.12	1.22	0.612
p-Isopropyltoluene	99-87-6	1.22	U	6.12	1.22	0.612
4-Methyl-2-pentanone	108-10-1	6.12	U	12.2	6.12	3.06
Methylene chloride	75-09-2	2.44	U	6.12	2.44	1.22
Naphthalene	91-20-3	1.22	U	6.12	1.22	0.612
n-Propylbenzene	103-65-1	1.22	U	6.12	1.22	0.612
Styrene	100-42-5	1.22	U	6.12	1.22	0.612
1,1,1,2-Tetrachloroethane	630-20-6	1.22	U	6.12	1.22	0.612
1,1,2,2-Tetrachloroethane	79-34-5	1.22	U	6.12	1.22	0.612
Tetrachloroethene	127-18-4	1.22	U	6.12	1.22	0.612
Toluene	108-88-3	1.22	U	6.12	1.22	0.612
1,2,3-Trichlorobenzene	87-61-6	1.22	U	6.12	1.22	0.612
1,2,4-Trichlorobenzene	120-82-1	1.22	U	6.12	1.22	0.612
1,1,1-Trichloroethane	71-55-6	1.22	U	6.12	1.22	0.612
1,1,2-Trichloroethane	79-00-5	1.22	U	6.12	1.22	0.612
Trichloroethene	79-01-6	1.17	J	6.12	1.22	0.612
Trichlorofluoromethane	75-69-4	2.44	U	6.12	2.44	1.22
1,2,3-Trichloropropane	96-18-4	2.44	U	6.12	2.44	1.22
1,2,4-Trimethylbenzene	95-63-6	1.22	U	6.12	1.22	0.612
1,3,5-Trimethylbenzene	108-67-8	1.22	U	6.12	1.22	0.612
Vinyl chloride	75-01-4	2.44	U	6.12	2.44	1.22
o-Xylene	95-47-6	1.22	U	6.12	1.22	0.612
m-,p-Xylene	179601-23-1	1.22	U	6.12	1.22	0.612

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.5	80	120	
1,2-Dichloroethane-d4	106	80	120	
Toluene-d8	104	85	115	
4-Bromofluorobenzene	107	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.
VOA Preparation/Preservation/Extraction Log

Batch #: WG559000
Analyst: AWE
Method: 5030B/5030C/5035
Run Date: 02/28/2016 13:09
Product: 8260
Purge and trap methanol COA18540
Purified Lab Sand Lot # COA18552

SAMPLE #	Fraction	Collected	Preserved	PCT-S	Tare Wt	Total Wt	Sample Wt	Water	MeOH	Vt	Comments
L16021306-01	A	02/25/16 09:30	02/28/16 13:09	666			4.73	5		5	
L16021306-02	A	02/25/16 09:40	02/28/16 13:09	666			4.75	5		5	
L16021306-03	A	02/25/16 09:40	02/28/16 13:09	666			5.35	5		5	
L16021306-04	A	02/25/16 09:40	02/28/16 13:10	666			5.38	5		5	
L16021306-05	A	02/25/16 09:50	02/28/16 13:10	666			4.66	5		5	
L16021306-06	A	02/25/16 09:45	02/28/16 13:12	666			5.11	5		5	

Comments:
1 = improperly sealed cap
2 = preserved out of hold
3 = effervesced
4 = preserved with NaHSO4
5 = preserved by freezing
6 = preserved in field

Analyst: Andrew Casey

VOA_EXT - Modified 05/22/2008
PDF ID: 4649669
Report generated: 02/28/2016 13:12

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 012516
Analyst1: ADC Analyst2: NA
Method: 8260B/8260C SOP: MSV01(-C) Rev: 23 (2)
Method: 5030B/5030C/5035 SOP: PAT01 Rev: 18
Method: 624 SOP: MSV10 Rev: 12
Maintenance Log ID:

Internal Standard: STD74414 Surrogate Standard: STD74126
CCV: STD74488 LCS: STD74459 MS/MSD: STD74459

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG555000 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M972470	WG555000-01 BFB 50ng A9	NA	7	1	STD74202	01/25/16 10:27
9M972471	RINSE	NA	7	1		01/25/16 10:52
9M972472	WG555000-02 5ug/Kg STD A9	NA	7	1	STD74406	01/25/16 11:22
9M972473	WG555000-03 20ug/Kg STD A9	NA	7	1	STD74406	01/25/16 11:52
9M972474	WG555000-04 50ug/Kg STD A9	NA	7	1	STD74406	01/25/16 12:23
9M972475	WG555000-05 100ug/Kg STD A9	NA	7	1	STD74406	01/25/16 12:53
9M972476	WG555000-06 200ug/Kg STD A9	NA	7	1	STD74406	01/25/16 13:23
9M972477	WG555000-07 300ug/Kg STD A9	NA	7	1	STD74406	01/25/16 13:54
9M972478	WG555000-08 400ug/Kg STD A9	NA	7	1	STD74406	01/25/16 14:25
9M972479	WG555000-09 500ug/Kg STD A9	NA	7	1	STD74406	01/25/16 14:56
9M972480	RINSE	NA	7	1		01/25/16 15:26
9M972481	WG555000-10 100ug/Kg ICV A9	NA	7	1	STD74461	01/25/16 15:56
9M972482	RINSE	NA	7	1		01/25/16 16:28

Approved: January 29, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 022516
Analyst1: ADC Analyst2: NA
Method: 8260 SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD74726 Surrogate Standard: STD74815
CCV: STD74488 LCS: STD74755 MS/MSD: STD74755

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG558732 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M972892	WG558732-01 BFB 50ng	NA	7	1	STD74773	02/25/16 14:26
9M972894	WG558732-01 BFB 50ng	NA	7	1	STD74773	02/25/16 14:45
9M972895	WG558732-02 50ug/L CCV 8260C	NA	7	1	STD74773	02/25/16 15:11
9M972896	WG558732-02 50ug/L CCV 8260C	NA	7	1	STD74773	02/25/16 15:48
9M972897	RINSE	NA	7	1		02/25/16 16:25
9M972898	WG558732-03 0.5ug/kg STD	NA	7	1	STD74773	02/25/16 16:55
9M972899	WG558732-04 1.0ug/kg STD	NA	7	1	STD74773	02/25/16 17:27
9M972900	WG558732-05 2.0ug/kg STD	NA	7	1	STD74773	02/25/16 17:57
9M972901	WG558732-06 5.0ug/kg STD	NA	7	1	STD74773	02/25/16 18:28
9M972902	WG558732-07 20.0ug/kg STD	NA	7	1	STD74773	02/25/16 18:59
9M972903	WG558732-08 100.0ug/kg STD	NA	7	1	STD74773	02/25/16 19:29
9M972904	WG558732-09 200.0ug/kg STD	NA	7	1	STD74773	02/25/16 20:00
9M972905	WG558732-10 300.0ug/kg STD	NA	7	1	STD74773	02/25/16 20:30
9M972906	RINSE	NA	7	1	STD74773	02/25/16 21:01
9M972907	WG558732-11 50.0ug/kg ALTSRC	NA	7	1	STD74755	02/25/16 21:31

Approved: February 29, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 022816
Analyst1: ADC Analyst2: NA
Method: 8260 SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD74726 Surrogate Standard: STD74815
CCV: STD74488 LCS: STD74755 MS/MSD: STD74755

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG559002

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M972942	WG559001-01 BFB 50ng 8260	NA	7	1	STD74606	02/28/16 15:15
9M972943	WG559001-02 50ug/Kg CCV 8260	NA	7	1	STD74773	02/28/16 15:39
9M972944	RINSE	NA	7	1		02/28/16 16:09
9M972945	WG559002-01 VBLK0228 BLANK 8260	NA	7	1		02/28/16 16:39
9M972946	WG559002-02 20ug/Kg LCS 8260	NA	7	1	STD74755	02/28/16 17:10
9M972947	L16021306-03 MS 8260 5.35g	NA	7	1	STD74755	02/28/16 17:41
9M972948	L16021306-04 MSD 8260 5.38g	NA	7	1	STD74755	02/28/16 18:12
9M972949	RINSE	NA	7	1		02/28/16 18:42
9M972950	L16020640-06 A 826-REF-BLK	NA	7	1		02/28/16 19:13
9M972951	L16020640-07 A 826-REF-BLK	NA	7	1		02/28/16 19:44
9M972952	L16020640-08 A 826-REF-BLK	NA	7	1		02/28/16 20:15
9M972953	L16020640-09 A 826-REF-BLK	NA	7	1		02/28/16 20:47
9M972954	L16021162-02 B 8260	NA	7	1		02/28/16 21:18
9M972955	L16021162-05 B 8260	NA	7	1		02/28/16 21:49
9M972956	L16021186-02 8260 4.57g	NA	7	1		02/28/16 22:21
9M972957	L16021236-01 8260 5.45g	NA	7	1		02/28/16 22:51
9M972958	L16021240-04 8260 4.59g	NA	7	1		02/28/16 23:22
9M972959	L16021306-01 8260 4.73g	NA	7	1		02/28/16 23:54
9M972960	L16021306-02 REF 8260 4.75g	NA	7	1		02/29/16 00:25
9M972961	L16021306-05 8260 4.66g	NA	7	1		02/29/16 00:57
9M972962	L16021306-06 8260 5.11g	NA	7	1		02/29/16 01:29
9M972963	L16021186-01 8260 0.98g	NA	7	1		02/29/16 02:00
9M972964	RINSE	NA	7	1		02/29/16 02:30
9M972965	RINSE	NA	7	1		02/29/16 03:01

Approved: February 29, 2016

Page: 1

Microbac Laboratories Inc.

Data Checklist

Date: 25-JAN-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 72995
Analytical Workgroups: WG555000

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
28-JAN-2016

Secondary Reviewer:
29-JAN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JAN-29-2016 16:00:23

Microbac Laboratories Inc.

Data Checklist

Date: 25-FEB-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 73547
Analytical Workgroups: WG558732

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
29-FEB-2016

Secondary Reviewer:
29-FEB-2016

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-29-2016 15:30:51

Microbac Laboratories Inc.

Data Checklist

Date: 28-FEB-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 73549
Analytical Workgroups: WG559002

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
29-FEB-2016

Secondary Reviewer:
29-FEB-2016

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-29-2016 15:49:00

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG559002

Login Number: L16021306

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18DPT05(4.5-5)250216	01	02/25/16					02/28/2016	3.2	14		02/28/16	3.6	14	
18DPT05(10-11)250216	02	02/25/16					02/28/2016	3.1	14		02/29/16	3.6	14	
18DPT05(10-11)250216 MS	03	02/25/16					02/28/2016	3.1	14		02/28/16	3.3	14	
18DPT05(10-11)250216 MS	04	02/25/16					02/28/2016	3.1	14		02/28/16	3.4	14	
18DPT05(15-15.5)250216	05	02/25/16					02/28/2016	3.1	14		02/29/16	3.6	14	
18DPT05(20-20.5)250216	06	02/25/16					02/28/2016	3.1	14		02/29/16	3.7	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4651854
Report generated 02/29/2016 16:46

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16021306
Instrument Id: HPMS9
Workgroup (AAB#): WG559002

Method: 8260
CAL ID: HPMS9-25-FEB-16
Matrix: Soil

Sample Number	Dilution	Tag	1	2	3	4
L16021306-01	1.00	01	95.6	97.9	112	107
L16021306-02	1.00	01	97.1	97.7	111	106
L16021306-03	1.00	01	95.7	100	114	107
L16021306-04	1.00	01	101	100	113	106
L16021306-05	1.00	01	97.9	98.8	117	107
L16021306-06	1.00	01	106	98.5	107	104
WG559002-01	1.00	01	104	102	113	111
WG559002-02	1.00	01	100	100	111	108

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	80	-	120
2 - Dibromofluoromethane	80	-	120
3 - 4-Bromofluorobenzene	85	-	120
4 - Toluene-d8	85	-	115

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4651863
Report generated: 02/29/2016 16:46

METHOD BLANK SUMMARY

Login Number: L16021306
Blank File ID: 9M972945
Prep Date: 02/28/16 16:39
Analyzed Date: 02/28/16 16:39
Analyst: FJB

Work Group: WG559002
Blank Sample ID: WG559002-01
Instrument ID: HPMS9
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG559002-02	9M972946	02/28/16 17:10	01
18DPT05(10-11)250216 MS	L16021306-03	9M972947	02/28/16 17:41	01
18DPT05(10-11)250216 MSD	L16021306-04	9M972948	02/28/16 18:12	01
18DPT05(4.5-5)250216	L16021306-01	9M972959	02/28/16 23:54	01
18DPT05(10-11)250216	L16021306-02	9M972960	02/29/16 00:25	01
18DPT05(15-15.5)250216	L16021306-05	9M972961	02/29/16 00:57	01
18DPT05(20-20.5)250216	L16021306-06	9M972962	02/29/16 01:29	01

Report Name: BLANK_SUMMARY
PDF File ID: 4651855
Report generated 02/29/2016 16:46

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16021306 Prep Date: 02/28/16 16:39 Sample ID: WG559002-01
Instrument ID: HPMS9 Run Date: 02/28/16 16:39 Prep Method: 5030B/5030C/503
File ID: 9M972945 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG559002 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-25-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	5.00	20.0	5.00	1	U
Benzene	0.500	5.00	0.500	1	U
Bromobenzene	0.500	5.00	0.500	1	U
Bromochloromethane	1.00	5.00	1.00	1	U
Bromodichloromethane	0.500	5.00	0.500	1	U
Bromoform	0.500	5.00	0.500	1	U
Bromomethane	1.00	5.00	1.00	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.500	5.00	0.500	1	U
sec-Butylbenzene	0.500	5.00	0.500	1	U
tert-Butylbenzene	0.500	5.00	0.500	1	U
Carbon disulfide	0.500	5.00	0.500	1	U
Carbon tetrachloride	0.500	5.00	0.500	1	U
Chlorobenzene	0.500	5.00	0.500	1	U
Chlorodibromomethane	0.500	5.00	0.500	1	U
Chloroethane	1.00	5.00	1.00	1	U
Chloroform	0.500	5.00	0.500	1	U
Chloromethane	2.00	10.0	2.00	1	U
2-Chlorotoluene	0.500	5.00	0.500	1	U
4-Chlorotoluene	0.500	5.00	0.500	1	U
1,2-Dibromo-3-chloropropane	2.00	10.0	2.00	1	U
1,2-Dibromoethane	0.500	5.00	0.500	1	U
Dibromomethane	0.500	5.00	0.500	1	U
1,2-Dichlorobenzene	0.500	5.00	0.500	1	U
1,3-Dichlorobenzene	0.500	5.00	0.500	1	U
1,4-Dichlorobenzene	0.500	5.00	0.500	1	U
Dichlorodifluoromethane	1.00	5.00	1.00	1	U
1,1-Dichloroethane	1.00	5.00	1.00	1	U
1,2-Dichloroethane	0.500	5.00	0.500	1	U
1,1-Dichloroethene	0.500	5.00	0.500	1	U
cis-1,2-Dichloroethene	0.500	5.00	0.500	1	U
trans-1,2-Dichloroethene	0.500	5.00	0.500	1	U
1,2-Dichloropropane	0.500	5.00	0.500	1	U
1,3-Dichloropropane	0.500	5.00	0.500	1	U
2,2-Dichloropropane	0.500	5.00	0.500	1	U
cis-1,3-Dichloropropene	0.500	5.00	0.500	1	U
trans-1,3-Dichloropropene	0.500	5.00	0.500	1	U
1,1-Dichloropropene	0.500	5.00	0.500	1	U
Ethylbenzene	0.500	5.00	0.500	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.500	5.00	0.500	1	U
Isopropylbenzene	0.500	5.00	0.500	1	U

Report Name: BLANK
PDF ID: 4651856
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Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16021306 Prep Date: 02/28/16 16:39 Sample ID: WG559002-01
Instrument ID: HPMS9 Run Date: 02/28/16 16:39 Prep Method: 5030B/5030C/503
File ID: 9M972945 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG559002 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-25-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.500	5.00	0.500	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	1.00	5.00	1.00	1	U
Naphthalene	0.500	5.00	0.500	1	U
n-Propylbenzene	0.500	5.00	0.500	1	U
Styrene	0.500	5.00	0.500	1	U
1,1,1,2-Tetrachloroethane	0.500	5.00	0.500	1	U
1,1,2,2-Tetrachloroethane	0.500	5.00	0.500	1	U
Tetrachloroethene	0.500	5.00	0.500	1	U
Toluene	0.500	5.00	0.500	1	U
1,2,3-Trichlorobenzene	0.500	5.00	0.500	1	U
1,2,4-Trichlorobenzene	0.500	5.00	0.500	1	U
1,1,1-Trichloroethane	0.500	5.00	0.500	1	U
1,1,2-Trichloroethane	0.500	5.00	0.500	1	U
Trichloroethene	0.500	5.00	0.500	1	U
Trichlorofluoromethane	1.00	5.00	1.00	1	U
1,2,3-Trichloropropane	1.00	5.00	1.00	1	U
1,2,4-Trimethylbenzene	0.500	5.00	0.500	1	U
1,3,5-Trimethylbenzene	0.500	5.00	0.500	1	U
Vinyl chloride	1.00	5.00	1.00	1	U
o-Xylene	0.500	5.00	0.500	1	U
m-,p-Xylene	0.500	5.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	102	80 - 120	PASS
1,2-Dichloroethane-d4	104	80 - 120	PASS
Toluene-d8	111	85 - 115	PASS
4-Bromofluorobenzene	113	85 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4651856
29-FEB-2016 16:46

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16021306 | Run Date: 02/28/2016 | Sample ID: WG559002-02
Instrument ID: HPMS9 | Run Time: 17:10 | Prep Method: 5030B/5030C/503
File ID: 9M972946 | Analyst: FJB | Method: 8260B
Workgroup (AAB#): WG559002 | Matrix: Soil | Units: ug/kg
QC Key: DOD4 | Lot#: STD74755 | Cal ID: HPMS9-25-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	20.1	101	20 - 160	
Benzene	20.0	21.9	110	75 - 125	
Bromobenzene	20.0	22.1	111	65 - 120	
Bromochloromethane	20.0	21.6	108	70 - 125	
Bromodichloromethane	20.0	20.8	104	70 - 130	
Bromoform	20.0	19.0	94.8	55 - 135	
Bromomethane	20.0	21.0	105	30 - 160	
2-Butanone	20.0	20.6	103	30 - 160	
n-Butylbenzene	20.0	20.6	103	65 - 140	
sec-Butylbenzene	20.0	22.2	111	65 - 130	
tert-Butylbenzene	20.0	23.1	116	65 - 130	
Carbon disulfide	20.0	19.5	97.6	45 - 160	
Carbon tetrachloride	20.0	19.9	99.4	65 - 135	
Chlorobenzene	20.0	22.7	114	75 - 125	
Chlorodibromomethane	20.0	20.6	103	65 - 130	
Chloroethane	20.0	22.5	112	40 - 155	
Chloroform	20.0	20.0	100	70 - 125	
Chloromethane	20.0	22.8	114	50 - 130	
2-Chlorotoluene	20.0	23.8	119	70 - 130	
4-Chlorotoluene	20.0	21.8	109	75 - 125	
1,2-Dibromo-3-chloropropane	20.0	20.7	104	40 - 135	
1,2-Dibromoethane	20.0	22.0	110	70 - 125	
Dibromomethane	20.0	20.6	103	75 - 130	
1,2-Dichlorobenzene	20.0	22.2	111	75 - 120	
1,3-Dichlorobenzene	20.0	21.3	107	70 - 125	
1,4-Dichlorobenzene	20.0	21.6	108	70 - 125	
Dichlorodifluoromethane	20.0	28.6	143	35 - 135	*
1,1-Dichloroethane	20.0	20.6	103	75 - 125	
1,2-Dichloroethane	20.0	21.9	109	70 - 135	
1,1-Dichloroethene	20.0	21.2	106	65 - 135	
cis-1,2-Dichloroethene	20.0	22.6	113	65 - 125	
trans-1,2-Dichloroethene	20.0	22.8	114	65 - 135	
1,2-Dichloropropane	20.0	23.2	116	70 - 120	
1,3-Dichloropropane	20.0	23.4	117	75 - 125	
2,2-Dichloropropane	20.0	21.6	108	65 - 135	
cis-1,3-Dichloropropene	20.0	23.1	115	70 - 125	
trans-1,3-Dichloropropene	20.0	22.2	111	65 - 125	
1,1-Dichloropropene	20.0	20.6	103	70 - 135	
Ethylbenzene	20.0	22.9	115	75 - 125	
2-Hexanone	20.0	21.9	109	45 - 145	
Hexachlorobutadiene	20.0	18.4	92.0	55 - 140	

LCS - Modified 03/06/2008
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Report generated: 02/29/2016 16:46

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16021306 Run Date: 02/28/2016 Sample ID: WG559002-02
Instrument ID: HPMS9 Run Time: 17:10 Prep Method: 5030B/5030C/503
File ID: 9M972946 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG559002 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD74755 Cal ID: HPMS9-25-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	22.6	113	75 - 130	
p-Isopropyltoluene	20.0	22.0	110	75 - 135	
4-Methyl-2-pentanone	20.0	22.0	110	45 - 145	
Methylene chloride	20.0	21.6	108	55 - 140	
Naphthalene	20.0	19.8	99.1	40 - 125	
n-Propylbenzene	20.0	23.3	116	65 - 135	
Styrene	20.0	22.7	113	75 - 125	
1,1,1,2-Tetrachloroethane	20.0	21.4	107	75 - 125	
1,1,2,2-Tetrachloroethane	20.0	21.5	107	55 - 130	
Tetrachloroethene	20.0	21.4	107	65 - 140	
Toluene	20.0	22.4	112	70 - 125	
1,2,3-Trichlorobenzene	20.0	20.3	102	60 - 135	
1,2,4-Trichlorobenzene	20.0	19.5	97.7	65 - 130	
1,1,1-Trichloroethane	20.0	20.7	103	70 - 135	
1,1,2-Trichloroethane	20.0	23.1	115	60 - 125	
Trichloroethene	20.0	22.1	111	75 - 125	
Trichlorofluoromethane	20.0	20.9	105	25 - 185	
1,2,3-Trichloropropane	20.0	23.5	117	65 - 130	
1,2,4-Trimethylbenzene	20.0	21.4	107	65 - 135	
1,3,5-Trimethylbenzene	20.0	23.1	115	65 - 135	
Vinyl chloride	20.0	23.8	119	60 - 125	
o-Xylene	20.0	23.2	116	75 - 125	
m-,p-Xylene	40.0	44.8	112	80 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	100	80 - 120	PASS
1,2-Dichloroethane-d4	100	80 - 120	PASS
Toluene-d8	108	85 - 115	PASS
4-Bromofluorobenzene	111	85 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
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Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16021306 Cal ID: HPMS9- 25-FEB-16 Worknum: WG559002

Instrument ID: HPMS9 Contract #: Prep Method: 5030B/5030C/

Parent ID: L16021306-02 File ID: 9M972960 Dil: 1 Method: 5035A

Sample ID: L16021306-03 MS File ID: 9M972947 Dil: 1 Matrix: 8260B

Sample ID: L16021306-04 MSD File ID: 9M972948 Dil: 1 Units: Soil

Percent Solid: ug/kg

88.0

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,1,1,2-Tetrachloroethane	U	21.2	22.4	106	21.1	17.2	81.4	26.4	75 - 125	30	
1,1,1-Trichloroethane	U	21.2	22.5	106	21.1	18.4	87.4	19.9	70 - 135	30	
1,1,2,2-Tetrachloroethane	U	21.2	22.7	107	21.1	16.3	77.1	32.7	55 - 130	30	#
1,1,2-Trichloroethane	U	21.2	22.5	106	21.1	17.4	82.3	25.8	60 - 125	30	
1,1-Dichloroethane	U	21.2	21.4	101	21.1	17.5	82.9	20.2	75 - 125	30	
1,1-Dichloroethene	U	21.2	21.9	103	21.1	19.7	93.2	10.9	65 - 135	30	
1,1-Dichloropropene	U	21.2	22.9	108	21.1	19.3	91.2	17.1	70 - 135	30	
1,2,3-Trichlorobenzene	U	21.2	21.0	98.8	21.1	13.6	64.3	42.8	60 - 135	30	#
1,2,3-Trichloropropane	U	21.2	23.1	109	21.1	17.9	84.7	25.5	65 - 130	30	
1,2,4-Trichlorobenzene	U	21.2	21.1	99.2	21.1	14.0	66.5	40.0	65 - 130	30	#
1,2,4-Trimethylbenzene	U	21.2	24.0	113	21.1	17.5	82.8	31.5	65 - 135	30	#
1,2-Dibromo-3-chloropropane	U	21.2	20.8	97.8	21.1	15.2	71.9	31.1	40 - 135	30	#
1,2-Dibromoethane	U	21.2	21.7	102	21.1	16.2	76.6	29.4	70 - 125	30	
1,2-Dichlorobenzene	U	21.2	23.1	109	21.1	16.7	79.2	31.9	75 - 120	30	#
1,2-Dichloroethane	U	21.2	21.5	101	21.1	17.0	80.4	23.6	70 - 135	30	
1,2-Dichloropropane	U	21.2	24.0	113	21.1	18.8	89.2	24.0	70 - 120	30	
1,3,5-Trimethylbenzene	U	21.2	25.2	119	21.1	18.8	89.1	29.2	65 - 135	30	
1,3-Dichlorobenzene	U	21.2	22.6	106	21.1	16.4	77.8	31.6	70 - 125	30	#
1,3-Dichloropropane	U	21.2	23.5	111	21.1	18.3	86.8	24.8	75 - 125	30	
1,4-Dichlorobenzene	U	21.2	22.9	108	21.1	16.5	78.1	32.6	70 - 125	30	#
2,2-Dichloropropane	U	21.2	23.2	109	21.1	19.4	91.7	17.8	65 - 135	30	
2-Butanone	U	21.2	18.9	88.8	21.1	16.3	77	14.9	30 - 160	30	
2-Chlorotoluene	U	21.2	25.8	122	21.1	18.4	87.1	33.7	70 - 130	30	#
2-Hexanone	U	21.2	19.9	93.5	21.1	15.9	75.1	22.3	45 - 145	30	
4-Chlorotoluene	U	21.2	24.0	113	21.1	18.8	89	24.5	75 - 125	30	
4-Methyl-2-pentanone	U	21.2	20.2	95.2	21.1	16.6	78.5	19.8	45 - 145	30	
Acetone	U	21.2	20.4	96.2	21.1	18.5	87.5	9.97	20 - 160	30	
Benzene	U	21.2	23.2	109	21.1	18.9	89.3	20.4	75 - 125	30	
Bromobenzene	U	21.2	23.6	111	21.1	16.8	79.7	33.4	65 - 120	30	#
Bromochloromethane	U	21.2	22.0	103	21.1	17.4	82.5	23.1	70 - 125	30	
Bromodichloromethane	U	21.2	21.3	100	21.1	16.4	77.5	26.2	70 - 130	30	
Bromoform	U	21.2	18.0	84.8	21.1	14.4	68.2	22.2	55 - 135	30	
Bromomethane	U	21.2	22.8	108	21.1	17.8	84.5	24.6	30 - 160	30	
Carbon disulfide	U	21.2	20.5	96.6	21.1	16.5	78	21.9	45 - 160	30	
Carbon tetrachloride	U	21.2	21.9	103	21.1	17.7	83.8	21.3	65 - 135	30	
Chlorobenzene	U	21.2	23.9	112	21.1	18.5	87.8	25.0	75 - 125	30	
Chloroethane	U	21.2	24.0	113	21.1	19.7	93.2	19.9	40 - 155	30	
Chloroform	U	21.2	22.1	104	21.1	17.6	83.1	22.8	70 - 125	30	
Chloromethane	U	21.2	24.4	115	21.1	19.9	94.2	20.1	50 - 130	30	
cis-1,2-Dichloroethene	U	21.2	24.2	114	21.1	19.1	90.4	23.8	65 - 125	30	
cis-1,3-Dichloropropene	U	21.2	23.4	110	21.1	18.5	87.6	23.3	70 - 125	30	

MS_MSD - Modified 03/06/2008
PDF File ID: 4651858
Report generated 02/29/2016 16:46

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16021306 Cal ID: HPMS9 25-FEB-16 Worknum: WG559002

Instrument ID: HPMS9 Contract #: Prep Method: 5030B/5030C/

Parent ID: L16021306-02 File ID: 9M972960 Dil: 1 Method: 5035A

Sample ID: L16021306-03 MS File ID: 9M972947 Dil: 1 Matrix: 8260B

Sample ID: L16021306-04 MSD File ID: 9M972948 Dil: 1 Units: Soil

Percent Solid: ug/kg

88.0

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chlorodibromomethane	U	21.2	20.6	96.9	21.1	15.3	72.7	29.2	65 - 130	30	
Dibromomethane	U	21.2	20.2	95.2	21.1	16.0	76	23.0	75 - 130	30	
Dichlorodifluoromethane	U	21.2	31.3	147	21.1	26.7	127	15.6	35 - 135	30	*
Ethylbenzene	U	21.2	24.4	115	21.1	18.8	88.9	26.2	75 - 125	30	
Hexachlorobutadiene	U	21.2	22.4	106	21.1	16.0	75.5	33.7	55 - 140	30	#
Isopropylbenzene	U	21.2	24.3	115	21.1	19.2	90.9	23.7	75 - 130	30	
m-,p-Xylene	U	42.5	48.6	114	42.2	38.5	91.2	23.2	80 - 125	30	
Methylene chloride	U	21.2	22.8	107	21.1	18.0	85.4	23.3	55 - 140	30	
n-Butylbenzene	U	21.2	24.1	114	21.1	17.2	81.4	33.6	65 - 140	30	#
n-Propylbenzene	U	21.2	26.4	124	21.1	19.7	93.5	28.9	65 - 135	30	
Naphthalene	U	21.2	19.8	93.2	21.1	13.7	65	36.2	40 - 125	30	#
o-Xylene	U	21.2	24.3	114	21.1	19.2	90.9	23.3	75 - 125	30	
p-Isopropyltoluene	U	21.2	25.0	118	21.1	18.8	88.9	28.4	75 - 135	30	
sec-Butylbenzene	U	21.2	25.5	120	21.1	19.7	93.2	25.8	65 - 130	30	
Styrene	U	21.2	23.4	110	21.1	17.8	84.1	27.5	75 - 125	30	
tert-Butylbenzene	U	21.2	26.6	125	21.1	20.4	96.4	26.6	65 - 130	30	
Tetrachloroethene	U	21.2	24.0	113	21.1	18.9	89.5	23.7	65 - 140	30	
Toluene	U	21.2	23.9	113	21.1	19.1	90.4	22.5	70 - 125	30	
trans-1,2-Dichloroethene	U	21.2	24.0	113	21.1	20.5	97.3	15.7	65 - 135	30	
trans-1,3-Dichloropropene	U	21.2	22.3	105	21.1	16.5	77.9	30.2	65 - 125	30	#
Trichloroethene	U	21.2	23.2	109	21.1	18.9	89.3	20.5	75 - 125	30	
Trichlorofluoromethane	U	21.2	22.5	106	21.1	19.6	92.7	14.1	25 - 185	30	
Vinyl chloride	U	21.2	27.5	130	21.1	24.1	114	13.4	60 - 125	30	*

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4651858
Report generated 02/29/2016 16:46

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16021306
Instrument: HPMS9
Analyst: FJB
Workgroup: WG555000

Tune ID: WG555000-01
Run Date: 01/25/2016
Run Time: 10:27
File ID: 9M972470
Cal ID: HPMS9 - 25-JAN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	23.0	10289	PASS
75.0	95.0	30.0	60.0	49.3	22030	PASS
95.0	95.0	100	100	100	44728	PASS
96.0	95.0	5.00	9.00	6.98	3122	PASS
173	174	0	2.00	0.381	160	PASS
174	95.0	50.0	100	93.9	41989	PASS
175	174	5.00	9.00	6.62	2778	PASS
176	174	95.0	101	95.6	40133	PASS
177	176	5.00	9.00	6.39	2564	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG555000-02	STD-S	01	01/25/2016 11:22	
WG555000-03	STD-S	01	01/25/2016 11:52	
WG555000-04	STD-S	01	01/25/2016 12:23	
WG555000-05	STD-CCV-S	01	01/25/2016 12:53	
WG555000-06	STD-S	01	01/25/2016 13:23	
WG555000-07	STD-S	01	01/25/2016 13:54	
WG555000-08	STD-S	01	01/25/2016 14:25	
WG555000-09	STD-S	01	01/25/2016 14:56	
WG555000-10	SSCV-S	01	01/25/2016 15:56	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4651860
Report generated 02/29/2016 16:46

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16021306
Instrument: HPMS9
Analyst: ADC
Workgroup: WG558732

Tune ID: WG558732-01
Run Date: 02/25/2016
Run Time: 14:45
File ID: 9M972894
Cal ID: HPMS9 - 25-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.2	5378	PASS
75.0	95.0	30.0	60.0	49.1	13067	PASS
95.0	95.0	100	100	100	26621	PASS
96.0	95.0	5.00	9.00	6.32	1683	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	85.8	22851	PASS
175	174	5.00	9.00	6.50	1485	PASS
176	174	95.0	101	98.3	22461	PASS
177	176	5.00	9.00	7.21	1619	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG558732-02	STD-CCV-S	01	02/25/2016 15:48	
WG558732-03	STD-S	01	02/25/2016 16:55	
WG558732-04	STD-S	01	02/25/2016 17:27	
WG558732-05	STD-S	01	02/25/2016 17:57	
WG558732-06	STD-S	01	02/25/2016 18:28	
WG558732-07	STD-S	01	02/25/2016 18:59	
WG558732-08	STD-S	01	02/25/2016 19:29	
WG558732-09	STD-S	01	02/25/2016 20:00	
WG558732-10	STD-S	01	02/25/2016 20:30	
WG558732-11	SSCV-S	01	02/25/2016 21:31	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4651860
Report generated 02/29/2016 16:46

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16021306
Instrument: HPMS9
Analyst: FJB
Workgroup: WG559001

Tune ID: WG559001-01
Run Date: 02/28/2016
Run Time: 15:15
File ID: 9M972942
Cal ID: HPMS9 - 25-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.8	9950	PASS
75.0	95.0	30.0	60.0	48.0	22972	PASS
95.0	95.0	100	100	100	47813	PASS
96.0	95.0	5.00	9.00	6.60	3156	PASS
173	174	0	2.00	0.277	115	PASS
174	95.0	50.0	100	86.9	41573	PASS
175	174	5.00	9.00	6.30	2621	PASS
176	174	95.0	101	95.5	39704	PASS
177	176	5.00	9.00	6.04	2399	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG559001-02	CCV-S	01	02/28/2016 15:39	
WG559002-01	BLANK	01	02/28/2016 16:39	
WG559002-02	LCS	01	02/28/2016 17:10	
L16021306-03	18DPT05(10-11)250216 MS	01	02/28/2016 17:41	
L16021306-04	18DPT05(10-11)250216 MSD	01	02/28/2016 18:12	
L16021306-01	18DPT05(4.5-5)250216	01	02/28/2016 23:54	
L16021306-02	18DPT05(10-11)250216	01	02/29/2016 00:25	
L16021306-05	18DPT05(15-15.5)250216	01	02/29/2016 00:57	
L16021306-06	18DPT05(20-20.5)250216	01	02/29/2016 01:29	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4651860
Report generated 02/29/2016 16:46

Calibration Table Report
Method: A9FOO_SL.M
Title: FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Calibration: Wed Jan 27 09:49:02 2016
Curve: WG555000
Calibration Files

Compound	5 9M972472.D	20 9M972473.D	50 9M972474.D	100 9M972475.D	200 9M972476.D	300 9M972477.D	400 9M972478.D	500 9M972479.D	Avg	%RSD	R^2 Linear
Fluorobenzene	ISTD										
Acetonitrile		0.053	0.046	0.048	0.052	0.046	0.052	0.054	0.050	6.657	
3-Chloro-1-propene	0.498	0.524	0.450	0.519	0.514	0.434	0.507	0.503	0.494	6.719	
2-Chloro-1,3-butadiene	0.534	0.576	0.519	0.592	0.585	0.509	0.593	0.584	0.561	6.202	
Ethyl Acetate		0.333	0.313	0.339	0.338	0.300	0.341	0.344	0.330	5.124	
Methacrylonitrile	0.102	0.109	0.101	0.112	0.110	0.096	0.112	0.112	0.107	5.912	
Isobutyl Alcohol	0.014	0.018	0.018	0.021	0.024	0.021	0.025	0.025	0.021	18.016	0.993
1-Butanol		0.010	0.013	0.015	0.017	0.015	0.018	0.018	0.015	17.838	0.992
Methyl methacrylate	0.236	0.246	0.231	0.265	0.265	0.231	0.271	0.269	0.252	7.005	
2-Nitropropane	0.069	0.073	0.074	0.083	0.089	0.079	0.093	0.095	0.082	12.090	
Chlorobenzene-d5	ISTD										
Cyclohexanone		0.020	0.022	0.025	0.028	0.023	0.027	0.028	0.025	12.963	
1,4-Dichlorobenzene-d4	ISTD										

Wed Jan 27 10:01:56 2016

Calibration Table Report
Method: 8260SL.M
Title: 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Calibration: Fri Feb 26 11:38:33 2016
Curve: WG558732
Calibration Files

Compound	0.5 9M972898.D	1 9M972899.D	2 9M972900.D	5 9M972901.D	20 9M972902.D	50 9M972896.D	100 9M972903.D	200 9M972904.D	300 9M972905.D	Avg	%RSD	R^2 Linear	Quadratic
Fluorobenzene	ISTD												
Dichlorodifluoromethane			0.338	0.271	0.399	0.396	0.318	0.357	0.307	0.341	13.734		
Chloromethane			0.372	0.280	0.331	0.361	0.296	0.346	0.304	0.327	10.674		
Vinyl Chloride		0.250	0.318	0.314	0.373	0.372	0.342	0.355	0.296	0.327	12.768		
1,3-Butadiene			0.347	0.266	0.328	0.330	0.297	0.321	0.293	0.312	8.837		
Bromomethane		0.236	0.267	0.181	0.206	0.208	0.186	0.217	0.199	0.213	13.250		
Chloroethane			0.127	0.116	0.142	0.165	0.139	0.173	0.160	0.146	14.271		
Trichlorofluoromethane		0.519	0.518	0.416	0.503	0.514	0.470	0.517	0.473	0.491	7.357		
Diethyl ether		0.215	0.246	0.217	0.243	0.241	0.214		0.231	0.230	6.215		
Isoprene			0.302	0.251	0.303	0.302	0.282	0.318	0.295	0.293	7.364		
Acrolein		0.041	0.046	0.045	0.046	0.048	0.046		0.050	0.046	6.212		
1,1,2-Trichloro-1,2,2-Trifluoroethane			0.252	0.234	0.255	0.261	0.248	0.273	0.251	0.253	4.699		
Acetone				0.179	0.138	0.128	0.119	0.124		0.138	17.810	0.999	
1,1-Dichloroethene		0.464	0.511	0.400	0.482	0.471	0.454	0.500	0.456	0.467	7.277		
Tert-Butyl Alcohol			0.057	0.046	0.055	0.051	0.047			0.051	8.698		
Dimethyl Sulfide		0.150	0.203	0.186	0.207	0.211	0.196	0.224	0.203	0.197	11.169		
Iodomethane				0.076	0.109	0.154	0.126	0.157	0.142	0.127	24.315	0.993	
Methyl acetate			0.282	0.223	0.279	0.262	0.240	0.258	0.234	0.254	8.867		
Methylene Chloride			0.271	0.217	0.263	0.261	0.240	0.280	0.249	0.254	8.252		
Carbon Disulfide			0.795	0.626	0.740	0.737	0.678	0.761	0.702	0.720	7.788		
Acrylonitrile		0.117	0.127	0.114	0.130	0.135	0.123		0.134	0.126	6.412		
Methyl Tert Butyl Ether		0.669	0.722	0.642	0.760	0.786	0.713	0.788	0.718	0.725	7.239		
trans-1,2-Dichloroethene		0.400	0.422	0.377	0.430	0.438	0.407	0.446	0.412	0.416	5.376		
n-Hexane			0.456	0.385	0.420	0.424	0.429	0.464	0.428	0.430	5.986		
Diisopropyl ether		0.938	1.068	0.928	1.071	1.051	0.931		0.995	0.998	6.627		
Vinyl Acetate			0.593	0.519	0.545	0.602	0.554	0.608	0.558	0.569	5.855		
1,1-Dichloroethane		0.548	0.558	0.445	0.532	0.549	0.499	0.553	0.500	0.523	7.454		
Ethyl-Tert-Butyl ether		0.871	0.992	0.852	0.990	0.988	0.865		0.934	0.928	6.918		
2-Butanone			0.177	0.152	0.156	0.166	0.156	0.172	0.149	0.161	6.650		
Propionitrile		0.042	0.055	0.048	0.053	0.051	0.048		0.049	0.049	8.494		
2,2-Dichloropropane			0.428	0.330	0.377	0.415	0.383	0.417	0.383	0.390	8.575		
cis-1,2-Dichloroethene		0.247	0.257	0.248	0.287	0.297	0.273	0.299	0.277	0.273	7.647		
Chloroform		0.473	0.530	0.432	0.482	0.509	0.459	0.505	0.454	0.480	6.746		
1-Bromopropane			0.011	0.041	0.042	0.043	0.040	0.045	0.041	0.038	31.434	0.997	
Bromochloromethane		0.131	0.173	0.169	0.194	0.199	0.179	0.197	0.178	0.177	12.275		
Tetrahydrofuran			0.111	0.099	0.110	0.110	0.097		0.097	0.104	6.802		
Dibromofluoromethane				0.267	0.243	0.286	0.286	0.274		0.271	6.547		
1,1,1-Trichloroethane		0.426	0.436	0.385	0.438	0.470	0.425	0.470	0.427	0.434	6.319		
Cyclohexane		0.465	0.495	0.425	0.494	0.478	0.465	0.503	0.464	0.474	5.302		
1,1-Dichloropropene		0.353	0.359	0.300	0.344	0.352	0.333	0.360	0.335	0.342	5.748		
Tert-Amyl-Methyl ether		0.631	0.709	0.631	0.716	0.716	0.632		0.684	0.674	6.133		
Carbon Tetrachloride			0.41939	0.34041	0.40512	0.42742	0.39181	0.43819	0.39737	0.40282	7.96886		
1,2-Dichloroethane-d4				0.34995	0.30686	0.35494	0.35835	0.33017		0.34005	6.33015		
Heptane										0	0		
1,2-Dichloroethane		0.36551	0.44947	0.39601	0.44224	0.45938	0.41291	0.4496	0.40581	0.42262	7.76179		
Benzene	1.14079	0.92872	1.03015	0.83328	0.97121	0.9721	0.88431	0.97127	0.88279	0.95718	9.53654		
Trichloroethene		0.30364	0.32158	0.26212	0.31219	0.31666	0.29597	0.321	0.29314	0.30329	6.54492		
Methylcyclohexane		0.31249	0.39837	0.32203	0.40419	0.39506	0.39323	0.42525	0.39247	0.38039	10.6291		
1,2-Dichloropropane		0.23004	0.27101	0.24016	0.27676	0.28593	0.2555	0.28277	0.26062	0.26285	7.66268		
1,4-Dioxane			0.0041	0.00361	0.00449	0.00376	0.00356		0.00414	0.00394	9.17892		
Bromodichloromethane			0.37851	0.33087	0.3725	0.39384	0.35929	0.397	0.36103	0.37044	6.13725		
Dibromomethane		0.15103	0.18915	0.16523	0.1825	0.18519	0.16707	0.1849	0.1682	0.17416	7.61692		
2-Chloroethyl Vinyl Ether				0.04535	0.05625	0.07439	0.06667	0.08013	0.07633	0.06652	20.1377	0.996	
4-Methyl-2-Pentanone				0.08933	0.11327	0.12554	0.11786	0.12977	0.11644	0.11537	12.2612		
cis-1,3-Dichloropropene			0.37321	0.33699	0.39477	0.41098	0.38072	0.42291	0.38195	0.38594	7.23123		
Dimethyl Disulfide			0.30882	0.3269	0.39409	0.4245	0.40234	0.4579	0.40032	0.38784	13.5683		
Chlorobenzene-d5	ISTD												
Toluene-d8				1.21266	1.14503	1.34974	1.34798	1.26813		1.26471	6.98417		
Toluene	1.57001	1.40445	1.51648	1.23448	1.46732	1.48749	1.3712	1.4823	1.3236	1.42859	7.34792		
Ethyl Methacrylate				0.31749	0.4112	0.4195	0.39758	0.44016	0.38999	0.39599	10.6751		
trans-1,3-Dichloropropene			0.50304	0.44978	0.5157	0.56049	0.50648	0.56248	0.50379	0.51454	7.49294		
1,1,2-Trichloroethane		0.27692	0.29584	0.27194	0.31787	0.32454	0.3	0.32173	0.292	0.3001	6.65768		
2-Hexanone				0.26013	0.28088	0.31451	0.30524	0.34734	0.28972	0.29964	10.056		
1,3-Dichloropropane		0.46617	0.55761	0.45639	0.51068	0.53187	0.47698	0.53043	0.47034	0.50006	7.49429		
Tetrachloroethene		0.33351	0.31568	0.26327	0.31051	0.30894	0.30156	0.32634	0.29026	0.30626	7.18201		
Dibromochloromethane			0.45014	0.36113	0.41394	0.44566	0.40515	0.45572	0.40415	0.41941	8.03547		
1,2-Dibromoethane				0.31086	0.34005	0.35035	0.32626	0.35324	0.31647	0.33287	5.32182		
1-Chlorohexane		0.39643	0.40929	0.33097	0.45098	0.44465	0.43807	0.477	0.42289	0.42128	10.5148		
Chlorobenzene		1.02904	1.08596	0.91908	1.05295	1.05625	0.95434	1.02465	0.91009	1.00405	6.67004		
1,1,1,2-Tetrachloroethane			0.37536	0.32525	0.38767	0.40783	0.37127	0.40937	0.36265	0.37706	7.67975		
Ethylbenzene	0.5157	0.51658	0.53164	0.45493	0.54391	0.54636	0.50916	0.54884	0.48836	0.51728	5.93862		
m-,p-Xylene	0.67213	0.61926	0.69794	0.58569	0.67162	0.65634	0.61182	0.65803	0.57657	0.63882	6.58722		
o-Xylene	0.61273	0.56415	0.61379	0.55512	0.6465	0.65334	0.60899	0.67127	0.59158	0.61305	6.41073		
Styrene		0.95813	1.06028	0.90308	1.08018	1.12326	1.04689	1.15897	1.02088	1.04396	8.002		
Bromoform			0.22872	0.23892	0.27832	0.30617	0.27263	0.32232	0.28054	0.27538	12.1348		
Isopropylbenzene		1.53891	1.69742	1.42189	1.74341	1.73716	1.64433	1.81019	1.57289	1.64577	7.76922		
1,4-Dichlorobenzene-d4	ISTD												
1,1,2,2-Tetrachloroethane		0.61571	0.83634	0.73739	0.79769	0.80854	0.74616	0.78083	0.74513	0.75847	8.88143		
p-Bromofluorobenzene				0.91653	0.87561	1.04735	1.0775	0.95104		0.97361	8.83571		
1,2,3-Trichloropropane		0.24645	0.29476	0.28329	0.29208	0.30442	0.29453	0.30315	0.28248	0.28764	6.41284		

trans-1,4-Dichloro-2-Butene		0.22501	0.23725	0.31415	0.3034	0.3105	0.33164	0.30766	0.28994	14.2446
n-Propylbenzene	3.98718	4.09811	3.61454	4.21971	4.10826	3.88939	3.82307	3.70205	3.93029	5.36989
Bromobenzene	0.84385	1.11565	0.86076	0.97118	0.9688	0.89248	0.89548	0.87446	0.92783	9.59949
1,3,5-Trimethylbenzene			2.76735	3.16086	3.10843	2.93606	2.91239	2.81635	2.95024	5.30322
2-Chlorotoluene		2.99265	2.31448	2.81057	2.64897	2.50142	2.61378	2.57101	2.63612	8.25378
4-Chlorotoluene	2.56339	2.5861	2.29006	2.55177	2.63031	2.41864	2.2799	2.17747	2.4372	6.98222
a-Methylstyrene			1.12025	1.41688	1.39756	1.35572	1.41986	1.35543	1.34428	8.43365
tert-Butylbenzene			0.56026	0.65003	0.66483	0.62531	0.61977	0.59094	0.61853	6.19423
1,2,4-Trimethylbenzene	3.41485	3.20381	2.86379	3.24429	3.17284	3.0014	2.96997	2.8463	3.08966	6.49589
sec-Butylbenzene	3.92127	3.95846	3.39254	3.98281	3.96896	3.8029	3.77812	3.59297	3.79976	5.54855
p-Isopropyltoluene			2.97918	3.35219	3.3501	3.24235	3.24339	3.07285	3.20668	4.70949
1,3-Dichlorobenzene	2.09668	2.18083	1.63464	1.82169	1.84149	1.71899	1.77783	1.67989	1.84401	10.6223
1,4-Dichlorobenzene	2.13498	2.06617	1.68605	1.85221	1.83159	1.72549	1.79434	1.65691	1.84347	9.41157
n-Butylbenzene	3.12981	3.1425	2.56827	2.96652	3.08072	3.01911	3.06733	2.87744	2.98146	6.31771
1,2-Dichlorobenzene	1.80685	1.84212	1.52596	1.70901	1.74915	1.66133	1.78603	1.60751	1.71099	6.28256
1,2-Dibromo-3-Chloropropane			0.17584	0.21007	0.23479	0.23723	0.24208	0.21787	0.21965	11.2549
1,2,4-Trichlorobenzene	1.3714	1.33063	1.02655	1.15029	1.2163	1.24479	1.25089	1.12609	1.21462	9.21088
Hexachlorobutadiene	0.57233	0.7279	0.53741	0.61674	0.64289	0.67353	0.72181	0.62948	0.64026	10.4449
Naphthalene		3.19632	2.63671	3.04494	3.29135	3.2233	3.14196	2.79099	3.04651	7.99534
1,2,3-Trichlorobenzene	1.32324	1.26566	0.99788	1.12352	1.21351	1.21702	1.20507	1.0788	1.17809	8.93408

Fri Feb 26 11:40:14 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16021306 Run Date: 02/25/2016 Sample ID: WG558732-11
Instrument ID: HPMS9 Run Time: 21:31 Method: 8260B
File ID: 9M972907 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG558732 Cal ID: HPMS9 - 25-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	48.0	ug/kg	0.461	4.00	20	
1,1-Dichloroethene	CCC	50.0	48.6	ug/kg	0.454	2.90	20	
1,2-Dichloropropane	CCC	50.0	52.3	ug/kg	0.275	4.60	20	
Ethylbenzene	CCC	50.0	51.3	ug/kg	0.531	2.60	20	
Toluene	CCC	50.0	50.7	ug/kg	1.45	1.50	20	
Vinyl Chloride	CCC	50.0	59.8	ug/kg	0.392	19.7	20	
Bromoform	SPCC	50.0	47.3	ug/kg	0.261	5.40	20	
Chlorobenzene	SPCC	50.0	51.2	ug/kg	1.03	2.40	20	
Chloromethane	SPCC	50.0	52.7	ug/kg	0.345	5.40	20	
1,1-Dichloroethane	SPCC	50.0	46.4	ug/kg	0.485	7.20	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	52.0	ug/kg	0.789	4.00	20	
Acetone		50.0	43.9	ug/kg	0.112	12.2	20	
Benzene		50.0	49.0	ug/kg	0.937	2.10	20	
Bromobenzene		50.0	52.2	ug/kg	0.968	4.40	20	
Bromochloromethane		50.0	51.5	ug/kg	0.183	3.00	20	
Bromodichloromethane		50.0	47.6	ug/kg	0.352	4.90	20	
Bromomethane		50.0	49.0	ug/kg	0.208	2.10	20	
2-Butanone		50.0	47.4	ug/kg	0.153	5.20	20	
n-Butylbenzene		50.0	52.5	ug/kg	3.13	4.90	20	
sec-Butylbenzene		50.0	54.7	ug/kg	4.16	9.50	20	
tert-Butylbenzene		50.0	55.4	ug/kg	0.685	10.8	20	
Carbon Disulfide		50.0	44.1	ug/kg	0.635	11.7	20	
Carbon Tetrachloride		50.0	46.5	ug/kg	0.375	7.00	20	
Dibromochloromethane		50.0	48.5	ug/kg	0.407	3.10	20	
Chloroethane		50.0	54.2	ug/kg	0.158	8.30	20	
2-Chlorotoluene		50.0	54.2	ug/kg	2.86	8.40	20	
4-Chlorotoluene		50.0	53.0	ug/kg	2.59	6.10	20	
1,2-Dibromo-3-Chloropropane		50.0	54.5	ug/kg	0.239	8.90	20	
1,2-Dibromoethane		50.0	50.8	ug/kg	0.338	1.50	20	
Dibromomethane		50.0	47.0	ug/kg	0.164	6.10	20	
1,2-Dichlorobenzene		50.0	52.7	ug/kg	1.81	5.50	20	
1,3-Dichlorobenzene		50.0	50.8	ug/kg	1.87	1.60	20	
1,4-Dichlorobenzene		50.0	51.1	ug/kg	1.88	2.20	20	
Dichlorodifluoromethane		50.0	63.4	ug/kg	0.432	26.7	20	*
1,2-Dichloroethane		50.0	49.2	ug/kg	0.416	1.60	20	
cis-1,2-Dichloroethene		50.0	52.6	ug/kg	0.287	5.20	20	
trans-1,2-Dichloroethene		50.0	50.6	ug/kg	0.422	1.20	20	
1,3-Dichloropropane		50.0	53.8	ug/kg	0.538	7.60	20	
2,2-Dichloropropane		50.0	47.1	ug/kg	0.368	5.90	20	
cis-1,3-Dichloropropene		50.0	53.2	ug/kg	0.411	6.40	20	
trans-1,3-Dichloropropene		50.0	50.0	ug/kg	0.515	0.100	20	
1,1-Dichloropropene		50.0	48.5	ug/kg	0.332	2.90	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4651859
Report generated 02/29/2016 16:46

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16021306 Run Date: 02/25/2016 Sample ID: WG558732-11
Instrument ID: HPMS9 Run Time: 21:31 Method: 8260B
File ID: 9M972907 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG558732 Cal ID: HPMS9 - 25-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	48.2	ug/kg	0.289	3.60	20	
Hexachlorobutadiene		50.0	54.5	ug/kg	0.698	9.00	20	
Isopropylbenzene		50.0	52.0	ug/kg	1.71	4.00	20	
p-Isopropyltoluene		50.0	54.1	ug/kg	3.47	8.10	20	
4-Methyl-2-Pentanone		50.0	47.8	ug/kg	0.110	4.40	20	
Methylene Chloride		50.0	49.8	ug/kg	0.254	0.400	20	
Naphthalene		50.0	50.8	ug/kg	3.10	1.70	20	
n-Propylbenzene		50.0	54.9	ug/kg	4.32	9.80	20	
Styrene		50.0	52.8	ug/kg	1.10	5.60	20	
1,1,1,2-Tetrachloroethane		50.0	49.7	ug/kg	0.375	0.600	20	
Tetrachloroethene		50.0	49.8	ug/kg	0.305	0.400	20	
1,2,3-Trichlorobenzene		50.0	52.6	ug/kg	1.24	5.20	20	
1,2,4-Trichlorobenzene		50.0	51.7	ug/kg	1.26	3.40	20	
1,1,1-Trichloroethane		50.0	46.7	ug/kg	0.406	6.50	20	
1,1,2-Trichloroethane		50.0	51.5	ug/kg	0.309	3.00	20	
Trichloroethene		50.0	49.4	ug/kg	0.300	1.20	20	
Trichlorofluoromethane		50.0	47.6	ug/kg	0.467	4.90	20	
1,2,3-Trichloropropane		50.0	54.2	ug/kg	0.312	8.40	20	
1,2,4-Trimethylbenzene		50.0	51.5	ug/kg	3.18	3.10	20	
1,3,5-Trimethylbenzene		50.0	54.3	ug/kg	3.21	8.60	20	
o-Xylene		50.0	53.6	ug/kg	0.657	7.10	20	
m-,p-Xylene		100	103	ug/kg	0.655	2.60	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4651859
Report generated 02/29/2016 16:46

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021306 Run Date: 02/28/2016 Sample ID: WG559001-02
Instrument ID: HPMS9 Run Time: 15:39 Method: 8260B
File ID: 9M972943 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG559002 Cal ID: HPMS9 - 25-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.8	ug/kg	0.488	1.66	20	
1,1-Dichloroethene	CCC	50.0	51.1	ug/kg	0.478	2.26	20	
1,2-Dichloropropane	CCC	50.0	53.6	ug/kg	0.282	7.20	20	
Ethylbenzene	CCC	50.0	54.8	ug/kg	0.567	9.67	20	
Toluene	CCC	50.0	52.7	ug/kg	1.51	5.37	20	
Vinyl Chloride	CCC	50.0	58.7	ug/kg	0.384	17.4	20	
Bromoform	SPCC	50.0	50.7	ug/kg	0.279	1.36	20	
Chlorobenzene	SPCC	50.0	51.9	ug/kg	1.04	3.70	20	
Chloromethane	SPCC	50.0	49.6	ug/kg	0.325	0.769	20	
1,1-Dichloroethane	SPCC	50.0	52.8	ug/kg	0.552	5.62	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	51.3	ug/kg	0.779	2.65	20	
Xylenes		150	157	ug/kg	0.658	4.90	40	
Acetone		50.0	44.5	ug/kg	0.113	10.9	20	
Benzene		50.0	51.9	ug/kg	0.993	3.70	20	
Bromobenzene		50.0	52.4	ug/kg	0.973	4.89	20	
Bromochloromethane		50.0	52.6	ug/kg	0.187	5.20	20	
Bromodichloromethane		50.0	49.7	ug/kg	0.368	0.545	20	
Bromomethane		50.0	46.4	ug/kg	0.197	7.27	20	
2-Butanone		50.0	46.4	ug/kg	0.150	7.26	20	
n-Butylbenzene		50.0	54.5	ug/kg	3.25	9.02	20	
sec-Butylbenzene		50.0	55.7	ug/kg	4.23	11.4	20	
tert-Butylbenzene		50.0	56.8	ug/kg	0.702	13.6	20	
Carbon Disulfide		50.0	54.1	ug/kg	0.778	8.13	20	
Carbon Tetrachloride		50.0	51.9	ug/kg	0.418	3.86	20	
Dibromochloromethane		50.0	49.2	ug/kg	0.412	1.68	20	
Chloroethane		50.0	56.7	ug/kg	0.166	13.4	20	
2-Chlorotoluene		50.0	52.3	ug/kg	2.76	4.60	20	
4-Chlorotoluene		50.0	55.6	ug/kg	2.71	11.2	20	
1,2-Dibromo-3-Chloropropane		50.0	47.2	ug/kg	0.207	5.63	20	
1,2-Dibromoethane		50.0	49.4	ug/kg	0.329	1.19	20	
Dibromomethane		50.0	50.4	ug/kg	0.176	0.750	20	
1,2-Dichlorobenzene		50.0	51.4	ug/kg	1.76	2.80	20	
1,3-Dichlorobenzene		50.0	51.5	ug/kg	1.90	2.94	20	
1,4-Dichlorobenzene		50.0	51.0	ug/kg	1.88	1.96	20	
Dichlorodifluoromethane		50.0	51.2	ug/kg	0.349	2.38	20	
1,2-Dichloroethane		50.0	51.2	ug/kg	0.433	2.43	20	
cis-1,2-Dichloroethene		50.0	53.7	ug/kg	0.293	7.31	20	
trans-1,2-Dichloroethene		50.0	54.7	ug/kg	0.455	9.32	20	
1,3-Dichloropropane		50.0	51.7	ug/kg	0.517	3.35	20	
2,2-Dichloropropane		50.0	55.9	ug/kg	0.436	11.8	20	
cis-1,3-Dichloropropene		50.0	52.2	ug/kg	0.403	4.31	20	
trans-1,3-Dichloropropene		50.0	51.7	ug/kg	0.532	3.37	20	

CCV - Modified 03/05/2008
PDF File ID: 4651861
Report generated 02/29/2016 16:46

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021306 Run Date: 02/28/2016 Sample ID: WG559001-02
Instrument ID: HPMS9 Run Time: 15:39 Method: 8260B
File ID: 9M972943 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG559002 Cal ID: HPMS9 - 25-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	53.5	ug/kg	0.366	6.98	20	
2-Hexanone		50.0	49.1	ug/kg	0.294	1.82	20	
Hexachlorobutadiene		50.0	52.5	ug/kg	0.672	4.92	20	
Isopropylbenzene		50.0	53.6	ug/kg	1.76	7.24	20	
p-Isopropyltoluene		50.0	55.0	ug/kg	3.53	9.95	20	
4-Methyl-2-Pentanone		50.0	49.0	ug/kg	0.113	2.01	20	
Methylene Chloride		50.0	51.6	ug/kg	0.262	3.10	20	
Naphthalene		50.0	48.5	ug/kg	2.96	2.90	20	
n-Propylbenzene		50.0	56.0	ug/kg	4.40	12.0	20	
Styrene		50.0	53.6	ug/kg	1.12	7.30	20	
1,1,1,2-Tetrachloroethane		50.0	52.0	ug/kg	0.392	3.96	20	
Tetrachloroethene		50.0	52.9	ug/kg	0.324	5.75	20	
1,2,3-Trichlorobenzene		50.0	50.5	ug/kg	1.19	1.07	20	
1,2,4-Trichlorobenzene		50.0	51.1	ug/kg	1.24	2.15	20	
1,1,1-Trichloroethane		50.0	52.5	ug/kg	0.457	5.06	20	
1,1,2-Trichloroethane		50.0	51.7	ug/kg	0.310	3.33	20	
Trichloroethene		50.0	54.1	ug/kg	0.328	8.14	20	
Trichlorofluoromethane		50.0	52.5	ug/kg	0.516	5.04	20	
1,2,3-Trichloropropane		50.0	52.2	ug/kg	0.301	4.50	20	
1,2,4-Trimethylbenzene		50.0	53.4	ug/kg	3.30	6.83	20	
1,3,5-Trimethylbenzene		50.0	55.3	ug/kg	3.26	10.6	20	
o-Xylene		50.0	53.1	ug/kg	0.651	6.13	20	
m-,p-Xylene		100	104	ug/kg	0.666	4.29	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4651861
Report generated 02/29/2016 16:46

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16021306
Instrument ID: HPMS9
Workgroup (AAB#): WG559002

ICAL CCV Number: WG558732-02
CAL ID: HPMS9 - 25-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558732-02	NA	NA	183008	378926	517775
Upper Limit	NA	NA	366016	757852	1035550
Lower Limit	NA	NA	91504	189463	258888
L16021306-01	1.00	01	181702	408222	580060
L16021306-02	1.00	01	183801	397433	563140
L16021306-03	1.00	01	186900	410018	573788
L16021306-04	1.00	01	204939	447518	618731
L16021306-05	1.00	01	182401	410583	586020
L16021306-06	1.00	01	182910	389043	533603
WG559002-01	1.00	01	204353	441195	620113
WG559002-02	1.00	01	193426	413544	577816

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4651862
Report generated 02/29/2016 16:46

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16021306
Instrument ID: HPMS9
Workgroup (AAB#): WG559002

ICAL CCV Number: WG558732-02
CAL ID: HPMS9 - 25-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558732-02	NA	NA	17.76	14.73	10.85
Upper Limit	NA	NA	18.26	15.23	11.35
Lower Limit	NA	NA	17.26	14.23	10.35
L16021306-01	1.00	01	17.75	14.72	10.85
L16021306-02	1.00	01	17.75	14.73	10.85
L16021306-03	1.00	01	17.75	14.72	10.85
L16021306-04	1.00	01	17.76	14.72	10.85
L16021306-05	1.00	01	17.76	14.73	10.85
L16021306-06	1.00	01	17.75	14.72	10.85
WG559002-01	1.00	01	17.75	14.72	10.85
WG559002-02	1.00	01	17.75	14.72	10.85

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4651864
Report generated: 02/29/2016 16:46

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022816\9M972959.D Vial: 17
Acq On : 28 Feb 2016 23:54 Operator: FJB
Sample : L16021306-01 8260 4.73g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 13:26:00 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	580060	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	408222	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	181702	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	153832	48.9253 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.86%		
43) 1,2-Dichloroethane-d4	10.45	65	188617	47.8112 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.62%		
58) Toluene-d8	12.82	98	551993	53.4585 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.92%		
79) p-Bromofluorobenzene	16.23	95	198493	56.1013 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 112.20%		

Target Compounds					Qvalue
13) Acetone	6.41	43	8331	3.4554 ug/kg	99
17) Iodomethane	7.12	142	241	2.9395 ug/kg#	34
56) Dimethyl Disulfide	12.82	94	15379	3.4180 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972959.D 8260SL.M Mon Feb 29 13:26:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022816\9M972959.D Vial: 17
Acq On : 28 Feb 2016 23:54 Operator: FJB
Sample : L16021306-01 8260 4.73g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 13:26 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

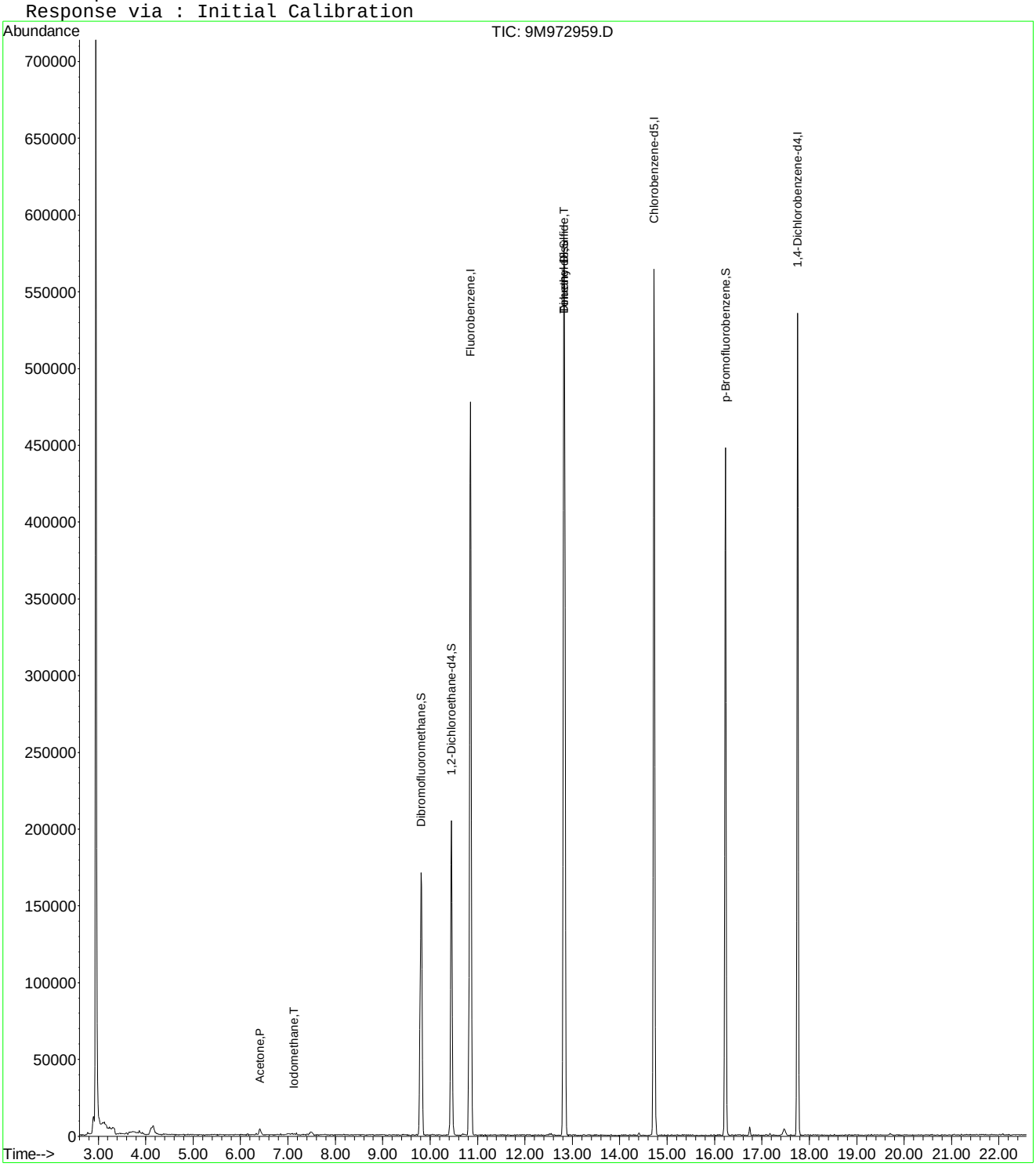

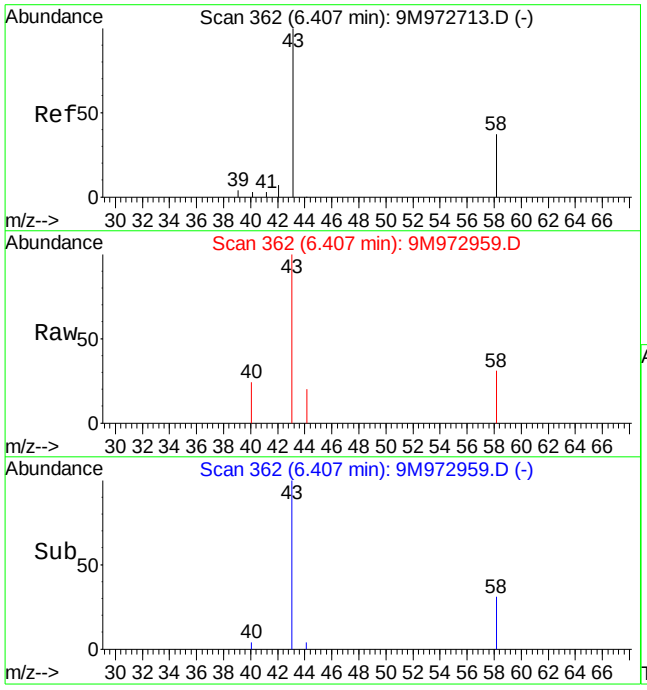

#13
Acetone
Concen: 3.46 ug/kg
RT: 6.41 min Scan# 362
Delta R.T. -0.01 min
Lab File: 9M972959.D
Acq: 28 Feb 2016 23:54

Tgt Ion: 43 Resp: 8331

Ion	Ratio	Lower	Upper
43	100		
58	27.6	16.9	39.3

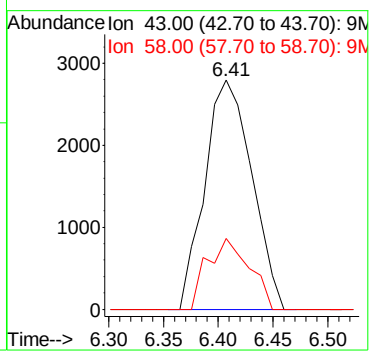

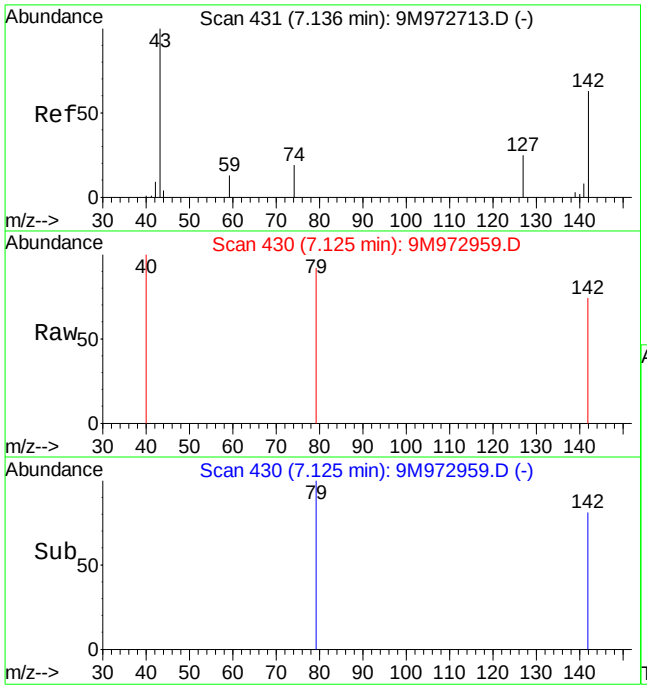

#17
Iodomethane
Concen: 2.94 ug/kg
RT: 7.12 min Scan# 430
Delta R.T. -0.01 min
Lab File: 9M972959.D
Acq: 28 Feb 2016 23:54

Tgt Ion:142 Resp: 241

Ion	Ratio	Lower	Upper
142	100		
127	0.0	25.1	58.7#

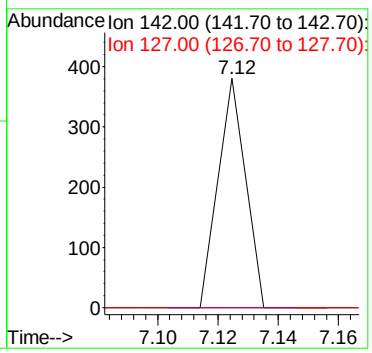

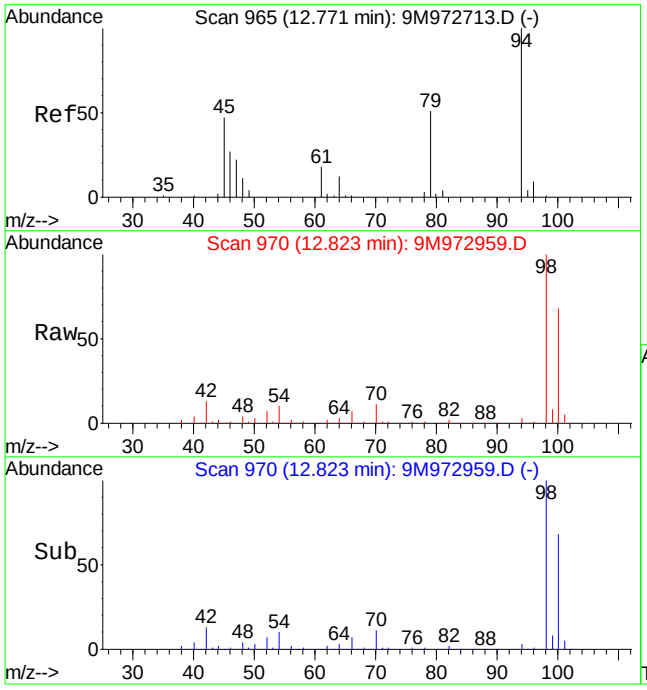

#56
Dimethyl Disulfide
Concen: 3.42 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M972959.D
Acq: 28 Feb 2016 23:54

Tgt Ion: 94 Resp: 15379

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

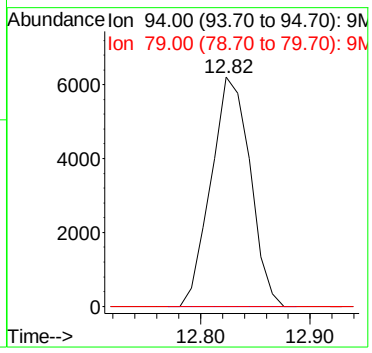

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022816\9M972960.D Vial: 18
Acq On : 29 Feb 2016 00:25 Operator: FJB
Sample : L16021306-02 REF 8260 4.75g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 13:26:01 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	563140	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.73	117	397433	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	183801	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	149180	48.8713 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.74%		
43) 1,2-Dichloroethane-d4	10.45	65	186033	48.5730 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.14%		
58) Toluene-d8	12.83	98	534564	53.1760 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.36%		
79) p-Bromofluorobenzene	16.23	95	198244	55.3910 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 110.78%		

Target Compounds

					Qvalue
13) Acetone	6.42	43	8026	3.4096 ug/kg	89
17) Iodomethane	7.13	142	227	2.9353 ug/kg#	34
29) 2-Butanone	9.02	43	837	0.4609 ug/kg#	58
56) Dimethyl Disulfide	12.83	94	15033	3.4415 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972960.D 8260SL.M Mon Feb 29 13:26:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022816\9M972960.D Vial: 18
Acq On : 29 Feb 2016 00:25 Operator: FJB
Sample : L16021306-02 REF 8260 4.75g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 13:26 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

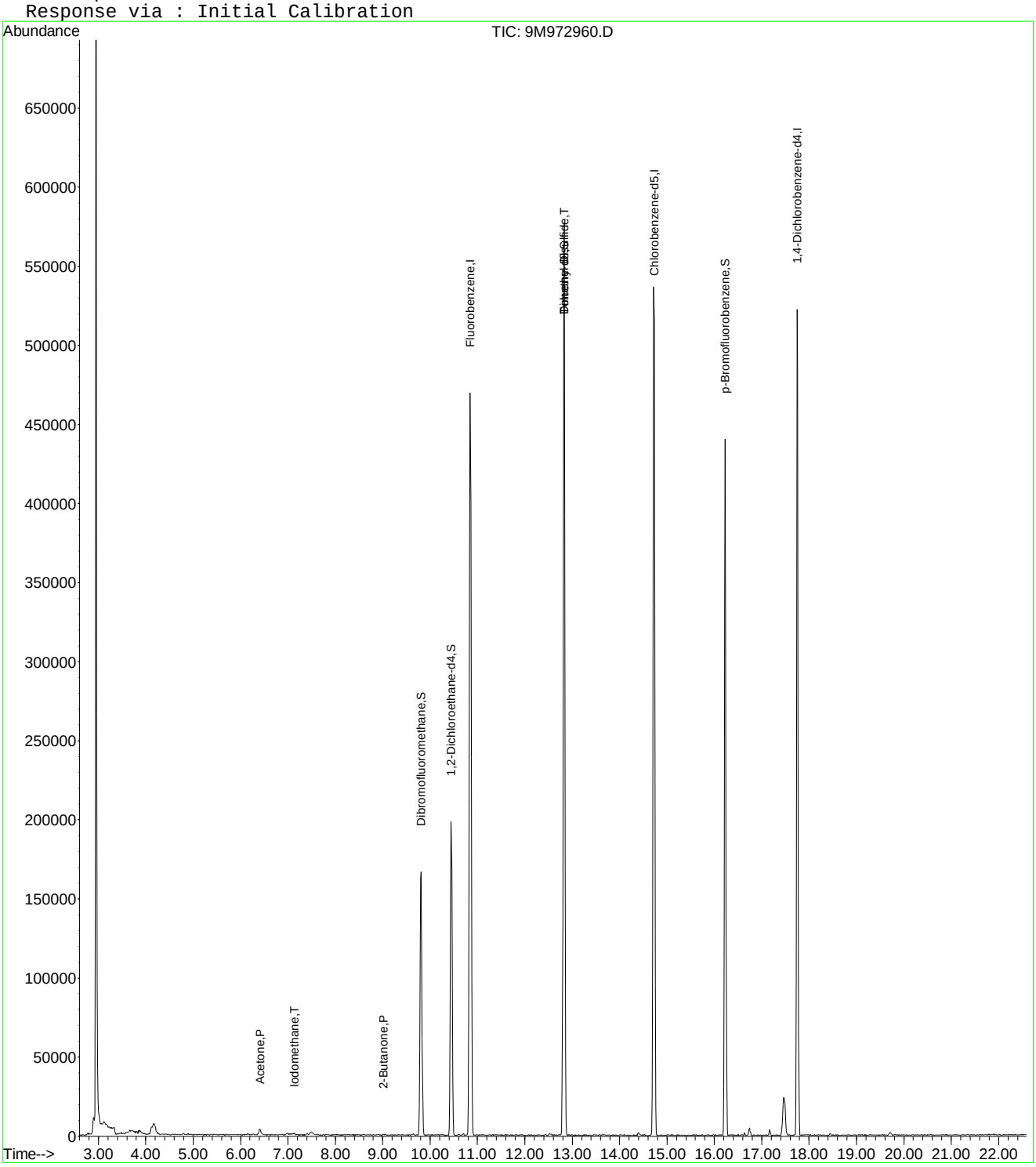

9M972960.D 8260SL.M Mon Feb 29 13:26:02 2016 Page 2

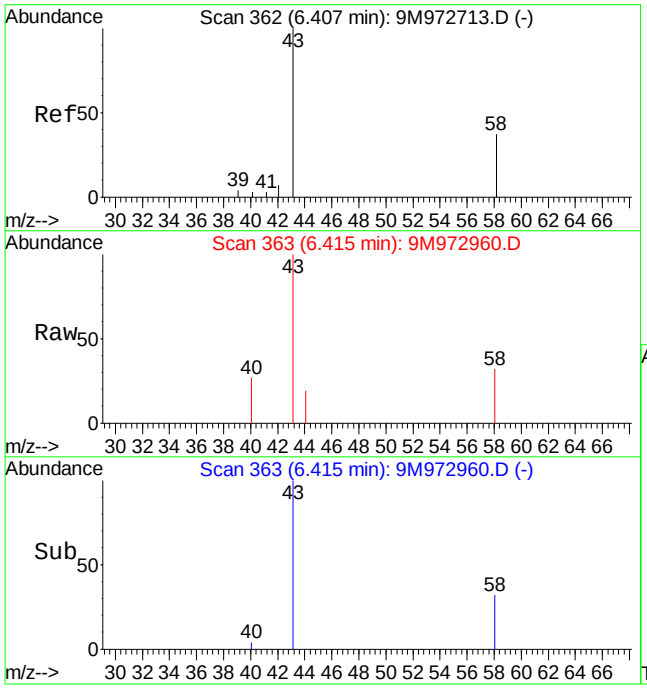

#13
Acetone
Concen: 3.41 ug/kg
RT: 6.42 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M972960.D
Acq: 29 Feb 2016 00:25

Tgt Ion: 43 Resp: 8026

Ion	Ratio	Lower	Upper
43	100		
58	33.9	16.9	39.3

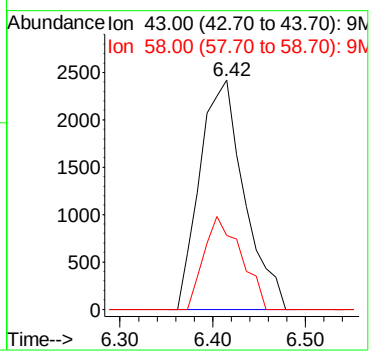

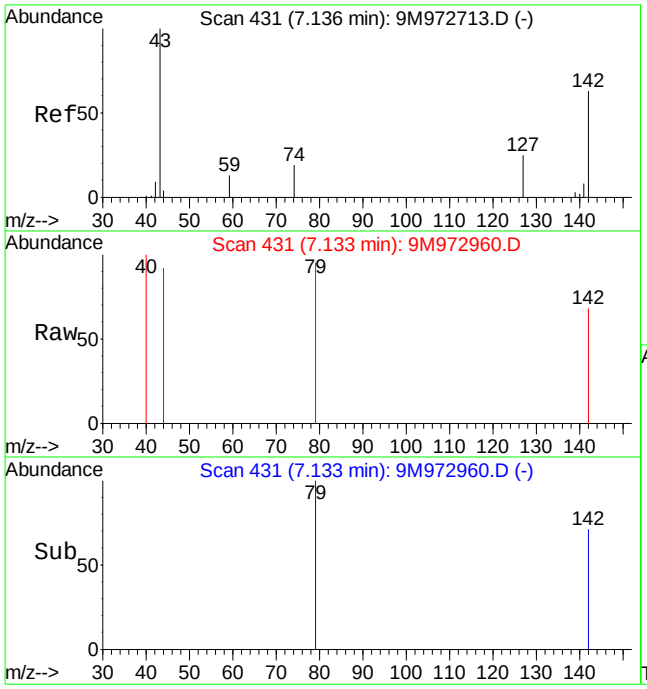

#17
Iodomethane
Concen: 2.94 ug/kg
RT: 7.13 min Scan# 431
Delta R.T. 0.00 min
Lab File: 9M972960.D
Acq: 29 Feb 2016 00:25

Tgt Ion:142 Resp: 227

Ion	Ratio	Lower	Upper
142	100		
127	0.0	25.1	58.7#

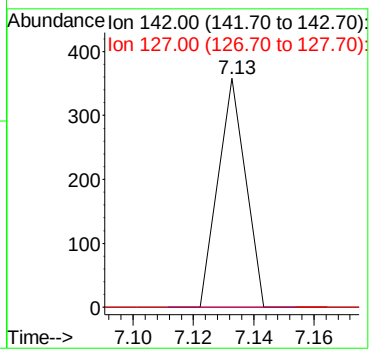

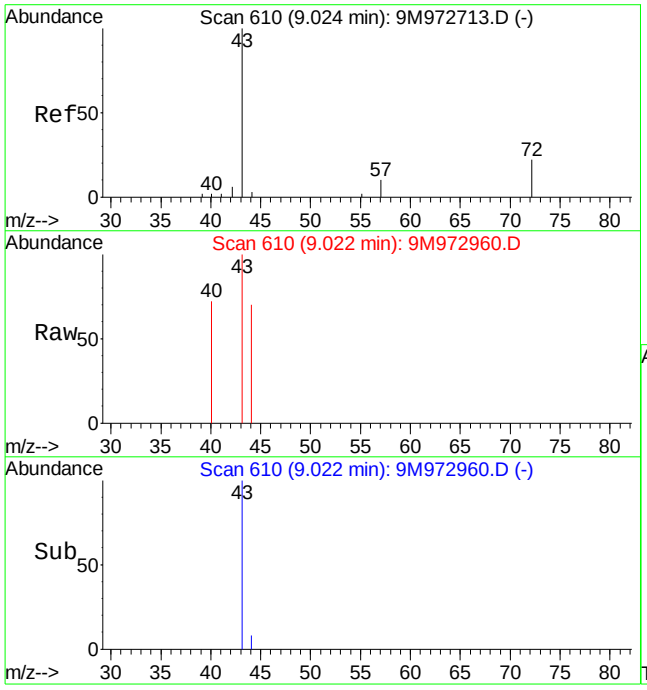

#29
2-Butanone
Concen: 0.46 ug/kg
RT: 9.02 min Scan# 610
Delta R.T. -0.01 min
Lab File: 9M972960.D
Acq: 29 Feb 2016 00:25

Tgt Ion: 43 Resp: 837

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

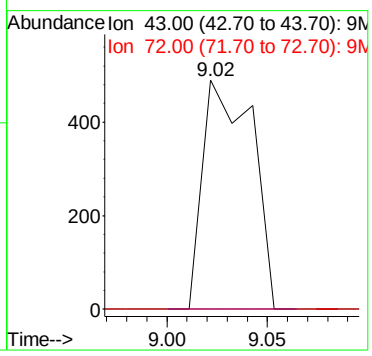

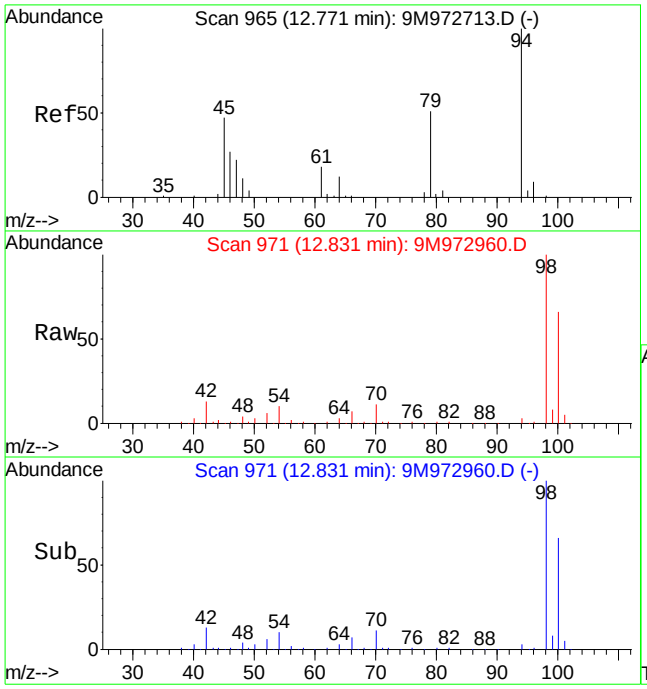

#56
Dimethyl Disulfide
Concen: 3.44 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.07 min
Lab File: 9M972960.D
Acq: 29 Feb 2016 00:25

Tgt Ion: 94 Resp: 15033

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

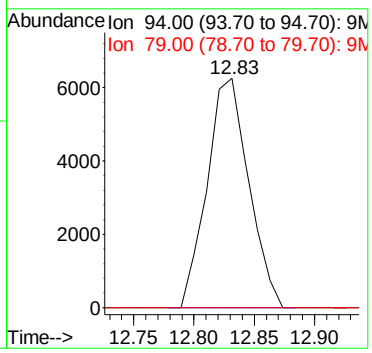

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022816\9M972947.D Vial: 5
Acq On : 28 Feb 2016 17:41 Operator: FJB
Sample : L16021306-03 MS 8260 5.35g Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 28 18:03:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	573788	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	410018	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	186900	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	156097	50.1883 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.38%		
43) 1,2-Dichloroethane-d4	10.45	65	186711	47.8454 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.70%		
58) Toluene-d8	12.82	98	556297	53.6394 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 107.28%		
79) p-Bromofluorobenzene	16.23	95	206994	56.8769 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 113.76%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	115195	29.4552 ug/kg	99
3) Chloromethane	3.75	50	86106	22.9371 ug/kg	98
4) Vinyl Chloride	3.99	62	97498	25.9443 ug/kg	99
5) 1,3-Butadiene	4.04	54	83533	23.3642 ug/kg	98
6) Bromomethane	4.88	94	52484	21.5035 ug/kg	98
7) Chloroethane	5.03	64	37879	22.6250 ug/kg	98
8) Trichlorofluoromethane	5.52	101	119669	21.2319 ug/kg	100
9) Diethyl ether	6.06	59	178822	67.8689 ug/kg	99
10) Isoprene	6.09	67	94523	28.0903 ug/kg	95
11) Acrolein	6.29	56	32131	61.1578 ug/kg	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	67828	23.3350 ug/kg	100
13) Acetone	6.41	43	30026	19.2327 ug/kg	89
14) 1,1-Dichloroethene	6.62	61	110830	20.6696 ug/kg	95
15) Tert-Butyl Alcohol	6.75	59	120736	205.7869 ug/kg	96
16) Dimethyl Sulfide	6.88	62	70011	30.8938 ug/kg	99
17) Iodomethane	7.13	142	33360	22.5631 ug/kg	97
18) Methyl acetate	7.15	43	60710	20.8273 ug/kg	99
19) Methylene Chloride	7.40	84	62646	21.4522 ug/kg	95
20) Carbon Disulfide	7.44	76	159584	19.3201 ug/kg	98
21) Acrylonitrile	7.58	53	28300	19.6256 ug/kg	98
22) Methyl Tert Butyl Ether	7.61	73	163008	19.5989 ug/kg	97
23) trans-1,2-Dichloroethene	7.85	61	108187	22.6395 ug/kg	99
24) n-Hexane	7.92	57	111446	22.6108 ug/kg	98
25) Diisopropyl ether	8.26	45	1029985	89.9758 ug/kg	99
26) Vinyl Acetate	8.43	43	90588	13.8816 ug/kg	100
27) 1,1-Dichloroethane	8.46	63	121149	20.1844 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	898879	84.4506 ug/kg	99
29) 2-Butanone	9.02	43	32868	17.7635 ug/kg	98
30) Propionitrile	9.14	54	49313	87.0891 ug/kg	97
31) 2,2-Dichloropropane	9.23	77	97722	21.8134 ug/kg	96
32) cis-1,2-Dichloroethene	9.31	96	71563	22.8332 ug/kg	100
33) Chloroform	9.52	83	114615	20.7875 ug/kg	96
34) 1-Bromopropane	9.66	122	15310	32.4140 ug/kg	94
35) Bromochloromethane	9.75	130	42127	20.6921 ug/kg	96
36) Tetrahydrofuran	9.77	42	95779	80.3056 ug/kg	99
38) 1,1,1-Trichloroethane	10.05	97	105837	21.2261 ug/kg	97
39) Cyclohexane	10.08	56	126314	23.2357 ug/kg	99
40) 1,1-Dichloropropene	10.25	75	84550	21.5495 ug/kg	99
41) Tert-Amyl-Methyl ether	10.34	73	724773	93.6783 ug/kg	100
42) Carbon Tetrachloride	10.38	117	95406	20.6390 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972947.D 8260SL.M Sun Feb 28 18:03:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022816\9M972947.D Vial: 5
Acq On : 28 Feb 2016 17:41 Operator: FJB
Sample : L16021306-03 MS 8260 5.35g Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 28 18:03:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	98378	20.2848 ug/kg	97
46)	Benzene	10.61	78	239490	21.8028 ug/kg	98
47)	Trichloroethene	11.36	130	75922	21.8138 ug/kg	96
48)	Methylcyclohexane	11.44	83	102973	23.5894 ug/kg	100
49)	1,2-Dichloropropane	11.57	63	68070	22.5667 ug/kg	98
50)	1,4-Dioxane	11.87	88	11363	251.1048 ug/kg	94
51)	Bromodichloromethane	11.87	83	85285	20.0622 ug/kg	99
52)	Dibromomethane	11.96	174	38042	19.0343 ug/kg	97
53)	2-Chloroethyl Vinyl Ether	12.16	63	9780	13.9000 ug/kg	93
54)	4-Methyl-2-Pentanone	12.19	58	25205	19.0376 ug/kg	99
55)	cis-1,3-Dichloropropene	12.51	75	97539	22.0233 ug/kg	98
56)	Dimethyl Disulfide	12.77	94	99935	22.4534 ug/kg	92
59)	Toluene	12.93	91	264119	22.5454 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	65044	20.0307 ug/kg	96
61)	trans-1,3-Dichloropropene	13.11	75	88598	20.9978 ug/kg	99
62)	1,1,2-Trichloroethane	13.32	97	52231	21.2238 ug/kg	97
63)	2-Hexanone	13.26	43	45939	18.6963 ug/kg	99
64)	1,3-Dichloropropane	13.62	76	90826	22.1491 ug/kg	97
65)	Tetrachloroethene	13.75	164	56705	22.5787 ug/kg	96
66)	Dibromochloromethane	14.02	129	66660	19.3816 ug/kg	98
67)	1,2-Dibromoethane	14.27	107	55914	20.4839 ug/kg	99
68)	1-Chlorohexane	14.35	91	82370	23.8430 ug/kg	98
69)	Chlorobenzene	14.77	112	184959	22.4641 ug/kg	97
70)	1,1,1,2-Tetrachloroethane	14.81	131	65292	21.1163 ug/kg	98
71)	Ethylbenzene	14.80	106	97595	23.0077 ug/kg	98
72)	m-,p-Xylene	14.88	106	239748	45.7659 ug/kg	99
73)	o-Xylene	15.45	106	114914	22.8582 ug/kg	98
74)	Styrene	15.49	104	188831	22.0575 ug/kg	98
75)	Bromoform	15.99	173	38278	16.9508 ug/kg	98
76)	Isopropylbenzene	15.87	105	309422	22.9270 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	60491	21.3359 ug/kg	100
80)	1,2,3-Trichloropropane	16.28	110	23399	21.7622 ug/kg	84
81)	trans-1,4-Dichloro-2-Buten	16.34	53	19632	18.1139 ug/kg	89
82)	n-Propylbenzene	16.38	91	365141	24.8540 ug/kg	99
83)	Bromobenzene	16.52	156	77031	22.2104 ug/kg	73
84)	1,3,5-Trimethylbenzene	16.57	105	262152	23.7715 ug/kg	98
85)	2-Chlorotoluene	16.66	91	239817	24.3374 ug/kg	100
86)	4-Chlorotoluene	16.71	91	206238	22.6380 ug/kg	98
87)	a-Methylstyrene	16.98	118	124893	24.8547 ug/kg	100
88)	tert-Butylbenzene	17.03	134	57904	25.0445 ug/kg	90
89)	1,2,4-Trimethylbenzene	17.09	105	261337	22.6283 ug/kg	99
90)	sec-Butylbenzene	17.31	105	341315	24.0304 ug/kg	99
91)	p-Isopropyltoluene	17.47	119	282025	23.5284 ug/kg	99
92)	1,3-Dichlorobenzene	17.67	146	146617	21.2708 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	148663	21.5739 ug/kg	98
94)	n-Butylbenzene	17.99	91	253427	22.7397 ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	138956	21.7265 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	16067	19.5692 ug/kg	94
97)	1,2,4-Trichlorobenzene	20.43	180	90087	19.8419 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	50549	21.1211 ug/kg	98
99)	Naphthalene	20.81	128	212379	18.6496 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.12	180	87057	19.7691 ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972947.D 8260SL.M Sun Feb 28 18:03:57 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022816\9M972947.D Vial: 5
Acq On : 28 Feb 2016 17:41 Operator: FJB
Sample : L16021306-03 MS 8260 5.35g Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 28 18:03 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

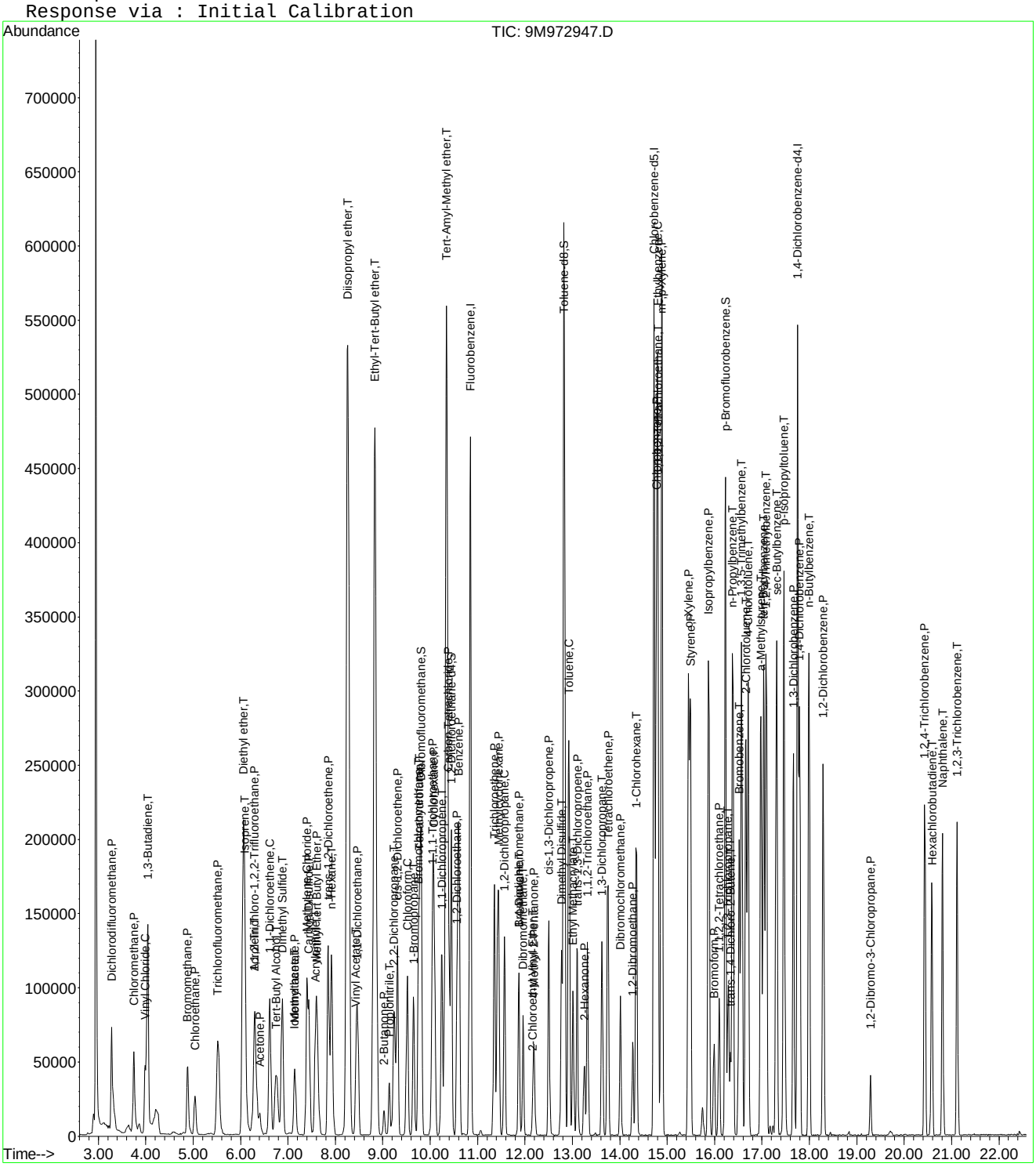
Abundance
TIC: 9M972947.D
Time-->
Dichlorodifluoromethane,P
Chloromethane,P
Vinyl Chloride,C
1,3-Butadiene,T
Bromomethane,P
Chloroethane,P
Trichlorofluoromethane,P
Diethyl ether,T
Acetone,P
Tert-Butyl Alcohol,T
1,1-Dichloroethene,C
Dimethyl Sulfide,T
Vinyl Acetate,T
Diisopropyl ether,T
Ethyl-Tert-Butyl ether,T
Tert-Amyl-Methyl ether,T
Fluorobenzene,I
Toluene-d8,S
Toluene,C
Chlorobenzene-d5,I
p-Bromofluorobenzene,S
1,4-Dichlorobenzene-d4,I
Styrene,P
p-Xylene,P
Isopropylbenzene,P
n-Propylbenzene,T
1,3,5-Trimethylbenzene,T
2-Chlorotoluene,T
a-Methylstyrene,T
sec-Butylbenzene,T
p-Isopropyltoluene,T
1,3-Dichlorobenzene,P
1,4-Dichlorobenzene,P
n-Butylbenzene,T
1,2-Dichlorobenzene,P
1,2-Dibromo-3-Chloropropane,P
Hexachlorobutadiene,T
1,2,4-Trichlorobenzene,P
Naphthalene,T
1,2,3-Trichlorobenzene,T
1-Chlorohexane,T
Dibromochloromethane,P
1,2-Dibromoethane,P
cis-1,3-Dichloropropene,P
Dimethyl Disulfide,T
2-Hexanone,P
1,3-Dichloropropane,P
Benzene,P
Bromobenzene,T
Bromoform,P
1,2-Tetrachloroethane,P
trans-1,4-Dichloro-2-Butene,T
1,2-Dichloroethane,P
1,1-Dichloroethane,P
2-Chloroethyl Vinyl Ether,P
1,2-Dichloroethene,P
Chloroform,C
1,1,1-Trichloroethane,P
Carbon Tetrachloride,P
Methyl Tert Butyl Ether,P
n-Hexane,P
Methyl Acetate,P
Acrylonitrile,T
Iodomethane,P
Methylene Chloride,P
Acrolein,P
Acrylonitrile,P
Propionitrile,T
2-Butanone,P
Methacrylonitrile,T
Methacrylonitrile,P
Methacrylonitrile,S
Methacrylonitrile,C
Methacrylonitrile,I

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022816\9M972948.D Vial: 6
Acq On : 28 Feb 2016 18:12 Operator: FJB
Sample : L16021306-04 MSD 8260 5.38g Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 28 18:34:36 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	618731	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	447518	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.76	152	204939	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	168419	50.2168 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.44%		
43) 1,2-Dichloroethane-d4	10.45	65	212147	50.4146 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.82%		
58) Toluene-d8	12.83	98	597797	52.8108 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 105.62%		
79) p-Bromofluorobenzene	16.23	95	226240	56.6934 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 113.38%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	106838	25.3340 ug/kg	99
3) Chloromethane	3.74	50	76289	18.8459 ug/kg	100
4) Vinyl Chloride	3.99	62	92419	22.8064 ug/kg	98
5) 1,3-Butadiene	4.04	54	77021	19.9779 ug/kg	97
6) Bromomethane	4.88	94	44459	16.8924 ug/kg	99
7) Chloroethane	5.04	64	33639	18.6330 ug/kg	97
8) Trichlorofluoromethane	5.53	101	112679	18.5396 ug/kg	99
9) Diethyl ether	6.06	59	149433	52.5952 ug/kg	99
10) Isoprene	6.09	67	79917	22.0245 ug/kg	99
11) Acrolein	6.30	56	31593	55.7658 ug/kg	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	63417	20.2327 ug/kg	100
13) Acetone	6.41	43	29803	17.5034 ug/kg	96
14) 1,1-Dichloroethene	6.61	61	107757	18.6367 ug/kg	97
15) Tert-Butyl Alcohol	6.75	59	110105	174.0354 ug/kg	95
16) Dimethyl Sulfide	6.88	62	57993	23.7317 ug/kg	98
17) Iodomethane	7.14	142	27717	18.0270 ug/kg	98
18) Methyl acetate	7.15	43	48293	15.3641 ug/kg	99
19) Methylene Chloride	7.40	84	53756	17.0709 ug/kg	97
20) Carbon Disulfide	7.45	76	138934	15.5983 ug/kg	97
21) Acrylonitrile	7.59	53	25570	16.4443 ug/kg	95
22) Methyl Tert Butyl Ether	7.61	73	137238	15.3020 ug/kg	97
23) trans-1,2-Dichloroethene	7.85	61	100243	19.4534 ug/kg	99
24) n-Hexane	7.92	57	91844	17.2803 ug/kg	100
25) Diisopropyl ether	8.26	45	876572	71.0121 ug/kg	99
26) Vinyl Acetate	8.44	43	103878	14.7619 ug/kg	99
27) 1,1-Dichloroethane	8.47	63	107275	16.5746 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.84	59	755671	65.8391 ug/kg	99
29) 2-Butanone	9.02	43	30712	15.3926 ug/kg	100
30) Propionitrile	9.14	54	44478	72.8446 ug/kg	95
31) 2,2-Dichloropropane	9.24	77	88638	18.3485 ug/kg	98
32) cis-1,2-Dichloroethene	9.32	96	61095	18.0773 ug/kg	96
33) Chloroform	9.52	83	98846	16.6253 ug/kg	98
34) 1-Bromopropane	9.65	122	13681	27.0369 ug/kg	98
35) Bromochloromethane	9.75	130	36214	16.4957 ug/kg	98
36) Tetrahydrofuran	9.78	42	81021	62.9974 ug/kg	97
38) 1,1,1-Trichloroethane	10.04	97	93948	17.4731 ug/kg	98
39) Cyclohexane	10.08	56	106296	18.1331 ug/kg	99
40) 1,1-Dichloropropene	10.25	75	77207	18.2486 ug/kg	99
41) Tert-Amyl-Methyl ether	10.34	73	603910	72.3867 ug/kg	99
42) Carbon Tetrachloride	10.39	117	83528	16.7569 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972948.D 8260SL.M Sun Feb 28 18:34:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022816\9M972948.D Vial: 6
Acq On : 28 Feb 2016 18:12 Operator: FJB
Sample : L16021306-04 MSD 8260 5.38g Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 28 18:34:36 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	84143	16.0894 ug/kg	96
46)	Benzene	10.60	78	211543	17.8597 ug/kg	99
47)	Trichloroethene	11.35	130	67043	17.8635 ug/kg	95
48)	Methylcyclohexane	11.44	83	89732	19.0629 ug/kg	99
49)	1,2-Dichloropropane	11.57	63	58025	17.8393 ug/kg	100
50)	1,4-Dioxane	11.87	88	10835	222.0448 ug/kg	96
51)	Bromodichloromethane	11.87	83	71037	15.4967 ug/kg	97
52)	Dibromomethane	11.97	174	32751	15.1967 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.17	63	9119	12.4022 ug/kg	91
54)	4-Methyl-2-Pentanone	12.20	58	22403	15.6921 ug/kg	96
55)	cis-1,3-Dichloropropene	12.50	75	83665	17.5186 ug/kg	98
56)	Dimethyl Disulfide	12.77	94	72957	15.2013 ug/kg	98
59)	Toluene	12.93	91	231147	18.0775 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	56537	15.9519 ug/kg	97
61)	trans-1,3-Dichloropropene	13.10	75	71760	15.5820 ug/kg	98
62)	1,1,2-Trichloroethane	13.32	97	44231	16.4670 ug/kg	97
63)	2-Hexanone	13.25	43	40304	15.0285 ug/kg	98
64)	1,3-Dichloropropane	13.62	76	77681	17.3561 ug/kg	99
65)	Tetrachloroethene	13.75	164	49075	17.9032 ug/kg	97
66)	Dibromochloromethane	14.01	129	54548	14.5310 ug/kg	99
67)	1,2-Dibromoethane	14.28	107	45648	15.3217 ug/kg	97
68)	1-Chlorohexane	14.35	91	63496	16.8395 ug/kg	94
69)	Chlorobenzene	14.77	112	157876	17.5680 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	54932	16.2771 ug/kg	96
71)	Ethylbenzene	14.79	106	82312	17.7788 ug/kg	98
72)	m-,p-Xylene	14.89	106	208499	36.4656 ug/kg	97
73)	o-Xylene	15.45	106	99793	18.1871 ug/kg	96
74)	Styrene	15.49	104	157215	16.8256 ug/kg	97
75)	Bromoform	15.99	173	33632	13.6454 ug/kg	99
76)	Isopropylbenzene	15.88	105	267689	18.1727 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	47960	15.4271 ug/kg	99
80)	1,2,3-Trichloropropane	16.29	110	19961	16.9306 ug/kg	84
81)	trans-1,4-Dichloro-2-Buten	16.33	53	16092	13.5408 ug/kg	83
82)	n-Propylbenzene	16.39	91	301086	18.6901 ug/kg	100
83)	Bromobenzene	16.52	156	60635	15.9440 ug/kg	96
84)	1,3,5-Trimethylbenzene	16.57	105	215491	17.8204 ug/kg	97
85)	2-Chlorotoluene	16.66	91	188134	17.4119 ug/kg	99
86)	4-Chlorotoluene	16.70	91	177747	17.7933 ug/kg	99
87)	a-Methylstyrene	16.98	118	95709	17.3703 ug/kg	99
88)	tert-Butylbenzene	17.04	134	48876	19.2789 ug/kg	90
89)	1,2,4-Trimethylbenzene	17.09	105	209651	16.5551 ug/kg	98
90)	sec-Butylbenzene	17.30	105	290347	18.6426 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	233678	17.7790 ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	117547	15.5523 ug/kg	98
93)	1,4-Dichlorobenzene	17.79	146	117953	15.6106 ug/kg	99
94)	n-Butylbenzene	17.99	91	198978	16.2825 ug/kg	99
95)	1,2-Dichlorobenzene	18.30	146	111018	15.8303 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	12952	14.3866 ug/kg	100
97)	1,2,4-Trichlorobenzene	20.44	180	66235	13.3043 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	39652	15.1096 ug/kg	99
99)	Naphthalene	20.81	128	162393	13.0050 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	62145	12.8699 ug/kg	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022816\9M972948.D Vial: 6
Acq On : 28 Feb 2016 18:12 Operator: FJB
Sample : L16021306-04 MSD 8260 5.38g Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 28 18:34 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

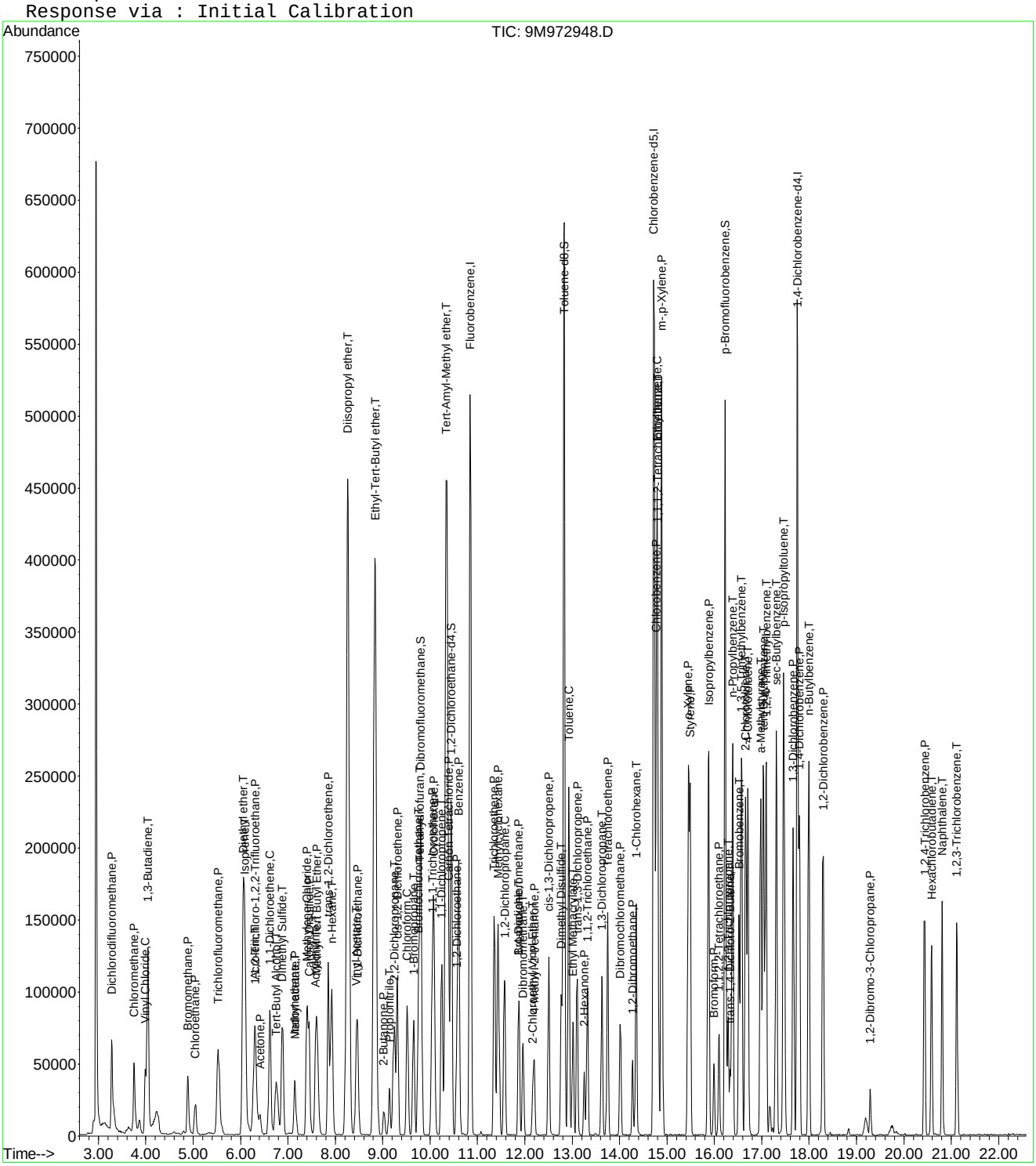

9M972948.D 8260SL.M Sun Feb 28 18:34:37 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022816\9M972961.D Vial: 19
Acq On : 29 Feb 2016 00:57 Operator: FJB
Sample : L16021306-05 8260 4.66g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 13:26:02 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	586020	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.73	117	410583	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.76	152	182401	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	156866	49.3828 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.76%		
43) 1,2-Dichloroethane-d4	10.45	65	195100	48.9515 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.90%		
58) Toluene-d8	12.83	98	556316	53.5674 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 107.14%		
79) p-Bromofluorobenzene	16.23	95	207062	58.2989 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 116.60%		

Target Compounds					Qvalue
13) Acetone	6.41	43	8792	3.7216 ug/kg	96
29) 2-Butanone	9.02	43	1032	0.5461 ug/kg#	58
36) Tetrahydrofuran	9.78	42	503	0.4129 ug/kg#	43
56) Dimethyl Disulfide	12.83	94	15210	3.3461 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972961.D 8260SL.M Mon Feb 29 13:26:02 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022816\9M972961.D Vial: 19
Acq On : 29 Feb 2016 00:57 Operator: FJB
Sample : L16021306-05 8260 4.66g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 13:26 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

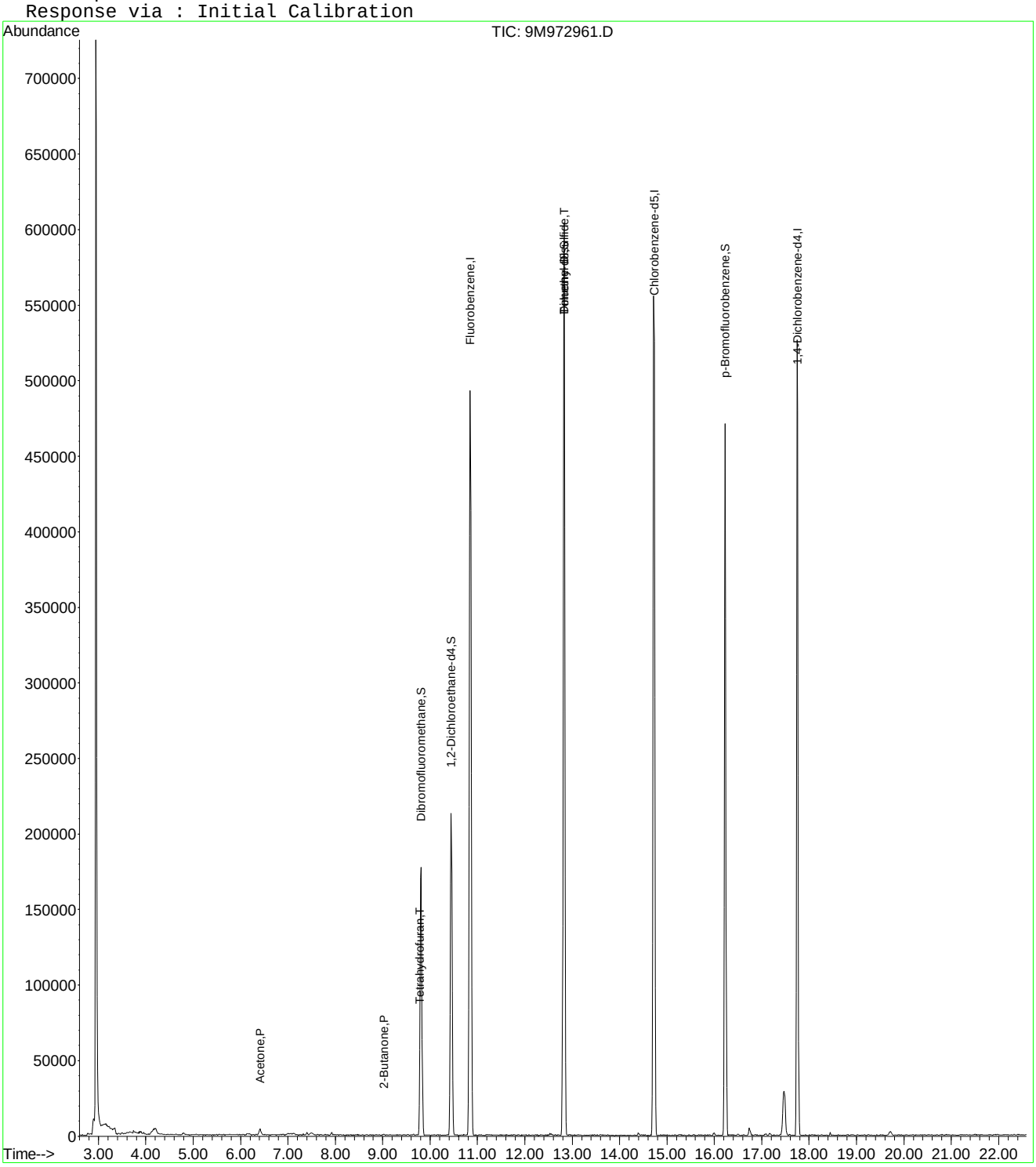

9M972961.D 8260SL.M Mon Feb 29 13:26:02 2016 Page 2

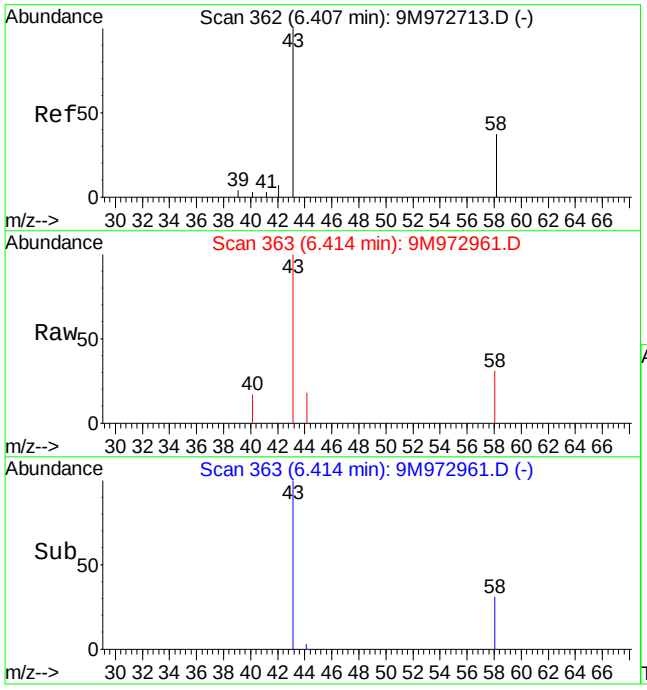

#13
Acetone
Concen: 3.72 ug/kg
RT: 6.41 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M972961.D
Acq: 29 Feb 2016 00:57

Tgt Ion: 43 Resp: 8792

Ion	Ratio	Lower	Upper
43	100		
58	30.0	16.9	39.3

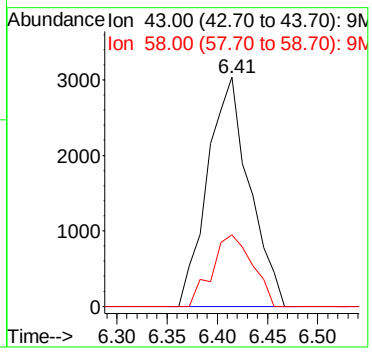

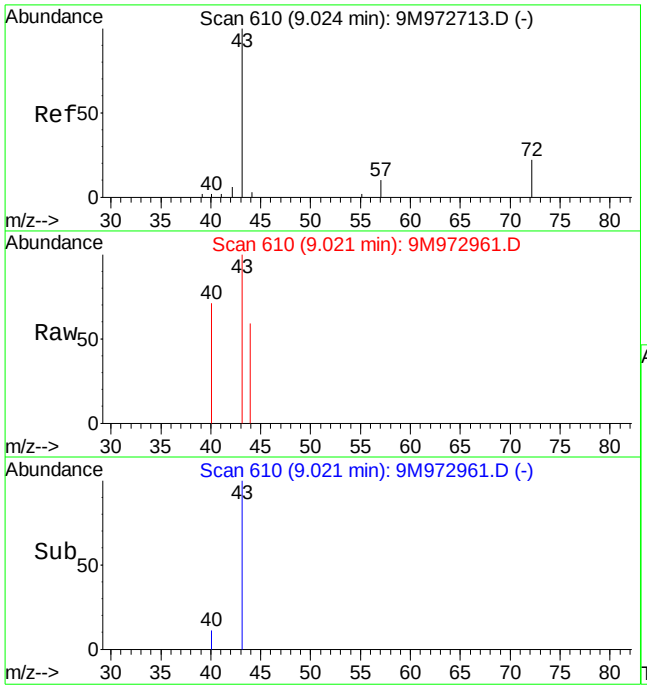

#29
2-Butanone
Concen: 0.55 ug/kg
RT: 9.02 min Scan# 610
Delta R.T. -0.01 min
Lab File: 9M972961.D
Acq: 29 Feb 2016 00:57

Tgt Ion: 43 Resp: 1032

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

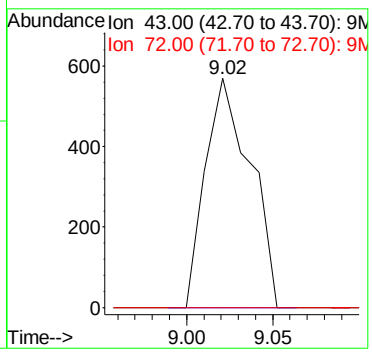

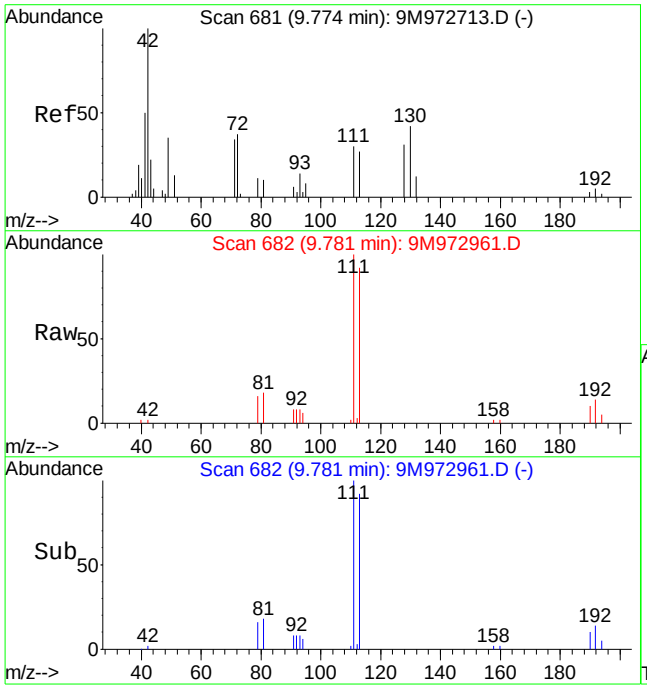

#36
Tetrahydrofuran
Concen: 0.41 ug/kg
RT: 9.78 min Scan# 682
Delta R.T. 0.00 min
Lab File: 9M972961.D
Acq: 29 Feb 2016 00:57

Tgt Ion: 42 Resp: 503

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

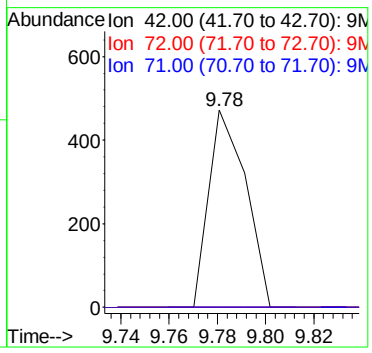

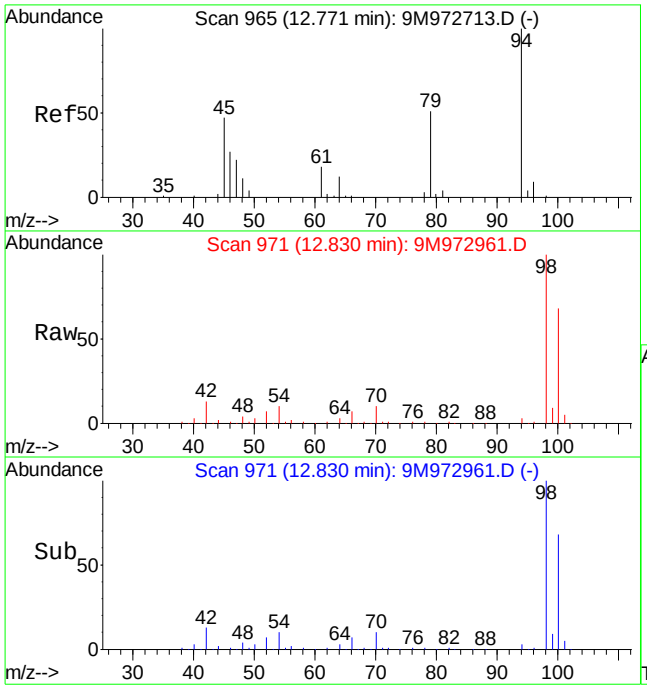

#56
Dimethyl Disulfide
Concen: 3.35 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.06 min
Lab File: 9M972961.D
Acq: 29 Feb 2016 00:57

Tgt Ion: 94 Resp: 15210

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

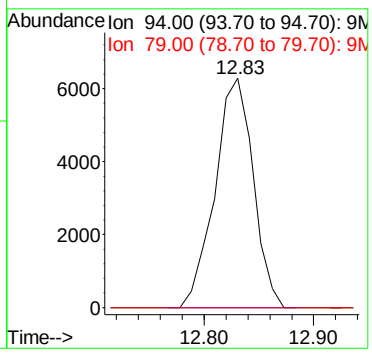

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022816\9M972962.D Vial: 20
Acq On : 29 Feb 2016 1:29 Operator: FJB
Sample : L16021306-06 8260 5.11g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 13:26:03 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	533603	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	389043	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	182910	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	142391	49.2293 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.46%		
43) 1,2-Dichloroethane-d4	10.45	65	192245	52.9735 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.94%		
58) Toluene-d8	12.82	98	511655	51.9948 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 103.98%		
79) p-Bromofluorobenzene	16.23	95	191306	53.7129 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 107.42%		

Target Compounds

					Qvalue
13) Acetone	6.41	43	5478	1.7532 ug/kg	94
15) Tert-Butyl Alcohol	6.77	59	389	0.7130 ug/kg#	58
47) Trichloroethene	11.36	130	3097	0.9568 ug/kg	92
56) Dimethyl Disulfide	12.83	94	14615	3.5310 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972962.D 8260SL.M Mon Feb 29 13:26:03 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022816\9M972962.D Vial: 20
Acq On : 29 Feb 2016 1:29 Operator: FJB
Sample : L16021306-06 8260 5.11g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 13:26 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

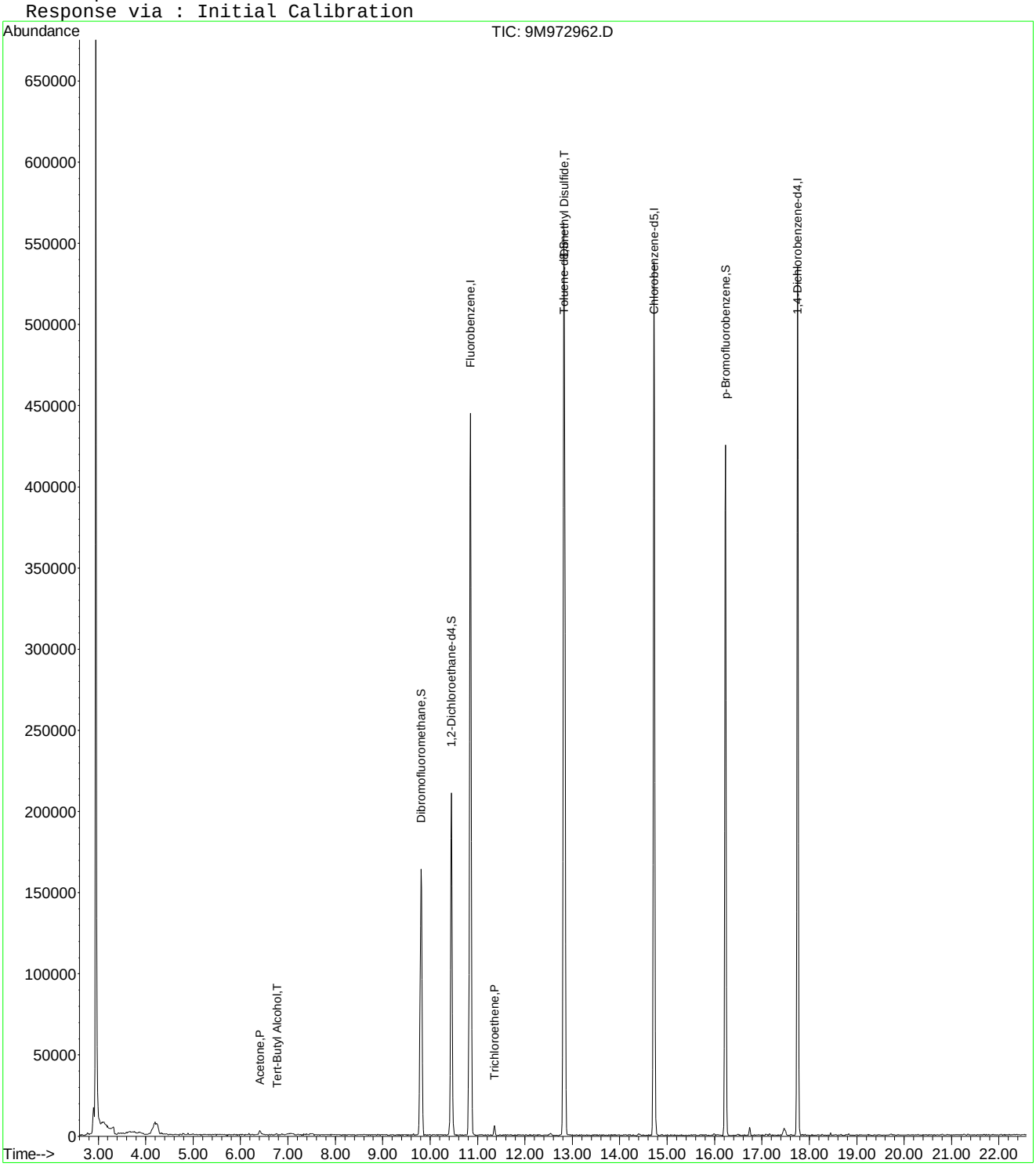

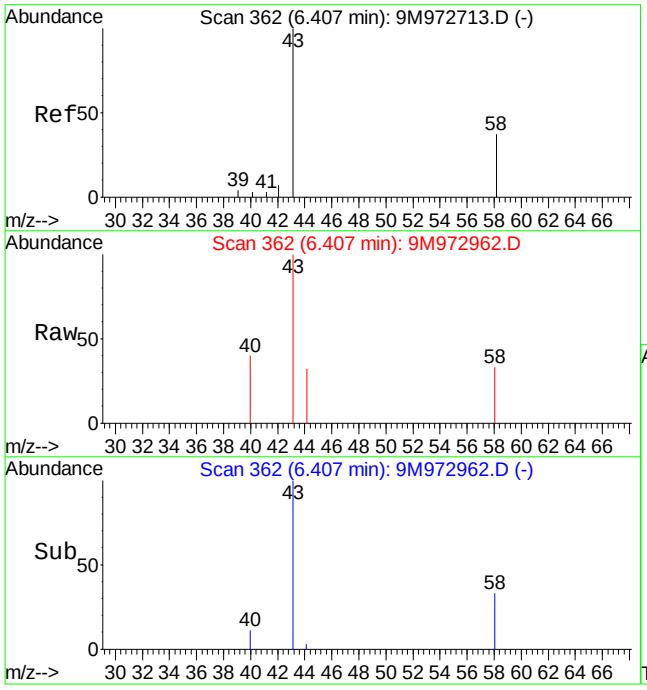

#13
Acetone
Concen: 1.75 ug/kg
RT: 6.41 min Scan# 362
Delta R.T. -0.01 min
Lab File: 9M972962.D
Acq: 29 Feb 2016 1:29

Tgt Ion: 43 Resp: 5478

Ion	Ratio	Lower	Upper
43	100		
58	24.9	16.9	39.3

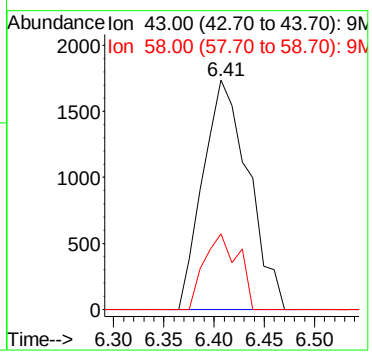

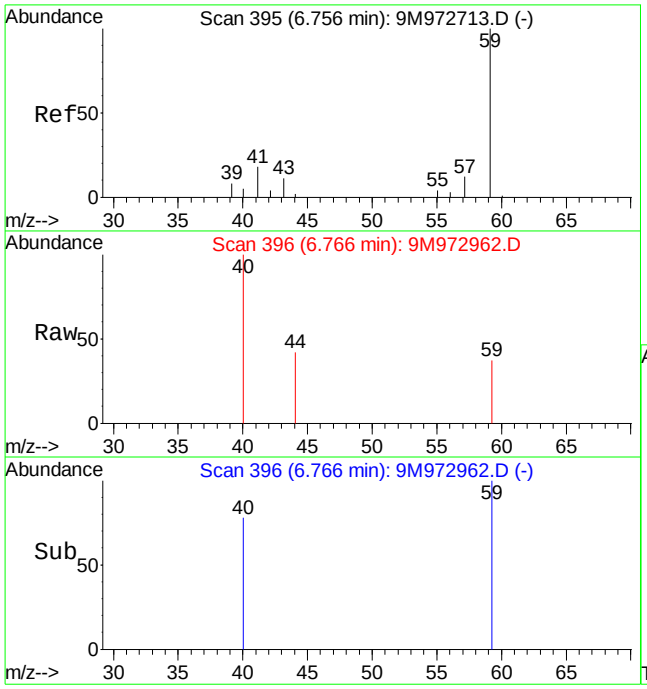

#15
Tert-Butyl Alcohol
Concen: 0.71 ug/kg
RT: 6.77 min Scan# 396
Delta R.T. 0.00 min
Lab File: 9M972962.D
Acq: 29 Feb 2016 1:29

Tgt Ion: 59 Resp: 389

Ion	Ratio	Lower	Upper
59	100		
41	0.0	14.1	32.9#
57	0.0	6.4	15.0#

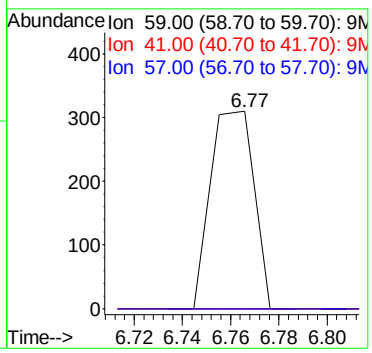

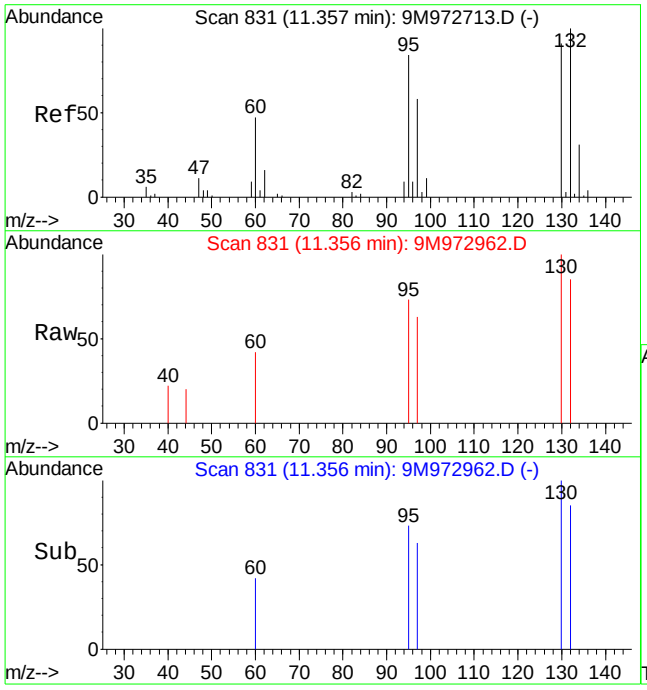

#47
Trichloroethene
Concen: 0.96 ug/kg
RT: 11.36 min Scan# 831
Delta R.T. 0.00 min
Lab File: 9M972962.D
Acq: 29 Feb 2016 1:29

Tgt Ion:130 Resp: 3097

Ion	Ratio	Lower	Upper
130	100		
132	84.4	56.5	131.7
95	97.7	55.4	129.4

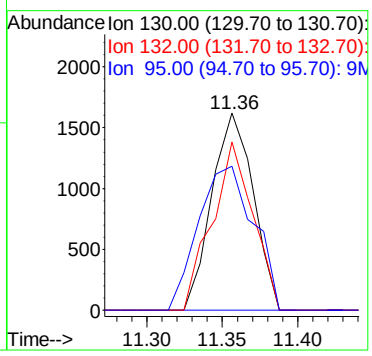

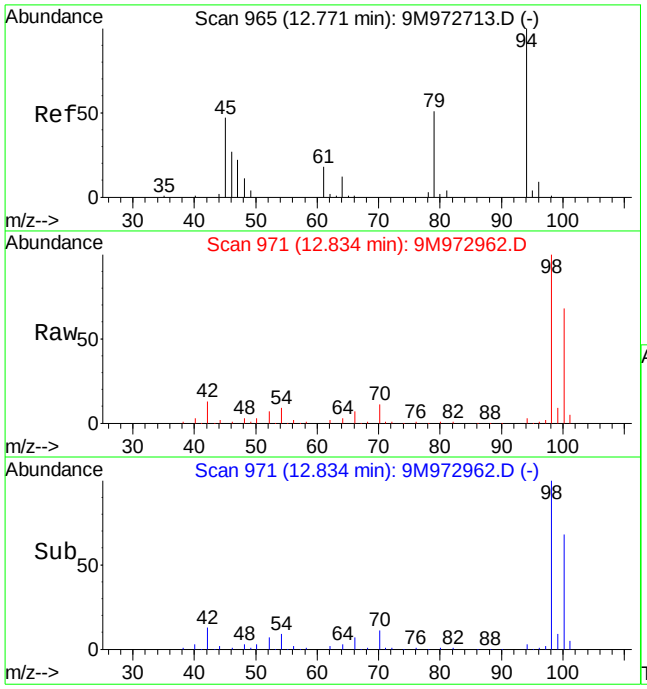

#56
Dimethyl Disulfide
Concen: 3.53 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.07 min
Lab File: 9M972962.D
Acq: 29 Feb 2016 1:29

Tgt Ion: 94 Resp: 14615

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

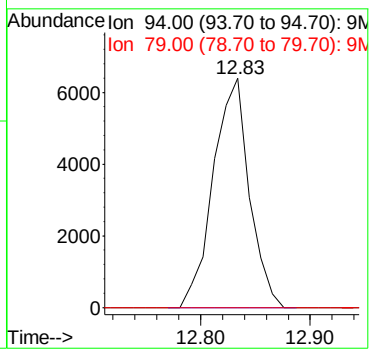

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972472.D Vial: 3
Acq On : 25 Jan 2016 11:22 Operator: FJB
Sample : WG555000-02 5ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:05 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	367739	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	266763	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.77	152	148882	50.00 ug/kg	0.01

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	1974	5.3580 ug/kg#	1
3) 3-Chloro-1-propene	7.23	41	18322	5.0468 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	19639	4.7564 ug/kg	98
5) Ethyl Acetate	9.24	43	12755	5.2595 ug/kg	91
6) Methacrylonitrile	9.40	67	3744	4.7691 ug/kg	95
7) Isobutyl Alcohol	9.42	43	1055	12.9700 ug/kg#	62
8) 1-Butanol	10.36	56	203	11.8711 ug/kg#	26
9) Methyl methacrylate	11.56	41	8689	4.6908 ug/kg	95
10) 2-Nitropropane	11.90	43	2531	4.2058 ug/kg	96

(#) = qualifier out of range (m) = manual integration
9M972472.D A9FOO_SL.M Wed Jan 27 11:22:42 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972472.D Vial: 3
Acq On : 25 Jan 2016 11:22 Operator: FJB
Sample : WG555000-02 5ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

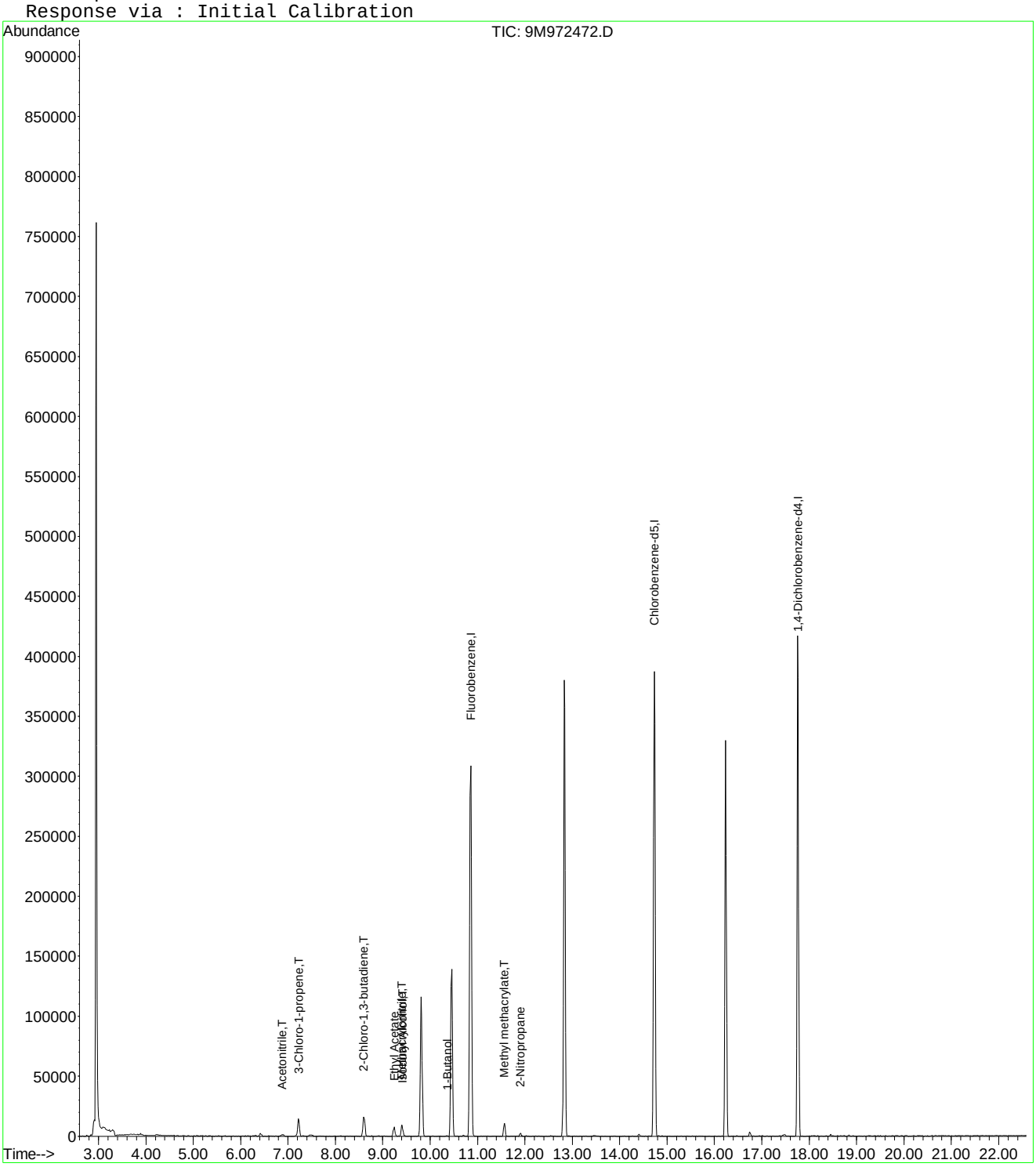

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972473.D Vial: 4
Acq On : 25 Jan 2016 11:52 Operator: FJB
Sample : WG555000-03 20ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:05 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	359691	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	265773	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	149223	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	7669	21.2815 ug/kg#	77
3) 3-Chloro-1-propene	7.23	41	75360	21.2224 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	82865	20.5181 ug/kg	100
5) Ethyl Acetate	9.23	43	47912	20.1986 ug/kg	97
6) Methacrylonitrile	9.40	67	15740	20.4980 ug/kg	98
7) Isobutyl Alcohol	9.42	43	5287	37.9280 ug/kg	95
8) 1-Butanol	10.35	56	1509	22.3153 ug/kg#	81
9) Methyl methacrylate	11.56	41	35437	19.5588 ug/kg	98
10) 2-Nitropropane	11.90	43	10433	17.7247 ug/kg	98
12) Cyclohexanone	16.01	55	2157	16.3929 ug/kg#	86

(#) = qualifier out of range (m) = manual integration
9M972473.D A9FOO_SL.M Wed Jan 27 11:22:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972473.D Vial: 4
Acq On : 25 Jan 2016 11:52 Operator: FJB
Sample : WG555000-03 20ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

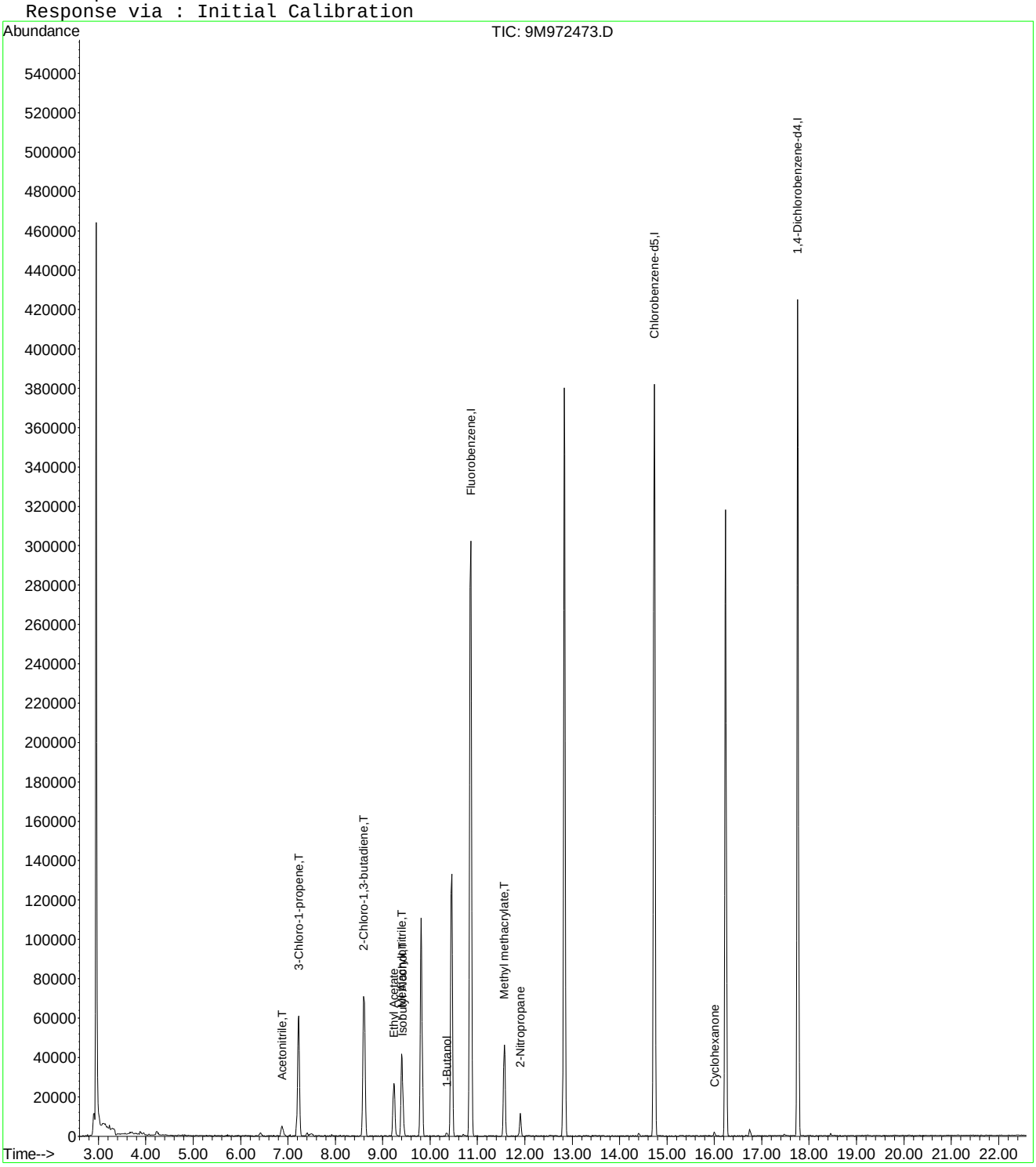

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972474.D Vial: 5
Acq On : 25 Jan 2016 12:23 Operator: FJB
Sample : WG555000-04 50ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:06 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	356886	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	259679	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	147334	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	16583	46.3795 ug/kg#	94
3) 3-Chloro-1-propene	7.23	41	160601	45.5828 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.61	53	185316	46.2464 ug/kg	99
5) Ethyl Acetate	9.23	43	111538	47.3915 ug/kg	99
6) Methacrylonitrile	9.40	67	36081	47.3572 ug/kg	99
7) Isobutyl Alcohol	9.42	43	12624	81.5447 ug/kg	95
8) 1-Butanol	10.35	56	4707	48.0983 ug/kg#	50
9) Methyl methacrylate	11.56	41	82406	45.8400 ug/kg	99
10) 2-Nitropropane	11.90	43	26302	45.0359 ug/kg	97
12) Cyclohexanone	16.01	55	5625	43.7525 ug/kg	93

(#) = qualifier out of range (m) = manual integration
9M972474.D A9FOO_SL.M Wed Jan 27 11:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972474.D Vial: 5
Acq On : 25 Jan 2016 12:23 Operator: FJB
Sample : WG555000-04 50ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

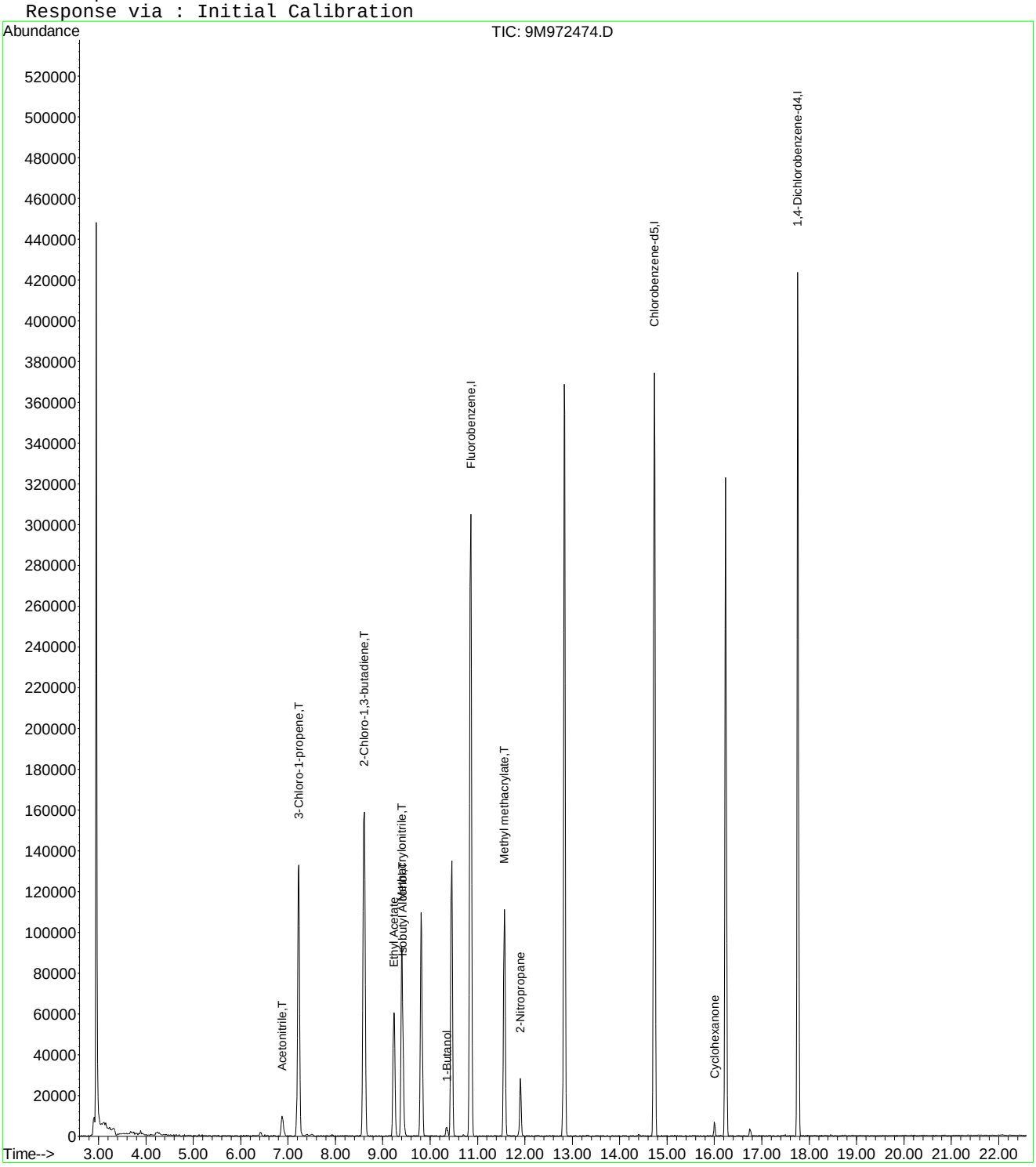

9M972474.D A9FOO_SL.M Wed Jan 27 11:22:51 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972475.D Vial: 6
Acq On : 25 Jan 2016 12:53 Operator: FJB
Sample : WG555000-05 100ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:06 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	394669	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	285851	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	161505	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	37767	95.5151	ug/kg#	100
3) 3-Chloro-1-propene	7.23	41	409870	105.1952	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.61	53	467514	105.5010	ug/kg	100
5) Ethyl Acetate	9.23	43	267513	102.7824	ug/kg	100
6) Methacrylonitrile	9.40	67	88054	104.5088	ug/kg	100
7) Isobutyl Alcohol	9.42	43	33721	187.1766	ug/kg	100
8) 1-Butanol	10.36	56	11671	95.0627	ug/kg	100
9) Methyl methacrylate	11.56	41	209503	105.3834	ug/kg	100
10) 2-Nitropropane	11.90	43	65435	101.3157	ug/kg	100
12) Cyclohexanone	16.01	55	14062	99.3630	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972475.D A9FOO_SL.M Wed Jan 27 11:22:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972475.D Vial: 6
Acq On : 25 Jan 2016 12:53 Operator: FJB
Sample : WG555000-05 100ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

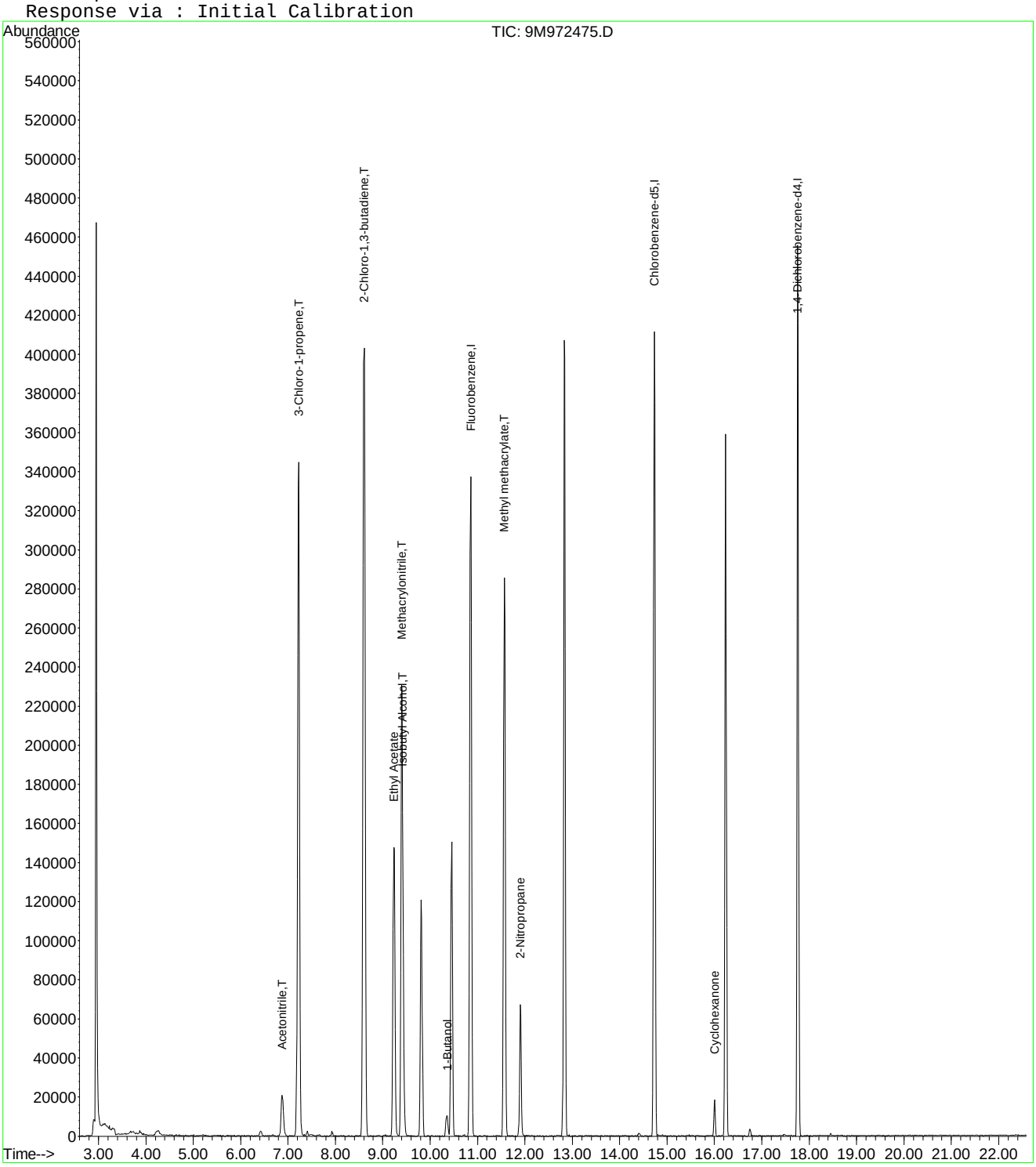

9M972475.D A9FOO_SL.M Wed Jan 27 11:22:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972476.D Vial: 7
Acq On : 25 Jan 2016 13:23 Operator: FJB
Sample : WG555000-06 200ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 09:51:10 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	361792	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	264283	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	150478	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.87	41	75099	207.1896	ug/kg#	94
3) 3-Chloro-1-propene	7.22	41	743262	208.0969	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	846271	208.3269	ug/kg	100
5) Ethyl Acetate	9.23	43	489855	205.3125	ug/kg	100
6) Methacrylonitrile	9.40	67	159879	206.9995	ug/kg	100
7) Isobutyl Alcohol	9.42	43	68551	406.6640	ug/kg	99
8) 1-Butanol	10.35	56	24111	201.3375	ug/kg	97
9) Methyl methacrylate	11.57	41	382820	210.0636	ug/kg	99
10) 2-Nitropropane	11.90	43	129000	217.8866	ug/kg	95
12) Cyclohexanone	16.00	55	30065	229.7785	ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972476.D A9FOO_SL.M Wed Jan 27 09:51:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972476.D Vial: 7
Acq On : 25 Jan 2016 13:23 Operator: FJB
Sample : WG555000-06 200ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 9:51 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

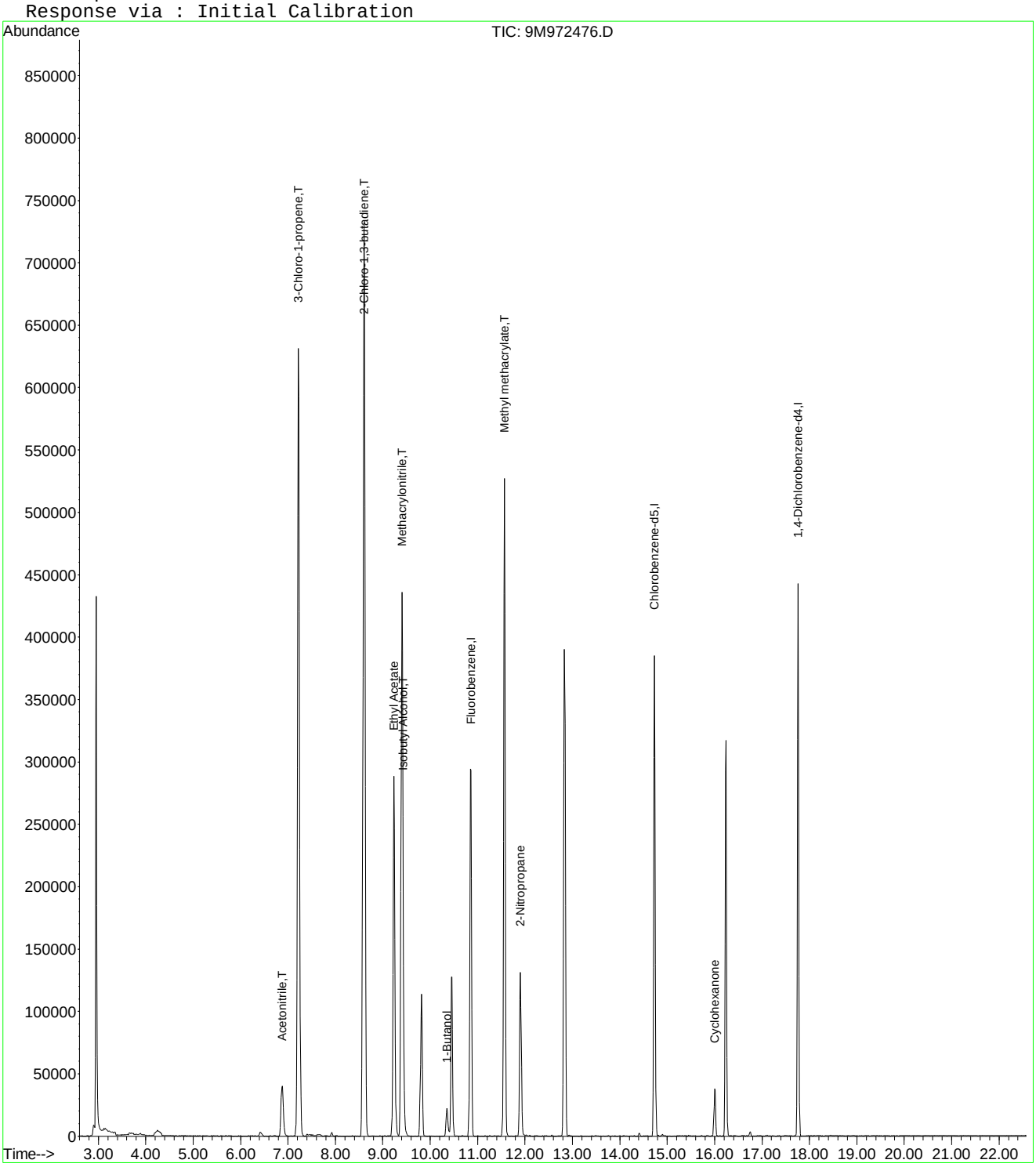

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972477.D Vial: 8
Acq On : 25 Jan 2016 13:54 Operator: FJB
Sample : WG555000-07 300ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:07 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.85	96	362779	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	265659	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	153468	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	99618	274.0870	ug/kg#	97
3) 3-Chloro-1-propene	7.22	41	944879	263.8255	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	1107217	271.8226	ug/kg	99
5) Ethyl Acetate	9.24	43	652386	272.6900	ug/kg	99
6) Methacrylonitrile	9.40	67	208153	268.7679	ug/kg	98
7) Isobutyl Alcohol	9.43	43	89707	528.6093	ug/kg#	99
8) 1-Butanol	10.35	56	31640	260.3131	ug/kg	98
9) Methyl methacrylate	11.57	41	502506	274.9883	ug/kg	98
10) 2-Nitropropane	11.90	43	172692	290.8907	ug/kg	95
12) Cyclohexanone	16.00	55	36951	280.9436	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972477.D A9FOO_SL.M Wed Jan 27 11:23:05 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972477.D Vial: 8
Acq On : 25 Jan 2016 13:54 Operator: FJB
Sample : WG555000-07 300ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

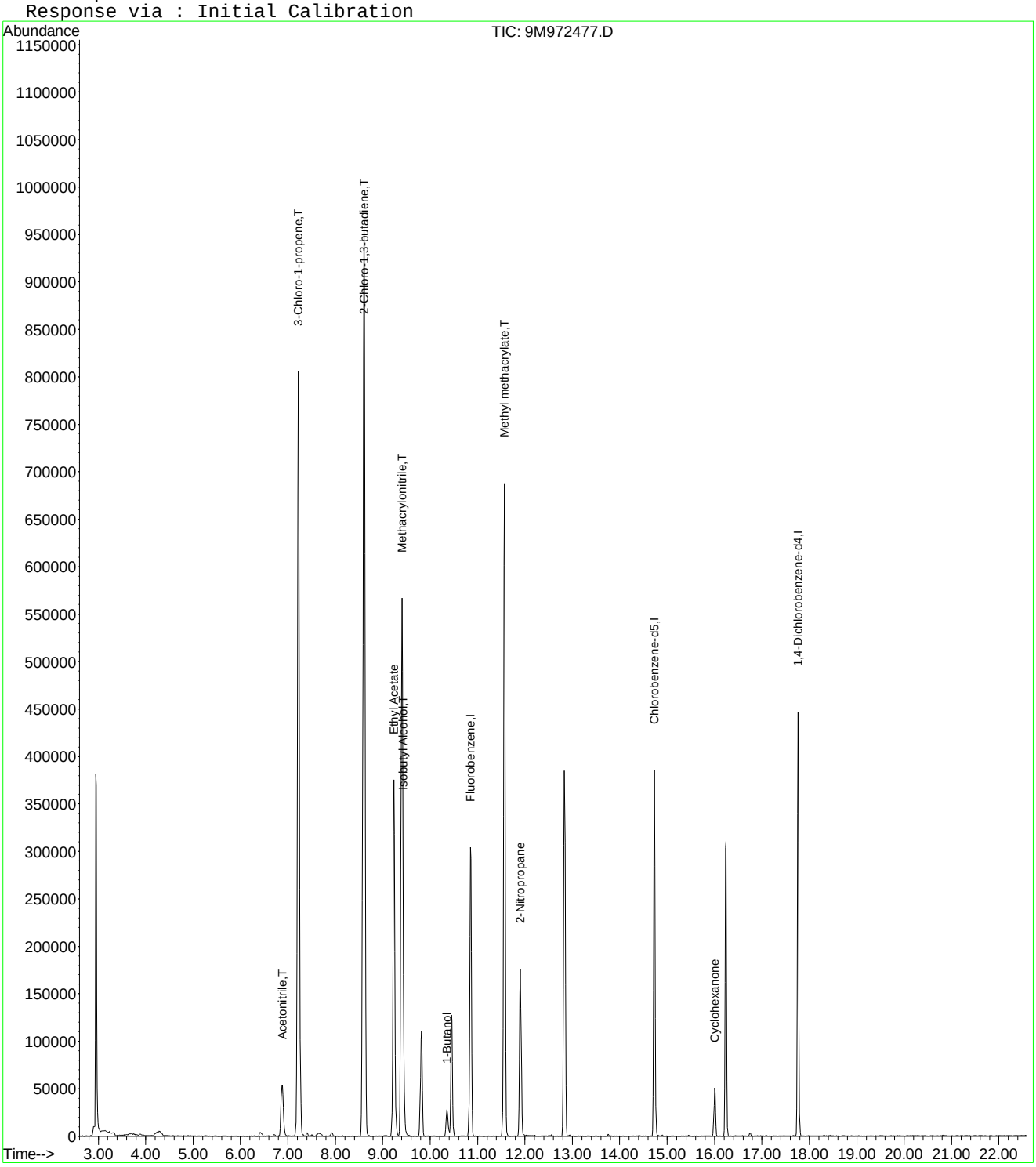

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972478.D Vial: 9
Acq On : 25 Jan 2016 14:25 Operator: FJB
Sample : WG555000-08 400ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 09:51:10 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	359343	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	261674	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	149058	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.89	41	148074	411.3034	ug/kg#	96
3) 3-Chloro-1-propene	7.22	41	1457717	410.9100	ug/kg	99
4) 2-Chloro-1,3-butadiene	8.61	53	1703971	422.3261	ug/kg	100
5) Ethyl Acetate	9.23	43	980479	413.7480	ug/kg	100
6) Methacrylonitrile	9.40	67	321602	419.2243	ug/kg	99
7) Isobutyl Alcohol	9.43	43	142361	842.7355	ug/kg#	98
8) 1-Butanol	10.36	56	51732	422.9922	ug/kg	99
9) Methyl methacrylate	11.56	41	779879	430.8570	ug/kg	98
10) 2-Nitropropane	11.90	43	267565	455.0088	ug/kg	96
12) Cyclohexanone	16.01	55	56623	437.0688	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972478.D A9FOO_SL.M Wed Jan 27 09:51:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972478.D Vial: 9
Acq On : 25 Jan 2016 14:25 Operator: FJB
Sample : WG555000-08 400ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 9:51 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

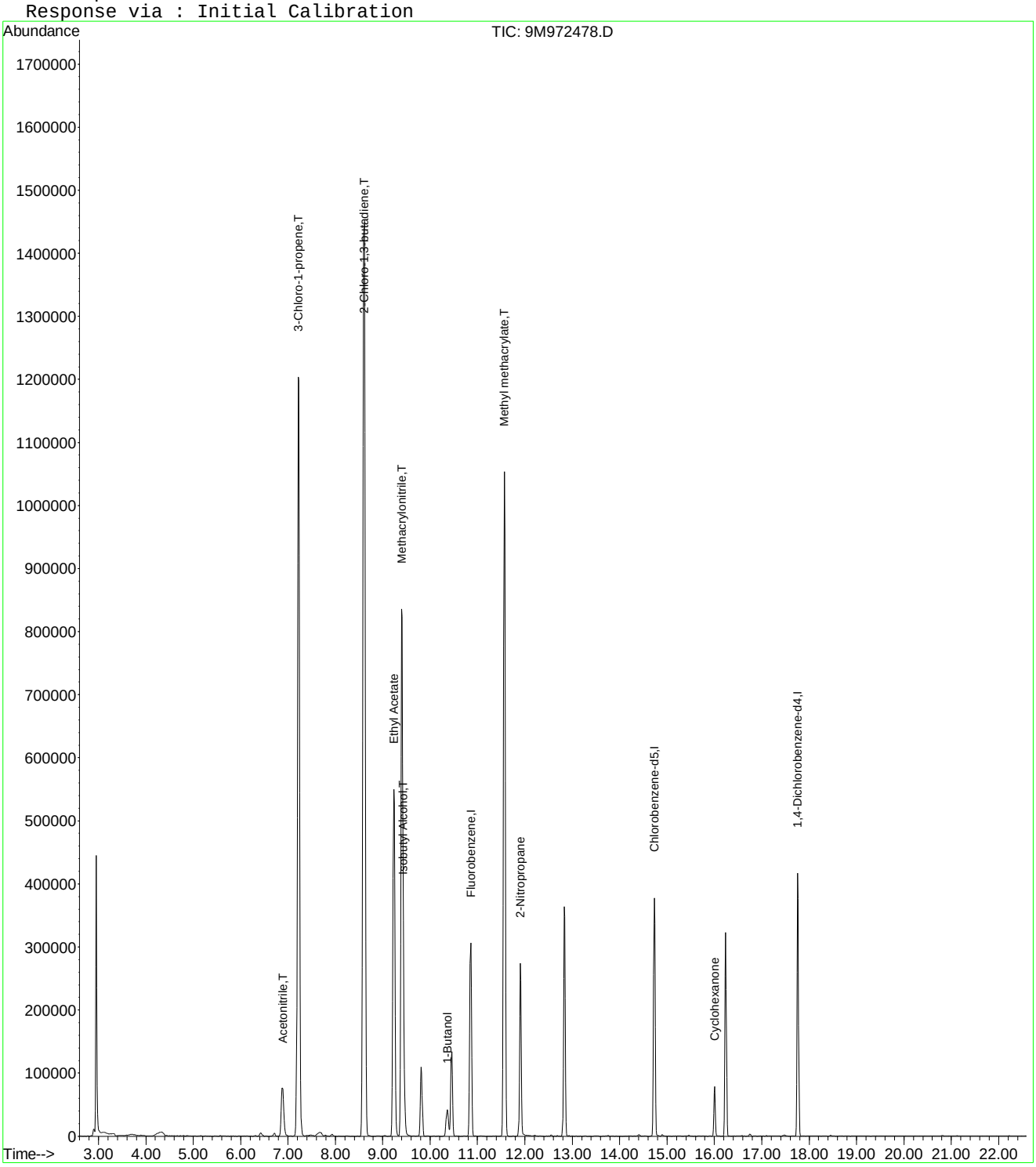

9M972478.D A9FOO_SL.M Wed Jan 27 09:51:11 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972479.D Vial: 10
Acq On : 25 Jan 2016 14:56 Operator: FJB
Sample : WG555000-09 500ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:08 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	364474	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	266311	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	151707	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	196334	537.6773	ug/kg#	94
3) 3-Chloro-1-propene	7.22	41	1832802	509.3680	ug/kg	99
4) 2-Chloro-1,3-butadiene	8.60	53	2126710	519.6807	ug/kg	100
5) Ethyl Acetate	9.23	43	1255294	522.2587	ug/kg	100
6) Methacrylonitrile	9.40	67	408537	525.0513	ug/kg	100
7) Isobutyl Alcohol	9.43	43	180610	1052.3719	ug/kg	98
8) 1-Butanol	10.36	56	64789	519.8809	ug/kg	97
9) Methyl methacrylate	11.56	41	981460	534.5904	ug/kg	100
10) 2-Nitropropane	11.90	43	346571	581.0659	ug/kg	97
12) Cyclohexanone	16.01	55	74733	566.8143	ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972479.D A9FOO_SL.M Wed Jan 27 11:30:29 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972479.D Vial: 10
Acq On : 25 Jan 2016 14:56 Operator: FJB
Sample : WG555000-09 500ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

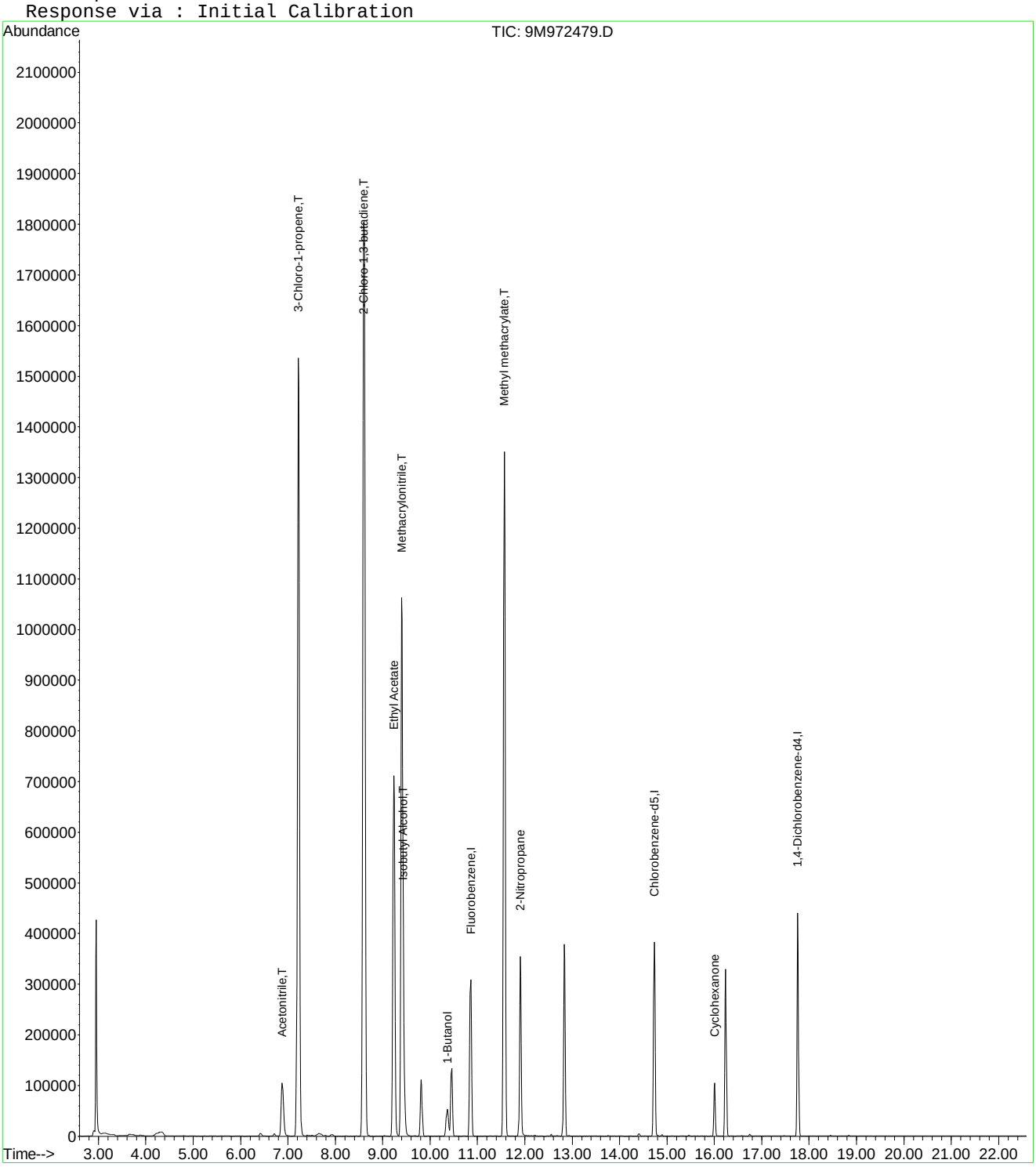

9M972479.D A9FOO_SL.M Wed Jan 27 11:30:29 2016 Page 2

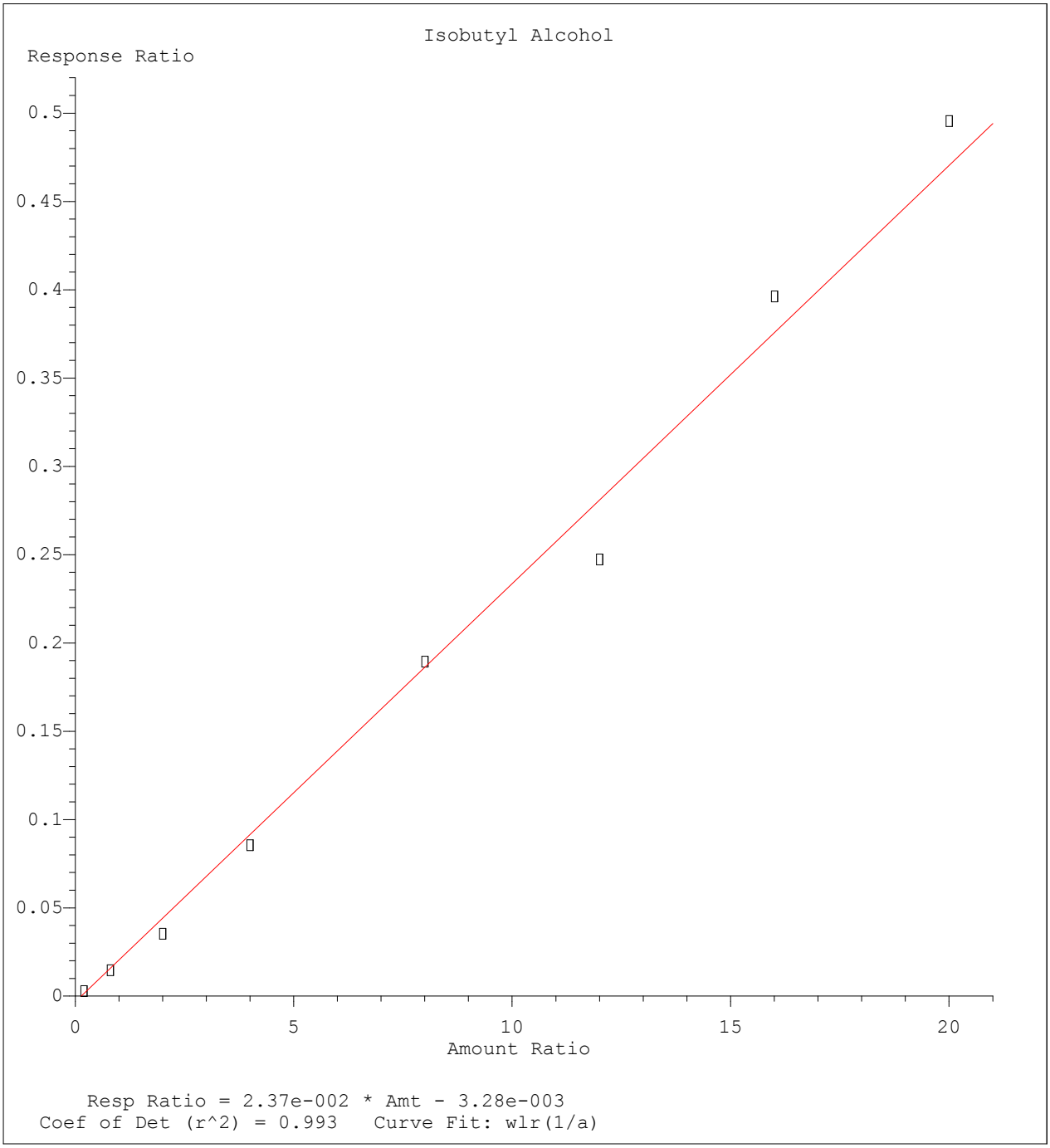

Method Name: C:\MSDCHEM\1\METHODS\A9FOO_SL.M
Calibration Table Last Updated: Wed Jan 27 09:49:02 2016

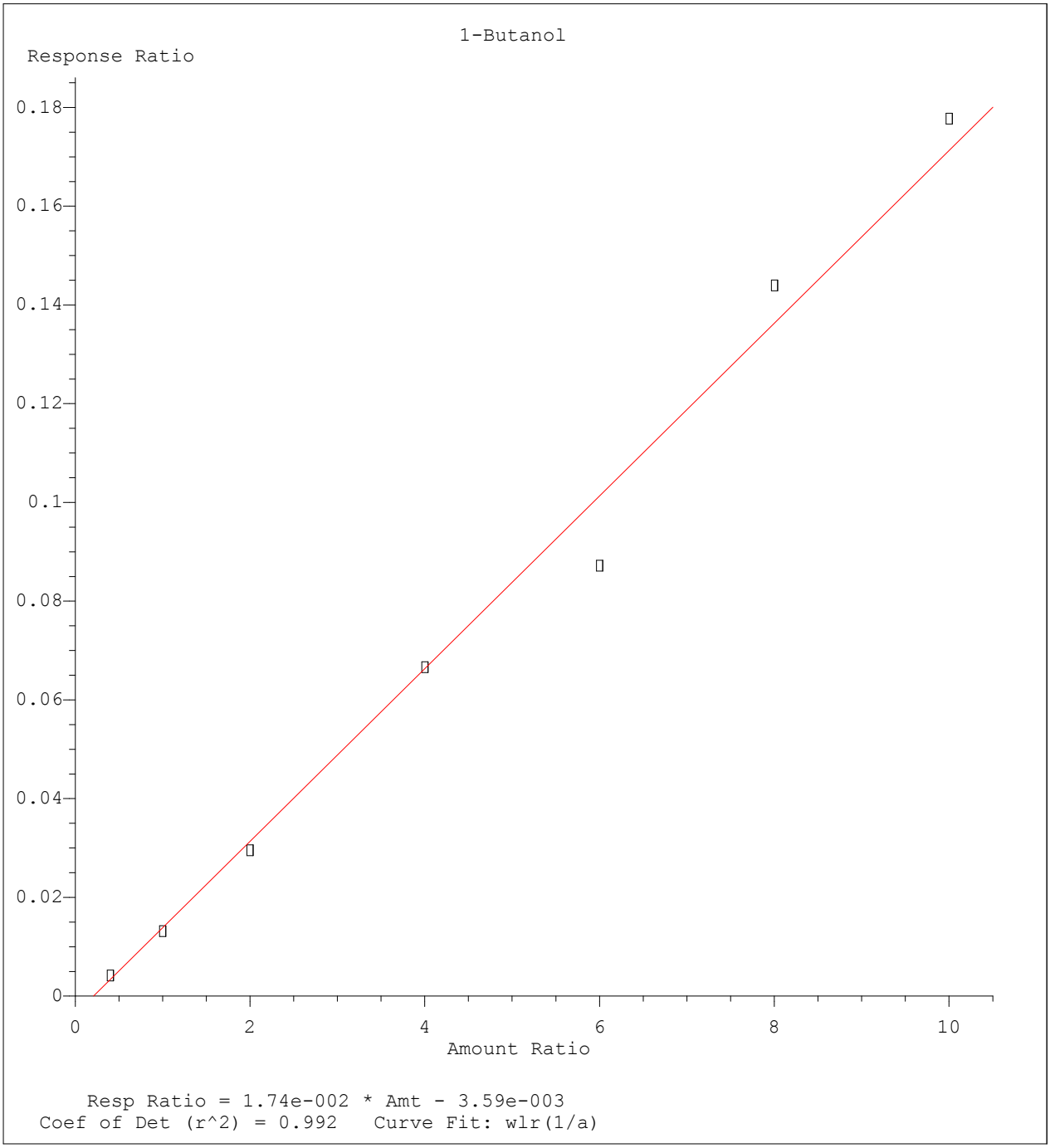

Method Name: C:\MSDCHEM\1\METHODS\A9FOO_SL.M
Calibration Table Last Updated: Wed Jan 27 09:49:02 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:09 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	394765	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	285754	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	159586	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	40054	101.2745	ug/kg#	100
3) 3-Chloro-1-propene	7.22	41	402890	103.3786	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	572568	129.1764	ug/kg	99
5) Ethyl Acetate	9.23	43	275962	106.0028	ug/kg	99
6) Methacrylonitrile	9.40	67	90289	107.1354	ug/kg	96
7) Isobutyl Alcohol	9.42	43	34031	188.7895	ug/kg	99
8) 1-Butanol	10.35	56	12038	97.7072	ug/kg	97
9) Methyl methacrylate	11.56	41	219363	110.3163	ug/kg	100
10) 2-Nitropropane	11.90	43	69288	107.2554	ug/kg	93
12) Cyclohexanone	16.01	55	14203	100.3934	ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972481.D A9FOO_SL.M Wed Jan 27 11:15:09 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

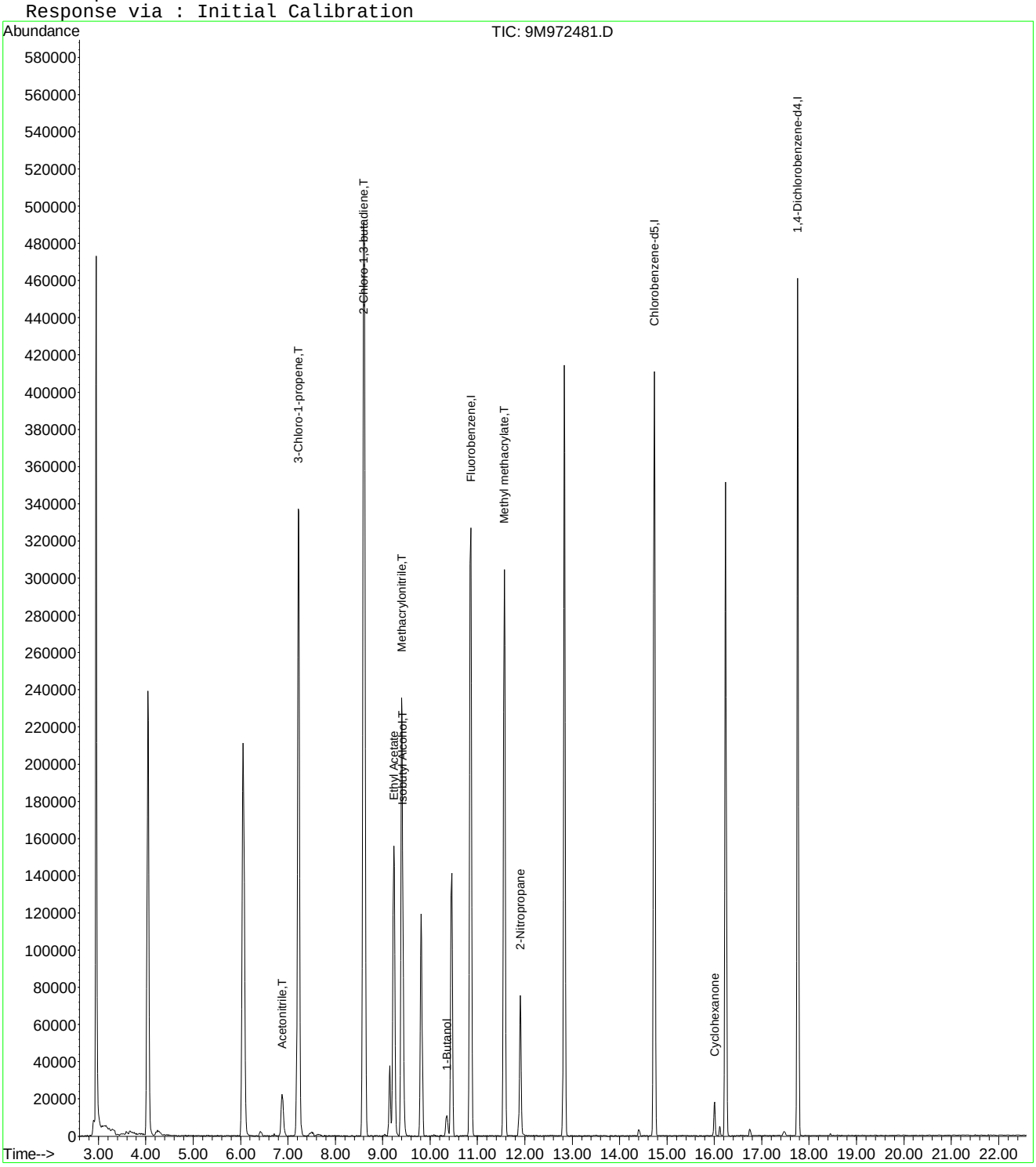

9M972481.D A9FOO_SL.M Wed Jan 27 11:15:09 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	101.2745	-1.3	106	0.00
3	T	3-Chloro-1-propene	100.0000	103.3786	-3.4	98	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	129.1764	-29.2	122	0.00
5		Ethyl Acetate	100.0000	106.0028	-6.0	103	0.00
6	T	Methacrylonitrile	100.0000	107.1354	-7.1	103	0.00
7	T	Isobutyl Alcohol	200.0000	188.7895	5.6	101	0.00
8		1-Butanol	100.0000	97.7072	2.3	103	0.00
9	T	Methyl methacrylate	100.0000	110.3163	-10.3	105	0.00
10		2-Nitropropane	100.0000	107.2554	-7.3	106	0.00
11	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
12		Cyclohexanone	100.0000	100.3934	-0.4	101	0.00
13	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	99	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972481.D A9FOO_SL.M Wed Jan 27 11:32:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972896.D Vial: 3
Acq On : 25 Feb 2016 15:48 Operator: ADC
Sample : WG558732-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:54 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260B_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	517775	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.73	117	378926	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.76	152	183008	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	147955	52.7167 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.44%		
43) 1,2-Dichloroethane-d4	10.44	65	183779	52.1887 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.38%		
58) Toluene-d8	12.83	98	511451	53.3617 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.72%		
79) p-Bromofluorobenzene	16.23	95	191673	53.7871 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 107.58%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.28	85	204882	57.9763 ug/kg	100
3) Chloromethane	3.74	50	183152	54.0664 ug/kg	100
4) Vinyl Chloride	3.99	62	192536	56.7764 ug/kg	100
5) 1,3-Butadiene	4.04	54	170907	52.9740 ug/kg	100
6) Bromomethane	4.88	94	107911	48.9956 ug/kg	100
7) Chloroethane	5.04	64	85391	56.5213 ug/kg	100
8) Trichlorofluoromethane	5.53	101	265962	52.2923 ug/kg	100
9) Diethyl ether	6.04	59	249400	104.8955 ug/kg	100
10) Isoprene	6.09	67	156373	51.4980 ug/kg	100
11) Acrolein	6.30	56	24630	51.9520 ug/kg	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	135036	51.4825 ug/kg	100
13) Acetone	6.41	43	66195	50.6135 ug/kg	100
14) 1,1-Dichloroethene	6.61	61	244051	50.4389 ug/kg	100
15) Tert-Butyl Alcohol	6.76	59	110494	208.7036 ug/kg	98
16) Dimethyl Sulfide	6.88	62	109294	53.4455 ug/kg	100
17) Iodomethane	7.13	142	79749	55.1586 ug/kg	100
18) Methyl acetate	7.14	43	135648	51.5699 ug/kg	100
19) Methylene Chloride	7.40	84	135280	51.3362 ug/kg	100
20) Carbon Disulfide	7.45	76	381814	51.2249 ug/kg	100
21) Acrylonitrile	7.59	53	69697	53.5624 ug/kg	100
22) Methyl Tert Butyl Ether	7.61	73	407131	54.2460 ug/kg	100
23) trans-1,2-Dichloroethene	7.85	61	226890	52.6160 ug/kg	100
24) n-Hexane	7.91	57	219597	49.3729 ug/kg	100
25) Diisopropyl ether	8.26	45	1088740	105.3973 ug/kg	100
26) Vinyl Acetate	8.43	43	311838	52.9553 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	284391	52.5076 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	1023392	106.5502 ug/kg	100
29) 2-Butanone	9.03	43	86123	51.5803 ug/kg	100
30) Propionitrile	9.14	54	53253	104.2214 ug/kg	100
31) 2,2-Dichloropropane	9.24	77	215042	53.1943 ug/kg	100
32) cis-1,2-Dichloroethene	9.31	96	153722	54.3532 ug/kg	100
33) Chloroform	9.52	83	263571	52.9749 ug/kg	100
34) 1-Bromopropane	9.65	122	22164	51.3817 ug/kg	100
35) Bromochloromethane	9.75	130	102780	55.9453 ug/kg	100
36) Tetrahydrofuran	9.78	42	113791	105.7289 ug/kg	100
38) 1,1,1-Trichloroethane	10.04	97	243452	54.1074 ug/kg	100
39) Cyclohexane	10.08	56	247641	50.4821 ug/kg	100
40) 1,1-Dichloropropene	10.24	75	182199	51.4612 ug/kg	100
41) Tert-Amyl-Methyl ether	10.34	73	741165	106.1603 ug/kg	100
42) Carbon Tetrachloride	10.39	117	221306	53.0537 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972896.D Vial: 3
Acq On : 25 Feb 2016 15:48 Operator: ADC
Sample : WG558732-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:54 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260B_SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	237857	54.3500	ug/kg	100
46)	Benzene	10.60	78	503328	50.7793	ug/kg	100
47)	Trichloroethene	11.35	130	163959	52.2047	ug/kg	100
48)	Methylcyclohexane	11.44	83	204551	51.9284	ug/kg	100
49)	1,2-Dichloropropane	11.56	63	148045	54.3898	ug/kg	100
50)	1,4-Dioxane	11.88	88	7789	190.7454	ug/kg	100
51)	Bromodichloromethane	11.87	83	203922	53.1595	ug/kg	100
52)	Dibromomethane	11.96	174	95887	53.1673	ug/kg	100
53)	2-Chloroethyl Vinyl Ether	12.17	63	38515	51.1377	ug/kg	100
54)	4-Methyl-2-Pentanone	12.19	58	64999	54.4056	ug/kg	100
55)	cis-1,3-Dichloropropene	12.50	75	212797	53.2452	ug/kg	100
56)	Dimethyl Disulfide	12.77	94	219798	54.7267	ug/kg	100
59)	Toluene	12.92	91	563647	52.0613	ug/kg	100
60)	Ethyl Methacrylate	13.02	69	158958	52.9687	ug/kg	100
61)	trans-1,3-Dichloropropene	13.10	75	212386	54.4657	ug/kg	100
62)	1,1,2-Trichloroethane	13.33	97	122975	54.0706	ug/kg	100
63)	2-Hexanone	13.25	43	119176	52.4822	ug/kg	100
64)	1,3-Dichloropropane	13.63	76	201541	53.1810	ug/kg	100
65)	Tetrachloroethene	13.75	164	117066	50.4378	ug/kg	100
66)	Dibromochloromethane	14.01	129	168874	53.1294	ug/kg	100
67)	1,2-Dibromoethane	14.28	107	132755	52.6249	ug/kg	100
68)	1-Chlorohexane	14.35	91	168490	52.7733	ug/kg	100
69)	Chlorobenzene	14.77	112	400241	52.5998	ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.80	131	154536	54.0800	ug/kg	100
71)	Ethylbenzene	14.80	106	207031	52.8117	ug/kg	100
72)	m-,p-Xylene	14.89	106	497405	102.7415	ug/kg	100
73)	o-Xylene	15.45	106	247567	53.2858	ug/kg	100
74)	Styrene	15.49	104	425634	53.7983	ug/kg	100
75)	Bromoform	16.00	173	116015	55.5910	ug/kg	100
76)	Isopropylbenzene	15.88	105	658255	52.7764	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.10	83	147970	53.3007	ug/kg	100
80)	1,2,3-Trichloropropane	16.29	110	55711	52.9159	ug/kg	100
81)	trans-1,4-Dichloro-2-Buten	16.33	53	55525	52.3210	ug/kg	100
82)	n-Propylbenzene	16.39	91	751844	52.2641	ug/kg	100
83)	Bromobenzene	16.52	156	177299	52.2079	ug/kg	100
84)	1,3,5-Trimethylbenzene	16.58	105	568867	52.6809	ug/kg	100
85)	2-Chlorotoluene	16.66	91	484783	50.2437	ug/kg	100
86)	4-Chlorotoluene	16.70	91	481367	53.9615	ug/kg	100
87)	a-Methylstyrene	16.98	118	255765	51.9817	ug/kg	100
88)	tert-Butylbenzene	17.04	134	121669	53.7430	ug/kg	100
89)	1,2,4-Trimethylbenzene	17.09	105	580656	51.3463	ug/kg	100
90)	sec-Butylbenzene	17.30	105	726352	52.2266	ug/kg	100
91)	p-Isopropyltoluene	17.46	119	613096	52.2364	ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	337008	49.9319	ug/kg	100
93)	1,4-Dichlorobenzene	17.80	146	335195	49.6777	ug/kg	100
94)	n-Butylbenzene	17.99	91	563797	51.6647	ug/kg	100
95)	1,2-Dichlorobenzene	18.30	146	320108	51.1150	ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.30	157	42968	53.4468	ug/kg	100
97)	1,2,4-Trichlorobenzene	20.44	180	222592	50.0691	ug/kg	100
98)	Hexachlorobutadiene	20.59	225	117654	50.2053	ug/kg	100
99)	Naphthalene	20.81	128	602344	54.0184	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	222082	51.5034	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972896.D 8260SL.M Fri Feb 26 11:21:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972896.D Vial: 3
Acq On : 25 Feb 2016 15:48 Operator: ADC
Sample : WG558732-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

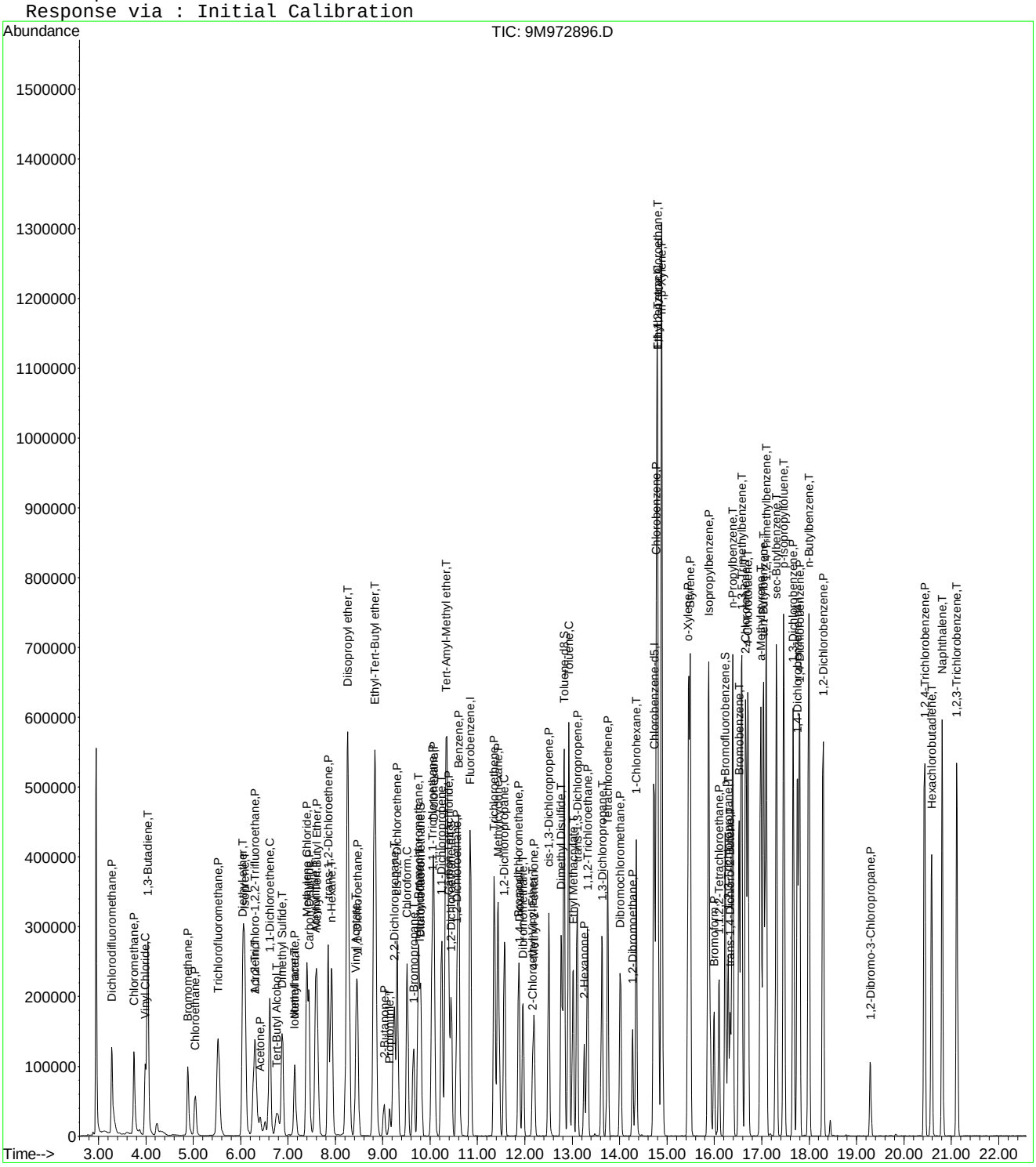

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:15 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	491503	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	353502	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	169028	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.83	98	923	0.1032 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.20%#	
79) p-Bromofluorobenzene	16.22	95	770	0.2339 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.46%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	1359	0.4051 ug/kg#	69
3) Chloromethane	3.75	50	2926	0.9099 ug/kg	95
4) Vinyl Chloride	3.98	62	1474	0.4579 ug/kg#	67
5) 1,3-Butadiene	4.03	54	1519	0.4960 ug/kg	82
6) Bromomethane	4.89	94	2071	0.9906 ug/kg	100
8) Trichlorofluoromethane	5.53	101	2609	0.5404 ug/kg#	51
10) Isoprene	6.08	67	1239	0.4298 ug/kg	70
13) Acetone	6.43	43	4251	5.5216 ug/kg#	75
14) 1,1-Dichloroethene	6.63	61	2149	0.4679 ug/kg#	66
17) Iodomethane	7.14	142	943	3.4505 ug/kg#	34
18) Methyl acetate	7.16	43	1334	0.5343 ug/kg#	45
19) Methylene Chloride	7.40	84	1287	0.5145 ug/kg	81
20) Carbon Disulfide	7.44	76	6762	0.9557 ug/kg#	76
23) trans-1,2-Dichloroethene	7.84	61	2196	0.5365 ug/kg	86
24) n-Hexane	7.92	57	2239	0.5303 ug/kg#	62
26) Vinyl Acetate	8.44	43	2494	0.4462 ug/kg#	78
27) 1,1-Dichloroethane	8.48	63	2396	0.4660 ug/kg#	63
29) 2-Butanone	9.02	43	778	0.4909 ug/kg#	58
31) 2,2-Dichloropropane	9.24	77	1877	0.4891 ug/kg#	42
32) cis-1,2-Dichloroethene	9.32	96	1178	0.4388 ug/kg	74
33) Chloroform	9.52	83	2007	0.4249 ug/kg	81
35) Bromochloromethane	9.74	130	828	0.4748 ug/kg#	68
36) Tetrahydrofuran	9.76	42	1603	1.5690 ug/kg#	57
38) 1,1,1-Trichloroethane	10.05	97	1773	0.4151 ug/kg	92
40) 1,1-Dichloropropene	10.25	75	1521	0.4526 ug/kg#	38
42) Carbon Tetrachloride	10.40	117	1765	0.4457 ug/kg#	85
45) 1,2-Dichloroethane	10.57	62	1885	0.4537 ug/kg#	68
46) Benzene	10.61	78	5607	0.5959 ug/kg#	83
47) Trichloroethene	11.36	130	1808	0.6064 ug/kg	88
48) Methylcyclohexane	11.44	83	1930	0.5161 ug/kg	96
55) cis-1,3-Dichloropropene	12.51	75	1714	0.4518 ug/kg#	51
59) Toluene	12.93	91	5550	0.5495 ug/kg	88
61) trans-1,3-Dichloropropene	13.10	75	1920	0.5278 ug/kg#	51
63) 2-Hexanone	13.25	43	877	0.4140 ug/kg#	63
64) 1,3-Dichloropropane	13.63	76	1615	0.4568 ug/kg	91
65) Tetrachloroethene	13.75	164	1154	0.5330 ug/kg#	74
67) 1,2-Dibromoethane	14.27	107	988	0.4198 ug/kg	87
68) 1-Chlorohexane	14.35	91	1436	0.4821 ug/kg	83
69) Chlorobenzene	14.78	112	4578	0.6449 ug/kg	87
70) 1,1,1,2-Tetrachloroethane	14.81	131	1078	0.4044 ug/kg	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:15 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
71)	Ethylbenzene	14.80	106	1823	0.4985 ug/kg	68
72)	m-,p-Xylene	14.88	106	4752	1.0521 ug/kg	95
73)	o-Xylene	15.44	106	2166	0.4997 ug/kg	94
74)	Styrene	15.49	104	3544	0.4802 ug/kg	91
76)	Isopropylbenzene	15.87	105	6349	0.5456 ug/kg	97
78)	1,1,2,2-Tetrachloroethane	16.09	83	1326	0.5171 ug/kg#	89
82)	n-Propylbenzene	16.38	91	7679	0.5780 ug/kg	98
83)	Bromobenzene	16.52	156	1798	0.5732 ug/kg	88
84)	1,3,5-Trimethylbenzene	16.57	105	4554	0.4566 ug/kg	92
85)	2-Chlorotoluene	16.66	91	5237	0.5877 ug/kg	84
86)	4-Chlorotoluene	16.71	91	5645	0.6851 ug/kg	93
87)	a-Methylstyrene	16.97	118	2091	0.4601 ug/kg	93
89)	1,2,4-Trimethylbenzene	17.09	105	6291	0.6023 ug/kg	84
90)	sec-Butylbenzene	17.31	105	7013	0.5460 ug/kg	93
91)	p-Isopropyltoluene	17.47	119	5681	0.5241 ug/kg	95
92)	1,3-Dichlorobenzene	17.67	146	4446	0.7132 ug/kg	91
93)	1,4-Dichlorobenzene	17.79	146	4603	0.7386 ug/kg#	73
94)	n-Butylbenzene	17.99	91	6750	0.6697 ug/kg#	90
95)	1,2-Dichlorobenzene	18.29	146	3889	0.6724 ug/kg	82
97)	1,2,4-Trichlorobenzene	20.43	180	3506	0.8539 ug/kg	94
98)	Hexachlorobutadiene	20.58	225	1493	0.6898 ug/kg#	70
99)	Naphthalene	20.81	128	10277	0.9979 ug/kg	93
100)	1,2,3-Trichlorobenzene	21.12	180	3961	0.9946 ug/kg	80

(#) = qualifier out of range (m) = manual integration
9M972898.D 8260SL.M Fri Feb 26 11:11:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration

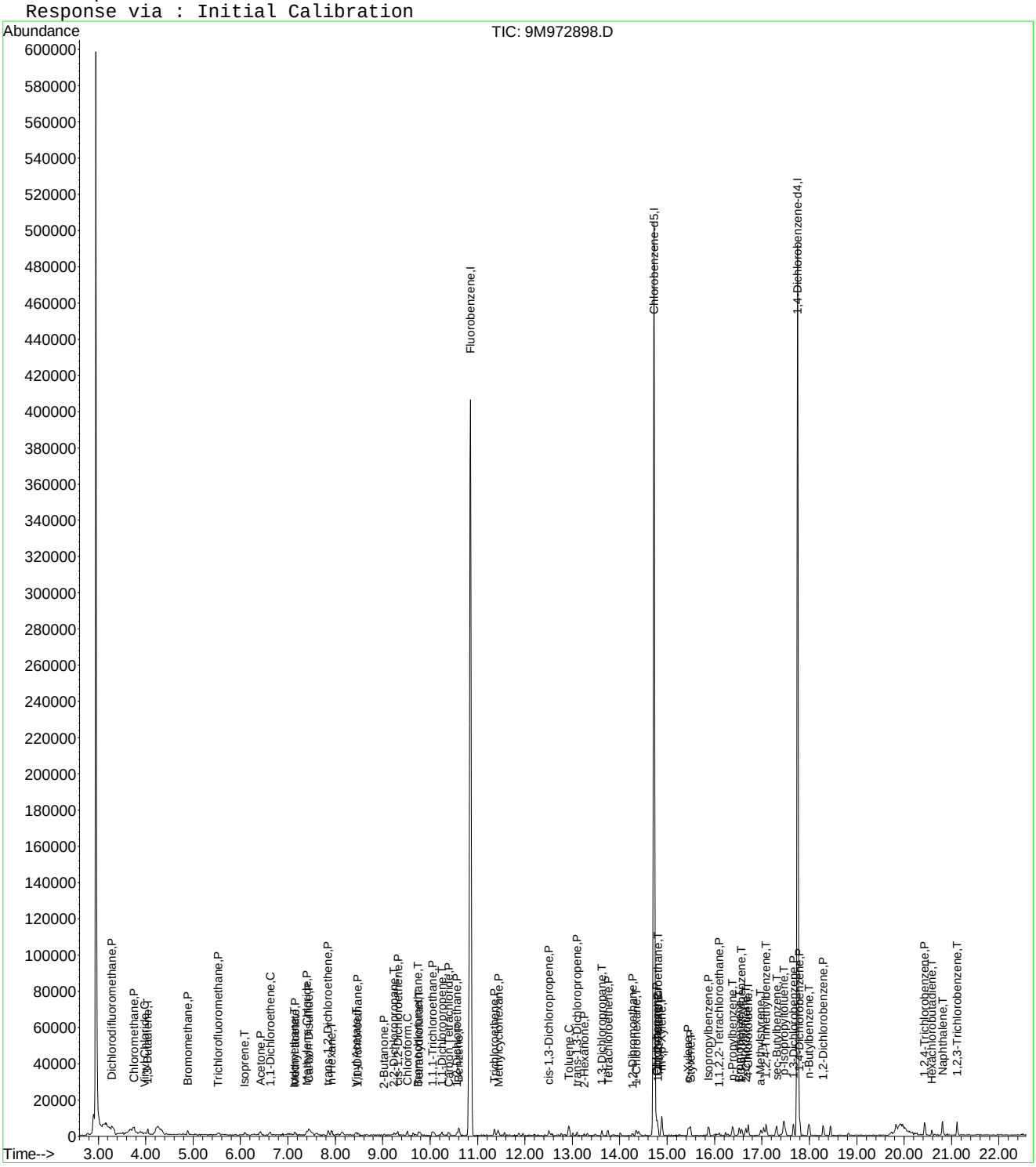

9M972898.D 8260SL.M Fri Feb 26 11:11:55 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	0.4051	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.9099	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.4579	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	0.4960	0.0	0	0.00
6	P	Bromomethane	-1.0000	0.9906	0.0	100	0.00
7	P	Chloroethane	-1.0000	0.2845	0.0	100	0.01
8	P	Trichlorofluoromethane	-1.0000	0.5404	0.0	100	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.04#
10	T	Isoprene	-1.0000	0.4298	0.0	0	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.30#
12	P	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.0779	0.0	100	0.00
13	P	Acetone	-1.0000	5.5216	0.0	0	0.02
14	C	1,1-Dichloroethene	-1.0000	0.4679	0.0	100	0.01
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.76#
16	T	Dimethyl Sulfide	-1.0000	0.1242	0.0	0	0.01
17	T	Iodomethane	-1.0000	3.4505	0.0	0	0.00
18	P	Methyl acetate	-1.0000	0.5343	0.0	0	0.02
19	P	Methylene Chloride	-1.0000	0.5145	0.0	100	0.00
20	P	Carbon Disulfide	-1.0000	0.9557	0.0	0	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.59#
22	P	Methyl Tert Butyl Ether	-1.0000	0.3878	0.0	100	0.00
23	P	trans-1,2-Dichloroethene	-1.0000	0.5365	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.5303	0.0	0	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.26#
26	T	Vinyl Acetate	-1.0000	0.4462	0.0	100	0.01
27	P	1,1-Dichloroethane	-1.0000	0.4660	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.83#
29	P	2-Butanone	-1.0000	0.4909	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.14#
31	T	2,2-Dichloropropane	-1.0000	0.4891	0.0	100	0.00
32	P	cis-1,2-Dichloroethene	-1.0000	0.4388	0.0	100	0.01
33	C	Chloroform	-1.0000	0.4249	0.0	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.65#
35	T	Bromochloromethane	-1.0000	0.4748	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	1.5690	0.0	100	-0.02
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	-1.0000	0.4151	0.0	100	0.00
39	P	Cyclohexane	-1.0000	0.3314	0.0	0	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4526	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.34#
42	P	Carbon Tetrachloride	-1.0000	0.4457	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	-1.0000	0.4537	0.0	100	0.00
46	P	Benzene	0.5000	0.5959	-19.2	100	0.00
47	P	Trichloroethene	-1.0000	0.6064	0.0	100	0.00
48	P	Methylcyclohexane	-1.0000	0.5161	0.0	0	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2930	0.0	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.88#
51	P	Bromodichloromethane	-1.0000	0.3238	0.0	100	0.00
52	T	Dibromomethane	-1.0000	0.1630	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.0000	0.0	0	-12.16#
54	P	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.19#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	-1.0000	0.4518	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2529	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.1032	0.0	100	0.00
59	C	Toluene	0.5000	0.5495	-9.9	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2340	0.0	0	0.00
61	P	trans-1,3-Dichloropropene	-1.0000	0.5278	0.0	100	0.00
62	P	1,1,2-Trichloroethane	-1.0000	0.3964	0.0	100	0.00
63	P	2-Hexanone	-1.0000	0.4140	0.0	100	0.00
64	T	1,3-Dichloropropane	-1.0000	0.4568	0.0	100	0.00
65	P	Tetrachloroethene	-1.0000	0.5330	0.0	100	0.00
66	P	Dibromochloromethane	-1.0000	0.3541	0.0	100	0.00
67	P	1,2-Dibromoethane	-1.0000	0.4198	0.0	100	0.00
68	T	1-Chlorohexane	-1.0000	0.4821	0.0	0	0.00
69	P	Chlorobenzene	-1.0000	0.6449	0.0	100	0.00
70	T	1,1,1,2-Tetrachloroethane	-1.0000	0.4044	0.0	100	0.00
71	C	Ethylbenzene	0.5000	0.4985	0.3	100	0.00
72	P	m-,p-Xylene	1.0000	1.0521	-5.2	100	0.00
73	P	o-Xylene	0.5000	0.4997	0.1	100	0.00
74	P	Styrene	-1.0000	0.4802	0.0	100	0.00
75	P	Bromoform	-1.0000	0.3955	0.0	100	0.00
76	P	Isopropylbenzene	-1.0000	0.5456	0.0	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	-1.0000	0.5171	0.0	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.2339	0.0	100	0.00
80	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.29#
81	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.33#
82	T	n-Propylbenzene	-1.0000	0.5780	0.0	100	0.00
83	T	Bromobenzene	-1.0000	0.5732	0.0	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	0.4566	0.0	100	0.00
85	T	2-Chlorotoluene	-1.0000	0.5877	0.0	100	0.00
86	T	4-Chlorotoluene	-1.0000	0.6851	0.0	100	0.00
87	T	a-Methylstyrene	-1.0000	0.4601	0.0	0	0.00
88	T	tert-Butylbenzene	-1.0000	0.2860	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	-1.0000	0.6023	0.0	100	0.00
90	T	sec-Butylbenzene	-1.0000	0.5460	0.0	100	0.00
91	T	p-Isopropyltoluene	-1.0000	0.5241	0.0	100	0.00
92	P	1,3-Dichlorobenzene	-1.0000	0.7132	0.0	100	0.00
93	P	1,4-Dichlorobenzene	-1.0000	0.7386	0.0	100	0.00
94	T	n-Butylbenzene	-1.0000	0.6697	0.0	100	0.00
95	P	1,2-Dichlorobenzene	-1.0000	0.6724	0.0	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.30#
97	P	1,2,4-Trichlorobenzene	-1.0000	0.8539	0.0	100	0.00
98	T	Hexachlorobutadiene	-1.0000	0.6898	0.0	100	0.00
99	T	Naphthalene	-1.0000	0.9979	0.0	100	0.00
100	T	1,2,3-Trichlorobenzene	-1.0000	0.9946	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972898.D 8260SL.M Fri Feb 26 11:11:52 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	536651	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	387839	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	177519	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.82	98	959	0.0978 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.20%#	
79) p-Bromofluorobenzene	16.22	95	467	0.1351 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	3486	0.9518 ug/kg#	85
3) Chloromethane	3.74	50	4175	1.1891 ug/kg	88
4) Vinyl Chloride	3.98	62	2686	0.7642 ug/kg	80
5) 1,3-Butadiene	4.03	54	3056	0.9139 ug/kg	91
6) Bromomethane	4.89	94	2537	1.1114 ug/kg	94
7) Chloroethane	5.05	64	1264	0.8072 ug/kg#	45
8) Trichlorofluoromethane	5.53	101	5567	1.0561 ug/kg#	93
9) Diethyl ether	6.05	59	11529	4.6784 ug/kg	97
10) Isoprene	6.08	67	2965	0.9421 ug/kg	97
11) Acrolein	6.29	56	1087	2.2122 ug/kg#	35
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	1939	0.7132 ug/kg	88
13) Acetone	6.41	43	5231	5.8863 ug/kg	95
14) 1,1-Dichloroethene	6.62	61	4981	0.9932 ug/kg	92
15) Tert-Butyl Alcohol	6.77	59	5682	10.3548 ug/kg#	63
16) Dimethyl Sulfide	6.88	62	1614	0.7615 ug/kg	91
17) Iodomethane	7.15	142	941	3.3944 ug/kg#	66
18) Methyl acetate	7.16	43	2553	0.9364 ug/kg#	65
19) Methylene Chloride	7.40	84	2963	1.0849 ug/kg	92
20) Carbon Disulfide	7.45	76	9749	1.2619 ug/kg	95
21) Acrylonitrile	7.58	53	3140	2.3282 ug/kg	85
22) Methyl Tert Butyl Ether	7.61	73	7179	0.9229 ug/kg	83
23) trans-1,2-Dichloroethene	7.85	61	4296	0.9612 ug/kg	95
24) n-Hexane	7.93	57	4481	0.9720 ug/kg	95
25) Diisopropyl ether	8.26	45	50344	4.7022 ug/kg	98
26) Vinyl Acetate	8.43	43	5247	0.8597 ug/kg#	90
27) 1,1-Dichloroethane	8.48	63	5885	1.0483 ug/kg#	85
28) Ethyl-Tert-Butyl ether	8.83	59	46767	4.6979 ug/kg	99
29) 2-Butanone	9.03	43	1776	1.0263 ug/kg#	58
30) Propionitrile	9.14	54	2256	4.2599 ug/kg#	60
31) 2,2-Dichloropropane	9.24	77	4402	1.0506 ug/kg#	71
32) cis-1,2-Dichloroethene	9.31	96	2650	0.9040 ug/kg	94
33) Chloroform	9.51	83	5072	0.9836 ug/kg	96
35) Bromochloromethane	9.75	130	1408	0.7394 ug/kg	86
36) Tetrahydrofuran	9.77	42	6699	6.0054 ug/kg	95
38) 1,1,1-Trichloroethane	10.05	97	4567	0.9793 ug/kg	91
39) Cyclohexane	10.08	56	4992	0.9818 ug/kg#	85
40) 1,1-Dichloropropene	10.24	75	3785	1.0315 ug/kg	90
41) Tert-Amyl-Methyl ether	10.34	73	33850	4.6779 ug/kg	95
42) Carbon Tetrachloride	10.40	117	4297	0.9939 ug/kg#	90
45) 1,2-Dichloroethane	10.55	62	3923	0.8649 ug/kg	93

(#) = qualifier out of range (m) = manual integration
9M972899.D 8260SL.M Fri Feb 26 11:12:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
46)	Benzene	10.61	78	9968	0.9703 ug/kg	96
47)	Trichloroethene	11.36	130	3259	1.0012 ug/kg	99
48)	Methylcyclohexane	11.43	83	3354	0.8215 ug/kg	76
49)	1,2-Dichloropropane	11.57	63	2469	0.8752 ug/kg	94
51)	Bromodichloromethane	11.87	83	3657	0.9198 ug/kg#	94
52)	Dibromomethane	11.96	174	1621	0.8672 ug/kg	93
53)	2-Chloroethyl Vinyl Ether	12.16	63	210	3.0851 ug/kg#	47
54)	4-Methyl-2-Pentanone	12.20	58	738	0.5960 ug/kg#	40
55)	cis-1,3-Dichloropropene	12.51	75	3714	0.8966 ug/kg	86
56)	Dimethyl Disulfide	12.77	94	3075	0.7387 ug/kg	83
59)	Toluene	12.93	91	10894	0.9831 ug/kg	97
60)	Ethyl Methacrylate	13.01	69	1966	0.6401 ug/kg#	53
61)	trans-1,3-Dichloropropene	13.11	75	3837	0.9614 ug/kg#	79
62)	1,1,2-Trichloroethane	13.32	97	2148	0.9227 ug/kg	94
63)	2-Hexanone	13.26	43	1796	0.7727 ug/kg#	80
64)	1,3-Dichloropropane	13.63	76	3616	0.9322 ug/kg	99
65)	Tetrachloroethene	13.75	164	2587	1.0890 ug/kg	79
66)	Dibromochloromethane	14.02	129	3318	1.0199 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	2336	0.9047 ug/kg	97
68)	1-Chlorohexane	14.34	91	3075	0.9410 ug/kg	85
69)	Chlorobenzene	14.78	112	7982	1.0249 ug/kg	88
70)	1,1,1,2-Tetrachloroethane	14.81	131	2589	0.8852 ug/kg	86
71)	Ethylbenzene	14.80	106	4007	0.9987 ug/kg	89
72)	m-,p-Xylene	14.88	106	9607	1.9388 ug/kg	98
73)	o-Xylene	15.45	106	4376	0.9202 ug/kg	99
74)	Styrene	15.49	104	7432	0.9178 ug/kg	92
75)	Bromoform	16.00	173	1759	0.8235 ug/kg#	79
76)	Isopropylbenzene	15.87	105	11937	0.9351 ug/kg	98
78)	1,1,2,2-Tetrachloroethane	16.09	83	2186	0.8118 ug/kg#	83
80)	1,2,3-Trichloropropane	16.28	110	875	0.8568 ug/kg#	81
81)	trans-1,4-Dichloro-2-Buten	16.34	53	831	0.8073 ug/kg#	74
82)	n-Propylbenzene	16.38	91	14156	1.0145 ug/kg	99
83)	Bromobenzene	16.53	156	2996	0.9095 ug/kg#	39
84)	1,3,5-Trimethylbenzene	16.57	105	11008	1.0509 ug/kg	88
85)	2-Chlorotoluene	16.65	91	10606	1.1332 ug/kg	84
86)	4-Chlorotoluene	16.71	91	9101	1.0518 ug/kg	95
87)	a-Methylstyrene	16.98	118	4078	0.8544 ug/kg	85
88)	tert-Butylbenzene	17.03	134	2095	0.9540 ug/kg	74
89)	1,2,4-Trimethylbenzene	17.09	105	12124	1.1053 ug/kg	83
90)	sec-Butylbenzene	17.31	105	13922	1.0320 ug/kg	100
91)	p-Isopropyltoluene	17.47	119	10153	0.8918 ug/kg	98
92)	1,3-Dichlorobenzene	17.67	146	7444	1.1370 ug/kg	90
93)	1,4-Dichlorobenzene	17.79	146	7580	1.1581 ug/kg	92
94)	n-Butylbenzene	17.99	91	11112	1.0498 ug/kg	91
95)	1,2-Dichlorobenzene	18.29	146	6415	1.0560 ug/kg	97
97)	1,2,4-Trichlorobenzene	20.43	180	4869	1.1291 ug/kg	98
98)	Hexachlorobutadiene	20.59	225	2032	0.8939 ug/kg	87
99)	Naphthalene	20.81	128	11710	1.0826 ug/kg	92
100)	1,2,3-Trichlorobenzene	21.12	180	4698	1.1232 ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972899.D 8260SL.M Fri Feb 26 11:12:33 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration

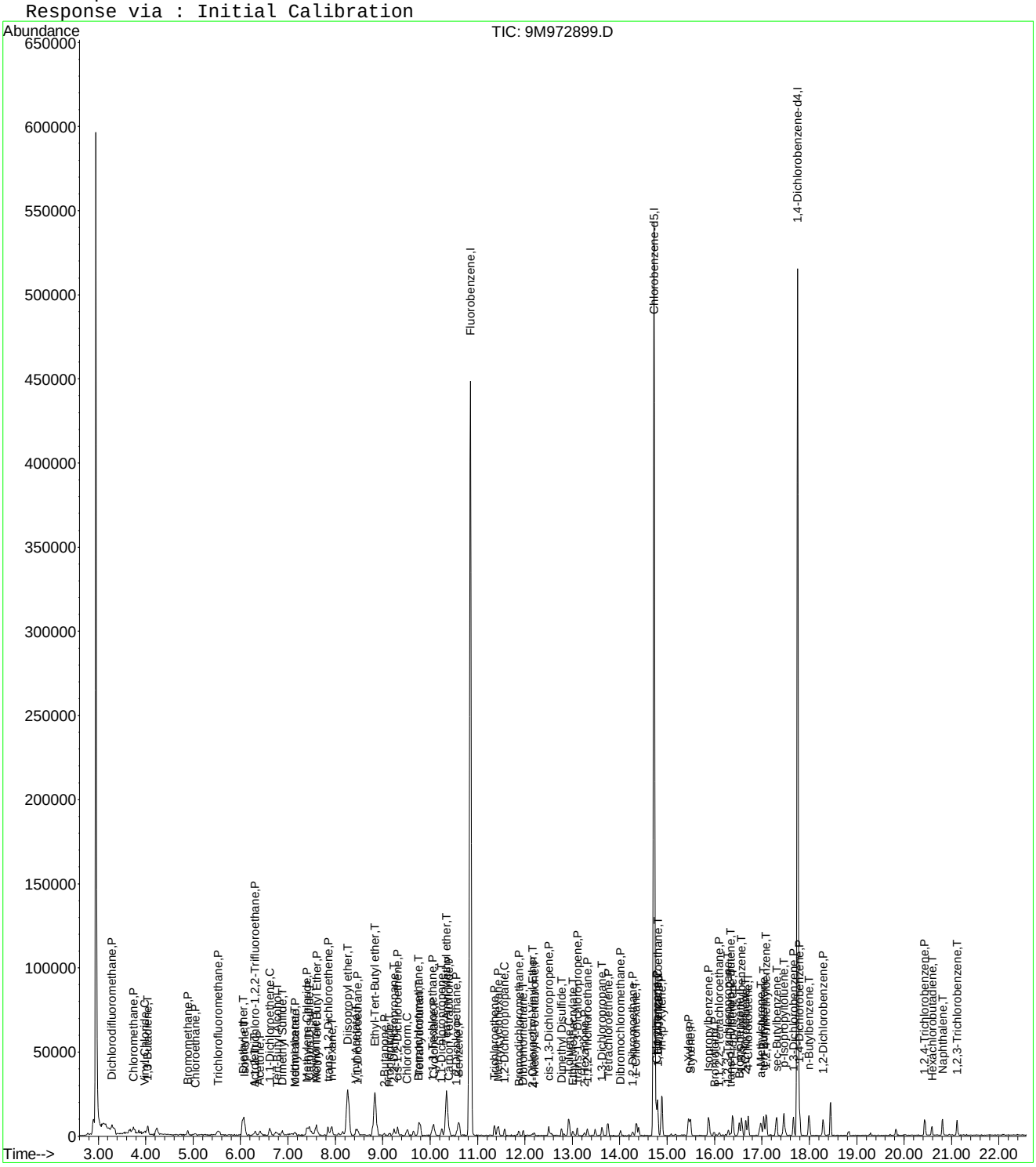

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	0.9518	0.0	100	0.00
3	P	Chloromethane	-1.0000	1.1891	0.0	100	0.00
4	C	Vinyl Chloride	1.0000	0.7642	23.6#	100	0.00
5	T	1,3-Butadiene	-1.0000	0.9139	0.0	0	0.00
6	P	Bromomethane	1.0000	1.1114	-11.1	100	0.00
7	P	Chloroethane	-1.0000	0.8072	0.0	100	0.00
8	P	Trichlorofluoromethane	1.0000	1.0561	-5.6	100	0.00
9	T	Diethyl ether	5.0000	4.6784	6.4	100	0.00
10	T	Isoprene	-1.0000	0.9421	0.0	0	0.00
11	T	Acrolein	2.5000	2.2122	11.5	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.7132	0.0	100	0.00
13	P	Acetone	-1.0000	5.8863	0.0	0	0.00
14	C	1,1-Dichloroethene	1.0000	0.9932	0.7	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	10.3548	0.0	100	0.00
16	T	Dimethyl Sulfide	1.0000	0.7615	23.9	100	0.00
17	T	Iodomethane	-1.0000	3.3944	0.0	0	0.01
18	P	Methyl acetate	-1.0000	0.9364	0.0	0	0.02
19	P	Methylene Chloride	-1.0000	1.0849	0.0	100	0.00
20	P	Carbon Disulfide	-1.0000	1.2619	0.0	0	0.00
21	T	Acrylonitrile	2.5000	2.3282	6.9	100	0.00
22	P	Methyl Tert Butyl Ether	1.0000	0.9229	7.7	100	0.00
23	P	trans-1,2-Dichloroethene	1.0000	0.9612	3.9	100	0.00
24	T	n-Hexane	-1.0000	0.9720	0.0	0	0.01
25	T	Diisopropyl ether	5.0000	4.7022	6.0	100	0.00
26	T	Vinyl Acetate	-1.0000	0.8597	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0483	-4.8	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.6979	6.0	100	0.00
29	P	2-Butanone	-1.0000	1.0263	0.0	100	0.00
30	T	Propionitrile	5.0000	4.2599	14.8	100	0.00
31	T	2,2-Dichloropropane	-1.0000	1.0506	0.0	100	0.00
32	P	cis-1,2-Dichloroethene	1.0000	0.9040	9.6	100	0.00
33	C	Chloroform	1.0000	0.9836	1.6	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.65#
35	T	Bromochloromethane	1.0000	0.7395	26.1#	100	0.00
36	T	Tetrahydrofuran	-1.0000	6.0054	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	1.0000	0.9793	2.1	100	0.00
39	P	Cyclohexane	1.0000	0.9818	1.8	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0315	-3.1	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	4.6780	6.4	100	0.00
42	P	Carbon Tetrachloride	-1.0000	0.9939	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	1.0000	0.8649	13.5	100	0.00
46	P	Benzene	1.0000	0.9703	3.0	100	0.00
47	P	Trichloroethene	1.0000	1.0012	-0.1	100	0.00
48	P	Methylcyclohexane	1.0000	0.8215	17.8	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.8752	12.5	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.88#
51	P	Bromodichloromethane	-1.0000	0.9198	0.0	100	0.00
52	T	Dibromomethane	1.0000	0.8672	13.3	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	3.0851	0.0	0	0.00
54	P	4-Methyl-2-Pentanone	-1.0000	0.5960	0.0	100	0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	-1.0000	0.8966	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.7387	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0978	0.0	100	0.00
59	C	Toluene	1.0000	0.9831	1.7	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.6401	0.0	0	0.00
61	P	trans-1,3-Dichloropropene	-1.0000	0.9614	0.0	100	0.00
62	P	1,1,2-Trichloroethane	1.0000	0.9227	7.7	100	0.00
63	P	2-Hexanone	-1.0000	0.7727	0.0	100	0.00
64	T	1,3-Dichloropropane	1.0000	0.9322	6.8	100	0.00
65	P	Tetrachloroethene	1.0000	1.0890	-8.9	100	0.00
66	P	Dibromochloromethane	-1.0000	1.0199	0.0	100	0.00
67	P	1,2-Dibromoethane	-1.0000	0.9047	0.0	100	0.00
68	T	1-Chlorohexane	1.0000	0.9410	5.9	100	0.00
69	P	Chlorobenzene	1.0000	1.0249	-2.5	100	0.00
70	T	1,1,1,2-Tetrachloroethane	-1.0000	0.8852	0.0	100	0.00
71	C	Ethylbenzene	1.0000	0.9987	0.1	100	0.00
72	P	m-,p-Xylene	2.0000	1.9388	3.1	100	0.00
73	P	o-Xylene	1.0000	0.9202	8.0	100	0.00
74	P	Styrene	1.0000	0.9178	8.2	100	0.00
75	P	Bromoform	-1.0000	0.8235	0.0	100	0.00
76	P	Isopropylbenzene	1.0000	0.9351	6.5	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	1.0000	0.8118	18.8	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.1351	0.0	100	0.00
80	T	1,2,3-Trichloropropane	1.0000	0.8568	14.3	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.8073	0.0	0	0.00
82	T	n-Propylbenzene	1.0000	1.0145	-1.4	100	0.00
83	T	Bromobenzene	1.0000	0.9095	9.1	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	1.0509	0.0	100	0.00
85	T	2-Chlorotoluene	-1.0000	1.1332	0.0	100	0.00
86	T	4-Chlorotoluene	1.0000	1.0518	-5.2	100	0.00
87	T	a-Methylstyrene	-1.0000	0.8544	0.0	0	0.00
88	T	tert-Butylbenzene	-1.0000	0.9540	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	1.0000	1.1053	-10.5	100	0.00
90	T	sec-Butylbenzene	1.0000	1.0320	-3.2	100	0.00
91	T	p-Isopropyltoluene	-1.0000	0.8918	0.0	100	0.00
92	P	1,3-Dichlorobenzene	1.0000	1.1370	-13.7	100	0.00
93	P	1,4-Dichlorobenzene	1.0000	1.1581	-15.8	100	0.00
94	T	n-Butylbenzene	1.0000	1.0498	-5.0	100	0.00
95	P	1,2-Dichlorobenzene	1.0000	1.0560	-5.6	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	0.3514	0.0	100	0.00
97	P	1,2,4-Trichlorobenzene	1.0000	1.1291	-12.9	100	0.00
98	T	Hexachlorobutadiene	1.0000	0.8939	10.6	100	0.00
99	T	Naphthalene	-1.0000	1.0826	0.0	100	0.00
100	T	1,2,3-Trichlorobenzene	1.0000	1.1232	-12.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1
9M972899.D 8260SL.M Fri Feb 26 11:12:31 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	472115	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	342668	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	156993	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.83	98	772	0.0891 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.18%#	
79) p-Bromofluorobenzene	16.23	95	570	0.1865 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.38%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.29	85	6383	1.9809 ug/kg#	78
3) Chloromethane	3.74	50	7027	2.2750 ug/kg	100
4) Vinyl Chloride	4.00	62	6001	1.9408 ug/kg	97
5) 1,3-Butadiene	4.04	54	6545	2.2249 ug/kg	95
6) Bromomethane	4.90	94	5050	2.5146 ug/kg	81
7) Chloroethane	5.04	64	2391	1.7357 ug/kg#	70
8) Trichlorofluoromethane	5.54	101	9777	2.1082 ug/kg#	94
9) Diethyl ether	6.06	59	58156	26.8255 ug/kg	97
10) Isoprene	6.09	67	5698	2.0580 ug/kg	89
11) Acrolein	6.30	56	5427	12.5543 ug/kg	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	4756	1.9886 ug/kg	93
13) Acetone	6.40	43	6167	6.9886 ug/kg	93
14) 1,1-Dichloroethene	6.62	61	9652	2.1877 ug/kg	91
15) Tert-Butyl Alcohol	6.75	59	26757	55.4271 ug/kg#	91
16) Dimethyl Sulfide	6.89	62	3840	2.0594 ug/kg	97
17) Iodomethane	7.14	142	1541	3.9079 ug/kg#	56
18) Methyl acetate	7.15	43	5334	2.2240 ug/kg#	69
19) Methylene Chloride	7.40	84	5116	2.1292 ug/kg	98
20) Carbon Disulfide	7.44	76	15010	2.2085 ug/kg	94
21) Acrylonitrile	7.59	53	14961	12.6096 ug/kg	100
22) Methyl Tert Butyl Ether	7.61	73	13630	1.9917 ug/kg	93
23) trans-1,2-Dichloroethene	7.85	61	7964	2.0255 ug/kg	100
24) n-Hexane	7.92	57	8619	2.1253 ug/kg	100
25) Diisopropyl ether	8.26	45	252190	26.7748 ug/kg	99
26) Vinyl Acetate	8.43	43	11207	2.0872 ug/kg	95
27) 1,1-Dichloroethane	8.47	63	10529	2.1320 ug/kg#	93
28) Ethyl-Tert-Butyl ether	8.83	59	234163	26.7377 ug/kg	99
29) 2-Butanone	9.03	43	3346	2.1978 ug/kg#	76
30) Propionitrile	9.14	54	12899	27.6861 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	8085	2.1934 ug/kg	88
32) cis-1,2-Dichloroethene	9.32	96	4861	1.8850 ug/kg	98
33) Chloroform	9.53	83	10005	2.2054 ug/kg	95
34) 1-Bromopropane	9.64	122	209	1.5465 ug/kg	96
35) Bromochloromethane	9.75	130	3273	1.9539 ug/kg	81
36) Tetrahydrofuran	9.78	42	26192	26.6900 ug/kg	94
38) 1,1,1-Trichloroethane	10.04	97	8229	2.0058 ug/kg	97
39) Cyclohexane	10.09	56	9354	2.0912 ug/kg	96
40) 1,1-Dichloropropene	10.23	75	6787	2.1024 ug/kg	88
41) Tert-Amyl-Methyl ether	10.34	73	167275	26.2768 ug/kg	98
42) Carbon Tetrachloride	10.39	117	7920	2.0823 ug/kg#	95

(#) = qualifier out of range (m) = manual integration
9M972900.D 8260SL.M Fri Feb 26 11:13:39 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	8488	2.1271 ug/kg	89
46)	Benzene	10.60	78	19454	2.1525 ug/kg	96
47)	Trichloroethene	11.35	130	6073	2.1207 ug/kg	96
48)	Methylcyclohexane	11.44	83	7523	2.0945 ug/kg	95
49)	1,2-Dichloropropane	11.58	63	5118	2.0621 ug/kg	93
50)	1,4-Dioxane	11.88	88	1938	52.0499 ug/kg	84
51)	Bromodichloromethane	11.87	83	7148	2.0436 ug/kg#	95
52)	Dibromomethane	11.97	174	3572	2.1721 ug/kg	91
53)	2-Chloroethyl Vinyl Ether	12.17	63	474	3.4830 ug/kg#	47
54)	4-Methyl-2-Pentanone	12.19	58	2111	1.9378 ug/kg#	64
55)	cis-1,3-Dichloropropene	12.50	75	7048	1.9341 ug/kg	92
56)	Dimethyl Disulfide	12.77	94	5832	1.5925 ug/kg	95
59)	Toluene	12.93	91	20786	2.1230 ug/kg	97
60)	Ethyl Methacrylate	13.01	69	4184	1.5417 ug/kg	98
61)	trans-1,3-Dichloropropene	13.11	75	6895	1.9553 ug/kg	92
62)	1,1,2-Trichloroethane	13.33	97	4055	1.9716 ug/kg	86
63)	2-Hexanone	13.25	43	3773	1.8373 ug/kg#	82
64)	1,3-Dichloropropane	13.62	76	7643	2.2302 ug/kg	97
65)	Tetrachloroethene	13.75	164	4327	2.0615 ug/kg	94
66)	Dibromochloromethane	14.01	129	6170	2.1465 ug/kg	87
67)	1,2-Dibromoethane	14.28	107	4656	2.0410 ug/kg	88
68)	1-Chlorohexane	14.35	91	5610	1.9430 ug/kg	97
69)	Chlorobenzene	14.77	112	14885	2.1632 ug/kg	95
70)	1,1,1,2-Tetrachloroethane	14.80	131	5145	1.9910 ug/kg	86
71)	Ethylbenzene	14.79	106	7287	2.0555 ug/kg	99
72)	m-,p-Xylene	14.89	106	19133	4.3702 ug/kg	93
73)	o-Xylene	15.45	106	8413	2.0024 ug/kg	94
74)	Styrene	15.49	104	14533	2.0313 ug/kg	97
75)	Bromoform	15.99	173	3135	1.6611 ug/kg	97
76)	Isopropylbenzene	15.87	105	23266	2.0628 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	5252	2.2053 ug/kg#	89
80)	1,2,3-Trichloropropane	16.28	110	1851	2.0495 ug/kg#	89
81)	trans-1,4-Dichloro-2-Buten	16.33	53	1413	1.5521 ug/kg	47
82)	n-Propylbenzene	16.38	91	25735	2.0854 ug/kg	99
83)	Bromobenzene	16.52	156	7006	2.4049 ug/kg	83
84)	1,3,5-Trimethylbenzene	16.57	105	18571	2.0048 ug/kg	99
85)	2-Chlorotoluene	16.66	91	18793	2.2705 ug/kg	97
86)	4-Chlorotoluene	16.70	91	16240	2.1222 ug/kg	96
87)	a-Methylstyrene	16.98	118	7524	1.7826 ug/kg	97
88)	tert-Butylbenzene	17.04	134	3654	1.8815 ug/kg	64
89)	1,2,4-Trimethylbenzene	17.09	105	20119	2.0739 ug/kg	99
90)	sec-Butylbenzene	17.31	105	24858	2.0835 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	20956	2.0813 ug/kg	96
92)	1,3-Dichlorobenzene	17.66	146	13695	2.3653 ug/kg	94
93)	1,4-Dichlorobenzene	17.79	146	12975	2.2416 ug/kg	82
94)	n-Butylbenzene	17.99	91	19734	2.1080 ug/kg	95
95)	1,2-Dichlorobenzene	18.30	146	11568	2.1533 ug/kg	91
96)	1,2-Dibromo-3-Chloropropan	19.30	157	941	1.3644 ug/kg	84
97)	1,2,4-Trichlorobenzene	20.44	180	8356	2.1910 ug/kg	98
98)	Hexachlorobutadiene	20.59	225	4571	2.2738 ug/kg	87
99)	Naphthalene	20.81	128	20072	2.0983 ug/kg	96
100)	1,2,3-Trichlorobenzene	21.11	180	7948	2.1487 ug/kg	96

(#) = qualifier out of range (m) = manual integration
9M972900.D 8260SL.M Fri Feb 26 11:13:39 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration

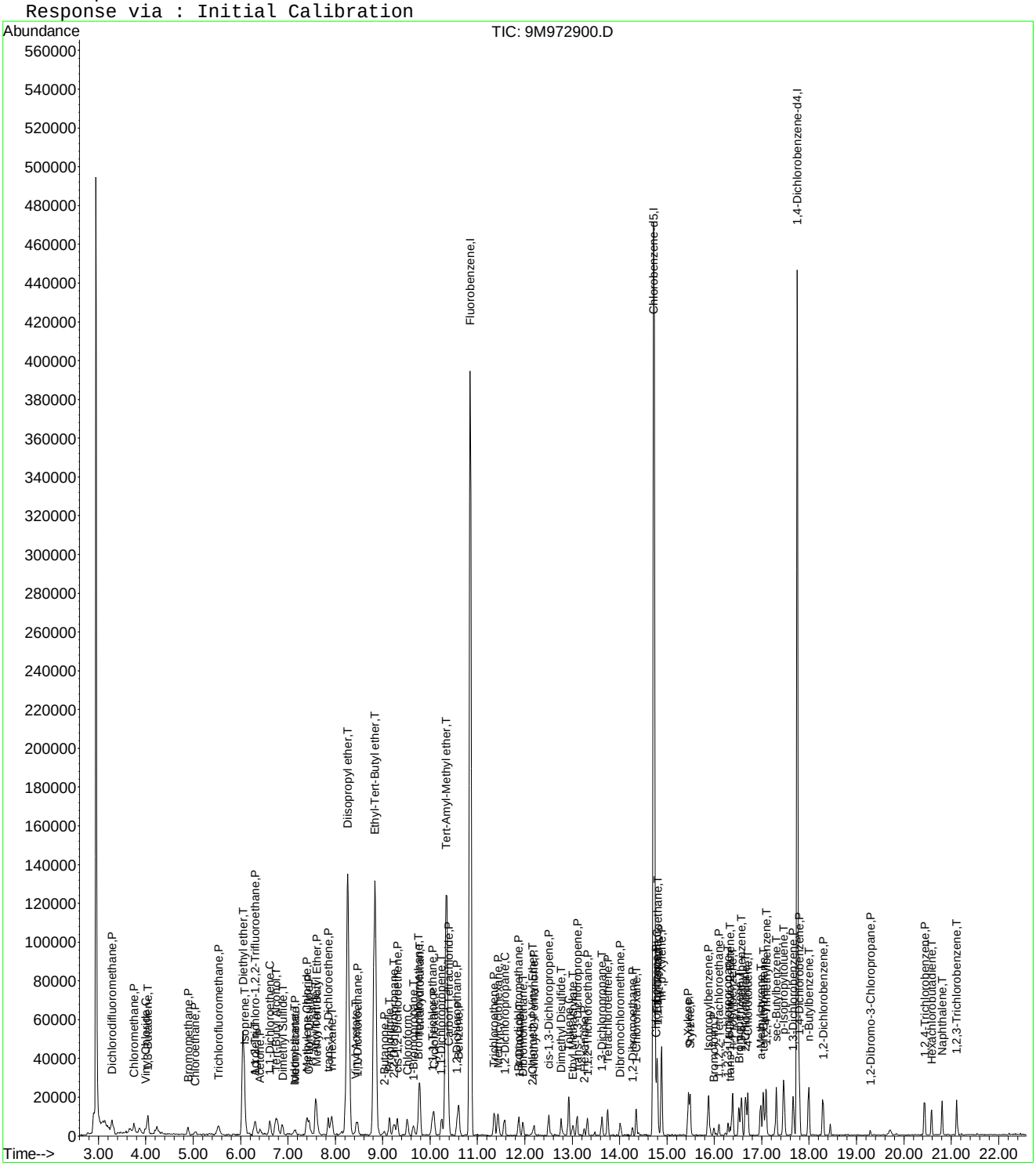

9M972900.D 8260SL.M Fri Feb 26 11:13:39 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	1.9809	0.0	100	0.01
3	P	Chloromethane	2.0000	2.2750	-13.7	100	0.00
4	C	Vinyl Chloride	2.0000	1.9408	3.0	100	0.01
5	T	1,3-Butadiene	2.0000	2.2249	-11.2	100	0.00
6	P	Bromomethane	2.0000	2.5146	-25.7#	100	0.01
7	P	Chloroethane	2.0000	1.7357	13.2	100	0.00
8	P	Trichlorofluoromethane	2.0000	2.1082	-5.4	100	0.01
9	T	Diethyl ether	25.0000	26.8255	-7.3	100	0.01
10	T	Isoprene	2.0000	2.0580	-2.9	100	0.00
11	T	Acrolein	12.5000	12.5543	-0.4	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.9886	0.6	100	0.01
13	P	Acetone	-1.0000	6.9886	0.0	0	0.00
14	C	1,1-Dichloroethene	2.0000	2.1877	-9.4	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	55.4271	-10.9	100	0.00
16	T	Dimethyl Sulfide	2.0000	2.0594	-3.0	100	0.01
17	T	Iodomethane	-1.0000	3.9079	0.0	0	0.01
18	P	Methyl acetate	2.0000	2.2240	-11.2	100	0.01
19	P	Methylene Chloride	2.0000	2.1292	-6.5	100	0.00
20	P	Carbon Disulfide	2.0000	2.2085	-10.4	100	0.00
21	T	Acrylonitrile	12.5000	12.6096	-0.9	100	0.00
22	P	Methyl Tert Butyl Ether	2.0000	1.9917	0.4	100	0.00
23	P	trans-1,2-Dichloroethene	2.0000	2.0255	-1.3	100	0.00
24	T	n-Hexane	2.0000	2.1253	-6.3	100	0.01
25	T	Diisopropyl ether	25.0000	26.7748	-7.1	100	0.00
26	T	Vinyl Acetate	2.0000	2.0872	-4.4	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.1320	-6.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	26.7377	-7.0	100	0.00
29	P	2-Butanone	2.0000	2.1978	-9.9	100	0.00
30	T	Propionitrile	25.0000	27.6861	-10.7	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1934	-9.7	100	0.00
32	P	cis-1,2-Dichloroethene	2.0000	1.8850	5.8	100	0.01
33	C	Chloroform	2.0000	2.2054	-10.3	100	0.01
34	T	1-Bromopropane	2.0000	1.5465	22.7	100	0.00
35	T	Bromochloromethane	2.0000	1.9539	2.3	100	0.00
36	T	Tetrahydrofuran	25.0000	26.6900	-6.8	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	2.0000	2.0058	-0.3	100	0.00
39	P	Cyclohexane	2.0000	2.0913	-4.6	100	0.01
40	T	1,1-Dichloropropene	2.0000	2.1023	-5.1	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	26.2768	-5.1	100	0.00
42	P	Carbon Tetrachloride	2.0000	2.0823	-4.1	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	2.0000	2.1271	-6.4	100	0.00
46	P	Benzene	2.0000	2.1525	-7.6	100	0.00
47	P	Trichloroethene	2.0000	2.1207	-6.0	100	0.00
48	P	Methylcyclohexane	2.0000	2.0945	-4.7	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0621	-3.1	100	0.01
50	T	1,4-Dioxane	50.0000	52.0499	-4.1	100	0.00
51	P	Bromodichloromethane	2.0000	2.0436	-2.2	100	0.00
52	T	Dibromomethane	2.0000	2.1721	-8.6	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	3.4830	0.0	0	0.00
54	P	4-Methyl-2-Pentanone	-1.0000	1.9378	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	2.0000	1.9341	3.3	100	0.00
56	T	Dimethyl Disulfide	2.0000	1.5925	20.4	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0891	0.0	100	0.00
59	C	Toluene	2.0000	2.1230	-6.2	100	0.00
60	T	Ethyl Methacrylate	-1.0000	1.5417	0.0	0	0.00
61	P	trans-1,3-Dichloropropene	2.0000	1.9553	2.2	100	0.00
62	P	1,1,2-Trichloroethane	2.0000	1.9716	1.4	100	0.00
63	P	2-Hexanone	-1.0000	1.8373	0.0	100	0.00
64	T	1,3-Dichloropropane	2.0000	2.2302	-11.5	100	0.00
65	P	Tetrachloroethene	2.0000	2.0616	-3.1	100	0.00
66	P	Dibromochloromethane	2.0000	2.1465	-7.3	100	0.00
67	P	1,2-Dibromoethane	-1.0000	2.0410	0.0	100	0.00
68	T	1-Chlorohexane	2.0000	1.9430	2.8	100	0.00
69	P	Chlorobenzene	2.0000	2.1632	-8.2	100	0.00
70	T	1,1,1,2-Tetrachloroethane	2.0000	1.9910	0.4	100	0.00
71	C	Ethylbenzene	2.0000	2.0555	-2.8	100	0.00
72	P	m-,p-Xylene	4.0000	4.3702	-9.3	100	0.00
73	P	o-Xylene	2.0000	2.0024	-0.1	100	0.00
74	P	Styrene	2.0000	2.0313	-1.6	100	0.00
75	P	Bromoform	2.0000	1.6611	16.9	100	0.00
76	P	Isopropylbenzene	2.0000	2.0628	-3.1	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	2.0000	2.2053	-10.3	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.1865	0.0	100	0.00
80	T	1,2,3-Trichloropropane	2.0000	2.0495	-2.5	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	2.0000	1.5521	22.4	100	0.00
82	T	n-Propylbenzene	2.0000	2.0854	-4.3	100	0.00
83	T	Bromobenzene	2.0000	2.4049	-20.2	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	2.0048	0.0	100	0.00
85	T	2-Chlorotoluene	2.0000	2.2705	-13.5	100	0.00
86	T	4-Chlorotoluene	2.0000	2.1222	-6.1	100	0.00
87	T	a-Methylstyrene	-1.0000	1.7826	0.0	0	0.00
88	T	tert-Butylbenzene	-1.0000	1.8815	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	2.0000	2.0739	-3.7	100	0.00
90	T	sec-Butylbenzene	2.0000	2.0835	-4.2	100	0.00
91	T	p-Isopropyltoluene	-1.0000	2.0813	0.0	100	0.00
92	P	1,3-Dichlorobenzene	2.0000	2.3653	-18.3	100	0.00
93	P	1,4-Dichlorobenzene	2.0000	2.2416	-12.1	100	0.00
94	T	n-Butylbenzene	2.0000	2.1080	-5.4	100	0.00
95	P	1,2-Dichlorobenzene	2.0000	2.1533	-7.7	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	1.3644	0.0	100	0.00
97	P	1,2,4-Trichlorobenzene	2.0000	2.1910	-9.6	100	0.00
98	T	Hexachlorobutadiene	2.0000	2.2738	-13.7	100	0.00
99	T	Naphthalene	2.0000	2.0983	-4.9	100	0.00
100	T	1,2,3-Trichlorobenzene	2.0000	2.1487	-7.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972900.D 8260SL.M Fri Feb 26 11:13:36 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	544259	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	391881	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.76	152	178969	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	29036	9.8422 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 19.68%#		
43) 1,2-Dichloroethane-d4	10.44	65	38093	10.2911 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 20.58%#		
58) Toluene-d8	12.83	98	95044	9.5885 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 19.18%#		
79) p-Bromofluorobenzene	16.23	95	32806	9.4138 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 18.82%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	14756	3.9724 ug/kg	92
3) Chloromethane	3.74	50	15227	4.2763 ug/kg	91
4) Vinyl Chloride	3.99	62	17097	4.7964 ug/kg	89
5) 1,3-Butadiene	4.04	54	14484	4.2710 ug/kg	97
6) Bromomethane	4.89	94	9847	4.2533 ug/kg	95
7) Chloroethane	5.04	64	6311	3.9741 ug/kg	93
8) Trichlorofluoromethane	5.53	101	22668	4.2400 ug/kg	100
9) Diethyl ether	6.05	59	118004	47.2164 ug/kg	99
10) Isoprene	6.10	67	13644	4.2747 ug/kg	95
11) Acrolein	6.30	56	12131	24.3428 ug/kg	84
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	12752	4.6251 ug/kg	95
13) Acetone	6.41	43	9765	4.9429 ug/kg	94
14) 1,1-Dichloroethene	6.62	61	21760	4.2784 ug/kg	99
15) Tert-Butyl Alcohol	6.76	59	50500	90.7440 ug/kg	98
16) Dimethyl Sulfide	6.88	62	10098	4.6977 ug/kg	87
17) Iodomethane	7.13	142	4147	5.3886 ug/kg	97
18) Methyl acetate	7.15	43	12159	4.3976 ug/kg#	87
19) Methylene Chloride	7.41	84	11825	4.2690 ug/kg	99
20) Carbon Disulfide	7.45	76	34078	4.3495 ug/kg	94
21) Acrylonitrile	7.58	53	31012	22.6731 ug/kg	100
22) Methyl Tert Butyl Ether	7.61	73	34936	4.4284 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	20503	4.5233 ug/kg	95
24) n-Hexane	7.92	57	20970	4.4853 ug/kg	98
25) Diisopropyl ether	8.26	45	505084	46.5162 ug/kg	100
26) Vinyl Acetate	8.44	43	28253	4.5644 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	24239	4.2575 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	463447	45.9037 ug/kg	99
29) 2-Butanone	9.03	43	8265	4.7092 ug/kg	88
30) Propionitrile	9.15	54	25938	48.2931 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	17954	4.2251 ug/kg	91
32) cis-1,2-Dichloroethene	9.32	96	13479	4.5340 ug/kg	84
33) Chloroform	9.52	83	23525	4.4982 ug/kg	95
34) 1-Bromopropane	9.65	122	2239	5.8652 ug/kg	90
35) Bromochloromethane	9.75	130	9205	4.7667 ug/kg	97
36) Tetrahydrofuran	9.78	42	53635	47.4100 ug/kg	99
38) 1,1,1-Trichloroethane	10.04	97	20945	4.4285 ug/kg	91
39) Cyclohexane	10.09	56	23110	4.4818 ug/kg	98
40) 1,1-Dichloropropene	10.24	75	16349	4.3930 ug/kg	99
41) Tert-Amyl-Methyl ether	10.35	73	343692	46.8330 ug/kg	98
42) Carbon Tetrachloride	10.39	117	18527	4.2254 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	21553	4.6852 ug/kg	99
46)	Benzene	10.60	78	45352	4.3528 ug/kg	99
47)	Trichloroethene	11.35	130	14266	4.3213 ug/kg	97
48)	Methylcyclohexane	11.44	83	17527	4.2330 ug/kg	97
49)	1,2-Dichloropropane	11.56	63	13071	4.5684 ug/kg	100
50)	1,4-Dioxane	11.88	88	3926	91.4657 ug/kg	99
51)	Bromodichloromethane	11.87	83	18008	4.4660 ug/kg	97
52)	Dibromomethane	11.96	174	8993	4.7438 ug/kg	95
53)	2-Chloroethyl Vinyl Ether	12.16	63	2468	5.7758 ug/kg#	66
54)	4-Methyl-2-Pentanone	12.19	58	4862	3.8716 ug/kg	95
55)	cis-1,3-Dichloropropene	12.50	75	18341	4.3659 ug/kg	96
56)	Dimethyl Disulfide	12.77	94	17792	4.2144 ug/kg	91
59)	Toluene	12.92	91	48377	4.3206 ug/kg	96
60)	Ethyl Methacrylate	13.02	69	12442	4.0089 ug/kg	96
61)	trans-1,3-Dichloropropene	13.10	75	17626	4.3707 ug/kg	95
62)	1,1,2-Trichloroethane	13.33	97	10657	4.5308 ug/kg	99
63)	2-Hexanone	13.25	43	10194	4.3408 ug/kg	96
64)	1,3-Dichloropropane	13.62	76	17885	4.5633 ug/kg	100
65)	Tetrachloroethene	13.75	164	10317	4.2981 ug/kg	97
66)	Dibromochloromethane	14.01	129	14152	4.3052 ug/kg	98
67)	1,2-Dibromoethane	14.28	107	12182	4.6694 ug/kg	99
68)	1-Chlorohexane	14.35	91	12970	3.9281 ug/kg	87
69)	Chlorobenzene	14.77	112	36017	4.5769 ug/kg	85
70)	1,1,1,2-Tetrachloroethane	14.80	131	12746	4.3130 ug/kg	95
71)	Ethylbenzene	14.80	106	17828	4.3974 ug/kg	92
72)	m-,p-Xylene	14.89	106	45904	9.1683 ug/kg	95
73)	o-Xylene	15.46	106	21754	4.5275 ug/kg	91
74)	Styrene	15.49	104	35390	4.3253 ug/kg	98
75)	Bromoform	15.98	173	9363	4.3382 ug/kg	96
76)	Isopropylbenzene	15.88	105	55721	4.3198 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	13197	4.8610 ug/kg	97
80)	1,2,3-Trichloropropane	16.29	110	5070	4.9243 ug/kg#	28
81)	trans-1,4-Dichloro-2-Buten	16.33	53	4246	4.0913 ug/kg#	39
82)	n-Propylbenzene	16.39	91	64689	4.5983 ug/kg	100
83)	Bromobenzene	16.52	156	15405	4.6386 ug/kg	90
84)	1,3,5-Trimethylbenzene	16.58	105	49527	4.6900 ug/kg	98
85)	2-Chlorotoluene	16.66	91	41422	4.3899 ug/kg	97
86)	4-Chlorotoluene	16.70	91	40985	4.6981 ug/kg	99
87)	a-Methylstyrene	16.98	118	20049	4.1667 ug/kg	90
88)	tert-Butylbenzene	17.04	134	10027	4.5290 ug/kg	84
89)	1,2,4-Trimethylbenzene	17.09	105	51253	4.6345 ug/kg	98
90)	sec-Butylbenzene	17.30	105	60716	4.4642 ug/kg	98
91)	p-Isopropyltoluene	17.46	119	53318	4.6453 ug/kg	98
92)	1,3-Dichlorobenzene	17.66	146	29255	4.4323 ug/kg	98
93)	1,4-Dichlorobenzene	17.79	146	30175	4.5730 ug/kg	91
94)	n-Butylbenzene	17.99	91	45964	4.3071 ug/kg	98
95)	1,2-Dichlorobenzene	18.30	146	27310	4.4593 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.30	157	3147	4.0028 ug/kg	87
97)	1,2,4-Trichlorobenzene	20.44	180	18372	4.2258 ug/kg	95
98)	Hexachlorobutadiene	20.59	225	9618	4.1968 ug/kg	90
99)	Naphthalene	20.81	128	47189	4.3274 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.11	180	17859	4.2352 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972901.D 8260SL.M Fri Feb 26 11:21:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

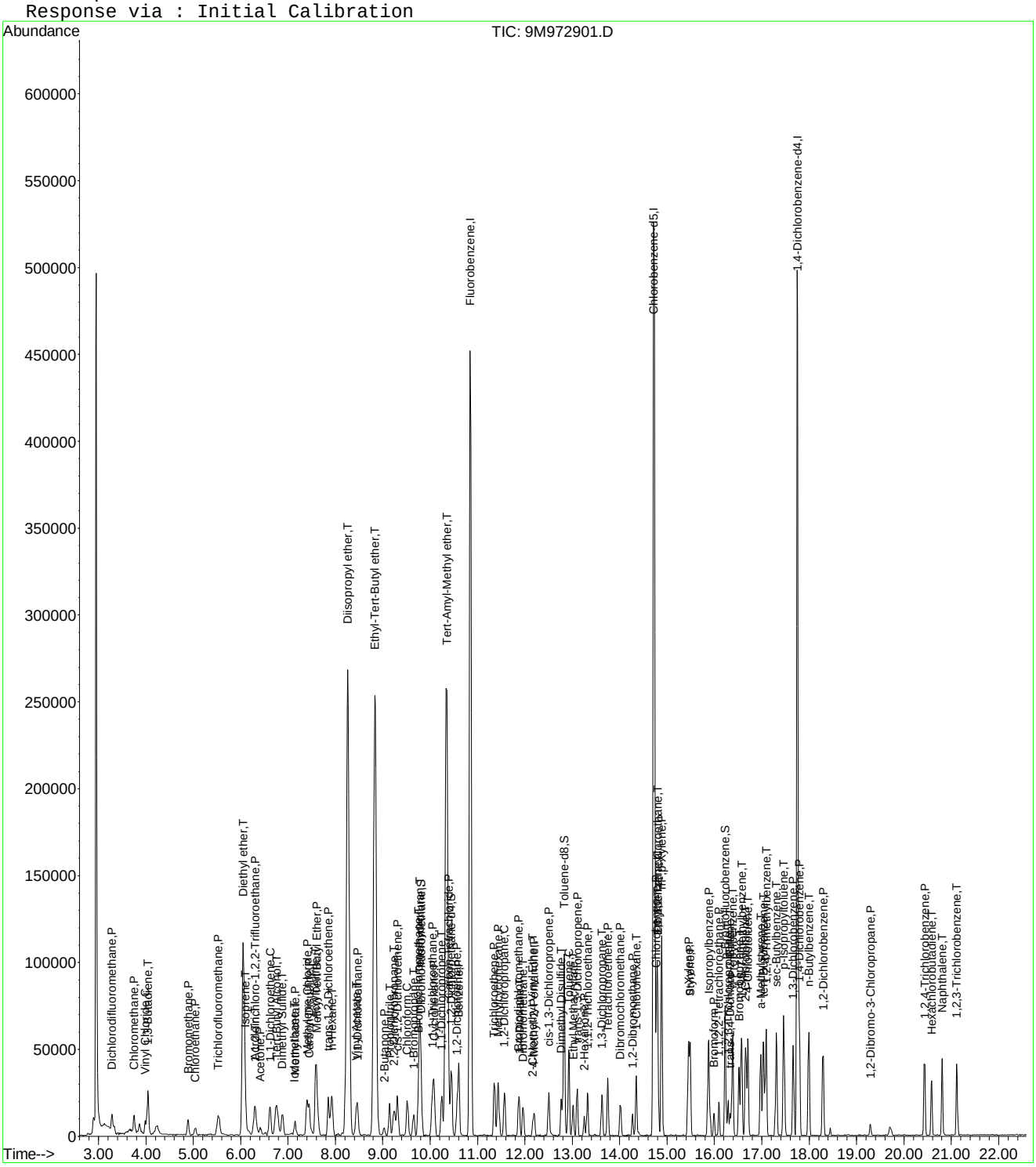

9M972901.D 8260SL.M Fri Feb 26 11:21:56 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	5.0000	3.9724	20.6	100	0.00
3	P	Chloromethane	5.0000	4.2763	14.5	100	0.00
4	C	Vinyl Chloride	5.0000	4.7964	4.1	100	0.00
5	T	1,3-Butadiene	5.0000	4.2710	14.6	100	0.00
6	P	Bromomethane	5.0000	4.2534	14.9	100	0.00
7	P	Chloroethane	5.0000	3.9741	20.5	100	0.00
8	P	Trichlorofluoromethane	5.0000	4.2400	15.2	100	0.00
9	T	Diethyl ether	50.0000	47.2164	5.6	100	0.00
10	T	Isoprene	5.0000	4.2747	14.5	100	0.01
11	T	Acrolein	25.0000	24.3428	2.6	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.6251	7.5	100	0.00
13	P	Acetone	5.0000	4.9429	1.1	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.2784	14.4	100	0.01
15	T	Tert-Butyl Alcohol	100.0000	90.7440	9.3	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.6977	6.0	100	0.00
17	T	Iodomethane	5.0000	5.3886	-7.8	100	0.00
18	P	Methyl acetate	5.0000	4.3976	12.0	100	0.01
19	P	Methylene Chloride	5.0000	4.2690	14.6	100	0.00
20	P	Carbon Disulfide	5.0000	4.3495	13.0	100	0.00
21	T	Acrylonitrile	25.0000	22.6731	9.3	100	0.00
22	P	Methyl Tert Butyl Ether	5.0000	4.4284	11.4	100	0.00
23	P	trans-1,2-Dichloroethene	5.0000	4.5233	9.5	100	0.00
24	T	n-Hexane	5.0000	4.4854	10.3	100	0.01
25	T	Diisopropyl ether	50.0000	46.5162	7.0	100	0.00
26	T	Vinyl Acetate	5.0000	4.5644	8.7	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.2575	14.8	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	45.9037	8.2	100	0.00
29	P	2-Butanone	5.0000	4.7092	5.8	100	0.00
30	T	Propionitrile	50.0000	48.2931	3.4	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.2251	15.5	100	-0.01
32	P	cis-1,2-Dichloroethene	5.0000	4.5340	9.3	100	0.00
33	C	Chloroform	5.0000	4.4982	10.0	100	0.00
34	T	1-Bromopropane	5.0000	5.8651	-17.3	100	0.00
35	T	Bromochloromethane	5.0000	4.7667	4.7	100	0.00
36	T	Tetrahydrofuran	50.0000	47.4100	5.2	100	0.00
37	S	Dibromofluoromethane	10.0000	9.8422	1.6	100	0.00
38	P	1,1,1-Trichloroethane	5.0000	4.4285	11.4	100	0.00
39	P	Cyclohexane	5.0000	4.4818	10.4	100	0.01
40	T	1,1-Dichloropropene	5.0000	4.3930	12.1	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	46.8330	6.3	100	0.00
42	P	Carbon Tetrachloride	5.0000	4.2254	15.5	100	0.00
43	S	1,2-Dichloroethane-d4	10.0000	10.2911	-2.9	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	5.0000	4.6852	6.3	100	0.00
46	P	Benzene	5.0000	4.3528	12.9	100	0.00
47	P	Trichloroethene	5.0000	4.3213	13.6	100	0.00
48	P	Methylcyclohexane	5.0000	4.2330	15.3	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.5684	8.6	100	0.00
50	T	1,4-Dioxane	100.0000	91.4657	8.5	100	0.00
51	P	Bromodichloromethane	5.0000	4.4660	10.7	100	0.00
52	T	Dibromomethane	5.0000	4.7438	5.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	5.7758	-15.5	100	0.00
54	P	4-Methyl-2-Pentanone	5.0000	3.8716	22.6	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	5.0000	4.3659	12.7	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.2144	15.7	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	-0.01
58	S	Toluene-d8	10.0000	9.5885	4.1	100	0.00
59	C	Toluene	5.0000	4.3206	13.6	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.0089	19.8	100	0.00
61	P	trans-1,3-Dichloropropene	5.0000	4.3707	12.6	100	0.00
62	P	1,1,2-Trichloroethane	5.0000	4.5309	9.4	100	0.00
63	P	2-Hexanone	5.0000	4.3408	13.2	100	0.00
64	T	1,3-Dichloropropane	5.0000	4.5633	8.7	100	-0.01
65	P	Tetrachloroethene	5.0000	4.2981	14.0	100	0.00
66	P	Dibromochloromethane	5.0000	4.3052	13.9	100	0.00
67	P	1,2-Dibromoethane	5.0000	4.6694	6.6	100	0.00
68	T	1-Chlorohexane	5.0000	3.9281	21.4	100	0.00
69	P	Chlorobenzene	5.0000	4.5769	8.5	100	0.00
70	T	1,1,1,2-Tetrachloroethane	5.0000	4.3130	13.7	100	0.00
71	C	Ethylbenzene	5.0000	4.3974	12.1	100	0.00
72	P	m-,p-Xylene	10.0000	9.1683	8.3	100	0.00
73	P	o-Xylene	5.0000	4.5275	9.5	100	0.00
74	P	Styrene	5.0000	4.3253	13.5	100	0.00
75	P	Bromoform	5.0000	4.3382	13.2	100	-0.01
76	P	Isopropylbenzene	5.0000	4.3198	13.6	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	5.0000	4.8610	2.8	100	-0.01
79	S	p-Bromofluorobenzene	10.0000	9.4138	5.9	100	0.00
80	T	1,2,3-Trichloropropane	5.0000	4.9243	1.5	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	5.0000	4.0913	18.2	100	0.00
82	T	n-Propylbenzene	5.0000	4.5983	8.0	100	0.00
83	T	Bromobenzene	5.0000	4.6386	7.2	100	0.00
84	T	1,3,5-Trimethylbenzene	5.0000	4.6900	6.2	100	0.00
85	T	2-Chlorotoluene	5.0000	4.3899	12.2	100	0.00
86	T	4-Chlorotoluene	5.0000	4.6981	6.0	100	0.00
87	T	a-Methylstyrene	5.0000	4.1667	16.7	100	0.00
88	T	tert-Butylbenzene	5.0000	4.5290	9.4	100	0.00
89	T	1,2,4-Trimethylbenzene	5.0000	4.6345	7.3	100	0.00
90	T	sec-Butylbenzene	5.0000	4.4642	10.7	100	0.00
91	T	p-Isopropyltoluene	5.0000	4.6453	7.1	100	0.00
92	P	1,3-Dichlorobenzene	5.0000	4.4323	11.4	100	0.00
93	P	1,4-Dichlorobenzene	5.0000	4.5730	8.5	100	-0.01
94	T	n-Butylbenzene	5.0000	4.3071	13.9	100	0.00
95	P	1,2-Dichlorobenzene	5.0000	4.4593	10.8	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	5.0000	4.0028	19.9	100	0.00
97	P	1,2,4-Trichlorobenzene	5.0000	4.2258	15.5	100	0.00
98	T	Hexachlorobutadiene	5.0000	4.1968	16.1	100	0.00
99	T	Naphthalene	5.0000	4.3274	13.5	100	0.00
100	T	1,2,3-Trichlorobenzene	5.0000	4.2352	15.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972901.D 8260SL.M Fri Feb 26 11:21:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972902.D Vial: 7
Acq On : 25 Feb 2016 18:59 Operator: ADC
Sample : WG558732-07 20.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	491006	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	357658	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	168257	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	47666	17.9094 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 35.82%#		
43) 1,2-Dichloroethane-d4	10.45	65	60269	18.0480 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 36.10%#		
58) Toluene-d8	12.82	98	163811	18.1074 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 36.22%#		
79) p-Bromofluorobenzene	16.23	95	58931	17.9870 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 35.98%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	78283	23.3598 ug/kg	99
3) Chloromethane	3.75	50	64951	20.2188 ug/kg	98
4) Vinyl Chloride	3.99	62	73167	22.7523 ug/kg	97
5) 1,3-Butadiene	4.04	54	64372	21.0404 ug/kg	98
6) Bromomethane	4.88	94	40556	19.4178 ug/kg	97
7) Chloroethane	5.04	64	27981	19.5307 ug/kg	97
8) Trichlorofluoromethane	5.53	101	98871	20.4994 ug/kg	98
9) Diethyl ether	6.06	59	191078	84.7472 ug/kg	99
10) Isoprene	6.10	67	59437	20.6414 ug/kg	98
11) Acrolein	6.30	56	18057	40.1641 ug/kg	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	50002	20.1026 ug/kg	100
13) Acetone	6.42	43	27164	20.4768 ug/kg	100
14) 1,1-Dichloroethene	6.62	61	94732	20.6460 ug/kg	98
15) Tert-Butyl Alcohol	6.75	59	85695	170.6872 ug/kg	97
16) Dimethyl Sulfide	6.88	62	40580	20.9258 ug/kg	99
17) Iodomethane	7.13	142	21330	17.5663 ug/kg	96
18) Methyl acetate	7.15	43	54770	21.9573 ug/kg	99
19) Methylene Chloride	7.41	84	51619	20.6564 ug/kg	95
20) Carbon Disulfide	7.45	76	145286	20.5545 ug/kg	97
21) Acrylonitrile	7.59	53	50918	41.2640 ug/kg	97
22) Methyl Tert Butyl Ether	7.61	73	149271	20.9731 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	84416	20.6434 ug/kg	98
24) n-Hexane	7.92	57	82582	19.5795 ug/kg	98
25) Diisopropyl ether	8.26	45	841729	85.9275 ug/kg	99
26) Vinyl Acetate	8.44	43	107114	19.1814 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	104490	20.3440 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	777976	85.4147 ug/kg	99
29) 2-Butanone	9.02	43	30691	19.3834 ug/kg	100
30) Propionitrile	9.14	54	41719	86.0996 ug/kg	99
31) 2,2-Dichloropropane	9.24	77	73960	19.2927 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	56404	21.0307 ug/kg	100
33) Chloroform	9.52	83	94621	20.0546 ug/kg	98
34) 1-Bromopropane	9.65	122	8251	20.7938 ug/kg	98
35) Bromochloromethane	9.75	130	38059	21.8457 ug/kg	99
36) Tetrahydrofuran	9.77	42	86589	84.8405 ug/kg	100
38) 1,1,1-Trichloroethane	10.05	97	85938	20.1411 ug/kg	99
39) Cyclohexane	10.09	56	96933	20.8373 ug/kg	98
40) 1,1-Dichloropropene	10.25	75	67544	20.1175 ug/kg	96
41) Tert-Amyl-Methyl ether	10.34	73	562826	85.0111 ug/kg	99
42) Carbon Tetrachloride	10.39	117	79566	20.1143 ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972902.D 8260SL.M Fri Feb 26 11:21:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972902.D Vial: 7
Acq On : 25 Feb 2016 18:59 Operator: ADC
Sample : WG558732-07 20.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	86857	20.9287 ug/kg	98
46)	Benzene	10.60	78	190747	20.2931 ug/kg	98
47)	Trichloroethene	11.35	130	61315	20.5871 ug/kg	99
48)	Methylcyclohexane	11.44	83	79384	21.2516 ug/kg	99
49)	1,2-Dichloropropane	11.56	63	54356	21.0584 ug/kg	98
50)	1,4-Dioxane	11.88	88	7054	182.1639 ug/kg	93
51)	Bromodichloromethane	11.87	83	73160	20.1115 ug/kg	99
52)	Dibromomethane	11.97	174	35844	20.9583 ug/kg	97
53)	2-Chloroethyl Vinyl Ether	12.17	63	11048	17.4432 ug/kg	94
54)	4-Methyl-2-Pentanone	12.20	58	22247	19.6364 ug/kg	96
55)	cis-1,3-Dichloropropene	12.50	75	77533	20.4577 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	77400	20.3222 ug/kg	99
59)	Toluene	12.93	91	209919	20.5421 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	58827	20.7683 ug/kg	99
61)	trans-1,3-Dichloropropene	13.11	75	73778	20.0452 ug/kg	98
62)	1,1,2-Trichloroethane	13.32	97	45475	21.1838 ug/kg	98
63)	2-Hexanone	13.25	43	40183	18.7479 ug/kg	97
64)	1,3-Dichloropropane	13.62	76	73060	20.4249 ug/kg	95
65)	Tetrachloroethene	13.75	164	44423	20.2778 ug/kg	96
66)	Dibromochloromethane	14.01	129	59220	19.7391 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	48648	20.4311 ug/kg	97
68)	1-Chlorohexane	14.35	91	64519	21.4099 ug/kg	96
69)	Chlorobenzene	14.77	112	150639	20.9742 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	55462	20.5631 ug/kg	99
71)	Ethylbenzene	14.79	106	77813	21.0297 ug/kg	100
72)	m-,p-Xylene	14.89	106	192168	42.0536 ug/kg	98
73)	o-Xylene	15.45	106	92490	21.0911 ug/kg	98
74)	Styrene	15.49	104	154534	20.6939 ug/kg	100
75)	Bromoform	16.00	173	39818	20.2142 ug/kg	98
76)	Isopropylbenzene	15.87	105	249418	21.1865 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	53687	21.0342 ug/kg	98
80)	1,2,3-Trichloropropane	16.28	110	19658	20.3087 ug/kg	98
81)	trans-1,4-Dichloro-2-Buten	16.33	53	21143	21.6696 ug/kg	89
82)	n-Propylbenzene	16.39	91	283998	21.4728 ug/kg	98
83)	Bromobenzene	16.52	156	65363	20.9343 ug/kg	95
84)	1,3,5-Trimethylbenzene	16.57	105	212735	21.4278 ug/kg	99
85)	2-Chlorotoluene	16.66	91	189159	21.3235 ug/kg	99
86)	4-Chlorotoluene	16.70	91	171741	20.9401 ug/kg	99
87)	a-Methylstyrene	16.98	118	95360	21.0801 ug/kg	99
88)	tert-Butylbenzene	17.03	134	43749	21.0188 ug/kg	90
89)	1,2,4-Trimethylbenzene	17.08	105	218350	21.0010 ug/kg	99
90)	sec-Butylbenzene	17.31	105	268054	20.9635 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	225612	20.9076 ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	122605	19.7580 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	124659	20.0949 ug/kg	99
94)	n-Butylbenzene	17.99	91	199655	19.8998 ug/kg	99
95)	1,2-Dichlorobenzene	18.30	146	115021	19.9768 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	14138	19.1277 ug/kg	95
97)	1,2,4-Trichlorobenzene	20.43	180	77418	18.9408 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	41508	19.2651 ug/kg	96
99)	Naphthalene	20.81	128	204933	19.9897 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.12	180	75616	19.0736 ug/kg	98

(#) = qualifier out of range (m) = manual integration
9M972902.D 8260SL.M Fri Feb 26 11:21:57 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972902.D Vial: 7
Acq On : 25 Feb 2016 18:59 Operator: ADC
Sample : WG558732-07 20.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

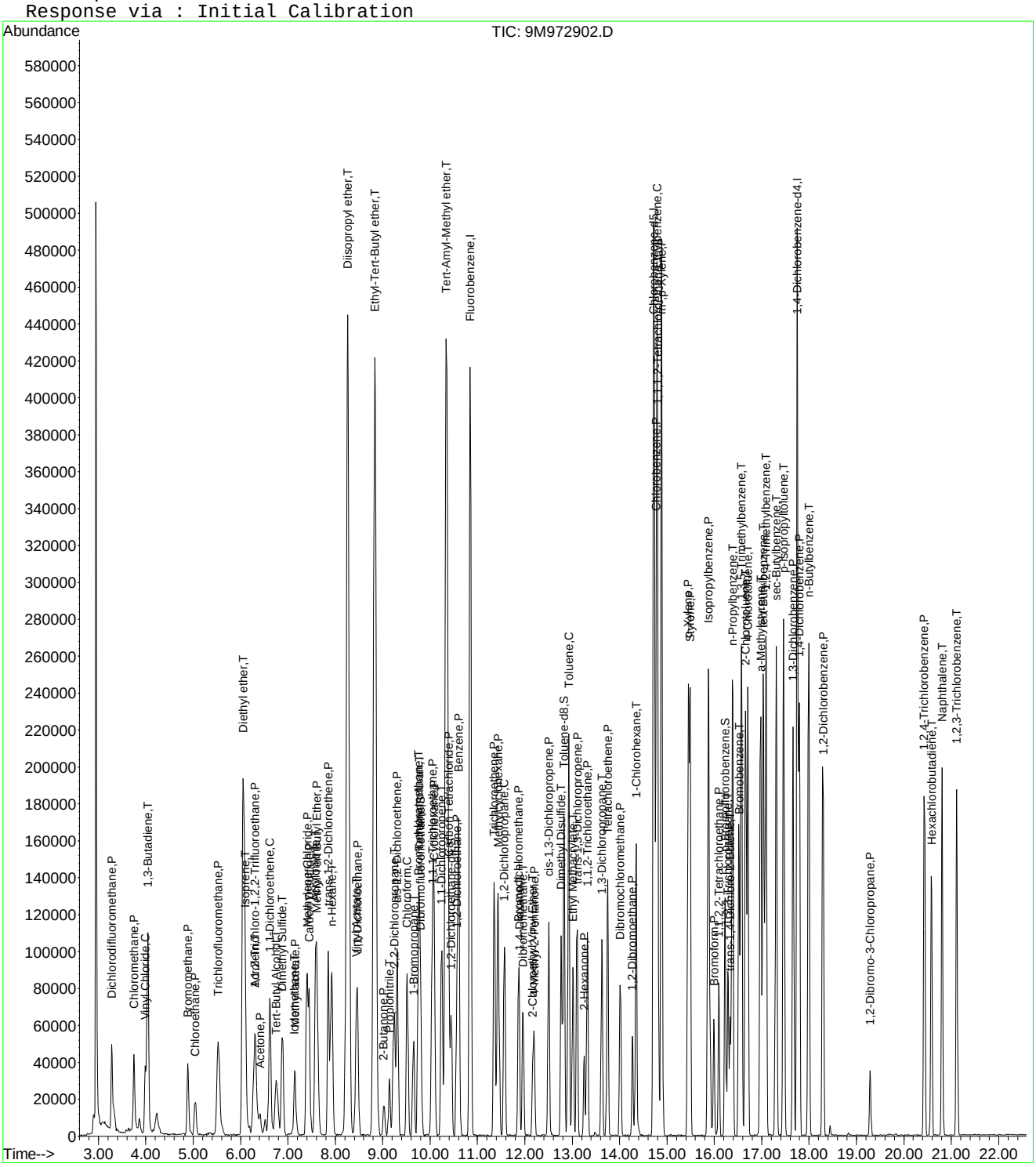

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972903.D Vial: 8
Acq On : 25 Feb 2016 19:29 Operator: ADC
Sample : WG558732-08 100.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:57 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	535022	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	390279	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.75	152	187456	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	305515	105.3466 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 210.70%#		
43) 1,2-Dichloroethane-d4	10.45	65	383447	105.3793 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 210.76%#		
58) Toluene-d8	12.83	98	1052175	106.5842 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 213.16%#		
79) p-Bromofluorobenzene	16.23	95	403966	110.6707 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 221.34%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	340079	93.1314 ug/kg	98
3) Chloromethane	3.74	50	316834	90.5143 ug/kg	100
4) Vinyl Chloride	3.99	62	366384	104.5591 ug/kg	99
5) 1,3-Butadiene	4.04	54	317949	95.3739 ug/kg	98
6) Bromomethane	4.88	94	198493	87.2180 ug/kg	99
7) Chloroethane	5.04	64	148539	95.1503 ug/kg	96
8) Trichlorofluoromethane	5.53	101	502703	95.6532 ug/kg	99
9) Diethyl ether	6.06	59	457873	186.3696 ug/kg	99
10) Isoprene	6.09	67	302269	96.3367 ug/kg	100
11) Acrolein	6.30	56	49319	100.6749 ug/kg	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	264925	97.7467 ug/kg	100
13) Acetone	6.41	43	126959	96.0965 ug/kg	97
14) 1,1-Dichloroethene	6.61	61	485466	97.0986 ug/kg	99
15) Tert-Butyl Alcohol	6.77	59	202804	370.7125 ug/kg	97
16) Dimethyl Sulfide	6.88	62	209613	99.1979 ug/kg	97
17) Iodomethane	7.14	142	134789	88.4431 ug/kg	96
18) Methyl acetate	7.15	43	256770	94.4705 ug/kg	99
19) Methylene Chloride	7.40	84	256919	94.3530 ug/kg	100
20) Carbon Disulfide	7.45	76	725343	94.1764 ug/kg	99
21) Acrylonitrile	7.59	53	131913	98.1077 ug/kg	97
22) Methyl Tert Butyl Ether	7.61	73	763125	98.4009 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	435514	97.7404 ug/kg	99
24) n-Hexane	7.92	57	458951	99.8615 ug/kg	98
25) Diisopropyl ether	8.26	45	1991599	186.5850 ug/kg	99
26) Vinyl Acetate	8.44	43	593217	97.4908 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	533571	95.3384 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	1850360	186.4394 ug/kg	100
29) 2-Butanone	9.03	43	167064	96.8316 ug/kg	99
30) Propionitrile	9.14	54	102467	194.0735 ug/kg	99
31) 2,2-Dichloropropane	9.24	77	409808	98.1051 ug/kg	98
32) cis-1,2-Dichloroethene	9.31	96	291782	99.8428 ug/kg	100
33) Chloroform	9.52	83	491651	95.6310 ug/kg	100
34) 1-Bromopropane	9.65	122	43084	95.7559 ug/kg	98
35) Bromochloromethane	9.75	130	191150	100.6929 ug/kg	97
36) Tetrahydrofuran	9.78	42	206962	186.0999 ug/kg	99
38) 1,1,1-Trichloroethane	10.04	97	454248	97.7025 ug/kg	99
39) Cyclohexane	10.08	56	497594	98.1657 ug/kg	99
40) 1,1-Dichloropropene	10.24	75	355996	97.3080 ug/kg	98
41) Tert-Amyl-Methyl ether	10.35	73	1353122	187.5659 ug/kg	99
42) Carbon Tetrachloride	10.39	117	419252	97.2674 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972903.D Vial: 8
Acq On : 25 Feb 2016 19:29 Operator: ADC
Sample : WG558732-08 100.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:57 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	441828	97.7027	ug/kg	98
46)	Benzene	10.60	78	946247	92.3868	ug/kg	100
47)	Trichloroethene	11.35	130	316701	97.5872	ug/kg	98
48)	Methylcyclohexane	11.44	83	420776	103.3770	ug/kg	100
49)	1,2-Dichloropropane	11.56	63	273398	97.2049	ug/kg	97
50)	1,4-Dioxane	11.89	88	15240	361.1826	ug/kg	95
51)	Bromodichloromethane	11.87	83	384453	96.9905	ug/kg	100
52)	Dibromomethane	11.96	174	178770	95.9288	ug/kg	100
53)	2-Chloroethyl Vinyl Ether	12.17	63	71336	89.4187	ug/kg	97
54)	4-Methyl-2-Pentanone	12.19	58	126118	102.1606	ug/kg	99
55)	cis-1,3-Dichloropropene	12.50	75	407392	98.6500	ug/kg	99
56)	Dimethyl Disulfide	12.77	94	430523	103.7388	ug/kg	99
59)	Toluene	12.93	91	1070303	95.9828	ug/kg	100
60)	Ethyl Methacrylate	13.01	69	310336	100.4033	ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	395340	98.4345	ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	234168	99.9657	ug/kg	97
63)	2-Hexanone	13.25	43	238254	101.8692	ug/kg	99
64)	1,3-Dichloropropane	13.62	76	372307	95.3836	ug/kg	98
65)	Tetrachloroethene	13.75	164	235384	98.4650	ug/kg	97
66)	Dibromochloromethane	14.01	129	316240	96.5980	ug/kg	100
67)	1,2-Dibromoethane	14.28	107	254663	98.0133	ug/kg	98
68)	1-Chlorohexane	14.35	91	341938	103.9841	ug/kg	98
69)	Chlorobenzene	14.77	112	744916	95.0493	ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.80	131	289798	98.4650	ug/kg	98
71)	Ethylbenzene	14.79	106	397428	98.4311	ug/kg	99
72)	m-,p-Xylene	14.89	106	955121	191.5462	ug/kg	97
73)	o-Xylene	15.45	106	475355	99.3381	ug/kg	100
74)	Styrene	15.49	104	817155	100.2803	ug/kg	100
75)	Bromoform	15.99	173	212807	99.0046	ug/kg	98
76)	Isopropylbenzene	15.88	105	1283494	99.9122	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	279744	98.3764	ug/kg	100
80)	1,2,3-Trichloropropane	16.29	110	110421	102.3924	ug/kg	94
81)	trans-1,4-Dichloro-2-Buten	16.33	53	116410	107.0899	ug/kg	87
82)	n-Propylbenzene	16.39	91	1458178	98.9594	ug/kg	99
83)	Bromobenzene	16.52	156	334600	96.1892	ug/kg	97
84)	1,3,5-Trimethylbenzene	16.57	105	1100766	99.5195	ug/kg	99
85)	2-Chlorotoluene	16.66	91	937812	94.8900	ug/kg	100
86)	4-Chlorotoluene	16.70	91	906777	99.2383	ug/kg	100
87)	a-Methylstyrene	16.98	118	508276	100.8508	ug/kg	99
88)	tert-Butylbenzene	17.04	134	234437	101.0972	ug/kg	99
89)	1,2,4-Trimethylbenzene	17.09	105	1125260	97.1435	ug/kg	99
90)	sec-Butylbenzene	17.30	105	1425754	100.0828	ug/kg	100
91)	p-Isopropyltoluene	17.46	119	1215596	101.1125	ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	644471	93.2206	ug/kg	100
93)	1,4-Dichlorobenzene	17.79	146	646907	93.6002	ug/kg	99
94)	n-Butylbenzene	17.99	91	1131901	101.2628	ug/kg	99
95)	1,2-Dichlorobenzene	18.30	146	622851	97.0971	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.30	157	88939	108.0040	ug/kg	99
97)	1,2,4-Trichlorobenzene	20.44	180	466688	102.4843	ug/kg	99
98)	Hexachlorobutadiene	20.59	225	252514	105.1960	ug/kg	99
99)	Naphthalene	20.81	128	1208454	105.8030	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	456274	103.3044	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972903.D 8260SL.M Fri Feb 26 11:21:58 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972903.D Vial: 8
Acq On : 25 Feb 2016 19:29 Operator: ADC
Sample : WG558732-08 100.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

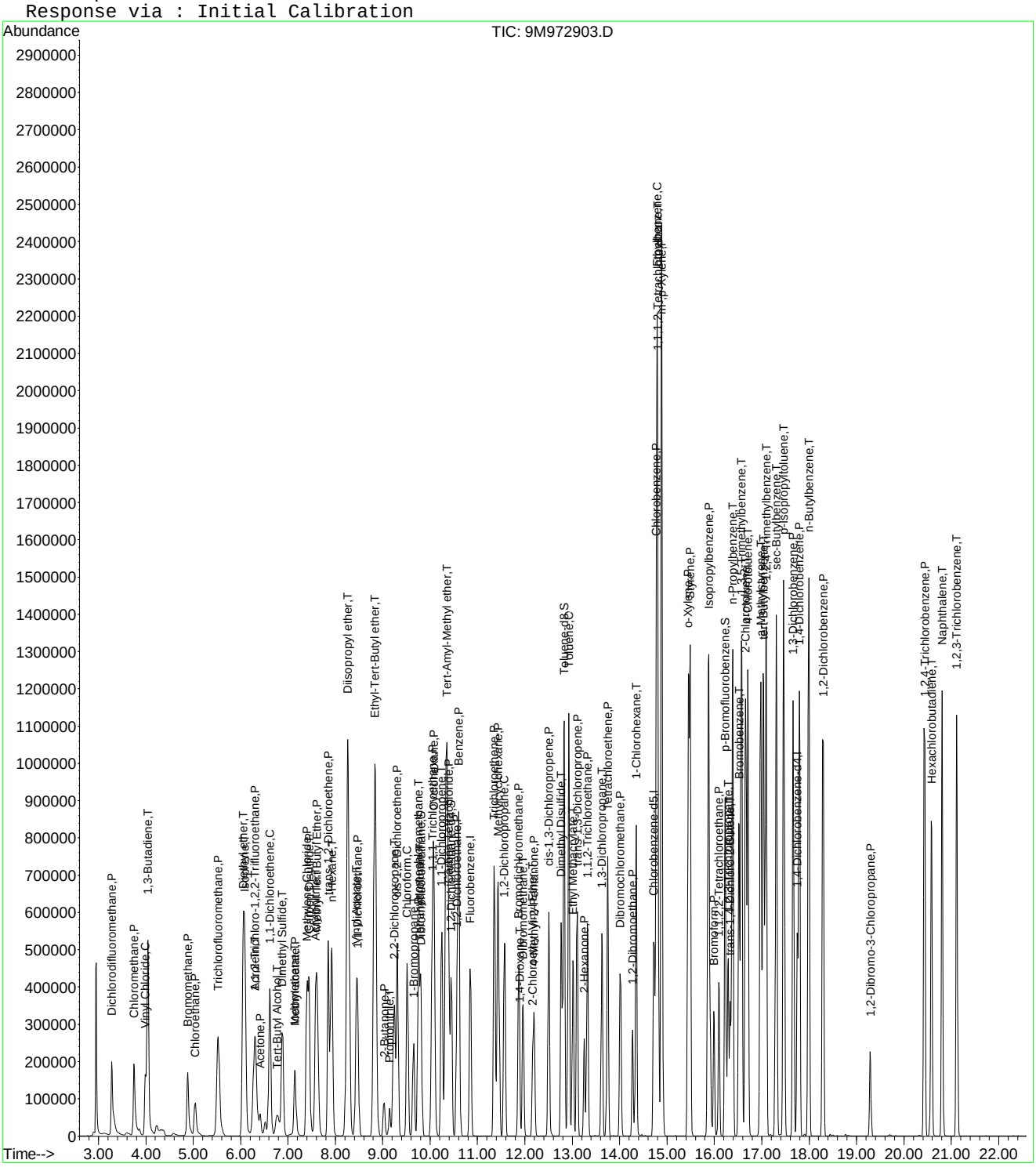

9M972903.D 8260SL.M Fri Feb 26 11:21:58 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972904.D Vial: 9
Acq On : 25 Feb 2016 20:00 Operator: ADC
Sample : WG558732-09 200.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:58 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	542388	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	396894	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	212175	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	595362	202.5026 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 405.00%#		
43) 1,2-Dichloroethane-d4	10.45	65	716316	194.1852 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 388.38%#		
58) Toluene-d8	12.82	98	2013255	200.5415 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 401.08%#		
79) p-Bromofluorobenzene	16.23	95	807150	195.3653 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 390.74%#		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.28	85	774894	209.3245 ug/kg	100
3) Chloromethane	3.75	50	750862	211.5959 ug/kg	100
4) Vinyl Chloride	3.99	62	770550	216.9141 ug/kg	100
5) 1,3-Butadiene	4.04	54	695631	205.8318 ug/kg	99
6) Bromomethane	4.88	94	470946	204.1239 ug/kg	97
7) Chloroethane	5.04	64	374502	236.6386 ug/kg	98
8) Trichlorofluoromethane	5.52	101	1120886	210.3832 ug/kg	99
10) Isoprene	6.09	67	690766	217.1654 ug/kg	97
11) Acrolein	6.31	56	2288	4.6071 ug/kg	86
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	592415	215.6090 ug/kg	100
13) Acetone	6.42	43	268070	202.8703 ug/kg	99
14) 1,1-Dichloroethene	6.62	61	1084122	213.8917 ug/kg	99
15) Tert-Butyl Alcohol	6.78	59	290	0.5229 ug/kg#	58
16) Dimethyl Sulfide	6.88	62	486231	226.9805 ug/kg	99
17) Iodomethane	7.14	142	341644	216.9305 ug/kg	98
18) Methyl acetate	7.15	43	558766	202.7886 ug/kg	97
19) Methylene Chloride	7.40	84	606998	219.8913 ug/kg	98
20) Carbon Disulfide	7.44	76	1650167	211.3432 ug/kg	98
21) Acrylonitrile	7.61	53	18860	13.8363 ug/kg#	28
22) Methyl Tert Butyl Ether	7.61	73	1710517	217.5666 ug/kg	99
23) trans-1,2-Dichloroethene	7.84	61	967656	214.2173 ug/kg	99
24) n-Hexane	7.92	57	1006142	215.9497 ug/kg	97
26) Vinyl Acetate	8.43	43	1320060	213.9959 ug/kg	98
27) 1,1-Dichloroethane	8.46	63	1199515	211.4185 ug/kg	100
29) 2-Butanone	9.02	43	373284	213.4201 ug/kg	100
31) 2,2-Dichloropropane	9.24	77	904865	213.6764 ug/kg	100
32) cis-1,2-Dichloroethene	9.31	96	649726	219.3058 ug/kg	100
33) Chloroform	9.52	83	1094765	210.0507 ug/kg	100
34) 1-Bromopropane	9.66	122	98189	213.9851 ug/kg	100
35) Bromochloromethane	9.75	130	427351	222.0603 ug/kg	99
36) Tetrahydrofuran	9.77	42	2491	2.2095 ug/kg	93
38) 1,1,1-Trichloroethane	10.05	97	1020636	216.5435 ug/kg	100
39) Cyclohexane	10.08	56	1092323	212.5677 ug/kg	98
40) 1,1-Dichloropropene	10.24	75	780375	210.4109 ug/kg	98
42) Carbon Tetrachloride	10.39	117	950685	217.5657 ug/kg	100
45) 1,2-Dichloroethane	10.56	62	975428	212.7698 ug/kg	98
46) Benzene	10.61	78	2107212	202.9435 ug/kg	100
47) Trichloroethene	11.36	130	696420	211.6783 ug/kg	98
48) Methylcyclohexane	11.43	83	922594	223.5862 ug/kg	100
49) 1,2-Dichloropropane	11.57	63	613480	215.1567 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972904.D Vial: 9
Acq On : 25 Feb 2016 20:00 Operator: ADC
Sample : WG558732-09 200.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:58 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
50)	1,4-Dioxane	11.86	88	821	19.1932	ug/kg#	7
51)	Bromodichloromethane	11.87	83	861318	214.3439	ug/kg	99
52)	Dibromomethane	11.96	174	401145	212.3328	ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	173854	210.9891	ug/kg	98
54)	4-Methyl-2-Pentanone	12.19	58	281550	224.9694	ug/kg	99
55)	cis-1,3-Dichloropropene	12.51	75	917528	219.1621	ug/kg	100
56)	Dimethyl Disulfide	12.77	94	993447	236.1300	ug/kg	99
59)	Toluene	12.93	91	2353264	207.5190	ug/kg	100
60)	Ethyl Methacrylate	13.01	69	698780	222.3090	ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	892986	218.6361	ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	510766	214.4105	ug/kg	98
63)	2-Hexanone	13.26	43	551431	231.8433	ug/kg	99
64)	1,3-Dichloropropane	13.63	76	842104	212.1481	ug/kg	99
65)	Tetrachloroethene	13.75	164	518091	213.1138	ug/kg	97
66)	Dibromochloromethane	14.02	129	723489	217.3121	ug/kg	99
67)	1,2-Dibromoethane	14.27	107	560802	212.2411	ug/kg	99
68)	1-Chlorohexane	14.35	91	757279	226.4519	ug/kg	100
69)	Chlorobenzene	14.78	112	1626715	204.1050	ug/kg	98
70)	1,1,1,2-Tetrachloroethane	14.81	131	649903	217.1378	ug/kg	97
71)	Ethylbenzene	14.80	106	871321	212.2035	ug/kg	99
72)	m-,p-Xylene	14.89	106	2089330	412.0243	ug/kg	98
73)	o-Xylene	15.45	106	1065692	218.9929	ug/kg	98
74)	Styrene	15.49	104	1839951	222.0334	ug/kg	100
75)	Bromoform	15.99	173	511700	234.0915	ug/kg	99
76)	Isopropylbenzene	15.87	105	2873816	219.9805	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	662688	205.8943	ug/kg	99
80)	1,2,3-Trichloropropane	16.29	110	257281	210.7797	ug/kg	98
81)	trans-1,4-Dichloro-2-Buten	16.34	53	281460	228.7601	ug/kg	90
82)	n-Propylbenzene	16.38	91	3244636	194.5439	ug/kg	100
83)	Bromobenzene	16.52	156	759998	193.0269	ug/kg	95
84)	1,3,5-Trimethylbenzene	16.57	105	2471747	197.4342	ug/kg	99
85)	2-Chlorotoluene	16.66	91	2218317	198.3049	ug/kg	100
86)	4-Chlorotoluene	16.71	91	1934954	187.0917	ug/kg	100
87)	a-Methylstyrene	16.98	118	1205032	211.2436	ug/kg	99
88)	tert-Butylbenzene	17.03	134	526001	200.4032	ug/kg	87
89)	1,2,4-Trimethylbenzene	17.09	105	2520611	192.2523	ug/kg	100
90)	sec-Butylbenzene	17.31	105	3206494	198.8615	ug/kg	100
91)	p-Isopropyltoluene	17.47	119	2752661	202.2895	ug/kg	100
92)	1,3-Dichlorobenzene	17.67	146	1508843	192.8225	ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	1522857	194.6701	ug/kg	99
94)	n-Butylbenzene	17.99	91	2603240	205.7600	ug/kg	100
95)	1,2-Dichlorobenzene	18.29	146	1515803	208.7710	ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	205456	220.4304	ug/kg	98
97)	1,2,4-Trichlorobenzene	20.43	180	1061631	205.9726	ug/kg	99
98)	Hexachlorobutadiene	20.58	225	612598	225.4729	ug/kg	100
99)	Naphthalene	20.81	128	2666581	206.2661	ug/kg	99
100)	1,2,3-Trichlorobenzene	21.12	180	1022740	204.5802	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972904.D 8260SL.M Fri Feb 26 11:21:58 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972904.D Vial: 9
Acq On : 25 Feb 2016 20:00 Operator: ADC
Sample : WG558732-09 200.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

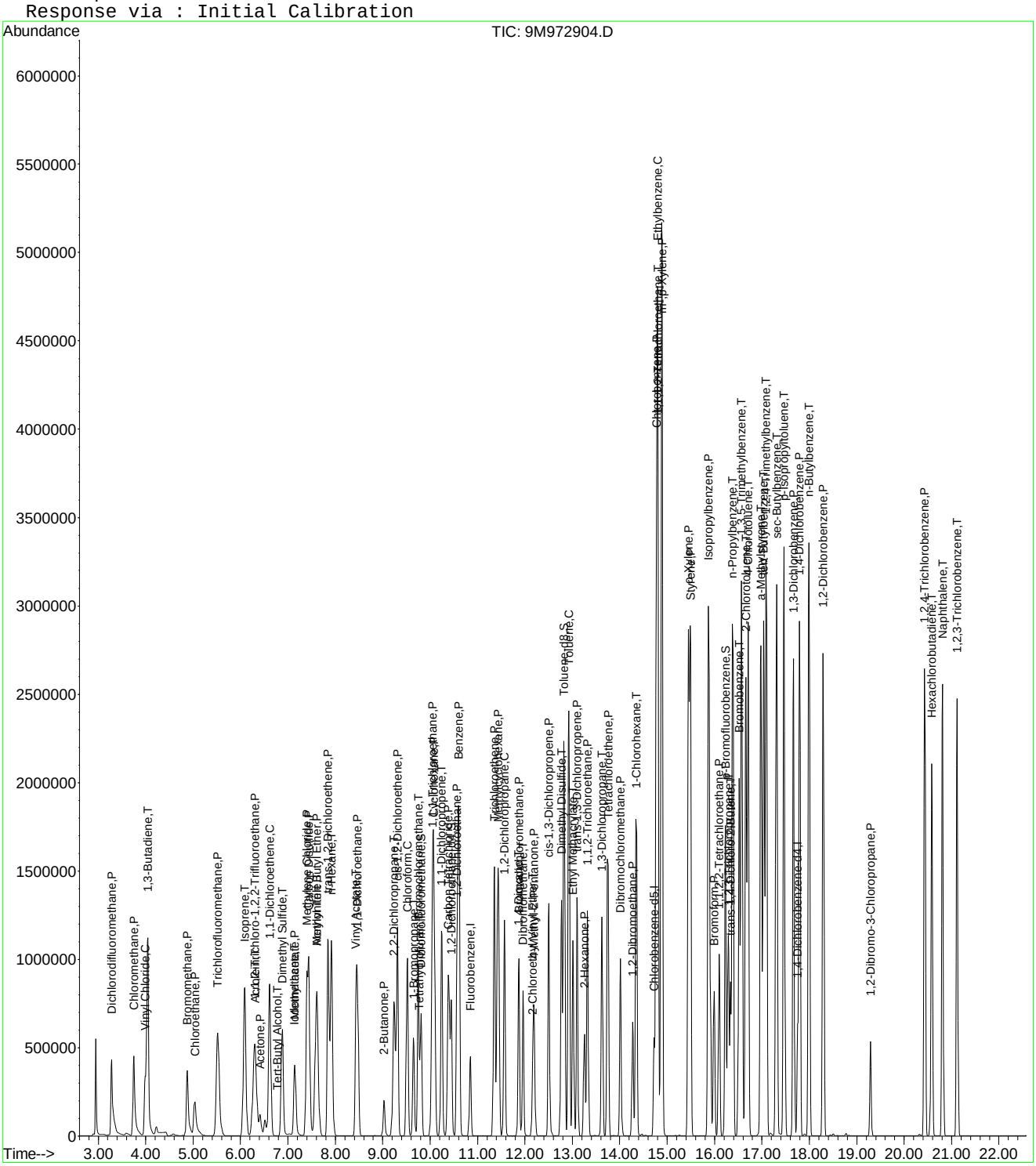
Abundance
TIC: 9M972904.D
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5500000
5000000
4500000
4000000
3500000
3000000
2500000
2000000
1500000
1000000
500000
0
Time-->
3.00
4.00
5.00
6.00
7.00
8.00
9.00
10.00
11.00
12.00
13.00
14.00
15.00
16.00
17.00
18.00
19.00
20.00
21.00
22.00
Dichlorodifluoromethane,P
Chloromethane,P
Vinyl Chloride,C
1,3-Butadiene,T
Bromomethane,P
Chloroethane,P
Trichlorofluoromethane,P
Isoprene,T
Acrolein
Acrylonitrile
Acetone,P
Tert-Butyl Alcohol,T
Dimethyl Sulfide,T
Methylene Chloride,P
Methyl Acetate,P
Methyl Tert-Butyl Ether,P
Carbon Disulfide,P
Acrylonitrile,P
Vinyl Acetate,P
Methyl Ethyl Ketone,P
Hexane,P
Chloroprene,P
Vinyl Acetate,P
Ethyl Acetate,P
2-Butanone,P
2,2-Dichloropropane,T
Chloroform,C
1-Bromochloromethane,T
Tetrahydrofuran,S
1,1-Dichloroethane,P
1,2-Dichloroethane,P
1,1,1-Trichloroethane,P
Cyclohexane,P
Carbon Tetrachloride,P
1,1-Dichloropropene,T
1,2-Dichloroethane,P
Benzene,P
Fluorobenzene,I
Trichloroethene,P
Methylcyclohexane,P
1,2-Dichloropropane,C
Dibromomethane,P
1,4-Dioxane,P
Bromodichloromethane,P
Methyl Methacrylate,P
2-Chloroethyl Vinyl Ether,P
2-Chloroethanol,P
2-Chloroethanol,P
2-Chloroethanol

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972905.D Vial: 10
Acq On : 25 Feb 2016 20:30 Operator: ADC
Sample : WG558732-10 300.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:59 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	626979	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	468521	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	224223	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	520	0.1530 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.30%#	
43) 1,2-Dichloroethane-d4	10.45	65	1794	0.4207 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.84%#	
58) Toluene-d8	12.82	98	7789	0.6573 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	1.32%#	
79) p-Bromofluorobenzene	16.23	95	6216	1.4237 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	2.84%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	1155483	270.0216 ug/kg	98
3) Chloromethane	3.75	50	1142773	278.5891 ug/kg	100
4) Vinyl Chloride	3.98	62	1112221	270.8539 ug/kg	99
5) 1,3-Butadiene	4.03	54	1100483	281.6917 ug/kg	98
6) Bromomethane	4.87	94	749711	281.1083 ug/kg	98
7) Chloroethane	5.04	64	601337	328.7051 ug/kg	98
8) Trichlorofluoromethane	5.52	101	1778447	288.7670 ug/kg	99
9) Diethyl ether	6.06	59	869609	302.0457 ug/kg	99
10) Isoprene	6.08	67	1108410	301.4513 ug/kg	98
11) Acrolein	6.30	56	93621	163.0794 ug/kg	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	943691	297.1172 ug/kg	99
13) Acetone	6.42	43	369915	242.6618 ug/kg	95
14) 1,1-Dichloroethene	6.61	61	1715009	292.7111 ug/kg	98
15) Tert-Butyl Alcohol	6.80	59	188151	293.4850 ug/kg	89
16) Dimethyl Sulfide	6.88	62	763075	308.1557 ug/kg	99
17) Iodomethane	7.14	142	532480	291.5128 ug/kg	99
18) Methyl acetate	7.15	43	879657	276.1748 ug/kg	98
19) Methylene Chloride	7.40	84	937262	293.7237 ug/kg	96
20) Carbon Disulfide	7.44	76	2640380	292.5391 ug/kg	98
21) Acrylonitrile	7.59	53	252681	160.3640 ug/kg	94
22) Methyl Tert Butyl Ether	7.61	73	2699681	297.0533 ug/kg	98
23) trans-1,2-Dichloroethene	7.84	61	1548353	296.5245 ug/kg	100
24) n-Hexane	7.92	57	1608467	298.6501 ug/kg	98
25) Diisopropyl ether	8.26	45	3742238	299.1747 ug/kg	100
26) Vinyl Acetate	8.43	43	2097407	294.1383 ug/kg	99
27) 1,1-Dichloroethane	8.47	63	1881635	286.8995 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	3515202	302.2390 ug/kg	99
29) 2-Butanone	9.02	43	559900	276.9258 ug/kg	100
30) Propionitrile	9.14	54	182998	295.7653 ug/kg	100
31) 2,2-Dichloropropane	9.24	77	1439671	294.0988 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	1040893	303.9366 ug/kg	99
33) Chloroform	9.52	83	1708608	283.5977 ug/kg	99
34) 1-Bromopropane	9.65	122	152776	287.6719 ug/kg	98
35) Bromochloromethane	9.75	130	668631	300.5590 ug/kg	98
36) Tetrahydrofuran	9.77	42	365915	280.7723 ug/kg	97
38) 1,1,1-Trichloroethane	10.05	97	1606962	294.9423 ug/kg	100
39) Cyclohexane	10.08	56	1746722	294.0540 ug/kg	99
40) 1,1-Dichloropropene	10.24	75	1258569	293.5615 ug/kg	98
41) Tert-Amyl-Methyl ether	10.34	73	2573262	304.3824 ug/kg	98
42) Carbon Tetrachloride	10.39	117	1494872	295.9476 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972905.D Vial: 10
Acq On : 25 Feb 2016 20:30 Operator: ADC
Sample : WG558732-10 300.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:59 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.57	62	1526616	288.0725 ug/kg	98
46)	Benzene	10.61	78	3320959	276.6861 ug/kg	99
47)	Trichloroethene	11.36	130	1102750	289.9607 ug/kg	98
48)	Methylcyclohexane	11.43	83	1476436	309.5324 ug/kg	98
49)	1,2-Dichloropropane	11.57	63	980423	297.4576 ug/kg	99
50)	1,4-Dioxane	11.89	88	31126	629.4828 ug/kg	81
51)	Bromodichloromethane	11.87	83	1358159	292.3851 ug/kg	99
52)	Dibromomethane	11.96	174	632731	289.7290 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	287132	300.2354 ug/kg	96
54)	4-Methyl-2-Pentanone	12.19	58	438042	302.7895 ug/kg	99
55)	cis-1,3-Dichloropropene	12.51	75	1436858	296.9047 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	1505953	309.6528 ug/kg	95
59)	Toluene	12.93	91	3720819	277.9530 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	1096301	295.4554 ug/kg	100
61)	trans-1,3-Dichloropropene	13.10	75	1416217	293.7329 ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	820836	291.8946 ug/kg	99
63)	2-Hexanone	13.26	43	814427	290.0688 ug/kg	100
64)	1,3-Dichloropropane	13.63	76	1322191	282.1714 ug/kg	100
65)	Tetrachloroethene	13.75	164	815946	284.3233 ug/kg	98
66)	Dibromochloromethane	14.02	129	1136128	289.0845 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	889642	285.2204 ug/kg	99
68)	1-Chlorohexane	14.34	91	1188786	301.1405 ug/kg	99
69)	Chlorobenzene	14.78	112	2558374	271.9265 ug/kg	97
70)	1,1,1,2-Tetrachloroethane	14.81	131	1019464	288.5389 ug/kg	97
71)	Ethylbenzene	14.80	106	1372834	283.2291 ug/kg	97
72)	m-,p-Xylene	14.89	106	3241616	541.5304 ug/kg	97
73)	o-Xylene	15.45	106	1663016	289.4945 ug/kg	99
74)	Styrene	15.49	104	2869824	293.3680 ug/kg	99
75)	Bromoform	15.99	173	788638	305.6282 ug/kg	99
76)	Isopropylbenzene	15.87	105	4421589	286.7141 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	1002445	294.7201 ug/kg	99
80)	1,2,3-Trichloropropane	16.28	110	380025	294.6098 ug/kg	66
81)	trans-1,4-Dichloro-2-Buten	16.34	53	413901	318.3274 ug/kg	57
82)	n-Propylbenzene	16.38	91	4980503	282.5783 ug/kg	99
83)	Bromobenzene	16.52	156	1176440	282.7414 ug/kg	93
84)	1,3,5-Trimethylbenzene	16.57	105	3788936	286.3846 ug/kg	99
85)	2-Chlorotoluene	16.66	91	3458872	292.5892 ug/kg	100
86)	4-Chlorotoluene	16.71	91	2929432	268.0287 ug/kg	100
87)	a-Methylstyrene	16.98	118	1823514	302.4880 ug/kg	100
88)	tert-Butylbenzene	17.03	134	795019	286.6221 ug/kg	86
89)	1,2,4-Trimethylbenzene	17.09	105	3829230	276.3702 ug/kg	100
90)	sec-Butylbenzene	17.31	105	4833765	283.6742 ug/kg	99
91)	p-Isopropyltoluene	17.47	119	4134027	287.4802 ug/kg	99
92)	1,3-Dichlorobenzene	17.67	146	2260017	273.2999 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	2229106	269.6404 ug/kg	99
94)	n-Butylbenzene	17.99	91	3871124	289.5329 ug/kg	100
95)	1,2-Dichlorobenzene	18.29	146	2162642	281.8552 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	293112	297.5776 ug/kg	98
97)	1,2,4-Trichlorobenzene	20.43	180	1514973	278.1345 ug/kg	100
98)	Hexachlorobutadiene	20.58	225	846867	294.9498 ug/kg	99
99)	Naphthalene	20.81	128	3754823	274.8379 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.12	180	1451357	274.7177 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972905.D 8260SL.M Fri Feb 26 11:21:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972905.D Vial: 10
Acq On : 25 Feb 2016 20:30 Operator: ADC
Sample : WG558732-10 300.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

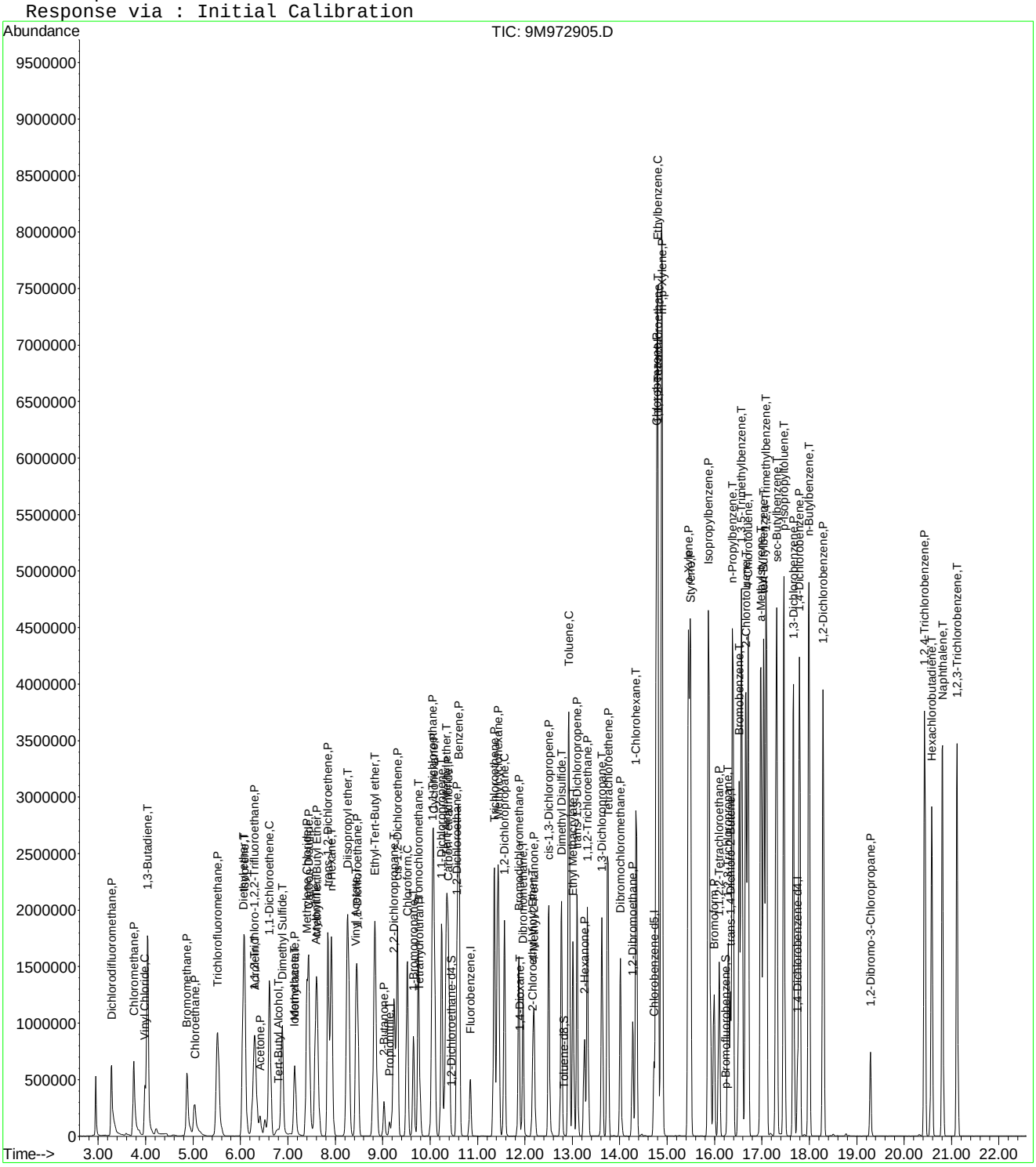

9M972905.D 8260SL.M Fri Feb 26 11:21:59 2016 Page 3

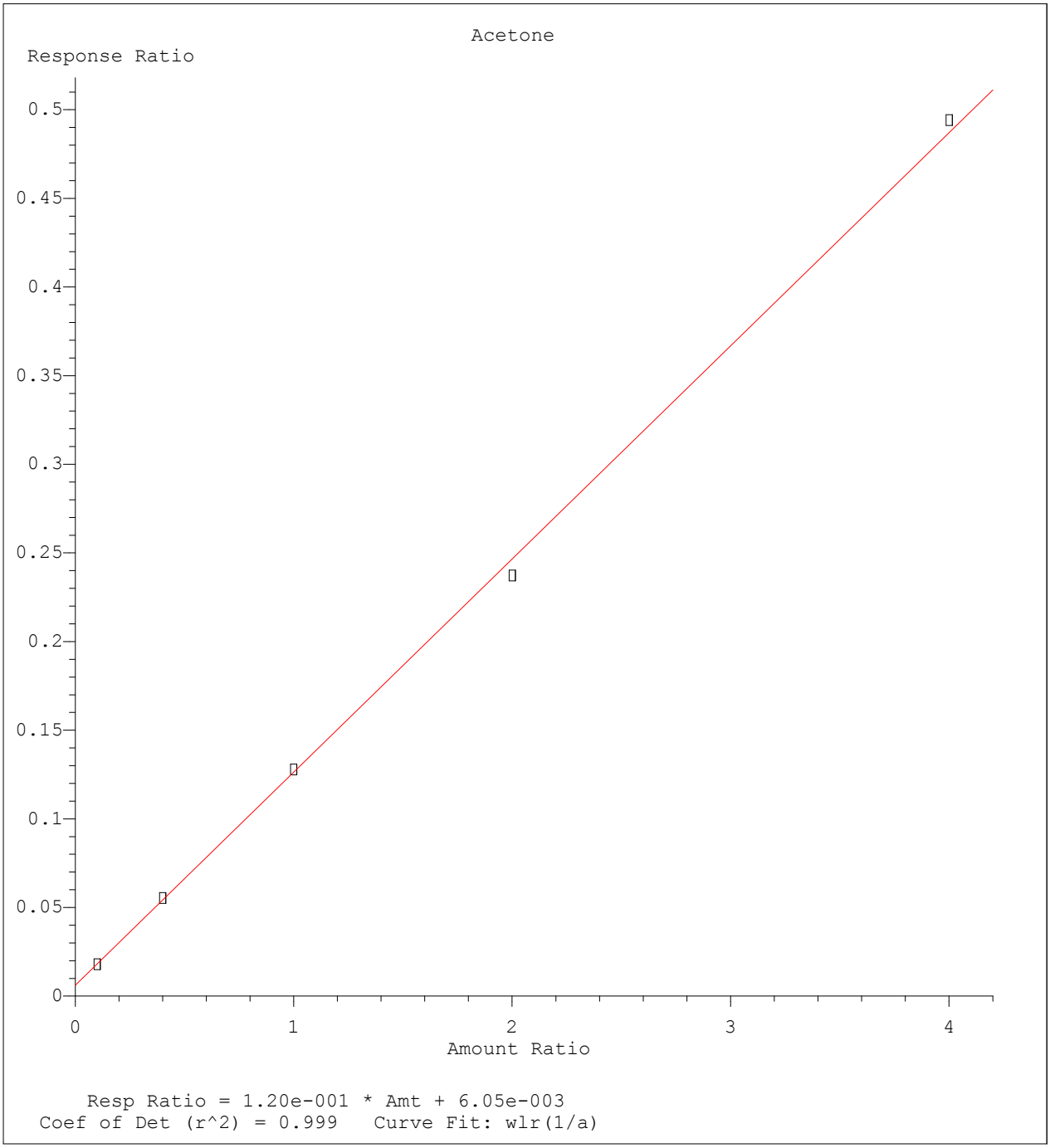

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

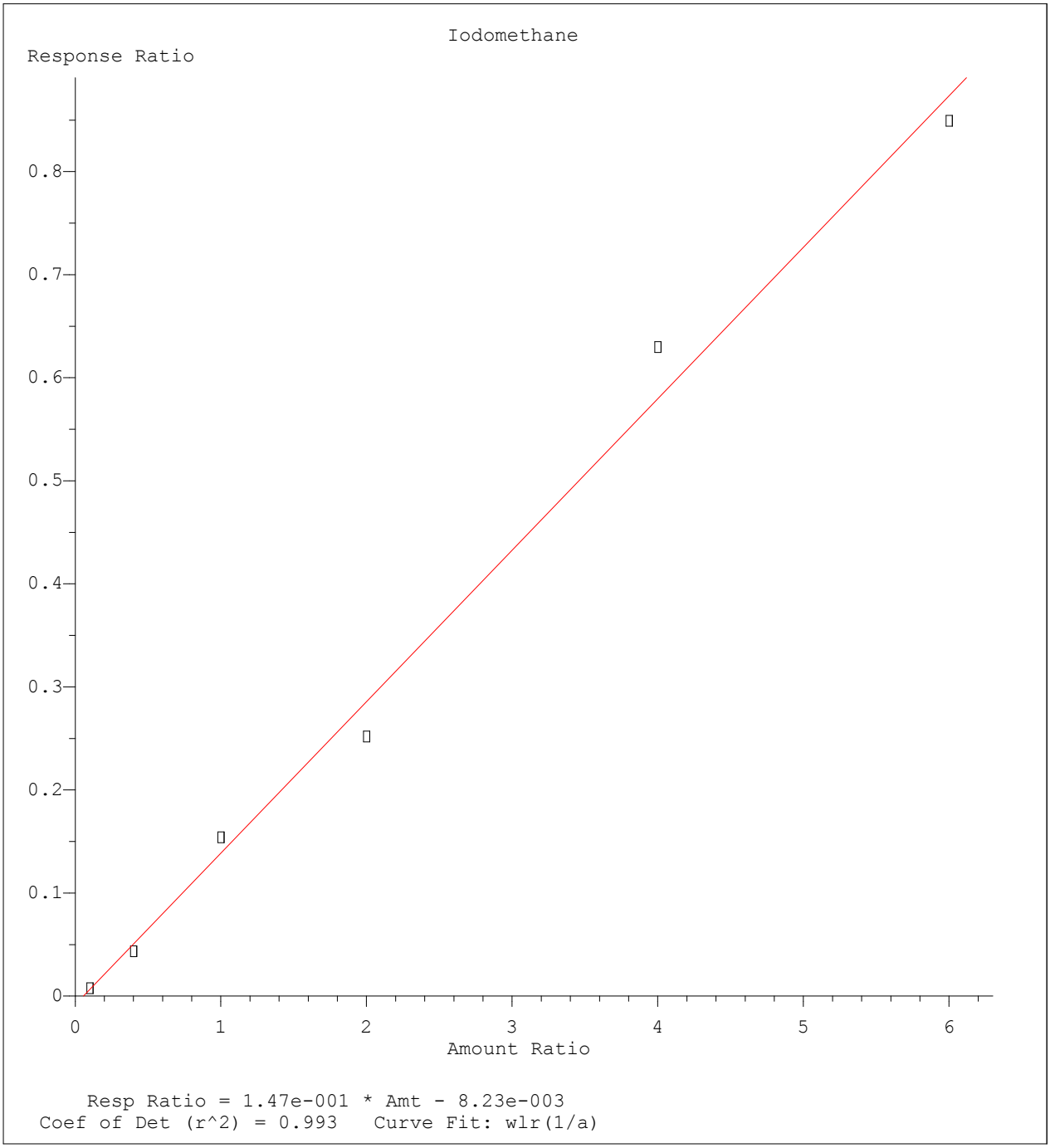

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

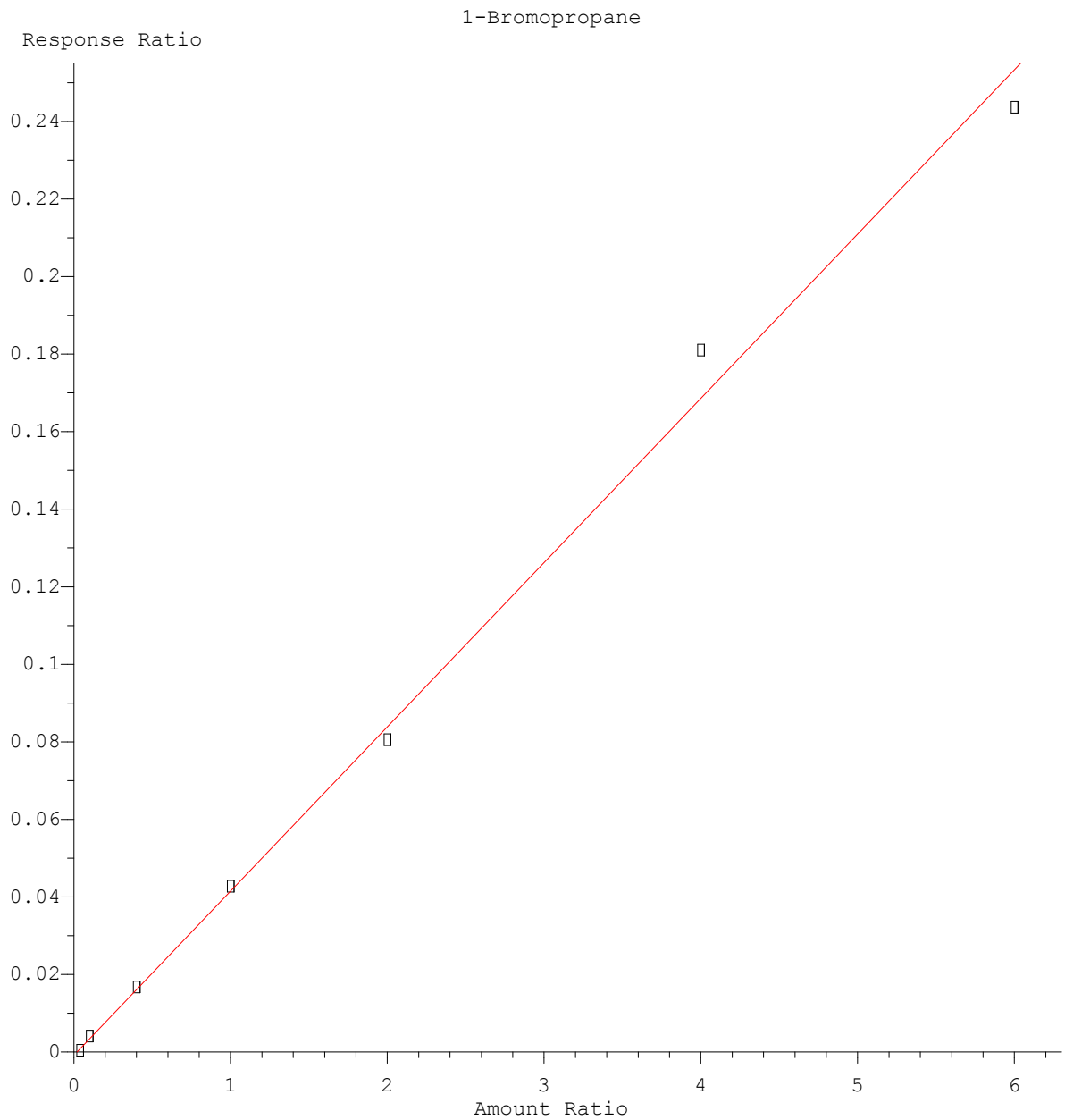

Resp Ratio = 4.25e-002 * Amt - 8.72e-004
Coef of Det (r^2) = 0.997 Curve Fit: wlr(1/a)

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

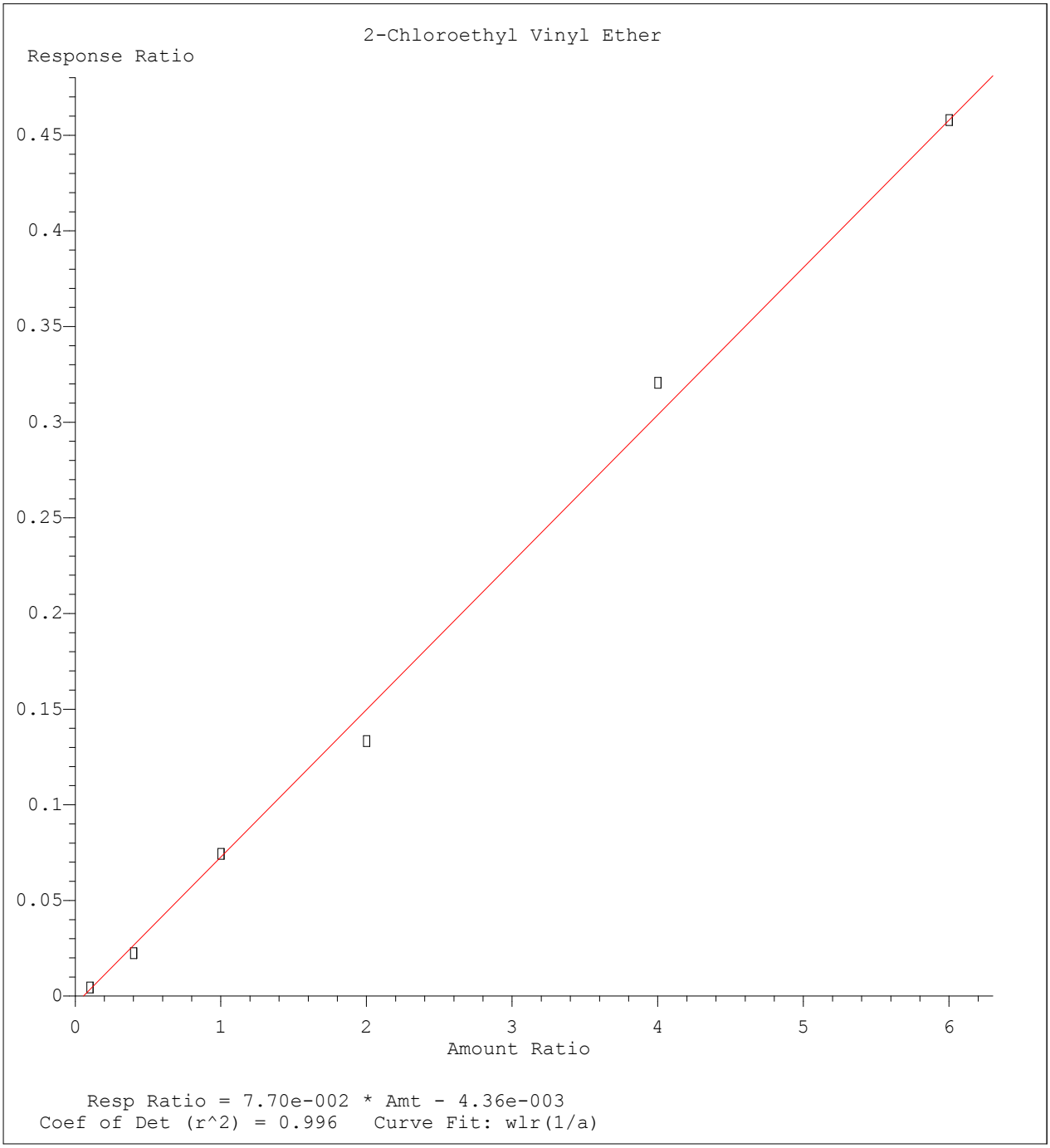

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:39:12 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	582126	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	421408	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	194909	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	163260	51.7395 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 103.48%		
43) 1,2-Dichloroethane-d4	10.45	65	197344	49.8458 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.70%		
58) Toluene-d8	12.82	98	564883	52.9951 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.00%		
79) p-Bromofluorobenzene	16.23	95	212358	55.9531 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 111.90%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	251431	63.3698 ug/kg	100
3) Chloromethane	3.74	50	200793	52.7216 ug/kg	100
4) Vinyl Chloride	3.99	62	228101	59.8284 ug/kg	99
5) 1,3-Butadiene	4.04	54	19055	5.2533 ug/kg	94
6) Bromomethane	4.88	94	121270	48.9744 ug/kg	100
7) Chloroethane	5.04	64	92003	54.1660 ug/kg	100
8) Trichlorofluoromethane	5.52	101	271981	47.5643 ug/kg	98
9) Diethyl ether	6.06	59	198146	74.1259 ug/kg	98
10) Isoprene	6.09	67	201645	59.0663 ug/kg	95
11) Acrolein	6.30	56	34569	64.8558 ug/kg	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	151498	51.3737 ug/kg	99
13) Acetone	6.41	43	65044	43.9190 ug/kg	98
14) 1,1-Dichloroethene	6.62	61	264179	48.5632 ug/kg	99
15) Tert-Butyl Alcohol	6.77	59	122141	205.1997 ug/kg	96
16) Dimethyl Sulfide	6.88	62	168266	73.1872 ug/kg	98
17) Iodomethane	7.13	142	81070	50.1419 ug/kg	99
18) Methyl acetate	7.15	43	155780	52.6767 ug/kg	99
19) Methylene Chloride	7.41	84	147546	49.8014 ug/kg	97
20) Carbon Disulfide	7.45	76	369798	44.1284 ug/kg	98
21) Acrylonitrile	7.59	53	71462	48.8478 ug/kg	99
22) Methyl Tert Butyl Ether	7.61	73	402298	47.6767 ug/kg	100
23) trans-1,2-Dichloroethene	7.85	61	245432	50.6242 ug/kg	100
24) n-Hexane	7.91	57	240056	48.0064 ug/kg	97
25) Diisopropyl ether	8.26	45	951889	81.9626 ug/kg	100
26) Vinyl Acetate	8.44	43	224385	33.8921 ug/kg	98
27) 1,1-Dichloroethane	8.47	63	282537	46.3987 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	854399	79.1219 ug/kg	99
29) 2-Butanone	9.03	43	88970	47.3950 ug/kg	99
30) Propionitrile	9.14	54	53106	92.4444 ug/kg	97
31) 2,2-Dichloropropane	9.24	77	213921	47.0673 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	167198	52.5828 ug/kg	96
33) Chloroform	9.52	83	268532	48.0056 ug/kg	99
34) 1-Bromopropane	9.65	122	36381	74.5451 ug/kg	96
35) Bromochloromethane	9.75	130	106386	51.5067 ug/kg	96
36) Tetrahydrofuran	9.78	42	101921	84.2313 ug/kg	98
38) 1,1,1-Trichloroethane	10.04	97	236420	46.7360 ug/kg	100
39) Cyclohexane	10.08	56	267623	48.5247 ug/kg	98
40) 1,1-Dichloropropene	10.25	75	193208	48.5381 ug/kg	99
41) Tert-Amyl-Methyl ether	10.34	73	688412	87.7041 ug/kg	100
42) Carbon Tetrachloride	10.39	117	218086	46.5023 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:39:12 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	241996	49.1831 ug/kg	99
46)	Benzene	10.60	78	545692	48.9674 ug/kg	99
47)	Trichloroethene	11.35	130	174371	49.3824 ug/kg	96
48)	Methylcyclohexane	11.44	83	228572	51.6120 ug/kg	98
49)	1,2-Dichloropropane	11.56	63	160075	52.3084 ug/kg	99
50)	1,4-Dioxane	11.88	88	7749	168.7883 ug/kg	88
51)	Bromodichloromethane	11.87	83	205164	47.5709 ug/kg	100
52)	Dibromomethane	11.96	174	95223	46.9624 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	36447	43.4907 ug/kg	97
54)	4-Methyl-2-Pentanone	12.19	58	64228	47.8173 ug/kg	96
55)	cis-1,3-Dichloropropene	12.50	75	238969	53.1840 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	243519	53.9302 ug/kg	99
59)	Toluene	12.93	91	610944	50.7412 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	172650	51.7315 ug/kg	99
61)	trans-1,3-Dichloropropene	13.11	75	216958	50.0293 ug/kg	98
62)	1,1,2-Trichloroethane	13.32	97	130293	51.5130 ug/kg	96
63)	2-Hexanone	13.25	43	121727	48.2017 ug/kg	99
64)	1,3-Dichloropropane	13.62	76	226811	53.8157 ug/kg	99
65)	Tetrachloroethene	13.75	164	128602	49.8224 ug/kg	96
66)	Dibromochloromethane	14.01	129	171284	48.4552 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	142409	50.7609 ug/kg	97
68)	1-Chlorohexane	14.35	91	184711	52.0217 ug/kg	98
69)	Chlorobenzene	14.77	112	433181	51.1898 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	157986	49.7138 ug/kg	100
71)	Ethylbenzene	14.79	106	223582	51.2841 ug/kg	100
72)	m-,p-Xylene	14.89	106	552299	102.5798 ug/kg	98
73)	o-Xylene	15.45	106	276739	53.5600 ug/kg	99
74)	Styrene	15.49	104	464515	52.7939 ug/kg	99
75)	Bromoform	15.99	173	109809	47.3129 ug/kg	99
76)	Isopropylbenzene	15.87	105	721376	52.0066 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	153818	52.0241 ug/kg	97
80)	1,2,3-Trichloropropane	16.29	110	60794	54.2181 ug/kg	92
81)	trans-1,4-Dichloro-2-Buten	16.33	53	48561	42.9649 ug/kg	74
82)	n-Propylbenzene	16.39	91	841260	54.9091 ug/kg	100
83)	Bromobenzene	16.52	156	188730	52.1806 ug/kg	96
84)	1,3,5-Trimethylbenzene	16.57	105	624761	54.3244 ug/kg	99
85)	2-Chlorotoluene	16.66	91	556729	54.1771 ug/kg	100
86)	4-Chlorotoluene	16.70	91	503918	53.0403 ug/kg	99
87)	a-Methylstyrene	16.98	118	305038	58.2105 ug/kg	98
88)	tert-Butylbenzene	17.03	134	133555	55.3912 ug/kg	90
89)	1,2,4-Trimethylbenzene	17.08	105	620621	51.5293 ug/kg	99
90)	sec-Butylbenzene	17.31	105	810765	54.7366 ug/kg	99
91)	p-Isopropyltoluene	17.46	119	675672	54.0529 ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	365216	50.8073 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	367190	51.0968 ug/kg	99
94)	n-Butylbenzene	17.99	91	609687	52.4585 ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	351826	52.7494 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	46623	54.4522 ug/kg	96
97)	1,2,4-Trichlorobenzene	20.43	180	244804	51.7031 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	136025	54.5004 ug/kg	99
99)	Naphthalene	20.81	128	603753	50.8387 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	241600	52.6087 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972907.D 8260SL.M Fri Feb 26 11:39:13 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:39 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

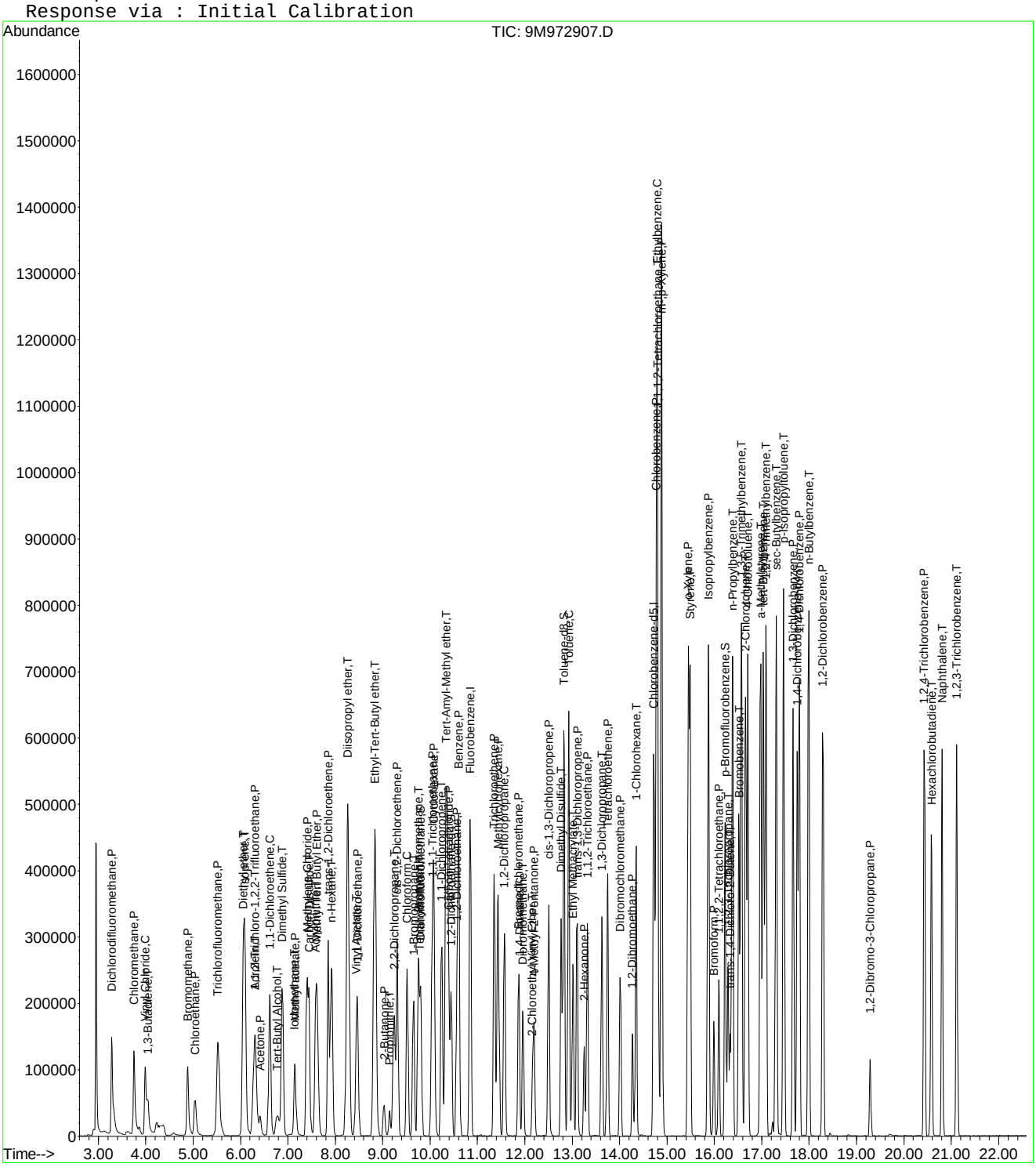

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	112	0.00
2	P	Dichlorodifluoromethane	50.0000	63.3698	-26.7#	123	0.00
3	P	Chloromethane	50.0000	52.7216	-5.4	107	0.00
4	C	Vinyl Chloride	50.0000	59.8284	-19.7	118	0.00
5	T	1,3-Butadiene	50.0000	5.2533	89.5#	11	0.00
6	P	Bromomethane	50.0000	48.9744	2.1	112	0.00
7	P	Chloroethane	50.0000	54.1660	-8.3	108	0.00
8	P	Trichlorofluoromethane	50.0000	47.5643	4.9	102	0.00
9	T	Diethyl ether	100.0000	74.1259	25.9#	79	0.01
10	T	Isoprene	50.0000	59.0664	-18.1	129	0.00
11	T	Acrolein	50.0000	64.8558	-29.7#	140	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	51.3737	-2.7	112	0.00
13	P	Acetone	50.0000	43.9190	12.2	98	0.00
14	C	1,1-Dichloroethene	50.0000	48.5632	2.9	108	0.00
15	T	Tert-Butyl Alcohol	200.0000	205.1997	-2.6	116	0.01
16	T	Dimethyl Sulfide	50.0000	73.1872	-46.4#	154	0.00
17	T	Iodomethane	50.0000	50.1419	-0.3	102	0.00
18	P	Methyl acetate	50.0000	52.6767	-5.4	115	0.01
19	P	Methylene Chloride	50.0000	49.8014	0.4	109	0.01
20	P	Carbon Disulfide	50.0000	44.1284	11.7	97	0.00
21	T	Acrylonitrile	50.0000	48.8478	2.3	103	0.00
22	P	Methyl Tert Butyl Ether	50.0000	47.6767	4.6	99	0.00
23	P	trans-1,2-Dichloroethene	50.0000	50.6242	-1.2	108	0.00
24	T	n-Hexane	50.0000	48.0064	4.0	109	0.00
25	T	Diisopropyl ether	100.0000	81.9626	18.0	87	0.00
26	T	Vinyl Acetate	50.0000	33.8921	32.2#	72	0.01
27	P	1,1-Dichloroethane	50.0000	46.3987	7.2	99	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	79.1219	20.9	83	0.00
29	P	2-Butanone	50.0000	47.3950	5.2	103	0.00
30	T	Propionitrile	100.0000	92.4444	7.6	100	0.00
31	T	2,2-Dichloropropane	50.0000	47.0673	5.9	99	0.00
32	P	cis-1,2-Dichloroethene	50.0000	52.5828	-5.2	109	0.00
33	C	Chloroform	50.0000	48.0057	4.0	102	0.00
34	T	1-Bromopropane	50.0000	74.5451	-49.1#	164	0.00
35	T	Bromochloromethane	50.0000	51.5067	-3.0	104	0.00
36	T	Tetrahydrofuran	100.0000	84.2314	15.8	90	0.00
37	S	Dibromofluoromethane	50.0000	51.7395	-3.5	110	0.00
38	P	1,1,1-Trichloroethane	50.0000	46.7360	6.5	97	0.00
39	P	Cyclohexane	50.0000	48.5247	3.0	108	0.00
40	T	1,1-Dichloropropene	50.0000	48.5381	2.9	106	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	87.7041	12.3	93	0.00
42	P	Carbon Tetrachloride	50.0000	46.5023	7.0	99	0.00
43	S	1,2-Dichloroethane-d4	50.0000	49.8458	0.3	107	0.00
44		Heptane	-1.0000	0.0000	0.0	104	0.00
45	P	1,2-Dichloroethane	50.0000	49.1831	1.6	102	0.00
46	P	Benzene	50.0000	48.9674	2.1	108	0.00
47	P	Trichloroethene	50.0000	49.3824	1.2	106	0.00
48	P	Methylcyclohexane	50.0000	51.6120	-3.2	112	0.00
49	C	1,2-Dichloropropane	50.0000	52.3083	-4.6	108	0.00
50	T	1,4-Dioxane	200.0000	168.7883	15.6	99	0.00
51	P	Bromodichloromethane	50.0000	47.5710	4.9	101	0.00
52	T	Dibromomethane	50.0000	46.9624	6.1	99	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	43.4907	13.0	95	0.00
54	P	4-Methyl-2-Pentanone	50.0000	47.8173	4.4	99	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	53.1840	-6.4	112	0.00
56	T	Dimethyl Disulfide	50.0000	53.9302	-7.9	111	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	111	0.00
58	S	Toluene-d8	50.0000	52.9951	-6.0	110	0.00
59	C	Toluene	50.0000	50.7412	-1.5	108	0.00
60	T	Ethyl Methacrylate	50.0000	51.7315	-3.5	109	0.00
61	P	trans-1,3-Dichloropropene	50.0000	50.0293	-0.1	102	0.00
62	P	1,1,2-Trichloroethane	50.0000	51.5130	-3.0	106	0.00
63	P	2-Hexanone	50.0000	48.2017	3.6	102	0.00
64	T	1,3-Dichloropropane	50.0000	53.8157	-7.6	113	0.00
65	P	Tetrachloroethene	50.0000	49.8224	0.4	110	0.00
66	P	Dibromochloromethane	50.0000	48.4552	3.1	101	0.00
67	P	1,2-Dibromoethane	50.0000	50.7609	-1.5	107	0.00
68	T	1-Chlorohexane	50.0000	52.0217	-4.0	110	0.00
69	P	Chlorobenzene	50.0000	51.1898	-2.4	108	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	49.7138	0.6	102	0.00
71	C	Ethylbenzene	50.0000	51.2841	-2.6	108	0.00
72	P	m-,p-Xylene	100.0000	102.5798	-2.6	111	0.00
73	P	o-Xylene	50.0000	53.5600	-7.1	112	0.00
74	P	Styrene	50.0000	52.7939	-5.6	109	0.00
75	P	Bromoform	50.0000	47.3129	5.4	95	0.00
76	P	Isopropylbenzene	50.0000	52.0066	-4.0	110	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	107	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	52.0241	-4.0	104	0.00
79	S	p-Bromofluorobenzene	50.0000	55.9531	-11.9	111	0.00
80	T	1,2,3-Trichloropropane	50.0000	54.2181	-8.4	109	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	42.9649	14.1	87	0.00
82	T	n-Propylbenzene	50.0000	54.9091	-9.8	112	0.00
83	T	Bromobenzene	50.0000	52.1806	-4.4	106	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	54.3244	-8.6	110	0.00
85	T	2-Chlorotoluene	50.0000	54.1771	-8.4	115	0.00
86	T	4-Chlorotoluene	50.0000	53.0403	-6.1	105	0.00
87	T	a-Methylstyrene	50.0000	58.2105	-16.4	119	0.00
88	T	tert-Butylbenzene	50.0000	55.3912	-10.8	110	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	51.5293	-3.1	107	0.00
90	T	sec-Butylbenzene	50.0000	54.7366	-9.5	112	0.00
91	T	p-Isopropyltoluene	50.0000	54.0529	-8.1	110	0.00
92	P	1,3-Dichlorobenzene	50.0000	50.8073	-1.6	108	0.00
93	P	1,4-Dichlorobenzene	50.0000	51.0968	-2.2	110	0.00
94	T	n-Butylbenzene	50.0000	52.4585	-4.9	108	0.00
95	P	1,2-Dichlorobenzene	50.0000	52.7494	-5.5	110	0.00
96	P	1,2-Dibromo-3-Chloropropane	50.0000	54.4522	-8.9	109	0.00
97	P	1,2,4-Trichlorobenzene	50.0000	51.7031	-3.4	110	0.00
98	T	Hexachlorobutadiene	50.0000	54.5004	-9.0	116	0.00
99	T	Naphthalene	50.0000	50.8387	-1.7	100	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	52.6087	-5.2	109	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972907.D 8260SL.M Fri Feb 26 11:39:16 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022816\9M972943.D Vial: 1
Acq On : 28 Feb 2016 15:39 Operator: FJB
Sample : WG559001-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 28 16:01:54 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	732812	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.73	117	530822	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.76	152	244479	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	195655	49.2559 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.52%		
43) 1,2-Dichloroethane-d4	10.45	65	235275	47.2068 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.42%		
58) Toluene-d8	12.83	98	679948	50.6415 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.28%		
79) p-Bromofluorobenzene	16.23	95	253762	53.3055 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 106.62%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	255669	51.1877 ug/kg	98
3) Chloromethane	3.74	50	237878	49.6157 ug/kg	99
4) Vinyl Chloride	3.99	62	281647	58.6826 ug/kg	97
5) 1,3-Butadiene	4.04	54	277289	60.7273 ug/kg	100
6) Bromomethane	4.88	94	144526	46.3646 ug/kg	97
7) Chloroethane	5.03	64	121259	56.7104 ug/kg	100
8) Trichlorofluoromethane	5.53	101	378043	52.5180 ug/kg	98
9) Diethyl ether	6.05	59	347080	103.1427 ug/kg	98
10) Isoprene	6.09	67	252186	58.6811 ug/kg	98
11) Acrolein	6.30	56	35961	53.5942 ug/kg	89
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	206090	55.5156 ug/kg	97
13) Acetone	6.40	43	82979	44.5417 ug/kg	96
14) 1,1-Dichloroethene	6.61	61	350129	51.1283 ug/kg	100
15) Tert-Butyl Alcohol	6.75	59	129255	172.4992 ug/kg	100
16) Dimethyl Sulfide	6.88	62	153089	52.8941 ug/kg	100
17) Iodomethane	7.13	142	119269	58.1274 ug/kg	99
18) Methyl acetate	7.14	43	189178	50.8161 ug/kg	98
19) Methylene Chloride	7.40	84	192261	51.5501 ug/kg	100
20) Carbon Disulfide	7.44	76	570333	54.0638 ug/kg	99
21) Acrylonitrile	7.59	53	93884	50.9784 ug/kg	100
22) Methyl Tert Butyl Ether	7.60	73	550471	51.8223 ug/kg	98
23) trans-1,2-Dichloroethene	7.85	61	333591	54.6595 ug/kg	99
24) n-Hexane	7.91	57	329962	52.4173 ug/kg	99
25) Diisopropyl ether	8.26	45	1547882	105.8746 ug/kg	100
26) Vinyl Acetate	8.43	43	415947	49.9077 ug/kg	99
27) 1,1-Dichloroethane	8.46	63	404833	52.8118 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	1414220	104.0345 ug/kg	99
29) 2-Butanone	9.02	43	109584	46.3725 ug/kg	99
30) Propionitrile	9.14	54	69360	95.9114 ug/kg	99
31) 2,2-Dichloropropane	9.24	77	319816	55.8973 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	214776	53.6566 ug/kg	100
33) Chloroform	9.52	83	357914	50.8276 ug/kg	100
34) 1-Bromopropane	9.65	122	29428	48.2660 ug/kg	94
35) Bromochloromethane	9.75	130	136766	52.5995 ug/kg	95
36) Tetrahydrofuran	9.77	42	143735	94.3620 ug/kg	98
38) 1,1,1-Trichloroethane	10.04	97	334516	52.5302 ug/kg	97
39) Cyclohexane	10.08	56	363229	52.3172 ug/kg	98
40) 1,1-Dichloropropene	10.25	75	268036	53.4904 ug/kg	99
41) Tert-Amyl-Methyl ether	10.34	73	1012333	102.4517 ug/kg	99
42) Carbon Tetrachloride	10.39	117	306580	51.9296 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972943.D 8260SL.M Sun Feb 28 16:01:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022816\9M972943.D Vial: 1
Acq On : 28 Feb 2016 15:39 Operator: FJB
Sample : WG559001-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 28 16:01:54 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	317216	51.2139 ug/kg	98
46)	Benzene	10.60	78	727414	51.8521 ug/kg	99
47)	Trichloroethene	11.35	130	240348	54.0708 ug/kg	100
48)	Methylcyclohexane	11.44	83	300727	53.9417 ug/kg	99
49)	1,2-Dichloropropane	11.56	63	206485	53.5995 ug/kg	100
50)	1,4-Dioxane	11.88	88	12097	209.3142 ug/kg	87
51)	Bromodichloromethane	11.87	83	269979	49.7273 ug/kg	100
52)	Dibromomethane	11.97	174	128582	50.3748 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.17	63	43438	41.3253 ug/kg	100
54)	4-Methyl-2-Pentanone	12.19	58	82842	48.9932 ug/kg	98
55)	cis-1,3-Dichloropropene	12.50	75	295012	52.1559 ug/kg	100
56)	Dimethyl Disulfide	12.77	94	315072	55.4286 ug/kg	99
59)	Toluene	12.93	91	799044	52.6846 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	221989	52.8048 ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	282331	51.6846 ug/kg	98
62)	1,1,2-Trichloroethane	13.32	97	164612	51.6668 ug/kg	97
63)	2-Hexanone	13.25	43	156155	49.0891 ug/kg	100
64)	1,3-Dichloropropane	13.62	76	274333	51.6746 ug/kg	99
65)	Tetrachloroethene	13.75	164	171910	52.8728 ug/kg	98
66)	Dibromochloromethane	14.01	129	218895	49.1602 ug/kg	100
67)	1,2-Dibromoethane	14.28	107	174593	49.4052 ug/kg	100
68)	1-Chlorohexane	14.35	91	249869	55.8673 ug/kg	99
69)	Chlorobenzene	14.77	112	552693	51.8503 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	208071	51.9786 ug/kg	96
71)	Ethylbenzene	14.79	106	301134	54.8352 ug/kg	96
72)	m-,p-Xylene	14.89	106	707295	104.2898 ug/kg	98
73)	o-Xylene	15.46	106	345370	53.0651 ug/kg	98
74)	Styrene	15.49	104	594591	53.6483 ug/kg	99
75)	Bromoform	16.00	173	148169	50.6819 ug/kg	99
76)	Isopropylbenzene	15.88	105	936851	53.6193 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.10	83	190339	51.3234 ug/kg	99
80)	1,2,3-Trichloropropane	16.29	110	73485	52.2483 ug/kg	99
81)	trans-1,4-Dichloro-2-Buten	16.33	53	81443	57.4473 ug/kg	87
82)	n-Propylbenzene	16.39	91	1076349	56.0089 ug/kg	100
83)	Bromobenzene	16.52	156	237935	52.4465 ug/kg	96
84)	1,3,5-Trimethylbenzene	16.58	105	797381	55.2760 ug/kg	99
85)	2-Chlorotoluene	16.66	91	674103	52.2984 ug/kg	99
86)	4-Chlorotoluene	16.70	91	662318	55.5780 ug/kg	99
87)	a-Methylstyrene	16.98	118	384287	58.4646 ug/kg	100
88)	tert-Butylbenzene	17.04	134	171725	56.7812 ug/kg	98
89)	1,2,4-Trimethylbenzene	17.09	105	806963	53.4161 ug/kg	100
90)	sec-Butylbenzene	17.30	105	1035118	55.7138 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	862001	54.9770 ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	464056	51.4679 ug/kg	99
93)	1,4-Dichlorobenzene	17.80	146	459544	50.9824 ug/kg	100
94)	n-Butylbenzene	17.99	91	794680	54.5119 ug/kg	99
95)	1,2-Dichlorobenzene	18.30	146	430011	51.3996 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	50673	47.1826 ug/kg	98
97)	1,2,4-Trichlorobenzene	20.44	180	303332	51.0748 ug/kg	100
98)	Hexachlorobutadiene	20.59	225	164229	52.4592 ug/kg	100
99)	Naphthalene	20.81	128	723204	48.5497 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	291110	50.5368 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972943.D 8260SL.M Sun Feb 28 16:01:54 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022816\9M972943.D Vial: 1
Acq On : 28 Feb 2016 15:39 Operator: FJB
Sample : WG559001-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 28 16:01 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

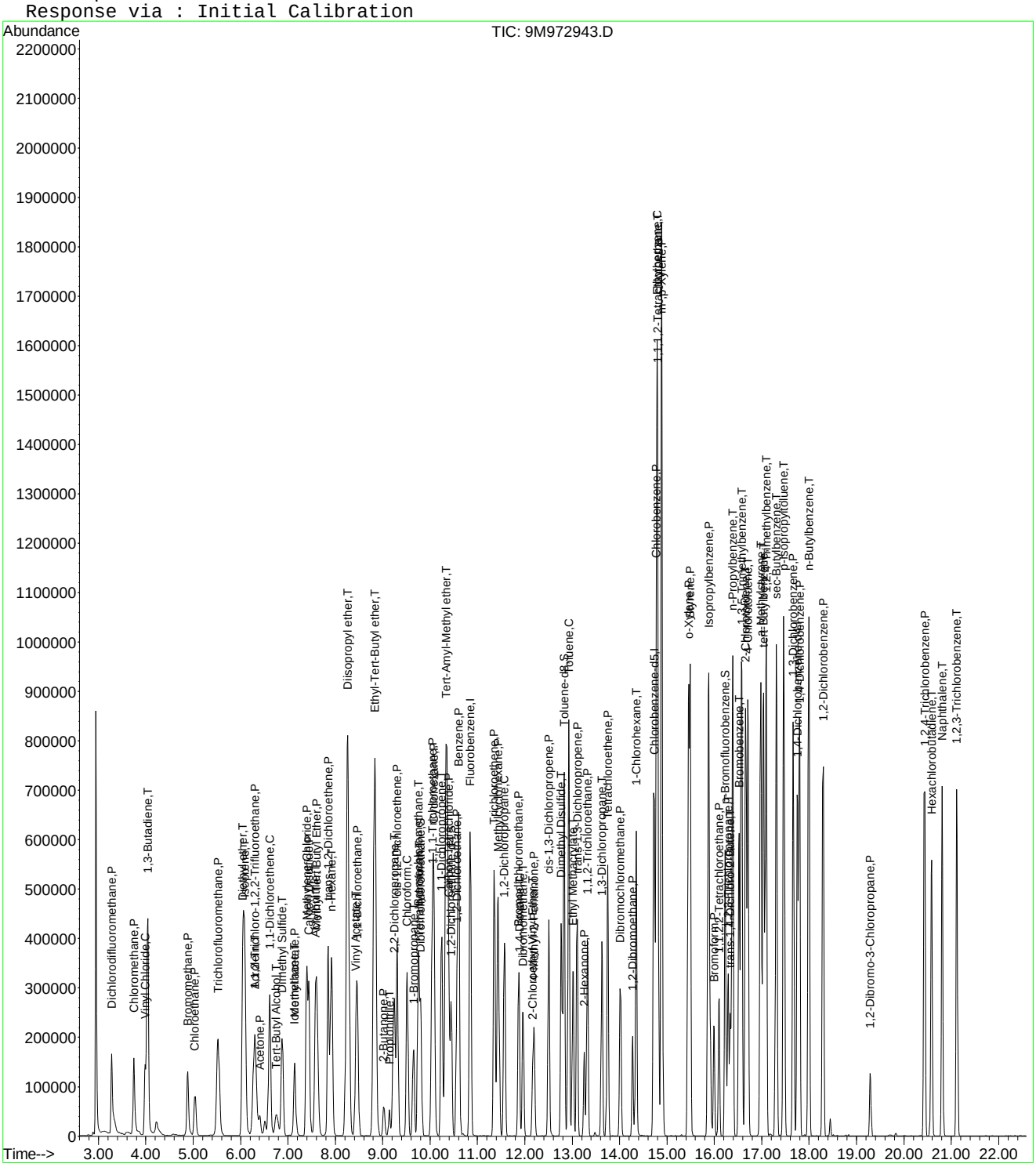

9M972943.D 8260SL.M Sun Feb 28 16:01:54 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022816\9M972943.D Vial: 1
Acq On : 28 Feb 2016 15:39 Operator: FJB
Sample : WG559001-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	142	0.00
2	P	Dichlorodifluoromethane	0.3408	0.3489	-2.4	125	0.00
3	P	Chloromethane	0.3271	0.3246	0.8	127	0.00
4	C	Vinyl Chloride	0.3275	0.3843	-17.4	146	0.00
5	T	1,3-Butadiene	0.3115	0.3784	-21.5	162	0.00
6	P	Bromomethane	0.2127	0.1972	7.3	134	0.00
7	P	Chloroethane	0.1459	0.1655	-13.4	142	0.00
8	P	Trichlorofluoromethane	0.4911	0.5159	-5.0	142	0.00
9	T	Diethyl ether	0.2296	0.2368	-3.1	139	0.00
10	T	Isoprene	0.2932	0.3441	-17.4	161	0.00
11	T	Acrolein	0.0458	0.0491	-7.2	146	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	0.2533	0.2812	-11.0	153	0.00
13	P	Acetone	0.1376	0.1132	17.7	125	0.00
14	C	1,1-Dichloroethene	0.4672	0.4778	-2.3	143	0.00
15	T	Tert-Butyl Alcohol	0.0511	0.0441	13.7	123	0.00
16	T	Dimethyl Sulfide	0.1975	0.2089	-5.8	140	0.00
17	T	Iodomethane	0.1273	0.1628	-27.9#	150	0.00
18	P	Methyl acetate	0.2540	0.2581	-1.6	139	0.00
19	P	Methylene Chloride	0.2545	0.2624	-3.1	142	0.00
20	P	Carbon Disulfide	0.7198	0.7783	-8.1	149	0.00
21	T	Acrylonitrile	0.1257	0.1281	-1.9	135	0.00
22	P	Methyl Tert Butyl Ether	0.7248	0.7512	-3.6	135	0.00
23	P	trans-1,2-Dichloroethene	0.4164	0.4552	-9.3	147	0.00
24	T	n-Hexane	0.4295	0.4503	-4.8	150	0.00
25	T	Diisopropyl ether	0.9975	1.0561	-5.9	142	0.00
26	T	Vinyl Acetate	0.5686	0.5676	0.2	133	0.00
27	P	1,1-Dichloroethane	0.5230	0.5524	-5.6	142	0.00
28	T	Ethyl-Tert-Butyl ether	0.9275	0.9649	-4.0	138	0.00
29	P	2-Butanone	0.1612	0.1495	7.3	127	0.00
30	T	Propionitrile	0.0493	0.0473	4.1	130	0.00
31	T	2,2-Dichloropropane	0.3904	0.4364	-11.8	149	0.00
32	P	cis-1,2-Dichloroethene	0.2731	0.2931	-7.3	140	0.00
33	C	Chloroform	0.4805	0.4884	-1.7	136	0.00
34	T	1-Bromopropane	0.0376	0.0402	-6.8	133	0.00
35	T	Bromochloromethane	0.1774	0.1866	-5.2	133	0.00
36	T	Tetrahydrofuran	0.1039	0.0981	5.6	126	0.00
37	S	Dibromofluoromethane	0.2710	0.2670	1.5	132	0.00
38	P	1,1,1-Trichloroethane	0.4345	0.4565	-5.1	137	0.00
39	P	Cyclohexane	0.4737	0.4957	-4.6	147	0.00
40	T	1,1-Dichloropropene	0.3419	0.3658	-7.0	147	0.00
41	T	Tert-Amyl-Methyl ether	0.6742	0.6907	-2.5	137	0.00
42	P	Carbon Tetrachloride	0.4028	0.4184	-3.9	139	0.00
43	S	1,2-Dichloroethane-d4	0.3401	0.3211	5.6	128	0.00
44		Heptane	0.0000	0.0000	0.0	139	0.00
45	P	1,2-Dichloroethane	0.4226	0.4329	-2.4	133	0.00
46	P	Benzene	0.9572	0.9926	-3.7	145	0.00
47	P	Trichloroethene	0.3033	0.3280	-8.1	147	0.00
48	P	Methylcyclohexane	0.3804	0.4104	-7.9	147	0.00
49	C	1,2-Dichloropropane	0.2628	0.2818	-7.2	139	0.00
50	T	1,4-Dioxane	0.0039	0.0041	-4.8	155	0.00
51	P	Bromodichloromethane	0.3704	0.3684	0.5	132	0.00
52	T	Dibromomethane	0.1742	0.1755	-0.7	134	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0665	0.0593	10.9	113	0.00
54	P	4-Methyl-2-Pentanone	0.1154	0.1131	2.0	127	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022816\9M972943.D Vial: 1
Acq On : 28 Feb 2016 15:39 Operator: FJB
Sample : WG559001-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	0.3859	0.4026	-4.3	139	0.00
56	T	Dimethyl Disulfide	0.3878	0.4300	-10.9	143	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	140	0.00
58	S	Toluene-d8	1.2647	1.2809	-1.3	133	0.00
59	C	Toluene	1.4286	1.5053	-5.4	142	0.00
60	T	Ethyl Methacrylate	0.3960	0.4182	-5.6	140	0.00
61	P	trans-1,3-Dichloropropene	0.5145	0.5319	-3.4	133	0.00
62	P	1,1,2-Trichloroethane	0.3001	0.3101	-3.3	134	0.00
63	P	2-Hexanone	0.2996	0.2942	1.8	131	0.00
64	T	1,3-Dichloropropane	0.5001	0.5168	-3.3	136	0.00
65	P	Tetrachloroethene	0.3063	0.3239	-5.7	147	0.00
66	P	Dibromochloromethane	0.4194	0.4124	1.7	130	0.00
67	P	1,2-Dibromoethane	0.3329	0.3289	1.2	132	0.00
68	T	1-Chlorohexane	0.4213	0.4707	-11.7	148	0.00
69	P	Chlorobenzene	1.0041	1.0412	-3.7	138	0.00
70	T	1,1,1,2-Tetrachloroethane	0.3771	0.3920	-4.0	135	0.00
71	C	Ethylbenzene	0.5173	0.5673	-9.7	145	0.00
72	P	m-,p-Xylene	0.6388	0.6662	-4.3	142	0.00
73	P	o-Xylene	0.6130	0.6506	-6.1	140	0.01
74	P	Styrene	1.0440	1.1201	-7.3	140	0.00
75	P	Bromoform	0.2754	0.2791	-1.4	128	0.00
76	P	Isopropylbenzene	1.6458	1.7649	-7.2	142	0.00
77	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	134	0.00
78	P	1,1,2,2-Tetrachloroethane	0.7585	0.7785	-2.6	129	0.00
79	S	p-Bromofluorobenzene	0.9736	1.0380	-6.6	132	0.00
80	T	1,2,3-Trichloropropane	0.2876	0.3006	-4.5	132	0.00
81	T	trans-1,4-Dichloro-2-Butene	0.2899	0.3331	-14.9	147	0.00
82	T	n-Propylbenzene	3.9303	4.4026	-12.0	143	0.00
83	T	Bromobenzene	0.9278	0.9732	-4.9	134	0.00
84	T	1,3,5-Trimethylbenzene	2.9502	3.2616	-10.6	140	0.00
85	T	2-Chlorotoluene	2.6361	2.7573	-4.6	139	0.00
86	T	4-Chlorotoluene	2.4372	2.7091	-11.2	138	0.00
87	T	a-Methylstyrene	1.3443	1.5719	-16.9	150	0.00
88	T	tert-Butylbenzene	0.6185	0.7024	-13.6	141	0.00
89	T	1,2,4-Trimethylbenzene	3.0897	3.3007	-6.8	139	0.00
90	T	sec-Butylbenzene	3.7998	4.2340	-11.4	143	0.00
91	T	p-Isopropyltoluene	3.2067	3.5259	-10.0	141	0.00
92	P	1,3-Dichlorobenzene	1.8440	1.8981	-2.9	138	0.00
93	P	1,4-Dichlorobenzene	1.8435	1.8797	-2.0	137	0.00
94	T	n-Butylbenzene	2.9815	3.2505	-9.0	141	0.00
95	P	1,2-Dichlorobenzene	1.7110	1.7589	-2.8	134	0.00
96	P	1,2-Dibromo-3-Chloropropane	0.2197	0.2073	5.6	118	0.00
97	P	1,2,4-Trichlorobenzene	1.2146	1.2407	-2.1	136	0.00
98	T	Hexachlorobutadiene	0.6403	0.6717	-4.9	140	0.00
99	T	Naphthalene	3.0465	2.9581	2.9	120	0.00
100	T	1,2,3-Trichlorobenzene	1.1781	1.1907	-1.1	131	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972943.D 8260SL.M Mon Feb 29 09:26:19 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022816\9M972943.D Vial: 1
Acq On : 28 Feb 2016 15:39 Operator: FJB
Sample : WG559001-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	142	0.00
2	P	Dichlorodifluoromethane	50.0000	51.1877	-2.4	125	0.00
3	P	Chloromethane	50.0000	49.6157	0.8	127	0.00
4	C	Vinyl Chloride	50.0000	58.6826	-17.4	146	0.00
5	T	1,3-Butadiene	50.0000	60.7273	-21.5	162	0.00
6	P	Bromomethane	50.0000	46.3646	7.3	134	0.00
7	P	Chloroethane	50.0000	56.7104	-13.4	142	0.00
8	P	Trichlorofluoromethane	50.0000	52.5180	-5.0	142	0.00
9	T	Diethyl ether	100.0000	103.1427	-3.1	139	0.00
10	T	Isoprene	50.0000	58.6811	-17.4	161	0.00
11	T	Acrolein	50.0000	53.5942	-7.2	146	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	55.5156	-11.0	153	0.00
13	P	Acetone	50.0000	44.5417	10.9	125	0.00
14	C	1,1-Dichloroethene	50.0000	51.1283	-2.3	143	0.00
15	T	Tert-Butyl Alcohol	200.0000	172.4992	13.8	123	0.00
16	T	Dimethyl Sulfide	50.0000	52.8941	-5.8	140	0.00
17	T	Iodomethane	50.0000	58.1274	-16.3	150	0.00
18	P	Methyl acetate	50.0000	50.8161	-1.6	139	0.00
19	P	Methylene Chloride	50.0000	51.5501	-3.1	142	0.00
20	P	Carbon Disulfide	50.0000	54.0638	-8.1	149	0.00
21	T	Acrylonitrile	50.0000	50.9784	-2.0	135	0.00
22	P	Methyl Tert Butyl Ether	50.0000	51.8223	-3.6	135	0.00
23	P	trans-1,2-Dichloroethene	50.0000	54.6595	-9.3	147	0.00
24	T	n-Hexane	50.0000	52.4173	-4.8	150	0.00
25	T	Diisopropyl ether	100.0000	105.8746	-5.9	142	0.00
26	T	Vinyl Acetate	50.0000	49.9077	0.2	133	0.00
27	P	1,1-Dichloroethane	50.0000	52.8118	-5.6	142	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	104.0346	-4.0	138	0.00
29	P	2-Butanone	50.0000	46.3725	7.3	127	0.00
30	T	Propionitrile	100.0000	95.9114	4.1	130	0.00
31	T	2,2-Dichloropropane	50.0000	55.8973	-11.8	149	0.00
32	P	cis-1,2-Dichloroethene	50.0000	53.6566	-7.3	140	0.00
33	C	Chloroform	50.0000	50.8276	-1.7	136	0.00
34	T	1-Bromopropane	50.0000	48.2660	3.5	133	0.00
35	T	Bromochloromethane	50.0000	52.5995	-5.2	133	0.00
36	T	Tetrahydrofuran	100.0000	94.3620	5.6	126	0.00
37	S	Dibromofluoromethane	50.0000	49.2559	1.5	132	0.00
38	P	1,1,1-Trichloroethane	50.0000	52.5302	-5.1	137	0.00
39	P	Cyclohexane	50.0000	52.3172	-4.6	147	0.00
40	T	1,1-Dichloropropene	50.0000	53.4904	-7.0	147	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	102.4517	-2.5	137	0.00
42	P	Carbon Tetrachloride	50.0000	51.9296	-3.9	139	0.00
43	S	1,2-Dichloroethane-d4	50.0000	47.2068	5.6	128	0.00
44		Heptane	-1.0000	0.0000	0.0	139	0.00
45	P	1,2-Dichloroethane	50.0000	51.2139	-2.4	133	0.00
46	P	Benzene	50.0000	51.8521	-3.7	145	0.00
47	P	Trichloroethene	50.0000	54.0708	-8.1	147	0.00
48	P	Methylcyclohexane	50.0000	53.9417	-7.9	147	0.00
49	C	1,2-Dichloropropane	50.0000	53.5995	-7.2	139	0.00
50	T	1,4-Dioxane	200.0000	209.3142	-4.7	155	0.00
51	P	Bromodichloromethane	50.0000	49.7273	0.5	132	0.00
52	T	Dibromomethane	50.0000	50.3748	-0.7	134	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	41.3253	17.3	113	0.00
54	P	4-Methyl-2-Pentanone	50.0000	48.9932	2.0	127	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022816\9M972943.D Vial: 1
Acq On : 28 Feb 2016 15:39 Operator: FJB
Sample : WG559001-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	52.1559	-4.3	139	0.00
56	T	Dimethyl Disulfide	50.0000	55.4286	-10.9	143	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	140	0.00
58	S	Toluene-d8	50.0000	50.6415	-1.3	133	0.00
59	C	Toluene	50.0000	52.6846	-5.4	142	0.00
60	T	Ethyl Methacrylate	50.0000	52.8048	-5.6	140	0.00
61	P	trans-1,3-Dichloropropene	50.0000	51.6846	-3.4	133	0.00
62	P	1,1,2-Trichloroethane	50.0000	51.6668	-3.3	134	0.00
63	P	2-Hexanone	50.0000	49.0891	1.8	131	0.00
64	T	1,3-Dichloropropane	50.0000	51.6746	-3.3	136	0.00
65	P	Tetrachloroethene	50.0000	52.8728	-5.7	147	0.00
66	P	Dibromochloromethane	50.0000	49.1602	1.7	130	0.00
67	P	1,2-Dibromoethane	50.0000	49.4052	1.2	132	0.00
68	T	1-Chlorohexane	50.0000	55.8674	-11.7	148	0.00
69	P	Chlorobenzene	50.0000	51.8503	-3.7	138	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	51.9785	-4.0	135	0.00
71	C	Ethylbenzene	50.0000	54.8352	-9.7	145	0.00
72	P	m-,p-Xylene	100.0000	104.2899	-4.3	142	0.00
73	P	o-Xylene	50.0000	53.0650	-6.1	140	0.01
74	P	Styrene	50.0000	53.6483	-7.3	140	0.00
75	P	Bromoform	50.0000	50.6819	-1.4	128	0.00
76	P	Isopropylbenzene	50.0000	53.6193	-7.2	142	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	134	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	51.3234	-2.6	129	0.00
79	S	p-Bromofluorobenzene	50.0000	53.3055	-6.6	132	0.00
80	T	1,2,3-Trichloropropane	50.0000	52.2483	-4.5	132	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	57.4474	-14.9	147	0.00
82	T	n-Propylbenzene	50.0000	56.0089	-12.0	143	0.00
83	T	Bromobenzene	50.0000	52.4465	-4.9	134	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	55.2760	-10.6	140	0.00
85	T	2-Chlorotoluene	50.0000	52.2984	-4.6	139	0.00
86	T	4-Chlorotoluene	50.0000	55.5780	-11.2	138	0.00
87	T	a-Methylstyrene	50.0000	58.4646	-16.9	150	0.00
88	T	tert-Butylbenzene	50.0000	56.7811	-13.6	141	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	53.4161	-6.8	139	0.00
90	T	sec-Butylbenzene	50.0000	55.7138	-11.4	143	0.00
91	T	p-Isopropyltoluene	50.0000	54.9770	-10.0	141	0.00
92	P	1,3-Dichlorobenzene	50.0000	51.4679	-2.9	138	0.00
93	P	1,4-Dichlorobenzene	50.0000	50.9824	-2.0	137	0.00
94	T	n-Butylbenzene	50.0000	54.5119	-9.0	141	0.00
95	P	1,2-Dichlorobenzene	50.0000	51.3996	-2.8	134	0.00
96	P	1,2-Dibromo-3-Chloropropane	50.0000	47.1826	5.6	118	0.00
97	P	1,2,4-Trichlorobenzene	50.0000	51.0748	-2.1	136	0.00
98	T	Hexachlorobutadiene	50.0000	52.4592	-4.9	140	0.00
99	T	Naphthalene	50.0000	48.5497	2.9	120	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	50.5368	-1.1	131	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972943.D 8260SL.M Mon Feb 29 09:26:18 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\1\DATA\022516\9M972894.D          Vial: 3
Acq On    : 25 Feb 2016  14:45                       Operator: ADC
Sample    : WG558732-01 BFB 50ng                     Inst    : hpms9
Misc      : 7,1 STD74773                             Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 02/15/16  HPMS9
```

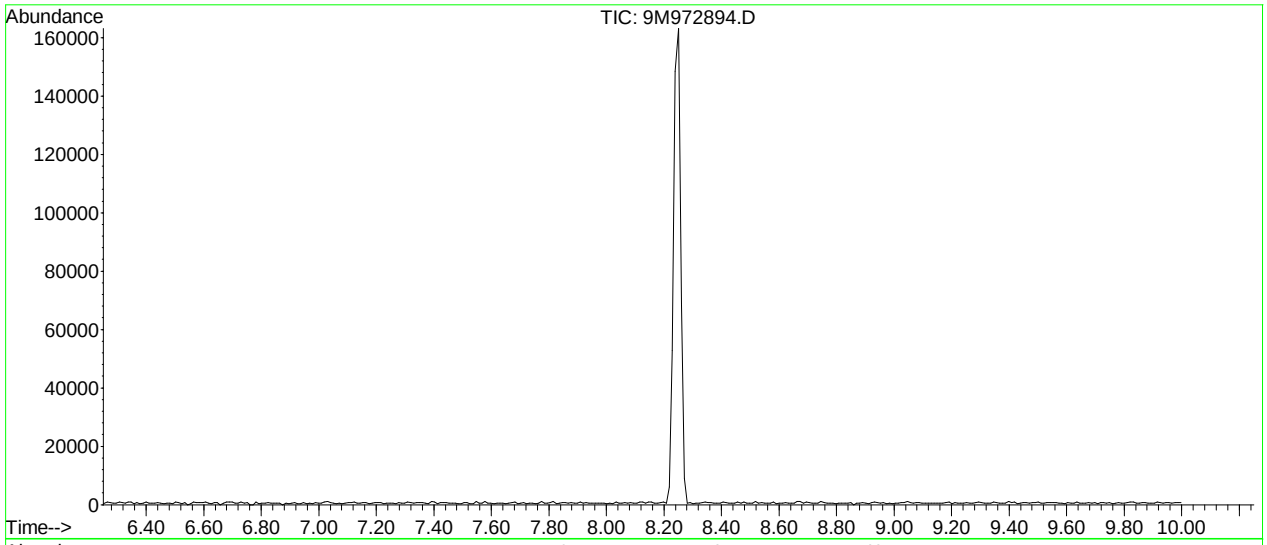

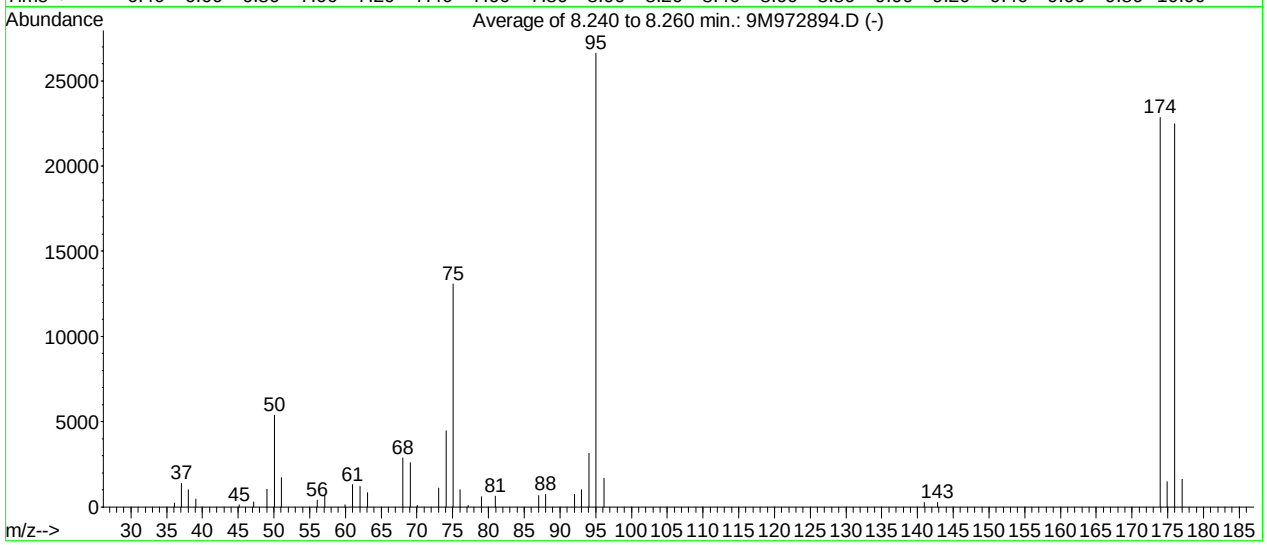

AutoFind: Scans 305, 306, 307; Background Corrected with Scan 300

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.2	5378	PASS
75	95	30	60	49.1	13067	PASS
95	95	100	100	100.0	26621	PASS
96	95	5	9	6.3	1683	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	85.8	22851	PASS
175	174	5	9	6.5	1485	PASS
176	174	95	101	98.3	22461	PASS
177	176	5	9	7.2	1619	PASS

9M972894.D 8260SL.M Fri Feb 26 11:11:03 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\022816\9M972942.D          Vial: 1
Acq On    : 28 Feb 2016  15:15                        Operator: FJB
Sample    : WG559001-01 BFB 50ng 8260                 Inst    : hpms9
Misc      : 7,1 STD74606                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 02/25/16  HPMS9
```

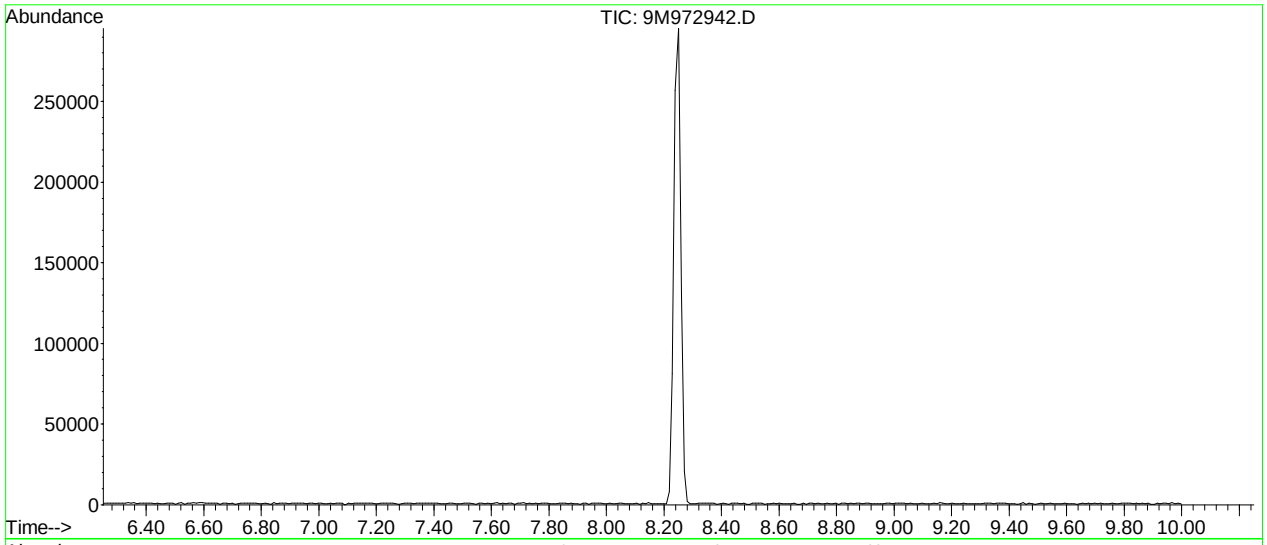

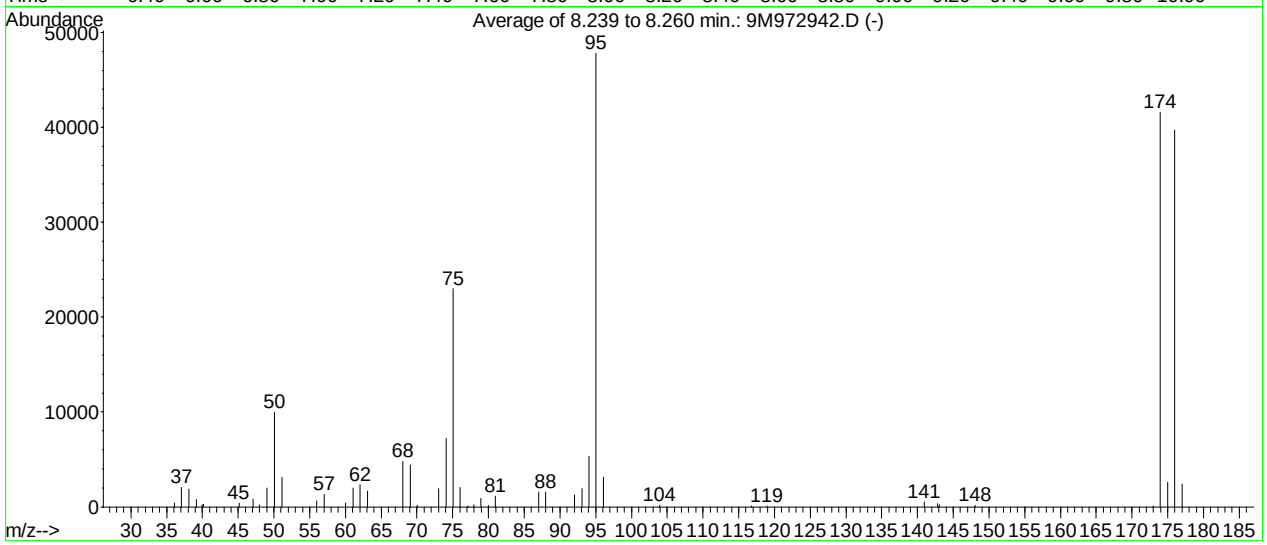

AutoFind: Scans 305, 306, 307; Background Corrected with Scan 300

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.8	9950	PASS
75	95	30	60	48.0	22972	PASS
95	95	100	100	100.0	47813	PASS
96	95	5	9	6.6	3156	PASS
173	174	0.00	2	0.3	115	PASS
174	95	50	100	86.9	41573	PASS
175	174	5	9	6.3	2621	PASS
176	174	95	101	95.5	39704	PASS
177	176	5	9	6.0	2399	PASS

9M972942.D 8260SL.M Mon Feb 29 09:26:07 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022816\9M972945.D Vial: 3
Acq On : 28 Feb 2016 16:39 Operator: FJB
Sample : WG559002-01 VBLK0228 BLANK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 13:25:49 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	620113	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	441195	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	204353	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	171981	51.1646 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 102.32%		
43) 1,2-Dichloroethane-d4	10.45	65	220352	52.2478 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.50%		
58) Toluene-d8	12.83	98	616842	55.2743 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 110.54%		
79) p-Bromofluorobenzene	16.23	95	224016	56.2970 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 112.60%		

Target Compounds

					Qvalue
6) Bromomethane	4.90	94	1094	0.4147 ug/kg#	52
13) Acetone	6.42	43	3635	Below Cal	95
17) Iodomethane	7.13	142	1078	3.3893 ug/kg#	34
36) Tetrahydrofuran	9.78	42	581	0.4507 ug/kg#	65
56) Dimethyl Disulfide	12.83	94	18043	3.7511 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972945.D 8260SL.M Mon Feb 29 13:25:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022816\9M972945.D Vial: 3
Acq On : 28 Feb 2016 16:39 Operator: FJB
Sample : WG559002-01 VBLK0228 BLANK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 13:25 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

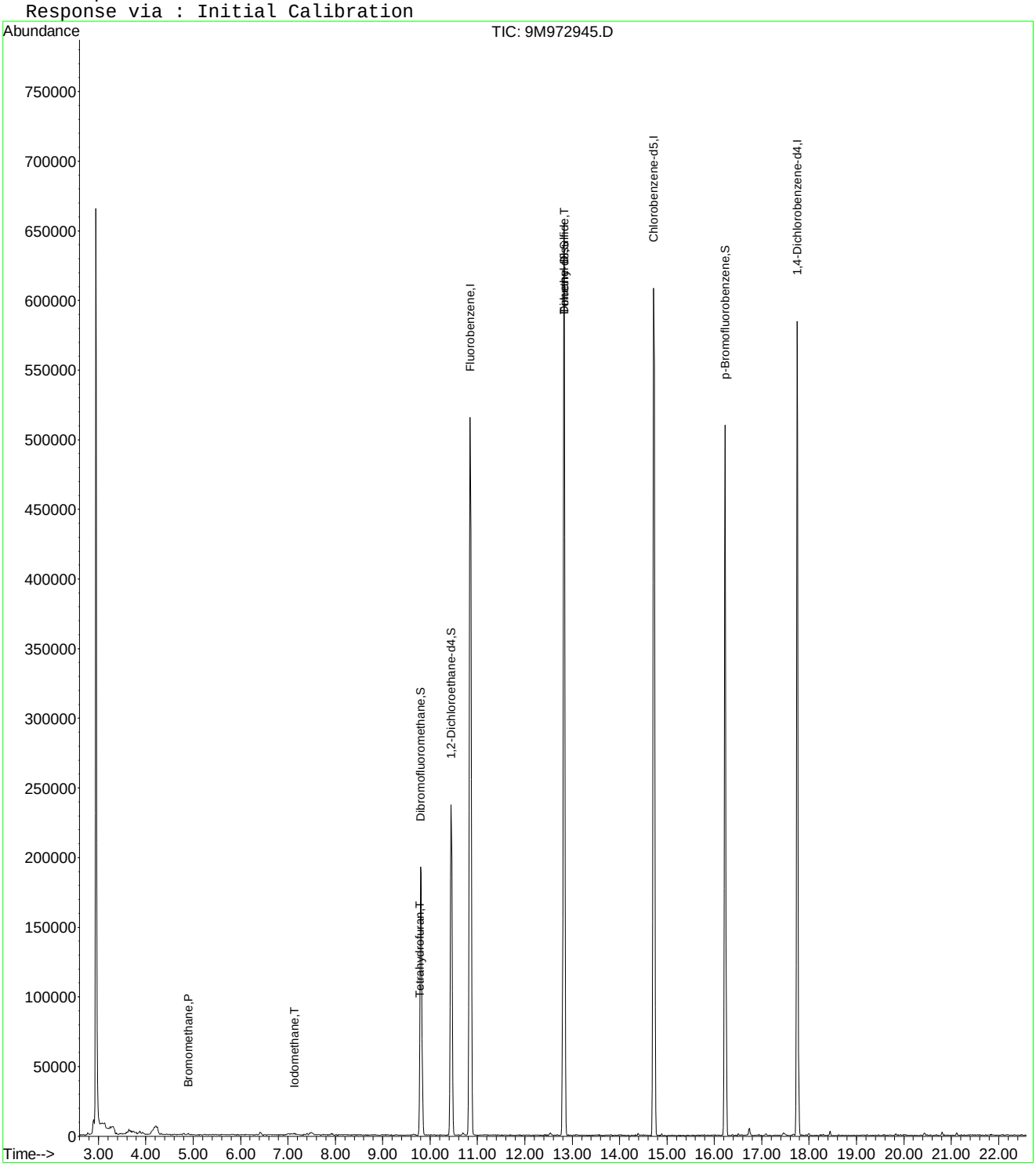

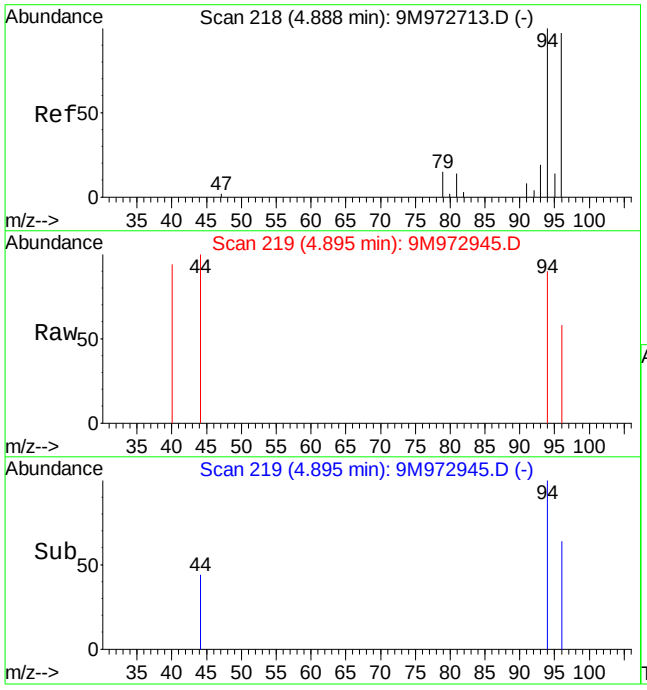

#6
Bromomethane
Concen: 0.41 ug/kg
RT: 4.90 min Scan# 219
Delta R.T. 0.01 min
Lab File: 9M972945.D
Acq: 28 Feb 2016 16:39

Tgt Ion: 94 Resp: 1094

Ion	Ratio	Lower	Upper
94	100		
96	48.9	57.2	133.6#

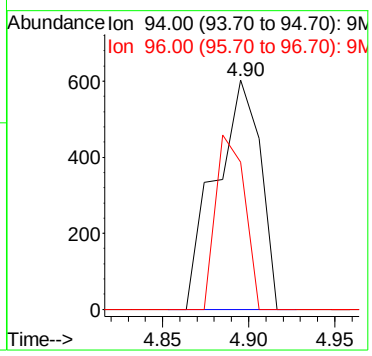

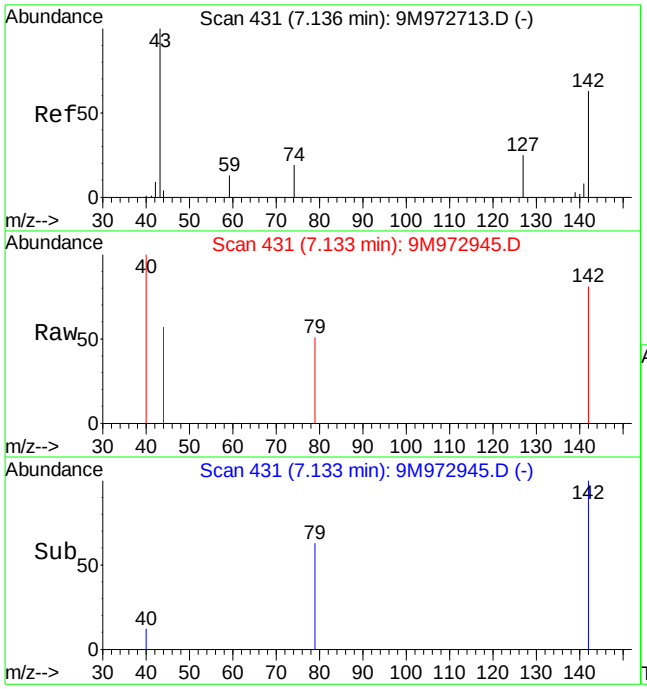

#17
Iodomethane
Concen: 3.39 ug/kg
RT: 7.13 min Scan# 431
Delta R.T. 0.00 min
Lab File: 9M972945.D
Acq: 28 Feb 2016 16:39

Tgt Ion:142 Resp: 1078

Ion	Ratio	Lower	Upper
142	100		
127	0.0	25.1	58.7#

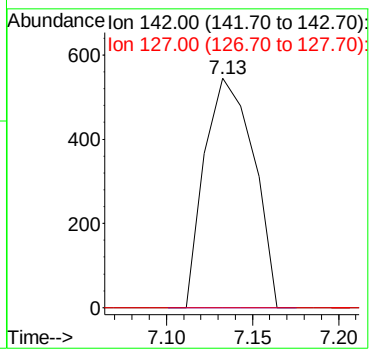

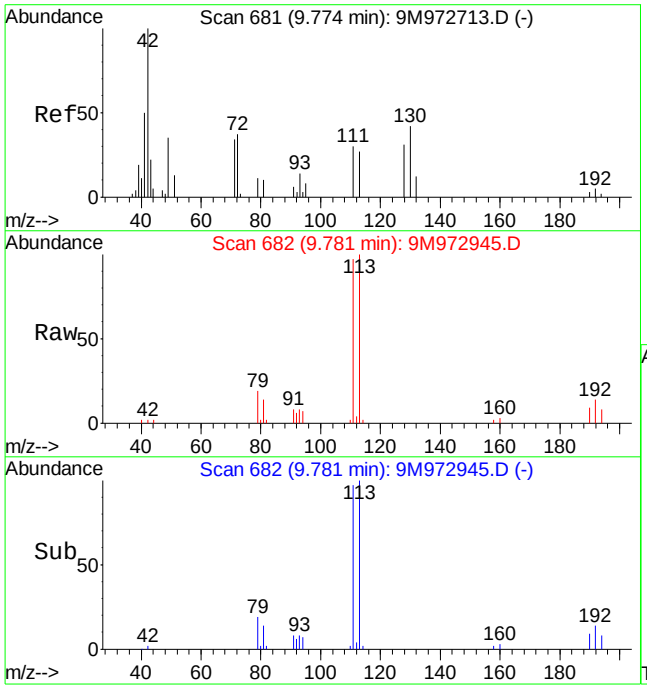

#36
Tetrahydrofuran
Concen: 0.45 ug/kg
RT: 9.78 min Scan# 682
Delta R.T. 0.00 min
Lab File: 9M972945.D
Acq: 28 Feb 2016 16:39

Tgt Ion: 42 Resp: 581

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	35.3	18.3	42.7

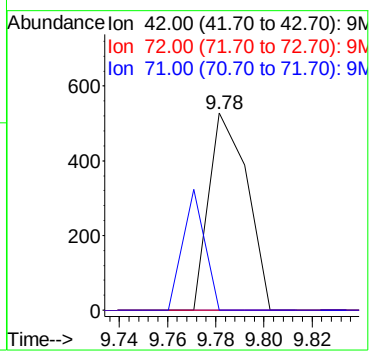

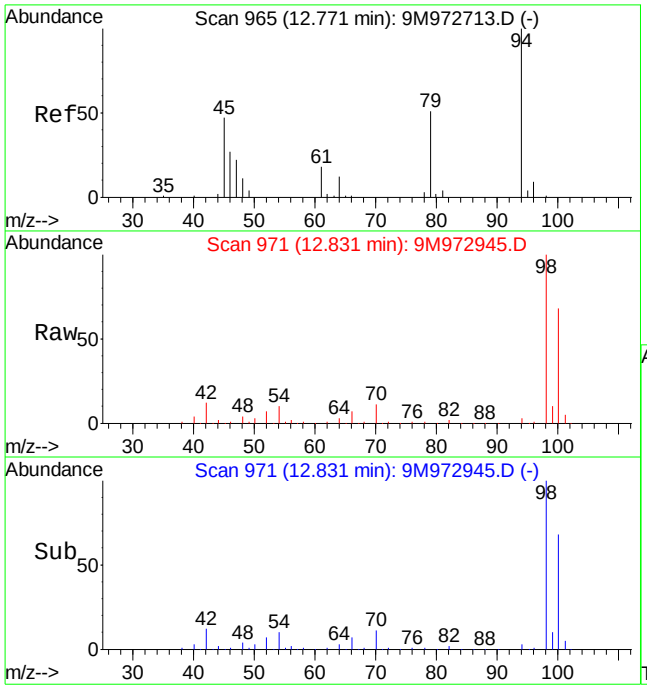

#56
Dimethyl Disulfide
Concen: 3.75 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.07 min
Lab File: 9M972945.D
Acq: 28 Feb 2016 16:39

Tgt Ion: 94 Resp: 18043

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

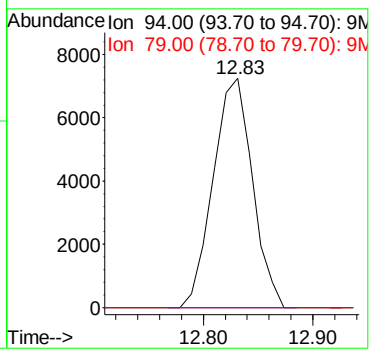

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022816\9M972946.D Vial: 4
Acq On : 28 Feb 2016 17:10 Operator: FJB
Sample : WG559002-02 20ug/Kg LCS 8260 Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 28 17:33:06 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	577816	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	413544	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	193426	50.00 ug/kg	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.80	111	157266	50.2117 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.42%		
43) 1,2-Dichloroethane-d4	10.45	65	196539	50.0127 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.02%		
58) Toluene-d8	12.82	98	565274	54.0402 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 108.08%		
79) p-Bromofluorobenzene	16.23	95	208942	55.4751 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 110.96%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	112624	28.5971 ug/kg	97
3) Chloromethane	3.75	50	86254	22.8164 ug/kg	100
4) Vinyl Chloride	3.98	62	89993	23.7802 ug/kg	97
5) 1,3-Butadiene	4.03	54	80500	22.3589 ug/kg	95
6) Bromomethane	4.88	94	51594	20.9914 ug/kg	99
7) Chloroethane	5.03	64	37911	22.4863 ug/kg	97
8) Trichlorofluoromethane	5.52	101	118730	20.9185 ug/kg	100
9) Diethyl ether	6.05	59	195802	73.7954 ug/kg	99
10) Isoprene	6.08	67	93338	27.5447 ug/kg	96
11) Acrolein	6.30	56	38044	71.9077 ug/kg	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	69258	23.6609 ug/kg	96
13) Acetone	6.42	43	31456	20.1096 ug/kg	95
14) 1,1-Dichloroethene	6.62	61	114583	21.2205 ug/kg	99
15) Tert-Butyl Alcohol	6.75	59	142519	241.2212 ug/kg	100
16) Dimethyl Sulfide	6.88	62	74435	32.6170 ug/kg	98
17) Iodomethane	7.13	142	31651	21.4199 ug/kg	98
18) Methyl acetate	7.15	43	59108	20.1363 ug/kg	99
19) Methylene Chloride	7.40	84	63387	21.5547 ug/kg	98
20) Carbon Disulfide	7.44	76	162423	19.5267 ug/kg	100
21) Acrylonitrile	7.58	53	32005	22.0402 ug/kg	94
22) Methyl Tert Butyl Ether	7.60	73	180961	21.6058 ug/kg	100
23) trans-1,2-Dichloroethene	7.84	61	109495	22.7535 ug/kg	99
24) n-Hexane	7.92	57	109240	22.0088 ug/kg	98
25) Diisopropyl ether	8.26	45	1088401	94.4160 ug/kg	100
26) Vinyl Acetate	8.43	43	146654	22.3165 ug/kg	99
27) 1,1-Dichloroethane	8.46	63	124545	20.6055 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	967839	90.2956 ug/kg	99
29) 2-Butanone	9.02	43	38299	20.5544 ug/kg	97
30) Propionitrile	9.14	54	59759	104.8015 ug/kg	100
31) 2,2-Dichloropropane	9.23	77	97470	21.6055 ug/kg	97
32) cis-1,2-Dichloroethene	9.31	96	71396	22.6211 ug/kg	99
33) Chloroform	9.52	83	111216	20.0305 ug/kg	96
34) 1-Bromopropane	9.66	122	16414	34.4428 ug/kg	98
35) Bromochloromethane	9.75	130	44238	21.5776 ug/kg	96
36) Tetrahydrofuran	9.77	42	114876	95.6460 ug/kg	99
38) 1,1,1-Trichloroethane	10.05	97	103902	20.6928 ug/kg	98
39) Cyclohexane	10.08	56	123492	22.5583 ug/kg	98
40) 1,1-Dichloropropene	10.24	75	81491	20.6251 ug/kg	95
41) Tert-Amyl-Methyl ether	10.34	73	787695	101.1014 ug/kg	100
42) Carbon Tetrachloride	10.38	117	92585	19.8891 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972946.D 8260SL.M Sun Feb 28 17:33:07 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022816\9M972946.D Vial: 4
Acq On : 28 Feb 2016 17:10 Operator: FJB
Sample : WG559002-02 20ug/Kg LCS 8260 Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 28 17:33:06 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	106774	21.8626 ug/kg	99
46)	Benzene	10.61	78	242250	21.9004 ug/kg	99
47)	Trichloroethene	11.36	130	77578	22.1342 ug/kg	98
48)	Methylcyclohexane	11.44	83	102065	23.2184 ug/kg	99
49)	1,2-Dichloropropane	11.57	63	70388	23.1725 ug/kg	100
50)	1,4-Dioxane	11.87	88	13650	299.5413 ug/kg	94
51)	Bromodichloromethane	11.87	83	88989	20.7876 ug/kg	100
52)	Dibromomethane	11.96	174	41532	20.6357 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	15982	20.7933 ug/kg	93
54)	4-Methyl-2-Pentanone	12.19	58	29277	21.9591 ug/kg	97
55)	cis-1,3-Dichloropropene	12.51	75	102855	23.0617 ug/kg	100
56)	Dimethyl Disulfide	12.77	94	108953	24.3089 ug/kg	92
59)	Toluene	12.93	91	264634	22.3968 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	75270	22.9822 ug/kg	98
61)	trans-1,3-Dichloropropene	13.10	75	94311	22.1612 ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	57316	23.0915 ug/kg	95
63)	2-Hexanone	13.26	43	54235	21.8845 ug/kg	100
64)	1,3-Dichloropropane	13.62	76	96660	23.3708 ug/kg	99
65)	Tetrachloroethene	13.75	164	54221	21.4055 ug/kg	97
66)	Dibromochloromethane	14.02	129	71622	20.6467 ug/kg	98
67)	1,2-Dibromoethane	14.27	107	60635	22.0240 ug/kg	96
68)	1-Chlorohexane	14.34	91	77741	22.3112 ug/kg	96
69)	Chlorobenzene	14.77	112	188889	22.7458 ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.81	131	66825	21.4279 ug/kg	100
71)	Ethylbenzene	14.80	106	97995	22.9050 ug/kg	98
72)	m-,p-Xylene	14.89	106	236799	44.8176 ug/kg	100
73)	o-Xylene	15.45	106	117789	23.2304 ug/kg	99
74)	Styrene	15.49	104	195725	22.6679 ug/kg	100
75)	Bromoform	15.99	173	43183	18.9599 ug/kg	98
76)	Isopropylbenzene	15.87	105	307619	22.5991 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	63025	21.4797 ug/kg	99
80)	1,2,3-Trichloropropane	16.28	110	26129	23.4814 ug/kg	83
81)	trans-1,4-Dichloro-2-Buten	16.34	53	21991	19.6060 ug/kg	92
82)	n-Propylbenzene	16.38	91	353827	23.2714 ug/kg	99
83)	Bromobenzene	16.52	156	79402	22.1216 ug/kg	74
84)	1,3,5-Trimethylbenzene	16.57	105	263372	23.0764 ug/kg	99
85)	2-Chlorotoluene	16.66	91	242282	23.7580 ug/kg	100
86)	4-Chlorotoluene	16.71	91	205505	21.7964 ug/kg	99
87)	a-Methylstyrene	16.98	118	130025	25.0029 ug/kg	97
88)	tert-Butylbenzene	17.03	134	55352	23.1329 ug/kg	89
89)	1,2,4-Trimethylbenzene	17.09	105	256289	21.4425 ug/kg	100
90)	sec-Butylbenzene	17.31	105	326775	22.2305 ug/kg	99
91)	p-Isopropyltoluene	17.47	119	272853	21.9952 ug/kg	100
92)	1,3-Dichlorobenzene	17.67	146	151965	21.3028 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	153934	21.5851 ug/kg	99
94)	n-Butylbenzene	17.99	91	237969	20.6322 ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	146690	22.1619 ug/kg	98
96)	1,2-Dibromo-3-Chloropropan	19.29	157	17591	20.7025 ug/kg	96
97)	1,2,4-Trichlorobenzene	20.43	180	91846	19.5468 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	45592	18.4072 ug/kg	100
99)	Naphthalene	20.81	128	233516	19.8139 ug/kg	99
100)	1,2,3-Trichlorobenzene	21.12	180	92739	20.3489 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022816\9M972946.D Vial: 4
Acq On : 28 Feb 2016 17:10 Operator: FJB
Sample : WG559002-02 20ug/Kg LCS 8260 Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 28 17:33 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

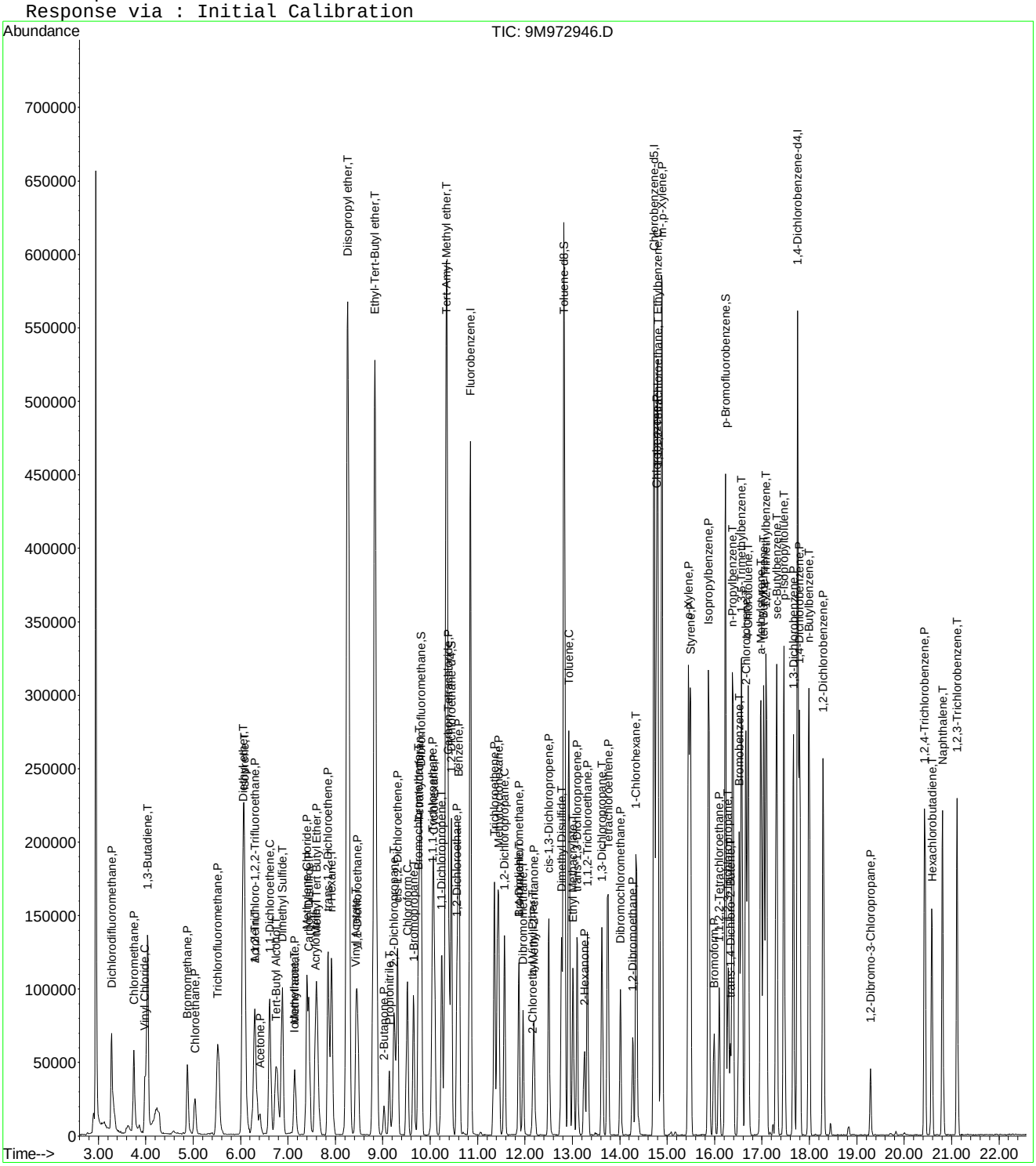

2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021306-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT05(4.5-5)250216	**Prep Method:**	6850	**Prep Date:**	02/26/2016 17:44
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558991	**Analyst:**	JWR	**Run Date:**	02/27/2016 01:40
Collect Date:	02/25/2016 09:30	**Dilution:**	1	**File ID:**	1LM.LM33425
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.34	U	4.67	2.34	1.17

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021306-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT05(10-11)250216	**Prep Method:**	6850	**Prep Date:**	02/26/2016 17:44
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558991	**Analyst:**	JWR	**Run Date:**	02/27/2016 00:43
Collect Date:	02/25/2016 09:40	**Dilution:**	1	**File ID:**	1LM.LM33422
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	88.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.22	U	4.42	2.22	1.11

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021306-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT05(10-11)250216 MS	**Prep Method:**	6850	**Prep Date:**	02/26/2016 17:44
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558991	**Analyst:**	JWR	**Run Date:**	02/27/2016 01:02
Collect Date:	02/25/2016 09:40	**Dilution:**	1	**File ID:**	1LM.LM33423
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	88.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.57	J	4.42	2.20	1.10

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021306-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT05(10-11)250216 MSD	**Prep Method:**	6850	**Prep Date:**	02/26/2016 17:44
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558991	**Analyst:**	JWR	**Run Date:**	02/27/2016 01:21
Collect Date:	02/25/2016 09:40	**Dilution:**	1	**File ID:**	1LM.LM33424
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	88.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.67	J	4.42	2.20	1.10

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021306-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT05(15-15.5)250216	**Prep Method:**	6850	**Prep Date:**	02/26/2016 17:44
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558991	**Analyst:**	JWR	**Run Date:**	02/27/2016 01:59
Collect Date:	02/25/2016 09:50	**Dilution:**	1	**File ID:**	1LM.LM33426
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	7.13		4.56	2.28	1.14

Certificate of Analysis

Sample #:	L16021306-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT05(20-20.5)250216	**Prep Method:**	6850	**Prep Date:**	02/26/2016 17:44
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558991	**Analyst:**	JWR	**Run Date:**	02/27/2016 11:35
Collect Date:	02/25/2016 09:45	**Dilution:**	50	**File ID:**	1LM.LM33435
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	80.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1400		243	121	60.7

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

MICROBAC

Semivolatile Sample Extract Log

Parameter: Perchlorate
SOP #: HPLC 06
Analyst: JWR
Spike/Surrogate analyst: JWR
Surrogate #: NA
Spike # A: STD72686
Ext Solvent: DI-H_2O
Ext Solvent: NA
Ext Disk: NA

Matrix: Soils
Rev #: 07
Date/Time Extracted: JWR 02/26/16 1744
Witness:

Spike # B: NA
Lot #: NA
Lot #: NA
Lot #: NA

Extraction Work Group: WG558990
Analytical Work Group: WG558991
Run ID: R4476215

Pipetter(s): Eppendorf #403
Analytical Balance ID: BAL017
Reagent: Tubes Lot #: RGT34011
Reagent: Sand Lot #: COA16150
Other: IS Lot #: COA18071

Color Code
T = Transparent
C = Colored
O = Opaque

	Sample ID	Test Code	pH	Initial Wt / Vol	JWR ~~Surrogate~~ Amount	IS Amount Spike	Final Volume	Extract Color	Comments
1	WG558990-01	6850		5.031g	0.250ml	1.0ml	50ml		MCT (2ug/kg) (10,000us)
2	WG558990-02			5.029g		NA			Blank
3	WG558990-03			5.012g		1.0ml			LCS (2ug/kg)
4	L16021306-01			5.102g		NA			
5	-02 RS			5.137g		NA			WG558990-04 Ref
6	-03 MS			5.142g		1.0ml			WG558990-05 MS (@2ug/kg)
7	-04 MSD			5.145g		1.0ml			WG558990-06 MSD (@2ug/kg)
8	-05			5.146g		NA			
9	-06			5.149g		NA			
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									

Reviewed by:

Analytical WG558991 (soils)

Perchlorate Conductivity Check

(perchlorate1)

Conductivity Probe Calibration Check: 1385 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG558990-01 MCT	9,920.	
WG558990-02 Blank	1.19 ~~5.029~~ JWR 02/26/16	
WG558990-03 LCS	1.07	
L16021306-01	3.08	
-02 RS	3.86	
-03 MS	3.55	
-04 MSD	3.34	
-05	5.54	
-06	8.83	

Analyst: John Richards

Date/Time: 02/26/16 1930

DCN#116907

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 021716_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG557864 (waters)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 MS/MSD STD: NA

Comments: ICAL WG557856 : Alternate Source STD72685
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM33244	WG557856-01 CCB	1	1		02/17/16 19:12
2	1LM.LM33245	WG557856-02 STD (0.1 ug/L)	1	1	STD72683	02/17/16 19:31
3	1LM.LM33246	WG557856-03 STD (0.2 ug/L)	1	1	STD72683	02/17/16 19:50
4	1LM.LM33247	WG557856-04 STD (0.5 ug/L)	1	1	STD72683	02/17/16 20:08
5	1LM.LM33248	WG557856-05 STD (1.0 ug/L)	1	1	STD72683	02/17/16 20:27
6	1LM.LM33249	WG557856-06 STD (2.0 ug/L)	1	1	STD72683	02/17/16 20:46
7	1LM.LM33250	WG557856-07 STD (5.0 ug/L)	1	1	STD72683	02/17/16 21:05
8	1LM.LM33251	WG557856-08 STD (10 ug/L)	1	1	STD72683	02/17/16 21:24
9	1LM.LM33252	WG557856-09 SSCV (1.0 ug/L)	1	1	STD72685	02/17/16 21:43
10	1LM.LM33253	WG557868-01 CCB	1	1		02/17/16 22:02
11	1LM.LM33254	WG557868-02 CCV (1.0ug/L)	1	1	STD72683	02/17/16 22:21
12	1LM.LM33255	WG557864-05 MRL (0.2ug/L)	1	1	STD72683	02/17/16 22:40
13	1LM.LM33256	WG557864-01 MCT (0.2ug/L)	1	1	STD72685	02/17/16 22:59
14	1LM.LM33257	WG557864-02 BLANK	1	1		02/17/16 23:18
15	1LM.LM33258	WG557864-03 LCS (0.2ug/L)	1	1	STD72685	02/17/16 23:37
16	1LM.LM33259	WG557864-04 LCS2 (0.2ug/L)	1	1	STD72685	02/17/16 23:56
17	1LM.LM33260	L16020819-01 (1000x) (NR)	1	1000		02/18/16 00:15
18	1LM.LM33261	L16020819-01 (100x) (NR)	1	100		02/18/16 00:34
19	1LM.LM33262	L16020819-01 (10x) (NR)	1	10		02/18/16 00:53
20	1LM.LM33263	L16020819-01 Neat	1	1		02/18/16 01:11
21	1LM.LM33264	Blank Rinse	1	1		02/18/16 01:30
22	1LM.LM33265	Blank Rinse	1	1		02/18/16 01:49
23	1LM.LM33266	WG557868-03 CCV (1.0ug/L)	1	1	STD72683	02/18/16 02:08
24	1LM.LM33267	WG557864-06 MRL (0.2ug/L)	1	1	STD72683	02/18/16 02:27
25	1LM.LM33268	WG557868-04 CCB	1	1		02/18/16 02:46

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17	X	1	Analyzed too dilute	
	L16020819-01 (1000x) (NR) : Results from this sample at this dilution are not needed.			
18	X	1	Analyzed too dilute	
	L16020819-01 (100x) (NR) : Results from this sample at this dilution are not needed.			
19	X	1	Analyzed too dilute	

Page: 1 Approved: 18-FEB-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 021716_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG557864 (waters)

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 NA

Comments

Seq.	Rerun	Dil.	Reason	Analytes
	L16020819-01 (10x) (NR) : Results from this sample at this dilution are not needed.			

Page: 2 Approved: 18-FEB-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 022616_JWR.TXT
Analyst1: JWR Analyst2: WTD
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG558988 (waters) Analytical WG558991 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 MS/MSD STD: STD72685

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM33402	WG558989-01 CCB	1	1		02/26/16 18:24
2	1LM.LM33403	WG558989-02 CCV (1.0ug/L)	1	1	STD72683	02/26/16 18:43
3	1LM.LM33404	WG558988-05 MRL (0.2ug/L)	1	1	STD72683	02/26/16 19:02
4	1LM.LM33405	WG558988-01 MCT (0.2ug/L)	1	1	STD72685	02/26/16 19:21
5	1LM.LM33406	WG558988-02 BLANK	1	1		02/26/16 19:40
6	1LM.LM33407	WG558988-03 LCS (0.2ug/L)	1	1	STD72685	02/26/16 19:59
7	1LM.LM33408	WG558988-04 LCS2 (0.2ug/L)	1	1	STD72685	02/26/16 20:18
8	1LM.LM33409	L16021190-01 WTD-P\&A (0.2ug/L)	1	1	STD72685	02/26/16 20:37
9	1LM.LM33410	L16021190-02 WTD-P\&A (0.2ug/L)	1	1	STD72685	02/26/16 20:56
10	1LM.LM33411	L16021190-03 WTD-P\&A (0.2ug/L)	1	1	STD72685	02/26/16 21:15
11	1LM.LM33412	L16021190-04 WTD-P\&A (0.2ug/L)	1	1	STD72685	02/26/16 21:34
12	1LM.LM33413	L16021193-01	1	1		02/26/16 21:52
13	1LM.LM33414	L16021193-02	1	1		02/26/16 22:11
14	1LM.LM33415	WG558989-03 CCV (1.0ug/L)	1	1	STD72683	02/26/16 22:30
15	1LM.LM33416	WG558988-06 MRL (0.2ug/L)	1	1	STD72683	02/26/16 22:49
16	1LM.LM33417	WG558989-04 CCB	1	1		02/26/16 23:08
17	1LM.LM33418	WG558991-07 MRL (2.0ug/kg)	7	1	STD72683	02/26/16 23:27
18	1LM.LM33419	WG558991-01 MCT (2.0ug/kg)	7	1	STD72685	02/26/16 23:46
19	1LM.LM33420	WG558991-02 BLANK	7	1		02/27/16 00:05
20	1LM.LM33421	WG558991-03 LCS (2.0ug/kg)	7	1	STD72685	02/27/16 00:24
21	1LM.LM33422	L16021306-02 RS	7	1		02/27/16 00:43
22	1LM.LM33423	L16021306-03 MS	7	1	STD72685	02/27/16 01:02
23	1LM.LM33424	L16021306-04 MSD	7	1	STD72685	02/27/16 01:21
24	1LM.LM33425	L16021306-01	7	1		02/27/16 01:40
25	1LM.LM33426	L16021306-05	7	1		02/27/16 01:59
26	1LM.LM33427	L16021306-06 (NR)	7	1		02/27/16 02:17
27	1LM.LM33428	Diluent	7	1		02/27/16 02:36
28	1LM.LM33429	WG558989-05 CCV (1.0ug/L)	1	1	STD72683	02/27/16 02:55
29	1LM.LM33430	WG558991-08 MRL (2.0ug/kg)	7	1	STD72683	02/27/16 03:14
30	1LM.LM33431	WG558989-06 CCB	1	1		02/27/16 03:33
31	1LM.LM33432	WG558989-07 CCV (1.0ug/L)	1	1	STD72683	02/27/16 10:38
32	1LM.LM33433	WG558991-09 MRL (2.0ug/kg)	7	1	STD72683	02/27/16 10:57
33	1LM.LM33434	WG558989-08 CCB	1	1		02/27/16 11:16

Page: 1 Approved: 29-FEB-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 022616_JWR.TXT
Analyst1: JWR Analyst2: WTD
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG558988 (waters) Analytical WG558991 (soils)

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM33435	L16021306-06 (RR 50x)	7	50		02/27/16 11:35
35	1LM.LM33436	WG558989-09 CCV (1.0ug/L)	1	1	STD72683	02/27/16 11:54
36	1LM.LM33437	WG558991-10 MRL (2.0ug/kg)	7	1	STD72683	02/27/16 12:13
37	1LM.LM33438	WG558989-10 CCB	1	1		02/27/16 12:32

Comments

Seq.	Rerun	Dil.	Reason	Analytes
23				
	L16021306-04 MSD : The MSD %Rec is marginally (<5%) above its upper control limit.			

Page: 2 Approved: 29-FEB-16

Microbac Laboratories Inc.

Data Checklist

Date: 17-FEB-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG557856
Runlog ID: 73366
Analytical Workgroups: L16020819

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
18-FEB-2016
John Richards

Secondary Reviewer:
18-FEB-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-18-2016 16:36:00

Microbac Laboratories Inc.

Data Checklist

Date: 26-FEB-2016
Analyst: JWR
Analyst: WTD
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 73516
Analytical Workgroups: L16021190(WTD-DOC'S), 1193 (WATERS) L16021306 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	MCT(SOIL)-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
27-FEB-2016
John Richards

Secondary Reviewer:
29-FEB-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-29-2016 07:37:58

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG558991

Login Number: L16021306

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18DPT05(4.5-5)250216	01	02/25/16					02/26/2016	1.3	28		02/27/16	.3	28	
18DPT05(10-11)250216	02	02/25/16					02/26/2016	1.3	28		02/27/16	.3	28	
18DPT05(10-11)250216 MS	03	02/25/16					02/26/2016	1.3	28		02/27/16	.3	28	
18DPT05(10-11)250216 MS	04	02/25/16					02/26/2016	1.3	28		02/27/16	.3	28	
18DPT05(15-15.5)250216	05	02/25/16					02/26/2016	1.3	28		02/27/16	.3	28	
18DPT05(20-20.5)250216	06	02/25/16					02/26/2016	1.3	28		02/27/16	.7	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4649626
Report generated 02/29/2016 09:06

METHOD BLANK SUMMARY

Login Number: L16021306
Blank File ID: 1LM.LM33420
Prep Date: 02/26/16 17:44
Analyzed Date: 02/27/16 00:05
Analyst: JWR

Work Group: WG558991
Blank Sample ID: WG558991-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG558991-07	1LM.LM33418	02/26/16 23:27	01
MCT	WG558991-01	1LM.LM33419	02/26/16 23:46	01
LCS	WG558991-03	1LM.LM33421	02/27/16 00:24	01
18DPT05(10-11)250216	L16021306-02	1LM.LM33422	02/27/16 00:43	01
18DPT05(10-11)250216 MS	L16021306-03	1LM.LM33423	02/27/16 01:02	01
18DPT05(10-11)250216 MSD	L16021306-04	1LM.LM33424	02/27/16 01:21	01
18DPT05(4.5-5)250216	L16021306-01	1LM.LM33425	02/27/16 01:40	01
18DPT05(15-15.5)250216	L16021306-05	1LM.LM33426	02/27/16 01:59	01
QCMRL	WG558991-08	1LM.LM33430	02/27/16 03:14	01
QCMRL	WG558991-09	1LM.LM33433	02/27/16 10:57	01
18DPT05(20-20.5)250216	L16021306-06	1LM.LM33435	02/27/16 11:35	DL01
QCMRL	WG558991-10	1LM.LM33437	02/27/16 12:13	01

Report Name: BLANK_SUMMARY
PDF File ID: 4649627
Report generated 02/29/2016 09:06

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16021306 Prep Date: 02/26/16 17:44 Sample ID: WG558991-02
Instrument ID: LCMS1 Run Date: 02/27/16 00:05 Prep Method: 6850
File ID: 1LM.LM33420 Analyst: JWR Method: 6850
Workgroup (AAB#): WG558991 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-17-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.994	3.98	0.994	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4649628
29-FEB-2016 09:06

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16021306 Run Date: 02/27/2016 Sample ID: WG558991-03
Instrument ID: LCMS1 Run Time: 00:24 Prep Method: 6850
File ID: 1LM.LM33421 Analyst: JWR Method: 6850
Workgroup (AAB#): WG558991 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD72685 Cal ID: LCMS1-17-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	2.00	2.19	110	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4649629
Report generated: 02/29/2016 09:06

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16021306 Cal ID: LCMS1- 17-FEB-16 Worknum: WG558991
Instrument ID: LCMS1 Contract #: Prep Method: 6850
Parent ID: L16021306-02 File ID: 1LM.LM33422 Dil: 1 Method: 6850
Sample ID: L16021306-03 MS File ID: 1LM.LM33423 Dil: 1 Matrix: Soil
Sample ID: L16021306-04 MSD File ID: 1LM.LM33424 Dil: 1 Units: ug/kg
Percent Solid: 88.0

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Perchlorate	U	2.21	2.57	117	2.21	2.67	121	3.73	80 - 120	15	*

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4649630
Report generated 02/29/2016 09:57

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16021306
Analytical Method: 6850
ICAL Workgroup: WG557856

Instrument ID: LCMS1
Initial Calibration Date: 17-FEB-16 21:24
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.628	7.83	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4649693
Report generated 02/29/2016 09:06

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16021306

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 17-FEB-16 21:24

Column ID: F

Analyte	WG557856-02			WG557856-03			WG557856-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	18800.0000	1.692	0.200	38700.0000	1.755	0.500	91400.0000	1.644

INT_CAL - Modified 03/06/2008
PDF File ID: 4649693
Report generated 02/29/2016 09:06

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16021306

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 17-FEB-16 21:24

Column ID: F

Analyte	WG557856-05			WG557856-06			WG557856-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	178000.000	1.625	2.00	350000.000	1.604	5.00	826000.000	1.554

INT_CAL - Modified 03/06/2008
PDF File ID: 4649693
Report generated 02/29/2016 09:06

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16021306

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 17-FEB-16 21:24

Column ID: F

Analyte	WG557856-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.521

INT_CAL - Modified 03/06/2008

PDF File ID: 4649693

Report generated 02/29/2016 09:06

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16021306 Run Date: 02/17/2016 Sample ID: WG557856-09
Instrument ID: LCMS1 Run Time: 21:43 Method: 6850
File ID: 1LM.LM33252 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG557856 Cal ID: LCMS1 - 17-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	1.05	ug/L	1.65	5.00	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4649694
Report generated 02/29/2016 09:06

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16021306
Run Date: 02/26/2016
Sample ID: WG558989-04
Instrument ID: LCMS1
Run Time: 23:08
Method: 6850
File ID: 1LM.LM33417
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG558991
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4649633
Report generated 02/29/2016 09:06

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16021306
Run Date: 02/27/2016
Sample ID: WG558989-06
Instrument ID: LCMS1
Run Time: 03:33
Method: 6850
File ID: 1LM.LM33431
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG558991
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4649633
Report generated 02/29/2016 09:06

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16021306
Run Date: 02/27/2016
Sample ID: WG558989-08
Instrument ID: LCMS1
Run Time: 11:16
Method: 6850
File ID: 1LM.LM33434
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG558991
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4649633
Report generated 02/29/2016 09:06

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16021306
Run Date: 02/27/2016
Sample ID: WG558989-10
Instrument ID: LCMS1
Run Time: 12:32
Method: 6850
File ID: 1LM.LM33438
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG558991
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4649633
Report generated 02/29/2016 09:06

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021306
Run Date: 02/26/2016
Sample ID: WG558989-03
Instrument ID: LCMS1
Run Time: 22:30
Method: 6850
File ID: 1LM.LM33415
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG558991
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.10	ug/kg	1.72	10.0	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4649632
Report generated 02/29/2016 09:06

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021306
Run Date: 02/27/2016
Sample ID: WG558989-05
Instrument ID: LCMS1
Run Time: 02:55
Method: 6850
File ID: 1LM.LM33429
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG558991
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.10	ug/kg	1.72	10.0	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4649632
Report generated 02/29/2016 09:06

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021306
Run Date: 02/27/2016
Sample ID: WG558989-07
Instrument ID: LCMS1
Run Time: 10:38
Method: 6850
File ID: 1LM.LM33432
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG558991
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/kg	1.61	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4649632
Report generated 02/29/2016 09:06

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021306
Run Date: 02/27/2016
Sample ID: WG558989-09
Instrument ID: LCMS1
Run Time: 11:54
Method: 6850
File ID: 1LM.LM33436
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG558991
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.05	ug/kg	1.64	5.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4649632
Report generated 02/29/2016 09:06

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16021306 Run Date: 02/26/2016 Sample ID: WG558991-07
Instrument ID: LCMS1 Run Time: 23:27 Prep Method: 6850
File ID: 1LM.LM33418 Analyst: JWR Method: 6850
Workgroup (AAB#): WG558991 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-17-FEB-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.11	106	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4649631
Report generated 02/29/2016 09:06

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16021306 Run Date: 02/27/2016 Sample ID: WG558991-08
Instrument ID: LCMS1 Run Time: 03:14 Prep Method: 6850
File ID: 1LM.LM33430 Analyst: JWR Method: 6850
Workgroup (AAB#): WG558991 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-17-FEB-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.15	108	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4649631
Report generated 02/29/2016 09:06

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16021306 Run Date: 02/27/2016 Sample ID: WG558991-09
Instrument ID: LCMS1 Run Time: 10:57 Prep Method: 6850
File ID: 1LM.LM33433 Analyst: JWR Method: 6850
Workgroup (AAB#): WG558991 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-17-FEB-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.10	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4649631
Report generated 02/29/2016 09:06

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16021306 Run Date: 02/27/2016 Sample ID: WG558991-10
Instrument ID: LCMS1 Run Time: 12:13 Prep Method: 6850
File ID: 1LM.LM33437 Analyst: JWR Method: 6850
Workgroup (AAB#): WG558991 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-17-FEB-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.12	106	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4649631
Report generated 02/29/2016 09:06

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16021306
Instrument ID: LCMS1
Workgroup (AAB#): WG558991

ICAL CCV Number: WG557856-05
CAL ID: LCMS1-17-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1
WG557856	NA	NA	542000
Upper Limit	NA	NA	813000
Lower Limit	NA	NA	271000
L16021306-01	1.00	01	543000
L16021306-02	1.00	01	523000
L16021306-03	1.00	01	527000
L16021306-04	1.00	01	529000
L16021306-05	1.00	01	539000
L16021306-06	50.0	DL01	496000
WG558991-02	1.00	01	538000
WG558991-03	1.00	01	524000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4649634
Report generated 02/29/2016 09:07

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**	6850	**Samplenum:**	L16021306-01
Instrument:	LCMS1	**Prep Date:**	02/26/2016 17:44	**File ID:**	1LM.LM33425
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558991	**Analysis Date:**	02/27/2016 01:40	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	2270	959	2.37	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**	6850	**Samplenum:**	L16021306-02
Instrument:	LCMS1	**Prep Date:**	02/26/2016 17:44	**File ID:**	1LM.LM33422
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558991	**Analysis Date:**	02/27/2016 00:43	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	3610	1990	1.81	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**	6850	**Samplenum:**	L16021306-03
Instrument:	LCMS1	**Prep Date:**	02/26/2016 17:44	**File ID:**	1LM.LM33423
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558991	**Analysis Date:**	02/27/2016 01:02	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	41300	14100	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**	6850	**Samplenum:**	L16021306-04
Instrument:	LCMS1	**Prep Date:**	02/26/2016 17:44	**File ID:**	1LM.LM33424
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558991	**Analysis Date:**	02/27/2016 01:21	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	42900	13300	3.23	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**	6850	**Samplenum:**	L16021306-05
Instrument:	LCMS1	**Prep Date:**	02/26/2016 17:44	**File ID:**	1LM.LM33426
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558991	**Analysis Date:**	02/27/2016 01:59	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	107000	35900	2.98	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**	6850	**Samplenum:**	L16021306-06
Instrument:	LCMS1	**Prep Date:**	02/26/2016 17:44	**File ID:**	1LM.LM33435
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558991	**Analysis Date:**	02/27/2016 11:35	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	355000	116000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**		**Samplenum:**	WG557856-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33245
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558991	**Analysis Date:**	02/17/2016 19:31	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	18800	6990	2.69	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**		**Samplenum:**	WG557856-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33246
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558991	**Analysis Date:**	02/17/2016 19:50	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38700	14200	2.73	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**		**Samplenum:**	WG557856-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33247
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558991	**Analysis Date:**	02/17/2016 20:08	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	91400	32900	2.78	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**		**Samplenum:**	WG557856-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33248
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558991	**Analysis Date:**	02/17/2016 20:27	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	178000	63900	2.79	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**		**Samplenum:**	WG557856-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33249
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558991	**Analysis Date:**	02/17/2016 20:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	350000	126000	2.78	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**		**Samplenum:**	WG557856-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33250
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558991	**Analysis Date:**	02/17/2016 21:05	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	826000	293000	2.82	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**		**Samplenum:**	WG557856-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33251
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558991	**Analysis Date:**	02/17/2016 21:24	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	562000	2.72	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**		**Samplenum:**	WG557856-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33252
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558991	**Analysis Date:**	02/17/2016 21:43	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	179000	63600	2.81	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**		**Samplenum:**	WG558989-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33415
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558991	**Analysis Date:**	02/26/2016 22:30	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	184000	60700	3.03	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**		**Samplenum:**	WG558989-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33417
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558991	**Analysis Date:**	02/26/2016 23:08	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	491	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**		**Samplenum:**	WG558989-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33429
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558991	**Analysis Date:**	02/27/2016 02:55	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	193000	63000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**		**Samplenum:**	WG558989-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33431
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558991	**Analysis Date:**	02/27/2016 03:33	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	754	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**		**Samplenum:**	WG558989-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33432
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558991	**Analysis Date:**	02/27/2016 10:38	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	55900	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**		**Samplenum:**	WG558989-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33434
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558991	**Analysis Date:**	02/27/2016 11:16	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	219	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**		**Samplenum:**	WG558989-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33436
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558991	**Analysis Date:**	02/27/2016 11:54	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	178000	57700	3.08	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**		**Samplenum:**	WG558989-10
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33438
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558991	**Analysis Date:**	02/27/2016 12:32	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1430	542	2.64	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**	6850	**Samplenum:**	WG558991-01
Instrument:	LCMS1	**Prep Date:**	02/26/2016 17:44	**File ID:**	1LM.LM33419
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558991	**Analysis Date:**	02/26/2016 23:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38600	12500	3.09	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**	6850	**Samplenum:**	WG558991-02
Instrument:	LCMS1	**Prep Date:**	02/26/2016 17:44	**File ID:**	1LM.LM33420
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558991	**Analysis Date:**	02/27/2016 00:05	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	595	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**	6850	**Samplenum:**	WG558991-03
Instrument:	LCMS1	**Prep Date:**	02/26/2016 17:44	**File ID:**	1LM.LM33421
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558991	**Analysis Date:**	02/27/2016 00:24	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	39000	12500	3.12	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**	6850	**Samplenum:**	WG558991-07
Instrument:	LCMS1	**Prep Date:**	02/26/2016 17:44	**File ID:**	1LM.LM33418
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558991	**Analysis Date:**	02/26/2016 23:27	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	39200	12900	3.04	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**	6850	**Samplenum:**	WG558991-08
Instrument:	LCMS1	**Prep Date:**	02/26/2016 17:44	**File ID:**	1LM.LM33430
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558991	**Analysis Date:**	02/27/2016 03:14	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	41600	14200	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**	6850	**Samplenum:**	WG558991-09
Instrument:	LCMS1	**Prep Date:**	02/26/2016 17:44	**File ID:**	1LM.LM33433
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558991	**Analysis Date:**	02/27/2016 10:57	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38000	12700	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**	6850	**Samplenum:**	WG558991-10
Instrument:	LCMS1	**Prep Date:**	02/26/2016 17:44	**File ID:**	1LM.LM33437
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558991	**Analysis Date:**	02/27/2016 12:13	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38300	12900	2.97	2.3	3.8	

2.2.1.3 Sample Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 2/27/2016 2:05 PM

Data File	LM33425.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/27/2016 1:40:08 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021306-01	**Injection Vial**	20.00
Data File	LM33425.wiff	**Injection Volume**	10.00
Acquisition Date	2/27/2016 1:40:08 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	L16021306-01	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.430e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.270e+03	9.95	N/A	< 0
Perchlorate conf	9.590e+02	9.94	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

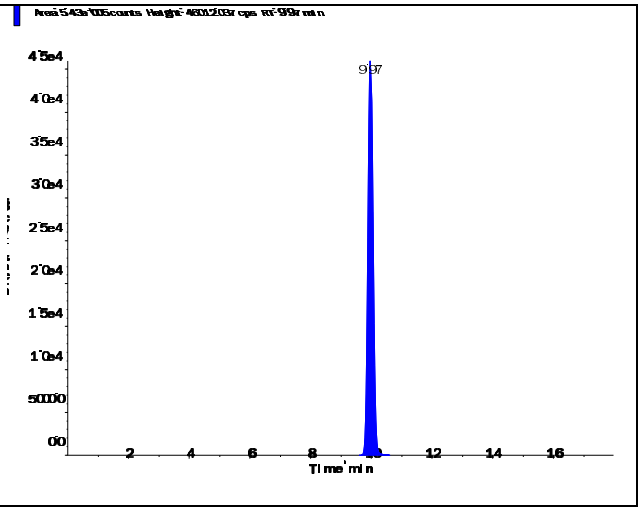

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)

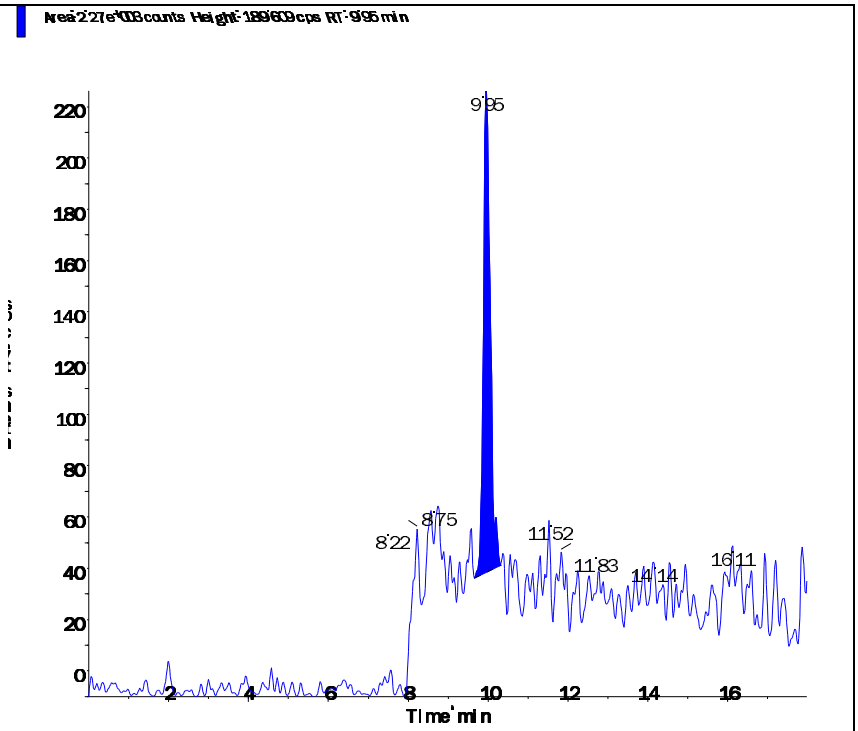

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

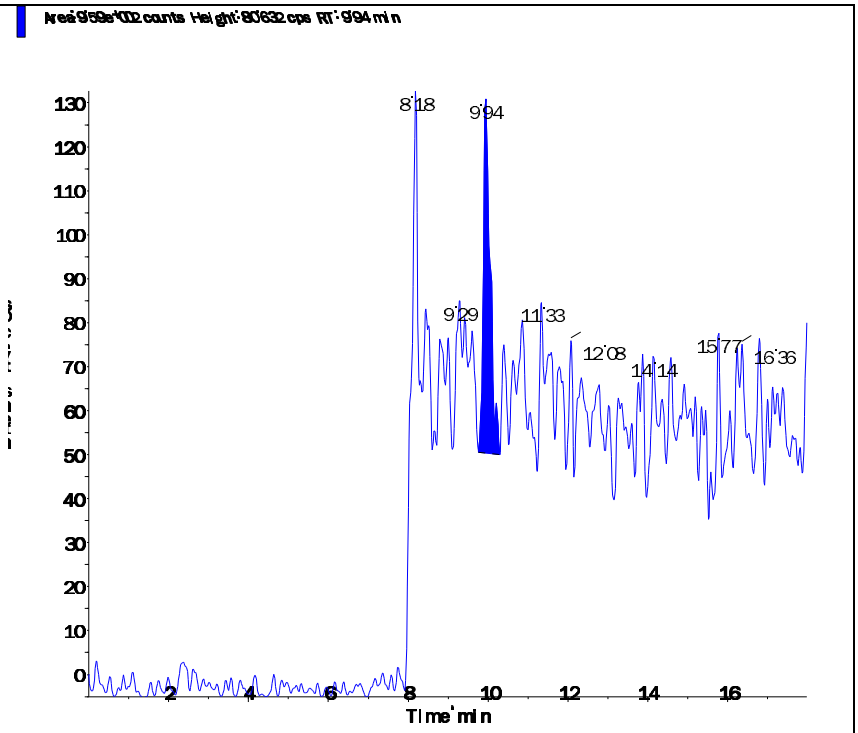

s.dataFile Page 2 of 2

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Created with Analyst Reporter
Printed: 2/27/2016 2:04 PM

Data File	LM33422.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/27/2016 12:43:18 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021306-02 RS	**Injection Vial**	17.00
Data File	LM33422.wiff	**Injection Volume**	10.00
Acquisition Date	2/27/2016 12:43:18 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG558991-04	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.230e+05	9.99	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.610e+03	10.00	N/A	0.0008
Perchlorate conf	1.990e+03	10.00	N/A	0.0118

O18LP (Internal Standard)

RT (Exp. RT): 9.99(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

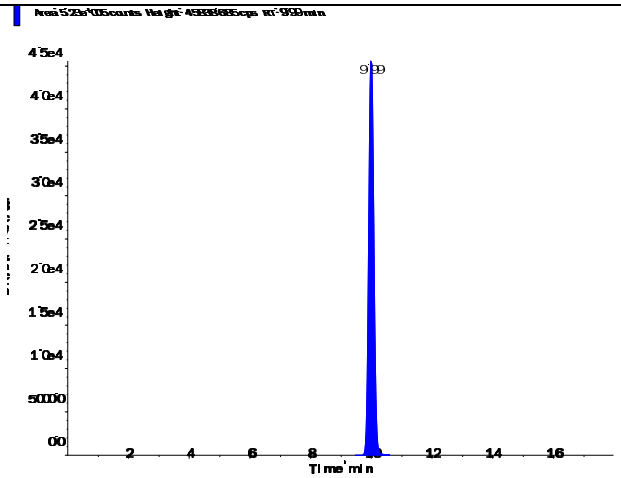

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.00 (9.94) min
Calculated conc:	0.0008 ng/ml
Area Ratio:	0.007
Sample Type:	(Unknown)

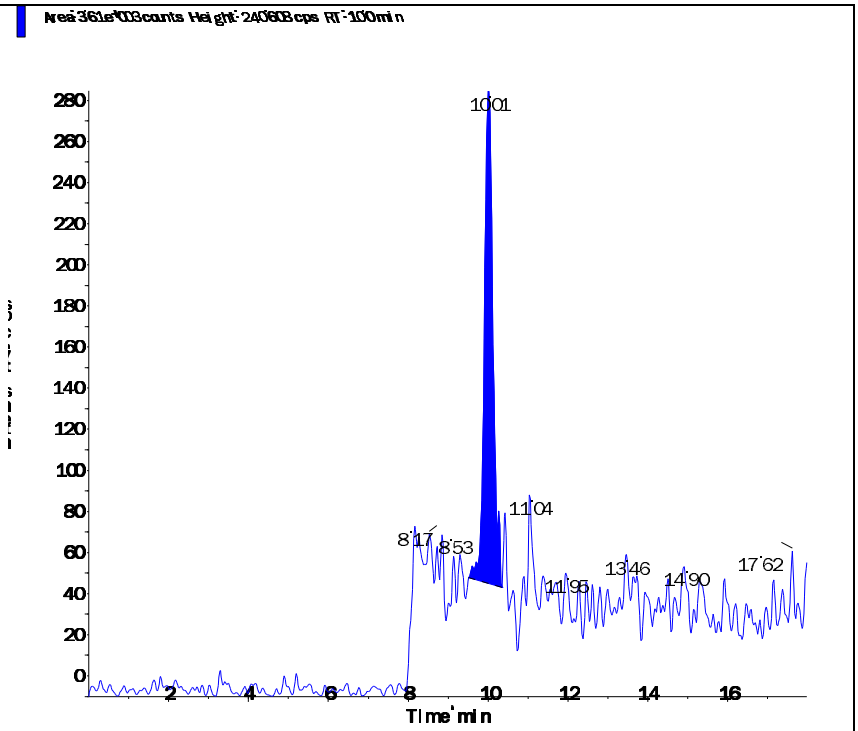

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.00 (9.92) min
Calculated conc:	0.0118 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)

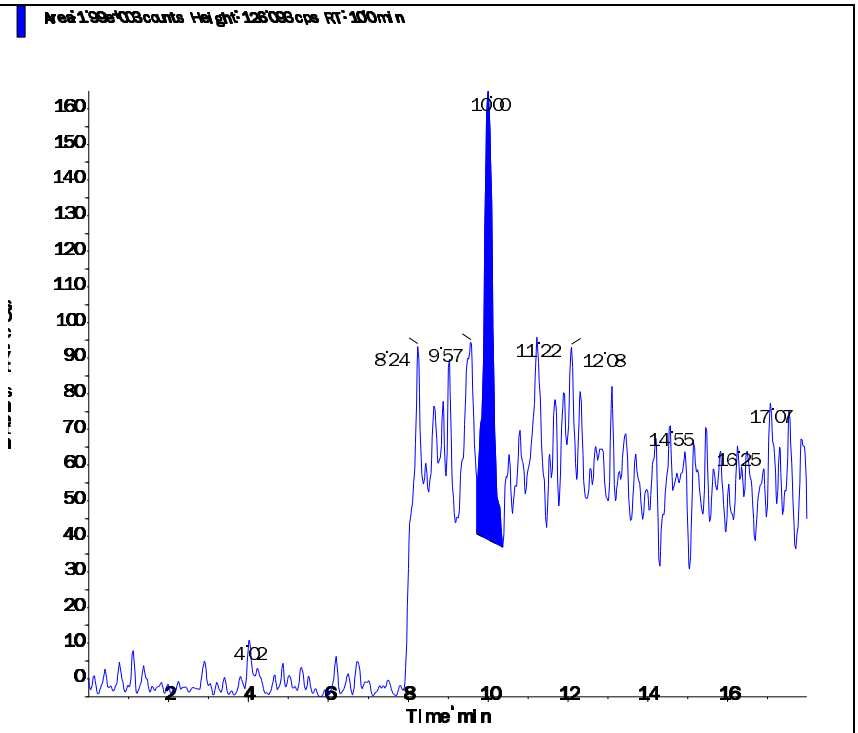

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Data File	LM33423.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/27/2016 1:02:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021306-03 MS	**Injection Vial**	18.00
Data File	LM33423.wiff	**Injection Volume**	10.00
Acquisition Date	2/27/2016 1:02:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG558991-05	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.270e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.130e+04	9.97	N/A	0.233
Perchlorate conf	1.410e+04	9.95	N/A	0.218

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

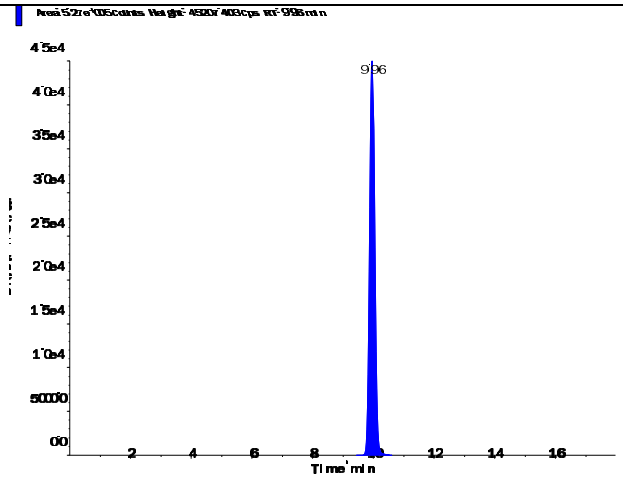

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.97 (9.94) min
Calculated conc:	0.233 ng/ml
Area Ratio:	0.078
Sample Type:	(Unknown)

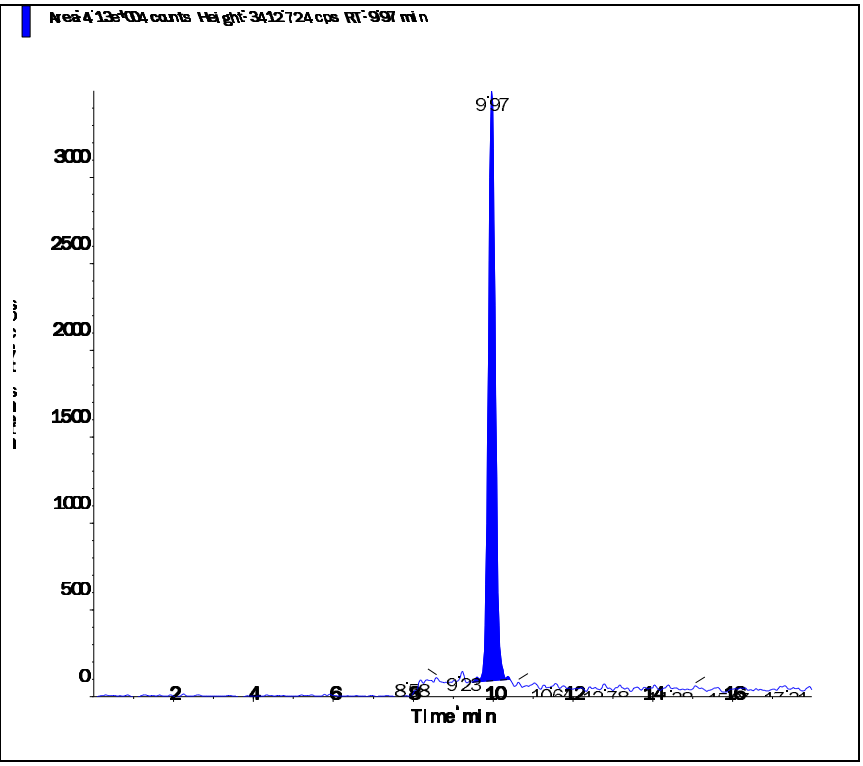

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.95 (9.92) min
Calculated conc:	0.218 ng/ml
Area Ratio:	0.027
Sample Type:	(Unknown)

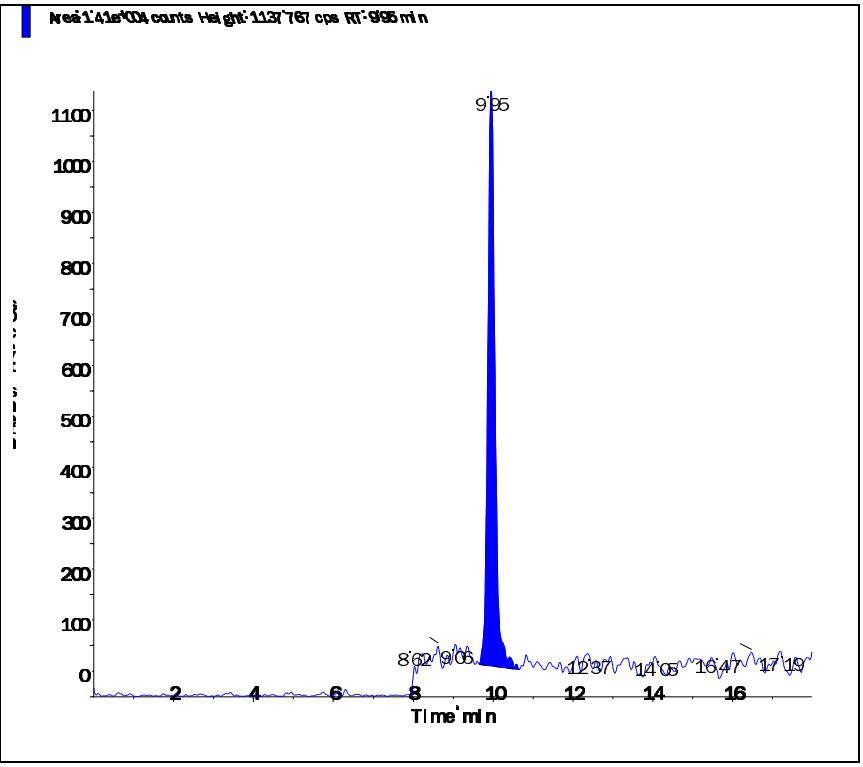

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Data File	LM33424.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/27/2016 1:21:13 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021306-04 MSD	**Injection Vial**	19.00
Data File	LM33424.wiff	**Injection Volume**	10.00
Acquisition Date	2/27/2016 1:21:13 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG558991-06	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.290e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.290e+04	9.98	N/A	0.242
Perchlorate conf	1.330e+04	9.97	N/A	0.203

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

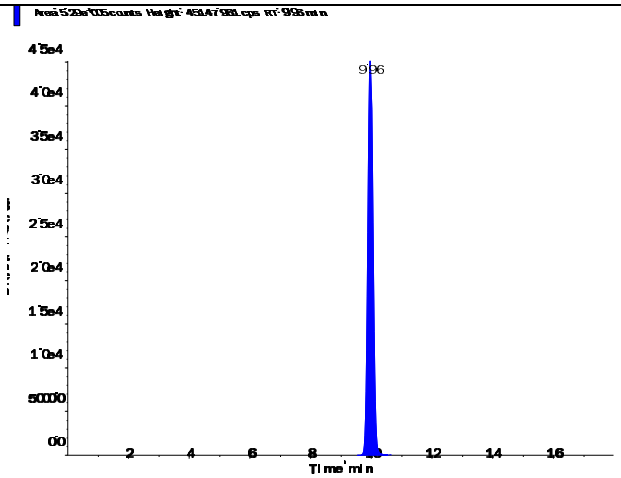

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.98 (9.94) min Calculated conc: 0.242 ng/ml Area Ratio: 0.081 Sample Type: (Unknown)	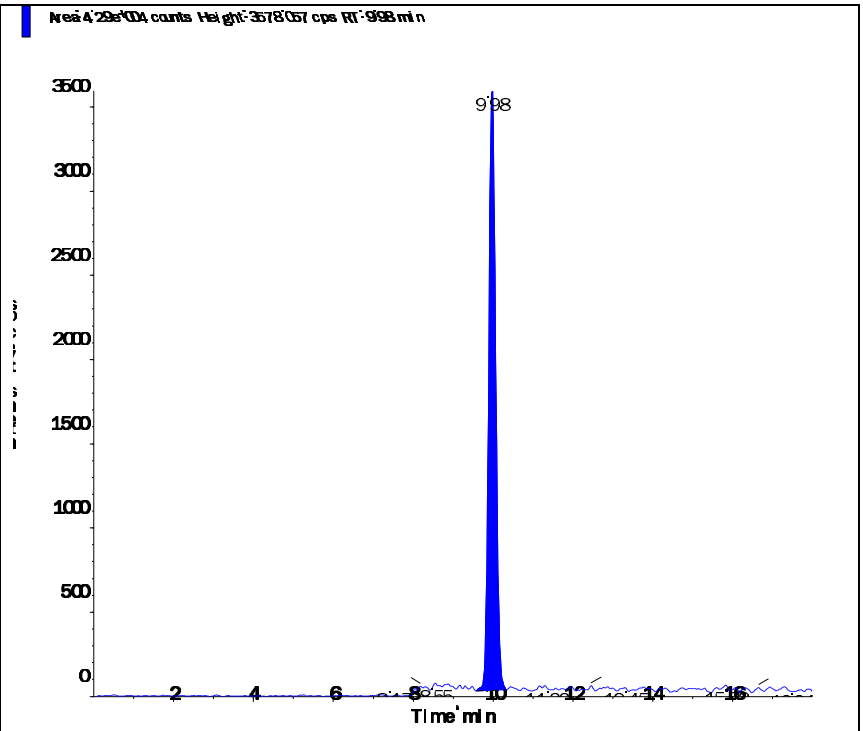
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.97 (9.92) min Calculated conc: 0.203 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	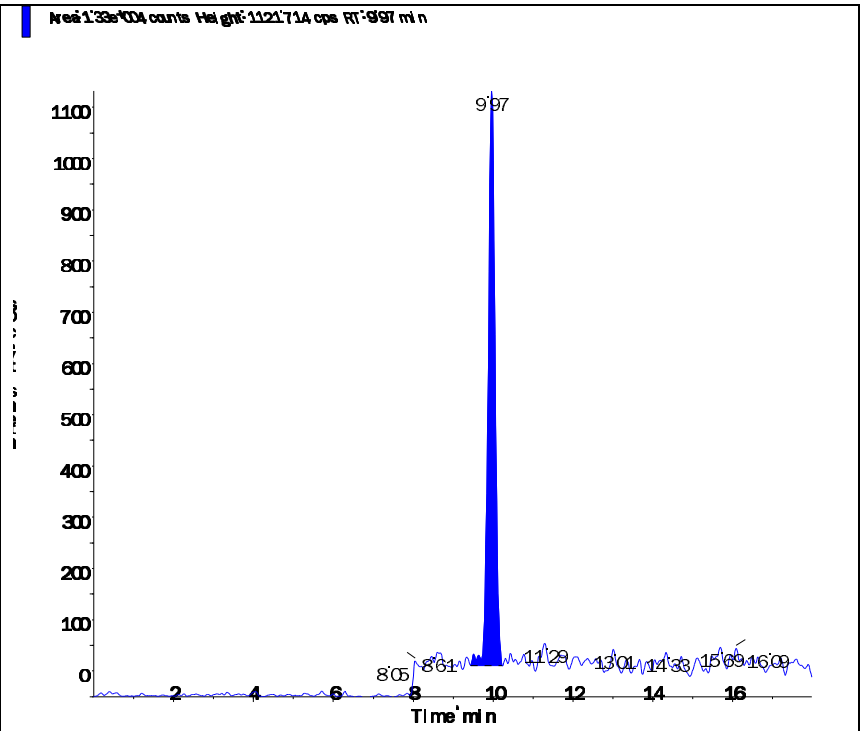

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Data File	LM33426.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/27/2016 1:59:04 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021306-05	**Injection Vial**	21.00
Data File	LM33426.wiff	**Injection Volume**	10.00
Acquisition Date	2/27/2016 1:59:04 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	L16021306-05	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.390e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.070e+05	9.97	N/A	0.625
Perchlorate conf	3.590e+04	9.96	N/A	0.575

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

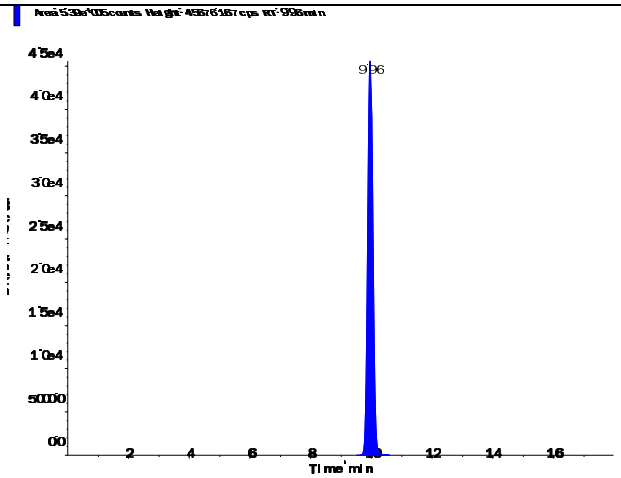

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.97 (9.94) min
Calculated conc:	0.625 ng/ml
Area Ratio:	0.199
Sample Type:	(Unknown)

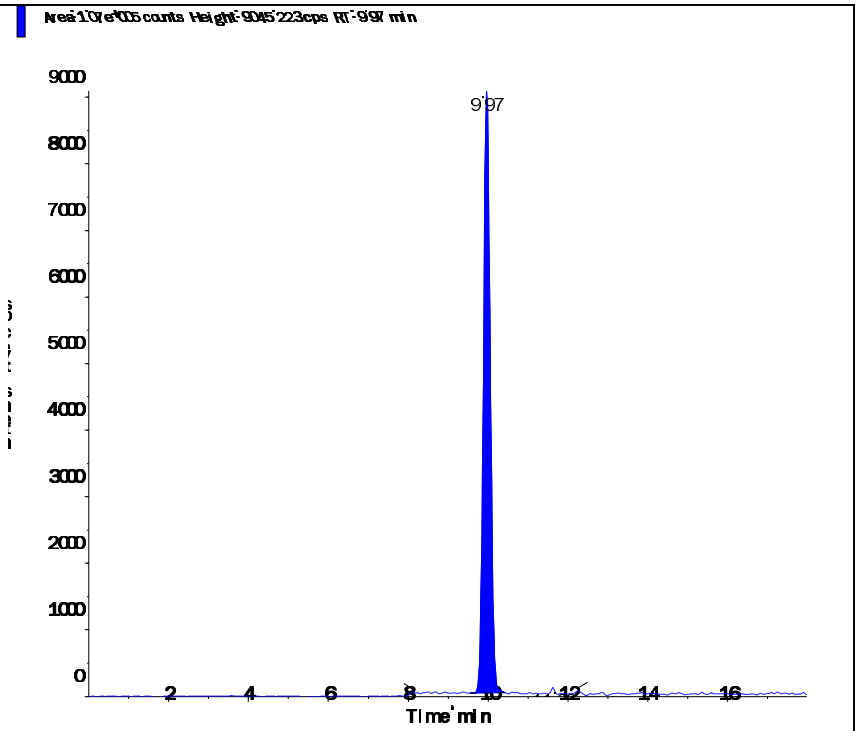

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.96 (9.92) min
Calculated conc:	0.575 ng/ml
Area Ratio:	0.067
Sample Type:	(Unknown)

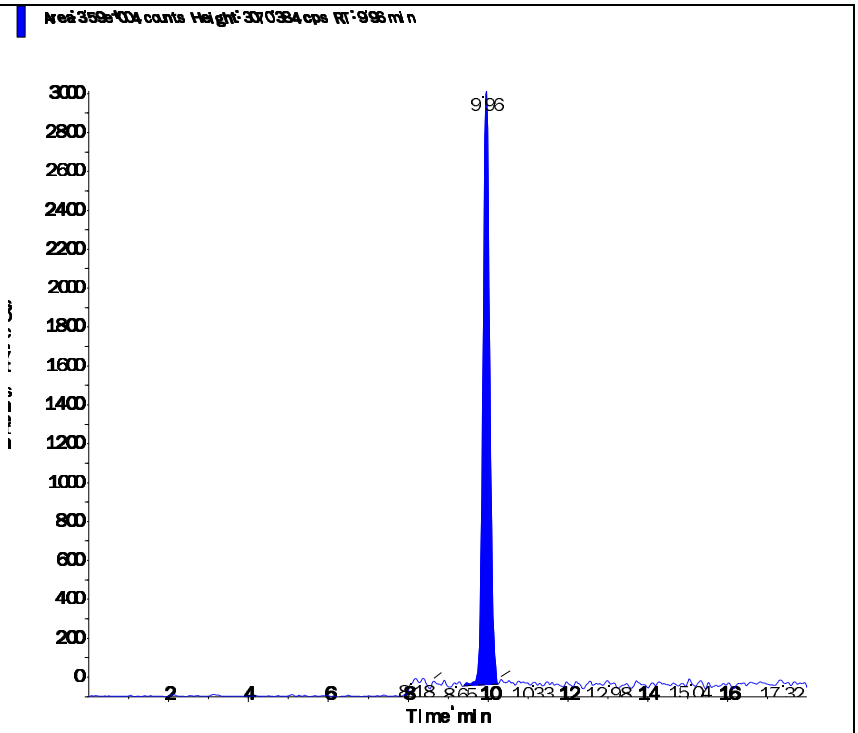

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Data File	LM33435.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/27/2016 11:35:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021306-06 (RR 50x)	**Injection Vial**	24.00
Data File	LM33435.wiff	**Injection Volume**	10.00
Acquisition Date	2/27/2016 11:35:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	L16021306-06	**Dilution Factor**	1.00
Sample Comment	750.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.960e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.550e+05	9.96	N/A	2.30
Perchlorate conf	1.160e+05	9.95	N/A	2.07

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

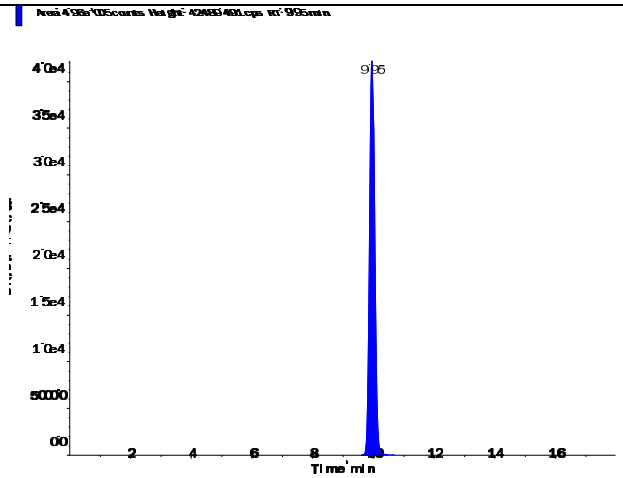

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	2.30 ng/ml
Area Ratio:	0.715
Sample Type:	(Unknown)

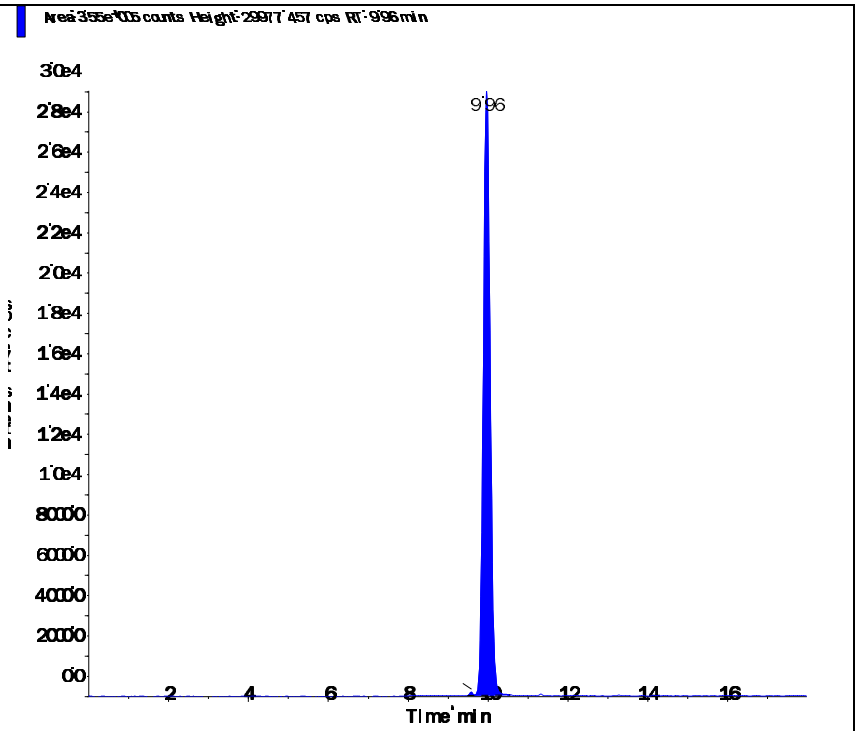

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.95 (9.92) min
Calculated conc:	2.07 ng/ml
Area Ratio:	0.233
Sample Type:	(Unknown)

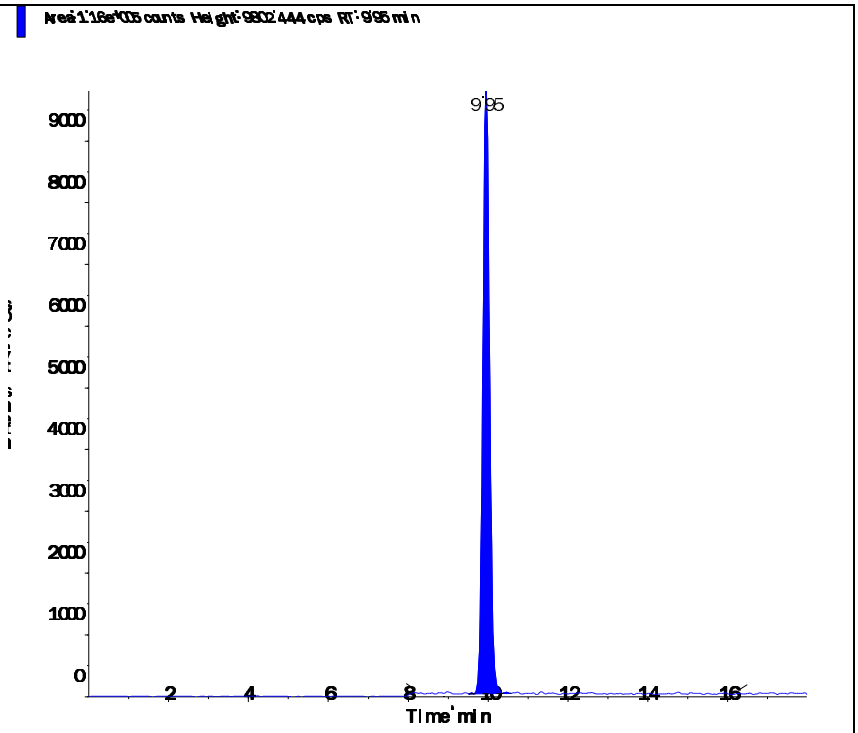

2.2.1.4 Standards Data

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Data File	LM33244.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/17/2016 7:12:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-01 CCB	**Injection Vial**	1.00
Data File	LM33244.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 7:12:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG557856-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.570e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.560e+03	9.97	N/A	< 0
Perchlorate conf	1.050e+03	9.97	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

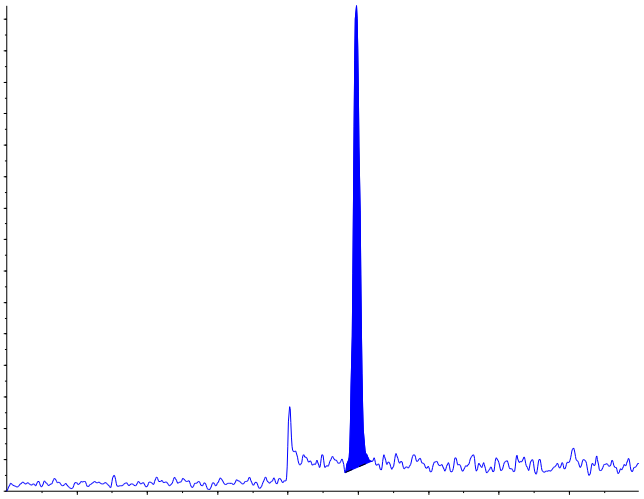

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Printed: 2/27/2016 1:54 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.97 (9.94) min Calculated conc: < 0 ng/ml Area Ratio: 0.005 Sample Type: (Unknown)	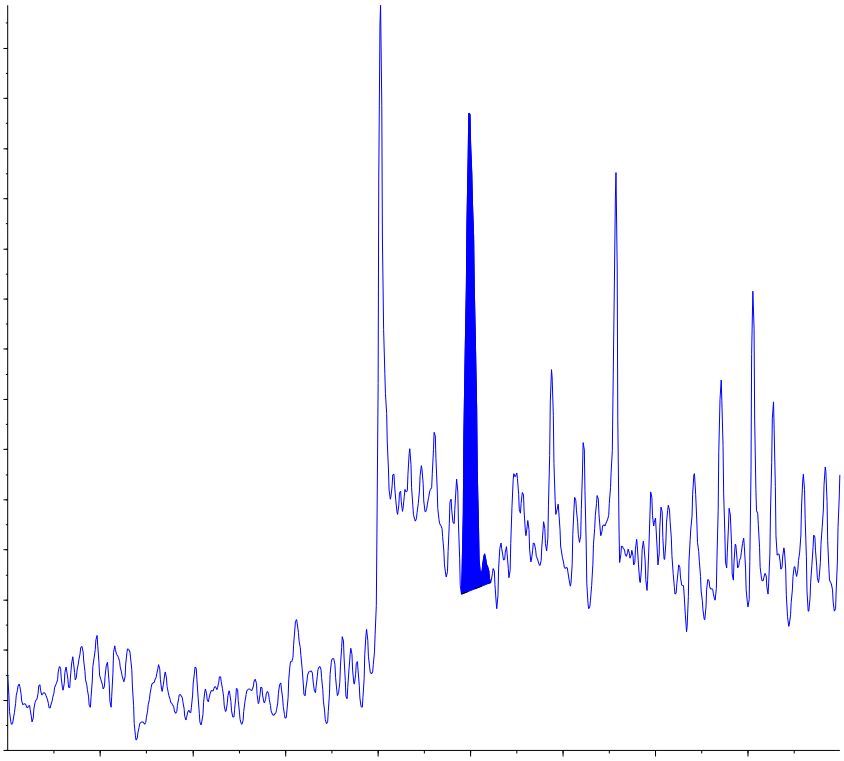
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.97 (9.92) min Calculated conc: < 0 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	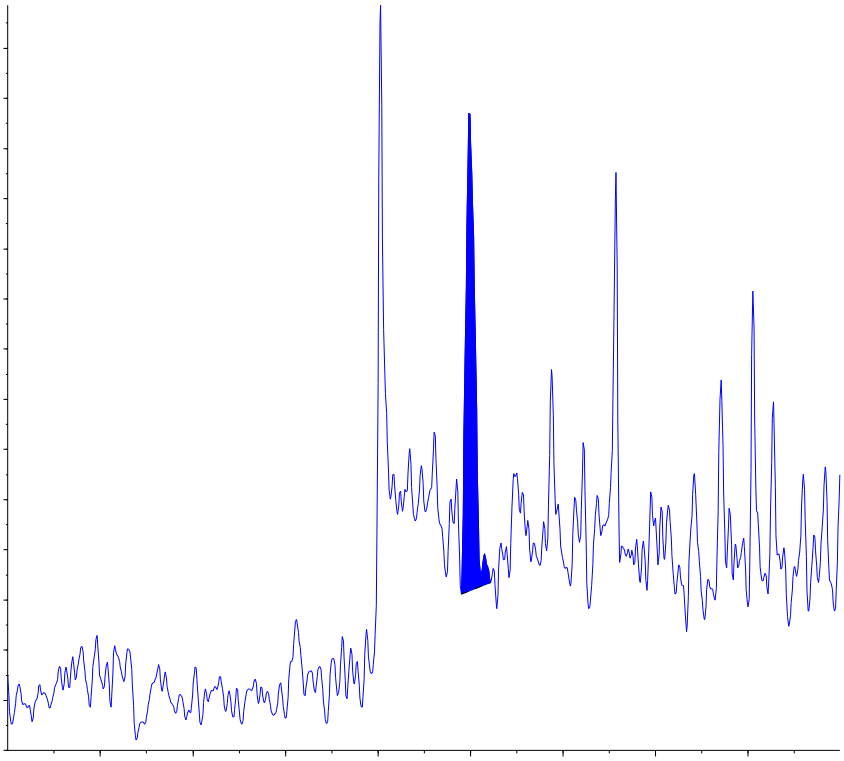

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Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM33244.wiff	**Result Table**	021716_JWR.rdb
Acquisition Date	2/17/2016 7:12:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.54 x + 0.00666 (r = 0.9998)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	88.4	N/A	N/A
0.20	1	0.21	103.3	N/A	N/A
0.50	1	0.51	102.6	N/A	N/A
1.00	1	1.03	103.4	N/A	N/A
2.00	1	2.06	103.1	N/A	N/A
5.00	1	5.03	100.6	N/A	N/A
10.00	1	9.87	98.7	N/A	N/A

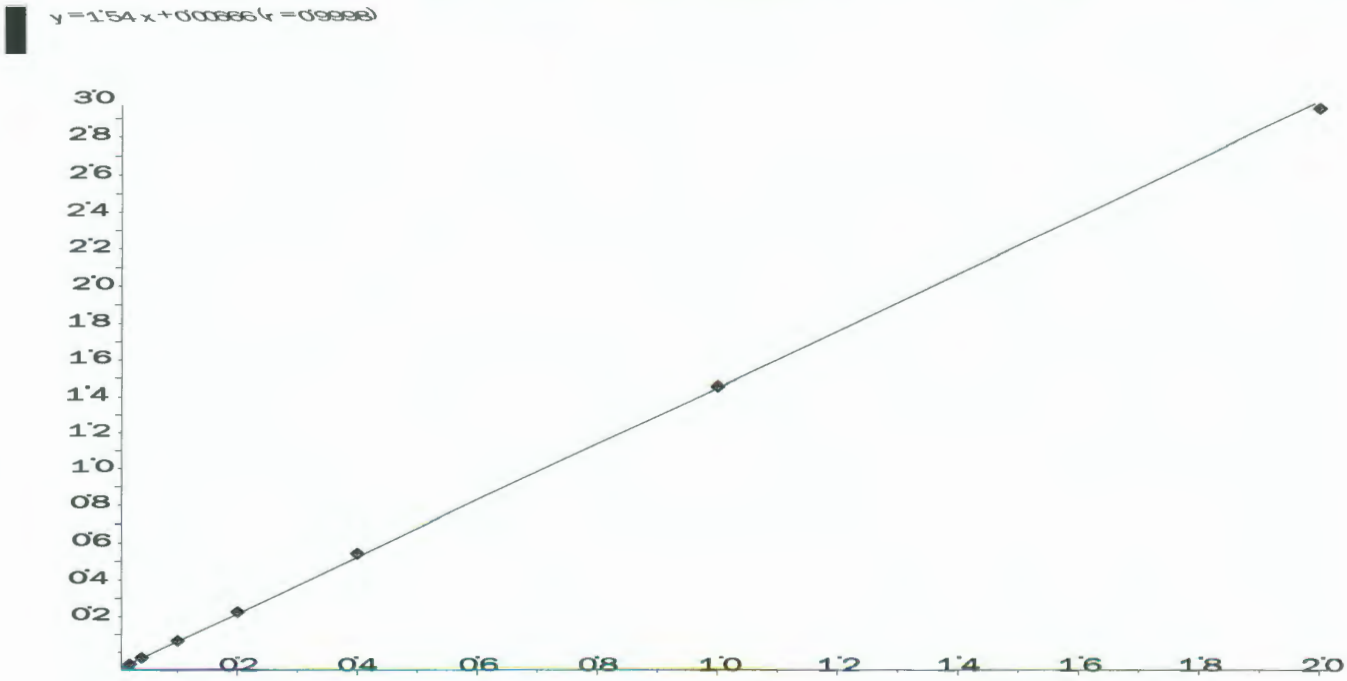

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Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM33244.wiff	**Result Table**	021716_JWR.rdb
Acquisition Date	2/17/2016 7:12:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.557 x + 0.00249 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	90.6	N/A	N/A
0.20	1	0.21	104.9	N/A	N/A
0.50	1	0.51	101.7	N/A	N/A
1.00	1	1.02	102.2	N/A	N/A
2.00	1	2.04	102.1	N/A	N/A
5.00	1	4.93	98.6	N/A	N/A
10.00	1	10.00	100.0	N/A	N/A

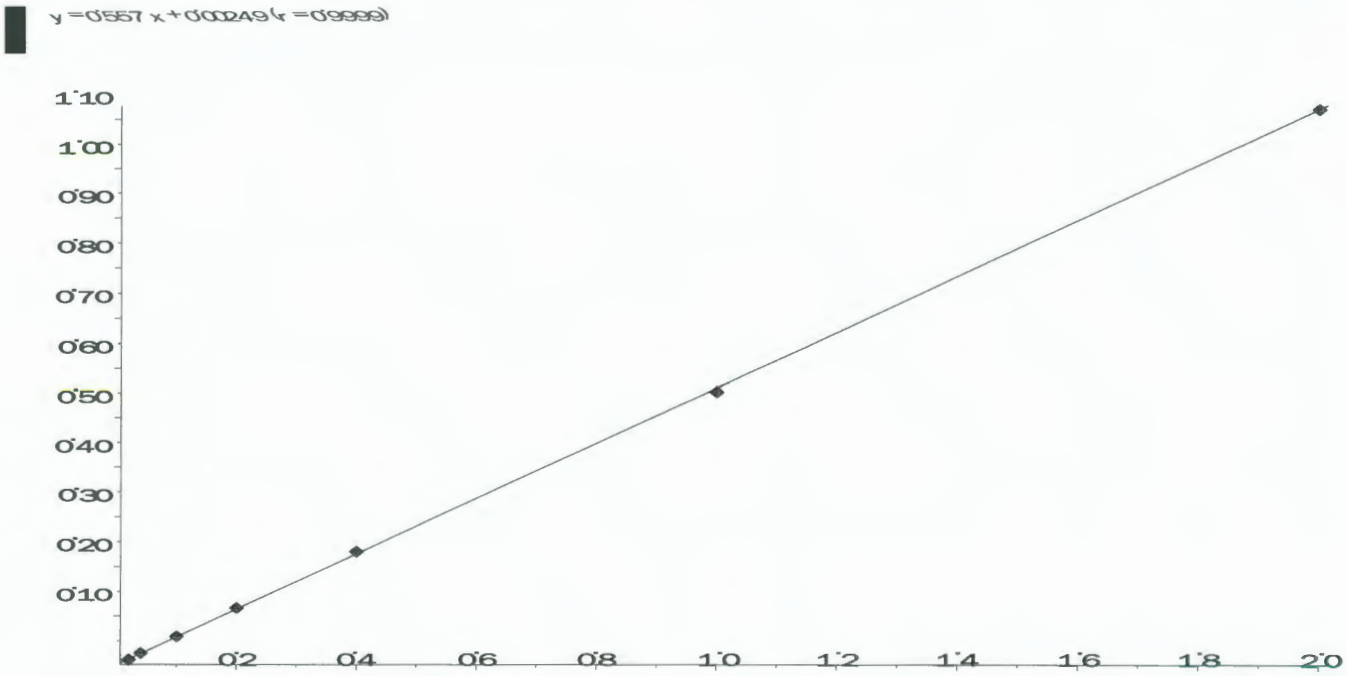

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Data File	LM33245.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/17/2016 7:31:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM33245.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 7:31:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG557856-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.550e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.880e+04	9.94	0.10	0.0884
Perchlorate conf	6.990e+03	9.93	0.10	0.0906

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

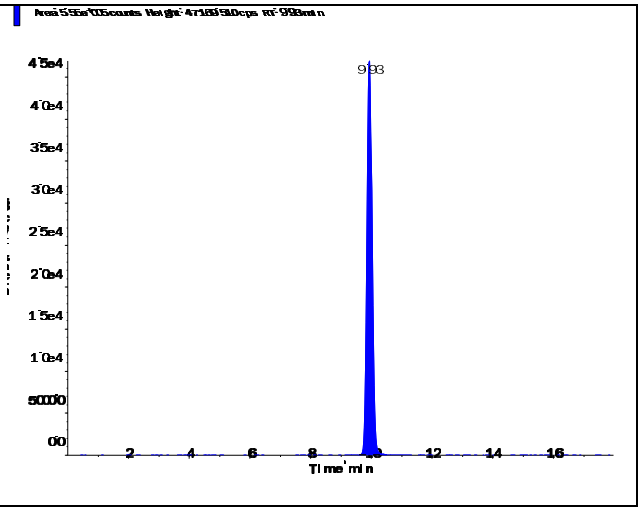

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.0884 ng/ml
Area Ratio:	0.034
Sample Type:	(Standard)

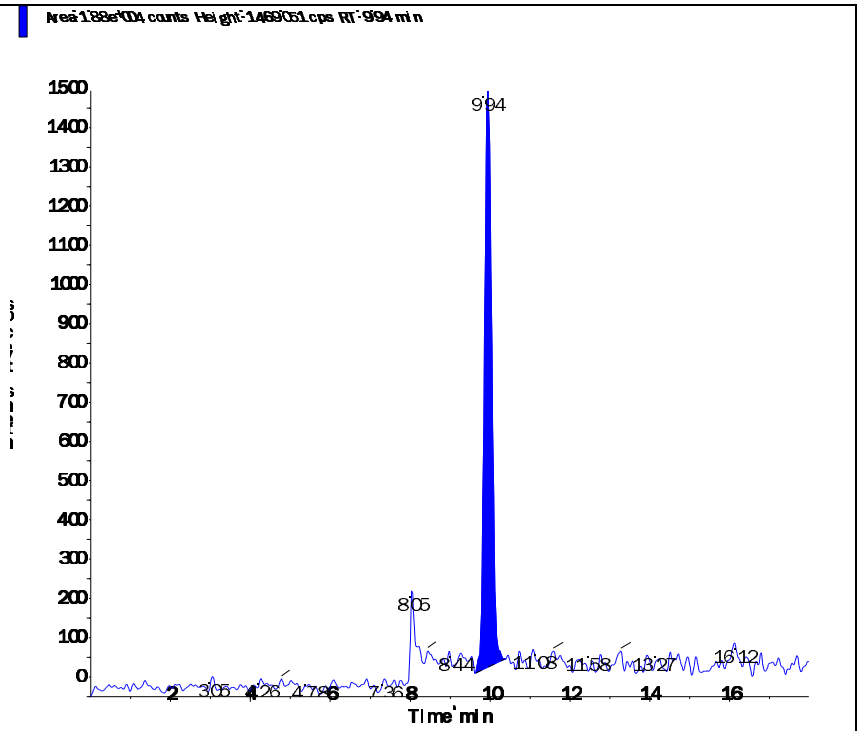

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	0.0906 ng/ml
Area Ratio:	0.013
Sample Type:	(Standard)

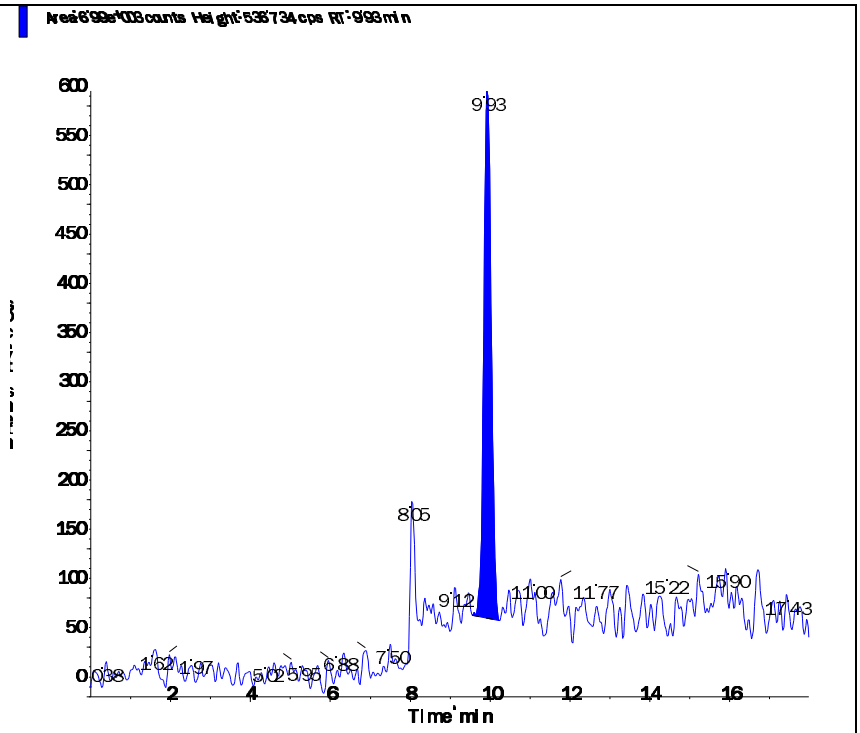

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Data File	LM33246.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/17/2016 7:50:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM33246.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 7:50:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG557856-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.510e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.870e+04	9.94	0.20	0.207
Perchlorate conf	1.420e+04	9.93	0.20	0.21

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

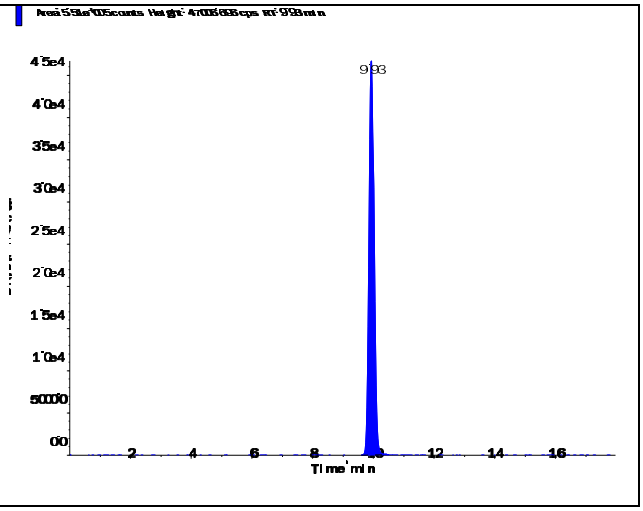

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.07
Sample Type:	(Standard)

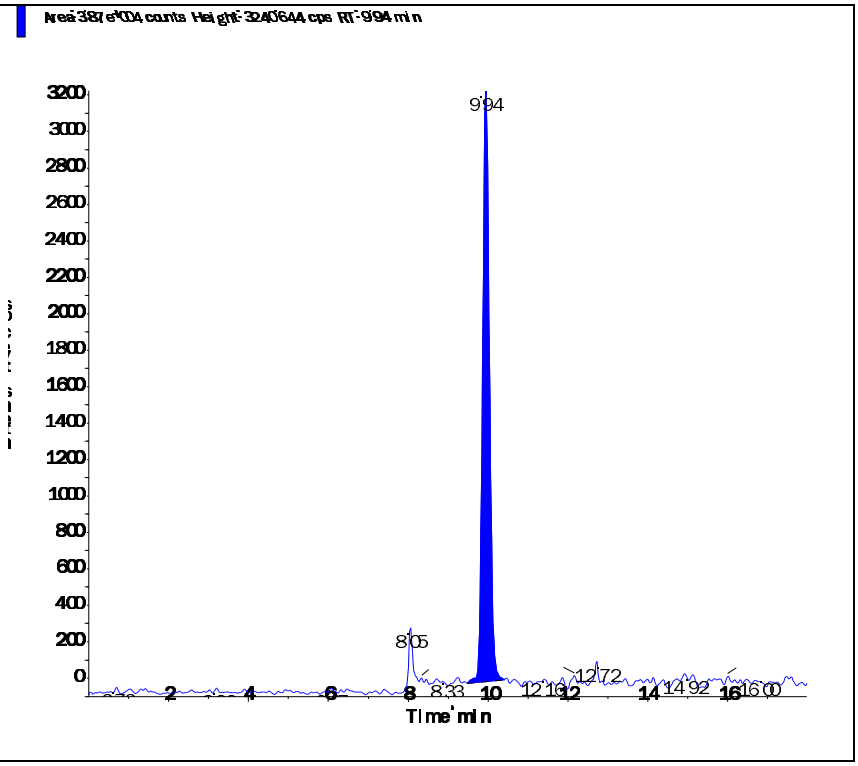

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.026
Sample Type:	(Standard)

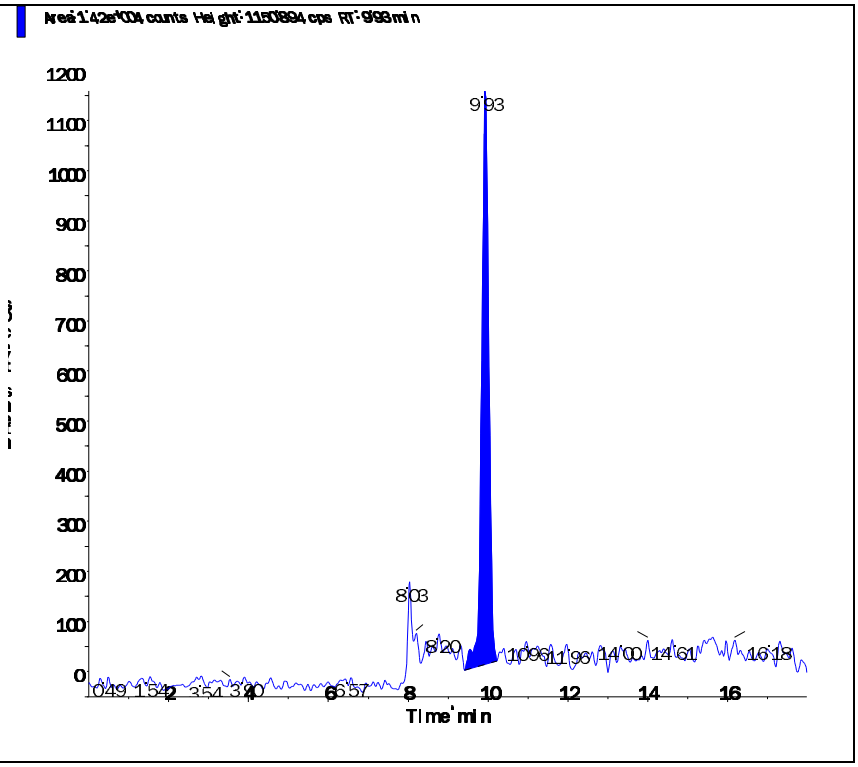

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Printed: 2/27/2016 1:55 PM

Data File	LM33247.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/17/2016 8:08:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM33247.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 8:08:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG557856-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.560e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	9.140e+04	9.94	0.50	0.513
Perchlorate conf	3.290e+04	9.93	0.50	0.508

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

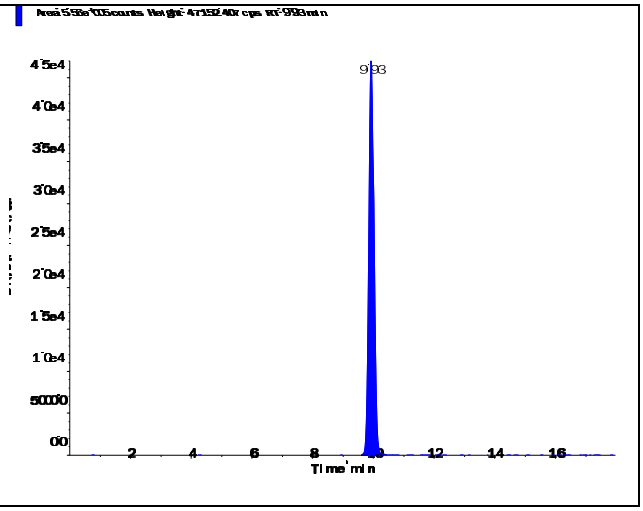

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.513 ng/ml
Area Ratio:	0.164
Sample Type:	(Standard)

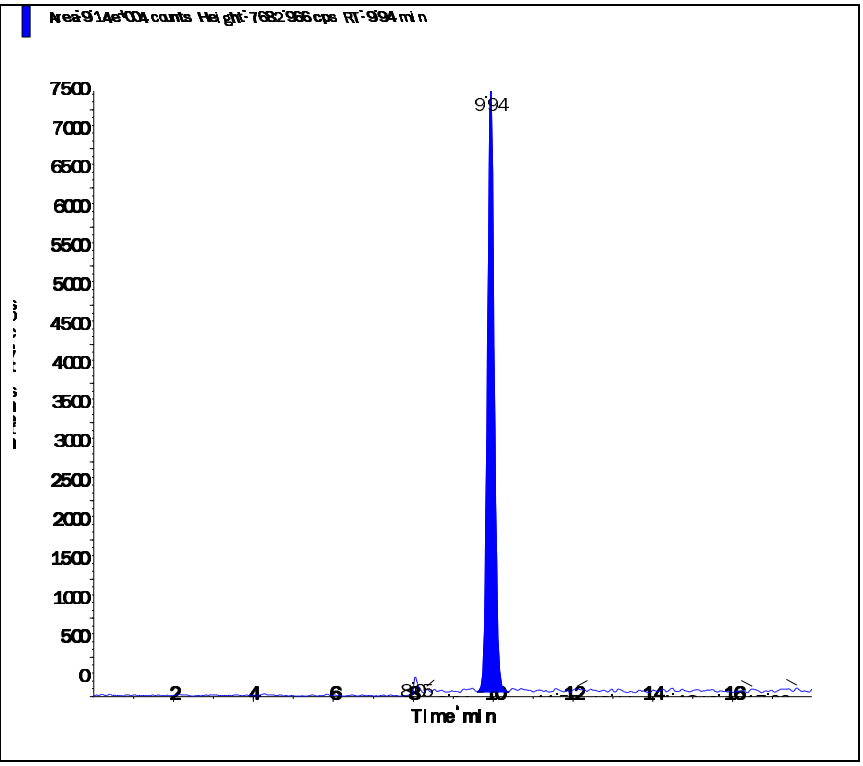

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	0.508 ng/ml
Area Ratio:	0.059
Sample Type:	(Standard)

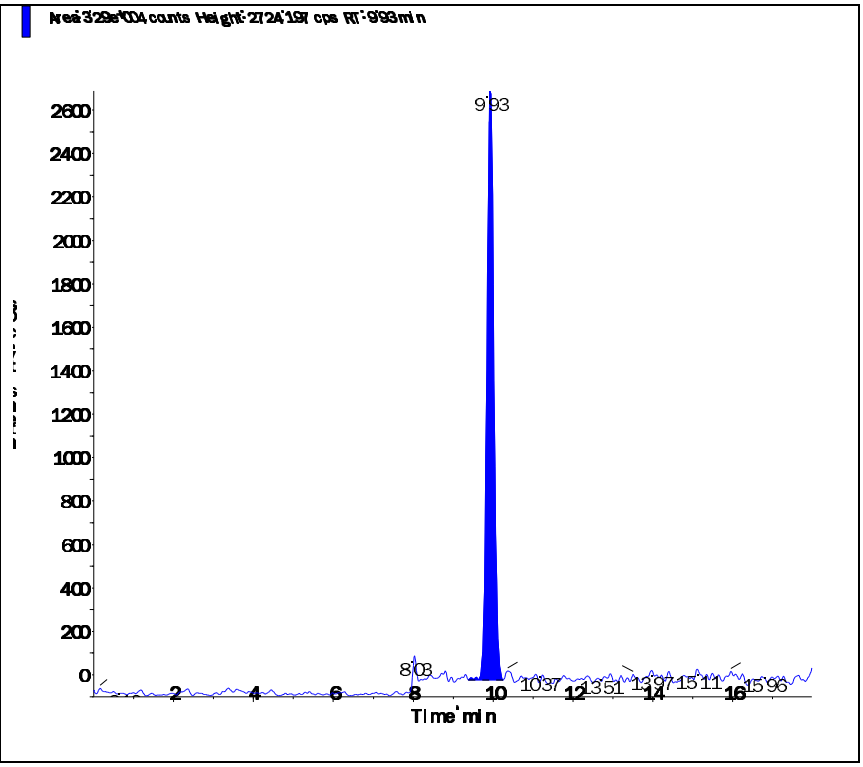

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Data File	LM33248.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/17/2016 8:27:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM33248.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 8:27:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG557856-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.490e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.780e+05	9.95	1.00	1.03
Perchlorate conf	6.390e+04	9.94	1.00	1.02

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

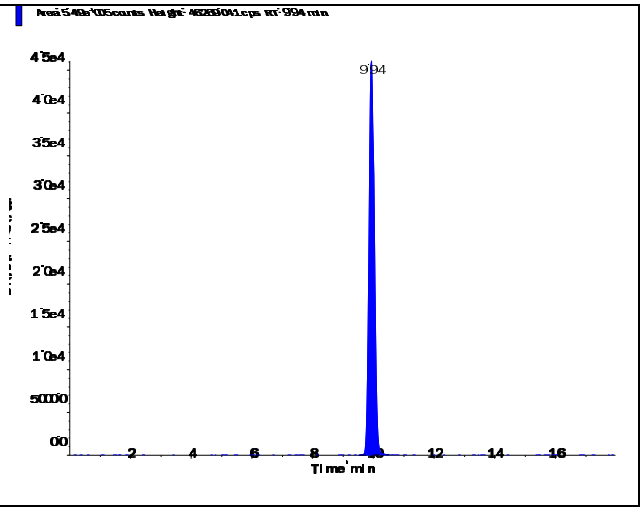

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.95 (9.94) min Calculated conc: 1.03 ng/ml Area Ratio: 0.325 Sample Type: (Standard)	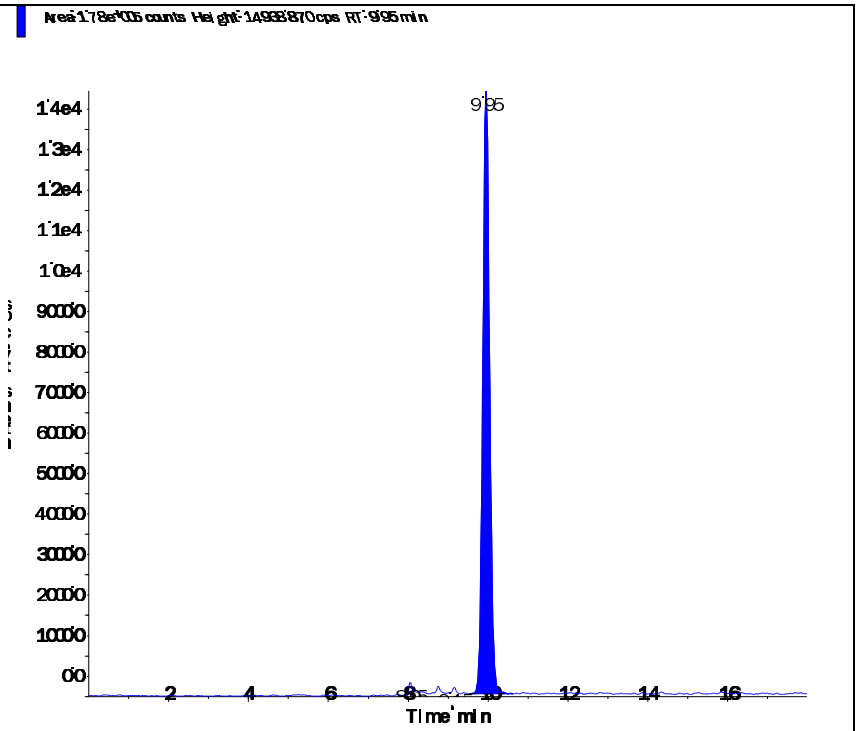
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.94 (9.92) min Calculated conc: 1.02 ng/ml Area Ratio: 0.116 Sample Type: (Standard)	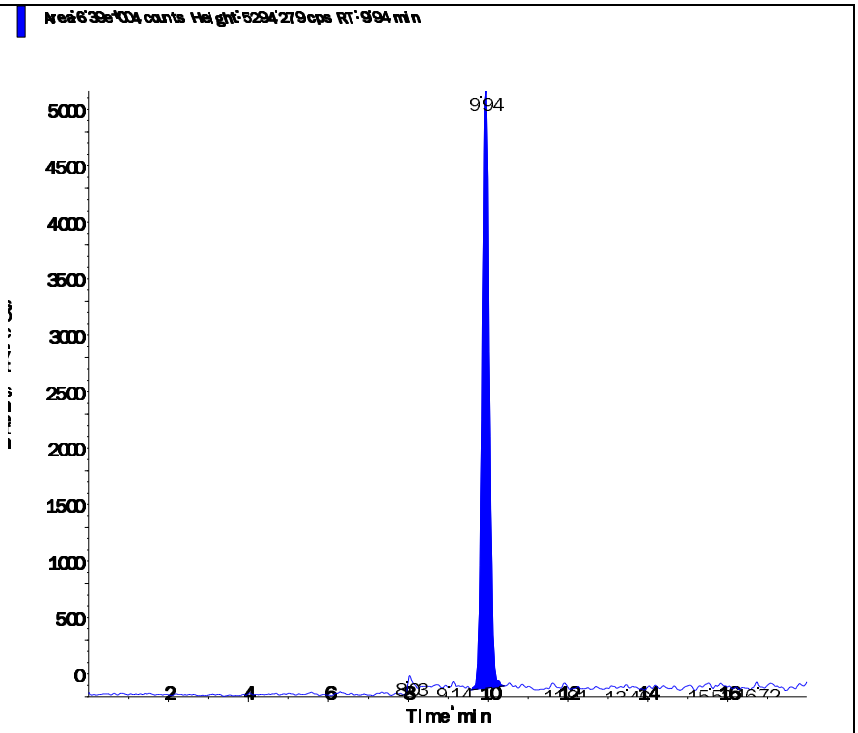

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Data File	LM33249.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/17/2016 8:46:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM33249.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 8:46:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG557856-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.460e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.500e+05	9.94	2.00	2.06
Perchlorate conf	1.260e+05	9.93	2.00	2.04

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

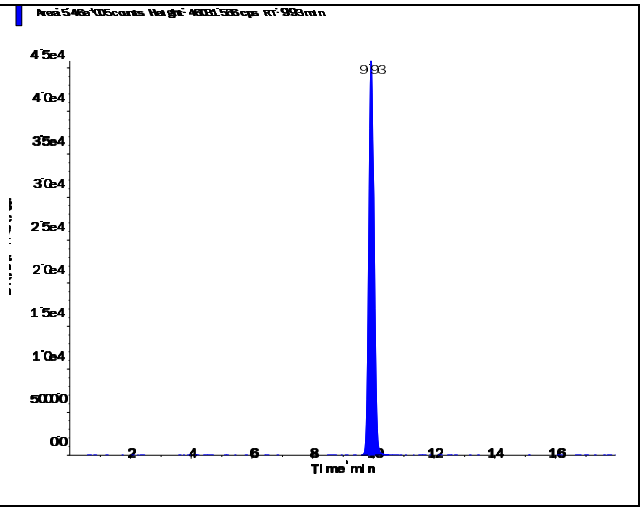

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	2.06 ng/ml
Area Ratio:	0.641
Sample Type:	(Standard)

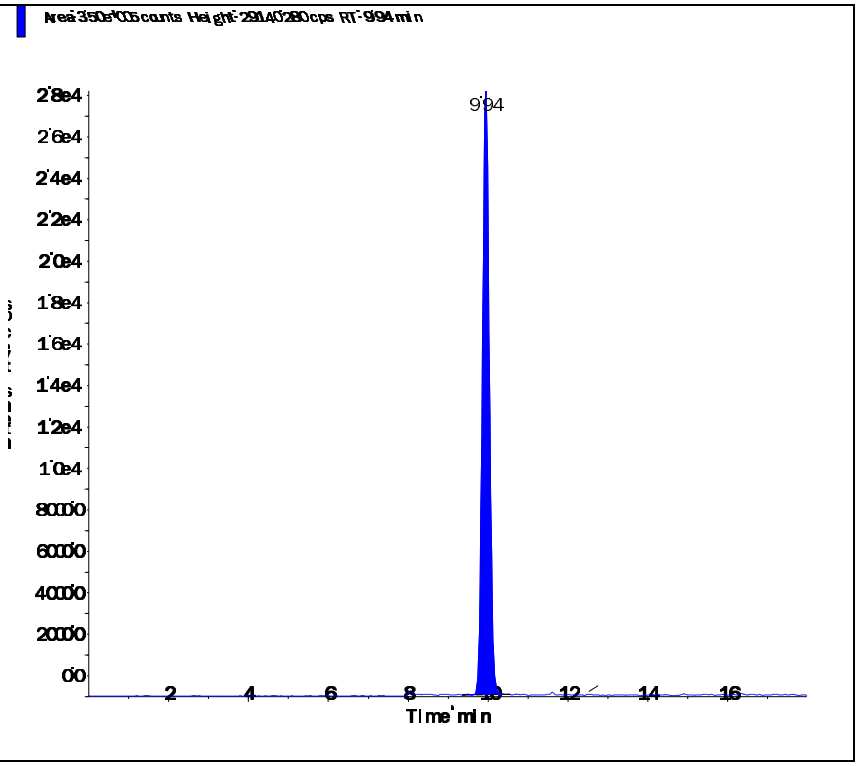

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	2.04 ng/ml
Area Ratio:	0.23
Sample Type:	(Standard)

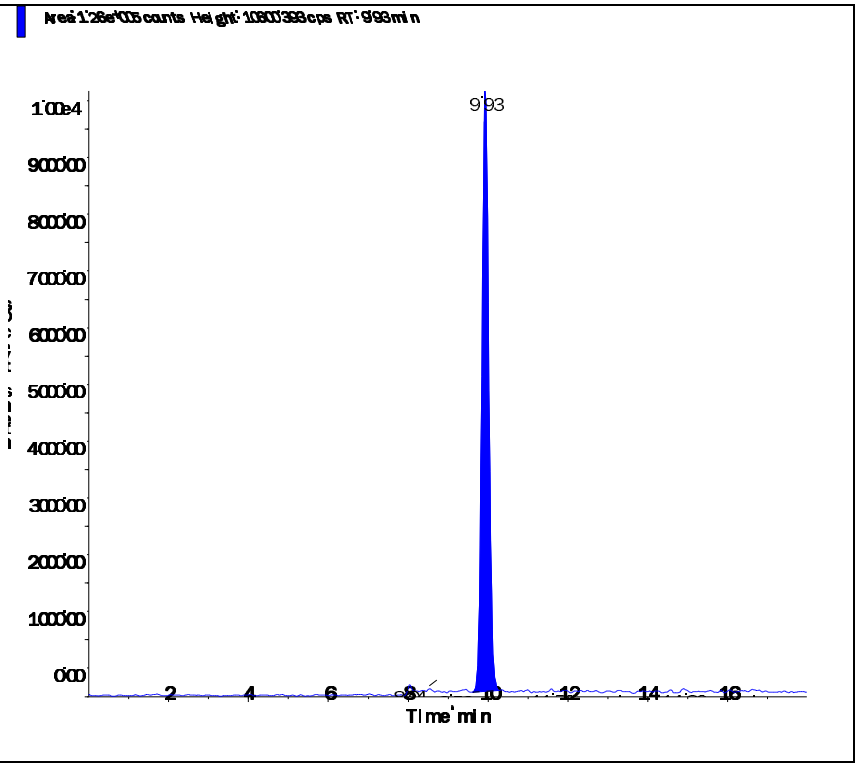

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Data File	LM33250.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/17/2016 9:05:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM33250.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 9:05:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG557856-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.320e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.260e+05	9.96	5.00	5.03
Perchlorate conf	2.930e+05	9.94	5.00	4.93

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

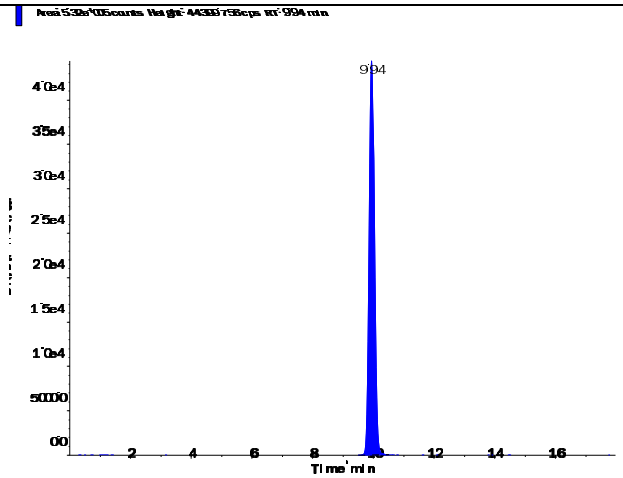

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	5.03 ng/ml
Area Ratio:	1.554
Sample Type:	(Standard)

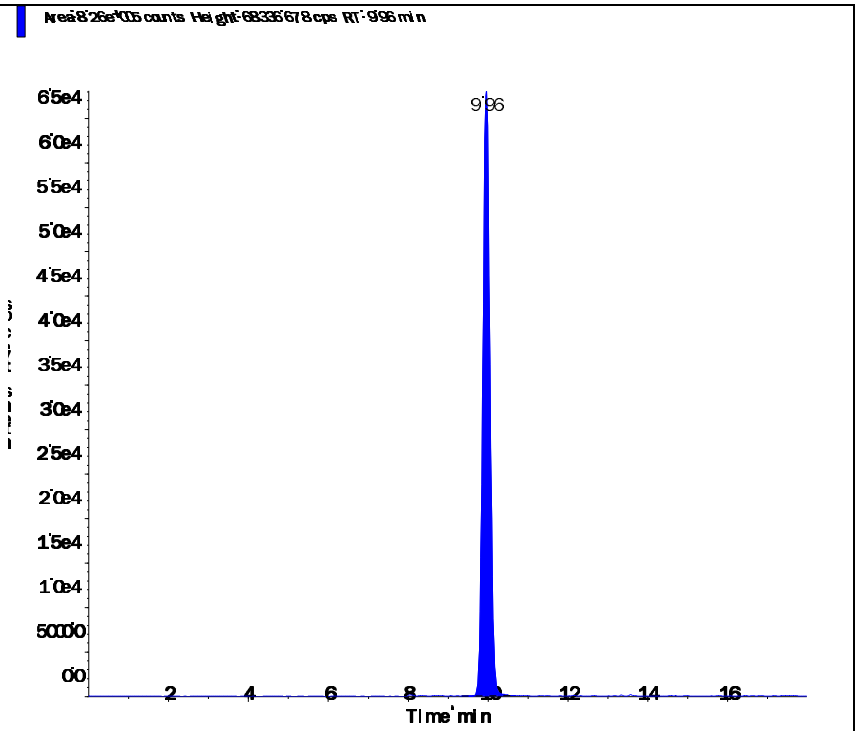

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	4.93 ng/ml
Area Ratio:	0.552
Sample Type:	(Standard)

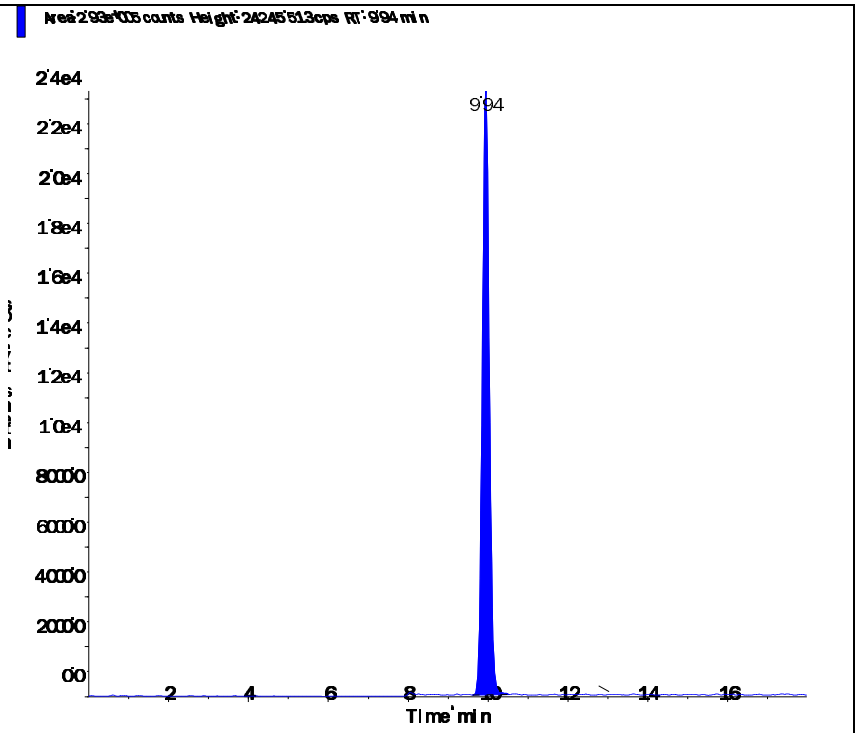

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Data File	LM33251.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/17/2016 9:24:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM33251.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 9:24:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG557856-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.030e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.94	10.00	9.87
Perchlorate conf	5.620e+05	9.93	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

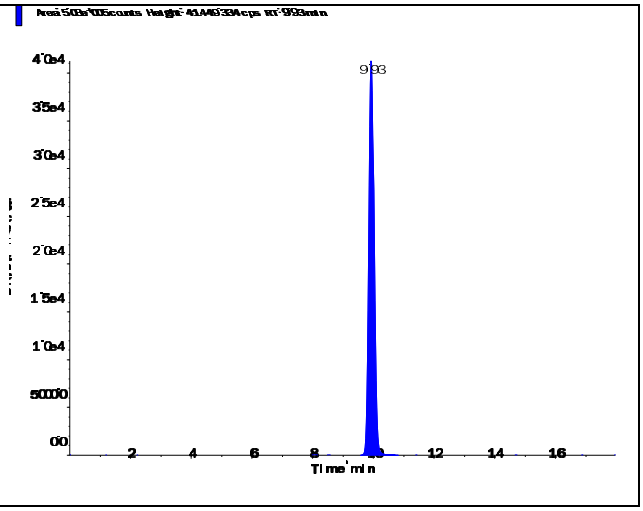

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	9.87 ng/ml
Area Ratio:	3.043
Sample Type:	(Standard)

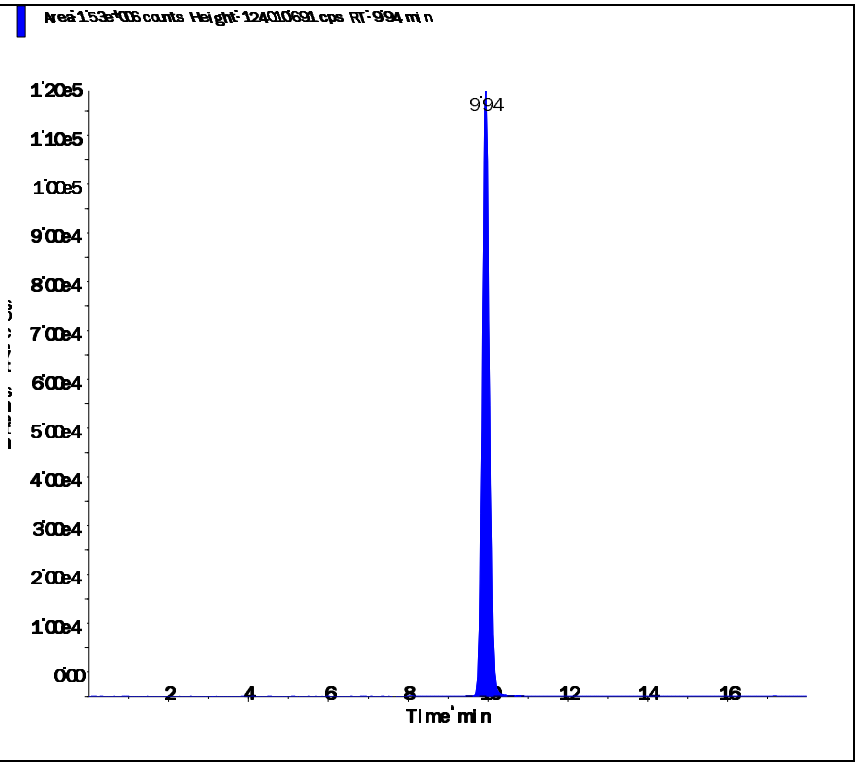

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	10.00 ng/ml
Area Ratio:	1.117
Sample Type:	(Standard)

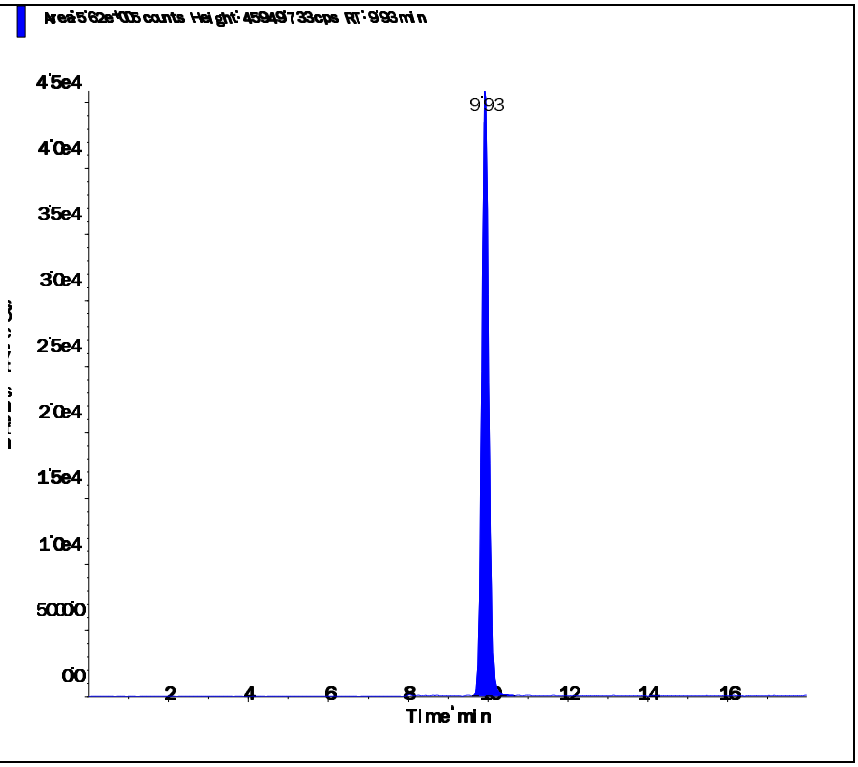

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Data File	LM33252.wiff	**Result Table**	021716_JWR.rdb
Acquisition Date	2/17/2016 9:43:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM33252.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 9:43:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	021716_JWR.rdb
Sample ID	WG557856-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.420e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+05	9.93	1.00	1.05
Perchlorate conf	6.360e+04	9.92	1.00	1.03

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

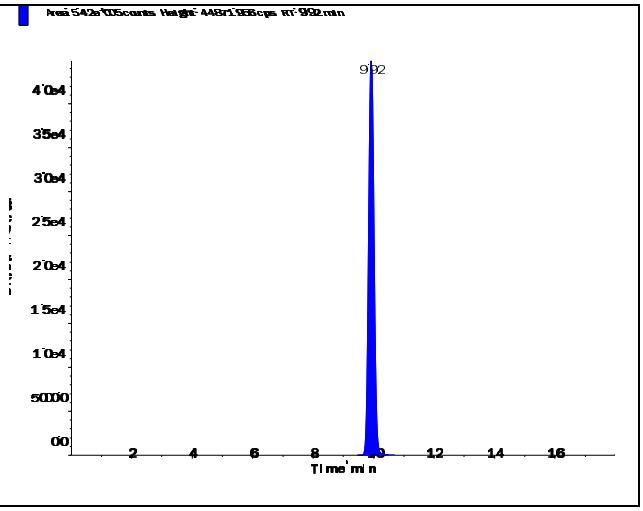

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.33
Sample Type:	(Quality Control)

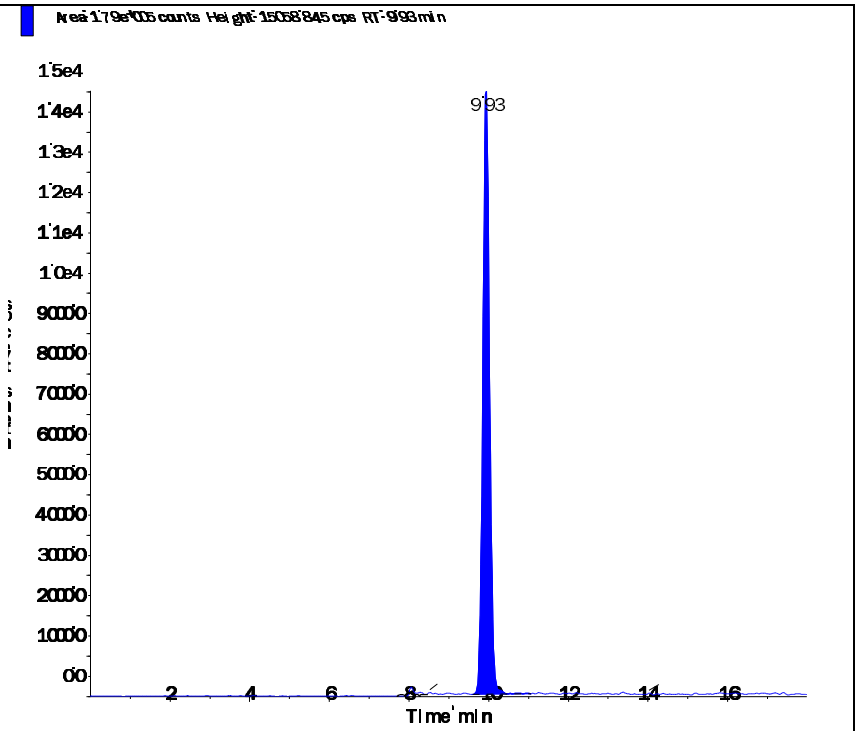

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.117
Sample Type:	(Quality Control)

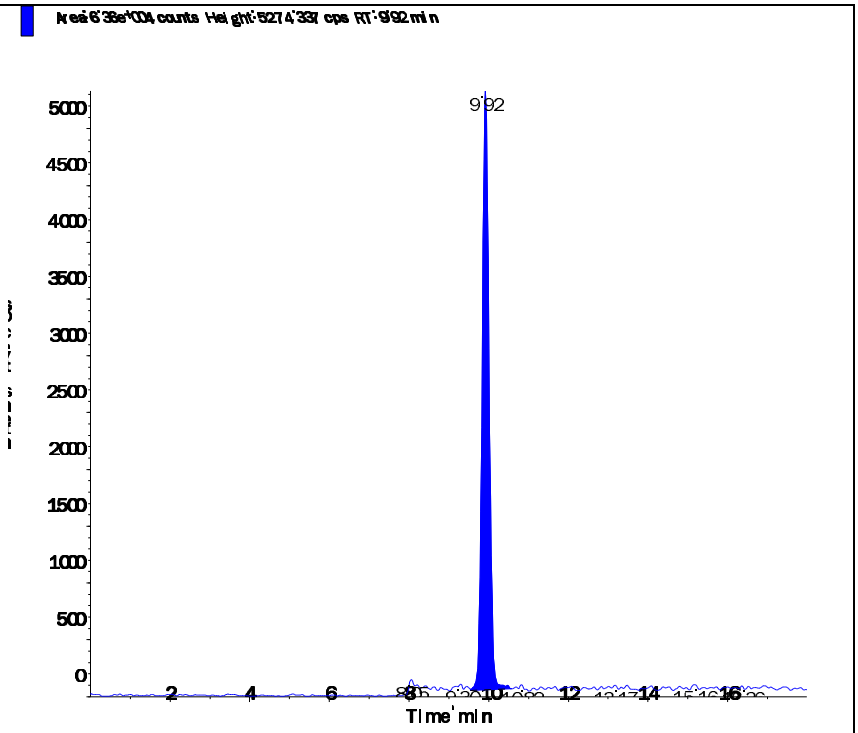

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Data File	LM33415.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/26/2016 10:30:47 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558989-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33415.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 10:30:47 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG558989-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.340e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.840e+05	9.99	1.00	1.10
Perchlorate conf	6.070e+04	9.98	1.00	0.996

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

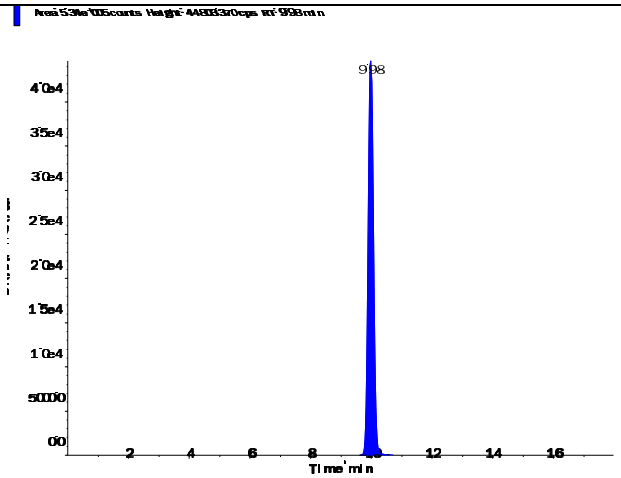

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.99 (9.94) min Calculated conc: 1.10 ng/ml Area Ratio: 0.344 Sample Type: (Quality Control)	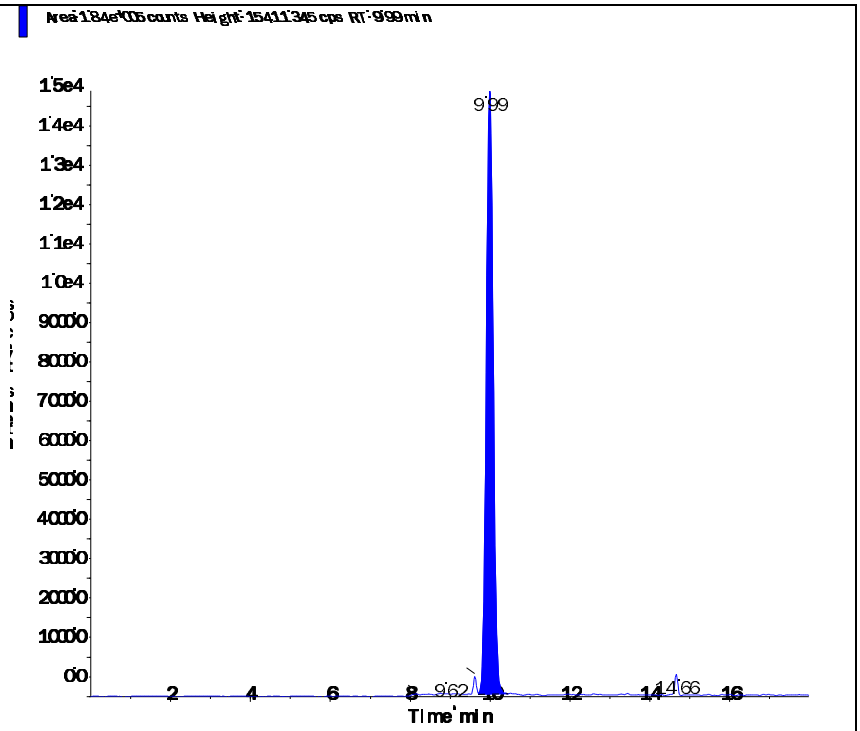
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.98 (9.92) min Calculated conc: 0.996 ng/ml Area Ratio: 0.114 Sample Type: (Quality Control)	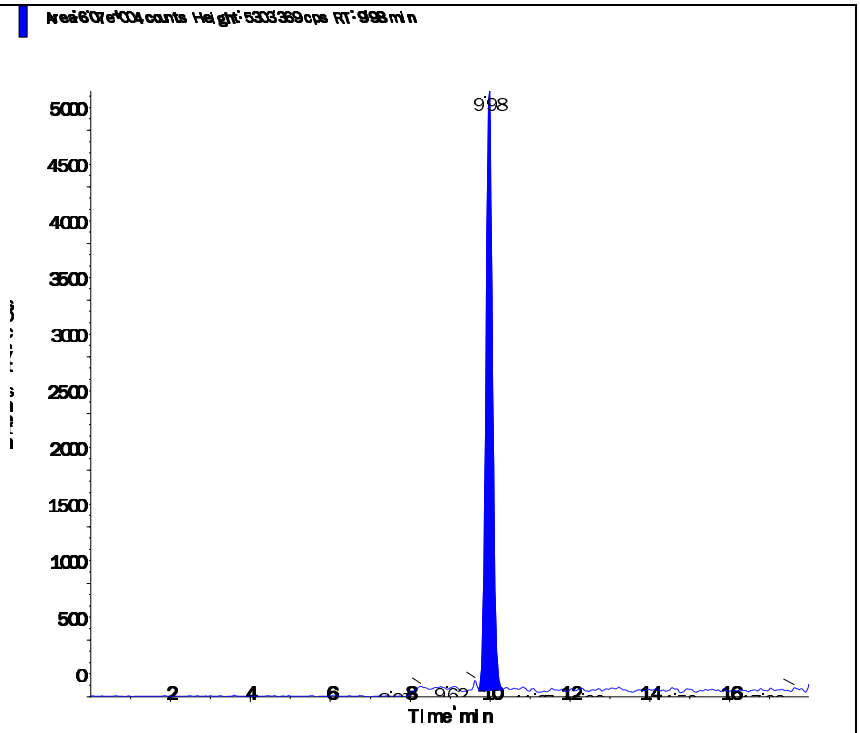

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Data File	LM33429.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/27/2016 2:55:51 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558989-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33429.wiff	**Injection Volume**	10.00
Acquisition Date	2/27/2016 2:55:51 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG558989-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.620e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.930e+05	9.98	1.00	1.10
Perchlorate conf	6.300e+04	9.96	1.00	0.983

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

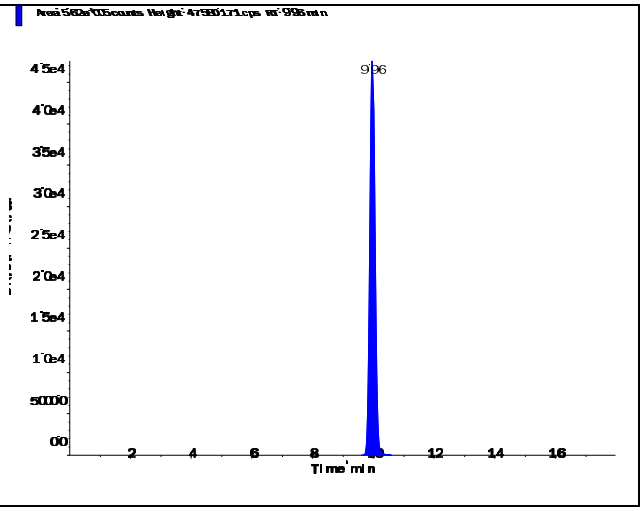

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.98 (9.94) min
Calculated conc:	1.10 ng/ml
Area Ratio:	0.344
Sample Type:	(Quality Control)

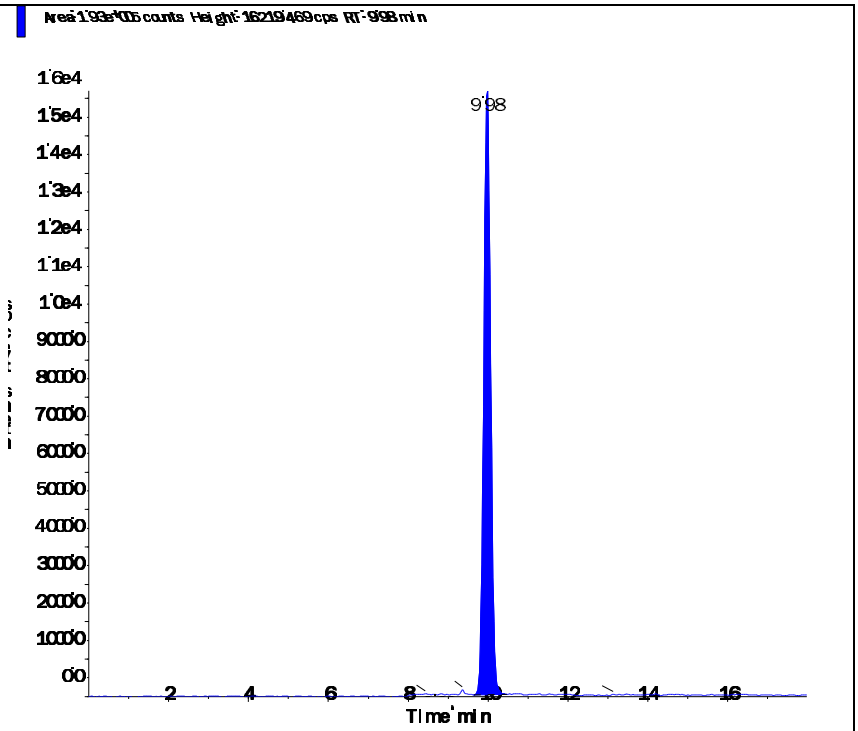

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.96 (9.92) min
Calculated conc:	0.983 ng/ml
Area Ratio:	0.112
Sample Type:	(Quality Control)

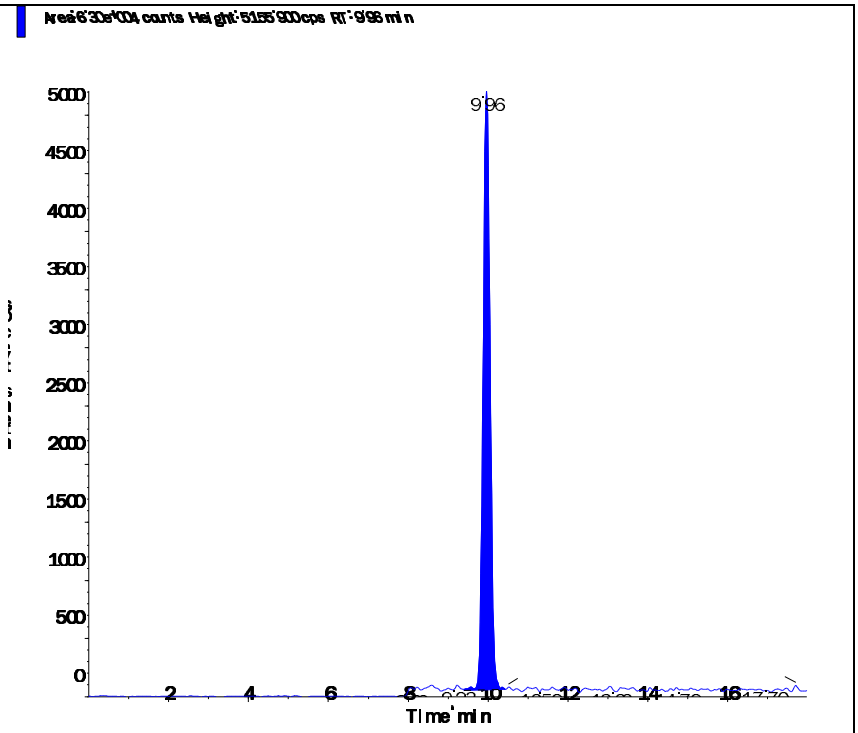

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Data File	LM33432.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/27/2016 10:38:29 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558989-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33432.wiff	**Injection Volume**	10.00
Acquisition Date	2/27/2016 10:38:29 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG558989-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.230e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.95	1.00	1.02
Perchlorate conf	5.590e+04	9.93	1.00	0.935

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

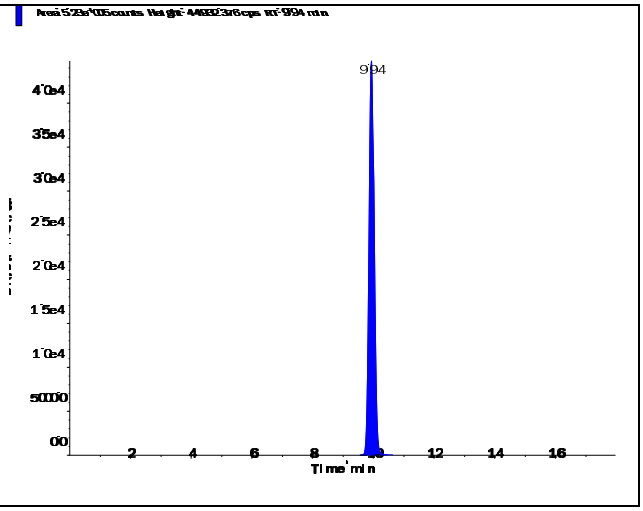

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.321
Sample Type:	(Quality Control)

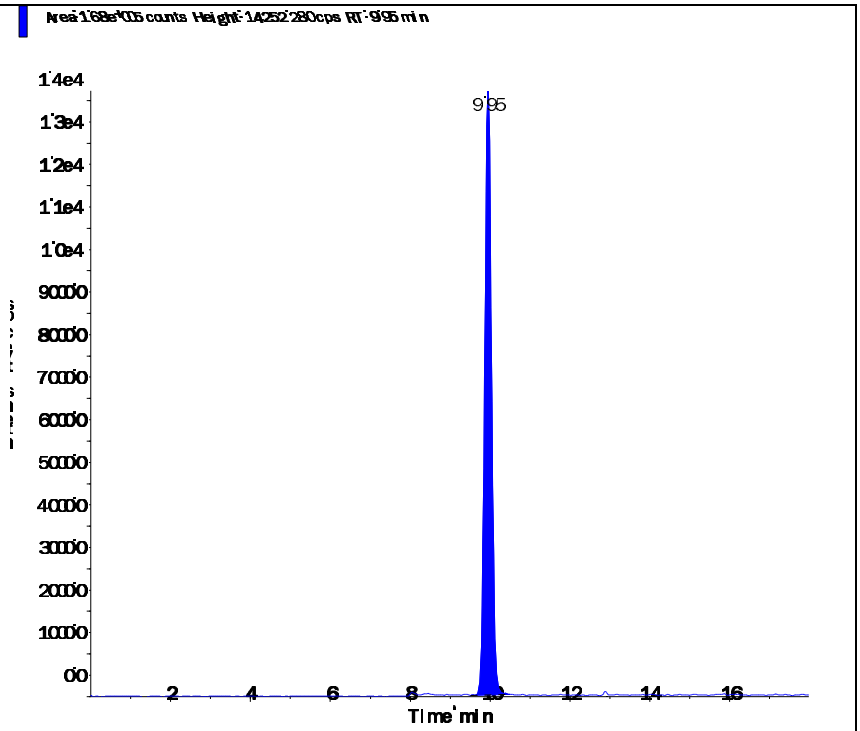

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	0.935 ng/ml
Area Ratio:	0.107
Sample Type:	(Quality Control)

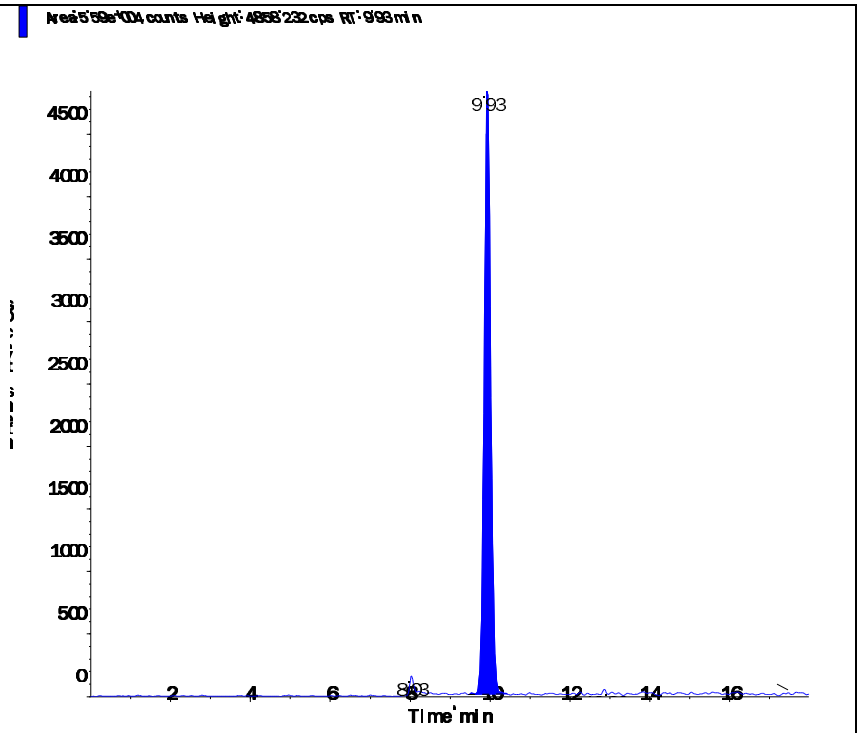

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Data File	LM33436.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/27/2016 11:54:11 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558989-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33436.wiff	**Injection Volume**	10.00
Acquisition Date	2/27/2016 11:54:11 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG558989-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.420e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.780e+05	9.97	1.00	1.05
Perchlorate conf	5.770e+04	9.96	1.00	0.931

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

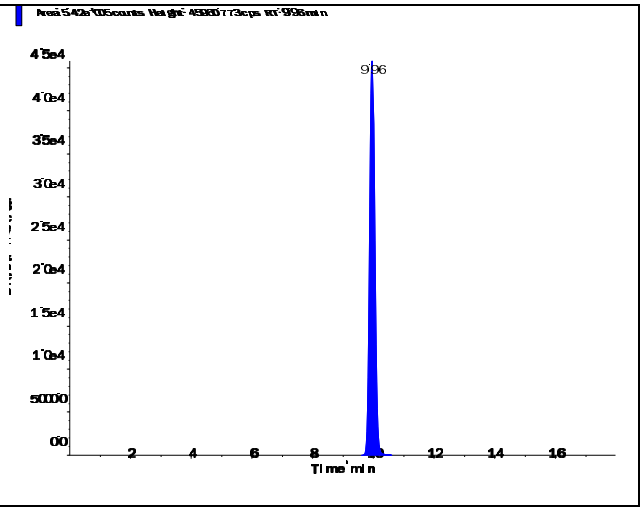

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.97 (9.94) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.329
Sample Type:	(Quality Control)

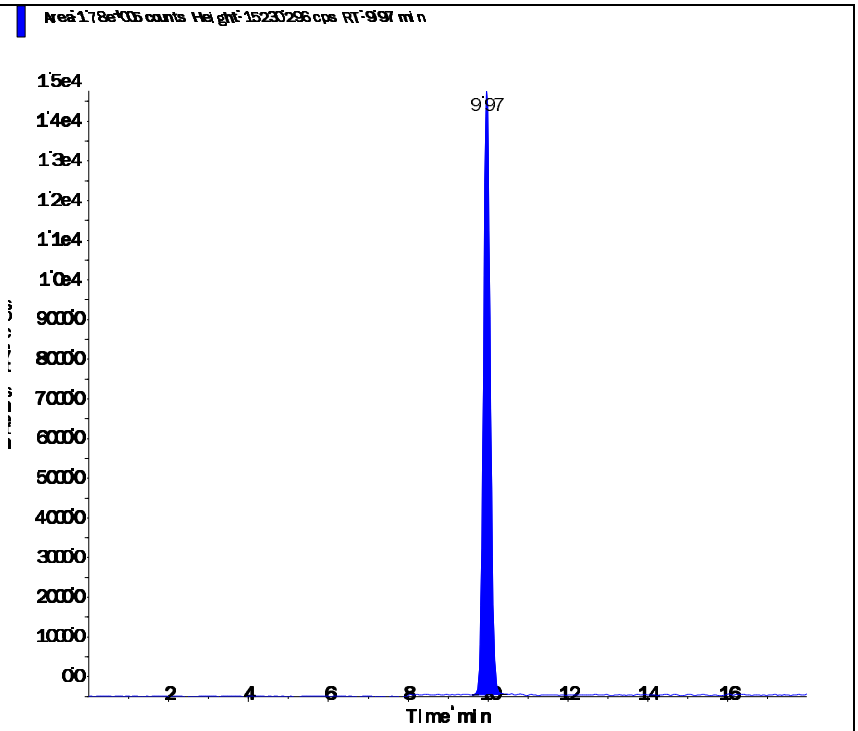

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.96 (9.92) min
Calculated conc:	0.931 ng/ml
Area Ratio:	0.106
Sample Type:	(Quality Control)

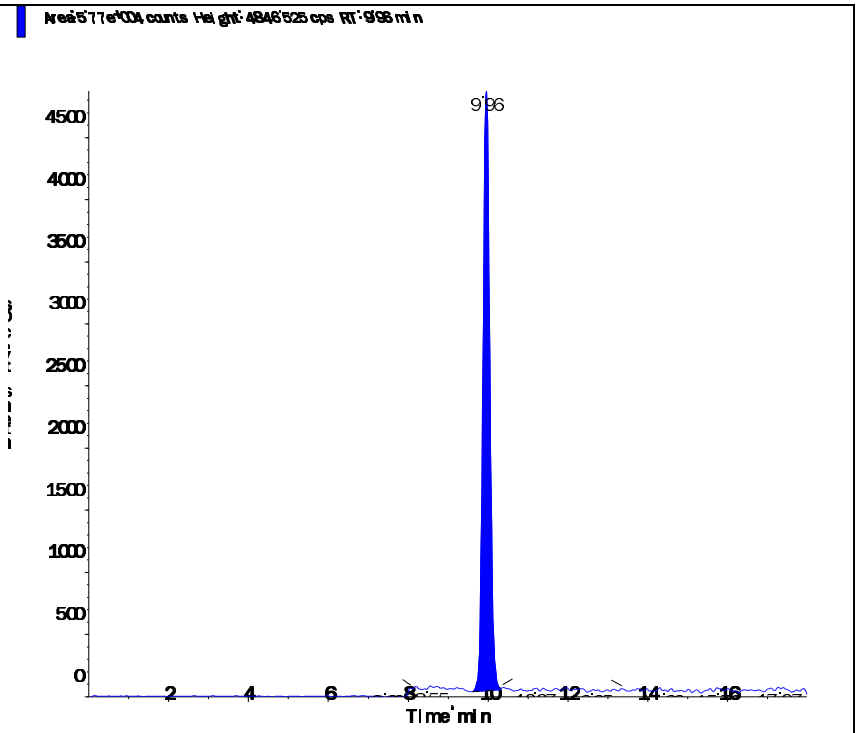

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Data File	LM33418.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/26/2016 11:27:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558991-07 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33418.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 11:27:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG558991-07	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.480e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.920e+04	9.99	N/A	0.211
Perchlorate conf	1.290e+04	9.97	N/A	0.188

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

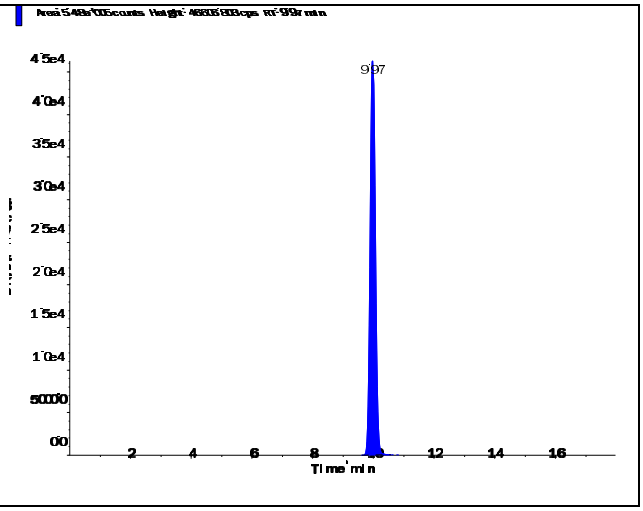

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.99 (9.94) min
Calculated conc:	0.211 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

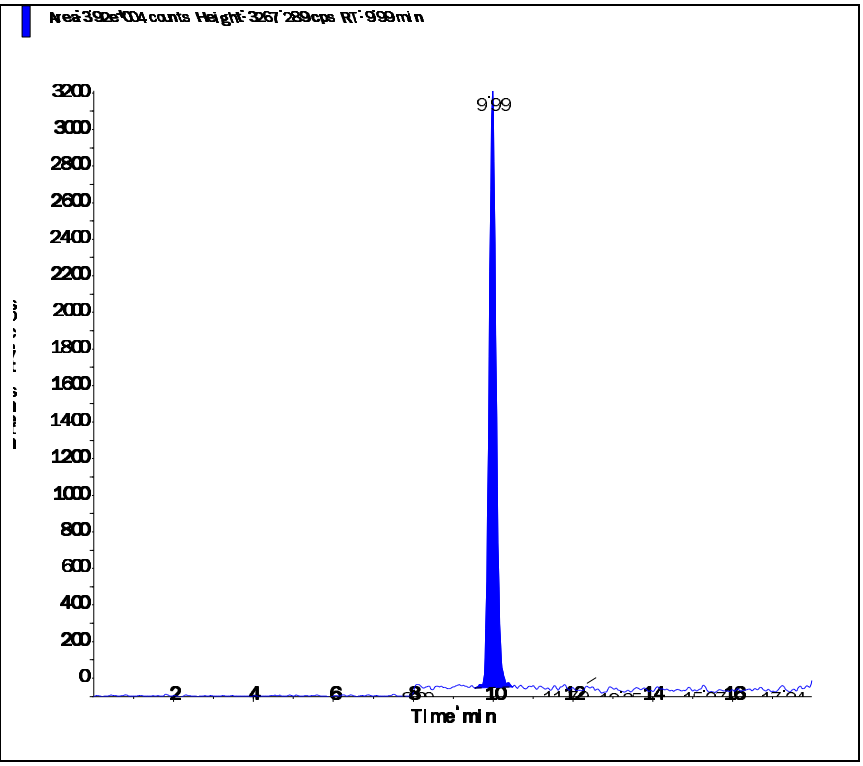

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.97 (9.92) min
Calculated conc:	0.188 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

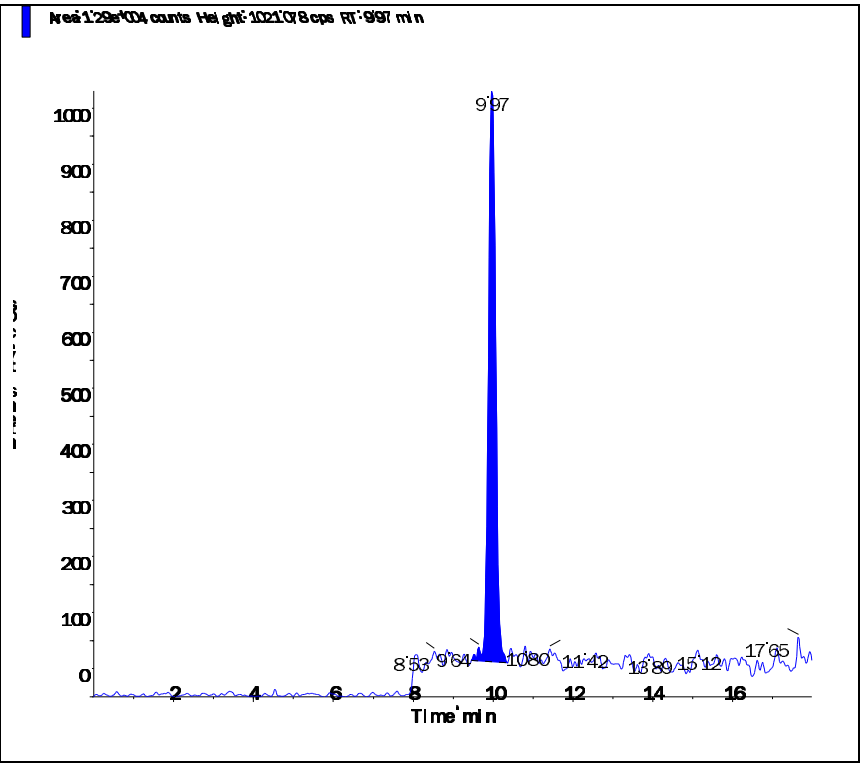

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Data File	LM33430.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/27/2016 3:14:47 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558991-08 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33430.wiff	**Injection Volume**	10.00
Acquisition Date	2/27/2016 3:14:47 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG558991-08	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.700e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.160e+04	9.96	N/A	0.215
Perchlorate conf	1.420e+04	9.94	N/A	0.201

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

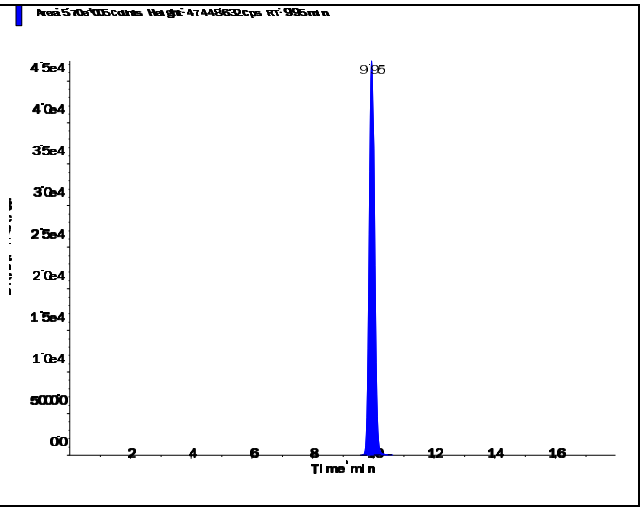

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.96 (9.94) min Calculated conc: 0.215 ng/ml Area Ratio: 0.073 Sample Type: (Unknown)	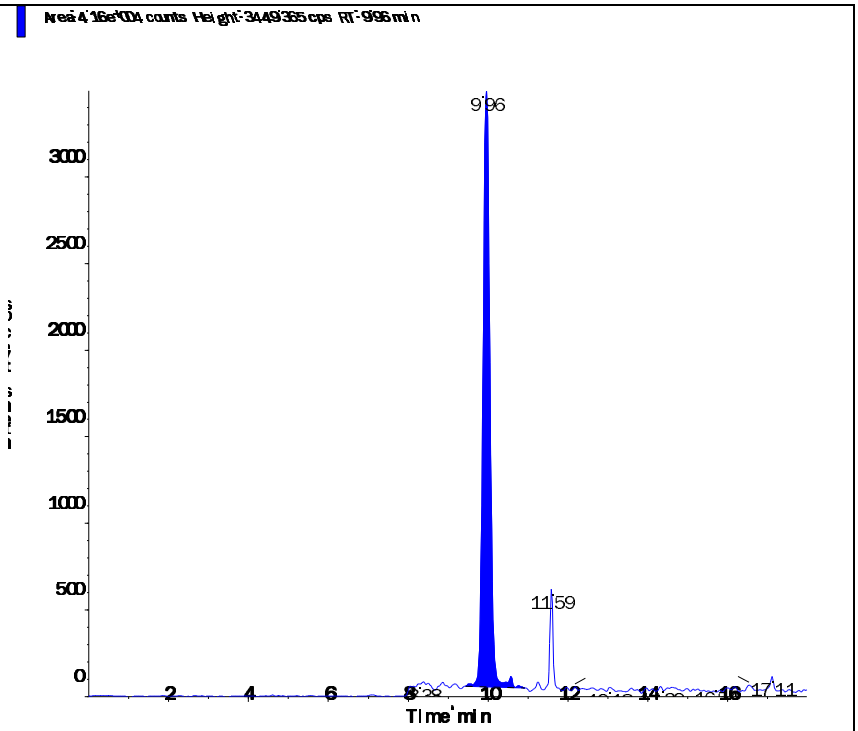
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.94 (9.92) min Calculated conc: 0.201 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	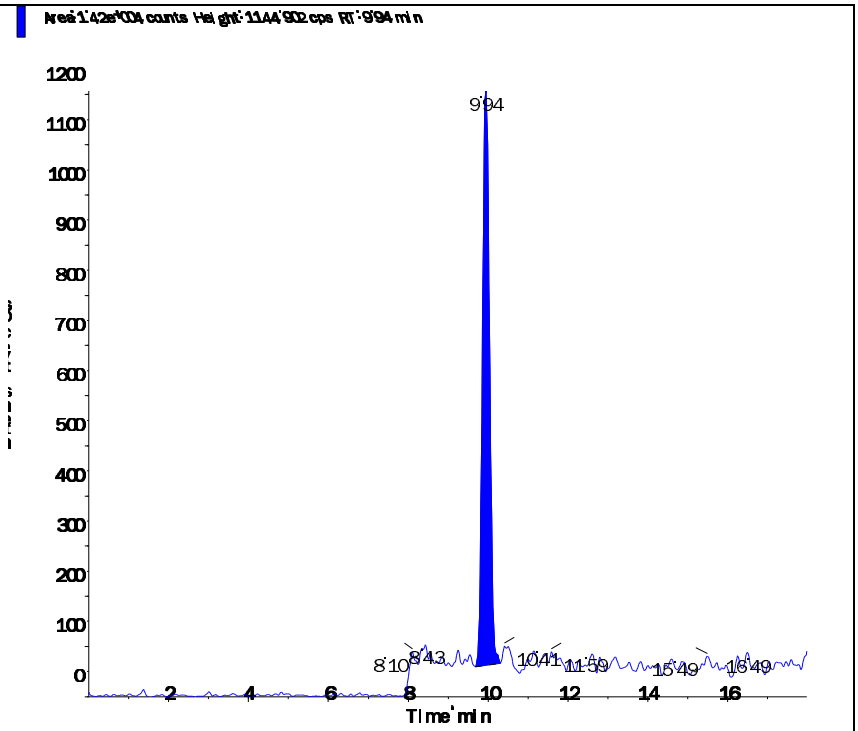

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Data File	LM33433.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/27/2016 10:57:24 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558991-09 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33433.wiff	**Injection Volume**	10.00
Acquisition Date	2/27/2016 10:57:24 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG558991-09	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.320e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.800e+04	9.95	N/A	0.21
Perchlorate conf	1.270e+04	9.94	N/A	0.192

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

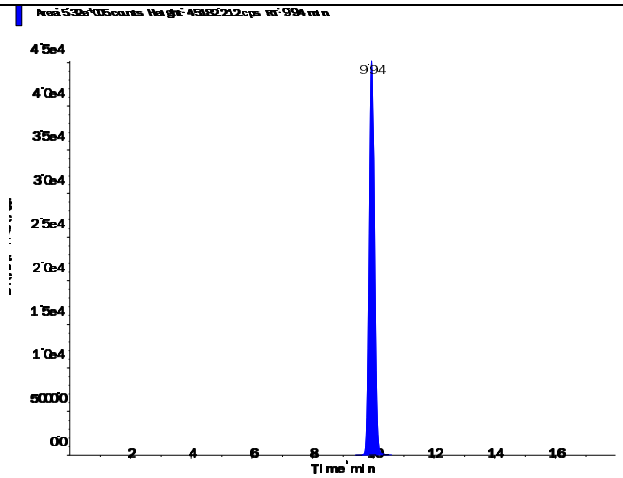

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.95 (9.94) min Calculated conc: 0.21 ng/ml Area Ratio: 0.071 Sample Type: (Unknown)	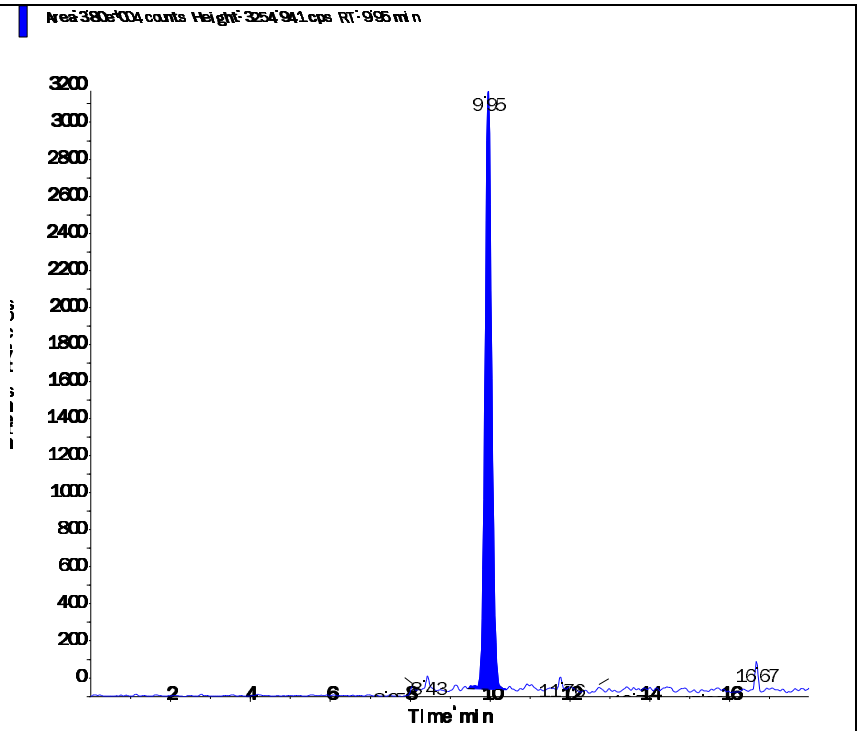
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.94 (9.92) min Calculated conc: 0.192 ng/ml Area Ratio: 0.024 Sample Type: (Unknown)	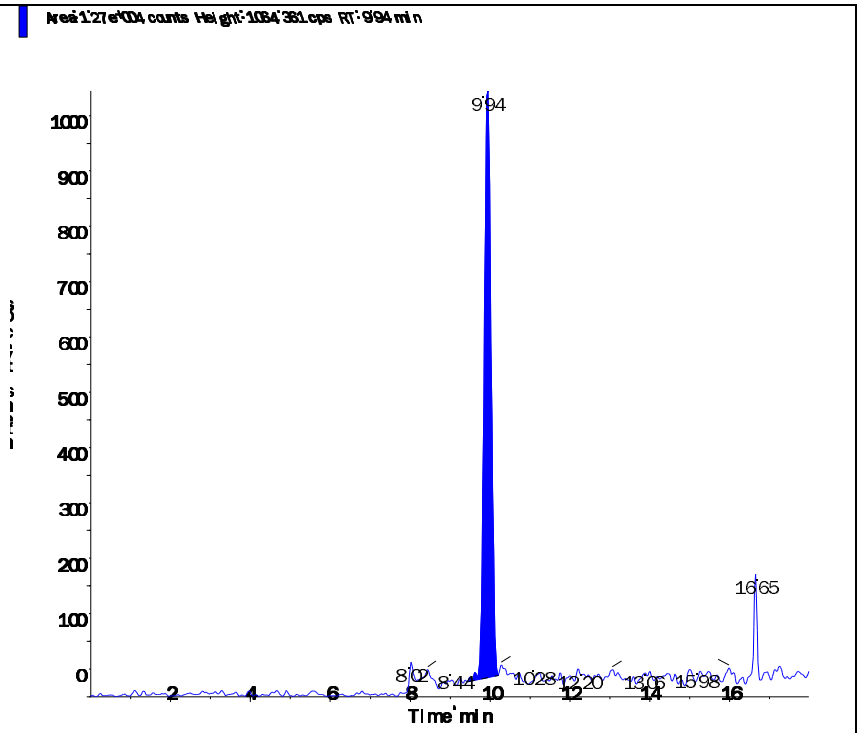

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Data File	LM33437.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/27/2016 12:13:07 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558991-10 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33437.wiff	**Injection Volume**	10.00
Acquisition Date	2/27/2016 12:13:07 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG558991-10	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.330e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.830e+04	9.97	N/A	0.212
Perchlorate conf	1.290e+04	9.95	N/A	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

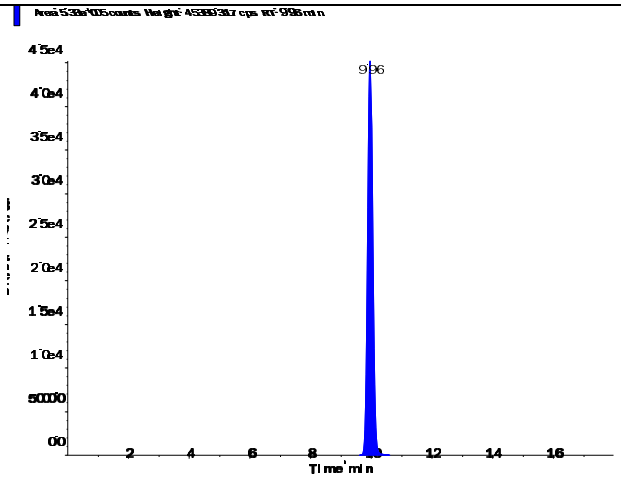

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.97 (9.94) min
Calculated conc:	0.212 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

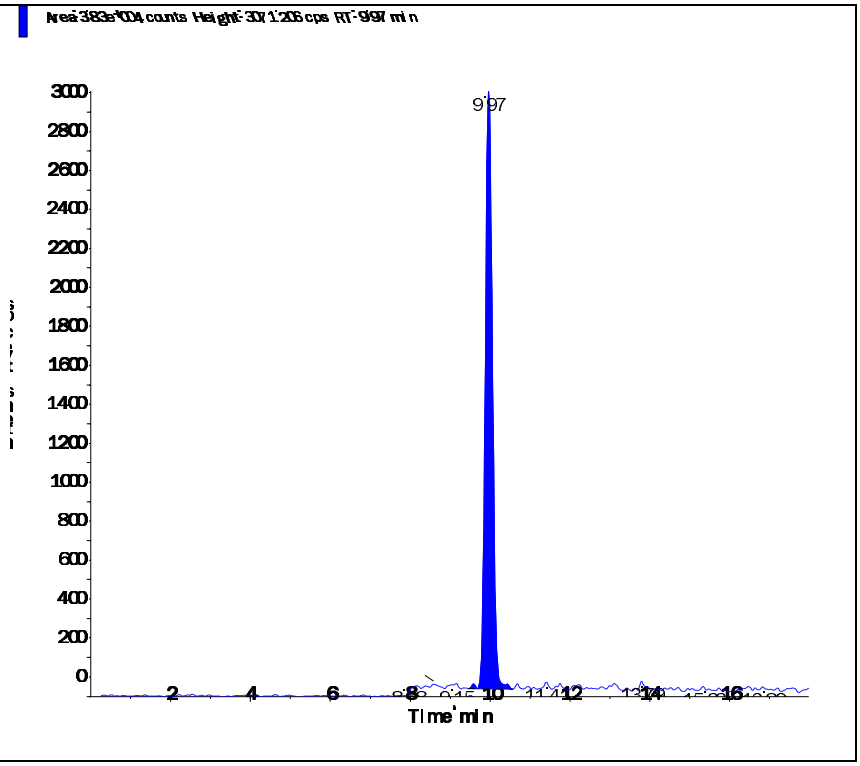

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.95 (9.92) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

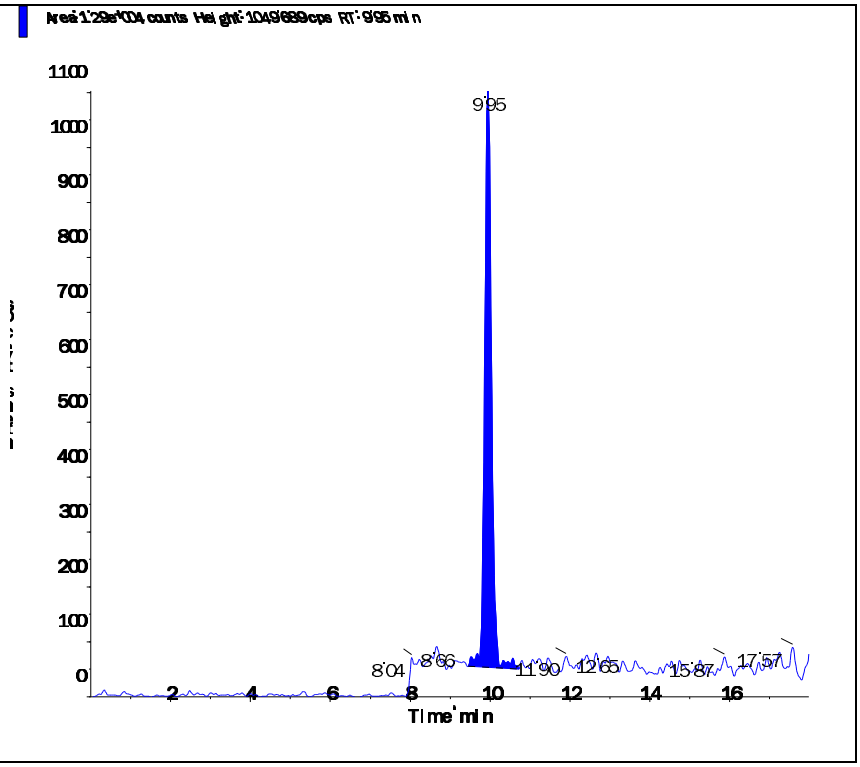

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Data File	LM33417.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/26/2016 11:08:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558989-04 CCB	**Injection Vial**	1.00
Data File	LM33417.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 11:08:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG558989-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.560e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	4.910e+02	9.96	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

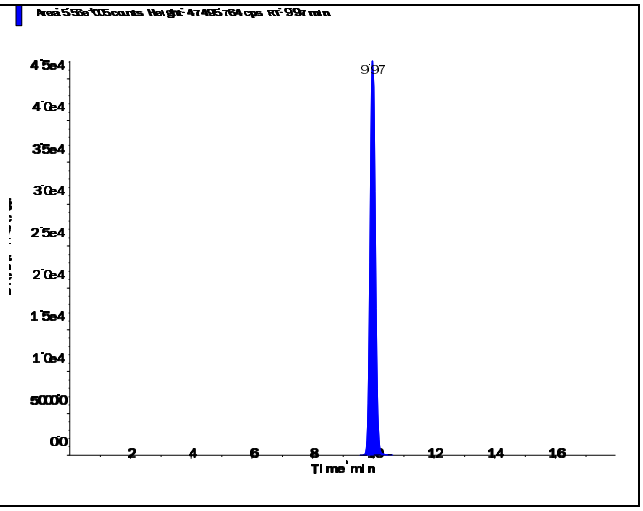

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.94) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	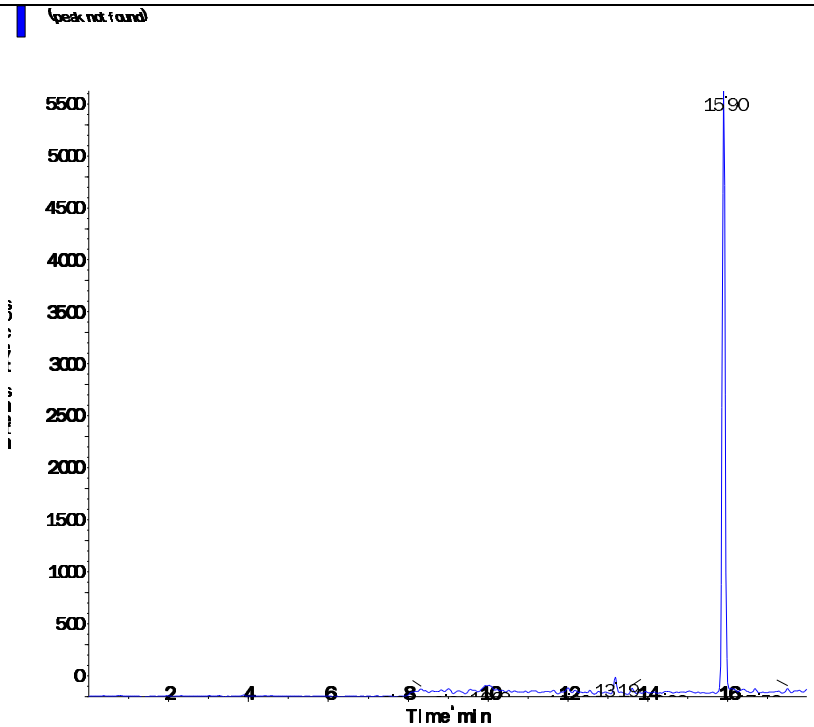
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.96 (9.92) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	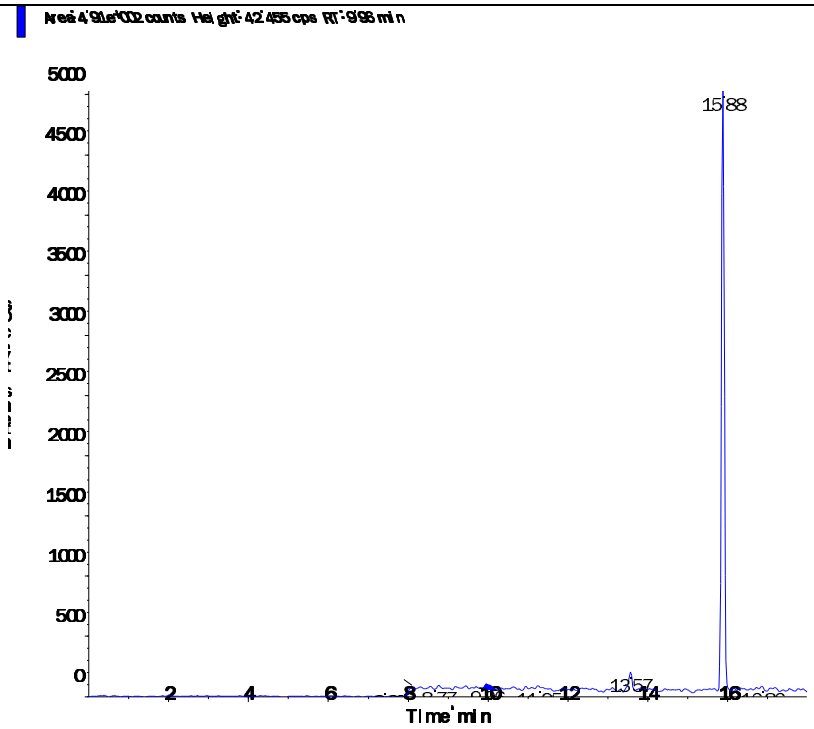

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Data File	LM33431.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/27/2016 3:33:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558989-06 CCB	**Injection Vial**	1.00
Data File	LM33431.wiff	**Injection Volume**	10.00
Acquisition Date	2/27/2016 3:33:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG558989-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.780e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	7.540e+02	10.00	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

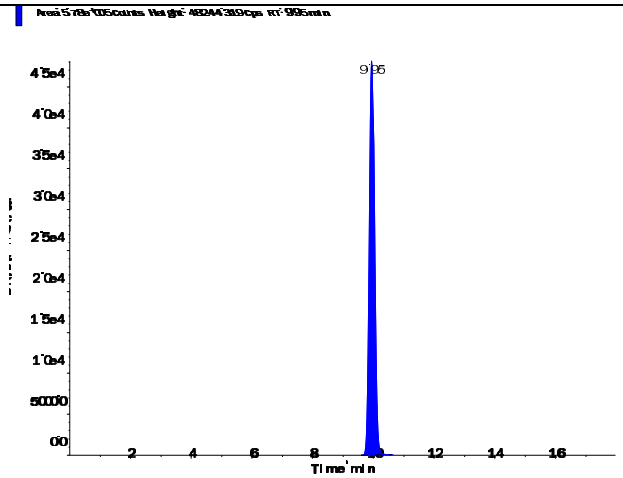

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

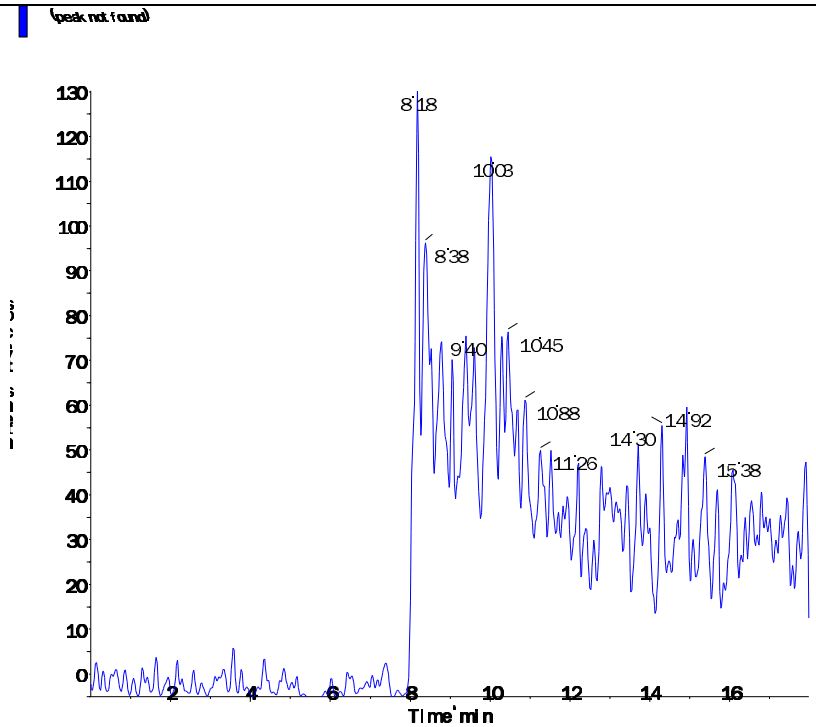

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.00 (9.92) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

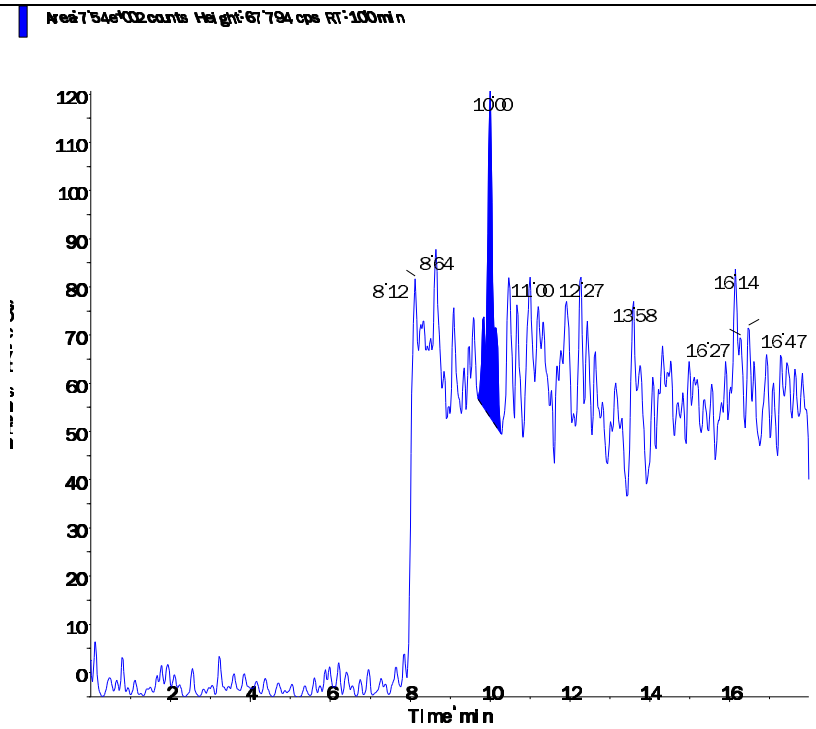

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Created with Analyst Reporter
Printed: 2/27/2016 2:08 PM

Data File	LM33434.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/27/2016 11:16:19 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558989-08 CCB	**Injection Vial**	1.00
Data File	LM33434.wiff	**Injection Volume**	10.00
Acquisition Date	2/27/2016 11:16:19 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG558989-08	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.440e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	2.190e+02	9.68	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

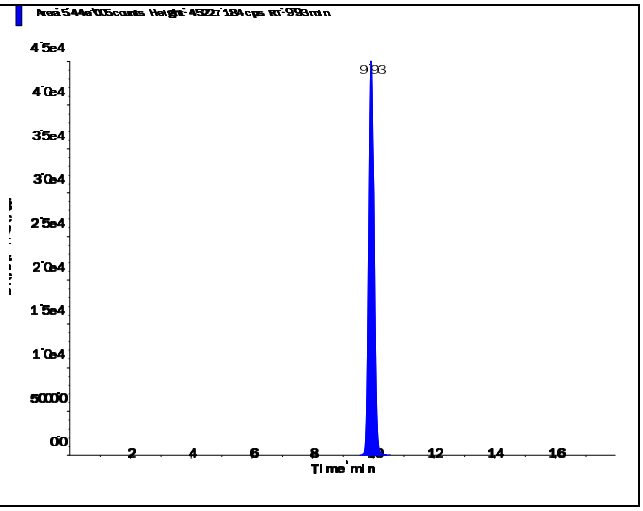

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

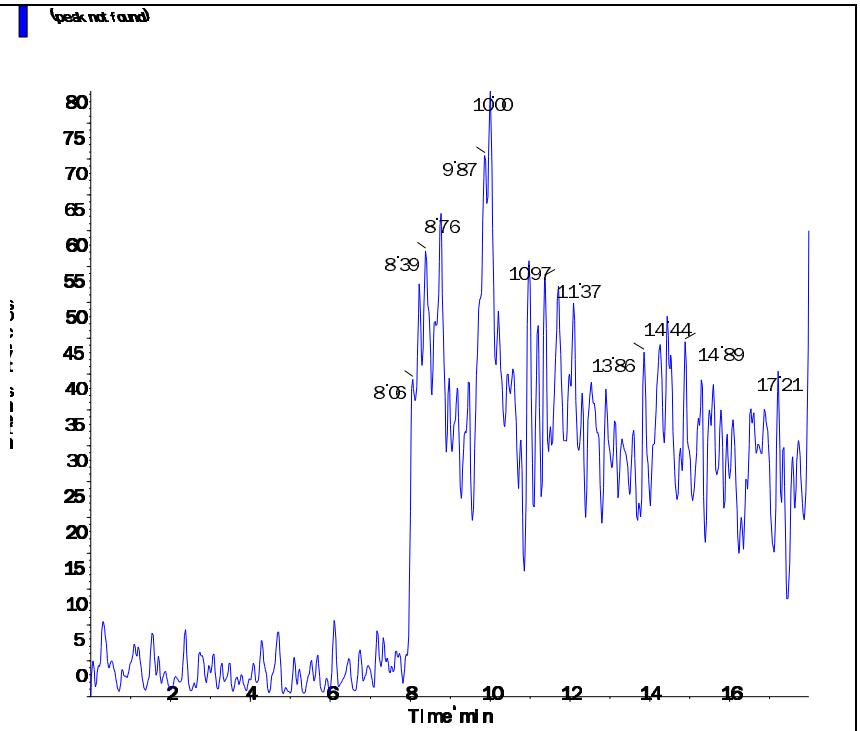

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.68 (9.92) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

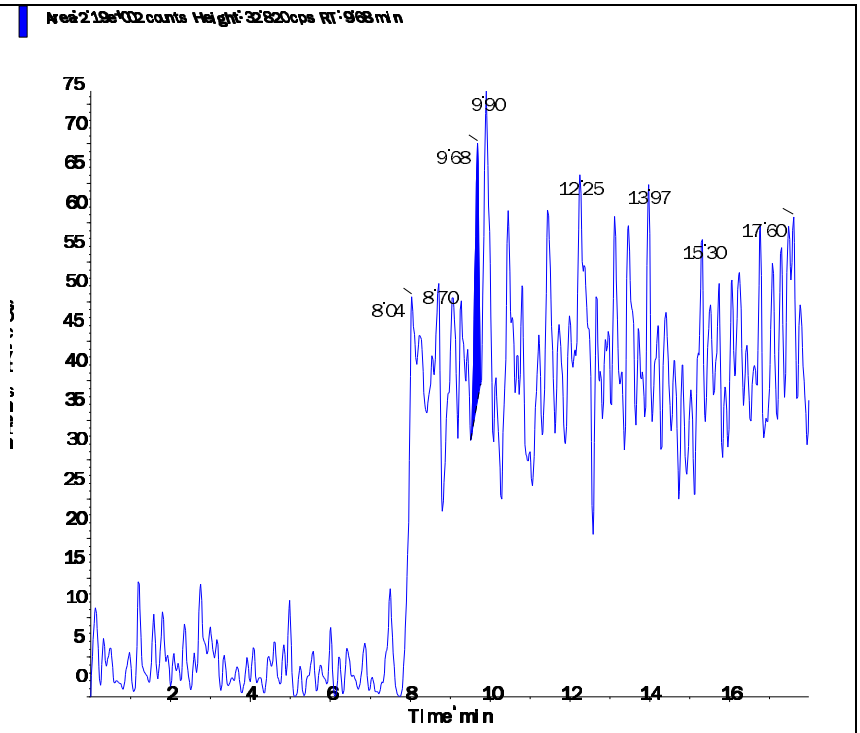

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Created with Analyst Reporter
Printed: 2/27/2016 2:09 PM

Data File	LM33438.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/27/2016 12:32:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558989-10 CCB	**Injection Vial**	1.00
Data File	LM33438.wiff	**Injection Volume**	10.00
Acquisition Date	2/27/2016 12:32:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG558989-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.510e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.430e+03	9.93	N/A	< 0
Perchlorate conf	5.420e+02	9.98	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

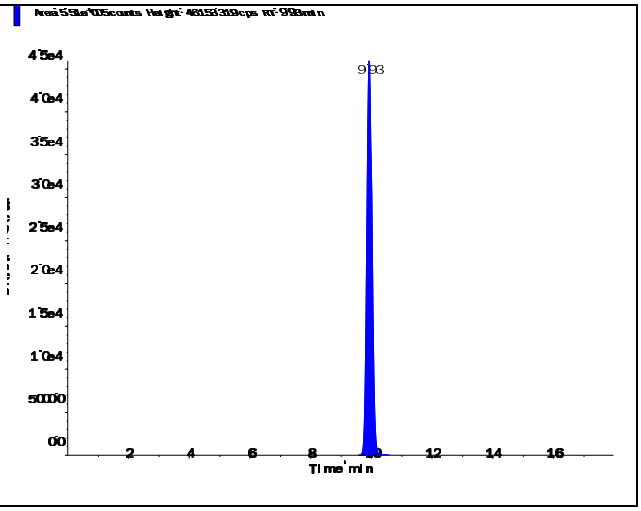

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.003
Sample Type:	(Unknown)

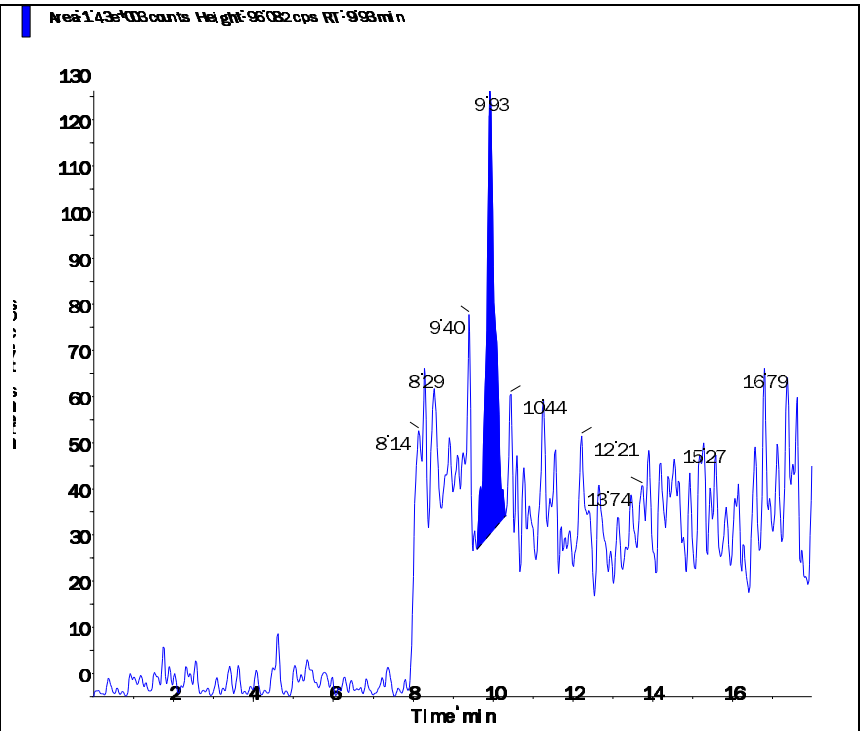

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.98 (9.92) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

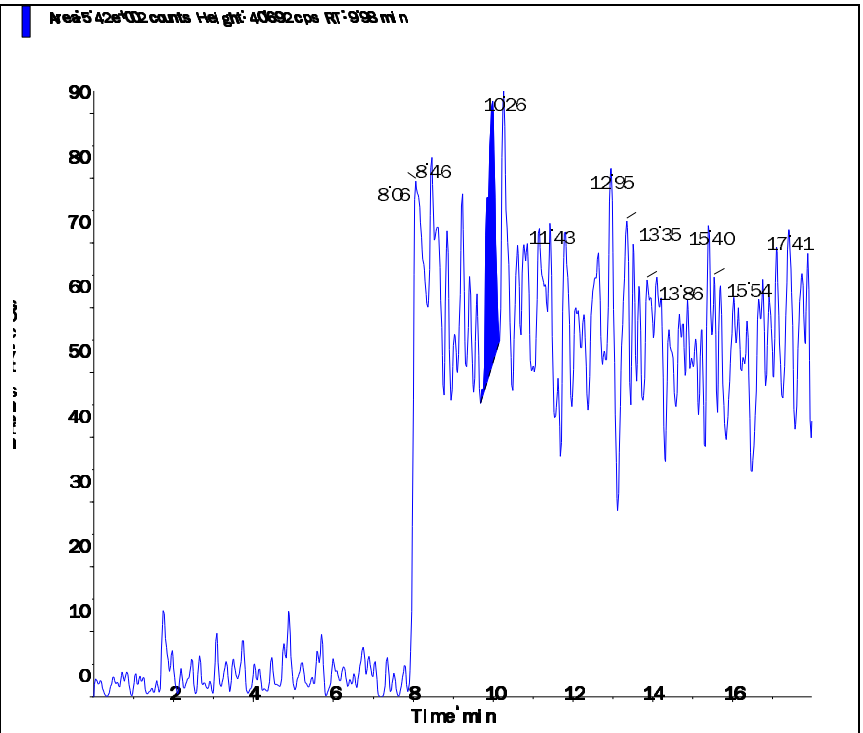

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Printed: 2/27/2016 2:03 PM

Data File	LM33419.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/26/2016 11:46:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558991-01 MCT (2.0ug/kg)	**Injection Vial**	14.00
Data File	LM33419.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 11:46:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG558991-01	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.890e+05	9.56	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.860e+04	9.57	N/A	0.235
Perchlorate conf	1.250e+04	9.54	N/A	0.208

O18LP (Internal Standard)

RT (Exp. RT): 9.56(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

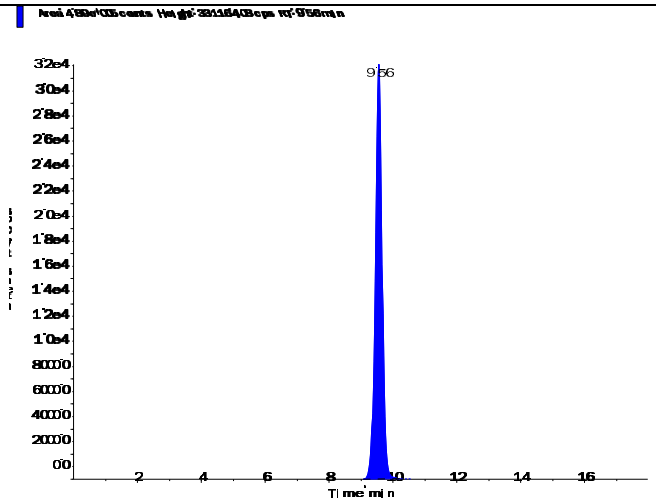

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Printed: 2/27/2016 2:03 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.57 (9.94) min
Calculated conc:	0.235 ng/ml
Area Ratio:	0.079
Sample Type:	(Unknown)

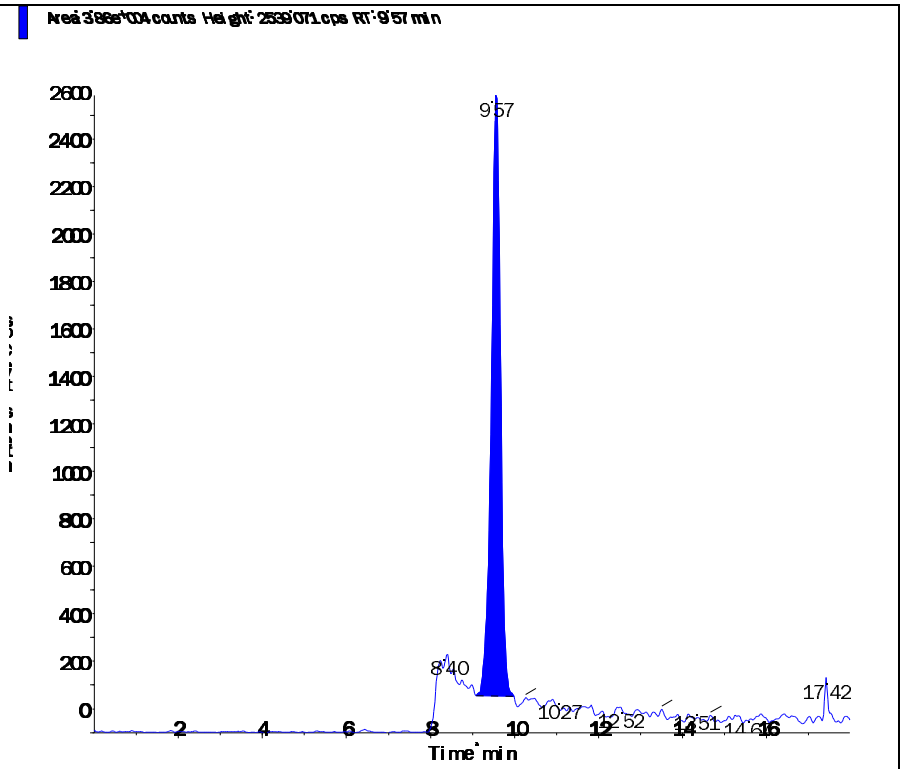

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.54 (9.92) min
Calculated conc:	0.208 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

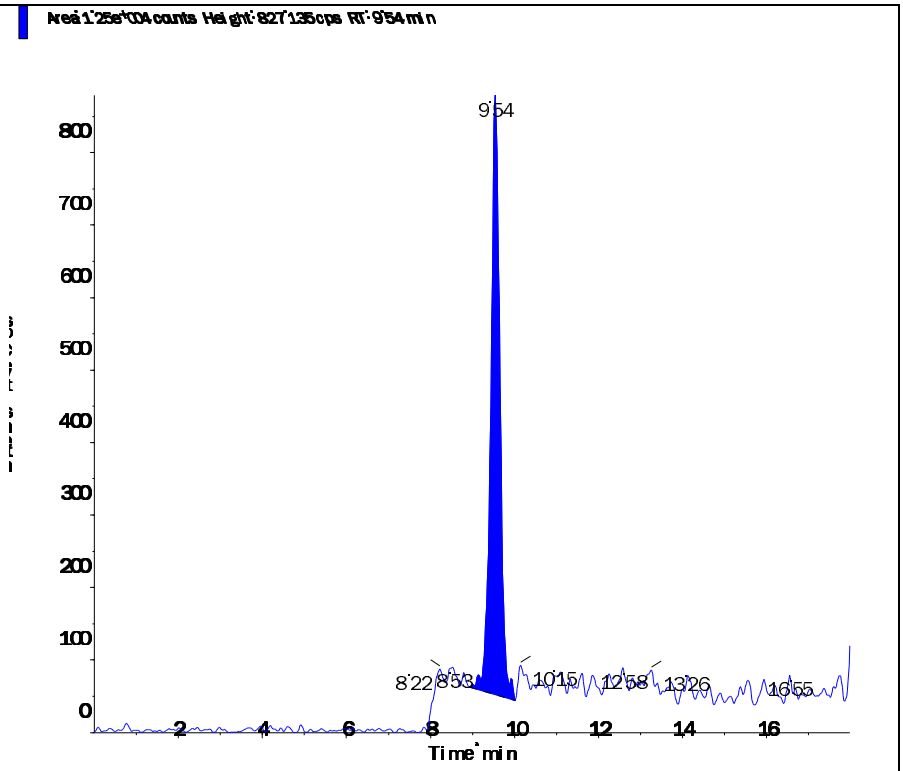

Printing Time: 9:06:21 AM
Printing Date: Saturday, February 27, 2016

Sample Name: "WG558991-01 MCT (2.0ug/kg)" Sample ID: "WG558991-01" File: "LM33419.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "7,1 STD72685" Annotation: ""

Sample Index:	1	
Sample Type:	Unknown	
Concentration:	N/A	
Calculated Conc:	0.273	ug/L
Acq. Date:	2/26/2016	
Acq. Time:	11:46:30 PM	
Modified:	No	
Proc. Algorithm:	Analyst Classic	
Smoothing Factor:	3	
Noise Threshold:	18.48	cps
Area Threshold:	92.40	cps
Num. Smooths:	5	
Sep. Width:	0.20	
Sep. Height:	0.01	
Exp. Peak Ratio:	5.00	
Exp. Adj. Ratio:	4.00	
Exp. Val. Ratio:	3.00	
RT Window:	30.000	sec
Expected RT:	9.94	min
Use Relative RT:	Yes	
Int. Type:	Valley	
Retention Time:	9.57	min
Area:	4.42e+004	counts
Height:	2622.273	cps
Start Time:	9.093	min
End Time:	10.612	min

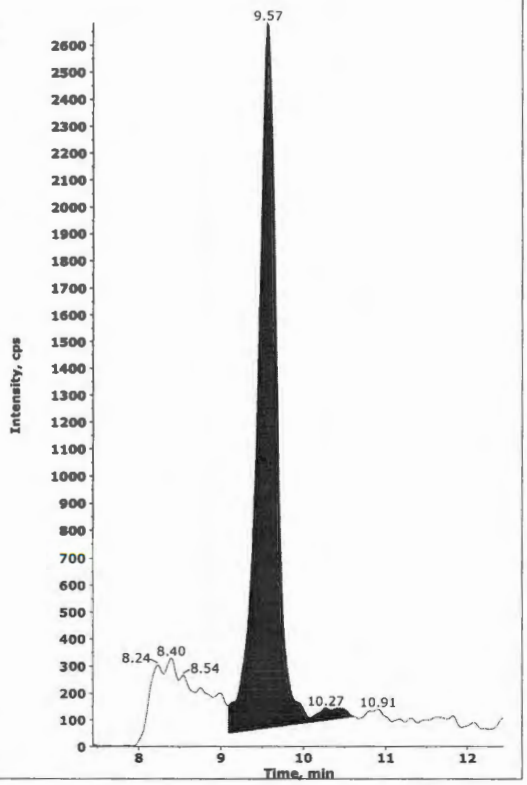

Collected by: N/A
Electronic Signature: no
Operator: lcms1

Printing Time: 9:07:18 AM
Printing Date: Saturday, February 27, 2016

Sample Name: "WG558991-01 MCT (2.0ug/kg)" Sample ID: "WG558991-01" File: "LM33419.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "7,1 STD72685" Annotation: ""

Sample Index:	1	
Sample Type:	Unknown	
Concentration:	N/A	
Calculated Conc:	0.235	ug/L
Acq. Date:	2/26/2016	
Acq. Time:	11:46:30 PM	
Modified:	Yes	
Proc. Algorithm:	Analyst Classic	
Punching Factor:	2	
Noise Threshold:	18.48	cps
Area Threshold:	92.40	cps
Num. Smooths:	5	
Sep. Width:	0.20	
Sep. Height:	0.01	
Exp. Peak Ratio:	5.00	
Exp. Adj. Ratio:	4.00	
Exp. Val. Ratio:	3.00	
RT Window:	30.000	sec
Expected RT:	9.94	min
Use Relative RT:	Yes	
Int. Type:	Base To Base	
Retention Time:	9.57	min
Area:	3.86e+004	counts
Height:	2539.071	cps
Start Time:	9.093	min
End Time:	9.984	min

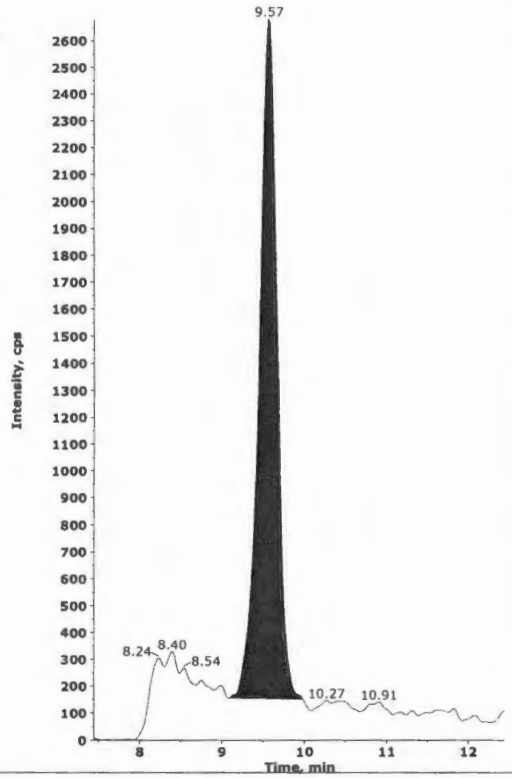

#4
JWR 02/27/14

2.29.16

Collected by: N/A
Electronic Signature: no
Operator: lcmsl

2.2.1.5 Raw QC Data

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Created with Analyst Reporter
Printed: 2/27/2016 2:03 PM

Data File	LM33420.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/27/2016 12:05:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558991-02 BLANK	**Injection Vial**	15.00
Data File	LM33420.wiff	**Injection Volume**	10.00
Acquisition Date	2/27/2016 12:05:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG558991-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.380e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	5.950e+02	9.93	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

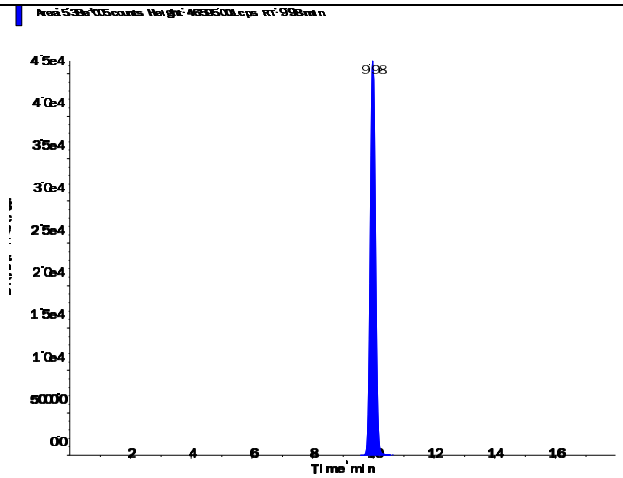

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

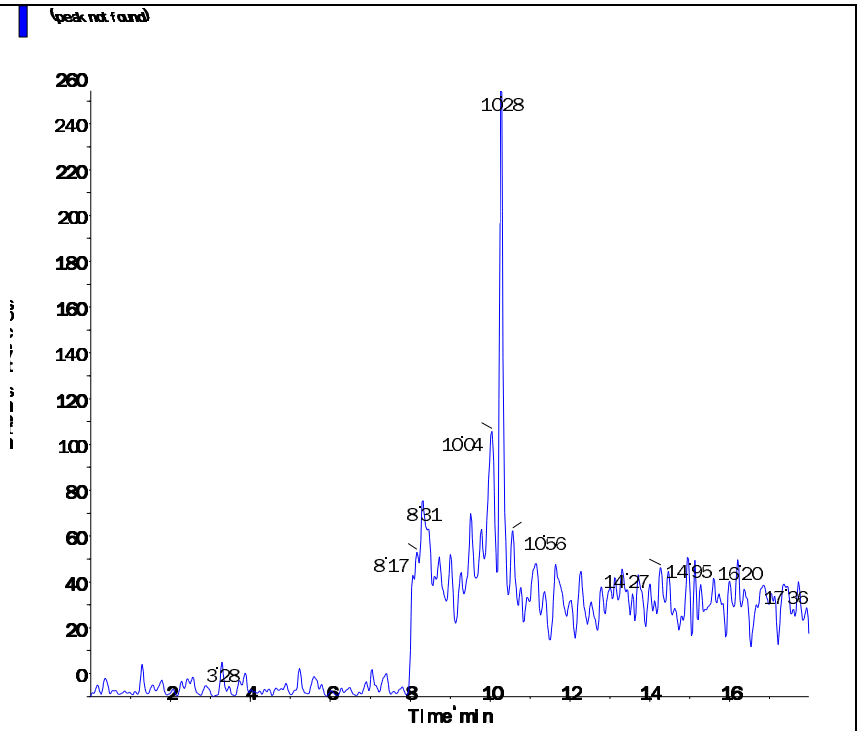

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

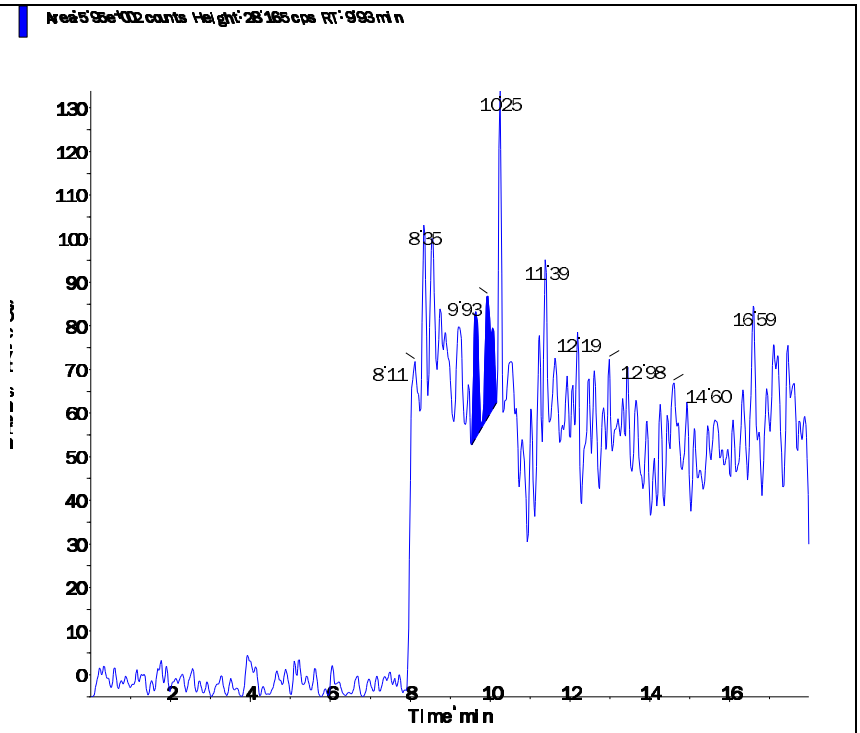

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Created with Analyst Reporter
Printed: 2/27/2016 2:03 PM

Data File	LM33421.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/27/2016 12:24:22 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558991-03 LCS (2.0ug/kg)	**Injection Vial**	16.00
Data File	LM33421.wiff	**Injection Volume**	10.00
Acquisition Date	2/27/2016 12:24:22 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG558991-03	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.240e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.900e+04	9.98	N/A	0.22
Perchlorate conf	1.250e+04	9.97	N/A	0.192

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

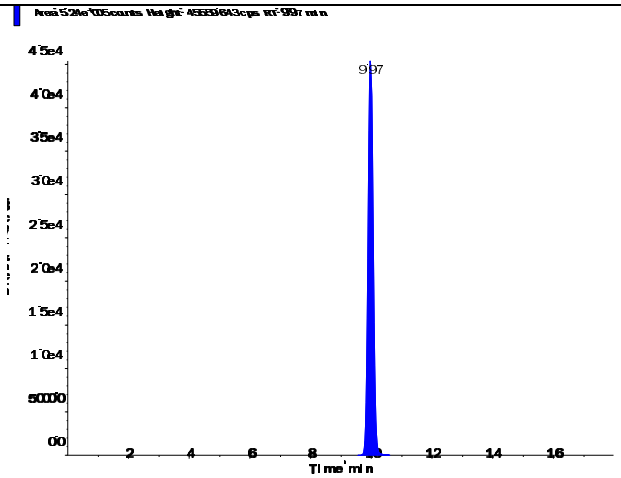

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.98 (9.94) min
Calculated conc:	0.22 ng/ml
Area Ratio:	0.074
Sample Type:	(Unknown)

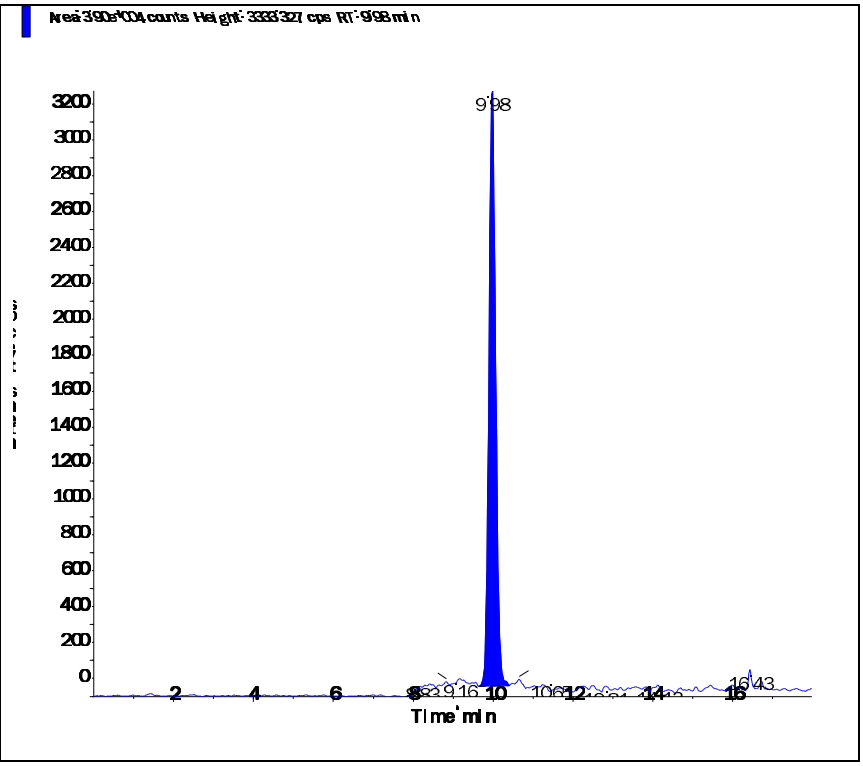

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.97 (9.92) min
Calculated conc:	0.192 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

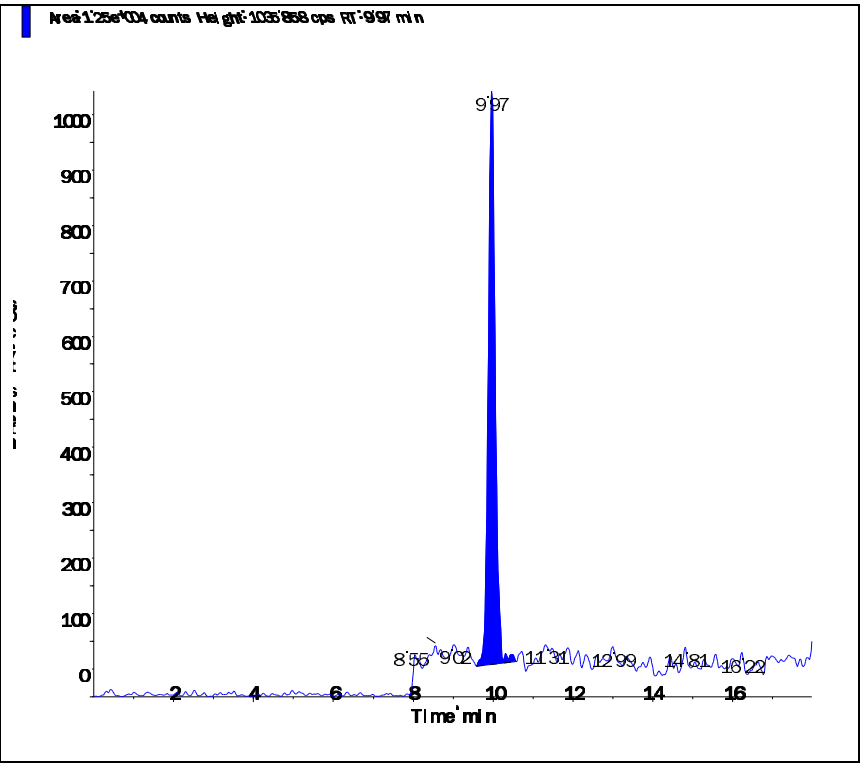

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2.3 General Chemistry Data

2.3.1 Percent Solids Data

2.3.1.1 Raw Data

Example Percent Solids Calculations

1.0 Calculating the percent solids of a sample.

$$\%Solids = \frac{WT3 - WT1}{WT2 - WT1} \times F$$

Where:	
WT1 = Weight, in grams, of the empty container	1.30 g
WT2 = Weight, in grams, of the container and wet sample	21.274 g
WT3 = Weight, in grams, of the container and dried sample	5.21 g
F = Factor to get units as percent weight	100
%Solids = Percent solids present in sample.	19.58%

2.0 Calculating the percent moisture of a sample.

% Moisture = 100 - % Solids from 1.0 calculation

Microbac Laboratories Inc.

PERCENT SOLIDS

Workgroup (AAB#): WG558918 Analyst: AC ADT(on): 02/26/2016 13:03
Method: D2216-90 Instrument: BAL021 ADT(off): 02/29/2016 08:13
SOP: K0003 Rev: 14

SAMPLE NUMBER	EMPTY PAN WT 1	WET WT 2	DRY WT 3A	DRY WT 3B	DRY WT 3C	PERCENT SOLID	PERCENT MOISTURE
L16021267-01	1.297	18.221	18.118			99.39	
L16021268-01	1.296	20.281	20.249			99.83	
L16021268-02	1.296	20.436	20.388			99.75	
L16021306-01	1.296	24.066	20.429			84.03	
L16021306-02	1.299	20.487	18.188			88.02	
L16021306-03	1.299	20.487	18.188			88.02	
L16021306-04	1.299	20.487	18.188			88.02	
L16021306-05	1.298	22.77	19.592			85.20	
L16021306-06	1.299	21.483	17.438			79.96	
L16021343-01	1.295	20.168	2.875			8.372	
WG558918-01	1.299	21.483	17.438			79.96	20.04
WG558918-02	1.297	21.166	17.153			79.80	20.20

Analyst: Andrea R Cochran

PERCENT_SOLIDS - Modified 04/24/2008
PDF ID: 4649704
Report generated: 02/29/2016 08:16

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
March 2, 2016

---

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
March 02, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
March 02, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Stephanie Mossburg	Project Manager: Debra Richmon	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): Kayla Pallanes	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Kayla Pallanes	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205			
Turn Around Time: STANDARD	pH:	Program:	
Project Name/Location: Longhorn			
Project Number: 60274185 0013B m41824			

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOCS 8260	PERCHLORATE 6850	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
	18DPT05(4.5-5)250216			2/25/16	0930		X	S	2	X	X					
	18DPT05(10-11)250216				0940		X	S	2	X	X					
	18DPT05(10-11)250216MS				0940		X	S	2	X	X					
	18DPT05(10-11)250216MSD				0940		X	S	2	X	X					
	18DPT05(15-15.5)250216				0950		X	S	2	X	X					
	18DPT05(20-20.5)250216			2/25/16	0945		X	S	2	X	X					

Comments: ~~STANDARD TAT~~ 48 HR TAT

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Kayla Pallanes	2/25/16	1630					
Relinquished by: (Signature)	Date	Time	Re (Si			Time	Remarks:

Microbac OVD
Received: 02/26/2016 09:52
By: BRENDA GREGORY 221000082494
Brenda Gregory

*Homogenize all composite samples prior to analysis

...anager, Pink QA/QC Manager

00655383

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16021306
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 01-MAR-2016

Samplenum	Container ID	Products
L16021306-01	706049	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-FEB-2016 10:28	CLS		
2	ANALYZ	V1	ORG4	26-FEB-2016 11:26	TMB	CLS	

Samplenum	Container ID	Products
L16021306-01	706050	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-FEB-2016 10:28	CLS		
2	PREP	W1	DIG	26-FEB-2016 12:59	CLS	AC	
3	STORE	DIG	W1	26-FEB-2016 13:11	CLS	AC	
4	ANALYZ	W1	SEM	26-FEB-2016 15:03	JWR	CLS	
5	STORE	SEM	A1	26-FEB-2016 22:11	AZH	JWR	
6	ANALYZ*	DIG	SEMI	27-FEB-2016 14:54	JWR	CLS	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16021306-02	706051	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-FEB-2016 10:28	CLS		
2	ANALYZ	V1	ORG4	26-FEB-2016 11:26	TMB	CLS	

Samplenum	Container ID	Products
L16021306-02	706052	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-FEB-2016 10:28	CLS		
2	PREP	W1	DIG	26-FEB-2016 12:59	CLS	AC	
3	STORE	DIG	W1	26-FEB-2016 13:11	CLS	AC	
4	ANALYZ	W1	SEM	26-FEB-2016 15:03	JWR	CLS	
5	STORE	SEM	A1	26-FEB-2016 22:11	AZH	JWR	
6	ANALYZ*	DIG	SEMI	27-FEB-2016 14:54	JWR	CLS	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16021306
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 01-MAR-2016

Samplenum	Container ID	Products
L16021306-03	706053	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-FEB-2016 10:28	CLS		
2	ANALYZ	V1	ORG4	26-FEB-2016 11:26	TMB	CLS	

Samplenum	Container ID	Products
L16021306-03	706054	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-FEB-2016 10:28	CLS		
2	PREP	W1	DIG	26-FEB-2016 12:59	CLS	AC	
3	STORE	DIG	W1	26-FEB-2016 13:11	CLS	AC	
4	ANALYZ	W1	SEM	26-FEB-2016 15:03	JWR	CLS	
5	STORE	SEM	A1	26-FEB-2016 22:11	AZH	JWR	
6	ANALYZ*	DIG	SEMI	27-FEB-2016 14:54	JWR	CLS	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16021306-04	706055	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-FEB-2016 10:28	CLS		
2	ANALYZ	V1	ORG4	26-FEB-2016 11:26	TMB	CLS	

Samplenum	Container ID	Products
L16021306-04	706056	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-FEB-2016 10:28	CLS		
2	PREP	W1	DIG	26-FEB-2016 12:59	CLS	AC	
3	STORE	DIG	W1	26-FEB-2016 13:11	CLS	AC	
4	ANALYZ	W1	SEM	26-FEB-2016 15:04	JWR	CLS	
5	STORE	SEM	A1	26-FEB-2016 22:11	AZH	JWR	
6	ANALYZ*	DIG	SEMI	27-FEB-2016 14:54	JWR	CLS	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16021306
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 01-MAR-2016

Samplenum	Container ID	Products
L16021306-05	706057	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-FEB-2016 10:28	CLS		
2	ANALYZ	V1	ORG4	26-FEB-2016 11:26	TMB	CLS	

Samplenum	Container ID	Products
L16021306-05	706058	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-FEB-2016 10:28	CLS		
2	PREP	W1	DIG	26-FEB-2016 12:59	CLS	AC	
3	STORE	DIG	W1	26-FEB-2016 13:11	CLS	AC	
4	ANALYZ	W1	SEM	26-FEB-2016 15:04	JWR	CLS	
5	STORE	SEM	A1	26-FEB-2016 22:11	AZH	JWR	
6	ANALYZ*	DIG	SEMI	27-FEB-2016 14:54	JWR	CLS	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16021306-06	706059	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-FEB-2016 10:28	CLS		
2	ANALYZ	V1	ORG4	26-FEB-2016 11:26	TMB	CLS	

Samplenum	Container ID	Products
L16021306-06	706060	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-FEB-2016 10:28	CLS		
2	PREP	W1	DIG	26-FEB-2016 12:59	CLS	AC	
3	STORE	DIG	W1	26-FEB-2016 13:11	CLS	AC	
4	ANALYZ	W1	SEM	26-FEB-2016 15:04	JWR	CLS	
5	STORE	SEM	A1	26-FEB-2016 22:11	AZH	JWR	
6	ANALYZ*	DIG	SEMI	27-FEB-2016 14:54	JWR	CLS	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16021357

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on March 03 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00110635	H	2.0		J2317165938	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	NA
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	NA

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18DPT01(5-5.5)250216	L16021357-01	02/25/2016 11:30	02/27/2016 10:39
18DPT01(9.5-10)250216	L16021357-02	02/25/2016 11:37	02/27/2016 10:39
18DPT01(15-15.5)250216	L16021357-03	02/25/2016 14:23	02/27/2016 10:39
18DPT01(22.5-23)250216	L16021357-04	02/25/2016 16:00	02/27/2016 10:39
18DPT01(24.5-25)250216	L16021357-05	02/25/2016 16:30	02/27/2016 10:39
18DPT01(27-27.5)250216	L16021357-06	02/25/2016 16:35	02/27/2016 10:39

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16021357
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.0 Summary Data

1.1 Narratives

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021357
Project Name:		**Method:**	8260
Prep Batch Number(s):	559151	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-01 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2016-03-01 19:49:43

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021357
Project Name:		**Method:**	8260
Prep Batch Number(s):	559151	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-01 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021357
Project Name:		**Method:**	8260
Prep Batch Number(s):	559151	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-01 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021357
Project Name:		**Method:**	8260
Prep Batch Number(s):	559151	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-01 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?		X			1
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021357
Project Name:		**Method:**	8260
Prep Batch Number(s):	559151	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-01 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021357
Project Name:		**Method:**	8260
Prep Batch Number(s):	559151	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-01 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1)Dichlorodifluoromethane exceeded the UCL in the ICV.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021357
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559142	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-02 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-03-02 15:38:40

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021357
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559142	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-02 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021357
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559142	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-02 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021357
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559142	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-02 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021357
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559142	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-02 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021357
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559142	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-02 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021357
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559108	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-01 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2016-03-01 18:48:24

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021357
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559108	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-01 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?			X		
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?			X		
Were sample detection limits reported for all analytes not detected?			X		
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?			X		
Were blanks analyzed at the appropriate frequency?			X		
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?			X		
Were blank concentrations < MQL?			X		
Laboratory control samples (LCS):			X		
Were all COCs included in the LCS?			X		

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021357
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559108	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-01 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?			X		
Were LCSs analyzed at the required frequency?			X		
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?			X		
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?			X		
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?			X		
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?			X		
Are unadjusted MQLs and DCSs included in the laboratory data package?			X		
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?			X		
Were percent RSDs or correlation coefficient criteria met?			X		

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021357
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559108	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-01 00:00:00		

Was the number of standards recommended in the method used for all analytes?			X		
Were all points generated between the lowest and highest standard used to calculate the curve?			X		
Are ICAL data available for all instruments used?			X		
Has the initial calibration curve been verified using an appropriate second source standard?			X		
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021357
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559108	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-01 00:00:00		

Was a MDL study performed for each reported analyte?			X		
Is the MDL either adjusted or supported by the analysis of DCSs?			X		
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?			X		
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021357
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559108	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-01 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021357-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT01(5-5.5)250216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:19
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	02/29/2016 21:00
Collect Date:	02/25/2016 11:30	**Dilution:**	1	**File ID:**	9M972974
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	7.78	J	25.0	12.5	6.24
Benzene	71-43-2	1.25	U	6.24	1.25	0.624
Bromobenzene	108-86-1	1.25	U	6.24	1.25	0.624
Bromochloromethane	74-97-5	2.50	U	6.24	2.50	1.25
Bromodichloromethane	75-27-4	1.25	U	6.24	1.25	0.624
Bromoform	75-25-2	1.25	U	6.24	1.25	0.624
Bromomethane	74-83-9	2.50	U	6.24	2.50	1.25
2-Butanone	78-93-3	6.24	U	12.5	6.24	3.12
n-Butylbenzene	104-51-8	1.25	U	6.24	1.25	0.624
sec-Butylbenzene	135-98-8	1.25	U	6.24	1.25	0.624
tert-Butylbenzene	98-06-6	0.778	J	6.24	1.25	0.624
Carbon disulfide	75-15-0	1.25	U	6.24	1.25	0.624
Carbon tetrachloride	56-23-5	1.25	U	6.24	1.25	0.624
Chlorobenzene	108-90-7	1.25	U	6.24	1.25	0.624
Chlorodibromomethane	124-48-1	1.25	U	6.24	1.25	0.624
Chloroethane	75-00-3	2.50	U	6.24	2.50	1.25
Chloroform	67-66-3	1.25	U	6.24	1.25	0.624
Chloromethane	74-87-3	5.00	U	12.5	5.00	2.50
2-Chlorotoluene	95-49-8	1.25	U	6.24	1.25	0.624
4-Chlorotoluene	106-43-4	1.25	U	6.24	1.25	0.624
1,2-Dibromo-3-chloropropane	96-12-8	5.00	U	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	6.24	1.25	0.624
Dibromomethane	74-95-3	1.25	U	6.24	1.25	0.624
1,2-Dichlorobenzene	95-50-1	1.25	U	6.24	1.25	0.624
1,3-Dichlorobenzene	541-73-1	1.25	U	6.24	1.25	0.624
1,4-Dichlorobenzene	106-46-7	1.25	U	6.24	1.25	0.624
Dichlorodifluoromethane	75-71-8	2.50	U	6.24	2.50	1.25
1,1-Dichloroethane	75-34-3	2.50	U	6.24	2.50	1.25
1,2-Dichloroethane	107-06-2	1.25	U	6.24	1.25	0.624
1,1-Dichloroethene	75-35-4	1.25	U	6.24	1.25	0.624
cis-1,2-Dichloroethene	156-59-2	1.25	U	6.24	1.25	0.624
trans-1,2-Dichloroethene	156-60-5	1.25	U	6.24	1.25	0.624

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.25	U	6.24	1.25	0.624
1,3-Dichloropropane	142-28-9	1.25	U	6.24	1.25	0.624
2,2-Dichloropropane	594-20-7	1.25	U	6.24	1.25	0.624
cis-1,3-Dichloropropene	10061-01-5	1.25	U	6.24	1.25	0.624
trans-1,3-Dichloropropene	10061-02-6	1.25	U	6.24	1.25	0.624
1,1-Dichloropropene	563-58-6	1.25	U	6.24	1.25	0.624
Ethylbenzene	100-41-4	1.25	U	6.24	1.25	0.624
2-Hexanone	591-78-6	6.24	U	12.5	6.24	3.12
Hexachlorobutadiene	87-68-3	1.25	U	6.24	1.25	0.624
Isopropylbenzene	98-82-8	1.25	U	6.24	1.25	0.624
p-Isopropyltoluene	99-87-6	21.8		6.24	1.25	0.624
4-Methyl-2-pentanone	108-10-1	6.24	U	12.5	6.24	3.12
Methylene chloride	75-09-2	2.50	U	6.24	2.50	1.25
Naphthalene	91-20-3	1.25	U	6.24	1.25	0.624
n-Propylbenzene	103-65-1	1.25	U	6.24	1.25	0.624
Styrene	100-42-5	1.25	U	6.24	1.25	0.624
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	6.24	1.25	0.624
1,1,2,2-Tetrachloroethane	79-34-5	1.25	U	6.24	1.25	0.624
Tetrachloroethene	127-18-4	1.25	U	6.24	1.25	0.624
Toluene	108-88-3	1.25	U	6.24	1.25	0.624
1,2,3-Trichlorobenzene	87-61-6	1.25	U	6.24	1.25	0.624
1,2,4-Trichlorobenzene	120-82-1	1.25	U	6.24	1.25	0.624
1,1,1-Trichloroethane	71-55-6	1.25	U	6.24	1.25	0.624
1,1,2-Trichloroethane	79-00-5	1.25	U	6.24	1.25	0.624
Trichloroethene	79-01-6	1.25	U	6.24	1.25	0.624
Trichlorofluoromethane	75-69-4	2.50	U	6.24	2.50	1.25
1,2,3-Trichloropropane	96-18-4	2.50	U	6.24	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	6.24	1.25	0.624
1,3,5-Trimethylbenzene	108-67-8	1.25	U	6.24	1.25	0.624
Vinyl chloride	75-01-4	2.50	U	6.24	2.50	1.25
o-Xylene	95-47-6	1.25	U	6.24	1.25	0.624
m-,p-Xylene	179601-23-1	1.25	U	6.24	1.25	0.624

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.7	80	120	
1,2-Dichloroethane-d4	102	80	120	
Toluene-d8	107	85	115	
4-Bromofluorobenzene	113	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021357-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT01(5-5.5)250216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	02/29/2016 22:50
Collect Date:	02/25/2016 11:30	**Dilution:**	1	**File ID:**	1LM.LM33483
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.34	U	4.66	2.34	1.17

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021357-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT01(9.5-10)250216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:21
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	02/29/2016 21:30
Collect Date:	02/25/2016 11:37	**Dilution:**	1	**File ID:**	9M972975
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	88.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	10.9	U	21.7	10.9	5.43
Benzene	71-43-2	1.09	U	5.43	1.09	0.543
Bromobenzene	108-86-1	1.09	U	5.43	1.09	0.543
Bromochloromethane	74-97-5	2.18	U	5.43	2.18	1.09
Bromodichloromethane	75-27-4	1.09	U	5.43	1.09	0.543
Bromoform	75-25-2	1.09	U	5.43	1.09	0.543
Bromomethane	74-83-9	2.18	U	5.43	2.18	1.09
2-Butanone	78-93-3	5.42	U	10.9	5.42	2.71
n-Butylbenzene	104-51-8	1.09	U	5.43	1.09	0.543
sec-Butylbenzene	135-98-8	1.09	U	5.43	1.09	0.543
tert-Butylbenzene	98-06-6	1.09	U	5.43	1.09	0.543
Carbon disulfide	75-15-0	1.09	U	5.43	1.09	0.543
Carbon tetrachloride	56-23-5	1.09	U	5.43	1.09	0.543
Chlorobenzene	108-90-7	1.09	U	5.43	1.09	0.543
Chlorodibromomethane	124-48-1	1.09	U	5.43	1.09	0.543
Chloroethane	75-00-3	2.18	U	5.43	2.18	1.09
Chloroform	67-66-3	1.09	U	5.43	1.09	0.543
Chloromethane	74-87-3	4.34	U	10.9	4.34	2.17
2-Chlorotoluene	95-49-8	1.09	U	5.43	1.09	0.543
4-Chlorotoluene	106-43-4	1.09	U	5.43	1.09	0.543
1,2-Dibromo-3-chloropropane	96-12-8	4.34	U	10.9	4.34	2.17
1,2-Dibromoethane	106-93-4	1.09	U	5.43	1.09	0.543
Dibromomethane	74-95-3	1.09	U	5.43	1.09	0.543
1,2-Dichlorobenzene	95-50-1	1.09	U	5.43	1.09	0.543
1,3-Dichlorobenzene	541-73-1	1.09	U	5.43	1.09	0.543
1,4-Dichlorobenzene	106-46-7	1.09	U	5.43	1.09	0.543
Dichlorodifluoromethane	75-71-8	2.18	U	5.43	2.18	1.09
1,1-Dichloroethane	75-34-3	2.18	U	5.43	2.18	1.09
1,2-Dichloroethane	107-06-2	1.09	U	5.43	1.09	0.543
1,1-Dichloroethene	75-35-4	1.09	U	5.43	1.09	0.543
cis-1,2-Dichloroethene	156-59-2	1.09	U	5.43	1.09	0.543

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.09	U	5.43	1.09	0.543
1,2-Dichloropropane	78-87-5	1.09	U	5.43	1.09	0.543
1,3-Dichloropropane	142-28-9	1.09	U	5.43	1.09	0.543
2,2-Dichloropropane	594-20-7	1.09	U	5.43	1.09	0.543
cis-1,3-Dichloropropene	10061-01-5	1.09	U	5.43	1.09	0.543
trans-1,3-Dichloropropene	10061-02-6	1.09	U	5.43	1.09	0.543
1,1-Dichloropropene	563-58-6	1.09	U	5.43	1.09	0.543
Ethylbenzene	100-41-4	1.09	U	5.43	1.09	0.543
2-Hexanone	591-78-6	5.42	U	10.9	5.42	2.71
Hexachlorobutadiene	87-68-3	1.09	U	5.43	1.09	0.543
Isopropylbenzene	98-82-8	1.09	U	5.43	1.09	0.543
p-Isopropyltoluene	99-87-6	1.09	U	5.43	1.09	0.543
4-Methyl-2-pentanone	108-10-1	5.42	U	10.9	5.42	2.71
Methylene chloride	75-09-2	2.18	U	5.43	2.18	1.09
Naphthalene	91-20-3	1.09	U	5.43	1.09	0.543
n-Propylbenzene	103-65-1	1.09	U	5.43	1.09	0.543
Styrene	100-42-5	1.09	U	5.43	1.09	0.543
1,1,1,2-Tetrachloroethane	630-20-6	1.09	U	5.43	1.09	0.543
1,1,2,2-Tetrachloroethane	79-34-5	1.09	U	5.43	1.09	0.543
Tetrachloroethene	127-18-4	1.09	U	5.43	1.09	0.543
Toluene	108-88-3	1.09	U	5.43	1.09	0.543
1,2,3-Trichlorobenzene	87-61-6	1.09	U	5.43	1.09	0.543
1,2,4-Trichlorobenzene	120-82-1	1.09	U	5.43	1.09	0.543
1,1,1-Trichloroethane	71-55-6	1.09	U	5.43	1.09	0.543
1,1,2-Trichloroethane	79-00-5	1.09	U	5.43	1.09	0.543
Trichloroethene	79-01-6	1.09	U	5.43	1.09	0.543
Trichlorofluoromethane	75-69-4	2.18	U	5.43	2.18	1.09
1,2,3-Trichloropropane	96-18-4	2.18	U	5.43	2.18	1.09
1,2,4-Trimethylbenzene	95-63-6	1.09	U	5.43	1.09	0.543
1,3,5-Trimethylbenzene	108-67-8	1.09	U	5.43	1.09	0.543
Vinyl chloride	75-01-4	2.18	U	5.43	2.18	1.09
o-Xylene	95-47-6	1.09	U	5.43	1.09	0.543
m-,p-Xylene	179601-23-1	1.09	U	5.43	1.09	0.543

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	80	120	
1,2-Dichloroethane-d4	99.4	80	120	
Toluene-d8	109	85	115	
4-Bromofluorobenzene	111	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021357-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT01(9.5-10)250216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	02/29/2016 23:46
Collect Date:	02/25/2016 11:37	**Dilution:**	1	**File ID:**	1LM.LM33486
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	88.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	20.7		4.35	2.18	1.09

Certificate of Analysis

Sample #:	L16021357-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT01(15-15.5)250216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:22
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	02/29/2016 22:01
Collect Date:	02/25/2016 14:23	**Dilution:**	1	**File ID:**	9M972976
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	90.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.1	U	22.3	11.1	5.57
Benzene	71-43-2	1.11	U	5.57	1.11	0.557
Bromobenzene	108-86-1	1.11	U	5.57	1.11	0.557
Bromochloromethane	74-97-5	2.22	U	5.57	2.22	1.11
Bromodichloromethane	75-27-4	1.11	U	5.57	1.11	0.557
Bromoform	75-25-2	1.11	U	5.57	1.11	0.557
Bromomethane	74-83-9	2.22	U	5.57	2.22	1.11
2-Butanone	78-93-3	5.58	U	11.1	5.58	2.79
n-Butylbenzene	104-51-8	1.11	U	5.57	1.11	0.557
sec-Butylbenzene	135-98-8	1.11	U	5.57	1.11	0.557
tert-Butylbenzene	98-06-6	1.11	U	5.57	1.11	0.557
Carbon disulfide	75-15-0	1.11	U	5.57	1.11	0.557
Carbon tetrachloride	56-23-5	1.11	U	5.57	1.11	0.557
Chlorobenzene	108-90-7	1.11	U	5.57	1.11	0.557
Chlorodibromomethane	124-48-1	1.11	U	5.57	1.11	0.557
Chloroethane	75-00-3	2.22	U	5.57	2.22	1.11
Chloroform	67-66-3	1.11	U	5.57	1.11	0.557
Chloromethane	74-87-3	4.46	U	11.1	4.46	2.23
2-Chlorotoluene	95-49-8	1.11	U	5.57	1.11	0.557
4-Chlorotoluene	106-43-4	1.11	U	5.57	1.11	0.557

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	4.46	U	11.1	4.46	2.23
1,2-Dibromoethane	106-93-4	1.11	U	5.57	1.11	0.557
Dibromomethane	74-95-3	1.11	U	5.57	1.11	0.557
1,2-Dichlorobenzene	95-50-1	1.11	U	5.57	1.11	0.557
1,3-Dichlorobenzene	541-73-1	1.11	U	5.57	1.11	0.557
1,4-Dichlorobenzene	106-46-7	1.11	U	5.57	1.11	0.557
Dichlorodifluoromethane	75-71-8	2.22	U	5.57	2.22	1.11
1,1-Dichloroethane	75-34-3	2.22	U	5.57	2.22	1.11
1,2-Dichloroethane	107-06-2	1.11	U	5.57	1.11	0.557
1,1-Dichloroethene	75-35-4	1.11	U	5.57	1.11	0.557
cis-1,2-Dichloroethene	156-59-2	1.11	U	5.57	1.11	0.557
trans-1,2-Dichloroethene	156-60-5	1.11	U	5.57	1.11	0.557
1,2-Dichloropropane	78-87-5	1.11	U	5.57	1.11	0.557
1,3-Dichloropropane	142-28-9	1.11	U	5.57	1.11	0.557
2,2-Dichloropropane	594-20-7	1.11	U	5.57	1.11	0.557
cis-1,3-Dichloropropene	10061-01-5	1.11	U	5.57	1.11	0.557
trans-1,3-Dichloropropene	10061-02-6	1.11	U	5.57	1.11	0.557
1,1-Dichloropropene	563-58-6	1.11	U	5.57	1.11	0.557
Ethylbenzene	100-41-4	1.11	U	5.57	1.11	0.557
2-Hexanone	591-78-6	5.58	U	11.1	5.58	2.79
Hexachlorobutadiene	87-68-3	1.11	U	5.57	1.11	0.557
Isopropylbenzene	98-82-8	1.11	U	5.57	1.11	0.557
p-Isopropyltoluene	99-87-6	1.11	U	5.57	1.11	0.557
4-Methyl-2-pentanone	108-10-1	5.58	U	11.1	5.58	2.79
Methylene chloride	75-09-2	2.22	U	5.57	2.22	1.11
Naphthalene	91-20-3	1.11	U	5.57	1.11	0.557
n-Propylbenzene	103-65-1	1.11	U	5.57	1.11	0.557
Styrene	100-42-5	1.11	U	5.57	1.11	0.557
1,1,1,2-Tetrachloroethane	630-20-6	1.11	U	5.57	1.11	0.557
1,1,2,2-Tetrachloroethane	79-34-5	1.11	U	5.57	1.11	0.557
Tetrachloroethene	127-18-4	1.11	U	5.57	1.11	0.557
Toluene	108-88-3	1.11	U	5.57	1.11	0.557
1,2,3-Trichlorobenzene	87-61-6	1.11	U	5.57	1.11	0.557
1,2,4-Trichlorobenzene	120-82-1	1.11	U	5.57	1.11	0.557
1,1,1-Trichloroethane	71-55-6	1.11	U	5.57	1.11	0.557
1,1,2-Trichloroethane	79-00-5	1.11	U	5.57	1.11	0.557
Trichloroethene	79-01-6	1.11	U	5.57	1.11	0.557
Trichlorofluoromethane	75-69-4	2.22	U	5.57	2.22	1.11
1,2,3-Trichloropropane	96-18-4	2.22	U	5.57	2.22	1.11

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Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.11	U	5.57	1.11	0.557
1,3,5-Trimethylbenzene	108-67-8	1.11	U	5.57	1.11	0.557
Vinyl chloride	75-01-4	2.22	U	5.57	2.22	1.11
o-Xylene	95-47-6	1.11	U	5.57	1.11	0.557
m-,p-Xylene	179601-23-1	1.11	U	5.57	1.11	0.557

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.5	80	120	
1,2-Dichloroethane-d4	99.4	80	120	
Toluene-d8	109	85	115	
4-Bromofluorobenzene	111	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021357-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT01(15-15.5)250216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 00:05
Collect Date:	02/25/2016 14:23	**Dilution:**	1	**File ID:**	1LM.LM33487
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	90.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	7.54		4.32	2.16	1.08

Certificate of Analysis

Sample #:	L16021357-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT01(22.5-23)250216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:22
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	02/29/2016 22:32
Collect Date:	02/25/2016 16:00	**Dilution:**	1	**File ID:**	9M972977
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	9.77	J	22.3	11.2	5.58
Benzene	71-43-2	1.12	U	5.58	1.12	0.558
Bromobenzene	108-86-1	1.12	U	5.58	1.12	0.558
Bromochloromethane	74-97-5	2.24	U	5.58	2.24	1.12
Bromodichloromethane	75-27-4	1.12	U	5.58	1.12	0.558
Bromoform	75-25-2	1.12	U	5.58	1.12	0.558
Bromomethane	74-83-9	2.24	U	5.58	2.24	1.12
2-Butanone	78-93-3	5.58	U	11.2	5.58	2.79
n-Butylbenzene	104-51-8	1.12	U	5.58	1.12	0.558
sec-Butylbenzene	135-98-8	1.12	U	5.58	1.12	0.558
tert-Butylbenzene	98-06-6	1.12	U	5.58	1.12	0.558
Carbon disulfide	75-15-0	1.12	U	5.58	1.12	0.558
Carbon tetrachloride	56-23-5	1.12	U	5.58	1.12	0.558
Chlorobenzene	108-90-7	1.12	U	5.58	1.12	0.558
Chlorodibromomethane	124-48-1	1.12	U	5.58	1.12	0.558
Chloroethane	75-00-3	2.24	U	5.58	2.24	1.12
Chloroform	67-66-3	1.12	U	5.58	1.12	0.558
Chloromethane	74-87-3	4.46	U	11.2	4.46	2.23
2-Chlorotoluene	95-49-8	1.12	U	5.58	1.12	0.558
4-Chlorotoluene	106-43-4	1.12	U	5.58	1.12	0.558

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Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	4.46	U	11.2	4.46	2.23
1,2-Dibromoethane	106-93-4	1.12	U	5.58	1.12	0.558
Dibromomethane	74-95-3	1.12	U	5.58	1.12	0.558
1,2-Dichlorobenzene	95-50-1	1.12	U	5.58	1.12	0.558
1,3-Dichlorobenzene	541-73-1	1.12	U	5.58	1.12	0.558
1,4-Dichlorobenzene	106-46-7	1.12	U	5.58	1.12	0.558
Dichlorodifluoromethane	75-71-8	2.24	U	5.58	2.24	1.12
1,1-Dichloroethane	75-34-3	2.24	U	5.58	2.24	1.12
1,2-Dichloroethane	107-06-2	1.12	U	5.58	1.12	0.558
1,1-Dichloroethene	75-35-4	1.12	U	5.58	1.12	0.558
cis-1,2-Dichloroethene	156-59-2	1.12	U	5.58	1.12	0.558
trans-1,2-Dichloroethene	156-60-5	1.12	U	5.58	1.12	0.558
1,2-Dichloropropane	78-87-5	1.12	U	5.58	1.12	0.558
1,3-Dichloropropane	142-28-9	1.12	U	5.58	1.12	0.558
2,2-Dichloropropane	594-20-7	1.12	U	5.58	1.12	0.558
cis-1,3-Dichloropropene	10061-01-5	1.12	U	5.58	1.12	0.558
trans-1,3-Dichloropropene	10061-02-6	1.12	U	5.58	1.12	0.558
1,1-Dichloropropene	563-58-6	1.12	U	5.58	1.12	0.558
Ethylbenzene	100-41-4	1.12	U	5.58	1.12	0.558
2-Hexanone	591-78-6	5.58	U	11.2	5.58	2.79
Hexachlorobutadiene	87-68-3	1.12	U	5.58	1.12	0.558
Isopropylbenzene	98-82-8	1.12	U	5.58	1.12	0.558
p-Isopropyltoluene	99-87-6	1.12	U	5.58	1.12	0.558
4-Methyl-2-pentanone	108-10-1	5.58	U	11.2	5.58	2.79
Methylene chloride	75-09-2	2.24	U	5.58	2.24	1.12
Naphthalene	91-20-3	1.12	U	5.58	1.12	0.558
n-Propylbenzene	103-65-1	1.12	U	5.58	1.12	0.558
Styrene	100-42-5	1.12	U	5.58	1.12	0.558
1,1,1,2-Tetrachloroethane	630-20-6	1.12	U	5.58	1.12	0.558
1,1,2,2-Tetrachloroethane	79-34-5	1.12	U	5.58	1.12	0.558
Tetrachloroethene	127-18-4	1.12	U	5.58	1.12	0.558
Toluene	108-88-3	1.12	U	5.58	1.12	0.558
1,2,3-Trichlorobenzene	87-61-6	1.12	U	5.58	1.12	0.558
1,2,4-Trichlorobenzene	120-82-1	1.12	U	5.58	1.12	0.558
1,1,1-Trichloroethane	71-55-6	1.12	U	5.58	1.12	0.558
1,1,2-Trichloroethane	79-00-5	1.12	U	5.58	1.12	0.558
Trichloroethene	79-01-6	1.12	U	5.58	1.12	0.558
Trichlorofluoromethane	75-69-4	2.24	U	5.58	2.24	1.12
1,2,3-Trichloropropane	96-18-4	2.24	U	5.58	2.24	1.12

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Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.12	U	5.58	1.12	0.558
1,3,5-Trimethylbenzene	108-67-8	1.12	U	5.58	1.12	0.558
Vinyl chloride	75-01-4	2.24	U	5.58	2.24	1.12
o-Xylene	95-47-6	1.12	U	5.58	1.12	0.558
m-,p-Xylene	179601-23-1	1.12	U	5.58	1.12	0.558

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.6	80	120	
1,2-Dichloroethane-d4	98.7	80	120	
Toluene-d8	106	85	115	
4-Bromofluorobenzene	116	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021357-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT01(22.5-23)250216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 00:24
Collect Date:	02/25/2016 16:00	**Dilution:**	1	**File ID:**	1LM.LM33488
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	63.0		4.54	2.28	1.14

Certificate of Analysis

Sample #:	L16021357-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT01(24.5-25)250216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:23
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	02/29/2016 23:03
Collect Date:	02/25/2016 16:30	**Dilution:**	1	**File ID:**	9M972978
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	87.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.1	U	22.1	11.1	5.53
Benzene	71-43-2	1.11	U	5.53	1.11	0.553
Bromobenzene	108-86-1	1.11	U	5.53	1.11	0.553
Bromochloromethane	74-97-5	2.22	U	5.53	2.22	1.11
Bromodichloromethane	75-27-4	1.11	U	5.53	1.11	0.553
Bromoform	75-25-2	1.11	U	5.53	1.11	0.553
Bromomethane	74-83-9	2.22	U	5.53	2.22	1.11
2-Butanone	78-93-3	5.52	U	11.1	5.52	2.76
n-Butylbenzene	104-51-8	1.11	U	5.53	1.11	0.553
sec-Butylbenzene	135-98-8	1.11	U	5.53	1.11	0.553
tert-Butylbenzene	98-06-6	1.11	U	5.53	1.11	0.553
Carbon disulfide	75-15-0	1.11	U	5.53	1.11	0.553
Carbon tetrachloride	56-23-5	1.11	U	5.53	1.11	0.553
Chlorobenzene	108-90-7	1.11	U	5.53	1.11	0.553
Chlorodibromomethane	124-48-1	1.11	U	5.53	1.11	0.553
Chloroethane	75-00-3	2.22	U	5.53	2.22	1.11
Chloroform	67-66-3	1.11	U	5.53	1.11	0.553
Chloromethane	74-87-3	4.42	U	11.1	4.42	2.21
2-Chlorotoluene	95-49-8	1.11	U	5.53	1.11	0.553
4-Chlorotoluene	106-43-4	1.11	U	5.53	1.11	0.553

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Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	4.42	U	11.1	4.42	2.21
1,2-Dibromoethane	106-93-4	1.11	U	5.53	1.11	0.553
Dibromomethane	74-95-3	1.11	U	5.53	1.11	0.553
1,2-Dichlorobenzene	95-50-1	1.11	U	5.53	1.11	0.553
1,3-Dichlorobenzene	541-73-1	1.11	U	5.53	1.11	0.553
1,4-Dichlorobenzene	106-46-7	1.11	U	5.53	1.11	0.553
Dichlorodifluoromethane	75-71-8	2.22	U	5.53	2.22	1.11
1,1-Dichloroethane	75-34-3	2.22	U	5.53	2.22	1.11
1,2-Dichloroethane	107-06-2	1.11	U	5.53	1.11	0.553
1,1-Dichloroethene	75-35-4	1.11	U	5.53	1.11	0.553
cis-1,2-Dichloroethene	156-59-2	1.11	U	5.53	1.11	0.553
trans-1,2-Dichloroethene	156-60-5	1.11	U	5.53	1.11	0.553
1,2-Dichloropropane	78-87-5	1.11	U	5.53	1.11	0.553
1,3-Dichloropropane	142-28-9	1.11	U	5.53	1.11	0.553
2,2-Dichloropropane	594-20-7	1.11	U	5.53	1.11	0.553
cis-1,3-Dichloropropene	10061-01-5	1.11	U	5.53	1.11	0.553
trans-1,3-Dichloropropene	10061-02-6	1.11	U	5.53	1.11	0.553
1,1-Dichloropropene	563-58-6	1.11	U	5.53	1.11	0.553
Ethylbenzene	100-41-4	1.11	U	5.53	1.11	0.553
2-Hexanone	591-78-6	5.52	U	11.1	5.52	2.76
Hexachlorobutadiene	87-68-3	1.11	U	5.53	1.11	0.553
Isopropylbenzene	98-82-8	1.11	U	5.53	1.11	0.553
p-Isopropyltoluene	99-87-6	1.11	U	5.53	1.11	0.553
4-Methyl-2-pentanone	108-10-1	5.52	U	11.1	5.52	2.76
Methylene chloride	75-09-2	2.22	U	5.53	2.22	1.11
Naphthalene	91-20-3	1.11	U	5.53	1.11	0.553
n-Propylbenzene	103-65-1	1.11	U	5.53	1.11	0.553
Styrene	100-42-5	1.11	U	5.53	1.11	0.553
1,1,1,2-Tetrachloroethane	630-20-6	1.11	U	5.53	1.11	0.553
1,1,2,2-Tetrachloroethane	79-34-5	1.11	U	5.53	1.11	0.553
Tetrachloroethene	127-18-4	1.11	U	5.53	1.11	0.553
Toluene	108-88-3	1.11	U	5.53	1.11	0.553
1,2,3-Trichlorobenzene	87-61-6	1.11	U	5.53	1.11	0.553
1,2,4-Trichlorobenzene	120-82-1	1.11	U	5.53	1.11	0.553
1,1,1-Trichloroethane	71-55-6	1.11	U	5.53	1.11	0.553
1,1,2-Trichloroethane	79-00-5	1.11	U	5.53	1.11	0.553
Trichloroethene	79-01-6	1.11	U	5.53	1.11	0.553
Trichlorofluoromethane	75-69-4	2.22	U	5.53	2.22	1.11
1,2,3-Trichloropropane	96-18-4	2.22	U	5.53	2.22	1.11

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Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.11	U	5.53	1.11	0.553
1,3,5-Trimethylbenzene	108-67-8	1.11	U	5.53	1.11	0.553
Vinyl chloride	75-01-4	2.22	U	5.53	2.22	1.11
o-Xylene	95-47-6	1.11	U	5.53	1.11	0.553
m-,p-Xylene	179601-23-1	1.11	U	5.53	1.11	0.553

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.5	80	120	
1,2-Dichloroethane-d4	95.8	80	120	
Toluene-d8	109	85	115	
4-Bromofluorobenzene	115	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021357-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT01(24.5-25)250216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 00:43
Collect Date:	02/25/2016 16:30	**Dilution:**	1	**File ID:**	1LM.LM33489
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	87.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	47.7		4.48	2.24	1.12

Certificate of Analysis

Sample #:	L16021357-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT01(27-27.5)250216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:23
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	02/29/2016 23:33
Collect Date:	02/25/2016 16:35	**Dilution:**	1	**File ID:**	9M972979
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.7	U	25.4	12.7	6.35
Benzene	71-43-2	1.27	U	6.35	1.27	0.635
Bromobenzene	108-86-1	1.27	U	6.35	1.27	0.635
Bromochloromethane	74-97-5	2.54	U	6.35	2.54	1.27
Bromodichloromethane	75-27-4	1.27	U	6.35	1.27	0.635
Bromoform	75-25-2	1.27	U	6.35	1.27	0.635
Bromomethane	74-83-9	2.54	U	6.35	2.54	1.27
2-Butanone	78-93-3	6.34	U	12.7	6.34	3.17
n-Butylbenzene	104-51-8	1.27	U	6.35	1.27	0.635
sec-Butylbenzene	135-98-8	1.27	U	6.35	1.27	0.635
tert-Butylbenzene	98-06-6	1.27	U	6.35	1.27	0.635
Carbon disulfide	75-15-0	1.27	U	6.35	1.27	0.635
Carbon tetrachloride	56-23-5	1.27	U	6.35	1.27	0.635
Chlorobenzene	108-90-7	1.27	U	6.35	1.27	0.635
Chlorodibromomethane	124-48-1	1.27	U	6.35	1.27	0.635
Chloroethane	75-00-3	2.54	U	6.35	2.54	1.27
Chloroform	67-66-3	1.27	U	6.35	1.27	0.635
Chloromethane	74-87-3	5.08	U	12.7	5.08	2.54
2-Chlorotoluene	95-49-8	1.27	U	6.35	1.27	0.635
4-Chlorotoluene	106-43-4	1.27	U	6.35	1.27	0.635

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Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	5.08	U	12.7	5.08	2.54
1,2-Dibromoethane	106-93-4	1.27	U	6.35	1.27	0.635
Dibromomethane	74-95-3	1.27	U	6.35	1.27	0.635
1,2-Dichlorobenzene	95-50-1	1.27	U	6.35	1.27	0.635
1,3-Dichlorobenzene	541-73-1	1.27	U	6.35	1.27	0.635
1,4-Dichlorobenzene	106-46-7	1.27	U	6.35	1.27	0.635
Dichlorodifluoromethane	75-71-8	2.54	U	6.35	2.54	1.27
1,1-Dichloroethane	75-34-3	2.54	U	6.35	2.54	1.27
1,2-Dichloroethane	107-06-2	1.27	U	6.35	1.27	0.635
1,1-Dichloroethene	75-35-4	1.27	U	6.35	1.27	0.635
cis-1,2-Dichloroethene	156-59-2	1.27	U	6.35	1.27	0.635
trans-1,2-Dichloroethene	156-60-5	1.27	U	6.35	1.27	0.635
1,2-Dichloropropane	78-87-5	1.27	U	6.35	1.27	0.635
1,3-Dichloropropane	142-28-9	1.27	U	6.35	1.27	0.635
2,2-Dichloropropane	594-20-7	1.27	U	6.35	1.27	0.635
cis-1,3-Dichloropropene	10061-01-5	1.27	U	6.35	1.27	0.635
trans-1,3-Dichloropropene	10061-02-6	1.27	U	6.35	1.27	0.635
1,1-Dichloropropene	563-58-6	1.27	U	6.35	1.27	0.635
Ethylbenzene	100-41-4	1.27	U	6.35	1.27	0.635
2-Hexanone	591-78-6	6.34	U	12.7	6.34	3.17
Hexachlorobutadiene	87-68-3	1.27	U	6.35	1.27	0.635
Isopropylbenzene	98-82-8	1.27	U	6.35	1.27	0.635
p-Isopropyltoluene	99-87-6	1.27	U	6.35	1.27	0.635
4-Methyl-2-pentanone	108-10-1	6.34	U	12.7	6.34	3.17
Methylene chloride	75-09-2	2.54	U	6.35	2.54	1.27
Naphthalene	91-20-3	1.27	U	6.35	1.27	0.635
n-Propylbenzene	103-65-1	1.27	U	6.35	1.27	0.635
Styrene	100-42-5	1.27	U	6.35	1.27	0.635
1,1,1,2-Tetrachloroethane	630-20-6	1.27	U	6.35	1.27	0.635
1,1,2,2-Tetrachloroethane	79-34-5	1.27	U	6.35	1.27	0.635
Tetrachloroethene	127-18-4	1.27	U	6.35	1.27	0.635
Toluene	108-88-3	1.27	U	6.35	1.27	0.635
1,2,3-Trichlorobenzene	87-61-6	1.27	U	6.35	1.27	0.635
1,2,4-Trichlorobenzene	120-82-1	1.27	U	6.35	1.27	0.635
1,1,1-Trichloroethane	71-55-6	1.27	U	6.35	1.27	0.635
1,1,2-Trichloroethane	79-00-5	1.27	U	6.35	1.27	0.635
Trichloroethene	79-01-6	1.27	U	6.35	1.27	0.635
Trichlorofluoromethane	75-69-4	2.54	U	6.35	2.54	1.27
1,2,3-Trichloropropane	96-18-4	2.54	U	6.35	2.54	1.27

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.27	U	6.35	1.27	0.635
1,3,5-Trimethylbenzene	108-67-8	1.27	U	6.35	1.27	0.635
Vinyl chloride	75-01-4	2.54	U	6.35	2.54	1.27
o-Xylene	95-47-6	1.27	U	6.35	1.27	0.635
m-,p-Xylene	179601-23-1	1.27	U	6.35	1.27	0.635

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.7	80	120	
1,2-Dichloroethane-d4	101	80	120	
Toluene-d8	108	85	115	
4-Bromofluorobenzene	117	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021357-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT01(27-27.5)250216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 10:32
Collect Date:	02/25/2016 16:35	**Dilution:**	10	**File ID:**	1LM.LM33511
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	79.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	535		48.6	24.4	12.2

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #: L16021357-01 **Client ID:** 18DPT01(5-5.5)250216 **Matrix:** Soil **Collect Date:** 02/25/2016 11:30

Analyte	Result	Units	Qualifier
Percent Solids	81.7	weight %	

Sample #: L16021357-02 **Client ID:** 18DPT01(9.5-10)250216 **Matrix:** Soil **Collect Date:** 02/25/2016 11:37

Analyte	Result	Units	Qualifier
Percent Solids	88.2	weight %	

Sample #: L16021357-03 **Client ID:** 18DPT01(15-15.5)250216 **Matrix:** Soil **Collect Date:** 02/25/2016 14:23

Analyte	Result	Units	Qualifier
Percent Solids	90.1	weight %	

Sample #: L16021357-04 **Client ID:** 18DPT01(22.5-23)250216 **Matrix:** Soil **Collect Date:** 02/25/2016 16:00

Analyte	Result	Units	Qualifier
Percent Solids	84.1	weight %	

Sample #: L16021357-05 **Client ID:** 18DPT01(24.5-25)250216 **Matrix:** Soil **Collect Date:** 02/25/2016 16:30

Analyte	Result	Units	Qualifier
Percent Solids	87.2	weight %	

Sample #: L16021357-06 **Client ID:** 18DPT01(27-27.5)250216 **Matrix:** Soil **Collect Date:** 02/25/2016 16:35

Analyte	Result	Units	Qualifier
Percent Solids	79.1	weight %	

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021357-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT01(5-5.5)250216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:19
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	02/29/2016 21:00
Collect Date:	02/25/2016 11:30	**Dilution:**	1	**File ID:**	9M972974
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	7.78	J	25.0	12.5	6.24
Benzene	71-43-2	1.25	U	6.24	1.25	0.624
Bromobenzene	108-86-1	1.25	U	6.24	1.25	0.624
Bromochloromethane	74-97-5	2.50	U	6.24	2.50	1.25
Bromodichloromethane	75-27-4	1.25	U	6.24	1.25	0.624
Bromoform	75-25-2	1.25	U	6.24	1.25	0.624
Bromomethane	74-83-9	2.50	U	6.24	2.50	1.25
2-Butanone	78-93-3	6.24	U	12.5	6.24	3.12
n-Butylbenzene	104-51-8	1.25	U	6.24	1.25	0.624
sec-Butylbenzene	135-98-8	1.25	U	6.24	1.25	0.624
tert-Butylbenzene	98-06-6	0.778	J	6.24	1.25	0.624
Carbon disulfide	75-15-0	1.25	U	6.24	1.25	0.624
Carbon tetrachloride	56-23-5	1.25	U	6.24	1.25	0.624
Chlorobenzene	108-90-7	1.25	U	6.24	1.25	0.624
Chlorodibromomethane	124-48-1	1.25	U	6.24	1.25	0.624
Chloroethane	75-00-3	2.50	U	6.24	2.50	1.25
Chloroform	67-66-3	1.25	U	6.24	1.25	0.624
Chloromethane	74-87-3	5.00	U	12.5	5.00	2.50
2-Chlorotoluene	95-49-8	1.25	U	6.24	1.25	0.624
4-Chlorotoluene	106-43-4	1.25	U	6.24	1.25	0.624
1,2-Dibromo-3-chloropropane	96-12-8	5.00	U	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	6.24	1.25	0.624
Dibromomethane	74-95-3	1.25	U	6.24	1.25	0.624
1,2-Dichlorobenzene	95-50-1	1.25	U	6.24	1.25	0.624
1,3-Dichlorobenzene	541-73-1	1.25	U	6.24	1.25	0.624
1,4-Dichlorobenzene	106-46-7	1.25	U	6.24	1.25	0.624
Dichlorodifluoromethane	75-71-8	2.50	U	6.24	2.50	1.25
1,1-Dichloroethane	75-34-3	2.50	U	6.24	2.50	1.25
1,2-Dichloroethane	107-06-2	1.25	U	6.24	1.25	0.624
1,1-Dichloroethene	75-35-4	1.25	U	6.24	1.25	0.624
cis-1,2-Dichloroethene	156-59-2	1.25	U	6.24	1.25	0.624
trans-1,2-Dichloroethene	156-60-5	1.25	U	6.24	1.25	0.624

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.25	U	6.24	1.25	0.624
1,3-Dichloropropane	142-28-9	1.25	U	6.24	1.25	0.624
2,2-Dichloropropane	594-20-7	1.25	U	6.24	1.25	0.624
cis-1,3-Dichloropropene	10061-01-5	1.25	U	6.24	1.25	0.624
trans-1,3-Dichloropropene	10061-02-6	1.25	U	6.24	1.25	0.624
1,1-Dichloropropene	563-58-6	1.25	U	6.24	1.25	0.624
Ethylbenzene	100-41-4	1.25	U	6.24	1.25	0.624
2-Hexanone	591-78-6	6.24	U	12.5	6.24	3.12
Hexachlorobutadiene	87-68-3	1.25	U	6.24	1.25	0.624
Isopropylbenzene	98-82-8	1.25	U	6.24	1.25	0.624
p-Isopropyltoluene	99-87-6	21.8		6.24	1.25	0.624
4-Methyl-2-pentanone	108-10-1	6.24	U	12.5	6.24	3.12
Methylene chloride	75-09-2	2.50	U	6.24	2.50	1.25
Naphthalene	91-20-3	1.25	U	6.24	1.25	0.624
n-Propylbenzene	103-65-1	1.25	U	6.24	1.25	0.624
Styrene	100-42-5	1.25	U	6.24	1.25	0.624
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	6.24	1.25	0.624
1,1,2,2-Tetrachloroethane	79-34-5	1.25	U	6.24	1.25	0.624
Tetrachloroethene	127-18-4	1.25	U	6.24	1.25	0.624
Toluene	108-88-3	1.25	U	6.24	1.25	0.624
1,2,3-Trichlorobenzene	87-61-6	1.25	U	6.24	1.25	0.624
1,2,4-Trichlorobenzene	120-82-1	1.25	U	6.24	1.25	0.624
1,1,1-Trichloroethane	71-55-6	1.25	U	6.24	1.25	0.624
1,1,2-Trichloroethane	79-00-5	1.25	U	6.24	1.25	0.624
Trichloroethene	79-01-6	1.25	U	6.24	1.25	0.624
Trichlorofluoromethane	75-69-4	2.50	U	6.24	2.50	1.25
1,2,3-Trichloropropane	96-18-4	2.50	U	6.24	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	6.24	1.25	0.624
1,3,5-Trimethylbenzene	108-67-8	1.25	U	6.24	1.25	0.624
Vinyl chloride	75-01-4	2.50	U	6.24	2.50	1.25
o-Xylene	95-47-6	1.25	U	6.24	1.25	0.624
m-,p-Xylene	179601-23-1	1.25	U	6.24	1.25	0.624

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.7	80	120	
1,2-Dichloroethane-d4	102	80	120	
Toluene-d8	107	85	115	
4-Bromofluorobenzene	113	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021357-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT01(9.5-10)250216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:21
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	02/29/2016 21:30
Collect Date:	02/25/2016 11:37	**Dilution:**	1	**File ID:**	9M972975
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	88.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	10.9	U	21.7	10.9	5.43
Benzene	71-43-2	1.09	U	5.43	1.09	0.543
Bromobenzene	108-86-1	1.09	U	5.43	1.09	0.543
Bromochloromethane	74-97-5	2.18	U	5.43	2.18	1.09
Bromodichloromethane	75-27-4	1.09	U	5.43	1.09	0.543
Bromoform	75-25-2	1.09	U	5.43	1.09	0.543
Bromomethane	74-83-9	2.18	U	5.43	2.18	1.09
2-Butanone	78-93-3	5.42	U	10.9	5.42	2.71
n-Butylbenzene	104-51-8	1.09	U	5.43	1.09	0.543
sec-Butylbenzene	135-98-8	1.09	U	5.43	1.09	0.543
tert-Butylbenzene	98-06-6	1.09	U	5.43	1.09	0.543
Carbon disulfide	75-15-0	1.09	U	5.43	1.09	0.543
Carbon tetrachloride	56-23-5	1.09	U	5.43	1.09	0.543
Chlorobenzene	108-90-7	1.09	U	5.43	1.09	0.543
Chlorodibromomethane	124-48-1	1.09	U	5.43	1.09	0.543
Chloroethane	75-00-3	2.18	U	5.43	2.18	1.09
Chloroform	67-66-3	1.09	U	5.43	1.09	0.543
Chloromethane	74-87-3	4.34	U	10.9	4.34	2.17
2-Chlorotoluene	95-49-8	1.09	U	5.43	1.09	0.543
4-Chlorotoluene	106-43-4	1.09	U	5.43	1.09	0.543
1,2-Dibromo-3-chloropropane	96-12-8	4.34	U	10.9	4.34	2.17
1,2-Dibromoethane	106-93-4	1.09	U	5.43	1.09	0.543
Dibromomethane	74-95-3	1.09	U	5.43	1.09	0.543
1,2-Dichlorobenzene	95-50-1	1.09	U	5.43	1.09	0.543
1,3-Dichlorobenzene	541-73-1	1.09	U	5.43	1.09	0.543
1,4-Dichlorobenzene	106-46-7	1.09	U	5.43	1.09	0.543
Dichlorodifluoromethane	75-71-8	2.18	U	5.43	2.18	1.09
1,1-Dichloroethane	75-34-3	2.18	U	5.43	2.18	1.09
1,2-Dichloroethane	107-06-2	1.09	U	5.43	1.09	0.543
1,1-Dichloroethene	75-35-4	1.09	U	5.43	1.09	0.543
cis-1,2-Dichloroethene	156-59-2	1.09	U	5.43	1.09	0.543

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.09	U	5.43	1.09	0.543
1,2-Dichloropropane	78-87-5	1.09	U	5.43	1.09	0.543
1,3-Dichloropropane	142-28-9	1.09	U	5.43	1.09	0.543
2,2-Dichloropropane	594-20-7	1.09	U	5.43	1.09	0.543
cis-1,3-Dichloropropene	10061-01-5	1.09	U	5.43	1.09	0.543
trans-1,3-Dichloropropene	10061-02-6	1.09	U	5.43	1.09	0.543
1,1-Dichloropropene	563-58-6	1.09	U	5.43	1.09	0.543
Ethylbenzene	100-41-4	1.09	U	5.43	1.09	0.543
2-Hexanone	591-78-6	5.42	U	10.9	5.42	2.71
Hexachlorobutadiene	87-68-3	1.09	U	5.43	1.09	0.543
Isopropylbenzene	98-82-8	1.09	U	5.43	1.09	0.543
p-Isopropyltoluene	99-87-6	1.09	U	5.43	1.09	0.543
4-Methyl-2-pentanone	108-10-1	5.42	U	10.9	5.42	2.71
Methylene chloride	75-09-2	2.18	U	5.43	2.18	1.09
Naphthalene	91-20-3	1.09	U	5.43	1.09	0.543
n-Propylbenzene	103-65-1	1.09	U	5.43	1.09	0.543
Styrene	100-42-5	1.09	U	5.43	1.09	0.543
1,1,1,2-Tetrachloroethane	630-20-6	1.09	U	5.43	1.09	0.543
1,1,2,2-Tetrachloroethane	79-34-5	1.09	U	5.43	1.09	0.543
Tetrachloroethene	127-18-4	1.09	U	5.43	1.09	0.543
Toluene	108-88-3	1.09	U	5.43	1.09	0.543
1,2,3-Trichlorobenzene	87-61-6	1.09	U	5.43	1.09	0.543
1,2,4-Trichlorobenzene	120-82-1	1.09	U	5.43	1.09	0.543
1,1,1-Trichloroethane	71-55-6	1.09	U	5.43	1.09	0.543
1,1,2-Trichloroethane	79-00-5	1.09	U	5.43	1.09	0.543
Trichloroethene	79-01-6	1.09	U	5.43	1.09	0.543
Trichlorofluoromethane	75-69-4	2.18	U	5.43	2.18	1.09
1,2,3-Trichloropropane	96-18-4	2.18	U	5.43	2.18	1.09
1,2,4-Trimethylbenzene	95-63-6	1.09	U	5.43	1.09	0.543
1,3,5-Trimethylbenzene	108-67-8	1.09	U	5.43	1.09	0.543
Vinyl chloride	75-01-4	2.18	U	5.43	2.18	1.09
o-Xylene	95-47-6	1.09	U	5.43	1.09	0.543
m-,p-Xylene	179601-23-1	1.09	U	5.43	1.09	0.543

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	80	120	
1,2-Dichloroethane-d4	99.4	80	120	
Toluene-d8	109	85	115	
4-Bromofluorobenzene	111	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021357-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT01(15-15.5)250216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:22
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	02/29/2016 22:01
Collect Date:	02/25/2016 14:23	**Dilution:**	1	**File ID:**	9M972976
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	90.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.1	U	22.3	11.1	5.57
Benzene	71-43-2	1.11	U	5.57	1.11	0.557
Bromobenzene	108-86-1	1.11	U	5.57	1.11	0.557
Bromochloromethane	74-97-5	2.22	U	5.57	2.22	1.11
Bromodichloromethane	75-27-4	1.11	U	5.57	1.11	0.557
Bromoform	75-25-2	1.11	U	5.57	1.11	0.557
Bromomethane	74-83-9	2.22	U	5.57	2.22	1.11
2-Butanone	78-93-3	5.58	U	11.1	5.58	2.79
n-Butylbenzene	104-51-8	1.11	U	5.57	1.11	0.557
sec-Butylbenzene	135-98-8	1.11	U	5.57	1.11	0.557
tert-Butylbenzene	98-06-6	1.11	U	5.57	1.11	0.557
Carbon disulfide	75-15-0	1.11	U	5.57	1.11	0.557
Carbon tetrachloride	56-23-5	1.11	U	5.57	1.11	0.557
Chlorobenzene	108-90-7	1.11	U	5.57	1.11	0.557
Chlorodibromomethane	124-48-1	1.11	U	5.57	1.11	0.557
Chloroethane	75-00-3	2.22	U	5.57	2.22	1.11
Chloroform	67-66-3	1.11	U	5.57	1.11	0.557
Chloromethane	74-87-3	4.46	U	11.1	4.46	2.23
2-Chlorotoluene	95-49-8	1.11	U	5.57	1.11	0.557
4-Chlorotoluene	106-43-4	1.11	U	5.57	1.11	0.557
1,2-Dibromo-3-chloropropane	96-12-8	4.46	U	11.1	4.46	2.23
1,2-Dibromoethane	106-93-4	1.11	U	5.57	1.11	0.557
Dibromomethane	74-95-3	1.11	U	5.57	1.11	0.557
1,2-Dichlorobenzene	95-50-1	1.11	U	5.57	1.11	0.557
1,3-Dichlorobenzene	541-73-1	1.11	U	5.57	1.11	0.557
1,4-Dichlorobenzene	106-46-7	1.11	U	5.57	1.11	0.557
Dichlorodifluoromethane	75-71-8	2.22	U	5.57	2.22	1.11
1,1-Dichloroethane	75-34-3	2.22	U	5.57	2.22	1.11
1,2-Dichloroethane	107-06-2	1.11	U	5.57	1.11	0.557
1,1-Dichloroethene	75-35-4	1.11	U	5.57	1.11	0.557
cis-1,2-Dichloroethene	156-59-2	1.11	U	5.57	1.11	0.557

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Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.11	U	5.57	1.11	0.557
1,2-Dichloropropane	78-87-5	1.11	U	5.57	1.11	0.557
1,3-Dichloropropane	142-28-9	1.11	U	5.57	1.11	0.557
2,2-Dichloropropane	594-20-7	1.11	U	5.57	1.11	0.557
cis-1,3-Dichloropropene	10061-01-5	1.11	U	5.57	1.11	0.557
trans-1,3-Dichloropropene	10061-02-6	1.11	U	5.57	1.11	0.557
1,1-Dichloropropene	563-58-6	1.11	U	5.57	1.11	0.557
Ethylbenzene	100-41-4	1.11	U	5.57	1.11	0.557
2-Hexanone	591-78-6	5.58	U	11.1	5.58	2.79
Hexachlorobutadiene	87-68-3	1.11	U	5.57	1.11	0.557
Isopropylbenzene	98-82-8	1.11	U	5.57	1.11	0.557
p-Isopropyltoluene	99-87-6	1.11	U	5.57	1.11	0.557
4-Methyl-2-pentanone	108-10-1	5.58	U	11.1	5.58	2.79
Methylene chloride	75-09-2	2.22	U	5.57	2.22	1.11
Naphthalene	91-20-3	1.11	U	5.57	1.11	0.557
n-Propylbenzene	103-65-1	1.11	U	5.57	1.11	0.557
Styrene	100-42-5	1.11	U	5.57	1.11	0.557
1,1,1,2-Tetrachloroethane	630-20-6	1.11	U	5.57	1.11	0.557
1,1,2,2-Tetrachloroethane	79-34-5	1.11	U	5.57	1.11	0.557
Tetrachloroethene	127-18-4	1.11	U	5.57	1.11	0.557
Toluene	108-88-3	1.11	U	5.57	1.11	0.557
1,2,3-Trichlorobenzene	87-61-6	1.11	U	5.57	1.11	0.557
1,2,4-Trichlorobenzene	120-82-1	1.11	U	5.57	1.11	0.557
1,1,1-Trichloroethane	71-55-6	1.11	U	5.57	1.11	0.557
1,1,2-Trichloroethane	79-00-5	1.11	U	5.57	1.11	0.557
Trichloroethene	79-01-6	1.11	U	5.57	1.11	0.557
Trichlorofluoromethane	75-69-4	2.22	U	5.57	2.22	1.11
1,2,3-Trichloropropane	96-18-4	2.22	U	5.57	2.22	1.11
1,2,4-Trimethylbenzene	95-63-6	1.11	U	5.57	1.11	0.557
1,3,5-Trimethylbenzene	108-67-8	1.11	U	5.57	1.11	0.557
Vinyl chloride	75-01-4	2.22	U	5.57	2.22	1.11
o-Xylene	95-47-6	1.11	U	5.57	1.11	0.557
m-,p-Xylene	179601-23-1	1.11	U	5.57	1.11	0.557

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.5	80	120	
1,2-Dichloroethane-d4	99.4	80	120	
Toluene-d8	109	85	115	
4-Bromofluorobenzene	111	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021357-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT01(22.5-23)250216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:22
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	02/29/2016 22:32
Collect Date:	02/25/2016 16:00	**Dilution:**	1	**File ID:**	9M972977
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	9.77	J	22.3	11.2	5.58
Benzene	71-43-2	1.12	U	5.58	1.12	0.558
Bromobenzene	108-86-1	1.12	U	5.58	1.12	0.558
Bromochloromethane	74-97-5	2.24	U	5.58	2.24	1.12
Bromodichloromethane	75-27-4	1.12	U	5.58	1.12	0.558
Bromoform	75-25-2	1.12	U	5.58	1.12	0.558
Bromomethane	74-83-9	2.24	U	5.58	2.24	1.12
2-Butanone	78-93-3	5.58	U	11.2	5.58	2.79
n-Butylbenzene	104-51-8	1.12	U	5.58	1.12	0.558
sec-Butylbenzene	135-98-8	1.12	U	5.58	1.12	0.558
tert-Butylbenzene	98-06-6	1.12	U	5.58	1.12	0.558
Carbon disulfide	75-15-0	1.12	U	5.58	1.12	0.558
Carbon tetrachloride	56-23-5	1.12	U	5.58	1.12	0.558
Chlorobenzene	108-90-7	1.12	U	5.58	1.12	0.558
Chlorodibromomethane	124-48-1	1.12	U	5.58	1.12	0.558
Chloroethane	75-00-3	2.24	U	5.58	2.24	1.12
Chloroform	67-66-3	1.12	U	5.58	1.12	0.558
Chloromethane	74-87-3	4.46	U	11.2	4.46	2.23
2-Chlorotoluene	95-49-8	1.12	U	5.58	1.12	0.558
4-Chlorotoluene	106-43-4	1.12	U	5.58	1.12	0.558
1,2-Dibromo-3-chloropropane	96-12-8	4.46	U	11.2	4.46	2.23
1,2-Dibromoethane	106-93-4	1.12	U	5.58	1.12	0.558
Dibromomethane	74-95-3	1.12	U	5.58	1.12	0.558
1,2-Dichlorobenzene	95-50-1	1.12	U	5.58	1.12	0.558
1,3-Dichlorobenzene	541-73-1	1.12	U	5.58	1.12	0.558
1,4-Dichlorobenzene	106-46-7	1.12	U	5.58	1.12	0.558
Dichlorodifluoromethane	75-71-8	2.24	U	5.58	2.24	1.12
1,1-Dichloroethane	75-34-3	2.24	U	5.58	2.24	1.12
1,2-Dichloroethane	107-06-2	1.12	U	5.58	1.12	0.558
1,1-Dichloroethene	75-35-4	1.12	U	5.58	1.12	0.558
cis-1,2-Dichloroethene	156-59-2	1.12	U	5.58	1.12	0.558

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Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.12	U	5.58	1.12	0.558
1,2-Dichloropropane	78-87-5	1.12	U	5.58	1.12	0.558
1,3-Dichloropropane	142-28-9	1.12	U	5.58	1.12	0.558
2,2-Dichloropropane	594-20-7	1.12	U	5.58	1.12	0.558
cis-1,3-Dichloropropene	10061-01-5	1.12	U	5.58	1.12	0.558
trans-1,3-Dichloropropene	10061-02-6	1.12	U	5.58	1.12	0.558
1,1-Dichloropropene	563-58-6	1.12	U	5.58	1.12	0.558
Ethylbenzene	100-41-4	1.12	U	5.58	1.12	0.558
2-Hexanone	591-78-6	5.58	U	11.2	5.58	2.79
Hexachlorobutadiene	87-68-3	1.12	U	5.58	1.12	0.558
Isopropylbenzene	98-82-8	1.12	U	5.58	1.12	0.558
p-Isopropyltoluene	99-87-6	1.12	U	5.58	1.12	0.558
4-Methyl-2-pentanone	108-10-1	5.58	U	11.2	5.58	2.79
Methylene chloride	75-09-2	2.24	U	5.58	2.24	1.12
Naphthalene	91-20-3	1.12	U	5.58	1.12	0.558
n-Propylbenzene	103-65-1	1.12	U	5.58	1.12	0.558
Styrene	100-42-5	1.12	U	5.58	1.12	0.558
1,1,1,2-Tetrachloroethane	630-20-6	1.12	U	5.58	1.12	0.558
1,1,2,2-Tetrachloroethane	79-34-5	1.12	U	5.58	1.12	0.558
Tetrachloroethene	127-18-4	1.12	U	5.58	1.12	0.558
Toluene	108-88-3	1.12	U	5.58	1.12	0.558
1,2,3-Trichlorobenzene	87-61-6	1.12	U	5.58	1.12	0.558
1,2,4-Trichlorobenzene	120-82-1	1.12	U	5.58	1.12	0.558
1,1,1-Trichloroethane	71-55-6	1.12	U	5.58	1.12	0.558
1,1,2-Trichloroethane	79-00-5	1.12	U	5.58	1.12	0.558
Trichloroethene	79-01-6	1.12	U	5.58	1.12	0.558
Trichlorofluoromethane	75-69-4	2.24	U	5.58	2.24	1.12
1,2,3-Trichloropropane	96-18-4	2.24	U	5.58	2.24	1.12
1,2,4-Trimethylbenzene	95-63-6	1.12	U	5.58	1.12	0.558
1,3,5-Trimethylbenzene	108-67-8	1.12	U	5.58	1.12	0.558
Vinyl chloride	75-01-4	2.24	U	5.58	2.24	1.12
o-Xylene	95-47-6	1.12	U	5.58	1.12	0.558
m-,p-Xylene	179601-23-1	1.12	U	5.58	1.12	0.558

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.6	80	120	
1,2-Dichloroethane-d4	98.7	80	120	
Toluene-d8	106	85	115	
4-Bromofluorobenzene	116	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

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Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021357-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT01(24.5-25)250216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:23
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	02/29/2016 23:03
Collect Date:	02/25/2016 16:30	**Dilution:**	1	**File ID:**	9M972978
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	87.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.1	U	22.1	11.1	5.53
Benzene	71-43-2	1.11	U	5.53	1.11	0.553
Bromobenzene	108-86-1	1.11	U	5.53	1.11	0.553
Bromochloromethane	74-97-5	2.22	U	5.53	2.22	1.11
Bromodichloromethane	75-27-4	1.11	U	5.53	1.11	0.553
Bromoform	75-25-2	1.11	U	5.53	1.11	0.553
Bromomethane	74-83-9	2.22	U	5.53	2.22	1.11
2-Butanone	78-93-3	5.52	U	11.1	5.52	2.76
n-Butylbenzene	104-51-8	1.11	U	5.53	1.11	0.553
sec-Butylbenzene	135-98-8	1.11	U	5.53	1.11	0.553
tert-Butylbenzene	98-06-6	1.11	U	5.53	1.11	0.553
Carbon disulfide	75-15-0	1.11	U	5.53	1.11	0.553
Carbon tetrachloride	56-23-5	1.11	U	5.53	1.11	0.553
Chlorobenzene	108-90-7	1.11	U	5.53	1.11	0.553
Chlorodibromomethane	124-48-1	1.11	U	5.53	1.11	0.553
Chloroethane	75-00-3	2.22	U	5.53	2.22	1.11
Chloroform	67-66-3	1.11	U	5.53	1.11	0.553
Chloromethane	74-87-3	4.42	U	11.1	4.42	2.21
2-Chlorotoluene	95-49-8	1.11	U	5.53	1.11	0.553
4-Chlorotoluene	106-43-4	1.11	U	5.53	1.11	0.553
1,2-Dibromo-3-chloropropane	96-12-8	4.42	U	11.1	4.42	2.21
1,2-Dibromoethane	106-93-4	1.11	U	5.53	1.11	0.553
Dibromomethane	74-95-3	1.11	U	5.53	1.11	0.553
1,2-Dichlorobenzene	95-50-1	1.11	U	5.53	1.11	0.553
1,3-Dichlorobenzene	541-73-1	1.11	U	5.53	1.11	0.553
1,4-Dichlorobenzene	106-46-7	1.11	U	5.53	1.11	0.553
Dichlorodifluoromethane	75-71-8	2.22	U	5.53	2.22	1.11
1,1-Dichloroethane	75-34-3	2.22	U	5.53	2.22	1.11
1,2-Dichloroethane	107-06-2	1.11	U	5.53	1.11	0.553
1,1-Dichloroethene	75-35-4	1.11	U	5.53	1.11	0.553
cis-1,2-Dichloroethene	156-59-2	1.11	U	5.53	1.11	0.553

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Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.11	U	5.53	1.11	0.553
1,2-Dichloropropane	78-87-5	1.11	U	5.53	1.11	0.553
1,3-Dichloropropane	142-28-9	1.11	U	5.53	1.11	0.553
2,2-Dichloropropane	594-20-7	1.11	U	5.53	1.11	0.553
cis-1,3-Dichloropropene	10061-01-5	1.11	U	5.53	1.11	0.553
trans-1,3-Dichloropropene	10061-02-6	1.11	U	5.53	1.11	0.553
1,1-Dichloropropene	563-58-6	1.11	U	5.53	1.11	0.553
Ethylbenzene	100-41-4	1.11	U	5.53	1.11	0.553
2-Hexanone	591-78-6	5.52	U	11.1	5.52	2.76
Hexachlorobutadiene	87-68-3	1.11	U	5.53	1.11	0.553
Isopropylbenzene	98-82-8	1.11	U	5.53	1.11	0.553
p-Isopropyltoluene	99-87-6	1.11	U	5.53	1.11	0.553
4-Methyl-2-pentanone	108-10-1	5.52	U	11.1	5.52	2.76
Methylene chloride	75-09-2	2.22	U	5.53	2.22	1.11
Naphthalene	91-20-3	1.11	U	5.53	1.11	0.553
n-Propylbenzene	103-65-1	1.11	U	5.53	1.11	0.553
Styrene	100-42-5	1.11	U	5.53	1.11	0.553
1,1,1,2-Tetrachloroethane	630-20-6	1.11	U	5.53	1.11	0.553
1,1,2,2-Tetrachloroethane	79-34-5	1.11	U	5.53	1.11	0.553
Tetrachloroethene	127-18-4	1.11	U	5.53	1.11	0.553
Toluene	108-88-3	1.11	U	5.53	1.11	0.553
1,2,3-Trichlorobenzene	87-61-6	1.11	U	5.53	1.11	0.553
1,2,4-Trichlorobenzene	120-82-1	1.11	U	5.53	1.11	0.553
1,1,1-Trichloroethane	71-55-6	1.11	U	5.53	1.11	0.553
1,1,2-Trichloroethane	79-00-5	1.11	U	5.53	1.11	0.553
Trichloroethene	79-01-6	1.11	U	5.53	1.11	0.553
Trichlorofluoromethane	75-69-4	2.22	U	5.53	2.22	1.11
1,2,3-Trichloropropane	96-18-4	2.22	U	5.53	2.22	1.11
1,2,4-Trimethylbenzene	95-63-6	1.11	U	5.53	1.11	0.553
1,3,5-Trimethylbenzene	108-67-8	1.11	U	5.53	1.11	0.553
Vinyl chloride	75-01-4	2.22	U	5.53	2.22	1.11
o-Xylene	95-47-6	1.11	U	5.53	1.11	0.553
m-,p-Xylene	179601-23-1	1.11	U	5.53	1.11	0.553

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.5	80	120	
1,2-Dichloroethane-d4	95.8	80	120	
Toluene-d8	109	85	115	
4-Bromofluorobenzene	115	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021357-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT01(27-27.5)250216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:23
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	02/29/2016 23:33
Collect Date:	02/25/2016 16:35	**Dilution:**	1	**File ID:**	9M972979
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.7	U	25.4	12.7	6.35
Benzene	71-43-2	1.27	U	6.35	1.27	0.635
Bromobenzene	108-86-1	1.27	U	6.35	1.27	0.635
Bromochloromethane	74-97-5	2.54	U	6.35	2.54	1.27
Bromodichloromethane	75-27-4	1.27	U	6.35	1.27	0.635
Bromoform	75-25-2	1.27	U	6.35	1.27	0.635
Bromomethane	74-83-9	2.54	U	6.35	2.54	1.27
2-Butanone	78-93-3	6.34	U	12.7	6.34	3.17
n-Butylbenzene	104-51-8	1.27	U	6.35	1.27	0.635
sec-Butylbenzene	135-98-8	1.27	U	6.35	1.27	0.635
tert-Butylbenzene	98-06-6	1.27	U	6.35	1.27	0.635
Carbon disulfide	75-15-0	1.27	U	6.35	1.27	0.635
Carbon tetrachloride	56-23-5	1.27	U	6.35	1.27	0.635
Chlorobenzene	108-90-7	1.27	U	6.35	1.27	0.635
Chlorodibromomethane	124-48-1	1.27	U	6.35	1.27	0.635
Chloroethane	75-00-3	2.54	U	6.35	2.54	1.27
Chloroform	67-66-3	1.27	U	6.35	1.27	0.635
Chloromethane	74-87-3	5.08	U	12.7	5.08	2.54
2-Chlorotoluene	95-49-8	1.27	U	6.35	1.27	0.635
4-Chlorotoluene	106-43-4	1.27	U	6.35	1.27	0.635
1,2-Dibromo-3-chloropropane	96-12-8	5.08	U	12.7	5.08	2.54
1,2-Dibromoethane	106-93-4	1.27	U	6.35	1.27	0.635
Dibromomethane	74-95-3	1.27	U	6.35	1.27	0.635
1,2-Dichlorobenzene	95-50-1	1.27	U	6.35	1.27	0.635
1,3-Dichlorobenzene	541-73-1	1.27	U	6.35	1.27	0.635
1,4-Dichlorobenzene	106-46-7	1.27	U	6.35	1.27	0.635
Dichlorodifluoromethane	75-71-8	2.54	U	6.35	2.54	1.27
1,1-Dichloroethane	75-34-3	2.54	U	6.35	2.54	1.27
1,2-Dichloroethane	107-06-2	1.27	U	6.35	1.27	0.635
1,1-Dichloroethene	75-35-4	1.27	U	6.35	1.27	0.635
cis-1,2-Dichloroethene	156-59-2	1.27	U	6.35	1.27	0.635

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Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.27	U	6.35	1.27	0.635
1,2-Dichloropropane	78-87-5	1.27	U	6.35	1.27	0.635
1,3-Dichloropropane	142-28-9	1.27	U	6.35	1.27	0.635
2,2-Dichloropropane	594-20-7	1.27	U	6.35	1.27	0.635
cis-1,3-Dichloropropene	10061-01-5	1.27	U	6.35	1.27	0.635
trans-1,3-Dichloropropene	10061-02-6	1.27	U	6.35	1.27	0.635
1,1-Dichloropropene	563-58-6	1.27	U	6.35	1.27	0.635
Ethylbenzene	100-41-4	1.27	U	6.35	1.27	0.635
2-Hexanone	591-78-6	6.34	U	12.7	6.34	3.17
Hexachlorobutadiene	87-68-3	1.27	U	6.35	1.27	0.635
Isopropylbenzene	98-82-8	1.27	U	6.35	1.27	0.635
p-Isopropyltoluene	99-87-6	1.27	U	6.35	1.27	0.635
4-Methyl-2-pentanone	108-10-1	6.34	U	12.7	6.34	3.17
Methylene chloride	75-09-2	2.54	U	6.35	2.54	1.27
Naphthalene	91-20-3	1.27	U	6.35	1.27	0.635
n-Propylbenzene	103-65-1	1.27	U	6.35	1.27	0.635
Styrene	100-42-5	1.27	U	6.35	1.27	0.635
1,1,1,2-Tetrachloroethane	630-20-6	1.27	U	6.35	1.27	0.635
1,1,2,2-Tetrachloroethane	79-34-5	1.27	U	6.35	1.27	0.635
Tetrachloroethene	127-18-4	1.27	U	6.35	1.27	0.635
Toluene	108-88-3	1.27	U	6.35	1.27	0.635
1,2,3-Trichlorobenzene	87-61-6	1.27	U	6.35	1.27	0.635
1,2,4-Trichlorobenzene	120-82-1	1.27	U	6.35	1.27	0.635
1,1,1-Trichloroethane	71-55-6	1.27	U	6.35	1.27	0.635
1,1,2-Trichloroethane	79-00-5	1.27	U	6.35	1.27	0.635
Trichloroethene	79-01-6	1.27	U	6.35	1.27	0.635
Trichlorofluoromethane	75-69-4	2.54	U	6.35	2.54	1.27
1,2,3-Trichloropropane	96-18-4	2.54	U	6.35	2.54	1.27
1,2,4-Trimethylbenzene	95-63-6	1.27	U	6.35	1.27	0.635
1,3,5-Trimethylbenzene	108-67-8	1.27	U	6.35	1.27	0.635
Vinyl chloride	75-01-4	2.54	U	6.35	2.54	1.27
o-Xylene	95-47-6	1.27	U	6.35	1.27	0.635
m-,p-Xylene	179601-23-1	1.27	U	6.35	1.27	0.635

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.7	80	120	
1,2-Dichloroethane-d4	101	80	120	
Toluene-d8	108	85	115	
4-Bromofluorobenzene	117	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.
VOA Preparation/Preservation/Extraction Log

Batch #: WG559084
Method: 5030B/5030C/5035
Product: 8260

Analyst: AWE
Run Date: 02/29/2016 12:19
Purge and trap methanol COA18540
Purified Lab Sand Lot # COA18552

SAMPLE #	Fraction	Collected	Preserved	PCT-S	Tare Wt	Total Wt	Sample Wt	Water	MeOH	Vt	Comments
L16021357-01	A	02/25/16 11:30	02/29/16 12:19	81.7			4.90	5		5	
L16021357-02	A	02/25/16 11:37	02/29/16 12:21	88.2			5.22	5		5	
L16021357-03	A	02/25/16 14:23	02/29/16 12:22	90.1			4.98	5		5	
L16021357-04	A	02/25/16 16:00	02/29/16 12:22	84.1			5.33	5		5	
L16021357-05	A	02/25/16 16:30	02/29/16 12:23	87.2			5.19	5		5	
L16021357-06	A	02/25/16 16:35	02/29/16 12:23	79.1			4.98	5		5	
L16021358-01	A	02/26/16 08:35	02/29/16 12:24	82.1			4.92	5		5	
L16021358-02	A	02/26/16 08:42	02/29/16 12:25	83.6			4.97	5		5	
L16021358-03	A	02/26/16 08:42	02/29/16 12:25	83.4			4.83	5		5	
L16021358-04	A	02/26/16 09:00	02/29/16 12:26	78.3			5.37	5		5	
L16021358-05	A	02/26/16 09:15	02/29/16 12:26	81.6			4.57	5		5	
L16021358-06	A	02/26/16 11:15	02/29/16 12:08	79.9			5.00	5		5	
L16021358-07	A	02/26/16 11:17	02/29/16 12:28	87.6			5.01	5		5	
L16021358-08	A	02/26/16 11:19	02/29/16 12:29	85.1			4.84	5		5	
L16021358-09	A	02/26/16 11:21	02/29/16 12:29	81.4			4.60	5		5	
WG559084-01	A		02/29/16 12:19	81.7			4.90	5		5	
WG559084-02	A		02/29/16 12:20	81.7			4.93	5		5	
WG559084-03	A		02/29/16 12:20	81.7			4.98	5		5	

Comments:
1 = improperly sealed cap
2 = preserved out of hold
3 = effervesced
4 = preserved with NaHSO4
5 = preserved by freezing
6 = preserved in field

Analyst: Andrew Casey

VOA_EXT - Modified 05/22/2008
PDF ID: 4651350
Report generated: 03/01/2016 11:17

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 012516
Analyst1: ADC Analyst2: NA
Method: 8260B/8260C SOP: MSV01(-C) Rev: 23 (2)
Method: 5030B/5030C/5035 SOP: PAT01 Rev: 18
Method: 624 SOP: MSV10 Rev: 12
Maintenance Log ID:

Internal Standard: STD74414 Surrogate Standard: STD74126
CCV: STD74488 LCS: STD74459 MS/MSD: STD74459

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG555000 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M972470	WG555000-01 BFB 50ng A9	NA	7	1	STD74202	01/25/16 10:27
9M972471	RINSE	NA	7	1		01/25/16 10:52
9M972472	WG555000-02 5ug/Kg STD A9	NA	7	1	STD74406	01/25/16 11:22
9M972473	WG555000-03 20ug/Kg STD A9	NA	7	1	STD74406	01/25/16 11:52
9M972474	WG555000-04 50ug/Kg STD A9	NA	7	1	STD74406	01/25/16 12:23
9M972475	WG555000-05 100ug/Kg STD A9	NA	7	1	STD74406	01/25/16 12:53
9M972476	WG555000-06 200ug/Kg STD A9	NA	7	1	STD74406	01/25/16 13:23
9M972477	WG555000-07 300ug/Kg STD A9	NA	7	1	STD74406	01/25/16 13:54
9M972478	WG555000-08 400ug/Kg STD A9	NA	7	1	STD74406	01/25/16 14:25
9M972479	WG555000-09 500ug/Kg STD A9	NA	7	1	STD74406	01/25/16 14:56
9M972480	RINSE	NA	7	1		01/25/16 15:26
9M972481	WG555000-10 100ug/Kg ICV A9	NA	7	1	STD74461	01/25/16 15:56
9M972482	RINSE	NA	7	1		01/25/16 16:28

Approved: January 29, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 022516
Analyst1: ADC Analyst2: NA
Method: 8260 SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD74726 Surrogate Standard: STD74815
CCV: STD74488 LCS: STD74755 MS/MSD: STD74755

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG558732 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M972892	WG558732-01 BFB 50ng	NA	7	1	STD74773	02/25/16 14:26
9M972894	WG558732-01 BFB 50ng	NA	7	1	STD74773	02/25/16 14:45
9M972895	WG558732-02 50ug/L CCV 8260C	NA	7	1	STD74773	02/25/16 15:11
9M972896	WG558732-02 50ug/L CCV 8260C	NA	7	1	STD74773	02/25/16 15:48
9M972897	RINSE	NA	7	1		02/25/16 16:25
9M972898	WG558732-03 0.5ug/kg STD	NA	7	1	STD74773	02/25/16 16:55
9M972899	WG558732-04 1.0ug/kg STD	NA	7	1	STD74773	02/25/16 17:27
9M972900	WG558732-05 2.0ug/kg STD	NA	7	1	STD74773	02/25/16 17:57
9M972901	WG558732-06 5.0ug/kg STD	NA	7	1	STD74773	02/25/16 18:28
9M972902	WG558732-07 20.0ug/kg STD	NA	7	1	STD74773	02/25/16 18:59
9M972903	WG558732-08 100.0ug/kg STD	NA	7	1	STD74773	02/25/16 19:29
9M972904	WG558732-09 200.0ug/kg STD	NA	7	1	STD74773	02/25/16 20:00
9M972905	WG558732-10 300.0ug/kg STD	NA	7	1	STD74773	02/25/16 20:30
9M972906	RINSE	NA	7	1	STD74773	02/25/16 21:01
9M972907	WG558732-11 50.0ug/kg ALTSRC	NA	7	1	STD74755	02/25/16 21:31

Approved: February 29, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 022916
Analyst1: FJB Analyst2: JDS
Method: 8260 SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD74726 Surrogate Standard: STD74815
CCV: STD74773 LCS: STD74900 MS/MSD: STD74900

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG559151

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M972966	WG559150-01 BFB 50ng 8260	NA	7	1	STD74606	02/29/16 16:59
9M972967	WG559150-02 50ug/Kg CCV 8260	NA	7	1	STD74773	02/29/16 17:23
9M972968	WG000000-01 50ug/Kg A9-CCV 8260	NA	7	1	STD74831	02/29/16 17:54
9M972969	WG559151-01 VBLK0229 BLANK 8260	NA	7	1		02/29/16 18:25
9M972970	WG559151-02 20ug/Kg LCS 8260	NA	7	1	STD74900	02/29/16 18:56
9M972971	WG559084-02 MS 4.93g 8260	NA	7	1	STD74900	02/29/16 19:28
9M972972	WG559084-03 MSD 4.98g 8260	NA	7	1	STD74900	02/29/16 19:59
9M972973	RINSE	NA	7	1		02/29/16 20:29
9M972974	WG559084-01 L16021357-01 REF 4.90g 82	NA	7	1		02/29/16 21:00
9M972975	L16021357-02 5.22g 8260	NA	7	1		02/29/16 21:30
9M972976	L16021357-03 4.98g 8260	NA	7	1		02/29/16 22:01
9M972977	L16021357-04 5.33g 8260	NA	7	1		02/29/16 22:32
9M972978	L16021357-05 5.19g 8260	NA	7	1		02/29/16 23:03
9M972979	L16021357-06 4.98g 8260	NA	7	1		02/29/16 23:33
9M972980	L16021358-01 4.92g 8260	NA	7	1		03/01/16 00:04
9M972981	L16021358-02 4.97g 8260	NA	7	1		03/01/16 00:34
9M972982	L16021358-03 4.83g 8260	NA	7	1		03/01/16 01:04
9M972983	L16021358-04 5.37g 8260	NA	7	1		03/01/16 01:36
9M972984	L16021358-05 4.57g 8260	NA	7	1		03/01/16 02:06
9M972985	L16021358-06 5.00g 8260	NA	7	1		03/01/16 02:36
9M972986	L16021358-07 5.01g 8260	NA	7	1		03/01/16 03:06
9M972987	L16021358-08 4.84g 8260	NA	7	1		03/01/16 03:37
9M972988	L16021358-09 4.60g 8260	NA	7	1		03/01/16 04:07
9M972989	CCV	NA	7	1		03/01/16 04:37
9M972990	RINSE	NA	7	1		03/01/16 05:07
9M972991	RINSE	NA	7	1		03/01/16 05:38

Approved: March 01, 2016

Sarah Vandenberg

Page: 1

Microbac Laboratories Inc.

Data Checklist

Date: 25-JAN-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 72995
Analytical Workgroups: WG555000

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
28-JAN-2016

Secondary Reviewer:
29-JAN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JAN-29-2016 16:00:23

Microbac Laboratories Inc.

Data Checklist

Date: 25-FEB-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 73547
Analytical Workgroups: WG558732

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
29-FEB-2016

Secondary Reviewer:
29-FEB-2016

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-29-2016 15:30:51

Microbac Laboratories Inc.

Data Checklist

Date: 29-FEB-2016
Analyst: FJB
Analyst: JDS
Method: 8260B
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 73561
Analytical Workgroups: WG559151

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	FJB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	X
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	FJB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
01-MAR-2016

Secondary Reviewer:
01-MAR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-01-2016 14:48:08

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG559151

Login Number: L16021357

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18DPT01(5-5.5)250216	01	02/25/16					02/29/2016	4	14		02/29/16	4.4	14	
18DPT01(9.5-10)250216	02	02/25/16					02/29/2016	4	14		02/29/16	4.4	14	
18DPT01(15-15.5)250216	03	02/25/16					02/29/2016	3.9	14		02/29/16	4.3	14	
18DPT01(22.5-23)250216	04	02/25/16					02/29/2016	3.8	14		02/29/16	4.3	14	
18DPT01(24.5-25)250216	05	02/25/16					02/29/2016	3.8	14		02/29/16	4.3	14	
18DPT01(27-27.5)250216	06	02/25/16					02/29/2016	3.8	14		02/29/16	4.3	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4652659
Report generated 03/01/2016 14:46

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16021357
Instrument Id: HPMS9
Workgroup (AAB#): WG559151

Method: 8260
CAL ID: HPMS9-25-FEB-16
Matrix: Soil

Sample Number	Dilution	Tag	1	2	3	4
L16021357-01	1.00	01	102	96.7	113	107
L16021357-02	1.00	01	99.4	100	111	109
L16021357-03	1.00	01	99.4	97.5	111	109
L16021357-04	1.00	01	98.7	98.6	116	106
L16021357-05	1.00	01	95.8	96.5	115	109
L16021357-06	1.00	01	101	97.7	117	108
WG559151-01	1.00	01	97.5	98.6	113	106
WG559151-02	1.00	01	97.0	99.0	105	102

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	80	-	120
2 - Dibromofluoromethane	80	-	120
3 - 4-Bromofluorobenzene	85	-	120
4 - Toluene-d8	85	-	115

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4652667
Report generated: 03/01/2016 14:46

METHOD BLANK SUMMARY

Login Number: L16021357
Blank File ID: 9M972969
Prep Date: 02/29/16 18:25
Analyzed Date: 02/29/16 18:25
Analyst: FJB/JDS

Work Group: WG559151
Blank Sample ID: WG559151-01
Instrument ID: HPMS9
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG559151-02	9M972970	02/29/16 18:56	01
18DPT01(5-5.5)250216	L16021357-01	9M972974	02/29/16 21:00	01
18DPT01(9.5-10)250216	L16021357-02	9M972975	02/29/16 21:30	01
18DPT01(15-15.5)250216	L16021357-03	9M972976	02/29/16 22:01	01
18DPT01(22.5-23)250216	L16021357-04	9M972977	02/29/16 22:32	01
18DPT01(24.5-25)250216	L16021357-05	9M972978	02/29/16 23:03	01
18DPT01(27-27.5)250216	L16021357-06	9M972979	02/29/16 23:33	01

Report Name: BLANK_SUMMARY
PDF File ID: 4652660
Report generated 03/01/2016 14:46

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16021357 Prep Date: 02/29/16 18:25 Sample ID: WG559151-01
Instrument ID: HPMS9 Run Date: 02/29/16 18:25 Prep Method: 5030B/5030C/503
File ID: 9M972969 Analyst: FJB/JDS Method: 8260B
Workgroup (AAB#): WG559151 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-25-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	5.00	20.0	5.00	1	U
Benzene	0.500	5.00	0.500	1	U
Bromobenzene	0.500	5.00	0.500	1	U
Bromochloromethane	1.00	5.00	1.00	1	U
Bromodichloromethane	0.500	5.00	0.500	1	U
Bromoform	0.500	5.00	0.500	1	U
Bromomethane	1.00	5.00	1.00	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.500	5.00	0.500	1	U
sec-Butylbenzene	0.500	5.00	0.500	1	U
tert-Butylbenzene	0.500	5.00	0.500	1	U
Carbon disulfide	0.500	5.00	0.500	1	U
Carbon tetrachloride	0.500	5.00	0.500	1	U
Chlorobenzene	0.500	5.00	0.500	1	U
Chlorodibromomethane	0.500	5.00	0.500	1	U
Chloroethane	1.00	5.00	1.00	1	U
Chloroform	0.500	5.00	0.500	1	U
Chloromethane	2.00	10.0	2.00	1	U
2-Chlorotoluene	0.500	5.00	0.500	1	U
4-Chlorotoluene	0.500	5.00	0.500	1	U
1,2-Dibromo-3-chloropropane	2.00	10.0	2.00	1	U
1,2-Dibromoethane	0.500	5.00	0.500	1	U
Dibromomethane	0.500	5.00	0.500	1	U
1,2-Dichlorobenzene	0.500	5.00	0.500	1	U
1,3-Dichlorobenzene	0.500	5.00	0.500	1	U
1,4-Dichlorobenzene	0.500	5.00	0.500	1	U
Dichlorodifluoromethane	1.00	5.00	1.00	1	U
1,1-Dichloroethane	1.00	5.00	1.00	1	U
1,2-Dichloroethane	0.500	5.00	0.500	1	U
1,1-Dichloroethene	0.500	5.00	0.500	1	U
cis-1,2-Dichloroethene	0.500	5.00	0.500	1	U
trans-1,2-Dichloroethene	0.500	5.00	0.500	1	U
1,2-Dichloropropane	0.500	5.00	0.500	1	U
1,3-Dichloropropane	0.500	5.00	0.500	1	U
2,2-Dichloropropane	0.500	5.00	0.500	1	U
cis-1,3-Dichloropropene	0.500	5.00	0.500	1	U
trans-1,3-Dichloropropene	0.500	5.00	0.500	1	U
1,1-Dichloropropene	0.500	5.00	0.500	1	U
Ethylbenzene	0.500	5.00	0.500	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.500	5.00	0.500	1	U
Isopropylbenzene	0.500	5.00	0.500	1	U

Report Name:BLANK
PDF ID: 4652661
01-MAR-2016 14:46

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16021357 Prep Date: 02/29/16 18:25 Sample ID: WG559151-01
Instrument ID: HPMS9 Run Date: 02/29/16 18:25 Prep Method: 5030B/5030C/503
File ID: 9M972969 Analyst: FJB/JDS Method: 8260B
Workgroup (AAB#): WG559151 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-25-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.500	5.00	0.500	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	1.00	5.00	1.00	1	U
Naphthalene	0.500	5.00	0.500	1	U
n-Propylbenzene	0.500	5.00	0.500	1	U
Styrene	0.500	5.00	0.500	1	U
1,1,1,2-Tetrachloroethane	0.500	5.00	0.500	1	U
1,1,2,2-Tetrachloroethane	0.500	5.00	0.500	1	U
Tetrachloroethene	0.500	5.00	0.500	1	U
Toluene	0.500	5.00	0.500	1	U
1,2,3-Trichlorobenzene	0.500	5.00	0.500	1	U
1,2,4-Trichlorobenzene	0.500	5.00	0.500	1	U
1,1,1-Trichloroethane	0.500	5.00	0.500	1	U
1,1,2-Trichloroethane	0.500	5.00	0.500	1	U
Trichloroethene	0.500	5.00	0.500	1	U
Trichlorofluoromethane	1.00	5.00	1.00	1	U
1,2,3-Trichloropropane	1.00	5.00	1.00	1	U
1,2,4-Trimethylbenzene	0.500	5.00	0.500	1	U
1,3,5-Trimethylbenzene	0.500	5.00	0.500	1	U
Vinyl chloride	1.00	5.00	1.00	1	U
o-Xylene	0.500	5.00	0.500	1	U
m-,p-Xylene	0.500	5.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	98.6	80 - 120	PASS
1,2-Dichloroethane-d4	97.5	80 - 120	PASS
Toluene-d8	106	85 - 115	PASS
4-Bromofluorobenzene	113	85 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4652661
01-MAR-2016 14:46

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16021357 | Run Date: 02/29/2016 | Sample ID: WG559151-02
Instrument ID: HPMS9 | Run Time: 18:56 | Prep Method: 5030B/5030C/503
File ID: 9M972970 | Analyst: FJB/JDS | Method: 8260B
Workgroup (AAB#): WG559151 | Matrix: Soil | Units: ug/kg
QC Key: DOD4 | Lot#: STD74900 | Cal ID: HPMS9-25-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	21.0	105	20 - 160	
Benzene	20.0	19.8	98.8	75 - 125	
Bromobenzene	20.0	19.1	95.5	65 - 120	
Bromochloromethane	20.0	19.8	99.0	70 - 125	
Bromodichloromethane	20.0	18.3	91.4	70 - 130	
Bromoform	20.0	16.9	84.7	55 - 135	
Bromomethane	20.0	18.9	94.3	30 - 160	
2-Butanone	20.0	20.6	103	30 - 160	
n-Butylbenzene	20.0	18.4	92.2	65 - 140	
sec-Butylbenzene	20.0	19.9	99.7	65 - 130	
tert-Butylbenzene	20.0	20.6	103	65 - 130	
Carbon disulfide	20.0	17.9	89.3	45 - 160	
Carbon tetrachloride	20.0	17.9	89.7	65 - 135	
Chlorobenzene	20.0	20.0	99.8	75 - 125	
Chlorodibromomethane	20.0	18.2	90.8	65 - 130	
Chloroethane	20.0	20.0	100	40 - 155	
Chloroform	20.0	18.8	94.0	70 - 125	
Chloromethane	20.0	19.9	99.4	50 - 130	
2-Chlorotoluene	20.0	19.6	97.9	70 - 130	
4-Chlorotoluene	20.0	20.7	104	75 - 125	
1,2-Dibromo-3-chloropropane	20.0	17.8	88.9	40 - 135	
1,2-Dibromoethane	20.0	18.8	94.2	70 - 125	
Dibromomethane	20.0	17.6	87.9	75 - 130	
1,2-Dichlorobenzene	20.0	19.5	97.5	75 - 120	
1,3-Dichlorobenzene	20.0	18.6	92.8	70 - 125	
1,4-Dichlorobenzene	20.0	19.0	95.1	70 - 125	
Dichlorodifluoromethane	20.0	25.5	127	35 - 135	
1,1-Dichloroethane	20.0	19.0	95.0	75 - 125	
1,2-Dichloroethane	20.0	19.5	97.3	70 - 135	
1,1-Dichloroethene	20.0	18.8	94.0	65 - 135	
cis-1,2-Dichloroethene	20.0	20.3	102	65 - 125	
trans-1,2-Dichloroethene	20.0	20.3	101	65 - 135	
1,2-Dichloropropane	20.0	20.8	104	70 - 120	
1,3-Dichloropropane	20.0	20.7	104	75 - 125	
2,2-Dichloropropane	20.0	19.2	95.9	65 - 135	
cis-1,3-Dichloropropene	20.0	20.8	104	70 - 125	
trans-1,3-Dichloropropene	20.0	19.7	98.3	65 - 125	
1,1-Dichloropropene	20.0	18.5	92.7	70 - 135	
Ethylbenzene	20.0	21.2	106	75 - 125	
2-Hexanone	20.0	20.5	103	45 - 145	
Hexachlorobutadiene	20.0	16.7	83.7	55 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4652662
Report generated: 03/01/2016 14:46

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16021357 | Run Date: 02/29/2016 | Sample ID: WG559151-02
Instrument ID: HPMS9 | Run Time: 18:56 | Prep Method: 5030B/5030C/503
File ID: 9M972970 | Analyst: FJB/JDS | Method: 8260B
Workgroup (AAB#): WG559151 | Matrix: Soil | Units: ug/kg
QC Key: DOD4 | Lot#: STD74900 | Cal ID: HPMS9-25-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	20.3	102	75 - 130	
p-Isopropyltoluene	20.0	19.2	96.0	75 - 135	
4-Methyl-2-pentanone	20.0	21.5	108	45 - 145	
Methylene chloride	20.0	19.3	96.7	55 - 140	
Naphthalene	20.0	17.6	87.8	40 - 125	
n-Propylbenzene	20.0	20.7	104	65 - 135	
Styrene	20.0	20.2	101	75 - 125	
1,1,1,2-Tetrachloroethane	20.0	19.3	96.4	75 - 125	
1,1,2,2-Tetrachloroethane	20.0	18.4	92.0	55 - 130	
Tetrachloroethene	20.0	18.8	94.2	65 - 140	
Toluene	20.0	20.3	102	70 - 125	
1,2,3-Trichlorobenzene	20.0	18.2	91.2	60 - 135	
1,2,4-Trichlorobenzene	20.0	17.5	87.7	65 - 130	
1,1,1-Trichloroethane	20.0	18.9	94.6	70 - 135	
1,1,2-Trichloroethane	20.0	20.4	102	60 - 125	
Trichloroethene	20.0	20.3	101	75 - 125	
Trichlorofluoromethane	20.0	18.4	92.2	25 - 185	
1,2,3-Trichloropropane	20.0	19.9	99.3	65 - 130	
1,2,4-Trimethylbenzene	20.0	19.3	96.5	65 - 135	
1,3,5-Trimethylbenzene	20.0	20.3	102	65 - 135	
Vinyl chloride	20.0	21.6	108	60 - 125	
o-Xylene	20.0	20.9	104	75 - 125	
m-,p-Xylene	40.0	40.7	102	80 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	99.0	80 - 120	PASS
1,2-Dichloroethane-d4	97.0	80 - 120	PASS
Toluene-d8	102	85 - 115	PASS
4-Bromofluorobenzene	105	85 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4652662
Report generated: 03/01/2016 14:46

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16021357
Instrument: HPMS9
Analyst: FJB
Workgroup: WG555000

Tune ID: WG555000-01
Run Date: 01/25/2016
Run Time: 10:27
File ID: 9M972470
Cal ID: HPMS9 - 25-JAN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	23.0	10289	PASS
75.0	95.0	30.0	60.0	49.3	22030	PASS
95.0	95.0	100	100	100	44728	PASS
96.0	95.0	5.00	9.00	6.98	3122	PASS
173	174	0	2.00	0.381	160	PASS
174	95.0	50.0	100	93.9	41989	PASS
175	174	5.00	9.00	6.62	2778	PASS
176	174	95.0	101	95.6	40133	PASS
177	176	5.00	9.00	6.39	2564	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG555000-02	STD-S	01	01/25/2016 11:22	
WG555000-03	STD-S	01	01/25/2016 11:52	
WG555000-04	STD-S	01	01/25/2016 12:23	
WG555000-05	STD-CCV-S	01	01/25/2016 12:53	
WG555000-06	STD-S	01	01/25/2016 13:23	
WG555000-07	STD-S	01	01/25/2016 13:54	
WG555000-08	STD-S	01	01/25/2016 14:25	
WG555000-09	STD-S	01	01/25/2016 14:56	
WG555000-10	SSCV-S	01	01/25/2016 15:56	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4652664
Report generated 03/01/2016 14:46

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16021357
Instrument: HPMS9
Analyst: ADC
Workgroup: WG558732

Tune ID: WG558732-01
Run Date: 02/25/2016
Run Time: 14:45
File ID: 9M972894
Cal ID: HPMS9 - 25-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.2	5378	PASS
75.0	95.0	30.0	60.0	49.1	13067	PASS
95.0	95.0	100	100	100	26621	PASS
96.0	95.0	5.00	9.00	6.32	1683	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	85.8	22851	PASS
175	174	5.00	9.00	6.50	1485	PASS
176	174	95.0	101	98.3	22461	PASS
177	176	5.00	9.00	7.21	1619	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG558732-02	STD-CCV-S	01	02/25/2016 15:48	
WG558732-03	STD-S	01	02/25/2016 16:55	
WG558732-04	STD-S	01	02/25/2016 17:27	
WG558732-05	STD-S	01	02/25/2016 17:57	
WG558732-06	STD-S	01	02/25/2016 18:28	
WG558732-07	STD-S	01	02/25/2016 18:59	
WG558732-08	STD-S	01	02/25/2016 19:29	
WG558732-09	STD-S	01	02/25/2016 20:00	
WG558732-10	STD-S	01	02/25/2016 20:30	
WG558732-11	SSCV-S	01	02/25/2016 21:31	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4652664
Report generated 03/01/2016 14:46

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16021357
Instrument: HPMS9
Analyst: FJB/JDS
Workgroup: WG559150

Tune ID: WG559150-01
Run Date: 02/29/2016
Run Time: 16:59
File ID: 9M972966
Cal ID: HPMS9 - 25-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.9	11703	PASS
75.0	95.0	30.0	60.0	49.4	25229	PASS
95.0	95.0	100	100	100	51056	PASS
96.0	95.0	5.00	9.00	6.77	3456	PASS
173	174	0	2.00	0.437	169	PASS
174	95.0	50.0	100	75.7	38650	PASS
175	174	5.00	9.00	6.65	2572	PASS
176	174	95.0	101	95.5	36914	PASS
177	176	5.00	9.00	6.11	2255	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG559150-02	CCV-S	01	02/29/2016 17:23	
WG559151-01	BLANK	01	02/29/2016 18:25	
WG559151-02	LCS	01	02/29/2016 18:56	
WG559084-02	MS	01	02/29/2016 19:28	
WG559084-03	MSD	01	02/29/2016 19:59	
L16021357-01	18DPT01(5-5.5)250216	01	02/29/2016 21:00	
L16021357-02	18DPT01(9.5-10)250216	01	02/29/2016 21:30	
L16021357-03	18DPT01(15-15.5)250216	01	02/29/2016 22:01	
L16021357-04	18DPT01(22.5-23)250216	01	02/29/2016 22:32	
L16021357-05	18DPT01(24.5-25)250216	01	02/29/2016 23:03	
L16021357-06	18DPT01(27-27.5)250216	01	02/29/2016 23:33	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4652664
Report generated 03/01/2016 14:46

Calibration Table Report
Method: A9FOO_SL.M
Title: FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Calibration: Wed Jan 27 09:49:02 2016
Curve: WG555000
Calibration Files

Compound	5 9M972472.D	20 9M972473.D	50 9M972474.D	100 9M972475.D	200 9M972476.D	300 9M972477.D	400 9M972478.D	500 9M972479.D	Avg	%RSD	R^2 Linear
Fluorobenzene	ISTD										
Acetonitrile		0.053	0.046	0.048	0.052	0.046	0.052	0.054	0.050	6.657	
3-Chloro-1-propene	0.498	0.524	0.450	0.519	0.514	0.434	0.507	0.503	0.494	6.719	
2-Chloro-1,3-butadiene	0.534	0.576	0.519	0.592	0.585	0.509	0.593	0.584	0.561	6.202	
Ethyl Acetate		0.333	0.313	0.339	0.338	0.300	0.341	0.344	0.330	5.124	
Methacrylonitrile	0.102	0.109	0.101	0.112	0.110	0.096	0.112	0.112	0.107	5.912	
Isobutyl Alcohol	0.014	0.018	0.018	0.021	0.024	0.021	0.025	0.025	0.021	18.016	0.993
1-Butanol		0.010	0.013	0.015	0.017	0.015	0.018	0.018	0.015	17.838	0.992
Methyl methacrylate	0.236	0.246	0.231	0.265	0.265	0.231	0.271	0.269	0.252	7.005	
2-Nitropropane	0.069	0.073	0.074	0.083	0.089	0.079	0.093	0.095	0.082	12.090	
Chlorobenzene-d5	ISTD										
Cyclohexanone		0.020	0.022	0.025	0.028	0.023	0.027	0.028	0.025	12.963	
1,4-Dichlorobenzene-d4	ISTD										

Wed Jan 27 10:01:56 2016

Calibration Table Report
Method: 8260SL.M
Title: 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Calibration: Fri Feb 26 11:38:33 2016
Curve: WG558732
Calibration Files

Compound	0.5 9M972898.D	1 9M972899.D	2 9M972900.D	5 9M972901.D	20 9M972902.D	50 9M972896.D	100 9M972903.D	200 9M972904.D	300 9M972905.D	Avg	%RSD	R^2 Linear	Quadratic
Fluorobenzene	ISTD												
Dichlorodifluoromethane			0.338	0.271	0.399	0.396	0.318	0.357	0.307	0.341	13.734		
Chloromethane			0.372	0.280	0.331	0.361	0.296	0.346	0.304	0.327	10.674		
Vinyl Chloride		0.250	0.318	0.314	0.373	0.372	0.342	0.355	0.296	0.327	12.768		
1,3-Butadiene			0.347	0.266	0.328	0.330	0.297	0.321	0.293	0.312	8.837		
Bromomethane		0.236	0.267	0.181	0.206	0.208	0.186	0.217	0.199	0.213	13.250		
Chloroethane			0.127	0.116	0.142	0.165	0.139	0.173	0.160	0.146	14.271		
Trichlorofluoromethane		0.519	0.518	0.416	0.503	0.514	0.470	0.517	0.473	0.491	7.357		
Diethyl ether		0.215	0.246	0.217	0.243	0.241	0.214		0.231	0.230	6.215		
Isoprene			0.302	0.251	0.303	0.302	0.282	0.318	0.295	0.293	7.364		
Acrolein		0.041	0.046	0.045	0.046	0.048	0.046		0.050	0.046	6.212		
1,1,2-Trichloro-1,2,2-Trifluoroethane			0.252	0.234	0.255	0.261	0.248	0.273	0.251	0.253	4.699		
Acetone				0.179	0.138	0.128	0.119	0.124		0.138	17.810	0.999	
1,1-Dichloroethene		0.464	0.511	0.400	0.482	0.471	0.454	0.500	0.456	0.467	7.277		
Tert-Butyl Alcohol			0.057	0.046	0.055	0.051	0.047			0.051	8.698		
Dimethyl Sulfide		0.150	0.203	0.186	0.207	0.211	0.196	0.224	0.203	0.197	11.169		
Iodomethane				0.076	0.109	0.154	0.126	0.157	0.142	0.127	24.315	0.993	
Methyl acetate			0.282	0.223	0.279	0.262	0.240	0.258	0.234	0.254	8.867		
Methylene Chloride			0.271	0.217	0.263	0.261	0.240	0.280	0.249	0.254	8.252		
Carbon Disulfide			0.795	0.626	0.740	0.737	0.678	0.761	0.702	0.720	7.788		
Acrylonitrile		0.117	0.127	0.114	0.130	0.135	0.123		0.134	0.126	6.412		
Methyl Tert Butyl Ether		0.669	0.722	0.642	0.760	0.786	0.713	0.788	0.718	0.725	7.239		
trans-1,2-Dichloroethene		0.400	0.422	0.377	0.430	0.438	0.407	0.446	0.412	0.416	5.376		
n-Hexane			0.456	0.385	0.420	0.424	0.429	0.464	0.428	0.430	5.986		
Diisopropyl ether		0.938	1.068	0.928	1.071	1.051	0.931		0.995	0.998	6.627		
Vinyl Acetate			0.593	0.519	0.545	0.602	0.554	0.608	0.558	0.569	5.855		
1,1-Dichloroethane		0.548	0.558	0.445	0.532	0.549	0.499	0.553	0.500	0.523	7.454		
Ethyl-Tert-Butyl ether		0.871	0.992	0.852	0.990	0.988	0.865		0.934	0.928	6.918		
2-Butanone			0.177	0.152	0.156	0.166	0.156	0.172	0.149	0.161	6.650		
Propionitrile		0.042	0.055	0.048	0.053	0.051	0.048		0.049	0.049	8.494		
2,2-Dichloropropane			0.428	0.330	0.377	0.415	0.383	0.417	0.383	0.390	8.575		
cis-1,2-Dichloroethene		0.247	0.257	0.248	0.287	0.297	0.273	0.299	0.277	0.273	7.647		
Chloroform		0.473	0.530	0.432	0.482	0.509	0.459	0.505	0.454	0.480	6.746		
1-Bromopropane			0.011	0.041	0.042	0.043	0.040	0.045	0.041	0.038	31.434	0.997	
Bromochloromethane		0.131	0.173	0.169	0.194	0.199	0.179	0.197	0.178	0.177	12.275		
Tetrahydrofuran			0.111	0.099	0.110	0.110	0.097		0.097	0.104	6.802		
Dibromofluoromethane				0.267	0.243	0.286	0.286	0.274		0.271	6.547		
1,1,1-Trichloroethane		0.426	0.436	0.385	0.438	0.470	0.425	0.470	0.427	0.434	6.319		
Cyclohexane		0.465	0.495	0.425	0.494	0.478	0.465	0.503	0.464	0.474	5.302		
1,1-Dichloropropene		0.353	0.359	0.300	0.344	0.352	0.333	0.360	0.335	0.342	5.748		
Tert-Amyl-Methyl ether		0.631	0.709	0.631	0.716	0.716	0.632		0.684	0.674	6.133		
Carbon Tetrachloride			0.41939	0.34041	0.40512	0.42742	0.39181	0.43819	0.39737	0.40282	7.96886		
1,2-Dichloroethane-d4				0.34995	0.30686	0.35494	0.35835	0.33017		0.34005	6.33015		
Heptane										0	0		
1,2-Dichloroethane		0.36551	0.44947	0.39601	0.44224	0.45938	0.41291	0.4496	0.40581	0.42262	7.76179		
Benzene	1.14079	0.92872	1.03015	0.83328	0.97121	0.9721	0.88431	0.97127	0.88279	0.95718	9.53654		
Trichloroethene		0.30364	0.32158	0.26212	0.31219	0.31666	0.29597	0.321	0.29314	0.30329	6.54492		
Methylcyclohexane		0.31249	0.39837	0.32203	0.40419	0.39506	0.39323	0.42525	0.39247	0.38039	10.6291		
1,2-Dichloropropane		0.23004	0.27101	0.24016	0.27676	0.28593	0.2555	0.28277	0.26062	0.26285	7.66268		
1,4-Dioxane			0.0041	0.00361	0.00449	0.00376	0.00356		0.00414	0.00394	9.17892		
Bromodichloromethane			0.37851	0.33087	0.3725	0.39384	0.35929	0.397	0.36103	0.37044	6.13725		
Dibromomethane		0.15103	0.18915	0.16523	0.1825	0.18519	0.16707	0.1849	0.1682	0.17416	7.61692		
2-Chloroethyl Vinyl Ether				0.04535	0.05625	0.07439	0.06667	0.08013	0.07633	0.06652	20.1377	0.996	
4-Methyl-2-Pentanone				0.08933	0.11327	0.12554	0.11786	0.12977	0.11644	0.11537	12.2612		
cis-1,3-Dichloropropene			0.37321	0.33699	0.39477	0.41098	0.38072	0.42291	0.38195	0.38594	7.23123		
Dimethyl Disulfide			0.30882	0.3269	0.39409	0.4245	0.40234	0.4579	0.40032	0.38784	13.5683		
Chlorobenzene-d5	ISTD												
Toluene-d8				1.21266	1.14503	1.34974	1.34798	1.26813		1.26471	6.98417		
Toluene	1.57001	1.40445	1.51648	1.23448	1.46732	1.48749	1.3712	1.4823	1.3236	1.42859	7.34792		
Ethyl Methacrylate				0.31749	0.4112	0.4195	0.39758	0.44016	0.38999	0.39599	10.6751		
trans-1,3-Dichloropropene			0.50304	0.44978	0.5157	0.56049	0.50648	0.56248	0.50379	0.51454	7.49294		
1,1,2-Trichloroethane		0.27692	0.29584	0.27194	0.31787	0.32454	0.3	0.32173	0.292	0.3001	6.65768		
2-Hexanone				0.26013	0.28088	0.31451	0.30524	0.34734	0.28972	0.29964	10.056		
1,3-Dichloropropane		0.46617	0.55761	0.45639	0.51068	0.53187	0.47698	0.53043	0.47034	0.50006	7.49429		
Tetrachloroethene		0.33351	0.31568	0.26327	0.31051	0.30894	0.30156	0.32634	0.29026	0.30626	7.18201		
Dibromochloromethane			0.45014	0.36113	0.41394	0.44566	0.40515	0.45572	0.40415	0.41941	8.03547		
1,2-Dibromoethane				0.31086	0.34005	0.35035	0.32626	0.35324	0.31647	0.33287	5.32182		
1-Chlorohexane		0.39643	0.40929	0.33097	0.45098	0.44465	0.43807	0.477	0.42289	0.42128	10.5148		
Chlorobenzene		1.02904	1.08596	0.91908	1.05295	1.05625	0.95434	1.02465	0.91009	1.00405	6.67004		
1,1,1,2-Tetrachloroethane			0.37536	0.32525	0.38767	0.40783	0.37127	0.40937	0.36265	0.37706	7.67975		
Ethylbenzene	0.5157	0.51658	0.53164	0.45493	0.54391	0.54636	0.50916	0.54884	0.48836	0.51728	5.93862		
m-,p-Xylene	0.67213	0.61926	0.69794	0.58569	0.67162	0.65634	0.61182	0.65803	0.57657	0.63882	6.58722		
o-Xylene	0.61273	0.56415	0.61379	0.55512	0.6465	0.65334	0.60899	0.67127	0.59158	0.61305	6.41073		
Styrene		0.95813	1.06028	0.90308	1.08018	1.12326	1.04689	1.15897	1.02088	1.04396	8.002		
Bromoform			0.22872	0.23892	0.27832	0.30617	0.27263	0.32232	0.28054	0.27538	12.1348		
Isopropylbenzene		1.53891	1.69742	1.42189	1.74341	1.73716	1.64433	1.81019	1.57289	1.64577	7.76922		
1,4-Dichlorobenzene-d4	ISTD												
1,1,2,2-Tetrachloroethane		0.61571	0.83634	0.73739	0.79769	0.80854	0.74616	0.78083	0.74513	0.75847	8.88143		
p-Bromofluorobenzene				0.91653	0.87561	1.04735	1.0775	0.95104		0.97361	8.83571		
1,2,3-Trichloropropane		0.24645	0.29476	0.28329	0.29208	0.30442	0.29453	0.30315	0.28248	0.28764	6.41284		

trans-1,4-Dichloro-2-Butene		0.22501	0.23725	0.31415	0.3034	0.3105	0.33164	0.30766	0.28994	14.2446
n-Propylbenzene	3.98718	4.09811	3.61454	4.21971	4.10826	3.88939	3.82307	3.70205	3.93029	5.36989
Bromobenzene	0.84385	1.11565	0.86076	0.97118	0.9688	0.89248	0.89548	0.87446	0.92783	9.59949
1,3,5-Trimethylbenzene			2.76735	3.16086	3.10843	2.93606	2.91239	2.81635	2.95024	5.30322
2-Chlorotoluene		2.99265	2.31448	2.81057	2.64897	2.50142	2.61378	2.57101	2.63612	8.25378
4-Chlorotoluene	2.56339	2.5861	2.29006	2.55177	2.63031	2.41864	2.2799	2.17747	2.4372	6.98222
a-Methylstyrene			1.12025	1.41688	1.39756	1.35572	1.41986	1.35543	1.34428	8.43365
tert-Butylbenzene			0.56026	0.65003	0.66483	0.62531	0.61977	0.59094	0.61853	6.19423
1,2,4-Trimethylbenzene	3.41485	3.20381	2.86379	3.24429	3.17284	3.0014	2.96997	2.8463	3.08966	6.49589
sec-Butylbenzene	3.92127	3.95846	3.39254	3.98281	3.96896	3.8029	3.77812	3.59297	3.79976	5.54855
p-Isopropyltoluene			2.97918	3.35219	3.3501	3.24235	3.24339	3.07285	3.20668	4.70949
1,3-Dichlorobenzene	2.09668	2.18083	1.63464	1.82169	1.84149	1.71899	1.77783	1.67989	1.84401	10.6223
1,4-Dichlorobenzene	2.13498	2.06617	1.68605	1.85221	1.83159	1.72549	1.79434	1.65691	1.84347	9.41157
n-Butylbenzene	3.12981	3.1425	2.56827	2.96652	3.08072	3.01911	3.06733	2.87744	2.98146	6.31771
1,2-Dichlorobenzene	1.80685	1.84212	1.52596	1.70901	1.74915	1.66133	1.78603	1.60751	1.71099	6.28256
1,2-Dibromo-3-Chloropropane			0.17584	0.21007	0.23479	0.23723	0.24208	0.21787	0.21965	11.2549
1,2,4-Trichlorobenzene	1.3714	1.33063	1.02655	1.15029	1.2163	1.24479	1.25089	1.12609	1.21462	9.21088
Hexachlorobutadiene	0.57233	0.7279	0.53741	0.61674	0.64289	0.67353	0.72181	0.62948	0.64026	10.4449
Naphthalene		3.19632	2.63671	3.04494	3.29135	3.2233	3.14196	2.79099	3.04651	7.99534
1,2,3-Trichlorobenzene	1.32324	1.26566	0.99788	1.12352	1.21351	1.21702	1.20507	1.0788	1.17809	8.93408

Fri Feb 26 11:40:14 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16021357 Run Date: 02/25/2016 Sample ID: WG558732-11
Instrument ID: HPMS9 Run Time: 21:31 Method: 8260B
File ID: 9M972907 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG558732 Cal ID: HPMS9 - 25-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	48.0	ug/kg	0.461	4.00	20	
1,1-Dichloroethene	CCC	50.0	48.6	ug/kg	0.454	2.90	20	
1,2-Dichloropropane	CCC	50.0	52.3	ug/kg	0.275	4.60	20	
Ethylbenzene	CCC	50.0	51.3	ug/kg	0.531	2.60	20	
Toluene	CCC	50.0	50.7	ug/kg	1.45	1.50	20	
Vinyl Chloride	CCC	50.0	59.8	ug/kg	0.392	19.7	20	
Bromoform	SPCC	50.0	47.3	ug/kg	0.261	5.40	20	
Chlorobenzene	SPCC	50.0	51.2	ug/kg	1.03	2.40	20	
Chloromethane	SPCC	50.0	52.7	ug/kg	0.345	5.40	20	
1,1-Dichloroethane	SPCC	50.0	46.4	ug/kg	0.485	7.20	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	52.0	ug/kg	0.789	4.00	20	
Acetone		50.0	43.9	ug/kg	0.112	12.2	20	
Benzene		50.0	49.0	ug/kg	0.937	2.10	20	
Bromobenzene		50.0	52.2	ug/kg	0.968	4.40	20	
Bromochloromethane		50.0	51.5	ug/kg	0.183	3.00	20	
Bromodichloromethane		50.0	47.6	ug/kg	0.352	4.90	20	
Bromomethane		50.0	49.0	ug/kg	0.208	2.10	20	
2-Butanone		50.0	47.4	ug/kg	0.153	5.20	20	
n-Butylbenzene		50.0	52.5	ug/kg	3.13	4.90	20	
sec-Butylbenzene		50.0	54.7	ug/kg	4.16	9.50	20	
tert-Butylbenzene		50.0	55.4	ug/kg	0.685	10.8	20	
Carbon Disulfide		50.0	44.1	ug/kg	0.635	11.7	20	
Carbon Tetrachloride		50.0	46.5	ug/kg	0.375	7.00	20	
Dibromochloromethane		50.0	48.5	ug/kg	0.407	3.10	20	
Chloroethane		50.0	54.2	ug/kg	0.158	8.30	20	
2-Chlorotoluene		50.0	54.2	ug/kg	2.86	8.40	20	
4-Chlorotoluene		50.0	53.0	ug/kg	2.59	6.10	20	
1,2-Dibromo-3-Chloropropane		50.0	54.5	ug/kg	0.239	8.90	20	
1,2-Dibromoethane		50.0	50.8	ug/kg	0.338	1.50	20	
Dibromomethane		50.0	47.0	ug/kg	0.164	6.10	20	
1,2-Dichlorobenzene		50.0	52.7	ug/kg	1.81	5.50	20	
1,3-Dichlorobenzene		50.0	50.8	ug/kg	1.87	1.60	20	
1,4-Dichlorobenzene		50.0	51.1	ug/kg	1.88	2.20	20	
Dichlorodifluoromethane		50.0	63.4	ug/kg	0.432	26.7	20	*
1,2-Dichloroethane		50.0	49.2	ug/kg	0.416	1.60	20	
cis-1,2-Dichloroethene		50.0	52.6	ug/kg	0.287	5.20	20	
trans-1,2-Dichloroethene		50.0	50.6	ug/kg	0.422	1.20	20	
1,3-Dichloropropane		50.0	53.8	ug/kg	0.538	7.60	20	
2,2-Dichloropropane		50.0	47.1	ug/kg	0.368	5.90	20	
cis-1,3-Dichloropropene		50.0	53.2	ug/kg	0.411	6.40	20	
trans-1,3-Dichloropropene		50.0	50.0	ug/kg	0.515	0.100	20	
1,1-Dichloropropene		50.0	48.5	ug/kg	0.332	2.90	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4652663
Report generated 03/01/2016 14:46

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16021357 Run Date: 02/25/2016 Sample ID: WG558732-11
Instrument ID: HPMS9 Run Time: 21:31 Method: 8260B
File ID: 9M972907 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG558732 Cal ID: HPMS9 - 25-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	48.2	ug/kg	0.289	3.60	20	
Hexachlorobutadiene		50.0	54.5	ug/kg	0.698	9.00	20	
Isopropylbenzene		50.0	52.0	ug/kg	1.71	4.00	20	
p-Isopropyltoluene		50.0	54.1	ug/kg	3.47	8.10	20	
4-Methyl-2-Pentanone		50.0	47.8	ug/kg	0.110	4.40	20	
Methylene Chloride		50.0	49.8	ug/kg	0.254	0.400	20	
Naphthalene		50.0	50.8	ug/kg	3.10	1.70	20	
n-Propylbenzene		50.0	54.9	ug/kg	4.32	9.80	20	
Styrene		50.0	52.8	ug/kg	1.10	5.60	20	
1,1,1,2-Tetrachloroethane		50.0	49.7	ug/kg	0.375	0.600	20	
Tetrachloroethene		50.0	49.8	ug/kg	0.305	0.400	20	
1,2,3-Trichlorobenzene		50.0	52.6	ug/kg	1.24	5.20	20	
1,2,4-Trichlorobenzene		50.0	51.7	ug/kg	1.26	3.40	20	
1,1,1-Trichloroethane		50.0	46.7	ug/kg	0.406	6.50	20	
1,1,2-Trichloroethane		50.0	51.5	ug/kg	0.309	3.00	20	
Trichloroethene		50.0	49.4	ug/kg	0.300	1.20	20	
Trichlorofluoromethane		50.0	47.6	ug/kg	0.467	4.90	20	
1,2,3-Trichloropropane		50.0	54.2	ug/kg	0.312	8.40	20	
1,2,4-Trimethylbenzene		50.0	51.5	ug/kg	3.18	3.10	20	
1,3,5-Trimethylbenzene		50.0	54.3	ug/kg	3.21	8.60	20	
o-Xylene		50.0	53.6	ug/kg	0.657	7.10	20	
m-,p-Xylene		100	103	ug/kg	0.655	2.60	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4652663
Report generated 03/01/2016 14:46

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021357 Run Date: 02/29/2016 Sample ID: WG559150-02
Instrument ID: HPMS9 Run Time: 17:23 Method: 8260B
File ID: 9M972967 Analyst: FJB/JDS QC Key: DOD4
Workgroup (AAB#): WG559151 Cal ID: HPMS9 - 25-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.0	ug/kg	0.480	0.0136	20	
1,1-Dichloroethene	CCC	50.0	50.3	ug/kg	0.470	0.656	20	
1,2-Dichloropropane	CCC	50.0	54.5	ug/kg	0.287	9.07	20	
Ethylbenzene	CCC	50.0	54.8	ug/kg	0.567	9.62	20	
Toluene	CCC	50.0	53.2	ug/kg	1.52	6.47	20	
Vinyl Chloride	CCC	50.0	57.3	ug/kg	0.375	14.5	20	
Bromoform	SPCC	50.0	49.9	ug/kg	0.275	0.188	20	
Chlorobenzene	SPCC	50.0	52.5	ug/kg	1.06	5.09	20	
Chloromethane	SPCC	50.0	44.7	ug/kg	0.292	10.6	20	
1,1-Dichloroethane	SPCC	50.0	52.1	ug/kg	0.545	4.16	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.9	ug/kg	0.757	0.242	20	
Xylenes		150	163	ug/kg	0.681	8.56	40	
Acetone		50.0	46.0	ug/kg	0.117	8.05	20	
Benzene		50.0	50.9	ug/kg	0.974	1.71	20	
Bromobenzene		50.0	53.0	ug/kg	0.984	6.00	20	
Bromochloromethane		50.0	52.4	ug/kg	0.186	4.72	20	
Bromodichloromethane		50.0	50.1	ug/kg	0.371	0.216	20	
Bromomethane		50.0	45.8	ug/kg	0.195	8.34	20	
2-Butanone		50.0	47.2	ug/kg	0.152	5.54	20	
n-Butylbenzene		50.0	56.2	ug/kg	3.35	12.4	20	
sec-Butylbenzene		50.0	56.9	ug/kg	4.33	13.8	20	
tert-Butylbenzene		50.0	57.2	ug/kg	0.708	14.5	20	
Carbon Disulfide		50.0	58.8	ug/kg	0.847	17.7	20	
Carbon Tetrachloride		50.0	51.1	ug/kg	0.412	2.18	20	
Dibromochloromethane		50.0	50.5	ug/kg	0.423	0.949	20	
Chloroethane		50.0	54.1	ug/kg	0.158	8.17	20	
2-Chlorotoluene		50.0	53.7	ug/kg	2.83	7.36	20	
4-Chlorotoluene		50.0	56.2	ug/kg	2.74	12.4	20	
1,2-Dibromo-3-Chloropropane		50.0	45.8	ug/kg	0.201	8.44	20	
1,2-Dibromoethane		50.0	49.8	ug/kg	0.331	0.443	20	
Dibromomethane		50.0	50.8	ug/kg	0.177	1.54	20	
1,2-Dichlorobenzene		50.0	51.9	ug/kg	1.78	3.77	20	
1,3-Dichlorobenzene		50.0	51.4	ug/kg	1.89	2.72	20	
1,4-Dichlorobenzene		50.0	51.4	ug/kg	1.89	2.70	20	
Dichlorodifluoromethane		50.0	45.8	ug/kg	0.312	8.33	20	
1,2-Dichloroethane		50.0	50.4	ug/kg	0.426	0.802	20	
cis-1,2-Dichloroethene		50.0	53.3	ug/kg	0.291	6.56	20	
trans-1,2-Dichloroethene		50.0	54.2	ug/kg	0.452	8.49	20	
1,3-Dichloropropane		50.0	51.0	ug/kg	0.510	2.07	20	
2,2-Dichloropropane		50.0	55.8	ug/kg	0.436	11.7	20	
cis-1,3-Dichloropropene		50.0	52.9	ug/kg	0.408	5.79	20	
trans-1,3-Dichloropropene		50.0	53.4	ug/kg	0.550	6.86	20	

CCV - Modified 03/05/2008
PDF File ID: 4652665
Report generated 03/01/2016 14:46

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021357 Run Date: 02/29/2016 Sample ID: WG559150-02
Instrument ID: HPMS9 Run Time: 17:23 Method: 8260B
File ID: 9M972967 Analyst: FJB/JDS QC Key: DOD4
Workgroup (AAB#): WG559151 Cal ID: HPMS9 - 25-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	53.3	ug/kg	0.365	6.61	20	
2-Hexanone		50.0	49.6	ug/kg	0.297	0.827	20	
Hexachlorobutadiene		50.0	54.2	ug/kg	0.695	8.48	20	
Isopropylbenzene		50.0	55.0	ug/kg	1.81	10.1	20	
p-Isopropyltoluene		50.0	56.6	ug/kg	3.63	13.2	20	
4-Methyl-2-Pentanone		50.0	50.1	ug/kg	0.116	0.238	20	
Methylene Chloride		50.0	50.3	ug/kg	0.256	0.504	20	
Naphthalene		50.0	47.7	ug/kg	2.90	4.70	20	
n-Propylbenzene		50.0	57.0	ug/kg	4.48	14.0	20	
Styrene		50.0	54.9	ug/kg	1.15	9.79	20	
1,1,1,2-Tetrachloroethane		50.0	52.1	ug/kg	0.393	4.12	20	
Tetrachloroethene		50.0	53.9	ug/kg	0.330	7.82	20	
1,2,3-Trichlorobenzene		50.0	50.2	ug/kg	1.18	0.361	20	
1,2,4-Trichlorobenzene		50.0	50.8	ug/kg	1.23	1.54	20	
1,1,1-Trichloroethane		50.0	52.6	ug/kg	0.457	5.20	20	
1,1,2-Trichloroethane		50.0	52.5	ug/kg	0.315	5.05	20	
Trichloroethene		50.0	52.9	ug/kg	0.321	5.82	20	
Trichlorofluoromethane		50.0	52.3	ug/kg	0.513	4.50	20	
1,2,3-Trichloropropane		50.0	50.0	ug/kg	0.288	0.0332	20	
1,2,4-Trimethylbenzene		50.0	54.4	ug/kg	3.36	8.70	20	
1,3,5-Trimethylbenzene		50.0	56.7	ug/kg	3.35	13.5	20	
o-Xylene		50.0	54.9	ug/kg	0.674	9.89	20	
m-,p-Xylene		100	108	ug/kg	0.689	7.89	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4652665
Report generated 03/01/2016 14:46

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16021357
Instrument ID: HPMS9
Workgroup (AAB#): WG559151

ICAL CCV Number: WG558732-02
CAL ID: HPMS9 - 25-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558732-02	NA	NA	183008	378926	517775
Upper Limit	NA	NA	366016	757852	1035550
Lower Limit	NA	NA	91504	189463	258888
L16021357-01	1.00	01	169769	363029	513071
L16021357-02	1.00	01	132036	286025	402912
L16021357-03	1.00	01	164775	349231	499404
L16021357-04	1.00	01	176954	394836	554674
L16021357-05	1.00	01	175728	381852	549980
L16021357-06	1.00	01	183109	417877	595721
WG559151-01	1.00	01	183902	403206	567751
WG559151-02	1.00	01	203058	426907	583985

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4652666
Report generated 03/01/2016 14:46

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16021357
Instrument ID: HPMS9
Workgroup (AAB#): WG559151

ICAL CCV Number: WG558732-02
CAL ID: HPMS9 - 25-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558732-02	NA	NA	17.76	14.73	10.85
Upper Limit	NA	NA	18.26	15.23	11.35
Lower Limit	NA	NA	17.26	14.23	10.35
L16021357-01	1.00	01	17.75	14.72	10.85
L16021357-02	1.00	01	17.75	14.72	10.85
L16021357-03	1.00	01	17.75	14.72	10.85
L16021357-04	1.00	01	17.75	14.72	10.85
L16021357-05	1.00	01	17.75	14.72	10.85
L16021357-06	1.00	01	17.75	14.72	10.85
WG559151-01	1.00	01	17.75	14.72	10.85
WG559151-02	1.00	01	17.76	14.73	10.85

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4652668
Report generated: 03/01/2016 14:46

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972974.D Vial: 8
Acq On : 29 Feb 2016 21:00 Operator: FJB/JDS
Sample : WG559084-01 L16021357-01 REF 4.90g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 01 09:27:15 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	513071	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	363029	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	169769	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	134429	48.3365 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.68%		
43) 1,2-Dichloroethane-d4	10.45	65	177621	50.9024 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 101.80%		
58) Toluene-d8	12.82	98	489347	53.2912 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.58%		
79) p-Bromofluorobenzene	16.23	95	187457	56.7062 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 113.42%		

Target Compounds

					Qvalue
13) Acetone	6.41	43	10794	6.2295 ug/kg	97
29) 2-Butanone	9.03	43	807	0.4878 ug/kg#	58
56) Dimethyl Disulfide	12.82	94	13775	3.4612 ug/kg#	29
88) tert-Butylbenzene	17.00	134	1308	0.6228 ug/kg#	1
91) p-Isopropyltoluene	17.47	119	190344	17.4822 ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972974.D 8260SL.M Tue Mar 01 09:27:16 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972974.D Vial: 8
Acq On : 29 Feb 2016 21:00 Operator: FJB/JDS
Sample : WG559084-01 L16021357-01 REF 4.90g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 1 9:27 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

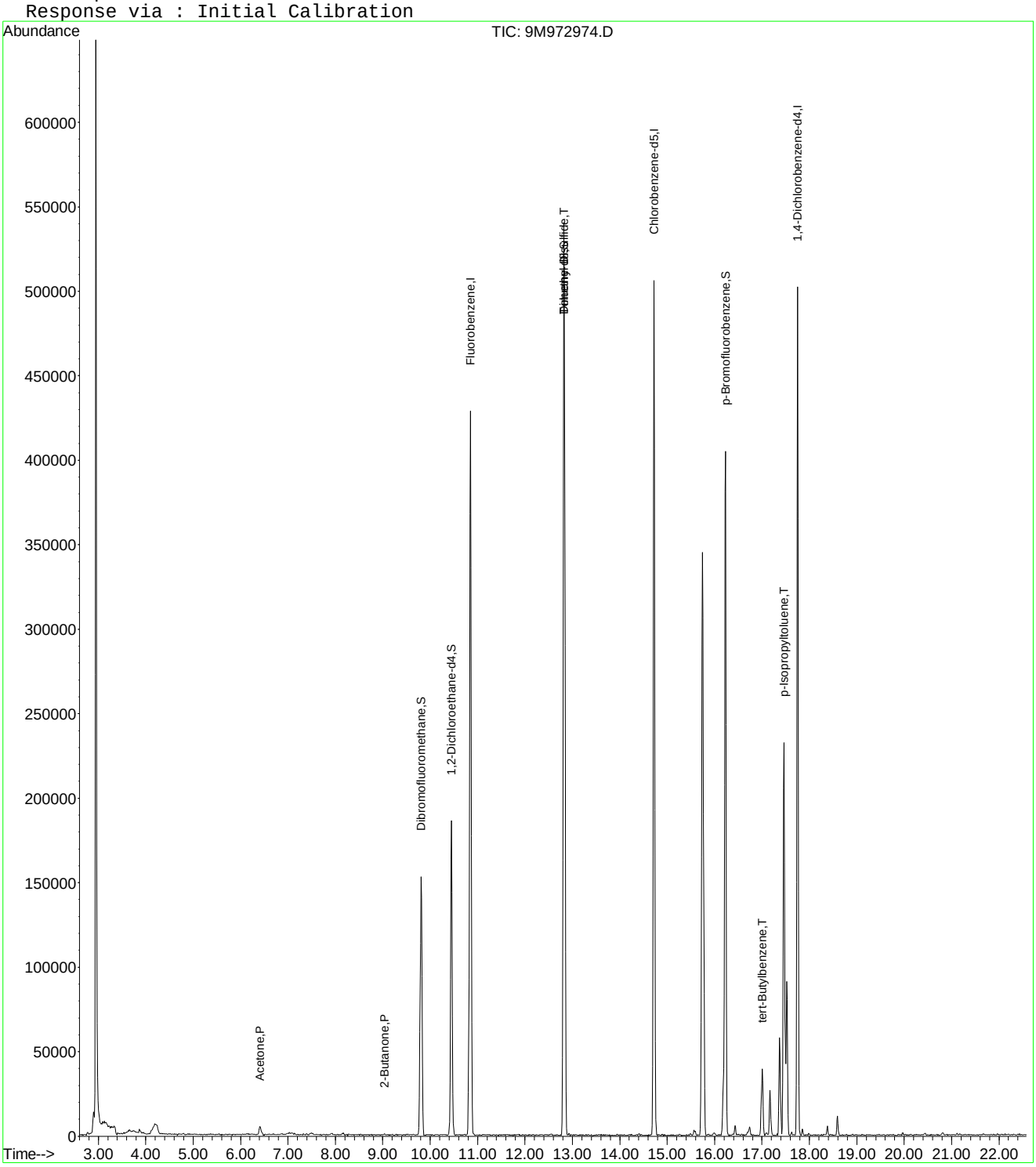

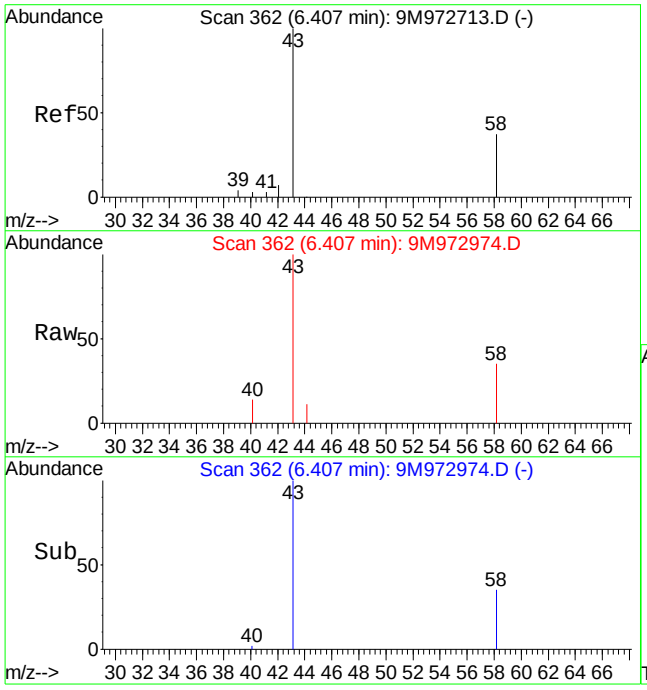

#13
Acetone
Concen: 6.23 ug/kg
RT: 6.41 min Scan# 362
Delta R.T. -0.01 min
Lab File: 9M972974.D
Acq: 29 Feb 2016 21:00

Tgt Ion: 43 Resp: 10794

Ion	Ratio	Lower	Upper
43	100		
58	29.8	16.9	39.3

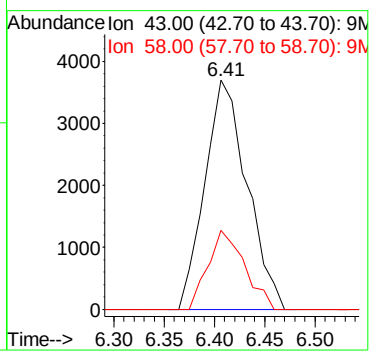

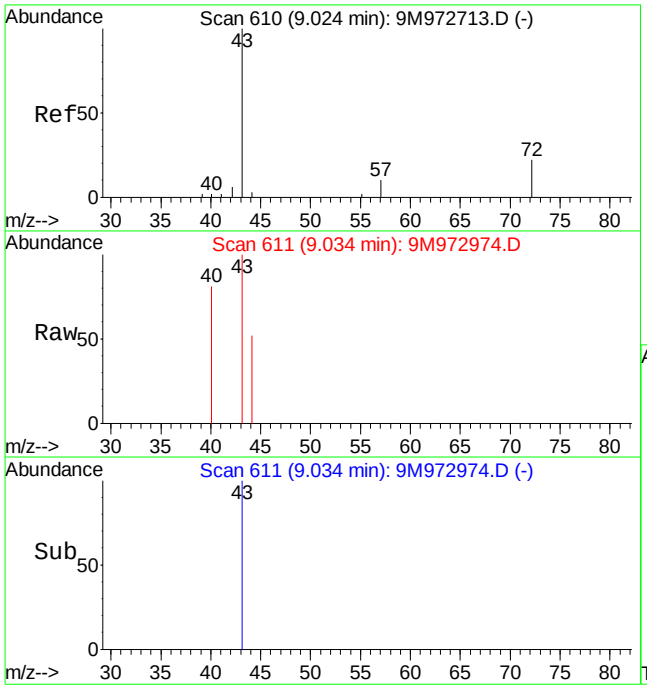

#29
2-Butanone
Concen: 0.49 ug/kg
RT: 9.03 min Scan# 611
Delta R.T. 0.00 min
Lab File: 9M972974.D
Acq: 29 Feb 2016 21:00

Tgt Ion: 43 Resp: 807

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

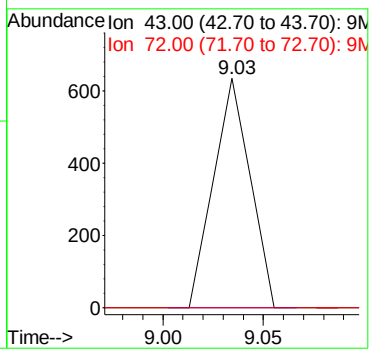

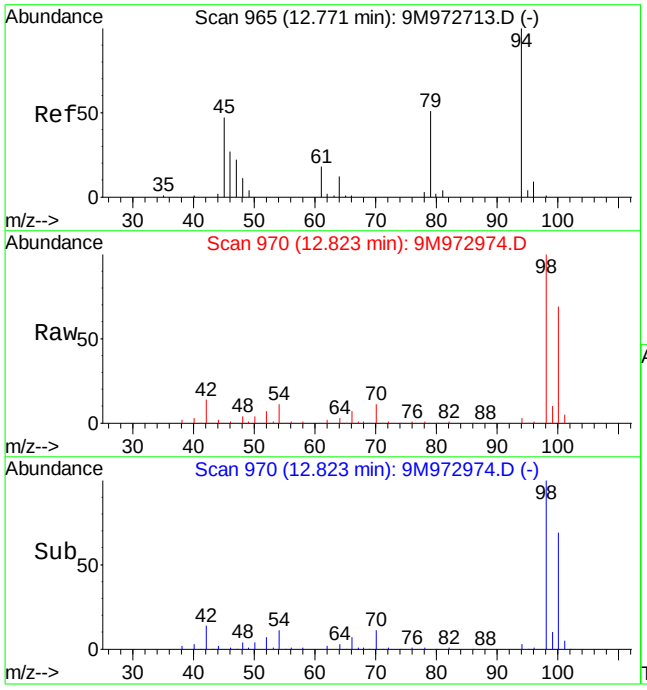

#56
Dimethyl Disulfide
Concen: 3.46 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M972974.D
Acq: 29 Feb 2016 21:00

Tgt Ion: 94 Resp: 13775

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

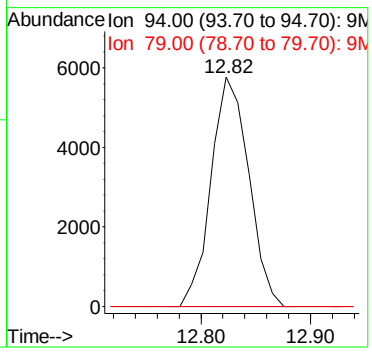

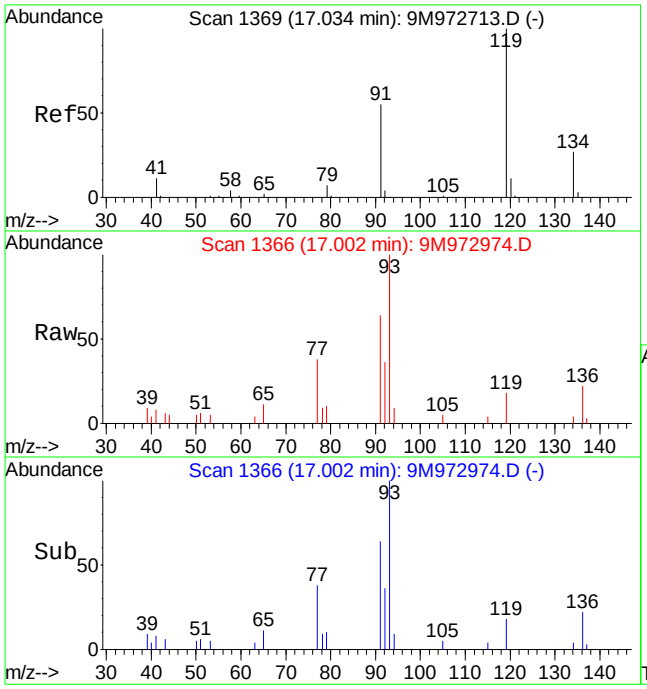

#88
tert-Butylbenzene
Concen: 0.62 ug/kg
RT: 17.00 min Scan# 1366
Delta R.T. -0.04 min
Lab File: 9M972974.D
Acq: 29 Feb 2016 21:00

Tgt Ion:134 Resp: 1308

Ion	Ratio	Lower	Upper
134	100		
119	390.8	291.4	680.0
91	1251.4	193.3	451.1#

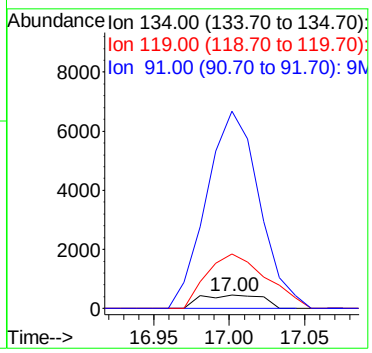

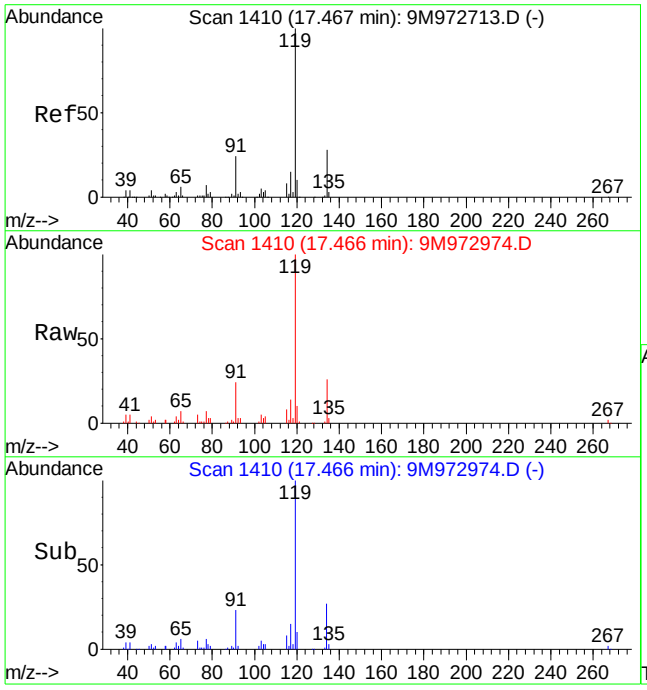

#91
p-Isopropyltoluene
Concen: 17.48 ug/kg
RT: 17.47 min Scan# 1410
Delta R.T. 0.00 min
Lab File: 9M972974.D
Acq: 29 Feb 2016 21:00

Tgt Ion:119 Resp: 190344

Ion	Ratio	Lower	Upper
119	100		
134	26.2	15.7	36.5

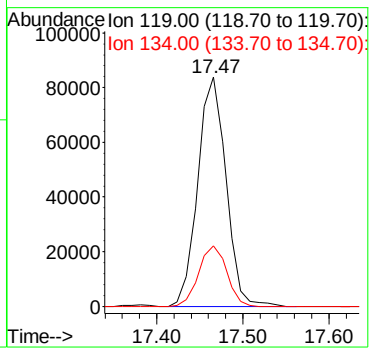

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972975.D Vial: 9
Acq On : 29 Feb 2016 21:30 Operator: FJB/JDS
Sample : L16021357-02 5.22g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 01 09:27:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	402912	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	286025	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.75	152	132036	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	109232	50.0149 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.02%		
43) 1,2-Dichloroethane-d4	10.45	65	136137	49.6807 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.36%		
58) Toluene-d8	12.83	98	393499	54.3901 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 108.78%		
79) p-Bromofluorobenzene	16.23	95	143326	55.7468 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 111.50%		

Target Compounds					Qvalue
6) Bromomethane	4.89	94	948	0.5531 ug/kg#	48
13) Acetone	6.42	43	5735	3.4020 ug/kg	98
17) Iodomethane	7.14	142	440	3.1696 ug/kg#	34
56) Dimethyl Disulfide	12.83	94	11335	3.6268 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972975.D 8260SL.M Tue Mar 01 09:27:17 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972975.D Vial: 9
Acq On : 29 Feb 2016 21:30 Operator: FJB/JDS
Sample : L16021357-02 5.22g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 1 9:27 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

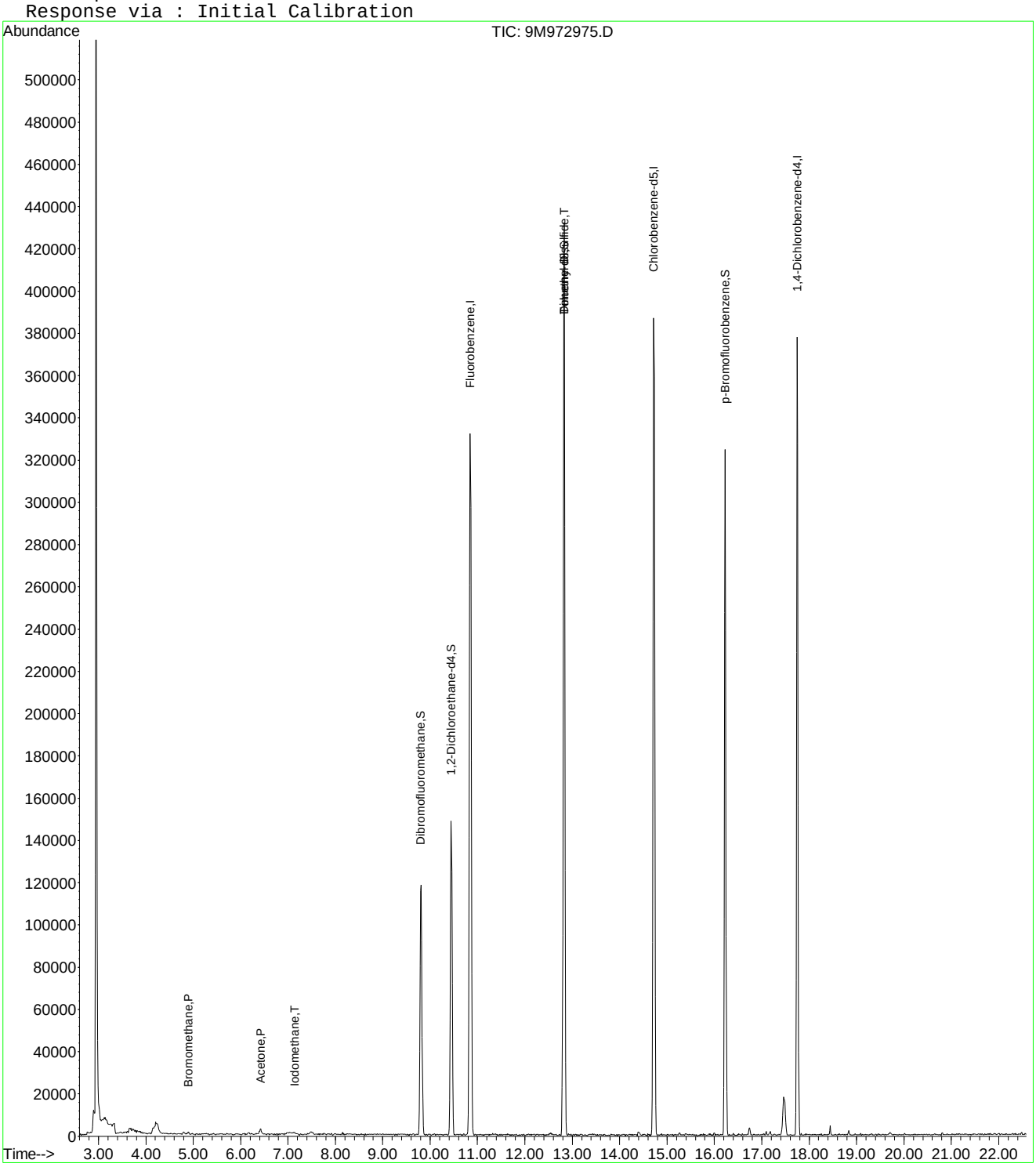

9M972975.D 8260SL.M Tue Mar 01 09:27:17 2016 Page 2

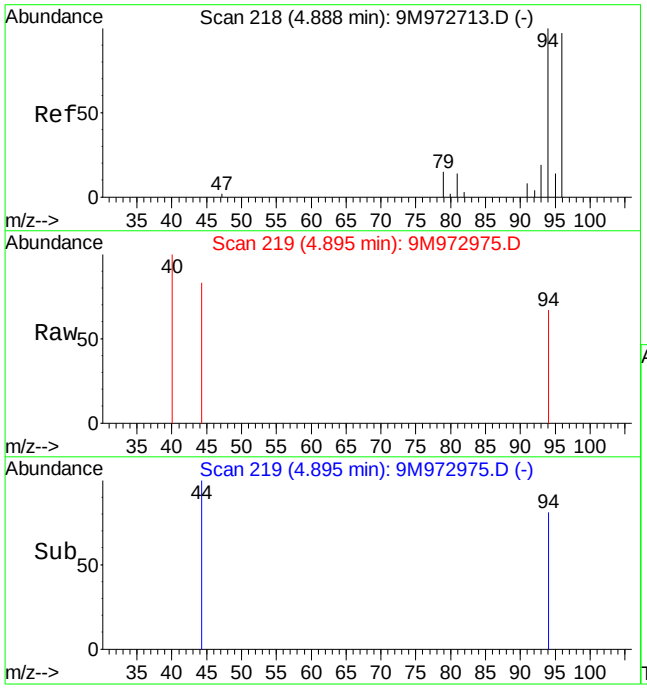

#6
Bromomethane
Concen: 0.55 ug/kg
RT: 4.89 min Scan# 219
Delta R.T. 0.01 min
Lab File: 9M972975.D
Acq: 29 Feb 2016 21:30

Tgt Ion: 94 Resp: 948

Ion	Ratio	Lower	Upper
94	100		
96	44.8	57.2	133.6#

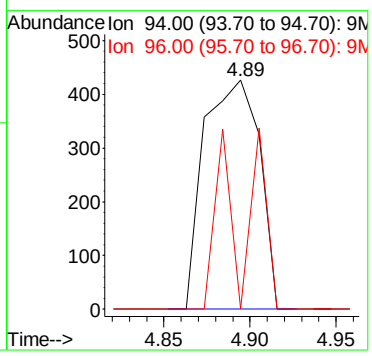

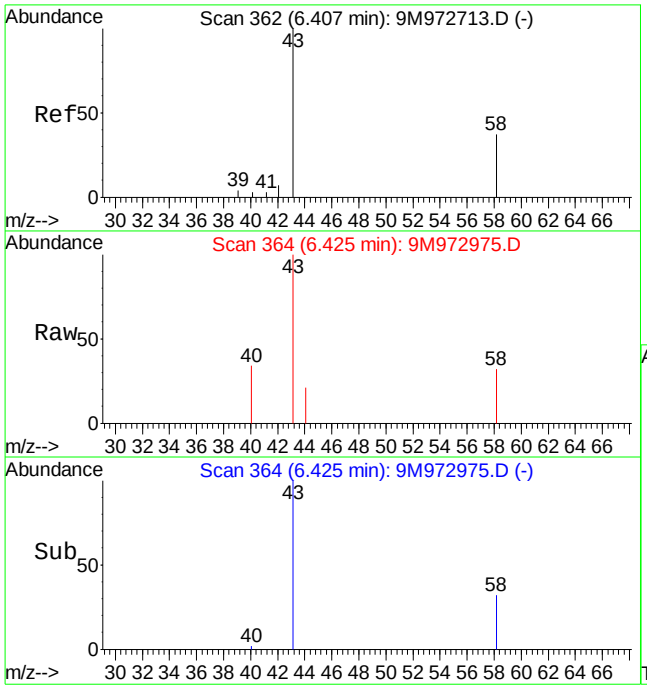

#13
Acetone
Concen: 3.40 ug/kg
RT: 6.42 min Scan# 364
Delta R.T. 0.01 min
Lab File: 9M972975.D
Acq: 29 Feb 2016 21:30

Tgt Ion: 43 Resp: 5735

Ion	Ratio	Lower	Upper
43	100		
58	26.9	16.9	39.3

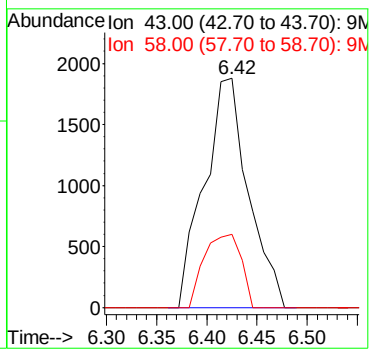

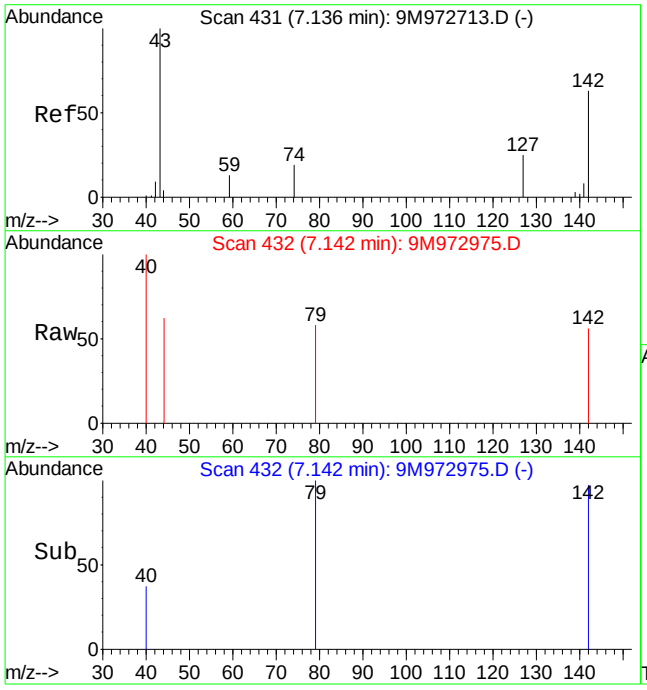

#17
Iodomethane
Concen: 3.17 ug/kg
RT: 7.14 min Scan# 432
Delta R.T. 0.01 min
Lab File: 9M972975.D
Acq: 29 Feb 2016 21:30

Tgt Ion:142 Resp: 440

Ion	Ratio	Lower	Upper
142	100		
127	0.0	25.1	58.7#

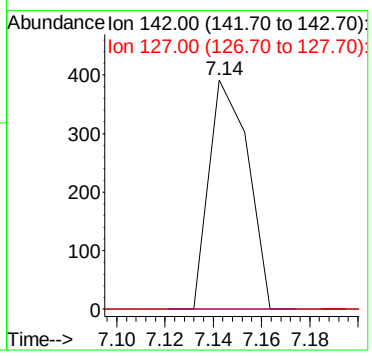

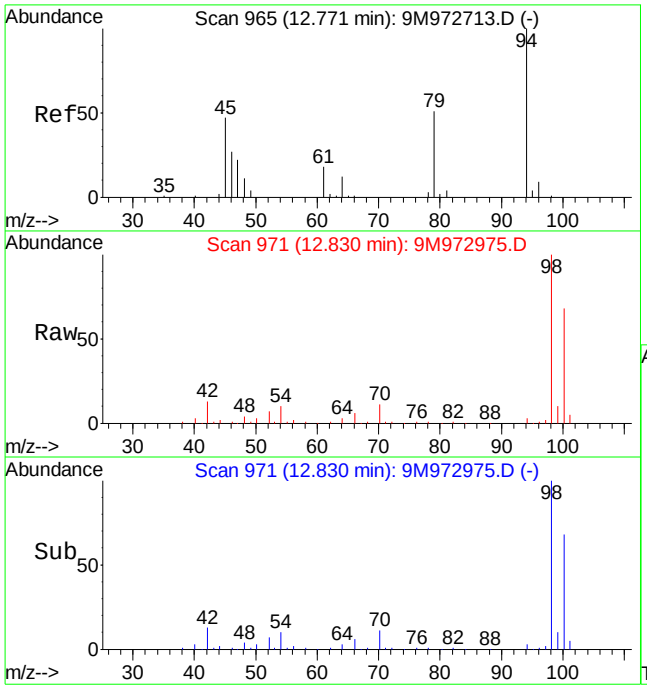

#56
Dimethyl Disulfide
Concen: 3.63 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.06 min
Lab File: 9M972975.D
Acq: 29 Feb 2016 21:30

Tgt Ion: 94 Resp: 11335

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

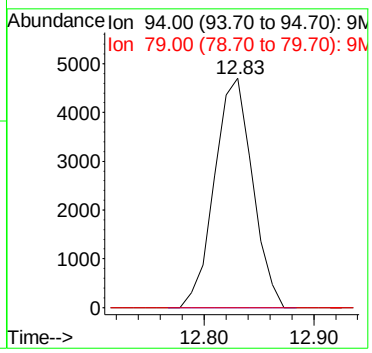

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972976.D Vial: 10
Acq On : 29 Feb 2016 22:01 Operator: FJB/JDS
Sample : L16021357-03 4.98g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 01 09:27:17 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	499404	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	349231	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	164775	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	131956	48.7457 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.50%		
43) 1,2-Dichloroethane-d4	10.45	65	168856	49.7148 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.42%		
58) Toluene-d8	12.82	98	482110	54.5775 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 109.16%		
79) p-Bromofluorobenzene	16.23	95	178083	55.5033 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 111.00%		

Target Compounds

					Qvalue
13) Acetone	6.40	43	8767	4.7821 ug/kg	98
17) Iodomethane	7.14	142	411	3.0781 ug/kg#	34
29) 2-Butanone	9.03	43	670	0.4160 ug/kg#	58
56) Dimethyl Disulfide	12.83	94	13863	3.5787 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972976.D 8260SL.M Tue Mar 01 09:27:18 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972976.D Vial: 10
Acq On : 29 Feb 2016 22:01 Operator: FJB/JDS
Sample : L16021357-03 4.98g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 1 9:27 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

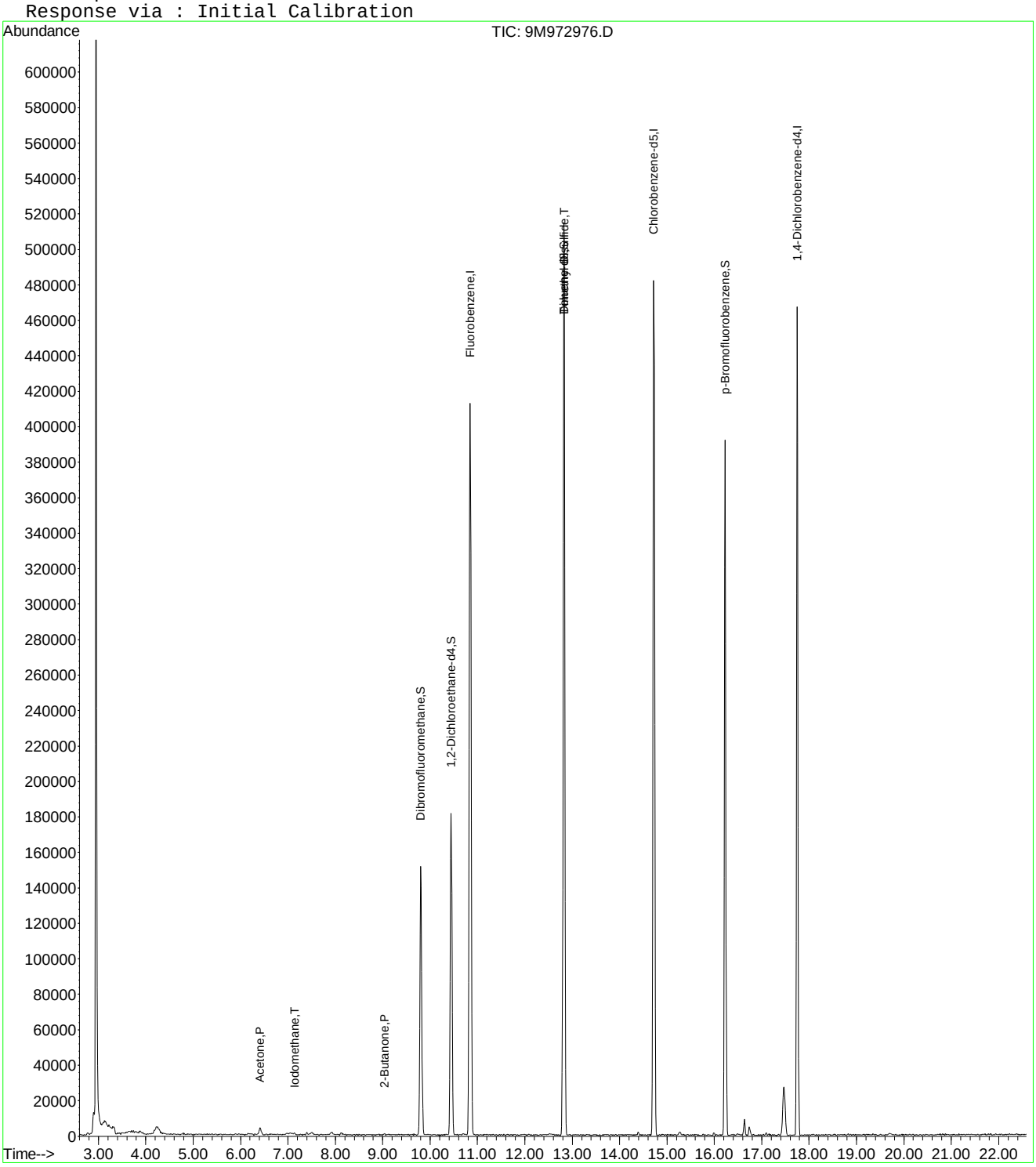

9M972976.D 8260SL.M Tue Mar 01 09:27:18 2016 Page 2

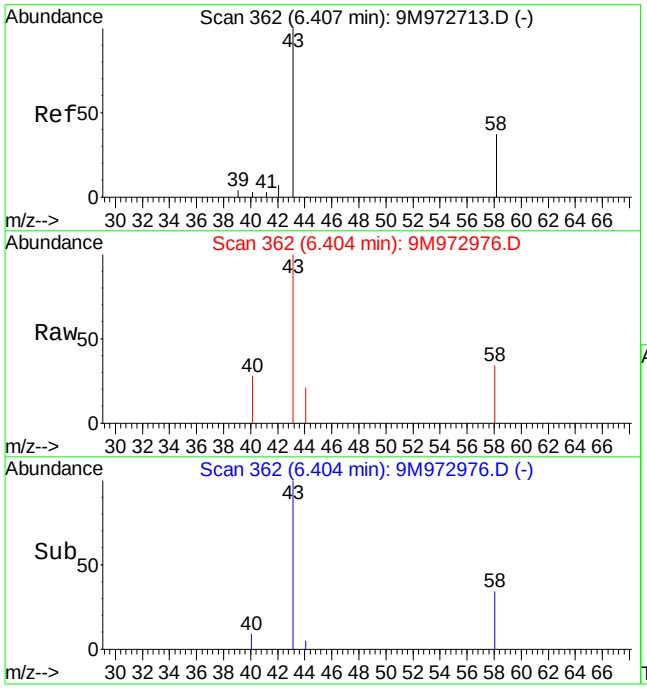

#13
Acetone
Concen: 4.78 ug/kg
RT: 6.40 min Scan# 362
Delta R.T. -0.01 min
Lab File: 9M972976.D
Acq: 29 Feb 2016 22:01

Tgt Ion: 43 Resp: 8767

Ion	Ratio	Lower	Upper
43	100		
58	29.4	16.9	39.3

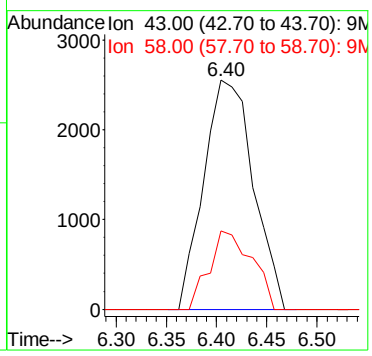

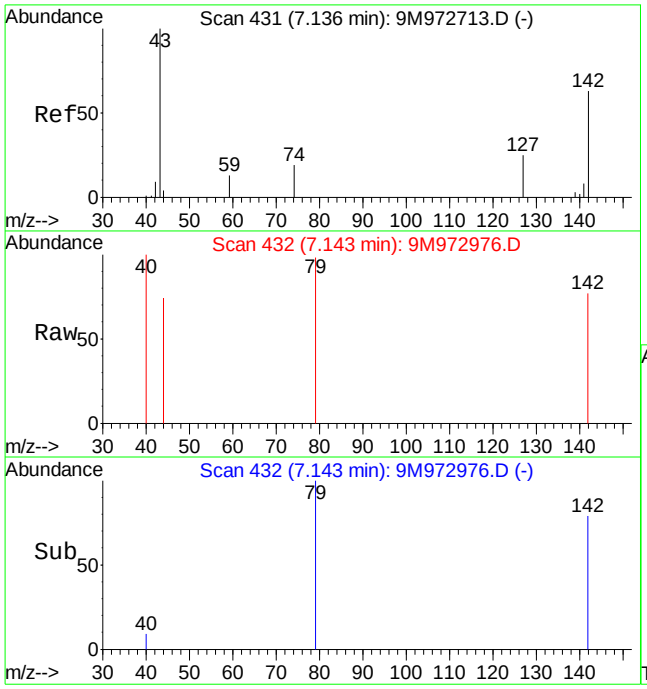

#17
Iodomethane
Concen: 3.08 ug/kg
RT: 7.14 min Scan# 432
Delta R.T. 0.01 min
Lab File: 9M972976.D
Acq: 29 Feb 2016 22:01

Tgt Ion:142 Resp: 411

Ion	Ratio	Lower	Upper
142	100		
127	0.0	25.1	58.7#

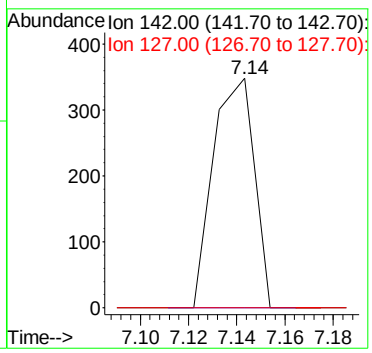

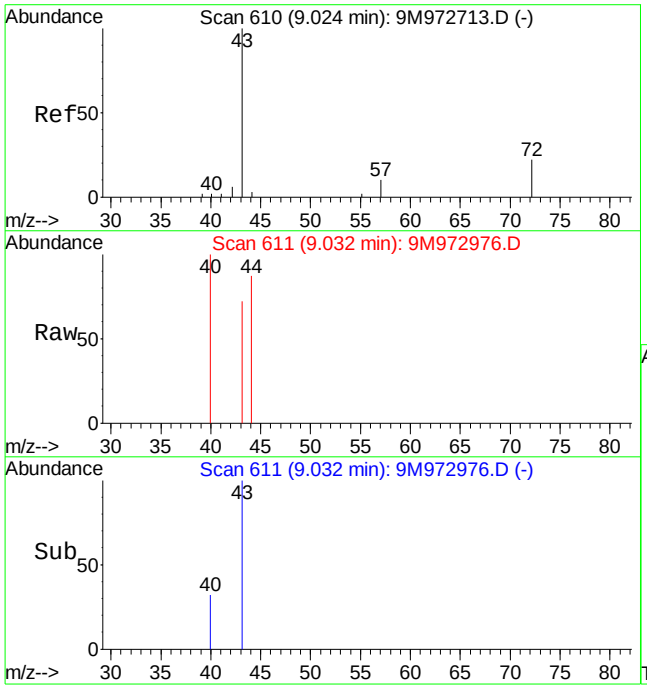

#29
2-Butanone
Concen: 0.42 ug/kg
RT: 9.03 min Scan# 611
Delta R.T. 0.00 min
Lab File: 9M972976.D
Acq: 29 Feb 2016 22:01

Tgt Ion: 43 Resp: 670

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

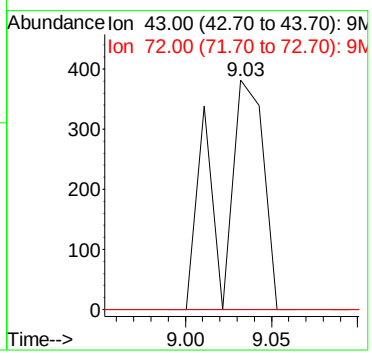

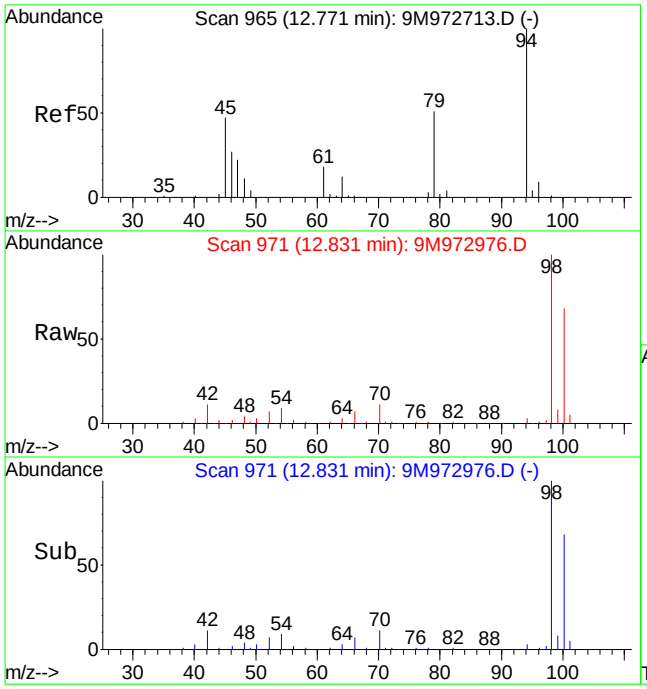

#56
Dimethyl Disulfide
Concen: 3.58 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.07 min
Lab File: 9M972976.D
Acq: 29 Feb 2016 22:01

Tgt Ion: 94 Resp: 13863

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

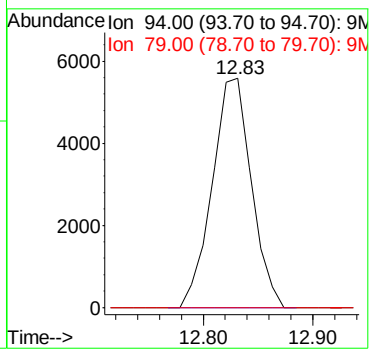

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972977.D Vial: 11
Acq On : 29 Feb 2016 22:32 Operator: FJB/JDS
Sample : L16021357-04 5.33g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 01 09:27:18 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	554674	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	394836	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	176954	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	148274	49.3159 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.64%		
43) 1,2-Dichloroethane-d4	10.45	65	186097	49.3314 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.66%		
58) Toluene-d8	12.82	98	527750	52.8435 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 105.68%		
79) p-Bromofluorobenzene	16.22	95	199665	57.9467 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 115.90%		

Target Compounds					Qvalue
13) Acetone	6.41	43	15047	8.7601 ug/kg	85
17) Iodomethane	7.16	142	209	2.9264 ug/kg#	34
29) 2-Butanone	9.03	43	1990	1.1126 ug/kg#	58
56) Dimethyl Disulfide	12.82	94	14988	3.4836 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972977.D 8260SL.M Tue Mar 01 09:27:19 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972977.D Vial: 11
Acq On : 29 Feb 2016 22:32 Operator: FJB/JDS
Sample : L16021357-04 5.33g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 1 9:27 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

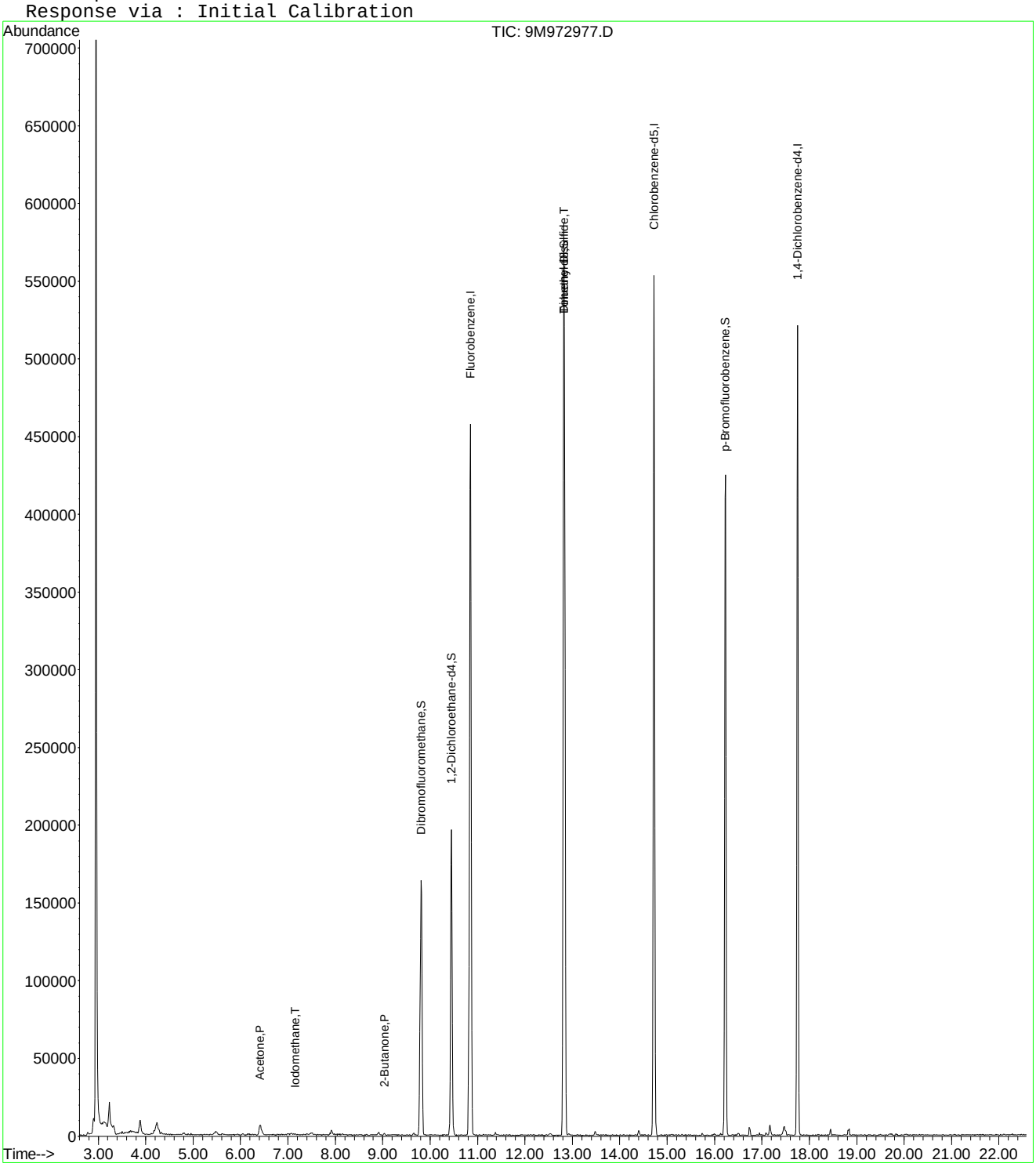

9M972977.D 8260SL.M Tue Mar 01 09:27:19 2016 Page 2

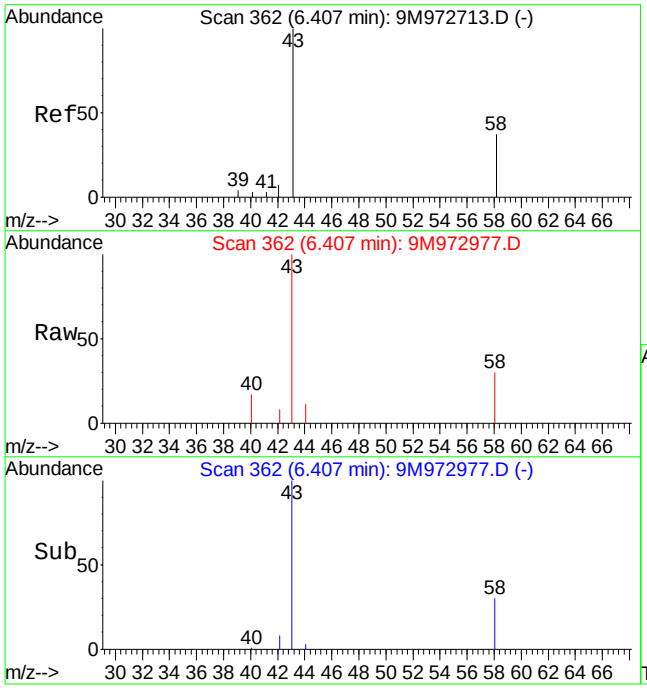

#13
Acetone
Concen: 8.76 ug/kg
RT: 6.41 min Scan# 362
Delta R.T. -0.01 min
Lab File: 9M972977.D
Acq: 29 Feb 2016 22:32

Tgt Ion: 43 Resp: 15047

Ion	Ratio	Lower	Upper
43	100		
58	35.8	16.9	39.3

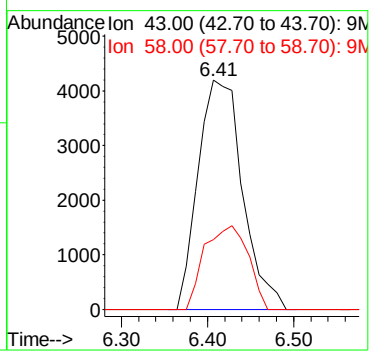

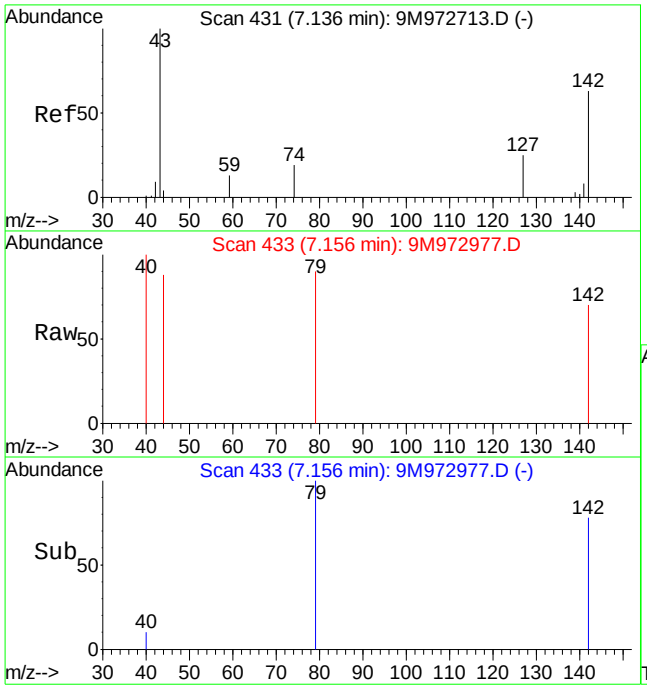

#17
Iodomethane
Concen: 2.93 ug/kg
RT: 7.16 min Scan# 433
Delta R.T. 0.03 min
Lab File: 9M972977.D
Acq: 29 Feb 2016 22:32

Tgt Ion:142 Resp: 209

Ion	Ratio	Lower	Upper
142	100		
127	0.0	25.1	58.7#

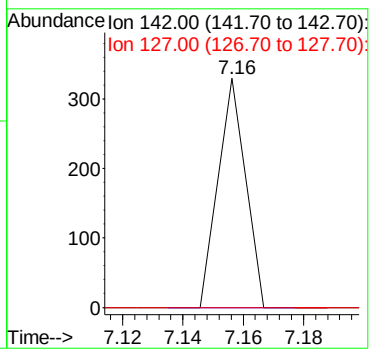

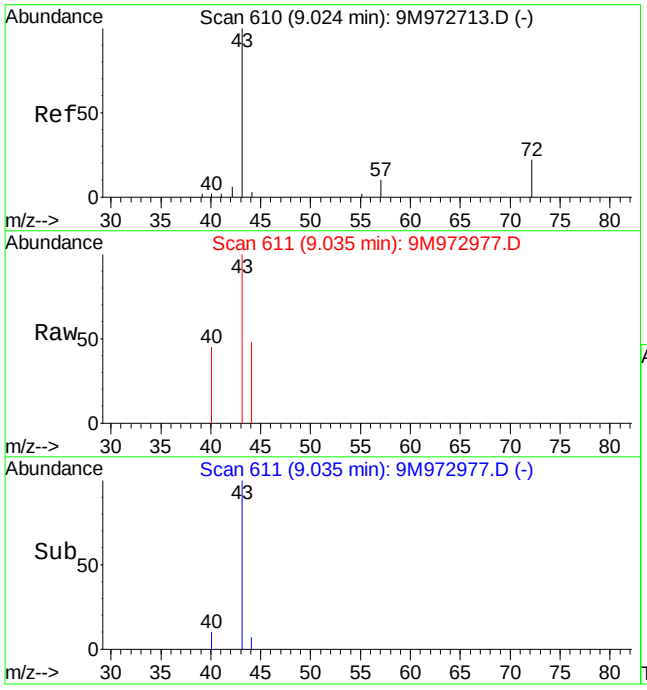

#29
2-Butanone
Concen: 1.11 ug/kg
RT: 9.03 min Scan# 611
Delta R.T. 0.00 min
Lab File: 9M972977.D
Acq: 29 Feb 2016 22:32

Tgt Ion: 43 Resp: 1990

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

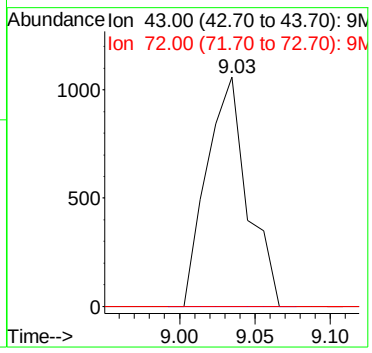

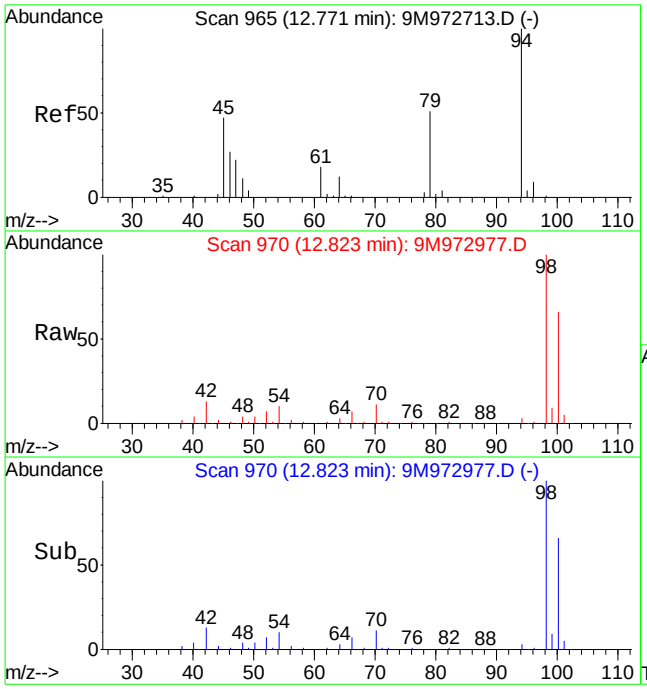

#56
Dimethyl Disulfide
Concen: 3.48 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M972977.D
Acq: 29 Feb 2016 22:32

Tgt Ion: 94 Resp: 14988

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

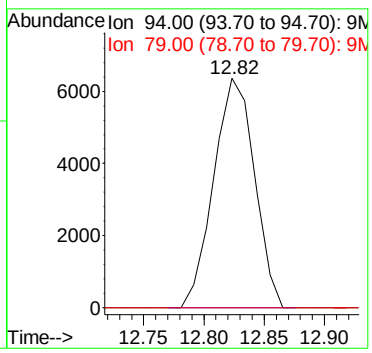

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972978.D Vial: 12
Acq On : 29 Feb 2016 23:03 Operator: FJB/JDS
Sample : L16021357-05 5.19g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 01 09:27:19 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	549980	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	381852	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	175728	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	143828	48.2454 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.50%		
43) 1,2-Dichloroethane-d4	10.45	65	179104	47.8828 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.76%		
58) Toluene-d8	12.82	98	524877	54.3428 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 108.68%		
79) p-Bromofluorobenzene	16.23	95	196467	57.4164 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 114.84%		

Target Compounds					Qvalue
13) Acetone	6.42	43	8814	4.1468 ug/kg	95
17) Iodomethane	7.13	142	662	3.2075 ug/kg	81
29) 2-Butanone	9.02	43	1221	0.6885 ug/kg#	58
56) Dimethyl Disulfide	12.83	94	14696	3.4448 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972978.D 8260SL.M Tue Mar 01 09:27:20 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972978.D Vial: 12
Acq On : 29 Feb 2016 23:03 Operator: FJB/JDS
Sample : L16021357-05 5.19g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 1 9:27 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

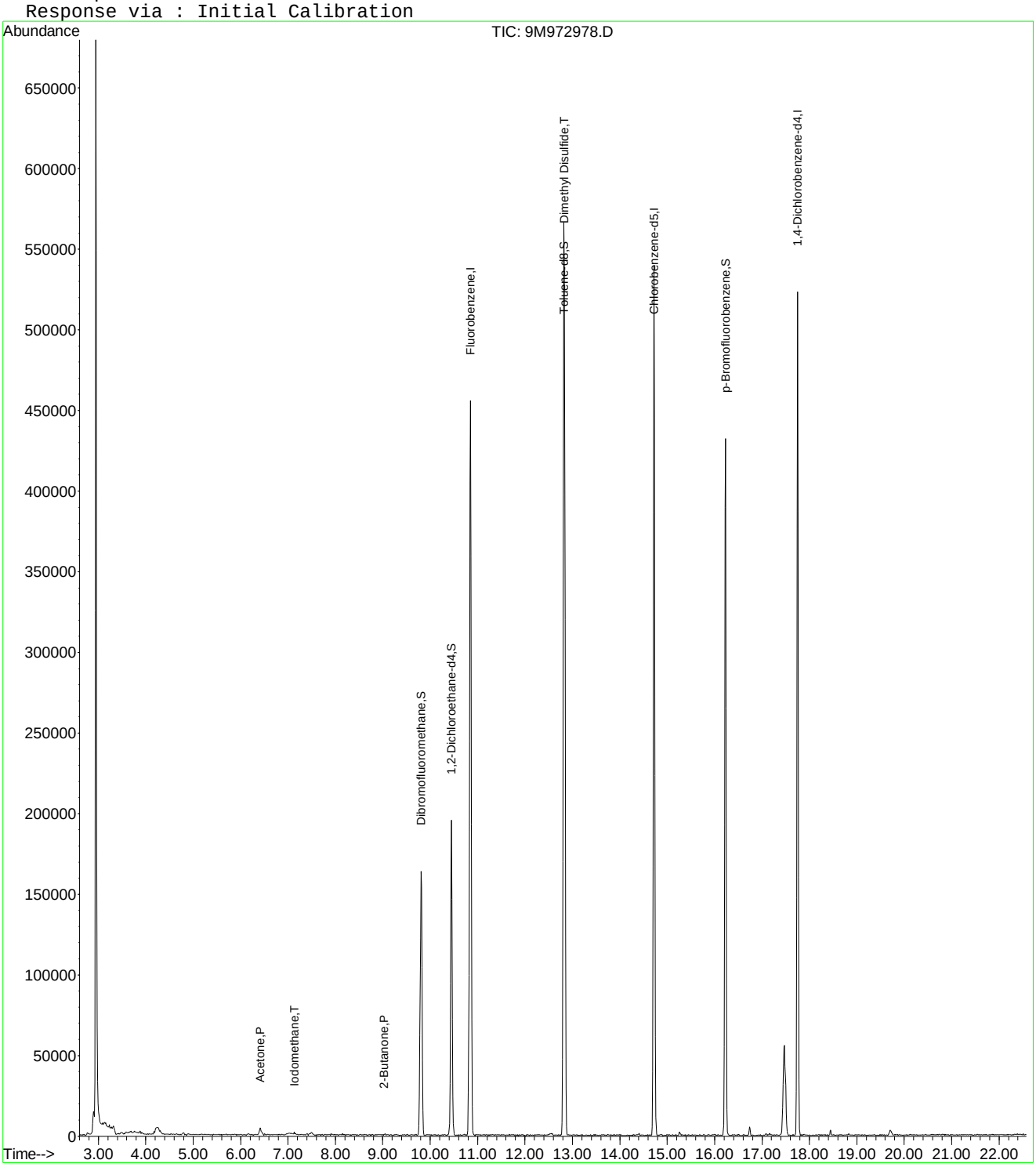

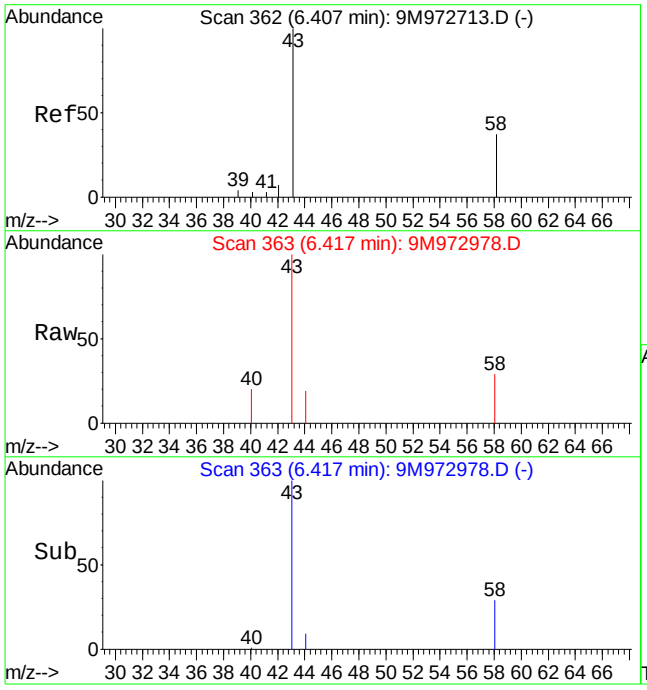

#13
Acetone
Concen: 4.15 ug/kg
RT: 6.42 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M972978.D
Acq: 29 Feb 2016 23:03

Tgt Ion: 43 Resp: 8814

Ion	Ratio	Lower	Upper
43	100		
58	30.9	16.9	39.3

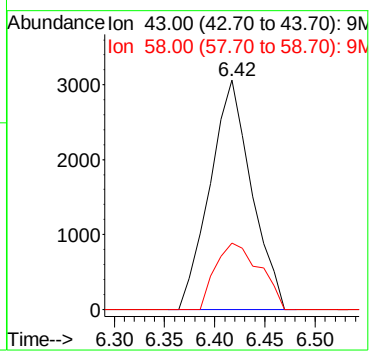

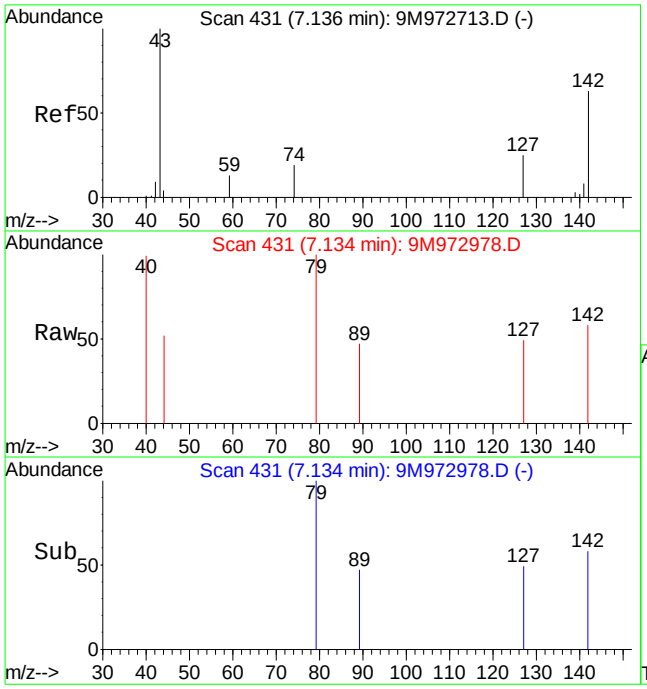

#17
Iodomethane
Concen: 3.21 ug/kg
RT: 7.13 min Scan# 431
Delta R.T. 0.00 min
Lab File: 9M972978.D
Acq: 29 Feb 2016 23:03

Tgt Ion:142 Resp: 662

Ion	Ratio	Lower	Upper
142	100		
127	29.9	25.1	58.7

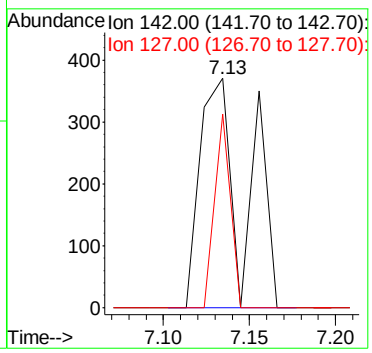

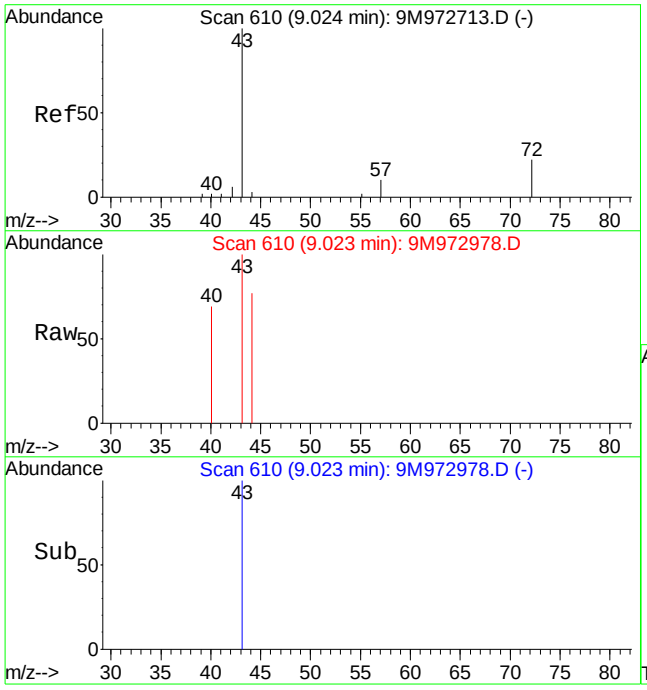

#29
2-Butanone
Concen: 0.69 ug/kg
RT: 9.02 min Scan# 610
Delta R.T. -0.01 min
Lab File: 9M972978.D
Acq: 29 Feb 2016 23:03

Tgt Ion: 43 Resp: 1221

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

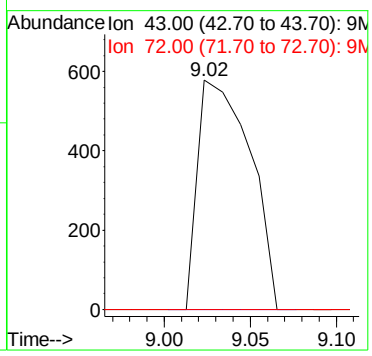

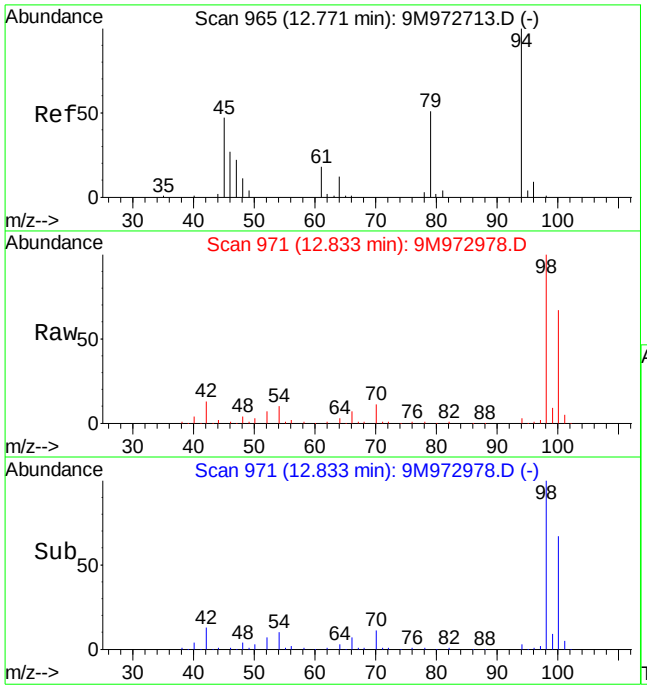

#56
Dimethyl Disulfide
Concen: 3.44 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.07 min
Lab File: 9M972978.D
Acq: 29 Feb 2016 23:03

Tgt Ion: 94 Resp: 14696

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

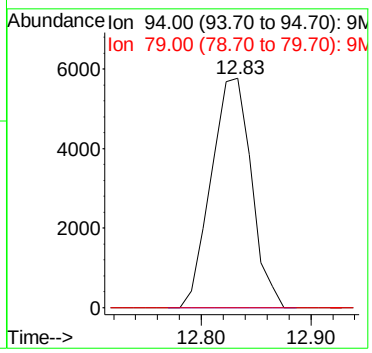

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972979.D Vial: 13
Acq On : 29 Feb 2016 23:33 Operator: FJB/JDS
Sample : L16021357-06 4.98g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 01 09:27:20 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	595721	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	417877	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	183109	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	157764	48.8567 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.72%		
43) 1,2-Dichloroethane-d4	10.45	65	204937	50.5823 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 101.16%		
58) Toluene-d8	12.83	98	570232	53.9490 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 107.90%		
79) p-Bromofluorobenzene	16.23	95	208121	58.3705 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 116.74%		

Target Compounds					Qvalue
13) Acetone	6.40	43	6577	2.0750 ug/kg	92
56) Dimethyl Disulfide	12.83	94	15539	3.3628 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972979.D 8260SL.M Tue Mar 01 09:27:21 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972979.D Vial: 13
Acq On : 29 Feb 2016 23:33 Operator: FJB/JDS
Sample : L16021357-06 4.98g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 1 9:27 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

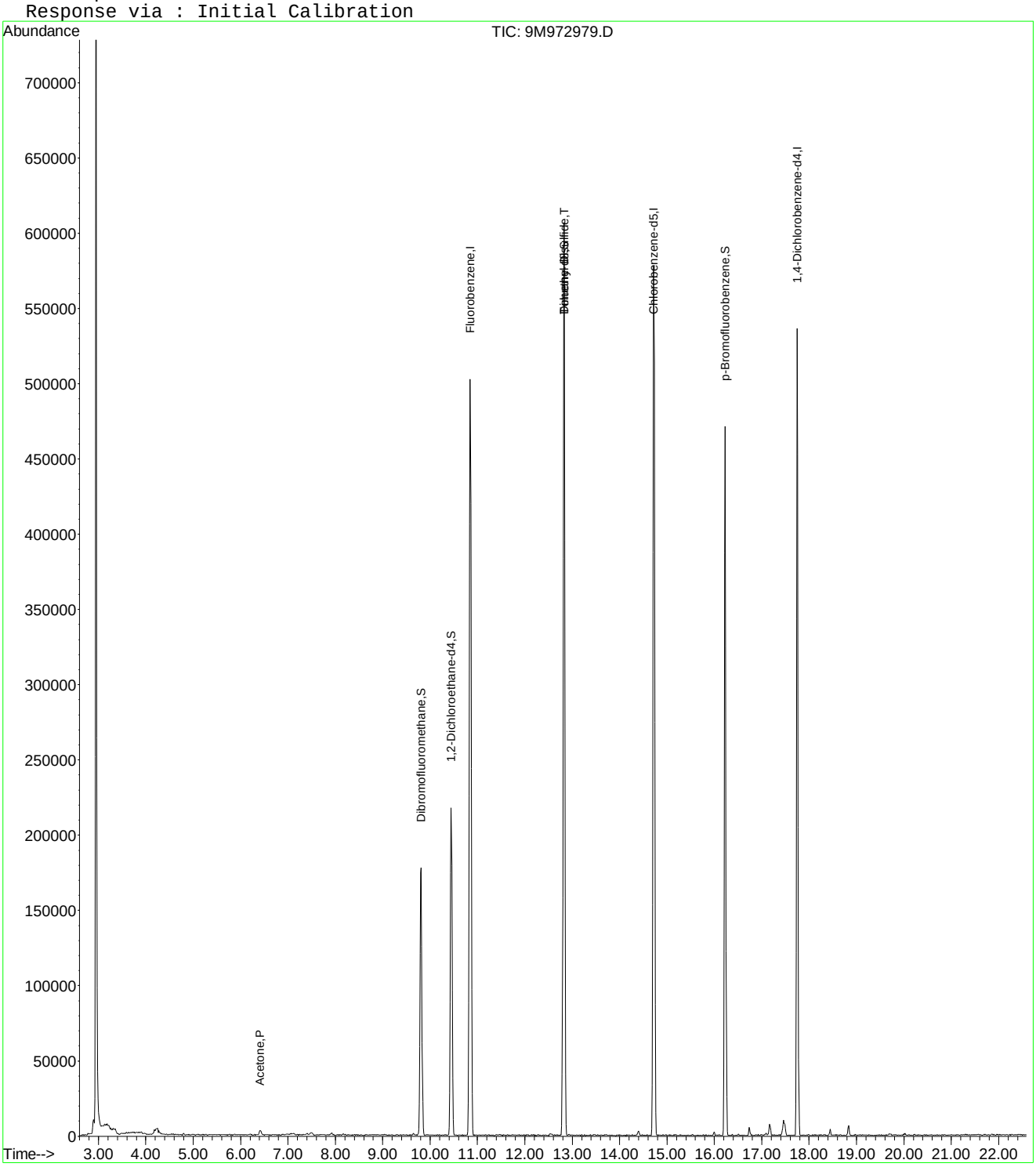

9M972979.D 8260SL.M Tue Mar 01 09:27:21 2016 Page 2

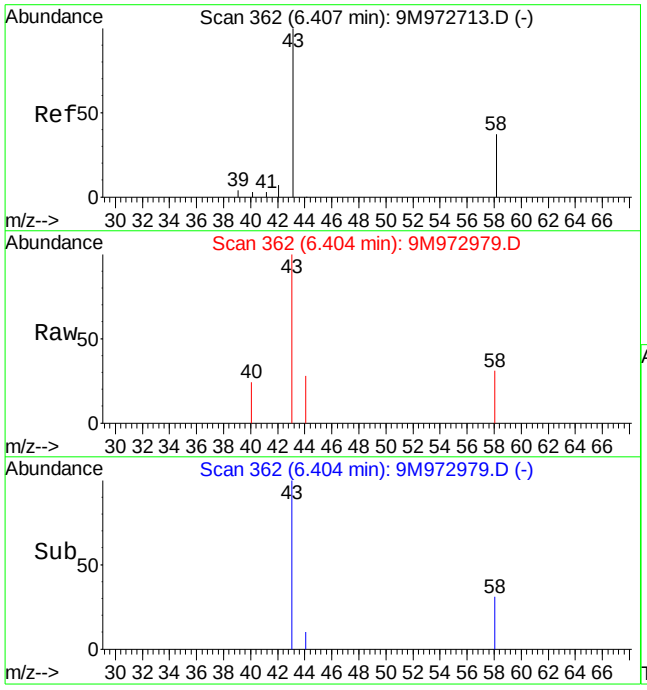

#13
Acetone
Concen: 2.07 ug/kg
RT: 6.40 min Scan# 362
Delta R.T. -0.01 min
Lab File: 9M972979.D
Acq: 29 Feb 2016 23:33

Tgt Ion: 43 Resp: 6577

Ion	Ratio	Lower	Upper
43	100		
58	32.1	16.9	39.3

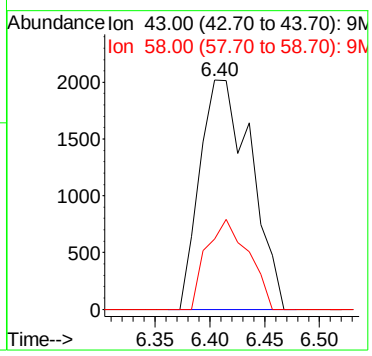

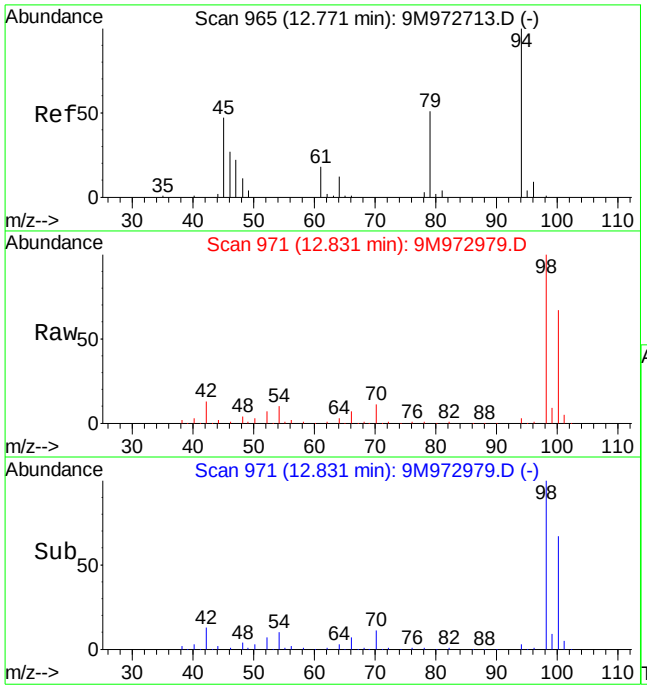

#56
Dimethyl Disulfide
Concen: 3.36 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.06 min
Lab File: 9M972979.D
Acq: 29 Feb 2016 23:33

Tgt Ion: 94 Resp: 15539

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

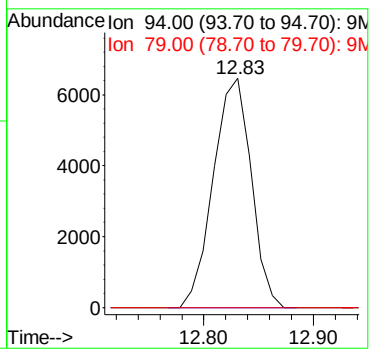

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972472.D Vial: 3
Acq On : 25 Jan 2016 11:22 Operator: FJB
Sample : WG555000-02 5ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:05 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	367739	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	266763	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.77	152	148882	50.00 ug/kg	0.01

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	1974	5.3580 ug/kg#	1
3) 3-Chloro-1-propene	7.23	41	18322	5.0468 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	19639	4.7564 ug/kg	98
5) Ethyl Acetate	9.24	43	12755	5.2595 ug/kg	91
6) Methacrylonitrile	9.40	67	3744	4.7691 ug/kg	95
7) Isobutyl Alcohol	9.42	43	1055	12.9700 ug/kg#	62
8) 1-Butanol	10.36	56	203	11.8711 ug/kg#	26
9) Methyl methacrylate	11.56	41	8689	4.6908 ug/kg	95
10) 2-Nitropropane	11.90	43	2531	4.2058 ug/kg	96

(#) = qualifier out of range (m) = manual integration
9M972472.D A9FOO_SL.M Wed Jan 27 11:22:42 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972472.D Vial: 3
Acq On : 25 Jan 2016 11:22 Operator: FJB
Sample : WG555000-02 5ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

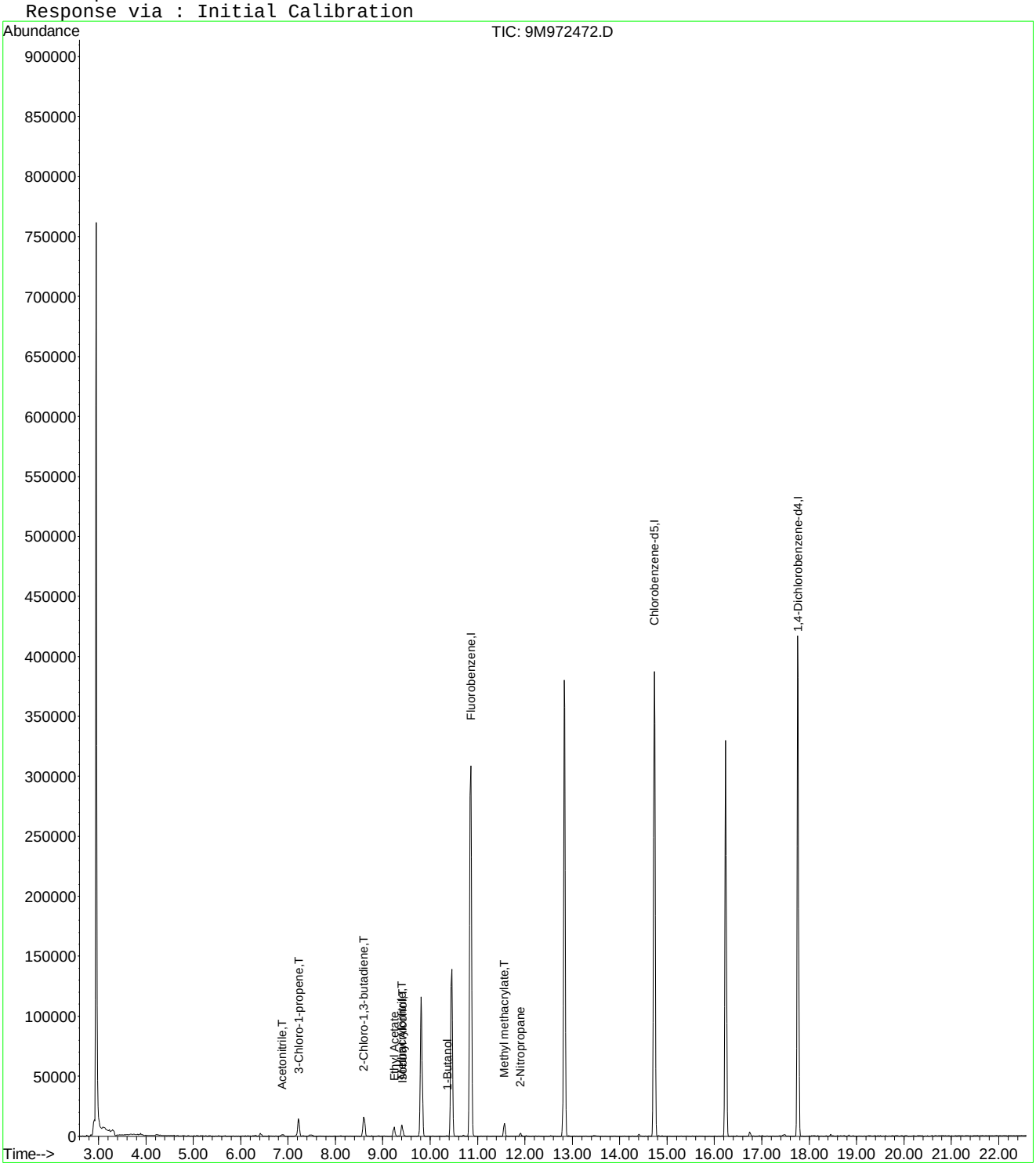

9M972472.D A9FOO_SL.M Wed Jan 27 11:22:42 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972473.D Vial: 4
Acq On : 25 Jan 2016 11:52 Operator: FJB
Sample : WG555000-03 20ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:05 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	359691	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	265773	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	149223	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	7669	21.2815 ug/kg#	77
3) 3-Chloro-1-propene	7.23	41	75360	21.2224 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	82865	20.5181 ug/kg	100
5) Ethyl Acetate	9.23	43	47912	20.1986 ug/kg	97
6) Methacrylonitrile	9.40	67	15740	20.4980 ug/kg	98
7) Isobutyl Alcohol	9.42	43	5287	37.9280 ug/kg	95
8) 1-Butanol	10.35	56	1509	22.3153 ug/kg#	81
9) Methyl methacrylate	11.56	41	35437	19.5588 ug/kg	98
10) 2-Nitropropane	11.90	43	10433	17.7247 ug/kg	98
12) Cyclohexanone	16.01	55	2157	16.3929 ug/kg#	86

(#) = qualifier out of range (m) = manual integration
9M972473.D A9FOO_SL.M Wed Jan 27 11:22:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972473.D Vial: 4
Acq On : 25 Jan 2016 11:52 Operator: FJB
Sample : WG555000-03 20ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

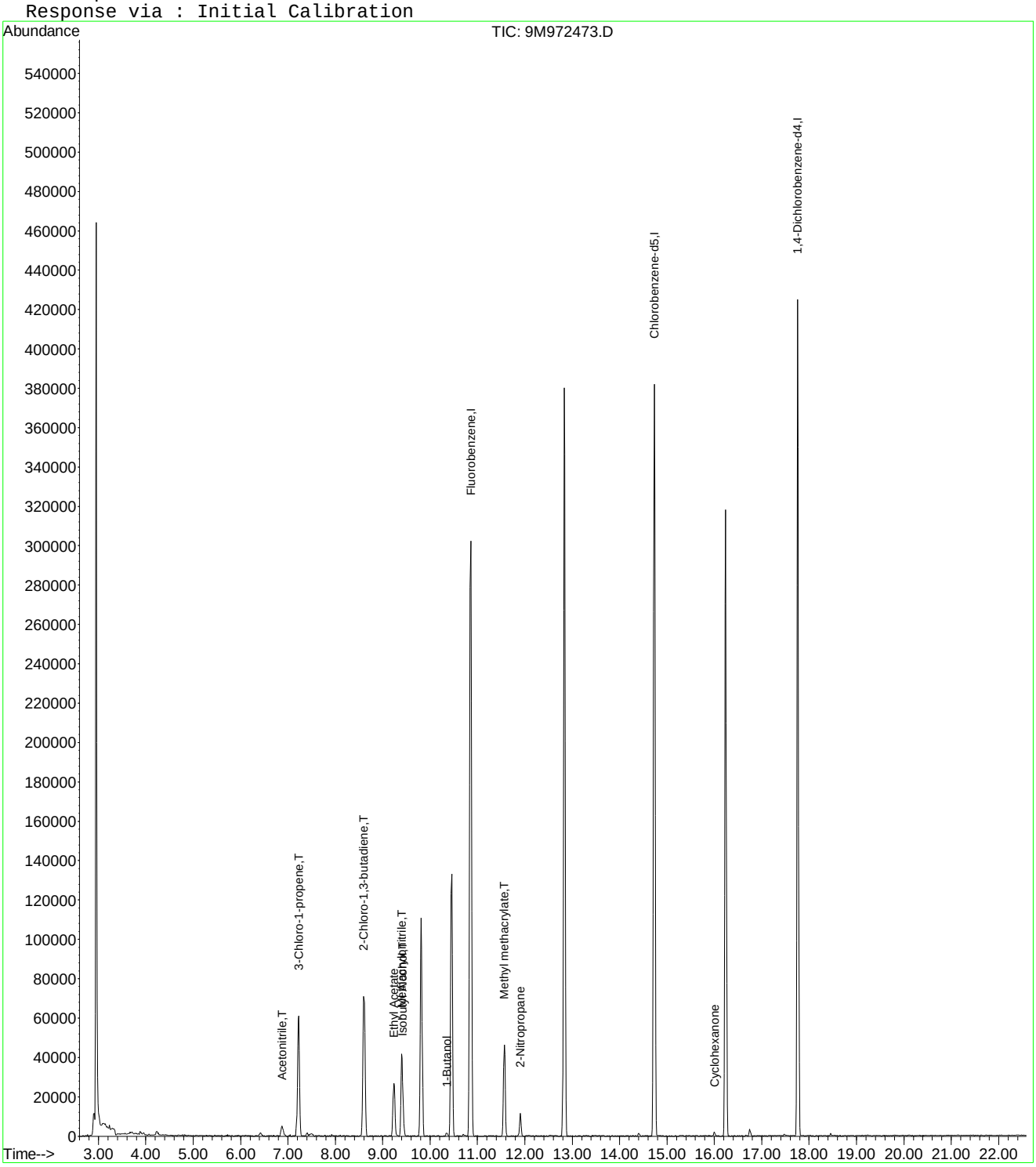

9M972473.D A9FOO_SL.M Wed Jan 27 11:22:46 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972474.D Vial: 5
Acq On : 25 Jan 2016 12:23 Operator: FJB
Sample : WG555000-04 50ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:06 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	356886	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	259679	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	147334	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	16583	46.3795 ug/kg#	94
3) 3-Chloro-1-propene	7.23	41	160601	45.5828 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.61	53	185316	46.2464 ug/kg	99
5) Ethyl Acetate	9.23	43	111538	47.3915 ug/kg	99
6) Methacrylonitrile	9.40	67	36081	47.3572 ug/kg	99
7) Isobutyl Alcohol	9.42	43	12624	81.5447 ug/kg	95
8) 1-Butanol	10.35	56	4707	48.0983 ug/kg#	50
9) Methyl methacrylate	11.56	41	82406	45.8400 ug/kg	99
10) 2-Nitropropane	11.90	43	26302	45.0359 ug/kg	97
12) Cyclohexanone	16.01	55	5625	43.7525 ug/kg	93

(#) = qualifier out of range (m) = manual integration
9M972474.D A9FOO_SL.M Wed Jan 27 11:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972474.D Vial: 5
Acq On : 25 Jan 2016 12:23 Operator: FJB
Sample : WG555000-04 50ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

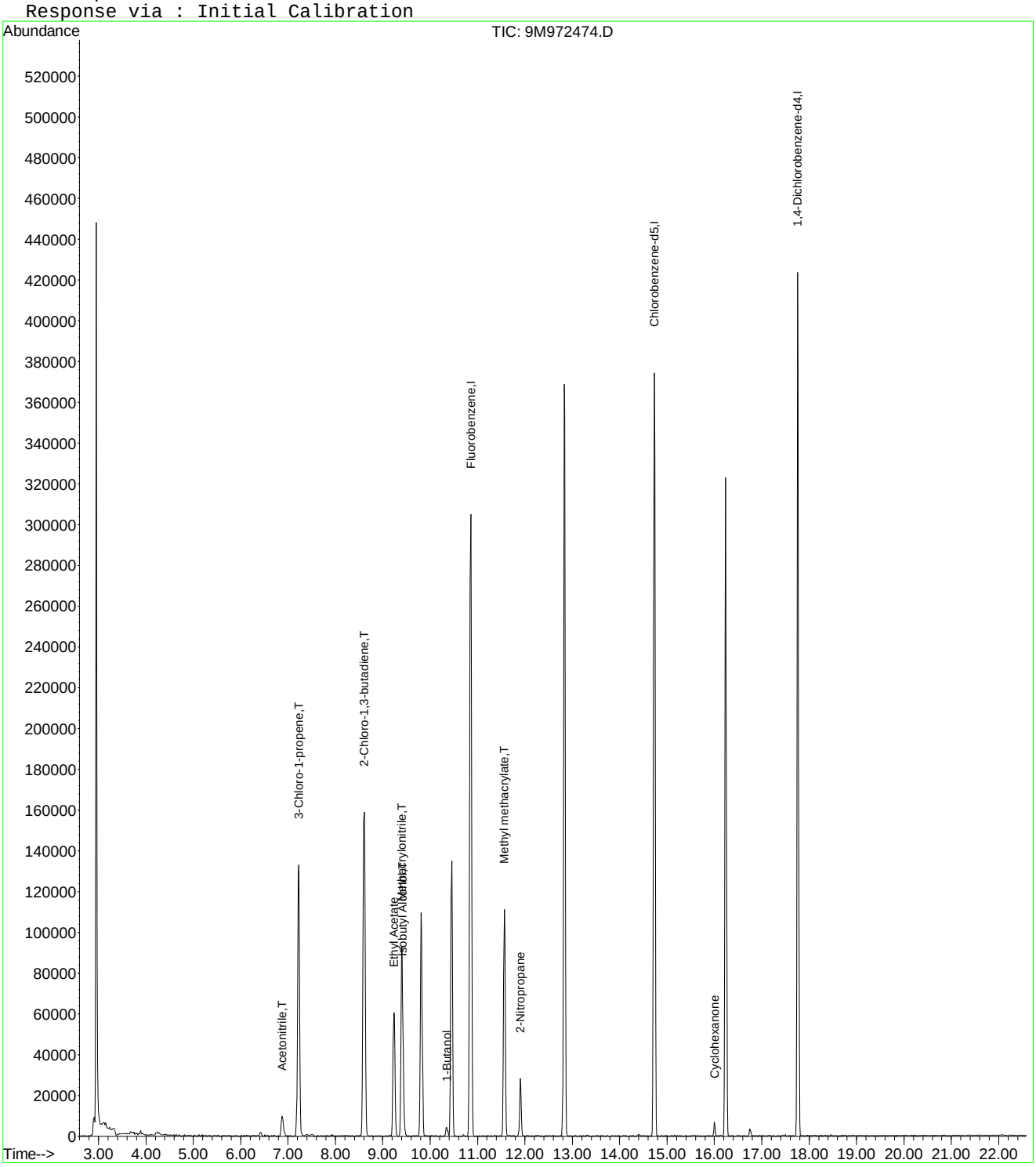

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972475.D Vial: 6
Acq On : 25 Jan 2016 12:53 Operator: FJB
Sample : WG555000-05 100ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:06 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	394669	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	285851	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	161505	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	37767	95.5151 ug/kg#	100
3) 3-Chloro-1-propene	7.23	41	409870	105.1952 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.61	53	467514	105.5010 ug/kg	100
5) Ethyl Acetate	9.23	43	267513	102.7824 ug/kg	100
6) Methacrylonitrile	9.40	67	88054	104.5088 ug/kg	100
7) Isobutyl Alcohol	9.42	43	33721	187.1766 ug/kg	100
8) 1-Butanol	10.36	56	11671	95.0627 ug/kg	100
9) Methyl methacrylate	11.56	41	209503	105.3834 ug/kg	100
10) 2-Nitropropane	11.90	43	65435	101.3157 ug/kg	100
12) Cyclohexanone	16.01	55	14062	99.3630 ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972475.D A9FOO_SL.M Wed Jan 27 11:22:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972475.D Vial: 6
Acq On : 25 Jan 2016 12:53 Operator: FJB
Sample : WG555000-05 100ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

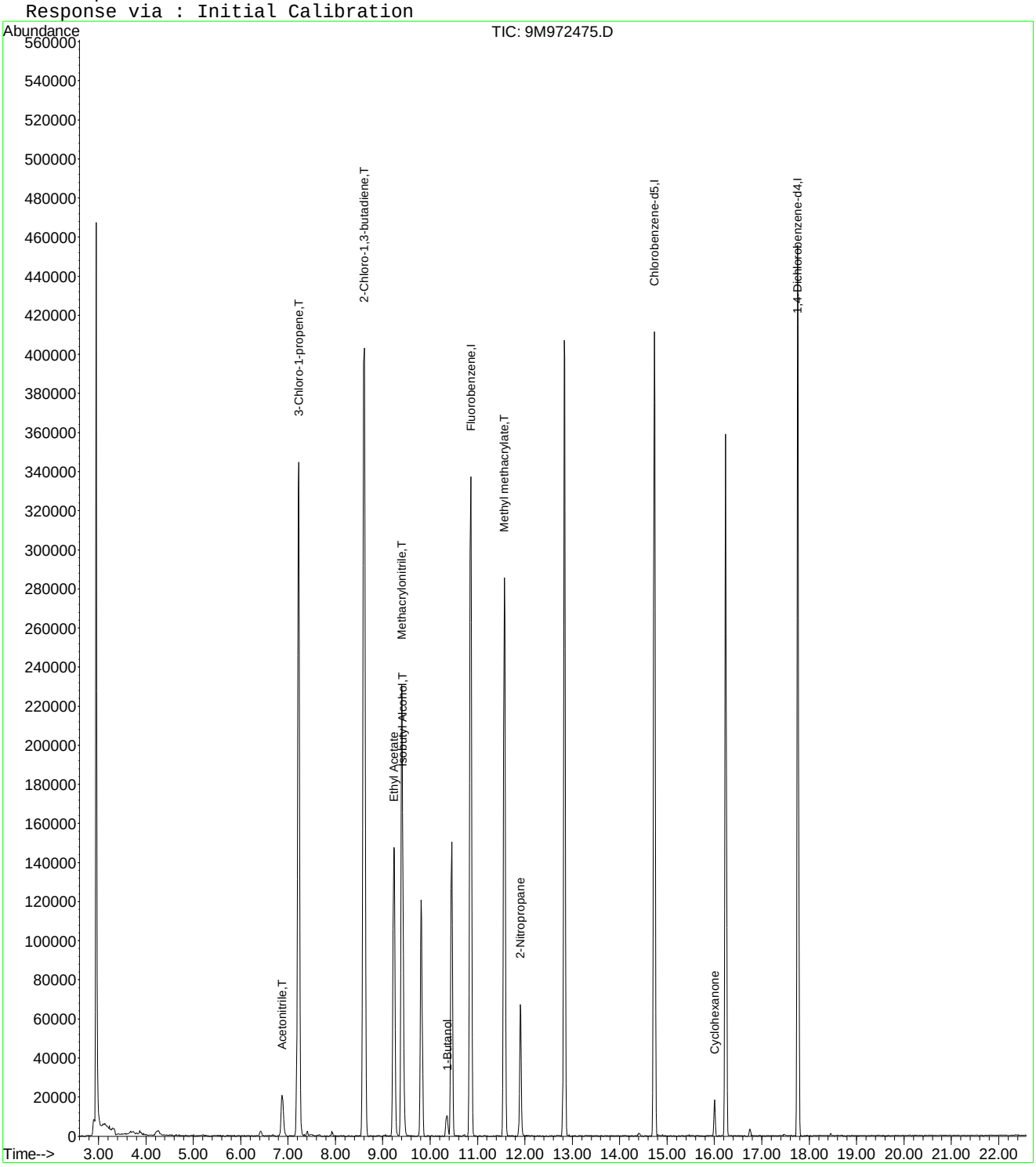

9M972475.D A9FOO_SL.M Wed Jan 27 11:22:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972476.D Vial: 7
Acq On : 25 Jan 2016 13:23 Operator: FJB
Sample : WG555000-06 200ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 09:51:10 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	361792	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	264283	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	150478	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.87	41	75099	207.1896	ug/kg#	94
3) 3-Chloro-1-propene	7.22	41	743262	208.0969	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	846271	208.3269	ug/kg	100
5) Ethyl Acetate	9.23	43	489855	205.3125	ug/kg	100
6) Methacrylonitrile	9.40	67	159879	206.9995	ug/kg	100
7) Isobutyl Alcohol	9.42	43	68551	406.6640	ug/kg	99
8) 1-Butanol	10.35	56	24111	201.3375	ug/kg	97
9) Methyl methacrylate	11.57	41	382820	210.0636	ug/kg	99
10) 2-Nitropropane	11.90	43	129000	217.8866	ug/kg	95
12) Cyclohexanone	16.00	55	30065	229.7785	ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972476.D A9FOO_SL.M Wed Jan 27 09:51:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972476.D Vial: 7
Acq On : 25 Jan 2016 13:23 Operator: FJB
Sample : WG555000-06 200ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 9:51 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

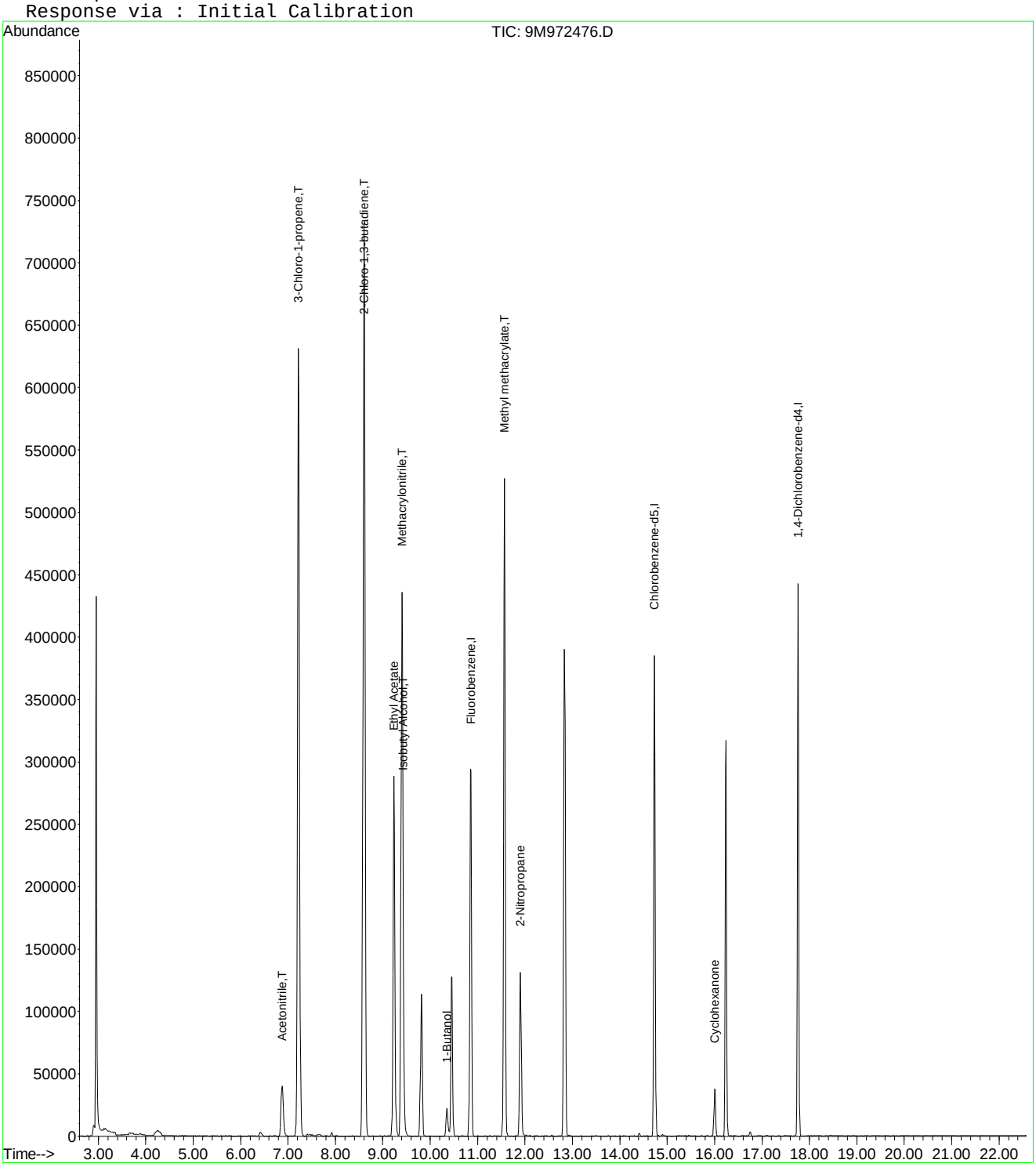

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972477.D Vial: 8
Acq On : 25 Jan 2016 13:54 Operator: FJB
Sample : WG555000-07 300ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:07 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.85	96	362779	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	265659	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	153468	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	99618	274.0870	ug/kg#	97
3) 3-Chloro-1-propene	7.22	41	944879	263.8255	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	1107217	271.8226	ug/kg	99
5) Ethyl Acetate	9.24	43	652386	272.6900	ug/kg	99
6) Methacrylonitrile	9.40	67	208153	268.7679	ug/kg	98
7) Isobutyl Alcohol	9.43	43	89707	528.6093	ug/kg#	99
8) 1-Butanol	10.35	56	31640	260.3131	ug/kg	98
9) Methyl methacrylate	11.57	41	502506	274.9883	ug/kg	98
10) 2-Nitropropane	11.90	43	172692	290.8907	ug/kg	95
12) Cyclohexanone	16.00	55	36951	280.9436	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972477.D A9FOO_SL.M Wed Jan 27 11:23:05 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972477.D Vial: 8
Acq On : 25 Jan 2016 13:54 Operator: FJB
Sample : WG555000-07 300ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

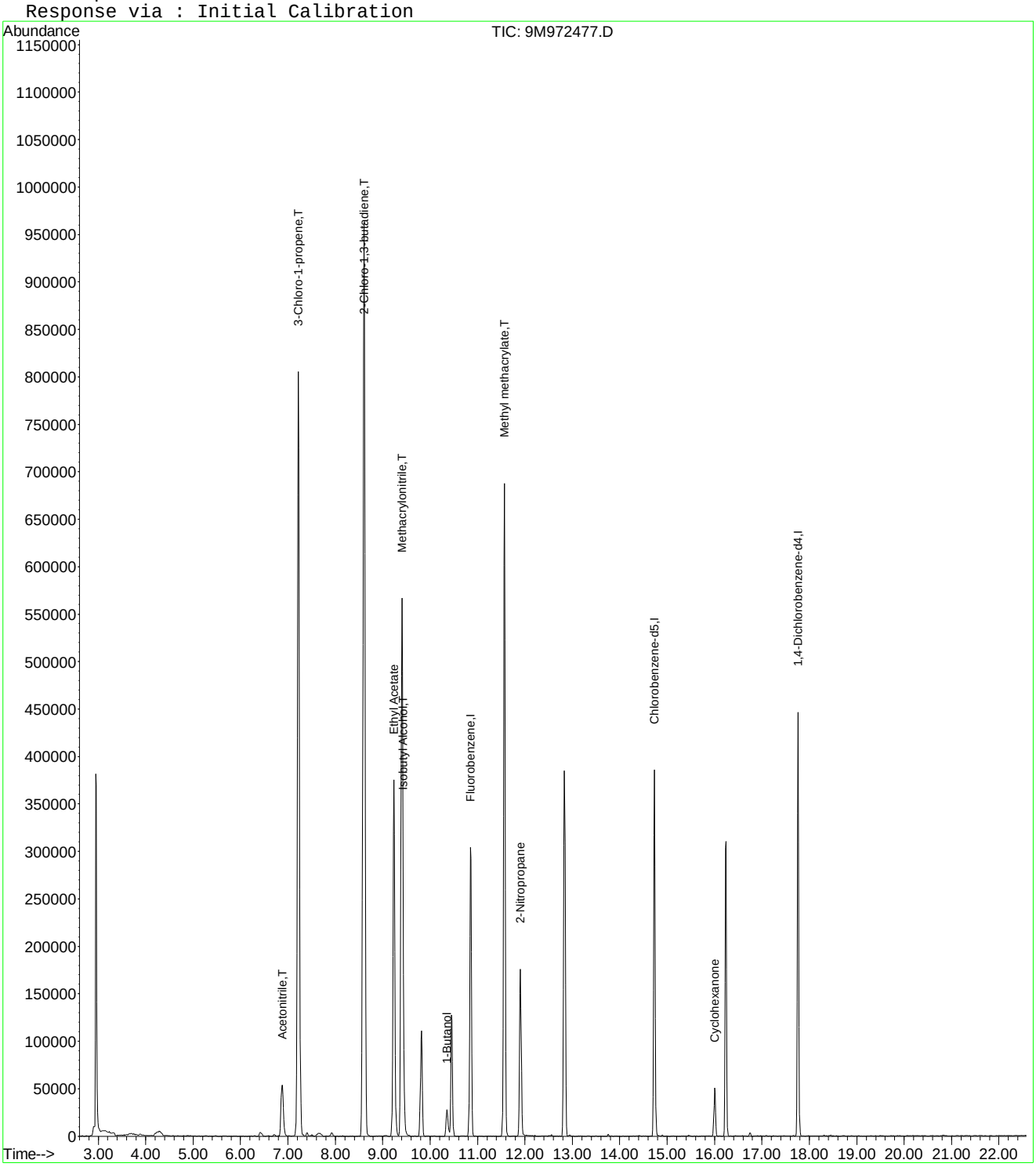

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972478.D Vial: 9
Acq On : 25 Jan 2016 14:25 Operator: FJB
Sample : WG555000-08 400ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 09:51:10 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	359343	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	261674	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	149058	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.89	41	148074	411.3034	ug/kg#	96
3) 3-Chloro-1-propene	7.22	41	1457717	410.9100	ug/kg	99
4) 2-Chloro-1,3-butadiene	8.61	53	1703971	422.3261	ug/kg	100
5) Ethyl Acetate	9.23	43	980479	413.7480	ug/kg	100
6) Methacrylonitrile	9.40	67	321602	419.2243	ug/kg	99
7) Isobutyl Alcohol	9.43	43	142361	842.7355	ug/kg#	98
8) 1-Butanol	10.36	56	51732	422.9922	ug/kg	99
9) Methyl methacrylate	11.56	41	779879	430.8570	ug/kg	98
10) 2-Nitropropane	11.90	43	267565	455.0088	ug/kg	96
12) Cyclohexanone	16.01	55	56623	437.0688	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972478.D A9FOO_SL.M Wed Jan 27 09:51:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972478.D Vial: 9
Acq On : 25 Jan 2016 14:25 Operator: FJB
Sample : WG555000-08 400ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 9:51 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

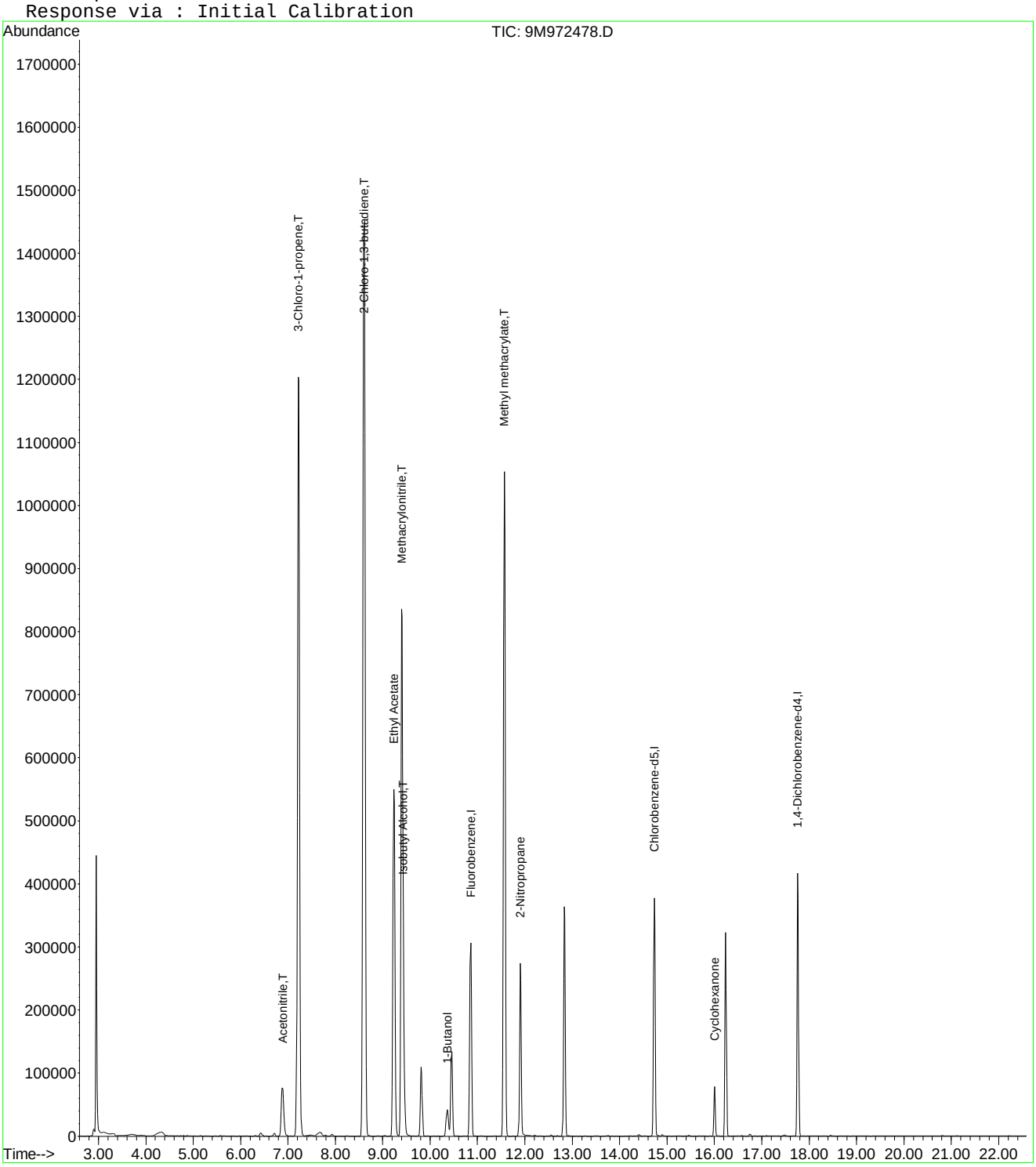

9M972478.D A9FOO_SL.M Wed Jan 27 09:51:11 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972479.D Vial: 10
Acq On : 25 Jan 2016 14:56 Operator: FJB
Sample : WG555000-09 500ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:08 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	364474	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	266311	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	151707	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	196334	537.6773	ug/kg#	94
3) 3-Chloro-1-propene	7.22	41	1832802	509.3680	ug/kg	99
4) 2-Chloro-1,3-butadiene	8.60	53	2126710	519.6807	ug/kg	100
5) Ethyl Acetate	9.23	43	1255294	522.2587	ug/kg	100
6) Methacrylonitrile	9.40	67	408537	525.0513	ug/kg	100
7) Isobutyl Alcohol	9.43	43	180610	1052.3719	ug/kg	98
8) 1-Butanol	10.36	56	64789	519.8809	ug/kg	97
9) Methyl methacrylate	11.56	41	981460	534.5904	ug/kg	100
10) 2-Nitropropane	11.90	43	346571	581.0659	ug/kg	97
12) Cyclohexanone	16.01	55	74733	566.8143	ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972479.D A9FOO_SL.M Wed Jan 27 11:30:29 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972479.D Vial: 10
Acq On : 25 Jan 2016 14:56 Operator: FJB
Sample : WG555000-09 500ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

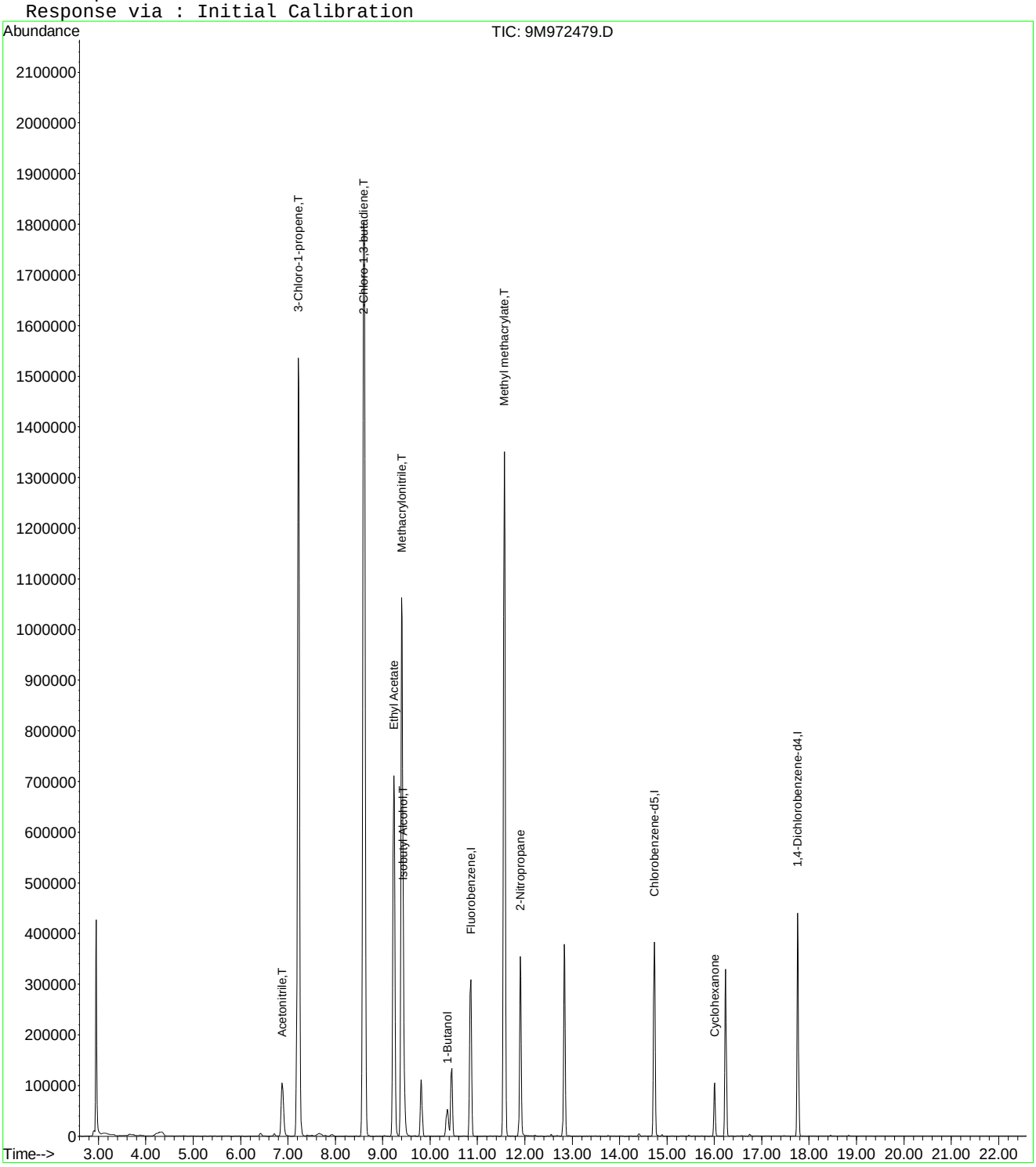

9M972479.D A9FOO_SL.M Wed Jan 27 11:30:29 2016 Page 2

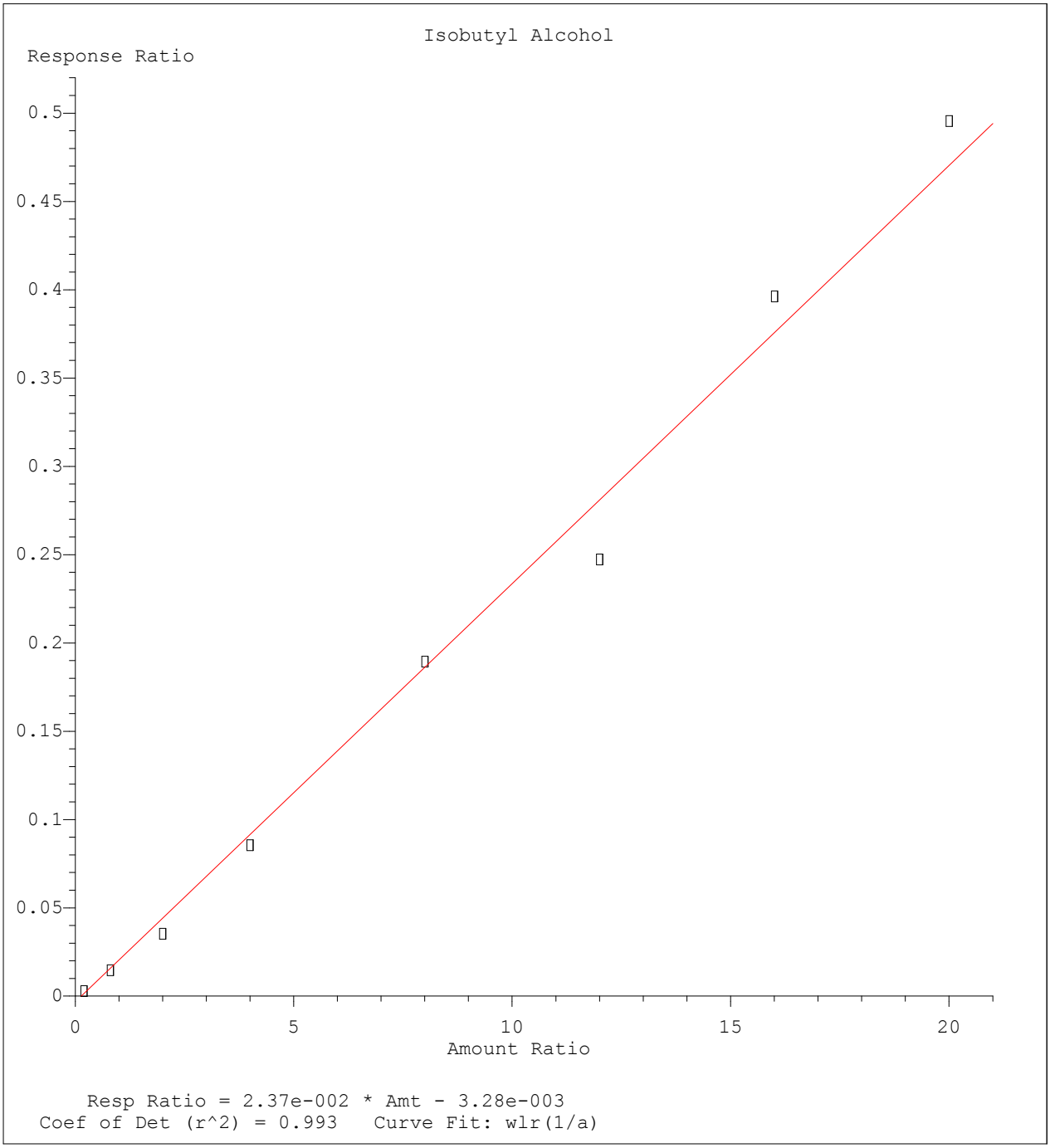

Method Name: C:\MSDCHEM\1\METHODS\A9FOO_SL.M
Calibration Table Last Updated: Wed Jan 27 09:49:02 2016

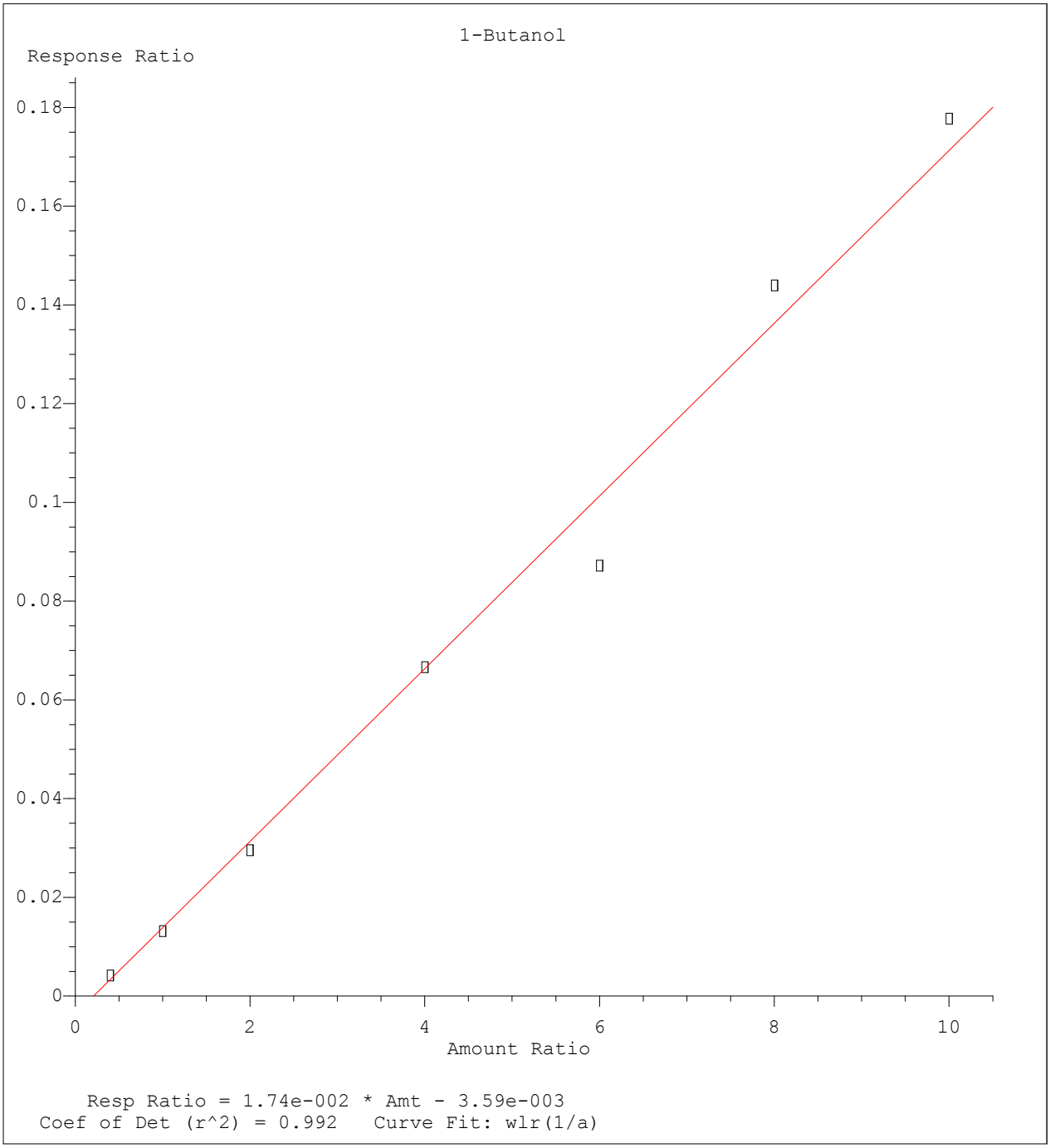

Method Name: C:\MSDCHEM\1\METHODS\A9FOO_SL.M
Calibration Table Last Updated: Wed Jan 27 09:49:02 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:09 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	394765	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	285754	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	159586	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	40054	101.2745 ug/kg#	100
3) 3-Chloro-1-propene	7.22	41	402890	103.3786 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	572568	129.1764 ug/kg	99
5) Ethyl Acetate	9.23	43	275962	106.0028 ug/kg	99
6) Methacrylonitrile	9.40	67	90289	107.1354 ug/kg	96
7) Isobutyl Alcohol	9.42	43	34031	188.7895 ug/kg	99
8) 1-Butanol	10.35	56	12038	97.7072 ug/kg	97
9) Methyl methacrylate	11.56	41	219363	110.3163 ug/kg	100
10) 2-Nitropropane	11.90	43	69288	107.2554 ug/kg	93
12) Cyclohexanone	16.01	55	14203	100.3934 ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972481.D A9FOO_SL.M Wed Jan 27 11:15:09 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

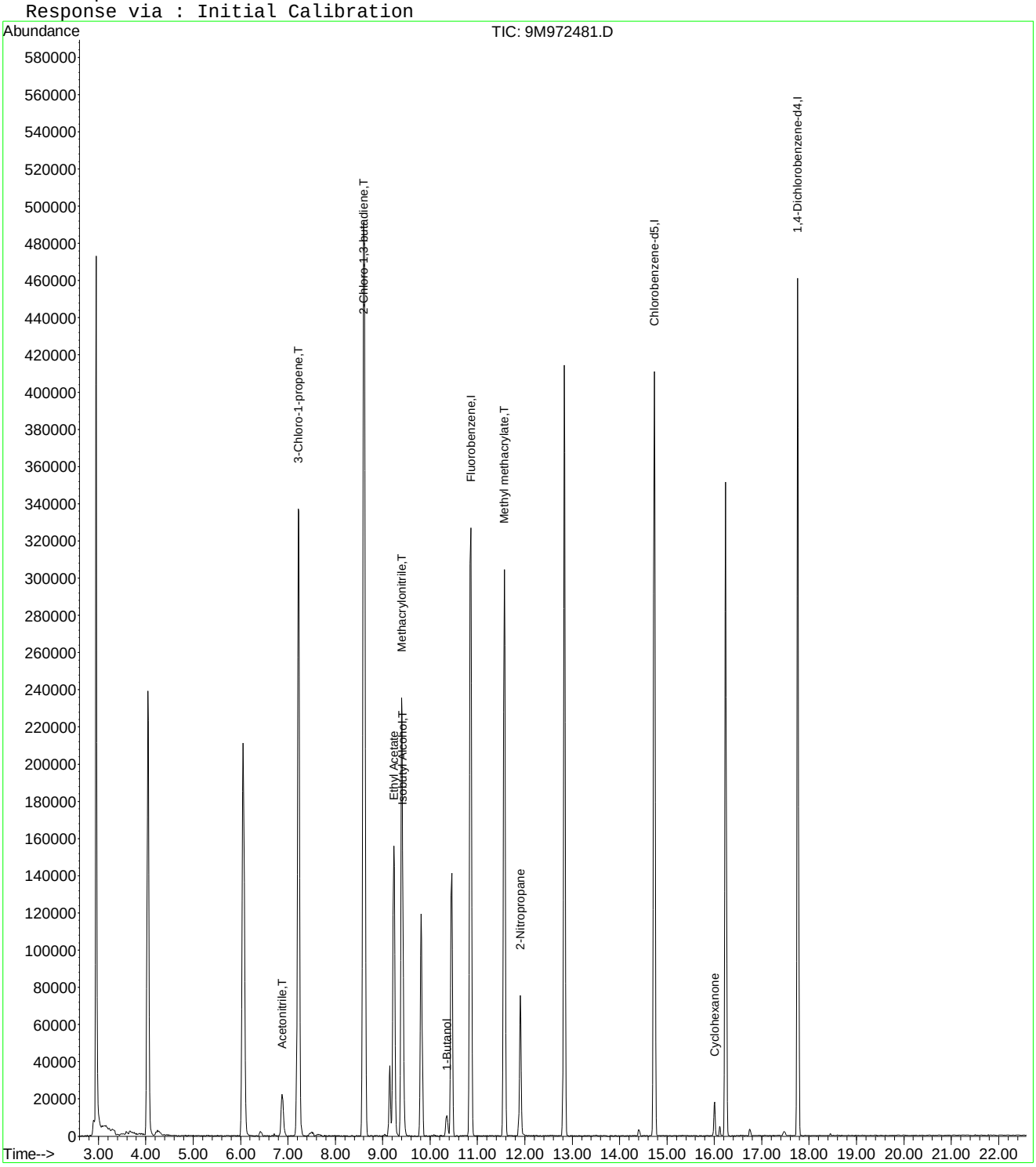

9M972481.D A9FOO_SL.M Wed Jan 27 11:15:09 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	101.2745	-1.3	106	0.00
3	T	3-Chloro-1-propene	100.0000	103.3786	-3.4	98	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	129.1764	-29.2	122	0.00
5		Ethyl Acetate	100.0000	106.0028	-6.0	103	0.00
6	T	Methacrylonitrile	100.0000	107.1354	-7.1	103	0.00
7	T	Isobutyl Alcohol	200.0000	188.7895	5.6	101	0.00
8		1-Butanol	100.0000	97.7072	2.3	103	0.00
9	T	Methyl methacrylate	100.0000	110.3163	-10.3	105	0.00
10		2-Nitropropane	100.0000	107.2554	-7.3	106	0.00
11	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
12		Cyclohexanone	100.0000	100.3934	-0.4	101	0.00
13	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	99	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972481.D A9FOO_SL.M Wed Jan 27 11:32:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972896.D Vial: 3
Acq On : 25 Feb 2016 15:48 Operator: ADC
Sample : WG558732-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:54 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260B_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	517775	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.73	117	378926	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.76	152	183008	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	147955	52.7167 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.44%		
43) 1,2-Dichloroethane-d4	10.44	65	183779	52.1887 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.38%		
58) Toluene-d8	12.83	98	511451	53.3617 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.72%		
79) p-Bromofluorobenzene	16.23	95	191673	53.7871 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 107.58%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.28	85	204882	57.9763 ug/kg	100
3) Chloromethane	3.74	50	183152	54.0664 ug/kg	100
4) Vinyl Chloride	3.99	62	192536	56.7764 ug/kg	100
5) 1,3-Butadiene	4.04	54	170907	52.9740 ug/kg	100
6) Bromomethane	4.88	94	107911	48.9956 ug/kg	100
7) Chloroethane	5.04	64	85391	56.5213 ug/kg	100
8) Trichlorofluoromethane	5.53	101	265962	52.2923 ug/kg	100
9) Diethyl ether	6.04	59	249400	104.8955 ug/kg	100
10) Isoprene	6.09	67	156373	51.4980 ug/kg	100
11) Acrolein	6.30	56	24630	51.9520 ug/kg	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	135036	51.4825 ug/kg	100
13) Acetone	6.41	43	66195	50.6135 ug/kg	100
14) 1,1-Dichloroethene	6.61	61	244051	50.4389 ug/kg	100
15) Tert-Butyl Alcohol	6.76	59	110494	208.7036 ug/kg	98
16) Dimethyl Sulfide	6.88	62	109294	53.4455 ug/kg	100
17) Iodomethane	7.13	142	79749	55.1586 ug/kg	100
18) Methyl acetate	7.14	43	135648	51.5699 ug/kg	100
19) Methylene Chloride	7.40	84	135280	51.3362 ug/kg	100
20) Carbon Disulfide	7.45	76	381814	51.2249 ug/kg	100
21) Acrylonitrile	7.59	53	69697	53.5624 ug/kg	100
22) Methyl Tert Butyl Ether	7.61	73	407131	54.2460 ug/kg	100
23) trans-1,2-Dichloroethene	7.85	61	226890	52.6160 ug/kg	100
24) n-Hexane	7.91	57	219597	49.3729 ug/kg	100
25) Diisopropyl ether	8.26	45	1088740	105.3973 ug/kg	100
26) Vinyl Acetate	8.43	43	311838	52.9553 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	284391	52.5076 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	1023392	106.5502 ug/kg	100
29) 2-Butanone	9.03	43	86123	51.5803 ug/kg	100
30) Propionitrile	9.14	54	53253	104.2214 ug/kg	100
31) 2,2-Dichloropropane	9.24	77	215042	53.1943 ug/kg	100
32) cis-1,2-Dichloroethene	9.31	96	153722	54.3532 ug/kg	100
33) Chloroform	9.52	83	263571	52.9749 ug/kg	100
34) 1-Bromopropane	9.65	122	22164	51.3817 ug/kg	100
35) Bromochloromethane	9.75	130	102780	55.9453 ug/kg	100
36) Tetrahydrofuran	9.78	42	113791	105.7289 ug/kg	100
38) 1,1,1-Trichloroethane	10.04	97	243452	54.1074 ug/kg	100
39) Cyclohexane	10.08	56	247641	50.4821 ug/kg	100
40) 1,1-Dichloropropene	10.24	75	182199	51.4612 ug/kg	100
41) Tert-Amyl-Methyl ether	10.34	73	741165	106.1603 ug/kg	100
42) Carbon Tetrachloride	10.39	117	221306	53.0537 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972896.D Vial: 3
Acq On : 25 Feb 2016 15:48 Operator: ADC
Sample : WG558732-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:54 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260B_SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	237857	54.3500	ug/kg	100
46)	Benzene	10.60	78	503328	50.7793	ug/kg	100
47)	Trichloroethene	11.35	130	163959	52.2047	ug/kg	100
48)	Methylcyclohexane	11.44	83	204551	51.9284	ug/kg	100
49)	1,2-Dichloropropane	11.56	63	148045	54.3898	ug/kg	100
50)	1,4-Dioxane	11.88	88	7789	190.7454	ug/kg	100
51)	Bromodichloromethane	11.87	83	203922	53.1595	ug/kg	100
52)	Dibromomethane	11.96	174	95887	53.1673	ug/kg	100
53)	2-Chloroethyl Vinyl Ether	12.17	63	38515	51.1377	ug/kg	100
54)	4-Methyl-2-Pentanone	12.19	58	64999	54.4056	ug/kg	100
55)	cis-1,3-Dichloropropene	12.50	75	212797	53.2452	ug/kg	100
56)	Dimethyl Disulfide	12.77	94	219798	54.7267	ug/kg	100
59)	Toluene	12.92	91	563647	52.0613	ug/kg	100
60)	Ethyl Methacrylate	13.02	69	158958	52.9687	ug/kg	100
61)	trans-1,3-Dichloropropene	13.10	75	212386	54.4657	ug/kg	100
62)	1,1,2-Trichloroethane	13.33	97	122975	54.0706	ug/kg	100
63)	2-Hexanone	13.25	43	119176	52.4822	ug/kg	100
64)	1,3-Dichloropropane	13.63	76	201541	53.1810	ug/kg	100
65)	Tetrachloroethene	13.75	164	117066	50.4378	ug/kg	100
66)	Dibromochloromethane	14.01	129	168874	53.1294	ug/kg	100
67)	1,2-Dibromoethane	14.28	107	132755	52.6249	ug/kg	100
68)	1-Chlorohexane	14.35	91	168490	52.7733	ug/kg	100
69)	Chlorobenzene	14.77	112	400241	52.5998	ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.80	131	154536	54.0800	ug/kg	100
71)	Ethylbenzene	14.80	106	207031	52.8117	ug/kg	100
72)	m-,p-Xylene	14.89	106	497405	102.7415	ug/kg	100
73)	o-Xylene	15.45	106	247567	53.2858	ug/kg	100
74)	Styrene	15.49	104	425634	53.7983	ug/kg	100
75)	Bromoform	16.00	173	116015	55.5910	ug/kg	100
76)	Isopropylbenzene	15.88	105	658255	52.7764	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.10	83	147970	53.3007	ug/kg	100
80)	1,2,3-Trichloropropane	16.29	110	55711	52.9159	ug/kg	100
81)	trans-1,4-Dichloro-2-Buten	16.33	53	55525	52.3210	ug/kg	100
82)	n-Propylbenzene	16.39	91	751844	52.2641	ug/kg	100
83)	Bromobenzene	16.52	156	177299	52.2079	ug/kg	100
84)	1,3,5-Trimethylbenzene	16.58	105	568867	52.6809	ug/kg	100
85)	2-Chlorotoluene	16.66	91	484783	50.2437	ug/kg	100
86)	4-Chlorotoluene	16.70	91	481367	53.9615	ug/kg	100
87)	a-Methylstyrene	16.98	118	255765	51.9817	ug/kg	100
88)	tert-Butylbenzene	17.04	134	121669	53.7430	ug/kg	100
89)	1,2,4-Trimethylbenzene	17.09	105	580656	51.3463	ug/kg	100
90)	sec-Butylbenzene	17.30	105	726352	52.2266	ug/kg	100
91)	p-Isopropyltoluene	17.46	119	613096	52.2364	ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	337008	49.9319	ug/kg	100
93)	1,4-Dichlorobenzene	17.80	146	335195	49.6777	ug/kg	100
94)	n-Butylbenzene	17.99	91	563797	51.6647	ug/kg	100
95)	1,2-Dichlorobenzene	18.30	146	320108	51.1150	ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.30	157	42968	53.4468	ug/kg	100
97)	1,2,4-Trichlorobenzene	20.44	180	222592	50.0691	ug/kg	100
98)	Hexachlorobutadiene	20.59	225	117654	50.2053	ug/kg	100
99)	Naphthalene	20.81	128	602344	54.0184	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	222082	51.5034	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972896.D 8260SL.M Fri Feb 26 11:21:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972896.D Vial: 3
Acq On : 25 Feb 2016 15:48 Operator: ADC
Sample : WG558732-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

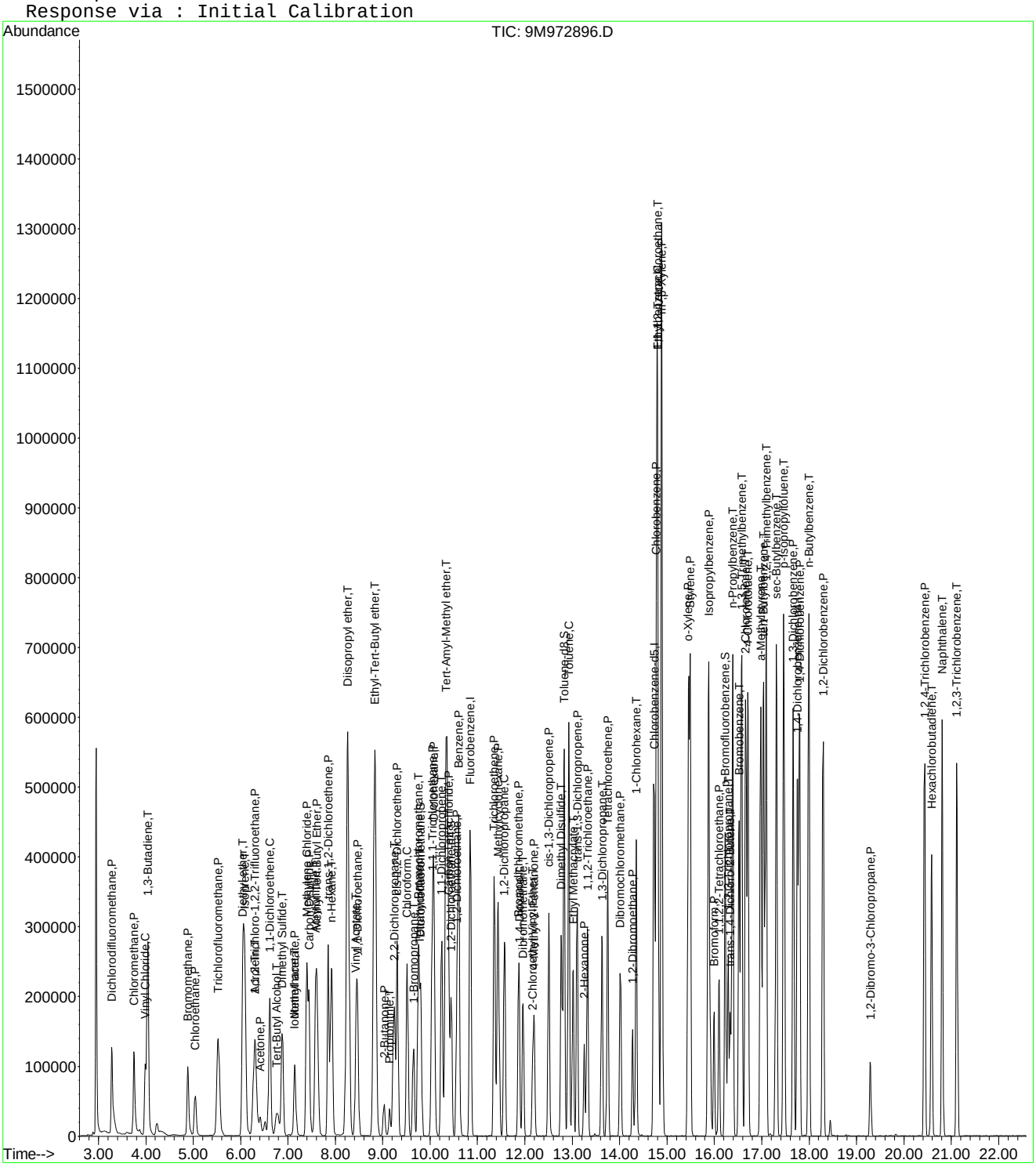

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:15 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	491503	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	353502	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	169028	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.83	98	923	0.1032 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.20%#	
79) p-Bromofluorobenzene	16.22	95	770	0.2339 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.46%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	1359	0.4051 ug/kg#	69
3) Chloromethane	3.75	50	2926	0.9099 ug/kg	95
4) Vinyl Chloride	3.98	62	1474	0.4579 ug/kg#	67
5) 1,3-Butadiene	4.03	54	1519	0.4960 ug/kg	82
6) Bromomethane	4.89	94	2071	0.9906 ug/kg	100
8) Trichlorofluoromethane	5.53	101	2609	0.5404 ug/kg#	51
10) Isoprene	6.08	67	1239	0.4298 ug/kg	70
13) Acetone	6.43	43	4251	5.5216 ug/kg#	75
14) 1,1-Dichloroethene	6.63	61	2149	0.4679 ug/kg#	66
17) Iodomethane	7.14	142	943	3.4505 ug/kg#	34
18) Methyl acetate	7.16	43	1334	0.5343 ug/kg#	45
19) Methylene Chloride	7.40	84	1287	0.5145 ug/kg	81
20) Carbon Disulfide	7.44	76	6762	0.9557 ug/kg#	76
23) trans-1,2-Dichloroethene	7.84	61	2196	0.5365 ug/kg	86
24) n-Hexane	7.92	57	2239	0.5303 ug/kg#	62
26) Vinyl Acetate	8.44	43	2494	0.4462 ug/kg#	78
27) 1,1-Dichloroethane	8.48	63	2396	0.4660 ug/kg#	63
29) 2-Butanone	9.02	43	778	0.4909 ug/kg#	58
31) 2,2-Dichloropropane	9.24	77	1877	0.4891 ug/kg#	42
32) cis-1,2-Dichloroethene	9.32	96	1178	0.4388 ug/kg	74
33) Chloroform	9.52	83	2007	0.4249 ug/kg	81
35) Bromochloromethane	9.74	130	828	0.4748 ug/kg#	68
36) Tetrahydrofuran	9.76	42	1603	1.5690 ug/kg#	57
38) 1,1,1-Trichloroethane	10.05	97	1773	0.4151 ug/kg	92
40) 1,1-Dichloropropene	10.25	75	1521	0.4526 ug/kg#	38
42) Carbon Tetrachloride	10.40	117	1765	0.4457 ug/kg#	85
45) 1,2-Dichloroethane	10.57	62	1885	0.4537 ug/kg#	68
46) Benzene	10.61	78	5607	0.5959 ug/kg#	83
47) Trichloroethene	11.36	130	1808	0.6064 ug/kg	88
48) Methylcyclohexane	11.44	83	1930	0.5161 ug/kg	96
55) cis-1,3-Dichloropropene	12.51	75	1714	0.4518 ug/kg#	51
59) Toluene	12.93	91	5550	0.5495 ug/kg	88
61) trans-1,3-Dichloropropene	13.10	75	1920	0.5278 ug/kg#	51
63) 2-Hexanone	13.25	43	877	0.4140 ug/kg#	63
64) 1,3-Dichloropropane	13.63	76	1615	0.4568 ug/kg	91
65) Tetrachloroethene	13.75	164	1154	0.5330 ug/kg#	74
67) 1,2-Dibromoethane	14.27	107	988	0.4198 ug/kg	87
68) 1-Chlorohexane	14.35	91	1436	0.4821 ug/kg	83
69) Chlorobenzene	14.78	112	4578	0.6449 ug/kg	87
70) 1,1,1,2-Tetrachloroethane	14.81	131	1078	0.4044 ug/kg	95

(#) = qualifier out of range (m) = manual integration
9M972898.D 8260SL.M Fri Feb 26 11:11:55 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:15 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
71)	Ethylbenzene	14.80	106	1823	0.4985 ug/kg	68
72)	m-,p-Xylene	14.88	106	4752	1.0521 ug/kg	95
73)	o-Xylene	15.44	106	2166	0.4997 ug/kg	94
74)	Styrene	15.49	104	3544	0.4802 ug/kg	91
76)	Isopropylbenzene	15.87	105	6349	0.5456 ug/kg	97
78)	1,1,2,2-Tetrachloroethane	16.09	83	1326	0.5171 ug/kg#	89
82)	n-Propylbenzene	16.38	91	7679	0.5780 ug/kg	98
83)	Bromobenzene	16.52	156	1798	0.5732 ug/kg	88
84)	1,3,5-Trimethylbenzene	16.57	105	4554	0.4566 ug/kg	92
85)	2-Chlorotoluene	16.66	91	5237	0.5877 ug/kg	84
86)	4-Chlorotoluene	16.71	91	5645	0.6851 ug/kg	93
87)	a-Methylstyrene	16.97	118	2091	0.4601 ug/kg	93
89)	1,2,4-Trimethylbenzene	17.09	105	6291	0.6023 ug/kg	84
90)	sec-Butylbenzene	17.31	105	7013	0.5460 ug/kg	93
91)	p-Isopropyltoluene	17.47	119	5681	0.5241 ug/kg	95
92)	1,3-Dichlorobenzene	17.67	146	4446	0.7132 ug/kg	91
93)	1,4-Dichlorobenzene	17.79	146	4603	0.7386 ug/kg#	73
94)	n-Butylbenzene	17.99	91	6750	0.6697 ug/kg#	90
95)	1,2-Dichlorobenzene	18.29	146	3889	0.6724 ug/kg	82
97)	1,2,4-Trichlorobenzene	20.43	180	3506	0.8539 ug/kg	94
98)	Hexachlorobutadiene	20.58	225	1493	0.6898 ug/kg#	70
99)	Naphthalene	20.81	128	10277	0.9979 ug/kg	93
100)	1,2,3-Trichlorobenzene	21.12	180	3961	0.9946 ug/kg	80

(#) = qualifier out of range (m) = manual integration
9M972898.D 8260SL.M Fri Feb 26 11:11:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration

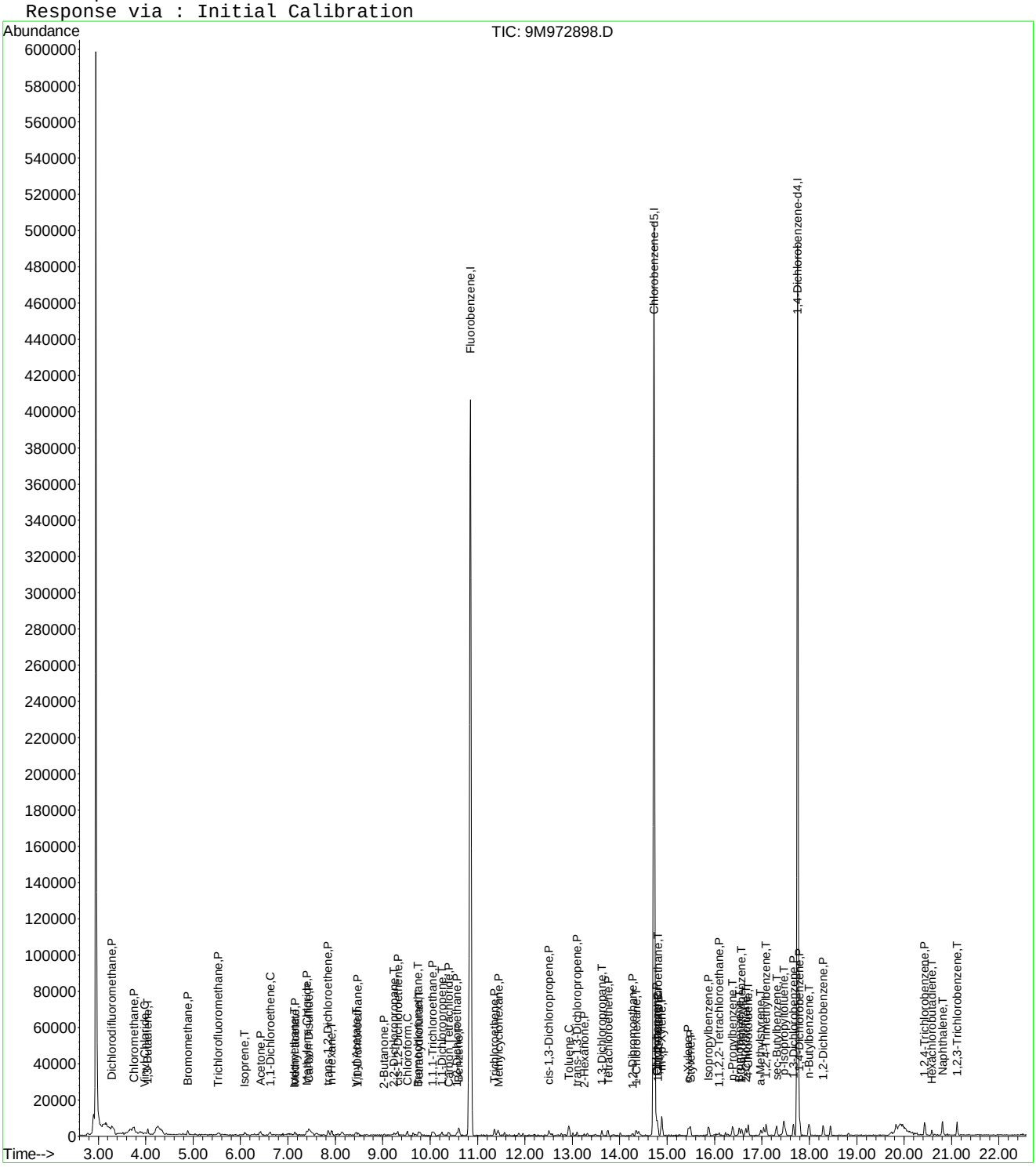

9M972898.D 8260SL.M Fri Feb 26 11:11:55 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	0.4051	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.9099	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.4579	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	0.4960	0.0	0	0.00
6	P	Bromomethane	-1.0000	0.9906	0.0	100	0.00
7	P	Chloroethane	-1.0000	0.2845	0.0	100	0.01
8	P	Trichlorofluoromethane	-1.0000	0.5404	0.0	100	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.04#
10	T	Isoprene	-1.0000	0.4298	0.0	0	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.30#
12	P	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.0779	0.0	100	0.00
13	P	Acetone	-1.0000	5.5216	0.0	0	0.02
14	C	1,1-Dichloroethene	-1.0000	0.4679	0.0	100	0.01
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.76#
16	T	Dimethyl Sulfide	-1.0000	0.1242	0.0	0	0.01
17	T	Iodomethane	-1.0000	3.4505	0.0	0	0.00
18	P	Methyl acetate	-1.0000	0.5343	0.0	0	0.02
19	P	Methylene Chloride	-1.0000	0.5145	0.0	100	0.00
20	P	Carbon Disulfide	-1.0000	0.9557	0.0	0	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.59#
22	P	Methyl Tert Butyl Ether	-1.0000	0.3878	0.0	100	0.00
23	P	trans-1,2-Dichloroethene	-1.0000	0.5365	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.5303	0.0	0	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.26#
26	T	Vinyl Acetate	-1.0000	0.4462	0.0	100	0.01
27	P	1,1-Dichloroethane	-1.0000	0.4660	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.83#
29	P	2-Butanone	-1.0000	0.4909	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.14#
31	T	2,2-Dichloropropane	-1.0000	0.4891	0.0	100	0.00
32	P	cis-1,2-Dichloroethene	-1.0000	0.4388	0.0	100	0.01
33	C	Chloroform	-1.0000	0.4249	0.0	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.65#
35	T	Bromochloromethane	-1.0000	0.4748	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	1.5690	0.0	100	-0.02
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	-1.0000	0.4151	0.0	100	0.00
39	P	Cyclohexane	-1.0000	0.3314	0.0	0	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4526	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.34#
42	P	Carbon Tetrachloride	-1.0000	0.4457	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	-1.0000	0.4537	0.0	100	0.00
46	P	Benzene	0.5000	0.5959	-19.2	100	0.00
47	P	Trichloroethene	-1.0000	0.6064	0.0	100	0.00
48	P	Methylcyclohexane	-1.0000	0.5161	0.0	0	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2930	0.0	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.88#
51	P	Bromodichloromethane	-1.0000	0.3238	0.0	100	0.00
52	T	Dibromomethane	-1.0000	0.1630	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.0000	0.0	0	-12.16#
54	P	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.19#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	-1.0000	0.4518	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2529	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.1032	0.0	100	0.00
59	C	Toluene	0.5000	0.5495	-9.9	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2340	0.0	0	0.00
61	P	trans-1,3-Dichloropropene	-1.0000	0.5278	0.0	100	0.00
62	P	1,1,2-Trichloroethane	-1.0000	0.3964	0.0	100	0.00
63	P	2-Hexanone	-1.0000	0.4140	0.0	100	0.00
64	T	1,3-Dichloropropane	-1.0000	0.4568	0.0	100	0.00
65	P	Tetrachloroethene	-1.0000	0.5330	0.0	100	0.00
66	P	Dibromochloromethane	-1.0000	0.3541	0.0	100	0.00
67	P	1,2-Dibromoethane	-1.0000	0.4198	0.0	100	0.00
68	T	1-Chlorohexane	-1.0000	0.4821	0.0	0	0.00
69	P	Chlorobenzene	-1.0000	0.6449	0.0	100	0.00
70	T	1,1,1,2-Tetrachloroethane	-1.0000	0.4044	0.0	100	0.00
71	C	Ethylbenzene	0.5000	0.4985	0.3	100	0.00
72	P	m-,p-Xylene	1.0000	1.0521	-5.2	100	0.00
73	P	o-Xylene	0.5000	0.4997	0.1	100	0.00
74	P	Styrene	-1.0000	0.4802	0.0	100	0.00
75	P	Bromoform	-1.0000	0.3955	0.0	100	0.00
76	P	Isopropylbenzene	-1.0000	0.5456	0.0	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	-1.0000	0.5171	0.0	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.2339	0.0	100	0.00
80	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.29#
81	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.33#
82	T	n-Propylbenzene	-1.0000	0.5780	0.0	100	0.00
83	T	Bromobenzene	-1.0000	0.5732	0.0	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	0.4566	0.0	100	0.00
85	T	2-Chlorotoluene	-1.0000	0.5877	0.0	100	0.00
86	T	4-Chlorotoluene	-1.0000	0.6851	0.0	100	0.00
87	T	a-Methylstyrene	-1.0000	0.4601	0.0	0	0.00
88	T	tert-Butylbenzene	-1.0000	0.2860	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	-1.0000	0.6023	0.0	100	0.00
90	T	sec-Butylbenzene	-1.0000	0.5460	0.0	100	0.00
91	T	p-Isopropyltoluene	-1.0000	0.5241	0.0	100	0.00
92	P	1,3-Dichlorobenzene	-1.0000	0.7132	0.0	100	0.00
93	P	1,4-Dichlorobenzene	-1.0000	0.7386	0.0	100	0.00
94	T	n-Butylbenzene	-1.0000	0.6697	0.0	100	0.00
95	P	1,2-Dichlorobenzene	-1.0000	0.6724	0.0	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.30#
97	P	1,2,4-Trichlorobenzene	-1.0000	0.8539	0.0	100	0.00
98	T	Hexachlorobutadiene	-1.0000	0.6898	0.0	100	0.00
99	T	Naphthalene	-1.0000	0.9979	0.0	100	0.00
100	T	1,2,3-Trichlorobenzene	-1.0000	0.9946	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972898.D 8260SL.M Fri Feb 26 11:11:52 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	536651	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	387839	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	177519	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.82	98	959	0.0978 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.20%#	
79) p-Bromofluorobenzene	16.22	95	467	0.1351 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	3486	0.9518 ug/kg#	85
3) Chloromethane	3.74	50	4175	1.1891 ug/kg	88
4) Vinyl Chloride	3.98	62	2686	0.7642 ug/kg	80
5) 1,3-Butadiene	4.03	54	3056	0.9139 ug/kg	91
6) Bromomethane	4.89	94	2537	1.1114 ug/kg	94
7) Chloroethane	5.05	64	1264	0.8072 ug/kg#	45
8) Trichlorofluoromethane	5.53	101	5567	1.0561 ug/kg#	93
9) Diethyl ether	6.05	59	11529	4.6784 ug/kg	97
10) Isoprene	6.08	67	2965	0.9421 ug/kg	97
11) Acrolein	6.29	56	1087	2.2122 ug/kg#	35
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	1939	0.7132 ug/kg	88
13) Acetone	6.41	43	5231	5.8863 ug/kg	95
14) 1,1-Dichloroethene	6.62	61	4981	0.9932 ug/kg	92
15) Tert-Butyl Alcohol	6.77	59	5682	10.3548 ug/kg#	63
16) Dimethyl Sulfide	6.88	62	1614	0.7615 ug/kg	91
17) Iodomethane	7.15	142	941	3.3944 ug/kg#	66
18) Methyl acetate	7.16	43	2553	0.9364 ug/kg#	65
19) Methylene Chloride	7.40	84	2963	1.0849 ug/kg	92
20) Carbon Disulfide	7.45	76	9749	1.2619 ug/kg	95
21) Acrylonitrile	7.58	53	3140	2.3282 ug/kg	85
22) Methyl Tert Butyl Ether	7.61	73	7179	0.9229 ug/kg	83
23) trans-1,2-Dichloroethene	7.85	61	4296	0.9612 ug/kg	95
24) n-Hexane	7.93	57	4481	0.9720 ug/kg	95
25) Diisopropyl ether	8.26	45	50344	4.7022 ug/kg	98
26) Vinyl Acetate	8.43	43	5247	0.8597 ug/kg#	90
27) 1,1-Dichloroethane	8.48	63	5885	1.0483 ug/kg#	85
28) Ethyl-Tert-Butyl ether	8.83	59	46767	4.6979 ug/kg	99
29) 2-Butanone	9.03	43	1776	1.0263 ug/kg#	58
30) Propionitrile	9.14	54	2256	4.2599 ug/kg#	60
31) 2,2-Dichloropropane	9.24	77	4402	1.0506 ug/kg#	71
32) cis-1,2-Dichloroethene	9.31	96	2650	0.9040 ug/kg	94
33) Chloroform	9.51	83	5072	0.9836 ug/kg	96
35) Bromochloromethane	9.75	130	1408	0.7394 ug/kg	86
36) Tetrahydrofuran	9.77	42	6699	6.0054 ug/kg	95
38) 1,1,1-Trichloroethane	10.05	97	4567	0.9793 ug/kg	91
39) Cyclohexane	10.08	56	4992	0.9818 ug/kg#	85
40) 1,1-Dichloropropene	10.24	75	3785	1.0315 ug/kg	90
41) Tert-Amyl-Methyl ether	10.34	73	33850	4.6779 ug/kg	95
42) Carbon Tetrachloride	10.40	117	4297	0.9939 ug/kg#	90
45) 1,2-Dichloroethane	10.55	62	3923	0.8649 ug/kg	93

(#) = qualifier out of range (m) = manual integration
9M972899.D 8260SL.M Fri Feb 26 11:12:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
46)	Benzene	10.61	78	9968	0.9703 ug/kg	96
47)	Trichloroethene	11.36	130	3259	1.0012 ug/kg	99
48)	Methylcyclohexane	11.43	83	3354	0.8215 ug/kg	76
49)	1,2-Dichloropropane	11.57	63	2469	0.8752 ug/kg	94
51)	Bromodichloromethane	11.87	83	3657	0.9198 ug/kg#	94
52)	Dibromomethane	11.96	174	1621	0.8672 ug/kg	93
53)	2-Chloroethyl Vinyl Ether	12.16	63	210	3.0851 ug/kg#	47
54)	4-Methyl-2-Pentanone	12.20	58	738	0.5960 ug/kg#	40
55)	cis-1,3-Dichloropropene	12.51	75	3714	0.8966 ug/kg	86
56)	Dimethyl Disulfide	12.77	94	3075	0.7387 ug/kg	83
59)	Toluene	12.93	91	10894	0.9831 ug/kg	97
60)	Ethyl Methacrylate	13.01	69	1966	0.6401 ug/kg#	53
61)	trans-1,3-Dichloropropene	13.11	75	3837	0.9614 ug/kg#	79
62)	1,1,2-Trichloroethane	13.32	97	2148	0.9227 ug/kg	94
63)	2-Hexanone	13.26	43	1796	0.7727 ug/kg#	80
64)	1,3-Dichloropropane	13.63	76	3616	0.9322 ug/kg	99
65)	Tetrachloroethene	13.75	164	2587	1.0890 ug/kg	79
66)	Dibromochloromethane	14.02	129	3318	1.0199 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	2336	0.9047 ug/kg	97
68)	1-Chlorohexane	14.34	91	3075	0.9410 ug/kg	85
69)	Chlorobenzene	14.78	112	7982	1.0249 ug/kg	88
70)	1,1,1,2-Tetrachloroethane	14.81	131	2589	0.8852 ug/kg	86
71)	Ethylbenzene	14.80	106	4007	0.9987 ug/kg	89
72)	m-,p-Xylene	14.88	106	9607	1.9388 ug/kg	98
73)	o-Xylene	15.45	106	4376	0.9202 ug/kg	99
74)	Styrene	15.49	104	7432	0.9178 ug/kg	92
75)	Bromoform	16.00	173	1759	0.8235 ug/kg#	79
76)	Isopropylbenzene	15.87	105	11937	0.9351 ug/kg	98
78)	1,1,2,2-Tetrachloroethane	16.09	83	2186	0.8118 ug/kg#	83
80)	1,2,3-Trichloropropane	16.28	110	875	0.8568 ug/kg#	81
81)	trans-1,4-Dichloro-2-Buten	16.34	53	831	0.8073 ug/kg#	74
82)	n-Propylbenzene	16.38	91	14156	1.0145 ug/kg	99
83)	Bromobenzene	16.53	156	2996	0.9095 ug/kg#	39
84)	1,3,5-Trimethylbenzene	16.57	105	11008	1.0509 ug/kg	88
85)	2-Chlorotoluene	16.65	91	10606	1.1332 ug/kg	84
86)	4-Chlorotoluene	16.71	91	9101	1.0518 ug/kg	95
87)	a-Methylstyrene	16.98	118	4078	0.8544 ug/kg	85
88)	tert-Butylbenzene	17.03	134	2095	0.9540 ug/kg	74
89)	1,2,4-Trimethylbenzene	17.09	105	12124	1.1053 ug/kg	83
90)	sec-Butylbenzene	17.31	105	13922	1.0320 ug/kg	100
91)	p-Isopropyltoluene	17.47	119	10153	0.8918 ug/kg	98
92)	1,3-Dichlorobenzene	17.67	146	7444	1.1370 ug/kg	90
93)	1,4-Dichlorobenzene	17.79	146	7580	1.1581 ug/kg	92
94)	n-Butylbenzene	17.99	91	11112	1.0498 ug/kg	91
95)	1,2-Dichlorobenzene	18.29	146	6415	1.0560 ug/kg	97
97)	1,2,4-Trichlorobenzene	20.43	180	4869	1.1291 ug/kg	98
98)	Hexachlorobutadiene	20.59	225	2032	0.8939 ug/kg	87
99)	Naphthalene	20.81	128	11710	1.0826 ug/kg	92
100)	1,2,3-Trichlorobenzene	21.12	180	4698	1.1232 ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972899.D 8260SL.M Fri Feb 26 11:12:33 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration

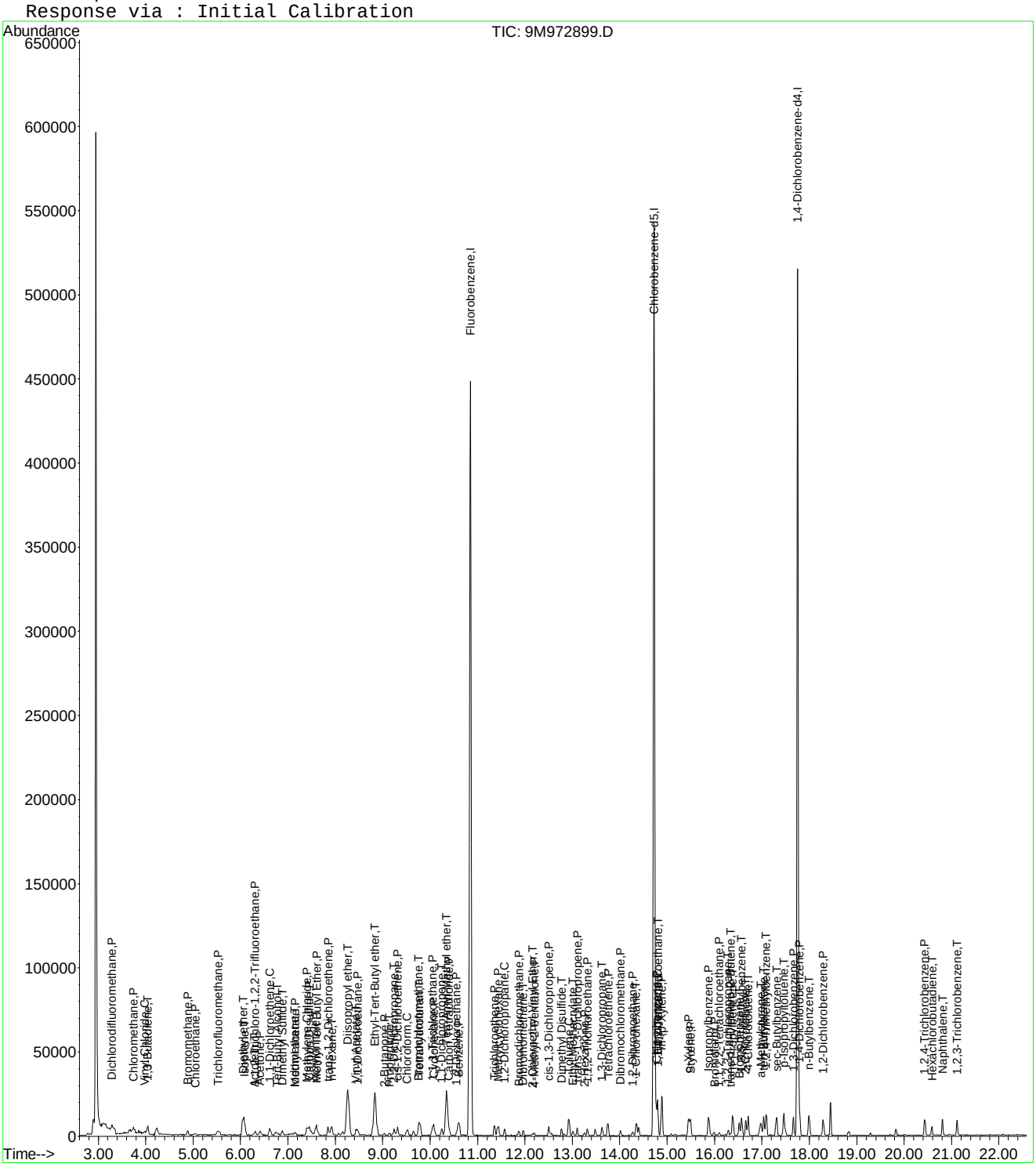

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	0.9518	0.0	100	0.00
3	P	Chloromethane	-1.0000	1.1891	0.0	100	0.00
4	C	Vinyl Chloride	1.0000	0.7642	23.6#	100	0.00
5	T	1,3-Butadiene	-1.0000	0.9139	0.0	0	0.00
6	P	Bromomethane	1.0000	1.1114	-11.1	100	0.00
7	P	Chloroethane	-1.0000	0.8072	0.0	100	0.00
8	P	Trichlorofluoromethane	1.0000	1.0561	-5.6	100	0.00
9	T	Diethyl ether	5.0000	4.6784	6.4	100	0.00
10	T	Isoprene	-1.0000	0.9421	0.0	0	0.00
11	T	Acrolein	2.5000	2.2122	11.5	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.7132	0.0	100	0.00
13	P	Acetone	-1.0000	5.8863	0.0	0	0.00
14	C	1,1-Dichloroethene	1.0000	0.9932	0.7	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	10.3548	0.0	100	0.00
16	T	Dimethyl Sulfide	1.0000	0.7615	23.9	100	0.00
17	T	Iodomethane	-1.0000	3.3944	0.0	0	0.01
18	P	Methyl acetate	-1.0000	0.9364	0.0	0	0.02
19	P	Methylene Chloride	-1.0000	1.0849	0.0	100	0.00
20	P	Carbon Disulfide	-1.0000	1.2619	0.0	0	0.00
21	T	Acrylonitrile	2.5000	2.3282	6.9	100	0.00
22	P	Methyl Tert Butyl Ether	1.0000	0.9229	7.7	100	0.00
23	P	trans-1,2-Dichloroethene	1.0000	0.9612	3.9	100	0.00
24	T	n-Hexane	-1.0000	0.9720	0.0	0	0.01
25	T	Diisopropyl ether	5.0000	4.7022	6.0	100	0.00
26	T	Vinyl Acetate	-1.0000	0.8597	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0483	-4.8	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.6979	6.0	100	0.00
29	P	2-Butanone	-1.0000	1.0263	0.0	100	0.00
30	T	Propionitrile	5.0000	4.2599	14.8	100	0.00
31	T	2,2-Dichloropropane	-1.0000	1.0506	0.0	100	0.00
32	P	cis-1,2-Dichloroethene	1.0000	0.9040	9.6	100	0.00
33	C	Chloroform	1.0000	0.9836	1.6	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.65#
35	T	Bromochloromethane	1.0000	0.7395	26.1#	100	0.00
36	T	Tetrahydrofuran	-1.0000	6.0054	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	1.0000	0.9793	2.1	100	0.00
39	P	Cyclohexane	1.0000	0.9818	1.8	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0315	-3.1	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	4.6780	6.4	100	0.00
42	P	Carbon Tetrachloride	-1.0000	0.9939	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	1.0000	0.8649	13.5	100	0.00
46	P	Benzene	1.0000	0.9703	3.0	100	0.00
47	P	Trichloroethene	1.0000	1.0012	-0.1	100	0.00
48	P	Methylcyclohexane	1.0000	0.8215	17.8	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.8752	12.5	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.88#
51	P	Bromodichloromethane	-1.0000	0.9198	0.0	100	0.00
52	T	Dibromomethane	1.0000	0.8672	13.3	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	3.0851	0.0	0	0.00
54	P	4-Methyl-2-Pentanone	-1.0000	0.5960	0.0	100	0.01

(#) = Out of Range
9M972899.D 8260SL.M Fri Feb 26 11:12:31 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	-1.0000	0.8966	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.7387	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0978	0.0	100	0.00
59	C	Toluene	1.0000	0.9831	1.7	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.6401	0.0	0	0.00
61	P	trans-1,3-Dichloropropene	-1.0000	0.9614	0.0	100	0.00
62	P	1,1,2-Trichloroethane	1.0000	0.9227	7.7	100	0.00
63	P	2-Hexanone	-1.0000	0.7727	0.0	100	0.00
64	T	1,3-Dichloropropane	1.0000	0.9322	6.8	100	0.00
65	P	Tetrachloroethene	1.0000	1.0890	-8.9	100	0.00
66	P	Dibromochloromethane	-1.0000	1.0199	0.0	100	0.00
67	P	1,2-Dibromoethane	-1.0000	0.9047	0.0	100	0.00
68	T	1-Chlorohexane	1.0000	0.9410	5.9	100	0.00
69	P	Chlorobenzene	1.0000	1.0249	-2.5	100	0.00
70	T	1,1,1,2-Tetrachloroethane	-1.0000	0.8852	0.0	100	0.00
71	C	Ethylbenzene	1.0000	0.9987	0.1	100	0.00
72	P	m-,p-Xylene	2.0000	1.9388	3.1	100	0.00
73	P	o-Xylene	1.0000	0.9202	8.0	100	0.00
74	P	Styrene	1.0000	0.9178	8.2	100	0.00
75	P	Bromoform	-1.0000	0.8235	0.0	100	0.00
76	P	Isopropylbenzene	1.0000	0.9351	6.5	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	1.0000	0.8118	18.8	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.1351	0.0	100	0.00
80	T	1,2,3-Trichloropropane	1.0000	0.8568	14.3	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.8073	0.0	0	0.00
82	T	n-Propylbenzene	1.0000	1.0145	-1.4	100	0.00
83	T	Bromobenzene	1.0000	0.9095	9.1	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	1.0509	0.0	100	0.00
85	T	2-Chlorotoluene	-1.0000	1.1332	0.0	100	0.00
86	T	4-Chlorotoluene	1.0000	1.0518	-5.2	100	0.00
87	T	a-Methylstyrene	-1.0000	0.8544	0.0	0	0.00
88	T	tert-Butylbenzene	-1.0000	0.9540	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	1.0000	1.1053	-10.5	100	0.00
90	T	sec-Butylbenzene	1.0000	1.0320	-3.2	100	0.00
91	T	p-Isopropyltoluene	-1.0000	0.8918	0.0	100	0.00
92	P	1,3-Dichlorobenzene	1.0000	1.1370	-13.7	100	0.00
93	P	1,4-Dichlorobenzene	1.0000	1.1581	-15.8	100	0.00
94	T	n-Butylbenzene	1.0000	1.0498	-5.0	100	0.00
95	P	1,2-Dichlorobenzene	1.0000	1.0560	-5.6	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	0.3514	0.0	100	0.00
97	P	1,2,4-Trichlorobenzene	1.0000	1.1291	-12.9	100	0.00
98	T	Hexachlorobutadiene	1.0000	0.8939	10.6	100	0.00
99	T	Naphthalene	-1.0000	1.0826	0.0	100	0.00
100	T	1,2,3-Trichlorobenzene	1.0000	1.1232	-12.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1
9M972899.D 8260SL.M Fri Feb 26 11:12:31 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	472115	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	342668	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	156993	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.83	98	772	0.0891 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.18%#	
79) p-Bromofluorobenzene	16.23	95	570	0.1865 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.38%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.29	85	6383	1.9809 ug/kg#	78
3) Chloromethane	3.74	50	7027	2.2750 ug/kg	100
4) Vinyl Chloride	4.00	62	6001	1.9408 ug/kg	97
5) 1,3-Butadiene	4.04	54	6545	2.2249 ug/kg	95
6) Bromomethane	4.90	94	5050	2.5146 ug/kg	81
7) Chloroethane	5.04	64	2391	1.7357 ug/kg#	70
8) Trichlorofluoromethane	5.54	101	9777	2.1082 ug/kg#	94
9) Diethyl ether	6.06	59	58156	26.8255 ug/kg	97
10) Isoprene	6.09	67	5698	2.0580 ug/kg	89
11) Acrolein	6.30	56	5427	12.5543 ug/kg	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	4756	1.9886 ug/kg	93
13) Acetone	6.40	43	6167	6.9886 ug/kg	93
14) 1,1-Dichloroethene	6.62	61	9652	2.1877 ug/kg	91
15) Tert-Butyl Alcohol	6.75	59	26757	55.4271 ug/kg#	91
16) Dimethyl Sulfide	6.89	62	3840	2.0594 ug/kg	97
17) Iodomethane	7.14	142	1541	3.9079 ug/kg#	56
18) Methyl acetate	7.15	43	5334	2.2240 ug/kg#	69
19) Methylene Chloride	7.40	84	5116	2.1292 ug/kg	98
20) Carbon Disulfide	7.44	76	15010	2.2085 ug/kg	94
21) Acrylonitrile	7.59	53	14961	12.6096 ug/kg	100
22) Methyl Tert Butyl Ether	7.61	73	13630	1.9917 ug/kg	93
23) trans-1,2-Dichloroethene	7.85	61	7964	2.0255 ug/kg	100
24) n-Hexane	7.92	57	8619	2.1253 ug/kg	100
25) Diisopropyl ether	8.26	45	252190	26.7748 ug/kg	99
26) Vinyl Acetate	8.43	43	11207	2.0872 ug/kg	95
27) 1,1-Dichloroethane	8.47	63	10529	2.1320 ug/kg#	93
28) Ethyl-Tert-Butyl ether	8.83	59	234163	26.7377 ug/kg	99
29) 2-Butanone	9.03	43	3346	2.1978 ug/kg#	76
30) Propionitrile	9.14	54	12899	27.6861 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	8085	2.1934 ug/kg	88
32) cis-1,2-Dichloroethene	9.32	96	4861	1.8850 ug/kg	98
33) Chloroform	9.53	83	10005	2.2054 ug/kg	95
34) 1-Bromopropane	9.64	122	209	1.5465 ug/kg	96
35) Bromochloromethane	9.75	130	3273	1.9539 ug/kg	81
36) Tetrahydrofuran	9.78	42	26192	26.6900 ug/kg	94
38) 1,1,1-Trichloroethane	10.04	97	8229	2.0058 ug/kg	97
39) Cyclohexane	10.09	56	9354	2.0912 ug/kg	96
40) 1,1-Dichloropropene	10.23	75	6787	2.1024 ug/kg	88
41) Tert-Amyl-Methyl ether	10.34	73	167275	26.2768 ug/kg	98
42) Carbon Tetrachloride	10.39	117	7920	2.0823 ug/kg#	95

(#) = qualifier out of range (m) = manual integration
9M972900.D 8260SL.M Fri Feb 26 11:13:39 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	8488	2.1271 ug/kg	89
46)	Benzene	10.60	78	19454	2.1525 ug/kg	96
47)	Trichloroethene	11.35	130	6073	2.1207 ug/kg	96
48)	Methylcyclohexane	11.44	83	7523	2.0945 ug/kg	95
49)	1,2-Dichloropropane	11.58	63	5118	2.0621 ug/kg	93
50)	1,4-Dioxane	11.88	88	1938	52.0499 ug/kg	84
51)	Bromodichloromethane	11.87	83	7148	2.0436 ug/kg#	95
52)	Dibromomethane	11.97	174	3572	2.1721 ug/kg	91
53)	2-Chloroethyl Vinyl Ether	12.17	63	474	3.4830 ug/kg#	47
54)	4-Methyl-2-Pentanone	12.19	58	2111	1.9378 ug/kg#	64
55)	cis-1,3-Dichloropropene	12.50	75	7048	1.9341 ug/kg	92
56)	Dimethyl Disulfide	12.77	94	5832	1.5925 ug/kg	95
59)	Toluene	12.93	91	20786	2.1230 ug/kg	97
60)	Ethyl Methacrylate	13.01	69	4184	1.5417 ug/kg	98
61)	trans-1,3-Dichloropropene	13.11	75	6895	1.9553 ug/kg	92
62)	1,1,2-Trichloroethane	13.33	97	4055	1.9716 ug/kg	86
63)	2-Hexanone	13.25	43	3773	1.8373 ug/kg#	82
64)	1,3-Dichloropropane	13.62	76	7643	2.2302 ug/kg	97
65)	Tetrachloroethene	13.75	164	4327	2.0615 ug/kg	94
66)	Dibromochloromethane	14.01	129	6170	2.1465 ug/kg	87
67)	1,2-Dibromoethane	14.28	107	4656	2.0410 ug/kg	88
68)	1-Chlorohexane	14.35	91	5610	1.9430 ug/kg	97
69)	Chlorobenzene	14.77	112	14885	2.1632 ug/kg	95
70)	1,1,1,2-Tetrachloroethane	14.80	131	5145	1.9910 ug/kg	86
71)	Ethylbenzene	14.79	106	7287	2.0555 ug/kg	99
72)	m-,p-Xylene	14.89	106	19133	4.3702 ug/kg	93
73)	o-Xylene	15.45	106	8413	2.0024 ug/kg	94
74)	Styrene	15.49	104	14533	2.0313 ug/kg	97
75)	Bromoform	15.99	173	3135	1.6611 ug/kg	97
76)	Isopropylbenzene	15.87	105	23266	2.0628 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	5252	2.2053 ug/kg#	89
80)	1,2,3-Trichloropropane	16.28	110	1851	2.0495 ug/kg#	89
81)	trans-1,4-Dichloro-2-Buten	16.33	53	1413	1.5521 ug/kg	47
82)	n-Propylbenzene	16.38	91	25735	2.0854 ug/kg	99
83)	Bromobenzene	16.52	156	7006	2.4049 ug/kg	83
84)	1,3,5-Trimethylbenzene	16.57	105	18571	2.0048 ug/kg	99
85)	2-Chlorotoluene	16.66	91	18793	2.2705 ug/kg	97
86)	4-Chlorotoluene	16.70	91	16240	2.1222 ug/kg	96
87)	a-Methylstyrene	16.98	118	7524	1.7826 ug/kg	97
88)	tert-Butylbenzene	17.04	134	3654	1.8815 ug/kg	64
89)	1,2,4-Trimethylbenzene	17.09	105	20119	2.0739 ug/kg	99
90)	sec-Butylbenzene	17.31	105	24858	2.0835 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	20956	2.0813 ug/kg	96
92)	1,3-Dichlorobenzene	17.66	146	13695	2.3653 ug/kg	94
93)	1,4-Dichlorobenzene	17.79	146	12975	2.2416 ug/kg	82
94)	n-Butylbenzene	17.99	91	19734	2.1080 ug/kg	95
95)	1,2-Dichlorobenzene	18.30	146	11568	2.1533 ug/kg	91
96)	1,2-Dibromo-3-Chloropropan	19.30	157	941	1.3644 ug/kg	84
97)	1,2,4-Trichlorobenzene	20.44	180	8356	2.1910 ug/kg	98
98)	Hexachlorobutadiene	20.59	225	4571	2.2738 ug/kg	87
99)	Naphthalene	20.81	128	20072	2.0983 ug/kg	96
100)	1,2,3-Trichlorobenzene	21.11	180	7948	2.1487 ug/kg	96

(#) = qualifier out of range (m) = manual integration
9M972900.D 8260SL.M Fri Feb 26 11:13:39 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration

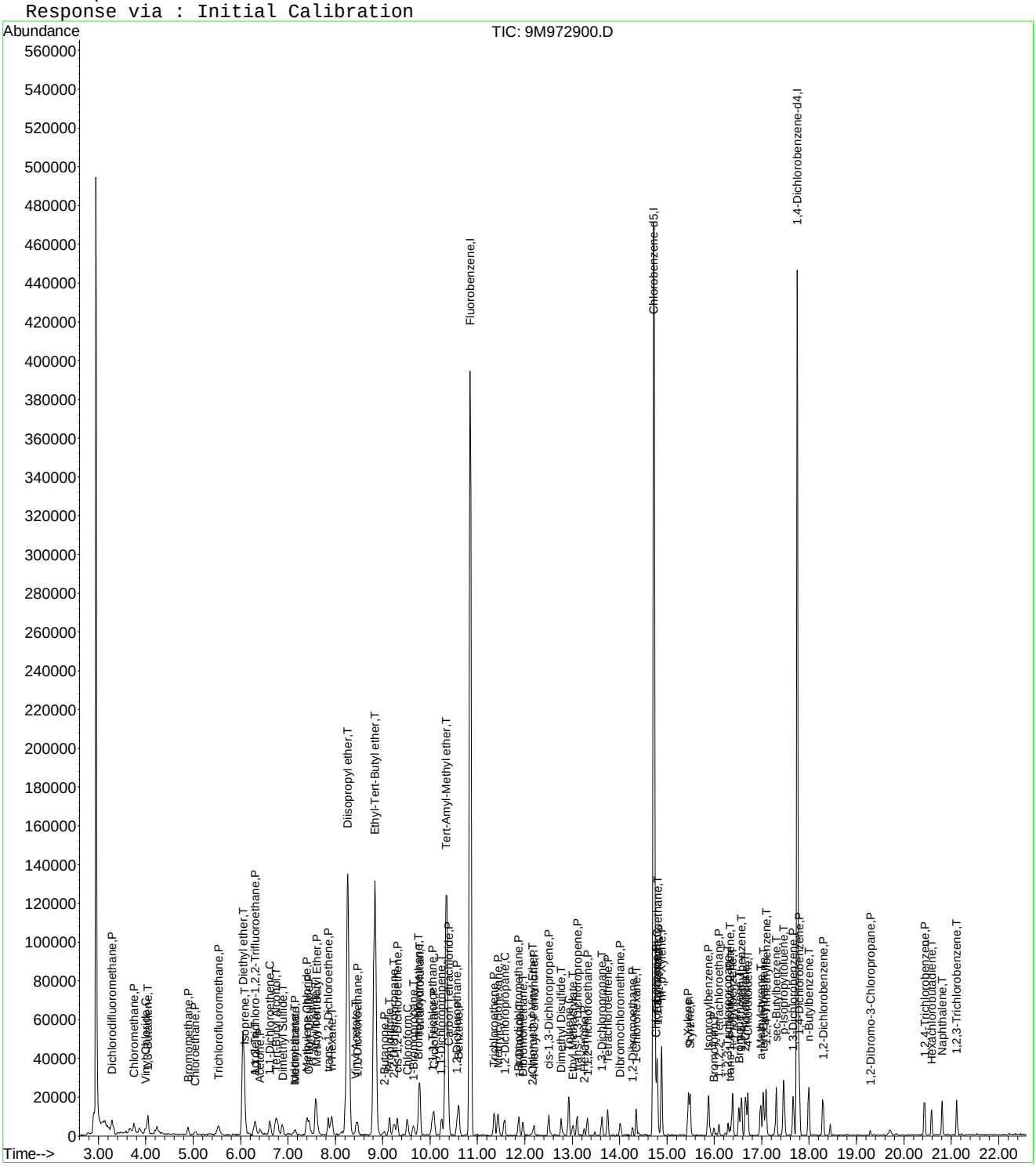

9M972900.D 8260SL.M Fri Feb 26 11:13:39 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	1.9809	0.0	100	0.01
3	P	Chloromethane	2.0000	2.2750	-13.7	100	0.00
4	C	Vinyl Chloride	2.0000	1.9408	3.0	100	0.01
5	T	1,3-Butadiene	2.0000	2.2249	-11.2	100	0.00
6	P	Bromomethane	2.0000	2.5146	-25.7#	100	0.01
7	P	Chloroethane	2.0000	1.7357	13.2	100	0.00
8	P	Trichlorofluoromethane	2.0000	2.1082	-5.4	100	0.01
9	T	Diethyl ether	25.0000	26.8255	-7.3	100	0.01
10	T	Isoprene	2.0000	2.0580	-2.9	100	0.00
11	T	Acrolein	12.5000	12.5543	-0.4	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.9886	0.6	100	0.01
13	P	Acetone	-1.0000	6.9886	0.0	0	0.00
14	C	1,1-Dichloroethene	2.0000	2.1877	-9.4	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	55.4271	-10.9	100	0.00
16	T	Dimethyl Sulfide	2.0000	2.0594	-3.0	100	0.01
17	T	Iodomethane	-1.0000	3.9079	0.0	0	0.01
18	P	Methyl acetate	2.0000	2.2240	-11.2	100	0.01
19	P	Methylene Chloride	2.0000	2.1292	-6.5	100	0.00
20	P	Carbon Disulfide	2.0000	2.2085	-10.4	100	0.00
21	T	Acrylonitrile	12.5000	12.6096	-0.9	100	0.00
22	P	Methyl Tert Butyl Ether	2.0000	1.9917	0.4	100	0.00
23	P	trans-1,2-Dichloroethene	2.0000	2.0255	-1.3	100	0.00
24	T	n-Hexane	2.0000	2.1253	-6.3	100	0.01
25	T	Diisopropyl ether	25.0000	26.7748	-7.1	100	0.00
26	T	Vinyl Acetate	2.0000	2.0872	-4.4	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.1320	-6.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	26.7377	-7.0	100	0.00
29	P	2-Butanone	2.0000	2.1978	-9.9	100	0.00
30	T	Propionitrile	25.0000	27.6861	-10.7	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1934	-9.7	100	0.00
32	P	cis-1,2-Dichloroethene	2.0000	1.8850	5.8	100	0.01
33	C	Chloroform	2.0000	2.2054	-10.3	100	0.01
34	T	1-Bromopropane	2.0000	1.5465	22.7	100	0.00
35	T	Bromochloromethane	2.0000	1.9539	2.3	100	0.00
36	T	Tetrahydrofuran	25.0000	26.6900	-6.8	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	2.0000	2.0058	-0.3	100	0.00
39	P	Cyclohexane	2.0000	2.0913	-4.6	100	0.01
40	T	1,1-Dichloropropene	2.0000	2.1023	-5.1	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	26.2768	-5.1	100	0.00
42	P	Carbon Tetrachloride	2.0000	2.0823	-4.1	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	2.0000	2.1271	-6.4	100	0.00
46	P	Benzene	2.0000	2.1525	-7.6	100	0.00
47	P	Trichloroethene	2.0000	2.1207	-6.0	100	0.00
48	P	Methylcyclohexane	2.0000	2.0945	-4.7	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0621	-3.1	100	0.01
50	T	1,4-Dioxane	50.0000	52.0499	-4.1	100	0.00
51	P	Bromodichloromethane	2.0000	2.0436	-2.2	100	0.00
52	T	Dibromomethane	2.0000	2.1721	-8.6	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	3.4830	0.0	0	0.00
54	P	4-Methyl-2-Pentanone	-1.0000	1.9378	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	2.0000	1.9341	3.3	100	0.00
56	T	Dimethyl Disulfide	2.0000	1.5925	20.4	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0891	0.0	100	0.00
59	C	Toluene	2.0000	2.1230	-6.2	100	0.00
60	T	Ethyl Methacrylate	-1.0000	1.5417	0.0	0	0.00
61	P	trans-1,3-Dichloropropene	2.0000	1.9553	2.2	100	0.00
62	P	1,1,2-Trichloroethane	2.0000	1.9716	1.4	100	0.00
63	P	2-Hexanone	-1.0000	1.8373	0.0	100	0.00
64	T	1,3-Dichloropropane	2.0000	2.2302	-11.5	100	0.00
65	P	Tetrachloroethene	2.0000	2.0616	-3.1	100	0.00
66	P	Dibromochloromethane	2.0000	2.1465	-7.3	100	0.00
67	P	1,2-Dibromoethane	-1.0000	2.0410	0.0	100	0.00
68	T	1-Chlorohexane	2.0000	1.9430	2.8	100	0.00
69	P	Chlorobenzene	2.0000	2.1632	-8.2	100	0.00
70	T	1,1,1,2-Tetrachloroethane	2.0000	1.9910	0.4	100	0.00
71	C	Ethylbenzene	2.0000	2.0555	-2.8	100	0.00
72	P	m-,p-Xylene	4.0000	4.3702	-9.3	100	0.00
73	P	o-Xylene	2.0000	2.0024	-0.1	100	0.00
74	P	Styrene	2.0000	2.0313	-1.6	100	0.00
75	P	Bromoform	2.0000	1.6611	16.9	100	0.00
76	P	Isopropylbenzene	2.0000	2.0628	-3.1	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	2.0000	2.2053	-10.3	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.1865	0.0	100	0.00
80	T	1,2,3-Trichloropropane	2.0000	2.0495	-2.5	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	2.0000	1.5521	22.4	100	0.00
82	T	n-Propylbenzene	2.0000	2.0854	-4.3	100	0.00
83	T	Bromobenzene	2.0000	2.4049	-20.2	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	2.0048	0.0	100	0.00
85	T	2-Chlorotoluene	2.0000	2.2705	-13.5	100	0.00
86	T	4-Chlorotoluene	2.0000	2.1222	-6.1	100	0.00
87	T	a-Methylstyrene	-1.0000	1.7826	0.0	0	0.00
88	T	tert-Butylbenzene	-1.0000	1.8815	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	2.0000	2.0739	-3.7	100	0.00
90	T	sec-Butylbenzene	2.0000	2.0835	-4.2	100	0.00
91	T	p-Isopropyltoluene	-1.0000	2.0813	0.0	100	0.00
92	P	1,3-Dichlorobenzene	2.0000	2.3653	-18.3	100	0.00
93	P	1,4-Dichlorobenzene	2.0000	2.2416	-12.1	100	0.00
94	T	n-Butylbenzene	2.0000	2.1080	-5.4	100	0.00
95	P	1,2-Dichlorobenzene	2.0000	2.1533	-7.7	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	1.3644	0.0	100	0.00
97	P	1,2,4-Trichlorobenzene	2.0000	2.1910	-9.6	100	0.00
98	T	Hexachlorobutadiene	2.0000	2.2738	-13.7	100	0.00
99	T	Naphthalene	2.0000	2.0983	-4.9	100	0.00
100	T	1,2,3-Trichlorobenzene	2.0000	2.1487	-7.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	544259	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	391881	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.76	152	178969	50.00 ug/kg	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.81	111	29036	9.8422 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 19.68%#		
43) 1,2-Dichloroethane-d4	10.44	65	38093	10.2911 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 20.58%#		
58) Toluene-d8	12.83	98	95044	9.5885 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 19.18%#		
79) p-Bromofluorobenzene	16.23	95	32806	9.4138 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 18.82%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	14756	3.9724 ug/kg	92
3) Chloromethane	3.74	50	15227	4.2763 ug/kg	91
4) Vinyl Chloride	3.99	62	17097	4.7964 ug/kg	89
5) 1,3-Butadiene	4.04	54	14484	4.2710 ug/kg	97
6) Bromomethane	4.89	94	9847	4.2533 ug/kg	95
7) Chloroethane	5.04	64	6311	3.9741 ug/kg	93
8) Trichlorofluoromethane	5.53	101	22668	4.2400 ug/kg	100
9) Diethyl ether	6.05	59	118004	47.2164 ug/kg	99
10) Isoprene	6.10	67	13644	4.2747 ug/kg	95
11) Acrolein	6.30	56	12131	24.3428 ug/kg	84
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	12752	4.6251 ug/kg	95
13) Acetone	6.41	43	9765	4.9429 ug/kg	94
14) 1,1-Dichloroethene	6.62	61	21760	4.2784 ug/kg	99
15) Tert-Butyl Alcohol	6.76	59	50500	90.7440 ug/kg	98
16) Dimethyl Sulfide	6.88	62	10098	4.6977 ug/kg	87
17) Iodomethane	7.13	142	4147	5.3886 ug/kg	97
18) Methyl acetate	7.15	43	12159	4.3976 ug/kg#	87
19) Methylene Chloride	7.41	84	11825	4.2690 ug/kg	99
20) Carbon Disulfide	7.45	76	34078	4.3495 ug/kg	94
21) Acrylonitrile	7.58	53	31012	22.6731 ug/kg	100
22) Methyl Tert Butyl Ether	7.61	73	34936	4.4284 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	20503	4.5233 ug/kg	95
24) n-Hexane	7.92	57	20970	4.4853 ug/kg	98
25) Diisopropyl ether	8.26	45	505084	46.5162 ug/kg	100
26) Vinyl Acetate	8.44	43	28253	4.5644 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	24239	4.2575 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	463447	45.9037 ug/kg	99
29) 2-Butanone	9.03	43	8265	4.7092 ug/kg	88
30) Propionitrile	9.15	54	25938	48.2931 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	17954	4.2251 ug/kg	91
32) cis-1,2-Dichloroethene	9.32	96	13479	4.5340 ug/kg	84
33) Chloroform	9.52	83	23525	4.4982 ug/kg	95
34) 1-Bromopropane	9.65	122	2239	5.8652 ug/kg	90
35) Bromochloromethane	9.75	130	9205	4.7667 ug/kg	97
36) Tetrahydrofuran	9.78	42	53635	47.4100 ug/kg	99
38) 1,1,1-Trichloroethane	10.04	97	20945	4.4285 ug/kg	91
39) Cyclohexane	10.09	56	23110	4.4818 ug/kg	98
40) 1,1-Dichloropropene	10.24	75	16349	4.3930 ug/kg	99
41) Tert-Amyl-Methyl ether	10.35	73	343692	46.8330 ug/kg	98
42) Carbon Tetrachloride	10.39	117	18527	4.2254 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	21553	4.6852 ug/kg	99
46)	Benzene	10.60	78	45352	4.3528 ug/kg	99
47)	Trichloroethene	11.35	130	14266	4.3213 ug/kg	97
48)	Methylcyclohexane	11.44	83	17527	4.2330 ug/kg	97
49)	1,2-Dichloropropane	11.56	63	13071	4.5684 ug/kg	100
50)	1,4-Dioxane	11.88	88	3926	91.4657 ug/kg	99
51)	Bromodichloromethane	11.87	83	18008	4.4660 ug/kg	97
52)	Dibromomethane	11.96	174	8993	4.7438 ug/kg	95
53)	2-Chloroethyl Vinyl Ether	12.16	63	2468	5.7758 ug/kg#	66
54)	4-Methyl-2-Pentanone	12.19	58	4862	3.8716 ug/kg	95
55)	cis-1,3-Dichloropropene	12.50	75	18341	4.3659 ug/kg	96
56)	Dimethyl Disulfide	12.77	94	17792	4.2144 ug/kg	91
59)	Toluene	12.92	91	48377	4.3206 ug/kg	96
60)	Ethyl Methacrylate	13.02	69	12442	4.0089 ug/kg	96
61)	trans-1,3-Dichloropropene	13.10	75	17626	4.3707 ug/kg	95
62)	1,1,2-Trichloroethane	13.33	97	10657	4.5308 ug/kg	99
63)	2-Hexanone	13.25	43	10194	4.3408 ug/kg	96
64)	1,3-Dichloropropane	13.62	76	17885	4.5633 ug/kg	100
65)	Tetrachloroethene	13.75	164	10317	4.2981 ug/kg	97
66)	Dibromochloromethane	14.01	129	14152	4.3052 ug/kg	98
67)	1,2-Dibromoethane	14.28	107	12182	4.6694 ug/kg	99
68)	1-Chlorohexane	14.35	91	12970	3.9281 ug/kg	87
69)	Chlorobenzene	14.77	112	36017	4.5769 ug/kg	85
70)	1,1,1,2-Tetrachloroethane	14.80	131	12746	4.3130 ug/kg	95
71)	Ethylbenzene	14.80	106	17828	4.3974 ug/kg	92
72)	m-,p-Xylene	14.89	106	45904	9.1683 ug/kg	95
73)	o-Xylene	15.46	106	21754	4.5275 ug/kg	91
74)	Styrene	15.49	104	35390	4.3253 ug/kg	98
75)	Bromoform	15.98	173	9363	4.3382 ug/kg	96
76)	Isopropylbenzene	15.88	105	55721	4.3198 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	13197	4.8610 ug/kg	97
80)	1,2,3-Trichloropropane	16.29	110	5070	4.9243 ug/kg#	28
81)	trans-1,4-Dichloro-2-Buten	16.33	53	4246	4.0913 ug/kg#	39
82)	n-Propylbenzene	16.39	91	64689	4.5983 ug/kg	100
83)	Bromobenzene	16.52	156	15405	4.6386 ug/kg	90
84)	1,3,5-Trimethylbenzene	16.58	105	49527	4.6900 ug/kg	98
85)	2-Chlorotoluene	16.66	91	41422	4.3899 ug/kg	97
86)	4-Chlorotoluene	16.70	91	40985	4.6981 ug/kg	99
87)	a-Methylstyrene	16.98	118	20049	4.1667 ug/kg	90
88)	tert-Butylbenzene	17.04	134	10027	4.5290 ug/kg	84
89)	1,2,4-Trimethylbenzene	17.09	105	51253	4.6345 ug/kg	98
90)	sec-Butylbenzene	17.30	105	60716	4.4642 ug/kg	98
91)	p-Isopropyltoluene	17.46	119	53318	4.6453 ug/kg	98
92)	1,3-Dichlorobenzene	17.66	146	29255	4.4323 ug/kg	98
93)	1,4-Dichlorobenzene	17.79	146	30175	4.5730 ug/kg	91
94)	n-Butylbenzene	17.99	91	45964	4.3071 ug/kg	98
95)	1,2-Dichlorobenzene	18.30	146	27310	4.4593 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.30	157	3147	4.0028 ug/kg	87
97)	1,2,4-Trichlorobenzene	20.44	180	18372	4.2258 ug/kg	95
98)	Hexachlorobutadiene	20.59	225	9618	4.1968 ug/kg	90
99)	Naphthalene	20.81	128	47189	4.3274 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.11	180	17859	4.2352 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972901.D 8260SL.M Fri Feb 26 11:21:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

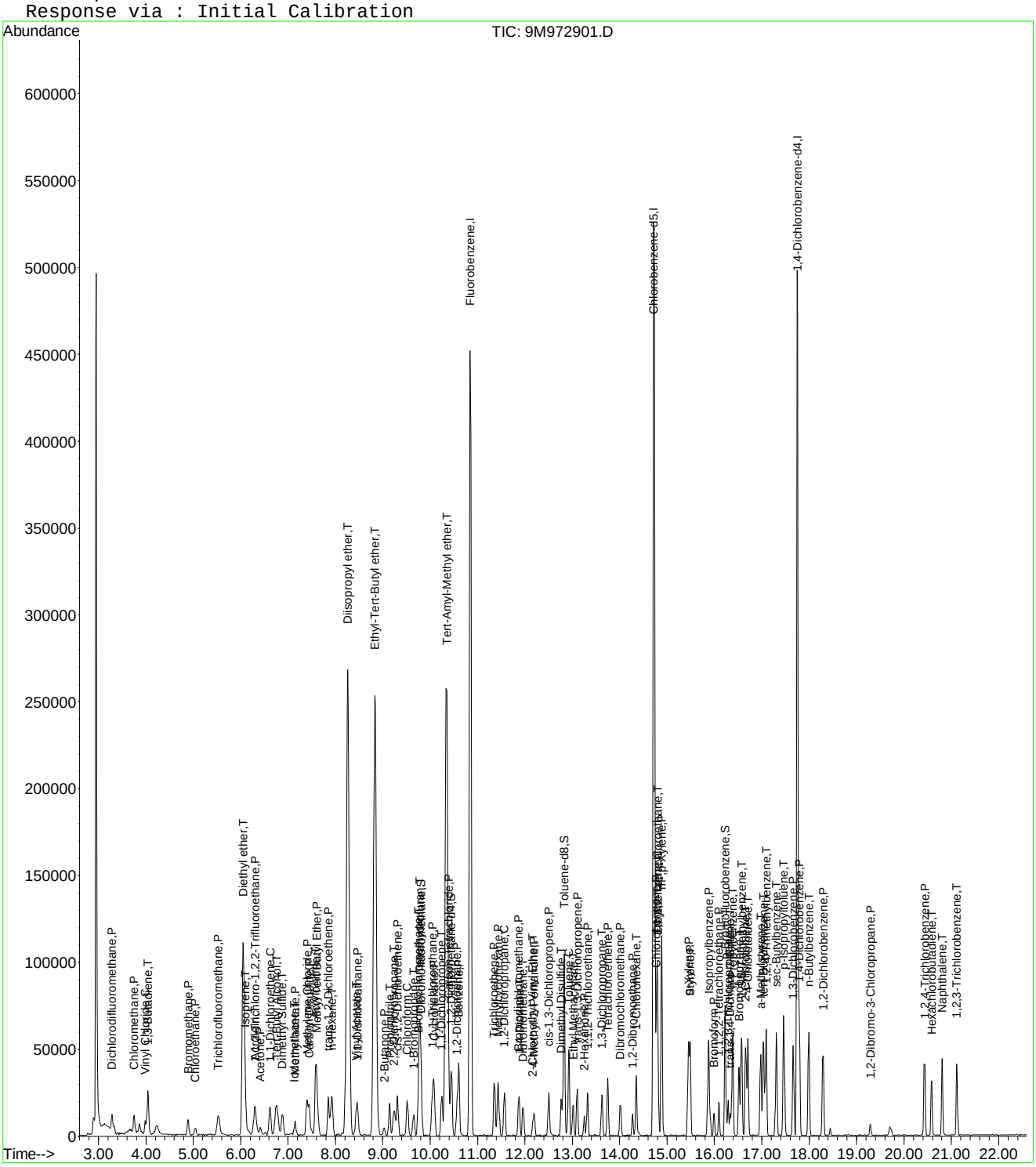

9M972901.D 8260SL.M Fri Feb 26 11:21:56 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	5.0000	3.9724	20.6	100	0.00
3	P	Chloromethane	5.0000	4.2763	14.5	100	0.00
4	C	Vinyl Chloride	5.0000	4.7964	4.1	100	0.00
5	T	1,3-Butadiene	5.0000	4.2710	14.6	100	0.00
6	P	Bromomethane	5.0000	4.2534	14.9	100	0.00
7	P	Chloroethane	5.0000	3.9741	20.5	100	0.00
8	P	Trichlorofluoromethane	5.0000	4.2400	15.2	100	0.00
9	T	Diethyl ether	50.0000	47.2164	5.6	100	0.00
10	T	Isoprene	5.0000	4.2747	14.5	100	0.01
11	T	Acrolein	25.0000	24.3428	2.6	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.6251	7.5	100	0.00
13	P	Acetone	5.0000	4.9429	1.1	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.2784	14.4	100	0.01
15	T	Tert-Butyl Alcohol	100.0000	90.7440	9.3	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.6977	6.0	100	0.00
17	T	Iodomethane	5.0000	5.3886	-7.8	100	0.00
18	P	Methyl acetate	5.0000	4.3976	12.0	100	0.01
19	P	Methylene Chloride	5.0000	4.2690	14.6	100	0.00
20	P	Carbon Disulfide	5.0000	4.3495	13.0	100	0.00
21	T	Acrylonitrile	25.0000	22.6731	9.3	100	0.00
22	P	Methyl Tert Butyl Ether	5.0000	4.4284	11.4	100	0.00
23	P	trans-1,2-Dichloroethene	5.0000	4.5233	9.5	100	0.00
24	T	n-Hexane	5.0000	4.4854	10.3	100	0.01
25	T	Diisopropyl ether	50.0000	46.5162	7.0	100	0.00
26	T	Vinyl Acetate	5.0000	4.5644	8.7	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.2575	14.8	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	45.9037	8.2	100	0.00
29	P	2-Butanone	5.0000	4.7092	5.8	100	0.00
30	T	Propionitrile	50.0000	48.2931	3.4	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.2251	15.5	100	-0.01
32	P	cis-1,2-Dichloroethene	5.0000	4.5340	9.3	100	0.00
33	C	Chloroform	5.0000	4.4982	10.0	100	0.00
34	T	1-Bromopropane	5.0000	5.8651	-17.3	100	0.00
35	T	Bromochloromethane	5.0000	4.7667	4.7	100	0.00
36	T	Tetrahydrofuran	50.0000	47.4100	5.2	100	0.00
37	S	Dibromofluoromethane	10.0000	9.8422	1.6	100	0.00
38	P	1,1,1-Trichloroethane	5.0000	4.4285	11.4	100	0.00
39	P	Cyclohexane	5.0000	4.4818	10.4	100	0.01
40	T	1,1-Dichloropropene	5.0000	4.3930	12.1	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	46.8330	6.3	100	0.00
42	P	Carbon Tetrachloride	5.0000	4.2254	15.5	100	0.00
43	S	1,2-Dichloroethane-d4	10.0000	10.2911	-2.9	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	5.0000	4.6852	6.3	100	0.00
46	P	Benzene	5.0000	4.3528	12.9	100	0.00
47	P	Trichloroethene	5.0000	4.3213	13.6	100	0.00
48	P	Methylcyclohexane	5.0000	4.2330	15.3	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.5684	8.6	100	0.00
50	T	1,4-Dioxane	100.0000	91.4657	8.5	100	0.00
51	P	Bromodichloromethane	5.0000	4.4660	10.7	100	0.00
52	T	Dibromomethane	5.0000	4.7438	5.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	5.7758	-15.5	100	0.00
54	P	4-Methyl-2-Pentanone	5.0000	3.8716	22.6	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	5.0000	4.3659	12.7	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.2144	15.7	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	-0.01
58	S	Toluene-d8	10.0000	9.5885	4.1	100	0.00
59	C	Toluene	5.0000	4.3206	13.6	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.0089	19.8	100	0.00
61	P	trans-1,3-Dichloropropene	5.0000	4.3707	12.6	100	0.00
62	P	1,1,2-Trichloroethane	5.0000	4.5309	9.4	100	0.00
63	P	2-Hexanone	5.0000	4.3408	13.2	100	0.00
64	T	1,3-Dichloropropane	5.0000	4.5633	8.7	100	-0.01
65	P	Tetrachloroethene	5.0000	4.2981	14.0	100	0.00
66	P	Dibromochloromethane	5.0000	4.3052	13.9	100	0.00
67	P	1,2-Dibromoethane	5.0000	4.6694	6.6	100	0.00
68	T	1-Chlorohexane	5.0000	3.9281	21.4	100	0.00
69	P	Chlorobenzene	5.0000	4.5769	8.5	100	0.00
70	T	1,1,1,2-Tetrachloroethane	5.0000	4.3130	13.7	100	0.00
71	C	Ethylbenzene	5.0000	4.3974	12.1	100	0.00
72	P	m-,p-Xylene	10.0000	9.1683	8.3	100	0.00
73	P	o-Xylene	5.0000	4.5275	9.5	100	0.00
74	P	Styrene	5.0000	4.3253	13.5	100	0.00
75	P	Bromoform	5.0000	4.3382	13.2	100	-0.01
76	P	Isopropylbenzene	5.0000	4.3198	13.6	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	5.0000	4.8610	2.8	100	-0.01
79	S	p-Bromofluorobenzene	10.0000	9.4138	5.9	100	0.00
80	T	1,2,3-Trichloropropane	5.0000	4.9243	1.5	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	5.0000	4.0913	18.2	100	0.00
82	T	n-Propylbenzene	5.0000	4.5983	8.0	100	0.00
83	T	Bromobenzene	5.0000	4.6386	7.2	100	0.00
84	T	1,3,5-Trimethylbenzene	5.0000	4.6900	6.2	100	0.00
85	T	2-Chlorotoluene	5.0000	4.3899	12.2	100	0.00
86	T	4-Chlorotoluene	5.0000	4.6981	6.0	100	0.00
87	T	a-Methylstyrene	5.0000	4.1667	16.7	100	0.00
88	T	tert-Butylbenzene	5.0000	4.5290	9.4	100	0.00
89	T	1,2,4-Trimethylbenzene	5.0000	4.6345	7.3	100	0.00
90	T	sec-Butylbenzene	5.0000	4.4642	10.7	100	0.00
91	T	p-Isopropyltoluene	5.0000	4.6453	7.1	100	0.00
92	P	1,3-Dichlorobenzene	5.0000	4.4323	11.4	100	0.00
93	P	1,4-Dichlorobenzene	5.0000	4.5730	8.5	100	-0.01
94	T	n-Butylbenzene	5.0000	4.3071	13.9	100	0.00
95	P	1,2-Dichlorobenzene	5.0000	4.4593	10.8	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	5.0000	4.0028	19.9	100	0.00
97	P	1,2,4-Trichlorobenzene	5.0000	4.2258	15.5	100	0.00
98	T	Hexachlorobutadiene	5.0000	4.1968	16.1	100	0.00
99	T	Naphthalene	5.0000	4.3274	13.5	100	0.00
100	T	1,2,3-Trichlorobenzene	5.0000	4.2352	15.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972901.D 8260SL.M Fri Feb 26 11:21:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972902.D Vial: 7
Acq On : 25 Feb 2016 18:59 Operator: ADC
Sample : WG558732-07 20.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	491006	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	357658	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	168257	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	47666	17.9094 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 35.82%#		
43) 1,2-Dichloroethane-d4	10.45	65	60269	18.0480 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 36.10%#		
58) Toluene-d8	12.82	98	163811	18.1074 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 36.22%#		
79) p-Bromofluorobenzene	16.23	95	58931	17.9870 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 35.98%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	78283	23.3598 ug/kg	99
3) Chloromethane	3.75	50	64951	20.2188 ug/kg	98
4) Vinyl Chloride	3.99	62	73167	22.7523 ug/kg	97
5) 1,3-Butadiene	4.04	54	64372	21.0404 ug/kg	98
6) Bromomethane	4.88	94	40556	19.4178 ug/kg	97
7) Chloroethane	5.04	64	27981	19.5307 ug/kg	97
8) Trichlorofluoromethane	5.53	101	98871	20.4994 ug/kg	98
9) Diethyl ether	6.06	59	191078	84.7472 ug/kg	99
10) Isoprene	6.10	67	59437	20.6414 ug/kg	98
11) Acrolein	6.30	56	18057	40.1641 ug/kg	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	50002	20.1026 ug/kg	100
13) Acetone	6.42	43	27164	20.4768 ug/kg	100
14) 1,1-Dichloroethene	6.62	61	94732	20.6460 ug/kg	98
15) Tert-Butyl Alcohol	6.75	59	85695	170.6872 ug/kg	97
16) Dimethyl Sulfide	6.88	62	40580	20.9258 ug/kg	99
17) Iodomethane	7.13	142	21330	17.5663 ug/kg	96
18) Methyl acetate	7.15	43	54770	21.9573 ug/kg	99
19) Methylene Chloride	7.41	84	51619	20.6564 ug/kg	95
20) Carbon Disulfide	7.45	76	145286	20.5545 ug/kg	97
21) Acrylonitrile	7.59	53	50918	41.2640 ug/kg	97
22) Methyl Tert Butyl Ether	7.61	73	149271	20.9731 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	84416	20.6434 ug/kg	98
24) n-Hexane	7.92	57	82582	19.5795 ug/kg	98
25) Diisopropyl ether	8.26	45	841729	85.9275 ug/kg	99
26) Vinyl Acetate	8.44	43	107114	19.1814 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	104490	20.3440 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	777976	85.4147 ug/kg	99
29) 2-Butanone	9.02	43	30691	19.3834 ug/kg	100
30) Propionitrile	9.14	54	41719	86.0996 ug/kg	99
31) 2,2-Dichloropropane	9.24	77	73960	19.2927 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	56404	21.0307 ug/kg	100
33) Chloroform	9.52	83	94621	20.0546 ug/kg	98
34) 1-Bromopropane	9.65	122	8251	20.7938 ug/kg	98
35) Bromochloromethane	9.75	130	38059	21.8457 ug/kg	99
36) Tetrahydrofuran	9.77	42	86589	84.8405 ug/kg	100
38) 1,1,1-Trichloroethane	10.05	97	85938	20.1411 ug/kg	99
39) Cyclohexane	10.09	56	96933	20.8373 ug/kg	98
40) 1,1-Dichloropropene	10.25	75	67544	20.1175 ug/kg	96
41) Tert-Amyl-Methyl ether	10.34	73	562826	85.0111 ug/kg	99
42) Carbon Tetrachloride	10.39	117	79566	20.1143 ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972902.D 8260SL.M Fri Feb 26 11:21:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972902.D Vial: 7
Acq On : 25 Feb 2016 18:59 Operator: ADC
Sample : WG558732-07 20.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	86857	20.9287 ug/kg	98
46)	Benzene	10.60	78	190747	20.2931 ug/kg	98
47)	Trichloroethene	11.35	130	61315	20.5871 ug/kg	99
48)	Methylcyclohexane	11.44	83	79384	21.2516 ug/kg	99
49)	1,2-Dichloropropane	11.56	63	54356	21.0584 ug/kg	98
50)	1,4-Dioxane	11.88	88	7054	182.1639 ug/kg	93
51)	Bromodichloromethane	11.87	83	73160	20.1115 ug/kg	99
52)	Dibromomethane	11.97	174	35844	20.9583 ug/kg	97
53)	2-Chloroethyl Vinyl Ether	12.17	63	11048	17.4432 ug/kg	94
54)	4-Methyl-2-Pentanone	12.20	58	22247	19.6364 ug/kg	96
55)	cis-1,3-Dichloropropene	12.50	75	77533	20.4577 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	77400	20.3222 ug/kg	99
59)	Toluene	12.93	91	209919	20.5421 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	58827	20.7683 ug/kg	99
61)	trans-1,3-Dichloropropene	13.11	75	73778	20.0452 ug/kg	98
62)	1,1,2-Trichloroethane	13.32	97	45475	21.1838 ug/kg	98
63)	2-Hexanone	13.25	43	40183	18.7479 ug/kg	97
64)	1,3-Dichloropropane	13.62	76	73060	20.4249 ug/kg	95
65)	Tetrachloroethene	13.75	164	44423	20.2778 ug/kg	96
66)	Dibromochloromethane	14.01	129	59220	19.7391 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	48648	20.4311 ug/kg	97
68)	1-Chlorohexane	14.35	91	64519	21.4099 ug/kg	96
69)	Chlorobenzene	14.77	112	150639	20.9742 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	55462	20.5631 ug/kg	99
71)	Ethylbenzene	14.79	106	77813	21.0297 ug/kg	100
72)	m-,p-Xylene	14.89	106	192168	42.0536 ug/kg	98
73)	o-Xylene	15.45	106	92490	21.0911 ug/kg	98
74)	Styrene	15.49	104	154534	20.6939 ug/kg	100
75)	Bromoform	16.00	173	39818	20.2142 ug/kg	98
76)	Isopropylbenzene	15.87	105	249418	21.1865 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	53687	21.0342 ug/kg	98
80)	1,2,3-Trichloropropane	16.28	110	19658	20.3087 ug/kg	98
81)	trans-1,4-Dichloro-2-Buten	16.33	53	21143	21.6696 ug/kg	89
82)	n-Propylbenzene	16.39	91	283998	21.4728 ug/kg	98
83)	Bromobenzene	16.52	156	65363	20.9343 ug/kg	95
84)	1,3,5-Trimethylbenzene	16.57	105	212735	21.4278 ug/kg	99
85)	2-Chlorotoluene	16.66	91	189159	21.3235 ug/kg	99
86)	4-Chlorotoluene	16.70	91	171741	20.9401 ug/kg	99
87)	a-Methylstyrene	16.98	118	95360	21.0801 ug/kg	99
88)	tert-Butylbenzene	17.03	134	43749	21.0188 ug/kg	90
89)	1,2,4-Trimethylbenzene	17.08	105	218350	21.0010 ug/kg	99
90)	sec-Butylbenzene	17.31	105	268054	20.9635 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	225612	20.9076 ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	122605	19.7580 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	124659	20.0949 ug/kg	99
94)	n-Butylbenzene	17.99	91	199655	19.8998 ug/kg	99
95)	1,2-Dichlorobenzene	18.30	146	115021	19.9768 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	14138	19.1277 ug/kg	95
97)	1,2,4-Trichlorobenzene	20.43	180	77418	18.9408 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	41508	19.2651 ug/kg	96
99)	Naphthalene	20.81	128	204933	19.9897 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.12	180	75616	19.0736 ug/kg	98

(#) = qualifier out of range (m) = manual integration
9M972902.D 8260SL.M Fri Feb 26 11:21:57 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972902.D Vial: 7
Acq On : 25 Feb 2016 18:59 Operator: ADC
Sample : WG558732-07 20.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

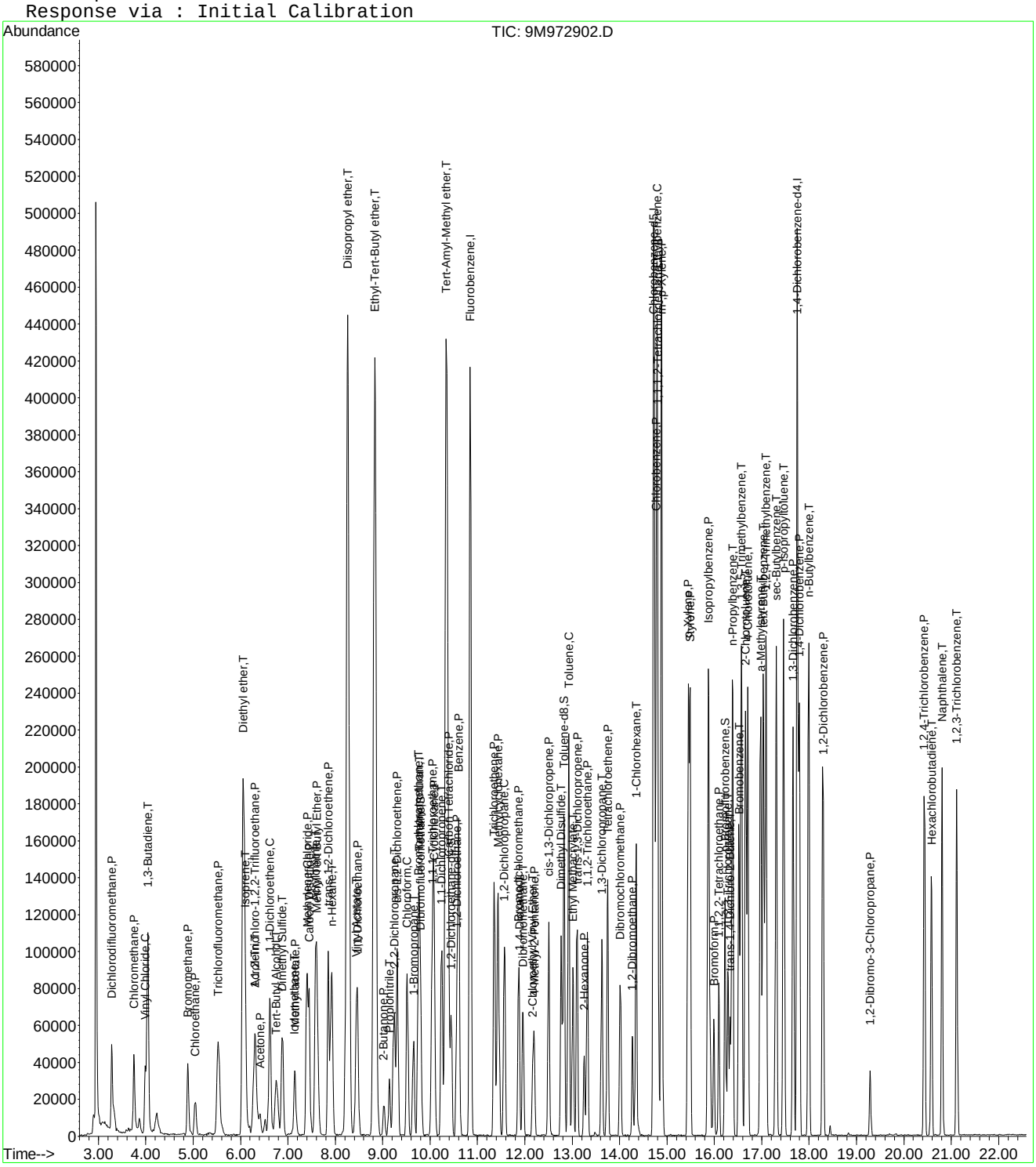

9M972902.D 8260SL.M Fri Feb 26 11:21:57 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972903.D Vial: 8
Acq On : 25 Feb 2016 19:29 Operator: ADC
Sample : WG558732-08 100.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:57 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	535022	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	390279	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.75	152	187456	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	305515	105.3466 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 210.70%#		
43) 1,2-Dichloroethane-d4	10.45	65	383447	105.3793 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 210.76%#		
58) Toluene-d8	12.83	98	1052175	106.5842 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 213.16%#		
79) p-Bromofluorobenzene	16.23	95	403966	110.6707 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 221.34%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	340079	93.1314 ug/kg	98
3) Chloromethane	3.74	50	316834	90.5143 ug/kg	100
4) Vinyl Chloride	3.99	62	366384	104.5591 ug/kg	99
5) 1,3-Butadiene	4.04	54	317949	95.3739 ug/kg	98
6) Bromomethane	4.88	94	198493	87.2180 ug/kg	99
7) Chloroethane	5.04	64	148539	95.1503 ug/kg	96
8) Trichlorofluoromethane	5.53	101	502703	95.6532 ug/kg	99
9) Diethyl ether	6.06	59	457873	186.3696 ug/kg	99
10) Isoprene	6.09	67	302269	96.3367 ug/kg	100
11) Acrolein	6.30	56	49319	100.6749 ug/kg	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	264925	97.7467 ug/kg	100
13) Acetone	6.41	43	126959	96.0965 ug/kg	97
14) 1,1-Dichloroethene	6.61	61	485466	97.0986 ug/kg	99
15) Tert-Butyl Alcohol	6.77	59	202804	370.7125 ug/kg	97
16) Dimethyl Sulfide	6.88	62	209613	99.1979 ug/kg	97
17) Iodomethane	7.14	142	134789	88.4431 ug/kg	96
18) Methyl acetate	7.15	43	256770	94.4705 ug/kg	99
19) Methylene Chloride	7.40	84	256919	94.3530 ug/kg	100
20) Carbon Disulfide	7.45	76	725343	94.1764 ug/kg	99
21) Acrylonitrile	7.59	53	131913	98.1077 ug/kg	97
22) Methyl Tert Butyl Ether	7.61	73	763125	98.4009 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	435514	97.7404 ug/kg	99
24) n-Hexane	7.92	57	458951	99.8615 ug/kg	98
25) Diisopropyl ether	8.26	45	1991599	186.5850 ug/kg	99
26) Vinyl Acetate	8.44	43	593217	97.4908 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	533571	95.3384 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	1850360	186.4394 ug/kg	100
29) 2-Butanone	9.03	43	167064	96.8316 ug/kg	99
30) Propionitrile	9.14	54	102467	194.0735 ug/kg	99
31) 2,2-Dichloropropane	9.24	77	409808	98.1051 ug/kg	98
32) cis-1,2-Dichloroethene	9.31	96	291782	99.8428 ug/kg	100
33) Chloroform	9.52	83	491651	95.6310 ug/kg	100
34) 1-Bromopropane	9.65	122	43084	95.7559 ug/kg	98
35) Bromochloromethane	9.75	130	191150	100.6929 ug/kg	97
36) Tetrahydrofuran	9.78	42	206962	186.0999 ug/kg	99
38) 1,1,1-Trichloroethane	10.04	97	454248	97.7025 ug/kg	99
39) Cyclohexane	10.08	56	497594	98.1657 ug/kg	99
40) 1,1-Dichloropropene	10.24	75	355996	97.3080 ug/kg	98
41) Tert-Amyl-Methyl ether	10.35	73	1353122	187.5659 ug/kg	99
42) Carbon Tetrachloride	10.39	117	419252	97.2674 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972903.D Vial: 8
Acq On : 25 Feb 2016 19:29 Operator: ADC
Sample : WG558732-08 100.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:57 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	441828	97.7027	ug/kg	98
46)	Benzene	10.60	78	946247	92.3868	ug/kg	100
47)	Trichloroethene	11.35	130	316701	97.5872	ug/kg	98
48)	Methylcyclohexane	11.44	83	420776	103.3770	ug/kg	100
49)	1,2-Dichloropropane	11.56	63	273398	97.2049	ug/kg	97
50)	1,4-Dioxane	11.89	88	15240	361.1826	ug/kg	95
51)	Bromodichloromethane	11.87	83	384453	96.9905	ug/kg	100
52)	Dibromomethane	11.96	174	178770	95.9288	ug/kg	100
53)	2-Chloroethyl Vinyl Ether	12.17	63	71336	89.4187	ug/kg	97
54)	4-Methyl-2-Pentanone	12.19	58	126118	102.1606	ug/kg	99
55)	cis-1,3-Dichloropropene	12.50	75	407392	98.6500	ug/kg	99
56)	Dimethyl Disulfide	12.77	94	430523	103.7388	ug/kg	99
59)	Toluene	12.93	91	1070303	95.9828	ug/kg	100
60)	Ethyl Methacrylate	13.01	69	310336	100.4033	ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	395340	98.4345	ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	234168	99.9657	ug/kg	97
63)	2-Hexanone	13.25	43	238254	101.8692	ug/kg	99
64)	1,3-Dichloropropane	13.62	76	372307	95.3836	ug/kg	98
65)	Tetrachloroethene	13.75	164	235384	98.4650	ug/kg	97
66)	Dibromochloromethane	14.01	129	316240	96.5980	ug/kg	100
67)	1,2-Dibromoethane	14.28	107	254663	98.0133	ug/kg	98
68)	1-Chlorohexane	14.35	91	341938	103.9841	ug/kg	98
69)	Chlorobenzene	14.77	112	744916	95.0493	ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.80	131	289798	98.4650	ug/kg	98
71)	Ethylbenzene	14.79	106	397428	98.4311	ug/kg	99
72)	m-,p-Xylene	14.89	106	955121	191.5462	ug/kg	97
73)	o-Xylene	15.45	106	475355	99.3381	ug/kg	100
74)	Styrene	15.49	104	817155	100.2803	ug/kg	100
75)	Bromoform	15.99	173	212807	99.0046	ug/kg	98
76)	Isopropylbenzene	15.88	105	1283494	99.9122	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	279744	98.3764	ug/kg	100
80)	1,2,3-Trichloropropane	16.29	110	110421	102.3924	ug/kg	94
81)	trans-1,4-Dichloro-2-Buten	16.33	53	116410	107.0899	ug/kg	87
82)	n-Propylbenzene	16.39	91	1458178	98.9594	ug/kg	99
83)	Bromobenzene	16.52	156	334600	96.1892	ug/kg	97
84)	1,3,5-Trimethylbenzene	16.57	105	1100766	99.5195	ug/kg	99
85)	2-Chlorotoluene	16.66	91	937812	94.8900	ug/kg	100
86)	4-Chlorotoluene	16.70	91	906777	99.2383	ug/kg	100
87)	a-Methylstyrene	16.98	118	508276	100.8508	ug/kg	99
88)	tert-Butylbenzene	17.04	134	234437	101.0972	ug/kg	99
89)	1,2,4-Trimethylbenzene	17.09	105	1125260	97.1435	ug/kg	99
90)	sec-Butylbenzene	17.30	105	1425754	100.0828	ug/kg	100
91)	p-Isopropyltoluene	17.46	119	1215596	101.1125	ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	644471	93.2206	ug/kg	100
93)	1,4-Dichlorobenzene	17.79	146	646907	93.6002	ug/kg	99
94)	n-Butylbenzene	17.99	91	1131901	101.2628	ug/kg	99
95)	1,2-Dichlorobenzene	18.30	146	622851	97.0971	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.30	157	88939	108.0040	ug/kg	99
97)	1,2,4-Trichlorobenzene	20.44	180	466688	102.4843	ug/kg	99
98)	Hexachlorobutadiene	20.59	225	252514	105.1960	ug/kg	99
99)	Naphthalene	20.81	128	1208454	105.8030	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	456274	103.3044	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972903.D 8260SL.M Fri Feb 26 11:21:58 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972903.D Vial: 8
Acq On : 25 Feb 2016 19:29 Operator: ADC
Sample : WG558732-08 100.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

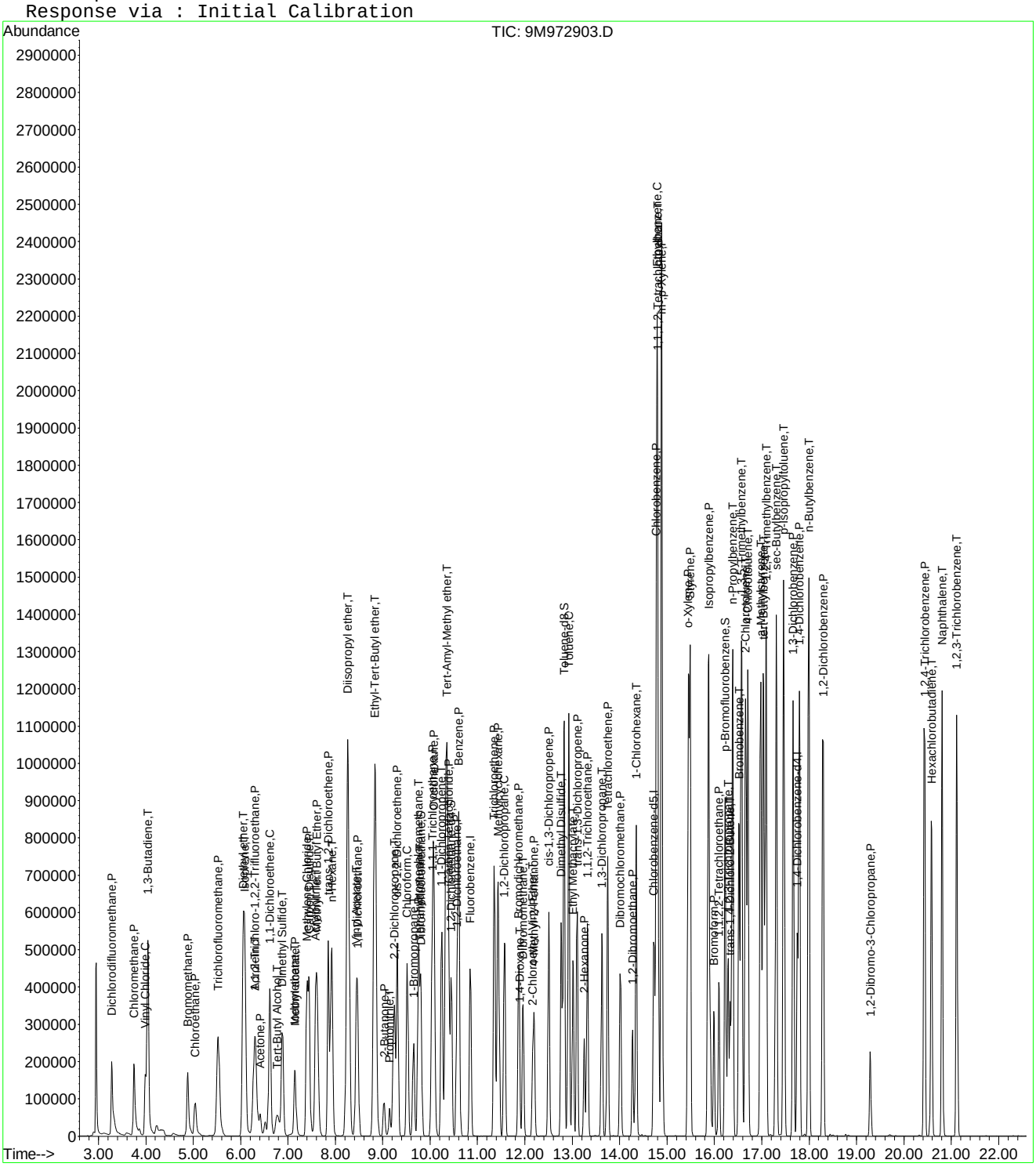

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972904.D Vial: 9
Acq On : 25 Feb 2016 20:00 Operator: ADC
Sample : WG558732-09 200.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:58 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	542388	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	396894	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	212175	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	595362	202.5026 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery	= 405.00%#	
43) 1,2-Dichloroethane-d4	10.45	65	716316	194.1852 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery	= 388.38%#	
58) Toluene-d8	12.82	98	2013255	200.5415 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery	= 401.08%#	
79) p-Bromofluorobenzene	16.23	95	807150	195.3653 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery	= 390.74%#	

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.28	85	774894	209.3245 ug/kg	100
3) Chloromethane	3.75	50	750862	211.5959 ug/kg	100
4) Vinyl Chloride	3.99	62	770550	216.9141 ug/kg	100
5) 1,3-Butadiene	4.04	54	695631	205.8318 ug/kg	99
6) Bromomethane	4.88	94	470946	204.1239 ug/kg	97
7) Chloroethane	5.04	64	374502	236.6386 ug/kg	98
8) Trichlorofluoromethane	5.52	101	1120886	210.3832 ug/kg	99
10) Isoprene	6.09	67	690766	217.1654 ug/kg	97
11) Acrolein	6.31	56	2288	4.6071 ug/kg	86
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	592415	215.6090 ug/kg	100
13) Acetone	6.42	43	268070	202.8703 ug/kg	99
14) 1,1-Dichloroethene	6.62	61	1084122	213.8917 ug/kg	99
15) Tert-Butyl Alcohol	6.78	59	290	0.5229 ug/kg#	58
16) Dimethyl Sulfide	6.88	62	486231	226.9805 ug/kg	99
17) Iodomethane	7.14	142	341644	216.9305 ug/kg	98
18) Methyl acetate	7.15	43	558766	202.7886 ug/kg	97
19) Methylene Chloride	7.40	84	606998	219.8913 ug/kg	98
20) Carbon Disulfide	7.44	76	1650167	211.3432 ug/kg	98
21) Acrylonitrile	7.61	53	18860	13.8363 ug/kg#	28
22) Methyl Tert Butyl Ether	7.61	73	1710517	217.5666 ug/kg	99
23) trans-1,2-Dichloroethene	7.84	61	967656	214.2173 ug/kg	99
24) n-Hexane	7.92	57	1006142	215.9497 ug/kg	97
26) Vinyl Acetate	8.43	43	1320060	213.9959 ug/kg	98
27) 1,1-Dichloroethane	8.46	63	1199515	211.4185 ug/kg	100
29) 2-Butanone	9.02	43	373284	213.4201 ug/kg	100
31) 2,2-Dichloropropane	9.24	77	904865	213.6764 ug/kg	100
32) cis-1,2-Dichloroethene	9.31	96	649726	219.3058 ug/kg	100
33) Chloroform	9.52	83	1094765	210.0507 ug/kg	100
34) 1-Bromopropane	9.66	122	98189	213.9851 ug/kg	100
35) Bromochloromethane	9.75	130	427351	222.0603 ug/kg	99
36) Tetrahydrofuran	9.77	42	2491	2.2095 ug/kg	93
38) 1,1,1-Trichloroethane	10.05	97	1020636	216.5435 ug/kg	100
39) Cyclohexane	10.08	56	1092323	212.5677 ug/kg	98
40) 1,1-Dichloropropene	10.24	75	780375	210.4109 ug/kg	98
42) Carbon Tetrachloride	10.39	117	950685	217.5657 ug/kg	100
45) 1,2-Dichloroethane	10.56	62	975428	212.7698 ug/kg	98
46) Benzene	10.61	78	2107212	202.9435 ug/kg	100
47) Trichloroethene	11.36	130	696420	211.6783 ug/kg	98
48) Methylcyclohexane	11.43	83	922594	223.5862 ug/kg	100
49) 1,2-Dichloropropane	11.57	63	613480	215.1567 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972904.D Vial: 9
Acq On : 25 Feb 2016 20:00 Operator: ADC
Sample : WG558732-09 200.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:58 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
50)	1,4-Dioxane	11.86	88	821	19.1932	ug/kg#	7
51)	Bromodichloromethane	11.87	83	861318	214.3439	ug/kg	99
52)	Dibromomethane	11.96	174	401145	212.3328	ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	173854	210.9891	ug/kg	98
54)	4-Methyl-2-Pentanone	12.19	58	281550	224.9694	ug/kg	99
55)	cis-1,3-Dichloropropene	12.51	75	917528	219.1621	ug/kg	100
56)	Dimethyl Disulfide	12.77	94	993447	236.1300	ug/kg	99
59)	Toluene	12.93	91	2353264	207.5190	ug/kg	100
60)	Ethyl Methacrylate	13.01	69	698780	222.3090	ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	892986	218.6361	ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	510766	214.4105	ug/kg	98
63)	2-Hexanone	13.26	43	551431	231.8433	ug/kg	99
64)	1,3-Dichloropropane	13.63	76	842104	212.1481	ug/kg	99
65)	Tetrachloroethene	13.75	164	518091	213.1138	ug/kg	97
66)	Dibromochloromethane	14.02	129	723489	217.3121	ug/kg	99
67)	1,2-Dibromoethane	14.27	107	560802	212.2411	ug/kg	99
68)	1-Chlorohexane	14.35	91	757279	226.4519	ug/kg	100
69)	Chlorobenzene	14.78	112	1626715	204.1050	ug/kg	98
70)	1,1,1,2-Tetrachloroethane	14.81	131	649903	217.1378	ug/kg	97
71)	Ethylbenzene	14.80	106	871321	212.2035	ug/kg	99
72)	m-,p-Xylene	14.89	106	2089330	412.0243	ug/kg	98
73)	o-Xylene	15.45	106	1065692	218.9929	ug/kg	98
74)	Styrene	15.49	104	1839951	222.0334	ug/kg	100
75)	Bromoform	15.99	173	511700	234.0915	ug/kg	99
76)	Isopropylbenzene	15.87	105	2873816	219.9805	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	662688	205.8943	ug/kg	99
80)	1,2,3-Trichloropropane	16.29	110	257281	210.7797	ug/kg	98
81)	trans-1,4-Dichloro-2-Buten	16.34	53	281460	228.7601	ug/kg	90
82)	n-Propylbenzene	16.38	91	3244636	194.5439	ug/kg	100
83)	Bromobenzene	16.52	156	759998	193.0269	ug/kg	95
84)	1,3,5-Trimethylbenzene	16.57	105	2471747	197.4342	ug/kg	99
85)	2-Chlorotoluene	16.66	91	2218317	198.3049	ug/kg	100
86)	4-Chlorotoluene	16.71	91	1934954	187.0917	ug/kg	100
87)	a-Methylstyrene	16.98	118	1205032	211.2436	ug/kg	99
88)	tert-Butylbenzene	17.03	134	526001	200.4032	ug/kg	87
89)	1,2,4-Trimethylbenzene	17.09	105	2520611	192.2523	ug/kg	100
90)	sec-Butylbenzene	17.31	105	3206494	198.8615	ug/kg	100
91)	p-Isopropyltoluene	17.47	119	2752661	202.2895	ug/kg	100
92)	1,3-Dichlorobenzene	17.67	146	1508843	192.8225	ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	1522857	194.6701	ug/kg	99
94)	n-Butylbenzene	17.99	91	2603240	205.7600	ug/kg	100
95)	1,2-Dichlorobenzene	18.29	146	1515803	208.7710	ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	205456	220.4304	ug/kg	98
97)	1,2,4-Trichlorobenzene	20.43	180	1061631	205.9726	ug/kg	99
98)	Hexachlorobutadiene	20.58	225	612598	225.4729	ug/kg	100
99)	Naphthalene	20.81	128	2666581	206.2661	ug/kg	99
100)	1,2,3-Trichlorobenzene	21.12	180	1022740	204.5802	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972904.D 8260SL.M Fri Feb 26 11:21:58 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972904.D Vial: 9
Acq On : 25 Feb 2016 20:00 Operator: ADC
Sample : WG558732-09 200.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

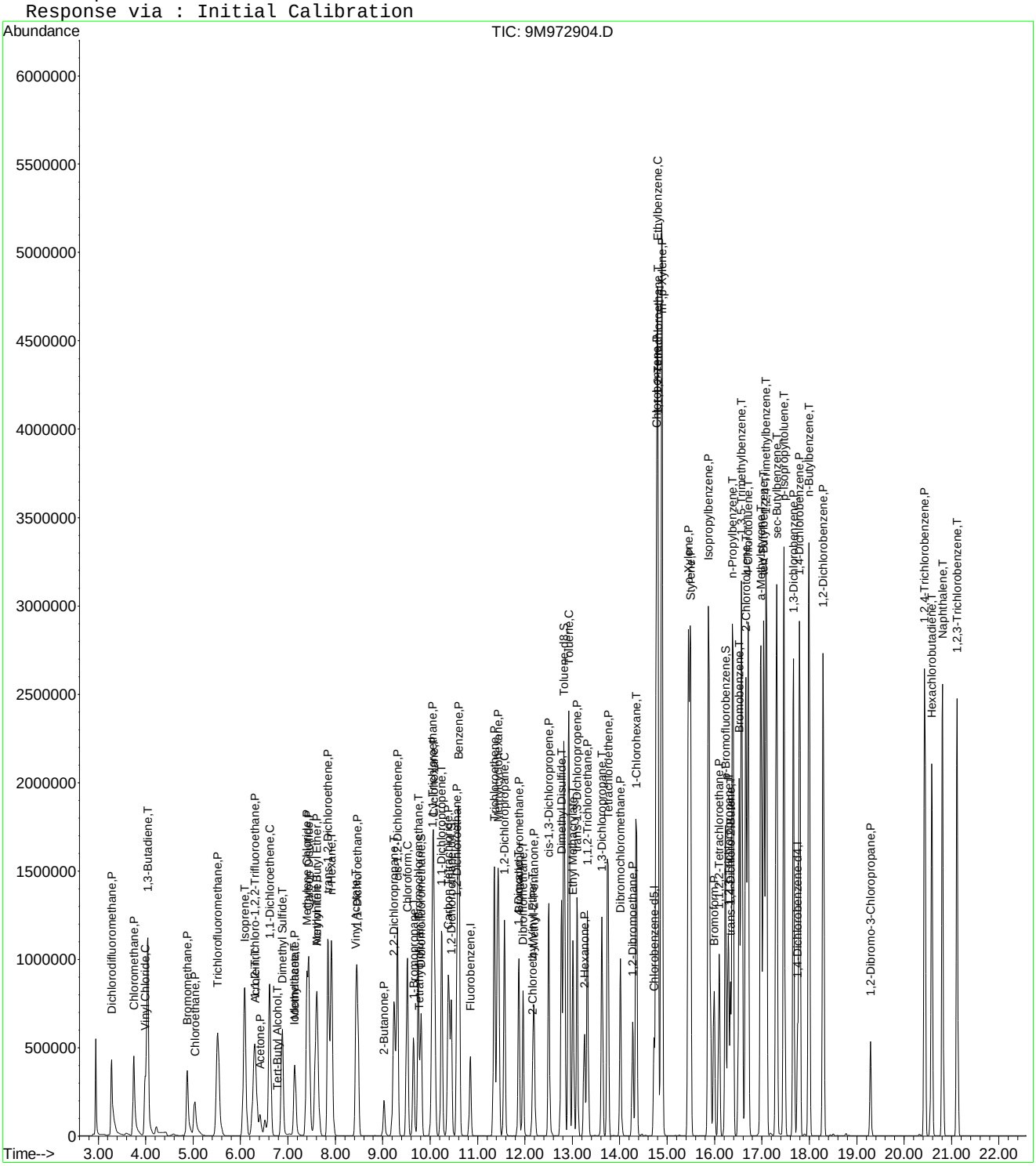

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972905.D Vial: 10
Acq On : 25 Feb 2016 20:30 Operator: ADC
Sample : WG558732-10 300.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:59 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	626979	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	468521	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	224223	50.00 ug/kg	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.81	111	520	0.1530 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.30%#	
43) 1,2-Dichloroethane-d4	10.45	65	1794	0.4207 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.84%#	
58) Toluene-d8	12.82	98	7789	0.6573 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	1.32%#	
79) p-Bromofluorobenzene	16.23	95	6216	1.4237 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	2.84%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	1155483	270.0216 ug/kg	98
3) Chloromethane	3.75	50	1142773	278.5891 ug/kg	100
4) Vinyl Chloride	3.98	62	1112221	270.8539 ug/kg	99
5) 1,3-Butadiene	4.03	54	1100483	281.6917 ug/kg	98
6) Bromomethane	4.87	94	749711	281.1083 ug/kg	98
7) Chloroethane	5.04	64	601337	328.7051 ug/kg	98
8) Trichlorofluoromethane	5.52	101	1778447	288.7670 ug/kg	99
9) Diethyl ether	6.06	59	869609	302.0457 ug/kg	99
10) Isoprene	6.08	67	1108410	301.4513 ug/kg	98
11) Acrolein	6.30	56	93621	163.0794 ug/kg	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	943691	297.1172 ug/kg	99
13) Acetone	6.42	43	369915	242.6618 ug/kg	95
14) 1,1-Dichloroethene	6.61	61	1715009	292.7111 ug/kg	98
15) Tert-Butyl Alcohol	6.80	59	188151	293.4850 ug/kg	89
16) Dimethyl Sulfide	6.88	62	763075	308.1557 ug/kg	99
17) Iodomethane	7.14	142	532480	291.5128 ug/kg	99
18) Methyl acetate	7.15	43	879657	276.1748 ug/kg	98
19) Methylene Chloride	7.40	84	937262	293.7237 ug/kg	96
20) Carbon Disulfide	7.44	76	2640380	292.5391 ug/kg	98
21) Acrylonitrile	7.59	53	252681	160.3640 ug/kg	94
22) Methyl Tert Butyl Ether	7.61	73	2699681	297.0533 ug/kg	98
23) trans-1,2-Dichloroethene	7.84	61	1548353	296.5245 ug/kg	100
24) n-Hexane	7.92	57	1608467	298.6501 ug/kg	98
25) Diisopropyl ether	8.26	45	3742238	299.1747 ug/kg	100
26) Vinyl Acetate	8.43	43	2097407	294.1383 ug/kg	99
27) 1,1-Dichloroethane	8.47	63	1881635	286.8995 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	3515202	302.2390 ug/kg	99
29) 2-Butanone	9.02	43	559900	276.9258 ug/kg	100
30) Propionitrile	9.14	54	182998	295.7653 ug/kg	100
31) 2,2-Dichloropropane	9.24	77	1439671	294.0988 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	1040893	303.9366 ug/kg	99
33) Chloroform	9.52	83	1708608	283.5977 ug/kg	99
34) 1-Bromopropane	9.65	122	152776	287.6719 ug/kg	98
35) Bromochloromethane	9.75	130	668631	300.5590 ug/kg	98
36) Tetrahydrofuran	9.77	42	365915	280.7723 ug/kg	97
38) 1,1,1-Trichloroethane	10.05	97	1606962	294.9423 ug/kg	100
39) Cyclohexane	10.08	56	1746722	294.0540 ug/kg	99
40) 1,1-Dichloropropene	10.24	75	1258569	293.5615 ug/kg	98
41) Tert-Amyl-Methyl ether	10.34	73	2573262	304.3824 ug/kg	98
42) Carbon Tetrachloride	10.39	117	1494872	295.9476 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972905.D Vial: 10
Acq On : 25 Feb 2016 20:30 Operator: ADC
Sample : WG558732-10 300.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:59 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.57	62	1526616	288.0725 ug/kg	98
46)	Benzene	10.61	78	3320959	276.6861 ug/kg	99
47)	Trichloroethene	11.36	130	1102750	289.9607 ug/kg	98
48)	Methylcyclohexane	11.43	83	1476436	309.5324 ug/kg	98
49)	1,2-Dichloropropane	11.57	63	980423	297.4576 ug/kg	99
50)	1,4-Dioxane	11.89	88	31126	629.4828 ug/kg	81
51)	Bromodichloromethane	11.87	83	1358159	292.3851 ug/kg	99
52)	Dibromomethane	11.96	174	632731	289.7290 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	287132	300.2354 ug/kg	96
54)	4-Methyl-2-Pentanone	12.19	58	438042	302.7895 ug/kg	99
55)	cis-1,3-Dichloropropene	12.51	75	1436858	296.9047 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	1505953	309.6528 ug/kg	95
59)	Toluene	12.93	91	3720819	277.9530 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	1096301	295.4554 ug/kg	100
61)	trans-1,3-Dichloropropene	13.10	75	1416217	293.7329 ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	820836	291.8946 ug/kg	99
63)	2-Hexanone	13.26	43	814427	290.0688 ug/kg	100
64)	1,3-Dichloropropane	13.63	76	1322191	282.1714 ug/kg	100
65)	Tetrachloroethene	13.75	164	815946	284.3233 ug/kg	98
66)	Dibromochloromethane	14.02	129	1136128	289.0845 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	889642	285.2204 ug/kg	99
68)	1-Chlorohexane	14.34	91	1188786	301.1405 ug/kg	99
69)	Chlorobenzene	14.78	112	2558374	271.9265 ug/kg	97
70)	1,1,1,2-Tetrachloroethane	14.81	131	1019464	288.5389 ug/kg	97
71)	Ethylbenzene	14.80	106	1372834	283.2291 ug/kg	97
72)	m-,p-Xylene	14.89	106	3241616	541.5304 ug/kg	97
73)	o-Xylene	15.45	106	1663016	289.4945 ug/kg	99
74)	Styrene	15.49	104	2869824	293.3680 ug/kg	99
75)	Bromoform	15.99	173	788638	305.6282 ug/kg	99
76)	Isopropylbenzene	15.87	105	4421589	286.7141 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	1002445	294.7201 ug/kg	99
80)	1,2,3-Trichloropropane	16.28	110	380025	294.6098 ug/kg	66
81)	trans-1,4-Dichloro-2-Buten	16.34	53	413901	318.3274 ug/kg	57
82)	n-Propylbenzene	16.38	91	4980503	282.5783 ug/kg	99
83)	Bromobenzene	16.52	156	1176440	282.7414 ug/kg	93
84)	1,3,5-Trimethylbenzene	16.57	105	3788936	286.3846 ug/kg	99
85)	2-Chlorotoluene	16.66	91	3458872	292.5892 ug/kg	100
86)	4-Chlorotoluene	16.71	91	2929432	268.0287 ug/kg	100
87)	a-Methylstyrene	16.98	118	1823514	302.4880 ug/kg	100
88)	tert-Butylbenzene	17.03	134	795019	286.6221 ug/kg	86
89)	1,2,4-Trimethylbenzene	17.09	105	3829230	276.3702 ug/kg	100
90)	sec-Butylbenzene	17.31	105	4833765	283.6742 ug/kg	99
91)	p-Isopropyltoluene	17.47	119	4134027	287.4802 ug/kg	99
92)	1,3-Dichlorobenzene	17.67	146	2260017	273.2999 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	2229106	269.6404 ug/kg	99
94)	n-Butylbenzene	17.99	91	3871124	289.5329 ug/kg	100
95)	1,2-Dichlorobenzene	18.29	146	2162642	281.8552 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	293112	297.5776 ug/kg	98
97)	1,2,4-Trichlorobenzene	20.43	180	1514973	278.1345 ug/kg	100
98)	Hexachlorobutadiene	20.58	225	846867	294.9498 ug/kg	99
99)	Naphthalene	20.81	128	3754823	274.8379 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.12	180	1451357	274.7177 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972905.D 8260SL.M Fri Feb 26 11:21:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972905.D Vial: 10
Acq On : 25 Feb 2016 20:30 Operator: ADC
Sample : WG558732-10 300.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

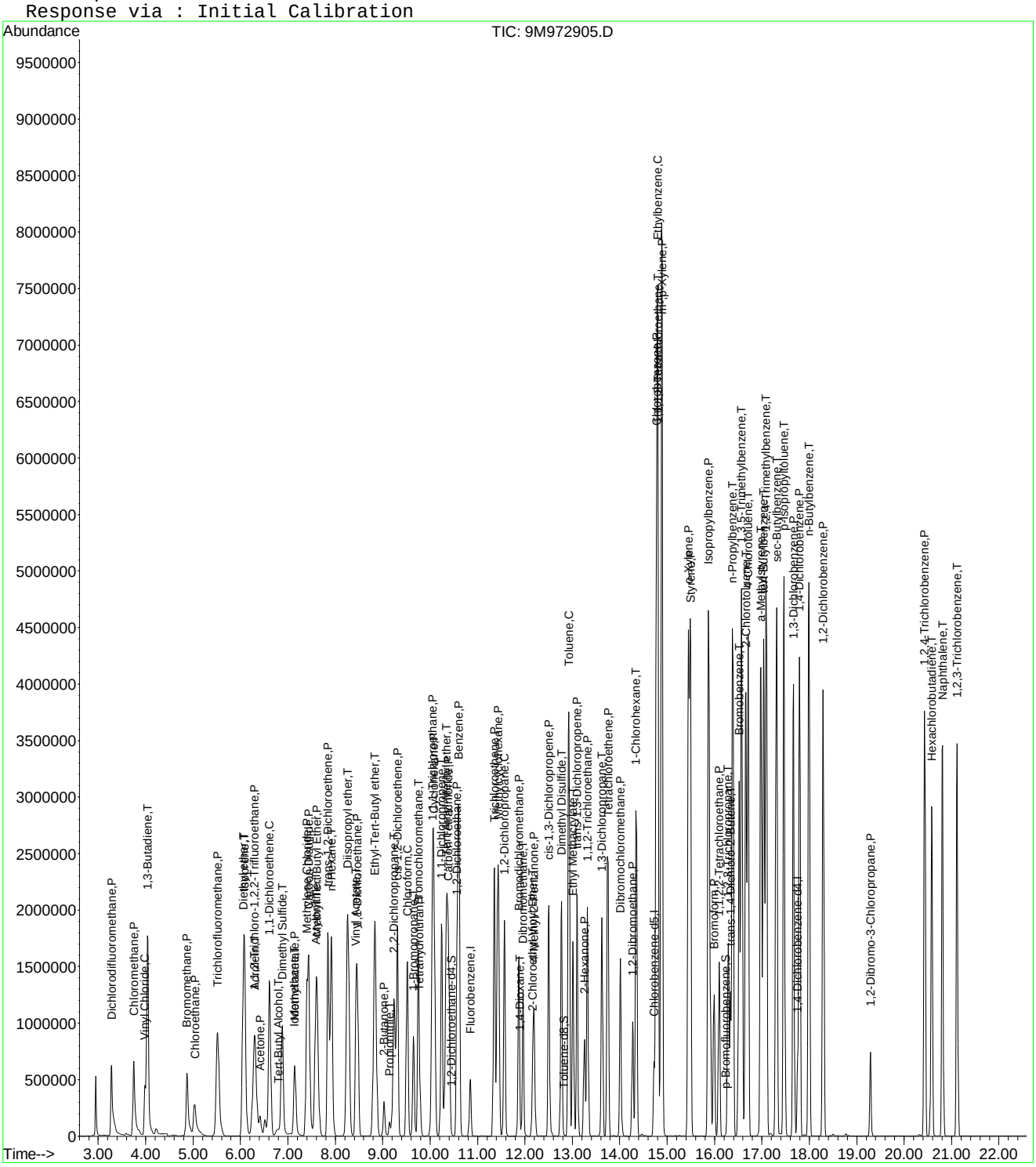

9M972905.D 8260SL.M Fri Feb 26 11:21:59 2016 Page 3

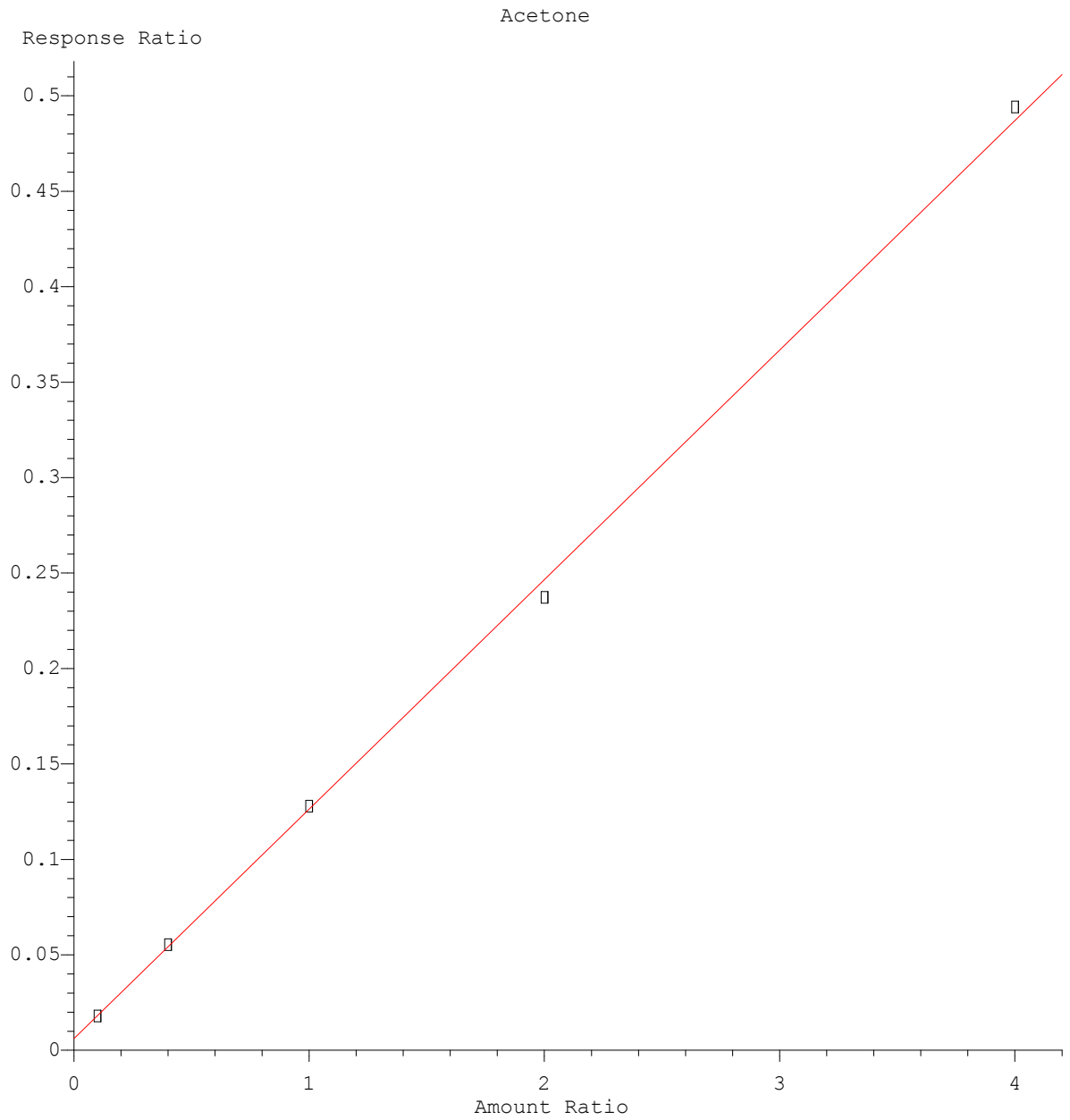

Resp Ratio = 1.20e-001 * Amt + 6.05e-003
Coef of Det (r^2) = 0.999 Curve Fit: wlr(1/a)

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

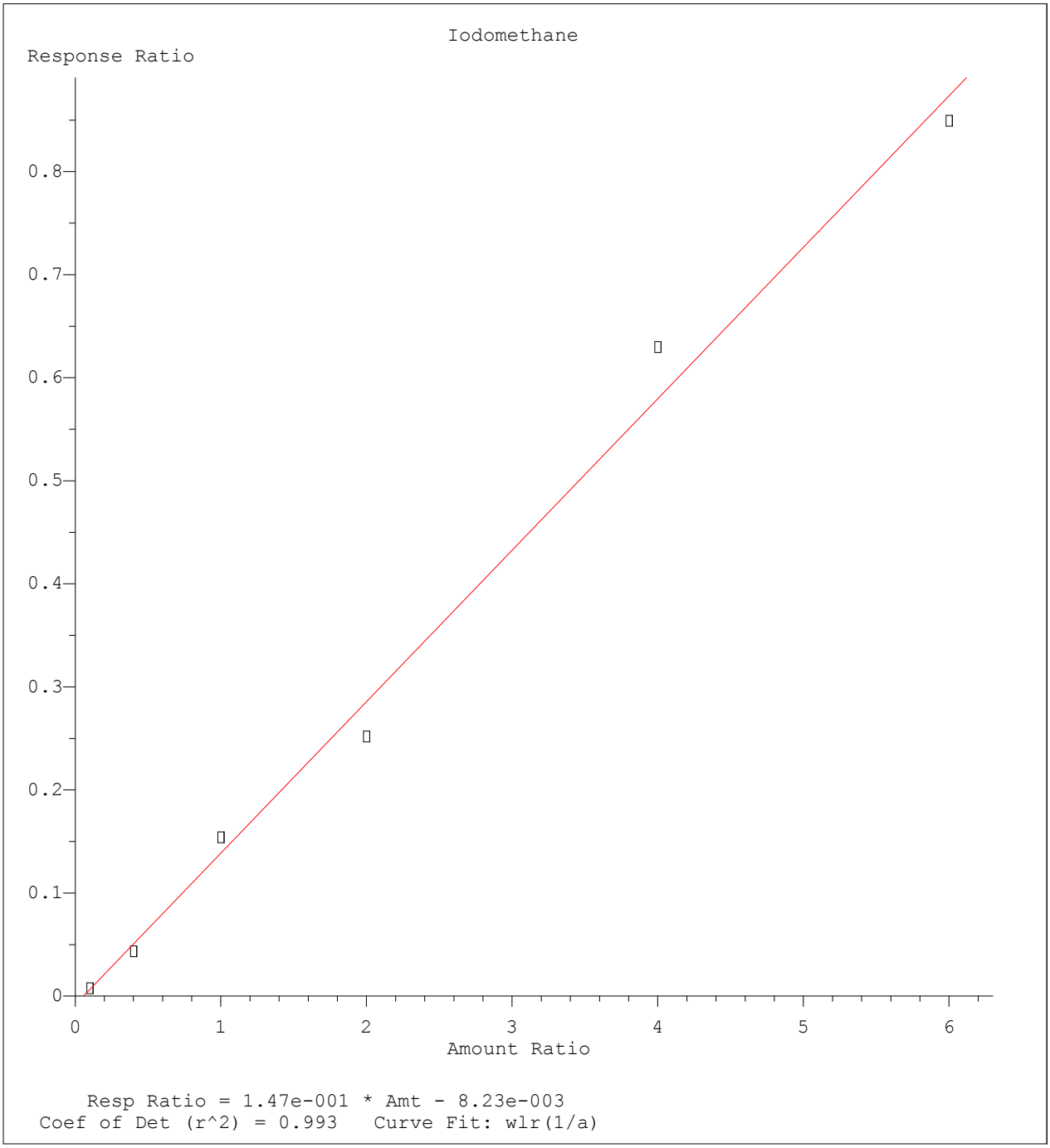

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

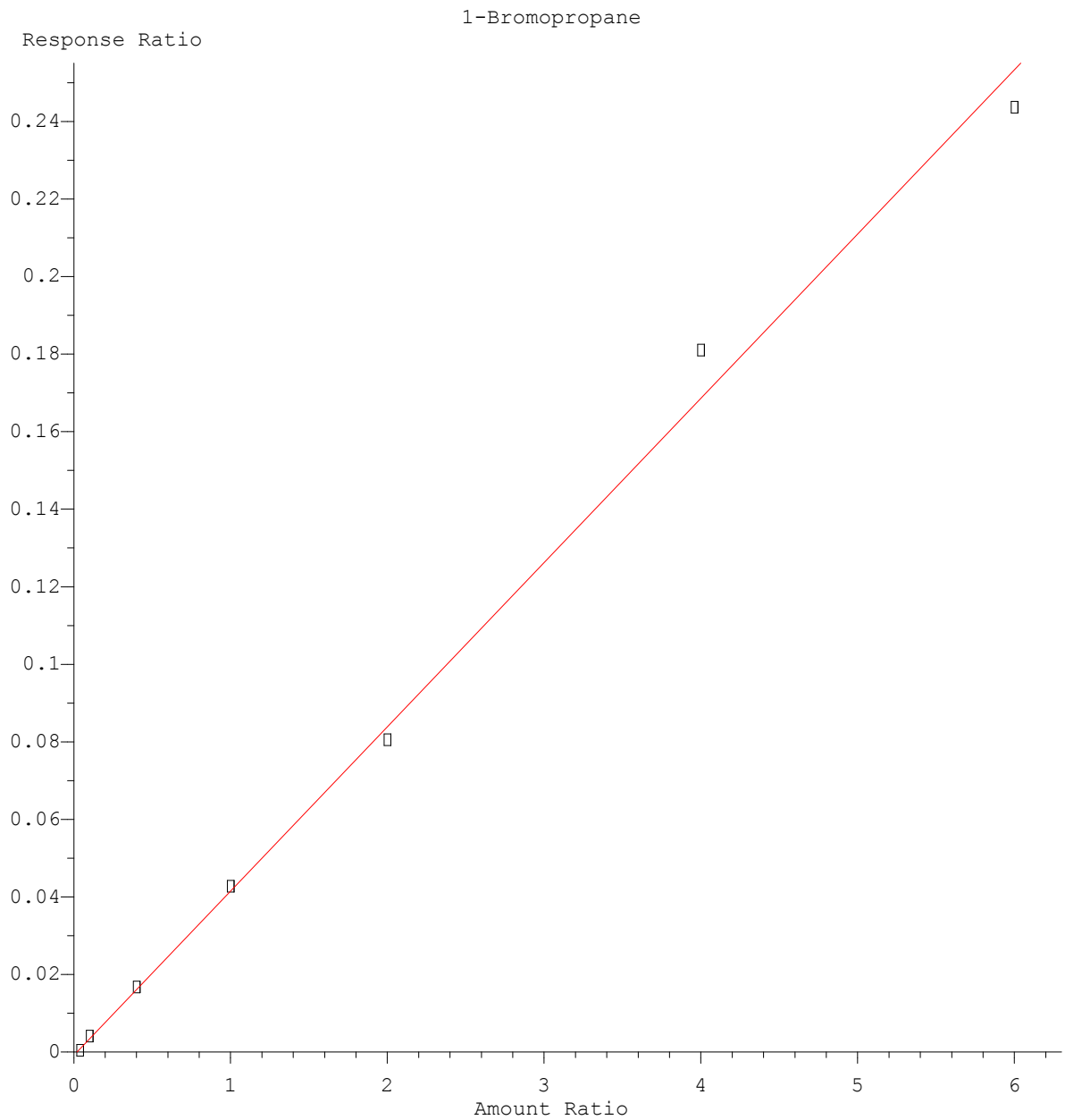

Resp Ratio = 4.25e-002 * Amt - 8.72e-004
Coef of Det (r^2) = 0.997 Curve Fit: wlr(1/a)

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

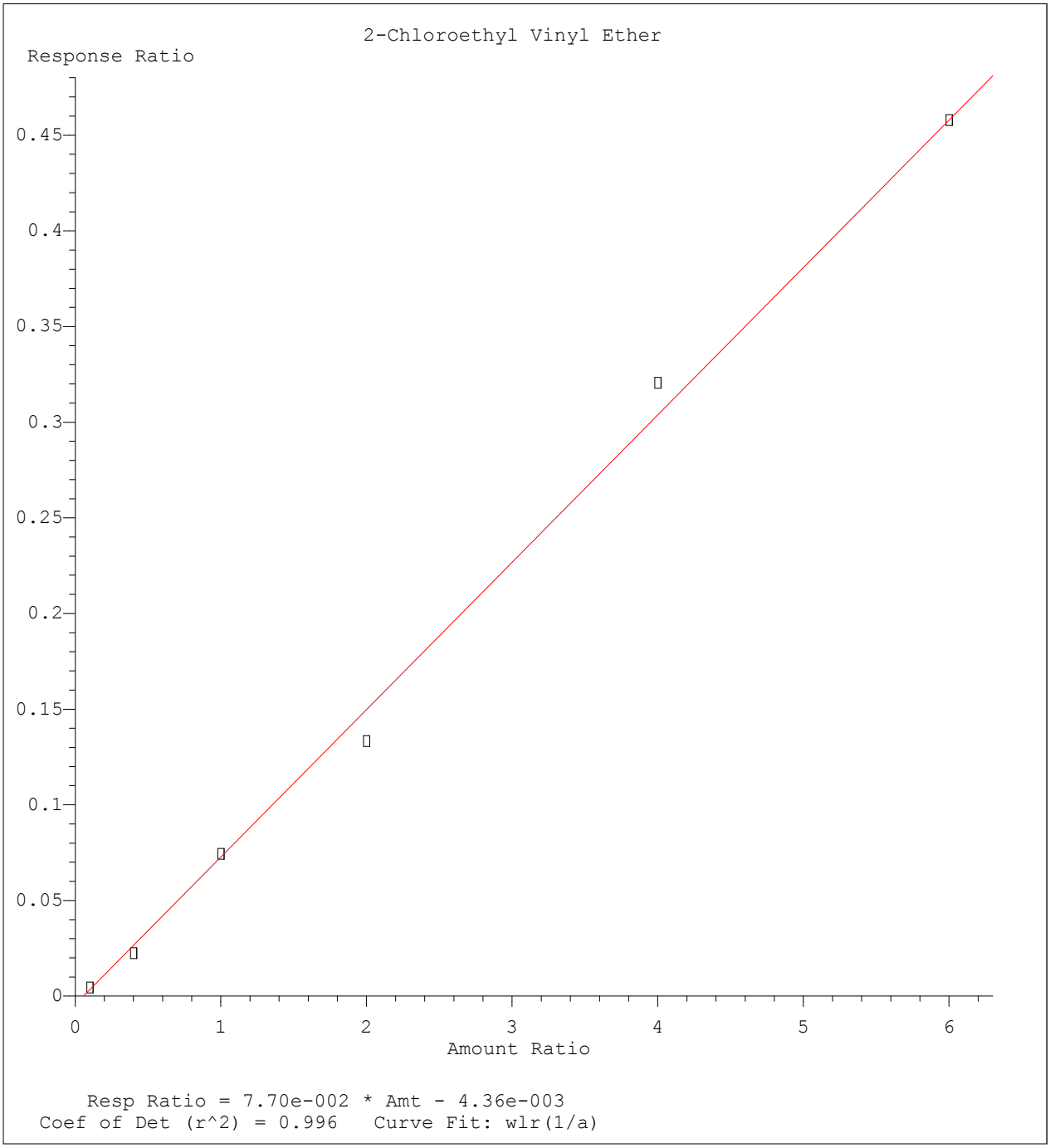

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:39:12 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	582126	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	421408	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	194909	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	163260	51.7395 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 103.48%		
43) 1,2-Dichloroethane-d4	10.45	65	197344	49.8458 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.70%		
58) Toluene-d8	12.82	98	564883	52.9951 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.00%		
79) p-Bromofluorobenzene	16.23	95	212358	55.9531 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 111.90%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	251431	63.3698 ug/kg	100
3) Chloromethane	3.74	50	200793	52.7216 ug/kg	100
4) Vinyl Chloride	3.99	62	228101	59.8284 ug/kg	99
5) 1,3-Butadiene	4.04	54	19055	5.2533 ug/kg	94
6) Bromomethane	4.88	94	121270	48.9744 ug/kg	100
7) Chloroethane	5.04	64	92003	54.1660 ug/kg	100
8) Trichlorofluoromethane	5.52	101	271981	47.5643 ug/kg	98
9) Diethyl ether	6.06	59	198146	74.1259 ug/kg	98
10) Isoprene	6.09	67	201645	59.0663 ug/kg	95
11) Acrolein	6.30	56	34569	64.8558 ug/kg	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	151498	51.3737 ug/kg	99
13) Acetone	6.41	43	65044	43.9190 ug/kg	98
14) 1,1-Dichloroethene	6.62	61	264179	48.5632 ug/kg	99
15) Tert-Butyl Alcohol	6.77	59	122141	205.1997 ug/kg	96
16) Dimethyl Sulfide	6.88	62	168266	73.1872 ug/kg	98
17) Iodomethane	7.13	142	81070	50.1419 ug/kg	99
18) Methyl acetate	7.15	43	155780	52.6767 ug/kg	99
19) Methylene Chloride	7.41	84	147546	49.8014 ug/kg	97
20) Carbon Disulfide	7.45	76	369798	44.1284 ug/kg	98
21) Acrylonitrile	7.59	53	71462	48.8478 ug/kg	99
22) Methyl Tert Butyl Ether	7.61	73	402298	47.6767 ug/kg	100
23) trans-1,2-Dichloroethene	7.85	61	245432	50.6242 ug/kg	100
24) n-Hexane	7.91	57	240056	48.0064 ug/kg	97
25) Diisopropyl ether	8.26	45	951889	81.9626 ug/kg	100
26) Vinyl Acetate	8.44	43	224385	33.8921 ug/kg	98
27) 1,1-Dichloroethane	8.47	63	282537	46.3987 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	854399	79.1219 ug/kg	99
29) 2-Butanone	9.03	43	88970	47.3950 ug/kg	99
30) Propionitrile	9.14	54	53106	92.4444 ug/kg	97
31) 2,2-Dichloropropane	9.24	77	213921	47.0673 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	167198	52.5828 ug/kg	96
33) Chloroform	9.52	83	268532	48.0056 ug/kg	99
34) 1-Bromopropane	9.65	122	36381	74.5451 ug/kg	96
35) Bromochloromethane	9.75	130	106386	51.5067 ug/kg	96
36) Tetrahydrofuran	9.78	42	101921	84.2313 ug/kg	98
38) 1,1,1-Trichloroethane	10.04	97	236420	46.7360 ug/kg	100
39) Cyclohexane	10.08	56	267623	48.5247 ug/kg	98
40) 1,1-Dichloropropene	10.25	75	193208	48.5381 ug/kg	99
41) Tert-Amyl-Methyl ether	10.34	73	688412	87.7041 ug/kg	100
42) Carbon Tetrachloride	10.39	117	218086	46.5023 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:39:12 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	241996	49.1831 ug/kg	99
46)	Benzene	10.60	78	545692	48.9674 ug/kg	99
47)	Trichloroethene	11.35	130	174371	49.3824 ug/kg	96
48)	Methylcyclohexane	11.44	83	228572	51.6120 ug/kg	98
49)	1,2-Dichloropropane	11.56	63	160075	52.3084 ug/kg	99
50)	1,4-Dioxane	11.88	88	7749	168.7883 ug/kg	88
51)	Bromodichloromethane	11.87	83	205164	47.5709 ug/kg	100
52)	Dibromomethane	11.96	174	95223	46.9624 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	36447	43.4907 ug/kg	97
54)	4-Methyl-2-Pentanone	12.19	58	64228	47.8173 ug/kg	96
55)	cis-1,3-Dichloropropene	12.50	75	238969	53.1840 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	243519	53.9302 ug/kg	99
59)	Toluene	12.93	91	610944	50.7412 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	172650	51.7315 ug/kg	99
61)	trans-1,3-Dichloropropene	13.11	75	216958	50.0293 ug/kg	98
62)	1,1,2-Trichloroethane	13.32	97	130293	51.5130 ug/kg	96
63)	2-Hexanone	13.25	43	121727	48.2017 ug/kg	99
64)	1,3-Dichloropropane	13.62	76	226811	53.8157 ug/kg	99
65)	Tetrachloroethene	13.75	164	128602	49.8224 ug/kg	96
66)	Dibromochloromethane	14.01	129	171284	48.4552 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	142409	50.7609 ug/kg	97
68)	1-Chlorohexane	14.35	91	184711	52.0217 ug/kg	98
69)	Chlorobenzene	14.77	112	433181	51.1898 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	157986	49.7138 ug/kg	100
71)	Ethylbenzene	14.79	106	223582	51.2841 ug/kg	100
72)	m-,p-Xylene	14.89	106	552299	102.5798 ug/kg	98
73)	o-Xylene	15.45	106	276739	53.5600 ug/kg	99
74)	Styrene	15.49	104	464515	52.7939 ug/kg	99
75)	Bromoform	15.99	173	109809	47.3129 ug/kg	99
76)	Isopropylbenzene	15.87	105	721376	52.0066 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	153818	52.0241 ug/kg	97
80)	1,2,3-Trichloropropane	16.29	110	60794	54.2181 ug/kg	92
81)	trans-1,4-Dichloro-2-Buten	16.33	53	48561	42.9649 ug/kg	74
82)	n-Propylbenzene	16.39	91	841260	54.9091 ug/kg	100
83)	Bromobenzene	16.52	156	188730	52.1806 ug/kg	96
84)	1,3,5-Trimethylbenzene	16.57	105	624761	54.3244 ug/kg	99
85)	2-Chlorotoluene	16.66	91	556729	54.1771 ug/kg	100
86)	4-Chlorotoluene	16.70	91	503918	53.0403 ug/kg	99
87)	a-Methylstyrene	16.98	118	305038	58.2105 ug/kg	98
88)	tert-Butylbenzene	17.03	134	133555	55.3912 ug/kg	90
89)	1,2,4-Trimethylbenzene	17.08	105	620621	51.5293 ug/kg	99
90)	sec-Butylbenzene	17.31	105	810765	54.7366 ug/kg	99
91)	p-Isopropyltoluene	17.46	119	675672	54.0529 ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	365216	50.8073 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	367190	51.0968 ug/kg	99
94)	n-Butylbenzene	17.99	91	609687	52.4585 ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	351826	52.7494 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	46623	54.4522 ug/kg	96
97)	1,2,4-Trichlorobenzene	20.43	180	244804	51.7031 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	136025	54.5004 ug/kg	99
99)	Naphthalene	20.81	128	603753	50.8387 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	241600	52.6087 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972907.D 8260SL.M Fri Feb 26 11:39:13 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:39 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

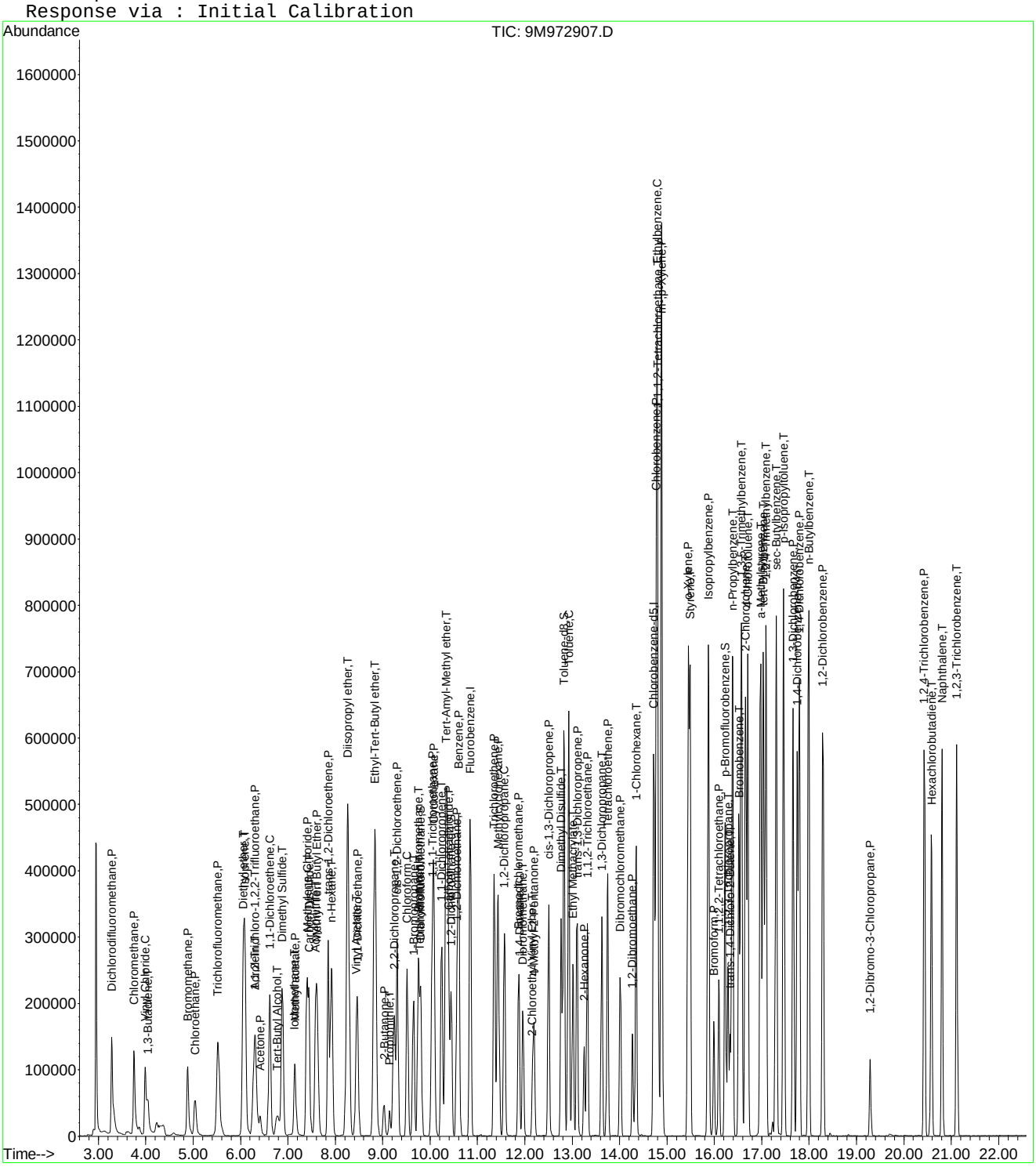

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	112	0.00
2	P	Dichlorodifluoromethane	50.0000	63.3698	-26.7#	123	0.00
3	P	Chloromethane	50.0000	52.7216	-5.4	107	0.00
4	C	Vinyl Chloride	50.0000	59.8284	-19.7	118	0.00
5	T	1,3-Butadiene	50.0000	5.2533	89.5#	11	0.00
6	P	Bromomethane	50.0000	48.9744	2.1	112	0.00
7	P	Chloroethane	50.0000	54.1660	-8.3	108	0.00
8	P	Trichlorofluoromethane	50.0000	47.5643	4.9	102	0.00
9	T	Diethyl ether	100.0000	74.1259	25.9#	79	0.01
10	T	Isoprene	50.0000	59.0664	-18.1	129	0.00
11	T	Acrolein	50.0000	64.8558	-29.7#	140	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	51.3737	-2.7	112	0.00
13	P	Acetone	50.0000	43.9190	12.2	98	0.00
14	C	1,1-Dichloroethene	50.0000	48.5632	2.9	108	0.00
15	T	Tert-Butyl Alcohol	200.0000	205.1997	-2.6	116	0.01
16	T	Dimethyl Sulfide	50.0000	73.1872	-46.4#	154	0.00
17	T	Iodomethane	50.0000	50.1419	-0.3	102	0.00
18	P	Methyl acetate	50.0000	52.6767	-5.4	115	0.01
19	P	Methylene Chloride	50.0000	49.8014	0.4	109	0.01
20	P	Carbon Disulfide	50.0000	44.1284	11.7	97	0.00
21	T	Acrylonitrile	50.0000	48.8478	2.3	103	0.00
22	P	Methyl Tert Butyl Ether	50.0000	47.6767	4.6	99	0.00
23	P	trans-1,2-Dichloroethene	50.0000	50.6242	-1.2	108	0.00
24	T	n-Hexane	50.0000	48.0064	4.0	109	0.00
25	T	Diisopropyl ether	100.0000	81.9626	18.0	87	0.00
26	T	Vinyl Acetate	50.0000	33.8921	32.2#	72	0.01
27	P	1,1-Dichloroethane	50.0000	46.3987	7.2	99	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	79.1219	20.9	83	0.00
29	P	2-Butanone	50.0000	47.3950	5.2	103	0.00
30	T	Propionitrile	100.0000	92.4444	7.6	100	0.00
31	T	2,2-Dichloropropane	50.0000	47.0673	5.9	99	0.00
32	P	cis-1,2-Dichloroethene	50.0000	52.5828	-5.2	109	0.00
33	C	Chloroform	50.0000	48.0057	4.0	102	0.00
34	T	1-Bromopropane	50.0000	74.5451	-49.1#	164	0.00
35	T	Bromochloromethane	50.0000	51.5067	-3.0	104	0.00
36	T	Tetrahydrofuran	100.0000	84.2314	15.8	90	0.00
37	S	Dibromofluoromethane	50.0000	51.7395	-3.5	110	0.00
38	P	1,1,1-Trichloroethane	50.0000	46.7360	6.5	97	0.00
39	P	Cyclohexane	50.0000	48.5247	3.0	108	0.00
40	T	1,1-Dichloropropene	50.0000	48.5381	2.9	106	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	87.7041	12.3	93	0.00
42	P	Carbon Tetrachloride	50.0000	46.5023	7.0	99	0.00
43	S	1,2-Dichloroethane-d4	50.0000	49.8458	0.3	107	0.00
44		Heptane	-1.0000	0.0000	0.0	104	0.00
45	P	1,2-Dichloroethane	50.0000	49.1831	1.6	102	0.00
46	P	Benzene	50.0000	48.9674	2.1	108	0.00
47	P	Trichloroethene	50.0000	49.3824	1.2	106	0.00
48	P	Methylcyclohexane	50.0000	51.6120	-3.2	112	0.00
49	C	1,2-Dichloropropane	50.0000	52.3083	-4.6	108	0.00
50	T	1,4-Dioxane	200.0000	168.7883	15.6	99	0.00
51	P	Bromodichloromethane	50.0000	47.5710	4.9	101	0.00
52	T	Dibromomethane	50.0000	46.9624	6.1	99	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	43.4907	13.0	95	0.00
54	P	4-Methyl-2-Pentanone	50.0000	47.8173	4.4	99	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	53.1840	-6.4	112	0.00
56	T	Dimethyl Disulfide	50.0000	53.9302	-7.9	111	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	111	0.00
58	S	Toluene-d8	50.0000	52.9951	-6.0	110	0.00
59	C	Toluene	50.0000	50.7412	-1.5	108	0.00
60	T	Ethyl Methacrylate	50.0000	51.7315	-3.5	109	0.00
61	P	trans-1,3-Dichloropropene	50.0000	50.0293	-0.1	102	0.00
62	P	1,1,2-Trichloroethane	50.0000	51.5130	-3.0	106	0.00
63	P	2-Hexanone	50.0000	48.2017	3.6	102	0.00
64	T	1,3-Dichloropropane	50.0000	53.8157	-7.6	113	0.00
65	P	Tetrachloroethene	50.0000	49.8224	0.4	110	0.00
66	P	Dibromochloromethane	50.0000	48.4552	3.1	101	0.00
67	P	1,2-Dibromoethane	50.0000	50.7609	-1.5	107	0.00
68	T	1-Chlorohexane	50.0000	52.0217	-4.0	110	0.00
69	P	Chlorobenzene	50.0000	51.1898	-2.4	108	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	49.7138	0.6	102	0.00
71	C	Ethylbenzene	50.0000	51.2841	-2.6	108	0.00
72	P	m-,p-Xylene	100.0000	102.5798	-2.6	111	0.00
73	P	o-Xylene	50.0000	53.5600	-7.1	112	0.00
74	P	Styrene	50.0000	52.7939	-5.6	109	0.00
75	P	Bromoform	50.0000	47.3129	5.4	95	0.00
76	P	Isopropylbenzene	50.0000	52.0066	-4.0	110	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	107	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	52.0241	-4.0	104	0.00
79	S	p-Bromofluorobenzene	50.0000	55.9531	-11.9	111	0.00
80	T	1,2,3-Trichloropropane	50.0000	54.2181	-8.4	109	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	42.9649	14.1	87	0.00
82	T	n-Propylbenzene	50.0000	54.9091	-9.8	112	0.00
83	T	Bromobenzene	50.0000	52.1806	-4.4	106	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	54.3244	-8.6	110	0.00
85	T	2-Chlorotoluene	50.0000	54.1771	-8.4	115	0.00
86	T	4-Chlorotoluene	50.0000	53.0403	-6.1	105	0.00
87	T	a-Methylstyrene	50.0000	58.2105	-16.4	119	0.00
88	T	tert-Butylbenzene	50.0000	55.3912	-10.8	110	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	51.5293	-3.1	107	0.00
90	T	sec-Butylbenzene	50.0000	54.7366	-9.5	112	0.00
91	T	p-Isopropyltoluene	50.0000	54.0529	-8.1	110	0.00
92	P	1,3-Dichlorobenzene	50.0000	50.8073	-1.6	108	0.00
93	P	1,4-Dichlorobenzene	50.0000	51.0968	-2.2	110	0.00
94	T	n-Butylbenzene	50.0000	52.4585	-4.9	108	0.00
95	P	1,2-Dichlorobenzene	50.0000	52.7494	-5.5	110	0.00
96	P	1,2-Dibromo-3-Chloropropane	50.0000	54.4522	-8.9	109	0.00
97	P	1,2,4-Trichlorobenzene	50.0000	51.7031	-3.4	110	0.00
98	T	Hexachlorobutadiene	50.0000	54.5004	-9.0	116	0.00
99	T	Naphthalene	50.0000	50.8387	-1.7	100	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	52.6087	-5.2	109	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022916\9M972967.D Vial: 1
Acq On : 29 Feb 2016 17:23 Operator: FJB/JDS
Sample : WG559150-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 17:45:41 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	717529	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.73	117	517165	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	238402	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	191450	49.2238 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.44%		
43) 1,2-Dichloroethane-d4	10.45	65	235993	48.3594 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.72%		
58) Toluene-d8	12.83	98	664282	50.7812 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.56%		
79) p-Bromofluorobenzene	16.23	95	254634	54.8522 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 109.70%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	224161	45.8354 ug/kg	95
3) Chloromethane	3.74	50	209740	44.6785 ug/kg	99
4) Vinyl Chloride	3.99	62	269057	57.2535 ug/kg	99
5) 1,3-Butadiene	4.04	54	305677	68.3702 ug/kg	99
6) Bromomethane	4.88	94	139881	45.8302 ug/kg	96
7) Chloroethane	5.04	64	113232	54.0843 ug/kg	98
8) Trichlorofluoromethane	5.53	101	368283	52.2519 ug/kg	99
9) Diethyl ether	6.06	59	339394	103.0069 ug/kg	99
10) Isoprene	6.09	67	270591	64.3048 ug/kg	99
11) Acrolein	6.30	56	34446	52.4298 ug/kg	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	197562	54.3519 ug/kg	99
13) Acetone	6.40	43	83723	45.9748 ug/kg	97
14) 1,1-Dichloroethene	6.61	61	337460	50.3279 ug/kg	98
15) Tert-Butyl Alcohol	6.75	59	123383	168.1699 ug/kg	98
16) Dimethyl Sulfide	6.88	62	157653	55.6312 ug/kg	98
17) Iodomethane	7.13	142	114641	57.1132 ug/kg	98
18) Methyl acetate	7.14	43	193963	53.2112 ug/kg	98
19) Methylene Chloride	7.40	84	183510	50.2518 ug/kg	98
20) Carbon Disulfide	7.45	76	607619	58.8251 ug/kg	99
21) Acrylonitrile	7.59	53	92377	51.2285 ug/kg	99
22) Methyl Tert Butyl Ether	7.61	73	527557	50.7230 ug/kg	98
23) trans-1,2-Dichloroethene	7.85	61	324146	54.2431 ug/kg	97
24) n-Hexane	7.92	57	370697	60.1427 ug/kg	98
25) Diisopropyl ether	8.26	45	1544159	107.8696 ug/kg	99
26) Vinyl Acetate	8.43	43	418695	51.3074 ug/kg	99
27) 1,1-Dichloroethane	8.46	63	390904	52.0808 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	1407574	105.7511 ug/kg	99
29) 2-Butanone	9.02	43	109282	47.2297 ug/kg	99
30) Propionitrile	9.14	54	67587	95.4504 ug/kg	100
31) 2,2-Dichloropropane	9.24	77	312822	55.8394 ug/kg	100
32) cis-1,2-Dichloroethene	9.31	96	208818	53.2793 ug/kg	96
33) Chloroform	9.52	83	344697	49.9932 ug/kg	99
34) 1-Bromopropane	9.65	122	32395	54.1365 ug/kg	100
35) Bromochloromethane	9.75	130	133300	52.3585 ug/kg	95
36) Tetrahydrofuran	9.78	42	144902	97.1543 ug/kg	100
38) 1,1,1-Trichloroethane	10.04	97	327988	52.6021 ug/kg	98
39) Cyclohexane	10.08	56	404884	59.5590 ug/kg	99
40) 1,1-Dichloropropene	10.24	75	261534	53.3045 ug/kg	100
41) Tert-Amyl-Methyl ether	10.34	73	995534	102.8976 ug/kg	99
42) Carbon Tetrachloride	10.39	117	295327	51.0890 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022916\9M972967.D Vial: 1
Acq On : 29 Feb 2016 17:23 Operator: FJB/JDS
Sample : WG559150-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 17:45:41 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	305670	50.4009 ug/kg	97
46)	Benzene	10.60	78	698526	50.8534 ug/kg	100
47)	Trichloroethene	11.35	130	230291	52.9118 ug/kg	97
48)	Methylcyclohexane	11.44	83	332449	60.9018 ug/kg	100
49)	1,2-Dichloropropane	11.56	63	205707	54.5349 ug/kg	98
50)	1,4-Dioxane	11.88	88	11862	209.6197 ug/kg	97
51)	Bromodichloromethane	11.87	83	266373	50.1082 ug/kg	99
52)	Dibromomethane	11.96	174	126894	50.7724 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.17	63	43935	42.5950 ug/kg	100
54)	4-Methyl-2-Pentanone	12.20	58	82978	50.1189 ug/kg	99
55)	cis-1,3-Dichloropropene	12.50	75	292953	52.8950 ug/kg	100
56)	Dimethyl Disulfide	12.77	94	318733	57.2670 ug/kg	99
59)	Toluene	12.93	91	786633	53.2359 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	229430	56.0160 ug/kg	96
61)	trans-1,3-Dichloropropene	13.10	75	284368	53.4322 ug/kg	99
62)	1,1,2-Trichloroethane	13.33	97	163037	52.5238 ug/kg	96
63)	2-Hexanone	13.25	43	153679	49.5865 ug/kg	98
64)	1,3-Dichloropropane	13.62	76	263969	51.0354 ug/kg	97
65)	Tetrachloroethene	13.75	164	170776	53.9110 ug/kg	97
66)	Dibromochloromethane	14.01	129	218964	50.4743 ug/kg	99
67)	1,2-Dibromoethane	14.28	107	171387	49.7787 ug/kg	99
68)	1-Chlorohexane	14.35	91	270956	62.1819 ug/kg	100
69)	Chlorobenzene	14.77	112	545712	52.5474 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	203041	52.0614 ug/kg	98
71)	Ethylbenzene	14.79	106	293242	54.8082 ug/kg	100
72)	m-,p-Xylene	14.89	106	712906	107.8931 ug/kg	96
73)	o-Xylene	15.45	106	348413	54.9463 ug/kg	97
74)	Styrene	15.49	104	592775	54.8968 ug/kg	99
75)	Bromoform	16.00	173	142147	49.9061 ug/kg	100
76)	Isopropylbenzene	15.88	105	937009	55.0446 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.10	83	180384	49.8790 ug/kg	97
80)	1,2,3-Trichloropropane	16.29	110	68552	49.9834 ug/kg	95
81)	trans-1,4-Dichloro-2-Buten	16.33	53	80928	58.5392 ug/kg	82
82)	n-Propylbenzene	16.39	91	1067940	56.9879 ug/kg	100
83)	Bromobenzene	16.52	156	234464	52.9988 ug/kg	96
84)	1,3,5-Trimethylbenzene	16.58	105	797971	56.7270 ug/kg	98
85)	2-Chlorotoluene	16.66	91	674685	53.6779 ug/kg	99
86)	4-Chlorotoluene	16.70	91	653058	56.1979 ug/kg	99
87)	a-Methylstyrene	16.98	118	400282	62.4504 ug/kg	99
88)	tert-Butylbenzene	17.04	134	168830	57.2469 ug/kg	100
89)	1,2,4-Trimethylbenzene	17.09	105	800671	54.3506 ug/kg	99
90)	sec-Butylbenzene	17.30	105	1031272	56.9217 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	865022	56.5760 ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	451554	51.3579 ug/kg	99
93)	1,4-Dichlorobenzene	17.80	146	451360	51.3508 ug/kg	100
94)	n-Butylbenzene	17.99	91	798632	56.1795 ug/kg	99
95)	1,2-Dichlorobenzene	18.30	146	423274	51.8840 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.30	157	47947	45.7824 ug/kg	98
97)	1,2,4-Trichlorobenzene	20.44	180	294038	50.7719 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	165585	54.2406 ug/kg	99
99)	Naphthalene	20.81	128	692181	47.6516 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	281873	50.1806 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972967.D 8260SL.M Mon Feb 29 17:45:41 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022916\9M972967.D Vial: 1
Acq On : 29 Feb 2016 17:23 Operator: FJB/JDS
Sample : WG559150-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 17:45 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

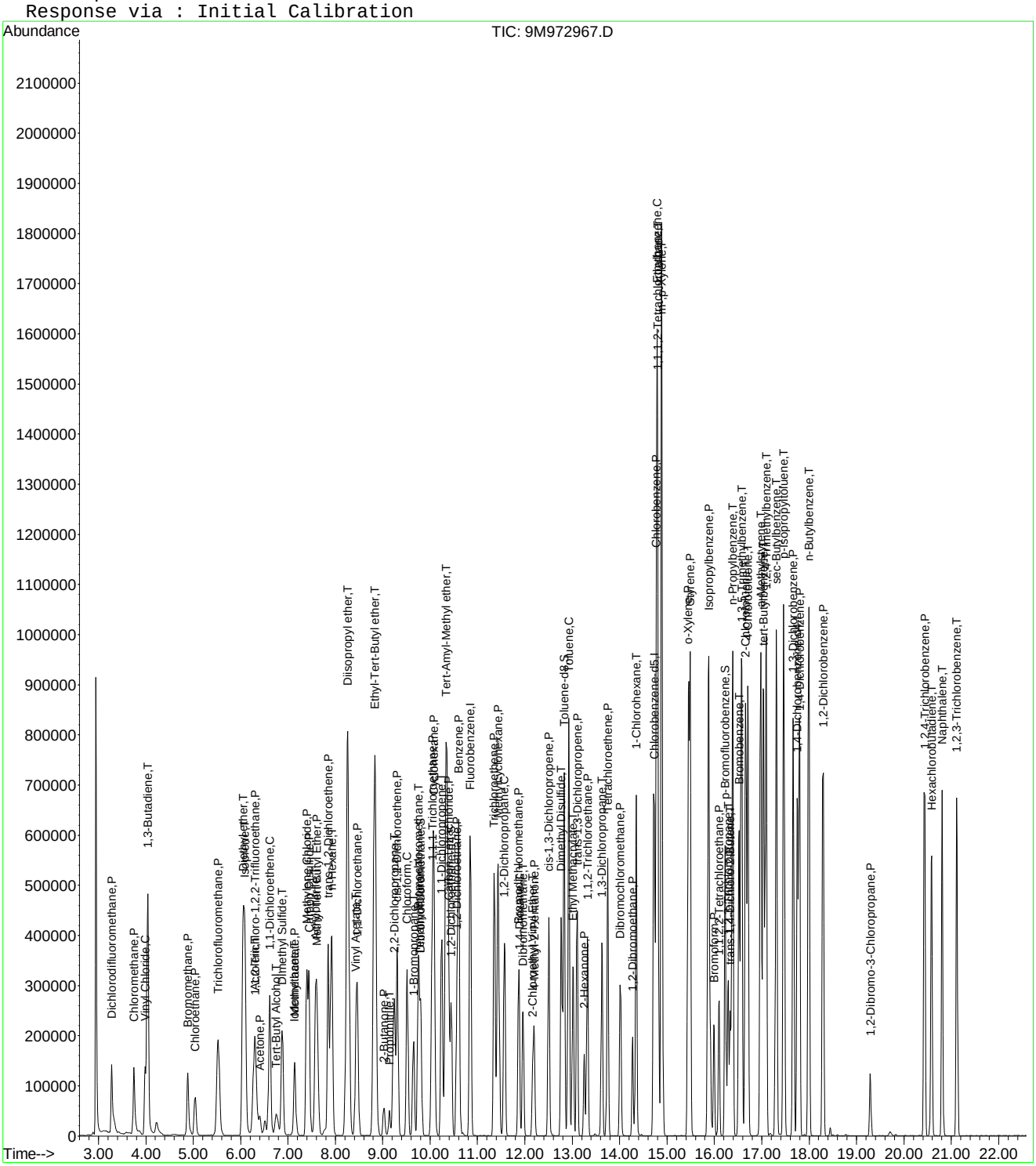

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022916\9M972967.D Vial: 1
Acq On : 29 Feb 2016 17:23 Operator: FJB/JDS
Sample : WG559150-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	139	0.00
2	P	Dichlorodifluoromethane	0.3408	0.3124	8.3	109	0.00
3	P	Chloromethane	0.3271	0.2923	10.6	112	0.00
4	C	Vinyl Chloride	0.3275	0.3750	-14.5	140	0.00
5	T	1,3-Butadiene	0.3115	0.4260	-36.7#	179	0.00
6	P	Bromomethane	0.2127	0.1950	8.3	130	0.00
7	P	Chloroethane	0.1459	0.1578	-8.2	133	0.00
8	P	Trichlorofluoromethane	0.4911	0.5133	-4.5	138	0.00
9	T	Diethyl ether	0.2296	0.2365	-3.0	136	0.01
10	T	Isoprene	0.2932	0.3771	-28.6#	173	0.00
11	T	Acrolein	0.0458	0.0480	-4.9	140	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	0.2533	0.2753	-8.7	146	0.01
13	P	Acetone	0.1376	0.1167	15.2	126	0.00
14	C	1,1-Dichloroethene	0.4672	0.4703	-0.7	138	0.00
15	T	Tert-Butyl Alcohol	0.0511	0.0430	15.9	118	-0.01
16	T	Dimethyl Sulfide	0.1975	0.2197	-11.3	144	0.00
17	T	Iodomethane	0.1273	0.1598	-25.5#	144	0.00
18	P	Methyl acetate	0.2540	0.2703	-6.4	143	0.00
19	P	Methylene Chloride	0.2545	0.2557	-0.5	136	0.00
20	P	Carbon Disulfide	0.7198	0.8468	-17.6	159	0.00
21	T	Acrylonitrile	0.1257	0.1287	-2.5	133	0.00
22	P	Methyl Tert Butyl Ether	0.7248	0.7352	-1.4	130	0.00
23	P	trans-1,2-Dichloroethene	0.4164	0.4517	-8.5	143	0.00
24	T	n-Hexane	0.4295	0.5166	-20.3	169	0.01
25	T	Diisopropyl ether	0.9975	1.0760	-7.9	142	0.00
26	T	Vinyl Acetate	0.5686	0.5835	-2.6	134	0.00
27	P	1,1-Dichloroethane	0.5230	0.5448	-4.2	137	-0.01
28	T	Ethyl-Tert-Butyl ether	0.9275	0.9809	-5.8	138	0.00
29	P	2-Butanone	0.1612	0.1523	5.5	127	-0.01
30	T	Propionitrile	0.0493	0.0471	4.5	127	0.00
31	T	2,2-Dichloropropane	0.3904	0.4360	-11.7	145	0.00
32	P	cis-1,2-Dichloroethene	0.2731	0.2910	-6.6	136	0.00
33	C	Chloroform	0.4805	0.4804	0.0	131	0.00
34	T	1-Bromopropane	0.0376	0.0452	-20.1	146	0.00
35	T	Bromochloromethane	0.1774	0.1858	-4.7	130	0.00
36	T	Tetrahydrofuran	0.1039	0.1010	2.8	127	0.00
37	S	Dibromofluoromethane	0.2710	0.2668	1.6	129	0.00
38	P	1,1,1-Trichloroethane	0.4345	0.4571	-5.2	135	0.00
39	P	Cyclohexane	0.4737	0.5643	-19.1	163	0.00
40	T	1,1-Dichloropropene	0.3419	0.3645	-6.6	144	0.00
41	T	Tert-Amyl-Methyl ether	0.6742	0.6937	-2.9	134	0.00
42	P	Carbon Tetrachloride	0.4028	0.4116	-2.2	133	0.00
43	S	1,2-Dichloroethane-d4	0.3401	0.3289	3.3	128	0.00
44		Heptane	0.0000	0.0000	0.0	134	0.00
45	P	1,2-Dichloroethane	0.4226	0.4260	-0.8	129	0.00
46	P	Benzene	0.9572	0.9735	-1.7	139	0.00
47	P	Trichloroethene	0.3033	0.3210	-5.8	140	0.00
48	P	Methylcyclohexane	0.3804	0.4633	-21.8	163	0.00
49	C	1,2-Dichloropropane	0.2628	0.2867	-9.1	139	0.00
50	T	1,4-Dioxane	0.0039	0.0041	-4.8	152	0.00
51	P	Bromodichloromethane	0.3704	0.3712	-0.2	131	0.00
52	T	Dibromomethane	0.1742	0.1769	-1.5	132	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0665	0.0612	8.0	114	0.00
54	P	4-Methyl-2-Pentanone	0.1154	0.1156	-0.2	128	0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022916\9M972967.D Vial: 1
Acq On : 29 Feb 2016 17:23 Operator: FJB/JDS
Sample : WG559150-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	0.3859	0.4083	-5.8	138	0.00
56	T	Dimethyl Disulfide	0.3878	0.4442	-14.5	145	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	136	0.00
58	S	Toluene-d8	1.2647	1.2845	-1.6	130	0.00
59	C	Toluene	1.4286	1.5211	-6.5	140	0.00
60	T	Ethyl Methacrylate	0.3960	0.4436	-12.0	144	0.00
61	P	trans-1,3-Dichloropropene	0.5145	0.5499	-6.9	134	0.00
62	P	1,1,2-Trichloroethane	0.3001	0.3152	-5.0	133	0.00
63	P	2-Hexanone	0.2996	0.2972	0.8	129	0.00
64	T	1,3-Dichloropropane	0.5001	0.5104	-2.1	131	-0.01
65	P	Tetrachloroethene	0.3063	0.3302	-7.8	146	0.00
66	P	Dibromochloromethane	0.4194	0.4234	-0.9	130	0.00
67	P	1,2-Dibromoethane	0.3329	0.3314	0.4	129	0.00
68	T	1-Chlorohexane	0.4213	0.5239	-24.4	161	0.00
69	P	Chlorobenzene	1.0041	1.0552	-5.1	136	0.00
70	T	1,1,1,2-Tetrachloroethane	0.3771	0.3926	-4.1	131	0.00
71	C	Ethylbenzene	0.5173	0.5670	-9.6	142	-0.01
72	P	m-,p-Xylene	0.6388	0.6892	-7.9	143	0.00
73	P	o-Xylene	0.6130	0.6737	-9.9	141	0.00
74	P	Styrene	1.0440	1.1462	-9.8	139	0.00
75	P	Bromoform	0.2754	0.2749	0.2	123	0.00
76	P	Isopropylbenzene	1.6458	1.8118	-10.1	142	0.00
77	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	130	-0.01
78	P	1,1,2,2-Tetrachloroethane	0.7585	0.7566	0.2	122	0.00
79	S	p-Bromofluorobenzene	0.9736	1.0681	-9.7	133	0.00
80	T	1,2,3-Trichloropropane	0.2876	0.2875	0.0	123	0.00
81	T	trans-1,4-Dichloro-2-Butene	0.2899	0.3395	-17.1	146	0.00
82	T	n-Propylbenzene	3.9303	4.4796	-14.0	142	0.00
83	T	Bromobenzene	0.9278	0.9835	-6.0	132	0.00
84	T	1,3,5-Trimethylbenzene	2.9502	3.3472	-13.5	140	0.00
85	T	2-Chlorotoluene	2.6361	2.8300	-7.4	139	0.00
86	T	4-Chlorotoluene	2.4372	2.7393	-12.4	136	0.00
87	T	a-Methylstyrene	1.3443	1.6790	-24.9	157	0.00
88	T	tert-Butylbenzene	0.6185	0.7082	-14.5	139	0.00
89	T	1,2,4-Trimethylbenzene	3.0897	3.3585	-8.7	138	0.00
90	T	sec-Butylbenzene	3.7998	4.3258	-13.8	142	0.00
91	T	p-Isopropyltoluene	3.2067	3.6284	-13.2	141	0.00
92	P	1,3-Dichlorobenzene	1.8440	1.8941	-2.7	134	0.00
93	P	1,4-Dichlorobenzene	1.8435	1.8933	-2.7	135	0.00
94	T	n-Butylbenzene	2.9815	3.3499	-12.4	142	0.00
95	P	1,2-Dichlorobenzene	1.7110	1.7755	-3.8	132	0.00
96	P	1,2-Dibromo-3-Chloropropane	0.2197	0.2011	8.4	112	0.00
97	P	1,2,4-Trichlorobenzene	1.2146	1.2334	-1.5	132	0.00
98	T	Hexachlorobutadiene	0.6403	0.6946	-8.5	141	0.00
99	T	Naphthalene	3.0465	2.9034	4.7	115	0.00
100	T	1,2,3-Trichlorobenzene	1.1781	1.1823	-0.4	127	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972967.D 8260SL.M Mon Feb 29 17:53:08 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022916\9M972967.D Vial: 1
Acq On : 29 Feb 2016 17:23 Operator: FJB/JDS
Sample : WG559150-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	139	0.00
2	P	Dichlorodifluoromethane	50.0000	45.8354	8.3	109	0.00
3	P	Chloromethane	50.0000	44.6785	10.6	112	0.00
4	C	Vinyl Chloride	50.0000	57.2535	-14.5	140	0.00
5	T	1,3-Butadiene	50.0000	68.3702	-36.7#	179	0.00
6	P	Bromomethane	50.0000	45.8302	8.3	130	0.00
7	P	Chloroethane	50.0000	54.0843	-8.2	133	0.00
8	P	Trichlorofluoromethane	50.0000	52.2519	-4.5	138	0.00
9	T	Diethyl ether	100.0000	103.0069	-3.0	136	0.01
10	T	Isoprene	50.0000	64.3048	-28.6#	173	0.00
11	T	Acrolein	50.0000	52.4298	-4.9	140	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	54.3519	-8.7	146	0.01
13	P	Acetone	50.0000	45.9748	8.1	126	0.00
14	C	1,1-Dichloroethene	50.0000	50.3279	-0.7	138	0.00
15	T	Tert-Butyl Alcohol	200.0000	168.1699	15.9	118	-0.01
16	T	Dimethyl Sulfide	50.0000	55.6313	-11.3	144	0.00
17	T	Iodomethane	50.0000	57.1132	-14.2	144	0.00
18	P	Methyl acetate	50.0000	53.2112	-6.4	143	0.00
19	P	Methylene Chloride	50.0000	50.2518	-0.5	136	0.00
20	P	Carbon Disulfide	50.0000	58.8251	-17.7	159	0.00
21	T	Acrylonitrile	50.0000	51.2285	-2.5	133	0.00
22	P	Methyl Tert Butyl Ether	50.0000	50.7230	-1.4	130	0.00
23	P	trans-1,2-Dichloroethene	50.0000	54.2432	-8.5	143	0.00
24	T	n-Hexane	50.0000	60.1427	-20.3	169	0.01
25	T	Diisopropyl ether	100.0000	107.8696	-7.9	142	0.00
26	T	Vinyl Acetate	50.0000	51.3074	-2.6	134	0.00
27	P	1,1-Dichloroethane	50.0000	52.0808	-4.2	137	-0.01
28	T	Ethyl-Tert-Butyl ether	100.0000	105.7511	-5.8	138	0.00
29	P	2-Butanone	50.0000	47.2297	5.5	127	-0.01
30	T	Propionitrile	100.0000	95.4504	4.5	127	0.00
31	T	2,2-Dichloropropane	50.0000	55.8394	-11.7	145	0.00
32	P	cis-1,2-Dichloroethene	50.0000	53.2793	-6.6	136	0.00
33	C	Chloroform	50.0000	49.9932	0.0	131	0.00
34	T	1-Bromopropane	50.0000	54.1365	-8.3	146	0.00
35	T	Bromochloromethane	50.0000	52.3585	-4.7	130	0.00
36	T	Tetrahydrofuran	100.0000	97.1543	2.8	127	0.00
37	S	Dibromofluoromethane	50.0000	49.2238	1.6	129	0.00
38	P	1,1,1-Trichloroethane	50.0000	52.6021	-5.2	135	0.00
39	P	Cyclohexane	50.0000	59.5590	-19.1	163	0.00
40	T	1,1-Dichloropropene	50.0000	53.3045	-6.6	144	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	102.8976	-2.9	134	0.00
42	P	Carbon Tetrachloride	50.0000	51.0890	-2.2	133	0.00
43	S	1,2-Dichloroethane-d4	50.0000	48.3594	3.3	128	0.00
44		Heptane	-1.0000	0.0000	0.0	134	0.00
45	P	1,2-Dichloroethane	50.0000	50.4009	-0.8	129	0.00
46	P	Benzene	50.0000	50.8534	-1.7	139	0.00
47	P	Trichloroethene	50.0000	52.9118	-5.8	140	0.00
48	P	Methylcyclohexane	50.0000	60.9018	-21.8	163	0.00
49	C	1,2-Dichloropropane	50.0000	54.5348	-9.1	139	0.00
50	T	1,4-Dioxane	200.0000	209.6197	-4.8	152	0.00
51	P	Bromodichloromethane	50.0000	50.1082	-0.2	131	0.00
52	T	Dibromomethane	50.0000	50.7724	-1.5	132	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	42.5950	14.8	114	0.00
54	P	4-Methyl-2-Pentanone	50.0000	50.1189	-0.2	128	0.01

(#) = Out of Range

Data File : C:\MSDCHEM\1\DATA\022916\9M972967.D Vial: 1
Acq On : 29 Feb 2016 17:23 Operator: FJB/JDS
Sample : WG559150-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	52.8950	-5.8	138	0.00
56	T	Dimethyl Disulfide	50.0000	57.2670	-14.5	145	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	136	0.00
58	S	Toluene-d8	50.0000	50.7812	-1.6	130	0.00
59	C	Toluene	50.0000	53.2359	-6.5	140	0.00
60	T	Ethyl Methacrylate	50.0000	56.0160	-12.0	144	0.00
61	P	trans-1,3-Dichloropropene	50.0000	53.4323	-6.9	134	0.00
62	P	1,1,2-Trichloroethane	50.0000	52.5238	-5.0	133	0.00
63	P	2-Hexanone	50.0000	49.5865	0.8	129	0.00
64	T	1,3-Dichloropropane	50.0000	51.0354	-2.1	131	-0.01
65	P	Tetrachloroethene	50.0000	53.9111	-7.8	146	0.00
66	P	Dibromochloromethane	50.0000	50.4743	-0.9	130	0.00
67	P	1,2-Dibromoethane	50.0000	49.7787	0.4	129	0.00
68	T	1-Chlorohexane	50.0000	62.1819	-24.4	161	0.00
69	P	Chlorobenzene	50.0000	52.5474	-5.1	136	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	52.0614	-4.1	131	0.00
71	C	Ethylbenzene	50.0000	54.8083	-9.6	142	-0.01
72	P	m-,p-Xylene	100.0000	107.8931	-7.9	143	0.00
73	P	o-Xylene	50.0000	54.9463	-9.9	141	0.00
74	P	Styrene	50.0000	54.8968	-9.8	139	0.00
75	P	Bromoform	50.0000	49.9061	0.2	123	0.00
76	P	Isopropylbenzene	50.0000	55.0446	-10.1	142	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	130	-0.01
78	P	1,1,2,2-Tetrachloroethane	50.0000	49.8790	0.2	122	0.00
79	S	p-Bromofluorobenzene	50.0000	54.8522	-9.7	133	0.00
80	T	1,2,3-Trichloropropane	50.0000	49.9834	0.0	123	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	58.5392	-17.1	146	0.00
82	T	n-Propylbenzene	50.0000	56.9879	-14.0	142	0.00
83	T	Bromobenzene	50.0000	52.9988	-6.0	132	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	56.7270	-13.5	140	0.00
85	T	2-Chlorotoluene	50.0000	53.6779	-7.4	139	0.00
86	T	4-Chlorotoluene	50.0000	56.1979	-12.4	136	0.00
87	T	a-Methylstyrene	50.0000	62.4504	-24.9	157	0.00
88	T	tert-Butylbenzene	50.0000	57.2469	-14.5	139	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	54.3506	-8.7	138	0.00
90	T	sec-Butylbenzene	50.0000	56.9217	-13.8	142	0.00
91	T	p-Isopropyltoluene	50.0000	56.5760	-13.2	141	0.00
92	P	1,3-Dichlorobenzene	50.0000	51.3580	-2.7	134	0.00
93	P	1,4-Dichlorobenzene	50.0000	51.3508	-2.7	135	0.00
94	T	n-Butylbenzene	50.0000	56.1795	-12.4	142	0.00
95	P	1,2-Dichlorobenzene	50.0000	51.8840	-3.8	132	0.00
96	P	1,2-Dibromo-3-Chloropropane	50.0000	45.7824	8.4	112	0.00
97	P	1,2,4-Trichlorobenzene	50.0000	50.7719	-1.5	132	0.00
98	T	Hexachlorobutadiene	50.0000	54.2405	-8.5	141	0.00
99	T	Naphthalene	50.0000	47.6516	4.7	115	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	50.1806	-0.4	127	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972967.D 8260SL.M Mon Feb 29 17:53:10 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\1\DATA\022516\9M972894.D          Vial: 3
Acq On    : 25 Feb 2016  14:45                       Operator: ADC
Sample    : WG558732-01 BFB 50ng                     Inst    : hpms9
Misc      : 7,1 STD74773                             Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 02/15/16  HPMS9
```

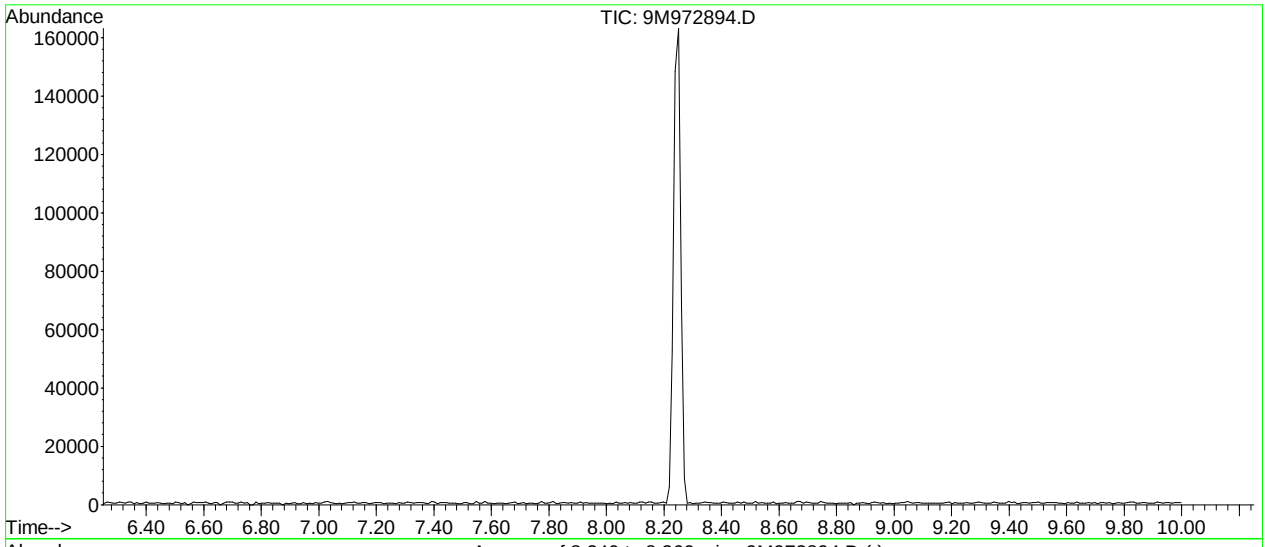

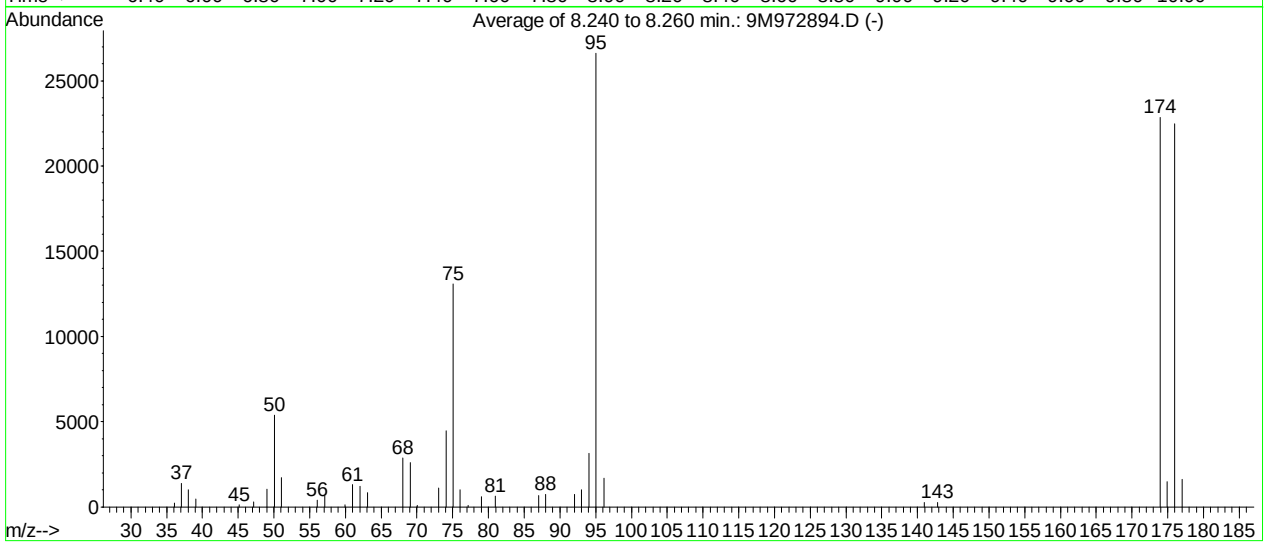

AutoFind: Scans 305, 306, 307; Background Corrected with Scan 300

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.2	5378	PASS
75	95	30	60	49.1	13067	PASS
95	95	100	100	100.0	26621	PASS
96	95	5	9	6.3	1683	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	85.8	22851	PASS
175	174	5	9	6.5	1485	PASS
176	174	95	101	98.3	22461	PASS
177	176	5	9	7.2	1619	PASS

9M972894.D 8260SL.M Fri Feb 26 11:11:03 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\022916\9M972966.D          Vial: 1
Acq On    : 29 Feb 2016  16:59                        Operator: FJB/JDS
Sample    : WG559150-01 BFB 50ng 8260                 Inst    : hpms9
Misc      : 7,1 STD74606                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 02/25/16  HPMS9
```

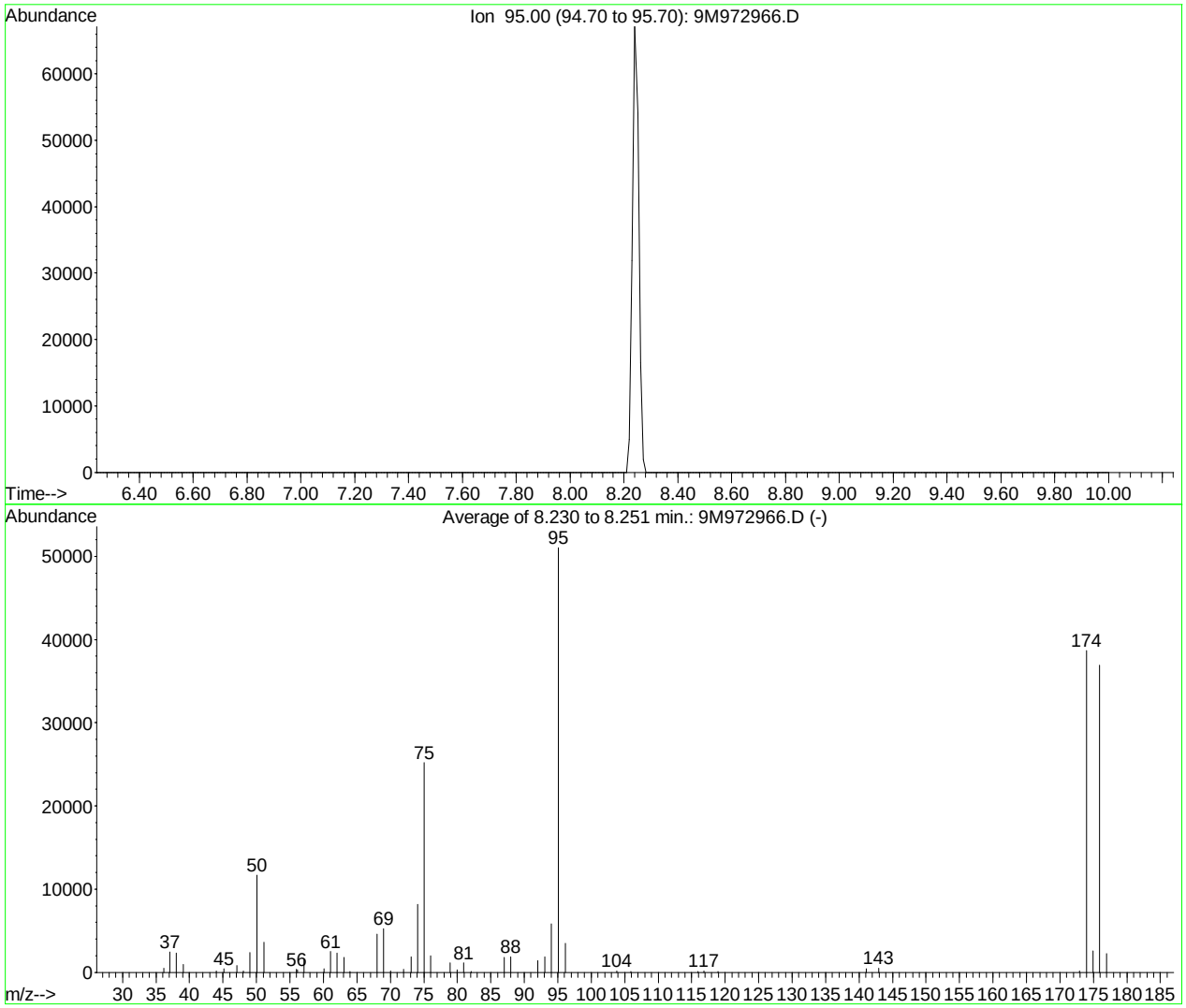

AutoFind: Scans 304, 305, 306; Background Corrected with Scan 300

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.9	11703	PASS
75	95	30	60	49.4	25229	PASS
95	95	100	100	100.0	51056	PASS
96	95	5	9	6.8	3456	PASS
173	174	0.00	2	0.4	169	PASS
174	95	50	100	75.7	38650	PASS
175	174	5	9	6.7	2572	PASS
176	174	95	101	95.5	36914	PASS
177	176	5	9	6.1	2255	PASS

9M972966.D 8260SL.M Tue Mar 01 09:17:35 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972969.D Vial: 3
Acq On : 29 Feb 2016 18:25 Operator: FJB/JDS
Sample : WG559151-01 VBLK0229 BLANK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 01 09:27:14 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	567751	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	403206	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	183902	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	151694	49.2913 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.58%		
43) 1,2-Dichloroethane-d4	10.45	65	188281	48.7607 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.52%		
58) Toluene-d8	12.83	98	538243	52.7754 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 105.56%		
79) p-Bromofluorobenzene	16.23	95	201972	56.4017 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 112.80%		

Target Compounds					Qvalue
13) Acetone	6.40	43	6092	1.9460 ug/kg#	78
56) Dimethyl Disulfide	12.82	94	14641	3.3245 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972969.D 8260SL.M Tue Mar 01 09:27:15 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972969.D Vial: 3
Acq On : 29 Feb 2016 18:25 Operator: FJB/JDS
Sample : WG559151-01 VBLK0229 BLANK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 1 9:27 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

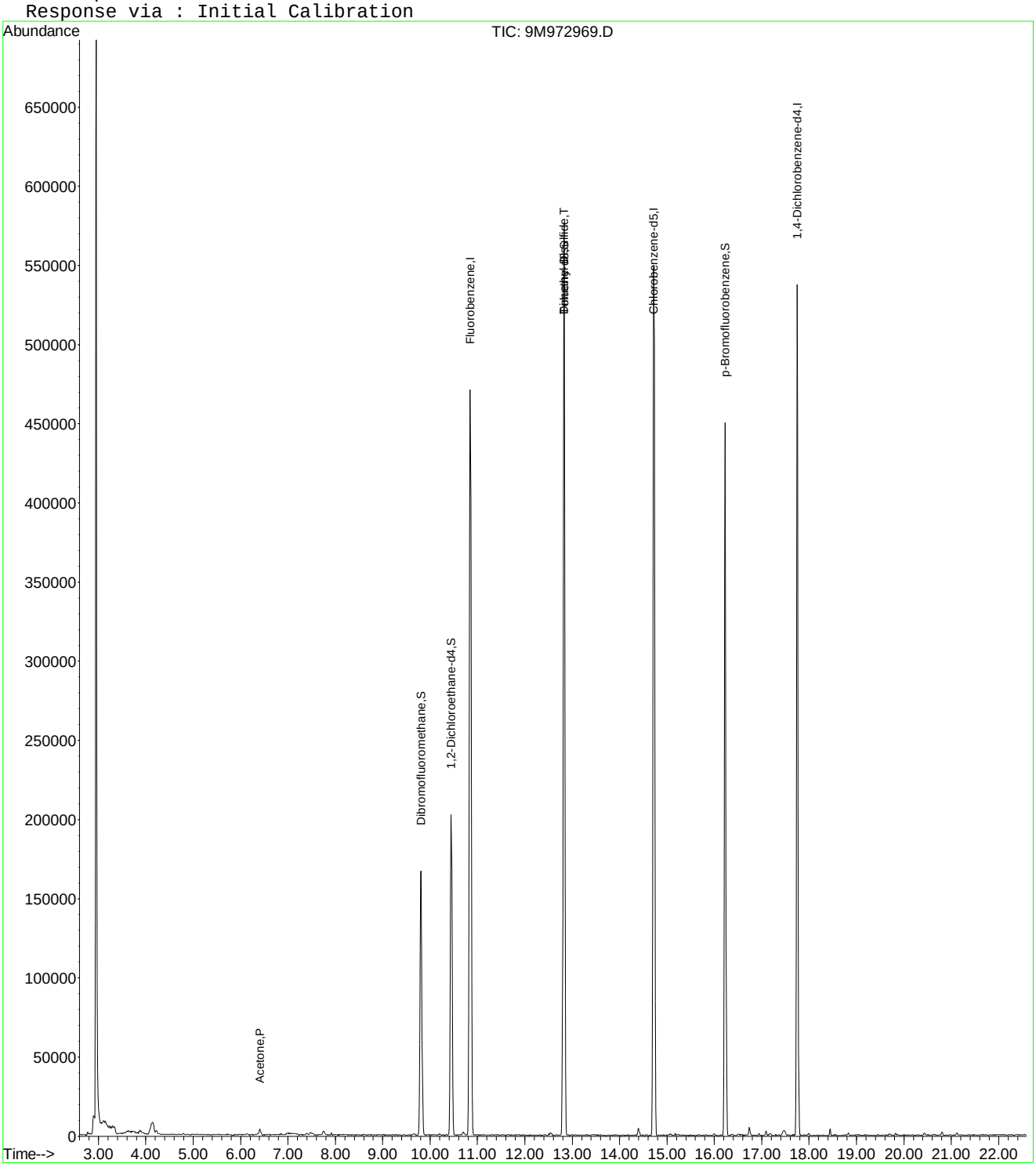

9M972969.D 8260SL.M Tue Mar 01 09:27:15 2016 Page 2

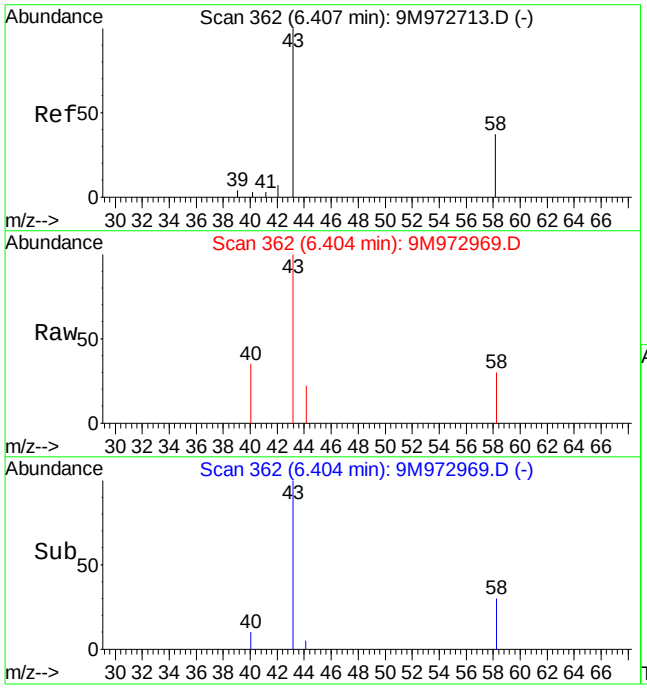

#13
Acetone
Concen: 1.95 ug/kg
RT: 6.40 min Scan# 362
Delta R.T. -0.01 min
Lab File: 9M972969.D
Acq: 29 Feb 2016 18:25

Tgt Ion: 43 Resp: 6092

Ion	Ratio	Lower	Upper
43	100		
58	39.6	16.9	39.3#

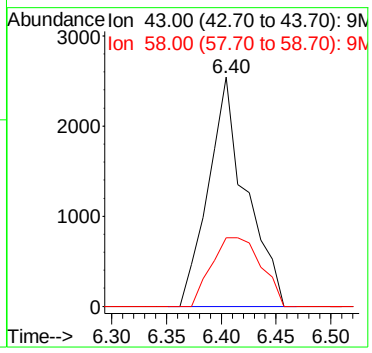

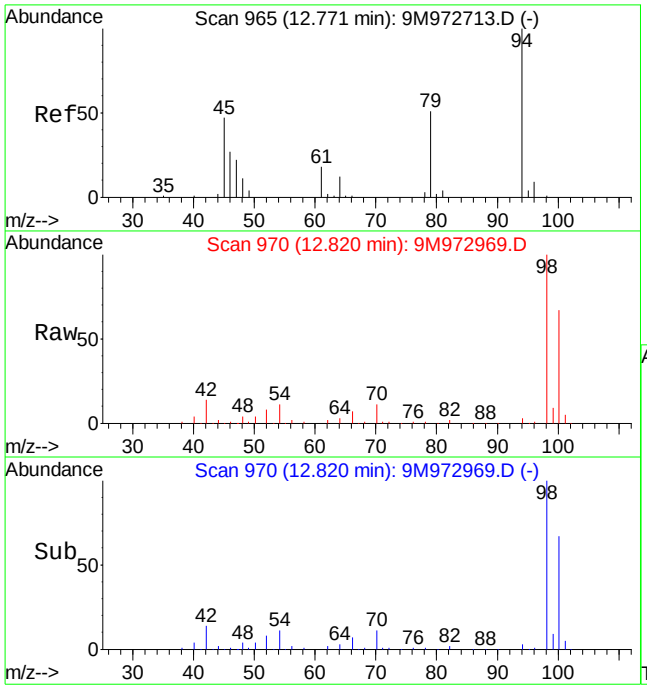

#56
Dimethyl Disulfide
Concen: 3.32 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M972969.D
Acq: 29 Feb 2016 18:25

Tgt Ion: 94 Resp: 14641

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

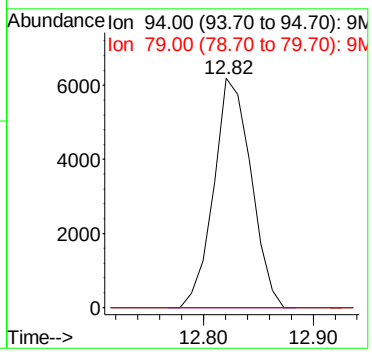

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022916\9M972970.D Vial: 4
Acq On : 29 Feb 2016 18:56 Operator: FJB/JDS
Sample : WG559151-02 20ug/Kg LCS 8260 Inst : hpms9
Misc : 7,1 STD74900 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 19:19:22 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	583985	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.73	117	426907	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.76	152	203058	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	156696	49.5012 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.00%		
43) 1,2-Dichloroethane-d4	10.44	65	192546	48.4791 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.96%		
58) Toluene-d8	12.83	98	549357	50.8746 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.74%		
79) p-Bromofluorobenzene	16.23	95	206720	52.2817 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 104.56%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	101334	25.4586 ug/kg	99
3) Chloromethane	3.74	50	75969	19.8835 ug/kg	100
4) Vinyl Chloride	3.99	62	82664	21.6128 ug/kg	99
5) 1,3-Butadiene	4.04	54	77329	21.2512 ug/kg	98
6) Bromomethane	4.88	94	46861	18.8644 ug/kg	98
7) Chloroethane	5.03	64	34093	20.0081 ug/kg	99
8) Trichlorofluoromethane	5.53	101	105806	18.4446 ug/kg	98
9) Diethyl ether	6.05	59	151224	56.3924 ug/kg	98
10) Isoprene	6.10	67	81952	23.9292 ug/kg	99
11) Acrolein	6.30	56	33255	62.1919 ug/kg	89
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	60735	20.5300 ug/kg	94
13) Acetone	6.40	43	32992	20.9636 ug/kg	99
14) 1,1-Dichloroethene	6.61	61	102623	18.8048 ug/kg	99
15) Tert-Butyl Alcohol	6.76	59	154055	257.9921 ug/kg	99
16) Dimethyl Sulfide	6.88	62	69525	30.1436 ug/kg	100
17) Iodomethane	7.13	142	28057	19.1310 ug/kg	99
18) Methyl acetate	7.14	43	57004	19.2144 ug/kg	98
19) Methylene Chloride	7.41	84	57477	19.3385 ug/kg	99
20) Carbon Disulfide	7.45	76	150130	17.8581 ug/kg	98
21) Acrylonitrile	7.58	53	29946	20.4044 ug/kg	98
22) Methyl Tert Butyl Ether	7.62	73	171070	20.2091 ug/kg	100
23) trans-1,2-Dichloroethene	7.85	61	98554	20.2636 ug/kg	97
24) n-Hexane	7.92	57	95889	19.1148 ug/kg	97
25) Diisopropyl ether	8.26	45	989869	84.9616 ug/kg	99
26) Vinyl Acetate	8.44	43	147777	22.2498 ug/kg	99
27) 1,1-Dichloroethane	8.47	63	116120	19.0087 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	875293	80.7988 ug/kg	99
29) 2-Butanone	9.02	43	38857	20.6335 ug/kg	98
30) Propionitrile	9.14	54	57762	100.2292 ug/kg	99
31) 2,2-Dichloropropane	9.24	77	87495	19.1895 ug/kg	96
32) cis-1,2-Dichloroethene	9.31	96	64843	20.3278 ug/kg	100
33) Chloroform	9.52	83	105458	18.7928 ug/kg	100
34) 1-Bromopropane	9.65	122	15268	31.7814 ug/kg	92
35) Bromochloromethane	9.75	130	41010	19.7918 ug/kg	97
36) Tetrahydrofuran	9.78	42	106319	87.5863 ug/kg	98
38) 1,1,1-Trichloroethane	10.04	97	95970	18.9112 ug/kg	98
39) Cyclohexane	10.08	56	116345	21.0282 ug/kg	98
40) 1,1-Dichloropropene	10.24	75	74028	18.5383 ug/kg	98
41) Tert-Amyl-Methyl ether	10.34	73	740185	93.9998 ug/kg	100
42) Carbon Tetrachloride	10.39	117	84392	17.9376 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022916\9M972970.D Vial: 4
Acq On : 29 Feb 2016 18:56 Operator: FJB/JDS
Sample : WG559151-02 20ug/Kg LCS 8260 Inst : hpms9
Misc : 7,1 STD74900 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 19:19:22 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	96010	19.4509 ug/kg	97
46)	Benzene	10.60	78	220888	19.7582 ug/kg	100
47)	Trichloroethene	11.35	130	71807	20.2712 ug/kg	97
48)	Methylcyclohexane	11.44	83	94356	21.2379 ug/kg	98
49)	1,2-Dichloropropane	11.56	63	63876	20.8066 ug/kg	99
50)	1,4-Dioxane	11.87	88	11081	240.5973 ug/kg	100
51)	Bromodichloromethane	11.87	83	79058	18.2727 ug/kg	99
52)	Dibromomethane	11.96	174	35780	17.5899 ug/kg	93
53)	2-Chloroethyl Vinyl Ether	12.16	63	13942	18.3350 ug/kg	91
54)	4-Methyl-2-Pentanone	12.20	58	29035	21.5476 ug/kg	96
55)	cis-1,3-Dichloropropene	12.50	75	93709	20.7891 ug/kg	100
56)	Dimethyl Disulfide	12.78	94	101791	22.4711 ug/kg	94
59)	Toluene	12.92	91	247646	20.3030 ug/kg	98
60)	Ethyl Methacrylate	13.02	69	71469	21.1386 ug/kg	100
61)	trans-1,3-Dichloropropene	13.10	75	86392	19.6649 ug/kg	98
62)	1,1,2-Trichloroethane	13.33	97	52262	20.3963 ug/kg	96
63)	2-Hexanone	13.25	43	52495	20.5193 ug/kg	98
64)	1,3-Dichloropropane	13.62	76	88405	20.7058 ug/kg	96
65)	Tetrachloroethene	13.75	164	49274	18.8436 ug/kg	98
66)	Dibromochloromethane	14.01	129	65001	18.1515 ug/kg	99
67)	1,2-Dibromoethane	14.28	107	53571	18.8491 ug/kg	100
68)	1-Chlorohexane	14.35	91	75778	21.0671 ug/kg	100
69)	Chlorobenzene	14.77	112	171132	19.9625 ug/kg	96
70)	1,1,1,2-Tetrachloroethane	14.80	131	62080	19.2832 ug/kg	96
71)	Ethylbenzene	14.79	106	93576	21.1875 ug/kg	95
72)	m-,p-Xylene	14.89	106	222100	40.7198 ug/kg	98
73)	o-Xylene	15.46	106	109315	20.8843 ug/kg	100
74)	Styrene	15.49	104	180106	20.2061 ug/kg	98
75)	Bromoform	16.00	173	39845	16.9467 ug/kg	99
76)	Isopropylbenzene	15.88	105	285427	20.3124 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	56665	18.3960 ug/kg	96
80)	1,2,3-Trichloropropane	16.29	110	23191	19.8525 ug/kg	91
81)	trans-1,4-Dichloro-2-Buten	16.33	53	20358	17.2891 ug/kg	90
82)	n-Propylbenzene	16.39	91	330501	20.7061 ug/kg	100
83)	Bromobenzene	16.52	156	72004	19.1089 ug/kg	93
84)	1,3,5-Trimethylbenzene	16.58	105	243261	20.3032 ug/kg	99
85)	2-Chlorotoluene	16.66	91	209662	19.5841 ug/kg	99
86)	4-Chlorotoluene	16.70	91	205369	20.7488 ug/kg	100
87)	a-Methylstyrene	16.98	118	125141	22.9223 ug/kg	98
88)	tert-Butylbenzene	17.04	134	51846	20.6399 ug/kg	98
89)	1,2,4-Trimethylbenzene	17.09	105	242157	19.2991 ug/kg	100
90)	sec-Butylbenzene	17.30	105	307726	19.9415 ug/kg	99
91)	p-Isopropyltoluene	17.46	119	249999	19.1970 ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	138985	18.5590 ug/kg	99
93)	1,4-Dichlorobenzene	17.80	146	142369	19.0165 ug/kg	99
94)	n-Butylbenzene	17.99	91	223292	18.4414 ug/kg	100
95)	1,2-Dichlorobenzene	18.30	146	135532	19.5049 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	15855	17.7743 ug/kg	97
97)	1,2,4-Trichlorobenzene	20.44	180	86505	17.5368 ug/kg	98
98)	Hexachlorobutadiene	20.59	225	43540	16.7449 ug/kg	99
99)	Naphthalene	20.81	128	217141	17.5505 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.11	180	87309	18.2487 ug/kg	98

(#) = qualifier out of range (m) = manual integration
9M972970.D 8260SL.M Mon Feb 29 19:19:23 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022916\9M972970.D Vial: 4
Acq On : 29 Feb 2016 18:56 Operator: FJB/JDS
Sample : WG559151-02 20ug/Kg LCS 8260 Inst : hpms9
Misc : 7,1 STD74900 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 19:19 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

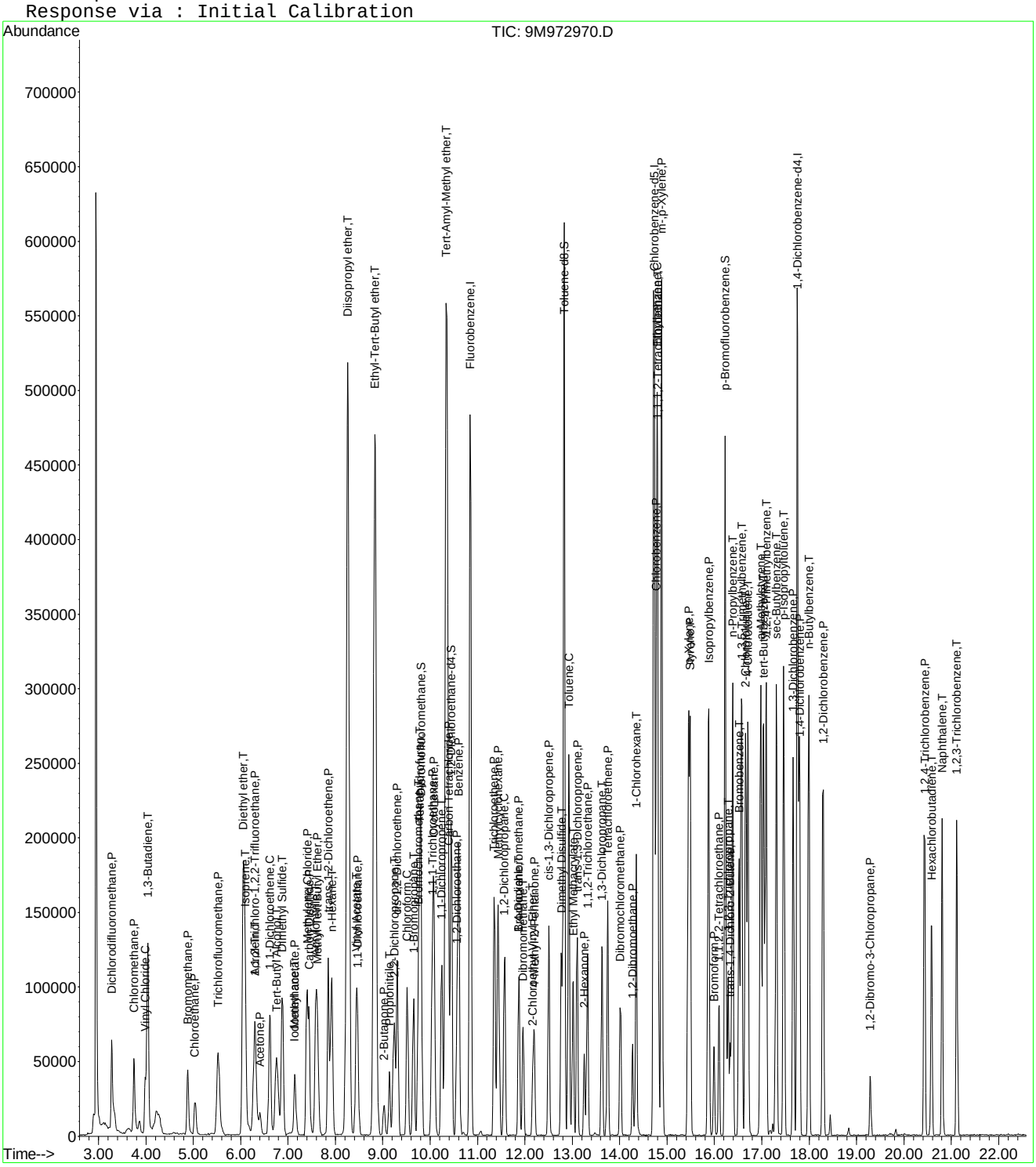

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022916\9M972971.D Vial: 5
Acq On : 29 Feb 2016 19:28 Operator: FJB/JDS
Sample : WG559084-02 MS 4.93g 8260 Inst : hpms9
Misc : 7,1 STD74900 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 19:50:39 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	518832	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	368099	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.75	152	172921	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	143909	51.1706 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 102.34%		
43) 1,2-Dichloroethane-d4	10.45	65	183661	52.0489 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.10%		
58) Toluene-d8	12.83	98	503613	54.0894 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 108.18%		
79) p-Bromofluorobenzene	16.23	95	197493	58.6531 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 117.30%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	110039	31.1172 ug/kg	100
3) Chloromethane	3.74	50	78136	23.0187 ug/kg	99
4) Vinyl Chloride	3.99	62	94321	27.7574 ug/kg	100
5) 1,3-Butadiene	4.04	54	78756	24.3613 ug/kg	97
6) Bromomethane	4.88	94	45173	20.4684 ug/kg	96
7) Chloroethane	5.03	64	34620	22.8687 ug/kg	98
8) Trichlorofluoromethane	5.52	101	114564	22.4792 ug/kg	99
9) Diethyl ether	6.06	59	173358	72.7644 ug/kg	99
10) Isoprene	6.09	67	86819	28.5337 ug/kg	95
11) Acrolein	6.30	56	27159	57.1697 ug/kg	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	66911	25.4578 ug/kg	96
13) Acetone	6.41	43	40730	30.1094 ug/kg	96
14) 1,1-Dichloroethene	6.61	61	110225	22.7342 ug/kg	97
15) Tert-Butyl Alcohol	6.76	59	142457	268.5279 ug/kg	99
16) Dimethyl Sulfide	6.88	62	60702	29.6232 ug/kg	98
17) Iodomethane	7.13	142	27166	20.5982 ug/kg	98
18) Methyl acetate	7.15	43	73724	27.9709 ug/kg	98
19) Methylene Chloride	7.41	84	54386	20.5964 ug/kg	98
20) Carbon Disulfide	7.45	76	143146	19.1656 ug/kg	98
21) Acrylonitrile	7.59	53	28241	21.6591 ug/kg	98
22) Methyl Tert Butyl Ether	7.62	73	152298	20.2508 ug/kg	97
23) trans-1,2-Dichloroethene	7.85	61	100250	23.2007 ug/kg	97
24) n-Hexane	7.92	57	106645	23.9286 ug/kg	97
25) Diisopropyl ether	8.26	45	1065021	102.8911 ug/kg	100
26) Vinyl Acetate	8.44	43	65198	11.0492 ug/kg	99
27) 1,1-Dichloroethane	8.47	63	109618	20.1977 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	914286	94.9967 ug/kg	99
29) 2-Butanone	9.03	43	38241	22.8564 ug/kg	100
30) Propionitrile	9.14	54	63492	124.0070 ug/kg	99
31) 2,2-Dichloropropane	9.24	77	88059	21.7385 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	64185	22.6484 ug/kg	99
33) Chloroform	9.52	83	102738	20.6071 ug/kg	98
34) 1-Bromopropane	9.65	122	15183	35.4508 ug/kg	98
35) Bromochloromethane	9.75	130	37597	20.4232 ug/kg	96
36) Tetrahydrofuran	9.78	42	121686	112.8342 ug/kg	99
38) 1,1,1-Trichloroethane	10.04	97	94231	20.9003 ug/kg	98
39) Cyclohexane	10.08	56	115591	23.5155 ug/kg	99
40) 1,1-Dichloropropene	10.24	75	76651	21.6056 ug/kg	98
41) Tert-Amyl-Methyl ether	10.34	73	738117	105.5084 ug/kg	99
42) Carbon Tetrachloride	10.39	117	85257	20.3970 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022916\9M972971.D Vial: 5
Acq On : 29 Feb 2016 19:28 Operator: FJB/JDS
Sample : WG559084-02 MS 4.93g 8260 Inst : hpms9
Misc : 7,1 STD74900 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 19:50:39 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	89455	20.3987	ug/kg	97
46)	Benzene	10.60	78	215032	21.6498	ug/kg	98
47)	Trichloroethene	11.35	130	69721	22.1540	ug/kg	97
48)	Methylcyclohexane	11.44	83	96691	24.4965	ug/kg	99
49)	1,2-Dichloropropane	11.56	63	60762	22.2777	ug/kg	98
50)	1,4-Dioxane	11.88	88	11497	280.9774	ug/kg	97
51)	Bromodichloromethane	11.87	83	75228	19.5709	ug/kg	99
52)	Dibromomethane	11.96	174	34485	19.0822	ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.17	63	10319	15.7471	ug/kg	95
54)	4-Methyl-2-Pentanone	12.20	58	25126	20.9882	ug/kg	96
55)	cis-1,3-Dichloropropene	12.50	75	83596	20.8744	ug/kg	100
56)	Dimethyl Disulfide	12.77	94	88205	21.9171	ug/kg	93
59)	Toluene	12.93	91	228417	21.7183	ug/kg	99
60)	Ethyl Methacrylate	13.02	69	55664	19.0942	ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	75309	19.8808	ug/kg	99
62)	1,1,2-Trichloroethane	13.32	97	46865	21.2121	ug/kg	94
63)	2-Hexanone	13.25	43	50961	23.1021	ug/kg	96
64)	1,3-Dichloropropane	13.62	76	81749	22.2058	ug/kg	98
65)	Tetrachloroethene	13.75	164	47458	21.0487	ug/kg	99
66)	Dibromochloromethane	14.01	129	58777	19.0357	ug/kg	96
67)	1,2-Dibromoethane	14.28	107	49507	20.2021	ug/kg	100
68)	1-Chlorohexane	14.35	91	67971	21.9156	ug/kg	98
69)	Chlorobenzene	14.77	112	153880	20.8178	ug/kg	97
70)	1,1,1,2-Tetrachloroethane	14.80	131	56030	20.1845	ug/kg	95
71)	Ethylbenzene	14.80	106	82663	21.7068	ug/kg	99
72)	m-,p-Xylene	14.89	106	198234	42.1506	ug/kg	98
73)	o-Xylene	15.45	106	96028	21.2768	ug/kg	97
74)	Styrene	15.49	104	156285	20.3348	ug/kg	99
75)	Bromoform	15.99	173	37091	18.2957	ug/kg	97
76)	Isopropylbenzene	15.88	105	258010	21.2947	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	54697	20.8519	ug/kg	99
80)	1,2,3-Trichloropropane	16.29	110	22624	22.7424	ug/kg	87
81)	trans-1,4-Dichloro-2-Buten	16.33	53	18551	18.5002	ug/kg	84
82)	n-Propylbenzene	16.39	91	286356	21.0671	ug/kg	99
83)	Bromobenzene	16.52	156	61092	19.0387	ug/kg	95
84)	1,3,5-Trimethylbenzene	16.57	105	208691	20.4535	ug/kg	100
85)	2-Chlorotoluene	16.66	91	178527	19.5821	ug/kg	98
86)	4-Chlorotoluene	16.70	91	166754	19.7837	ug/kg	99
87)	a-Methylstyrene	16.98	118	94822	20.3958	ug/kg	100
88)	tert-Butylbenzene	17.04	134	47657	22.2788	ug/kg	84
89)	1,2,4-Trimethylbenzene	17.09	105	204757	19.1624	ug/kg	100
90)	sec-Butylbenzene	17.30	105	269834	20.5335	ug/kg	99
91)	p-Isopropyltoluene	17.46	119	339455	30.6090	ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	113351	17.7740	ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	113863	17.8595	ug/kg	98
94)	n-Butylbenzene	17.99	91	185284	17.9693	ug/kg	99
95)	1,2-Dichlorobenzene	18.30	146	109863	18.5663	ug/kg	97
96)	1,2-Dibromo-3-Chloropropan	19.30	157	16051	21.1301	ug/kg	98
97)	1,2,4-Trichlorobenzene	20.43	180	69508	16.5469	ug/kg	97
98)	Hexachlorobutadiene	20.59	225	37957	17.1418	ug/kg	98
99)	Naphthalene	20.81	128	192603	18.2803	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	68902	16.9113	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972971.D 8260SL.M Mon Feb 29 19:50:39 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022916\9M972971.D Vial: 5
Acq On : 29 Feb 2016 19:28 Operator: FJB/JDS
Sample : WG559084-02 MS 4.93g 8260 Inst : hpms9
Misc : 7,1 STD74900 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 19:50 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

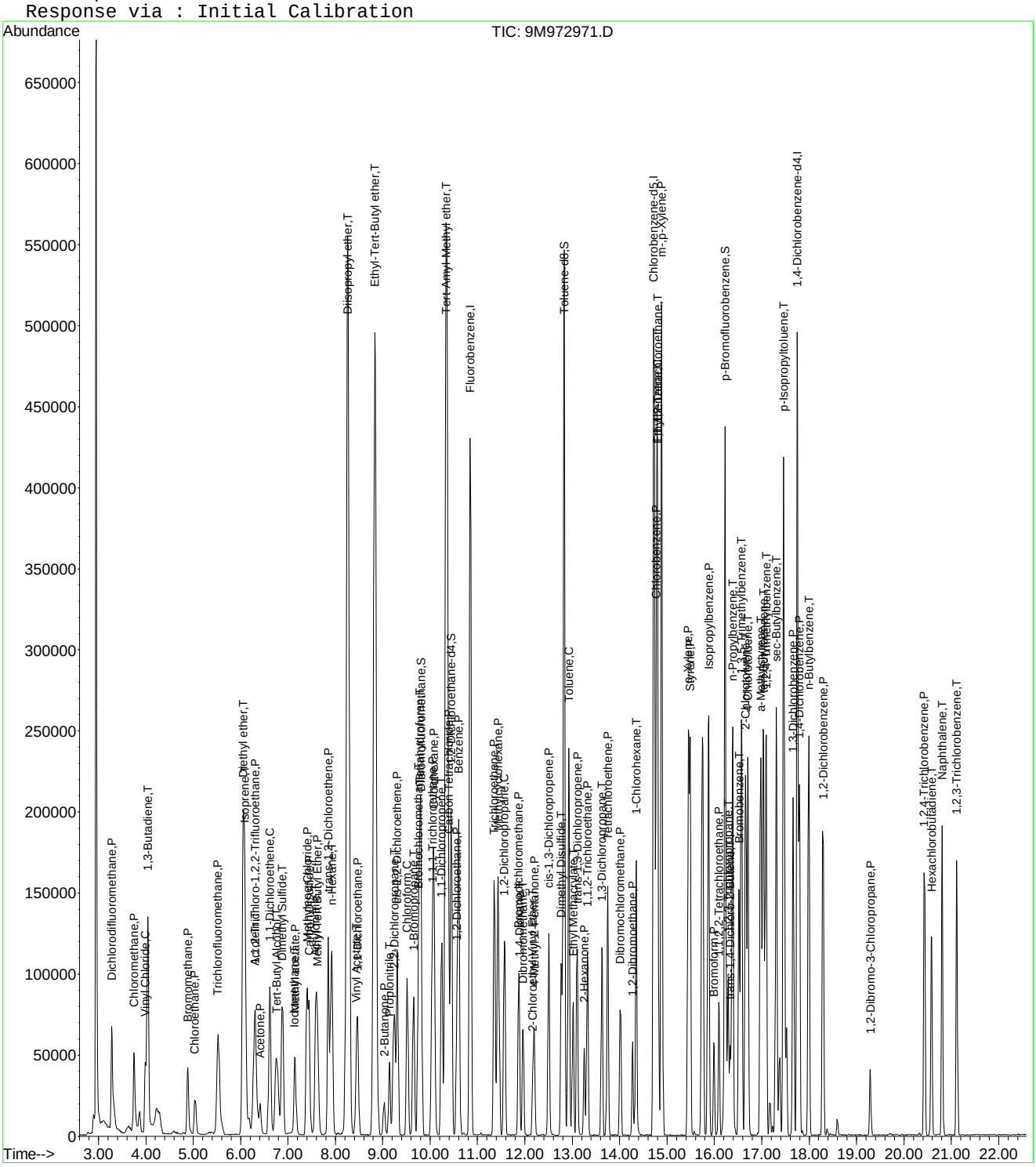

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022916\9M972972.D Vial: 6
Acq On : 29 Feb 2016 19:59 Operator: FJB/JDS
Sample : WG559084-03 MSD 4.98g 8260 Inst : hpms9
Misc : 7,1 STD74900 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 20:21:42 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	580822	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.73	117	416742	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	195602	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	157381	49.9883 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.98%		
43) 1,2-Dichloroethane-d4	10.44	65	198383	50.2207 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.44%		
58) Toluene-d8	12.83	98	559406	53.0689 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.14%		
79) p-Bromofluorobenzene	16.23	95	215279	56.5218 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 113.04%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	119216	30.1142 ug/kg	99
3) Chloromethane	3.74	50	89296	23.4988 ug/kg	100
4) Vinyl Chloride	3.99	62	98181	25.8096 ug/kg	98
5) 1,3-Butadiene	4.04	54	86407	23.8753 ug/kg	98
6) Bromomethane	4.88	94	50748	20.5404 ug/kg	99
7) Chloroethane	5.04	64	38146	22.5085 ug/kg	98
8) Trichlorofluoromethane	5.53	101	129114	22.6303 ug/kg	100
9) Diethyl ether	6.05	59	176361	66.1243 ug/kg	99
10) Isoprene	6.09	67	94412	27.7175 ug/kg	100
11) Acrolein	6.30	56	28437	53.4711 ug/kg	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	75948	25.8122 ug/kg	97
13) Acetone	6.41	43	42723	28.0536 ug/kg	94
14) 1,1-Dichloroethene	6.61	61	125322	23.0893 ug/kg	98
15) Tert-Butyl Alcohol	6.75	59	139055	234.1401 ug/kg	100
16) Dimethyl Sulfide	6.89	62	65930	28.7406 ug/kg	97
17) Iodomethane	7.14	142	29993	20.3531 ug/kg	99
18) Methyl acetate	7.14	43	75015	25.4231 ug/kg	100
19) Methylene Chloride	7.41	84	63030	21.3224 ug/kg	94
20) Carbon Disulfide	7.45	76	163488	19.5530 ug/kg	99
21) Acrylonitrile	7.58	53	31897	21.8521 ug/kg	97
22) Methyl Tert Butyl Ether	7.61	73	167494	19.8944 ug/kg	100
23) trans-1,2-Dichloroethene	7.85	61	113826	23.5311 ug/kg	100
24) n-Hexane	7.92	57	116861	23.4223 ug/kg	98
25) Diisopropyl ether	8.26	45	1105439	95.3978 ug/kg	100
26) Vinyl Acetate	8.43	43	77014	11.6587 ug/kg	99
27) 1,1-Dichloroethane	8.46	63	125305	20.6240 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	947597	87.9496 ug/kg	99
29) 2-Butanone	9.03	43	40521	21.6343 ug/kg	100
30) Propionitrile	9.14	54	60577	105.6863 ug/kg	99
31) 2,2-Dichloropropane	9.24	77	100969	22.2653 ug/kg	97
32) cis-1,2-Dichloroethene	9.30	96	72804	22.9479 ug/kg	99
33) Chloroform	9.52	83	119845	21.4729 ug/kg	97
34) 1-Bromopropane	9.65	122	16437	34.3165 ug/kg	95
35) Bromochloromethane	9.75	130	42499	20.6221 ug/kg	97
36) Tetrahydrofuran	9.78	42	119586	99.0522 ug/kg	98
38) 1,1,1-Trichloroethane	10.05	97	108178	21.4329 ug/kg	98
39) Cyclohexane	10.08	56	132646	24.1050 ug/kg	98
40) 1,1-Dichloropropene	10.24	75	93084	23.4373 ug/kg	98
41) Tert-Amyl-Methyl ether	10.34	73	755325	96.4449 ug/kg	99
42) Carbon Tetrachloride	10.39	117	96816	20.6904 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022916\9M972972.D Vial: 6
Acq On : 29 Feb 2016 19:59 Operator: FJB/JDS
Sample : WG559084-03 MSD 4.98g 8260 Inst : hpms9
Misc : 7,1 STD74900 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 20:21:42 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	103644	21.1118 ug/kg	98
46)	Benzene	10.60	78	248359	22.3364 ug/kg	99
47)	Trichloroethene	11.35	130	84080	23.8652 ug/kg	98
48)	Methylcyclohexane	11.44	83	112982	25.5688 ug/kg	98
49)	1,2-Dichloropropane	11.56	63	70138	22.9707 ug/kg	98
50)	1,4-Dioxane	11.88	88	10123	220.9936 ug/kg	97
51)	Bromodichloromethane	11.87	83	84333	19.5980 ug/kg	96
52)	Dibromomethane	11.96	174	39178	19.3653 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.15	63	10937	15.0595 ug/kg	95
54)	4-Methyl-2-Pentanone	12.20	58	29575	22.0678 ug/kg	97
55)	cis-1,3-Dichloropropene	12.50	75	99539	22.2027 ug/kg	98
56)	Dimethyl Disulfide	12.77	94	100887	22.3928 ug/kg	91
59)	Toluene	12.92	91	281968	23.6807 ug/kg	99
60)	Ethyl Methacrylate	13.02	69	65418	19.8208 ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	88815	20.7096 ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	55519	22.1959 ug/kg	97
63)	2-Hexanone	13.25	43	53827	21.5532 ug/kg	99
64)	1,3-Dichloropropane	13.62	76	95231	22.8486 ug/kg	99
65)	Tetrachloroethene	13.75	164	60438	23.6768 ug/kg	97
66)	Dibromochloromethane	14.01	129	67164	19.2130 ug/kg	100
67)	1,2-Dibromoethane	14.28	107	58739	21.1716 ug/kg	97
68)	1-Chlorohexane	14.35	91	87133	24.8148 ug/kg	98
69)	Chlorobenzene	14.77	112	187785	22.4393 ug/kg	96
70)	1,1,1,2-Tetrachloroethane	14.80	131	66976	21.3115 ug/kg	98
71)	Ethylbenzene	14.80	106	103117	23.9173 ug/kg	99
72)	m-,p-Xylene	14.89	106	253582	47.6257 ug/kg	96
73)	o-Xylene	15.46	106	119898	23.4648 ug/kg	99
74)	Styrene	15.49	104	194537	22.3574 ug/kg	100
75)	Bromoform	16.00	173	42273	18.4179 ug/kg	96
76)	Isopropylbenzene	15.88	105	333373	24.3032 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	63287	21.3290 ug/kg	100
80)	1,2,3-Trichloropropane	16.29	110	25092	22.2986 ug/kg	87
81)	trans-1,4-Dichloro-2-Buten	16.33	53	20364	17.9534 ug/kg	82
82)	n-Propylbenzene	16.39	91	386942	25.1662 ug/kg	99
83)	Bromobenzene	16.52	156	77856	21.4496 ug/kg	97
84)	1,3,5-Trimethylbenzene	16.57	105	281461	24.3870 ug/kg	99
85)	2-Chlorotoluene	16.66	91	234670	22.7556 ug/kg	99
86)	4-Chlorotoluene	16.70	91	228924	24.0102 ug/kg	99
87)	a-Methylstyrene	16.98	118	126397	24.0349 ug/kg	99
88)	tert-Butylbenzene	17.03	134	63395	26.1996 ug/kg	82
89)	1,2,4-Trimethylbenzene	17.09	105	272777	22.5681 ug/kg	98
90)	sec-Butylbenzene	17.30	105	374729	25.2092 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	518809	41.3570 ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	152163	21.0933 ug/kg	100
93)	1,4-Dichlorobenzene	17.80	146	151668	21.0308 ug/kg	99
94)	n-Butylbenzene	17.99	91	272650	23.3762 ug/kg	99
95)	1,2-Dichlorobenzene	18.30	146	141071	21.0759 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.30	157	17981	20.9261 ug/kg	99
97)	1,2,4-Trichlorobenzene	20.44	180	90409	19.0269 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	57832	23.0891 ug/kg	98
99)	Naphthalene	20.81	128	225877	18.9525 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	89461	19.4112 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972972.D 8260SL.M Mon Feb 29 20:21:43 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022916\9M972972.D Vial: 6
Acq On : 29 Feb 2016 19:59 Operator: FJB/JDS
Sample : WG559084-03 MSD 4.98g 8260 Inst : hpms9
Misc : 7,1 STD74900 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 20:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

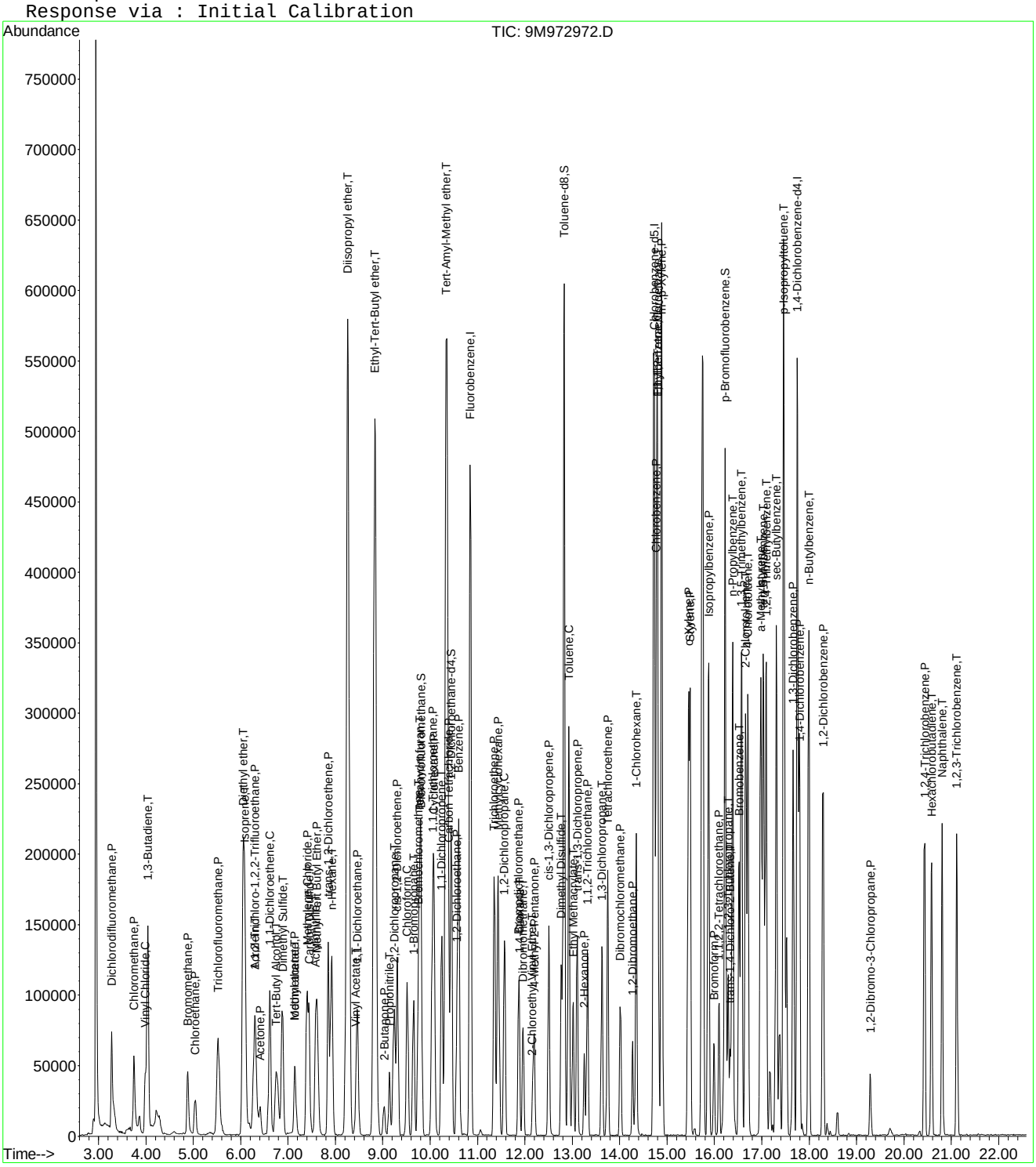

9M972972.D 8260SL.M Mon Feb 29 20:21:43 2016 Page 3

2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021357-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT01(5-5.5)250216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	02/29/2016 22:50
Collect Date:	02/25/2016 11:30	**Dilution:**	1	**File ID:**	1LM.LM33483
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.34	U	4.66	2.34	1.17

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021357-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT01(9.5-10)250216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	02/29/2016 23:46
Collect Date:	02/25/2016 11:37	**Dilution:**	1	**File ID:**	1LM.LM33486
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	88.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	20.7		4.35	2.18	1.09

Certificate of Analysis

Sample #:	L16021357-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT01(15-15.5)250216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 00:05
Collect Date:	02/25/2016 14:23	**Dilution:**	1	**File ID:**	1LM.LM33487
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	90.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	7.54		4.32	2.16	1.08

Certificate of Analysis

Sample #:	L16021357-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT01(22.5-23)250216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 00:24
Collect Date:	02/25/2016 16:00	**Dilution:**	1	**File ID:**	1LM.LM33488
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	63.0		4.54	2.28	1.14

Certificate of Analysis

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L16021357-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT01(24.5-25)250216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 00:43
Collect Date:	02/25/2016 16:30	**Dilution:**	1	**File ID:**	1LM.LM33489
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	87.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	47.7		4.48	2.24	1.12

Certificate of Analysis

Sample #:	L16021357-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT01(27-27.5)250216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 10:32
Collect Date:	02/25/2016 16:35	**Dilution:**	10	**File ID:**	1LM.LM33511
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	79.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	535		48.6	24.4	12.2

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

MICROBAC

Semivolatile Sample Extract Log

Document Control No.: 1753 Page: 14 of 100

Parameter: Perchlorate
SOP #: HPLC 06
Analyst: ADC / AWE
Spike/Surrogate analyst: ADC
Surrogate #: NA
Spike # A: STD 72686
Ext Solvent: DI-H2O
Ext Solvent: NA
Ext Disk: NA

Matrix: SOILS
Rev #: 07
Date/Time Extracted: ADC 2/29/16 12:30
Witness:

Spike # B: NA
Lot #: NA
Lot #: NA
Lot #: NA

Extraction Work Group: WG 559140
Analytical Work Group: WG 559142
Run ID: R4478798

Pipetter(s): Eppendorf #403
Analytical Balance ID: BAL 014
Reagent: Tubes Lot #: R6134011
Reagent: Spa Lot #: COA 16150
Other: DS Lot #: COA 18071

Color Code
T = Transparent
C = Colored
O = Opaque

	Sample ID	Test Code	pH	Initial Wt / Vol	IS Amount ADC ~~Surrogate~~	Amount Spike	Final Volume	Extract Color	Comments
1	WG -01	6850	NA	5.003	0.250 mL	1.0 mL	50.0 mL	NA	MCP (2mg/kg) (10,000 ug/kg)
2	-02			5.006		NA			Blank
3	-03			5.009		1.0 mL			LCS (2mg/kg)
4	L16021352-01			5.250		NA			RPA
5	WG -05			5.241		1.0 mL			MS
6	-06			5.248		1.0 mL			MSD
7	1357-02			5.210		NA			
8	-03			5.143					
9	-04			5.239					
10	-05			5.120					
11	-06			5.199					
12	L16021358-01			5.165					
13	-02			5.088					
14	-03			5.087					
15	-04			5.129					
16	-05			5.186					
17	-06			5.066					
18	-07			5.222					
19	-08			5.059					
20	-09			5.075					
21									
22									
23									
24									

Reviewed by: [signature] 3-1-16

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe
Calibration Check: 1412 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG559142-01 MCT	~~4,056~~ 9,560	
-02 BLK	6.51	
-03 LCS	6.57	
L16021357-01 208	~~1527~~ 15.27	
MS	18.06	
MSD	14.16	
1357-02	~~25.8~~ 258	
-03	190.2	
-04	182.7	
-05	155.6	
-06	96.2	
L16021358-01	6.58	
-02	19.11	
-03	16.73	
-04	7.87	
-05	28.4	
-06	5.76	
-07	68.9	
-08	37.9	
-09	26.3	

Analyst: Andrew Ewing

Date/Time: 3-1-16 / 1310

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 021716_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG557864 (waters)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 MS/MSD STD: NA

Comments: ICAL WG557856 : Alternate Source STD72685
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM33244	WG557856-01 CCB	1	1		02/17/16 19:12
2	1LM.LM33245	WG557856-02 STD (0.1 ug/L)	1	1	STD72683	02/17/16 19:31
3	1LM.LM33246	WG557856-03 STD (0.2 ug/L)	1	1	STD72683	02/17/16 19:50
4	1LM.LM33247	WG557856-04 STD (0.5 ug/L)	1	1	STD72683	02/17/16 20:08
5	1LM.LM33248	WG557856-05 STD (1.0 ug/L)	1	1	STD72683	02/17/16 20:27
6	1LM.LM33249	WG557856-06 STD (2.0 ug/L)	1	1	STD72683	02/17/16 20:46
7	1LM.LM33250	WG557856-07 STD (5.0 ug/L)	1	1	STD72683	02/17/16 21:05
8	1LM.LM33251	WG557856-08 STD (10 ug/L)	1	1	STD72683	02/17/16 21:24
9	1LM.LM33252	WG557856-09 SSCV (1.0 ug/L)	1	1	STD72685	02/17/16 21:43
10	1LM.LM33253	WG557868-01 CCB	1	1		02/17/16 22:02
11	1LM.LM33254	WG557868-02 CCV (1.0ug/L)	1	1	STD72683	02/17/16 22:21
12	1LM.LM33255	WG557864-05 MRL (0.2ug/L)	1	1	STD72683	02/17/16 22:40
13	1LM.LM33256	WG557864-01 MCT (0.2ug/L)	1	1	STD72685	02/17/16 22:59
14	1LM.LM33257	WG557864-02 BLANK	1	1		02/17/16 23:18
15	1LM.LM33258	WG557864-03 LCS (0.2ug/L)	1	1	STD72685	02/17/16 23:37
16	1LM.LM33259	WG557864-04 LCS2 (0.2ug/L)	1	1	STD72685	02/17/16 23:56
17	1LM.LM33260	L16020819-01 (1000x) (NR)	1	1000		02/18/16 00:15
18	1LM.LM33261	L16020819-01 (100x) (NR)	1	100		02/18/16 00:34
19	1LM.LM33262	L16020819-01 (10x) (NR)	1	10		02/18/16 00:53
20	1LM.LM33263	L16020819-01 Neat	1	1		02/18/16 01:11
21	1LM.LM33264	Blank Rinse	1	1		02/18/16 01:30
22	1LM.LM33265	Blank Rinse	1	1		02/18/16 01:49
23	1LM.LM33266	WG557868-03 CCV (1.0ug/L)	1	1	STD72683	02/18/16 02:08
24	1LM.LM33267	WG557864-06 MRL (0.2ug/L)	1	1	STD72683	02/18/16 02:27
25	1LM.LM33268	WG557868-04 CCB	1	1		02/18/16 02:46

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17	X	1	Analyzed too dilute	
	L16020819-01 (1000x) (NR) : Results from this sample at this dilution are not needed.			
18	X	1	Analyzed too dilute	
	L16020819-01 (100x) (NR) : Results from this sample at this dilution are not needed.			
19	X	1	Analyzed too dilute	

Page: 1 Approved: 18-FEB-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 021716_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG557864 (waters)

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 NA

Comments

Seq.	Rerun	Dil.	Reason	Analytes
	L16020819-01 (10x) (NR) : Results from this sample at this dilution are not needed.			

Page: 2 Approved: 18-FEB-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 022916_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015 (Water) WG559142 (Soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 MS/MSD STD: STD72685

Comments: L16021262s were analyzed initially at dilutions based on historical data. Fraction 03 required further dilution to obtain results within the calibration range. Seq No.s 4 through 26 need re-analyzed due to CCV failure.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM33446	WG559066-01 CCB	1	1		02/29/16 11:09
2	1LM.LM33447	WG559066-02 CCV (1.0ug/L)	1	1	STD72683	02/29/16 11:28
3	1LM.LM33448	WG559015-05 MRL (0.2ug/L)	1	1	STD72683	02/29/16 11:47
4	1LM.LM33449	WG559015-01 MCT (0.2ug/L)	1	1	STD72685	02/29/16 12:06
5	1LM.LM33450	WG559015-02 BLANK	1	1		02/29/16 12:25
6	1LM.LM33451	WG559015-03 LCS (0.2ug/L)	1	1	STD72685	02/29/16 12:44
7	1LM.LM33452	WG559015-04 LCS2 (0.2ug/L)	1	1	STD72685	02/29/16 13:02
8	1LM.LM33453	L16021060-01 ADC	1	1	STD72685	02/29/16 13:21
9	1LM.LM33454	L16021060-02 ADC	1	1	STD72685	02/29/16 13:40
10	1LM.LM33455	L16021060-03 ADC	1	1	STD72685	02/29/16 13:59
11	1LM.LM33456	L16021060-04 ADC	1	1	STD72685	02/29/16 14:18
12	1LM.LM33457	L16021262-01 (20x)	1	20		02/29/16 14:37
13	1LM.LM33458	L16021262-02 (5000x)	1	5000		02/29/16 14:56
14	1LM.LM33459	WG559066-03 CCV (1.0ug/L)	1	1	STD72683	02/29/16 15:15
15	1LM.LM33460	WG559015-06 MRL (0.2ug/L)	1	1	STD72683	02/29/16 15:34
16	1LM.LM33461	WG559066-04 CCB	1	1		02/29/16 15:53
17	1LM.LM33462	L16021262-03 (20X)	1	20		02/29/16 16:12
18	1LM.LM33463	L16021262-04 (2000X)	1	2000		02/29/16 16:31
19	1LM.LM33464	L16021262-05 (1000X)	1	1000		02/29/16 16:50
20	1LM.LM33465	L16021262-06 (10,000X)	1	10000		02/29/16 17:09
21	1LM.LM33466	L16021262-07 (10,000X)	1	10000		02/29/16 17:28
22	1LM.LM33467	L16021262-08 (5000X)	1	5000		02/29/16 17:47
23	1LM.LM33468	L16021262-09 (5000X)	1	5000		02/29/16 18:06
24	1LM.LM33469	L16021262-10 (100,000X)	1	100000		02/29/16 18:24
25	1LM.LM33470	L16021262-11 (10,000X)	1	10000		02/29/16 18:43
26	1LM.LM33471	L16021262-12 (10,000X)	1	10000		02/29/16 19:02
27	1LM.LM33472	WG559066-05 CCV (1.0ug/L)	1	1	STD72683	02/29/16 19:21
28	1LM.LM33473	WG559015-07 MRL (0.2ug/L)	1	1	STD72683	02/29/16 19:40
29	1LM.LM33474	WG559066-06 CCB	1	1		02/29/16 19:59
30	1LM.LM33475	L16021262-13 (10,000X)	1	10000		02/29/16 20:18
31	1LM.LM33476	L16021262-14 (10,000X)	1	10000		02/29/16 20:37
32	1LM.LM33477	WG559066-07 CCV (1.0ug/L)	1	1	STD72683	02/29/16 20:56
75	1LM.LM33478	WG559142-07 MRL (0.2ug/L)	7	1	STD72683	02/29/16 21:15

Page: 1 Approved: 01-MAR-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 022916_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015 (Water) WG559142 (Soils)

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM33479	WG559066-08 CCB	1	1		02/29/16 21:34
35	1LM.LM33480	WG559142-01 MCT (2.0ug/kg)	7	1	STD72685	02/29/16 21:53
36	1LM.LM33481	WG559142-02 BLANK	7	1		02/29/16 22:12
37	1LM.LM33482	WG559142-03 LCS (2.0ug/kg)	7	1	STD72685	02/29/16 22:31
76	1LM.LM33483	L16021357-01 REF	7	1		02/29/16 22:50
39	1LM.LM33484	L16021357-01 MS	7	1		02/29/16 23:09
40	1LM.LM33485	L16021357-01 MSD	7	1		02/29/16 23:27
41	1LM.LM33486	L16021357-02	7	1		02/29/16 23:46
42	1LM.LM33487	L16021357-03	7	1		03/01/16 00:05
43	1LM.LM33488	L16021357-04	7	1		03/01/16 00:24
44	1LM.LM33489	L16021357-05	7	1		03/01/16 00:43
45	1LM.LM33490	WG559066-09 CCV (1.0ug/L)	1	1	STD72685	03/01/16 01:02
46	1LM.LM33491	WG559142-08 MRL (2.0ug/kg)	7	1	STD72685	03/01/16 01:21
47	1LM.LM33492	WG559066-10 CCB	1	1		03/01/16 01:40
48	1LM.LM33493	L16021357-06	7	1		03/01/16 01:59
49	1LM.LM33494	L16021358-01	7	1		03/01/16 02:18
50	1LM.LM33495	L16021358-02	7	1		03/01/16 02:37
51	1LM.LM33496	L16021358-03	7	1		03/01/16 02:56
52	1LM.LM33497	L16021358-04	7	1		03/01/16 03:15
53	1LM.LM33498	L16021358-05	7	1		03/01/16 03:34
54	1LM.LM33499	L16021358-06	7	1		03/01/16 03:53
55	1LM.LM33500	L16021358-07	7	1		03/01/16 04:12
56	1LM.LM33501	L16021358-08	7	1		03/01/16 04:30
57	1LM.LM33502	L16021358-09	7	1		03/01/16 04:49
58	1LM.LM33503	WG559066-11 CCV (1.0ug/L)	1	1	STD72685	03/01/16 05:08
59	1LM.LM33504	WG559142-09 MRL (2.0ug/kg)	7	1	STD72685	03/01/16 05:27
60	1LM.LM33505	WG559066-12 CCB	1	1		03/01/16 05:46
61	1LM.LM33506	WG559015-09 MRL (0.2ug/L)	1	1	STD72683	03/01/16 08:58
62	1LM.LM33507	L16021262-03 (100X)	1	100		03/01/16 09:17
63	1LM.LM33508	WG559066-13 CCV (1.0ug/L)	1	1	STD72683	03/01/16 09:35
64	1LM.LM33509	WG559015-10 MRL (0.2ug/L)	1	1	STD72683	03/01/16 09:54
65	1LM.LM33510	WG559066-14 CCB	1	1		03/01/16 10:13
66	1LM.LM33511	L16021357-06 (10X)	7	10		03/01/16 10:32
67	1LM.LM33512	L16021358-05 (10X)	7	10		03/01/16 10:51
68	1LM.LM33513	L16021358-07 (100X)	7	100		03/01/16 11:10
69	1LM.LM33514	L16021358-08 (100X)	7	100		03/01/16 11:29

Page: 2 Approved: 01-MAR-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 022916_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015 (Water) WG559142 (Soils)

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
70	1LM.LM33515	L16021358-09 (100X)	7	100		03/01/16 11:48
71	1LM.LM33516	WG559066-15 CCV (1.0ug/L)	1	1	STD72685	03/01/16 12:07
72	1LM.LM33517	WG559142-10 MRL (2.0ug/kg)	7	1	STD72685	03/01/16 12:26
73	1LM.LM33518	WG559066-16 CCB	1	1		03/01/16 12:45

Comments

Seq.	Rerun	Dil.	Reason	Analytes
14				
	WG559066-03 CCV fails high. Affected samples will need re-analyzed.			
30				
	L16021262-13 not reporting per WTD.			
31				
	L16021262-14 not reporting per WTD.			
48	X	10	Over Calibration Range	perchlorate
	L16021357-06			
53	X	10	Over Calibration Range	Perchlorate
	L16021358-05			
55	X	100	Over Calibration Range	Perchlorate
	L16021358-07			
56	X	100	Over Calibration Range	Perchlorate
	L16021358-08			
57	X	100	Over Calibration Range	Perchlorate
	L16021358-09			

Page: 3 Approved: 01-MAR-16

Microbac Laboratories Inc.

Data Checklist

Date: 17-FEB-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG557856
Runlog ID: 73366
Analytical Workgroups: L16020819

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
18-FEB-2016
John Richards

Secondary Reviewer:
18-FEB-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-18-2016 16:36:00

Microbac Laboratories Inc.

Data Checklist

Date: 29-FEB-2016
Analyst: WTD
Analyst: ADC
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 73569
Analytical Workgroups: L16021262,L16021060,L16021357,L16021358

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	WTD
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MES

Primary Reviewer: 01-MAR-2016

Secondary Reviewer: 01-MAR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-02-2016 08:38:17

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG559142

Login Number: L16021357

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18DPT01(5-5.5)250216	01	02/25/16					02/29/2016	4	28		02/29/16	.4	28	
18DPT01(9.5-10)250216	02	02/25/16					02/29/2016	4	28		02/29/16	.5	28	
18DPT01(15-15.5)250216	03	02/25/16					02/29/2016	3.9	28		03/01/16	.5	28	
18DPT01(22.5-23)250216	04	02/25/16					02/29/2016	3.9	28		03/01/16	.5	28	
18DPT01(24.5-25)250216	05	02/25/16					02/29/2016	3.8	28		03/01/16	.5	28	
18DPT01(27-27.5)250216	06	02/25/16					02/29/2016	3.8	28		03/01/16	.9	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4653176
Report generated 03/02/2016 08:15

METHOD BLANK SUMMARY

Login Number: L16021357
Blank File ID: 1LM.LM33481
Prep Date: 02/29/16 12:30
Analyzed Date: 02/29/16 22:12
Analyst: WTD

Work Group: WG559142
Blank Sample ID: WG559142-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG559142-07	1LM.LM33478	02/29/16 21:15	01
MCT	WG559142-01	1LM.LM33480	02/29/16 21:53	01
LCS	WG559142-03	1LM.LM33482	02/29/16 22:31	01
18DPT01(5-5.5)250216	L16021357-01	1LM.LM33483	02/29/16 22:50	01
18DPT01(9.5-10)250216	L16021357-02	1LM.LM33486	02/29/16 23:46	01
18DPT01(15-15.5)250216	L16021357-03	1LM.LM33487	03/01/16 00:05	01
18DPT01(22.5-23)250216	L16021357-04	1LM.LM33488	03/01/16 00:24	01
18DPT01(24.5-25)250216	L16021357-05	1LM.LM33489	03/01/16 00:43	01
QCMRL	WG559142-08	1LM.LM33491	03/01/16 01:21	01
QCMRL	WG559142-09	1LM.LM33504	03/01/16 05:27	01
18DPT01(27-27.5)250216	L16021357-06	1LM.LM33511	03/01/16 10:32	DL01
QCMRL	WG559142-10	1LM.LM33517	03/01/16 12:26	01

Report Name: BLANK_SUMMARY
PDF File ID: 4653177
Report generated 03/02/2016 08:15

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16021357 Prep Date: 02/29/16 12:30 Sample ID: WG559142-02
Instrument ID: LCMS1 Run Date: 02/29/16 22:12 Prep Method: 6850
File ID: 1LM.LM33481 Analyst: WTD Method: 6850
Workgroup (AAB#): WG559142 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-17-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.999	4.00	0.999	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4653178
02-MAR-2016 08:15

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16021357 Run Date: 02/29/2016 Sample ID: WG559142-03
Instrument ID: LCMS1 Run Time: 22:31 Prep Method: 6850
File ID: 1LM.LM33482 Analyst: WTD Method: 6850
Workgroup (AAB#): WG559142 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD72685 Cal ID: LCMS1-17-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	2.00	2.07	104	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4653179
Report generated: 03/02/2016 08:16

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16021357 Cal ID: LCMS1 - Worknum: WG559142
Instrument ID: LCMS1 Contract #: Method: 6850
Parent ID: WG559142-04 File ID: 1LM.LM33483 Dil: 1 Matrix: SOLID
Sample ID: WG559142-05 MS File ID: 1LM.LM33484 Dil: 1 Units: ug/kg
Sample ID: WG559142-06 MSD File ID: 1LM.LM33485 Dil: 1 Percent Solid: 81.7

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Perchlorate	ND	2.33	2.44	105	2.33	2.37	102	3.05	80 - 120	15	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4653180
Report generated 03/02/2016 08:16

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16021357
Analytical Method: 6850
ICAL Workgroup: WG557856

Instrument ID: LCMS1
Initial Calibration Date: 17-FEB-16 21:24
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.628	7.83	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4653182
Report generated 03/02/2016 08:16

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16021357

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 17-FEB-16 21:24

Column ID: F

Analyte	WG557856-02			WG557856-03			WG557856-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	18800.0000	1.692	0.200	38700.0000	1.755	0.500	91400.0000	1.644

INT_CAL - Modified 03/06/2008
PDF File ID: 4653182
Report generated 03/02/2016 08:16

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16021357

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 17-FEB-16 21:24

Column ID: F

Analyte	WG557856-05			WG557856-06			WG557856-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	178000.000	1.625	2.00	350000.000	1.604	5.00	826000.000	1.554

INT_CAL - Modified 03/06/2008
PDF File ID: 4653182
Report generated 03/02/2016 08:16

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16021357

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 17-FEB-16 21:24

Column ID: F

Analyte	WG557856-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.521

INT_CAL - Modified 03/06/2008
PDF File ID: 4653182
Report generated 03/02/2016 08:16

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16021357 Run Date: 02/17/2016 Sample ID: WG557856-09
Instrument ID: LCMS1 Run Time: 21:43 Method: 6850
File ID: 1LM.LM33252 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG557856 Cal ID: LCMS1 - 17-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	1.05	ug/L	1.65	5.00	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4653183
Report generated 03/02/2016 08:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16021357
Run Date: 02/29/2016
Sample ID: WG559066-08
Instrument ID: LCMS1
Run Time: 21:34
Method: 6850
File ID: 1LM.LM33479
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG559142
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4653185
Report generated 03/02/2016 08:20

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16021357
Run Date: 03/01/2016
Sample ID: WG559066-10
Instrument ID: LCMS1
Run Time: 01:40
Method: 6850
File ID: 1LM.LM33492
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG559142
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4653185
Report generated 03/02/2016 08:20

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16021357
Run Date: 03/01/2016
Sample ID: WG559066-12
Instrument ID: LCMS1
Run Time: 05:46
Method: 6850
File ID: 1LM.LM33505
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG559142
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4653185
Report generated 03/02/2016 08:20

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16021357
Run Date: 03/01/2016
Sample ID: WG559066-14
Instrument ID: LCMS1
Run Time: 10:13
Method: 6850
File ID: 1LM.LM33510
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG559142
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4653185
Report generated 03/02/2016 08:20

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16021357
Run Date: 03/01/2016
Sample ID: WG559066-16
Instrument ID: LCMS1
Run Time: 12:45
Method: 6850
File ID: 1LM.LM33518
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG559142
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4653185
Report generated 03/02/2016 08:20

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021357
Run Date: 02/29/2016
Sample ID: WG559066-07
Instrument ID: LCMS1
Run Time: 20:56
Method: 6850
File ID: 1LM.LM33477
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG559142
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.06	ug/kg	1.66	6.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4653184
Report generated 03/02/2016 08:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021357
Run Date: 03/01/2016
Sample ID: WG559066-09
Instrument ID: LCMS1
Run Time: 01:02
Method: 6850
File ID: 1LM.LM33490
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG559142
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/kg	1.61	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4653184
Report generated 03/02/2016 08:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021357
Run Date: 03/01/2016
Sample ID: WG559066-11
Instrument ID: LCMS1
Run Time: 05:08
Method: 6850
File ID: 1LM.LM33503
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG559142
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/kg	1.62	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4653184
Report generated 03/02/2016 08:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021357
Run Date: 03/01/2016
Sample ID: WG559066-13
Instrument ID: LCMS1
Run Time: 09:35
Method: 6850
File ID: 1LM.LM33508
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG559142
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/kg	1.62	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4653184
Report generated 03/02/2016 08:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021357
Run Date: 03/01/2016
Sample ID: WG559066-15
Instrument ID: LCMS1
Run Time: 12:07
Method: 6850
File ID: 1LM.LM33516
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG559142
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.05	ug/kg	1.65	5.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4653184
Report generated 03/02/2016 08:16

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16021357
Run Date: 02/29/2016
Sample ID: WG559142-07
Instrument ID: LCMS1
Run Time: 21:15
Prep Method: 6850
File ID: 1LM.LM33478
Analyst: WTD
Method: 6850
Workgroup (AAB#): WG559142
Matrix: Soil
Units: ug/kg
Contract #:
Cal ID: LCMS1-17-FEB-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.18	109	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4653181
Report generated 03/02/2016 08:16

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16021357 Run Date: 03/01/2016 Sample ID: WG559142-08
Instrument ID: LCMS1 Run Time: 01:21 Prep Method: 6850
File ID: 1LM.LM33491 Analyst: WTD Method: 6850
Workgroup (AAB#): WG559142 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-17-FEB-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.02	101	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4653181
Report generated 03/02/2016 08:16

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16021357 Run Date: 03/01/2016 Sample ID: WG559142-09
Instrument ID: LCMS1 Run Time: 05:27 Prep Method: 6850
File ID: 1LM.LM33504 Analyst: WTD Method: 6850
Workgroup (AAB#): WG559142 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-17-FEB-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.05	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4653181
Report generated 03/02/2016 08:16

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16021357 Run Date: 03/01/2016 Sample ID: WG559142-10
Instrument ID: LCMS1 Run Time: 12:26 Prep Method: 6850
File ID: 1LM.LM33517 Analyst: WTD Method: 6850
Workgroup (AAB#): WG559142 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-17-FEB-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.07	104	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4653181
Report generated 03/02/2016 08:16

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16021357
Instrument ID: LCMS1
Workgroup (AAB#): WG559142

ICAL CCV Number: WG557856-05
CAL ID: LCMS1-17-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1
WG557856	NA	NA	542000
Upper Limit	NA	NA	813000
Lower Limit	NA	NA	271000
L16021357-01	1.00	01	523000
L16021357-02	1.00	01	514000
L16021357-03	1.00	01	497000
L16021357-04	1.00	01	483000
L16021357-05	1.00	01	499000
L16021357-06	10.0	DL01	444000
WG559142-02	1.00	01	515000
WG559142-03	1.00	01	508000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4653186
Report generated 03/02/2016 08:17

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**	6850	**Samplenum:**	L16021357-01
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33483
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	02/29/2016 22:50	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	3140	1090	2.88	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**	6850	**Samplenum:**	L16021357-02
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33486
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	02/29/2016 23:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	304000	99400	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**	6850	**Samplenum:**	L16021357-03
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33487
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	03/01/2016 00:05	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	110000	36900	2.98	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**	6850	**Samplenum:**	L16021357-04
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33488
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	03/01/2016 00:24	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	829000	269000	3.08	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**	6850	**Samplenum:**	L16021357-05
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33489
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	03/01/2016 00:43	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	657000	218000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**	6850	**Samplenum:**	L16021357-06
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33511
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	03/01/2016 10:32	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	604000	199000	3.04	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**		**Samplenum:**	WG557856-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33245
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	02/17/2016 19:31	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	18800	6990	2.69	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**		**Samplenum:**	WG557856-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33246
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	02/17/2016 19:50	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38700	14200	2.73	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**		**Samplenum:**	WG557856-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33247
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	02/17/2016 20:08	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	91400	32900	2.78	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**		**Samplenum:**	WG557856-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33248
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	02/17/2016 20:27	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	178000	63900	2.79	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**		**Samplenum:**	WG557856-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33249
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	02/17/2016 20:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	350000	126000	2.78	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**		**Samplenum:**	WG557856-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33250
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	02/17/2016 21:05	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	826000	293000	2.82	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**		**Samplenum:**	WG557856-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33251
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	02/17/2016 21:24	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	562000	2.72	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**		**Samplenum:**	WG557856-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33252
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	02/17/2016 21:43	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	179000	63600	2.81	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**		**Samplenum:**	WG559066-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33474
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	02/29/2016 19:59	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	890	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**		**Samplenum:**	WG559066-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33477
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	02/29/2016 20:56	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	176000	58300	3.02	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**		**Samplenum:**	WG559066-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33479
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	02/29/2016 21:34	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	840	230	3.65	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**		**Samplenum:**	WG559066-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33490
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	03/01/2016 01:02	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	173000	55900	3.09	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**		**Samplenum:**	WG559066-10
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33492
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	03/01/2016 01:40	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	490	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**		**Samplenum:**	WG559066-11
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33503
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	03/01/2016 05:08	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	163000	53400	3.05	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**		**Samplenum:**	WG559066-12
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33505
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	03/01/2016 05:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**		**Samplenum:**	WG559066-13
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33508
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	03/01/2016 09:35	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	156000	51400	3.04	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**		**Samplenum:**	WG559066-14
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33510
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	03/01/2016 10:13	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**		**Samplenum:**	WG559066-15
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33516
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	03/01/2016 12:07	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	162000	53000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**		**Samplenum:**	WG559066-16
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33518
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	03/01/2016 12:45	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1320	1400	0.943	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**	6850	**Samplenum:**	WG559142-01
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33480
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	02/29/2016 21:53	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	33200	11500	2.89	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**	6850	**Samplenum:**	WG559142-02
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33481
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	02/29/2016 22:12	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	776	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**	6850	**Samplenum:**	WG559142-03
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33482
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	02/29/2016 22:31	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35800	12800	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**	6850	**Samplenum:**	WG559142-05
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33484
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	02/29/2016 23:09	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	39200	14300	2.74	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**	6850	**Samplenum:**	WG559142-06
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33485
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	02/29/2016 23:27	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36400	13100	2.78	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**	6850	**Samplenum:**	WG559142-07
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33478
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	02/29/2016 21:15	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	39100	13500	2.90	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**	6850	**Samplenum:**	WG559142-08
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33491
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	03/01/2016 01:21	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36300	12600	2.88	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**	6850	**Samplenum:**	WG559142-09
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33504
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	03/01/2016 05:27	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35000	11800	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**	6850	**Samplenum:**	WG559142-10
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33517
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	03/01/2016 12:26	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34300	11800	2.91	2.3	3.8	

2.2.1.3 Sample Data

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Data File	LM33483.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/29/2016 10:50:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021357-01 REF	**Injection Vial**	29.00
Data File	LM33483.wiff	**Injection Volume**	10.00
Acquisition Date	2/29/2016 10:50:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559142-04	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.230e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.140e+03	9.96	N/A	< 0
Perchlorate conf	1.090e+03	9.94	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

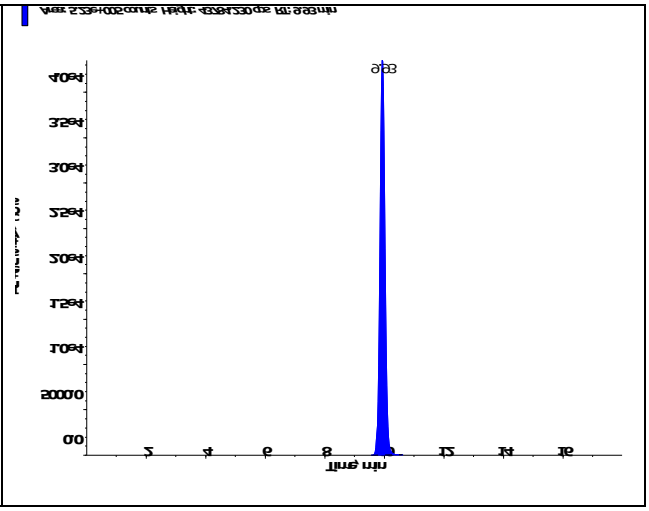

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.96 (9.94) min Calculated conc: < 0 ng/ml Area Ratio: 0.006 Sample Type: (Unknown)	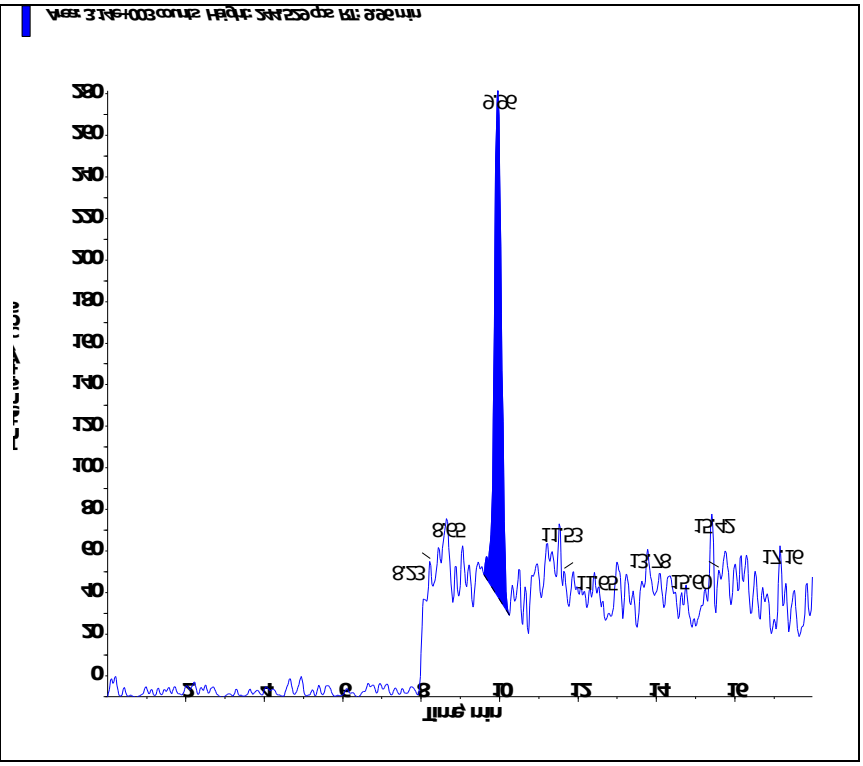
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.94 (9.92) min Calculated conc: < 0 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	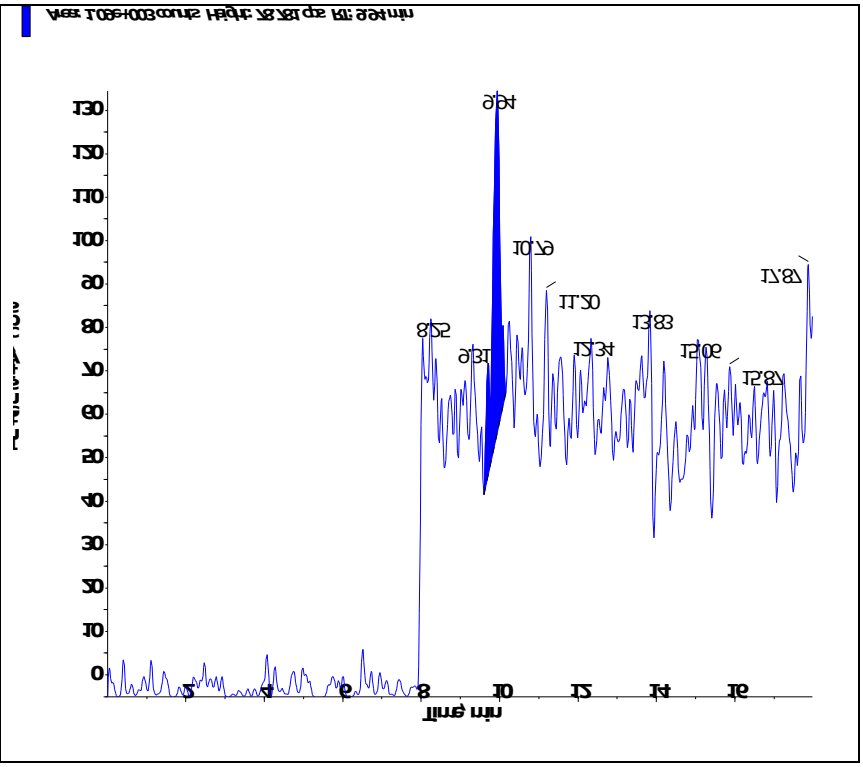

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Printed: 3/1/2016 2:34 PM

Data File	LM33486.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/29/2016 11:46:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021357-02	**Injection Vial**	32.00
Data File	LM33486.wiff	**Injection Volume**	10.00
Acquisition Date	2/29/2016 11:46:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	L16021357-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.140e+05	9.86	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.040e+05	9.87	N/A	1.90
Perchlorate conf	9.940e+04	9.86	N/A	1.71

O18LP (Internal Standard)

RT (Exp. RT): 9.86(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

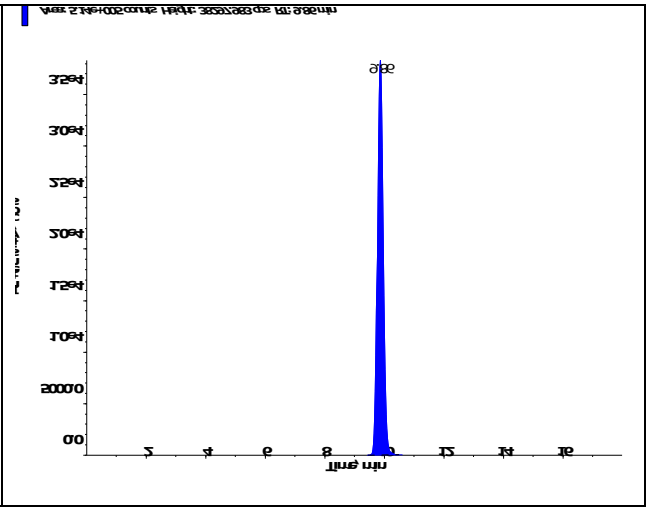

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.87 (9.94) min Calculated conc: 1.90 ng/ml Area Ratio: 0.593 Sample Type: (Unknown)	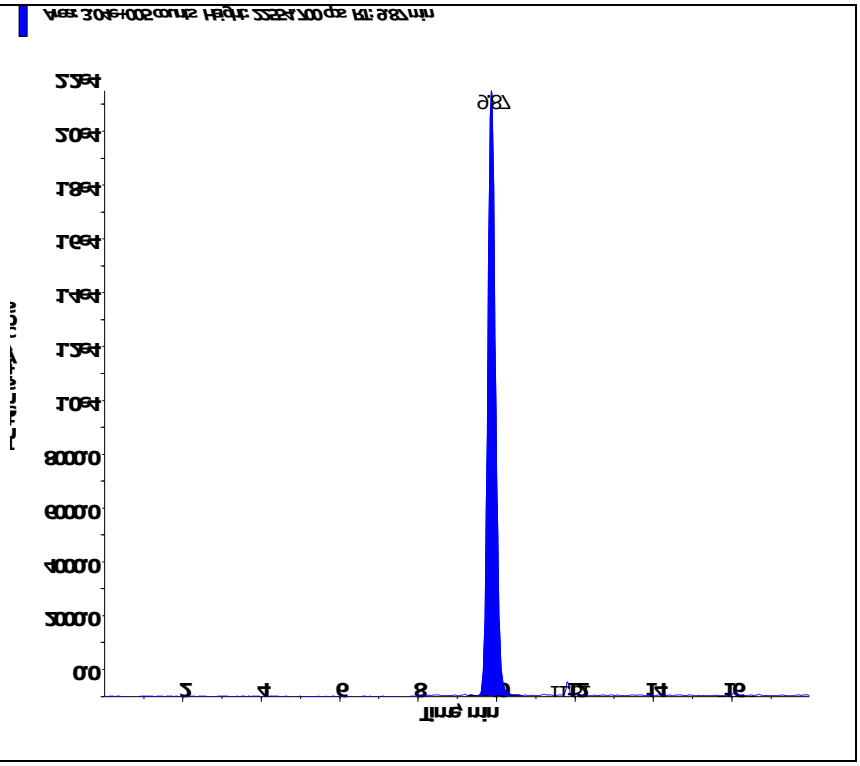
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.86 (9.92) min Calculated conc: 1.71 ng/ml Area Ratio: 0.194 Sample Type: (Unknown)	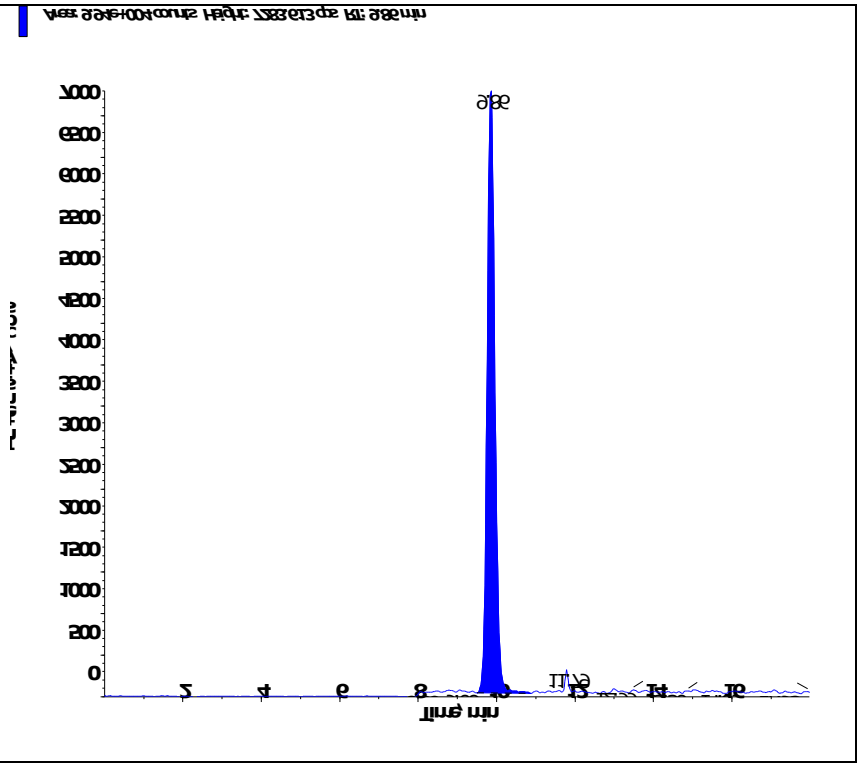

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Data File	LM33487.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 12:05:49 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021357-03	**Injection Vial**	33.00
Data File	LM33487.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 12:05:49 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	L16021357-03	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.87	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.100e+05	9.88	N/A	0.699
Perchlorate conf	3.690e+04	9.87	N/A	0.643

O18LP (Internal Standard)

RT (Exp. RT): 9.87(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

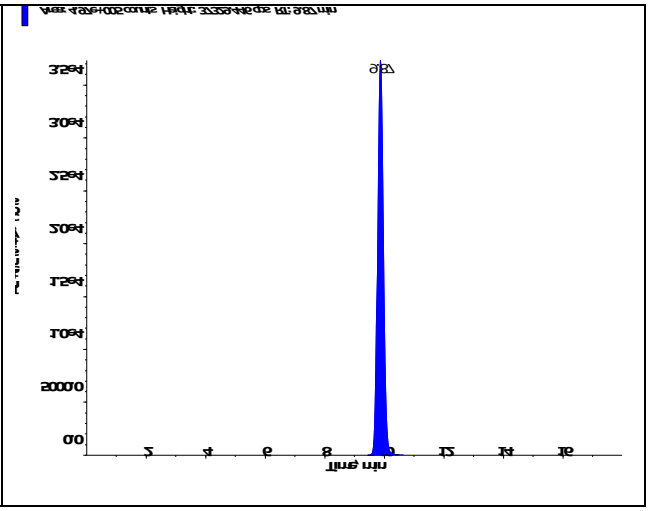

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.88 (9.94) min Calculated conc: 0.699 ng/ml Area Ratio: 0.222 Sample Type: (Unknown)	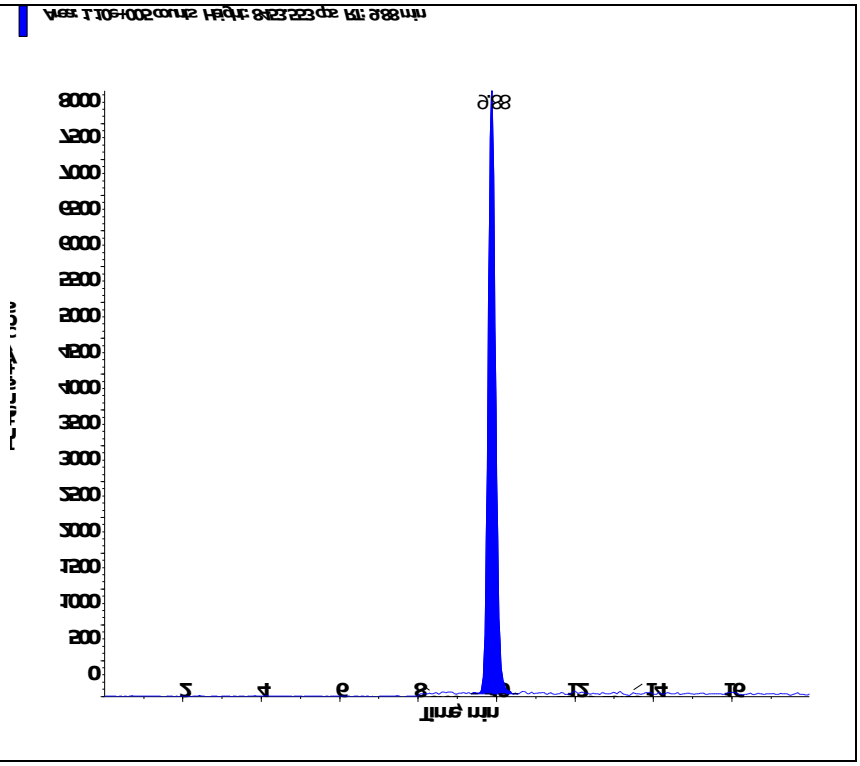
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.87 (9.92) min Calculated conc: 0.643 ng/ml Area Ratio: 0.074 Sample Type: (Unknown)	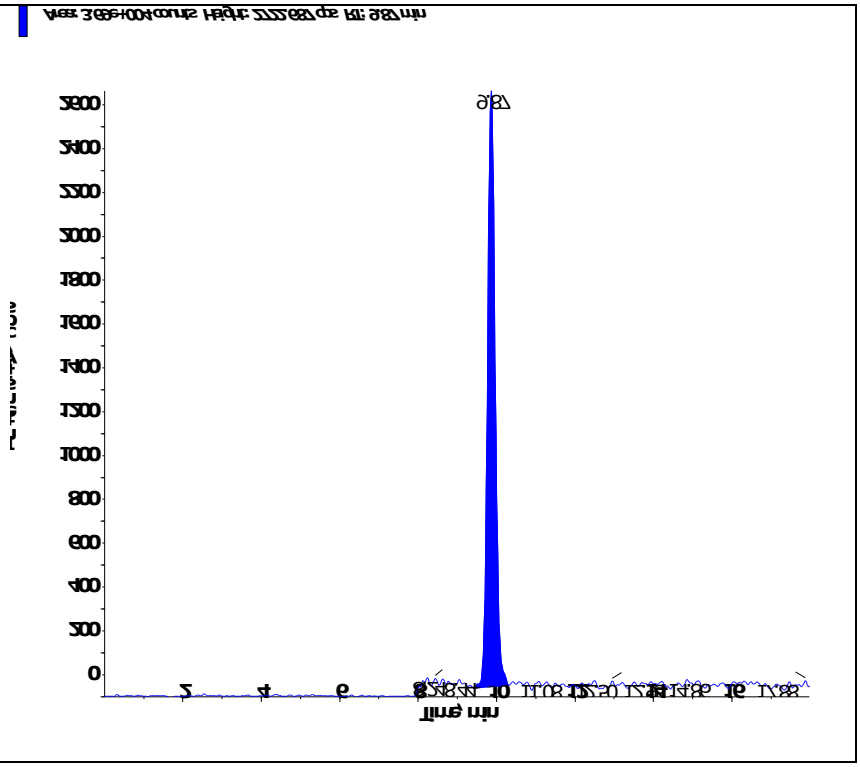

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Data File	LM33488.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 12:24:44 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021357-04	**Injection Vial**	34.00
Data File	LM33488.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 12:24:44 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	L16021357-04	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.830e+05	9.86	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.290e+05	9.88	N/A	5.55
Perchlorate conf	2.690e+05	9.86	N/A	4.97

O18LP (Internal Standard)

RT (Exp. RT): 9.86(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

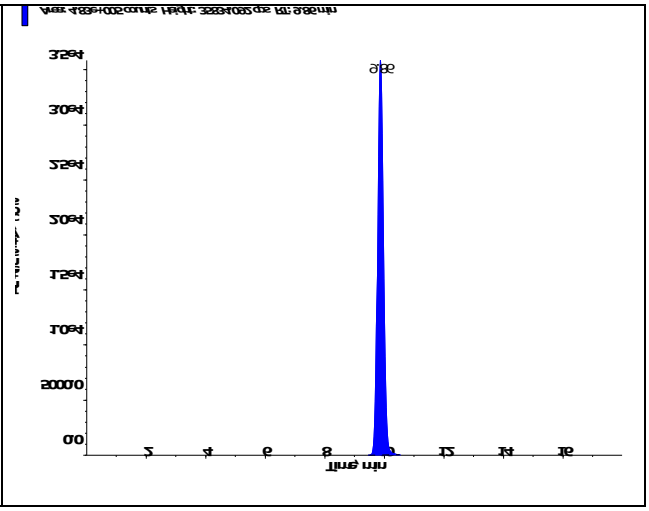

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.88 (9.94) min Calculated conc: 5.55 ng/ml Area Ratio: 1.715 Sample Type: (Unknown)	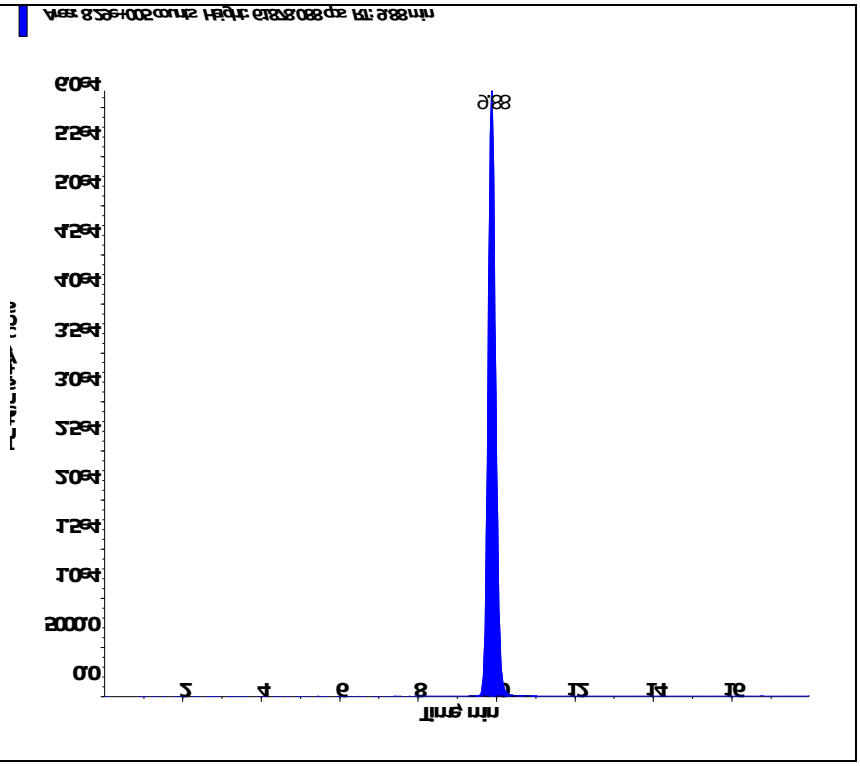
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.86 (9.92) min Calculated conc: 4.97 ng/ml Area Ratio: 0.557 Sample Type: (Unknown)	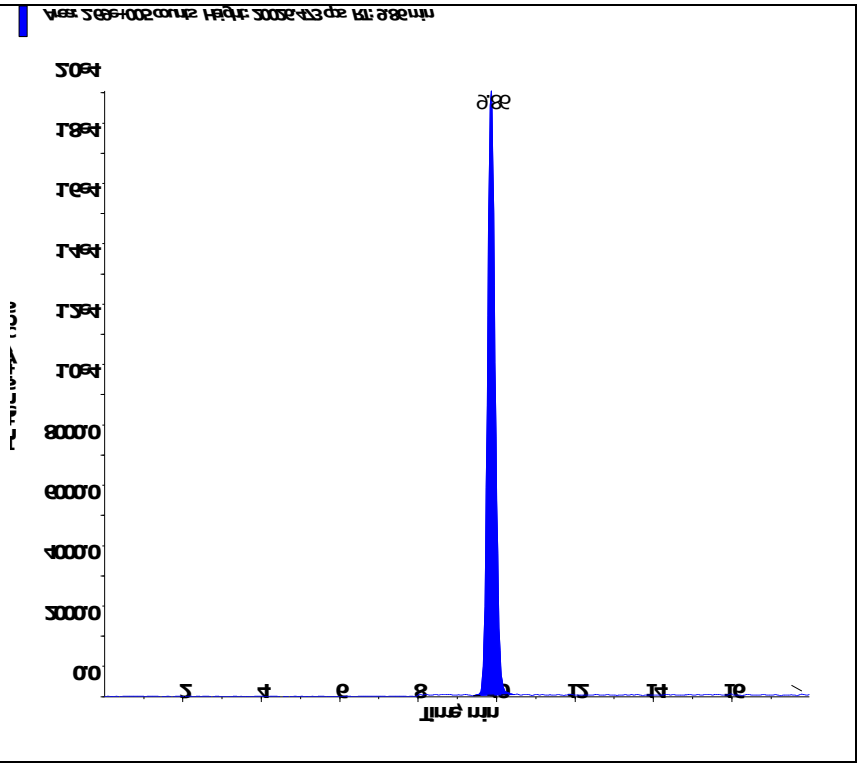

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Data File	LM33489.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 12:43:43 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021357-05	**Injection Vial**	35.00
Data File	LM33489.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 12:43:43 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	L16021357-05	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.990e+05	9.89	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	6.570e+05	9.90	N/A	4.26
Perchlorate conf	2.180e+05	9.88	N/A	3.90

O18LP (Internal Standard)

RT (Exp. RT): 9.89(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

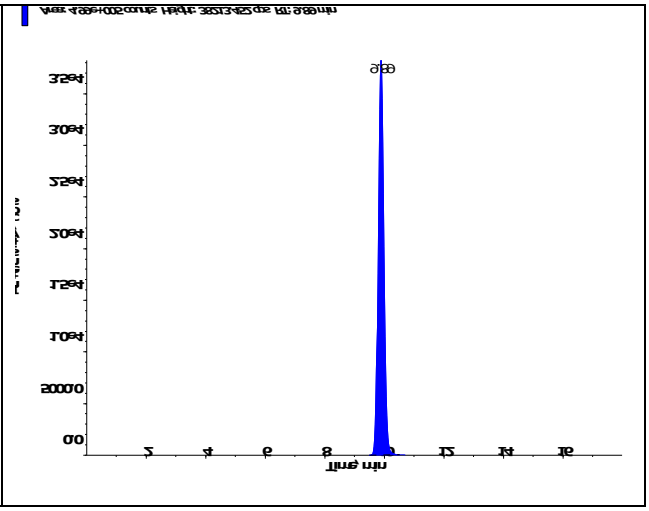

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.90 (9.94) min Calculated conc: 4.26 ng/ml Area Ratio: 1.317 Sample Type: (Unknown)	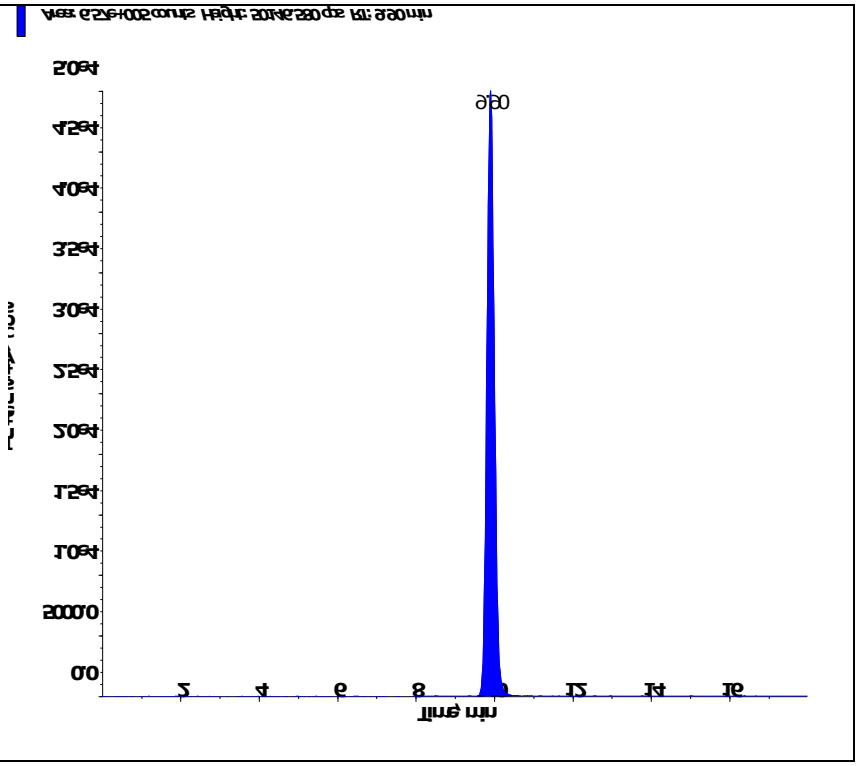
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.88 (9.92) min Calculated conc: 3.90 ng/ml Area Ratio: 0.437 Sample Type: (Unknown)	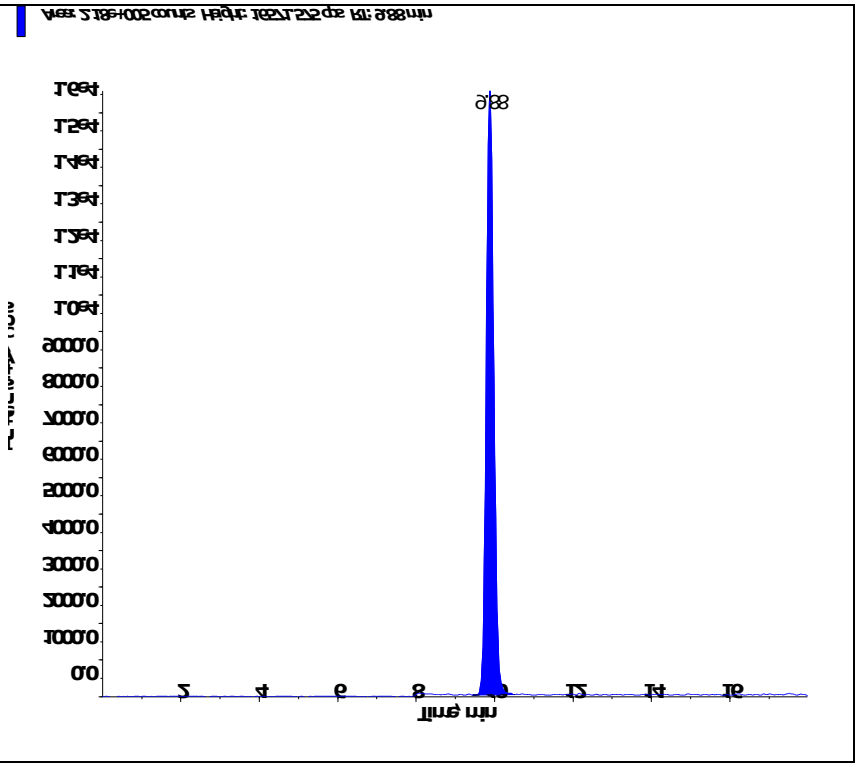

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Data File	LM33511.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 10:32:46 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021357-06 (10X)	**Injection Vial**	47.00
Data File	LM33511.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 10:32:46 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	L16021357-06	**Dilution Factor**	1.00
Sample Comment	710.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.440e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	6.040e+05	9.98	N/A	4.40
Perchlorate conf	1.990e+05	9.97	N/A	4.00

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

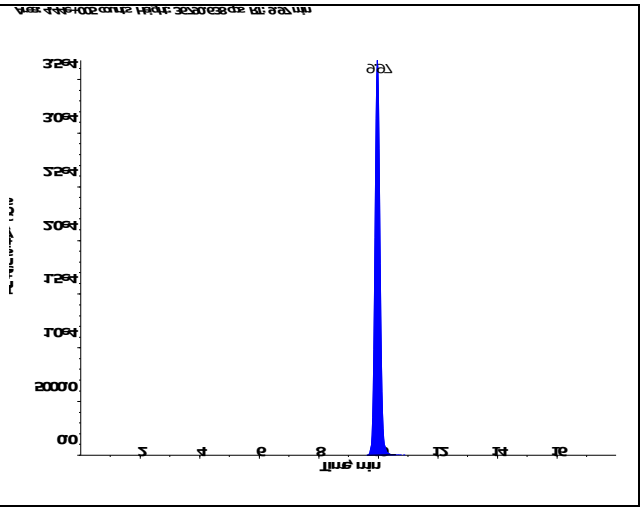

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.98 (9.94) min Calculated conc: 4.40 ng/ml Area Ratio: 1.362 Sample Type: (Unknown)	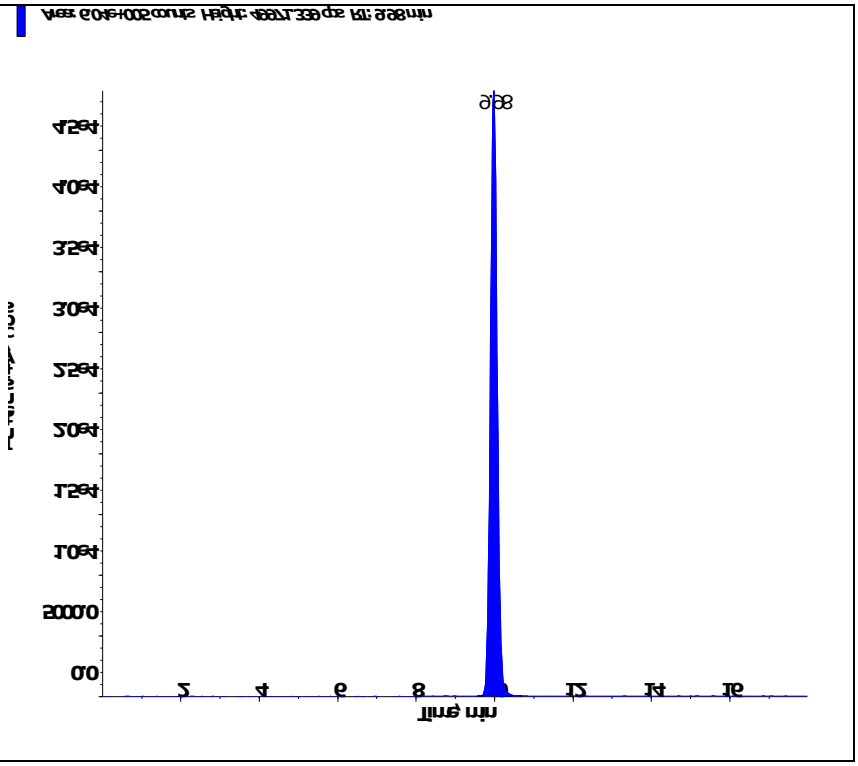
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.97 (9.92) min Calculated conc: 4.00 ng/ml Area Ratio: 0.448 Sample Type: (Unknown)	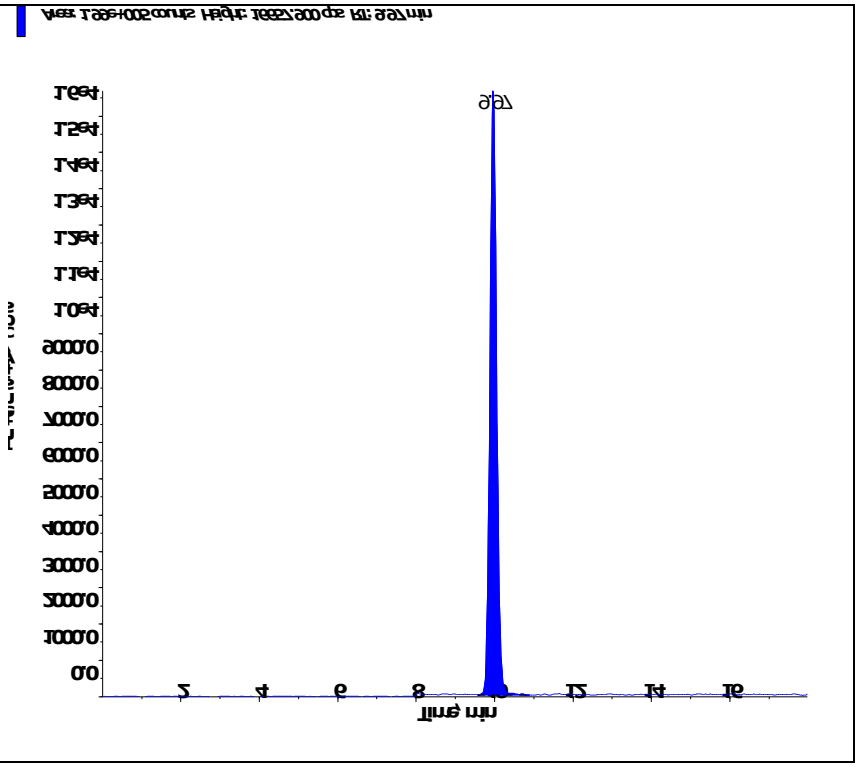

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2.2.1.4 Standards Data

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Data File	LM33244.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/17/2016 7:12:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-01 CCB	**Injection Vial**	1.00
Data File	LM33244.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 7:12:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG557856-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.570e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.560e+03	9.97	N/A	< 0
Perchlorate conf	1.050e+03	9.97	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

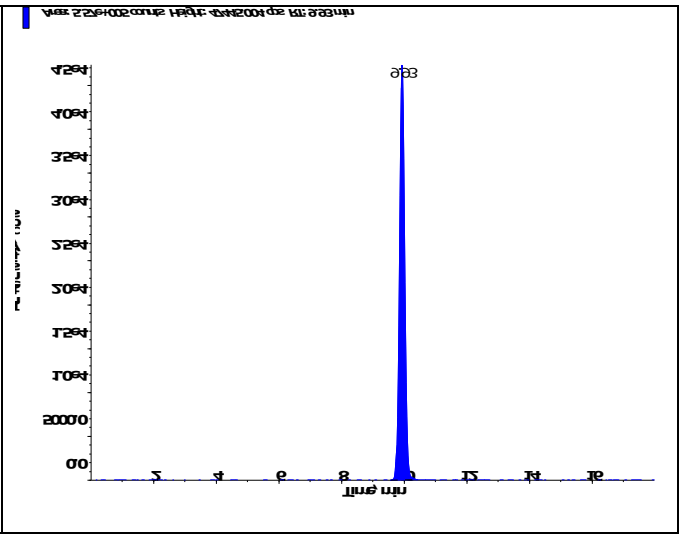

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.97 (9.94) min Calculated conc: < 0 ng/ml Area Ratio: 0.005 Sample Type: (Unknown)	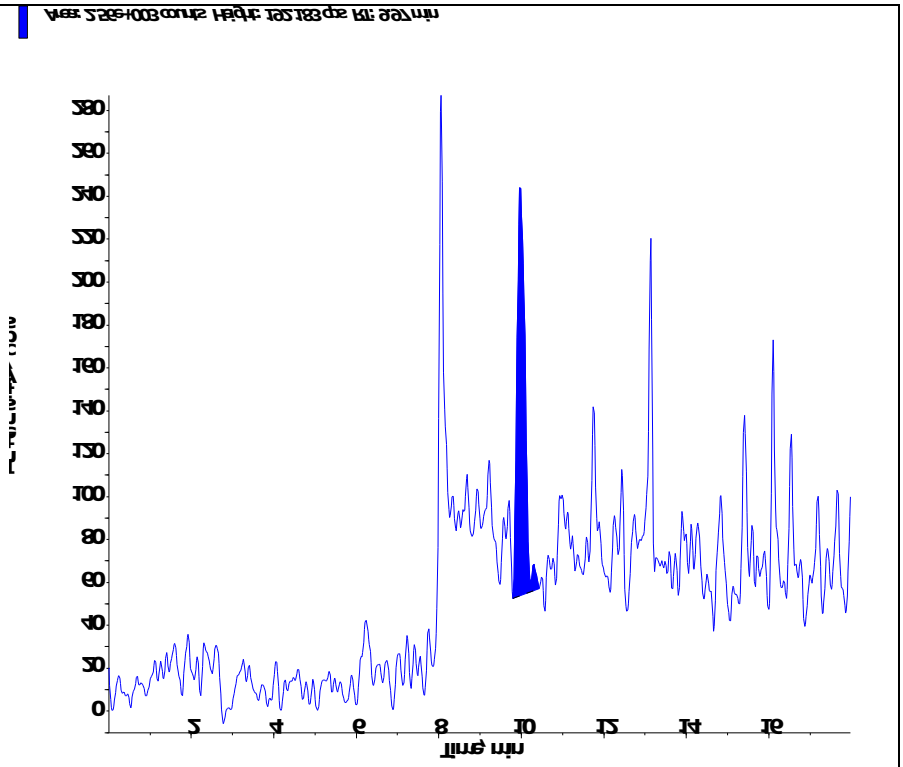
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.97 (9.92) min Calculated conc: < 0 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	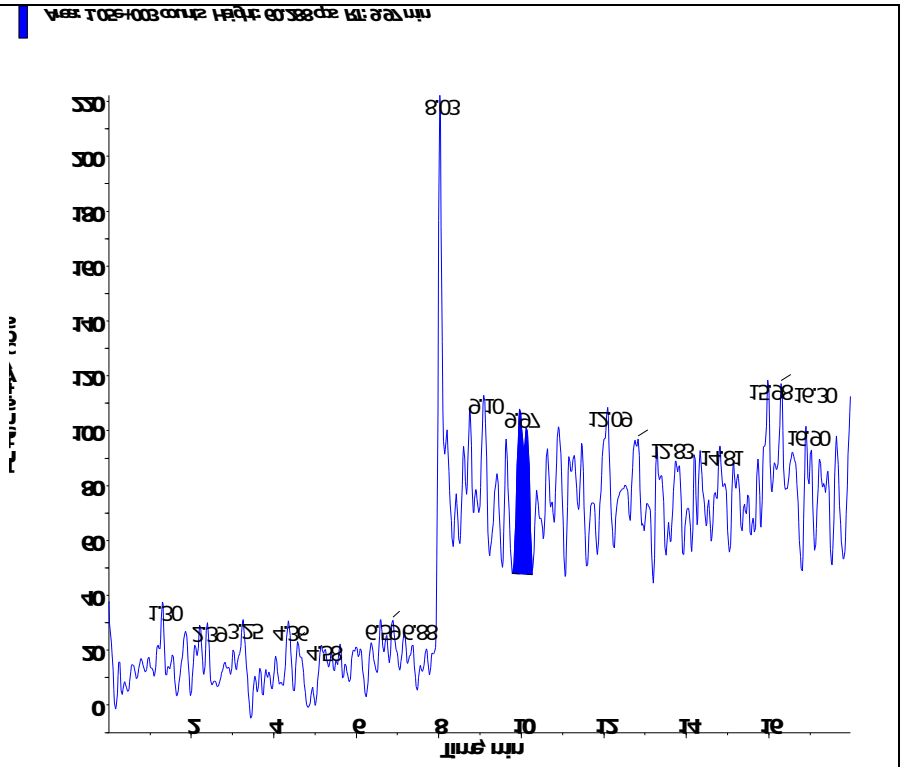

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Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM33244.wiff	**Result Table**	021716_JWR.rdb
Acquisition Date	2/17/2016 7:12:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.54 x + 0.00666 (r = 0.9998)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	88.4	N/A	N/A
0.20	1	0.21	103.3	N/A	N/A
0.50	1	0.51	102.6	N/A	N/A
1.00	1	1.03	103.4	N/A	N/A
2.00	1	2.06	103.1	N/A	N/A
5.00	1	5.03	100.6	N/A	N/A
10.00	1	9.87	98.7	N/A	N/A

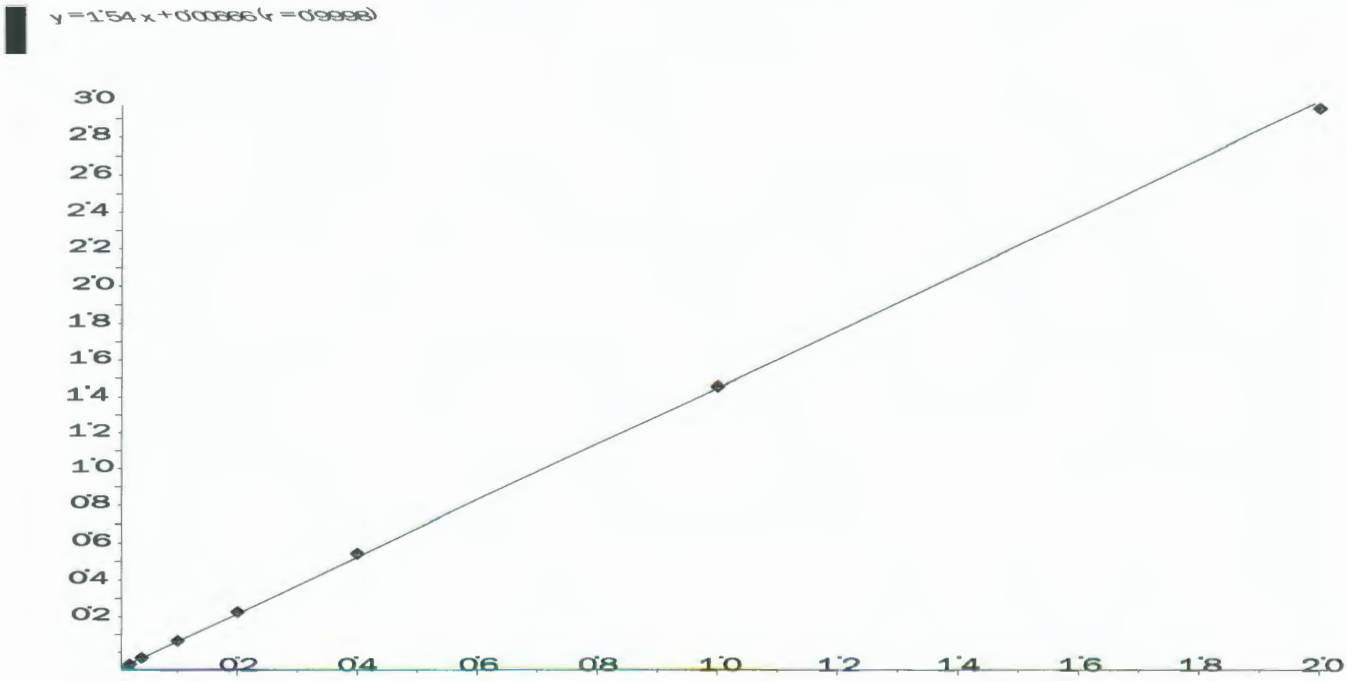

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Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM33244.wiff	**Result Table**	021716_JWR.rdb
Acquisition Date	2/17/2016 7:12:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.557 x + 0.00249 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	90.6	N/A	N/A
0.20	1	0.21	104.9	N/A	N/A
0.50	1	0.51	101.7	N/A	N/A
1.00	1	1.02	102.2	N/A	N/A
2.00	1	2.04	102.1	N/A	N/A
5.00	1	4.93	98.6	N/A	N/A
10.00	1	10.00	100.0	N/A	N/A

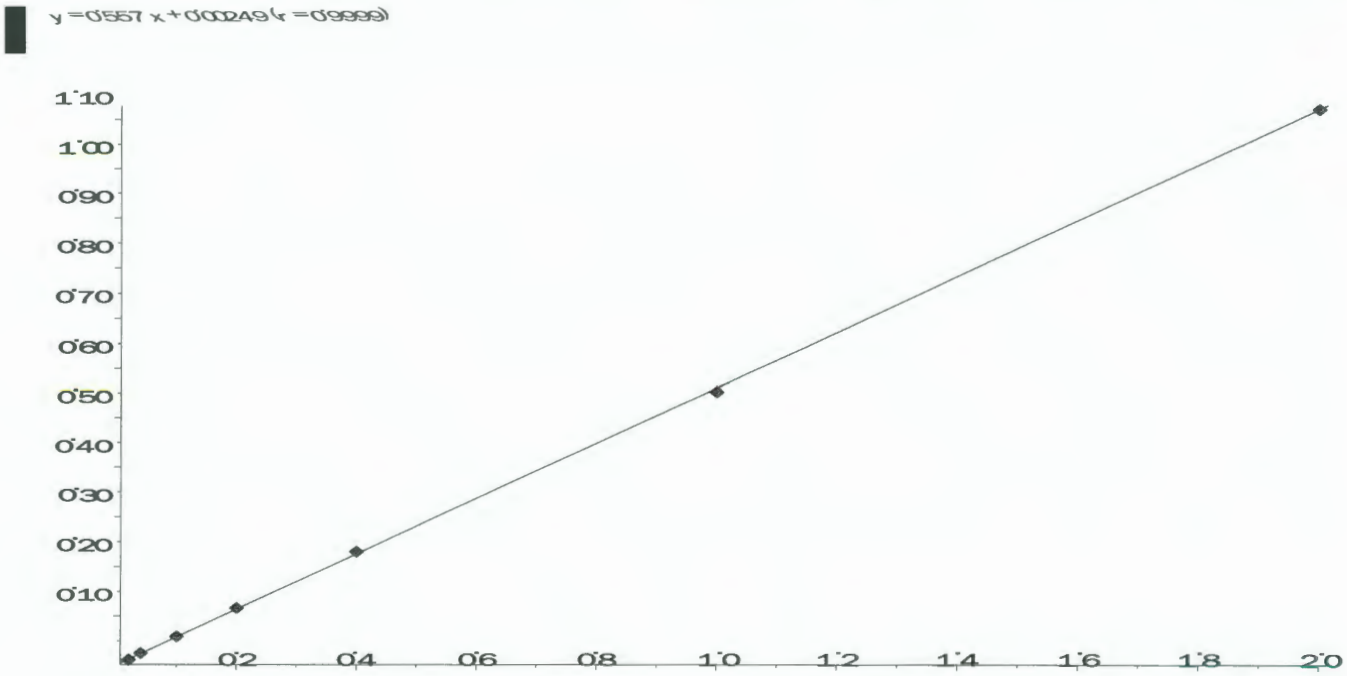

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Printed: 3/1/2016 2:20 PM

Data File	LM33245.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/17/2016 7:31:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM33245.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 7:31:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG557856-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.550e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.880e+04	9.94	0.10	0.0884
Perchlorate conf	6.990e+03	9.93	0.10	0.0906

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

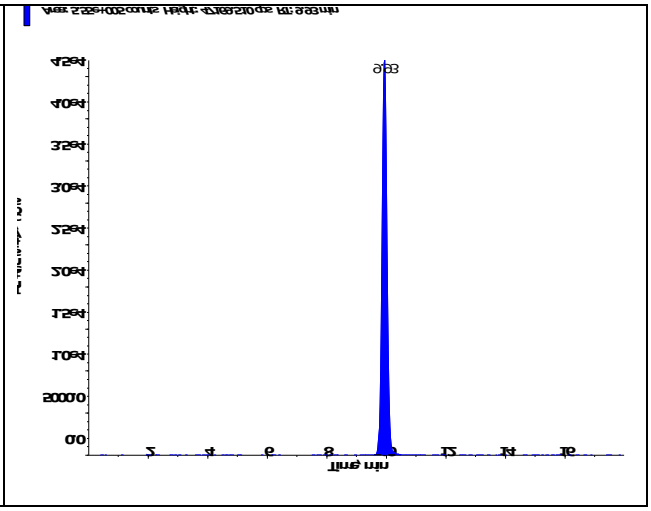

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.94 (9.94) min Calculated conc: 0.0884 ng/ml Area Ratio: 0.034 Sample Type: (Standard)	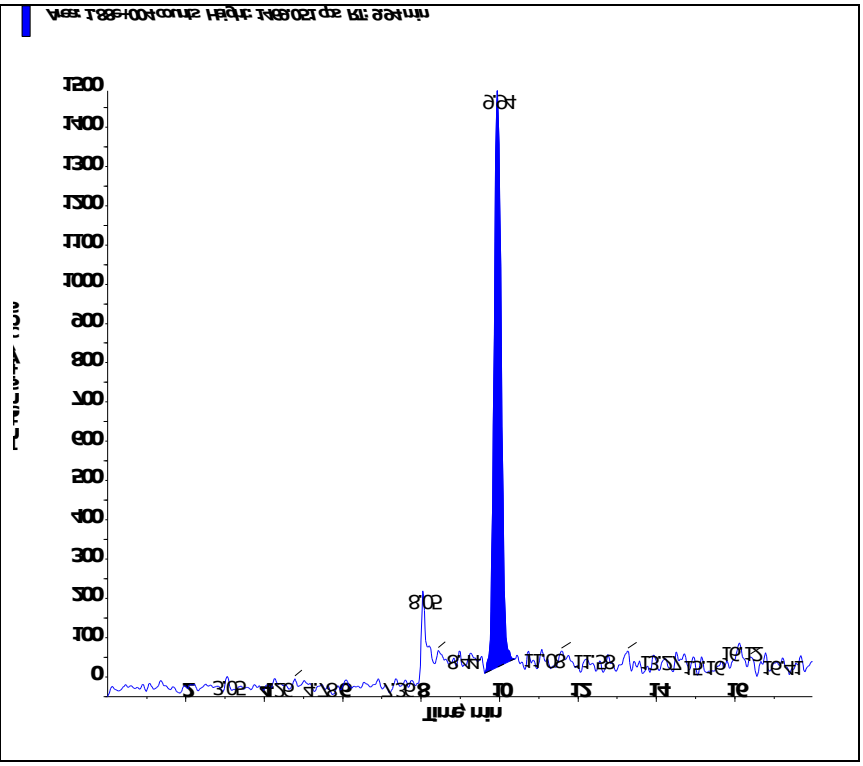
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.93 (9.92) min Calculated conc: 0.0906 ng/ml Area Ratio: 0.013 Sample Type: (Standard)	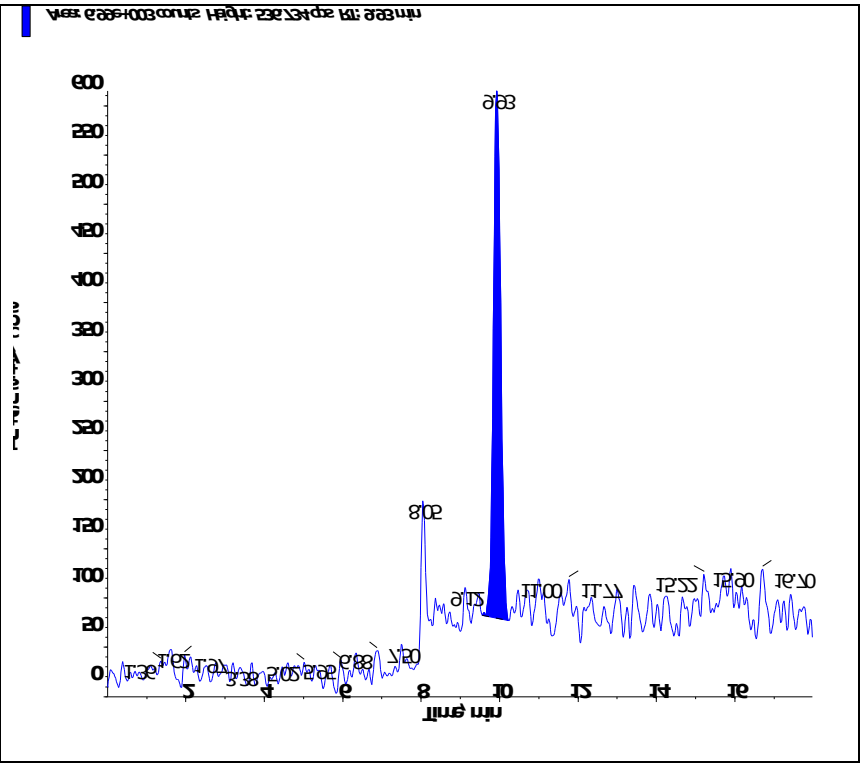

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Data File	LM33246.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/17/2016 7:50:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM33246.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 7:50:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG557856-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.510e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.870e+04	9.94	0.20	0.207
Perchlorate conf	1.420e+04	9.93	0.20	0.21

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

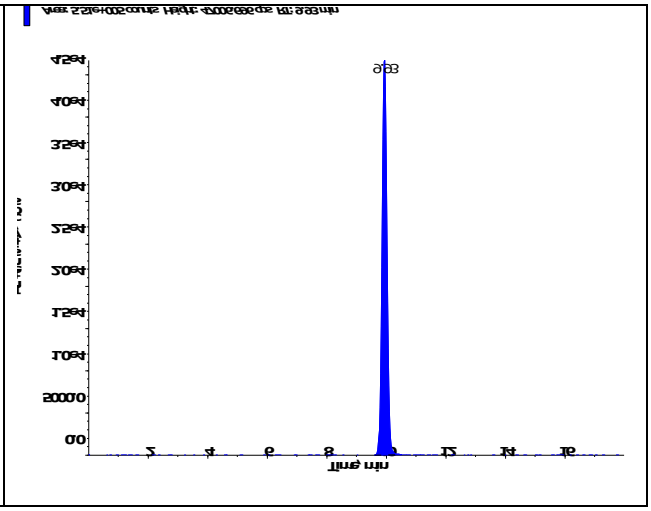

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.94 (9.94) min Calculated conc: 0.207 ng/ml Area Ratio: 0.07 Sample Type: (Standard)	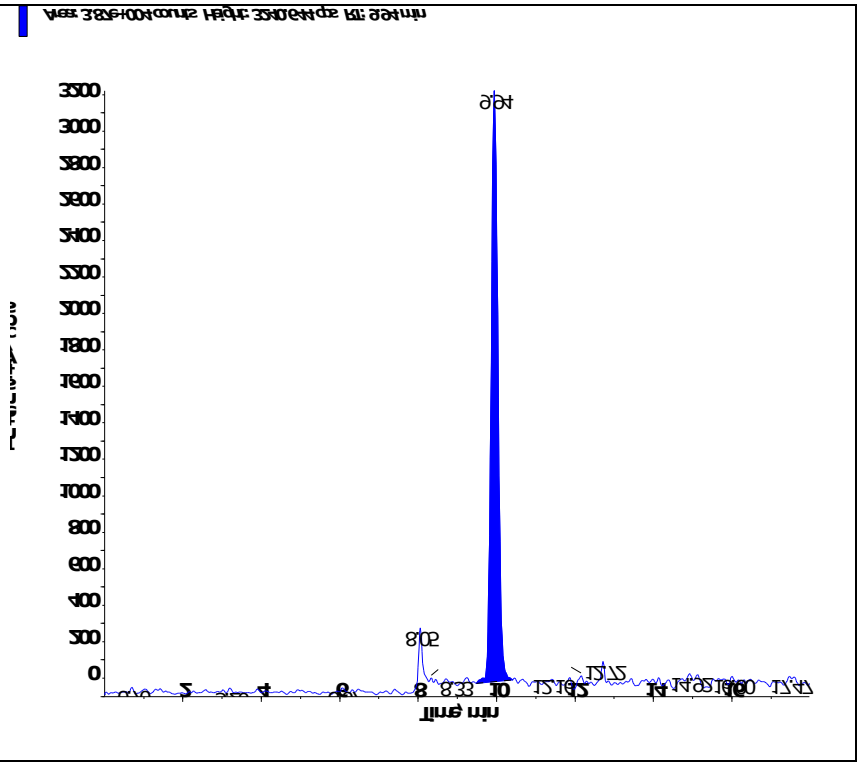
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.93 (9.92) min Calculated conc: 0.21 ng/ml Area Ratio: 0.026 Sample Type: (Standard)	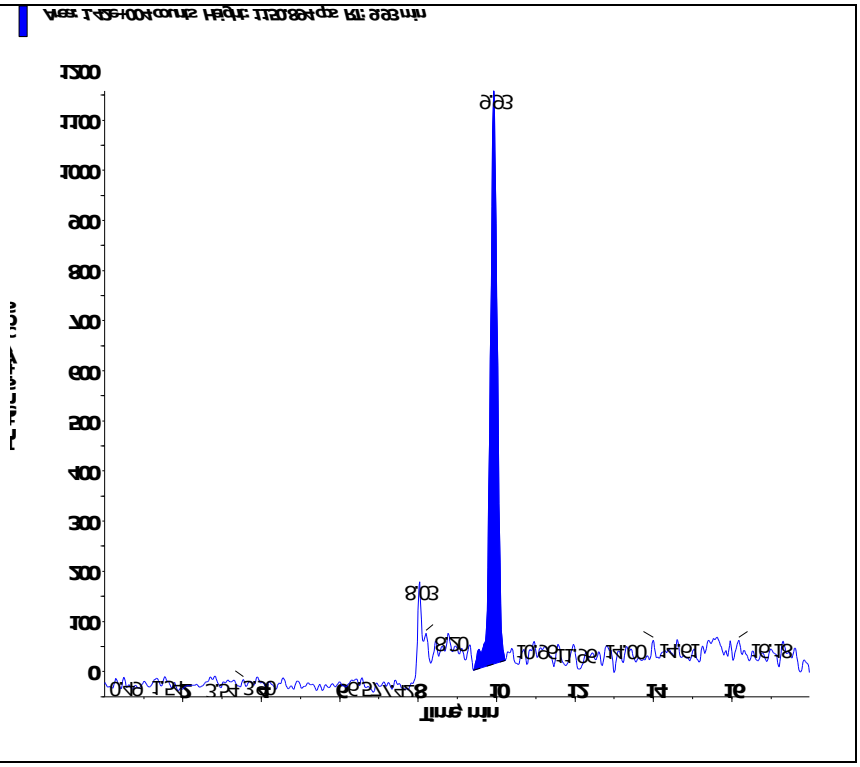

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Data File	LM33247.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/17/2016 8:08:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM33247.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 8:08:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG557856-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.560e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	9.140e+04	9.94	0.50	0.513
Perchlorate conf	3.290e+04	9.93	0.50	0.508

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

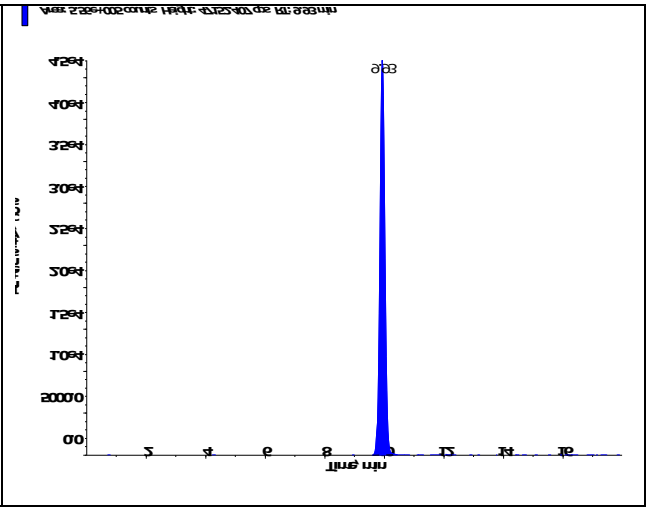

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.94 (9.94) min Calculated conc: 0.513 ng/ml Area Ratio: 0.164 Sample Type: (Standard)	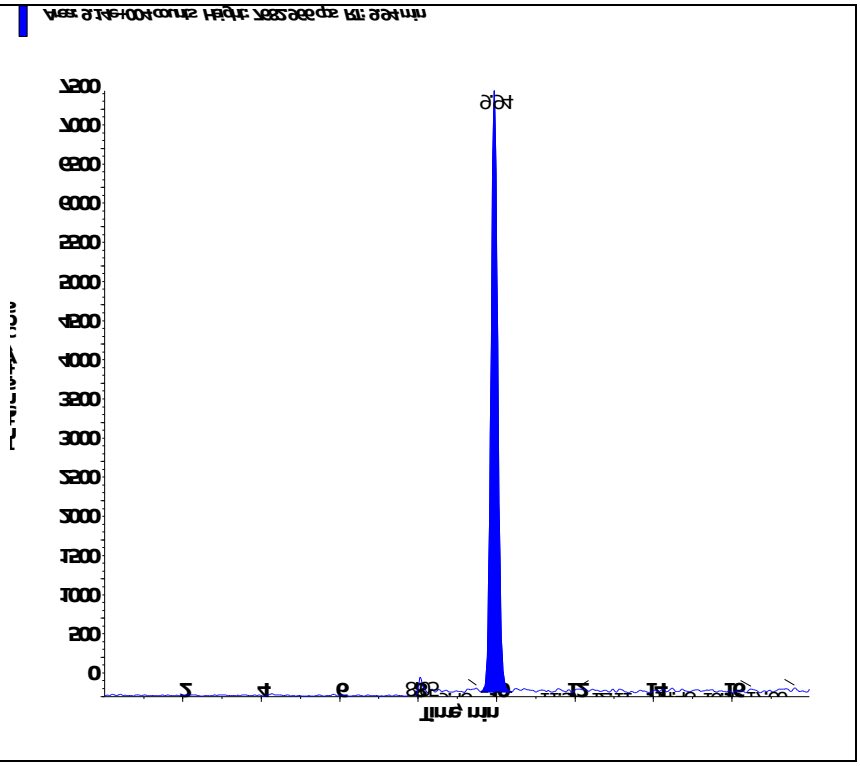
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.93 (9.92) min Calculated conc: 0.508 ng/ml Area Ratio: 0.059 Sample Type: (Standard)	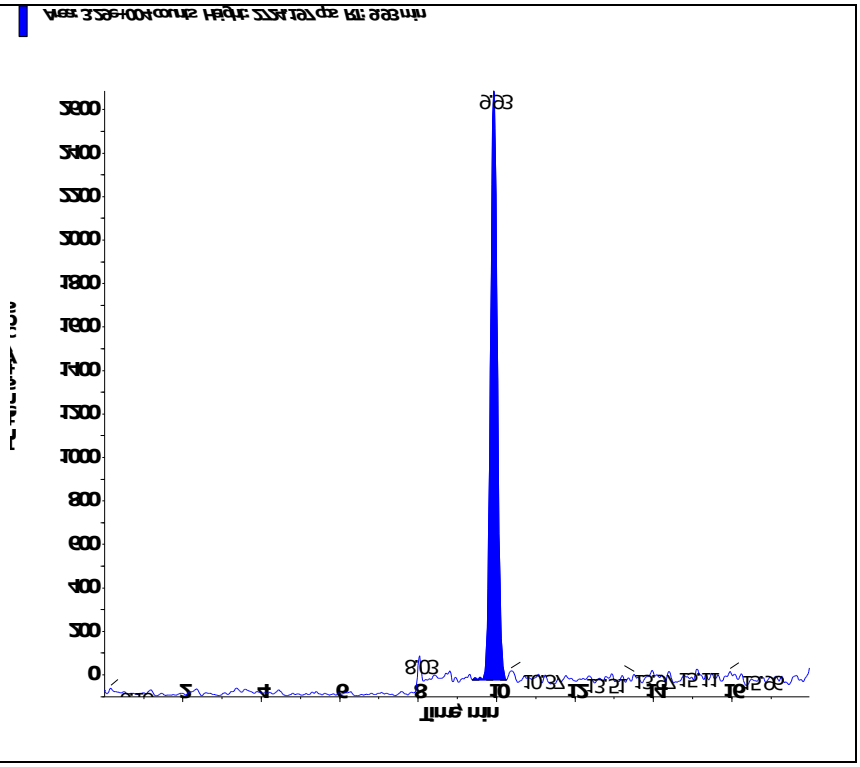

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Data File	LM33248.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/17/2016 8:27:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM33248.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 8:27:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG557856-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.490e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.780e+05	9.95	1.00	1.03
Perchlorate conf	6.390e+04	9.94	1.00	1.02

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

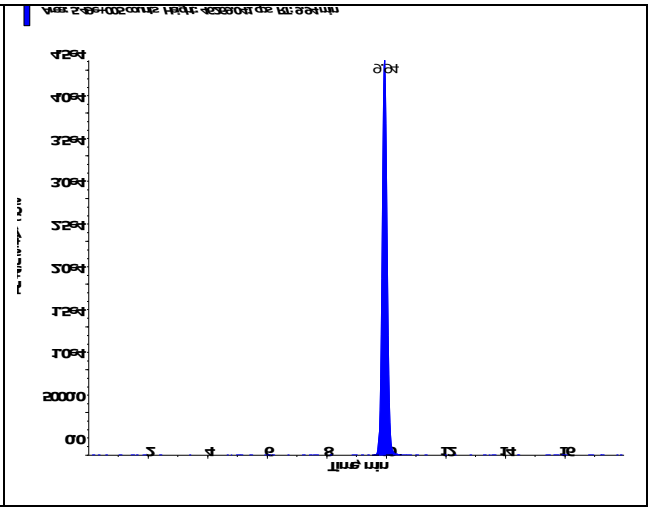

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.95 (9.94) min Calculated conc: 1.03 ng/ml Area Ratio: 0.325 Sample Type: (Standard)	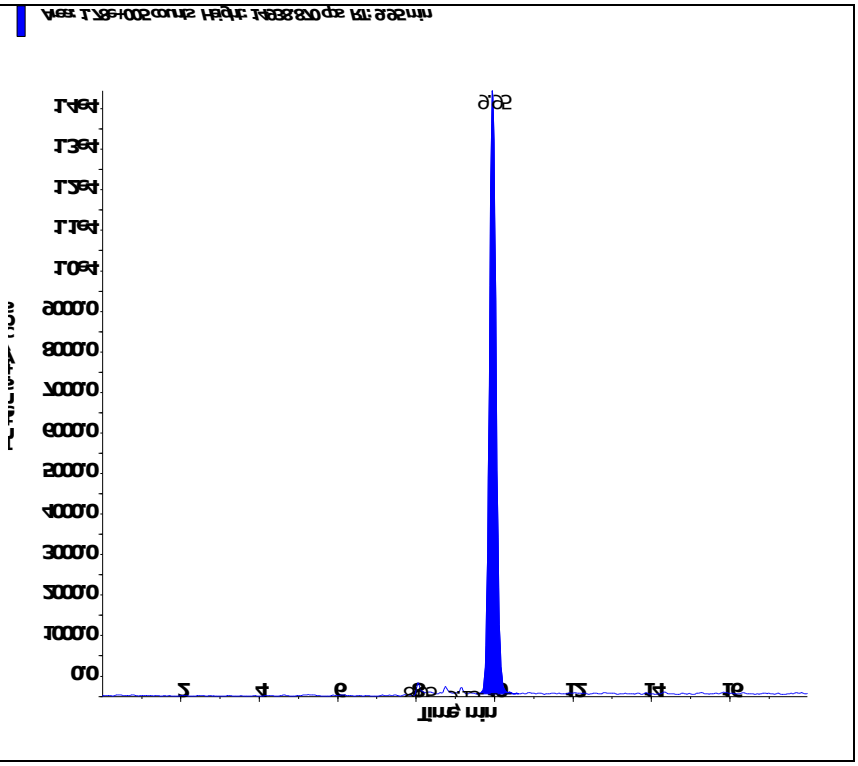
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.94 (9.92) min Calculated conc: 1.02 ng/ml Area Ratio: 0.116 Sample Type: (Standard)	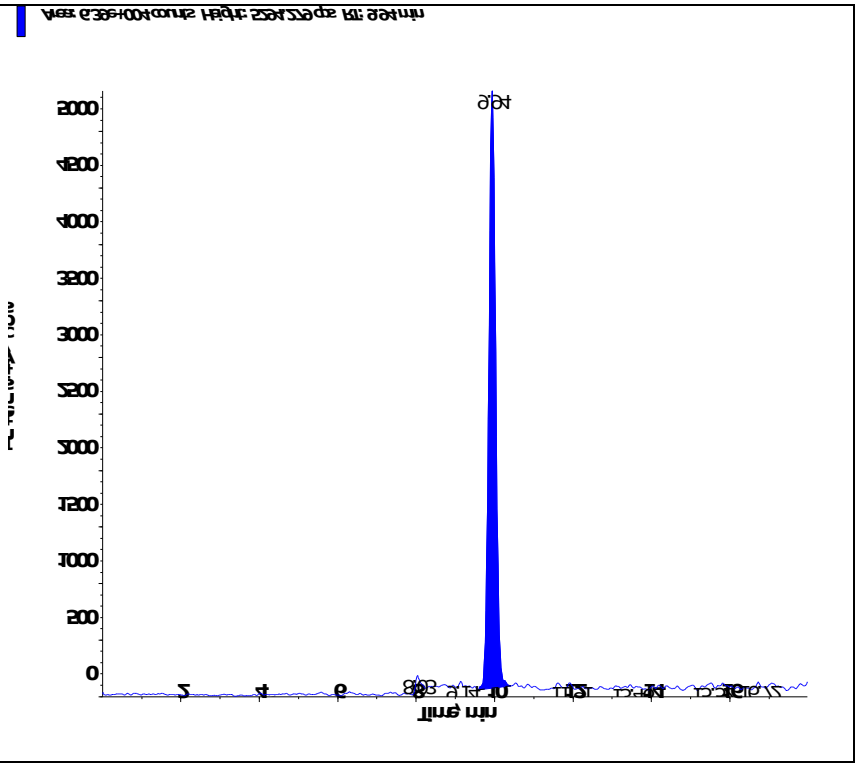

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Data File	LM33249.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/17/2016 8:46:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM33249.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 8:46:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG557856-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.460e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.500e+05	9.94	2.00	2.06
Perchlorate conf	1.260e+05	9.93	2.00	2.04

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

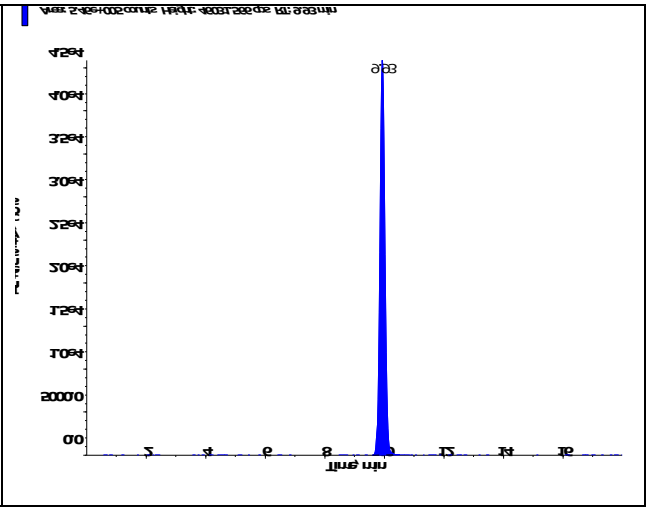

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.94 (9.94) min Calculated conc: 2.06 ng/ml Area Ratio: 0.641 Sample Type: (Standard)	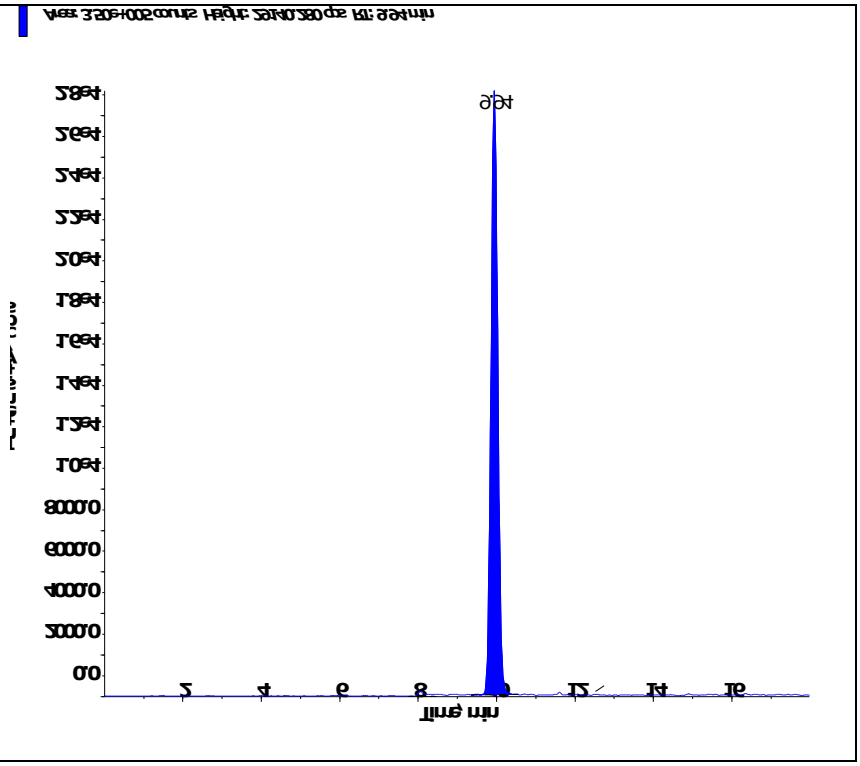
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.93 (9.92) min Calculated conc: 2.04 ng/ml Area Ratio: 0.23 Sample Type: (Standard)	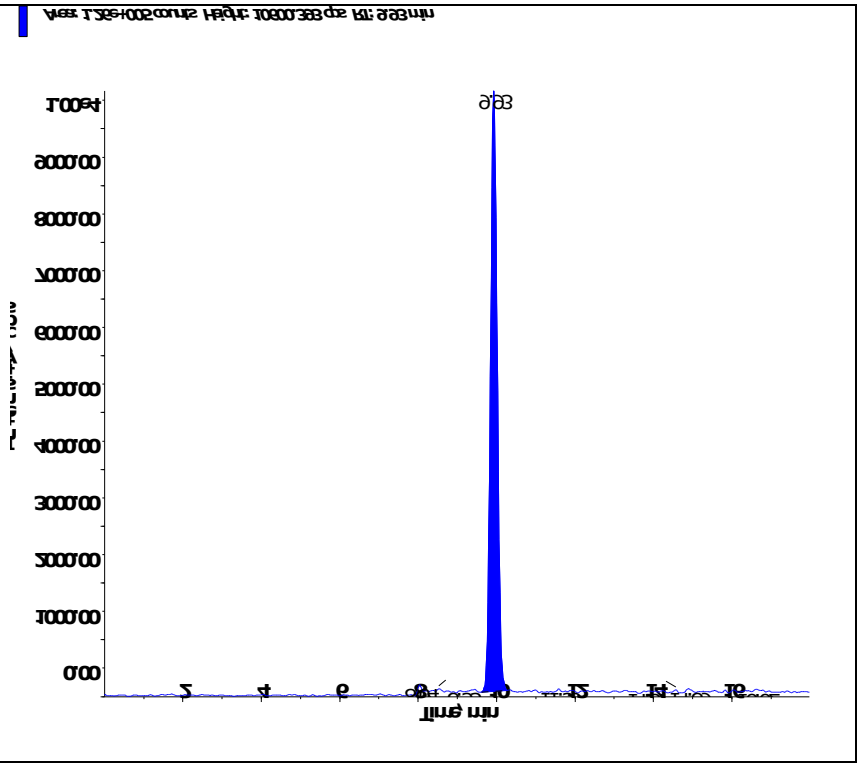

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Data File	LM33250.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/17/2016 9:05:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM33250.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 9:05:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG557856-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.320e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.260e+05	9.96	5.00	5.03
Perchlorate conf	2.930e+05	9.94	5.00	4.93

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

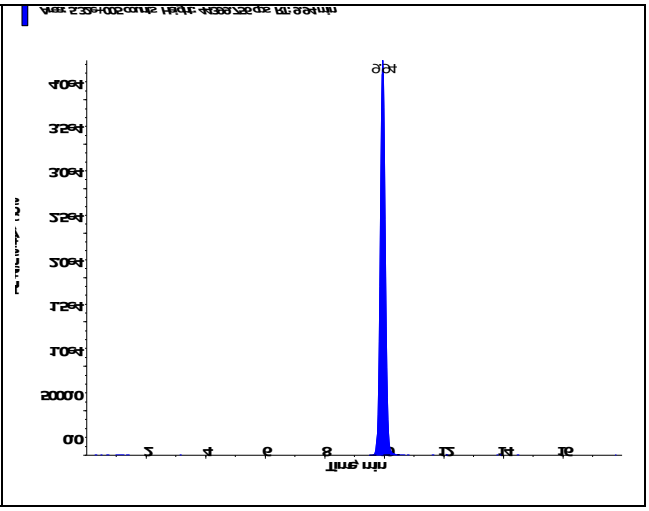

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.96 (9.94) min Calculated conc: 5.03 ng/ml Area Ratio: 1.554 Sample Type: (Standard)	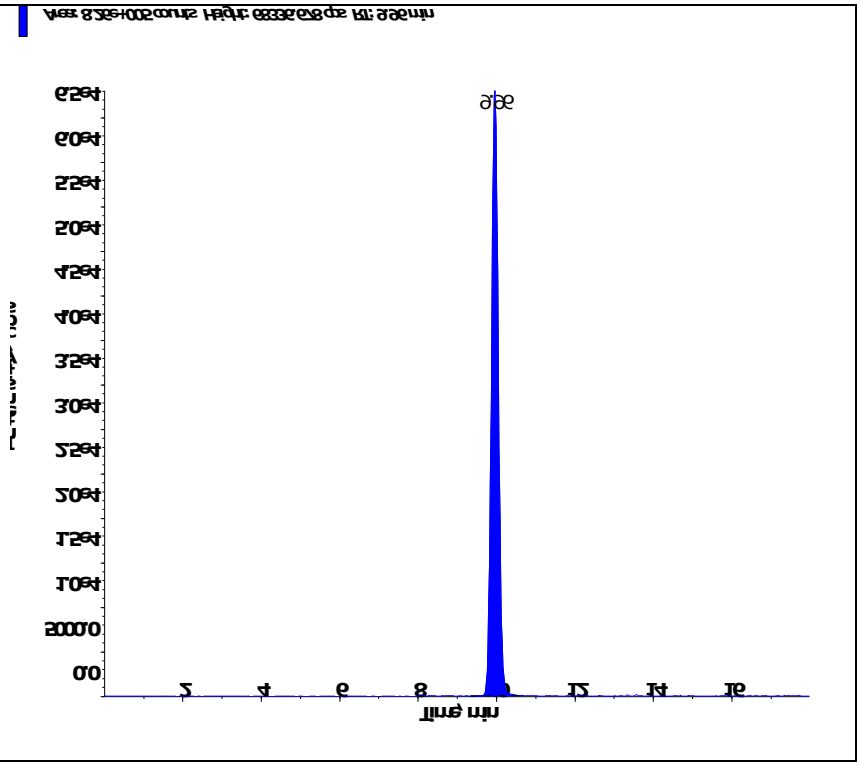
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.94 (9.92) min Calculated conc: 4.93 ng/ml Area Ratio: 0.552 Sample Type: (Standard)	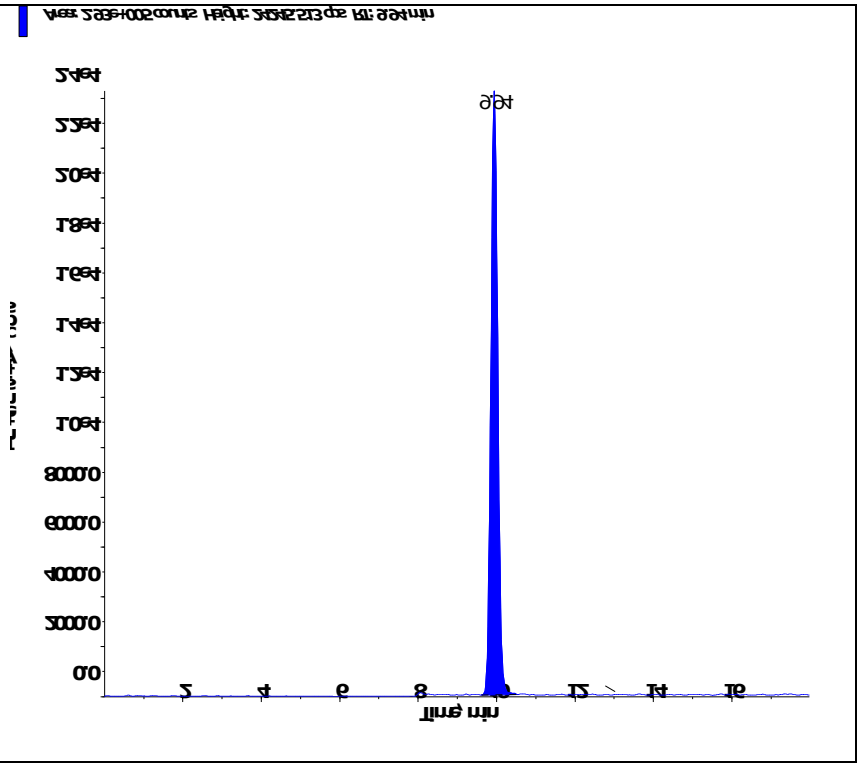

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Data File	LM33251.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/17/2016 9:24:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM33251.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 9:24:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG557856-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.030e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.94	10.00	9.87
Perchlorate conf	5.620e+05	9.93	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

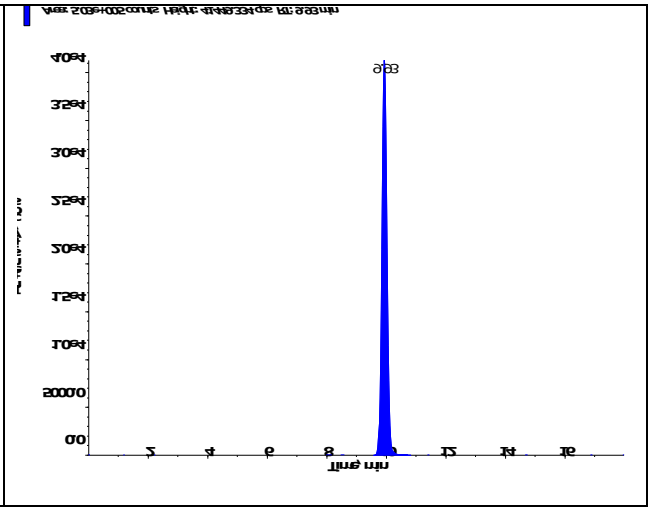

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.94 (9.94) min Calculated conc: 9.87 ng/ml Area Ratio: 3.043 Sample Type: (Standard)	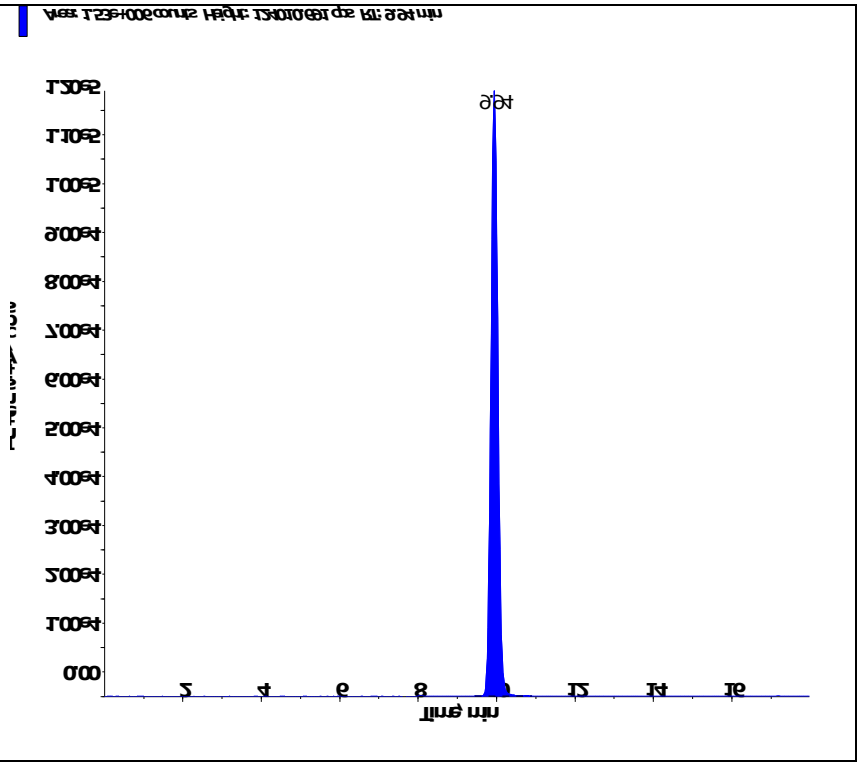
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.93 (9.92) min Calculated conc: 10.00 ng/ml Area Ratio: 1.117 Sample Type: (Standard)	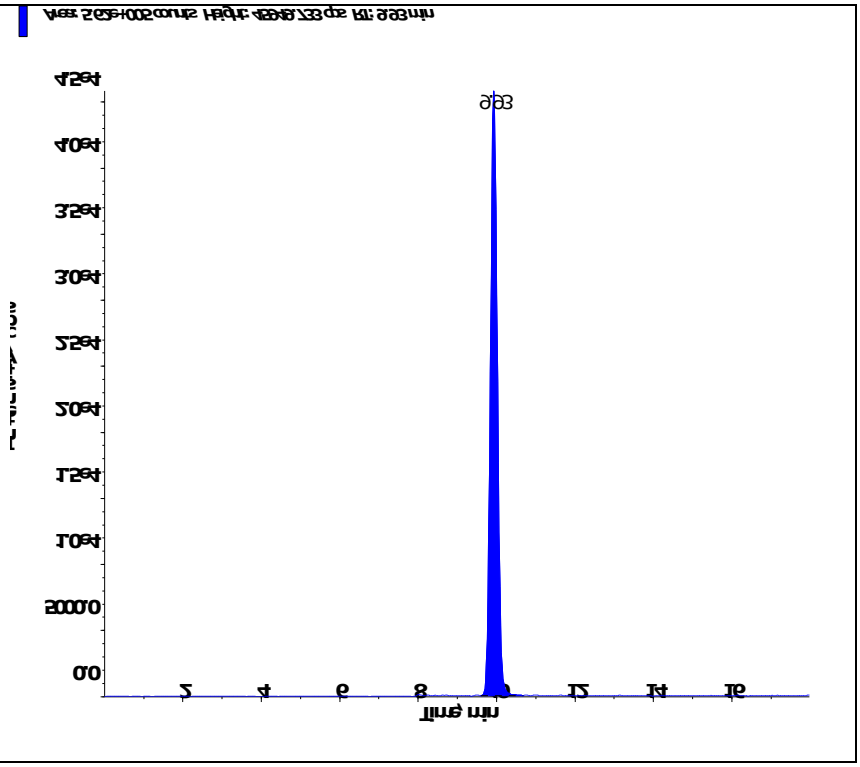

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Data File	LM33252.wiff	**Result Table**	021716_JWR.rdb
Acquisition Date	2/17/2016 9:43:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM33252.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 9:43:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	021716_JWR.rdb
Sample ID	WG557856-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.420e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+05	9.93	1.00	1.05
Perchlorate conf	6.360e+04	9.92	1.00	1.03

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

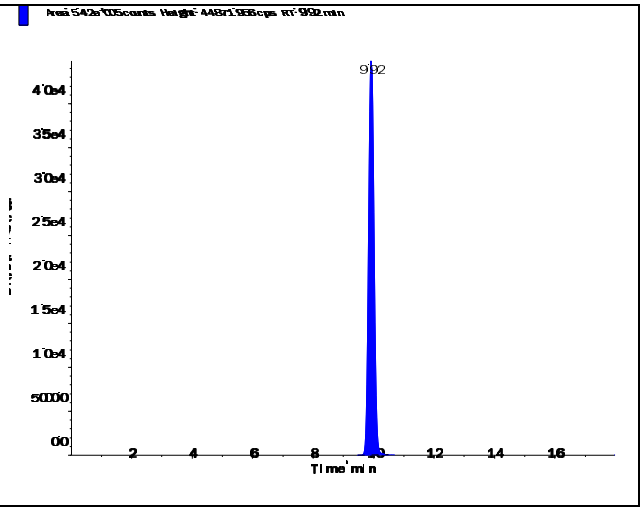

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.33
Sample Type:	(Quality Control)

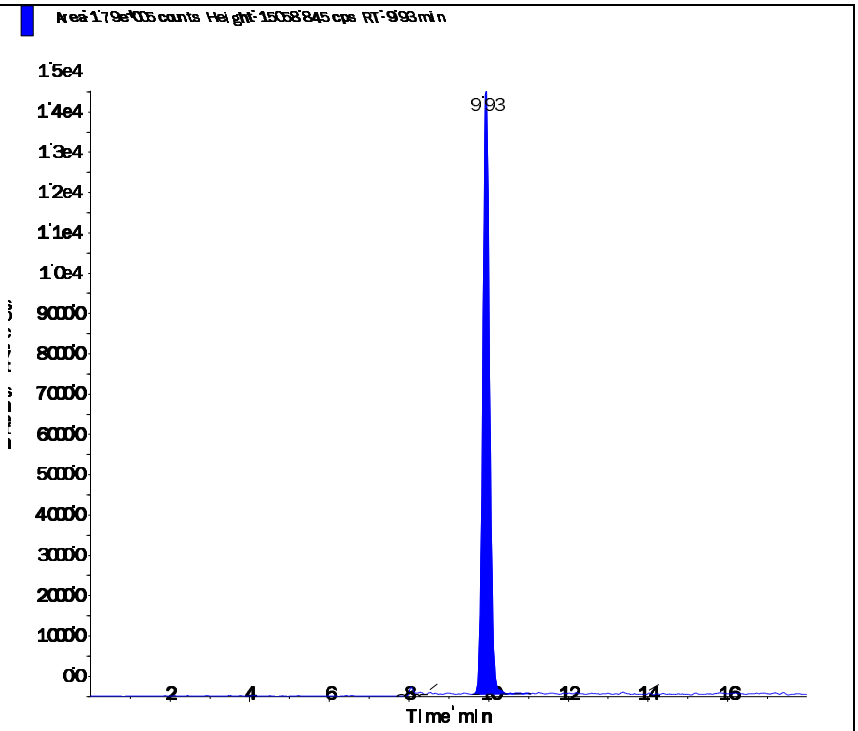

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.117
Sample Type:	(Quality Control)

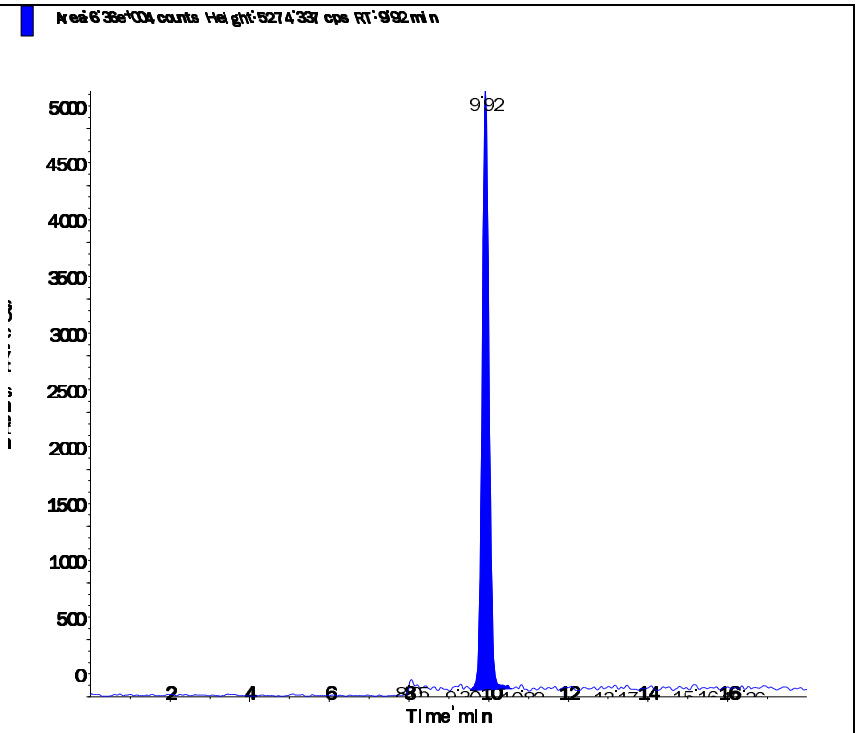

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Data File	LM33477.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/29/2016 8:56:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559066-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33477.wiff	**Injection Volume**	10.00
Acquisition Date	2/29/2016 8:56:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559066-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.320e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.760e+05	9.97	1.00	1.06
Perchlorate conf	5.830e+04	9.96	1.00	0.962

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

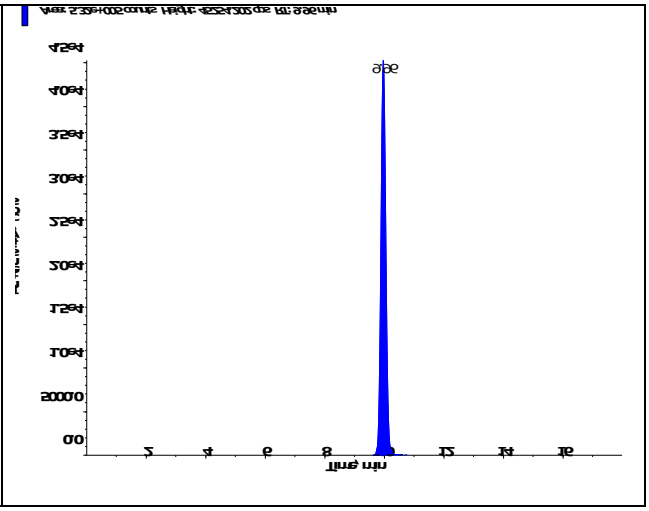

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.97 (9.94) min Calculated conc: 1.06 ng/ml Area Ratio: 0.332 Sample Type: (Quality Control)	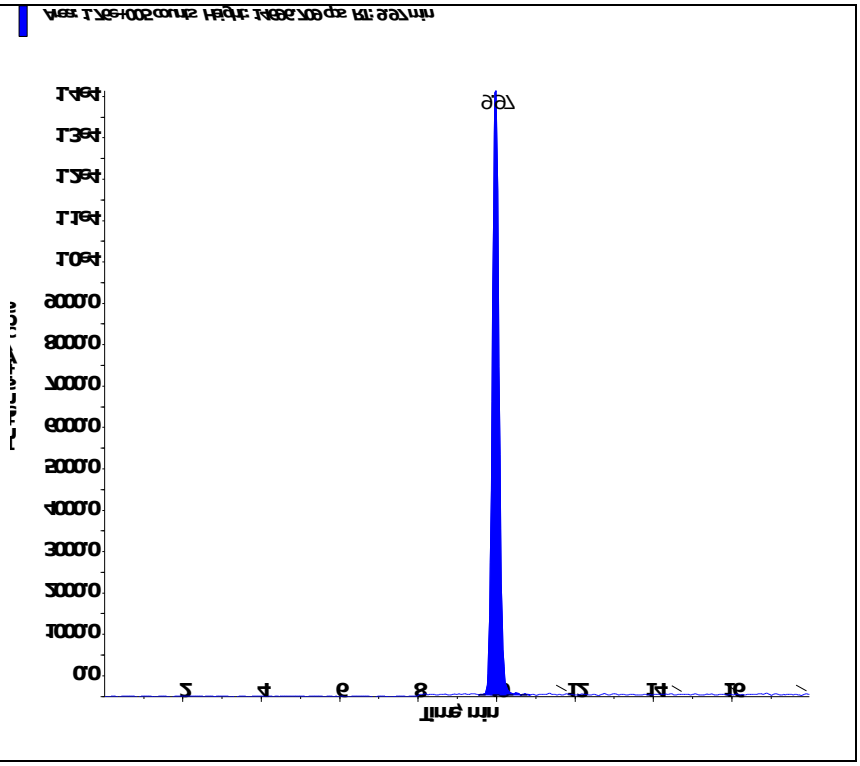
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.96 (9.92) min Calculated conc: 0.962 ng/ml Area Ratio: 0.11 Sample Type: (Quality Control)	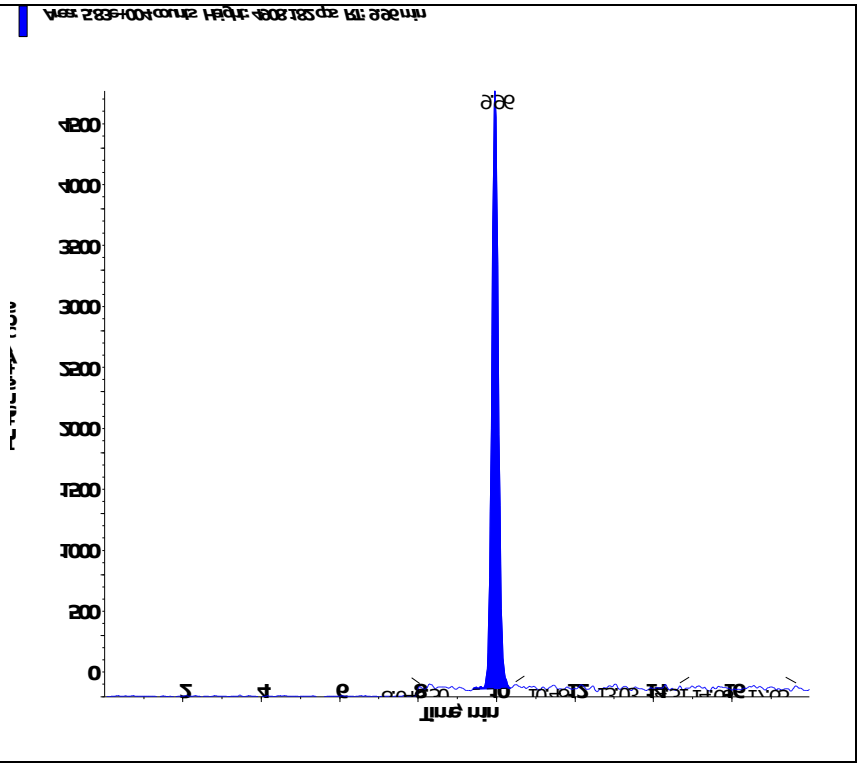

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Data File	LM33490.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 1:02:38 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG599066-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33490.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 1:02:38 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG599066-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.380e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.730e+05	9.97	1.00	1.02
Perchlorate conf	5.590e+04	9.95	1.00	0.91

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

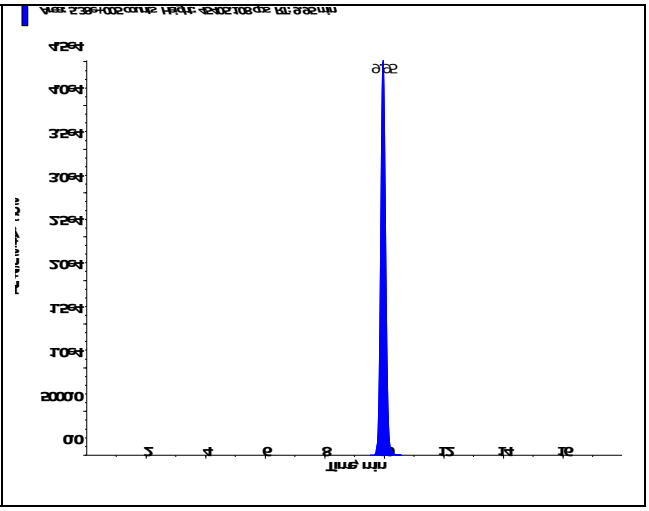

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.97 (9.94) min Calculated conc: 1.02 ng/ml Area Ratio: 0.322 Sample Type: (Quality Control)	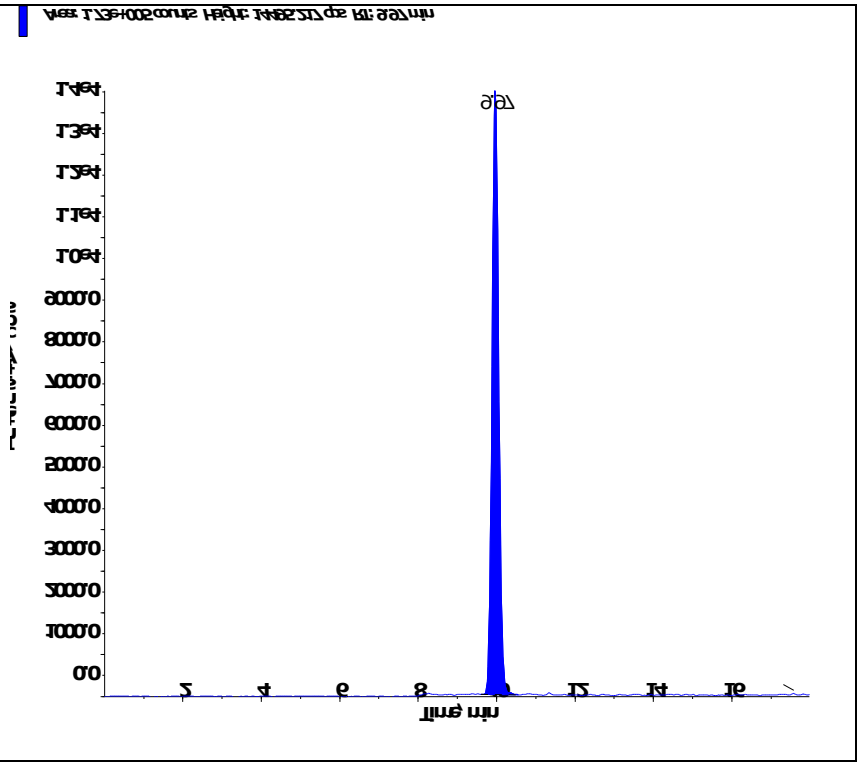
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.95 (9.92) min Calculated conc: 0.91 ng/ml Area Ratio: 0.104 Sample Type: (Quality Control)	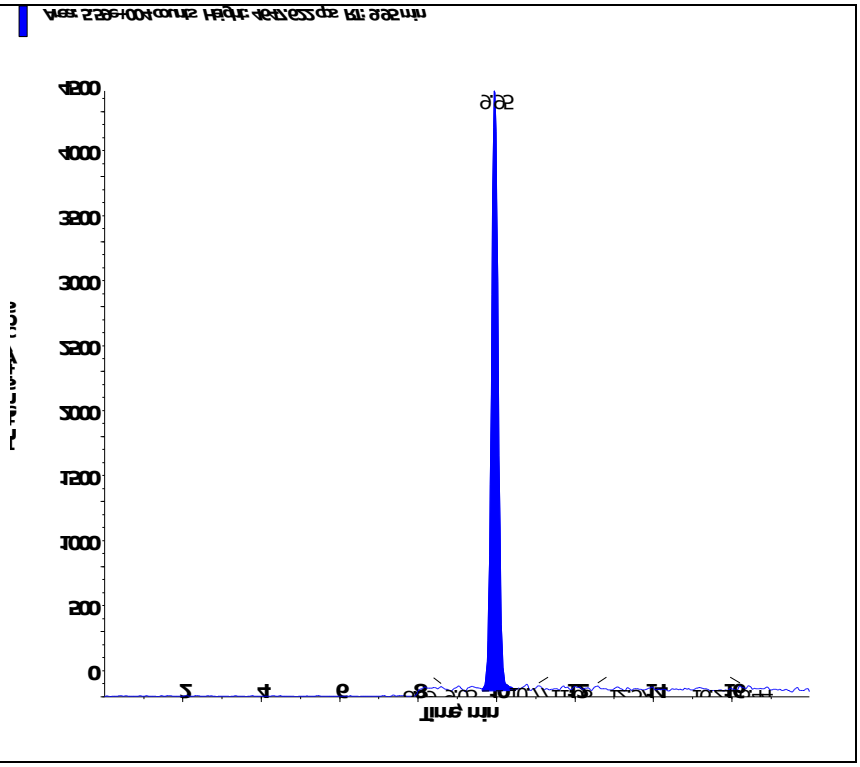

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Data File	LM33503.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 5:08:49 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG599066-11 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33503.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 5:08:49 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG599066-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.040e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.630e+05	9.96	1.00	1.03
Perchlorate conf	5.340e+04	9.94	1.00	0.929

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

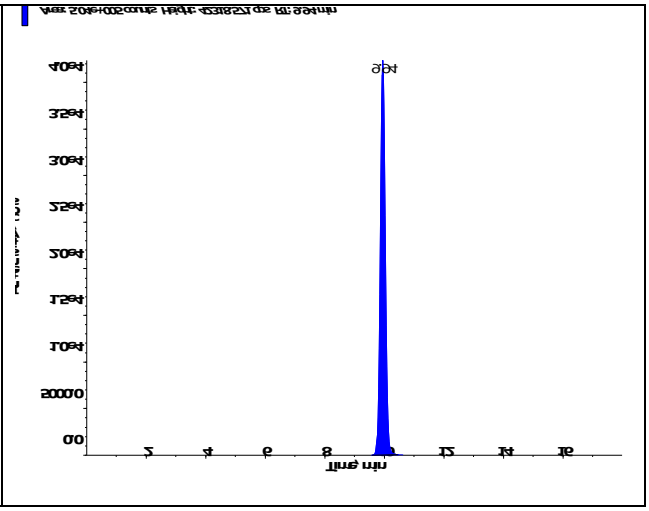

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.96 (9.94) min Calculated conc: 1.03 ng/ml Area Ratio: 0.323 Sample Type: (Quality Control)	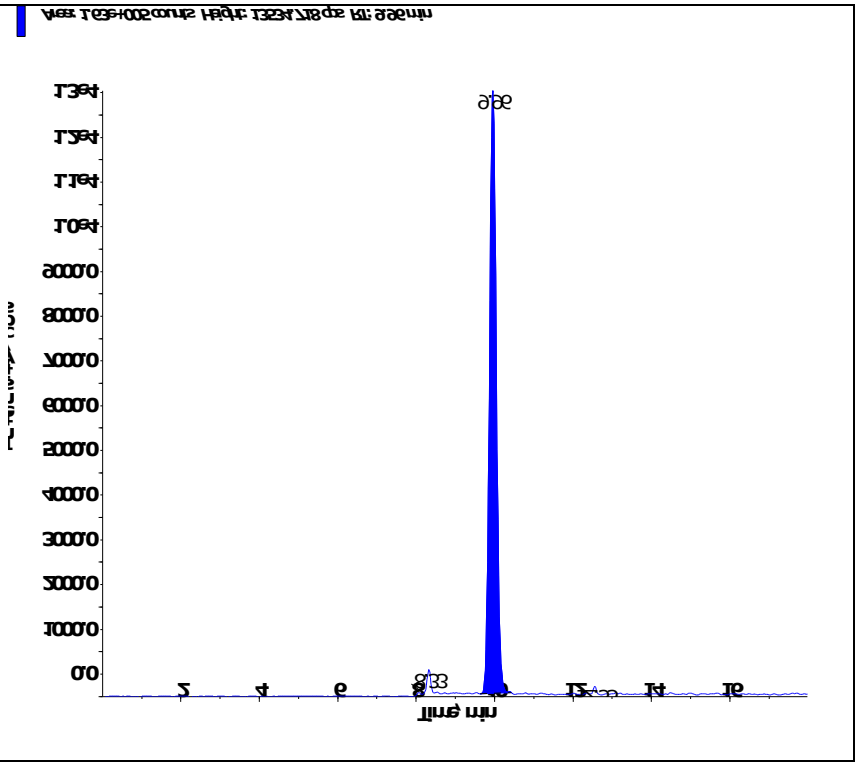
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.94 (9.92) min Calculated conc: 0.929 ng/ml Area Ratio: 0.106 Sample Type: (Quality Control)	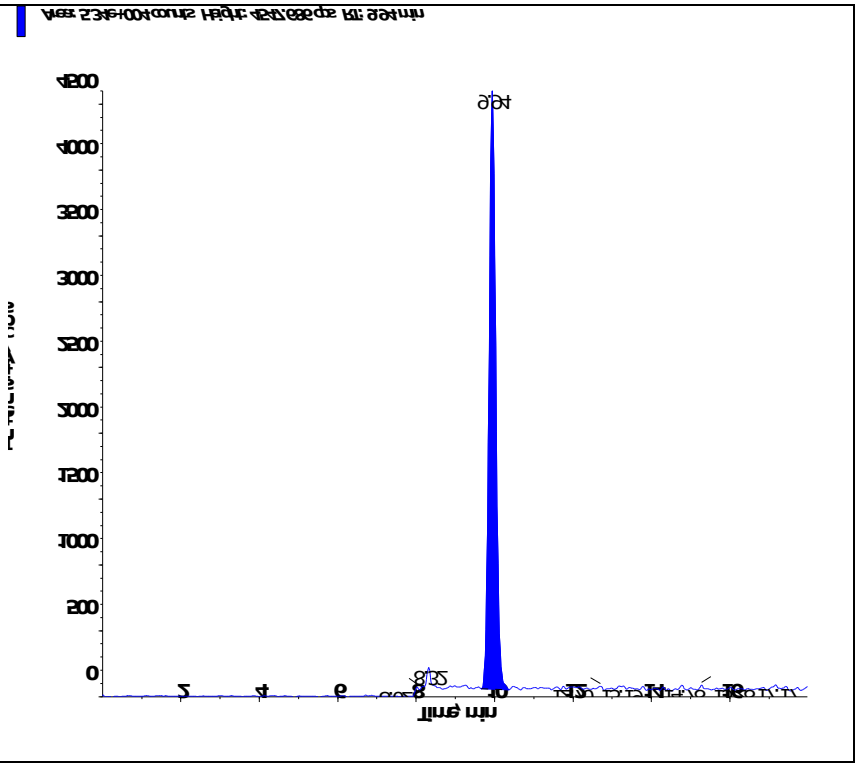

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Data File	LM33508.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 9:35:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559066-13 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33508.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 9:35:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559066-13	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.810e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.560e+05	9.97	1.00	1.03
Perchlorate conf	5.140e+04	9.96	1.00	0.936

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

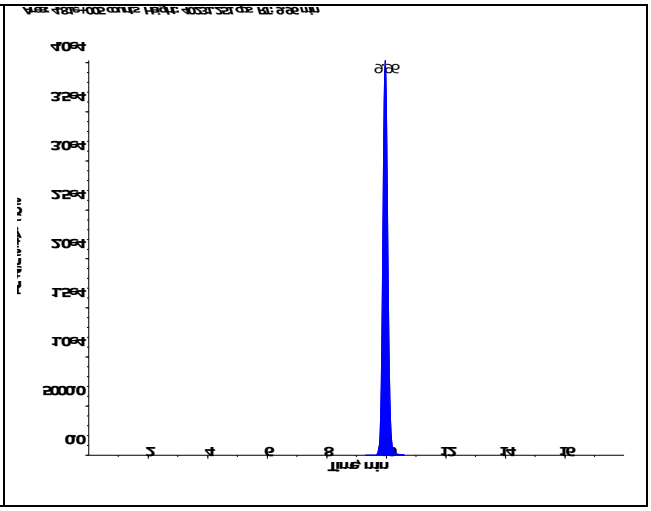

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.97 (9.94) min Calculated conc: 1.03 ng/ml Area Ratio: 0.324 Sample Type: (Quality Control)	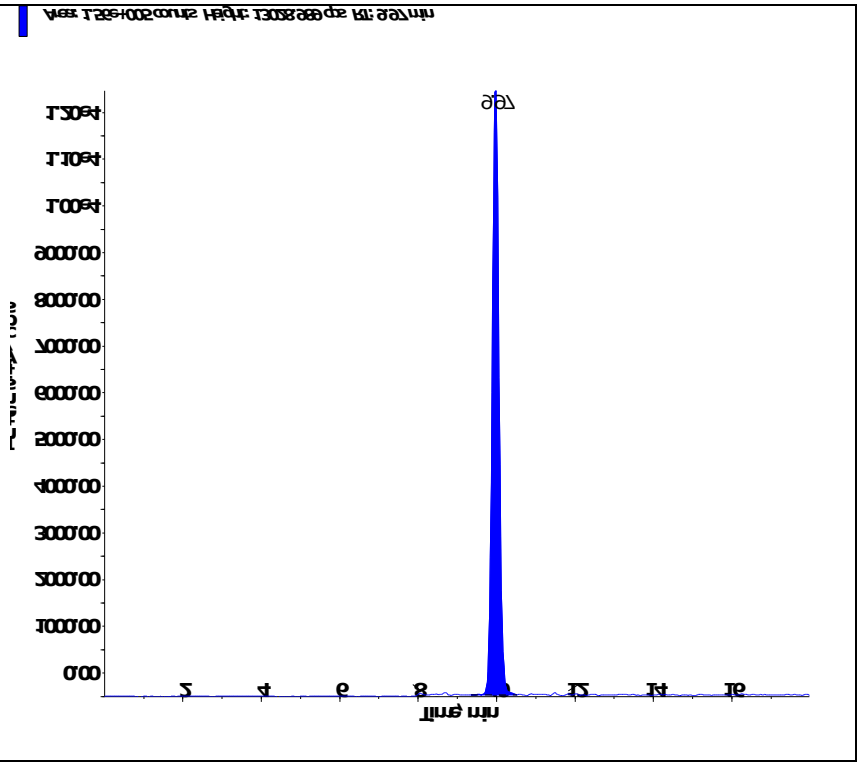
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.96 (9.92) min Calculated conc: 0.936 ng/ml Area Ratio: 0.107 Sample Type: (Quality Control)	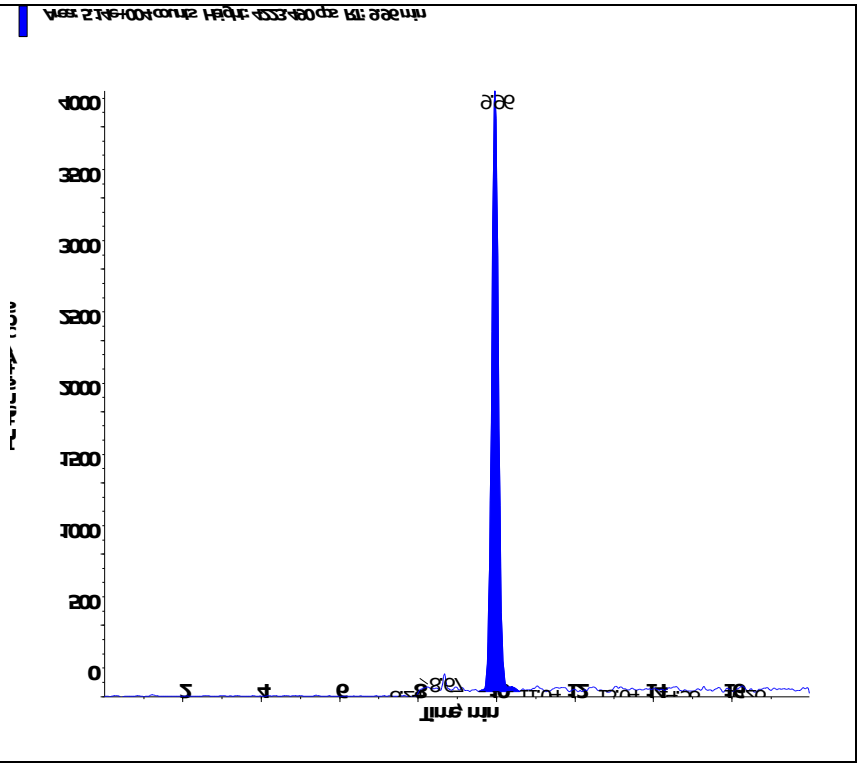

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Data File	LM33516.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 12:07:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG599066-15 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33516.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 12:07:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG599066-15	**Dilution Factor**	1.00
Sample Comment	1,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.910e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.620e+05	10.00	1.00	1.05
Perchlorate conf	5.300e+04	9.98	1.00	0.945

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

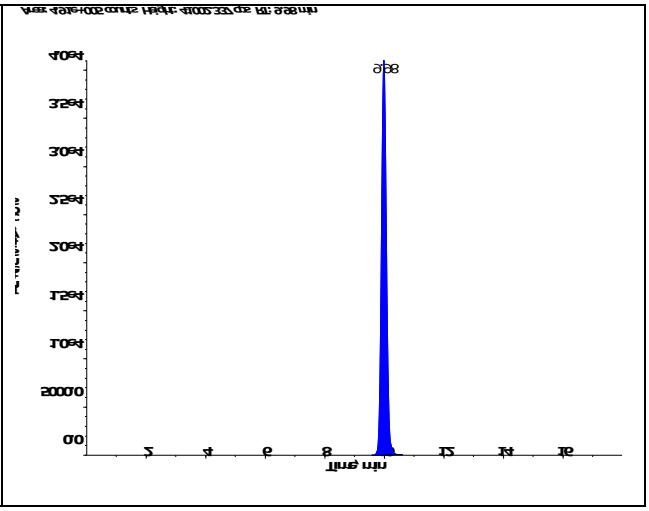

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.00 (9.94) min Calculated conc: 1.05 ng/ml Area Ratio: 0.33 Sample Type: (Quality Control)	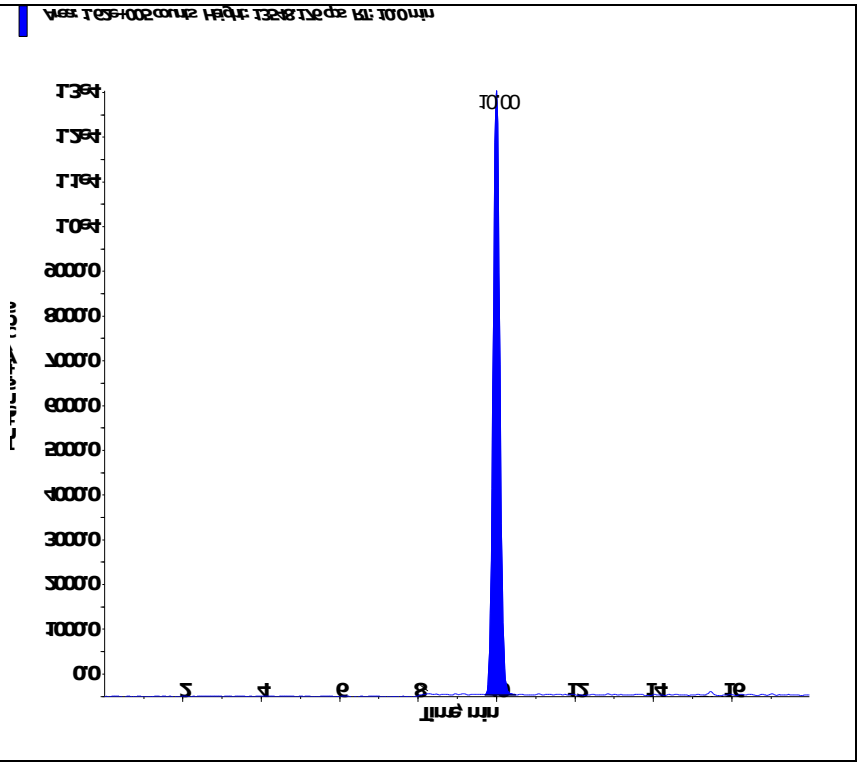
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.98 (9.92) min Calculated conc: 0.945 ng/ml Area Ratio: 0.108 Sample Type: (Quality Control)	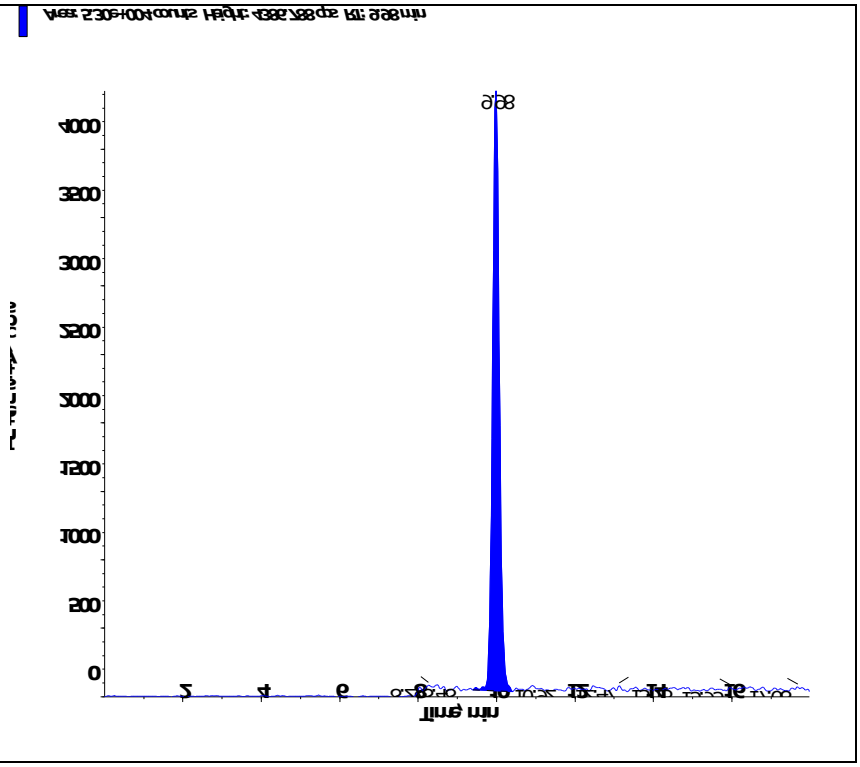

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Data File	LM33478.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/29/2016 9:15:23 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559015-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM33478.wiff	**Injection Volume**	10.00
Acquisition Date	2/29/2016 9:15:23 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559015-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.310e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.910e+04	9.98	N/A	0.218
Perchlorate conf	1.350e+04	9.96	N/A	0.205

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

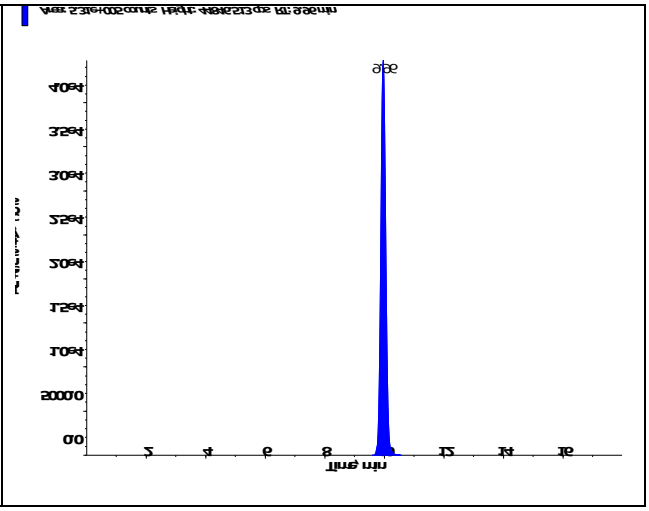

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.98 (9.94) min Calculated conc: 0.218 ng/ml Area Ratio: 0.074 Sample Type: (Unknown)	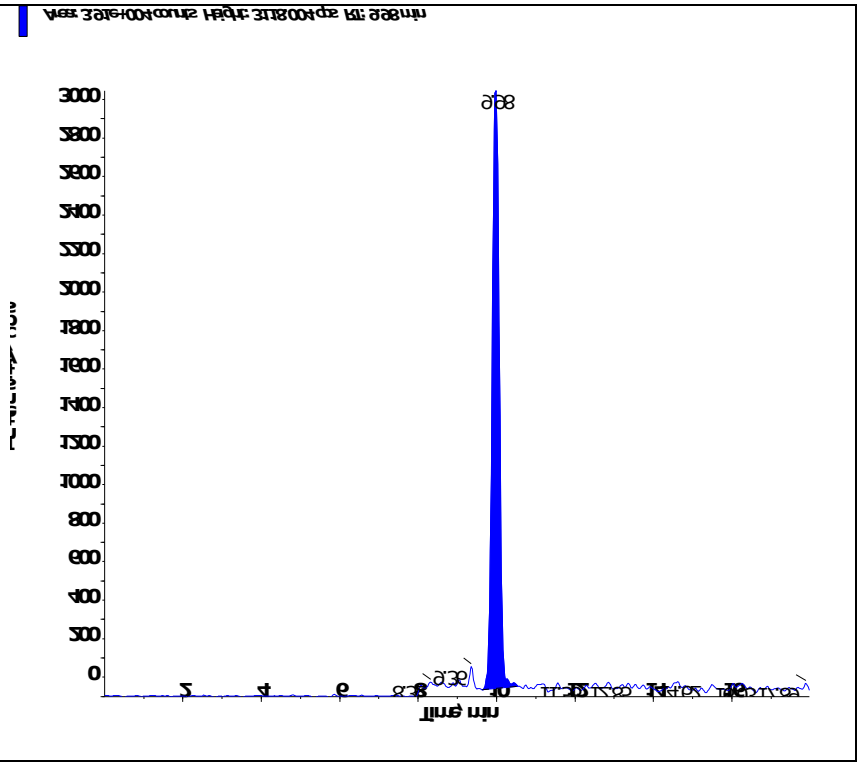
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.96 (9.92) min Calculated conc: 0.205 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	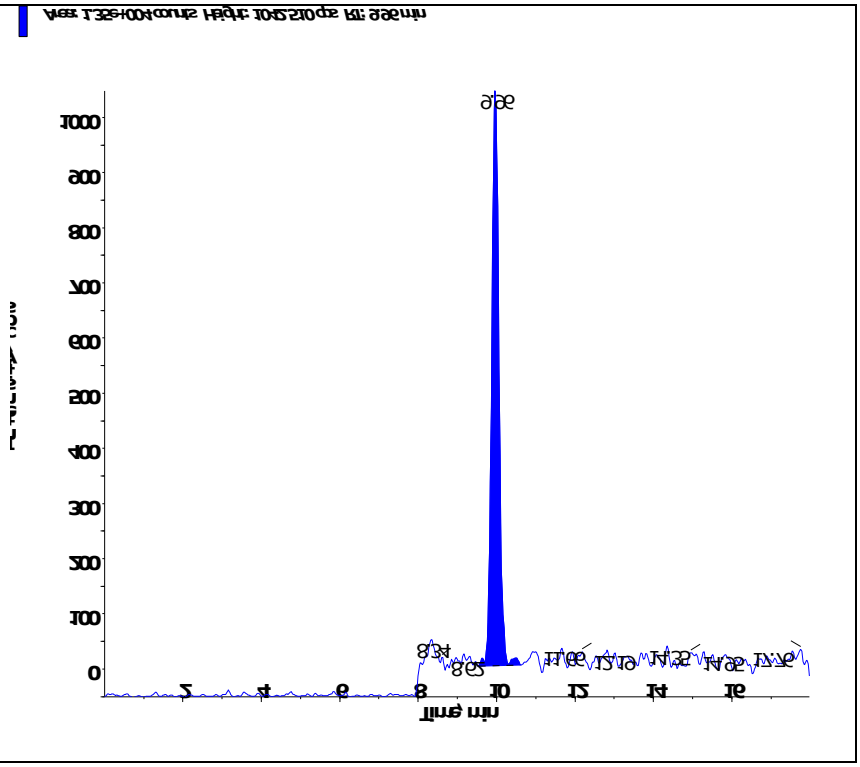

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Data File	LM33491.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 1:21:34 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559142-08 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33491.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 1:21:34 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559142-08	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.260e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.630e+04	9.98	N/A	0.202
Perchlorate conf	1.260e+04	9.97	N/A	0.192

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

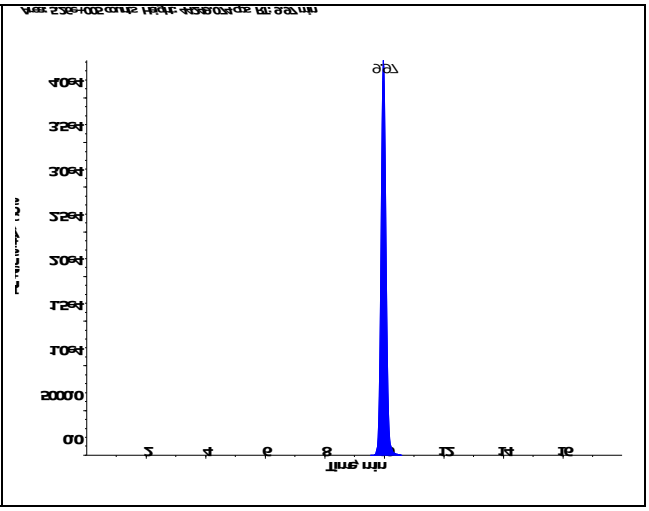

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.98 (9.94) min Calculated conc: 0.202 ng/ml Area Ratio: 0.069 Sample Type: (Unknown)	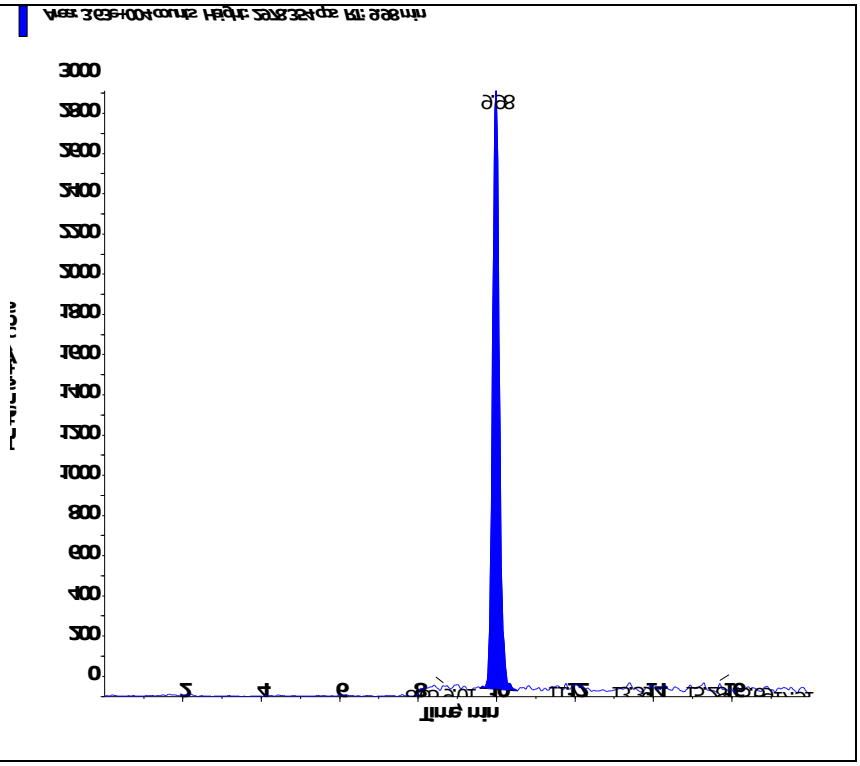
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.97 (9.92) min Calculated conc: 0.192 ng/ml Area Ratio: 0.024 Sample Type: (Unknown)	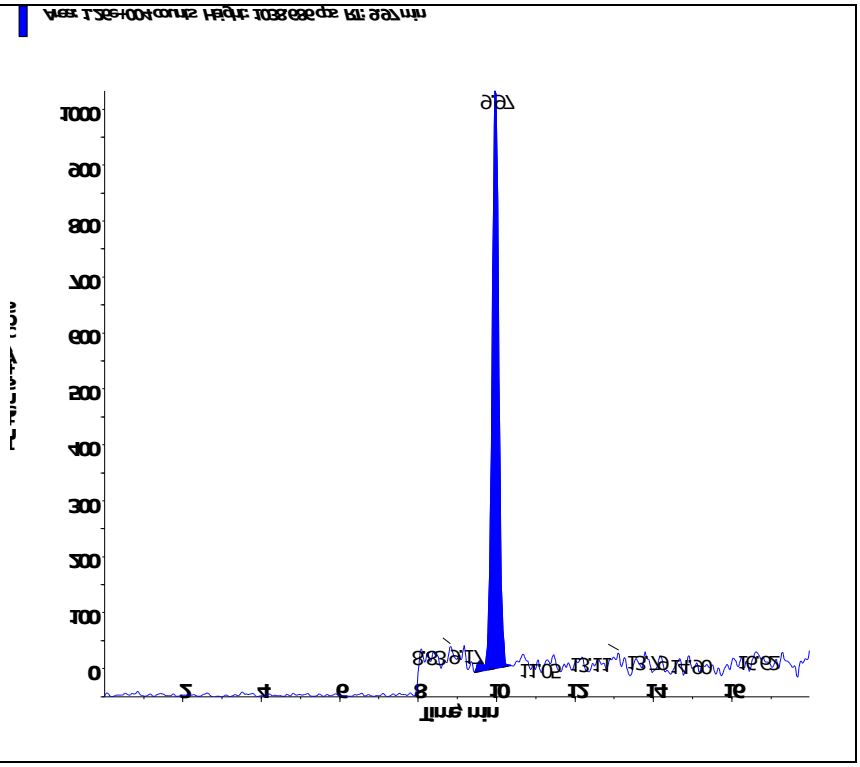

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Data File	LM33504.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 5:27:44 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559142-09 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33504.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 5:27:44 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559142-09	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.500e+04	9.96	N/A	0.205
Perchlorate conf	1.180e+04	9.95	N/A	0.188

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

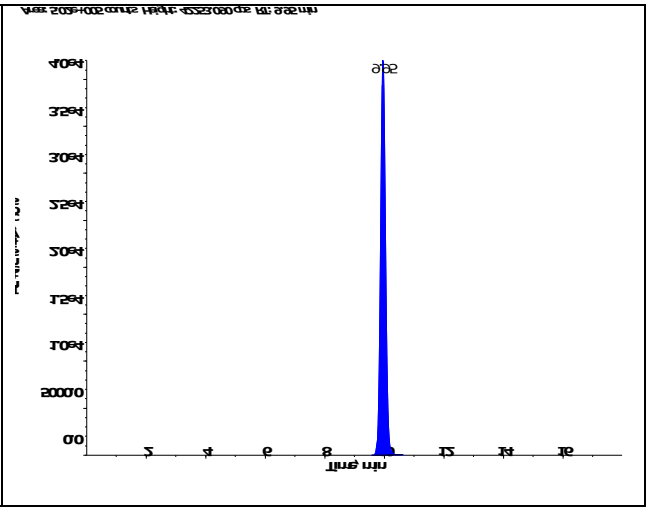

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.96 (9.94) min Calculated conc: 0.205 ng/ml Area Ratio: 0.07 Sample Type: (Unknown)	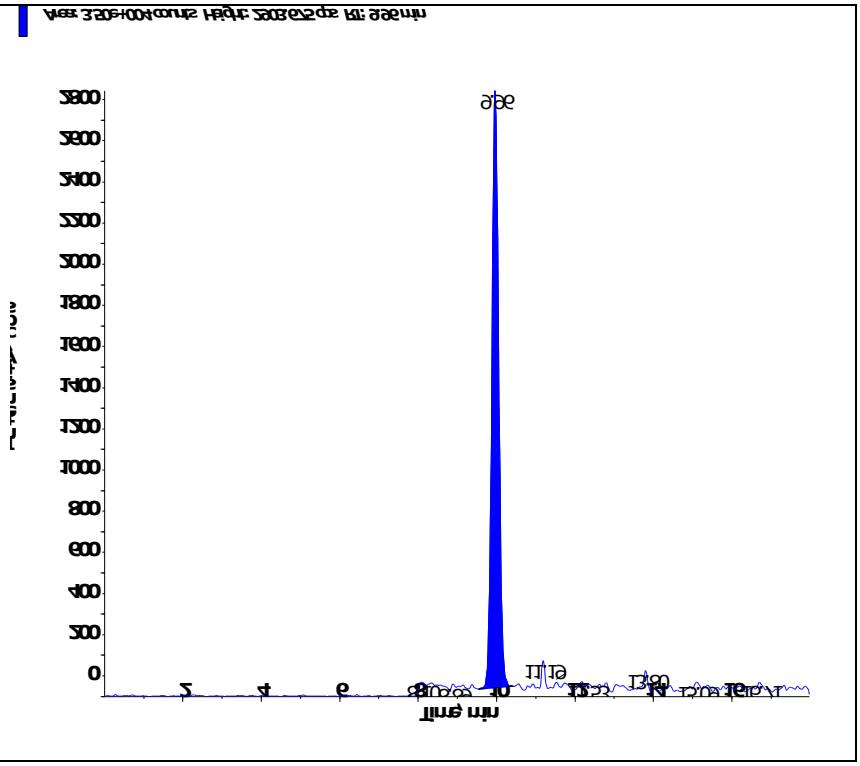
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.95 (9.92) min Calculated conc: 0.188 ng/ml Area Ratio: 0.023 Sample Type: (Unknown)	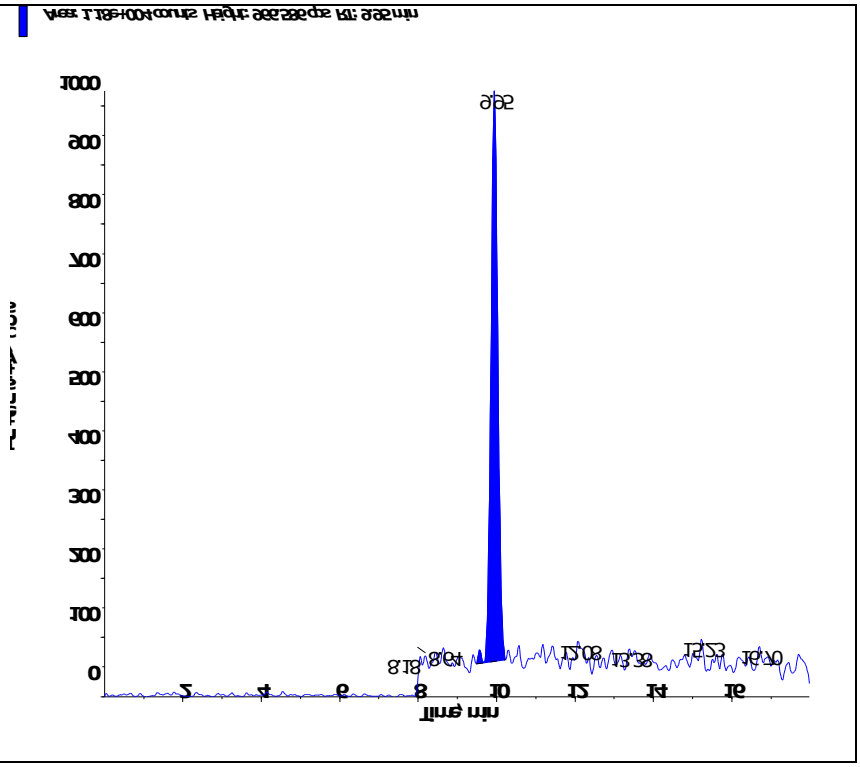

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Data File	LM33517.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 12:26:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559142-10 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33517.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 12:26:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559142-10	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.860e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.430e+04	10.00	N/A	0.207
Perchlorate conf	1.180e+04	9.98	N/A	0.196

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

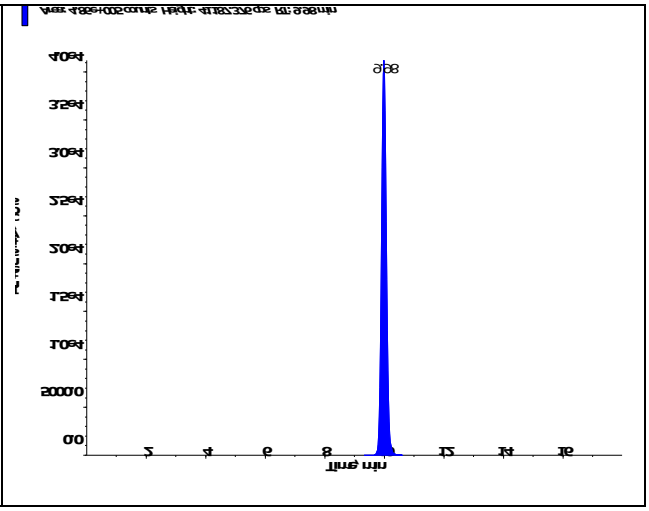

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.00 (9.94) min Calculated conc: 0.207 ng/ml Area Ratio: 0.07 Sample Type: (Unknown)	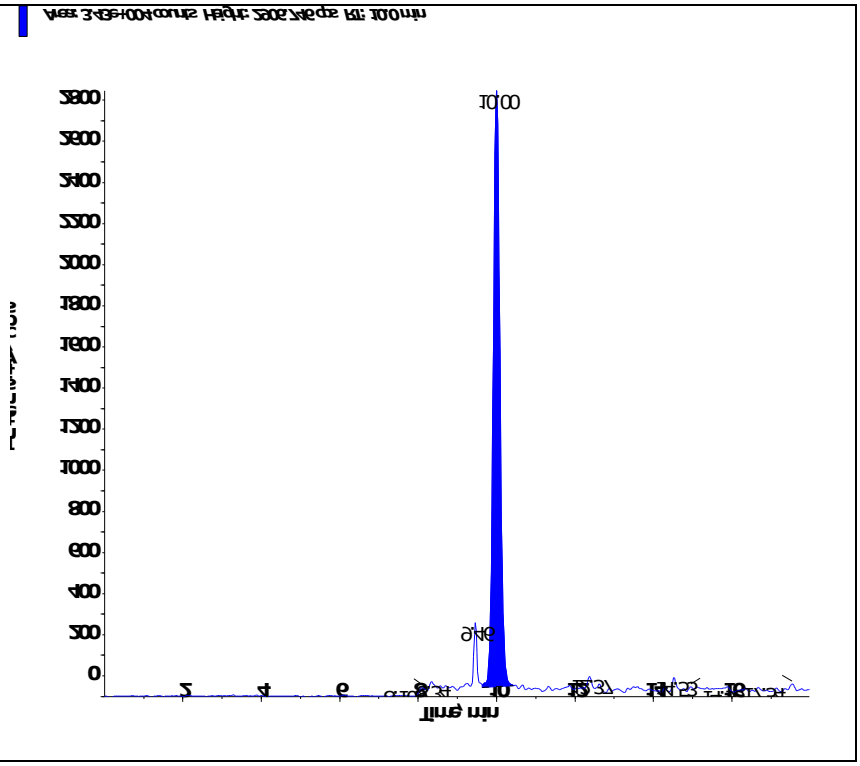
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.98 (9.92) min Calculated conc: 0.196 ng/ml Area Ratio: 0.024 Sample Type: (Unknown)	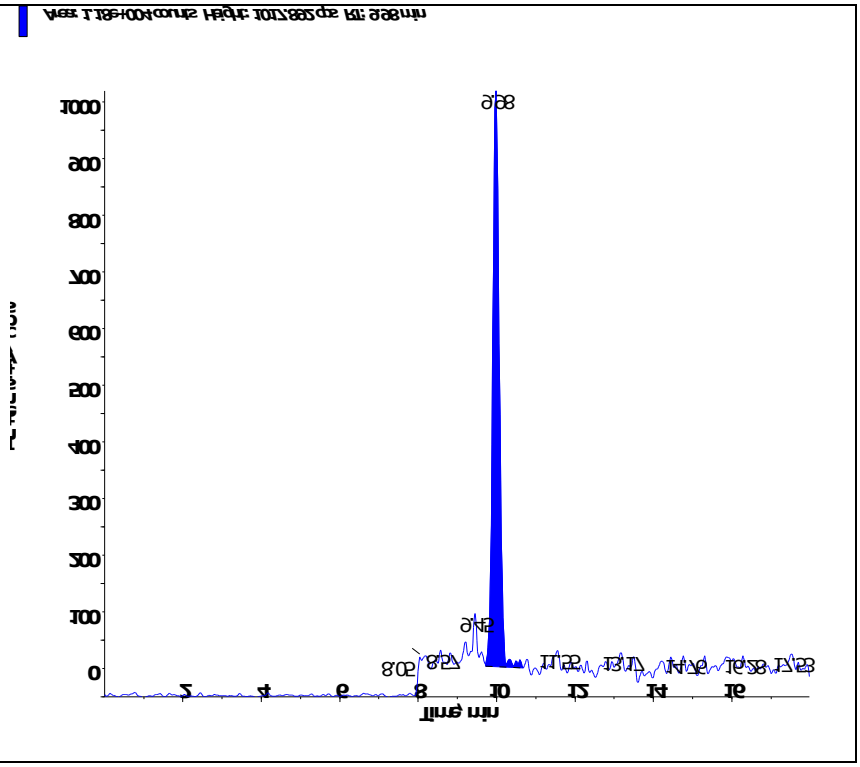

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Data File	LM33479.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/29/2016 9:34:19 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559066-08 CCB	**Injection Vial**	1.00
Data File	LM33479.wiff	**Injection Volume**	10.00
Acquisition Date	2/29/2016 9:34:19 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559066-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.400e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.400e+02	9.92	N/A	< 0
Perchlorate conf	2.300e+02	9.95	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

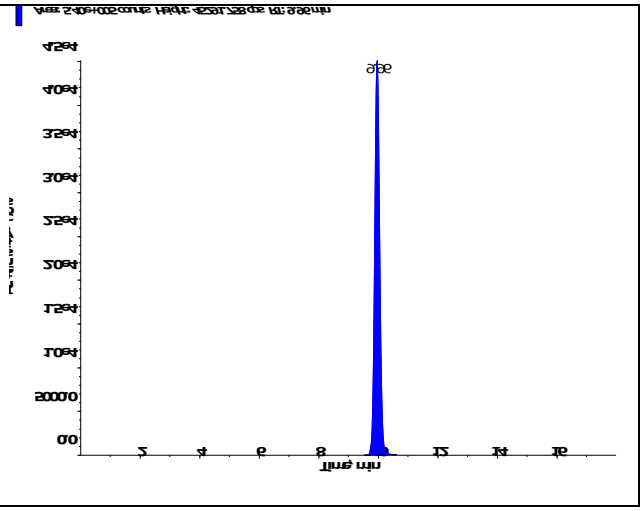

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.92 (9.94) min Calculated conc: < 0 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	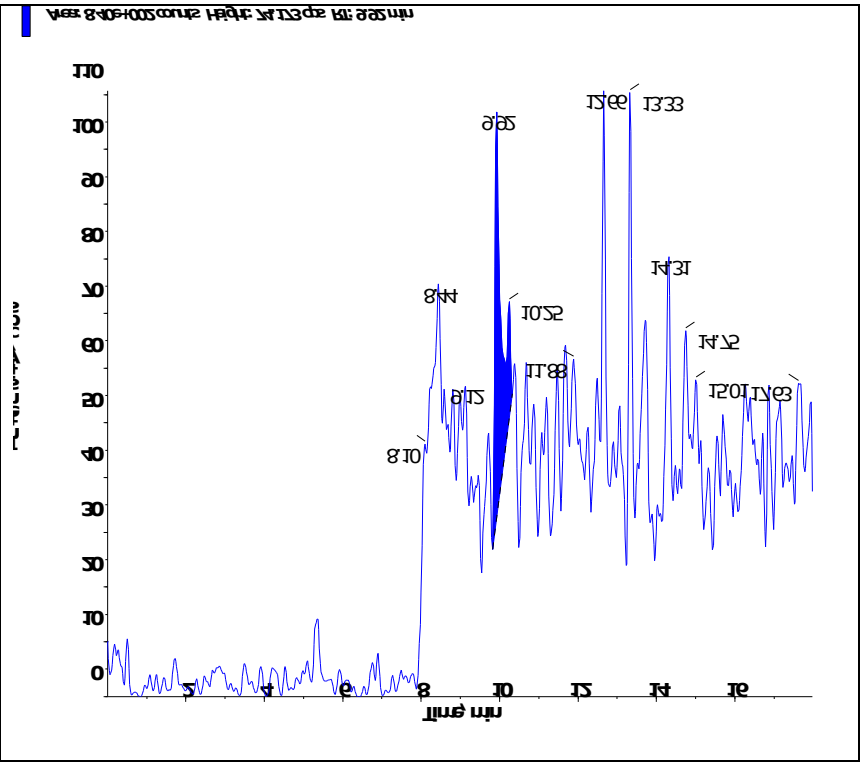
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.95 (9.92) min Calculated conc: < 0 ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	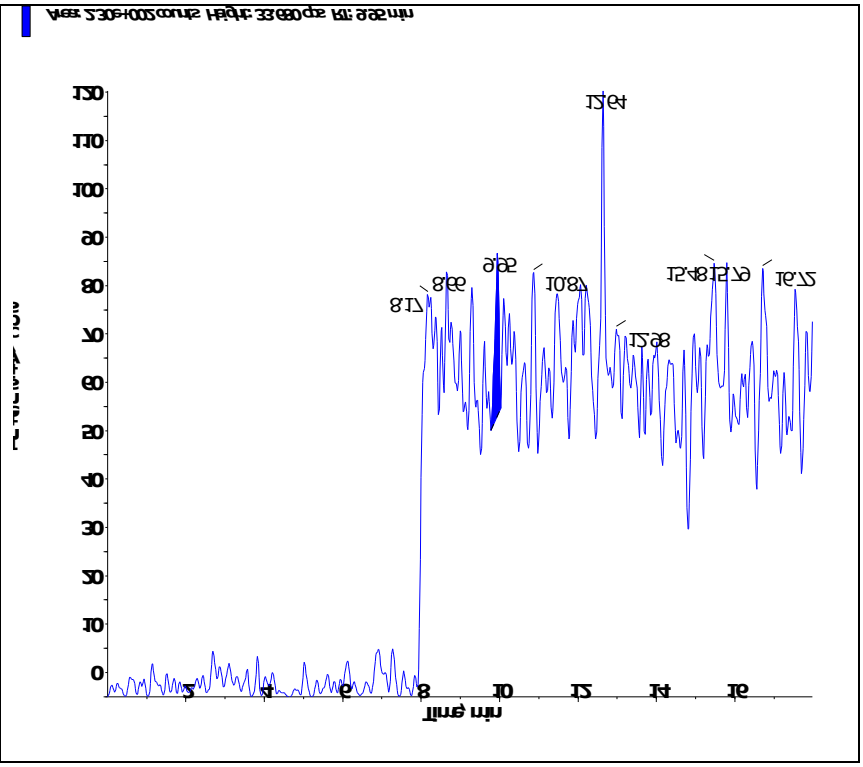

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Data File	LM33492.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 1:40:30 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG599066-10 CCB	**Injection Vial**	1.00
Data File	LM33492.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 1:40:30 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG599066-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.310e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	4.900e+02	9.88	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

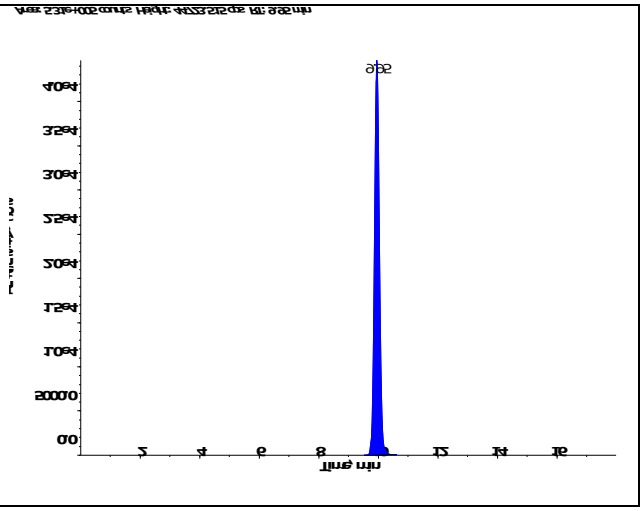

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.94) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	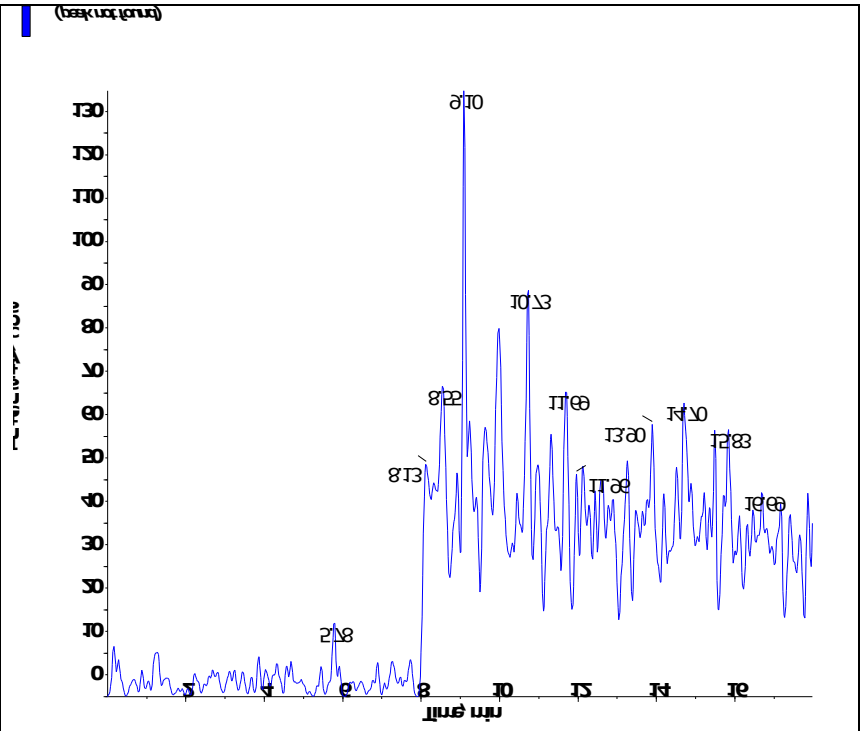
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.88 (9.92) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	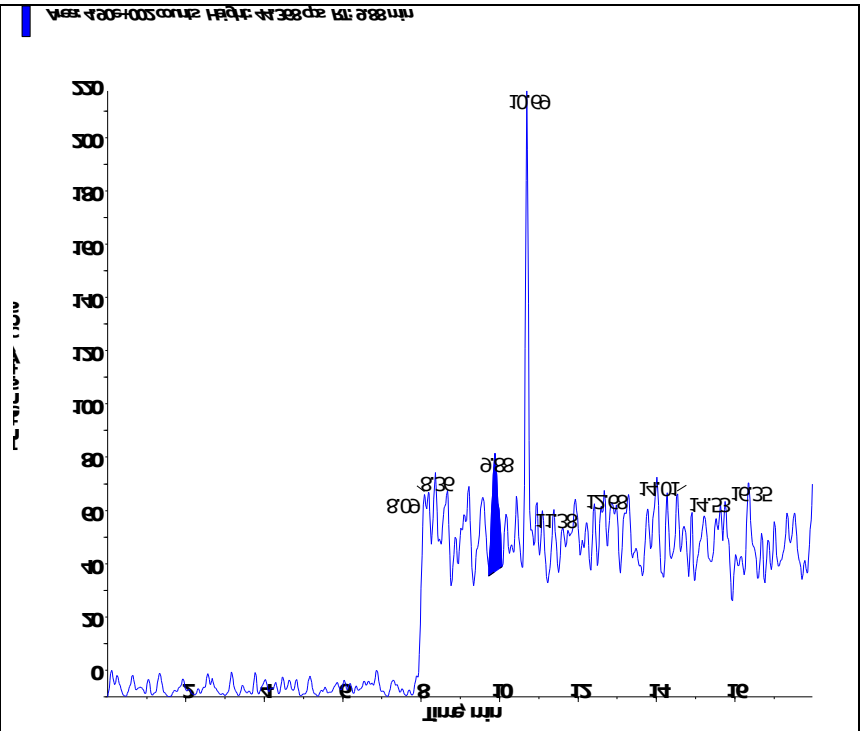

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Data File	LM33505.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 5:46:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG599066-12 CCB	**Injection Vial**	1.00
Data File	LM33505.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 5:46:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG599066-12	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

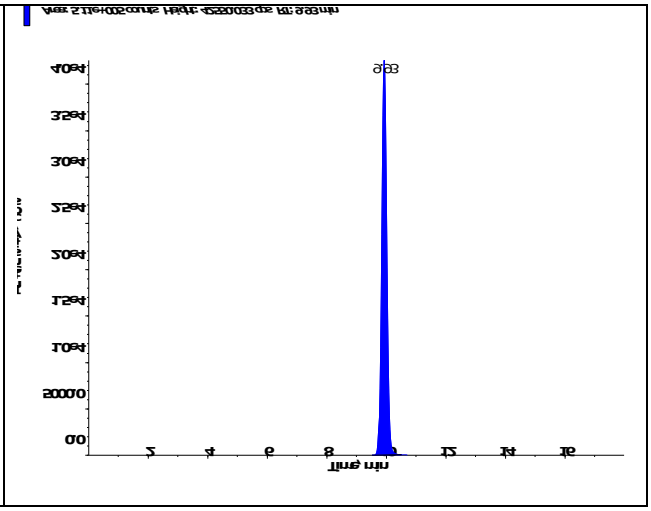

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.94) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	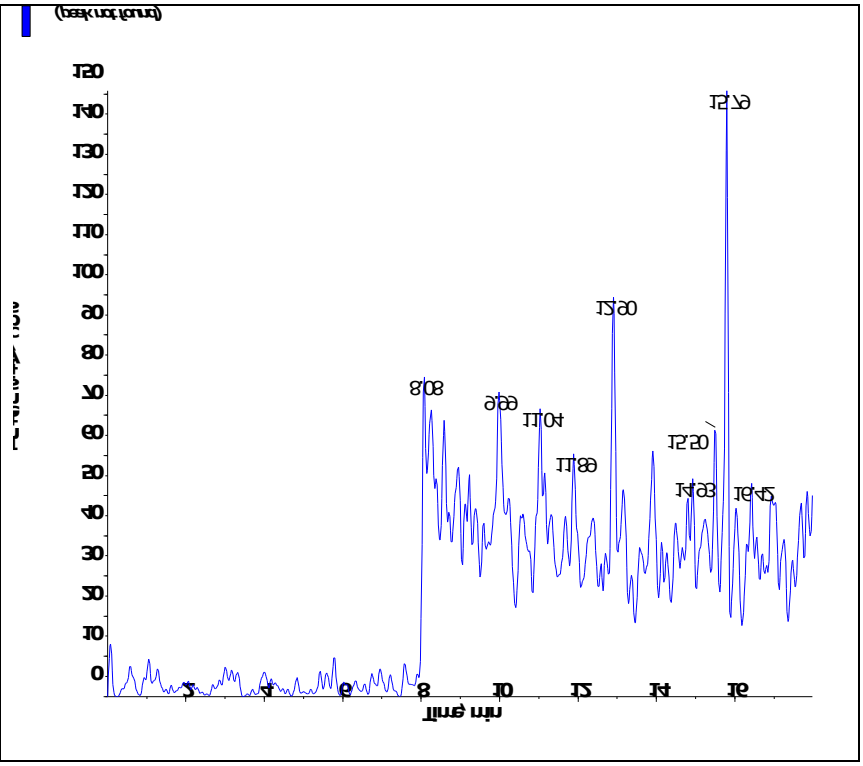
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.92) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	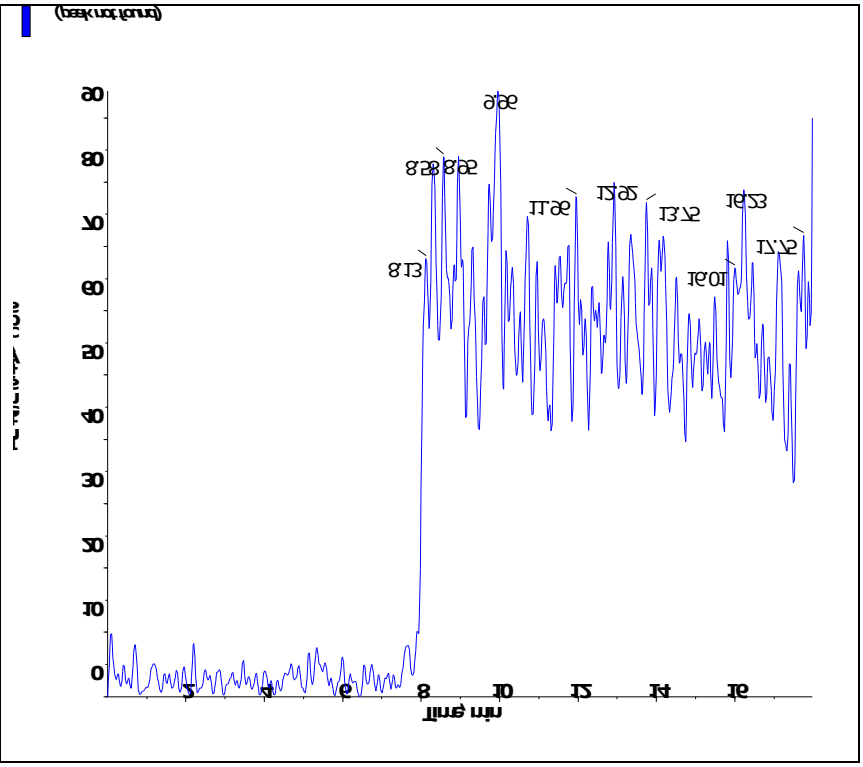

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Data File	LM33510.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 10:13:50 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559066-14 CCB	**Injection Vial**	1.00
Data File	LM33510.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 10:13:50 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559066-14	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.980e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

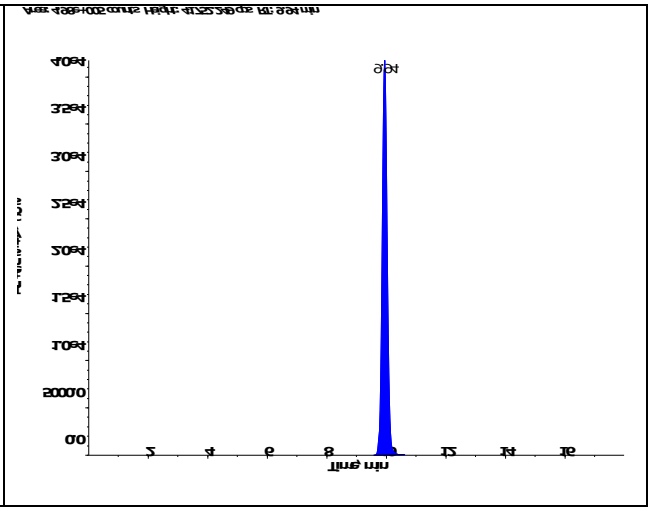

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.94) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	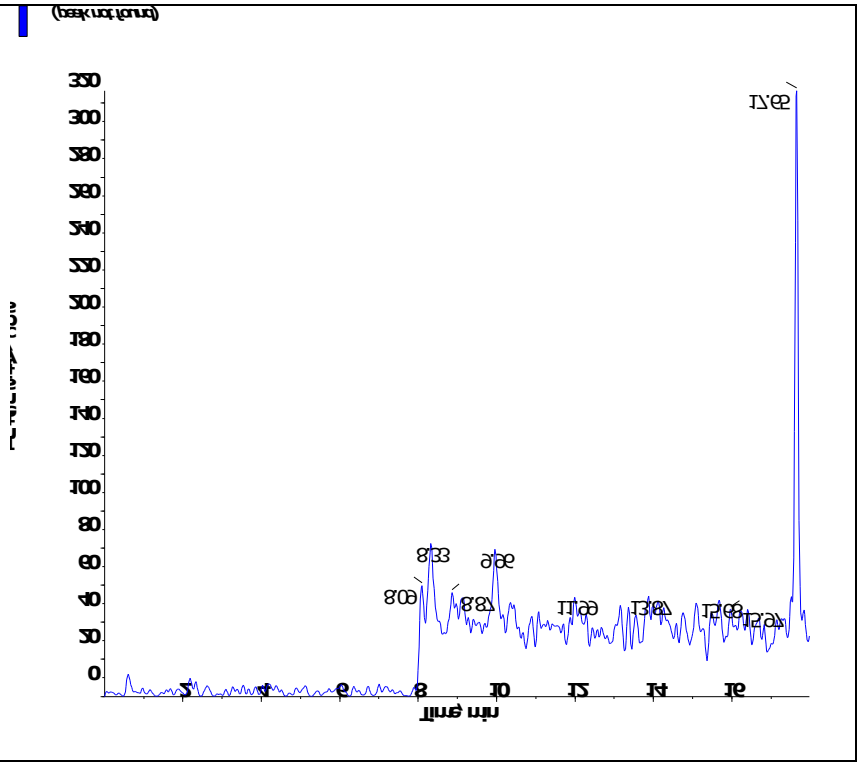
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.92) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	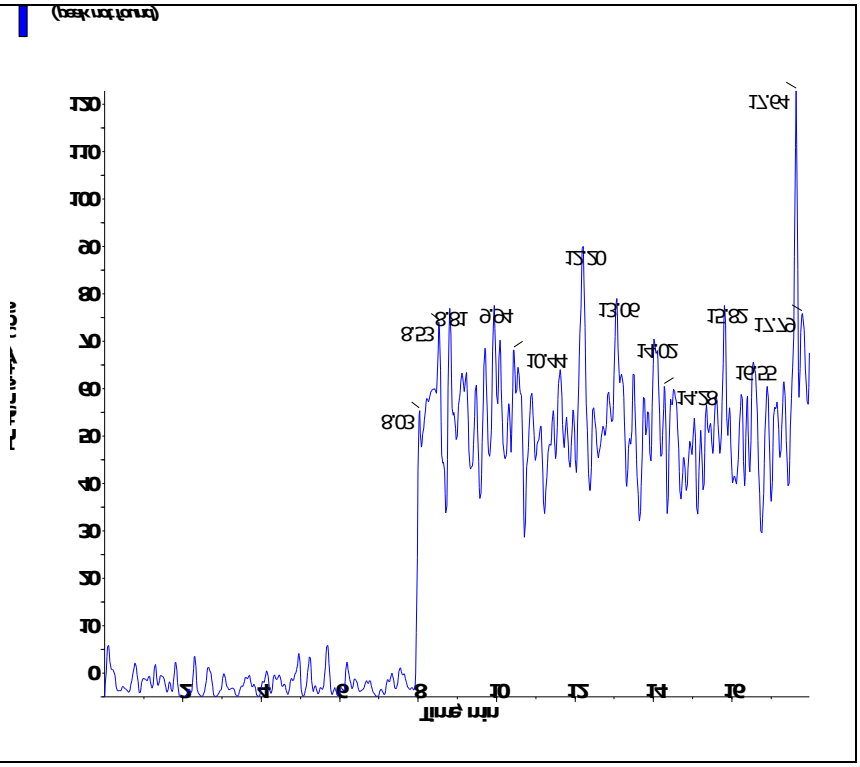

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Data File	LM33518.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 12:45:23 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG599066-16 CCB	**Injection Vial**	1.00
Data File	LM33518.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 12:45:23 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG599066-16	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.870e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.320e+03	10.10	N/A	< 0
Perchlorate conf	1.400e+03	10.10	N/A	0.0035

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

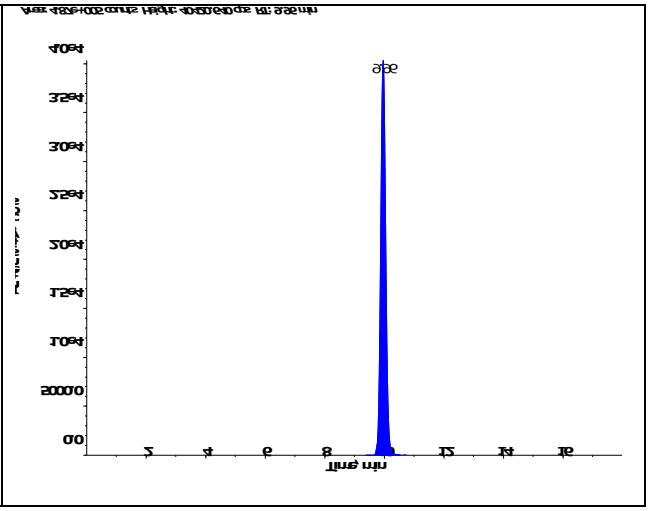

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.10 (9.94) min Calculated conc: < 0 ng/ml Area Ratio: 0.003 Sample Type: (Unknown)	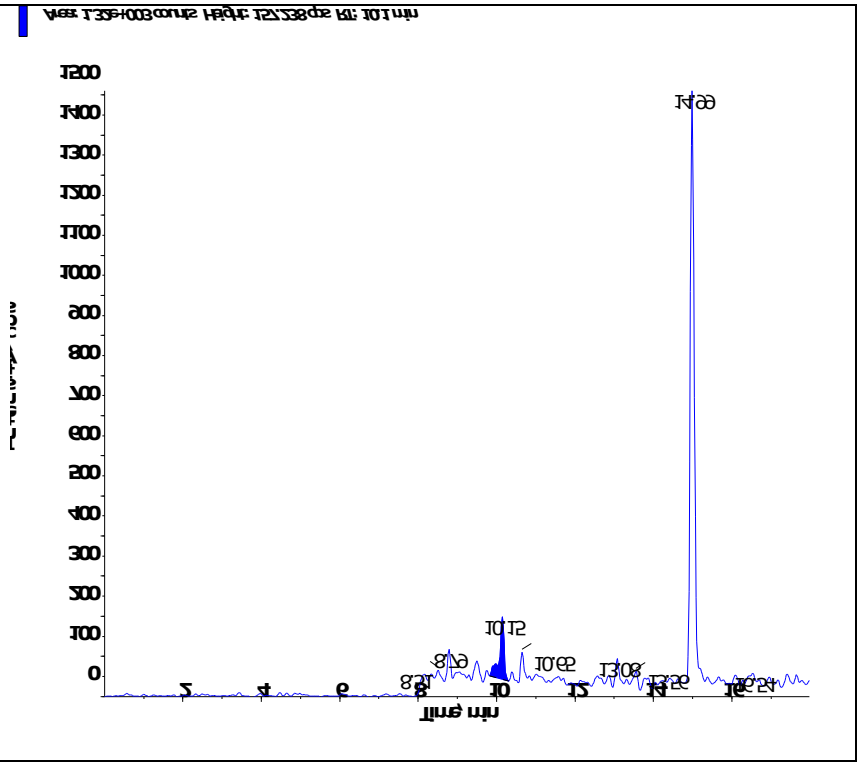
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 10.10 (9.92) min Calculated conc: 0.0035 ng/ml Area Ratio: 0.003 Sample Type: (Unknown)	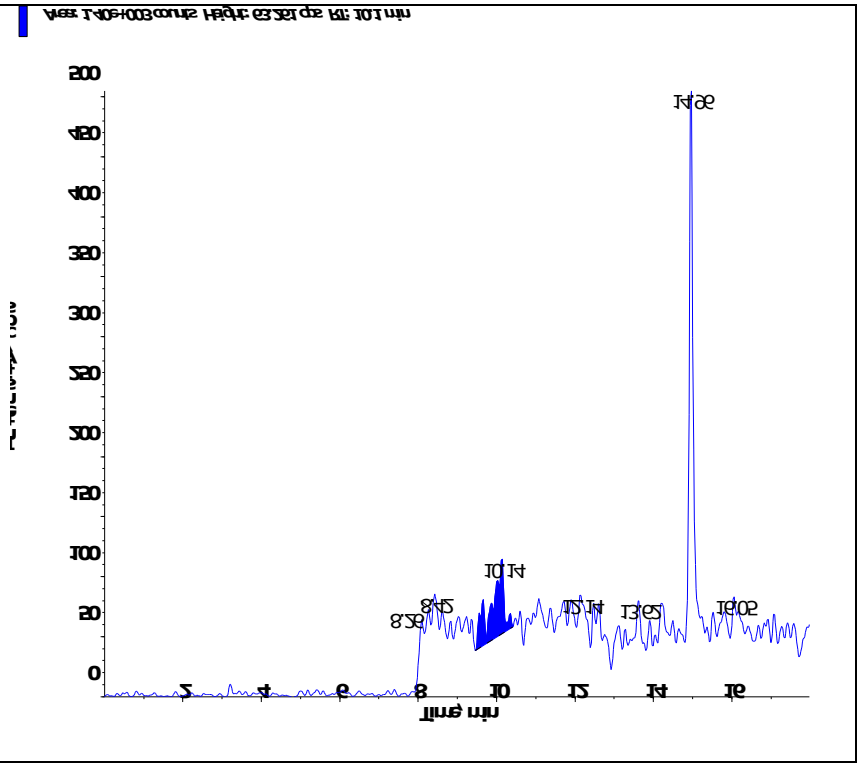

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Data File	LM33480.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/29/2016 9:53:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559142-01 MCT (2.0ug/kg)	**Injection Vial**	26.00
Data File	LM33480.wiff	**Injection Volume**	10.00
Acquisition Date	2/29/2016 9:53:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559142-01	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.060e+05	9.56	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.320e+04	9.57	N/A	0.191
Perchlorate conf	1.150e+04	9.55	N/A	0.181

O18LP (Internal Standard)

RT (Exp. RT): 9.56(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

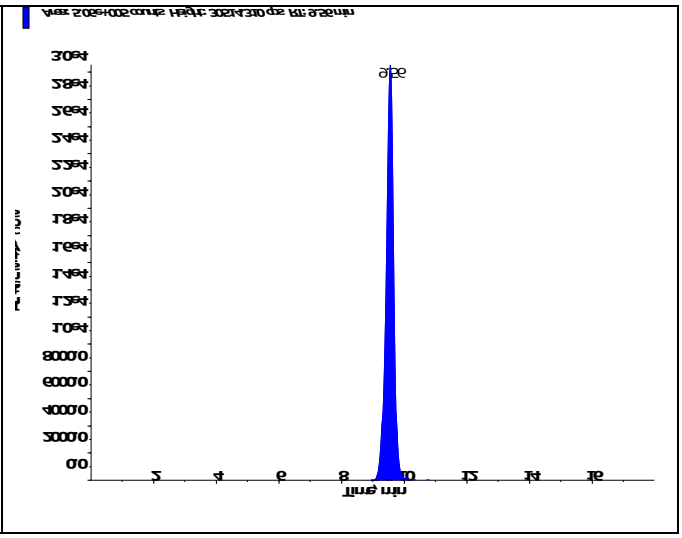

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.57 (9.94) min Calculated conc: 0.191 ng/ml Area Ratio: 0.066 Sample Type: (Unknown)	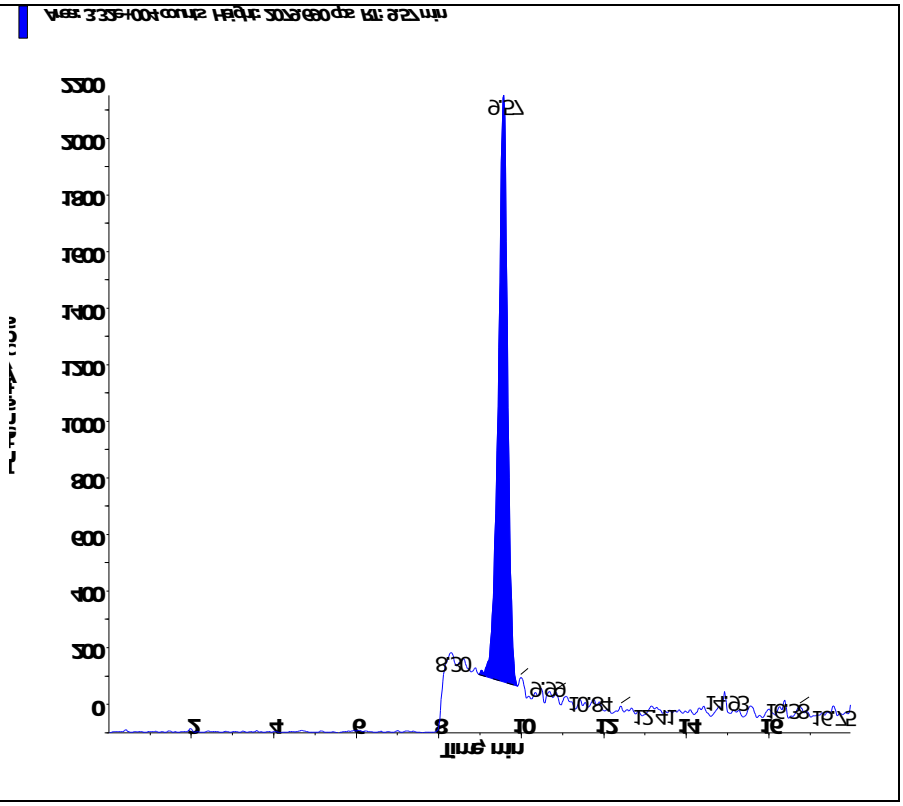
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.55 (9.92) min Calculated conc: 0.181 ng/ml Area Ratio: 0.023 Sample Type: (Unknown)	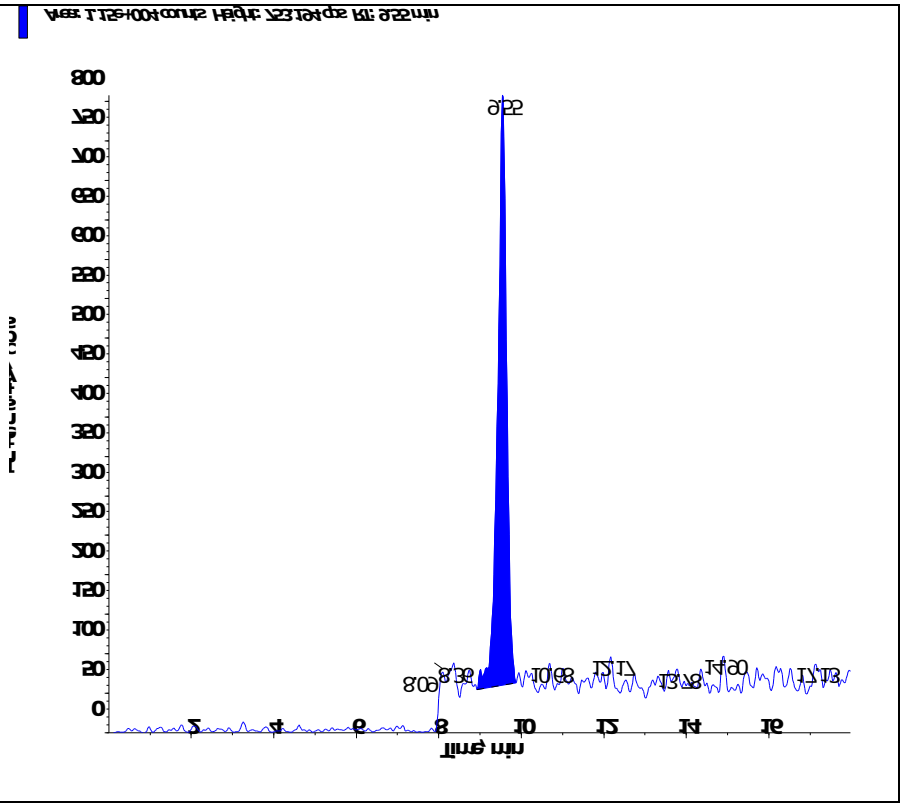

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2.2.1.5 Raw QC Data

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Data File	LM33481.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/29/2016 10:12:12 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559142-02 BLANK	**Injection Vial**	27.00
Data File	LM33481.wiff	**Injection Volume**	10.00
Acquisition Date	2/29/2016 10:12:12 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559142-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.150e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	7.760e+02	9.92	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

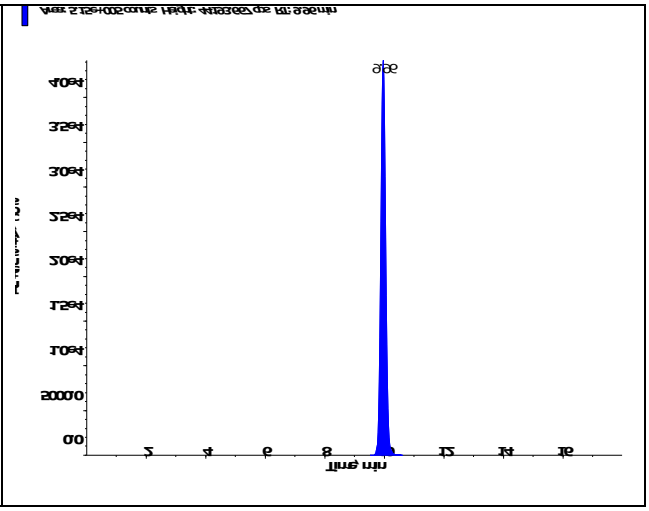

s.dataFile Page 1 of 2

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Printed: 3/1/2016 2:32 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.94) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	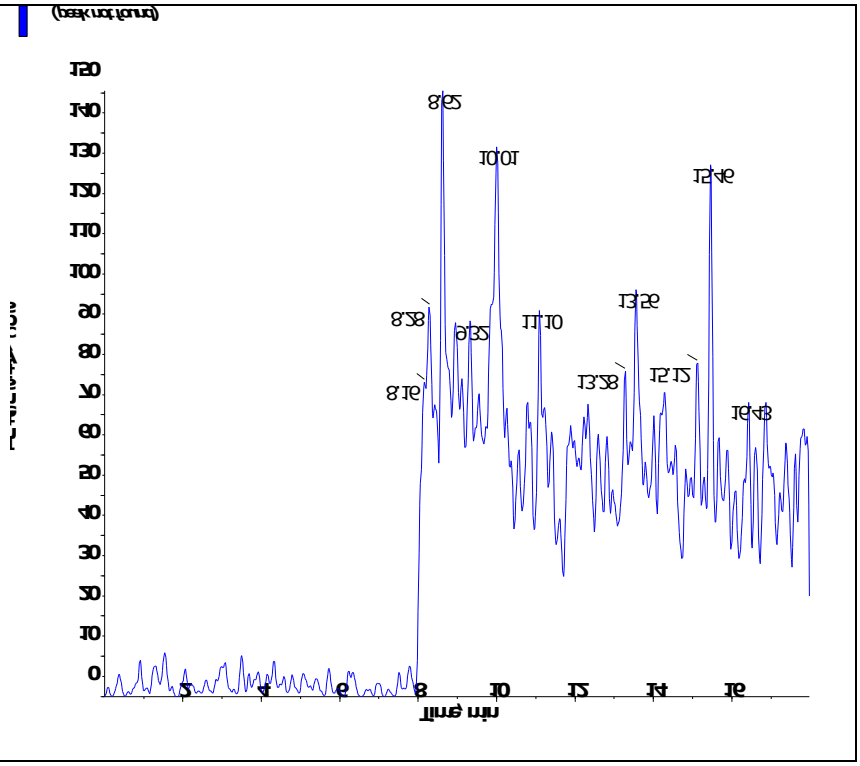
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.92 (9.92) min Calculated conc: < 0 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	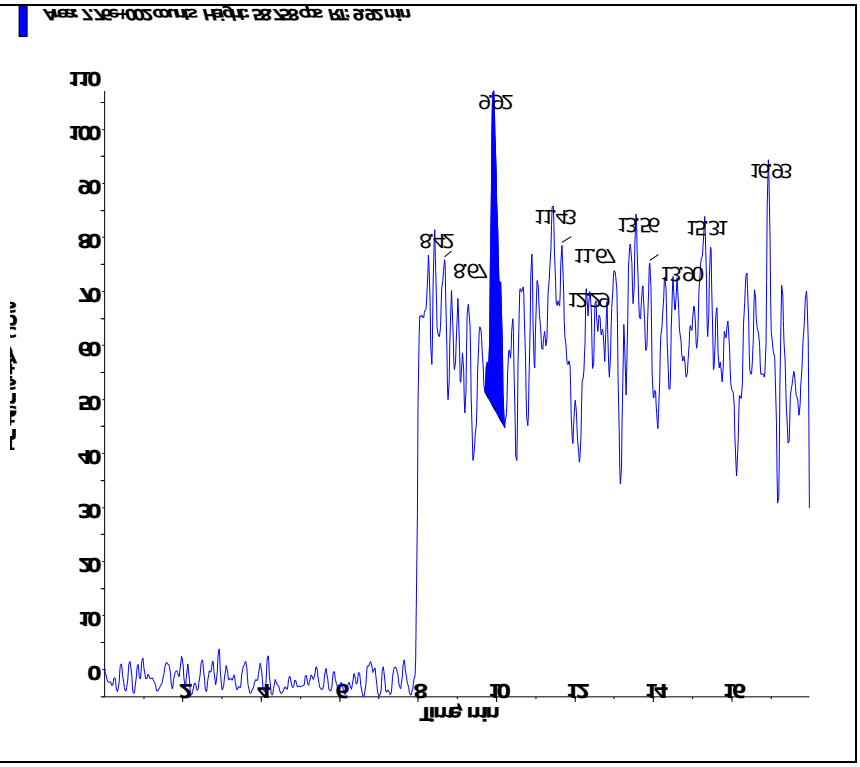

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Created with Analyst Reporter
Printed: 3/1/2016 2:33 PM

Data File	LM33482.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/29/2016 10:31:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559142-03 LCS (2.0ug/kg)	**Injection Vial**	28.00
Data File	LM33482.wiff	**Injection Volume**	10.00
Acquisition Date	2/29/2016 10:31:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559142-03	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.580e+04	9.97	N/A	0.207
Perchlorate conf	1.280e+04	9.96	N/A	0.204

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

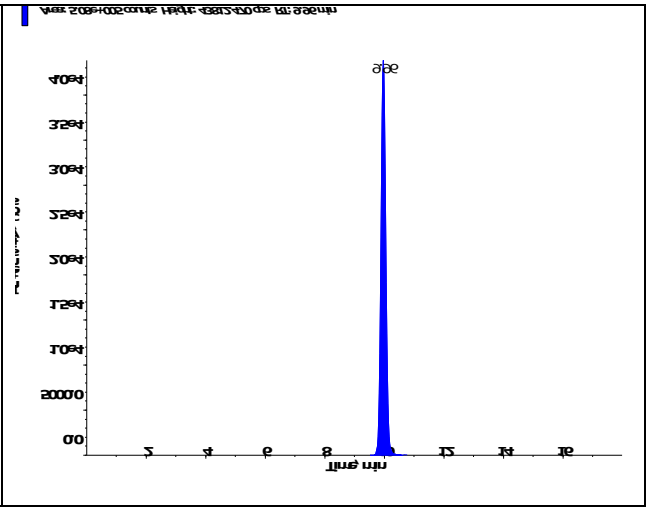

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.97 (9.94) min Calculated conc: 0.207 ng/ml Area Ratio: 0.07 Sample Type: (Unknown)	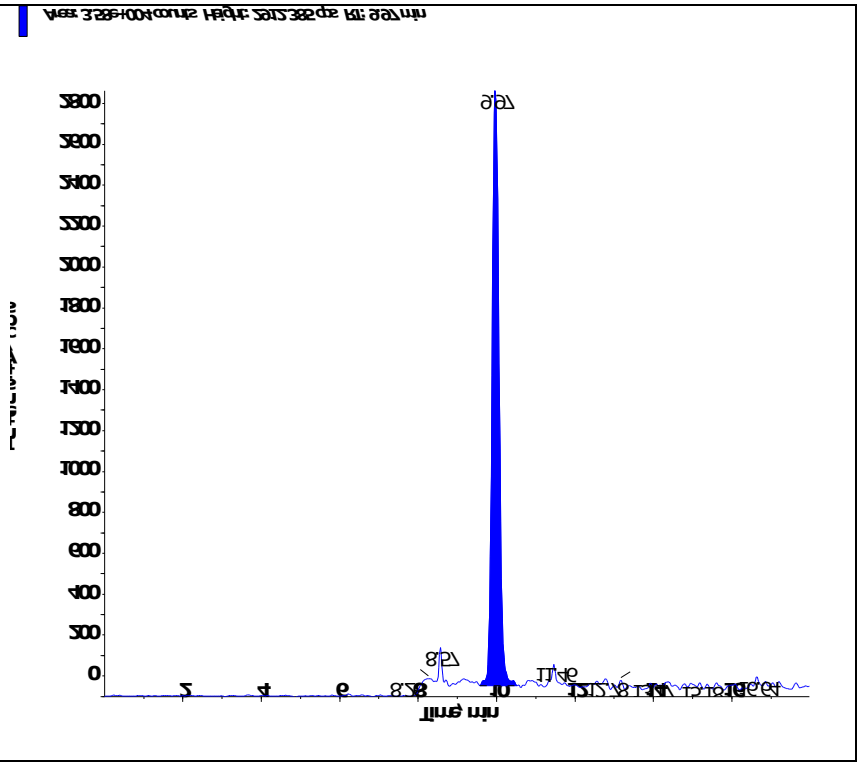
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.96 (9.92) min Calculated conc: 0.204 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	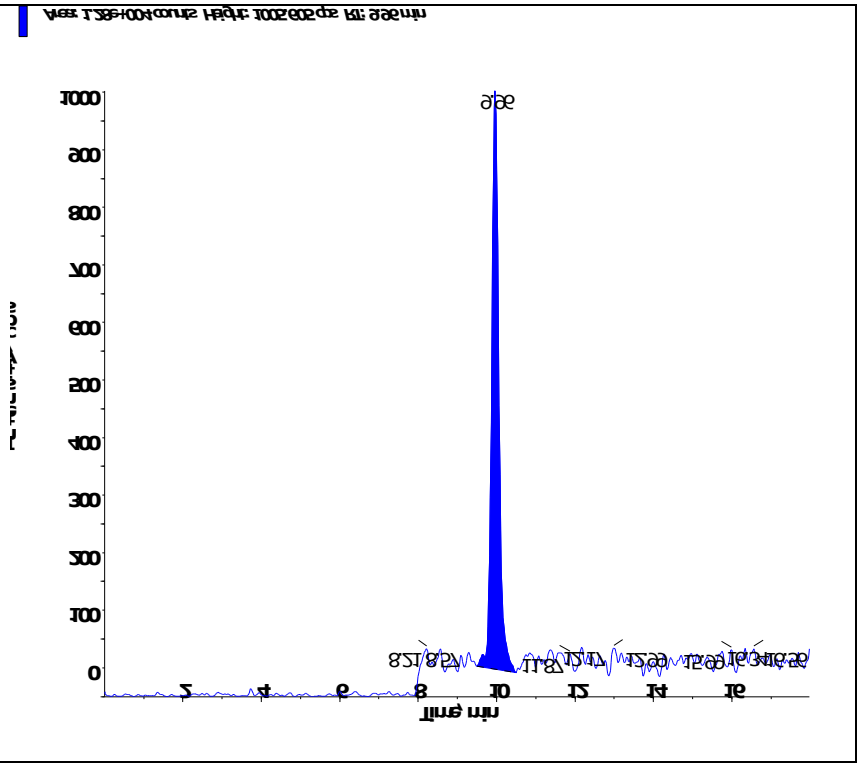

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Printed: 3/1/2016 2:33 PM

Data File	LM33484.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/29/2016 11:09:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021357-01 MS	**Injection Vial**	30.00
Data File	LM33484.wiff	**Injection Volume**	10.00
Acquisition Date	2/29/2016 11:09:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559142-05	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.520e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.920e+04	9.97	N/A	0.209
Perchlorate conf	1.430e+04	9.95	N/A	0.209

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

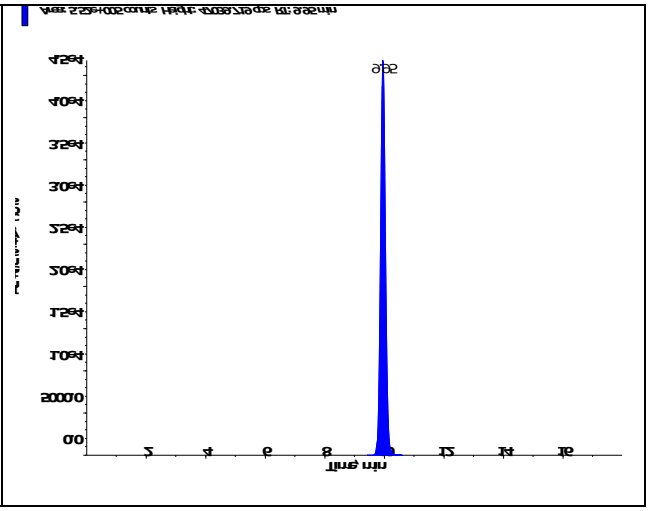

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.97 (9.94) min Calculated conc: 0.209 ng/ml Area Ratio: 0.071 Sample Type: (Unknown)	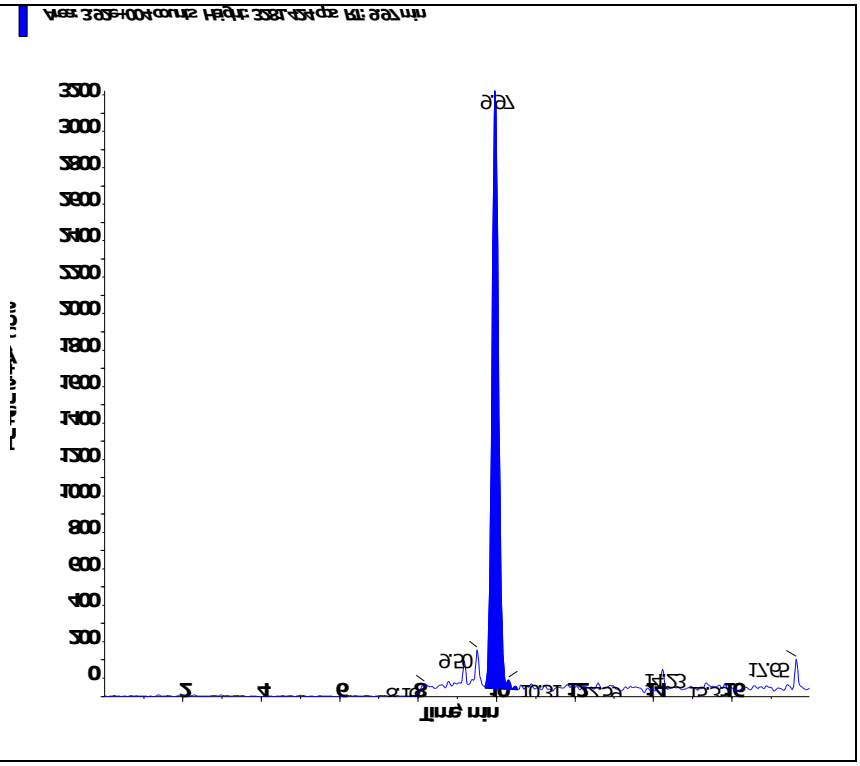
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.95 (9.92) min Calculated conc: 0.209 ng/ml Area Ratio: 0.026 Sample Type: (Unknown)	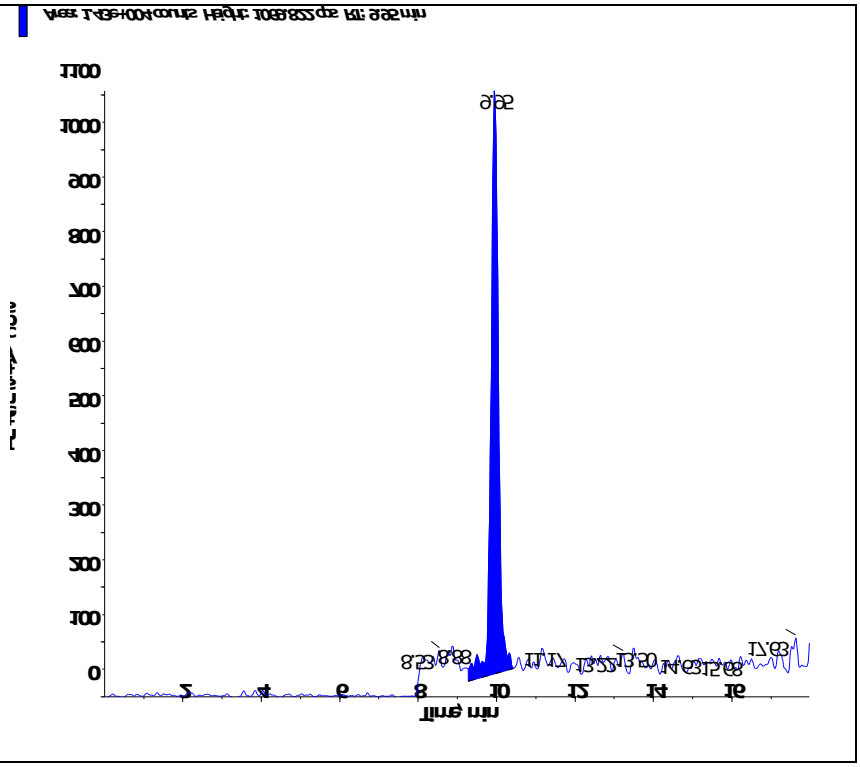

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Created with Analyst Reporter
Printed: 3/1/2016 2:34 PM

Data File	LM33485.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/29/2016 11:27:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021357-01 MSD	**Injection Vial**	31.00
Data File	LM33485.wiff	**Injection Volume**	10.00
Acquisition Date	2/29/2016 11:27:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559142-06	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.270e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.640e+04	9.96	N/A	0.203
Perchlorate conf	1.310e+04	9.96	N/A	0.201

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

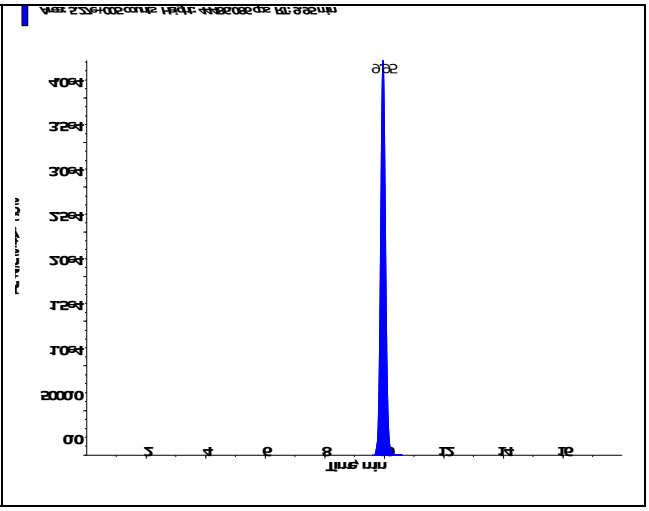

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.96 (9.94) min Calculated conc: 0.203 ng/ml Area Ratio: 0.069 Sample Type: (Unknown)	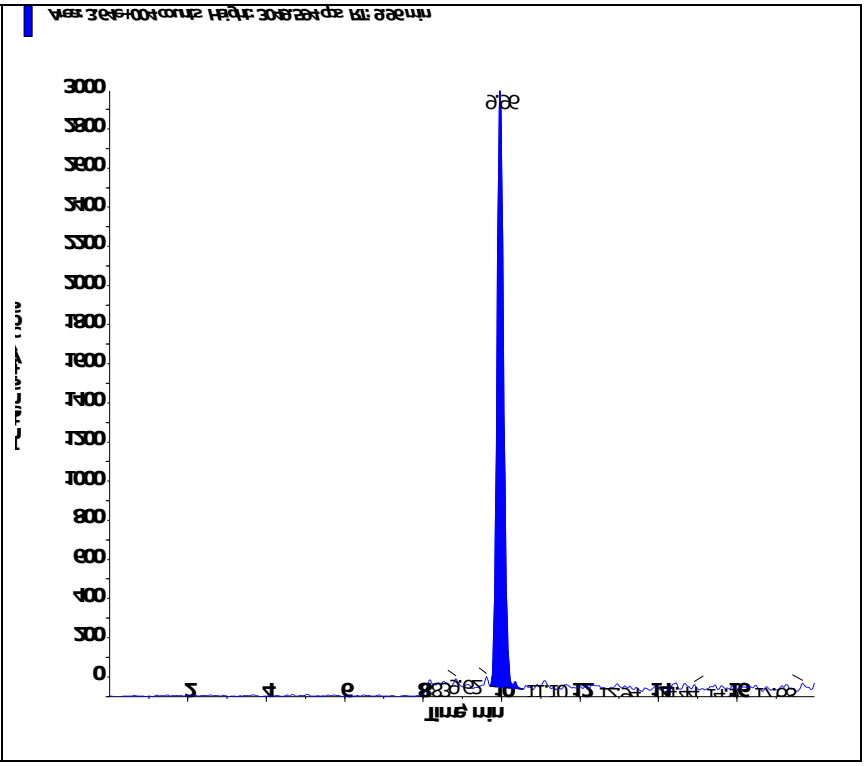
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.96 (9.92) min Calculated conc: 0.201 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	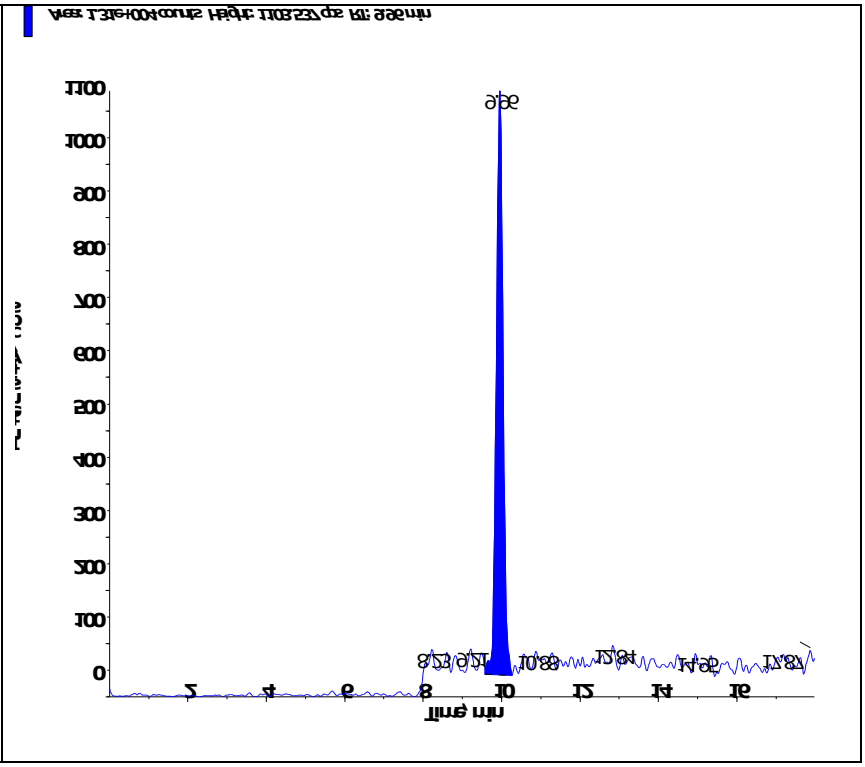

2.3 General Chemistry Data

2.3.1 Percent Solids Data

2.3.1.1 Raw Data

Example Percent Solids Calculations

1.0 Calculating the percent solids of a sample.

$$\%Solids = \frac{WT3 - WT1}{WT2 - WT1} \times F$$

Where:	
WT1 = Weight, in grams, of the empty container	1.30 g
WT2 = Weight, in grams, of the container and wet sample	21.274 g
WT3 = Weight, in grams, of the container and dried sample	5.21 g
F = Factor to get units as percent weight	100
%Solids = Percent solids present in sample.	19.58%

2.0 Calculating the percent moisture of a sample.

% Moisture = 100 - % Solids from 1.0 calculation

Microbac Laboratories Inc.

PERCENT SOLIDS

Workgroup (AAB#): WG559108 Analyst: AC ADT(on): 02/29/2016 13:53
Method: D2216-90 Instrument: BAL021 ADT(off): 03/01/2016 08:01
SOP: K0003 Rev: 14

SAMPLE NUMBER	EMPTY PAN WT 1	WET WT 2	DRY WT 3A	DRY WT 3B	DRY WT 3C	PERCENT SOLID	PERCENT MOISTURE
L16021354-02	1.295	16.623	12.281			71.67	
L16021354-03	1.289	16.412	13.157			78.48	
L16021354-04	1.299	17.74	12.93			70.74	
L16021354-05	1.294	18.333	14.899			79.85	
L16021354-06	1.295	16.451	12.716			75.36	
L16021354-07	1.295	16.451	12.716			75.36	
L16021354-08	1.295	16.451	12.716			75.36	
L16021354-09	1.293	18.074	13.136			70.57	
L16021357-01	1.296	25.752	21.282			81.72	
L16021357-02	1.287	20.884	18.578			88.23	
L16021357-03	1.293	25.373	22.987			90.09	
L16021357-04	1.3	23.612	20.061			84.08	
L16021357-05	1.288	25.903	22.745			87.17	
L16021357-06	1.28	22.506	18.069			79.10	
L16021358-01	1.284	21.033	17.498			82.10	
L16021358-02	1.295	26.216	22.134			83.62	
L16021358-03	1.293	21.007	17.744			83.45	
L16021358-04	1.282	28.108	22.283			78.29	
L16021358-05	1.28	24.692	20.383			81.59	
L16021358-06	1.289	24.186	19.593			79.94	
L16021358-07	1.293	25.604	22.599			87.64	
L16021358-08	1.297	27.046	23.197			85.05	
L16021358-09	1.291	24.875	20.497			81.44	
WG559108-01	1.287	20.884	18.578			88.23	11.77
WG559108-02	1.297	27.046	23.197			85.05	14.95
WG559108-03	1.289	20.044	17.36			85.69	14.31
WG559108-04	1.295	21.346	18.385			85.23	14.77

Analyst: [signature]

PERCENT_SOLIDS - Modified 04/24/2008
PDF ID: 4652107
Report generated: 03/01/2016 08:06

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
March 3, 2016

---

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
March 03, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
March 03, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Stephanie Mossburg	Project Manager: Debra Richmon	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): KAYLA PALLANES	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Kayla Pallanes	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205	pH:	Program:	
Turn Around Time: STANDARD			
Project Name/Location: Longhorn			
Project Number:			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOCs 8260	PERCHLORATE 6850							SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
	18DPT01(5-5.5)250216			2/25/16	1130		X	S	2	X	X											
	18DPT01(9.5-10)250216			2/25/16	1137		X	S	2	X	X											
	18DPT01(15-15.5)250216			2/25/16	1423		X	S	2	X	X											
	18DPT01(22.5-23)250216			2/25/16	1600		X	S	2	X	X											
	18DPT01(24.5-25)250216			2/25/16	1630		X	S	2	X	X											
	18DPT01(27-27.5)250216			2/25/16	1625		X	S	2	X	X											

Comments: ~~STANDARD TAT~~ 48HR TAT

Relinquished by: (Signature) Kayla Pallanes	Date 2/26/16	Time 1200	Received by: (Signature)	Microbac OVD Received: 02/27/2016 10:39 By: CARA STRICKLER 221000082532
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Cara Strickler

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16021357
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 02-MAR-2016

Samplenum	Container ID	Products
L16021357-01	706575	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-FEB-2016 11:02	CLS		
2	ANALYZ	V1	ORG4	28-FEB-2016 11:22	AWE	CLS	

Samplenum	Container ID	Products
L16021357-01	706576	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-FEB-2016 11:02	CLS		
2	ANALYZ	W1	SEM	29-FEB-2016 11:09	AWE	CLS	
3	STORE	DIG	A1	29-FEB-2016 15:12	BRG	ERP	

Samplenum	Container ID	Products
L16021357-02	706577	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-FEB-2016 11:02	CLS		
2	ANALYZ	V1	ORG4	28-FEB-2016 11:22	AWE	CLS	

Samplenum	Container ID	Products
L16021357-02	706578	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-FEB-2016 11:02	CLS		
2	ANALYZ	W1	SEM	29-FEB-2016 11:09	AWE	CLS	
3	STORE	DIG	A1	29-FEB-2016 15:12	BRG	ERP	

Samplenum	Container ID	Products
L16021357-03	706579	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-FEB-2016 11:02	CLS		
2	ANALYZ	V1	ORG4	28-FEB-2016 11:22	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16021357
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 02-MAR-2016

Samplenum	Container ID	Products
L16021357-03	706580	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-FEB-2016 11:02	CLS		
2	ANALYZ	W1	SEM	29-FEB-2016 11:09	AWE	CLS	
3	STORE	DIG	A1	29-FEB-2016 15:12	BRG	ERP	

Samplenum	Container ID	Products
L16021357-04	706581	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-FEB-2016 11:02	CLS		
2	ANALYZ	V1	ORG4	28-FEB-2016 11:22	AWE	CLS	

Samplenum	Container ID	Products
L16021357-04	706582	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-FEB-2016 11:02	CLS		
2	ANALYZ	W1	SEM	29-FEB-2016 11:09	AWE	CLS	
3	STORE	DIG	A1	29-FEB-2016 15:12	BRG	ERP	

Samplenum	Container ID	Products
L16021357-05	706583	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-FEB-2016 11:02	CLS		
2	ANALYZ	V1	ORG4	28-FEB-2016 11:22	AWE	CLS	

Samplenum	Container ID	Products
L16021357-05	706584	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	DIG	27-FEB-2016 11:02	CLS		
2	STORE	DIG	A1	29-FEB-2016 15:12	BRG	ERP	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16021357
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 02-MAR-2016

Samplenum	Container ID	Products
L16021357-06	706585	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-FEB-2016 11:02	CLS		
2	ANALYZ	V1	ORG4	28-FEB-2016 11:22	AWE	CLS	

Samplenum	Container ID	Products
L16021357-06	706586	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-FEB-2016 11:02	CLS		
2	ANALYZ	W1	SEM	29-FEB-2016 11:09	AWE	CLS	
3	STORE	DIG	A1	29-FEB-2016 15:12	BRG	ERP	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16021358

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on March 03 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00110635	H	2.0		J2317165938	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	NA
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	NA

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18DPT02(5-5.5)260216	L16021358-01	02/26/2016 08:35	02/27/2016 10:39
18DPT02(10-10.5)260216	L16021358-02	02/26/2016 08:42	02/27/2016 10:39
18DPT02(10-10.5)260216FD	L16021358-03	02/26/2016 08:42	02/27/2016 10:39
18DPT02(15-15.5)260216	L16021358-04	02/26/2016 09:00	02/27/2016 10:39
18DPT02(22-22.5)260216	L16021358-05	02/26/2016 09:15	02/27/2016 10:39
18DPT03(5-5.5)260216	L16021358-06	02/26/2016 11:15	02/27/2016 10:39
18DPT03(10-10.5)260216	L16021358-07	02/26/2016 11:17	02/27/2016 10:39
18DPT03(14.5-15)260216	L16021358-08	02/26/2016 11:19	02/27/2016 10:39
18DPT03(17.5-18)260216	L16021358-09	02/26/2016 11:21	02/27/2016 10:39

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16021358
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.0 Summary Data

1.1 Narratives

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021358
Project Name:		**Method:**	8260
Prep Batch Number(s):	559151	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-01 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2016-03-01 19:56:56

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021358
Project Name:		**Method:**	8260
Prep Batch Number(s):	559151	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-01 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021358
Project Name:		**Method:**	8260
Prep Batch Number(s):	559151	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-01 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021358
Project Name:		**Method:**	8260
Prep Batch Number(s):	559151	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-01 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?		X			1
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021358
Project Name:		**Method:**	8260
Prep Batch Number(s):	559151	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-01 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021358
Project Name:		**Method:**	8260
Prep Batch Number(s):	559151	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-01 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1)Dichlorodifluoromethane exceeded the UCL in the ICV.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021358
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559142	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-02 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-03-02 15:58:20

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021358
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559142	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-02 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

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Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021358
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559142	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-02 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021358
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559142	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-02 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021358
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559142	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-02 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021358
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559142	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-02 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021358
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559108	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-01 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2016-03-01 18:49:29

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021358
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559108	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-01 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?			X		
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?			X		
Were sample detection limits reported for all analytes not detected?			X		
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?			X		
Were blanks analyzed at the appropriate frequency?			X		
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?			X		
Were blank concentrations < MQL?			X		
Laboratory control samples (LCS):			X		
Were all COCs included in the LCS?			X		

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021358
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559108	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-01 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?			X		
Were LCSs analyzed at the required frequency?			X		
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?			X		
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?			X		
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?			X		
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?			X		
Are unadjusted MQLs and DCSs included in the laboratory data package?			X		
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?			X		
Were percent RSDs or correlation coefficient criteria met?			X		

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021358
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559108	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-01 00:00:00		

Was the number of standards recommended in the method used for all analytes?			X		
Were all points generated between the lowest and highest standard used to calculate the curve?			X		
Are ICAL data available for all instruments used?			X		
Has the initial calibration curve been verified using an appropriate second source standard?			X		
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021358
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559108	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-01 00:00:00		

Was a MDL study performed for each reported analyte?			X		
Is the MDL either adjusted or supported by the analysis of DCSs?			X		
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?			X		
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
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The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021358
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559108	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-01 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT02(5-5.5)260216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:24
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	03/01/2016 00:04
Collect Date:	02/26/2016 08:35	**Dilution:**	1	**File ID:**	9M972980
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	22.8	J	24.8	12.4	6.19
Benzene	71-43-2	1.24	U	6.19	1.24	0.619
Bromobenzene	108-86-1	1.24	U	6.19	1.24	0.619
Bromochloromethane	74-97-5	2.48	U	6.19	2.48	1.24
Bromodichloromethane	75-27-4	1.24	U	6.19	1.24	0.619
Bromoform	75-25-2	1.24	U	6.19	1.24	0.619
Bromomethane	74-83-9	2.48	U	6.19	2.48	1.24
2-Butanone	78-93-3	6.18	U	12.4	6.18	3.09
n-Butylbenzene	104-51-8	1.24	U	6.19	1.24	0.619
sec-Butylbenzene	135-98-8	1.24	U	6.19	1.24	0.619
tert-Butylbenzene	98-06-6	1.24	U	6.19	1.24	0.619
Carbon disulfide	75-15-0	1.24	U	6.19	1.24	0.619
Carbon tetrachloride	56-23-5	1.24	U	6.19	1.24	0.619
Chlorobenzene	108-90-7	1.24	U	6.19	1.24	0.619
Chlorodibromomethane	124-48-1	1.24	U	6.19	1.24	0.619
Chloroethane	75-00-3	2.48	U	6.19	2.48	1.24
Chloroform	67-66-3	1.24	U	6.19	1.24	0.619
Chloromethane	74-87-3	4.96	U	12.4	4.96	2.48
2-Chlorotoluene	95-49-8	1.24	U	6.19	1.24	0.619
4-Chlorotoluene	106-43-4	1.24	U	6.19	1.24	0.619
1,2-Dibromo-3-chloropropane	96-12-8	4.96	U	12.4	4.96	2.48
1,2-Dibromoethane	106-93-4	1.24	U	6.19	1.24	0.619
Dibromomethane	74-95-3	1.24	U	6.19	1.24	0.619
1,2-Dichlorobenzene	95-50-1	1.24	U	6.19	1.24	0.619
1,3-Dichlorobenzene	541-73-1	1.24	U	6.19	1.24	0.619
1,4-Dichlorobenzene	106-46-7	1.24	U	6.19	1.24	0.619
Dichlorodifluoromethane	75-71-8	2.48	U	6.19	2.48	1.24
1,1-Dichloroethane	75-34-3	2.48	U	6.19	2.48	1.24
1,2-Dichloroethane	107-06-2	1.24	U	6.19	1.24	0.619
1,1-Dichloroethene	75-35-4	1.24	U	6.19	1.24	0.619
cis-1,2-Dichloroethene	156-59-2	1.24	U	6.19	1.24	0.619
trans-1,2-Dichloroethene	156-60-5	1.24	U	6.19	1.24	0.619

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.24	U	6.19	1.24	0.619
1,3-Dichloropropane	142-28-9	1.24	U	6.19	1.24	0.619
2,2-Dichloropropane	594-20-7	1.24	U	6.19	1.24	0.619
cis-1,3-Dichloropropene	10061-01-5	1.24	U	6.19	1.24	0.619
trans-1,3-Dichloropropene	10061-02-6	1.24	U	6.19	1.24	0.619
1,1-Dichloropropene	563-58-6	1.24	U	6.19	1.24	0.619
Ethylbenzene	100-41-4	1.24	U	6.19	1.24	0.619
2-Hexanone	591-78-6	6.18	U	12.4	6.18	3.09
Hexachlorobutadiene	87-68-3	1.24	U	6.19	1.24	0.619
Isopropylbenzene	98-82-8	1.24	U	6.19	1.24	0.619
p-Isopropyltoluene	99-87-6	1.98	J	6.19	1.24	0.619
4-Methyl-2-pentanone	108-10-1	6.18	U	12.4	6.18	3.09
Methylene chloride	75-09-2	2.48	U	6.19	2.48	1.24
Naphthalene	91-20-3	1.24	U	6.19	1.24	0.619
n-Propylbenzene	103-65-1	1.24	U	6.19	1.24	0.619
Styrene	100-42-5	1.24	U	6.19	1.24	0.619
1,1,1,2-Tetrachloroethane	630-20-6	1.24	U	6.19	1.24	0.619
1,1,2,2-Tetrachloroethane	79-34-5	1.24	U	6.19	1.24	0.619
Tetrachloroethene	127-18-4	1.24	U	6.19	1.24	0.619
Toluene	108-88-3	1.24	U	6.19	1.24	0.619
1,2,3-Trichlorobenzene	87-61-6	1.24	U	6.19	1.24	0.619
1,2,4-Trichlorobenzene	120-82-1	1.24	U	6.19	1.24	0.619
1,1,1-Trichloroethane	71-55-6	1.24	U	6.19	1.24	0.619
1,1,2-Trichloroethane	79-00-5	1.24	U	6.19	1.24	0.619
Trichloroethene	79-01-6	1.24	U	6.19	1.24	0.619
Trichlorofluoromethane	75-69-4	2.48	U	6.19	2.48	1.24
1,2,3-Trichloropropane	96-18-4	2.48	U	6.19	2.48	1.24
1,2,4-Trimethylbenzene	95-63-6	1.24	U	6.19	1.24	0.619
1,3,5-Trimethylbenzene	108-67-8	1.24	U	6.19	1.24	0.619
Vinyl chloride	75-01-4	2.48	U	6.19	2.48	1.24
o-Xylene	95-47-6	1.24	U	6.19	1.24	0.619
m-,p-Xylene	179601-23-1	1.24	U	6.19	1.24	0.619

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.8	80	120	
1,2-Dichloroethane-d4	95.0	80	120	
Toluene-d8	106	85	115	
4-Bromofluorobenzene	110	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT02(5-5.5)260216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 02:18
Collect Date:	02/26/2016 08:35	**Dilution:**	1	**File ID:**	1LM.LM33494
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.36	U	4.72	2.36	1.18

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT02(10-10.5)260216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:25
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	03/01/2016 00:34
Collect Date:	02/26/2016 08:42	**Dilution:**	1	**File ID:**	9M972981
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	7.17	J	24.1	12.0	6.02
Benzene	71-43-2	1.20	U	6.02	1.20	0.602
Bromobenzene	108-86-1	1.20	U	6.02	1.20	0.602
Bromochloromethane	74-97-5	2.40	U	6.02	2.40	1.20
Bromodichloromethane	75-27-4	1.20	U	6.02	1.20	0.602
Bromoform	75-25-2	1.20	U	6.02	1.20	0.602
Bromomethane	74-83-9	2.40	U	6.02	2.40	1.20
2-Butanone	78-93-3	6.02	U	12.0	6.02	3.01
n-Butylbenzene	104-51-8	1.20	U	6.02	1.20	0.602
sec-Butylbenzene	135-98-8	1.20	U	6.02	1.20	0.602
tert-Butylbenzene	98-06-6	1.20	U	6.02	1.20	0.602
Carbon disulfide	75-15-0	1.20	U	6.02	1.20	0.602
Carbon tetrachloride	56-23-5	1.20	U	6.02	1.20	0.602
Chlorobenzene	108-90-7	1.20	U	6.02	1.20	0.602
Chlorodibromomethane	124-48-1	1.20	U	6.02	1.20	0.602
Chloroethane	75-00-3	2.40	U	6.02	2.40	1.20
Chloroform	67-66-3	1.20	U	6.02	1.20	0.602
Chloromethane	74-87-3	4.82	U	12.0	4.82	2.41
2-Chlorotoluene	95-49-8	1.20	U	6.02	1.20	0.602
4-Chlorotoluene	106-43-4	1.20	U	6.02	1.20	0.602
1,2-Dibromo-3-chloropropane	96-12-8	4.82	U	12.0	4.82	2.41
1,2-Dibromoethane	106-93-4	1.20	U	6.02	1.20	0.602
Dibromomethane	74-95-3	1.20	U	6.02	1.20	0.602
1,2-Dichlorobenzene	95-50-1	1.20	U	6.02	1.20	0.602
1,3-Dichlorobenzene	541-73-1	1.20	U	6.02	1.20	0.602
1,4-Dichlorobenzene	106-46-7	1.20	U	6.02	1.20	0.602
Dichlorodifluoromethane	75-71-8	2.40	U	6.02	2.40	1.20
1,1-Dichloroethane	75-34-3	2.40	U	6.02	2.40	1.20
1,2-Dichloroethane	107-06-2	1.20	U	6.02	1.20	0.602
1,1-Dichloroethene	75-35-4	1.20	U	6.02	1.20	0.602
cis-1,2-Dichloroethene	156-59-2	1.20	U	6.02	1.20	0.602

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.20	U	6.02	1.20	0.602
1,2-Dichloropropane	78-87-5	1.20	U	6.02	1.20	0.602
1,3-Dichloropropane	142-28-9	1.20	U	6.02	1.20	0.602
2,2-Dichloropropane	594-20-7	1.20	U	6.02	1.20	0.602
cis-1,3-Dichloropropene	10061-01-5	1.20	U	6.02	1.20	0.602
trans-1,3-Dichloropropene	10061-02-6	1.20	U	6.02	1.20	0.602
1,1-Dichloropropene	563-58-6	1.20	U	6.02	1.20	0.602
Ethylbenzene	100-41-4	1.20	U	6.02	1.20	0.602
2-Hexanone	591-78-6	6.02	U	12.0	6.02	3.01
Hexachlorobutadiene	87-68-3	1.20	U	6.02	1.20	0.602
Isopropylbenzene	98-82-8	1.20	U	6.02	1.20	0.602
p-Isopropyltoluene	99-87-6	1.20	U	6.02	1.20	0.602
4-Methyl-2-pentanone	108-10-1	6.02	U	12.0	6.02	3.01
Methylene chloride	75-09-2	2.40	U	6.02	2.40	1.20
Naphthalene	91-20-3	1.20	U	6.02	1.20	0.602
n-Propylbenzene	103-65-1	1.20	U	6.02	1.20	0.602
Styrene	100-42-5	1.20	U	6.02	1.20	0.602
1,1,1,2-Tetrachloroethane	630-20-6	1.20	U	6.02	1.20	0.602
1,1,2,2-Tetrachloroethane	79-34-5	1.20	U	6.02	1.20	0.602
Tetrachloroethene	127-18-4	1.20	U	6.02	1.20	0.602
Toluene	108-88-3	1.20	U	6.02	1.20	0.602
1,2,3-Trichlorobenzene	87-61-6	1.20	U	6.02	1.20	0.602
1,2,4-Trichlorobenzene	120-82-1	1.20	U	6.02	1.20	0.602
1,1,1-Trichloroethane	71-55-6	1.20	U	6.02	1.20	0.602
1,1,2-Trichloroethane	79-00-5	1.20	U	6.02	1.20	0.602
Trichloroethene	79-01-6	1.20	U	6.02	1.20	0.602
Trichlorofluoromethane	75-69-4	2.40	U	6.02	2.40	1.20
1,2,3-Trichloropropane	96-18-4	2.40	U	6.02	2.40	1.20
1,2,4-Trimethylbenzene	95-63-6	1.20	U	6.02	1.20	0.602
1,3,5-Trimethylbenzene	108-67-8	1.20	U	6.02	1.20	0.602
Vinyl chloride	75-01-4	2.40	U	6.02	2.40	1.20
o-Xylene	95-47-6	1.20	U	6.02	1.20	0.602
m-,p-Xylene	179601-23-1	1.20	U	6.02	1.20	0.602

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.8	80	120	
1,2-Dichloroethane-d4	97.2	80	120	
Toluene-d8	104	85	115	
4-Bromofluorobenzene	108	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT02(10-10.5)260216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 02:37
Collect Date:	02/26/2016 08:42	**Dilution:**	1	**File ID:**	1LM.LM33495
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.36	U	4.70	2.36	1.18

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT02(10-10.5)260216FD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:25
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	03/01/2016 01:04
Collect Date:	02/26/2016 08:42	**Dilution:**	1	**File ID:**	9M972982
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	17.3	J	24.8	12.4	6.20
Benzene	71-43-2	1.24	U	6.20	1.24	0.620
Bromobenzene	108-86-1	1.24	U	6.20	1.24	0.620
Bromochloromethane	74-97-5	2.48	U	6.20	2.48	1.24
Bromodichloromethane	75-27-4	1.24	U	6.20	1.24	0.620
Bromoform	75-25-2	1.24	U	6.20	1.24	0.620
Bromomethane	74-83-9	2.48	U	6.20	2.48	1.24
2-Butanone	78-93-3	6.20	U	12.4	6.20	3.10
n-Butylbenzene	104-51-8	1.24	U	6.20	1.24	0.620
sec-Butylbenzene	135-98-8	1.24	U	6.20	1.24	0.620
tert-Butylbenzene	98-06-6	1.24	U	6.20	1.24	0.620
Carbon disulfide	75-15-0	1.24	U	6.20	1.24	0.620
Carbon tetrachloride	56-23-5	1.24	U	6.20	1.24	0.620
Chlorobenzene	108-90-7	1.24	U	6.20	1.24	0.620
Chlorodibromomethane	124-48-1	1.24	U	6.20	1.24	0.620
Chloroethane	75-00-3	2.48	U	6.20	2.48	1.24
Chloroform	67-66-3	1.24	U	6.20	1.24	0.620
Chloromethane	74-87-3	4.96	U	12.4	4.96	2.48
2-Chlorotoluene	95-49-8	1.24	U	6.20	1.24	0.620
4-Chlorotoluene	106-43-4	1.24	U	6.20	1.24	0.620
1,2-Dibromo-3-chloropropane	96-12-8	4.96	U	12.4	4.96	2.48
1,2-Dibromoethane	106-93-4	1.24	U	6.20	1.24	0.620
Dibromomethane	74-95-3	1.24	U	6.20	1.24	0.620
1,2-Dichlorobenzene	95-50-1	1.24	U	6.20	1.24	0.620
1,3-Dichlorobenzene	541-73-1	1.24	U	6.20	1.24	0.620
1,4-Dichlorobenzene	106-46-7	1.24	U	6.20	1.24	0.620
Dichlorodifluoromethane	75-71-8	2.48	U	6.20	2.48	1.24
1,1-Dichloroethane	75-34-3	2.48	U	6.20	2.48	1.24
1,2-Dichloroethane	107-06-2	1.24	U	6.20	1.24	0.620
1,1-Dichloroethene	75-35-4	1.24	U	6.20	1.24	0.620
cis-1,2-Dichloroethene	156-59-2	1.24	U	6.20	1.24	0.620

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.24	U	6.20	1.24	0.620
1,2-Dichloropropane	78-87-5	1.24	U	6.20	1.24	0.620
1,3-Dichloropropane	142-28-9	1.24	U	6.20	1.24	0.620
2,2-Dichloropropane	594-20-7	1.24	U	6.20	1.24	0.620
cis-1,3-Dichloropropene	10061-01-5	1.24	U	6.20	1.24	0.620
trans-1,3-Dichloropropene	10061-02-6	1.24	U	6.20	1.24	0.620
1,1-Dichloropropene	563-58-6	1.24	U	6.20	1.24	0.620
Ethylbenzene	100-41-4	1.24	U	6.20	1.24	0.620
2-Hexanone	591-78-6	6.20	U	12.4	6.20	3.10
Hexachlorobutadiene	87-68-3	1.24	U	6.20	1.24	0.620
Isopropylbenzene	98-82-8	1.24	U	6.20	1.24	0.620
p-Isopropyltoluene	99-87-6	4.08	J	6.20	1.24	0.620
4-Methyl-2-pentanone	108-10-1	6.20	U	12.4	6.20	3.10
Methylene chloride	75-09-2	2.48	U	6.20	2.48	1.24
Naphthalene	91-20-3	1.24	U	6.20	1.24	0.620
n-Propylbenzene	103-65-1	1.24	U	6.20	1.24	0.620
Styrene	100-42-5	1.24	U	6.20	1.24	0.620
1,1,1,2-Tetrachloroethane	630-20-6	1.24	U	6.20	1.24	0.620
1,1,2,2-Tetrachloroethane	79-34-5	1.24	U	6.20	1.24	0.620
Tetrachloroethene	127-18-4	1.24	U	6.20	1.24	0.620
Toluene	108-88-3	1.24	U	6.20	1.24	0.620
1,2,3-Trichlorobenzene	87-61-6	1.24	U	6.20	1.24	0.620
1,2,4-Trichlorobenzene	120-82-1	1.24	U	6.20	1.24	0.620
1,1,1-Trichloroethane	71-55-6	1.24	U	6.20	1.24	0.620
1,1,2-Trichloroethane	79-00-5	1.24	U	6.20	1.24	0.620
Trichloroethene	79-01-6	1.24	U	6.20	1.24	0.620
Trichlorofluoromethane	75-69-4	2.48	U	6.20	2.48	1.24
1,2,3-Trichloropropane	96-18-4	2.48	U	6.20	2.48	1.24
1,2,4-Trimethylbenzene	95-63-6	1.24	U	6.20	1.24	0.620
1,3,5-Trimethylbenzene	108-67-8	1.24	U	6.20	1.24	0.620
Vinyl chloride	75-01-4	2.48	U	6.20	2.48	1.24
o-Xylene	95-47-6	1.24	U	6.20	1.24	0.620
m-,p-Xylene	179601-23-1	1.24	U	6.20	1.24	0.620

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.5	80	120	
1,2-Dichloroethane-d4	97.0	80	120	
Toluene-d8	106	85	115	
4-Bromofluorobenzene	117	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT02(10-10.5)260216FD	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 02:56
Collect Date:	02/26/2016 08:42	**Dilution:**	1	**File ID:**	1LM.LM33496
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.36	U	4.71	2.36	1.18

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT02(15-15.5)260216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:26
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	03/01/2016 01:36
Collect Date:	02/26/2016 09:00	**Dilution:**	1	**File ID:**	9M972983
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	78.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	8.14	J	23.8	11.9	5.95
Benzene	71-43-2	1.19	U	5.95	1.19	0.595
Bromobenzene	108-86-1	1.19	U	5.95	1.19	0.595
Bromochloromethane	74-97-5	2.38	U	5.95	2.38	1.19
Bromodichloromethane	75-27-4	1.19	U	5.95	1.19	0.595
Bromoform	75-25-2	1.19	U	5.95	1.19	0.595
Bromomethane	74-83-9	2.38	U	5.95	2.38	1.19
2-Butanone	78-93-3	5.94	U	11.9	5.94	2.97
n-Butylbenzene	104-51-8	1.19	U	5.95	1.19	0.595
sec-Butylbenzene	135-98-8	1.19	U	5.95	1.19	0.595
tert-Butylbenzene	98-06-6	1.19	U	5.95	1.19	0.595
Carbon disulfide	75-15-0	1.19	U	5.95	1.19	0.595
Carbon tetrachloride	56-23-5	1.19	U	5.95	1.19	0.595
Chlorobenzene	108-90-7	1.19	U	5.95	1.19	0.595
Chlorodibromomethane	124-48-1	1.19	U	5.95	1.19	0.595
Chloroethane	75-00-3	2.38	U	5.95	2.38	1.19
Chloroform	67-66-3	1.19	U	5.95	1.19	0.595
Chloromethane	74-87-3	4.76	U	11.9	4.76	2.38
2-Chlorotoluene	95-49-8	1.19	U	5.95	1.19	0.595
4-Chlorotoluene	106-43-4	1.19	U	5.95	1.19	0.595
1,2-Dibromo-3-chloropropane	96-12-8	4.76	U	11.9	4.76	2.38
1,2-Dibromoethane	106-93-4	1.19	U	5.95	1.19	0.595
Dibromomethane	74-95-3	1.19	U	5.95	1.19	0.595
1,2-Dichlorobenzene	95-50-1	1.19	U	5.95	1.19	0.595
1,3-Dichlorobenzene	541-73-1	1.19	U	5.95	1.19	0.595
1,4-Dichlorobenzene	106-46-7	1.19	U	5.95	1.19	0.595
Dichlorodifluoromethane	75-71-8	2.38	U	5.95	2.38	1.19
1,1-Dichloroethane	75-34-3	2.38	U	5.95	2.38	1.19
1,2-Dichloroethane	107-06-2	1.19	U	5.95	1.19	0.595
1,1-Dichloroethene	75-35-4	1.19	U	5.95	1.19	0.595
cis-1,2-Dichloroethene	156-59-2	1.19	U	5.95	1.19	0.595

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.19	U	5.95	1.19	0.595
1,2-Dichloropropane	78-87-5	1.19	U	5.95	1.19	0.595
1,3-Dichloropropane	142-28-9	1.19	U	5.95	1.19	0.595
2,2-Dichloropropane	594-20-7	1.19	U	5.95	1.19	0.595
cis-1,3-Dichloropropene	10061-01-5	1.19	U	5.95	1.19	0.595
trans-1,3-Dichloropropene	10061-02-6	1.19	U	5.95	1.19	0.595
1,1-Dichloropropene	563-58-6	1.19	U	5.95	1.19	0.595
Ethylbenzene	100-41-4	1.19	U	5.95	1.19	0.595
2-Hexanone	591-78-6	5.94	U	11.9	5.94	2.97
Hexachlorobutadiene	87-68-3	1.19	U	5.95	1.19	0.595
Isopropylbenzene	98-82-8	1.19	U	5.95	1.19	0.595
p-Isopropyltoluene	99-87-6	1.35	J	5.95	1.19	0.595
4-Methyl-2-pentanone	108-10-1	5.94	U	11.9	5.94	2.97
Methylene chloride	75-09-2	2.38	U	5.95	2.38	1.19
Naphthalene	91-20-3	1.19	U	5.95	1.19	0.595
n-Propylbenzene	103-65-1	1.19	U	5.95	1.19	0.595
Styrene	100-42-5	1.19	U	5.95	1.19	0.595
1,1,1,2-Tetrachloroethane	630-20-6	1.19	U	5.95	1.19	0.595
1,1,2,2-Tetrachloroethane	79-34-5	1.19	U	5.95	1.19	0.595
Tetrachloroethene	127-18-4	1.19	U	5.95	1.19	0.595
Toluene	108-88-3	1.19	U	5.95	1.19	0.595
1,2,3-Trichlorobenzene	87-61-6	1.19	U	5.95	1.19	0.595
1,2,4-Trichlorobenzene	120-82-1	1.19	U	5.95	1.19	0.595
1,1,1-Trichloroethane	71-55-6	1.19	U	5.95	1.19	0.595
1,1,2-Trichloroethane	79-00-5	1.19	U	5.95	1.19	0.595
Trichloroethene	79-01-6	1.19	U	5.95	1.19	0.595
Trichlorofluoromethane	75-69-4	2.38	U	5.95	2.38	1.19
1,2,3-Trichloropropane	96-18-4	2.38	U	5.95	2.38	1.19
1,2,4-Trimethylbenzene	95-63-6	1.19	U	5.95	1.19	0.595
1,3,5-Trimethylbenzene	108-67-8	1.19	U	5.95	1.19	0.595
Vinyl chloride	75-01-4	2.38	U	5.95	2.38	1.19
o-Xylene	95-47-6	1.19	U	5.95	1.19	0.595
m-,p-Xylene	179601-23-1	1.19	U	5.95	1.19	0.595

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.9	80	120	
1,2-Dichloroethane-d4	98.7	80	120	
Toluene-d8	108	85	115	
4-Bromofluorobenzene	115	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT02(15-15.5)260216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 03:15
Collect Date:	02/26/2016 09:00	**Dilution:**	1	**File ID:**	1LM.LM33497
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	78.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.50	U	4.98	2.50	1.25

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT02(22-22.5)260216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:26
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	03/01/2016 02:06
Collect Date:	02/26/2016 09:15	**Dilution:**	1	**File ID:**	9M972984
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.4	U	26.8	13.4	6.70
Benzene	71-43-2	1.34	U	6.70	1.34	0.670
Bromobenzene	108-86-1	1.34	U	6.70	1.34	0.670
Bromochloromethane	74-97-5	2.68	U	6.70	2.68	1.34
Bromodichloromethane	75-27-4	1.34	U	6.70	1.34	0.670
Bromoform	75-25-2	1.34	U	6.70	1.34	0.670
Bromomethane	74-83-9	2.68	U	6.70	2.68	1.34
2-Butanone	78-93-3	6.70	U	13.4	6.70	3.35
n-Butylbenzene	104-51-8	1.34	U	6.70	1.34	0.670
sec-Butylbenzene	135-98-8	1.34	U	6.70	1.34	0.670
tert-Butylbenzene	98-06-6	1.34	U	6.70	1.34	0.670
Carbon disulfide	75-15-0	1.34	U	6.70	1.34	0.670
Carbon tetrachloride	56-23-5	1.34	U	6.70	1.34	0.670
Chlorobenzene	108-90-7	1.34	U	6.70	1.34	0.670
Chlorodibromomethane	124-48-1	1.34	U	6.70	1.34	0.670
Chloroethane	75-00-3	2.68	U	6.70	2.68	1.34
Chloroform	67-66-3	1.34	U	6.70	1.34	0.670
Chloromethane	74-87-3	5.36	U	13.4	5.36	2.68
2-Chlorotoluene	95-49-8	1.34	U	6.70	1.34	0.670
4-Chlorotoluene	106-43-4	1.34	U	6.70	1.34	0.670
1,2-Dibromo-3-chloropropane	96-12-8	5.36	U	13.4	5.36	2.68
1,2-Dibromoethane	106-93-4	1.34	U	6.70	1.34	0.670
Dibromomethane	74-95-3	1.34	U	6.70	1.34	0.670
1,2-Dichlorobenzene	95-50-1	1.34	U	6.70	1.34	0.670
1,3-Dichlorobenzene	541-73-1	1.34	U	6.70	1.34	0.670
1,4-Dichlorobenzene	106-46-7	1.34	U	6.70	1.34	0.670
Dichlorodifluoromethane	75-71-8	2.68	U	6.70	2.68	1.34
1,1-Dichloroethane	75-34-3	2.68	U	6.70	2.68	1.34
1,2-Dichloroethane	107-06-2	1.34	U	6.70	1.34	0.670
1,1-Dichloroethene	75-35-4	1.34	U	6.70	1.34	0.670
cis-1,2-Dichloroethene	156-59-2	1.34	U	6.70	1.34	0.670

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Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.34	U	6.70	1.34	0.670
1,2-Dichloropropane	78-87-5	1.34	U	6.70	1.34	0.670
1,3-Dichloropropane	142-28-9	1.34	U	6.70	1.34	0.670
2,2-Dichloropropane	594-20-7	1.34	U	6.70	1.34	0.670
cis-1,3-Dichloropropene	10061-01-5	1.34	U	6.70	1.34	0.670
trans-1,3-Dichloropropene	10061-02-6	1.34	U	6.70	1.34	0.670
1,1-Dichloropropene	563-58-6	1.34	U	6.70	1.34	0.670
Ethylbenzene	100-41-4	1.34	U	6.70	1.34	0.670
2-Hexanone	591-78-6	6.70	U	13.4	6.70	3.35
Hexachlorobutadiene	87-68-3	1.34	U	6.70	1.34	0.670
Isopropylbenzene	98-82-8	1.34	U	6.70	1.34	0.670
p-Isopropyltoluene	99-87-6	1.34	U	6.70	1.34	0.670
4-Methyl-2-pentanone	108-10-1	6.70	U	13.4	6.70	3.35
Methylene chloride	75-09-2	2.68	U	6.70	2.68	1.34
Naphthalene	91-20-3	1.34	U	6.70	1.34	0.670
n-Propylbenzene	103-65-1	1.34	U	6.70	1.34	0.670
Styrene	100-42-5	1.34	U	6.70	1.34	0.670
1,1,1,2-Tetrachloroethane	630-20-6	1.34	U	6.70	1.34	0.670
1,1,2,2-Tetrachloroethane	79-34-5	1.34	U	6.70	1.34	0.670
Tetrachloroethene	127-18-4	1.34	U	6.70	1.34	0.670
Toluene	108-88-3	1.34	U	6.70	1.34	0.670
1,2,3-Trichlorobenzene	87-61-6	1.34	U	6.70	1.34	0.670
1,2,4-Trichlorobenzene	120-82-1	1.34	U	6.70	1.34	0.670
1,1,1-Trichloroethane	71-55-6	1.34	U	6.70	1.34	0.670
1,1,2-Trichloroethane	79-00-5	1.34	U	6.70	1.34	0.670
Trichloroethene	79-01-6	1.34	U	6.70	1.34	0.670
Trichlorofluoromethane	75-69-4	2.68	U	6.70	2.68	1.34
1,2,3-Trichloropropane	96-18-4	2.68	U	6.70	2.68	1.34
1,2,4-Trimethylbenzene	95-63-6	1.34	U	6.70	1.34	0.670
1,3,5-Trimethylbenzene	108-67-8	1.34	U	6.70	1.34	0.670
Vinyl chloride	75-01-4	2.68	U	6.70	2.68	1.34
o-Xylene	95-47-6	1.34	U	6.70	1.34	0.670
m-,p-Xylene	179601-23-1	1.34	U	6.70	1.34	0.670

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.7	80	120	
1,2-Dichloroethane-d4	95.4	80	120	
Toluene-d8	107	85	115	
4-Bromofluorobenzene	114	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT02(22-22.5)260216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 10:51
Collect Date:	02/26/2016 09:15	**Dilution:**	10	**File ID:**	1LM.LM33512
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	81.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	269		47.3	23.6	11.8

Certificate of Analysis

Sample #:	L16021358-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT03(5-5.5)260216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:08
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	03/01/2016 02:36
Collect Date:	02/26/2016 11:15	**Dilution:**	1	**File ID:**	9M972985
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	25.0	12.5	6.25
Benzene	71-43-2	1.25	U	6.25	1.25	0.625
Bromobenzene	108-86-1	1.25	U	6.25	1.25	0.625
Bromochloromethane	74-97-5	2.50	U	6.25	2.50	1.25
Bromodichloromethane	75-27-4	1.25	U	6.25	1.25	0.625
Bromoform	75-25-2	1.25	U	6.25	1.25	0.625
Bromomethane	74-83-9	2.50	U	6.25	2.50	1.25
2-Butanone	78-93-3	6.26	U	12.5	6.26	3.13
n-Butylbenzene	104-51-8	1.25	U	6.25	1.25	0.625
sec-Butylbenzene	135-98-8	1.25	U	6.25	1.25	0.625
tert-Butylbenzene	98-06-6	1.25	U	6.25	1.25	0.625
Carbon disulfide	75-15-0	1.25	U	6.25	1.25	0.625
Carbon tetrachloride	56-23-5	1.25	U	6.25	1.25	0.625
Chlorobenzene	108-90-7	1.25	U	6.25	1.25	0.625
Chlorodibromomethane	124-48-1	1.25	U	6.25	1.25	0.625
Chloroethane	75-00-3	2.50	U	6.25	2.50	1.25
Chloroform	67-66-3	1.25	U	6.25	1.25	0.625
Chloromethane	74-87-3	5.00	U	12.5	5.00	2.50
2-Chlorotoluene	95-49-8	1.25	U	6.25	1.25	0.625
4-Chlorotoluene	106-43-4	1.25	U	6.25	1.25	0.625

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Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	5.00	U	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	6.25	1.25	0.625
Dibromomethane	74-95-3	1.25	U	6.25	1.25	0.625
1,2-Dichlorobenzene	95-50-1	1.25	U	6.25	1.25	0.625
1,3-Dichlorobenzene	541-73-1	1.25	U	6.25	1.25	0.625
1,4-Dichlorobenzene	106-46-7	1.25	U	6.25	1.25	0.625
Dichlorodifluoromethane	75-71-8	2.50	U	6.25	2.50	1.25
1,1-Dichloroethane	75-34-3	2.50	U	6.25	2.50	1.25
1,2-Dichloroethane	107-06-2	1.25	U	6.25	1.25	0.625
1,1-Dichloroethene	75-35-4	1.25	U	6.25	1.25	0.625
cis-1,2-Dichloroethene	156-59-2	1.25	U	6.25	1.25	0.625
trans-1,2-Dichloroethene	156-60-5	1.25	U	6.25	1.25	0.625
1,2-Dichloropropane	78-87-5	1.25	U	6.25	1.25	0.625
1,3-Dichloropropane	142-28-9	1.25	U	6.25	1.25	0.625
2,2-Dichloropropane	594-20-7	1.25	U	6.25	1.25	0.625
cis-1,3-Dichloropropene	10061-01-5	1.25	U	6.25	1.25	0.625
trans-1,3-Dichloropropene	10061-02-6	1.25	U	6.25	1.25	0.625
1,1-Dichloropropene	563-58-6	1.25	U	6.25	1.25	0.625
Ethylbenzene	100-41-4	1.25	U	6.25	1.25	0.625
2-Hexanone	591-78-6	6.26	U	12.5	6.26	3.13
Hexachlorobutadiene	87-68-3	1.25	U	6.25	1.25	0.625
Isopropylbenzene	98-82-8	1.25	U	6.25	1.25	0.625
p-Isopropyltoluene	99-87-6	1.25	U	6.25	1.25	0.625
4-Methyl-2-pentanone	108-10-1	6.26	U	12.5	6.26	3.13
Methylene chloride	75-09-2	2.50	U	6.25	2.50	1.25
Naphthalene	91-20-3	1.25	U	6.25	1.25	0.625
n-Propylbenzene	103-65-1	1.25	U	6.25	1.25	0.625
Styrene	100-42-5	1.25	U	6.25	1.25	0.625
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	6.25	1.25	0.625
1,1,2,2-Tetrachloroethane	79-34-5	1.25	U	6.25	1.25	0.625
Tetrachloroethene	127-18-4	1.25	U	6.25	1.25	0.625
Toluene	108-88-3	1.25	U	6.25	1.25	0.625
1,2,3-Trichlorobenzene	87-61-6	1.25	U	6.25	1.25	0.625
1,2,4-Trichlorobenzene	120-82-1	1.25	U	6.25	1.25	0.625
1,1,1-Trichloroethane	71-55-6	1.25	U	6.25	1.25	0.625
1,1,2-Trichloroethane	79-00-5	1.25	U	6.25	1.25	0.625
Trichloroethene	79-01-6	1.25	U	6.25	1.25	0.625
Trichlorofluoromethane	75-69-4	2.50	U	6.25	2.50	1.25
1,2,3-Trichloropropane	96-18-4	2.50	U	6.25	2.50	1.25

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Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.25	U	6.25	1.25	0.625
1,3,5-Trimethylbenzene	108-67-8	1.25	U	6.25	1.25	0.625
Vinyl chloride	75-01-4	2.50	U	6.25	2.50	1.25
o-Xylene	95-47-6	1.25	U	6.25	1.25	0.625
m-,p-Xylene	179601-23-1	1.25	U	6.25	1.25	0.625

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.3	80	120	
1,2-Dichloroethane-d4	101	80	120	
Toluene-d8	106	85	115	
4-Bromofluorobenzene	113	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT03(5-5.5)260216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 03:53
Collect Date:	02/26/2016 11:15	**Dilution:**	1	**File ID:**	1LM.LM33499
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.46	U	4.94	2.46	1.23

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT03(10-10.5)260216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:28
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	03/01/2016 03:06
Collect Date:	02/26/2016 11:17	**Dilution:**	1	**File ID:**	9M972986
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	87.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.4	U	22.8	11.4	5.69
Benzene	71-43-2	1.14	U	5.69	1.14	0.569
Bromobenzene	108-86-1	1.14	U	5.69	1.14	0.569
Bromochloromethane	74-97-5	2.28	U	5.69	2.28	1.14
Bromodichloromethane	75-27-4	1.14	U	5.69	1.14	0.569
Bromoform	75-25-2	1.14	U	5.69	1.14	0.569
Bromomethane	74-83-9	2.28	U	5.69	2.28	1.14
2-Butanone	78-93-3	5.70	U	11.4	5.70	2.85
n-Butylbenzene	104-51-8	1.14	U	5.69	1.14	0.569
sec-Butylbenzene	135-98-8	1.14	U	5.69	1.14	0.569
tert-Butylbenzene	98-06-6	1.14	U	5.69	1.14	0.569
Carbon disulfide	75-15-0	1.14	U	5.69	1.14	0.569
Carbon tetrachloride	56-23-5	1.14	U	5.69	1.14	0.569
Chlorobenzene	108-90-7	1.14	U	5.69	1.14	0.569
Chlorodibromomethane	124-48-1	1.14	U	5.69	1.14	0.569
Chloroethane	75-00-3	2.28	U	5.69	2.28	1.14
Chloroform	67-66-3	1.14	U	5.69	1.14	0.569
Chloromethane	74-87-3	4.56	U	11.4	4.56	2.28
2-Chlorotoluene	95-49-8	1.14	U	5.69	1.14	0.569
4-Chlorotoluene	106-43-4	1.14	U	5.69	1.14	0.569
1,2-Dibromo-3-chloropropane	96-12-8	4.56	U	11.4	4.56	2.28
1,2-Dibromoethane	106-93-4	1.14	U	5.69	1.14	0.569
Dibromomethane	74-95-3	1.14	U	5.69	1.14	0.569
1,2-Dichlorobenzene	95-50-1	1.14	U	5.69	1.14	0.569
1,3-Dichlorobenzene	541-73-1	1.14	U	5.69	1.14	0.569
1,4-Dichlorobenzene	106-46-7	1.14	U	5.69	1.14	0.569
Dichlorodifluoromethane	75-71-8	2.28	U	5.69	2.28	1.14
1,1-Dichloroethane	75-34-3	2.28	U	5.69	2.28	1.14
1,2-Dichloroethane	107-06-2	1.14	U	5.69	1.14	0.569
1,1-Dichloroethene	75-35-4	1.14	U	5.69	1.14	0.569
cis-1,2-Dichloroethene	156-59-2	1.14	U	5.69	1.14	0.569

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.14	U	5.69	1.14	0.569
1,2-Dichloropropane	78-87-5	1.14	U	5.69	1.14	0.569
1,3-Dichloropropane	142-28-9	1.14	U	5.69	1.14	0.569
2,2-Dichloropropane	594-20-7	1.14	U	5.69	1.14	0.569
cis-1,3-Dichloropropene	10061-01-5	1.14	U	5.69	1.14	0.569
trans-1,3-Dichloropropene	10061-02-6	1.14	U	5.69	1.14	0.569
1,1-Dichloropropene	563-58-6	1.14	U	5.69	1.14	0.569
Ethylbenzene	100-41-4	1.14	U	5.69	1.14	0.569
2-Hexanone	591-78-6	5.70	U	11.4	5.70	2.85
Hexachlorobutadiene	87-68-3	1.14	U	5.69	1.14	0.569
Isopropylbenzene	98-82-8	1.14	U	5.69	1.14	0.569
p-Isopropyltoluene	99-87-6	1.14	U	5.69	1.14	0.569
4-Methyl-2-pentanone	108-10-1	5.70	U	11.4	5.70	2.85
Methylene chloride	75-09-2	2.28	U	5.69	2.28	1.14
Naphthalene	91-20-3	1.14	U	5.69	1.14	0.569
n-Propylbenzene	103-65-1	1.14	U	5.69	1.14	0.569
Styrene	100-42-5	1.14	U	5.69	1.14	0.569
1,1,1,2-Tetrachloroethane	630-20-6	1.14	U	5.69	1.14	0.569
1,1,2,2-Tetrachloroethane	79-34-5	1.14	U	5.69	1.14	0.569
Tetrachloroethene	127-18-4	1.14	U	5.69	1.14	0.569
Toluene	108-88-3	1.14	U	5.69	1.14	0.569
1,2,3-Trichlorobenzene	87-61-6	1.14	U	5.69	1.14	0.569
1,2,4-Trichlorobenzene	120-82-1	1.14	U	5.69	1.14	0.569
1,1,1-Trichloroethane	71-55-6	1.14	U	5.69	1.14	0.569
1,1,2-Trichloroethane	79-00-5	1.14	U	5.69	1.14	0.569
Trichloroethene	79-01-6	1.14	U	5.69	1.14	0.569
Trichlorofluoromethane	75-69-4	2.28	U	5.69	2.28	1.14
1,2,3-Trichloropropane	96-18-4	2.28	U	5.69	2.28	1.14
1,2,4-Trimethylbenzene	95-63-6	1.14	U	5.69	1.14	0.569
1,3,5-Trimethylbenzene	108-67-8	1.14	U	5.69	1.14	0.569
Vinyl chloride	75-01-4	2.28	U	5.69	2.28	1.14
o-Xylene	95-47-6	1.14	U	5.69	1.14	0.569
m-,p-Xylene	179601-23-1	1.14	U	5.69	1.14	0.569

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.6	80	120	
1,2-Dichloroethane-d4	95.0	80	120	
Toluene-d8	107	85	115	
4-Bromofluorobenzene	110	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT03(10-10.5)260216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 11:10
Collect Date:	02/26/2016 11:17	**Dilution:**	100	**File ID:**	1LM.LM33513
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	87.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2110		437	218	109

Certificate of Analysis

Sample #:	L16021358-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT03(14.5-15)260216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:29
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	03/01/2016 03:37
Collect Date:	02/26/2016 11:19	**Dilution:**	1	**File ID:**	9M972987
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.1	U	24.3	12.1	6.07
Benzene	71-43-2	1.21	U	6.07	1.21	0.607
Bromobenzene	108-86-1	1.21	U	6.07	1.21	0.607
Bromochloromethane	74-97-5	2.42	U	6.07	2.42	1.21
Bromodichloromethane	75-27-4	1.21	U	6.07	1.21	0.607
Bromoform	75-25-2	1.21	U	6.07	1.21	0.607
Bromomethane	74-83-9	2.42	U	6.07	2.42	1.21
2-Butanone	78-93-3	6.08	U	12.1	6.08	3.04
n-Butylbenzene	104-51-8	1.21	U	6.07	1.21	0.607
sec-Butylbenzene	135-98-8	1.21	U	6.07	1.21	0.607
tert-Butylbenzene	98-06-6	1.21	U	6.07	1.21	0.607
Carbon disulfide	75-15-0	1.21	U	6.07	1.21	0.607
Carbon tetrachloride	56-23-5	1.21	U	6.07	1.21	0.607
Chlorobenzene	108-90-7	1.21	U	6.07	1.21	0.607
Chlorodibromomethane	124-48-1	1.21	U	6.07	1.21	0.607
Chloroethane	75-00-3	2.42	U	6.07	2.42	1.21
Chloroform	67-66-3	1.21	U	6.07	1.21	0.607
Chloromethane	74-87-3	4.86	U	12.1	4.86	2.43
2-Chlorotoluene	95-49-8	1.21	U	6.07	1.21	0.607
4-Chlorotoluene	106-43-4	1.21	U	6.07	1.21	0.607

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	4.86	U	12.1	4.86	2.43
1,2-Dibromoethane	106-93-4	1.21	U	6.07	1.21	0.607
Dibromomethane	74-95-3	1.21	U	6.07	1.21	0.607
1,2-Dichlorobenzene	95-50-1	1.21	U	6.07	1.21	0.607
1,3-Dichlorobenzene	541-73-1	1.21	U	6.07	1.21	0.607
1,4-Dichlorobenzene	106-46-7	1.21	U	6.07	1.21	0.607
Dichlorodifluoromethane	75-71-8	2.42	U	6.07	2.42	1.21
1,1-Dichloroethane	75-34-3	2.42	U	6.07	2.42	1.21
1,2-Dichloroethane	107-06-2	1.21	U	6.07	1.21	0.607
1,1-Dichloroethene	75-35-4	1.21	U	6.07	1.21	0.607
cis-1,2-Dichloroethene	156-59-2	1.21	U	6.07	1.21	0.607
trans-1,2-Dichloroethene	156-60-5	1.21	U	6.07	1.21	0.607
1,2-Dichloropropane	78-87-5	1.21	U	6.07	1.21	0.607
1,3-Dichloropropane	142-28-9	1.21	U	6.07	1.21	0.607
2,2-Dichloropropane	594-20-7	1.21	U	6.07	1.21	0.607
cis-1,3-Dichloropropene	10061-01-5	1.21	U	6.07	1.21	0.607
trans-1,3-Dichloropropene	10061-02-6	1.21	U	6.07	1.21	0.607
1,1-Dichloropropene	563-58-6	1.21	U	6.07	1.21	0.607
Ethylbenzene	100-41-4	1.21	U	6.07	1.21	0.607
2-Hexanone	591-78-6	6.08	U	12.1	6.08	3.04
Hexachlorobutadiene	87-68-3	1.21	U	6.07	1.21	0.607
Isopropylbenzene	98-82-8	1.21	U	6.07	1.21	0.607
p-Isopropyltoluene	99-87-6	1.21	U	6.07	1.21	0.607
4-Methyl-2-pentanone	108-10-1	6.08	U	12.1	6.08	3.04
Methylene chloride	75-09-2	2.42	U	6.07	2.42	1.21
Naphthalene	91-20-3	1.21	U	6.07	1.21	0.607
n-Propylbenzene	103-65-1	1.21	U	6.07	1.21	0.607
Styrene	100-42-5	1.21	U	6.07	1.21	0.607
1,1,1,2-Tetrachloroethane	630-20-6	1.21	U	6.07	1.21	0.607
1,1,2,2-Tetrachloroethane	79-34-5	1.21	U	6.07	1.21	0.607
Tetrachloroethene	127-18-4	1.21	U	6.07	1.21	0.607
Toluene	108-88-3	1.21	U	6.07	1.21	0.607
1,2,3-Trichlorobenzene	87-61-6	1.21	U	6.07	1.21	0.607
1,2,4-Trichlorobenzene	120-82-1	1.21	U	6.07	1.21	0.607
1,1,1-Trichloroethane	71-55-6	1.21	U	6.07	1.21	0.607
1,1,2-Trichloroethane	79-00-5	1.21	U	6.07	1.21	0.607
Trichloroethene	79-01-6	1.21	U	6.07	1.21	0.607
Trichlorofluoromethane	75-69-4	2.42	U	6.07	2.42	1.21
1,2,3-Trichloropropane	96-18-4	2.42	U	6.07	2.42	1.21

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.21	U	6.07	1.21	0.607
1,3,5-Trimethylbenzene	108-67-8	1.21	U	6.07	1.21	0.607
Vinyl chloride	75-01-4	2.42	U	6.07	2.42	1.21
o-Xylene	95-47-6	1.21	U	6.07	1.21	0.607
m-,p-Xylene	179601-23-1	1.21	U	6.07	1.21	0.607

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	80	120	
1,2-Dichloroethane-d4	106	80	120	
Toluene-d8	106	85	115	
4-Bromofluorobenzene	110	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT03(14.5-15)260216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 11:29
Collect Date:	02/26/2016 11:19	**Dilution:**	100	**File ID:**	1LM.LM33514
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	85.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3290		465	232	116

Certificate of Analysis

Sample #:	L16021358-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT03(17.5-18)260216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:29
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	03/01/2016 04:07
Collect Date:	02/26/2016 11:21	**Dilution:**	1	**File ID:**	9M972988
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.3	U	26.7	13.3	6.67
Benzene	71-43-2	1.33	U	6.67	1.33	0.667
Bromobenzene	108-86-1	1.33	U	6.67	1.33	0.667
Bromochloromethane	74-97-5	2.66	U	6.67	2.66	1.33
Bromodichloromethane	75-27-4	1.33	U	6.67	1.33	0.667
Bromoform	75-25-2	1.33	U	6.67	1.33	0.667
Bromomethane	74-83-9	2.66	U	6.67	2.66	1.33
2-Butanone	78-93-3	6.68	U	13.3	6.68	3.34
n-Butylbenzene	104-51-8	1.33	U	6.67	1.33	0.667
sec-Butylbenzene	135-98-8	1.33	U	6.67	1.33	0.667
tert-Butylbenzene	98-06-6	1.33	U	6.67	1.33	0.667
Carbon disulfide	75-15-0	1.33	U	6.67	1.33	0.667
Carbon tetrachloride	56-23-5	1.33	U	6.67	1.33	0.667
Chlorobenzene	108-90-7	1.33	U	6.67	1.33	0.667
Chlorodibromomethane	124-48-1	1.33	U	6.67	1.33	0.667
Chloroethane	75-00-3	2.66	U	6.67	2.66	1.33
Chloroform	67-66-3	1.33	U	6.67	1.33	0.667
Chloromethane	74-87-3	5.34	U	13.3	5.34	2.67
2-Chlorotoluene	95-49-8	1.33	U	6.67	1.33	0.667
4-Chlorotoluene	106-43-4	1.33	U	6.67	1.33	0.667

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	5.34	U	13.3	5.34	2.67
1,2-Dibromoethane	106-93-4	1.33	U	6.67	1.33	0.667
Dibromomethane	74-95-3	1.33	U	6.67	1.33	0.667
1,2-Dichlorobenzene	95-50-1	1.33	U	6.67	1.33	0.667
1,3-Dichlorobenzene	541-73-1	1.33	U	6.67	1.33	0.667
1,4-Dichlorobenzene	106-46-7	1.33	U	6.67	1.33	0.667
Dichlorodifluoromethane	75-71-8	2.66	U	6.67	2.66	1.33
1,1-Dichloroethane	75-34-3	2.66	U	6.67	2.66	1.33
1,2-Dichloroethane	107-06-2	1.33	U	6.67	1.33	0.667
1,1-Dichloroethene	75-35-4	1.33	U	6.67	1.33	0.667
cis-1,2-Dichloroethene	156-59-2	1.33	U	6.67	1.33	0.667
trans-1,2-Dichloroethene	156-60-5	1.33	U	6.67	1.33	0.667
1,2-Dichloropropane	78-87-5	1.33	U	6.67	1.33	0.667
1,3-Dichloropropane	142-28-9	1.33	U	6.67	1.33	0.667
2,2-Dichloropropane	594-20-7	1.33	U	6.67	1.33	0.667
cis-1,3-Dichloropropene	10061-01-5	1.33	U	6.67	1.33	0.667
trans-1,3-Dichloropropene	10061-02-6	1.33	U	6.67	1.33	0.667
1,1-Dichloropropene	563-58-6	1.33	U	6.67	1.33	0.667
Ethylbenzene	100-41-4	1.33	U	6.67	1.33	0.667
2-Hexanone	591-78-6	6.68	U	13.3	6.68	3.34
Hexachlorobutadiene	87-68-3	1.33	U	6.67	1.33	0.667
Isopropylbenzene	98-82-8	1.33	U	6.67	1.33	0.667
p-Isopropyltoluene	99-87-6	1.33	U	6.67	1.33	0.667
4-Methyl-2-pentanone	108-10-1	6.68	U	13.3	6.68	3.34
Methylene chloride	75-09-2	2.66	U	6.67	2.66	1.33
Naphthalene	91-20-3	1.33	U	6.67	1.33	0.667
n-Propylbenzene	103-65-1	1.33	U	6.67	1.33	0.667
Styrene	100-42-5	1.33	U	6.67	1.33	0.667
1,1,1,2-Tetrachloroethane	630-20-6	1.33	U	6.67	1.33	0.667
1,1,2,2-Tetrachloroethane	79-34-5	1.33	U	6.67	1.33	0.667
Tetrachloroethene	127-18-4	1.33	U	6.67	1.33	0.667
Toluene	108-88-3	1.33	U	6.67	1.33	0.667
1,2,3-Trichlorobenzene	87-61-6	1.33	U	6.67	1.33	0.667
1,2,4-Trichlorobenzene	120-82-1	1.33	U	6.67	1.33	0.667
1,1,1-Trichloroethane	71-55-6	1.33	U	6.67	1.33	0.667
1,1,2-Trichloroethane	79-00-5	1.33	U	6.67	1.33	0.667
Trichloroethene	79-01-6	1.33	U	6.67	1.33	0.667
Trichlorofluoromethane	75-69-4	2.66	U	6.67	2.66	1.33
1,2,3-Trichloropropane	96-18-4	2.66	U	6.67	2.66	1.33

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.33	U	6.67	1.33	0.667
1,3,5-Trimethylbenzene	108-67-8	1.33	U	6.67	1.33	0.667
Vinyl chloride	75-01-4	2.66	U	6.67	2.66	1.33
o-Xylene	95-47-6	1.33	U	6.67	1.33	0.667
m-,p-Xylene	179601-23-1	1.33	U	6.67	1.33	0.667

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.9	80	120	
1,2-Dichloroethane-d4	96.2	80	120	
Toluene-d8	107	85	115	
4-Bromofluorobenzene	111	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-09	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT03(17.5-18)260216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 11:48
Collect Date:	02/26/2016 11:21	**Dilution:**	100	**File ID:**	1LM.LM33515
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	81.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2330		484	242	121

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #: L16021358-01 **Client ID:** 18DPT02(5-5.5)260216 **Matrix:** Soil **Collect Date:** 02/26/2016 08:35

Analyte	Result	Units	Qualifier
Percent Solids	82.1	weight %	

Sample #: L16021358-02 **Client ID:** 18DPT02(10-10.5)260216 **Matrix:** Soil **Collect Date:** 02/26/2016 08:42

Analyte	Result	Units	Qualifier
Percent Solids	83.6	weight %	

Sample #: L16021358-03 **Client ID:** 18DPT02(10-10.5)260216FD **Matrix:** Soil **Collect Date:** 02/26/2016 08:42

Analyte	Result	Units	Qualifier
Percent Solids	83.4	weight %	

Sample #: L16021358-04 **Client ID:** 18DPT02(15-15.5)260216 **Matrix:** Soil **Collect Date:** 02/26/2016 09:00

Analyte	Result	Units	Qualifier
Percent Solids	78.3	weight %	

Sample #: L16021358-05 **Client ID:** 18DPT02(22-22.5)260216 **Matrix:** Soil **Collect Date:** 02/26/2016 09:15

Analyte	Result	Units	Qualifier
Percent Solids	81.6	weight %	

Sample #: L16021358-06 **Client ID:** 18DPT03(5-5.5)260216 **Matrix:** Soil **Collect Date:** 02/26/2016 11:15

Analyte	Result	Units	Qualifier
Percent Solids	79.9	weight %	

Sample #: L16021358-07 **Client ID:** 18DPT03(10-10.5)260216 **Matrix:** Soil **Collect Date:** 02/26/2016 11:17

Analyte	Result	Units	Qualifier
Percent Solids	87.6	weight %	

Sample #: L16021358-08 **Client ID:** 18DPT03(14.5-15)260216 **Matrix:** Soil **Collect Date:** 02/26/2016 11:19

Analyte	Result	Units	Qualifier
Percent Solids	85.1	weight %	

Sample #: L16021358-09 **Client ID:** 18DPT03(17.5-18)260216 **Matrix:** Soil **Collect Date:** 02/26/2016 11:21

Analyte	Result	Units	Qualifier
Percent Solids	81.4	weight %	

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT02(5-5.5)260216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:24
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	03/01/2016 00:04
Collect Date:	02/26/2016 08:35	**Dilution:**	1	**File ID:**	9M972980
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	22.8	J	24.8	12.4	6.19
Benzene	71-43-2	1.24	U	6.19	1.24	0.619
Bromobenzene	108-86-1	1.24	U	6.19	1.24	0.619
Bromochloromethane	74-97-5	2.48	U	6.19	2.48	1.24
Bromodichloromethane	75-27-4	1.24	U	6.19	1.24	0.619
Bromoform	75-25-2	1.24	U	6.19	1.24	0.619
Bromomethane	74-83-9	2.48	U	6.19	2.48	1.24
2-Butanone	78-93-3	6.18	U	12.4	6.18	3.09
n-Butylbenzene	104-51-8	1.24	U	6.19	1.24	0.619
sec-Butylbenzene	135-98-8	1.24	U	6.19	1.24	0.619
tert-Butylbenzene	98-06-6	1.24	U	6.19	1.24	0.619
Carbon disulfide	75-15-0	1.24	U	6.19	1.24	0.619
Carbon tetrachloride	56-23-5	1.24	U	6.19	1.24	0.619
Chlorobenzene	108-90-7	1.24	U	6.19	1.24	0.619
Chlorodibromomethane	124-48-1	1.24	U	6.19	1.24	0.619
Chloroethane	75-00-3	2.48	U	6.19	2.48	1.24
Chloroform	67-66-3	1.24	U	6.19	1.24	0.619
Chloromethane	74-87-3	4.96	U	12.4	4.96	2.48
2-Chlorotoluene	95-49-8	1.24	U	6.19	1.24	0.619
4-Chlorotoluene	106-43-4	1.24	U	6.19	1.24	0.619
1,2-Dibromo-3-chloropropane	96-12-8	4.96	U	12.4	4.96	2.48
1,2-Dibromoethane	106-93-4	1.24	U	6.19	1.24	0.619
Dibromomethane	74-95-3	1.24	U	6.19	1.24	0.619
1,2-Dichlorobenzene	95-50-1	1.24	U	6.19	1.24	0.619
1,3-Dichlorobenzene	541-73-1	1.24	U	6.19	1.24	0.619
1,4-Dichlorobenzene	106-46-7	1.24	U	6.19	1.24	0.619
Dichlorodifluoromethane	75-71-8	2.48	U	6.19	2.48	1.24
1,1-Dichloroethane	75-34-3	2.48	U	6.19	2.48	1.24
1,2-Dichloroethane	107-06-2	1.24	U	6.19	1.24	0.619
1,1-Dichloroethene	75-35-4	1.24	U	6.19	1.24	0.619
cis-1,2-Dichloroethene	156-59-2	1.24	U	6.19	1.24	0.619
trans-1,2-Dichloroethene	156-60-5	1.24	U	6.19	1.24	0.619

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Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.24	U	6.19	1.24	0.619
1,3-Dichloropropane	142-28-9	1.24	U	6.19	1.24	0.619
2,2-Dichloropropane	594-20-7	1.24	U	6.19	1.24	0.619
cis-1,3-Dichloropropene	10061-01-5	1.24	U	6.19	1.24	0.619
trans-1,3-Dichloropropene	10061-02-6	1.24	U	6.19	1.24	0.619
1,1-Dichloropropene	563-58-6	1.24	U	6.19	1.24	0.619
Ethylbenzene	100-41-4	1.24	U	6.19	1.24	0.619
2-Hexanone	591-78-6	6.18	U	12.4	6.18	3.09
Hexachlorobutadiene	87-68-3	1.24	U	6.19	1.24	0.619
Isopropylbenzene	98-82-8	1.24	U	6.19	1.24	0.619
p-Isopropyltoluene	99-87-6	1.98	J	6.19	1.24	0.619
4-Methyl-2-pentanone	108-10-1	6.18	U	12.4	6.18	3.09
Methylene chloride	75-09-2	2.48	U	6.19	2.48	1.24
Naphthalene	91-20-3	1.24	U	6.19	1.24	0.619
n-Propylbenzene	103-65-1	1.24	U	6.19	1.24	0.619
Styrene	100-42-5	1.24	U	6.19	1.24	0.619
1,1,1,2-Tetrachloroethane	630-20-6	1.24	U	6.19	1.24	0.619
1,1,2,2-Tetrachloroethane	79-34-5	1.24	U	6.19	1.24	0.619
Tetrachloroethene	127-18-4	1.24	U	6.19	1.24	0.619
Toluene	108-88-3	1.24	U	6.19	1.24	0.619
1,2,3-Trichlorobenzene	87-61-6	1.24	U	6.19	1.24	0.619
1,2,4-Trichlorobenzene	120-82-1	1.24	U	6.19	1.24	0.619
1,1,1-Trichloroethane	71-55-6	1.24	U	6.19	1.24	0.619
1,1,2-Trichloroethane	79-00-5	1.24	U	6.19	1.24	0.619
Trichloroethene	79-01-6	1.24	U	6.19	1.24	0.619
Trichlorofluoromethane	75-69-4	2.48	U	6.19	2.48	1.24
1,2,3-Trichloropropane	96-18-4	2.48	U	6.19	2.48	1.24
1,2,4-Trimethylbenzene	95-63-6	1.24	U	6.19	1.24	0.619
1,3,5-Trimethylbenzene	108-67-8	1.24	U	6.19	1.24	0.619
Vinyl chloride	75-01-4	2.48	U	6.19	2.48	1.24
o-Xylene	95-47-6	1.24	U	6.19	1.24	0.619
m-,p-Xylene	179601-23-1	1.24	U	6.19	1.24	0.619

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.8	80	120	
1,2-Dichloroethane-d4	95.0	80	120	
Toluene-d8	106	85	115	
4-Bromofluorobenzene	110	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT02(10-10.5)260216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:25
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	03/01/2016 00:34
Collect Date:	02/26/2016 08:42	**Dilution:**	1	**File ID:**	9M972981
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	7.17	J	24.1	12.0	6.02
Benzene	71-43-2	1.20	U	6.02	1.20	0.602
Bromobenzene	108-86-1	1.20	U	6.02	1.20	0.602
Bromochloromethane	74-97-5	2.40	U	6.02	2.40	1.20
Bromodichloromethane	75-27-4	1.20	U	6.02	1.20	0.602
Bromoform	75-25-2	1.20	U	6.02	1.20	0.602
Bromomethane	74-83-9	2.40	U	6.02	2.40	1.20
2-Butanone	78-93-3	6.02	U	12.0	6.02	3.01
n-Butylbenzene	104-51-8	1.20	U	6.02	1.20	0.602
sec-Butylbenzene	135-98-8	1.20	U	6.02	1.20	0.602
tert-Butylbenzene	98-06-6	1.20	U	6.02	1.20	0.602
Carbon disulfide	75-15-0	1.20	U	6.02	1.20	0.602
Carbon tetrachloride	56-23-5	1.20	U	6.02	1.20	0.602
Chlorobenzene	108-90-7	1.20	U	6.02	1.20	0.602
Chlorodibromomethane	124-48-1	1.20	U	6.02	1.20	0.602
Chloroethane	75-00-3	2.40	U	6.02	2.40	1.20
Chloroform	67-66-3	1.20	U	6.02	1.20	0.602
Chloromethane	74-87-3	4.82	U	12.0	4.82	2.41
2-Chlorotoluene	95-49-8	1.20	U	6.02	1.20	0.602
4-Chlorotoluene	106-43-4	1.20	U	6.02	1.20	0.602
1,2-Dibromo-3-chloropropane	96-12-8	4.82	U	12.0	4.82	2.41
1,2-Dibromoethane	106-93-4	1.20	U	6.02	1.20	0.602
Dibromomethane	74-95-3	1.20	U	6.02	1.20	0.602
1,2-Dichlorobenzene	95-50-1	1.20	U	6.02	1.20	0.602
1,3-Dichlorobenzene	541-73-1	1.20	U	6.02	1.20	0.602
1,4-Dichlorobenzene	106-46-7	1.20	U	6.02	1.20	0.602
Dichlorodifluoromethane	75-71-8	2.40	U	6.02	2.40	1.20
1,1-Dichloroethane	75-34-3	2.40	U	6.02	2.40	1.20
1,2-Dichloroethane	107-06-2	1.20	U	6.02	1.20	0.602
1,1-Dichloroethene	75-35-4	1.20	U	6.02	1.20	0.602
cis-1,2-Dichloroethene	156-59-2	1.20	U	6.02	1.20	0.602

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Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.20	U	6.02	1.20	0.602
1,2-Dichloropropane	78-87-5	1.20	U	6.02	1.20	0.602
1,3-Dichloropropane	142-28-9	1.20	U	6.02	1.20	0.602
2,2-Dichloropropane	594-20-7	1.20	U	6.02	1.20	0.602
cis-1,3-Dichloropropene	10061-01-5	1.20	U	6.02	1.20	0.602
trans-1,3-Dichloropropene	10061-02-6	1.20	U	6.02	1.20	0.602
1,1-Dichloropropene	563-58-6	1.20	U	6.02	1.20	0.602
Ethylbenzene	100-41-4	1.20	U	6.02	1.20	0.602
2-Hexanone	591-78-6	6.02	U	12.0	6.02	3.01
Hexachlorobutadiene	87-68-3	1.20	U	6.02	1.20	0.602
Isopropylbenzene	98-82-8	1.20	U	6.02	1.20	0.602
p-Isopropyltoluene	99-87-6	1.20	U	6.02	1.20	0.602
4-Methyl-2-pentanone	108-10-1	6.02	U	12.0	6.02	3.01
Methylene chloride	75-09-2	2.40	U	6.02	2.40	1.20
Naphthalene	91-20-3	1.20	U	6.02	1.20	0.602
n-Propylbenzene	103-65-1	1.20	U	6.02	1.20	0.602
Styrene	100-42-5	1.20	U	6.02	1.20	0.602
1,1,1,2-Tetrachloroethane	630-20-6	1.20	U	6.02	1.20	0.602
1,1,2,2-Tetrachloroethane	79-34-5	1.20	U	6.02	1.20	0.602
Tetrachloroethene	127-18-4	1.20	U	6.02	1.20	0.602
Toluene	108-88-3	1.20	U	6.02	1.20	0.602
1,2,3-Trichlorobenzene	87-61-6	1.20	U	6.02	1.20	0.602
1,2,4-Trichlorobenzene	120-82-1	1.20	U	6.02	1.20	0.602
1,1,1-Trichloroethane	71-55-6	1.20	U	6.02	1.20	0.602
1,1,2-Trichloroethane	79-00-5	1.20	U	6.02	1.20	0.602
Trichloroethene	79-01-6	1.20	U	6.02	1.20	0.602
Trichlorofluoromethane	75-69-4	2.40	U	6.02	2.40	1.20
1,2,3-Trichloropropane	96-18-4	2.40	U	6.02	2.40	1.20
1,2,4-Trimethylbenzene	95-63-6	1.20	U	6.02	1.20	0.602
1,3,5-Trimethylbenzene	108-67-8	1.20	U	6.02	1.20	0.602
Vinyl chloride	75-01-4	2.40	U	6.02	2.40	1.20
o-Xylene	95-47-6	1.20	U	6.02	1.20	0.602
m-,p-Xylene	179601-23-1	1.20	U	6.02	1.20	0.602

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.8	80	120	
1,2-Dichloroethane-d4	97.2	80	120	
Toluene-d8	104	85	115	
4-Bromofluorobenzene	108	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT02(10-10.5)260216FD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:25
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	03/01/2016 01:04
Collect Date:	02/26/2016 08:42	**Dilution:**	1	**File ID:**	9M972982
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	17.3	J	24.8	12.4	6.20
Benzene	71-43-2	1.24	U	6.20	1.24	0.620
Bromobenzene	108-86-1	1.24	U	6.20	1.24	0.620
Bromochloromethane	74-97-5	2.48	U	6.20	2.48	1.24
Bromodichloromethane	75-27-4	1.24	U	6.20	1.24	0.620
Bromoform	75-25-2	1.24	U	6.20	1.24	0.620
Bromomethane	74-83-9	2.48	U	6.20	2.48	1.24
2-Butanone	78-93-3	6.20	U	12.4	6.20	3.10
n-Butylbenzene	104-51-8	1.24	U	6.20	1.24	0.620
sec-Butylbenzene	135-98-8	1.24	U	6.20	1.24	0.620
tert-Butylbenzene	98-06-6	1.24	U	6.20	1.24	0.620
Carbon disulfide	75-15-0	1.24	U	6.20	1.24	0.620
Carbon tetrachloride	56-23-5	1.24	U	6.20	1.24	0.620
Chlorobenzene	108-90-7	1.24	U	6.20	1.24	0.620
Chlorodibromomethane	124-48-1	1.24	U	6.20	1.24	0.620
Chloroethane	75-00-3	2.48	U	6.20	2.48	1.24
Chloroform	67-66-3	1.24	U	6.20	1.24	0.620
Chloromethane	74-87-3	4.96	U	12.4	4.96	2.48
2-Chlorotoluene	95-49-8	1.24	U	6.20	1.24	0.620
4-Chlorotoluene	106-43-4	1.24	U	6.20	1.24	0.620
1,2-Dibromo-3-chloropropane	96-12-8	4.96	U	12.4	4.96	2.48
1,2-Dibromoethane	106-93-4	1.24	U	6.20	1.24	0.620
Dibromomethane	74-95-3	1.24	U	6.20	1.24	0.620
1,2-Dichlorobenzene	95-50-1	1.24	U	6.20	1.24	0.620
1,3-Dichlorobenzene	541-73-1	1.24	U	6.20	1.24	0.620
1,4-Dichlorobenzene	106-46-7	1.24	U	6.20	1.24	0.620
Dichlorodifluoromethane	75-71-8	2.48	U	6.20	2.48	1.24
1,1-Dichloroethane	75-34-3	2.48	U	6.20	2.48	1.24
1,2-Dichloroethane	107-06-2	1.24	U	6.20	1.24	0.620
1,1-Dichloroethene	75-35-4	1.24	U	6.20	1.24	0.620
cis-1,2-Dichloroethene	156-59-2	1.24	U	6.20	1.24	0.620

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Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.24	U	6.20	1.24	0.620
1,2-Dichloropropane	78-87-5	1.24	U	6.20	1.24	0.620
1,3-Dichloropropane	142-28-9	1.24	U	6.20	1.24	0.620
2,2-Dichloropropane	594-20-7	1.24	U	6.20	1.24	0.620
cis-1,3-Dichloropropene	10061-01-5	1.24	U	6.20	1.24	0.620
trans-1,3-Dichloropropene	10061-02-6	1.24	U	6.20	1.24	0.620
1,1-Dichloropropene	563-58-6	1.24	U	6.20	1.24	0.620
Ethylbenzene	100-41-4	1.24	U	6.20	1.24	0.620
2-Hexanone	591-78-6	6.20	U	12.4	6.20	3.10
Hexachlorobutadiene	87-68-3	1.24	U	6.20	1.24	0.620
Isopropylbenzene	98-82-8	1.24	U	6.20	1.24	0.620
p-Isopropyltoluene	99-87-6	4.08	J	6.20	1.24	0.620
4-Methyl-2-pentanone	108-10-1	6.20	U	12.4	6.20	3.10
Methylene chloride	75-09-2	2.48	U	6.20	2.48	1.24
Naphthalene	91-20-3	1.24	U	6.20	1.24	0.620
n-Propylbenzene	103-65-1	1.24	U	6.20	1.24	0.620
Styrene	100-42-5	1.24	U	6.20	1.24	0.620
1,1,1,2-Tetrachloroethane	630-20-6	1.24	U	6.20	1.24	0.620
1,1,2,2-Tetrachloroethane	79-34-5	1.24	U	6.20	1.24	0.620
Tetrachloroethene	127-18-4	1.24	U	6.20	1.24	0.620
Toluene	108-88-3	1.24	U	6.20	1.24	0.620
1,2,3-Trichlorobenzene	87-61-6	1.24	U	6.20	1.24	0.620
1,2,4-Trichlorobenzene	120-82-1	1.24	U	6.20	1.24	0.620
1,1,1-Trichloroethane	71-55-6	1.24	U	6.20	1.24	0.620
1,1,2-Trichloroethane	79-00-5	1.24	U	6.20	1.24	0.620
Trichloroethene	79-01-6	1.24	U	6.20	1.24	0.620
Trichlorofluoromethane	75-69-4	2.48	U	6.20	2.48	1.24
1,2,3-Trichloropropane	96-18-4	2.48	U	6.20	2.48	1.24
1,2,4-Trimethylbenzene	95-63-6	1.24	U	6.20	1.24	0.620
1,3,5-Trimethylbenzene	108-67-8	1.24	U	6.20	1.24	0.620
Vinyl chloride	75-01-4	2.48	U	6.20	2.48	1.24
o-Xylene	95-47-6	1.24	U	6.20	1.24	0.620
m-,p-Xylene	179601-23-1	1.24	U	6.20	1.24	0.620

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.5	80	120	
1,2-Dichloroethane-d4	97.0	80	120	
Toluene-d8	106	85	115	
4-Bromofluorobenzene	117	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT02(15-15.5)260216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:26
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	03/01/2016 01:36
Collect Date:	02/26/2016 09:00	**Dilution:**	1	**File ID:**	9M972983
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	78.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	8.14	J	23.8	11.9	5.95
Benzene	71-43-2	1.19	U	5.95	1.19	0.595
Bromobenzene	108-86-1	1.19	U	5.95	1.19	0.595
Bromochloromethane	74-97-5	2.38	U	5.95	2.38	1.19
Bromodichloromethane	75-27-4	1.19	U	5.95	1.19	0.595
Bromoform	75-25-2	1.19	U	5.95	1.19	0.595
Bromomethane	74-83-9	2.38	U	5.95	2.38	1.19
2-Butanone	78-93-3	5.94	U	11.9	5.94	2.97
n-Butylbenzene	104-51-8	1.19	U	5.95	1.19	0.595
sec-Butylbenzene	135-98-8	1.19	U	5.95	1.19	0.595
tert-Butylbenzene	98-06-6	1.19	U	5.95	1.19	0.595
Carbon disulfide	75-15-0	1.19	U	5.95	1.19	0.595
Carbon tetrachloride	56-23-5	1.19	U	5.95	1.19	0.595
Chlorobenzene	108-90-7	1.19	U	5.95	1.19	0.595
Chlorodibromomethane	124-48-1	1.19	U	5.95	1.19	0.595
Chloroethane	75-00-3	2.38	U	5.95	2.38	1.19
Chloroform	67-66-3	1.19	U	5.95	1.19	0.595
Chloromethane	74-87-3	4.76	U	11.9	4.76	2.38
2-Chlorotoluene	95-49-8	1.19	U	5.95	1.19	0.595
4-Chlorotoluene	106-43-4	1.19	U	5.95	1.19	0.595
1,2-Dibromo-3-chloropropane	96-12-8	4.76	U	11.9	4.76	2.38
1,2-Dibromoethane	106-93-4	1.19	U	5.95	1.19	0.595
Dibromomethane	74-95-3	1.19	U	5.95	1.19	0.595
1,2-Dichlorobenzene	95-50-1	1.19	U	5.95	1.19	0.595
1,3-Dichlorobenzene	541-73-1	1.19	U	5.95	1.19	0.595
1,4-Dichlorobenzene	106-46-7	1.19	U	5.95	1.19	0.595
Dichlorodifluoromethane	75-71-8	2.38	U	5.95	2.38	1.19
1,1-Dichloroethane	75-34-3	2.38	U	5.95	2.38	1.19
1,2-Dichloroethane	107-06-2	1.19	U	5.95	1.19	0.595
1,1-Dichloroethene	75-35-4	1.19	U	5.95	1.19	0.595
cis-1,2-Dichloroethene	156-59-2	1.19	U	5.95	1.19	0.595

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Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.19	U	5.95	1.19	0.595
1,2-Dichloropropane	78-87-5	1.19	U	5.95	1.19	0.595
1,3-Dichloropropane	142-28-9	1.19	U	5.95	1.19	0.595
2,2-Dichloropropane	594-20-7	1.19	U	5.95	1.19	0.595
cis-1,3-Dichloropropene	10061-01-5	1.19	U	5.95	1.19	0.595
trans-1,3-Dichloropropene	10061-02-6	1.19	U	5.95	1.19	0.595
1,1-Dichloropropene	563-58-6	1.19	U	5.95	1.19	0.595
Ethylbenzene	100-41-4	1.19	U	5.95	1.19	0.595
2-Hexanone	591-78-6	5.94	U	11.9	5.94	2.97
Hexachlorobutadiene	87-68-3	1.19	U	5.95	1.19	0.595
Isopropylbenzene	98-82-8	1.19	U	5.95	1.19	0.595
p-Isopropyltoluene	99-87-6	1.35	J	5.95	1.19	0.595
4-Methyl-2-pentanone	108-10-1	5.94	U	11.9	5.94	2.97
Methylene chloride	75-09-2	2.38	U	5.95	2.38	1.19
Naphthalene	91-20-3	1.19	U	5.95	1.19	0.595
n-Propylbenzene	103-65-1	1.19	U	5.95	1.19	0.595
Styrene	100-42-5	1.19	U	5.95	1.19	0.595
1,1,1,2-Tetrachloroethane	630-20-6	1.19	U	5.95	1.19	0.595
1,1,2,2-Tetrachloroethane	79-34-5	1.19	U	5.95	1.19	0.595
Tetrachloroethene	127-18-4	1.19	U	5.95	1.19	0.595
Toluene	108-88-3	1.19	U	5.95	1.19	0.595
1,2,3-Trichlorobenzene	87-61-6	1.19	U	5.95	1.19	0.595
1,2,4-Trichlorobenzene	120-82-1	1.19	U	5.95	1.19	0.595
1,1,1-Trichloroethane	71-55-6	1.19	U	5.95	1.19	0.595
1,1,2-Trichloroethane	79-00-5	1.19	U	5.95	1.19	0.595
Trichloroethene	79-01-6	1.19	U	5.95	1.19	0.595
Trichlorofluoromethane	75-69-4	2.38	U	5.95	2.38	1.19
1,2,3-Trichloropropane	96-18-4	2.38	U	5.95	2.38	1.19
1,2,4-Trimethylbenzene	95-63-6	1.19	U	5.95	1.19	0.595
1,3,5-Trimethylbenzene	108-67-8	1.19	U	5.95	1.19	0.595
Vinyl chloride	75-01-4	2.38	U	5.95	2.38	1.19
o-Xylene	95-47-6	1.19	U	5.95	1.19	0.595
m-,p-Xylene	179601-23-1	1.19	U	5.95	1.19	0.595

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.9	80	120	
1,2-Dichloroethane-d4	98.7	80	120	
Toluene-d8	108	85	115	
4-Bromofluorobenzene	115	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT02(22-22.5)260216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:26
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	03/01/2016 02:06
Collect Date:	02/26/2016 09:15	**Dilution:**	1	**File ID:**	9M972984
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.4	U	26.8	13.4	6.70
Benzene	71-43-2	1.34	U	6.70	1.34	0.670
Bromobenzene	108-86-1	1.34	U	6.70	1.34	0.670
Bromochloromethane	74-97-5	2.68	U	6.70	2.68	1.34
Bromodichloromethane	75-27-4	1.34	U	6.70	1.34	0.670
Bromoform	75-25-2	1.34	U	6.70	1.34	0.670
Bromomethane	74-83-9	2.68	U	6.70	2.68	1.34
2-Butanone	78-93-3	6.70	U	13.4	6.70	3.35
n-Butylbenzene	104-51-8	1.34	U	6.70	1.34	0.670
sec-Butylbenzene	135-98-8	1.34	U	6.70	1.34	0.670
tert-Butylbenzene	98-06-6	1.34	U	6.70	1.34	0.670
Carbon disulfide	75-15-0	1.34	U	6.70	1.34	0.670
Carbon tetrachloride	56-23-5	1.34	U	6.70	1.34	0.670
Chlorobenzene	108-90-7	1.34	U	6.70	1.34	0.670
Chlorodibromomethane	124-48-1	1.34	U	6.70	1.34	0.670
Chloroethane	75-00-3	2.68	U	6.70	2.68	1.34
Chloroform	67-66-3	1.34	U	6.70	1.34	0.670
Chloromethane	74-87-3	5.36	U	13.4	5.36	2.68
2-Chlorotoluene	95-49-8	1.34	U	6.70	1.34	0.670
4-Chlorotoluene	106-43-4	1.34	U	6.70	1.34	0.670
1,2-Dibromo-3-chloropropane	96-12-8	5.36	U	13.4	5.36	2.68
1,2-Dibromoethane	106-93-4	1.34	U	6.70	1.34	0.670
Dibromomethane	74-95-3	1.34	U	6.70	1.34	0.670
1,2-Dichlorobenzene	95-50-1	1.34	U	6.70	1.34	0.670
1,3-Dichlorobenzene	541-73-1	1.34	U	6.70	1.34	0.670
1,4-Dichlorobenzene	106-46-7	1.34	U	6.70	1.34	0.670
Dichlorodifluoromethane	75-71-8	2.68	U	6.70	2.68	1.34
1,1-Dichloroethane	75-34-3	2.68	U	6.70	2.68	1.34
1,2-Dichloroethane	107-06-2	1.34	U	6.70	1.34	0.670
1,1-Dichloroethene	75-35-4	1.34	U	6.70	1.34	0.670
cis-1,2-Dichloroethene	156-59-2	1.34	U	6.70	1.34	0.670

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Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.34	U	6.70	1.34	0.670
1,2-Dichloropropane	78-87-5	1.34	U	6.70	1.34	0.670
1,3-Dichloropropane	142-28-9	1.34	U	6.70	1.34	0.670
2,2-Dichloropropane	594-20-7	1.34	U	6.70	1.34	0.670
cis-1,3-Dichloropropene	10061-01-5	1.34	U	6.70	1.34	0.670
trans-1,3-Dichloropropene	10061-02-6	1.34	U	6.70	1.34	0.670
1,1-Dichloropropene	563-58-6	1.34	U	6.70	1.34	0.670
Ethylbenzene	100-41-4	1.34	U	6.70	1.34	0.670
2-Hexanone	591-78-6	6.70	U	13.4	6.70	3.35
Hexachlorobutadiene	87-68-3	1.34	U	6.70	1.34	0.670
Isopropylbenzene	98-82-8	1.34	U	6.70	1.34	0.670
p-Isopropyltoluene	99-87-6	1.34	U	6.70	1.34	0.670
4-Methyl-2-pentanone	108-10-1	6.70	U	13.4	6.70	3.35
Methylene chloride	75-09-2	2.68	U	6.70	2.68	1.34
Naphthalene	91-20-3	1.34	U	6.70	1.34	0.670
n-Propylbenzene	103-65-1	1.34	U	6.70	1.34	0.670
Styrene	100-42-5	1.34	U	6.70	1.34	0.670
1,1,1,2-Tetrachloroethane	630-20-6	1.34	U	6.70	1.34	0.670
1,1,2,2-Tetrachloroethane	79-34-5	1.34	U	6.70	1.34	0.670
Tetrachloroethene	127-18-4	1.34	U	6.70	1.34	0.670
Toluene	108-88-3	1.34	U	6.70	1.34	0.670
1,2,3-Trichlorobenzene	87-61-6	1.34	U	6.70	1.34	0.670
1,2,4-Trichlorobenzene	120-82-1	1.34	U	6.70	1.34	0.670
1,1,1-Trichloroethane	71-55-6	1.34	U	6.70	1.34	0.670
1,1,2-Trichloroethane	79-00-5	1.34	U	6.70	1.34	0.670
Trichloroethene	79-01-6	1.34	U	6.70	1.34	0.670
Trichlorofluoromethane	75-69-4	2.68	U	6.70	2.68	1.34
1,2,3-Trichloropropane	96-18-4	2.68	U	6.70	2.68	1.34
1,2,4-Trimethylbenzene	95-63-6	1.34	U	6.70	1.34	0.670
1,3,5-Trimethylbenzene	108-67-8	1.34	U	6.70	1.34	0.670
Vinyl chloride	75-01-4	2.68	U	6.70	2.68	1.34
o-Xylene	95-47-6	1.34	U	6.70	1.34	0.670
m-,p-Xylene	179601-23-1	1.34	U	6.70	1.34	0.670

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.7	80	120	
1,2-Dichloroethane-d4	95.4	80	120	
Toluene-d8	107	85	115	
4-Bromofluorobenzene	114	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT03(5-5.5)260216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:08
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	03/01/2016 02:36
Collect Date:	02/26/2016 11:15	**Dilution:**	1	**File ID:**	9M972985
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	25.0	12.5	6.25
Benzene	71-43-2	1.25	U	6.25	1.25	0.625
Bromobenzene	108-86-1	1.25	U	6.25	1.25	0.625
Bromochloromethane	74-97-5	2.50	U	6.25	2.50	1.25
Bromodichloromethane	75-27-4	1.25	U	6.25	1.25	0.625
Bromoform	75-25-2	1.25	U	6.25	1.25	0.625
Bromomethane	74-83-9	2.50	U	6.25	2.50	1.25
2-Butanone	78-93-3	6.26	U	12.5	6.26	3.13
n-Butylbenzene	104-51-8	1.25	U	6.25	1.25	0.625
sec-Butylbenzene	135-98-8	1.25	U	6.25	1.25	0.625
tert-Butylbenzene	98-06-6	1.25	U	6.25	1.25	0.625
Carbon disulfide	75-15-0	1.25	U	6.25	1.25	0.625
Carbon tetrachloride	56-23-5	1.25	U	6.25	1.25	0.625
Chlorobenzene	108-90-7	1.25	U	6.25	1.25	0.625
Chlorodibromomethane	124-48-1	1.25	U	6.25	1.25	0.625
Chloroethane	75-00-3	2.50	U	6.25	2.50	1.25
Chloroform	67-66-3	1.25	U	6.25	1.25	0.625
Chloromethane	74-87-3	5.00	U	12.5	5.00	2.50
2-Chlorotoluene	95-49-8	1.25	U	6.25	1.25	0.625
4-Chlorotoluene	106-43-4	1.25	U	6.25	1.25	0.625
1,2-Dibromo-3-chloropropane	96-12-8	5.00	U	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	6.25	1.25	0.625
Dibromomethane	74-95-3	1.25	U	6.25	1.25	0.625
1,2-Dichlorobenzene	95-50-1	1.25	U	6.25	1.25	0.625
1,3-Dichlorobenzene	541-73-1	1.25	U	6.25	1.25	0.625
1,4-Dichlorobenzene	106-46-7	1.25	U	6.25	1.25	0.625
Dichlorodifluoromethane	75-71-8	2.50	U	6.25	2.50	1.25
1,1-Dichloroethane	75-34-3	2.50	U	6.25	2.50	1.25
1,2-Dichloroethane	107-06-2	1.25	U	6.25	1.25	0.625
1,1-Dichloroethene	75-35-4	1.25	U	6.25	1.25	0.625
cis-1,2-Dichloroethene	156-59-2	1.25	U	6.25	1.25	0.625

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Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.25	U	6.25	1.25	0.625
1,2-Dichloropropane	78-87-5	1.25	U	6.25	1.25	0.625
1,3-Dichloropropane	142-28-9	1.25	U	6.25	1.25	0.625
2,2-Dichloropropane	594-20-7	1.25	U	6.25	1.25	0.625
cis-1,3-Dichloropropene	10061-01-5	1.25	U	6.25	1.25	0.625
trans-1,3-Dichloropropene	10061-02-6	1.25	U	6.25	1.25	0.625
1,1-Dichloropropene	563-58-6	1.25	U	6.25	1.25	0.625
Ethylbenzene	100-41-4	1.25	U	6.25	1.25	0.625
2-Hexanone	591-78-6	6.26	U	12.5	6.26	3.13
Hexachlorobutadiene	87-68-3	1.25	U	6.25	1.25	0.625
Isopropylbenzene	98-82-8	1.25	U	6.25	1.25	0.625
p-Isopropyltoluene	99-87-6	1.25	U	6.25	1.25	0.625
4-Methyl-2-pentanone	108-10-1	6.26	U	12.5	6.26	3.13
Methylene chloride	75-09-2	2.50	U	6.25	2.50	1.25
Naphthalene	91-20-3	1.25	U	6.25	1.25	0.625
n-Propylbenzene	103-65-1	1.25	U	6.25	1.25	0.625
Styrene	100-42-5	1.25	U	6.25	1.25	0.625
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	6.25	1.25	0.625
1,1,2,2-Tetrachloroethane	79-34-5	1.25	U	6.25	1.25	0.625
Tetrachloroethene	127-18-4	1.25	U	6.25	1.25	0.625
Toluene	108-88-3	1.25	U	6.25	1.25	0.625
1,2,3-Trichlorobenzene	87-61-6	1.25	U	6.25	1.25	0.625
1,2,4-Trichlorobenzene	120-82-1	1.25	U	6.25	1.25	0.625
1,1,1-Trichloroethane	71-55-6	1.25	U	6.25	1.25	0.625
1,1,2-Trichloroethane	79-00-5	1.25	U	6.25	1.25	0.625
Trichloroethene	79-01-6	1.25	U	6.25	1.25	0.625
Trichlorofluoromethane	75-69-4	2.50	U	6.25	2.50	1.25
1,2,3-Trichloropropane	96-18-4	2.50	U	6.25	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	6.25	1.25	0.625
1,3,5-Trimethylbenzene	108-67-8	1.25	U	6.25	1.25	0.625
Vinyl chloride	75-01-4	2.50	U	6.25	2.50	1.25
o-Xylene	95-47-6	1.25	U	6.25	1.25	0.625
m-,p-Xylene	179601-23-1	1.25	U	6.25	1.25	0.625

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.3	80	120	
1,2-Dichloroethane-d4	101	80	120	
Toluene-d8	106	85	115	
4-Bromofluorobenzene	113	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT03(10-10.5)260216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:28
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	03/01/2016 03:06
Collect Date:	02/26/2016 11:17	**Dilution:**	1	**File ID:**	9M972986
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	87.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.4	U	22.8	11.4	5.69
Benzene	71-43-2	1.14	U	5.69	1.14	0.569
Bromobenzene	108-86-1	1.14	U	5.69	1.14	0.569
Bromochloromethane	74-97-5	2.28	U	5.69	2.28	1.14
Bromodichloromethane	75-27-4	1.14	U	5.69	1.14	0.569
Bromoform	75-25-2	1.14	U	5.69	1.14	0.569
Bromomethane	74-83-9	2.28	U	5.69	2.28	1.14
2-Butanone	78-93-3	5.70	U	11.4	5.70	2.85
n-Butylbenzene	104-51-8	1.14	U	5.69	1.14	0.569
sec-Butylbenzene	135-98-8	1.14	U	5.69	1.14	0.569
tert-Butylbenzene	98-06-6	1.14	U	5.69	1.14	0.569
Carbon disulfide	75-15-0	1.14	U	5.69	1.14	0.569
Carbon tetrachloride	56-23-5	1.14	U	5.69	1.14	0.569
Chlorobenzene	108-90-7	1.14	U	5.69	1.14	0.569
Chlorodibromomethane	124-48-1	1.14	U	5.69	1.14	0.569
Chloroethane	75-00-3	2.28	U	5.69	2.28	1.14
Chloroform	67-66-3	1.14	U	5.69	1.14	0.569
Chloromethane	74-87-3	4.56	U	11.4	4.56	2.28
2-Chlorotoluene	95-49-8	1.14	U	5.69	1.14	0.569
4-Chlorotoluene	106-43-4	1.14	U	5.69	1.14	0.569
1,2-Dibromo-3-chloropropane	96-12-8	4.56	U	11.4	4.56	2.28
1,2-Dibromoethane	106-93-4	1.14	U	5.69	1.14	0.569
Dibromomethane	74-95-3	1.14	U	5.69	1.14	0.569
1,2-Dichlorobenzene	95-50-1	1.14	U	5.69	1.14	0.569
1,3-Dichlorobenzene	541-73-1	1.14	U	5.69	1.14	0.569
1,4-Dichlorobenzene	106-46-7	1.14	U	5.69	1.14	0.569
Dichlorodifluoromethane	75-71-8	2.28	U	5.69	2.28	1.14
1,1-Dichloroethane	75-34-3	2.28	U	5.69	2.28	1.14
1,2-Dichloroethane	107-06-2	1.14	U	5.69	1.14	0.569
1,1-Dichloroethene	75-35-4	1.14	U	5.69	1.14	0.569
cis-1,2-Dichloroethene	156-59-2	1.14	U	5.69	1.14	0.569

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Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.14	U	5.69	1.14	0.569
1,2-Dichloropropane	78-87-5	1.14	U	5.69	1.14	0.569
1,3-Dichloropropane	142-28-9	1.14	U	5.69	1.14	0.569
2,2-Dichloropropane	594-20-7	1.14	U	5.69	1.14	0.569
cis-1,3-Dichloropropene	10061-01-5	1.14	U	5.69	1.14	0.569
trans-1,3-Dichloropropene	10061-02-6	1.14	U	5.69	1.14	0.569
1,1-Dichloropropene	563-58-6	1.14	U	5.69	1.14	0.569
Ethylbenzene	100-41-4	1.14	U	5.69	1.14	0.569
2-Hexanone	591-78-6	5.70	U	11.4	5.70	2.85
Hexachlorobutadiene	87-68-3	1.14	U	5.69	1.14	0.569
Isopropylbenzene	98-82-8	1.14	U	5.69	1.14	0.569
p-Isopropyltoluene	99-87-6	1.14	U	5.69	1.14	0.569
4-Methyl-2-pentanone	108-10-1	5.70	U	11.4	5.70	2.85
Methylene chloride	75-09-2	2.28	U	5.69	2.28	1.14
Naphthalene	91-20-3	1.14	U	5.69	1.14	0.569
n-Propylbenzene	103-65-1	1.14	U	5.69	1.14	0.569
Styrene	100-42-5	1.14	U	5.69	1.14	0.569
1,1,1,2-Tetrachloroethane	630-20-6	1.14	U	5.69	1.14	0.569
1,1,2,2-Tetrachloroethane	79-34-5	1.14	U	5.69	1.14	0.569
Tetrachloroethene	127-18-4	1.14	U	5.69	1.14	0.569
Toluene	108-88-3	1.14	U	5.69	1.14	0.569
1,2,3-Trichlorobenzene	87-61-6	1.14	U	5.69	1.14	0.569
1,2,4-Trichlorobenzene	120-82-1	1.14	U	5.69	1.14	0.569
1,1,1-Trichloroethane	71-55-6	1.14	U	5.69	1.14	0.569
1,1,2-Trichloroethane	79-00-5	1.14	U	5.69	1.14	0.569
Trichloroethene	79-01-6	1.14	U	5.69	1.14	0.569
Trichlorofluoromethane	75-69-4	2.28	U	5.69	2.28	1.14
1,2,3-Trichloropropane	96-18-4	2.28	U	5.69	2.28	1.14
1,2,4-Trimethylbenzene	95-63-6	1.14	U	5.69	1.14	0.569
1,3,5-Trimethylbenzene	108-67-8	1.14	U	5.69	1.14	0.569
Vinyl chloride	75-01-4	2.28	U	5.69	2.28	1.14
o-Xylene	95-47-6	1.14	U	5.69	1.14	0.569
m-,p-Xylene	179601-23-1	1.14	U	5.69	1.14	0.569

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.6	80	120	
1,2-Dichloroethane-d4	95.0	80	120	
Toluene-d8	107	85	115	
4-Bromofluorobenzene	110	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT03(14.5-15)260216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:29
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	03/01/2016 03:37
Collect Date:	02/26/2016 11:19	**Dilution:**	1	**File ID:**	9M972987
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.1	U	24.3	12.1	6.07
Benzene	71-43-2	1.21	U	6.07	1.21	0.607
Bromobenzene	108-86-1	1.21	U	6.07	1.21	0.607
Bromochloromethane	74-97-5	2.42	U	6.07	2.42	1.21
Bromodichloromethane	75-27-4	1.21	U	6.07	1.21	0.607
Bromoform	75-25-2	1.21	U	6.07	1.21	0.607
Bromomethane	74-83-9	2.42	U	6.07	2.42	1.21
2-Butanone	78-93-3	6.08	U	12.1	6.08	3.04
n-Butylbenzene	104-51-8	1.21	U	6.07	1.21	0.607
sec-Butylbenzene	135-98-8	1.21	U	6.07	1.21	0.607
tert-Butylbenzene	98-06-6	1.21	U	6.07	1.21	0.607
Carbon disulfide	75-15-0	1.21	U	6.07	1.21	0.607
Carbon tetrachloride	56-23-5	1.21	U	6.07	1.21	0.607
Chlorobenzene	108-90-7	1.21	U	6.07	1.21	0.607
Chlorodibromomethane	124-48-1	1.21	U	6.07	1.21	0.607
Chloroethane	75-00-3	2.42	U	6.07	2.42	1.21
Chloroform	67-66-3	1.21	U	6.07	1.21	0.607
Chloromethane	74-87-3	4.86	U	12.1	4.86	2.43
2-Chlorotoluene	95-49-8	1.21	U	6.07	1.21	0.607
4-Chlorotoluene	106-43-4	1.21	U	6.07	1.21	0.607
1,2-Dibromo-3-chloropropane	96-12-8	4.86	U	12.1	4.86	2.43
1,2-Dibromoethane	106-93-4	1.21	U	6.07	1.21	0.607
Dibromomethane	74-95-3	1.21	U	6.07	1.21	0.607
1,2-Dichlorobenzene	95-50-1	1.21	U	6.07	1.21	0.607
1,3-Dichlorobenzene	541-73-1	1.21	U	6.07	1.21	0.607
1,4-Dichlorobenzene	106-46-7	1.21	U	6.07	1.21	0.607
Dichlorodifluoromethane	75-71-8	2.42	U	6.07	2.42	1.21
1,1-Dichloroethane	75-34-3	2.42	U	6.07	2.42	1.21
1,2-Dichloroethane	107-06-2	1.21	U	6.07	1.21	0.607
1,1-Dichloroethene	75-35-4	1.21	U	6.07	1.21	0.607
cis-1,2-Dichloroethene	156-59-2	1.21	U	6.07	1.21	0.607

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Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.21	U	6.07	1.21	0.607
1,2-Dichloropropane	78-87-5	1.21	U	6.07	1.21	0.607
1,3-Dichloropropane	142-28-9	1.21	U	6.07	1.21	0.607
2,2-Dichloropropane	594-20-7	1.21	U	6.07	1.21	0.607
cis-1,3-Dichloropropene	10061-01-5	1.21	U	6.07	1.21	0.607
trans-1,3-Dichloropropene	10061-02-6	1.21	U	6.07	1.21	0.607
1,1-Dichloropropene	563-58-6	1.21	U	6.07	1.21	0.607
Ethylbenzene	100-41-4	1.21	U	6.07	1.21	0.607
2-Hexanone	591-78-6	6.08	U	12.1	6.08	3.04
Hexachlorobutadiene	87-68-3	1.21	U	6.07	1.21	0.607
Isopropylbenzene	98-82-8	1.21	U	6.07	1.21	0.607
p-Isopropyltoluene	99-87-6	1.21	U	6.07	1.21	0.607
4-Methyl-2-pentanone	108-10-1	6.08	U	12.1	6.08	3.04
Methylene chloride	75-09-2	2.42	U	6.07	2.42	1.21
Naphthalene	91-20-3	1.21	U	6.07	1.21	0.607
n-Propylbenzene	103-65-1	1.21	U	6.07	1.21	0.607
Styrene	100-42-5	1.21	U	6.07	1.21	0.607
1,1,1,2-Tetrachloroethane	630-20-6	1.21	U	6.07	1.21	0.607
1,1,2,2-Tetrachloroethane	79-34-5	1.21	U	6.07	1.21	0.607
Tetrachloroethene	127-18-4	1.21	U	6.07	1.21	0.607
Toluene	108-88-3	1.21	U	6.07	1.21	0.607
1,2,3-Trichlorobenzene	87-61-6	1.21	U	6.07	1.21	0.607
1,2,4-Trichlorobenzene	120-82-1	1.21	U	6.07	1.21	0.607
1,1,1-Trichloroethane	71-55-6	1.21	U	6.07	1.21	0.607
1,1,2-Trichloroethane	79-00-5	1.21	U	6.07	1.21	0.607
Trichloroethene	79-01-6	1.21	U	6.07	1.21	0.607
Trichlorofluoromethane	75-69-4	2.42	U	6.07	2.42	1.21
1,2,3-Trichloropropane	96-18-4	2.42	U	6.07	2.42	1.21
1,2,4-Trimethylbenzene	95-63-6	1.21	U	6.07	1.21	0.607
1,3,5-Trimethylbenzene	108-67-8	1.21	U	6.07	1.21	0.607
Vinyl chloride	75-01-4	2.42	U	6.07	2.42	1.21
o-Xylene	95-47-6	1.21	U	6.07	1.21	0.607
m-,p-Xylene	179601-23-1	1.21	U	6.07	1.21	0.607

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	80	120	
1,2-Dichloroethane-d4	106	80	120	
Toluene-d8	106	85	115	
4-Bromofluorobenzene	110	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT03(17.5-18)260216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:29
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	03/01/2016 04:07
Collect Date:	02/26/2016 11:21	**Dilution:**	1	**File ID:**	9M972988
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.3	U	26.7	13.3	6.67
Benzene	71-43-2	1.33	U	6.67	1.33	0.667
Bromobenzene	108-86-1	1.33	U	6.67	1.33	0.667
Bromochloromethane	74-97-5	2.66	U	6.67	2.66	1.33
Bromodichloromethane	75-27-4	1.33	U	6.67	1.33	0.667
Bromoform	75-25-2	1.33	U	6.67	1.33	0.667
Bromomethane	74-83-9	2.66	U	6.67	2.66	1.33
2-Butanone	78-93-3	6.68	U	13.3	6.68	3.34
n-Butylbenzene	104-51-8	1.33	U	6.67	1.33	0.667
sec-Butylbenzene	135-98-8	1.33	U	6.67	1.33	0.667
tert-Butylbenzene	98-06-6	1.33	U	6.67	1.33	0.667
Carbon disulfide	75-15-0	1.33	U	6.67	1.33	0.667
Carbon tetrachloride	56-23-5	1.33	U	6.67	1.33	0.667
Chlorobenzene	108-90-7	1.33	U	6.67	1.33	0.667
Chlorodibromomethane	124-48-1	1.33	U	6.67	1.33	0.667
Chloroethane	75-00-3	2.66	U	6.67	2.66	1.33
Chloroform	67-66-3	1.33	U	6.67	1.33	0.667
Chloromethane	74-87-3	5.34	U	13.3	5.34	2.67
2-Chlorotoluene	95-49-8	1.33	U	6.67	1.33	0.667
4-Chlorotoluene	106-43-4	1.33	U	6.67	1.33	0.667
1,2-Dibromo-3-chloropropane	96-12-8	5.34	U	13.3	5.34	2.67
1,2-Dibromoethane	106-93-4	1.33	U	6.67	1.33	0.667
Dibromomethane	74-95-3	1.33	U	6.67	1.33	0.667
1,2-Dichlorobenzene	95-50-1	1.33	U	6.67	1.33	0.667
1,3-Dichlorobenzene	541-73-1	1.33	U	6.67	1.33	0.667
1,4-Dichlorobenzene	106-46-7	1.33	U	6.67	1.33	0.667
Dichlorodifluoromethane	75-71-8	2.66	U	6.67	2.66	1.33
1,1-Dichloroethane	75-34-3	2.66	U	6.67	2.66	1.33
1,2-Dichloroethane	107-06-2	1.33	U	6.67	1.33	0.667
1,1-Dichloroethene	75-35-4	1.33	U	6.67	1.33	0.667
cis-1,2-Dichloroethene	156-59-2	1.33	U	6.67	1.33	0.667

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Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.33	U	6.67	1.33	0.667
1,2-Dichloropropane	78-87-5	1.33	U	6.67	1.33	0.667
1,3-Dichloropropane	142-28-9	1.33	U	6.67	1.33	0.667
2,2-Dichloropropane	594-20-7	1.33	U	6.67	1.33	0.667
cis-1,3-Dichloropropene	10061-01-5	1.33	U	6.67	1.33	0.667
trans-1,3-Dichloropropene	10061-02-6	1.33	U	6.67	1.33	0.667
1,1-Dichloropropene	563-58-6	1.33	U	6.67	1.33	0.667
Ethylbenzene	100-41-4	1.33	U	6.67	1.33	0.667
2-Hexanone	591-78-6	6.68	U	13.3	6.68	3.34
Hexachlorobutadiene	87-68-3	1.33	U	6.67	1.33	0.667
Isopropylbenzene	98-82-8	1.33	U	6.67	1.33	0.667
p-Isopropyltoluene	99-87-6	1.33	U	6.67	1.33	0.667
4-Methyl-2-pentanone	108-10-1	6.68	U	13.3	6.68	3.34
Methylene chloride	75-09-2	2.66	U	6.67	2.66	1.33
Naphthalene	91-20-3	1.33	U	6.67	1.33	0.667
n-Propylbenzene	103-65-1	1.33	U	6.67	1.33	0.667
Styrene	100-42-5	1.33	U	6.67	1.33	0.667
1,1,1,2-Tetrachloroethane	630-20-6	1.33	U	6.67	1.33	0.667
1,1,2,2-Tetrachloroethane	79-34-5	1.33	U	6.67	1.33	0.667
Tetrachloroethene	127-18-4	1.33	U	6.67	1.33	0.667
Toluene	108-88-3	1.33	U	6.67	1.33	0.667
1,2,3-Trichlorobenzene	87-61-6	1.33	U	6.67	1.33	0.667
1,2,4-Trichlorobenzene	120-82-1	1.33	U	6.67	1.33	0.667
1,1,1-Trichloroethane	71-55-6	1.33	U	6.67	1.33	0.667
1,1,2-Trichloroethane	79-00-5	1.33	U	6.67	1.33	0.667
Trichloroethene	79-01-6	1.33	U	6.67	1.33	0.667
Trichlorofluoromethane	75-69-4	2.66	U	6.67	2.66	1.33
1,2,3-Trichloropropane	96-18-4	2.66	U	6.67	2.66	1.33
1,2,4-Trimethylbenzene	95-63-6	1.33	U	6.67	1.33	0.667
1,3,5-Trimethylbenzene	108-67-8	1.33	U	6.67	1.33	0.667
Vinyl chloride	75-01-4	2.66	U	6.67	2.66	1.33
o-Xylene	95-47-6	1.33	U	6.67	1.33	0.667
m-,p-Xylene	179601-23-1	1.33	U	6.67	1.33	0.667

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.9	80	120	
1,2-Dichloroethane-d4	96.2	80	120	
Toluene-d8	107	85	115	
4-Bromofluorobenzene	111	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.
VOA Preparation/Preservation/Extraction Log

Batch #: WG559084
Analyst: AWE
Method: 5030B/5030C/5035
Run Date: 02/29/2016 12:19
Product: 8260
Purge and trap methanol COA18540
Purified Lab Sand Lot # COA18552

SAMPLE #	Fraction	Collected	Preserved	PCT-S	Tare Wt	Total Wt	Sample Wt	Water	MeOH	Vt	Comments
L16021357-01	A	02/25/16 11:30	02/29/16 12:19	81.7			4.90	5		5	
L16021357-02	A	02/25/16 11:37	02/29/16 12:21	88.2			5.22	5		5	
L16021357-03	A	02/25/16 14:23	02/29/16 12:22	90.1			4.98	5		5	
L16021357-04	A	02/25/16 16:00	02/29/16 12:22	84.1			5.33	5		5	
L16021357-05	A	02/25/16 16:30	02/29/16 12:23	87.2			5.19	5		5	
L16021357-06	A	02/25/16 16:35	02/29/16 12:23	79.1			4.98	5		5	
L16021358-01	A	02/26/16 08:35	02/29/16 12:24	82.1			4.92	5		5	
L16021358-02	A	02/26/16 08:42	02/29/16 12:25	83.6			4.97	5		5	
L16021358-03	A	02/26/16 08:42	02/29/16 12:25	83.4			4.83	5		5	
L16021358-04	A	02/26/16 09:00	02/29/16 12:26	78.3			5.37	5		5	
L16021358-05	A	02/26/16 09:15	02/29/16 12:26	81.6			4.57	5		5	
L16021358-06	A	02/26/16 11:15	02/29/16 12:08	79.9			5.00	5		5	
L16021358-07	A	02/26/16 11:17	02/29/16 12:28	87.6			5.01	5		5	
L16021358-08	A	02/26/16 11:19	02/29/16 12:29	85.1			4.84	5		5	
L16021358-09	A	02/26/16 11:21	02/29/16 12:29	81.4			4.60	5		5	
WG559084-01	A		02/29/16 12:19	81.7			4.90	5		5	
WG559084-02	A		02/29/16 12:20	81.7			4.93	5		5	
WG559084-03	A		02/29/16 12:20	81.7			4.98	5		5	

Comments:
1 = improperly sealed cap
2 = preserved out of hold
3 = effervesced
4 = preserved with NaHSO4
5 = preserved by freezing
6 = preserved in field

Analyst: Andrew Casey

VOA_EXT - Modified 05/22/2008
PDF ID: 4651351
Report generated: 03/01/2016 11:17

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 012516
Analyst1: ADC Analyst2: NA
Method: 8260B/8260C SOP: MSV01(-C) Rev: 23 (2)
Method: 5030B/5030C/5035 SOP: PAT01 Rev: 18
Method: 624 SOP: MSV10 Rev: 12
Maintenance Log ID:

Internal Standard: STD74414 Surrogate Standard: STD74126
CCV: STD74488 LCS: STD74459 MS/MSD: STD74459

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG555000 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M972470	WG555000-01 BFB 50ng A9	NA	7	1	STD74202	01/25/16 10:27
9M972471	RINSE	NA	7	1		01/25/16 10:52
9M972472	WG555000-02 5ug/Kg STD A9	NA	7	1	STD74406	01/25/16 11:22
9M972473	WG555000-03 20ug/Kg STD A9	NA	7	1	STD74406	01/25/16 11:52
9M972474	WG555000-04 50ug/Kg STD A9	NA	7	1	STD74406	01/25/16 12:23
9M972475	WG555000-05 100ug/Kg STD A9	NA	7	1	STD74406	01/25/16 12:53
9M972476	WG555000-06 200ug/Kg STD A9	NA	7	1	STD74406	01/25/16 13:23
9M972477	WG555000-07 300ug/Kg STD A9	NA	7	1	STD74406	01/25/16 13:54
9M972478	WG555000-08 400ug/Kg STD A9	NA	7	1	STD74406	01/25/16 14:25
9M972479	WG555000-09 500ug/Kg STD A9	NA	7	1	STD74406	01/25/16 14:56
9M972480	RINSE	NA	7	1		01/25/16 15:26
9M972481	WG555000-10 100ug/Kg ICV A9	NA	7	1	STD74461	01/25/16 15:56
9M972482	RINSE	NA	7	1		01/25/16 16:28

Approved: January 29, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 022516
Analyst1: ADC Analyst2: NA
Method: 8260 SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD74726 Surrogate Standard: STD74815
CCV: STD74488 LCS: STD74755 MS/MSD: STD74755

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG558732 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M972892	WG558732-01 BFB 50ng	NA	7	1	STD74773	02/25/16 14:26
9M972894	WG558732-01 BFB 50ng	NA	7	1	STD74773	02/25/16 14:45
9M972895	WG558732-02 50ug/L CCV 8260C	NA	7	1	STD74773	02/25/16 15:11
9M972896	WG558732-02 50ug/L CCV 8260C	NA	7	1	STD74773	02/25/16 15:48
9M972897	RINSE	NA	7	1		02/25/16 16:25
9M972898	WG558732-03 0.5ug/kg STD	NA	7	1	STD74773	02/25/16 16:55
9M972899	WG558732-04 1.0ug/kg STD	NA	7	1	STD74773	02/25/16 17:27
9M972900	WG558732-05 2.0ug/kg STD	NA	7	1	STD74773	02/25/16 17:57
9M972901	WG558732-06 5.0ug/kg STD	NA	7	1	STD74773	02/25/16 18:28
9M972902	WG558732-07 20.0ug/kg STD	NA	7	1	STD74773	02/25/16 18:59
9M972903	WG558732-08 100.0ug/kg STD	NA	7	1	STD74773	02/25/16 19:29
9M972904	WG558732-09 200.0ug/kg STD	NA	7	1	STD74773	02/25/16 20:00
9M972905	WG558732-10 300.0ug/kg STD	NA	7	1	STD74773	02/25/16 20:30
9M972906	RINSE	NA	7	1	STD74773	02/25/16 21:01
9M972907	WG558732-11 50.0ug/kg ALTSRC	NA	7	1	STD74755	02/25/16 21:31

Approved: February 29, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 022916
Analyst1: FJB Analyst2: JDS
Method: 8260 SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD74726 Surrogate Standard: STD74815
CCV: STD74773 LCS: STD74900 MS/MSD: STD74900

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG559151

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M972966	WG559150-01 BFB 50ng 8260	NA	7	1	STD74606	02/29/16 16:59
9M972967	WG559150-02 50ug/Kg CCV 8260	NA	7	1	STD74773	02/29/16 17:23
9M972968	WG000000-01 50ug/Kg A9-CCV 8260	NA	7	1	STD74831	02/29/16 17:54
9M972969	WG559151-01 VBLK0229 BLANK 8260	NA	7	1		02/29/16 18:25
9M972970	WG559151-02 20ug/Kg LCS 8260	NA	7	1	STD74900	02/29/16 18:56
9M972971	WG559084-02 MS 4.93g 8260	NA	7	1	STD74900	02/29/16 19:28
9M972972	WG559084-03 MSD 4.98g 8260	NA	7	1	STD74900	02/29/16 19:59
9M972973	RINSE	NA	7	1		02/29/16 20:29
9M972974	WG559084-01 L16021357-01 REF 4.90g 82	NA	7	1		02/29/16 21:00
9M972975	L16021357-02 5.22g 8260	NA	7	1		02/29/16 21:30
9M972976	L16021357-03 4.98g 8260	NA	7	1		02/29/16 22:01
9M972977	L16021357-04 5.33g 8260	NA	7	1		02/29/16 22:32
9M972978	L16021357-05 5.19g 8260	NA	7	1		02/29/16 23:03
9M972979	L16021357-06 4.98g 8260	NA	7	1		02/29/16 23:33
9M972980	L16021358-01 4.92g 8260	NA	7	1		03/01/16 00:04
9M972981	L16021358-02 4.97g 8260	NA	7	1		03/01/16 00:34
9M972982	L16021358-03 4.83g 8260	NA	7	1		03/01/16 01:04
9M972983	L16021358-04 5.37g 8260	NA	7	1		03/01/16 01:36
9M972984	L16021358-05 4.57g 8260	NA	7	1		03/01/16 02:06
9M972985	L16021358-06 5.00g 8260	NA	7	1		03/01/16 02:36
9M972986	L16021358-07 5.01g 8260	NA	7	1		03/01/16 03:06
9M972987	L16021358-08 4.84g 8260	NA	7	1		03/01/16 03:37
9M972988	L16021358-09 4.60g 8260	NA	7	1		03/01/16 04:07
9M972989	CCV	NA	7	1		03/01/16 04:37
9M972990	RINSE	NA	7	1		03/01/16 05:07
9M972991	RINSE	NA	7	1		03/01/16 05:38

Approved: March 01, 2016

Sarah Vandenberg

Page: 1

Microbac Laboratories Inc.

Data Checklist

Date: 25-JAN-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 72995
Analytical Workgroups: WG555000

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
28-JAN-2016

Secondary Reviewer:
29-JAN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JAN-29-2016 16:00:23

Microbac Laboratories Inc.

Data Checklist

Date: 25-FEB-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 73547
Analytical Workgroups: WG558732

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
29-FEB-2016

Secondary Reviewer:
29-FEB-2016

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-29-2016 15:30:51

Microbac Laboratories Inc.

Data Checklist

Date: 29-FEB-2016
Analyst: FJB
Analyst: JDS
Method: 8260B
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 73561
Analytical Workgroups: WG559151

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	FJB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	X
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	FJB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer: 01-MAR-2016

Secondary Reviewer: 01-MAR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-01-2016 14:48:08

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG559151

Login Number: L16021358

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18DPT02(5-5.5)260216	01	02/26/16					02/29/2016	3.2	14		03/01/16	3.6	14	
18DPT02(10-10.5)260216	02	02/26/16					02/29/2016	3.2	14		03/01/16	3.7	14	
18DPT02(10-10.5)260216FD	03	02/26/16					02/29/2016	3.2	14		03/01/16	3.7	14	
18DPT02(15-15.5)260216	04	02/26/16					02/29/2016	3.1	14		03/01/16	3.7	14	
18DPT02(22-22.5)260216	05	02/26/16					02/29/2016	3.1	14		03/01/16	3.7	14	
18DPT03(5-5.5)260216	06	02/26/16					02/29/2016	3	14		03/01/16	3.6	14	
18DPT03(10-10.5)260216	07	02/26/16					02/29/2016	3	14		03/01/16	3.7	14	
18DPT03(14.5-15)260216	08	02/26/16					02/29/2016	3	14		03/01/16	3.7	14	
18DPT03(17.5-18)260216	09	02/26/16					02/29/2016	3	14		03/01/16	3.7	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4652687
Report generated 03/01/2016 14:46

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16021358
Instrument Id: HPMS9
Workgroup (AAB#): WG559151

Method: 8260
CAL ID: HPMS9-25-FEB-16
Matrix: Soil

Sample Number	Dilution	Tag	1	2	3	4
L16021358-01	1.00	01	95.0	97.8	110	106
L16021358-02	1.00	01	97.2	96.8	108	104
L16021358-03	1.00	01	97.0	97.5	117	106
L16021358-04	1.00	01	98.7	98.9	115	108
L16021358-05	1.00	01	95.4	97.7	114	107
L16021358-06	1.00	01	101	99.3	113	106
L16021358-07	1.00	01	95.0	97.6	110	107
L16021358-08	1.00	01	106	100	110	106
L16021358-09	1.00	01	96.2	95.9	111	107
WG559151-01	1.00	01	97.5	98.6	113	106
WG559151-02	1.00	01	97.0	99.0	105	102

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	80	-	120
2 - Dibromofluoromethane	80	-	120
3 - 4-Bromofluorobenzene	85	-	120
4 - Toluene-d8	85	-	115

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4652695
Report generated: 03/01/2016 14:46

METHOD BLANK SUMMARY

Login Number: L16021358
Blank File ID: 9M972969
Prep Date: 02/29/16 18:25
Analyzed Date: 02/29/16 18:25
Analyst: FJB/JDS

Work Group: WG559151
Blank Sample ID: WG559151-01
Instrument ID: HPMS9
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG559151-02	9M972970	02/29/16 18:56	01
18DPT02(5-5.5)260216	L16021358-01	9M972980	03/01/16 00:04	01
18DPT02(10-10.5)260216	L16021358-02	9M972981	03/01/16 00:34	01
18DPT02(10-10.5)260216FD	L16021358-03	9M972982	03/01/16 01:04	01
18DPT02(15-15.5)260216	L16021358-04	9M972983	03/01/16 01:36	01
18DPT02(22-22.5)260216	L16021358-05	9M972984	03/01/16 02:06	01
18DPT03(5-5.5)260216	L16021358-06	9M972985	03/01/16 02:36	01
18DPT03(10-10.5)260216	L16021358-07	9M972986	03/01/16 03:06	01
18DPT03(14.5-15)260216	L16021358-08	9M972987	03/01/16 03:37	01
18DPT03(17.5-18)260216	L16021358-09	9M972988	03/01/16 04:07	01

Report Name: BLANK_SUMMARY
PDF File ID: 4652688
Report generated 03/01/2016 14:46

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16021358 Prep Date: 02/29/16 18:25 Sample ID: WG559151-01
Instrument ID: HPMS9 Run Date: 02/29/16 18:25 Prep Method: 5030B/5030C/503
File ID: 9M972969 Analyst: FJB/JDS Method: 8260B
Workgroup (AAB#): WG559151 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-25-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	5.00	20.0	5.00	1	U
Benzene	0.500	5.00	0.500	1	U
Bromobenzene	0.500	5.00	0.500	1	U
Bromochloromethane	1.00	5.00	1.00	1	U
Bromodichloromethane	0.500	5.00	0.500	1	U
Bromoform	0.500	5.00	0.500	1	U
Bromomethane	1.00	5.00	1.00	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.500	5.00	0.500	1	U
sec-Butylbenzene	0.500	5.00	0.500	1	U
tert-Butylbenzene	0.500	5.00	0.500	1	U
Carbon disulfide	0.500	5.00	0.500	1	U
Carbon tetrachloride	0.500	5.00	0.500	1	U
Chlorobenzene	0.500	5.00	0.500	1	U
Chlorodibromomethane	0.500	5.00	0.500	1	U
Chloroethane	1.00	5.00	1.00	1	U
Chloroform	0.500	5.00	0.500	1	U
Chloromethane	2.00	10.0	2.00	1	U
2-Chlorotoluene	0.500	5.00	0.500	1	U
4-Chlorotoluene	0.500	5.00	0.500	1	U
1,2-Dibromo-3-chloropropane	2.00	10.0	2.00	1	U
1,2-Dibromoethane	0.500	5.00	0.500	1	U
Dibromomethane	0.500	5.00	0.500	1	U
1,2-Dichlorobenzene	0.500	5.00	0.500	1	U
1,3-Dichlorobenzene	0.500	5.00	0.500	1	U
1,4-Dichlorobenzene	0.500	5.00	0.500	1	U
Dichlorodifluoromethane	1.00	5.00	1.00	1	U
1,1-Dichloroethane	1.00	5.00	1.00	1	U
1,2-Dichloroethane	0.500	5.00	0.500	1	U
1,1-Dichloroethene	0.500	5.00	0.500	1	U
cis-1,2-Dichloroethene	0.500	5.00	0.500	1	U
trans-1,2-Dichloroethene	0.500	5.00	0.500	1	U
1,2-Dichloropropane	0.500	5.00	0.500	1	U
1,3-Dichloropropane	0.500	5.00	0.500	1	U
2,2-Dichloropropane	0.500	5.00	0.500	1	U
cis-1,3-Dichloropropene	0.500	5.00	0.500	1	U
trans-1,3-Dichloropropene	0.500	5.00	0.500	1	U
1,1-Dichloropropene	0.500	5.00	0.500	1	U
Ethylbenzene	0.500	5.00	0.500	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.500	5.00	0.500	1	U
Isopropylbenzene	0.500	5.00	0.500	1	U

Report Name:BLANK
PDF ID: 4652689
01-MAR-2016 14:46

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16021358 Prep Date: 02/29/16 18:25 Sample ID: WG559151-01
Instrument ID: HPMS9 Run Date: 02/29/16 18:25 Prep Method: 5030B/5030C/503
File ID: 9M972969 Analyst: FJB/JDS Method: 8260B
Workgroup (AAB#): WG559151 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-25-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.500	5.00	0.500	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	1.00	5.00	1.00	1	U
Naphthalene	0.500	5.00	0.500	1	U
n-Propylbenzene	0.500	5.00	0.500	1	U
Styrene	0.500	5.00	0.500	1	U
1,1,1,2-Tetrachloroethane	0.500	5.00	0.500	1	U
1,1,2,2-Tetrachloroethane	0.500	5.00	0.500	1	U
Tetrachloroethene	0.500	5.00	0.500	1	U
Toluene	0.500	5.00	0.500	1	U
1,2,3-Trichlorobenzene	0.500	5.00	0.500	1	U
1,2,4-Trichlorobenzene	0.500	5.00	0.500	1	U
1,1,1-Trichloroethane	0.500	5.00	0.500	1	U
1,1,2-Trichloroethane	0.500	5.00	0.500	1	U
Trichloroethene	0.500	5.00	0.500	1	U
Trichlorofluoromethane	1.00	5.00	1.00	1	U
1,2,3-Trichloropropane	1.00	5.00	1.00	1	U
1,2,4-Trimethylbenzene	0.500	5.00	0.500	1	U
1,3,5-Trimethylbenzene	0.500	5.00	0.500	1	U
Vinyl chloride	1.00	5.00	1.00	1	U
o-Xylene	0.500	5.00	0.500	1	U
m-,p-Xylene	0.500	5.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	98.6	80 - 120	PASS
1,2-Dichloroethane-d4	97.5	80 - 120	PASS
Toluene-d8	106	85 - 115	PASS
4-Bromofluorobenzene	113	85 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4652689
01-MAR-2016 14:46

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16021358 Run Date: 02/29/2016 Sample ID: WG559151-02
Instrument ID: HPMS9 Run Time: 18:56 Prep Method: 5030B/5030C/503
File ID: 9M972970 Analyst: FJB/JDS Method: 8260B
Workgroup (AAB#): WG559151 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD74900 Cal ID: HPMS9-25-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	21.0	105	20 - 160	
Benzene	20.0	19.8	98.8	75 - 125	
Bromobenzene	20.0	19.1	95.5	65 - 120	
Bromochloromethane	20.0	19.8	99.0	70 - 125	
Bromodichloromethane	20.0	18.3	91.4	70 - 130	
Bromoform	20.0	16.9	84.7	55 - 135	
Bromomethane	20.0	18.9	94.3	30 - 160	
2-Butanone	20.0	20.6	103	30 - 160	
n-Butylbenzene	20.0	18.4	92.2	65 - 140	
sec-Butylbenzene	20.0	19.9	99.7	65 - 130	
tert-Butylbenzene	20.0	20.6	103	65 - 130	
Carbon disulfide	20.0	17.9	89.3	45 - 160	
Carbon tetrachloride	20.0	17.9	89.7	65 - 135	
Chlorobenzene	20.0	20.0	99.8	75 - 125	
Chlorodibromomethane	20.0	18.2	90.8	65 - 130	
Chloroethane	20.0	20.0	100	40 - 155	
Chloroform	20.0	18.8	94.0	70 - 125	
Chloromethane	20.0	19.9	99.4	50 - 130	
2-Chlorotoluene	20.0	19.6	97.9	70 - 130	
4-Chlorotoluene	20.0	20.7	104	75 - 125	
1,2-Dibromo-3-chloropropane	20.0	17.8	88.9	40 - 135	
1,2-Dibromoethane	20.0	18.8	94.2	70 - 125	
Dibromomethane	20.0	17.6	87.9	75 - 130	
1,2-Dichlorobenzene	20.0	19.5	97.5	75 - 120	
1,3-Dichlorobenzene	20.0	18.6	92.8	70 - 125	
1,4-Dichlorobenzene	20.0	19.0	95.1	70 - 125	
Dichlorodifluoromethane	20.0	25.5	127	35 - 135	
1,1-Dichloroethane	20.0	19.0	95.0	75 - 125	
1,2-Dichloroethane	20.0	19.5	97.3	70 - 135	
1,1-Dichloroethene	20.0	18.8	94.0	65 - 135	
cis-1,2-Dichloroethene	20.0	20.3	102	65 - 125	
trans-1,2-Dichloroethene	20.0	20.3	101	65 - 135	
1,2-Dichloropropane	20.0	20.8	104	70 - 120	
1,3-Dichloropropane	20.0	20.7	104	75 - 125	
2,2-Dichloropropane	20.0	19.2	95.9	65 - 135	
cis-1,3-Dichloropropene	20.0	20.8	104	70 - 125	
trans-1,3-Dichloropropene	20.0	19.7	98.3	65 - 125	
1,1-Dichloropropene	20.0	18.5	92.7	70 - 135	
Ethylbenzene	20.0	21.2	106	75 - 125	
2-Hexanone	20.0	20.5	103	45 - 145	
Hexachlorobutadiene	20.0	16.7	83.7	55 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4652690
Report generated: 03/01/2016 14:46

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16021358 | Run Date: 02/29/2016 | Sample ID: WG559151-02
Instrument ID: HPMS9 | Run Time: 18:56 | Prep Method: 5030B/5030C/503
File ID: 9M972970 | Analyst: FJB/JDS | Method: 8260B
Workgroup (AAB#): WG559151 | Matrix: Soil | Units: ug/kg
QC Key: DOD4 | Lot#: STD74900 | Cal ID: HPMS9-25-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	20.3	102	75 - 130	
p-Isopropyltoluene	20.0	19.2	96.0	75 - 135	
4-Methyl-2-pentanone	20.0	21.5	108	45 - 145	
Methylene chloride	20.0	19.3	96.7	55 - 140	
Naphthalene	20.0	17.6	87.8	40 - 125	
n-Propylbenzene	20.0	20.7	104	65 - 135	
Styrene	20.0	20.2	101	75 - 125	
1,1,1,2-Tetrachloroethane	20.0	19.3	96.4	75 - 125	
1,1,2,2-Tetrachloroethane	20.0	18.4	92.0	55 - 130	
Tetrachloroethene	20.0	18.8	94.2	65 - 140	
Toluene	20.0	20.3	102	70 - 125	
1,2,3-Trichlorobenzene	20.0	18.2	91.2	60 - 135	
1,2,4-Trichlorobenzene	20.0	17.5	87.7	65 - 130	
1,1,1-Trichloroethane	20.0	18.9	94.6	70 - 135	
1,1,2-Trichloroethane	20.0	20.4	102	60 - 125	
Trichloroethene	20.0	20.3	101	75 - 125	
Trichlorofluoromethane	20.0	18.4	92.2	25 - 185	
1,2,3-Trichloropropane	20.0	19.9	99.3	65 - 130	
1,2,4-Trimethylbenzene	20.0	19.3	96.5	65 - 135	
1,3,5-Trimethylbenzene	20.0	20.3	102	65 - 135	
Vinyl chloride	20.0	21.6	108	60 - 125	
o-Xylene	20.0	20.9	104	75 - 125	
m-,p-Xylene	40.0	40.7	102	80 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	99.0	80 - 120	PASS
1,2-Dichloroethane-d4	97.0	80 - 120	PASS
Toluene-d8	102	85 - 115	PASS
4-Bromofluorobenzene	105	85 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4652690
Report generated: 03/01/2016 14:46

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16021358
Instrument: HPMS9
Analyst: FJB
Workgroup: WG555000

Tune ID: WG555000-01
Run Date: 01/25/2016
Run Time: 10:27
File ID: 9M972470
Cal ID: HPMS9 - 25-JAN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	23.0	10289	PASS
75.0	95.0	30.0	60.0	49.3	22030	PASS
95.0	95.0	100	100	100	44728	PASS
96.0	95.0	5.00	9.00	6.98	3122	PASS
173	174	0	2.00	0.381	160	PASS
174	95.0	50.0	100	93.9	41989	PASS
175	174	5.00	9.00	6.62	2778	PASS
176	174	95.0	101	95.6	40133	PASS
177	176	5.00	9.00	6.39	2564	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG555000-02	STD-S	01	01/25/2016 11:22	
WG555000-03	STD-S	01	01/25/2016 11:52	
WG555000-04	STD-S	01	01/25/2016 12:23	
WG555000-05	STD-CCV-S	01	01/25/2016 12:53	
WG555000-06	STD-S	01	01/25/2016 13:23	
WG555000-07	STD-S	01	01/25/2016 13:54	
WG555000-08	STD-S	01	01/25/2016 14:25	
WG555000-09	STD-S	01	01/25/2016 14:56	
WG555000-10	SSCV-S	01	01/25/2016 15:56	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4652692
Report generated 03/01/2016 14:46

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16021358
Instrument: HPMS9
Analyst: ADC
Workgroup: WG558732

Tune ID: WG558732-01
Run Date: 02/25/2016
Run Time: 14:45
File ID: 9M972894
Cal ID: HPMS9 - 25-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.2	5378	PASS
75.0	95.0	30.0	60.0	49.1	13067	PASS
95.0	95.0	100	100	100	26621	PASS
96.0	95.0	5.00	9.00	6.32	1683	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	85.8	22851	PASS
175	174	5.00	9.00	6.50	1485	PASS
176	174	95.0	101	98.3	22461	PASS
177	176	5.00	9.00	7.21	1619	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG558732-02	STD-CCV-S	01	02/25/2016 15:48	
WG558732-03	STD-S	01	02/25/2016 16:55	
WG558732-04	STD-S	01	02/25/2016 17:27	
WG558732-05	STD-S	01	02/25/2016 17:57	
WG558732-06	STD-S	01	02/25/2016 18:28	
WG558732-07	STD-S	01	02/25/2016 18:59	
WG558732-08	STD-S	01	02/25/2016 19:29	
WG558732-09	STD-S	01	02/25/2016 20:00	
WG558732-10	STD-S	01	02/25/2016 20:30	
WG558732-11	SSCV-S	01	02/25/2016 21:31	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4652692
Report generated 03/01/2016 14:46

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16021358
Instrument: HPMS9
Analyst: FJB/JDS
Workgroup: WG559150

Tune ID: WG559150-01
Run Date: 02/29/2016
Run Time: 16:59
File ID: 9M972966
Cal ID: HPMS9 - 25-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.9	11703	PASS
75.0	95.0	30.0	60.0	49.4	25229	PASS
95.0	95.0	100	100	100	51056	PASS
96.0	95.0	5.00	9.00	6.77	3456	PASS
173	174	0	2.00	0.437	169	PASS
174	95.0	50.0	100	75.7	38650	PASS
175	174	5.00	9.00	6.65	2572	PASS
176	174	95.0	101	95.5	36914	PASS
177	176	5.00	9.00	6.11	2255	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG559150-02	CCV-S	01	02/29/2016 17:23	
WG559151-01	BLANK	01	02/29/2016 18:25	
WG559151-02	LCS	01	02/29/2016 18:56	
L16021358-01	18DPT02(5-5.5)260216	01	03/01/2016 00:04	
L16021358-02	18DPT02(10-10.5)260216	01	03/01/2016 00:34	
L16021358-03	18DPT02(10-10.5)260216FD	01	03/01/2016 01:04	
L16021358-04	18DPT02(15-15.5)260216	01	03/01/2016 01:36	
L16021358-05	18DPT02(22-22.5)260216	01	03/01/2016 02:06	
L16021358-06	18DPT03(5-5.5)260216	01	03/01/2016 02:36	
L16021358-07	18DPT03(10-10.5)260216	01	03/01/2016 03:06	
L16021358-08	18DPT03(14.5-15)260216	01	03/01/2016 03:37	
L16021358-09	18DPT03(17.5-18)260216	01	03/01/2016 04:07	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4652692
Report generated 03/01/2016 14:46

Calibration Table Report
Method: A9FOO_SL.M
Title: FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Calibration: Wed Jan 27 09:49:02 2016
Curve: WG555000
Calibration Files

Compound	5 9M972472.D	20 9M972473.D	50 9M972474.D	100 9M972475.D	200 9M972476.D	300 9M972477.D	400 9M972478.D	500 9M972479.D	Avg	%RSD	R^2 Linear
Fluorobenzene	ISTD										
Acetonitrile		0.053	0.046	0.048	0.052	0.046	0.052	0.054	0.050	6.657	
3-Chloro-1-propene	0.498	0.524	0.450	0.519	0.514	0.434	0.507	0.503	0.494	6.719	
2-Chloro-1,3-butadiene	0.534	0.576	0.519	0.592	0.585	0.509	0.593	0.584	0.561	6.202	
Ethyl Acetate		0.333	0.313	0.339	0.338	0.300	0.341	0.344	0.330	5.124	
Methacrylonitrile	0.102	0.109	0.101	0.112	0.110	0.096	0.112	0.112	0.107	5.912	
Isobutyl Alcohol	0.014	0.018	0.018	0.021	0.024	0.021	0.025	0.025	0.021	18.016	0.993
1-Butanol		0.010	0.013	0.015	0.017	0.015	0.018	0.018	0.015	17.838	0.992
Methyl methacrylate	0.236	0.246	0.231	0.265	0.265	0.231	0.271	0.269	0.252	7.005	
2-Nitropropane	0.069	0.073	0.074	0.083	0.089	0.079	0.093	0.095	0.082	12.090	
Chlorobenzene-d5	ISTD										
Cyclohexanone		0.020	0.022	0.025	0.028	0.023	0.027	0.028	0.025	12.963	
1,4-Dichlorobenzene-d4	ISTD										

Wed Jan 27 10:01:56 2016

Calibration Table Report
Method: 8260SL.M
Title: 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Calibration: Fri Feb 26 11:38:33 2016
Curve: WG558732
Calibration Files

Compound	0.5 9M972898.D	1 9M972899.D	2 9M972900.D	5 9M972901.D	20 9M972902.D	50 9M972896.D	100 9M972903.D	200 9M972904.D	300 9M972905.D	Avg	%RSD	R^2 Linear	Quadratic
Fluorobenzene	ISTD												
Dichlorodifluoromethane			0.338	0.271	0.399	0.396	0.318	0.357	0.307	0.341	13.734		
Chloromethane			0.372	0.280	0.331	0.361	0.296	0.346	0.304	0.327	10.674		
Vinyl Chloride		0.250	0.318	0.314	0.373	0.372	0.342	0.355	0.296	0.327	12.768		
1,3-Butadiene			0.347	0.266	0.328	0.330	0.297	0.321	0.293	0.312	8.837		
Bromomethane		0.236	0.267	0.181	0.206	0.208	0.186	0.217	0.199	0.213	13.250		
Chloroethane			0.127	0.116	0.142	0.165	0.139	0.173	0.160	0.146	14.271		
Trichlorofluoromethane		0.519	0.518	0.416	0.503	0.514	0.470	0.517	0.473	0.491	7.357		
Diethyl ether		0.215	0.246	0.217	0.243	0.241	0.214		0.231	0.230	6.215		
Isoprene			0.302	0.251	0.303	0.302	0.282	0.318	0.295	0.293	7.364		
Acrolein		0.041	0.046	0.045	0.046	0.048	0.046		0.050	0.046	6.212		
1,1,2-Trichloro-1,2,2-Trifluoroethane			0.252	0.234	0.255	0.261	0.248	0.273	0.251	0.253	4.699		
Acetone				0.179	0.138	0.128	0.119	0.124		0.138	17.810	0.999	
1,1-Dichloroethene		0.464	0.511	0.400	0.482	0.471	0.454	0.500	0.456	0.467	7.277		
Tert-Butyl Alcohol			0.057	0.046	0.055	0.051	0.047			0.051	8.698		
Dimethyl Sulfide		0.150	0.203	0.186	0.207	0.211	0.196	0.224	0.203	0.197	11.169		
Iodomethane				0.076	0.109	0.154	0.126	0.157	0.142	0.127	24.315	0.993	
Methyl acetate			0.282	0.223	0.279	0.262	0.240	0.258	0.234	0.254	8.867		
Methylene Chloride			0.271	0.217	0.263	0.261	0.240	0.280	0.249	0.254	8.252		
Carbon Disulfide			0.795	0.626	0.740	0.737	0.678	0.761	0.702	0.720	7.788		
Acrylonitrile		0.117	0.127	0.114	0.130	0.135	0.123		0.134	0.126	6.412		
Methyl Tert Butyl Ether		0.669	0.722	0.642	0.760	0.786	0.713	0.788	0.718	0.725	7.239		
trans-1,2-Dichloroethene		0.400	0.422	0.377	0.430	0.438	0.407	0.446	0.412	0.416	5.376		
n-Hexane			0.456	0.385	0.420	0.424	0.429	0.464	0.428	0.430	5.986		
Diisopropyl ether		0.938	1.068	0.928	1.071	1.051	0.931		0.995	0.998	6.627		
Vinyl Acetate			0.593	0.519	0.545	0.602	0.554	0.608	0.558	0.569	5.855		
1,1-Dichloroethane		0.548	0.558	0.445	0.532	0.549	0.499	0.553	0.500	0.523	7.454		
Ethyl-Tert-Butyl ether		0.871	0.992	0.852	0.990	0.988	0.865		0.934	0.928	6.918		
2-Butanone			0.177	0.152	0.156	0.166	0.156	0.172	0.149	0.161	6.650		
Propionitrile		0.042	0.055	0.048	0.053	0.051	0.048		0.049	0.049	8.494		
2,2-Dichloropropane			0.428	0.330	0.377	0.415	0.383	0.417	0.383	0.390	8.575		
cis-1,2-Dichloroethene		0.247	0.257	0.248	0.287	0.297	0.273	0.299	0.277	0.273	7.647		
Chloroform		0.473	0.530	0.432	0.482	0.509	0.459	0.505	0.454	0.480	6.746		
1-Bromopropane			0.011	0.041	0.042	0.043	0.040	0.045	0.041	0.038	31.434	0.997	
Bromochloromethane		0.131	0.173	0.169	0.194	0.199	0.179	0.197	0.178	0.177	12.275		
Tetrahydrofuran			0.111	0.099	0.110	0.110	0.097		0.097	0.104	6.802		
Dibromofluoromethane				0.267	0.243	0.286	0.286	0.274		0.271	6.547		
1,1,1-Trichloroethane		0.426	0.436	0.385	0.438	0.470	0.425	0.470	0.427	0.434	6.319		
Cyclohexane		0.465	0.495	0.425	0.494	0.478	0.465	0.503	0.464	0.474	5.302		
1,1-Dichloropropene		0.353	0.359	0.300	0.344	0.352	0.333	0.360	0.335	0.342	5.748		
Tert-Amyl-Methyl ether		0.631	0.709	0.631	0.716	0.716	0.632		0.684	0.674	6.133		
Carbon Tetrachloride			0.41939	0.34041	0.40512	0.42742	0.39181	0.43819	0.39737	0.40282	7.96886		
1,2-Dichloroethane-d4				0.34995	0.30686	0.35494	0.35835	0.33017		0.34005	6.33015		
Heptane										0	0		
1,2-Dichloroethane		0.36551	0.44947	0.39601	0.44224	0.45938	0.41291	0.4496	0.40581	0.42262	7.76179		
Benzene	1.14079	0.92872	1.03015	0.83328	0.97121	0.9721	0.88431	0.97127	0.88279	0.95718	9.53654		
Trichloroethene		0.30364	0.32158	0.26212	0.31219	0.31666	0.29597	0.321	0.29314	0.30329	6.54492		
Methylcyclohexane		0.31249	0.39837	0.32203	0.40419	0.39506	0.39323	0.42525	0.39247	0.38039	10.6291		
1,2-Dichloropropane		0.23004	0.27101	0.24016	0.27676	0.28593	0.2555	0.28277	0.26062	0.26285	7.66268		
1,4-Dioxane			0.0041	0.00361	0.00449	0.00376	0.00356		0.00414	0.00394	9.17892		
Bromodichloromethane			0.37851	0.33087	0.3725	0.39384	0.35929	0.397	0.36103	0.37044	6.13725		
Dibromomethane		0.15103	0.18915	0.16523	0.1825	0.18519	0.16707	0.1849	0.1682	0.17416	7.61692		
2-Chloroethyl Vinyl Ether				0.04535	0.05625	0.07439	0.06667	0.08013	0.07633	0.06652	20.1377	0.996	
4-Methyl-2-Pentanone				0.08933	0.11327	0.12554	0.11786	0.12977	0.11644	0.11537	12.2612		
cis-1,3-Dichloropropene			0.37321	0.33699	0.39477	0.41098	0.38072	0.42291	0.38195	0.38594	7.23123		
Dimethyl Disulfide			0.30882	0.3269	0.39409	0.4245	0.40234	0.4579	0.40032	0.38784	13.5683		
Chlorobenzene-d5	ISTD												
Toluene-d8				1.21266	1.14503	1.34974	1.34798	1.26813		1.26471	6.98417		
Toluene	1.57001	1.40445	1.51648	1.23448	1.46732	1.48749	1.3712	1.4823	1.3236	1.42859	7.34792		
Ethyl Methacrylate				0.31749	0.4112	0.4195	0.39758	0.44016	0.38999	0.39599	10.6751		
trans-1,3-Dichloropropene			0.50304	0.44978	0.5157	0.56049	0.50648	0.56248	0.50379	0.51454	7.49294		
1,1,2-Trichloroethane		0.27692	0.29584	0.27194	0.31787	0.32454	0.3	0.32173	0.292	0.3001	6.65768		
2-Hexanone				0.26013	0.28088	0.31451	0.30524	0.34734	0.28972	0.29964	10.056		
1,3-Dichloropropane		0.46617	0.55761	0.45639	0.51068	0.53187	0.47698	0.53043	0.47034	0.50006	7.49429		
Tetrachloroethene		0.33351	0.31568	0.26327	0.31051	0.30894	0.30156	0.32634	0.29026	0.30626	7.18201		
Dibromochloromethane			0.45014	0.36113	0.41394	0.44566	0.40515	0.45572	0.40415	0.41941	8.03547		
1,2-Dibromoethane				0.31086	0.34005	0.35035	0.32626	0.35324	0.31647	0.33287	5.32182		
1-Chlorohexane		0.39643	0.40929	0.33097	0.45098	0.44465	0.43807	0.477	0.42289	0.42128	10.5148		
Chlorobenzene		1.02904	1.08596	0.91908	1.05295	1.05625	0.95434	1.02465	0.91009	1.00405	6.67004		
1,1,1,2-Tetrachloroethane			0.37536	0.32525	0.38767	0.40783	0.37127	0.40937	0.36265	0.37706	7.67975		
Ethylbenzene	0.5157	0.51658	0.53164	0.45493	0.54391	0.54636	0.50916	0.54884	0.48836	0.51728	5.93862		
m-,p-Xylene	0.67213	0.61926	0.69794	0.58569	0.67162	0.65634	0.61182	0.65803	0.57657	0.63882	6.58722		
o-Xylene	0.61273	0.56415	0.61379	0.55512	0.6465	0.65334	0.60899	0.67127	0.59158	0.61305	6.41073		
Styrene		0.95813	1.06028	0.90308	1.08018	1.12326	1.04689	1.15897	1.02088	1.04396	8.002		
Bromoform			0.22872	0.23892	0.27832	0.30617	0.27263	0.32232	0.28054	0.27538	12.1348		
Isopropylbenzene		1.53891	1.69742	1.42189	1.74341	1.73716	1.64433	1.81019	1.57289	1.64577	7.76922		
1,4-Dichlorobenzene-d4	ISTD												
1,1,2,2-Tetrachloroethane		0.61571	0.83634	0.73739	0.79769	0.80854	0.74616	0.78083	0.74513	0.75847	8.88143		
p-Bromofluorobenzene				0.91653	0.87561	1.04735	1.0775	0.95104		0.97361	8.83571		
1,2,3-Trichloropropane		0.24645	0.29476	0.28329	0.29208	0.30442	0.29453	0.30315	0.28248	0.28764	6.41284		

trans-1,4-Dichloro-2-Butene		0.22501	0.23725	0.31415	0.3034	0.3105	0.33164	0.30766	0.28994	14.2446
n-Propylbenzene	3.98718	4.09811	3.61454	4.21971	4.10826	3.88939	3.82307	3.70205	3.93029	5.36989
Bromobenzene	0.84385	1.11565	0.86076	0.97118	0.9688	0.89248	0.89548	0.87446	0.92783	9.59949
1,3,5-Trimethylbenzene			2.76735	3.16086	3.10843	2.93606	2.91239	2.81635	2.95024	5.30322
2-Chlorotoluene		2.99265	2.31448	2.81057	2.64897	2.50142	2.61378	2.57101	2.63612	8.25378
4-Chlorotoluene	2.56339	2.5861	2.29006	2.55177	2.63031	2.41864	2.2799	2.17747	2.4372	6.98222
a-Methylstyrene			1.12025	1.41688	1.39756	1.35572	1.41986	1.35543	1.34428	8.43365
tert-Butylbenzene			0.56026	0.65003	0.66483	0.62531	0.61977	0.59094	0.61853	6.19423
1,2,4-Trimethylbenzene	3.41485	3.20381	2.86379	3.24429	3.17284	3.0014	2.96997	2.8463	3.08966	6.49589
sec-Butylbenzene	3.92127	3.95846	3.39254	3.98281	3.96896	3.8029	3.77812	3.59297	3.79976	5.54855
p-Isopropyltoluene			2.97918	3.35219	3.3501	3.24235	3.24339	3.07285	3.20668	4.70949
1,3-Dichlorobenzene	2.09668	2.18083	1.63464	1.82169	1.84149	1.71899	1.77783	1.67989	1.84401	10.6223
1,4-Dichlorobenzene	2.13498	2.06617	1.68605	1.85221	1.83159	1.72549	1.79434	1.65691	1.84347	9.41157
n-Butylbenzene	3.12981	3.1425	2.56827	2.96652	3.08072	3.01911	3.06733	2.87744	2.98146	6.31771
1,2-Dichlorobenzene	1.80685	1.84212	1.52596	1.70901	1.74915	1.66133	1.78603	1.60751	1.71099	6.28256
1,2-Dibromo-3-Chloropropane			0.17584	0.21007	0.23479	0.23723	0.24208	0.21787	0.21965	11.2549
1,2,4-Trichlorobenzene	1.3714	1.33063	1.02655	1.15029	1.2163	1.24479	1.25089	1.12609	1.21462	9.21088
Hexachlorobutadiene	0.57233	0.7279	0.53741	0.61674	0.64289	0.67353	0.72181	0.62948	0.64026	10.4449
Naphthalene		3.19632	2.63671	3.04494	3.29135	3.2233	3.14196	2.79099	3.04651	7.99534
1,2,3-Trichlorobenzene	1.32324	1.26566	0.99788	1.12352	1.21351	1.21702	1.20507	1.0788	1.17809	8.93408

Fri Feb 26 11:40:14 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16021358 Run Date: 02/25/2016 Sample ID: WG558732-11
Instrument ID: HPMS9 Run Time: 21:31 Method: 8260B
File ID: 9M972907 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG558732 Cal ID: HPMS9 - 25-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	48.0	ug/kg	0.461	4.00	20	
1,1-Dichloroethene	CCC	50.0	48.6	ug/kg	0.454	2.90	20	
1,2-Dichloropropane	CCC	50.0	52.3	ug/kg	0.275	4.60	20	
Ethylbenzene	CCC	50.0	51.3	ug/kg	0.531	2.60	20	
Toluene	CCC	50.0	50.7	ug/kg	1.45	1.50	20	
Vinyl Chloride	CCC	50.0	59.8	ug/kg	0.392	19.7	20	
Bromoform	SPCC	50.0	47.3	ug/kg	0.261	5.40	20	
Chlorobenzene	SPCC	50.0	51.2	ug/kg	1.03	2.40	20	
Chloromethane	SPCC	50.0	52.7	ug/kg	0.345	5.40	20	
1,1-Dichloroethane	SPCC	50.0	46.4	ug/kg	0.485	7.20	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	52.0	ug/kg	0.789	4.00	20	
Acetone		50.0	43.9	ug/kg	0.112	12.2	20	
Benzene		50.0	49.0	ug/kg	0.937	2.10	20	
Bromobenzene		50.0	52.2	ug/kg	0.968	4.40	20	
Bromochloromethane		50.0	51.5	ug/kg	0.183	3.00	20	
Bromodichloromethane		50.0	47.6	ug/kg	0.352	4.90	20	
Bromomethane		50.0	49.0	ug/kg	0.208	2.10	20	
2-Butanone		50.0	47.4	ug/kg	0.153	5.20	20	
n-Butylbenzene		50.0	52.5	ug/kg	3.13	4.90	20	
sec-Butylbenzene		50.0	54.7	ug/kg	4.16	9.50	20	
tert-Butylbenzene		50.0	55.4	ug/kg	0.685	10.8	20	
Carbon Disulfide		50.0	44.1	ug/kg	0.635	11.7	20	
Carbon Tetrachloride		50.0	46.5	ug/kg	0.375	7.00	20	
Dibromochloromethane		50.0	48.5	ug/kg	0.407	3.10	20	
Chloroethane		50.0	54.2	ug/kg	0.158	8.30	20	
2-Chlorotoluene		50.0	54.2	ug/kg	2.86	8.40	20	
4-Chlorotoluene		50.0	53.0	ug/kg	2.59	6.10	20	
1,2-Dibromo-3-Chloropropane		50.0	54.5	ug/kg	0.239	8.90	20	
1,2-Dibromoethane		50.0	50.8	ug/kg	0.338	1.50	20	
Dibromomethane		50.0	47.0	ug/kg	0.164	6.10	20	
1,2-Dichlorobenzene		50.0	52.7	ug/kg	1.81	5.50	20	
1,3-Dichlorobenzene		50.0	50.8	ug/kg	1.87	1.60	20	
1,4-Dichlorobenzene		50.0	51.1	ug/kg	1.88	2.20	20	
Dichlorodifluoromethane		50.0	63.4	ug/kg	0.432	26.7	20	*
1,2-Dichloroethane		50.0	49.2	ug/kg	0.416	1.60	20	
cis-1,2-Dichloroethene		50.0	52.6	ug/kg	0.287	5.20	20	
trans-1,2-Dichloroethene		50.0	50.6	ug/kg	0.422	1.20	20	
1,3-Dichloropropane		50.0	53.8	ug/kg	0.538	7.60	20	
2,2-Dichloropropane		50.0	47.1	ug/kg	0.368	5.90	20	
cis-1,3-Dichloropropene		50.0	53.2	ug/kg	0.411	6.40	20	
trans-1,3-Dichloropropene		50.0	50.0	ug/kg	0.515	0.100	20	
1,1-Dichloropropene		50.0	48.5	ug/kg	0.332	2.90	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4652691
Report generated 03/01/2016 14:46

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16021358 Run Date: 02/25/2016 Sample ID: WG558732-11
Instrument ID: HPMS9 Run Time: 21:31 Method: 8260B
File ID: 9M972907 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG558732 Cal ID: HPMS9 - 25-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	48.2	ug/kg	0.289	3.60	20	
Hexachlorobutadiene		50.0	54.5	ug/kg	0.698	9.00	20	
Isopropylbenzene		50.0	52.0	ug/kg	1.71	4.00	20	
p-Isopropyltoluene		50.0	54.1	ug/kg	3.47	8.10	20	
4-Methyl-2-Pentanone		50.0	47.8	ug/kg	0.110	4.40	20	
Methylene Chloride		50.0	49.8	ug/kg	0.254	0.400	20	
Naphthalene		50.0	50.8	ug/kg	3.10	1.70	20	
n-Propylbenzene		50.0	54.9	ug/kg	4.32	9.80	20	
Styrene		50.0	52.8	ug/kg	1.10	5.60	20	
1,1,1,2-Tetrachloroethane		50.0	49.7	ug/kg	0.375	0.600	20	
Tetrachloroethene		50.0	49.8	ug/kg	0.305	0.400	20	
1,2,3-Trichlorobenzene		50.0	52.6	ug/kg	1.24	5.20	20	
1,2,4-Trichlorobenzene		50.0	51.7	ug/kg	1.26	3.40	20	
1,1,1-Trichloroethane		50.0	46.7	ug/kg	0.406	6.50	20	
1,1,2-Trichloroethane		50.0	51.5	ug/kg	0.309	3.00	20	
Trichloroethene		50.0	49.4	ug/kg	0.300	1.20	20	
Trichlorofluoromethane		50.0	47.6	ug/kg	0.467	4.90	20	
1,2,3-Trichloropropane		50.0	54.2	ug/kg	0.312	8.40	20	
1,2,4-Trimethylbenzene		50.0	51.5	ug/kg	3.18	3.10	20	
1,3,5-Trimethylbenzene		50.0	54.3	ug/kg	3.21	8.60	20	
o-Xylene		50.0	53.6	ug/kg	0.657	7.10	20	
m-,p-Xylene		100	103	ug/kg	0.655	2.60	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4652691
Report generated 03/01/2016 14:46

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021358 Run Date: 02/29/2016 Sample ID: WG559150-02
Instrument ID: HPMS9 Run Time: 17:23 Method: 8260B
File ID: 9M972967 Analyst: FJB/JDS QC Key: DOD4
Workgroup (AAB#): WG559151 Cal ID: HPMS9 - 25-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.0	ug/kg	0.480	0.0136	20	
1,1-Dichloroethene	CCC	50.0	50.3	ug/kg	0.470	0.656	20	
1,2-Dichloropropane	CCC	50.0	54.5	ug/kg	0.287	9.07	20	
Ethylbenzene	CCC	50.0	54.8	ug/kg	0.567	9.62	20	
Toluene	CCC	50.0	53.2	ug/kg	1.52	6.47	20	
Vinyl Chloride	CCC	50.0	57.3	ug/kg	0.375	14.5	20	
Bromoform	SPCC	50.0	49.9	ug/kg	0.275	0.188	20	
Chlorobenzene	SPCC	50.0	52.5	ug/kg	1.06	5.09	20	
Chloromethane	SPCC	50.0	44.7	ug/kg	0.292	10.6	20	
1,1-Dichloroethane	SPCC	50.0	52.1	ug/kg	0.545	4.16	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.9	ug/kg	0.757	0.242	20	
Xylenes		150	163	ug/kg	0.681	8.56	40	
Acetone		50.0	46.0	ug/kg	0.117	8.05	20	
Benzene		50.0	50.9	ug/kg	0.974	1.71	20	
Bromobenzene		50.0	53.0	ug/kg	0.984	6.00	20	
Bromochloromethane		50.0	52.4	ug/kg	0.186	4.72	20	
Bromodichloromethane		50.0	50.1	ug/kg	0.371	0.216	20	
Bromomethane		50.0	45.8	ug/kg	0.195	8.34	20	
2-Butanone		50.0	47.2	ug/kg	0.152	5.54	20	
n-Butylbenzene		50.0	56.2	ug/kg	3.35	12.4	20	
sec-Butylbenzene		50.0	56.9	ug/kg	4.33	13.8	20	
tert-Butylbenzene		50.0	57.2	ug/kg	0.708	14.5	20	
Carbon Disulfide		50.0	58.8	ug/kg	0.847	17.7	20	
Carbon Tetrachloride		50.0	51.1	ug/kg	0.412	2.18	20	
Dibromochloromethane		50.0	50.5	ug/kg	0.423	0.949	20	
Chloroethane		50.0	54.1	ug/kg	0.158	8.17	20	
2-Chlorotoluene		50.0	53.7	ug/kg	2.83	7.36	20	
4-Chlorotoluene		50.0	56.2	ug/kg	2.74	12.4	20	
1,2-Dibromo-3-Chloropropane		50.0	45.8	ug/kg	0.201	8.44	20	
1,2-Dibromoethane		50.0	49.8	ug/kg	0.331	0.443	20	
Dibromomethane		50.0	50.8	ug/kg	0.177	1.54	20	
1,2-Dichlorobenzene		50.0	51.9	ug/kg	1.78	3.77	20	
1,3-Dichlorobenzene		50.0	51.4	ug/kg	1.89	2.72	20	
1,4-Dichlorobenzene		50.0	51.4	ug/kg	1.89	2.70	20	
Dichlorodifluoromethane		50.0	45.8	ug/kg	0.312	8.33	20	
1,2-Dichloroethane		50.0	50.4	ug/kg	0.426	0.802	20	
cis-1,2-Dichloroethene		50.0	53.3	ug/kg	0.291	6.56	20	
trans-1,2-Dichloroethene		50.0	54.2	ug/kg	0.452	8.49	20	
1,3-Dichloropropane		50.0	51.0	ug/kg	0.510	2.07	20	
2,2-Dichloropropane		50.0	55.8	ug/kg	0.436	11.7	20	
cis-1,3-Dichloropropene		50.0	52.9	ug/kg	0.408	5.79	20	
trans-1,3-Dichloropropene		50.0	53.4	ug/kg	0.550	6.86	20	

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021358 Run Date: 02/29/2016 Sample ID: WG559150-02
Instrument ID: HPMS9 Run Time: 17:23 Method: 8260B
File ID: 9M972967 Analyst: FJB/JDS QC Key: DOD4
Workgroup (AAB#): WG559151 Cal ID: HPMS9 - 25-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	53.3	ug/kg	0.365	6.61	20	
2-Hexanone		50.0	49.6	ug/kg	0.297	0.827	20	
Hexachlorobutadiene		50.0	54.2	ug/kg	0.695	8.48	20	
Isopropylbenzene		50.0	55.0	ug/kg	1.81	10.1	20	
p-Isopropyltoluene		50.0	56.6	ug/kg	3.63	13.2	20	
4-Methyl-2-Pentanone		50.0	50.1	ug/kg	0.116	0.238	20	
Methylene Chloride		50.0	50.3	ug/kg	0.256	0.504	20	
Naphthalene		50.0	47.7	ug/kg	2.90	4.70	20	
n-Propylbenzene		50.0	57.0	ug/kg	4.48	14.0	20	
Styrene		50.0	54.9	ug/kg	1.15	9.79	20	
1,1,1,2-Tetrachloroethane		50.0	52.1	ug/kg	0.393	4.12	20	
Tetrachloroethene		50.0	53.9	ug/kg	0.330	7.82	20	
1,2,3-Trichlorobenzene		50.0	50.2	ug/kg	1.18	0.361	20	
1,2,4-Trichlorobenzene		50.0	50.8	ug/kg	1.23	1.54	20	
1,1,1-Trichloroethane		50.0	52.6	ug/kg	0.457	5.20	20	
1,1,2-Trichloroethane		50.0	52.5	ug/kg	0.315	5.05	20	
Trichloroethene		50.0	52.9	ug/kg	0.321	5.82	20	
Trichlorofluoromethane		50.0	52.3	ug/kg	0.513	4.50	20	
1,2,3-Trichloropropane		50.0	50.0	ug/kg	0.288	0.0332	20	
1,2,4-Trimethylbenzene		50.0	54.4	ug/kg	3.36	8.70	20	
1,3,5-Trimethylbenzene		50.0	56.7	ug/kg	3.35	13.5	20	
o-Xylene		50.0	54.9	ug/kg	0.674	9.89	20	
m-,p-Xylene		100	108	ug/kg	0.689	7.89	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4652693
Report generated 03/01/2016 14:46

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16021358
Instrument ID: HPMS9
Workgroup (AAB#): WG559151

ICAL CCV Number: WG558732-02
CAL ID: HPMS9-25-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558732-02	NA	NA	183008	378926	517775
Upper Limit	NA	NA	366016	757852	1035550
Lower Limit	NA	NA	91504	189463	258888
L16021358-01	1.00	01	182224	401543	569420
L16021358-02	1.00	01	201415	439169	608411
L16021358-03	1.00	01	173065	382940	535668
L16021358-04	1.00	01	182994	397163	556527
L16021358-05	1.00	01	179911	403143	577665
L16021358-06	1.00	01	181264	391693	550575
L16021358-07	1.00	01	180534	390047	554504
L16021358-08	1.00	01	164608	356211	492393
L16021358-09	1.00	01	156364	337722	484214
WG559151-01	1.00	01	183902	403206	567751
WG559151-02	1.00	01	203058	426907	583985

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4652694
Report generated 03/01/2016 14:46

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16021358
Instrument ID: HPMS9
Workgroup (AAB#): WG559151

ICAL CCV Number: WG558732-02
CAL ID: HPMS9 - 25-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558732-02	NA	NA	17.76	14.73	10.85
Upper Limit	NA	NA	18.26	15.23	11.35
Lower Limit	NA	NA	17.26	14.23	10.35
L16021358-01	1.00	01	17.75	14.72	10.85
L16021358-02	1.00	01	17.75	14.72	10.85
L16021358-03	1.00	01	17.75	14.72	10.85
L16021358-04	1.00	01	17.75	14.72	10.85
L16021358-05	1.00	01	17.75	14.72	10.85
L16021358-06	1.00	01	17.75	14.72	10.85
L16021358-07	1.00	01	17.75	14.72	10.85
L16021358-08	1.00	01	17.75	14.72	10.85
L16021358-09	1.00	01	17.75	14.72	10.85
WG559151-01	1.00	01	17.75	14.72	10.85
WG559151-02	1.00	01	17.76	14.73	10.85

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4652696
Report generated: 03/01/2016 14:46

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972980.D Vial: 14
Acq On : 1 Mar 2016 00:04 Operator: FJB/JDS
Sample : L16021358-01 4.92g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 01 09:27:21 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	569420	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	401543	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	182224	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	150915	48.8944 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.78%		
43) 1,2-Dichloroethane-d4	10.45	65	184014	47.5160 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.04%		
58) Toluene-d8	12.82	98	539473	53.1150 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.24%		
79) p-Bromofluorobenzene	16.22	95	195654	55.1405 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 110.28%		

Target Compounds

					Qvalue
13) Acetone	6.42	43	28633	18.3830 ug/kg	99
17) Iodomethane	7.15	142	199	2.9171 ug/kg#	34
29) 2-Butanone	9.02	43	1603	0.8730 ug/kg#	58
56) Dimethyl Disulfide	12.82	94	15116	3.4223 ug/kg#	29
91) p-Isopropyltoluene	17.47	119	18692	1.5994 ug/kg	95
97) 1,2,4-Trichlorobenzene	20.39	180	2426	0.5480 ug/kg#	25
100) 1,2,3-Trichlorobenzene	21.11	180	3544	0.8254 ug/kg#	12

(#) = qualifier out of range (m) = manual integration
9M972980.D 8260SL.M Tue Mar 01 09:27:21 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972980.D Vial: 14
Acq On : 1 Mar 2016 00:04 Operator: FJB/JDS
Sample : L16021358-01 4.92g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 1 9:27 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

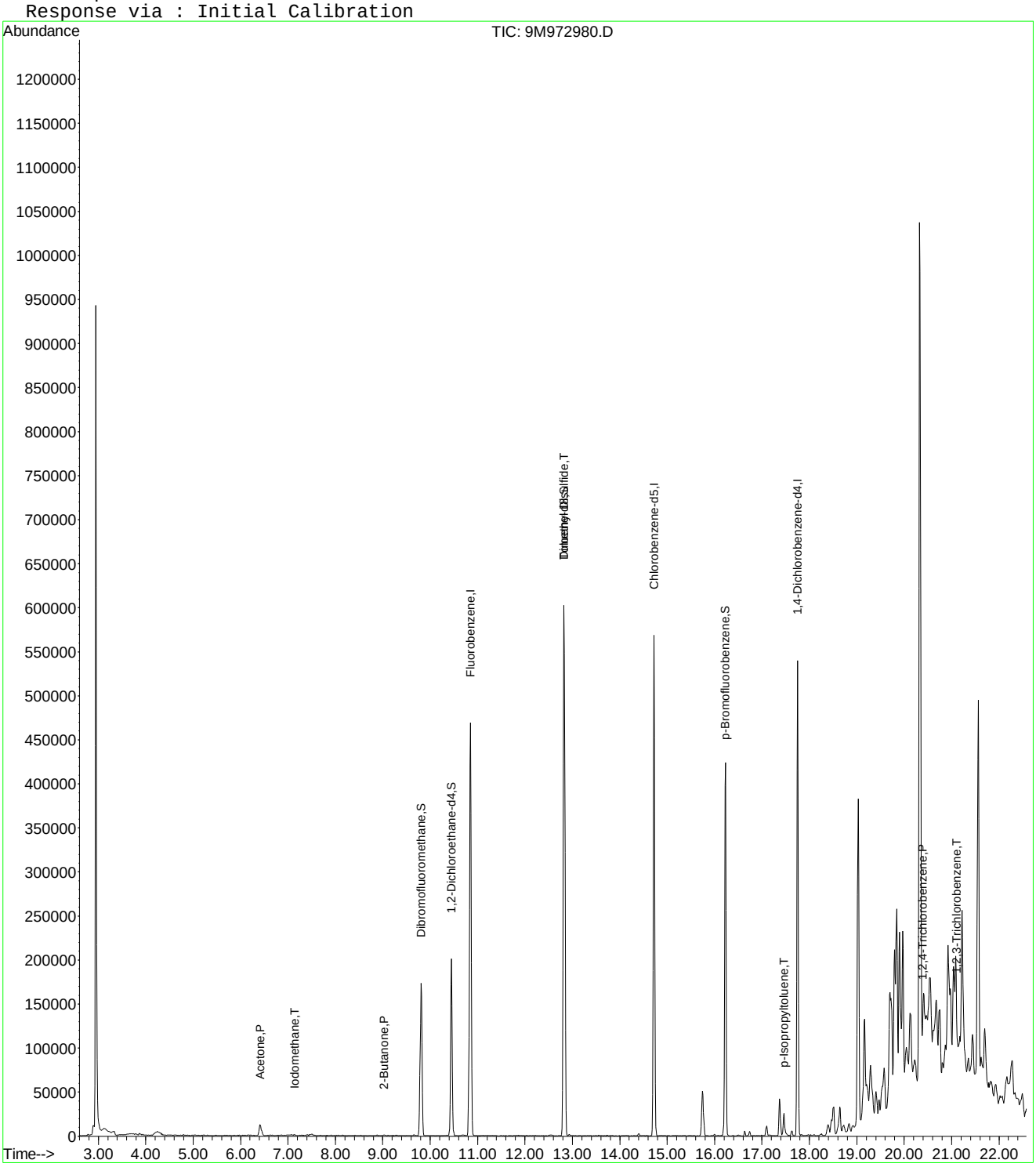

9M972980.D 8260SL.M Tue Mar 01 09:27:22 2016 Page 2

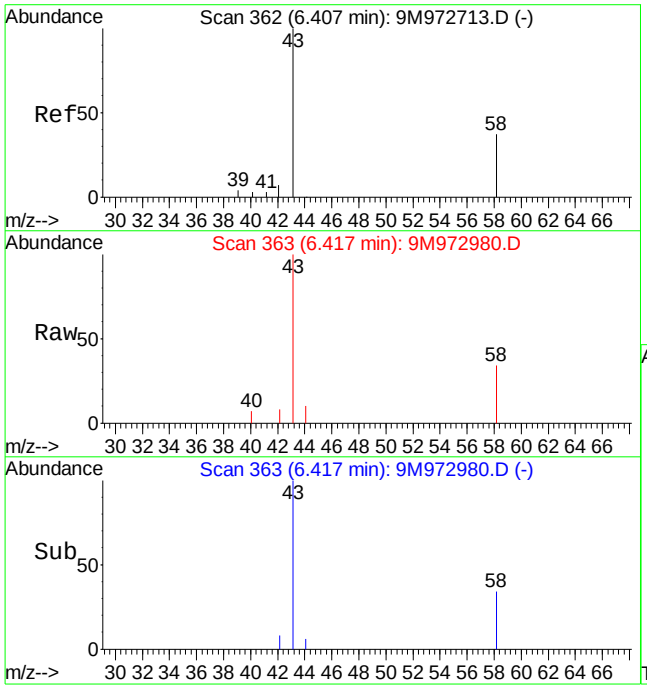

#13
Acetone
Concen: 18.38 ug/kg
RT: 6.42 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M972980.D
Acq: 1 Mar 2016 00:04

Tgt Ion: 43 Resp: 28633

Ion	Ratio	Lower	Upper
43	100		
58	28.8	16.9	39.3

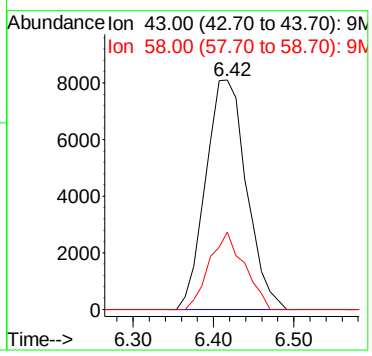

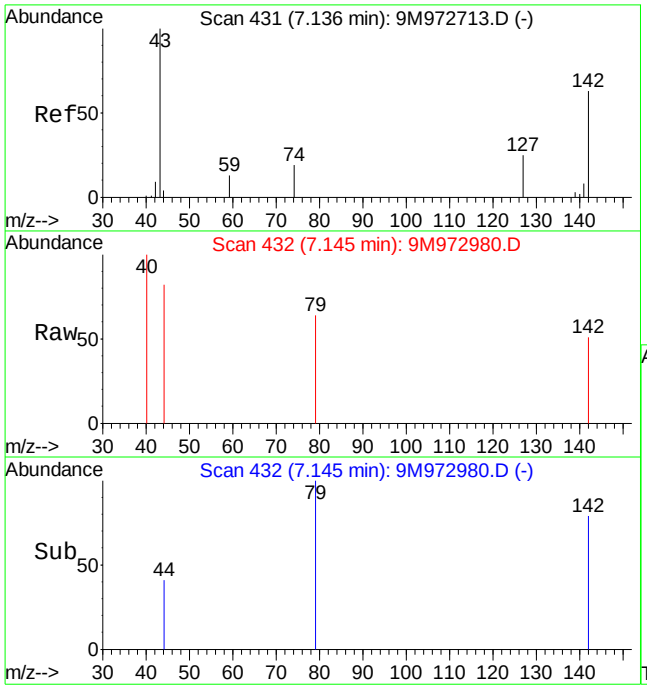

#17
Iodomethane
Concen: 2.92 ug/kg
RT: 7.15 min Scan# 432
Delta R.T. 0.01 min
Lab File: 9M972980.D
Acq: 1 Mar 2016 00:04

Tgt Ion:142 Resp: 199

Ion	Ratio	Lower	Upper
142	100		
127	0.0	25.1	58.7#

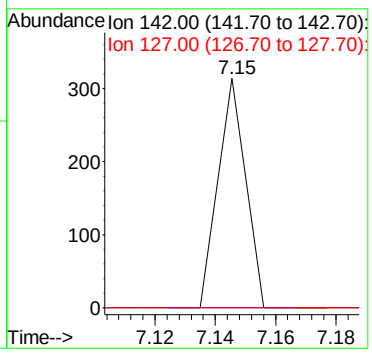

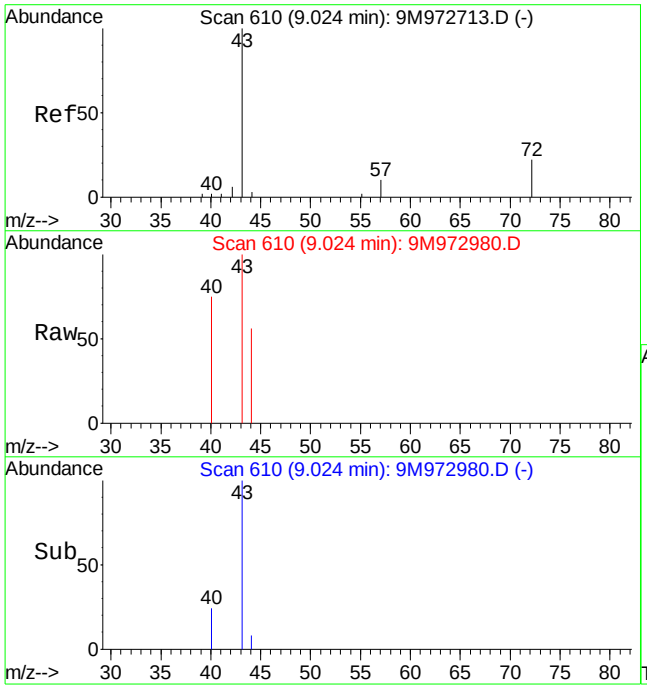

#29
2-Butanone
Concen: 0.87 ug/kg
RT: 9.02 min Scan# 610
Delta R.T. -0.01 min
Lab File: 9M972980.D
Acq: 1 Mar 2016 00:04

Tgt Ion: 43 Resp: 1603

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

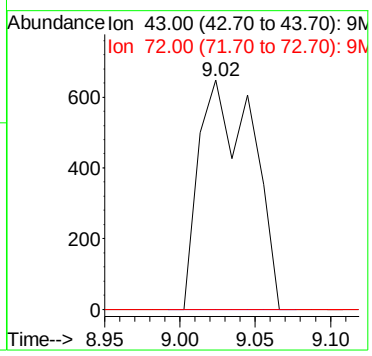

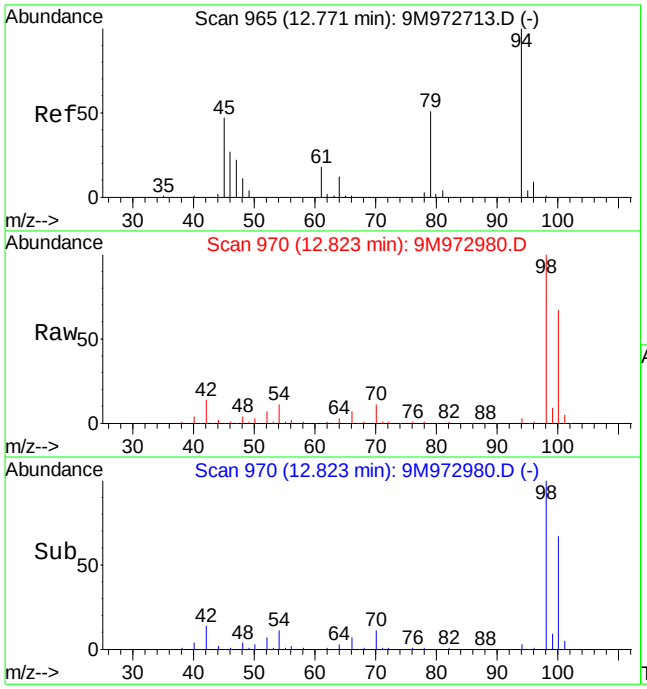

#56
Dimethyl Disulfide
Concen: 3.42 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M972980.D
Acq: 1 Mar 2016 00:04

Tgt Ion: 94 Resp: 15116

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

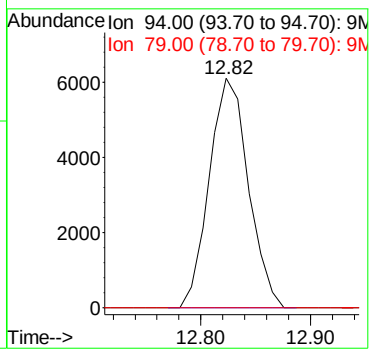

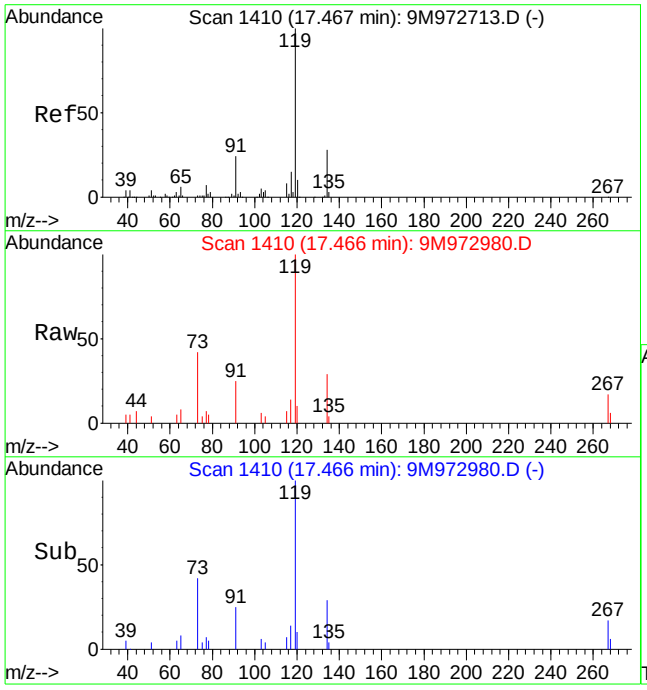

#91
p-Isopropyltoluene
Concen: 1.60 ug/kg
RT: 17.47 min Scan# 1410
Delta R.T. 0.00 min
Lab File: 9M972980.D
Acq: 1 Mar 2016 00:04

Tgt Ion:119 Resp: 18692

Ion	Ratio	Lower	Upper
119	100		
134	23.5	15.7	36.5

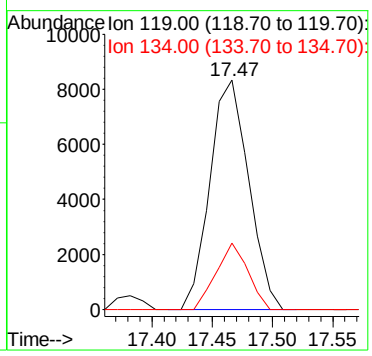

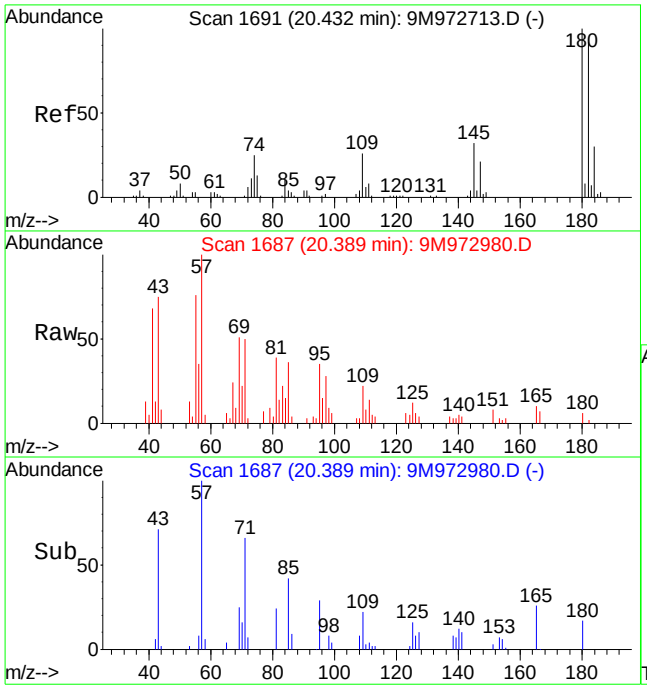

#97
1,2,4-Trichlorobenzene
Concen: 0.55 ug/kg
RT: 20.39 min Scan# 1687
Delta R.T. -0.05 min
Lab File: 9M972980.D
Acq: 1 Mar 2016 00:04

Tgt Ion:180 Resp: 2426

Ion	Ratio	Lower	Upper
180	100		
182	16.9	57.5	134.1#
145	0.0	19.3	45.1#

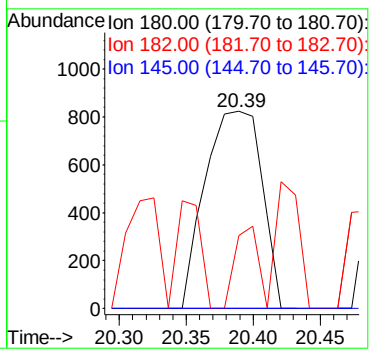

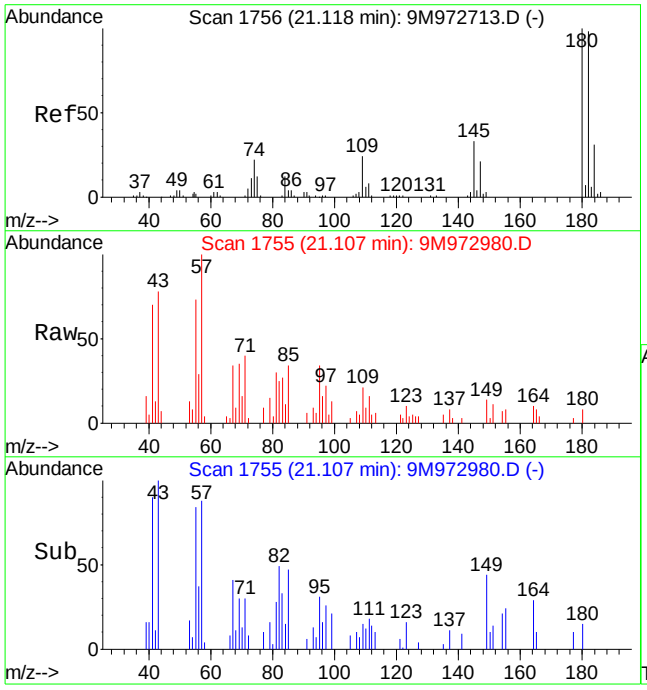

#100
1,2,3-Trichlorobenzene
Concen: 0.83 ug/kg
RT: 21.11 min Scan# 1755
Delta R.T. -0.01 min
Lab File: 9M972980.D
Acq: 1 Mar 2016 00:04

Tgt Ion:180 Resp: 3544

Ion	Ratio	Lower	Upper
180	100		
182	0.0	57.6	134.4#
145	0.0	20.2	47.0#

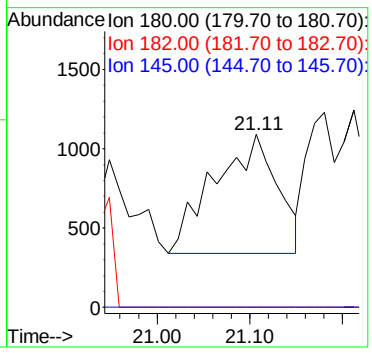

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972981.D Vial: 15
Acq On : 1 Mar 2016 00:34 Operator: FJB/JDS
Sample : L16021358-02 4.97g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 01 09:27:22 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	608411	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	439169	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	201415	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	159676	48.4175 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.84%		
43) 1,2-Dichloroethane-d4	10.45	65	201026	48.5821 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.16%		
58) Toluene-d8	12.83	98	575552	51.8123 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 103.62%		
79) p-Bromofluorobenzene	16.23	95	212061	54.0700 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 108.14%		

Target Compounds

					Qvalue
13) Acetone	6.41	43	12410	5.9633 ug/kg	89
17) Iodomethane	7.13	142	203	2.9117 ug/kg#	34
29) 2-Butanone	9.04	43	1221	0.6223 ug/kg#	58
56) Dimethyl Disulfide	12.83	94	16800	3.5598 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972981.D 8260SL.M Tue Mar 01 09:27:23 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972981.D Vial: 15
Acq On : 1 Mar 2016 00:34 Operator: FJB/JDS
Sample : L16021358-02 4.97g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 1 9:27 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

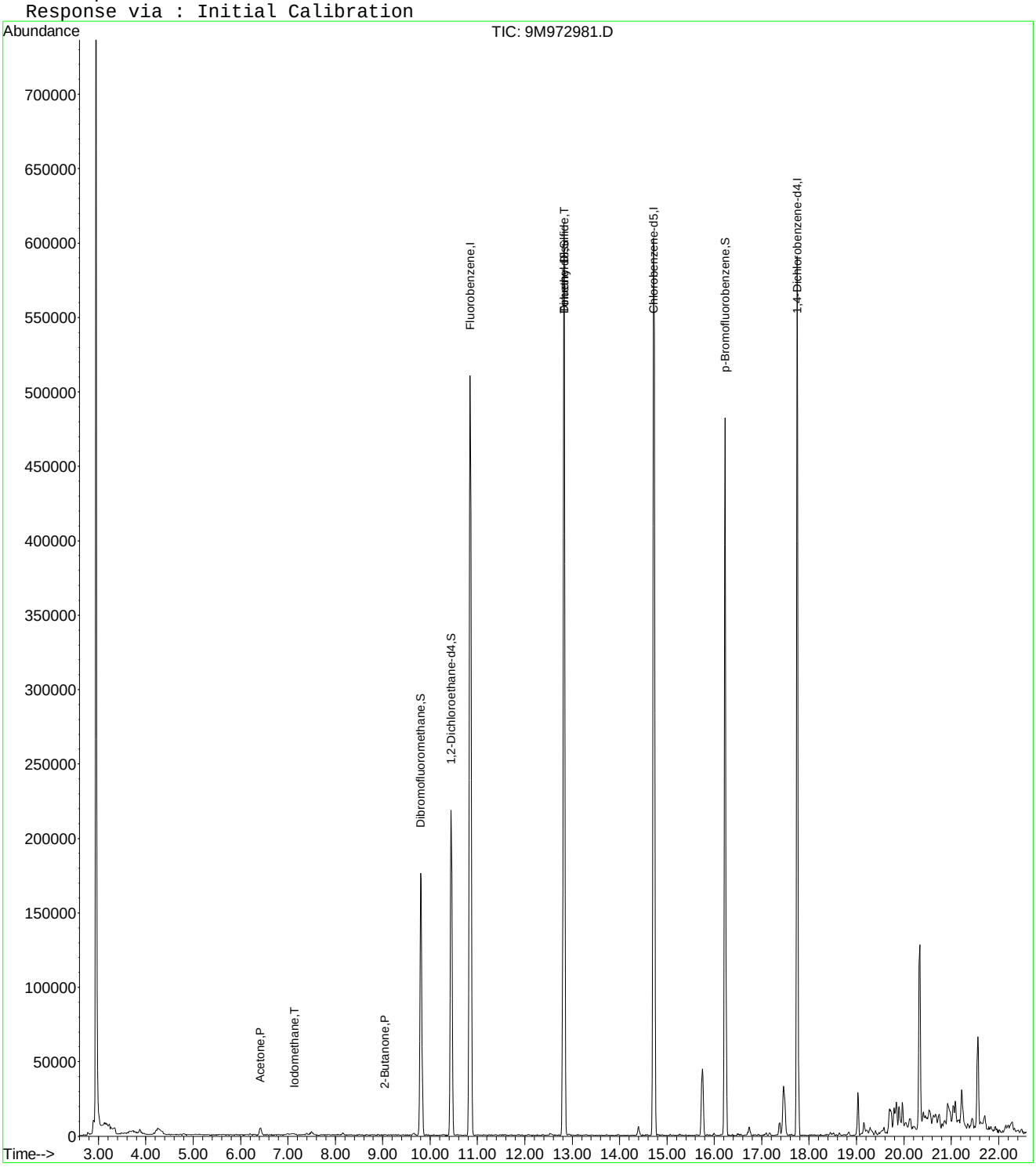

9M972981.D 8260SL.M Tue Mar 01 09:27:23 2016 Page 2

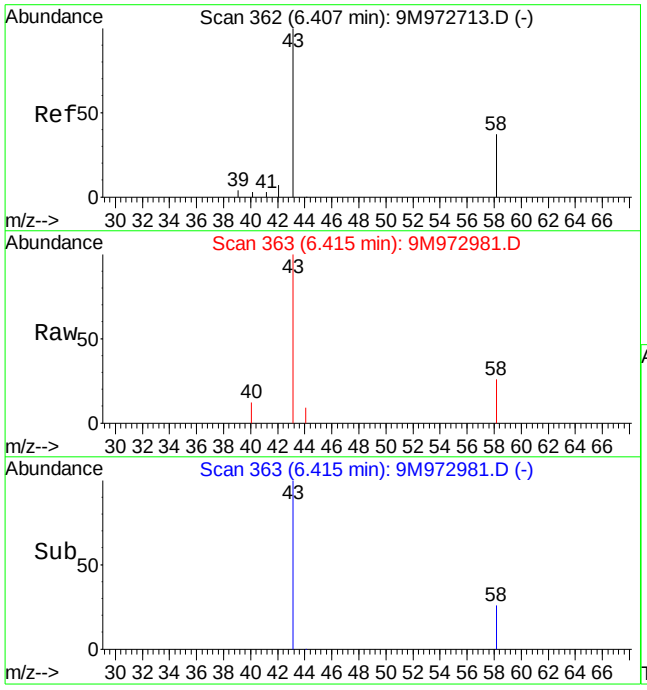

#13
Acetone
Concen: 5.96 ug/kg
RT: 6.41 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M972981.D
Acq: 1 Mar 2016 00:34

Tgt Ion: 43 Resp: 12410

Ion	Ratio	Lower	Upper
43	100		
58	22.5	16.9	39.3

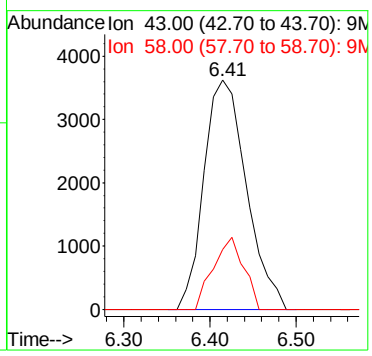

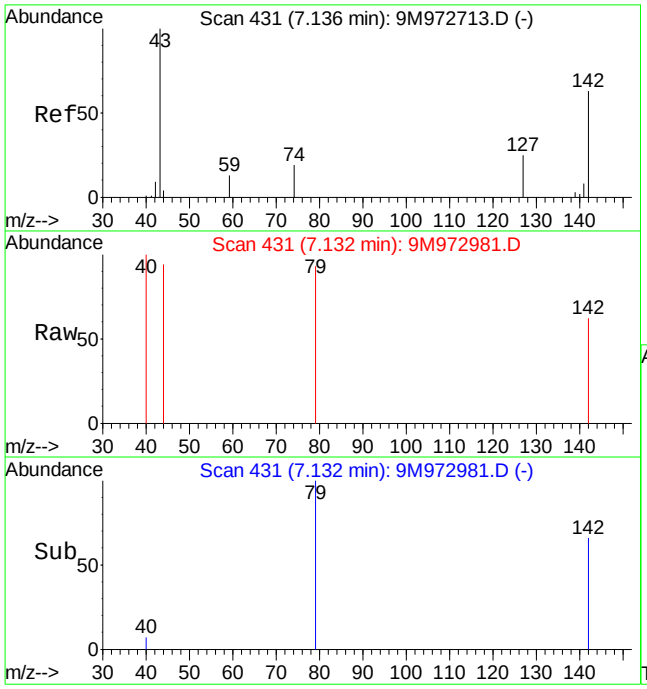

#17
Iodomethane
Concen: 2.91 ug/kg
RT: 7.13 min Scan# 431
Delta R.T. 0.00 min
Lab File: 9M972981.D
Acq: 1 Mar 2016 00:34

Tgt Ion:142 Resp: 203

Ion	Ratio	Lower	Upper
142	100		
127	0.0	25.1	58.7#

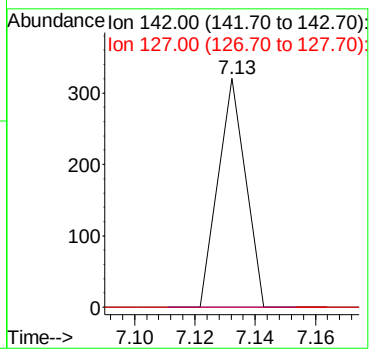

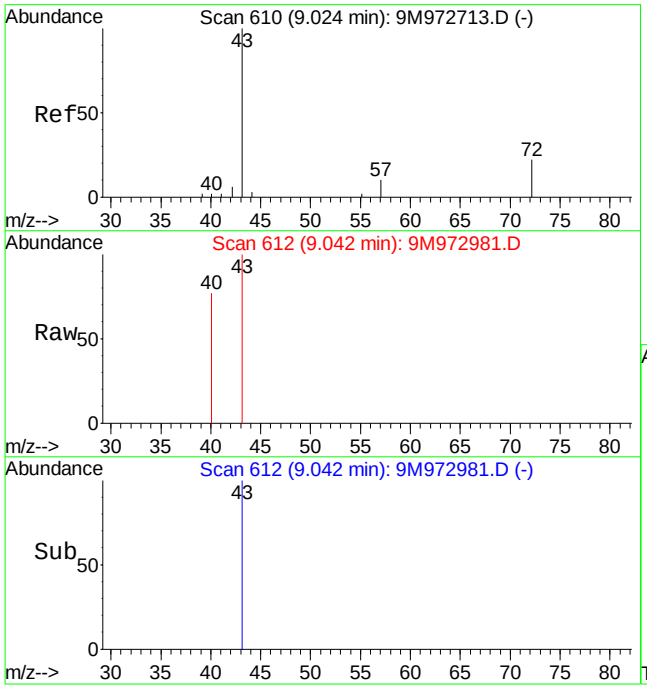

#29
2-Butanone
Concen: 0.62 ug/kg
RT: 9.04 min Scan# 612
Delta R.T. 0.01 min
Lab File: 9M972981.D
Acq: 1 Mar 2016 00:34

Tgt Ion: 43 Resp: 1221

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

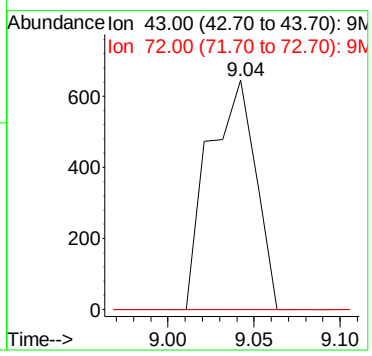

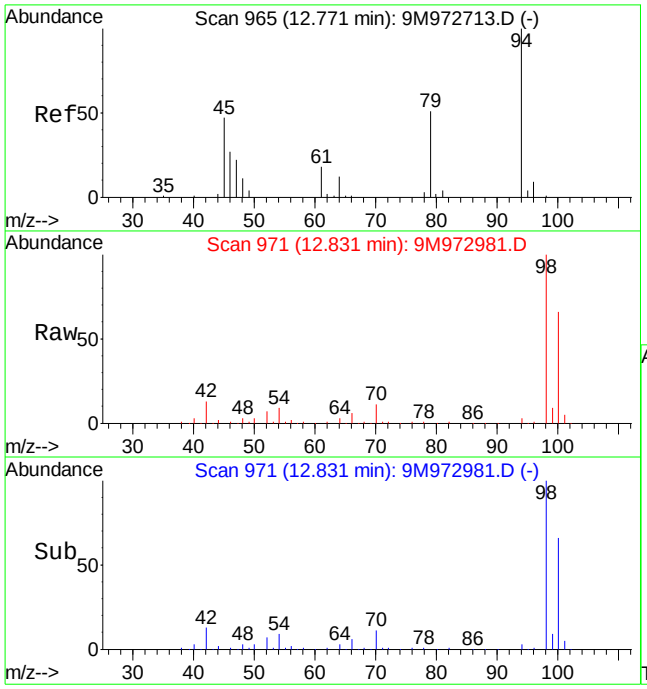

#56
Dimethyl Disulfide
Concen: 3.56 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.06 min
Lab File: 9M972981.D
Acq: 1 Mar 2016 00:34

Tgt Ion: 94 Resp: 16800

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

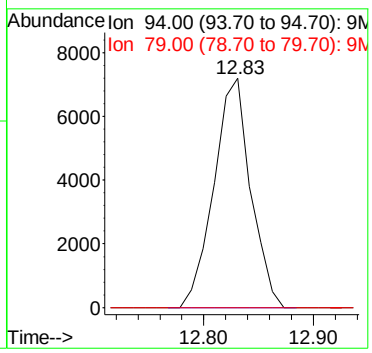

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972982.D Vial: 16
Acq On : 1 Mar 2016 1:04 Operator: FJB/JDS
Sample : L16021358-03 4.83g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 01 09:27:23 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	535668	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	382940	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	173065	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	141534	48.7444 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.48%		
43) 1,2-Dichloroethane-d4	10.45	65	176701	48.5026 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.00%		
58) Toluene-d8	12.83	98	514617	53.1292 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.26%		
79) p-Bromofluorobenzene	16.23	95	196503	58.3106 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 116.62%		

Target Compounds

					Qvalue
13) Acetone	6.41	43	21224	13.9519 ug/kg	97
17) Iodomethane	7.13	142	211	2.9322 ug/kg#	34
29) 2-Butanone	9.03	43	2635	1.5254 ug/kg#	58
56) Dimethyl Disulfide	12.83	94	14678	3.5325 ug/kg#	29
85) 2-Chlorotoluene	16.70	91	4869	0.5336 ug/kg#	41
86) 4-Chlorotoluene	16.70	91	4869	0.5772 ug/kg#	40
91) p-Isopropyltoluene	17.46	119	36527	3.2909 ug/kg	96

(#) = qualifier out of range (m) = manual integration
9M972982.D 8260SL.M Tue Mar 01 09:27:24 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972982.D Vial: 16
Acq On : 1 Mar 2016 1:04 Operator: FJB/JDS
Sample : L16021358-03 4.83g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 1 9:27 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

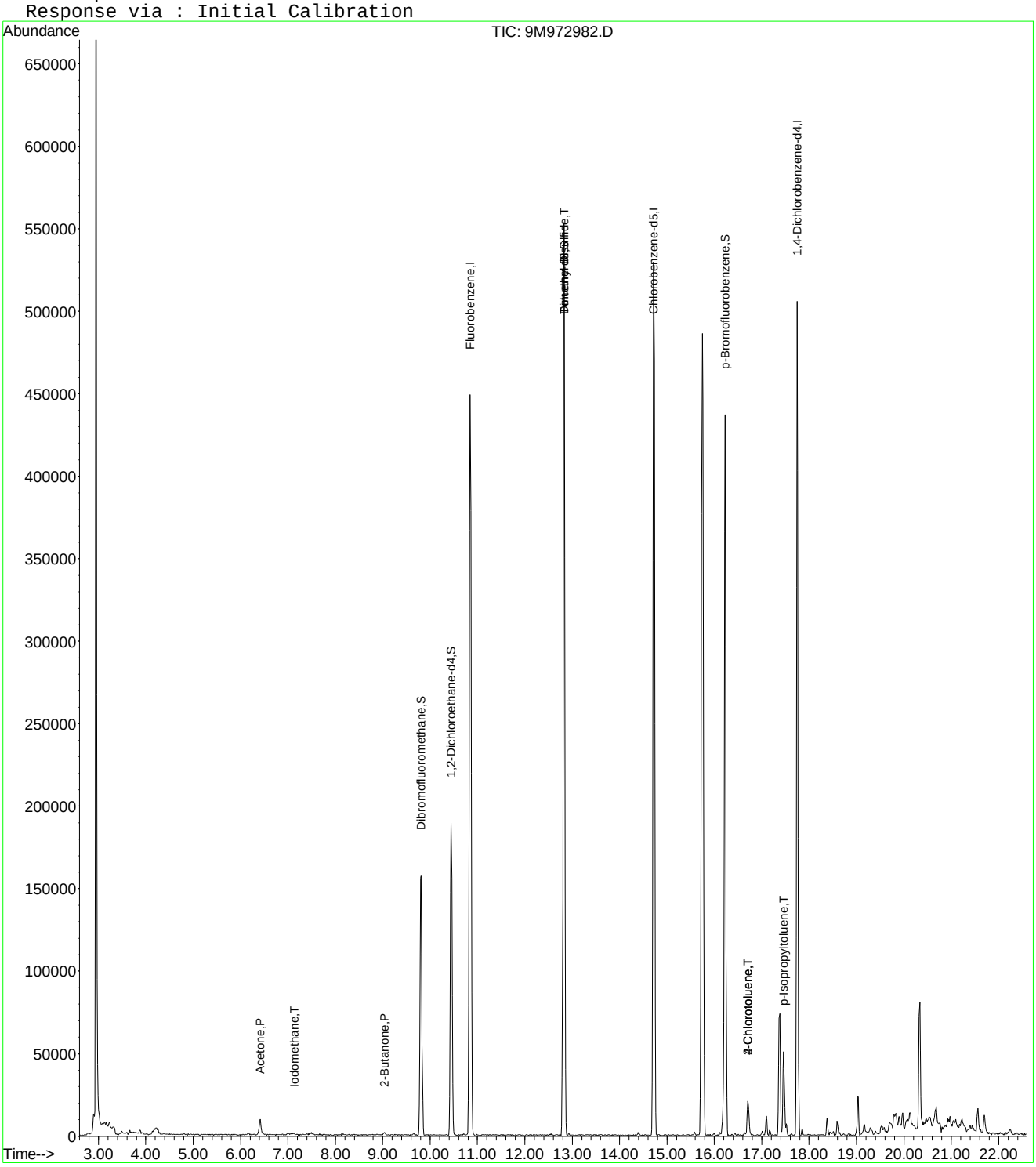

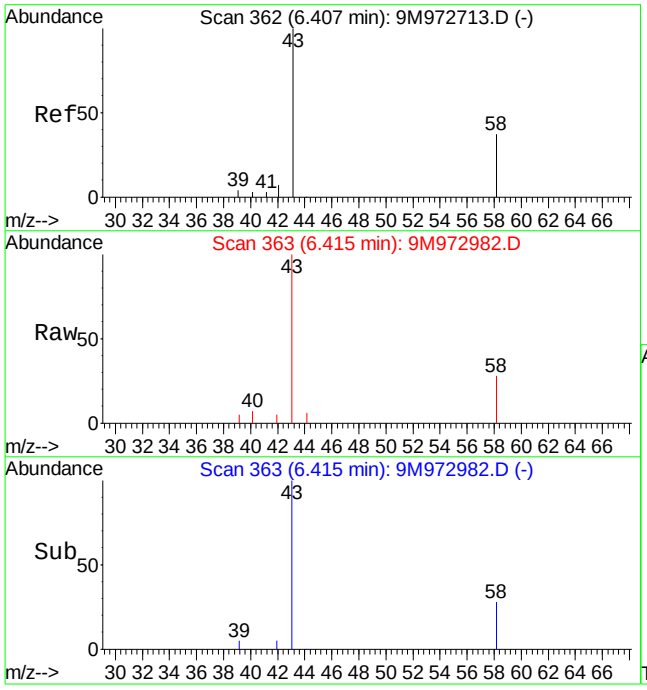

#13
Acetone
Concen: 13.95 ug/kg
RT: 6.41 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M972982.D
Acq: 1 Mar 2016 1:04

Tgt Ion: 43 Resp: 21224

Ion	Ratio	Lower	Upper
43	100		
58	29.5	16.9	39.3

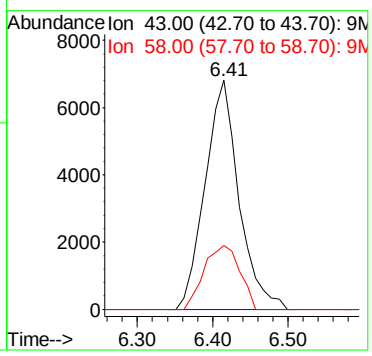

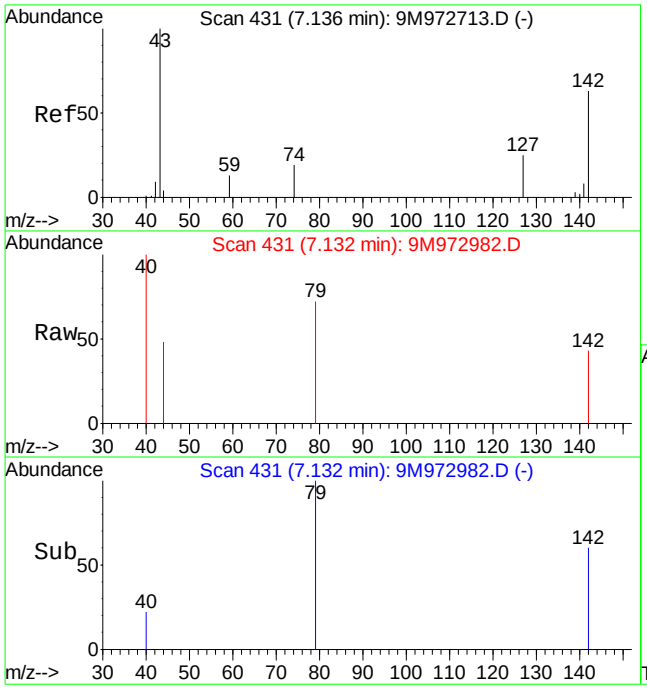

#17
Iodomethane
Concen: 2.93 ug/kg
RT: 7.13 min Scan# 431
Delta R.T. 0.00 min
Lab File: 9M972982.D
Acq: 1 Mar 2016 1:04

Tgt Ion:142 Resp: 211

Ion	Ratio	Lower	Upper
142	100		
127	0.0	25.1	58.7#

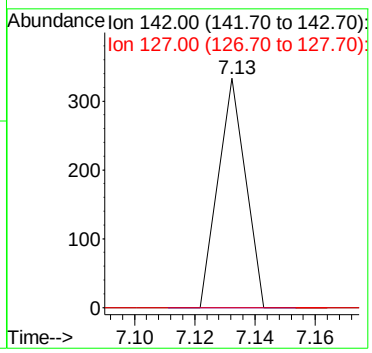

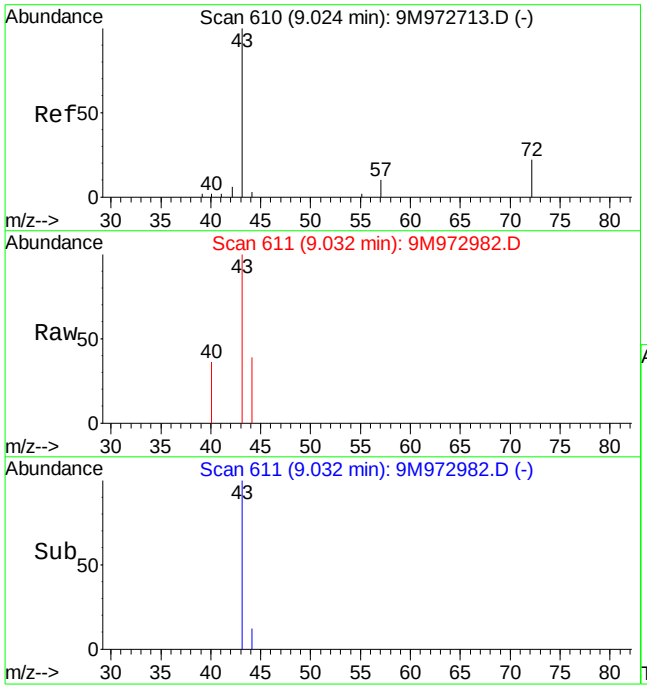

#29
2-Butanone
Concen: 1.53 ug/kg
RT: 9.03 min Scan# 611
Delta R.T. 0.00 min
Lab File: 9M972982.D
Acq: 1 Mar 2016 1:04

Tgt Ion: 43 Resp: 2635

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

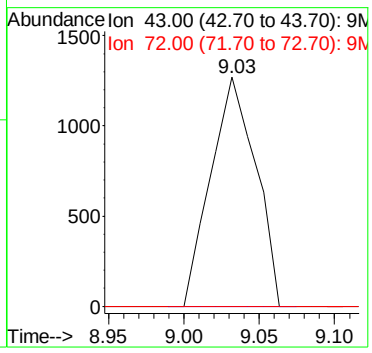

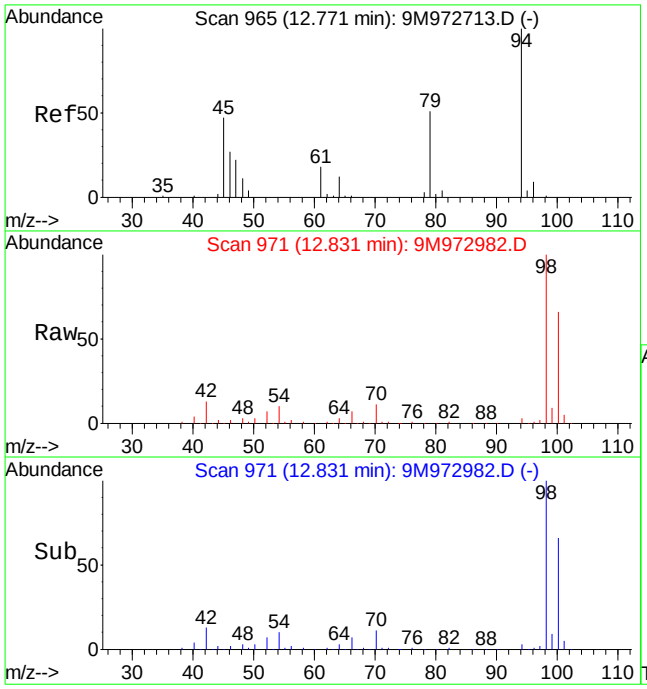

#56
Dimethyl Disulfide
Concen: 3.53 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.06 min
Lab File: 9M972982.D
Acq: 1 Mar 2016 1:04

Tgt Ion: 94 Resp: 14678

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

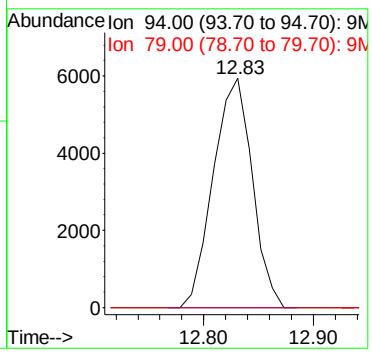

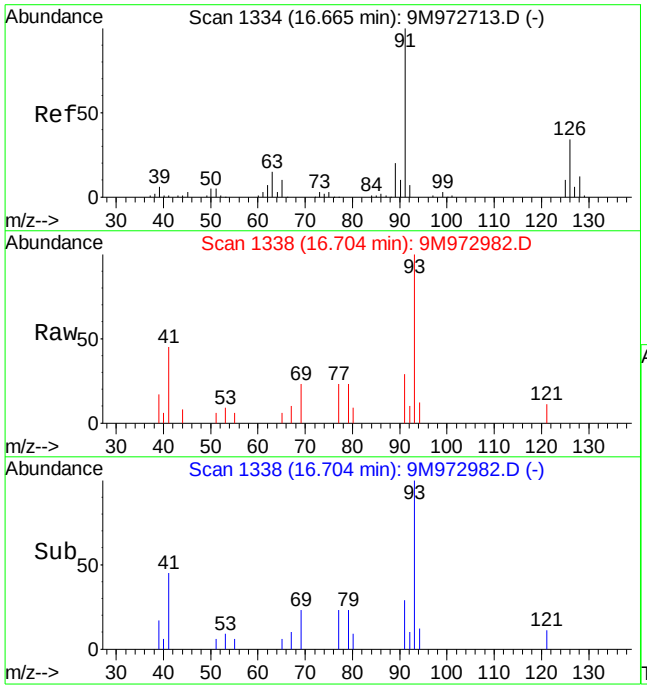

#85
2-Chlorotoluene
Concen: 0.53 ug/kg
RT: 16.70 min Scan# 1338
Delta R.T. 0.04 min
Lab File: 9M972982.D
Acq: 1 Mar 2016 1:04

Tgt Ion: 91 Resp: 4869

Ion	Ratio	Lower	Upper
91	100		
126	0.0	20.1	46.9#

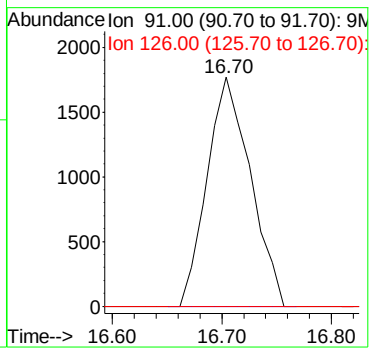

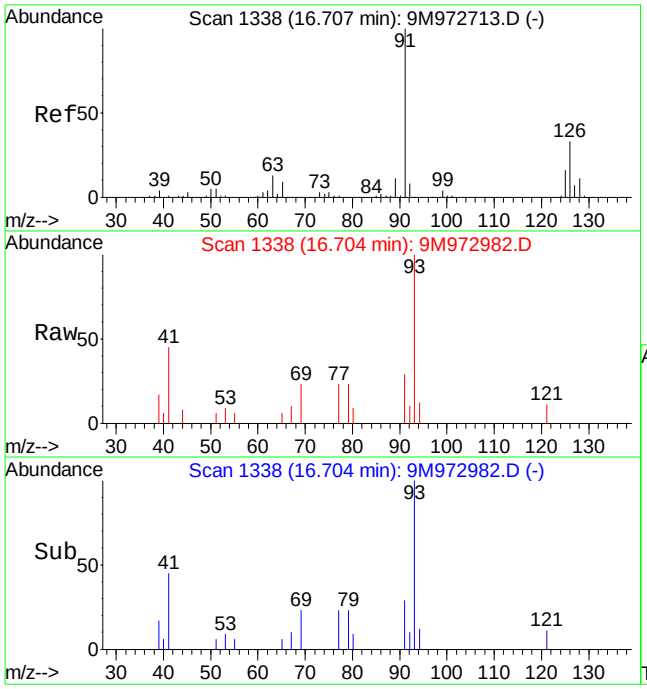

#86
4-Chlorotoluene
Concen: 0.58 ug/kg
RT: 16.70 min Scan# 1338
Delta R.T. 0.00 min
Lab File: 9M972982.D
Acq: 1 Mar 2016 1:04

Tgt Ion: 91 Resp: 4869

Ion	Ratio	Lower	Upper
91	100		
126	0.0	20.9	48.9#

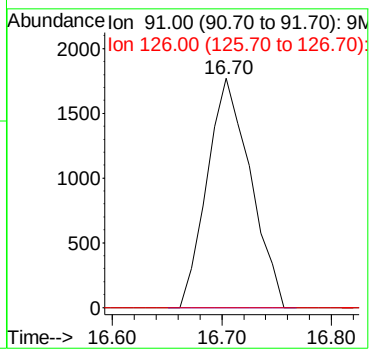

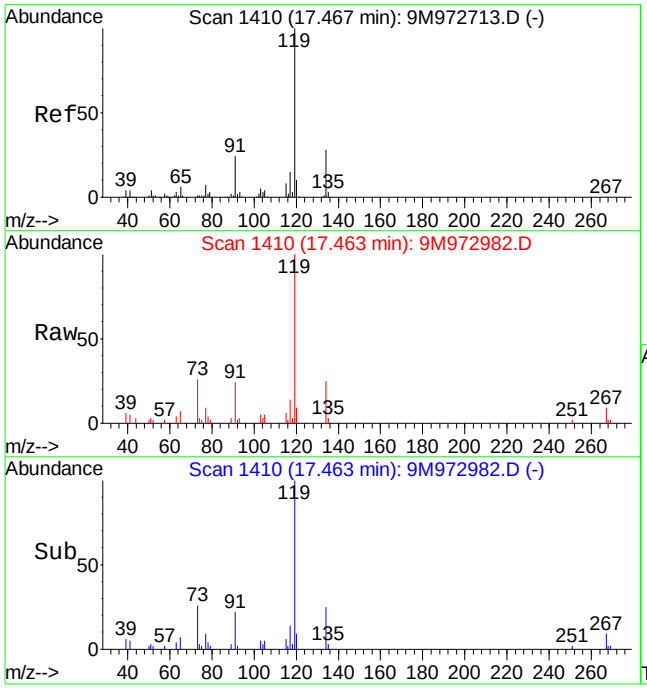

#91
p-Isopropyltoluene
Concen: 3.29 ug/kg
RT: 17.46 min Scan# 1410
Delta R.T. 0.00 min
Lab File: 9M972982.D
Acq: 1 Mar 2016 1:04

Tgt Ion:119 Resp: 36527

Ion	Ratio	Lower	Upper
119	100		
134	23.9	15.7	36.5

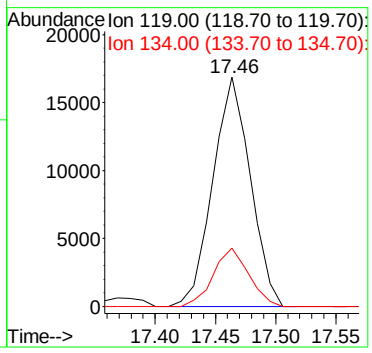

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972983.D Vial: 17
Acq On : 1 Mar 2016 1:36 Operator: FJB/JDS
Sample : L16021358-04 5.37g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 01 09:27:24 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	556527	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	397163	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	182994	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	149189	49.4550 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.90%		
43) 1,2-Dichloroethane-d4	10.45	65	186845	49.3647 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.72%		
58) Toluene-d8	12.83	98	541335	53.8862 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 107.78%		
79) p-Bromofluorobenzene	16.23	95	204642	57.4309 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 114.86%		

Target Compounds					Qvalue
13) Acetone	6.41	43	12529	6.8424 ug/kg	94
17) Iodomethane	7.14	142	197	2.9186 ug/kg#	34
29) 2-Butanone	9.04	43	1429	0.7963 ug/kg#	58
56) Dimethyl Disulfide	12.83	94	15403	3.5681 ug/kg#	29
91) p-Isopropyltoluene	17.46	119	13366	1.1389 ug/kg	98

(#) = qualifier out of range (m) = manual integration
9M972983.D 8260SL.M Tue Mar 01 09:27:25 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972983.D Vial: 17
Acq On : 1 Mar 2016 1:36 Operator: FJB/JDS
Sample : L16021358-04 5.37g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 1 9:27 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

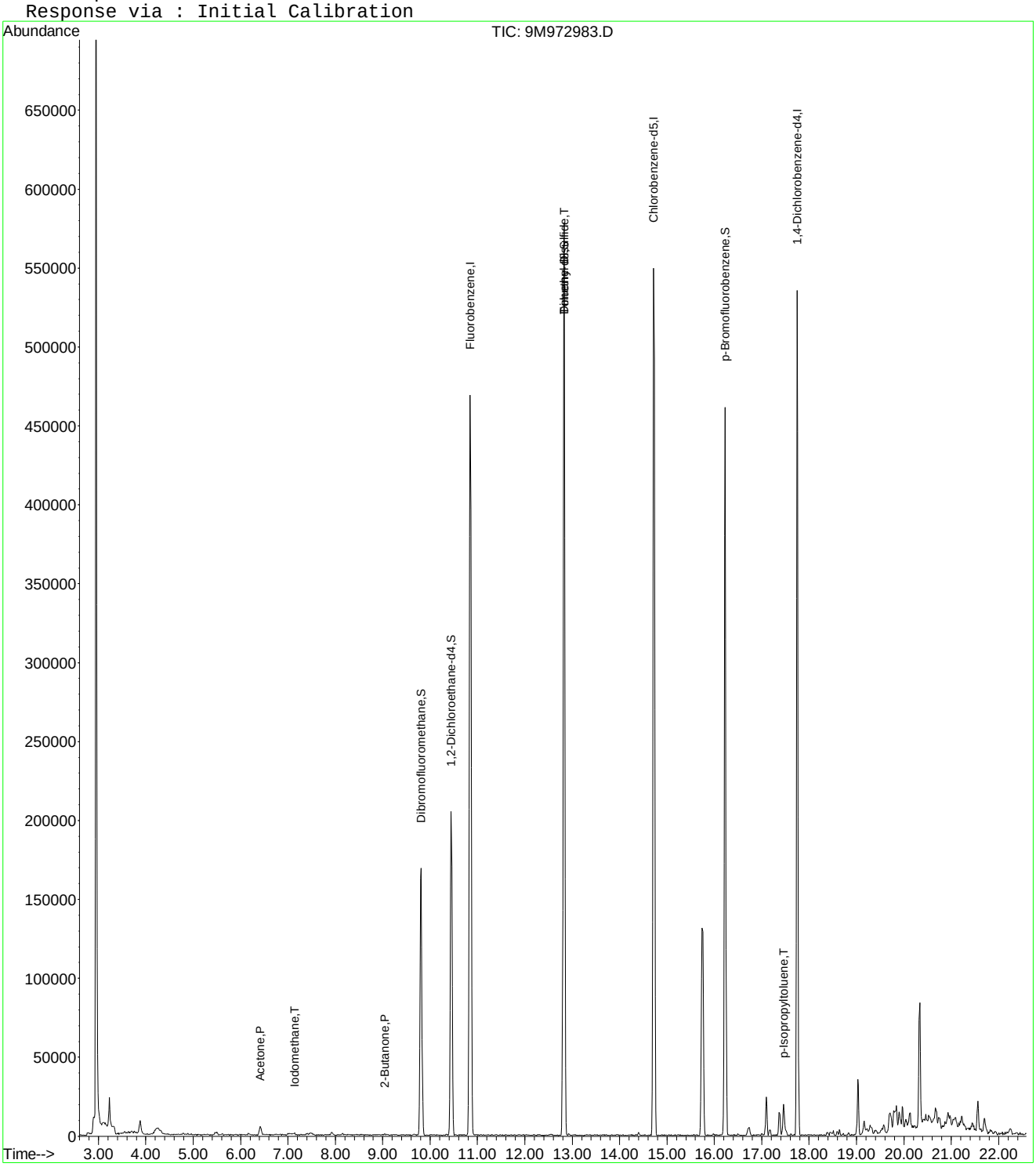

9M972983.D 8260SL.M Tue Mar 01 09:27:25 2016 Page 2

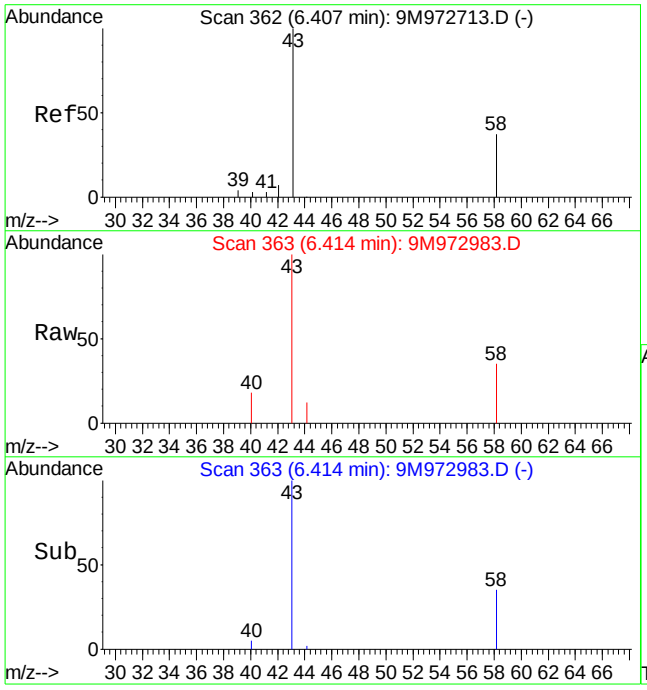

#13
Acetone
Concen: 6.84 ug/kg
RT: 6.41 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M972983.D
Acq: 1 Mar 2016 1:36

Tgt Ion: 43 Resp: 12529

Ion	Ratio	Lower	Upper
43	100		
58	31.3	16.9	39.3

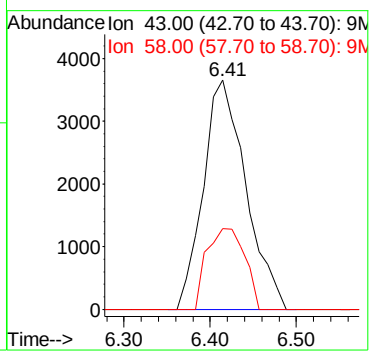

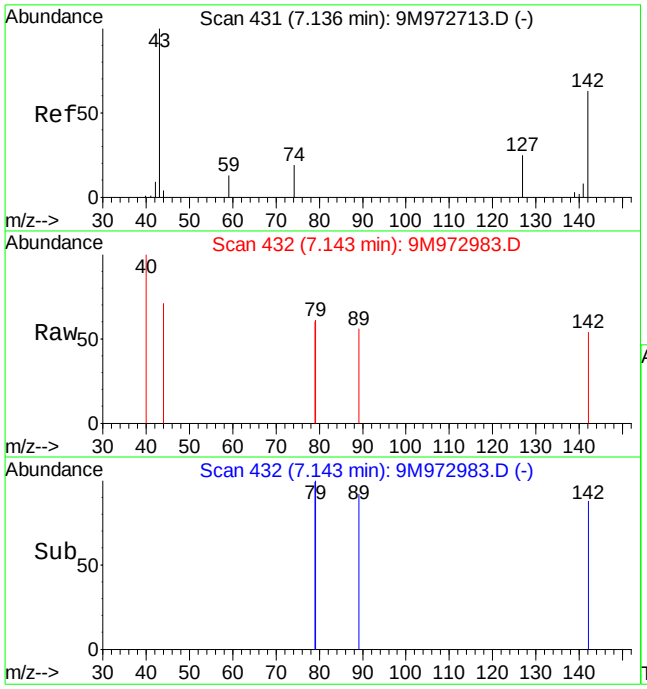

#17
Iodomethane
Concen: 2.92 ug/kg
RT: 7.14 min Scan# 432
Delta R.T. 0.01 min
Lab File: 9M972983.D
Acq: 1 Mar 2016 1:36

Tgt Ion:142 Resp: 197

Ion	Ratio	Lower	Upper
142	100		
127	0.0	25.1	58.7#

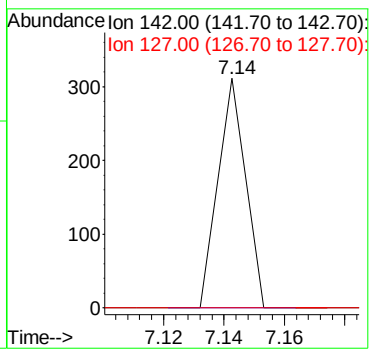

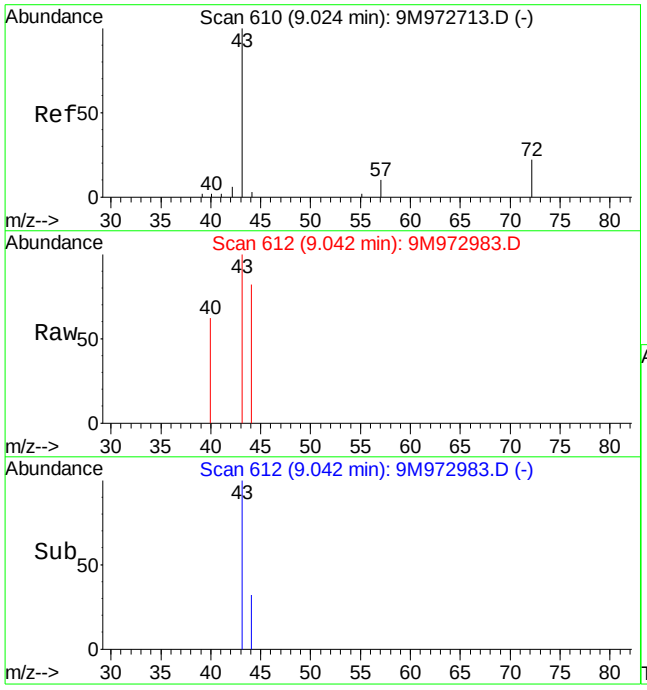

#29
2-Butanone
Concen: 0.80 ug/kg
RT: 9.04 min Scan# 612
Delta R.T. 0.01 min
Lab File: 9M972983.D
Acq: 1 Mar 2016 1:36

Tgt Ion: 43 Resp: 1429

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

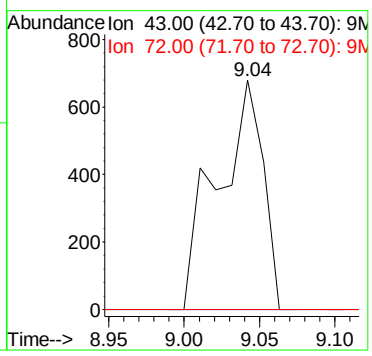

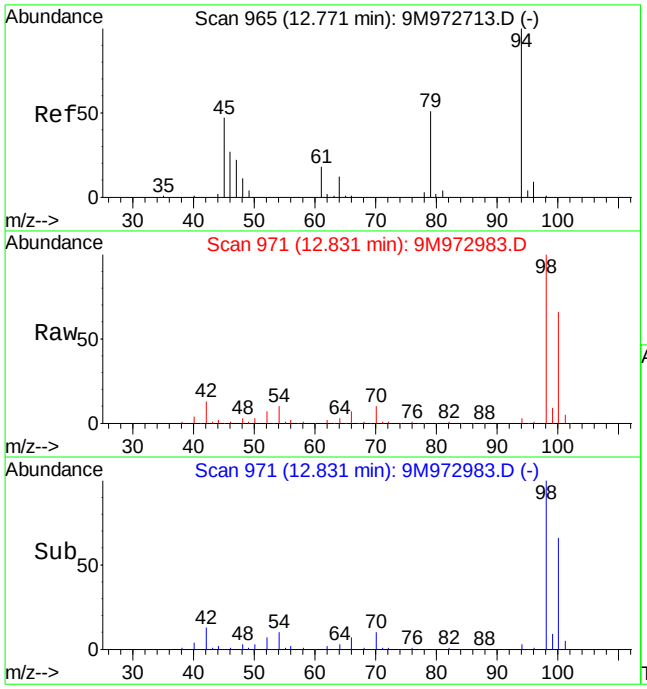

#56
Dimethyl Disulfide
Concen: 3.57 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.06 min
Lab File: 9M972983.D
Acq: 1 Mar 2016 1:36

Tgt Ion: 94 Resp: 15403

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

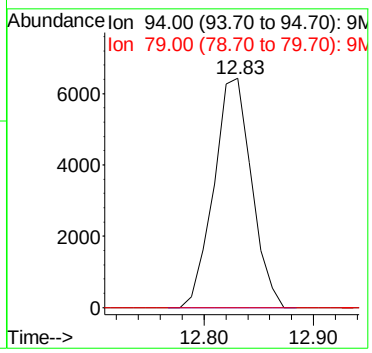

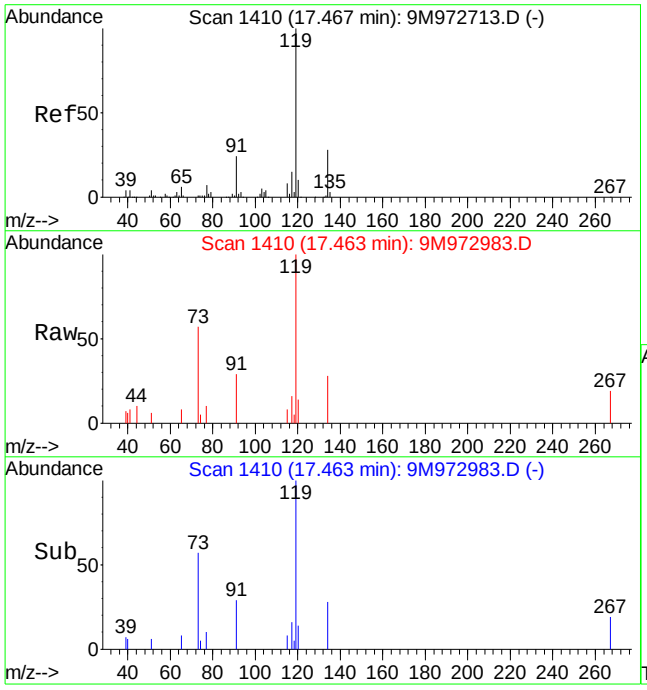

#91
p-Isopropyltoluene
Concen: 1.14 ug/kg
RT: 17.46 min Scan# 1410
Delta R.T. 0.00 min
Lab File: 9M972983.D
Acq: 1 Mar 2016 1:36

Tgt Ion:119 Resp: 13366

Ion	Ratio	Lower	Upper
119	100		
134	24.9	15.7	36.5

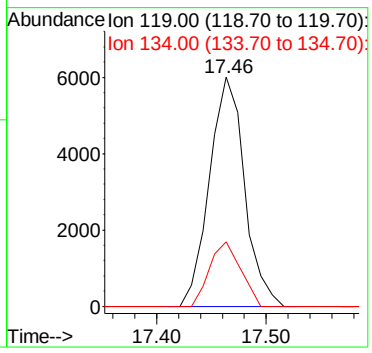

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972984.D Vial: 18
Acq On : 1 Mar 2016 2:06 Operator: FJB/JDS
Sample : L16021358-05 4.57g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 01 09:27:25 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	577665	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	403143	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	179911	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	152887	48.8263 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.66%		
43) 1,2-Dichloroethane-d4	10.45	65	187462	47.7154 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.44%		
58) Toluene-d8	12.82	98	546293	53.5731 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 107.14%		
79) p-Bromofluorobenzene	16.23	95	199402	56.9192 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 113.84%		

Target Compounds					Qvalue
13) Acetone	6.41	43	5906	1.7357 ug/kg	88
17) Iodomethane	7.14	142	219	2.9272 ug/kg#	34
56) Dimethyl Disulfide	12.83	94	15063	3.3616 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972984.D 8260SL.M Tue Mar 01 09:27:26 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972984.D Vial: 18
Acq On : 1 Mar 2016 2:06 Operator: FJB/JDS
Sample : L16021358-05 4.57g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 1 9:27 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

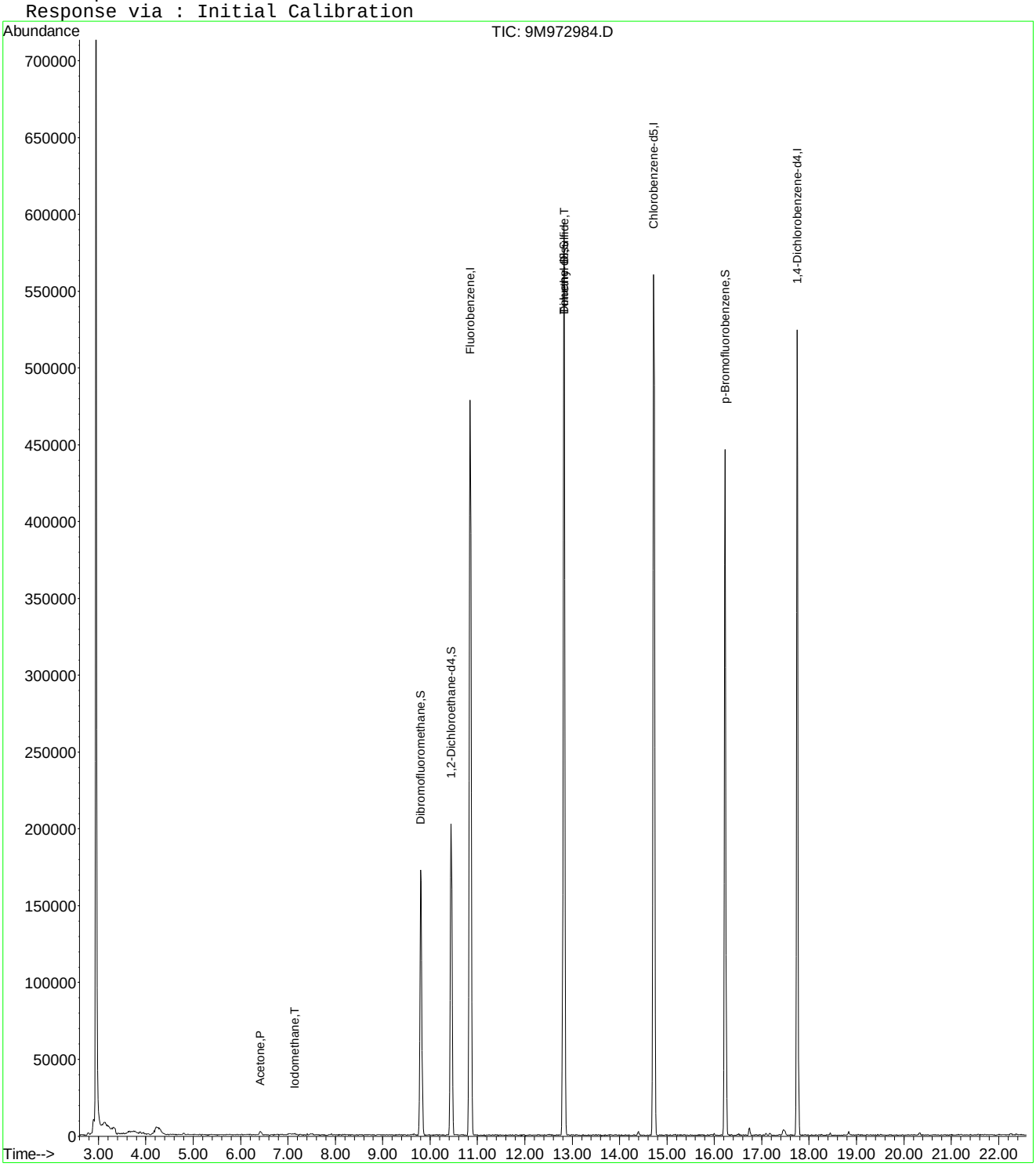

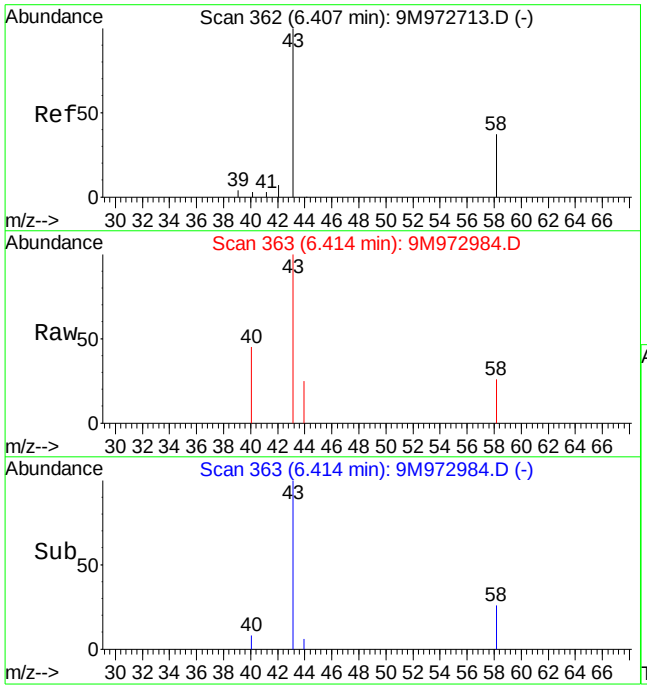

#13
Acetone
Concen: 1.74 ug/kg
RT: 6.41 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M972984.D
Acq: 1 Mar 2016 2:06

Tgt Ion: 43 Resp: 5906

Ion	Ratio	Lower	Upper
43	100		
58	21.5	16.9	39.3

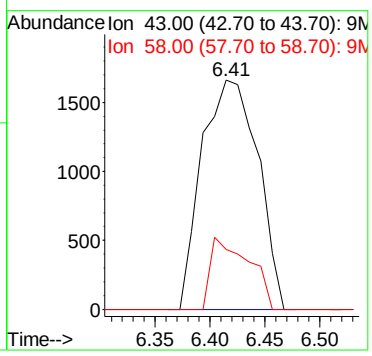

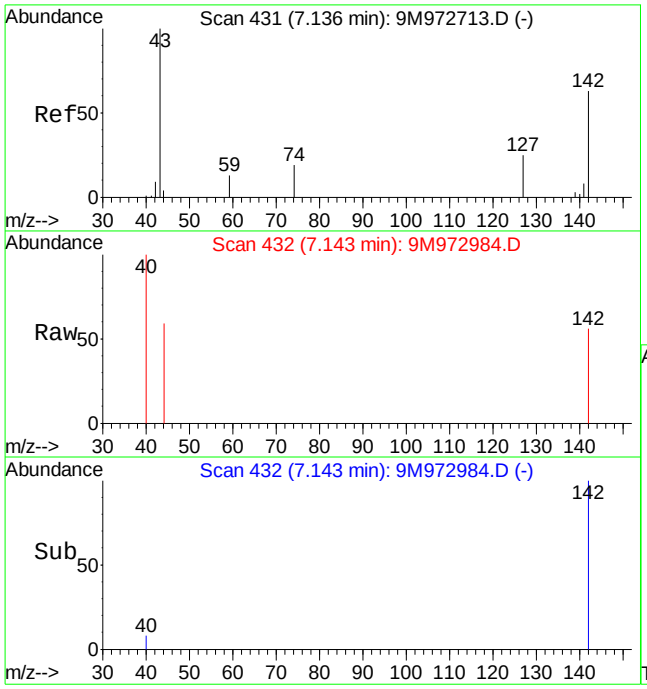

#17
Iodomethane
Concen: 2.93 ug/kg
RT: 7.14 min Scan# 432
Delta R.T. 0.01 min
Lab File: 9M972984.D
Acq: 1 Mar 2016 2:06

Tgt Ion:142 Resp: 219

Ion	Ratio	Lower	Upper
142	100		
127	0.0	25.1	58.7#

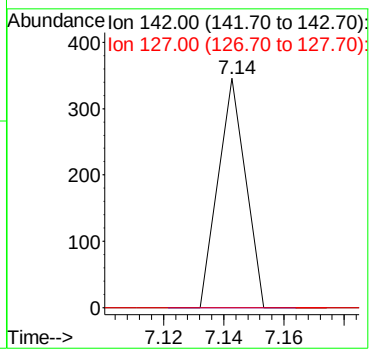

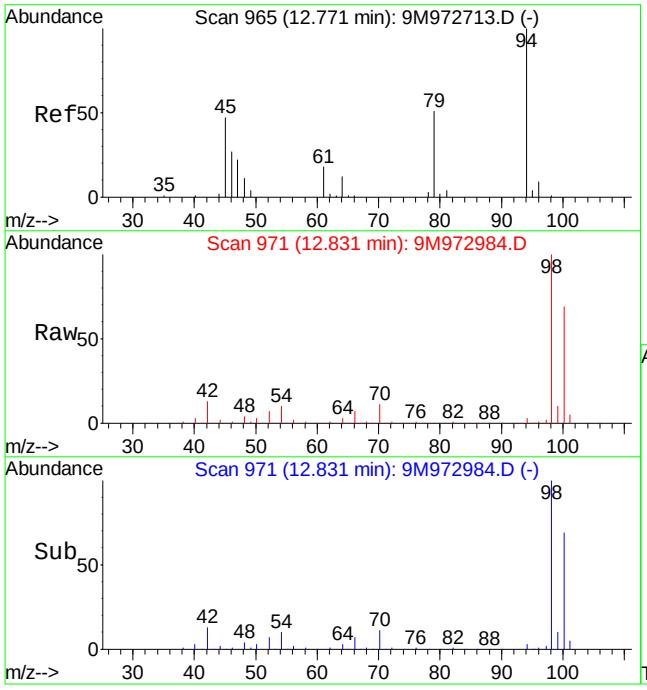

#56
Dimethyl Disulfide
Concen: 3.36 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.06 min
Lab File: 9M972984.D
Acq: 1 Mar 2016 2:06

Tgt Ion: 94 Resp: 15063

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

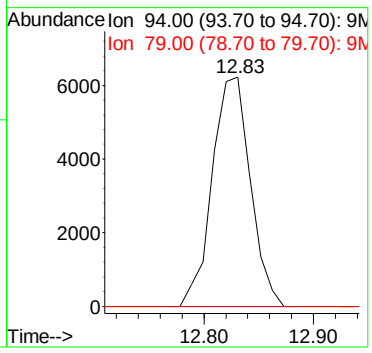

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972985.D Vial: 19
Acq On : 1 Mar 2016 2:36 Operator: FJB/JDS
Sample : L16021358-06 5.00g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 01 09:27:26 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	550575	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	391693	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.75	152	181264	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	148154	49.6428 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.28%		
43) 1,2-Dichloroethane-d4	10.45	65	189697	50.6600 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 101.32%		
58) Toluene-d8	12.83	98	527557	53.2480 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.50%		
79) p-Bromofluorobenzene	16.23	95	198850	56.3380 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 112.68%		

Target Compounds

					Qvalue
13) Acetone	6.41	43	3143	Below Cal	98
15) Tert-Butyl Alcohol	6.77	59	229	0.4068 ug/kg#	58
56) Dimethyl Disulfide	12.82	94	13985	3.2746 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972985.D 8260SL.M Tue Mar 01 09:27:27 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972985.D Vial: 19
Acq On : 1 Mar 2016 2:36 Operator: FJB/JDS
Sample : L16021358-06 5.00g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 1 9:27 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

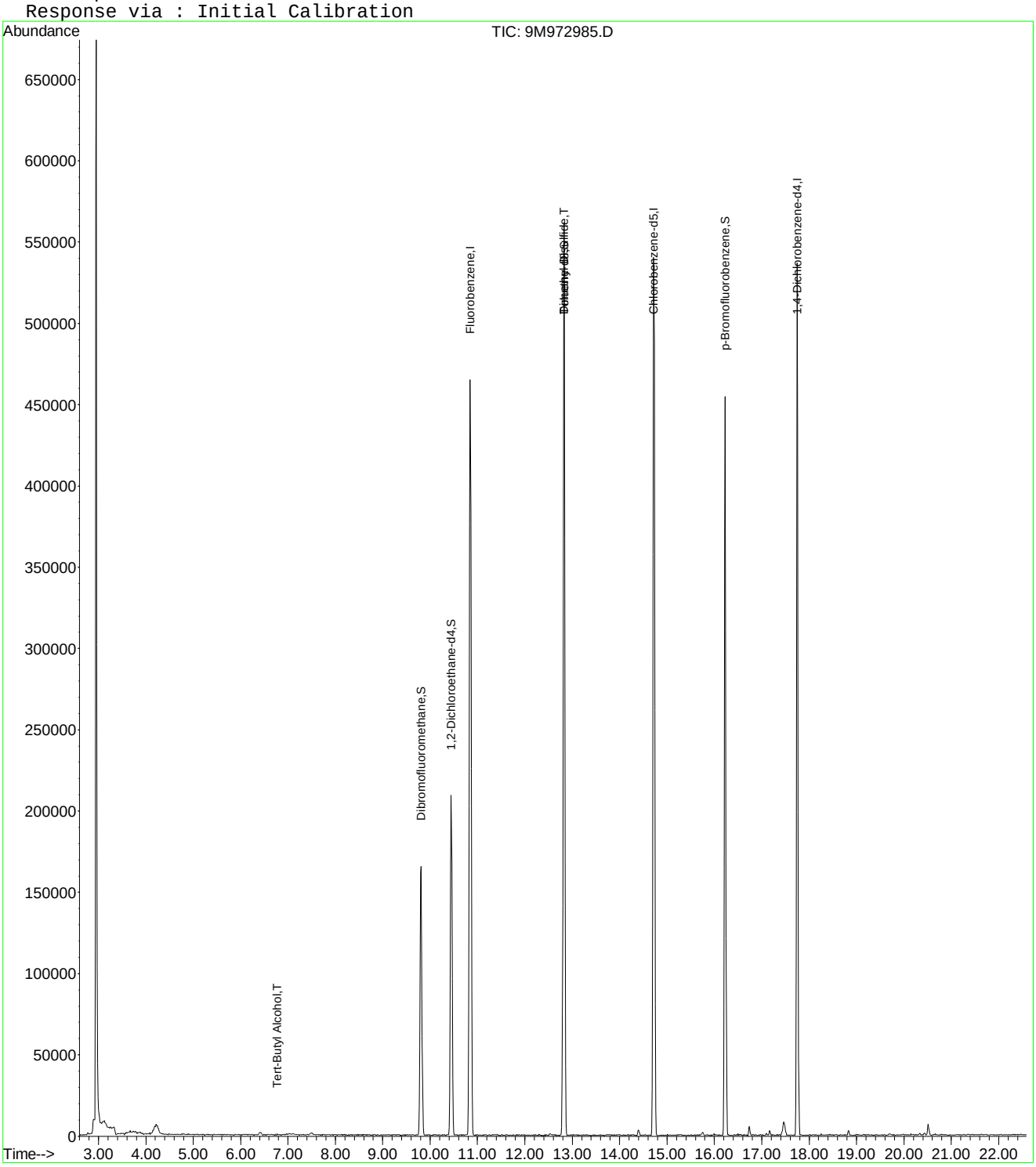

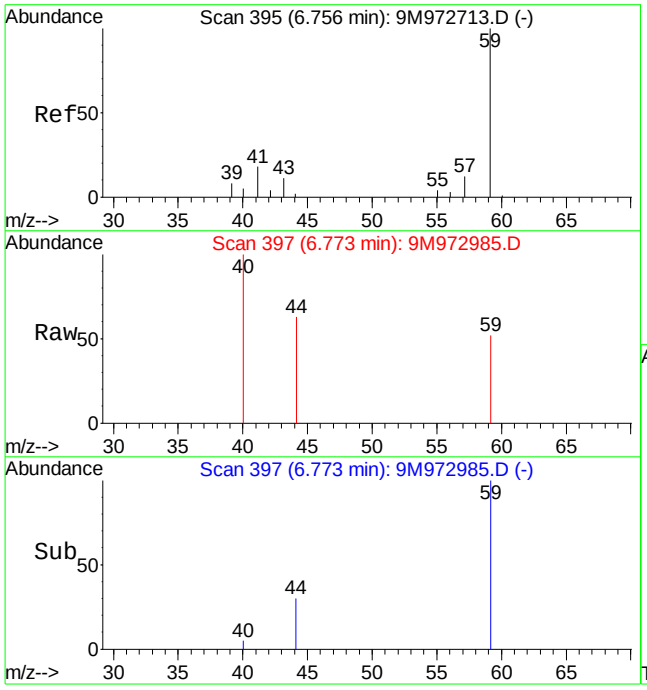

#15
Tert-Butyl Alcohol
Concen: 0.41 ug/kg
RT: 6.77 min Scan# 397
Delta R.T. 0.01 min
Lab File: 9M972985.D
Acq: 1 Mar 2016 2:36

Tgt Ion: 59 Resp: 229

Ion	Ratio	Lower	Upper
59	100		
41	0.0	14.1	32.9#
57	0.0	6.4	15.0#

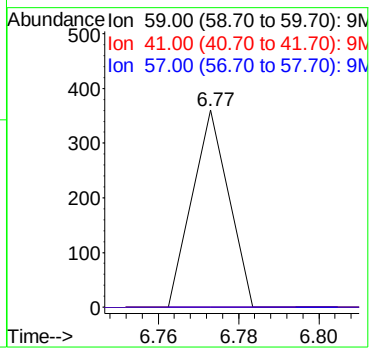

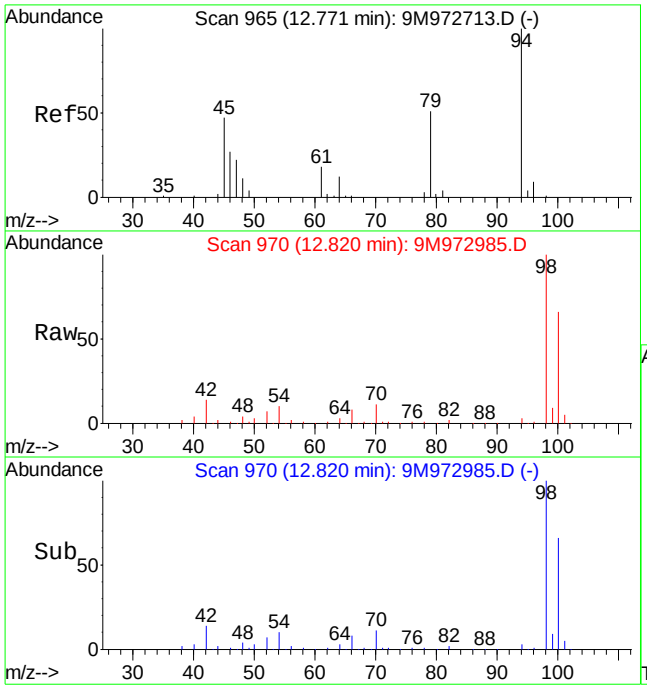

#56
Dimethyl Disulfide
Concen: 3.27 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M972985.D
Acq: 1 Mar 2016 2:36

Tgt Ion: 94 Resp: 13985

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

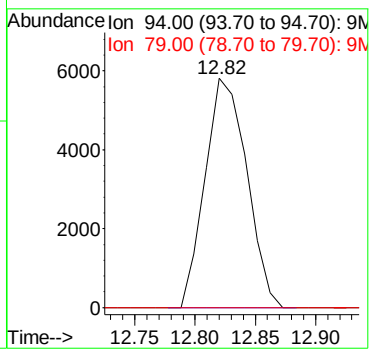

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972986.D Vial: 20
Acq On : 1 Mar 2016 3:06 Operator: FJB/JDS
Sample : L16021358-07 5.01g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 01 09:27:27 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	554504	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	390047	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	180534	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	146715	48.8123 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.62%		
43) 1,2-Dichloroethane-d4	10.45	65	179143	47.5025 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.00%		
58) Toluene-d8	12.82	98	527003	53.4166 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.84%		
79) p-Bromofluorobenzene	16.23	95	193777	55.1227 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 110.24%		

Target Compounds

					Qvalue
13) Acetone	6.42	43	8118	3.5708 ug/kg	98
15) Tert-Butyl Alcohol	6.76	59	477	0.8413 ug/kg#	58
17) Iodomethane	7.12	142	717	3.2379 ug/kg#	34
56) Dimethyl Disulfide	12.82	94	14825	3.4467 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972986.D 8260SL.M Tue Mar 01 09:27:28 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972986.D Vial: 20
Acq On : 1 Mar 2016 3:06 Operator: FJB/JDS
Sample : L16021358-07 5.01g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 1 9:27 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

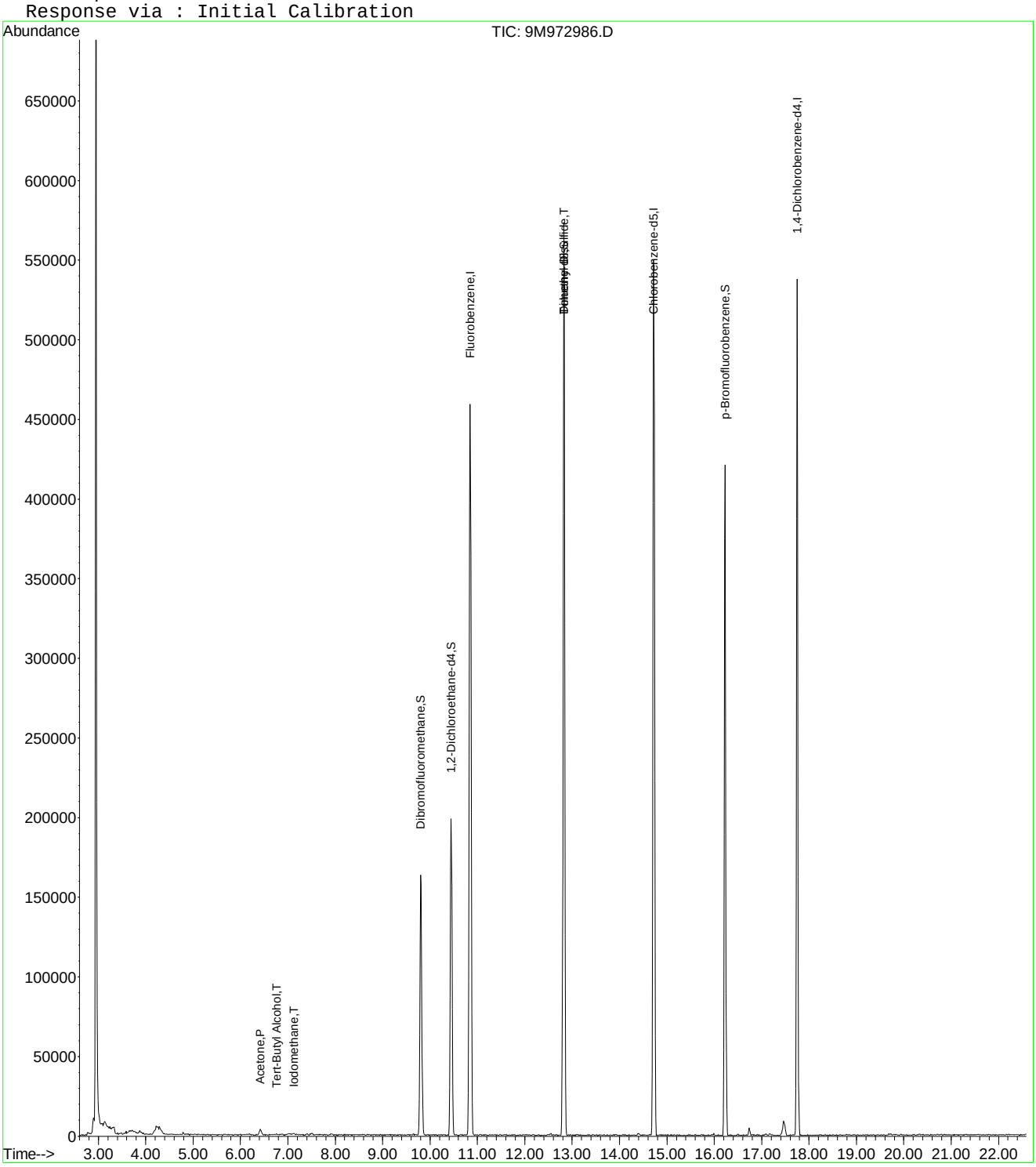

9M972986.D 8260SL.M Tue Mar 01 09:27:28 2016 Page 2

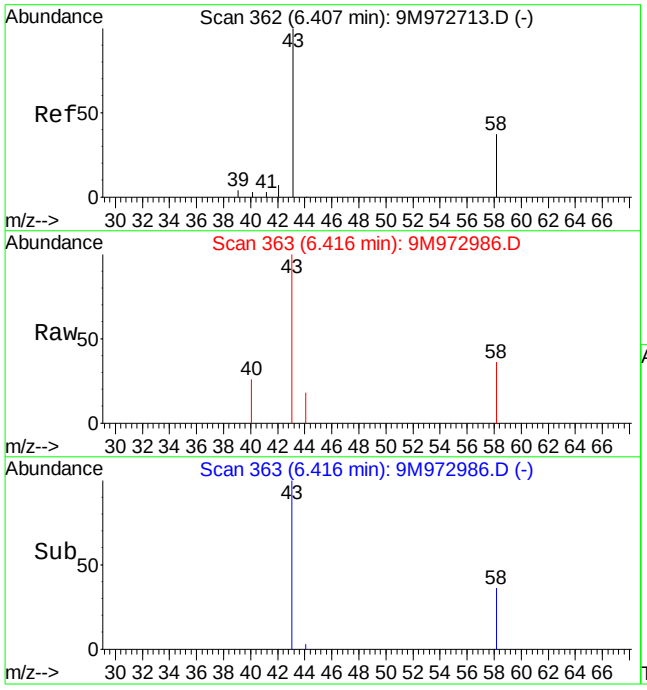

#13
Acetone
Concen: 3.57 ug/kg
RT: 6.42 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M972986.D
Acq: 1 Mar 2016 3:06

Tgt Ion: 43 Resp: 8118

Ion	Ratio	Lower	Upper
43	100		
58	26.9	16.9	39.3

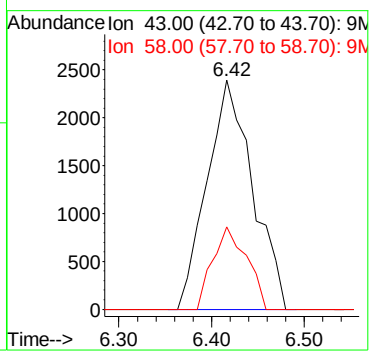

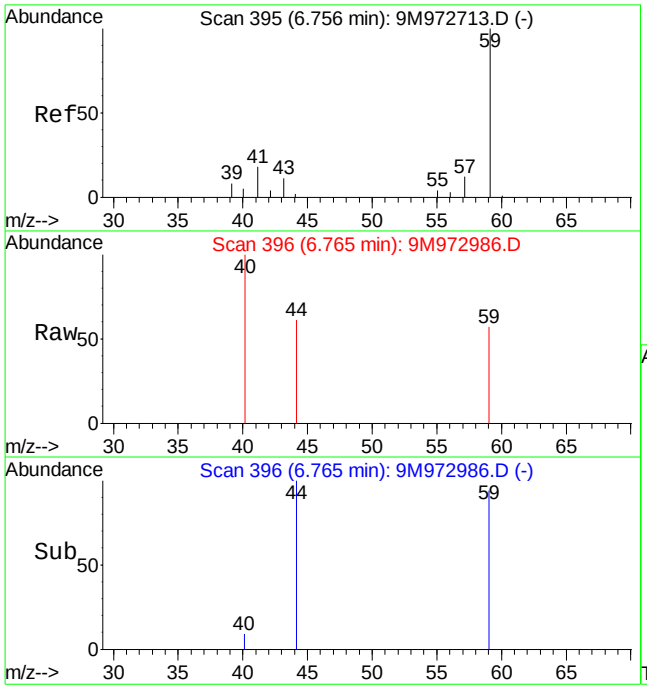

#15
Tert-Butyl Alcohol
Concen: 0.84 ug/kg
RT: 6.76 min Scan# 396
Delta R.T. 0.00 min
Lab File: 9M972986.D
Acq: 1 Mar 2016 3:06

Tgt Ion: 59 Resp: 477

Ion	Ratio	Lower	Upper
59	100		
41	0.0	14.1	32.9#
57	0.0	6.4	15.0#

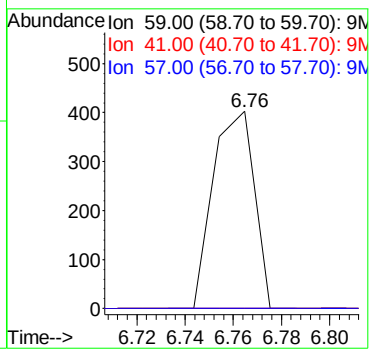

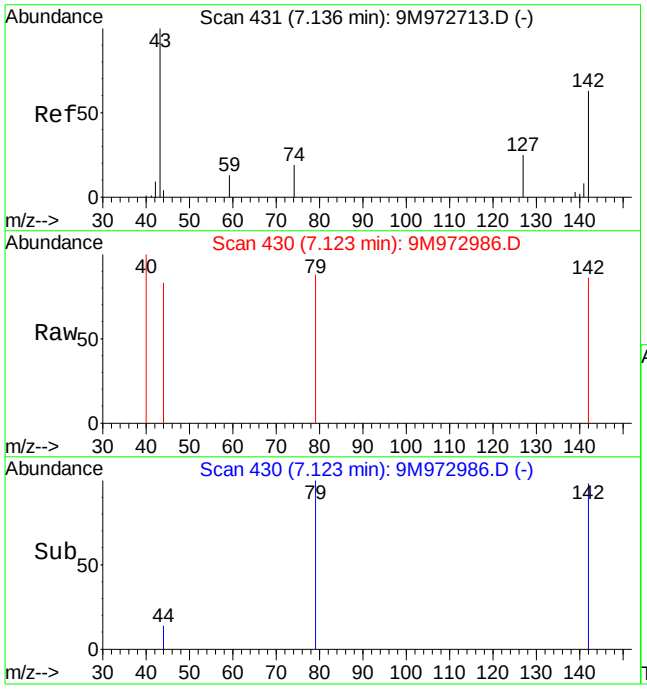

#17
Iodomethane
Concen: 3.24 ug/kg
RT: 7.12 min Scan# 430
Delta R.T. -0.01 min
Lab File: 9M972986.D
Acq: 1 Mar 2016 3:06

Tgt Ion:142 Resp: 717

Ion	Ratio	Lower	Upper
142	100		
127	0.0	25.1	58.7#

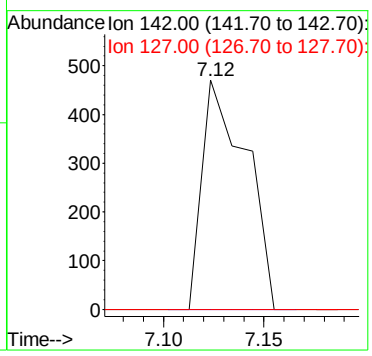

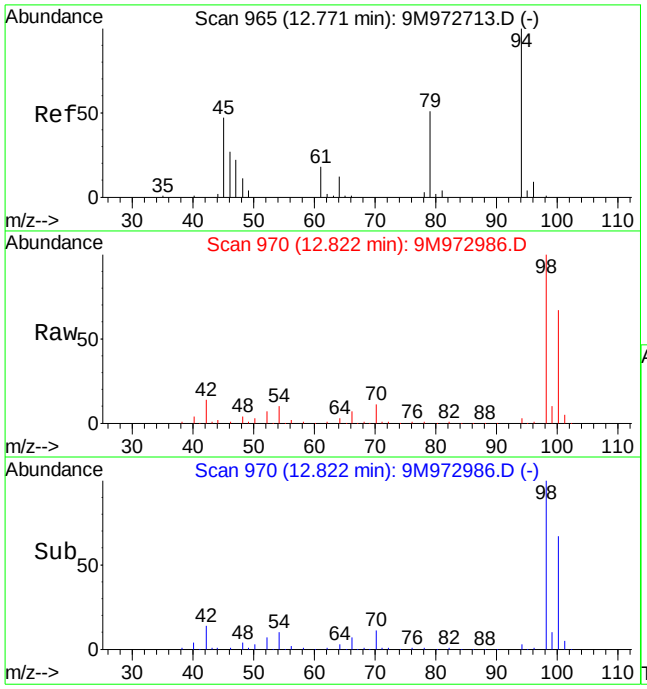

#56
Dimethyl Disulfide
Concen: 3.45 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M972986.D
Acq: 1 Mar 2016 3:06

Tgt Ion: 94 Resp: 14825

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

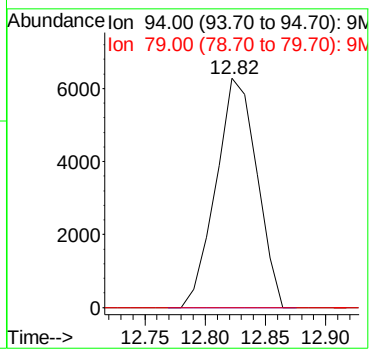

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972987.D Vial: 21
Acq On : 1 Mar 2016 3:37 Operator: FJB/JDS
Sample : L16021358-08 4.84g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 01 09:27:28 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	492393	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	356211	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	164608	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	133496	50.0168 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.04%		
43) 1,2-Dichloroethane-d4	10.45	65	177799	53.0932 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 106.18%		
58) Toluene-d8	12.83	98	477680	53.0163 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.04%		
79) p-Bromofluorobenzene	16.23	95	176710	55.1312 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 110.26%		

Target Compounds

					Qvalue
13) Acetone	6.40	43	5335	1.9895 ug/kg	87
17) Iodomethane	7.13	142	194	2.9322 ug/kg#	34
36) Tetrahydrofuran	9.79	42	434	0.4240 ug/kg#	43
56) Dimethyl Disulfide	12.83	94	13588	3.5576 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972987.D 8260SL.M Tue Mar 01 09:27:29 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972987.D Vial: 21
Acq On : 1 Mar 2016 3:37 Operator: FJB/JDS
Sample : L16021358-08 4.84g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 1 9:27 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

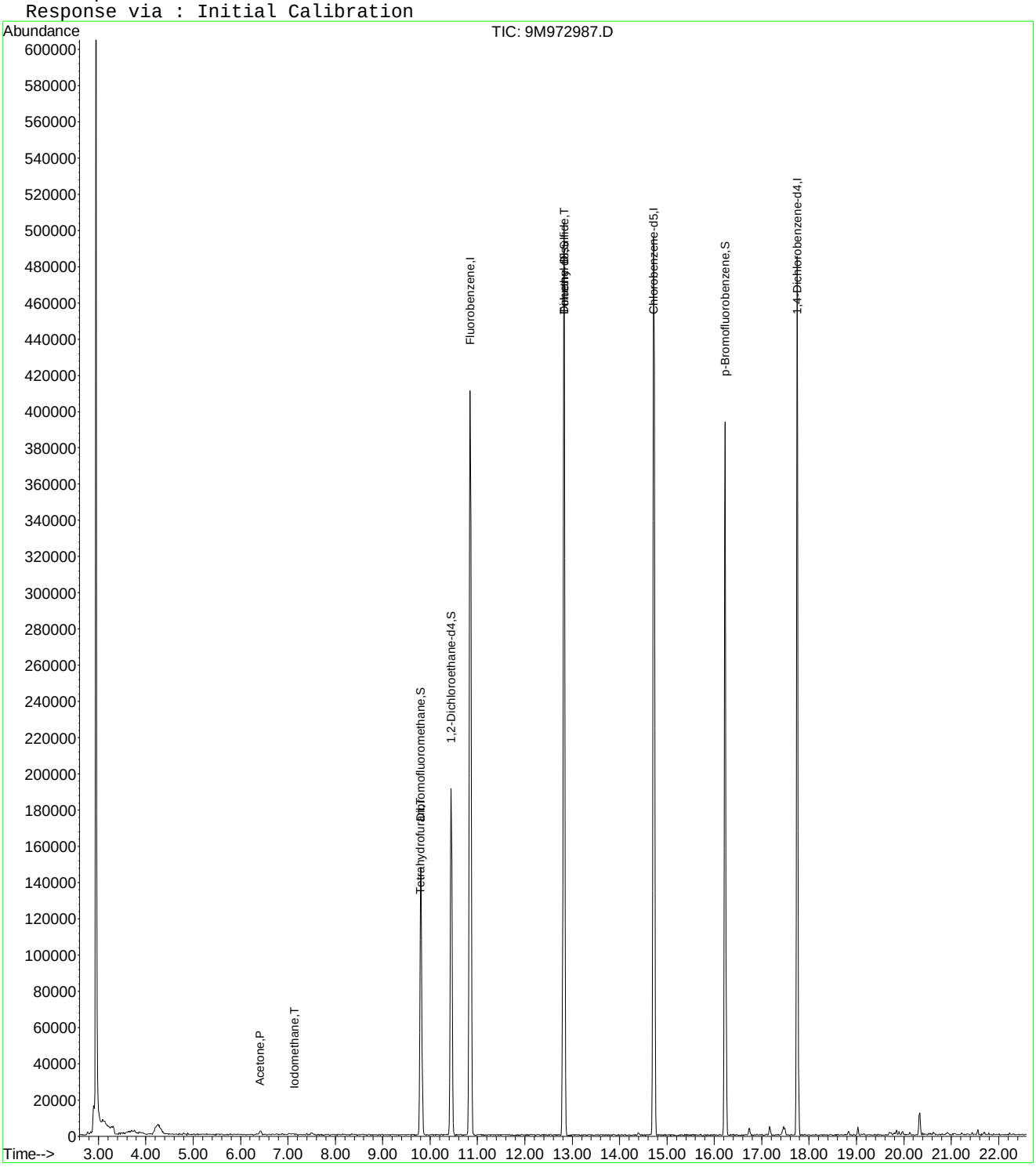

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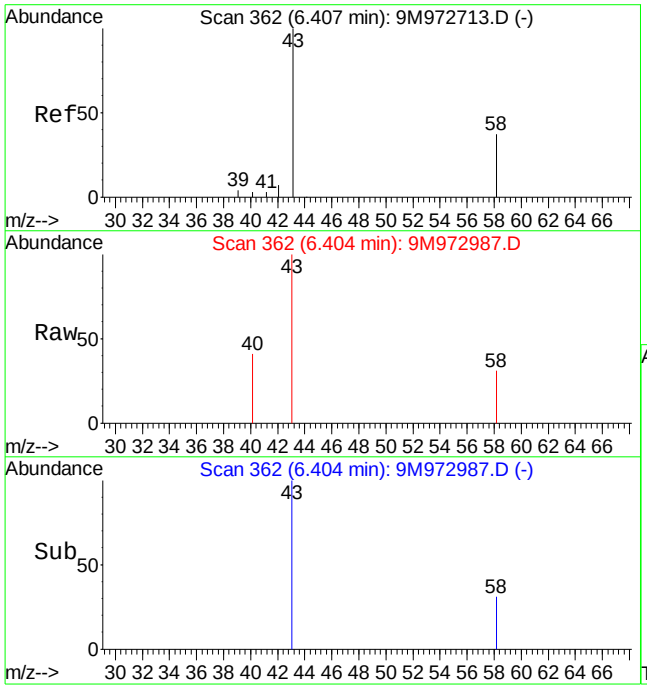

#13
Acetone
Concen: 1.99 ug/kg
RT: 6.40 min Scan# 362
Delta R.T. -0.01 min
Lab File: 9M972987.D
Acq: 1 Mar 2016 3:37

Tgt Ion: 43 Resp: 5335

Ion	Ratio	Lower	Upper
43	100		
58	21.3	16.9	39.3

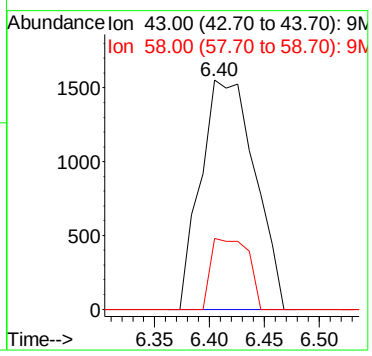

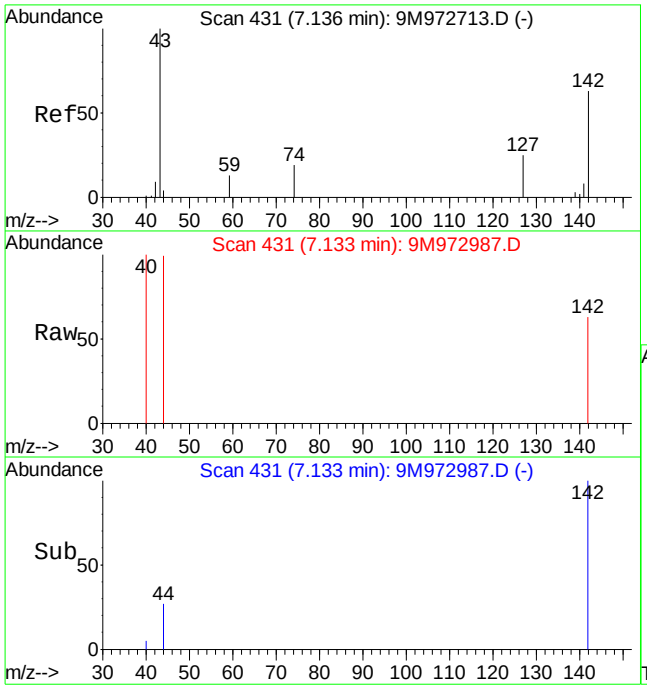

#17
Iodomethane
Concen: 2.93 ug/kg
RT: 7.13 min Scan# 431
Delta R.T. 0.00 min
Lab File: 9M972987.D
Acq: 1 Mar 2016 3:37

Tgt Ion:142 Resp: 194

Ion	Ratio	Lower	Upper
142	100		
127	0.0	25.1	58.7#

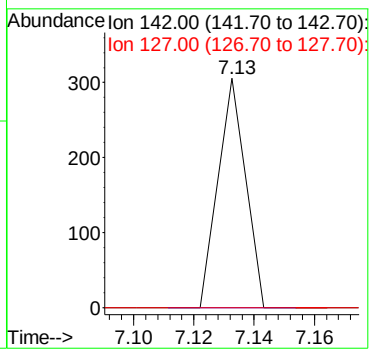

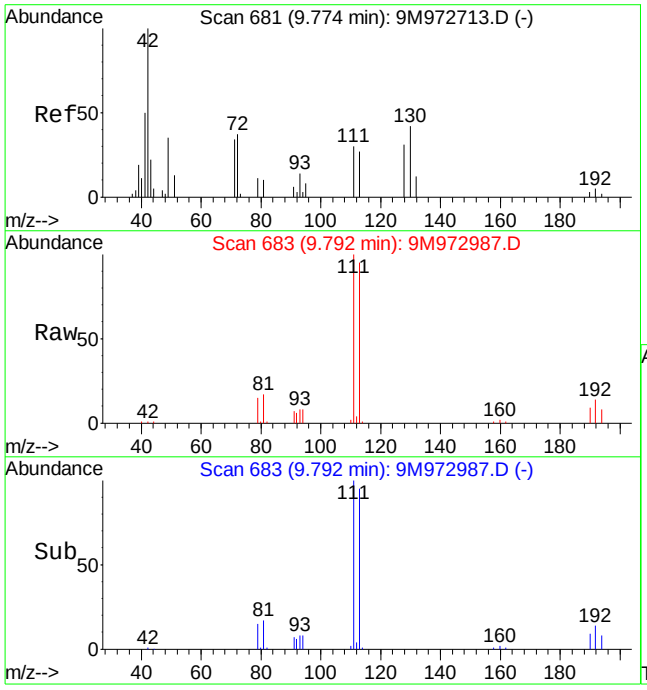

#36
Tetrahydrofuran
Concen: 0.42 ug/kg
RT: 9.79 min Scan# 683
Delta R.T. 0.01 min
Lab File: 9M972987.D
Acq: 1 Mar 2016 3:37

Tgt Ion: 42 Resp: 434

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

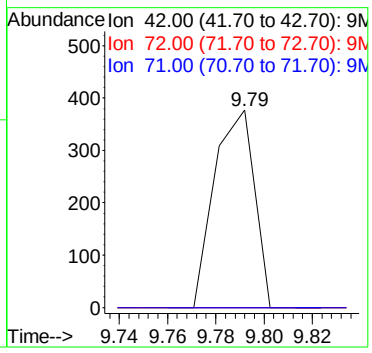

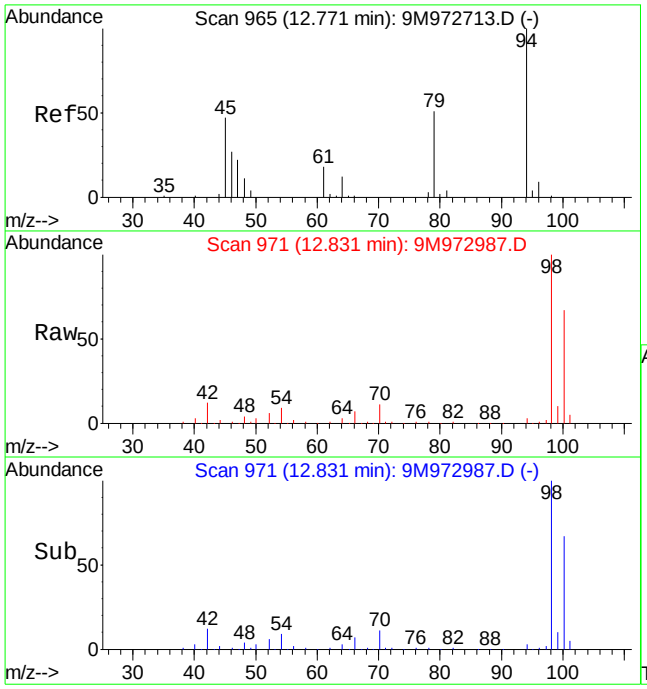

#56
Dimethyl Disulfide
Concen: 3.56 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.07 min
Lab File: 9M972987.D
Acq: 1 Mar 2016 3:37

Tgt Ion: 94 Resp: 13588

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

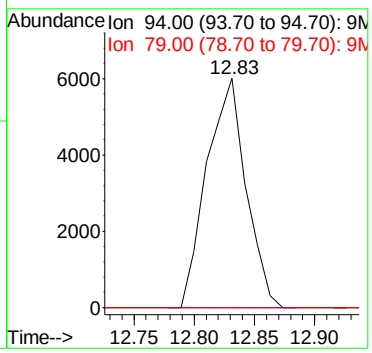

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972988.D Vial: 22
Acq On : 1 Mar 2016 4:07 Operator: FJB/JDS
Sample : L16021358-09 4.60g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 01 09:27:29 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	484214	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	337722	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	156364	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	125839	47.9444 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.88%		
43) 1,2-Dichloroethane-d4	10.45	65	158386	48.0951 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.20%		
58) Toluene-d8	12.82	98	457011	53.4992 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 107.00%		
79) p-Bromofluorobenzene	16.23	95	169191	55.5684 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 111.14%		

Target Compounds					Qvalue
13) Acetone	6.41	43	5937	2.5822 ug/kg	89
56) Dimethyl Disulfide	12.82	94	12597	3.3539 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972988.D 8260SL.M Tue Mar 01 09:27:30 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972988.D Vial: 22
Acq On : 1 Mar 2016 4:07 Operator: FJB/JDS
Sample : L16021358-09 4.60g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 1 9:27 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

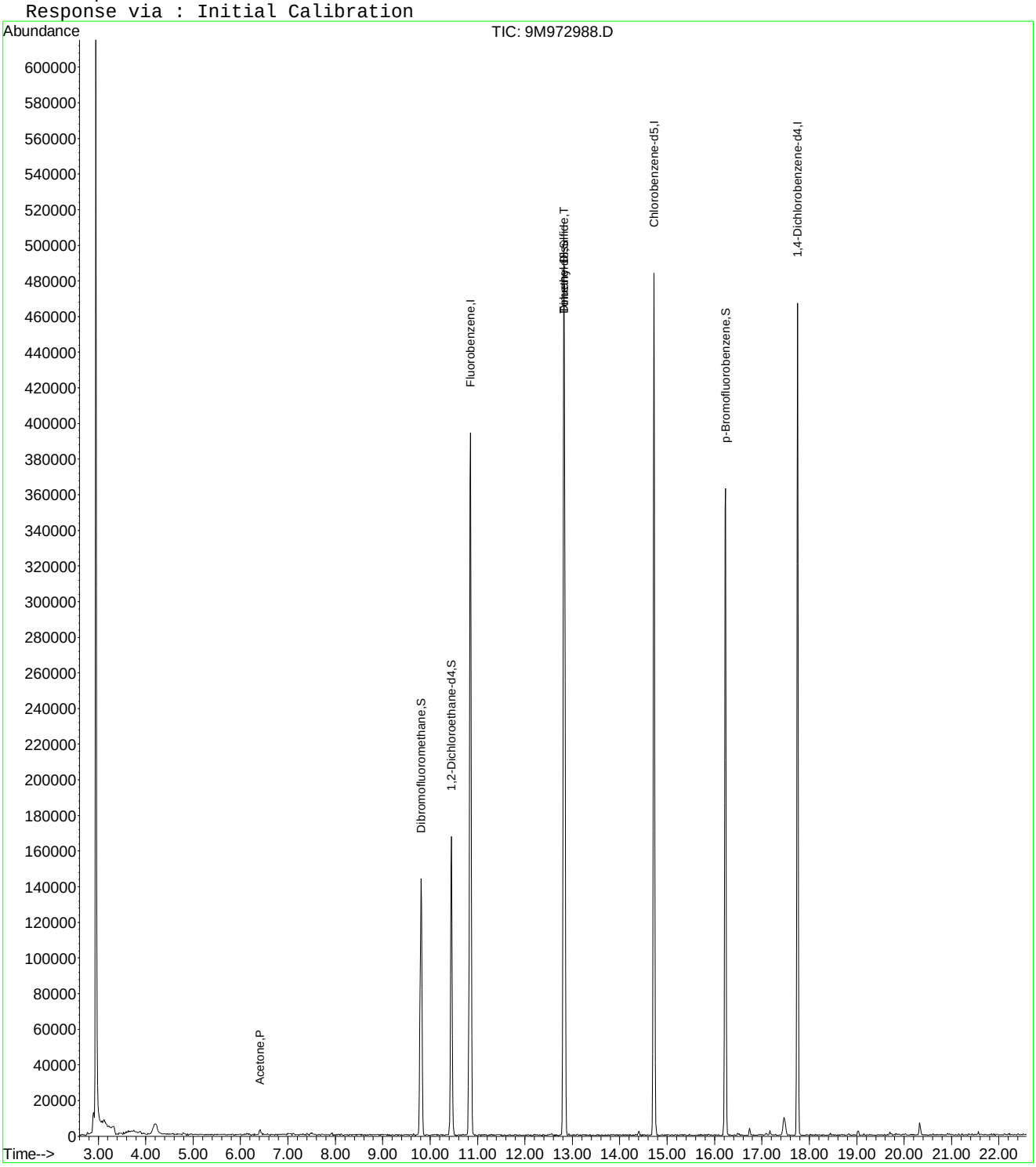

9M972988.D 8260SL.M Tue Mar 01 09:27:30 2016 Page 2

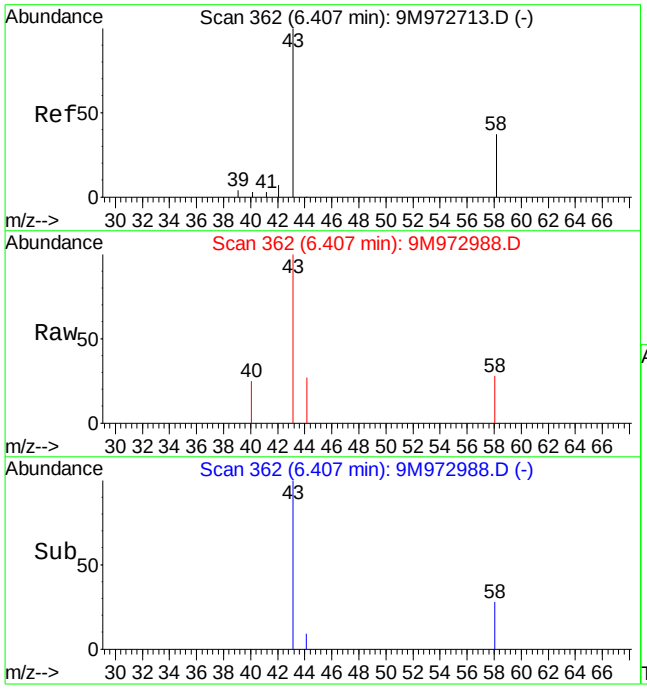

#13
Acetone
Concen: 2.58 ug/kg
RT: 6.41 min Scan# 362
Delta R.T. -0.01 min
Lab File: 9M972988.D
Acq: 1 Mar 2016 4:07

Tgt Ion: 43 Resp: 5937

Ion	Ratio	Lower	Upper
43	100		
58	22.4	16.9	39.3

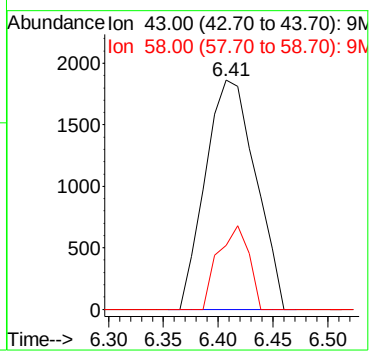

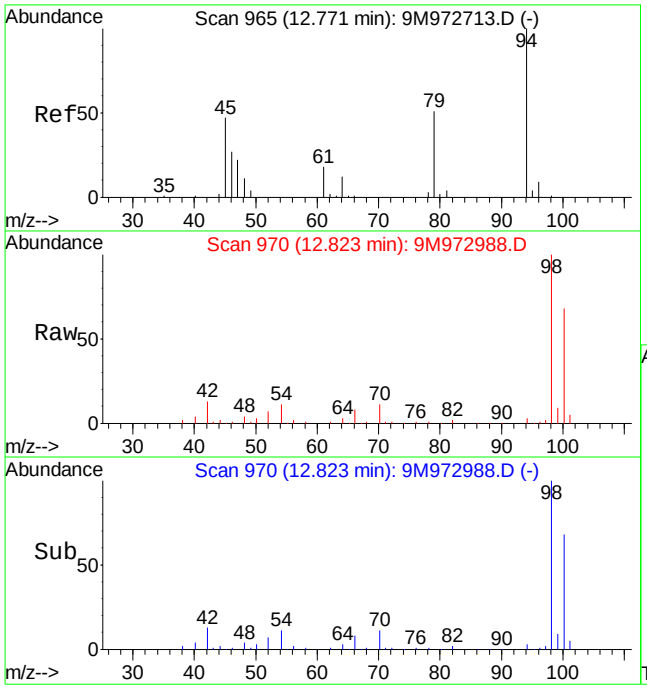

#56
Dimethyl Disulfide
Concen: 3.35 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M972988.D
Acq: 1 Mar 2016 4:07

Tgt Ion: 94 Resp: 12597

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

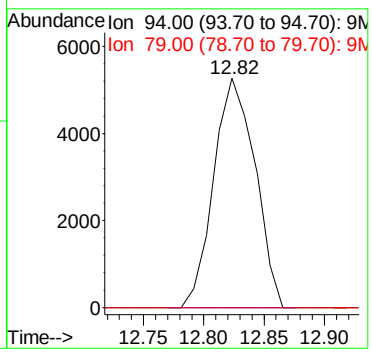

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972472.D Vial: 3
Acq On : 25 Jan 2016 11:22 Operator: FJB
Sample : WG555000-02 5ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:05 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	367739	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	266763	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.77	152	148882	50.00 ug/kg	0.01

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	1974	5.3580 ug/kg#	1
3) 3-Chloro-1-propene	7.23	41	18322	5.0468 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	19639	4.7564 ug/kg	98
5) Ethyl Acetate	9.24	43	12755	5.2595 ug/kg	91
6) Methacrylonitrile	9.40	67	3744	4.7691 ug/kg	95
7) Isobutyl Alcohol	9.42	43	1055	12.9700 ug/kg#	62
8) 1-Butanol	10.36	56	203	11.8711 ug/kg#	26
9) Methyl methacrylate	11.56	41	8689	4.6908 ug/kg	95
10) 2-Nitropropane	11.90	43	2531	4.2058 ug/kg	96

(#) = qualifier out of range (m) = manual integration
9M972472.D A9FOO_SL.M Wed Jan 27 11:22:42 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972472.D Vial: 3
Acq On : 25 Jan 2016 11:22 Operator: FJB
Sample : WG555000-02 5ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

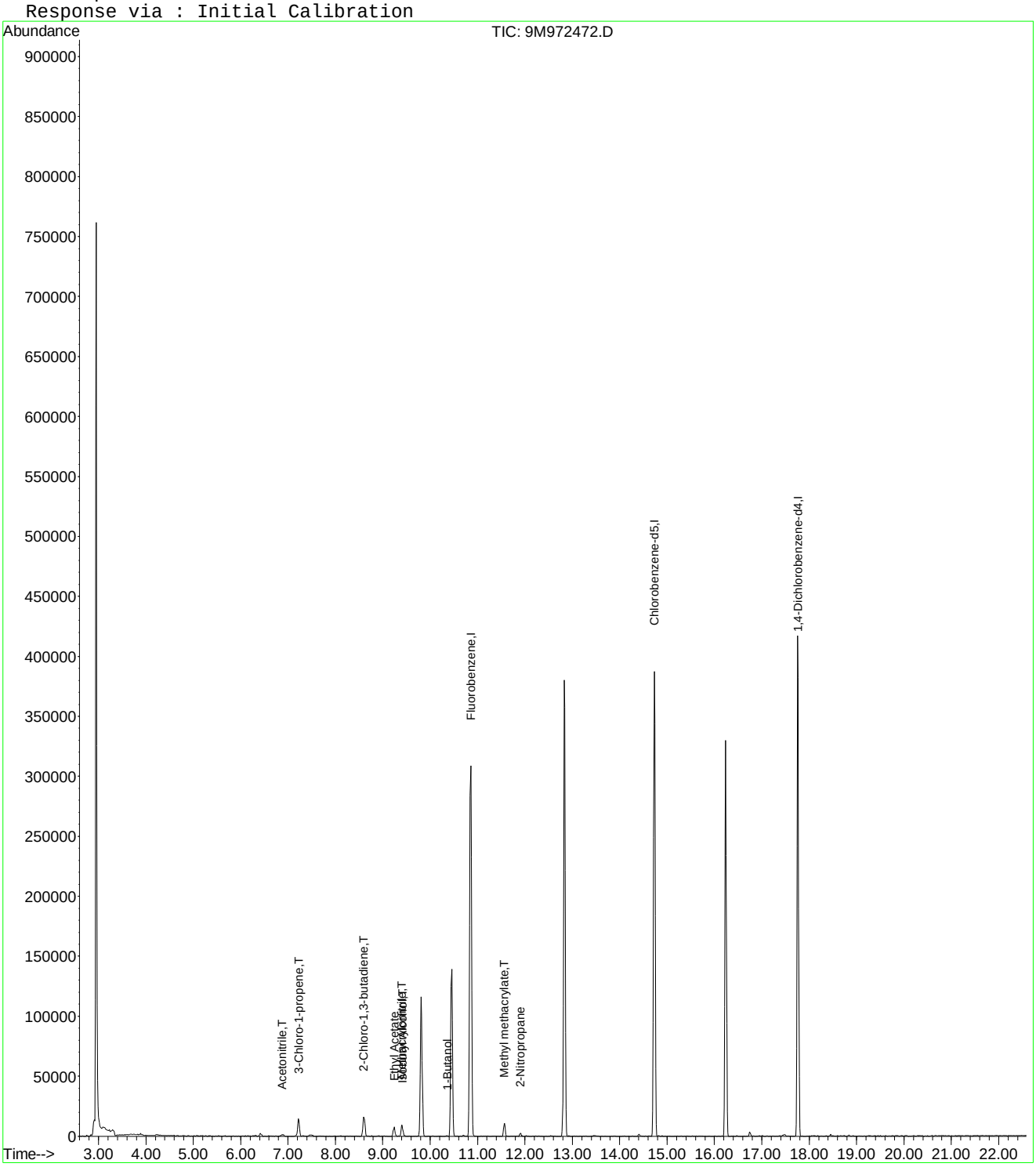

9M972472.D A9FOO_SL.M Wed Jan 27 11:22:42 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972473.D Vial: 4
Acq On : 25 Jan 2016 11:52 Operator: FJB
Sample : WG555000-03 20ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:05 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	359691	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	265773	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	149223	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	7669	21.2815 ug/kg#	77
3) 3-Chloro-1-propene	7.23	41	75360	21.2224 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	82865	20.5181 ug/kg	100
5) Ethyl Acetate	9.23	43	47912	20.1986 ug/kg	97
6) Methacrylonitrile	9.40	67	15740	20.4980 ug/kg	98
7) Isobutyl Alcohol	9.42	43	5287	37.9280 ug/kg	95
8) 1-Butanol	10.35	56	1509	22.3153 ug/kg#	81
9) Methyl methacrylate	11.56	41	35437	19.5588 ug/kg	98
10) 2-Nitropropane	11.90	43	10433	17.7247 ug/kg	98
12) Cyclohexanone	16.01	55	2157	16.3929 ug/kg#	86

(#) = qualifier out of range (m) = manual integration
9M972473.D A9FOO_SL.M Wed Jan 27 11:22:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972473.D Vial: 4
Acq On : 25 Jan 2016 11:52 Operator: FJB
Sample : WG555000-03 20ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

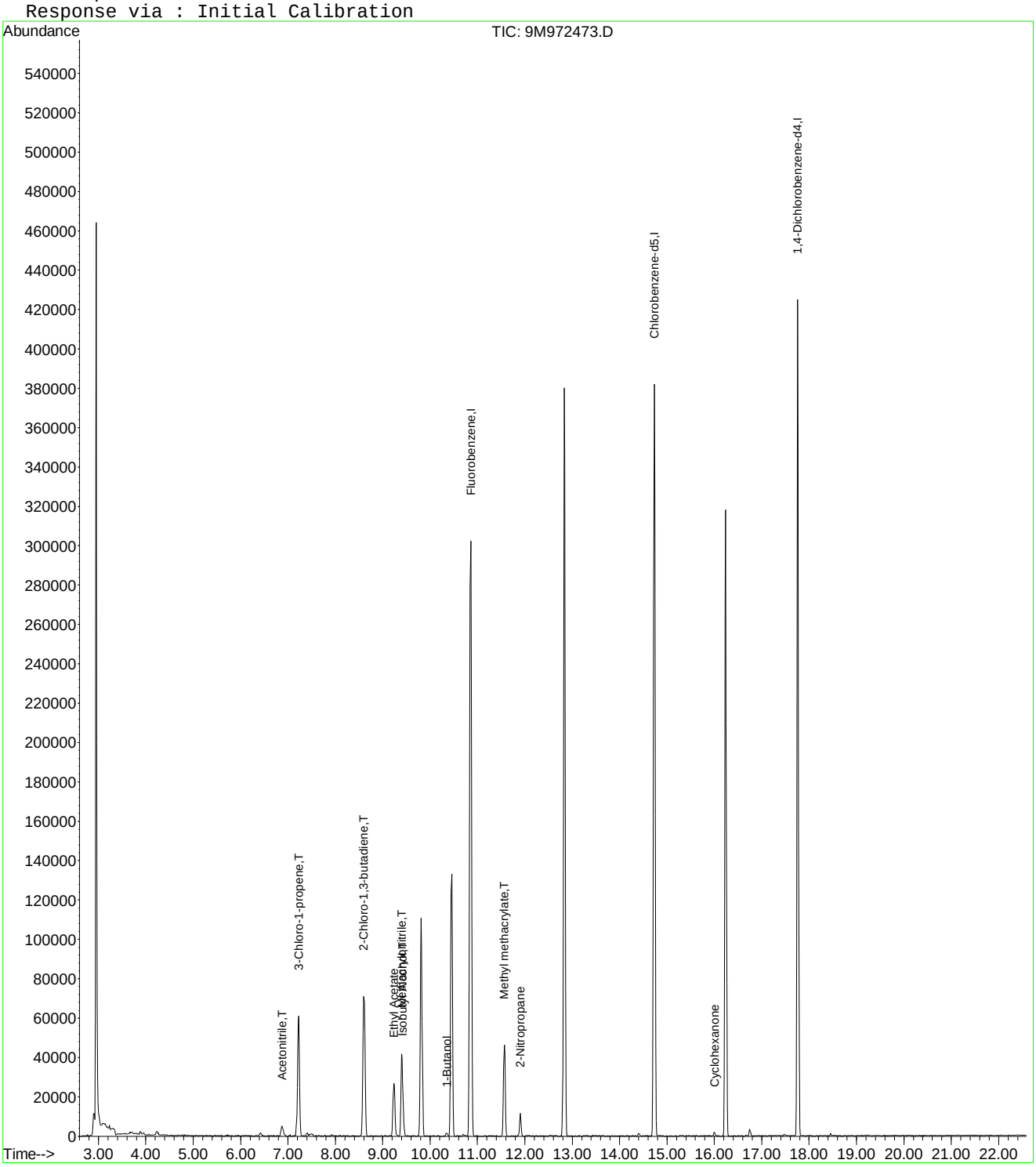

9M972473.D A9FOO_SL.M Wed Jan 27 11:22:46 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972474.D Vial: 5
Acq On : 25 Jan 2016 12:23 Operator: FJB
Sample : WG555000-04 50ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:06 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	356886	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	259679	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	147334	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	16583	46.3795 ug/kg#	94
3) 3-Chloro-1-propene	7.23	41	160601	45.5828 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.61	53	185316	46.2464 ug/kg	99
5) Ethyl Acetate	9.23	43	111538	47.3915 ug/kg	99
6) Methacrylonitrile	9.40	67	36081	47.3572 ug/kg	99
7) Isobutyl Alcohol	9.42	43	12624	81.5447 ug/kg	95
8) 1-Butanol	10.35	56	4707	48.0983 ug/kg#	50
9) Methyl methacrylate	11.56	41	82406	45.8400 ug/kg	99
10) 2-Nitropropane	11.90	43	26302	45.0359 ug/kg	97
12) Cyclohexanone	16.01	55	5625	43.7525 ug/kg	93

(#) = qualifier out of range (m) = manual integration
9M972474.D A9FOO_SL.M Wed Jan 27 11:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972474.D Vial: 5
Acq On : 25 Jan 2016 12:23 Operator: FJB
Sample : WG555000-04 50ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

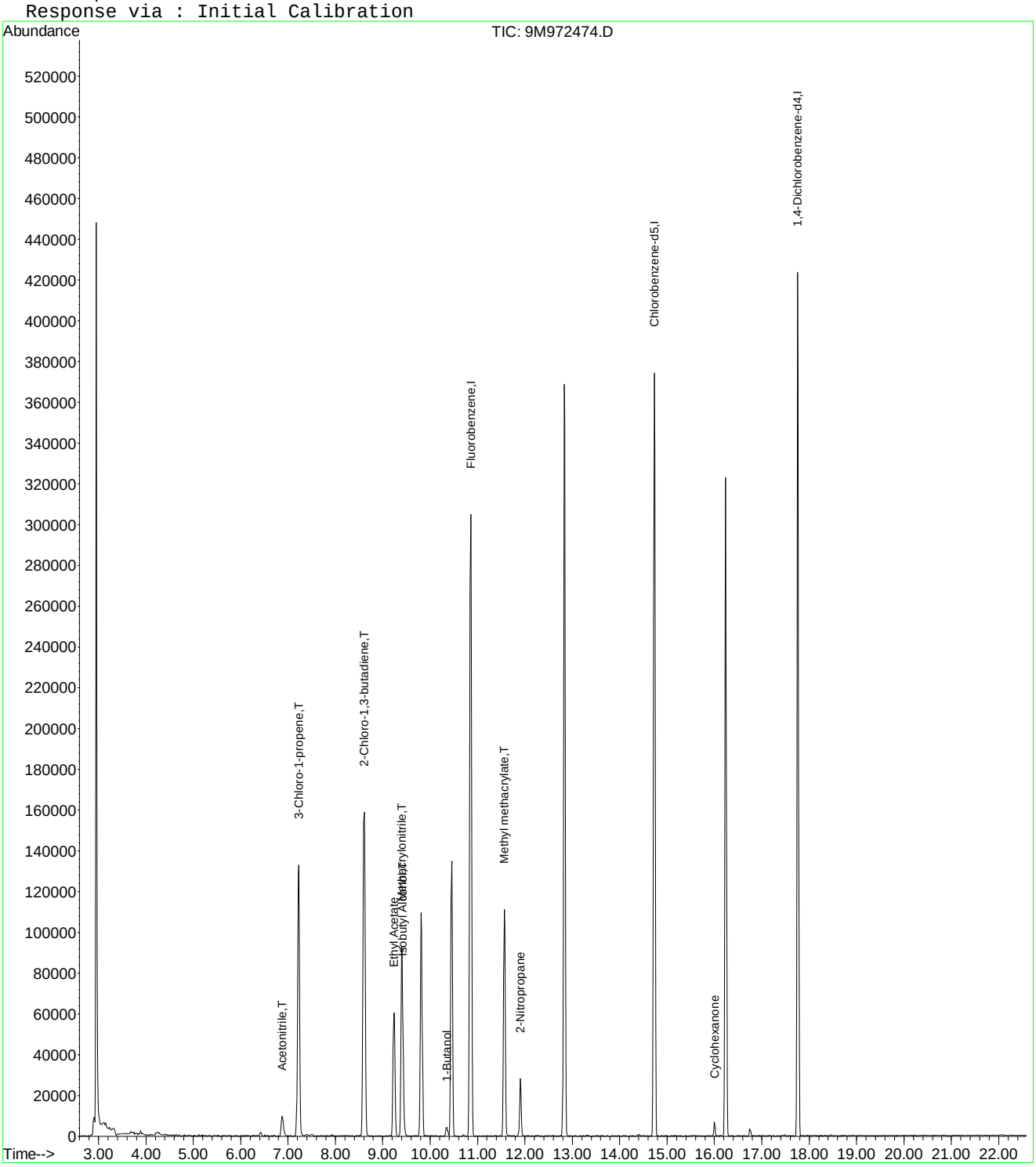

9M972474.D A9FOO_SL.M Wed Jan 27 11:22:51 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972475.D Vial: 6
Acq On : 25 Jan 2016 12:53 Operator: FJB
Sample : WG555000-05 100ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:06 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	394669	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	285851	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	161505	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	37767	95.5151	ug/kg#	100
3) 3-Chloro-1-propene	7.23	41	409870	105.1952	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.61	53	467514	105.5010	ug/kg	100
5) Ethyl Acetate	9.23	43	267513	102.7824	ug/kg	100
6) Methacrylonitrile	9.40	67	88054	104.5088	ug/kg	100
7) Isobutyl Alcohol	9.42	43	33721	187.1766	ug/kg	100
8) 1-Butanol	10.36	56	11671	95.0627	ug/kg	100
9) Methyl methacrylate	11.56	41	209503	105.3834	ug/kg	100
10) 2-Nitropropane	11.90	43	65435	101.3157	ug/kg	100
12) Cyclohexanone	16.01	55	14062	99.3630	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972475.D A9FOO_SL.M Wed Jan 27 11:22:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972475.D Vial: 6
Acq On : 25 Jan 2016 12:53 Operator: FJB
Sample : WG555000-05 100ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

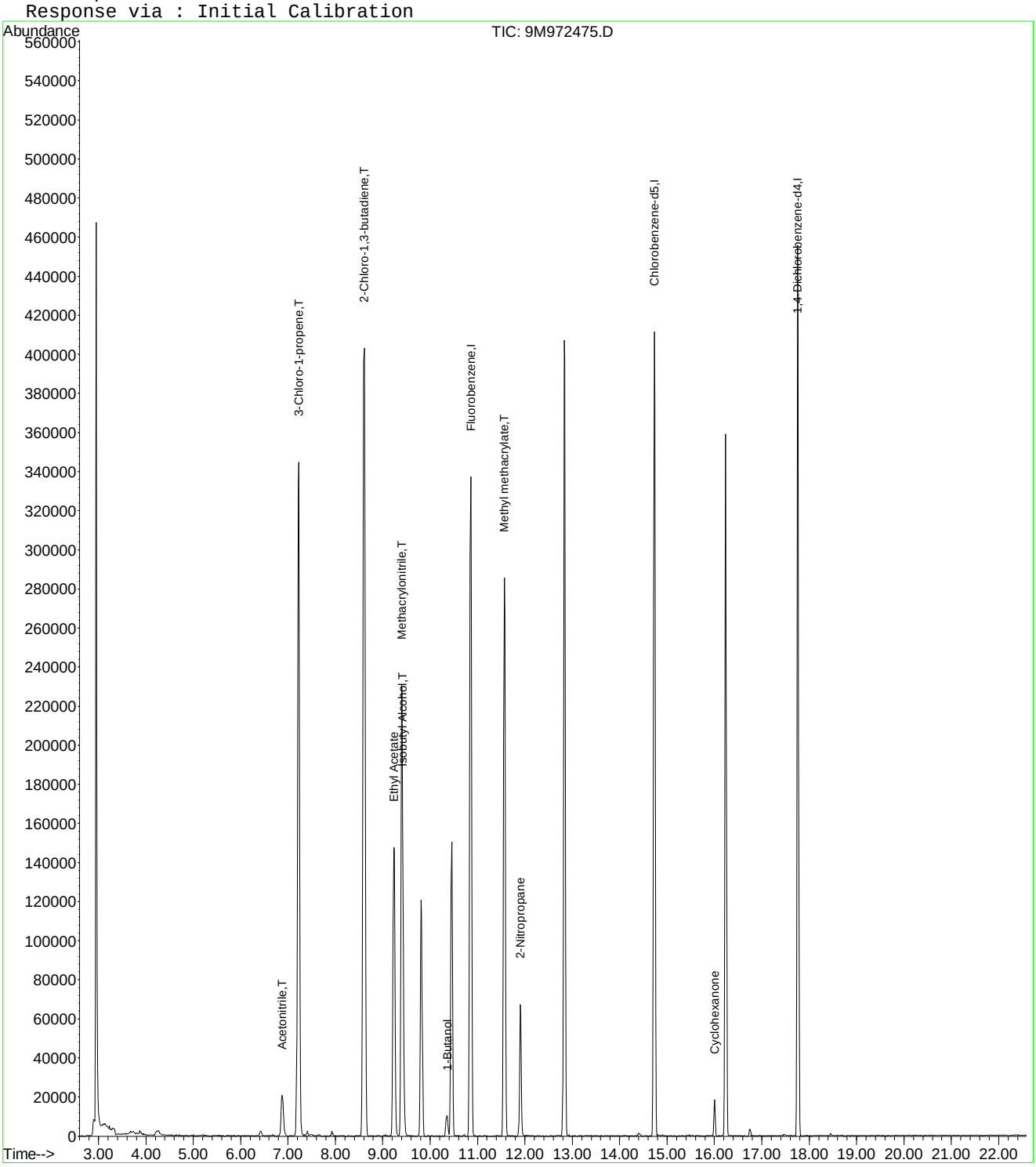

9M972475.D A9FOO_SL.M Wed Jan 27 11:22:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972476.D Vial: 7
Acq On : 25 Jan 2016 13:23 Operator: FJB
Sample : WG555000-06 200ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 09:51:10 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	361792	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	264283	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	150478	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.87	41	75099	207.1896	ug/kg#	94
3) 3-Chloro-1-propene	7.22	41	743262	208.0969	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	846271	208.3269	ug/kg	100
5) Ethyl Acetate	9.23	43	489855	205.3125	ug/kg	100
6) Methacrylonitrile	9.40	67	159879	206.9995	ug/kg	100
7) Isobutyl Alcohol	9.42	43	68551	406.6640	ug/kg	99
8) 1-Butanol	10.35	56	24111	201.3375	ug/kg	97
9) Methyl methacrylate	11.57	41	382820	210.0636	ug/kg	99
10) 2-Nitropropane	11.90	43	129000	217.8866	ug/kg	95
12) Cyclohexanone	16.00	55	30065	229.7785	ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972476.D A9FOO_SL.M Wed Jan 27 09:51:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972476.D Vial: 7
Acq On : 25 Jan 2016 13:23 Operator: FJB
Sample : WG555000-06 200ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 9:51 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

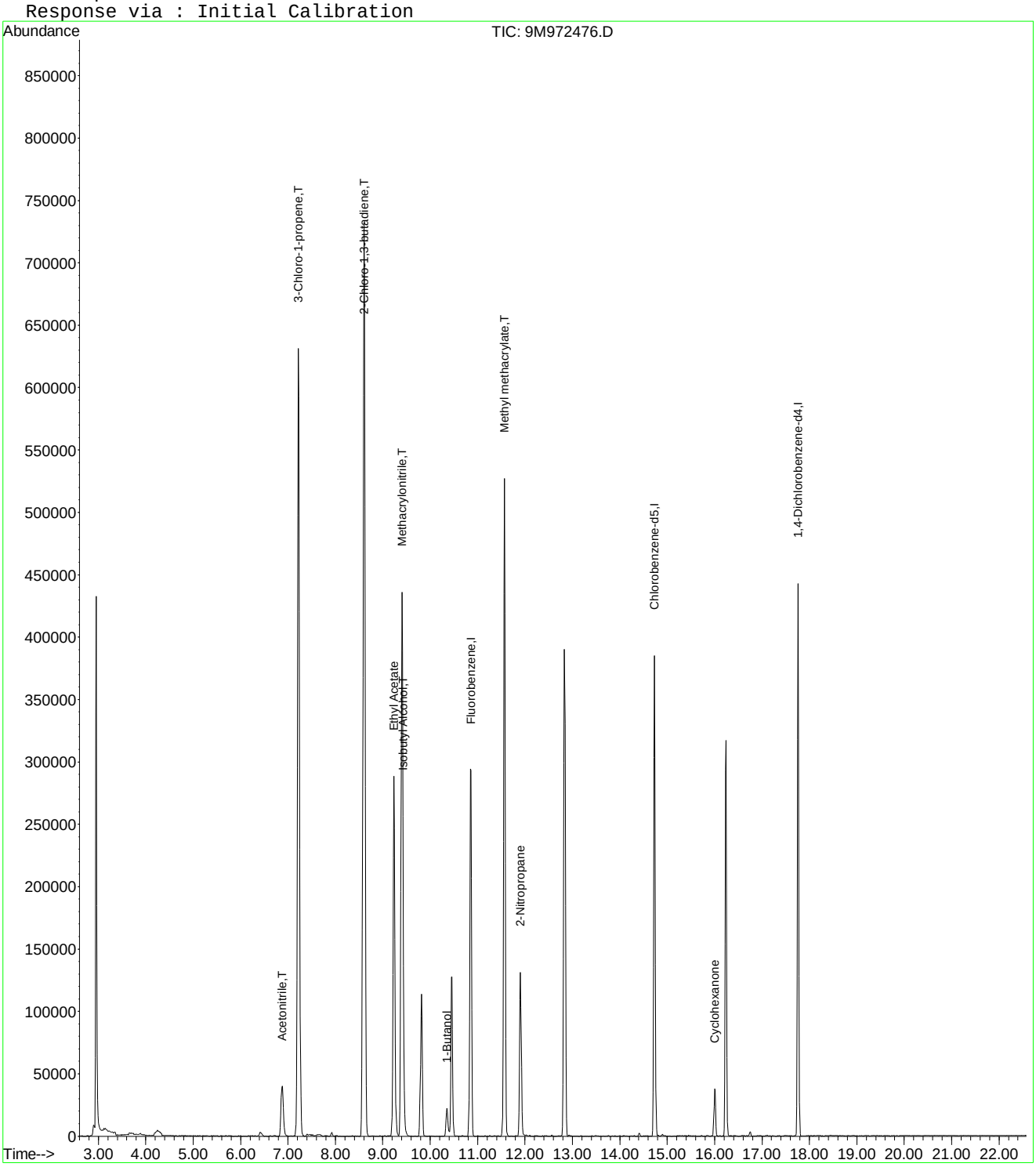

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972477.D Vial: 8
Acq On : 25 Jan 2016 13:54 Operator: FJB
Sample : WG555000-07 300ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:07 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.85	96	362779	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	265659	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	153468	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	99618	274.0870	ug/kg#	97
3) 3-Chloro-1-propene	7.22	41	944879	263.8255	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	1107217	271.8226	ug/kg	99
5) Ethyl Acetate	9.24	43	652386	272.6900	ug/kg	99
6) Methacrylonitrile	9.40	67	208153	268.7679	ug/kg	98
7) Isobutyl Alcohol	9.43	43	89707	528.6093	ug/kg#	99
8) 1-Butanol	10.35	56	31640	260.3131	ug/kg	98
9) Methyl methacrylate	11.57	41	502506	274.9883	ug/kg	98
10) 2-Nitropropane	11.90	43	172692	290.8907	ug/kg	95
12) Cyclohexanone	16.00	55	36951	280.9436	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972477.D A9FOO_SL.M Wed Jan 27 11:23:05 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972477.D Vial: 8
Acq On : 25 Jan 2016 13:54 Operator: FJB
Sample : WG555000-07 300ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

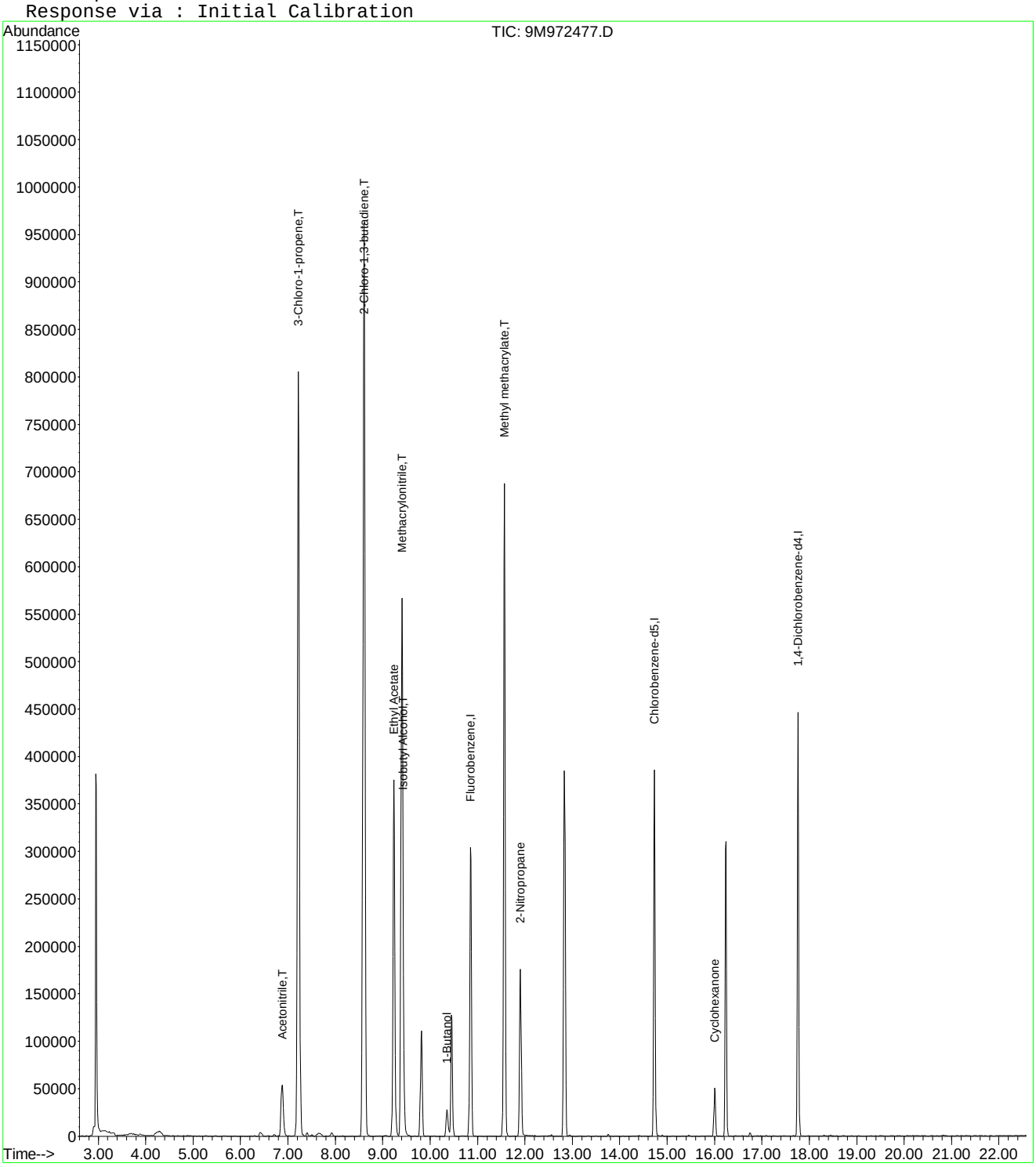

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972478.D Vial: 9
Acq On : 25 Jan 2016 14:25 Operator: FJB
Sample : WG555000-08 400ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 09:51:10 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	359343	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	261674	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	149058	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.89	41	148074	411.3034	ug/kg#	96
3) 3-Chloro-1-propene	7.22	41	1457717	410.9100	ug/kg	99
4) 2-Chloro-1,3-butadiene	8.61	53	1703971	422.3261	ug/kg	100
5) Ethyl Acetate	9.23	43	980479	413.7480	ug/kg	100
6) Methacrylonitrile	9.40	67	321602	419.2243	ug/kg	99
7) Isobutyl Alcohol	9.43	43	142361	842.7355	ug/kg#	98
8) 1-Butanol	10.36	56	51732	422.9922	ug/kg	99
9) Methyl methacrylate	11.56	41	779879	430.8570	ug/kg	98
10) 2-Nitropropane	11.90	43	267565	455.0088	ug/kg	96
12) Cyclohexanone	16.01	55	56623	437.0688	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972478.D A9FOO_SL.M Wed Jan 27 09:51:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972478.D Vial: 9
Acq On : 25 Jan 2016 14:25 Operator: FJB
Sample : WG555000-08 400ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 9:51 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

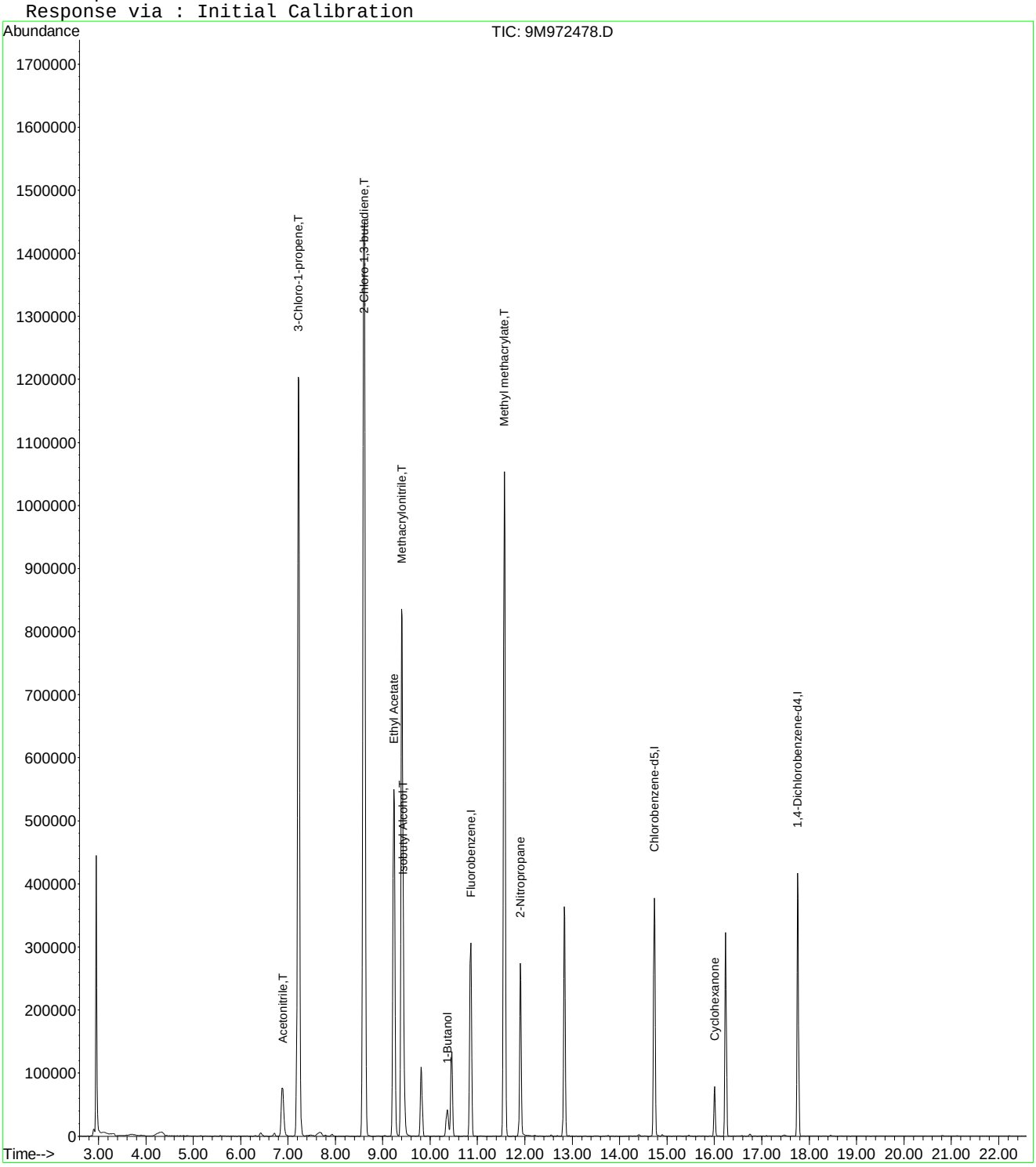

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972479.D Vial: 10
Acq On : 25 Jan 2016 14:56 Operator: FJB
Sample : WG555000-09 500ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:08 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	364474	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	266311	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	151707	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	196334	537.6773	ug/kg#	94
3) 3-Chloro-1-propene	7.22	41	1832802	509.3680	ug/kg	99
4) 2-Chloro-1,3-butadiene	8.60	53	2126710	519.6807	ug/kg	100
5) Ethyl Acetate	9.23	43	1255294	522.2587	ug/kg	100
6) Methacrylonitrile	9.40	67	408537	525.0513	ug/kg	100
7) Isobutyl Alcohol	9.43	43	180610	1052.3719	ug/kg	98
8) 1-Butanol	10.36	56	64789	519.8809	ug/kg	97
9) Methyl methacrylate	11.56	41	981460	534.5904	ug/kg	100
10) 2-Nitropropane	11.90	43	346571	581.0659	ug/kg	97
12) Cyclohexanone	16.01	55	74733	566.8143	ug/kg	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972479.D Vial: 10
Acq On : 25 Jan 2016 14:56 Operator: FJB
Sample : WG555000-09 500ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

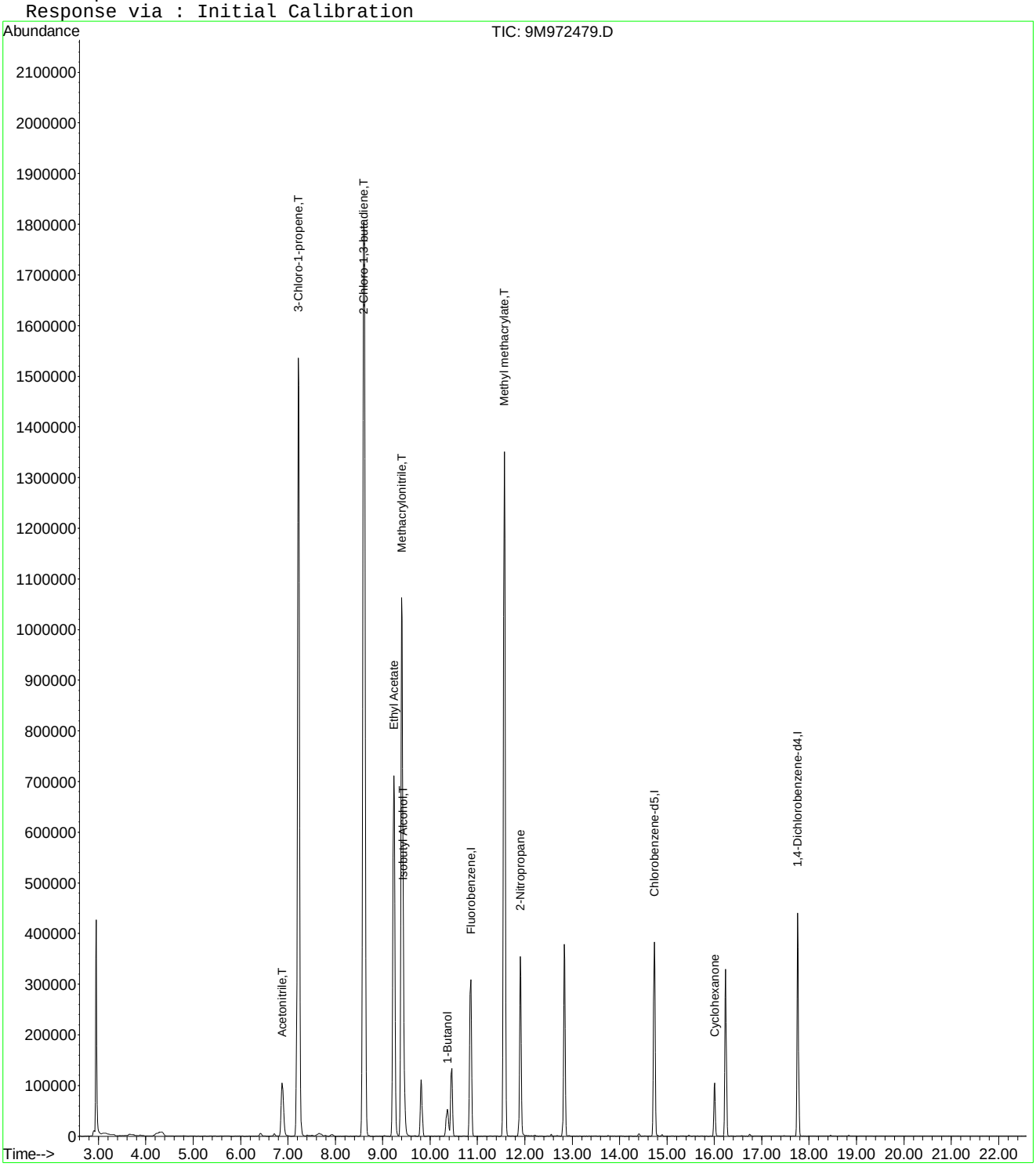

9M972479.D A9FOO_SL.M Wed Jan 27 11:30:29 2016 Page 2

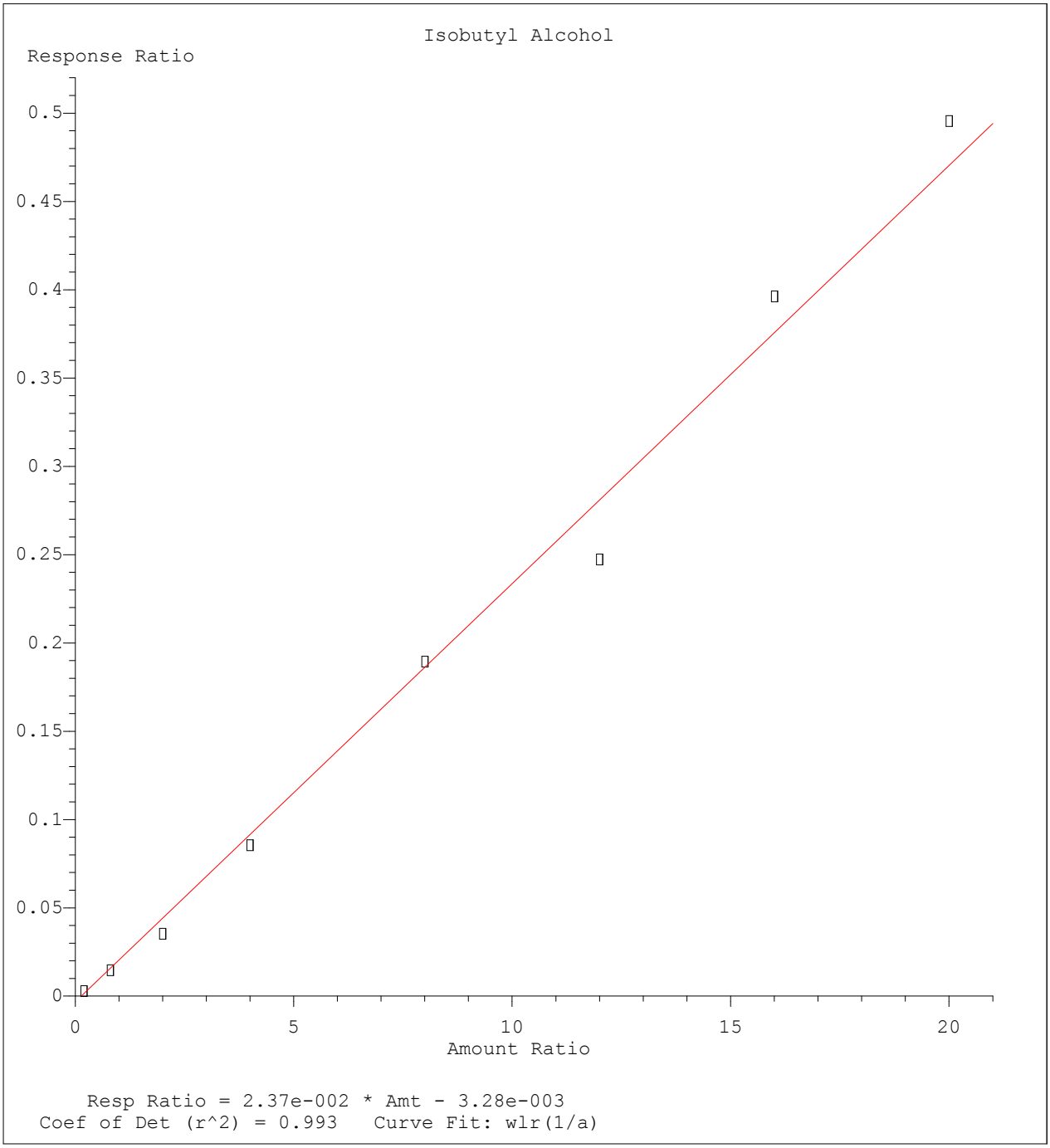

Method Name: C:\MSDCHEM\1\METHODS\A9FOO_SL.M
Calibration Table Last Updated: Wed Jan 27 09:49:02 2016

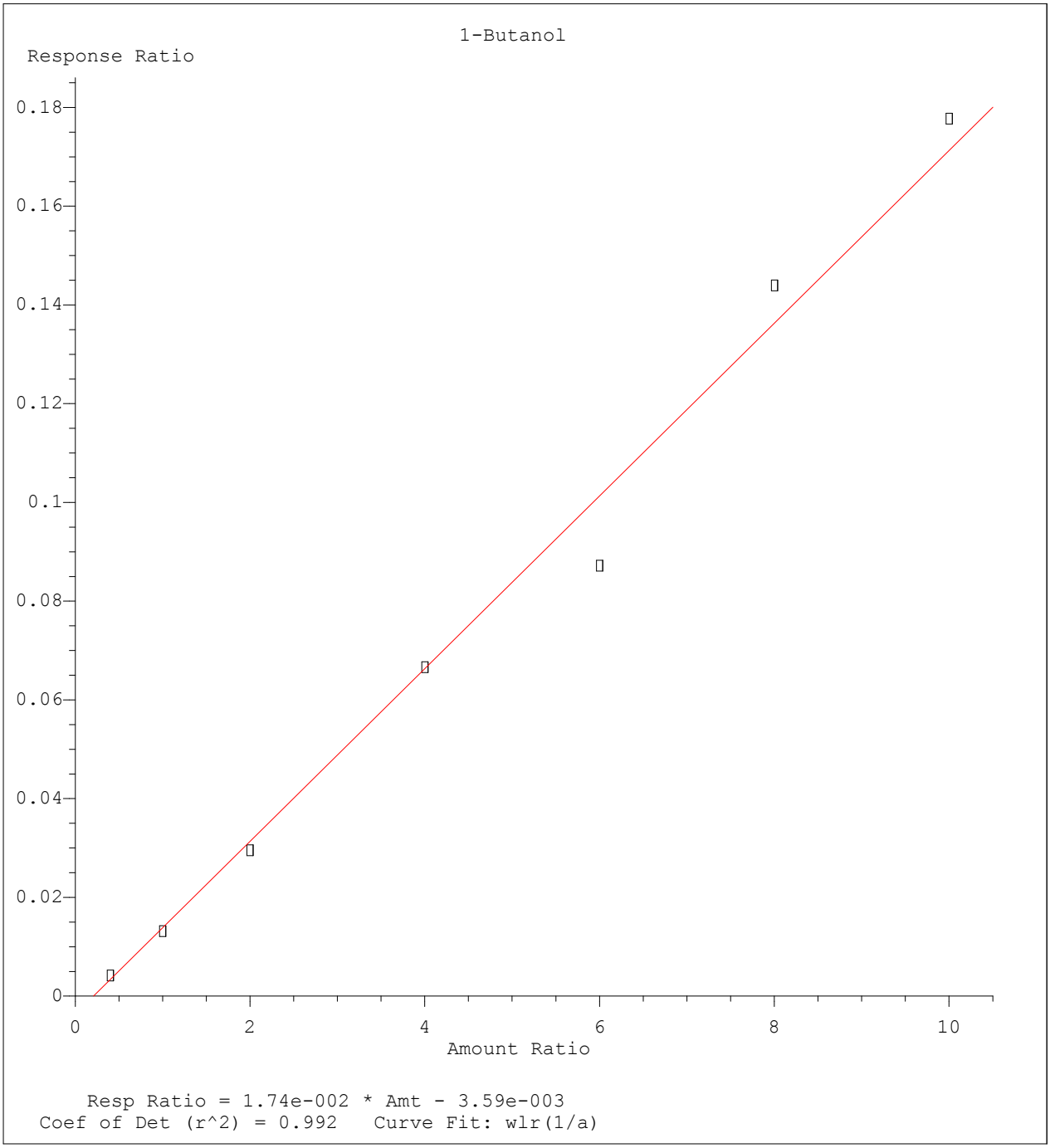

Method Name: C:\MSDCHEM\1\METHODS\A9FOO_SL.M
Calibration Table Last Updated: Wed Jan 27 09:49:02 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:09 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	394765	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	285754	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	159586	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	40054	101.2745	ug/kg#	100
3) 3-Chloro-1-propene	7.22	41	402890	103.3786	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	572568	129.1764	ug/kg	99
5) Ethyl Acetate	9.23	43	275962	106.0028	ug/kg	99
6) Methacrylonitrile	9.40	67	90289	107.1354	ug/kg	96
7) Isobutyl Alcohol	9.42	43	34031	188.7895	ug/kg	99
8) 1-Butanol	10.35	56	12038	97.7072	ug/kg	97
9) Methyl methacrylate	11.56	41	219363	110.3163	ug/kg	100
10) 2-Nitropropane	11.90	43	69288	107.2554	ug/kg	93
12) Cyclohexanone	16.01	55	14203	100.3934	ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972481.D A9FOO_SL.M Wed Jan 27 11:15:09 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

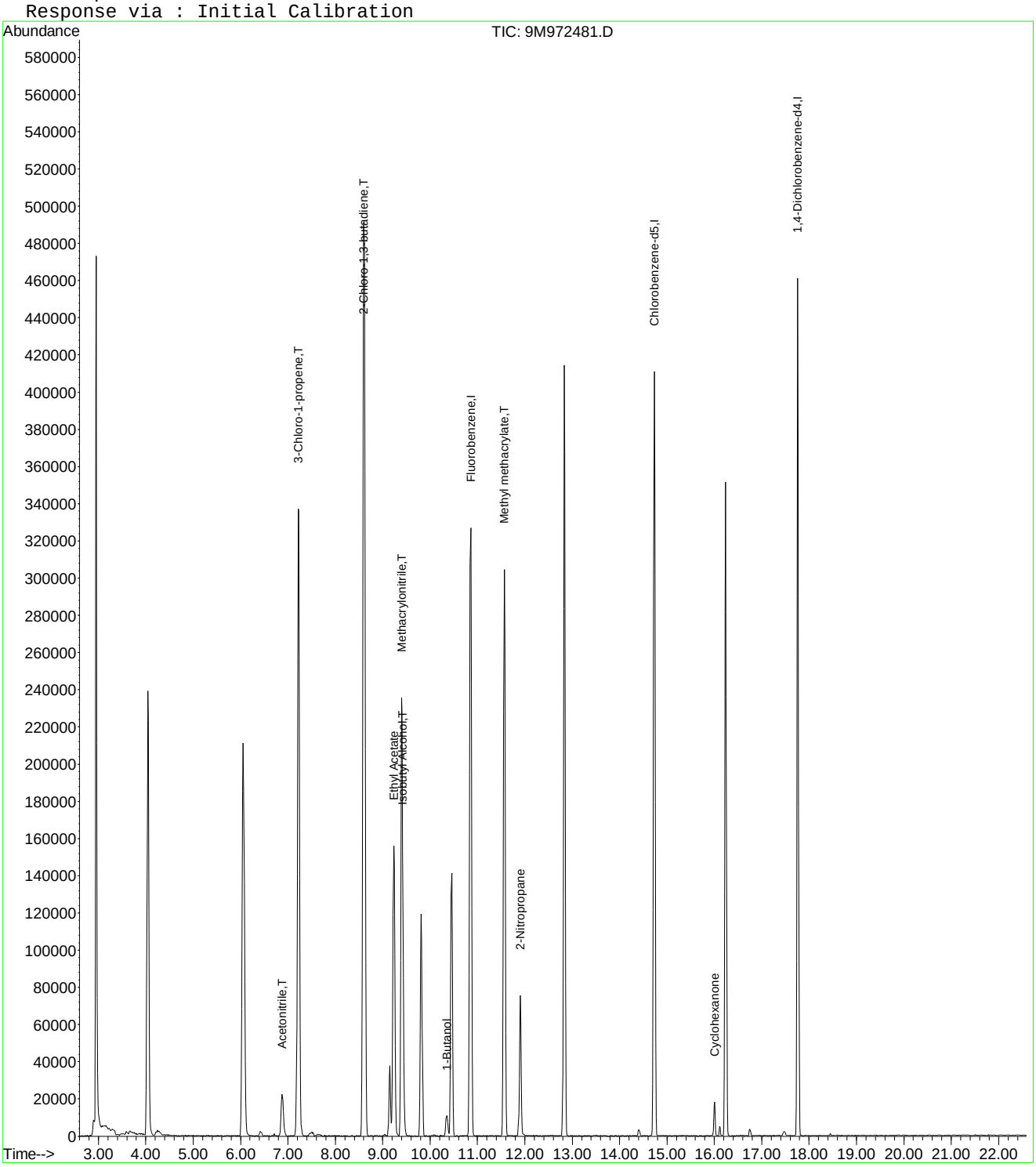

9M972481.D A9FOO_SL.M Wed Jan 27 11:15:09 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	101.2745	-1.3	106	0.00
3	T	3-Chloro-1-propene	100.0000	103.3786	-3.4	98	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	129.1764	-29.2	122	0.00
5		Ethyl Acetate	100.0000	106.0028	-6.0	103	0.00
6	T	Methacrylonitrile	100.0000	107.1354	-7.1	103	0.00
7	T	Isobutyl Alcohol	200.0000	188.7895	5.6	101	0.00
8		1-Butanol	100.0000	97.7072	2.3	103	0.00
9	T	Methyl methacrylate	100.0000	110.3163	-10.3	105	0.00
10		2-Nitropropane	100.0000	107.2554	-7.3	106	0.00
11	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
12		Cyclohexanone	100.0000	100.3934	-0.4	101	0.00
13	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	99	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972481.D A9FOO_SL.M Wed Jan 27 11:32:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972896.D Vial: 3
Acq On : 25 Feb 2016 15:48 Operator: ADC
Sample : WG558732-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:54 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260B_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	517775	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.73	117	378926	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.76	152	183008	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	147955	52.7167 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.44%		
43) 1,2-Dichloroethane-d4	10.44	65	183779	52.1887 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.38%		
58) Toluene-d8	12.83	98	511451	53.3617 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.72%		
79) p-Bromofluorobenzene	16.23	95	191673	53.7871 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 107.58%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.28	85	204882	57.9763 ug/kg	100
3) Chloromethane	3.74	50	183152	54.0664 ug/kg	100
4) Vinyl Chloride	3.99	62	192536	56.7764 ug/kg	100
5) 1,3-Butadiene	4.04	54	170907	52.9740 ug/kg	100
6) Bromomethane	4.88	94	107911	48.9956 ug/kg	100
7) Chloroethane	5.04	64	85391	56.5213 ug/kg	100
8) Trichlorofluoromethane	5.53	101	265962	52.2923 ug/kg	100
9) Diethyl ether	6.04	59	249400	104.8955 ug/kg	100
10) Isoprene	6.09	67	156373	51.4980 ug/kg	100
11) Acrolein	6.30	56	24630	51.9520 ug/kg	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	135036	51.4825 ug/kg	100
13) Acetone	6.41	43	66195	50.6135 ug/kg	100
14) 1,1-Dichloroethene	6.61	61	244051	50.4389 ug/kg	100
15) Tert-Butyl Alcohol	6.76	59	110494	208.7036 ug/kg	98
16) Dimethyl Sulfide	6.88	62	109294	53.4455 ug/kg	100
17) Iodomethane	7.13	142	79749	55.1586 ug/kg	100
18) Methyl acetate	7.14	43	135648	51.5699 ug/kg	100
19) Methylene Chloride	7.40	84	135280	51.3362 ug/kg	100
20) Carbon Disulfide	7.45	76	381814	51.2249 ug/kg	100
21) Acrylonitrile	7.59	53	69697	53.5624 ug/kg	100
22) Methyl Tert Butyl Ether	7.61	73	407131	54.2460 ug/kg	100
23) trans-1,2-Dichloroethene	7.85	61	226890	52.6160 ug/kg	100
24) n-Hexane	7.91	57	219597	49.3729 ug/kg	100
25) Diisopropyl ether	8.26	45	1088740	105.3973 ug/kg	100
26) Vinyl Acetate	8.43	43	311838	52.9553 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	284391	52.5076 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	1023392	106.5502 ug/kg	100
29) 2-Butanone	9.03	43	86123	51.5803 ug/kg	100
30) Propionitrile	9.14	54	53253	104.2214 ug/kg	100
31) 2,2-Dichloropropane	9.24	77	215042	53.1943 ug/kg	100
32) cis-1,2-Dichloroethene	9.31	96	153722	54.3532 ug/kg	100
33) Chloroform	9.52	83	263571	52.9749 ug/kg	100
34) 1-Bromopropane	9.65	122	22164	51.3817 ug/kg	100
35) Bromochloromethane	9.75	130	102780	55.9453 ug/kg	100
36) Tetrahydrofuran	9.78	42	113791	105.7289 ug/kg	100
38) 1,1,1-Trichloroethane	10.04	97	243452	54.1074 ug/kg	100
39) Cyclohexane	10.08	56	247641	50.4821 ug/kg	100
40) 1,1-Dichloropropene	10.24	75	182199	51.4612 ug/kg	100
41) Tert-Amyl-Methyl ether	10.34	73	741165	106.1603 ug/kg	100
42) Carbon Tetrachloride	10.39	117	221306	53.0537 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972896.D Vial: 3
Acq On : 25 Feb 2016 15:48 Operator: ADC
Sample : WG558732-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:54 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260B_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	237857	54.3500 ug/kg	100
46)	Benzene	10.60	78	503328	50.7793 ug/kg	100
47)	Trichloroethene	11.35	130	163959	52.2047 ug/kg	100
48)	Methylcyclohexane	11.44	83	204551	51.9284 ug/kg	100
49)	1,2-Dichloropropane	11.56	63	148045	54.3898 ug/kg	100
50)	1,4-Dioxane	11.88	88	7789	190.7454 ug/kg	100
51)	Bromodichloromethane	11.87	83	203922	53.1595 ug/kg	100
52)	Dibromomethane	11.96	174	95887	53.1673 ug/kg	100
53)	2-Chloroethyl Vinyl Ether	12.17	63	38515	51.1377 ug/kg	100
54)	4-Methyl-2-Pentanone	12.19	58	64999	54.4056 ug/kg	100
55)	cis-1,3-Dichloropropene	12.50	75	212797	53.2452 ug/kg	100
56)	Dimethyl Disulfide	12.77	94	219798	54.7267 ug/kg	100
59)	Toluene	12.92	91	563647	52.0613 ug/kg	100
60)	Ethyl Methacrylate	13.02	69	158958	52.9687 ug/kg	100
61)	trans-1,3-Dichloropropene	13.10	75	212386	54.4657 ug/kg	100
62)	1,1,2-Trichloroethane	13.33	97	122975	54.0706 ug/kg	100
63)	2-Hexanone	13.25	43	119176	52.4822 ug/kg	100
64)	1,3-Dichloropropane	13.63	76	201541	53.1810 ug/kg	100
65)	Tetrachloroethene	13.75	164	117066	50.4378 ug/kg	100
66)	Dibromochloromethane	14.01	129	168874	53.1294 ug/kg	100
67)	1,2-Dibromoethane	14.28	107	132755	52.6249 ug/kg	100
68)	1-Chlorohexane	14.35	91	168490	52.7733 ug/kg	100
69)	Chlorobenzene	14.77	112	400241	52.5998 ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.80	131	154536	54.0800 ug/kg	100
71)	Ethylbenzene	14.80	106	207031	52.8117 ug/kg	100
72)	m-,p-Xylene	14.89	106	497405	102.7415 ug/kg	100
73)	o-Xylene	15.45	106	247567	53.2858 ug/kg	100
74)	Styrene	15.49	104	425634	53.7983 ug/kg	100
75)	Bromoform	16.00	173	116015	55.5910 ug/kg	100
76)	Isopropylbenzene	15.88	105	658255	52.7764 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.10	83	147970	53.3007 ug/kg	100
80)	1,2,3-Trichloropropane	16.29	110	55711	52.9159 ug/kg	100
81)	trans-1,4-Dichloro-2-Buten	16.33	53	55525	52.3210 ug/kg	100
82)	n-Propylbenzene	16.39	91	751844	52.2641 ug/kg	100
83)	Bromobenzene	16.52	156	177299	52.2079 ug/kg	100
84)	1,3,5-Trimethylbenzene	16.58	105	568867	52.6809 ug/kg	100
85)	2-Chlorotoluene	16.66	91	484783	50.2437 ug/kg	100
86)	4-Chlorotoluene	16.70	91	481367	53.9615 ug/kg	100
87)	a-Methylstyrene	16.98	118	255765	51.9817 ug/kg	100
88)	tert-Butylbenzene	17.04	134	121669	53.7430 ug/kg	100
89)	1,2,4-Trimethylbenzene	17.09	105	580656	51.3463 ug/kg	100
90)	sec-Butylbenzene	17.30	105	726352	52.2266 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	613096	52.2364 ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	337008	49.9319 ug/kg	100
93)	1,4-Dichlorobenzene	17.80	146	335195	49.6777 ug/kg	100
94)	n-Butylbenzene	17.99	91	563797	51.6647 ug/kg	100
95)	1,2-Dichlorobenzene	18.30	146	320108	51.1150 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.30	157	42968	53.4468 ug/kg	100
97)	1,2,4-Trichlorobenzene	20.44	180	222592	50.0691 ug/kg	100
98)	Hexachlorobutadiene	20.59	225	117654	50.2053 ug/kg	100
99)	Naphthalene	20.81	128	602344	54.0184 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	222082	51.5034 ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972896.D 8260SL.M Fri Feb 26 11:21:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972896.D Vial: 3
Acq On : 25 Feb 2016 15:48 Operator: ADC
Sample : WG558732-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

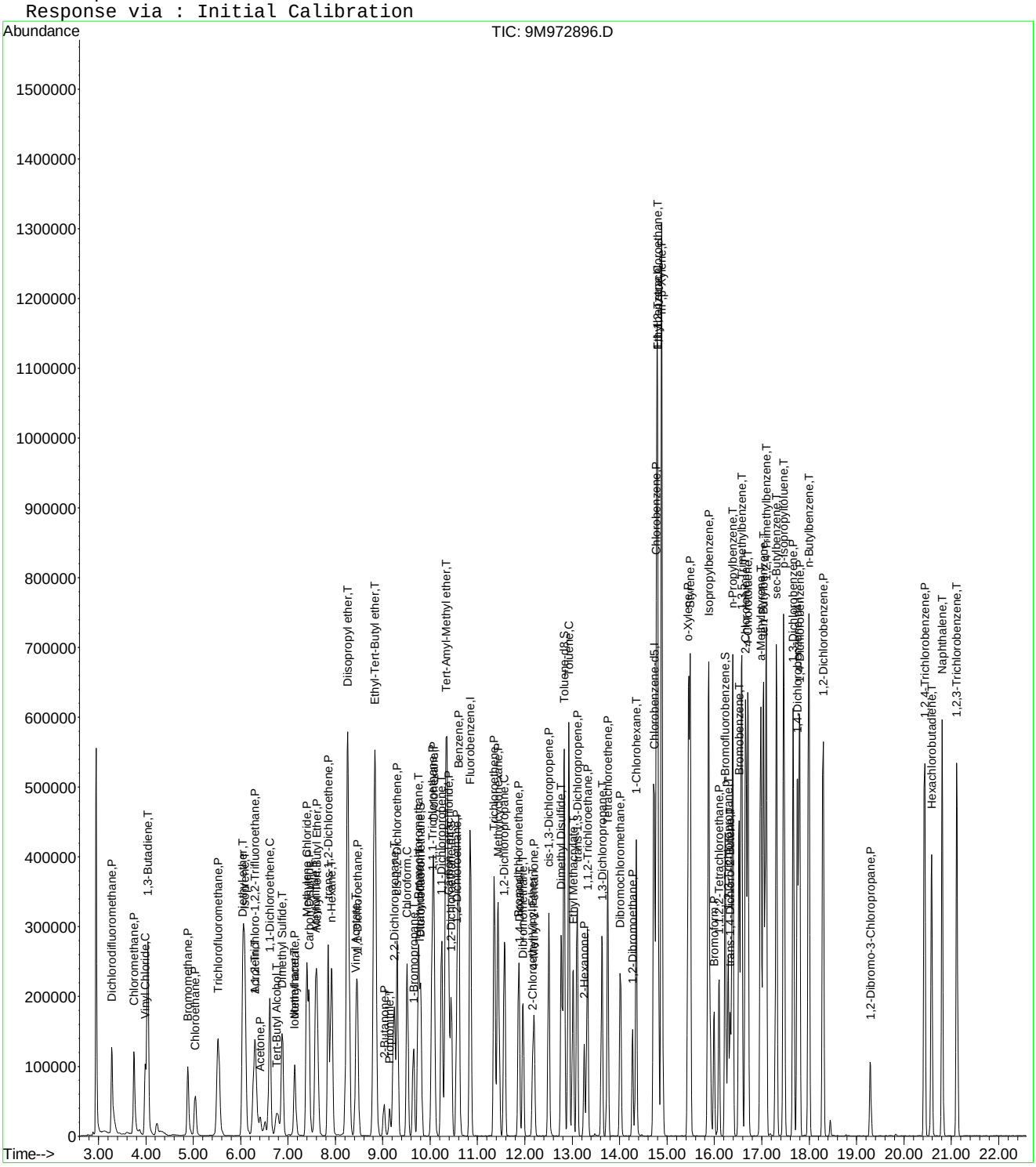

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:15 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	491503	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	353502	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	169028	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.83	98	923	0.1032 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.20%#	
79) p-Bromofluorobenzene	16.22	95	770	0.2339 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.46%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	1359	0.4051 ug/kg#	69
3) Chloromethane	3.75	50	2926	0.9099 ug/kg	95
4) Vinyl Chloride	3.98	62	1474	0.4579 ug/kg#	67
5) 1,3-Butadiene	4.03	54	1519	0.4960 ug/kg	82
6) Bromomethane	4.89	94	2071	0.9906 ug/kg	100
8) Trichlorofluoromethane	5.53	101	2609	0.5404 ug/kg#	51
10) Isoprene	6.08	67	1239	0.4298 ug/kg	70
13) Acetone	6.43	43	4251	5.5216 ug/kg#	75
14) 1,1-Dichloroethene	6.63	61	2149	0.4679 ug/kg#	66
17) Iodomethane	7.14	142	943	3.4505 ug/kg#	34
18) Methyl acetate	7.16	43	1334	0.5343 ug/kg#	45
19) Methylene Chloride	7.40	84	1287	0.5145 ug/kg	81
20) Carbon Disulfide	7.44	76	6762	0.9557 ug/kg#	76
23) trans-1,2-Dichloroethene	7.84	61	2196	0.5365 ug/kg	86
24) n-Hexane	7.92	57	2239	0.5303 ug/kg#	62
26) Vinyl Acetate	8.44	43	2494	0.4462 ug/kg#	78
27) 1,1-Dichloroethane	8.48	63	2396	0.4660 ug/kg#	63
29) 2-Butanone	9.02	43	778	0.4909 ug/kg#	58
31) 2,2-Dichloropropane	9.24	77	1877	0.4891 ug/kg#	42
32) cis-1,2-Dichloroethene	9.32	96	1178	0.4388 ug/kg	74
33) Chloroform	9.52	83	2007	0.4249 ug/kg	81
35) Bromochloromethane	9.74	130	828	0.4748 ug/kg#	68
36) Tetrahydrofuran	9.76	42	1603	1.5690 ug/kg#	57
38) 1,1,1-Trichloroethane	10.05	97	1773	0.4151 ug/kg	92
40) 1,1-Dichloropropene	10.25	75	1521	0.4526 ug/kg#	38
42) Carbon Tetrachloride	10.40	117	1765	0.4457 ug/kg#	85
45) 1,2-Dichloroethane	10.57	62	1885	0.4537 ug/kg#	68
46) Benzene	10.61	78	5607	0.5959 ug/kg#	83
47) Trichloroethene	11.36	130	1808	0.6064 ug/kg	88
48) Methylcyclohexane	11.44	83	1930	0.5161 ug/kg	96
55) cis-1,3-Dichloropropene	12.51	75	1714	0.4518 ug/kg#	51
59) Toluene	12.93	91	5550	0.5495 ug/kg	88
61) trans-1,3-Dichloropropene	13.10	75	1920	0.5278 ug/kg#	51
63) 2-Hexanone	13.25	43	877	0.4140 ug/kg#	63
64) 1,3-Dichloropropane	13.63	76	1615	0.4568 ug/kg	91
65) Tetrachloroethene	13.75	164	1154	0.5330 ug/kg#	74
67) 1,2-Dibromoethane	14.27	107	988	0.4198 ug/kg	87
68) 1-Chlorohexane	14.35	91	1436	0.4821 ug/kg	83
69) Chlorobenzene	14.78	112	4578	0.6449 ug/kg	87
70) 1,1,1,2-Tetrachloroethane	14.81	131	1078	0.4044 ug/kg	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:15 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
71)	Ethylbenzene	14.80	106	1823	0.4985 ug/kg	68
72)	m-,p-Xylene	14.88	106	4752	1.0521 ug/kg	95
73)	o-Xylene	15.44	106	2166	0.4997 ug/kg	94
74)	Styrene	15.49	104	3544	0.4802 ug/kg	91
76)	Isopropylbenzene	15.87	105	6349	0.5456 ug/kg	97
78)	1,1,2,2-Tetrachloroethane	16.09	83	1326	0.5171 ug/kg#	89
82)	n-Propylbenzene	16.38	91	7679	0.5780 ug/kg	98
83)	Bromobenzene	16.52	156	1798	0.5732 ug/kg	88
84)	1,3,5-Trimethylbenzene	16.57	105	4554	0.4566 ug/kg	92
85)	2-Chlorotoluene	16.66	91	5237	0.5877 ug/kg	84
86)	4-Chlorotoluene	16.71	91	5645	0.6851 ug/kg	93
87)	a-Methylstyrene	16.97	118	2091	0.4601 ug/kg	93
89)	1,2,4-Trimethylbenzene	17.09	105	6291	0.6023 ug/kg	84
90)	sec-Butylbenzene	17.31	105	7013	0.5460 ug/kg	93
91)	p-Isopropyltoluene	17.47	119	5681	0.5241 ug/kg	95
92)	1,3-Dichlorobenzene	17.67	146	4446	0.7132 ug/kg	91
93)	1,4-Dichlorobenzene	17.79	146	4603	0.7386 ug/kg#	73
94)	n-Butylbenzene	17.99	91	6750	0.6697 ug/kg#	90
95)	1,2-Dichlorobenzene	18.29	146	3889	0.6724 ug/kg	82
97)	1,2,4-Trichlorobenzene	20.43	180	3506	0.8539 ug/kg	94
98)	Hexachlorobutadiene	20.58	225	1493	0.6898 ug/kg#	70
99)	Naphthalene	20.81	128	10277	0.9979 ug/kg	93
100)	1,2,3-Trichlorobenzene	21.12	180	3961	0.9946 ug/kg	80

(#) = qualifier out of range (m) = manual integration
9M972898.D 8260SL.M Fri Feb 26 11:11:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration

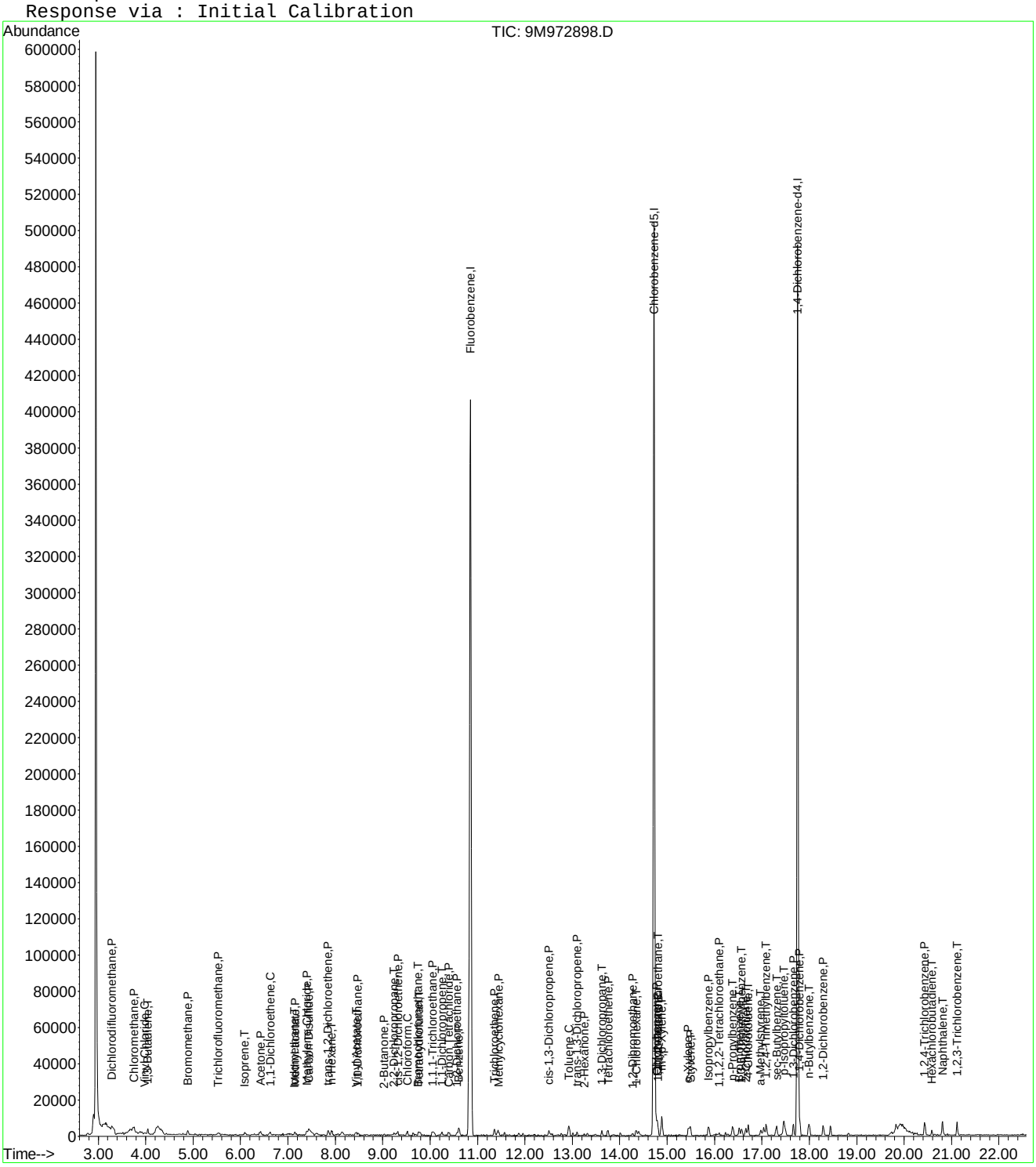

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	0.4051	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.9099	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.4579	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	0.4960	0.0	0	0.00
6	P	Bromomethane	-1.0000	0.9906	0.0	100	0.00
7	P	Chloroethane	-1.0000	0.2845	0.0	100	0.01
8	P	Trichlorofluoromethane	-1.0000	0.5404	0.0	100	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.04#
10	T	Isoprene	-1.0000	0.4298	0.0	0	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.30#
12	P	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.0779	0.0	100	0.00
13	P	Acetone	-1.0000	5.5216	0.0	0	0.02
14	C	1,1-Dichloroethene	-1.0000	0.4679	0.0	100	0.01
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.76#
16	T	Dimethyl Sulfide	-1.0000	0.1242	0.0	0	0.01
17	T	Iodomethane	-1.0000	3.4505	0.0	0	0.00
18	P	Methyl acetate	-1.0000	0.5343	0.0	0	0.02
19	P	Methylene Chloride	-1.0000	0.5145	0.0	100	0.00
20	P	Carbon Disulfide	-1.0000	0.9557	0.0	0	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.59#
22	P	Methyl Tert Butyl Ether	-1.0000	0.3878	0.0	100	0.00
23	P	trans-1,2-Dichloroethene	-1.0000	0.5365	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.5303	0.0	0	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.26#
26	T	Vinyl Acetate	-1.0000	0.4462	0.0	100	0.01
27	P	1,1-Dichloroethane	-1.0000	0.4660	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.83#
29	P	2-Butanone	-1.0000	0.4909	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.14#
31	T	2,2-Dichloropropane	-1.0000	0.4891	0.0	100	0.00
32	P	cis-1,2-Dichloroethene	-1.0000	0.4388	0.0	100	0.01
33	C	Chloroform	-1.0000	0.4249	0.0	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.65#
35	T	Bromochloromethane	-1.0000	0.4748	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	1.5690	0.0	100	-0.02
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	-1.0000	0.4151	0.0	100	0.00
39	P	Cyclohexane	-1.0000	0.3314	0.0	0	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4526	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.34#
42	P	Carbon Tetrachloride	-1.0000	0.4457	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	-1.0000	0.4537	0.0	100	0.00
46	P	Benzene	0.5000	0.5959	-19.2	100	0.00
47	P	Trichloroethene	-1.0000	0.6064	0.0	100	0.00
48	P	Methylcyclohexane	-1.0000	0.5161	0.0	0	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2930	0.0	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.88#
51	P	Bromodichloromethane	-1.0000	0.3238	0.0	100	0.00
52	T	Dibromomethane	-1.0000	0.1630	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.0000	0.0	0	-12.16#
54	P	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.19#

(#) = Out of Range

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	-1.0000	0.4518	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2529	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.1032	0.0	100	0.00
59	C	Toluene	0.5000	0.5495	-9.9	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2340	0.0	0	0.00
61	P	trans-1,3-Dichloropropene	-1.0000	0.5278	0.0	100	0.00
62	P	1,1,2-Trichloroethane	-1.0000	0.3964	0.0	100	0.00
63	P	2-Hexanone	-1.0000	0.4140	0.0	100	0.00
64	T	1,3-Dichloropropane	-1.0000	0.4568	0.0	100	0.00
65	P	Tetrachloroethene	-1.0000	0.5330	0.0	100	0.00
66	P	Dibromochloromethane	-1.0000	0.3541	0.0	100	0.00
67	P	1,2-Dibromoethane	-1.0000	0.4198	0.0	100	0.00
68	T	1-Chlorohexane	-1.0000	0.4821	0.0	0	0.00
69	P	Chlorobenzene	-1.0000	0.6449	0.0	100	0.00
70	T	1,1,1,2-Tetrachloroethane	-1.0000	0.4044	0.0	100	0.00
71	C	Ethylbenzene	0.5000	0.4985	0.3	100	0.00
72	P	m-,p-Xylene	1.0000	1.0521	-5.2	100	0.00
73	P	o-Xylene	0.5000	0.4997	0.1	100	0.00
74	P	Styrene	-1.0000	0.4802	0.0	100	0.00
75	P	Bromoform	-1.0000	0.3955	0.0	100	0.00
76	P	Isopropylbenzene	-1.0000	0.5456	0.0	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	-1.0000	0.5171	0.0	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.2339	0.0	100	0.00
80	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.29#
81	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.33#
82	T	n-Propylbenzene	-1.0000	0.5780	0.0	100	0.00
83	T	Bromobenzene	-1.0000	0.5732	0.0	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	0.4566	0.0	100	0.00
85	T	2-Chlorotoluene	-1.0000	0.5877	0.0	100	0.00
86	T	4-Chlorotoluene	-1.0000	0.6851	0.0	100	0.00
87	T	a-Methylstyrene	-1.0000	0.4601	0.0	0	0.00
88	T	tert-Butylbenzene	-1.0000	0.2860	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	-1.0000	0.6023	0.0	100	0.00
90	T	sec-Butylbenzene	-1.0000	0.5460	0.0	100	0.00
91	T	p-Isopropyltoluene	-1.0000	0.5241	0.0	100	0.00
92	P	1,3-Dichlorobenzene	-1.0000	0.7132	0.0	100	0.00
93	P	1,4-Dichlorobenzene	-1.0000	0.7386	0.0	100	0.00
94	T	n-Butylbenzene	-1.0000	0.6697	0.0	100	0.00
95	P	1,2-Dichlorobenzene	-1.0000	0.6724	0.0	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.30#
97	P	1,2,4-Trichlorobenzene	-1.0000	0.8539	0.0	100	0.00
98	T	Hexachlorobutadiene	-1.0000	0.6898	0.0	100	0.00
99	T	Naphthalene	-1.0000	0.9979	0.0	100	0.00
100	T	1,2,3-Trichlorobenzene	-1.0000	0.9946	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972898.D 8260SL.M Fri Feb 26 11:11:52 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	536651	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	387839	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	177519	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.82	98	959	0.0978 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.20%#	
79) p-Bromofluorobenzene	16.22	95	467	0.1351 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.28%#	

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.28	85	3486	0.9518 ug/kg#	85
3) Chloromethane	3.74	50	4175	1.1891 ug/kg	88
4) Vinyl Chloride	3.98	62	2686	0.7642 ug/kg	80
5) 1,3-Butadiene	4.03	54	3056	0.9139 ug/kg	91
6) Bromomethane	4.89	94	2537	1.1114 ug/kg	94
7) Chloroethane	5.05	64	1264	0.8072 ug/kg#	45
8) Trichlorofluoromethane	5.53	101	5567	1.0561 ug/kg#	93
9) Diethyl ether	6.05	59	11529	4.6784 ug/kg	97
10) Isoprene	6.08	67	2965	0.9421 ug/kg	97
11) Acrolein	6.29	56	1087	2.2122 ug/kg#	35
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	1939	0.7132 ug/kg	88
13) Acetone	6.41	43	5231	5.8863 ug/kg	95
14) 1,1-Dichloroethene	6.62	61	4981	0.9932 ug/kg	92
15) Tert-Butyl Alcohol	6.77	59	5682	10.3548 ug/kg#	63
16) Dimethyl Sulfide	6.88	62	1614	0.7615 ug/kg	91
17) Iodomethane	7.15	142	941	3.3944 ug/kg#	66
18) Methyl acetate	7.16	43	2553	0.9364 ug/kg#	65
19) Methylene Chloride	7.40	84	2963	1.0849 ug/kg	92
20) Carbon Disulfide	7.45	76	9749	1.2619 ug/kg	95
21) Acrylonitrile	7.58	53	3140	2.3282 ug/kg	85
22) Methyl Tert Butyl Ether	7.61	73	7179	0.9229 ug/kg	83
23) trans-1,2-Dichloroethene	7.85	61	4296	0.9612 ug/kg	95
24) n-Hexane	7.93	57	4481	0.9720 ug/kg	95
25) Diisopropyl ether	8.26	45	50344	4.7022 ug/kg	98
26) Vinyl Acetate	8.43	43	5247	0.8597 ug/kg#	90
27) 1,1-Dichloroethane	8.48	63	5885	1.0483 ug/kg#	85
28) Ethyl-Tert-Butyl ether	8.83	59	46767	4.6979 ug/kg	99
29) 2-Butanone	9.03	43	1776	1.0263 ug/kg#	58
30) Propionitrile	9.14	54	2256	4.2599 ug/kg#	60
31) 2,2-Dichloropropane	9.24	77	4402	1.0506 ug/kg#	71
32) cis-1,2-Dichloroethene	9.31	96	2650	0.9040 ug/kg	94
33) Chloroform	9.51	83	5072	0.9836 ug/kg	96
35) Bromochloromethane	9.75	130	1408	0.7394 ug/kg	86
36) Tetrahydrofuran	9.77	42	6699	6.0054 ug/kg	95
38) 1,1,1-Trichloroethane	10.05	97	4567	0.9793 ug/kg	91
39) Cyclohexane	10.08	56	4992	0.9818 ug/kg#	85
40) 1,1-Dichloropropene	10.24	75	3785	1.0315 ug/kg	90
41) Tert-Amyl-Methyl ether	10.34	73	33850	4.6779 ug/kg	95
42) Carbon Tetrachloride	10.40	117	4297	0.9939 ug/kg#	90
45) 1,2-Dichloroethane	10.55	62	3923	0.8649 ug/kg	93

(#) = qualifier out of range (m) = manual integration
9M972899.D 8260SL.M Fri Feb 26 11:12:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
46)	Benzene	10.61	78	9968	0.9703 ug/kg	96
47)	Trichloroethene	11.36	130	3259	1.0012 ug/kg	99
48)	Methylcyclohexane	11.43	83	3354	0.8215 ug/kg	76
49)	1,2-Dichloropropane	11.57	63	2469	0.8752 ug/kg	94
51)	Bromodichloromethane	11.87	83	3657	0.9198 ug/kg#	94
52)	Dibromomethane	11.96	174	1621	0.8672 ug/kg	93
53)	2-Chloroethyl Vinyl Ether	12.16	63	210	3.0851 ug/kg#	47
54)	4-Methyl-2-Pentanone	12.20	58	738	0.5960 ug/kg#	40
55)	cis-1,3-Dichloropropene	12.51	75	3714	0.8966 ug/kg	86
56)	Dimethyl Disulfide	12.77	94	3075	0.7387 ug/kg	83
59)	Toluene	12.93	91	10894	0.9831 ug/kg	97
60)	Ethyl Methacrylate	13.01	69	1966	0.6401 ug/kg#	53
61)	trans-1,3-Dichloropropene	13.11	75	3837	0.9614 ug/kg#	79
62)	1,1,2-Trichloroethane	13.32	97	2148	0.9227 ug/kg	94
63)	2-Hexanone	13.26	43	1796	0.7727 ug/kg#	80
64)	1,3-Dichloropropane	13.63	76	3616	0.9322 ug/kg	99
65)	Tetrachloroethene	13.75	164	2587	1.0890 ug/kg	79
66)	Dibromochloromethane	14.02	129	3318	1.0199 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	2336	0.9047 ug/kg	97
68)	1-Chlorohexane	14.34	91	3075	0.9410 ug/kg	85
69)	Chlorobenzene	14.78	112	7982	1.0249 ug/kg	88
70)	1,1,1,2-Tetrachloroethane	14.81	131	2589	0.8852 ug/kg	86
71)	Ethylbenzene	14.80	106	4007	0.9987 ug/kg	89
72)	m-,p-Xylene	14.88	106	9607	1.9388 ug/kg	98
73)	o-Xylene	15.45	106	4376	0.9202 ug/kg	99
74)	Styrene	15.49	104	7432	0.9178 ug/kg	92
75)	Bromoform	16.00	173	1759	0.8235 ug/kg#	79
76)	Isopropylbenzene	15.87	105	11937	0.9351 ug/kg	98
78)	1,1,2,2-Tetrachloroethane	16.09	83	2186	0.8118 ug/kg#	83
80)	1,2,3-Trichloropropane	16.28	110	875	0.8568 ug/kg#	81
81)	trans-1,4-Dichloro-2-Buten	16.34	53	831	0.8073 ug/kg#	74
82)	n-Propylbenzene	16.38	91	14156	1.0145 ug/kg	99
83)	Bromobenzene	16.53	156	2996	0.9095 ug/kg#	39
84)	1,3,5-Trimethylbenzene	16.57	105	11008	1.0509 ug/kg	88
85)	2-Chlorotoluene	16.65	91	10606	1.1332 ug/kg	84
86)	4-Chlorotoluene	16.71	91	9101	1.0518 ug/kg	95
87)	a-Methylstyrene	16.98	118	4078	0.8544 ug/kg	85
88)	tert-Butylbenzene	17.03	134	2095	0.9540 ug/kg	74
89)	1,2,4-Trimethylbenzene	17.09	105	12124	1.1053 ug/kg	83
90)	sec-Butylbenzene	17.31	105	13922	1.0320 ug/kg	100
91)	p-Isopropyltoluene	17.47	119	10153	0.8918 ug/kg	98
92)	1,3-Dichlorobenzene	17.67	146	7444	1.1370 ug/kg	90
93)	1,4-Dichlorobenzene	17.79	146	7580	1.1581 ug/kg	92
94)	n-Butylbenzene	17.99	91	11112	1.0498 ug/kg	91
95)	1,2-Dichlorobenzene	18.29	146	6415	1.0560 ug/kg	97
97)	1,2,4-Trichlorobenzene	20.43	180	4869	1.1291 ug/kg	98
98)	Hexachlorobutadiene	20.59	225	2032	0.8939 ug/kg	87
99)	Naphthalene	20.81	128	11710	1.0826 ug/kg	92
100)	1,2,3-Trichlorobenzene	21.12	180	4698	1.1232 ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972899.D 8260SL.M Fri Feb 26 11:12:33 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration

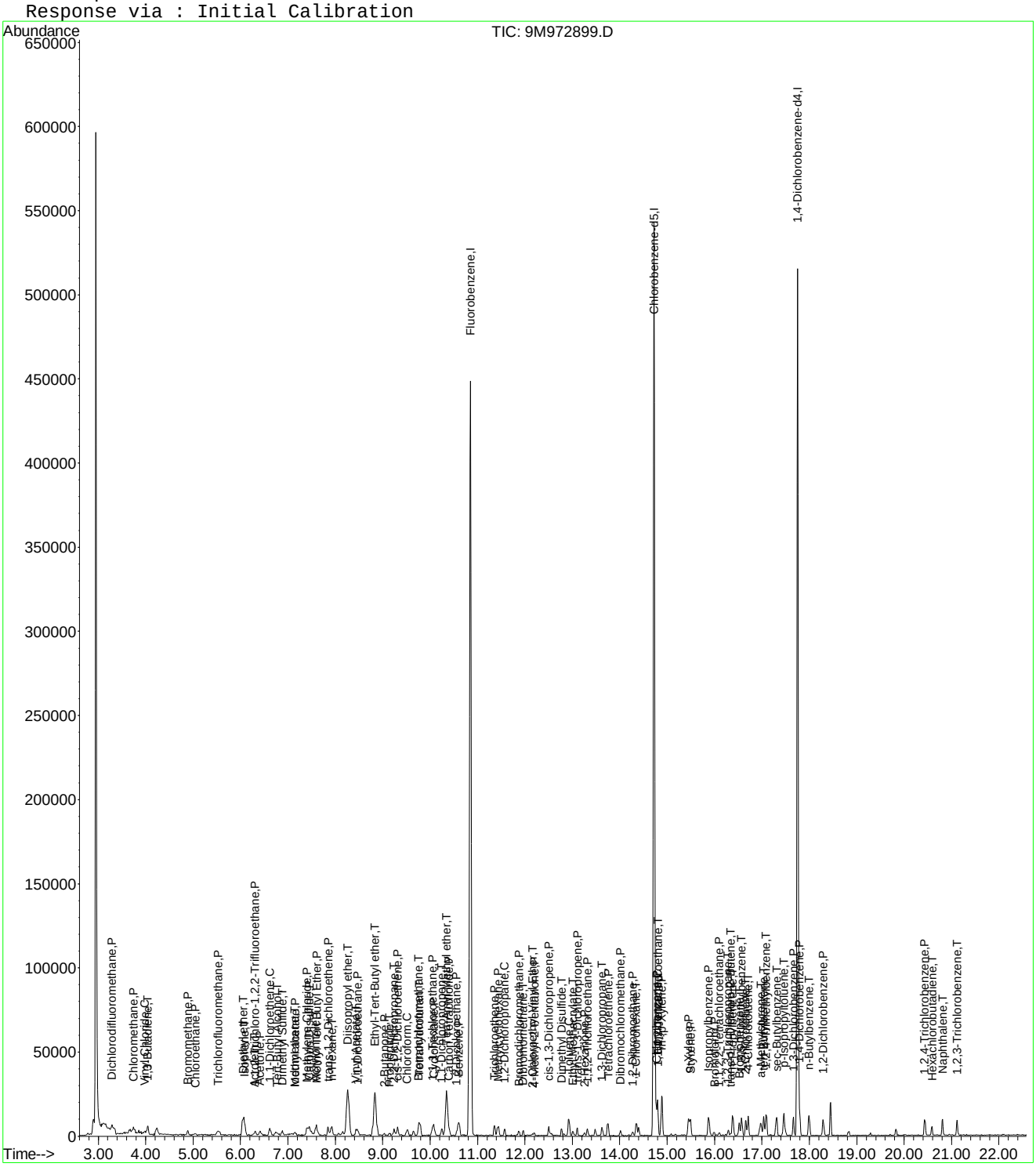

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	0.9518	0.0	100	0.00
3	P	Chloromethane	-1.0000	1.1891	0.0	100	0.00
4	C	Vinyl Chloride	1.0000	0.7642	23.6#	100	0.00
5	T	1,3-Butadiene	-1.0000	0.9139	0.0	0	0.00
6	P	Bromomethane	1.0000	1.1114	-11.1	100	0.00
7	P	Chloroethane	-1.0000	0.8072	0.0	100	0.00
8	P	Trichlorofluoromethane	1.0000	1.0561	-5.6	100	0.00
9	T	Diethyl ether	5.0000	4.6784	6.4	100	0.00
10	T	Isoprene	-1.0000	0.9421	0.0	0	0.00
11	T	Acrolein	2.5000	2.2122	11.5	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.7132	0.0	100	0.00
13	P	Acetone	-1.0000	5.8863	0.0	0	0.00
14	C	1,1-Dichloroethene	1.0000	0.9932	0.7	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	10.3548	0.0	100	0.00
16	T	Dimethyl Sulfide	1.0000	0.7615	23.9	100	0.00
17	T	Iodomethane	-1.0000	3.3944	0.0	0	0.01
18	P	Methyl acetate	-1.0000	0.9364	0.0	0	0.02
19	P	Methylene Chloride	-1.0000	1.0849	0.0	100	0.00
20	P	Carbon Disulfide	-1.0000	1.2619	0.0	0	0.00
21	T	Acrylonitrile	2.5000	2.3282	6.9	100	0.00
22	P	Methyl Tert Butyl Ether	1.0000	0.9229	7.7	100	0.00
23	P	trans-1,2-Dichloroethene	1.0000	0.9612	3.9	100	0.00
24	T	n-Hexane	-1.0000	0.9720	0.0	0	0.01
25	T	Diisopropyl ether	5.0000	4.7022	6.0	100	0.00
26	T	Vinyl Acetate	-1.0000	0.8597	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0483	-4.8	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.6979	6.0	100	0.00
29	P	2-Butanone	-1.0000	1.0263	0.0	100	0.00
30	T	Propionitrile	5.0000	4.2599	14.8	100	0.00
31	T	2,2-Dichloropropane	-1.0000	1.0506	0.0	100	0.00
32	P	cis-1,2-Dichloroethene	1.0000	0.9040	9.6	100	0.00
33	C	Chloroform	1.0000	0.9836	1.6	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.65#
35	T	Bromochloromethane	1.0000	0.7395	26.1#	100	0.00
36	T	Tetrahydrofuran	-1.0000	6.0054	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	1.0000	0.9793	2.1	100	0.00
39	P	Cyclohexane	1.0000	0.9818	1.8	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0315	-3.1	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	4.6780	6.4	100	0.00
42	P	Carbon Tetrachloride	-1.0000	0.9939	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	1.0000	0.8649	13.5	100	0.00
46	P	Benzene	1.0000	0.9703	3.0	100	0.00
47	P	Trichloroethene	1.0000	1.0012	-0.1	100	0.00
48	P	Methylcyclohexane	1.0000	0.8215	17.8	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.8752	12.5	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.88#
51	P	Bromodichloromethane	-1.0000	0.9198	0.0	100	0.00
52	T	Dibromomethane	1.0000	0.8672	13.3	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	3.0851	0.0	0	0.00
54	P	4-Methyl-2-Pentanone	-1.0000	0.5960	0.0	100	0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	-1.0000	0.8966	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.7387	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0978	0.0	100	0.00
59	C	Toluene	1.0000	0.9831	1.7	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.6401	0.0	0	0.00
61	P	trans-1,3-Dichloropropene	-1.0000	0.9614	0.0	100	0.00
62	P	1,1,2-Trichloroethane	1.0000	0.9227	7.7	100	0.00
63	P	2-Hexanone	-1.0000	0.7727	0.0	100	0.00
64	T	1,3-Dichloropropane	1.0000	0.9322	6.8	100	0.00
65	P	Tetrachloroethene	1.0000	1.0890	-8.9	100	0.00
66	P	Dibromochloromethane	-1.0000	1.0199	0.0	100	0.00
67	P	1,2-Dibromoethane	-1.0000	0.9047	0.0	100	0.00
68	T	1-Chlorohexane	1.0000	0.9410	5.9	100	0.00
69	P	Chlorobenzene	1.0000	1.0249	-2.5	100	0.00
70	T	1,1,1,2-Tetrachloroethane	-1.0000	0.8852	0.0	100	0.00
71	C	Ethylbenzene	1.0000	0.9987	0.1	100	0.00
72	P	m-,p-Xylene	2.0000	1.9388	3.1	100	0.00
73	P	o-Xylene	1.0000	0.9202	8.0	100	0.00
74	P	Styrene	1.0000	0.9178	8.2	100	0.00
75	P	Bromoform	-1.0000	0.8235	0.0	100	0.00
76	P	Isopropylbenzene	1.0000	0.9351	6.5	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	1.0000	0.8118	18.8	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.1351	0.0	100	0.00
80	T	1,2,3-Trichloropropane	1.0000	0.8568	14.3	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.8073	0.0	0	0.00
82	T	n-Propylbenzene	1.0000	1.0145	-1.4	100	0.00
83	T	Bromobenzene	1.0000	0.9095	9.1	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	1.0509	0.0	100	0.00
85	T	2-Chlorotoluene	-1.0000	1.1332	0.0	100	0.00
86	T	4-Chlorotoluene	1.0000	1.0518	-5.2	100	0.00
87	T	a-Methylstyrene	-1.0000	0.8544	0.0	0	0.00
88	T	tert-Butylbenzene	-1.0000	0.9540	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	1.0000	1.1053	-10.5	100	0.00
90	T	sec-Butylbenzene	1.0000	1.0320	-3.2	100	0.00
91	T	p-Isopropyltoluene	-1.0000	0.8918	0.0	100	0.00
92	P	1,3-Dichlorobenzene	1.0000	1.1370	-13.7	100	0.00
93	P	1,4-Dichlorobenzene	1.0000	1.1581	-15.8	100	0.00
94	T	n-Butylbenzene	1.0000	1.0498	-5.0	100	0.00
95	P	1,2-Dichlorobenzene	1.0000	1.0560	-5.6	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	0.3514	0.0	100	0.00
97	P	1,2,4-Trichlorobenzene	1.0000	1.1291	-12.9	100	0.00
98	T	Hexachlorobutadiene	1.0000	0.8939	10.6	100	0.00
99	T	Naphthalene	-1.0000	1.0826	0.0	100	0.00
100	T	1,2,3-Trichlorobenzene	1.0000	1.1232	-12.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1
9M972899.D 8260SL.M Fri Feb 26 11:12:31 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	472115	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	342668	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	156993	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.83	98	772	0.0891 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.18%#	
79) p-Bromofluorobenzene	16.23	95	570	0.1865 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.38%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.29	85	6383	1.9809 ug/kg#	78
3) Chloromethane	3.74	50	7027	2.2750 ug/kg	100
4) Vinyl Chloride	4.00	62	6001	1.9408 ug/kg	97
5) 1,3-Butadiene	4.04	54	6545	2.2249 ug/kg	95
6) Bromomethane	4.90	94	5050	2.5146 ug/kg	81
7) Chloroethane	5.04	64	2391	1.7357 ug/kg#	70
8) Trichlorofluoromethane	5.54	101	9777	2.1082 ug/kg#	94
9) Diethyl ether	6.06	59	58156	26.8255 ug/kg	97
10) Isoprene	6.09	67	5698	2.0580 ug/kg	89
11) Acrolein	6.30	56	5427	12.5543 ug/kg	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	4756	1.9886 ug/kg	93
13) Acetone	6.40	43	6167	6.9886 ug/kg	93
14) 1,1-Dichloroethene	6.62	61	9652	2.1877 ug/kg	91
15) Tert-Butyl Alcohol	6.75	59	26757	55.4271 ug/kg#	91
16) Dimethyl Sulfide	6.89	62	3840	2.0594 ug/kg	97
17) Iodomethane	7.14	142	1541	3.9079 ug/kg#	56
18) Methyl acetate	7.15	43	5334	2.2240 ug/kg#	69
19) Methylene Chloride	7.40	84	5116	2.1292 ug/kg	98
20) Carbon Disulfide	7.44	76	15010	2.2085 ug/kg	94
21) Acrylonitrile	7.59	53	14961	12.6096 ug/kg	100
22) Methyl Tert Butyl Ether	7.61	73	13630	1.9917 ug/kg	93
23) trans-1,2-Dichloroethene	7.85	61	7964	2.0255 ug/kg	100
24) n-Hexane	7.92	57	8619	2.1253 ug/kg	100
25) Diisopropyl ether	8.26	45	252190	26.7748 ug/kg	99
26) Vinyl Acetate	8.43	43	11207	2.0872 ug/kg	95
27) 1,1-Dichloroethane	8.47	63	10529	2.1320 ug/kg#	93
28) Ethyl-Tert-Butyl ether	8.83	59	234163	26.7377 ug/kg	99
29) 2-Butanone	9.03	43	3346	2.1978 ug/kg#	76
30) Propionitrile	9.14	54	12899	27.6861 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	8085	2.1934 ug/kg	88
32) cis-1,2-Dichloroethene	9.32	96	4861	1.8850 ug/kg	98
33) Chloroform	9.53	83	10005	2.2054 ug/kg	95
34) 1-Bromopropane	9.64	122	209	1.5465 ug/kg	96
35) Bromochloromethane	9.75	130	3273	1.9539 ug/kg	81
36) Tetrahydrofuran	9.78	42	26192	26.6900 ug/kg	94
38) 1,1,1-Trichloroethane	10.04	97	8229	2.0058 ug/kg	97
39) Cyclohexane	10.09	56	9354	2.0912 ug/kg	96
40) 1,1-Dichloropropene	10.23	75	6787	2.1024 ug/kg	88
41) Tert-Amyl-Methyl ether	10.34	73	167275	26.2768 ug/kg	98
42) Carbon Tetrachloride	10.39	117	7920	2.0823 ug/kg#	95

(#) = qualifier out of range (m) = manual integration
9M972900.D 8260SL.M Fri Feb 26 11:13:39 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	8488	2.1271 ug/kg	89
46)	Benzene	10.60	78	19454	2.1525 ug/kg	96
47)	Trichloroethene	11.35	130	6073	2.1207 ug/kg	96
48)	Methylcyclohexane	11.44	83	7523	2.0945 ug/kg	95
49)	1,2-Dichloropropane	11.58	63	5118	2.0621 ug/kg	93
50)	1,4-Dioxane	11.88	88	1938	52.0499 ug/kg	84
51)	Bromodichloromethane	11.87	83	7148	2.0436 ug/kg#	95
52)	Dibromomethane	11.97	174	3572	2.1721 ug/kg	91
53)	2-Chloroethyl Vinyl Ether	12.17	63	474	3.4830 ug/kg#	47
54)	4-Methyl-2-Pentanone	12.19	58	2111	1.9378 ug/kg#	64
55)	cis-1,3-Dichloropropene	12.50	75	7048	1.9341 ug/kg	92
56)	Dimethyl Disulfide	12.77	94	5832	1.5925 ug/kg	95
59)	Toluene	12.93	91	20786	2.1230 ug/kg	97
60)	Ethyl Methacrylate	13.01	69	4184	1.5417 ug/kg	98
61)	trans-1,3-Dichloropropene	13.11	75	6895	1.9553 ug/kg	92
62)	1,1,2-Trichloroethane	13.33	97	4055	1.9716 ug/kg	86
63)	2-Hexanone	13.25	43	3773	1.8373 ug/kg#	82
64)	1,3-Dichloropropane	13.62	76	7643	2.2302 ug/kg	97
65)	Tetrachloroethene	13.75	164	4327	2.0615 ug/kg	94
66)	Dibromochloromethane	14.01	129	6170	2.1465 ug/kg	87
67)	1,2-Dibromoethane	14.28	107	4656	2.0410 ug/kg	88
68)	1-Chlorohexane	14.35	91	5610	1.9430 ug/kg	97
69)	Chlorobenzene	14.77	112	14885	2.1632 ug/kg	95
70)	1,1,1,2-Tetrachloroethane	14.80	131	5145	1.9910 ug/kg	86
71)	Ethylbenzene	14.79	106	7287	2.0555 ug/kg	99
72)	m-,p-Xylene	14.89	106	19133	4.3702 ug/kg	93
73)	o-Xylene	15.45	106	8413	2.0024 ug/kg	94
74)	Styrene	15.49	104	14533	2.0313 ug/kg	97
75)	Bromoform	15.99	173	3135	1.6611 ug/kg	97
76)	Isopropylbenzene	15.87	105	23266	2.0628 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	5252	2.2053 ug/kg#	89
80)	1,2,3-Trichloropropane	16.28	110	1851	2.0495 ug/kg#	89
81)	trans-1,4-Dichloro-2-Buten	16.33	53	1413	1.5521 ug/kg	47
82)	n-Propylbenzene	16.38	91	25735	2.0854 ug/kg	99
83)	Bromobenzene	16.52	156	7006	2.4049 ug/kg	83
84)	1,3,5-Trimethylbenzene	16.57	105	18571	2.0048 ug/kg	99
85)	2-Chlorotoluene	16.66	91	18793	2.2705 ug/kg	97
86)	4-Chlorotoluene	16.70	91	16240	2.1222 ug/kg	96
87)	a-Methylstyrene	16.98	118	7524	1.7826 ug/kg	97
88)	tert-Butylbenzene	17.04	134	3654	1.8815 ug/kg	64
89)	1,2,4-Trimethylbenzene	17.09	105	20119	2.0739 ug/kg	99
90)	sec-Butylbenzene	17.31	105	24858	2.0835 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	20956	2.0813 ug/kg	96
92)	1,3-Dichlorobenzene	17.66	146	13695	2.3653 ug/kg	94
93)	1,4-Dichlorobenzene	17.79	146	12975	2.2416 ug/kg	82
94)	n-Butylbenzene	17.99	91	19734	2.1080 ug/kg	95
95)	1,2-Dichlorobenzene	18.30	146	11568	2.1533 ug/kg	91
96)	1,2-Dibromo-3-Chloropropan	19.30	157	941	1.3644 ug/kg	84
97)	1,2,4-Trichlorobenzene	20.44	180	8356	2.1910 ug/kg	98
98)	Hexachlorobutadiene	20.59	225	4571	2.2738 ug/kg	87
99)	Naphthalene	20.81	128	20072	2.0983 ug/kg	96
100)	1,2,3-Trichlorobenzene	21.11	180	7948	2.1487 ug/kg	96

(#) = qualifier out of range (m) = manual integration
9M972900.D 8260SL.M Fri Feb 26 11:13:39 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration

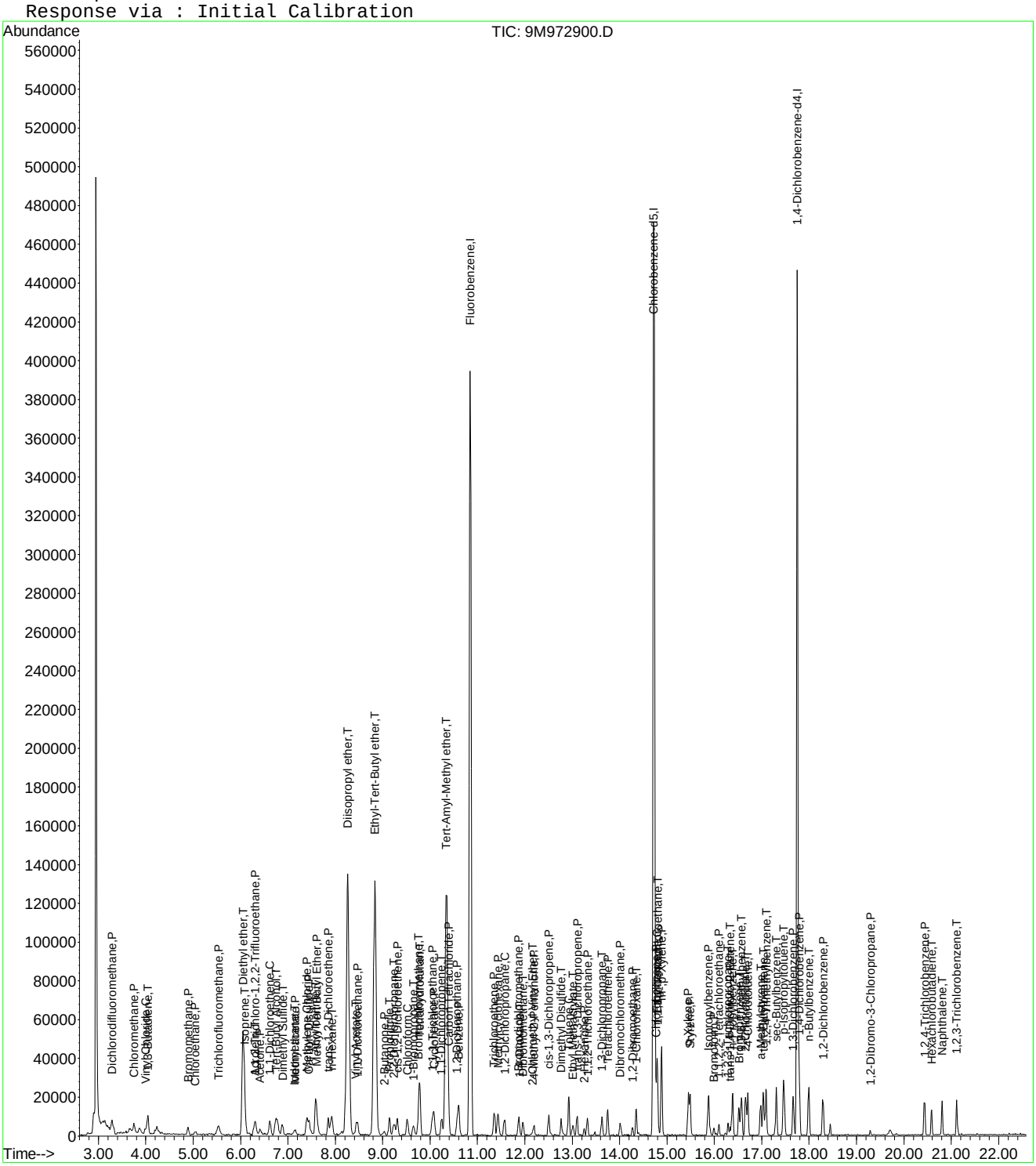

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	1.9809	0.0	100	0.01
3	P	Chloromethane	2.0000	2.2750	-13.7	100	0.00
4	C	Vinyl Chloride	2.0000	1.9408	3.0	100	0.01
5	T	1,3-Butadiene	2.0000	2.2249	-11.2	100	0.00
6	P	Bromomethane	2.0000	2.5146	-25.7#	100	0.01
7	P	Chloroethane	2.0000	1.7357	13.2	100	0.00
8	P	Trichlorofluoromethane	2.0000	2.1082	-5.4	100	0.01
9	T	Diethyl ether	25.0000	26.8255	-7.3	100	0.01
10	T	Isoprene	2.0000	2.0580	-2.9	100	0.00
11	T	Acrolein	12.5000	12.5543	-0.4	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.9886	0.6	100	0.01
13	P	Acetone	-1.0000	6.9886	0.0	0	0.00
14	C	1,1-Dichloroethene	2.0000	2.1877	-9.4	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	55.4271	-10.9	100	0.00
16	T	Dimethyl Sulfide	2.0000	2.0594	-3.0	100	0.01
17	T	Iodomethane	-1.0000	3.9079	0.0	0	0.01
18	P	Methyl acetate	2.0000	2.2240	-11.2	100	0.01
19	P	Methylene Chloride	2.0000	2.1292	-6.5	100	0.00
20	P	Carbon Disulfide	2.0000	2.2085	-10.4	100	0.00
21	T	Acrylonitrile	12.5000	12.6096	-0.9	100	0.00
22	P	Methyl Tert Butyl Ether	2.0000	1.9917	0.4	100	0.00
23	P	trans-1,2-Dichloroethene	2.0000	2.0255	-1.3	100	0.00
24	T	n-Hexane	2.0000	2.1253	-6.3	100	0.01
25	T	Diisopropyl ether	25.0000	26.7748	-7.1	100	0.00
26	T	Vinyl Acetate	2.0000	2.0872	-4.4	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.1320	-6.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	26.7377	-7.0	100	0.00
29	P	2-Butanone	2.0000	2.1978	-9.9	100	0.00
30	T	Propionitrile	25.0000	27.6861	-10.7	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1934	-9.7	100	0.00
32	P	cis-1,2-Dichloroethene	2.0000	1.8850	5.8	100	0.01
33	C	Chloroform	2.0000	2.2054	-10.3	100	0.01
34	T	1-Bromopropane	2.0000	1.5465	22.7	100	0.00
35	T	Bromochloromethane	2.0000	1.9539	2.3	100	0.00
36	T	Tetrahydrofuran	25.0000	26.6900	-6.8	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	2.0000	2.0058	-0.3	100	0.00
39	P	Cyclohexane	2.0000	2.0913	-4.6	100	0.01
40	T	1,1-Dichloropropene	2.0000	2.1023	-5.1	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	26.2768	-5.1	100	0.00
42	P	Carbon Tetrachloride	2.0000	2.0823	-4.1	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	2.0000	2.1271	-6.4	100	0.00
46	P	Benzene	2.0000	2.1525	-7.6	100	0.00
47	P	Trichloroethene	2.0000	2.1207	-6.0	100	0.00
48	P	Methylcyclohexane	2.0000	2.0945	-4.7	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0621	-3.1	100	0.01
50	T	1,4-Dioxane	50.0000	52.0499	-4.1	100	0.00
51	P	Bromodichloromethane	2.0000	2.0436	-2.2	100	0.00
52	T	Dibromomethane	2.0000	2.1721	-8.6	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	3.4830	0.0	0	0.00
54	P	4-Methyl-2-Pentanone	-1.0000	1.9378	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	2.0000	1.9341	3.3	100	0.00
56	T	Dimethyl Disulfide	2.0000	1.5925	20.4	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0891	0.0	100	0.00
59	C	Toluene	2.0000	2.1230	-6.2	100	0.00
60	T	Ethyl Methacrylate	-1.0000	1.5417	0.0	0	0.00
61	P	trans-1,3-Dichloropropene	2.0000	1.9553	2.2	100	0.00
62	P	1,1,2-Trichloroethane	2.0000	1.9716	1.4	100	0.00
63	P	2-Hexanone	-1.0000	1.8373	0.0	100	0.00
64	T	1,3-Dichloropropane	2.0000	2.2302	-11.5	100	0.00
65	P	Tetrachloroethene	2.0000	2.0616	-3.1	100	0.00
66	P	Dibromochloromethane	2.0000	2.1465	-7.3	100	0.00
67	P	1,2-Dibromoethane	-1.0000	2.0410	0.0	100	0.00
68	T	1-Chlorohexane	2.0000	1.9430	2.8	100	0.00
69	P	Chlorobenzene	2.0000	2.1632	-8.2	100	0.00
70	T	1,1,1,2-Tetrachloroethane	2.0000	1.9910	0.4	100	0.00
71	C	Ethylbenzene	2.0000	2.0555	-2.8	100	0.00
72	P	m-,p-Xylene	4.0000	4.3702	-9.3	100	0.00
73	P	o-Xylene	2.0000	2.0024	-0.1	100	0.00
74	P	Styrene	2.0000	2.0313	-1.6	100	0.00
75	P	Bromoform	2.0000	1.6611	16.9	100	0.00
76	P	Isopropylbenzene	2.0000	2.0628	-3.1	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	2.0000	2.2053	-10.3	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.1865	0.0	100	0.00
80	T	1,2,3-Trichloropropane	2.0000	2.0495	-2.5	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	2.0000	1.5521	22.4	100	0.00
82	T	n-Propylbenzene	2.0000	2.0854	-4.3	100	0.00
83	T	Bromobenzene	2.0000	2.4049	-20.2	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	2.0048	0.0	100	0.00
85	T	2-Chlorotoluene	2.0000	2.2705	-13.5	100	0.00
86	T	4-Chlorotoluene	2.0000	2.1222	-6.1	100	0.00
87	T	a-Methylstyrene	-1.0000	1.7826	0.0	0	0.00
88	T	tert-Butylbenzene	-1.0000	1.8815	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	2.0000	2.0739	-3.7	100	0.00
90	T	sec-Butylbenzene	2.0000	2.0835	-4.2	100	0.00
91	T	p-Isopropyltoluene	-1.0000	2.0813	0.0	100	0.00
92	P	1,3-Dichlorobenzene	2.0000	2.3653	-18.3	100	0.00
93	P	1,4-Dichlorobenzene	2.0000	2.2416	-12.1	100	0.00
94	T	n-Butylbenzene	2.0000	2.1080	-5.4	100	0.00
95	P	1,2-Dichlorobenzene	2.0000	2.1533	-7.7	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	1.3644	0.0	100	0.00
97	P	1,2,4-Trichlorobenzene	2.0000	2.1910	-9.6	100	0.00
98	T	Hexachlorobutadiene	2.0000	2.2738	-13.7	100	0.00
99	T	Naphthalene	2.0000	2.0983	-4.9	100	0.00
100	T	1,2,3-Trichlorobenzene	2.0000	2.1487	-7.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	544259	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	391881	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.76	152	178969	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	29036	9.8422 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 19.68%#		
43) 1,2-Dichloroethane-d4	10.44	65	38093	10.2911 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 20.58%#		
58) Toluene-d8	12.83	98	95044	9.5885 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 19.18%#		
79) p-Bromofluorobenzene	16.23	95	32806	9.4138 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 18.82%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	14756	3.9724 ug/kg	92
3) Chloromethane	3.74	50	15227	4.2763 ug/kg	91
4) Vinyl Chloride	3.99	62	17097	4.7964 ug/kg	89
5) 1,3-Butadiene	4.04	54	14484	4.2710 ug/kg	97
6) Bromomethane	4.89	94	9847	4.2533 ug/kg	95
7) Chloroethane	5.04	64	6311	3.9741 ug/kg	93
8) Trichlorofluoromethane	5.53	101	22668	4.2400 ug/kg	100
9) Diethyl ether	6.05	59	118004	47.2164 ug/kg	99
10) Isoprene	6.10	67	13644	4.2747 ug/kg	95
11) Acrolein	6.30	56	12131	24.3428 ug/kg	84
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	12752	4.6251 ug/kg	95
13) Acetone	6.41	43	9765	4.9429 ug/kg	94
14) 1,1-Dichloroethene	6.62	61	21760	4.2784 ug/kg	99
15) Tert-Butyl Alcohol	6.76	59	50500	90.7440 ug/kg	98
16) Dimethyl Sulfide	6.88	62	10098	4.6977 ug/kg	87
17) Iodomethane	7.13	142	4147	5.3886 ug/kg	97
18) Methyl acetate	7.15	43	12159	4.3976 ug/kg#	87
19) Methylene Chloride	7.41	84	11825	4.2690 ug/kg	99
20) Carbon Disulfide	7.45	76	34078	4.3495 ug/kg	94
21) Acrylonitrile	7.58	53	31012	22.6731 ug/kg	100
22) Methyl Tert Butyl Ether	7.61	73	34936	4.4284 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	20503	4.5233 ug/kg	95
24) n-Hexane	7.92	57	20970	4.4853 ug/kg	98
25) Diisopropyl ether	8.26	45	505084	46.5162 ug/kg	100
26) Vinyl Acetate	8.44	43	28253	4.5644 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	24239	4.2575 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	463447	45.9037 ug/kg	99
29) 2-Butanone	9.03	43	8265	4.7092 ug/kg	88
30) Propionitrile	9.15	54	25938	48.2931 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	17954	4.2251 ug/kg	91
32) cis-1,2-Dichloroethene	9.32	96	13479	4.5340 ug/kg	84
33) Chloroform	9.52	83	23525	4.4982 ug/kg	95
34) 1-Bromopropane	9.65	122	2239	5.8652 ug/kg	90
35) Bromochloromethane	9.75	130	9205	4.7667 ug/kg	97
36) Tetrahydrofuran	9.78	42	53635	47.4100 ug/kg	99
38) 1,1,1-Trichloroethane	10.04	97	20945	4.4285 ug/kg	91
39) Cyclohexane	10.09	56	23110	4.4818 ug/kg	98
40) 1,1-Dichloropropene	10.24	75	16349	4.3930 ug/kg	99
41) Tert-Amyl-Methyl ether	10.35	73	343692	46.8330 ug/kg	98
42) Carbon Tetrachloride	10.39	117	18527	4.2254 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	21553	4.6852 ug/kg	99
46)	Benzene	10.60	78	45352	4.3528 ug/kg	99
47)	Trichloroethene	11.35	130	14266	4.3213 ug/kg	97
48)	Methylcyclohexane	11.44	83	17527	4.2330 ug/kg	97
49)	1,2-Dichloropropane	11.56	63	13071	4.5684 ug/kg	100
50)	1,4-Dioxane	11.88	88	3926	91.4657 ug/kg	99
51)	Bromodichloromethane	11.87	83	18008	4.4660 ug/kg	97
52)	Dibromomethane	11.96	174	8993	4.7438 ug/kg	95
53)	2-Chloroethyl Vinyl Ether	12.16	63	2468	5.7758 ug/kg#	66
54)	4-Methyl-2-Pentanone	12.19	58	4862	3.8716 ug/kg	95
55)	cis-1,3-Dichloropropene	12.50	75	18341	4.3659 ug/kg	96
56)	Dimethyl Disulfide	12.77	94	17792	4.2144 ug/kg	91
59)	Toluene	12.92	91	48377	4.3206 ug/kg	96
60)	Ethyl Methacrylate	13.02	69	12442	4.0089 ug/kg	96
61)	trans-1,3-Dichloropropene	13.10	75	17626	4.3707 ug/kg	95
62)	1,1,2-Trichloroethane	13.33	97	10657	4.5308 ug/kg	99
63)	2-Hexanone	13.25	43	10194	4.3408 ug/kg	96
64)	1,3-Dichloropropane	13.62	76	17885	4.5633 ug/kg	100
65)	Tetrachloroethene	13.75	164	10317	4.2981 ug/kg	97
66)	Dibromochloromethane	14.01	129	14152	4.3052 ug/kg	98
67)	1,2-Dibromoethane	14.28	107	12182	4.6694 ug/kg	99
68)	1-Chlorohexane	14.35	91	12970	3.9281 ug/kg	87
69)	Chlorobenzene	14.77	112	36017	4.5769 ug/kg	85
70)	1,1,1,2-Tetrachloroethane	14.80	131	12746	4.3130 ug/kg	95
71)	Ethylbenzene	14.80	106	17828	4.3974 ug/kg	92
72)	m-,p-Xylene	14.89	106	45904	9.1683 ug/kg	95
73)	o-Xylene	15.46	106	21754	4.5275 ug/kg	91
74)	Styrene	15.49	104	35390	4.3253 ug/kg	98
75)	Bromoform	15.98	173	9363	4.3382 ug/kg	96
76)	Isopropylbenzene	15.88	105	55721	4.3198 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	13197	4.8610 ug/kg	97
80)	1,2,3-Trichloropropane	16.29	110	5070	4.9243 ug/kg#	28
81)	trans-1,4-Dichloro-2-Buten	16.33	53	4246	4.0913 ug/kg#	39
82)	n-Propylbenzene	16.39	91	64689	4.5983 ug/kg	100
83)	Bromobenzene	16.52	156	15405	4.6386 ug/kg	90
84)	1,3,5-Trimethylbenzene	16.58	105	49527	4.6900 ug/kg	98
85)	2-Chlorotoluene	16.66	91	41422	4.3899 ug/kg	97
86)	4-Chlorotoluene	16.70	91	40985	4.6981 ug/kg	99
87)	a-Methylstyrene	16.98	118	20049	4.1667 ug/kg	90
88)	tert-Butylbenzene	17.04	134	10027	4.5290 ug/kg	84
89)	1,2,4-Trimethylbenzene	17.09	105	51253	4.6345 ug/kg	98
90)	sec-Butylbenzene	17.30	105	60716	4.4642 ug/kg	98
91)	p-Isopropyltoluene	17.46	119	53318	4.6453 ug/kg	98
92)	1,3-Dichlorobenzene	17.66	146	29255	4.4323 ug/kg	98
93)	1,4-Dichlorobenzene	17.79	146	30175	4.5730 ug/kg	91
94)	n-Butylbenzene	17.99	91	45964	4.3071 ug/kg	98
95)	1,2-Dichlorobenzene	18.30	146	27310	4.4593 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.30	157	3147	4.0028 ug/kg	87
97)	1,2,4-Trichlorobenzene	20.44	180	18372	4.2258 ug/kg	95
98)	Hexachlorobutadiene	20.59	225	9618	4.1968 ug/kg	90
99)	Naphthalene	20.81	128	47189	4.3274 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.11	180	17859	4.2352 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972901.D 8260SL.M Fri Feb 26 11:21:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

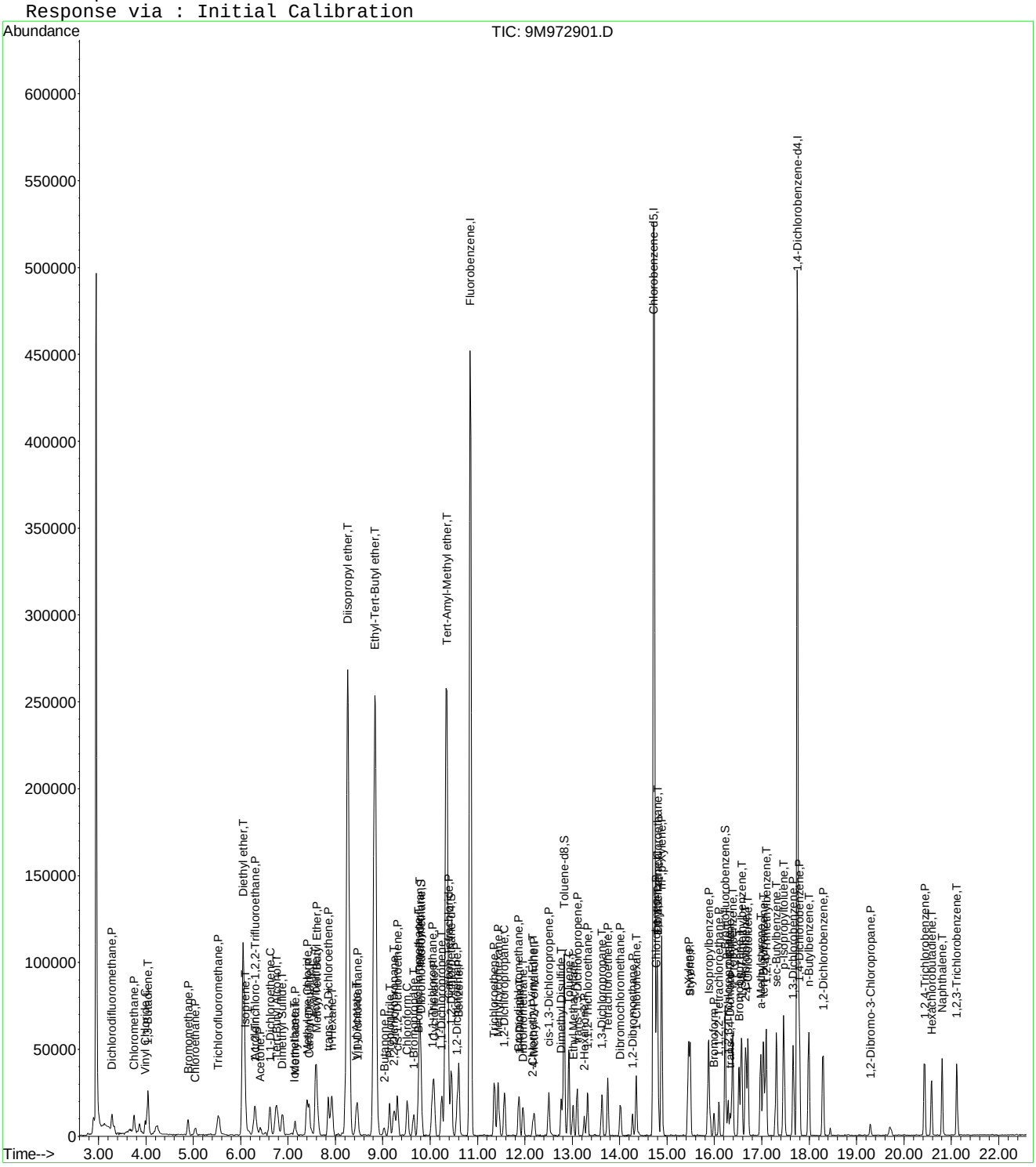

9M972901.D 8260SL.M Fri Feb 26 11:21:56 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	5.0000	3.9724	20.6	100	0.00
3	P	Chloromethane	5.0000	4.2763	14.5	100	0.00
4	C	Vinyl Chloride	5.0000	4.7964	4.1	100	0.00
5	T	1,3-Butadiene	5.0000	4.2710	14.6	100	0.00
6	P	Bromomethane	5.0000	4.2534	14.9	100	0.00
7	P	Chloroethane	5.0000	3.9741	20.5	100	0.00
8	P	Trichlorofluoromethane	5.0000	4.2400	15.2	100	0.00
9	T	Diethyl ether	50.0000	47.2164	5.6	100	0.00
10	T	Isoprene	5.0000	4.2747	14.5	100	0.01
11	T	Acrolein	25.0000	24.3428	2.6	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.6251	7.5	100	0.00
13	P	Acetone	5.0000	4.9429	1.1	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.2784	14.4	100	0.01
15	T	Tert-Butyl Alcohol	100.0000	90.7440	9.3	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.6977	6.0	100	0.00
17	T	Iodomethane	5.0000	5.3886	-7.8	100	0.00
18	P	Methyl acetate	5.0000	4.3976	12.0	100	0.01
19	P	Methylene Chloride	5.0000	4.2690	14.6	100	0.00
20	P	Carbon Disulfide	5.0000	4.3495	13.0	100	0.00
21	T	Acrylonitrile	25.0000	22.6731	9.3	100	0.00
22	P	Methyl Tert Butyl Ether	5.0000	4.4284	11.4	100	0.00
23	P	trans-1,2-Dichloroethene	5.0000	4.5233	9.5	100	0.00
24	T	n-Hexane	5.0000	4.4854	10.3	100	0.01
25	T	Diisopropyl ether	50.0000	46.5162	7.0	100	0.00
26	T	Vinyl Acetate	5.0000	4.5644	8.7	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.2575	14.8	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	45.9037	8.2	100	0.00
29	P	2-Butanone	5.0000	4.7092	5.8	100	0.00
30	T	Propionitrile	50.0000	48.2931	3.4	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.2251	15.5	100	-0.01
32	P	cis-1,2-Dichloroethene	5.0000	4.5340	9.3	100	0.00
33	C	Chloroform	5.0000	4.4982	10.0	100	0.00
34	T	1-Bromopropane	5.0000	5.8651	-17.3	100	0.00
35	T	Bromochloromethane	5.0000	4.7667	4.7	100	0.00
36	T	Tetrahydrofuran	50.0000	47.4100	5.2	100	0.00
37	S	Dibromofluoromethane	10.0000	9.8422	1.6	100	0.00
38	P	1,1,1-Trichloroethane	5.0000	4.4285	11.4	100	0.00
39	P	Cyclohexane	5.0000	4.4818	10.4	100	0.01
40	T	1,1-Dichloropropene	5.0000	4.3930	12.1	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	46.8330	6.3	100	0.00
42	P	Carbon Tetrachloride	5.0000	4.2254	15.5	100	0.00
43	S	1,2-Dichloroethane-d4	10.0000	10.2911	-2.9	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	5.0000	4.6852	6.3	100	0.00
46	P	Benzene	5.0000	4.3528	12.9	100	0.00
47	P	Trichloroethene	5.0000	4.3213	13.6	100	0.00
48	P	Methylcyclohexane	5.0000	4.2330	15.3	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.5684	8.6	100	0.00
50	T	1,4-Dioxane	100.0000	91.4657	8.5	100	0.00
51	P	Bromodichloromethane	5.0000	4.4660	10.7	100	0.00
52	T	Dibromomethane	5.0000	4.7438	5.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	5.7758	-15.5	100	0.00
54	P	4-Methyl-2-Pentanone	5.0000	3.8716	22.6	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	5.0000	4.3659	12.7	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.2144	15.7	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	-0.01
58	S	Toluene-d8	10.0000	9.5885	4.1	100	0.00
59	C	Toluene	5.0000	4.3206	13.6	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.0089	19.8	100	0.00
61	P	trans-1,3-Dichloropropene	5.0000	4.3707	12.6	100	0.00
62	P	1,1,2-Trichloroethane	5.0000	4.5309	9.4	100	0.00
63	P	2-Hexanone	5.0000	4.3408	13.2	100	0.00
64	T	1,3-Dichloropropane	5.0000	4.5633	8.7	100	-0.01
65	P	Tetrachloroethene	5.0000	4.2981	14.0	100	0.00
66	P	Dibromochloromethane	5.0000	4.3052	13.9	100	0.00
67	P	1,2-Dibromoethane	5.0000	4.6694	6.6	100	0.00
68	T	1-Chlorohexane	5.0000	3.9281	21.4	100	0.00
69	P	Chlorobenzene	5.0000	4.5769	8.5	100	0.00
70	T	1,1,1,2-Tetrachloroethane	5.0000	4.3130	13.7	100	0.00
71	C	Ethylbenzene	5.0000	4.3974	12.1	100	0.00
72	P	m-,p-Xylene	10.0000	9.1683	8.3	100	0.00
73	P	o-Xylene	5.0000	4.5275	9.5	100	0.00
74	P	Styrene	5.0000	4.3253	13.5	100	0.00
75	P	Bromoform	5.0000	4.3382	13.2	100	-0.01
76	P	Isopropylbenzene	5.0000	4.3198	13.6	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	5.0000	4.8610	2.8	100	-0.01
79	S	p-Bromofluorobenzene	10.0000	9.4138	5.9	100	0.00
80	T	1,2,3-Trichloropropane	5.0000	4.9243	1.5	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	5.0000	4.0913	18.2	100	0.00
82	T	n-Propylbenzene	5.0000	4.5983	8.0	100	0.00
83	T	Bromobenzene	5.0000	4.6386	7.2	100	0.00
84	T	1,3,5-Trimethylbenzene	5.0000	4.6900	6.2	100	0.00
85	T	2-Chlorotoluene	5.0000	4.3899	12.2	100	0.00
86	T	4-Chlorotoluene	5.0000	4.6981	6.0	100	0.00
87	T	a-Methylstyrene	5.0000	4.1667	16.7	100	0.00
88	T	tert-Butylbenzene	5.0000	4.5290	9.4	100	0.00
89	T	1,2,4-Trimethylbenzene	5.0000	4.6345	7.3	100	0.00
90	T	sec-Butylbenzene	5.0000	4.4642	10.7	100	0.00
91	T	p-Isopropyltoluene	5.0000	4.6453	7.1	100	0.00
92	P	1,3-Dichlorobenzene	5.0000	4.4323	11.4	100	0.00
93	P	1,4-Dichlorobenzene	5.0000	4.5730	8.5	100	-0.01
94	T	n-Butylbenzene	5.0000	4.3071	13.9	100	0.00
95	P	1,2-Dichlorobenzene	5.0000	4.4593	10.8	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	5.0000	4.0028	19.9	100	0.00
97	P	1,2,4-Trichlorobenzene	5.0000	4.2258	15.5	100	0.00
98	T	Hexachlorobutadiene	5.0000	4.1968	16.1	100	0.00
99	T	Naphthalene	5.0000	4.3274	13.5	100	0.00
100	T	1,2,3-Trichlorobenzene	5.0000	4.2352	15.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972901.D 8260SL.M Fri Feb 26 11:21:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972902.D Vial: 7
Acq On : 25 Feb 2016 18:59 Operator: ADC
Sample : WG558732-07 20.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	491006	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	357658	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	168257	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	47666	17.9094 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 35.82%#		
43) 1,2-Dichloroethane-d4	10.45	65	60269	18.0480 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 36.10%#		
58) Toluene-d8	12.82	98	163811	18.1074 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 36.22%#		
79) p-Bromofluorobenzene	16.23	95	58931	17.9870 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 35.98%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	78283	23.3598 ug/kg	99
3) Chloromethane	3.75	50	64951	20.2188 ug/kg	98
4) Vinyl Chloride	3.99	62	73167	22.7523 ug/kg	97
5) 1,3-Butadiene	4.04	54	64372	21.0404 ug/kg	98
6) Bromomethane	4.88	94	40556	19.4178 ug/kg	97
7) Chloroethane	5.04	64	27981	19.5307 ug/kg	97
8) Trichlorofluoromethane	5.53	101	98871	20.4994 ug/kg	98
9) Diethyl ether	6.06	59	191078	84.7472 ug/kg	99
10) Isoprene	6.10	67	59437	20.6414 ug/kg	98
11) Acrolein	6.30	56	18057	40.1641 ug/kg	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	50002	20.1026 ug/kg	100
13) Acetone	6.42	43	27164	20.4768 ug/kg	100
14) 1,1-Dichloroethene	6.62	61	94732	20.6460 ug/kg	98
15) Tert-Butyl Alcohol	6.75	59	85695	170.6872 ug/kg	97
16) Dimethyl Sulfide	6.88	62	40580	20.9258 ug/kg	99
17) Iodomethane	7.13	142	21330	17.5663 ug/kg	96
18) Methyl acetate	7.15	43	54770	21.9573 ug/kg	99
19) Methylene Chloride	7.41	84	51619	20.6564 ug/kg	95
20) Carbon Disulfide	7.45	76	145286	20.5545 ug/kg	97
21) Acrylonitrile	7.59	53	50918	41.2640 ug/kg	97
22) Methyl Tert Butyl Ether	7.61	73	149271	20.9731 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	84416	20.6434 ug/kg	98
24) n-Hexane	7.92	57	82582	19.5795 ug/kg	98
25) Diisopropyl ether	8.26	45	841729	85.9275 ug/kg	99
26) Vinyl Acetate	8.44	43	107114	19.1814 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	104490	20.3440 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	777976	85.4147 ug/kg	99
29) 2-Butanone	9.02	43	30691	19.3834 ug/kg	100
30) Propionitrile	9.14	54	41719	86.0996 ug/kg	99
31) 2,2-Dichloropropane	9.24	77	73960	19.2927 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	56404	21.0307 ug/kg	100
33) Chloroform	9.52	83	94621	20.0546 ug/kg	98
34) 1-Bromopropane	9.65	122	8251	20.7938 ug/kg	98
35) Bromochloromethane	9.75	130	38059	21.8457 ug/kg	99
36) Tetrahydrofuran	9.77	42	86589	84.8405 ug/kg	100
38) 1,1,1-Trichloroethane	10.05	97	85938	20.1411 ug/kg	99
39) Cyclohexane	10.09	56	96933	20.8373 ug/kg	98
40) 1,1-Dichloropropene	10.25	75	67544	20.1175 ug/kg	96
41) Tert-Amyl-Methyl ether	10.34	73	562826	85.0111 ug/kg	99
42) Carbon Tetrachloride	10.39	117	79566	20.1143 ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972902.D 8260SL.M Fri Feb 26 11:21:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972902.D Vial: 7
Acq On : 25 Feb 2016 18:59 Operator: ADC
Sample : WG558732-07 20.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	86857	20.9287 ug/kg	98
46)	Benzene	10.60	78	190747	20.2931 ug/kg	98
47)	Trichloroethene	11.35	130	61315	20.5871 ug/kg	99
48)	Methylcyclohexane	11.44	83	79384	21.2516 ug/kg	99
49)	1,2-Dichloropropane	11.56	63	54356	21.0584 ug/kg	98
50)	1,4-Dioxane	11.88	88	7054	182.1639 ug/kg	93
51)	Bromodichloromethane	11.87	83	73160	20.1115 ug/kg	99
52)	Dibromomethane	11.97	174	35844	20.9583 ug/kg	97
53)	2-Chloroethyl Vinyl Ether	12.17	63	11048	17.4432 ug/kg	94
54)	4-Methyl-2-Pentanone	12.20	58	22247	19.6364 ug/kg	96
55)	cis-1,3-Dichloropropene	12.50	75	77533	20.4577 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	77400	20.3222 ug/kg	99
59)	Toluene	12.93	91	209919	20.5421 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	58827	20.7683 ug/kg	99
61)	trans-1,3-Dichloropropene	13.11	75	73778	20.0452 ug/kg	98
62)	1,1,2-Trichloroethane	13.32	97	45475	21.1838 ug/kg	98
63)	2-Hexanone	13.25	43	40183	18.7479 ug/kg	97
64)	1,3-Dichloropropane	13.62	76	73060	20.4249 ug/kg	95
65)	Tetrachloroethene	13.75	164	44423	20.2778 ug/kg	96
66)	Dibromochloromethane	14.01	129	59220	19.7391 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	48648	20.4311 ug/kg	97
68)	1-Chlorohexane	14.35	91	64519	21.4099 ug/kg	96
69)	Chlorobenzene	14.77	112	150639	20.9742 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	55462	20.5631 ug/kg	99
71)	Ethylbenzene	14.79	106	77813	21.0297 ug/kg	100
72)	m-,p-Xylene	14.89	106	192168	42.0536 ug/kg	98
73)	o-Xylene	15.45	106	92490	21.0911 ug/kg	98
74)	Styrene	15.49	104	154534	20.6939 ug/kg	100
75)	Bromoform	16.00	173	39818	20.2142 ug/kg	98
76)	Isopropylbenzene	15.87	105	249418	21.1865 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	53687	21.0342 ug/kg	98
80)	1,2,3-Trichloropropane	16.28	110	19658	20.3087 ug/kg	98
81)	trans-1,4-Dichloro-2-Buten	16.33	53	21143	21.6696 ug/kg	89
82)	n-Propylbenzene	16.39	91	283998	21.4728 ug/kg	98
83)	Bromobenzene	16.52	156	65363	20.9343 ug/kg	95
84)	1,3,5-Trimethylbenzene	16.57	105	212735	21.4278 ug/kg	99
85)	2-Chlorotoluene	16.66	91	189159	21.3235 ug/kg	99
86)	4-Chlorotoluene	16.70	91	171741	20.9401 ug/kg	99
87)	a-Methylstyrene	16.98	118	95360	21.0801 ug/kg	99
88)	tert-Butylbenzene	17.03	134	43749	21.0188 ug/kg	90
89)	1,2,4-Trimethylbenzene	17.08	105	218350	21.0010 ug/kg	99
90)	sec-Butylbenzene	17.31	105	268054	20.9635 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	225612	20.9076 ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	122605	19.7580 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	124659	20.0949 ug/kg	99
94)	n-Butylbenzene	17.99	91	199655	19.8998 ug/kg	99
95)	1,2-Dichlorobenzene	18.30	146	115021	19.9768 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	14138	19.1277 ug/kg	95
97)	1,2,4-Trichlorobenzene	20.43	180	77418	18.9408 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	41508	19.2651 ug/kg	96
99)	Naphthalene	20.81	128	204933	19.9897 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.12	180	75616	19.0736 ug/kg	98

(#) = qualifier out of range (m) = manual integration
9M972902.D 8260SL.M Fri Feb 26 11:21:57 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972902.D Vial: 7
Acq On : 25 Feb 2016 18:59 Operator: ADC
Sample : WG558732-07 20.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

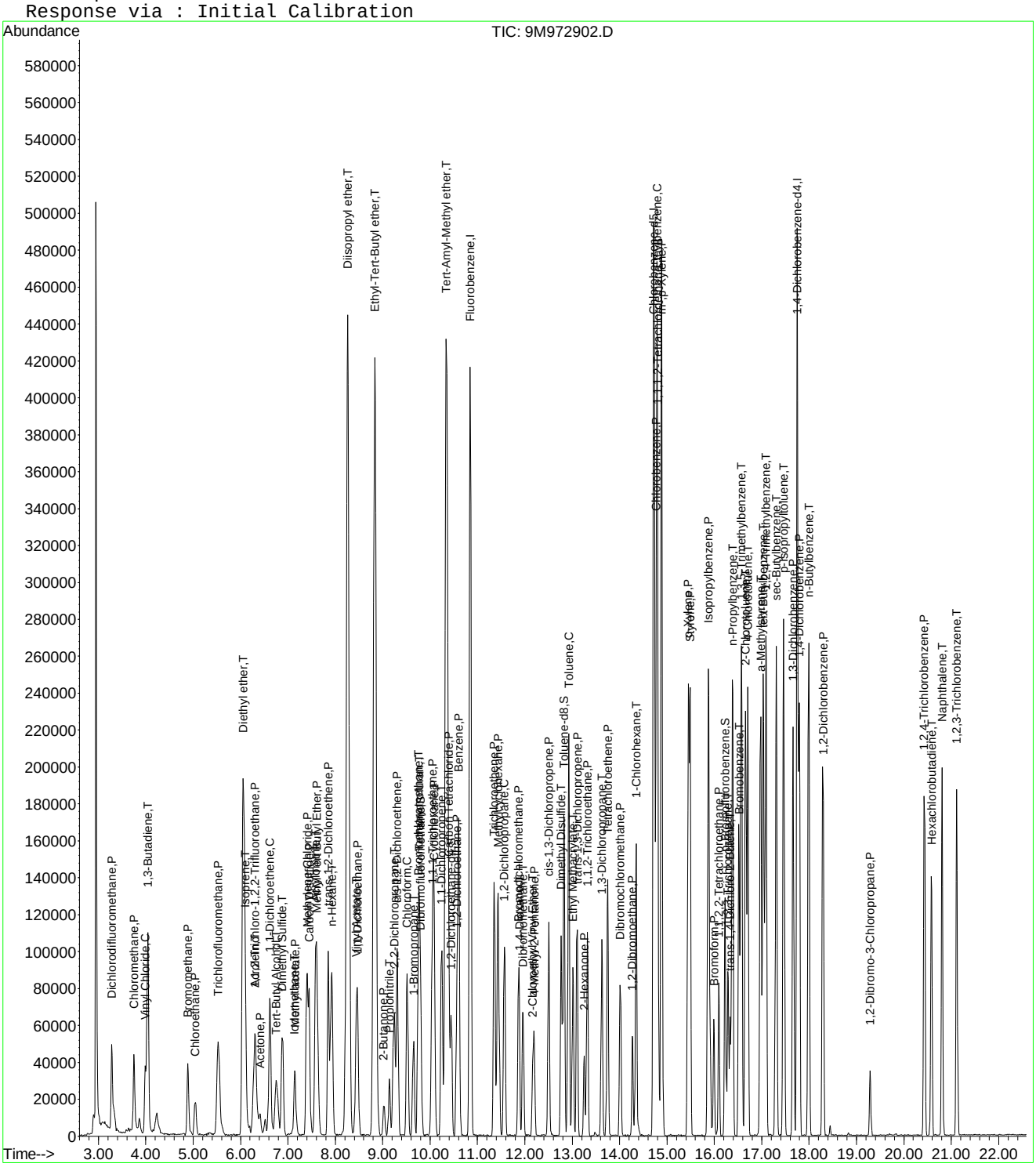

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972903.D Vial: 8
Acq On : 25 Feb 2016 19:29 Operator: ADC
Sample : WG558732-08 100.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:57 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	535022	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	390279	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.75	152	187456	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	305515	105.3466 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 210.70%#		
43) 1,2-Dichloroethane-d4	10.45	65	383447	105.3793 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 210.76%#		
58) Toluene-d8	12.83	98	1052175	106.5842 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 213.16%#		
79) p-Bromofluorobenzene	16.23	95	403966	110.6707 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 221.34%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	340079	93.1314 ug/kg	98
3) Chloromethane	3.74	50	316834	90.5143 ug/kg	100
4) Vinyl Chloride	3.99	62	366384	104.5591 ug/kg	99
5) 1,3-Butadiene	4.04	54	317949	95.3739 ug/kg	98
6) Bromomethane	4.88	94	198493	87.2180 ug/kg	99
7) Chloroethane	5.04	64	148539	95.1503 ug/kg	96
8) Trichlorofluoromethane	5.53	101	502703	95.6532 ug/kg	99
9) Diethyl ether	6.06	59	457873	186.3696 ug/kg	99
10) Isoprene	6.09	67	302269	96.3367 ug/kg	100
11) Acrolein	6.30	56	49319	100.6749 ug/kg	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	264925	97.7467 ug/kg	100
13) Acetone	6.41	43	126959	96.0965 ug/kg	97
14) 1,1-Dichloroethene	6.61	61	485466	97.0986 ug/kg	99
15) Tert-Butyl Alcohol	6.77	59	202804	370.7125 ug/kg	97
16) Dimethyl Sulfide	6.88	62	209613	99.1979 ug/kg	97
17) Iodomethane	7.14	142	134789	88.4431 ug/kg	96
18) Methyl acetate	7.15	43	256770	94.4705 ug/kg	99
19) Methylene Chloride	7.40	84	256919	94.3530 ug/kg	100
20) Carbon Disulfide	7.45	76	725343	94.1764 ug/kg	99
21) Acrylonitrile	7.59	53	131913	98.1077 ug/kg	97
22) Methyl Tert Butyl Ether	7.61	73	763125	98.4009 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	435514	97.7404 ug/kg	99
24) n-Hexane	7.92	57	458951	99.8615 ug/kg	98
25) Diisopropyl ether	8.26	45	1991599	186.5850 ug/kg	99
26) Vinyl Acetate	8.44	43	593217	97.4908 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	533571	95.3384 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	1850360	186.4394 ug/kg	100
29) 2-Butanone	9.03	43	167064	96.8316 ug/kg	99
30) Propionitrile	9.14	54	102467	194.0735 ug/kg	99
31) 2,2-Dichloropropane	9.24	77	409808	98.1051 ug/kg	98
32) cis-1,2-Dichloroethene	9.31	96	291782	99.8428 ug/kg	100
33) Chloroform	9.52	83	491651	95.6310 ug/kg	100
34) 1-Bromopropane	9.65	122	43084	95.7559 ug/kg	98
35) Bromochloromethane	9.75	130	191150	100.6929 ug/kg	97
36) Tetrahydrofuran	9.78	42	206962	186.0999 ug/kg	99
38) 1,1,1-Trichloroethane	10.04	97	454248	97.7025 ug/kg	99
39) Cyclohexane	10.08	56	497594	98.1657 ug/kg	99
40) 1,1-Dichloropropene	10.24	75	355996	97.3080 ug/kg	98
41) Tert-Amyl-Methyl ether	10.35	73	1353122	187.5659 ug/kg	99
42) Carbon Tetrachloride	10.39	117	419252	97.2674 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972903.D Vial: 8
Acq On : 25 Feb 2016 19:29 Operator: ADC
Sample : WG558732-08 100.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:57 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	441828	97.7027	ug/kg	98
46)	Benzene	10.60	78	946247	92.3868	ug/kg	100
47)	Trichloroethene	11.35	130	316701	97.5872	ug/kg	98
48)	Methylcyclohexane	11.44	83	420776	103.3770	ug/kg	100
49)	1,2-Dichloropropane	11.56	63	273398	97.2049	ug/kg	97
50)	1,4-Dioxane	11.89	88	15240	361.1826	ug/kg	95
51)	Bromodichloromethane	11.87	83	384453	96.9905	ug/kg	100
52)	Dibromomethane	11.96	174	178770	95.9288	ug/kg	100
53)	2-Chloroethyl Vinyl Ether	12.17	63	71336	89.4187	ug/kg	97
54)	4-Methyl-2-Pentanone	12.19	58	126118	102.1606	ug/kg	99
55)	cis-1,3-Dichloropropene	12.50	75	407392	98.6500	ug/kg	99
56)	Dimethyl Disulfide	12.77	94	430523	103.7388	ug/kg	99
59)	Toluene	12.93	91	1070303	95.9828	ug/kg	100
60)	Ethyl Methacrylate	13.01	69	310336	100.4033	ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	395340	98.4345	ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	234168	99.9657	ug/kg	97
63)	2-Hexanone	13.25	43	238254	101.8692	ug/kg	99
64)	1,3-Dichloropropane	13.62	76	372307	95.3836	ug/kg	98
65)	Tetrachloroethene	13.75	164	235384	98.4650	ug/kg	97
66)	Dibromochloromethane	14.01	129	316240	96.5980	ug/kg	100
67)	1,2-Dibromoethane	14.28	107	254663	98.0133	ug/kg	98
68)	1-Chlorohexane	14.35	91	341938	103.9841	ug/kg	98
69)	Chlorobenzene	14.77	112	744916	95.0493	ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.80	131	289798	98.4650	ug/kg	98
71)	Ethylbenzene	14.79	106	397428	98.4311	ug/kg	99
72)	m-,p-Xylene	14.89	106	955121	191.5462	ug/kg	97
73)	o-Xylene	15.45	106	475355	99.3381	ug/kg	100
74)	Styrene	15.49	104	817155	100.2803	ug/kg	100
75)	Bromoform	15.99	173	212807	99.0046	ug/kg	98
76)	Isopropylbenzene	15.88	105	1283494	99.9122	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	279744	98.3764	ug/kg	100
80)	1,2,3-Trichloropropane	16.29	110	110421	102.3924	ug/kg	94
81)	trans-1,4-Dichloro-2-Buten	16.33	53	116410	107.0899	ug/kg	87
82)	n-Propylbenzene	16.39	91	1458178	98.9594	ug/kg	99
83)	Bromobenzene	16.52	156	334600	96.1892	ug/kg	97
84)	1,3,5-Trimethylbenzene	16.57	105	1100766	99.5195	ug/kg	99
85)	2-Chlorotoluene	16.66	91	937812	94.8900	ug/kg	100
86)	4-Chlorotoluene	16.70	91	906777	99.2383	ug/kg	100
87)	a-Methylstyrene	16.98	118	508276	100.8508	ug/kg	99
88)	tert-Butylbenzene	17.04	134	234437	101.0972	ug/kg	99
89)	1,2,4-Trimethylbenzene	17.09	105	1125260	97.1435	ug/kg	99
90)	sec-Butylbenzene	17.30	105	1425754	100.0828	ug/kg	100
91)	p-Isopropyltoluene	17.46	119	1215596	101.1125	ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	644471	93.2206	ug/kg	100
93)	1,4-Dichlorobenzene	17.79	146	646907	93.6002	ug/kg	99
94)	n-Butylbenzene	17.99	91	1131901	101.2628	ug/kg	99
95)	1,2-Dichlorobenzene	18.30	146	622851	97.0971	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.30	157	88939	108.0040	ug/kg	99
97)	1,2,4-Trichlorobenzene	20.44	180	466688	102.4843	ug/kg	99
98)	Hexachlorobutadiene	20.59	225	252514	105.1960	ug/kg	99
99)	Naphthalene	20.81	128	1208454	105.8030	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	456274	103.3044	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972903.D 8260SL.M Fri Feb 26 11:21:58 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972903.D Vial: 8
Acq On : 25 Feb 2016 19:29 Operator: ADC
Sample : WG558732-08 100.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

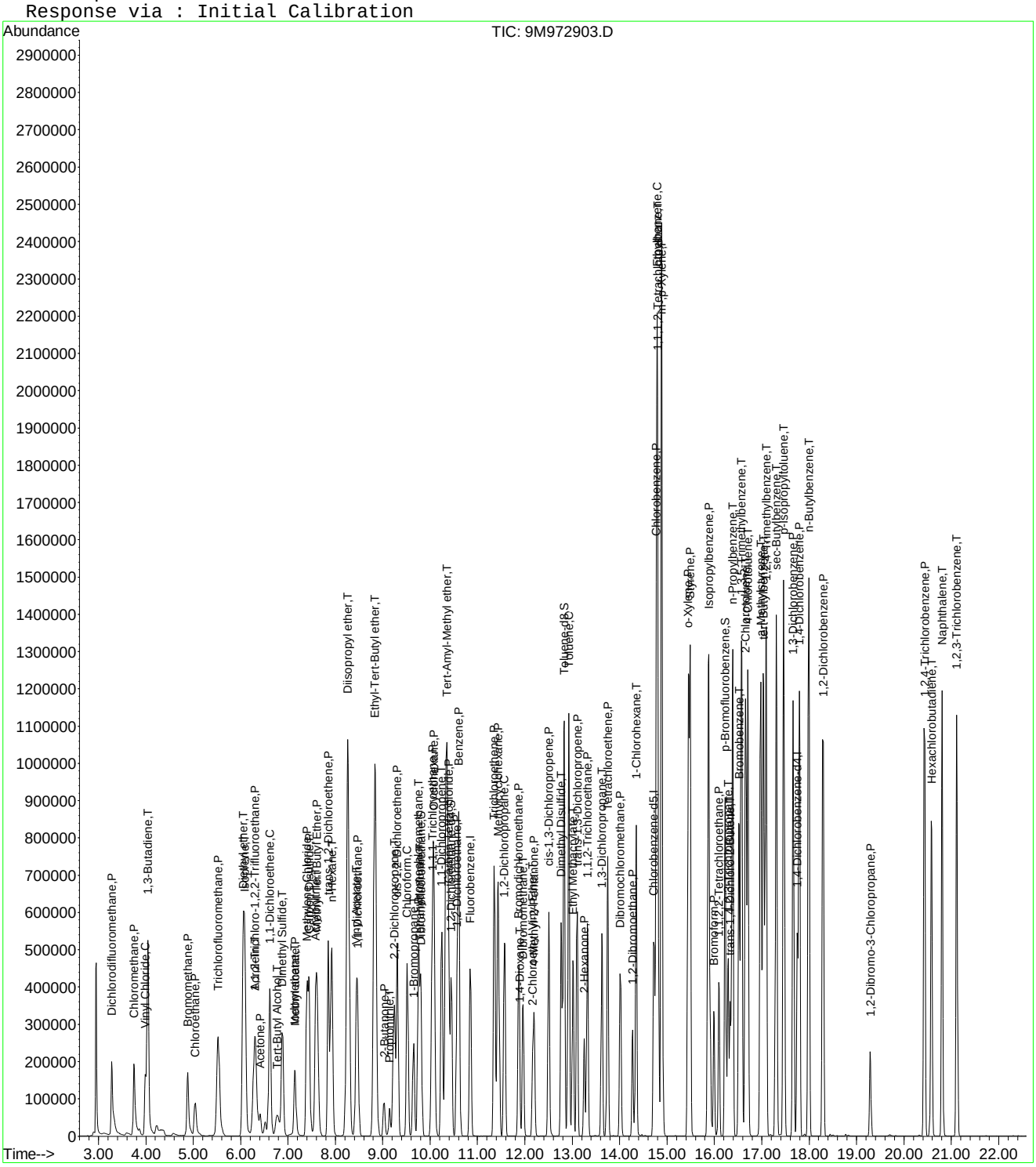

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972904.D Vial: 9
Acq On : 25 Feb 2016 20:00 Operator: ADC
Sample : WG558732-09 200.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:58 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	542388	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	396894	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	212175	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	595362	202.5026 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery	= 405.00%#	
43) 1,2-Dichloroethane-d4	10.45	65	716316	194.1852 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery	= 388.38%#	
58) Toluene-d8	12.82	98	2013255	200.5415 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery	= 401.08%#	
79) p-Bromofluorobenzene	16.23	95	807150	195.3653 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery	= 390.74%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	774894	209.3245 ug/kg	100
3) Chloromethane	3.75	50	750862	211.5959 ug/kg	100
4) Vinyl Chloride	3.99	62	770550	216.9141 ug/kg	100
5) 1,3-Butadiene	4.04	54	695631	205.8318 ug/kg	99
6) Bromomethane	4.88	94	470946	204.1239 ug/kg	97
7) Chloroethane	5.04	64	374502	236.6386 ug/kg	98
8) Trichlorofluoromethane	5.52	101	1120886	210.3832 ug/kg	99
10) Isoprene	6.09	67	690766	217.1654 ug/kg	97
11) Acrolein	6.31	56	2288	4.6071 ug/kg	86
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	592415	215.6090 ug/kg	100
13) Acetone	6.42	43	268070	202.8703 ug/kg	99
14) 1,1-Dichloroethene	6.62	61	1084122	213.8917 ug/kg	99
15) Tert-Butyl Alcohol	6.78	59	290	0.5229 ug/kg#	58
16) Dimethyl Sulfide	6.88	62	486231	226.9805 ug/kg	99
17) Iodomethane	7.14	142	341644	216.9305 ug/kg	98
18) Methyl acetate	7.15	43	558766	202.7886 ug/kg	97
19) Methylene Chloride	7.40	84	606998	219.8913 ug/kg	98
20) Carbon Disulfide	7.44	76	1650167	211.3432 ug/kg	98
21) Acrylonitrile	7.61	53	18860	13.8363 ug/kg#	28
22) Methyl Tert Butyl Ether	7.61	73	1710517	217.5666 ug/kg	99
23) trans-1,2-Dichloroethene	7.84	61	967656	214.2173 ug/kg	99
24) n-Hexane	7.92	57	1006142	215.9497 ug/kg	97
26) Vinyl Acetate	8.43	43	1320060	213.9959 ug/kg	98
27) 1,1-Dichloroethane	8.46	63	1199515	211.4185 ug/kg	100
29) 2-Butanone	9.02	43	373284	213.4201 ug/kg	100
31) 2,2-Dichloropropane	9.24	77	904865	213.6764 ug/kg	100
32) cis-1,2-Dichloroethene	9.31	96	649726	219.3058 ug/kg	100
33) Chloroform	9.52	83	1094765	210.0507 ug/kg	100
34) 1-Bromopropane	9.66	122	98189	213.9851 ug/kg	100
35) Bromochloromethane	9.75	130	427351	222.0603 ug/kg	99
36) Tetrahydrofuran	9.77	42	2491	2.2095 ug/kg	93
38) 1,1,1-Trichloroethane	10.05	97	1020636	216.5435 ug/kg	100
39) Cyclohexane	10.08	56	1092323	212.5677 ug/kg	98
40) 1,1-Dichloropropene	10.24	75	780375	210.4109 ug/kg	98
42) Carbon Tetrachloride	10.39	117	950685	217.5657 ug/kg	100
45) 1,2-Dichloroethane	10.56	62	975428	212.7698 ug/kg	98
46) Benzene	10.61	78	2107212	202.9435 ug/kg	100
47) Trichloroethene	11.36	130	696420	211.6783 ug/kg	98
48) Methylcyclohexane	11.43	83	922594	223.5862 ug/kg	100
49) 1,2-Dichloropropane	11.57	63	613480	215.1567 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972904.D Vial: 9
Acq On : 25 Feb 2016 20:00 Operator: ADC
Sample : WG558732-09 200.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:58 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
50)	1,4-Dioxane	11.86	88	821	19.1932	ug/kg#	7
51)	Bromodichloromethane	11.87	83	861318	214.3439	ug/kg	99
52)	Dibromomethane	11.96	174	401145	212.3328	ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	173854	210.9891	ug/kg	98
54)	4-Methyl-2-Pentanone	12.19	58	281550	224.9694	ug/kg	99
55)	cis-1,3-Dichloropropene	12.51	75	917528	219.1621	ug/kg	100
56)	Dimethyl Disulfide	12.77	94	993447	236.1300	ug/kg	99
59)	Toluene	12.93	91	2353264	207.5190	ug/kg	100
60)	Ethyl Methacrylate	13.01	69	698780	222.3090	ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	892986	218.6361	ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	510766	214.4105	ug/kg	98
63)	2-Hexanone	13.26	43	551431	231.8433	ug/kg	99
64)	1,3-Dichloropropane	13.63	76	842104	212.1481	ug/kg	99
65)	Tetrachloroethene	13.75	164	518091	213.1138	ug/kg	97
66)	Dibromochloromethane	14.02	129	723489	217.3121	ug/kg	99
67)	1,2-Dibromoethane	14.27	107	560802	212.2411	ug/kg	99
68)	1-Chlorohexane	14.35	91	757279	226.4519	ug/kg	100
69)	Chlorobenzene	14.78	112	1626715	204.1050	ug/kg	98
70)	1,1,1,2-Tetrachloroethane	14.81	131	649903	217.1378	ug/kg	97
71)	Ethylbenzene	14.80	106	871321	212.2035	ug/kg	99
72)	m-,p-Xylene	14.89	106	2089330	412.0243	ug/kg	98
73)	o-Xylene	15.45	106	1065692	218.9929	ug/kg	98
74)	Styrene	15.49	104	1839951	222.0334	ug/kg	100
75)	Bromoform	15.99	173	511700	234.0915	ug/kg	99
76)	Isopropylbenzene	15.87	105	2873816	219.9805	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	662688	205.8943	ug/kg	99
80)	1,2,3-Trichloropropane	16.29	110	257281	210.7797	ug/kg	98
81)	trans-1,4-Dichloro-2-Buten	16.34	53	281460	228.7601	ug/kg	90
82)	n-Propylbenzene	16.38	91	3244636	194.5439	ug/kg	100
83)	Bromobenzene	16.52	156	759998	193.0269	ug/kg	95
84)	1,3,5-Trimethylbenzene	16.57	105	2471747	197.4342	ug/kg	99
85)	2-Chlorotoluene	16.66	91	2218317	198.3049	ug/kg	100
86)	4-Chlorotoluene	16.71	91	1934954	187.0917	ug/kg	100
87)	a-Methylstyrene	16.98	118	1205032	211.2436	ug/kg	99
88)	tert-Butylbenzene	17.03	134	526001	200.4032	ug/kg	87
89)	1,2,4-Trimethylbenzene	17.09	105	2520611	192.2523	ug/kg	100
90)	sec-Butylbenzene	17.31	105	3206494	198.8615	ug/kg	100
91)	p-Isopropyltoluene	17.47	119	2752661	202.2895	ug/kg	100
92)	1,3-Dichlorobenzene	17.67	146	1508843	192.8225	ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	1522857	194.6701	ug/kg	99
94)	n-Butylbenzene	17.99	91	2603240	205.7600	ug/kg	100
95)	1,2-Dichlorobenzene	18.29	146	1515803	208.7710	ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	205456	220.4304	ug/kg	98
97)	1,2,4-Trichlorobenzene	20.43	180	1061631	205.9726	ug/kg	99
98)	Hexachlorobutadiene	20.58	225	612598	225.4729	ug/kg	100
99)	Naphthalene	20.81	128	2666581	206.2661	ug/kg	99
100)	1,2,3-Trichlorobenzene	21.12	180	1022740	204.5802	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972904.D 8260SL.M Fri Feb 26 11:21:58 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972904.D Vial: 9
Acq On : 25 Feb 2016 20:00 Operator: ADC
Sample : WG558732-09 200.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

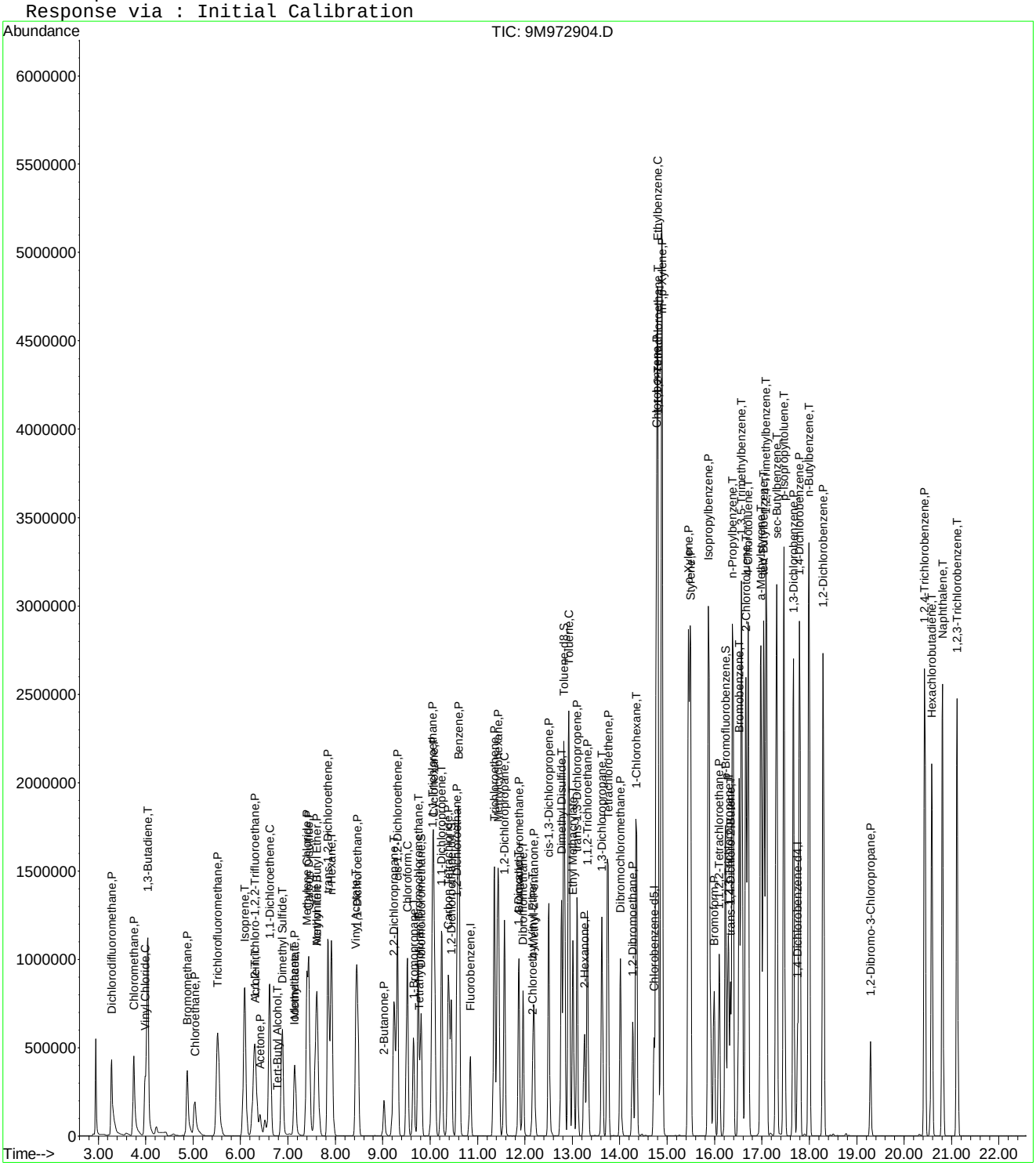

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972905.D Vial: 10
Acq On : 25 Feb 2016 20:30 Operator: ADC
Sample : WG558732-10 300.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:59 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.85	96	626979	50.00	ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	468521	50.00	ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	224223	50.00	ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	520	0.1530	ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.30%#		
43) 1,2-Dichloroethane-d4	10.45	65	1794	0.4207	ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.84%#		
58) Toluene-d8	12.82	98	7789	0.6573	ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	1.32%#		
79) p-Bromofluorobenzene	16.23	95	6216	1.4237	ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	2.84%#		

Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.28	85	1155483	270.0216	ug/kg	98
3) Chloromethane	3.75	50	1142773	278.5891	ug/kg	100
4) Vinyl Chloride	3.98	62	1112221	270.8539	ug/kg	99
5) 1,3-Butadiene	4.03	54	1100483	281.6917	ug/kg	98
6) Bromomethane	4.87	94	749711	281.1083	ug/kg	98
7) Chloroethane	5.04	64	601337	328.7051	ug/kg	98
8) Trichlorofluoromethane	5.52	101	1778447	288.7670	ug/kg	99
9) Diethyl ether	6.06	59	869609	302.0457	ug/kg	99
10) Isoprene	6.08	67	1108410	301.4513	ug/kg	98
11) Acrolein	6.30	56	93621	163.0794	ug/kg	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	943691	297.1172	ug/kg	99
13) Acetone	6.42	43	369915	242.6618	ug/kg	95
14) 1,1-Dichloroethene	6.61	61	1715009	292.7111	ug/kg	98
15) Tert-Butyl Alcohol	6.80	59	188151	293.4850	ug/kg	89
16) Dimethyl Sulfide	6.88	62	763075	308.1557	ug/kg	99
17) Iodomethane	7.14	142	532480	291.5128	ug/kg	99
18) Methyl acetate	7.15	43	879657	276.1748	ug/kg	98
19) Methylene Chloride	7.40	84	937262	293.7237	ug/kg	96
20) Carbon Disulfide	7.44	76	2640380	292.5391	ug/kg	98
21) Acrylonitrile	7.59	53	252681	160.3640	ug/kg	94
22) Methyl Tert Butyl Ether	7.61	73	2699681	297.0533	ug/kg	98
23) trans-1,2-Dichloroethene	7.84	61	1548353	296.5245	ug/kg	100
24) n-Hexane	7.92	57	1608467	298.6501	ug/kg	98
25) Diisopropyl ether	8.26	45	3742238	299.1747	ug/kg	100
26) Vinyl Acetate	8.43	43	2097407	294.1383	ug/kg	99
27) 1,1-Dichloroethane	8.47	63	1881635	286.8995	ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	3515202	302.2390	ug/kg	99
29) 2-Butanone	9.02	43	559900	276.9258	ug/kg	100
30) Propionitrile	9.14	54	182998	295.7653	ug/kg	100
31) 2,2-Dichloropropane	9.24	77	1439671	294.0988	ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	1040893	303.9366	ug/kg	99
33) Chloroform	9.52	83	1708608	283.5977	ug/kg	99
34) 1-Bromopropane	9.65	122	152776	287.6719	ug/kg	98
35) Bromochloromethane	9.75	130	668631	300.5590	ug/kg	98
36) Tetrahydrofuran	9.77	42	365915	280.7723	ug/kg	97
38) 1,1,1-Trichloroethane	10.05	97	1606962	294.9423	ug/kg	100
39) Cyclohexane	10.08	56	1746722	294.0540	ug/kg	99
40) 1,1-Dichloropropene	10.24	75	1258569	293.5615	ug/kg	98
41) Tert-Amyl-Methyl ether	10.34	73	2573262	304.3824	ug/kg	98
42) Carbon Tetrachloride	10.39	117	1494872	295.9476	ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972905.D Vial: 10
Acq On : 25 Feb 2016 20:30 Operator: ADC
Sample : WG558732-10 300.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:59 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.57	62	1526616	288.0725 ug/kg	98
46)	Benzene	10.61	78	3320959	276.6861 ug/kg	99
47)	Trichloroethene	11.36	130	1102750	289.9607 ug/kg	98
48)	Methylcyclohexane	11.43	83	1476436	309.5324 ug/kg	98
49)	1,2-Dichloropropane	11.57	63	980423	297.4576 ug/kg	99
50)	1,4-Dioxane	11.89	88	31126	629.4828 ug/kg	81
51)	Bromodichloromethane	11.87	83	1358159	292.3851 ug/kg	99
52)	Dibromomethane	11.96	174	632731	289.7290 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	287132	300.2354 ug/kg	96
54)	4-Methyl-2-Pentanone	12.19	58	438042	302.7895 ug/kg	99
55)	cis-1,3-Dichloropropene	12.51	75	1436858	296.9047 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	1505953	309.6528 ug/kg	95
59)	Toluene	12.93	91	3720819	277.9530 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	1096301	295.4554 ug/kg	100
61)	trans-1,3-Dichloropropene	13.10	75	1416217	293.7329 ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	820836	291.8946 ug/kg	99
63)	2-Hexanone	13.26	43	814427	290.0688 ug/kg	100
64)	1,3-Dichloropropane	13.63	76	1322191	282.1714 ug/kg	100
65)	Tetrachloroethene	13.75	164	815946	284.3233 ug/kg	98
66)	Dibromochloromethane	14.02	129	1136128	289.0845 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	889642	285.2204 ug/kg	99
68)	1-Chlorohexane	14.34	91	1188786	301.1405 ug/kg	99
69)	Chlorobenzene	14.78	112	2558374	271.9265 ug/kg	97
70)	1,1,1,2-Tetrachloroethane	14.81	131	1019464	288.5389 ug/kg	97
71)	Ethylbenzene	14.80	106	1372834	283.2291 ug/kg	97
72)	m-,p-Xylene	14.89	106	3241616	541.5304 ug/kg	97
73)	o-Xylene	15.45	106	1663016	289.4945 ug/kg	99
74)	Styrene	15.49	104	2869824	293.3680 ug/kg	99
75)	Bromoform	15.99	173	788638	305.6282 ug/kg	99
76)	Isopropylbenzene	15.87	105	4421589	286.7141 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	1002445	294.7201 ug/kg	99
80)	1,2,3-Trichloropropane	16.28	110	380025	294.6098 ug/kg	66
81)	trans-1,4-Dichloro-2-Buten	16.34	53	413901	318.3274 ug/kg	57
82)	n-Propylbenzene	16.38	91	4980503	282.5783 ug/kg	99
83)	Bromobenzene	16.52	156	1176440	282.7414 ug/kg	93
84)	1,3,5-Trimethylbenzene	16.57	105	3788936	286.3846 ug/kg	99
85)	2-Chlorotoluene	16.66	91	3458872	292.5892 ug/kg	100
86)	4-Chlorotoluene	16.71	91	2929432	268.0287 ug/kg	100
87)	a-Methylstyrene	16.98	118	1823514	302.4880 ug/kg	100
88)	tert-Butylbenzene	17.03	134	795019	286.6221 ug/kg	86
89)	1,2,4-Trimethylbenzene	17.09	105	3829230	276.3702 ug/kg	100
90)	sec-Butylbenzene	17.31	105	4833765	283.6742 ug/kg	99
91)	p-Isopropyltoluene	17.47	119	4134027	287.4802 ug/kg	99
92)	1,3-Dichlorobenzene	17.67	146	2260017	273.2999 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	2229106	269.6404 ug/kg	99
94)	n-Butylbenzene	17.99	91	3871124	289.5329 ug/kg	100
95)	1,2-Dichlorobenzene	18.29	146	2162642	281.8552 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	293112	297.5776 ug/kg	98
97)	1,2,4-Trichlorobenzene	20.43	180	1514973	278.1345 ug/kg	100
98)	Hexachlorobutadiene	20.58	225	846867	294.9498 ug/kg	99
99)	Naphthalene	20.81	128	3754823	274.8379 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.12	180	1451357	274.7177 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972905.D 8260SL.M Fri Feb 26 11:21:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972905.D Vial: 10
Acq On : 25 Feb 2016 20:30 Operator: ADC
Sample : WG558732-10 300.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

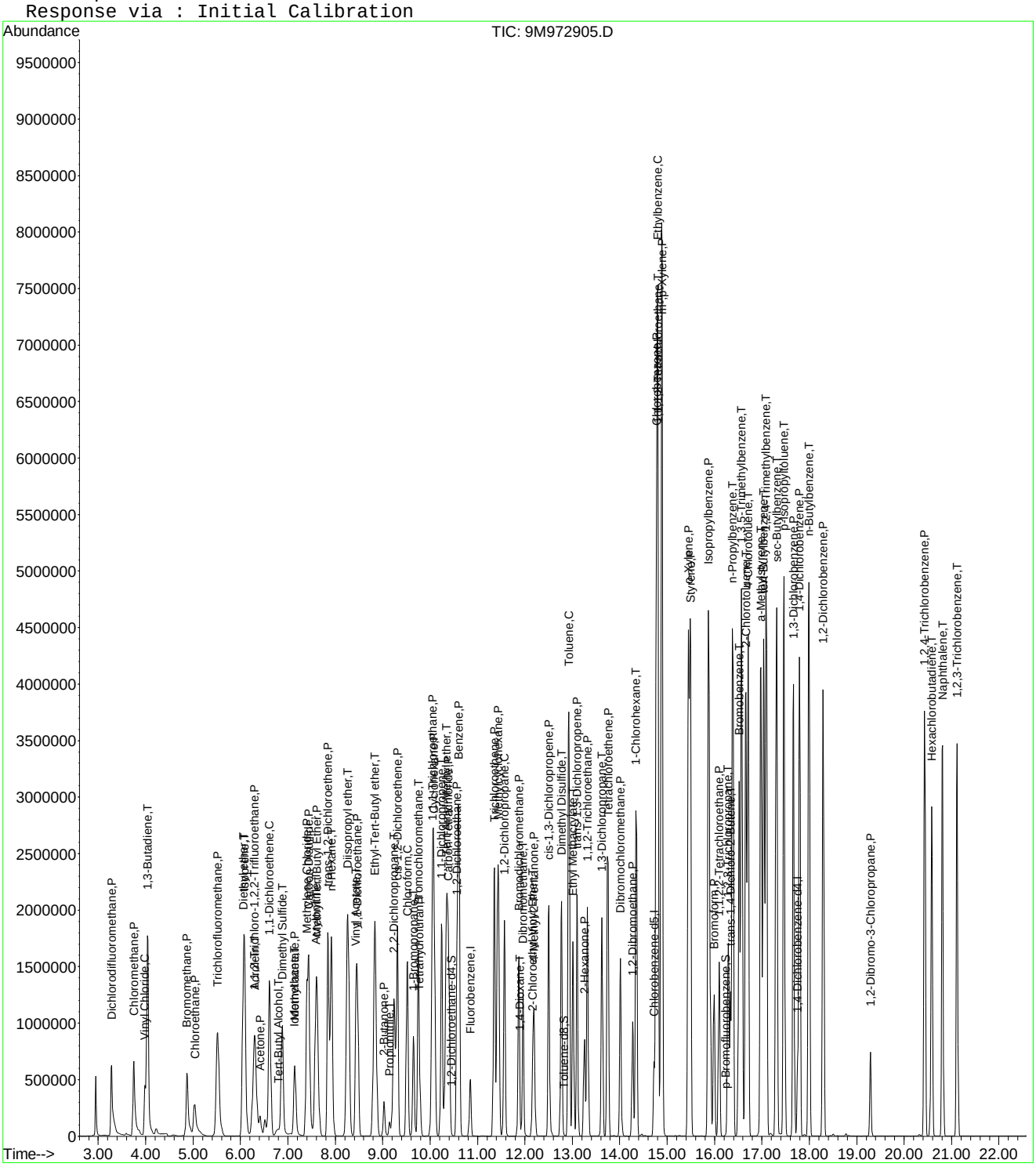

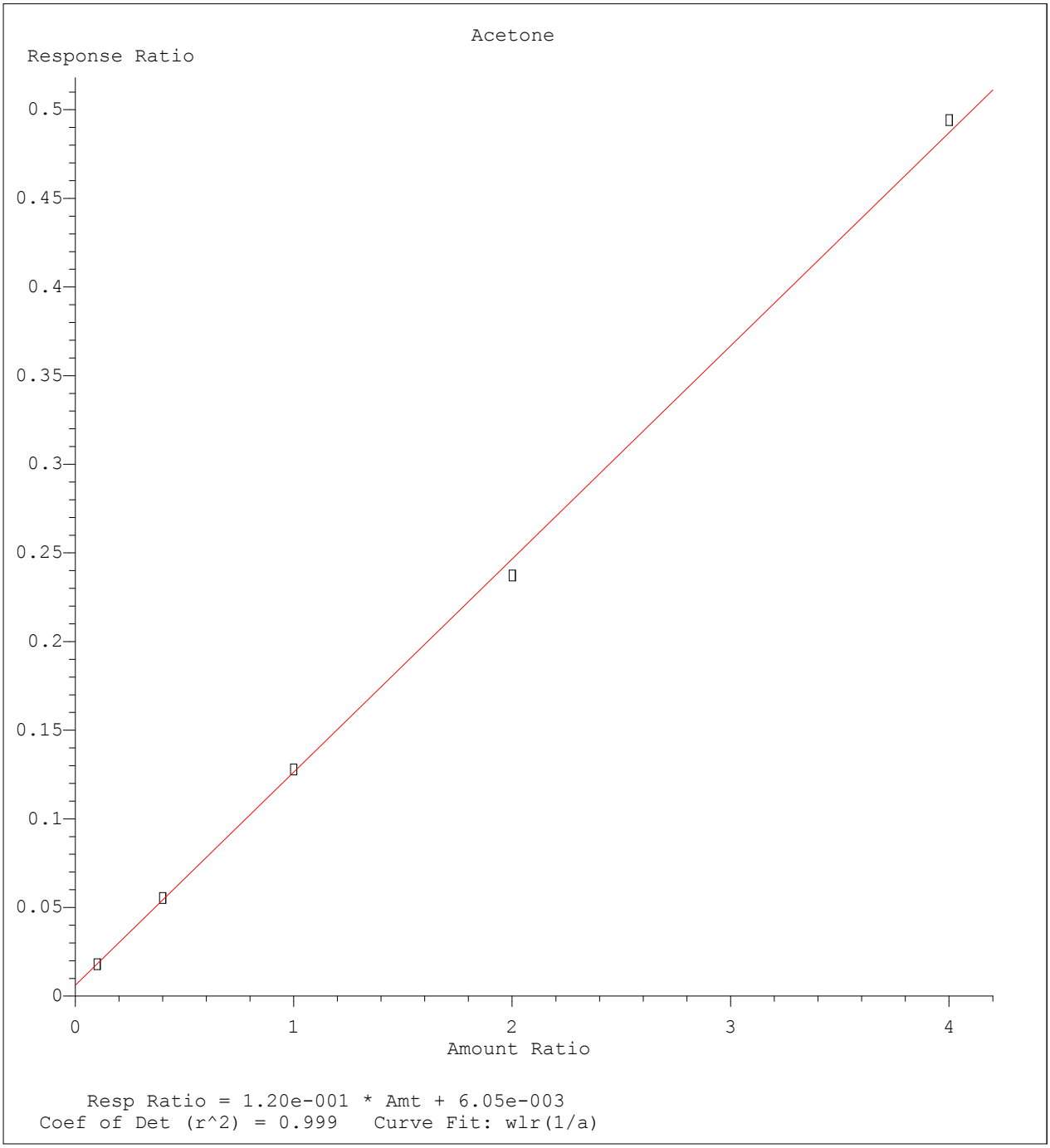

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

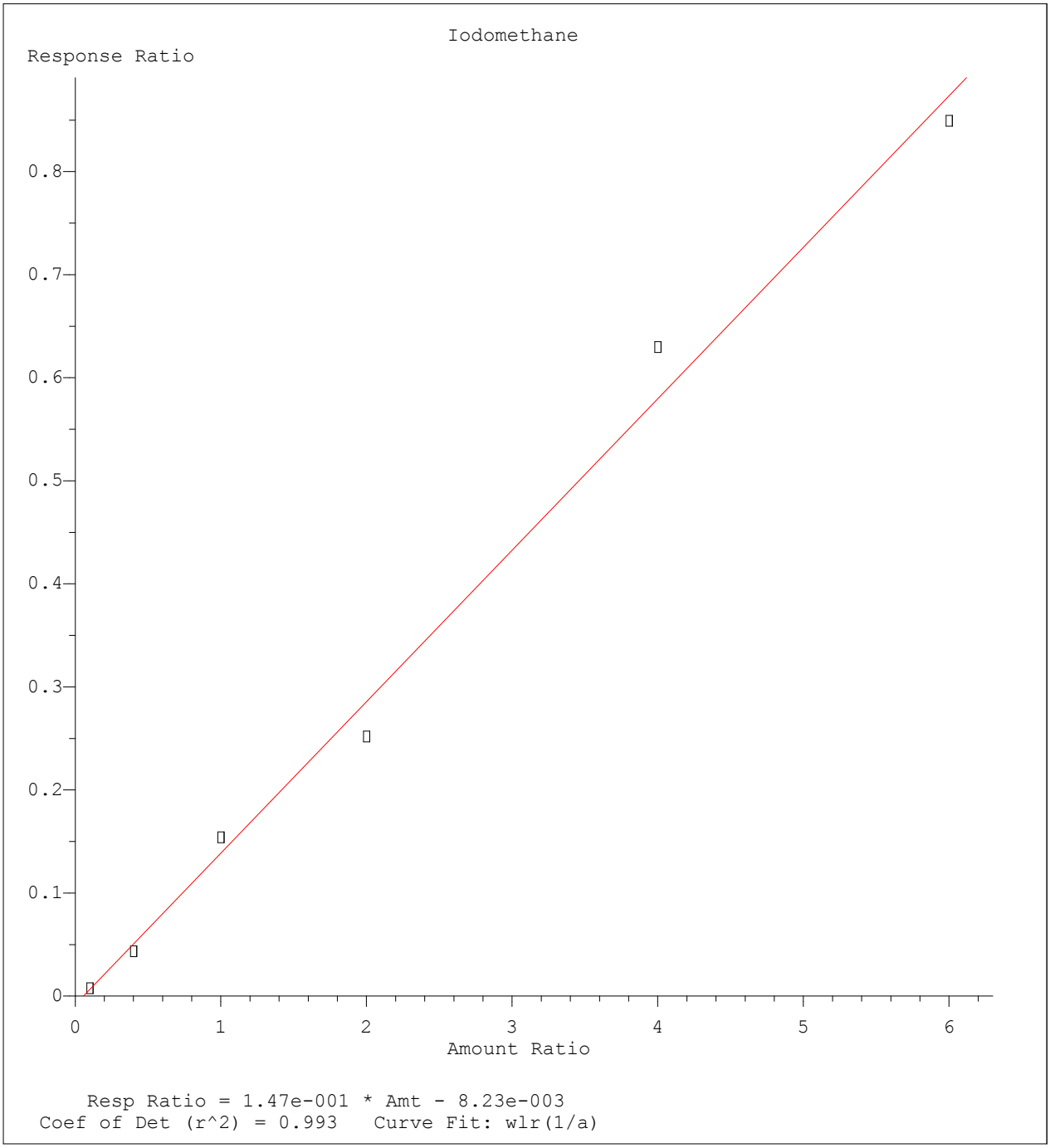

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

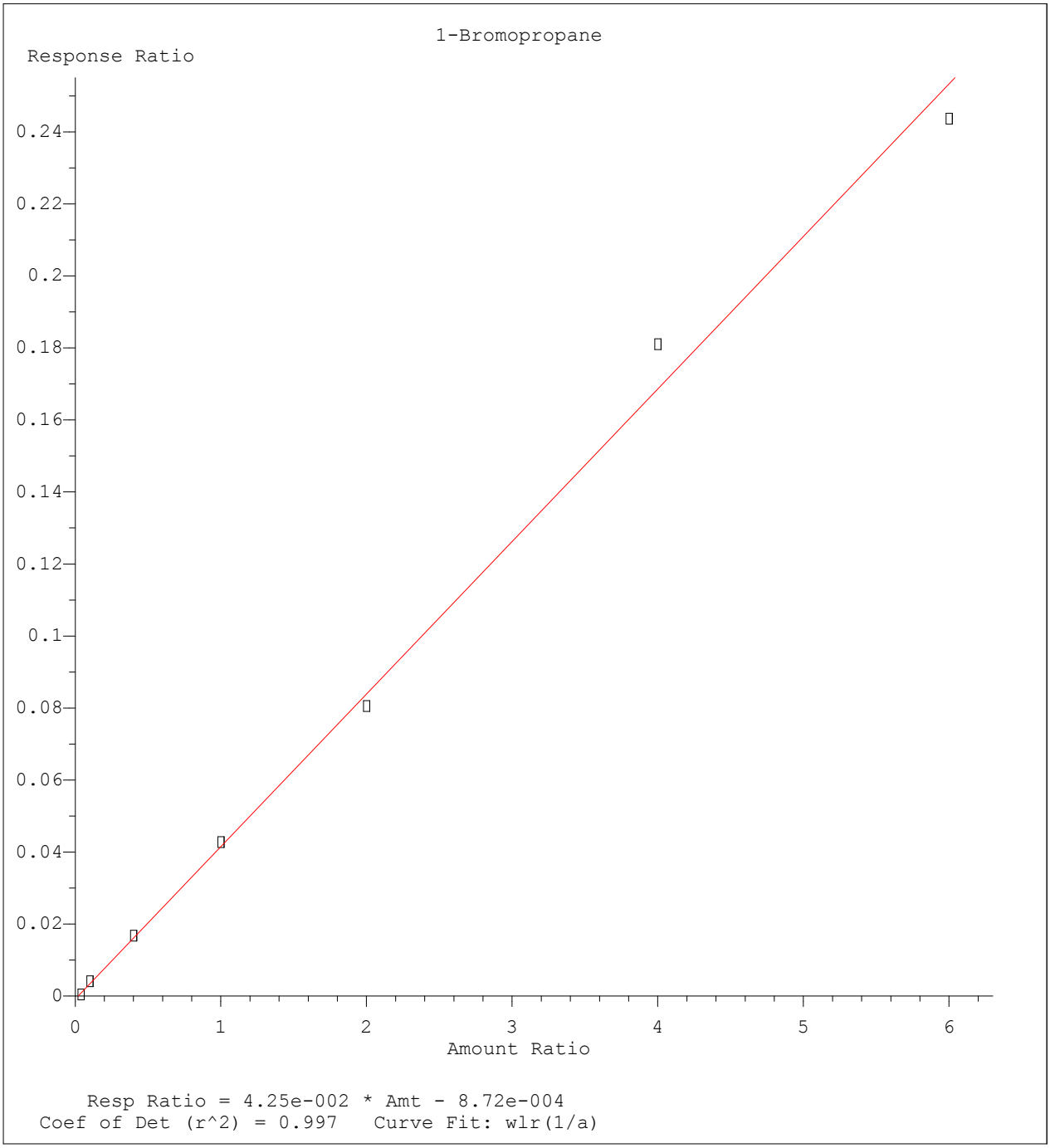

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

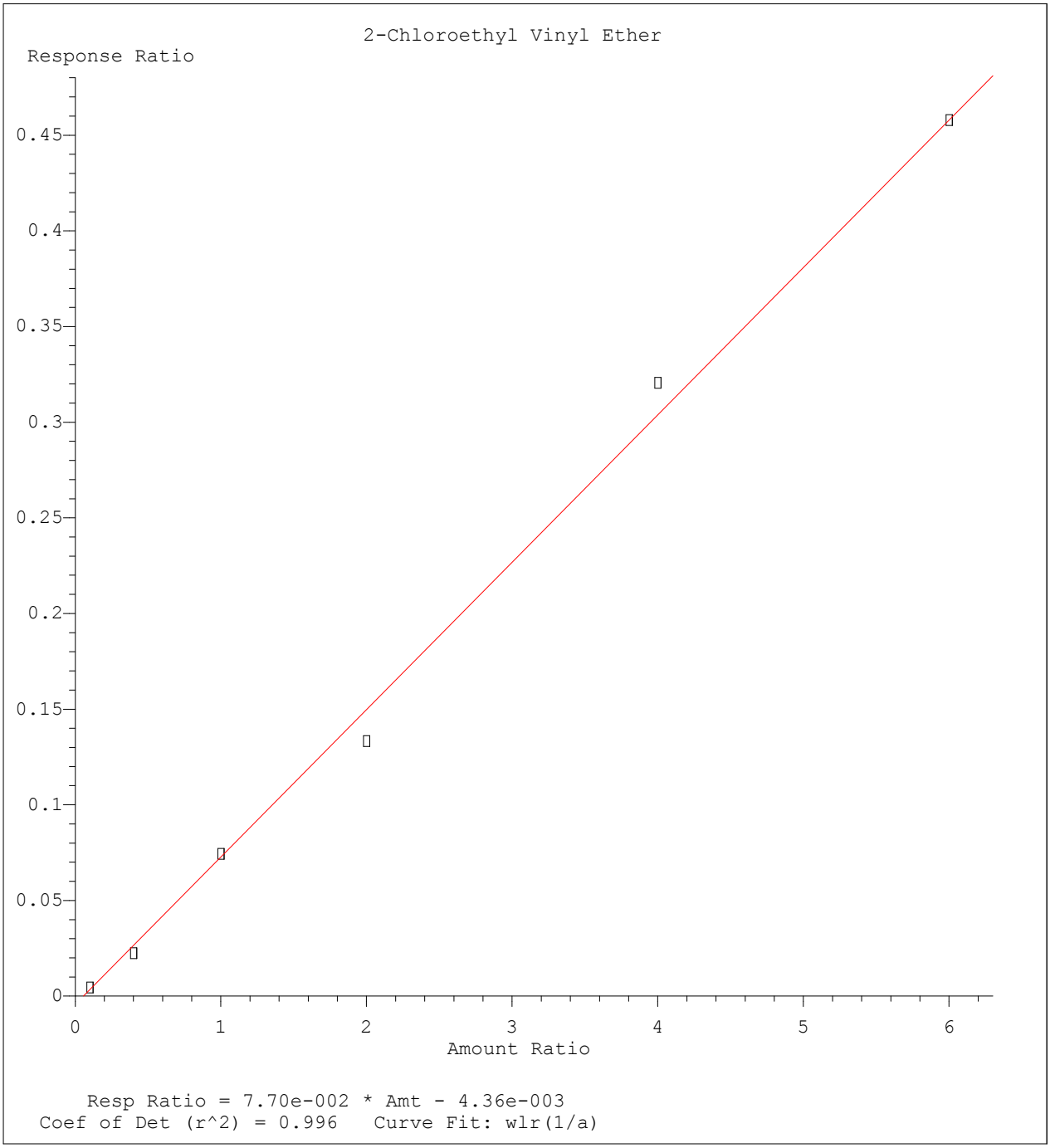

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:39:12 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	582126	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	421408	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	194909	50.00 ug/kg	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.80	111	163260	51.7395 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 103.48%		
43) 1,2-Dichloroethane-d4	10.45	65	197344	49.8458 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.70%		
58) Toluene-d8	12.82	98	564883	52.9951 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.00%		
79) p-Bromofluorobenzene	16.23	95	212358	55.9531 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 111.90%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	251431	63.3698 ug/kg	100
3) Chloromethane	3.74	50	200793	52.7216 ug/kg	100
4) Vinyl Chloride	3.99	62	228101	59.8284 ug/kg	99
5) 1,3-Butadiene	4.04	54	19055	5.2533 ug/kg	94
6) Bromomethane	4.88	94	121270	48.9744 ug/kg	100
7) Chloroethane	5.04	64	92003	54.1660 ug/kg	100
8) Trichlorofluoromethane	5.52	101	271981	47.5643 ug/kg	98
9) Diethyl ether	6.06	59	198146	74.1259 ug/kg	98
10) Isoprene	6.09	67	201645	59.0663 ug/kg	95
11) Acrolein	6.30	56	34569	64.8558 ug/kg	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	151498	51.3737 ug/kg	99
13) Acetone	6.41	43	65044	43.9190 ug/kg	98
14) 1,1-Dichloroethene	6.62	61	264179	48.5632 ug/kg	99
15) Tert-Butyl Alcohol	6.77	59	122141	205.1997 ug/kg	96
16) Dimethyl Sulfide	6.88	62	168266	73.1872 ug/kg	98
17) Iodomethane	7.13	142	81070	50.1419 ug/kg	99
18) Methyl acetate	7.15	43	155780	52.6767 ug/kg	99
19) Methylene Chloride	7.41	84	147546	49.8014 ug/kg	97
20) Carbon Disulfide	7.45	76	369798	44.1284 ug/kg	98
21) Acrylonitrile	7.59	53	71462	48.8478 ug/kg	99
22) Methyl Tert Butyl Ether	7.61	73	402298	47.6767 ug/kg	100
23) trans-1,2-Dichloroethene	7.85	61	245432	50.6242 ug/kg	100
24) n-Hexane	7.91	57	240056	48.0064 ug/kg	97
25) Diisopropyl ether	8.26	45	951889	81.9626 ug/kg	100
26) Vinyl Acetate	8.44	43	224385	33.8921 ug/kg	98
27) 1,1-Dichloroethane	8.47	63	282537	46.3987 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	854399	79.1219 ug/kg	99
29) 2-Butanone	9.03	43	88970	47.3950 ug/kg	99
30) Propionitrile	9.14	54	53106	92.4444 ug/kg	97
31) 2,2-Dichloropropane	9.24	77	213921	47.0673 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	167198	52.5828 ug/kg	96
33) Chloroform	9.52	83	268532	48.0056 ug/kg	99
34) 1-Bromopropane	9.65	122	36381	74.5451 ug/kg	96
35) Bromochloromethane	9.75	130	106386	51.5067 ug/kg	96
36) Tetrahydrofuran	9.78	42	101921	84.2313 ug/kg	98
38) 1,1,1-Trichloroethane	10.04	97	236420	46.7360 ug/kg	100
39) Cyclohexane	10.08	56	267623	48.5247 ug/kg	98
40) 1,1-Dichloropropene	10.25	75	193208	48.5381 ug/kg	99
41) Tert-Amyl-Methyl ether	10.34	73	688412	87.7041 ug/kg	100
42) Carbon Tetrachloride	10.39	117	218086	46.5023 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:39:12 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	241996	49.1831 ug/kg	99
46)	Benzene	10.60	78	545692	48.9674 ug/kg	99
47)	Trichloroethene	11.35	130	174371	49.3824 ug/kg	96
48)	Methylcyclohexane	11.44	83	228572	51.6120 ug/kg	98
49)	1,2-Dichloropropane	11.56	63	160075	52.3084 ug/kg	99
50)	1,4-Dioxane	11.88	88	7749	168.7883 ug/kg	88
51)	Bromodichloromethane	11.87	83	205164	47.5709 ug/kg	100
52)	Dibromomethane	11.96	174	95223	46.9624 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	36447	43.4907 ug/kg	97
54)	4-Methyl-2-Pentanone	12.19	58	64228	47.8173 ug/kg	96
55)	cis-1,3-Dichloropropene	12.50	75	238969	53.1840 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	243519	53.9302 ug/kg	99
59)	Toluene	12.93	91	610944	50.7412 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	172650	51.7315 ug/kg	99
61)	trans-1,3-Dichloropropene	13.11	75	216958	50.0293 ug/kg	98
62)	1,1,2-Trichloroethane	13.32	97	130293	51.5130 ug/kg	96
63)	2-Hexanone	13.25	43	121727	48.2017 ug/kg	99
64)	1,3-Dichloropropane	13.62	76	226811	53.8157 ug/kg	99
65)	Tetrachloroethene	13.75	164	128602	49.8224 ug/kg	96
66)	Dibromochloromethane	14.01	129	171284	48.4552 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	142409	50.7609 ug/kg	97
68)	1-Chlorohexane	14.35	91	184711	52.0217 ug/kg	98
69)	Chlorobenzene	14.77	112	433181	51.1898 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	157986	49.7138 ug/kg	100
71)	Ethylbenzene	14.79	106	223582	51.2841 ug/kg	100
72)	m-,p-Xylene	14.89	106	552299	102.5798 ug/kg	98
73)	o-Xylene	15.45	106	276739	53.5600 ug/kg	99
74)	Styrene	15.49	104	464515	52.7939 ug/kg	99
75)	Bromoform	15.99	173	109809	47.3129 ug/kg	99
76)	Isopropylbenzene	15.87	105	721376	52.0066 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	153818	52.0241 ug/kg	97
80)	1,2,3-Trichloropropane	16.29	110	60794	54.2181 ug/kg	92
81)	trans-1,4-Dichloro-2-Buten	16.33	53	48561	42.9649 ug/kg	74
82)	n-Propylbenzene	16.39	91	841260	54.9091 ug/kg	100
83)	Bromobenzene	16.52	156	188730	52.1806 ug/kg	96
84)	1,3,5-Trimethylbenzene	16.57	105	624761	54.3244 ug/kg	99
85)	2-Chlorotoluene	16.66	91	556729	54.1771 ug/kg	100
86)	4-Chlorotoluene	16.70	91	503918	53.0403 ug/kg	99
87)	a-Methylstyrene	16.98	118	305038	58.2105 ug/kg	98
88)	tert-Butylbenzene	17.03	134	133555	55.3912 ug/kg	90
89)	1,2,4-Trimethylbenzene	17.08	105	620621	51.5293 ug/kg	99
90)	sec-Butylbenzene	17.31	105	810765	54.7366 ug/kg	99
91)	p-Isopropyltoluene	17.46	119	675672	54.0529 ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	365216	50.8073 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	367190	51.0968 ug/kg	99
94)	n-Butylbenzene	17.99	91	609687	52.4585 ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	351826	52.7494 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	46623	54.4522 ug/kg	96
97)	1,2,4-Trichlorobenzene	20.43	180	244804	51.7031 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	136025	54.5004 ug/kg	99
99)	Naphthalene	20.81	128	603753	50.8387 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	241600	52.6087 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972907.D 8260SL.M Fri Feb 26 11:39:13 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:39 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

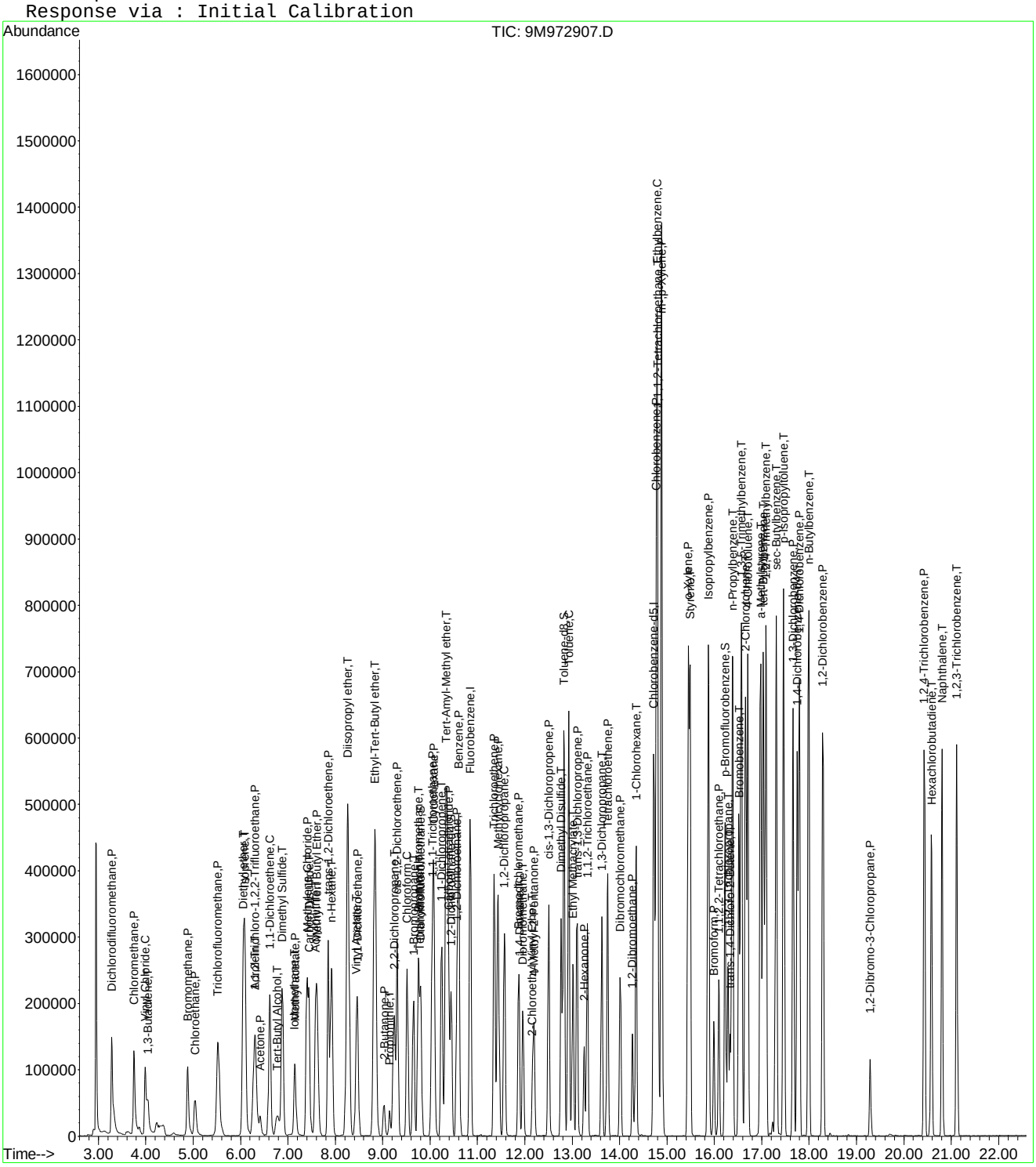

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	112	0.00
2	P	Dichlorodifluoromethane	50.0000	63.3698	-26.7#	123	0.00
3	P	Chloromethane	50.0000	52.7216	-5.4	107	0.00
4	C	Vinyl Chloride	50.0000	59.8284	-19.7	118	0.00
5	T	1,3-Butadiene	50.0000	5.2533	89.5#	11	0.00
6	P	Bromomethane	50.0000	48.9744	2.1	112	0.00
7	P	Chloroethane	50.0000	54.1660	-8.3	108	0.00
8	P	Trichlorofluoromethane	50.0000	47.5643	4.9	102	0.00
9	T	Diethyl ether	100.0000	74.1259	25.9#	79	0.01
10	T	Isoprene	50.0000	59.0664	-18.1	129	0.00
11	T	Acrolein	50.0000	64.8558	-29.7#	140	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	51.3737	-2.7	112	0.00
13	P	Acetone	50.0000	43.9190	12.2	98	0.00
14	C	1,1-Dichloroethene	50.0000	48.5632	2.9	108	0.00
15	T	Tert-Butyl Alcohol	200.0000	205.1997	-2.6	116	0.01
16	T	Dimethyl Sulfide	50.0000	73.1872	-46.4#	154	0.00
17	T	Iodomethane	50.0000	50.1419	-0.3	102	0.00
18	P	Methyl acetate	50.0000	52.6767	-5.4	115	0.01
19	P	Methylene Chloride	50.0000	49.8014	0.4	109	0.01
20	P	Carbon Disulfide	50.0000	44.1284	11.7	97	0.00
21	T	Acrylonitrile	50.0000	48.8478	2.3	103	0.00
22	P	Methyl Tert Butyl Ether	50.0000	47.6767	4.6	99	0.00
23	P	trans-1,2-Dichloroethene	50.0000	50.6242	-1.2	108	0.00
24	T	n-Hexane	50.0000	48.0064	4.0	109	0.00
25	T	Diisopropyl ether	100.0000	81.9626	18.0	87	0.00
26	T	Vinyl Acetate	50.0000	33.8921	32.2#	72	0.01
27	P	1,1-Dichloroethane	50.0000	46.3987	7.2	99	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	79.1219	20.9	83	0.00
29	P	2-Butanone	50.0000	47.3950	5.2	103	0.00
30	T	Propionitrile	100.0000	92.4444	7.6	100	0.00
31	T	2,2-Dichloropropane	50.0000	47.0673	5.9	99	0.00
32	P	cis-1,2-Dichloroethene	50.0000	52.5828	-5.2	109	0.00
33	C	Chloroform	50.0000	48.0057	4.0	102	0.00
34	T	1-Bromopropane	50.0000	74.5451	-49.1#	164	0.00
35	T	Bromochloromethane	50.0000	51.5067	-3.0	104	0.00
36	T	Tetrahydrofuran	100.0000	84.2314	15.8	90	0.00
37	S	Dibromofluoromethane	50.0000	51.7395	-3.5	110	0.00
38	P	1,1,1-Trichloroethane	50.0000	46.7360	6.5	97	0.00
39	P	Cyclohexane	50.0000	48.5247	3.0	108	0.00
40	T	1,1-Dichloropropene	50.0000	48.5381	2.9	106	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	87.7041	12.3	93	0.00
42	P	Carbon Tetrachloride	50.0000	46.5023	7.0	99	0.00
43	S	1,2-Dichloroethane-d4	50.0000	49.8458	0.3	107	0.00
44		Heptane	-1.0000	0.0000	0.0	104	0.00
45	P	1,2-Dichloroethane	50.0000	49.1831	1.6	102	0.00
46	P	Benzene	50.0000	48.9674	2.1	108	0.00
47	P	Trichloroethene	50.0000	49.3824	1.2	106	0.00
48	P	Methylcyclohexane	50.0000	51.6120	-3.2	112	0.00
49	C	1,2-Dichloropropane	50.0000	52.3083	-4.6	108	0.00
50	T	1,4-Dioxane	200.0000	168.7883	15.6	99	0.00
51	P	Bromodichloromethane	50.0000	47.5710	4.9	101	0.00
52	T	Dibromomethane	50.0000	46.9624	6.1	99	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	43.4907	13.0	95	0.00
54	P	4-Methyl-2-Pentanone	50.0000	47.8173	4.4	99	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	53.1840	-6.4	112	0.00
56	T	Dimethyl Disulfide	50.0000	53.9302	-7.9	111	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	111	0.00
58	S	Toluene-d8	50.0000	52.9951	-6.0	110	0.00
59	C	Toluene	50.0000	50.7412	-1.5	108	0.00
60	T	Ethyl Methacrylate	50.0000	51.7315	-3.5	109	0.00
61	P	trans-1,3-Dichloropropene	50.0000	50.0293	-0.1	102	0.00
62	P	1,1,2-Trichloroethane	50.0000	51.5130	-3.0	106	0.00
63	P	2-Hexanone	50.0000	48.2017	3.6	102	0.00
64	T	1,3-Dichloropropane	50.0000	53.8157	-7.6	113	0.00
65	P	Tetrachloroethene	50.0000	49.8224	0.4	110	0.00
66	P	Dibromochloromethane	50.0000	48.4552	3.1	101	0.00
67	P	1,2-Dibromoethane	50.0000	50.7609	-1.5	107	0.00
68	T	1-Chlorohexane	50.0000	52.0217	-4.0	110	0.00
69	P	Chlorobenzene	50.0000	51.1898	-2.4	108	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	49.7138	0.6	102	0.00
71	C	Ethylbenzene	50.0000	51.2841	-2.6	108	0.00
72	P	m-,p-Xylene	100.0000	102.5798	-2.6	111	0.00
73	P	o-Xylene	50.0000	53.5600	-7.1	112	0.00
74	P	Styrene	50.0000	52.7939	-5.6	109	0.00
75	P	Bromoform	50.0000	47.3129	5.4	95	0.00
76	P	Isopropylbenzene	50.0000	52.0066	-4.0	110	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	107	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	52.0241	-4.0	104	0.00
79	S	p-Bromofluorobenzene	50.0000	55.9531	-11.9	111	0.00
80	T	1,2,3-Trichloropropane	50.0000	54.2181	-8.4	109	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	42.9649	14.1	87	0.00
82	T	n-Propylbenzene	50.0000	54.9091	-9.8	112	0.00
83	T	Bromobenzene	50.0000	52.1806	-4.4	106	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	54.3244	-8.6	110	0.00
85	T	2-Chlorotoluene	50.0000	54.1771	-8.4	115	0.00
86	T	4-Chlorotoluene	50.0000	53.0403	-6.1	105	0.00
87	T	a-Methylstyrene	50.0000	58.2105	-16.4	119	0.00
88	T	tert-Butylbenzene	50.0000	55.3912	-10.8	110	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	51.5293	-3.1	107	0.00
90	T	sec-Butylbenzene	50.0000	54.7366	-9.5	112	0.00
91	T	p-Isopropyltoluene	50.0000	54.0529	-8.1	110	0.00
92	P	1,3-Dichlorobenzene	50.0000	50.8073	-1.6	108	0.00
93	P	1,4-Dichlorobenzene	50.0000	51.0968	-2.2	110	0.00
94	T	n-Butylbenzene	50.0000	52.4585	-4.9	108	0.00
95	P	1,2-Dichlorobenzene	50.0000	52.7494	-5.5	110	0.00
96	P	1,2-Dibromo-3-Chloropropane	50.0000	54.4522	-8.9	109	0.00
97	P	1,2,4-Trichlorobenzene	50.0000	51.7031	-3.4	110	0.00
98	T	Hexachlorobutadiene	50.0000	54.5004	-9.0	116	0.00
99	T	Naphthalene	50.0000	50.8387	-1.7	100	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	52.6087	-5.2	109	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972907.D 8260SL.M Fri Feb 26 11:39:16 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022916\9M972967.D Vial: 1
Acq On : 29 Feb 2016 17:23 Operator: FJB/JDS
Sample : WG559150-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 17:45:41 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	717529	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.73	117	517165	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	238402	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	191450	49.2238 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.44%		
43) 1,2-Dichloroethane-d4	10.45	65	235993	48.3594 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.72%		
58) Toluene-d8	12.83	98	664282	50.7812 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.56%		
79) p-Bromofluorobenzene	16.23	95	254634	54.8522 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 109.70%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	224161	45.8354 ug/kg	95
3) Chloromethane	3.74	50	209740	44.6785 ug/kg	99
4) Vinyl Chloride	3.99	62	269057	57.2535 ug/kg	99
5) 1,3-Butadiene	4.04	54	305677	68.3702 ug/kg	99
6) Bromomethane	4.88	94	139881	45.8302 ug/kg	96
7) Chloroethane	5.04	64	113232	54.0843 ug/kg	98
8) Trichlorofluoromethane	5.53	101	368283	52.2519 ug/kg	99
9) Diethyl ether	6.06	59	339394	103.0069 ug/kg	99
10) Isoprene	6.09	67	270591	64.3048 ug/kg	99
11) Acrolein	6.30	56	34446	52.4298 ug/kg	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	197562	54.3519 ug/kg	99
13) Acetone	6.40	43	83723	45.9748 ug/kg	97
14) 1,1-Dichloroethene	6.61	61	337460	50.3279 ug/kg	98
15) Tert-Butyl Alcohol	6.75	59	123383	168.1699 ug/kg	98
16) Dimethyl Sulfide	6.88	62	157653	55.6312 ug/kg	98
17) Iodomethane	7.13	142	114641	57.1132 ug/kg	98
18) Methyl acetate	7.14	43	193963	53.2112 ug/kg	98
19) Methylene Chloride	7.40	84	183510	50.2518 ug/kg	98
20) Carbon Disulfide	7.45	76	607619	58.8251 ug/kg	99
21) Acrylonitrile	7.59	53	92377	51.2285 ug/kg	99
22) Methyl Tert Butyl Ether	7.61	73	527557	50.7230 ug/kg	98
23) trans-1,2-Dichloroethene	7.85	61	324146	54.2431 ug/kg	97
24) n-Hexane	7.92	57	370697	60.1427 ug/kg	98
25) Diisopropyl ether	8.26	45	1544159	107.8696 ug/kg	99
26) Vinyl Acetate	8.43	43	418695	51.3074 ug/kg	99
27) 1,1-Dichloroethane	8.46	63	390904	52.0808 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	1407574	105.7511 ug/kg	99
29) 2-Butanone	9.02	43	109282	47.2297 ug/kg	99
30) Propionitrile	9.14	54	67587	95.4504 ug/kg	100
31) 2,2-Dichloropropane	9.24	77	312822	55.8394 ug/kg	100
32) cis-1,2-Dichloroethene	9.31	96	208818	53.2793 ug/kg	96
33) Chloroform	9.52	83	344697	49.9932 ug/kg	99
34) 1-Bromopropane	9.65	122	32395	54.1365 ug/kg	100
35) Bromochloromethane	9.75	130	133300	52.3585 ug/kg	95
36) Tetrahydrofuran	9.78	42	144902	97.1543 ug/kg	100
38) 1,1,1-Trichloroethane	10.04	97	327988	52.6021 ug/kg	98
39) Cyclohexane	10.08	56	404884	59.5590 ug/kg	99
40) 1,1-Dichloropropene	10.24	75	261534	53.3045 ug/kg	100
41) Tert-Amyl-Methyl ether	10.34	73	995534	102.8976 ug/kg	99
42) Carbon Tetrachloride	10.39	117	295327	51.0890 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022916\9M972967.D Vial: 1
Acq On : 29 Feb 2016 17:23 Operator: FJB/JDS
Sample : WG559150-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 17:45:41 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	305670	50.4009 ug/kg	97
46)	Benzene	10.60	78	698526	50.8534 ug/kg	100
47)	Trichloroethene	11.35	130	230291	52.9118 ug/kg	97
48)	Methylcyclohexane	11.44	83	332449	60.9018 ug/kg	100
49)	1,2-Dichloropropane	11.56	63	205707	54.5349 ug/kg	98
50)	1,4-Dioxane	11.88	88	11862	209.6197 ug/kg	97
51)	Bromodichloromethane	11.87	83	266373	50.1082 ug/kg	99
52)	Dibromomethane	11.96	174	126894	50.7724 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.17	63	43935	42.5950 ug/kg	100
54)	4-Methyl-2-Pentanone	12.20	58	82978	50.1189 ug/kg	99
55)	cis-1,3-Dichloropropene	12.50	75	292953	52.8950 ug/kg	100
56)	Dimethyl Disulfide	12.77	94	318733	57.2670 ug/kg	99
59)	Toluene	12.93	91	786633	53.2359 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	229430	56.0160 ug/kg	96
61)	trans-1,3-Dichloropropene	13.10	75	284368	53.4322 ug/kg	99
62)	1,1,2-Trichloroethane	13.33	97	163037	52.5238 ug/kg	96
63)	2-Hexanone	13.25	43	153679	49.5865 ug/kg	98
64)	1,3-Dichloropropane	13.62	76	263969	51.0354 ug/kg	97
65)	Tetrachloroethene	13.75	164	170776	53.9110 ug/kg	97
66)	Dibromochloromethane	14.01	129	218964	50.4743 ug/kg	99
67)	1,2-Dibromoethane	14.28	107	171387	49.7787 ug/kg	99
68)	1-Chlorohexane	14.35	91	270956	62.1819 ug/kg	100
69)	Chlorobenzene	14.77	112	545712	52.5474 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	203041	52.0614 ug/kg	98
71)	Ethylbenzene	14.79	106	293242	54.8082 ug/kg	100
72)	m-,p-Xylene	14.89	106	712906	107.8931 ug/kg	96
73)	o-Xylene	15.45	106	348413	54.9463 ug/kg	97
74)	Styrene	15.49	104	592775	54.8968 ug/kg	99
75)	Bromoform	16.00	173	142147	49.9061 ug/kg	100
76)	Isopropylbenzene	15.88	105	937009	55.0446 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.10	83	180384	49.8790 ug/kg	97
80)	1,2,3-Trichloropropane	16.29	110	68552	49.9834 ug/kg	95
81)	trans-1,4-Dichloro-2-Buten	16.33	53	80928	58.5392 ug/kg	82
82)	n-Propylbenzene	16.39	91	1067940	56.9879 ug/kg	100
83)	Bromobenzene	16.52	156	234464	52.9988 ug/kg	96
84)	1,3,5-Trimethylbenzene	16.58	105	797971	56.7270 ug/kg	98
85)	2-Chlorotoluene	16.66	91	674685	53.6779 ug/kg	99
86)	4-Chlorotoluene	16.70	91	653058	56.1979 ug/kg	99
87)	a-Methylstyrene	16.98	118	400282	62.4504 ug/kg	99
88)	tert-Butylbenzene	17.04	134	168830	57.2469 ug/kg	100
89)	1,2,4-Trimethylbenzene	17.09	105	800671	54.3506 ug/kg	99
90)	sec-Butylbenzene	17.30	105	1031272	56.9217 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	865022	56.5760 ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	451554	51.3579 ug/kg	99
93)	1,4-Dichlorobenzene	17.80	146	451360	51.3508 ug/kg	100
94)	n-Butylbenzene	17.99	91	798632	56.1795 ug/kg	99
95)	1,2-Dichlorobenzene	18.30	146	423274	51.8840 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.30	157	47947	45.7824 ug/kg	98
97)	1,2,4-Trichlorobenzene	20.44	180	294038	50.7719 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	165585	54.2406 ug/kg	99
99)	Naphthalene	20.81	128	692181	47.6516 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	281873	50.1806 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972967.D 8260SL.M Mon Feb 29 17:45:41 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022916\9M972967.D Vial: 1
Acq On : 29 Feb 2016 17:23 Operator: FJB/JDS
Sample : WG559150-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 17:45 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

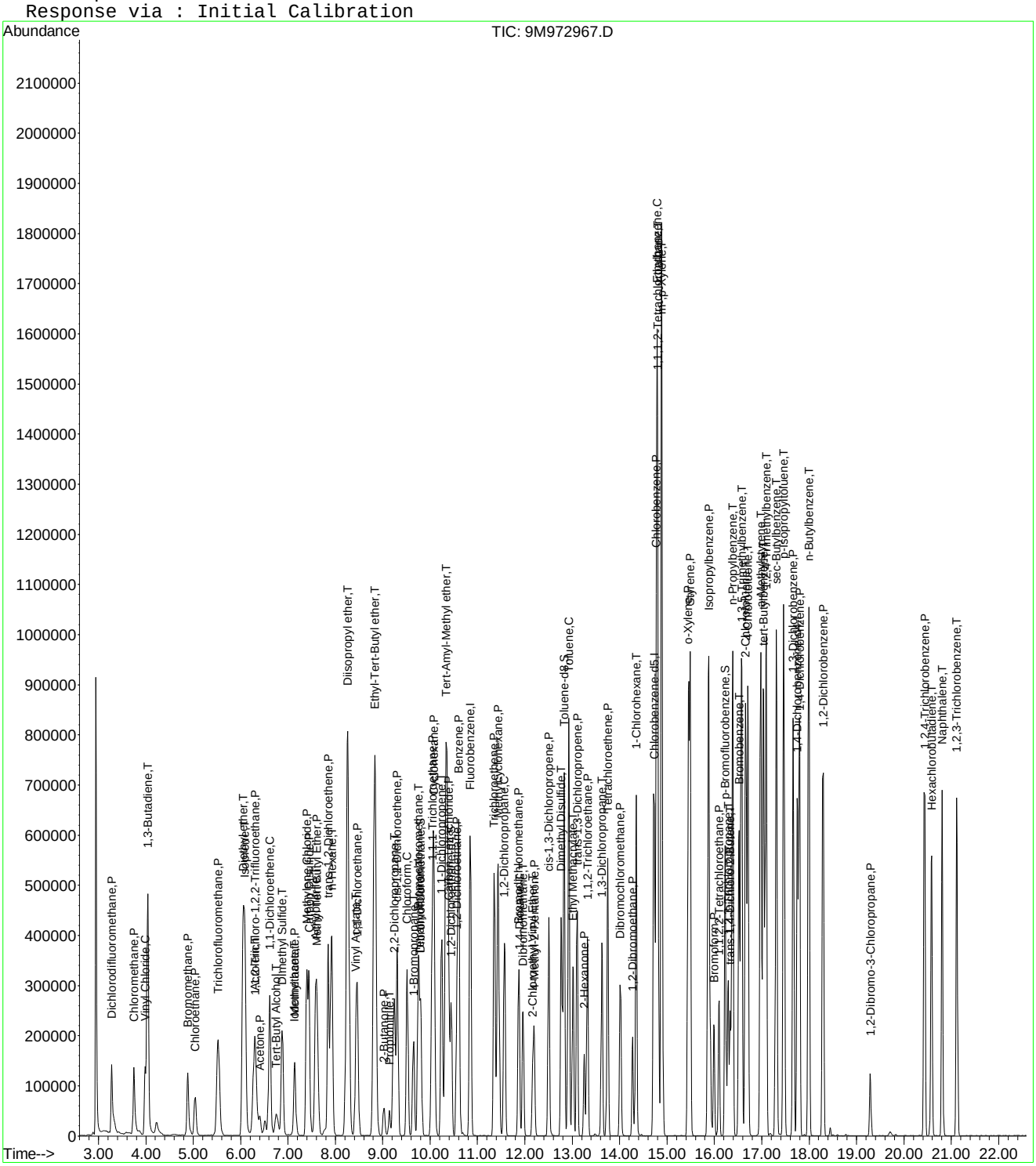

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022916\9M972967.D Vial: 1
Acq On : 29 Feb 2016 17:23 Operator: FJB/JDS
Sample : WG559150-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	139	0.00
2	P	Dichlorodifluoromethane	0.3408	0.3124	8.3	109	0.00
3	P	Chloromethane	0.3271	0.2923	10.6	112	0.00
4	C	Vinyl Chloride	0.3275	0.3750	-14.5	140	0.00
5	T	1,3-Butadiene	0.3115	0.4260	-36.7#	179	0.00
6	P	Bromomethane	0.2127	0.1950	8.3	130	0.00
7	P	Chloroethane	0.1459	0.1578	-8.2	133	0.00
8	P	Trichlorofluoromethane	0.4911	0.5133	-4.5	138	0.00
9	T	Diethyl ether	0.2296	0.2365	-3.0	136	0.01
10	T	Isoprene	0.2932	0.3771	-28.6#	173	0.00
11	T	Acrolein	0.0458	0.0480	-4.9	140	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	0.2533	0.2753	-8.7	146	0.01
13	P	Acetone	0.1376	0.1167	15.2	126	0.00
14	C	1,1-Dichloroethene	0.4672	0.4703	-0.7	138	0.00
15	T	Tert-Butyl Alcohol	0.0511	0.0430	15.9	118	-0.01
16	T	Dimethyl Sulfide	0.1975	0.2197	-11.3	144	0.00
17	T	Iodomethane	0.1273	0.1598	-25.5#	144	0.00
18	P	Methyl acetate	0.2540	0.2703	-6.4	143	0.00
19	P	Methylene Chloride	0.2545	0.2557	-0.5	136	0.00
20	P	Carbon Disulfide	0.7198	0.8468	-17.6	159	0.00
21	T	Acrylonitrile	0.1257	0.1287	-2.5	133	0.00
22	P	Methyl Tert Butyl Ether	0.7248	0.7352	-1.4	130	0.00
23	P	trans-1,2-Dichloroethene	0.4164	0.4517	-8.5	143	0.00
24	T	n-Hexane	0.4295	0.5166	-20.3	169	0.01
25	T	Diisopropyl ether	0.9975	1.0760	-7.9	142	0.00
26	T	Vinyl Acetate	0.5686	0.5835	-2.6	134	0.00
27	P	1,1-Dichloroethane	0.5230	0.5448	-4.2	137	-0.01
28	T	Ethyl-Tert-Butyl ether	0.9275	0.9809	-5.8	138	0.00
29	P	2-Butanone	0.1612	0.1523	5.5	127	-0.01
30	T	Propionitrile	0.0493	0.0471	4.5	127	0.00
31	T	2,2-Dichloropropane	0.3904	0.4360	-11.7	145	0.00
32	P	cis-1,2-Dichloroethene	0.2731	0.2910	-6.6	136	0.00
33	C	Chloroform	0.4805	0.4804	0.0	131	0.00
34	T	1-Bromopropane	0.0376	0.0452	-20.1	146	0.00
35	T	Bromochloromethane	0.1774	0.1858	-4.7	130	0.00
36	T	Tetrahydrofuran	0.1039	0.1010	2.8	127	0.00
37	S	Dibromofluoromethane	0.2710	0.2668	1.6	129	0.00
38	P	1,1,1-Trichloroethane	0.4345	0.4571	-5.2	135	0.00
39	P	Cyclohexane	0.4737	0.5643	-19.1	163	0.00
40	T	1,1-Dichloropropene	0.3419	0.3645	-6.6	144	0.00
41	T	Tert-Amyl-Methyl ether	0.6742	0.6937	-2.9	134	0.00
42	P	Carbon Tetrachloride	0.4028	0.4116	-2.2	133	0.00
43	S	1,2-Dichloroethane-d4	0.3401	0.3289	3.3	128	0.00
44		Heptane	0.0000	0.0000	0.0	134	0.00
45	P	1,2-Dichloroethane	0.4226	0.4260	-0.8	129	0.00
46	P	Benzene	0.9572	0.9735	-1.7	139	0.00
47	P	Trichloroethene	0.3033	0.3210	-5.8	140	0.00
48	P	Methylcyclohexane	0.3804	0.4633	-21.8	163	0.00
49	C	1,2-Dichloropropane	0.2628	0.2867	-9.1	139	0.00
50	T	1,4-Dioxane	0.0039	0.0041	-4.8	152	0.00
51	P	Bromodichloromethane	0.3704	0.3712	-0.2	131	0.00
52	T	Dibromomethane	0.1742	0.1769	-1.5	132	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0665	0.0612	8.0	114	0.00
54	P	4-Methyl-2-Pentanone	0.1154	0.1156	-0.2	128	0.01

(#) = Out of Range
9M972967.D 8260SL.M Mon Feb 29 17:53:08 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022916\9M972967.D Vial: 1
Acq On : 29 Feb 2016 17:23 Operator: FJB/JDS
Sample : WG559150-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	0.3859	0.4083	-5.8	138	0.00
56	T	Dimethyl Disulfide	0.3878	0.4442	-14.5	145	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	136	0.00
58	S	Toluene-d8	1.2647	1.2845	-1.6	130	0.00
59	C	Toluene	1.4286	1.5211	-6.5	140	0.00
60	T	Ethyl Methacrylate	0.3960	0.4436	-12.0	144	0.00
61	P	trans-1,3-Dichloropropene	0.5145	0.5499	-6.9	134	0.00
62	P	1,1,2-Trichloroethane	0.3001	0.3152	-5.0	133	0.00
63	P	2-Hexanone	0.2996	0.2972	0.8	129	0.00
64	T	1,3-Dichloropropane	0.5001	0.5104	-2.1	131	-0.01
65	P	Tetrachloroethene	0.3063	0.3302	-7.8	146	0.00
66	P	Dibromochloromethane	0.4194	0.4234	-0.9	130	0.00
67	P	1,2-Dibromoethane	0.3329	0.3314	0.4	129	0.00
68	T	1-Chlorohexane	0.4213	0.5239	-24.4	161	0.00
69	P	Chlorobenzene	1.0041	1.0552	-5.1	136	0.00
70	T	1,1,1,2-Tetrachloroethane	0.3771	0.3926	-4.1	131	0.00
71	C	Ethylbenzene	0.5173	0.5670	-9.6	142	-0.01
72	P	m-,p-Xylene	0.6388	0.6892	-7.9	143	0.00
73	P	o-Xylene	0.6130	0.6737	-9.9	141	0.00
74	P	Styrene	1.0440	1.1462	-9.8	139	0.00
75	P	Bromoform	0.2754	0.2749	0.2	123	0.00
76	P	Isopropylbenzene	1.6458	1.8118	-10.1	142	0.00
77	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	130	-0.01
78	P	1,1,2,2-Tetrachloroethane	0.7585	0.7566	0.2	122	0.00
79	S	p-Bromofluorobenzene	0.9736	1.0681	-9.7	133	0.00
80	T	1,2,3-Trichloropropane	0.2876	0.2875	0.0	123	0.00
81	T	trans-1,4-Dichloro-2-Butene	0.2899	0.3395	-17.1	146	0.00
82	T	n-Propylbenzene	3.9303	4.4796	-14.0	142	0.00
83	T	Bromobenzene	0.9278	0.9835	-6.0	132	0.00
84	T	1,3,5-Trimethylbenzene	2.9502	3.3472	-13.5	140	0.00
85	T	2-Chlorotoluene	2.6361	2.8300	-7.4	139	0.00
86	T	4-Chlorotoluene	2.4372	2.7393	-12.4	136	0.00
87	T	a-Methylstyrene	1.3443	1.6790	-24.9	157	0.00
88	T	tert-Butylbenzene	0.6185	0.7082	-14.5	139	0.00
89	T	1,2,4-Trimethylbenzene	3.0897	3.3585	-8.7	138	0.00
90	T	sec-Butylbenzene	3.7998	4.3258	-13.8	142	0.00
91	T	p-Isopropyltoluene	3.2067	3.6284	-13.2	141	0.00
92	P	1,3-Dichlorobenzene	1.8440	1.8941	-2.7	134	0.00
93	P	1,4-Dichlorobenzene	1.8435	1.8933	-2.7	135	0.00
94	T	n-Butylbenzene	2.9815	3.3499	-12.4	142	0.00
95	P	1,2-Dichlorobenzene	1.7110	1.7755	-3.8	132	0.00
96	P	1,2-Dibromo-3-Chloropropane	0.2197	0.2011	8.4	112	0.00
97	P	1,2,4-Trichlorobenzene	1.2146	1.2334	-1.5	132	0.00
98	T	Hexachlorobutadiene	0.6403	0.6946	-8.5	141	0.00
99	T	Naphthalene	3.0465	2.9034	4.7	115	0.00
100	T	1,2,3-Trichlorobenzene	1.1781	1.1823	-0.4	127	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972967.D 8260SL.M Mon Feb 29 17:53:08 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022916\9M972967.D Vial: 1
Acq On : 29 Feb 2016 17:23 Operator: FJB/JDS
Sample : WG559150-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	139	0.00
2	P	Dichlorodifluoromethane	50.0000	45.8354	8.3	109	0.00
3	P	Chloromethane	50.0000	44.6785	10.6	112	0.00
4	C	Vinyl Chloride	50.0000	57.2535	-14.5	140	0.00
5	T	1,3-Butadiene	50.0000	68.3702	-36.7#	179	0.00
6	P	Bromomethane	50.0000	45.8302	8.3	130	0.00
7	P	Chloroethane	50.0000	54.0843	-8.2	133	0.00
8	P	Trichlorofluoromethane	50.0000	52.2519	-4.5	138	0.00
9	T	Diethyl ether	100.0000	103.0069	-3.0	136	0.01
10	T	Isoprene	50.0000	64.3048	-28.6#	173	0.00
11	T	Acrolein	50.0000	52.4298	-4.9	140	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	54.3519	-8.7	146	0.01
13	P	Acetone	50.0000	45.9748	8.1	126	0.00
14	C	1,1-Dichloroethene	50.0000	50.3279	-0.7	138	0.00
15	T	Tert-Butyl Alcohol	200.0000	168.1699	15.9	118	-0.01
16	T	Dimethyl Sulfide	50.0000	55.6313	-11.3	144	0.00
17	T	Iodomethane	50.0000	57.1132	-14.2	144	0.00
18	P	Methyl acetate	50.0000	53.2112	-6.4	143	0.00
19	P	Methylene Chloride	50.0000	50.2518	-0.5	136	0.00
20	P	Carbon Disulfide	50.0000	58.8251	-17.7	159	0.00
21	T	Acrylonitrile	50.0000	51.2285	-2.5	133	0.00
22	P	Methyl Tert Butyl Ether	50.0000	50.7230	-1.4	130	0.00
23	P	trans-1,2-Dichloroethene	50.0000	54.2432	-8.5	143	0.00
24	T	n-Hexane	50.0000	60.1427	-20.3	169	0.01
25	T	Diisopropyl ether	100.0000	107.8696	-7.9	142	0.00
26	T	Vinyl Acetate	50.0000	51.3074	-2.6	134	0.00
27	P	1,1-Dichloroethane	50.0000	52.0808	-4.2	137	-0.01
28	T	Ethyl-Tert-Butyl ether	100.0000	105.7511	-5.8	138	0.00
29	P	2-Butanone	50.0000	47.2297	5.5	127	-0.01
30	T	Propionitrile	100.0000	95.4504	4.5	127	0.00
31	T	2,2-Dichloropropane	50.0000	55.8394	-11.7	145	0.00
32	P	cis-1,2-Dichloroethene	50.0000	53.2793	-6.6	136	0.00
33	C	Chloroform	50.0000	49.9932	0.0	131	0.00
34	T	1-Bromopropane	50.0000	54.1365	-8.3	146	0.00
35	T	Bromochloromethane	50.0000	52.3585	-4.7	130	0.00
36	T	Tetrahydrofuran	100.0000	97.1543	2.8	127	0.00
37	S	Dibromofluoromethane	50.0000	49.2238	1.6	129	0.00
38	P	1,1,1-Trichloroethane	50.0000	52.6021	-5.2	135	0.00
39	P	Cyclohexane	50.0000	59.5590	-19.1	163	0.00
40	T	1,1-Dichloropropene	50.0000	53.3045	-6.6	144	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	102.8976	-2.9	134	0.00
42	P	Carbon Tetrachloride	50.0000	51.0890	-2.2	133	0.00
43	S	1,2-Dichloroethane-d4	50.0000	48.3594	3.3	128	0.00
44		Heptane	-1.0000	0.0000	0.0	134	0.00
45	P	1,2-Dichloroethane	50.0000	50.4009	-0.8	129	0.00
46	P	Benzene	50.0000	50.8534	-1.7	139	0.00
47	P	Trichloroethene	50.0000	52.9118	-5.8	140	0.00
48	P	Methylcyclohexane	50.0000	60.9018	-21.8	163	0.00
49	C	1,2-Dichloropropane	50.0000	54.5348	-9.1	139	0.00
50	T	1,4-Dioxane	200.0000	209.6197	-4.8	152	0.00
51	P	Bromodichloromethane	50.0000	50.1082	-0.2	131	0.00
52	T	Dibromomethane	50.0000	50.7724	-1.5	132	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	42.5950	14.8	114	0.00
54	P	4-Methyl-2-Pentanone	50.0000	50.1189	-0.2	128	0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022916\9M972967.D Vial: 1
Acq On : 29 Feb 2016 17:23 Operator: FJB/JDS
Sample : WG559150-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	52.8950	-5.8	138	0.00
56	T	Dimethyl Disulfide	50.0000	57.2670	-14.5	145	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	136	0.00
58	S	Toluene-d8	50.0000	50.7812	-1.6	130	0.00
59	C	Toluene	50.0000	53.2359	-6.5	140	0.00
60	T	Ethyl Methacrylate	50.0000	56.0160	-12.0	144	0.00
61	P	trans-1,3-Dichloropropene	50.0000	53.4323	-6.9	134	0.00
62	P	1,1,2-Trichloroethane	50.0000	52.5238	-5.0	133	0.00
63	P	2-Hexanone	50.0000	49.5865	0.8	129	0.00
64	T	1,3-Dichloropropane	50.0000	51.0354	-2.1	131	-0.01
65	P	Tetrachloroethene	50.0000	53.9111	-7.8	146	0.00
66	P	Dibromochloromethane	50.0000	50.4743	-0.9	130	0.00
67	P	1,2-Dibromoethane	50.0000	49.7787	0.4	129	0.00
68	T	1-Chlorohexane	50.0000	62.1819	-24.4	161	0.00
69	P	Chlorobenzene	50.0000	52.5474	-5.1	136	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	52.0614	-4.1	131	0.00
71	C	Ethylbenzene	50.0000	54.8083	-9.6	142	-0.01
72	P	m-,p-Xylene	100.0000	107.8931	-7.9	143	0.00
73	P	o-Xylene	50.0000	54.9463	-9.9	141	0.00
74	P	Styrene	50.0000	54.8968	-9.8	139	0.00
75	P	Bromoform	50.0000	49.9061	0.2	123	0.00
76	P	Isopropylbenzene	50.0000	55.0446	-10.1	142	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	130	-0.01
78	P	1,1,2,2-Tetrachloroethane	50.0000	49.8790	0.2	122	0.00
79	S	p-Bromofluorobenzene	50.0000	54.8522	-9.7	133	0.00
80	T	1,2,3-Trichloropropane	50.0000	49.9834	0.0	123	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	58.5392	-17.1	146	0.00
82	T	n-Propylbenzene	50.0000	56.9879	-14.0	142	0.00
83	T	Bromobenzene	50.0000	52.9988	-6.0	132	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	56.7270	-13.5	140	0.00
85	T	2-Chlorotoluene	50.0000	53.6779	-7.4	139	0.00
86	T	4-Chlorotoluene	50.0000	56.1979	-12.4	136	0.00
87	T	a-Methylstyrene	50.0000	62.4504	-24.9	157	0.00
88	T	tert-Butylbenzene	50.0000	57.2469	-14.5	139	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	54.3506	-8.7	138	0.00
90	T	sec-Butylbenzene	50.0000	56.9217	-13.8	142	0.00
91	T	p-Isopropyltoluene	50.0000	56.5760	-13.2	141	0.00
92	P	1,3-Dichlorobenzene	50.0000	51.3580	-2.7	134	0.00
93	P	1,4-Dichlorobenzene	50.0000	51.3508	-2.7	135	0.00
94	T	n-Butylbenzene	50.0000	56.1795	-12.4	142	0.00
95	P	1,2-Dichlorobenzene	50.0000	51.8840	-3.8	132	0.00
96	P	1,2-Dibromo-3-Chloropropane	50.0000	45.7824	8.4	112	0.00
97	P	1,2,4-Trichlorobenzene	50.0000	50.7719	-1.5	132	0.00
98	T	Hexachlorobutadiene	50.0000	54.2405	-8.5	141	0.00
99	T	Naphthalene	50.0000	47.6516	4.7	115	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	50.1806	-0.4	127	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972967.D 8260SL.M Mon Feb 29 17:53:10 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\1\DATA\022516\9M972894.D          Vial: 3
Acq On    : 25 Feb 2016  14:45                       Operator: ADC
Sample    : WG558732-01 BFB 50ng                     Inst    : hpms9
Misc      : 7,1 STD74773                             Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 02/15/16  HPMS9
```

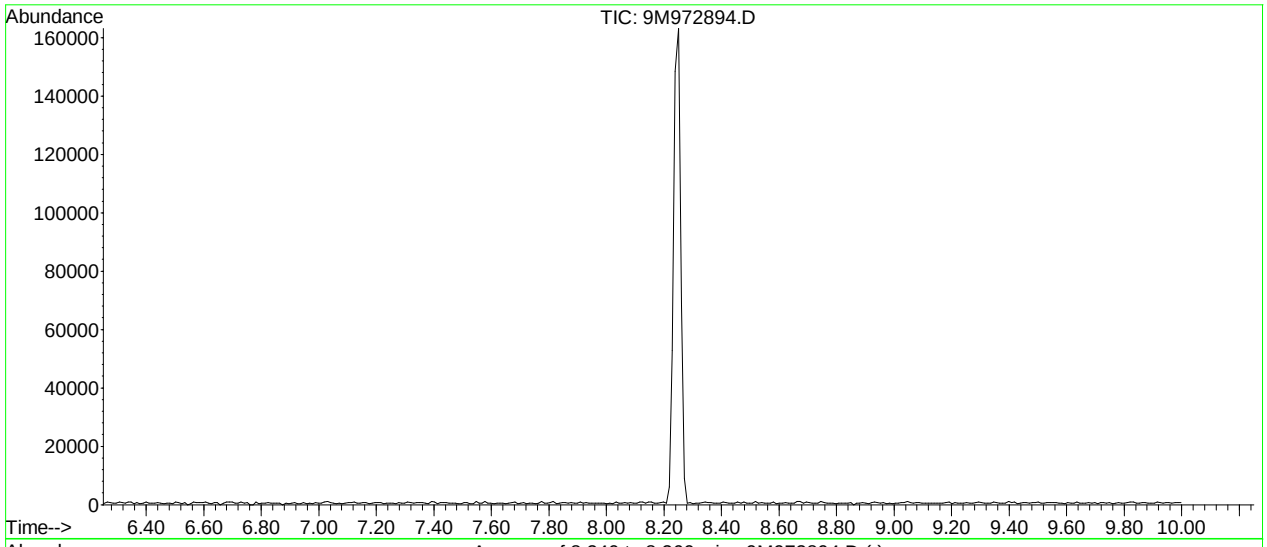

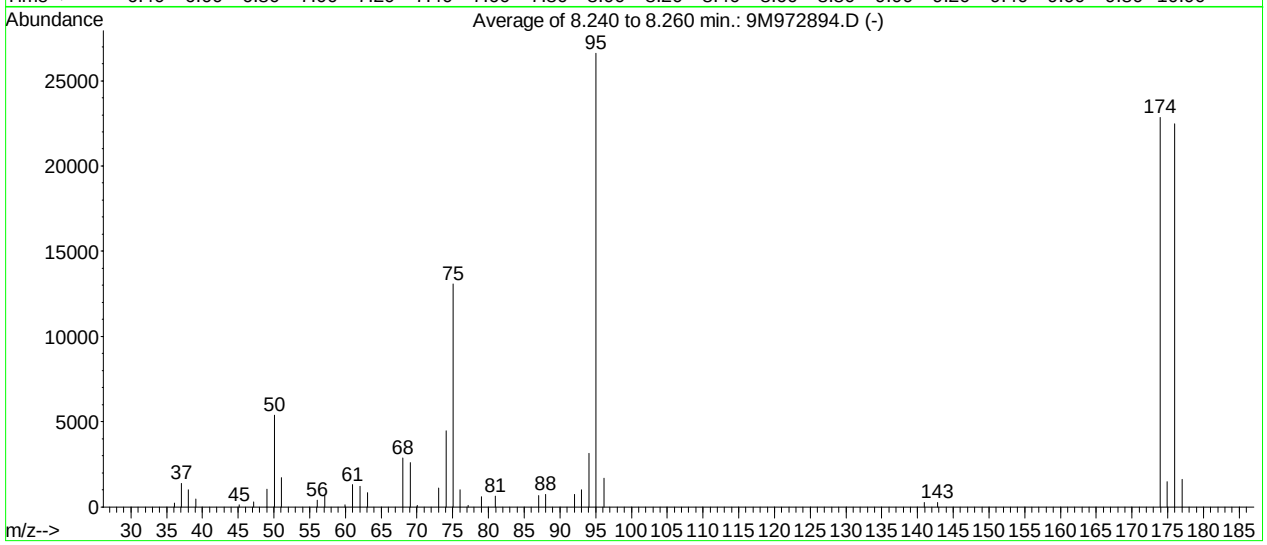

AutoFind: Scans 305, 306, 307; Background Corrected with Scan 300

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.2	5378	PASS
75	95	30	60	49.1	13067	PASS
95	95	100	100	100.0	26621	PASS
96	95	5	9	6.3	1683	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	85.8	22851	PASS
175	174	5	9	6.5	1485	PASS
176	174	95	101	98.3	22461	PASS
177	176	5	9	7.2	1619	PASS

9M972894.D 8260SL.M Fri Feb 26 11:11:03 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\022916\9M972966.D          Vial: 1
Acq On    : 29 Feb 2016  16:59                        Operator: FJB/JDS
Sample    : WG559150-01 BFB 50ng 8260                 Inst    : hpms9
Misc      : 7,1 STD74606                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 02/25/16  HPMS9
```

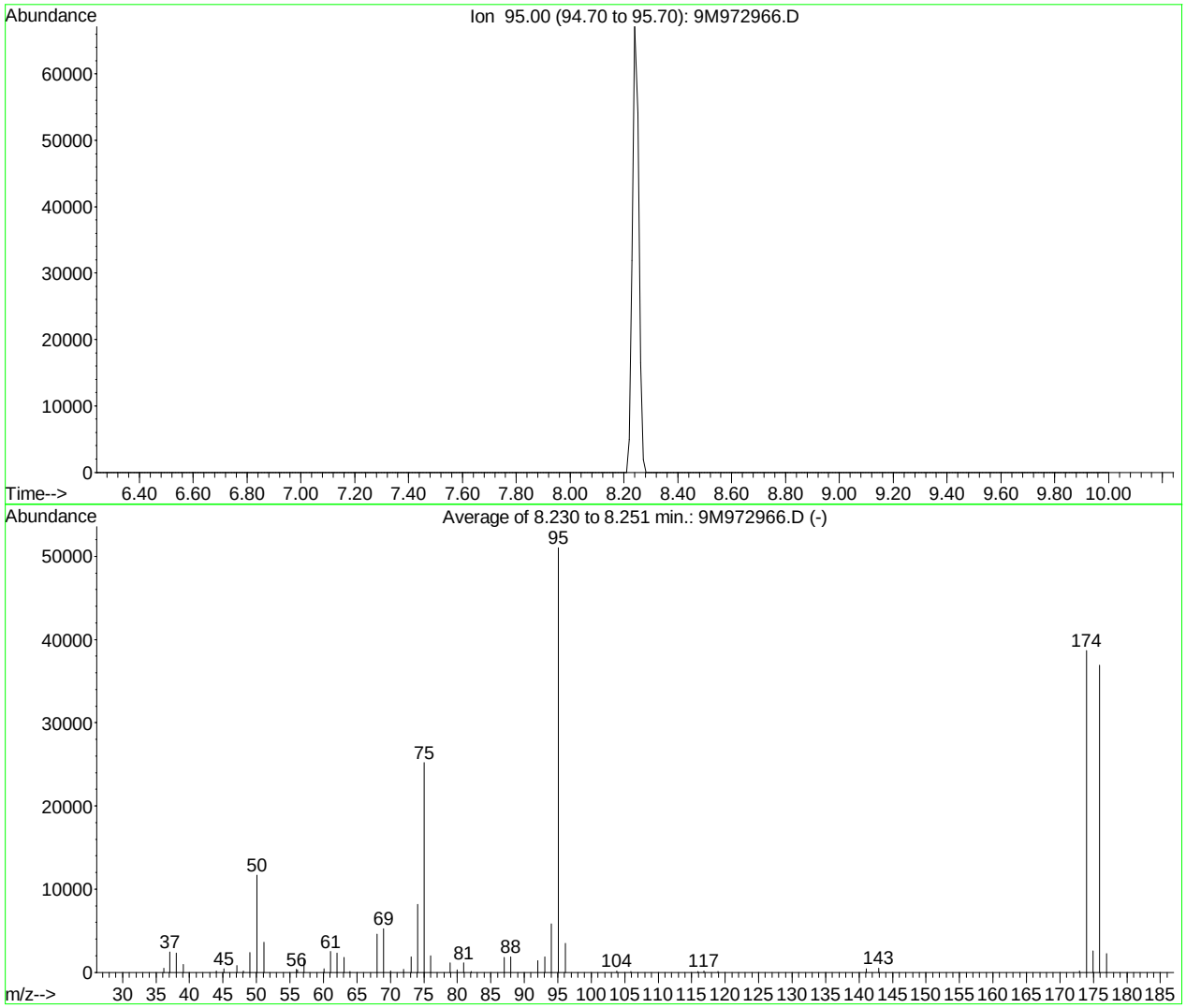

AutoFind: Scans 304, 305, 306; Background Corrected with Scan 300

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.9	11703	PASS
75	95	30	60	49.4	25229	PASS
95	95	100	100	100.0	51056	PASS
96	95	5	9	6.8	3456	PASS
173	174	0.00	2	0.4	169	PASS
174	95	50	100	75.7	38650	PASS
175	174	5	9	6.7	2572	PASS
176	174	95	101	95.5	36914	PASS
177	176	5	9	6.1	2255	PASS

9M972966.D 8260SL.M Tue Mar 01 09:17:35 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972969.D Vial: 3
Acq On : 29 Feb 2016 18:25 Operator: FJB/JDS
Sample : WG559151-01 VBLK0229 BLANK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 01 09:27:14 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	567751	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	403206	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	183902	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	151694	49.2913 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.58%		
43) 1,2-Dichloroethane-d4	10.45	65	188281	48.7607 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.52%		
58) Toluene-d8	12.83	98	538243	52.7754 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 105.56%		
79) p-Bromofluorobenzene	16.23	95	201972	56.4017 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 112.80%		

Target Compounds					Qvalue
13) Acetone	6.40	43	6092	1.9460 ug/kg#	78
56) Dimethyl Disulfide	12.82	94	14641	3.3245 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972969.D 8260SL.M Tue Mar 01 09:27:15 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972969.D Vial: 3
Acq On : 29 Feb 2016 18:25 Operator: FJB/JDS
Sample : WG559151-01 VBLK0229 BLANK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 1 9:27 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

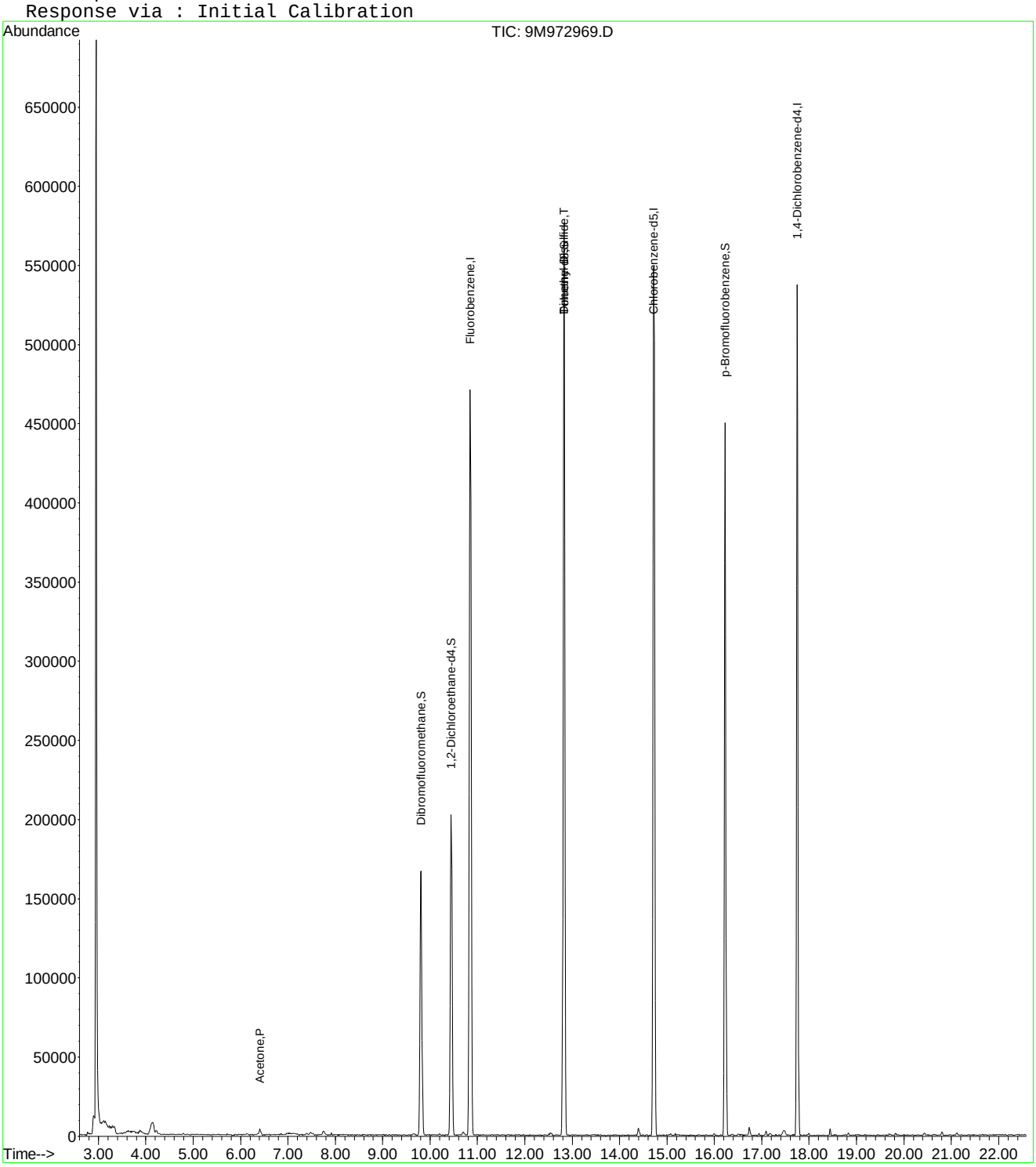

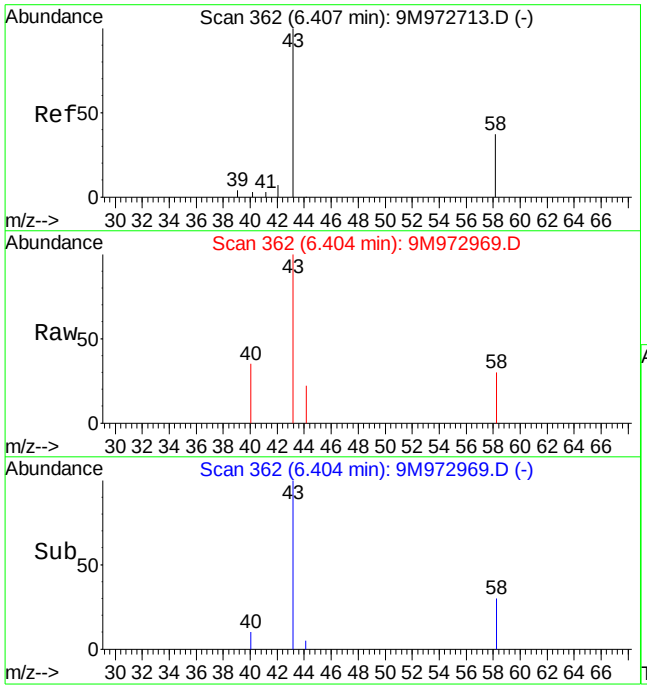

#13
Acetone
Concen: 1.95 ug/kg
RT: 6.40 min Scan# 362
Delta R.T. -0.01 min
Lab File: 9M972969.D
Acq: 29 Feb 2016 18:25

Tgt Ion: 43 Resp: 6092

Ion	Ratio	Lower	Upper
43	100		
58	39.6	16.9	39.3#

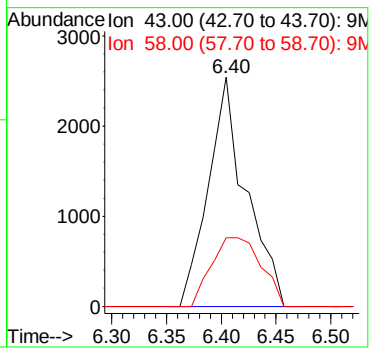

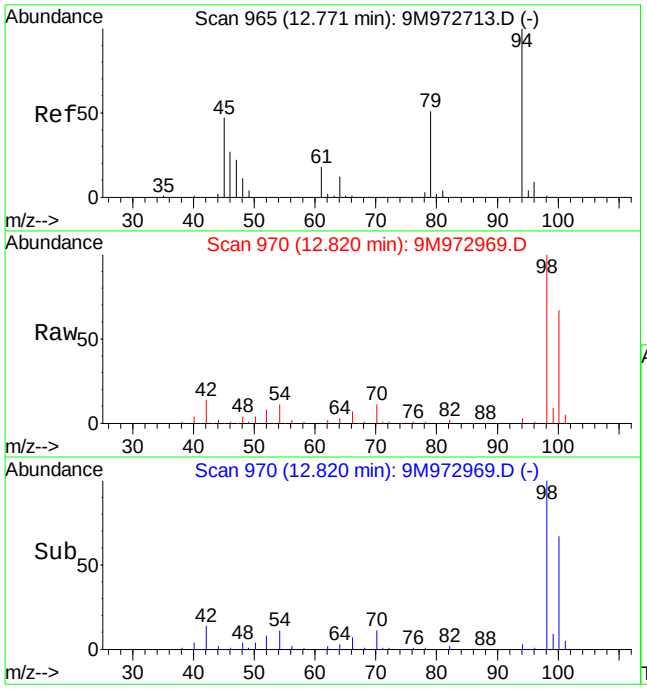

#56
Dimethyl Disulfide
Concen: 3.32 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M972969.D
Acq: 29 Feb 2016 18:25

Tgt Ion: 94 Resp: 14641

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

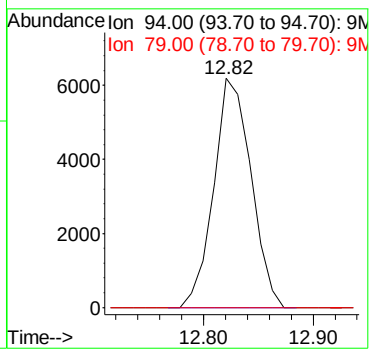

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022916\9M972970.D Vial: 4
Acq On : 29 Feb 2016 18:56 Operator: FJB/JDS
Sample : WG559151-02 20ug/Kg LCS 8260 Inst : hpms9
Misc : 7,1 STD74900 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 19:19:22 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	583985	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.73	117	426907	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.76	152	203058	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	156696	49.5012 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.00%		
43) 1,2-Dichloroethane-d4	10.44	65	192546	48.4791 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.96%		
58) Toluene-d8	12.83	98	549357	50.8746 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.74%		
79) p-Bromofluorobenzene	16.23	95	206720	52.2817 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 104.56%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	101334	25.4586 ug/kg	99
3) Chloromethane	3.74	50	75969	19.8835 ug/kg	100
4) Vinyl Chloride	3.99	62	82664	21.6128 ug/kg	99
5) 1,3-Butadiene	4.04	54	77329	21.2512 ug/kg	98
6) Bromomethane	4.88	94	46861	18.8644 ug/kg	98
7) Chloroethane	5.03	64	34093	20.0081 ug/kg	99
8) Trichlorofluoromethane	5.53	101	105806	18.4446 ug/kg	98
9) Diethyl ether	6.05	59	151224	56.3924 ug/kg	98
10) Isoprene	6.10	67	81952	23.9292 ug/kg	99
11) Acrolein	6.30	56	33255	62.1919 ug/kg	89
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	60735	20.5300 ug/kg	94
13) Acetone	6.40	43	32992	20.9636 ug/kg	99
14) 1,1-Dichloroethene	6.61	61	102623	18.8048 ug/kg	99
15) Tert-Butyl Alcohol	6.76	59	154055	257.9921 ug/kg	99
16) Dimethyl Sulfide	6.88	62	69525	30.1436 ug/kg	100
17) Iodomethane	7.13	142	28057	19.1310 ug/kg	99
18) Methyl acetate	7.14	43	57004	19.2144 ug/kg	98
19) Methylene Chloride	7.41	84	57477	19.3385 ug/kg	99
20) Carbon Disulfide	7.45	76	150130	17.8581 ug/kg	98
21) Acrylonitrile	7.58	53	29946	20.4044 ug/kg	98
22) Methyl Tert Butyl Ether	7.62	73	171070	20.2091 ug/kg	100
23) trans-1,2-Dichloroethene	7.85	61	98554	20.2636 ug/kg	97
24) n-Hexane	7.92	57	95889	19.1148 ug/kg	97
25) Diisopropyl ether	8.26	45	989869	84.9616 ug/kg	99
26) Vinyl Acetate	8.44	43	147777	22.2498 ug/kg	99
27) 1,1-Dichloroethane	8.47	63	116120	19.0087 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	875293	80.7988 ug/kg	99
29) 2-Butanone	9.02	43	38857	20.6335 ug/kg	98
30) Propionitrile	9.14	54	57762	100.2292 ug/kg	99
31) 2,2-Dichloropropane	9.24	77	87495	19.1895 ug/kg	96
32) cis-1,2-Dichloroethene	9.31	96	64843	20.3278 ug/kg	100
33) Chloroform	9.52	83	105458	18.7928 ug/kg	100
34) 1-Bromopropane	9.65	122	15268	31.7814 ug/kg	92
35) Bromochloromethane	9.75	130	41010	19.7918 ug/kg	97
36) Tetrahydrofuran	9.78	42	106319	87.5863 ug/kg	98
38) 1,1,1-Trichloroethane	10.04	97	95970	18.9112 ug/kg	98
39) Cyclohexane	10.08	56	116345	21.0282 ug/kg	98
40) 1,1-Dichloropropene	10.24	75	74028	18.5383 ug/kg	98
41) Tert-Amyl-Methyl ether	10.34	73	740185	93.9998 ug/kg	100
42) Carbon Tetrachloride	10.39	117	84392	17.9376 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022916\9M972970.D Vial: 4
Acq On : 29 Feb 2016 18:56 Operator: FJB/JDS
Sample : WG559151-02 20ug/Kg LCS 8260 Inst : hpms9
Misc : 7,1 STD74900 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 19:19:22 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	96010	19.4509 ug/kg	97
46)	Benzene	10.60	78	220888	19.7582 ug/kg	100
47)	Trichloroethene	11.35	130	71807	20.2712 ug/kg	97
48)	Methylcyclohexane	11.44	83	94356	21.2379 ug/kg	98
49)	1,2-Dichloropropane	11.56	63	63876	20.8066 ug/kg	99
50)	1,4-Dioxane	11.87	88	11081	240.5973 ug/kg	100
51)	Bromodichloromethane	11.87	83	79058	18.2727 ug/kg	99
52)	Dibromomethane	11.96	174	35780	17.5899 ug/kg	93
53)	2-Chloroethyl Vinyl Ether	12.16	63	13942	18.3350 ug/kg	91
54)	4-Methyl-2-Pentanone	12.20	58	29035	21.5476 ug/kg	96
55)	cis-1,3-Dichloropropene	12.50	75	93709	20.7891 ug/kg	100
56)	Dimethyl Disulfide	12.78	94	101791	22.4711 ug/kg	94
59)	Toluene	12.92	91	247646	20.3030 ug/kg	98
60)	Ethyl Methacrylate	13.02	69	71469	21.1386 ug/kg	100
61)	trans-1,3-Dichloropropene	13.10	75	86392	19.6649 ug/kg	98
62)	1,1,2-Trichloroethane	13.33	97	52262	20.3963 ug/kg	96
63)	2-Hexanone	13.25	43	52495	20.5193 ug/kg	98
64)	1,3-Dichloropropane	13.62	76	88405	20.7058 ug/kg	96
65)	Tetrachloroethene	13.75	164	49274	18.8436 ug/kg	98
66)	Dibromochloromethane	14.01	129	65001	18.1515 ug/kg	99
67)	1,2-Dibromoethane	14.28	107	53571	18.8491 ug/kg	100
68)	1-Chlorohexane	14.35	91	75778	21.0671 ug/kg	100
69)	Chlorobenzene	14.77	112	171132	19.9625 ug/kg	96
70)	1,1,1,2-Tetrachloroethane	14.80	131	62080	19.2832 ug/kg	96
71)	Ethylbenzene	14.79	106	93576	21.1875 ug/kg	95
72)	m-,p-Xylene	14.89	106	222100	40.7198 ug/kg	98
73)	o-Xylene	15.46	106	109315	20.8843 ug/kg	100
74)	Styrene	15.49	104	180106	20.2061 ug/kg	98
75)	Bromoform	16.00	173	39845	16.9467 ug/kg	99
76)	Isopropylbenzene	15.88	105	285427	20.3124 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	56665	18.3960 ug/kg	96
80)	1,2,3-Trichloropropane	16.29	110	23191	19.8525 ug/kg	91
81)	trans-1,4-Dichloro-2-Buten	16.33	53	20358	17.2891 ug/kg	90
82)	n-Propylbenzene	16.39	91	330501	20.7061 ug/kg	100
83)	Bromobenzene	16.52	156	72004	19.1089 ug/kg	93
84)	1,3,5-Trimethylbenzene	16.58	105	243261	20.3032 ug/kg	99
85)	2-Chlorotoluene	16.66	91	209662	19.5841 ug/kg	99
86)	4-Chlorotoluene	16.70	91	205369	20.7488 ug/kg	100
87)	a-Methylstyrene	16.98	118	125141	22.9223 ug/kg	98
88)	tert-Butylbenzene	17.04	134	51846	20.6399 ug/kg	98
89)	1,2,4-Trimethylbenzene	17.09	105	242157	19.2991 ug/kg	100
90)	sec-Butylbenzene	17.30	105	307726	19.9415 ug/kg	99
91)	p-Isopropyltoluene	17.46	119	249999	19.1970 ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	138985	18.5590 ug/kg	99
93)	1,4-Dichlorobenzene	17.80	146	142369	19.0165 ug/kg	99
94)	n-Butylbenzene	17.99	91	223292	18.4414 ug/kg	100
95)	1,2-Dichlorobenzene	18.30	146	135532	19.5049 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	15855	17.7743 ug/kg	97
97)	1,2,4-Trichlorobenzene	20.44	180	86505	17.5368 ug/kg	98
98)	Hexachlorobutadiene	20.59	225	43540	16.7449 ug/kg	99
99)	Naphthalene	20.81	128	217141	17.5505 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.11	180	87309	18.2487 ug/kg	98

(#) = qualifier out of range (m) = manual integration
9M972970.D 8260SL.M Mon Feb 29 19:19:23 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022916\9M972970.D Vial: 4
Acq On : 29 Feb 2016 18:56 Operator: FJB/JDS
Sample : WG559151-02 20ug/Kg LCS 8260 Inst : hpms9
Misc : 7,1 STD74900 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 19:19 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

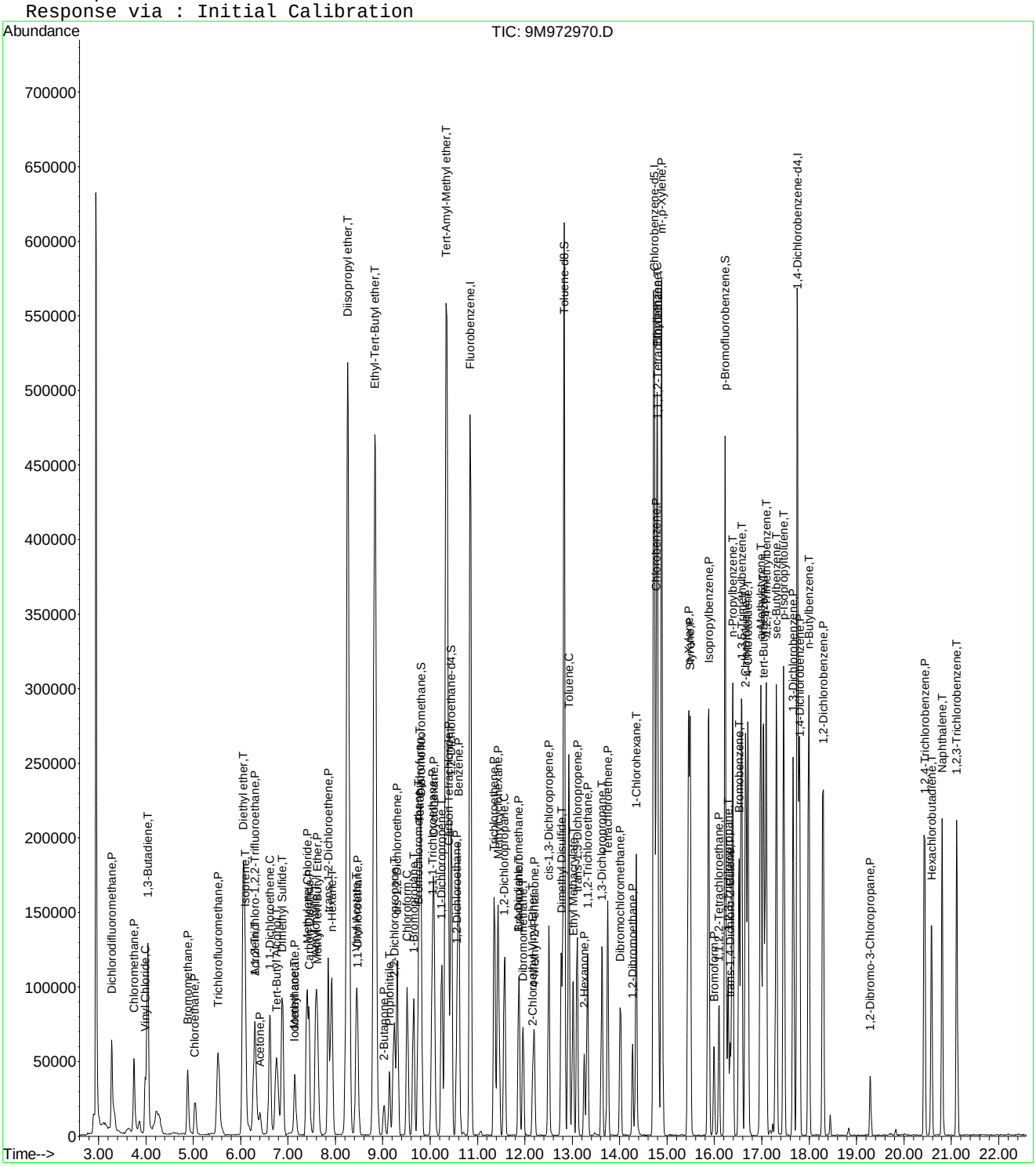

2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT02(5-5.5)260216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 02:18
Collect Date:	02/26/2016 08:35	**Dilution:**	1	**File ID:**	1LM.LM33494
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.36	U	4.72	2.36	1.18

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT02(10-10.5)260216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 02:37
Collect Date:	02/26/2016 08:42	**Dilution:**	1	**File ID:**	1LM.LM33495
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.36	U	4.70	2.36	1.18

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT02(10-10.5)260216FD	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 02:56
Collect Date:	02/26/2016 08:42	**Dilution:**	1	**File ID:**	1LM.LM33496
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.36	U	4.71	2.36	1.18

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT02(15-15.5)260216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 03:15
Collect Date:	02/26/2016 09:00	**Dilution:**	1	**File ID:**	1LM.LM33497
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	78.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.50	U	4.98	2.50	1.25

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT02(22-22.5)260216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 10:51
Collect Date:	02/26/2016 09:15	**Dilution:**	10	**File ID:**	1LM.LM33512
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	81.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	269		47.3	23.6	11.8

Certificate of Analysis

Sample #:	L16021358-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT03(5-5.5)260216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 03:53
Collect Date:	02/26/2016 11:15	**Dilution:**	1	**File ID:**	1LM.LM33499
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.46	U	4.94	2.46	1.23

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT03(10-10.5)260216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 11:10
Collect Date:	02/26/2016 11:17	**Dilution:**	100	**File ID:**	1LM.LM33513
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	87.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2110		437	218	109

Certificate of Analysis

Sample #:	L16021358-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT03(14.5-15)260216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 11:29
Collect Date:	02/26/2016 11:19	**Dilution:**	100	**File ID:**	1LM.LM33514
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	85.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3290		465	232	116

Certificate of Analysis

Sample #:	L16021358-09	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT03(17.5-18)260216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 11:48
Collect Date:	02/26/2016 11:21	**Dilution:**	100	**File ID:**	1LM.LM33515
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	81.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2330		484	242	121

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

MICROBAC

Semivolatile Sample Extract Log

Parameter: Perchlorate
SOP #: HPLC 06
Analyst: ADC / AWE
Spike/Surrogate analyst: ADC
Surrogate #: NA
Spike # A: STD 72686
Ext Solvent: DI-H2O
Ext Solvent: NA
Ext Disk: NA

Matrix: SOILS
Rev #: 07
Date/Time Extracted: ADC 2/29/16 12:30
Witness:

Spike # B: NA
Lot #: NA
Lot #: NA
Lot #: NA

Extraction Work Group: WG 559140
Analytical Work Group: WG 559142
Run ID: R4478798

Pipetter(s): Eppendorf #403
Analytical Balance ID: BAL 014
Reagent: Tubes Lot #: R6134011
Reagent: Sand Lot #: COA 16150
Other: DS Lot #: COA 18071

Color Code
T = Transparent
C = Colored
O = Opaque

	Sample ID	Test Code	pH	Initial Wt / Vol	~~Surrogate~~ IS Amount ADC	Amount Spike	Final Volume	Extract Color	Comments
1	WG -01	6850	NA	5.003	0.250 mL	1.0 mL	50.0 mL	NA	MCP (2mg/kg) (10,000 ug/kg)
2	-02			5.006		NA			Blank
3	-03			5.009		1.0 mL			LCS (2mg/kg)
4	L16021352-01			5.250		NA			RPA
5	WG -05			5.241		1.0 mL			MS
6	-06			5.248		1.0 mL			MSD
7	1357-02			5.210		NA			
8	-03			5.143					
9	-04			5.239					
10	-05			5.120					
11	-06			5.199					
12	L16021358-01			5.165					
13	-02			5.088					
14	-03			5.087					
15	-04			5.129					
16	-05			5.186					
17	-06			5.066					
18	-07			5.222					
19	-08			5.059					
20	-09			5.075					
21									
22									
23									
24									

Reviewed by: [signature] 3-1-16

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe
Calibration Check: 1412 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG559142-01 MCT	~~4,056~~ 9,560	
-02 BLK	6.51	
-03 LCS	6.57	
L16021357-01 208	~~1527~~ 15.27	
MS	18.06	
MSD	14.16	
1357-02	~~25.8~~ 258	
-03	190.2	
-04	182.7	
-05	155.6	
-06	96.2	
L16021358-01	6.58	
-02	19.11	
-03	16.73	
-04	7.87	
-05	28.4	
-06	5.76	
-07	68.9	
-08	37.9	
-09	26.3	

Analyst: Andrew Ewing

Date/Time: 3-1-16 / 1310

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 021716_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG557864 (waters)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 MS/MSD STD: NA

Comments: ICAL WG557856 : Alternate Source STD72685
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM33244	WG557856-01 CCB	1	1		02/17/16 19:12
2	1LM.LM33245	WG557856-02 STD (0.1 ug/L)	1	1	STD72683	02/17/16 19:31
3	1LM.LM33246	WG557856-03 STD (0.2 ug/L)	1	1	STD72683	02/17/16 19:50
4	1LM.LM33247	WG557856-04 STD (0.5 ug/L)	1	1	STD72683	02/17/16 20:08
5	1LM.LM33248	WG557856-05 STD (1.0 ug/L)	1	1	STD72683	02/17/16 20:27
6	1LM.LM33249	WG557856-06 STD (2.0 ug/L)	1	1	STD72683	02/17/16 20:46
7	1LM.LM33250	WG557856-07 STD (5.0 ug/L)	1	1	STD72683	02/17/16 21:05
8	1LM.LM33251	WG557856-08 STD (10 ug/L)	1	1	STD72683	02/17/16 21:24
9	1LM.LM33252	WG557856-09 SSCV (1.0 ug/L)	1	1	STD72685	02/17/16 21:43
10	1LM.LM33253	WG557868-01 CCB	1	1		02/17/16 22:02
11	1LM.LM33254	WG557868-02 CCV (1.0ug/L)	1	1	STD72683	02/17/16 22:21
12	1LM.LM33255	WG557864-05 MRL (0.2ug/L)	1	1	STD72683	02/17/16 22:40
13	1LM.LM33256	WG557864-01 MCT (0.2ug/L)	1	1	STD72685	02/17/16 22:59
14	1LM.LM33257	WG557864-02 BLANK	1	1		02/17/16 23:18
15	1LM.LM33258	WG557864-03 LCS (0.2ug/L)	1	1	STD72685	02/17/16 23:37
16	1LM.LM33259	WG557864-04 LCS2 (0.2ug/L)	1	1	STD72685	02/17/16 23:56
17	1LM.LM33260	L16020819-01 (1000x) (NR)	1	1000		02/18/16 00:15
18	1LM.LM33261	L16020819-01 (100x) (NR)	1	100		02/18/16 00:34
19	1LM.LM33262	L16020819-01 (10x) (NR)	1	10		02/18/16 00:53
20	1LM.LM33263	L16020819-01 Neat	1	1		02/18/16 01:11
21	1LM.LM33264	Blank Rinse	1	1		02/18/16 01:30
22	1LM.LM33265	Blank Rinse	1	1		02/18/16 01:49
23	1LM.LM33266	WG557868-03 CCV (1.0ug/L)	1	1	STD72683	02/18/16 02:08
24	1LM.LM33267	WG557864-06 MRL (0.2ug/L)	1	1	STD72683	02/18/16 02:27
25	1LM.LM33268	WG557868-04 CCB	1	1		02/18/16 02:46

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17	X	1	Analyzed too dilute	
	L16020819-01 (1000x) (NR) : Results from this sample at this dilution are not needed.			
18	X	1	Analyzed too dilute	
	L16020819-01 (100x) (NR) : Results from this sample at this dilution are not needed.			
19	X	1	Analyzed too dilute	

Page: 1 Approved: 18-FEB-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 021716_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG557864 (waters)

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 NA

Comments

Seq.	Rerun	Dil.	Reason	Analytes
	L16020819-01 (10x) (NR) : Results from this sample at this dilution are not needed.			

Page: 2 Approved: 18-FEB-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 022916_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015 (Water) WG559142 (Soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 MS/MSD STD: STD72685

Comments: L16021262s were analyzed initially at dilutions based on historical data. Fraction 03 required further dilution to obtain results within the calibration range. Seq No.s 4 through 26 need re-analyzed due to CCV failure.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM33446	WG559066-01 CCB	1	1		02/29/16 11:09
2	1LM.LM33447	WG559066-02 CCV (1.0ug/L)	1	1	STD72683	02/29/16 11:28
3	1LM.LM33448	WG559015-05 MRL (0.2ug/L)	1	1	STD72683	02/29/16 11:47
4	1LM.LM33449	WG559015-01 MCT (0.2ug/L)	1	1	STD72685	02/29/16 12:06
5	1LM.LM33450	WG559015-02 BLANK	1	1		02/29/16 12:25
6	1LM.LM33451	WG559015-03 LCS (0.2ug/L)	1	1	STD72685	02/29/16 12:44
7	1LM.LM33452	WG559015-04 LCS2 (0.2ug/L)	1	1	STD72685	02/29/16 13:02
8	1LM.LM33453	L16021060-01 ADC	1	1	STD72685	02/29/16 13:21
9	1LM.LM33454	L16021060-02 ADC	1	1	STD72685	02/29/16 13:40
10	1LM.LM33455	L16021060-03 ADC	1	1	STD72685	02/29/16 13:59
11	1LM.LM33456	L16021060-04 ADC	1	1	STD72685	02/29/16 14:18
12	1LM.LM33457	L16021262-01 (20x)	1	20		02/29/16 14:37
13	1LM.LM33458	L16021262-02 (5000x)	1	5000		02/29/16 14:56
14	1LM.LM33459	WG559066-03 CCV (1.0ug/L)	1	1	STD72683	02/29/16 15:15
15	1LM.LM33460	WG559015-06 MRL (0.2ug/L)	1	1	STD72683	02/29/16 15:34
16	1LM.LM33461	WG559066-04 CCB	1	1		02/29/16 15:53
17	1LM.LM33462	L16021262-03 (20X)	1	20		02/29/16 16:12
18	1LM.LM33463	L16021262-04 (2000X)	1	2000		02/29/16 16:31
19	1LM.LM33464	L16021262-05 (1000X)	1	1000		02/29/16 16:50
20	1LM.LM33465	L16021262-06 (10,000X)	1	10000		02/29/16 17:09
21	1LM.LM33466	L16021262-07 (10,000X)	1	10000		02/29/16 17:28
22	1LM.LM33467	L16021262-08 (5000X)	1	5000		02/29/16 17:47
23	1LM.LM33468	L16021262-09 (5000X)	1	5000		02/29/16 18:06
24	1LM.LM33469	L16021262-10 (100,000X)	1	100000		02/29/16 18:24
25	1LM.LM33470	L16021262-11 (10,000X)	1	10000		02/29/16 18:43
26	1LM.LM33471	L16021262-12 (10,000X)	1	10000		02/29/16 19:02
27	1LM.LM33472	WG559066-05 CCV (1.0ug/L)	1	1	STD72683	02/29/16 19:21
28	1LM.LM33473	WG559015-07 MRL (0.2ug/L)	1	1	STD72683	02/29/16 19:40
29	1LM.LM33474	WG559066-06 CCB	1	1		02/29/16 19:59
30	1LM.LM33475	L16021262-13 (10,000X)	1	10000		02/29/16 20:18
31	1LM.LM33476	L16021262-14 (10,000X)	1	10000		02/29/16 20:37
32	1LM.LM33477	WG559066-07 CCV (1.0ug/L)	1	1	STD72683	02/29/16 20:56
75	1LM.LM33478	WG559142-07 MRL (0.2ug/L)	7	1	STD72683	02/29/16 21:15

Page: 1 Approved: 01-MAR-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 022916_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015 (Water) WG559142 (Soils)

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM33479	WG559066-08 CCB	1	1		02/29/16 21:34
35	1LM.LM33480	WG559142-01 MCT (2.0ug/kg)	7	1	STD72685	02/29/16 21:53
36	1LM.LM33481	WG559142-02 BLANK	7	1		02/29/16 22:12
37	1LM.LM33482	WG559142-03 LCS (2.0ug/kg)	7	1	STD72685	02/29/16 22:31
76	1LM.LM33483	L16021357-01 REF	7	1		02/29/16 22:50
39	1LM.LM33484	L16021357-01 MS	7	1		02/29/16 23:09
40	1LM.LM33485	L16021357-01 MSD	7	1		02/29/16 23:27
41	1LM.LM33486	L16021357-02	7	1		02/29/16 23:46
42	1LM.LM33487	L16021357-03	7	1		03/01/16 00:05
43	1LM.LM33488	L16021357-04	7	1		03/01/16 00:24
44	1LM.LM33489	L16021357-05	7	1		03/01/16 00:43
45	1LM.LM33490	WG559066-09 CCV (1.0ug/L)	1	1	STD72685	03/01/16 01:02
46	1LM.LM33491	WG559142-08 MRL (2.0ug/kg)	7	1	STD72685	03/01/16 01:21
47	1LM.LM33492	WG559066-10 CCB	1	1		03/01/16 01:40
48	1LM.LM33493	L16021357-06	7	1		03/01/16 01:59
49	1LM.LM33494	L16021358-01	7	1		03/01/16 02:18
50	1LM.LM33495	L16021358-02	7	1		03/01/16 02:37
51	1LM.LM33496	L16021358-03	7	1		03/01/16 02:56
52	1LM.LM33497	L16021358-04	7	1		03/01/16 03:15
53	1LM.LM33498	L16021358-05	7	1		03/01/16 03:34
54	1LM.LM33499	L16021358-06	7	1		03/01/16 03:53
55	1LM.LM33500	L16021358-07	7	1		03/01/16 04:12
56	1LM.LM33501	L16021358-08	7	1		03/01/16 04:30
57	1LM.LM33502	L16021358-09	7	1		03/01/16 04:49
58	1LM.LM33503	WG559066-11 CCV (1.0ug/L)	1	1	STD72685	03/01/16 05:08
59	1LM.LM33504	WG559142-09 MRL (2.0ug/kg)	7	1	STD72685	03/01/16 05:27
60	1LM.LM33505	WG559066-12 CCB	1	1		03/01/16 05:46
61	1LM.LM33506	WG559015-09 MRL (0.2ug/L)	1	1	STD72683	03/01/16 08:58
62	1LM.LM33507	L16021262-03 (100X)	1	100		03/01/16 09:17
63	1LM.LM33508	WG559066-13 CCV (1.0ug/L)	1	1	STD72683	03/01/16 09:35
64	1LM.LM33509	WG559015-10 MRL (0.2ug/L)	1	1	STD72683	03/01/16 09:54
65	1LM.LM33510	WG559066-14 CCB	1	1		03/01/16 10:13
66	1LM.LM33511	L16021357-06 (10X)	7	10		03/01/16 10:32
67	1LM.LM33512	L16021358-05 (10X)	7	10		03/01/16 10:51
68	1LM.LM33513	L16021358-07 (100X)	7	100		03/01/16 11:10
69	1LM.LM33514	L16021358-08 (100X)	7	100		03/01/16 11:29

Page: 2 Approved: 01-MAR-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 022916_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015 (Water) WG559142 (Soils)

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
70	1LM.LM33515	L16021358-09 (100X)	7	100		03/01/16 11:48
71	1LM.LM33516	WG559066-15 CCV (1.0ug/L)	1	1	STD72685	03/01/16 12:07
72	1LM.LM33517	WG559142-10 MRL (2.0ug/kg)	7	1	STD72685	03/01/16 12:26
73	1LM.LM33518	WG559066-16 CCB	1	1		03/01/16 12:45

Comments

Seq.	Rerun	Dil.	Reason	Analytes
14				
	WG559066-03 CCV fails high. Affected samples will need re-analyzed.			
30				
	L16021262-13 not reporting per WTD.			
31				
	L16021262-14 not reporting per WTD.			
48	X	10	Over Calibration Range	perchlorate
	L16021357-06			
53	X	10	Over Calibration Range	Perchlorate
	L16021358-05			
55	X	100	Over Calibration Range	Perchlorate
	L16021358-07			
56	X	100	Over Calibration Range	Perchlorate
	L16021358-08			
57	X	100	Over Calibration Range	Perchlorate
	L16021358-09			

Page: 3 Approved: 01-MAR-16

Microbac Laboratories Inc.

Data Checklist

Date: 17-FEB-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG557856
Runlog ID: 73366
Analytical Workgroups: L16020819

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 18-FEB-2016 John Richards

Secondary Reviewer: 18-FEB-2016 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-18-2016 16:36:00

Microbac Laboratories Inc.

Data Checklist

Date: 29-FEB-2016
Analyst: WTD
Analyst: ADC
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 73569
Analytical Workgroups: L16021262,L16021060,L16021357,L16021358

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	WTD
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MES

Primary Reviewer: 01-MAR-2016

Secondary Reviewer: 01-MAR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-02-2016 08:38:17

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG559142

Login Number: L16021358

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18DPT02(5-5.5)260216	01	02/26/16					02/29/2016	3.2	28		03/01/16	.6	28	
18DPT02(10-10.5)260216	02	02/26/16					02/29/2016	3.2	28		03/01/16	.6	28	
18DPT02(10-10.5)260216FD	03	02/26/16					02/29/2016	3.2	28		03/01/16	.6	28	
18DPT02(15-15.5)260216	04	02/26/16					02/29/2016	3.1	28		03/01/16	.6	28	
18DPT02(22-22.5)260216	05	02/26/16					02/29/2016	3.1	28		03/01/16	.9	28	
18DPT03(5-5.5)260216	06	02/26/16					02/29/2016	3.1	28		03/01/16	.6	28	
18DPT03(10-10.5)260216	07	02/26/16					02/29/2016	3.1	28		03/01/16	.9	28	
18DPT03(14.5-15)260216	08	02/26/16					02/29/2016	3	28		03/01/16	1	28	
18DPT03(17.5-18)260216	09	02/26/16					02/29/2016	3	28		03/01/16	1	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4653190
Report generated 03/02/2016 08:27

METHOD BLANK SUMMARY

Login Number: L16021358
Blank File ID: 1LM.LM33481
Prep Date: 02/29/16 12:30
Analyzed Date: 02/29/16 22:12
Analyst: WTD

Work Group: WG559142
Blank Sample ID: WG559142-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG559142-07	1LM.LM33478	02/29/16 21:15	01
MCT	WG559142-01	1LM.LM33480	02/29/16 21:53	01
LCS	WG559142-03	1LM.LM33482	02/29/16 22:31	01
QCMRL	WG559142-08	1LM.LM33491	03/01/16 01:21	01
18DPT02(5-5.5)260216	L16021358-01	1LM.LM33494	03/01/16 02:18	01
18DPT02(10-10.5)260216	L16021358-02	1LM.LM33495	03/01/16 02:37	01
18DPT02(10-10.5)260216FD	L16021358-03	1LM.LM33496	03/01/16 02:56	01
18DPT02(15-15.5)260216	L16021358-04	1LM.LM33497	03/01/16 03:15	01
18DPT03(5-5.5)260216	L16021358-06	1LM.LM33499	03/01/16 03:53	01
QCMRL	WG559142-09	1LM.LM33504	03/01/16 05:27	01
18DPT02(22-22.5)260216	L16021358-05	1LM.LM33512	03/01/16 10:51	DL01
18DPT03(10-10.5)260216	L16021358-07	1LM.LM33513	03/01/16 11:10	DL01
18DPT03(14.5-15)260216	L16021358-08	1LM.LM33514	03/01/16 11:29	DL01
18DPT03(17.5-18)260216	L16021358-09	1LM.LM33515	03/01/16 11:48	DL01
QCMRL	WG559142-10	1LM.LM33517	03/01/16 12:26	01

Report Name: BLANK_SUMMARY
PDF File ID: 4653191
Report generated 03/02/2016 08:27

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16021358 Prep Date: 02/29/16 12:30 Sample ID: WG559142-02
Instrument ID: LCMS1 Run Date: 02/29/16 22:12 Prep Method: 6850
File ID: 1LM.LM33481 Analyst: WTD Method: 6850
Workgroup (AAB#): WG559142 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-17-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.999	4.00	0.999	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4653192
02-MAR-2016 08:27

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16021358 Run Date: 02/29/2016 Sample ID: WG559142-03
Instrument ID: LCMS1 Run Time: 22:31 Prep Method: 6850
File ID: 1LM.LM33482 Analyst: WTD Method: 6850
Workgroup (AAB#): WG559142 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD72685 Cal ID: LCMS1-17-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	2.00	2.07	104	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4653194
Report generated: 03/02/2016 08:27

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16021358
Analytical Method: 6850
ICAL Workgroup: WG557856

Instrument ID: LCMS1
Initial Calibration Date: 17-FEB-16 21:24
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.628	7.83	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4653197
Report generated 03/02/2016 08:27

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16021358

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 17-FEB-16 21:24

Column ID: F

Analyte	WG557856-02			WG557856-03			WG557856-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	18800.0000	1.692	0.200	38700.0000	1.755	0.500	91400.0000	1.644

INT_CAL - Modified 03/06/2008
PDF File ID: 4653197
Report generated 03/02/2016 08:27

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16021358

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 17-FEB-16 21:24

Column ID: F

Analyte	WG557856-05			WG557856-06			WG557856-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	178000.000	1.625	2.00	350000.000	1.604	5.00	826000.000	1.554

INT_CAL - Modified 03/06/2008
PDF File ID: 4653197
Report generated 03/02/2016 08:27

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16021358
Analytical Method: 6850

Instrument ID: LCMS1
Initial Calibration Date: 17-FEB-16 21:24
Column ID: F

Analyte	WG557856-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.521

INT_CAL - Modified 03/06/2008
PDF File ID: 4653197
Report generated 03/02/2016 08:27

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16021358 Run Date: 02/17/2016 Sample ID: WG557856-09
Instrument ID: LCMS1 Run Time: 21:43 Method: 6850
File ID: 1LM.LM33252 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG557856 Cal ID: LCMS1 - 17-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	1.05	ug/L	1.65	5.00	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4653198
Report generated 03/02/2016 08:28

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16021358
Run Date: 02/29/2016
Sample ID: WG559066-08
Instrument ID: LCMS1
Run Time: 21:34
Method: 6850
File ID: 1LM.LM33479
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG559142
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4653201
Report generated 03/02/2016 08:28

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16021358
Run Date: 03/01/2016
Sample ID: WG559066-10
Instrument ID: LCMS1
Run Time: 01:40
Method: 6850
File ID: 1LM.LM33492
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG559142
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4653201
Report generated 03/02/2016 08:28

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16021358
Run Date: 03/01/2016
Sample ID: WG559066-12
Instrument ID: LCMS1
Run Time: 05:46
Method: 6850
File ID: 1LM.LM33505
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG559142
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4653201
Report generated 03/02/2016 08:28

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16021358
Run Date: 03/01/2016
Sample ID: WG559066-14
Instrument ID: LCMS1
Run Time: 10:13
Method: 6850
File ID: 1LM.LM33510
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG559142
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4653201
Report generated 03/02/2016 08:28

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16021358
Run Date: 03/01/2016
Sample ID: WG559066-16
Instrument ID: LCMS1
Run Time: 12:45
Method: 6850
File ID: 1LM.LM33518
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG559142
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4653201
Report generated 03/02/2016 08:28

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021358 Run Date: 02/29/2016 Sample ID: WG559066-07
Instrument ID: LCMS1 Run Time: 20:56 Method: 6850
File ID: 1LM.LM33477 Analyst: WTD QC Key: DOD4
Workgroup (AAB#): WG559142 Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.06	ug/kg	1.66	6.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4653199
Report generated 03/02/2016 08:28

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021358
Run Date: 03/01/2016
Sample ID: WG559066-09
Instrument ID: LCMS1
Run Time: 01:02
Method: 6850
File ID: 1LM.LM33490
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG559142
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/kg	1.61	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4653199
Report generated 03/02/2016 08:28

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021358
Run Date: 03/01/2016
Sample ID: WG559066-11
Instrument ID: LCMS1
Run Time: 05:08
Method: 6850
File ID: 1LM.LM33503
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG559142
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/kg	1.62	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4653199
Report generated 03/02/2016 08:28

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021358
Run Date: 03/01/2016
Sample ID: WG559066-13
Instrument ID: LCMS1
Run Time: 09:35
Method: 6850
File ID: 1LM.LM33508
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG559142
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/kg	1.62	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4653199
Report generated 03/02/2016 08:28

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021358
Run Date: 03/01/2016
Sample ID: WG559066-15
Instrument ID: LCMS1
Run Time: 12:07
Method: 6850
File ID: 1LM.LM33516
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG559142
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.05	ug/kg	1.65	5.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4653199
Report generated 03/02/2016 08:28

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16021358 Run Date: 02/29/2016 Sample ID: WG559142-07

Instrument ID: LCMS1 Run Time: 21:15 Prep Method: 6850

File ID: 1LM.LM33478 Analyst: WTD Method: 6850

Workgroup (AAB#): WG559142 Matrix: Soil Units: ug/kg

Contract #: Cal ID: LCMS1-17-FEB-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.18	109	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4653195
Report generated 03/02/2016 08:27

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16021358 Run Date: 03/01/2016 Sample ID: WG559142-08
Instrument ID: LCMS1 Run Time: 01:21 Prep Method: 6850
File ID: 1LM.LM33491 Analyst: WTD Method: 6850
Workgroup (AAB#): WG559142 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-17-FEB-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.02	101	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4653195
Report generated 03/02/2016 08:27

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16021358 Run Date: 03/01/2016 Sample ID: WG559142-09
Instrument ID: LCMS1 Run Time: 05:27 Prep Method: 6850
File ID: 1LM.LM33504 Analyst: WTD Method: 6850
Workgroup (AAB#): WG559142 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-17-FEB-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.05	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4653195
Report generated 03/02/2016 08:27

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16021358 Run Date: 03/01/2016 Sample ID: WG559142-10
Instrument ID: LCMS1 Run Time: 12:26 Prep Method: 6850
File ID: 1LM.LM33517 Analyst: WTD Method: 6850
Workgroup (AAB#): WG559142 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-17-FEB-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.07	104	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4653195
Report generated 03/02/2016 08:27

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16021358
Instrument ID: LCMS1
Workgroup (AAB#): WG559142

ICAL CCV Number: WG557856-05
CAL ID: LCMS1-17-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1
WG557856	NA	NA	542000
Upper Limit	NA	NA	813000
Lower Limit	NA	NA	271000
L16021358-01	1.00	01	506000
L16021358-02	1.00	01	523000
L16021358-03	1.00	01	504000
L16021358-04	1.00	01	500000
L16021358-05	10.0	DL01	453000
L16021358-06	1.00	01	522000
L16021358-07	100	DL01	455000
L16021358-08	100	DL01	448000
L16021358-09	100	DL01	450000
WG559142-02	1.00	01	515000
WG559142-03	1.00	01	508000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4653205
Report generated 03/02/2016 08:28

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**	6850	**Samplenum:**	L16021358-01
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33494
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	03/01/2016 02:18	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	7110	2890	2.46	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**	6850	**Samplenum:**	L16021358-02
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33495
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	03/01/2016 02:37	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	3430	1120	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**	6850	**Samplenum:**	L16021358-03
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33496
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	03/01/2016 02:56	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	3470	1960	1.77	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**	6850	**Samplenum:**	L16021358-04
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33497
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	03/01/2016 03:15	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	2530	1450	1.74	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**	6850	**Samplenum:**	L16021358-05
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33512
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	03/01/2016 10:51	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	321000	103000	3.12	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**	6850	**Samplenum:**	L16021358-06
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33499
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	03/01/2016 03:53	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	11100	4190	2.65	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**	6850	**Samplenum:**	L16021358-07
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33513
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	03/01/2016 11:10	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	273000	88600	3.08	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**	6850	**Samplenum:**	L16021358-08
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33514
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	03/01/2016 11:29	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	393000	129000	3.05	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**	6850	**Samplenum:**	L16021358-09
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33515
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	03/01/2016 11:48	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	270000	88500	3.05	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**		**Samplenum:**	WG557856-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33245
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	02/17/2016 19:31	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	18800	6990	2.69	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**		**Samplenum:**	WG557856-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33246
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	02/17/2016 19:50	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38700	14200	2.73	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**		**Samplenum:**	WG557856-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33247
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	02/17/2016 20:08	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	91400	32900	2.78	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**		**Samplenum:**	WG557856-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33248
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	02/17/2016 20:27	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	178000	63900	2.79	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**		**Samplenum:**	WG557856-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33249
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	02/17/2016 20:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	350000	126000	2.78	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**		**Samplenum:**	WG557856-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33250
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	02/17/2016 21:05	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	826000	293000	2.82	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**		**Samplenum:**	WG557856-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33251
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	02/17/2016 21:24	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	562000	2.72	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**		**Samplenum:**	WG557856-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33252
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	02/17/2016 21:43	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	179000	63600	2.81	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**		**Samplenum:**	WG559066-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33474
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	02/29/2016 19:59	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	890	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**		**Samplenum:**	WG559066-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33477
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	02/29/2016 20:56	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	176000	58300	3.02	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**		**Samplenum:**	WG559066-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33479
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	02/29/2016 21:34	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	840	230	3.65	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**		**Samplenum:**	WG559066-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33490
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	03/01/2016 01:02	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	173000	55900	3.09	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**		**Samplenum:**	WG559066-10
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33492
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	03/01/2016 01:40	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	490	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**		**Samplenum:**	WG559066-11
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33503
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	03/01/2016 05:08	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	163000	53400	3.05	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**		**Samplenum:**	WG559066-12
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33505
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	03/01/2016 05:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**		**Samplenum:**	WG559066-13
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33508
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	03/01/2016 09:35	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	156000	51400	3.04	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**		**Samplenum:**	WG559066-14
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33510
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	03/01/2016 10:13	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**		**Samplenum:**	WG559066-15
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33516
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	03/01/2016 12:07	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	162000	53000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**		**Samplenum:**	WG559066-16
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33518
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	03/01/2016 12:45	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1320	1400	0.943	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**	6850	**Samplenum:**	WG559142-01
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33480
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	02/29/2016 21:53	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	33200	11500	2.89	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**	6850	**Samplenum:**	WG559142-02
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33481
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	02/29/2016 22:12	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	776	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**	6850	**Samplenum:**	WG559142-03
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33482
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	02/29/2016 22:31	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35800	12800	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**	6850	**Samplenum:**	WG559142-07
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33478
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	02/29/2016 21:15	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	39100	13500	2.90	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**	6850	**Samplenum:**	WG559142-08
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33491
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	03/01/2016 01:21	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36300	12600	2.88	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**	6850	**Samplenum:**	WG559142-09
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33504
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	03/01/2016 05:27	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35000	11800	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**	6850	**Samplenum:**	WG559142-10
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33517
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	03/01/2016 12:26	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34300	11800	2.91	2.3	3.8	

2.2.1.3 Sample Data

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Data File	LM33494.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 2:18:22 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021358-01	**Injection Vial**	37.00
Data File	LM33494.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 2:18:22 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	L16021358-01	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.060e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.110e+03	9.98	N/A	0.024
Perchlorate conf	2.890e+03	9.98	N/A	0.0289

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

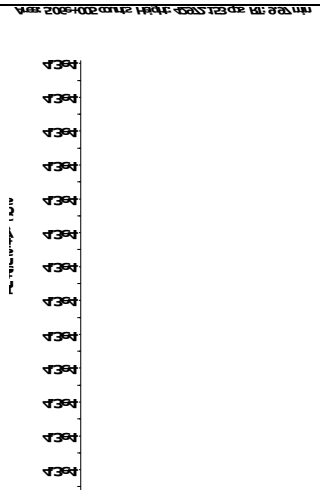

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.98 (9.94) min Calculated conc: 0.024 ng/ml Area Ratio: 0.014 Sample Type: (Unknown)	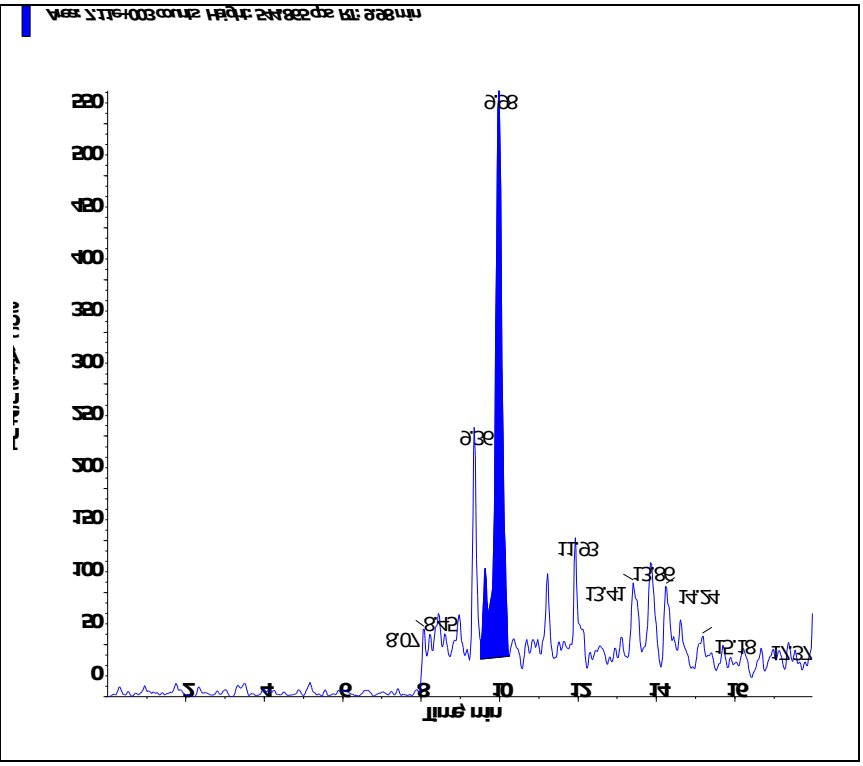
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.98 (9.92) min Calculated conc: 0.0289 ng/ml Area Ratio: 0.006 Sample Type: (Unknown)	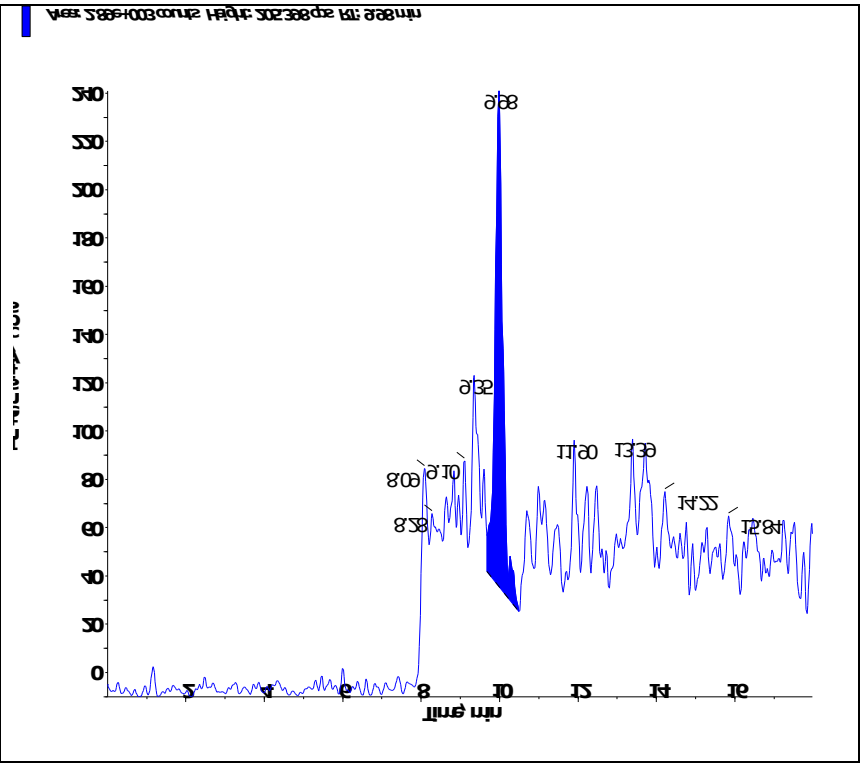

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Data File	LM33495.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 2:37:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021358-02	**Injection Vial**	38.00
Data File	LM33495.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 2:37:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	L16021358-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.230e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.430e+03	9.99	N/A	< 0
Perchlorate conf	1.120e+03	9.95	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

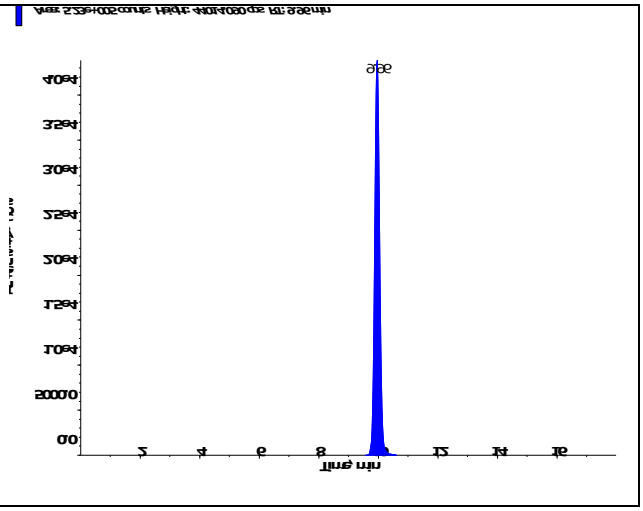

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.99 (9.94) min Calculated conc: < 0 ng/ml Area Ratio: 0.007 Sample Type: (Unknown)	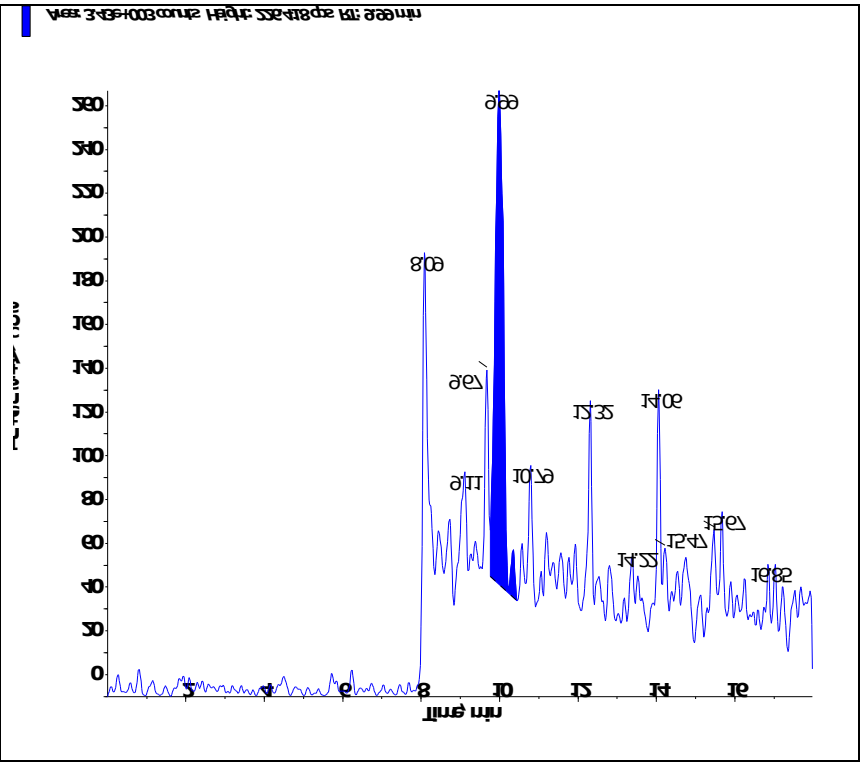
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.95 (9.92) min Calculated conc: < 0 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	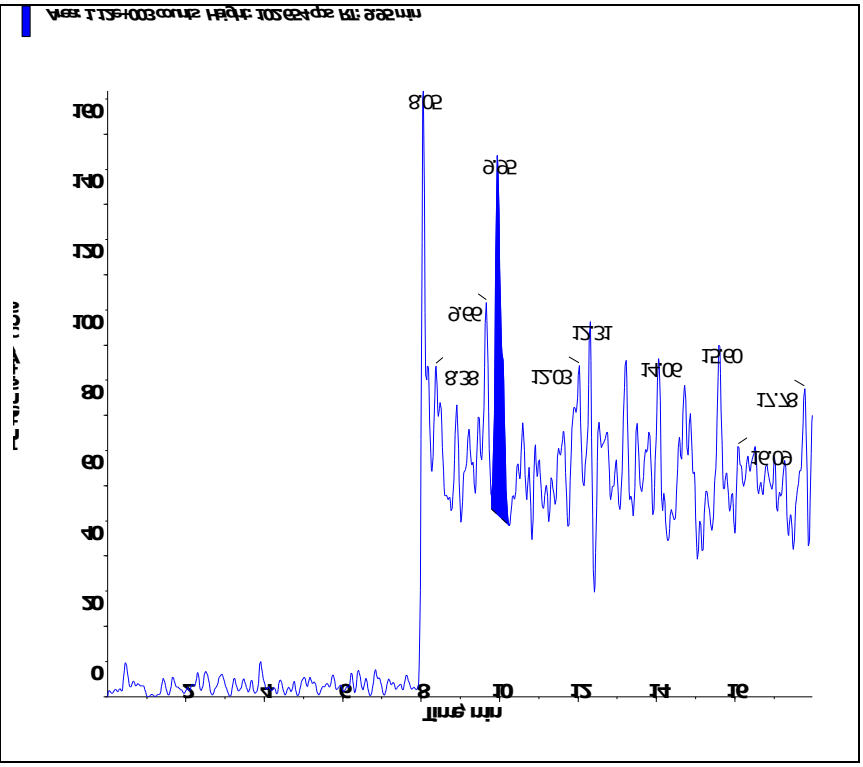

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Data File	LM33496.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 2:56:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021358-03	**Injection Vial**	39.00
Data File	LM33496.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 2:56:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	L16021358-03	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.040e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.470e+03	9.97	N/A	0.0008
Perchlorate conf	1.960e+03	9.95	N/A	0.0126

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

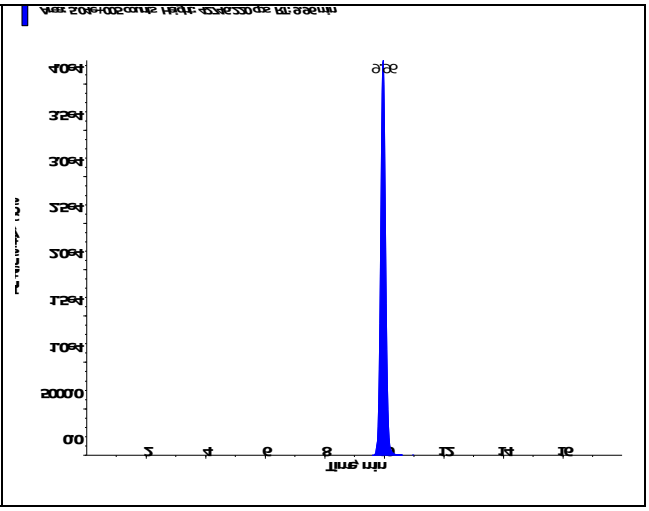

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.97 (9.94) min Calculated conc: 0.0008 ng/ml Area Ratio: 0.007 Sample Type: (Unknown)	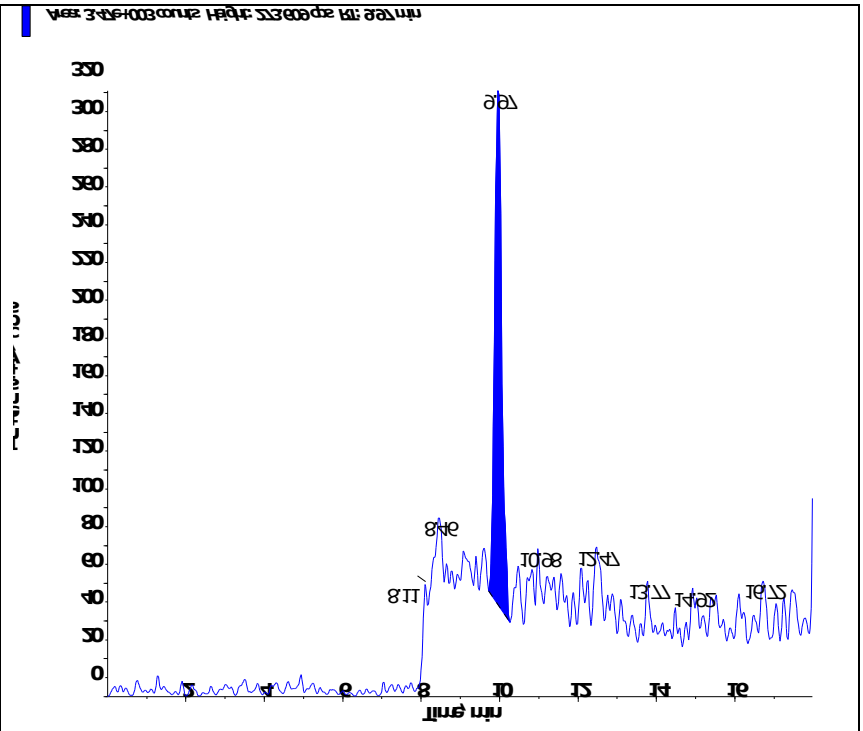
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.95 (9.92) min Calculated conc: 0.0126 ng/ml Area Ratio: 0.004 Sample Type: (Unknown)	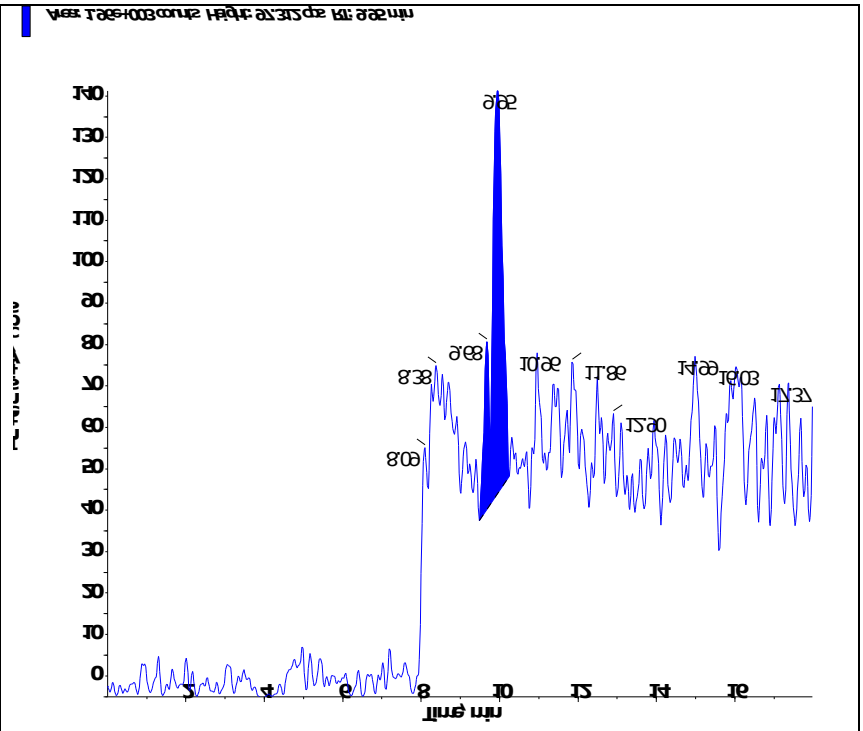

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Data File	LM33497.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 3:15:14 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021358-04	**Injection Vial**	40.00
Data File	LM33497.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 3:15:14 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	L16021358-04	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.530e+03	9.97	N/A	< 0
Perchlorate conf	1.450e+03	9.96	N/A	0.0037

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

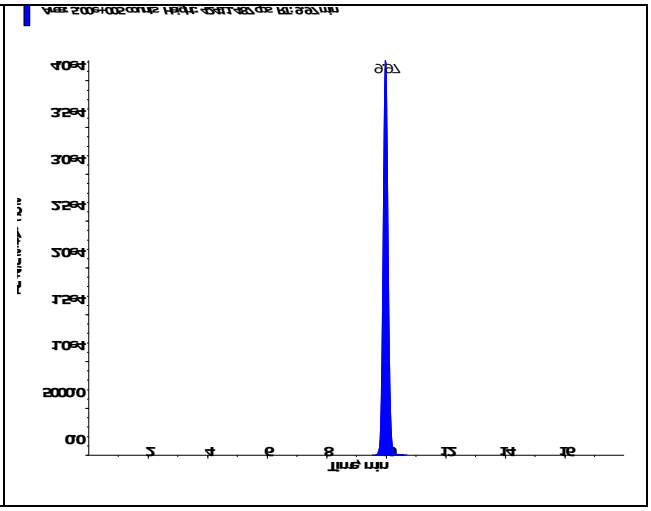

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.97 (9.94) min Calculated conc: < 0 ng/ml Area Ratio: 0.005 Sample Type: (Unknown)	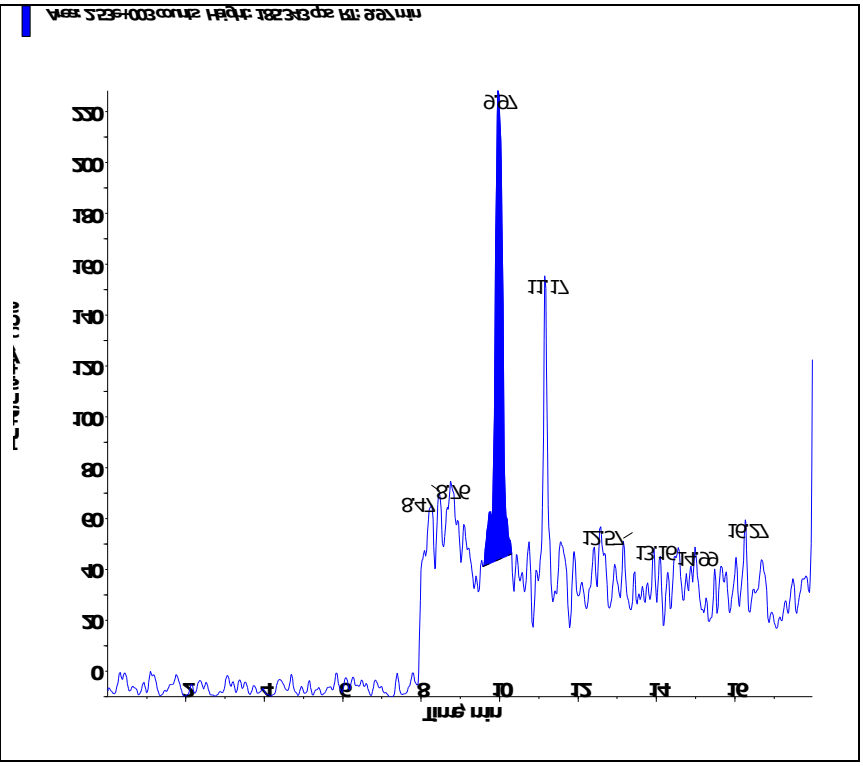
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.96 (9.92) min Calculated conc: 0.0037 ng/ml Area Ratio: 0.003 Sample Type: (Unknown)	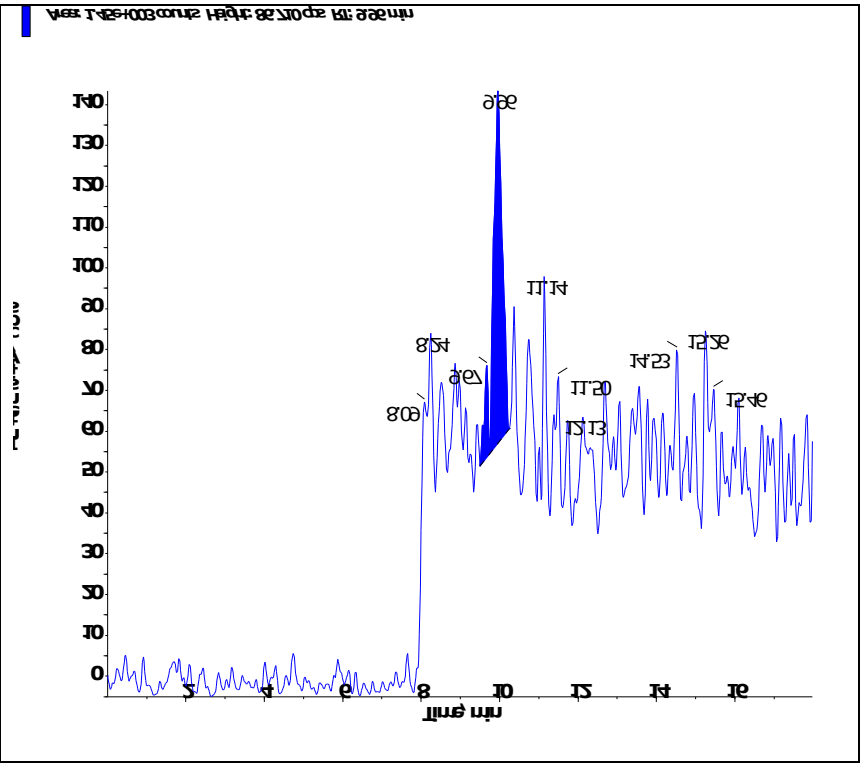

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Data File	LM33512.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 10:51:44 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021358-05 (10X)	**Injection Vial**	48.00
Data File	LM33512.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 10:51:44 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	L16021358-05	**Dilution Factor**	1.00
Sample Comment	710.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.530e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.210e+05	9.97	N/A	2.28
Perchlorate conf	1.030e+05	9.96	N/A	2.02

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

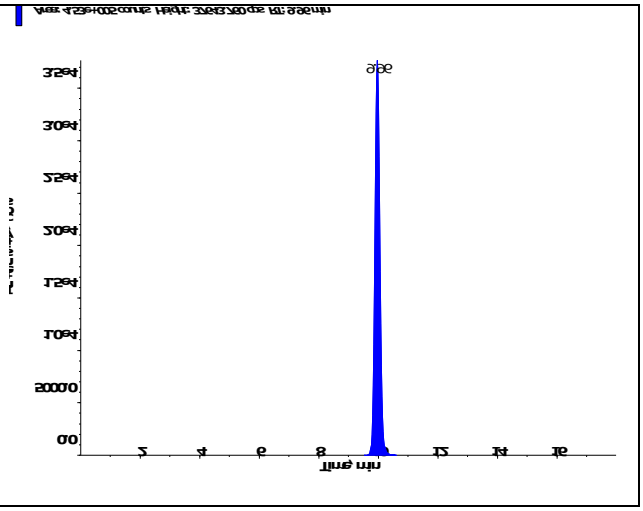

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.97 (9.94) min Calculated conc: 2.28 ng/ml Area Ratio: 0.709 Sample Type: (Unknown)	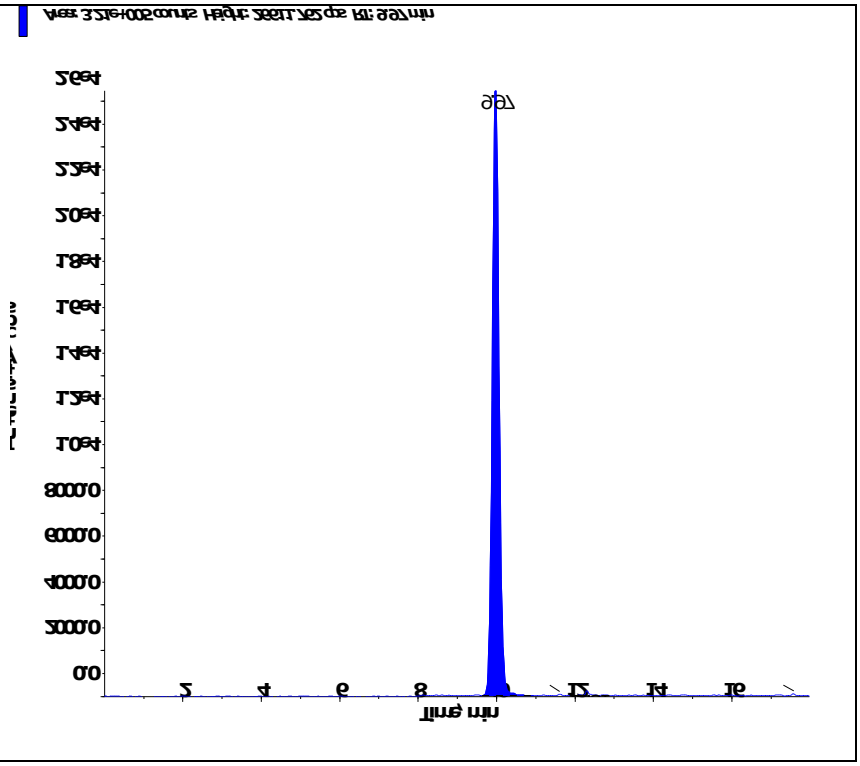
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.96 (9.92) min Calculated conc: 2.02 ng/ml Area Ratio: 0.228 Sample Type: (Unknown)	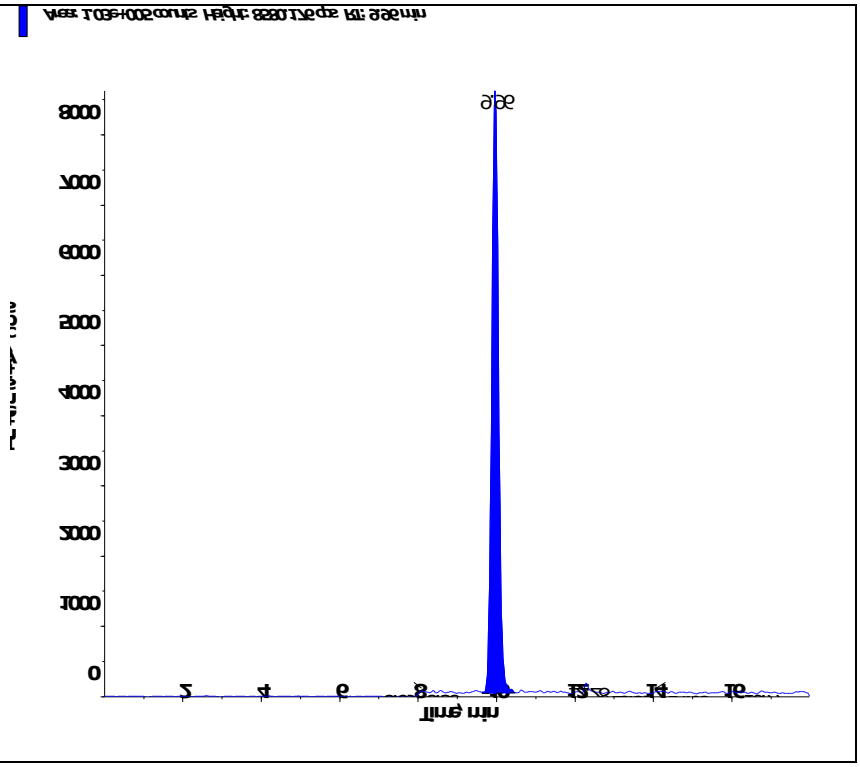

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Data File	LM33499.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 3:53:07 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021358-06	**Injection Vial**	42.00
Data File	LM33499.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 3:53:07 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	L16021358-06	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.220e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.110e+04	9.98	N/A	0.0474
Perchlorate conf	4.190e+03	9.98	N/A	0.0496

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

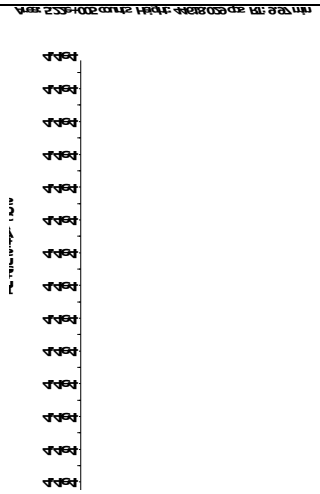

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.98 (9.94) min Calculated conc: 0.0474 ng/ml Area Ratio: 0.021 Sample Type: (Unknown)	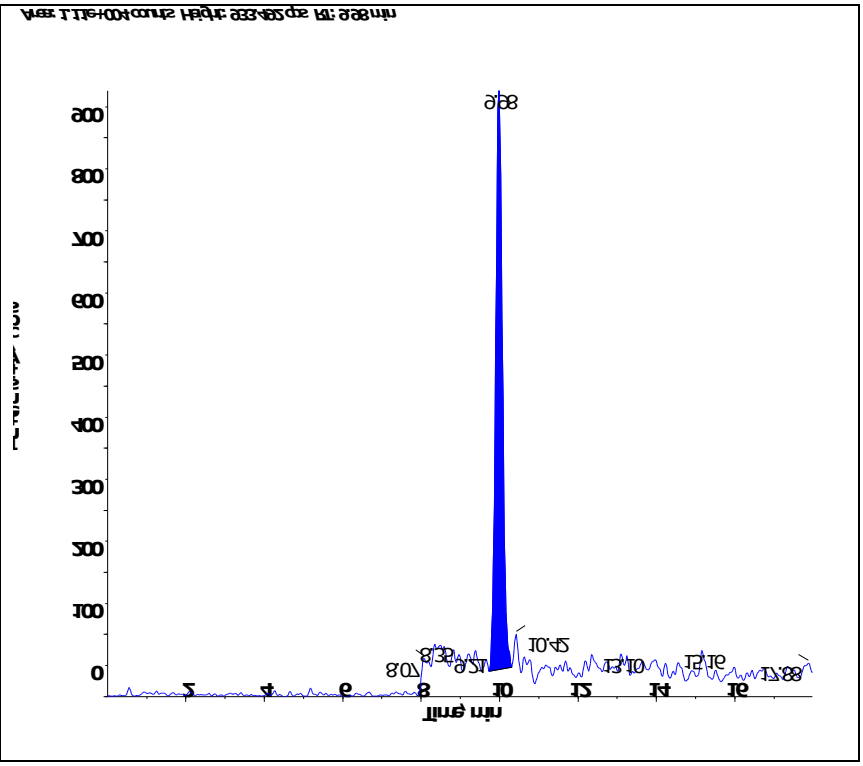
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.98 (9.92) min Calculated conc: 0.0496 ng/ml Area Ratio: 0.008 Sample Type: (Unknown)	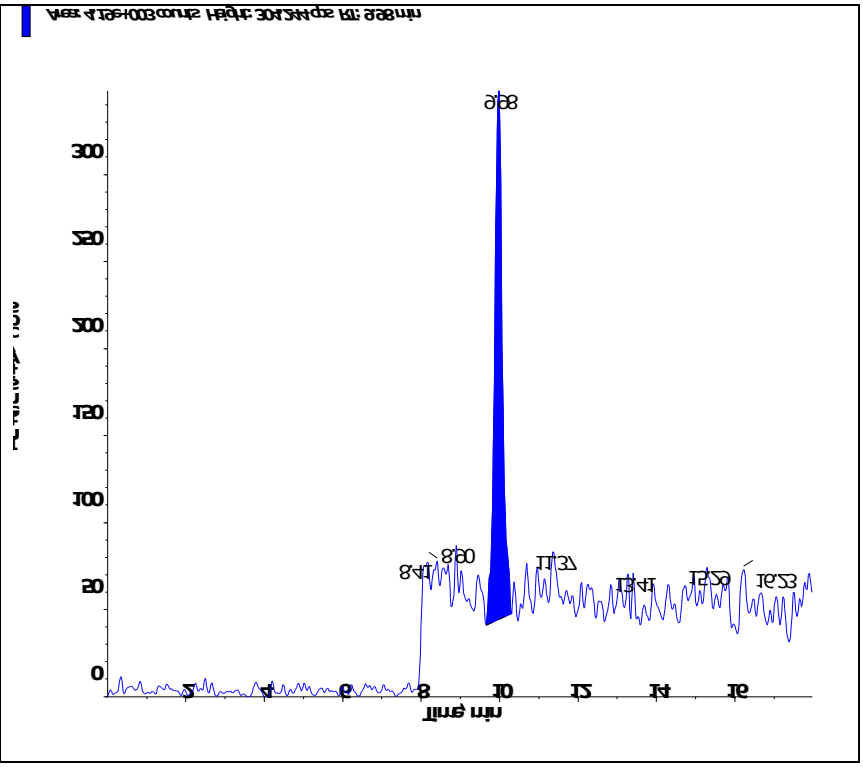

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Data File	LM33513.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 11:10:41 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021358-07 (100X)	**Injection Vial**	49.00
Data File	LM33513.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 11:10:41 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	L16021358-07	**Dilution Factor**	1.00
Sample Comment	7,100.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.550e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.730e+05	9.98	N/A	1.93
Perchlorate conf	8.860e+04	9.97	N/A	1.72

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

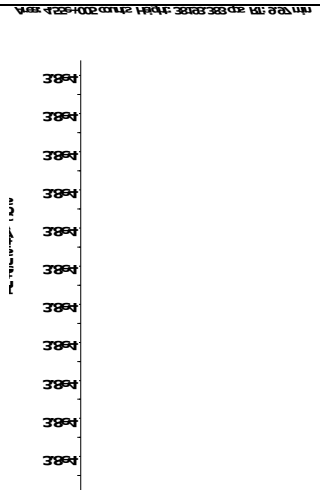

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.98 (9.94) min Calculated conc: 1.93 ng/ml Area Ratio: 0.60 Sample Type: (Unknown)	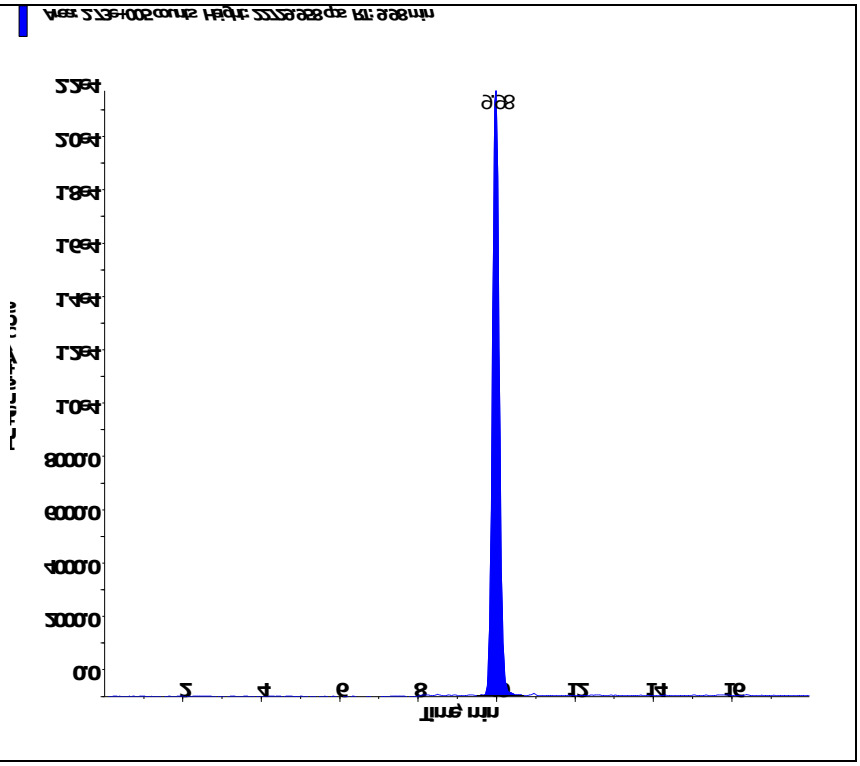
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.97 (9.92) min Calculated conc: 1.72 ng/ml Area Ratio: 0.195 Sample Type: (Unknown)	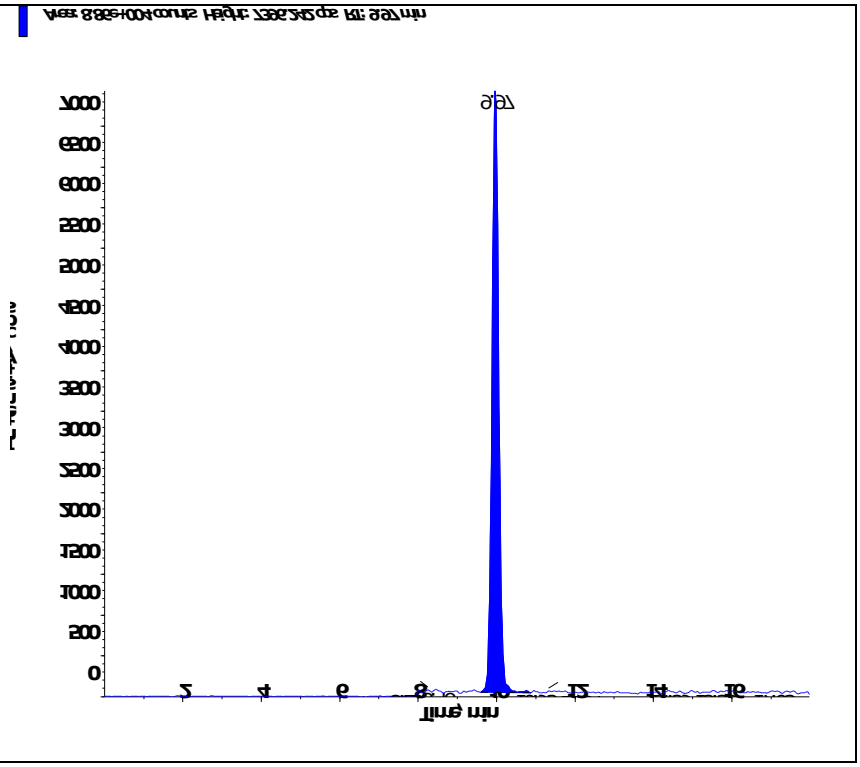

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Data File	LM33514.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 11:29:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021358-08 (100X)	**Injection Vial**	50.00
Data File	LM33514.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 11:29:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	L16021358-08	**Dilution Factor**	1.00
Sample Comment	7,100.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.480e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.930e+05	9.97	N/A	2.83
Perchlorate conf	1.290e+05	9.96	N/A	2.55

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

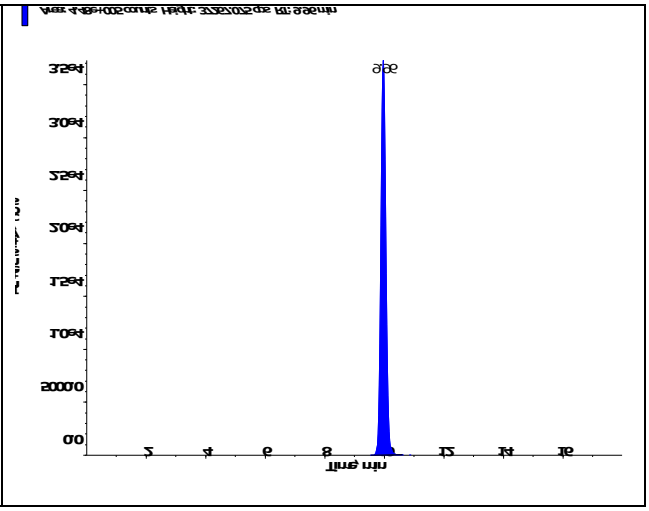

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.97 (9.94) min Calculated conc: 2.83 ng/ml Area Ratio: 0.878 Sample Type: (Unknown)	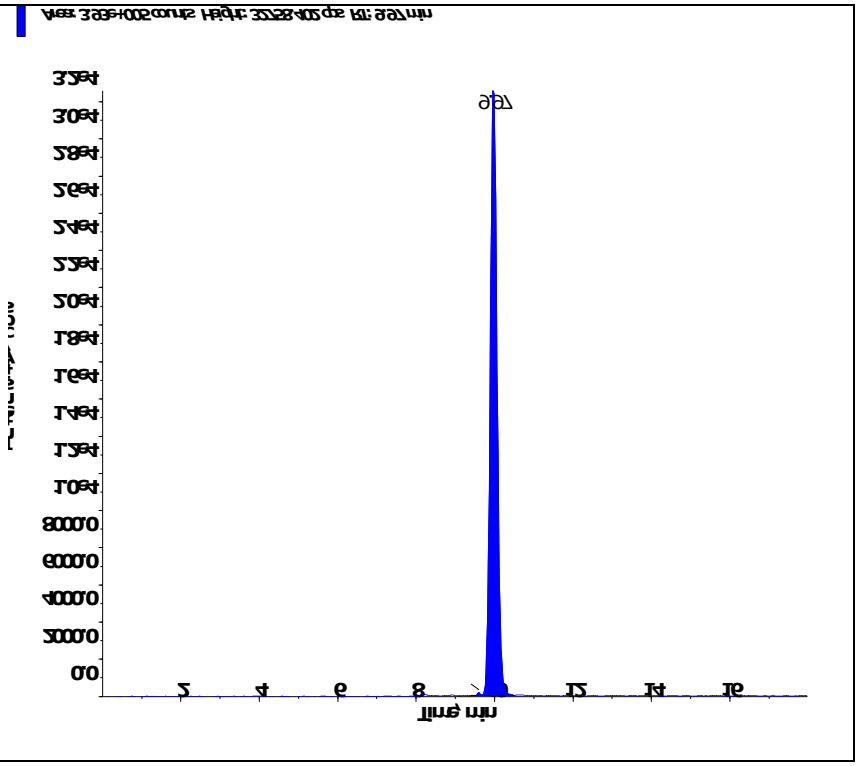
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.96 (9.92) min Calculated conc: 2.55 ng/ml Area Ratio: 0.287 Sample Type: (Unknown)	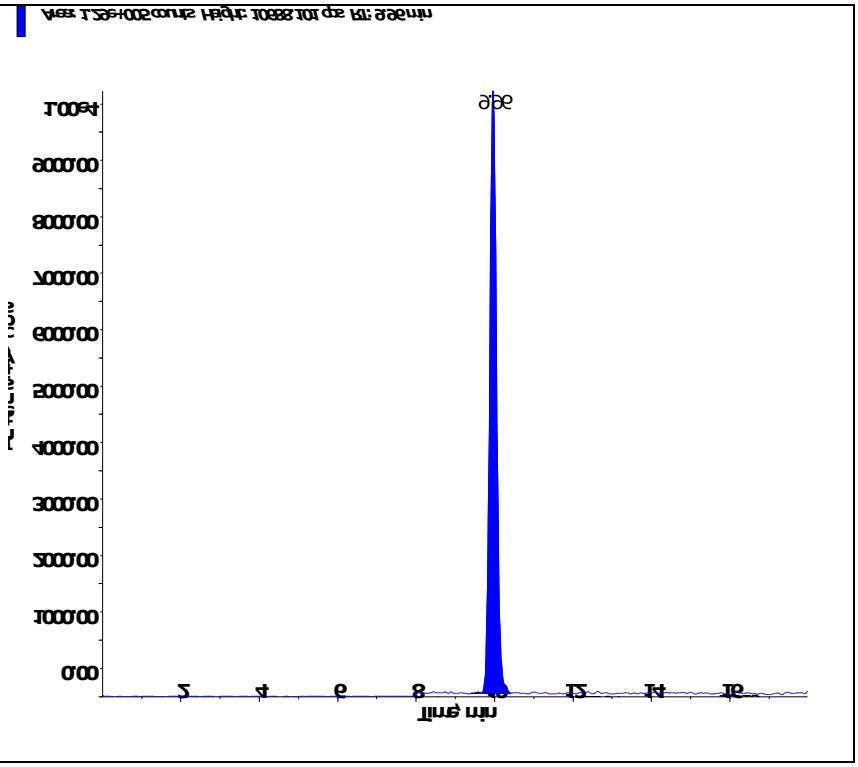

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Data File	LM33515.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 11:48:36 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021358-09 (100X)	**Injection Vial**	51.00
Data File	LM33515.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 11:48:36 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	L16021358-09	**Dilution Factor**	1.00
Sample Comment	7,100.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.500e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.700e+05	9.98	N/A	1.93
Perchlorate conf	8.850e+04	9.96	N/A	1.74

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

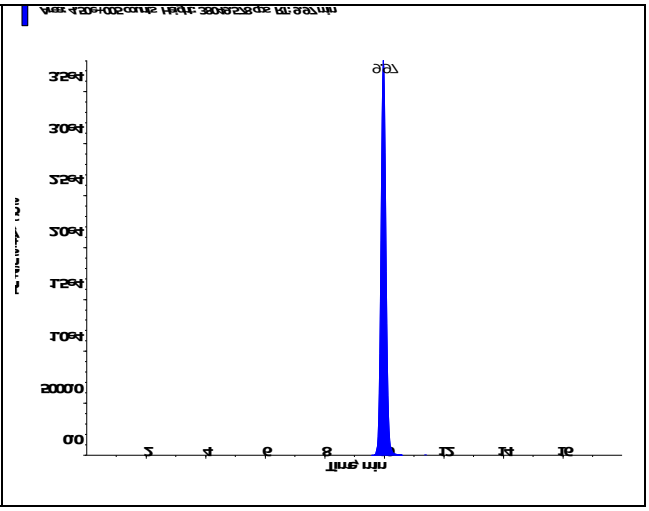

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.98 (9.94) min Calculated conc: 1.93 ng/ml Area Ratio: 0.599 Sample Type: (Unknown)	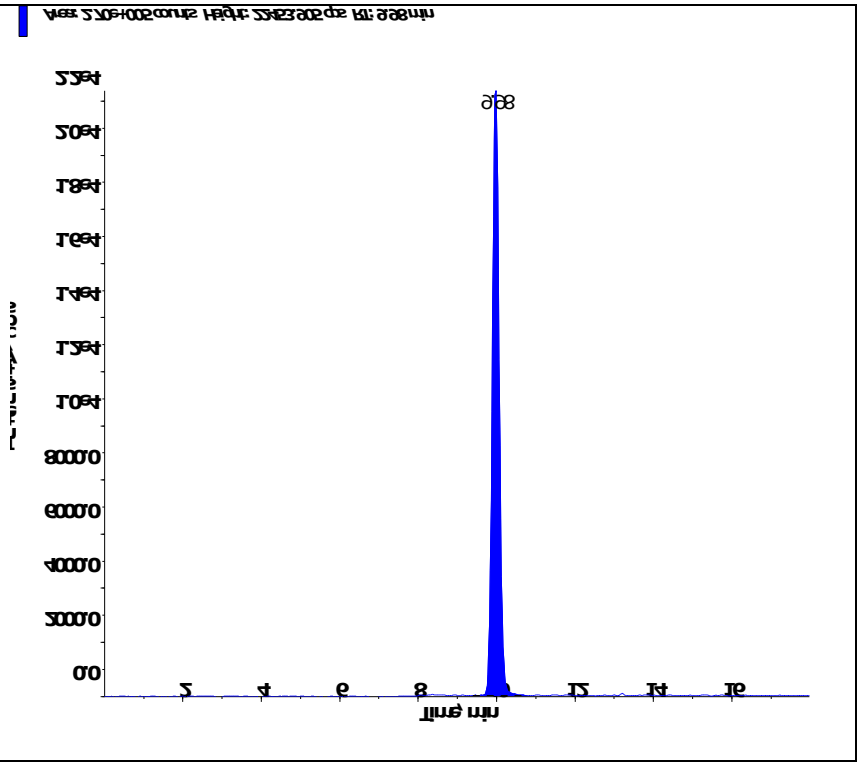
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.96 (9.92) min Calculated conc: 1.74 ng/ml Area Ratio: 0.196 Sample Type: (Unknown)	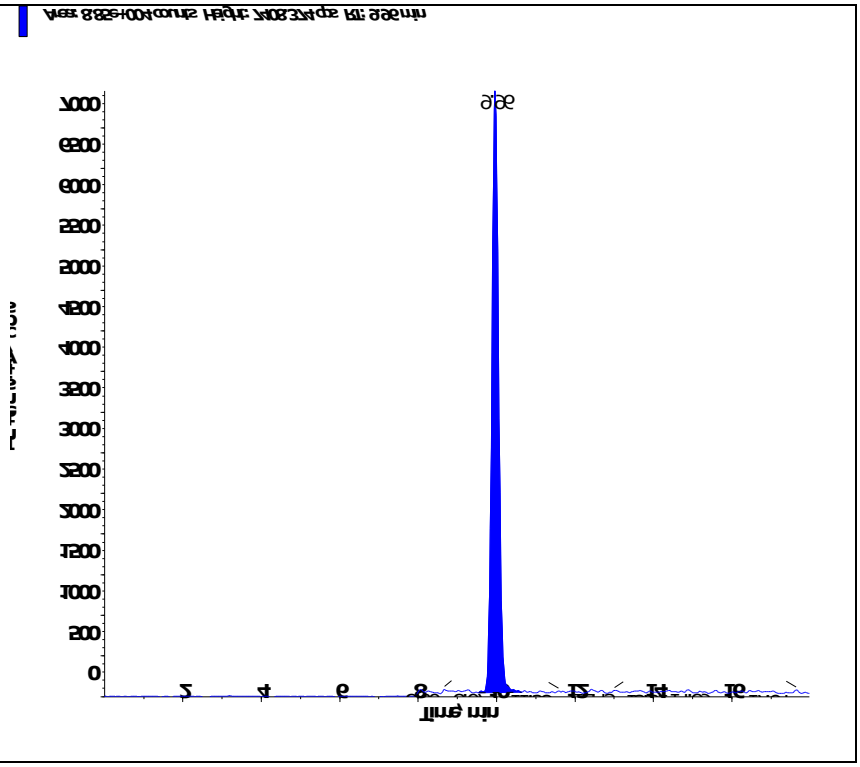

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2.2.1.4 Standards Data

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Data File	LM33244.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/17/2016 7:12:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-01 CCB	**Injection Vial**	1.00
Data File	LM33244.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 7:12:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG557856-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.570e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.560e+03	9.97	N/A	< 0
Perchlorate conf	1.050e+03	9.97	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

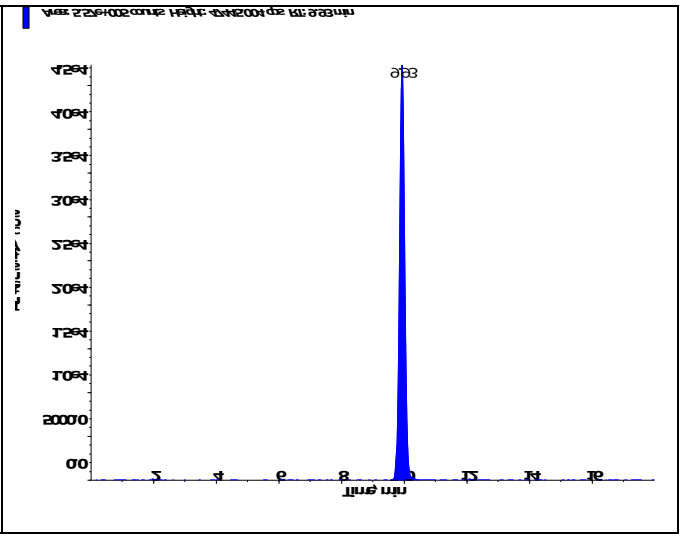

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.97 (9.94) min Calculated conc: < 0 ng/ml Area Ratio: 0.005 Sample Type: (Unknown)	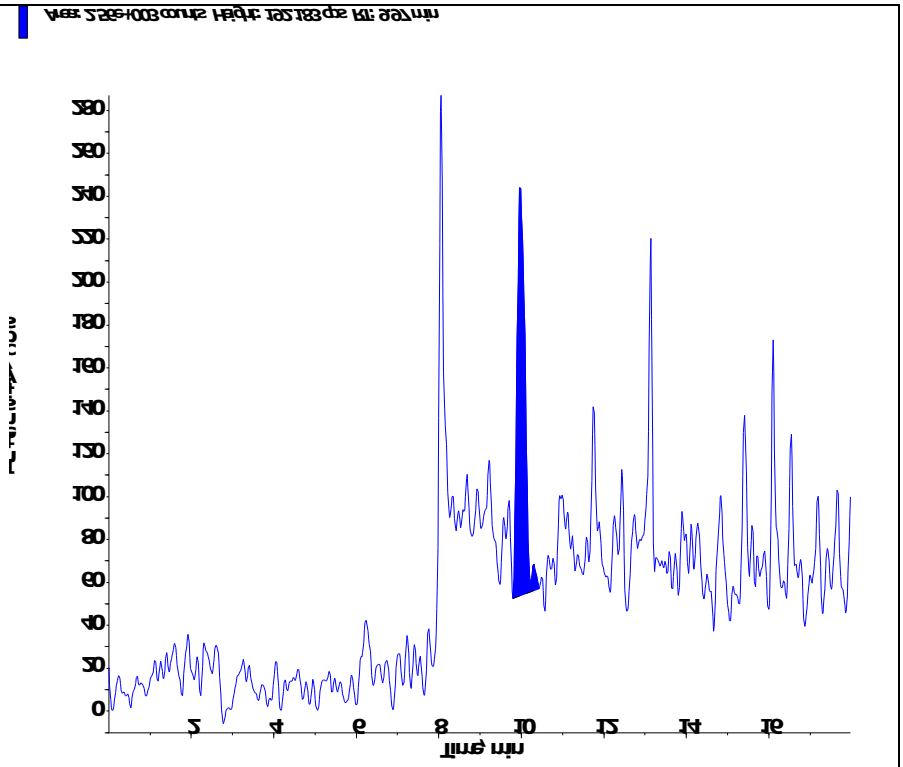
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.97 (9.92) min Calculated conc: < 0 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	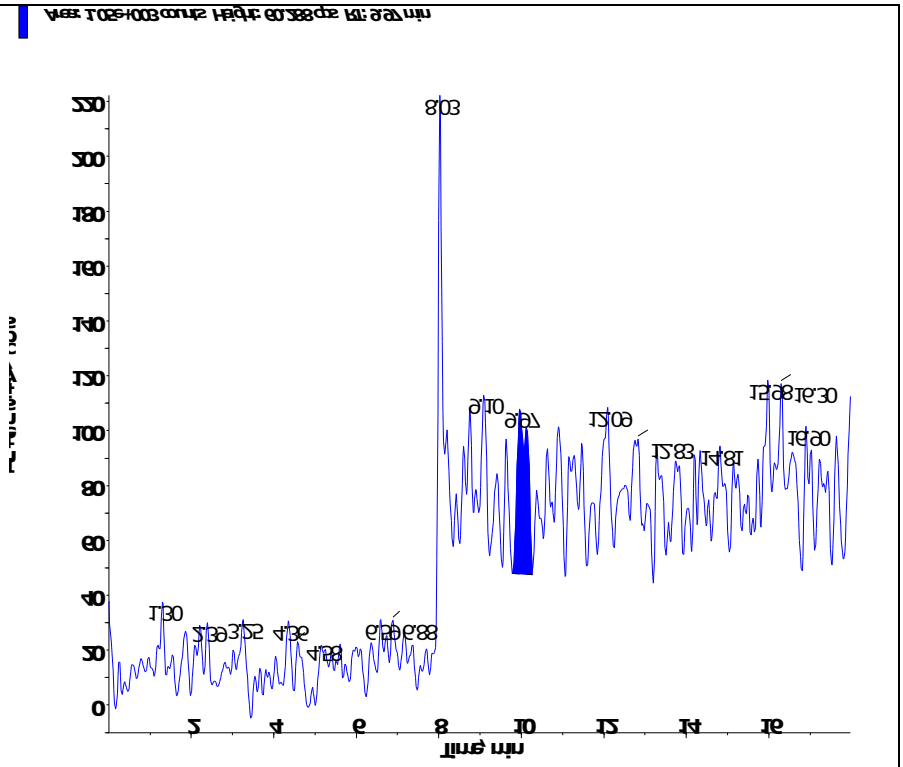

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Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM33244.wiff	**Result Table**	021716_JWR.rdb
Acquisition Date	2/17/2016 7:12:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.54 x + 0.00666 (r = 0.9998)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	88.4	N/A	N/A
0.20	1	0.21	103.3	N/A	N/A
0.50	1	0.51	102.6	N/A	N/A
1.00	1	1.03	103.4	N/A	N/A
2.00	1	2.06	103.1	N/A	N/A
5.00	1	5.03	100.6	N/A	N/A
10.00	1	9.87	98.7	N/A	N/A

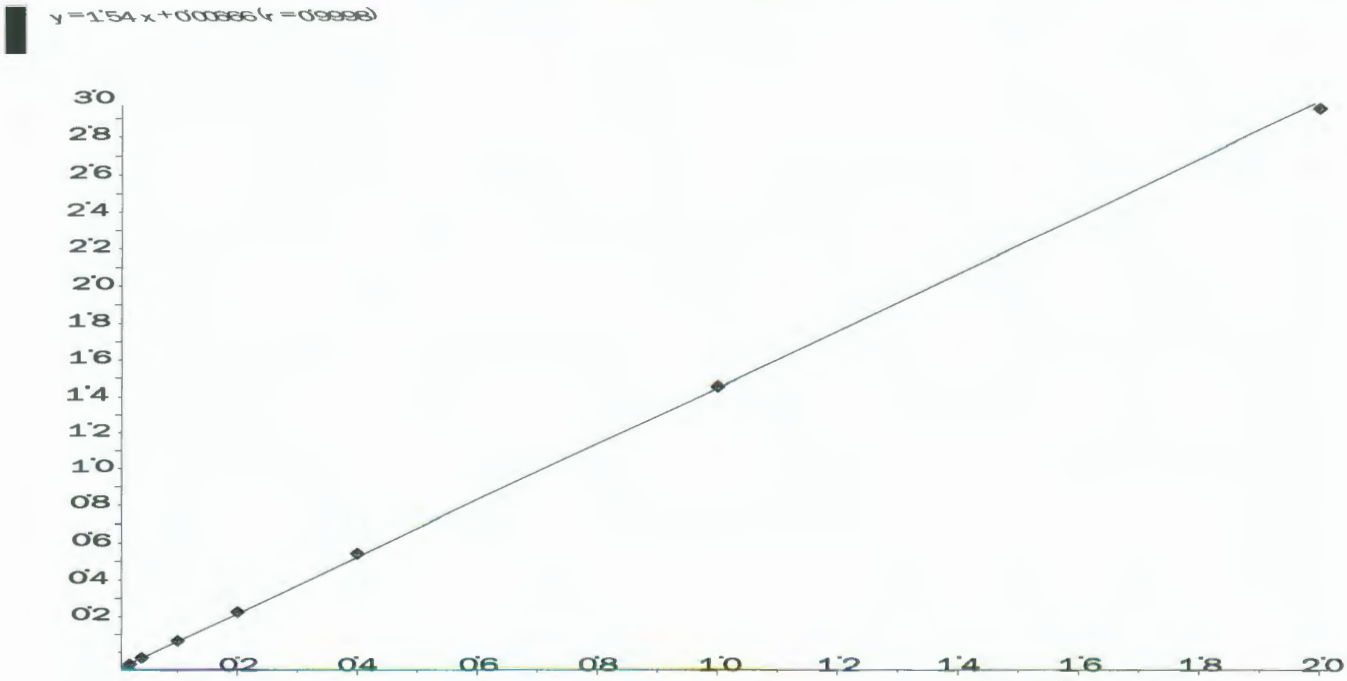

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Created with Analyst Reporter
Printed: 2/18/2016 2:15 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM33244.wiff	**Result Table**	021716_JWR.rdb
Acquisition Date	2/17/2016 7:12:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.557 x + 0.00249 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	90.6	N/A	N/A
0.20	1	0.21	104.9	N/A	N/A
0.50	1	0.51	101.7	N/A	N/A
1.00	1	1.02	102.2	N/A	N/A
2.00	1	2.04	102.1	N/A	N/A
5.00	1	4.93	98.6	N/A	N/A
10.00	1	10.00	100.0	N/A	N/A

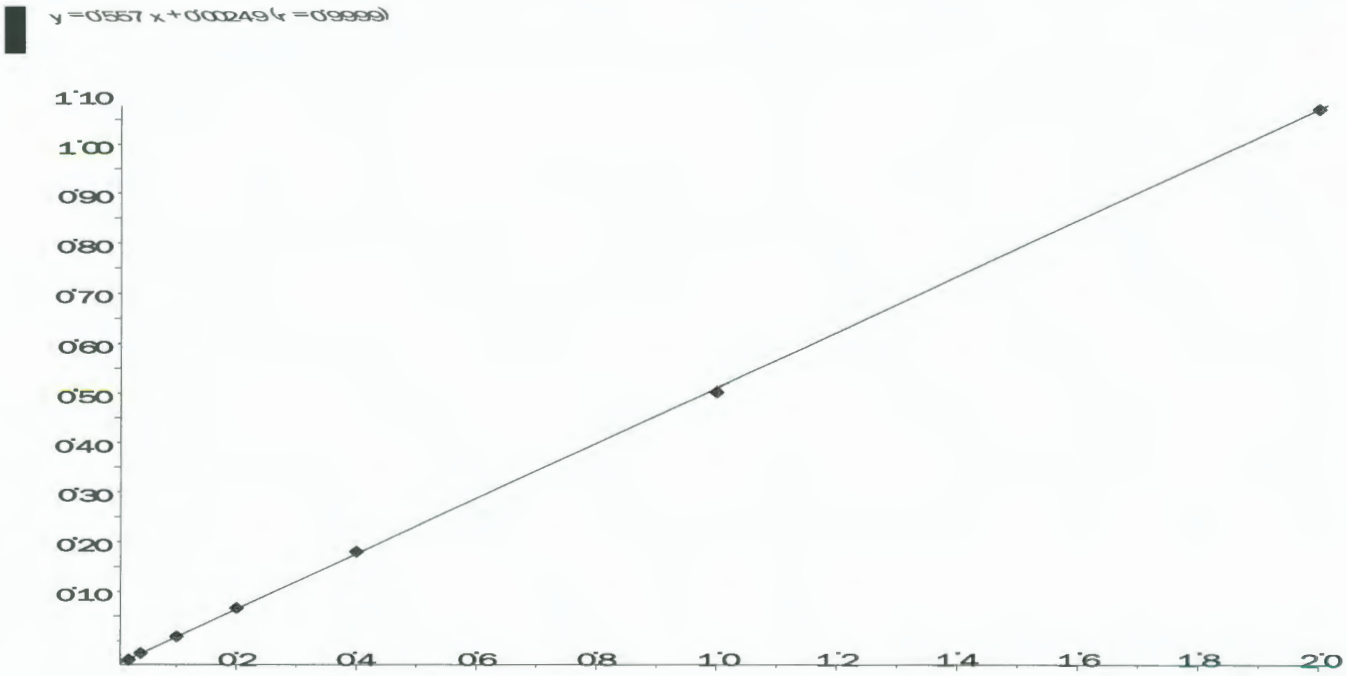

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Data File	LM33245.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/17/2016 7:31:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM33245.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 7:31:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG557856-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.550e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.880e+04	9.94	0.10	0.0884
Perchlorate conf	6.990e+03	9.93	0.10	0.0906

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

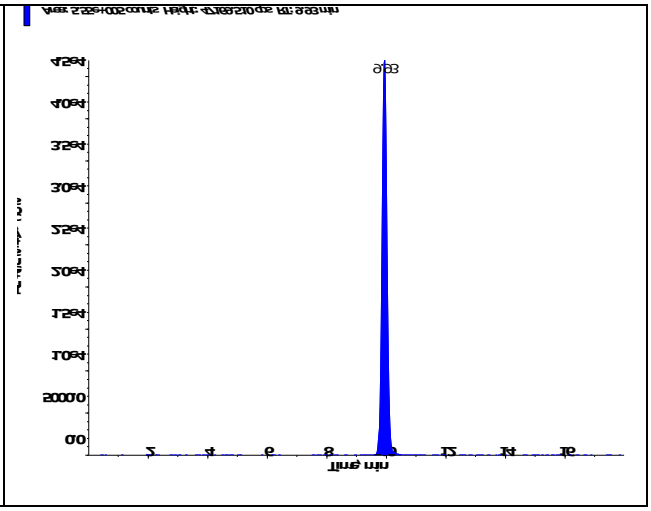

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.94 (9.94) min Calculated conc: 0.0884 ng/ml Area Ratio: 0.034 Sample Type: (Standard)	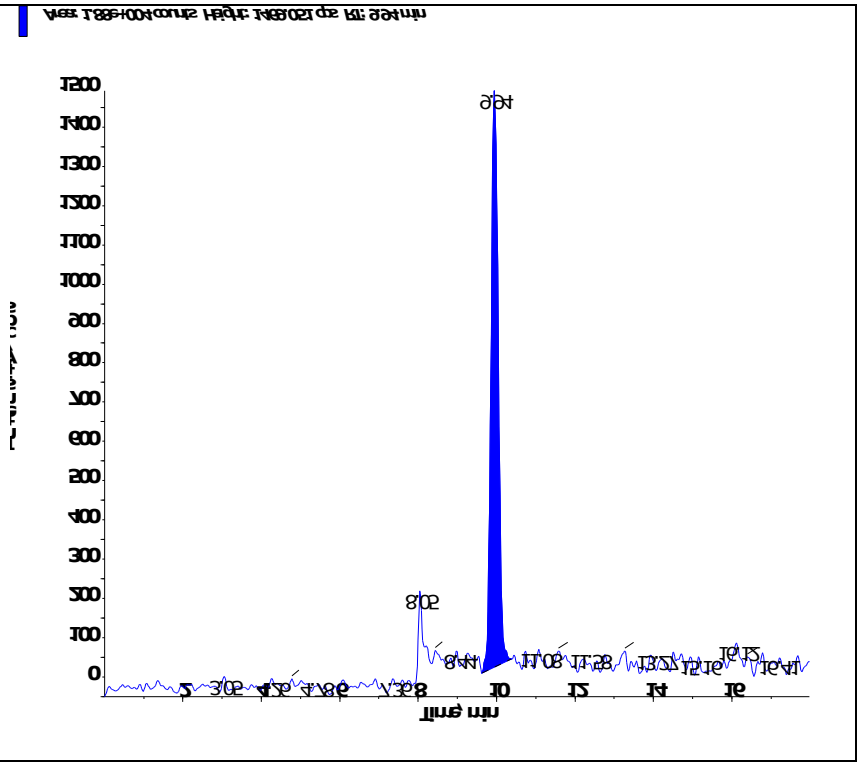
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.93 (9.92) min Calculated conc: 0.0906 ng/ml Area Ratio: 0.013 Sample Type: (Standard)	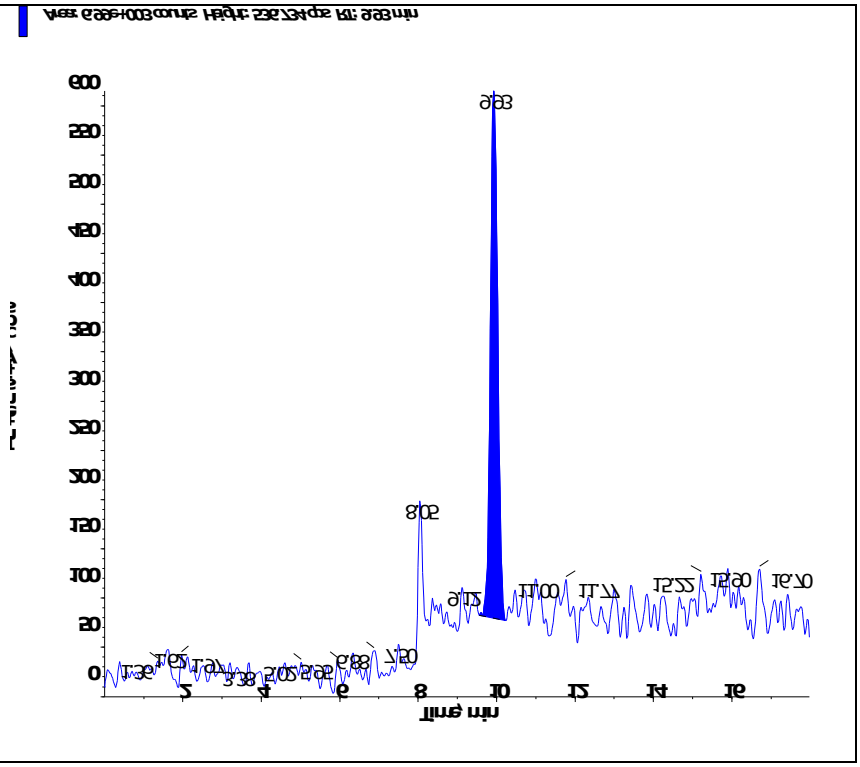

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Data File	LM33246.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/17/2016 7:50:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM33246.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 7:50:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG557856-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.510e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.870e+04	9.94	0.20	0.207
Perchlorate conf	1.420e+04	9.93	0.20	0.21

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

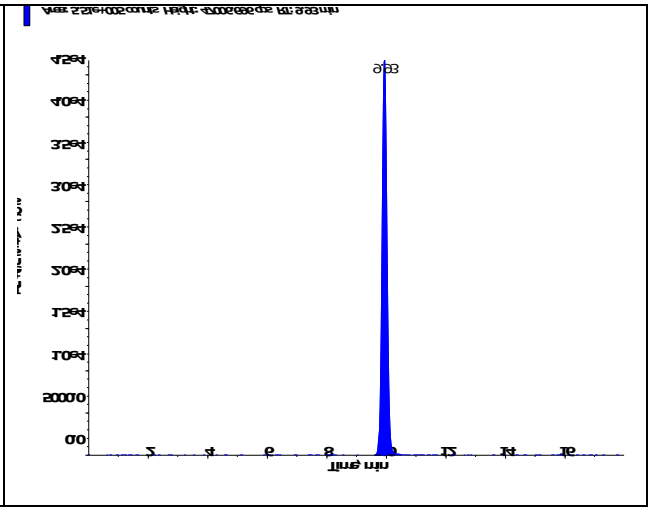

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.94 (9.94) min Calculated conc: 0.207 ng/ml Area Ratio: 0.07 Sample Type: (Standard)	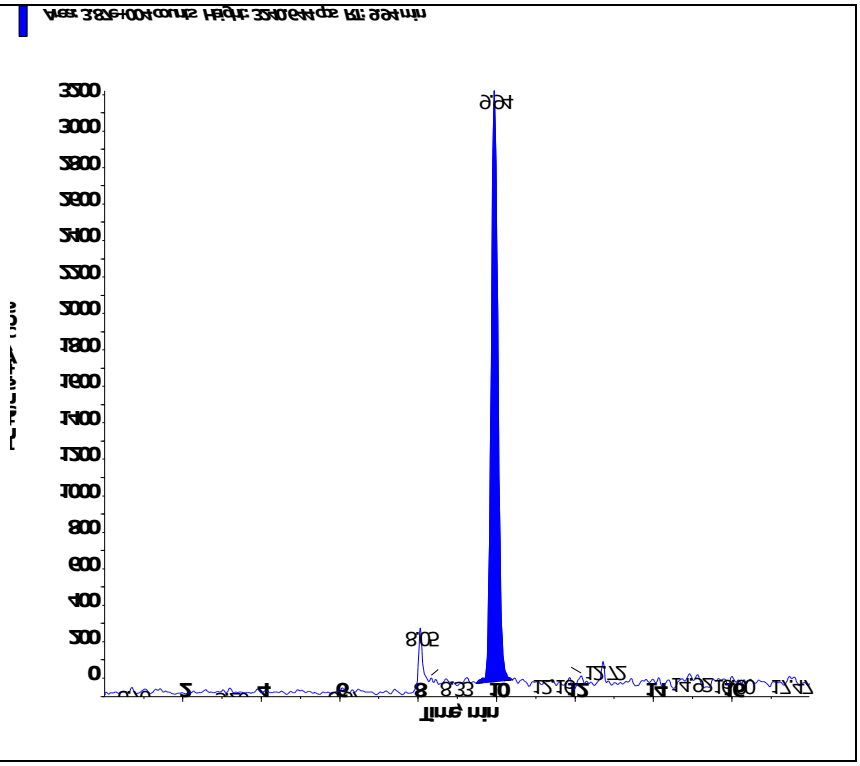
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.93 (9.92) min Calculated conc: 0.21 ng/ml Area Ratio: 0.026 Sample Type: (Standard)	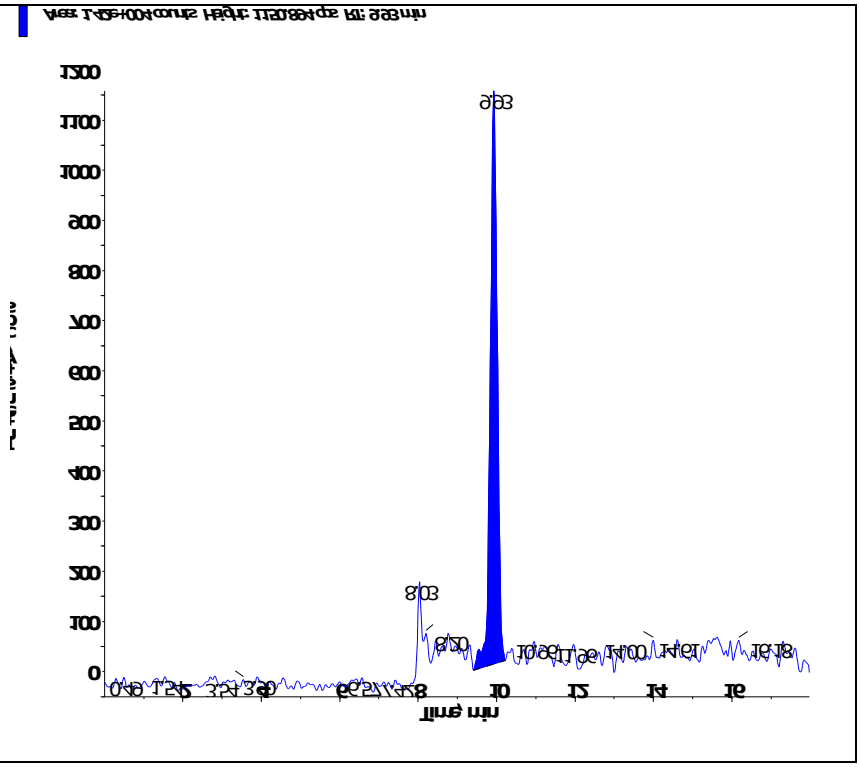

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Data File	LM33247.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/17/2016 8:08:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM33247.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 8:08:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG557856-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.560e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	9.140e+04	9.94	0.50	0.513
Perchlorate conf	3.290e+04	9.93	0.50	0.508

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

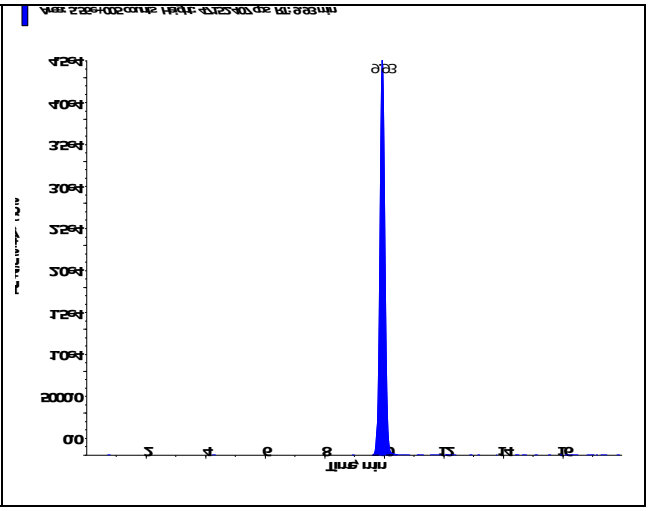

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.94 (9.94) min Calculated conc: 0.513 ng/ml Area Ratio: 0.164 Sample Type: (Standard)	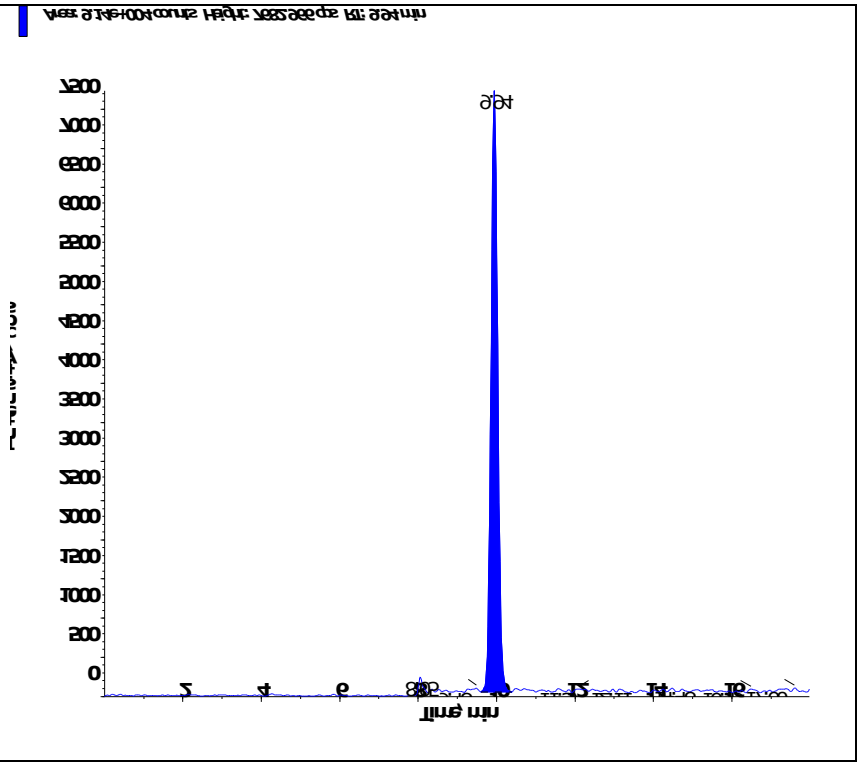
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.93 (9.92) min Calculated conc: 0.508 ng/ml Area Ratio: 0.059 Sample Type: (Standard)	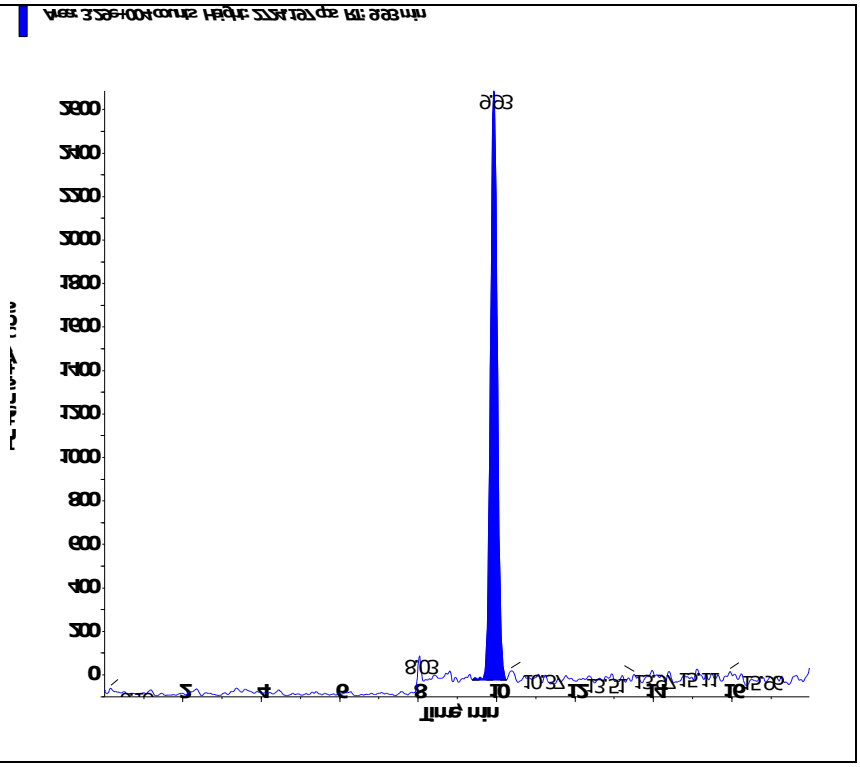

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Data File	LM33248.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/17/2016 8:27:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM33248.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 8:27:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG557856-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.490e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.780e+05	9.95	1.00	1.03
Perchlorate conf	6.390e+04	9.94	1.00	1.02

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

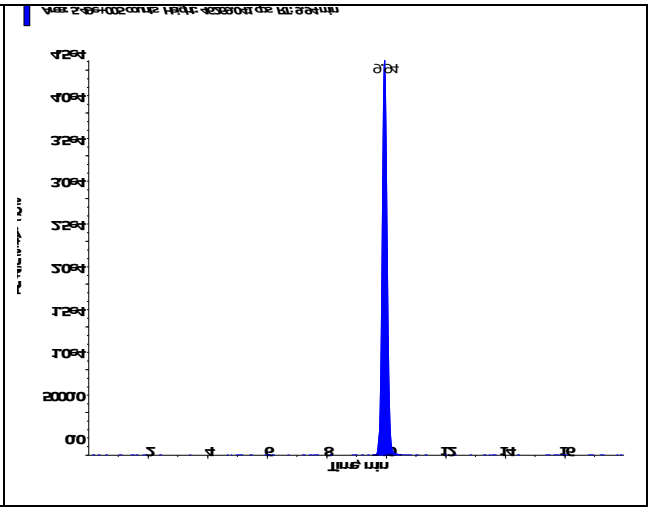

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.95 (9.94) min Calculated conc: 1.03 ng/ml Area Ratio: 0.325 Sample Type: (Standard)	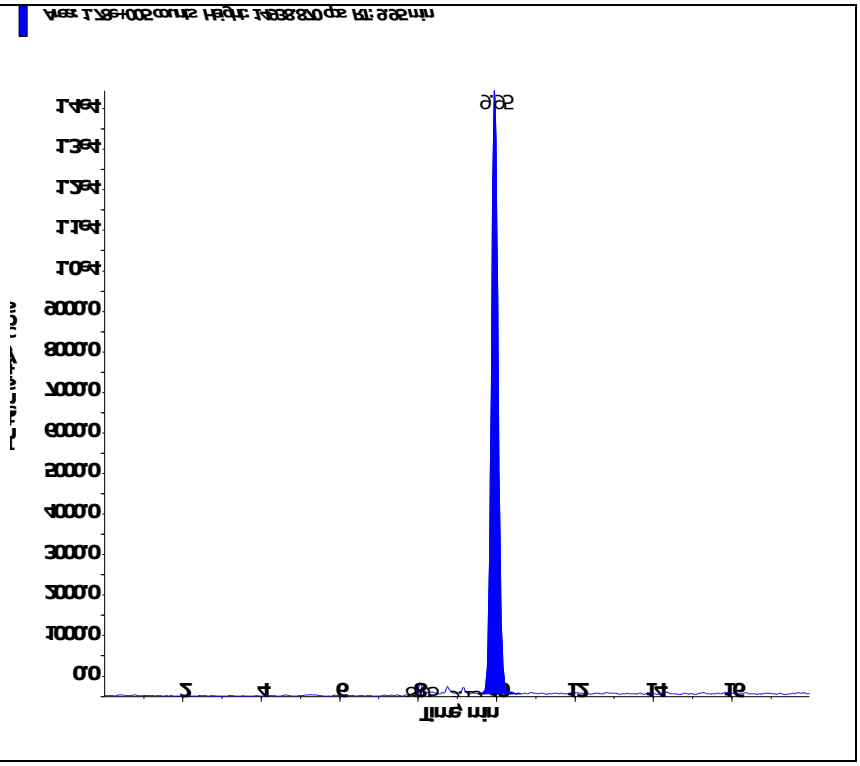
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.94 (9.92) min Calculated conc: 1.02 ng/ml Area Ratio: 0.116 Sample Type: (Standard)	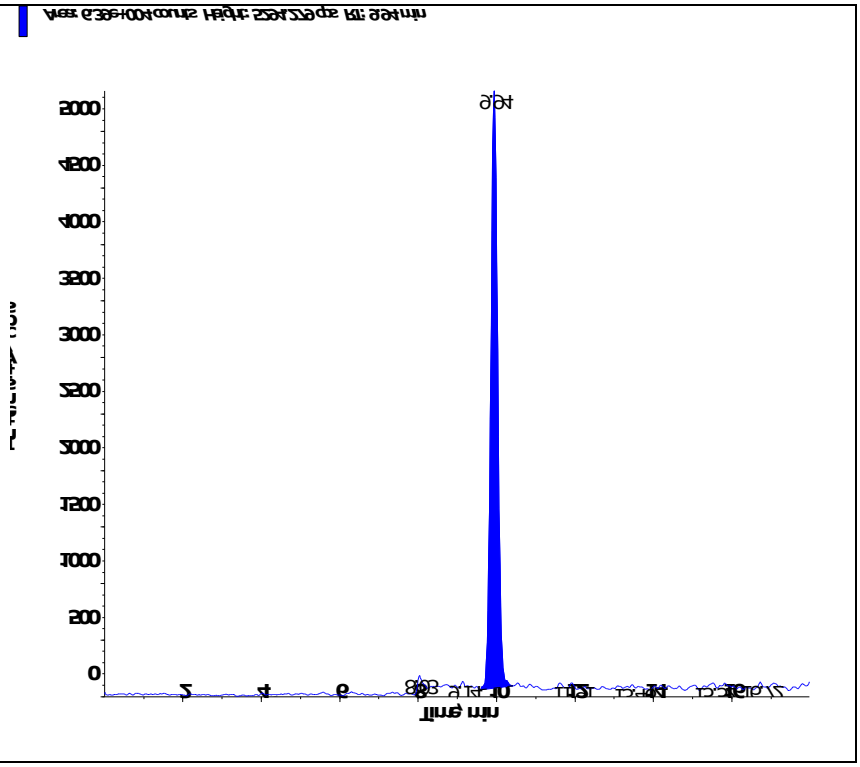

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Data File	LM33249.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/17/2016 8:46:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM33249.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 8:46:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG557856-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.460e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.500e+05	9.94	2.00	2.06
Perchlorate conf	1.260e+05	9.93	2.00	2.04

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

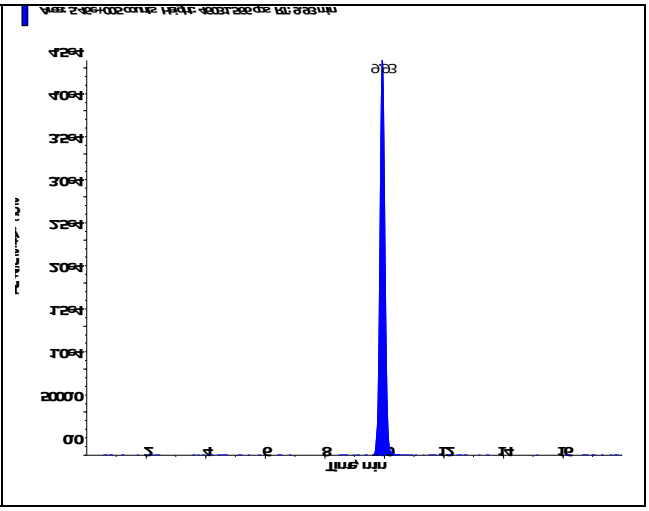

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.94 (9.94) min Calculated conc: 2.06 ng/ml Area Ratio: 0.641 Sample Type: (Standard)	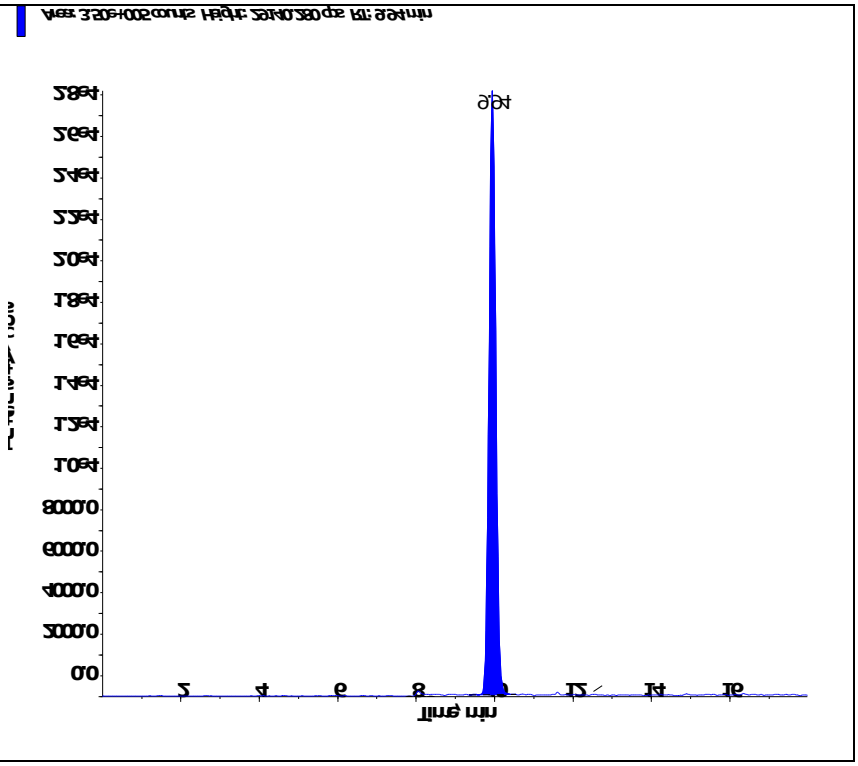
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.93 (9.92) min Calculated conc: 2.04 ng/ml Area Ratio: 0.23 Sample Type: (Standard)	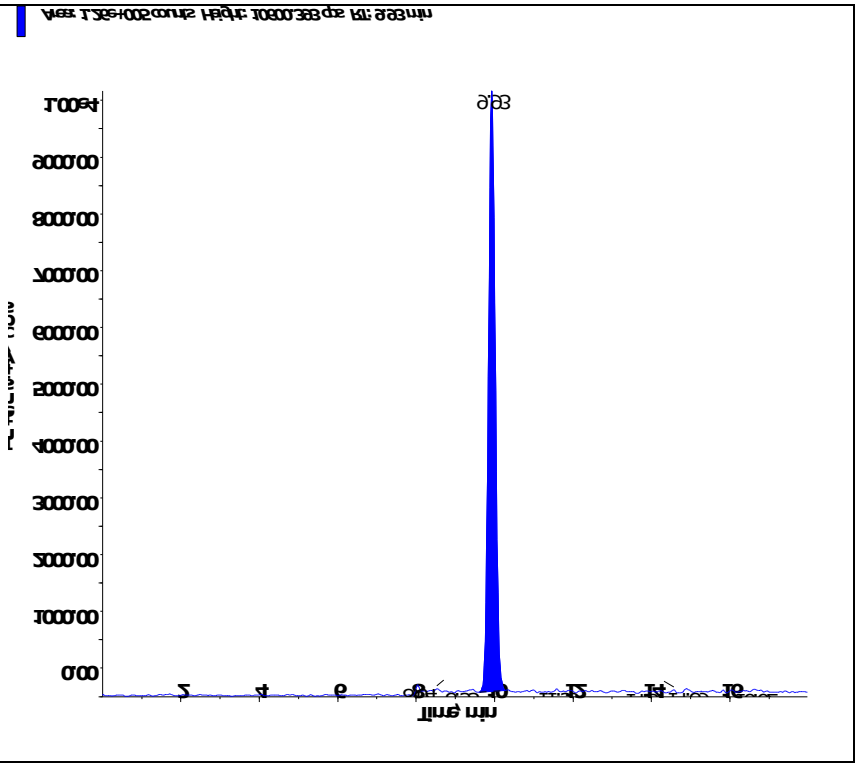

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Data File	LM33250.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/17/2016 9:05:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM33250.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 9:05:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG557856-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.320e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.260e+05	9.96	5.00	5.03
Perchlorate conf	2.930e+05	9.94	5.00	4.93

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

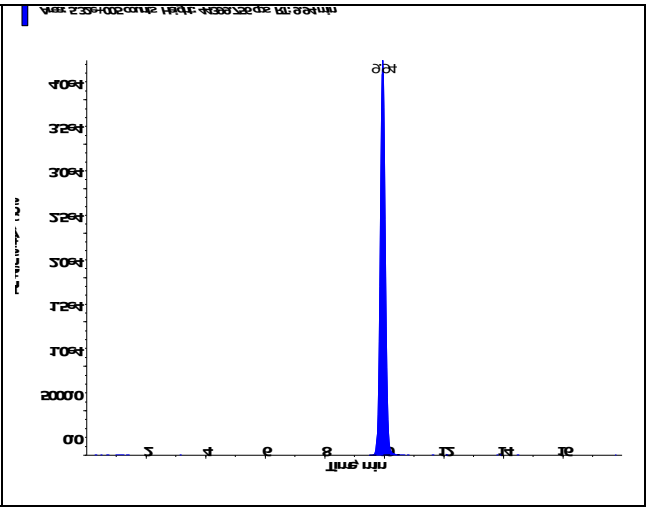

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.96 (9.94) min Calculated conc: 5.03 ng/ml Area Ratio: 1.554 Sample Type: (Standard)	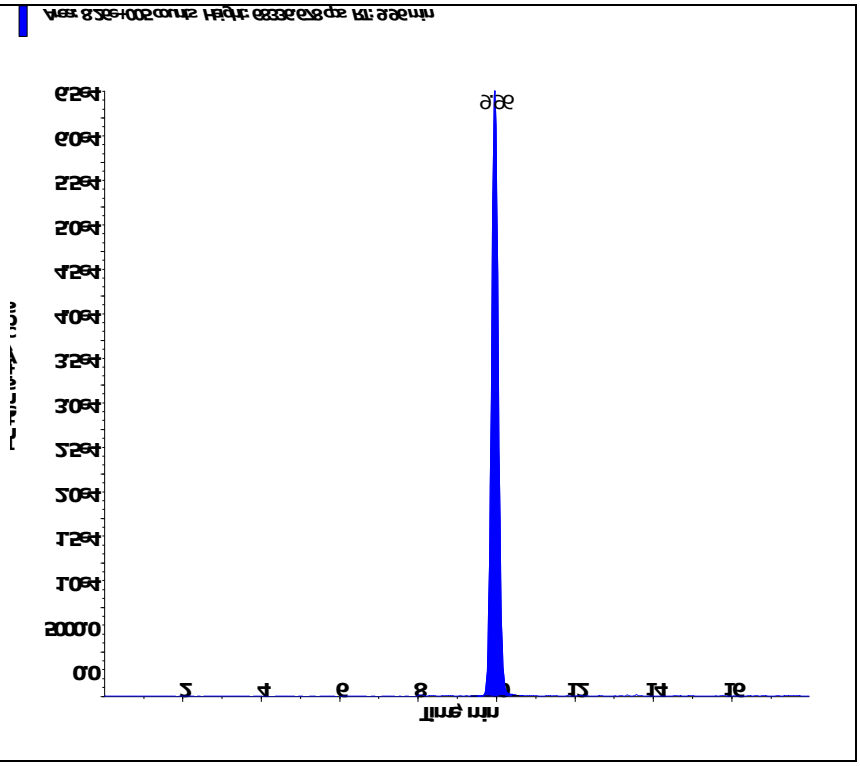
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.94 (9.92) min Calculated conc: 4.93 ng/ml Area Ratio: 0.552 Sample Type: (Standard)	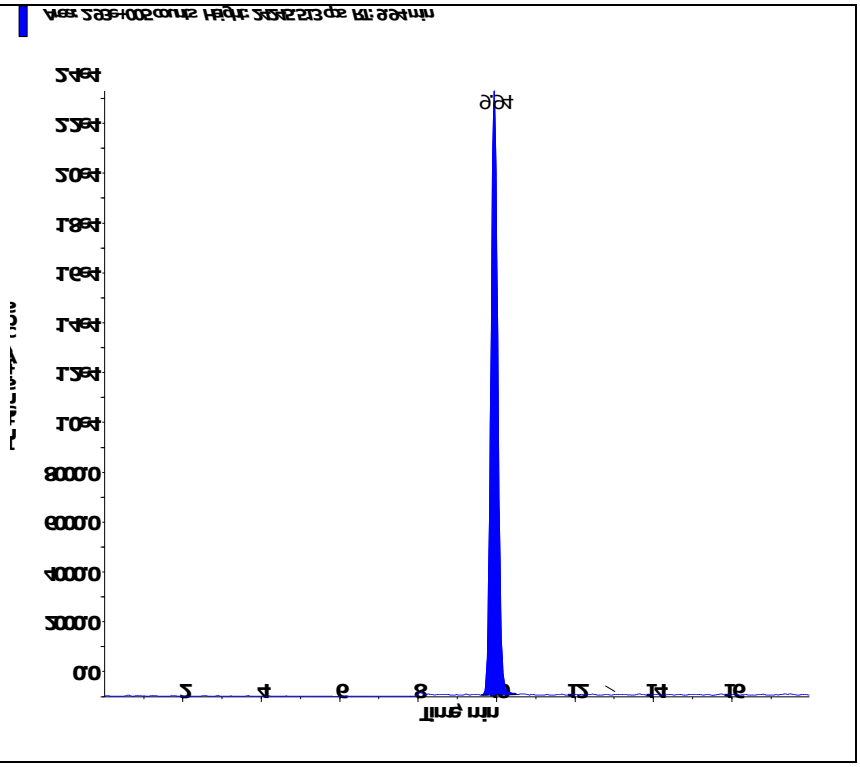

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Data File	LM33251.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/17/2016 9:24:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM33251.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 9:24:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG557856-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.030e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.94	10.00	9.87
Perchlorate conf	5.620e+05	9.93	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

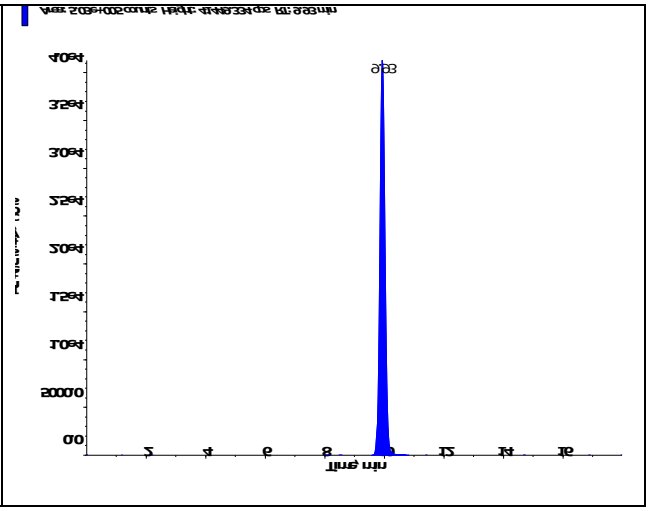

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.94 (9.94) min Calculated conc: 9.87 ng/ml Area Ratio: 3.043 Sample Type: (Standard)	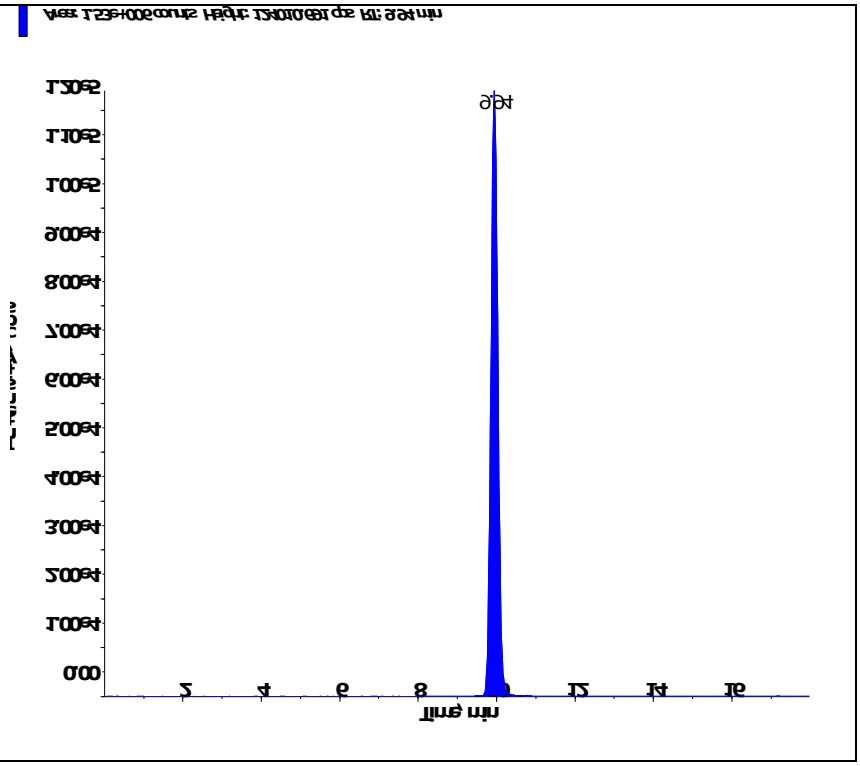
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.93 (9.92) min Calculated conc: 10.00 ng/ml Area Ratio: 1.117 Sample Type: (Standard)	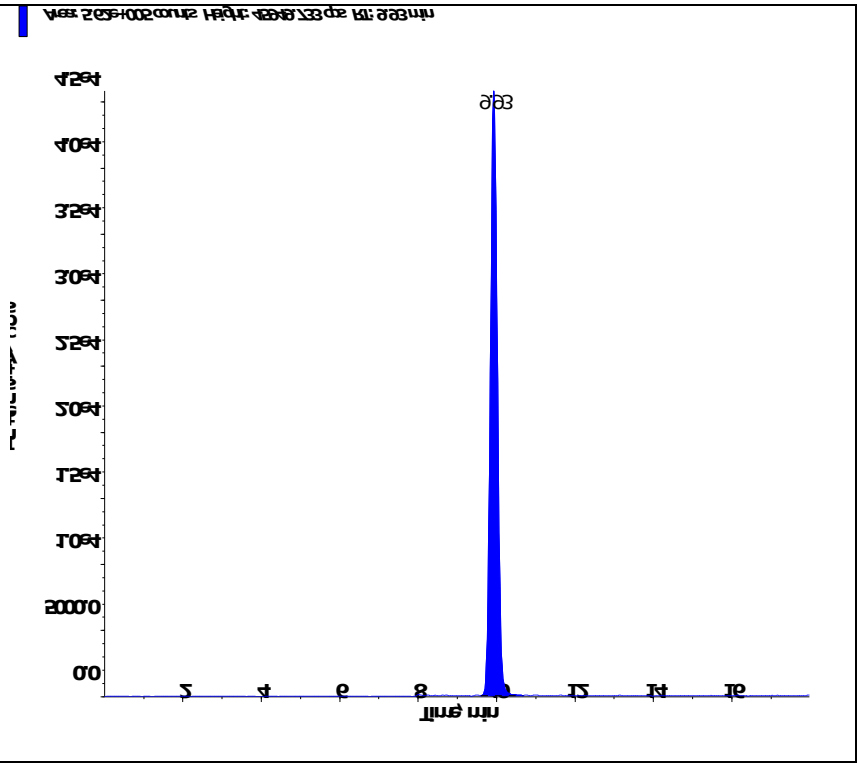

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Data File	LM33252.wiff	**Result Table**	021716_JWR.rdb
Acquisition Date	2/17/2016 9:43:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM33252.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 9:43:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	021716_JWR.rdb
Sample ID	WG557856-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.420e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+05	9.93	1.00	1.05
Perchlorate conf	6.360e+04	9.92	1.00	1.03

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

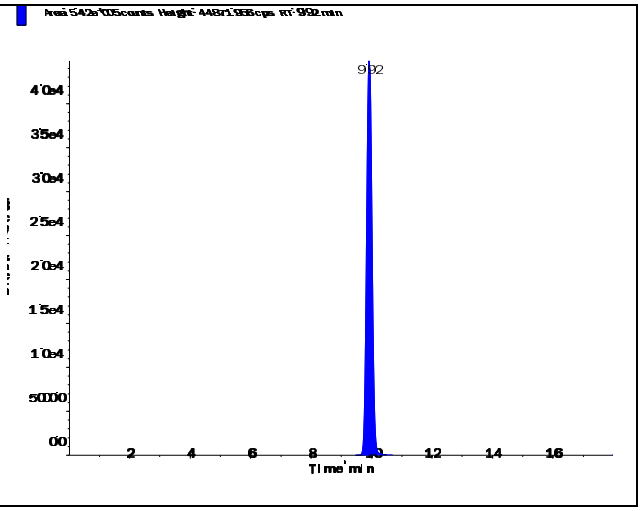

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.33
Sample Type:	(Quality Control)

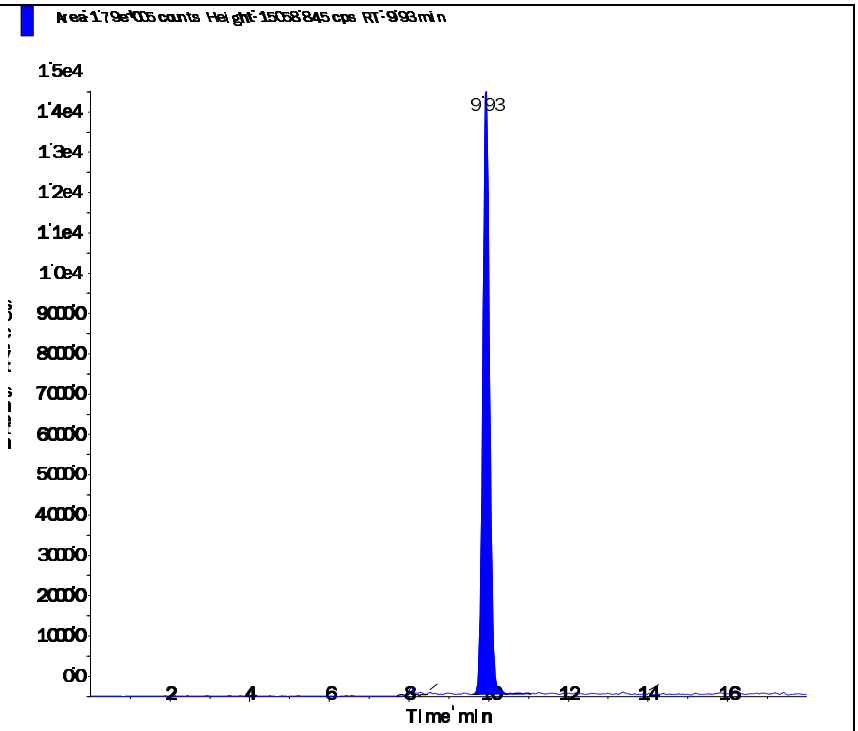

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.117
Sample Type:	(Quality Control)

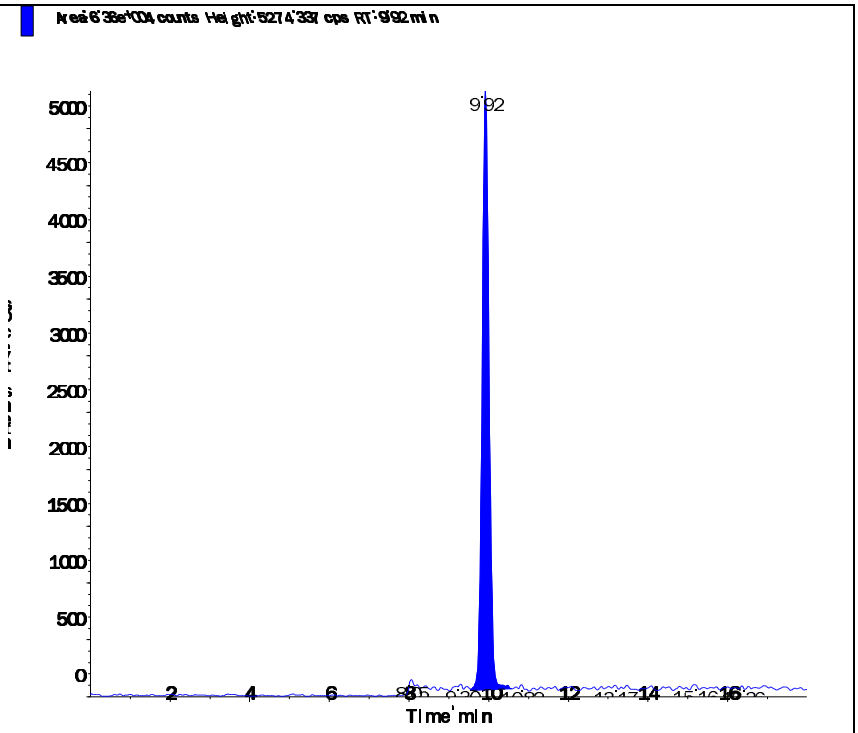

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Data File	LM33477.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/29/2016 8:56:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559066-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33477.wiff	**Injection Volume**	10.00
Acquisition Date	2/29/2016 8:56:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559066-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.320e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.760e+05	9.97	1.00	1.06
Perchlorate conf	5.830e+04	9.96	1.00	0.962

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

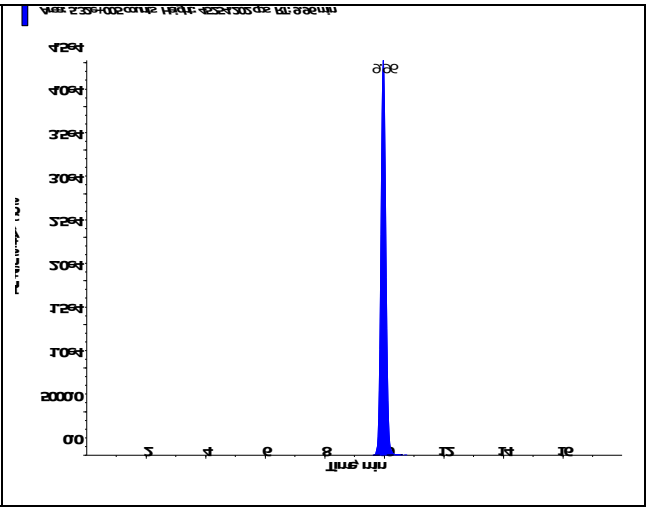

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.97 (9.94) min Calculated conc: 1.06 ng/ml Area Ratio: 0.332 Sample Type: (Quality Control)	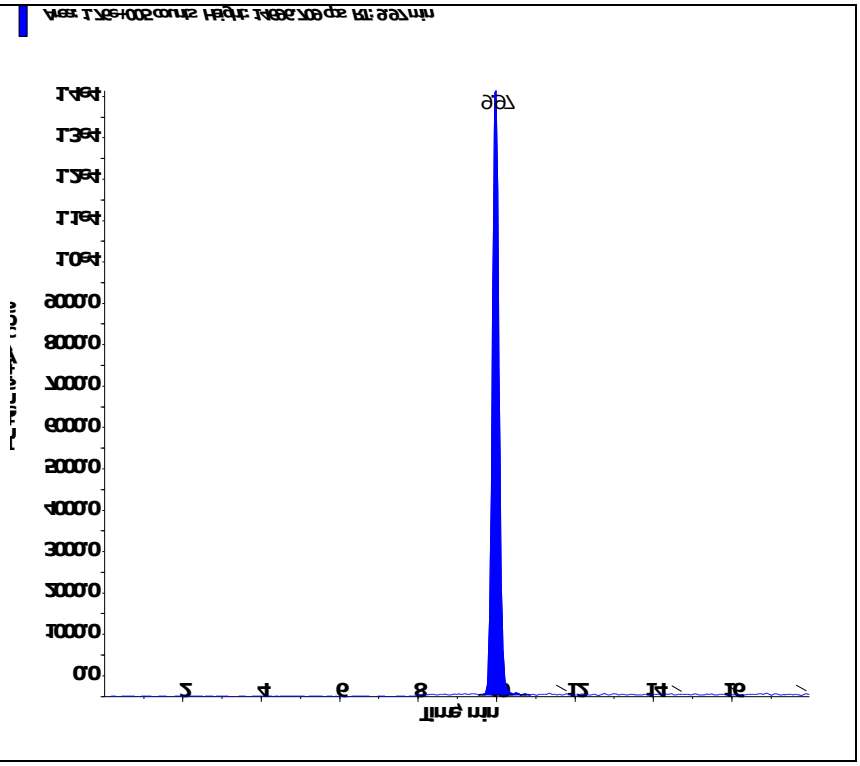
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.96 (9.92) min Calculated conc: 0.962 ng/ml Area Ratio: 0.11 Sample Type: (Quality Control)	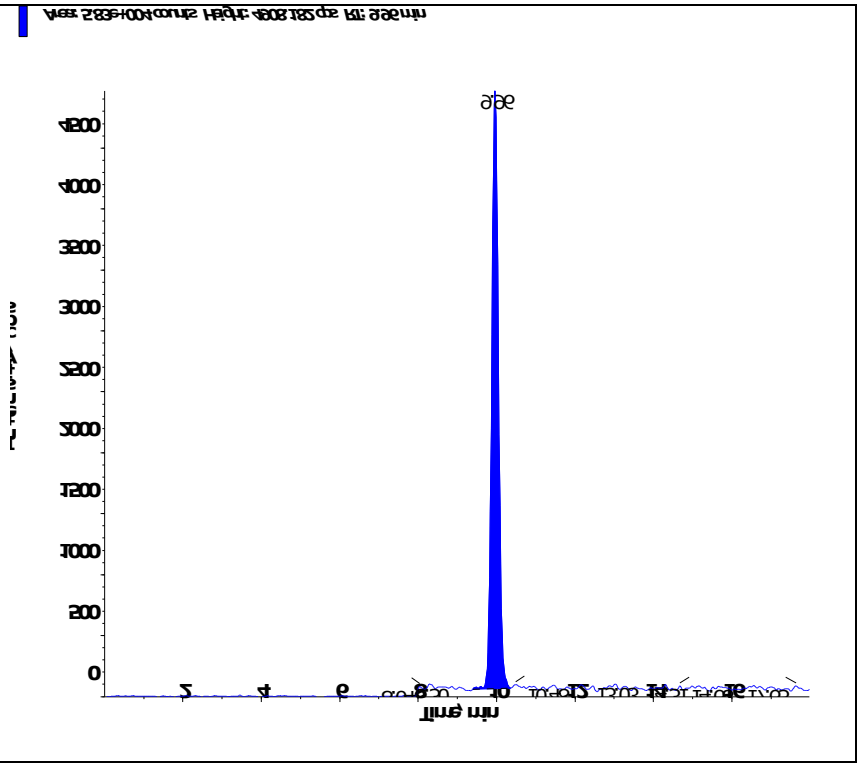

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Data File	LM33490.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 1:02:38 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG599066-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33490.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 1:02:38 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG599066-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.380e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.730e+05	9.97	1.00	1.02
Perchlorate conf	5.590e+04	9.95	1.00	0.91

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

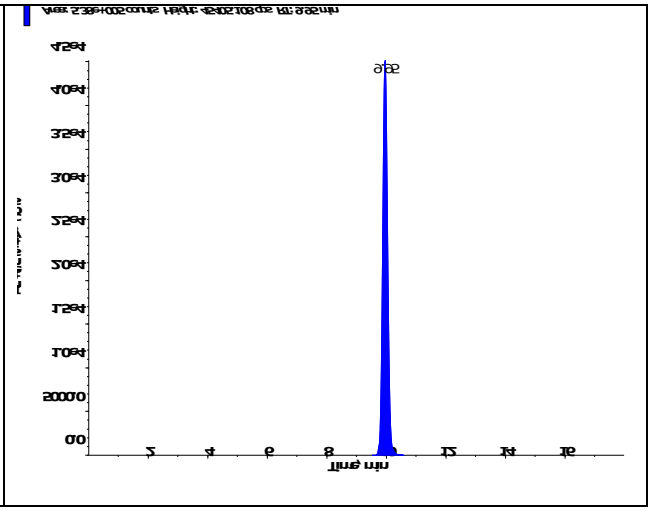

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.97 (9.94) min Calculated conc: 1.02 ng/ml Area Ratio: 0.322 Sample Type: (Quality Control)	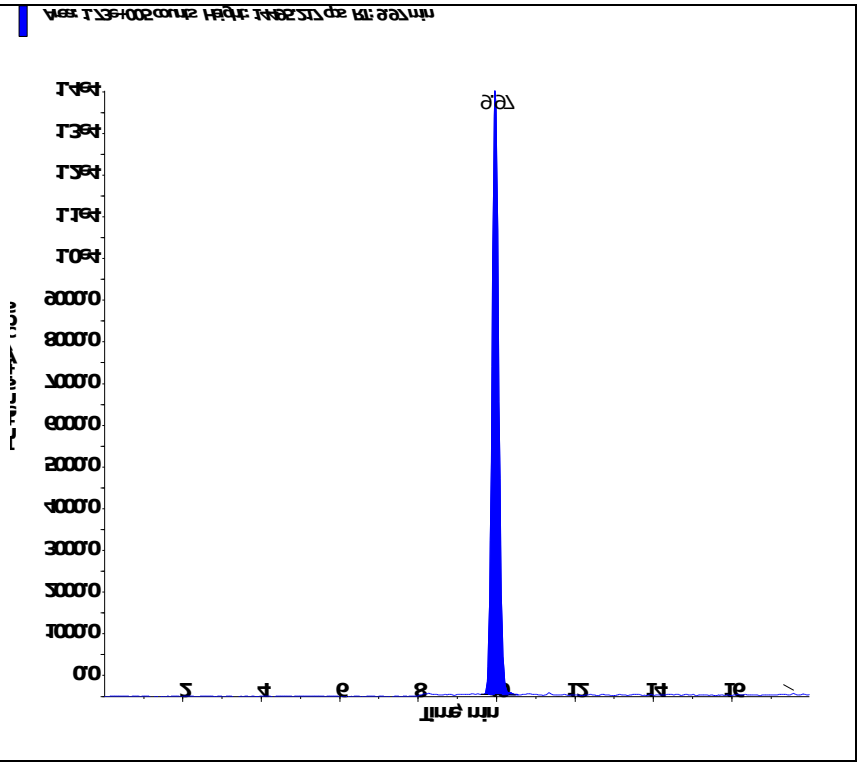
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.95 (9.92) min Calculated conc: 0.91 ng/ml Area Ratio: 0.104 Sample Type: (Quality Control)	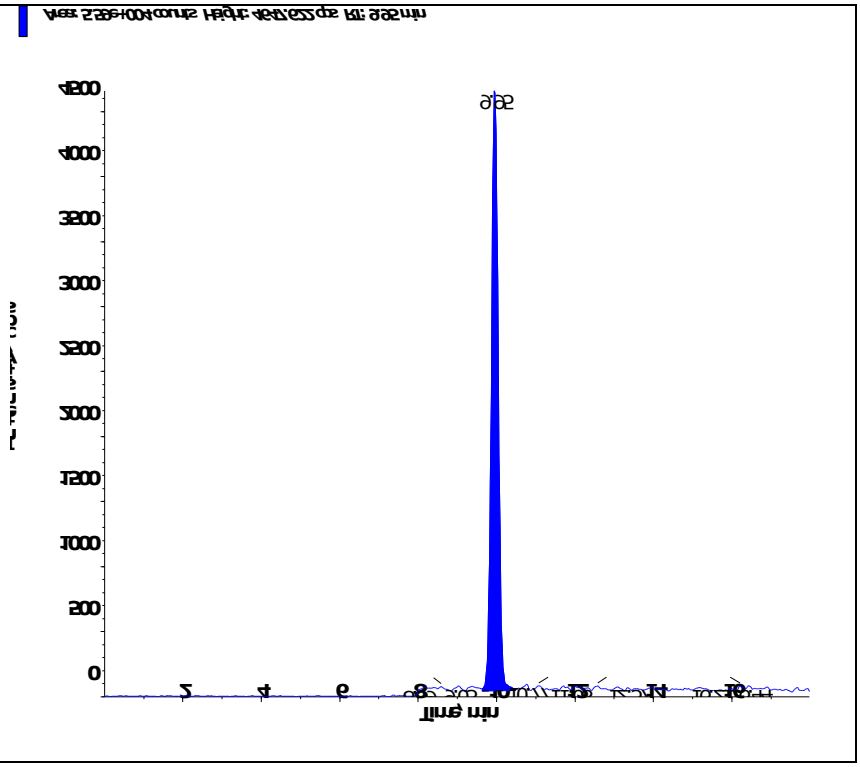

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Data File	LM33503.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 5:08:49 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG599066-11 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33503.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 5:08:49 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG599066-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.040e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.630e+05	9.96	1.00	1.03
Perchlorate conf	5.340e+04	9.94	1.00	0.929

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

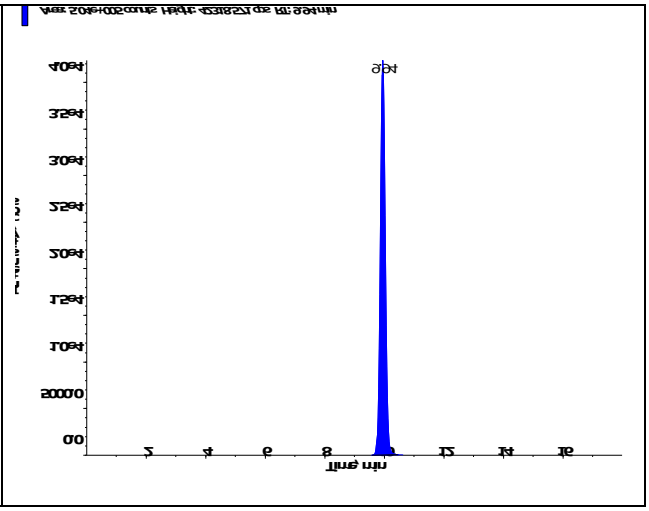

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.96 (9.94) min Calculated conc: 1.03 ng/ml Area Ratio: 0.323 Sample Type: (Quality Control)	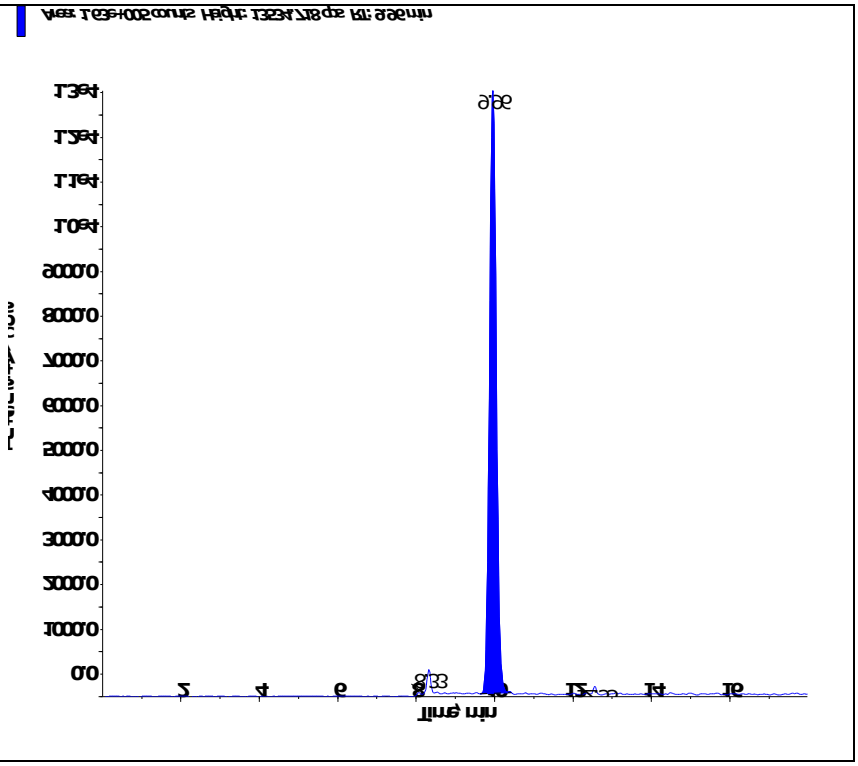
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.94 (9.92) min Calculated conc: 0.929 ng/ml Area Ratio: 0.106 Sample Type: (Quality Control)	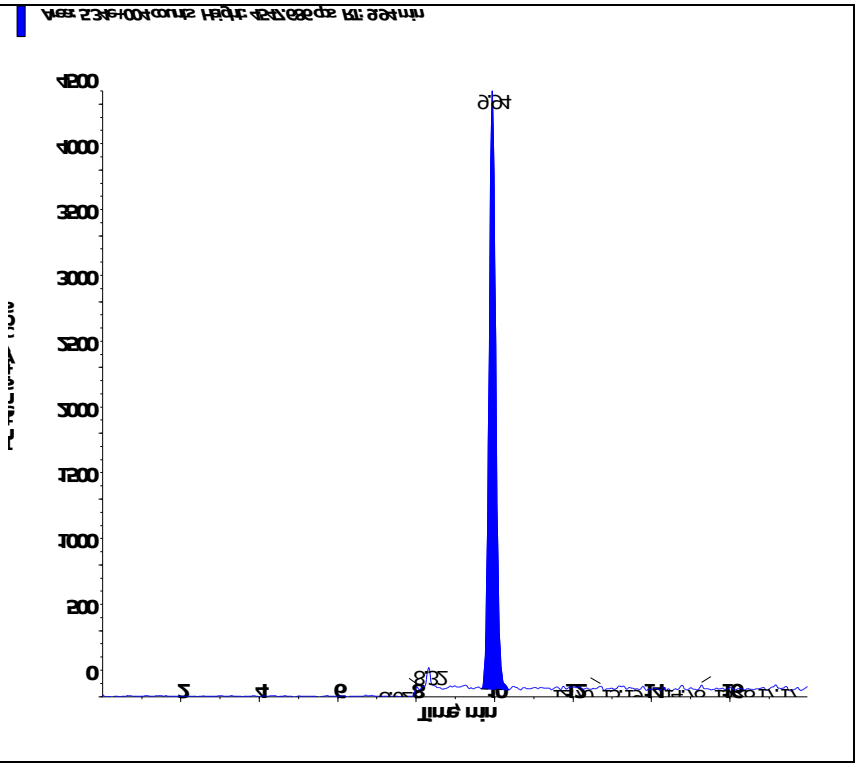

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Data File	LM33508.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 9:35:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559066-13 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33508.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 9:35:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559066-13	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.810e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.560e+05	9.97	1.00	1.03
Perchlorate conf	5.140e+04	9.96	1.00	0.936

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

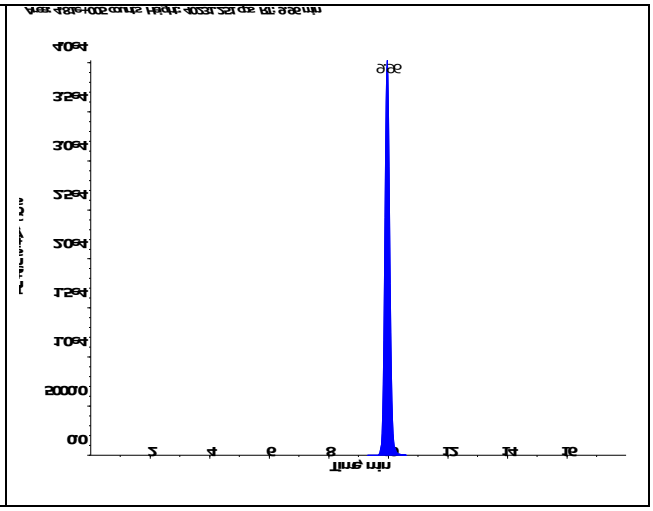

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.97 (9.94) min Calculated conc: 1.03 ng/ml Area Ratio: 0.324 Sample Type: (Quality Control)	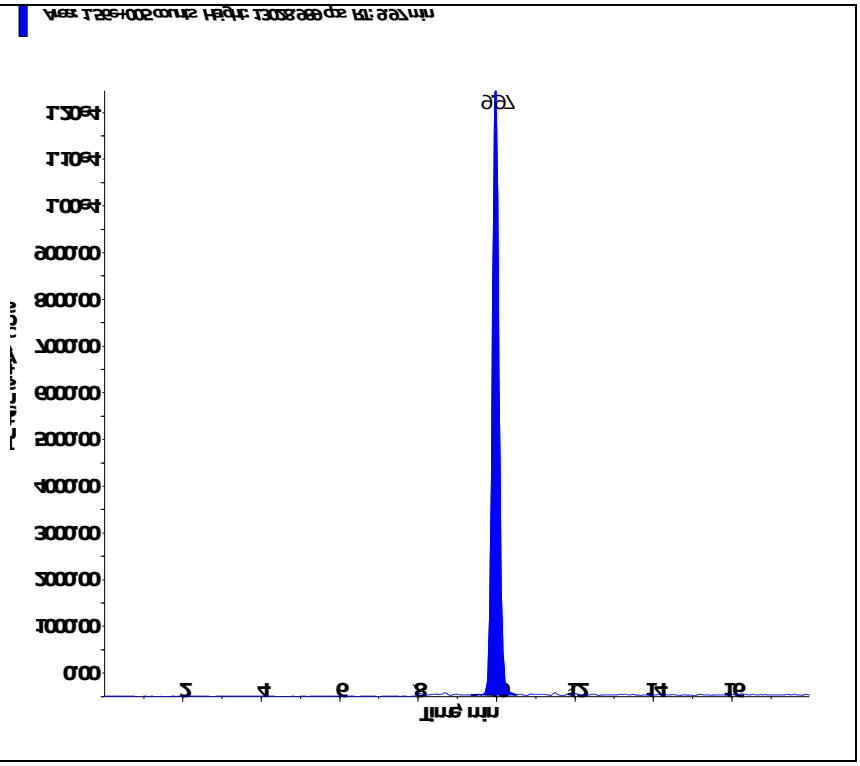
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.96 (9.92) min Calculated conc: 0.936 ng/ml Area Ratio: 0.107 Sample Type: (Quality Control)	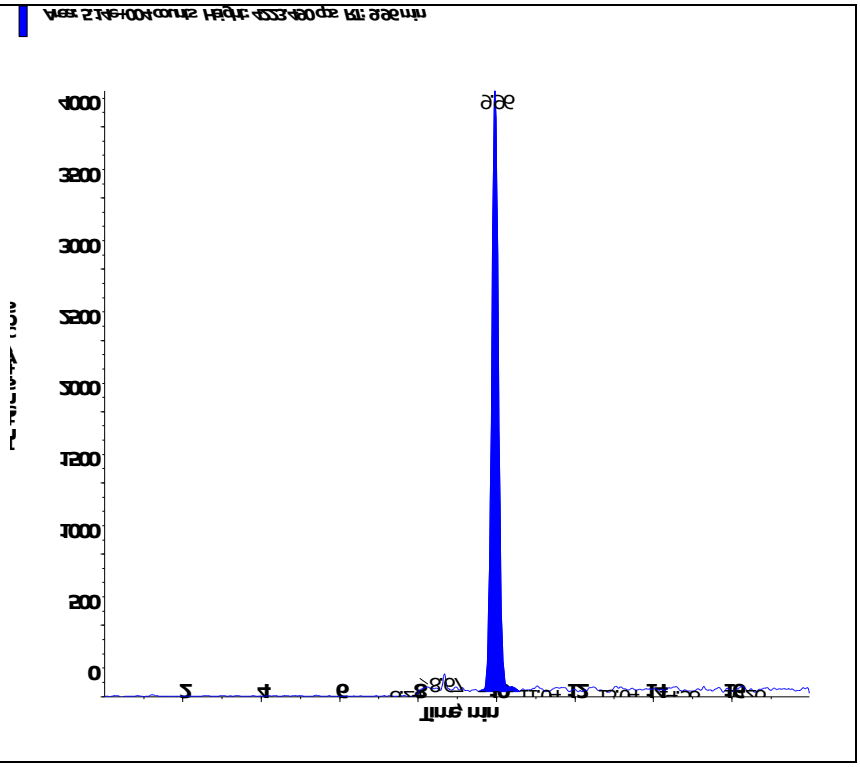

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Data File	LM33516.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 12:07:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG599066-15 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33516.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 12:07:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG599066-15	**Dilution Factor**	1.00
Sample Comment	1,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.910e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.620e+05	10.00	1.00	1.05
Perchlorate conf	5.300e+04	9.98	1.00	0.945

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

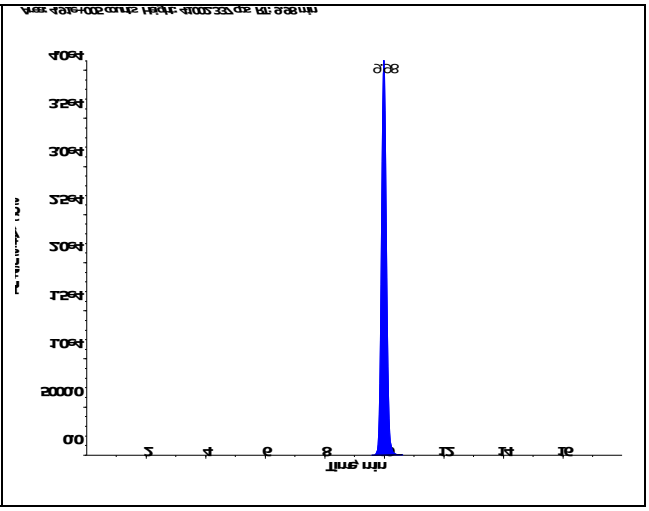

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.00 (9.94) min Calculated conc: 1.05 ng/ml Area Ratio: 0.33 Sample Type: (Quality Control)	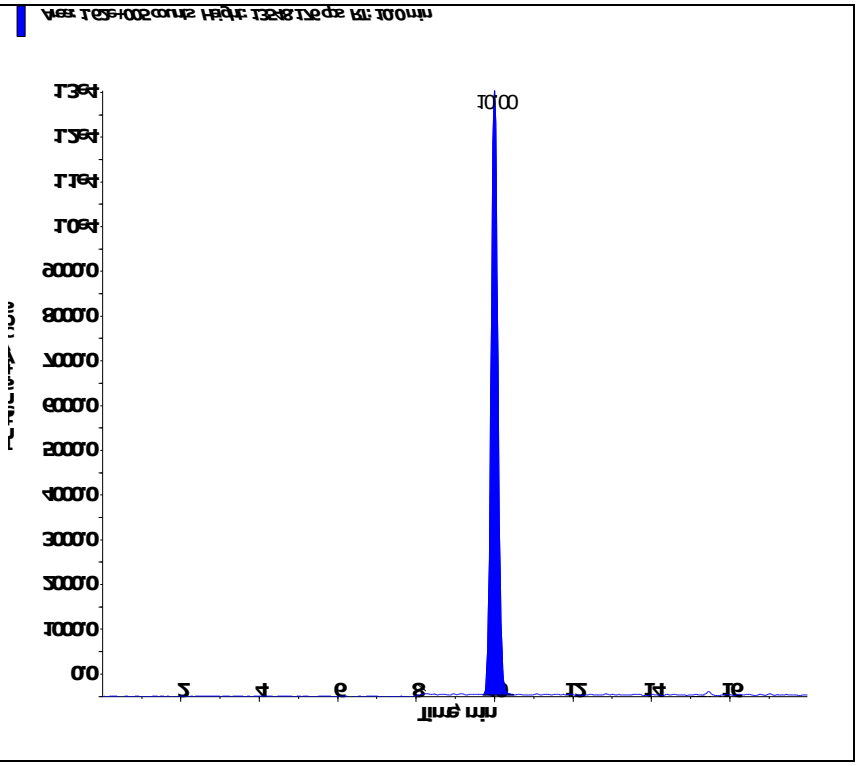
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.98 (9.92) min Calculated conc: 0.945 ng/ml Area Ratio: 0.108 Sample Type: (Quality Control)	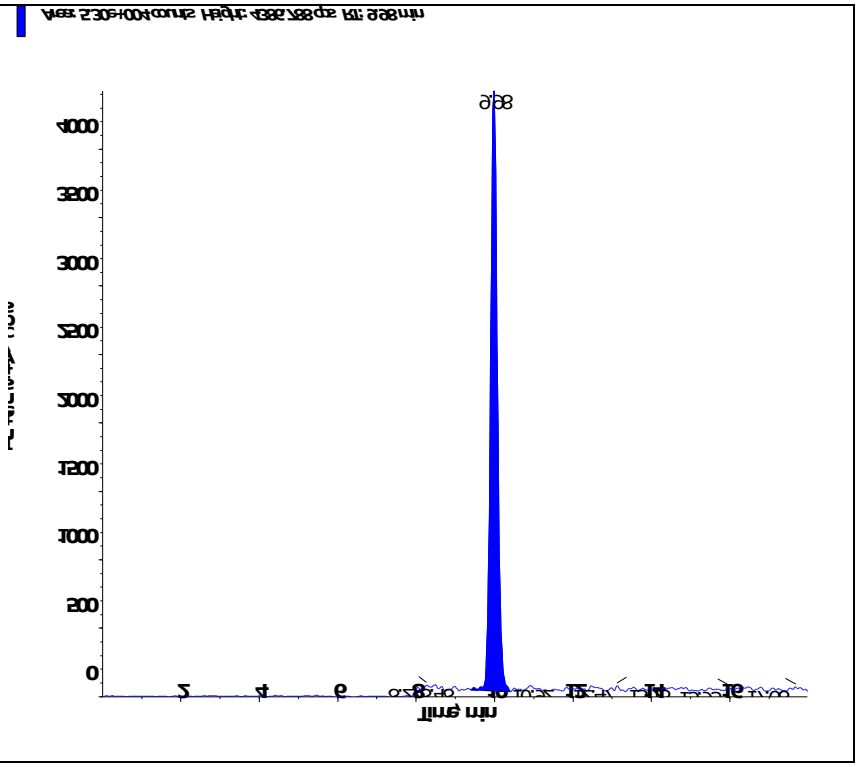

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Data File	LM33478.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/29/2016 9:15:23 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559015-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM33478.wiff	**Injection Volume**	10.00
Acquisition Date	2/29/2016 9:15:23 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559015-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.310e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.910e+04	9.98	N/A	0.218
Perchlorate conf	1.350e+04	9.96	N/A	0.205

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

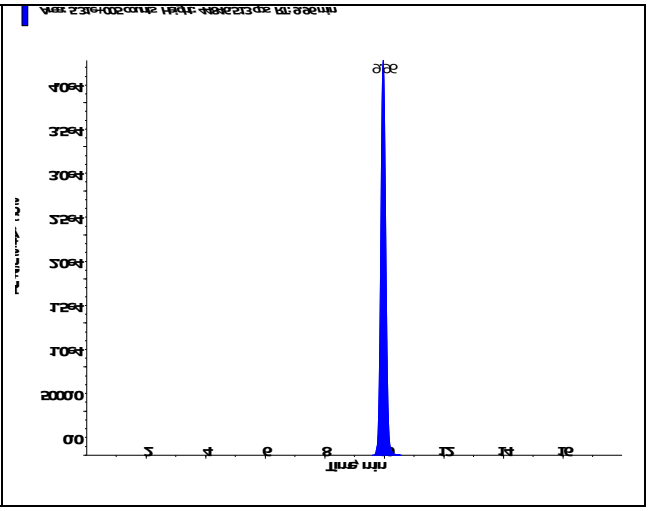

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.98 (9.94) min Calculated conc: 0.218 ng/ml Area Ratio: 0.074 Sample Type: (Unknown)	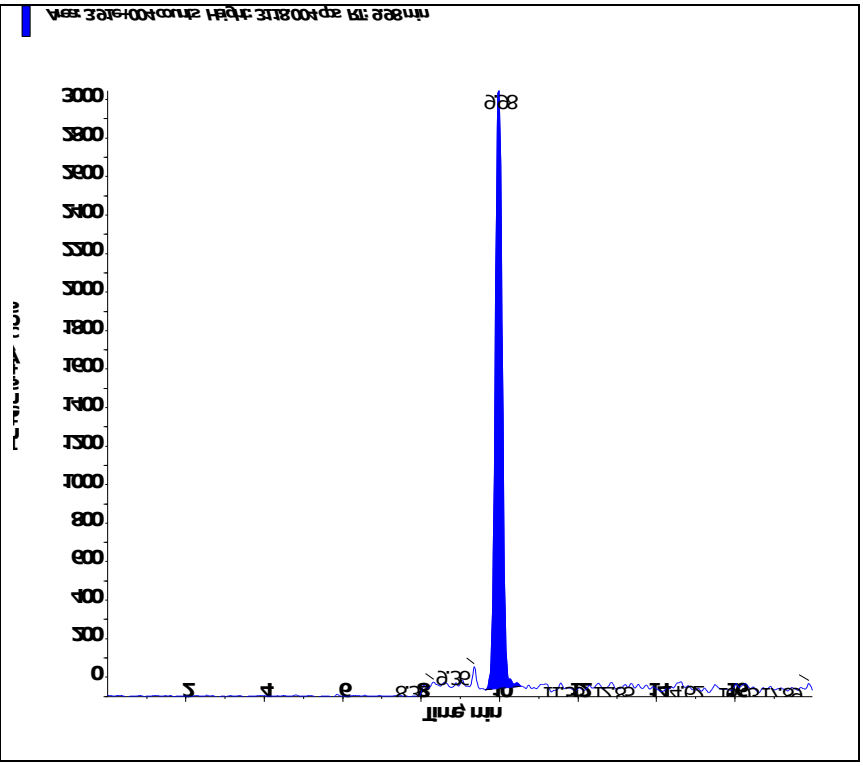
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.96 (9.92) min Calculated conc: 0.205 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	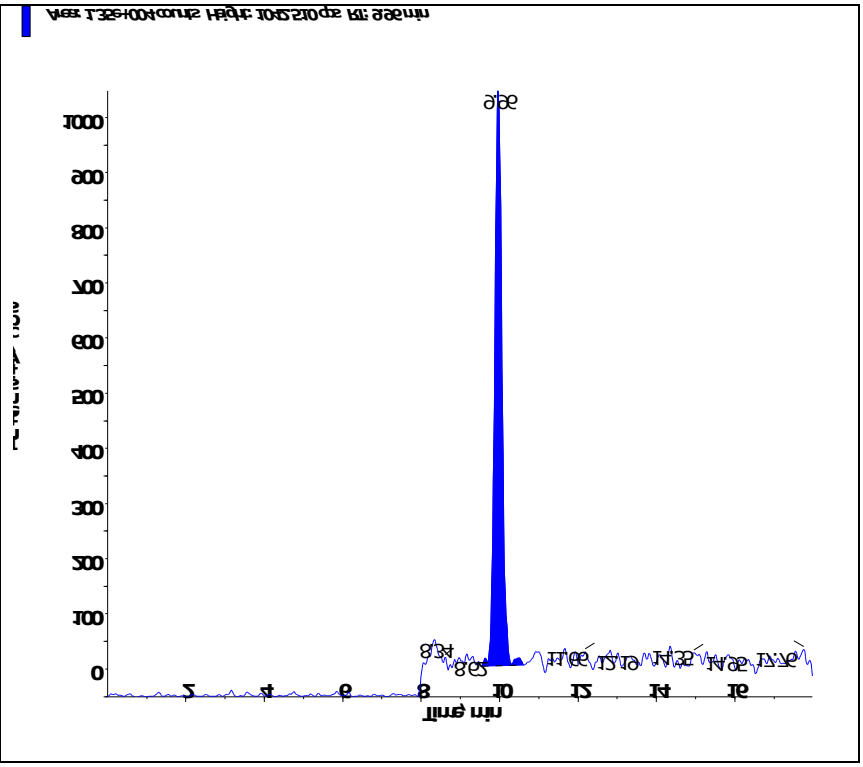

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Data File	LM33491.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 1:21:34 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559142-08 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33491.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 1:21:34 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559142-08	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.260e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.630e+04	9.98	N/A	0.202
Perchlorate conf	1.260e+04	9.97	N/A	0.192

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

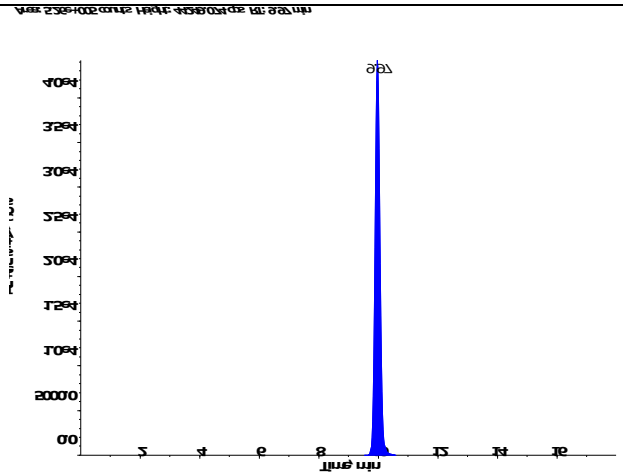

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.98 (9.94) min Calculated conc: 0.202 ng/ml Area Ratio: 0.069 Sample Type: (Unknown)	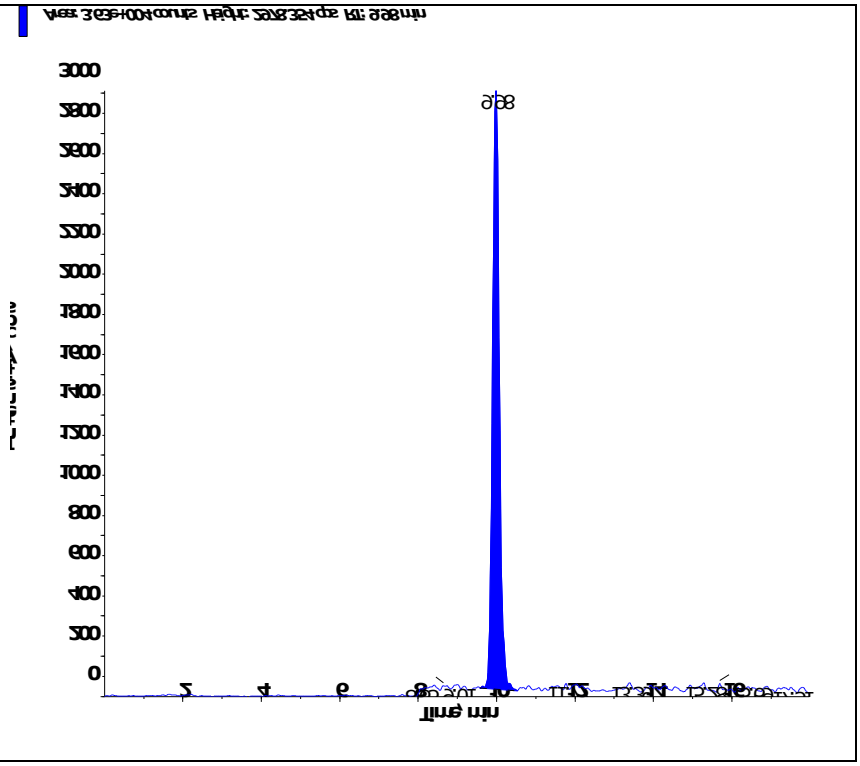
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.97 (9.92) min Calculated conc: 0.192 ng/ml Area Ratio: 0.024 Sample Type: (Unknown)	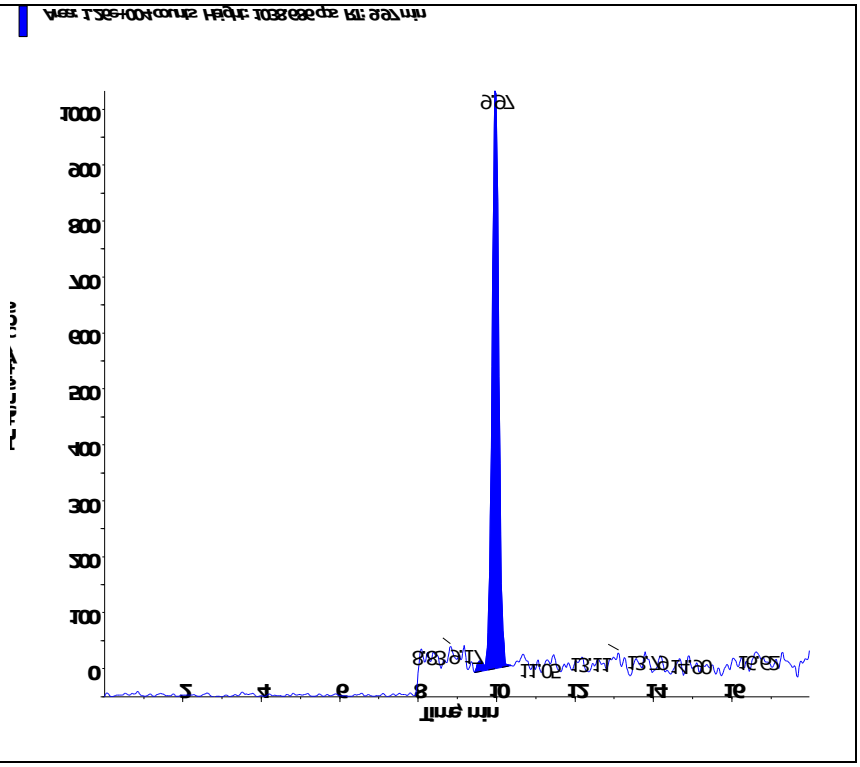

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Data File	LM33504.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 5:27:44 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559142-09 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33504.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 5:27:44 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559142-09	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.500e+04	9.96	N/A	0.205
Perchlorate conf	1.180e+04	9.95	N/A	0.188

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

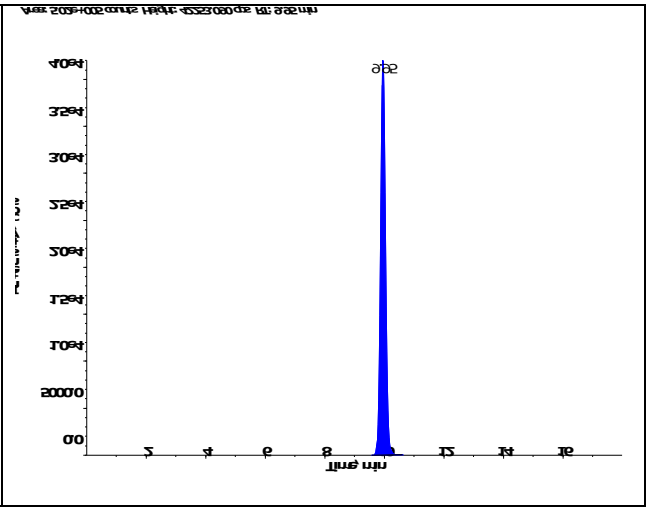

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.96 (9.94) min Calculated conc: 0.205 ng/ml Area Ratio: 0.07 Sample Type: (Unknown)	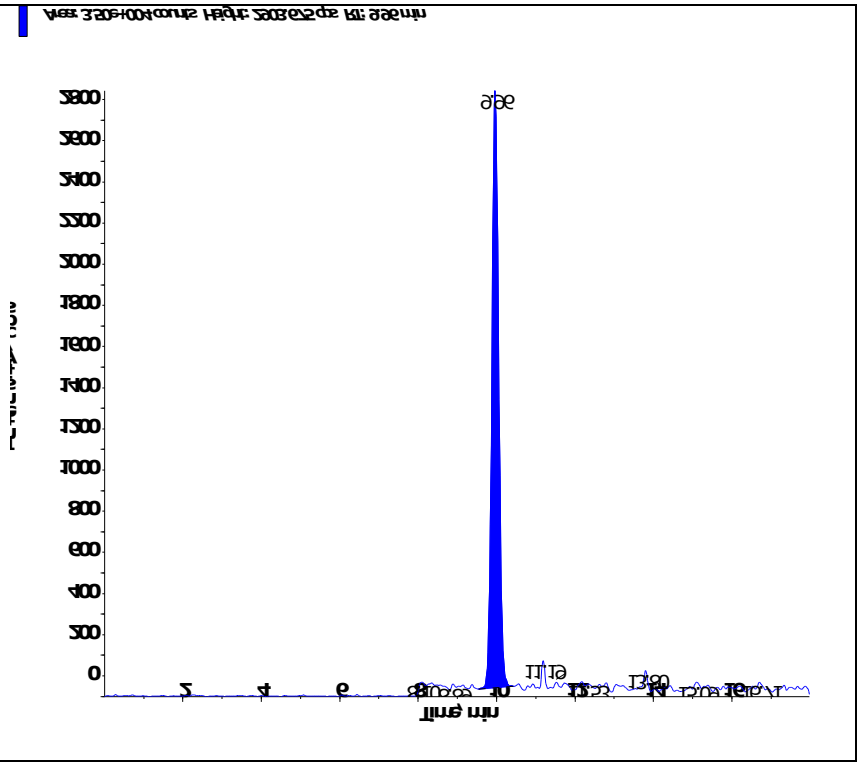
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.95 (9.92) min Calculated conc: 0.188 ng/ml Area Ratio: 0.023 Sample Type: (Unknown)	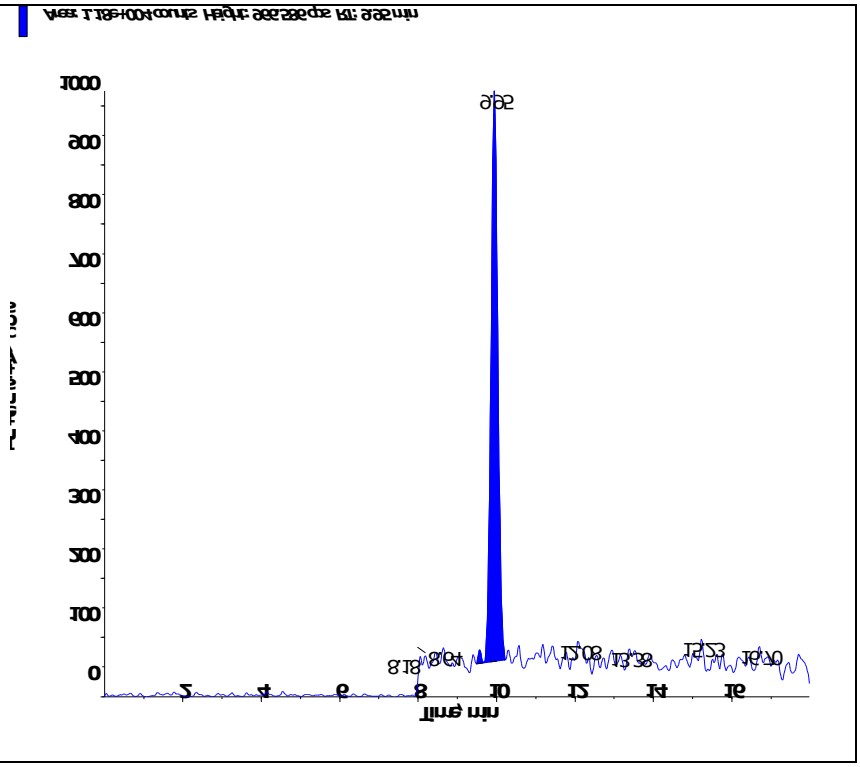

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Data File	LM33517.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 12:26:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559142-10 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33517.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 12:26:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559142-10	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.860e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.430e+04	10.00	N/A	0.207
Perchlorate conf	1.180e+04	9.98	N/A	0.196

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

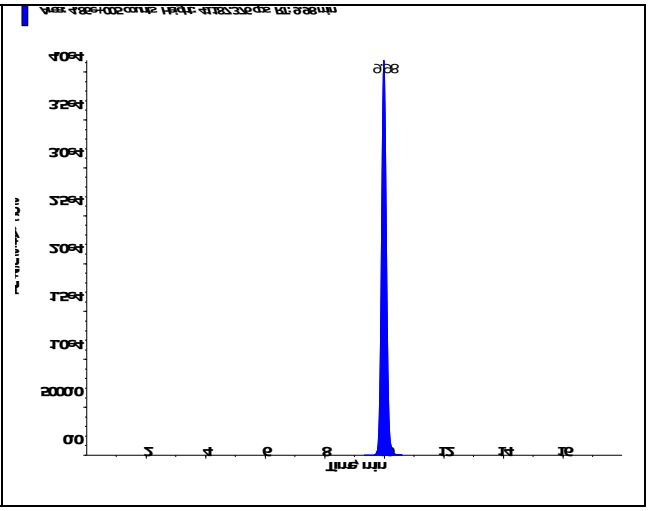

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.00 (9.94) min Calculated conc: 0.207 ng/ml Area Ratio: 0.07 Sample Type: (Unknown)	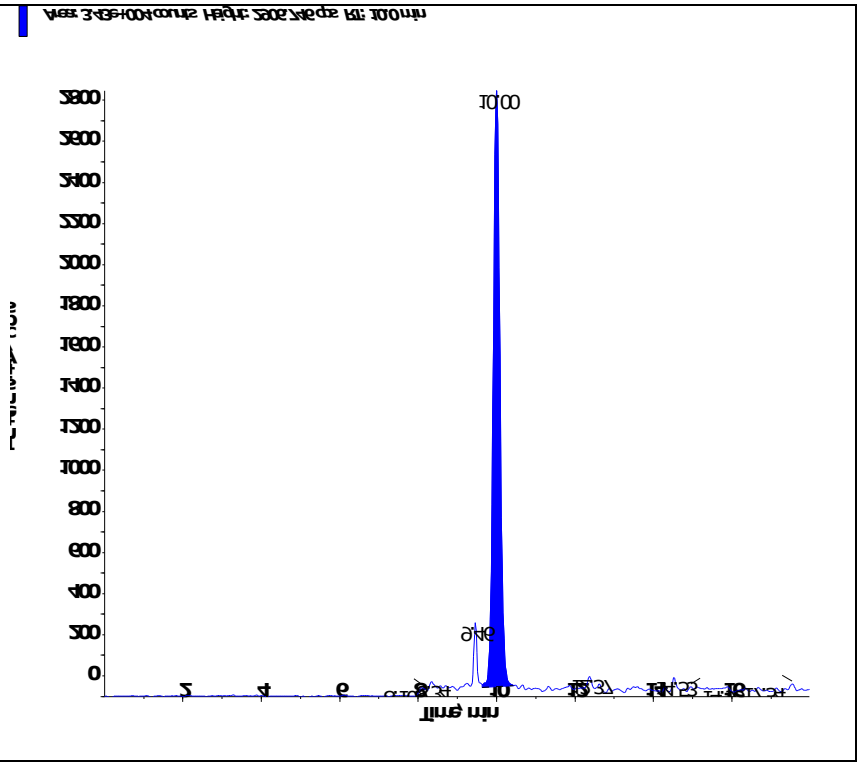
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.98 (9.92) min Calculated conc: 0.196 ng/ml Area Ratio: 0.024 Sample Type: (Unknown)	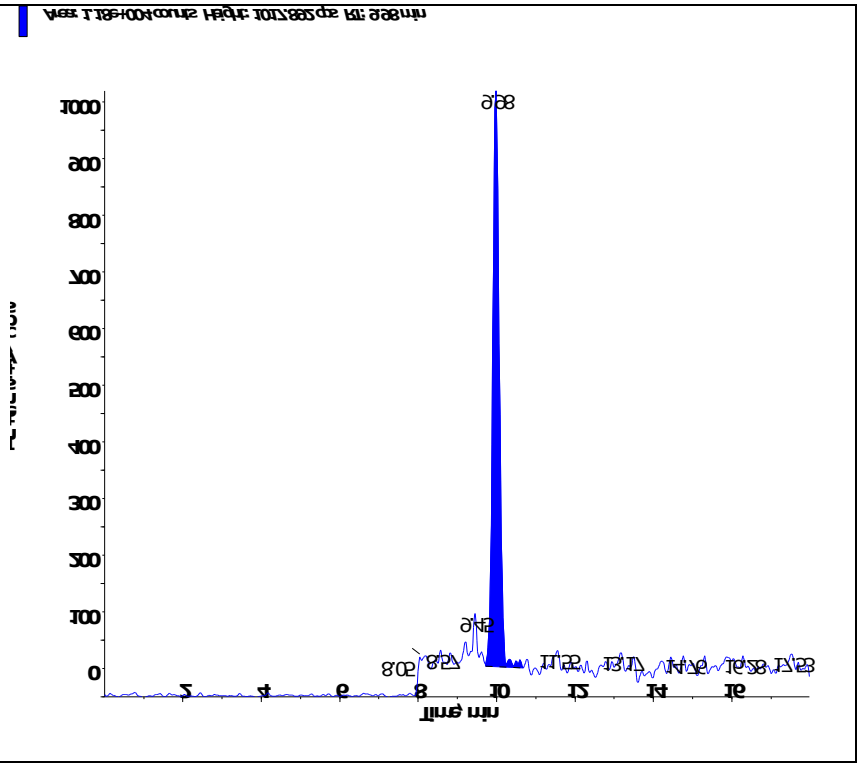

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Data File	LM33479.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/29/2016 9:34:19 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559066-08 CCB	**Injection Vial**	1.00
Data File	LM33479.wiff	**Injection Volume**	10.00
Acquisition Date	2/29/2016 9:34:19 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559066-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.400e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.400e+02	9.92	N/A	< 0
Perchlorate conf	2.300e+02	9.95	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

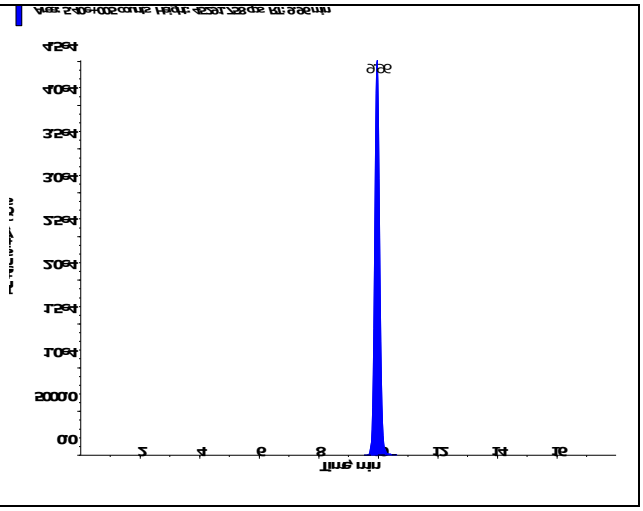

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.92 (9.94) min Calculated conc: < 0 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	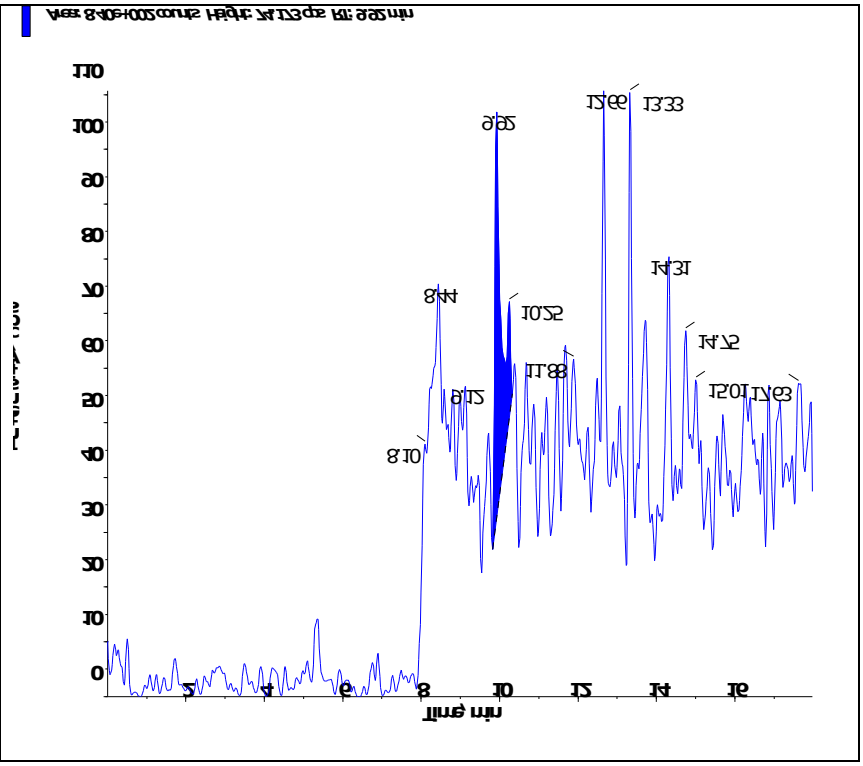
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.95 (9.92) min Calculated conc: < 0 ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	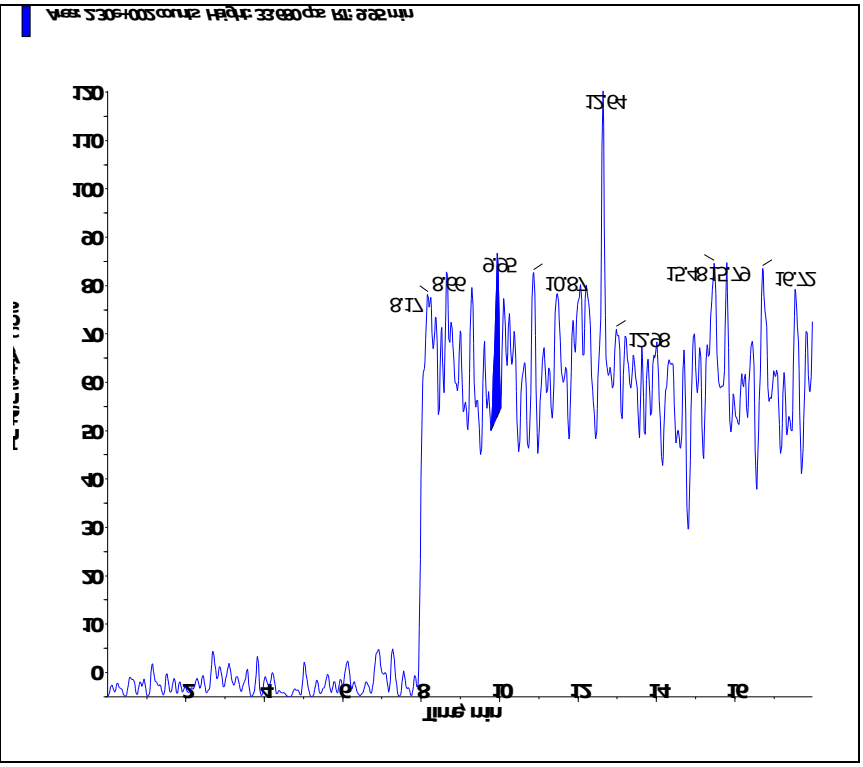

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Data File	LM33492.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 1:40:30 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG599066-10 CCB	**Injection Vial**	1.00
Data File	LM33492.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 1:40:30 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG599066-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.310e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	4.900e+02	9.88	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

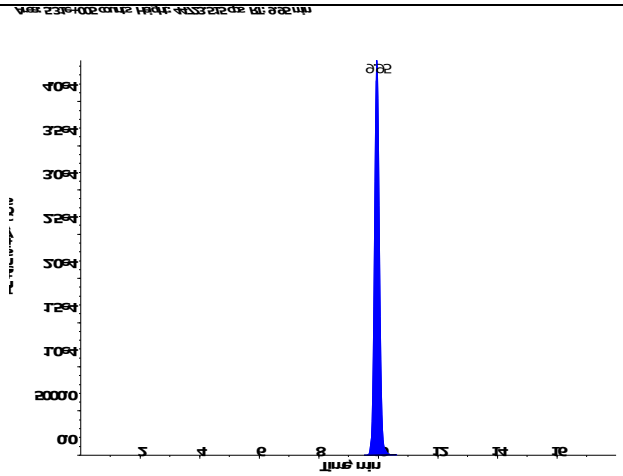

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.94) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	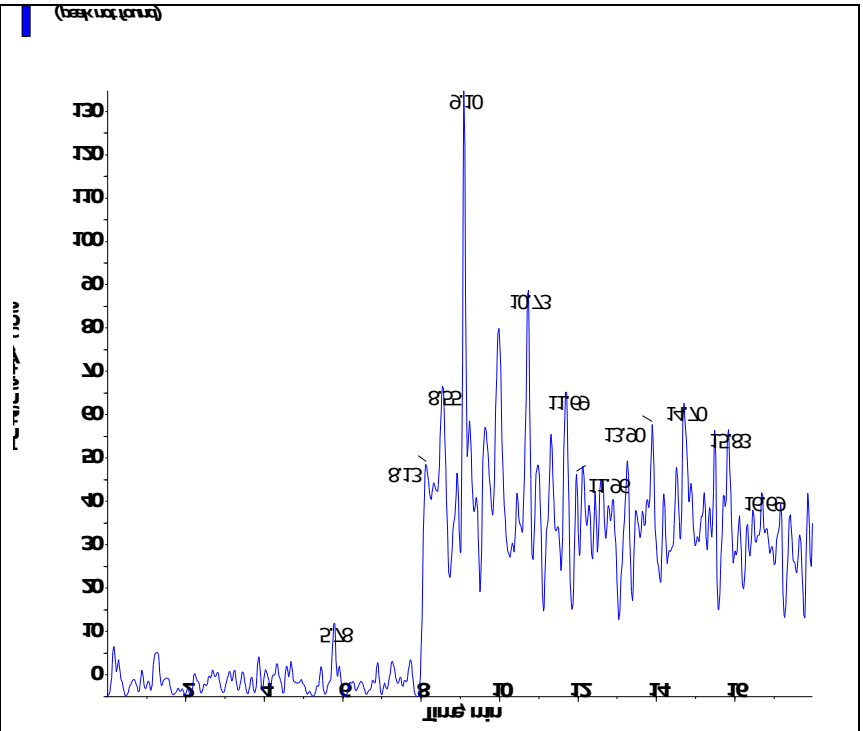
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.88 (9.92) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	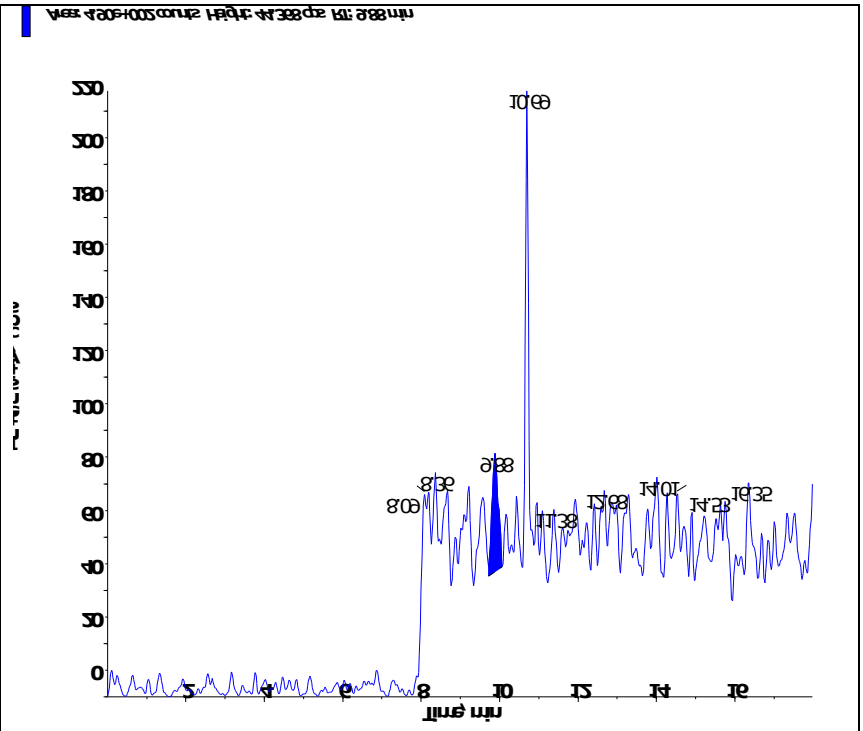

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Data File	LM33505.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 5:46:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG599066-12 CCB	**Injection Vial**	1.00
Data File	LM33505.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 5:46:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG599066-12	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

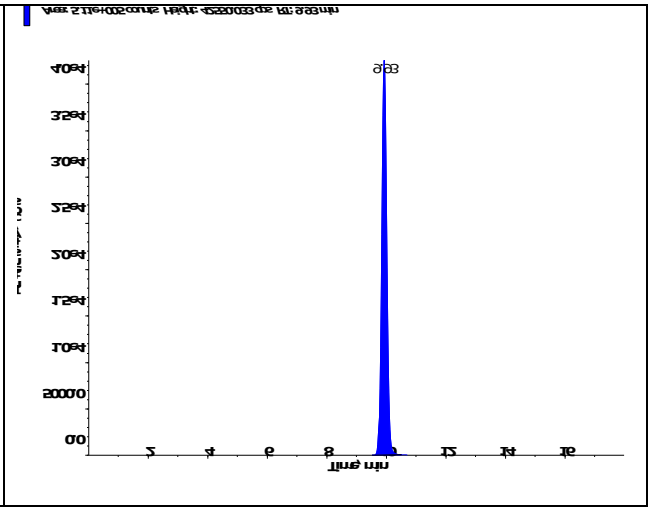

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Printed: 3/1/2016 2:43 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.94) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	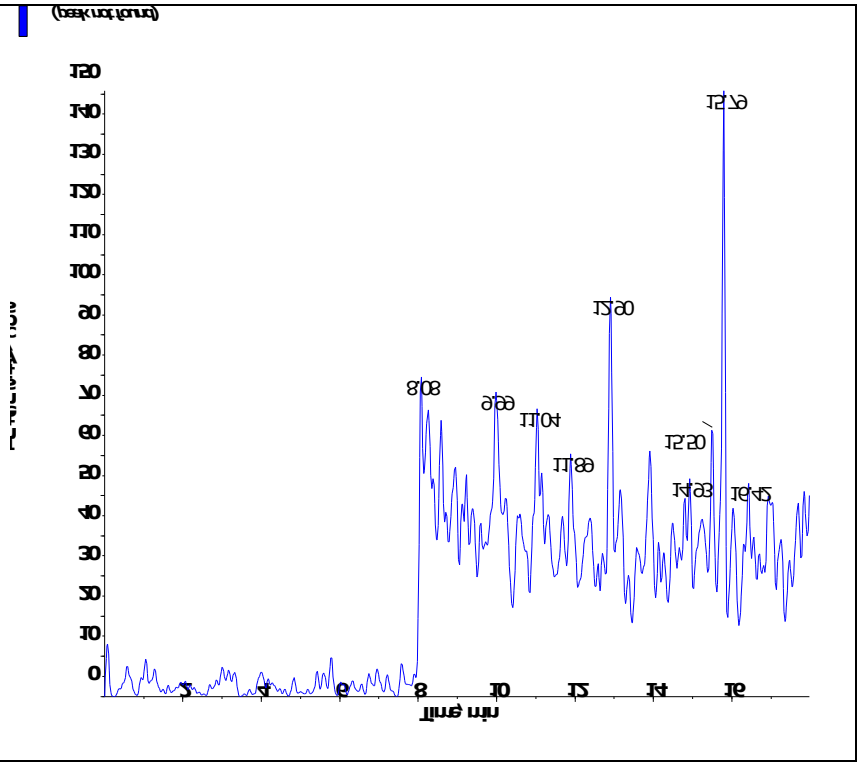
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.92) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	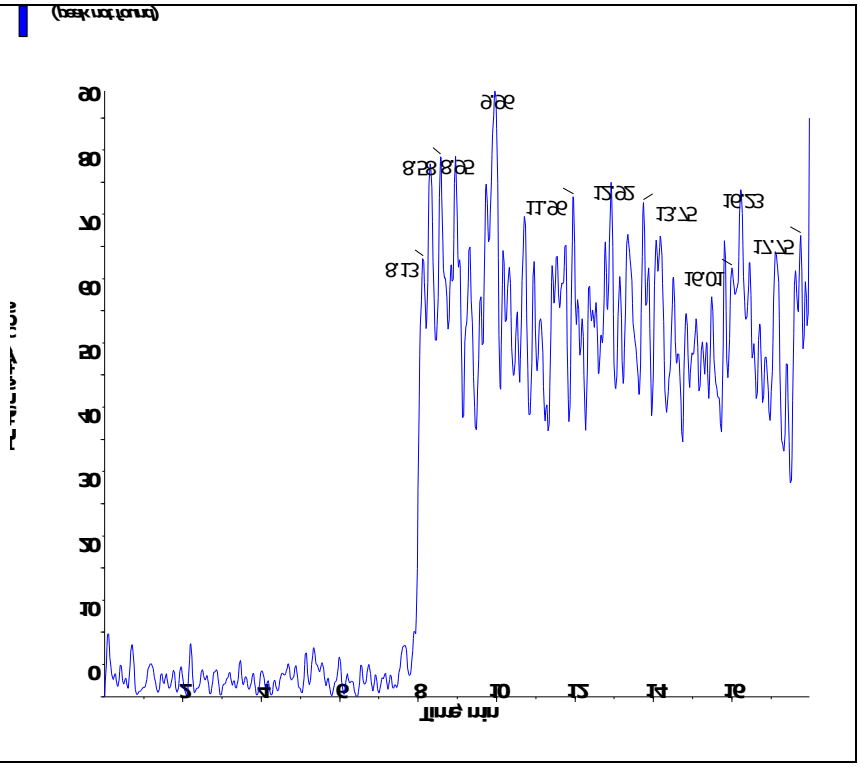

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Created with Analyst Reporter
Printed: 3/1/2016 2:44 PM

Data File	LM33510.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 10:13:50 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559066-14 CCB	**Injection Vial**	1.00
Data File	LM33510.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 10:13:50 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559066-14	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.980e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

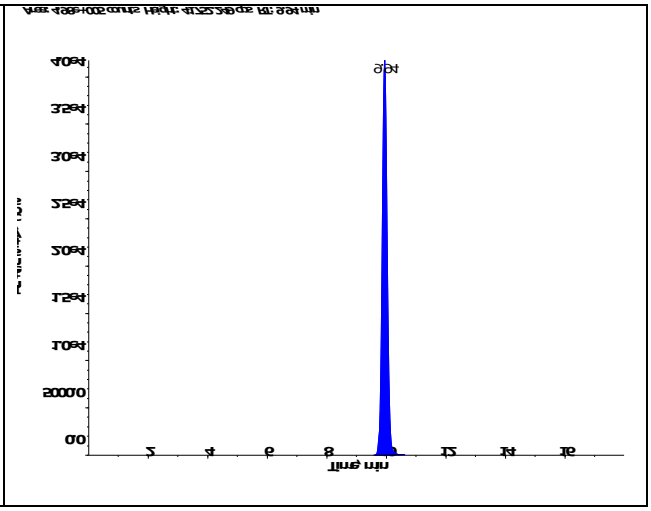

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

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Printed: 3/1/2016 2:44 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.94) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	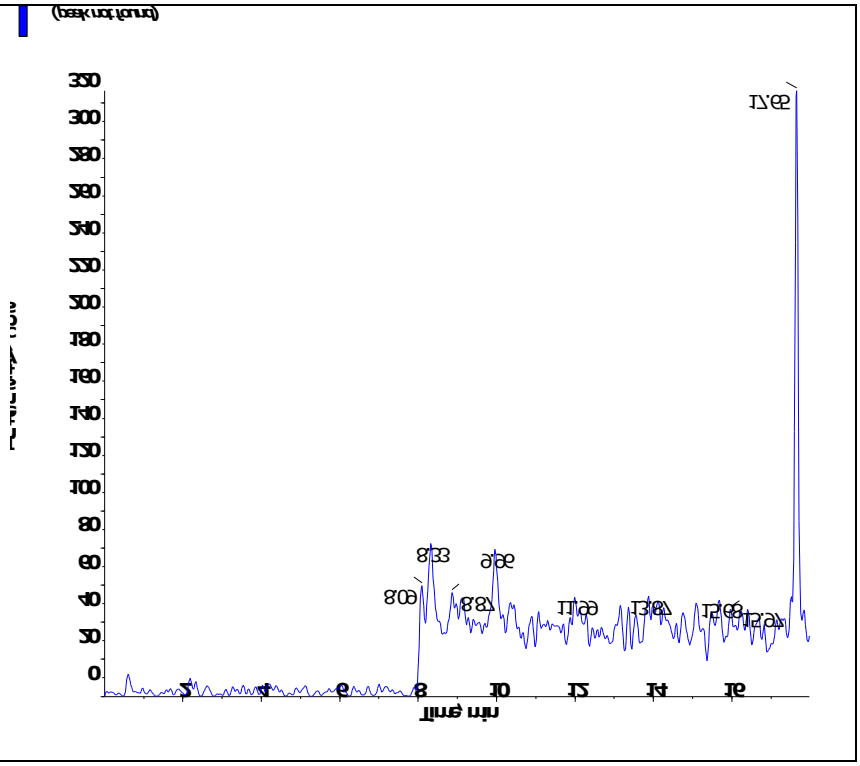
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.92) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	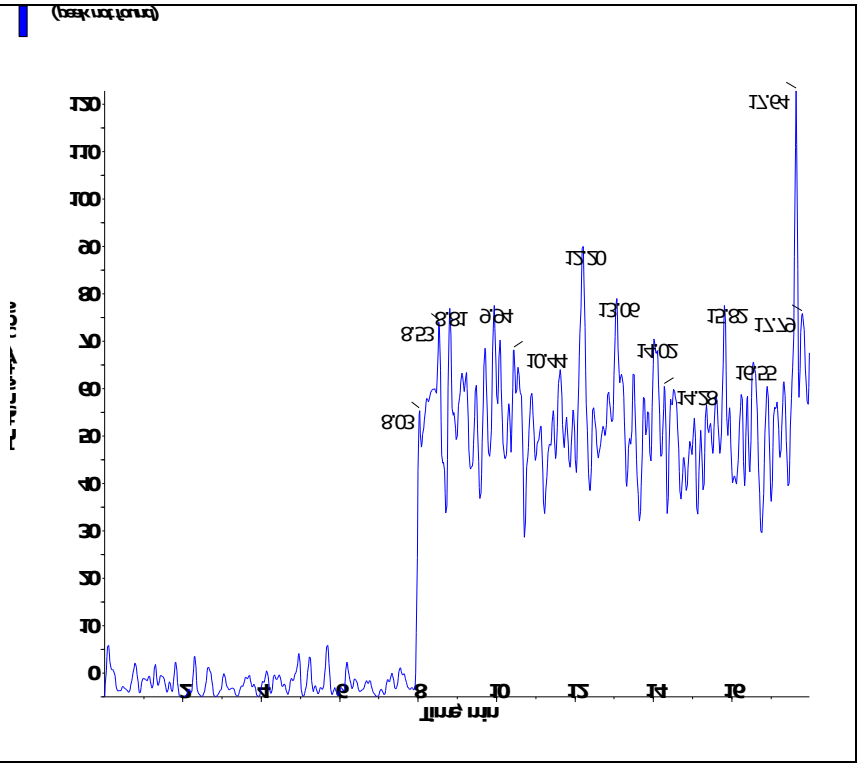

s.dataFile Page 2 of 2

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Printed: 3/1/2016 2:48 PM

Data File	LM33518.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 12:45:23 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG599066-16 CCB	**Injection Vial**	1.00
Data File	LM33518.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 12:45:23 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG599066-16	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.870e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.320e+03	10.10	N/A	< 0
Perchlorate conf	1.400e+03	10.10	N/A	0.0035

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

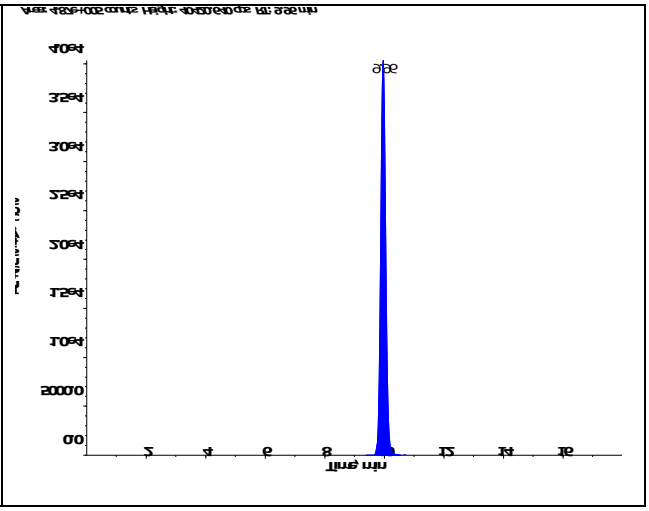

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.10 (9.94) min Calculated conc: < 0 ng/ml Area Ratio: 0.003 Sample Type: (Unknown)	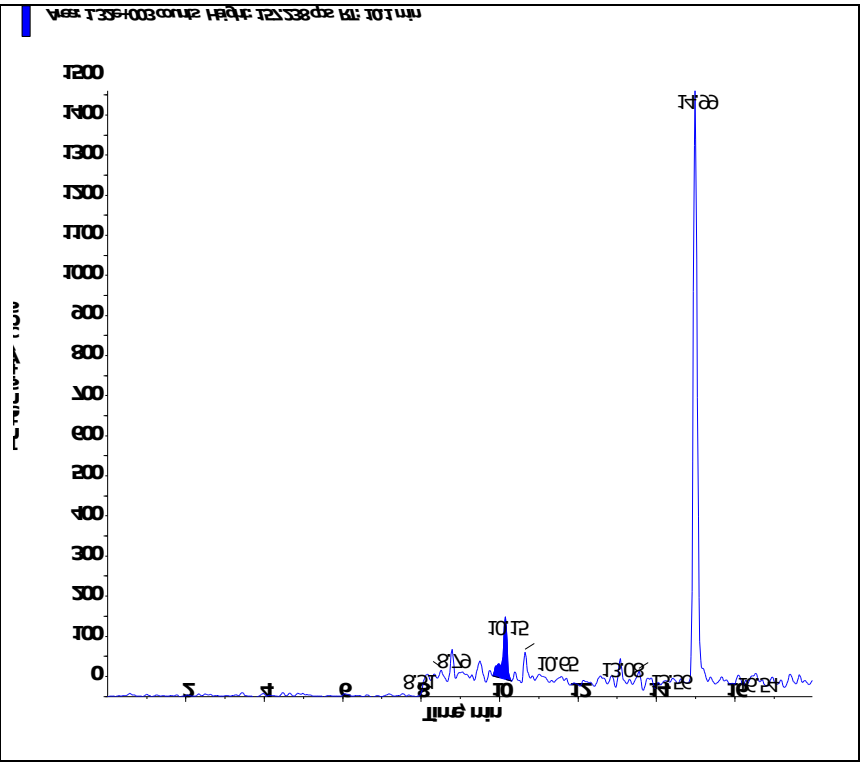
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 10.10 (9.92) min Calculated conc: 0.0035 ng/ml Area Ratio: 0.003 Sample Type: (Unknown)	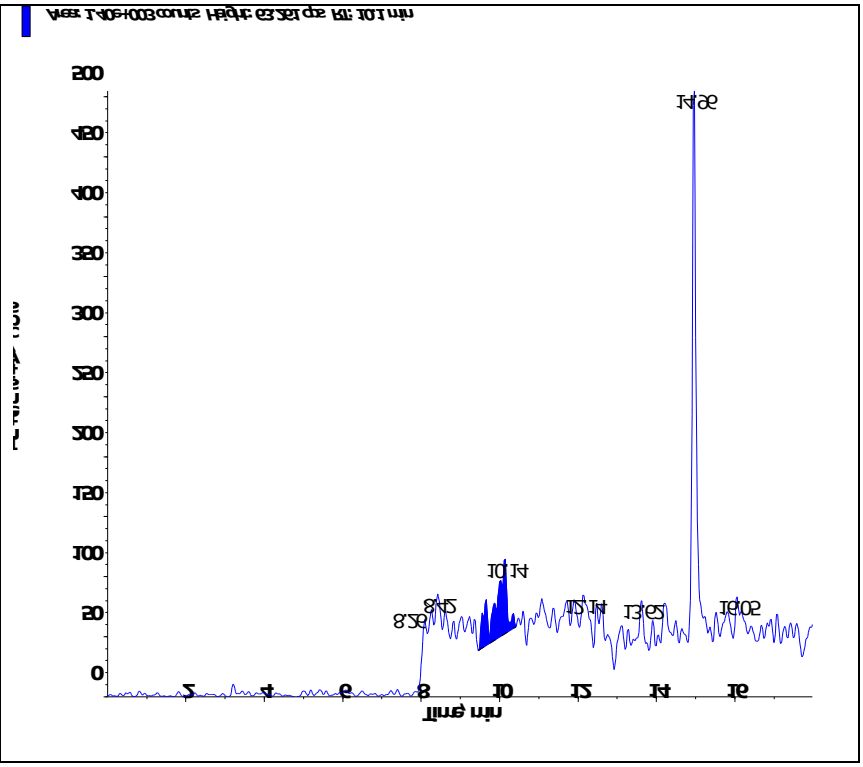

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Data File	LM33480.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/29/2016 9:53:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559142-01 MCT (2.0ug/kg)	**Injection Vial**	26.00
Data File	LM33480.wiff	**Injection Volume**	10.00
Acquisition Date	2/29/2016 9:53:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559142-01	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.060e+05	9.56	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.320e+04	9.57	N/A	0.191
Perchlorate conf	1.150e+04	9.55	N/A	0.181

O18LP (Internal Standard)

RT (Exp. RT): 9.56(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

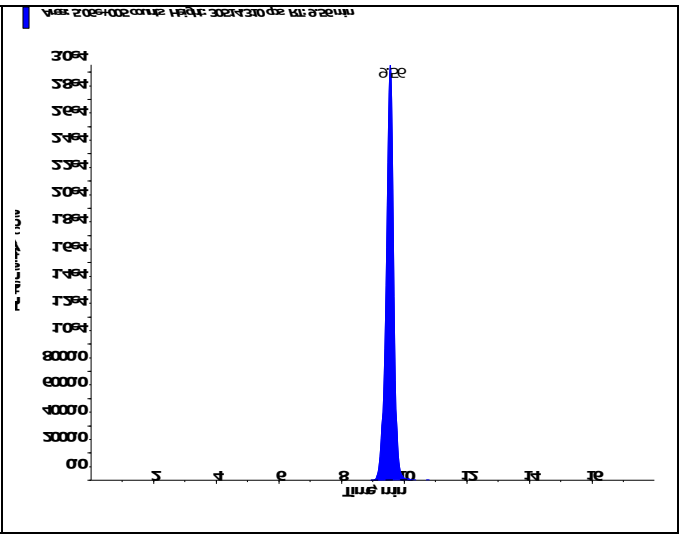

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.57 (9.94) min Calculated conc: 0.191 ng/ml Area Ratio: 0.066 Sample Type: (Unknown)	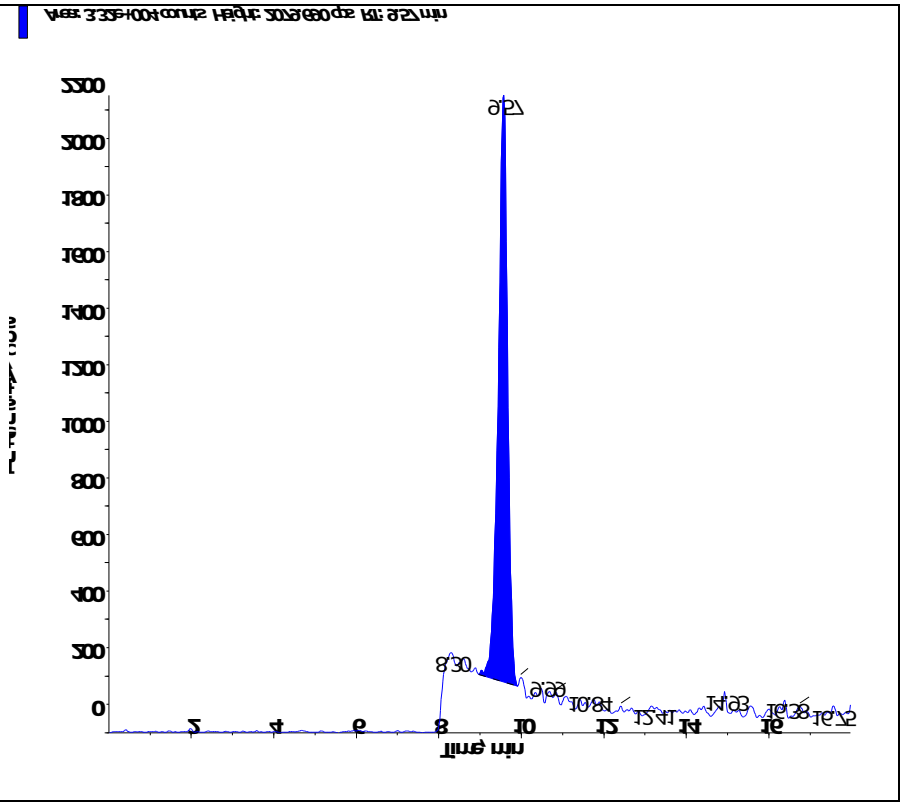
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.55 (9.92) min Calculated conc: 0.181 ng/ml Area Ratio: 0.023 Sample Type: (Unknown)	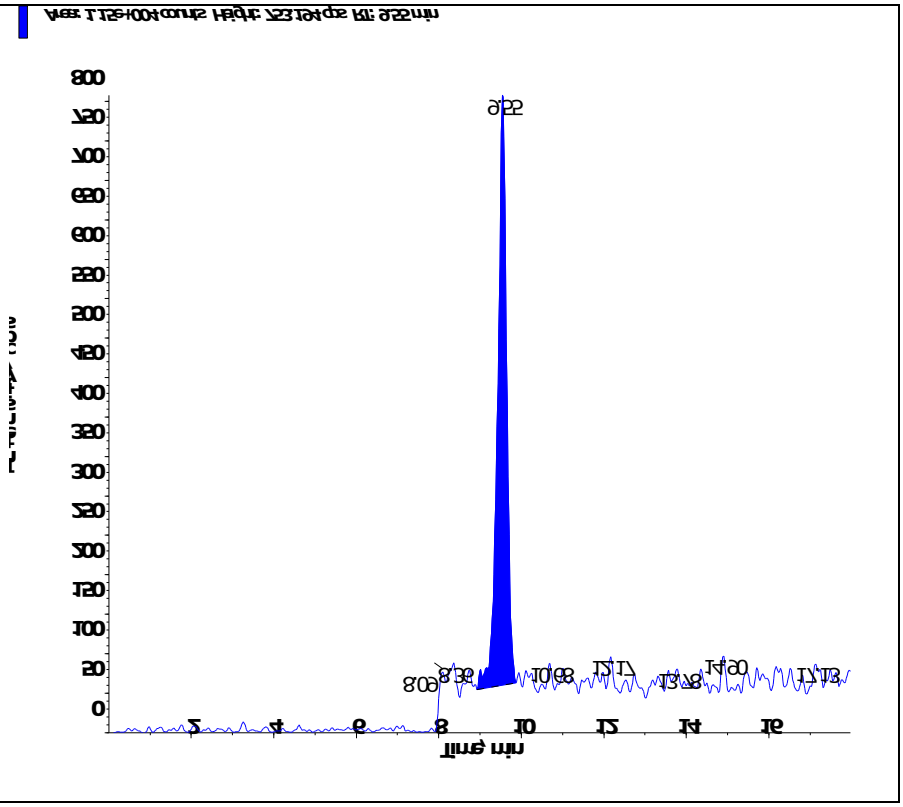

s.dataFile Page 2 of 2

2.2.1.5 Raw QC Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 3/1/2016 2:32 PM

Data File	LM33481.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/29/2016 10:12:12 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559142-02 BLANK	**Injection Vial**	27.00
Data File	LM33481.wiff	**Injection Volume**	10.00
Acquisition Date	2/29/2016 10:12:12 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559142-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.150e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	7.760e+02	9.92	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

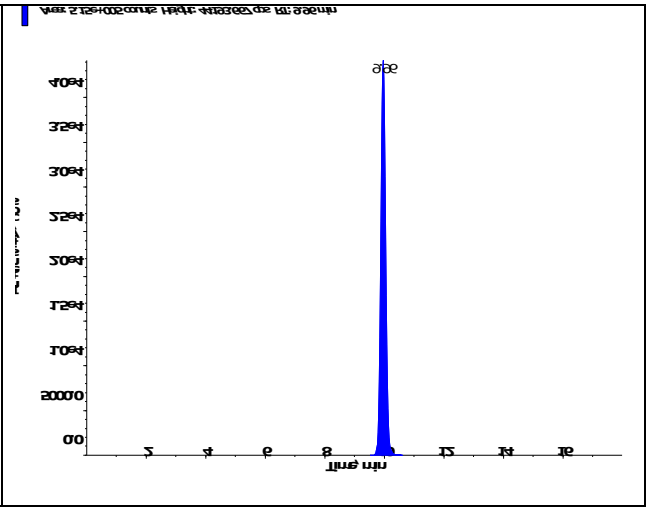

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Created with Analyst Reporter
Printed: 3/1/2016 2:32 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.94) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	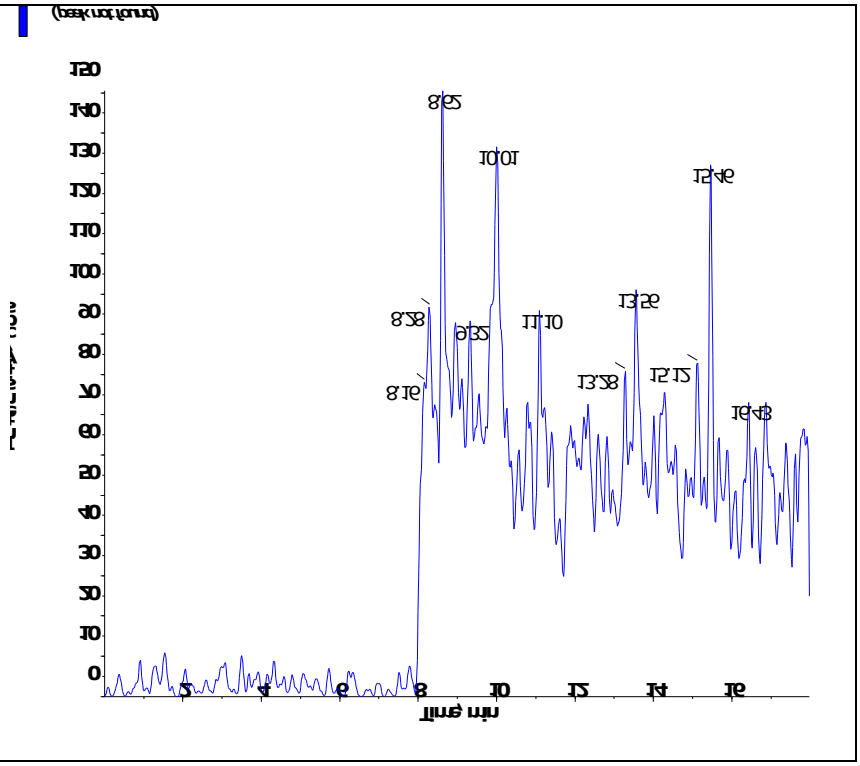
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.92 (9.92) min Calculated conc: < 0 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	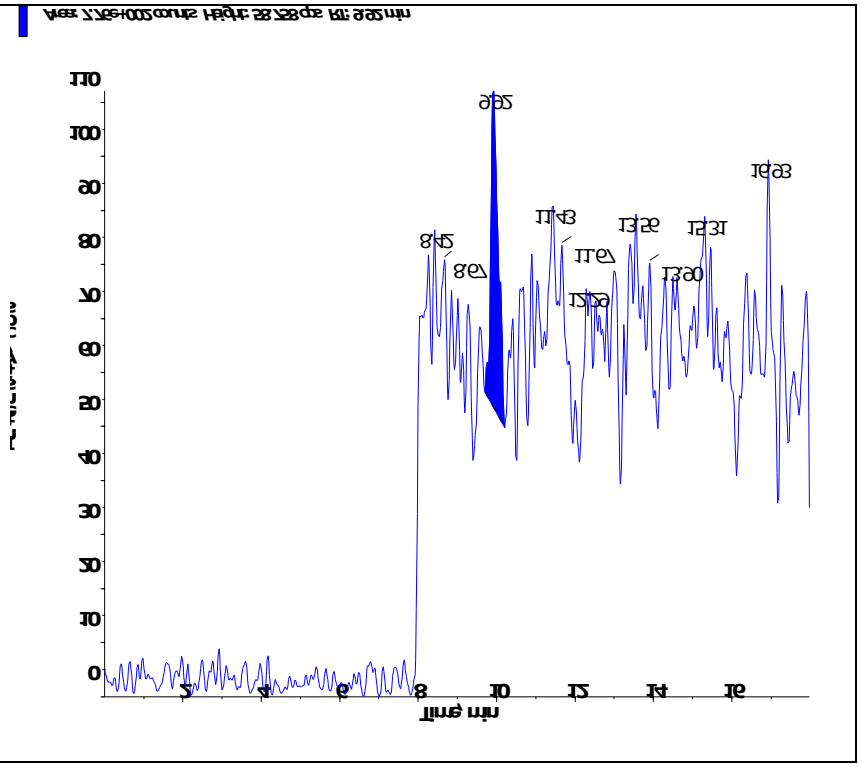

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Created with Analyst Reporter
Printed: 3/1/2016 2:33 PM

Data File	LM33482.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/29/2016 10:31:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559142-03 LCS (2.0ug/kg)	**Injection Vial**	28.00
Data File	LM33482.wiff	**Injection Volume**	10.00
Acquisition Date	2/29/2016 10:31:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559142-03	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.580e+04	9.97	N/A	0.207
Perchlorate conf	1.280e+04	9.96	N/A	0.204

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

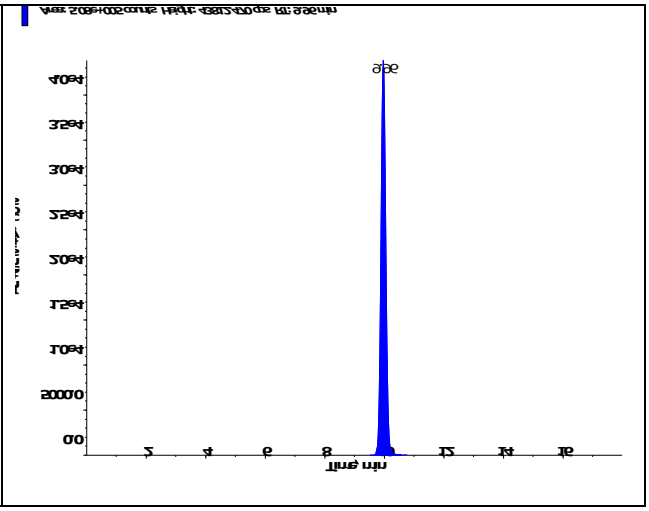

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.97 (9.94) min Calculated conc: 0.207 ng/ml Area Ratio: 0.07 Sample Type: (Unknown)	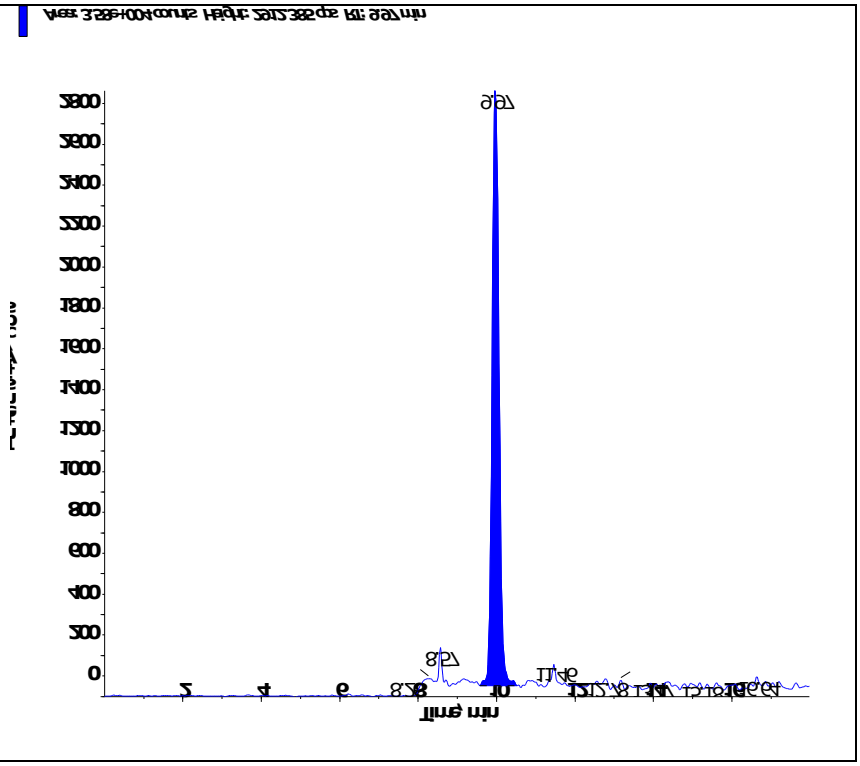
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.96 (9.92) min Calculated conc: 0.204 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	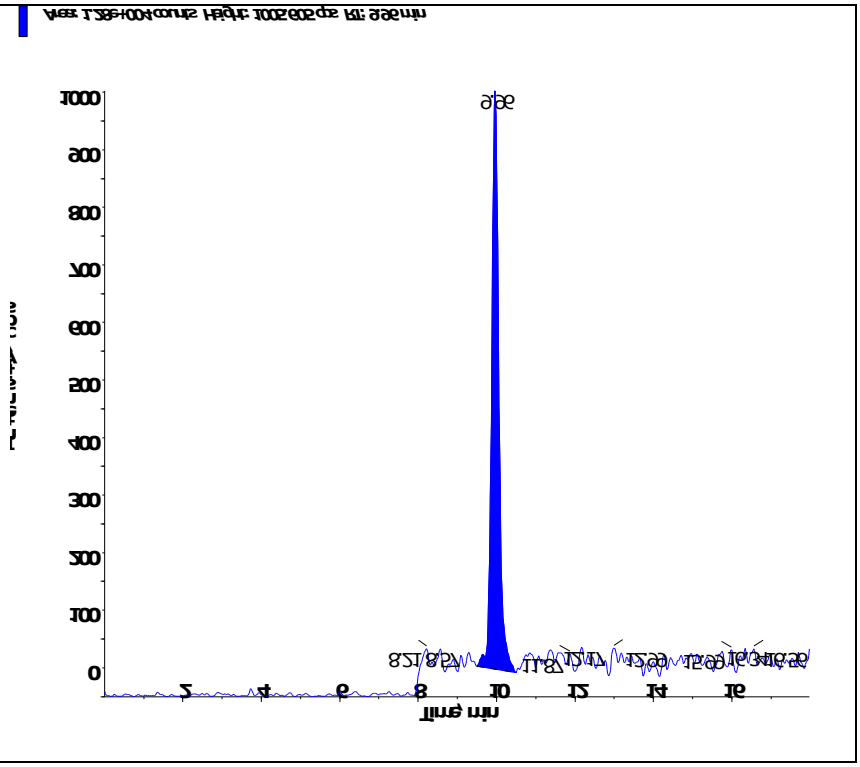

2.3 General Chemistry Data

2.3.1 Percent Solids Data

2.3.1.1 Raw Data

Example Percent Solids Calculations

1.0 Calculating the percent solids of a sample.

$$\%Solids = \frac{WT3 - WT1}{WT2 - WT1} \times F$$

Where:	
WT1 = Weight, in grams, of the empty container	1.30 g
WT2 = Weight, in grams, of the container and wet sample	21.274 g
WT3 = Weight, in grams, of the container and dried sample	5.21 g
F = Factor to get units as percent weight	100
%Solids = Percent solids present in sample.	19.58%

2.0 Calculating the percent moisture of a sample.

% Moisture = 100 - % Solids from 1.0 calculation

Microbac Laboratories Inc.

PERCENT SOLIDS

Workgroup (AAB#): WG559108 Analyst: AC ADT(on): 02/29/2016 13:53
Method: D2216-90 Instrument: BAL021 ADT(off): 03/01/2016 08:01
SOP: K0003 Rev: 14

SAMPLE NUMBER	EMPTY PAN WT 1	WET WT 2	DRY WT 3A	DRY WT 3B	DRY WT 3C	PERCENT SOLID	PERCENT MOISTURE
L16021354-02	1.295	16.623	12.281			71.67	
L16021354-03	1.289	16.412	13.157			78.48	
L16021354-04	1.299	17.74	12.93			70.74	
L16021354-05	1.294	18.333	14.899			79.85	
L16021354-06	1.295	16.451	12.716			75.36	
L16021354-07	1.295	16.451	12.716			75.36	
L16021354-08	1.295	16.451	12.716			75.36	
L16021354-09	1.293	18.074	13.136			70.57	
L16021357-01	1.296	25.752	21.282			81.72	
L16021357-02	1.287	20.884	18.578			88.23	
L16021357-03	1.293	25.373	22.987			90.09	
L16021357-04	1.3	23.612	20.061			84.08	
L16021357-05	1.288	25.903	22.745			87.17	
L16021357-06	1.28	22.506	18.069			79.10	
L16021358-01	1.284	21.033	17.498			82.10	
L16021358-02	1.295	26.216	22.134			83.62	
L16021358-03	1.293	21.007	17.744			83.45	
L16021358-04	1.282	28.108	22.283			78.29	
L16021358-05	1.28	24.692	20.383			81.59	
L16021358-06	1.289	24.186	19.593			79.94	
L16021358-07	1.293	25.604	22.599			87.64	
L16021358-08	1.297	27.046	23.197			85.05	
L16021358-09	1.291	24.875	20.497			81.44	
WG559108-01	1.287	20.884	18.578			88.23	11.77
WG559108-02	1.297	27.046	23.197			85.05	14.95
WG559108-03	1.289	20.044	17.36			85.69	14.31
WG559108-04	1.295	21.346	18.385			85.23	14.77

Analyst: [signature]

PERCENT_SOLIDS - Modified 04/24/2008
PDF ID: 4652109
Report generated: 03/01/2016 08:07

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
March 3, 2016

---

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
March 03, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
March 03, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Stephanie Mossburg	Project Manager: Debra Richmon	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): KAYLA PALLANES	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Kayla Pallanes	Fed Ex Airbill No: 1231 7116 5938	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205			
Turn Around Time: STANDARD	pH:	Program:	
Project Name/Location: Longhorn			
Project Number: 60274185-0013BM41824		ERPIMS REQUIRED FIELDS	

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOCs 8260	PETCHLORATE 6850	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
	18DPT02(5-5.5)260216			2/26/16	0835		X	S	2	X	X					
	18DPT02(10-10.5)260216			2/26/16	0842		X	S	2	X	X					
	18DPT02(10-10.5)260216 ~~[illegible]~~		FD	2/26/16	0842		X	S	2	X	X					
	18DPT02(15-15.5)260216			2/26/16	0900		X	S	2	X	X					
	18DPT02(22-22.5)260216			2/26/16	0915		X	S	2	X	X					
	18DPT03(5-5.5)260216			2/26/16	1115		X	S	2	X	X					
	18DPT03(10-10.5)260216			2/26/16	1117		X	S	2	X	X					
	18DPT03(14.5-15)260216			2/26/16	1119		X	S	2	X	X					
	18DPT03(17.5-18)260216			2/26/16	1121		X	S	2	X	X					

Microbac OVD
Received: 02/27/2016 10:39
By: CARA STRICKLER 221000082531
Cara Strickler

Comments: ~~STANDARD TAT~~ 48 HR TAT

Relinquished by: (Signature) Kayla Pallanes	Date 2/26/16	Time 1200	Received by: (Signature)	Received by: (Signature)	Date / Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time	Remarks:

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16021358
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 02-MAR-2016

Samplenum	Container ID	Products
L16021358-01	706587	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-FEB-2016 11:06	CLS		
2	ANALYZ	V1	ORG4	28-FEB-2016 11:22	AWE	CLS	

Samplenum	Container ID	Products
L16021358-01	706588	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-FEB-2016 11:06	CLS		
2	ANALYZ	W1	SEM	29-FEB-2016 11:09	AWE	CLS	
3	STORE	DIG	A1	29-FEB-2016 15:12	BRG	ERP	

Samplenum	Container ID	Products
L16021358-02	706589	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-FEB-2016 11:06	CLS		
2	ANALYZ	V1	ORG4	28-FEB-2016 11:22	AWE	CLS	

Samplenum	Container ID	Products
L16021358-02	706590	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-FEB-2016 11:06	CLS		
2	ANALYZ	W1	SEM	29-FEB-2016 11:09	AWE	CLS	
3	STORE	DIG	A1	29-FEB-2016 15:12	BRG	ERP	

Samplenum	Container ID	Products
L16021358-03	706591	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-FEB-2016 11:06	CLS		
2	ANALYZ	V1	ORG4	28-FEB-2016 11:22	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16021358
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 02-MAR-2016

Samplenum	Container ID	Products
L16021358-03	706592	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-FEB-2016 11:06	CLS		
2	ANALYZ	W1	SEM	29-FEB-2016 11:09	AWE	CLS	
3	STORE	DIG	A1	29-FEB-2016 15:12	BRG	ERP	

Samplenum	Container ID	Products
L16021358-04	706593	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-FEB-2016 11:06	CLS		
2	ANALYZ	V1	ORG4	28-FEB-2016 11:22	AWE	CLS	

Samplenum	Container ID	Products
L16021358-04	706594	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-FEB-2016 11:06	CLS		
2	ANALYZ	W1	SEM	29-FEB-2016 11:10	AWE	CLS	
3	STORE	DIG	A1	29-FEB-2016 15:12	BRG	ERP	

Samplenum	Container ID	Products
L16021358-05	706595	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-FEB-2016 11:06	CLS		
2	ANALYZ	V1	ORG4	28-FEB-2016 11:22	AWE	CLS	

Samplenum	Container ID	Products
L16021358-05	706596	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-FEB-2016 11:06	CLS		
2	ANALYZ	W1	SEM	29-FEB-2016 11:10	AWE	CLS	
3	STORE	DIG	A1	29-FEB-2016 15:12	BRG	ERP	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16021358
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 02-MAR-2016

Samplenum	Container ID	Products
L16021358-06	706597	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-FEB-2016 11:06	CLS		
2	ANALYZ	V1	ORG4	28-FEB-2016 11:22	AWE	CLS	

Samplenum	Container ID	Products
L16021358-06	706598	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-FEB-2016 11:06	CLS		
2	ANALYZ	W1	SEM	29-FEB-2016 11:10	AWE	CLS	
3	STORE	DIG	A1	29-FEB-2016 15:12	BRG	ERP	

Samplenum	Container ID	Products
L16021358-07	706599	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-FEB-2016 11:06	CLS		
2	ANALYZ	V1	ORG4	28-FEB-2016 11:22	AWE	CLS	

Samplenum	Container ID	Products
L16021358-07	706600	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	DIG	27-FEB-2016 11:06	CLS		
2	STORE	DIG	A1	29-FEB-2016 15:12	BRG	ERP	

Samplenum	Container ID	Products
L16021358-08	706601	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-FEB-2016 11:06	CLS		
2	ANALYZ	V1	ORG4	28-FEB-2016 11:22	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16021358
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 02-MAR-2016

Samplenum	Container ID	Products
L16021358-08	706602	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-FEB-2016 11:06	CLS		
2	ANALYZ	W1	SEM	29-FEB-2016 11:10	AWE	CLS	
3	STORE	DIG	A1	29-FEB-2016 15:12	BRG	ERP	

Samplenum	Container ID	Products
L16021358-09	706603	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-FEB-2016 11:06	CLS		
2	ANALYZ	V1	ORG4	28-FEB-2016 11:22	AWE	CLS	

Samplenum	Container ID	Products
L16021358-09	706604	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-FEB-2016 11:06	CLS		
2	ANALYZ	W1	SEM	29-FEB-2016 11:09	AWE	CLS	
3	STORE	DIG	A1	29-FEB-2016 15:12	BRG	ERP	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16030134

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on March 10 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00113008	I	0.0		J2317165910	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	NA
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	NA

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18DPT06(5-5.5)020316	L16030134-01	03/02/2016 08:58	03/03/2016 09:52
18DPT06(5-5.5)020316FD	L16030134-02	03/02/2016 08:58	03/03/2016 09:52
18DPT06(15-15.5)020316	L16030134-03	03/02/2016 10:35	03/03/2016 09:52
18DPT06(20-20.5)020316	L16030134-04	03/02/2016 11:11	03/03/2016 09:52
18DPT06(27.5-28)020316	L16030134-05	03/02/2016 12:05	03/03/2016 09:52
18DPT06(38.5-39)020316	L16030134-06	03/02/2016 15:00	03/03/2016 09:52

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16030134
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.1 Narratives 6
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2.0 Full Sample Data Package 45
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2.1.1.1 Summary Data 48
2.1.1.2 QC Summary Data 64
2.1.1.3 Sample Data 93
2.1.1.4 Standards Data 123
2.1.1.5 Raw QC Data 196
2.2 General Chromatography Data 212
2.2.1 6850 LC/MS Data 213
2.2.1.1 Summary Data 214
2.2.1.2 QC Summary Data 220
2.2.1.3 Sample Data 294
2.2.1.4 Standards Data 307
2.2.1.5 Raw QC Data 362
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1.0 Summary Data

1.1 Narratives

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030134
Project Name:		**Method:**	8260
Prep Batch Number(s):	559859	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-10 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2016-03-10 15:57:36

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030134
Project Name:		**Method:**	8260
Prep Batch Number(s):	559859	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-10 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				
Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030134
Project Name:		**Method:**	8260
Prep Batch Number(s):	559859	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-10 00:00:00		

Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				
Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030134
Project Name:		**Method:**	8260
Prep Batch Number(s):	559859	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-10 00:00:00		

Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?		X			1
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					
Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030134
Project Name:		**Method:**	8260
Prep Batch Number(s):	559859	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-10 00:00:00		

Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1)Dichlorodifluoromethane exceeded the UCL in the ICV.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030134
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559621	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-07 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-03-07 19:36:01

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030134
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559621	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-07 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030134
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559621	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-07 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			1
Were MS/MSD RPDs within laboratory QC limits?		X			1
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030134
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559621	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-07 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030134
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559621	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-07 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030134
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559621	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-07 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. The MS failed high and the MSD failed low due to the presence of a large amount of perchlorate in the reference sample.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030134
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559579	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-04 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2016-03-04 14:27:48

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030134
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559579	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-04 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?			X		
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?			X		
Were sample detection limits reported for all analytes not detected?			X		
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?			X		
Were blanks analyzed at the appropriate frequency?			X		
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?			X		
Were blank concentrations < MQL?			X		
Laboratory control samples (LCS):			X		
Were all COCs included in the LCS?			X		

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030134
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559579	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-04 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?			X		
Were LCSs analyzed at the required frequency?			X		
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?			X		
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?			X		
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?			X		
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?			X		
Are unadjusted MQLs and DCSs included in the laboratory data package?			X		
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?			X		
Were percent RSDs or correlation coefficient criteria met?			X		

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030134
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559579	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-04 00:00:00		

Was the number of standards recommended in the method used for all analytes?			X		
Were all points generated between the lowest and highest standard used to calculate the curve?			X		
Are ICAL data available for all instruments used?			X		
Has the initial calibration curve been verified using an appropriate second source standard?			X		
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030134
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559579	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-04 00:00:00		

Was a MDL study performed for each reported analyte?			X		
Is the MDL either adjusted or supported by the analysis of DCSs?			X		
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?			X		
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030134
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559579	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-04 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030134-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT06(5-5.5)020316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 12:56
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559859	**Analyst:**	ADC	**Run Date:**	03/06/2016 18:28
Collect Date:	03/02/2016 08:58	**Dilution:**	1	**File ID:**	9M973104
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.4	U	26.8	13.4	6.70
Benzene	71-43-2	1.34	U	6.70	1.34	0.670
Bromobenzene	108-86-1	1.34	U	6.70	1.34	0.670
Bromochloromethane	74-97-5	2.68	U	6.70	2.68	1.34
Bromodichloromethane	75-27-4	1.34	U	6.70	1.34	0.670
Bromoform	75-25-2	1.34	U	6.70	1.34	0.670
Bromomethane	74-83-9	2.68	U	6.70	2.68	1.34
2-Butanone	78-93-3	6.70	U	13.4	6.70	3.35
n-Butylbenzene	104-51-8	1.34	U	6.70	1.34	0.670
sec-Butylbenzene	135-98-8	1.34	U	6.70	1.34	0.670
tert-Butylbenzene	98-06-6	1.34	U	6.70	1.34	0.670
Carbon disulfide	75-15-0	1.34	U	6.70	1.34	0.670
Carbon tetrachloride	56-23-5	1.34	U	6.70	1.34	0.670
Chlorobenzene	108-90-7	1.34	U	6.70	1.34	0.670
Chlorodibromomethane	124-48-1	1.34	U	6.70	1.34	0.670
Chloroethane	75-00-3	2.68	U	6.70	2.68	1.34
Chloroform	67-66-3	1.34	U	6.70	1.34	0.670
Chloromethane	74-87-3	5.36	U	13.4	5.36	2.68
2-Chlorotoluene	95-49-8	1.34	U	6.70	1.34	0.670
4-Chlorotoluene	106-43-4	1.34	U	6.70	1.34	0.670
1,2-Dibromo-3-chloropropane	96-12-8	5.36	U	13.4	5.36	2.68
1,2-Dibromoethane	106-93-4	1.34	U	6.70	1.34	0.670
Dibromomethane	74-95-3	1.34	U	6.70	1.34	0.670
1,2-Dichlorobenzene	95-50-1	1.34	U	6.70	1.34	0.670
1,3-Dichlorobenzene	541-73-1	1.34	U	6.70	1.34	0.670
1,4-Dichlorobenzene	106-46-7	1.34	U	6.70	1.34	0.670
Dichlorodifluoromethane	75-71-8	2.68	U	6.70	2.68	1.34
1,1-Dichloroethane	75-34-3	2.68	U	6.70	2.68	1.34
1,2-Dichloroethane	107-06-2	1.34	U	6.70	1.34	0.670
1,1-Dichloroethene	75-35-4	1.34	U	6.70	1.34	0.670
cis-1,2-Dichloroethene	156-59-2	1.34	U	6.70	1.34	0.670
trans-1,2-Dichloroethene	156-60-5	1.34	U	6.70	1.34	0.670

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Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.34	U	6.70	1.34	0.670
1,3-Dichloropropane	142-28-9	1.34	U	6.70	1.34	0.670
2,2-Dichloropropane	594-20-7	1.34	U	6.70	1.34	0.670
cis-1,3-Dichloropropene	10061-01-5	1.34	U	6.70	1.34	0.670
trans-1,3-Dichloropropene	10061-02-6	1.34	U	6.70	1.34	0.670
1,1-Dichloropropene	563-58-6	1.34	U	6.70	1.34	0.670
Ethylbenzene	100-41-4	1.34	U	6.70	1.34	0.670
2-Hexanone	591-78-6	6.70	U	13.4	6.70	3.35
Hexachlorobutadiene	87-68-3	1.34	U	6.70	1.34	0.670
Isopropylbenzene	98-82-8	1.34	U	6.70	1.34	0.670
p-Isopropyltoluene	99-87-6	1.34	U	6.70	1.34	0.670
4-Methyl-2-pentanone	108-10-1	6.70	U	13.4	6.70	3.35
Methylene chloride	75-09-2	2.68	U	6.70	2.68	1.34
Naphthalene	91-20-3	1.34	U	6.70	1.34	0.670
n-Propylbenzene	103-65-1	1.34	U	6.70	1.34	0.670
Styrene	100-42-5	1.34	U	6.70	1.34	0.670
1,1,1,2-Tetrachloroethane	630-20-6	1.34	U	6.70	1.34	0.670
1,1,2,2-Tetrachloroethane	79-34-5	1.34	U	6.70	1.34	0.670
Tetrachloroethene	127-18-4	1.34	U	6.70	1.34	0.670
Toluene	108-88-3	1.34	U	6.70	1.34	0.670
1,2,3-Trichlorobenzene	87-61-6	1.34	U	6.70	1.34	0.670
1,2,4-Trichlorobenzene	120-82-1	1.34	U	6.70	1.34	0.670
1,1,1-Trichloroethane	71-55-6	1.34	U	6.70	1.34	0.670
1,1,2-Trichloroethane	79-00-5	1.34	U	6.70	1.34	0.670
Trichloroethene	79-01-6	1.34	U	6.70	1.34	0.670
Trichlorofluoromethane	75-69-4	2.68	U	6.70	2.68	1.34
1,2,3-Trichloropropane	96-18-4	2.68	U	6.70	2.68	1.34
1,2,4-Trimethylbenzene	95-63-6	1.34	U	6.70	1.34	0.670
1,3,5-Trimethylbenzene	108-67-8	1.34	U	6.70	1.34	0.670
Vinyl chloride	75-01-4	2.68	U	6.70	2.68	1.34
o-Xylene	95-47-6	1.34	U	6.70	1.34	0.670
m-,p-Xylene	179601-23-1	1.34	U	6.70	1.34	0.670

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.2	80	120	
1,2-Dichloroethane-d4	93.9	80	120	
Toluene-d8	97.7	85	115	
4-Bromofluorobenzene	101	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030134-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT06(5-5.5)020316	**Prep Method:**	6850	**Prep Date:**	03/03/2016 17:43
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559621	**Analyst:**	WTD	**Run Date:**	03/03/2016 19:37
Collect Date:	03/02/2016 08:58	**Dilution:**	1	**File ID:**	1LM.LM33660
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.42	U	4.84	2.42	1.21

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030134-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT06(5-5.5)020316FD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 12:56
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559859	**Analyst:**	ADC	**Run Date:**	03/06/2016 18:59
Collect Date:	03/02/2016 08:58	**Dilution:**	1	**File ID:**	9M973105
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.0	U	23.9	12.0	5.98
Benzene	71-43-2	1.20	U	5.98	1.20	0.598
Bromobenzene	108-86-1	1.20	U	5.98	1.20	0.598
Bromochloromethane	74-97-5	2.40	U	5.98	2.40	1.20
Bromodichloromethane	75-27-4	1.20	U	5.98	1.20	0.598
Bromoform	75-25-2	1.20	U	5.98	1.20	0.598
Bromomethane	74-83-9	2.40	U	5.98	2.40	1.20
2-Butanone	78-93-3	5.98	U	12.0	5.98	2.99
n-Butylbenzene	104-51-8	1.20	U	5.98	1.20	0.598
sec-Butylbenzene	135-98-8	1.20	U	5.98	1.20	0.598
tert-Butylbenzene	98-06-6	1.20	U	5.98	1.20	0.598
Carbon disulfide	75-15-0	1.20	U	5.98	1.20	0.598
Carbon tetrachloride	56-23-5	1.20	U	5.98	1.20	0.598
Chlorobenzene	108-90-7	1.20	U	5.98	1.20	0.598
Chlorodibromomethane	124-48-1	1.20	U	5.98	1.20	0.598
Chloroethane	75-00-3	2.40	U	5.98	2.40	1.20
Chloroform	67-66-3	1.20	U	5.98	1.20	0.598
Chloromethane	74-87-3	4.78	U	12.0	4.78	2.39
2-Chlorotoluene	95-49-8	1.20	U	5.98	1.20	0.598
4-Chlorotoluene	106-43-4	1.20	U	5.98	1.20	0.598
1,2-Dibromo-3-chloropropane	96-12-8	4.78	U	12.0	4.78	2.39
1,2-Dibromoethane	106-93-4	1.20	U	5.98	1.20	0.598
Dibromomethane	74-95-3	1.20	U	5.98	1.20	0.598
1,2-Dichlorobenzene	95-50-1	1.20	U	5.98	1.20	0.598
1,3-Dichlorobenzene	541-73-1	1.20	U	5.98	1.20	0.598
1,4-Dichlorobenzene	106-46-7	1.20	U	5.98	1.20	0.598
Dichlorodifluoromethane	75-71-8	2.40	U	5.98	2.40	1.20
1,1-Dichloroethane	75-34-3	2.40	U	5.98	2.40	1.20
1,2-Dichloroethane	107-06-2	1.20	U	5.98	1.20	0.598
1,1-Dichloroethene	75-35-4	1.20	U	5.98	1.20	0.598
cis-1,2-Dichloroethene	156-59-2	1.20	U	5.98	1.20	0.598

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Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.20	U	5.98	1.20	0.598
1,2-Dichloropropane	78-87-5	1.20	U	5.98	1.20	0.598
1,3-Dichloropropane	142-28-9	1.20	U	5.98	1.20	0.598
2,2-Dichloropropane	594-20-7	1.20	U	5.98	1.20	0.598
cis-1,3-Dichloropropene	10061-01-5	1.20	U	5.98	1.20	0.598
trans-1,3-Dichloropropene	10061-02-6	1.20	U	5.98	1.20	0.598
1,1-Dichloropropene	563-58-6	1.20	U	5.98	1.20	0.598
Ethylbenzene	100-41-4	1.20	U	5.98	1.20	0.598
2-Hexanone	591-78-6	5.98	U	12.0	5.98	2.99
Hexachlorobutadiene	87-68-3	1.20	U	5.98	1.20	0.598
Isopropylbenzene	98-82-8	1.20	U	5.98	1.20	0.598
p-Isopropyltoluene	99-87-6	1.20	U	5.98	1.20	0.598
4-Methyl-2-pentanone	108-10-1	5.98	U	12.0	5.98	2.99
Methylene chloride	75-09-2	2.40	U	5.98	2.40	1.20
Naphthalene	91-20-3	1.20	U	5.98	1.20	0.598
n-Propylbenzene	103-65-1	1.20	U	5.98	1.20	0.598
Styrene	100-42-5	1.20	U	5.98	1.20	0.598
1,1,1,2-Tetrachloroethane	630-20-6	1.20	U	5.98	1.20	0.598
1,1,2,2-Tetrachloroethane	79-34-5	1.20	U	5.98	1.20	0.598
Tetrachloroethene	127-18-4	1.20	U	5.98	1.20	0.598
Toluene	108-88-3	1.20	U	5.98	1.20	0.598
1,2,3-Trichlorobenzene	87-61-6	1.20	U	5.98	1.20	0.598
1,2,4-Trichlorobenzene	120-82-1	1.20	U	5.98	1.20	0.598
1,1,1-Trichloroethane	71-55-6	1.20	U	5.98	1.20	0.598
1,1,2-Trichloroethane	79-00-5	1.20	U	5.98	1.20	0.598
Trichloroethene	79-01-6	1.20	U	5.98	1.20	0.598
Trichlorofluoromethane	75-69-4	2.40	U	5.98	2.40	1.20
1,2,3-Trichloropropane	96-18-4	2.40	U	5.98	2.40	1.20
1,2,4-Trimethylbenzene	95-63-6	1.20	U	5.98	1.20	0.598
1,3,5-Trimethylbenzene	108-67-8	1.20	U	5.98	1.20	0.598
Vinyl chloride	75-01-4	2.40	U	5.98	2.40	1.20
o-Xylene	95-47-6	1.20	U	5.98	1.20	0.598
m-,p-Xylene	179601-23-1	1.20	U	5.98	1.20	0.598

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.7	80	120	
1,2-Dichloroethane-d4	95.7	80	120	
Toluene-d8	99.3	85	115	
4-Bromofluorobenzene	102	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030134-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT06(5-5.5)020316FD	**Prep Method:**	6850	**Prep Date:**	03/03/2016 17:43
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559621	**Analyst:**	WTD	**Run Date:**	03/03/2016 19:56
Collect Date:	03/02/2016 08:58	**Dilution:**	1	**File ID:**	1LM.LM33661
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.46	U	4.94	2.46	1.23

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030134-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT06(15-15.5)020316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 12:57
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559859	**Analyst:**	ADC	**Run Date:**	03/06/2016 19:29
Collect Date:	03/02/2016 10:35	**Dilution:**	1	**File ID:**	9M973106
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	88.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.5	U	23.0	11.5	5.74
Benzene	71-43-2	1.15	U	5.74	1.15	0.574
Bromobenzene	108-86-1	1.15	U	5.74	1.15	0.574
Bromochloromethane	74-97-5	2.30	U	5.74	2.30	1.15
Bromodichloromethane	75-27-4	1.15	U	5.74	1.15	0.574
Bromoform	75-25-2	1.15	U	5.74	1.15	0.574
Bromomethane	74-83-9	2.30	U	5.74	2.30	1.15
2-Butanone	78-93-3	5.74	U	11.5	5.74	2.87
n-Butylbenzene	104-51-8	1.15	U	5.74	1.15	0.574
sec-Butylbenzene	135-98-8	1.15	U	5.74	1.15	0.574
tert-Butylbenzene	98-06-6	1.15	U	5.74	1.15	0.574
Carbon disulfide	75-15-0	1.15	U	5.74	1.15	0.574
Carbon tetrachloride	56-23-5	1.15	U	5.74	1.15	0.574
Chlorobenzene	108-90-7	1.15	U	5.74	1.15	0.574
Chlorodibromomethane	124-48-1	1.15	U	5.74	1.15	0.574
Chloroethane	75-00-3	2.30	U	5.74	2.30	1.15
Chloroform	67-66-3	1.15	U	5.74	1.15	0.574
Chloromethane	74-87-3	4.60	U	11.5	4.60	2.30
2-Chlorotoluene	95-49-8	1.15	U	5.74	1.15	0.574
4-Chlorotoluene	106-43-4	1.15	U	5.74	1.15	0.574
1,2-Dibromo-3-chloropropane	96-12-8	4.60	U	11.5	4.60	2.30
1,2-Dibromoethane	106-93-4	1.15	U	5.74	1.15	0.574
Dibromomethane	74-95-3	1.15	U	5.74	1.15	0.574
1,2-Dichlorobenzene	95-50-1	1.15	U	5.74	1.15	0.574
1,3-Dichlorobenzene	541-73-1	1.15	U	5.74	1.15	0.574
1,4-Dichlorobenzene	106-46-7	1.15	U	5.74	1.15	0.574
Dichlorodifluoromethane	75-71-8	2.30	U	5.74	2.30	1.15
1,1-Dichloroethane	75-34-3	2.30	U	5.74	2.30	1.15
1,2-Dichloroethane	107-06-2	1.15	U	5.74	1.15	0.574
1,1-Dichloroethene	75-35-4	1.15	U	5.74	1.15	0.574
cis-1,2-Dichloroethene	156-59-2	1.15	U	5.74	1.15	0.574

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Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.15	U	5.74	1.15	0.574
1,2-Dichloropropane	78-87-5	1.15	U	5.74	1.15	0.574
1,3-Dichloropropane	142-28-9	1.15	U	5.74	1.15	0.574
2,2-Dichloropropane	594-20-7	1.15	U	5.74	1.15	0.574
cis-1,3-Dichloropropene	10061-01-5	1.15	U	5.74	1.15	0.574
trans-1,3-Dichloropropene	10061-02-6	1.15	U	5.74	1.15	0.574
1,1-Dichloropropene	563-58-6	1.15	U	5.74	1.15	0.574
Ethylbenzene	100-41-4	1.15	U	5.74	1.15	0.574
2-Hexanone	591-78-6	5.74	U	11.5	5.74	2.87
Hexachlorobutadiene	87-68-3	1.15	U	5.74	1.15	0.574
Isopropylbenzene	98-82-8	1.15	U	5.74	1.15	0.574
p-Isopropyltoluene	99-87-6	1.15	U	5.74	1.15	0.574
4-Methyl-2-pentanone	108-10-1	5.74	U	11.5	5.74	2.87
Methylene chloride	75-09-2	2.30	U	5.74	2.30	1.15
Naphthalene	91-20-3	1.15	U	5.74	1.15	0.574
n-Propylbenzene	103-65-1	1.15	U	5.74	1.15	0.574
Styrene	100-42-5	1.15	U	5.74	1.15	0.574
1,1,1,2-Tetrachloroethane	630-20-6	1.15	U	5.74	1.15	0.574
1,1,2,2-Tetrachloroethane	79-34-5	1.15	U	5.74	1.15	0.574
Tetrachloroethene	127-18-4	1.15	U	5.74	1.15	0.574
Toluene	108-88-3	1.15	U	5.74	1.15	0.574
1,2,3-Trichlorobenzene	87-61-6	1.15	U	5.74	1.15	0.574
1,2,4-Trichlorobenzene	120-82-1	1.15	U	5.74	1.15	0.574
1,1,1-Trichloroethane	71-55-6	1.15	U	5.74	1.15	0.574
1,1,2-Trichloroethane	79-00-5	1.15	U	5.74	1.15	0.574
Trichloroethene	79-01-6	1.15	U	5.74	1.15	0.574
Trichlorofluoromethane	75-69-4	2.30	U	5.74	2.30	1.15
1,2,3-Trichloropropane	96-18-4	2.30	U	5.74	2.30	1.15
1,2,4-Trimethylbenzene	95-63-6	1.15	U	5.74	1.15	0.574
1,3,5-Trimethylbenzene	108-67-8	1.15	U	5.74	1.15	0.574
Vinyl chloride	75-01-4	2.30	U	5.74	2.30	1.15
o-Xylene	95-47-6	1.15	U	5.74	1.15	0.574
m-,p-Xylene	179601-23-1	1.15	U	5.74	1.15	0.574

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.2	80	120	
1,2-Dichloroethane-d4	97.0	80	120	
Toluene-d8	99.0	85	115	
4-Bromofluorobenzene	99.4	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030134-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT06(15-15.5)020316	**Prep Method:**	6850	**Prep Date:**	03/03/2016 17:43
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559621	**Analyst:**	WTD	**Run Date:**	03/03/2016 20:15
Collect Date:	03/02/2016 10:35	**Dilution:**	1	**File ID:**	1LM.LM33662
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	88.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.26	U	4.52	2.26	1.13

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030134-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT06(20-20.5)020316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 12:58
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559859	**Analyst:**	ADC	**Run Date:**	03/06/2016 20:00
Collect Date:	03/02/2016 11:11	**Dilution:**	1	**File ID:**	9M973107
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.8	U	25.6	12.8	6.39
Benzene	71-43-2	1.28	U	6.39	1.28	0.639
Bromobenzene	108-86-1	1.28	U	6.39	1.28	0.639
Bromochloromethane	74-97-5	2.56	U	6.39	2.56	1.28
Bromodichloromethane	75-27-4	1.28	U	6.39	1.28	0.639
Bromoform	75-25-2	1.28	U	6.39	1.28	0.639
Bromomethane	74-83-9	2.56	U	6.39	2.56	1.28
2-Butanone	78-93-3	6.40	U	12.8	6.40	3.20
n-Butylbenzene	104-51-8	1.28	U	6.39	1.28	0.639
sec-Butylbenzene	135-98-8	1.28	U	6.39	1.28	0.639
tert-Butylbenzene	98-06-6	1.28	U	6.39	1.28	0.639
Carbon disulfide	75-15-0	1.28	U	6.39	1.28	0.639
Carbon tetrachloride	56-23-5	1.28	U	6.39	1.28	0.639
Chlorobenzene	108-90-7	1.28	U	6.39	1.28	0.639
Chlorodibromomethane	124-48-1	1.28	U	6.39	1.28	0.639
Chloroethane	75-00-3	2.56	U	6.39	2.56	1.28
Chloroform	67-66-3	1.28	U	6.39	1.28	0.639
Chloromethane	74-87-3	5.12	U	12.8	5.12	2.56
2-Chlorotoluene	95-49-8	1.28	U	6.39	1.28	0.639
4-Chlorotoluene	106-43-4	1.28	U	6.39	1.28	0.639
1,2-Dibromo-3-chloropropane	96-12-8	5.12	U	12.8	5.12	2.56
1,2-Dibromoethane	106-93-4	1.28	U	6.39	1.28	0.639
Dibromomethane	74-95-3	1.28	U	6.39	1.28	0.639
1,2-Dichlorobenzene	95-50-1	1.28	U	6.39	1.28	0.639
1,3-Dichlorobenzene	541-73-1	1.28	U	6.39	1.28	0.639
1,4-Dichlorobenzene	106-46-7	1.28	U	6.39	1.28	0.639
Dichlorodifluoromethane	75-71-8	2.56	U	6.39	2.56	1.28
1,1-Dichloroethane	75-34-3	2.56	U	6.39	2.56	1.28
1,2-Dichloroethane	107-06-2	1.28	U	6.39	1.28	0.639
1,1-Dichloroethene	75-35-4	1.28	U	6.39	1.28	0.639
cis-1,2-Dichloroethene	156-59-2	1.28	U	6.39	1.28	0.639

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.28	U	6.39	1.28	0.639
1,2-Dichloropropane	78-87-5	1.28	U	6.39	1.28	0.639
1,3-Dichloropropane	142-28-9	1.28	U	6.39	1.28	0.639
2,2-Dichloropropane	594-20-7	1.28	U	6.39	1.28	0.639
cis-1,3-Dichloropropene	10061-01-5	1.28	U	6.39	1.28	0.639
trans-1,3-Dichloropropene	10061-02-6	1.28	U	6.39	1.28	0.639
1,1-Dichloropropene	563-58-6	1.28	U	6.39	1.28	0.639
Ethylbenzene	100-41-4	1.28	U	6.39	1.28	0.639
2-Hexanone	591-78-6	6.40	U	12.8	6.40	3.20
Hexachlorobutadiene	87-68-3	1.28	U	6.39	1.28	0.639
Isopropylbenzene	98-82-8	1.28	U	6.39	1.28	0.639
p-Isopropyltoluene	99-87-6	1.28	U	6.39	1.28	0.639
4-Methyl-2-pentanone	108-10-1	6.40	U	12.8	6.40	3.20
Methylene chloride	75-09-2	2.56	U	6.39	2.56	1.28
Naphthalene	91-20-3	1.28	U	6.39	1.28	0.639
n-Propylbenzene	103-65-1	1.28	U	6.39	1.28	0.639
Styrene	100-42-5	1.28	U	6.39	1.28	0.639
1,1,1,2-Tetrachloroethane	630-20-6	1.28	U	6.39	1.28	0.639
1,1,2,2-Tetrachloroethane	79-34-5	1.28	U	6.39	1.28	0.639
Tetrachloroethene	127-18-4	1.28	U	6.39	1.28	0.639
Toluene	108-88-3	1.28	U	6.39	1.28	0.639
1,2,3-Trichlorobenzene	87-61-6	1.28	U	6.39	1.28	0.639
1,2,4-Trichlorobenzene	120-82-1	1.28	U	6.39	1.28	0.639
1,1,1-Trichloroethane	71-55-6	1.28	U	6.39	1.28	0.639
1,1,2-Trichloroethane	79-00-5	1.28	U	6.39	1.28	0.639
Trichloroethene	79-01-6	1.28	U	6.39	1.28	0.639
Trichlorofluoromethane	75-69-4	2.56	U	6.39	2.56	1.28
1,2,3-Trichloropropane	96-18-4	2.56	U	6.39	2.56	1.28
1,2,4-Trimethylbenzene	95-63-6	1.28	U	6.39	1.28	0.639
1,3,5-Trimethylbenzene	108-67-8	1.28	U	6.39	1.28	0.639
Vinyl chloride	75-01-4	2.56	U	6.39	2.56	1.28
o-Xylene	95-47-6	1.28	U	6.39	1.28	0.639
m-,p-Xylene	179601-23-1	1.28	U	6.39	1.28	0.639

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.0	80	120	
1,2-Dichloroethane-d4	98.9	80	120	
Toluene-d8	98.6	85	115	
4-Bromofluorobenzene	98.3	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030134-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT06(20-20.5)020316	**Prep Method:**	6850	**Prep Date:**	03/03/2016 17:43
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559621	**Analyst:**	WTD	**Run Date:**	03/03/2016 20:34
Collect Date:	03/02/2016 11:11	**Dilution:**	1	**File ID:**	1LM.LM33663
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3.35	J	4.67	2.34	1.17

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030134-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT06(27.5-28)020316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 12:58
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559859	**Analyst:**	ADC	**Run Date:**	03/06/2016 20:30
Collect Date:	03/02/2016 12:05	**Dilution:**	1	**File ID:**	9M973108
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.0	U	25.9	13.0	6.48
Benzene	71-43-2	1.30	U	6.48	1.30	0.648
Bromobenzene	108-86-1	1.30	U	6.48	1.30	0.648
Bromochloromethane	74-97-5	2.60	U	6.48	2.60	1.30
Bromodichloromethane	75-27-4	1.30	U	6.48	1.30	0.648
Bromoform	75-25-2	1.30	U	6.48	1.30	0.648
Bromomethane	74-83-9	2.60	U	6.48	2.60	1.30
2-Butanone	78-93-3	6.48	U	13.0	6.48	3.24
n-Butylbenzene	104-51-8	1.30	U	6.48	1.30	0.648
sec-Butylbenzene	135-98-8	1.30	U	6.48	1.30	0.648
tert-Butylbenzene	98-06-6	1.30	U	6.48	1.30	0.648
Carbon disulfide	75-15-0	1.30	U	6.48	1.30	0.648
Carbon tetrachloride	56-23-5	1.30	U	6.48	1.30	0.648
Chlorobenzene	108-90-7	1.30	U	6.48	1.30	0.648
Chlorodibromomethane	124-48-1	1.30	U	6.48	1.30	0.648
Chloroethane	75-00-3	2.60	U	6.48	2.60	1.30
Chloroform	67-66-3	1.30	U	6.48	1.30	0.648
Chloromethane	74-87-3	5.18	U	13.0	5.18	2.59
2-Chlorotoluene	95-49-8	1.30	U	6.48	1.30	0.648
4-Chlorotoluene	106-43-4	1.30	U	6.48	1.30	0.648
1,2-Dibromo-3-chloropropane	96-12-8	5.18	U	13.0	5.18	2.59
1,2-Dibromoethane	106-93-4	1.30	U	6.48	1.30	0.648
Dibromomethane	74-95-3	1.30	U	6.48	1.30	0.648
1,2-Dichlorobenzene	95-50-1	1.30	U	6.48	1.30	0.648
1,3-Dichlorobenzene	541-73-1	1.30	U	6.48	1.30	0.648
1,4-Dichlorobenzene	106-46-7	1.30	U	6.48	1.30	0.648
Dichlorodifluoromethane	75-71-8	2.60	U	6.48	2.60	1.30
1,1-Dichloroethane	75-34-3	2.60	U	6.48	2.60	1.30
1,2-Dichloroethane	107-06-2	1.07	J	6.48	1.30	0.648
1,1-Dichloroethene	75-35-4	1.30	U	6.48	1.30	0.648
cis-1,2-Dichloroethene	156-59-2	1.30	U	6.48	1.30	0.648

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.30	U	6.48	1.30	0.648
1,2-Dichloropropane	78-87-5	1.30	U	6.48	1.30	0.648
1,3-Dichloropropane	142-28-9	1.30	U	6.48	1.30	0.648
2,2-Dichloropropane	594-20-7	1.30	U	6.48	1.30	0.648
cis-1,3-Dichloropropene	10061-01-5	1.30	U	6.48	1.30	0.648
trans-1,3-Dichloropropene	10061-02-6	1.30	U	6.48	1.30	0.648
1,1-Dichloropropene	563-58-6	1.30	U	6.48	1.30	0.648
Ethylbenzene	100-41-4	1.30	U	6.48	1.30	0.648
2-Hexanone	591-78-6	6.48	U	13.0	6.48	3.24
Hexachlorobutadiene	87-68-3	1.30	U	6.48	1.30	0.648
Isopropylbenzene	98-82-8	1.30	U	6.48	1.30	0.648
p-Isopropyltoluene	99-87-6	1.30	U	6.48	1.30	0.648
4-Methyl-2-pentanone	108-10-1	6.48	U	13.0	6.48	3.24
Methylene chloride	75-09-2	2.60	U	6.48	2.60	1.30
Naphthalene	91-20-3	1.30	U	6.48	1.30	0.648
n-Propylbenzene	103-65-1	1.30	U	6.48	1.30	0.648
Styrene	100-42-5	1.30	U	6.48	1.30	0.648
1,1,1,2-Tetrachloroethane	630-20-6	1.30	U	6.48	1.30	0.648
1,1,2,2-Tetrachloroethane	79-34-5	1.30	U	6.48	1.30	0.648
Tetrachloroethene	127-18-4	1.30	U	6.48	1.30	0.648
Toluene	108-88-3	1.30	U	6.48	1.30	0.648
1,2,3-Trichlorobenzene	87-61-6	1.30	U	6.48	1.30	0.648
1,2,4-Trichlorobenzene	120-82-1	1.30	U	6.48	1.30	0.648
1,1,1-Trichloroethane	71-55-6	1.30	U	6.48	1.30	0.648
1,1,2-Trichloroethane	79-00-5	1.30	U	6.48	1.30	0.648
Trichloroethene	79-01-6	57.1		6.48	1.30	0.648
Trichlorofluoromethane	75-69-4	2.60	U	6.48	2.60	1.30
1,2,3-Trichloropropane	96-18-4	2.60	U	6.48	2.60	1.30
1,2,4-Trimethylbenzene	95-63-6	1.30	U	6.48	1.30	0.648
1,3,5-Trimethylbenzene	108-67-8	1.30	U	6.48	1.30	0.648
Vinyl chloride	75-01-4	2.60	U	6.48	2.60	1.30
o-Xylene	95-47-6	1.30	U	6.48	1.30	0.648
m-,p-Xylene	179601-23-1	1.30	U	6.48	1.30	0.648

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.6	80	120	
1,2-Dichloroethane-d4	97.1	80	120	
Toluene-d8	99.0	85	115	
4-Bromofluorobenzene	100	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030134-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT06(27.5-28)020316	**Prep Method:**	6850	**Prep Date:**	03/03/2016 17:43
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559621	**Analyst:**	WTD	**Run Date:**	03/04/2016 11:16
Collect Date:	03/02/2016 12:05	**Dilution:**	100	**File ID:**	1LM.LM33703
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	82.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1530		474	236	118

Certificate of Analysis

Sample #:	L16030134-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT06(38.5-39)020316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 12:59
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559859	**Analyst:**	ADC	**Run Date:**	03/06/2016 21:00
Collect Date:	03/02/2016 15:00	**Dilution:**	1	**File ID:**	9M973109
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.1	U	26.2	13.1	6.55
Benzene	71-43-2	1.31	U	6.55	1.31	0.655
Bromobenzene	108-86-1	1.31	U	6.55	1.31	0.655
Bromochloromethane	74-97-5	2.62	U	6.55	2.62	1.31
Bromodichloromethane	75-27-4	1.31	U	6.55	1.31	0.655
Bromoform	75-25-2	1.31	U	6.55	1.31	0.655
Bromomethane	74-83-9	2.62	U	6.55	2.62	1.31
2-Butanone	78-93-3	6.54	U	13.1	6.54	3.27
n-Butylbenzene	104-51-8	1.31	U	6.55	1.31	0.655
sec-Butylbenzene	135-98-8	1.31	U	6.55	1.31	0.655
tert-Butylbenzene	98-06-6	1.31	U	6.55	1.31	0.655
Carbon disulfide	75-15-0	1.31	U	6.55	1.31	0.655
Carbon tetrachloride	56-23-5	1.31	U	6.55	1.31	0.655
Chlorobenzene	108-90-7	1.31	U	6.55	1.31	0.655
Chlorodibromomethane	124-48-1	1.31	U	6.55	1.31	0.655
Chloroethane	75-00-3	2.62	U	6.55	2.62	1.31
Chloroform	67-66-3	1.31	U	6.55	1.31	0.655
Chloromethane	74-87-3	5.24	U	13.1	5.24	2.62
2-Chlorotoluene	95-49-8	1.31	U	6.55	1.31	0.655
4-Chlorotoluene	106-43-4	1.31	U	6.55	1.31	0.655

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Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	5.24	U	13.1	5.24	2.62
1,2-Dibromoethane	106-93-4	1.31	U	6.55	1.31	0.655
Dibromomethane	74-95-3	1.31	U	6.55	1.31	0.655
1,2-Dichlorobenzene	95-50-1	1.31	U	6.55	1.31	0.655
1,3-Dichlorobenzene	541-73-1	1.31	U	6.55	1.31	0.655
1,4-Dichlorobenzene	106-46-7	1.31	U	6.55	1.31	0.655
Dichlorodifluoromethane	75-71-8	2.62	U	6.55	2.62	1.31
1,1-Dichloroethane	75-34-3	2.62	U	6.55	2.62	1.31
1,2-Dichloroethane	107-06-2	1.31	U	6.55	1.31	0.655
1,1-Dichloroethene	75-35-4	1.31	U	6.55	1.31	0.655
cis-1,2-Dichloroethene	156-59-2	1.31	U	6.55	1.31	0.655
trans-1,2-Dichloroethene	156-60-5	1.31	U	6.55	1.31	0.655
1,2-Dichloropropane	78-87-5	1.31	U	6.55	1.31	0.655
1,3-Dichloropropane	142-28-9	1.31	U	6.55	1.31	0.655
2,2-Dichloropropane	594-20-7	1.31	U	6.55	1.31	0.655
cis-1,3-Dichloropropene	10061-01-5	1.31	U	6.55	1.31	0.655
trans-1,3-Dichloropropene	10061-02-6	1.31	U	6.55	1.31	0.655
1,1-Dichloropropene	563-58-6	1.31	U	6.55	1.31	0.655
Ethylbenzene	100-41-4	1.31	U	6.55	1.31	0.655
2-Hexanone	591-78-6	6.54	U	13.1	6.54	3.27
Hexachlorobutadiene	87-68-3	1.31	U	6.55	1.31	0.655
Isopropylbenzene	98-82-8	1.31	U	6.55	1.31	0.655
p-Isopropyltoluene	99-87-6	1.31	U	6.55	1.31	0.655
4-Methyl-2-pentanone	108-10-1	6.54	U	13.1	6.54	3.27
Methylene chloride	75-09-2	2.62	U	6.55	2.62	1.31
Naphthalene	91-20-3	1.31	U	6.55	1.31	0.655
n-Propylbenzene	103-65-1	1.31	U	6.55	1.31	0.655
Styrene	100-42-5	1.31	U	6.55	1.31	0.655
1,1,1,2-Tetrachloroethane	630-20-6	1.31	U	6.55	1.31	0.655
1,1,2,2-Tetrachloroethane	79-34-5	1.31	U	6.55	1.31	0.655
Tetrachloroethene	127-18-4	1.31	U	6.55	1.31	0.655
Toluene	108-88-3	1.31	U	6.55	1.31	0.655
1,2,3-Trichlorobenzene	87-61-6	1.31	U	6.55	1.31	0.655
1,2,4-Trichlorobenzene	120-82-1	1.31	U	6.55	1.31	0.655
1,1,1-Trichloroethane	71-55-6	1.31	U	6.55	1.31	0.655
1,1,2-Trichloroethane	79-00-5	1.31	U	6.55	1.31	0.655
Trichloroethene	79-01-6	0.747	J	6.55	1.31	0.655
Trichlorofluoromethane	75-69-4	2.62	U	6.55	2.62	1.31
1,2,3-Trichloropropane	96-18-4	2.62	U	6.55	2.62	1.31

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.31	U	6.55	1.31	0.655
1,3,5-Trimethylbenzene	108-67-8	1.31	U	6.55	1.31	0.655
Vinyl chloride	75-01-4	2.62	U	6.55	2.62	1.31
o-Xylene	95-47-6	1.31	U	6.55	1.31	0.655
m-,p-Xylene	179601-23-1	1.31	U	6.55	1.31	0.655

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.8	80	120	
1,2-Dichloroethane-d4	102	80	120	
Toluene-d8	99.0	85	115	
4-Bromofluorobenzene	101	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030134-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT06(38.5-39)020316	**Prep Method:**	6850	**Prep Date:**	03/03/2016 17:43
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559621	**Analyst:**	WTD	**Run Date:**	03/04/2016 11:35
Collect Date:	03/02/2016 15:00	**Dilution:**	100	**File ID:**	1LM.LM33704
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	80.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2690		497	248	124

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #: L16030134-01 **Client ID:** 18DPT06(5-5.5)020316 **Matrix:** Soil **Collect Date:** 03/02/2016 08:58

Analyte	Result	Units	Qualifier
Percent Solids	80.7	weight %	

Sample #: L16030134-02 **Client ID:** 18DPT06(5-5.5)020316FD **Matrix:** Soil **Collect Date:** 03/02/2016 08:58

Analyte	Result	Units	Qualifier
Percent Solids	80.8	weight %	

Sample #: L16030134-03 **Client ID:** 18DPT06(15-15.5)020316 **Matrix:** Soil **Collect Date:** 03/02/2016 10:35

Analyte	Result	Units	Qualifier
Percent Solids	88.1	weight %	

Sample #: L16030134-04 **Client ID:** 18DPT06(20-20.5)020316 **Matrix:** Soil **Collect Date:** 03/02/2016 11:11

Analyte	Result	Units	Qualifier
Percent Solids	82.3	weight %	

Sample #: L16030134-05 **Client ID:** 18DPT06(27.5-28)020316 **Matrix:** Soil **Collect Date:** 03/02/2016 12:05

Analyte	Result	Units	Qualifier
Percent Solids	82.1	weight %	

Sample #: L16030134-06 **Client ID:** 18DPT06(38.5-39)020316 **Matrix:** Soil **Collect Date:** 03/02/2016 15:00

Analyte	Result	Units	Qualifier
Percent Solids	80.0	weight %	

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030134-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT06(5-5.5)020316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 12:56
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559859	**Analyst:**	ADC	**Run Date:**	03/06/2016 18:28
Collect Date:	03/02/2016 08:58	**Dilution:**	1	**File ID:**	9M973104
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.4	U	26.8	13.4	6.70
Benzene	71-43-2	1.34	U	6.70	1.34	0.670
Bromobenzene	108-86-1	1.34	U	6.70	1.34	0.670
Bromochloromethane	74-97-5	2.68	U	6.70	2.68	1.34
Bromodichloromethane	75-27-4	1.34	U	6.70	1.34	0.670
Bromoform	75-25-2	1.34	U	6.70	1.34	0.670
Bromomethane	74-83-9	2.68	U	6.70	2.68	1.34
2-Butanone	78-93-3	6.70	U	13.4	6.70	3.35
n-Butylbenzene	104-51-8	1.34	U	6.70	1.34	0.670
sec-Butylbenzene	135-98-8	1.34	U	6.70	1.34	0.670
tert-Butylbenzene	98-06-6	1.34	U	6.70	1.34	0.670
Carbon disulfide	75-15-0	1.34	U	6.70	1.34	0.670
Carbon tetrachloride	56-23-5	1.34	U	6.70	1.34	0.670
Chlorobenzene	108-90-7	1.34	U	6.70	1.34	0.670
Chlorodibromomethane	124-48-1	1.34	U	6.70	1.34	0.670
Chloroethane	75-00-3	2.68	U	6.70	2.68	1.34
Chloroform	67-66-3	1.34	U	6.70	1.34	0.670
Chloromethane	74-87-3	5.36	U	13.4	5.36	2.68
2-Chlorotoluene	95-49-8	1.34	U	6.70	1.34	0.670
4-Chlorotoluene	106-43-4	1.34	U	6.70	1.34	0.670
1,2-Dibromo-3-chloropropane	96-12-8	5.36	U	13.4	5.36	2.68
1,2-Dibromoethane	106-93-4	1.34	U	6.70	1.34	0.670
Dibromomethane	74-95-3	1.34	U	6.70	1.34	0.670
1,2-Dichlorobenzene	95-50-1	1.34	U	6.70	1.34	0.670
1,3-Dichlorobenzene	541-73-1	1.34	U	6.70	1.34	0.670
1,4-Dichlorobenzene	106-46-7	1.34	U	6.70	1.34	0.670
Dichlorodifluoromethane	75-71-8	2.68	U	6.70	2.68	1.34
1,1-Dichloroethane	75-34-3	2.68	U	6.70	2.68	1.34
1,2-Dichloroethane	107-06-2	1.34	U	6.70	1.34	0.670
1,1-Dichloroethene	75-35-4	1.34	U	6.70	1.34	0.670
cis-1,2-Dichloroethene	156-59-2	1.34	U	6.70	1.34	0.670
trans-1,2-Dichloroethene	156-60-5	1.34	U	6.70	1.34	0.670

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.34	U	6.70	1.34	0.670
1,3-Dichloropropane	142-28-9	1.34	U	6.70	1.34	0.670
2,2-Dichloropropane	594-20-7	1.34	U	6.70	1.34	0.670
cis-1,3-Dichloropropene	10061-01-5	1.34	U	6.70	1.34	0.670
trans-1,3-Dichloropropene	10061-02-6	1.34	U	6.70	1.34	0.670
1,1-Dichloropropene	563-58-6	1.34	U	6.70	1.34	0.670
Ethylbenzene	100-41-4	1.34	U	6.70	1.34	0.670
2-Hexanone	591-78-6	6.70	U	13.4	6.70	3.35
Hexachlorobutadiene	87-68-3	1.34	U	6.70	1.34	0.670
Isopropylbenzene	98-82-8	1.34	U	6.70	1.34	0.670
p-Isopropyltoluene	99-87-6	1.34	U	6.70	1.34	0.670
4-Methyl-2-pentanone	108-10-1	6.70	U	13.4	6.70	3.35
Methylene chloride	75-09-2	2.68	U	6.70	2.68	1.34
Naphthalene	91-20-3	1.34	U	6.70	1.34	0.670
n-Propylbenzene	103-65-1	1.34	U	6.70	1.34	0.670
Styrene	100-42-5	1.34	U	6.70	1.34	0.670
1,1,1,2-Tetrachloroethane	630-20-6	1.34	U	6.70	1.34	0.670
1,1,2,2-Tetrachloroethane	79-34-5	1.34	U	6.70	1.34	0.670
Tetrachloroethene	127-18-4	1.34	U	6.70	1.34	0.670
Toluene	108-88-3	1.34	U	6.70	1.34	0.670
1,2,3-Trichlorobenzene	87-61-6	1.34	U	6.70	1.34	0.670
1,2,4-Trichlorobenzene	120-82-1	1.34	U	6.70	1.34	0.670
1,1,1-Trichloroethane	71-55-6	1.34	U	6.70	1.34	0.670
1,1,2-Trichloroethane	79-00-5	1.34	U	6.70	1.34	0.670
Trichloroethene	79-01-6	1.34	U	6.70	1.34	0.670
Trichlorofluoromethane	75-69-4	2.68	U	6.70	2.68	1.34
1,2,3-Trichloropropane	96-18-4	2.68	U	6.70	2.68	1.34
1,2,4-Trimethylbenzene	95-63-6	1.34	U	6.70	1.34	0.670
1,3,5-Trimethylbenzene	108-67-8	1.34	U	6.70	1.34	0.670
Vinyl chloride	75-01-4	2.68	U	6.70	2.68	1.34
o-Xylene	95-47-6	1.34	U	6.70	1.34	0.670
m-,p-Xylene	179601-23-1	1.34	U	6.70	1.34	0.670

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.2	80	120	
1,2-Dichloroethane-d4	93.9	80	120	
Toluene-d8	97.7	85	115	
4-Bromofluorobenzene	101	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030134-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT06(5-5.5)020316FD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 12:56
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559859	**Analyst:**	ADC	**Run Date:**	03/06/2016 18:59
Collect Date:	03/02/2016 08:58	**Dilution:**	1	**File ID:**	9M973105
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.0	U	23.9	12.0	5.98
Benzene	71-43-2	1.20	U	5.98	1.20	0.598
Bromobenzene	108-86-1	1.20	U	5.98	1.20	0.598
Bromochloromethane	74-97-5	2.40	U	5.98	2.40	1.20
Bromodichloromethane	75-27-4	1.20	U	5.98	1.20	0.598
Bromoform	75-25-2	1.20	U	5.98	1.20	0.598
Bromomethane	74-83-9	2.40	U	5.98	2.40	1.20
2-Butanone	78-93-3	5.98	U	12.0	5.98	2.99
n-Butylbenzene	104-51-8	1.20	U	5.98	1.20	0.598
sec-Butylbenzene	135-98-8	1.20	U	5.98	1.20	0.598
tert-Butylbenzene	98-06-6	1.20	U	5.98	1.20	0.598
Carbon disulfide	75-15-0	1.20	U	5.98	1.20	0.598
Carbon tetrachloride	56-23-5	1.20	U	5.98	1.20	0.598
Chlorobenzene	108-90-7	1.20	U	5.98	1.20	0.598
Chlorodibromomethane	124-48-1	1.20	U	5.98	1.20	0.598
Chloroethane	75-00-3	2.40	U	5.98	2.40	1.20
Chloroform	67-66-3	1.20	U	5.98	1.20	0.598
Chloromethane	74-87-3	4.78	U	12.0	4.78	2.39
2-Chlorotoluene	95-49-8	1.20	U	5.98	1.20	0.598
4-Chlorotoluene	106-43-4	1.20	U	5.98	1.20	0.598
1,2-Dibromo-3-chloropropane	96-12-8	4.78	U	12.0	4.78	2.39
1,2-Dibromoethane	106-93-4	1.20	U	5.98	1.20	0.598
Dibromomethane	74-95-3	1.20	U	5.98	1.20	0.598
1,2-Dichlorobenzene	95-50-1	1.20	U	5.98	1.20	0.598
1,3-Dichlorobenzene	541-73-1	1.20	U	5.98	1.20	0.598
1,4-Dichlorobenzene	106-46-7	1.20	U	5.98	1.20	0.598
Dichlorodifluoromethane	75-71-8	2.40	U	5.98	2.40	1.20
1,1-Dichloroethane	75-34-3	2.40	U	5.98	2.40	1.20
1,2-Dichloroethane	107-06-2	1.20	U	5.98	1.20	0.598
1,1-Dichloroethene	75-35-4	1.20	U	5.98	1.20	0.598
cis-1,2-Dichloroethene	156-59-2	1.20	U	5.98	1.20	0.598

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Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.20	U	5.98	1.20	0.598
1,2-Dichloropropane	78-87-5	1.20	U	5.98	1.20	0.598
1,3-Dichloropropane	142-28-9	1.20	U	5.98	1.20	0.598
2,2-Dichloropropane	594-20-7	1.20	U	5.98	1.20	0.598
cis-1,3-Dichloropropene	10061-01-5	1.20	U	5.98	1.20	0.598
trans-1,3-Dichloropropene	10061-02-6	1.20	U	5.98	1.20	0.598
1,1-Dichloropropene	563-58-6	1.20	U	5.98	1.20	0.598
Ethylbenzene	100-41-4	1.20	U	5.98	1.20	0.598
2-Hexanone	591-78-6	5.98	U	12.0	5.98	2.99
Hexachlorobutadiene	87-68-3	1.20	U	5.98	1.20	0.598
Isopropylbenzene	98-82-8	1.20	U	5.98	1.20	0.598
p-Isopropyltoluene	99-87-6	1.20	U	5.98	1.20	0.598
4-Methyl-2-pentanone	108-10-1	5.98	U	12.0	5.98	2.99
Methylene chloride	75-09-2	2.40	U	5.98	2.40	1.20
Naphthalene	91-20-3	1.20	U	5.98	1.20	0.598
n-Propylbenzene	103-65-1	1.20	U	5.98	1.20	0.598
Styrene	100-42-5	1.20	U	5.98	1.20	0.598
1,1,1,2-Tetrachloroethane	630-20-6	1.20	U	5.98	1.20	0.598
1,1,2,2-Tetrachloroethane	79-34-5	1.20	U	5.98	1.20	0.598
Tetrachloroethene	127-18-4	1.20	U	5.98	1.20	0.598
Toluene	108-88-3	1.20	U	5.98	1.20	0.598
1,2,3-Trichlorobenzene	87-61-6	1.20	U	5.98	1.20	0.598
1,2,4-Trichlorobenzene	120-82-1	1.20	U	5.98	1.20	0.598
1,1,1-Trichloroethane	71-55-6	1.20	U	5.98	1.20	0.598
1,1,2-Trichloroethane	79-00-5	1.20	U	5.98	1.20	0.598
Trichloroethene	79-01-6	1.20	U	5.98	1.20	0.598
Trichlorofluoromethane	75-69-4	2.40	U	5.98	2.40	1.20
1,2,3-Trichloropropane	96-18-4	2.40	U	5.98	2.40	1.20
1,2,4-Trimethylbenzene	95-63-6	1.20	U	5.98	1.20	0.598
1,3,5-Trimethylbenzene	108-67-8	1.20	U	5.98	1.20	0.598
Vinyl chloride	75-01-4	2.40	U	5.98	2.40	1.20
o-Xylene	95-47-6	1.20	U	5.98	1.20	0.598
m-,p-Xylene	179601-23-1	1.20	U	5.98	1.20	0.598

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.7	80	120	
1,2-Dichloroethane-d4	95.7	80	120	
Toluene-d8	99.3	85	115	
4-Bromofluorobenzene	102	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030134-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT06(15-15.5)020316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 12:57
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559859	**Analyst:**	ADC	**Run Date:**	03/06/2016 19:29
Collect Date:	03/02/2016 10:35	**Dilution:**	1	**File ID:**	9M973106
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	88.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.5	U	23.0	11.5	5.74
Benzene	71-43-2	1.15	U	5.74	1.15	0.574
Bromobenzene	108-86-1	1.15	U	5.74	1.15	0.574
Bromochloromethane	74-97-5	2.30	U	5.74	2.30	1.15
Bromodichloromethane	75-27-4	1.15	U	5.74	1.15	0.574
Bromoform	75-25-2	1.15	U	5.74	1.15	0.574
Bromomethane	74-83-9	2.30	U	5.74	2.30	1.15
2-Butanone	78-93-3	5.74	U	11.5	5.74	2.87
n-Butylbenzene	104-51-8	1.15	U	5.74	1.15	0.574
sec-Butylbenzene	135-98-8	1.15	U	5.74	1.15	0.574
tert-Butylbenzene	98-06-6	1.15	U	5.74	1.15	0.574
Carbon disulfide	75-15-0	1.15	U	5.74	1.15	0.574
Carbon tetrachloride	56-23-5	1.15	U	5.74	1.15	0.574
Chlorobenzene	108-90-7	1.15	U	5.74	1.15	0.574
Chlorodibromomethane	124-48-1	1.15	U	5.74	1.15	0.574
Chloroethane	75-00-3	2.30	U	5.74	2.30	1.15
Chloroform	67-66-3	1.15	U	5.74	1.15	0.574
Chloromethane	74-87-3	4.60	U	11.5	4.60	2.30
2-Chlorotoluene	95-49-8	1.15	U	5.74	1.15	0.574
4-Chlorotoluene	106-43-4	1.15	U	5.74	1.15	0.574
1,2-Dibromo-3-chloropropane	96-12-8	4.60	U	11.5	4.60	2.30
1,2-Dibromoethane	106-93-4	1.15	U	5.74	1.15	0.574
Dibromomethane	74-95-3	1.15	U	5.74	1.15	0.574
1,2-Dichlorobenzene	95-50-1	1.15	U	5.74	1.15	0.574
1,3-Dichlorobenzene	541-73-1	1.15	U	5.74	1.15	0.574
1,4-Dichlorobenzene	106-46-7	1.15	U	5.74	1.15	0.574
Dichlorodifluoromethane	75-71-8	2.30	U	5.74	2.30	1.15
1,1-Dichloroethane	75-34-3	2.30	U	5.74	2.30	1.15
1,2-Dichloroethane	107-06-2	1.15	U	5.74	1.15	0.574
1,1-Dichloroethene	75-35-4	1.15	U	5.74	1.15	0.574
cis-1,2-Dichloroethene	156-59-2	1.15	U	5.74	1.15	0.574

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Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.15	U	5.74	1.15	0.574
1,2-Dichloropropane	78-87-5	1.15	U	5.74	1.15	0.574
1,3-Dichloropropane	142-28-9	1.15	U	5.74	1.15	0.574
2,2-Dichloropropane	594-20-7	1.15	U	5.74	1.15	0.574
cis-1,3-Dichloropropene	10061-01-5	1.15	U	5.74	1.15	0.574
trans-1,3-Dichloropropene	10061-02-6	1.15	U	5.74	1.15	0.574
1,1-Dichloropropene	563-58-6	1.15	U	5.74	1.15	0.574
Ethylbenzene	100-41-4	1.15	U	5.74	1.15	0.574
2-Hexanone	591-78-6	5.74	U	11.5	5.74	2.87
Hexachlorobutadiene	87-68-3	1.15	U	5.74	1.15	0.574
Isopropylbenzene	98-82-8	1.15	U	5.74	1.15	0.574
p-Isopropyltoluene	99-87-6	1.15	U	5.74	1.15	0.574
4-Methyl-2-pentanone	108-10-1	5.74	U	11.5	5.74	2.87
Methylene chloride	75-09-2	2.30	U	5.74	2.30	1.15
Naphthalene	91-20-3	1.15	U	5.74	1.15	0.574
n-Propylbenzene	103-65-1	1.15	U	5.74	1.15	0.574
Styrene	100-42-5	1.15	U	5.74	1.15	0.574
1,1,1,2-Tetrachloroethane	630-20-6	1.15	U	5.74	1.15	0.574
1,1,2,2-Tetrachloroethane	79-34-5	1.15	U	5.74	1.15	0.574
Tetrachloroethene	127-18-4	1.15	U	5.74	1.15	0.574
Toluene	108-88-3	1.15	U	5.74	1.15	0.574
1,2,3-Trichlorobenzene	87-61-6	1.15	U	5.74	1.15	0.574
1,2,4-Trichlorobenzene	120-82-1	1.15	U	5.74	1.15	0.574
1,1,1-Trichloroethane	71-55-6	1.15	U	5.74	1.15	0.574
1,1,2-Trichloroethane	79-00-5	1.15	U	5.74	1.15	0.574
Trichloroethene	79-01-6	1.15	U	5.74	1.15	0.574
Trichlorofluoromethane	75-69-4	2.30	U	5.74	2.30	1.15
1,2,3-Trichloropropane	96-18-4	2.30	U	5.74	2.30	1.15
1,2,4-Trimethylbenzene	95-63-6	1.15	U	5.74	1.15	0.574
1,3,5-Trimethylbenzene	108-67-8	1.15	U	5.74	1.15	0.574
Vinyl chloride	75-01-4	2.30	U	5.74	2.30	1.15
o-Xylene	95-47-6	1.15	U	5.74	1.15	0.574
m-,p-Xylene	179601-23-1	1.15	U	5.74	1.15	0.574

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.2	80	120	
1,2-Dichloroethane-d4	97.0	80	120	
Toluene-d8	99.0	85	115	
4-Bromofluorobenzene	99.4	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030134-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT06(20-20.5)020316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 12:58
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559859	**Analyst:**	ADC	**Run Date:**	03/06/2016 20:00
Collect Date:	03/02/2016 11:11	**Dilution:**	1	**File ID:**	9M973107
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.8	U	25.6	12.8	6.39
Benzene	71-43-2	1.28	U	6.39	1.28	0.639
Bromobenzene	108-86-1	1.28	U	6.39	1.28	0.639
Bromochloromethane	74-97-5	2.56	U	6.39	2.56	1.28
Bromodichloromethane	75-27-4	1.28	U	6.39	1.28	0.639
Bromoform	75-25-2	1.28	U	6.39	1.28	0.639
Bromomethane	74-83-9	2.56	U	6.39	2.56	1.28
2-Butanone	78-93-3	6.40	U	12.8	6.40	3.20
n-Butylbenzene	104-51-8	1.28	U	6.39	1.28	0.639
sec-Butylbenzene	135-98-8	1.28	U	6.39	1.28	0.639
tert-Butylbenzene	98-06-6	1.28	U	6.39	1.28	0.639
Carbon disulfide	75-15-0	1.28	U	6.39	1.28	0.639
Carbon tetrachloride	56-23-5	1.28	U	6.39	1.28	0.639
Chlorobenzene	108-90-7	1.28	U	6.39	1.28	0.639
Chlorodibromomethane	124-48-1	1.28	U	6.39	1.28	0.639
Chloroethane	75-00-3	2.56	U	6.39	2.56	1.28
Chloroform	67-66-3	1.28	U	6.39	1.28	0.639
Chloromethane	74-87-3	5.12	U	12.8	5.12	2.56
2-Chlorotoluene	95-49-8	1.28	U	6.39	1.28	0.639
4-Chlorotoluene	106-43-4	1.28	U	6.39	1.28	0.639
1,2-Dibromo-3-chloropropane	96-12-8	5.12	U	12.8	5.12	2.56
1,2-Dibromoethane	106-93-4	1.28	U	6.39	1.28	0.639
Dibromomethane	74-95-3	1.28	U	6.39	1.28	0.639
1,2-Dichlorobenzene	95-50-1	1.28	U	6.39	1.28	0.639
1,3-Dichlorobenzene	541-73-1	1.28	U	6.39	1.28	0.639
1,4-Dichlorobenzene	106-46-7	1.28	U	6.39	1.28	0.639
Dichlorodifluoromethane	75-71-8	2.56	U	6.39	2.56	1.28
1,1-Dichloroethane	75-34-3	2.56	U	6.39	2.56	1.28
1,2-Dichloroethane	107-06-2	1.28	U	6.39	1.28	0.639
1,1-Dichloroethene	75-35-4	1.28	U	6.39	1.28	0.639
cis-1,2-Dichloroethene	156-59-2	1.28	U	6.39	1.28	0.639

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.28	U	6.39	1.28	0.639
1,2-Dichloropropane	78-87-5	1.28	U	6.39	1.28	0.639
1,3-Dichloropropane	142-28-9	1.28	U	6.39	1.28	0.639
2,2-Dichloropropane	594-20-7	1.28	U	6.39	1.28	0.639
cis-1,3-Dichloropropene	10061-01-5	1.28	U	6.39	1.28	0.639
trans-1,3-Dichloropropene	10061-02-6	1.28	U	6.39	1.28	0.639
1,1-Dichloropropene	563-58-6	1.28	U	6.39	1.28	0.639
Ethylbenzene	100-41-4	1.28	U	6.39	1.28	0.639
2-Hexanone	591-78-6	6.40	U	12.8	6.40	3.20
Hexachlorobutadiene	87-68-3	1.28	U	6.39	1.28	0.639
Isopropylbenzene	98-82-8	1.28	U	6.39	1.28	0.639
p-Isopropyltoluene	99-87-6	1.28	U	6.39	1.28	0.639
4-Methyl-2-pentanone	108-10-1	6.40	U	12.8	6.40	3.20
Methylene chloride	75-09-2	2.56	U	6.39	2.56	1.28
Naphthalene	91-20-3	1.28	U	6.39	1.28	0.639
n-Propylbenzene	103-65-1	1.28	U	6.39	1.28	0.639
Styrene	100-42-5	1.28	U	6.39	1.28	0.639
1,1,1,2-Tetrachloroethane	630-20-6	1.28	U	6.39	1.28	0.639
1,1,2,2-Tetrachloroethane	79-34-5	1.28	U	6.39	1.28	0.639
Tetrachloroethene	127-18-4	1.28	U	6.39	1.28	0.639
Toluene	108-88-3	1.28	U	6.39	1.28	0.639
1,2,3-Trichlorobenzene	87-61-6	1.28	U	6.39	1.28	0.639
1,2,4-Trichlorobenzene	120-82-1	1.28	U	6.39	1.28	0.639
1,1,1-Trichloroethane	71-55-6	1.28	U	6.39	1.28	0.639
1,1,2-Trichloroethane	79-00-5	1.28	U	6.39	1.28	0.639
Trichloroethene	79-01-6	1.28	U	6.39	1.28	0.639
Trichlorofluoromethane	75-69-4	2.56	U	6.39	2.56	1.28
1,2,3-Trichloropropane	96-18-4	2.56	U	6.39	2.56	1.28
1,2,4-Trimethylbenzene	95-63-6	1.28	U	6.39	1.28	0.639
1,3,5-Trimethylbenzene	108-67-8	1.28	U	6.39	1.28	0.639
Vinyl chloride	75-01-4	2.56	U	6.39	2.56	1.28
o-Xylene	95-47-6	1.28	U	6.39	1.28	0.639
m-,p-Xylene	179601-23-1	1.28	U	6.39	1.28	0.639

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.0	80	120	
1,2-Dichloroethane-d4	98.9	80	120	
Toluene-d8	98.6	85	115	
4-Bromofluorobenzene	98.3	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030134-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT06(27.5-28)020316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 12:58
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559859	**Analyst:**	ADC	**Run Date:**	03/06/2016 20:30
Collect Date:	03/02/2016 12:05	**Dilution:**	1	**File ID:**	9M973108
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.0	U	25.9	13.0	6.48
Benzene	71-43-2	1.30	U	6.48	1.30	0.648
Bromobenzene	108-86-1	1.30	U	6.48	1.30	0.648
Bromochloromethane	74-97-5	2.60	U	6.48	2.60	1.30
Bromodichloromethane	75-27-4	1.30	U	6.48	1.30	0.648
Bromoform	75-25-2	1.30	U	6.48	1.30	0.648
Bromomethane	74-83-9	2.60	U	6.48	2.60	1.30
2-Butanone	78-93-3	6.48	U	13.0	6.48	3.24
n-Butylbenzene	104-51-8	1.30	U	6.48	1.30	0.648
sec-Butylbenzene	135-98-8	1.30	U	6.48	1.30	0.648
tert-Butylbenzene	98-06-6	1.30	U	6.48	1.30	0.648
Carbon disulfide	75-15-0	1.30	U	6.48	1.30	0.648
Carbon tetrachloride	56-23-5	1.30	U	6.48	1.30	0.648
Chlorobenzene	108-90-7	1.30	U	6.48	1.30	0.648
Chlorodibromomethane	124-48-1	1.30	U	6.48	1.30	0.648
Chloroethane	75-00-3	2.60	U	6.48	2.60	1.30
Chloroform	67-66-3	1.30	U	6.48	1.30	0.648
Chloromethane	74-87-3	5.18	U	13.0	5.18	2.59
2-Chlorotoluene	95-49-8	1.30	U	6.48	1.30	0.648
4-Chlorotoluene	106-43-4	1.30	U	6.48	1.30	0.648
1,2-Dibromo-3-chloropropane	96-12-8	5.18	U	13.0	5.18	2.59
1,2-Dibromoethane	106-93-4	1.30	U	6.48	1.30	0.648
Dibromomethane	74-95-3	1.30	U	6.48	1.30	0.648
1,2-Dichlorobenzene	95-50-1	1.30	U	6.48	1.30	0.648
1,3-Dichlorobenzene	541-73-1	1.30	U	6.48	1.30	0.648
1,4-Dichlorobenzene	106-46-7	1.30	U	6.48	1.30	0.648
Dichlorodifluoromethane	75-71-8	2.60	U	6.48	2.60	1.30
1,1-Dichloroethane	75-34-3	2.60	U	6.48	2.60	1.30
1,2-Dichloroethane	107-06-2	1.07	J	6.48	1.30	0.648
1,1-Dichloroethene	75-35-4	1.30	U	6.48	1.30	0.648
cis-1,2-Dichloroethene	156-59-2	1.30	U	6.48	1.30	0.648

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Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.30	U	6.48	1.30	0.648
1,2-Dichloropropane	78-87-5	1.30	U	6.48	1.30	0.648
1,3-Dichloropropane	142-28-9	1.30	U	6.48	1.30	0.648
2,2-Dichloropropane	594-20-7	1.30	U	6.48	1.30	0.648
cis-1,3-Dichloropropene	10061-01-5	1.30	U	6.48	1.30	0.648
trans-1,3-Dichloropropene	10061-02-6	1.30	U	6.48	1.30	0.648
1,1-Dichloropropene	563-58-6	1.30	U	6.48	1.30	0.648
Ethylbenzene	100-41-4	1.30	U	6.48	1.30	0.648
2-Hexanone	591-78-6	6.48	U	13.0	6.48	3.24
Hexachlorobutadiene	87-68-3	1.30	U	6.48	1.30	0.648
Isopropylbenzene	98-82-8	1.30	U	6.48	1.30	0.648
p-Isopropyltoluene	99-87-6	1.30	U	6.48	1.30	0.648
4-Methyl-2-pentanone	108-10-1	6.48	U	13.0	6.48	3.24
Methylene chloride	75-09-2	2.60	U	6.48	2.60	1.30
Naphthalene	91-20-3	1.30	U	6.48	1.30	0.648
n-Propylbenzene	103-65-1	1.30	U	6.48	1.30	0.648
Styrene	100-42-5	1.30	U	6.48	1.30	0.648
1,1,1,2-Tetrachloroethane	630-20-6	1.30	U	6.48	1.30	0.648
1,1,2,2-Tetrachloroethane	79-34-5	1.30	U	6.48	1.30	0.648
Tetrachloroethene	127-18-4	1.30	U	6.48	1.30	0.648
Toluene	108-88-3	1.30	U	6.48	1.30	0.648
1,2,3-Trichlorobenzene	87-61-6	1.30	U	6.48	1.30	0.648
1,2,4-Trichlorobenzene	120-82-1	1.30	U	6.48	1.30	0.648
1,1,1-Trichloroethane	71-55-6	1.30	U	6.48	1.30	0.648
1,1,2-Trichloroethane	79-00-5	1.30	U	6.48	1.30	0.648
Trichloroethene	79-01-6	57.1		6.48	1.30	0.648
Trichlorofluoromethane	75-69-4	2.60	U	6.48	2.60	1.30
1,2,3-Trichloropropane	96-18-4	2.60	U	6.48	2.60	1.30
1,2,4-Trimethylbenzene	95-63-6	1.30	U	6.48	1.30	0.648
1,3,5-Trimethylbenzene	108-67-8	1.30	U	6.48	1.30	0.648
Vinyl chloride	75-01-4	2.60	U	6.48	2.60	1.30
o-Xylene	95-47-6	1.30	U	6.48	1.30	0.648
m-,p-Xylene	179601-23-1	1.30	U	6.48	1.30	0.648

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.6	80	120	
1,2-Dichloroethane-d4	97.1	80	120	
Toluene-d8	99.0	85	115	
4-Bromofluorobenzene	100	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030134-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT06(38.5-39)020316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 12:59
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559859	**Analyst:**	ADC	**Run Date:**	03/06/2016 21:00
Collect Date:	03/02/2016 15:00	**Dilution:**	1	**File ID:**	9M973109
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.1	U	26.2	13.1	6.55
Benzene	71-43-2	1.31	U	6.55	1.31	0.655
Bromobenzene	108-86-1	1.31	U	6.55	1.31	0.655
Bromochloromethane	74-97-5	2.62	U	6.55	2.62	1.31
Bromodichloromethane	75-27-4	1.31	U	6.55	1.31	0.655
Bromoform	75-25-2	1.31	U	6.55	1.31	0.655
Bromomethane	74-83-9	2.62	U	6.55	2.62	1.31
2-Butanone	78-93-3	6.54	U	13.1	6.54	3.27
n-Butylbenzene	104-51-8	1.31	U	6.55	1.31	0.655
sec-Butylbenzene	135-98-8	1.31	U	6.55	1.31	0.655
tert-Butylbenzene	98-06-6	1.31	U	6.55	1.31	0.655
Carbon disulfide	75-15-0	1.31	U	6.55	1.31	0.655
Carbon tetrachloride	56-23-5	1.31	U	6.55	1.31	0.655
Chlorobenzene	108-90-7	1.31	U	6.55	1.31	0.655
Chlorodibromomethane	124-48-1	1.31	U	6.55	1.31	0.655
Chloroethane	75-00-3	2.62	U	6.55	2.62	1.31
Chloroform	67-66-3	1.31	U	6.55	1.31	0.655
Chloromethane	74-87-3	5.24	U	13.1	5.24	2.62
2-Chlorotoluene	95-49-8	1.31	U	6.55	1.31	0.655
4-Chlorotoluene	106-43-4	1.31	U	6.55	1.31	0.655
1,2-Dibromo-3-chloropropane	96-12-8	5.24	U	13.1	5.24	2.62
1,2-Dibromoethane	106-93-4	1.31	U	6.55	1.31	0.655
Dibromomethane	74-95-3	1.31	U	6.55	1.31	0.655
1,2-Dichlorobenzene	95-50-1	1.31	U	6.55	1.31	0.655
1,3-Dichlorobenzene	541-73-1	1.31	U	6.55	1.31	0.655
1,4-Dichlorobenzene	106-46-7	1.31	U	6.55	1.31	0.655
Dichlorodifluoromethane	75-71-8	2.62	U	6.55	2.62	1.31
1,1-Dichloroethane	75-34-3	2.62	U	6.55	2.62	1.31
1,2-Dichloroethane	107-06-2	1.31	U	6.55	1.31	0.655
1,1-Dichloroethene	75-35-4	1.31	U	6.55	1.31	0.655
cis-1,2-Dichloroethene	156-59-2	1.31	U	6.55	1.31	0.655

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Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.31	U	6.55	1.31	0.655
1,2-Dichloropropane	78-87-5	1.31	U	6.55	1.31	0.655
1,3-Dichloropropane	142-28-9	1.31	U	6.55	1.31	0.655
2,2-Dichloropropane	594-20-7	1.31	U	6.55	1.31	0.655
cis-1,3-Dichloropropene	10061-01-5	1.31	U	6.55	1.31	0.655
trans-1,3-Dichloropropene	10061-02-6	1.31	U	6.55	1.31	0.655
1,1-Dichloropropene	563-58-6	1.31	U	6.55	1.31	0.655
Ethylbenzene	100-41-4	1.31	U	6.55	1.31	0.655
2-Hexanone	591-78-6	6.54	U	13.1	6.54	3.27
Hexachlorobutadiene	87-68-3	1.31	U	6.55	1.31	0.655
Isopropylbenzene	98-82-8	1.31	U	6.55	1.31	0.655
p-Isopropyltoluene	99-87-6	1.31	U	6.55	1.31	0.655
4-Methyl-2-pentanone	108-10-1	6.54	U	13.1	6.54	3.27
Methylene chloride	75-09-2	2.62	U	6.55	2.62	1.31
Naphthalene	91-20-3	1.31	U	6.55	1.31	0.655
n-Propylbenzene	103-65-1	1.31	U	6.55	1.31	0.655
Styrene	100-42-5	1.31	U	6.55	1.31	0.655
1,1,1,2-Tetrachloroethane	630-20-6	1.31	U	6.55	1.31	0.655
1,1,2,2-Tetrachloroethane	79-34-5	1.31	U	6.55	1.31	0.655
Tetrachloroethene	127-18-4	1.31	U	6.55	1.31	0.655
Toluene	108-88-3	1.31	U	6.55	1.31	0.655
1,2,3-Trichlorobenzene	87-61-6	1.31	U	6.55	1.31	0.655
1,2,4-Trichlorobenzene	120-82-1	1.31	U	6.55	1.31	0.655
1,1,1-Trichloroethane	71-55-6	1.31	U	6.55	1.31	0.655
1,1,2-Trichloroethane	79-00-5	1.31	U	6.55	1.31	0.655
Trichloroethene	79-01-6	0.747	J	6.55	1.31	0.655
Trichlorofluoromethane	75-69-4	2.62	U	6.55	2.62	1.31
1,2,3-Trichloropropane	96-18-4	2.62	U	6.55	2.62	1.31
1,2,4-Trimethylbenzene	95-63-6	1.31	U	6.55	1.31	0.655
1,3,5-Trimethylbenzene	108-67-8	1.31	U	6.55	1.31	0.655
Vinyl chloride	75-01-4	2.62	U	6.55	2.62	1.31
o-Xylene	95-47-6	1.31	U	6.55	1.31	0.655
m-,p-Xylene	179601-23-1	1.31	U	6.55	1.31	0.655

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.8	80	120	
1,2-Dichloroethane-d4	102	80	120	
Toluene-d8	99.0	85	115	
4-Bromofluorobenzene	101	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.
VOA Preparation/Preservation/Extraction Log

Batch #: WG559855
Analyst: AWE
Method: 5030B/5030C/5035
Run Date: 03/06/2016 12:56
Product: 8260
Purge and trap methanol COA18540
Purified Lab Sand Lot #COA18552

SAMPLE #	Fraction	Collected	Preserved	PCT-S	Tare Wt	Total Wt	Sample Wt	Water	MeOH	Vt	Comments
L16030134-01	A	03/02/16 08:58	03/06/16 12:56	80.7			4.62	5		5	
L16030134-02	A	03/02/16 08:58	03/06/16 12:56	80.8			5.17	5		5	
L16030134-03	A	03/02/16 10:35	03/06/16 12:57	88.1			4.94	5		5	
L16030134-04	A	03/02/16 11:11	03/06/16 12:58	82.3			4.75	5		5	
L16030134-05	A	03/02/16 12:05	03/06/16 12:58	82.1			4.70	5		5	
L16030134-06	A	03/02/16 15:00	03/06/16 12:59	80.0			4.77	5		5	
L16030234-01	A	03/03/16 13:15	03/06/16 13:01	83.4			4.61	5		5	
L16030234-02	A	03/03/16 13:49	03/06/16 13:02	81.8			4.73	5		5	
L16030234-03	A	03/03/16 14:40	03/06/16 13:03	84.4			4.79	5		5	
L16030234-04	A	03/03/16 14:50	03/06/16 13:04	83.4			4.56	5		5	
L16030234-05	A	03/03/16 14:55	03/06/16 13:04	82.0			5.43	5		5	
L16030234-06	A	03/03/16 15:05	03/06/16 13:05	80.1			5.03	5		5	
L16030235-01	A	03/02/16 16:00	03/06/16 13:06	82.3			4.92	5		5	
L16030235-02	A	03/02/16 16:25	03/06/16 13:06	76.4			5.25	5		5	
L16030235-03	A	03/03/16 10:00	03/06/16 13:07	82.2			5.48	5		5	
L16030235-04	A	03/03/16 10:00	03/06/16 13:07	82.2			5.17	5		5	
L16030235-05	A	03/03/16 10:00	03/06/16 13:08	82.2			5.07	5		5	
L16030235-06	A	03/03/16 10:10	03/06/16 13:09	75.6			5.16	5		5	
L16030235-07	A	03/03/16 10:10	03/06/16 13:10	75.6			4.64	5		5	
L16030235-08	A	03/03/16 10:15	03/06/16 13:10	83.1			5.24	5		5	
WG559855-01	A		03/06/16 12:59	80.0			4.77	5		5	
WG559855-02	A		03/06/16 13:00	80.0			5.05	5		5	
WG559855-03	A		03/06/16 13:00	80.0			4.75	5		5	

Comments:
1 = improperly sealed cap
2 = preserved out of hold
3 = effervesced
4 = preserved with NaHSO4
5 = preserved by freezing
6 = preserved in field

Analyst: Andrew Baeg

VOA_EXT - Modified 05/22/2008
PDF ID: 4658103
Report generated: 03/08/2016 15:07

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 012516
Analyst1: ADC Analyst2: NA
Method: 8260B/8260C SOP: MSV01(-C) Rev: 23 (2)
Method: 5030B/5030C/5035 SOP: PAT01 Rev: 18
Method: 624 SOP: MSV10 Rev: 12
Maintenance Log ID:

Internal Standard: STD74414 Surrogate Standard: STD74126
CCV: STD74488 LCS: STD74459 MS/MSD: STD74459

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG555000 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M972470	WG555000-01 BFB 50ng A9	NA	7	1	STD74202	01/25/16 10:27
9M972471	RINSE	NA	7	1		01/25/16 10:52
9M972472	WG555000-02 5ug/Kg STD A9	NA	7	1	STD74406	01/25/16 11:22
9M972473	WG555000-03 20ug/Kg STD A9	NA	7	1	STD74406	01/25/16 11:52
9M972474	WG555000-04 50ug/Kg STD A9	NA	7	1	STD74406	01/25/16 12:23
9M972475	WG555000-05 100ug/Kg STD A9	NA	7	1	STD74406	01/25/16 12:53
9M972476	WG555000-06 200ug/Kg STD A9	NA	7	1	STD74406	01/25/16 13:23
9M972477	WG555000-07 300ug/Kg STD A9	NA	7	1	STD74406	01/25/16 13:54
9M972478	WG555000-08 400ug/Kg STD A9	NA	7	1	STD74406	01/25/16 14:25
9M972479	WG555000-09 500ug/Kg STD A9	NA	7	1	STD74406	01/25/16 14:56
9M972480	RINSE	NA	7	1		01/25/16 15:26
9M972481	WG555000-10 100ug/Kg ICV A9	NA	7	1	STD74461	01/25/16 15:56
9M972482	RINSE	NA	7	1		01/25/16 16:28

Approved: January 29, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 022516
Analyst1: ADC Analyst2: NA
Method: 8260 SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD74726 Surrogate Standard: STD74815
CCV: STD74488 LCS: STD74755 MS/MSD: STD74755

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG558732 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M972892	WG558732-01 BFB 50ng	NA	7	1	STD74773	02/25/16 14:26
9M972894	WG558732-01 BFB 50ng	NA	7	1	STD74773	02/25/16 14:45
9M972895	WG558732-02 50ug/L CCV 8260C	NA	7	1	STD74773	02/25/16 15:11
9M972896	WG558732-02 50ug/L CCV 8260C	NA	7	1	STD74773	02/25/16 15:48
9M972897	RINSE	NA	7	1		02/25/16 16:25
9M972898	WG558732-03 0.5ug/kg STD	NA	7	1	STD74773	02/25/16 16:55
9M972899	WG558732-04 1.0ug/kg STD	NA	7	1	STD74773	02/25/16 17:27
9M972900	WG558732-05 2.0ug/kg STD	NA	7	1	STD74773	02/25/16 17:57
9M972901	WG558732-06 5.0ug/kg STD	NA	7	1	STD74773	02/25/16 18:28
9M972902	WG558732-07 20.0ug/kg STD	NA	7	1	STD74773	02/25/16 18:59
9M972903	WG558732-08 100.0ug/kg STD	NA	7	1	STD74773	02/25/16 19:29
9M972904	WG558732-09 200.0ug/kg STD	NA	7	1	STD74773	02/25/16 20:00
9M972905	WG558732-10 300.0ug/kg STD	NA	7	1	STD74773	02/25/16 20:30
9M972906	RINSE	NA	7	1	STD74773	02/25/16 21:01
9M972907	WG558732-11 50.0ug/kg ALTSRC	NA	7	1	STD74755	02/25/16 21:31

Approved: February 29, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 030616
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD74726 Surrogate Standard: STD74815
CCV: STD74773 LCS: STD74900 MS/MSD: STD74900

Column 1 ID: RTX502.1 Column 2 ID: NA
Workgroups: WG559859

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M973096	WG559858-01 BFB 50ng 8260	NA	7	1	STD74606	03/06/16 14:28
9M973097	WG559858-02 50ug/Kg CCV 8260	NA	7	1	STD74773	03/06/16 14:55
9M973098	WGXXXXXX-01 A9FOO QC 100ug/kg	NA	7	1		03/06/16 15:25
9M973099	WG559858-02 50ug/Kg CCV 8260	NA	7	1	STD74773	03/06/16 15:56
9M973100	RINSE	NA	7	1		03/06/16 16:26
9M973101	WG559859-01 VBLK0306 BLANK 8260	NA	7	1		03/06/16 16:57
9M973102	WG559859-02 20ug/L LCS 8260	NA	7	1	STD74900	03/06/16 17:27
9M973103	RINSE	NA	7	1		03/06/16 17:58
9M973104	L16030134-01 A 8260 4.62g	NA	7	1		03/06/16 18:28
9M973105	L16030134-02 A 8260 5.17g	NA	7	1		03/06/16 18:59
9M973106	L16030134-03 A 8260 4.94g	NA	7	1		03/06/16 19:29
9M973107	L16030134-04 A 8260 4.75g	NA	7	1		03/06/16 20:00
9M973108	L16030134-05 A 8260 4.70g	NA	7	1		03/06/16 20:30
9M973109	WG559855-01 L16030134-06 A 8260 4.77g	NA	7	1		03/06/16 21:00
9M973110	L16030234-01 A 8260 4.61g	NA	7	1		03/06/16 21:31
9M973111	L16030234-02 A 8260 4.73g	NA	7	1		03/06/16 22:01
9M973112	L16030234-03 A 8260 4.79g	NA	7	1		03/06/16 22:31
9M973113	L16030234-04 A 8260 4.56g	NA	7	1		03/06/16 23:01
9M973114	L16030234-05 A 8260 5.43g	NA	7	1		03/06/16 23:32
9M973115	L16030234-06 A 8260 5.03g	NA	7	1		03/07/16 00:02
9M973116	WG559855-02 MS A 8260 5.05g	NA	7	1		03/07/16 00:32
9M973117	WG559855-03 MSD A 8260 4.75g	NA	7	1		03/07/16 01:02
9M973118	RINSE	NA	7	1		03/07/16 01:32
9M973119	RINSE	NA	7	1		03/07/16 02:03

Comments

Seq.	Rerun	Dil.	Reason	Analytes
19	X		Internal standard failure	
File ID: 9M973114				
L16030234-05				

Approved: March 07, 2016

Page: 1

Microbac Laboratories Inc.

Data Checklist

Date: 25-JAN-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 72995
Analytical Workgroups: WG555000

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
28-JAN-2016

Secondary Reviewer:
29-JAN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JAN-29-2016 16:00:23

Microbac Laboratories Inc.

Data Checklist

Date: 25-FEB-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 73547
Analytical Workgroups: WG558732

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
29-FEB-2016

Secondary Reviewer:
29-FEB-2016

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-29-2016 15:30:51

Microbac Laboratories Inc.

Data Checklist

Date: 06-MAR-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 73657
Analytical Workgroups: WG559859

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
07-MAR-2016

Secondary Reviewer:
07-MAR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-07-2016 14:35:52

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG559859

Login Number: L16030134

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18DPT06(5-5.5)020316	01	03/02/16					03/06/2016	4.2	14		03/06/16	4.4	14	
18DPT06(5-5.5)020316FD	02	03/02/16					03/06/2016	4.2	14		03/06/16	4.4	14	
18DPT06(15-15.5)020316	03	03/02/16					03/06/2016	4.1	14		03/06/16	4.4	14	
18DPT06(20-20.5)020316	04	03/02/16					03/06/2016	4.1	14		03/06/16	4.4	14	
18DPT06(27.5-28)020316	05	03/02/16					03/06/2016	4	14		03/06/16	4.4	14	
18DPT06(38.5-39)020316	06	03/02/16					03/06/2016	3.9	14		03/06/16	4.3	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4659239
Report generated 03/07/2016 12:33

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16030134
Instrument Id: HPMS9
Workgroup (AAB#): WG559859

Method: 8260
CAL ID: HPMS9-25-FEB-16
Matrix: Soil

Sample Number	Dilution	Tag	1	2	3	4
L16030134-01	1.00	01	93.9	96.2	101	97.7
L16030134-02	1.00	01	95.7	95.7	102	99.3
L16030134-03	1.00	01	97.0	95.2	99.4	99.0
L16030134-04	1.00	01	98.9	98.0	98.3	98.6
L16030134-05	1.00	01	97.1	94.6	100	99.0
L16030134-06	1.00	01	102	96.8	101	99.0
WG559859-01	1.00	01	99.7	96.5	102	99.4
WG559859-02	1.00	01	97.6	97.9	102	100

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	80	-	120
2 - Dibromofluoromethane	80	-	120
3 - 4-Bromofluorobenzene	85	-	120
4 - Toluene-d8	85	-	115

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4659252
Report generated: 03/07/2016 12:34

METHOD BLANK SUMMARY

Login Number: L16030134
Blank File ID: 9M973101
Prep Date: 03/06/16 16:57
Analyzed Date: 03/06/16 16:57
Analyst: ADC

Work Group: WG559859
Blank Sample ID: WG559859-01
Instrument ID: HPMS9
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG559859-02	9M973102	03/06/16 17:27	01
18DPT06(5-5.5)020316	L16030134-01	9M973104	03/06/16 18:28	01
18DPT06(5-5.5)020316FD	L16030134-02	9M973105	03/06/16 18:59	01
18DPT06(15-15.5)020316	L16030134-03	9M973106	03/06/16 19:29	01
18DPT06(20-20.5)020316	L16030134-04	9M973107	03/06/16 20:00	01
18DPT06(27.5-28)020316	L16030134-05	9M973108	03/06/16 20:30	01
18DPT06(38.5-39)020316	L16030134-06	9M973109	03/06/16 21:00	01

Report Name: BLANK_SUMMARY
PDF File ID: 4659240
Report generated 03/07/2016 12:33

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16030134 Prep Date: 03/06/16 16:57 Sample ID: WG559859-01
Instrument ID: HPMS9 Run Date: 03/06/16 16:57 Prep Method: 5030B/5030C/503
File ID: 9M973101 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG559859 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-25-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	5.00	20.0	5.00	1	U
Benzene	0.500	5.00	0.500	1	U
Bromobenzene	0.500	5.00	0.500	1	U
Bromochloromethane	1.00	5.00	1.00	1	U
Bromodichloromethane	0.500	5.00	0.500	1	U
Bromoform	0.500	5.00	0.500	1	U
Bromomethane	1.00	5.00	1.00	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.500	5.00	0.500	1	U
sec-Butylbenzene	0.500	5.00	0.500	1	U
tert-Butylbenzene	0.500	5.00	0.500	1	U
Carbon disulfide	0.500	5.00	0.500	1	U
Carbon tetrachloride	0.500	5.00	0.500	1	U
Chlorobenzene	0.500	5.00	0.500	1	U
Chlorodibromomethane	0.500	5.00	0.500	1	U
Chloroethane	1.00	5.00	1.00	1	U
Chloroform	0.500	5.00	0.500	1	U
Chloromethane	2.00	10.0	2.00	1	U
2-Chlorotoluene	0.500	5.00	0.500	1	U
4-Chlorotoluene	0.500	5.00	0.500	1	U
1,2-Dibromo-3-chloropropane	2.00	10.0	2.00	1	U
1,2-Dibromoethane	0.500	5.00	0.500	1	U
Dibromomethane	0.500	5.00	0.500	1	U
1,2-Dichlorobenzene	0.500	5.00	0.500	1	U
1,3-Dichlorobenzene	0.500	5.00	0.500	1	U
1,4-Dichlorobenzene	0.500	5.00	0.500	1	U
Dichlorodifluoromethane	1.00	5.00	1.00	1	U
1,1-Dichloroethane	1.00	5.00	1.00	1	U
1,2-Dichloroethane	0.500	5.00	0.500	1	U
1,1-Dichloroethene	0.500	5.00	0.500	1	U
cis-1,2-Dichloroethene	0.500	5.00	0.500	1	U
trans-1,2-Dichloroethene	0.500	5.00	0.500	1	U
1,2-Dichloropropane	0.500	5.00	0.500	1	U
1,3-Dichloropropane	0.500	5.00	0.500	1	U
2,2-Dichloropropane	0.500	5.00	0.500	1	U
cis-1,3-Dichloropropene	0.500	5.00	0.500	1	U
trans-1,3-Dichloropropene	0.500	5.00	0.500	1	U
1,1-Dichloropropene	0.500	5.00	0.500	1	U
Ethylbenzene	0.500	5.00	0.500	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.500	5.00	0.500	1	U
Isopropylbenzene	0.500	5.00	0.500	1	U

Report Name:BLANK
PDF ID: 4659241
07-MAR-2016 12:33

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16030134 Prep Date: 03/06/16 16:57 Sample ID: WG559859-01
Instrument ID: HPMS9 Run Date: 03/06/16 16:57 Prep Method: 5030B/5030C/503
File ID: 9M973101 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG559859 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-25-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.500	5.00	0.500	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	1.00	5.00	1.00	1	U
Naphthalene	0.500	5.00	0.500	1	U
n-Propylbenzene	0.500	5.00	0.500	1	U
Styrene	0.500	5.00	0.500	1	U
1,1,1,2-Tetrachloroethane	0.500	5.00	0.500	1	U
1,1,2,2-Tetrachloroethane	0.500	5.00	0.500	1	U
Tetrachloroethene	0.500	5.00	0.500	1	U
Toluene	0.500	5.00	0.500	1	U
1,2,3-Trichlorobenzene	0.500	5.00	0.500	1	U
1,2,4-Trichlorobenzene	0.500	5.00	0.500	1	U
1,1,1-Trichloroethane	0.500	5.00	0.500	1	U
1,1,2-Trichloroethane	0.500	5.00	0.500	1	U
Trichloroethene	0.500	5.00	0.500	1	U
Trichlorofluoromethane	1.00	5.00	1.00	1	U
1,2,3-Trichloropropane	1.00	5.00	1.00	1	U
1,2,4-Trimethylbenzene	0.500	5.00	0.500	1	U
1,3,5-Trimethylbenzene	0.500	5.00	0.500	1	U
Vinyl chloride	1.00	5.00	1.00	1	U
o-Xylene	0.500	5.00	0.500	1	U
m-,p-Xylene	0.500	5.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	96.5	80 - 120	PASS
1,2-Dichloroethane-d4	99.7	80 - 120	PASS
Toluene-d8	99.4	85 - 115	PASS
4-Bromofluorobenzene	102	85 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4659241
07-MAR-2016 12:33

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030134 | Run Date: 03/06/2016 | Sample ID: WG559859-02
Instrument ID: HPMS9 | Run Time: 17:27 | Prep Method: 5030B/5030C/503
File ID: 9M973102 | Analyst: ADC | Method: 8260B
Workgroup (AAB#): WG559859 | Matrix: Soil | Units: ug/kg
QC Key: DOD4 | Lot#: STD74900 | Cal ID: HPMS9-25-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	20.7	103	20 - 160	
Benzene	20.0	19.6	98.0	75 - 125	
Bromobenzene	20.0	17.3	86.5	65 - 120	
Bromochloromethane	20.0	19.8	99.0	70 - 125	
Bromodichloromethane	20.0	19.1	95.3	70 - 130	
Bromoform	20.0	16.4	82.2	55 - 135	
Bromomethane	20.0	18.3	91.6	30 - 160	
2-Butanone	20.0	21.6	108	30 - 160	
n-Butylbenzene	20.0	16.6	83.0	65 - 140	
sec-Butylbenzene	20.0	18.1	90.4	65 - 130	
tert-Butylbenzene	20.0	18.1	90.6	65 - 130	
Carbon disulfide	20.0	18.6	92.9	45 - 160	
Carbon tetrachloride	20.0	18.0	89.8	65 - 135	
Chlorobenzene	20.0	19.3	96.7	75 - 125	
Chlorodibromomethane	20.0	18.2	91.0	65 - 130	
Chloroethane	20.0	19.0	95.0	40 - 155	
Chloroform	20.0	19.6	98.0	70 - 125	
Chloromethane	20.0	19.7	98.5	50 - 130	
2-Chlorotoluene	20.0	19.1	95.4	70 - 130	
4-Chlorotoluene	20.0	16.6	83.2	75 - 125	
1,2-Dibromo-3-chloropropane	20.0	15.4	77.2	40 - 135	
1,2-Dibromoethane	20.0	18.3	91.7	70 - 125	
Dibromomethane	20.0	18.7	93.6	75 - 130	
1,2-Dichlorobenzene	20.0	17.4	87.0	75 - 120	
1,3-Dichlorobenzene	20.0	16.3	81.5	70 - 125	
1,4-Dichlorobenzene	20.0	17.0	84.9	70 - 125	
Dichlorodifluoromethane	20.0	23.1	116	35 - 135	
1,1-Dichloroethane	20.0	18.9	94.3	75 - 125	
1,2-Dichloroethane	20.0	21.0	105	70 - 135	
1,1-Dichloroethene	20.0	19.4	97.2	65 - 135	
cis-1,2-Dichloroethene	20.0	20.2	101	65 - 125	
trans-1,2-Dichloroethene	20.0	20.3	102	65 - 135	
1,2-Dichloropropane	20.0	21.7	109	70 - 120	
1,3-Dichloropropane	20.0	20.6	103	75 - 125	
2,2-Dichloropropane	20.0	18.1	90.3	65 - 135	
cis-1,3-Dichloropropene	20.0	20.3	101	70 - 125	
trans-1,3-Dichloropropene	20.0	18.8	94.0	65 - 125	
1,1-Dichloropropene	20.0	18.5	92.5	70 - 135	
Ethylbenzene	20.0	19.9	99.4	75 - 125	
2-Hexanone	20.0	20.8	104	45 - 145	
Hexachlorobutadiene	20.0	16.1	80.7	55 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4659243
Report generated: 03/07/2016 12:33

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030134 Run Date: 03/06/2016 Sample ID: WG559859-02
Instrument ID: HPMS9 Run Time: 17:27 Prep Method: 5030B/5030C/503
File ID: 9M973102 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG559859 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD74900 Cal ID: HPMS9-25-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	19.6	98.1	75 - 130	
p-Isopropyltoluene	20.0	17.2	86.1	75 - 135	
4-Methyl-2-pentanone	20.0	21.5	107	45 - 145	
Methylene chloride	20.0	19.8	99.0	55 - 140	
Naphthalene	20.0	14.3	71.7	40 - 125	
n-Propylbenzene	20.0	18.4	92.2	65 - 135	
Styrene	20.0	19.7	98.4	75 - 125	
1,1,1,2-Tetrachloroethane	20.0	18.9	94.7	75 - 125	
1,1,2,2-Tetrachloroethane	20.0	17.3	86.7	55 - 130	
Tetrachloroethene	20.0	17.3	86.6	65 - 140	
Toluene	20.0	19.3	96.5	70 - 125	
1,2,3-Trichlorobenzene	20.0	15.3	76.7	60 - 135	
1,2,4-Trichlorobenzene	20.0	15.1	75.7	65 - 130	
1,1,1-Trichloroethane	20.0	18.5	92.3	70 - 135	
1,1,2-Trichloroethane	20.0	20.1	101	60 - 125	
Trichloroethene	20.0	19.4	96.9	75 - 125	
Trichlorofluoromethane	20.0	18.6	92.8	25 - 185	
1,2,3-Trichloropropane	20.0	17.5	87.4	65 - 130	
1,2,4-Trimethylbenzene	20.0	17.4	87.0	65 - 135	
1,3,5-Trimethylbenzene	20.0	18.2	91.0	65 - 135	
Vinyl chloride	20.0	21.1	105	60 - 125	
o-Xylene	20.0	20.0	100	75 - 125	
m-,p-Xylene	40.0	39.5	98.7	80 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	97.9	80 - 120	PASS
1,2-Dichloroethane-d4	97.6	80 - 120	PASS
Toluene-d8	100	85 - 115	PASS
4-Bromofluorobenzene	102	85 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4659243
Report generated: 03/07/2016 12:33

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16030134
Instrument: HPMS9
Analyst: FJB
Workgroup: WG555000

Tune ID: WG555000-01
Run Date: 01/25/2016
Run Time: 10:27
File ID: 9M972470
Cal ID: HPMS9 - 25-JAN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	23.0	10289	PASS
75.0	95.0	30.0	60.0	49.3	22030	PASS
95.0	95.0	100	100	100	44728	PASS
96.0	95.0	5.00	9.00	6.98	3122	PASS
173	174	0	2.00	0.381	160	PASS
174	95.0	50.0	100	93.9	41989	PASS
175	174	5.00	9.00	6.62	2778	PASS
176	174	95.0	101	95.6	40133	PASS
177	176	5.00	9.00	6.39	2564	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG555000-02	STD-S	01	01/25/2016 11:22	
WG555000-03	STD-S	01	01/25/2016 11:52	
WG555000-04	STD-S	01	01/25/2016 12:23	
WG555000-05	STD-CCV-S	01	01/25/2016 12:53	
WG555000-06	STD-S	01	01/25/2016 13:23	
WG555000-07	STD-S	01	01/25/2016 13:54	
WG555000-08	STD-S	01	01/25/2016 14:25	
WG555000-09	STD-S	01	01/25/2016 14:56	
WG555000-10	SSCV-S	01	01/25/2016 15:56	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4659248
Report generated 03/07/2016 12:33

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16030134
Instrument: HPMS9
Analyst: ADC
Workgroup: WG558732

Tune ID: WG558732-01
Run Date: 02/25/2016
Run Time: 14:45
File ID: 9M972894
Cal ID: HPMS9 - 25-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.2	5378	PASS
75.0	95.0	30.0	60.0	49.1	13067	PASS
95.0	95.0	100	100	100	26621	PASS
96.0	95.0	5.00	9.00	6.32	1683	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	85.8	22851	PASS
175	174	5.00	9.00	6.50	1485	PASS
176	174	95.0	101	98.3	22461	PASS
177	176	5.00	9.00	7.21	1619	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG558732-02	STD-CCV-S	01	02/25/2016 15:48	
WG558732-03	STD-S	01	02/25/2016 16:55	
WG558732-04	STD-S	01	02/25/2016 17:27	
WG558732-05	STD-S	01	02/25/2016 17:57	
WG558732-06	STD-S	01	02/25/2016 18:28	
WG558732-07	STD-S	01	02/25/2016 18:59	
WG558732-08	STD-S	01	02/25/2016 19:29	
WG558732-09	STD-S	01	02/25/2016 20:00	
WG558732-10	STD-S	01	02/25/2016 20:30	
WG558732-11	SSCV-S	01	02/25/2016 21:31	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4659248
Report generated 03/07/2016 12:33

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16030134
Instrument: HPMS9
Analyst: ADC
Workgroup: WG559858

Tune ID: WG559858-01
Run Date: 03/06/2016
Run Time: 14:28
File ID: 9M973096
Cal ID: HPMS9 - 25-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	23.0	6500	PASS
75.0	95.0	30.0	60.0	49.4	13966	PASS
95.0	95.0	100	100	100	28287	PASS
96.0	95.0	5.00	9.00	6.91	1954	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	74.8	21150	PASS
175	174	5.00	9.00	7.33	1550	PASS
176	174	95.0	101	95.6	20221	PASS
177	176	5.00	9.00	5.87	1186	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG559858-02	CCV-S	01	03/06/2016 15:56	
WG559859-01	BLANK	01	03/06/2016 16:57	
WG559859-02	LCS	01	03/06/2016 17:27	
L16030134-01	18DPT06(5-5.5)020316	01	03/06/2016 18:28	
L16030134-02	18DPT06(5-5.5)020316FD	01	03/06/2016 18:59	
L16030134-03	18DPT06(15-15.5)020316	01	03/06/2016 19:29	
L16030134-04	18DPT06(20-20.5)020316	01	03/06/2016 20:00	
L16030134-05	18DPT06(27.5-28)020316	01	03/06/2016 20:30	
L16030134-06	18DPT06(38.5-39)020316	01	03/06/2016 21:00	
WG559855-02	MS	01	03/07/2016 00:32	
WG559855-03	MSD	01	03/07/2016 01:02	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4659248
Report generated 03/07/2016 12:33

Calibration Table Report
Method: A9FOO_SL.M
Title: FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Calibration: Wed Jan 27 09:49:02 2016
Curve: WG555000
Calibration Files

Compound	5 9M972472.D	20 9M972473.D	50 9M972474.D	100 9M972475.D	200 9M972476.D	300 9M972477.D	400 9M972478.D	500 9M972479.D	Avg	%RSD	R^2 Linear
Fluorobenzene	ISTD										
Acetonitrile		0.053	0.046	0.048	0.052	0.046	0.052	0.054	0.050	6.657	
3-Chloro-1-propene	0.498	0.524	0.450	0.519	0.514	0.434	0.507	0.503	0.494	6.719	
2-Chloro-1,3-butadiene	0.534	0.576	0.519	0.592	0.585	0.509	0.593	0.584	0.561	6.202	
Ethyl Acetate		0.333	0.313	0.339	0.338	0.300	0.341	0.344	0.330	5.124	
Methacrylonitrile	0.102	0.109	0.101	0.112	0.110	0.096	0.112	0.112	0.107	5.912	
Isobutyl Alcohol	0.014	0.018	0.018	0.021	0.024	0.021	0.025	0.025	0.021	18.016	0.993
1-Butanol		0.010	0.013	0.015	0.017	0.015	0.018	0.018	0.015	17.838	0.992
Methyl methacrylate	0.236	0.246	0.231	0.265	0.265	0.231	0.271	0.269	0.252	7.005	
2-Nitropropane	0.069	0.073	0.074	0.083	0.089	0.079	0.093	0.095	0.082	12.090	
Chlorobenzene-d5	ISTD										
Cyclohexanone		0.020	0.022	0.025	0.028	0.023	0.027	0.028	0.025	12.963	
1,4-Dichlorobenzene-d4	ISTD										

Wed Jan 27 10:01:56 2016

Calibration Table Report
Method: 8260SL.M
Title: 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Calibration: Fri Feb 26 11:38:33 2016
Curve: WG558732
Calibration Files

Compound	0.5 9M972898.D	1 9M972899.D	2 9M972900.D	5 9M972901.D	20 9M972902.D	50 9M972896.D	100 9M972903.D	200 9M972904.D	300 9M972905.D	Avg	%RSD	R^2 Linear	Quadratic
Fluorobenzene	ISTD												
Dichlorodifluoromethane			0.338	0.271	0.399	0.396	0.318	0.357	0.307	0.341	13.734		
Chloromethane			0.372	0.280	0.331	0.361	0.296	0.346	0.304	0.327	10.674		
Vinyl Chloride		0.250	0.318	0.314	0.373	0.372	0.342	0.355	0.296	0.327	12.768		
1,3-Butadiene			0.347	0.266	0.328	0.330	0.297	0.321	0.293	0.312	8.837		
Bromomethane		0.236	0.267	0.181	0.206	0.208	0.186	0.217	0.199	0.213	13.250		
Chloroethane			0.127	0.116	0.142	0.165	0.139	0.173	0.160	0.146	14.271		
Trichlorofluoromethane		0.519	0.518	0.416	0.503	0.514	0.470	0.517	0.473	0.491	7.357		
Diethyl ether		0.215	0.246	0.217	0.243	0.241	0.214		0.231	0.230	6.215		
Isoprene			0.302	0.251	0.303	0.302	0.282	0.318	0.295	0.293	7.364		
Acrolein		0.041	0.046	0.045	0.046	0.048	0.046		0.050	0.046	6.212		
1,1,2-Trichloro-1,2,2-Trifluoroethane			0.252	0.234	0.255	0.261	0.248	0.273	0.251	0.253	4.699		
Acetone				0.179	0.138	0.128	0.119	0.124		0.138	17.810	0.999	
1,1-Dichloroethene		0.464	0.511	0.400	0.482	0.471	0.454	0.500	0.456	0.467	7.277		
Tert-Butyl Alcohol			0.057	0.046	0.055	0.051	0.047			0.051	8.698		
Dimethyl Sulfide		0.150	0.203	0.186	0.207	0.211	0.196	0.224	0.203	0.197	11.169		
Iodomethane				0.076	0.109	0.154	0.126	0.157	0.142	0.127	24.315	0.993	
Methyl acetate			0.282	0.223	0.279	0.262	0.240	0.258	0.234	0.254	8.867		
Methylene Chloride			0.271	0.217	0.263	0.261	0.240	0.280	0.249	0.254	8.252		
Carbon Disulfide			0.795	0.626	0.740	0.737	0.678	0.761	0.702	0.720	7.788		
Acrylonitrile		0.117	0.127	0.114	0.130	0.135	0.123		0.134	0.126	6.412		
Methyl Tert Butyl Ether		0.669	0.722	0.642	0.760	0.786	0.713	0.788	0.718	0.725	7.239		
trans-1,2-Dichloroethene		0.400	0.422	0.377	0.430	0.438	0.407	0.446	0.412	0.416	5.376		
n-Hexane			0.456	0.385	0.420	0.424	0.429	0.464	0.428	0.430	5.986		
Diisopropyl ether		0.938	1.068	0.928	1.071	1.051	0.931		0.995	0.998	6.627		
Vinyl Acetate			0.593	0.519	0.545	0.602	0.554	0.608	0.558	0.569	5.855		
1,1-Dichloroethane		0.548	0.558	0.445	0.532	0.549	0.499	0.553	0.500	0.523	7.454		
Ethyl-Tert-Butyl ether		0.871	0.992	0.852	0.990	0.988	0.865		0.934	0.928	6.918		
2-Butanone			0.177	0.152	0.156	0.166	0.156	0.172	0.149	0.161	6.650		
Propionitrile		0.042	0.055	0.048	0.053	0.051	0.048		0.049	0.049	8.494		
2,2-Dichloropropane			0.428	0.330	0.377	0.415	0.383	0.417	0.383	0.390	8.575		
cis-1,2-Dichloroethene		0.247	0.257	0.248	0.287	0.297	0.273	0.299	0.277	0.273	7.647		
Chloroform		0.473	0.530	0.432	0.482	0.509	0.459	0.505	0.454	0.480	6.746		
1-Bromopropane			0.011	0.041	0.042	0.043	0.040	0.045	0.041	0.038	31.434	0.997	
Bromochloromethane		0.131	0.173	0.169	0.194	0.199	0.179	0.197	0.178	0.177	12.275		
Tetrahydrofuran			0.111	0.099	0.110	0.110	0.097		0.097	0.104	6.802		
Dibromofluoromethane				0.267	0.243	0.286	0.286	0.274		0.271	6.547		
1,1,1-Trichloroethane		0.426	0.436	0.385	0.438	0.470	0.425	0.470	0.427	0.434	6.319		
Cyclohexane		0.465	0.495	0.425	0.494	0.478	0.465	0.503	0.464	0.474	5.302		
1,1-Dichloropropene		0.353	0.359	0.300	0.344	0.352	0.333	0.360	0.335	0.342	5.748		
Tert-Amyl-Methyl ether		0.631	0.709	0.631	0.716	0.716	0.632		0.684	0.674	6.133		
Carbon Tetrachloride			0.41939	0.34041	0.40512	0.42742	0.39181	0.43819	0.39737	0.40282	7.96886		
1,2-Dichloroethane-d4				0.34995	0.30686	0.35494	0.35835	0.33017		0.34005	6.33015		
Heptane										0	0		
1,2-Dichloroethane		0.36551	0.44947	0.39601	0.44224	0.45938	0.41291	0.4496	0.40581	0.42262	7.76179		
Benzene	1.14079	0.92872	1.03015	0.83328	0.97121	0.9721	0.88431	0.97127	0.88279	0.95718	9.53654		
Trichloroethene		0.30364	0.32158	0.26212	0.31219	0.31666	0.29597	0.321	0.29314	0.30329	6.54492		
Methylcyclohexane		0.31249	0.39837	0.32203	0.40419	0.39506	0.39323	0.42525	0.39247	0.38039	10.6291		
1,2-Dichloropropane		0.23004	0.27101	0.24016	0.27676	0.28593	0.2555	0.28277	0.26062	0.26285	7.66268		
1,4-Dioxane			0.0041	0.00361	0.00449	0.00376	0.00356		0.00414	0.00394	9.17892		
Bromodichloromethane			0.37851	0.33087	0.3725	0.39384	0.35929	0.397	0.36103	0.37044	6.13725		
Dibromomethane		0.15103	0.18915	0.16523	0.1825	0.18519	0.16707	0.1849	0.1682	0.17416	7.61692		
2-Chloroethyl Vinyl Ether				0.04535	0.05625	0.07439	0.06667	0.08013	0.07633	0.06652	20.1377	0.996	
4-Methyl-2-Pentanone				0.08933	0.11327	0.12554	0.11786	0.12977	0.11644	0.11537	12.2612		
cis-1,3-Dichloropropene			0.37321	0.33699	0.39477	0.41098	0.38072	0.42291	0.38195	0.38594	7.23123		
Dimethyl Disulfide			0.30882	0.3269	0.39409	0.4245	0.40234	0.4579	0.40032	0.38784	13.5683		
Chlorobenzene-d5	ISTD												
Toluene-d8				1.21266	1.14503	1.34974	1.34798	1.26813		1.26471	6.98417		
Toluene	1.57001	1.40445	1.51648	1.23448	1.46732	1.48749	1.3712	1.4823	1.3236	1.42859	7.34792		
Ethyl Methacrylate				0.31749	0.4112	0.4195	0.39758	0.44016	0.38999	0.39599	10.6751		
trans-1,3-Dichloropropene			0.50304	0.44978	0.5157	0.56049	0.50648	0.56248	0.50379	0.51454	7.49294		
1,1,2-Trichloroethane		0.27692	0.29584	0.27194	0.31787	0.32454	0.3	0.32173	0.292	0.3001	6.65768		
2-Hexanone				0.26013	0.28088	0.31451	0.30524	0.34734	0.28972	0.29964	10.056		
1,3-Dichloropropane		0.46617	0.55761	0.45639	0.51068	0.53187	0.47698	0.53043	0.47034	0.50006	7.49429		
Tetrachloroethene		0.33351	0.31568	0.26327	0.31051	0.30894	0.30156	0.32634	0.29026	0.30626	7.18201		
Dibromochloromethane			0.45014	0.36113	0.41394	0.44566	0.40515	0.45572	0.40415	0.41941	8.03547		
1,2-Dibromoethane				0.31086	0.34005	0.35035	0.32626	0.35324	0.31647	0.33287	5.32182		
1-Chlorohexane		0.39643	0.40929	0.33097	0.45098	0.44465	0.43807	0.477	0.42289	0.42128	10.5148		
Chlorobenzene		1.02904	1.08596	0.91908	1.05295	1.05625	0.95434	1.02465	0.91009	1.00405	6.67004		
1,1,1,2-Tetrachloroethane			0.37536	0.32525	0.38767	0.40783	0.37127	0.40937	0.36265	0.37706	7.67975		
Ethylbenzene	0.5157	0.51658	0.53164	0.45493	0.54391	0.54636	0.50916	0.54884	0.48836	0.51728	5.93862		
m-,p-Xylene	0.67213	0.61926	0.69794	0.58569	0.67162	0.65634	0.61182	0.65803	0.57657	0.63882	6.58722		
o-Xylene	0.61273	0.56415	0.61379	0.55512	0.6465	0.65334	0.60899	0.67127	0.59158	0.61305	6.41073		
Styrene		0.95813	1.06028	0.90308	1.08018	1.12326	1.04689	1.15897	1.02088	1.04396	8.002		
Bromoform			0.22872	0.23892	0.27832	0.30617	0.27263	0.32232	0.28054	0.27538	12.1348		
Isopropylbenzene		1.53891	1.69742	1.42189	1.74341	1.73716	1.64433	1.81019	1.57289	1.64577	7.76922		
1,4-Dichlorobenzene-d4	ISTD												
1,1,2,2-Tetrachloroethane		0.61571	0.83634	0.73739	0.79769	0.80854	0.74616	0.78083	0.74513	0.75847	8.88143		
p-Bromofluorobenzene				0.91653	0.87561	1.04735	1.0775	0.95104		0.97361	8.83571		
1,2,3-Trichloropropane		0.24645	0.29476	0.28329	0.29208	0.30442	0.29453	0.30315	0.28248	0.28764	6.41284		

trans-1,4-Dichloro-2-Butene		0.22501	0.23725	0.31415	0.3034	0.3105	0.33164	0.30766	0.28994	14.2446
n-Propylbenzene	3.98718	4.09811	3.61454	4.21971	4.10826	3.88939	3.82307	3.70205	3.93029	5.36989
Bromobenzene	0.84385	1.11565	0.86076	0.97118	0.9688	0.89248	0.89548	0.87446	0.92783	9.59949
1,3,5-Trimethylbenzene			2.76735	3.16086	3.10843	2.93606	2.91239	2.81635	2.95024	5.30322
2-Chlorotoluene		2.99265	2.31448	2.81057	2.64897	2.50142	2.61378	2.57101	2.63612	8.25378
4-Chlorotoluene	2.56339	2.5861	2.29006	2.55177	2.63031	2.41864	2.2799	2.17747	2.4372	6.98222
a-Methylstyrene			1.12025	1.41688	1.39756	1.35572	1.41986	1.35543	1.34428	8.43365
tert-Butylbenzene			0.56026	0.65003	0.66483	0.62531	0.61977	0.59094	0.61853	6.19423
1,2,4-Trimethylbenzene	3.41485	3.20381	2.86379	3.24429	3.17284	3.0014	2.96997	2.8463	3.08966	6.49589
sec-Butylbenzene	3.92127	3.95846	3.39254	3.98281	3.96896	3.8029	3.77812	3.59297	3.79976	5.54855
p-Isopropyltoluene			2.97918	3.35219	3.3501	3.24235	3.24339	3.07285	3.20668	4.70949
1,3-Dichlorobenzene	2.09668	2.18083	1.63464	1.82169	1.84149	1.71899	1.77783	1.67989	1.84401	10.6223
1,4-Dichlorobenzene	2.13498	2.06617	1.68605	1.85221	1.83159	1.72549	1.79434	1.65691	1.84347	9.41157
n-Butylbenzene	3.12981	3.1425	2.56827	2.96652	3.08072	3.01911	3.06733	2.87744	2.98146	6.31771
1,2-Dichlorobenzene	1.80685	1.84212	1.52596	1.70901	1.74915	1.66133	1.78603	1.60751	1.71099	6.28256
1,2-Dibromo-3-Chloropropane			0.17584	0.21007	0.23479	0.23723	0.24208	0.21787	0.21965	11.2549
1,2,4-Trichlorobenzene	1.3714	1.33063	1.02655	1.15029	1.2163	1.24479	1.25089	1.12609	1.21462	9.21088
Hexachlorobutadiene	0.57233	0.7279	0.53741	0.61674	0.64289	0.67353	0.72181	0.62948	0.64026	10.4449
Naphthalene		3.19632	2.63671	3.04494	3.29135	3.2233	3.14196	2.79099	3.04651	7.99534
1,2,3-Trichlorobenzene	1.32324	1.26566	0.99788	1.12352	1.21351	1.21702	1.20507	1.0788	1.17809	8.93408

Fri Feb 26 11:40:14 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16030134 Run Date: 02/25/2016 Sample ID: WG558732-11
Instrument ID: HPMS9 Run Time: 21:31 Method: 8260B
File ID: 9M972907 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG558732 Cal ID: HPMS9 - 25-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	48.0	ug/kg	0.461	4.00	20	
1,1-Dichloroethene	CCC	50.0	48.6	ug/kg	0.454	2.90	20	
1,2-Dichloropropane	CCC	50.0	52.3	ug/kg	0.275	4.60	20	
Ethylbenzene	CCC	50.0	51.3	ug/kg	0.531	2.60	20	
Toluene	CCC	50.0	50.7	ug/kg	1.45	1.50	20	
Vinyl Chloride	CCC	50.0	59.8	ug/kg	0.392	19.7	20	
Bromoform	SPCC	50.0	47.3	ug/kg	0.261	5.40	20	
Chlorobenzene	SPCC	50.0	51.2	ug/kg	1.03	2.40	20	
Chloromethane	SPCC	50.0	52.7	ug/kg	0.345	5.40	20	
1,1-Dichloroethane	SPCC	50.0	46.4	ug/kg	0.485	7.20	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	52.0	ug/kg	0.789	4.00	20	
Acetone		50.0	43.9	ug/kg	0.112	12.2	20	
Benzene		50.0	49.0	ug/kg	0.937	2.10	20	
Bromobenzene		50.0	52.2	ug/kg	0.968	4.40	20	
Bromochloromethane		50.0	51.5	ug/kg	0.183	3.00	20	
Bromodichloromethane		50.0	47.6	ug/kg	0.352	4.90	20	
Bromomethane		50.0	49.0	ug/kg	0.208	2.10	20	
2-Butanone		50.0	47.4	ug/kg	0.153	5.20	20	
n-Butylbenzene		50.0	52.5	ug/kg	3.13	4.90	20	
sec-Butylbenzene		50.0	54.7	ug/kg	4.16	9.50	20	
tert-Butylbenzene		50.0	55.4	ug/kg	0.685	10.8	20	
Carbon Disulfide		50.0	44.1	ug/kg	0.635	11.7	20	
Carbon Tetrachloride		50.0	46.5	ug/kg	0.375	7.00	20	
Dibromochloromethane		50.0	48.5	ug/kg	0.407	3.10	20	
Chloroethane		50.0	54.2	ug/kg	0.158	8.30	20	
2-Chlorotoluene		50.0	54.2	ug/kg	2.86	8.40	20	
4-Chlorotoluene		50.0	53.0	ug/kg	2.59	6.10	20	
1,2-Dibromo-3-Chloropropane		50.0	54.5	ug/kg	0.239	8.90	20	
1,2-Dibromoethane		50.0	50.8	ug/kg	0.338	1.50	20	
Dibromomethane		50.0	47.0	ug/kg	0.164	6.10	20	
1,2-Dichlorobenzene		50.0	52.7	ug/kg	1.81	5.50	20	
1,3-Dichlorobenzene		50.0	50.8	ug/kg	1.87	1.60	20	
1,4-Dichlorobenzene		50.0	51.1	ug/kg	1.88	2.20	20	
Dichlorodifluoromethane		50.0	63.4	ug/kg	0.432	26.7	20	*
1,2-Dichloroethane		50.0	49.2	ug/kg	0.416	1.60	20	
cis-1,2-Dichloroethene		50.0	52.6	ug/kg	0.287	5.20	20	
trans-1,2-Dichloroethene		50.0	50.6	ug/kg	0.422	1.20	20	
1,3-Dichloropropane		50.0	53.8	ug/kg	0.538	7.60	20	
2,2-Dichloropropane		50.0	47.1	ug/kg	0.368	5.90	20	
cis-1,3-Dichloropropene		50.0	53.2	ug/kg	0.411	6.40	20	
trans-1,3-Dichloropropene		50.0	50.0	ug/kg	0.515	0.100	20	
1,1-Dichloropropene		50.0	48.5	ug/kg	0.332	2.90	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4659246
Report generated 03/07/2016 12:33

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16030134 Run Date: 02/25/2016 Sample ID: WG558732-11
Instrument ID: HPMS9 Run Time: 21:31 Method: 8260B
File ID: 9M972907 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG558732 Cal ID: HPMS9 - 25-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	48.2	ug/kg	0.289	3.60	20	
Hexachlorobutadiene		50.0	54.5	ug/kg	0.698	9.00	20	
Isopropylbenzene		50.0	52.0	ug/kg	1.71	4.00	20	
p-Isopropyltoluene		50.0	54.1	ug/kg	3.47	8.10	20	
4-Methyl-2-Pentanone		50.0	47.8	ug/kg	0.110	4.40	20	
Methylene Chloride		50.0	49.8	ug/kg	0.254	0.400	20	
Naphthalene		50.0	50.8	ug/kg	3.10	1.70	20	
n-Propylbenzene		50.0	54.9	ug/kg	4.32	9.80	20	
Styrene		50.0	52.8	ug/kg	1.10	5.60	20	
1,1,1,2-Tetrachloroethane		50.0	49.7	ug/kg	0.375	0.600	20	
Tetrachloroethene		50.0	49.8	ug/kg	0.305	0.400	20	
1,2,3-Trichlorobenzene		50.0	52.6	ug/kg	1.24	5.20	20	
1,2,4-Trichlorobenzene		50.0	51.7	ug/kg	1.26	3.40	20	
1,1,1-Trichloroethane		50.0	46.7	ug/kg	0.406	6.50	20	
1,1,2-Trichloroethane		50.0	51.5	ug/kg	0.309	3.00	20	
Trichloroethene		50.0	49.4	ug/kg	0.300	1.20	20	
Trichlorofluoromethane		50.0	47.6	ug/kg	0.467	4.90	20	
1,2,3-Trichloropropane		50.0	54.2	ug/kg	0.312	8.40	20	
1,2,4-Trimethylbenzene		50.0	51.5	ug/kg	3.18	3.10	20	
1,3,5-Trimethylbenzene		50.0	54.3	ug/kg	3.21	8.60	20	
o-Xylene		50.0	53.6	ug/kg	0.657	7.10	20	
m-,p-Xylene		100	103	ug/kg	0.655	2.60	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4659246
Report generated 03/07/2016 12:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030134 Run Date: 03/06/2016 Sample ID: WG559858-02
Instrument ID: HPMS9 Run Time: 15:56 Method: 8260B
File ID: 9M973099 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG559859 Cal ID: HPMS9 - 25-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.3	ug/kg	0.483	0.621	20	
1,1-Dichloroethene	CCC	50.0	50.4	ug/kg	0.471	0.823	20	
1,2-Dichloropropane	CCC	50.0	53.8	ug/kg	0.283	7.66	20	
Ethylbenzene	CCC	50.0	50.8	ug/kg	0.526	1.66	20	
Toluene	CCC	50.0	49.6	ug/kg	1.42	0.854	20	
Vinyl Chloride	CCC	50.0	51.6	ug/kg	0.338	3.15	20	
Bromoform	SPCC	50.0	50.7	ug/kg	0.279	1.46	20	
Chlorobenzene	SPCC	50.0	49.1	ug/kg	0.986	1.82	20	
Chloromethane	SPCC	50.0	44.3	ug/kg	0.290	11.3	20	
1,1-Dichloroethane	SPCC	50.0	50.8	ug/kg	0.532	1.64	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	46.7	ug/kg	0.708	6.65	20	
Xylenes		150	153	ug/kg	0.639	1.95	40	
Acetone		50.0	50.5	ug/kg	0.128	0.987	20	
Benzene		50.0	50.0	ug/kg	0.958	0.0928	20	
Bromobenzene		50.0	44.1	ug/kg	0.818	11.8	20	
Bromochloromethane		50.0	52.1	ug/kg	0.185	4.10	20	
Bromodichloromethane		50.0	50.8	ug/kg	0.376	1.60	20	
Bromomethane		50.0	42.0	ug/kg	0.179	16.0	20	
2-Butanone		50.0	53.7	ug/kg	0.173	7.40	20	
n-Butylbenzene		50.0	47.0	ug/kg	2.81	5.91	20	
sec-Butylbenzene		50.0	46.4	ug/kg	3.53	7.21	20	
tert-Butylbenzene		50.0	46.5	ug/kg	0.575	7.10	20	
Carbon Disulfide		50.0	52.0	ug/kg	0.748	3.91	20	
Carbon Tetrachloride		50.0	49.4	ug/kg	0.398	1.11	20	
Dibromochloromethane		50.0	50.2	ug/kg	0.421	0.410	20	
Chloroethane		50.0	48.2	ug/kg	0.141	3.54	20	
2-Chlorotoluene		50.0	45.4	ug/kg	2.39	9.21	20	
4-Chlorotoluene		50.0	45.4	ug/kg	2.21	9.25	20	
1,2-Dibromo-3-Chloropropane		50.0	44.5	ug/kg	0.196	11.0	20	
1,2-Dibromoethane		50.0	49.7	ug/kg	0.331	0.666	20	
Dibromomethane		50.0	52.1	ug/kg	0.182	4.21	20	
1,2-Dichlorobenzene		50.0	44.1	ug/kg	1.51	11.9	20	
1,3-Dichlorobenzene		50.0	42.5	ug/kg	1.57	14.9	20	
1,4-Dichlorobenzene		50.0	42.5	ug/kg	1.57	15.0	20	
Dichlorodifluoromethane		50.0	41.5	ug/kg	0.283	17.0	20	
1,2-Dichloroethane		50.0	55.1	ug/kg	0.466	10.2	20	
cis-1,2-Dichloroethene		50.0	51.9	ug/kg	0.284	3.80	20	
trans-1,2-Dichloroethene		50.0	52.4	ug/kg	0.437	4.86	20	
1,3-Dichloropropane		50.0	51.1	ug/kg	0.511	2.11	20	
2,2-Dichloropropane		50.0	50.1	ug/kg	0.392	0.293	20	
cis-1,3-Dichloropropene		50.0	52.2	ug/kg	0.403	4.42	20	
trans-1,3-Dichloropropene		50.0	51.2	ug/kg	0.527	2.43	20	

CCV - Modified 03/05/2008
PDF File ID: 4659249
Report generated 03/07/2016 12:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030134 Run Date: 03/06/2016 Sample ID: WG559858-02
Instrument ID: HPMS9 Run Time: 15:56 Method: 8260B
File ID: 9M973099 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG559859 Cal ID: HPMS9 - 25-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	50.4	ug/kg	0.345	0.871	20	
2-Hexanone		50.0	54.4	ug/kg	0.326	8.80	20	
Hexachlorobutadiene		50.0	43.0	ug/kg	0.551	13.9	20	
Isopropylbenzene		50.0	51.5	ug/kg	1.70	3.04	20	
p-Isopropyltoluene		50.0	45.9	ug/kg	2.94	8.26	20	
4-Methyl-2-Pentanone		50.0	55.6	ug/kg	0.128	11.2	20	
Methylene Chloride		50.0	49.6	ug/kg	0.253	0.775	20	
Naphthalene		50.0	46.1	ug/kg	2.81	7.78	20	
n-Propylbenzene		50.0	46.6	ug/kg	3.66	6.80	20	
Styrene		50.0	51.5	ug/kg	1.08	2.98	20	
1,1,1,2-Tetrachloroethane		50.0	50.4	ug/kg	0.380	0.836	20	
Tetrachloroethene		50.0	49.2	ug/kg	0.302	1.50	20	
1,2,3-Trichlorobenzene		50.0	44.2	ug/kg	1.04	11.5	20	
1,2,4-Trichlorobenzene		50.0	42.8	ug/kg	1.04	14.3	20	
1,1,1-Trichloroethane		50.0	50.1	ug/kg	0.435	0.115	20	
1,1,2-Trichloroethane		50.0	54.3	ug/kg	0.326	8.65	20	
Trichloroethene		50.0	50.4	ug/kg	0.306	0.764	20	
Trichlorofluoromethane		50.0	47.7	ug/kg	0.469	4.53	20	
1,2,3-Trichloropropane		50.0	47.6	ug/kg	0.274	4.81	20	
1,2,4-Trimethylbenzene		50.0	44.7	ug/kg	2.76	10.7	20	
1,3,5-Trimethylbenzene		50.0	45.6	ug/kg	2.69	8.72	20	
o-Xylene		50.0	51.4	ug/kg	0.630	2.72	20	
m-,p-Xylene		100	102	ug/kg	0.649	1.57	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4659249
Report generated 03/07/2016 12:33

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16030134
Instrument ID: HPMS9
Workgroup (AAB#): WG559859

ICAL CCV Number: WG558732-02
CAL ID: HPMS9 - 25-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558732-02	NA	NA	183008	378926	517775
Upper Limit	NA	NA	366016	757852	1035550
Lower Limit	NA	NA	91504	189463	258888
L16030134-01	1.00	01	212370	416715	554464
L16030134-02	1.00	01	203978	402733	546953
L16030134-03	1.00	01	181442	346645	466371
L16030134-04	1.00	01	192544	366169	484932
L16030134-05	1.00	01	192130	376977	507085
L16030134-06	1.00	01	172969	329308	440806
WG559859-01	1.00	01	209918	419175	561969
WG559859-02	1.00	01	236934	449882	599667

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4659250
Report generated 03/07/2016 12:34

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16030134
Instrument ID: HPMS9
Workgroup (AAB#): WG559859

ICAL CCV Number: WG558732-02
CAL ID: HPMS9 - 25-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558732-02	NA	NA	17.76	14.73	10.85
Upper Limit	NA	NA	18.26	15.23	11.35
Lower Limit	NA	NA	17.26	14.23	10.35
L16030134-01	1.00	01	17.75	14.72	10.85
L16030134-02	1.00	01	17.75	14.72	10.85
L16030134-03	1.00	01	17.75	14.72	10.85
L16030134-04	1.00	01	17.75	14.72	10.85
L16030134-05	1.00	01	17.75	14.72	10.85
L16030134-06	1.00	01	17.75	14.72	10.85
WG559859-01	1.00	01	17.75	14.72	10.85
WG559859-02	1.00	01	17.75	14.72	10.85

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4659253
Report generated: 03/07/2016 12:34

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973104.D Vial: 8
Acq On : 6 Mar 2016 18:28 Operator: ADC
Sample : L16030134-01 A 8260 4.62g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 12:19:06 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	554464	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	416715	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.75	152	212370	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	144511	48.0825 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.16%		
43) 1,2-Dichloroethane-d4	10.45	65	177130	46.9721 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.94%		
58) Toluene-d8	12.83	98	514823	48.8426 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 97.68%		
79) p-Bromofluorobenzene	16.23	95	208085	50.3193 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 100.64%		

Target Compounds

					Qvalue
13) Acetone	6.41	43	6120	2.0738 ug/kg#	72
36) Tetrahydrofuran	9.79	42	1173	1.0178 ug/kg#	43
56) Dimethyl Disulfide	12.83	94	14764	3.4328 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M973104.D 8260SL.M Mon Mar 07 12:19:06 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973104.D Vial: 8
Acq On : 6 Mar 2016 18:28 Operator: ADC
Sample : L16030134-01 A 8260 4.62g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 7 12:19 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

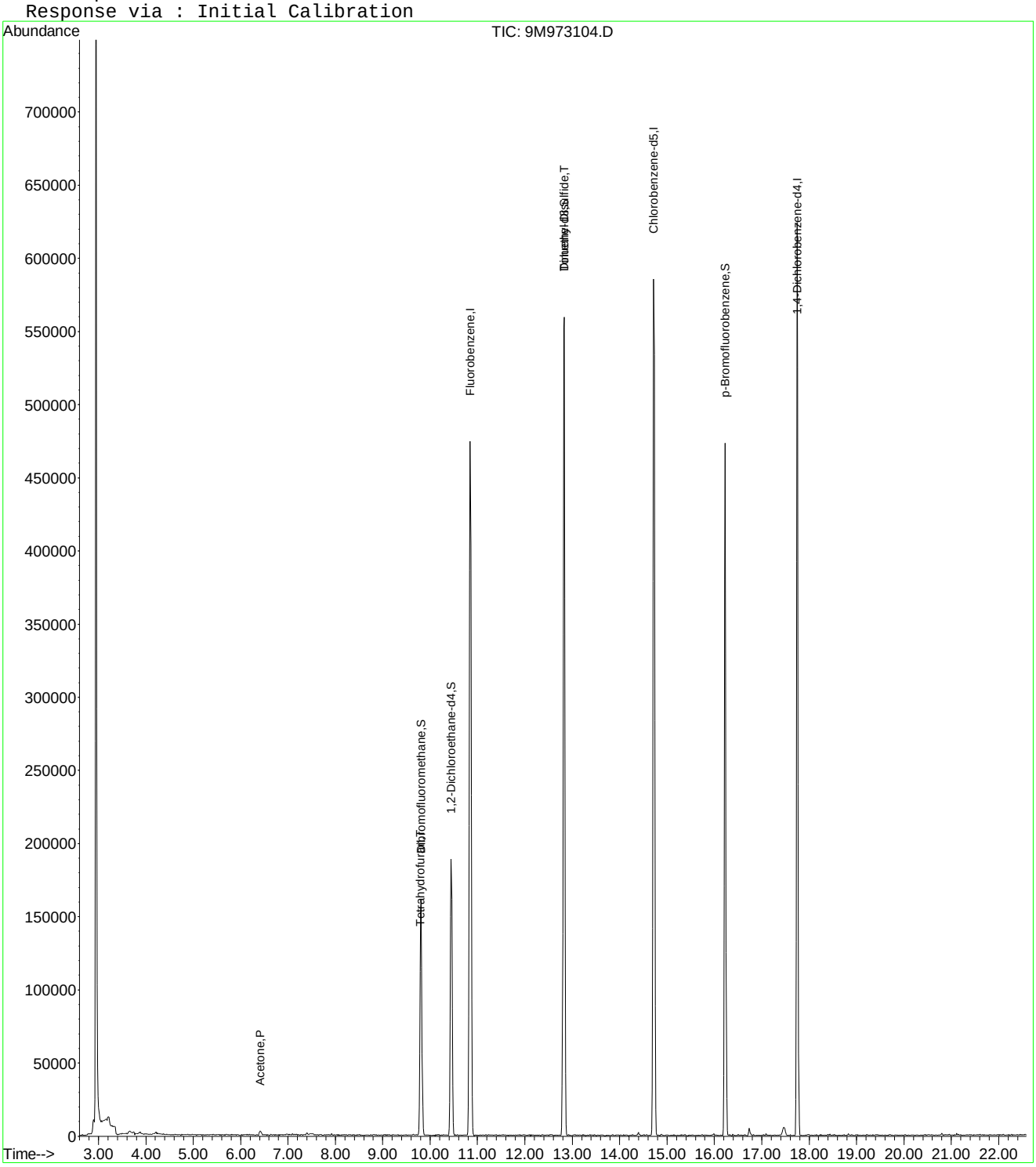

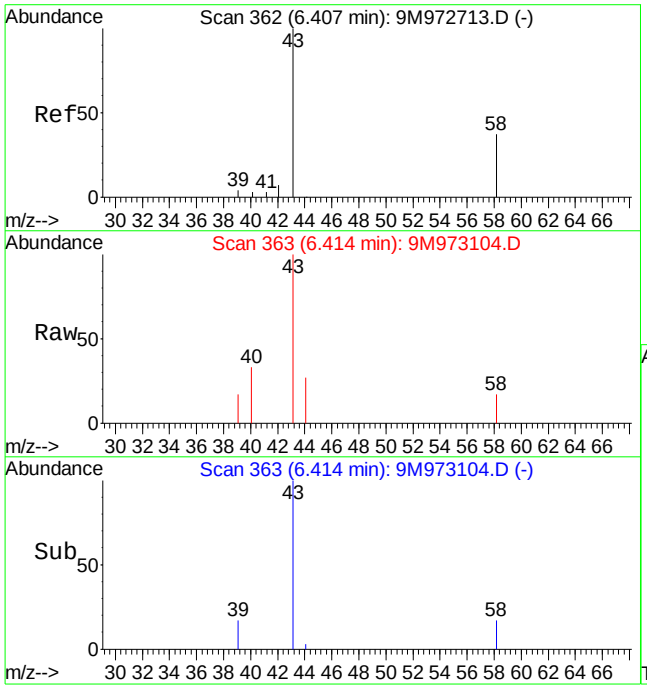

#13
Acetone
Concen: 2.07 ug/kg
RT: 6.41 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M973104.D
Acq: 6 Mar 2016 18:28

Tgt Ion: 43 Resp: 6120

Ion	Ratio	Lower	Upper
43	100		
58	13.6	16.9	39.3#

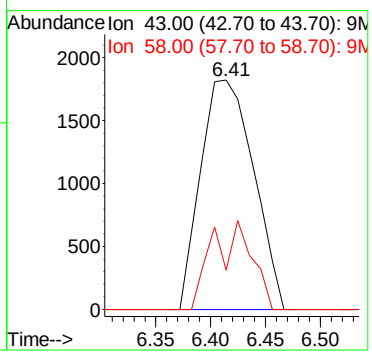

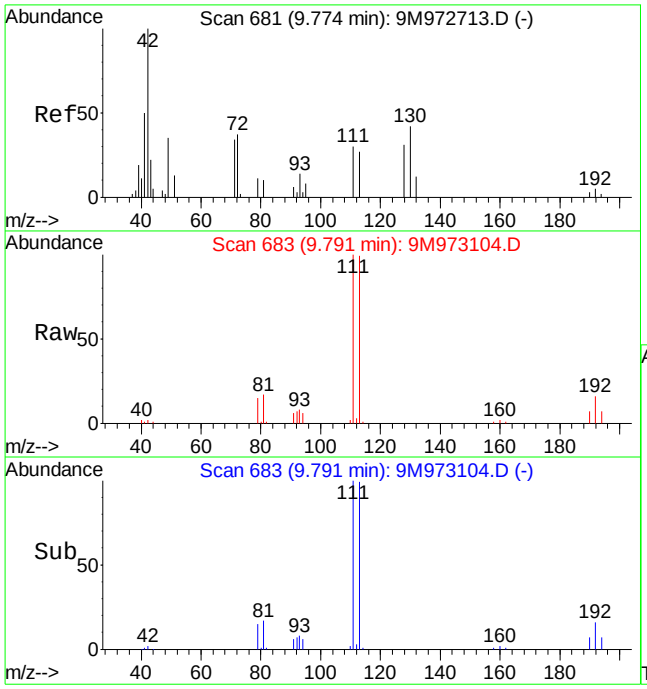

#36
Tetrahydrofuran
Concen: 1.02 ug/kg
RT: 9.79 min Scan# 683
Delta R.T. 0.01 min
Lab File: 9M973104.D
Acq: 6 Mar 2016 18:28

Tgt Ion: 42 Resp: 1173

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

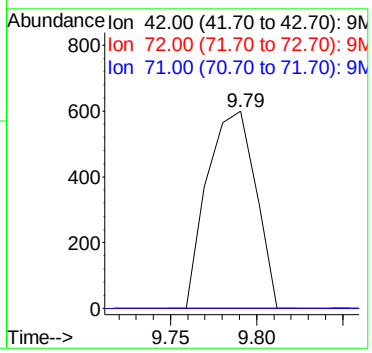

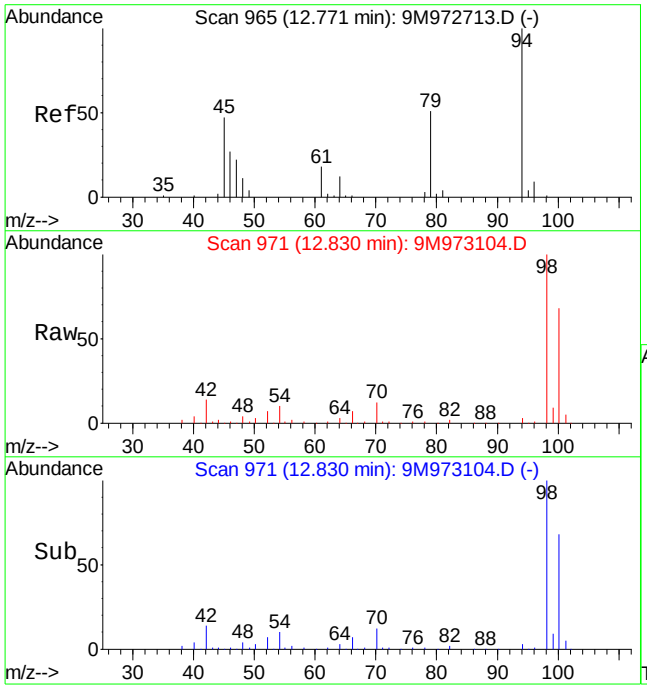

#56
Dimethyl Disulfide
Concen: 3.43 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.06 min
Lab File: 9M973104.D
Acq: 6 Mar 2016 18:28

Tgt Ion: 94 Resp: 14764

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

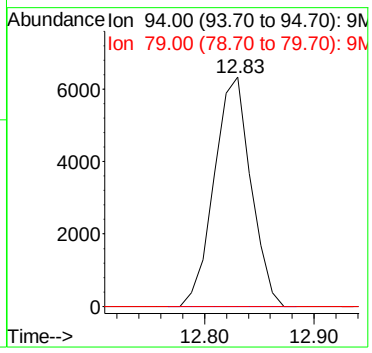

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973105.D Vial: 9
Acq On : 6 Mar 2016 18:59 Operator: ADC
Sample : L16030134-02 A 8260 5.17g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 12:19:07 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	546953	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	402733	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	203978	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	141902	47.8628 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.72%		
43) 1,2-Dichloroethane-d4	10.45	65	177910	47.8269 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.66%		
58) Toluene-d8	12.82	98	505893	49.6617 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.32%		
79) p-Bromofluorobenzene	16.22	95	202944	51.0952 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.20%		

Target Compounds

					Qvalue
13) Acetone	6.40	43	7069	2.8578 ug/kg	96
29) 2-Butanone	9.04	43	938	0.5318 ug/kg#	58
36) Tetrahydrofuran	9.79	42	1242	1.0924 ug/kg#	43
56) Dimethyl Disulfide	12.82	94	14953	3.5245 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M973105.D 8260SL.M Mon Mar 07 12:19:07 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973105.D Vial: 9
Acq On : 6 Mar 2016 18:59 Operator: ADC
Sample : L16030134-02 A 8260 5.17g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 7 12:19 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

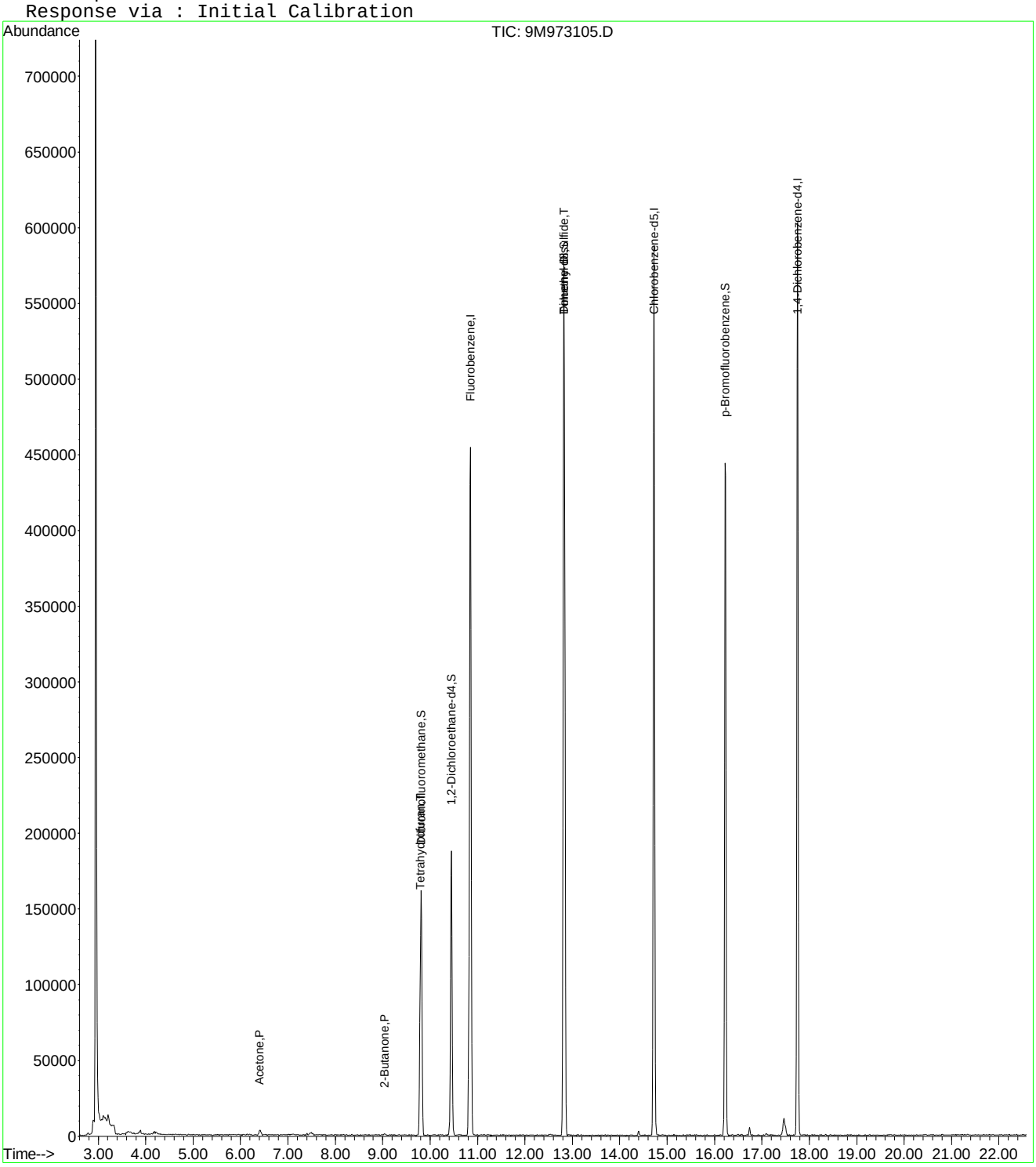

9M973105.D 8260SL.M Mon Mar 07 12:19:07 2016 Page 2

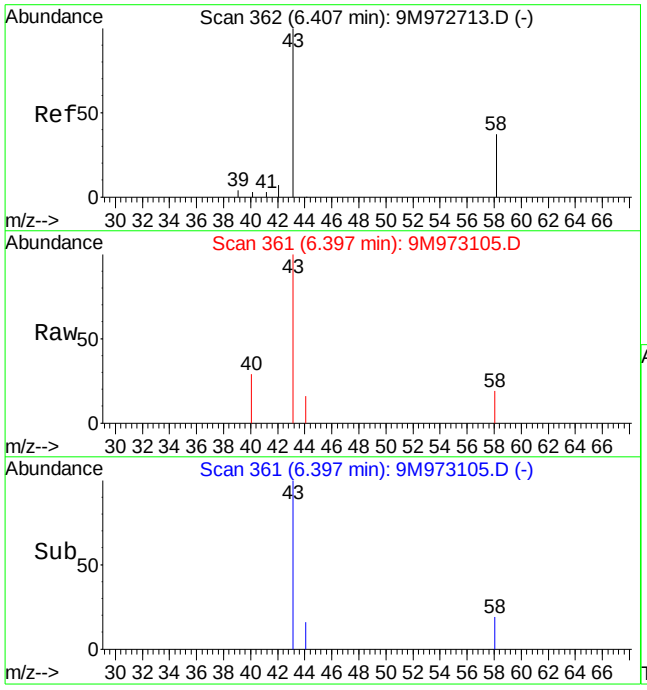

#13
Acetone
Concen: 2.86 ug/kg
RT: 6.40 min Scan# 361
Delta R.T. -0.02 min
Lab File: 9M973105.D
Acq: 6 Mar 2016 18:59

Tgt Ion: 43 Resp: 7069

Ion	Ratio	Lower	Upper
43	100		
58	26.0	16.9	39.3

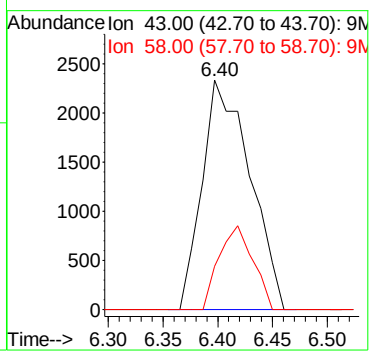

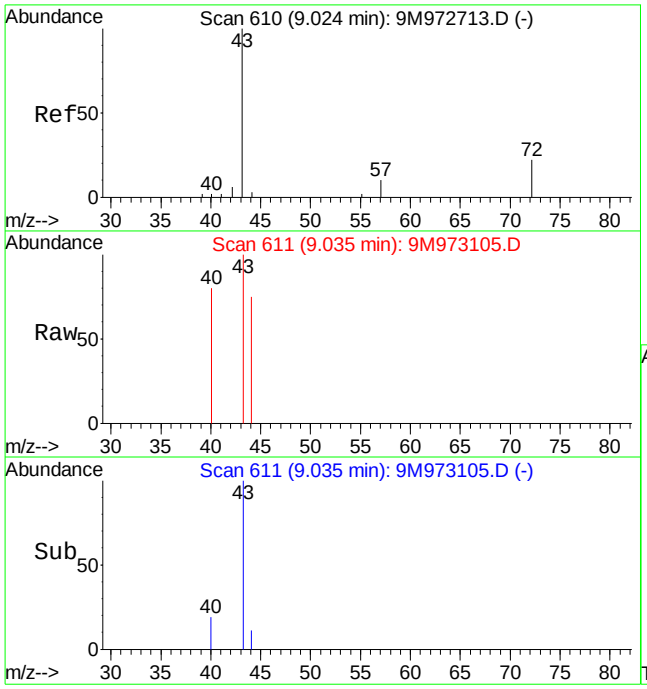

#29
2-Butanone
Concen: 0.53 ug/kg
RT: 9.04 min Scan# 611
Delta R.T. 0.00 min
Lab File: 9M973105.D
Acq: 6 Mar 2016 18:59

Tgt Ion: 43 Resp: 938

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

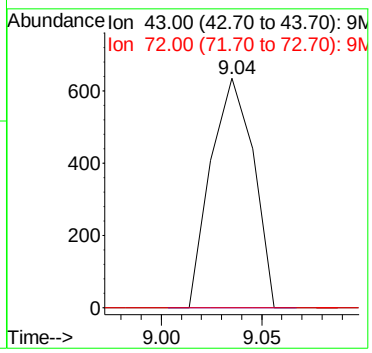

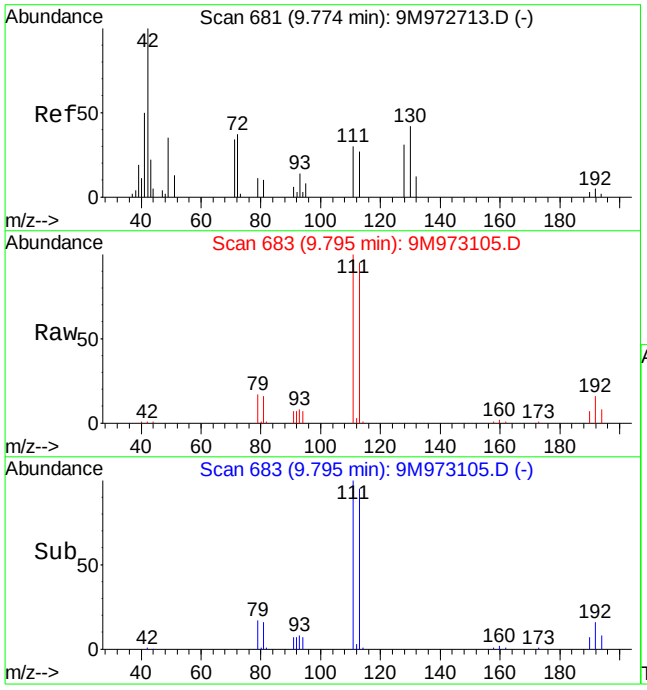

#36
Tetrahydrofuran
Concen: 1.09 ug/kg
RT: 9.79 min Scan# 683
Delta R.T. 0.01 min
Lab File: 9M973105.D
Acq: 6 Mar 2016 18:59

Tgt Ion: 42 Resp: 1242

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

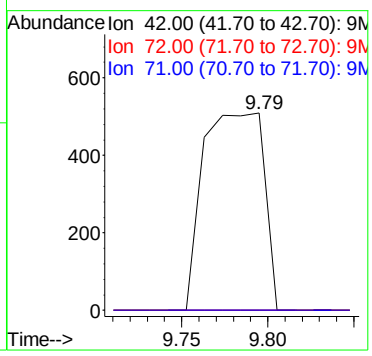

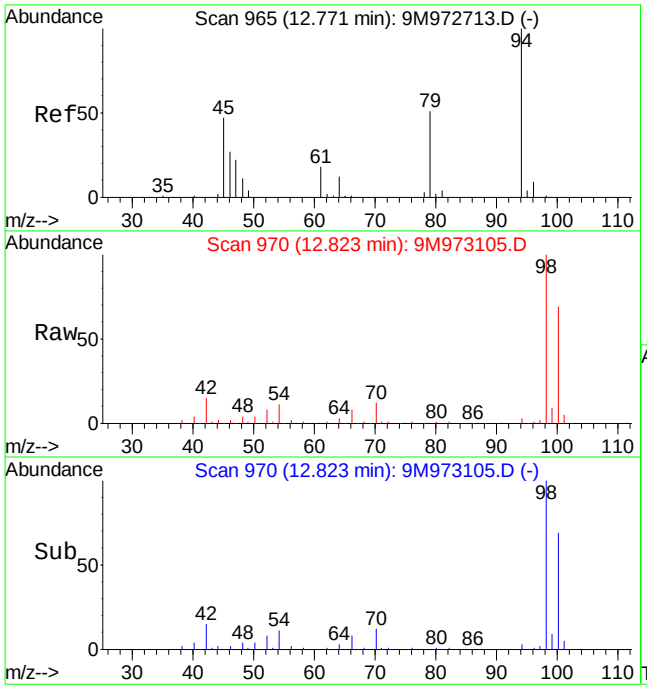

#56
Dimethyl Disulfide
Concen: 3.52 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M973105.D
Acq: 6 Mar 2016 18:59

Tgt Ion: 94 Resp: 14953

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

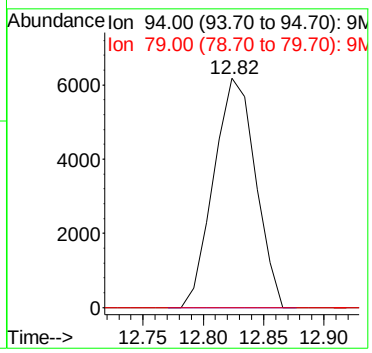

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973106.D Vial: 10
Acq On : 6 Mar 2016 19:29 Operator: ADC
Sample : L16030134-03 A 8260 4.94g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 12:19:08 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	466371	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	346645	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	181442	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	120306	47.5900 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.18%		
43) 1,2-Dichloroethane-d4	10.45	65	153783	48.4840 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.96%		
58) Toluene-d8	12.82	98	434125	49.5119 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.02%		
79) p-Bromofluorobenzene	16.23	95	175652	49.7167 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 99.44%		

Target Compounds

					Qvalue
13) Acetone	6.40	43	7908	4.5334 ug/kg	99
15) Tert-Butyl Alcohol	6.76	59	1669	3.4999 ug/kg#	58
29) 2-Butanone	9.03	43	1874	1.2461 ug/kg#	58
36) Tetrahydrofuran	9.77	42	1105	1.1399 ug/kg#	43
56) Dimethyl Disulfide	12.82	94	12440	3.4388 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M973106.D 8260SL.M Mon Mar 07 12:19:08 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973106.D Vial: 10
Acq On : 6 Mar 2016 19:29 Operator: ADC
Sample : L16030134-03 A 8260 4.94g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 7 12:19 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

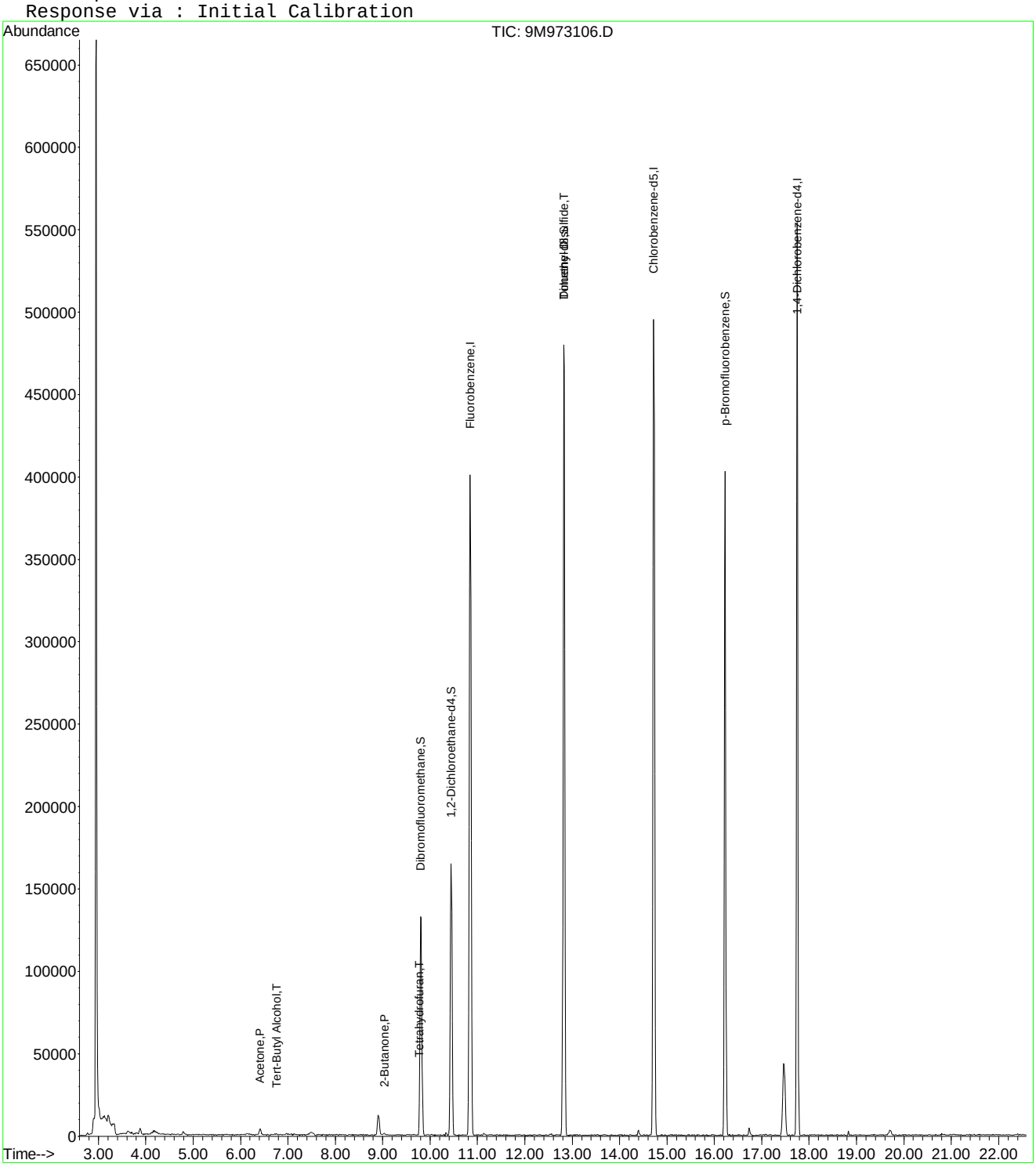

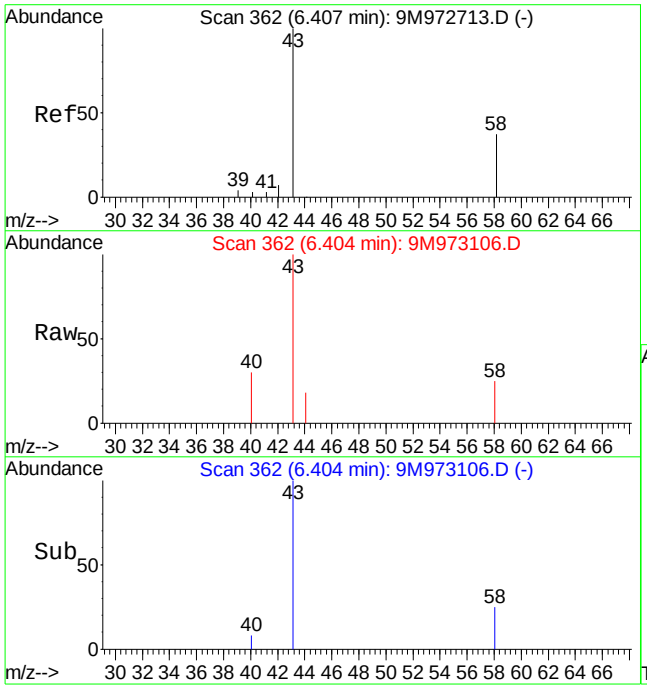

#13
Acetone
Concen: 4.53 ug/kg
RT: 6.40 min Scan# 362
Delta R.T. -0.01 min
Lab File: 9M973106.D
Acq: 6 Mar 2016 19:29

Tgt Ion: 43 Resp: 7908

Ion	Ratio	Lower	Upper
43	100		
58	27.4	16.9	39.3

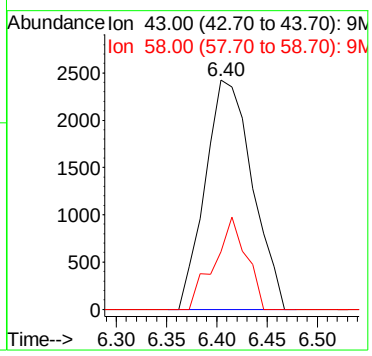

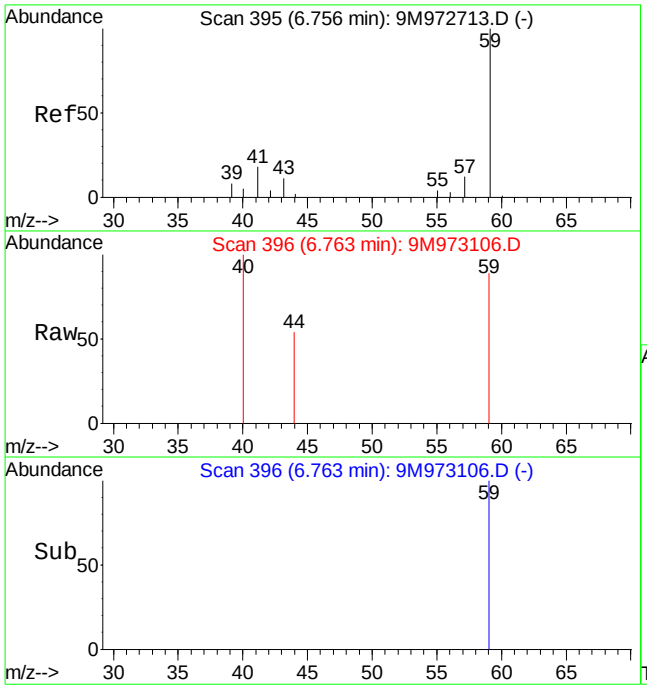

#15
Tert-Butyl Alcohol
Concen: 3.50 ug/kg
RT: 6.76 min Scan# 396
Delta R.T. 0.00 min
Lab File: 9M973106.D
Acq: 6 Mar 2016 19:29

Tgt Ion: 59 Resp: 1669

Ion	Ratio	Lower	Upper
59	100		
41	0.0	14.1	32.9#
57	0.0	6.4	15.0#

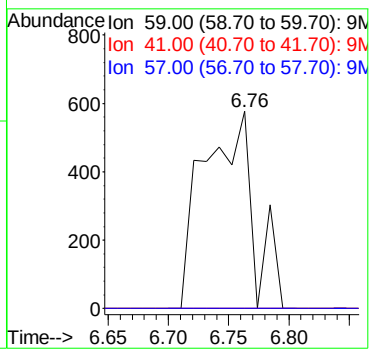

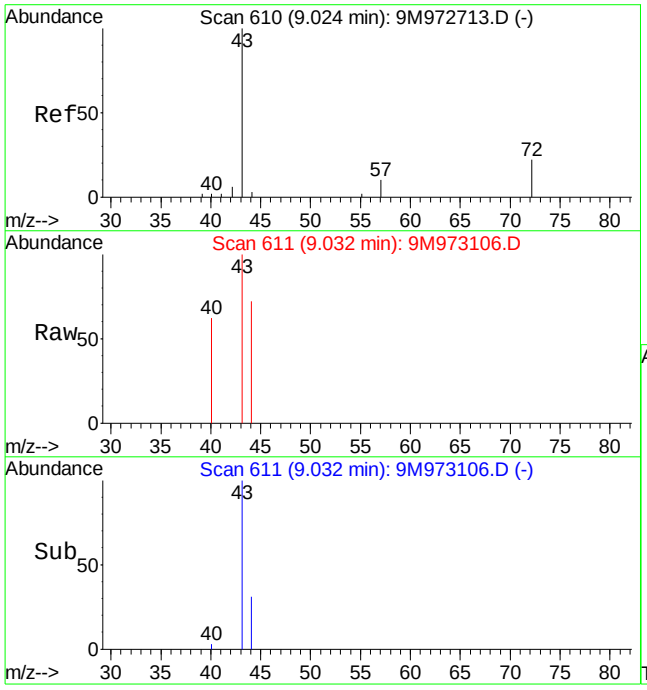

#29
2-Butanone
Concen: 1.25 ug/kg
RT: 9.03 min Scan# 611
Delta R.T. 0.00 min
Lab File: 9M973106.D
Acq: 6 Mar 2016 19:29

Tgt Ion: 43 Resp: 1874

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

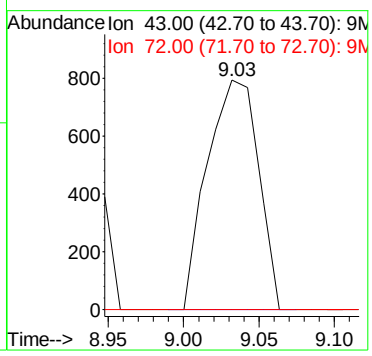

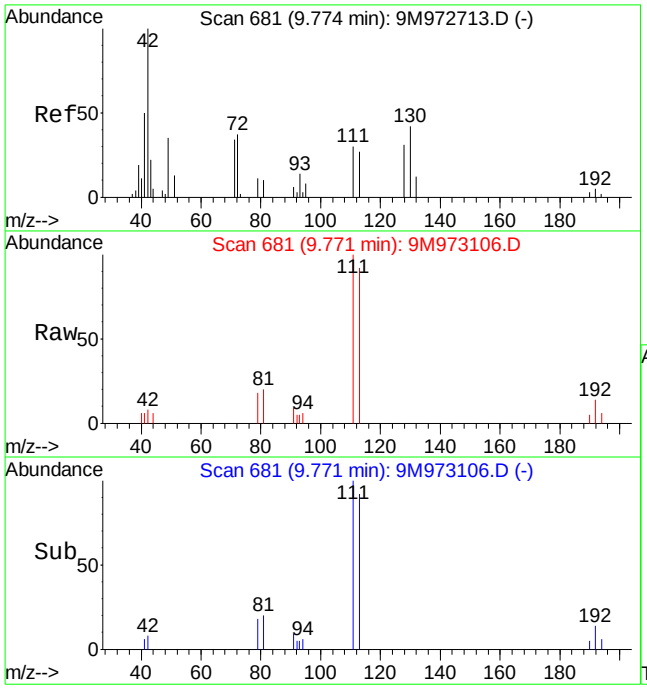

#36
Tetrahydrofuran
Concen: 1.14 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. -0.01 min
Lab File: 9M973106.D
Acq: 6 Mar 2016 19:29

Tgt Ion: 42 Resp: 1105

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

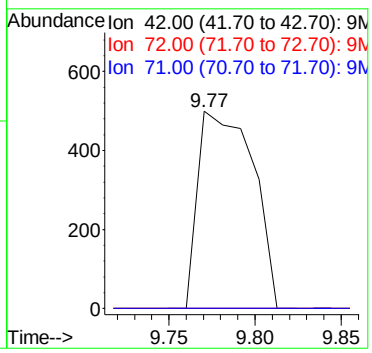

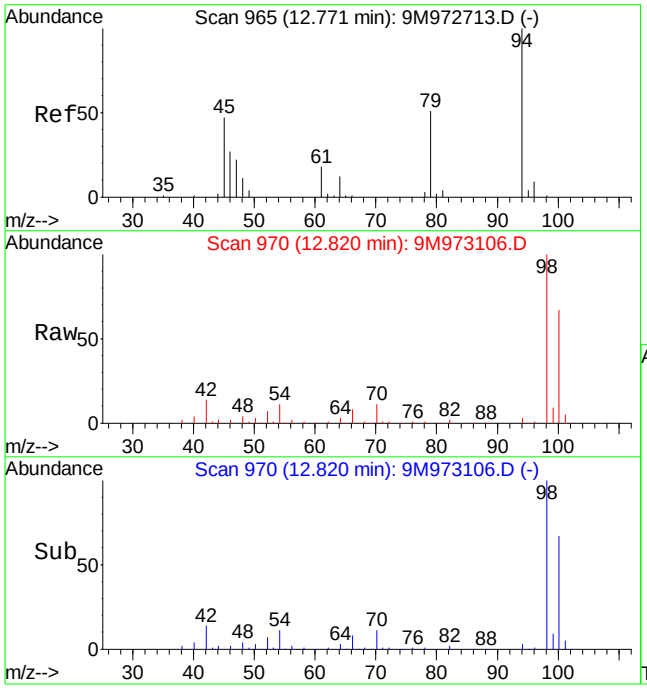

#56
Dimethyl Disulfide
Concen: 3.44 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M973106.D
Acq: 6 Mar 2016 19:29

Tgt Ion: 94 Resp: 12440

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

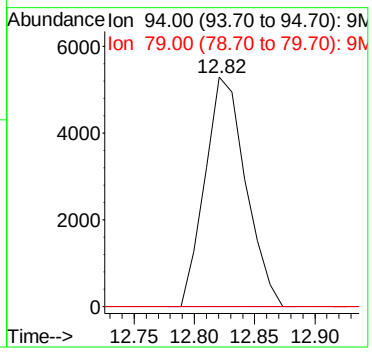

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973107.D Vial: 11
Acq On : 6 Mar 2016 20:00 Operator: ADC
Sample : L16030134-04 A 8260 4.75g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 12:19:09 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	484932	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	366169	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	192544	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	128739	48.9766 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.96%		
43) 1,2-Dichloroethane-d4	10.45	65	163022	49.4296 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.86%		
58) Toluene-d8	12.83	98	456733	49.3129 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.62%		
79) p-Bromofluorobenzene	16.23	95	184269	49.1484 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 98.30%		

Target Compounds

					Qvalue
13) Acetone	6.42	43	7983	4.3280 ug/kg	97
15) Tert-Butyl Alcohol	6.76	59	771	1.5549 ug/kg#	58
29) 2-Butanone	9.03	43	1068	0.6830 ug/kg#	58
36) Tetrahydrofuran	9.78	42	885	0.8780 ug/kg#	43
56) Dimethyl Disulfide	12.82	94	12231	3.2516 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M973107.D 8260SL.M Mon Mar 07 12:19:09 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973107.D Vial: 11
Acq On : 6 Mar 2016 20:00 Operator: ADC
Sample : L16030134-04 A 8260 4.75g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 7 12:19 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

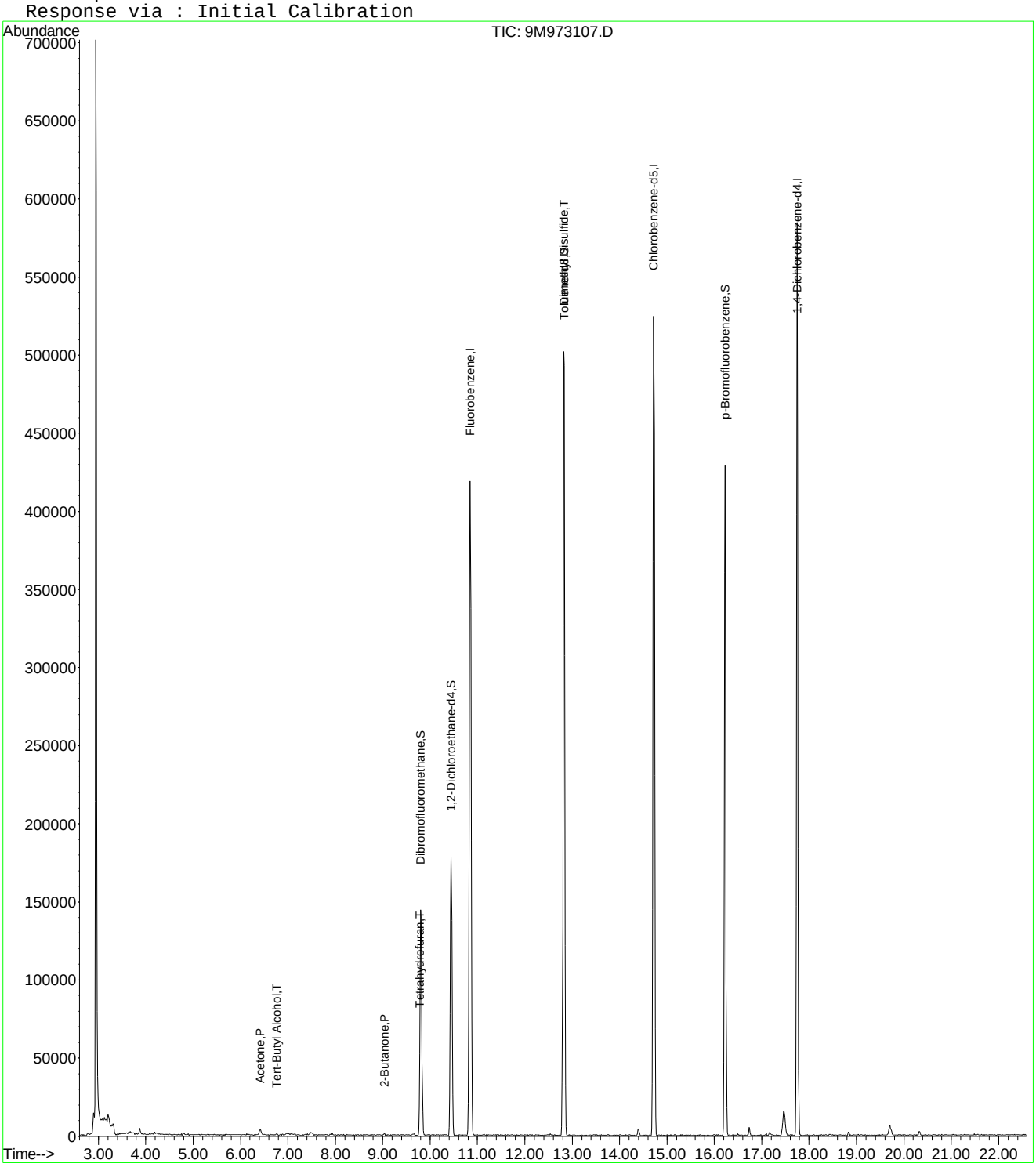

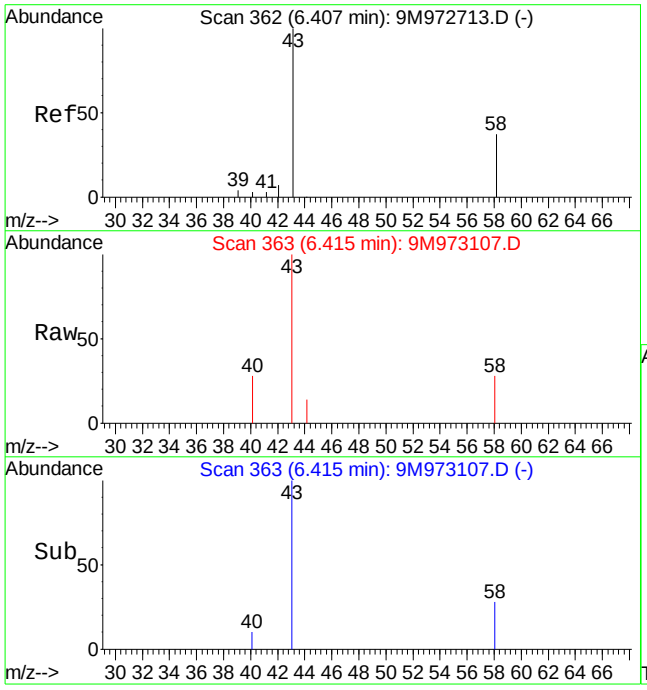

#13
Acetone
Concen: 4.33 ug/kg
RT: 6.42 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M973107.D
Acq: 6 Mar 2016 20:00

Tgt Ion: 43 Resp: 7983

Ion	Ratio	Lower	Upper
43	100		
58	29.5	16.9	39.3

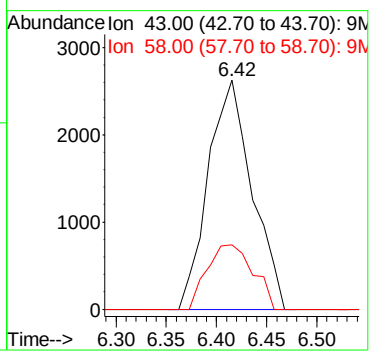

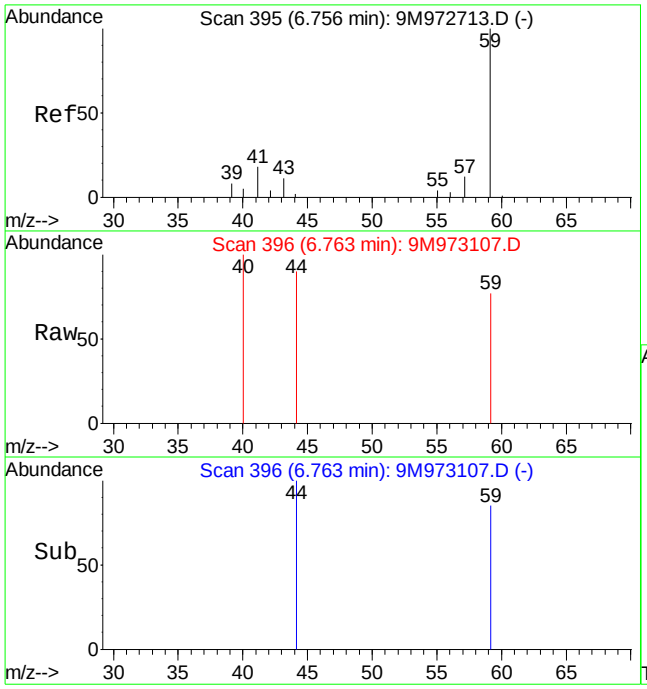

#15
Tert-Butyl Alcohol
Concen: 1.55 ug/kg
RT: 6.76 min Scan# 396
Delta R.T. 0.00 min
Lab File: 9M973107.D
Acq: 6 Mar 2016 20:00

Tgt Ion: 59 Resp: 771

Ion	Ratio	Lower	Upper
59	100		
41	0.0	14.1	32.9#
57	0.0	6.4	15.0#

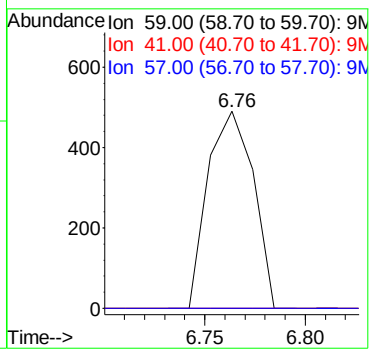

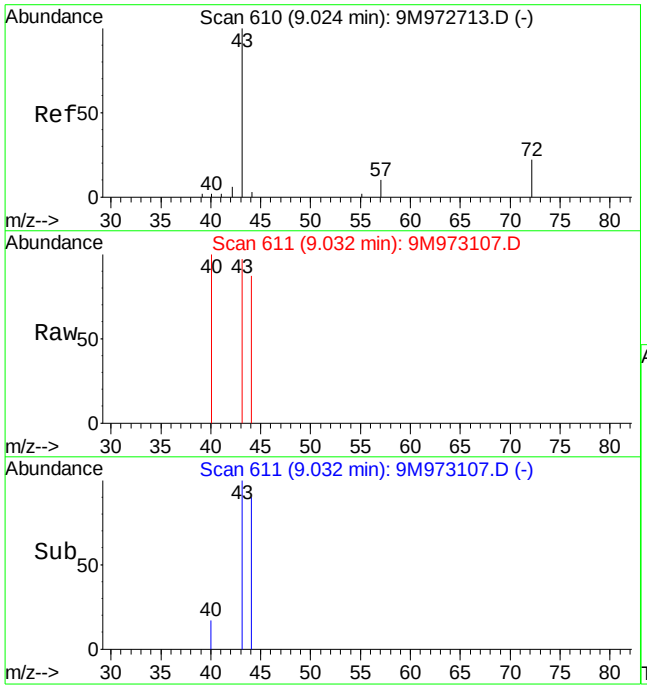

#29
2-Butanone
Concen: 0.68 ug/kg
RT: 9.03 min Scan# 611
Delta R.T. 0.00 min
Lab File: 9M973107.D
Acq: 6 Mar 2016 20:00

Tgt Ion: 43 Resp: 1068

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

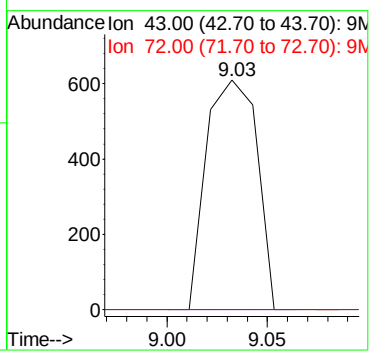

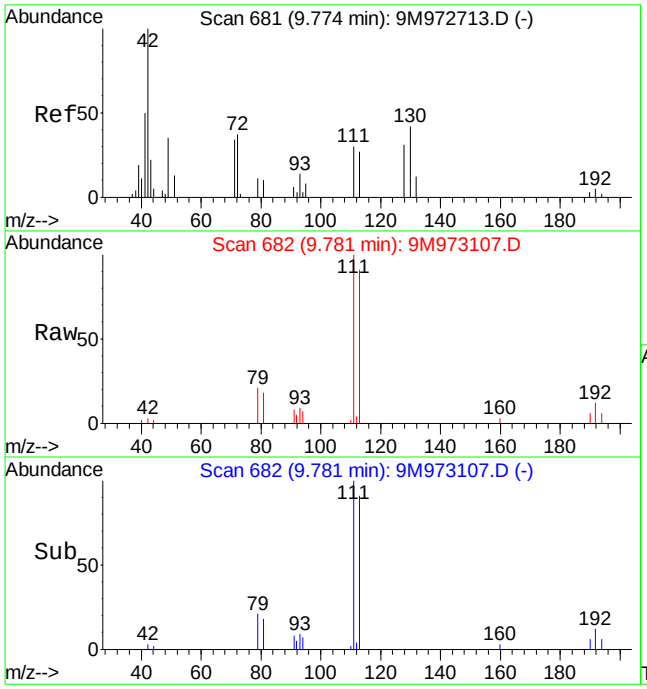

#36
Tetrahydrofuran
Concen: 0.88 ug/kg
RT: 9.78 min Scan# 682
Delta R.T. 0.00 min
Lab File: 9M973107.D
Acq: 6 Mar 2016 20:00

Tgt Ion: 42 Resp: 885

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

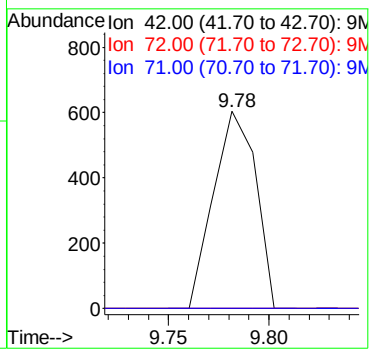

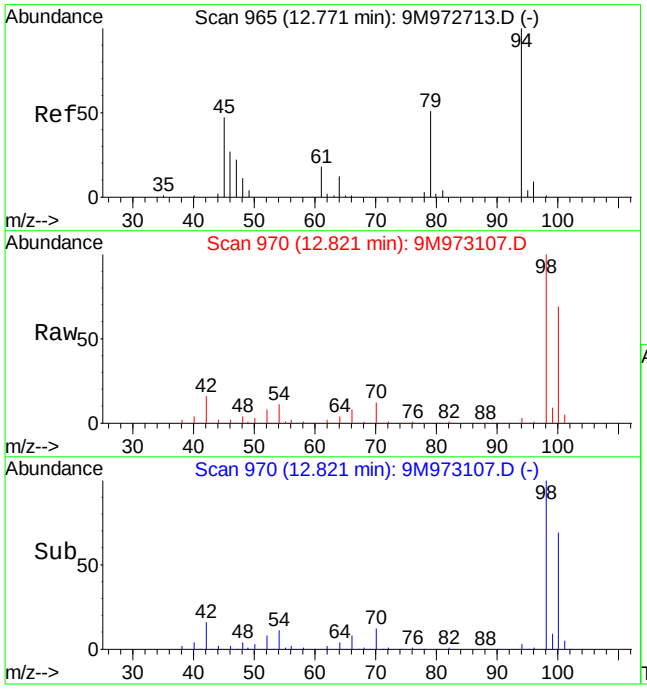

#56
Dimethyl Disulfide
Concen: 3.25 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M973107.D
Acq: 6 Mar 2016 20:00

Tgt Ion: 94 Resp: 12231

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

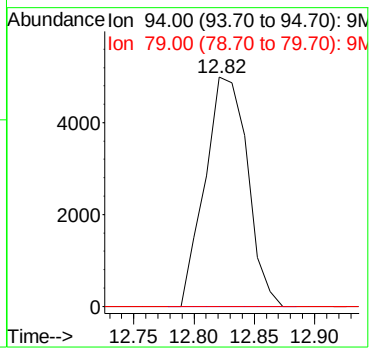

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973108.D Vial: 12
Acq On : 6 Mar 2016 20:30 Operator: ADC
Sample : L16030134-05 A 8260 4.70g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 12:19:10 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	507085	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	376977	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.75	152	192130	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	129951	47.2779 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.56%		
43) 1,2-Dichloroethane-d4	10.44	65	167510	48.5715 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.14%		
58) Toluene-d8	12.83	98	472181	49.5192 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.04%		
79) p-Bromofluorobenzene	16.23	95	187381	50.0862 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 100.18%		

Target Compounds					Qvalue
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	8855	3.4471 ug/kg	96
13) Acetone	6.41	43	6101	2.4868 ug/kg	99
29) 2-Butanone	9.03	43	1376	0.8415 ug/kg#	58
36) Tetrahydrofuran	9.79	42	1188	1.1271 ug/kg#	43
45) 1,2-Dichloroethane	10.56	62	3527	0.8229 ug/kg	93
47) Trichloroethene	11.35	130	135609	44.0883 ug/kg	98
56) Dimethyl Disulfide	12.82	94	13765	3.4995 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M973108.D 8260SL.M Mon Mar 07 12:19:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973108.D Vial: 12
Acq On : 6 Mar 2016 20:30 Operator: ADC
Sample : L16030134-05 A 8260 4.70g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 7 12:19 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

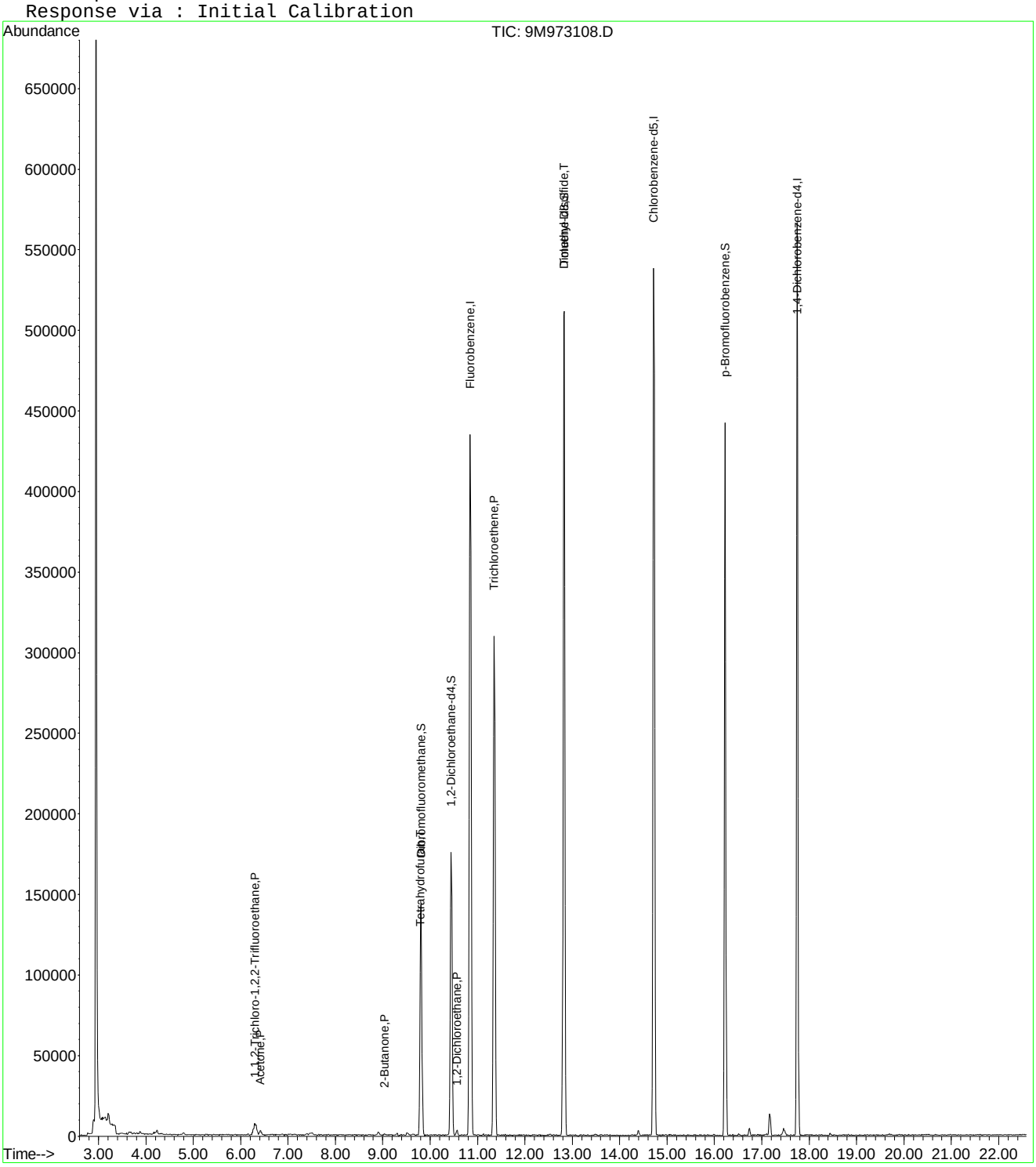

9M973108.D 8260SL.M Mon Mar 07 12:19:11 2016 Page 2

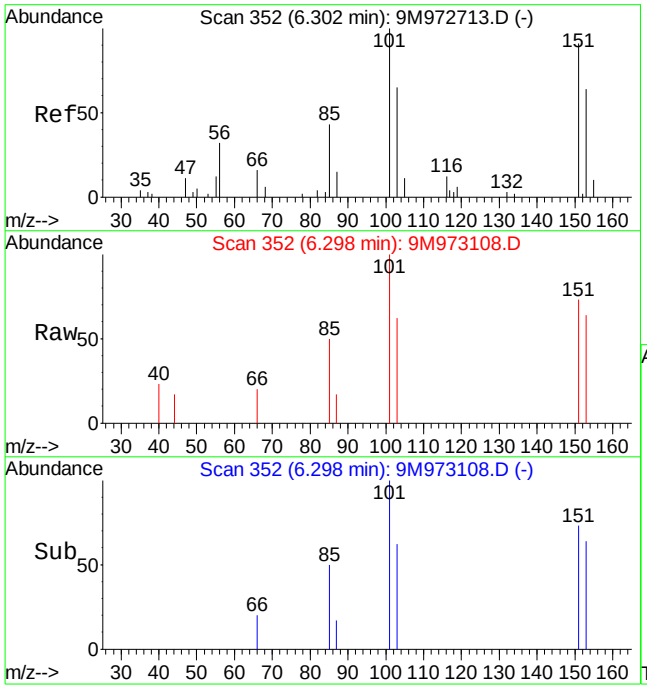

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 3.45 ug/kg
RT: 6.30 min Scan# 352
Delta R.T. -0.00 min
Lab File: 9M973108.D
Acq: 6 Mar 2016 20:30

Tgt Ion:101 Resp: 8855

Ion	Ratio	Lower	Upper
101	100		
151	87.4	43.8	123.8

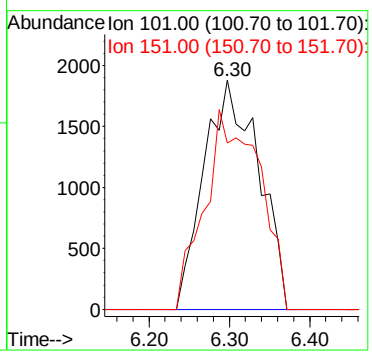

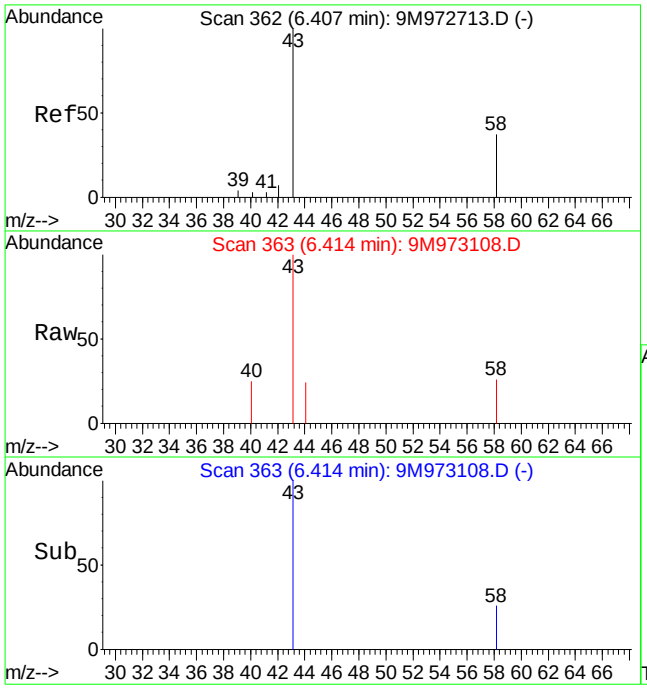

#13
Acetone
Concen: 2.49 ug/kg
RT: 6.41 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M973108.D
Acq: 6 Mar 2016 20:30

Tgt Ion: 43 Resp: 6101

Ion	Ratio	Lower	Upper
43	100		
58	27.4	16.9	39.3

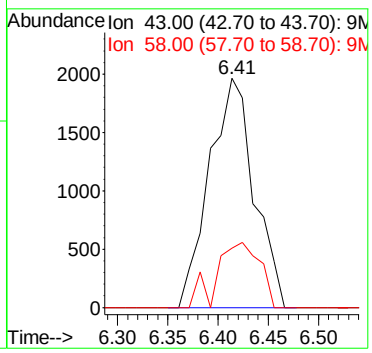

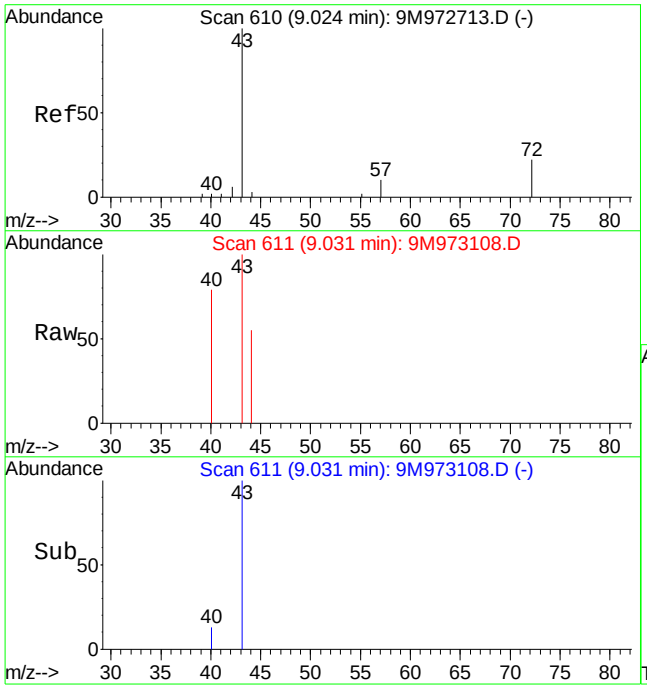

#29
2-Butanone
Concen: 0.84 ug/kg
RT: 9.03 min Scan# 611
Delta R.T. -0.00 min
Lab File: 9M973108.D
Acq: 6 Mar 2016 20:30

Tgt Ion: 43 Resp: 1376

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

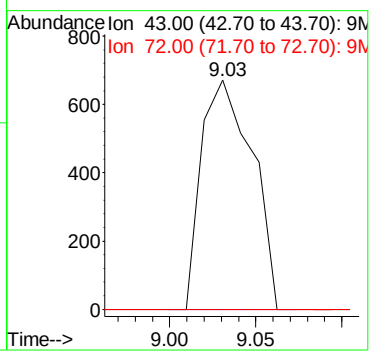

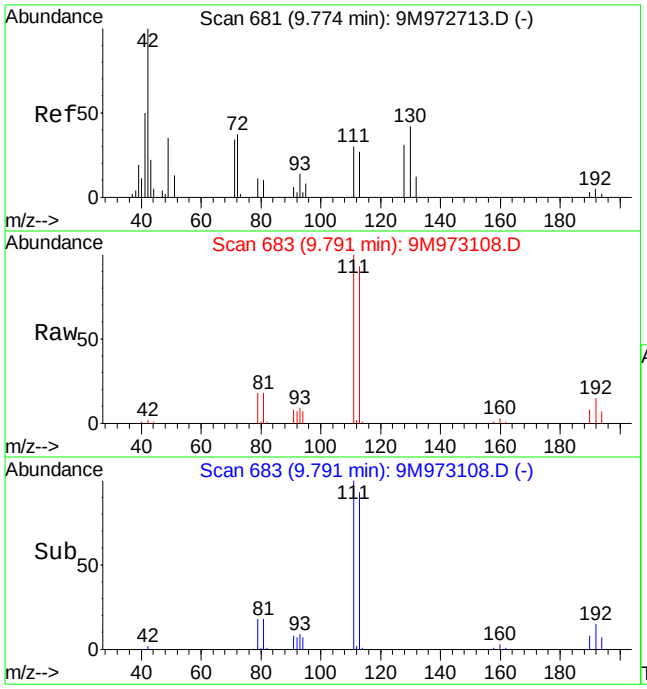

#36
Tetrahydrofuran
Concen: 1.13 ug/kg
RT: 9.79 min Scan# 683
Delta R.T. 0.01 min
Lab File: 9M973108.D
Acq: 6 Mar 2016 20:30

Tgt Ion: 42 Resp: 1188

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

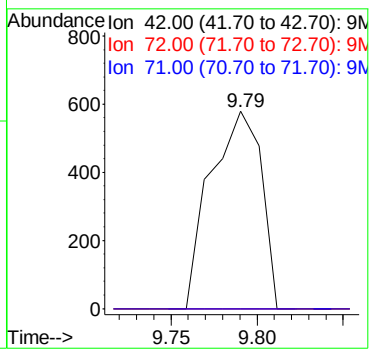

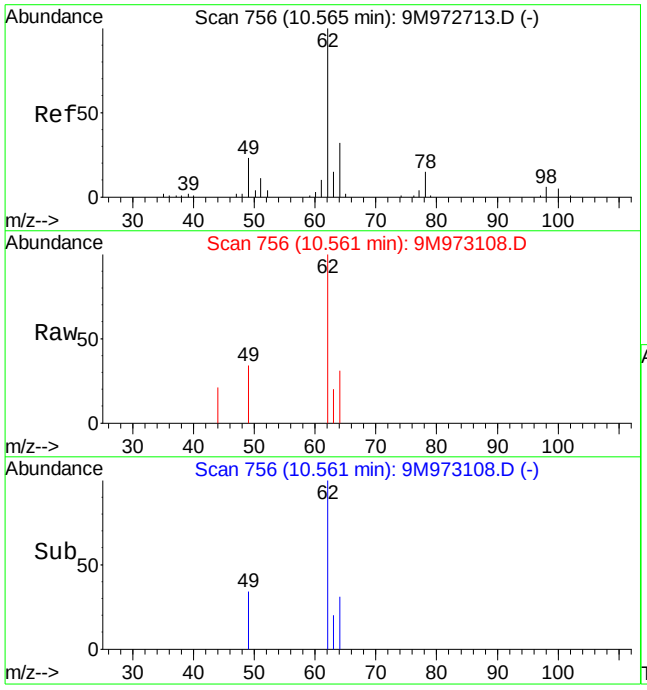

#45
1,2-Dichloroethane
Concen: 0.82 ug/kg
RT: 10.56 min Scan# 756
Delta R.T. -0.00 min
Lab File: 9M973108.D
Acq: 6 Mar 2016 20:30

Tgt Ion: 62 Resp: 3527

Ion	Ratio	Lower	Upper
62	100		
64	26.8	18.7	43.5
49	30.5	20.3	47.5

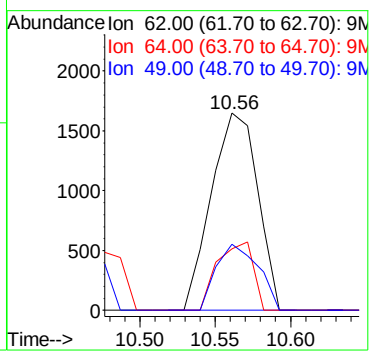

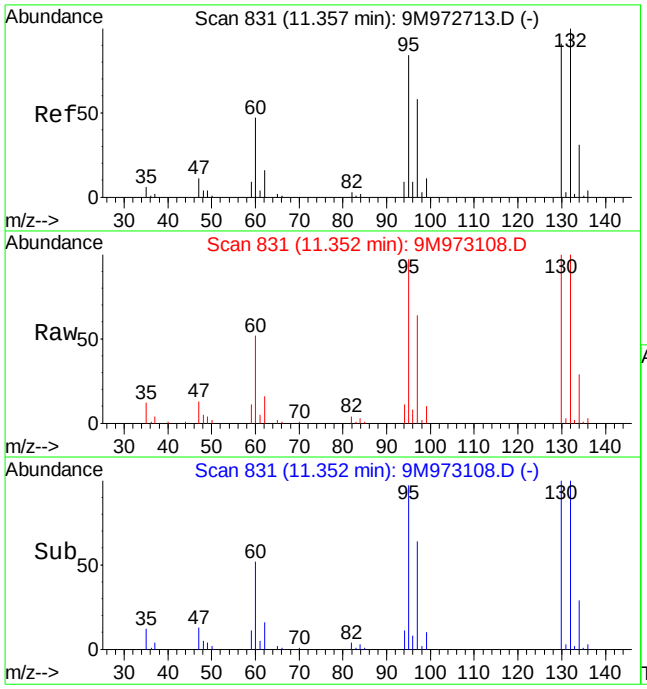

#47
Trichloroethene
Concen: 44.09 ug/kg
RT: 11.35 min Scan# 831
Delta R.T. -0.00 min
Lab File: 9M973108.D
Acq: 6 Mar 2016 20:30

Tgt Ion:130 Resp: 135609

Ion	Ratio	Lower	Upper
130	100		
132	96.9	56.5	131.7
95	94.4	55.4	129.4

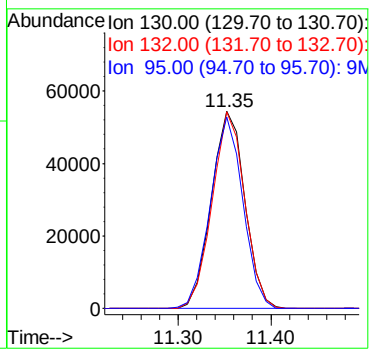

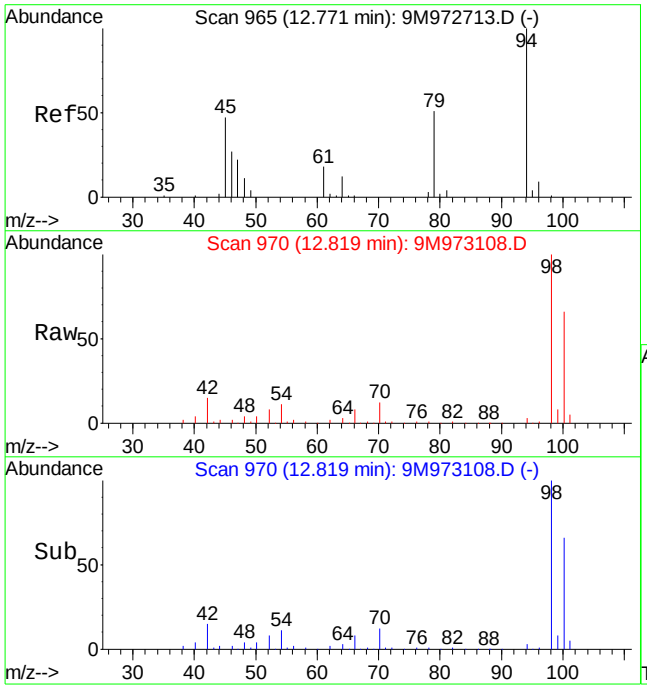

#56
Dimethyl Disulfide
Concen: 3.50 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M973108.D
Acq: 6 Mar 2016 20:30

Tgt Ion: 94 Resp: 13765

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

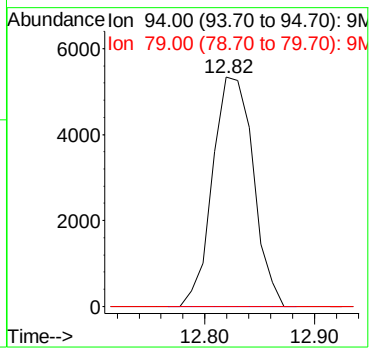

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973109.D Vial: 13
Acq On : 6 Mar 2016 21:00 Operator: ADC
Sample : WG559855-01 L16030134-06 A 8260 4.77g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 12:19:12 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	440806	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	329308	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.75	152	172969	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	115706	48.4248 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.84%		
43) 1,2-Dichloroethane-d4	10.44	65	152664	50.9226 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 101.84%		
58) Toluene-d8	12.83	98	412352	49.5046 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.00%		
79) p-Bromofluorobenzene	16.23	95	170094	50.5019 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 101.00%		

Target Compounds

					Qvalue
13) Acetone	6.41	43	5821	2.9746 ug/kg	89
15) Tert-Butyl Alcohol	6.77	59	227	0.5036 ug/kg#	58
36) Tetrahydrofuran	9.78	42	845	0.9222 ug/kg#	43
47) Trichloroethene	11.35	130	1526	0.5707 ug/kg	72
56) Dimethyl Disulfide	12.82	94	10983	3.2121 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M973109.D 8260SL.M Mon Mar 07 12:19:12 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973109.D Vial: 13
Acq On : 6 Mar 2016 21:00 Operator: ADC
Sample : WG559855-01 L16030134-06 A 8260 4.77g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 7 12:19 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

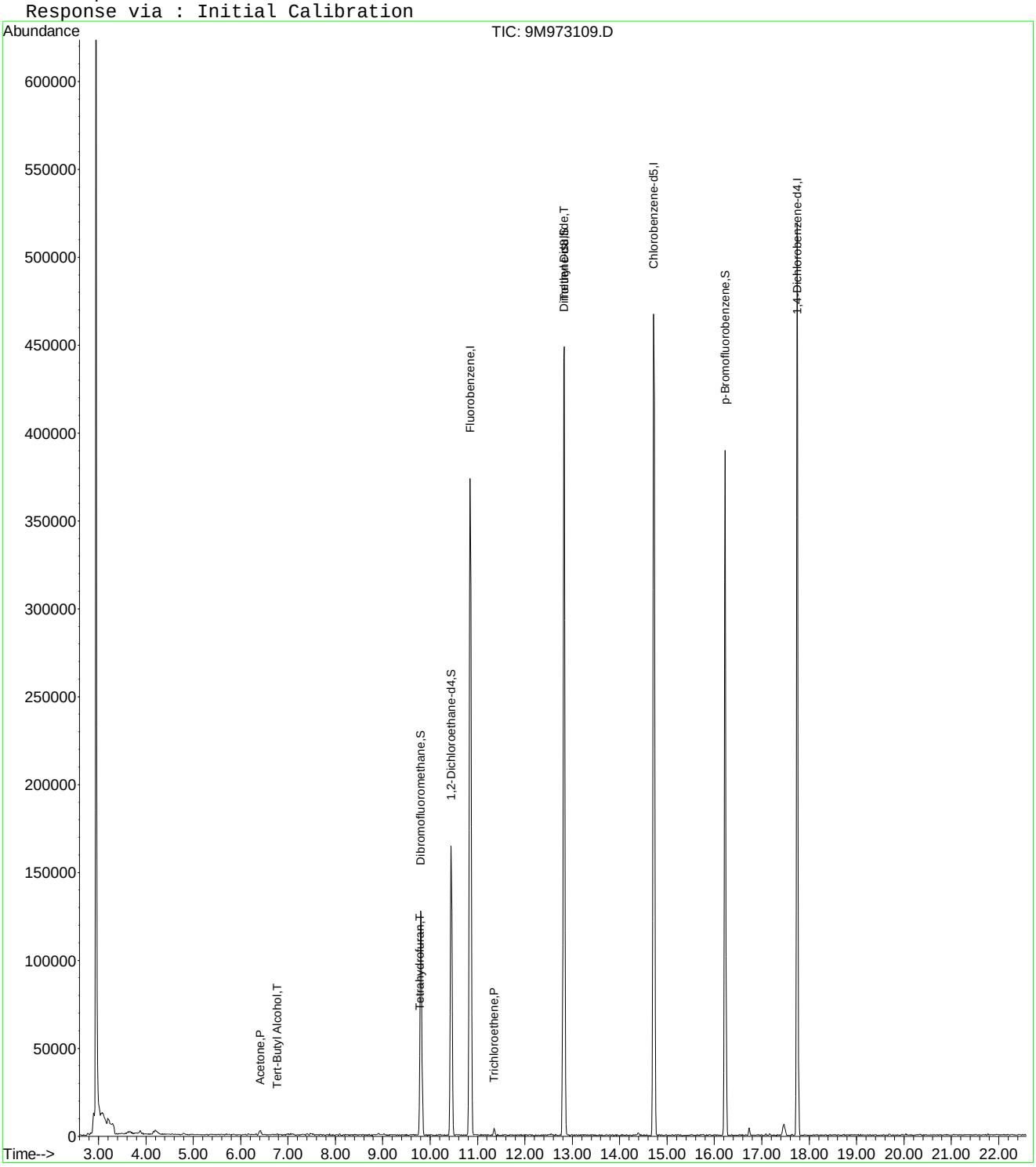

9M973109.D 8260SL.M Mon Mar 07 12:19:12 2016 Page 2

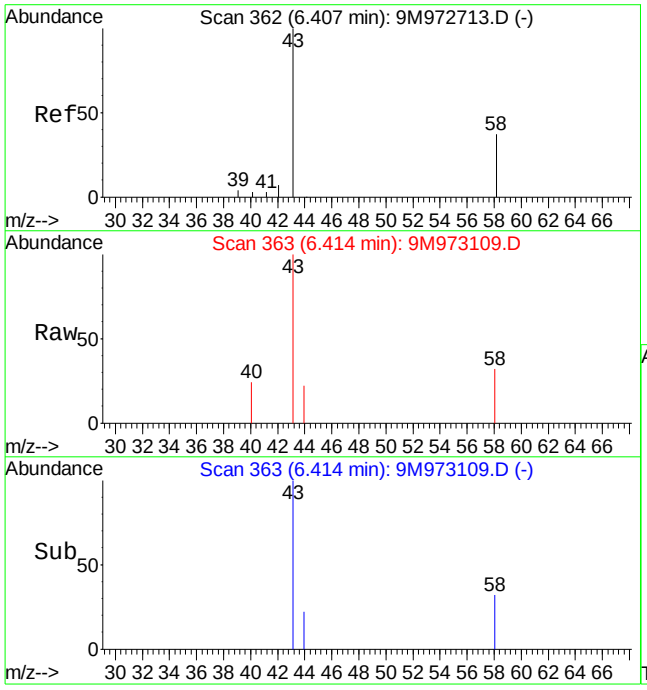

#13
Acetone
Concen: 2.97 ug/kg
RT: 6.41 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M973109.D
Acq: 6 Mar 2016 21:00

Tgt Ion: 43 Resp: 5821

Ion	Ratio	Lower	Upper
43	100		
58	22.4	16.9	39.3

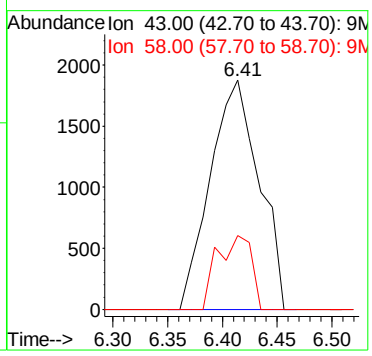

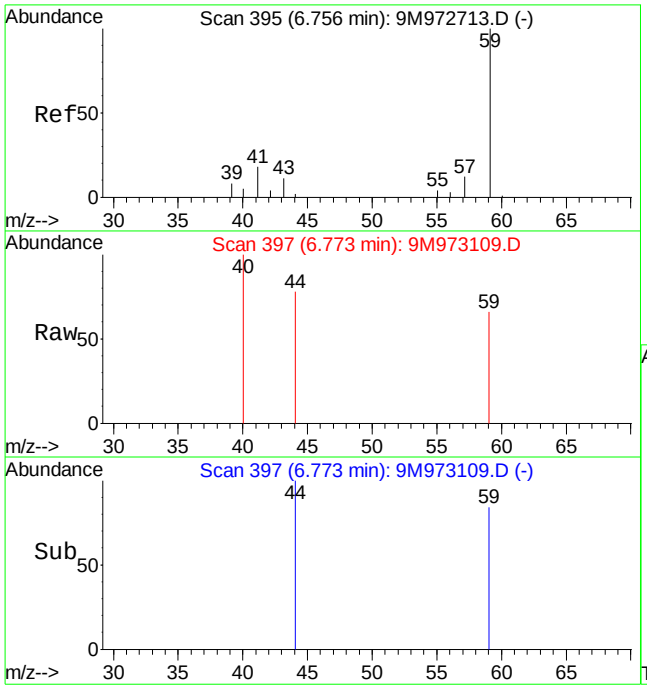

#15
Tert-Butyl Alcohol
Concen: 0.50 ug/kg
RT: 6.77 min Scan# 397
Delta R.T. 0.01 min
Lab File: 9M973109.D
Acq: 6 Mar 2016 21:00

Tgt Ion: 59 Resp: 227

Ion	Ratio	Lower	Upper
59	100		
41	0.0	14.1	32.9#
57	0.0	6.4	15.0#

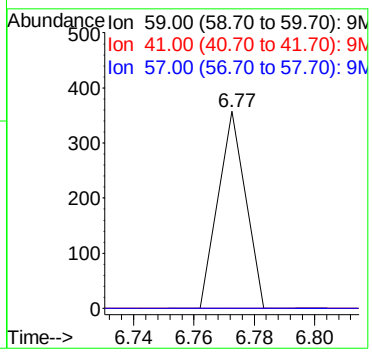

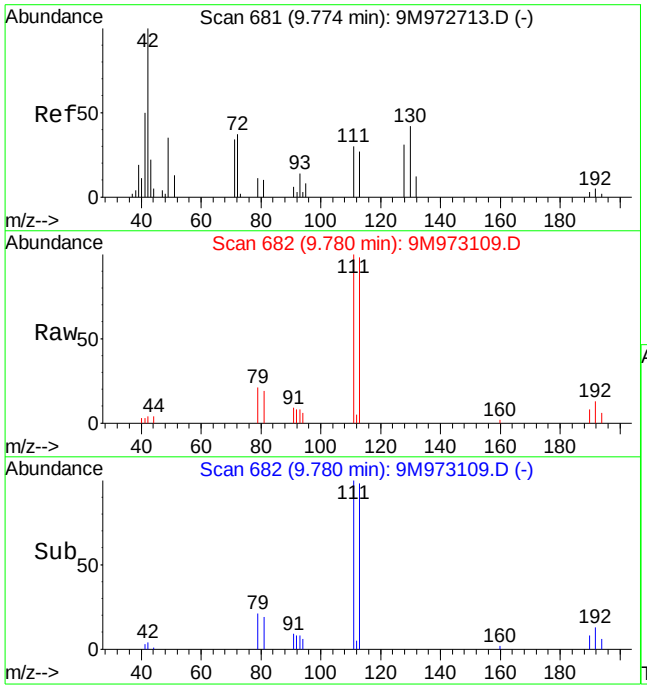

#36
Tetrahydrofuran
Concen: 0.92 ug/kg
RT: 9.78 min Scan# 682
Delta R.T. -0.00 min
Lab File: 9M973109.D
Acq: 6 Mar 2016 21:00

Tgt Ion: 42 Resp: 845

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

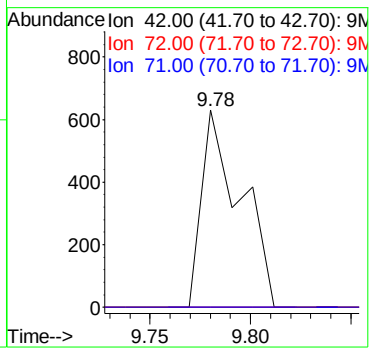

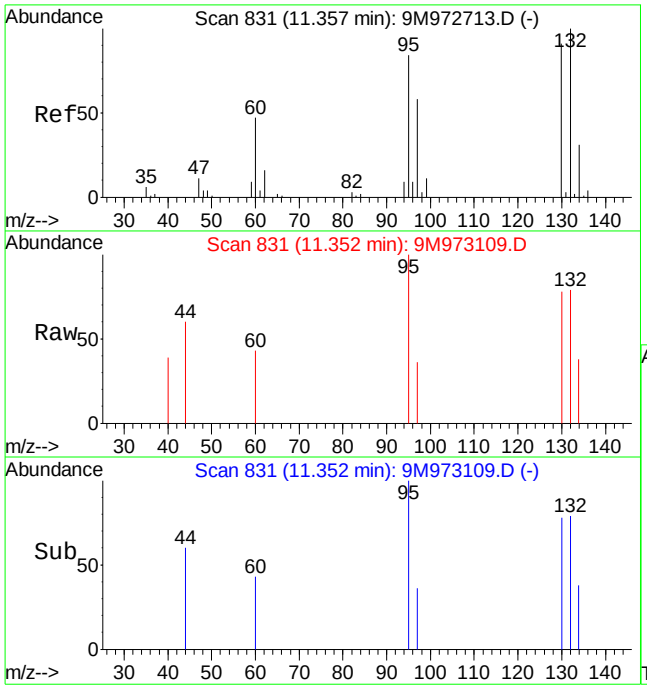

#47
Trichloroethene
Concen: 0.57 ug/kg
RT: 11.35 min Scan# 831
Delta R.T. -0.00 min
Lab File: 9M973109.D
Acq: 6 Mar 2016 21:00

Tgt Ion:130 Resp: 1526

Ion	Ratio	Lower	Upper
130	100		
132	119.6	56.5	131.7
95	120.4	55.4	129.4

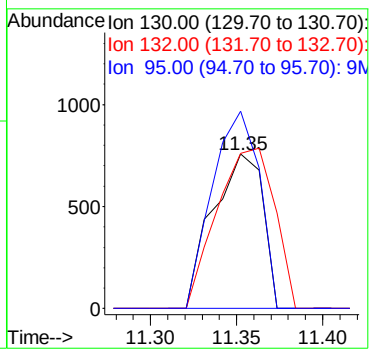

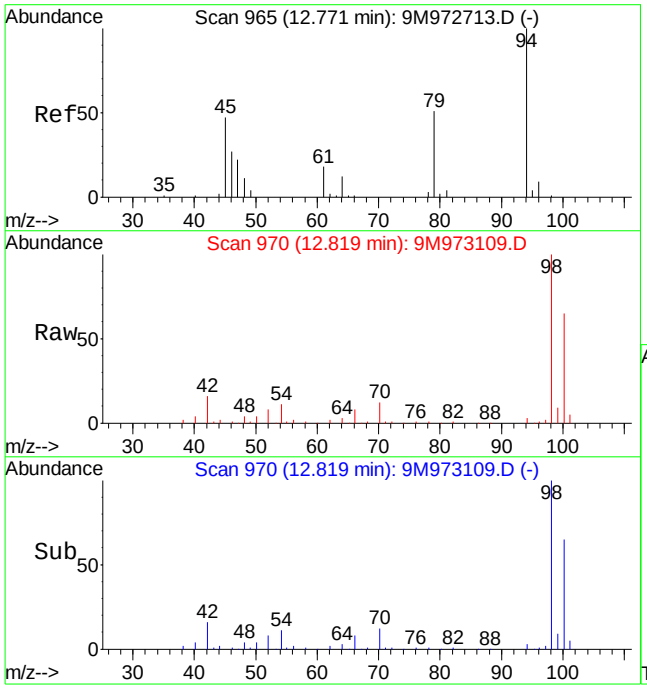

#56
Dimethyl Disulfide
Concen: 3.21 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M973109.D
Acq: 6 Mar 2016 21:00

Tgt Ion: 94 Resp: 10983

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

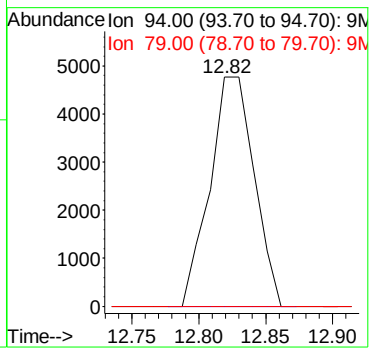

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972472.D Vial: 3
Acq On : 25 Jan 2016 11:22 Operator: FJB
Sample : WG555000-02 5ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:05 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	367739	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	266763	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.77	152	148882	50.00 ug/kg	0.01

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	1974	5.3580 ug/kg#	1
3) 3-Chloro-1-propene	7.23	41	18322	5.0468 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	19639	4.7564 ug/kg	98
5) Ethyl Acetate	9.24	43	12755	5.2595 ug/kg	91
6) Methacrylonitrile	9.40	67	3744	4.7691 ug/kg	95
7) Isobutyl Alcohol	9.42	43	1055	12.9700 ug/kg#	62
8) 1-Butanol	10.36	56	203	11.8711 ug/kg#	26
9) Methyl methacrylate	11.56	41	8689	4.6908 ug/kg	95
10) 2-Nitropropane	11.90	43	2531	4.2058 ug/kg	96

(#) = qualifier out of range (m) = manual integration
9M972472.D A9FOO_SL.M Wed Jan 27 11:22:42 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972472.D Vial: 3
Acq On : 25 Jan 2016 11:22 Operator: FJB
Sample : WG555000-02 5ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

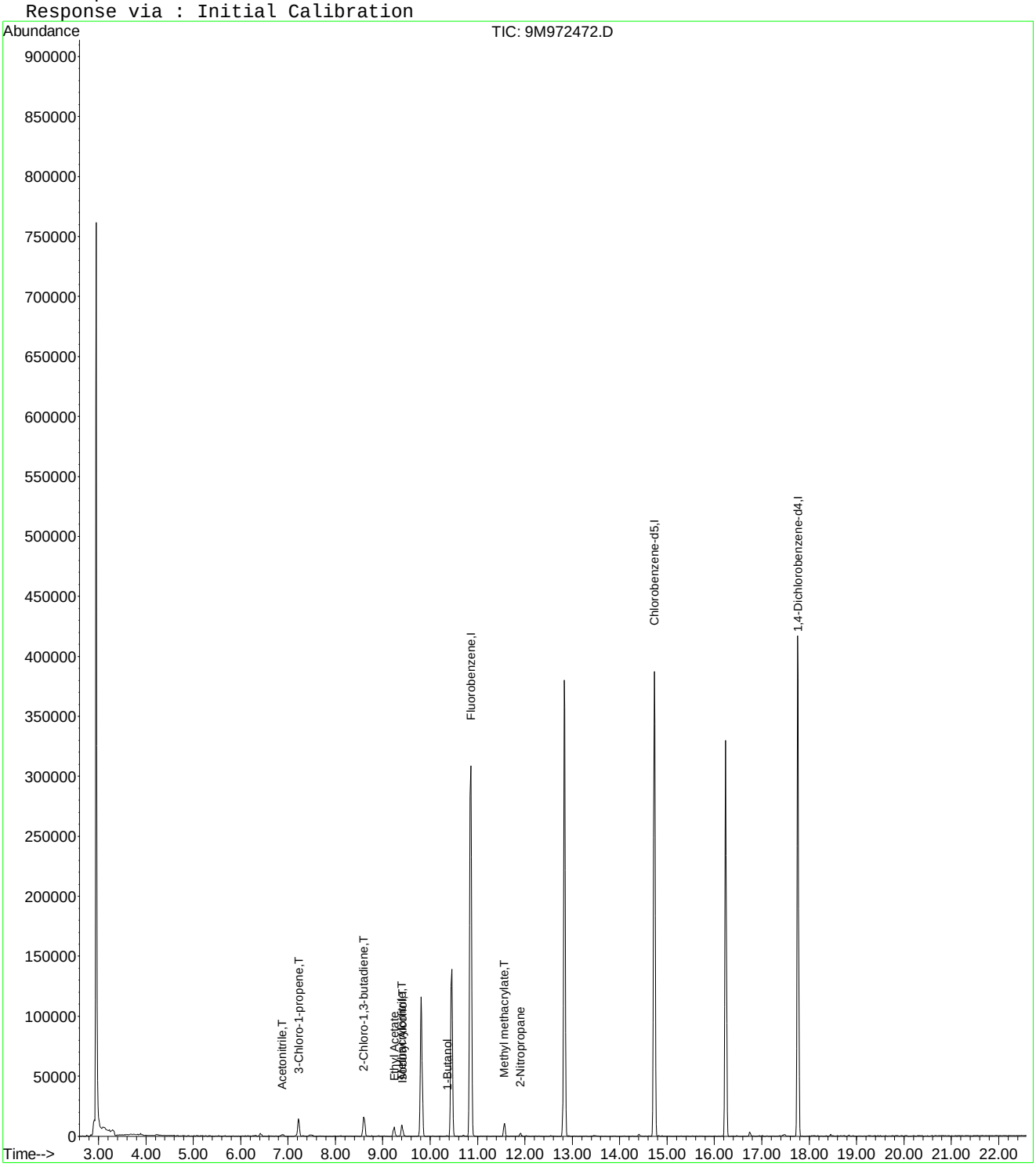

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972473.D Vial: 4
Acq On : 25 Jan 2016 11:52 Operator: FJB
Sample : WG555000-03 20ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:05 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	359691	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	265773	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	149223	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	7669	21.2815 ug/kg#	77
3) 3-Chloro-1-propene	7.23	41	75360	21.2224 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	82865	20.5181 ug/kg	100
5) Ethyl Acetate	9.23	43	47912	20.1986 ug/kg	97
6) Methacrylonitrile	9.40	67	15740	20.4980 ug/kg	98
7) Isobutyl Alcohol	9.42	43	5287	37.9280 ug/kg	95
8) 1-Butanol	10.35	56	1509	22.3153 ug/kg#	81
9) Methyl methacrylate	11.56	41	35437	19.5588 ug/kg	98
10) 2-Nitropropane	11.90	43	10433	17.7247 ug/kg	98
12) Cyclohexanone	16.01	55	2157	16.3929 ug/kg#	86

(#) = qualifier out of range (m) = manual integration
9M972473.D A9FOO_SL.M Wed Jan 27 11:22:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972473.D Vial: 4
Acq On : 25 Jan 2016 11:52 Operator: FJB
Sample : WG555000-03 20ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

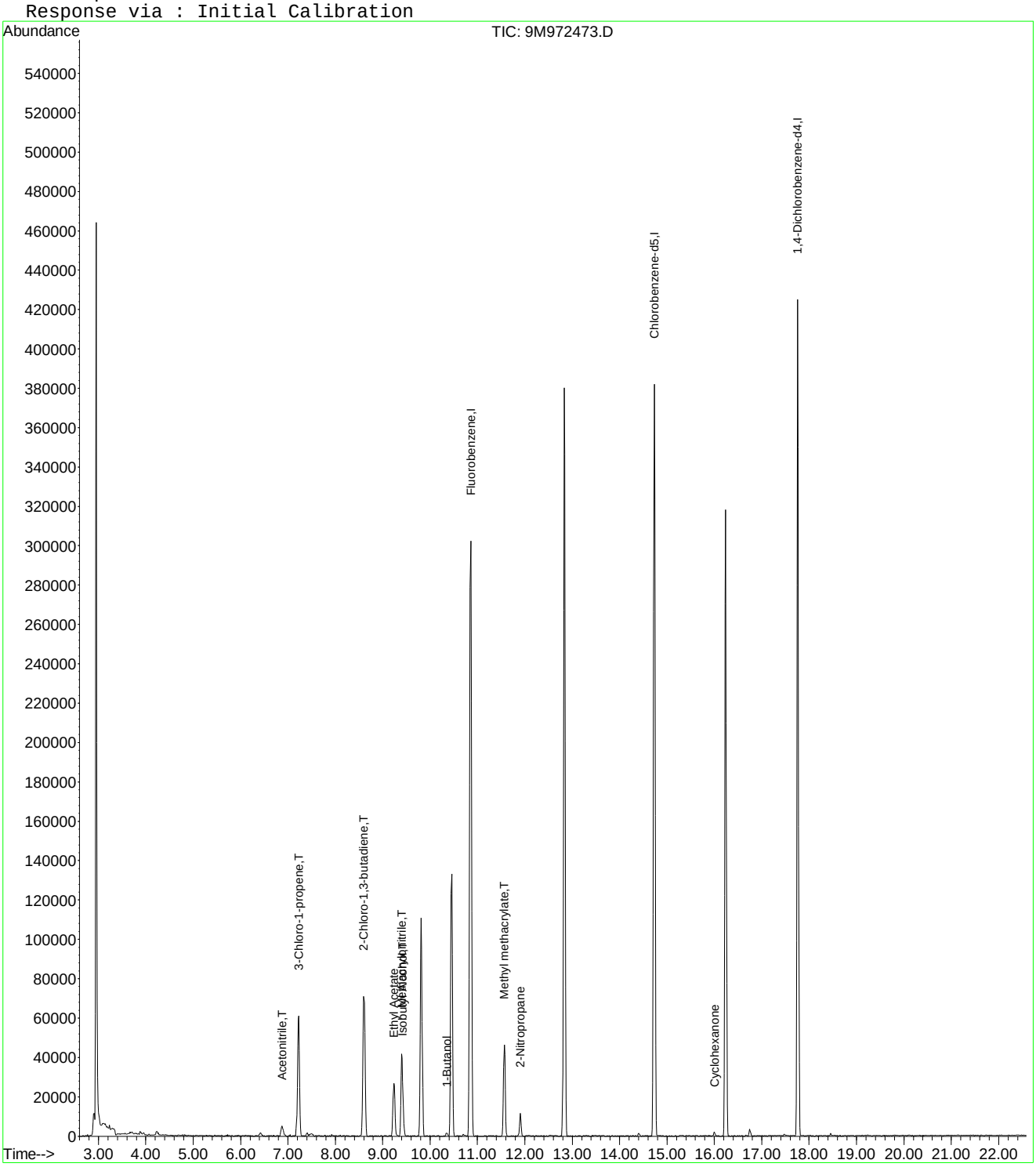

9M972473.D A9FOO_SL.M Wed Jan 27 11:22:46 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972474.D Vial: 5
Acq On : 25 Jan 2016 12:23 Operator: FJB
Sample : WG555000-04 50ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:06 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	356886	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	259679	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	147334	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	16583	46.3795 ug/kg#	94
3) 3-Chloro-1-propene	7.23	41	160601	45.5828 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.61	53	185316	46.2464 ug/kg	99
5) Ethyl Acetate	9.23	43	111538	47.3915 ug/kg	99
6) Methacrylonitrile	9.40	67	36081	47.3572 ug/kg	99
7) Isobutyl Alcohol	9.42	43	12624	81.5447 ug/kg	95
8) 1-Butanol	10.35	56	4707	48.0983 ug/kg#	50
9) Methyl methacrylate	11.56	41	82406	45.8400 ug/kg	99
10) 2-Nitropropane	11.90	43	26302	45.0359 ug/kg	97
12) Cyclohexanone	16.01	55	5625	43.7525 ug/kg	93

(#) = qualifier out of range (m) = manual integration
9M972474.D A9FOO_SL.M Wed Jan 27 11:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972474.D Vial: 5
Acq On : 25 Jan 2016 12:23 Operator: FJB
Sample : WG555000-04 50ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

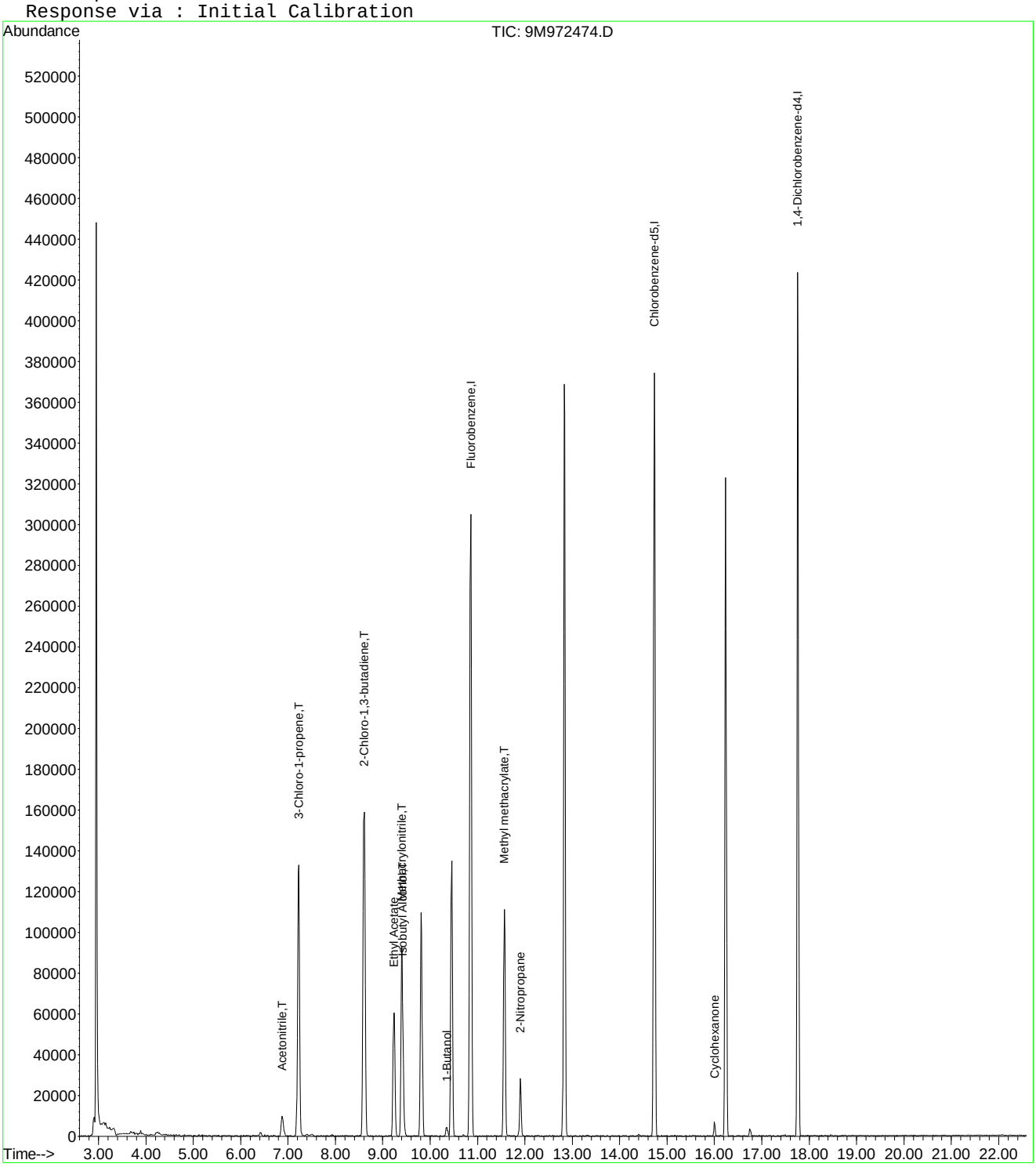

9M972474.D A9FOO_SL.M Wed Jan 27 11:22:51 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972475.D Vial: 6
Acq On : 25 Jan 2016 12:53 Operator: FJB
Sample : WG555000-05 100ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:06 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	394669	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	285851	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	161505	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	37767	95.5151	ug/kg#	100
3) 3-Chloro-1-propene	7.23	41	409870	105.1952	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.61	53	467514	105.5010	ug/kg	100
5) Ethyl Acetate	9.23	43	267513	102.7824	ug/kg	100
6) Methacrylonitrile	9.40	67	88054	104.5088	ug/kg	100
7) Isobutyl Alcohol	9.42	43	33721	187.1766	ug/kg	100
8) 1-Butanol	10.36	56	11671	95.0627	ug/kg	100
9) Methyl methacrylate	11.56	41	209503	105.3834	ug/kg	100
10) 2-Nitropropane	11.90	43	65435	101.3157	ug/kg	100
12) Cyclohexanone	16.01	55	14062	99.3630	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972475.D A9FOO_SL.M Wed Jan 27 11:22:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972475.D Vial: 6
Acq On : 25 Jan 2016 12:53 Operator: FJB
Sample : WG555000-05 100ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

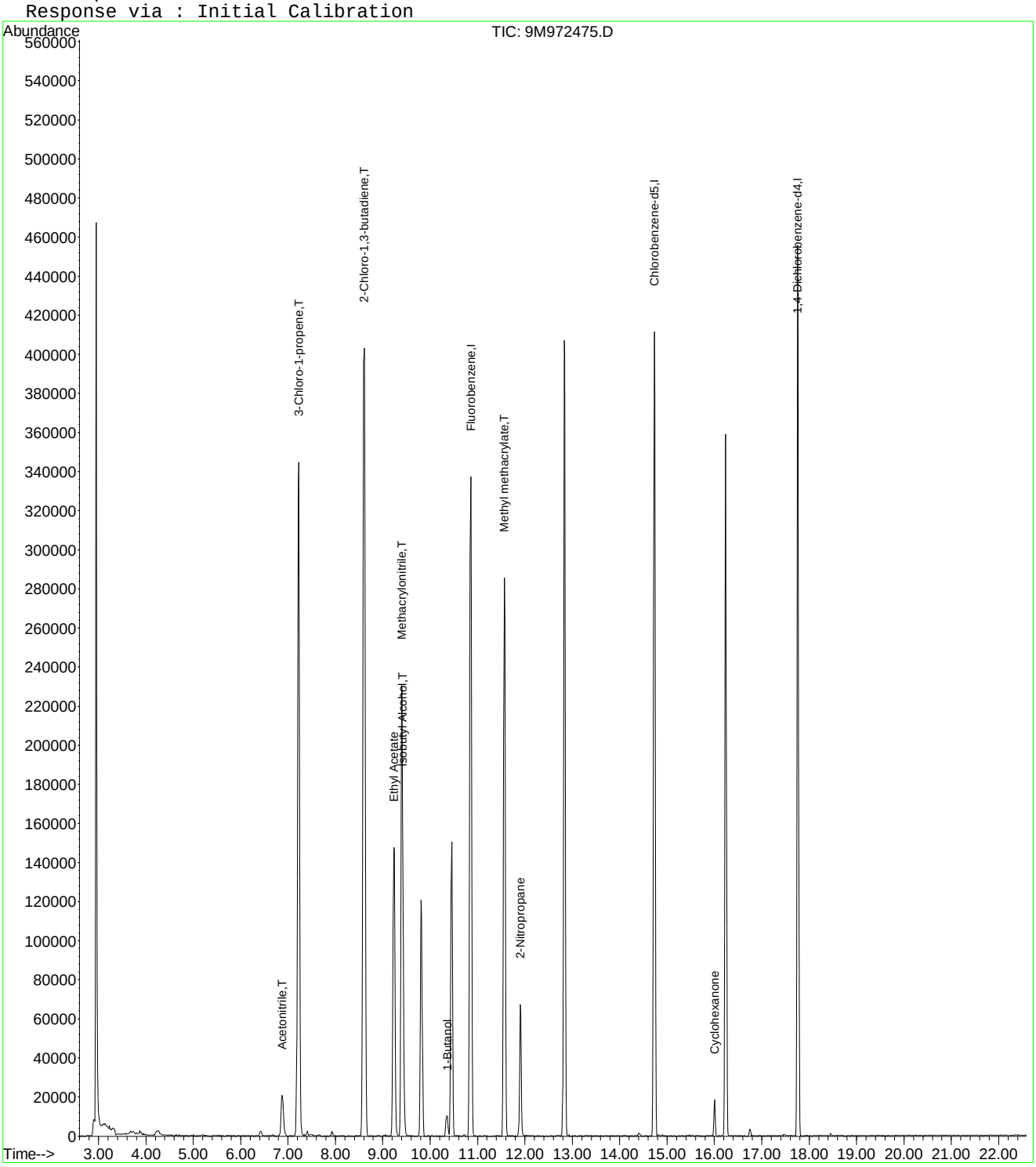

9M972475.D A9FOO_SL.M Wed Jan 27 11:22:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972476.D Vial: 7
Acq On : 25 Jan 2016 13:23 Operator: FJB
Sample : WG555000-06 200ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 09:51:10 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	361792	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	264283	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	150478	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.87	41	75099	207.1896	ug/kg#	94
3) 3-Chloro-1-propene	7.22	41	743262	208.0969	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	846271	208.3269	ug/kg	100
5) Ethyl Acetate	9.23	43	489855	205.3125	ug/kg	100
6) Methacrylonitrile	9.40	67	159879	206.9995	ug/kg	100
7) Isobutyl Alcohol	9.42	43	68551	406.6640	ug/kg	99
8) 1-Butanol	10.35	56	24111	201.3375	ug/kg	97
9) Methyl methacrylate	11.57	41	382820	210.0636	ug/kg	99
10) 2-Nitropropane	11.90	43	129000	217.8866	ug/kg	95
12) Cyclohexanone	16.00	55	30065	229.7785	ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972476.D A9FOO_SL.M Wed Jan 27 09:51:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972476.D Vial: 7
Acq On : 25 Jan 2016 13:23 Operator: FJB
Sample : WG555000-06 200ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 9:51 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

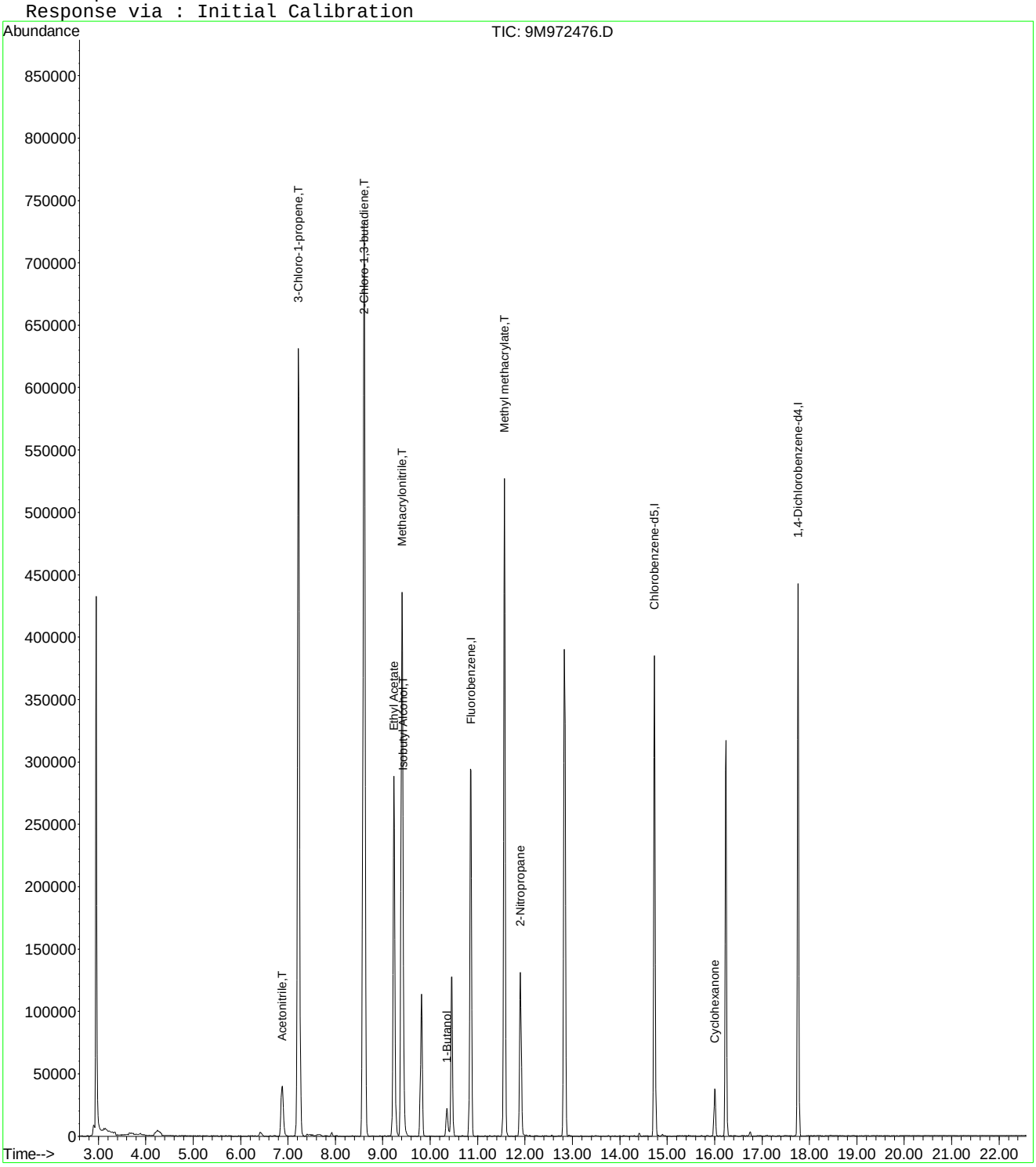

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972477.D Vial: 8
Acq On : 25 Jan 2016 13:54 Operator: FJB
Sample : WG555000-07 300ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:07 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.85	96	362779	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	265659	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	153468	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	99618	274.0870	ug/kg#	97
3) 3-Chloro-1-propene	7.22	41	944879	263.8255	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	1107217	271.8226	ug/kg	99
5) Ethyl Acetate	9.24	43	652386	272.6900	ug/kg	99
6) Methacrylonitrile	9.40	67	208153	268.7679	ug/kg	98
7) Isobutyl Alcohol	9.43	43	89707	528.6093	ug/kg#	99
8) 1-Butanol	10.35	56	31640	260.3131	ug/kg	98
9) Methyl methacrylate	11.57	41	502506	274.9883	ug/kg	98
10) 2-Nitropropane	11.90	43	172692	290.8907	ug/kg	95
12) Cyclohexanone	16.00	55	36951	280.9436	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972477.D A9FOO_SL.M Wed Jan 27 11:23:05 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972477.D Vial: 8
Acq On : 25 Jan 2016 13:54 Operator: FJB
Sample : WG555000-07 300ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

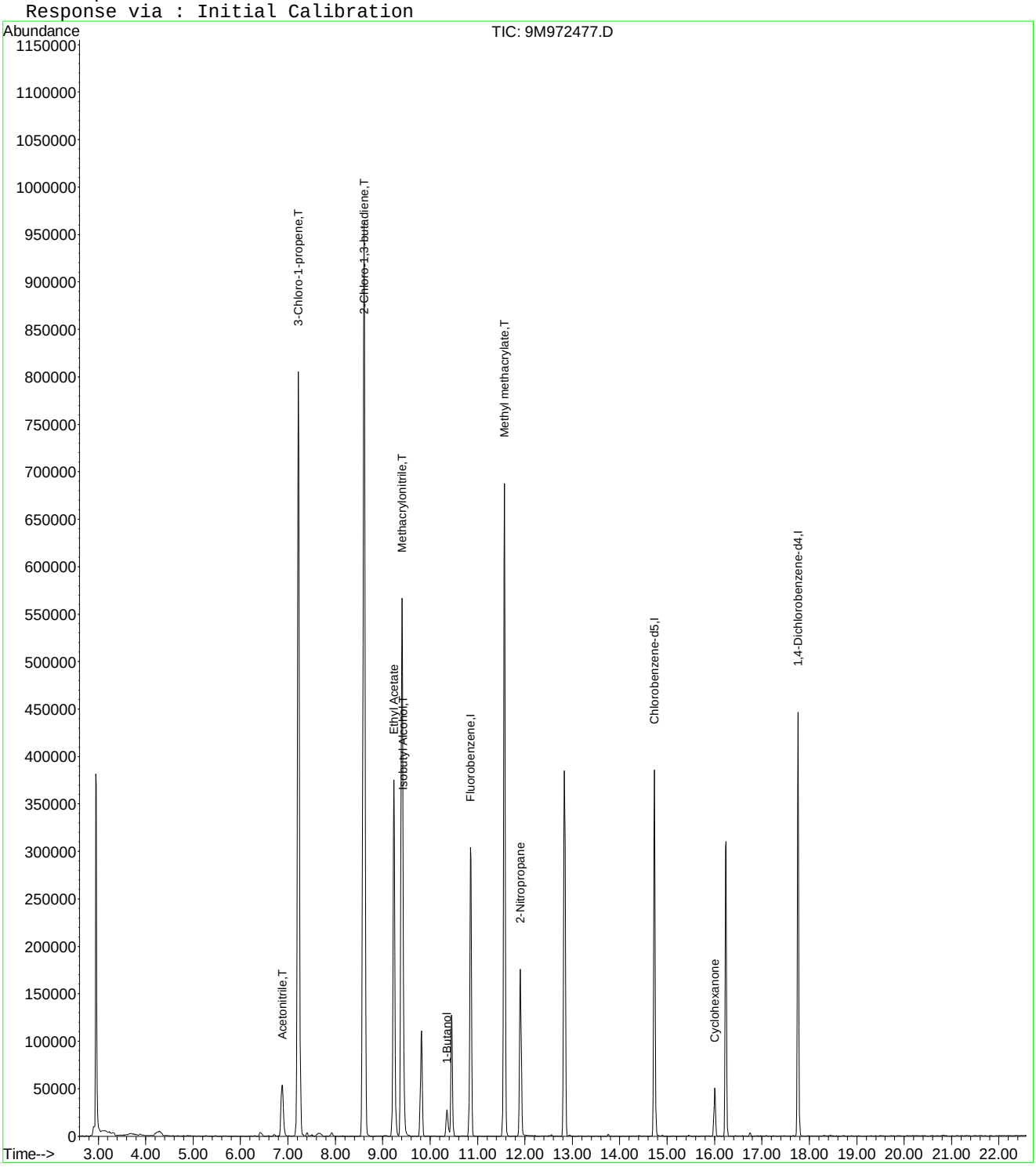

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972478.D Vial: 9
Acq On : 25 Jan 2016 14:25 Operator: FJB
Sample : WG555000-08 400ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 09:51:10 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	359343	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	261674	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	149058	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.89	41	148074	411.3034	ug/kg#	96
3) 3-Chloro-1-propene	7.22	41	1457717	410.9100	ug/kg	99
4) 2-Chloro-1,3-butadiene	8.61	53	1703971	422.3261	ug/kg	100
5) Ethyl Acetate	9.23	43	980479	413.7480	ug/kg	100
6) Methacrylonitrile	9.40	67	321602	419.2243	ug/kg	99
7) Isobutyl Alcohol	9.43	43	142361	842.7355	ug/kg#	98
8) 1-Butanol	10.36	56	51732	422.9922	ug/kg	99
9) Methyl methacrylate	11.56	41	779879	430.8570	ug/kg	98
10) 2-Nitropropane	11.90	43	267565	455.0088	ug/kg	96
12) Cyclohexanone	16.01	55	56623	437.0688	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972478.D A9FOO_SL.M Wed Jan 27 09:51:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972478.D Vial: 9
Acq On : 25 Jan 2016 14:25 Operator: FJB
Sample : WG555000-08 400ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 9:51 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

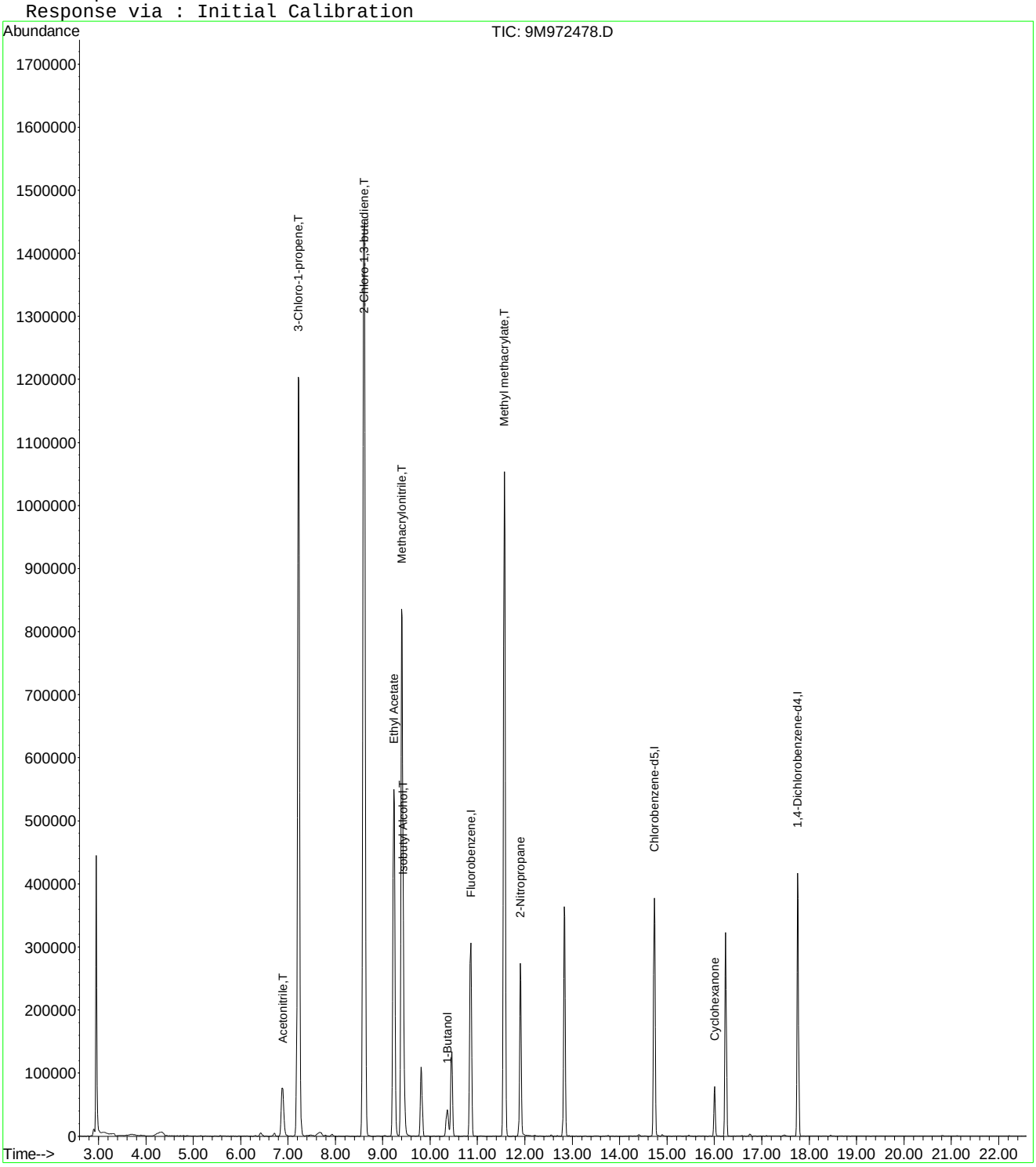

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972479.D Vial: 10
Acq On : 25 Jan 2016 14:56 Operator: FJB
Sample : WG555000-09 500ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:08 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	364474	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	266311	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	151707	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	196334	537.6773	ug/kg#	94
3) 3-Chloro-1-propene	7.22	41	1832802	509.3680	ug/kg	99
4) 2-Chloro-1,3-butadiene	8.60	53	2126710	519.6807	ug/kg	100
5) Ethyl Acetate	9.23	43	1255294	522.2587	ug/kg	100
6) Methacrylonitrile	9.40	67	408537	525.0513	ug/kg	100
7) Isobutyl Alcohol	9.43	43	180610	1052.3719	ug/kg	98
8) 1-Butanol	10.36	56	64789	519.8809	ug/kg	97
9) Methyl methacrylate	11.56	41	981460	534.5904	ug/kg	100
10) 2-Nitropropane	11.90	43	346571	581.0659	ug/kg	97
12) Cyclohexanone	16.01	55	74733	566.8143	ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972479.D A9FOO_SL.M Wed Jan 27 11:30:29 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972479.D Vial: 10
Acq On : 25 Jan 2016 14:56 Operator: FJB
Sample : WG555000-09 500ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

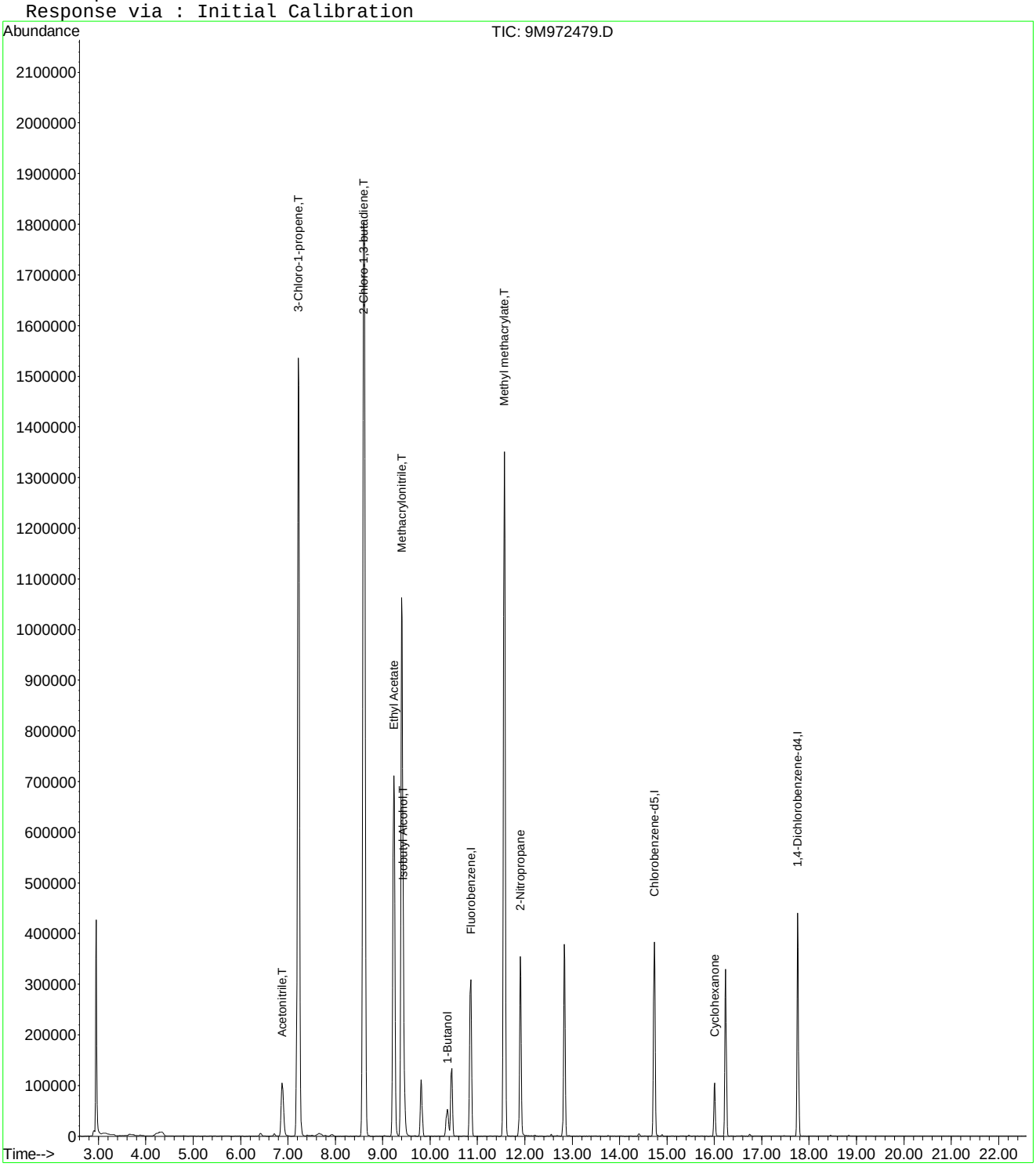

9M972479.D A9FOO_SL.M Wed Jan 27 11:30:29 2016 Page 2

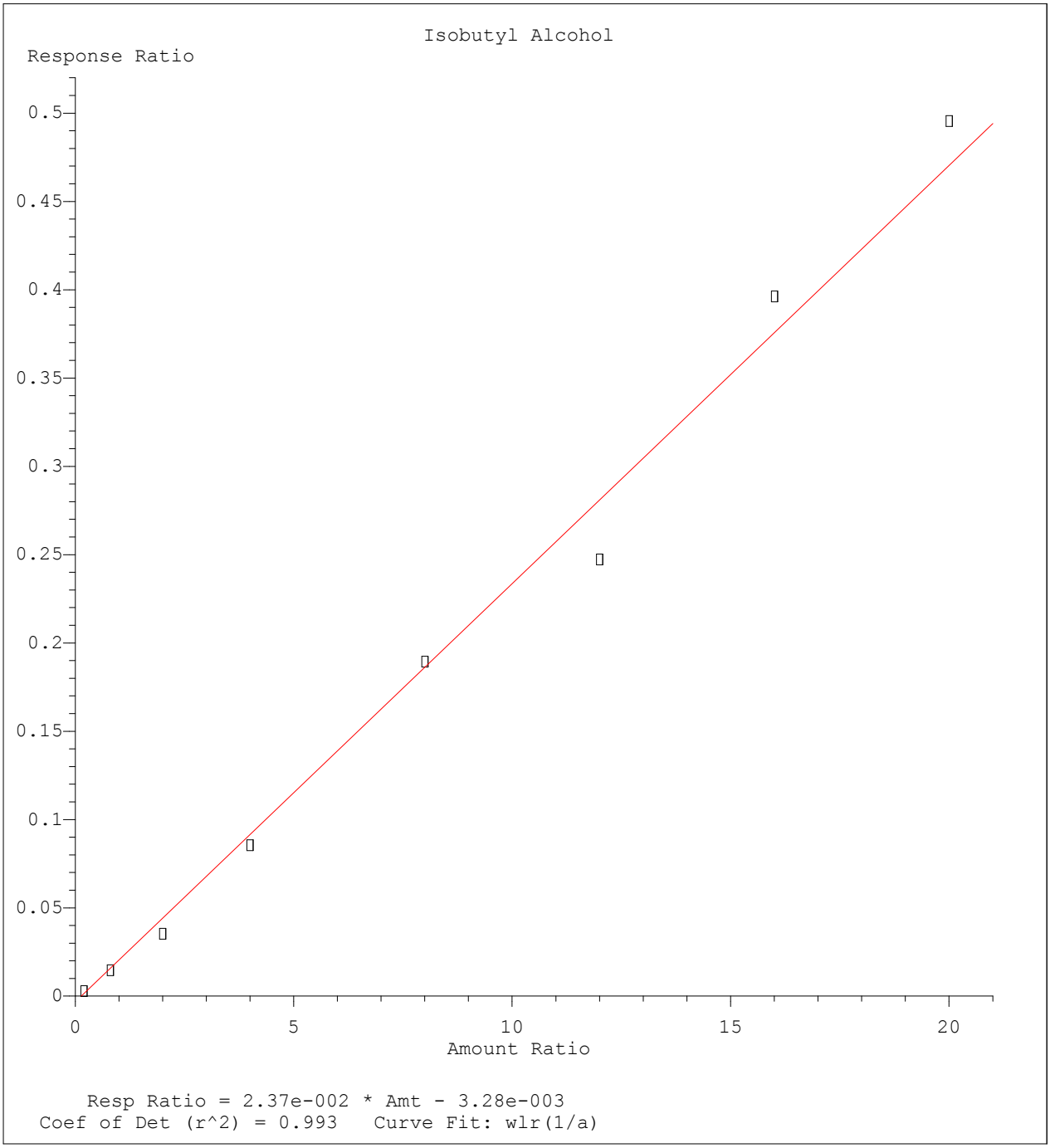

Method Name: C:\MSDCHEM\1\METHODS\A9FOO_SL.M
Calibration Table Last Updated: Wed Jan 27 09:49:02 2016

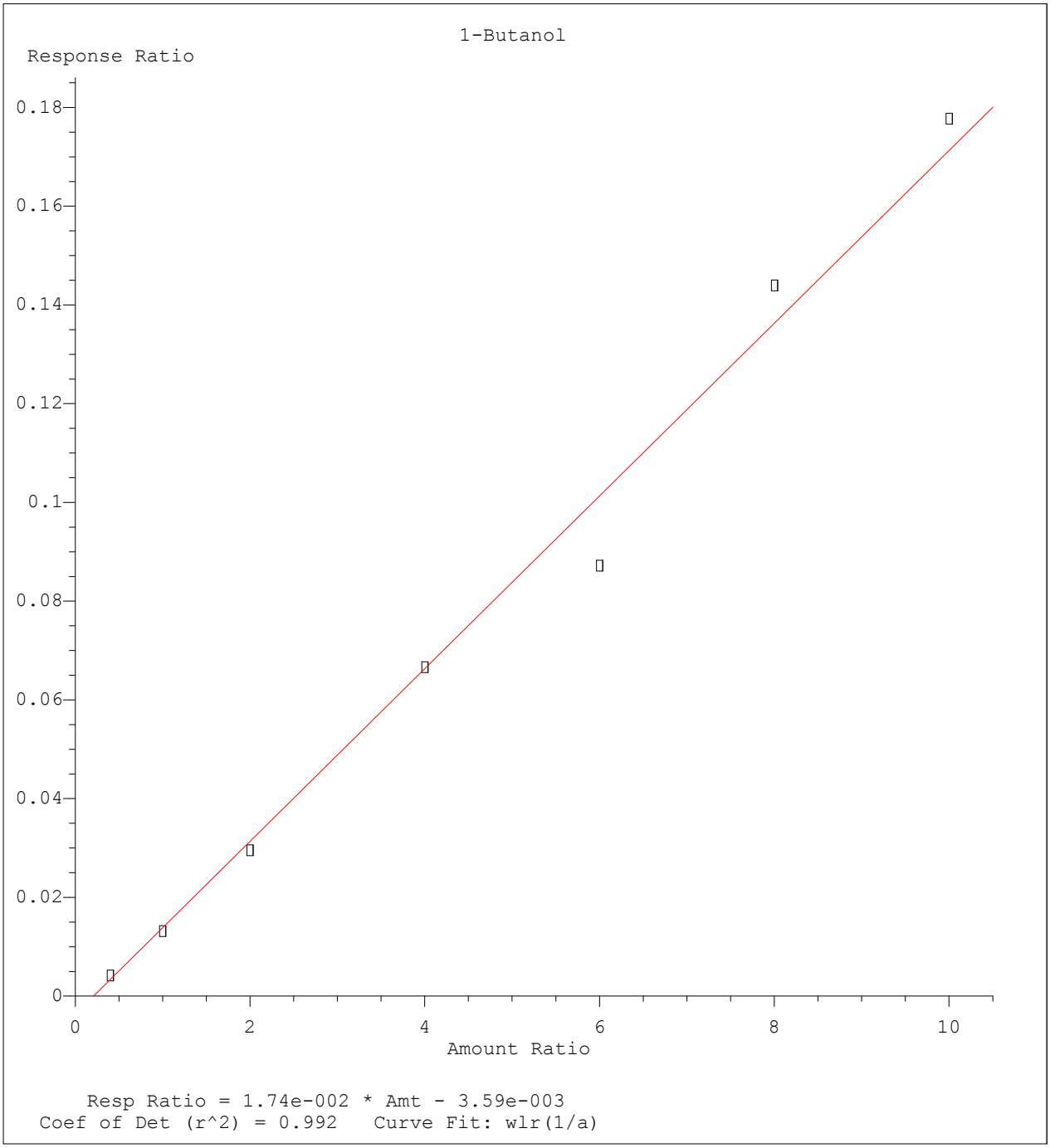

Method Name: C:\MSDCHEM\1\METHODS\A9FOO_SL.M
Calibration Table Last Updated: Wed Jan 27 09:49:02 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:09 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	394765	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	285754	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	159586	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	40054	101.2745	ug/kg#	100
3) 3-Chloro-1-propene	7.22	41	402890	103.3786	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	572568	129.1764	ug/kg	99
5) Ethyl Acetate	9.23	43	275962	106.0028	ug/kg	99
6) Methacrylonitrile	9.40	67	90289	107.1354	ug/kg	96
7) Isobutyl Alcohol	9.42	43	34031	188.7895	ug/kg	99
8) 1-Butanol	10.35	56	12038	97.7072	ug/kg	97
9) Methyl methacrylate	11.56	41	219363	110.3163	ug/kg	100
10) 2-Nitropropane	11.90	43	69288	107.2554	ug/kg	93
12) Cyclohexanone	16.01	55	14203	100.3934	ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972481.D A9FOO_SL.M Wed Jan 27 11:15:09 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

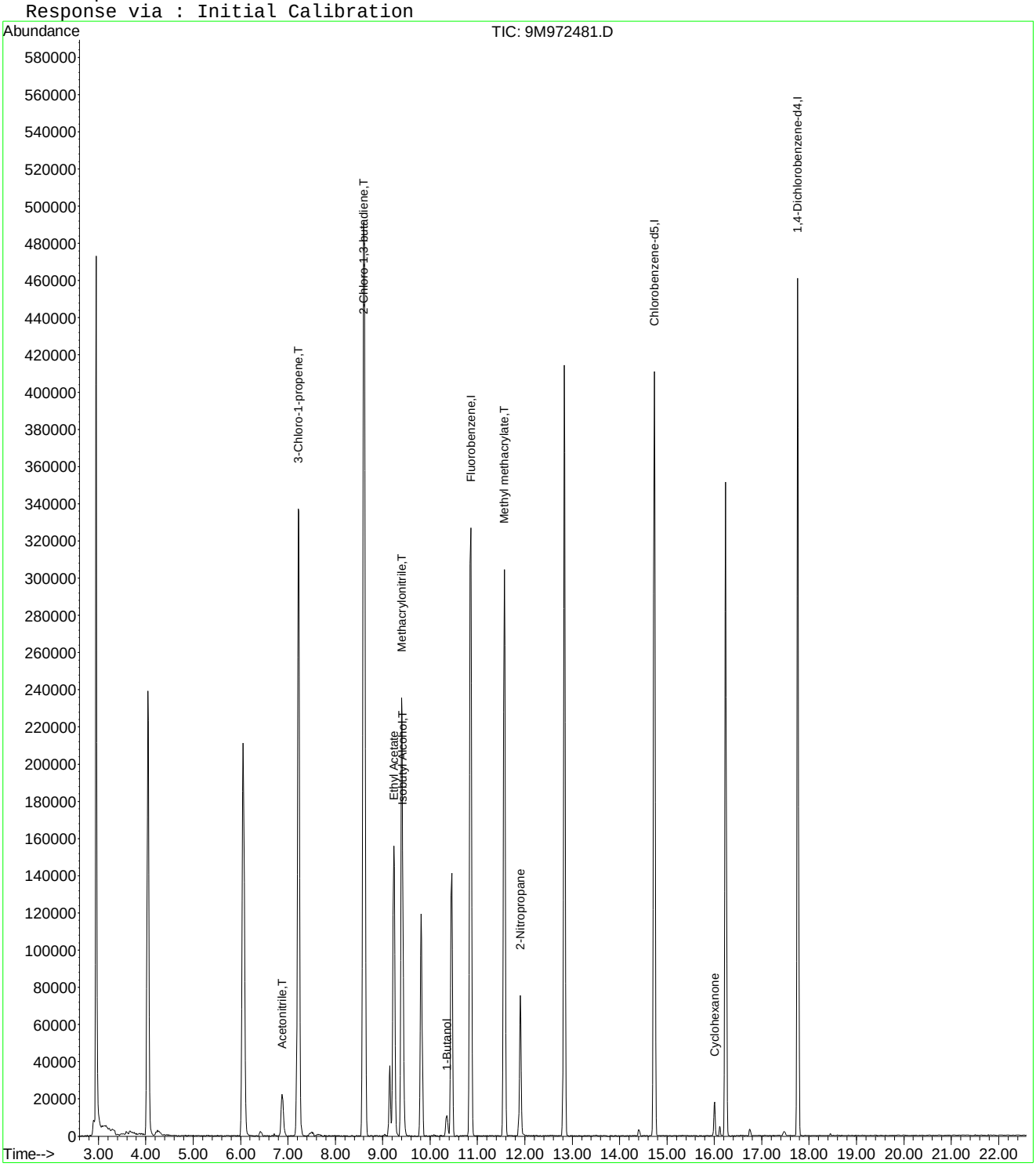

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	101.2745	-1.3	106	0.00
3	T	3-Chloro-1-propene	100.0000	103.3786	-3.4	98	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	129.1764	-29.2	122	0.00
5		Ethyl Acetate	100.0000	106.0028	-6.0	103	0.00
6	T	Methacrylonitrile	100.0000	107.1354	-7.1	103	0.00
7	T	Isobutyl Alcohol	200.0000	188.7895	5.6	101	0.00
8		1-Butanol	100.0000	97.7072	2.3	103	0.00
9	T	Methyl methacrylate	100.0000	110.3163	-10.3	105	0.00
10		2-Nitropropane	100.0000	107.2554	-7.3	106	0.00
11	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
12		Cyclohexanone	100.0000	100.3934	-0.4	101	0.00
13	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	99	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972481.D A9FOO_SL.M Wed Jan 27 11:32:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972896.D Vial: 3
Acq On : 25 Feb 2016 15:48 Operator: ADC
Sample : WG558732-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:54 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260B_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	517775	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.73	117	378926	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.76	152	183008	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	147955	52.7167 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.44%		
43) 1,2-Dichloroethane-d4	10.44	65	183779	52.1887 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.38%		
58) Toluene-d8	12.83	98	511451	53.3617 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.72%		
79) p-Bromofluorobenzene	16.23	95	191673	53.7871 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 107.58%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.28	85	204882	57.9763 ug/kg	100
3) Chloromethane	3.74	50	183152	54.0664 ug/kg	100
4) Vinyl Chloride	3.99	62	192536	56.7764 ug/kg	100
5) 1,3-Butadiene	4.04	54	170907	52.9740 ug/kg	100
6) Bromomethane	4.88	94	107911	48.9956 ug/kg	100
7) Chloroethane	5.04	64	85391	56.5213 ug/kg	100
8) Trichlorofluoromethane	5.53	101	265962	52.2923 ug/kg	100
9) Diethyl ether	6.04	59	249400	104.8955 ug/kg	100
10) Isoprene	6.09	67	156373	51.4980 ug/kg	100
11) Acrolein	6.30	56	24630	51.9520 ug/kg	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	135036	51.4825 ug/kg	100
13) Acetone	6.41	43	66195	50.6135 ug/kg	100
14) 1,1-Dichloroethene	6.61	61	244051	50.4389 ug/kg	100
15) Tert-Butyl Alcohol	6.76	59	110494	208.7036 ug/kg	98
16) Dimethyl Sulfide	6.88	62	109294	53.4455 ug/kg	100
17) Iodomethane	7.13	142	79749	55.1586 ug/kg	100
18) Methyl acetate	7.14	43	135648	51.5699 ug/kg	100
19) Methylene Chloride	7.40	84	135280	51.3362 ug/kg	100
20) Carbon Disulfide	7.45	76	381814	51.2249 ug/kg	100
21) Acrylonitrile	7.59	53	69697	53.5624 ug/kg	100
22) Methyl Tert Butyl Ether	7.61	73	407131	54.2460 ug/kg	100
23) trans-1,2-Dichloroethene	7.85	61	226890	52.6160 ug/kg	100
24) n-Hexane	7.91	57	219597	49.3729 ug/kg	100
25) Diisopropyl ether	8.26	45	1088740	105.3973 ug/kg	100
26) Vinyl Acetate	8.43	43	311838	52.9553 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	284391	52.5076 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	1023392	106.5502 ug/kg	100
29) 2-Butanone	9.03	43	86123	51.5803 ug/kg	100
30) Propionitrile	9.14	54	53253	104.2214 ug/kg	100
31) 2,2-Dichloropropane	9.24	77	215042	53.1943 ug/kg	100
32) cis-1,2-Dichloroethene	9.31	96	153722	54.3532 ug/kg	100
33) Chloroform	9.52	83	263571	52.9749 ug/kg	100
34) 1-Bromopropane	9.65	122	22164	51.3817 ug/kg	100
35) Bromochloromethane	9.75	130	102780	55.9453 ug/kg	100
36) Tetrahydrofuran	9.78	42	113791	105.7289 ug/kg	100
38) 1,1,1-Trichloroethane	10.04	97	243452	54.1074 ug/kg	100
39) Cyclohexane	10.08	56	247641	50.4821 ug/kg	100
40) 1,1-Dichloropropene	10.24	75	182199	51.4612 ug/kg	100
41) Tert-Amyl-Methyl ether	10.34	73	741165	106.1603 ug/kg	100
42) Carbon Tetrachloride	10.39	117	221306	53.0537 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972896.D Vial: 3
Acq On : 25 Feb 2016 15:48 Operator: ADC
Sample : WG558732-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:54 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260B_SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	237857	54.3500	ug/kg	100
46)	Benzene	10.60	78	503328	50.7793	ug/kg	100
47)	Trichloroethene	11.35	130	163959	52.2047	ug/kg	100
48)	Methylcyclohexane	11.44	83	204551	51.9284	ug/kg	100
49)	1,2-Dichloropropane	11.56	63	148045	54.3898	ug/kg	100
50)	1,4-Dioxane	11.88	88	7789	190.7454	ug/kg	100
51)	Bromodichloromethane	11.87	83	203922	53.1595	ug/kg	100
52)	Dibromomethane	11.96	174	95887	53.1673	ug/kg	100
53)	2-Chloroethyl Vinyl Ether	12.17	63	38515	51.1377	ug/kg	100
54)	4-Methyl-2-Pentanone	12.19	58	64999	54.4056	ug/kg	100
55)	cis-1,3-Dichloropropene	12.50	75	212797	53.2452	ug/kg	100
56)	Dimethyl Disulfide	12.77	94	219798	54.7267	ug/kg	100
59)	Toluene	12.92	91	563647	52.0613	ug/kg	100
60)	Ethyl Methacrylate	13.02	69	158958	52.9687	ug/kg	100
61)	trans-1,3-Dichloropropene	13.10	75	212386	54.4657	ug/kg	100
62)	1,1,2-Trichloroethane	13.33	97	122975	54.0706	ug/kg	100
63)	2-Hexanone	13.25	43	119176	52.4822	ug/kg	100
64)	1,3-Dichloropropane	13.63	76	201541	53.1810	ug/kg	100
65)	Tetrachloroethene	13.75	164	117066	50.4378	ug/kg	100
66)	Dibromochloromethane	14.01	129	168874	53.1294	ug/kg	100
67)	1,2-Dibromoethane	14.28	107	132755	52.6249	ug/kg	100
68)	1-Chlorohexane	14.35	91	168490	52.7733	ug/kg	100
69)	Chlorobenzene	14.77	112	400241	52.5998	ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.80	131	154536	54.0800	ug/kg	100
71)	Ethylbenzene	14.80	106	207031	52.8117	ug/kg	100
72)	m-,p-Xylene	14.89	106	497405	102.7415	ug/kg	100
73)	o-Xylene	15.45	106	247567	53.2858	ug/kg	100
74)	Styrene	15.49	104	425634	53.7983	ug/kg	100
75)	Bromoform	16.00	173	116015	55.5910	ug/kg	100
76)	Isopropylbenzene	15.88	105	658255	52.7764	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.10	83	147970	53.3007	ug/kg	100
80)	1,2,3-Trichloropropane	16.29	110	55711	52.9159	ug/kg	100
81)	trans-1,4-Dichloro-2-Buten	16.33	53	55525	52.3210	ug/kg	100
82)	n-Propylbenzene	16.39	91	751844	52.2641	ug/kg	100
83)	Bromobenzene	16.52	156	177299	52.2079	ug/kg	100
84)	1,3,5-Trimethylbenzene	16.58	105	568867	52.6809	ug/kg	100
85)	2-Chlorotoluene	16.66	91	484783	50.2437	ug/kg	100
86)	4-Chlorotoluene	16.70	91	481367	53.9615	ug/kg	100
87)	a-Methylstyrene	16.98	118	255765	51.9817	ug/kg	100
88)	tert-Butylbenzene	17.04	134	121669	53.7430	ug/kg	100
89)	1,2,4-Trimethylbenzene	17.09	105	580656	51.3463	ug/kg	100
90)	sec-Butylbenzene	17.30	105	726352	52.2266	ug/kg	100
91)	p-Isopropyltoluene	17.46	119	613096	52.2364	ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	337008	49.9319	ug/kg	100
93)	1,4-Dichlorobenzene	17.80	146	335195	49.6777	ug/kg	100
94)	n-Butylbenzene	17.99	91	563797	51.6647	ug/kg	100
95)	1,2-Dichlorobenzene	18.30	146	320108	51.1150	ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.30	157	42968	53.4468	ug/kg	100
97)	1,2,4-Trichlorobenzene	20.44	180	222592	50.0691	ug/kg	100
98)	Hexachlorobutadiene	20.59	225	117654	50.2053	ug/kg	100
99)	Naphthalene	20.81	128	602344	54.0184	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	222082	51.5034	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972896.D 8260SL.M Fri Feb 26 11:21:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972896.D Vial: 3
Acq On : 25 Feb 2016 15:48 Operator: ADC
Sample : WG558732-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

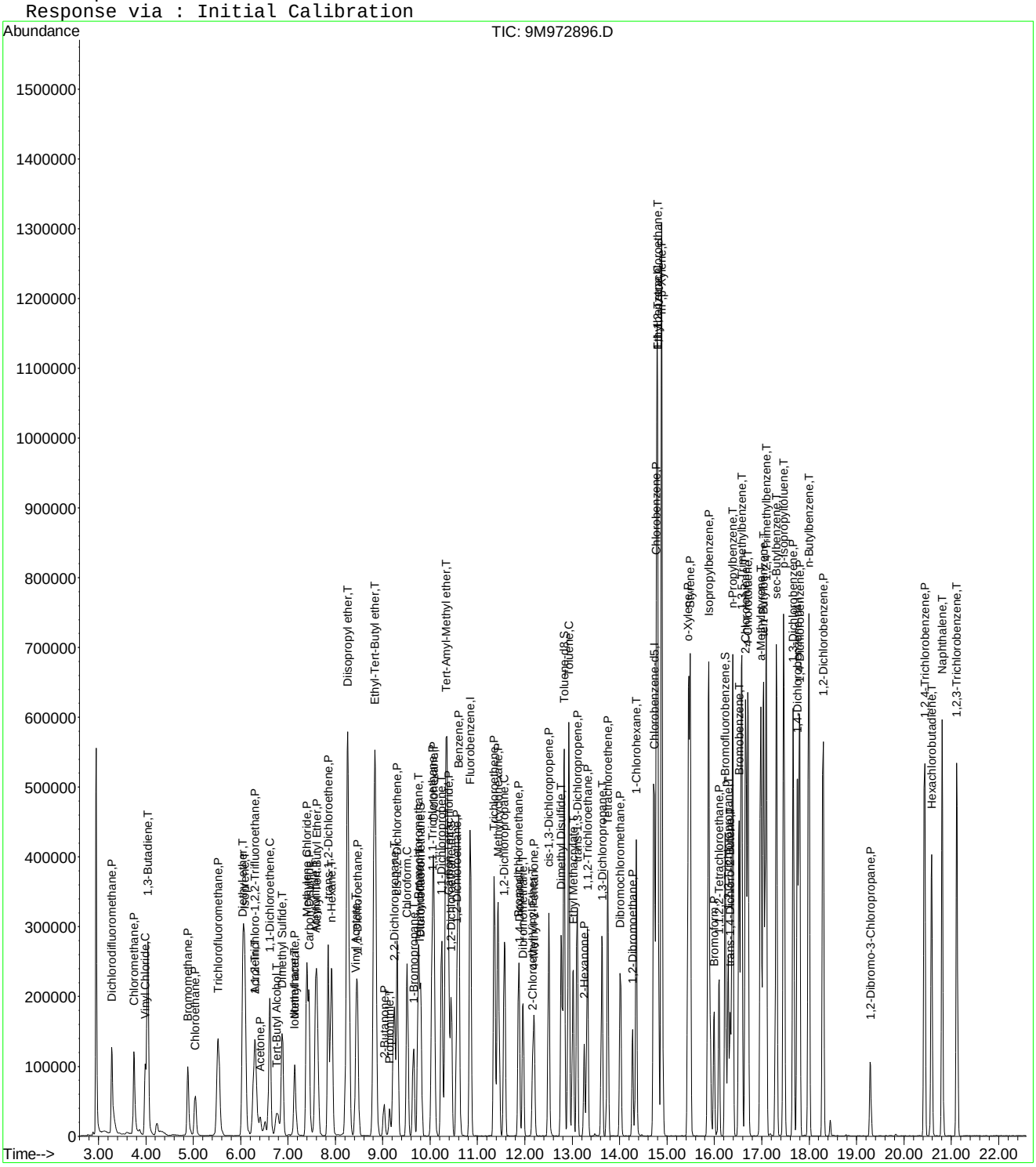

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:15 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	491503	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	353502	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	169028	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.83	98	923	0.1032 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.20%#	
79) p-Bromofluorobenzene	16.22	95	770	0.2339 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.46%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	1359	0.4051 ug/kg#	69
3) Chloromethane	3.75	50	2926	0.9099 ug/kg	95
4) Vinyl Chloride	3.98	62	1474	0.4579 ug/kg#	67
5) 1,3-Butadiene	4.03	54	1519	0.4960 ug/kg	82
6) Bromomethane	4.89	94	2071	0.9906 ug/kg	100
8) Trichlorofluoromethane	5.53	101	2609	0.5404 ug/kg#	51
10) Isoprene	6.08	67	1239	0.4298 ug/kg	70
13) Acetone	6.43	43	4251	5.5216 ug/kg#	75
14) 1,1-Dichloroethene	6.63	61	2149	0.4679 ug/kg#	66
17) Iodomethane	7.14	142	943	3.4505 ug/kg#	34
18) Methyl acetate	7.16	43	1334	0.5343 ug/kg#	45
19) Methylene Chloride	7.40	84	1287	0.5145 ug/kg	81
20) Carbon Disulfide	7.44	76	6762	0.9557 ug/kg#	76
23) trans-1,2-Dichloroethene	7.84	61	2196	0.5365 ug/kg	86
24) n-Hexane	7.92	57	2239	0.5303 ug/kg#	62
26) Vinyl Acetate	8.44	43	2494	0.4462 ug/kg#	78
27) 1,1-Dichloroethane	8.48	63	2396	0.4660 ug/kg#	63
29) 2-Butanone	9.02	43	778	0.4909 ug/kg#	58
31) 2,2-Dichloropropane	9.24	77	1877	0.4891 ug/kg#	42
32) cis-1,2-Dichloroethene	9.32	96	1178	0.4388 ug/kg	74
33) Chloroform	9.52	83	2007	0.4249 ug/kg	81
35) Bromochloromethane	9.74	130	828	0.4748 ug/kg#	68
36) Tetrahydrofuran	9.76	42	1603	1.5690 ug/kg#	57
38) 1,1,1-Trichloroethane	10.05	97	1773	0.4151 ug/kg	92
40) 1,1-Dichloropropene	10.25	75	1521	0.4526 ug/kg#	38
42) Carbon Tetrachloride	10.40	117	1765	0.4457 ug/kg#	85
45) 1,2-Dichloroethane	10.57	62	1885	0.4537 ug/kg#	68
46) Benzene	10.61	78	5607	0.5959 ug/kg#	83
47) Trichloroethene	11.36	130	1808	0.6064 ug/kg	88
48) Methylcyclohexane	11.44	83	1930	0.5161 ug/kg	96
55) cis-1,3-Dichloropropene	12.51	75	1714	0.4518 ug/kg#	51
59) Toluene	12.93	91	5550	0.5495 ug/kg	88
61) trans-1,3-Dichloropropene	13.10	75	1920	0.5278 ug/kg#	51
63) 2-Hexanone	13.25	43	877	0.4140 ug/kg#	63
64) 1,3-Dichloropropane	13.63	76	1615	0.4568 ug/kg	91
65) Tetrachloroethene	13.75	164	1154	0.5330 ug/kg#	74
67) 1,2-Dibromoethane	14.27	107	988	0.4198 ug/kg	87
68) 1-Chlorohexane	14.35	91	1436	0.4821 ug/kg	83
69) Chlorobenzene	14.78	112	4578	0.6449 ug/kg	87
70) 1,1,1,2-Tetrachloroethane	14.81	131	1078	0.4044 ug/kg	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:15 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
71)	Ethylbenzene	14.80	106	1823	0.4985 ug/kg	68
72)	m-,p-Xylene	14.88	106	4752	1.0521 ug/kg	95
73)	o-Xylene	15.44	106	2166	0.4997 ug/kg	94
74)	Styrene	15.49	104	3544	0.4802 ug/kg	91
76)	Isopropylbenzene	15.87	105	6349	0.5456 ug/kg	97
78)	1,1,2,2-Tetrachloroethane	16.09	83	1326	0.5171 ug/kg#	89
82)	n-Propylbenzene	16.38	91	7679	0.5780 ug/kg	98
83)	Bromobenzene	16.52	156	1798	0.5732 ug/kg	88
84)	1,3,5-Trimethylbenzene	16.57	105	4554	0.4566 ug/kg	92
85)	2-Chlorotoluene	16.66	91	5237	0.5877 ug/kg	84
86)	4-Chlorotoluene	16.71	91	5645	0.6851 ug/kg	93
87)	a-Methylstyrene	16.97	118	2091	0.4601 ug/kg	93
89)	1,2,4-Trimethylbenzene	17.09	105	6291	0.6023 ug/kg	84
90)	sec-Butylbenzene	17.31	105	7013	0.5460 ug/kg	93
91)	p-Isopropyltoluene	17.47	119	5681	0.5241 ug/kg	95
92)	1,3-Dichlorobenzene	17.67	146	4446	0.7132 ug/kg	91
93)	1,4-Dichlorobenzene	17.79	146	4603	0.7386 ug/kg#	73
94)	n-Butylbenzene	17.99	91	6750	0.6697 ug/kg#	90
95)	1,2-Dichlorobenzene	18.29	146	3889	0.6724 ug/kg	82
97)	1,2,4-Trichlorobenzene	20.43	180	3506	0.8539 ug/kg	94
98)	Hexachlorobutadiene	20.58	225	1493	0.6898 ug/kg#	70
99)	Naphthalene	20.81	128	10277	0.9979 ug/kg	93
100)	1,2,3-Trichlorobenzene	21.12	180	3961	0.9946 ug/kg	80

(#) = qualifier out of range (m) = manual integration
9M972898.D 8260SL.M Fri Feb 26 11:11:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration

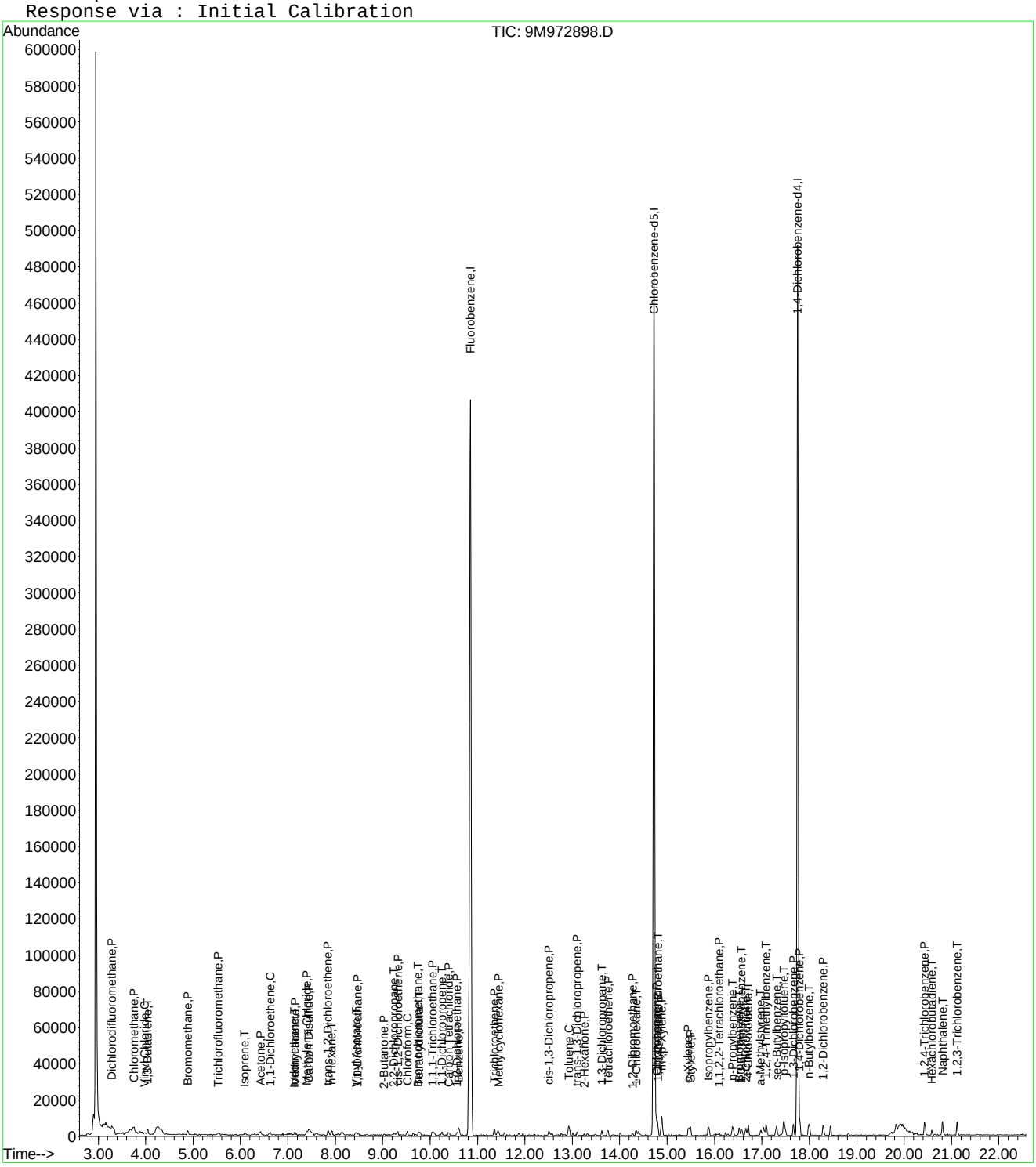

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	0.4051	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.9099	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.4579	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	0.4960	0.0	0	0.00
6	P	Bromomethane	-1.0000	0.9906	0.0	100	0.00
7	P	Chloroethane	-1.0000	0.2845	0.0	100	0.01
8	P	Trichlorofluoromethane	-1.0000	0.5404	0.0	100	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.04#
10	T	Isoprene	-1.0000	0.4298	0.0	0	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.30#
12	P	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.0779	0.0	100	0.00
13	P	Acetone	-1.0000	5.5216	0.0	0	0.02
14	C	1,1-Dichloroethene	-1.0000	0.4679	0.0	100	0.01
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.76#
16	T	Dimethyl Sulfide	-1.0000	0.1242	0.0	0	0.01
17	T	Iodomethane	-1.0000	3.4505	0.0	0	0.00
18	P	Methyl acetate	-1.0000	0.5343	0.0	0	0.02
19	P	Methylene Chloride	-1.0000	0.5145	0.0	100	0.00
20	P	Carbon Disulfide	-1.0000	0.9557	0.0	0	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.59#
22	P	Methyl Tert Butyl Ether	-1.0000	0.3878	0.0	100	0.00
23	P	trans-1,2-Dichloroethene	-1.0000	0.5365	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.5303	0.0	0	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.26#
26	T	Vinyl Acetate	-1.0000	0.4462	0.0	100	0.01
27	P	1,1-Dichloroethane	-1.0000	0.4660	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.83#
29	P	2-Butanone	-1.0000	0.4909	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.14#
31	T	2,2-Dichloropropane	-1.0000	0.4891	0.0	100	0.00
32	P	cis-1,2-Dichloroethene	-1.0000	0.4388	0.0	100	0.01
33	C	Chloroform	-1.0000	0.4249	0.0	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.65#
35	T	Bromochloromethane	-1.0000	0.4748	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	1.5690	0.0	100	-0.02
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	-1.0000	0.4151	0.0	100	0.00
39	P	Cyclohexane	-1.0000	0.3314	0.0	0	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4526	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.34#
42	P	Carbon Tetrachloride	-1.0000	0.4457	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	-1.0000	0.4537	0.0	100	0.00
46	P	Benzene	0.5000	0.5959	-19.2	100	0.00
47	P	Trichloroethene	-1.0000	0.6064	0.0	100	0.00
48	P	Methylcyclohexane	-1.0000	0.5161	0.0	0	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2930	0.0	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.88#
51	P	Bromodichloromethane	-1.0000	0.3238	0.0	100	0.00
52	T	Dibromomethane	-1.0000	0.1630	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.0000	0.0	0	-12.16#
54	P	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.19#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	-1.0000	0.4518	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2529	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.1032	0.0	100	0.00
59	C	Toluene	0.5000	0.5495	-9.9	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2340	0.0	0	0.00
61	P	trans-1,3-Dichloropropene	-1.0000	0.5278	0.0	100	0.00
62	P	1,1,2-Trichloroethane	-1.0000	0.3964	0.0	100	0.00
63	P	2-Hexanone	-1.0000	0.4140	0.0	100	0.00
64	T	1,3-Dichloropropane	-1.0000	0.4568	0.0	100	0.00
65	P	Tetrachloroethene	-1.0000	0.5330	0.0	100	0.00
66	P	Dibromochloromethane	-1.0000	0.3541	0.0	100	0.00
67	P	1,2-Dibromoethane	-1.0000	0.4198	0.0	100	0.00
68	T	1-Chlorohexane	-1.0000	0.4821	0.0	0	0.00
69	P	Chlorobenzene	-1.0000	0.6449	0.0	100	0.00
70	T	1,1,1,2-Tetrachloroethane	-1.0000	0.4044	0.0	100	0.00
71	C	Ethylbenzene	0.5000	0.4985	0.3	100	0.00
72	P	m-,p-Xylene	1.0000	1.0521	-5.2	100	0.00
73	P	o-Xylene	0.5000	0.4997	0.1	100	0.00
74	P	Styrene	-1.0000	0.4802	0.0	100	0.00
75	P	Bromoform	-1.0000	0.3955	0.0	100	0.00
76	P	Isopropylbenzene	-1.0000	0.5456	0.0	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	-1.0000	0.5171	0.0	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.2339	0.0	100	0.00
80	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.29#
81	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.33#
82	T	n-Propylbenzene	-1.0000	0.5780	0.0	100	0.00
83	T	Bromobenzene	-1.0000	0.5732	0.0	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	0.4566	0.0	100	0.00
85	T	2-Chlorotoluene	-1.0000	0.5877	0.0	100	0.00
86	T	4-Chlorotoluene	-1.0000	0.6851	0.0	100	0.00
87	T	a-Methylstyrene	-1.0000	0.4601	0.0	0	0.00
88	T	tert-Butylbenzene	-1.0000	0.2860	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	-1.0000	0.6023	0.0	100	0.00
90	T	sec-Butylbenzene	-1.0000	0.5460	0.0	100	0.00
91	T	p-Isopropyltoluene	-1.0000	0.5241	0.0	100	0.00
92	P	1,3-Dichlorobenzene	-1.0000	0.7132	0.0	100	0.00
93	P	1,4-Dichlorobenzene	-1.0000	0.7386	0.0	100	0.00
94	T	n-Butylbenzene	-1.0000	0.6697	0.0	100	0.00
95	P	1,2-Dichlorobenzene	-1.0000	0.6724	0.0	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.30#
97	P	1,2,4-Trichlorobenzene	-1.0000	0.8539	0.0	100	0.00
98	T	Hexachlorobutadiene	-1.0000	0.6898	0.0	100	0.00
99	T	Naphthalene	-1.0000	0.9979	0.0	100	0.00
100	T	1,2,3-Trichlorobenzene	-1.0000	0.9946	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	536651	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	387839	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	177519	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.82	98	959	0.0978 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.20%#	
79) p-Bromofluorobenzene	16.22	95	467	0.1351 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	3486	0.9518 ug/kg#	85
3) Chloromethane	3.74	50	4175	1.1891 ug/kg	88
4) Vinyl Chloride	3.98	62	2686	0.7642 ug/kg	80
5) 1,3-Butadiene	4.03	54	3056	0.9139 ug/kg	91
6) Bromomethane	4.89	94	2537	1.1114 ug/kg	94
7) Chloroethane	5.05	64	1264	0.8072 ug/kg#	45
8) Trichlorofluoromethane	5.53	101	5567	1.0561 ug/kg#	93
9) Diethyl ether	6.05	59	11529	4.6784 ug/kg	97
10) Isoprene	6.08	67	2965	0.9421 ug/kg	97
11) Acrolein	6.29	56	1087	2.2122 ug/kg#	35
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	1939	0.7132 ug/kg	88
13) Acetone	6.41	43	5231	5.8863 ug/kg	95
14) 1,1-Dichloroethene	6.62	61	4981	0.9932 ug/kg	92
15) Tert-Butyl Alcohol	6.77	59	5682	10.3548 ug/kg#	63
16) Dimethyl Sulfide	6.88	62	1614	0.7615 ug/kg	91
17) Iodomethane	7.15	142	941	3.3944 ug/kg#	66
18) Methyl acetate	7.16	43	2553	0.9364 ug/kg#	65
19) Methylene Chloride	7.40	84	2963	1.0849 ug/kg	92
20) Carbon Disulfide	7.45	76	9749	1.2619 ug/kg	95
21) Acrylonitrile	7.58	53	3140	2.3282 ug/kg	85
22) Methyl Tert Butyl Ether	7.61	73	7179	0.9229 ug/kg	83
23) trans-1,2-Dichloroethene	7.85	61	4296	0.9612 ug/kg	95
24) n-Hexane	7.93	57	4481	0.9720 ug/kg	95
25) Diisopropyl ether	8.26	45	50344	4.7022 ug/kg	98
26) Vinyl Acetate	8.43	43	5247	0.8597 ug/kg#	90
27) 1,1-Dichloroethane	8.48	63	5885	1.0483 ug/kg#	85
28) Ethyl-Tert-Butyl ether	8.83	59	46767	4.6979 ug/kg	99
29) 2-Butanone	9.03	43	1776	1.0263 ug/kg#	58
30) Propionitrile	9.14	54	2256	4.2599 ug/kg#	60
31) 2,2-Dichloropropane	9.24	77	4402	1.0506 ug/kg#	71
32) cis-1,2-Dichloroethene	9.31	96	2650	0.9040 ug/kg	94
33) Chloroform	9.51	83	5072	0.9836 ug/kg	96
35) Bromochloromethane	9.75	130	1408	0.7394 ug/kg	86
36) Tetrahydrofuran	9.77	42	6699	6.0054 ug/kg	95
38) 1,1,1-Trichloroethane	10.05	97	4567	0.9793 ug/kg	91
39) Cyclohexane	10.08	56	4992	0.9818 ug/kg#	85
40) 1,1-Dichloropropene	10.24	75	3785	1.0315 ug/kg	90
41) Tert-Amyl-Methyl ether	10.34	73	33850	4.6779 ug/kg	95
42) Carbon Tetrachloride	10.40	117	4297	0.9939 ug/kg#	90
45) 1,2-Dichloroethane	10.55	62	3923	0.8649 ug/kg	93

(#) = qualifier out of range (m) = manual integration
9M972899.D 8260SL.M Fri Feb 26 11:12:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
46)	Benzene	10.61	78	9968	0.9703 ug/kg	96
47)	Trichloroethene	11.36	130	3259	1.0012 ug/kg	99
48)	Methylcyclohexane	11.43	83	3354	0.8215 ug/kg	76
49)	1,2-Dichloropropane	11.57	63	2469	0.8752 ug/kg	94
51)	Bromodichloromethane	11.87	83	3657	0.9198 ug/kg#	94
52)	Dibromomethane	11.96	174	1621	0.8672 ug/kg	93
53)	2-Chloroethyl Vinyl Ether	12.16	63	210	3.0851 ug/kg#	47
54)	4-Methyl-2-Pentanone	12.20	58	738	0.5960 ug/kg#	40
55)	cis-1,3-Dichloropropene	12.51	75	3714	0.8966 ug/kg	86
56)	Dimethyl Disulfide	12.77	94	3075	0.7387 ug/kg	83
59)	Toluene	12.93	91	10894	0.9831 ug/kg	97
60)	Ethyl Methacrylate	13.01	69	1966	0.6401 ug/kg#	53
61)	trans-1,3-Dichloropropene	13.11	75	3837	0.9614 ug/kg#	79
62)	1,1,2-Trichloroethane	13.32	97	2148	0.9227 ug/kg	94
63)	2-Hexanone	13.26	43	1796	0.7727 ug/kg#	80
64)	1,3-Dichloropropane	13.63	76	3616	0.9322 ug/kg	99
65)	Tetrachloroethene	13.75	164	2587	1.0890 ug/kg	79
66)	Dibromochloromethane	14.02	129	3318	1.0199 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	2336	0.9047 ug/kg	97
68)	1-Chlorohexane	14.34	91	3075	0.9410 ug/kg	85
69)	Chlorobenzene	14.78	112	7982	1.0249 ug/kg	88
70)	1,1,1,2-Tetrachloroethane	14.81	131	2589	0.8852 ug/kg	86
71)	Ethylbenzene	14.80	106	4007	0.9987 ug/kg	89
72)	m-,p-Xylene	14.88	106	9607	1.9388 ug/kg	98
73)	o-Xylene	15.45	106	4376	0.9202 ug/kg	99
74)	Styrene	15.49	104	7432	0.9178 ug/kg	92
75)	Bromoform	16.00	173	1759	0.8235 ug/kg#	79
76)	Isopropylbenzene	15.87	105	11937	0.9351 ug/kg	98
78)	1,1,2,2-Tetrachloroethane	16.09	83	2186	0.8118 ug/kg#	83
80)	1,2,3-Trichloropropane	16.28	110	875	0.8568 ug/kg#	81
81)	trans-1,4-Dichloro-2-Buten	16.34	53	831	0.8073 ug/kg#	74
82)	n-Propylbenzene	16.38	91	14156	1.0145 ug/kg	99
83)	Bromobenzene	16.53	156	2996	0.9095 ug/kg#	39
84)	1,3,5-Trimethylbenzene	16.57	105	11008	1.0509 ug/kg	88
85)	2-Chlorotoluene	16.65	91	10606	1.1332 ug/kg	84
86)	4-Chlorotoluene	16.71	91	9101	1.0518 ug/kg	95
87)	a-Methylstyrene	16.98	118	4078	0.8544 ug/kg	85
88)	tert-Butylbenzene	17.03	134	2095	0.9540 ug/kg	74
89)	1,2,4-Trimethylbenzene	17.09	105	12124	1.1053 ug/kg	83
90)	sec-Butylbenzene	17.31	105	13922	1.0320 ug/kg	100
91)	p-Isopropyltoluene	17.47	119	10153	0.8918 ug/kg	98
92)	1,3-Dichlorobenzene	17.67	146	7444	1.1370 ug/kg	90
93)	1,4-Dichlorobenzene	17.79	146	7580	1.1581 ug/kg	92
94)	n-Butylbenzene	17.99	91	11112	1.0498 ug/kg	91
95)	1,2-Dichlorobenzene	18.29	146	6415	1.0560 ug/kg	97
97)	1,2,4-Trichlorobenzene	20.43	180	4869	1.1291 ug/kg	98
98)	Hexachlorobutadiene	20.59	225	2032	0.8939 ug/kg	87
99)	Naphthalene	20.81	128	11710	1.0826 ug/kg	92
100)	1,2,3-Trichlorobenzene	21.12	180	4698	1.1232 ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972899.D 8260SL.M Fri Feb 26 11:12:33 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration

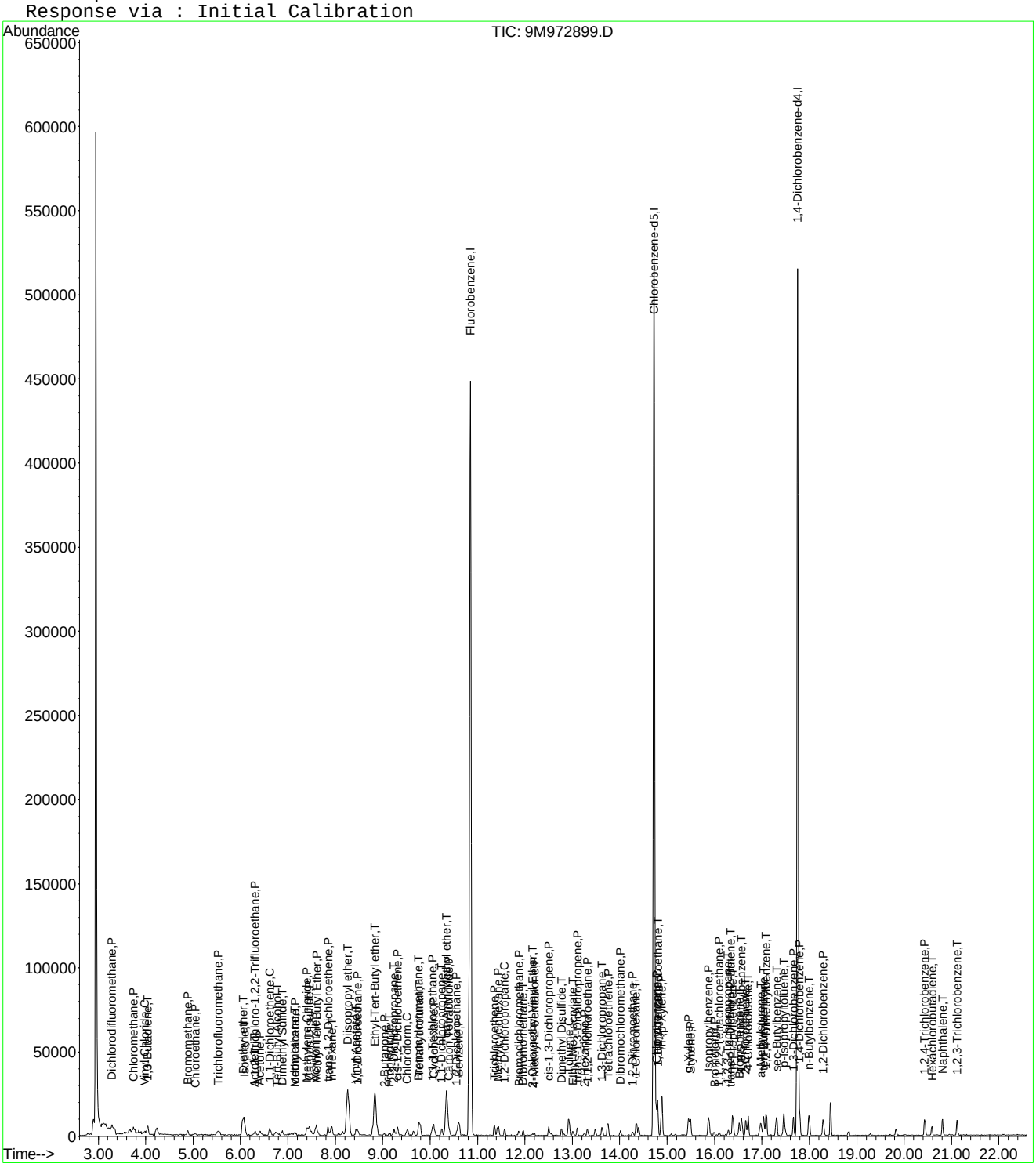

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	0.9518	0.0	100	0.00
3	P	Chloromethane	-1.0000	1.1891	0.0	100	0.00
4	C	Vinyl Chloride	1.0000	0.7642	23.6#	100	0.00
5	T	1,3-Butadiene	-1.0000	0.9139	0.0	0	0.00
6	P	Bromomethane	1.0000	1.1114	-11.1	100	0.00
7	P	Chloroethane	-1.0000	0.8072	0.0	100	0.00
8	P	Trichlorofluoromethane	1.0000	1.0561	-5.6	100	0.00
9	T	Diethyl ether	5.0000	4.6784	6.4	100	0.00
10	T	Isoprene	-1.0000	0.9421	0.0	0	0.00
11	T	Acrolein	2.5000	2.2122	11.5	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.7132	0.0	100	0.00
13	P	Acetone	-1.0000	5.8863	0.0	0	0.00
14	C	1,1-Dichloroethene	1.0000	0.9932	0.7	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	10.3548	0.0	100	0.00
16	T	Dimethyl Sulfide	1.0000	0.7615	23.9	100	0.00
17	T	Iodomethane	-1.0000	3.3944	0.0	0	0.01
18	P	Methyl acetate	-1.0000	0.9364	0.0	0	0.02
19	P	Methylene Chloride	-1.0000	1.0849	0.0	100	0.00
20	P	Carbon Disulfide	-1.0000	1.2619	0.0	0	0.00
21	T	Acrylonitrile	2.5000	2.3282	6.9	100	0.00
22	P	Methyl Tert Butyl Ether	1.0000	0.9229	7.7	100	0.00
23	P	trans-1,2-Dichloroethene	1.0000	0.9612	3.9	100	0.00
24	T	n-Hexane	-1.0000	0.9720	0.0	0	0.01
25	T	Diisopropyl ether	5.0000	4.7022	6.0	100	0.00
26	T	Vinyl Acetate	-1.0000	0.8597	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0483	-4.8	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.6979	6.0	100	0.00
29	P	2-Butanone	-1.0000	1.0263	0.0	100	0.00
30	T	Propionitrile	5.0000	4.2599	14.8	100	0.00
31	T	2,2-Dichloropropane	-1.0000	1.0506	0.0	100	0.00
32	P	cis-1,2-Dichloroethene	1.0000	0.9040	9.6	100	0.00
33	C	Chloroform	1.0000	0.9836	1.6	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.65#
35	T	Bromochloromethane	1.0000	0.7395	26.1#	100	0.00
36	T	Tetrahydrofuran	-1.0000	6.0054	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	1.0000	0.9793	2.1	100	0.00
39	P	Cyclohexane	1.0000	0.9818	1.8	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0315	-3.1	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	4.6780	6.4	100	0.00
42	P	Carbon Tetrachloride	-1.0000	0.9939	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	1.0000	0.8649	13.5	100	0.00
46	P	Benzene	1.0000	0.9703	3.0	100	0.00
47	P	Trichloroethene	1.0000	1.0012	-0.1	100	0.00
48	P	Methylcyclohexane	1.0000	0.8215	17.8	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.8752	12.5	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.88#
51	P	Bromodichloromethane	-1.0000	0.9198	0.0	100	0.00
52	T	Dibromomethane	1.0000	0.8672	13.3	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	3.0851	0.0	0	0.00
54	P	4-Methyl-2-Pentanone	-1.0000	0.5960	0.0	100	0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	-1.0000	0.8966	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.7387	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0978	0.0	100	0.00
59	C	Toluene	1.0000	0.9831	1.7	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.6401	0.0	0	0.00
61	P	trans-1,3-Dichloropropene	-1.0000	0.9614	0.0	100	0.00
62	P	1,1,2-Trichloroethane	1.0000	0.9227	7.7	100	0.00
63	P	2-Hexanone	-1.0000	0.7727	0.0	100	0.00
64	T	1,3-Dichloropropane	1.0000	0.9322	6.8	100	0.00
65	P	Tetrachloroethene	1.0000	1.0890	-8.9	100	0.00
66	P	Dibromochloromethane	-1.0000	1.0199	0.0	100	0.00
67	P	1,2-Dibromoethane	-1.0000	0.9047	0.0	100	0.00
68	T	1-Chlorohexane	1.0000	0.9410	5.9	100	0.00
69	P	Chlorobenzene	1.0000	1.0249	-2.5	100	0.00
70	T	1,1,1,2-Tetrachloroethane	-1.0000	0.8852	0.0	100	0.00
71	C	Ethylbenzene	1.0000	0.9987	0.1	100	0.00
72	P	m-,p-Xylene	2.0000	1.9388	3.1	100	0.00
73	P	o-Xylene	1.0000	0.9202	8.0	100	0.00
74	P	Styrene	1.0000	0.9178	8.2	100	0.00
75	P	Bromoform	-1.0000	0.8235	0.0	100	0.00
76	P	Isopropylbenzene	1.0000	0.9351	6.5	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	1.0000	0.8118	18.8	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.1351	0.0	100	0.00
80	T	1,2,3-Trichloropropane	1.0000	0.8568	14.3	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.8073	0.0	0	0.00
82	T	n-Propylbenzene	1.0000	1.0145	-1.4	100	0.00
83	T	Bromobenzene	1.0000	0.9095	9.1	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	1.0509	0.0	100	0.00
85	T	2-Chlorotoluene	-1.0000	1.1332	0.0	100	0.00
86	T	4-Chlorotoluene	1.0000	1.0518	-5.2	100	0.00
87	T	a-Methylstyrene	-1.0000	0.8544	0.0	0	0.00
88	T	tert-Butylbenzene	-1.0000	0.9540	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	1.0000	1.1053	-10.5	100	0.00
90	T	sec-Butylbenzene	1.0000	1.0320	-3.2	100	0.00
91	T	p-Isopropyltoluene	-1.0000	0.8918	0.0	100	0.00
92	P	1,3-Dichlorobenzene	1.0000	1.1370	-13.7	100	0.00
93	P	1,4-Dichlorobenzene	1.0000	1.1581	-15.8	100	0.00
94	T	n-Butylbenzene	1.0000	1.0498	-5.0	100	0.00
95	P	1,2-Dichlorobenzene	1.0000	1.0560	-5.6	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	0.3514	0.0	100	0.00
97	P	1,2,4-Trichlorobenzene	1.0000	1.1291	-12.9	100	0.00
98	T	Hexachlorobutadiene	1.0000	0.8939	10.6	100	0.00
99	T	Naphthalene	-1.0000	1.0826	0.0	100	0.00
100	T	1,2,3-Trichlorobenzene	1.0000	1.1232	-12.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1
9M972899.D 8260SL.M Fri Feb 26 11:12:31 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	472115	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	342668	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	156993	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.83	98	772	0.0891 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.18%#	
79) p-Bromofluorobenzene	16.23	95	570	0.1865 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.38%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.29	85	6383	1.9809 ug/kg#	78
3) Chloromethane	3.74	50	7027	2.2750 ug/kg	100
4) Vinyl Chloride	4.00	62	6001	1.9408 ug/kg	97
5) 1,3-Butadiene	4.04	54	6545	2.2249 ug/kg	95
6) Bromomethane	4.90	94	5050	2.5146 ug/kg	81
7) Chloroethane	5.04	64	2391	1.7357 ug/kg#	70
8) Trichlorofluoromethane	5.54	101	9777	2.1082 ug/kg#	94
9) Diethyl ether	6.06	59	58156	26.8255 ug/kg	97
10) Isoprene	6.09	67	5698	2.0580 ug/kg	89
11) Acrolein	6.30	56	5427	12.5543 ug/kg	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	4756	1.9886 ug/kg	93
13) Acetone	6.40	43	6167	6.9886 ug/kg	93
14) 1,1-Dichloroethene	6.62	61	9652	2.1877 ug/kg	91
15) Tert-Butyl Alcohol	6.75	59	26757	55.4271 ug/kg#	91
16) Dimethyl Sulfide	6.89	62	3840	2.0594 ug/kg	97
17) Iodomethane	7.14	142	1541	3.9079 ug/kg#	56
18) Methyl acetate	7.15	43	5334	2.2240 ug/kg#	69
19) Methylene Chloride	7.40	84	5116	2.1292 ug/kg	98
20) Carbon Disulfide	7.44	76	15010	2.2085 ug/kg	94
21) Acrylonitrile	7.59	53	14961	12.6096 ug/kg	100
22) Methyl Tert Butyl Ether	7.61	73	13630	1.9917 ug/kg	93
23) trans-1,2-Dichloroethene	7.85	61	7964	2.0255 ug/kg	100
24) n-Hexane	7.92	57	8619	2.1253 ug/kg	100
25) Diisopropyl ether	8.26	45	252190	26.7748 ug/kg	99
26) Vinyl Acetate	8.43	43	11207	2.0872 ug/kg	95
27) 1,1-Dichloroethane	8.47	63	10529	2.1320 ug/kg#	93
28) Ethyl-Tert-Butyl ether	8.83	59	234163	26.7377 ug/kg	99
29) 2-Butanone	9.03	43	3346	2.1978 ug/kg#	76
30) Propionitrile	9.14	54	12899	27.6861 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	8085	2.1934 ug/kg	88
32) cis-1,2-Dichloroethene	9.32	96	4861	1.8850 ug/kg	98
33) Chloroform	9.53	83	10005	2.2054 ug/kg	95
34) 1-Bromopropane	9.64	122	209	1.5465 ug/kg	96
35) Bromochloromethane	9.75	130	3273	1.9539 ug/kg	81
36) Tetrahydrofuran	9.78	42	26192	26.6900 ug/kg	94
38) 1,1,1-Trichloroethane	10.04	97	8229	2.0058 ug/kg	97
39) Cyclohexane	10.09	56	9354	2.0912 ug/kg	96
40) 1,1-Dichloropropene	10.23	75	6787	2.1024 ug/kg	88
41) Tert-Amyl-Methyl ether	10.34	73	167275	26.2768 ug/kg	98
42) Carbon Tetrachloride	10.39	117	7920	2.0823 ug/kg#	95

(#) = qualifier out of range (m) = manual integration
9M972900.D 8260SL.M Fri Feb 26 11:13:39 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	8488	2.1271 ug/kg	89
46)	Benzene	10.60	78	19454	2.1525 ug/kg	96
47)	Trichloroethene	11.35	130	6073	2.1207 ug/kg	96
48)	Methylcyclohexane	11.44	83	7523	2.0945 ug/kg	95
49)	1,2-Dichloropropane	11.58	63	5118	2.0621 ug/kg	93
50)	1,4-Dioxane	11.88	88	1938	52.0499 ug/kg	84
51)	Bromodichloromethane	11.87	83	7148	2.0436 ug/kg#	95
52)	Dibromomethane	11.97	174	3572	2.1721 ug/kg	91
53)	2-Chloroethyl Vinyl Ether	12.17	63	474	3.4830 ug/kg#	47
54)	4-Methyl-2-Pentanone	12.19	58	2111	1.9378 ug/kg#	64
55)	cis-1,3-Dichloropropene	12.50	75	7048	1.9341 ug/kg	92
56)	Dimethyl Disulfide	12.77	94	5832	1.5925 ug/kg	95
59)	Toluene	12.93	91	20786	2.1230 ug/kg	97
60)	Ethyl Methacrylate	13.01	69	4184	1.5417 ug/kg	98
61)	trans-1,3-Dichloropropene	13.11	75	6895	1.9553 ug/kg	92
62)	1,1,2-Trichloroethane	13.33	97	4055	1.9716 ug/kg	86
63)	2-Hexanone	13.25	43	3773	1.8373 ug/kg#	82
64)	1,3-Dichloropropane	13.62	76	7643	2.2302 ug/kg	97
65)	Tetrachloroethene	13.75	164	4327	2.0615 ug/kg	94
66)	Dibromochloromethane	14.01	129	6170	2.1465 ug/kg	87
67)	1,2-Dibromoethane	14.28	107	4656	2.0410 ug/kg	88
68)	1-Chlorohexane	14.35	91	5610	1.9430 ug/kg	97
69)	Chlorobenzene	14.77	112	14885	2.1632 ug/kg	95
70)	1,1,1,2-Tetrachloroethane	14.80	131	5145	1.9910 ug/kg	86
71)	Ethylbenzene	14.79	106	7287	2.0555 ug/kg	99
72)	m-,p-Xylene	14.89	106	19133	4.3702 ug/kg	93
73)	o-Xylene	15.45	106	8413	2.0024 ug/kg	94
74)	Styrene	15.49	104	14533	2.0313 ug/kg	97
75)	Bromoform	15.99	173	3135	1.6611 ug/kg	97
76)	Isopropylbenzene	15.87	105	23266	2.0628 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	5252	2.2053 ug/kg#	89
80)	1,2,3-Trichloropropane	16.28	110	1851	2.0495 ug/kg#	89
81)	trans-1,4-Dichloro-2-Buten	16.33	53	1413	1.5521 ug/kg	47
82)	n-Propylbenzene	16.38	91	25735	2.0854 ug/kg	99
83)	Bromobenzene	16.52	156	7006	2.4049 ug/kg	83
84)	1,3,5-Trimethylbenzene	16.57	105	18571	2.0048 ug/kg	99
85)	2-Chlorotoluene	16.66	91	18793	2.2705 ug/kg	97
86)	4-Chlorotoluene	16.70	91	16240	2.1222 ug/kg	96
87)	a-Methylstyrene	16.98	118	7524	1.7826 ug/kg	97
88)	tert-Butylbenzene	17.04	134	3654	1.8815 ug/kg	64
89)	1,2,4-Trimethylbenzene	17.09	105	20119	2.0739 ug/kg	99
90)	sec-Butylbenzene	17.31	105	24858	2.0835 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	20956	2.0813 ug/kg	96
92)	1,3-Dichlorobenzene	17.66	146	13695	2.3653 ug/kg	94
93)	1,4-Dichlorobenzene	17.79	146	12975	2.2416 ug/kg	82
94)	n-Butylbenzene	17.99	91	19734	2.1080 ug/kg	95
95)	1,2-Dichlorobenzene	18.30	146	11568	2.1533 ug/kg	91
96)	1,2-Dibromo-3-Chloropropan	19.30	157	941	1.3644 ug/kg	84
97)	1,2,4-Trichlorobenzene	20.44	180	8356	2.1910 ug/kg	98
98)	Hexachlorobutadiene	20.59	225	4571	2.2738 ug/kg	87
99)	Naphthalene	20.81	128	20072	2.0983 ug/kg	96
100)	1,2,3-Trichlorobenzene	21.11	180	7948	2.1487 ug/kg	96

(#) = qualifier out of range (m) = manual integration
9M972900.D 8260SL.M Fri Feb 26 11:13:39 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration

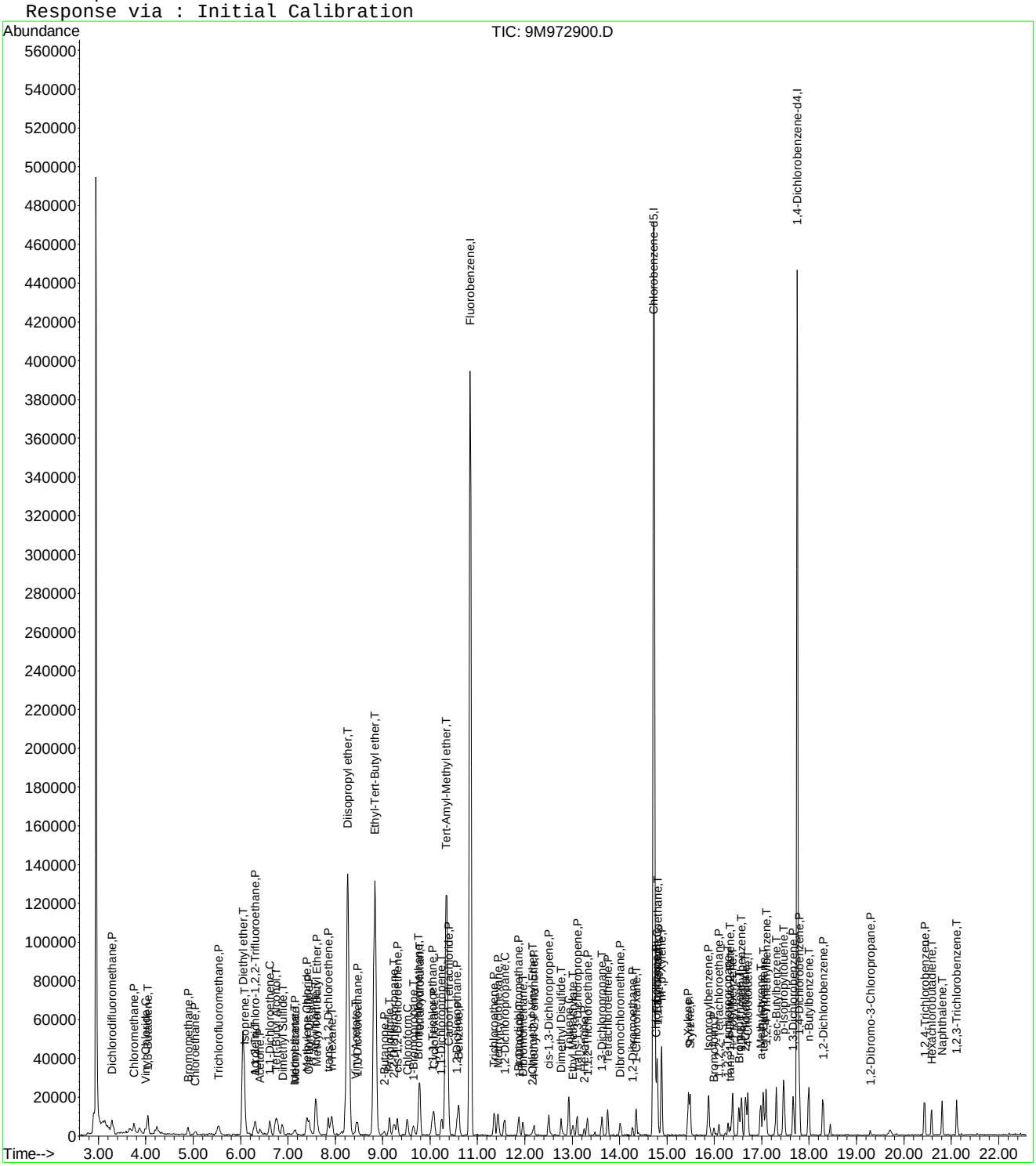

9M972900.D 8260SL.M Fri Feb 26 11:13:39 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	1.9809	0.0	100	0.01
3	P	Chloromethane	2.0000	2.2750	-13.7	100	0.00
4	C	Vinyl Chloride	2.0000	1.9408	3.0	100	0.01
5	T	1,3-Butadiene	2.0000	2.2249	-11.2	100	0.00
6	P	Bromomethane	2.0000	2.5146	-25.7#	100	0.01
7	P	Chloroethane	2.0000	1.7357	13.2	100	0.00
8	P	Trichlorofluoromethane	2.0000	2.1082	-5.4	100	0.01
9	T	Diethyl ether	25.0000	26.8255	-7.3	100	0.01
10	T	Isoprene	2.0000	2.0580	-2.9	100	0.00
11	T	Acrolein	12.5000	12.5543	-0.4	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.9886	0.6	100	0.01
13	P	Acetone	-1.0000	6.9886	0.0	0	0.00
14	C	1,1-Dichloroethene	2.0000	2.1877	-9.4	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	55.4271	-10.9	100	0.00
16	T	Dimethyl Sulfide	2.0000	2.0594	-3.0	100	0.01
17	T	Iodomethane	-1.0000	3.9079	0.0	0	0.01
18	P	Methyl acetate	2.0000	2.2240	-11.2	100	0.01
19	P	Methylene Chloride	2.0000	2.1292	-6.5	100	0.00
20	P	Carbon Disulfide	2.0000	2.2085	-10.4	100	0.00
21	T	Acrylonitrile	12.5000	12.6096	-0.9	100	0.00
22	P	Methyl Tert Butyl Ether	2.0000	1.9917	0.4	100	0.00
23	P	trans-1,2-Dichloroethene	2.0000	2.0255	-1.3	100	0.00
24	T	n-Hexane	2.0000	2.1253	-6.3	100	0.01
25	T	Diisopropyl ether	25.0000	26.7748	-7.1	100	0.00
26	T	Vinyl Acetate	2.0000	2.0872	-4.4	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.1320	-6.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	26.7377	-7.0	100	0.00
29	P	2-Butanone	2.0000	2.1978	-9.9	100	0.00
30	T	Propionitrile	25.0000	27.6861	-10.7	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1934	-9.7	100	0.00
32	P	cis-1,2-Dichloroethene	2.0000	1.8850	5.8	100	0.01
33	C	Chloroform	2.0000	2.2054	-10.3	100	0.01
34	T	1-Bromopropane	2.0000	1.5465	22.7	100	0.00
35	T	Bromochloromethane	2.0000	1.9539	2.3	100	0.00
36	T	Tetrahydrofuran	25.0000	26.6900	-6.8	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	2.0000	2.0058	-0.3	100	0.00
39	P	Cyclohexane	2.0000	2.0913	-4.6	100	0.01
40	T	1,1-Dichloropropene	2.0000	2.1023	-5.1	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	26.2768	-5.1	100	0.00
42	P	Carbon Tetrachloride	2.0000	2.0823	-4.1	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	2.0000	2.1271	-6.4	100	0.00
46	P	Benzene	2.0000	2.1525	-7.6	100	0.00
47	P	Trichloroethene	2.0000	2.1207	-6.0	100	0.00
48	P	Methylcyclohexane	2.0000	2.0945	-4.7	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0621	-3.1	100	0.01
50	T	1,4-Dioxane	50.0000	52.0499	-4.1	100	0.00
51	P	Bromodichloromethane	2.0000	2.0436	-2.2	100	0.00
52	T	Dibromomethane	2.0000	2.1721	-8.6	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	3.4830	0.0	0	0.00
54	P	4-Methyl-2-Pentanone	-1.0000	1.9378	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	2.0000	1.9341	3.3	100	0.00
56	T	Dimethyl Disulfide	2.0000	1.5925	20.4	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0891	0.0	100	0.00
59	C	Toluene	2.0000	2.1230	-6.2	100	0.00
60	T	Ethyl Methacrylate	-1.0000	1.5417	0.0	0	0.00
61	P	trans-1,3-Dichloropropene	2.0000	1.9553	2.2	100	0.00
62	P	1,1,2-Trichloroethane	2.0000	1.9716	1.4	100	0.00
63	P	2-Hexanone	-1.0000	1.8373	0.0	100	0.00
64	T	1,3-Dichloropropane	2.0000	2.2302	-11.5	100	0.00
65	P	Tetrachloroethene	2.0000	2.0616	-3.1	100	0.00
66	P	Dibromochloromethane	2.0000	2.1465	-7.3	100	0.00
67	P	1,2-Dibromoethane	-1.0000	2.0410	0.0	100	0.00
68	T	1-Chlorohexane	2.0000	1.9430	2.8	100	0.00
69	P	Chlorobenzene	2.0000	2.1632	-8.2	100	0.00
70	T	1,1,1,2-Tetrachloroethane	2.0000	1.9910	0.4	100	0.00
71	C	Ethylbenzene	2.0000	2.0555	-2.8	100	0.00
72	P	m-,p-Xylene	4.0000	4.3702	-9.3	100	0.00
73	P	o-Xylene	2.0000	2.0024	-0.1	100	0.00
74	P	Styrene	2.0000	2.0313	-1.6	100	0.00
75	P	Bromoform	2.0000	1.6611	16.9	100	0.00
76	P	Isopropylbenzene	2.0000	2.0628	-3.1	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	2.0000	2.2053	-10.3	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.1865	0.0	100	0.00
80	T	1,2,3-Trichloropropane	2.0000	2.0495	-2.5	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	2.0000	1.5521	22.4	100	0.00
82	T	n-Propylbenzene	2.0000	2.0854	-4.3	100	0.00
83	T	Bromobenzene	2.0000	2.4049	-20.2	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	2.0048	0.0	100	0.00
85	T	2-Chlorotoluene	2.0000	2.2705	-13.5	100	0.00
86	T	4-Chlorotoluene	2.0000	2.1222	-6.1	100	0.00
87	T	a-Methylstyrene	-1.0000	1.7826	0.0	0	0.00
88	T	tert-Butylbenzene	-1.0000	1.8815	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	2.0000	2.0739	-3.7	100	0.00
90	T	sec-Butylbenzene	2.0000	2.0835	-4.2	100	0.00
91	T	p-Isopropyltoluene	-1.0000	2.0813	0.0	100	0.00
92	P	1,3-Dichlorobenzene	2.0000	2.3653	-18.3	100	0.00
93	P	1,4-Dichlorobenzene	2.0000	2.2416	-12.1	100	0.00
94	T	n-Butylbenzene	2.0000	2.1080	-5.4	100	0.00
95	P	1,2-Dichlorobenzene	2.0000	2.1533	-7.7	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	1.3644	0.0	100	0.00
97	P	1,2,4-Trichlorobenzene	2.0000	2.1910	-9.6	100	0.00
98	T	Hexachlorobutadiene	2.0000	2.2738	-13.7	100	0.00
99	T	Naphthalene	2.0000	2.0983	-4.9	100	0.00
100	T	1,2,3-Trichlorobenzene	2.0000	2.1487	-7.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972900.D 8260SL.M Fri Feb 26 11:13:36 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	544259	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	391881	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.76	152	178969	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	29036	9.8422 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 19.68%#		
43) 1,2-Dichloroethane-d4	10.44	65	38093	10.2911 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 20.58%#		
58) Toluene-d8	12.83	98	95044	9.5885 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 19.18%#		
79) p-Bromofluorobenzene	16.23	95	32806	9.4138 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 18.82%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	14756	3.9724 ug/kg	92
3) Chloromethane	3.74	50	15227	4.2763 ug/kg	91
4) Vinyl Chloride	3.99	62	17097	4.7964 ug/kg	89
5) 1,3-Butadiene	4.04	54	14484	4.2710 ug/kg	97
6) Bromomethane	4.89	94	9847	4.2533 ug/kg	95
7) Chloroethane	5.04	64	6311	3.9741 ug/kg	93
8) Trichlorofluoromethane	5.53	101	22668	4.2400 ug/kg	100
9) Diethyl ether	6.05	59	118004	47.2164 ug/kg	99
10) Isoprene	6.10	67	13644	4.2747 ug/kg	95
11) Acrolein	6.30	56	12131	24.3428 ug/kg	84
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	12752	4.6251 ug/kg	95
13) Acetone	6.41	43	9765	4.9429 ug/kg	94
14) 1,1-Dichloroethene	6.62	61	21760	4.2784 ug/kg	99
15) Tert-Butyl Alcohol	6.76	59	50500	90.7440 ug/kg	98
16) Dimethyl Sulfide	6.88	62	10098	4.6977 ug/kg	87
17) Iodomethane	7.13	142	4147	5.3886 ug/kg	97
18) Methyl acetate	7.15	43	12159	4.3976 ug/kg#	87
19) Methylene Chloride	7.41	84	11825	4.2690 ug/kg	99
20) Carbon Disulfide	7.45	76	34078	4.3495 ug/kg	94
21) Acrylonitrile	7.58	53	31012	22.6731 ug/kg	100
22) Methyl Tert Butyl Ether	7.61	73	34936	4.4284 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	20503	4.5233 ug/kg	95
24) n-Hexane	7.92	57	20970	4.4853 ug/kg	98
25) Diisopropyl ether	8.26	45	505084	46.5162 ug/kg	100
26) Vinyl Acetate	8.44	43	28253	4.5644 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	24239	4.2575 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	463447	45.9037 ug/kg	99
29) 2-Butanone	9.03	43	8265	4.7092 ug/kg	88
30) Propionitrile	9.15	54	25938	48.2931 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	17954	4.2251 ug/kg	91
32) cis-1,2-Dichloroethene	9.32	96	13479	4.5340 ug/kg	84
33) Chloroform	9.52	83	23525	4.4982 ug/kg	95
34) 1-Bromopropane	9.65	122	2239	5.8652 ug/kg	90
35) Bromochloromethane	9.75	130	9205	4.7667 ug/kg	97
36) Tetrahydrofuran	9.78	42	53635	47.4100 ug/kg	99
38) 1,1,1-Trichloroethane	10.04	97	20945	4.4285 ug/kg	91
39) Cyclohexane	10.09	56	23110	4.4818 ug/kg	98
40) 1,1-Dichloropropene	10.24	75	16349	4.3930 ug/kg	99
41) Tert-Amyl-Methyl ether	10.35	73	343692	46.8330 ug/kg	98
42) Carbon Tetrachloride	10.39	117	18527	4.2254 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	21553	4.6852 ug/kg	99
46)	Benzene	10.60	78	45352	4.3528 ug/kg	99
47)	Trichloroethene	11.35	130	14266	4.3213 ug/kg	97
48)	Methylcyclohexane	11.44	83	17527	4.2330 ug/kg	97
49)	1,2-Dichloropropane	11.56	63	13071	4.5684 ug/kg	100
50)	1,4-Dioxane	11.88	88	3926	91.4657 ug/kg	99
51)	Bromodichloromethane	11.87	83	18008	4.4660 ug/kg	97
52)	Dibromomethane	11.96	174	8993	4.7438 ug/kg	95
53)	2-Chloroethyl Vinyl Ether	12.16	63	2468	5.7758 ug/kg#	66
54)	4-Methyl-2-Pentanone	12.19	58	4862	3.8716 ug/kg	95
55)	cis-1,3-Dichloropropene	12.50	75	18341	4.3659 ug/kg	96
56)	Dimethyl Disulfide	12.77	94	17792	4.2144 ug/kg	91
59)	Toluene	12.92	91	48377	4.3206 ug/kg	96
60)	Ethyl Methacrylate	13.02	69	12442	4.0089 ug/kg	96
61)	trans-1,3-Dichloropropene	13.10	75	17626	4.3707 ug/kg	95
62)	1,1,2-Trichloroethane	13.33	97	10657	4.5308 ug/kg	99
63)	2-Hexanone	13.25	43	10194	4.3408 ug/kg	96
64)	1,3-Dichloropropane	13.62	76	17885	4.5633 ug/kg	100
65)	Tetrachloroethene	13.75	164	10317	4.2981 ug/kg	97
66)	Dibromochloromethane	14.01	129	14152	4.3052 ug/kg	98
67)	1,2-Dibromoethane	14.28	107	12182	4.6694 ug/kg	99
68)	1-Chlorohexane	14.35	91	12970	3.9281 ug/kg	87
69)	Chlorobenzene	14.77	112	36017	4.5769 ug/kg	85
70)	1,1,1,2-Tetrachloroethane	14.80	131	12746	4.3130 ug/kg	95
71)	Ethylbenzene	14.80	106	17828	4.3974 ug/kg	92
72)	m-,p-Xylene	14.89	106	45904	9.1683 ug/kg	95
73)	o-Xylene	15.46	106	21754	4.5275 ug/kg	91
74)	Styrene	15.49	104	35390	4.3253 ug/kg	98
75)	Bromoform	15.98	173	9363	4.3382 ug/kg	96
76)	Isopropylbenzene	15.88	105	55721	4.3198 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	13197	4.8610 ug/kg	97
80)	1,2,3-Trichloropropane	16.29	110	5070	4.9243 ug/kg#	28
81)	trans-1,4-Dichloro-2-Buten	16.33	53	4246	4.0913 ug/kg#	39
82)	n-Propylbenzene	16.39	91	64689	4.5983 ug/kg	100
83)	Bromobenzene	16.52	156	15405	4.6386 ug/kg	90
84)	1,3,5-Trimethylbenzene	16.58	105	49527	4.6900 ug/kg	98
85)	2-Chlorotoluene	16.66	91	41422	4.3899 ug/kg	97
86)	4-Chlorotoluene	16.70	91	40985	4.6981 ug/kg	99
87)	a-Methylstyrene	16.98	118	20049	4.1667 ug/kg	90
88)	tert-Butylbenzene	17.04	134	10027	4.5290 ug/kg	84
89)	1,2,4-Trimethylbenzene	17.09	105	51253	4.6345 ug/kg	98
90)	sec-Butylbenzene	17.30	105	60716	4.4642 ug/kg	98
91)	p-Isopropyltoluene	17.46	119	53318	4.6453 ug/kg	98
92)	1,3-Dichlorobenzene	17.66	146	29255	4.4323 ug/kg	98
93)	1,4-Dichlorobenzene	17.79	146	30175	4.5730 ug/kg	91
94)	n-Butylbenzene	17.99	91	45964	4.3071 ug/kg	98
95)	1,2-Dichlorobenzene	18.30	146	27310	4.4593 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.30	157	3147	4.0028 ug/kg	87
97)	1,2,4-Trichlorobenzene	20.44	180	18372	4.2258 ug/kg	95
98)	Hexachlorobutadiene	20.59	225	9618	4.1968 ug/kg	90
99)	Naphthalene	20.81	128	47189	4.3274 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.11	180	17859	4.2352 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972901.D 8260SL.M Fri Feb 26 11:21:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

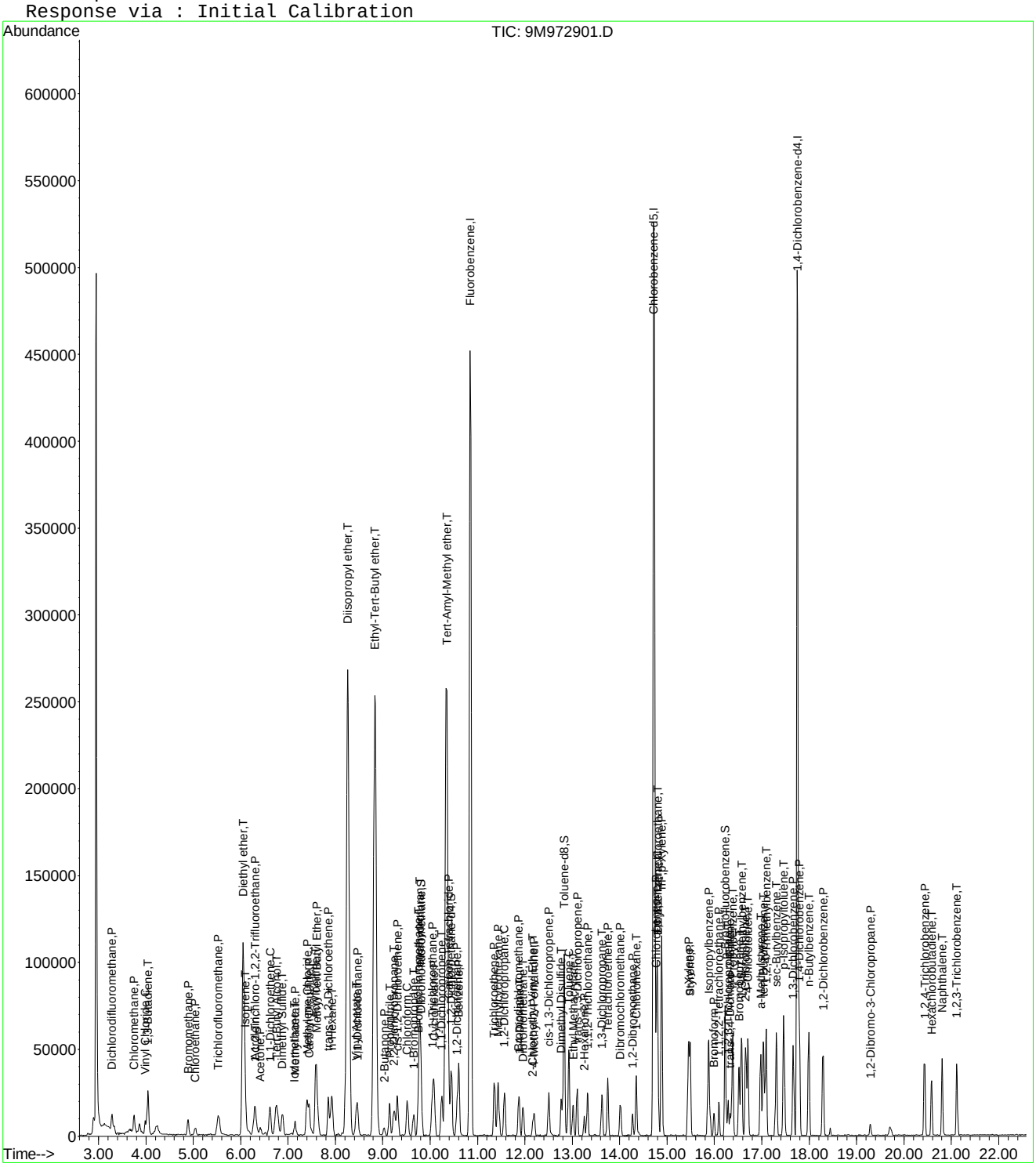

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	5.0000	3.9724	20.6	100	0.00
3	P	Chloromethane	5.0000	4.2763	14.5	100	0.00
4	C	Vinyl Chloride	5.0000	4.7964	4.1	100	0.00
5	T	1,3-Butadiene	5.0000	4.2710	14.6	100	0.00
6	P	Bromomethane	5.0000	4.2534	14.9	100	0.00
7	P	Chloroethane	5.0000	3.9741	20.5	100	0.00
8	P	Trichlorofluoromethane	5.0000	4.2400	15.2	100	0.00
9	T	Diethyl ether	50.0000	47.2164	5.6	100	0.00
10	T	Isoprene	5.0000	4.2747	14.5	100	0.01
11	T	Acrolein	25.0000	24.3428	2.6	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.6251	7.5	100	0.00
13	P	Acetone	5.0000	4.9429	1.1	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.2784	14.4	100	0.01
15	T	Tert-Butyl Alcohol	100.0000	90.7440	9.3	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.6977	6.0	100	0.00
17	T	Iodomethane	5.0000	5.3886	-7.8	100	0.00
18	P	Methyl acetate	5.0000	4.3976	12.0	100	0.01
19	P	Methylene Chloride	5.0000	4.2690	14.6	100	0.00
20	P	Carbon Disulfide	5.0000	4.3495	13.0	100	0.00
21	T	Acrylonitrile	25.0000	22.6731	9.3	100	0.00
22	P	Methyl Tert Butyl Ether	5.0000	4.4284	11.4	100	0.00
23	P	trans-1,2-Dichloroethene	5.0000	4.5233	9.5	100	0.00
24	T	n-Hexane	5.0000	4.4854	10.3	100	0.01
25	T	Diisopropyl ether	50.0000	46.5162	7.0	100	0.00
26	T	Vinyl Acetate	5.0000	4.5644	8.7	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.2575	14.8	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	45.9037	8.2	100	0.00
29	P	2-Butanone	5.0000	4.7092	5.8	100	0.00
30	T	Propionitrile	50.0000	48.2931	3.4	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.2251	15.5	100	-0.01
32	P	cis-1,2-Dichloroethene	5.0000	4.5340	9.3	100	0.00
33	C	Chloroform	5.0000	4.4982	10.0	100	0.00
34	T	1-Bromopropane	5.0000	5.8651	-17.3	100	0.00
35	T	Bromochloromethane	5.0000	4.7667	4.7	100	0.00
36	T	Tetrahydrofuran	50.0000	47.4100	5.2	100	0.00
37	S	Dibromofluoromethane	10.0000	9.8422	1.6	100	0.00
38	P	1,1,1-Trichloroethane	5.0000	4.4285	11.4	100	0.00
39	P	Cyclohexane	5.0000	4.4818	10.4	100	0.01
40	T	1,1-Dichloropropene	5.0000	4.3930	12.1	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	46.8330	6.3	100	0.00
42	P	Carbon Tetrachloride	5.0000	4.2254	15.5	100	0.00
43	S	1,2-Dichloroethane-d4	10.0000	10.2911	-2.9	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	5.0000	4.6852	6.3	100	0.00
46	P	Benzene	5.0000	4.3528	12.9	100	0.00
47	P	Trichloroethene	5.0000	4.3213	13.6	100	0.00
48	P	Methylcyclohexane	5.0000	4.2330	15.3	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.5684	8.6	100	0.00
50	T	1,4-Dioxane	100.0000	91.4657	8.5	100	0.00
51	P	Bromodichloromethane	5.0000	4.4660	10.7	100	0.00
52	T	Dibromomethane	5.0000	4.7438	5.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	5.7758	-15.5	100	0.00
54	P	4-Methyl-2-Pentanone	5.0000	3.8716	22.6	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	5.0000	4.3659	12.7	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.2144	15.7	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	-0.01
58	S	Toluene-d8	10.0000	9.5885	4.1	100	0.00
59	C	Toluene	5.0000	4.3206	13.6	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.0089	19.8	100	0.00
61	P	trans-1,3-Dichloropropene	5.0000	4.3707	12.6	100	0.00
62	P	1,1,2-Trichloroethane	5.0000	4.5309	9.4	100	0.00
63	P	2-Hexanone	5.0000	4.3408	13.2	100	0.00
64	T	1,3-Dichloropropane	5.0000	4.5633	8.7	100	-0.01
65	P	Tetrachloroethene	5.0000	4.2981	14.0	100	0.00
66	P	Dibromochloromethane	5.0000	4.3052	13.9	100	0.00
67	P	1,2-Dibromoethane	5.0000	4.6694	6.6	100	0.00
68	T	1-Chlorohexane	5.0000	3.9281	21.4	100	0.00
69	P	Chlorobenzene	5.0000	4.5769	8.5	100	0.00
70	T	1,1,1,2-Tetrachloroethane	5.0000	4.3130	13.7	100	0.00
71	C	Ethylbenzene	5.0000	4.3974	12.1	100	0.00
72	P	m-,p-Xylene	10.0000	9.1683	8.3	100	0.00
73	P	o-Xylene	5.0000	4.5275	9.5	100	0.00
74	P	Styrene	5.0000	4.3253	13.5	100	0.00
75	P	Bromoform	5.0000	4.3382	13.2	100	-0.01
76	P	Isopropylbenzene	5.0000	4.3198	13.6	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	5.0000	4.8610	2.8	100	-0.01
79	S	p-Bromofluorobenzene	10.0000	9.4138	5.9	100	0.00
80	T	1,2,3-Trichloropropane	5.0000	4.9243	1.5	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	5.0000	4.0913	18.2	100	0.00
82	T	n-Propylbenzene	5.0000	4.5983	8.0	100	0.00
83	T	Bromobenzene	5.0000	4.6386	7.2	100	0.00
84	T	1,3,5-Trimethylbenzene	5.0000	4.6900	6.2	100	0.00
85	T	2-Chlorotoluene	5.0000	4.3899	12.2	100	0.00
86	T	4-Chlorotoluene	5.0000	4.6981	6.0	100	0.00
87	T	a-Methylstyrene	5.0000	4.1667	16.7	100	0.00
88	T	tert-Butylbenzene	5.0000	4.5290	9.4	100	0.00
89	T	1,2,4-Trimethylbenzene	5.0000	4.6345	7.3	100	0.00
90	T	sec-Butylbenzene	5.0000	4.4642	10.7	100	0.00
91	T	p-Isopropyltoluene	5.0000	4.6453	7.1	100	0.00
92	P	1,3-Dichlorobenzene	5.0000	4.4323	11.4	100	0.00
93	P	1,4-Dichlorobenzene	5.0000	4.5730	8.5	100	-0.01
94	T	n-Butylbenzene	5.0000	4.3071	13.9	100	0.00
95	P	1,2-Dichlorobenzene	5.0000	4.4593	10.8	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	5.0000	4.0028	19.9	100	0.00
97	P	1,2,4-Trichlorobenzene	5.0000	4.2258	15.5	100	0.00
98	T	Hexachlorobutadiene	5.0000	4.1968	16.1	100	0.00
99	T	Naphthalene	5.0000	4.3274	13.5	100	0.00
100	T	1,2,3-Trichlorobenzene	5.0000	4.2352	15.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972901.D 8260SL.M Fri Feb 26 11:21:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972902.D Vial: 7
Acq On : 25 Feb 2016 18:59 Operator: ADC
Sample : WG558732-07 20.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	491006	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	357658	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	168257	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	47666	17.9094 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 35.82%#		
43) 1,2-Dichloroethane-d4	10.45	65	60269	18.0480 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 36.10%#		
58) Toluene-d8	12.82	98	163811	18.1074 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 36.22%#		
79) p-Bromofluorobenzene	16.23	95	58931	17.9870 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 35.98%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	78283	23.3598 ug/kg	99
3) Chloromethane	3.75	50	64951	20.2188 ug/kg	98
4) Vinyl Chloride	3.99	62	73167	22.7523 ug/kg	97
5) 1,3-Butadiene	4.04	54	64372	21.0404 ug/kg	98
6) Bromomethane	4.88	94	40556	19.4178 ug/kg	97
7) Chloroethane	5.04	64	27981	19.5307 ug/kg	97
8) Trichlorofluoromethane	5.53	101	98871	20.4994 ug/kg	98
9) Diethyl ether	6.06	59	191078	84.7472 ug/kg	99
10) Isoprene	6.10	67	59437	20.6414 ug/kg	98
11) Acrolein	6.30	56	18057	40.1641 ug/kg	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	50002	20.1026 ug/kg	100
13) Acetone	6.42	43	27164	20.4768 ug/kg	100
14) 1,1-Dichloroethene	6.62	61	94732	20.6460 ug/kg	98
15) Tert-Butyl Alcohol	6.75	59	85695	170.6872 ug/kg	97
16) Dimethyl Sulfide	6.88	62	40580	20.9258 ug/kg	99
17) Iodomethane	7.13	142	21330	17.5663 ug/kg	96
18) Methyl acetate	7.15	43	54770	21.9573 ug/kg	99
19) Methylene Chloride	7.41	84	51619	20.6564 ug/kg	95
20) Carbon Disulfide	7.45	76	145286	20.5545 ug/kg	97
21) Acrylonitrile	7.59	53	50918	41.2640 ug/kg	97
22) Methyl Tert Butyl Ether	7.61	73	149271	20.9731 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	84416	20.6434 ug/kg	98
24) n-Hexane	7.92	57	82582	19.5795 ug/kg	98
25) Diisopropyl ether	8.26	45	841729	85.9275 ug/kg	99
26) Vinyl Acetate	8.44	43	107114	19.1814 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	104490	20.3440 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	777976	85.4147 ug/kg	99
29) 2-Butanone	9.02	43	30691	19.3834 ug/kg	100
30) Propionitrile	9.14	54	41719	86.0996 ug/kg	99
31) 2,2-Dichloropropane	9.24	77	73960	19.2927 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	56404	21.0307 ug/kg	100
33) Chloroform	9.52	83	94621	20.0546 ug/kg	98
34) 1-Bromopropane	9.65	122	8251	20.7938 ug/kg	98
35) Bromochloromethane	9.75	130	38059	21.8457 ug/kg	99
36) Tetrahydrofuran	9.77	42	86589	84.8405 ug/kg	100
38) 1,1,1-Trichloroethane	10.05	97	85938	20.1411 ug/kg	99
39) Cyclohexane	10.09	56	96933	20.8373 ug/kg	98
40) 1,1-Dichloropropene	10.25	75	67544	20.1175 ug/kg	96
41) Tert-Amyl-Methyl ether	10.34	73	562826	85.0111 ug/kg	99
42) Carbon Tetrachloride	10.39	117	79566	20.1143 ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972902.D 8260SL.M Fri Feb 26 11:21:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972902.D Vial: 7
Acq On : 25 Feb 2016 18:59 Operator: ADC
Sample : WG558732-07 20.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	86857	20.9287 ug/kg	98
46)	Benzene	10.60	78	190747	20.2931 ug/kg	98
47)	Trichloroethene	11.35	130	61315	20.5871 ug/kg	99
48)	Methylcyclohexane	11.44	83	79384	21.2516 ug/kg	99
49)	1,2-Dichloropropane	11.56	63	54356	21.0584 ug/kg	98
50)	1,4-Dioxane	11.88	88	7054	182.1639 ug/kg	93
51)	Bromodichloromethane	11.87	83	73160	20.1115 ug/kg	99
52)	Dibromomethane	11.97	174	35844	20.9583 ug/kg	97
53)	2-Chloroethyl Vinyl Ether	12.17	63	11048	17.4432 ug/kg	94
54)	4-Methyl-2-Pentanone	12.20	58	22247	19.6364 ug/kg	96
55)	cis-1,3-Dichloropropene	12.50	75	77533	20.4577 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	77400	20.3222 ug/kg	99
59)	Toluene	12.93	91	209919	20.5421 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	58827	20.7683 ug/kg	99
61)	trans-1,3-Dichloropropene	13.11	75	73778	20.0452 ug/kg	98
62)	1,1,2-Trichloroethane	13.32	97	45475	21.1838 ug/kg	98
63)	2-Hexanone	13.25	43	40183	18.7479 ug/kg	97
64)	1,3-Dichloropropane	13.62	76	73060	20.4249 ug/kg	95
65)	Tetrachloroethene	13.75	164	44423	20.2778 ug/kg	96
66)	Dibromochloromethane	14.01	129	59220	19.7391 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	48648	20.4311 ug/kg	97
68)	1-Chlorohexane	14.35	91	64519	21.4099 ug/kg	96
69)	Chlorobenzene	14.77	112	150639	20.9742 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	55462	20.5631 ug/kg	99
71)	Ethylbenzene	14.79	106	77813	21.0297 ug/kg	100
72)	m-,p-Xylene	14.89	106	192168	42.0536 ug/kg	98
73)	o-Xylene	15.45	106	92490	21.0911 ug/kg	98
74)	Styrene	15.49	104	154534	20.6939 ug/kg	100
75)	Bromoform	16.00	173	39818	20.2142 ug/kg	98
76)	Isopropylbenzene	15.87	105	249418	21.1865 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	53687	21.0342 ug/kg	98
80)	1,2,3-Trichloropropane	16.28	110	19658	20.3087 ug/kg	98
81)	trans-1,4-Dichloro-2-Buten	16.33	53	21143	21.6696 ug/kg	89
82)	n-Propylbenzene	16.39	91	283998	21.4728 ug/kg	98
83)	Bromobenzene	16.52	156	65363	20.9343 ug/kg	95
84)	1,3,5-Trimethylbenzene	16.57	105	212735	21.4278 ug/kg	99
85)	2-Chlorotoluene	16.66	91	189159	21.3235 ug/kg	99
86)	4-Chlorotoluene	16.70	91	171741	20.9401 ug/kg	99
87)	a-Methylstyrene	16.98	118	95360	21.0801 ug/kg	99
88)	tert-Butylbenzene	17.03	134	43749	21.0188 ug/kg	90
89)	1,2,4-Trimethylbenzene	17.08	105	218350	21.0010 ug/kg	99
90)	sec-Butylbenzene	17.31	105	268054	20.9635 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	225612	20.9076 ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	122605	19.7580 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	124659	20.0949 ug/kg	99
94)	n-Butylbenzene	17.99	91	199655	19.8998 ug/kg	99
95)	1,2-Dichlorobenzene	18.30	146	115021	19.9768 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	14138	19.1277 ug/kg	95
97)	1,2,4-Trichlorobenzene	20.43	180	77418	18.9408 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	41508	19.2651 ug/kg	96
99)	Naphthalene	20.81	128	204933	19.9897 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.12	180	75616	19.0736 ug/kg	98

(#) = qualifier out of range (m) = manual integration
9M972902.D 8260SL.M Fri Feb 26 11:21:57 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972902.D Vial: 7
Acq On : 25 Feb 2016 18:59 Operator: ADC
Sample : WG558732-07 20.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

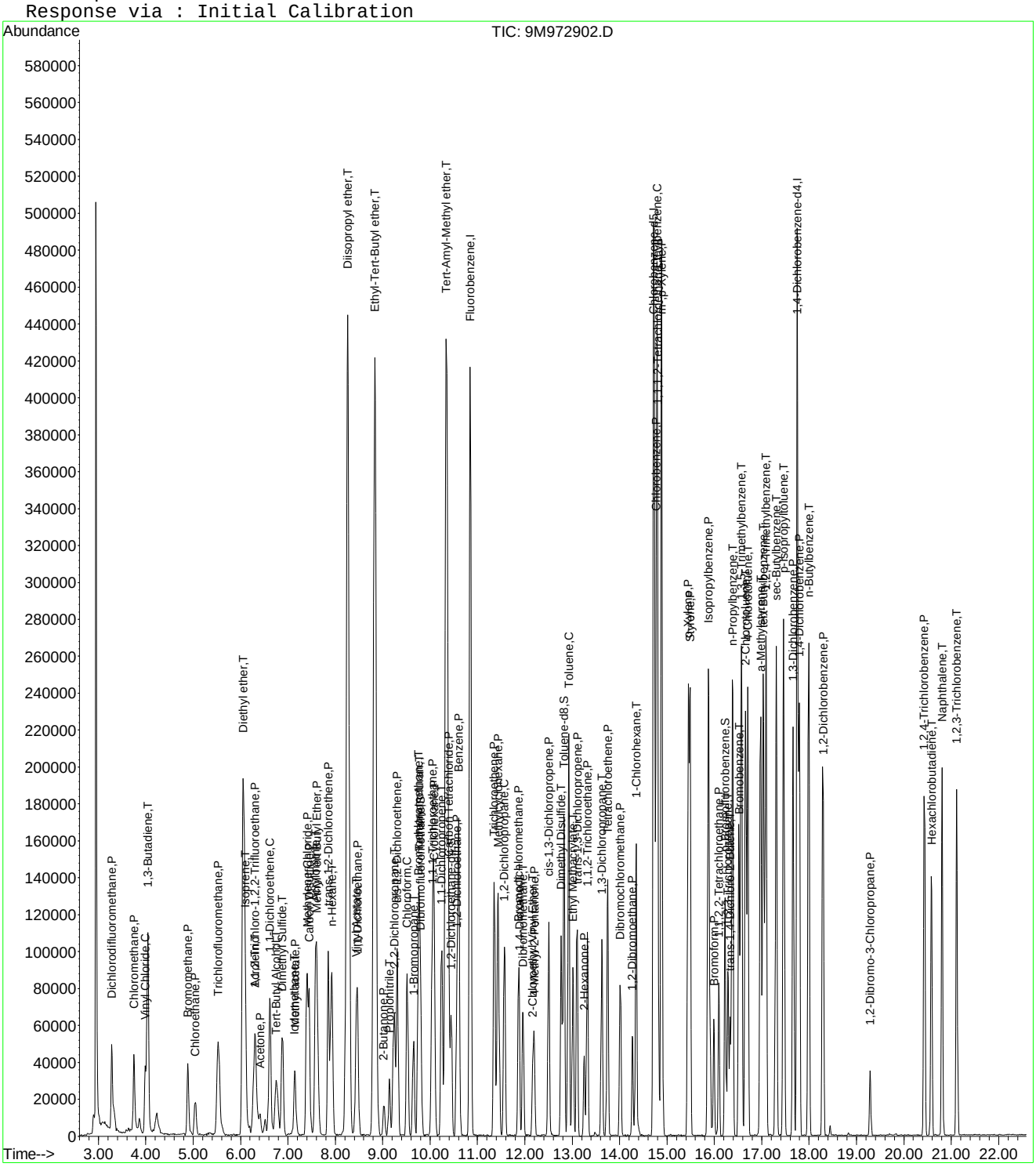

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972903.D Vial: 8
Acq On : 25 Feb 2016 19:29 Operator: ADC
Sample : WG558732-08 100.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:57 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	535022	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	390279	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.75	152	187456	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	305515	105.3466 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 210.70%#		
43) 1,2-Dichloroethane-d4	10.45	65	383447	105.3793 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 210.76%#		
58) Toluene-d8	12.83	98	1052175	106.5842 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 213.16%#		
79) p-Bromofluorobenzene	16.23	95	403966	110.6707 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 221.34%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	340079	93.1314 ug/kg	98
3) Chloromethane	3.74	50	316834	90.5143 ug/kg	100
4) Vinyl Chloride	3.99	62	366384	104.5591 ug/kg	99
5) 1,3-Butadiene	4.04	54	317949	95.3739 ug/kg	98
6) Bromomethane	4.88	94	198493	87.2180 ug/kg	99
7) Chloroethane	5.04	64	148539	95.1503 ug/kg	96
8) Trichlorofluoromethane	5.53	101	502703	95.6532 ug/kg	99
9) Diethyl ether	6.06	59	457873	186.3696 ug/kg	99
10) Isoprene	6.09	67	302269	96.3367 ug/kg	100
11) Acrolein	6.30	56	49319	100.6749 ug/kg	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	264925	97.7467 ug/kg	100
13) Acetone	6.41	43	126959	96.0965 ug/kg	97
14) 1,1-Dichloroethene	6.61	61	485466	97.0986 ug/kg	99
15) Tert-Butyl Alcohol	6.77	59	202804	370.7125 ug/kg	97
16) Dimethyl Sulfide	6.88	62	209613	99.1979 ug/kg	97
17) Iodomethane	7.14	142	134789	88.4431 ug/kg	96
18) Methyl acetate	7.15	43	256770	94.4705 ug/kg	99
19) Methylene Chloride	7.40	84	256919	94.3530 ug/kg	100
20) Carbon Disulfide	7.45	76	725343	94.1764 ug/kg	99
21) Acrylonitrile	7.59	53	131913	98.1077 ug/kg	97
22) Methyl Tert Butyl Ether	7.61	73	763125	98.4009 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	435514	97.7404 ug/kg	99
24) n-Hexane	7.92	57	458951	99.8615 ug/kg	98
25) Diisopropyl ether	8.26	45	1991599	186.5850 ug/kg	99
26) Vinyl Acetate	8.44	43	593217	97.4908 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	533571	95.3384 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	1850360	186.4394 ug/kg	100
29) 2-Butanone	9.03	43	167064	96.8316 ug/kg	99
30) Propionitrile	9.14	54	102467	194.0735 ug/kg	99
31) 2,2-Dichloropropane	9.24	77	409808	98.1051 ug/kg	98
32) cis-1,2-Dichloroethene	9.31	96	291782	99.8428 ug/kg	100
33) Chloroform	9.52	83	491651	95.6310 ug/kg	100
34) 1-Bromopropane	9.65	122	43084	95.7559 ug/kg	98
35) Bromochloromethane	9.75	130	191150	100.6929 ug/kg	97
36) Tetrahydrofuran	9.78	42	206962	186.0999 ug/kg	99
38) 1,1,1-Trichloroethane	10.04	97	454248	97.7025 ug/kg	99
39) Cyclohexane	10.08	56	497594	98.1657 ug/kg	99
40) 1,1-Dichloropropene	10.24	75	355996	97.3080 ug/kg	98
41) Tert-Amyl-Methyl ether	10.35	73	1353122	187.5659 ug/kg	99
42) Carbon Tetrachloride	10.39	117	419252	97.2674 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972903.D Vial: 8
Acq On : 25 Feb 2016 19:29 Operator: ADC
Sample : WG558732-08 100.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:57 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	441828	97.7027	ug/kg	98
46)	Benzene	10.60	78	946247	92.3868	ug/kg	100
47)	Trichloroethene	11.35	130	316701	97.5872	ug/kg	98
48)	Methylcyclohexane	11.44	83	420776	103.3770	ug/kg	100
49)	1,2-Dichloropropane	11.56	63	273398	97.2049	ug/kg	97
50)	1,4-Dioxane	11.89	88	15240	361.1826	ug/kg	95
51)	Bromodichloromethane	11.87	83	384453	96.9905	ug/kg	100
52)	Dibromomethane	11.96	174	178770	95.9288	ug/kg	100
53)	2-Chloroethyl Vinyl Ether	12.17	63	71336	89.4187	ug/kg	97
54)	4-Methyl-2-Pentanone	12.19	58	126118	102.1606	ug/kg	99
55)	cis-1,3-Dichloropropene	12.50	75	407392	98.6500	ug/kg	99
56)	Dimethyl Disulfide	12.77	94	430523	103.7388	ug/kg	99
59)	Toluene	12.93	91	1070303	95.9828	ug/kg	100
60)	Ethyl Methacrylate	13.01	69	310336	100.4033	ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	395340	98.4345	ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	234168	99.9657	ug/kg	97
63)	2-Hexanone	13.25	43	238254	101.8692	ug/kg	99
64)	1,3-Dichloropropane	13.62	76	372307	95.3836	ug/kg	98
65)	Tetrachloroethene	13.75	164	235384	98.4650	ug/kg	97
66)	Dibromochloromethane	14.01	129	316240	96.5980	ug/kg	100
67)	1,2-Dibromoethane	14.28	107	254663	98.0133	ug/kg	98
68)	1-Chlorohexane	14.35	91	341938	103.9841	ug/kg	98
69)	Chlorobenzene	14.77	112	744916	95.0493	ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.80	131	289798	98.4650	ug/kg	98
71)	Ethylbenzene	14.79	106	397428	98.4311	ug/kg	99
72)	m-,p-Xylene	14.89	106	955121	191.5462	ug/kg	97
73)	o-Xylene	15.45	106	475355	99.3381	ug/kg	100
74)	Styrene	15.49	104	817155	100.2803	ug/kg	100
75)	Bromoform	15.99	173	212807	99.0046	ug/kg	98
76)	Isopropylbenzene	15.88	105	1283494	99.9122	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	279744	98.3764	ug/kg	100
80)	1,2,3-Trichloropropane	16.29	110	110421	102.3924	ug/kg	94
81)	trans-1,4-Dichloro-2-Buten	16.33	53	116410	107.0899	ug/kg	87
82)	n-Propylbenzene	16.39	91	1458178	98.9594	ug/kg	99
83)	Bromobenzene	16.52	156	334600	96.1892	ug/kg	97
84)	1,3,5-Trimethylbenzene	16.57	105	1100766	99.5195	ug/kg	99
85)	2-Chlorotoluene	16.66	91	937812	94.8900	ug/kg	100
86)	4-Chlorotoluene	16.70	91	906777	99.2383	ug/kg	100
87)	a-Methylstyrene	16.98	118	508276	100.8508	ug/kg	99
88)	tert-Butylbenzene	17.04	134	234437	101.0972	ug/kg	99
89)	1,2,4-Trimethylbenzene	17.09	105	1125260	97.1435	ug/kg	99
90)	sec-Butylbenzene	17.30	105	1425754	100.0828	ug/kg	100
91)	p-Isopropyltoluene	17.46	119	1215596	101.1125	ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	644471	93.2206	ug/kg	100
93)	1,4-Dichlorobenzene	17.79	146	646907	93.6002	ug/kg	99
94)	n-Butylbenzene	17.99	91	1131901	101.2628	ug/kg	99
95)	1,2-Dichlorobenzene	18.30	146	622851	97.0971	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.30	157	88939	108.0040	ug/kg	99
97)	1,2,4-Trichlorobenzene	20.44	180	466688	102.4843	ug/kg	99
98)	Hexachlorobutadiene	20.59	225	252514	105.1960	ug/kg	99
99)	Naphthalene	20.81	128	1208454	105.8030	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	456274	103.3044	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972903.D 8260SL.M Fri Feb 26 11:21:58 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972903.D Vial: 8
Acq On : 25 Feb 2016 19:29 Operator: ADC
Sample : WG558732-08 100.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

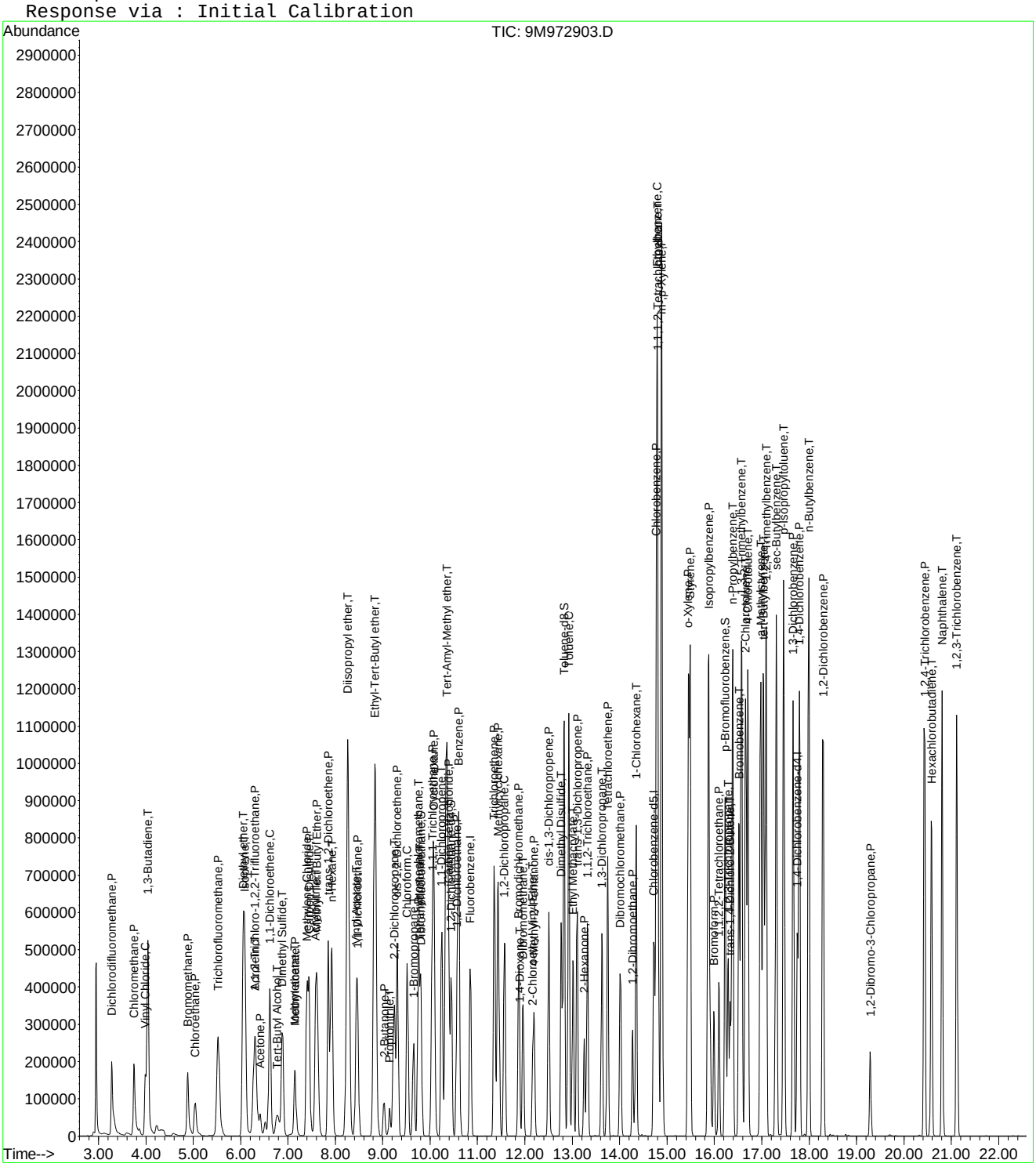

9M972903.D 8260SL.M Fri Feb 26 11:21:58 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972904.D Vial: 9
Acq On : 25 Feb 2016 20:00 Operator: ADC
Sample : WG558732-09 200.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:58 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	542388	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	396894	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	212175	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	595362	202.5026 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery	= 405.00%#	
43) 1,2-Dichloroethane-d4	10.45	65	716316	194.1852 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery	= 388.38%#	
58) Toluene-d8	12.82	98	2013255	200.5415 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery	= 401.08%#	
79) p-Bromofluorobenzene	16.23	95	807150	195.3653 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery	= 390.74%#	

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.28	85	774894	209.3245 ug/kg	100
3) Chloromethane	3.75	50	750862	211.5959 ug/kg	100
4) Vinyl Chloride	3.99	62	770550	216.9141 ug/kg	100
5) 1,3-Butadiene	4.04	54	695631	205.8318 ug/kg	99
6) Bromomethane	4.88	94	470946	204.1239 ug/kg	97
7) Chloroethane	5.04	64	374502	236.6386 ug/kg	98
8) Trichlorofluoromethane	5.52	101	1120886	210.3832 ug/kg	99
10) Isoprene	6.09	67	690766	217.1654 ug/kg	97
11) Acrolein	6.31	56	2288	4.6071 ug/kg	86
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	592415	215.6090 ug/kg	100
13) Acetone	6.42	43	268070	202.8703 ug/kg	99
14) 1,1-Dichloroethene	6.62	61	1084122	213.8917 ug/kg	99
15) Tert-Butyl Alcohol	6.78	59	290	0.5229 ug/kg#	58
16) Dimethyl Sulfide	6.88	62	486231	226.9805 ug/kg	99
17) Iodomethane	7.14	142	341644	216.9305 ug/kg	98
18) Methyl acetate	7.15	43	558766	202.7886 ug/kg	97
19) Methylene Chloride	7.40	84	606998	219.8913 ug/kg	98
20) Carbon Disulfide	7.44	76	1650167	211.3432 ug/kg	98
21) Acrylonitrile	7.61	53	18860	13.8363 ug/kg#	28
22) Methyl Tert Butyl Ether	7.61	73	1710517	217.5666 ug/kg	99
23) trans-1,2-Dichloroethene	7.84	61	967656	214.2173 ug/kg	99
24) n-Hexane	7.92	57	1006142	215.9497 ug/kg	97
26) Vinyl Acetate	8.43	43	1320060	213.9959 ug/kg	98
27) 1,1-Dichloroethane	8.46	63	1199515	211.4185 ug/kg	100
29) 2-Butanone	9.02	43	373284	213.4201 ug/kg	100
31) 2,2-Dichloropropane	9.24	77	904865	213.6764 ug/kg	100
32) cis-1,2-Dichloroethene	9.31	96	649726	219.3058 ug/kg	100
33) Chloroform	9.52	83	1094765	210.0507 ug/kg	100
34) 1-Bromopropane	9.66	122	98189	213.9851 ug/kg	100
35) Bromochloromethane	9.75	130	427351	222.0603 ug/kg	99
36) Tetrahydrofuran	9.77	42	2491	2.2095 ug/kg	93
38) 1,1,1-Trichloroethane	10.05	97	1020636	216.5435 ug/kg	100
39) Cyclohexane	10.08	56	1092323	212.5677 ug/kg	98
40) 1,1-Dichloropropene	10.24	75	780375	210.4109 ug/kg	98
42) Carbon Tetrachloride	10.39	117	950685	217.5657 ug/kg	100
45) 1,2-Dichloroethane	10.56	62	975428	212.7698 ug/kg	98
46) Benzene	10.61	78	2107212	202.9435 ug/kg	100
47) Trichloroethene	11.36	130	696420	211.6783 ug/kg	98
48) Methylcyclohexane	11.43	83	922594	223.5862 ug/kg	100
49) 1,2-Dichloropropane	11.57	63	613480	215.1567 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972904.D Vial: 9
Acq On : 25 Feb 2016 20:00 Operator: ADC
Sample : WG558732-09 200.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:58 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
50)	1,4-Dioxane	11.86	88	821	19.1932	ug/kg#	7
51)	Bromodichloromethane	11.87	83	861318	214.3439	ug/kg	99
52)	Dibromomethane	11.96	174	401145	212.3328	ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	173854	210.9891	ug/kg	98
54)	4-Methyl-2-Pentanone	12.19	58	281550	224.9694	ug/kg	99
55)	cis-1,3-Dichloropropene	12.51	75	917528	219.1621	ug/kg	100
56)	Dimethyl Disulfide	12.77	94	993447	236.1300	ug/kg	99
59)	Toluene	12.93	91	2353264	207.5190	ug/kg	100
60)	Ethyl Methacrylate	13.01	69	698780	222.3090	ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	892986	218.6361	ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	510766	214.4105	ug/kg	98
63)	2-Hexanone	13.26	43	551431	231.8433	ug/kg	99
64)	1,3-Dichloropropane	13.63	76	842104	212.1481	ug/kg	99
65)	Tetrachloroethene	13.75	164	518091	213.1138	ug/kg	97
66)	Dibromochloromethane	14.02	129	723489	217.3121	ug/kg	99
67)	1,2-Dibromoethane	14.27	107	560802	212.2411	ug/kg	99
68)	1-Chlorohexane	14.35	91	757279	226.4519	ug/kg	100
69)	Chlorobenzene	14.78	112	1626715	204.1050	ug/kg	98
70)	1,1,1,2-Tetrachloroethane	14.81	131	649903	217.1378	ug/kg	97
71)	Ethylbenzene	14.80	106	871321	212.2035	ug/kg	99
72)	m-,p-Xylene	14.89	106	2089330	412.0243	ug/kg	98
73)	o-Xylene	15.45	106	1065692	218.9929	ug/kg	98
74)	Styrene	15.49	104	1839951	222.0334	ug/kg	100
75)	Bromoform	15.99	173	511700	234.0915	ug/kg	99
76)	Isopropylbenzene	15.87	105	2873816	219.9805	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	662688	205.8943	ug/kg	99
80)	1,2,3-Trichloropropane	16.29	110	257281	210.7797	ug/kg	98
81)	trans-1,4-Dichloro-2-Buten	16.34	53	281460	228.7601	ug/kg	90
82)	n-Propylbenzene	16.38	91	3244636	194.5439	ug/kg	100
83)	Bromobenzene	16.52	156	759998	193.0269	ug/kg	95
84)	1,3,5-Trimethylbenzene	16.57	105	2471747	197.4342	ug/kg	99
85)	2-Chlorotoluene	16.66	91	2218317	198.3049	ug/kg	100
86)	4-Chlorotoluene	16.71	91	1934954	187.0917	ug/kg	100
87)	a-Methylstyrene	16.98	118	1205032	211.2436	ug/kg	99
88)	tert-Butylbenzene	17.03	134	526001	200.4032	ug/kg	87
89)	1,2,4-Trimethylbenzene	17.09	105	2520611	192.2523	ug/kg	100
90)	sec-Butylbenzene	17.31	105	3206494	198.8615	ug/kg	100
91)	p-Isopropyltoluene	17.47	119	2752661	202.2895	ug/kg	100
92)	1,3-Dichlorobenzene	17.67	146	1508843	192.8225	ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	1522857	194.6701	ug/kg	99
94)	n-Butylbenzene	17.99	91	2603240	205.7600	ug/kg	100
95)	1,2-Dichlorobenzene	18.29	146	1515803	208.7710	ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	205456	220.4304	ug/kg	98
97)	1,2,4-Trichlorobenzene	20.43	180	1061631	205.9726	ug/kg	99
98)	Hexachlorobutadiene	20.58	225	612598	225.4729	ug/kg	100
99)	Naphthalene	20.81	128	2666581	206.2661	ug/kg	99
100)	1,2,3-Trichlorobenzene	21.12	180	1022740	204.5802	ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972904.D Vial: 9
Acq On : 25 Feb 2016 20:00 Operator: ADC
Sample : WG558732-09 200.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

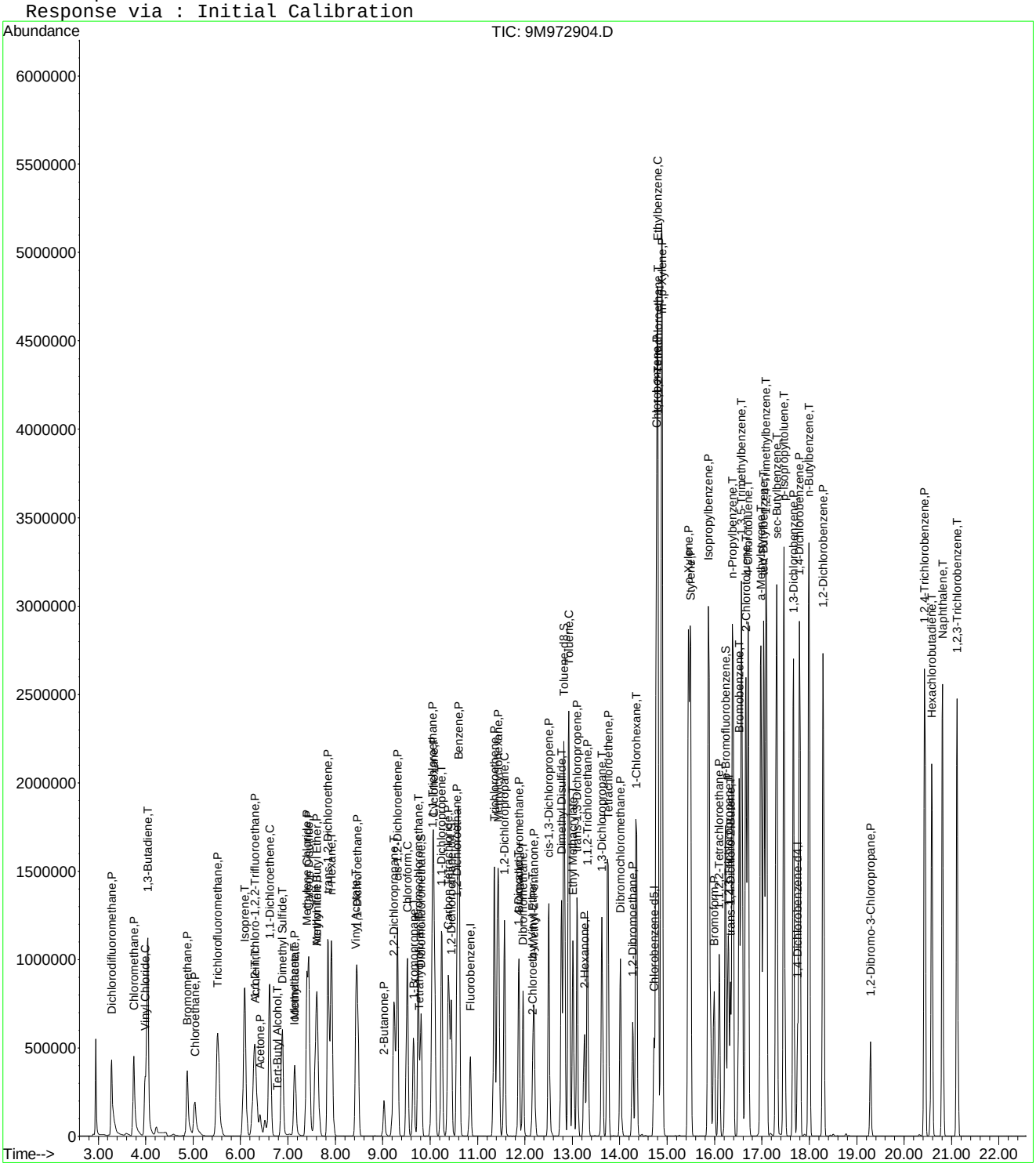

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972905.D Vial: 10
Acq On : 25 Feb 2016 20:30 Operator: ADC
Sample : WG558732-10 300.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:59 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	626979	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	468521	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	224223	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	520	0.1530 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.30%#	
43) 1,2-Dichloroethane-d4	10.45	65	1794	0.4207 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.84%#	
58) Toluene-d8	12.82	98	7789	0.6573 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	1.32%#	
79) p-Bromofluorobenzene	16.23	95	6216	1.4237 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	2.84%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	1155483	270.0216 ug/kg	98
3) Chloromethane	3.75	50	1142773	278.5891 ug/kg	100
4) Vinyl Chloride	3.98	62	1112221	270.8539 ug/kg	99
5) 1,3-Butadiene	4.03	54	1100483	281.6917 ug/kg	98
6) Bromomethane	4.87	94	749711	281.1083 ug/kg	98
7) Chloroethane	5.04	64	601337	328.7051 ug/kg	98
8) Trichlorofluoromethane	5.52	101	1778447	288.7670 ug/kg	99
9) Diethyl ether	6.06	59	869609	302.0457 ug/kg	99
10) Isoprene	6.08	67	1108410	301.4513 ug/kg	98
11) Acrolein	6.30	56	93621	163.0794 ug/kg	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	943691	297.1172 ug/kg	99
13) Acetone	6.42	43	369915	242.6618 ug/kg	95
14) 1,1-Dichloroethene	6.61	61	1715009	292.7111 ug/kg	98
15) Tert-Butyl Alcohol	6.80	59	188151	293.4850 ug/kg	89
16) Dimethyl Sulfide	6.88	62	763075	308.1557 ug/kg	99
17) Iodomethane	7.14	142	532480	291.5128 ug/kg	99
18) Methyl acetate	7.15	43	879657	276.1748 ug/kg	98
19) Methylene Chloride	7.40	84	937262	293.7237 ug/kg	96
20) Carbon Disulfide	7.44	76	2640380	292.5391 ug/kg	98
21) Acrylonitrile	7.59	53	252681	160.3640 ug/kg	94
22) Methyl Tert Butyl Ether	7.61	73	2699681	297.0533 ug/kg	98
23) trans-1,2-Dichloroethene	7.84	61	1548353	296.5245 ug/kg	100
24) n-Hexane	7.92	57	1608467	298.6501 ug/kg	98
25) Diisopropyl ether	8.26	45	3742238	299.1747 ug/kg	100
26) Vinyl Acetate	8.43	43	2097407	294.1383 ug/kg	99
27) 1,1-Dichloroethane	8.47	63	1881635	286.8995 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	3515202	302.2390 ug/kg	99
29) 2-Butanone	9.02	43	559900	276.9258 ug/kg	100
30) Propionitrile	9.14	54	182998	295.7653 ug/kg	100
31) 2,2-Dichloropropane	9.24	77	1439671	294.0988 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	1040893	303.9366 ug/kg	99
33) Chloroform	9.52	83	1708608	283.5977 ug/kg	99
34) 1-Bromopropane	9.65	122	152776	287.6719 ug/kg	98
35) Bromochloromethane	9.75	130	668631	300.5590 ug/kg	98
36) Tetrahydrofuran	9.77	42	365915	280.7723 ug/kg	97
38) 1,1,1-Trichloroethane	10.05	97	1606962	294.9423 ug/kg	100
39) Cyclohexane	10.08	56	1746722	294.0540 ug/kg	99
40) 1,1-Dichloropropene	10.24	75	1258569	293.5615 ug/kg	98
41) Tert-Amyl-Methyl ether	10.34	73	2573262	304.3824 ug/kg	98
42) Carbon Tetrachloride	10.39	117	1494872	295.9476 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972905.D Vial: 10
Acq On : 25 Feb 2016 20:30 Operator: ADC
Sample : WG558732-10 300.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:59 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.57	62	1526616	288.0725 ug/kg	98
46)	Benzene	10.61	78	3320959	276.6861 ug/kg	99
47)	Trichloroethene	11.36	130	1102750	289.9607 ug/kg	98
48)	Methylcyclohexane	11.43	83	1476436	309.5324 ug/kg	98
49)	1,2-Dichloropropane	11.57	63	980423	297.4576 ug/kg	99
50)	1,4-Dioxane	11.89	88	31126	629.4828 ug/kg	81
51)	Bromodichloromethane	11.87	83	1358159	292.3851 ug/kg	99
52)	Dibromomethane	11.96	174	632731	289.7290 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	287132	300.2354 ug/kg	96
54)	4-Methyl-2-Pentanone	12.19	58	438042	302.7895 ug/kg	99
55)	cis-1,3-Dichloropropene	12.51	75	1436858	296.9047 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	1505953	309.6528 ug/kg	95
59)	Toluene	12.93	91	3720819	277.9530 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	1096301	295.4554 ug/kg	100
61)	trans-1,3-Dichloropropene	13.10	75	1416217	293.7329 ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	820836	291.8946 ug/kg	99
63)	2-Hexanone	13.26	43	814427	290.0688 ug/kg	100
64)	1,3-Dichloropropane	13.63	76	1322191	282.1714 ug/kg	100
65)	Tetrachloroethene	13.75	164	815946	284.3233 ug/kg	98
66)	Dibromochloromethane	14.02	129	1136128	289.0845 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	889642	285.2204 ug/kg	99
68)	1-Chlorohexane	14.34	91	1188786	301.1405 ug/kg	99
69)	Chlorobenzene	14.78	112	2558374	271.9265 ug/kg	97
70)	1,1,1,2-Tetrachloroethane	14.81	131	1019464	288.5389 ug/kg	97
71)	Ethylbenzene	14.80	106	1372834	283.2291 ug/kg	97
72)	m-,p-Xylene	14.89	106	3241616	541.5304 ug/kg	97
73)	o-Xylene	15.45	106	1663016	289.4945 ug/kg	99
74)	Styrene	15.49	104	2869824	293.3680 ug/kg	99
75)	Bromoform	15.99	173	788638	305.6282 ug/kg	99
76)	Isopropylbenzene	15.87	105	4421589	286.7141 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	1002445	294.7201 ug/kg	99
80)	1,2,3-Trichloropropane	16.28	110	380025	294.6098 ug/kg	66
81)	trans-1,4-Dichloro-2-Buten	16.34	53	413901	318.3274 ug/kg	57
82)	n-Propylbenzene	16.38	91	4980503	282.5783 ug/kg	99
83)	Bromobenzene	16.52	156	1176440	282.7414 ug/kg	93
84)	1,3,5-Trimethylbenzene	16.57	105	3788936	286.3846 ug/kg	99
85)	2-Chlorotoluene	16.66	91	3458872	292.5892 ug/kg	100
86)	4-Chlorotoluene	16.71	91	2929432	268.0287 ug/kg	100
87)	a-Methylstyrene	16.98	118	1823514	302.4880 ug/kg	100
88)	tert-Butylbenzene	17.03	134	795019	286.6221 ug/kg	86
89)	1,2,4-Trimethylbenzene	17.09	105	3829230	276.3702 ug/kg	100
90)	sec-Butylbenzene	17.31	105	4833765	283.6742 ug/kg	99
91)	p-Isopropyltoluene	17.47	119	4134027	287.4802 ug/kg	99
92)	1,3-Dichlorobenzene	17.67	146	2260017	273.2999 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	2229106	269.6404 ug/kg	99
94)	n-Butylbenzene	17.99	91	3871124	289.5329 ug/kg	100
95)	1,2-Dichlorobenzene	18.29	146	2162642	281.8552 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	293112	297.5776 ug/kg	98
97)	1,2,4-Trichlorobenzene	20.43	180	1514973	278.1345 ug/kg	100
98)	Hexachlorobutadiene	20.58	225	846867	294.9498 ug/kg	99
99)	Naphthalene	20.81	128	3754823	274.8379 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.12	180	1451357	274.7177 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972905.D 8260SL.M Fri Feb 26 11:21:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972905.D Vial: 10
Acq On : 25 Feb 2016 20:30 Operator: ADC
Sample : WG558732-10 300.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

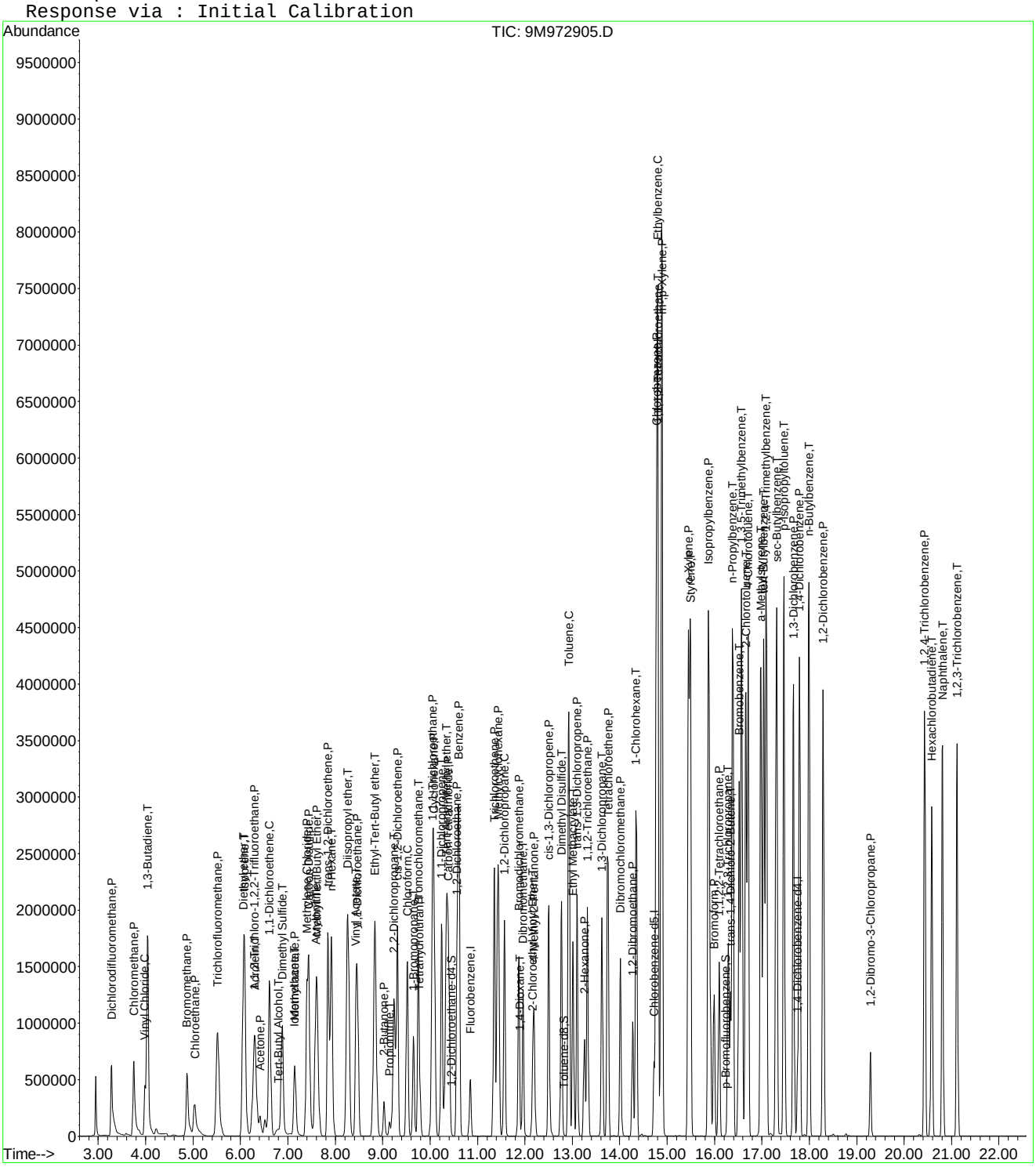

9M972905.D 8260SL.M Fri Feb 26 11:21:59 2016 Page 3

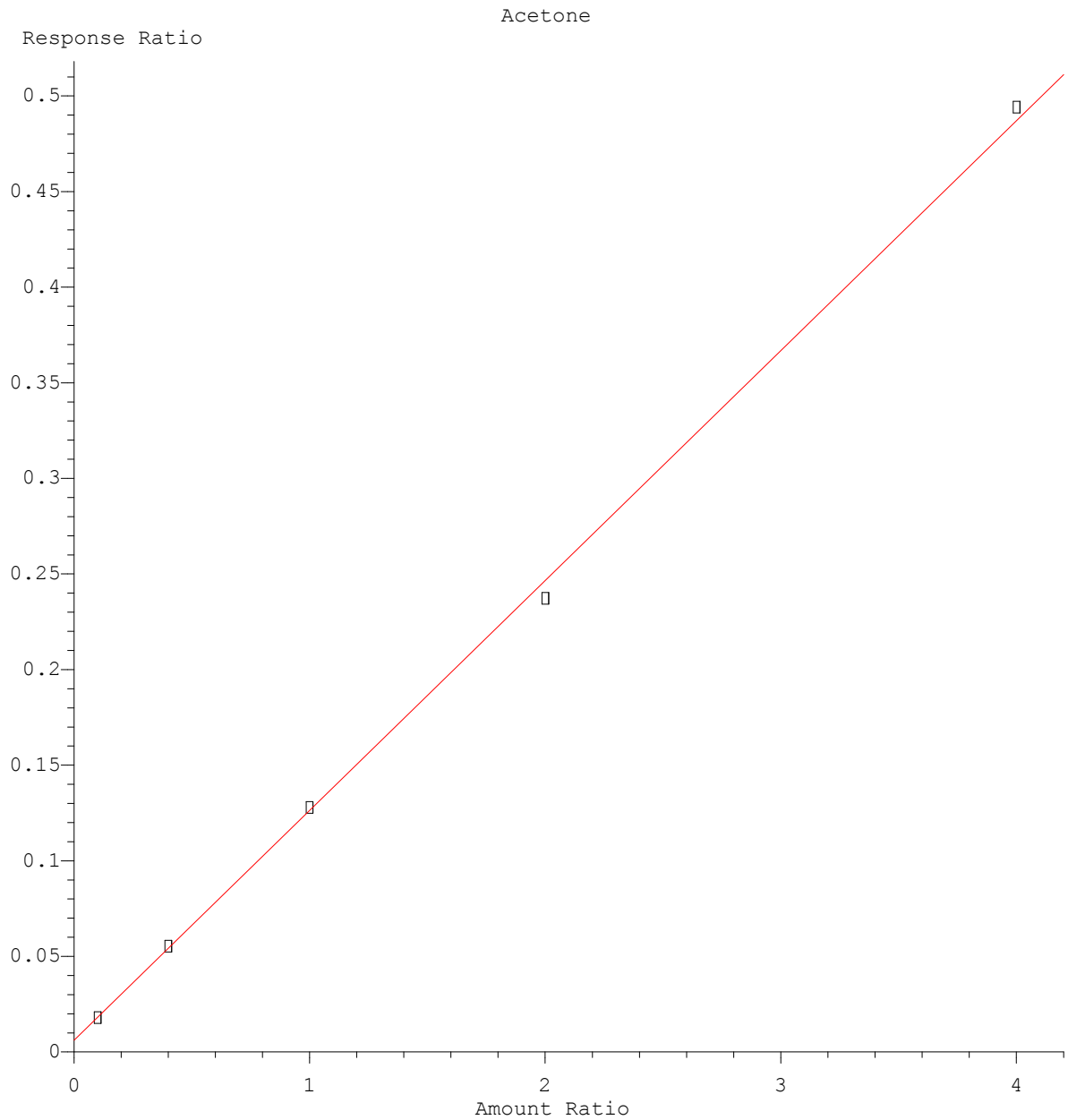

Resp Ratio = 1.20e-001 * Amt + 6.05e-003
Coef of Det (r^2) = 0.999 Curve Fit: wlr(1/a)

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

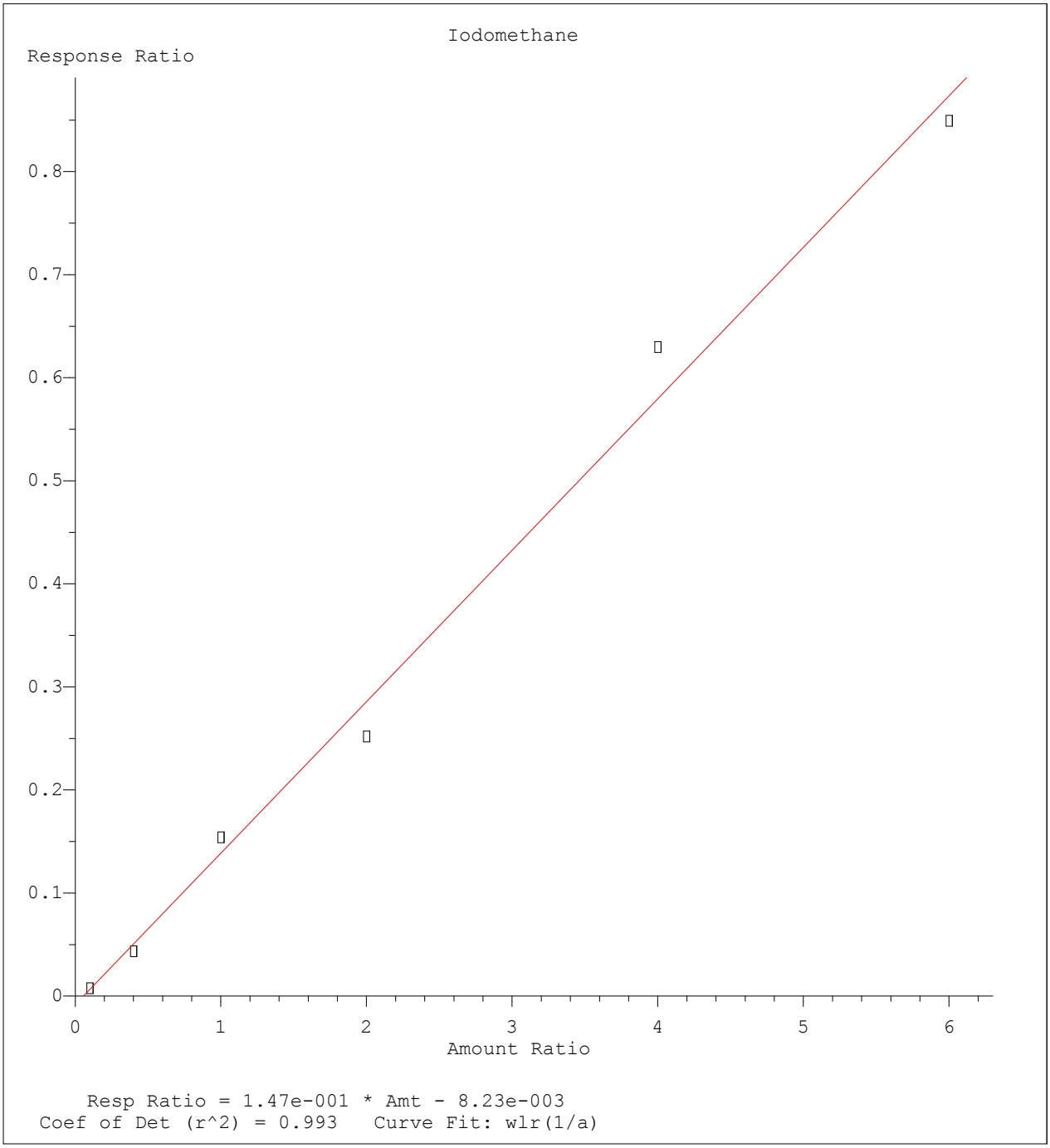

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

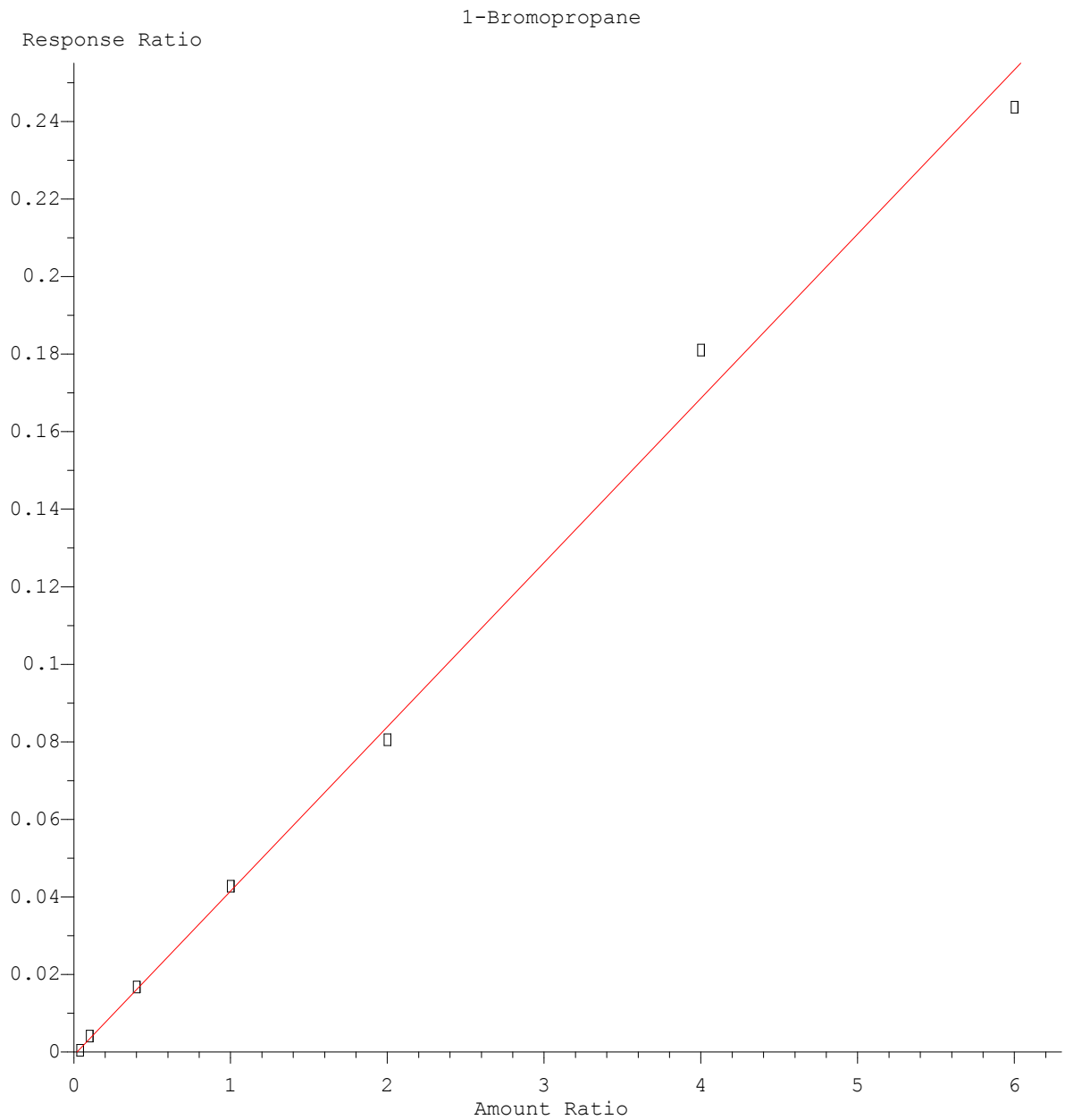

Resp Ratio = 4.25e-002 * Amt - 8.72e-004
Coef of Det (r^2) = 0.997 Curve Fit: wlr(1/a)

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

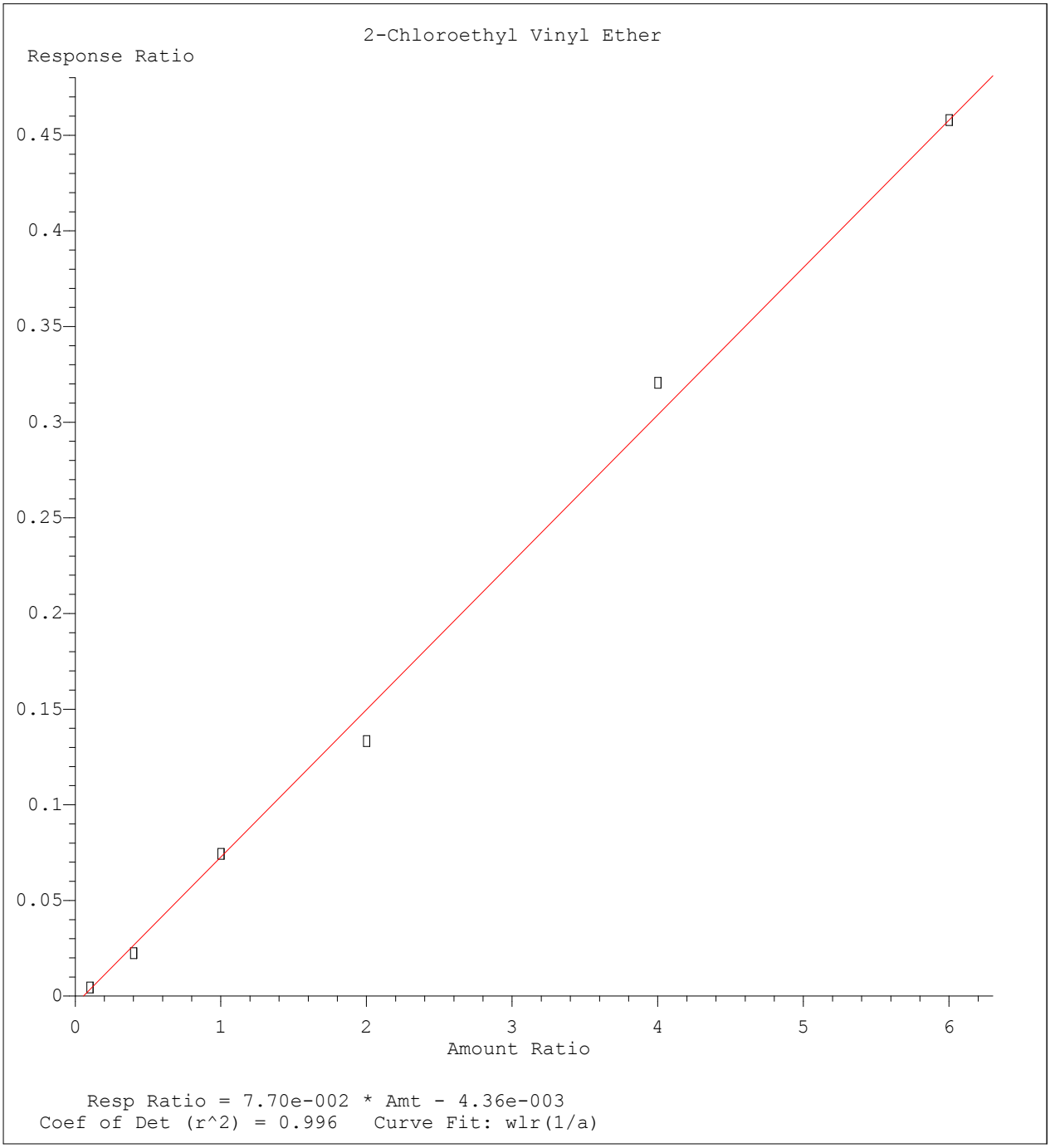

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:39:12 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	582126	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	421408	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	194909	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	163260	51.7395 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 103.48%		
43) 1,2-Dichloroethane-d4	10.45	65	197344	49.8458 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.70%		
58) Toluene-d8	12.82	98	564883	52.9951 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.00%		
79) p-Bromofluorobenzene	16.23	95	212358	55.9531 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 111.90%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	251431	63.3698 ug/kg	100
3) Chloromethane	3.74	50	200793	52.7216 ug/kg	100
4) Vinyl Chloride	3.99	62	228101	59.8284 ug/kg	99
5) 1,3-Butadiene	4.04	54	19055	5.2533 ug/kg	94
6) Bromomethane	4.88	94	121270	48.9744 ug/kg	100
7) Chloroethane	5.04	64	92003	54.1660 ug/kg	100
8) Trichlorofluoromethane	5.52	101	271981	47.5643 ug/kg	98
9) Diethyl ether	6.06	59	198146	74.1259 ug/kg	98
10) Isoprene	6.09	67	201645	59.0663 ug/kg	95
11) Acrolein	6.30	56	34569	64.8558 ug/kg	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	151498	51.3737 ug/kg	99
13) Acetone	6.41	43	65044	43.9190 ug/kg	98
14) 1,1-Dichloroethene	6.62	61	264179	48.5632 ug/kg	99
15) Tert-Butyl Alcohol	6.77	59	122141	205.1997 ug/kg	96
16) Dimethyl Sulfide	6.88	62	168266	73.1872 ug/kg	98
17) Iodomethane	7.13	142	81070	50.1419 ug/kg	99
18) Methyl acetate	7.15	43	155780	52.6767 ug/kg	99
19) Methylene Chloride	7.41	84	147546	49.8014 ug/kg	97
20) Carbon Disulfide	7.45	76	369798	44.1284 ug/kg	98
21) Acrylonitrile	7.59	53	71462	48.8478 ug/kg	99
22) Methyl Tert Butyl Ether	7.61	73	402298	47.6767 ug/kg	100
23) trans-1,2-Dichloroethene	7.85	61	245432	50.6242 ug/kg	100
24) n-Hexane	7.91	57	240056	48.0064 ug/kg	97
25) Diisopropyl ether	8.26	45	951889	81.9626 ug/kg	100
26) Vinyl Acetate	8.44	43	224385	33.8921 ug/kg	98
27) 1,1-Dichloroethane	8.47	63	282537	46.3987 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	854399	79.1219 ug/kg	99
29) 2-Butanone	9.03	43	88970	47.3950 ug/kg	99
30) Propionitrile	9.14	54	53106	92.4444 ug/kg	97
31) 2,2-Dichloropropane	9.24	77	213921	47.0673 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	167198	52.5828 ug/kg	96
33) Chloroform	9.52	83	268532	48.0056 ug/kg	99
34) 1-Bromopropane	9.65	122	36381	74.5451 ug/kg	96
35) Bromochloromethane	9.75	130	106386	51.5067 ug/kg	96
36) Tetrahydrofuran	9.78	42	101921	84.2313 ug/kg	98
38) 1,1,1-Trichloroethane	10.04	97	236420	46.7360 ug/kg	100
39) Cyclohexane	10.08	56	267623	48.5247 ug/kg	98
40) 1,1-Dichloropropene	10.25	75	193208	48.5381 ug/kg	99
41) Tert-Amyl-Methyl ether	10.34	73	688412	87.7041 ug/kg	100
42) Carbon Tetrachloride	10.39	117	218086	46.5023 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:39:12 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	241996	49.1831 ug/kg	99
46)	Benzene	10.60	78	545692	48.9674 ug/kg	99
47)	Trichloroethene	11.35	130	174371	49.3824 ug/kg	96
48)	Methylcyclohexane	11.44	83	228572	51.6120 ug/kg	98
49)	1,2-Dichloropropane	11.56	63	160075	52.3084 ug/kg	99
50)	1,4-Dioxane	11.88	88	7749	168.7883 ug/kg	88
51)	Bromodichloromethane	11.87	83	205164	47.5709 ug/kg	100
52)	Dibromomethane	11.96	174	95223	46.9624 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	36447	43.4907 ug/kg	97
54)	4-Methyl-2-Pentanone	12.19	58	64228	47.8173 ug/kg	96
55)	cis-1,3-Dichloropropene	12.50	75	238969	53.1840 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	243519	53.9302 ug/kg	99
59)	Toluene	12.93	91	610944	50.7412 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	172650	51.7315 ug/kg	99
61)	trans-1,3-Dichloropropene	13.11	75	216958	50.0293 ug/kg	98
62)	1,1,2-Trichloroethane	13.32	97	130293	51.5130 ug/kg	96
63)	2-Hexanone	13.25	43	121727	48.2017 ug/kg	99
64)	1,3-Dichloropropane	13.62	76	226811	53.8157 ug/kg	99
65)	Tetrachloroethene	13.75	164	128602	49.8224 ug/kg	96
66)	Dibromochloromethane	14.01	129	171284	48.4552 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	142409	50.7609 ug/kg	97
68)	1-Chlorohexane	14.35	91	184711	52.0217 ug/kg	98
69)	Chlorobenzene	14.77	112	433181	51.1898 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	157986	49.7138 ug/kg	100
71)	Ethylbenzene	14.79	106	223582	51.2841 ug/kg	100
72)	m-,p-Xylene	14.89	106	552299	102.5798 ug/kg	98
73)	o-Xylene	15.45	106	276739	53.5600 ug/kg	99
74)	Styrene	15.49	104	464515	52.7939 ug/kg	99
75)	Bromoform	15.99	173	109809	47.3129 ug/kg	99
76)	Isopropylbenzene	15.87	105	721376	52.0066 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	153818	52.0241 ug/kg	97
80)	1,2,3-Trichloropropane	16.29	110	60794	54.2181 ug/kg	92
81)	trans-1,4-Dichloro-2-Buten	16.33	53	48561	42.9649 ug/kg	74
82)	n-Propylbenzene	16.39	91	841260	54.9091 ug/kg	100
83)	Bromobenzene	16.52	156	188730	52.1806 ug/kg	96
84)	1,3,5-Trimethylbenzene	16.57	105	624761	54.3244 ug/kg	99
85)	2-Chlorotoluene	16.66	91	556729	54.1771 ug/kg	100
86)	4-Chlorotoluene	16.70	91	503918	53.0403 ug/kg	99
87)	a-Methylstyrene	16.98	118	305038	58.2105 ug/kg	98
88)	tert-Butylbenzene	17.03	134	133555	55.3912 ug/kg	90
89)	1,2,4-Trimethylbenzene	17.08	105	620621	51.5293 ug/kg	99
90)	sec-Butylbenzene	17.31	105	810765	54.7366 ug/kg	99
91)	p-Isopropyltoluene	17.46	119	675672	54.0529 ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	365216	50.8073 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	367190	51.0968 ug/kg	99
94)	n-Butylbenzene	17.99	91	609687	52.4585 ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	351826	52.7494 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	46623	54.4522 ug/kg	96
97)	1,2,4-Trichlorobenzene	20.43	180	244804	51.7031 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	136025	54.5004 ug/kg	99
99)	Naphthalene	20.81	128	603753	50.8387 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	241600	52.6087 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972907.D 8260SL.M Fri Feb 26 11:39:13 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:39 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

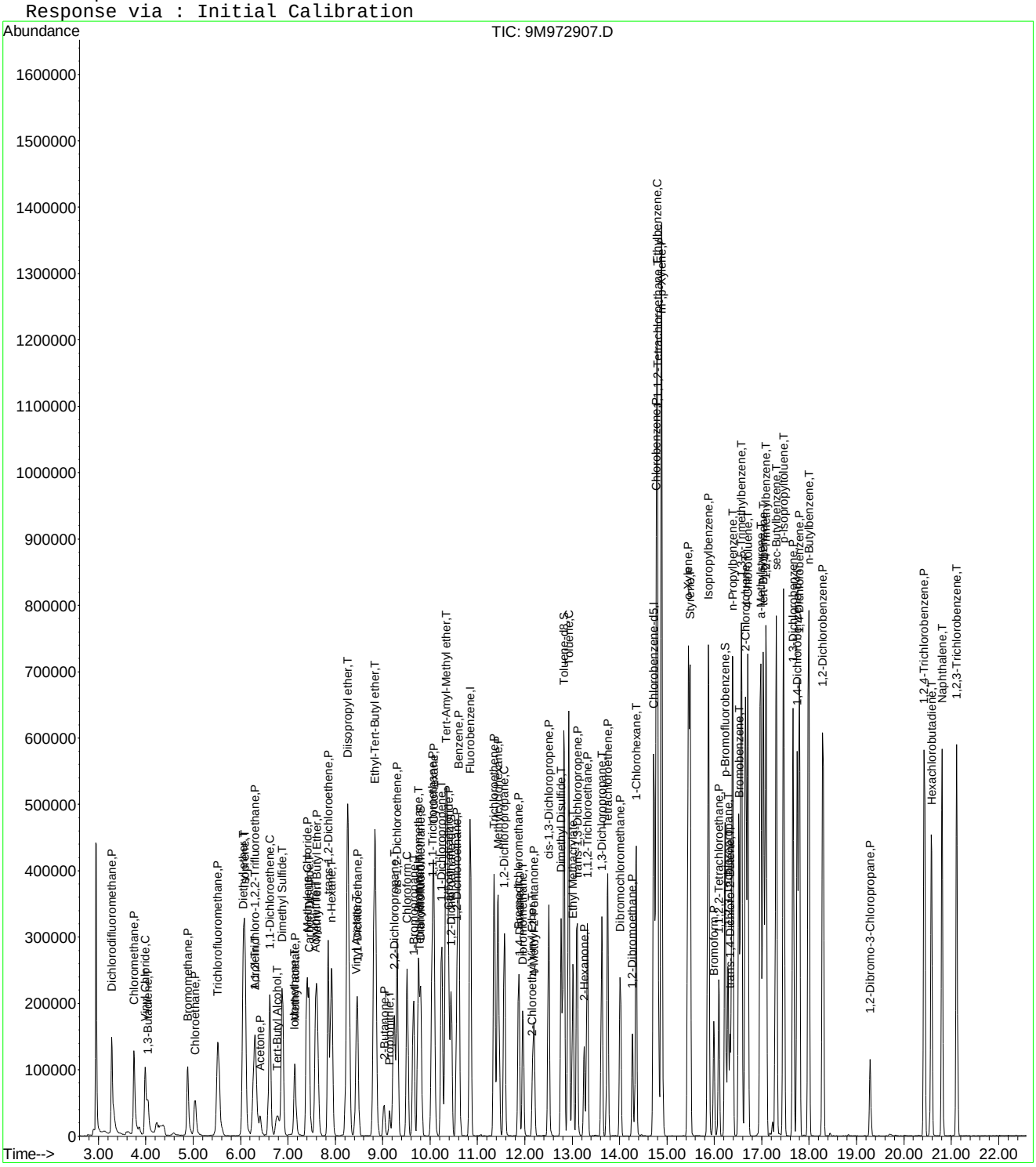

9M972907.D 8260SL.M Fri Feb 26 11:39:13 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	112	0.00
2	P	Dichlorodifluoromethane	50.0000	63.3698	-26.7#	123	0.00
3	P	Chloromethane	50.0000	52.7216	-5.4	107	0.00
4	C	Vinyl Chloride	50.0000	59.8284	-19.7	118	0.00
5	T	1,3-Butadiene	50.0000	5.2533	89.5#	11	0.00
6	P	Bromomethane	50.0000	48.9744	2.1	112	0.00
7	P	Chloroethane	50.0000	54.1660	-8.3	108	0.00
8	P	Trichlorofluoromethane	50.0000	47.5643	4.9	102	0.00
9	T	Diethyl ether	100.0000	74.1259	25.9#	79	0.01
10	T	Isoprene	50.0000	59.0664	-18.1	129	0.00
11	T	Acrolein	50.0000	64.8558	-29.7#	140	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	51.3737	-2.7	112	0.00
13	P	Acetone	50.0000	43.9190	12.2	98	0.00
14	C	1,1-Dichloroethene	50.0000	48.5632	2.9	108	0.00
15	T	Tert-Butyl Alcohol	200.0000	205.1997	-2.6	116	0.01
16	T	Dimethyl Sulfide	50.0000	73.1872	-46.4#	154	0.00
17	T	Iodomethane	50.0000	50.1419	-0.3	102	0.00
18	P	Methyl acetate	50.0000	52.6767	-5.4	115	0.01
19	P	Methylene Chloride	50.0000	49.8014	0.4	109	0.01
20	P	Carbon Disulfide	50.0000	44.1284	11.7	97	0.00
21	T	Acrylonitrile	50.0000	48.8478	2.3	103	0.00
22	P	Methyl Tert Butyl Ether	50.0000	47.6767	4.6	99	0.00
23	P	trans-1,2-Dichloroethene	50.0000	50.6242	-1.2	108	0.00
24	T	n-Hexane	50.0000	48.0064	4.0	109	0.00
25	T	Diisopropyl ether	100.0000	81.9626	18.0	87	0.00
26	T	Vinyl Acetate	50.0000	33.8921	32.2#	72	0.01
27	P	1,1-Dichloroethane	50.0000	46.3987	7.2	99	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	79.1219	20.9	83	0.00
29	P	2-Butanone	50.0000	47.3950	5.2	103	0.00
30	T	Propionitrile	100.0000	92.4444	7.6	100	0.00
31	T	2,2-Dichloropropane	50.0000	47.0673	5.9	99	0.00
32	P	cis-1,2-Dichloroethene	50.0000	52.5828	-5.2	109	0.00
33	C	Chloroform	50.0000	48.0057	4.0	102	0.00
34	T	1-Bromopropane	50.0000	74.5451	-49.1#	164	0.00
35	T	Bromochloromethane	50.0000	51.5067	-3.0	104	0.00
36	T	Tetrahydrofuran	100.0000	84.2314	15.8	90	0.00
37	S	Dibromofluoromethane	50.0000	51.7395	-3.5	110	0.00
38	P	1,1,1-Trichloroethane	50.0000	46.7360	6.5	97	0.00
39	P	Cyclohexane	50.0000	48.5247	3.0	108	0.00
40	T	1,1-Dichloropropene	50.0000	48.5381	2.9	106	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	87.7041	12.3	93	0.00
42	P	Carbon Tetrachloride	50.0000	46.5023	7.0	99	0.00
43	S	1,2-Dichloroethane-d4	50.0000	49.8458	0.3	107	0.00
44		Heptane	-1.0000	0.0000	0.0	104	0.00
45	P	1,2-Dichloroethane	50.0000	49.1831	1.6	102	0.00
46	P	Benzene	50.0000	48.9674	2.1	108	0.00
47	P	Trichloroethene	50.0000	49.3824	1.2	106	0.00
48	P	Methylcyclohexane	50.0000	51.6120	-3.2	112	0.00
49	C	1,2-Dichloropropane	50.0000	52.3083	-4.6	108	0.00
50	T	1,4-Dioxane	200.0000	168.7883	15.6	99	0.00
51	P	Bromodichloromethane	50.0000	47.5710	4.9	101	0.00
52	T	Dibromomethane	50.0000	46.9624	6.1	99	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	43.4907	13.0	95	0.00
54	P	4-Methyl-2-Pentanone	50.0000	47.8173	4.4	99	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	53.1840	-6.4	112	0.00
56	T	Dimethyl Disulfide	50.0000	53.9302	-7.9	111	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	111	0.00
58	S	Toluene-d8	50.0000	52.9951	-6.0	110	0.00
59	C	Toluene	50.0000	50.7412	-1.5	108	0.00
60	T	Ethyl Methacrylate	50.0000	51.7315	-3.5	109	0.00
61	P	trans-1,3-Dichloropropene	50.0000	50.0293	-0.1	102	0.00
62	P	1,1,2-Trichloroethane	50.0000	51.5130	-3.0	106	0.00
63	P	2-Hexanone	50.0000	48.2017	3.6	102	0.00
64	T	1,3-Dichloropropane	50.0000	53.8157	-7.6	113	0.00
65	P	Tetrachloroethene	50.0000	49.8224	0.4	110	0.00
66	P	Dibromochloromethane	50.0000	48.4552	3.1	101	0.00
67	P	1,2-Dibromoethane	50.0000	50.7609	-1.5	107	0.00
68	T	1-Chlorohexane	50.0000	52.0217	-4.0	110	0.00
69	P	Chlorobenzene	50.0000	51.1898	-2.4	108	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	49.7138	0.6	102	0.00
71	C	Ethylbenzene	50.0000	51.2841	-2.6	108	0.00
72	P	m-,p-Xylene	100.0000	102.5798	-2.6	111	0.00
73	P	o-Xylene	50.0000	53.5600	-7.1	112	0.00
74	P	Styrene	50.0000	52.7939	-5.6	109	0.00
75	P	Bromoform	50.0000	47.3129	5.4	95	0.00
76	P	Isopropylbenzene	50.0000	52.0066	-4.0	110	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	107	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	52.0241	-4.0	104	0.00
79	S	p-Bromofluorobenzene	50.0000	55.9531	-11.9	111	0.00
80	T	1,2,3-Trichloropropane	50.0000	54.2181	-8.4	109	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	42.9649	14.1	87	0.00
82	T	n-Propylbenzene	50.0000	54.9091	-9.8	112	0.00
83	T	Bromobenzene	50.0000	52.1806	-4.4	106	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	54.3244	-8.6	110	0.00
85	T	2-Chlorotoluene	50.0000	54.1771	-8.4	115	0.00
86	T	4-Chlorotoluene	50.0000	53.0403	-6.1	105	0.00
87	T	a-Methylstyrene	50.0000	58.2105	-16.4	119	0.00
88	T	tert-Butylbenzene	50.0000	55.3912	-10.8	110	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	51.5293	-3.1	107	0.00
90	T	sec-Butylbenzene	50.0000	54.7366	-9.5	112	0.00
91	T	p-Isopropyltoluene	50.0000	54.0529	-8.1	110	0.00
92	P	1,3-Dichlorobenzene	50.0000	50.8073	-1.6	108	0.00
93	P	1,4-Dichlorobenzene	50.0000	51.0968	-2.2	110	0.00
94	T	n-Butylbenzene	50.0000	52.4585	-4.9	108	0.00
95	P	1,2-Dichlorobenzene	50.0000	52.7494	-5.5	110	0.00
96	P	1,2-Dibromo-3-Chloropropane	50.0000	54.4522	-8.9	109	0.00
97	P	1,2,4-Trichlorobenzene	50.0000	51.7031	-3.4	110	0.00
98	T	Hexachlorobutadiene	50.0000	54.5004	-9.0	116	0.00
99	T	Naphthalene	50.0000	50.8387	-1.7	100	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	52.6087	-5.2	109	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972907.D 8260SL.M Fri Feb 26 11:39:16 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030616\9M973099.D Vial: 3
Acq On : 6 Mar 2016 15:56 Operator: ADC
Sample : WG559858-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 06 16:18:41 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	540271	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	409527	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.75	152	218878	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	142842	48.7757 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.56%		
43) 1,2-Dichloroethane-d4	10.44	65	179724	48.9121 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.82%		
58) Toluene-d8	12.83	98	506431	48.8897 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 97.78%		
79) p-Bromofluorobenzene	16.23	95	211772	49.6883 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 99.38%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	152852	41.5088 ug/kg	100
3) Chloromethane	3.74	50	156738	44.3425 ug/kg	99
4) Vinyl Chloride	3.99	62	182496	51.5749 ug/kg	99
5) 1,3-Butadiene	4.04	54	191273	56.8180 ug/kg	98
6) Bromomethane	4.88	94	96576	42.0233 ug/kg	97
7) Chloroethane	5.04	64	76033	48.2316 ug/kg	97
8) Trichlorofluoromethane	5.53	101	253324	47.7336 ug/kg	99
9) Diethyl ether	6.05	59	263983	106.4060 ug/kg	98
10) Isoprene	6.10	67	174062	54.9366 ug/kg	98
11) Acrolein	6.30	56	26216	52.9948 ug/kg	84
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	135596	49.5434 ug/kg	97
13) Acetone	6.40	43	68915	50.4935 ug/kg	100
14) 1,1-Dichloroethene	6.61	61	254517	50.4116 ug/kg	99
15) Tert-Butyl Alcohol	6.75	59	117182	212.1200 ug/kg	98
16) Dimethyl Sulfide	6.88	62	111297	52.1588 ug/kg	97
17) Iodomethane	7.14	142	63424	42.7063 ug/kg	98
18) Methyl acetate	7.14	43	166073	60.5078 ug/kg	97
19) Methylene Chloride	7.40	84	136418	49.6125 ug/kg	93
20) Carbon Disulfide	7.45	76	404084	51.9554 ug/kg	99
21) Acrylonitrile	7.59	53	77407	57.0106 ug/kg	99
22) Methyl Tert Butyl Ether	7.61	73	416760	53.2169 ug/kg	98
23) trans-1,2-Dichloroethene	7.85	61	235917	52.4314 ug/kg	96
24) n-Hexane	7.92	57	263016	56.6727 ug/kg	100
25) Diisopropyl ether	8.26	45	1195367	110.9012 ug/kg	98
26) Vinyl Acetate	8.43	43	313012	50.9414 ug/kg	99
27) 1,1-Dichloroethane	8.47	63	287207	50.8195 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	1064834	106.2487 ug/kg	98
29) 2-Butanone	9.02	43	93561	53.7018 ug/kg	98
30) Propionitrile	9.14	54	60333	113.1611 ug/kg	99
31) 2,2-Dichloropropane	9.24	77	211528	50.1463 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	153158	51.8989 ug/kg	93
33) Chloroform	9.52	83	261190	50.3104 ug/kg	100
34) 1-Bromopropane	9.65	122	22000	48.9279 ug/kg	99
35) Bromochloromethane	9.75	130	99779	52.0504 ug/kg	91
36) Tetrahydrofuran	9.78	42	129342	115.1741 ug/kg	98
38) 1,1,1-Trichloroethane	10.04	97	235016	50.0576 ug/kg	95
39) Cyclohexane	10.08	56	290166	56.6880 ug/kg	98
40) 1,1-Dichloropropene	10.24	75	186325	50.4353 ug/kg	99
41) Tert-Amyl-Methyl ether	10.34	73	761065	104.4717 ug/kg	98
42) Carbon Tetrachloride	10.39	117	215214	49.4450 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M973099.D 8260SL.M Sun Mar 06 16:18:42 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030616\9M973099.D Vial: 3
Acq On : 6 Mar 2016 15:56 Operator: ADC
Sample : WG559858-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 06 16:18:41 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	251601	55.0967 ug/kg	97
46)	Benzene	10.60	78	517616	50.0464 ug/kg	99
47)	Trichloroethene	11.35	130	165110	50.3822 ug/kg	96
48)	Methylcyclohexane	11.44	83	229191	55.7610 ug/kg	96
49)	1,2-Dichloropropane	11.57	63	152881	53.8278 ug/kg	100
50)	1,4-Dioxane	11.88	88	10267	240.9603 ug/kg	97
51)	Bromodichloromethane	11.87	83	203332	50.7986 ug/kg	98
52)	Dibromomethane	11.96	174	98058	52.1071 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.17	63	36203	46.3473 ug/kg	97
54)	4-Methyl-2-Pentanone	12.19	58	69290	55.5824 ug/kg	99
55)	cis-1,3-Dichloropropene	12.50	75	217717	52.2080 ug/kg	98
56)	Dimethyl Disulfide	12.77	94	231653	55.2768 ug/kg	98
59)	Toluene	12.92	91	580049	49.5729 ug/kg	100
60)	Ethyl Methacrylate	13.02	69	181833	56.0636 ug/kg	97
61)	trans-1,3-Dichloropropene	13.10	75	215831	51.2133 ug/kg	99
62)	1,1,2-Trichloroethane	13.32	97	133530	54.3244 ug/kg	100
63)	2-Hexanone	13.25	43	133511	54.4017 ug/kg	99
64)	1,3-Dichloropropane	13.62	76	209116	51.0567 ug/kg	93
65)	Tetrachloroethene	13.75	164	123539	49.2495 ug/kg	96
66)	Dibromochloromethane	14.01	129	172466	50.2051 ug/kg	97
67)	1,2-Dibromoethane	14.28	107	135412	49.6671 ug/kg	98
68)	1-Chlorohexane	14.35	91	186775	54.1291 ug/kg	94
69)	Chlorobenzene	14.77	112	403713	49.0916 ug/kg	98
70)	1,1,1,2-Tetrachloroethane	14.80	131	155707	50.4182 ug/kg	94
71)	Ethylbenzene	14.79	106	215364	50.8323 ug/kg	100
72)	m-,p-Xylene	14.89	106	531429	101.5671 ug/kg	97
73)	o-Xylene	15.45	106	257893	51.3606 ug/kg	99
74)	Styrene	15.49	104	440272	51.4903 ug/kg	99
75)	Bromoform	15.99	173	114415	50.7277 ug/kg	99
76)	Isopropylbenzene	15.87	105	694457	51.5184 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	154978	46.6764 ug/kg	100
80)	1,2,3-Trichloropropane	16.29	110	59930	47.5946 ug/kg	99
81)	trans-1,4-Dichloro-2-Buten	16.33	53	70039	55.1818 ug/kg	79
82)	n-Propylbenzene	16.39	91	801774	46.6010 ug/kg	98
83)	Bromobenzene	16.52	156	179091	44.0932 ug/kg	93
84)	1,3,5-Trimethylbenzene	16.57	105	589463	45.6422 ug/kg	99
85)	2-Chlorotoluene	16.66	91	523842	45.3944 ug/kg	100
86)	4-Chlorotoluene	16.70	91	484086	45.3731 ug/kg	99
87)	a-Methylstyrene	16.98	118	293131	49.8126 ug/kg	100
88)	tert-Butylbenzene	17.04	134	125771	46.4505 ug/kg	99
89)	1,2,4-Trimethylbenzene	17.09	105	604060	44.6620 ug/kg	100
90)	sec-Butylbenzene	17.30	105	771716	46.3949 ug/kg	99
91)	p-Isopropyltoluene	17.46	119	643926	45.8721 ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	343352	42.5349 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	342896	42.4908 ug/kg	100
94)	n-Butylbenzene	17.99	91	613993	47.0438 ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	330049	44.0654 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	42809	44.5225 ug/kg	98
97)	1,2,4-Trichlorobenzene	20.43	180	227738	42.8315 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	120658	43.0494 ug/kg	99
99)	Naphthalene	20.81	128	614969	46.1125 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	228091	44.2281 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030616\9M973099.D Vial: 3
Acq On : 6 Mar 2016 15:56 Operator: ADC
Sample : WG559858-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 6 16:18 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

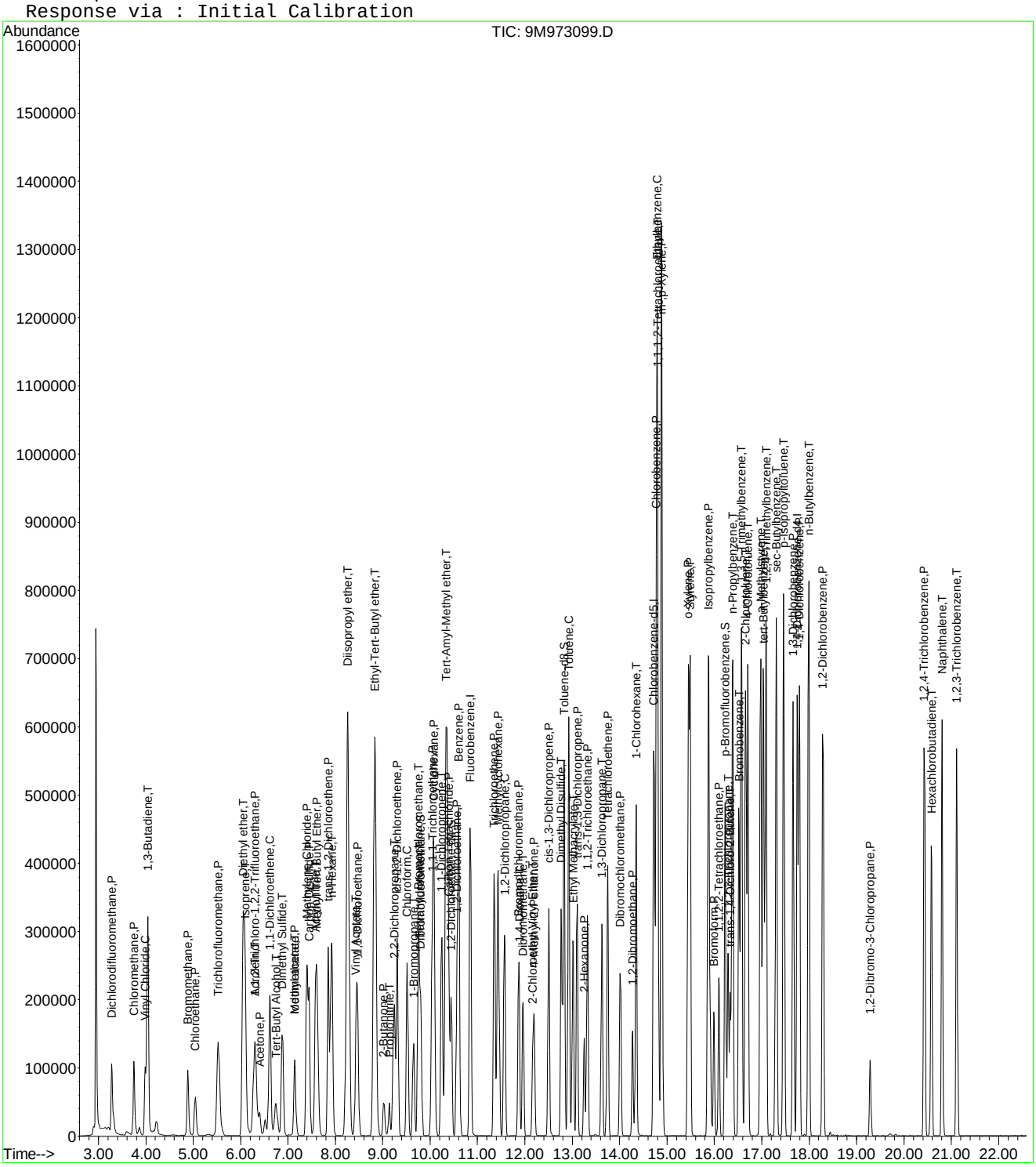

9M973099.D 8260SL.M Sun Mar 06 16:18:42 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\030616\9M973099.D Vial: 3
Acq On : 6 Mar 2016 15:56 Operator: ADC
Sample : WG559858-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	104	0.00
2	P	Dichlorodifluoromethane	0.3408	0.2829	17.0	75	0.00
3	P	Chloromethane	0.3271	0.2901	11.3	84	0.00
4	C	Vinyl Chloride	0.3275	0.3378	-3.2	95	0.00
5	T	1,3-Butadiene	0.3115	0.3540	-13.6	112	0.00
6	P	Bromomethane	0.2127	0.1787	16.0	89	0.00
7	P	Chloroethane	0.1459	0.1407	3.5	89	0.00
8	P	Trichlorofluoromethane	0.4911	0.4689	4.5	95	0.00
9	T	Diethyl ether	0.2296	0.2443	-6.4	106	0.01
10	T	Isoprene	0.2932	0.3222	-9.9	111	0.01
11	T	Acrolein	0.0458	0.0485	-6.0	106	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	0.2533	0.2510	0.9	100	0.00
13	P	Acetone	0.1376	0.1276	7.3	104	0.00
14	C	1,1-Dichloroethene	0.4672	0.4711	-0.8	104	0.00
15	T	Tert-Butyl Alcohol	0.0511	0.0542	-6.0	112	-0.01
16	T	Dimethyl Sulfide	0.1975	0.2060	-4.3	102	0.00
17	T	Iodomethane	0.1273	0.1174	7.8	80	0.01
18	P	Methyl acetate	0.2540	0.3074	-21.0	122	0.00
19	P	Methylene Chloride	0.2545	0.2525	0.8	101	0.00
20	P	Carbon Disulfide	0.7198	0.7479	-3.9	106	0.00
21	T	Acrylonitrile	0.1257	0.1433	-14.0	111	0.00
22	P	Methyl Tert Butyl Ether	0.7248	0.7714	-6.4	102	0.00
23	P	trans-1,2-Dichloroethene	0.4164	0.4367	-4.9	104	0.00
24	T	n-Hexane	0.4295	0.4868	-13.3	120	0.01
25	T	Diisopropyl ether	0.9975	1.1063	-10.9	110	0.00
26	T	Vinyl Acetate	0.5686	0.5794	-1.9	100	0.00
27	P	1,1-Dichloroethane	0.5230	0.5316	-1.6	101	0.00
28	T	Ethyl-Tert-Butyl ether	0.9275	0.9855	-6.2	104	0.00
29	P	2-Butanone	0.1612	0.1732	-7.4	109	-0.01
30	T	Propionitrile	0.0493	0.0558	-13.2	113	0.00
31	T	2,2-Dichloropropane	0.3904	0.3915	-0.3	98	0.00
32	P	cis-1,2-Dichloroethene	0.2731	0.2835	-3.8	100	0.00
33	C	Chloroform	0.4805	0.4834	-0.6	99	0.00
34	T	1-Bromopropane	0.0376	0.0407	-8.3	99	0.00
35	T	Bromochloromethane	0.1774	0.1847	-4.1	97	0.00
36	T	Tetrahydrofuran	0.1039	0.1197	-15.2	114	0.00
37	S	Dibromofluoromethane	0.2710	0.2644	2.4	97	0.00
38	P	1,1,1-Trichloroethane	0.4345	0.4350	-0.1	97	0.00
39	P	Cyclohexane	0.4737	0.5371	-13.4	117	0.00
40	T	1,1-Dichloropropene	0.3419	0.3449	-0.9	102	0.00
41	T	Tert-Amyl-Methyl ether	0.6742	0.7043	-4.5	103	0.00
42	P	Carbon Tetrachloride	0.4028	0.3983	1.1	97	0.00
43	S	1,2-Dichloroethane-d4	0.3401	0.3327	2.2	98	0.00
44		Heptane	0.0000	0.0000	0.0	110	0.00
45	P	1,2-Dichloroethane	0.4226	0.4657	-10.2	106	0.00
46	P	Benzene	0.9572	0.9581	-0.1	103	0.00
47	P	Trichloroethene	0.3033	0.3056	-0.8	101	0.00
48	P	Methylcyclohexane	0.3804	0.4242	-11.5	112	0.00
49	C	1,2-Dichloropropane	0.2628	0.2830	-7.7	103	0.01
50	T	1,4-Dioxane	0.0039	0.0047	-20.6	132	0.00
51	P	Bromodichloromethane	0.3704	0.3764	-1.6	100	0.00
52	T	Dibromomethane	0.1742	0.1815	-4.2	102	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0665	0.0670	-0.7	94	0.00
54	P	4-Methyl-2-Pentanone	0.1154	0.1283	-11.2	107	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\030616\9M973099.D Vial: 3
Acq On : 6 Mar 2016 15:56 Operator: ADC
Sample : WG559858-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	0.3859	0.4030	-4.4	102	0.00
56	T	Dimethyl Disulfide	0.3878	0.4288	-10.6	105	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	108	-0.01
58	S	Toluene-d8	1.2647	1.2366	2.2	99	0.00
59	C	Toluene	1.4286	1.4164	0.9	103	0.00
60	T	Ethyl Methacrylate	0.3960	0.4440	-12.1	114	0.00
61	P	trans-1,3-Dichloropropene	0.5145	0.5270	-2.4	102	0.00
62	P	1,1,2-Trichloroethane	0.3001	0.3261	-8.7	109	-0.01
63	P	2-Hexanone	0.2996	0.3260	-8.8	112	0.00
64	T	1,3-Dichloropropane	0.5001	0.5106	-2.1	104	-0.01
65	P	Tetrachloroethene	0.3063	0.3017	1.5	106	0.00
66	P	Dibromochloromethane	0.4194	0.4211	-0.4	102	0.00
67	P	1,2-Dibromoethane	0.3329	0.3307	0.7	102	0.00
68	T	1-Chlorohexane	0.4213	0.4561	-8.3	111	0.00
69	P	Chlorobenzene	1.0041	0.9858	1.8	101	0.00
70	T	1,1,1,2-Tetrachloroethane	0.3771	0.3802	-0.8	101	0.00
71	C	Ethylbenzene	0.5173	0.5259	-1.7	104	-0.01
72	P	m-,p-Xylene	0.6388	0.6488	-1.6	107	0.00
73	P	o-Xylene	0.6130	0.6297	-2.7	104	0.00
74	P	Styrene	1.0440	1.0751	-3.0	103	0.00
75	P	Bromoform	0.2754	0.2794	-1.5	99	-0.01
76	P	Isopropylbenzene	1.6458	1.6958	-3.0	105	-0.01
77	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	120	-0.01
78	P	1,1,2,2-Tetrachloroethane	0.7585	0.7081	6.6	105	-0.01
79	S	p-Bromofluorobenzene	0.9736	0.9675	0.6	110	0.00
80	T	1,2,3-Trichloropropane	0.2876	0.2738	4.8	108	0.00
81	T	trans-1,4-Dichloro-2-Butene	0.2899	0.3200	-10.4	126	0.00
82	T	n-Propylbenzene	3.9303	3.6631	6.8	107	0.00
83	T	Bromobenzene	0.9278	0.8182	11.8	101	0.00
84	T	1,3,5-Trimethylbenzene	2.9502	2.6931	8.7	104	-0.01
85	T	2-Chlorotoluene	2.6361	2.3933	9.2	108	0.00
86	T	4-Chlorotoluene	2.4372	2.2117	9.3	101	0.00
87	T	a-Methylstyrene	1.3443	1.3392	0.4	115	0.00
88	T	tert-Butylbenzene	0.6185	0.5746	7.1	103	0.00
89	T	1,2,4-Trimethylbenzene	3.0897	2.7598	10.7	104	0.00
90	T	sec-Butylbenzene	3.7998	3.5258	7.2	106	0.00
91	T	p-Isopropyltoluene	3.2067	2.9419	8.3	105	0.00
92	P	1,3-Dichlorobenzene	1.8440	1.5687	14.9	102	0.00
93	P	1,4-Dichlorobenzene	1.8435	1.5666	15.0	102	-0.01
94	T	n-Butylbenzene	2.9815	2.8052	5.9	109	0.00
95	P	1,2-Dichlorobenzene	1.7110	1.5079	11.9	103	-0.01
96	P	1,2-Dibromo-3-Chloropropane	0.2197	0.1956	11.0	100	-0.01
97	P	1,2,4-Trichlorobenzene	1.2146	1.0405	14.3	102	-0.01
98	T	Hexachlorobutadiene	0.6403	0.5513	13.9	103	0.00
99	T	Naphthalene	3.0465	2.8096	7.8	102	0.00
100	T	1,2,3-Trichlorobenzene	1.1781	1.0421	11.5	103	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M973099.D 8260SL.M Mon Mar 07 08:50:47 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\030616\9M973099.D Vial: 3
Acq On : 6 Mar 2016 15:56 Operator: ADC
Sample : WG559858-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	104	0.00
2	P	Dichlorodifluoromethane	50.0000	41.5088	17.0	75	0.00
3	P	Chloromethane	50.0000	44.3425	11.3	84	0.00
4	C	Vinyl Chloride	50.0000	51.5749	-3.1	95	0.00
5	T	1,3-Butadiene	50.0000	56.8180	-13.6	112	0.00
6	P	Bromomethane	50.0000	42.0233	16.0	89	0.00
7	P	Chloroethane	50.0000	48.2316	3.5	89	0.00
8	P	Trichlorofluoromethane	50.0000	47.7336	4.5	95	0.00
9	T	Diethyl ether	100.0000	106.4060	-6.4	106	0.01
10	T	Isoprene	50.0000	54.9366	-9.9	111	0.01
11	T	Acrolein	50.0000	52.9948	-6.0	106	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	49.5434	0.9	100	0.00
13	P	Acetone	50.0000	50.4935	-1.0	104	0.00
14	C	1,1-Dichloroethene	50.0000	50.4117	-0.8	104	0.00
15	T	Tert-Butyl Alcohol	200.0000	212.1200	-6.1	112	-0.01
16	T	Dimethyl Sulfide	50.0000	52.1588	-4.3	102	0.00
17	T	Iodomethane	50.0000	42.7063	14.6	80	0.01
18	P	Methyl acetate	50.0000	60.5078	-21.0	122	0.00
19	P	Methylene Chloride	50.0000	49.6125	0.8	101	0.00
20	P	Carbon Disulfide	50.0000	51.9554	-3.9	106	0.00
21	T	Acrylonitrile	50.0000	57.0106	-14.0	111	0.00
22	P	Methyl Tert Butyl Ether	50.0000	53.2169	-6.4	102	0.00
23	P	trans-1,2-Dichloroethene	50.0000	52.4314	-4.9	104	0.00
24	T	n-Hexane	50.0000	56.6727	-13.3	120	0.01
25	T	Diisopropyl ether	100.0000	110.9012	-10.9	110	0.00
26	T	Vinyl Acetate	50.0000	50.9414	-1.9	100	0.00
27	P	1,1-Dichloroethane	50.0000	50.8195	-1.6	101	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	106.2487	-6.2	104	0.00
29	P	2-Butanone	50.0000	53.7018	-7.4	109	-0.01
30	T	Propionitrile	100.0000	113.1611	-13.2	113	0.00
31	T	2,2-Dichloropropane	50.0000	50.1463	-0.3	98	0.00
32	P	cis-1,2-Dichloroethene	50.0000	51.8989	-3.8	100	0.00
33	C	Chloroform	50.0000	50.3104	-0.6	99	0.00
34	T	1-Bromopropane	50.0000	48.9279	2.1	99	0.00
35	T	Bromochloromethane	50.0000	52.0504	-4.1	97	0.00
36	T	Tetrahydrofuran	100.0000	115.1741	-15.2	114	0.00
37	S	Dibromofluoromethane	50.0000	48.7757	2.4	97	0.00
38	P	1,1,1-Trichloroethane	50.0000	50.0576	-0.1	97	0.00
39	P	Cyclohexane	50.0000	56.6880	-13.4	117	0.00
40	T	1,1-Dichloropropene	50.0000	50.4353	-0.9	102	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	104.4717	-4.5	103	0.00
42	P	Carbon Tetrachloride	50.0000	49.4450	1.1	97	0.00
43	S	1,2-Dichloroethane-d4	50.0000	48.9121	2.2	98	0.00
44		Heptane	-1.0000	0.0000	0.0	110	0.00
45	P	1,2-Dichloroethane	50.0000	55.0967	-10.2	106	0.00
46	P	Benzene	50.0000	50.0464	-0.1	103	0.00
47	P	Trichloroethene	50.0000	50.3822	-0.8	101	0.00
48	P	Methylcyclohexane	50.0000	55.7610	-11.5	112	0.00
49	C	1,2-Dichloropropane	50.0000	53.8278	-7.7	103	0.01
50	T	1,4-Dioxane	200.0000	240.9603	-20.5	132	0.00
51	P	Bromodichloromethane	50.0000	50.7986	-1.6	100	0.00
52	T	Dibromomethane	50.0000	52.1071	-4.2	102	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	46.3473	7.3	94	0.00
54	P	4-Methyl-2-Pentanone	50.0000	55.5824	-11.2	107	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\030616\9M973099.D Vial: 3
Acq On : 6 Mar 2016 15:56 Operator: ADC
Sample : WG559858-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	52.2080	-4.4	102	0.00
56	T	Dimethyl Disulfide	50.0000	55.2768	-10.6	105	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	108	-0.01
58	S	Toluene-d8	50.0000	48.8897	2.2	99	0.00
59	C	Toluene	50.0000	49.5729	0.9	103	0.00
60	T	Ethyl Methacrylate	50.0000	56.0637	-12.1	114	0.00
61	P	trans-1,3-Dichloropropene	50.0000	51.2133	-2.4	102	0.00
62	P	1,1,2-Trichloroethane	50.0000	54.3244	-8.6	109	-0.01
63	P	2-Hexanone	50.0000	54.4017	-8.8	112	0.00
64	T	1,3-Dichloropropane	50.0000	51.0567	-2.1	104	-0.01
65	P	Tetrachloroethene	50.0000	49.2495	1.5	106	0.00
66	P	Dibromochloromethane	50.0000	50.2051	-0.4	102	0.00
67	P	1,2-Dibromoethane	50.0000	49.6671	0.7	102	0.00
68	T	1-Chlorohexane	50.0000	54.1291	-8.3	111	0.00
69	P	Chlorobenzene	50.0000	49.0916	1.8	101	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	50.4182	-0.8	101	0.00
71	C	Ethylbenzene	50.0000	50.8323	-1.7	104	-0.01
72	P	m-,p-Xylene	100.0000	101.5671	-1.6	107	0.00
73	P	o-Xylene	50.0000	51.3606	-2.7	104	0.00
74	P	Styrene	50.0000	51.4903	-3.0	103	0.00
75	P	Bromoform	50.0000	50.7277	-1.5	99	-0.01
76	P	Isopropylbenzene	50.0000	51.5184	-3.0	105	-0.01
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	120	-0.01
78	P	1,1,2,2-Tetrachloroethane	50.0000	46.6764	6.6	105	-0.01
79	S	p-Bromofluorobenzene	50.0000	49.6883	0.6	110	0.00
80	T	1,2,3-Trichloropropane	50.0000	47.5946	4.8	108	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	55.1818	-10.4	126	0.00
82	T	n-Propylbenzene	50.0000	46.6011	6.8	107	0.00
83	T	Bromobenzene	50.0000	44.0932	11.8	101	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	45.6422	8.7	104	-0.01
85	T	2-Chlorotoluene	50.0000	45.3944	9.2	108	0.00
86	T	4-Chlorotoluene	50.0000	45.3731	9.3	101	0.00
87	T	a-Methylstyrene	50.0000	49.8126	0.4	115	0.00
88	T	tert-Butylbenzene	50.0000	46.4505	7.1	103	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	44.6620	10.7	104	0.00
90	T	sec-Butylbenzene	50.0000	46.3948	7.2	106	0.00
91	T	p-Isopropyltoluene	50.0000	45.8721	8.3	105	0.00
92	P	1,3-Dichlorobenzene	50.0000	42.5349	14.9	102	0.00
93	P	1,4-Dichlorobenzene	50.0000	42.4908	15.0	102	-0.01
94	T	n-Butylbenzene	50.0000	47.0438	5.9	109	0.00
95	P	1,2-Dichlorobenzene	50.0000	44.0654	11.9	103	-0.01
96	P	1,2-Dibromo-3-Chloropropane	50.0000	44.5225	11.0	100	-0.01
97	P	1,2,4-Trichlorobenzene	50.0000	42.8315	14.3	102	-0.01
98	T	Hexachlorobutadiene	50.0000	43.0494	13.9	103	0.00
99	T	Naphthalene	50.0000	46.1125	7.8	102	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	44.2281	11.5	103	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M973099.D 8260SL.M Mon Mar 07 08:50:46 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\1\DATA\022516\9M972894.D          Vial: 3
Acq On    : 25 Feb 2016  14:45                       Operator: ADC
Sample    : WG558732-01 BFB 50ng                     Inst    : hpms9
Misc      : 7,1 STD74773                             Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 02/15/16  HPMS9
```

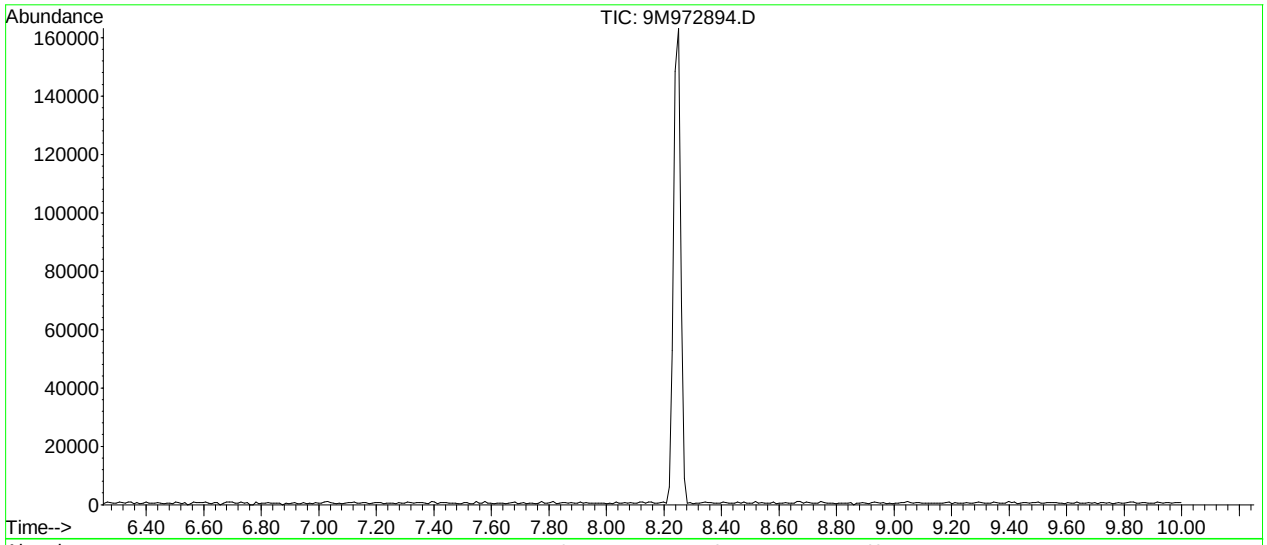

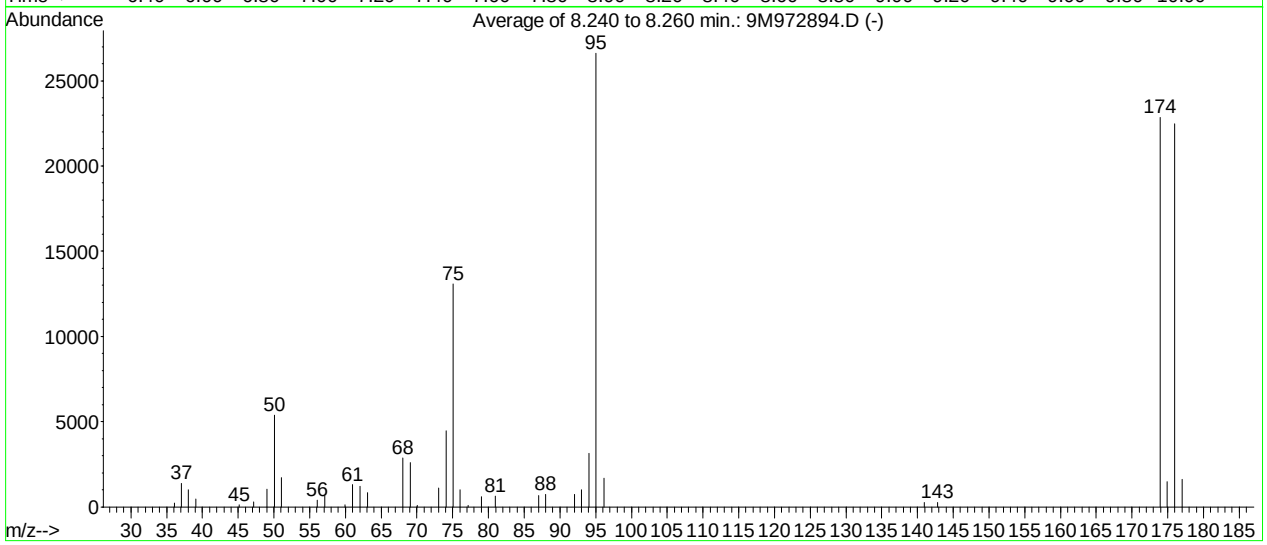

AutoFind: Scans 305, 306, 307; Background Corrected with Scan 300

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.2	5378	PASS
75	95	30	60	49.1	13067	PASS
95	95	100	100	100.0	26621	PASS
96	95	5	9	6.3	1683	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	85.8	22851	PASS
175	174	5	9	6.5	1485	PASS
176	174	95	101	98.3	22461	PASS
177	176	5	9	7.2	1619	PASS

9M972894.D 8260SL.M Fri Feb 26 11:11:03 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\030616\9M973096.D          Vial: 2
Acq On    :  6 Mar 2016  14:28                        Operator: ADC
Sample    : WG559858-01 BFB 50ng 8260                 Inst    : hpms9
Misc      : 7,1 STD74606                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 02/25/16  HPMS9
```

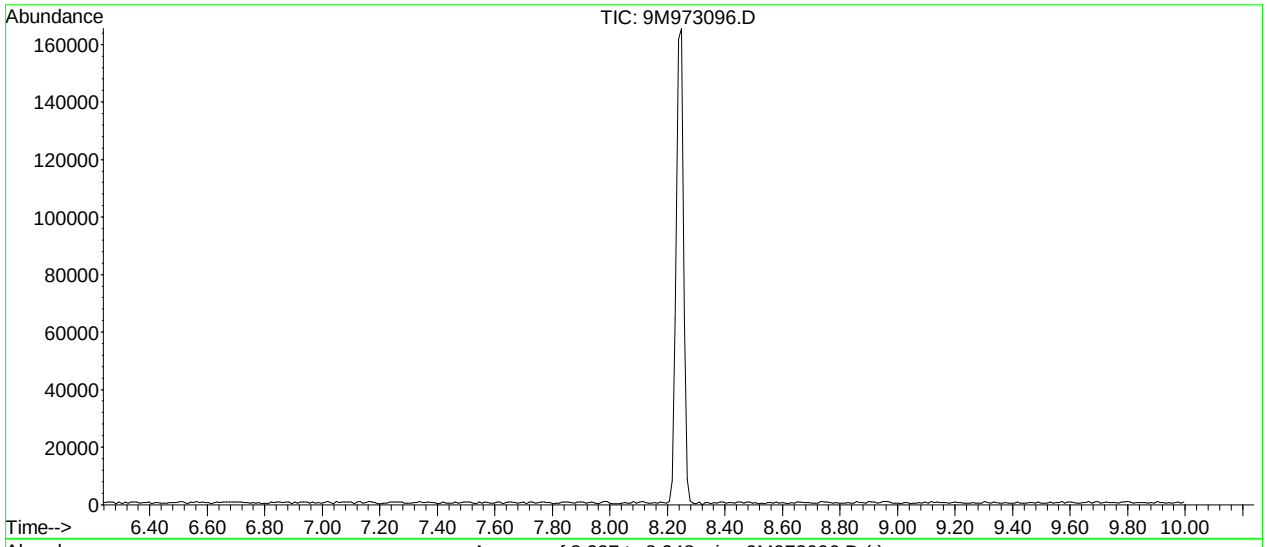

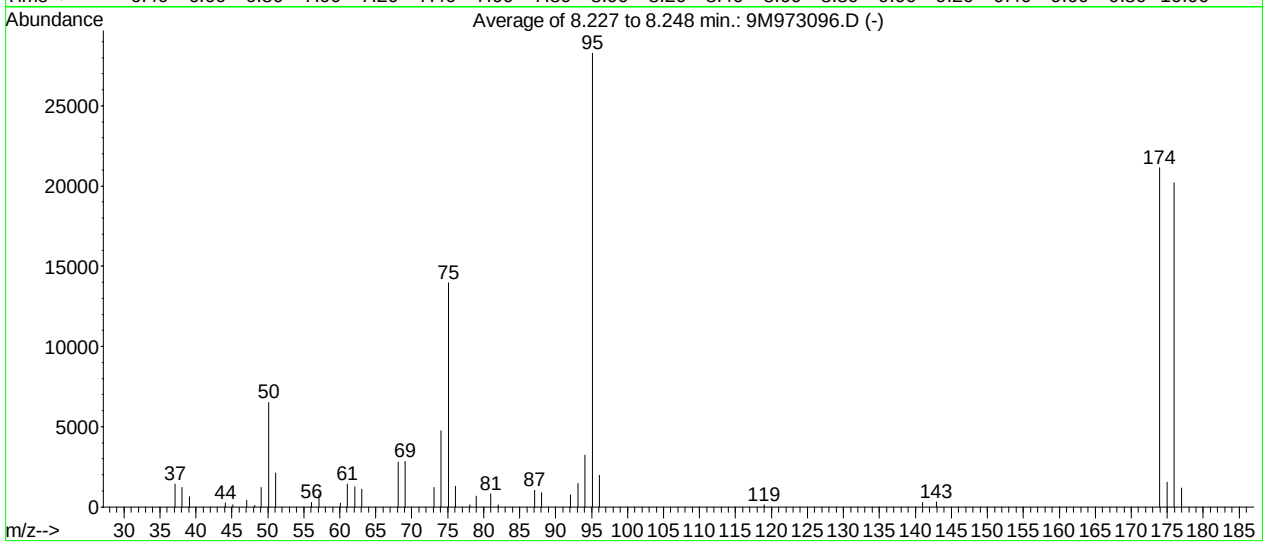

AutoFind: Scans 304, 305, 306; Background Corrected with Scan 300

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	23.0	6500	PASS
75	95	30	60	49.4	13966	PASS
95	95	100	100	100.0	28287	PASS
96	95	5	9	6.9	1954	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	74.8	21150	PASS
175	174	5	9	7.3	1550	PASS
176	174	95	101	95.6	20221	PASS
177	176	5	9	5.9	1186	PASS

9M973096.D 8260SL.M Mon Mar 07 08:50:59 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973101.D Vial: 5
Acq On : 6 Mar 2016 16:57 Operator: ADC
Sample : WG559859-01 VBLK0306 BLANK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 12:19:05 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	561969	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	419175	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	209918	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	146974	48.2489 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.50%		
43) 1,2-Dichloroethane-d4	10.45	65	190439	49.8270 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.66%		
58) Toluene-d8	12.83	98	526746	49.6805 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.36%		
79) p-Bromofluorobenzene	16.23	95	209348	51.2161 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.44%		

Target Compounds

					Qvalue
13) Acetone	6.40	43	5001	1.1851 ug/kg	85
36) Tetrahydrofuran	9.78	42	1481	1.2679 ug/kg#	43
56) Dimethyl Disulfide	12.83	94	15709	3.6037 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M973101.D 8260SL.M Mon Mar 07 12:19:05 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973101.D Vial: 5
Acq On : 6 Mar 2016 16:57 Operator: ADC
Sample : WG559859-01 VBLK0306 BLANK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 7 12:19 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

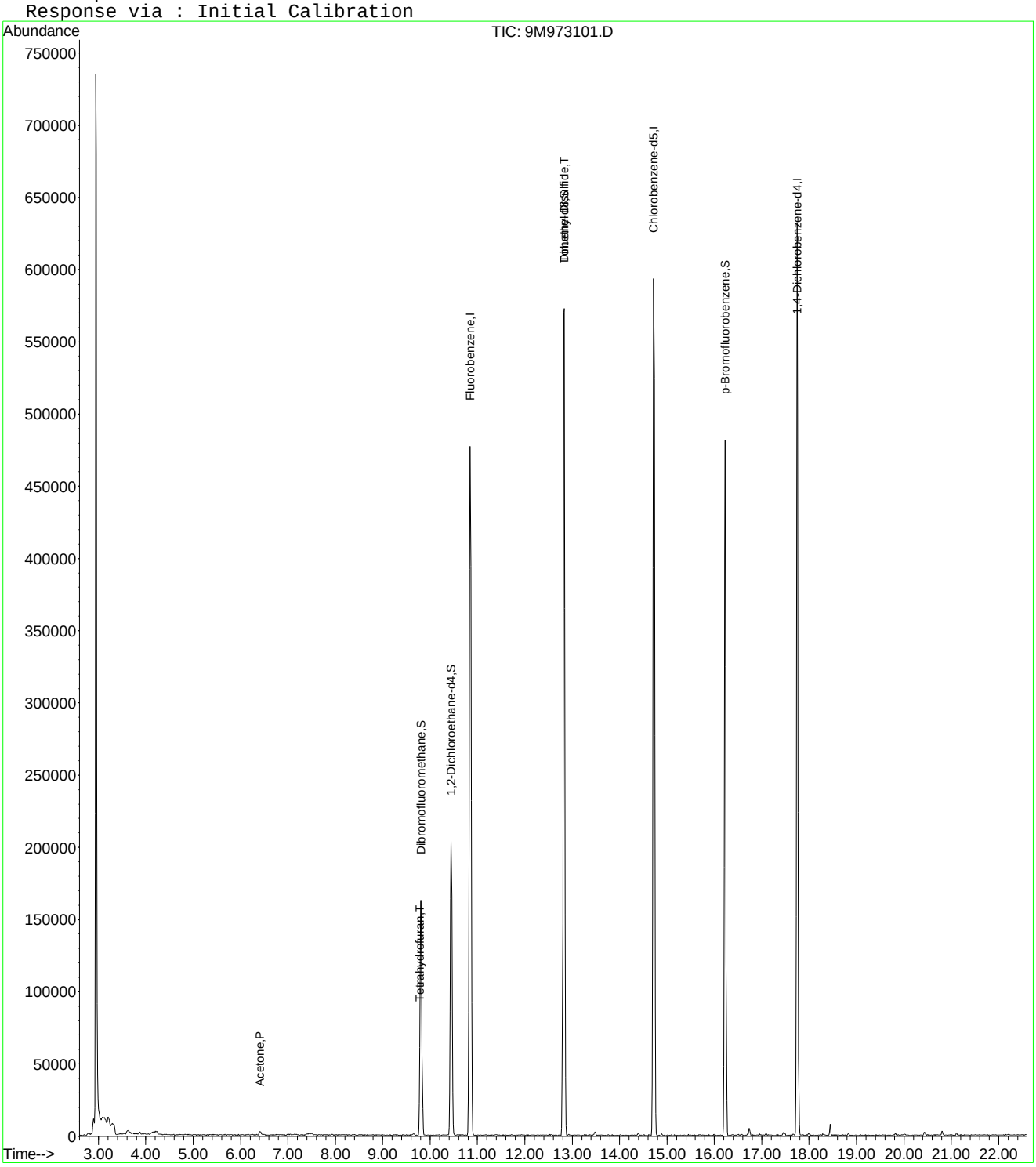

9M973101.D 8260SL.M Mon Mar 07 12:19:05 2016 Page 2

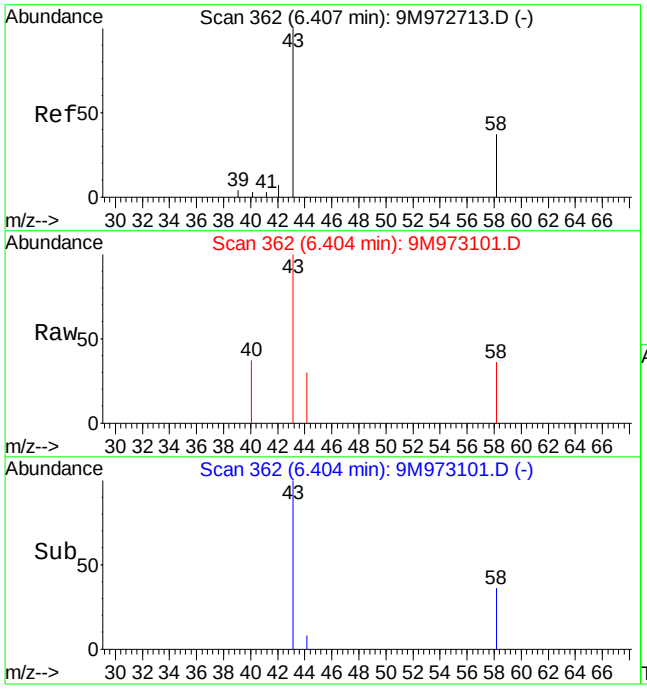

#13
Acetone
Concen: 1.19 ug/kg
RT: 6.40 min Scan# 362
Delta R.T. -0.01 min
Lab File: 9M973101.D
Acq: 6 Mar 2016 16:57

Tgt Ion: 43 Resp: 5001

Ion	Ratio	Lower	Upper
43	100		
58	35.8	16.9	39.3

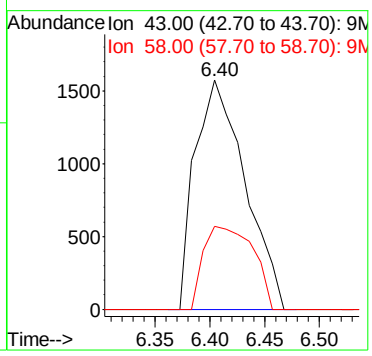

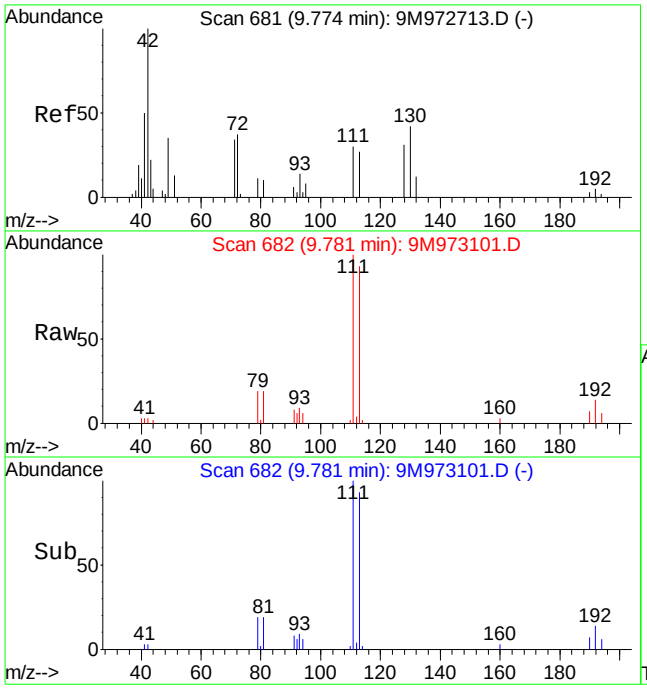

#36
Tetrahydrofuran
Concen: 1.27 ug/kg
RT: 9.78 min Scan# 682
Delta R.T. 0.00 min
Lab File: 9M973101.D
Acq: 6 Mar 2016 16:57

Tgt Ion: 42 Resp: 1481

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

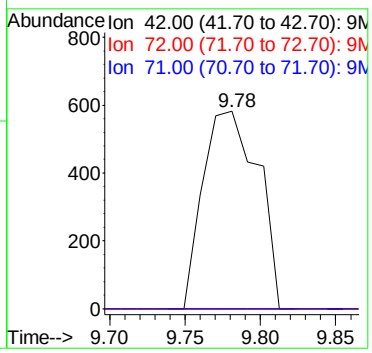

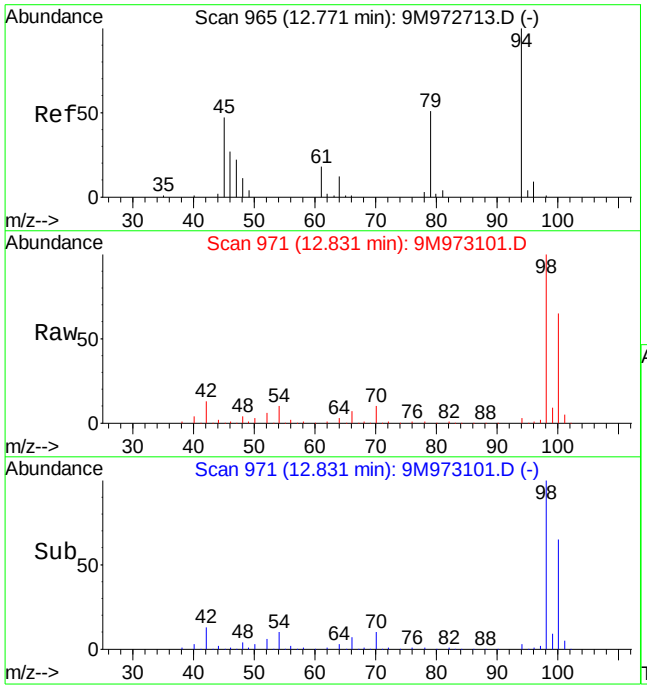

#56
Dimethyl Disulfide
Concen: 3.60 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.06 min
Lab File: 9M973101.D
Acq: 6 Mar 2016 16:57

Tgt Ion: 94 Resp: 15709

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

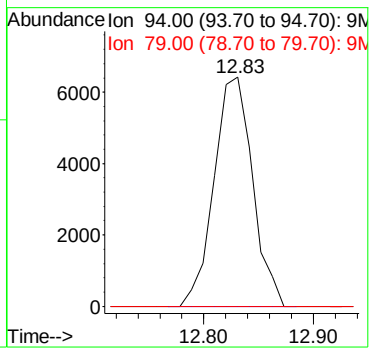

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030616\9M973102.D Vial: 6
Acq On : 6 Mar 2016 17:27 Operator: ADC
Sample : WG559859-02 20ug/L LCS 8260 Inst : hpms9
Misc : 7,1 STD74900 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 06 17:50:34 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	599667	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	449882	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	236934	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	159128	48.9549 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.90%		
43) 1,2-Dichloroethane-d4	10.45	65	198949	48.7813 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.56%		
58) Toluene-d8	12.82	98	571237	50.1993 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 100.40%		
79) p-Bromofluorobenzene	16.22	95	236329	51.2244 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.44%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	94480	23.1159 ug/kg	99
3) Chloromethane	3.75	50	77310	19.7053 ug/kg	98
4) Vinyl Chloride	3.99	62	82712	21.0599 ug/kg	100
5) 1,3-Butadiene	4.03	54	22381	5.9898 ug/kg	96
6) Bromomethane	4.89	94	46739	18.3232 ug/kg	96
7) Chloroethane	5.05	64	33247	19.0013 ug/kg	92
8) Trichlorofluoromethane	5.53	101	109280	18.5520 ug/kg	97
9) Diethyl ether	6.05	59	320855	116.5199 ug/kg	98
10) Isoprene	6.09	67	85179	24.2210 ug/kg	99
11) Acrolein	6.29	56	61647	112.2744 ug/kg	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	60451	19.8996 ug/kg	96
13) Acetone	6.41	43	33465	20.6774 ug/kg	96
14) 1,1-Dichloroethene	6.62	61	108890	19.4314 ug/kg	100
15) Tert-Butyl Alcohol	6.75	59	112894	184.1166 ug/kg	97
16) Dimethyl Sulfide	6.88	62	70485	29.7607 ug/kg	91
17) Iodomethane	7.14	142	25284	17.1319 ug/kg	96
18) Methyl acetate	7.15	43	65055	21.3547 ug/kg	98
19) Methylene Chloride	7.40	84	60446	19.8056 ug/kg	98
20) Carbon Disulfide	7.44	76	160362	18.5764 ug/kg	99
21) Acrylonitrile	7.59	53	31258	20.7414 ug/kg	97
22) Methyl Tert Butyl Ether	7.61	73	183920	21.1589 ug/kg	98
23) trans-1,2-Dichloroethene	7.84	61	101561	20.3358 ug/kg	98
24) n-Hexane	7.92	57	107355	20.8409 ug/kg	100
25) Diisopropyl ether	8.25	45	1351528	112.9695 ug/kg	99
26) Vinyl Acetate	8.43	43	148420	21.7623 ug/kg	99
27) 1,1-Dichloroethane	8.47	63	118305	18.8599 ug/kg	98
28) Ethyl-Tert-Butyl ether	8.83	59	1146457	103.0625 ug/kg	98
29) 2-Butanone	9.02	43	41754	21.5920 ug/kg	96
30) Propionitrile	9.14	54	60026	101.4339 ug/kg	97
31) 2,2-Dichloropropane	9.25	77	84514	18.0510 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	66111	20.1834 ug/kg	95
33) Chloroform	9.52	83	112899	19.5927 ug/kg	96
34) 1-Bromopropane	9.66	122	14310	29.0977 ug/kg	94
35) Bromochloromethane	9.75	130	42111	19.7916 ug/kg	94
36) Tetrahydrofuran	9.77	42	130566	104.7483 ug/kg	98
38) 1,1,1-Trichloroethane	10.05	97	96178	18.4565 ug/kg	94
39) Cyclohexane	10.08	56	123598	21.7549 ug/kg	99
40) 1,1-Dichloropropene	10.25	75	75864	18.5012 ug/kg	100
41) Tert-Amyl-Methyl ether	10.34	73	878194	108.6097 ug/kg	98
42) Carbon Tetrachloride	10.39	117	86746	17.9557 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M973102.D 8260SL.M Sun Mar 06 17:50:34 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030616\9M973102.D Vial: 6
Acq On : 6 Mar 2016 17:27 Operator: ADC
Sample : WG559859-02 20ug/L LCS 8260 Inst : hpms9
Misc : 7,1 STD74900 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 06 17:50:34 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.57	62	106382	20.9886 ug/kg	97
46)	Benzene	10.61	78	225013	19.6008 ug/kg	99
47)	Trichloroethene	11.36	130	70503	19.3826 ug/kg	95
48)	Methylcyclohexane	11.43	83	101608	22.2722 ug/kg	98
49)	1,2-Dichloropropane	11.57	63	68542	21.7426 ug/kg	97
50)	1,4-Dioxane	11.87	88	9997	211.3845 ug/kg	88
51)	Bromodichloromethane	11.87	83	84670	19.0580 ug/kg	99
52)	Dibromomethane	11.96	174	39104	18.7213 ug/kg	97
53)	2-Chloroethyl Vinyl Ether	12.16	63	15824	19.9676 ug/kg	93
54)	4-Methyl-2-Pentanone	12.19	58	29735	21.4900 ug/kg	98
55)	cis-1,3-Dichloropropene	12.51	75	93892	20.2850 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	112219	24.1253 ug/kg	93
59)	Toluene	12.93	91	247990	19.2929 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	76225	21.3939 ug/kg	96
61)	trans-1,3-Dichloropropene	13.10	75	87011	18.7944 ug/kg	98
62)	1,1,2-Trichloroethane	13.32	97	54400	20.1465 ug/kg	100
63)	2-Hexanone	13.25	43	56201	20.8460 ug/kg	95
64)	1,3-Dichloropropane	13.63	76	92634	20.5883 ug/kg	95
65)	Tetrachloroethene	13.75	164	47720	17.3174 ug/kg	94
66)	Dibromochloromethane	14.02	129	68707	18.2066 ug/kg	100
67)	1,2-Dibromoethane	14.27	107	54923	18.3379 ug/kg	96
68)	1-Chlorohexane	14.34	91	83470	22.0205 ug/kg	99
69)	Chlorobenzene	14.78	112	174797	19.3487 ug/kg	95
70)	1,1,1,2-Tetrachloroethane	14.81	131	64255	18.9396 ug/kg	100
71)	Ethylbenzene	14.80	106	92540	19.8829 ug/kg	100
72)	m-,p-Xylene	14.88	106	226968	39.4872 ug/kg	99
73)	o-Xylene	15.45	106	110469	20.0269 ug/kg	99
74)	Styrene	15.49	104	184923	19.6870 ug/kg	100
75)	Bromoform	15.99	173	40755	16.4485 ug/kg	97
76)	Isopropylbenzene	15.87	105	290509	19.6183 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	62302	17.3342 ug/kg	98
80)	1,2,3-Trichloropropane	16.28	110	23832	17.4843 ug/kg	89
81)	trans-1,4-Dichloro-2-Buten	16.33	53	23441	17.0611 ug/kg	89
82)	n-Propylbenzene	16.38	91	343369	18.4365 ug/kg	99
83)	Bromobenzene	16.52	156	76031	17.2927 ug/kg	73
84)	1,3,5-Trimethylbenzene	16.57	105	254517	18.2055 ug/kg	99
85)	2-Chlorotoluene	16.66	91	238316	19.0779 ug/kg	100
86)	4-Chlorotoluene	16.71	91	192135	16.6363 ug/kg	99
87)	a-Methylstyrene	16.97	118	133550	20.9650 ug/kg	96
88)	tert-Butylbenzene	17.03	134	53098	18.1160 ug/kg	83
89)	1,2,4-Trimethylbenzene	17.09	105	254797	17.4031 ug/kg	99
90)	sec-Butylbenzene	17.31	105	325663	18.0865 ug/kg	100
91)	p-Isopropyltoluene	17.47	119	261769	17.2268 ug/kg	100
92)	1,3-Dichlorobenzene	17.67	146	142348	16.2904 ug/kg	98
93)	1,4-Dichlorobenzene	17.79	146	148255	16.9713 ug/kg	100
94)	n-Butylbenzene	17.99	91	234575	16.6033 ug/kg	98
95)	1,2-Dichlorobenzene	18.29	146	141050	17.3967 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	16074	15.4434 ug/kg	96
97)	1,2,4-Trichlorobenzene	20.43	180	87140	15.1398 ug/kg	99
98)	Hexachlorobutadiene	20.58	225	48996	16.1490 ug/kg	98
99)	Naphthalene	20.80	128	207013	14.3396 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.12	180	85622	15.3374 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M973102.D 8260SL.M Sun Mar 06 17:50:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030616\9M973102.D Vial: 6
Acq On : 6 Mar 2016 17:27 Operator: ADC
Sample : WG559859-02 20ug/L LCS 8260 Inst : hpms9
Misc : 7,1 STD74900 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 6 17:50 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

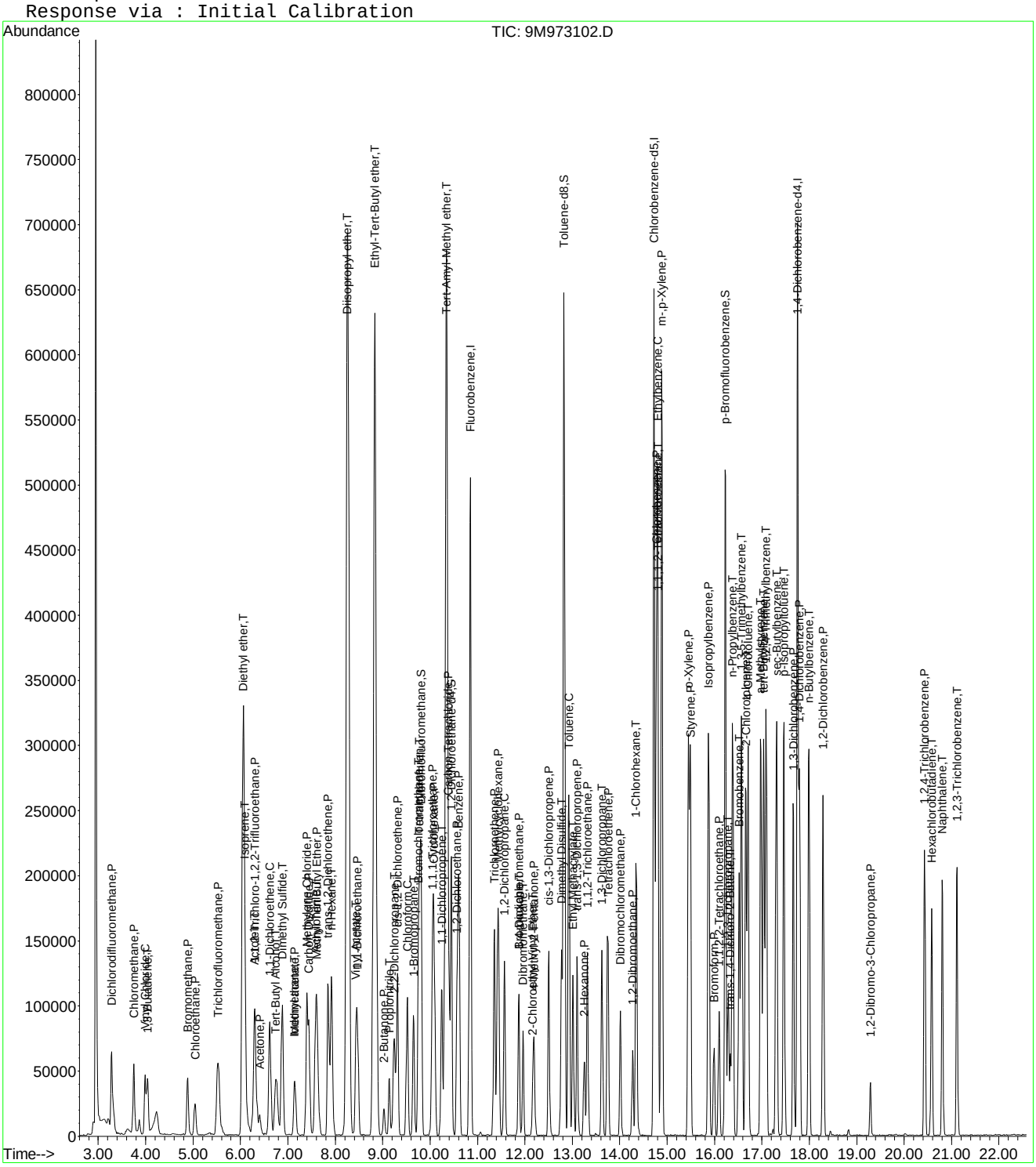

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030616\9M973116.D Vial: 20
Acq On : 7 Mar 2016 00:32 Operator: ADC
Sample : WG559855-02 MS A 8260 5.05g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 00:55:24 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	503932	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	380297	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	206376	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	132817	48.6229 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.24%		
43) 1,2-Dichloroethane-d4	10.45	65	175019	51.0663 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 102.14%		
58) Toluene-d8	12.82	98	479005	49.7963 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.60%		
79) p-Bromofluorobenzene	16.23	95	205903	51.2378 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.48%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	81875	23.8375 ug/kg	97
3) Chloromethane	3.74	50	61358	18.6104 ug/kg	99
4) Vinyl Chloride	3.99	62	67493	20.4496 ug/kg	96
6) Bromomethane	4.88	94	35865	16.7314 ug/kg	99
7) Chloroethane	5.04	64	29496	20.0601 ug/kg	99
8) Trichlorofluoromethane	5.53	101	97530	19.7027 ug/kg	99
10) Isoprene	6.10	67	66192	22.3977 ug/kg	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	53364	20.9039 ug/kg	96
13) Acetone	6.40	43	25182	18.2527 ug/kg	99
14) 1,1-Dichloroethene	6.62	61	89734	19.0551 ug/kg	96
16) Dimethyl Sulfide	6.89	62	48901	24.5698 ug/kg	92
17) Iodomethane	7.13	142	15687	13.3808 ug/kg	88
18) Methyl acetate	7.14	43	40682	15.8911 ug/kg	96
19) Methylene Chloride	7.40	84	44281	17.2654 ug/kg	96
20) Carbon Disulfide	7.45	76	126385	17.4218 ug/kg	99
21) Acrylonitrile	7.59	53	21493	16.9712 ug/kg	97
22) Methyl Tert Butyl Ether	7.61	73	121654	16.6544 ug/kg	97
23) trans-1,2-Dichloroethene	7.85	61	82901	19.7529 ug/kg	93
24) n-Hexane	7.91	57	89015	20.5634 ug/kg	99
27) 1,1-Dichloroethane	8.47	63	91490	17.3560 ug/kg	99
29) 2-Butanone	9.02	43	27919	17.1804 ug/kg	94
31) 2,2-Dichloropropane	9.24	77	64913	16.4984 ug/kg	100
32) cis-1,2-Dichloroethene	9.31	96	50260	18.2591 ug/kg	96
33) Chloroform	9.52	83	86164	17.7937 ug/kg	97
34) 1-Bromopropane	9.65	122	10929	26.5382 ug/kg	98
35) Bromochloromethane	9.75	130	29689	16.6043 ug/kg	91
36) Tetrahydrofuran	9.79	42	1135	1.0836 ug/kg#	43
38) 1,1,1-Trichloroethane	10.04	97	80942	18.4836 ug/kg	96
39) Cyclohexane	10.08	56	97418	20.4044 ug/kg	97
40) 1,1-Dichloropropene	10.25	75	62347	18.0933 ug/kg	98
42) Carbon Tetrachloride	10.39	117	74625	18.3813 ug/kg	99
45) 1,2-Dichloroethane	10.56	62	76970	18.0707 ug/kg	96
46) Benzene	10.60	78	167758	17.3895 ug/kg	98
47) Trichloroethene	11.35	130	59375	19.4244 ug/kg	97
48) Methylcyclohexane	11.44	83	81452	21.2459 ug/kg	96
49) 1,2-Dichloropropane	11.56	63	51201	19.3273 ug/kg	97
51) Bromodichloromethane	11.87	83	64190	17.1931 ug/kg	99
52) Dibromomethane	11.95	174	27297	15.5514 ug/kg	97
53) 2-Chloroethyl Vinyl Ether	12.16	63	8039	13.1908 ug/kg	94
54) 4-Methyl-2-Pentanone	12.20	58	20578	17.6974 ug/kg	93

(#) = qualifier out of range (m) = manual integration
9M973116.D 8260SL.M Mon Mar 07 00:55:24 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030616\9M973116.D Vial: 20
Acq On : 7 Mar 2016 00:32 Operator: ADC
Sample : WG559855-02 MS A 8260 5.05g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 00:55:24 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
55)	cis-1,3-Dichloropropene	12.50	75	67748	17.4173	ug/kg	98
56)	Dimethyl Disulfide	12.77	94	72621	18.5783	ug/kg	95
59)	Toluene	12.93	91	192647	17.7297	ug/kg	99
60)	Ethyl Methacrylate	13.01	69	46221	15.3464	ug/kg	97
61)	trans-1,3-Dichloropropene	13.10	75	61102	15.6129	ug/kg	98
62)	1,1,2-Trichloroethane	13.32	97	38024	16.6584	ug/kg	99
63)	2-Hexanone	13.25	43	37503	16.4559	ug/kg	95
64)	1,3-Dichloropropane	13.62	76	65151	17.1296	ug/kg	90
65)	Tetrachloroethene	13.75	164	40784	17.5084	ug/kg	98
66)	Dibromochloromethane	14.01	129	49316	15.4594	ug/kg	97
67)	1,2-Dibromoethane	14.27	107	40132	15.8512	ug/kg	99
68)	1-Chlorohexane	14.35	91	64029	19.9824	ug/kg	96
69)	Chlorobenzene	14.77	112	135070	17.6869	ug/kg	96
70)	1,1,1,2-Tetrachloroethane	14.80	131	47676	16.6241	ug/kg	98
71)	Ethylbenzene	14.79	106	72401	18.4022	ug/kg	99
72)	m-,p-Xylene	14.89	106	175380	36.0950	ug/kg	99
73)	o-Xylene	15.45	106	83756	17.9625	ug/kg	98
74)	Styrene	15.49	104	135087	17.0129	ug/kg	97
75)	Bromoform	15.99	173	30775	14.6933	ug/kg	97
76)	Isopropylbenzene	15.87	105	234696	18.7492	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	43419	13.8692	ug/kg	99
80)	1,2,3-Trichloropropane	16.29	110	18039	15.1939	ug/kg	82
81)	trans-1,4-Dichloro-2-Buten	16.33	53	14699	12.2825	ug/kg	86
82)	n-Propylbenzene	16.39	91	273513	16.8603	ug/kg	99
83)	Bromobenzene	16.52	156	55284	14.4358	ug/kg	93
84)	1,3,5-Trimethylbenzene	16.57	105	196626	16.1471	ug/kg	99
85)	2-Chlorotoluene	16.66	91	175356	16.1163	ug/kg	99
86)	4-Chlorotoluene	16.70	91	157727	15.6792	ug/kg	98
87)	a-Methylstyrene	16.98	118	92507	16.6723	ug/kg	98
88)	tert-Butylbenzene	17.03	134	43941	17.2117	ug/kg	86
89)	1,2,4-Trimethylbenzene	17.09	105	192855	15.1228	ug/kg	99
90)	sec-Butylbenzene	17.31	105	263600	16.8074	ug/kg	99
91)	p-Isopropyltoluene	17.46	119	203806	15.3983	ug/kg	98
92)	1,3-Dichlorobenzene	17.66	146	106498	13.9923	ug/kg	98
93)	1,4-Dichlorobenzene	17.79	146	106384	13.9814	ug/kg	97
94)	n-Butylbenzene	17.99	91	182807	14.8551	ug/kg	98
95)	1,2-Dichlorobenzene	18.29	146	99583	14.1009	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	10653	11.7506	ug/kg	95
97)	1,2,4-Trichlorobenzene	20.44	180	60321	12.0320	ug/kg	98
98)	Hexachlorobutadiene	20.59	225	38074	14.4073	ug/kg	98
99)	Naphthalene	20.81	128	141328	11.2392	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	59879	12.3142	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M973116.D 8260SL.M Mon Mar 07 00:55:24 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030616\9M973116.D Vial: 20
Acq On : 7 Mar 2016 00:32 Operator: ADC
Sample : WG559855-02 MS A 8260 5.05g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 7 0:55 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

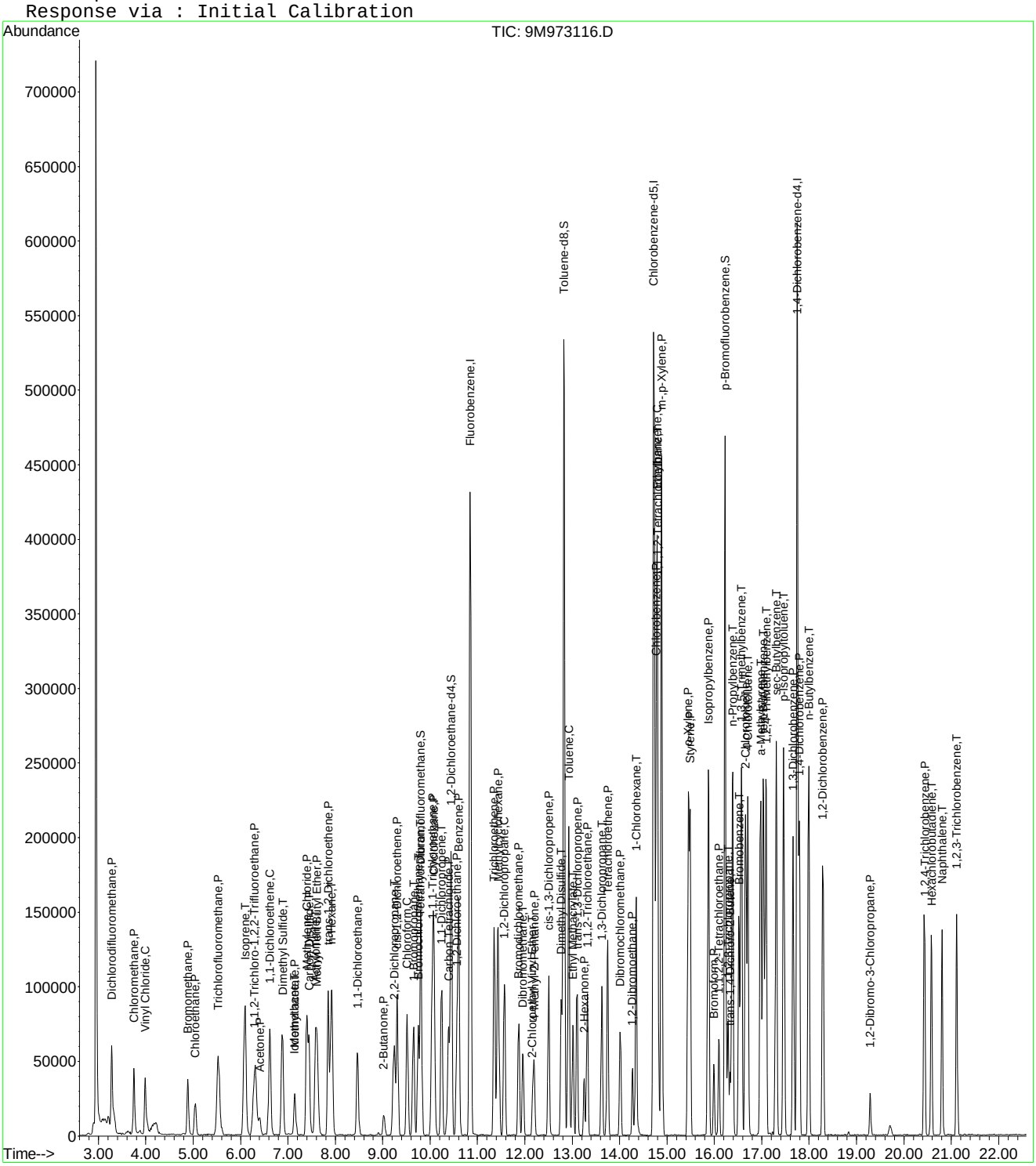

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030616\9M973117.D Vial: 21
Acq On : 7 Mar 2016 1:02 Operator: ADC
Sample : WG559855-03 MSD A 8260 4.75g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 01:25:21 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	473916	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	353935	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	184651	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	122415	47.6533 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.30%		
43) 1,2-Dichloroethane-d4	10.45	65	158525	49.1833 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.36%		
58) Toluene-d8	12.82	98	437471	48.8659 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 97.74%		
79) p-Bromofluorobenzene	16.22	95	181283	50.4188 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 100.84%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	75277	23.3046 ug/kg	98
3) Chloromethane	3.75	50	59233	19.1038 ug/kg	98
4) Vinyl Chloride	3.99	62	68095	21.9387 ug/kg	96
6) Bromomethane	4.89	94	33932	16.8322 ug/kg	96
7) Chloroethane	5.03	64	26263	18.9926 ug/kg	97
8) Trichlorofluoromethane	5.52	101	85332	18.3303 ug/kg	97
10) Isoprene	6.09	67	62074	22.3346 ug/kg	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	47348	19.7220 ug/kg	99
13) Acetone	6.40	43	24122	18.6385 ug/kg	99
14) 1,1-Dichloroethene	6.62	61	82029	18.5222 ug/kg	97
16) Dimethyl Sulfide	6.88	62	50072	26.7516 ug/kg	93
17) Iodomethane	7.14	142	19918	17.0860 ug/kg	96
18) Methyl acetate	7.14	43	40594	16.8610 ug/kg	96
19) Methylene Chloride	7.40	84	43728	18.1296 ug/kg	97
20) Carbon Disulfide	7.44	76	116380	17.0588 ug/kg	98
21) Acrylonitrile	7.58	53	21141	17.7505 ug/kg	97
22) Methyl Tert Butyl Ether	7.61	73	126408	18.4013 ug/kg	98
23) trans-1,2-Dichloroethene	7.85	61	75365	19.0947 ug/kg	96
24) n-Hexane	7.93	57	80157	19.6899 ug/kg	96
27) 1,1-Dichloroethane	8.47	63	84580	17.0614 ug/kg	98
29) 2-Butanone	9.02	43	27774	18.1737 ug/kg	93
31) 2,2-Dichloropropane	9.24	77	58084	15.6978 ug/kg	100
32) cis-1,2-Dichloroethene	9.31	96	47495	18.3475 ug/kg	100
33) Chloroform	9.52	83	80013	17.5700 ug/kg	100
34) 1-Bromopropane	9.65	122	10759	27.7321 ug/kg	89
35) Bromochloromethane	9.75	130	29076	17.2914 ug/kg	90
36) Tetrahydrofuran	9.78	42	636	0.6456 ug/kg#	43
38) 1,1,1-Trichloroethane	10.05	97	73725	17.9018 ug/kg	99
39) Cyclohexane	10.08	56	95156	21.1929 ug/kg	98
40) 1,1-Dichloropropene	10.25	75	55978	17.2739 ug/kg	100
41) Tert-Amyl-Methyl ether	10.25	73	9233	1.4449 ug/kg#	45
42) Carbon Tetrachloride	10.38	117	65481	17.1505 ug/kg	100
45) 1,2-Dichloroethane	10.56	62	73880	18.4438 ug/kg	98
46) Benzene	10.61	78	164113	18.0892 ug/kg	98
47) Trichloroethene	11.36	130	54221	18.8617 ug/kg	98
48) Methylcyclohexane	11.43	83	75636	20.9784 ug/kg	96
49) 1,2-Dichloropropane	11.57	63	46643	18.7219 ug/kg	98
51) Bromodichloromethane	11.87	83	60003	17.0895 ug/kg	97
52) Dibromomethane	11.96	174	26085	15.8021 ug/kg	97
53) 2-Chloroethyl Vinyl Ether	12.17	63	8790	14.8760 ug/kg	92

(#) = qualifier out of range (m) = manual integration
9M973117.D 8260SL.M Mon Mar 07 01:25:21 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030616\9M973117.D Vial: 21
Acq On : 7 Mar 2016 1:02 Operator: ADC
Sample : WG559855-03 MSD A 8260 4.75g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 01:25:21 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
54)	4-Methyl-2-Pentanone	12.19	58	19279	17.6304 ug/kg	98
55)	cis-1,3-Dichloropropene	12.51	75	63281	17.2993 ug/kg	100
56)	Dimethyl Disulfide	12.77	94	74804	20.3489 ug/kg	92
59)	Toluene	12.93	91	182952	18.0915 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	46776	16.6875 ug/kg	98
61)	trans-1,3-Dichloropropene	13.10	75	58249	15.9925 ug/kg	96
62)	1,1,2-Trichloroethane	13.32	97	35909	16.9036 ug/kg	94
63)	2-Hexanone	13.25	43	35976	16.9616 ug/kg	98
64)	1,3-Dichloropropane	13.62	76	62382	17.6232 ug/kg	92
65)	Tetrachloroethene	13.75	164	37530	17.3115 ug/kg	96
66)	Dibromochloromethane	14.01	129	46454	15.6468 ug/kg	98
67)	1,2-Dibromoethane	14.27	107	38451	16.3184 ug/kg	95
68)	1-Chlorohexane	14.34	91	58995	19.7827 ug/kg	92
69)	Chlorobenzene	14.77	112	126225	17.7598 ug/kg	96
70)	1,1,1,2-Tetrachloroethane	14.81	131	45664	17.1085 ug/kg	99
71)	Ethylbenzene	14.80	106	65813	17.9737 ug/kg	96
72)	m-,p-Xylene	14.89	106	164885	36.4626 ug/kg	99
73)	o-Xylene	15.45	106	80520	18.5547 ug/kg	99
74)	Styrene	15.49	104	132037	17.8673 ug/kg	100
75)	Bromoform	15.99	173	29228	14.9941 ug/kg	98
76)	Isopropylbenzene	15.87	105	211578	18.1613 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	41581	14.8447 ug/kg	97
80)	1,2,3-Trichloropropane	16.29	110	15993	15.0554 ug/kg	86
81)	trans-1,4-Dichloro-2-Buten	16.33	53	14483	13.5259 ug/kg	98
82)	n-Propylbenzene	16.38	91	250277	17.2431 ug/kg	100
83)	Bromobenzene	16.52	156	51790	15.1145 ug/kg	97
84)	1,3,5-Trimethylbenzene	16.57	105	175652	16.1218 ug/kg	98
85)	2-Chlorotoluene	16.66	91	168324	17.2901 ug/kg	99
86)	4-Chlorotoluene	16.71	91	138216	15.3562 ug/kg	100
87)	a-Methylstyrene	16.98	118	93610	18.8560 ug/kg	96
88)	tert-Butylbenzene	17.03	134	38153	16.7028 ug/kg	78
89)	1,2,4-Trimethylbenzene	17.09	105	176980	15.5107 ug/kg	99
90)	sec-Butylbenzene	17.31	105	235851	16.8074 ug/kg	100
91)	p-Isopropyltoluene	17.47	119	187087	15.7982 ug/kg	100
92)	1,3-Dichlorobenzene	17.67	146	100650	14.7798 ug/kg	100
93)	1,4-Dichlorobenzene	17.79	146	97441	14.3128 ug/kg	99
94)	n-Butylbenzene	17.99	91	165130	14.9974 ug/kg	100
95)	1,2-Dichlorobenzene	18.29	146	92601	14.6550 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	9840	12.1308 ug/kg	92
97)	1,2,4-Trichlorobenzene	20.43	180	51473	11.4751 ug/kg	100
98)	Hexachlorobutadiene	20.58	225	31656	13.3881 ug/kg	97
99)	Naphthalene	20.81	128	128731	11.4419 ug/kg	97
100)	1,2,3-Trichlorobenzene	21.12	180	52906	12.1603 ug/kg	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030616\9M973117.D Vial: 21
Acq On : 7 Mar 2016 1:02 Operator: ADC
Sample : WG559855-03 MSD A 8260 4.75g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 7 1:25 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

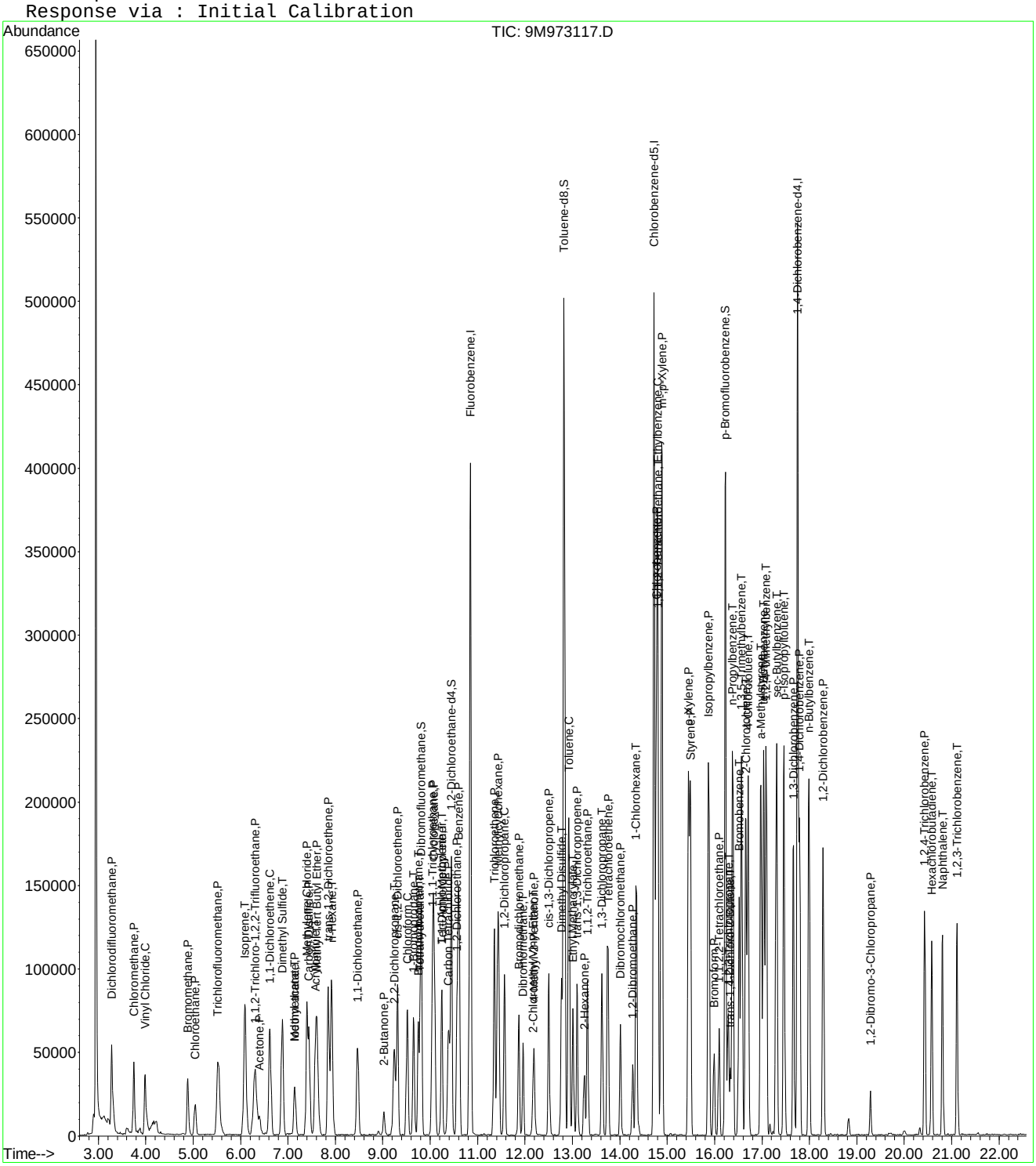

2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030134-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT06(5-5.5)020316	**Prep Method:**	6850	**Prep Date:**	03/03/2016 17:43
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559621	**Analyst:**	WTD	**Run Date:**	03/03/2016 19:37
Collect Date:	03/02/2016 08:58	**Dilution:**	1	**File ID:**	1LM.LM33660
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.42	U	4.84	2.42	1.21

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030134-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT06(5-5.5)020316FD	**Prep Method:**	6850	**Prep Date:**	03/03/2016 17:43
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559621	**Analyst:**	WTD	**Run Date:**	03/03/2016 19:56
Collect Date:	03/02/2016 08:58	**Dilution:**	1	**File ID:**	1LM.LM33661
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.46	U	4.94	2.46	1.23

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030134-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT06(15-15.5)020316	**Prep Method:**	6850	**Prep Date:**	03/03/2016 17:43
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559621	**Analyst:**	WTD	**Run Date:**	03/03/2016 20:15
Collect Date:	03/02/2016 10:35	**Dilution:**	1	**File ID:**	1LM.LM33662
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	88.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.26	U	4.52	2.26	1.13

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030134-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT06(20-20.5)020316	**Prep Method:**	6850	**Prep Date:**	03/03/2016 17:43
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559621	**Analyst:**	WTD	**Run Date:**	03/03/2016 20:34
Collect Date:	03/02/2016 11:11	**Dilution:**	1	**File ID:**	1LM.LM33663
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3.35	J	4.67	2.34	1.17

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030134-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT06(27.5-28)020316	**Prep Method:**	6850	**Prep Date:**	03/03/2016 17:43
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559621	**Analyst:**	WTD	**Run Date:**	03/04/2016 11:16
Collect Date:	03/02/2016 12:05	**Dilution:**	100	**File ID:**	1LM.LM33703
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	82.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1530		474	236	118

Certificate of Analysis

Sample #:	L16030134-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT06(38.5-39)020316	**Prep Method:**	6850	**Prep Date:**	03/03/2016 17:43
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559621	**Analyst:**	WTD	**Run Date:**	03/04/2016 11:35
Collect Date:	03/02/2016 15:00	**Dilution:**	100	**File ID:**	1LM.LM33704
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	80.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2690		497	248	124

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

MICROBAC

Semivolatile Sample Extract Log

Parameter: Perchlorate
SOP #: HPLC06
Analyst: ADC/AWE
Spike/Surrogate analyst: ADC
Surrogate #: STD 72686 NA
Spike # A: STD 72686
Ext Solvent: DI-H2O
Ext Solvent: NA
Ext Disk: NA

Matrix: Soils
Rev #: 07
Date/Time Extracted: 3-8-16 13:45
Witness: WD

Spike # B: NA
Lot #: NA
Lot #: NA
Lot #: NA

Extraction Work Group: WG 559620
Analytical Work Group: WG 559621
Run ID: R4483574

Pipetter(s): Eppendorf #403
Analytical Balance ID: BAL 014
Reagent: Tubes Lot #: RGT34011
Reagent: Sand Lot #: COA16156
Other: ES Lot #: COA18071

Color Code
T = Transparent
C = Colored
O = Opaque

	Sample ID	Test Code	pH	Initial Wt / Vol	~~Amount Surrogate~~ IS	Amount Spike	Final Volume	Extract Color	Comments
1	WG559621-01	6850	NA	5.000 g	0.250 mL	1.0 mL	50.0 mL	NA	MCT (10,000 µS/cm) (2.0 mg/kg)
2	-02			5.003 g		NA			BLK
3	-03			5.000 g		1.0 mL			LCS (2.0 mg/kg)
4	L16030134-01			5.124 g		NA			
5	-02			5.012 g					
6	-03			5.022					
7	-04			5.021					
8	-05			5.139					
9	-06			5.031					Rep
10	-06 MS			5.024		1.0 mL			MS (2.0 mg/kg)
11	-06 MSD			5.034		1.0 mL			MSD (2.0 mg/kg)
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									

Reviewed by: Wanda Dolby

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1386 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG 559 621 -01 MCT	9,740	
-02 LCS	6,21	
-03 BLK	7,06	
L16030134 -01	3,57	
-02	3,55	
-03	6,54	
-04	8,45	
-05	8,36	
-06 Rad	10,10	
-06 MS	9,09	
-06 MSD	9,08	

Analyst: Andrew Gunz

Date/Time: 3-6-16 / 1353

DCN#117048

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030216_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015, WG559292

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 MS/MSD STD: STD72685

Comments: L16021262s and L16021255s diluted based on historical data.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM33567	WG559340-01 CCB	1	1		03/02/16 08:34
2	1LM.LM33568	WG559340-02 STD (0.1 ug/L)	1	1	STD72683	03/02/16 08:53
3	1LM.LM33569	WG559340-03 STD (0.2 ug/L)	1	1	STD72683	03/02/16 09:12
4	1LM.LM33570	WG559340-04 STD (0.5 ug/L)	1	1	STD72683	03/02/16 09:31
5	1LM.LM33571	WG559340-05 STD (1.0 ug/L)	1	1	STD72683	03/02/16 09:50
6	1LM.LM33572	WG559340-06 STD (2.0 ug/L)	1	1	STD72683	03/02/16 10:09
7	1LM.LM33573	WG559340-07 STD (5.0 ug/L)	1	1	STD72683	03/02/16 10:28
8	1LM.LM33574	WG559340-08 STD (10 ug/L)	1	1	STD72683	03/02/16 10:46
9	1LM.LM33575	WG559340-09 SSCV (1.0 ug/L)	1	1	STD72685	03/02/16 11:05
10	1LM.LM33576	WG559291-01 CCB	1	1		03/02/16 11:25
11	1LM.LM33577	WG559291-02 CCV (1.0ug/L)	1	1	STD72683	03/02/16 11:44
12	1LM.LM33578	WG559015-05 MRL (0.2ug/L)	1	1	STD72683	03/02/16 12:03
13	1LM.LM33579	WG559015-01 MCT (0.2ug/L)	1	1	STD72685	03/02/16 12:22
14	1LM.LM33580	WG559015-02 BLANK	1	1		03/02/16 12:41
15	1LM.LM33581	WG559015-05 MRL (0.2ug/L)	1	1	STD72683	03/02/16 13:01
16	1LM.LM33582	WG559015-03 LCS (0.2ug/L)	1	1	STD72685	03/02/16 13:20
17	1LM.LM33583	WG559015-04 LCS2 (0.2ug/L)	1	1	STD72685	03/02/16 13:39
18	1LM.LM33584	L16021060-01 ADC	1	1	STD72685	03/02/16 13:58
19	1LM.LM33585	L16021060-02 ADC	1	1	STD72685	03/02/16 14:17
20	1LM.LM33586	L16021060-03 ADC	1	1	STD72685	03/02/16 14:36
21	1LM.LM33587	L16021060-04 ADC	1	1	STD72685	03/02/16 14:55
22	1LM.LM33588	L16021262-01 (20x)	1	20		03/02/16 15:13
23	1LM.LM33589	L16021262-02 (5000x)	1	5000		03/02/16 15:32
24	1LM.LM33590	WG559291-03 CCV (1.0ug/L)	1	1	STD72683	03/02/16 15:51
25	1LM.LM33591	WG559015-06 MRL (0.2ug/L)	1	1	STD72683	03/02/16 16:10
26	1LM.LM33592	WG559291-04 CCB	1	1		03/02/16 16:29
27	1LM.LM33593	L16021262-03 (100X)	1	100		03/02/16 16:48
28	1LM.LM33594	L16021262-04 (2000X)	1	2000		03/02/16 17:07
29	1LM.LM33595	L16021262-05 (1000X)	1	1000		03/02/16 17:26
30	1LM.LM33596	L16021262-06 (10,000X)	1	10000		03/02/16 17:45
31	1LM.LM33597	L16021262-07 (10,000X)	1	10000		03/02/16 18:04
32	1LM.LM33598	L16021262-08 (5000X)	1	5000		03/02/16 18:23
33	1LM.LM33599	L16021262-09 (5000X)	1	5000		03/02/16 18:42

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030216_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015, WG559292

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM33600	L16021262-10 (100,000X)	1	100000		03/02/16 19:01
35	1LM.LM33601	L16021262-11 (10,000X)	1	10000		03/02/16 19:20
36	1LM.LM33602	L16021262-12 (10,000X)	1	10000		03/02/16 19:39
37	1LM.LM33603	WG559291-05 CCV (1.0ug/L)	1	1	STD72683	03/02/16 19:58
38	1LM.LM33604	WG559015-07 MRL (0.2ug/L)	1	1	STD72683	03/02/16 20:17
39	1LM.LM33605	WG559291-06 CCB	1	1		03/02/16 20:35
40	1LM.LM33606	L16021262-13 (10,000X)	1	10000		03/02/16 20:54
41	1LM.LM33607	L16021262-14 (10,000X)	1	10000		03/02/16 21:13
42	1LM.LM33608	WG559291-07 CCV (1.0ug/L)	1	1	STD72683	03/02/16 21:32
43	1LM.LM33609	WG559015-08 MRL (0.2ug/L)	1	1	STD72683	03/02/16 21:51
44	1LM.LM33610	WG559291-08 CCB	1	1		03/02/16 22:10
45	1LM.LM33611	WG559292-07 MRL (0.2ug/L)	1	1	STD72685	03/02/16 22:29
46	1LM.LM33612	WG559292-01 MCT (0.2ug/L)	1	1	STD72685	03/02/16 22:48
47	1LM.LM33613	WG559292-02 BLANK	1	1		03/02/16 23:07
48	1LM.LM33614	WG559292-03 LCS (0.2ug/L)	1	1	STD72685	03/02/16 23:26
93	1LM.LM33615	L16021255-01 REF 100X	1	100		03/02/16 23:45
50	1LM.LM33616	L16021255-02 MS 100X	1	100	STD72685	03/03/16 00:04
51	1LM.LM33617	L16021255-03 MSD 100X	1	100	STD72685	03/03/16 00:23
94	1LM.LM33618	L16021255-04 20X	1	20		03/03/16 00:42
53	1LM.LM33619	L16021255-05 20X	1	20		03/03/16 01:01
54	1LM.LM33620	L16021255-06 200X	1	200		03/03/16 01:20
55	1LM.LM33621	L16021255-07 100X	1	100		03/03/16 01:39
56	1LM.LM33622	WG559291-09 CCV (1.0ug/L)	1	1	STD72685	03/03/16 01:57
57	1LM.LM33623	WG559292-08 MRL (0.2ug/L)	1	1	STD72685	03/03/16 02:16
58	1LM.LM33624	WG559291-10 CCB	1	1		03/03/16 02:35
59	1LM.LM33625	L16021255-08	1	1		03/03/16 02:54
60	1LM.LM33626	L16021255-09 500X	1	500		03/03/16 03:13
61	1LM.LM33627	L16021255-10 5000X	1	5000		03/03/16 03:32
62	1LM.LM33628	L16021255-11 5000X	1	5000		03/03/16 03:51
63	1LM.LM33629	L16021255-12 100X	1	100		03/03/16 04:10
64	1LM.LM33630	L16021255-13 10,000X	1	10000		03/03/16 04:29
65	1LM.LM33631	L16021255-14 10,000X	1	10000		03/03/16 04:48
66	1LM.LM33632	L16030008-01	1	1		03/03/16 05:07
67	1LM.LM33633	L16030008-01 10X	1	10		03/03/16 05:26
68	1LM.LM33634	L16021328-01	1	1		03/03/16 05:45
69	1LM.LM33635	WG559291-11 CCV (1.0ug/L)	1	1	STD72685	03/03/16 06:04

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030216_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015, WG559292

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
70	1LM.LM33636	WG559292-09 MRL (0.2ug/L)	1	1	STD72685	03/03/16 06:23
71	1LM.LM33637	WG559291-12 CCB	1	1		03/03/16 06:41
72	1LM.LM33638	L16021328-02	1	1		03/03/16 07:00
73	1LM.LM33639	L16021328-03	1	1		03/03/16 07:19
74	1LM.LM33640	L16021328-04	1	1		03/03/16 07:38
75	1LM.LM33641	L16021328-05	1	1		03/03/16 07:57
76	1LM.LM33642	WG559291-13 CCV (1.0ug/L)	1	1	STD72685	03/03/16 08:16
77	1LM.LM33643	WG559292-10 MRL (0.2ug/L)	1	1	STD72685	03/03/16 08:35
78	1LM.LM33644	WG559291-14 CCB	1	1		03/03/16 08:54
79	1LM.LM33645	L16021255-05 200X	1	200		03/03/16 09:13
80	1LM.LM33646	L16021255-06	1	1		03/03/16 09:32
81	1LM.LM33647	L16021255-12 1000X	1	1000		03/03/16 09:51
95	1LM.LM33648	L16021255-04	1	1		03/03/16 10:10
96	1LM.LM33649	L16021255-02 MS	1	1	STD72685	03/03/16 10:29
97	1LM.LM33650	L16021255-03 MSD	1	1	STD72685	03/03/16 10:48
85	1LM.LM33651	WG559291-15 CCV (1.0ug/L)	1	1	STD72685	03/03/16 11:07
86	1LM.LM33652	WG559292-11 MRL (0.2ug/L)	1	1	STD72685	03/03/16 11:25
87	1LM.LM33653	WG559291-16 CCB	1	1		03/03/16 11:44

Comments

Seq.	Rerun	Dil.	Reason	Analytes
12	X			
	WG559015-05 incorrect vial location.			
50				
	DNR. Incorrect information on the supplied Chain of Custody.			
51				
	DNR. Incorrect information on the supplied Chain of Custody.			
94	X	1	Analyzed too dilute	
	L16021255-04			
53	X	200	Over Calibration Range	Perchlorate
	L16021255-05			
54	X	1	Analyzed too dilute	
	L16021255-06			
63	X	1000	Over Calibration Range	
	L16021255-12 100X			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030316_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: wg559619, wg559621

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 MS/MSD STD: STD72685

Comments: L16021329 were diluted based on historical data.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM33654	WG559618-01 CCB	1	1		03/03/16 17:43
2	1LM.LM33655	WG559618-02 CCV (1.0ug/L)	1	1	STD72683	03/03/16 18:02
3	1LM.LM33656	WG559621-07 MRL (2.0ug/KG)	7	1	STD72683	03/03/16 18:21
4	1LM.LM33657	WG559621-01 MCT (2.0ug/KG)	7	1	STD72686	03/03/16 18:40
5	1LM.LM33658	WG559621-02 BLK	7	1		03/03/16 18:59
6	1LM.LM33659	WG559621-02 LCS (2.0ug/KG)	7	1	STD72686	03/03/16 19:18
7	1LM.LM33660	L16030134-01	7	1		03/03/16 19:37
8	1LM.LM33661	L16030134-02	7	1		03/03/16 19:56
9	1LM.LM33662	L16030134-03	7	1		03/03/16 20:15
10	1LM.LM33663	L16030134-04	7	1		03/03/16 20:34
11	1LM.LM33664	L16030134-05	7	1		03/03/16 20:53
12	1LM.LM33665	WG559618-03 CCV (1.0ug/L)	1	1	STD72683	03/03/16 21:11
13	1LM.LM33666	WG559621-08 MRL (2.0ug/KG)	7	1	STD72683	03/03/16 21:30
14	1LM.LM33667	WG559618-04 CCB	1	1		03/03/16 21:49
63	1LM.LM33668	L16030134-06 REF	7	1		03/03/16 22:08
16	1LM.LM33669	WG559621-05 MS	7	1	STD72686	03/03/16 22:27
17	1LM.LM33670	WG559621-06 MSD	7	1	STD72686	03/03/16 22:46
18	1LM.LM33671	WG559618-05 CCV (1.0ug/L)	1	1	STD72683	03/03/16 23:05
19	1LM.LM33672	WG559621-09 MRL (2.0ug/KG)	7	1	STD72683	03/03/16 23:24
20	1LM.LM33673	WG559618-06 CCB	1	1		03/03/16 23:43
21	1LM.LM33674	WG559619-07 MRL (0.2ug/L)	1	1	STD72685	03/04/16 00:02
22	1LM.LM33675	WG559619-01 MCT (0.2ug/L)	1	1	STD72685	03/04/16 00:21
23	1LM.LM33676	WG559619-02 BLANK	1	1		03/04/16 00:40
24	1LM.LM33677	WG559619-03 LCS (0.2ug/L)	1	1	STD72685	03/04/16 00:59
25	1LM.LM33678	L16021329-01 100X	1	100		03/04/16 01:18
26	1LM.LM33679	L16021329-02 100X	1	100		03/04/16 01:37
64	1LM.LM33680	L16021329-03 REF 20X	1	20		03/04/16 01:56
65	1LM.LM33681	L16021329-04 MS 20X	1	20	STD72685	03/04/16 02:14
66	1LM.LM33682	L16021329-05 MSD 20X	1	20	STD72685	03/04/16 02:33
30	1LM.LM33683	L16021329-06	1	1		03/04/16 02:52
31	1LM.LM33684	L16021329-07 20X	1	20		03/04/16 03:11
32	1LM.LM33685	WG559618-07 CCV (1.0ug/L)	1	1	STD72685	03/04/16 03:30
33	1LM.LM33686	WG559619-08 MRL (0.2ug/L)	1	1	STD72685	03/04/16 03:49

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030316_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: wg559619, wg559621

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM33687	WG559618-08 CCB	1	1		03/04/16 04:08
35	1LM.LM33688	L16021329-08	1	1		03/04/16 04:27
36	1LM.LM33689	L16021329-09	1	1		03/04/16 04:46
37	1LM.LM33690	L16021329-10	1	1		03/04/16 05:05
38	1LM.LM33691	L16021329-11	1	1		03/04/16 05:24
39	1LM.LM33692	WG559618-09 CCV (1.0ug/L)	1	1	STD72685	03/04/16 05:43
40	1LM.LM33693	WG559619-09 MRL (0.2ug/L)	1	1	STD72685	03/04/16 06:02
41	1LM.LM33694	WG559618-10 CCB	1	1		03/04/16 06:21
67	1LM.LM33695	L16021329-03 REF 100X	1	100		03/04/16 08:44
68	1LM.LM33696	L16021329-04 MS 100X	1	100	STD72685	03/04/16 09:03
69	1LM.LM33697	L16021329-05 MSD 100X	1	100	STD72685	03/04/16 09:22
45	1LM.LM33698	L16021329-07	1	1		03/04/16 09:41
46	1LM.LM33699	WG559618-11 CCV (1.0ug/L)	1	1	STD72685	03/04/16 10:00
47	1LM.LM33700	WG559619-10 MRL (0.2ug/L)	1	1	STD72685	03/04/16 10:19
48	1LM.LM33701	WG559618-12 CCB	1	1		03/04/16 10:38
49	1LM.LM33702	WG559621-10 MRL (2.0ug/KG)	7	1	STD72683	03/04/16 10:57
50	1LM.LM33703	L16030134-05 (100X)	7	100		03/04/16 11:16
70	1LM.LM33704	L16030134-06 REF (100X)	7	100		03/04/16 11:35
52	1LM.LM33705	WG559621-05 MS (100X)	7	100	STD72686	03/04/16 11:53
53	1LM.LM33706	WG559621-06 MSD (100X)	7	100	STD72686	03/04/16 12:12
54	1LM.LM33707	WG559618-13 CCV (1.0ug/L)	1	1	STD72683	03/04/16 12:31
55	1LM.LM33708	WG559621-11 MRL (2.0ug/KG)	7	1	STD72683	03/04/16 12:50
56	1LM.LM33709	WG559618-14 CCB	1	1		03/04/16 13:09

Comments

Seq.	Rerun	Dil.	Reason	Analytes
11	X	100	Over Calibration Range	
	L16030134-05			
63	X	100	Over Calibration Range	
	L16030134-06			
16	X	100	Over Calibration Range	
	WG559621-05			
17	X	100	Over Calibration Range	
	WG559621-06			
64	X	100	Over Calibration Range	
	L16021329-03			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030316_WTD.TXT

Analyst1: WTD Analyst2: ADC

Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: wg559619, wg559621

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Comments

Seq.	Rerun	Dil.	Reason	Analytes
65	X	100	Over Calibration Range	
	L16021329-04			
66	X	100	Over Calibration Range	
	L16021329-05			
31	X	1	Analyzed too dilute	
	L16021329-07			
68				
	L16021329-04 MS has low recovery due to high levels in parent sample requiring dilution. Spiked concentration was diluted out.			
69				
	L16021329-05 MSD has low recovery due to high levels in parent sample requiring dilution. Spiked concentration was diluted out.			
52				
	WG559621-05 MS has low recovery due to high levels in parent sample requiring dilution. Spiked concentration was diluted out.			
53				
	WG559621-06 MSD has low recovery due to high levels in parent sample requiring dilution. Spiked concentration was diluted out.			

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Microbac Laboratories Inc.

Data Checklist

Date: 02-MAR-2016
Analyst: WTD
Analyst: ADC
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 73617
Analytical Workgroups: L16021255,L16021328,030008,021262,021060

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	WTD
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MES

Primary Reviewer: 03-MAR-2016

Secondary Reviewer: 04-MAR-2016

CHECKLIST1 - Modified 03/05/2008

Generated: MAR-04-2016 13:53:03

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAR-2016
Analyst: WTD
Analyst: ADC
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 73637
Analytical Workgroups: L16021329, L16030134

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	WTD
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MES

Primary Reviewer: 04-MAR-2016

Secondary Reviewer: 07-MAR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-07-2016 11:38:45

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG559621

Login Number: L16030134

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18DPT06(5-5.5)020316	01	03/02/16					03/03/2016	1.4	28		03/03/16	.1	28	
18DPT06(5-5.5)020316FD	02	03/02/16					03/03/2016	1.4	28		03/03/16	.1	28	
18DPT06(15-15.5)020316	03	03/02/16					03/03/2016	1.3	28		03/03/16	.1	28	
18DPT06(20-20.5)020316	04	03/02/16					03/03/2016	1.3	28		03/03/16	.1	28	
18DPT06(27.5-28)020316	05	03/02/16					03/03/2016	1.2	28		03/04/16	.7	28	
18DPT06(38.5-39)020316	06	03/02/16					03/03/2016	1.1	28		03/04/16	.7	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4657689
Report generated 03/07/2016 11:29

METHOD BLANK SUMMARY

Login Number: L16030134
Blank File ID: 1LM.LM33658
Prep Date: 03/03/16 17:43
Analyzed Date: 03/03/16 18:59
Analyst: WTD

Work Group: WG559621
Blank Sample ID: WG559621-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG559621-07	1LM.LM33656	03/03/16 18:21	01
MCT	WG559621-01	1LM.LM33657	03/03/16 18:40	01
LCS	WG559621-03	1LM.LM33659	03/03/16 19:18	01
18DPT06(5-5.5)020316	L16030134-01	1LM.LM33660	03/03/16 19:37	01
18DPT06(5-5.5)020316FD	L16030134-02	1LM.LM33661	03/03/16 19:56	01
18DPT06(15-15.5)020316	L16030134-03	1LM.LM33662	03/03/16 20:15	01
18DPT06(20-20.5)020316	L16030134-04	1LM.LM33663	03/03/16 20:34	01
QCMRL	WG559621-08	1LM.LM33666	03/03/16 21:30	01
QCMRL	WG559621-09	1LM.LM33672	03/03/16 23:24	01
QCMRL	WG559621-10	1LM.LM33702	03/04/16 10:57	01
18DPT06(27.5-28)020316	L16030134-05	1LM.LM33703	03/04/16 11:16	DL01
18DPT06(38.5-39)020316	L16030134-06	1LM.LM33704	03/04/16 11:35	DL01
QCMRL	WG559621-09	1LM.LM33708	03/04/16 12:50	02

Report Name: BLANK_SUMMARY
PDF File ID: 4657690
Report generated 03/07/2016 11:29

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16030134 Prep Date: 03/03/16 17:43 Sample ID: WG559621-02
Instrument ID: LCMS1 Run Date: 03/03/16 18:59 Prep Method: 6850
File ID: 1LM.LM33658 Analyst: WTD Method: 6850
Workgroup (AAB#): WG559621 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.999	4.00	0.999	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4657691
07-MAR-2016 11:29

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030134 Run Date: 03/03/2016 Sample ID: WG559621-03
Instrument ID: LCMS1 Run Time: 19:18 Prep Method: 6850
File ID: 1LM.LM33659 Analyst: WTD Method: 6850
Workgroup (AAB#): WG559621 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD72685 Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	2.00	1.95	97.5	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4657692
Report generated: 03/07/2016 11:29

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16030134 Cal ID: LCMS1 - Worknum: WG559621
Instrument ID: LCMS1 Contract #: Method: 6850
Parent ID: WG559621-04 File ID: 1LM.LM33704 Dil: 100 Matrix: SOLID
Sample ID: WG559621-05 MS File ID: 1LM.LM33705 Dil: 100 Units: ug/kg
Sample ID: WG559621-06 MSD File ID: 1LM.LM33706 Dil: 100 Percent Solid: 80.0

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Perchlorate	2690	2.49	2900	8150	2.48	2670	-1060	8.23	80 - 120	15	*

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4657693
Report generated 03/07/2016 11:29

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16030134
Analytical Method: 6850
ICAL Workgroup: WG559340

Instrument ID: LCMS1
Initial Calibration Date: 02-MAR-16 10:46
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.808	3.97	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4657695
Report generated 03/07/2016 11:30

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16030134

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 02-MAR-16 10:46

Column ID: F

Analyte	WG559340-02			WG559340-03			WG559340-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	18400.0000	1.879	0.200	37000.0000	1.850	0.500	89000.0000	1.810

INT_CAL - Modified 03/06/2008
PDF File ID: 4657695
Report generated 03/07/2016 11:30

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16030134

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 02-MAR-16 10:46

Column ID: F

Analyte	WG559340-05			WG559340-06			WG559340-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	183000.000	1.829	2.00	363000.000	1.777	5.00	871000.000	1.779

INT_CAL - Modified 03/06/2008
PDF File ID: 4657695
Report generated 03/07/2016 11:30

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16030134

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 02-MAR-16 10:46

Column ID: F

Analyte	WG559340-08		
	CONC	RESP	RF
Perchlorate	10.0	1650000.00	1.729

INT_CAL - Modified 03/06/2008

PDF File ID: 4657695

Report generated 03/07/2016 11:30

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16030134 Run Date: 03/02/2016 Sample ID: WG559340-09
Instrument ID: LCMS1 Run Time: 11:05 Method: 6850
File ID: 1LM.LM33575 Analyst: WTD QC Key: DOD4
ICal Workgroup: WG559340 Cal ID: LCMS1 - 02-MAR-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.83	3.00	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4657696
Report generated 03/07/2016 11:30

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030134
Run Date: 03/03/2016
Sample ID: WG559618-01
Instrument ID: LCMS1
Run Time: 17:43
Method: 6850
File ID: 1LM.LM33654
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG559621
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4657698
Report generated 03/07/2016 11:30

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030134
Run Date: 03/03/2016
Sample ID: WG559618-04
Instrument ID: LCMS1
Run Time: 21:49
Method: 6850
File ID: 1LM.LM33667
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG559621
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4657698
Report generated 03/07/2016 11:30

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030134
Run Date: 03/03/2016
Sample ID: WG559618-06
Instrument ID: LCMS1
Run Time: 23:43
Method: 6850
File ID: 1LM.LM33673
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG559621
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4657698
Report generated 03/07/2016 11:30

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030134
Run Date: 03/04/2016
Sample ID: WG559618-12
Instrument ID: LCMS1
Run Time: 10:38
Method: 6850
File ID: 1LM.LM33701
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG559621
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4657698
Report generated 03/07/2016 11:30

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030134
Run Date: 03/04/2016
Sample ID: WG559618-14
Instrument ID: LCMS1
Run Time: 13:09
Method: 6850
File ID: 1LM.LM33709
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG559621
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4657698
Report generated 03/07/2016 11:30

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030134
Run Date: 03/03/2016
Sample ID: WG559618-02
Instrument ID: LCMS1
Run Time: 18:02
Method: 6850
File ID: 1LM.LM33655
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG559621
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.975	ug/kg	1.73	2.50	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4657697
Report generated 03/07/2016 11:30

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030134
Run Date: 03/03/2016
Sample ID: WG559618-03
Instrument ID: LCMS1
Run Time: 21:11
Method: 6850
File ID: 1LM.LM33665
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG559621
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.970	ug/kg	1.72	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4657697
Report generated 03/07/2016 11:30

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030134
Run Date: 03/03/2016
Sample ID: WG559618-05
Instrument ID: LCMS1
Run Time: 23:05
Method: 6850
File ID: 1LM.LM33671
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG559621
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.981	ug/kg	1.74	1.90	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4657697
Report generated 03/07/2016 11:30

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030134
Run Date: 03/04/2016
Sample ID: WG559618-07
Instrument ID: LCMS1
Run Time: 03:30
Method: 6850
File ID: 1LM.LM33685
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG559621
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.971	ug/kg	1.72	2.90	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4657697
Report generated 03/07/2016 11:30

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030134
Run Date: 03/04/2016
Sample ID: WG559618-11
Instrument ID: LCMS1
Run Time: 10:00
Method: 6850
File ID: 1LM.LM33699
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG559621
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.975	ug/kg	1.73	2.50	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4657697
Report generated 03/07/2016 11:30

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030134
Run Date: 03/04/2016
Sample ID: WG559618-13
Instrument ID: LCMS1
Run Time: 12:31
Method: 6850
File ID: 1LM.LM33707
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG559621
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.962	ug/kg	1.71	3.80	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4657697
Report generated 03/07/2016 11:30

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030134 Run Date: 03/03/2016 Sample ID: WG559621-07
Instrument ID: LCMS1 Run Time: 18:21 Prep Method: 6850
File ID: 1LM.LM33656 Analyst: WTD Method: 6850
Workgroup (AAB#): WG559621 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.90	95.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4657694
Report generated 03/07/2016 11:30

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030134 Run Date: 03/03/2016 Sample ID: WG559621-08
Instrument ID: LCMS1 Run Time: 21:30 Prep Method: 6850
File ID: 1LM.LM33666 Analyst: WTD Method: 6850
Workgroup (AAB#): WG559621 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.93	96.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4657694
Report generated 03/07/2016 11:30

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030134 Run Date: 03/03/2016 Sample ID: WG559621-09
Instrument ID: LCMS1 Run Time: 23:24 Prep Method: 6850
File ID: 1LM.LM33672 Analyst: WTD Method: 6850
Workgroup (AAB#): WG559621 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.95	97.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4657694
Report generated 03/07/2016 11:30

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030134 Run Date: 03/04/2016 Sample ID: WG559621-10

Instrument ID: LCMS1 Run Time: 10:57 Prep Method: 6850

File ID: 1LM.LM33702 Analyst: WTD Method: 6850

Workgroup (AAB#): WG559621 Matrix: Soil Units: ug/kg

Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.91	95.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4657694
Report generated 03/07/2016 11:30

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030134 Run Date: 03/04/2016 Sample ID: WG559621-09

Instrument ID: LCMS1 Run Time: 12:50 Prep Method: 6850

File ID: 1LM.LM33708 Analyst: WTD Method: 6850

Workgroup (AAB#): WG559621 Matrix: Soil Units: ug/kg

Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.00	100	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4657694
Report generated 03/07/2016 11:30

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16030134
Instrument ID: LCMS1
Workgroup (AAB#): WG559621

ICAL CCV Number: WG559340-05
CAL ID: LCMS1-02-MAR-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1
WG559340	NA	NA	494000
Upper Limit	NA	NA	741000
Lower Limit	NA	NA	247000
L16030134-01	1.00	01	539000
L16030134-02	1.00	01	536000
L16030134-03	1.00	01	539000
L16030134-04	1.00	01	523000
L16030134-05	100	DL01	509000
L16030134-06	100	DL01	507000
WG559621-02	1.00	01	513000
WG559621-03	1.00	01	517000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4657699
Report generated 03/07/2016 11:30

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**	6850	**Samplenum:**	L16030134-01
Instrument:	LCMS1	**Prep Date:**	03/03/2016 17:43	**File ID:**	1LM.LM33660
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559621	**Analysis Date:**	03/03/2016 19:37	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	5330	1490	3.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**	6850	**Samplenum:**	L16030134-02
Instrument:	LCMS1	**Prep Date:**	03/03/2016 17:43	**File ID:**	1LM.LM33661
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559621	**Analysis Date:**	03/03/2016 19:56	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	3690	2060	1.79	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**	6850	**Samplenum:**	L16030134-03
Instrument:	LCMS1	**Prep Date:**	03/03/2016 17:43	**File ID:**	1LM.LM33662
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559621	**Analysis Date:**	03/03/2016 20:15	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	5880	2950	1.99	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**	6850	**Samplenum:**	L16030134-04
Instrument:	LCMS1	**Prep Date:**	03/03/2016 17:43	**File ID:**	1LM.LM33663
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559621	**Analysis Date:**	03/03/2016 20:34	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	54900	17200	3.19	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**	6850	**Samplenum:**	L16030134-05
Instrument:	LCMS1	**Prep Date:**	03/03/2016 17:43	**File ID:**	1LM.LM33703
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559621	**Analysis Date:**	03/04/2016 11:16	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	232000	73300	3.17	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**	6850	**Samplenum:**	L16030134-06
Instrument:	LCMS1	**Prep Date:**	03/03/2016 17:43	**File ID:**	1LM.LM33704
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559621	**Analysis Date:**	03/04/2016 11:35	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	387000	124000	3.12	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**		**Samplenum:**	WG559340-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33568
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559621	**Analysis Date:**	03/02/2016 08:53	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	18400	5910	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**		**Samplenum:**	WG559340-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33569
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559621	**Analysis Date:**	03/02/2016 09:12	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37000	11900	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**		**Samplenum:**	WG559340-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33570
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559621	**Analysis Date:**	03/02/2016 09:31	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	89000	30400	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**		**Samplenum:**	WG559340-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33571
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559621	**Analysis Date:**	03/02/2016 09:50	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	183000	56800	3.22	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**		**Samplenum:**	WG559340-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33572
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559621	**Analysis Date:**	03/02/2016 10:09	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	363000	117000	3.10	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**		**Samplenum:**	WG559340-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33573
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559621	**Analysis Date:**	03/02/2016 10:28	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	871000	282000	3.09	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**		**Samplenum:**	WG559340-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33574
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559621	**Analysis Date:**	03/02/2016 10:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1650000	530000	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**		**Samplenum:**	WG559340-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33575
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559621	**Analysis Date:**	03/02/2016 11:05	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	190000	62200	3.05	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**		**Samplenum:**	WG559618-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33654
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559621	**Analysis Date:**	03/03/2016 17:43	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**		**Samplenum:**	WG559618-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33655
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559621	**Analysis Date:**	03/03/2016 18:02	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	182000	59800	3.04	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**		**Samplenum:**	WG559618-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33665
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559621	**Analysis Date:**	03/03/2016 21:11	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	188000	60900	3.09	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**		**Samplenum:**	WG559618-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33667
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559621	**Analysis Date:**	03/03/2016 21:49	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**		**Samplenum:**	WG559618-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33671
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559621	**Analysis Date:**	03/03/2016 23:05	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	188000	60400	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**		**Samplenum:**	WG559618-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33673
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559621	**Analysis Date:**	03/03/2016 23:43	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	700	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**		**Samplenum:**	WG559618-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33685
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559621	**Analysis Date:**	03/04/2016 03:30	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	193000	60200	3.21	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**		**Samplenum:**	WG559618-11
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33699
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559621	**Analysis Date:**	03/04/2016 10:00	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	191000	60200	3.17	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**		**Samplenum:**	WG559618-12
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33701
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559621	**Analysis Date:**	03/04/2016 10:38	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**		**Samplenum:**	WG559618-13
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33707
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559621	**Analysis Date:**	03/04/2016 12:31	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	181000	59200	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**		**Samplenum:**	WG559618-14
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33709
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559621	**Analysis Date:**	03/04/2016 13:09	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**	6850	**Samplenum:**	WG559621-01
Instrument:	LCMS1	**Prep Date:**	03/03/2016 17:43	**File ID:**	1LM.LM33657
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559621	**Analysis Date:**	03/03/2016 18:40	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	39800	11800	3.37	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**	6850	**Samplenum:**	WG559621-02
Instrument:	LCMS1	**Prep Date:**	03/03/2016 17:43	**File ID:**	1LM.LM33658
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559621	**Analysis Date:**	03/03/2016 18:59	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	544	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**	6850	**Samplenum:**	WG559621-03
Instrument:	LCMS1	**Prep Date:**	03/03/2016 17:43	**File ID:**	1LM.LM33659
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559621	**Analysis Date:**	03/03/2016 19:18	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37400	12800	2.92	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**	6850	**Samplenum:**	WG559621-05
Instrument:	LCMS1	**Prep Date:**	03/03/2016 17:43	**File ID:**	1LM.LM33705
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559621	**Analysis Date:**	03/04/2016 11:53	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	408000	128000	3.19	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**	6850	**Samplenum:**	WG559621-06
Instrument:	LCMS1	**Prep Date:**	03/03/2016 17:43	**File ID:**	1LM.LM33706
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559621	**Analysis Date:**	03/04/2016 12:12	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	375000	119000	3.15	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**	6850	**Samplenum:**	WG559621-07
Instrument:	LCMS1	**Prep Date:**	03/03/2016 17:43	**File ID:**	1LM.LM33656
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559621	**Analysis Date:**	03/03/2016 18:21	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37300	13500	2.76	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**	6850	**Samplenum:**	WG559621-08
Instrument:	LCMS1	**Prep Date:**	03/03/2016 17:43	**File ID:**	1LM.LM33666
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559621	**Analysis Date:**	03/03/2016 21:30	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	39000	13600	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**	6850	**Samplenum:**	WG559621-09
Instrument:	LCMS1	**Prep Date:**	03/03/2016 17:43	**File ID:**	1LM.LM33672
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559621	**Analysis Date:**	03/03/2016 23:24	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	39400	12900	3.05	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**	6850	**Samplenum:**	WG559621-09
Instrument:	LCMS1	**Prep Date:**	03/03/2016 17:43	**File ID:**	1LM.LM33708
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559621	**Analysis Date:**	03/04/2016 12:50	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	40200	14100	2.85	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**	6850	**Samplenum:**	WG559621-10
Instrument:	LCMS1	**Prep Date:**	03/03/2016 17:43	**File ID:**	1LM.LM33702
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559621	**Analysis Date:**	03/04/2016 10:57	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37300	12500	2.98	2.3	3.8	

2.2.1.3 Sample Data

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Data File	LM33660.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/3/2016 7:37:15 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030134-01	**Injection Vial**	7.00
Data File	LM33660.wiff	**Injection Volume**	10.00
Acquisition Date	3/3/2016 7:37:15 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	L16030134-01	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.390e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.330e+03	9.94	N/A	0.0157
Perchlorate conf	1.490e+03	9.91	N/A	0.0107

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

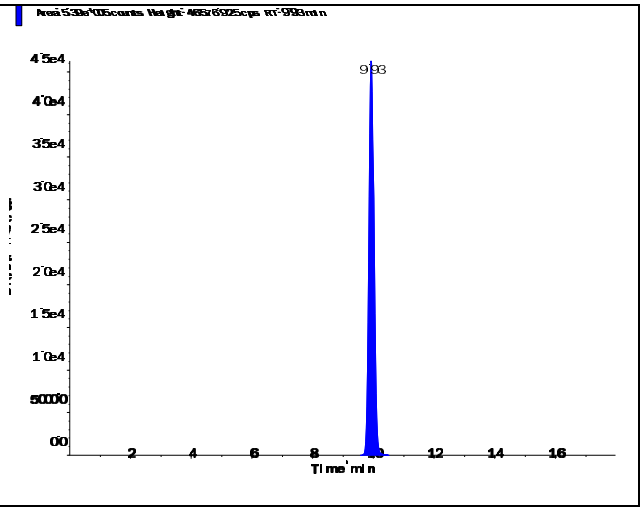

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.0157 ng/ml
Area Ratio:	0.01
Sample Type:	(Unknown)

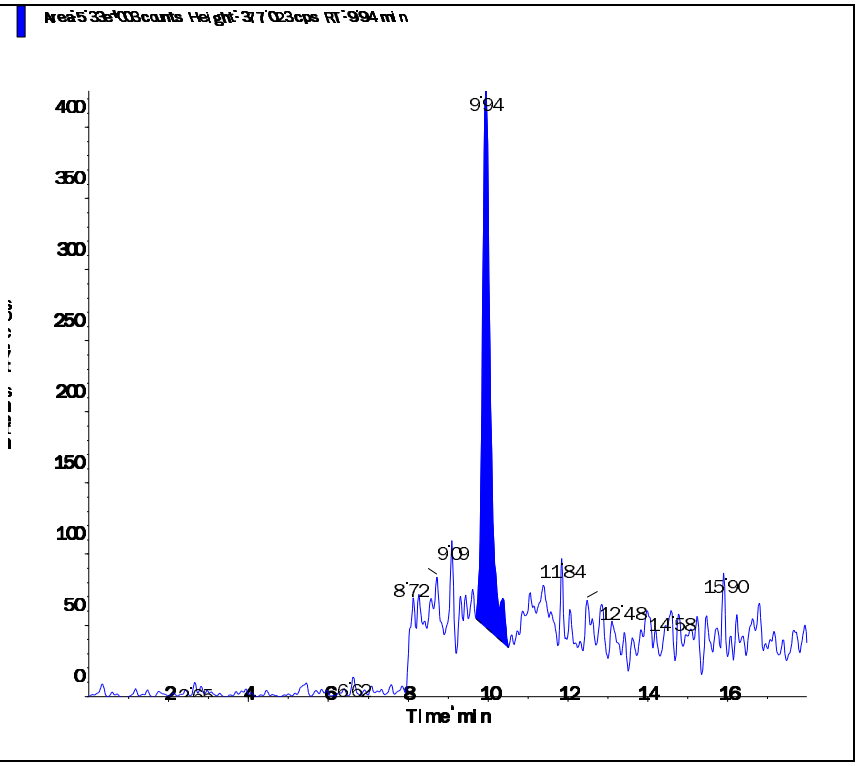

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.92) min
Calculated conc:	0.0107 ng/ml
Area Ratio:	0.003
Sample Type:	(Unknown)

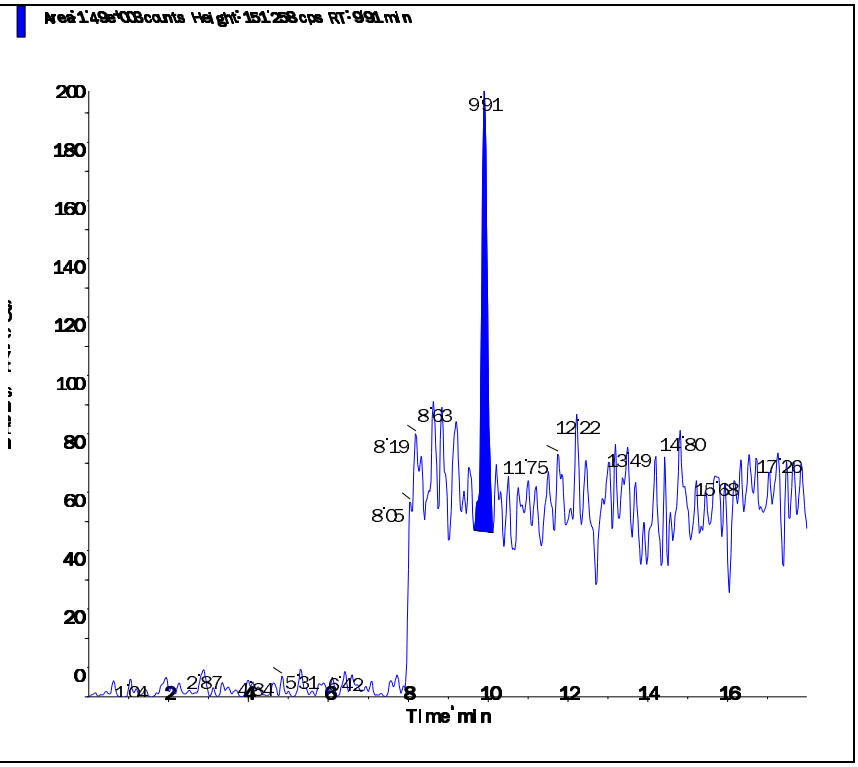

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Data File	LM33661.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/3/2016 7:56:11 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030134-02	**Injection Vial**	8.00
Data File	LM33661.wiff	**Injection Volume**	10.00
Acquisition Date	3/3/2016 7:56:11 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	L16030134-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.360e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.690e+03	9.96	N/A	0.0072
Perchlorate conf	2.060e+03	9.92	N/A	0.0202

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

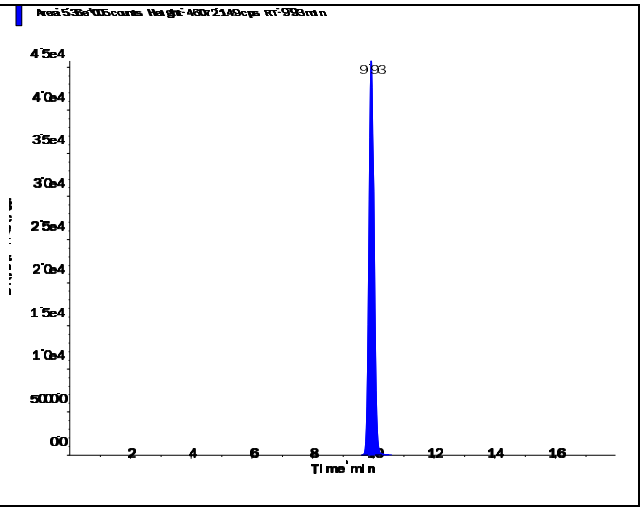

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	0.0072 ng/ml
Area Ratio:	0.007
Sample Type:	(Unknown)

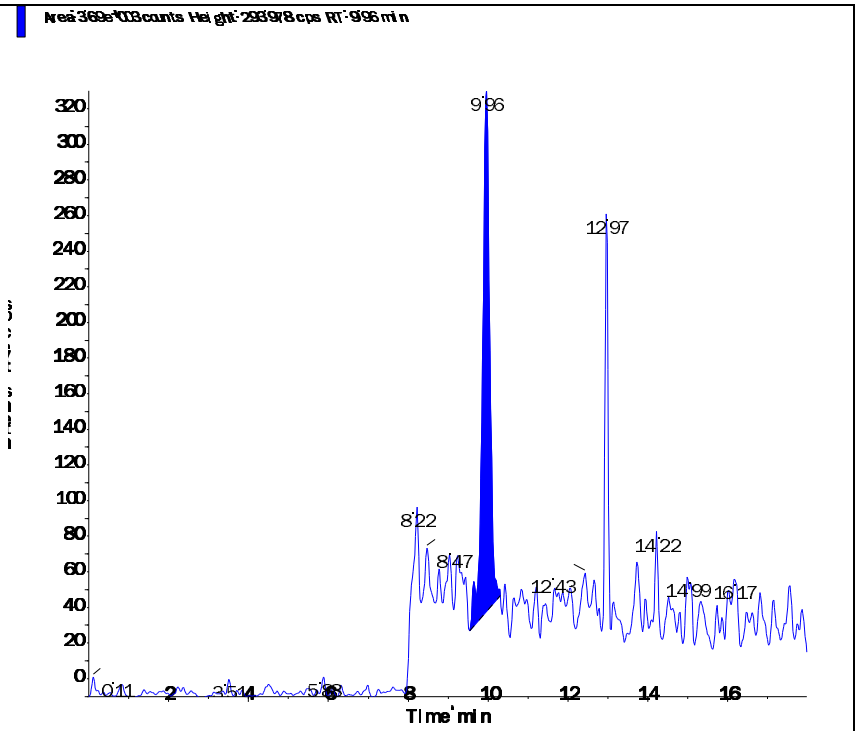

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	0.0202 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)

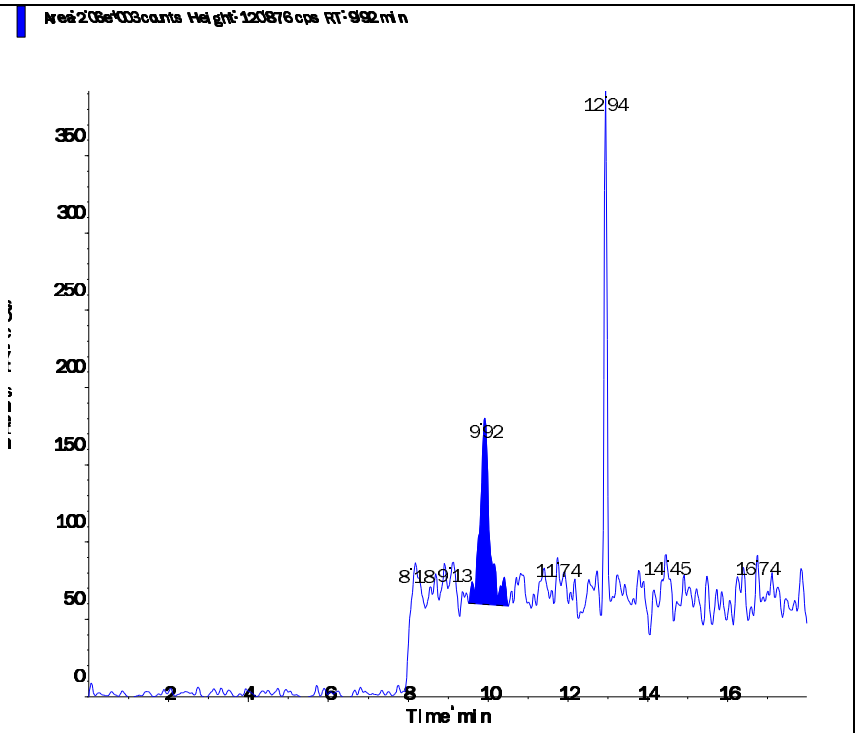

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Data File	LM33662.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/3/2016 8:15:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030134-03	**Injection Vial**	9.00
Data File	LM33662.wiff	**Injection Volume**	10.00
Acquisition Date	3/3/2016 8:15:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	L16030134-03	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.390e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.880e+03	9.94	N/A	0.0187
Perchlorate conf	2.950e+03	9.93	N/A	0.0348

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

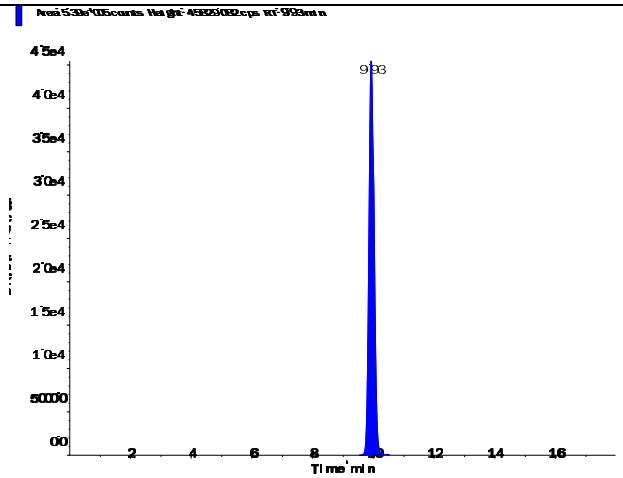

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Printed: 3/4/2016 1:59 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.0187 ng/ml
Area Ratio:	0.011
Sample Type:	(Unknown)

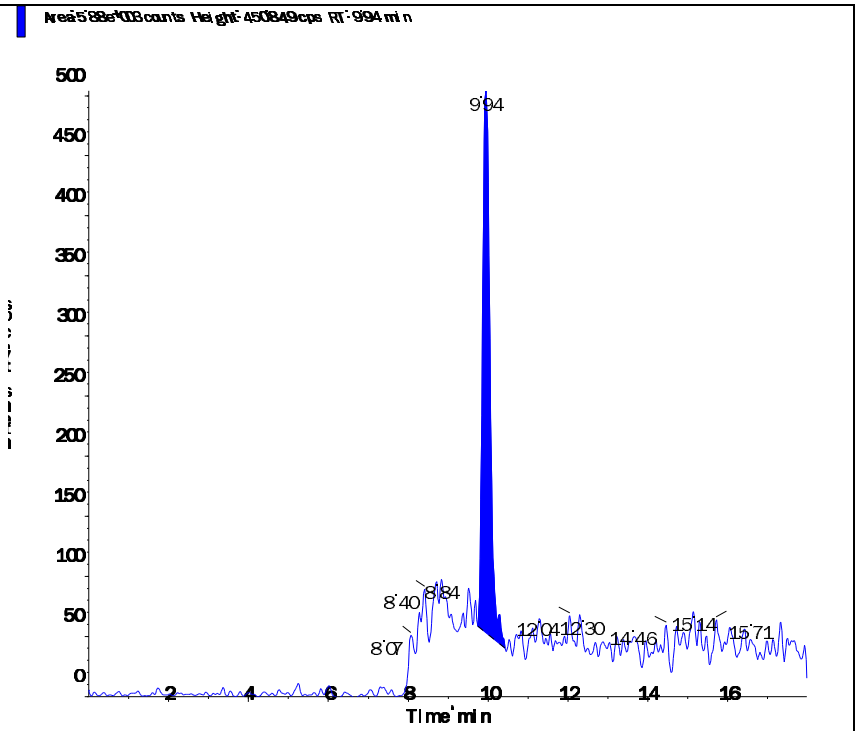

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	0.0348 ng/ml
Area Ratio:	0.005
Sample Type:	(Unknown)

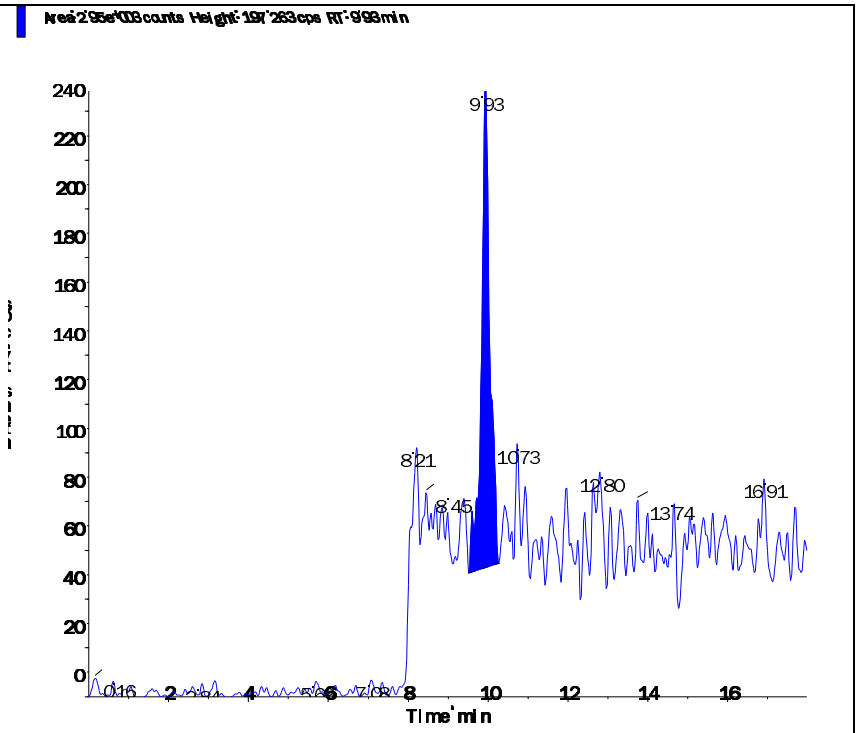

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Printed: 3/4/2016 1:59 PM

Data File	LM33663.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/3/2016 8:34:08 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030134-04	**Injection Vial**	10.00
Data File	LM33663.wiff	**Injection Volume**	10.00
Acquisition Date	3/3/2016 8:34:08 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	L16030134-04	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.230e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.490e+04	9.93	N/A	0.287
Perchlorate conf	1.720e+04	9.93	N/A	0.278

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

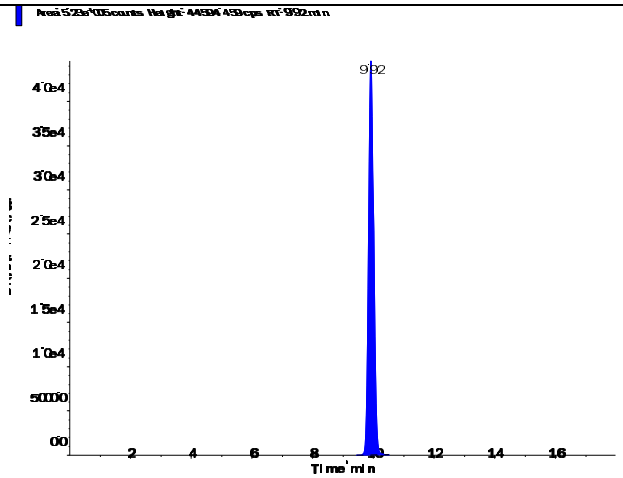

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	0.287 ng/ml
Area Ratio:	0.105
Sample Type:	(Unknown)

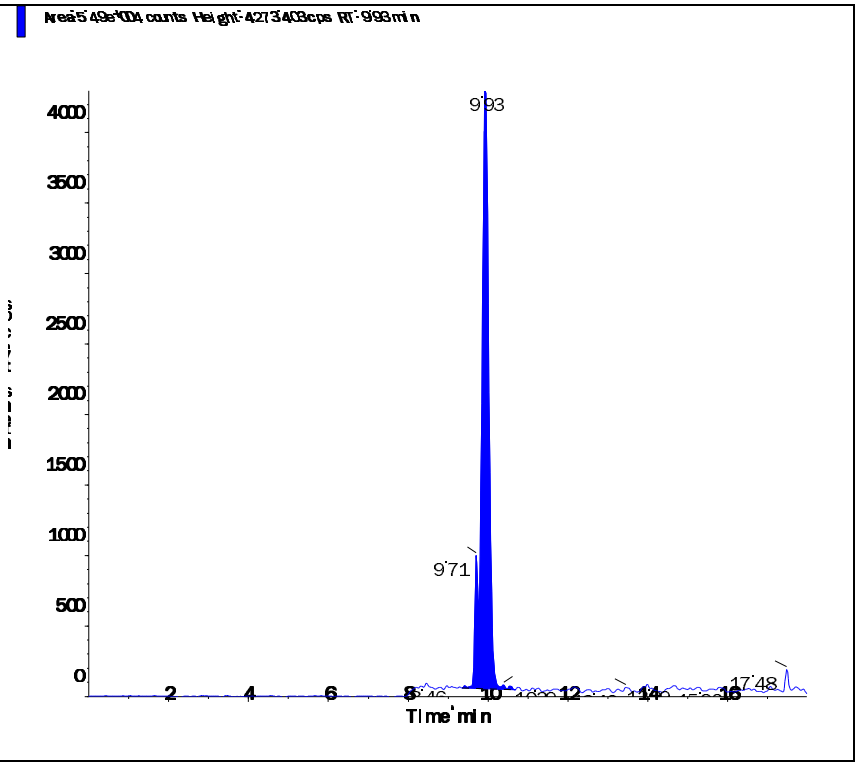

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	0.278 ng/ml
Area Ratio:	0.033
Sample Type:	(Unknown)

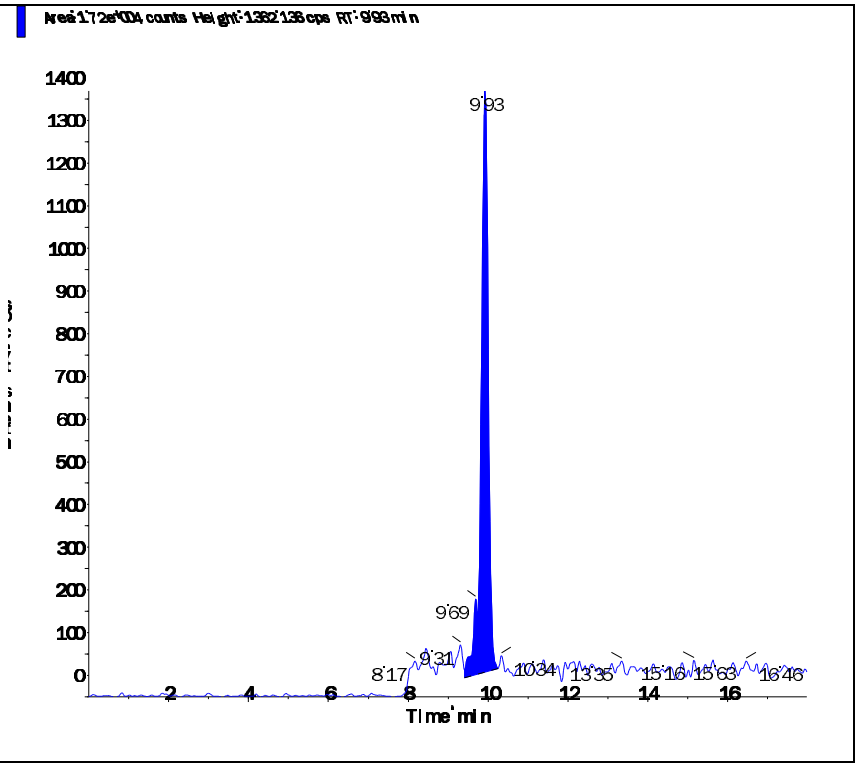

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Printed: 3/4/2016 2:10 PM

Data File	LM33703.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/4/2016 11:16:02 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030134-05 (100X)	**Injection Vial**	11.00
Data File	LM33703.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 11:16:02 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	L16030134-05	**Dilution Factor**	1.00
Sample Comment	7,100.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.090e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.320e+05	9.96	N/A	1.29
Perchlorate conf	7.330e+04	9.94	N/A	1.27

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

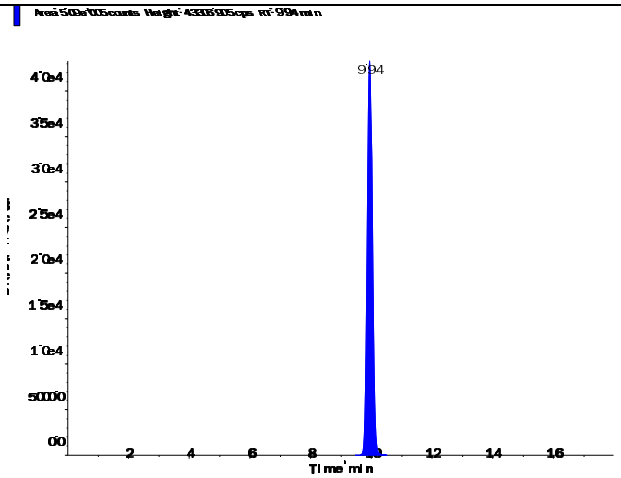

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	1.29 ng/ml
Area Ratio:	0.455
Sample Type:	(Unknown)

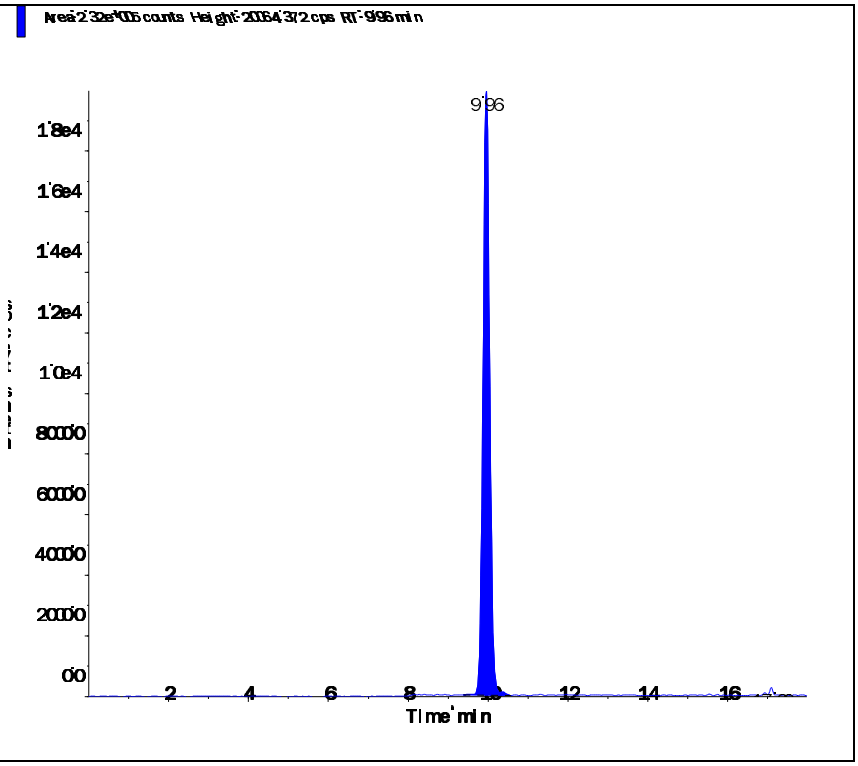

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	1.27 ng/ml
Area Ratio:	0.144
Sample Type:	(Unknown)

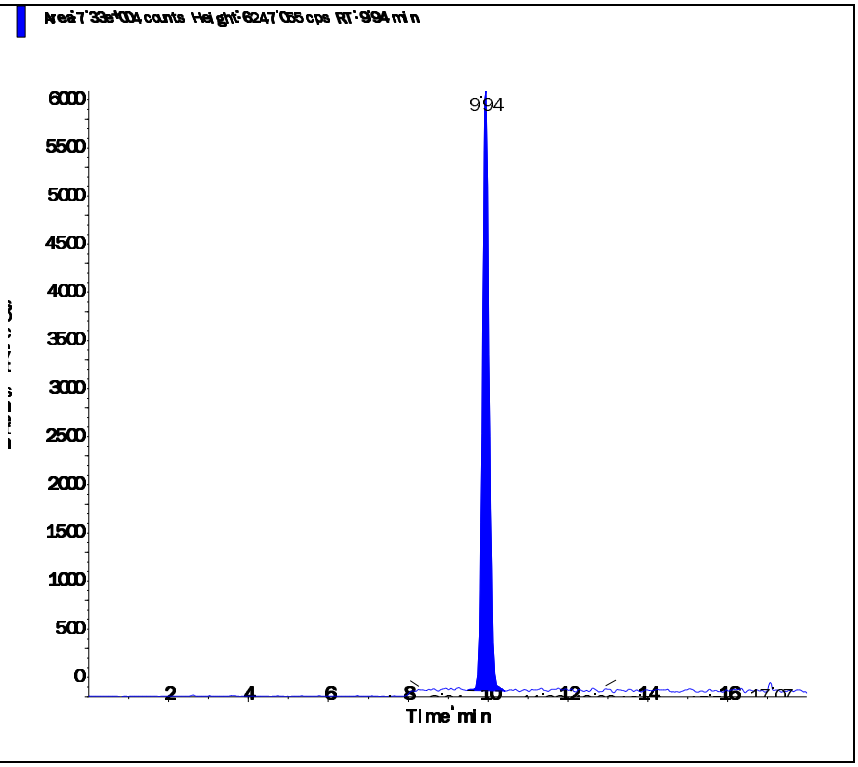

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Data File	LM33704.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/4/2016 11:35:01 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030134-06 REF (100X)	**Injection Vial**	12.00
Data File	LM33704.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 11:35:01 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	L16030134-06	**Dilution Factor**	1.00
Sample Comment	7,100.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.070e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.870e+05	9.95	N/A	2.17
Perchlorate conf	1.240e+05	9.94	N/A	2.15

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

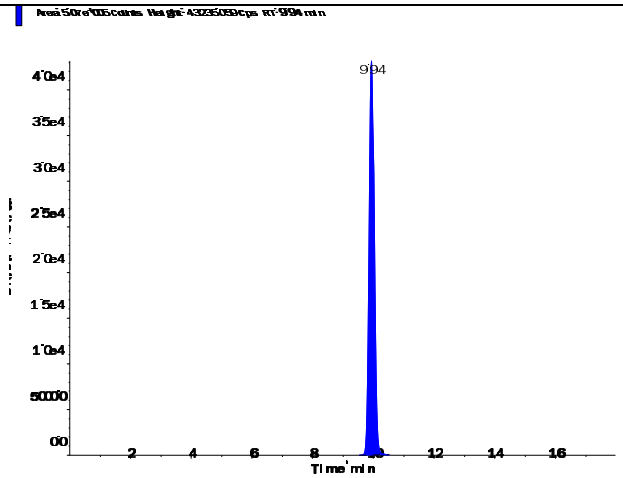

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.95 (9.94) min Calculated conc: 2.17 ng/ml Area Ratio: 0.763 Sample Type: (Unknown)	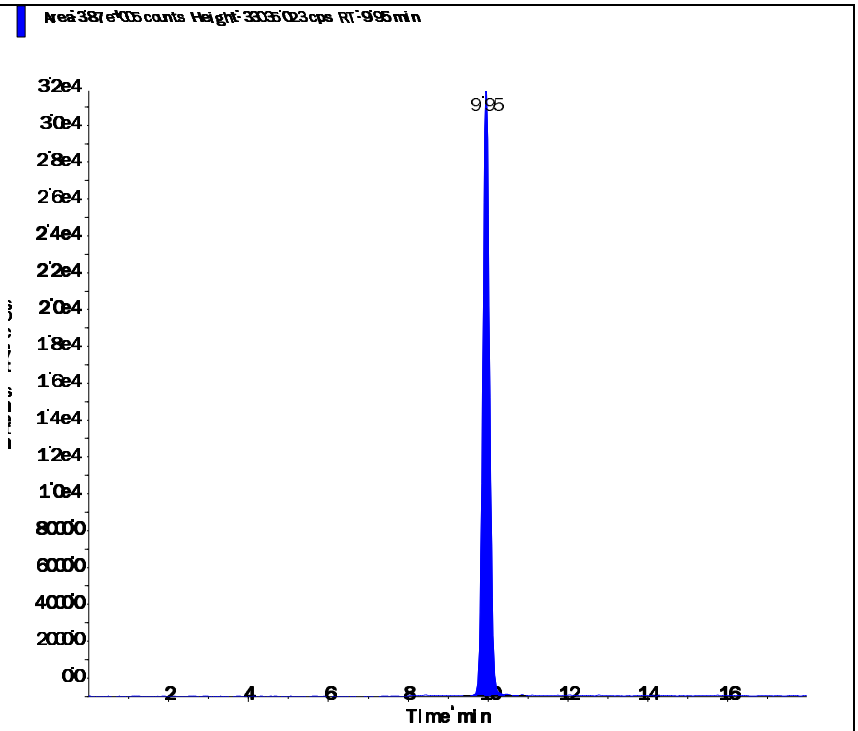
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.94 (9.92) min Calculated conc: 2.15 ng/ml Area Ratio: 0.244 Sample Type: (Unknown)	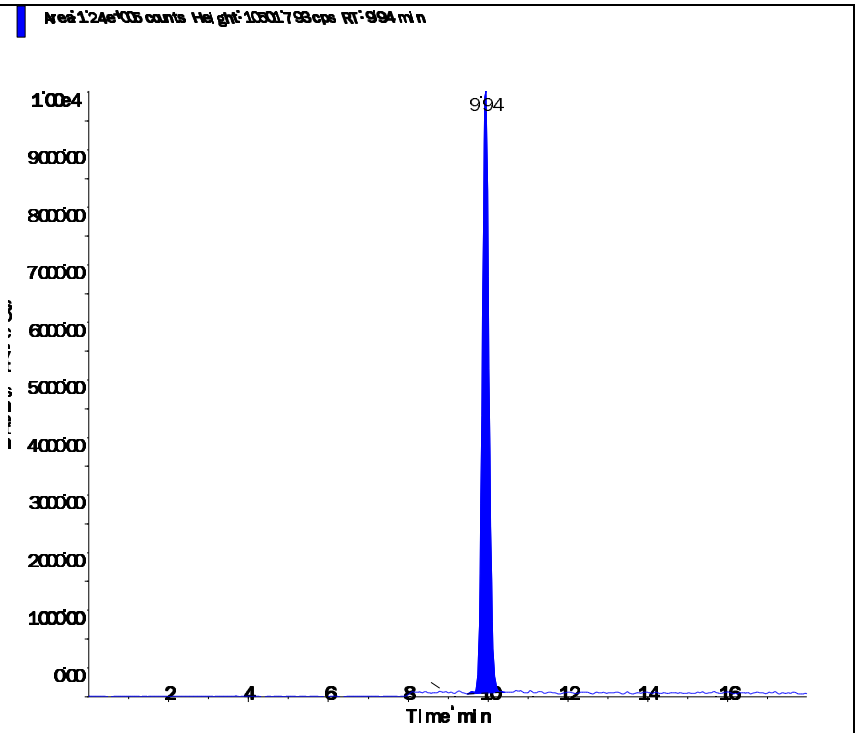

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2.2.1.4 Standards Data

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Data File	LM33567.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-01 CCB	**Injection Vial**	51.00
Data File	LM33567.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559340-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.710e+05	9.99	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.99(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

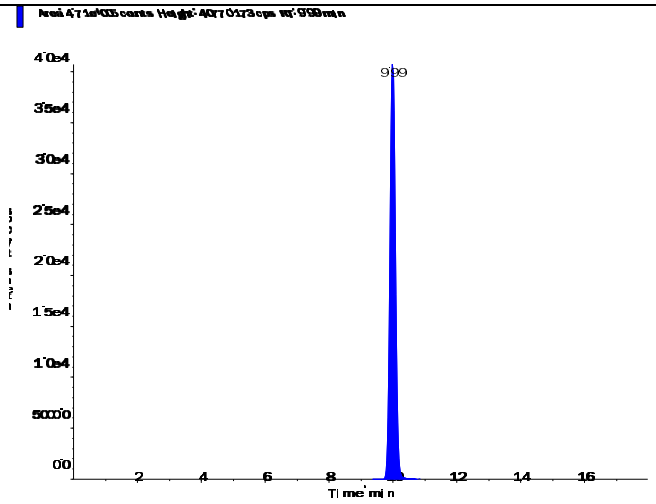

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

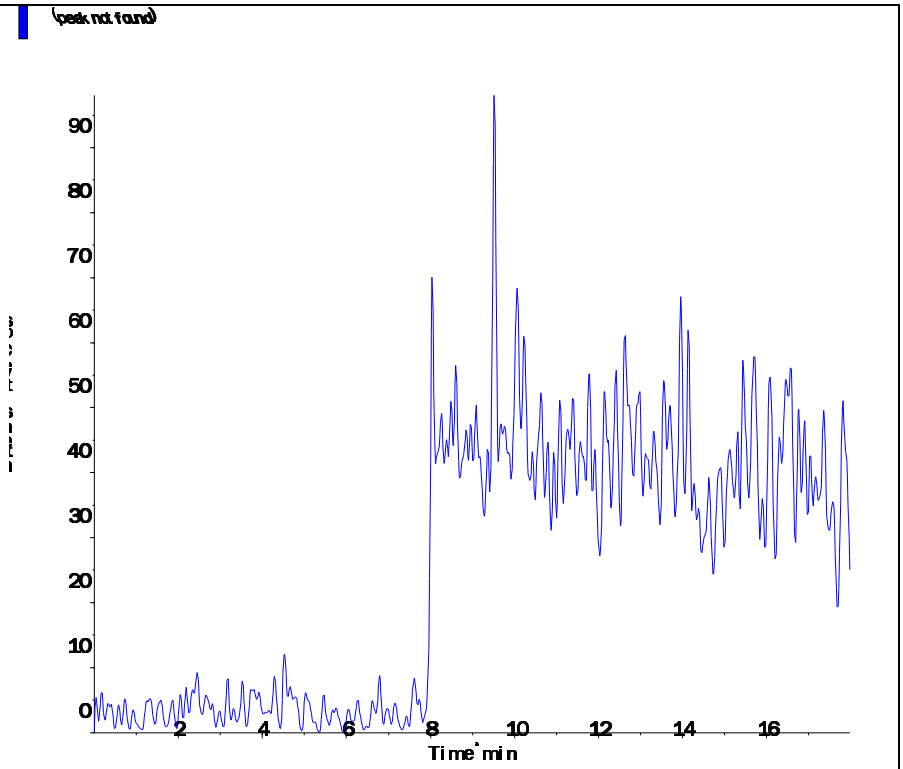

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

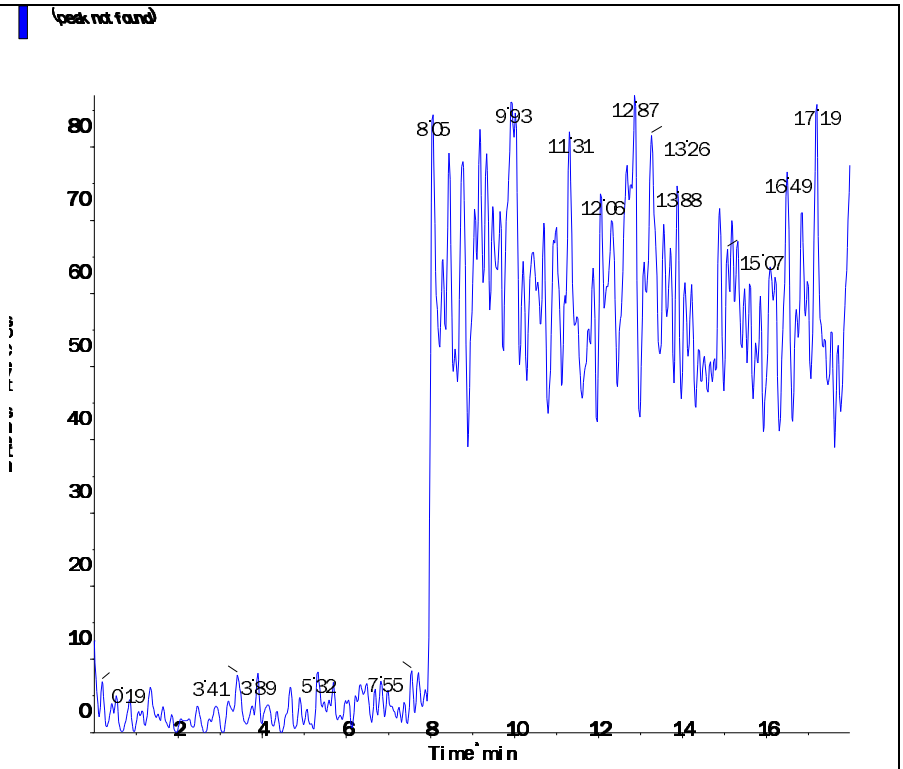

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Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM33567.wiff	**Result Table**	030216_WTD.rdb
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.75 x + 0.00437 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	95.0	N/A	N/A
0.20	1	0.20	99.5	N/A	N/A
0.50	1	0.50	101.0	N/A	N/A
1.00	1	1.03	103.4	N/A	N/A
2.00	1	2.02	101.0	N/A	N/A
5.00	1	5.07	101.5	N/A	N/A
10.00	1	9.87	98.7	N/A	N/A

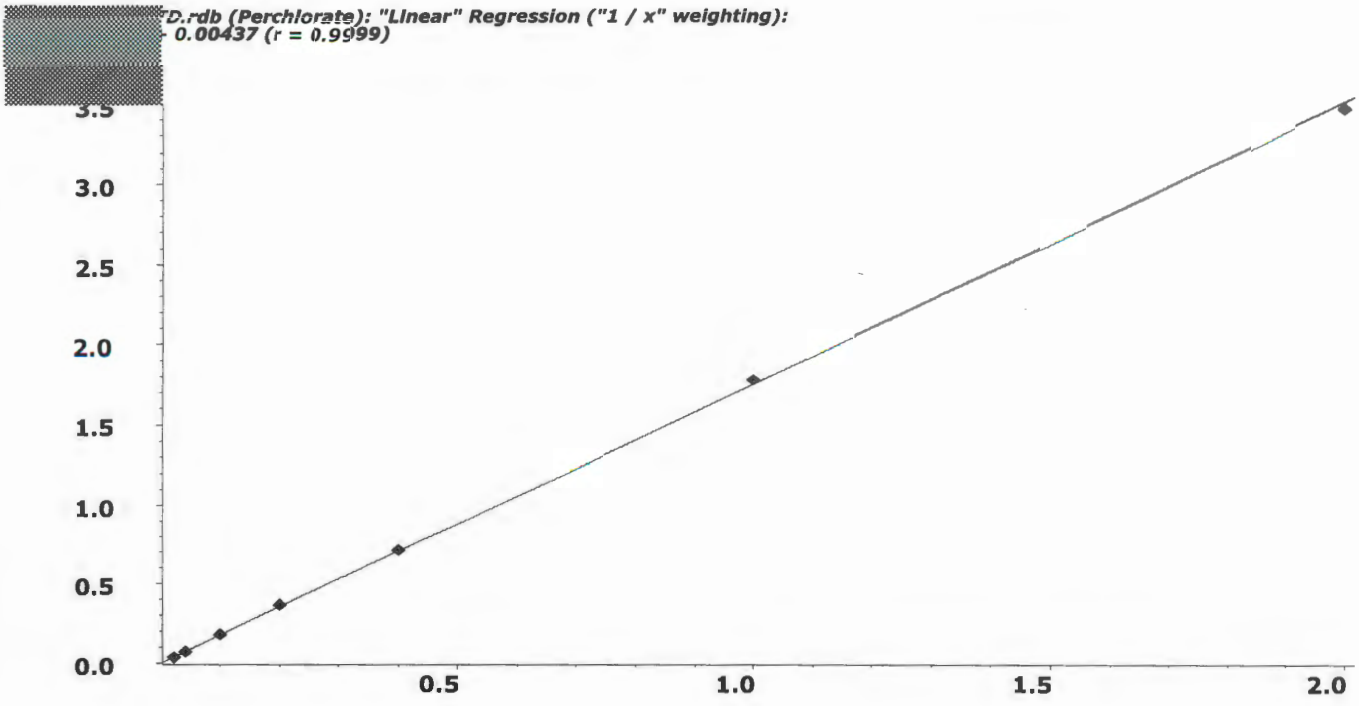

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Printed: 3/3/2016 1:59 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM33567.wiff	**Result Table**	030216_WTD.rdb
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.562 x + 0.00157 (r = 0.9998)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	93.4	N/A	N/A
0.20	1	0.20	98.6	N/A	N/A
0.50	1	0.54	107.2	N/A	N/A
1.00	1	1.00	99.5	N/A	N/A
2.00	1	2.01	100.7	N/A	N/A
5.00	1	5.11	102.2	N/A	N/A
10.00	1	9.85	98.5	N/A	N/A

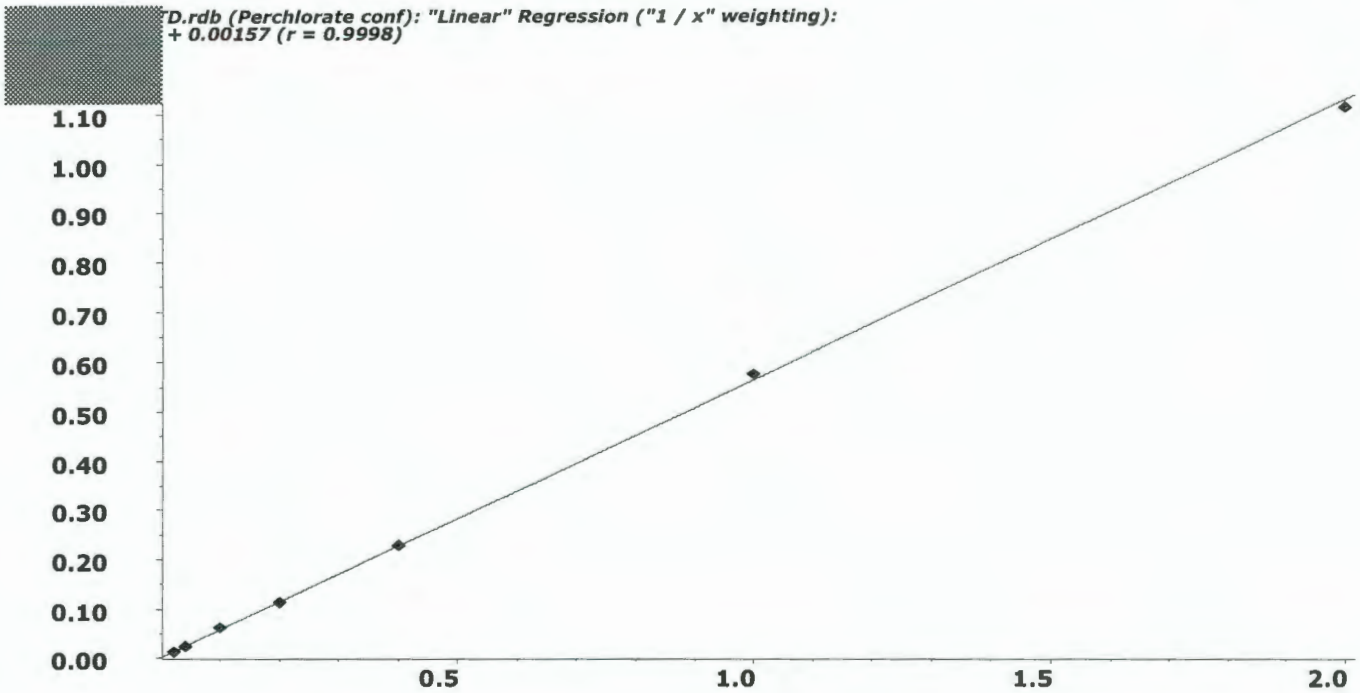

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Data File	LM33568.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/2/2016 8:53:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-02 STD (0.1 ug/L)	**Injection Vial**	52.00
Data File	LM33568.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 8:53:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559340-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.900e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.840e+04	9.97	0.10	0.095
Perchlorate conf	5.910e+03	9.94	0.10	0.0934

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

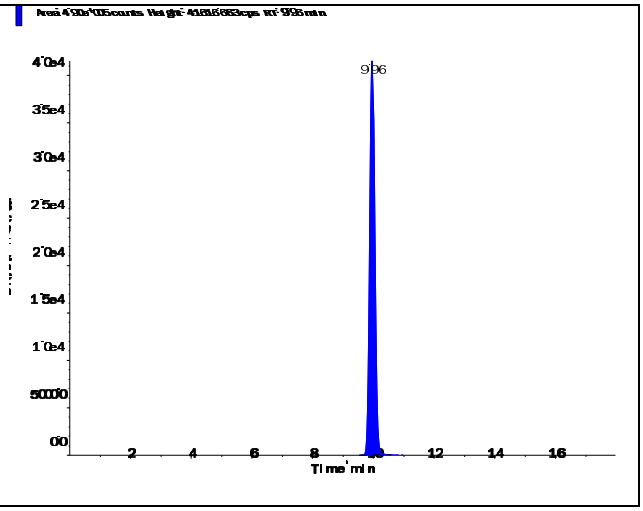

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.97 (9.94) min
Calculated conc:	0.095 ng/ml
Area Ratio:	0.038
Sample Type:	(Standard)

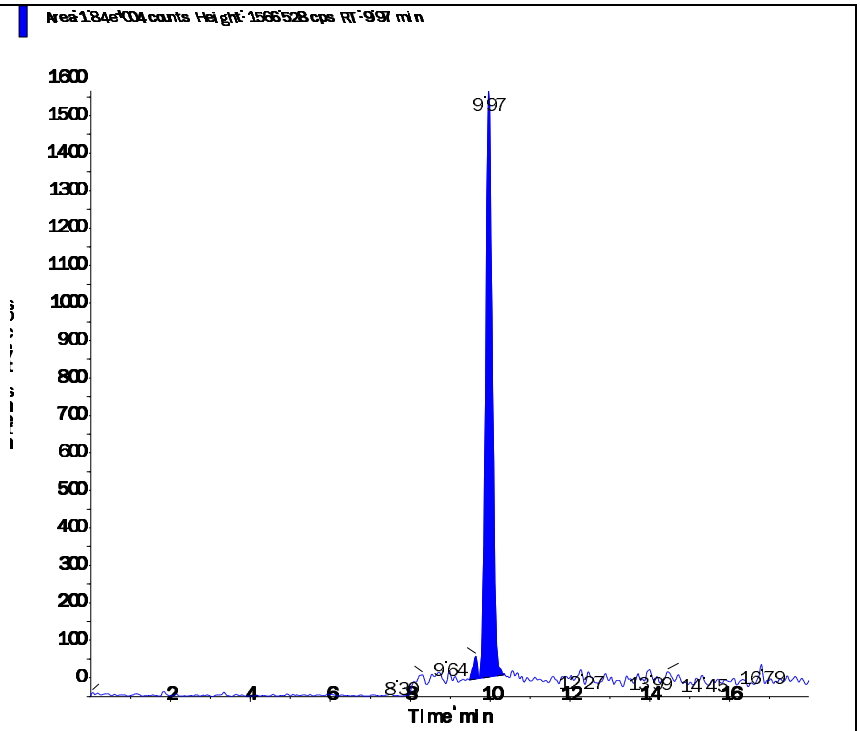

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.0934 ng/ml
Area Ratio:	0.012
Sample Type:	(Standard)

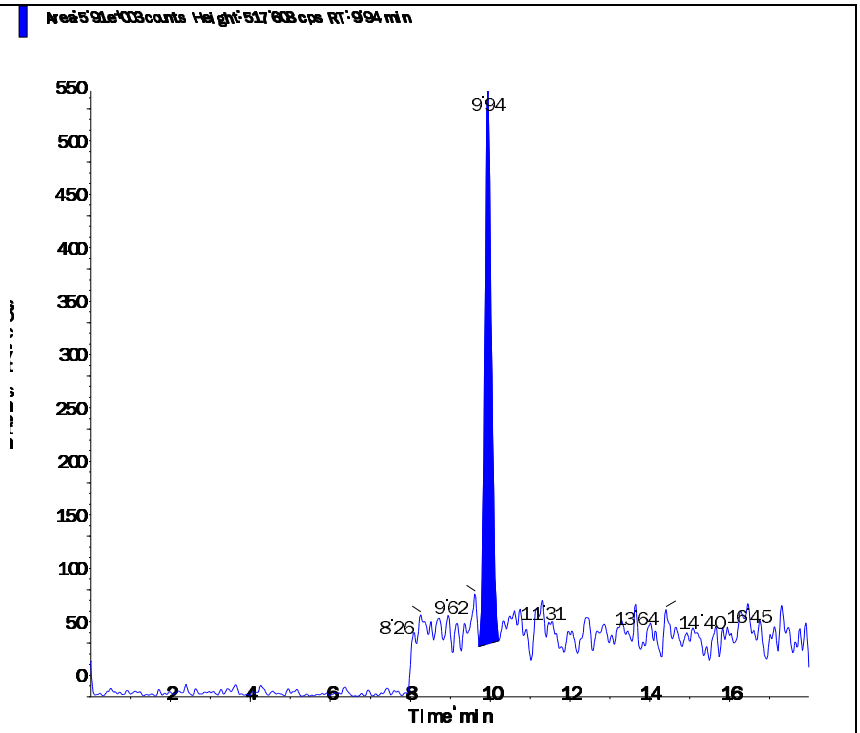

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Data File	LM33569.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/2/2016 9:12:17 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-03 STD (0.2 ug/L)	**Injection Vial**	53.00
Data File	LM33569.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 9:12:17 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559340-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.990e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.700e+04	9.99	0.20	0.199
Perchlorate conf	1.190e+04	9.98	0.20	0.197

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

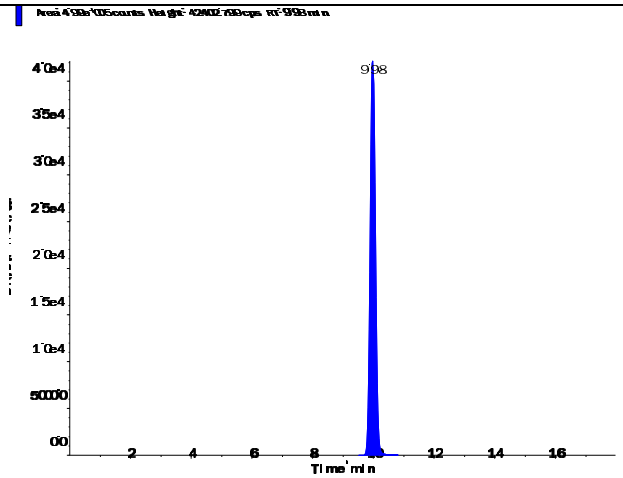

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.99 (9.94) min
Calculated conc:	0.199 ng/ml
Area Ratio:	0.074
Sample Type:	(Standard)

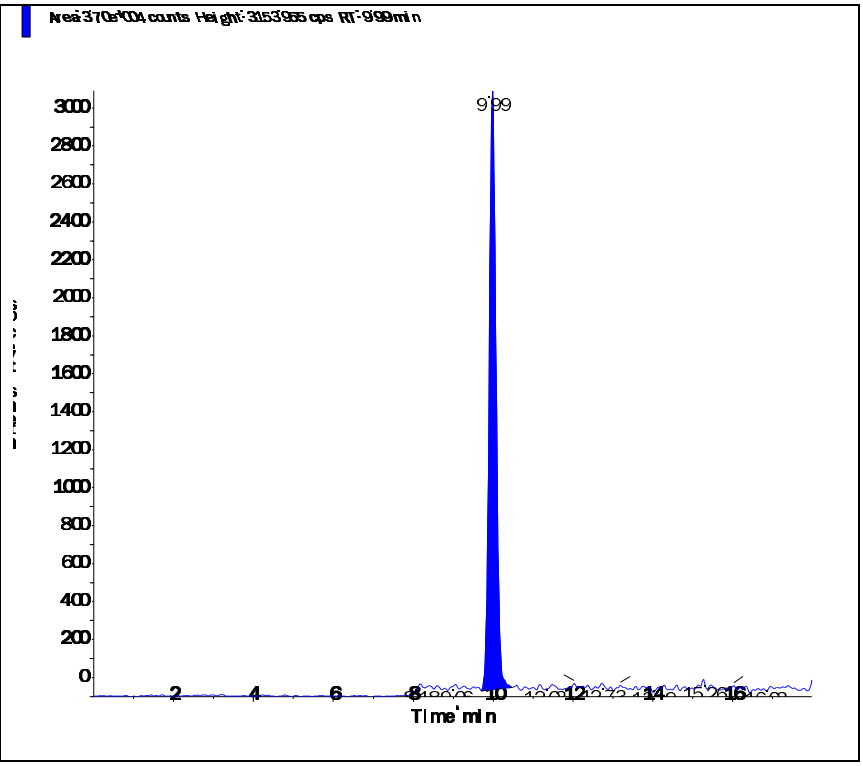

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.98 (9.92) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

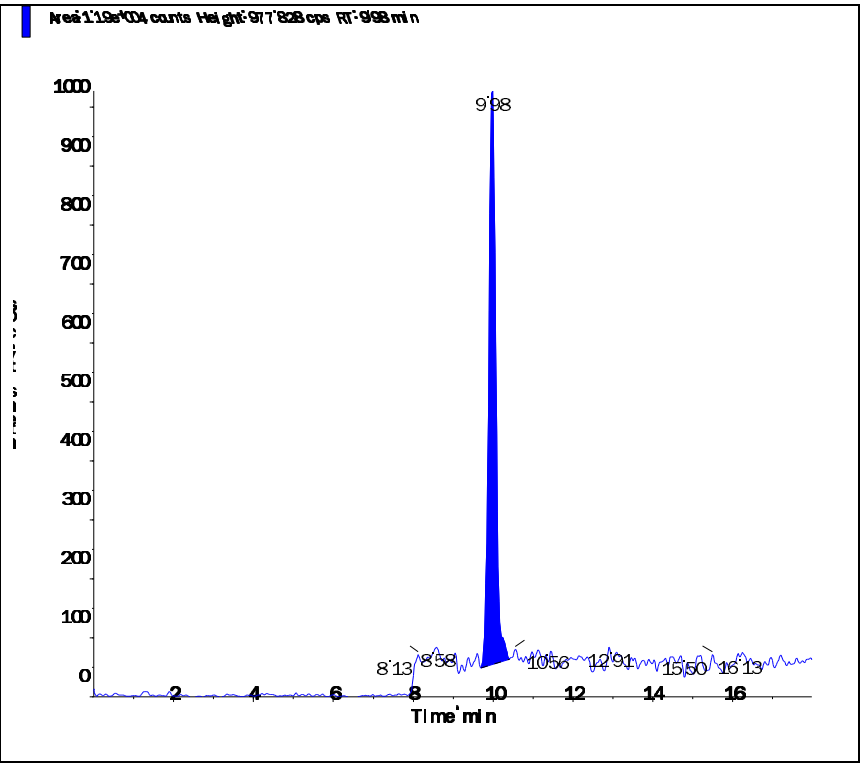

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Data File	LM33570.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/2/2016 9:31:14 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-04 STD (0.5 ug/L)	**Injection Vial**	54.00
Data File	LM33570.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 9:31:14 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559340-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.920e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.900e+04	10.00	0.50	0.505
Perchlorate conf	3.040e+04	9.98	0.50	0.536

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

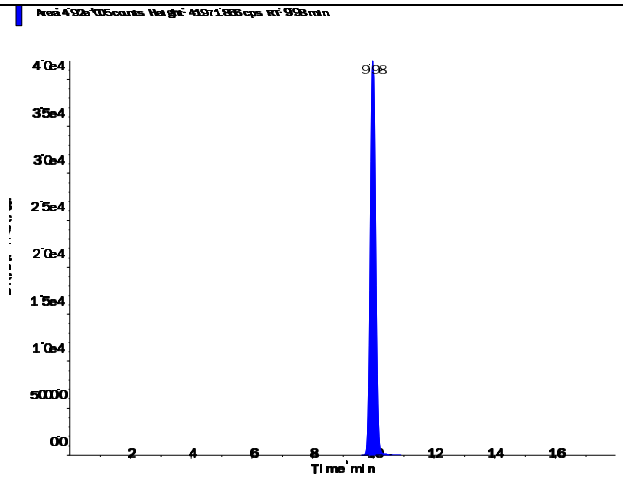

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.00 (9.94) min
Calculated conc:	0.505 ng/ml
Area Ratio:	0.181
Sample Type:	(Standard)

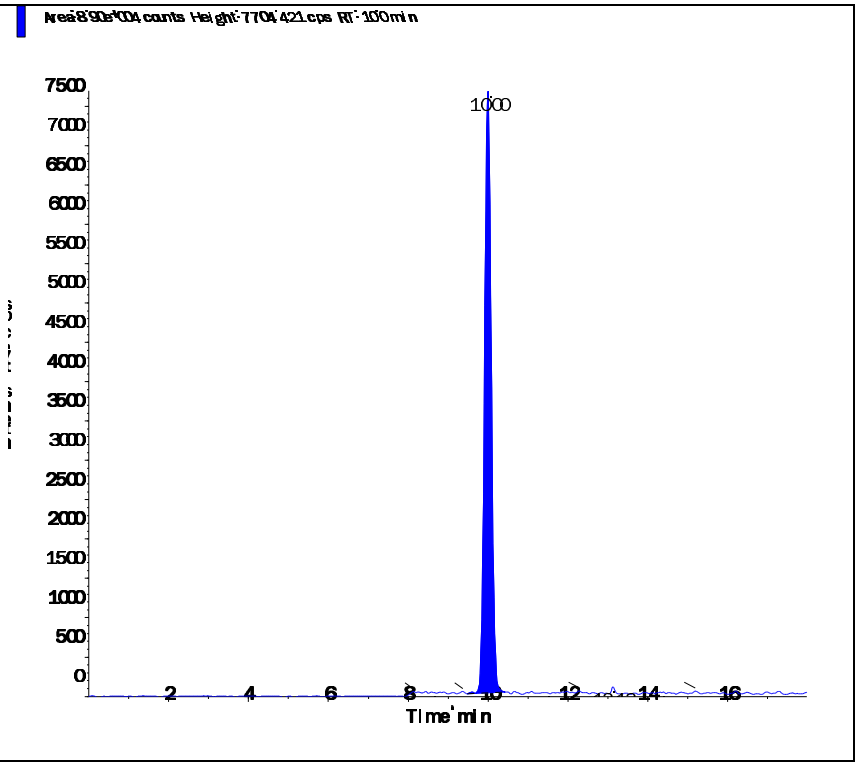

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.98 (9.92) min
Calculated conc:	0.536 ng/ml
Area Ratio:	0.062
Sample Type:	(Standard)

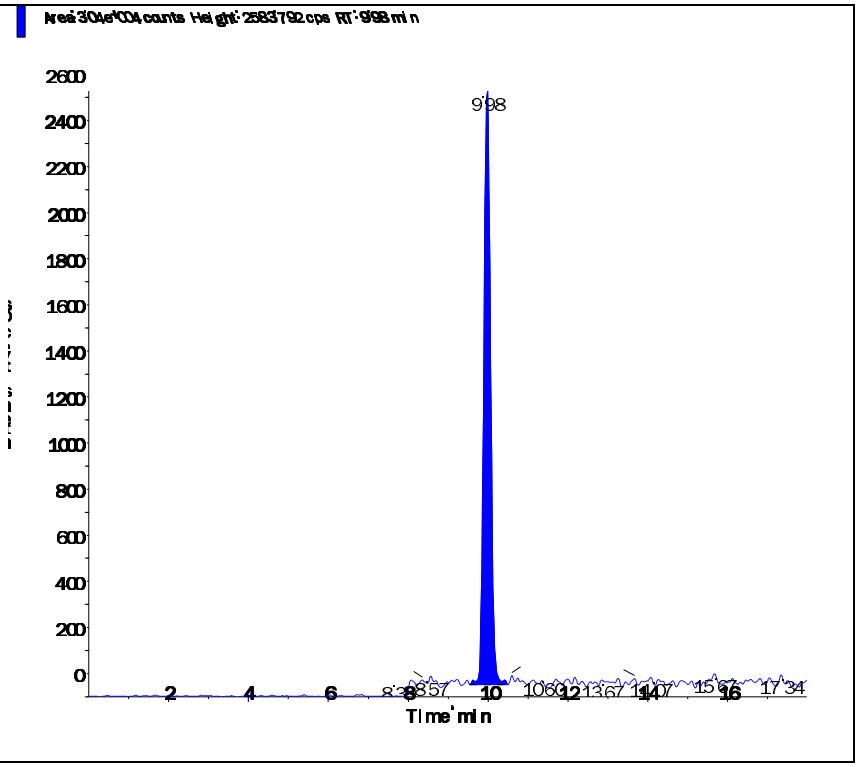

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Data File	LM33571.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/2/2016 9:50:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-05 STD (1.0 ug/L)	**Injection Vial**	55.00
Data File	LM33571.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 9:50:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559340-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.010e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.830e+05	9.99	1.00	1.03
Perchlorate conf	5.680e+04	9.98	1.00	0.995

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

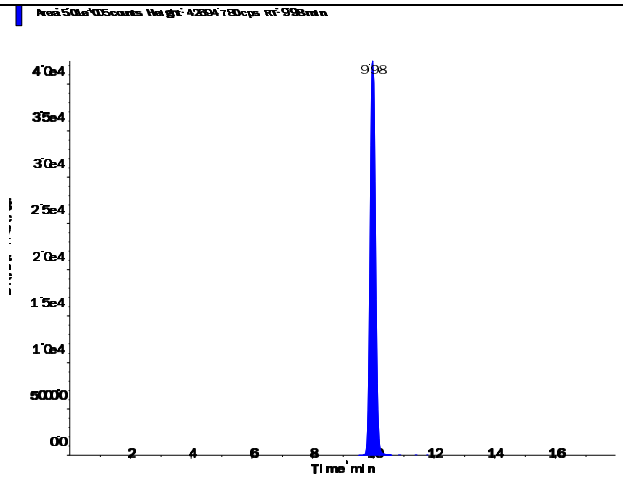

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.99 (9.94) min Calculated conc: 1.03 ng/ml Area Ratio: 0.366 Sample Type: (Standard)	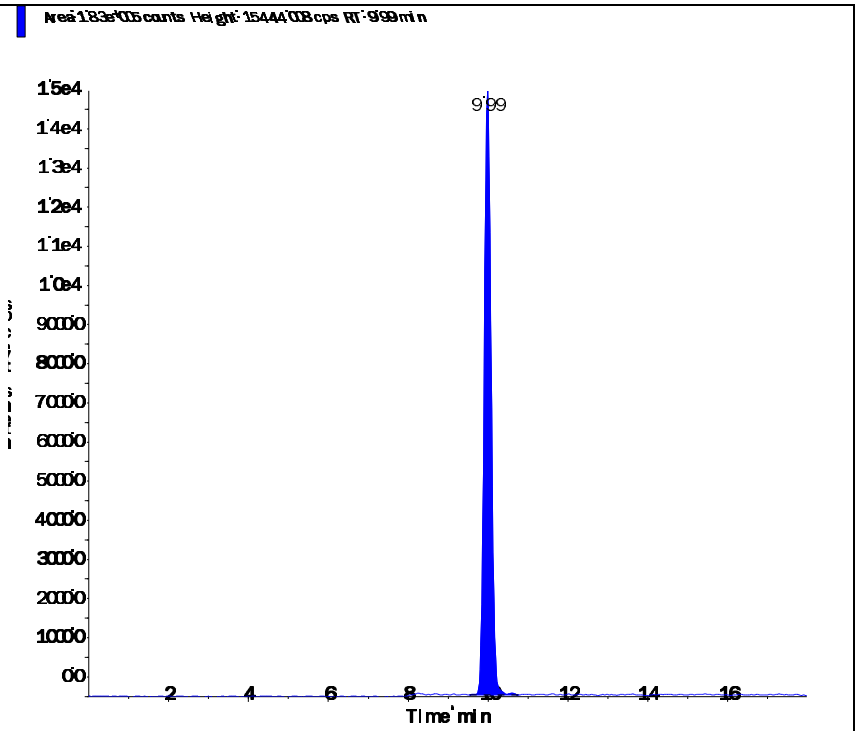
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.98 (9.92) min Calculated conc: 0.995 ng/ml Area Ratio: 0.113 Sample Type: (Standard)	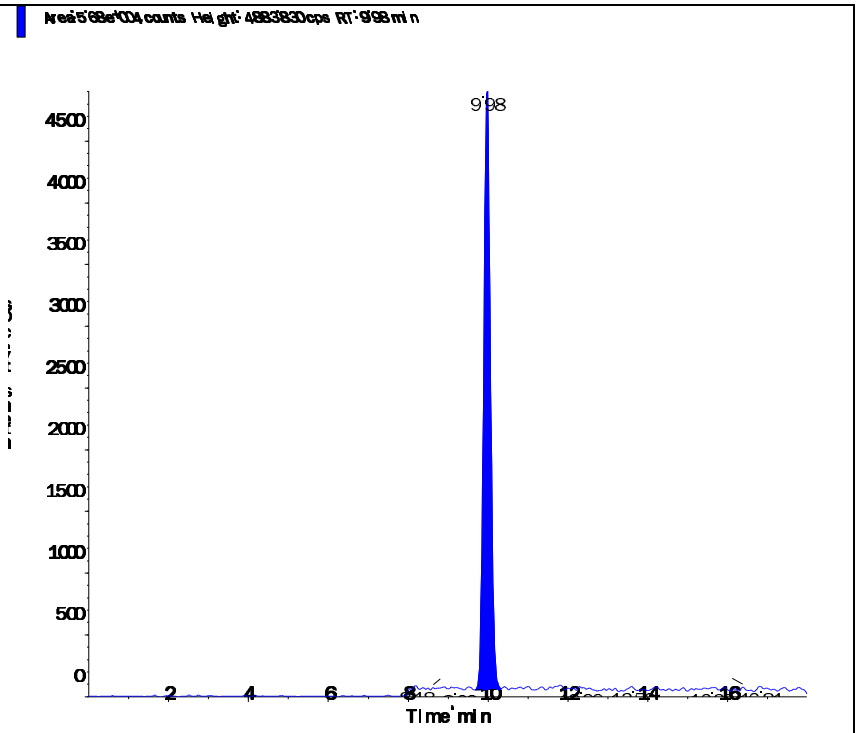

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Data File	LM33572.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/2/2016 10:09:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-06 STD (2.0 ug/L)	**Injection Vial**	56.00
Data File	LM33572.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 10:09:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559340-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.99	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.630e+05	10.00	2.00	2.02
Perchlorate conf	1.170e+05	9.99	2.00	2.01

O18LP (Internal Standard)

RT (Exp. RT): 9.99(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

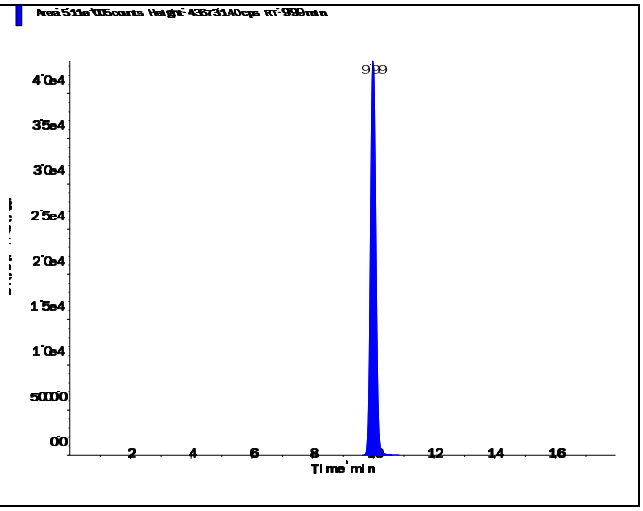

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.00 (9.94) min
Calculated conc:	2.02 ng/ml
Area Ratio:	0.711
Sample Type:	(Standard)

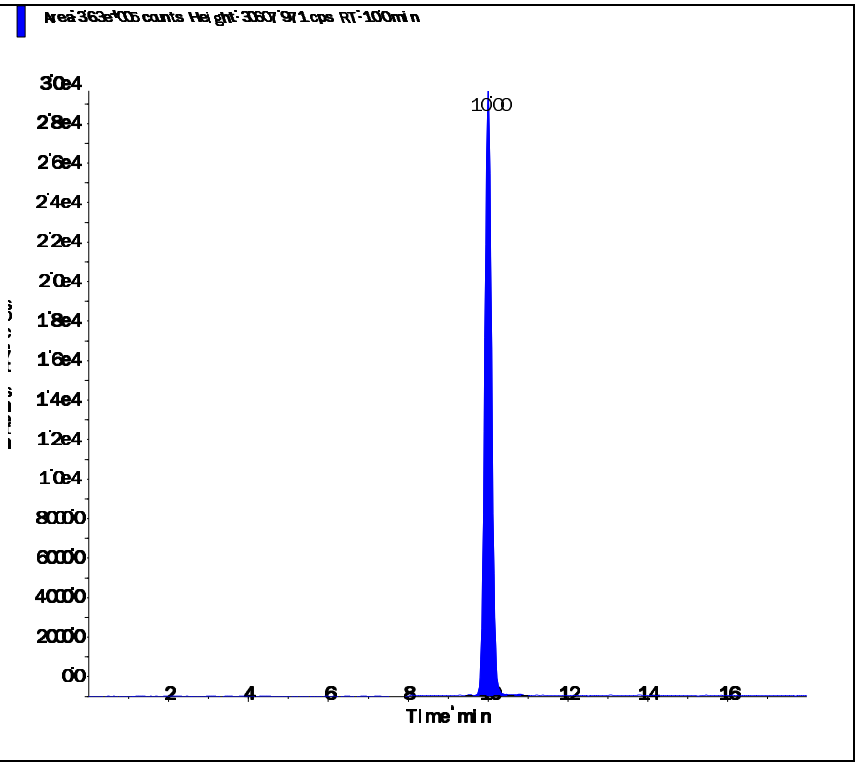

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.99 (9.92) min
Calculated conc:	2.01 ng/ml
Area Ratio:	0.228
Sample Type:	(Standard)

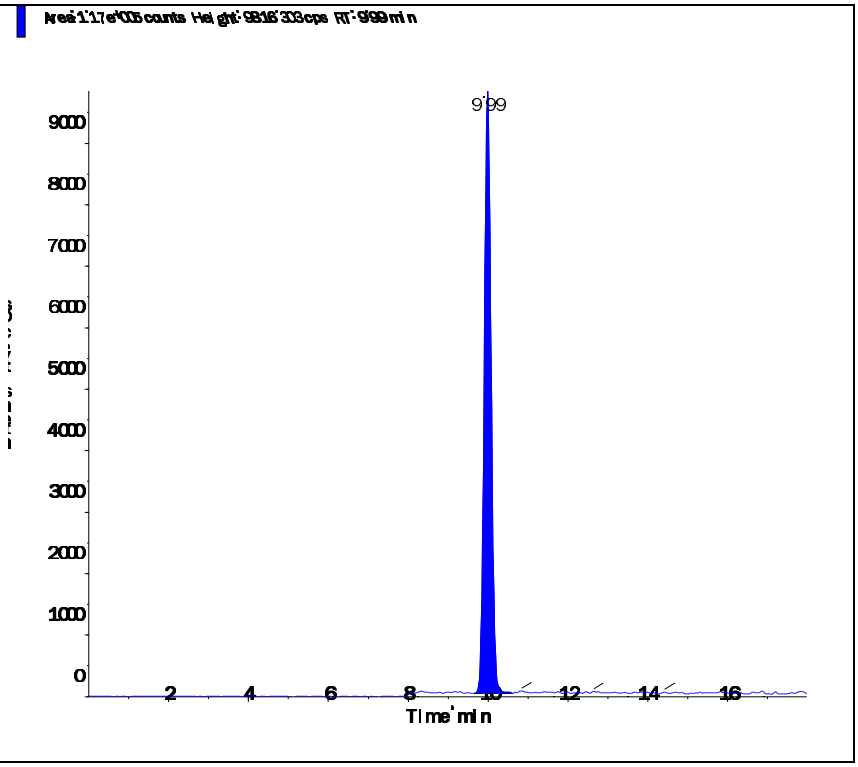

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Data File	LM33573.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/2/2016 10:28:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-07 STD (5.0 ug/L)	**Injection Vial**	57.00
Data File	LM33573.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 10:28:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559340-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.900e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.710e+05	9.98	5.00	5.07
Perchlorate conf	2.820e+05	9.97	5.00	5.11

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

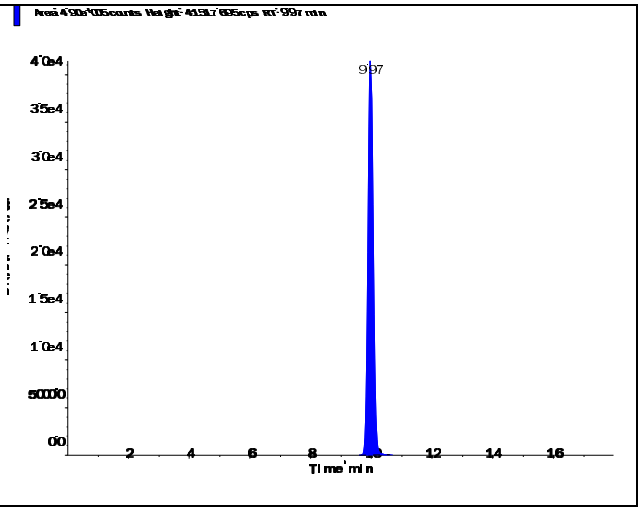

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.98 (9.94) min
Calculated conc:	5.07 ng/ml
Area Ratio:	1.779
Sample Type:	(Standard)

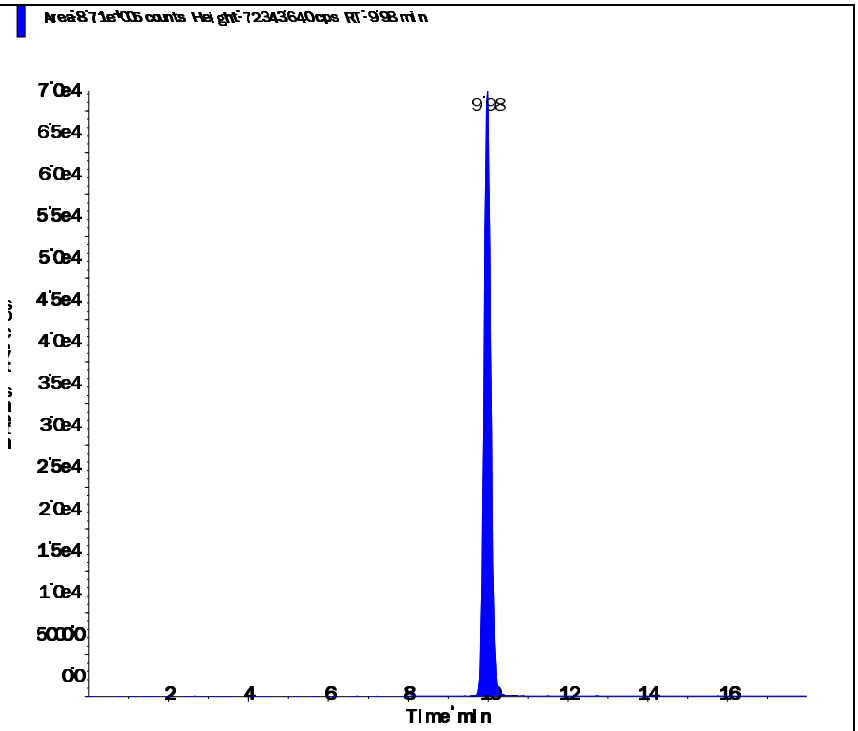

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.97 (9.92) min
Calculated conc:	5.11 ng/ml
Area Ratio:	0.576
Sample Type:	(Standard)

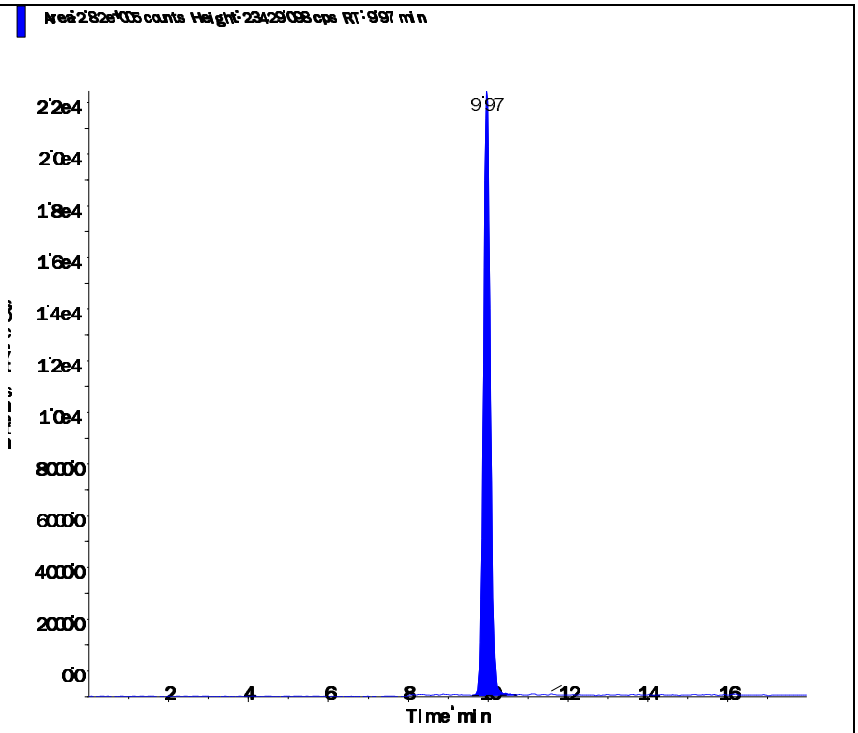

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Data File	LM33574.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/2/2016 10:46:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-08 STD (10 ug/L)	**Injection Vial**	58.00
Data File	LM33574.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 10:46:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559340-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.650e+06	9.98	10.00	9.87
Perchlorate conf	5.300e+05	9.96	10.00	9.85

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

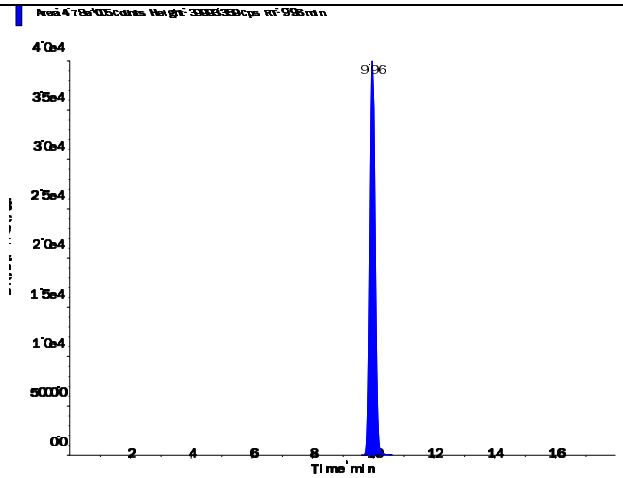

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.98 (9.94) min Calculated conc: 9.87 ng/ml Area Ratio: 3.458 Sample Type: (Standard)	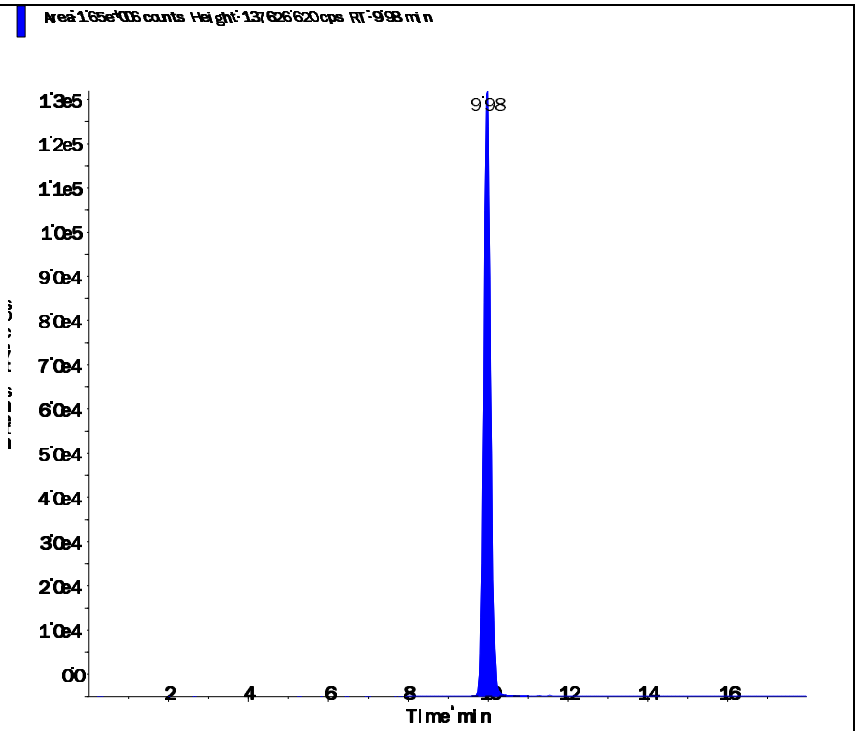
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.96 (9.92) min Calculated conc: 9.85 ng/ml Area Ratio: 1.11 Sample Type: (Standard)	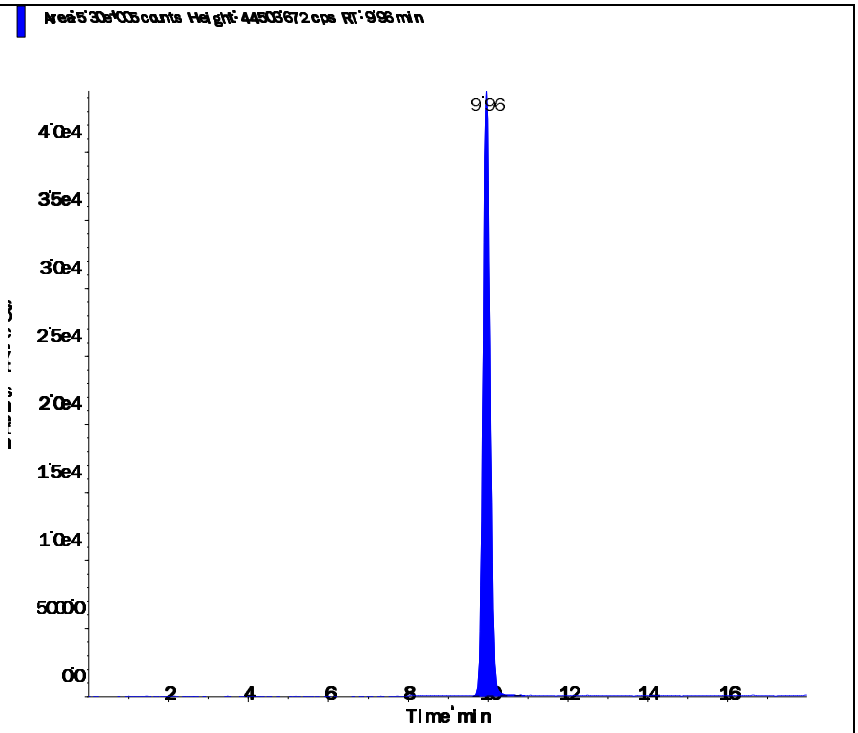

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Data File	LM33575.wiff	**Result Table**	030216_WTD.rdb
Acquisition Date	3/2/2016 11:05:52 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-09 SSCV (1.0 ug/L)	**Injection Vial**	59.00
Data File	LM33575.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 11:05:52 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030216_WTD.rdb
Sample ID	WG559340-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.200e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.900e+05	9.98	1.00	1.03
Perchlorate conf	6.220e+04	9.97	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

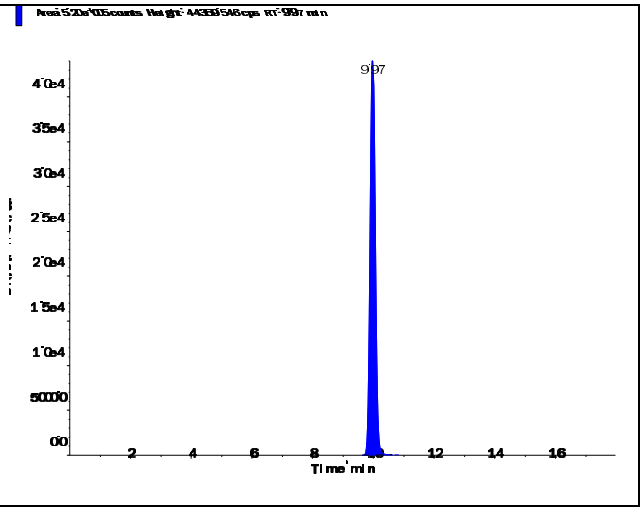

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.98 (9.94) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.366
Sample Type:	(Quality Control)

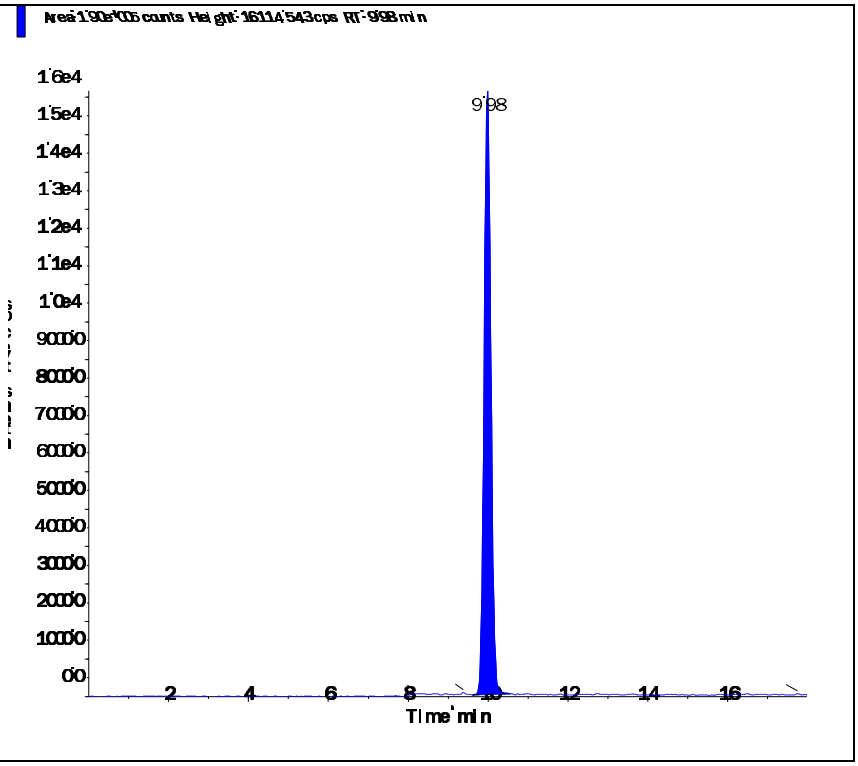

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.97 (9.92) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.12
Sample Type:	(Quality Control)

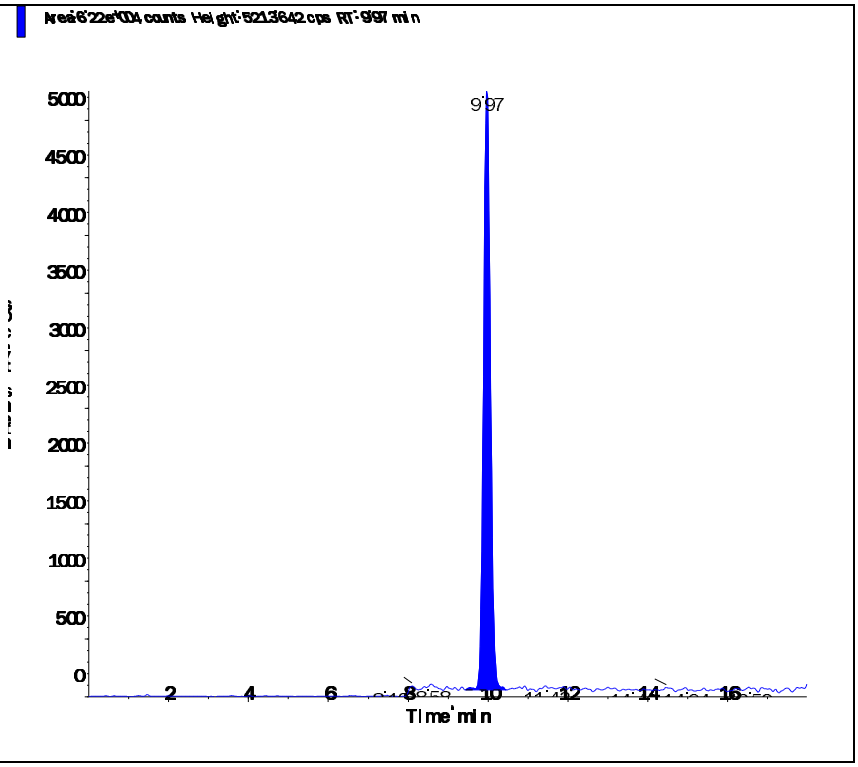

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Data File	LM33655.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/3/2016 6:02:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559618-02 CCV (1.0ug/L)	**Injection Vial**	2.00
Data File	LM33655.wiff	**Injection Volume**	10.00
Acquisition Date	3/3/2016 6:02:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559618-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.280e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.820e+05	9.94	1.00	0.975
Perchlorate conf	5.980e+04	9.93	1.00	0.995

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

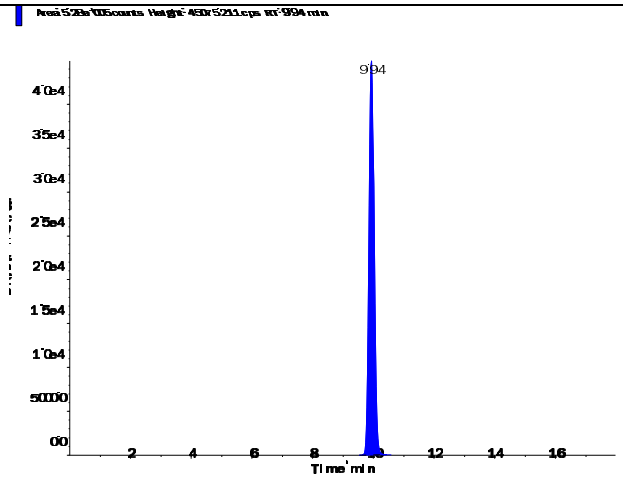

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.975 ng/ml
Area Ratio:	0.345
Sample Type:	(Quality Control)

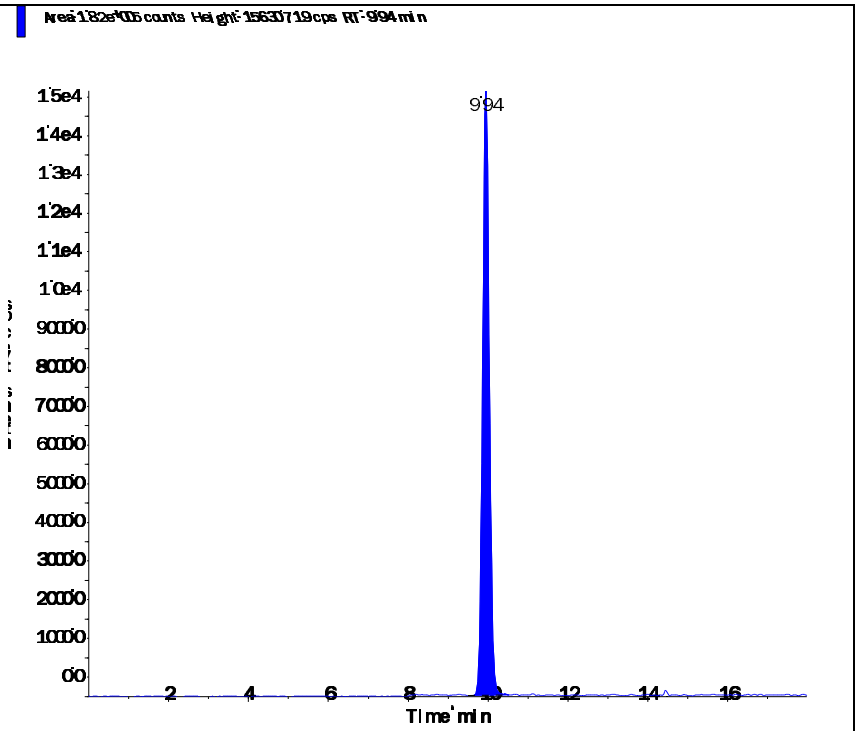

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	0.995 ng/ml
Area Ratio:	0.113
Sample Type:	(Quality Control)

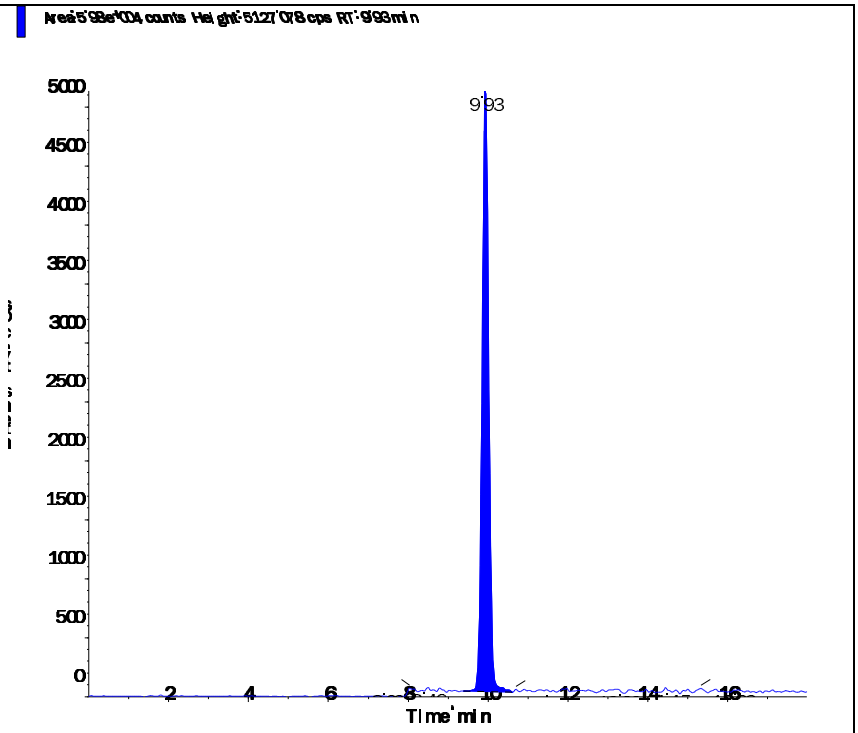

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Data File	LM33665.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/3/2016 9:11:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559618-03 CCV (1.0ug/L)	**Injection Vial**	2.00
Data File	LM33665.wiff	**Injection Volume**	10.00
Acquisition Date	3/3/2016 9:11:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559618-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.470e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.880e+05	9.94	1.00	0.97
Perchlorate conf	6.090e+04	9.93	1.00	0.976

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

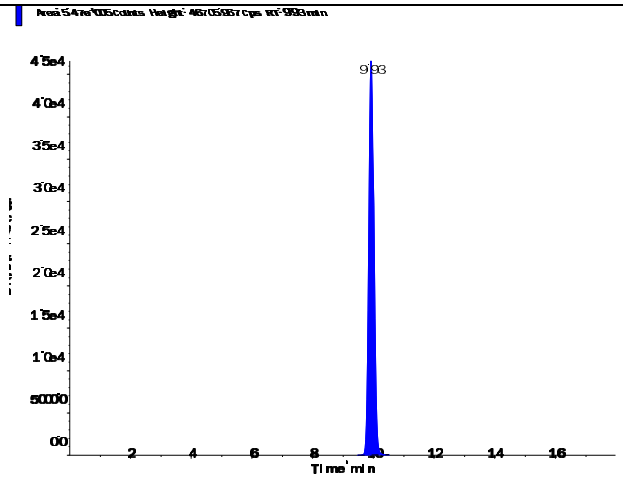

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.97 ng/ml
Area Ratio:	0.344
Sample Type:	(Quality Control)

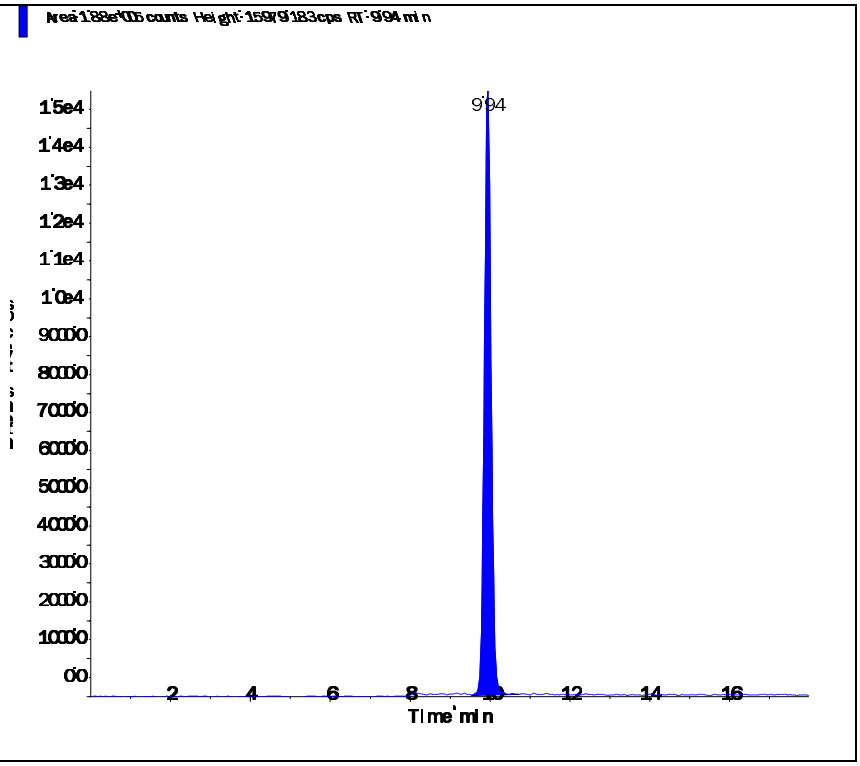

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	0.976 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

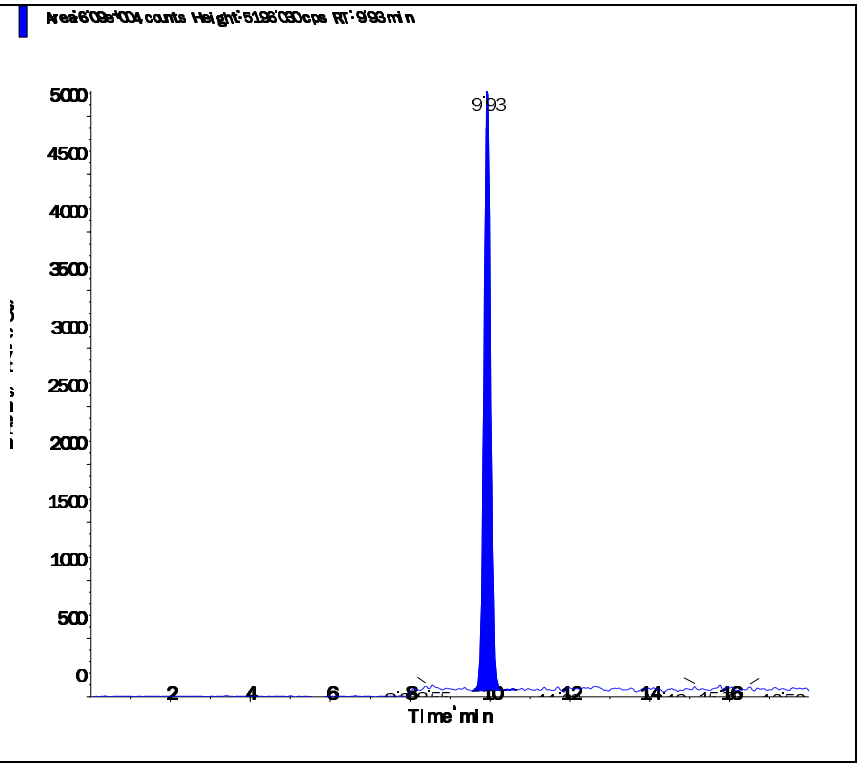

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Data File	LM33671.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/3/2016 11:05:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559618-05 CCV (1.0ug/L)	**Injection Vial**	2.00
Data File	LM33671.wiff	**Injection Volume**	10.00
Acquisition Date	3/3/2016 11:05:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559618-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.420e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.880e+05	9.94	1.00	0.981
Perchlorate conf	6.040e+04	9.92	1.00	0.977

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

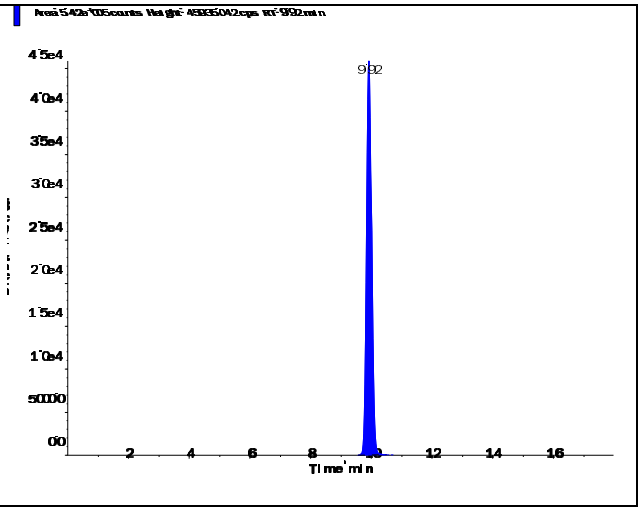

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.981 ng/ml
Area Ratio:	0.348
Sample Type:	(Quality Control)

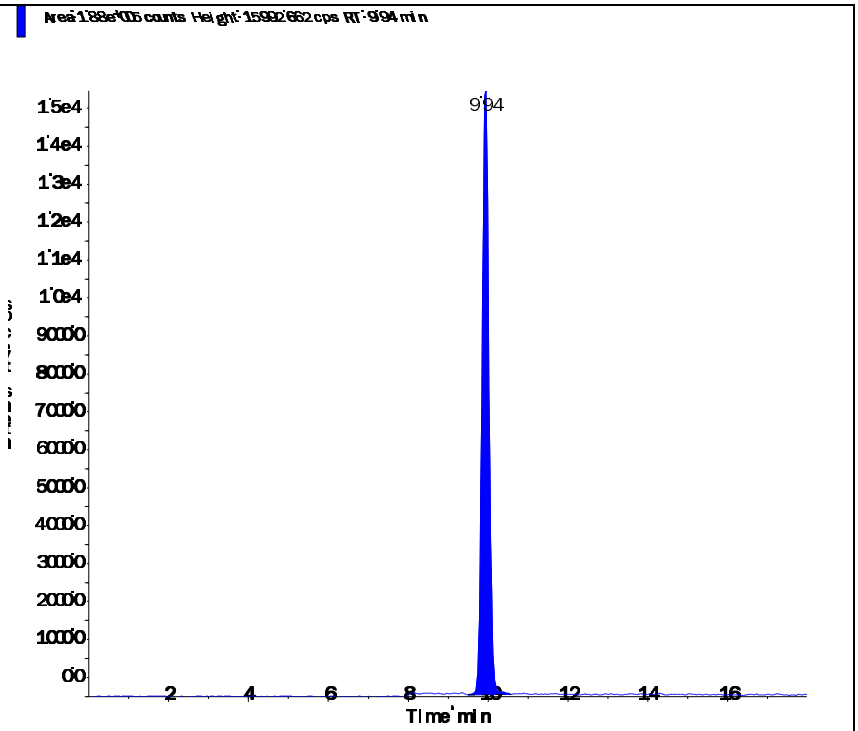

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	0.977 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

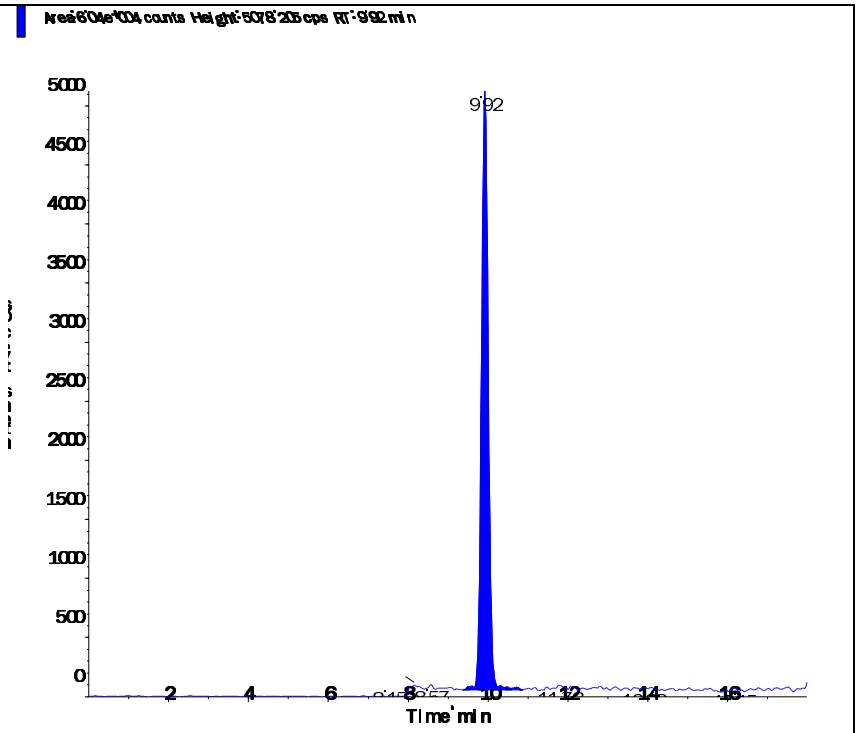

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Data File	LM33685.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/4/2016 3:30:43 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559618-07 CCV (1.0ug/L)	**Injection Vial**	2.00
Data File	LM33685.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 3:30:43 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559618-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.600e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.930e+05	9.94	1.00	0.971
Perchlorate conf	6.020e+04	9.93	1.00	0.942

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

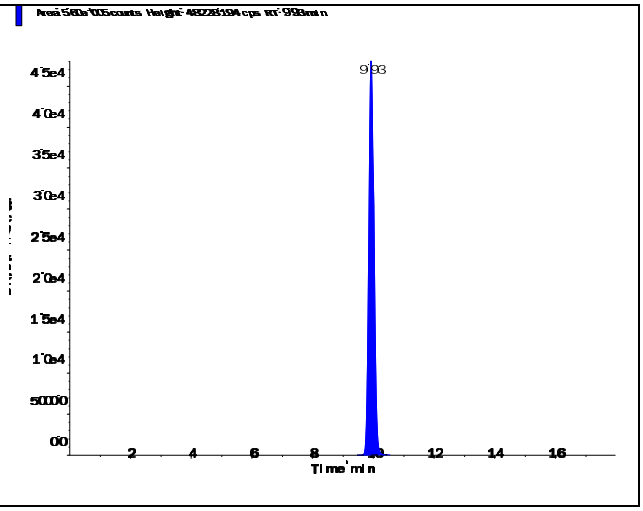

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.971 ng/ml
Area Ratio:	0.344
Sample Type:	(Quality Control)

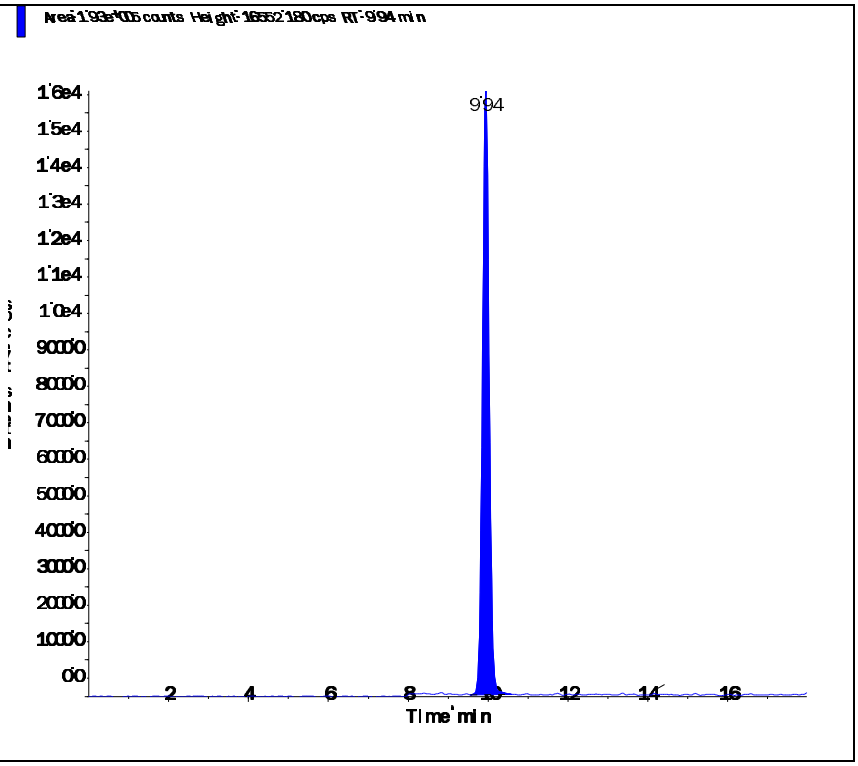

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	0.942 ng/ml
Area Ratio:	0.107
Sample Type:	(Quality Control)

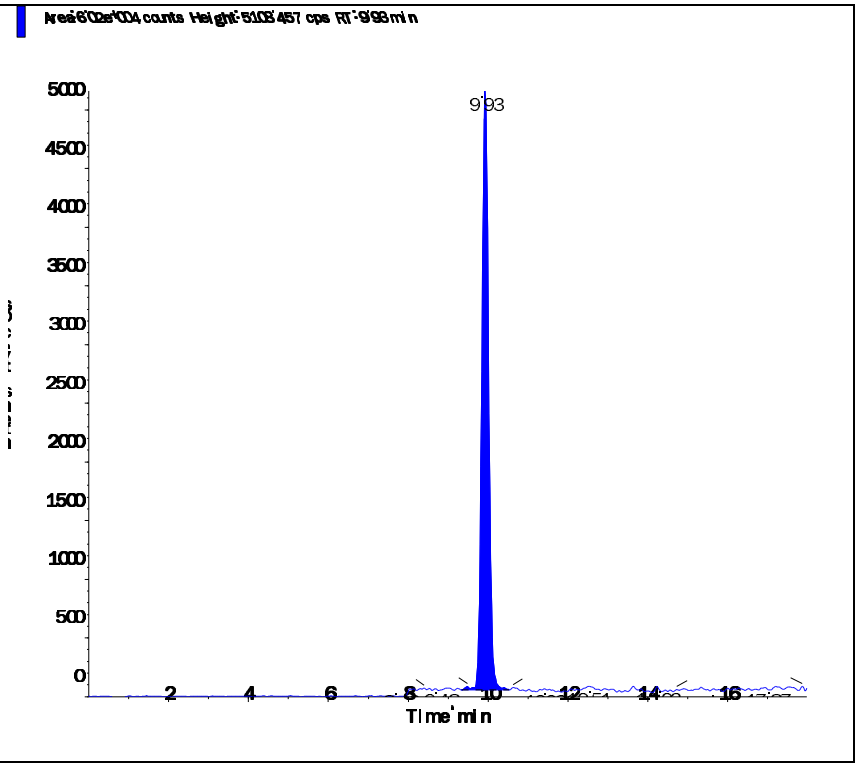

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Data File	LM33699.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/4/2016 10:00:19 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559618-11 CCV (1.0ug/L)	**Injection Vial**	2.00
Data File	LM33699.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 10:00:19 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559618-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.540e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.910e+05	9.95	1.00	0.975
Perchlorate conf	6.020e+04	9.94	1.00	0.954

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

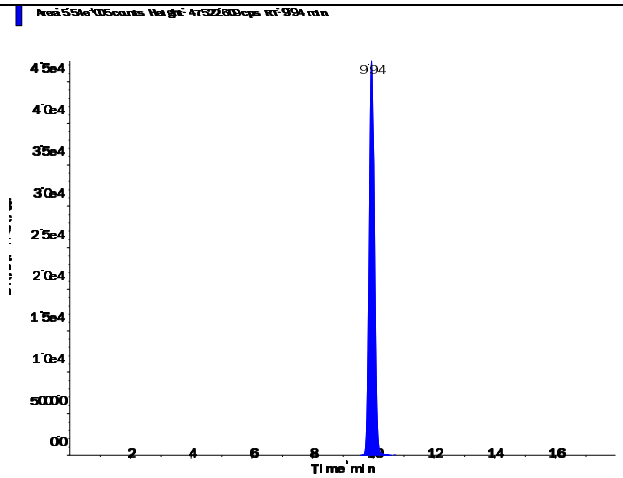

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	0.975 ng/ml
Area Ratio:	0.345
Sample Type:	(Quality Control)

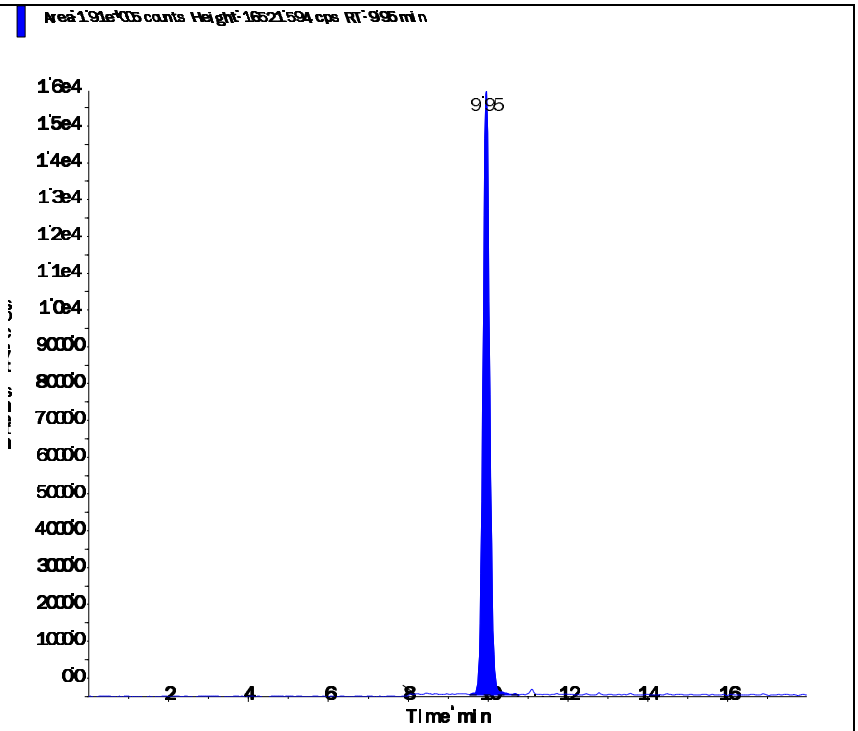

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.954 ng/ml
Area Ratio:	0.109
Sample Type:	(Quality Control)

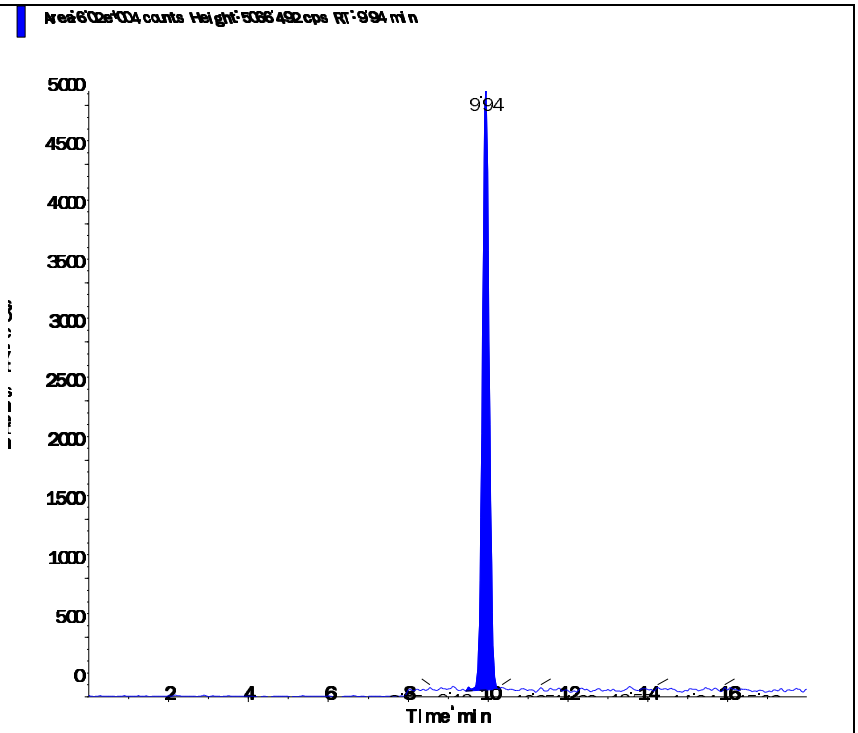

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Data File	LM33707.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/4/2016 12:31:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559618-13 CCV (1.0ug/L)	**Injection Vial**	2.00
Data File	LM33707.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 12:31:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559618-13	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.300e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.810e+05	9.96	1.00	0.962
Perchlorate conf	5.920e+04	9.94	1.00	0.981

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

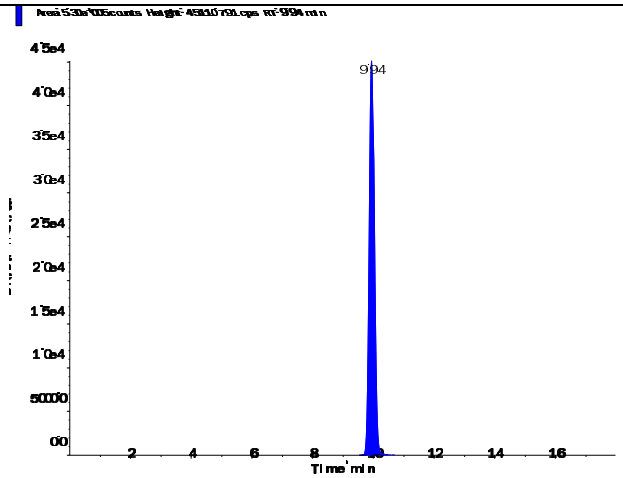

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	0.962 ng/ml
Area Ratio:	0.341
Sample Type:	(Quality Control)

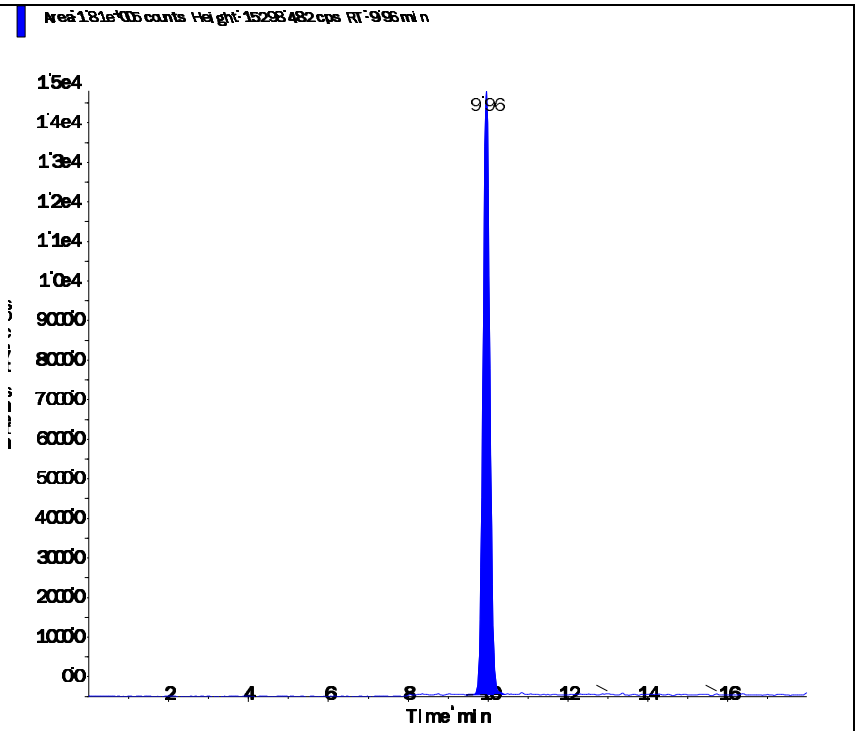

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.981 ng/ml
Area Ratio:	0.112
Sample Type:	(Quality Control)

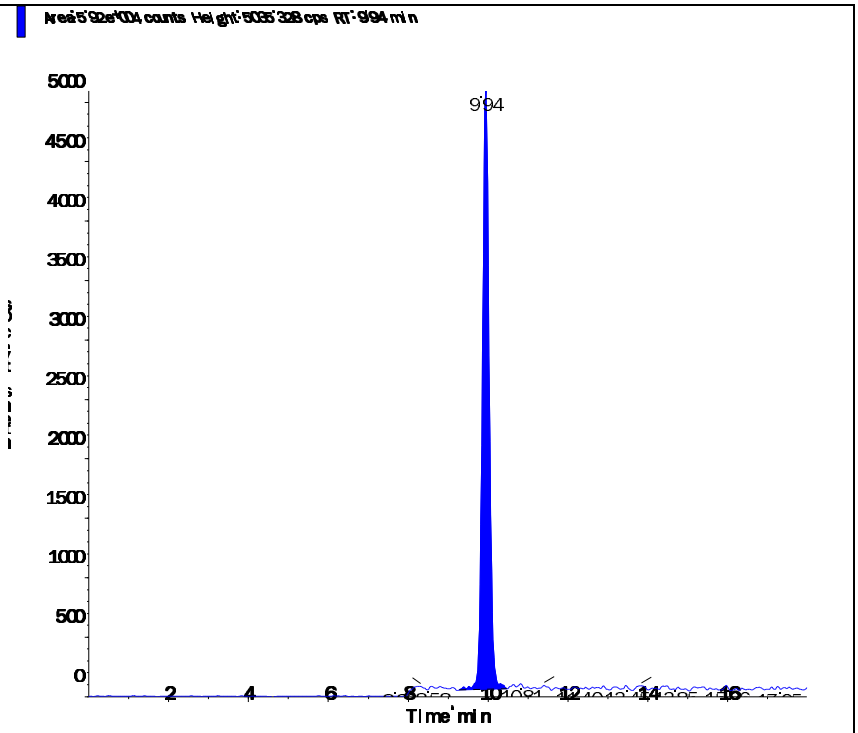

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Data File	LM33656.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/3/2016 6:21:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559621-07 MRL (2.0ug/KG)	**Injection Vial**	3.00
Data File	LM33656.wiff	**Injection Volume**	10.00
Acquisition Date	3/3/2016 6:21:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559621-07	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.270e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.730e+04	9.94	N/A	0.19
Perchlorate conf	1.350e+04	9.94	N/A	0.213

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

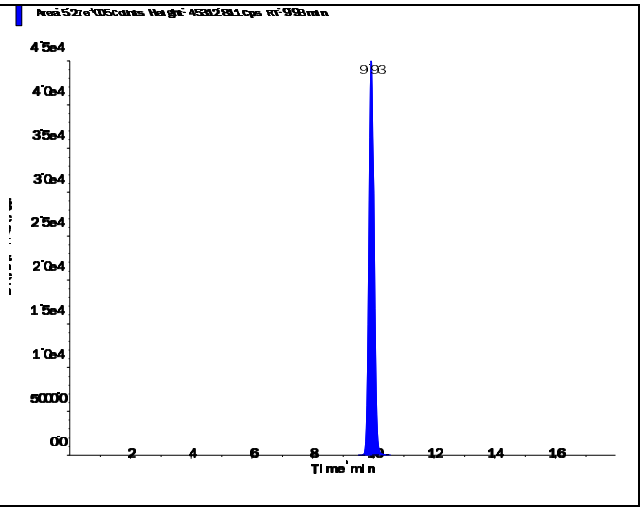

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.19 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

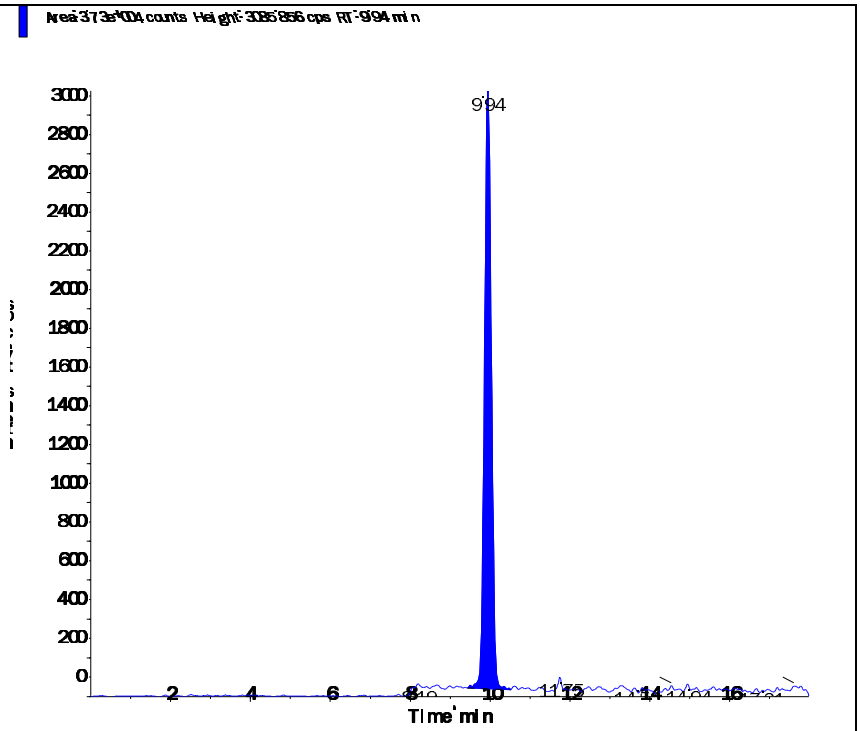

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.213 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

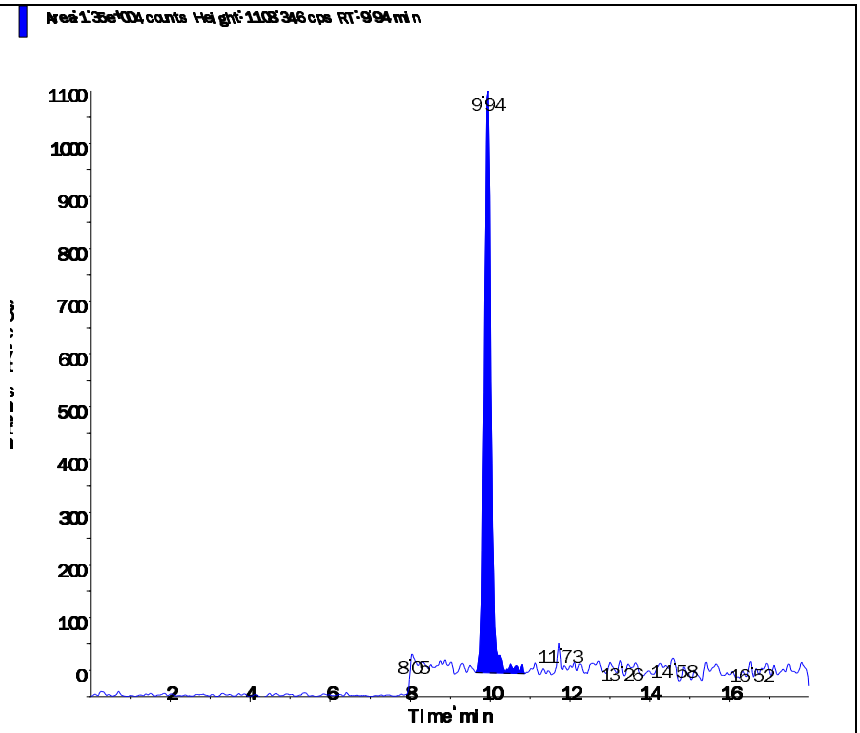

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Data File	LM33666.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/3/2016 9:30:55 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559621-08 MRL (2.0ug/KG)	**Injection Vial**	3.00
Data File	LM33666.wiff	**Injection Volume**	10.00
Acquisition Date	3/3/2016 9:30:55 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559621-08	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.440e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.900e+04	9.95	N/A	0.193
Perchlorate conf	1.360e+04	9.93	N/A	0.208

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

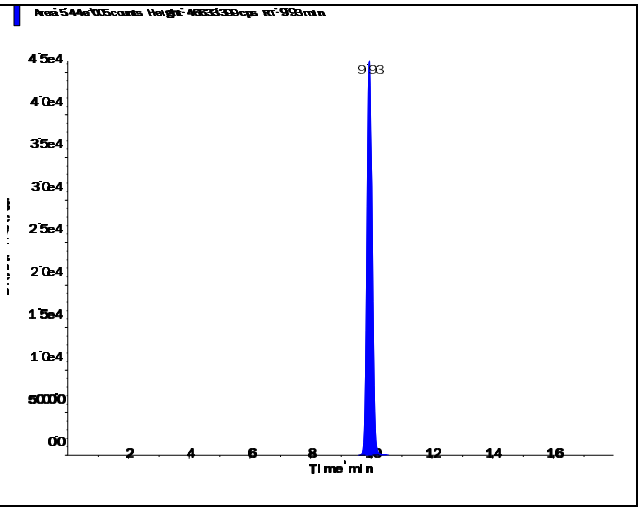

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.95 (9.94) min Calculated conc: 0.193 ng/ml Area Ratio: 0.072 Sample Type: (Unknown)	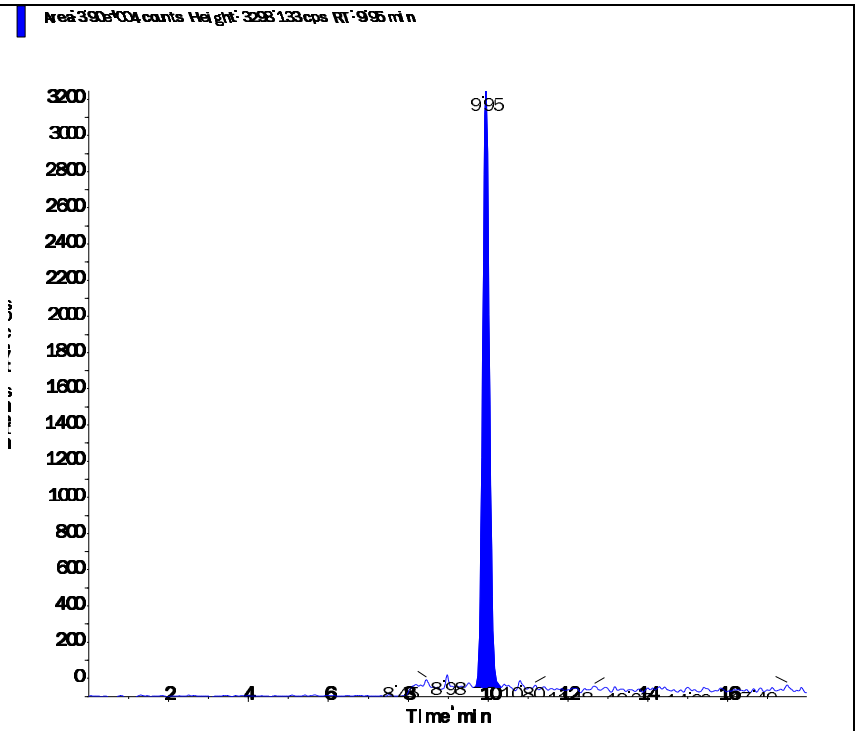
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.93 (9.92) min Calculated conc: 0.208 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	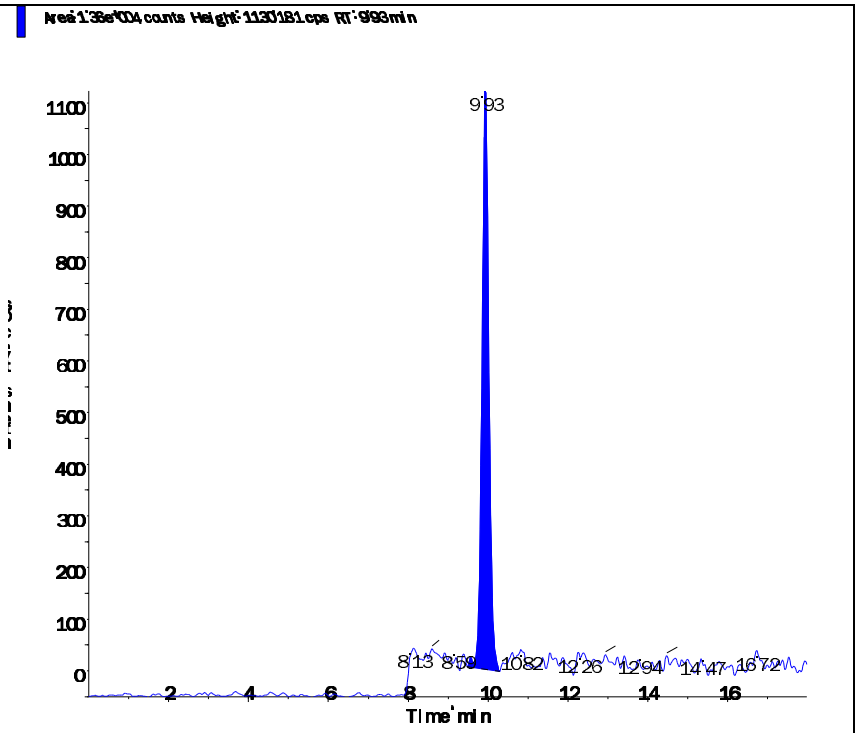

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Data File	LM33672.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/3/2016 11:24:31 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559621-09 MRL (2.0ug/KG)	**Injection Vial**	3.00
Data File	LM33672.wiff	**Injection Volume**	10.00
Acquisition Date	3/3/2016 11:24:31 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559621-09	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.440e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.940e+04	9.93	N/A	0.195
Perchlorate conf	1.290e+04	9.92	N/A	0.197

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

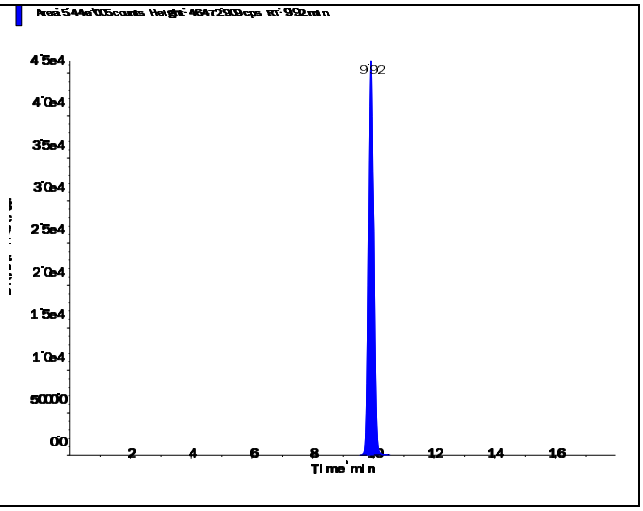

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	0.195 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

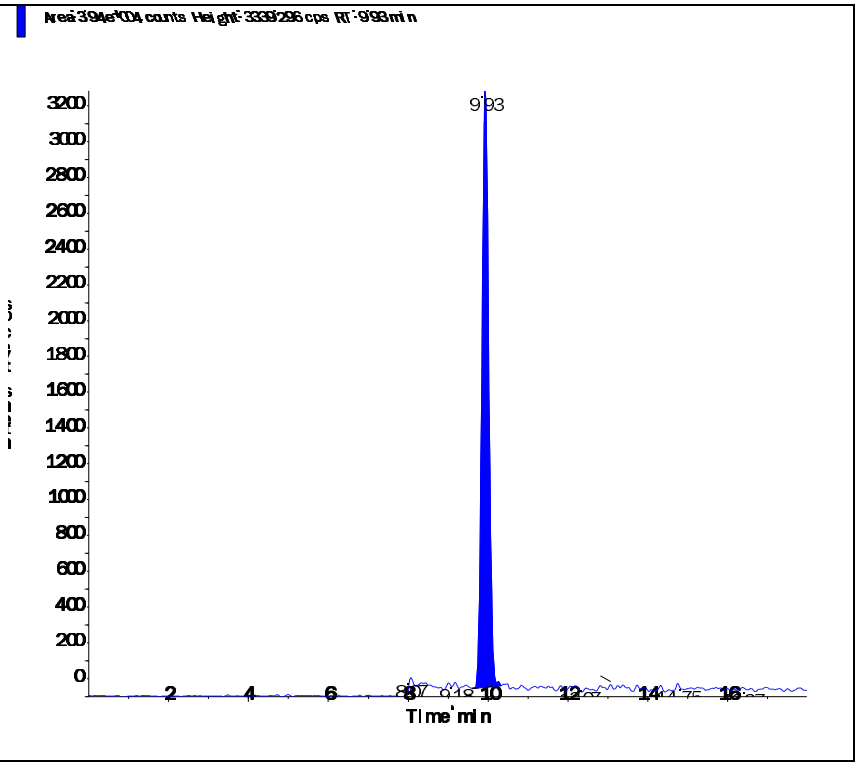

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

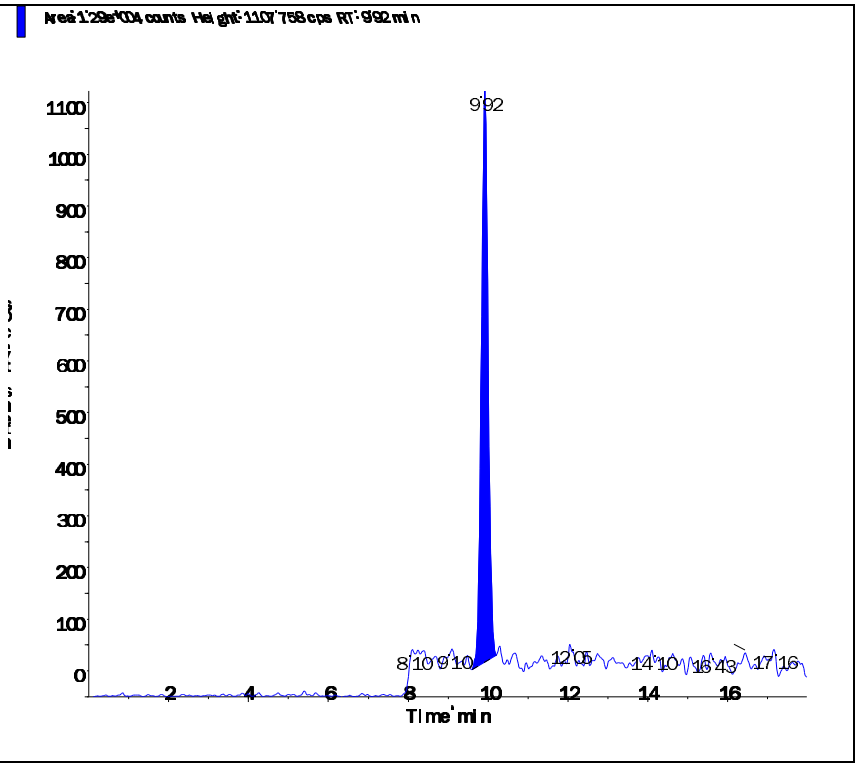

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Data File	LM33702.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/4/2016 10:57:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559621-10 MRL (2.0ug/KG)	**Injection Vial**	3.00
Data File	LM33702.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 10:57:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559621-10	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.240e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.730e+04	9.95	N/A	0.191
Perchlorate conf	1.250e+04	9.94	N/A	0.197

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

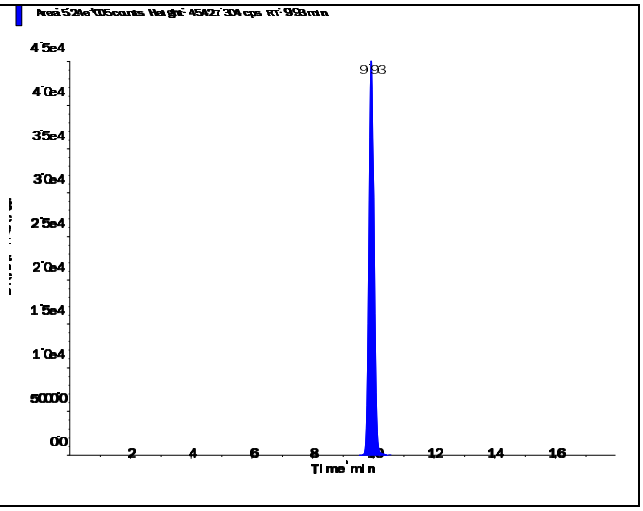

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	0.191 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

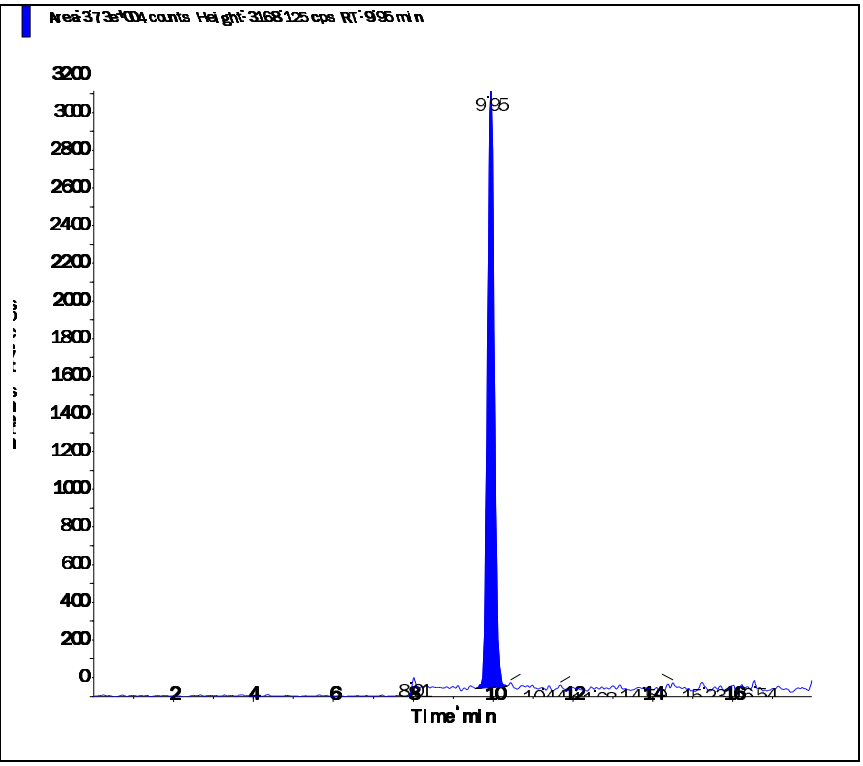

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

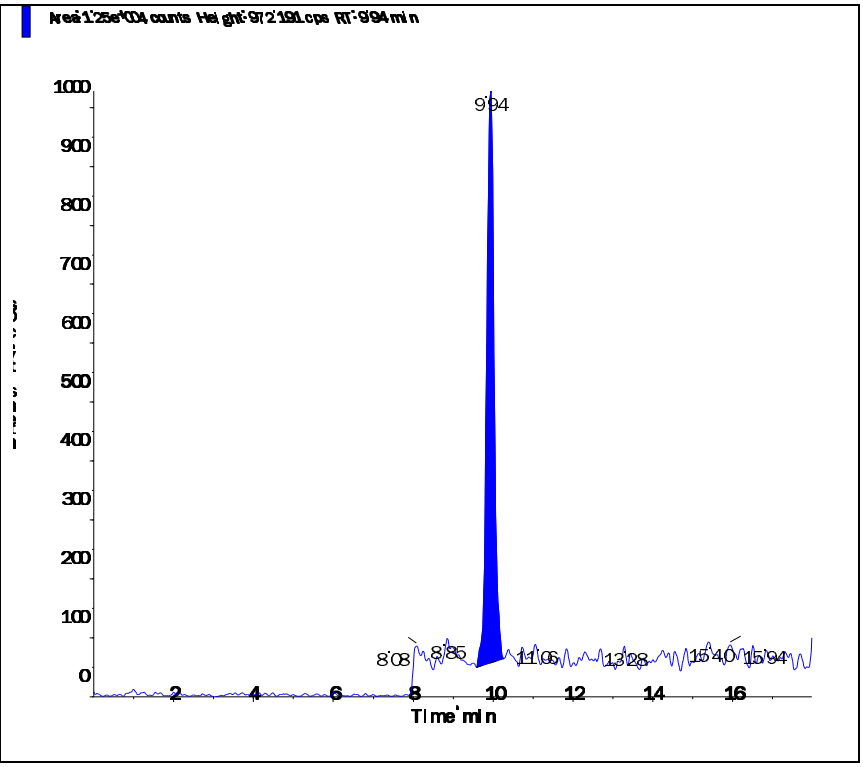

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Printed: 3/4/2016 2:11 PM

Data File	LM33708.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/4/2016 12:50:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559621-11 MRL (2.0ug/KG)	**Injection Vial**	3.00
Data File	LM33708.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 12:50:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559621-09	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.410e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.020e+04	9.96	N/A	0.20
Perchlorate conf	1.410e+04	9.94	N/A	0.218

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

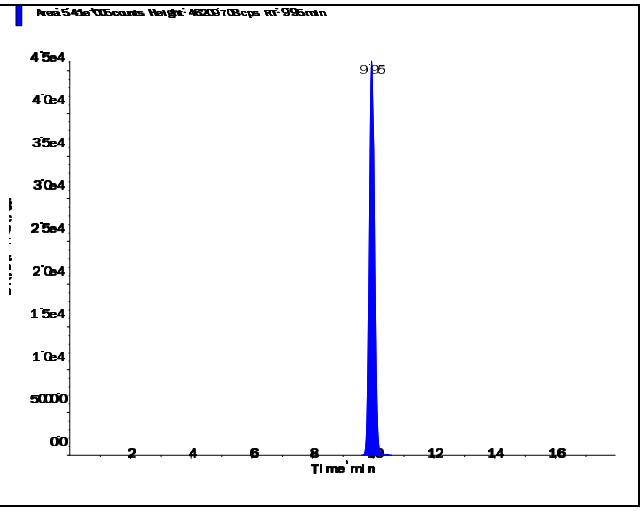

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	0.20 ng/ml
Area Ratio:	0.074
Sample Type:	(Unknown)

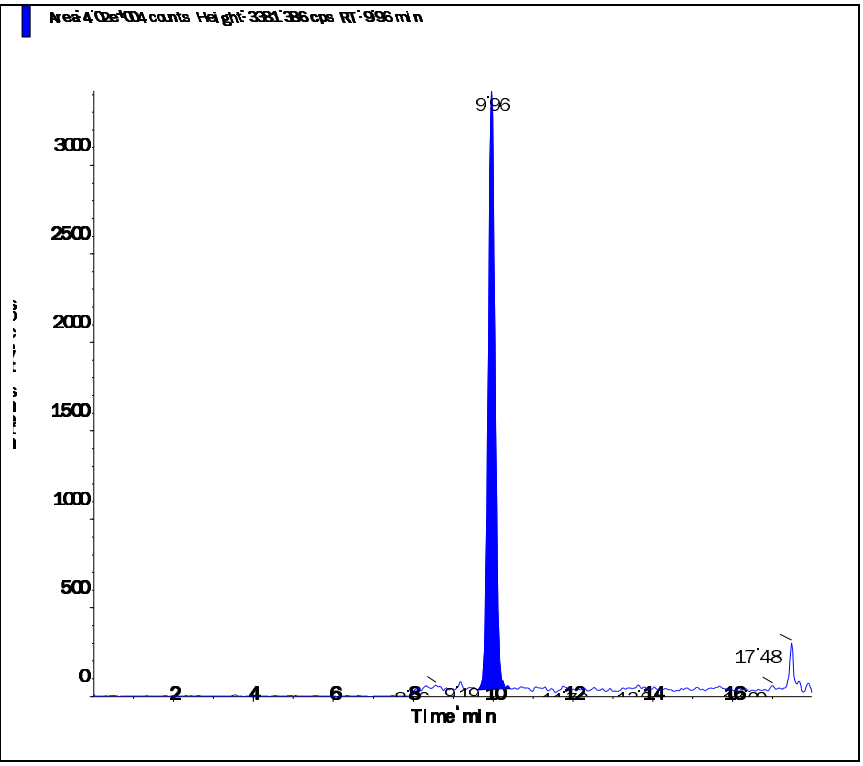

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.218 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

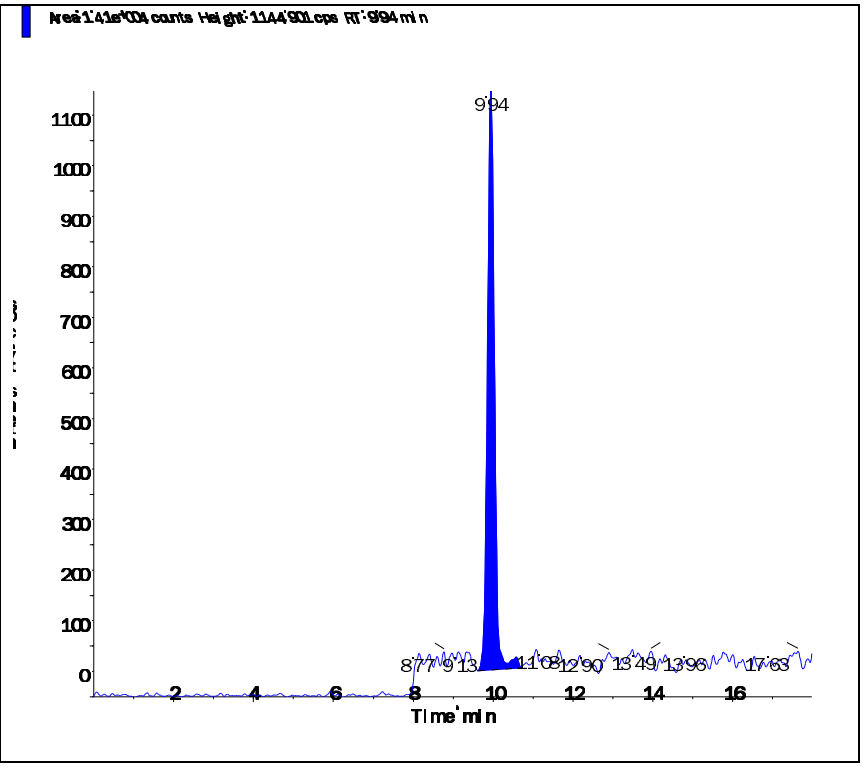

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Data File	LM33654.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/3/2016 5:43:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559618-01 CCB	**Injection Vial**	1.00
Data File	LM33654.wiff	**Injection Volume**	10.00
Acquisition Date	3/3/2016 5:43:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559618-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.060e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

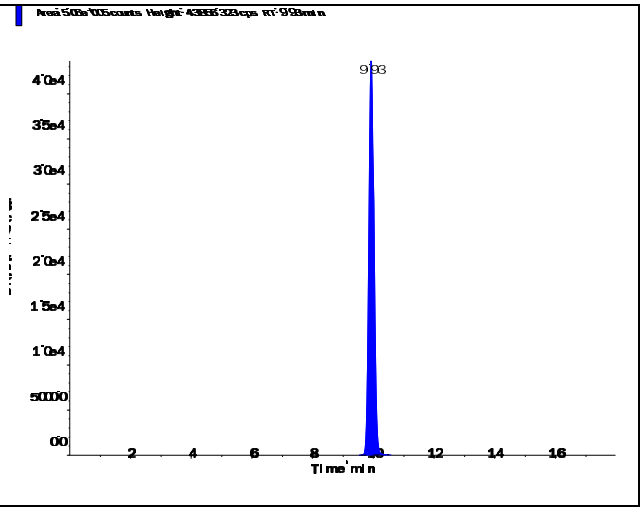

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

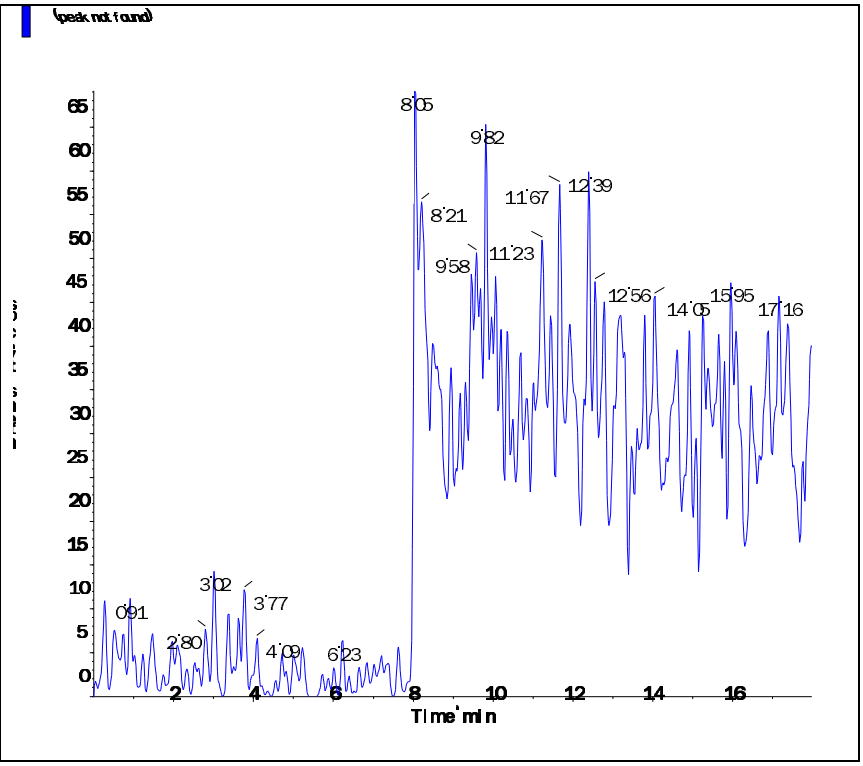

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

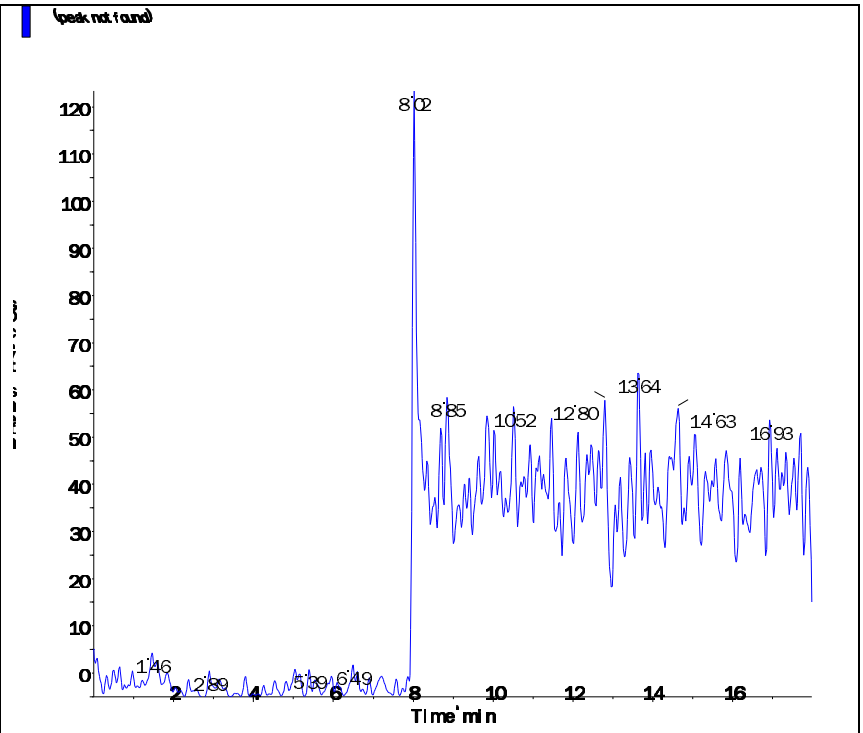

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Printed: 3/4/2016 2:00 PM

Data File	LM33667.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/3/2016 9:49:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559618-04 CCB	**Injection Vial**	1.00
Data File	LM33667.wiff	**Injection Volume**	10.00
Acquisition Date	3/3/2016 9:49:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559618-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.390e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

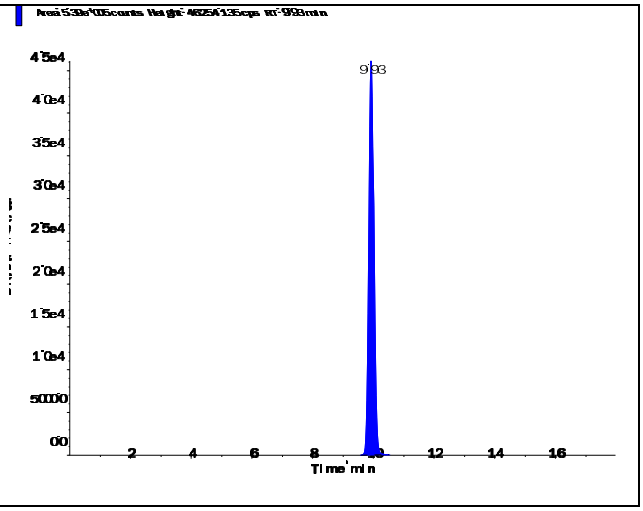

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

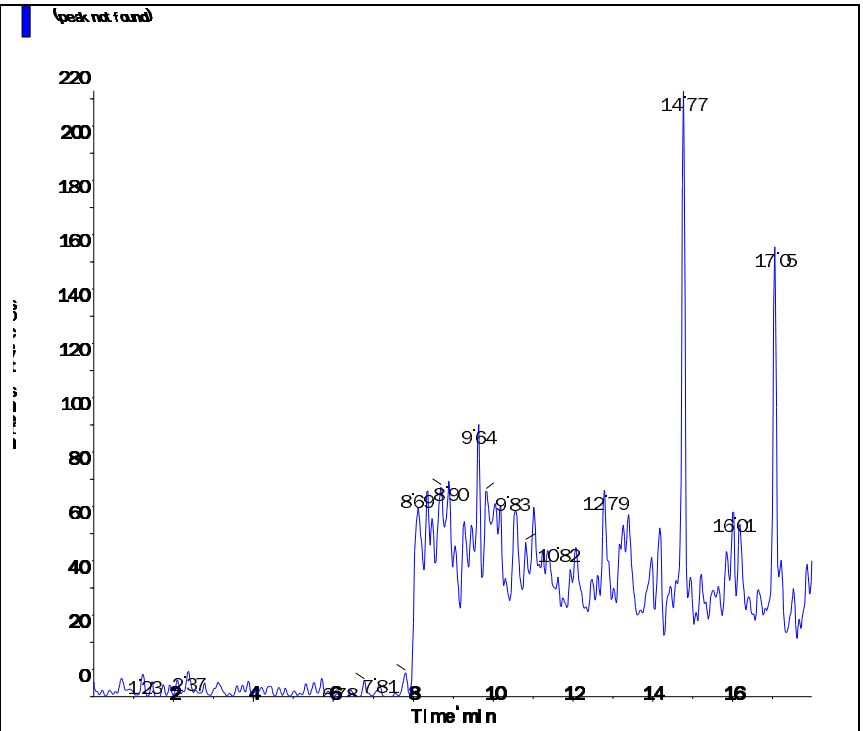

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

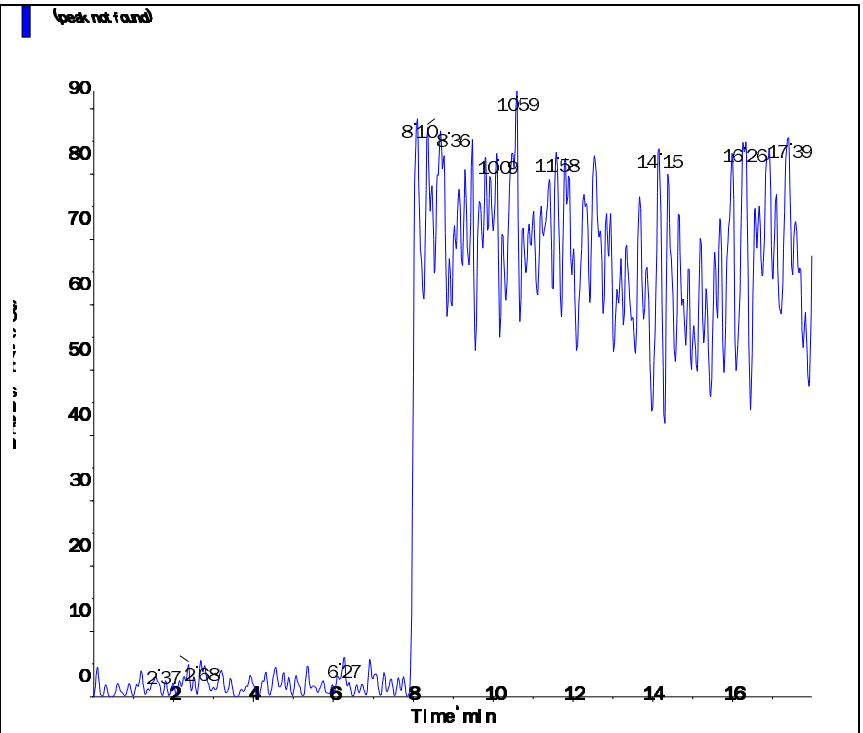

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Data File	LM33673.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/3/2016 11:43:27 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559618-06 CCB	**Injection Vial**	1.00
Data File	LM33673.wiff	**Injection Volume**	10.00
Acquisition Date	3/3/2016 11:43:27 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559618-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.270e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	7.000e+02	9.95	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

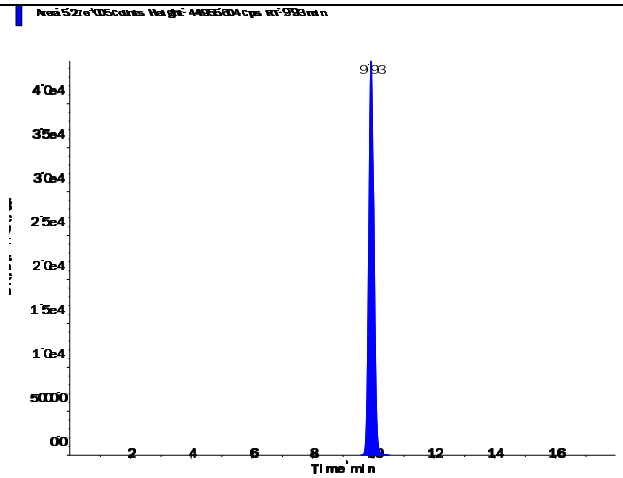

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

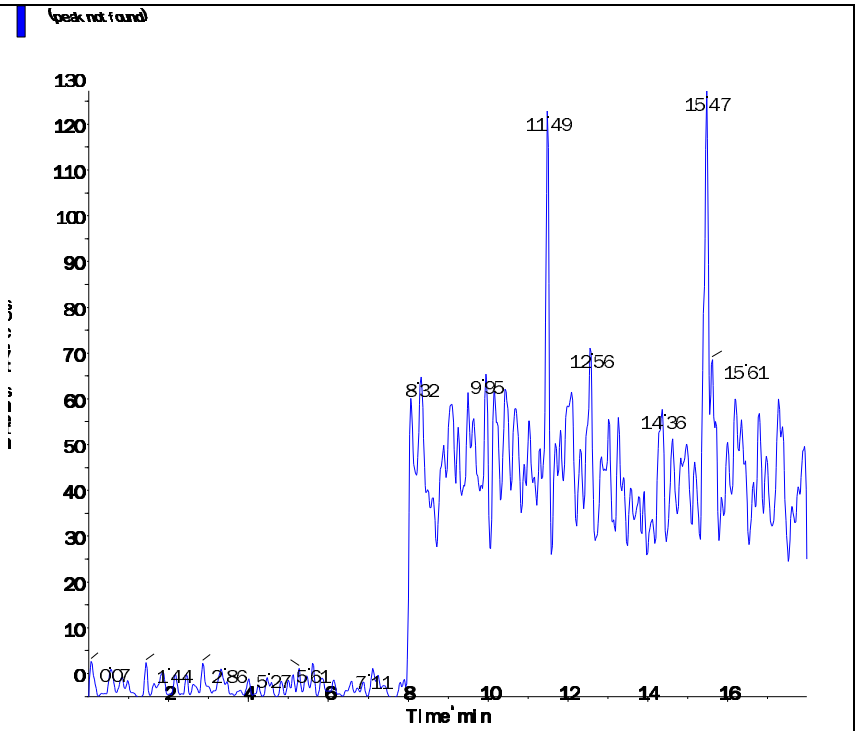

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.95 (9.92) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

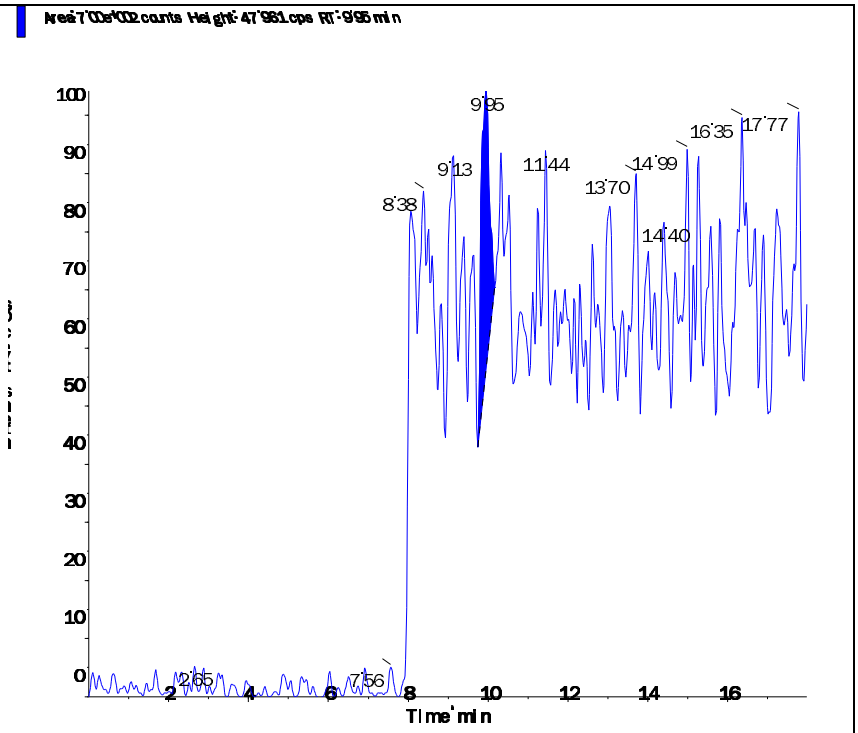

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Data File	LM33701.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/4/2016 10:38:10 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559618-12 CCB	**Injection Vial**	1.00
Data File	LM33701.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 10:38:10 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559618-12	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.160e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

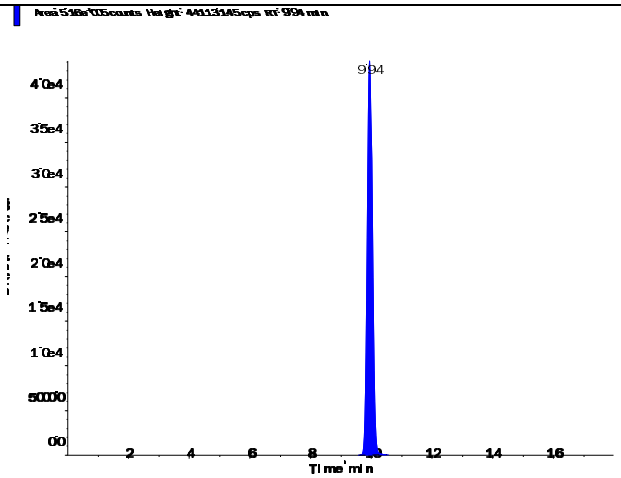

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

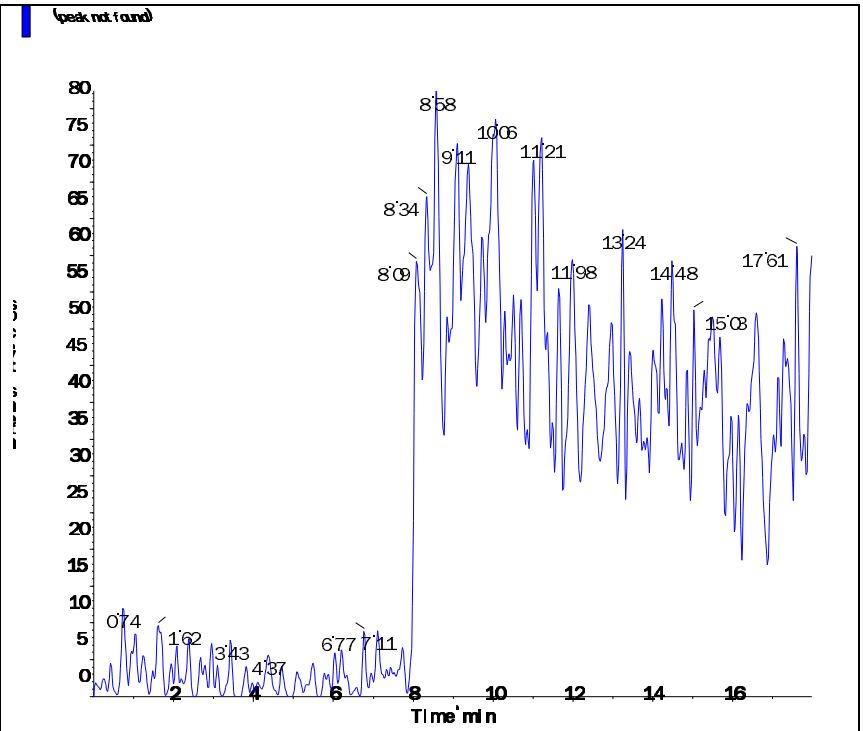

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

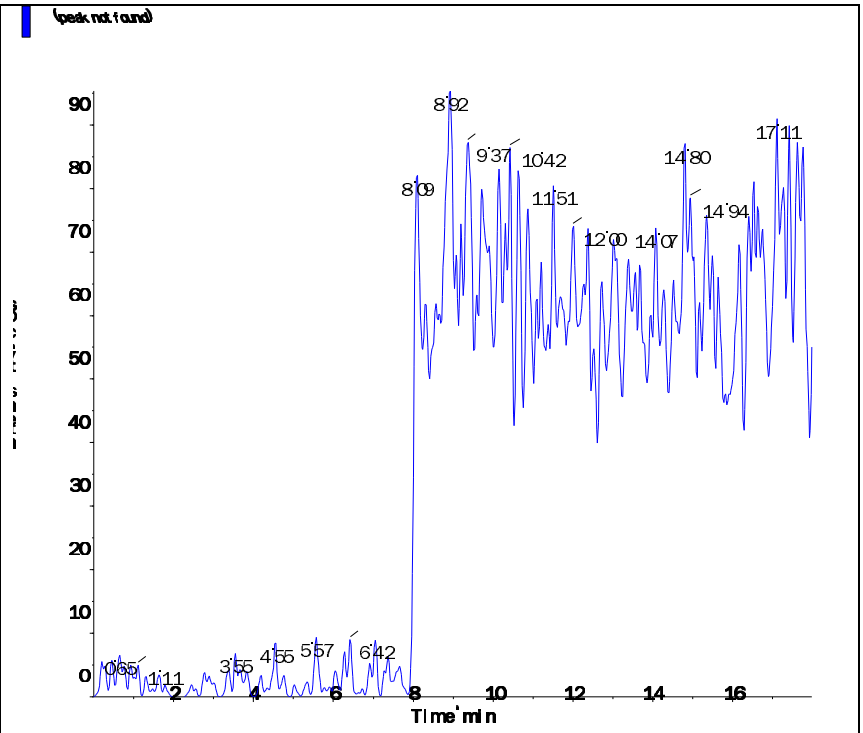

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Data File	LM33709.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/4/2016 1:09:41 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559618-14 CCB	**Injection Vial**	1.00
Data File	LM33709.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 1:09:41 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559618-14	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.310e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

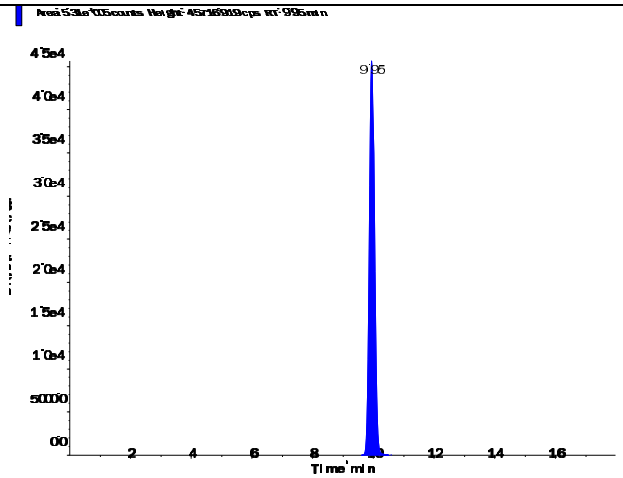

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

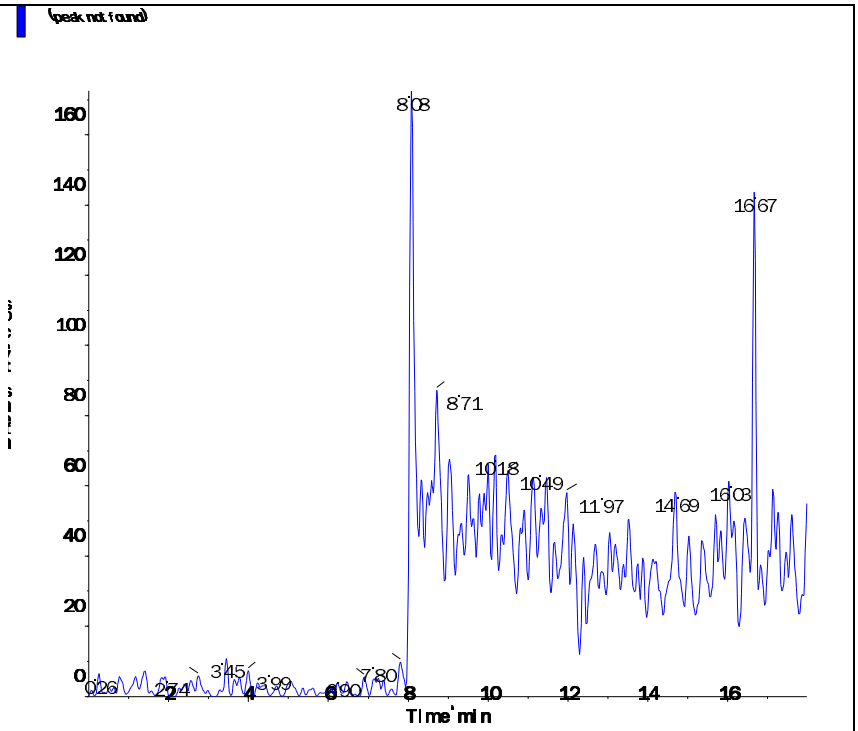

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

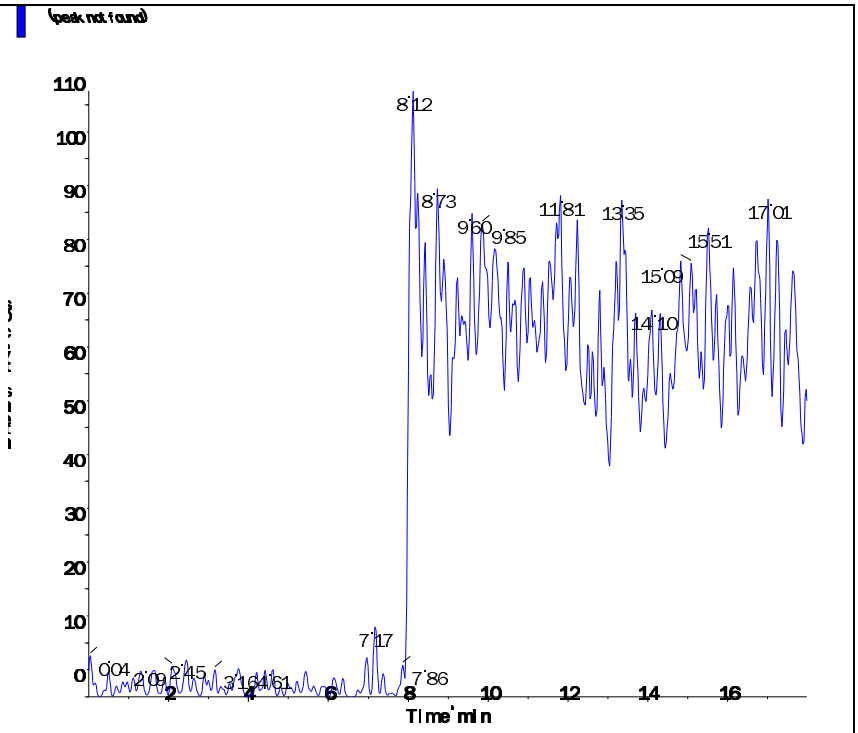

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Data File	LM33657.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/3/2016 6:40:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559621-01 MCT (2.0ug/KG)	**Injection Vial**	4.00
Data File	LM33657.wiff	**Injection Volume**	10.00
Acquisition Date	3/3/2016 6:40:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559621-01	**Dilution Factor**	1.00
Sample Comment	7,1 STD72686	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.230e+05	9.53	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.980e+04	9.54	N/A	0.205
Perchlorate conf	1.180e+04	9.53	N/A	0.187

O18LP (Internal Standard)

RT (Exp. RT): 9.53(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

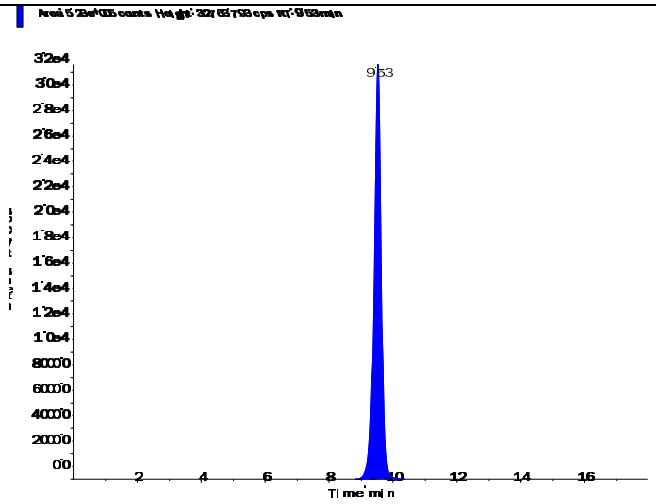

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.54 (9.94) min
Calculated conc:	0.205 ng/ml
Area Ratio:	0.076
Sample Type:	(Unknown)

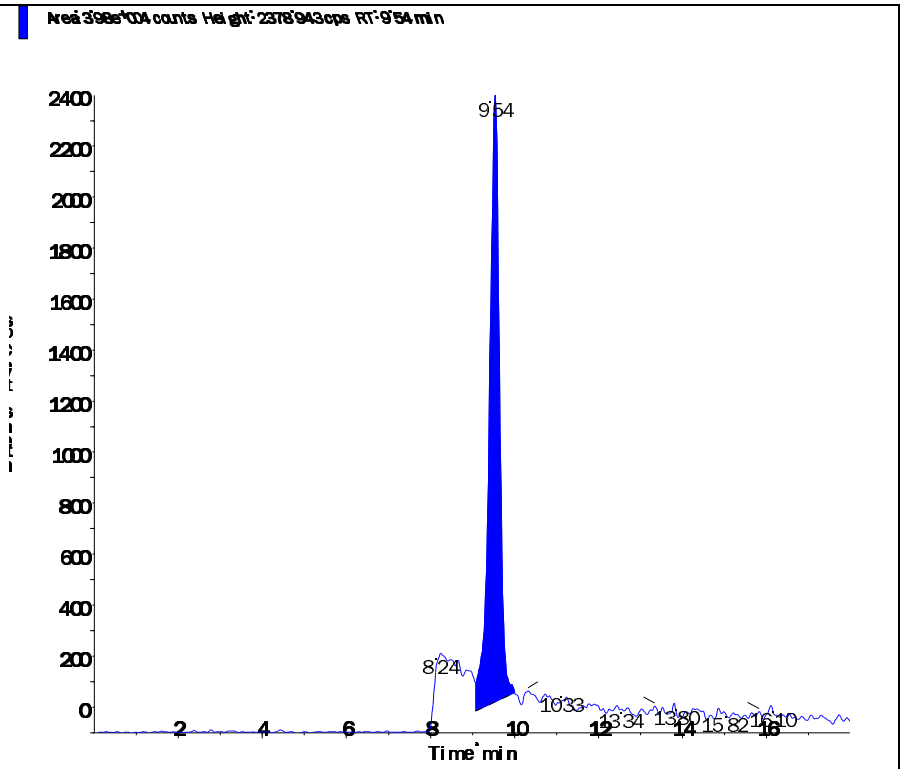

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.53 (9.92) min
Calculated conc:	0.187 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

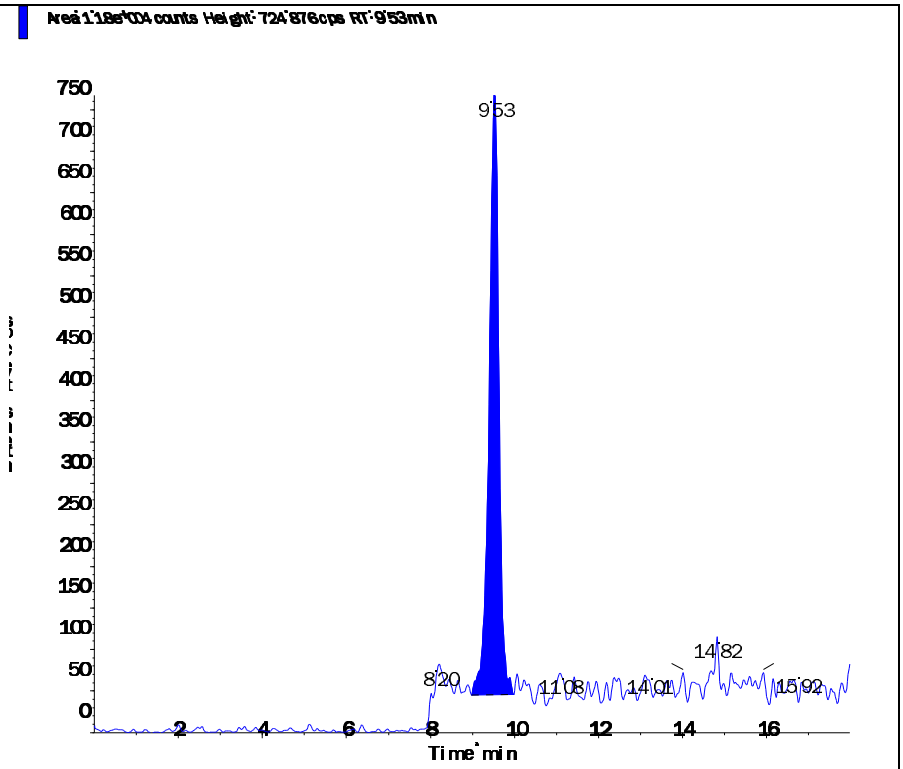

2.2.1.5 Raw QC Data

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Data File	LM33658.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/3/2016 6:59:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559621-02 BLK	**Injection Vial**	5.00
Data File	LM33658.wiff	**Injection Volume**	10.00
Acquisition Date	3/3/2016 6:59:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559621-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.130e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	5.440e+02	9.95	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

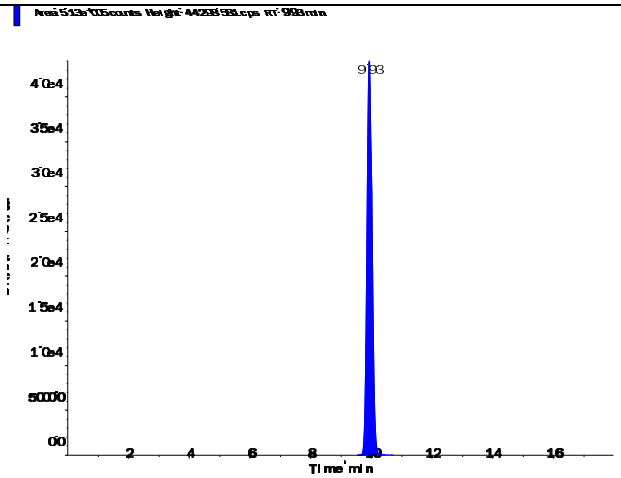

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

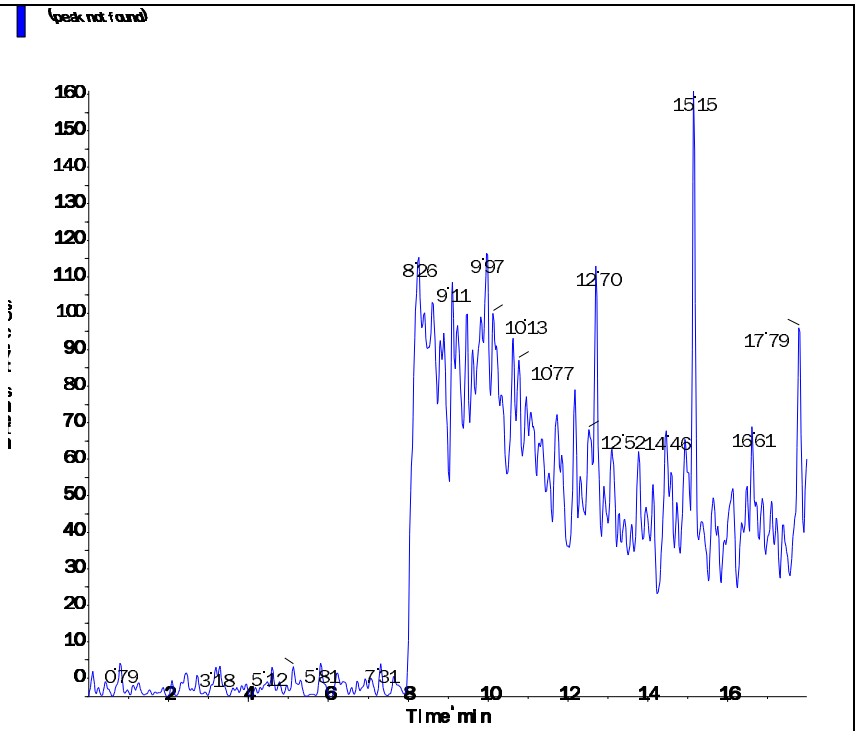

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.95 (9.92) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

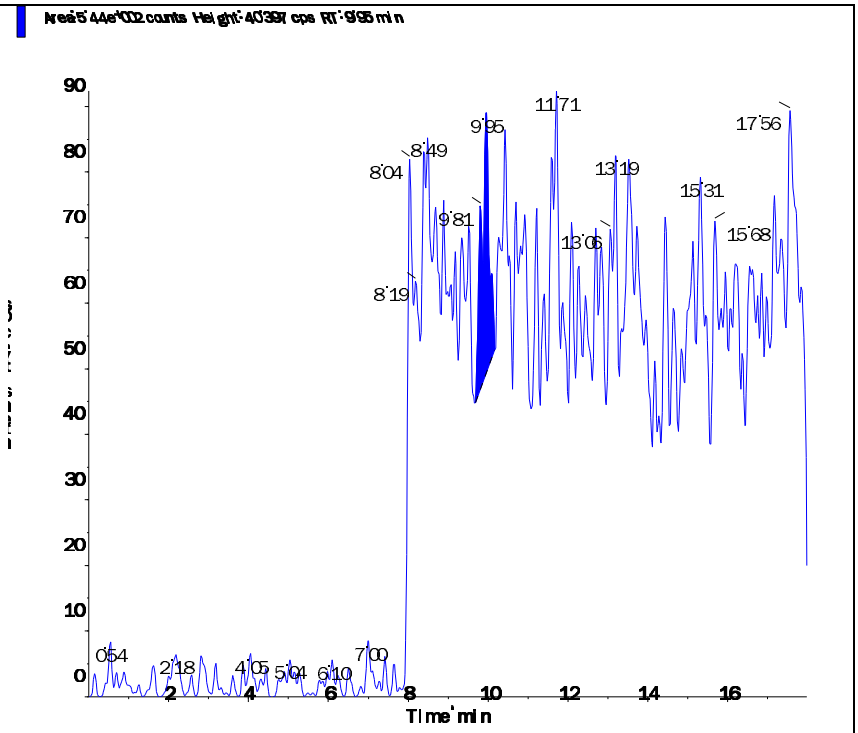

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Created with Analyst Reporter
Printed: 3/4/2016 1:58 PM

Data File	LM33659.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/3/2016 7:18:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559621-02 LCS (2.0ug/KG)	**Injection Vial**	6.00
Data File	LM33659.wiff	**Injection Volume**	10.00
Acquisition Date	3/3/2016 7:18:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559621-03	**Dilution Factor**	1.00
Sample Comment	7,1 STD72686	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.170e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.740e+04	9.94	N/A	0.195
Perchlorate conf	1.280e+04	9.93	N/A	0.206

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

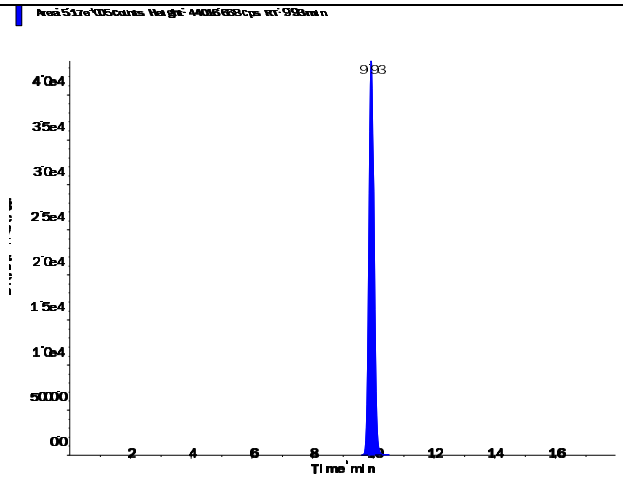

s.dataFile Page 1 of 2

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Printed: 3/4/2016 1:58 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.195 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

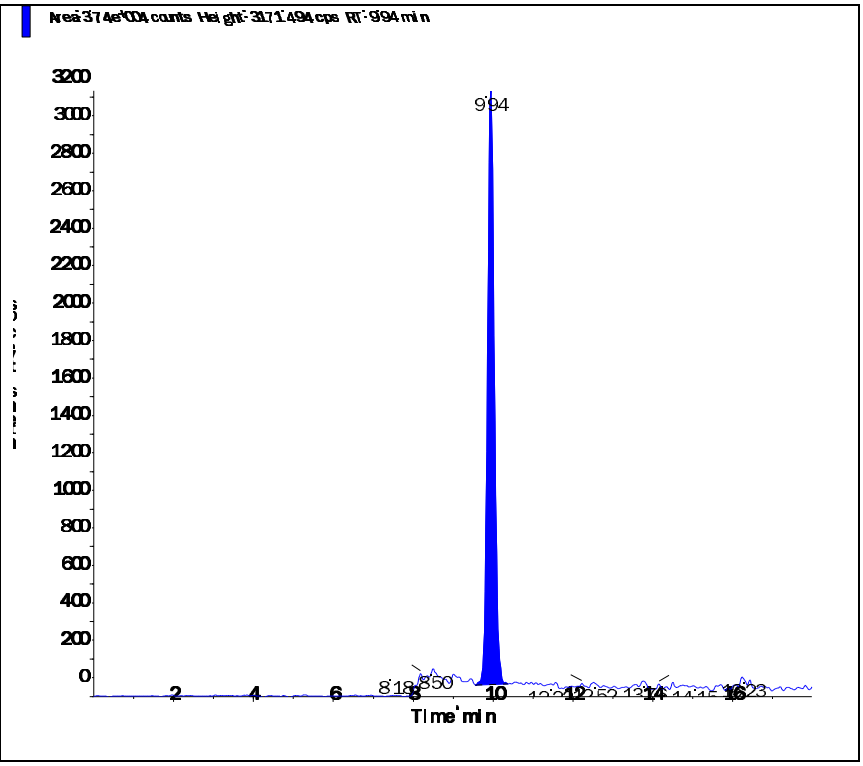

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

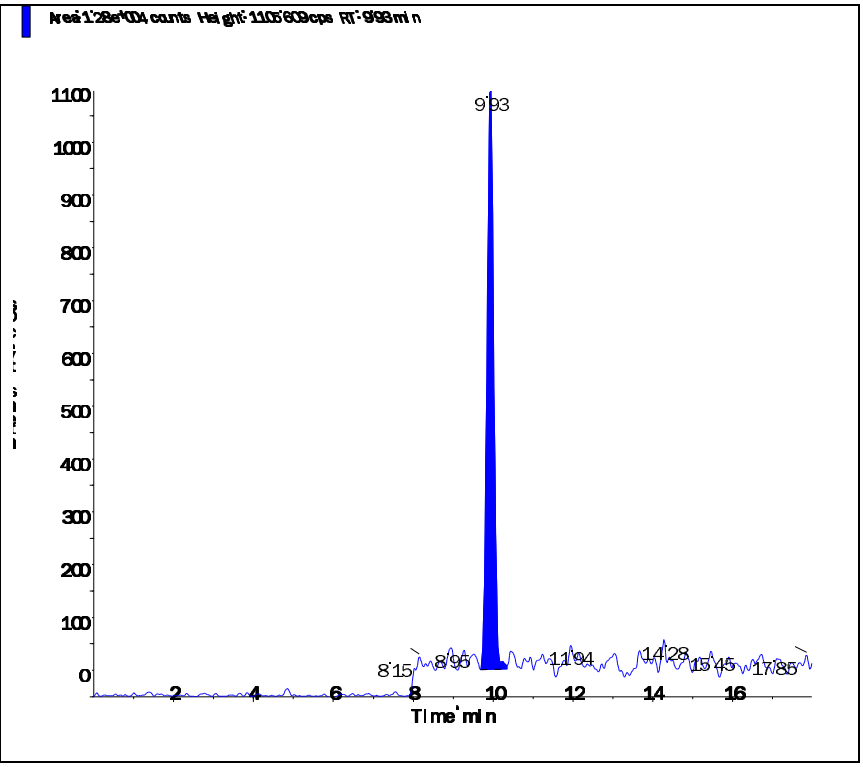

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 3/4/2016 2:10 PM

Data File	LM33705.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/4/2016 11:53:57 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559621-05 MS (100X)	**Injection Vial**	13.00
Data File	LM33705.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 11:53:57 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559621-05	**Dilution Factor**	1.00
Sample Comment	7,100 STD72686	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.980e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.080e+05	9.95	N/A	2.33
Perchlorate conf	1.280e+05	9.94	N/A	2.28

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

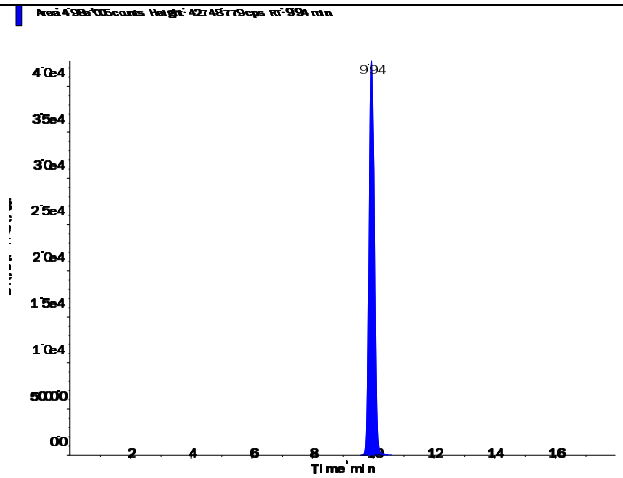

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	2.33 ng/ml
Area Ratio:	0.819
Sample Type:	(Unknown)

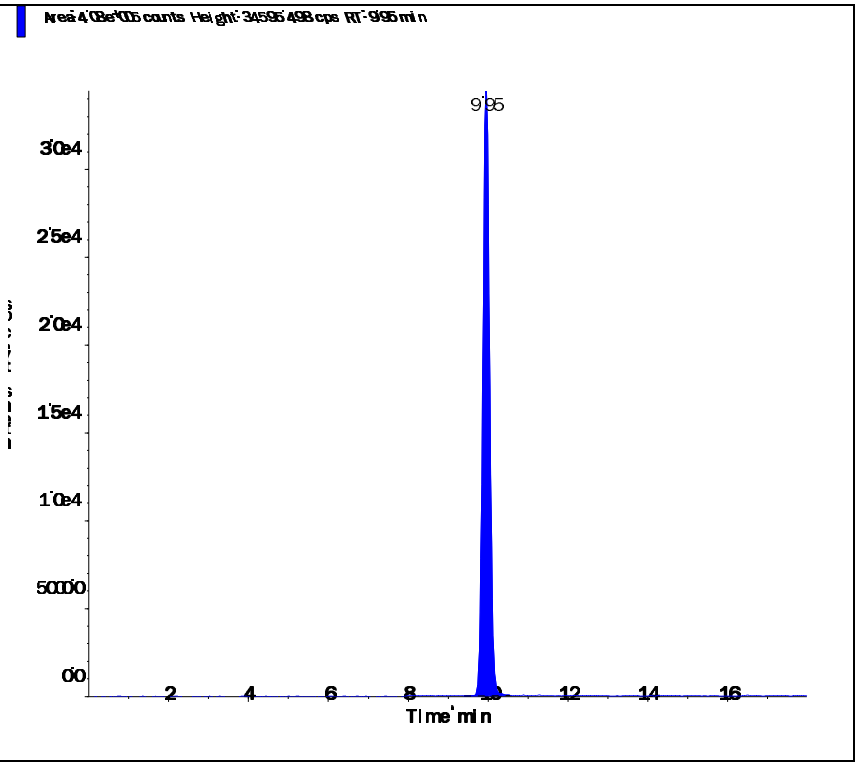

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	2.28 ng/ml
Area Ratio:	0.258
Sample Type:	(Unknown)

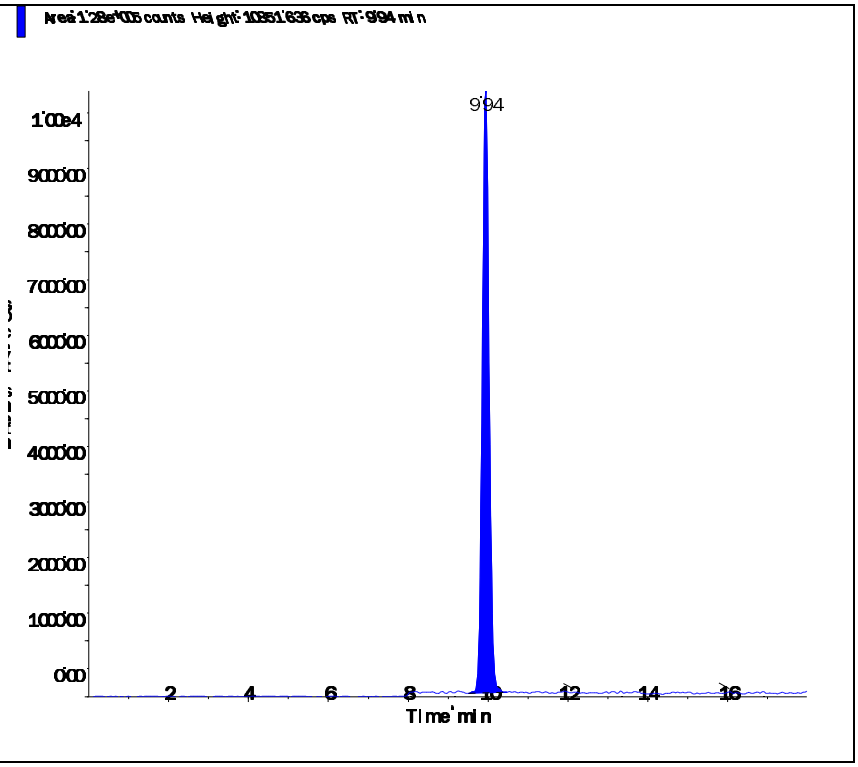

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Printed: 3/4/2016 2:11 PM

Data File	LM33706.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/4/2016 12:12:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559621-06 MSD (100X)	**Injection Vial**	14.00
Data File	LM33706.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 12:12:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559621-06	**Dilution Factor**	1.00
Sample Comment	7,100 STD72686	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.750e+05	9.95	N/A	2.15
Perchlorate conf	1.190e+05	9.93	N/A	2.12

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

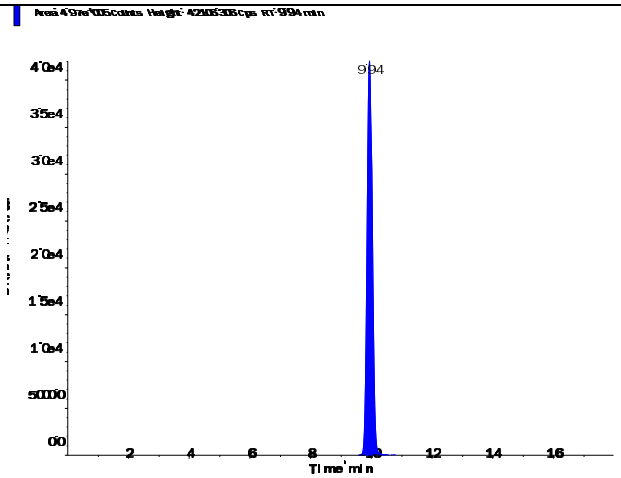

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Printed: 3/4/2016 2:11 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	2.15 ng/ml
Area Ratio:	0.756
Sample Type:	(Unknown)

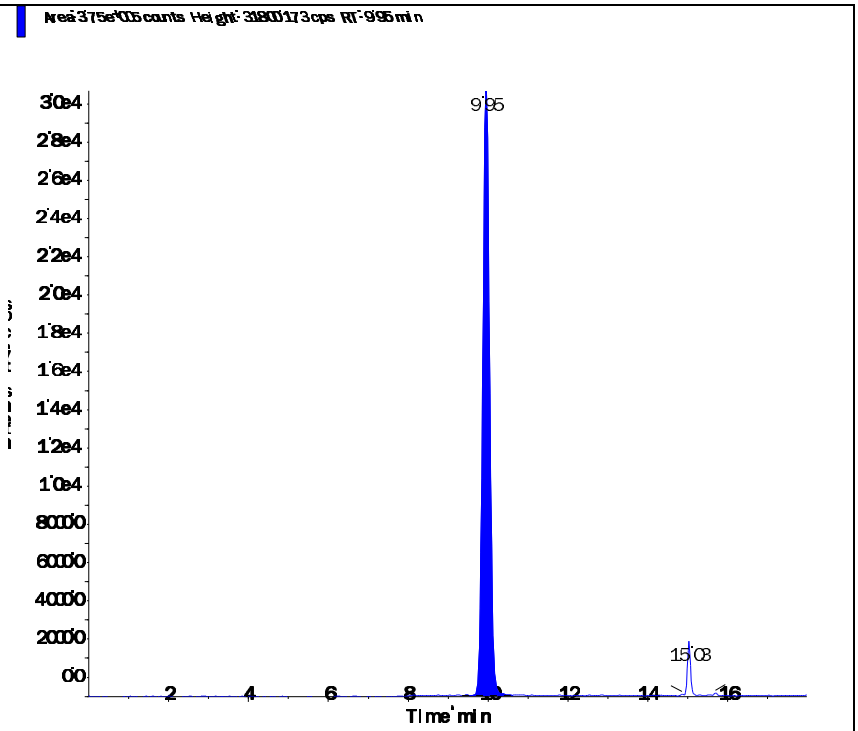

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	2.12 ng/ml
Area Ratio:	0.24
Sample Type:	(Unknown)

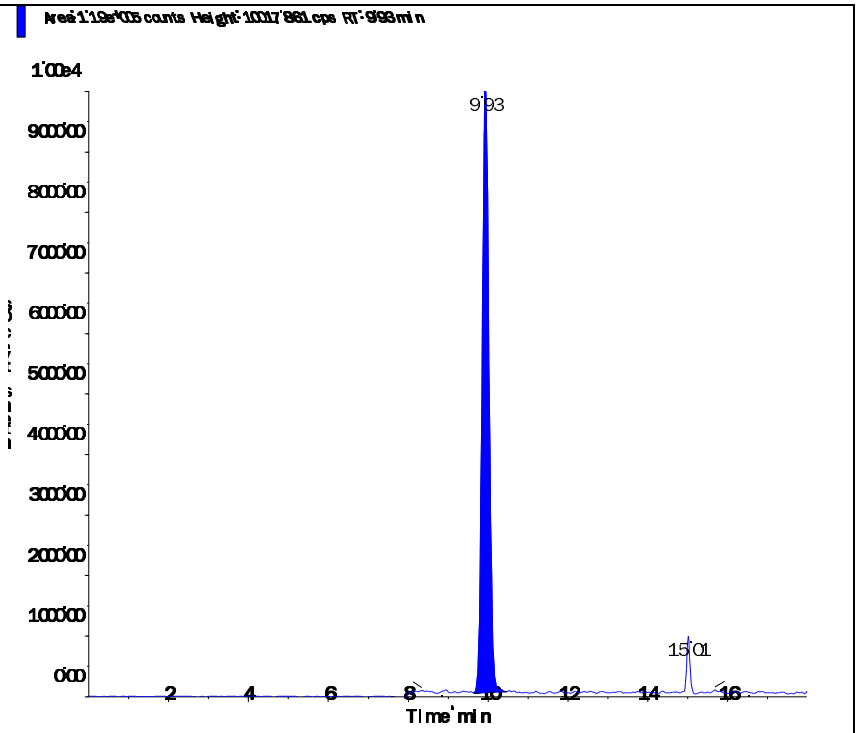

s.dataFile Page 2 of 2

2.3 General Chemistry Data

2.3.1 Percent Solids Data

2.3.1.1 Raw Data

Example Percent Solids Calculations

1.0 Calculating the percent solids of a sample.

$$\%Solids = \frac{WT3 - WT1}{WT2 - WT1} \times F$$

Where:	
WT1 = Weight, in grams, of the empty container	1.30 g
WT2 = Weight, in grams, of the container and wet sample	21.274 g
WT3 = Weight, in grams, of the container and dried sample	5.21 g
F = Factor to get units as percent weight	100
%Solids = Percent solids present in sample.	19.58%

2.0 Calculating the percent moisture of a sample.

% Moisture = 100 - % Solids from 1.0 calculation

Microbac Laboratories Inc.

PERCENT SOLIDS

Workgroup (AAB#): WG559579 Analyst: AC ADT(on): 03/03/2016 13:21
Method: D2216-90 Instrument: BAL021 ADT(off): 03/04/2016 08:03
SOP: K0003 Rev: 14

SAMPLE NUMBER	EMPTY PAN WT 1	WET WT 2	DRY WT 3A	DRY WT 3B	DRY WT 3C	PERCENT SOLID	PERCENT MOISTURE
L16030034-01	1.286	13.64	3.12			14.85	
L16030036-01	1.296	16.583	5.218			25.66	
L16030047-01	1.296	15.07	1.632			2.439	
L16030058-02	1.294	22.062	21.841			98.94	
L16030058-05	1.291	14.739	14.238			96.27	
L16030063-01	1.295	12.939	1.571			2.370	
L16030105-01	1.301	44.884	38.856			86.17	
L16030110-01	1.302	20.95	20.94			99.95	
L16030134-01	1.298	20.458	16.762			80.71	
L16030134-02	1.294	21.979	18.015			80.84	
L16030134-03	1.293	23.057	20.47			88.11	
L16030134-04	1.301	27.828	23.138			82.32	
L16030134-05	1.296	37.47	31.003			82.12	
L16030134-06	1.294	24.137	19.576			80.03	
WG559579-01	1.294	24.137	19.576			80.03	19.97
WG559579-02	1.295	23.702	19.297			80.34	19.66

Analyst: Andrea R Cashman

PERCENT_SOLIDS - Modified 04/24/2008
PDF ID: 4656268
Report generated: 03/04/2016 08:06

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
March 10, 2016

001 - BIO-CHEM TESTING WVDEP 220	002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental	004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES	006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES	008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND	AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER	ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS	ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG	AZH - AFTER HOURS
BJO - BRIAN J. OGDEN	BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT	BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN	CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES	CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD	CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS	CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL	DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE	DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON	DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE	DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR	ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK	ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN	JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON	JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE	JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG	JLL - JOHN L. LENT
JMW - JEANA M. WHITE	JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS	JWS - JACK W. SHEAVES
JYH - JI Y. HU	KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER	KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES	KHR - KIM H. RHODES
KKB - KERRI K. BUCK	KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER	KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER	LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS	LSB - LESLIE S. BUCINA
MBK - MORGAN B. KNOWLTON	MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN	MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE	MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR	MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS	PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB	PSW - PEGGY S. WEBB
QX - QIN XU	RAH - ROY A. HALSTEAD
REK - BOB E. KYER	RLB - BOB BUCHANAN
RM - RAYMOND MALEKE	RNP - RICK N. PETTY
RST - ROBIN S. TURNER	SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN	SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG	SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE	TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY	TMM - TAMMY M. MORRIS
VC - VICKI COLLIER	WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS	WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT	

Microbac Laboratories Inc.
List of Valid Qualifiers
March 10, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
March 10, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Stephanie Mossburg	Project Manager: Debra Richmon	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): KAYLA PALLANES	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Kayla Pallanes	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205	pH:	Program:	
Turn Around Time: STANDARD			
Project Name/Location: Longhorn			
Project Number: 60274185 11DASOW16 DGI-RPT OL			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOCs 8260	Perchlorate 6850	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
	18DPT06(5-5.5)~~030216~~	020316		3/2/16	0858		X	S	2	X	X					
	18DPT06(5-5.5)~~030216FD~~	020316	FD	3/2/16	0858		X	S	2	X	X					
	18DPT06(15-15.5)~~030216~~	020316		3/2/16	1035		X	S	2	X	X					
	18DPT06(20-20.5)~~030216~~	020316		3/2/16	1111		X	S	2	X	X					
	18DPT06(27.5-28)~~030216~~	020316		3/2/16	1205		X	S	2	X	X					
	18DPT06(38.5-39)	020316		3/2/16	1500		X	S	2	X	X					

Comments: ~~STANDARD TAT~~ 48HR TAT

Relinquished by: (Signature) Kayla Pallanes	Date 3/3/16	Time 1700	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time			Time	Remarks:

Microbac OVD
Received: 03/03/2016 09:52
By: BRENDA GREGORY
221000082672
Brenda Gregory

*Homogenize all composite samples prior to analysis

Manager, Pink QA/QC Manager

09656542

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030134
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 07-MAR-2016

Samplenum	Container ID	Products
L16030134-01	708704	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-MAR-2016 10:14	BRG		
2	ANALYZ	V1	ORG4	03-MAR-2016 10:18	AWE	CLS	

Samplenum	Container ID	Products
L16030134-01	708705	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	03-MAR-2016 10:14	BRG		
2	ANALYZ	W1	SEM	03-MAR-2016 11:53	WTD	CLS	
3	STORE	DIG	A1	04-MAR-2016 13:45	BRG	ERP	

Samplenum	Container ID	Products
L16030134-02	708706	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-MAR-2016 10:14	BRG		
2	ANALYZ	V1	ORG4	03-MAR-2016 10:18	AWE	CLS	

Samplenum	Container ID	Products
L16030134-02	708707	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	03-MAR-2016 10:14	BRG		
2	ANALYZ	W1	SEM	03-MAR-2016 11:52	WTD	CLS	
3	STORE	DIG	A1	04-MAR-2016 13:45	BRG	ERP	

Samplenum	Container ID	Products
L16030134-03	708708	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-MAR-2016 10:14	BRG		
2	ANALYZ	V1	ORG4	03-MAR-2016 10:18	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030134
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 07-MAR-2016

Samplenum	Container ID	Products
L16030134-03	708709	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	03-MAR-2016 10:14	BRG		
2	ANALYZ	W1	SEM	03-MAR-2016 11:52	WTD	CLS	
3	STORE	DIG	A1	04-MAR-2016 13:45	BRG	ERP	

Samplenum	Container ID	Products
L16030134-04	708710	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-MAR-2016 10:14	BRG		
2	ANALYZ	V1	ORG4	03-MAR-2016 10:18	AWE	CLS	

Samplenum	Container ID	Products
L16030134-04	708711	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	03-MAR-2016 10:14	BRG		
2	ANALYZ	W1	SEM	03-MAR-2016 11:53	WTD	CLS	
3	STORE	DIG	A1	04-MAR-2016 13:45	BRG	ERP	

Samplenum	Container ID	Products
L16030134-05	708712	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-MAR-2016 10:14	BRG		
2	ANALYZ	V1	ORG4	03-MAR-2016 10:18	AWE	CLS	

Samplenum	Container ID	Products
L16030134-05	708713	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	03-MAR-2016 10:14	BRG		
2	ANALYZ	W1	SEM	03-MAR-2016 11:52	WTD	CLS	
3	STORE	DIG	A1	04-MAR-2016 13:45	BRG	ERP	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030134
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 07-MAR-2016

Samplenum	Container ID	Products
L16030134-06	708714	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-MAR-2016 10:14	BRG		
2	ANALYZ	V1	ORG4	03-MAR-2016 10:18	AWE	CLS	

Samplenum	Container ID	Products
L16030134-06	708715	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	03-MAR-2016 10:14	BRG		
2	ANALYZ	W1	SEM	03-MAR-2016 11:52	WTD	CLS	
3	STORE	DIG	A1	04-MAR-2016 13:45	BRG	ERP	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16030234

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on March 15 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00113624	I	0.0		J2317165901	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	NA
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	NA

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18DPT08(5-5.5)030316	L16030234-01	03/03/2016 13:15	03/04/2016 10:17
18DPT08(15-15.5)030316	L16030234-02	03/03/2016 13:49	03/04/2016 10:17
18DPT08(10-10.5)030316	L16030234-03	03/03/2016 14:40	03/04/2016 10:17
18DPT08(21-21.5)030316	L16030234-04	03/03/2016 14:50	03/04/2016 10:17
18DPT08(26-26.5)030316	L16030234-05	03/03/2016 14:55	03/04/2016 10:17
18DPT08(35-35.5)030316	L16030234-06	03/03/2016 15:05	03/04/2016 10:17

Microbac REPORT L16030234
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.0 Summary Data

1.1 Narratives

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030234
Project Name:		**Method:**	8260
Prep Batch Number(s):	559859, 559982	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-03-14 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden	Franci Bolden	Analyst I	2016-03-14 19:39:22

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030234
Project Name:		**Method:**	8260
Prep Batch Number(s):	559859, 559982	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-03-14 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				
Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030234
Project Name:		**Method:**	8260
Prep Batch Number(s):	559859, 559982	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-03-14 00:00:00		

Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				
Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030234
Project Name:		**Method:**	8260
Prep Batch Number(s):	559859, 559982	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-03-14 00:00:00		

Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?		X			1
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					
Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030234
Project Name:		**Method:**	8260
Prep Batch Number(s):	559859, 559982	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-03-14 00:00:00		

Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) Dichlorodifluoromethane exceeded the UCL in the ICV.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030234
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559808	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-08 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-03-08 19:45:14

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030234
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559808	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-08 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030234
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559808	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-08 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030234
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559808	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-08 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030234
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559808	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-08 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030234
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559808	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-08 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030234
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559839	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-07 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2016-03-07 17:47:27

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030234
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559839	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-07 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?			X		
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?			X		
Were sample detection limits reported for all analytes not detected?			X		
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?			X		
Were blanks analyzed at the appropriate frequency?			X		
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?			X		
Were blank concentrations < MQL?			X		
Laboratory control samples (LCS):			X		
Were all COCs included in the LCS?			X		

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030234
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559839	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-07 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?			X		
Were LCSs analyzed at the required frequency?			X		
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?			X		
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?			X		
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?			X		
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?			X		
Are unadjusted MQLs and DCSs included in the laboratory data package?			X		
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?			X		
Were percent RSDs or correlation coefficient criteria met?			X		

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030234
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559839	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-07 00:00:00		

Was the number of standards recommended in the method used for all analytes?			X		
Were all points generated between the lowest and highest standard used to calculate the curve?			X		
Are ICAL data available for all instruments used?			X		
Has the initial calibration curve been verified using an appropriate second source standard?			X		
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030234
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559839	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-07 00:00:00		

Was a MDL study performed for each reported analyte?			X		
Is the MDL either adjusted or supported by the analysis of DCSs?			X		
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?			X		
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030234
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559839	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-07 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030234-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT08(5-5.5)030316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:01
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559859	**Analyst:**	ADC	**Run Date:**	03/06/2016 21:31
Collect Date:	03/03/2016 13:15	**Dilution:**	1	**File ID:**	9M973110
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.0	U	26.0	13.0	6.51
Benzene	71-43-2	1.30	U	6.51	1.30	0.651
Bromobenzene	108-86-1	1.30	U	6.51	1.30	0.651
Bromochloromethane	74-97-5	2.60	U	6.51	2.60	1.30
Bromodichloromethane	75-27-4	1.30	U	6.51	1.30	0.651
Bromoform	75-25-2	1.30	U	6.51	1.30	0.651
Bromomethane	74-83-9	2.60	U	6.51	2.60	1.30
2-Butanone	78-93-3	6.50	U	13.0	6.50	3.25
n-Butylbenzene	104-51-8	1.30	U	6.51	1.30	0.651
sec-Butylbenzene	135-98-8	1.30	U	6.51	1.30	0.651
tert-Butylbenzene	98-06-6	1.30	U	6.51	1.30	0.651
Carbon disulfide	75-15-0	1.30	U	6.51	1.30	0.651
Carbon tetrachloride	56-23-5	1.30	U	6.51	1.30	0.651
Chlorobenzene	108-90-7	1.30	U	6.51	1.30	0.651
Chlorodibromomethane	124-48-1	1.30	U	6.51	1.30	0.651
Chloroethane	75-00-3	2.60	U	6.51	2.60	1.30
Chloroform	67-66-3	1.30	U	6.51	1.30	0.651
Chloromethane	74-87-3	5.20	U	13.0	5.20	2.60
2-Chlorotoluene	95-49-8	1.30	U	6.51	1.30	0.651
4-Chlorotoluene	106-43-4	1.30	U	6.51	1.30	0.651
1,2-Dibromo-3-chloropropane	96-12-8	5.20	U	13.0	5.20	2.60
1,2-Dibromoethane	106-93-4	1.30	U	6.51	1.30	0.651
Dibromomethane	74-95-3	1.30	U	6.51	1.30	0.651
1,2-Dichlorobenzene	95-50-1	1.30	U	6.51	1.30	0.651
1,3-Dichlorobenzene	541-73-1	1.30	U	6.51	1.30	0.651
1,4-Dichlorobenzene	106-46-7	1.30	U	6.51	1.30	0.651
Dichlorodifluoromethane	75-71-8	2.60	U	6.51	2.60	1.30
1,1-Dichloroethane	75-34-3	2.60	U	6.51	2.60	1.30
1,2-Dichloroethane	107-06-2	1.30	U	6.51	1.30	0.651
1,1-Dichloroethene	75-35-4	1.30	U	6.51	1.30	0.651
cis-1,2-Dichloroethene	156-59-2	1.30	U	6.51	1.30	0.651
trans-1,2-Dichloroethene	156-60-5	1.30	U	6.51	1.30	0.651

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.30	U	6.51	1.30	0.651
1,3-Dichloropropane	142-28-9	1.30	U	6.51	1.30	0.651
2,2-Dichloropropane	594-20-7	1.30	U	6.51	1.30	0.651
cis-1,3-Dichloropropene	10061-01-5	1.30	U	6.51	1.30	0.651
trans-1,3-Dichloropropene	10061-02-6	1.30	U	6.51	1.30	0.651
1,1-Dichloropropene	563-58-6	1.30	U	6.51	1.30	0.651
Ethylbenzene	100-41-4	1.30	U	6.51	1.30	0.651
2-Hexanone	591-78-6	6.50	U	13.0	6.50	3.25
Hexachlorobutadiene	87-68-3	1.30	U	6.51	1.30	0.651
Isopropylbenzene	98-82-8	1.30	U	6.51	1.30	0.651
p-Isopropyltoluene	99-87-6	1.30	U	6.51	1.30	0.651
4-Methyl-2-pentanone	108-10-1	6.50	U	13.0	6.50	3.25
Methylene chloride	75-09-2	2.60	U	6.51	2.60	1.30
Naphthalene	91-20-3	1.30	U	6.51	1.30	0.651
n-Propylbenzene	103-65-1	1.30	U	6.51	1.30	0.651
Styrene	100-42-5	1.30	U	6.51	1.30	0.651
1,1,1,2-Tetrachloroethane	630-20-6	1.30	U	6.51	1.30	0.651
1,1,2,2-Tetrachloroethane	79-34-5	1.30	U	6.51	1.30	0.651
Tetrachloroethene	127-18-4	1.30	U	6.51	1.30	0.651
Toluene	108-88-3	1.30	U	6.51	1.30	0.651
1,2,3-Trichlorobenzene	87-61-6	1.30	U	6.51	1.30	0.651
1,2,4-Trichlorobenzene	120-82-1	1.30	U	6.51	1.30	0.651
1,1,1-Trichloroethane	71-55-6	1.30	U	6.51	1.30	0.651
1,1,2-Trichloroethane	79-00-5	1.30	U	6.51	1.30	0.651
Trichloroethene	79-01-6	1.30	U	6.51	1.30	0.651
Trichlorofluoromethane	75-69-4	2.60	U	6.51	2.60	1.30
1,2,3-Trichloropropane	96-18-4	2.60	U	6.51	2.60	1.30
1,2,4-Trimethylbenzene	95-63-6	1.30	U	6.51	1.30	0.651
1,3,5-Trimethylbenzene	108-67-8	1.30	U	6.51	1.30	0.651
Vinyl chloride	75-01-4	2.60	U	6.51	2.60	1.30
o-Xylene	95-47-6	1.30	U	6.51	1.30	0.651
m-,p-Xylene	179601-23-1	1.30	U	6.51	1.30	0.651

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.7	80	120	
1,2-Dichloroethane-d4	112	80	120	
Toluene-d8	98.8	85	115	
4-Bromofluorobenzene	102	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030234-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT08(5-5.5)030316	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/04/2016 18:31
Collect Date:	03/03/2016 13:15	**Dilution:**	1	**File ID:**	1LM.LM33716
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.28	U	4.58	2.28	1.14

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030234-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT08(15-15.5)030316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:02
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559859	**Analyst:**	ADC	**Run Date:**	03/06/2016 22:01
Collect Date:	03/03/2016 13:49	**Dilution:**	1	**File ID:**	9M973111
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.9	U	25.9	12.9	6.46
Benzene	71-43-2	1.29	U	6.46	1.29	0.646
Bromobenzene	108-86-1	1.29	U	6.46	1.29	0.646
Bromochloromethane	74-97-5	2.58	U	6.46	2.58	1.29
Bromodichloromethane	75-27-4	1.29	U	6.46	1.29	0.646
Bromoform	75-25-2	1.29	U	6.46	1.29	0.646
Bromomethane	74-83-9	2.58	U	6.46	2.58	1.29
2-Butanone	78-93-3	6.46	U	12.9	6.46	3.23
n-Butylbenzene	104-51-8	1.29	U	6.46	1.29	0.646
sec-Butylbenzene	135-98-8	1.29	U	6.46	1.29	0.646
tert-Butylbenzene	98-06-6	1.29	U	6.46	1.29	0.646
Carbon disulfide	75-15-0	1.29	U	6.46	1.29	0.646
Carbon tetrachloride	56-23-5	1.29	U	6.46	1.29	0.646
Chlorobenzene	108-90-7	1.29	U	6.46	1.29	0.646
Chlorodibromomethane	124-48-1	1.29	U	6.46	1.29	0.646
Chloroethane	75-00-3	2.58	U	6.46	2.58	1.29
Chloroform	67-66-3	1.29	U	6.46	1.29	0.646
Chloromethane	74-87-3	5.18	U	12.9	5.18	2.59
2-Chlorotoluene	95-49-8	1.29	U	6.46	1.29	0.646
4-Chlorotoluene	106-43-4	1.29	U	6.46	1.29	0.646
1,2-Dibromo-3-chloropropane	96-12-8	5.18	U	12.9	5.18	2.59
1,2-Dibromoethane	106-93-4	1.29	U	6.46	1.29	0.646
Dibromomethane	74-95-3	1.29	U	6.46	1.29	0.646
1,2-Dichlorobenzene	95-50-1	1.29	U	6.46	1.29	0.646
1,3-Dichlorobenzene	541-73-1	1.29	U	6.46	1.29	0.646
1,4-Dichlorobenzene	106-46-7	1.29	U	6.46	1.29	0.646
Dichlorodifluoromethane	75-71-8	2.58	U	6.46	2.58	1.29
1,1-Dichloroethane	75-34-3	2.58	U	6.46	2.58	1.29
1,2-Dichloroethane	107-06-2	1.29	U	6.46	1.29	0.646
1,1-Dichloroethene	75-35-4	1.29	U	6.46	1.29	0.646
cis-1,2-Dichloroethene	156-59-2	1.29	U	6.46	1.29	0.646

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.29	U	6.46	1.29	0.646
1,2-Dichloropropane	78-87-5	1.29	U	6.46	1.29	0.646
1,3-Dichloropropane	142-28-9	1.29	U	6.46	1.29	0.646
2,2-Dichloropropane	594-20-7	1.29	U	6.46	1.29	0.646
cis-1,3-Dichloropropene	10061-01-5	1.29	U	6.46	1.29	0.646
trans-1,3-Dichloropropene	10061-02-6	1.29	U	6.46	1.29	0.646
1,1-Dichloropropene	563-58-6	1.29	U	6.46	1.29	0.646
Ethylbenzene	100-41-4	1.29	U	6.46	1.29	0.646
2-Hexanone	591-78-6	6.46	U	12.9	6.46	3.23
Hexachlorobutadiene	87-68-3	1.29	U	6.46	1.29	0.646
Isopropylbenzene	98-82-8	1.29	U	6.46	1.29	0.646
p-Isopropyltoluene	99-87-6	1.29	U	6.46	1.29	0.646
4-Methyl-2-pentanone	108-10-1	6.46	U	12.9	6.46	3.23
Methylene chloride	75-09-2	2.58	U	6.46	2.58	1.29
Naphthalene	91-20-3	1.29	U	6.46	1.29	0.646
n-Propylbenzene	103-65-1	1.29	U	6.46	1.29	0.646
Styrene	100-42-5	1.29	U	6.46	1.29	0.646
1,1,1,2-Tetrachloroethane	630-20-6	1.29	U	6.46	1.29	0.646
1,1,2,2-Tetrachloroethane	79-34-5	1.29	U	6.46	1.29	0.646
Tetrachloroethene	127-18-4	1.29	U	6.46	1.29	0.646
Toluene	108-88-3	1.29	U	6.46	1.29	0.646
1,2,3-Trichlorobenzene	87-61-6	1.29	U	6.46	1.29	0.646
1,2,4-Trichlorobenzene	120-82-1	1.29	U	6.46	1.29	0.646
1,1,1-Trichloroethane	71-55-6	1.29	U	6.46	1.29	0.646
1,1,2-Trichloroethane	79-00-5	1.29	U	6.46	1.29	0.646
Trichloroethene	79-01-6	1.29	U	6.46	1.29	0.646
Trichlorofluoromethane	75-69-4	2.58	U	6.46	2.58	1.29
1,2,3-Trichloropropane	96-18-4	2.58	U	6.46	2.58	1.29
1,2,4-Trimethylbenzene	95-63-6	1.29	U	6.46	1.29	0.646
1,3,5-Trimethylbenzene	108-67-8	1.29	U	6.46	1.29	0.646
Vinyl chloride	75-01-4	2.58	U	6.46	2.58	1.29
o-Xylene	95-47-6	1.29	U	6.46	1.29	0.646
m-,p-Xylene	179601-23-1	1.29	U	6.46	1.29	0.646

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.7	80	120	
1,2-Dichloroethane-d4	99.4	80	120	
Toluene-d8	98.3	85	115	
4-Bromofluorobenzene	104	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030234-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT08(15-15.5)030316	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/04/2016 18:50
Collect Date:	03/03/2016 13:49	**Dilution:**	1	**File ID:**	1LM.LM33717
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.34	U	4.68	2.34	1.17

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030234-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT08(10-10.5)030316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:03
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559859	**Analyst:**	ADC	**Run Date:**	03/06/2016 22:31
Collect Date:	03/03/2016 14:40	**Dilution:**	1	**File ID:**	9M973112
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.4	U	24.7	12.4	6.18
Benzene	71-43-2	1.24	U	6.18	1.24	0.618
Bromobenzene	108-86-1	1.24	U	6.18	1.24	0.618
Bromochloromethane	74-97-5	2.48	U	6.18	2.48	1.24
Bromodichloromethane	75-27-4	1.24	U	6.18	1.24	0.618
Bromoform	75-25-2	1.24	U	6.18	1.24	0.618
Bromomethane	74-83-9	2.48	U	6.18	2.48	1.24
2-Butanone	78-93-3	6.18	U	12.4	6.18	3.09
n-Butylbenzene	104-51-8	1.24	U	6.18	1.24	0.618
sec-Butylbenzene	135-98-8	1.24	U	6.18	1.24	0.618
tert-Butylbenzene	98-06-6	1.24	U	6.18	1.24	0.618
Carbon disulfide	75-15-0	1.24	U	6.18	1.24	0.618
Carbon tetrachloride	56-23-5	1.24	U	6.18	1.24	0.618
Chlorobenzene	108-90-7	1.24	U	6.18	1.24	0.618
Chlorodibromomethane	124-48-1	1.24	U	6.18	1.24	0.618
Chloroethane	75-00-3	2.48	U	6.18	2.48	1.24
Chloroform	67-66-3	1.24	U	6.18	1.24	0.618
Chloromethane	74-87-3	4.94	U	12.4	4.94	2.47
2-Chlorotoluene	95-49-8	1.24	U	6.18	1.24	0.618
4-Chlorotoluene	106-43-4	1.24	U	6.18	1.24	0.618
1,2-Dibromo-3-chloropropane	96-12-8	4.94	U	12.4	4.94	2.47
1,2-Dibromoethane	106-93-4	1.24	U	6.18	1.24	0.618
Dibromomethane	74-95-3	1.24	U	6.18	1.24	0.618
1,2-Dichlorobenzene	95-50-1	1.24	U	6.18	1.24	0.618
1,3-Dichlorobenzene	541-73-1	1.24	U	6.18	1.24	0.618
1,4-Dichlorobenzene	106-46-7	1.24	U	6.18	1.24	0.618
Dichlorodifluoromethane	75-71-8	2.48	U	6.18	2.48	1.24
1,1-Dichloroethane	75-34-3	2.48	U	6.18	2.48	1.24
1,2-Dichloroethane	107-06-2	1.24	U	6.18	1.24	0.618
1,1-Dichloroethene	75-35-4	1.24	U	6.18	1.24	0.618
cis-1,2-Dichloroethene	156-59-2	1.24	U	6.18	1.24	0.618

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.24	U	6.18	1.24	0.618
1,2-Dichloropropane	78-87-5	1.24	U	6.18	1.24	0.618
1,3-Dichloropropane	142-28-9	1.24	U	6.18	1.24	0.618
2,2-Dichloropropane	594-20-7	1.24	U	6.18	1.24	0.618
cis-1,3-Dichloropropene	10061-01-5	1.24	U	6.18	1.24	0.618
trans-1,3-Dichloropropene	10061-02-6	1.24	U	6.18	1.24	0.618
1,1-Dichloropropene	563-58-6	1.24	U	6.18	1.24	0.618
Ethylbenzene	100-41-4	1.24	U	6.18	1.24	0.618
2-Hexanone	591-78-6	6.18	U	12.4	6.18	3.09
Hexachlorobutadiene	87-68-3	1.24	U	6.18	1.24	0.618
Isopropylbenzene	98-82-8	1.24	U	6.18	1.24	0.618
p-Isopropyltoluene	99-87-6	1.24	U	6.18	1.24	0.618
4-Methyl-2-pentanone	108-10-1	6.18	U	12.4	6.18	3.09
Methylene chloride	75-09-2	2.48	U	6.18	2.48	1.24
Naphthalene	91-20-3	1.24	U	6.18	1.24	0.618
n-Propylbenzene	103-65-1	1.24	U	6.18	1.24	0.618
Styrene	100-42-5	1.24	U	6.18	1.24	0.618
1,1,1,2-Tetrachloroethane	630-20-6	1.24	U	6.18	1.24	0.618
1,1,2,2-Tetrachloroethane	79-34-5	1.24	U	6.18	1.24	0.618
Tetrachloroethene	127-18-4	1.24	U	6.18	1.24	0.618
Toluene	108-88-3	1.24	U	6.18	1.24	0.618
1,2,3-Trichlorobenzene	87-61-6	1.24	U	6.18	1.24	0.618
1,2,4-Trichlorobenzene	120-82-1	1.24	U	6.18	1.24	0.618
1,1,1-Trichloroethane	71-55-6	1.24	U	6.18	1.24	0.618
1,1,2-Trichloroethane	79-00-5	1.24	U	6.18	1.24	0.618
Trichloroethene	79-01-6	1.24	U	6.18	1.24	0.618
Trichlorofluoromethane	75-69-4	2.48	U	6.18	2.48	1.24
1,2,3-Trichloropropane	96-18-4	2.48	U	6.18	2.48	1.24
1,2,4-Trimethylbenzene	95-63-6	1.24	U	6.18	1.24	0.618
1,3,5-Trimethylbenzene	108-67-8	1.24	U	6.18	1.24	0.618
Vinyl chloride	75-01-4	2.48	U	6.18	2.48	1.24
o-Xylene	95-47-6	1.24	U	6.18	1.24	0.618
m-,p-Xylene	179601-23-1	1.24	U	6.18	1.24	0.618

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.7	80	120	
1,2-Dichloroethane-d4	100	80	120	
Toluene-d8	97.2	85	115	
4-Bromofluorobenzene	102	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030234-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT08(10-10.5)030316	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/04/2016 19:09
Collect Date:	03/03/2016 14:40	**Dilution:**	1	**File ID:**	1LM.LM33718
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.32	U	4.62	2.32	1.16

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030234-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT08(21-21.5)030316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:04
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559859	**Analyst:**	ADC	**Run Date:**	03/06/2016 23:01
Collect Date:	03/03/2016 14:50	**Dilution:**	1	**File ID:**	9M973113
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.1	U	26.3	13.1	6.57
Benzene	71-43-2	1.31	U	6.57	1.31	0.657
Bromobenzene	108-86-1	1.31	U	6.57	1.31	0.657
Bromochloromethane	74-97-5	2.62	U	6.57	2.62	1.31
Bromodichloromethane	75-27-4	1.31	U	6.57	1.31	0.657
Bromoform	75-25-2	1.31	U	6.57	1.31	0.657
Bromomethane	74-83-9	2.62	U	6.57	2.62	1.31
2-Butanone	78-93-3	6.58	U	13.1	6.58	3.29
n-Butylbenzene	104-51-8	1.31	U	6.57	1.31	0.657
sec-Butylbenzene	135-98-8	1.31	U	6.57	1.31	0.657
tert-Butylbenzene	98-06-6	1.31	U	6.57	1.31	0.657
Carbon disulfide	75-15-0	1.31	U	6.57	1.31	0.657
Carbon tetrachloride	56-23-5	1.31	U	6.57	1.31	0.657
Chlorobenzene	108-90-7	1.31	U	6.57	1.31	0.657
Chlorodibromomethane	124-48-1	1.31	U	6.57	1.31	0.657
Chloroethane	75-00-3	2.62	U	6.57	2.62	1.31
Chloroform	67-66-3	1.31	U	6.57	1.31	0.657
Chloromethane	74-87-3	5.26	U	13.1	5.26	2.63
2-Chlorotoluene	95-49-8	1.31	U	6.57	1.31	0.657
4-Chlorotoluene	106-43-4	1.31	U	6.57	1.31	0.657
1,2-Dibromo-3-chloropropane	96-12-8	5.26	U	13.1	5.26	2.63
1,2-Dibromoethane	106-93-4	1.31	U	6.57	1.31	0.657
Dibromomethane	74-95-3	1.31	U	6.57	1.31	0.657
1,2-Dichlorobenzene	95-50-1	1.31	U	6.57	1.31	0.657
1,3-Dichlorobenzene	541-73-1	1.31	U	6.57	1.31	0.657
1,4-Dichlorobenzene	106-46-7	1.31	U	6.57	1.31	0.657
Dichlorodifluoromethane	75-71-8	2.62	U	6.57	2.62	1.31
1,1-Dichloroethane	75-34-3	2.62	U	6.57	2.62	1.31
1,2-Dichloroethane	107-06-2	1.31	U	6.57	1.31	0.657
1,1-Dichloroethene	75-35-4	1.31	U	6.57	1.31	0.657
cis-1,2-Dichloroethene	156-59-2	1.31	U	6.57	1.31	0.657

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.31	U	6.57	1.31	0.657
1,2-Dichloropropane	78-87-5	1.31	U	6.57	1.31	0.657
1,3-Dichloropropane	142-28-9	1.31	U	6.57	1.31	0.657
2,2-Dichloropropane	594-20-7	1.31	U	6.57	1.31	0.657
cis-1,3-Dichloropropene	10061-01-5	1.31	U	6.57	1.31	0.657
trans-1,3-Dichloropropene	10061-02-6	1.31	U	6.57	1.31	0.657
1,1-Dichloropropene	563-58-6	1.31	U	6.57	1.31	0.657
Ethylbenzene	100-41-4	1.31	U	6.57	1.31	0.657
2-Hexanone	591-78-6	6.58	U	13.1	6.58	3.29
Hexachlorobutadiene	87-68-3	1.31	U	6.57	1.31	0.657
Isopropylbenzene	98-82-8	1.31	U	6.57	1.31	0.657
p-Isopropyltoluene	99-87-6	1.31	U	6.57	1.31	0.657
4-Methyl-2-pentanone	108-10-1	6.58	U	13.1	6.58	3.29
Methylene chloride	75-09-2	2.62	U	6.57	2.62	1.31
Naphthalene	91-20-3	1.31	U	6.57	1.31	0.657
n-Propylbenzene	103-65-1	1.31	U	6.57	1.31	0.657
Styrene	100-42-5	1.31	U	6.57	1.31	0.657
1,1,1,2-Tetrachloroethane	630-20-6	1.31	U	6.57	1.31	0.657
1,1,2,2-Tetrachloroethane	79-34-5	1.31	U	6.57	1.31	0.657
Tetrachloroethene	127-18-4	1.31	U	6.57	1.31	0.657
Toluene	108-88-3	1.31	U	6.57	1.31	0.657
1,2,3-Trichlorobenzene	87-61-6	1.31	U	6.57	1.31	0.657
1,2,4-Trichlorobenzene	120-82-1	1.31	U	6.57	1.31	0.657
1,1,1-Trichloroethane	71-55-6	1.31	U	6.57	1.31	0.657
1,1,2-Trichloroethane	79-00-5	1.31	U	6.57	1.31	0.657
Trichloroethene	79-01-6	1.31	U	6.57	1.31	0.657
Trichlorofluoromethane	75-69-4	2.62	U	6.57	2.62	1.31
1,2,3-Trichloropropane	96-18-4	2.62	U	6.57	2.62	1.31
1,2,4-Trimethylbenzene	95-63-6	1.31	U	6.57	1.31	0.657
1,3,5-Trimethylbenzene	108-67-8	1.31	U	6.57	1.31	0.657
Vinyl chloride	75-01-4	2.62	U	6.57	2.62	1.31
o-Xylene	95-47-6	1.31	U	6.57	1.31	0.657
m-,p-Xylene	179601-23-1	1.31	U	6.57	1.31	0.657

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.9	80	120	
1,2-Dichloroethane-d4	97.2	80	120	
Toluene-d8	98.6	85	115	
4-Bromofluorobenzene	102	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030234-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT08(21-21.5)030316	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/04/2016 19:28
Collect Date:	03/03/2016 14:50	**Dilution:**	1	**File ID:**	1LM.LM33719
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	18.9		4.67	2.34	1.17

Certificate of Analysis

Sample #:	L16030234-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT08(26-26.5)030316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/07/2016 10:14
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559982	**Analyst:**	ADC	**Run Date:**	03/07/2016 17:51
Collect Date:	03/03/2016 14:55	**Dilution:**	1	**File ID:**	9M973126
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	6.26	J	25.0	12.5	6.25
Benzene	71-43-2	1.25	U	6.25	1.25	0.625
Bromobenzene	108-86-1	1.25	U	6.25	1.25	0.625
Bromochloromethane	74-97-5	2.50	U	6.25	2.50	1.25
Bromodichloromethane	75-27-4	1.25	U	6.25	1.25	0.625
Bromoform	75-25-2	1.25	U	6.25	1.25	0.625
Bromomethane	74-83-9	2.50	U	6.25	2.50	1.25
2-Butanone	78-93-3	6.24	U	12.5	6.24	3.12
n-Butylbenzene	104-51-8	1.25	U	6.25	1.25	0.625
sec-Butylbenzene	135-98-8	1.25	U	6.25	1.25	0.625
tert-Butylbenzene	98-06-6	1.25	U	6.25	1.25	0.625
Carbon disulfide	75-15-0	1.25	U	6.25	1.25	0.625
Carbon tetrachloride	56-23-5	1.25	U	6.25	1.25	0.625
Chlorobenzene	108-90-7	1.25	U	6.25	1.25	0.625
Chlorodibromomethane	124-48-1	1.25	U	6.25	1.25	0.625
Chloroethane	75-00-3	2.50	U	6.25	2.50	1.25
Chloroform	67-66-3	1.25	U	6.25	1.25	0.625
Chloromethane	74-87-3	5.00	U	12.5	5.00	2.50
2-Chlorotoluene	95-49-8	1.25	U	6.25	1.25	0.625
4-Chlorotoluene	106-43-4	1.25	U	6.25	1.25	0.625

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	5.00	U	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	6.25	1.25	0.625
Dibromomethane	74-95-3	1.25	U	6.25	1.25	0.625
1,2-Dichlorobenzene	95-50-1	1.25	U	6.25	1.25	0.625
1,3-Dichlorobenzene	541-73-1	1.25	U	6.25	1.25	0.625
1,4-Dichlorobenzene	106-46-7	1.25	U	6.25	1.25	0.625
Dichlorodifluoromethane	75-71-8	2.50	U	6.25	2.50	1.25
1,1-Dichloroethane	75-34-3	2.50	U	6.25	2.50	1.25
1,2-Dichloroethane	107-06-2	1.25	U	6.25	1.25	0.625
1,1-Dichloroethene	75-35-4	1.25	U	6.25	1.25	0.625
cis-1,2-Dichloroethene	156-59-2	1.25	U	6.25	1.25	0.625
trans-1,2-Dichloroethene	156-60-5	1.25	U	6.25	1.25	0.625
1,2-Dichloropropane	78-87-5	1.25	U	6.25	1.25	0.625
1,3-Dichloropropane	142-28-9	1.25	U	6.25	1.25	0.625
2,2-Dichloropropane	594-20-7	1.25	U	6.25	1.25	0.625
cis-1,3-Dichloropropene	10061-01-5	1.25	U	6.25	1.25	0.625
trans-1,3-Dichloropropene	10061-02-6	1.25	U	6.25	1.25	0.625
1,1-Dichloropropene	563-58-6	1.25	U	6.25	1.25	0.625
Ethylbenzene	100-41-4	1.25	U	6.25	1.25	0.625
2-Hexanone	591-78-6	6.24	U	12.5	6.24	3.12
Hexachlorobutadiene	87-68-3	1.25	U	6.25	1.25	0.625
Isopropylbenzene	98-82-8	1.25	U	6.25	1.25	0.625
p-Isopropyltoluene	99-87-6	1.25	U	6.25	1.25	0.625
4-Methyl-2-pentanone	108-10-1	6.24	U	12.5	6.24	3.12
Methylene chloride	75-09-2	2.50	U	6.25	2.50	1.25
Naphthalene	91-20-3	1.25	U	6.25	1.25	0.625
n-Propylbenzene	103-65-1	1.25	U	6.25	1.25	0.625
Styrene	100-42-5	1.25	U	6.25	1.25	0.625
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	6.25	1.25	0.625
1,1,2,2-Tetrachloroethane	79-34-5	1.25	U	6.25	1.25	0.625
Tetrachloroethene	127-18-4	1.25	U	6.25	1.25	0.625
Toluene	108-88-3	1.25	U	6.25	1.25	0.625
1,2,3-Trichlorobenzene	87-61-6	1.25	U	6.25	1.25	0.625
1,2,4-Trichlorobenzene	120-82-1	1.25	U	6.25	1.25	0.625
1,1,1-Trichloroethane	71-55-6	1.25	U	6.25	1.25	0.625
1,1,2-Trichloroethane	79-00-5	1.25	U	6.25	1.25	0.625
Trichloroethene	79-01-6	1.25	U	6.25	1.25	0.625
Trichlorofluoromethane	75-69-4	2.50	U	6.25	2.50	1.25
1,2,3-Trichloropropane	96-18-4	2.50	U	6.25	2.50	1.25

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.25	U	6.25	1.25	0.625
1,3,5-Trimethylbenzene	108-67-8	1.25	U	6.25	1.25	0.625
Vinyl chloride	75-01-4	2.50	U	6.25	2.50	1.25
o-Xylene	95-47-6	1.25	U	6.25	1.25	0.625
m-,p-Xylene	179601-23-1	1.25	U	6.25	1.25	0.625

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.5	80	120	
1,2-Dichloroethane-d4	98.0	80	120	
Toluene-d8	97.7	85	115	
4-Bromofluorobenzene	101	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030234-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT08(26-26.5)030316	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/04/2016 19:47
Collect Date:	03/03/2016 14:55	**Dilution:**	1	**File ID:**	1LM.LM33720
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	31.3		4.85	2.42	1.21

Certificate of Analysis

Sample #:	L16030234-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT08(35-35.5)030316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:05
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559859	**Analyst:**	ADC	**Run Date:**	03/07/2016 00:02
Collect Date:	03/03/2016 15:05	**Dilution:**	1	**File ID:**	9M973115
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.4	U	24.8	12.4	6.20
Benzene	71-43-2	1.24	U	6.20	1.24	0.620
Bromobenzene	108-86-1	1.24	U	6.20	1.24	0.620
Bromochloromethane	74-97-5	2.48	U	6.20	2.48	1.24
Bromodichloromethane	75-27-4	1.24	U	6.20	1.24	0.620
Bromoform	75-25-2	1.24	U	6.20	1.24	0.620
Bromomethane	74-83-9	2.48	U	6.20	2.48	1.24
2-Butanone	78-93-3	6.20	U	12.4	6.20	3.10
n-Butylbenzene	104-51-8	1.24	U	6.20	1.24	0.620
sec-Butylbenzene	135-98-8	1.24	U	6.20	1.24	0.620
tert-Butylbenzene	98-06-6	1.24	U	6.20	1.24	0.620
Carbon disulfide	75-15-0	1.24	U	6.20	1.24	0.620
Carbon tetrachloride	56-23-5	1.24	U	6.20	1.24	0.620
Chlorobenzene	108-90-7	1.24	U	6.20	1.24	0.620
Chlorodibromomethane	124-48-1	1.24	U	6.20	1.24	0.620
Chloroethane	75-00-3	2.48	U	6.20	2.48	1.24
Chloroform	67-66-3	1.24	U	6.20	1.24	0.620
Chloromethane	74-87-3	4.96	U	12.4	4.96	2.48
2-Chlorotoluene	95-49-8	1.24	U	6.20	1.24	0.620
4-Chlorotoluene	106-43-4	1.24	U	6.20	1.24	0.620

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	4.96	U	12.4	4.96	2.48
1,2-Dibromoethane	106-93-4	1.24	U	6.20	1.24	0.620
Dibromomethane	74-95-3	1.24	U	6.20	1.24	0.620
1,2-Dichlorobenzene	95-50-1	1.24	U	6.20	1.24	0.620
1,3-Dichlorobenzene	541-73-1	1.24	U	6.20	1.24	0.620
1,4-Dichlorobenzene	106-46-7	1.24	U	6.20	1.24	0.620
Dichlorodifluoromethane	75-71-8	2.48	U	6.20	2.48	1.24
1,1-Dichloroethane	75-34-3	2.48	U	6.20	2.48	1.24
1,2-Dichloroethane	107-06-2	1.24	U	6.20	1.24	0.620
1,1-Dichloroethene	75-35-4	1.24	U	6.20	1.24	0.620
cis-1,2-Dichloroethene	156-59-2	1.24	U	6.20	1.24	0.620
trans-1,2-Dichloroethene	156-60-5	1.24	U	6.20	1.24	0.620
1,2-Dichloropropane	78-87-5	1.24	U	6.20	1.24	0.620
1,3-Dichloropropane	142-28-9	1.24	U	6.20	1.24	0.620
2,2-Dichloropropane	594-20-7	1.24	U	6.20	1.24	0.620
cis-1,3-Dichloropropene	10061-01-5	1.24	U	6.20	1.24	0.620
trans-1,3-Dichloropropene	10061-02-6	1.24	U	6.20	1.24	0.620
1,1-Dichloropropene	563-58-6	1.24	U	6.20	1.24	0.620
Ethylbenzene	100-41-4	1.24	U	6.20	1.24	0.620
2-Hexanone	591-78-6	6.20	U	12.4	6.20	3.10
Hexachlorobutadiene	87-68-3	1.24	U	6.20	1.24	0.620
Isopropylbenzene	98-82-8	1.24	U	6.20	1.24	0.620
p-Isopropyltoluene	99-87-6	1.24	U	6.20	1.24	0.620
4-Methyl-2-pentanone	108-10-1	6.20	U	12.4	6.20	3.10
Methylene chloride	75-09-2	2.48	U	6.20	2.48	1.24
Naphthalene	91-20-3	1.24	U	6.20	1.24	0.620
n-Propylbenzene	103-65-1	1.24	U	6.20	1.24	0.620
Styrene	100-42-5	1.24	U	6.20	1.24	0.620
1,1,1,2-Tetrachloroethane	630-20-6	1.24	U	6.20	1.24	0.620
1,1,2,2-Tetrachloroethane	79-34-5	1.24	U	6.20	1.24	0.620
Tetrachloroethene	127-18-4	1.24	U	6.20	1.24	0.620
Toluene	108-88-3	1.24	U	6.20	1.24	0.620
1,2,3-Trichlorobenzene	87-61-6	1.24	U	6.20	1.24	0.620
1,2,4-Trichlorobenzene	120-82-1	1.24	U	6.20	1.24	0.620
1,1,1-Trichloroethane	71-55-6	1.24	U	6.20	1.24	0.620
1,1,2-Trichloroethane	79-00-5	1.24	U	6.20	1.24	0.620
Trichloroethene	79-01-6	1.24	U	6.20	1.24	0.620
Trichlorofluoromethane	75-69-4	2.48	U	6.20	2.48	1.24
1,2,3-Trichloropropane	96-18-4	2.48	U	6.20	2.48	1.24

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Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.24	U	6.20	1.24	0.620
1,3,5-Trimethylbenzene	108-67-8	1.24	U	6.20	1.24	0.620
Vinyl chloride	75-01-4	2.48	U	6.20	2.48	1.24
o-Xylene	95-47-6	1.24	U	6.20	1.24	0.620
m-,p-Xylene	179601-23-1	1.24	U	6.20	1.24	0.620

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.0	80	120	
1,2-Dichloroethane-d4	98.6	80	120	
Toluene-d8	98.2	85	115	
4-Bromofluorobenzene	101	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030234-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT08(35-35.5)030316	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/04/2016 20:06
Collect Date:	03/03/2016 15:05	**Dilution:**	1	**File ID:**	1LM.LM33721
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	4.62	J	4.79	2.40	1.20

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #: L16030234-01 **Client ID:** 18DPT08(5-5.5)030316 **Matrix:** Soil **Collect Date:** 03/03/2016 13:15

Analyte	Result	Units	Qualifier
Percent Solids	83.4	weight %	

Sample #: L16030234-02 **Client ID:** 18DPT08(15-15.5)030316 **Matrix:** Soil **Collect Date:** 03/03/2016 13:49

Analyte	Result	Units	Qualifier
Percent Solids	81.8	weight %	

Sample #: L16030234-03 **Client ID:** 18DPT08(10-10.5)030316 **Matrix:** Soil **Collect Date:** 03/03/2016 14:40

Analyte	Result	Units	Qualifier
Percent Solids	84.4	weight %	

Sample #: L16030234-04 **Client ID:** 18DPT08(21-21.5)030316 **Matrix:** Soil **Collect Date:** 03/03/2016 14:50

Analyte	Result	Units	Qualifier
Percent Solids	83.4	weight %	

Sample #: L16030234-05 **Client ID:** 18DPT08(26-26.5)030316 **Matrix:** Soil **Collect Date:** 03/03/2016 14:55

Analyte	Result	Units	Qualifier
Percent Solids	82.0	weight %	

Sample #: L16030234-06 **Client ID:** 18DPT08(35-35.5)030316 **Matrix:** Soil **Collect Date:** 03/03/2016 15:05

Analyte	Result	Units	Qualifier
Percent Solids	80.1	weight %	

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030234-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT08(5-5.5)030316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:01
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559859	**Analyst:**	ADC	**Run Date:**	03/06/2016 21:31
Collect Date:	03/03/2016 13:15	**Dilution:**	1	**File ID:**	9M973110
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.0	U	26.0	13.0	6.51
Benzene	71-43-2	1.30	U	6.51	1.30	0.651
Bromobenzene	108-86-1	1.30	U	6.51	1.30	0.651
Bromochloromethane	74-97-5	2.60	U	6.51	2.60	1.30
Bromodichloromethane	75-27-4	1.30	U	6.51	1.30	0.651
Bromoform	75-25-2	1.30	U	6.51	1.30	0.651
Bromomethane	74-83-9	2.60	U	6.51	2.60	1.30
2-Butanone	78-93-3	6.50	U	13.0	6.50	3.25
n-Butylbenzene	104-51-8	1.30	U	6.51	1.30	0.651
sec-Butylbenzene	135-98-8	1.30	U	6.51	1.30	0.651
tert-Butylbenzene	98-06-6	1.30	U	6.51	1.30	0.651
Carbon disulfide	75-15-0	1.30	U	6.51	1.30	0.651
Carbon tetrachloride	56-23-5	1.30	U	6.51	1.30	0.651
Chlorobenzene	108-90-7	1.30	U	6.51	1.30	0.651
Chlorodibromomethane	124-48-1	1.30	U	6.51	1.30	0.651
Chloroethane	75-00-3	2.60	U	6.51	2.60	1.30
Chloroform	67-66-3	1.30	U	6.51	1.30	0.651
Chloromethane	74-87-3	5.20	U	13.0	5.20	2.60
2-Chlorotoluene	95-49-8	1.30	U	6.51	1.30	0.651
4-Chlorotoluene	106-43-4	1.30	U	6.51	1.30	0.651
1,2-Dibromo-3-chloropropane	96-12-8	5.20	U	13.0	5.20	2.60
1,2-Dibromoethane	106-93-4	1.30	U	6.51	1.30	0.651
Dibromomethane	74-95-3	1.30	U	6.51	1.30	0.651
1,2-Dichlorobenzene	95-50-1	1.30	U	6.51	1.30	0.651
1,3-Dichlorobenzene	541-73-1	1.30	U	6.51	1.30	0.651
1,4-Dichlorobenzene	106-46-7	1.30	U	6.51	1.30	0.651
Dichlorodifluoromethane	75-71-8	2.60	U	6.51	2.60	1.30
1,1-Dichloroethane	75-34-3	2.60	U	6.51	2.60	1.30
1,2-Dichloroethane	107-06-2	1.30	U	6.51	1.30	0.651
1,1-Dichloroethene	75-35-4	1.30	U	6.51	1.30	0.651
cis-1,2-Dichloroethene	156-59-2	1.30	U	6.51	1.30	0.651
trans-1,2-Dichloroethene	156-60-5	1.30	U	6.51	1.30	0.651

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Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.30	U	6.51	1.30	0.651
1,3-Dichloropropane	142-28-9	1.30	U	6.51	1.30	0.651
2,2-Dichloropropane	594-20-7	1.30	U	6.51	1.30	0.651
cis-1,3-Dichloropropene	10061-01-5	1.30	U	6.51	1.30	0.651
trans-1,3-Dichloropropene	10061-02-6	1.30	U	6.51	1.30	0.651
1,1-Dichloropropene	563-58-6	1.30	U	6.51	1.30	0.651
Ethylbenzene	100-41-4	1.30	U	6.51	1.30	0.651
2-Hexanone	591-78-6	6.50	U	13.0	6.50	3.25
Hexachlorobutadiene	87-68-3	1.30	U	6.51	1.30	0.651
Isopropylbenzene	98-82-8	1.30	U	6.51	1.30	0.651
p-Isopropyltoluene	99-87-6	1.30	U	6.51	1.30	0.651
4-Methyl-2-pentanone	108-10-1	6.50	U	13.0	6.50	3.25
Methylene chloride	75-09-2	2.60	U	6.51	2.60	1.30
Naphthalene	91-20-3	1.30	U	6.51	1.30	0.651
n-Propylbenzene	103-65-1	1.30	U	6.51	1.30	0.651
Styrene	100-42-5	1.30	U	6.51	1.30	0.651
1,1,1,2-Tetrachloroethane	630-20-6	1.30	U	6.51	1.30	0.651
1,1,2,2-Tetrachloroethane	79-34-5	1.30	U	6.51	1.30	0.651
Tetrachloroethene	127-18-4	1.30	U	6.51	1.30	0.651
Toluene	108-88-3	1.30	U	6.51	1.30	0.651
1,2,3-Trichlorobenzene	87-61-6	1.30	U	6.51	1.30	0.651
1,2,4-Trichlorobenzene	120-82-1	1.30	U	6.51	1.30	0.651
1,1,1-Trichloroethane	71-55-6	1.30	U	6.51	1.30	0.651
1,1,2-Trichloroethane	79-00-5	1.30	U	6.51	1.30	0.651
Trichloroethene	79-01-6	1.30	U	6.51	1.30	0.651
Trichlorofluoromethane	75-69-4	2.60	U	6.51	2.60	1.30
1,2,3-Trichloropropane	96-18-4	2.60	U	6.51	2.60	1.30
1,2,4-Trimethylbenzene	95-63-6	1.30	U	6.51	1.30	0.651
1,3,5-Trimethylbenzene	108-67-8	1.30	U	6.51	1.30	0.651
Vinyl chloride	75-01-4	2.60	U	6.51	2.60	1.30
o-Xylene	95-47-6	1.30	U	6.51	1.30	0.651
m-,p-Xylene	179601-23-1	1.30	U	6.51	1.30	0.651

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.7	80	120	
1,2-Dichloroethane-d4	112	80	120	
Toluene-d8	98.8	85	115	
4-Bromofluorobenzene	102	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030234-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT08(15-15.5)030316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:02
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559859	**Analyst:**	ADC	**Run Date:**	03/06/2016 22:01
Collect Date:	03/03/2016 13:49	**Dilution:**	1	**File ID:**	9M973111
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.9	U	25.9	12.9	6.46
Benzene	71-43-2	1.29	U	6.46	1.29	0.646
Bromobenzene	108-86-1	1.29	U	6.46	1.29	0.646
Bromochloromethane	74-97-5	2.58	U	6.46	2.58	1.29
Bromodichloromethane	75-27-4	1.29	U	6.46	1.29	0.646
Bromoform	75-25-2	1.29	U	6.46	1.29	0.646
Bromomethane	74-83-9	2.58	U	6.46	2.58	1.29
2-Butanone	78-93-3	6.46	U	12.9	6.46	3.23
n-Butylbenzene	104-51-8	1.29	U	6.46	1.29	0.646
sec-Butylbenzene	135-98-8	1.29	U	6.46	1.29	0.646
tert-Butylbenzene	98-06-6	1.29	U	6.46	1.29	0.646
Carbon disulfide	75-15-0	1.29	U	6.46	1.29	0.646
Carbon tetrachloride	56-23-5	1.29	U	6.46	1.29	0.646
Chlorobenzene	108-90-7	1.29	U	6.46	1.29	0.646
Chlorodibromomethane	124-48-1	1.29	U	6.46	1.29	0.646
Chloroethane	75-00-3	2.58	U	6.46	2.58	1.29
Chloroform	67-66-3	1.29	U	6.46	1.29	0.646
Chloromethane	74-87-3	5.18	U	12.9	5.18	2.59
2-Chlorotoluene	95-49-8	1.29	U	6.46	1.29	0.646
4-Chlorotoluene	106-43-4	1.29	U	6.46	1.29	0.646
1,2-Dibromo-3-chloropropane	96-12-8	5.18	U	12.9	5.18	2.59
1,2-Dibromoethane	106-93-4	1.29	U	6.46	1.29	0.646
Dibromomethane	74-95-3	1.29	U	6.46	1.29	0.646
1,2-Dichlorobenzene	95-50-1	1.29	U	6.46	1.29	0.646
1,3-Dichlorobenzene	541-73-1	1.29	U	6.46	1.29	0.646
1,4-Dichlorobenzene	106-46-7	1.29	U	6.46	1.29	0.646
Dichlorodifluoromethane	75-71-8	2.58	U	6.46	2.58	1.29
1,1-Dichloroethane	75-34-3	2.58	U	6.46	2.58	1.29
1,2-Dichloroethane	107-06-2	1.29	U	6.46	1.29	0.646
1,1-Dichloroethene	75-35-4	1.29	U	6.46	1.29	0.646
cis-1,2-Dichloroethene	156-59-2	1.29	U	6.46	1.29	0.646

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.29	U	6.46	1.29	0.646
1,2-Dichloropropane	78-87-5	1.29	U	6.46	1.29	0.646
1,3-Dichloropropane	142-28-9	1.29	U	6.46	1.29	0.646
2,2-Dichloropropane	594-20-7	1.29	U	6.46	1.29	0.646
cis-1,3-Dichloropropene	10061-01-5	1.29	U	6.46	1.29	0.646
trans-1,3-Dichloropropene	10061-02-6	1.29	U	6.46	1.29	0.646
1,1-Dichloropropene	563-58-6	1.29	U	6.46	1.29	0.646
Ethylbenzene	100-41-4	1.29	U	6.46	1.29	0.646
2-Hexanone	591-78-6	6.46	U	12.9	6.46	3.23
Hexachlorobutadiene	87-68-3	1.29	U	6.46	1.29	0.646
Isopropylbenzene	98-82-8	1.29	U	6.46	1.29	0.646
p-Isopropyltoluene	99-87-6	1.29	U	6.46	1.29	0.646
4-Methyl-2-pentanone	108-10-1	6.46	U	12.9	6.46	3.23
Methylene chloride	75-09-2	2.58	U	6.46	2.58	1.29
Naphthalene	91-20-3	1.29	U	6.46	1.29	0.646
n-Propylbenzene	103-65-1	1.29	U	6.46	1.29	0.646
Styrene	100-42-5	1.29	U	6.46	1.29	0.646
1,1,1,2-Tetrachloroethane	630-20-6	1.29	U	6.46	1.29	0.646
1,1,2,2-Tetrachloroethane	79-34-5	1.29	U	6.46	1.29	0.646
Tetrachloroethene	127-18-4	1.29	U	6.46	1.29	0.646
Toluene	108-88-3	1.29	U	6.46	1.29	0.646
1,2,3-Trichlorobenzene	87-61-6	1.29	U	6.46	1.29	0.646
1,2,4-Trichlorobenzene	120-82-1	1.29	U	6.46	1.29	0.646
1,1,1-Trichloroethane	71-55-6	1.29	U	6.46	1.29	0.646
1,1,2-Trichloroethane	79-00-5	1.29	U	6.46	1.29	0.646
Trichloroethene	79-01-6	1.29	U	6.46	1.29	0.646
Trichlorofluoromethane	75-69-4	2.58	U	6.46	2.58	1.29
1,2,3-Trichloropropane	96-18-4	2.58	U	6.46	2.58	1.29
1,2,4-Trimethylbenzene	95-63-6	1.29	U	6.46	1.29	0.646
1,3,5-Trimethylbenzene	108-67-8	1.29	U	6.46	1.29	0.646
Vinyl chloride	75-01-4	2.58	U	6.46	2.58	1.29
o-Xylene	95-47-6	1.29	U	6.46	1.29	0.646
m-,p-Xylene	179601-23-1	1.29	U	6.46	1.29	0.646

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.7	80	120	
1,2-Dichloroethane-d4	99.4	80	120	
Toluene-d8	98.3	85	115	
4-Bromofluorobenzene	104	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030234-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT08(10-10.5)030316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:03
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559859	**Analyst:**	ADC	**Run Date:**	03/06/2016 22:31
Collect Date:	03/03/2016 14:40	**Dilution:**	1	**File ID:**	9M973112
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.4	U	24.7	12.4	6.18
Benzene	71-43-2	1.24	U	6.18	1.24	0.618
Bromobenzene	108-86-1	1.24	U	6.18	1.24	0.618
Bromochloromethane	74-97-5	2.48	U	6.18	2.48	1.24
Bromodichloromethane	75-27-4	1.24	U	6.18	1.24	0.618
Bromoform	75-25-2	1.24	U	6.18	1.24	0.618
Bromomethane	74-83-9	2.48	U	6.18	2.48	1.24
2-Butanone	78-93-3	6.18	U	12.4	6.18	3.09
n-Butylbenzene	104-51-8	1.24	U	6.18	1.24	0.618
sec-Butylbenzene	135-98-8	1.24	U	6.18	1.24	0.618
tert-Butylbenzene	98-06-6	1.24	U	6.18	1.24	0.618
Carbon disulfide	75-15-0	1.24	U	6.18	1.24	0.618
Carbon tetrachloride	56-23-5	1.24	U	6.18	1.24	0.618
Chlorobenzene	108-90-7	1.24	U	6.18	1.24	0.618
Chlorodibromomethane	124-48-1	1.24	U	6.18	1.24	0.618
Chloroethane	75-00-3	2.48	U	6.18	2.48	1.24
Chloroform	67-66-3	1.24	U	6.18	1.24	0.618
Chloromethane	74-87-3	4.94	U	12.4	4.94	2.47
2-Chlorotoluene	95-49-8	1.24	U	6.18	1.24	0.618
4-Chlorotoluene	106-43-4	1.24	U	6.18	1.24	0.618
1,2-Dibromo-3-chloropropane	96-12-8	4.94	U	12.4	4.94	2.47
1,2-Dibromoethane	106-93-4	1.24	U	6.18	1.24	0.618
Dibromomethane	74-95-3	1.24	U	6.18	1.24	0.618
1,2-Dichlorobenzene	95-50-1	1.24	U	6.18	1.24	0.618
1,3-Dichlorobenzene	541-73-1	1.24	U	6.18	1.24	0.618
1,4-Dichlorobenzene	106-46-7	1.24	U	6.18	1.24	0.618
Dichlorodifluoromethane	75-71-8	2.48	U	6.18	2.48	1.24
1,1-Dichloroethane	75-34-3	2.48	U	6.18	2.48	1.24
1,2-Dichloroethane	107-06-2	1.24	U	6.18	1.24	0.618
1,1-Dichloroethene	75-35-4	1.24	U	6.18	1.24	0.618
cis-1,2-Dichloroethene	156-59-2	1.24	U	6.18	1.24	0.618

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.24	U	6.18	1.24	0.618
1,2-Dichloropropane	78-87-5	1.24	U	6.18	1.24	0.618
1,3-Dichloropropane	142-28-9	1.24	U	6.18	1.24	0.618
2,2-Dichloropropane	594-20-7	1.24	U	6.18	1.24	0.618
cis-1,3-Dichloropropene	10061-01-5	1.24	U	6.18	1.24	0.618
trans-1,3-Dichloropropene	10061-02-6	1.24	U	6.18	1.24	0.618
1,1-Dichloropropene	563-58-6	1.24	U	6.18	1.24	0.618
Ethylbenzene	100-41-4	1.24	U	6.18	1.24	0.618
2-Hexanone	591-78-6	6.18	U	12.4	6.18	3.09
Hexachlorobutadiene	87-68-3	1.24	U	6.18	1.24	0.618
Isopropylbenzene	98-82-8	1.24	U	6.18	1.24	0.618
p-Isopropyltoluene	99-87-6	1.24	U	6.18	1.24	0.618
4-Methyl-2-pentanone	108-10-1	6.18	U	12.4	6.18	3.09
Methylene chloride	75-09-2	2.48	U	6.18	2.48	1.24
Naphthalene	91-20-3	1.24	U	6.18	1.24	0.618
n-Propylbenzene	103-65-1	1.24	U	6.18	1.24	0.618
Styrene	100-42-5	1.24	U	6.18	1.24	0.618
1,1,1,2-Tetrachloroethane	630-20-6	1.24	U	6.18	1.24	0.618
1,1,2,2-Tetrachloroethane	79-34-5	1.24	U	6.18	1.24	0.618
Tetrachloroethene	127-18-4	1.24	U	6.18	1.24	0.618
Toluene	108-88-3	1.24	U	6.18	1.24	0.618
1,2,3-Trichlorobenzene	87-61-6	1.24	U	6.18	1.24	0.618
1,2,4-Trichlorobenzene	120-82-1	1.24	U	6.18	1.24	0.618
1,1,1-Trichloroethane	71-55-6	1.24	U	6.18	1.24	0.618
1,1,2-Trichloroethane	79-00-5	1.24	U	6.18	1.24	0.618
Trichloroethene	79-01-6	1.24	U	6.18	1.24	0.618
Trichlorofluoromethane	75-69-4	2.48	U	6.18	2.48	1.24
1,2,3-Trichloropropane	96-18-4	2.48	U	6.18	2.48	1.24
1,2,4-Trimethylbenzene	95-63-6	1.24	U	6.18	1.24	0.618
1,3,5-Trimethylbenzene	108-67-8	1.24	U	6.18	1.24	0.618
Vinyl chloride	75-01-4	2.48	U	6.18	2.48	1.24
o-Xylene	95-47-6	1.24	U	6.18	1.24	0.618
m-,p-Xylene	179601-23-1	1.24	U	6.18	1.24	0.618

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.7	80	120	
1,2-Dichloroethane-d4	100	80	120	
Toluene-d8	97.2	85	115	
4-Bromofluorobenzene	102	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030234-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT08(21-21.5)030316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:04
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559859	**Analyst:**	ADC	**Run Date:**	03/06/2016 23:01
Collect Date:	03/03/2016 14:50	**Dilution:**	1	**File ID:**	9M973113
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.1	U	26.3	13.1	6.57
Benzene	71-43-2	1.31	U	6.57	1.31	0.657
Bromobenzene	108-86-1	1.31	U	6.57	1.31	0.657
Bromochloromethane	74-97-5	2.62	U	6.57	2.62	1.31
Bromodichloromethane	75-27-4	1.31	U	6.57	1.31	0.657
Bromoform	75-25-2	1.31	U	6.57	1.31	0.657
Bromomethane	74-83-9	2.62	U	6.57	2.62	1.31
2-Butanone	78-93-3	6.58	U	13.1	6.58	3.29
n-Butylbenzene	104-51-8	1.31	U	6.57	1.31	0.657
sec-Butylbenzene	135-98-8	1.31	U	6.57	1.31	0.657
tert-Butylbenzene	98-06-6	1.31	U	6.57	1.31	0.657
Carbon disulfide	75-15-0	1.31	U	6.57	1.31	0.657
Carbon tetrachloride	56-23-5	1.31	U	6.57	1.31	0.657
Chlorobenzene	108-90-7	1.31	U	6.57	1.31	0.657
Chlorodibromomethane	124-48-1	1.31	U	6.57	1.31	0.657
Chloroethane	75-00-3	2.62	U	6.57	2.62	1.31
Chloroform	67-66-3	1.31	U	6.57	1.31	0.657
Chloromethane	74-87-3	5.26	U	13.1	5.26	2.63
2-Chlorotoluene	95-49-8	1.31	U	6.57	1.31	0.657
4-Chlorotoluene	106-43-4	1.31	U	6.57	1.31	0.657
1,2-Dibromo-3-chloropropane	96-12-8	5.26	U	13.1	5.26	2.63
1,2-Dibromoethane	106-93-4	1.31	U	6.57	1.31	0.657
Dibromomethane	74-95-3	1.31	U	6.57	1.31	0.657
1,2-Dichlorobenzene	95-50-1	1.31	U	6.57	1.31	0.657
1,3-Dichlorobenzene	541-73-1	1.31	U	6.57	1.31	0.657
1,4-Dichlorobenzene	106-46-7	1.31	U	6.57	1.31	0.657
Dichlorodifluoromethane	75-71-8	2.62	U	6.57	2.62	1.31
1,1-Dichloroethane	75-34-3	2.62	U	6.57	2.62	1.31
1,2-Dichloroethane	107-06-2	1.31	U	6.57	1.31	0.657
1,1-Dichloroethene	75-35-4	1.31	U	6.57	1.31	0.657
cis-1,2-Dichloroethene	156-59-2	1.31	U	6.57	1.31	0.657

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.31	U	6.57	1.31	0.657
1,2-Dichloropropane	78-87-5	1.31	U	6.57	1.31	0.657
1,3-Dichloropropane	142-28-9	1.31	U	6.57	1.31	0.657
2,2-Dichloropropane	594-20-7	1.31	U	6.57	1.31	0.657
cis-1,3-Dichloropropene	10061-01-5	1.31	U	6.57	1.31	0.657
trans-1,3-Dichloropropene	10061-02-6	1.31	U	6.57	1.31	0.657
1,1-Dichloropropene	563-58-6	1.31	U	6.57	1.31	0.657
Ethylbenzene	100-41-4	1.31	U	6.57	1.31	0.657
2-Hexanone	591-78-6	6.58	U	13.1	6.58	3.29
Hexachlorobutadiene	87-68-3	1.31	U	6.57	1.31	0.657
Isopropylbenzene	98-82-8	1.31	U	6.57	1.31	0.657
p-Isopropyltoluene	99-87-6	1.31	U	6.57	1.31	0.657
4-Methyl-2-pentanone	108-10-1	6.58	U	13.1	6.58	3.29
Methylene chloride	75-09-2	2.62	U	6.57	2.62	1.31
Naphthalene	91-20-3	1.31	U	6.57	1.31	0.657
n-Propylbenzene	103-65-1	1.31	U	6.57	1.31	0.657
Styrene	100-42-5	1.31	U	6.57	1.31	0.657
1,1,1,2-Tetrachloroethane	630-20-6	1.31	U	6.57	1.31	0.657
1,1,2,2-Tetrachloroethane	79-34-5	1.31	U	6.57	1.31	0.657
Tetrachloroethene	127-18-4	1.31	U	6.57	1.31	0.657
Toluene	108-88-3	1.31	U	6.57	1.31	0.657
1,2,3-Trichlorobenzene	87-61-6	1.31	U	6.57	1.31	0.657
1,2,4-Trichlorobenzene	120-82-1	1.31	U	6.57	1.31	0.657
1,1,1-Trichloroethane	71-55-6	1.31	U	6.57	1.31	0.657
1,1,2-Trichloroethane	79-00-5	1.31	U	6.57	1.31	0.657
Trichloroethene	79-01-6	1.31	U	6.57	1.31	0.657
Trichlorofluoromethane	75-69-4	2.62	U	6.57	2.62	1.31
1,2,3-Trichloropropane	96-18-4	2.62	U	6.57	2.62	1.31
1,2,4-Trimethylbenzene	95-63-6	1.31	U	6.57	1.31	0.657
1,3,5-Trimethylbenzene	108-67-8	1.31	U	6.57	1.31	0.657
Vinyl chloride	75-01-4	2.62	U	6.57	2.62	1.31
o-Xylene	95-47-6	1.31	U	6.57	1.31	0.657
m-,p-Xylene	179601-23-1	1.31	U	6.57	1.31	0.657

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.9	80	120	
1,2-Dichloroethane-d4	97.2	80	120	
Toluene-d8	98.6	85	115	
4-Bromofluorobenzene	102	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030234-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT08(26-26.5)030316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/07/2016 10:14
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559982	**Analyst:**	ADC	**Run Date:**	03/07/2016 17:51
Collect Date:	03/03/2016 14:55	**Dilution:**	1	**File ID:**	9M973126
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	6.26	J	25.0	12.5	6.25
Benzene	71-43-2	1.25	U	6.25	1.25	0.625
Bromobenzene	108-86-1	1.25	U	6.25	1.25	0.625
Bromochloromethane	74-97-5	2.50	U	6.25	2.50	1.25
Bromodichloromethane	75-27-4	1.25	U	6.25	1.25	0.625
Bromoform	75-25-2	1.25	U	6.25	1.25	0.625
Bromomethane	74-83-9	2.50	U	6.25	2.50	1.25
2-Butanone	78-93-3	6.24	U	12.5	6.24	3.12
n-Butylbenzene	104-51-8	1.25	U	6.25	1.25	0.625
sec-Butylbenzene	135-98-8	1.25	U	6.25	1.25	0.625
tert-Butylbenzene	98-06-6	1.25	U	6.25	1.25	0.625
Carbon disulfide	75-15-0	1.25	U	6.25	1.25	0.625
Carbon tetrachloride	56-23-5	1.25	U	6.25	1.25	0.625
Chlorobenzene	108-90-7	1.25	U	6.25	1.25	0.625
Chlorodibromomethane	124-48-1	1.25	U	6.25	1.25	0.625
Chloroethane	75-00-3	2.50	U	6.25	2.50	1.25
Chloroform	67-66-3	1.25	U	6.25	1.25	0.625
Chloromethane	74-87-3	5.00	U	12.5	5.00	2.50
2-Chlorotoluene	95-49-8	1.25	U	6.25	1.25	0.625
4-Chlorotoluene	106-43-4	1.25	U	6.25	1.25	0.625
1,2-Dibromo-3-chloropropane	96-12-8	5.00	U	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	6.25	1.25	0.625
Dibromomethane	74-95-3	1.25	U	6.25	1.25	0.625
1,2-Dichlorobenzene	95-50-1	1.25	U	6.25	1.25	0.625
1,3-Dichlorobenzene	541-73-1	1.25	U	6.25	1.25	0.625
1,4-Dichlorobenzene	106-46-7	1.25	U	6.25	1.25	0.625
Dichlorodifluoromethane	75-71-8	2.50	U	6.25	2.50	1.25
1,1-Dichloroethane	75-34-3	2.50	U	6.25	2.50	1.25
1,2-Dichloroethane	107-06-2	1.25	U	6.25	1.25	0.625
1,1-Dichloroethene	75-35-4	1.25	U	6.25	1.25	0.625
cis-1,2-Dichloroethene	156-59-2	1.25	U	6.25	1.25	0.625

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.25	U	6.25	1.25	0.625
1,2-Dichloropropane	78-87-5	1.25	U	6.25	1.25	0.625
1,3-Dichloropropane	142-28-9	1.25	U	6.25	1.25	0.625
2,2-Dichloropropane	594-20-7	1.25	U	6.25	1.25	0.625
cis-1,3-Dichloropropene	10061-01-5	1.25	U	6.25	1.25	0.625
trans-1,3-Dichloropropene	10061-02-6	1.25	U	6.25	1.25	0.625
1,1-Dichloropropene	563-58-6	1.25	U	6.25	1.25	0.625
Ethylbenzene	100-41-4	1.25	U	6.25	1.25	0.625
2-Hexanone	591-78-6	6.24	U	12.5	6.24	3.12
Hexachlorobutadiene	87-68-3	1.25	U	6.25	1.25	0.625
Isopropylbenzene	98-82-8	1.25	U	6.25	1.25	0.625
p-Isopropyltoluene	99-87-6	1.25	U	6.25	1.25	0.625
4-Methyl-2-pentanone	108-10-1	6.24	U	12.5	6.24	3.12
Methylene chloride	75-09-2	2.50	U	6.25	2.50	1.25
Naphthalene	91-20-3	1.25	U	6.25	1.25	0.625
n-Propylbenzene	103-65-1	1.25	U	6.25	1.25	0.625
Styrene	100-42-5	1.25	U	6.25	1.25	0.625
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	6.25	1.25	0.625
1,1,2,2-Tetrachloroethane	79-34-5	1.25	U	6.25	1.25	0.625
Tetrachloroethene	127-18-4	1.25	U	6.25	1.25	0.625
Toluene	108-88-3	1.25	U	6.25	1.25	0.625
1,2,3-Trichlorobenzene	87-61-6	1.25	U	6.25	1.25	0.625
1,2,4-Trichlorobenzene	120-82-1	1.25	U	6.25	1.25	0.625
1,1,1-Trichloroethane	71-55-6	1.25	U	6.25	1.25	0.625
1,1,2-Trichloroethane	79-00-5	1.25	U	6.25	1.25	0.625
Trichloroethene	79-01-6	1.25	U	6.25	1.25	0.625
Trichlorofluoromethane	75-69-4	2.50	U	6.25	2.50	1.25
1,2,3-Trichloropropane	96-18-4	2.50	U	6.25	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	6.25	1.25	0.625
1,3,5-Trimethylbenzene	108-67-8	1.25	U	6.25	1.25	0.625
Vinyl chloride	75-01-4	2.50	U	6.25	2.50	1.25
o-Xylene	95-47-6	1.25	U	6.25	1.25	0.625
m-,p-Xylene	179601-23-1	1.25	U	6.25	1.25	0.625

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.5	80	120	
1,2-Dichloroethane-d4	98.0	80	120	
Toluene-d8	97.7	85	115	
4-Bromofluorobenzene	101	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030234-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT08(35-35.5)030316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:05
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559859	**Analyst:**	ADC	**Run Date:**	03/07/2016 00:02
Collect Date:	03/03/2016 15:05	**Dilution:**	1	**File ID:**	9M973115
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.4	U	24.8	12.4	6.20
Benzene	71-43-2	1.24	U	6.20	1.24	0.620
Bromobenzene	108-86-1	1.24	U	6.20	1.24	0.620
Bromochloromethane	74-97-5	2.48	U	6.20	2.48	1.24
Bromodichloromethane	75-27-4	1.24	U	6.20	1.24	0.620
Bromoform	75-25-2	1.24	U	6.20	1.24	0.620
Bromomethane	74-83-9	2.48	U	6.20	2.48	1.24
2-Butanone	78-93-3	6.20	U	12.4	6.20	3.10
n-Butylbenzene	104-51-8	1.24	U	6.20	1.24	0.620
sec-Butylbenzene	135-98-8	1.24	U	6.20	1.24	0.620
tert-Butylbenzene	98-06-6	1.24	U	6.20	1.24	0.620
Carbon disulfide	75-15-0	1.24	U	6.20	1.24	0.620
Carbon tetrachloride	56-23-5	1.24	U	6.20	1.24	0.620
Chlorobenzene	108-90-7	1.24	U	6.20	1.24	0.620
Chlorodibromomethane	124-48-1	1.24	U	6.20	1.24	0.620
Chloroethane	75-00-3	2.48	U	6.20	2.48	1.24
Chloroform	67-66-3	1.24	U	6.20	1.24	0.620
Chloromethane	74-87-3	4.96	U	12.4	4.96	2.48
2-Chlorotoluene	95-49-8	1.24	U	6.20	1.24	0.620
4-Chlorotoluene	106-43-4	1.24	U	6.20	1.24	0.620
1,2-Dibromo-3-chloropropane	96-12-8	4.96	U	12.4	4.96	2.48
1,2-Dibromoethane	106-93-4	1.24	U	6.20	1.24	0.620
Dibromomethane	74-95-3	1.24	U	6.20	1.24	0.620
1,2-Dichlorobenzene	95-50-1	1.24	U	6.20	1.24	0.620
1,3-Dichlorobenzene	541-73-1	1.24	U	6.20	1.24	0.620
1,4-Dichlorobenzene	106-46-7	1.24	U	6.20	1.24	0.620
Dichlorodifluoromethane	75-71-8	2.48	U	6.20	2.48	1.24
1,1-Dichloroethane	75-34-3	2.48	U	6.20	2.48	1.24
1,2-Dichloroethane	107-06-2	1.24	U	6.20	1.24	0.620
1,1-Dichloroethene	75-35-4	1.24	U	6.20	1.24	0.620
cis-1,2-Dichloroethene	156-59-2	1.24	U	6.20	1.24	0.620

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.24	U	6.20	1.24	0.620
1,2-Dichloropropane	78-87-5	1.24	U	6.20	1.24	0.620
1,3-Dichloropropane	142-28-9	1.24	U	6.20	1.24	0.620
2,2-Dichloropropane	594-20-7	1.24	U	6.20	1.24	0.620
cis-1,3-Dichloropropene	10061-01-5	1.24	U	6.20	1.24	0.620
trans-1,3-Dichloropropene	10061-02-6	1.24	U	6.20	1.24	0.620
1,1-Dichloropropene	563-58-6	1.24	U	6.20	1.24	0.620
Ethylbenzene	100-41-4	1.24	U	6.20	1.24	0.620
2-Hexanone	591-78-6	6.20	U	12.4	6.20	3.10
Hexachlorobutadiene	87-68-3	1.24	U	6.20	1.24	0.620
Isopropylbenzene	98-82-8	1.24	U	6.20	1.24	0.620
p-Isopropyltoluene	99-87-6	1.24	U	6.20	1.24	0.620
4-Methyl-2-pentanone	108-10-1	6.20	U	12.4	6.20	3.10
Methylene chloride	75-09-2	2.48	U	6.20	2.48	1.24
Naphthalene	91-20-3	1.24	U	6.20	1.24	0.620
n-Propylbenzene	103-65-1	1.24	U	6.20	1.24	0.620
Styrene	100-42-5	1.24	U	6.20	1.24	0.620
1,1,1,2-Tetrachloroethane	630-20-6	1.24	U	6.20	1.24	0.620
1,1,2,2-Tetrachloroethane	79-34-5	1.24	U	6.20	1.24	0.620
Tetrachloroethene	127-18-4	1.24	U	6.20	1.24	0.620
Toluene	108-88-3	1.24	U	6.20	1.24	0.620
1,2,3-Trichlorobenzene	87-61-6	1.24	U	6.20	1.24	0.620
1,2,4-Trichlorobenzene	120-82-1	1.24	U	6.20	1.24	0.620
1,1,1-Trichloroethane	71-55-6	1.24	U	6.20	1.24	0.620
1,1,2-Trichloroethane	79-00-5	1.24	U	6.20	1.24	0.620
Trichloroethene	79-01-6	1.24	U	6.20	1.24	0.620
Trichlorofluoromethane	75-69-4	2.48	U	6.20	2.48	1.24
1,2,3-Trichloropropane	96-18-4	2.48	U	6.20	2.48	1.24
1,2,4-Trimethylbenzene	95-63-6	1.24	U	6.20	1.24	0.620
1,3,5-Trimethylbenzene	108-67-8	1.24	U	6.20	1.24	0.620
Vinyl chloride	75-01-4	2.48	U	6.20	2.48	1.24
o-Xylene	95-47-6	1.24	U	6.20	1.24	0.620
m-,p-Xylene	179601-23-1	1.24	U	6.20	1.24	0.620

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.0	80	120	
1,2-Dichloroethane-d4	98.6	80	120	
Toluene-d8	98.2	85	115	
4-Bromofluorobenzene	101	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.
VOA Preparation/Preservation/Extraction Log

Batch #: WG559855
Analyst: AWE
Method: 5030B/5030C/5035
Run Date: 03/06/2016 12:56
Product: 8260
Purge and trap methanol COA18540
Purified Lab Sand Lot # COA18552

SAMPLE #	Fraction	Collected	Preserved	PCT-S	Tare Wt	Total Wt	Sample Wt	Water	MeOH	Vt	Comments
L16030134-01	A	03/02/16 08:58	03/06/16 12:56	80.7			4.62	5		5	
L16030134-02	A	03/02/16 08:58	03/06/16 12:56	80.8			5.17	5		5	
L16030134-03	A	03/02/16 10:35	03/06/16 12:57	88.1			4.94	5		5	
L16030134-04	A	03/02/16 11:11	03/06/16 12:58	82.3			4.75	5		5	
L16030134-05	A	03/02/16 12:05	03/06/16 12:58	82.1			4.70	5		5	
L16030134-06	A	03/02/16 15:00	03/06/16 12:59	80.0			4.77	5		5	
L16030234-01	A	03/03/16 13:15	03/06/16 13:01	83.4			4.61	5		5	
L16030234-02	A	03/03/16 13:49	03/06/16 13:02	81.8			4.73	5		5	
L16030234-03	A	03/03/16 14:40	03/06/16 13:03	84.4			4.79	5		5	
L16030234-04	A	03/03/16 14:50	03/06/16 13:04	83.4			4.56	5		5	
L16030234-05	A	03/03/16 14:55	03/06/16 13:04	82.0			5.43	5		5	
L16030234-06	A	03/03/16 15:05	03/06/16 13:05	80.1			5.03	5		5	
L16030235-01	A	03/02/16 16:00	03/06/16 13:06	82.3			4.92	5		5	
L16030235-02	A	03/02/16 16:25	03/06/16 13:06	76.4			5.25	5		5	
L16030235-03	A	03/03/16 10:00	03/06/16 13:07	82.2			5.48	5		5	
L16030235-04	A	03/03/16 10:00	03/06/16 13:07	82.2			5.17	5		5	
L16030235-05	A	03/03/16 10:00	03/06/16 13:08	82.2			5.07	5		5	
L16030235-06	A	03/03/16 10:10	03/06/16 13:09	75.6			5.16	5		5	
L16030235-07	A	03/03/16 10:10	03/06/16 13:10	75.6			4.64	5		5	
L16030235-08	A	03/03/16 10:15	03/06/16 13:10	83.1			5.24	5		5	
WG559855-01	A		03/06/16 12:59	80.0			4.77	5		5	
WG559855-02	A		03/06/16 13:00	80.0			5.05	5		5	
WG559855-03	A		03/06/16 13:00	80.0			4.75	5		5	

Comments:
1 = improperly sealed cap
2 = preserved out of hold
3 = effervesced
4 = preserved with NaHSO4
5 = preserved by freezing
6 = preserved in field

Analyst: Andrew Baeg

VOA_EXT - Modified 05/22/2008
PDF ID: 4658102
Report generated: 03/08/2016 15:07

Microbac Laboratories Inc.
VOA Preparation/Preservation/Extraction Log

Batch #: WG559925
Analyst: AWE
Method: 5030B/5030C/5035
Run Date: 03/07/2016 10:54
Product: 8260
Purge and trap methanol COA18540
Purified Lab Sand Lot # COA18552

SAMPLE #	Fraction	Collected	Preserved	PCT-S	Tare Wt	Total Wt	Sample Wt	Water	MeOH	Vt	Comments
L16030176-02	A	03/02/16 10:30	03/07/16 10:54	100			0.94	5		5	
L16030234-05	A	03/03/16 14:55	03/07/16 10:14	82.0			4.88	5		5	

Comments:
1 = improperly sealed cap
2 = preserved out of hold
3 = effervesced
4 = preserved with NaHSO4
5 = preserved by freezing
6 = preserved in field

Analyst: Andrew Casey

VOA_EXT - Modified 05/22/2008
PDF ID: 4658638
Report generated: 03/07/2016 10:54

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 012516
Analyst1: ADC Analyst2: NA
Method: 8260B/8260C SOP: MSV01(-C) Rev: 23 (2)
Method: 5030B/5030C/5035 SOP: PAT01 Rev: 18
Method: 624 SOP: MSV10 Rev: 12
Maintenance Log ID:

Internal Standard: STD74414 Surrogate Standard: STD74126
CCV: STD74488 LCS: STD74459 MS/MSD: STD74459

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG555000 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M972470	WG555000-01 BFB 50ng A9	NA	7	1	STD74202	01/25/16 10:27
9M972471	RINSE	NA	7	1		01/25/16 10:52
9M972472	WG555000-02 5ug/Kg STD A9	NA	7	1	STD74406	01/25/16 11:22
9M972473	WG555000-03 20ug/Kg STD A9	NA	7	1	STD74406	01/25/16 11:52
9M972474	WG555000-04 50ug/Kg STD A9	NA	7	1	STD74406	01/25/16 12:23
9M972475	WG555000-05 100ug/Kg STD A9	NA	7	1	STD74406	01/25/16 12:53
9M972476	WG555000-06 200ug/Kg STD A9	NA	7	1	STD74406	01/25/16 13:23
9M972477	WG555000-07 300ug/Kg STD A9	NA	7	1	STD74406	01/25/16 13:54
9M972478	WG555000-08 400ug/Kg STD A9	NA	7	1	STD74406	01/25/16 14:25
9M972479	WG555000-09 500ug/Kg STD A9	NA	7	1	STD74406	01/25/16 14:56
9M972480	RINSE	NA	7	1		01/25/16 15:26
9M972481	WG555000-10 100ug/Kg ICV A9	NA	7	1	STD74461	01/25/16 15:56
9M972482	RINSE	NA	7	1		01/25/16 16:28

Approved: January 29, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 022516
Analyst1: ADC Analyst2: NA
Method: 8260 SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD74726 Surrogate Standard: STD74815
CCV: STD74488 LCS: STD74755 MS/MSD: STD74755

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG558732 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M972892	WG558732-01 BFB 50ng	NA	7	1	STD74773	02/25/16 14:26
9M972894	WG558732-01 BFB 50ng	NA	7	1	STD74773	02/25/16 14:45
9M972895	WG558732-02 50ug/L CCV 8260C	NA	7	1	STD74773	02/25/16 15:11
9M972896	WG558732-02 50ug/L CCV 8260C	NA	7	1	STD74773	02/25/16 15:48
9M972897	RINSE	NA	7	1		02/25/16 16:25
9M972898	WG558732-03 0.5ug/kg STD	NA	7	1	STD74773	02/25/16 16:55
9M972899	WG558732-04 1.0ug/kg STD	NA	7	1	STD74773	02/25/16 17:27
9M972900	WG558732-05 2.0ug/kg STD	NA	7	1	STD74773	02/25/16 17:57
9M972901	WG558732-06 5.0ug/kg STD	NA	7	1	STD74773	02/25/16 18:28
9M972902	WG558732-07 20.0ug/kg STD	NA	7	1	STD74773	02/25/16 18:59
9M972903	WG558732-08 100.0ug/kg STD	NA	7	1	STD74773	02/25/16 19:29
9M972904	WG558732-09 200.0ug/kg STD	NA	7	1	STD74773	02/25/16 20:00
9M972905	WG558732-10 300.0ug/kg STD	NA	7	1	STD74773	02/25/16 20:30
9M972906	RINSE	NA	7	1	STD74773	02/25/16 21:01
9M972907	WG558732-11 50.0ug/kg ALTSRC	NA	7	1	STD74755	02/25/16 21:31

Approved: February 29, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 030616
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD74726 Surrogate Standard: STD74815
CCV: STD74773 LCS: STD74900 MS/MSD: STD74900

Column 1 ID: RTX502.1 Column 2 ID: NA
Workgroups: WG559859

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M973096	WG559858-01 BFB 50ng 8260	NA	7	1	STD74606	03/06/16 14:28
9M973097	WG559858-02 50ug/Kg CCV 8260	NA	7	1	STD74773	03/06/16 14:55
9M973098	WGXXXXXX-01 A9FOO QC 100ug/kg	NA	7	1		03/06/16 15:25
9M973099	WG559858-02 50ug/Kg CCV 8260	NA	7	1	STD74773	03/06/16 15:56
9M973100	RINSE	NA	7	1		03/06/16 16:26
9M973101	WG559859-01 VBLK0306 BLANK 8260	NA	7	1		03/06/16 16:57
9M973102	WG559859-02 20ug/L LCS 8260	NA	7	1	STD74900	03/06/16 17:27
9M973103	RINSE	NA	7	1		03/06/16 17:58
9M973104	L16030134-01 A 8260 4.62g	NA	7	1		03/06/16 18:28
9M973105	L16030134-02 A 8260 5.17g	NA	7	1		03/06/16 18:59
9M973106	L16030134-03 A 8260 4.94g	NA	7	1		03/06/16 19:29
9M973107	L16030134-04 A 8260 4.75g	NA	7	1		03/06/16 20:00
9M973108	L16030134-05 A 8260 4.70g	NA	7	1		03/06/16 20:30
9M973109	WG559855-01 L16030134-06 A 8260 4.77g	NA	7	1		03/06/16 21:00
9M973110	L16030234-01 A 8260 4.61g	NA	7	1		03/06/16 21:31
9M973111	L16030234-02 A 8260 4.73g	NA	7	1		03/06/16 22:01
9M973112	L16030234-03 A 8260 4.79g	NA	7	1		03/06/16 22:31
9M973113	L16030234-04 A 8260 4.56g	NA	7	1		03/06/16 23:01
9M973114	L16030234-05 A 8260 5.43g	NA	7	1		03/06/16 23:32
9M973115	L16030234-06 A 8260 5.03g	NA	7	1		03/07/16 00:02
9M973116	WG559855-02 MS A 8260 5.05g	NA	7	1		03/07/16 00:32
9M973117	WG559855-03 MSD A 8260 4.75g	NA	7	1		03/07/16 01:02
9M973118	RINSE	NA	7	1		03/07/16 01:32
9M973119	RINSE	NA	7	1		03/07/16 02:03

Comments

Seq.	Rerun	Dil.	Reason	Analytes
19	X		Internal standard failure	
File ID: 9M973114				
L16030234-05				

Approved: March 07, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 030716
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD74726 Surrogate Standard: STD74815
CCV: STD74773 LCS: STD74900 MS/MSD: STD74900

Column 1 ID: RTX502.1 Column 2 ID: NA
Workgroups: WG559982

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M973120	WG559980-01 BFB 50ng 8260	NA	7	1	STD74606	03/07/16 14:48
9M973121	WG559980-02 50ug/Kg CCV 8260	NA	7	1	STD74773	03/07/16 15:17
9M973122	WGXXXXXX-01 A9FOO QC 100ug/kg	NA	7	1		03/07/16 15:48
9M973123	WG559982-01 VBLK0307 BLANK 8260	NA	7	1		03/07/16 16:18
9M973124	WG559982-02 20ug/L LCS 8260	NA	7	1	STD74900	03/07/16 16:49
9M973125	RINSE	NA	7	1		03/07/16 17:20
9M973126	L16030234-05 A 8260 4.88g	NA	7	1		03/07/16 17:51
9M973127	L16030235-01 A 8260 4.92g	NA	7	1		03/07/16 18:21
9M973128	L16030235-02 A 8260 5.25g	NA	7	1		03/07/16 18:51
9M973129	L16030235-03 A RS 8260 5.48g	NA	7	1		03/07/16 19:22
9M973130	L16030235-06 A 8260 5.16g	NA	7	1		03/07/16 19:53
9M973131	L16030235-07 A 8260 4.64g	NA	7	1		03/07/16 20:24
9M973132	L16030235-08 A 8260 5.24g	NA	7	1		03/07/16 20:55
9M973133	L16030235-04 A MS 8260 5.17g	NA	7	1		03/07/16 21:26
9M973134	L16030235-05 A MSD 8260 5.07g	NA	7	1		03/07/16 21:58
9M973135	RINSE	NA	7	1		03/07/16 22:29
9M973136	L16030176-02 A 8260 0.94g	NA	10	1		03/07/16 23:00
9M973137	RINSE	NA	7	1		03/07/16 23:30
9M973138	SCREEN 10X 0323-01	NA	7	1		03/08/16 00:01
9M973139	SCREEN 10X 0323-02	NA	7	1		03/08/16 00:31
9M973140	SCREEN 10X 0323-03	NA	7	1		03/08/16 01:01
9M973141	SCREEN 10X 0323-04	NA	7	1		03/08/16 01:32
9M973142	SCREEN 10X 0323-05	NA	7	1		03/08/16 02:02
9M973143	SCREEN 10X 0323-06	NA	7	1		03/08/16 02:32
9M973144	SCREEN 1000X 0168-01	NA	7	1		03/08/16 03:03
9M973145	RINSE	NA	7	1		03/08/16 03:33
9M973146	RINSE	NA	7	1		03/08/16 04:03

Comments

Seq.	Rerun	Dil.	Reason	Analytes
3				
File ID: 9M973122				
Not needed. DNR.				

Approved: March 08, 2016

Tiffany Bailey

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 030716
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD74726 Surrogate Standard: STD74815
CCV: STD74773 LCS: STD74900 MS/MSD: STD74900

Column 1 ID: RTX502.1 Column 2 ID: NA
Workgroups: WG559982

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17	X	1	Analyzed too dilute	
File ID: 9M973136				
IS/SS failures				

Approved: March 08, 2016

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 25-JAN-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 72995
Analytical Workgroups: WG555000

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
28-JAN-2016

Secondary Reviewer:
29-JAN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JAN-29-2016 16:00:23

Microbac Laboratories Inc.

Data Checklist

Date: 25-FEB-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 73547
Analytical Workgroups: WG558732

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
29-FEB-2016

Secondary Reviewer:
29-FEB-2016

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-29-2016 15:30:51

Microbac Laboratories Inc.

Data Checklist

Date: 06-MAR-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 73657
Analytical Workgroups: WG559859

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
07-MAR-2016

Secondary Reviewer:
07-MAR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-07-2016 14:35:52

Microbac Laboratories Inc.

Data Checklist

Date: 07-MAR-2016
Analyst: ADC
Analyst: NA
Method: 8260B
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 73696
Analytical Workgroups: WG559982

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	FJB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	FJB
Secondary Reviewer	TMB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer: 08-MAR-2016

Secondary Reviewer: 08-MAR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-08-2016 15:47:34

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG559859

Login Number: L16030234

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18DPT08(5-5.5)030316	01	03/03/16					03/06/2016	3	14		03/06/16	3.3	14	
18DPT08(15-15.5)030316	02	03/03/16					03/06/2016	3	14		03/06/16	3.3	14	
18DPT08(10-10.5)030316	03	03/03/16					03/06/2016	2.9	14		03/06/16	3.3	14	
18DPT08(21-21.5)030316	04	03/03/16					03/06/2016	2.9	14		03/06/16	3.3	14	
18DPT08(35-35.5)030316	06	03/03/16					03/06/2016	2.9	14		03/07/16	3.4	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4659260
Report generated 03/14/2016 11:22

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG559982

Login Number: L16030234

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18DPT08(26-26.5)030316	05	03/03/16					03/07/2016	3.8	14		03/07/16	4.1	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4659260
Report generated 03/14/2016 11:22

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16030234
Instrument Id: HPMS9
Workgroup (AAB#): WG559982

Method: 8260
CAL ID: HPMS9-25-FEB-16
Matrix: Soil

Sample Number	Dilution	Tag	1	2	3	4
L16030234-05	1.00	01	98.0	96.5	101	97.7
WG559982-01	1.00	01	101	97.2	103	99.2
WG559982-02	1.00	01	97.7	94.6	96.4	95.3

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	80	-	120
2 - Dibromofluoromethane	80	-	120
3 - 4-Bromofluorobenzene	85	-	120
4 - Toluene-d8	85	-	115

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4659274
Report generated: 03/14/2016 11:22

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16030234
Instrument Id: HPMS9
Workgroup (AAB#): WG559859

Method: 8260
CAL ID: HPMS9-25-FEB-16
Matrix: Soil

Sample Number	Dilution	Tag	1	2	3	4
L16030234-01	1.00	01	112	98.7	102	98.8
L16030234-02	1.00	01	99.4	96.7	104	98.3
L16030234-03	1.00	01	100	94.7	102	97.2
L16030234-04	1.00	01	97.2	94.9	102	98.6
L16030234-06	1.00	01	98.6	97.0	101	98.2
WG559859-01	1.00	01	99.7	96.5	102	99.4
WG559859-02	1.00	01	97.6	97.9	102	100

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	80	-	120
2 - Dibromofluoromethane	80	-	120
3 - 4-Bromofluorobenzene	85	-	120
4 - Toluene-d8	85	-	115

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4659274
Report generated: 03/14/2016 11:22

METHOD BLANK SUMMARY

Login Number: L16030234
Blank File ID: 9M973101
Prep Date: 03/06/16 16:57
Analyzed Date: 03/06/16 16:57
Analyst: ADC

Work Group: WG559859
Blank Sample ID: WG559859-01
Instrument ID: HPMS9
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG559859-02	9M973102	03/06/16 17:27	01
18DPT08(5-5.5)030316	L16030234-01	9M973110	03/06/16 21:31	01
18DPT08(15-15.5)030316	L16030234-02	9M973111	03/06/16 22:01	01
18DPT08(10-10.5)030316	L16030234-03	9M973112	03/06/16 22:31	01
18DPT08(21-21.5)030316	L16030234-04	9M973113	03/06/16 23:01	01
18DPT08(35-35.5)030316	L16030234-06	9M973115	03/07/16 00:02	01

Report Name: BLANK_SUMMARY
PDF File ID: 4659262
Report generated 03/14/2016 11:22

METHOD BLANK SUMMARY

Login Number: L16030234
Blank File ID: 9M973123
Prep Date: 03/07/16 16:18
Analyzed Date: 03/07/16 16:18
Analyst: ADC

Work Group: WG559982
Blank Sample ID: WG559982-01
Instrument ID: HPMS9
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG559982-02	9M973124	03/07/16 16:49	01
18DPT08(26-26.5)030316	L16030234-05	9M973126	03/07/16 17:51	01

Report Name: BLANK_SUMMARY
PDF File ID: 4659262
Report generated 03/14/2016 11:22

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16030234 Prep Date: 03/06/16 16:57 Sample ID: WG559859-01
Instrument ID: HPMS9 Run Date: 03/06/16 16:57 Prep Method: 5030B/5030C/503
File ID: 9M973101 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG559859 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-25-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	5.00	20.0	5.00	1	U
Benzene	0.500	5.00	0.500	1	U
Bromobenzene	0.500	5.00	0.500	1	U
Bromochloromethane	1.00	5.00	1.00	1	U
Bromodichloromethane	0.500	5.00	0.500	1	U
Bromoform	0.500	5.00	0.500	1	U
Bromomethane	1.00	5.00	1.00	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.500	5.00	0.500	1	U
sec-Butylbenzene	0.500	5.00	0.500	1	U
tert-Butylbenzene	0.500	5.00	0.500	1	U
Carbon disulfide	0.500	5.00	0.500	1	U
Carbon tetrachloride	0.500	5.00	0.500	1	U
Chlorobenzene	0.500	5.00	0.500	1	U
Chlorodibromomethane	0.500	5.00	0.500	1	U
Chloroethane	1.00	5.00	1.00	1	U
Chloroform	0.500	5.00	0.500	1	U
Chloromethane	2.00	10.0	2.00	1	U
2-Chlorotoluene	0.500	5.00	0.500	1	U
4-Chlorotoluene	0.500	5.00	0.500	1	U
1,2-Dibromo-3-chloropropane	2.00	10.0	2.00	1	U
1,2-Dibromoethane	0.500	5.00	0.500	1	U
Dibromomethane	0.500	5.00	0.500	1	U
1,2-Dichlorobenzene	0.500	5.00	0.500	1	U
1,3-Dichlorobenzene	0.500	5.00	0.500	1	U
1,4-Dichlorobenzene	0.500	5.00	0.500	1	U
Dichlorodifluoromethane	1.00	5.00	1.00	1	U
1,1-Dichloroethane	1.00	5.00	1.00	1	U
1,2-Dichloroethane	0.500	5.00	0.500	1	U
1,1-Dichloroethene	0.500	5.00	0.500	1	U
cis-1,2-Dichloroethene	0.500	5.00	0.500	1	U
trans-1,2-Dichloroethene	0.500	5.00	0.500	1	U
1,2-Dichloropropane	0.500	5.00	0.500	1	U
1,3-Dichloropropane	0.500	5.00	0.500	1	U
2,2-Dichloropropane	0.500	5.00	0.500	1	U
cis-1,3-Dichloropropene	0.500	5.00	0.500	1	U
trans-1,3-Dichloropropene	0.500	5.00	0.500	1	U
1,1-Dichloropropene	0.500	5.00	0.500	1	U
Ethylbenzene	0.500	5.00	0.500	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.500	5.00	0.500	1	U
Isopropylbenzene	0.500	5.00	0.500	1	U

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METHOD BLANK REPORT

Login Number: L16030234 Prep Date: 03/06/16 16:57 Sample ID: WG559859-01
Instrument ID: HPMS9 Run Date: 03/06/16 16:57 Prep Method: 5030B/5030C/503
File ID: 9M973101 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG559859 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-25-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.500	5.00	0.500	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	1.00	5.00	1.00	1	U
Naphthalene	0.500	5.00	0.500	1	U
n-Propylbenzene	0.500	5.00	0.500	1	U
Styrene	0.500	5.00	0.500	1	U
1,1,1,2-Tetrachloroethane	0.500	5.00	0.500	1	U
1,1,2,2-Tetrachloroethane	0.500	5.00	0.500	1	U
Tetrachloroethene	0.500	5.00	0.500	1	U
Toluene	0.500	5.00	0.500	1	U
1,2,3-Trichlorobenzene	0.500	5.00	0.500	1	U
1,2,4-Trichlorobenzene	0.500	5.00	0.500	1	U
1,1,1-Trichloroethane	0.500	5.00	0.500	1	U
1,1,2-Trichloroethane	0.500	5.00	0.500	1	U
Trichloroethene	0.500	5.00	0.500	1	U
Trichlorofluoromethane	1.00	5.00	1.00	1	U
1,2,3-Trichloropropane	1.00	5.00	1.00	1	U
1,2,4-Trimethylbenzene	0.500	5.00	0.500	1	U
1,3,5-Trimethylbenzene	0.500	5.00	0.500	1	U
Vinyl chloride	1.00	5.00	1.00	1	U
o-Xylene	0.500	5.00	0.500	1	U
m-,p-Xylene	0.500	5.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	96.5	80 - 120	PASS
1,2-Dichloroethane-d4	99.7	80 - 120	PASS
Toluene-d8	99.4	85 - 115	PASS
4-Bromofluorobenzene	102	85 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
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Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16030234 Prep Date: 03/07/16 16:18 Sample ID: WG559982-01
Instrument ID: HPMS9 Run Date: 03/07/16 16:18 Prep Method: 5030B/5030C/503
File ID: 9M973123 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG559982 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-25-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	5.00	20.0	5.00	1	U
Benzene	0.500	5.00	0.500	1	U
Bromobenzene	0.500	5.00	0.500	1	U
Bromochloromethane	1.00	5.00	1.00	1	U
Bromodichloromethane	0.500	5.00	0.500	1	U
Bromoform	0.500	5.00	0.500	1	U
Bromomethane	1.00	5.00	1.00	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.500	5.00	0.500	1	U
sec-Butylbenzene	0.500	5.00	0.500	1	U
tert-Butylbenzene	0.500	5.00	0.500	1	U
Carbon disulfide	0.500	5.00	0.500	1	U
Carbon tetrachloride	0.500	5.00	0.500	1	U
Chlorobenzene	0.500	5.00	0.500	1	U
Chlorodibromomethane	0.500	5.00	0.500	1	U
Chloroethane	1.00	5.00	1.00	1	U
Chloroform	0.500	5.00	0.500	1	U
Chloromethane	2.00	10.0	2.00	1	U
2-Chlorotoluene	0.500	5.00	0.500	1	U
4-Chlorotoluene	0.500	5.00	0.500	1	U
1,2-Dibromo-3-chloropropane	2.00	10.0	2.00	1	U
1,2-Dibromoethane	0.500	5.00	0.500	1	U
Dibromomethane	0.500	5.00	0.500	1	U
1,2-Dichlorobenzene	0.500	5.00	0.500	1	U
1,3-Dichlorobenzene	0.500	5.00	0.500	1	U
1,4-Dichlorobenzene	0.500	5.00	0.500	1	U
Dichlorodifluoromethane	1.00	5.00	1.00	1	U
1,1-Dichloroethane	1.00	5.00	1.00	1	U
1,2-Dichloroethane	0.500	5.00	0.500	1	U
1,1-Dichloroethene	0.500	5.00	0.500	1	U
cis-1,2-Dichloroethene	0.500	5.00	0.500	1	U
trans-1,2-Dichloroethene	0.500	5.00	0.500	1	U
1,2-Dichloropropane	0.500	5.00	0.500	1	U
1,3-Dichloropropane	0.500	5.00	0.500	1	U
2,2-Dichloropropane	0.500	5.00	0.500	1	U
cis-1,3-Dichloropropene	0.500	5.00	0.500	1	U
trans-1,3-Dichloropropene	0.500	5.00	0.500	1	U
1,1-Dichloropropene	0.500	5.00	0.500	1	U
Ethylbenzene	0.500	5.00	0.500	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.500	5.00	0.500	1	U
Isopropylbenzene	0.500	5.00	0.500	1	U

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Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16030234 Prep Date: 03/07/16 16:18 Sample ID: WG559982-01
Instrument ID: HPMS9 Run Date: 03/07/16 16:18 Prep Method: 5030B/5030C/503
File ID: 9M973123 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG559982 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-25-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.500	5.00	0.500	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	1.00	5.00	1.00	1	U
Naphthalene	0.500	5.00	0.500	1	U
n-Propylbenzene	0.500	5.00	0.500	1	U
Styrene	0.500	5.00	0.500	1	U
1,1,1,2-Tetrachloroethane	0.500	5.00	0.500	1	U
1,1,2,2-Tetrachloroethane	0.500	5.00	0.500	1	U
Tetrachloroethene	0.500	5.00	0.500	1	U
Toluene	0.500	5.00	0.500	1	U
1,2,3-Trichlorobenzene	0.500	5.00	0.500	1	U
1,2,4-Trichlorobenzene	0.500	5.00	0.500	1	U
1,1,1-Trichloroethane	0.500	5.00	0.500	1	U
1,1,2-Trichloroethane	0.500	5.00	0.500	1	U
Trichloroethene	0.500	5.00	0.500	1	U
Trichlorofluoromethane	1.00	5.00	1.00	1	U
1,2,3-Trichloropropane	1.00	5.00	1.00	1	U
1,2,4-Trimethylbenzene	0.500	5.00	0.500	1	U
1,3,5-Trimethylbenzene	0.500	5.00	0.500	1	U
Vinyl chloride	1.00	5.00	1.00	1	U
o-Xylene	0.500	5.00	0.500	1	U
m-,p-Xylene	0.500	5.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	97.2	80 - 120	PASS
1,2-Dichloroethane-d4	101	80 - 120	PASS
Toluene-d8	99.2	85 - 115	PASS
4-Bromofluorobenzene	103	85 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030234 | Run Date: 03/06/2016 | Sample ID: WG559859-02
Instrument ID: HPMS9 | Run Time: 17:27 | Prep Method: 5030B/5030C/503
File ID: 9M973102 | Analyst: ADC | Method: 8260B
Workgroup (AAB#): WG559859 | Matrix: Soil | Units: ug/kg
QC Key: DOD4 | Lot#: STD74900 | Cal ID: HPMS9-25-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	20.7	103	20 - 160	
Benzene	20.0	19.6	98.0	75 - 125	
Bromobenzene	20.0	17.3	86.5	65 - 120	
Bromochloromethane	20.0	19.8	99.0	70 - 125	
Bromodichloromethane	20.0	19.1	95.3	70 - 130	
Bromoform	20.0	16.4	82.2	55 - 135	
Bromomethane	20.0	18.3	91.6	30 - 160	
2-Butanone	20.0	21.6	108	30 - 160	
n-Butylbenzene	20.0	16.6	83.0	65 - 140	
sec-Butylbenzene	20.0	18.1	90.4	65 - 130	
tert-Butylbenzene	20.0	18.1	90.6	65 - 130	
Carbon disulfide	20.0	18.6	92.9	45 - 160	
Carbon tetrachloride	20.0	18.0	89.8	65 - 135	
Chlorobenzene	20.0	19.3	96.7	75 - 125	
Chlorodibromomethane	20.0	18.2	91.0	65 - 130	
Chloroethane	20.0	19.0	95.0	40 - 155	
Chloroform	20.0	19.6	98.0	70 - 125	
Chloromethane	20.0	19.7	98.5	50 - 130	
2-Chlorotoluene	20.0	19.1	95.4	70 - 130	
4-Chlorotoluene	20.0	16.6	83.2	75 - 125	
1,2-Dibromo-3-chloropropane	20.0	15.4	77.2	40 - 135	
1,2-Dibromoethane	20.0	18.3	91.7	70 - 125	
Dibromomethane	20.0	18.7	93.6	75 - 130	
1,2-Dichlorobenzene	20.0	17.4	87.0	75 - 120	
1,3-Dichlorobenzene	20.0	16.3	81.5	70 - 125	
1,4-Dichlorobenzene	20.0	17.0	84.9	70 - 125	
Dichlorodifluoromethane	20.0	23.1	116	35 - 135	
1,1-Dichloroethane	20.0	18.9	94.3	75 - 125	
1,2-Dichloroethane	20.0	21.0	105	70 - 135	
1,1-Dichloroethene	20.0	19.4	97.2	65 - 135	
cis-1,2-Dichloroethene	20.0	20.2	101	65 - 125	
trans-1,2-Dichloroethene	20.0	20.3	102	65 - 135	
1,2-Dichloropropane	20.0	21.7	109	70 - 120	
1,3-Dichloropropane	20.0	20.6	103	75 - 125	
2,2-Dichloropropane	20.0	18.1	90.3	65 - 135	
cis-1,3-Dichloropropene	20.0	20.3	101	70 - 125	
trans-1,3-Dichloropropene	20.0	18.8	94.0	65 - 125	
1,1-Dichloropropene	20.0	18.5	92.5	70 - 135	
Ethylbenzene	20.0	19.9	99.4	75 - 125	
2-Hexanone	20.0	20.8	104	45 - 145	
Hexachlorobutadiene	20.0	16.1	80.7	55 - 140	

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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030234 Run Date: 03/06/2016 Sample ID: WG559859-02
Instrument ID: HPMS9 Run Time: 17:27 Prep Method: 5030B/5030C/503
File ID: 9M973102 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG559859 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD74900 Cal ID: HPMS9-25-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	19.6	98.1	75 - 130	
p-Isopropyltoluene	20.0	17.2	86.1	75 - 135	
4-Methyl-2-pentanone	20.0	21.5	107	45 - 145	
Methylene chloride	20.0	19.8	99.0	55 - 140	
Naphthalene	20.0	14.3	71.7	40 - 125	
n-Propylbenzene	20.0	18.4	92.2	65 - 135	
Styrene	20.0	19.7	98.4	75 - 125	
1,1,1,2-Tetrachloroethane	20.0	18.9	94.7	75 - 125	
1,1,2,2-Tetrachloroethane	20.0	17.3	86.7	55 - 130	
Tetrachloroethene	20.0	17.3	86.6	65 - 140	
Toluene	20.0	19.3	96.5	70 - 125	
1,2,3-Trichlorobenzene	20.0	15.3	76.7	60 - 135	
1,2,4-Trichlorobenzene	20.0	15.1	75.7	65 - 130	
1,1,1-Trichloroethane	20.0	18.5	92.3	70 - 135	
1,1,2-Trichloroethane	20.0	20.1	101	60 - 125	
Trichloroethene	20.0	19.4	96.9	75 - 125	
Trichlorofluoromethane	20.0	18.6	92.8	25 - 185	
1,2,3-Trichloropropane	20.0	17.5	87.4	65 - 130	
1,2,4-Trimethylbenzene	20.0	17.4	87.0	65 - 135	
1,3,5-Trimethylbenzene	20.0	18.2	91.0	65 - 135	
Vinyl chloride	20.0	21.1	105	60 - 125	
o-Xylene	20.0	20.0	100	75 - 125	
m-,p-Xylene	40.0	39.5	98.7	80 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	97.9	80 - 120	PASS
1,2-Dichloroethane-d4	97.6	80 - 120	PASS
Toluene-d8	100	85 - 115	PASS
4-Bromofluorobenzene	102	85 - 120	PASS

* EXCEEDS %REC LIMIT

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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030234 | Run Date: 03/07/2016 | Sample ID: WG559982-02
Instrument ID: HPMS9 | Run Time: 16:49 | Prep Method: 5030B/5030C/503
File ID: 9M973124 | Analyst: ADC | Method: 8260B
Workgroup (AAB#): WG559982 | Matrix: Soil | Units: ug/kg
QC Key: DOD4 | Lot#: STD74900 | Cal ID: HPMS9-25-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	21.5	107	20 - 160	
Benzene	20.0	19.9	99.3	75 - 125	
Bromobenzene	20.0	16.2	80.8	65 - 120	
Bromochloromethane	20.0	19.4	96.8	70 - 125	
Bromodichloromethane	20.0	19.2	96.1	70 - 130	
Bromoform	20.0	17.0	85.2	55 - 135	
Bromomethane	20.0	18.4	91.8	30 - 160	
2-Butanone	20.0	22.5	113	30 - 160	
n-Butylbenzene	20.0	17.4	87.0	65 - 140	
sec-Butylbenzene	20.0	18.7	93.3	65 - 130	
tert-Butylbenzene	20.0	18.6	93.2	65 - 130	
Carbon disulfide	20.0	18.6	93.1	45 - 160	
Carbon tetrachloride	20.0	19.3	96.5	65 - 135	
Chlorobenzene	20.0	20.2	101	75 - 125	
Chlorodibromomethane	20.0	18.3	91.5	65 - 130	
Chloroethane	20.0	19.7	98.7	40 - 155	
Chloroform	20.0	19.3	96.3	70 - 125	
Chloromethane	20.0	21.2	106	50 - 130	
2-Chlorotoluene	20.0	18.4	92.2	70 - 130	
4-Chlorotoluene	20.0	18.0	89.8	75 - 125	
1,2-Dibromo-3-chloropropane	20.0	15.2	75.8	40 - 135	
1,2-Dibromoethane	20.0	18.9	94.3	70 - 125	
Dibromomethane	20.0	17.9	89.6	75 - 130	
1,2-Dichlorobenzene	20.0	17.4	87.0	75 - 120	
1,3-Dichlorobenzene	20.0	16.7	83.4	70 - 125	
1,4-Dichlorobenzene	20.0	16.5	82.6	70 - 125	
Dichlorodifluoromethane	20.0	24.0	120	35 - 135	
1,1-Dichloroethane	20.0	19.5	97.7	75 - 125	
1,2-Dichloroethane	20.0	21.2	106	70 - 135	
1,1-Dichloroethene	20.0	20.2	101	65 - 135	
cis-1,2-Dichloroethene	20.0	20.3	102	65 - 125	
trans-1,2-Dichloroethene	20.0	20.7	103	65 - 135	
1,2-Dichloropropane	20.0	21.1	105	70 - 120	
1,3-Dichloropropane	20.0	20.8	104	75 - 125	
2,2-Dichloropropane	20.0	19.8	99.0	65 - 135	
cis-1,3-Dichloropropene	20.0	20.6	103	70 - 125	
trans-1,3-Dichloropropene	20.0	19.3	96.6	65 - 125	
1,1-Dichloropropene	20.0	19.4	97.1	70 - 135	
Ethylbenzene	20.0	20.6	103	75 - 125	
2-Hexanone	20.0	21.1	106	45 - 145	
Hexachlorobutadiene	20.0	16.5	82.6	55 - 140	

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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030234 Run Date: 03/07/2016 Sample ID: WG559982-02
Instrument ID: HPMS9 Run Time: 16:49 Prep Method: 5030B/5030C/503
File ID: 9M973124 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG559982 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD74900 Cal ID: HPMS9-25-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	20.3	101	75 - 130	
p-Isopropyltoluene	20.0	17.8	89.1	75 - 135	
4-Methyl-2-pentanone	20.0	21.7	109	45 - 145	
Methylene chloride	20.0	19.0	94.9	55 - 140	
Naphthalene	20.0	14.6	72.8	40 - 125	
n-Propylbenzene	20.0	18.6	92.9	65 - 135	
Styrene	20.0	19.8	99.0	75 - 125	
1,1,1,2-Tetrachloroethane	20.0	19.3	96.6	75 - 125	
1,1,2,2-Tetrachloroethane	20.0	16.1	80.4	55 - 130	
Tetrachloroethene	20.0	19.2	96.2	65 - 140	
Toluene	20.0	19.7	98.3	70 - 125	
1,2,3-Trichlorobenzene	20.0	15.3	76.6	60 - 135	
1,2,4-Trichlorobenzene	20.0	15.3	76.7	65 - 130	
1,1,1-Trichloroethane	20.0	20.2	101	70 - 135	
1,1,2-Trichloroethane	20.0	20.2	101	60 - 125	
Trichloroethene	20.0	20.6	103	75 - 125	
Trichlorofluoromethane	20.0	19.8	98.9	25 - 185	
1,2,3-Trichloropropane	20.0	18.0	90.2	65 - 130	
1,2,4-Trimethylbenzene	20.0	17.2	85.8	65 - 135	
1,3,5-Trimethylbenzene	20.0	18.4	92.0	65 - 135	
Vinyl chloride	20.0	18.7	93.4	60 - 125	
o-Xylene	20.0	20.4	102	75 - 125	
m-,p-Xylene	40.0	40.7	102	80 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	94.6	80 - 120	PASS
1,2-Dichloroethane-d4	97.7	80 - 120	PASS
Toluene-d8	95.3	85 - 115	PASS
4-Bromofluorobenzene	96.4	85 - 120	PASS

* EXCEEDS %REC LIMIT

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Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16030234
Instrument: HPMS9
Analyst: FJB
Workgroup: WG555000

Tune ID: WG555000-01
Run Date: 01/25/2016
Run Time: 10:27
File ID: 9M972470
Cal ID: HPMS9 - 25-JAN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	23.0	10289	PASS
75.0	95.0	30.0	60.0	49.3	22030	PASS
95.0	95.0	100	100	100	44728	PASS
96.0	95.0	5.00	9.00	6.98	3122	PASS
173	174	0	2.00	0.381	160	PASS
174	95.0	50.0	100	93.9	41989	PASS
175	174	5.00	9.00	6.62	2778	PASS
176	174	95.0	101	95.6	40133	PASS
177	176	5.00	9.00	6.39	2564	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG555000-02	STD-S	01	01/25/2016 11:22	
WG555000-03	STD-S	01	01/25/2016 11:52	
WG555000-04	STD-S	01	01/25/2016 12:23	
WG555000-05	STD-CCV-S	01	01/25/2016 12:53	
WG555000-06	STD-S	01	01/25/2016 13:23	
WG555000-07	STD-S	01	01/25/2016 13:54	
WG555000-08	STD-S	01	01/25/2016 14:25	
WG555000-09	STD-S	01	01/25/2016 14:56	
WG555000-10	SSCV-S	01	01/25/2016 15:56	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4659269
Report generated 03/14/2016 11:22

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16030234
Instrument: HPMS9
Analyst: ADC
Workgroup: WG558732

Tune ID: WG558732-01
Run Date: 02/25/2016
Run Time: 14:45
File ID: 9M972894
Cal ID: HPMS9 - 25-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.2	5378	PASS
75.0	95.0	30.0	60.0	49.1	13067	PASS
95.0	95.0	100	100	100	26621	PASS
96.0	95.0	5.00	9.00	6.32	1683	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	85.8	22851	PASS
175	174	5.00	9.00	6.50	1485	PASS
176	174	95.0	101	98.3	22461	PASS
177	176	5.00	9.00	7.21	1619	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG558732-02	STD-CCV-S	01	02/25/2016 15:48	
WG558732-03	STD-S	01	02/25/2016 16:55	
WG558732-04	STD-S	01	02/25/2016 17:27	
WG558732-05	STD-S	01	02/25/2016 17:57	
WG558732-06	STD-S	01	02/25/2016 18:28	
WG558732-07	STD-S	01	02/25/2016 18:59	
WG558732-08	STD-S	01	02/25/2016 19:29	
WG558732-09	STD-S	01	02/25/2016 20:00	
WG558732-10	STD-S	01	02/25/2016 20:30	
WG558732-11	SSCV-S	01	02/25/2016 21:31	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4659269
Report generated 03/14/2016 11:22

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16030234
Instrument: HPMS9
Analyst: ADC
Workgroup: WG559858

Tune ID: WG559858-01
Run Date: 03/06/2016
Run Time: 14:28
File ID: 9M973096
Cal ID: HPMS9 - 25-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	23.0	6500	PASS
75.0	95.0	30.0	60.0	49.4	13966	PASS
95.0	95.0	100	100	100	28287	PASS
96.0	95.0	5.00	9.00	6.91	1954	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	74.8	21150	PASS
175	174	5.00	9.00	7.33	1550	PASS
176	174	95.0	101	95.6	20221	PASS
177	176	5.00	9.00	5.87	1186	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG559858-02	CCV-S	01	03/06/2016 15:56	
WG559859-01	BLANK	01	03/06/2016 16:57	
WG559859-02	LCS	01	03/06/2016 17:27	
L16030234-01	18DPT08(5-5.5)030316	01	03/06/2016 21:31	
L16030234-02	18DPT08(15-15.5)030316	01	03/06/2016 22:01	
L16030234-03	18DPT08(10-10.5)030316	01	03/06/2016 22:31	
L16030234-04	18DPT08(21-21.5)030316	01	03/06/2016 23:01	
L16030234-06	18DPT08(35-35.5)030316	01	03/07/2016 00:02	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4659269
Report generated 03/14/2016 11:22

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16030234
Instrument: HPMS9
Analyst: ADC
Workgroup: WG559980

Tune ID: WG559980-01
Run Date: 03/07/2016
Run Time: 14:48
File ID: 9M973120
Cal ID: HPMS9 - 25-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	24.3	8393	PASS
75.0	95.0	30.0	60.0	51.9	17879	PASS
95.0	95.0	100	100	100	34471	PASS
96.0	95.0	5.00	9.00	5.97	2058	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	73.1	25197	PASS
175	174	5.00	9.00	7.16	1804	PASS
176	174	95.0	101	95.6	24090	PASS
177	176	5.00	9.00	6.96	1676	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG559980-02	CCV-S	01	03/07/2016 15:17	
WG559982-01	BLANK	01	03/07/2016 16:18	
WG559982-02	LCS	01	03/07/2016 16:49	
L16030234-05	18DPT08(26-26.5)030316	01	03/07/2016 17:51	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4659269
Report generated 03/14/2016 11:22

Calibration Table Report
Method: A9FOO_SL.M
Title: FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Calibration: Wed Jan 27 09:49:02 2016
Curve: WG555000
Calibration Files

Compound	5 9M972472.D	20 9M972473.D	50 9M972474.D	100 9M972475.D	200 9M972476.D	300 9M972477.D	400 9M972478.D	500 9M972479.D	Avg	%RSD	R^2 Linear
Fluorobenzene	ISTD										
Acetonitrile		0.053	0.046	0.048	0.052	0.046	0.052	0.054	0.050	6.657	
3-Chloro-1-propene	0.498	0.524	0.450	0.519	0.514	0.434	0.507	0.503	0.494	6.719	
2-Chloro-1,3-butadiene	0.534	0.576	0.519	0.592	0.585	0.509	0.593	0.584	0.561	6.202	
Ethyl Acetate		0.333	0.313	0.339	0.338	0.300	0.341	0.344	0.330	5.124	
Methacrylonitrile	0.102	0.109	0.101	0.112	0.110	0.096	0.112	0.112	0.107	5.912	
Isobutyl Alcohol	0.014	0.018	0.018	0.021	0.024	0.021	0.025	0.025	0.021	18.016	0.993
1-Butanol		0.010	0.013	0.015	0.017	0.015	0.018	0.018	0.015	17.838	0.992
Methyl methacrylate	0.236	0.246	0.231	0.265	0.265	0.231	0.271	0.269	0.252	7.005	
2-Nitropropane	0.069	0.073	0.074	0.083	0.089	0.079	0.093	0.095	0.082	12.090	
Chlorobenzene-d5	ISTD										
Cyclohexanone		0.020	0.022	0.025	0.028	0.023	0.027	0.028	0.025	12.963	
1,4-Dichlorobenzene-d4	ISTD										

Wed Jan 27 10:01:56 2016

Calibration Table Report
Method: 8260SL.M
Title: 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Calibration: Fri Feb 26 11:38:33 2016
Curve: WG558732
Calibration Files

Compound	0.5 9M972898.D	1 9M972899.D	2 9M972900.D	5 9M972901.D	20 9M972902.D	50 9M972896.D	100 9M972903.D	200 9M972904.D	300 9M972905.D	Avg	%RSD	R^2 Linear	Quadratic
Fluorobenzene	ISTD												
Dichlorodifluoromethane			0.338	0.271	0.399	0.396	0.318	0.357	0.307	0.341	13.734		
Chloromethane			0.372	0.280	0.331	0.361	0.296	0.346	0.304	0.327	10.674		
Vinyl Chloride		0.250	0.318	0.314	0.373	0.372	0.342	0.355	0.296	0.327	12.768		
1,3-Butadiene			0.347	0.266	0.328	0.330	0.297	0.321	0.293	0.312	8.837		
Bromomethane		0.236	0.267	0.181	0.206	0.208	0.186	0.217	0.199	0.213	13.250		
Chloroethane			0.127	0.116	0.142	0.165	0.139	0.173	0.160	0.146	14.271		
Trichlorofluoromethane		0.519	0.518	0.416	0.503	0.514	0.470	0.517	0.473	0.491	7.357		
Diethyl ether		0.215	0.246	0.217	0.243	0.241	0.214		0.231	0.230	6.215		
Isoprene			0.302	0.251	0.303	0.302	0.282	0.318	0.295	0.293	7.364		
Acrolein		0.041	0.046	0.045	0.046	0.048	0.046		0.050	0.046	6.212		
1,1,2-Trichloro-1,2,2-Trifluoroethane			0.252	0.234	0.255	0.261	0.248	0.273	0.251	0.253	4.699		
Acetone				0.179	0.138	0.128	0.119	0.124		0.138	17.810	0.999	
1,1-Dichloroethene		0.464	0.511	0.400	0.482	0.471	0.454	0.500	0.456	0.467	7.277		
Tert-Butyl Alcohol			0.057	0.046	0.055	0.051	0.047			0.051	8.698		
Dimethyl Sulfide		0.150	0.203	0.186	0.207	0.211	0.196	0.224	0.203	0.197	11.169		
Iodomethane				0.076	0.109	0.154	0.126	0.157	0.142	0.127	24.315	0.993	
Methyl acetate			0.282	0.223	0.279	0.262	0.240	0.258	0.234	0.254	8.867		
Methylene Chloride			0.271	0.217	0.263	0.261	0.240	0.280	0.249	0.254	8.252		
Carbon Disulfide			0.795	0.626	0.740	0.737	0.678	0.761	0.702	0.720	7.788		
Acrylonitrile		0.117	0.127	0.114	0.130	0.135	0.123		0.134	0.126	6.412		
Methyl Tert Butyl Ether		0.669	0.722	0.642	0.760	0.786	0.713	0.788	0.718	0.725	7.239		
trans-1,2-Dichloroethene		0.400	0.422	0.377	0.430	0.438	0.407	0.446	0.412	0.416	5.376		
n-Hexane			0.456	0.385	0.420	0.424	0.429	0.464	0.428	0.430	5.986		
Diisopropyl ether		0.938	1.068	0.928	1.071	1.051	0.931		0.995	0.998	6.627		
Vinyl Acetate			0.593	0.519	0.545	0.602	0.554	0.608	0.558	0.569	5.855		
1,1-Dichloroethane		0.548	0.558	0.445	0.532	0.549	0.499	0.553	0.500	0.523	7.454		
Ethyl-Tert-Butyl ether		0.871	0.992	0.852	0.990	0.988	0.865		0.934	0.928	6.918		
2-Butanone			0.177	0.152	0.156	0.166	0.156	0.172	0.149	0.161	6.650		
Propionitrile		0.042	0.055	0.048	0.053	0.051	0.048		0.049	0.049	8.494		
2,2-Dichloropropane			0.428	0.330	0.377	0.415	0.383	0.417	0.383	0.390	8.575		
cis-1,2-Dichloroethene		0.247	0.257	0.248	0.287	0.297	0.273	0.299	0.277	0.273	7.647		
Chloroform		0.473	0.530	0.432	0.482	0.509	0.459	0.505	0.454	0.480	6.746		
1-Bromopropane			0.011	0.041	0.042	0.043	0.040	0.045	0.041	0.038	31.434	0.997	
Bromochloromethane		0.131	0.173	0.169	0.194	0.199	0.179	0.197	0.178	0.177	12.275		
Tetrahydrofuran			0.111	0.099	0.110	0.110	0.097		0.097	0.104	6.802		
Dibromofluoromethane				0.267	0.243	0.286	0.286	0.274		0.271	6.547		
1,1,1-Trichloroethane		0.426	0.436	0.385	0.438	0.470	0.425	0.470	0.427	0.434	6.319		
Cyclohexane		0.465	0.495	0.425	0.494	0.478	0.465	0.503	0.464	0.474	5.302		
1,1-Dichloropropene		0.353	0.359	0.300	0.344	0.352	0.333	0.360	0.335	0.342	5.748		
Tert-Amyl-Methyl ether		0.631	0.709	0.631	0.716	0.716	0.632		0.684	0.674	6.133		
Carbon Tetrachloride			0.41939	0.34041	0.40512	0.42742	0.39181	0.43819	0.39737	0.40282	7.96886		
1,2-Dichloroethane-d4				0.34995	0.30686	0.35494	0.35835	0.33017		0.34005	6.33015		
Heptane										0	0		
1,2-Dichloroethane		0.36551	0.44947	0.39601	0.44224	0.45938	0.41291	0.4496	0.40581	0.42262	7.76179		
Benzene	1.14079	0.92872	1.03015	0.83328	0.97121	0.9721	0.88431	0.97127	0.88279	0.95718	9.53654		
Trichloroethene		0.30364	0.32158	0.26212	0.31219	0.31666	0.29597	0.321	0.29314	0.30329	6.54492		
Methylcyclohexane		0.31249	0.39837	0.32203	0.40419	0.39506	0.39323	0.42525	0.39247	0.38039	10.6291		
1,2-Dichloropropane		0.23004	0.27101	0.24016	0.27676	0.28593	0.2555	0.28277	0.26062	0.26285	7.66268		
1,4-Dioxane			0.0041	0.00361	0.00449	0.00376	0.00356		0.00414	0.00394	9.17892		
Bromodichloromethane			0.37851	0.33087	0.3725	0.39384	0.35929	0.397	0.36103	0.37044	6.13725		
Dibromomethane		0.15103	0.18915	0.16523	0.1825	0.18519	0.16707	0.1849	0.1682	0.17416	7.61692		
2-Chloroethyl Vinyl Ether				0.04535	0.05625	0.07439	0.06667	0.08013	0.07633	0.06652	20.1377	0.996	
4-Methyl-2-Pentanone				0.08933	0.11327	0.12554	0.11786	0.12977	0.11644	0.11537	12.2612		
cis-1,3-Dichloropropene			0.37321	0.33699	0.39477	0.41098	0.38072	0.42291	0.38195	0.38594	7.23123		
Dimethyl Disulfide			0.30882	0.3269	0.39409	0.4245	0.40234	0.4579	0.40032	0.38784	13.5683		
Chlorobenzene-d5	ISTD												
Toluene-d8				1.21266	1.14503	1.34974	1.34798	1.26813		1.26471	6.98417		
Toluene	1.57001	1.40445	1.51648	1.23448	1.46732	1.48749	1.3712	1.4823	1.3236	1.42859	7.34792		
Ethyl Methacrylate				0.31749	0.4112	0.4195	0.39758	0.44016	0.38999	0.39599	10.6751		
trans-1,3-Dichloropropene			0.50304	0.44978	0.5157	0.56049	0.50648	0.56248	0.50379	0.51454	7.49294		
1,1,2-Trichloroethane		0.27692	0.29584	0.27194	0.31787	0.32454	0.3	0.32173	0.292	0.3001	6.65768		
2-Hexanone				0.26013	0.28088	0.31451	0.30524	0.34734	0.28972	0.29964	10.056		
1,3-Dichloropropane		0.46617	0.55761	0.45639	0.51068	0.53187	0.47698	0.53043	0.47034	0.50006	7.49429		
Tetrachloroethene		0.33351	0.31568	0.26327	0.31051	0.30894	0.30156	0.32634	0.29026	0.30626	7.18201		
Dibromochloromethane			0.45014	0.36113	0.41394	0.44566	0.40515	0.45572	0.40415	0.41941	8.03547		
1,2-Dibromoethane				0.31086	0.34005	0.35035	0.32626	0.35324	0.31647	0.33287	5.32182		
1-Chlorohexane		0.39643	0.40929	0.33097	0.45098	0.44465	0.43807	0.477	0.42289	0.42128	10.5148		
Chlorobenzene		1.02904	1.08596	0.91908	1.05295	1.05625	0.95434	1.02465	0.91009	1.00405	6.67004		
1,1,1,2-Tetrachloroethane			0.37536	0.32525	0.38767	0.40783	0.37127	0.40937	0.36265	0.37706	7.67975		
Ethylbenzene	0.5157	0.51658	0.53164	0.45493	0.54391	0.54636	0.50916	0.54884	0.48836	0.51728	5.93862		
m-,p-Xylene	0.67213	0.61926	0.69794	0.58569	0.67162	0.65634	0.61182	0.65803	0.57657	0.63882	6.58722		
o-Xylene	0.61273	0.56415	0.61379	0.55512	0.6465	0.65334	0.60899	0.67127	0.59158	0.61305	6.41073		
Styrene		0.95813	1.06028	0.90308	1.08018	1.12326	1.04689	1.15897	1.02088	1.04396	8.002		
Bromoform			0.22872	0.23892	0.27832	0.30617	0.27263	0.32232	0.28054	0.27538	12.1348		
Isopropylbenzene		1.53891	1.69742	1.42189	1.74341	1.73716	1.64433	1.81019	1.57289	1.64577	7.76922		
1,4-Dichlorobenzene-d4	ISTD												
1,1,2,2-Tetrachloroethane		0.61571	0.83634	0.73739	0.79769	0.80854	0.74616	0.78083	0.74513	0.75847	8.88143		
p-Bromofluorobenzene				0.91653	0.87561	1.04735	1.0775	0.95104		0.97361	8.83571		
1,2,3-Trichloropropane		0.24645	0.29476	0.28329	0.29208	0.30442	0.29453	0.30315	0.28248	0.28764	6.41284		

trans-1,4-Dichloro-2-Butene		0.22501	0.23725	0.31415	0.3034	0.3105	0.33164	0.30766	0.28994	14.2446
n-Propylbenzene	3.98718	4.09811	3.61454	4.21971	4.10826	3.88939	3.82307	3.70205	3.93029	5.36989
Bromobenzene	0.84385	1.11565	0.86076	0.97118	0.9688	0.89248	0.89548	0.87446	0.92783	9.59949
1,3,5-Trimethylbenzene			2.76735	3.16086	3.10843	2.93606	2.91239	2.81635	2.95024	5.30322
2-Chlorotoluene		2.99265	2.31448	2.81057	2.64897	2.50142	2.61378	2.57101	2.63612	8.25378
4-Chlorotoluene	2.56339	2.5861	2.29006	2.55177	2.63031	2.41864	2.2799	2.17747	2.4372	6.98222
a-Methylstyrene			1.12025	1.41688	1.39756	1.35572	1.41986	1.35543	1.34428	8.43365
tert-Butylbenzene			0.56026	0.65003	0.66483	0.62531	0.61977	0.59094	0.61853	6.19423
1,2,4-Trimethylbenzene	3.41485	3.20381	2.86379	3.24429	3.17284	3.0014	2.96997	2.8463	3.08966	6.49589
sec-Butylbenzene	3.92127	3.95846	3.39254	3.98281	3.96896	3.8029	3.77812	3.59297	3.79976	5.54855
p-Isopropyltoluene			2.97918	3.35219	3.3501	3.24235	3.24339	3.07285	3.20668	4.70949
1,3-Dichlorobenzene	2.09668	2.18083	1.63464	1.82169	1.84149	1.71899	1.77783	1.67989	1.84401	10.6223
1,4-Dichlorobenzene	2.13498	2.06617	1.68605	1.85221	1.83159	1.72549	1.79434	1.65691	1.84347	9.41157
n-Butylbenzene	3.12981	3.1425	2.56827	2.96652	3.08072	3.01911	3.06733	2.87744	2.98146	6.31771
1,2-Dichlorobenzene	1.80685	1.84212	1.52596	1.70901	1.74915	1.66133	1.78603	1.60751	1.71099	6.28256
1,2-Dibromo-3-Chloropropane			0.17584	0.21007	0.23479	0.23723	0.24208	0.21787	0.21965	11.2549
1,2,4-Trichlorobenzene	1.3714	1.33063	1.02655	1.15029	1.2163	1.24479	1.25089	1.12609	1.21462	9.21088
Hexachlorobutadiene	0.57233	0.7279	0.53741	0.61674	0.64289	0.67353	0.72181	0.62948	0.64026	10.4449
Naphthalene		3.19632	2.63671	3.04494	3.29135	3.2233	3.14196	2.79099	3.04651	7.99534
1,2,3-Trichlorobenzene	1.32324	1.26566	0.99788	1.12352	1.21351	1.21702	1.20507	1.0788	1.17809	8.93408

Fri Feb 26 11:40:14 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16030234 Run Date: 02/25/2016 Sample ID: WG558732-11
Instrument ID: HPMS9 Run Time: 21:31 Method: 8260B
File ID: 9M972907 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG558732 Cal ID: HPMS9 - 25-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	48.0	ug/kg	0.461	4.00	20	
1,1-Dichloroethene	CCC	50.0	48.6	ug/kg	0.454	2.90	20	
1,2-Dichloropropane	CCC	50.0	52.3	ug/kg	0.275	4.60	20	
Ethylbenzene	CCC	50.0	51.3	ug/kg	0.531	2.60	20	
Toluene	CCC	50.0	50.7	ug/kg	1.45	1.50	20	
Vinyl Chloride	CCC	50.0	59.8	ug/kg	0.392	19.7	20	
Bromoform	SPCC	50.0	47.3	ug/kg	0.261	5.40	20	
Chlorobenzene	SPCC	50.0	51.2	ug/kg	1.03	2.40	20	
Chloromethane	SPCC	50.0	52.7	ug/kg	0.345	5.40	20	
1,1-Dichloroethane	SPCC	50.0	46.4	ug/kg	0.485	7.20	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	52.0	ug/kg	0.789	4.00	20	
Acetone		50.0	43.9	ug/kg	0.112	12.2	20	
Benzene		50.0	49.0	ug/kg	0.937	2.10	20	
Bromobenzene		50.0	52.2	ug/kg	0.968	4.40	20	
Bromochloromethane		50.0	51.5	ug/kg	0.183	3.00	20	
Bromodichloromethane		50.0	47.6	ug/kg	0.352	4.90	20	
Bromomethane		50.0	49.0	ug/kg	0.208	2.10	20	
2-Butanone		50.0	47.4	ug/kg	0.153	5.20	20	
n-Butylbenzene		50.0	52.5	ug/kg	3.13	4.90	20	
sec-Butylbenzene		50.0	54.7	ug/kg	4.16	9.50	20	
tert-Butylbenzene		50.0	55.4	ug/kg	0.685	10.8	20	
Carbon Disulfide		50.0	44.1	ug/kg	0.635	11.7	20	
Carbon Tetrachloride		50.0	46.5	ug/kg	0.375	7.00	20	
Dibromochloromethane		50.0	48.5	ug/kg	0.407	3.10	20	
Chloroethane		50.0	54.2	ug/kg	0.158	8.30	20	
2-Chlorotoluene		50.0	54.2	ug/kg	2.86	8.40	20	
4-Chlorotoluene		50.0	53.0	ug/kg	2.59	6.10	20	
1,2-Dibromo-3-Chloropropane		50.0	54.5	ug/kg	0.239	8.90	20	
1,2-Dibromoethane		50.0	50.8	ug/kg	0.338	1.50	20	
Dibromomethane		50.0	47.0	ug/kg	0.164	6.10	20	
1,2-Dichlorobenzene		50.0	52.7	ug/kg	1.81	5.50	20	
1,3-Dichlorobenzene		50.0	50.8	ug/kg	1.87	1.60	20	
1,4-Dichlorobenzene		50.0	51.1	ug/kg	1.88	2.20	20	
Dichlorodifluoromethane		50.0	63.4	ug/kg	0.432	26.7	20	*
1,2-Dichloroethane		50.0	49.2	ug/kg	0.416	1.60	20	
cis-1,2-Dichloroethene		50.0	52.6	ug/kg	0.287	5.20	20	
trans-1,2-Dichloroethene		50.0	50.6	ug/kg	0.422	1.20	20	
1,3-Dichloropropane		50.0	53.8	ug/kg	0.538	7.60	20	
2,2-Dichloropropane		50.0	47.1	ug/kg	0.368	5.90	20	
cis-1,3-Dichloropropene		50.0	53.2	ug/kg	0.411	6.40	20	
trans-1,3-Dichloropropene		50.0	50.0	ug/kg	0.515	0.100	20	
1,1-Dichloropropene		50.0	48.5	ug/kg	0.332	2.90	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4659267
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Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16030234 Run Date: 02/25/2016 Sample ID: WG558732-11
Instrument ID: HPMS9 Run Time: 21:31 Method: 8260B
File ID: 9M972907 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG558732 Cal ID: HPMS9 - 25-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	48.2	ug/kg	0.289	3.60	20	
Hexachlorobutadiene		50.0	54.5	ug/kg	0.698	9.00	20	
Isopropylbenzene		50.0	52.0	ug/kg	1.71	4.00	20	
p-Isopropyltoluene		50.0	54.1	ug/kg	3.47	8.10	20	
4-Methyl-2-Pentanone		50.0	47.8	ug/kg	0.110	4.40	20	
Methylene Chloride		50.0	49.8	ug/kg	0.254	0.400	20	
Naphthalene		50.0	50.8	ug/kg	3.10	1.70	20	
n-Propylbenzene		50.0	54.9	ug/kg	4.32	9.80	20	
Styrene		50.0	52.8	ug/kg	1.10	5.60	20	
1,1,1,2-Tetrachloroethane		50.0	49.7	ug/kg	0.375	0.600	20	
Tetrachloroethene		50.0	49.8	ug/kg	0.305	0.400	20	
1,2,3-Trichlorobenzene		50.0	52.6	ug/kg	1.24	5.20	20	
1,2,4-Trichlorobenzene		50.0	51.7	ug/kg	1.26	3.40	20	
1,1,1-Trichloroethane		50.0	46.7	ug/kg	0.406	6.50	20	
1,1,2-Trichloroethane		50.0	51.5	ug/kg	0.309	3.00	20	
Trichloroethene		50.0	49.4	ug/kg	0.300	1.20	20	
Trichlorofluoromethane		50.0	47.6	ug/kg	0.467	4.90	20	
1,2,3-Trichloropropane		50.0	54.2	ug/kg	0.312	8.40	20	
1,2,4-Trimethylbenzene		50.0	51.5	ug/kg	3.18	3.10	20	
1,3,5-Trimethylbenzene		50.0	54.3	ug/kg	3.21	8.60	20	
o-Xylene		50.0	53.6	ug/kg	0.657	7.10	20	
m-,p-Xylene		100	103	ug/kg	0.655	2.60	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

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Version 1.5 PDF File ID: 4659267
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030234 Run Date: 03/06/2016 Sample ID: WG559858-02
Instrument ID: HPMS9 Run Time: 15:56 Method: 8260B
File ID: 9M973099 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG559859 Cal ID: HPMS9 - 25-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.3	ug/kg	0.483	0.621	20	
1,1-Dichloroethene	CCC	50.0	50.4	ug/kg	0.471	0.823	20	
1,2-Dichloropropane	CCC	50.0	53.8	ug/kg	0.283	7.66	20	
Ethylbenzene	CCC	50.0	50.8	ug/kg	0.526	1.66	20	
Toluene	CCC	50.0	49.6	ug/kg	1.42	0.854	20	
Vinyl Chloride	CCC	50.0	51.6	ug/kg	0.338	3.15	20	
Bromoform	SPCC	50.0	50.7	ug/kg	0.279	1.46	20	
Chlorobenzene	SPCC	50.0	49.1	ug/kg	0.986	1.82	20	
Chloromethane	SPCC	50.0	44.3	ug/kg	0.290	11.3	20	
1,1-Dichloroethane	SPCC	50.0	50.8	ug/kg	0.532	1.64	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	46.7	ug/kg	0.708	6.65	20	
Xylenes		150	153	ug/kg	0.639	1.95	40	
Acetone		50.0	50.5	ug/kg	0.128	0.987	20	
Benzene		50.0	50.0	ug/kg	0.958	0.0928	20	
Bromobenzene		50.0	44.1	ug/kg	0.818	11.8	20	
Bromochloromethane		50.0	52.1	ug/kg	0.185	4.10	20	
Bromodichloromethane		50.0	50.8	ug/kg	0.376	1.60	20	
Bromomethane		50.0	42.0	ug/kg	0.179	16.0	20	
2-Butanone		50.0	53.7	ug/kg	0.173	7.40	20	
n-Butylbenzene		50.0	47.0	ug/kg	2.81	5.91	20	
sec-Butylbenzene		50.0	46.4	ug/kg	3.53	7.21	20	
tert-Butylbenzene		50.0	46.5	ug/kg	0.575	7.10	20	
Carbon Disulfide		50.0	52.0	ug/kg	0.748	3.91	20	
Carbon Tetrachloride		50.0	49.4	ug/kg	0.398	1.11	20	
Dibromochloromethane		50.0	50.2	ug/kg	0.421	0.410	20	
Chloroethane		50.0	48.2	ug/kg	0.141	3.54	20	
2-Chlorotoluene		50.0	45.4	ug/kg	2.39	9.21	20	
4-Chlorotoluene		50.0	45.4	ug/kg	2.21	9.25	20	
1,2-Dibromo-3-Chloropropane		50.0	44.5	ug/kg	0.196	11.0	20	
1,2-Dibromoethane		50.0	49.7	ug/kg	0.331	0.666	20	
Dibromomethane		50.0	52.1	ug/kg	0.182	4.21	20	
1,2-Dichlorobenzene		50.0	44.1	ug/kg	1.51	11.9	20	
1,3-Dichlorobenzene		50.0	42.5	ug/kg	1.57	14.9	20	
1,4-Dichlorobenzene		50.0	42.5	ug/kg	1.57	15.0	20	
Dichlorodifluoromethane		50.0	41.5	ug/kg	0.283	17.0	20	
1,2-Dichloroethane		50.0	55.1	ug/kg	0.466	10.2	20	
cis-1,2-Dichloroethene		50.0	51.9	ug/kg	0.284	3.80	20	
trans-1,2-Dichloroethene		50.0	52.4	ug/kg	0.437	4.86	20	
1,3-Dichloropropane		50.0	51.1	ug/kg	0.511	2.11	20	
2,2-Dichloropropane		50.0	50.1	ug/kg	0.392	0.293	20	
cis-1,3-Dichloropropene		50.0	52.2	ug/kg	0.403	4.42	20	
trans-1,3-Dichloropropene		50.0	51.2	ug/kg	0.527	2.43	20	

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030234 Run Date: 03/06/2016 Sample ID: WG559858-02
Instrument ID: HPMS9 Run Time: 15:56 Method: 8260B
File ID: 9M973099 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG559859 Cal ID: HPMS9 - 25-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	50.4	ug/kg	0.345	0.871	20	
2-Hexanone		50.0	54.4	ug/kg	0.326	8.80	20	
Hexachlorobutadiene		50.0	43.0	ug/kg	0.551	13.9	20	
Isopropylbenzene		50.0	51.5	ug/kg	1.70	3.04	20	
p-Isopropyltoluene		50.0	45.9	ug/kg	2.94	8.26	20	
4-Methyl-2-Pentanone		50.0	55.6	ug/kg	0.128	11.2	20	
Methylene Chloride		50.0	49.6	ug/kg	0.253	0.775	20	
Naphthalene		50.0	46.1	ug/kg	2.81	7.78	20	
n-Propylbenzene		50.0	46.6	ug/kg	3.66	6.80	20	
Styrene		50.0	51.5	ug/kg	1.08	2.98	20	
1,1,1,2-Tetrachloroethane		50.0	50.4	ug/kg	0.380	0.836	20	
Tetrachloroethene		50.0	49.2	ug/kg	0.302	1.50	20	
1,2,3-Trichlorobenzene		50.0	44.2	ug/kg	1.04	11.5	20	
1,2,4-Trichlorobenzene		50.0	42.8	ug/kg	1.04	14.3	20	
1,1,1-Trichloroethane		50.0	50.1	ug/kg	0.435	0.115	20	
1,1,2-Trichloroethane		50.0	54.3	ug/kg	0.326	8.65	20	
Trichloroethene		50.0	50.4	ug/kg	0.306	0.764	20	
Trichlorofluoromethane		50.0	47.7	ug/kg	0.469	4.53	20	
1,2,3-Trichloropropane		50.0	47.6	ug/kg	0.274	4.81	20	
1,2,4-Trimethylbenzene		50.0	44.7	ug/kg	2.76	10.7	20	
1,3,5-Trimethylbenzene		50.0	45.6	ug/kg	2.69	8.72	20	
o-Xylene		50.0	51.4	ug/kg	0.630	2.72	20	
m-,p-Xylene		100	102	ug/kg	0.649	1.57	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4659271
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030234 Run Date: 03/07/2016 Sample ID: WG559980-02
Instrument ID: HPMS9 Run Time: 15:17 Method: 8260B
File ID: 9M973121 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG559982 Cal ID: HPMS9 - 25-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	52.1	ug/kg	0.500	4.14	20	
1,1-Dichloroethene	CCC	50.0	53.3	ug/kg	0.498	6.67	20	
1,2-Dichloropropane	CCC	50.0	54.8	ug/kg	0.288	9.67	20	
Ethylbenzene	CCC	50.0	51.9	ug/kg	0.537	3.74	20	
Toluene	CCC	50.0	50.7	ug/kg	1.45	1.41	20	
Vinyl Chloride	CCC	50.0	55.7	ug/kg	0.365	11.4	20	
Bromoform	SPCC	50.0	51.0	ug/kg	0.281	2.08	20	
Chlorobenzene	SPCC	50.0	50.7	ug/kg	1.02	1.47	20	
Chloromethane	SPCC	50.0	47.9	ug/kg	0.313	4.20	20	
1,1-Dichloroethane	SPCC	50.0	54.0	ug/kg	0.565	7.95	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	45.1	ug/kg	0.685	9.71	20	
Xylenes		150	155	ug/kg	0.650	3.64	40	
Acetone		50.0	50.0	ug/kg	0.126	0.0460	20	
Benzene		50.0	50.2	ug/kg	0.961	0.429	20	
Bromobenzene		50.0	45.3	ug/kg	0.841	9.31	20	
Bromochloromethane		50.0	51.5	ug/kg	0.183	3.06	20	
Bromodichloromethane		50.0	51.6	ug/kg	0.383	3.27	20	
Bromomethane		50.0	42.9	ug/kg	0.183	14.1	20	
2-Butanone		50.0	52.3	ug/kg	0.169	4.50	20	
n-Butylbenzene		50.0	51.3	ug/kg	3.06	2.61	20	
sec-Butylbenzene		50.0	49.5	ug/kg	3.76	0.971	20	
tert-Butylbenzene		50.0	48.0	ug/kg	0.594	3.94	20	
Carbon Disulfide		50.0	54.2	ug/kg	0.781	8.47	20	
Carbon Tetrachloride		50.0	56.1	ug/kg	0.452	12.2	20	
Dibromochloromethane		50.0	48.8	ug/kg	0.410	2.37	20	
Chloroethane		50.0	54.7	ug/kg	0.160	9.46	20	
2-Chlorotoluene		50.0	46.9	ug/kg	2.47	6.14	20	
4-Chlorotoluene		50.0	49.5	ug/kg	2.41	0.944	20	
1,2-Dibromo-3-Chloropropane		50.0	44.2	ug/kg	0.194	11.6	20	
1,2-Dibromoethane		50.0	48.1	ug/kg	0.320	3.81	20	
Dibromomethane		50.0	49.7	ug/kg	0.173	0.585	20	
1,2-Dichlorobenzene		50.0	45.9	ug/kg	1.57	8.25	20	
1,3-Dichlorobenzene		50.0	45.3	ug/kg	1.67	9.39	20	
1,4-Dichlorobenzene		50.0	45.4	ug/kg	1.67	9.24	20	
Dichlorodifluoromethane		50.0	45.0	ug/kg	0.306	10.1	20	
1,2-Dichloroethane		50.0	53.5	ug/kg	0.453	7.08	20	
cis-1,2-Dichloroethene		50.0	53.2	ug/kg	0.290	6.31	20	
trans-1,2-Dichloroethene		50.0	54.8	ug/kg	0.457	9.68	20	
1,3-Dichloropropane		50.0	49.4	ug/kg	0.494	1.16	20	
2,2-Dichloropropane		50.0	57.8	ug/kg	0.451	15.5	20	
cis-1,3-Dichloropropene		50.0	52.5	ug/kg	0.405	4.93	20	
trans-1,3-Dichloropropene		50.0	51.0	ug/kg	0.525	2.09	20	

CCV - Modified 03/05/2008
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Report generated 03/14/2016 11:22

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030234 Run Date: 03/07/2016 Sample ID: WG559980-02
Instrument ID: HPMS9 Run Time: 15:17 Method: 8260B
File ID: 9M973121 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG559982 Cal ID: HPMS9 - 25-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	53.5	ug/kg	0.366	7.00	20	
2-Hexanone		50.0	50.6	ug/kg	0.303	1.27	20	
Hexachlorobutadiene		50.0	48.7	ug/kg	0.623	2.68	20	
Isopropylbenzene		50.0	53.7	ug/kg	1.77	7.45	20	
p-Isopropyltoluene		50.0	49.5	ug/kg	3.18	0.988	20	
4-Methyl-2-Pentanone		50.0	51.2	ug/kg	0.118	2.32	20	
Methylene Chloride		50.0	50.0	ug/kg	0.254	0.0730	20	
Naphthalene		50.0	45.4	ug/kg	2.76	9.27	20	
n-Propylbenzene		50.0	49.7	ug/kg	3.91	0.537	20	
Styrene		50.0	52.2	ug/kg	1.09	4.48	20	
1,1,1,2-Tetrachloroethane		50.0	50.9	ug/kg	0.384	1.81	20	
Tetrachloroethene		50.0	51.9	ug/kg	0.318	3.87	20	
1,2,3-Trichlorobenzene		50.0	46.2	ug/kg	1.09	7.69	20	
1,2,4-Trichlorobenzene		50.0	46.2	ug/kg	1.12	7.58	20	
1,1,1-Trichloroethane		50.0	54.9	ug/kg	0.477	9.88	20	
1,1,2-Trichloroethane		50.0	50.2	ug/kg	0.301	0.347	20	
Trichloroethene		50.0	53.5	ug/kg	0.324	6.92	20	
Trichlorofluoromethane		50.0	55.3	ug/kg	0.543	10.6	20	
1,2,3-Trichloropropane		50.0	46.9	ug/kg	0.270	6.12	20	
1,2,4-Trimethylbenzene		50.0	47.5	ug/kg	2.94	4.96	20	
1,3,5-Trimethylbenzene		50.0	48.4	ug/kg	2.85	3.27	20	
o-Xylene		50.0	52.4	ug/kg	0.642	4.74	20	
m-,p-Xylene		100	103	ug/kg	0.659	3.09	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4659271
Report generated 03/14/2016 11:22

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16030234
Instrument ID: HPMS9
Workgroup (AAB#): WG559859

ICAL CCV Number: WG558732-02
CAL ID: HPMS9 - 25-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558732-02	NA	NA	183008	378926	517775
Upper Limit	NA	NA	366016	757852	1035550
Lower Limit	NA	NA	91504	189463	258888
L16030234-01	1.00	01	204986	390973	520456
L16030234-02	1.00	01	172975	341132	458479
L16030234-03	1.00	01	193752	382523	512636
L16030234-04	1.00	01	181646	364200	493928
L16030234-06	1.00	01	171566	337203	454311
WG559859-01	1.00	01	209918	419175	561969
WG559859-02	1.00	01	236934	449882	599667

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4659273
Report generated 03/14/2016 11:22

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16030234
Instrument ID: HPMS9
Workgroup (AAB#): WG559982

ICAL CCV Number: WG558732-02
CAL ID: HPMS9 - 25-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558732-02	NA	NA	183008	378926	517775
Upper Limit	NA	NA	366016	757852	1035550
Lower Limit	NA	NA	91504	189463	258888
L16030234-05	1.00	01	188823	368734	492604
WG559982-01	1.00	01	193847	377724	512722
WG559982-02	1.00	01	201592	374762	497008

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4659273
Report generated 03/14/2016 11:22

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16030234
Instrument ID: HPMS9
Workgroup (AAB#): WG559859

ICAL CCV Number: WG558732-02
CAL ID: HPMS9 - 25-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558732-02	NA	NA	17.76	14.73	10.85
Upper Limit	NA	NA	18.26	15.23	11.35
Lower Limit	NA	NA	17.26	14.23	10.35
L16030234-01	1.00	01	17.75	14.72	10.85
L16030234-02	1.00	01	17.75	14.72	10.85
L16030234-03	1.00	01	17.75	14.72	10.85
L16030234-04	1.00	01	17.75	14.72	10.85
L16030234-06	1.00	01	17.75	14.72	10.85
WG559859-01	1.00	01	17.75	14.72	10.85
WG559859-02	1.00	01	17.75	14.72	10.85

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4659275
Report generated: 03/14/2016 11:22

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16030234
Instrument ID: HPMS9
Workgroup (AAB#): WG559982

ICAL CCV Number: WG558732-02
CAL ID: HPMS9 - 25-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558732-02	NA	NA	17.76	14.73	10.85
Upper Limit	NA	NA	18.26	15.23	11.35
Lower Limit	NA	NA	17.26	14.23	10.35
L16030234-05	1.00	01	17.75	14.72	10.85
WG559982-01	1.00	01	17.75	14.72	10.85
WG559982-02	1.00	01	17.75	14.72	10.85

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4659275
Report generated: 03/14/2016 11:22

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973110.D Vial: 14
Acq On : 6 Mar 2016 21:31 Operator: ADC
Sample : L16030234-01 A 8260 4.61g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 12:19:13 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	520456	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	390973	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	204986	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	139207	49.3443 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.68%		
43) 1,2-Dichloroethane-d4	10.45	65	197637	55.8349 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 111.66%		
58) Toluene-d8	12.82	98	488418	49.3884 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.78%		
79) p-Bromofluorobenzene	16.22	95	204199	51.1584 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.32%		

Target Compounds

					Qvalue
13) Acetone	6.42	43	4527	1.1016 ug/kg	82
15) Tert-Butyl Alcohol	6.76	59	231	0.4341 ug/kg#	58
36) Tetrahydrofuran	9.78	42	1076	0.9946 ug/kg#	43
56) Dimethyl Disulfide	12.82	94	14006	3.4693 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M973110.D 8260SL.M Mon Mar 07 12:19:13 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973110.D Vial: 14
Acq On : 6 Mar 2016 21:31 Operator: ADC
Sample : L16030234-01 A 8260 4.61g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 7 12:19 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

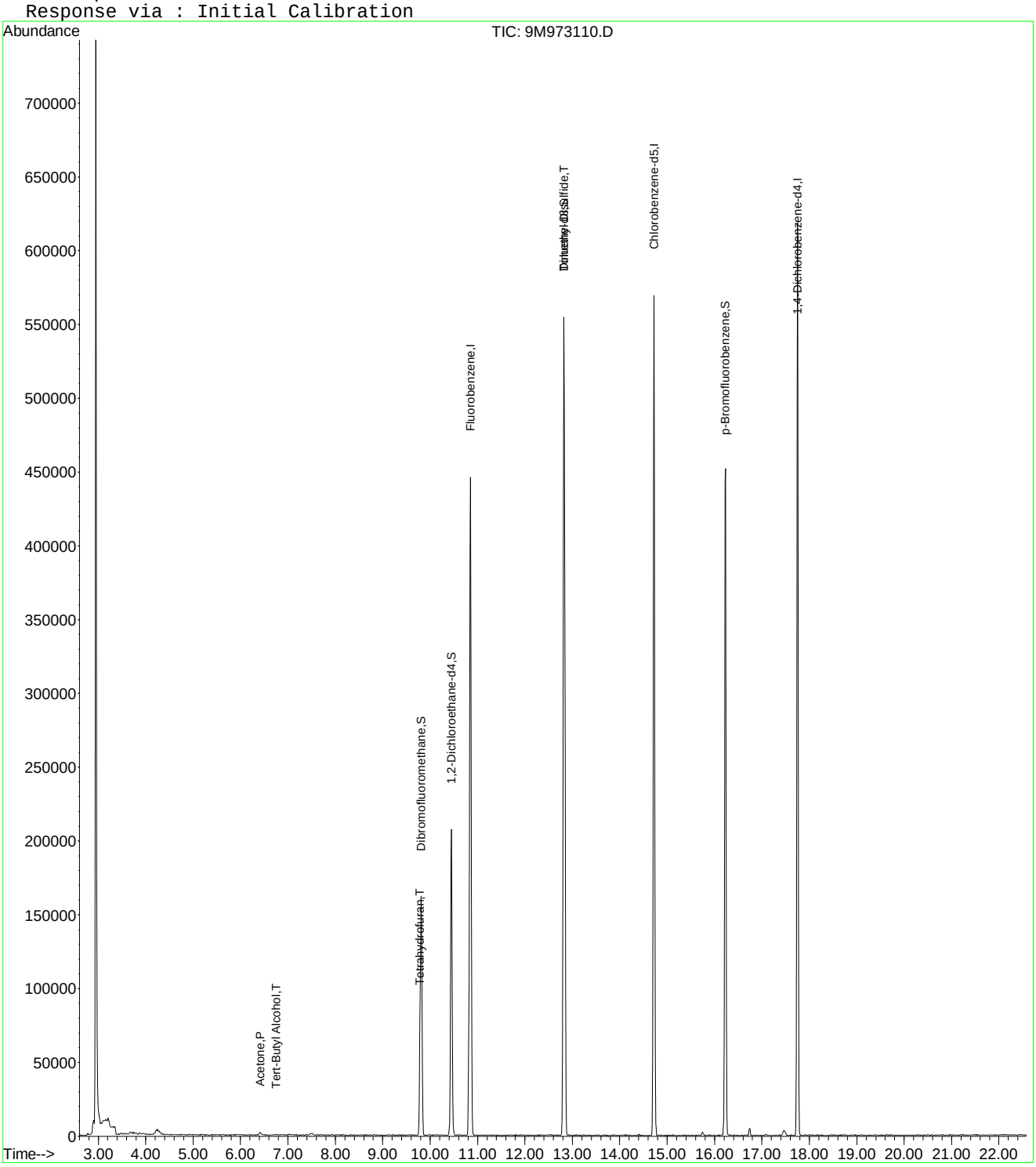

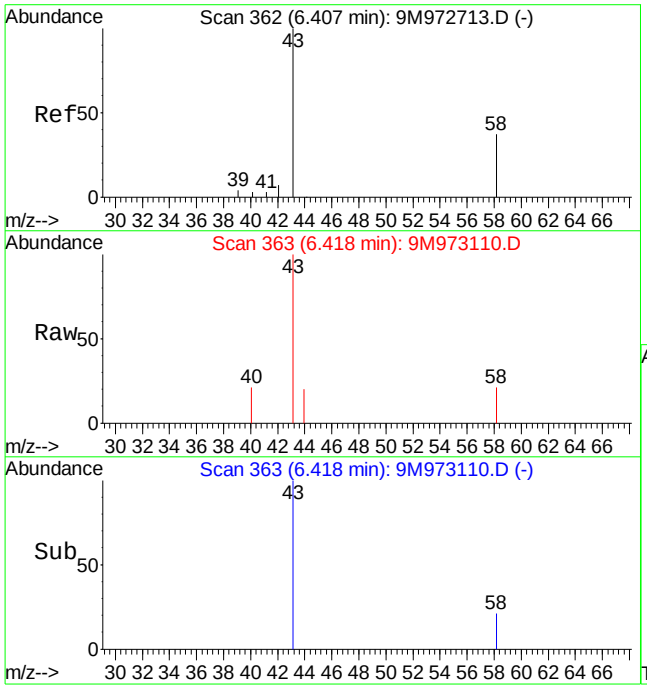

#13
Acetone
Concen: 1.10 ug/kg
RT: 6.42 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M973110.D
Acq: 6 Mar 2016 21:31

Tgt Ion: 43 Resp: 4527

Ion	Ratio	Lower	Upper
43	100		
58	18.6	16.9	39.3

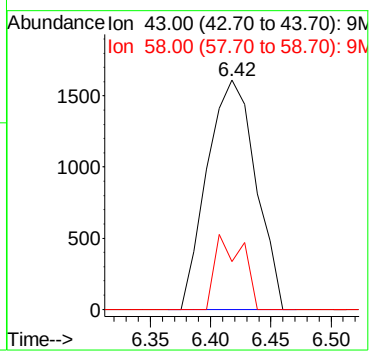

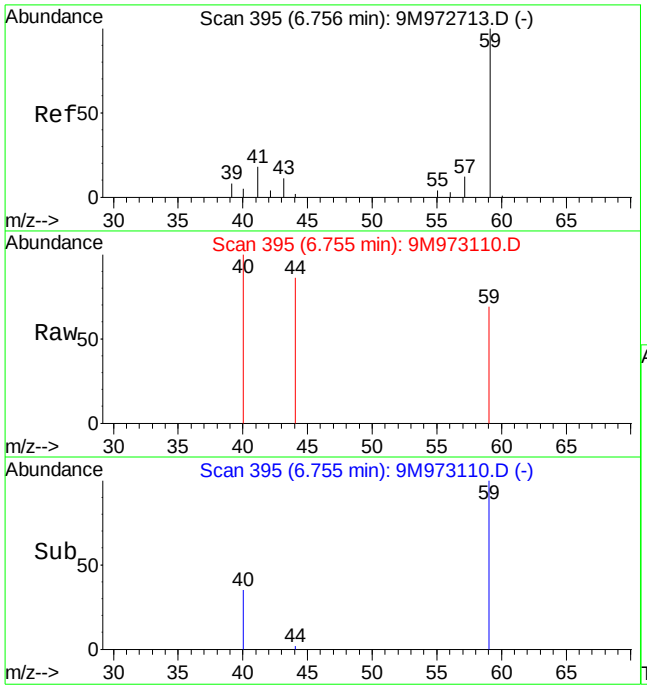

#15
Tert-Butyl Alcohol
Concen: 0.43 ug/kg
RT: 6.76 min Scan# 395
Delta R.T. -0.01 min
Lab File: 9M973110.D
Acq: 6 Mar 2016 21:31

Tgt Ion: 59 Resp: 231

Ion	Ratio	Lower	Upper
59	100		
41	0.0	14.1	32.9#
57	0.0	6.4	15.0#

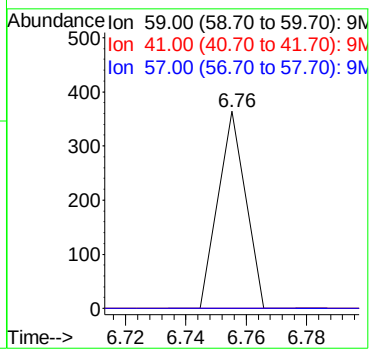

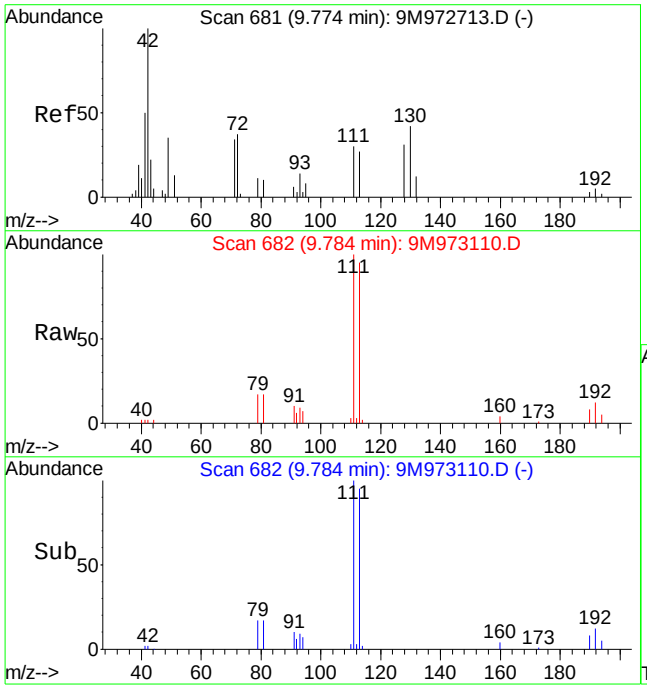

#36
Tetrahydrofuran
Concen: 0.99 ug/kg
RT: 9.78 min Scan# 682
Delta R.T. 0.00 min
Lab File: 9M973110.D
Acq: 6 Mar 2016 21:31

Tgt Ion: 42 Resp: 1076

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

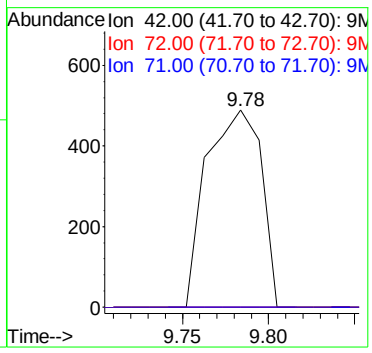

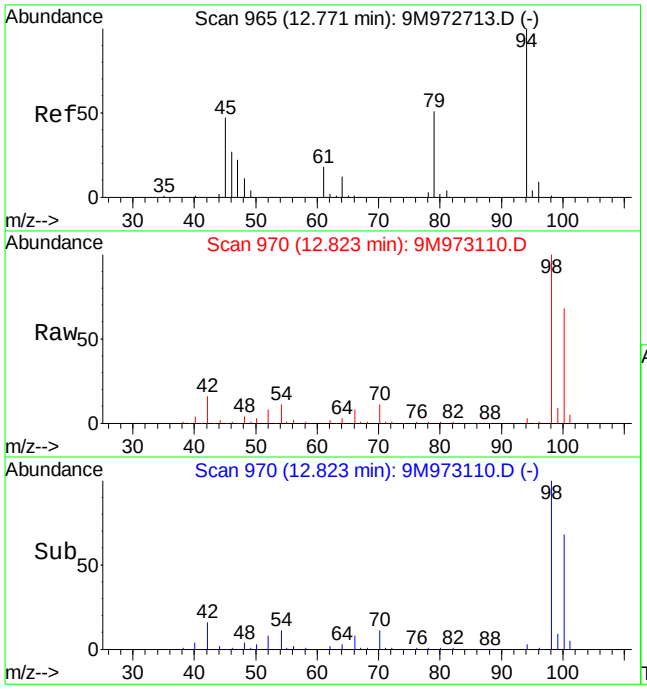

#56
Dimethyl Disulfide
Concen: 3.47 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M973110.D
Acq: 6 Mar 2016 21:31

Tgt Ion: 94 Resp: 14006

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

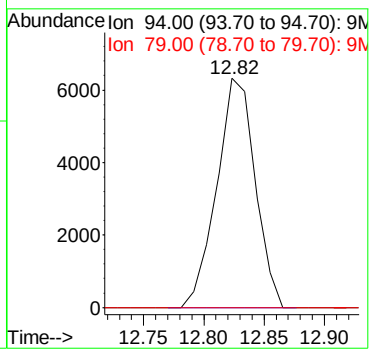

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973111.D Vial: 15
Acq On : 6 Mar 2016 22:01 Operator: ADC
Sample : L16030234-02 A 8260 4.73g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 12:19:14 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	458479	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	341132	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.75	152	172975	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	120103	48.3275 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.66%		
43) 1,2-Dichloroethane-d4	10.45	65	154956	49.6947 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.38%		
58) Toluene-d8	12.83	98	424036	49.1428 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.28%		
79) p-Bromofluorobenzene	16.23	95	174622	51.8445 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 103.68%		

Target Compounds

					Qvalue
13) Acetone	6.41	43	6667	3.5299 ug/kg	95
29) 2-Butanone	9.03	43	720	0.4870 ug/kg#	58
36) Tetrahydrofuran	9.78	42	651	0.6831 ug/kg#	43
56) Dimethyl Disulfide	12.83	94	11670	3.2815 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M973111.D 8260SL.M Mon Mar 07 12:19:14 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973111.D Vial: 15
Acq On : 6 Mar 2016 22:01 Operator: ADC
Sample : L16030234-02 A 8260 4.73g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 7 12:19 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

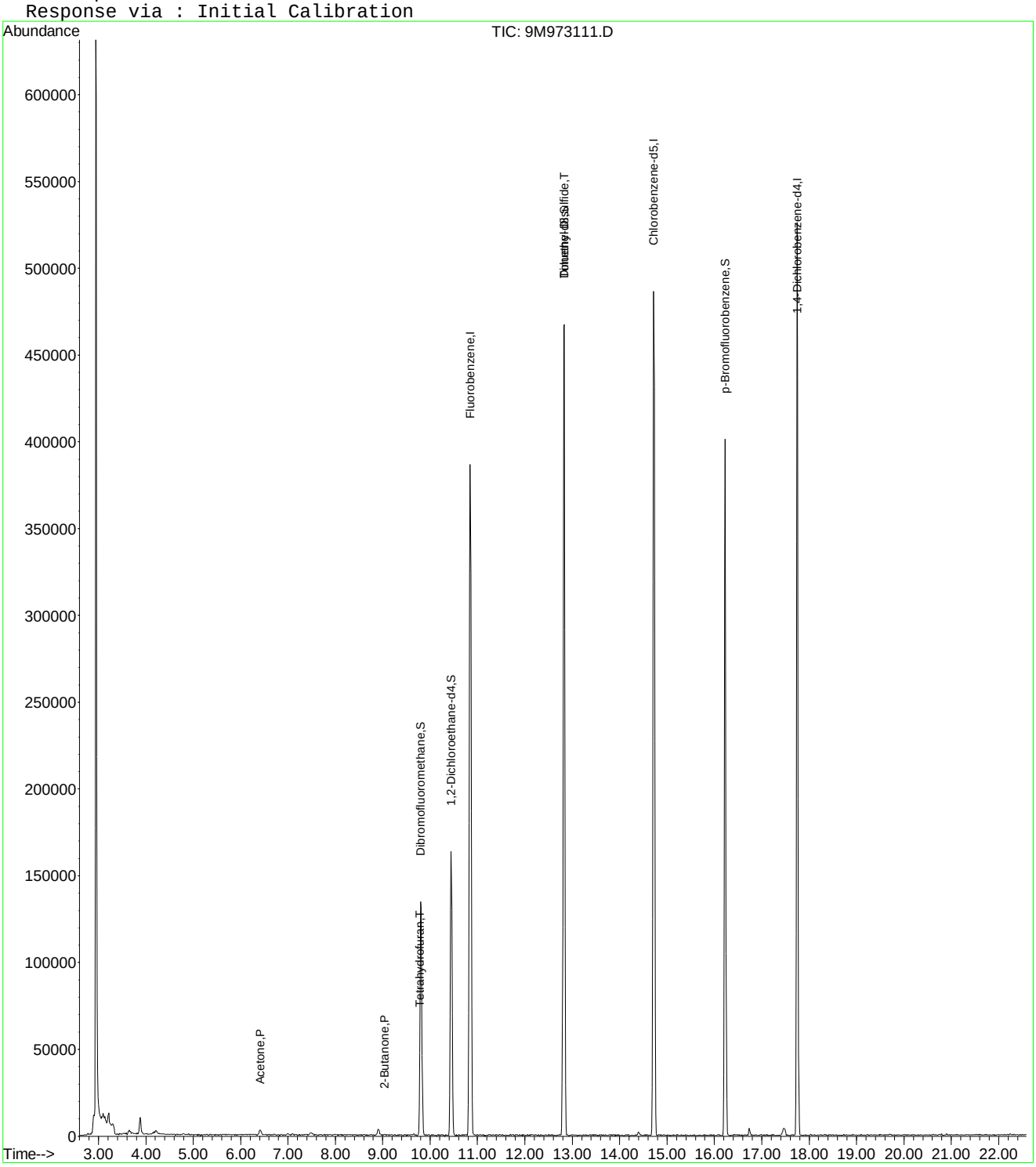

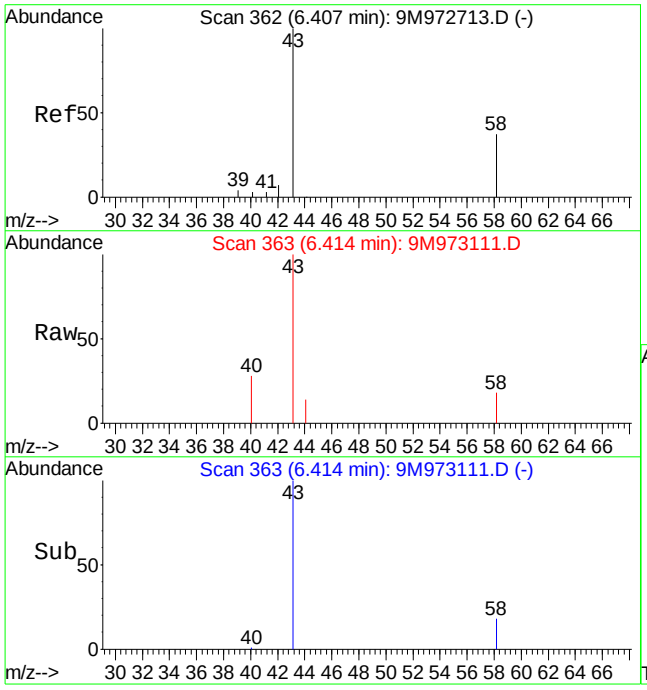

#13
Acetone
Concen: 3.53 ug/kg
RT: 6.41 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M973111.D
Acq: 6 Mar 2016 22:01

Tgt Ion: 43 Resp: 6667

Ion	Ratio	Lower	Upper
43	100		
58	25.5	16.9	39.3

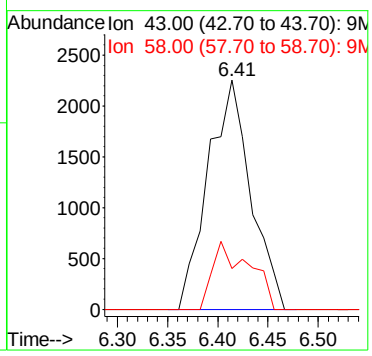

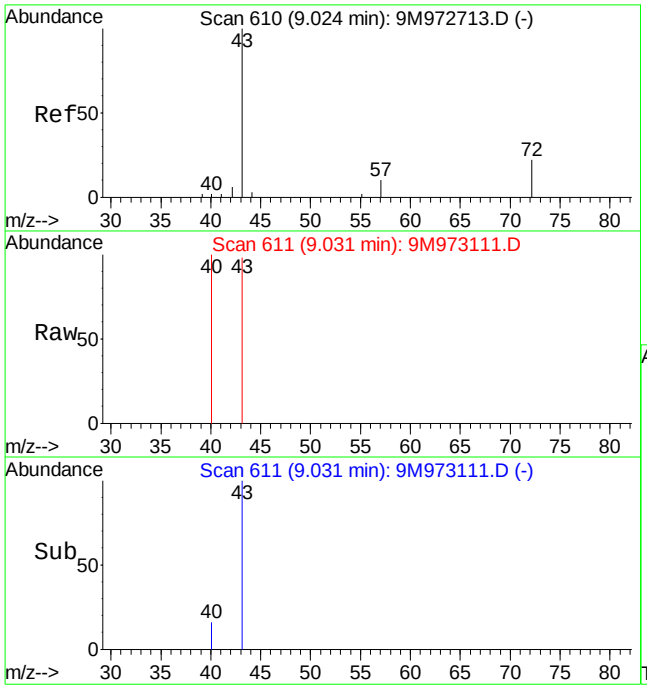

#29
2-Butanone
Concen: 0.49 ug/kg
RT: 9.03 min Scan# 611
Delta R.T. 0.00 min
Lab File: 9M973111.D
Acq: 6 Mar 2016 22:01

Tgt Ion: 43 Resp: 720

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

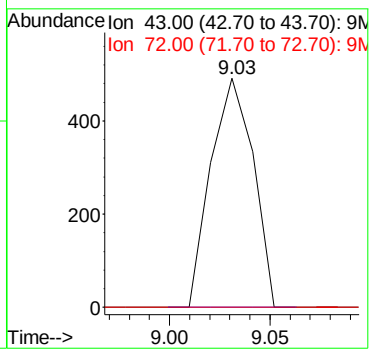

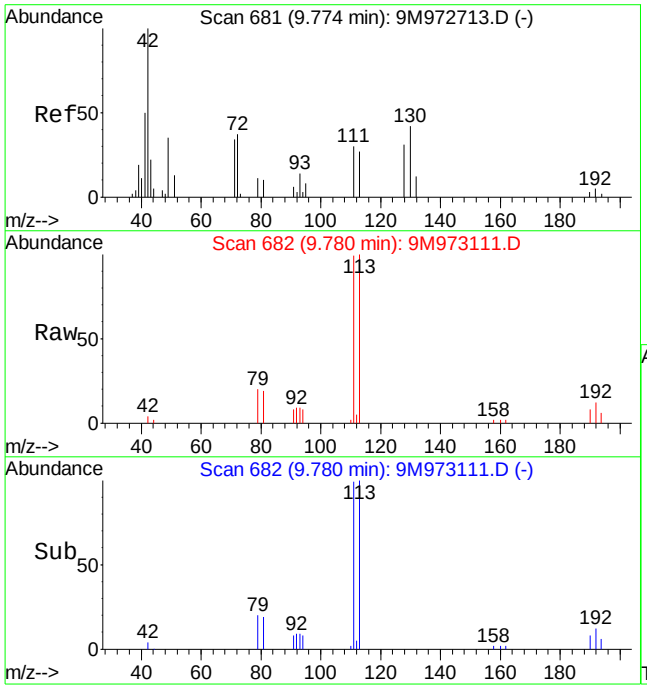

#36
Tetrahydrofuran
Concen: 0.68 ug/kg
RT: 9.78 min Scan# 682
Delta R.T. 0.00 min
Lab File: 9M973111.D
Acq: 6 Mar 2016 22:01

Tgt Ion: 42 Resp: 651

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

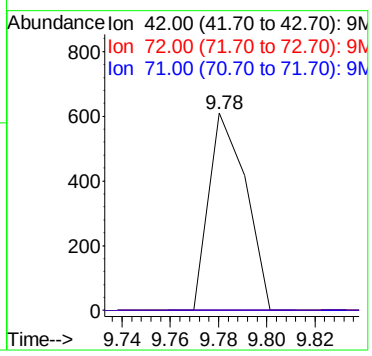

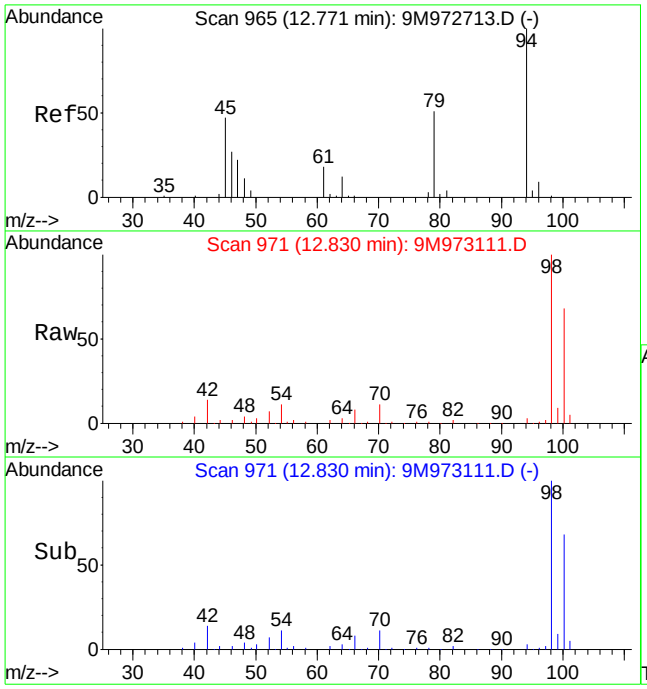

#56
Dimethyl Disulfide
Concen: 3.28 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.06 min
Lab File: 9M973111.D
Acq: 6 Mar 2016 22:01

Tgt Ion: 94 Resp: 11670

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

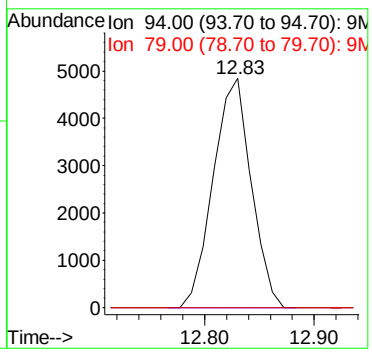

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973112.D Vial: 16
Acq On : 6 Mar 2016 22:31 Operator: ADC
Sample : L16030234-03 A 8260 4.79g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 12:19:15 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	512636	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	382523	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	193752	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	131589	47.3555 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.72%		
43) 1,2-Dichloroethane-d4	10.45	65	174782	50.1313 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.26%		
58) Toluene-d8	12.82	98	470017	48.5776 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 97.16%		
79) p-Bromofluorobenzene	16.22	95	191543	50.7700 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 101.54%		

Target Compounds

					Qvalue
13) Acetone	6.41	43	5827	2.2106 ug/kg	88
29) 2-Butanone	9.02	43	917	0.5547 ug/kg#	58
36) Tetrahydrofuran	9.76	42	1013	0.9507 ug/kg#	43
56) Dimethyl Disulfide	12.82	94	13776	3.4644 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M973112.D 8260SL.M Mon Mar 07 12:19:15 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973112.D Vial: 16
Acq On : 6 Mar 2016 22:31 Operator: ADC
Sample : L16030234-03 A 8260 4.79g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 7 12:19 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

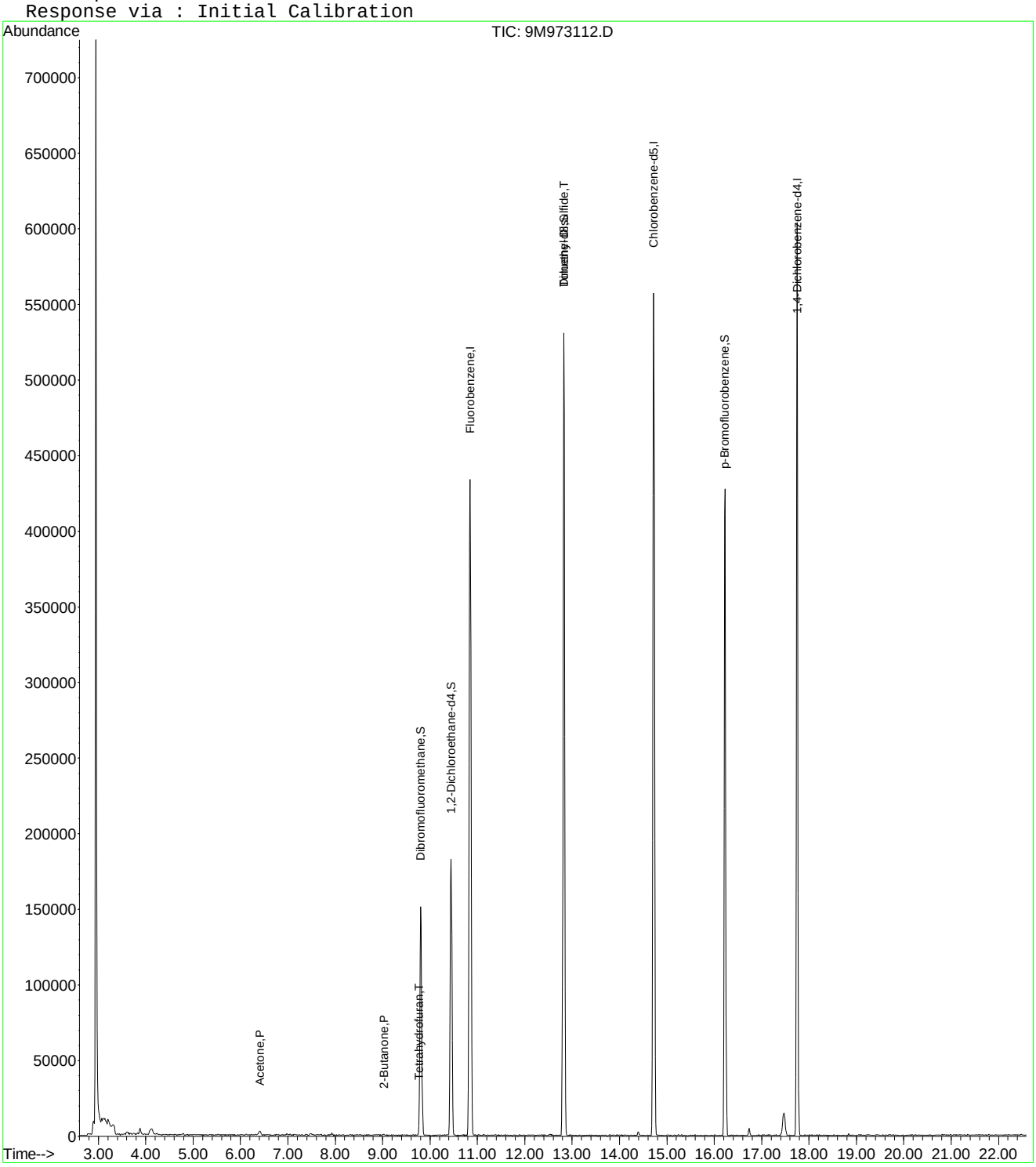

9M973112.D 8260SL.M Mon Mar 07 12:19:15 2016 Page 2

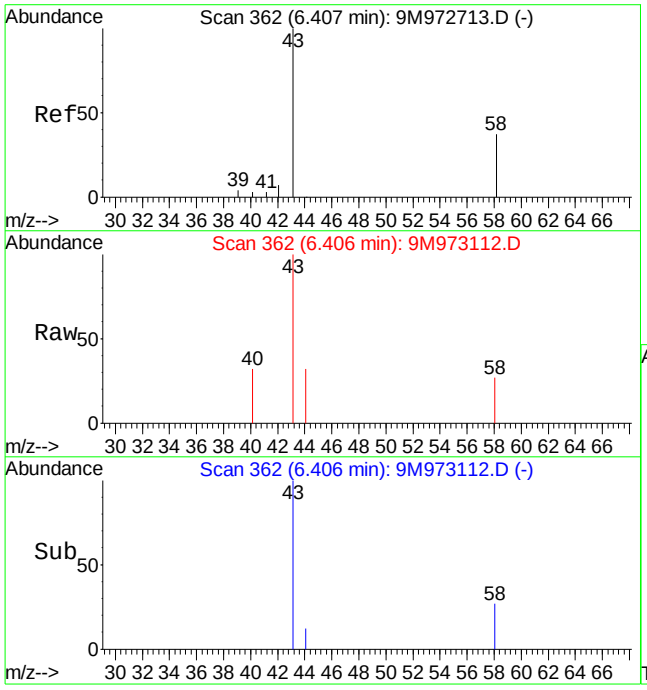

#13
Acetone
Concen: 2.21 ug/kg
RT: 6.41 min Scan# 362
Delta R.T. -0.01 min
Lab File: 9M973112.D
Acq: 6 Mar 2016 22:31

Tgt Ion: 43 Resp: 5827

Ion	Ratio	Lower	Upper
43	100		
58	21.6	16.9	39.3

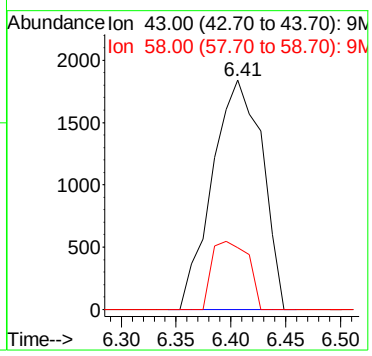

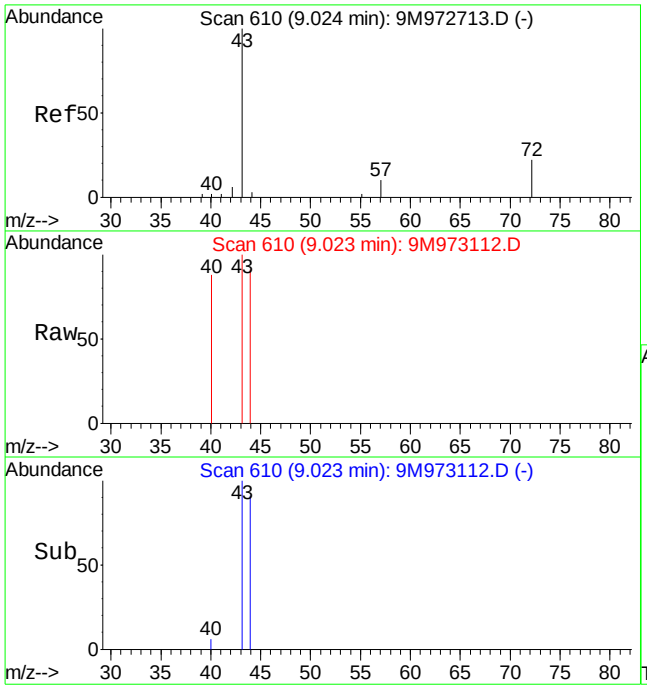

#29
2-Butanone
Concen: 0.55 ug/kg
RT: 9.02 min Scan# 610
Delta R.T. -0.01 min
Lab File: 9M973112.D
Acq: 6 Mar 2016 22:31

Tgt Ion: 43 Resp: 917

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

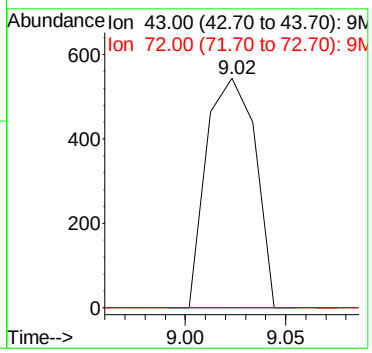

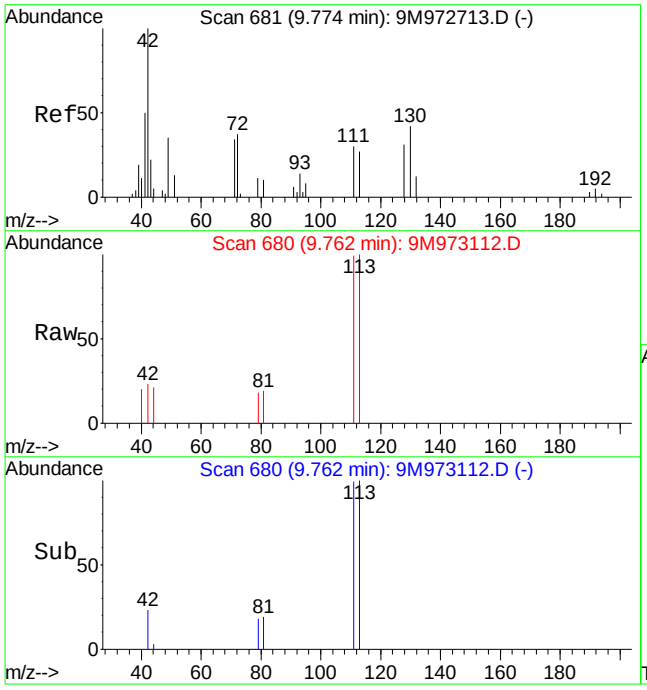

#36
Tetrahydrofuran
Concen: 0.95 ug/kg
RT: 9.76 min Scan# 680
Delta R.T. -0.02 min
Lab File: 9M973112.D
Acq: 6 Mar 2016 22:31

Tgt Ion: 42 Resp: 1013

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

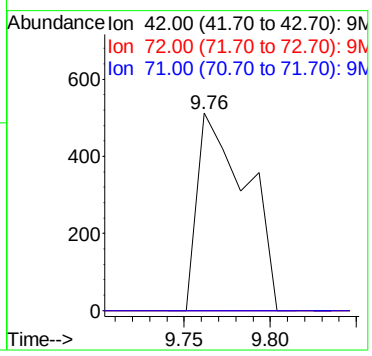

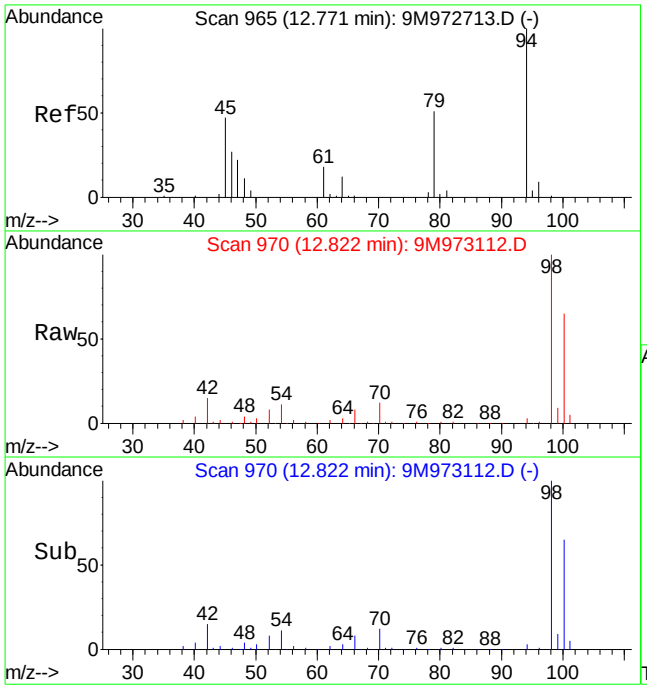

#56
Dimethyl Disulfide
Concen: 3.46 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M973112.D
Acq: 6 Mar 2016 22:31

Tgt Ion: 94 Resp: 13776

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

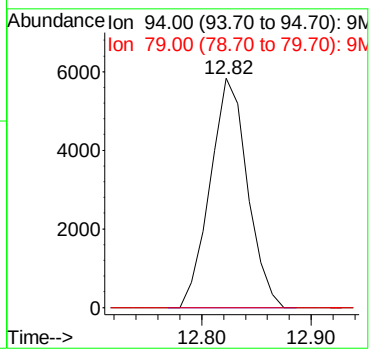

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973113.D Vial: 17
Acq On : 6 Mar 2016 23:01 Operator: ADC
Sample : L16030234-04 A 8260 4.56g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 12:19:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	493928	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	364200	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	181646	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	126996	47.4336 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.86%		
43) 1,2-Dichloroethane-d4	10.45	65	163217	48.5874 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.18%		
58) Toluene-d8	12.82	98	454325	49.3181 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.64%		
79) p-Bromofluorobenzene	16.22	95	181188	51.2261 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.46%		

Target Compounds					Qvalue
13) Acetone	6.42	43	7449	3.7541 ug/kg	92
29) 2-Butanone	9.02	43	800	0.5023 ug/kg#	58
36) Tetrahydrofuran	9.79	42	986	0.9604 ug/kg#	43
56) Dimethyl Disulfide	12.82	94	12893	3.3652 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M973113.D 8260SL.M Mon Mar 07 12:19:16 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973113.D Vial: 17
Acq On : 6 Mar 2016 23:01 Operator: ADC
Sample : L16030234-04 A 8260 4.56g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 7 12:19 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

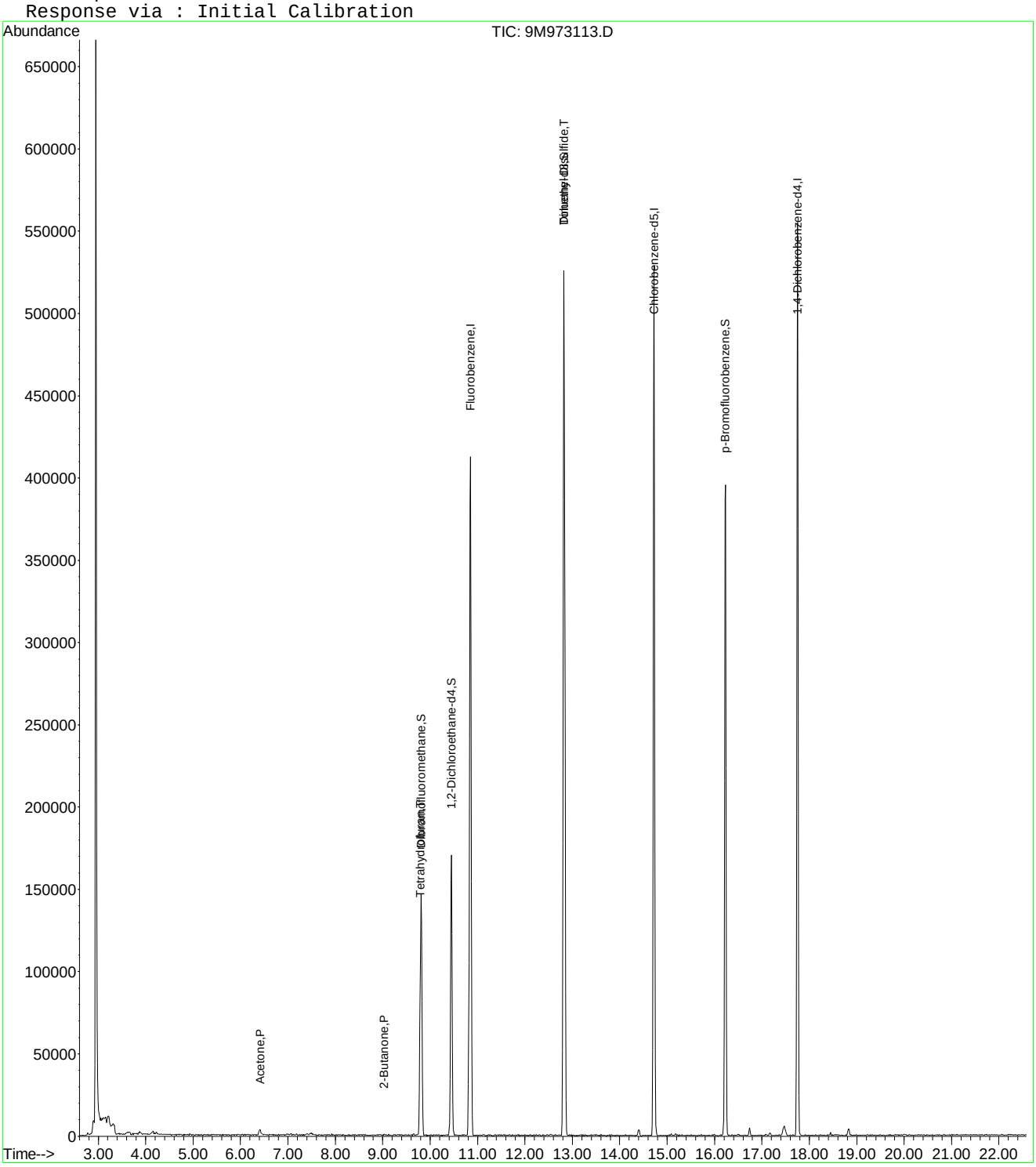

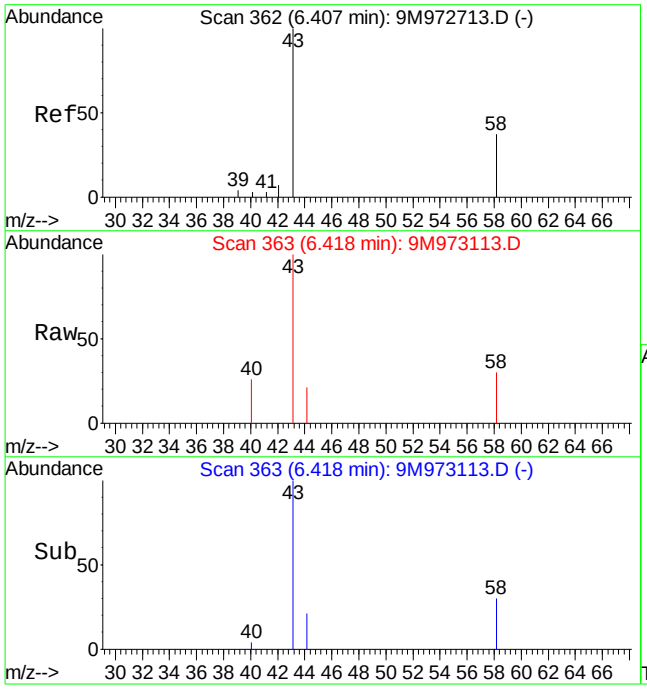

#13
Acetone
Concen: 3.75 ug/kg
RT: 6.42 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M973113.D
Acq: 6 Mar 2016 23:01

Tgt Ion: 43 Resp: 7449

Ion	Ratio	Lower	Upper
43	100		
58	32.3	16.9	39.3

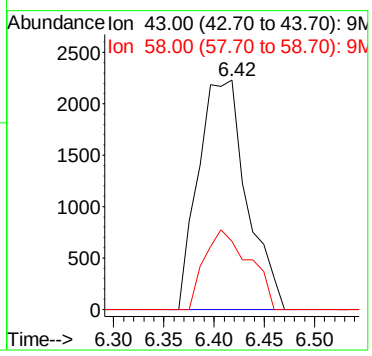

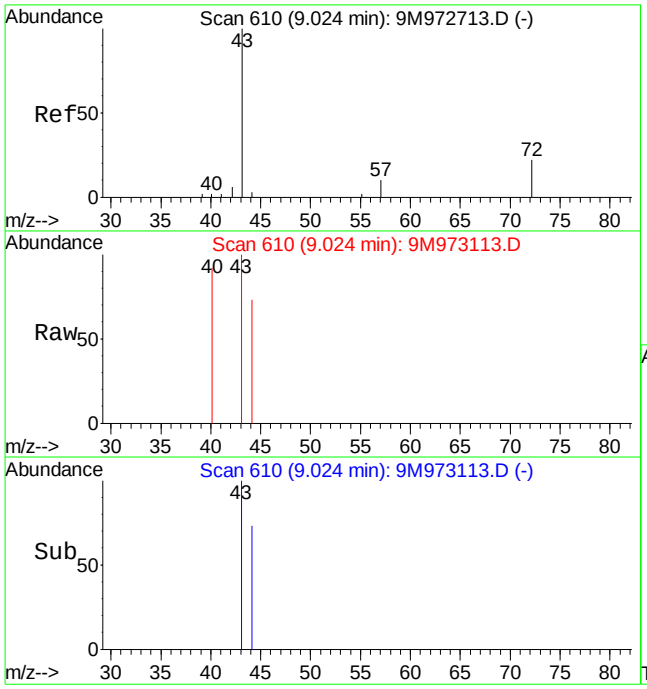

#29
2-Butanone
Concen: 0.50 ug/kg
RT: 9.02 min Scan# 610
Delta R.T. -0.01 min
Lab File: 9M973113.D
Acq: 6 Mar 2016 23:01

Tgt Ion: 43 Resp: 800

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

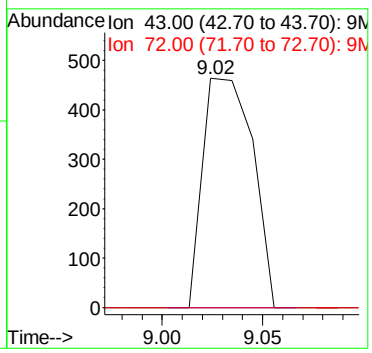

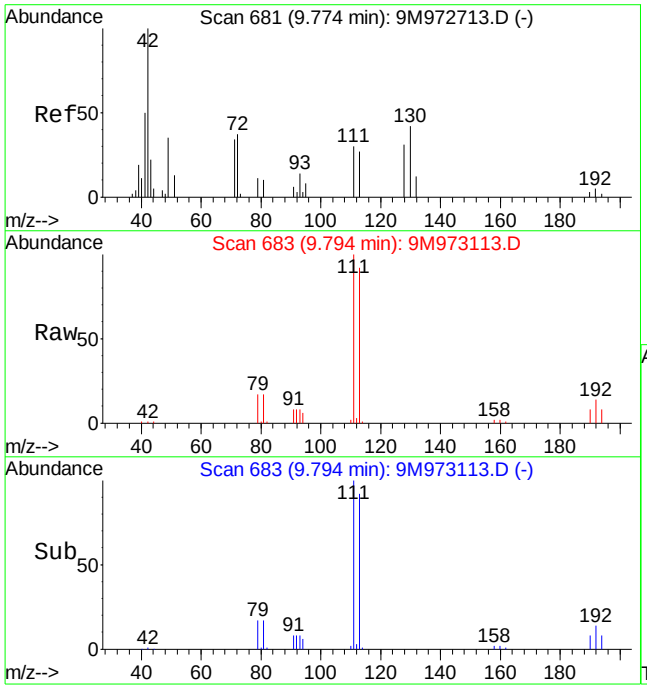

#36
Tetrahydrofuran
Concen: 0.96 ug/kg
RT: 9.79 min Scan# 683
Delta R.T. 0.01 min
Lab File: 9M973113.D
Acq: 6 Mar 2016 23:01

Tgt Ion: 42 Resp: 986

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

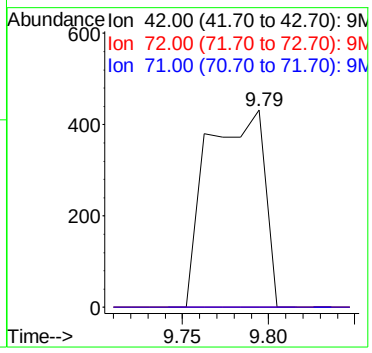

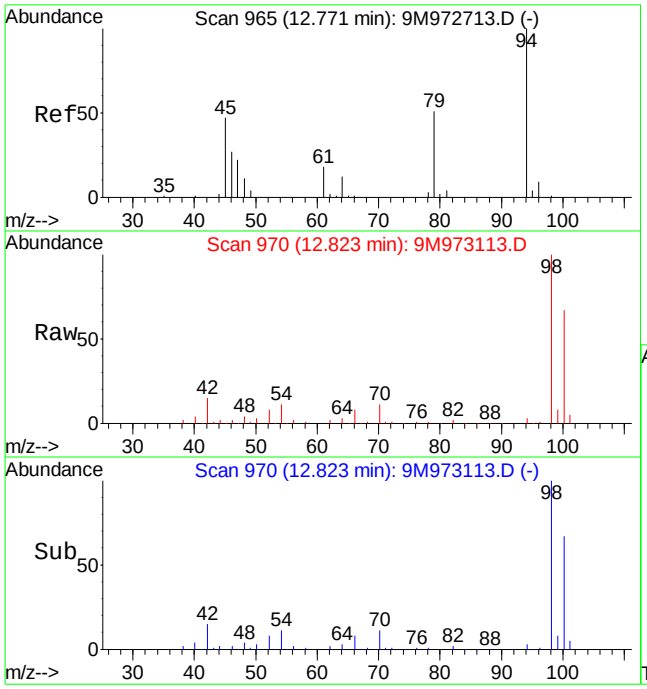

#56
Dimethyl Disulfide
Concen: 3.37 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M973113.D
Acq: 6 Mar 2016 23:01

Tgt Ion: 94 Resp: 12893

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

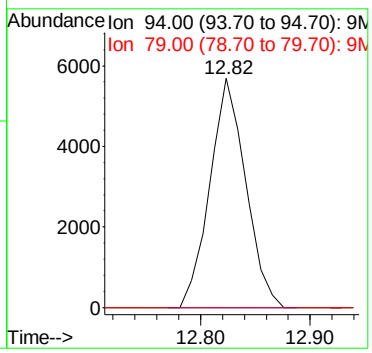

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030716\9M973126.D Vial: 6
Acq On : 7 Mar 2016 17:51 Operator: ADC
Sample : L16030234-05 A 8260 4.88g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 08 14:13:42 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	492604	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	368734	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.75	152	188823	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	128829	48.2475 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.50%		
43) 1,2-Dichloroethane-d4	10.45	65	164176	49.0042 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.00%		
58) Toluene-d8	12.83	98	455720	48.8613 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 97.72%		
79) p-Bromofluorobenzene	16.23	95	186099	50.6147 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 101.22%		

Target Compounds					Qvalue
13) Acetone	6.41	43	8924	5.0152 ug/kg	97
15) Tert-Butyl Alcohol	6.76	59	474	0.9411 ug/kg#	58
19) Methylene Chloride	7.40	84	1023	0.4080 ug/kg	78
29) 2-Butanone	9.03	43	1491	0.9386 ug/kg#	58
36) Tetrahydrofuran	9.79	42	1040	1.0157 ug/kg#	43
56) Dimethyl Disulfide	12.83	94	13765	3.6024 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M973126.D 8260SL.M Tue Mar 08 14:13:42 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030716\9M973126.D Vial: 6
Acq On : 7 Mar 2016 17:51 Operator: ADC
Sample : L16030234-05 A 8260 4.88g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 8 14:13 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

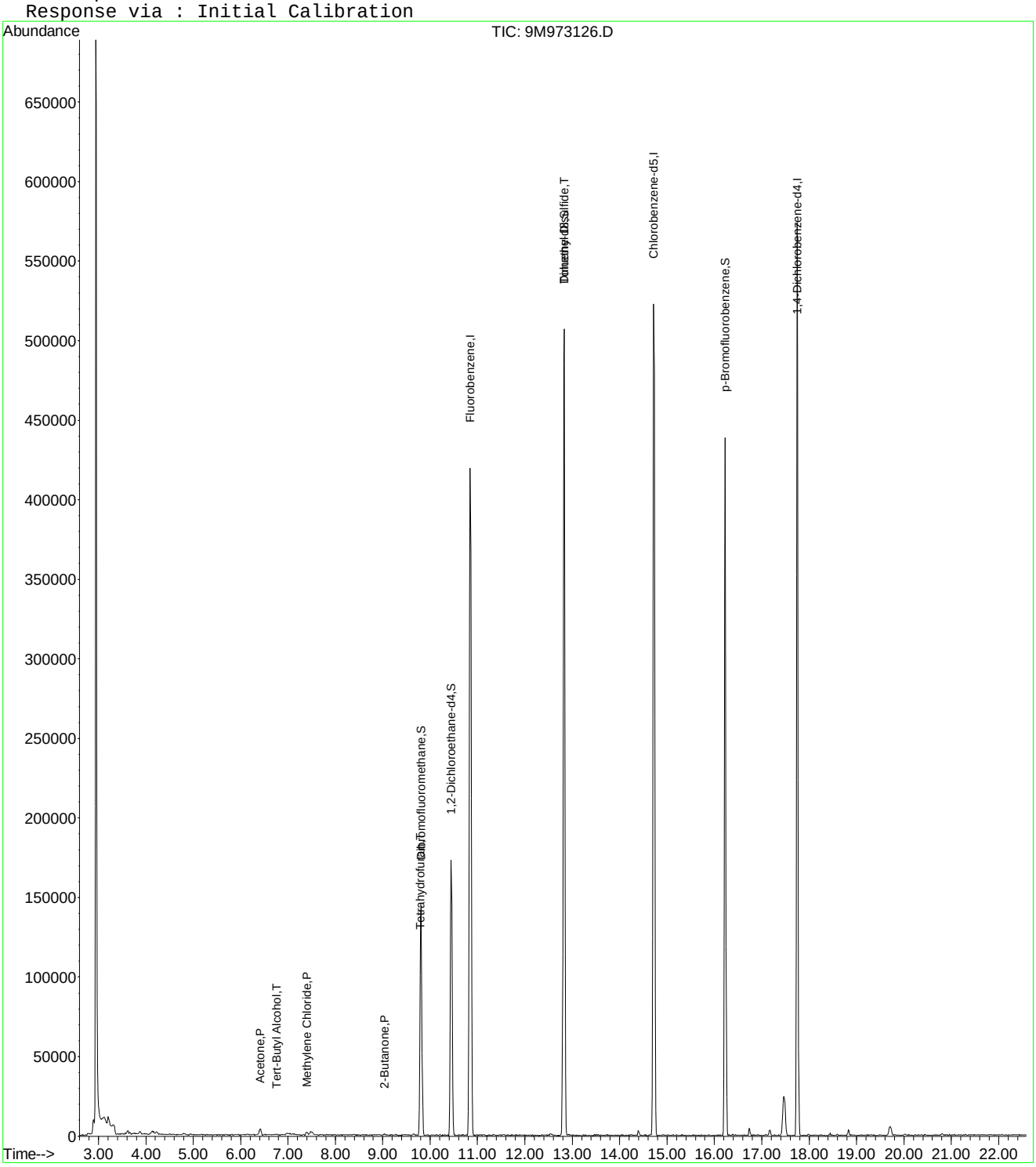

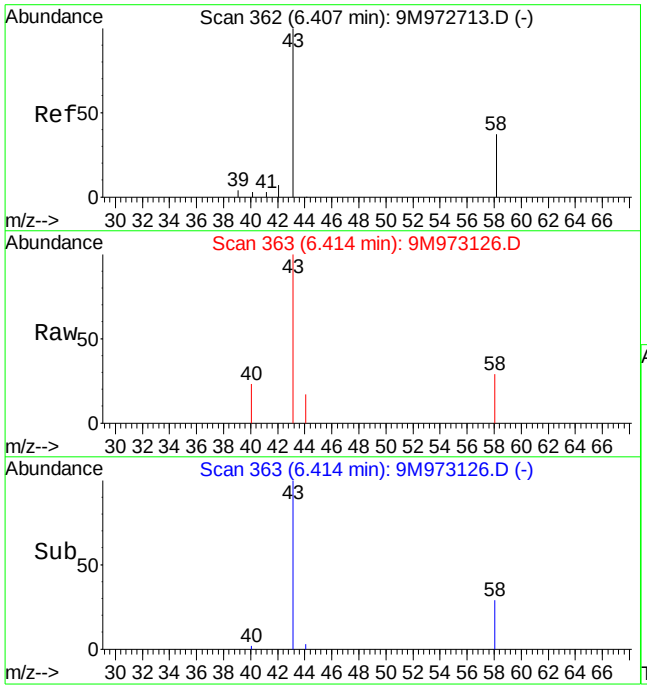

#13
Acetone
Concen: 5.02 ug/kg
RT: 6.41 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M973126.D
Acq: 7 Mar 2016 17:51

Tgt Ion: 43 Resp: 8924

Ion	Ratio	Lower	Upper
43	100		
58	29.5	16.9	39.3

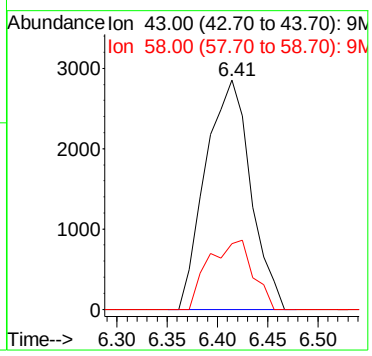

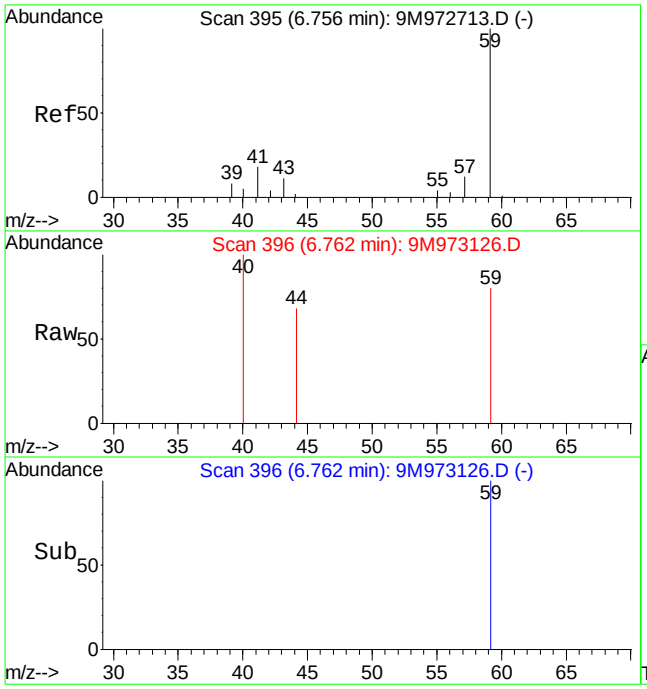

#15
Tert-Butyl Alcohol
Concen: 0.94 ug/kg
RT: 6.76 min Scan# 396
Delta R.T. 0.00 min
Lab File: 9M973126.D
Acq: 7 Mar 2016 17:51

Tgt Ion: 59 Resp: 474

Ion	Ratio	Lower	Upper
59	100		
41	0.0	14.1	32.9#
57	0.0	6.4	15.0#

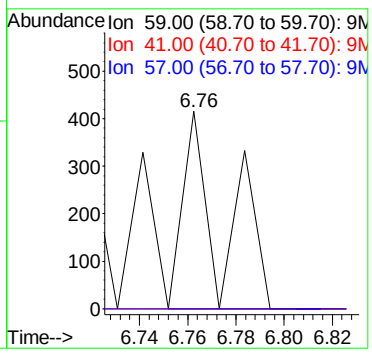

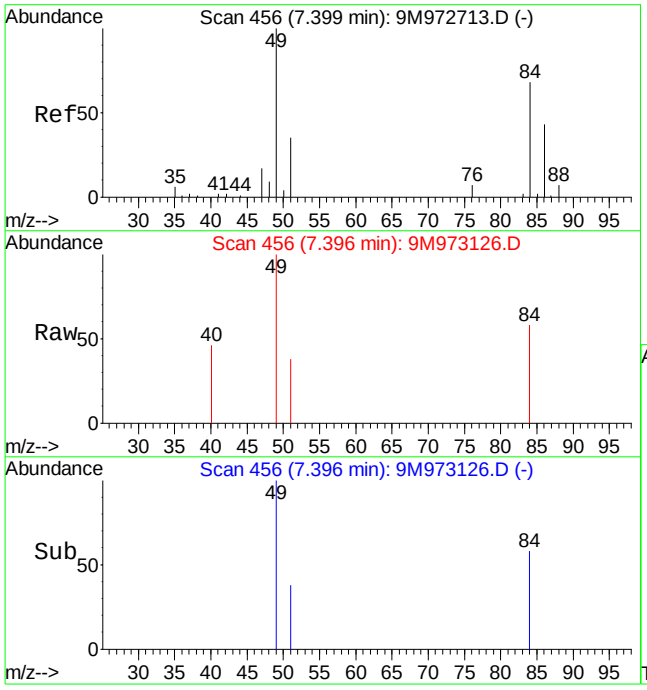

#19
Methylene Chloride
Concen: 0.41 ug/kg
RT: 7.40 min Scan# 456
Delta R.T. 0.00 min
Lab File: 9M973126.D
Acq: 7 Mar 2016 17:51

Tgt Ion: 84 Resp: 1023

Ion	Ratio	Lower	Upper
84	100		
49	199.6	101.8	237.4

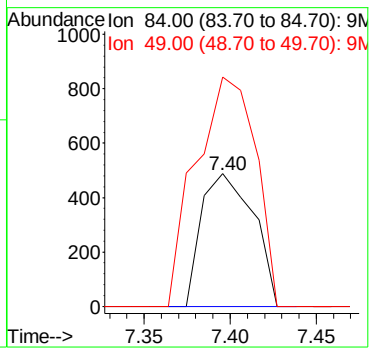

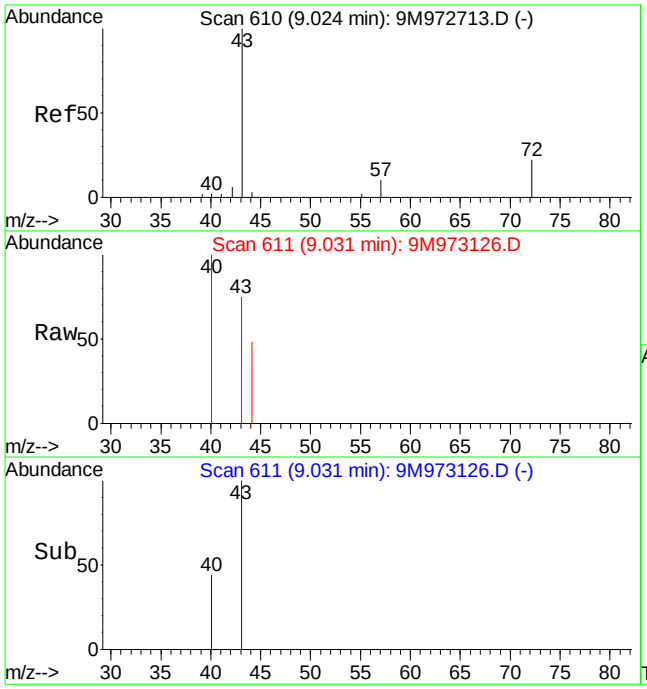

#29
2-Butanone
Concen: 0.94 ug/kg
RT: 9.03 min Scan# 611
Delta R.T. 0.00 min
Lab File: 9M973126.D
Acq: 7 Mar 2016 17:51

Tgt Ion: 43 Resp: 1491

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

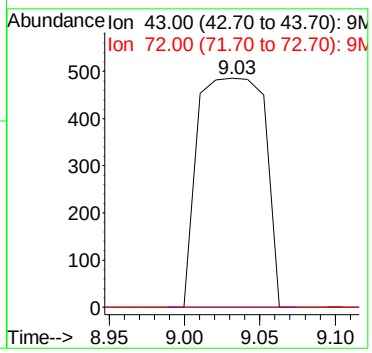

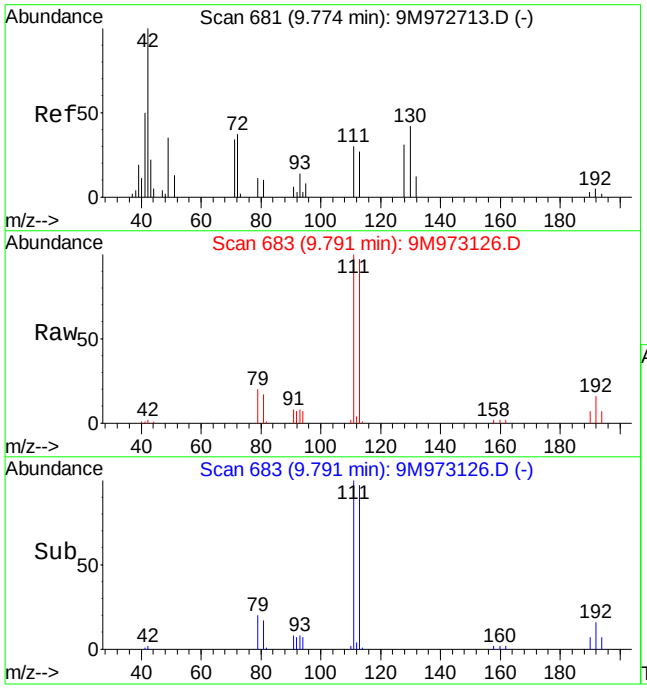

#36
Tetrahydrofuran
Concen: 1.02 ug/kg
RT: 9.79 min Scan# 683
Delta R.T. 0.01 min
Lab File: 9M973126.D
Acq: 7 Mar 2016 17:51

Tgt Ion: 42 Resp: 1040

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

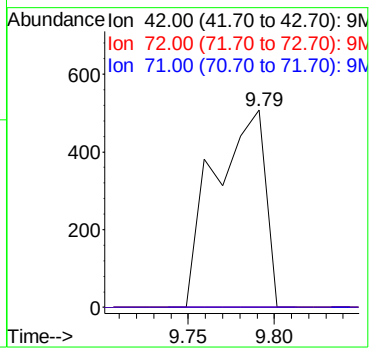

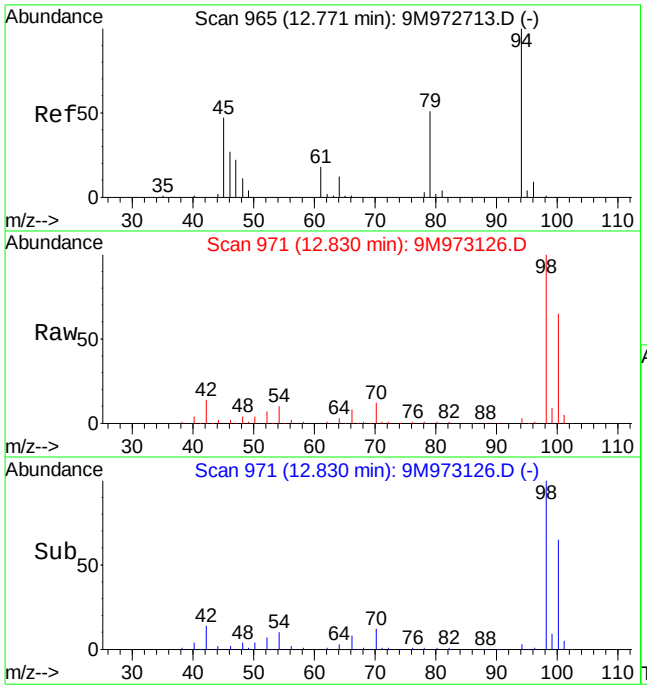

#56
Dimethyl Disulfide
Concen: 3.60 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.06 min
Lab File: 9M973126.D
Acq: 7 Mar 2016 17:51

Tgt Ion: 94 Resp: 13765

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

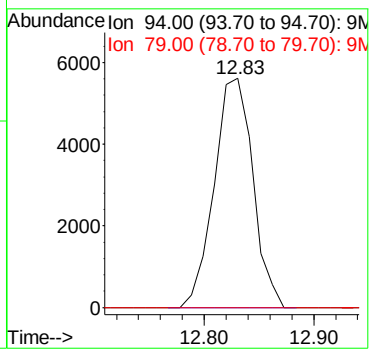

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973115.D Vial: 19
Acq On : 7 Mar 2016 00:02 Operator: ADC
Sample : L16030234-06 A 8260 5.03g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 12:19:18 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	454311	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	337203	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.75	152	171566	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	119455	48.5077 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.02%		
43) 1,2-Dichloroethane-d4	10.44	65	152333	49.3017 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.60%		
58) Toluene-d8	12.83	98	418962	49.1205 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.24%		
79) p-Bromofluorobenzene	16.23	95	168261	50.3662 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 100.74%		

Target Compounds					Qvalue
13) Acetone	6.40	43	7707	4.5366 ug/kg	95
15) Tert-Butyl Alcohol	6.73	59	482	1.0376 ug/kg#	58
29) 2-Butanone	9.04	43	1313	0.8962 ug/kg#	58
36) Tetrahydrofuran	9.78	42	799	0.8461 ug/kg#	43
56) Dimethyl Disulfide	12.83	94	12525	3.5542 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M973115.D 8260SL.M Mon Mar 07 12:19:18 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973115.D Vial: 19
Acq On : 7 Mar 2016 00:02 Operator: ADC
Sample : L16030234-06 A 8260 5.03g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 7 12:19 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

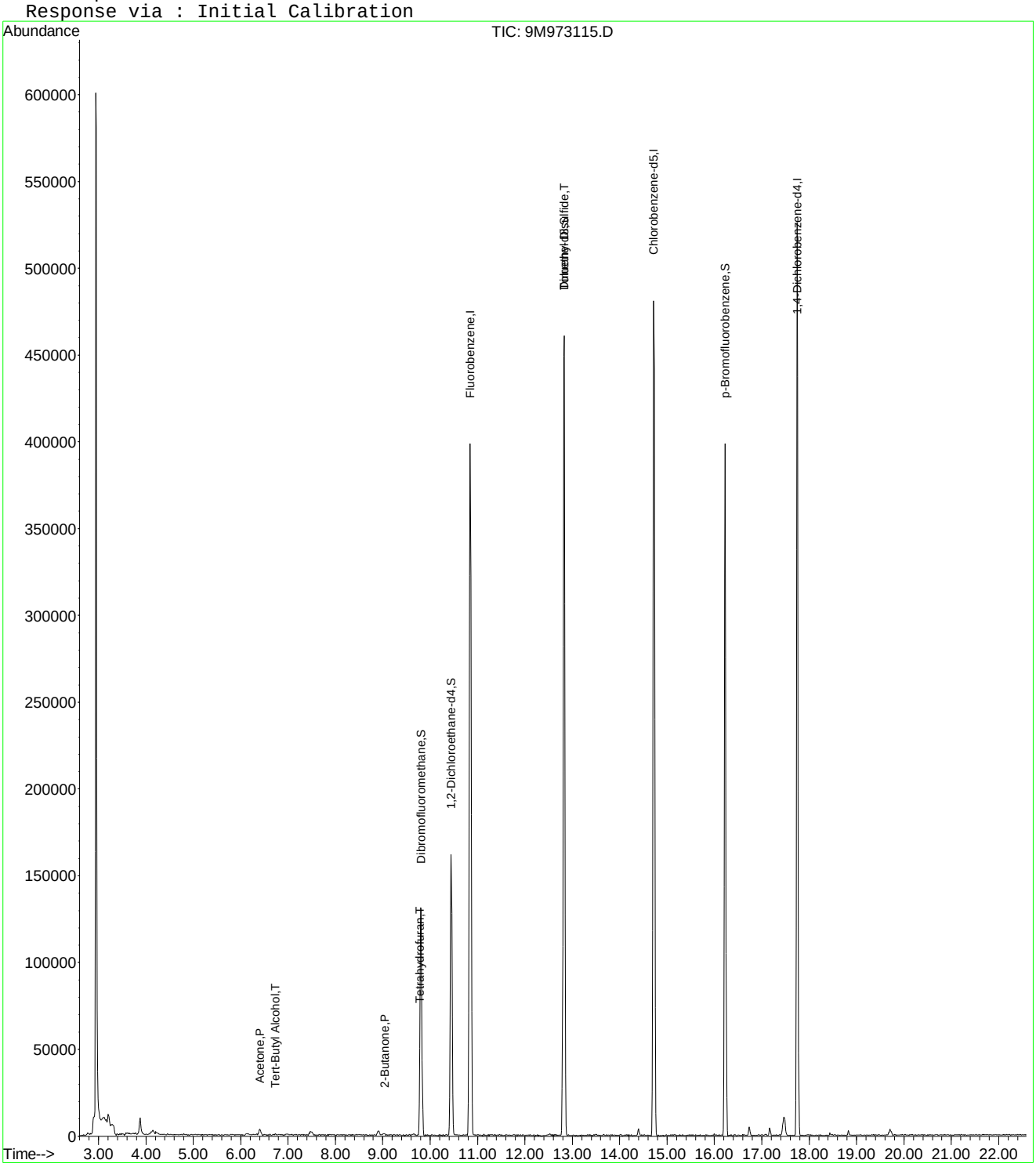

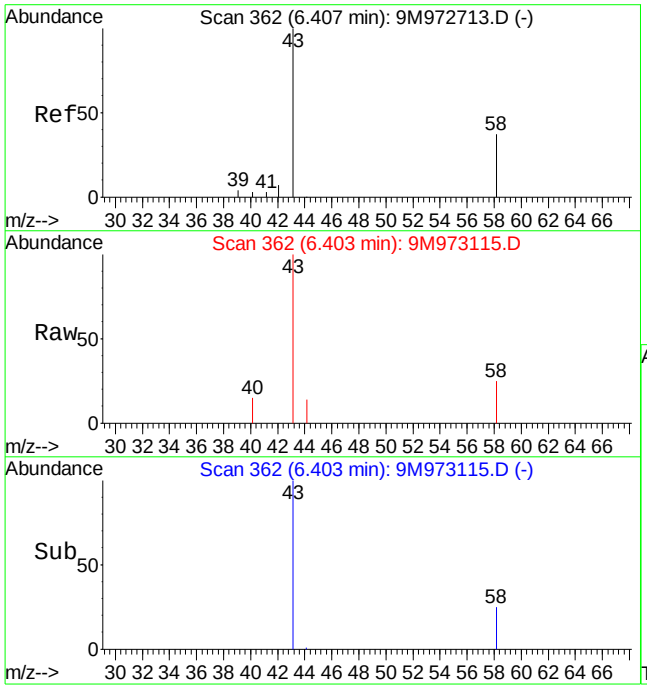

#13
Acetone
Concen: 4.54 ug/kg
RT: 6.40 min Scan# 362
Delta R.T. -0.01 min
Lab File: 9M973115.D
Acq: 7 Mar 2016 00:02

Tgt Ion: 43 Resp: 7707

Ion	Ratio	Lower	Upper
43	100		
58	25.7	16.9	39.3

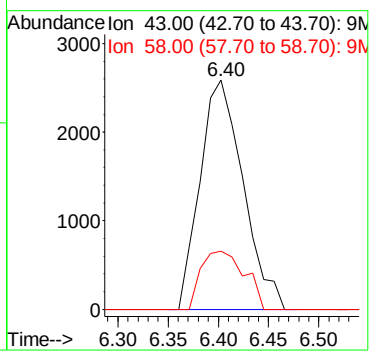

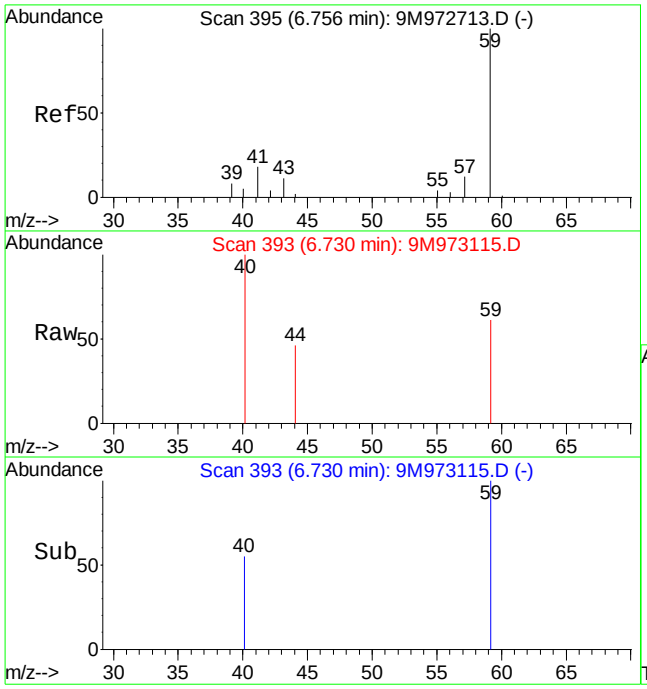

#15
Tert-Butyl Alcohol
Concen: 1.04 ug/kg
RT: 6.73 min Scan# 393
Delta R.T. -0.03 min
Lab File: 9M973115.D
Acq: 7 Mar 2016 00:02

Tgt Ion: 59 Resp: 482

Ion	Ratio	Lower	Upper
59	100		
41	0.0	14.1	32.9#
57	0.0	6.4	15.0#

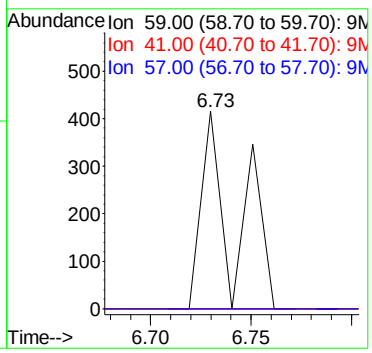

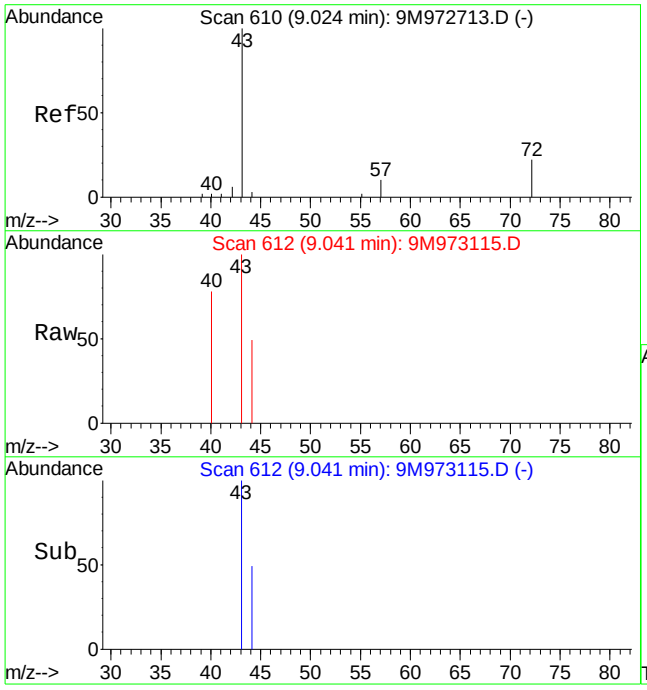

#29
2-Butanone
Concen: 0.90 ug/kg
RT: 9.04 min Scan# 612
Delta R.T. 0.01 min
Lab File: 9M973115.D
Acq: 7 Mar 2016 00:02

Tgt Ion: 43 Resp: 1313

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

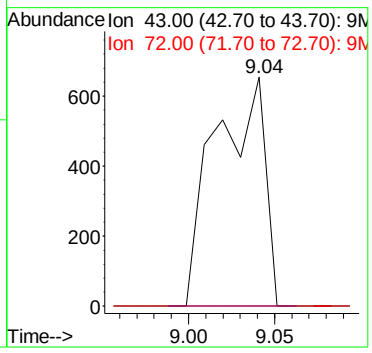

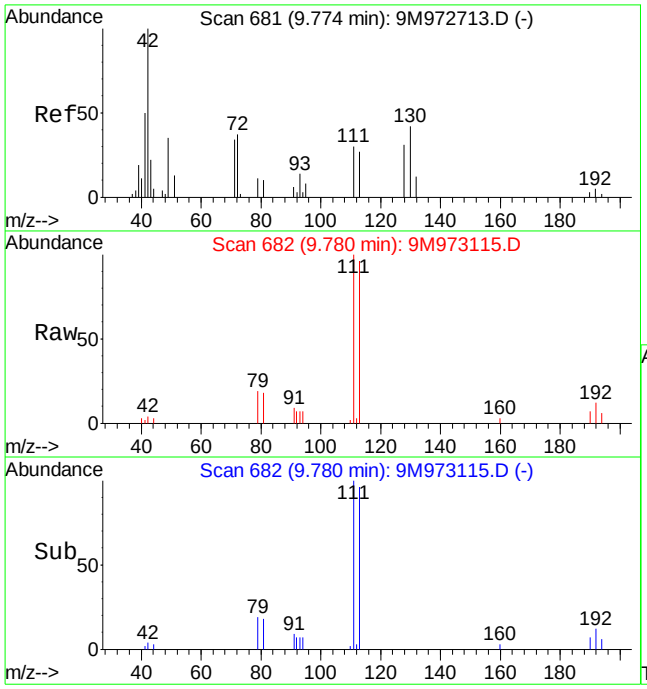

#36
Tetrahydrofuran
Concen: 0.85 ug/kg
RT: 9.78 min Scan# 682
Delta R.T. -0.00 min
Lab File: 9M973115.D
Acq: 7 Mar 2016 00:02

Tgt Ion: 42 Resp: 799

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

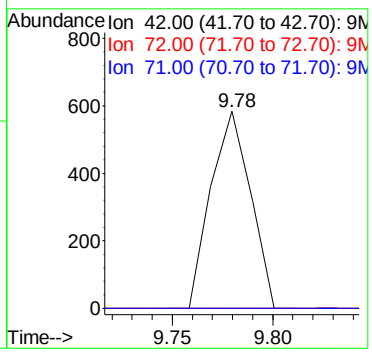

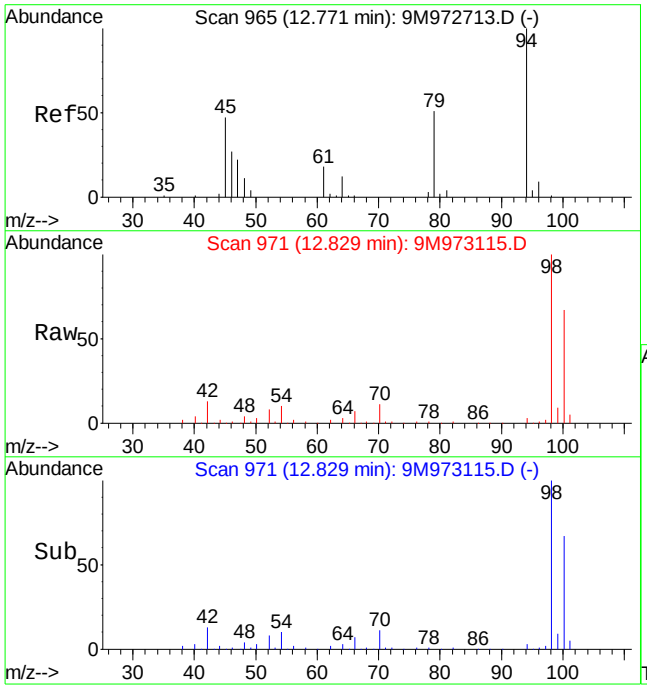

#56
Dimethyl Disulfide
Concen: 3.55 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.06 min
Lab File: 9M973115.D
Acq: 7 Mar 2016 00:02

Tgt Ion: 94 Resp: 12525

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

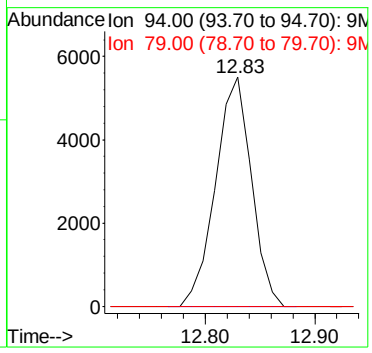

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972472.D Vial: 3
Acq On : 25 Jan 2016 11:22 Operator: FJB
Sample : WG555000-02 5ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:05 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	367739	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	266763	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.77	152	148882	50.00 ug/kg	0.01

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	1974	5.3580 ug/kg#	1
3) 3-Chloro-1-propene	7.23	41	18322	5.0468 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	19639	4.7564 ug/kg	98
5) Ethyl Acetate	9.24	43	12755	5.2595 ug/kg	91
6) Methacrylonitrile	9.40	67	3744	4.7691 ug/kg	95
7) Isobutyl Alcohol	9.42	43	1055	12.9700 ug/kg#	62
8) 1-Butanol	10.36	56	203	11.8711 ug/kg#	26
9) Methyl methacrylate	11.56	41	8689	4.6908 ug/kg	95
10) 2-Nitropropane	11.90	43	2531	4.2058 ug/kg	96

(#) = qualifier out of range (m) = manual integration
9M972472.D A9FOO_SL.M Wed Jan 27 11:22:42 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972472.D Vial: 3
Acq On : 25 Jan 2016 11:22 Operator: FJB
Sample : WG555000-02 5ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

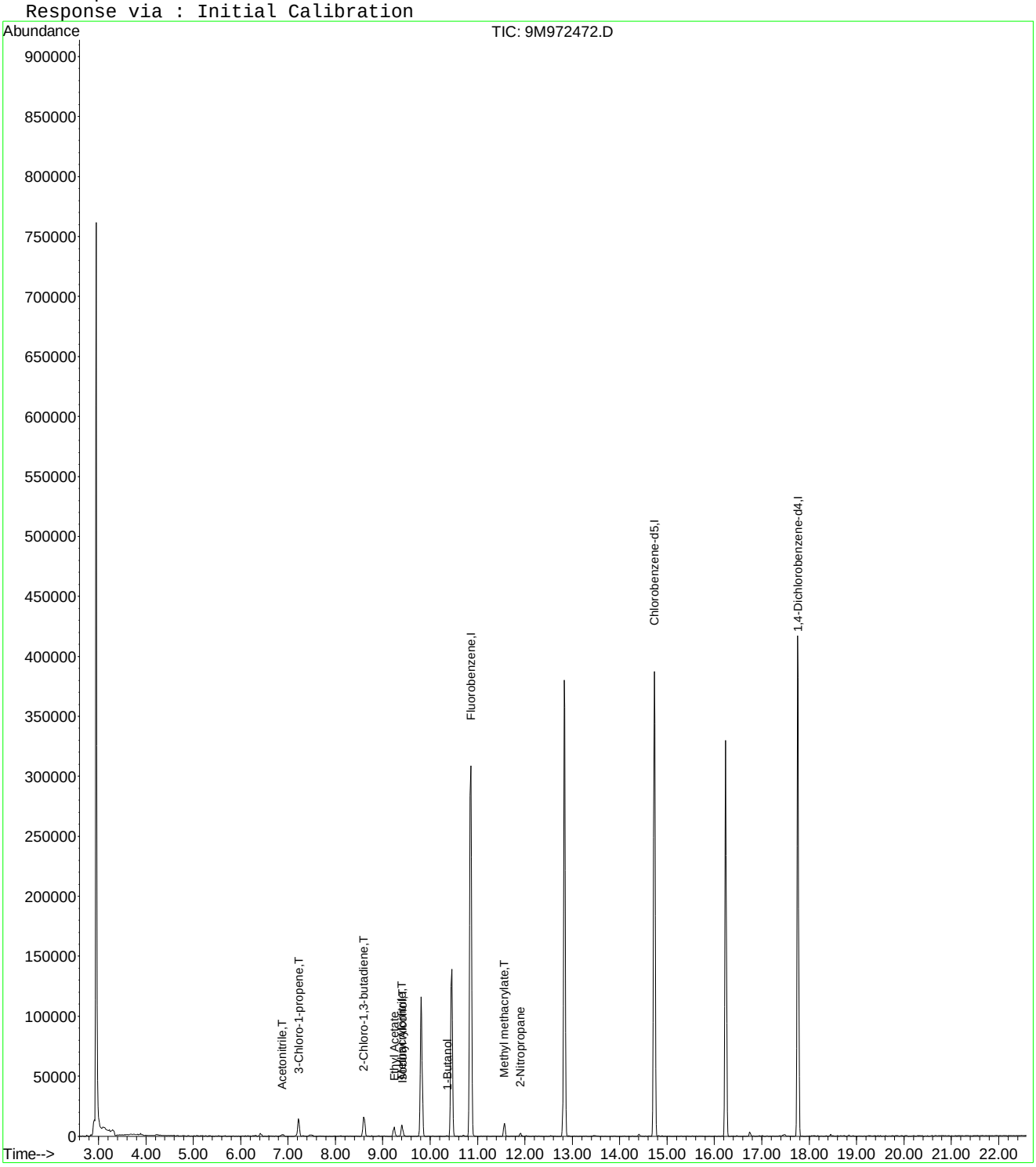

9M972472.D A9FOO_SL.M Wed Jan 27 11:22:42 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972473.D Vial: 4
Acq On : 25 Jan 2016 11:52 Operator: FJB
Sample : WG555000-03 20ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:05 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	359691	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	265773	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	149223	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	7669	21.2815 ug/kg#	77
3) 3-Chloro-1-propene	7.23	41	75360	21.2224 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	82865	20.5181 ug/kg	100
5) Ethyl Acetate	9.23	43	47912	20.1986 ug/kg	97
6) Methacrylonitrile	9.40	67	15740	20.4980 ug/kg	98
7) Isobutyl Alcohol	9.42	43	5287	37.9280 ug/kg	95
8) 1-Butanol	10.35	56	1509	22.3153 ug/kg#	81
9) Methyl methacrylate	11.56	41	35437	19.5588 ug/kg	98
10) 2-Nitropropane	11.90	43	10433	17.7247 ug/kg	98
12) Cyclohexanone	16.01	55	2157	16.3929 ug/kg#	86

(#) = qualifier out of range (m) = manual integration
9M972473.D A9FOO_SL.M Wed Jan 27 11:22:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972473.D Vial: 4
Acq On : 25 Jan 2016 11:52 Operator: FJB
Sample : WG555000-03 20ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

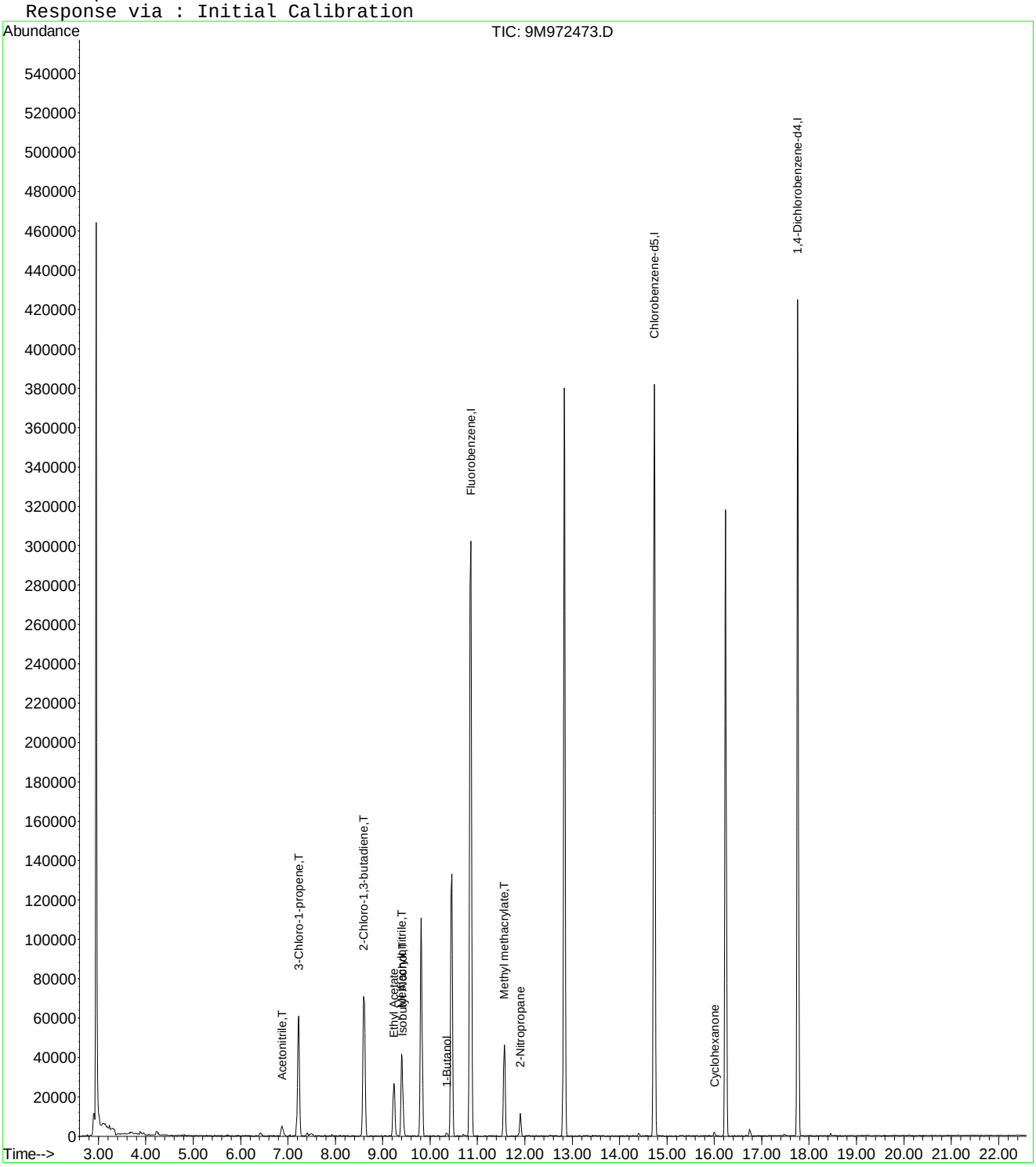

9M972473.D A9FOO_SL.M Wed Jan 27 11:22:46 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972474.D Vial: 5
Acq On : 25 Jan 2016 12:23 Operator: FJB
Sample : WG555000-04 50ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:06 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	356886	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	259679	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	147334	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	16583	46.3795 ug/kg#	94
3) 3-Chloro-1-propene	7.23	41	160601	45.5828 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.61	53	185316	46.2464 ug/kg	99
5) Ethyl Acetate	9.23	43	111538	47.3915 ug/kg	99
6) Methacrylonitrile	9.40	67	36081	47.3572 ug/kg	99
7) Isobutyl Alcohol	9.42	43	12624	81.5447 ug/kg	95
8) 1-Butanol	10.35	56	4707	48.0983 ug/kg#	50
9) Methyl methacrylate	11.56	41	82406	45.8400 ug/kg	99
10) 2-Nitropropane	11.90	43	26302	45.0359 ug/kg	97
12) Cyclohexanone	16.01	55	5625	43.7525 ug/kg	93

(#) = qualifier out of range (m) = manual integration
9M972474.D A9FOO_SL.M Wed Jan 27 11:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972474.D Vial: 5
Acq On : 25 Jan 2016 12:23 Operator: FJB
Sample : WG555000-04 50ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

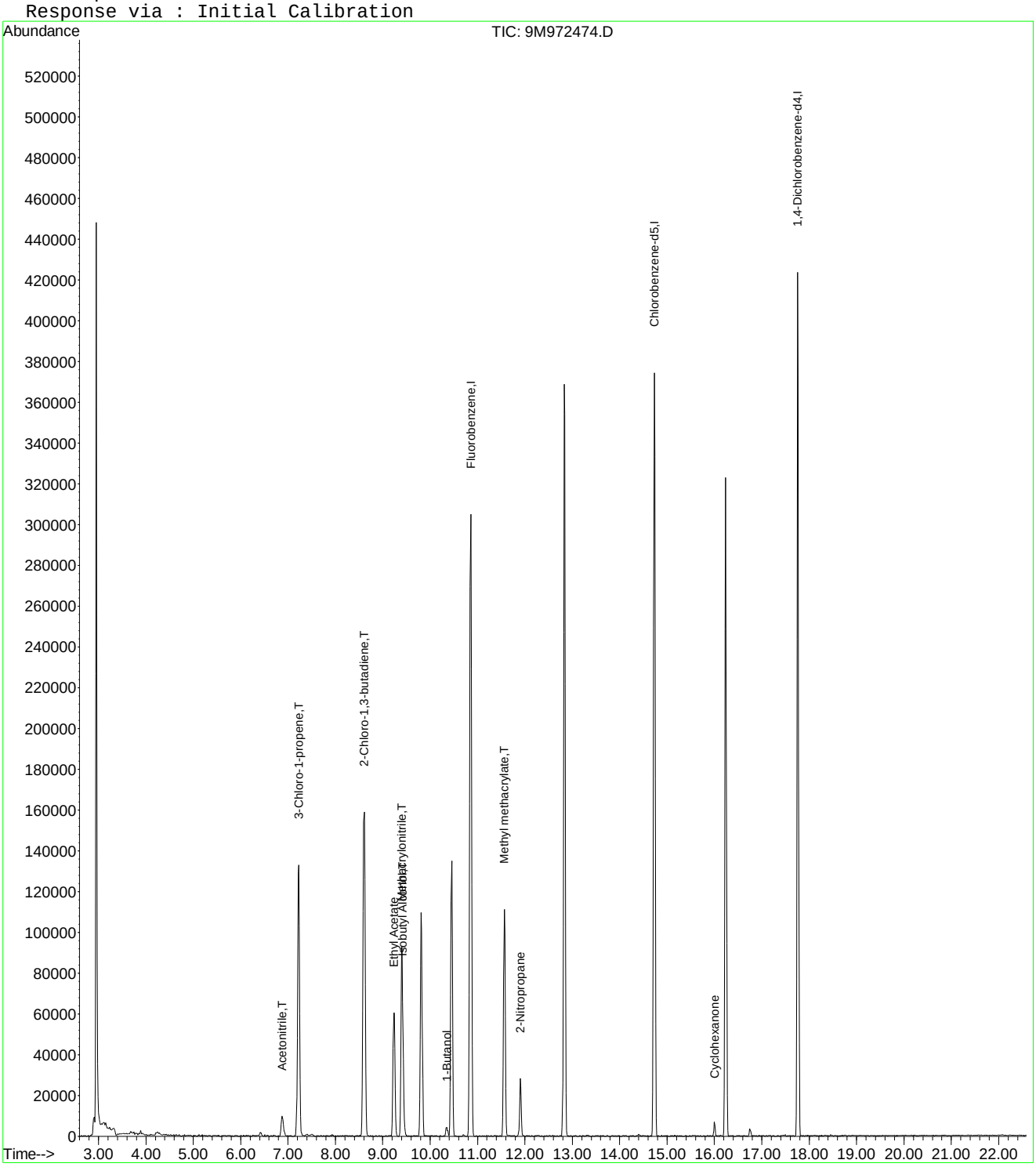

9M972474.D A9FOO_SL.M Wed Jan 27 11:22:51 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972475.D Vial: 6
Acq On : 25 Jan 2016 12:53 Operator: FJB
Sample : WG555000-05 100ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:06 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	394669	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	285851	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	161505	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	37767	95.5151	ug/kg#	100
3) 3-Chloro-1-propene	7.23	41	409870	105.1952	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.61	53	467514	105.5010	ug/kg	100
5) Ethyl Acetate	9.23	43	267513	102.7824	ug/kg	100
6) Methacrylonitrile	9.40	67	88054	104.5088	ug/kg	100
7) Isobutyl Alcohol	9.42	43	33721	187.1766	ug/kg	100
8) 1-Butanol	10.36	56	11671	95.0627	ug/kg	100
9) Methyl methacrylate	11.56	41	209503	105.3834	ug/kg	100
10) 2-Nitropropane	11.90	43	65435	101.3157	ug/kg	100
12) Cyclohexanone	16.01	55	14062	99.3630	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972475.D A9FOO_SL.M Wed Jan 27 11:22:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972475.D Vial: 6
Acq On : 25 Jan 2016 12:53 Operator: FJB
Sample : WG555000-05 100ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

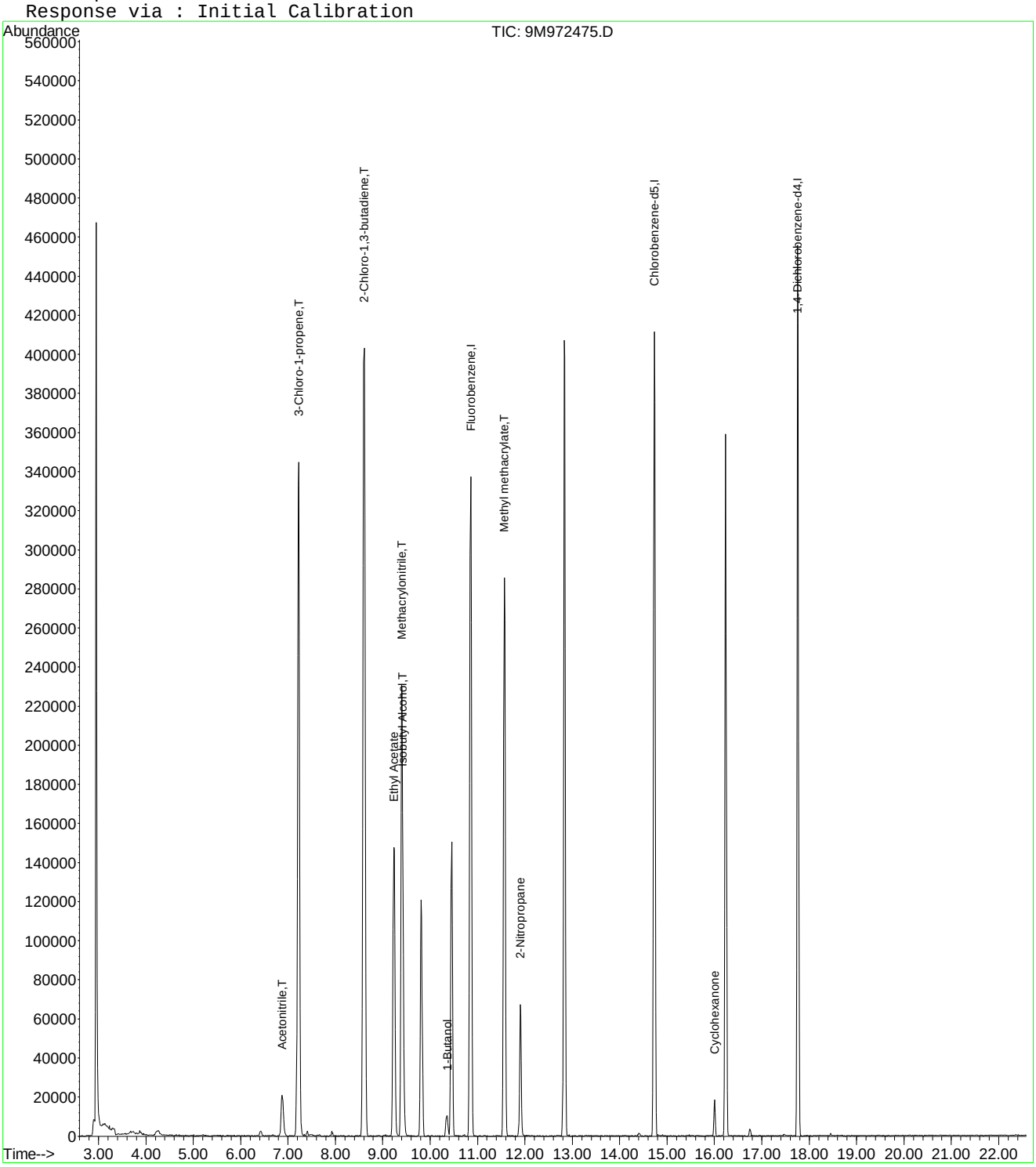

9M972475.D A9FOO_SL.M Wed Jan 27 11:22:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972476.D Vial: 7
Acq On : 25 Jan 2016 13:23 Operator: FJB
Sample : WG555000-06 200ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 09:51:10 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	361792	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	264283	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	150478	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.87	41	75099	207.1896	ug/kg#	94
3) 3-Chloro-1-propene	7.22	41	743262	208.0969	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	846271	208.3269	ug/kg	100
5) Ethyl Acetate	9.23	43	489855	205.3125	ug/kg	100
6) Methacrylonitrile	9.40	67	159879	206.9995	ug/kg	100
7) Isobutyl Alcohol	9.42	43	68551	406.6640	ug/kg	99
8) 1-Butanol	10.35	56	24111	201.3375	ug/kg	97
9) Methyl methacrylate	11.57	41	382820	210.0636	ug/kg	99
10) 2-Nitropropane	11.90	43	129000	217.8866	ug/kg	95
12) Cyclohexanone	16.00	55	30065	229.7785	ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972476.D A9FOO_SL.M Wed Jan 27 09:51:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972476.D Vial: 7
Acq On : 25 Jan 2016 13:23 Operator: FJB
Sample : WG555000-06 200ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 9:51 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

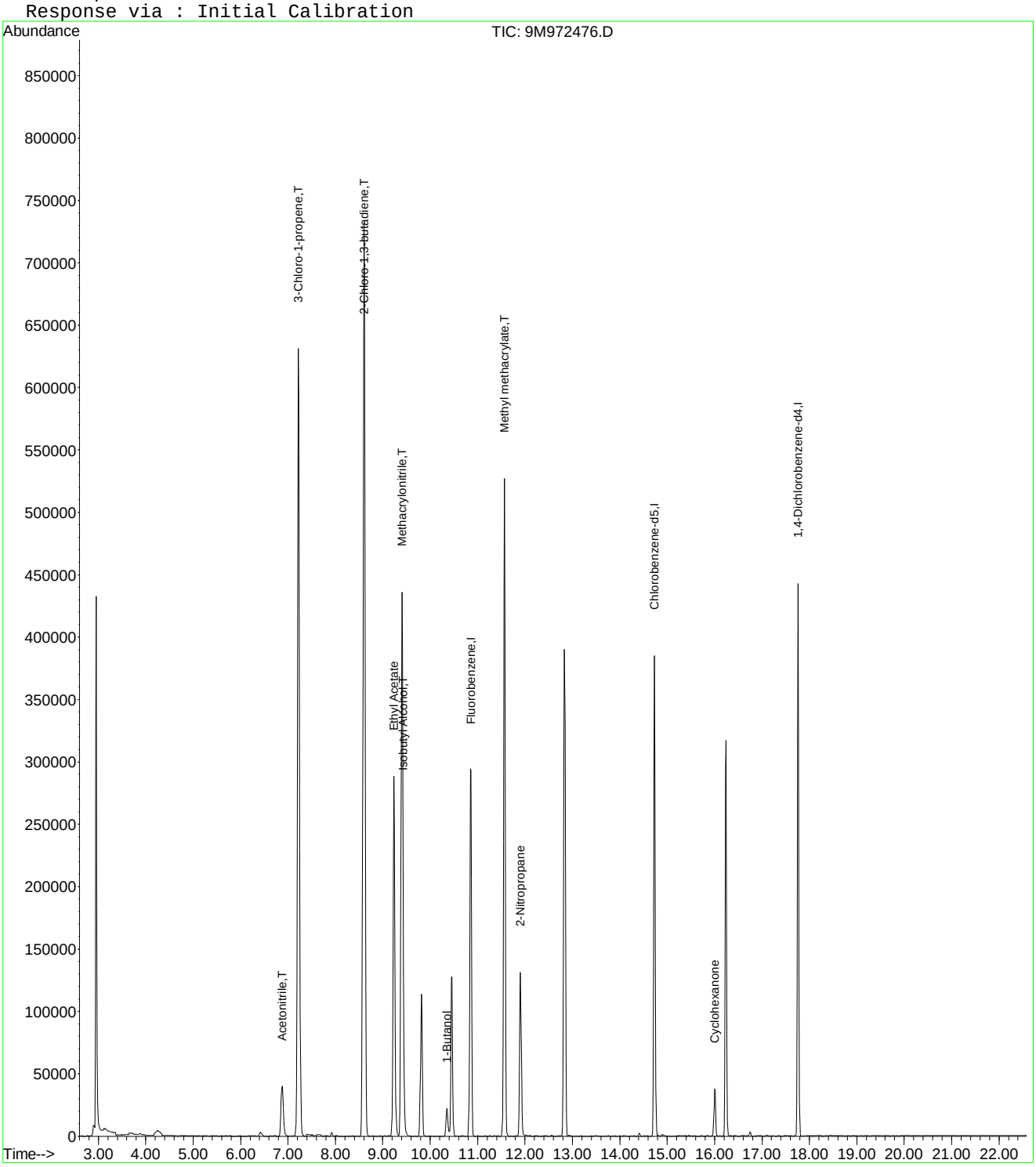

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972477.D Vial: 8
Acq On : 25 Jan 2016 13:54 Operator: FJB
Sample : WG555000-07 300ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:07 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.85	96	362779	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	265659	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	153468	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	99618	274.0870	ug/kg#	97
3) 3-Chloro-1-propene	7.22	41	944879	263.8255	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	1107217	271.8226	ug/kg	99
5) Ethyl Acetate	9.24	43	652386	272.6900	ug/kg	99
6) Methacrylonitrile	9.40	67	208153	268.7679	ug/kg	98
7) Isobutyl Alcohol	9.43	43	89707	528.6093	ug/kg#	99
8) 1-Butanol	10.35	56	31640	260.3131	ug/kg	98
9) Methyl methacrylate	11.57	41	502506	274.9883	ug/kg	98
10) 2-Nitropropane	11.90	43	172692	290.8907	ug/kg	95
12) Cyclohexanone	16.00	55	36951	280.9436	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972477.D A9FOO_SL.M Wed Jan 27 11:23:05 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972477.D Vial: 8
Acq On : 25 Jan 2016 13:54 Operator: FJB
Sample : WG555000-07 300ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

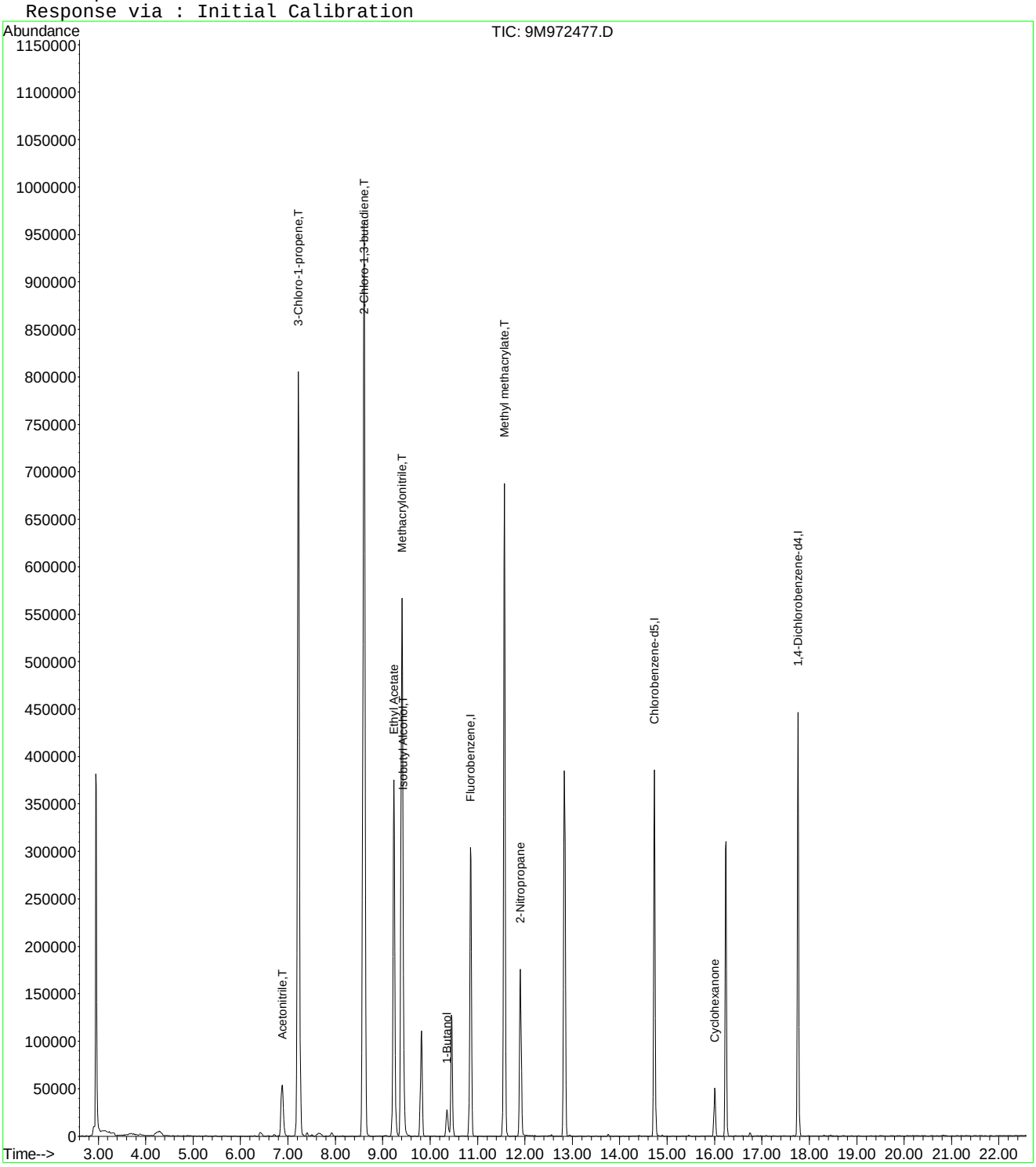

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972478.D Vial: 9
Acq On : 25 Jan 2016 14:25 Operator: FJB
Sample : WG555000-08 400ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 09:51:10 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	359343	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	261674	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	149058	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.89	41	148074	411.3034	ug/kg#	96
3) 3-Chloro-1-propene	7.22	41	1457717	410.9100	ug/kg	99
4) 2-Chloro-1,3-butadiene	8.61	53	1703971	422.3261	ug/kg	100
5) Ethyl Acetate	9.23	43	980479	413.7480	ug/kg	100
6) Methacrylonitrile	9.40	67	321602	419.2243	ug/kg	99
7) Isobutyl Alcohol	9.43	43	142361	842.7355	ug/kg#	98
8) 1-Butanol	10.36	56	51732	422.9922	ug/kg	99
9) Methyl methacrylate	11.56	41	779879	430.8570	ug/kg	98
10) 2-Nitropropane	11.90	43	267565	455.0088	ug/kg	96
12) Cyclohexanone	16.01	55	56623	437.0688	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972478.D A9FOO_SL.M Wed Jan 27 09:51:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972478.D Vial: 9
Acq On : 25 Jan 2016 14:25 Operator: FJB
Sample : WG555000-08 400ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 9:51 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

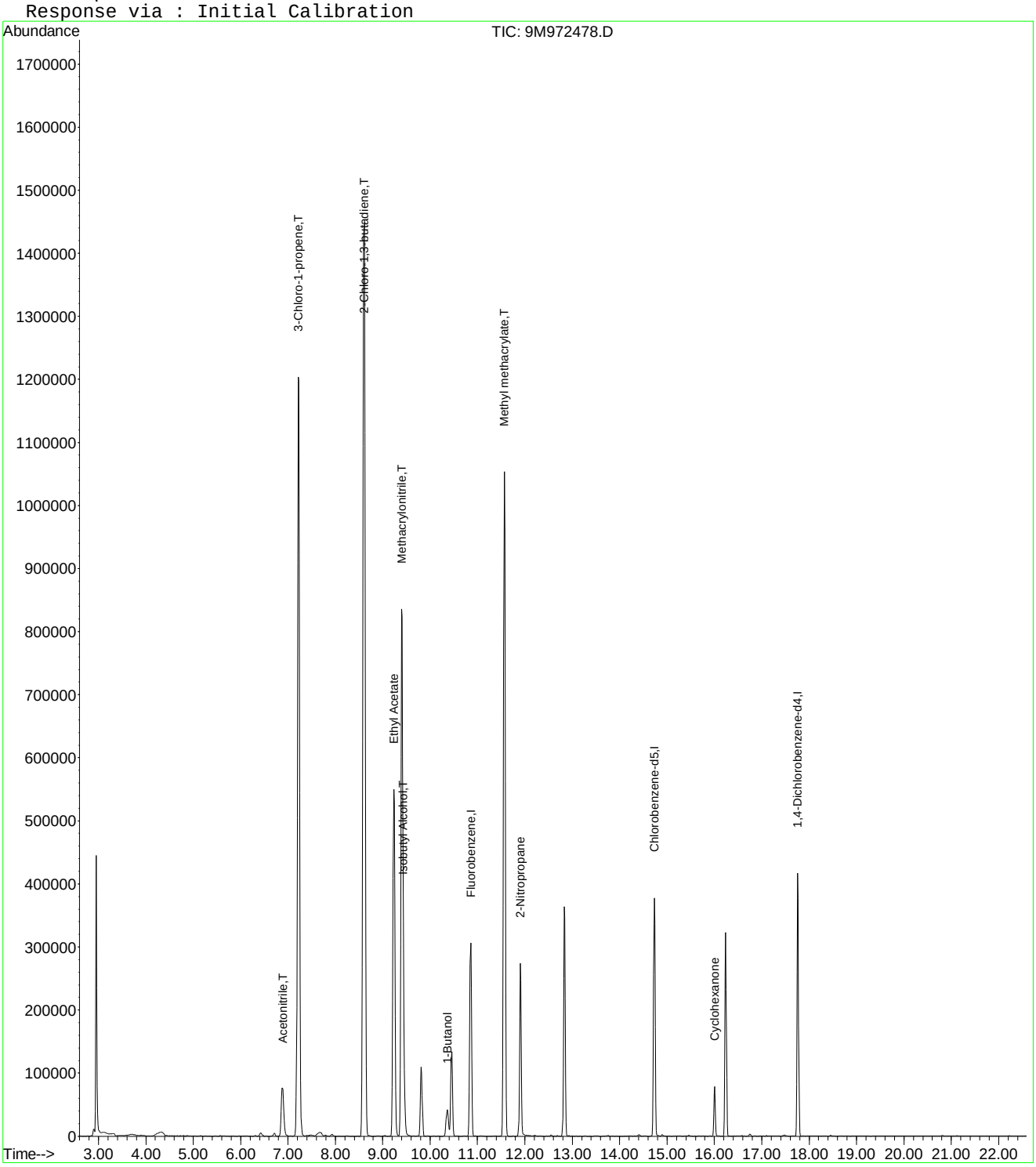

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972479.D Vial: 10
Acq On : 25 Jan 2016 14:56 Operator: FJB
Sample : WG555000-09 500ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:08 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	364474	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	266311	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	151707	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	196334	537.6773	ug/kg#	94
3) 3-Chloro-1-propene	7.22	41	1832802	509.3680	ug/kg	99
4) 2-Chloro-1,3-butadiene	8.60	53	2126710	519.6807	ug/kg	100
5) Ethyl Acetate	9.23	43	1255294	522.2587	ug/kg	100
6) Methacrylonitrile	9.40	67	408537	525.0513	ug/kg	100
7) Isobutyl Alcohol	9.43	43	180610	1052.3719	ug/kg	98
8) 1-Butanol	10.36	56	64789	519.8809	ug/kg	97
9) Methyl methacrylate	11.56	41	981460	534.5904	ug/kg	100
10) 2-Nitropropane	11.90	43	346571	581.0659	ug/kg	97
12) Cyclohexanone	16.01	55	74733	566.8143	ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972479.D A9FOO_SL.M Wed Jan 27 11:30:29 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972479.D Vial: 10
Acq On : 25 Jan 2016 14:56 Operator: FJB
Sample : WG555000-09 500ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

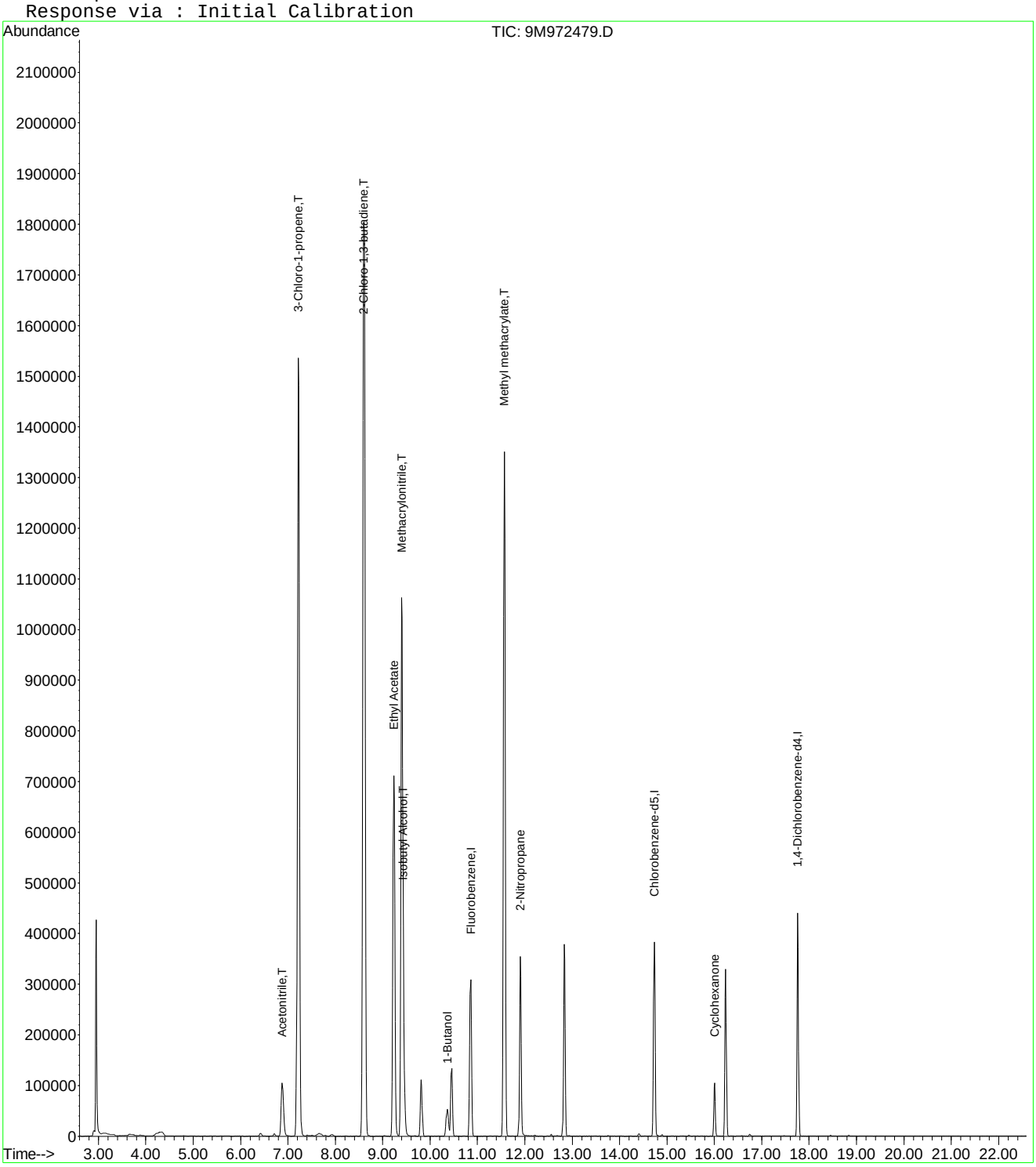

9M972479.D A9FOO_SL.M Wed Jan 27 11:30:29 2016 Page 2

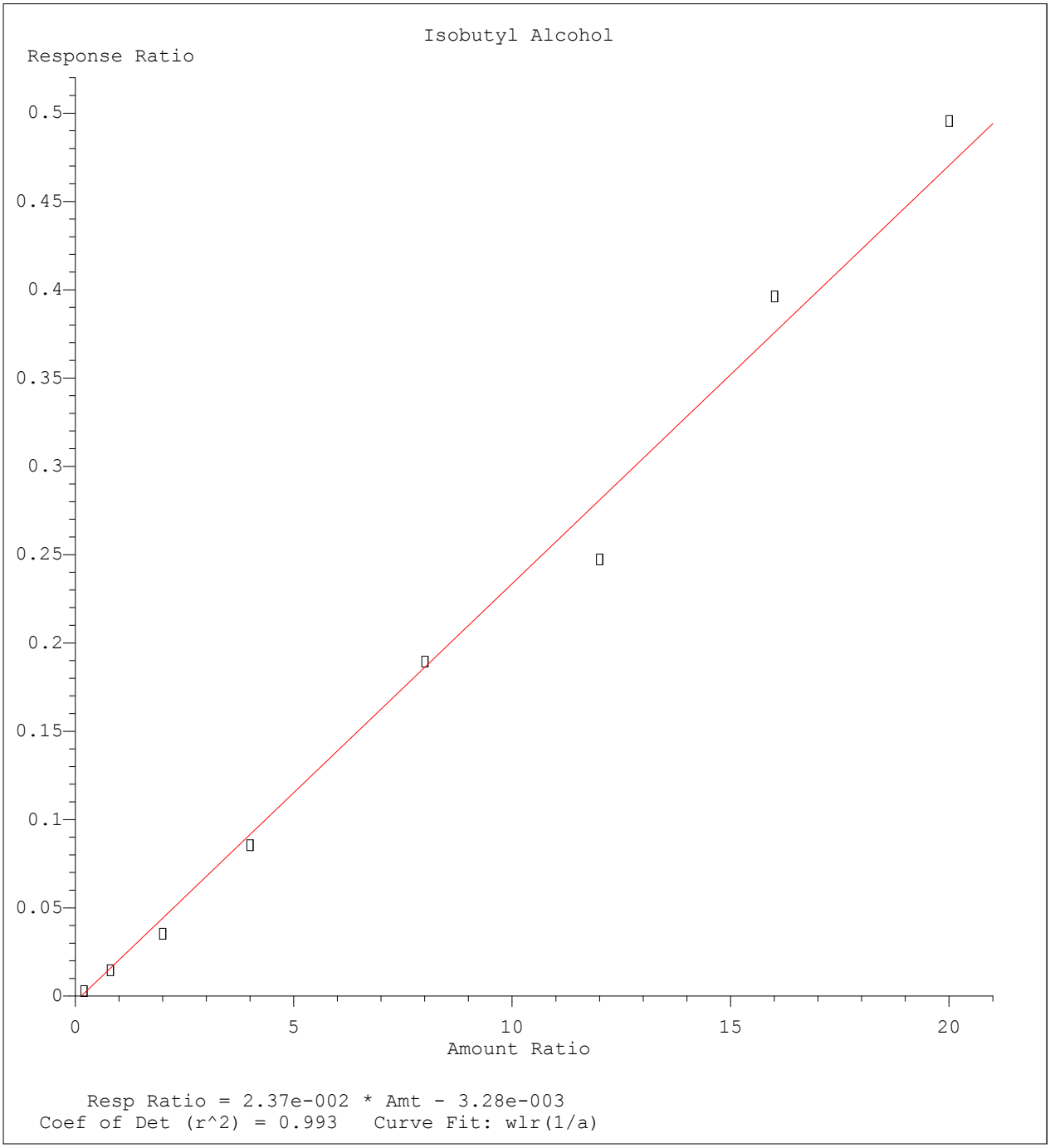

Method Name: C:\MSDCHEM\1\METHODS\A9FOO_SL.M
Calibration Table Last Updated: Wed Jan 27 09:49:02 2016

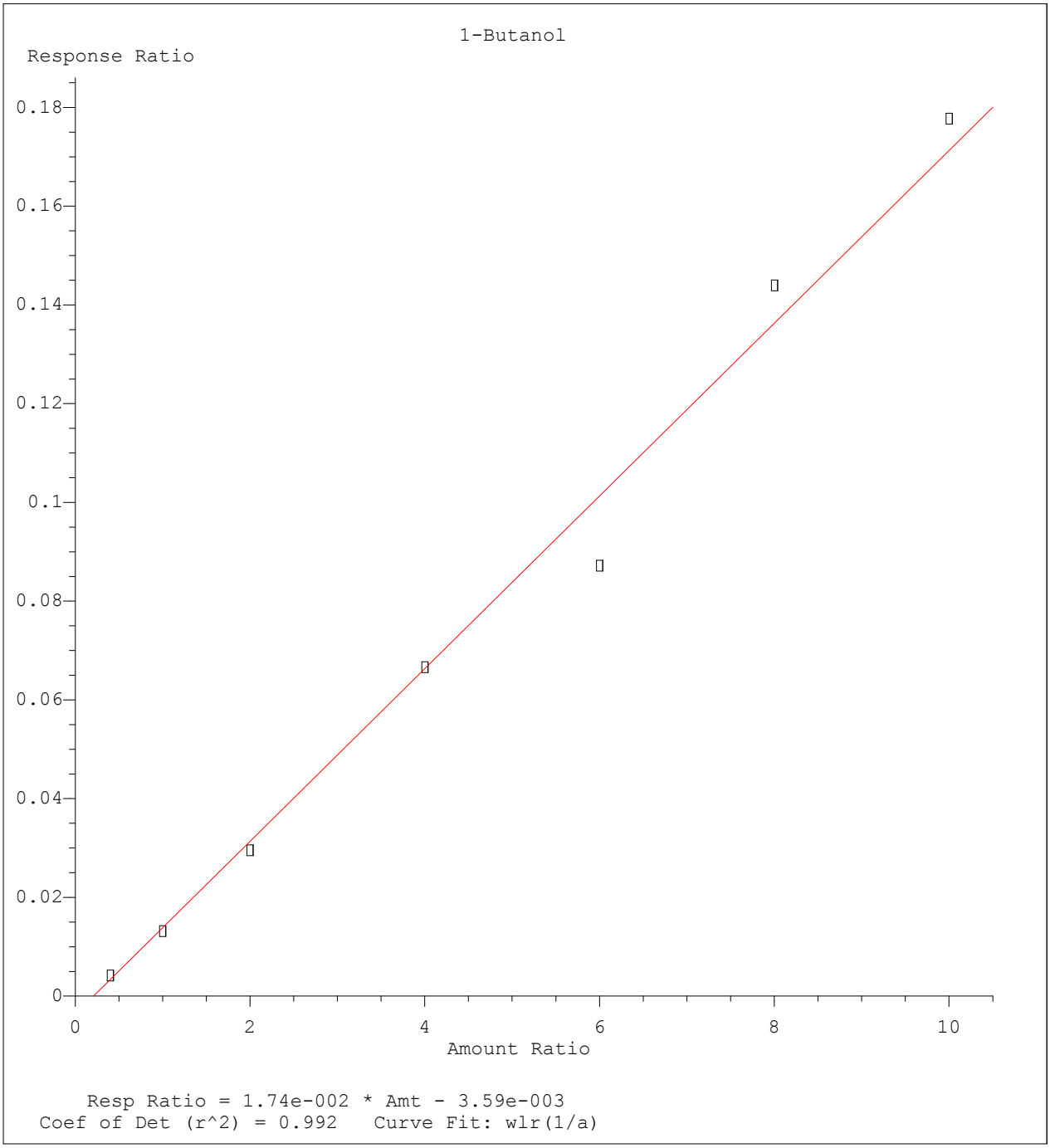

Method Name: C:\MSDCHEM\1\METHODS\A9FOO_SL.M
Calibration Table Last Updated: Wed Jan 27 09:49:02 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:09 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	394765	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	285754	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	159586	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	40054	101.2745	ug/kg#	100
3) 3-Chloro-1-propene	7.22	41	402890	103.3786	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	572568	129.1764	ug/kg	99
5) Ethyl Acetate	9.23	43	275962	106.0028	ug/kg	99
6) Methacrylonitrile	9.40	67	90289	107.1354	ug/kg	96
7) Isobutyl Alcohol	9.42	43	34031	188.7895	ug/kg	99
8) 1-Butanol	10.35	56	12038	97.7072	ug/kg	97
9) Methyl methacrylate	11.56	41	219363	110.3163	ug/kg	100
10) 2-Nitropropane	11.90	43	69288	107.2554	ug/kg	93
12) Cyclohexanone	16.01	55	14203	100.3934	ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972481.D A9FOO_SL.M Wed Jan 27 11:15:09 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

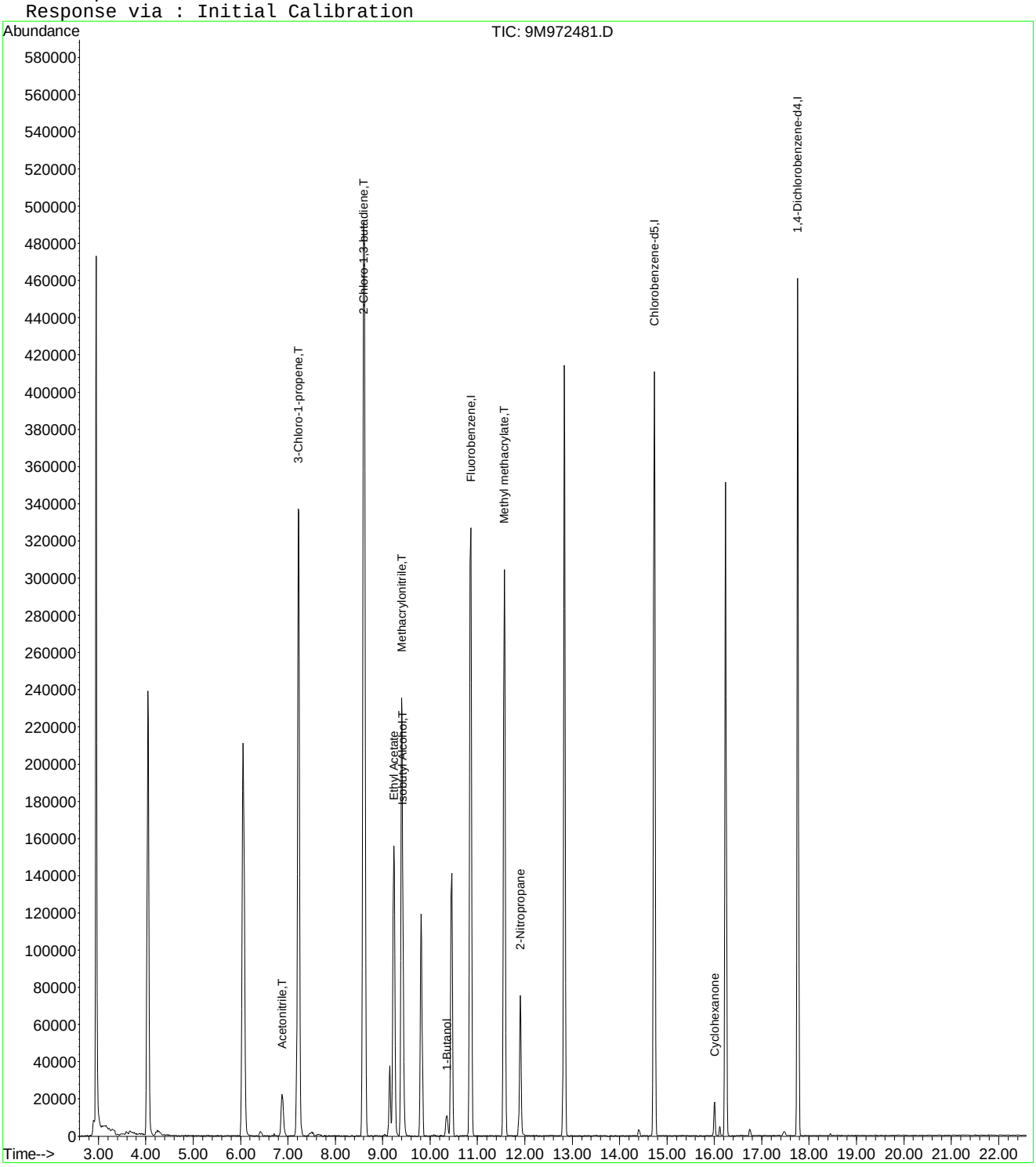

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	101.2745	-1.3	106	0.00
3	T	3-Chloro-1-propene	100.0000	103.3786	-3.4	98	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	129.1764	-29.2	122	0.00
5		Ethyl Acetate	100.0000	106.0028	-6.0	103	0.00
6	T	Methacrylonitrile	100.0000	107.1354	-7.1	103	0.00
7	T	Isobutyl Alcohol	200.0000	188.7895	5.6	101	0.00
8		1-Butanol	100.0000	97.7072	2.3	103	0.00
9	T	Methyl methacrylate	100.0000	110.3163	-10.3	105	0.00
10		2-Nitropropane	100.0000	107.2554	-7.3	106	0.00
11	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
12		Cyclohexanone	100.0000	100.3934	-0.4	101	0.00
13	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	99	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972481.D A9FOO_SL.M Wed Jan 27 11:32:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972896.D Vial: 3
Acq On : 25 Feb 2016 15:48 Operator: ADC
Sample : WG558732-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:54 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260B_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	517775	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.73	117	378926	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.76	152	183008	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	147955	52.7167 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.44%		
43) 1,2-Dichloroethane-d4	10.44	65	183779	52.1887 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.38%		
58) Toluene-d8	12.83	98	511451	53.3617 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.72%		
79) p-Bromofluorobenzene	16.23	95	191673	53.7871 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 107.58%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.28	85	204882	57.9763 ug/kg	100
3) Chloromethane	3.74	50	183152	54.0664 ug/kg	100
4) Vinyl Chloride	3.99	62	192536	56.7764 ug/kg	100
5) 1,3-Butadiene	4.04	54	170907	52.9740 ug/kg	100
6) Bromomethane	4.88	94	107911	48.9956 ug/kg	100
7) Chloroethane	5.04	64	85391	56.5213 ug/kg	100
8) Trichlorofluoromethane	5.53	101	265962	52.2923 ug/kg	100
9) Diethyl ether	6.04	59	249400	104.8955 ug/kg	100
10) Isoprene	6.09	67	156373	51.4980 ug/kg	100
11) Acrolein	6.30	56	24630	51.9520 ug/kg	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	135036	51.4825 ug/kg	100
13) Acetone	6.41	43	66195	50.6135 ug/kg	100
14) 1,1-Dichloroethene	6.61	61	244051	50.4389 ug/kg	100
15) Tert-Butyl Alcohol	6.76	59	110494	208.7036 ug/kg	98
16) Dimethyl Sulfide	6.88	62	109294	53.4455 ug/kg	100
17) Iodomethane	7.13	142	79749	55.1586 ug/kg	100
18) Methyl acetate	7.14	43	135648	51.5699 ug/kg	100
19) Methylene Chloride	7.40	84	135280	51.3362 ug/kg	100
20) Carbon Disulfide	7.45	76	381814	51.2249 ug/kg	100
21) Acrylonitrile	7.59	53	69697	53.5624 ug/kg	100
22) Methyl Tert Butyl Ether	7.61	73	407131	54.2460 ug/kg	100
23) trans-1,2-Dichloroethene	7.85	61	226890	52.6160 ug/kg	100
24) n-Hexane	7.91	57	219597	49.3729 ug/kg	100
25) Diisopropyl ether	8.26	45	1088740	105.3973 ug/kg	100
26) Vinyl Acetate	8.43	43	311838	52.9553 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	284391	52.5076 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	1023392	106.5502 ug/kg	100
29) 2-Butanone	9.03	43	86123	51.5803 ug/kg	100
30) Propionitrile	9.14	54	53253	104.2214 ug/kg	100
31) 2,2-Dichloropropane	9.24	77	215042	53.1943 ug/kg	100
32) cis-1,2-Dichloroethene	9.31	96	153722	54.3532 ug/kg	100
33) Chloroform	9.52	83	263571	52.9749 ug/kg	100
34) 1-Bromopropane	9.65	122	22164	51.3817 ug/kg	100
35) Bromochloromethane	9.75	130	102780	55.9453 ug/kg	100
36) Tetrahydrofuran	9.78	42	113791	105.7289 ug/kg	100
38) 1,1,1-Trichloroethane	10.04	97	243452	54.1074 ug/kg	100
39) Cyclohexane	10.08	56	247641	50.4821 ug/kg	100
40) 1,1-Dichloropropene	10.24	75	182199	51.4612 ug/kg	100
41) Tert-Amyl-Methyl ether	10.34	73	741165	106.1603 ug/kg	100
42) Carbon Tetrachloride	10.39	117	221306	53.0537 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972896.D Vial: 3
Acq On : 25 Feb 2016 15:48 Operator: ADC
Sample : WG558732-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:54 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260B_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	237857	54.3500 ug/kg	100
46)	Benzene	10.60	78	503328	50.7793 ug/kg	100
47)	Trichloroethene	11.35	130	163959	52.2047 ug/kg	100
48)	Methylcyclohexane	11.44	83	204551	51.9284 ug/kg	100
49)	1,2-Dichloropropane	11.56	63	148045	54.3898 ug/kg	100
50)	1,4-Dioxane	11.88	88	7789	190.7454 ug/kg	100
51)	Bromodichloromethane	11.87	83	203922	53.1595 ug/kg	100
52)	Dibromomethane	11.96	174	95887	53.1673 ug/kg	100
53)	2-Chloroethyl Vinyl Ether	12.17	63	38515	51.1377 ug/kg	100
54)	4-Methyl-2-Pentanone	12.19	58	64999	54.4056 ug/kg	100
55)	cis-1,3-Dichloropropene	12.50	75	212797	53.2452 ug/kg	100
56)	Dimethyl Disulfide	12.77	94	219798	54.7267 ug/kg	100
59)	Toluene	12.92	91	563647	52.0613 ug/kg	100
60)	Ethyl Methacrylate	13.02	69	158958	52.9687 ug/kg	100
61)	trans-1,3-Dichloropropene	13.10	75	212386	54.4657 ug/kg	100
62)	1,1,2-Trichloroethane	13.33	97	122975	54.0706 ug/kg	100
63)	2-Hexanone	13.25	43	119176	52.4822 ug/kg	100
64)	1,3-Dichloropropane	13.63	76	201541	53.1810 ug/kg	100
65)	Tetrachloroethene	13.75	164	117066	50.4378 ug/kg	100
66)	Dibromochloromethane	14.01	129	168874	53.1294 ug/kg	100
67)	1,2-Dibromoethane	14.28	107	132755	52.6249 ug/kg	100
68)	1-Chlorohexane	14.35	91	168490	52.7733 ug/kg	100
69)	Chlorobenzene	14.77	112	400241	52.5998 ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.80	131	154536	54.0800 ug/kg	100
71)	Ethylbenzene	14.80	106	207031	52.8117 ug/kg	100
72)	m-,p-Xylene	14.89	106	497405	102.7415 ug/kg	100
73)	o-Xylene	15.45	106	247567	53.2858 ug/kg	100
74)	Styrene	15.49	104	425634	53.7983 ug/kg	100
75)	Bromoform	16.00	173	116015	55.5910 ug/kg	100
76)	Isopropylbenzene	15.88	105	658255	52.7764 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.10	83	147970	53.3007 ug/kg	100
80)	1,2,3-Trichloropropane	16.29	110	55711	52.9159 ug/kg	100
81)	trans-1,4-Dichloro-2-Buten	16.33	53	55525	52.3210 ug/kg	100
82)	n-Propylbenzene	16.39	91	751844	52.2641 ug/kg	100
83)	Bromobenzene	16.52	156	177299	52.2079 ug/kg	100
84)	1,3,5-Trimethylbenzene	16.58	105	568867	52.6809 ug/kg	100
85)	2-Chlorotoluene	16.66	91	484783	50.2437 ug/kg	100
86)	4-Chlorotoluene	16.70	91	481367	53.9615 ug/kg	100
87)	a-Methylstyrene	16.98	118	255765	51.9817 ug/kg	100
88)	tert-Butylbenzene	17.04	134	121669	53.7430 ug/kg	100
89)	1,2,4-Trimethylbenzene	17.09	105	580656	51.3463 ug/kg	100
90)	sec-Butylbenzene	17.30	105	726352	52.2266 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	613096	52.2364 ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	337008	49.9319 ug/kg	100
93)	1,4-Dichlorobenzene	17.80	146	335195	49.6777 ug/kg	100
94)	n-Butylbenzene	17.99	91	563797	51.6647 ug/kg	100
95)	1,2-Dichlorobenzene	18.30	146	320108	51.1150 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.30	157	42968	53.4468 ug/kg	100
97)	1,2,4-Trichlorobenzene	20.44	180	222592	50.0691 ug/kg	100
98)	Hexachlorobutadiene	20.59	225	117654	50.2053 ug/kg	100
99)	Naphthalene	20.81	128	602344	54.0184 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	222082	51.5034 ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972896.D 8260SL.M Fri Feb 26 11:21:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972896.D Vial: 3
Acq On : 25 Feb 2016 15:48 Operator: ADC
Sample : WG558732-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

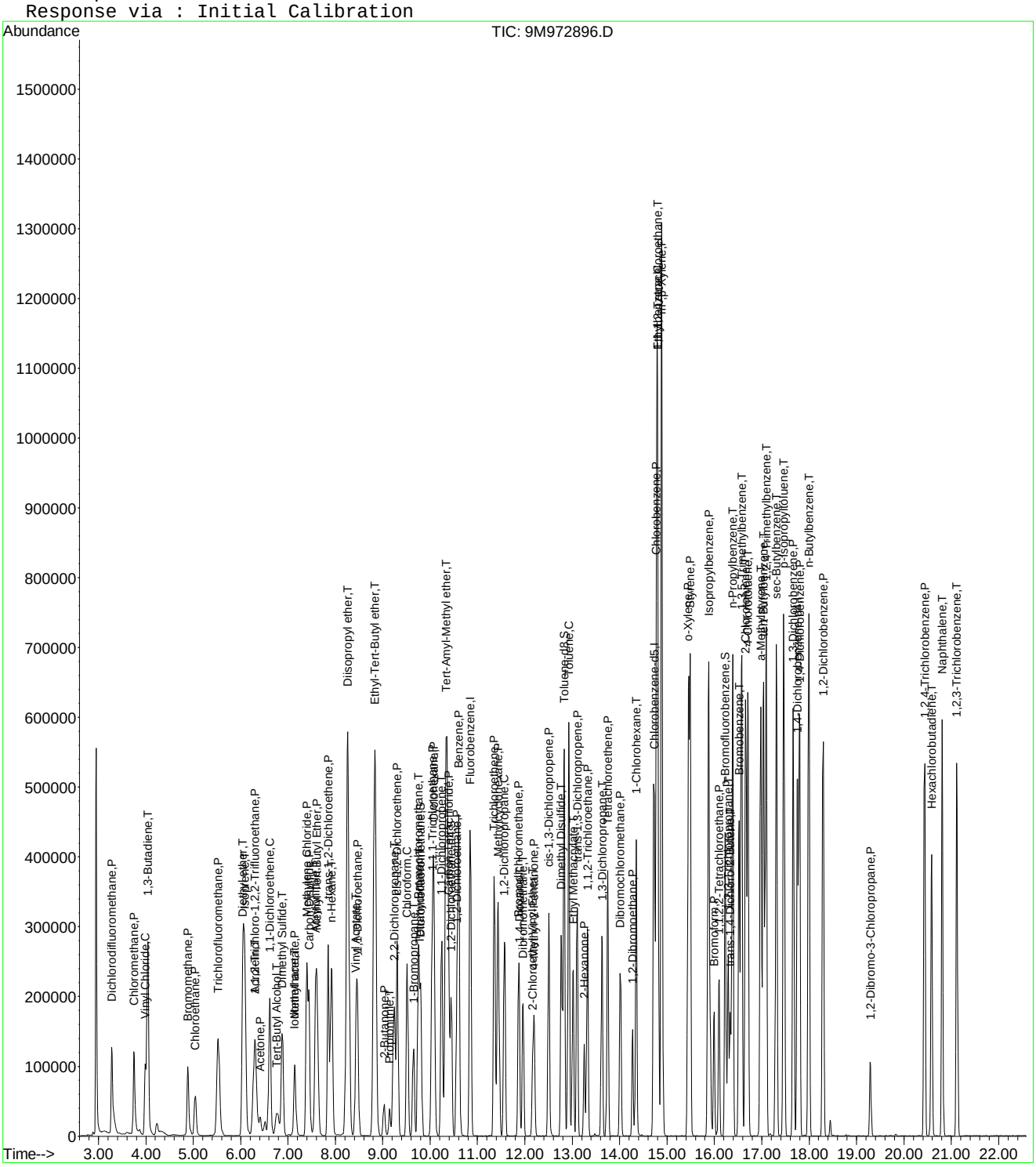

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:15 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	491503	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	353502	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	169028	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.83	98	923	0.1032 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.20%#	
79) p-Bromofluorobenzene	16.22	95	770	0.2339 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.46%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	1359	0.4051 ug/kg#	69
3) Chloromethane	3.75	50	2926	0.9099 ug/kg	95
4) Vinyl Chloride	3.98	62	1474	0.4579 ug/kg#	67
5) 1,3-Butadiene	4.03	54	1519	0.4960 ug/kg	82
6) Bromomethane	4.89	94	2071	0.9906 ug/kg	100
8) Trichlorofluoromethane	5.53	101	2609	0.5404 ug/kg#	51
10) Isoprene	6.08	67	1239	0.4298 ug/kg	70
13) Acetone	6.43	43	4251	5.5216 ug/kg#	75
14) 1,1-Dichloroethene	6.63	61	2149	0.4679 ug/kg#	66
17) Iodomethane	7.14	142	943	3.4505 ug/kg#	34
18) Methyl acetate	7.16	43	1334	0.5343 ug/kg#	45
19) Methylene Chloride	7.40	84	1287	0.5145 ug/kg	81
20) Carbon Disulfide	7.44	76	6762	0.9557 ug/kg#	76
23) trans-1,2-Dichloroethene	7.84	61	2196	0.5365 ug/kg	86
24) n-Hexane	7.92	57	2239	0.5303 ug/kg#	62
26) Vinyl Acetate	8.44	43	2494	0.4462 ug/kg#	78
27) 1,1-Dichloroethane	8.48	63	2396	0.4660 ug/kg#	63
29) 2-Butanone	9.02	43	778	0.4909 ug/kg#	58
31) 2,2-Dichloropropane	9.24	77	1877	0.4891 ug/kg#	42
32) cis-1,2-Dichloroethene	9.32	96	1178	0.4388 ug/kg	74
33) Chloroform	9.52	83	2007	0.4249 ug/kg	81
35) Bromochloromethane	9.74	130	828	0.4748 ug/kg#	68
36) Tetrahydrofuran	9.76	42	1603	1.5690 ug/kg#	57
38) 1,1,1-Trichloroethane	10.05	97	1773	0.4151 ug/kg	92
40) 1,1-Dichloropropene	10.25	75	1521	0.4526 ug/kg#	38
42) Carbon Tetrachloride	10.40	117	1765	0.4457 ug/kg#	85
45) 1,2-Dichloroethane	10.57	62	1885	0.4537 ug/kg#	68
46) Benzene	10.61	78	5607	0.5959 ug/kg#	83
47) Trichloroethene	11.36	130	1808	0.6064 ug/kg	88
48) Methylcyclohexane	11.44	83	1930	0.5161 ug/kg	96
55) cis-1,3-Dichloropropene	12.51	75	1714	0.4518 ug/kg#	51
59) Toluene	12.93	91	5550	0.5495 ug/kg	88
61) trans-1,3-Dichloropropene	13.10	75	1920	0.5278 ug/kg#	51
63) 2-Hexanone	13.25	43	877	0.4140 ug/kg#	63
64) 1,3-Dichloropropane	13.63	76	1615	0.4568 ug/kg	91
65) Tetrachloroethene	13.75	164	1154	0.5330 ug/kg#	74
67) 1,2-Dibromoethane	14.27	107	988	0.4198 ug/kg	87
68) 1-Chlorohexane	14.35	91	1436	0.4821 ug/kg	83
69) Chlorobenzene	14.78	112	4578	0.6449 ug/kg	87
70) 1,1,1,2-Tetrachloroethane	14.81	131	1078	0.4044 ug/kg	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:15 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
71)	Ethylbenzene	14.80	106	1823	0.4985 ug/kg	68
72)	m-,p-Xylene	14.88	106	4752	1.0521 ug/kg	95
73)	o-Xylene	15.44	106	2166	0.4997 ug/kg	94
74)	Styrene	15.49	104	3544	0.4802 ug/kg	91
76)	Isopropylbenzene	15.87	105	6349	0.5456 ug/kg	97
78)	1,1,2,2-Tetrachloroethane	16.09	83	1326	0.5171 ug/kg#	89
82)	n-Propylbenzene	16.38	91	7679	0.5780 ug/kg	98
83)	Bromobenzene	16.52	156	1798	0.5732 ug/kg	88
84)	1,3,5-Trimethylbenzene	16.57	105	4554	0.4566 ug/kg	92
85)	2-Chlorotoluene	16.66	91	5237	0.5877 ug/kg	84
86)	4-Chlorotoluene	16.71	91	5645	0.6851 ug/kg	93
87)	a-Methylstyrene	16.97	118	2091	0.4601 ug/kg	93
89)	1,2,4-Trimethylbenzene	17.09	105	6291	0.6023 ug/kg	84
90)	sec-Butylbenzene	17.31	105	7013	0.5460 ug/kg	93
91)	p-Isopropyltoluene	17.47	119	5681	0.5241 ug/kg	95
92)	1,3-Dichlorobenzene	17.67	146	4446	0.7132 ug/kg	91
93)	1,4-Dichlorobenzene	17.79	146	4603	0.7386 ug/kg#	73
94)	n-Butylbenzene	17.99	91	6750	0.6697 ug/kg#	90
95)	1,2-Dichlorobenzene	18.29	146	3889	0.6724 ug/kg	82
97)	1,2,4-Trichlorobenzene	20.43	180	3506	0.8539 ug/kg	94
98)	Hexachlorobutadiene	20.58	225	1493	0.6898 ug/kg#	70
99)	Naphthalene	20.81	128	10277	0.9979 ug/kg	93
100)	1,2,3-Trichlorobenzene	21.12	180	3961	0.9946 ug/kg	80

(#) = qualifier out of range (m) = manual integration
9M972898.D 8260SL.M Fri Feb 26 11:11:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration

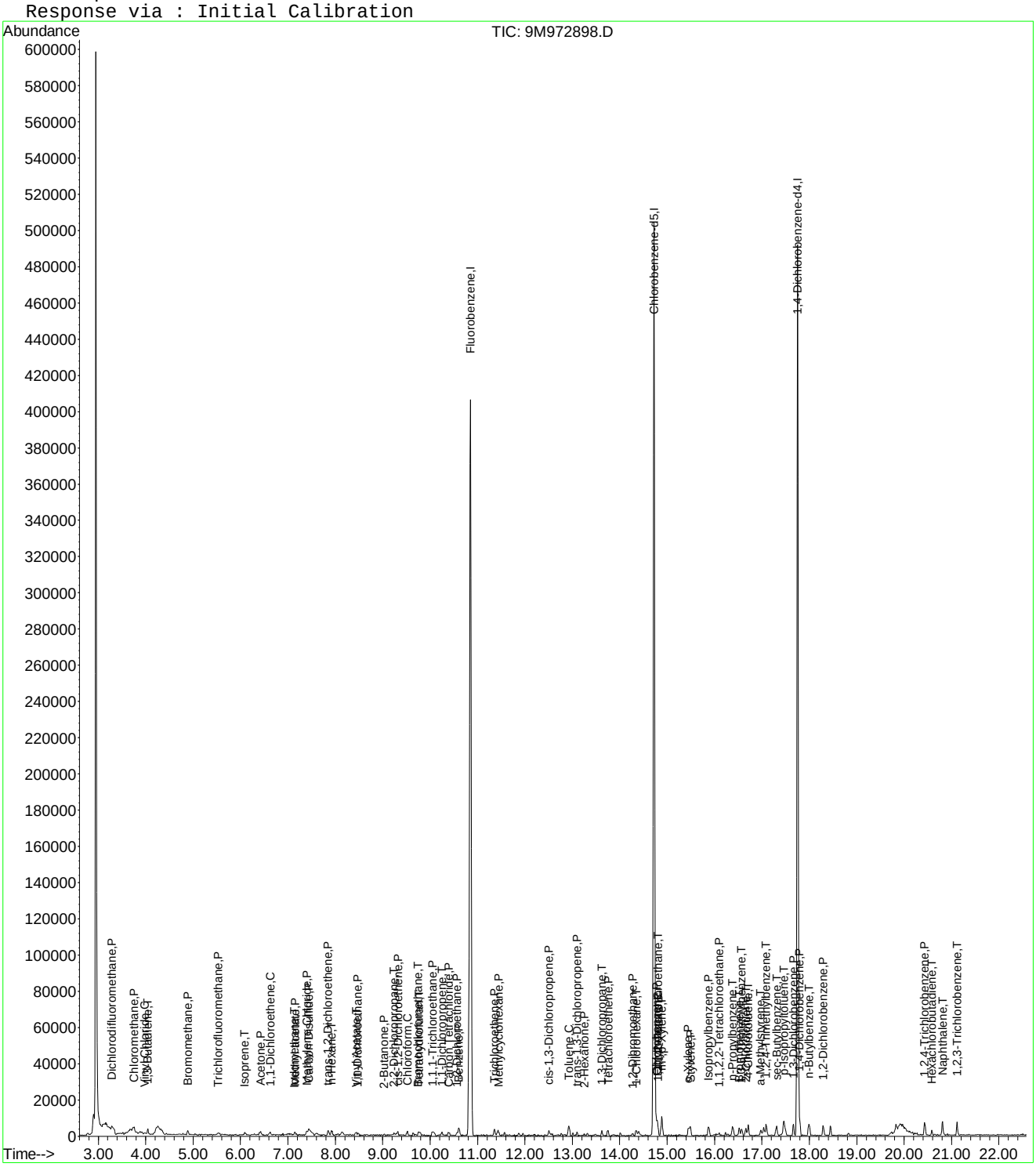

9M972898.D 8260SL.M Fri Feb 26 11:11:55 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	0.4051	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.9099	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.4579	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	0.4960	0.0	0	0.00
6	P	Bromomethane	-1.0000	0.9906	0.0	100	0.00
7	P	Chloroethane	-1.0000	0.2845	0.0	100	0.01
8	P	Trichlorofluoromethane	-1.0000	0.5404	0.0	100	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.04#
10	T	Isoprene	-1.0000	0.4298	0.0	0	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.30#
12	P	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.0779	0.0	100	0.00
13	P	Acetone	-1.0000	5.5216	0.0	0	0.02
14	C	1,1-Dichloroethene	-1.0000	0.4679	0.0	100	0.01
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.76#
16	T	Dimethyl Sulfide	-1.0000	0.1242	0.0	0	0.01
17	T	Iodomethane	-1.0000	3.4505	0.0	0	0.00
18	P	Methyl acetate	-1.0000	0.5343	0.0	0	0.02
19	P	Methylene Chloride	-1.0000	0.5145	0.0	100	0.00
20	P	Carbon Disulfide	-1.0000	0.9557	0.0	0	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.59#
22	P	Methyl Tert Butyl Ether	-1.0000	0.3878	0.0	100	0.00
23	P	trans-1,2-Dichloroethene	-1.0000	0.5365	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.5303	0.0	0	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.26#
26	T	Vinyl Acetate	-1.0000	0.4462	0.0	100	0.01
27	P	1,1-Dichloroethane	-1.0000	0.4660	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.83#
29	P	2-Butanone	-1.0000	0.4909	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.14#
31	T	2,2-Dichloropropane	-1.0000	0.4891	0.0	100	0.00
32	P	cis-1,2-Dichloroethene	-1.0000	0.4388	0.0	100	0.01
33	C	Chloroform	-1.0000	0.4249	0.0	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.65#
35	T	Bromochloromethane	-1.0000	0.4748	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	1.5690	0.0	100	-0.02
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	-1.0000	0.4151	0.0	100	0.00
39	P	Cyclohexane	-1.0000	0.3314	0.0	0	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4526	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.34#
42	P	Carbon Tetrachloride	-1.0000	0.4457	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	-1.0000	0.4537	0.0	100	0.00
46	P	Benzene	0.5000	0.5959	-19.2	100	0.00
47	P	Trichloroethene	-1.0000	0.6064	0.0	100	0.00
48	P	Methylcyclohexane	-1.0000	0.5161	0.0	0	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2930	0.0	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.88#
51	P	Bromodichloromethane	-1.0000	0.3238	0.0	100	0.00
52	T	Dibromomethane	-1.0000	0.1630	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.0000	0.0	0	-12.16#
54	P	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.19#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	-1.0000	0.4518	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2529	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.1032	0.0	100	0.00
59	C	Toluene	0.5000	0.5495	-9.9	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2340	0.0	0	0.00
61	P	trans-1,3-Dichloropropene	-1.0000	0.5278	0.0	100	0.00
62	P	1,1,2-Trichloroethane	-1.0000	0.3964	0.0	100	0.00
63	P	2-Hexanone	-1.0000	0.4140	0.0	100	0.00
64	T	1,3-Dichloropropane	-1.0000	0.4568	0.0	100	0.00
65	P	Tetrachloroethene	-1.0000	0.5330	0.0	100	0.00
66	P	Dibromochloromethane	-1.0000	0.3541	0.0	100	0.00
67	P	1,2-Dibromoethane	-1.0000	0.4198	0.0	100	0.00
68	T	1-Chlorohexane	-1.0000	0.4821	0.0	0	0.00
69	P	Chlorobenzene	-1.0000	0.6449	0.0	100	0.00
70	T	1,1,1,2-Tetrachloroethane	-1.0000	0.4044	0.0	100	0.00
71	C	Ethylbenzene	0.5000	0.4985	0.3	100	0.00
72	P	m-,p-Xylene	1.0000	1.0521	-5.2	100	0.00
73	P	o-Xylene	0.5000	0.4997	0.1	100	0.00
74	P	Styrene	-1.0000	0.4802	0.0	100	0.00
75	P	Bromoform	-1.0000	0.3955	0.0	100	0.00
76	P	Isopropylbenzene	-1.0000	0.5456	0.0	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	-1.0000	0.5171	0.0	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.2339	0.0	100	0.00
80	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.29#
81	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.33#
82	T	n-Propylbenzene	-1.0000	0.5780	0.0	100	0.00
83	T	Bromobenzene	-1.0000	0.5732	0.0	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	0.4566	0.0	100	0.00
85	T	2-Chlorotoluene	-1.0000	0.5877	0.0	100	0.00
86	T	4-Chlorotoluene	-1.0000	0.6851	0.0	100	0.00
87	T	a-Methylstyrene	-1.0000	0.4601	0.0	0	0.00
88	T	tert-Butylbenzene	-1.0000	0.2860	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	-1.0000	0.6023	0.0	100	0.00
90	T	sec-Butylbenzene	-1.0000	0.5460	0.0	100	0.00
91	T	p-Isopropyltoluene	-1.0000	0.5241	0.0	100	0.00
92	P	1,3-Dichlorobenzene	-1.0000	0.7132	0.0	100	0.00
93	P	1,4-Dichlorobenzene	-1.0000	0.7386	0.0	100	0.00
94	T	n-Butylbenzene	-1.0000	0.6697	0.0	100	0.00
95	P	1,2-Dichlorobenzene	-1.0000	0.6724	0.0	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.30#
97	P	1,2,4-Trichlorobenzene	-1.0000	0.8539	0.0	100	0.00
98	T	Hexachlorobutadiene	-1.0000	0.6898	0.0	100	0.00
99	T	Naphthalene	-1.0000	0.9979	0.0	100	0.00
100	T	1,2,3-Trichlorobenzene	-1.0000	0.9946	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972898.D 8260SL.M Fri Feb 26 11:11:52 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	536651	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	387839	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	177519	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.82	98	959	0.0978 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.20%#	
79) p-Bromofluorobenzene	16.22	95	467	0.1351 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	3486	0.9518 ug/kg#	85
3) Chloromethane	3.74	50	4175	1.1891 ug/kg	88
4) Vinyl Chloride	3.98	62	2686	0.7642 ug/kg	80
5) 1,3-Butadiene	4.03	54	3056	0.9139 ug/kg	91
6) Bromomethane	4.89	94	2537	1.1114 ug/kg	94
7) Chloroethane	5.05	64	1264	0.8072 ug/kg#	45
8) Trichlorofluoromethane	5.53	101	5567	1.0561 ug/kg#	93
9) Diethyl ether	6.05	59	11529	4.6784 ug/kg	97
10) Isoprene	6.08	67	2965	0.9421 ug/kg	97
11) Acrolein	6.29	56	1087	2.2122 ug/kg#	35
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	1939	0.7132 ug/kg	88
13) Acetone	6.41	43	5231	5.8863 ug/kg	95
14) 1,1-Dichloroethene	6.62	61	4981	0.9932 ug/kg	92
15) Tert-Butyl Alcohol	6.77	59	5682	10.3548 ug/kg#	63
16) Dimethyl Sulfide	6.88	62	1614	0.7615 ug/kg	91
17) Iodomethane	7.15	142	941	3.3944 ug/kg#	66
18) Methyl acetate	7.16	43	2553	0.9364 ug/kg#	65
19) Methylene Chloride	7.40	84	2963	1.0849 ug/kg	92
20) Carbon Disulfide	7.45	76	9749	1.2619 ug/kg	95
21) Acrylonitrile	7.58	53	3140	2.3282 ug/kg	85
22) Methyl Tert Butyl Ether	7.61	73	7179	0.9229 ug/kg	83
23) trans-1,2-Dichloroethene	7.85	61	4296	0.9612 ug/kg	95
24) n-Hexane	7.93	57	4481	0.9720 ug/kg	95
25) Diisopropyl ether	8.26	45	50344	4.7022 ug/kg	98
26) Vinyl Acetate	8.43	43	5247	0.8597 ug/kg#	90
27) 1,1-Dichloroethane	8.48	63	5885	1.0483 ug/kg#	85
28) Ethyl-Tert-Butyl ether	8.83	59	46767	4.6979 ug/kg	99
29) 2-Butanone	9.03	43	1776	1.0263 ug/kg#	58
30) Propionitrile	9.14	54	2256	4.2599 ug/kg#	60
31) 2,2-Dichloropropane	9.24	77	4402	1.0506 ug/kg#	71
32) cis-1,2-Dichloroethene	9.31	96	2650	0.9040 ug/kg	94
33) Chloroform	9.51	83	5072	0.9836 ug/kg	96
35) Bromochloromethane	9.75	130	1408	0.7394 ug/kg	86
36) Tetrahydrofuran	9.77	42	6699	6.0054 ug/kg	95
38) 1,1,1-Trichloroethane	10.05	97	4567	0.9793 ug/kg	91
39) Cyclohexane	10.08	56	4992	0.9818 ug/kg#	85
40) 1,1-Dichloropropene	10.24	75	3785	1.0315 ug/kg	90
41) Tert-Amyl-Methyl ether	10.34	73	33850	4.6779 ug/kg	95
42) Carbon Tetrachloride	10.40	117	4297	0.9939 ug/kg#	90
45) 1,2-Dichloroethane	10.55	62	3923	0.8649 ug/kg	93

(#) = qualifier out of range (m) = manual integration
9M972899.D 8260SL.M Fri Feb 26 11:12:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
46)	Benzene	10.61	78	9968	0.9703 ug/kg	96
47)	Trichloroethene	11.36	130	3259	1.0012 ug/kg	99
48)	Methylcyclohexane	11.43	83	3354	0.8215 ug/kg	76
49)	1,2-Dichloropropane	11.57	63	2469	0.8752 ug/kg	94
51)	Bromodichloromethane	11.87	83	3657	0.9198 ug/kg#	94
52)	Dibromomethane	11.96	174	1621	0.8672 ug/kg	93
53)	2-Chloroethyl Vinyl Ether	12.16	63	210	3.0851 ug/kg#	47
54)	4-Methyl-2-Pentanone	12.20	58	738	0.5960 ug/kg#	40
55)	cis-1,3-Dichloropropene	12.51	75	3714	0.8966 ug/kg	86
56)	Dimethyl Disulfide	12.77	94	3075	0.7387 ug/kg	83
59)	Toluene	12.93	91	10894	0.9831 ug/kg	97
60)	Ethyl Methacrylate	13.01	69	1966	0.6401 ug/kg#	53
61)	trans-1,3-Dichloropropene	13.11	75	3837	0.9614 ug/kg#	79
62)	1,1,2-Trichloroethane	13.32	97	2148	0.9227 ug/kg	94
63)	2-Hexanone	13.26	43	1796	0.7727 ug/kg#	80
64)	1,3-Dichloropropane	13.63	76	3616	0.9322 ug/kg	99
65)	Tetrachloroethene	13.75	164	2587	1.0890 ug/kg	79
66)	Dibromochloromethane	14.02	129	3318	1.0199 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	2336	0.9047 ug/kg	97
68)	1-Chlorohexane	14.34	91	3075	0.9410 ug/kg	85
69)	Chlorobenzene	14.78	112	7982	1.0249 ug/kg	88
70)	1,1,1,2-Tetrachloroethane	14.81	131	2589	0.8852 ug/kg	86
71)	Ethylbenzene	14.80	106	4007	0.9987 ug/kg	89
72)	m-,p-Xylene	14.88	106	9607	1.9388 ug/kg	98
73)	o-Xylene	15.45	106	4376	0.9202 ug/kg	99
74)	Styrene	15.49	104	7432	0.9178 ug/kg	92
75)	Bromoform	16.00	173	1759	0.8235 ug/kg#	79
76)	Isopropylbenzene	15.87	105	11937	0.9351 ug/kg	98
78)	1,1,2,2-Tetrachloroethane	16.09	83	2186	0.8118 ug/kg#	83
80)	1,2,3-Trichloropropane	16.28	110	875	0.8568 ug/kg#	81
81)	trans-1,4-Dichloro-2-Buten	16.34	53	831	0.8073 ug/kg#	74
82)	n-Propylbenzene	16.38	91	14156	1.0145 ug/kg	99
83)	Bromobenzene	16.53	156	2996	0.9095 ug/kg#	39
84)	1,3,5-Trimethylbenzene	16.57	105	11008	1.0509 ug/kg	88
85)	2-Chlorotoluene	16.65	91	10606	1.1332 ug/kg	84
86)	4-Chlorotoluene	16.71	91	9101	1.0518 ug/kg	95
87)	a-Methylstyrene	16.98	118	4078	0.8544 ug/kg	85
88)	tert-Butylbenzene	17.03	134	2095	0.9540 ug/kg	74
89)	1,2,4-Trimethylbenzene	17.09	105	12124	1.1053 ug/kg	83
90)	sec-Butylbenzene	17.31	105	13922	1.0320 ug/kg	100
91)	p-Isopropyltoluene	17.47	119	10153	0.8918 ug/kg	98
92)	1,3-Dichlorobenzene	17.67	146	7444	1.1370 ug/kg	90
93)	1,4-Dichlorobenzene	17.79	146	7580	1.1581 ug/kg	92
94)	n-Butylbenzene	17.99	91	11112	1.0498 ug/kg	91
95)	1,2-Dichlorobenzene	18.29	146	6415	1.0560 ug/kg	97
97)	1,2,4-Trichlorobenzene	20.43	180	4869	1.1291 ug/kg	98
98)	Hexachlorobutadiene	20.59	225	2032	0.8939 ug/kg	87
99)	Naphthalene	20.81	128	11710	1.0826 ug/kg	92
100)	1,2,3-Trichlorobenzene	21.12	180	4698	1.1232 ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972899.D 8260SL.M Fri Feb 26 11:12:33 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration

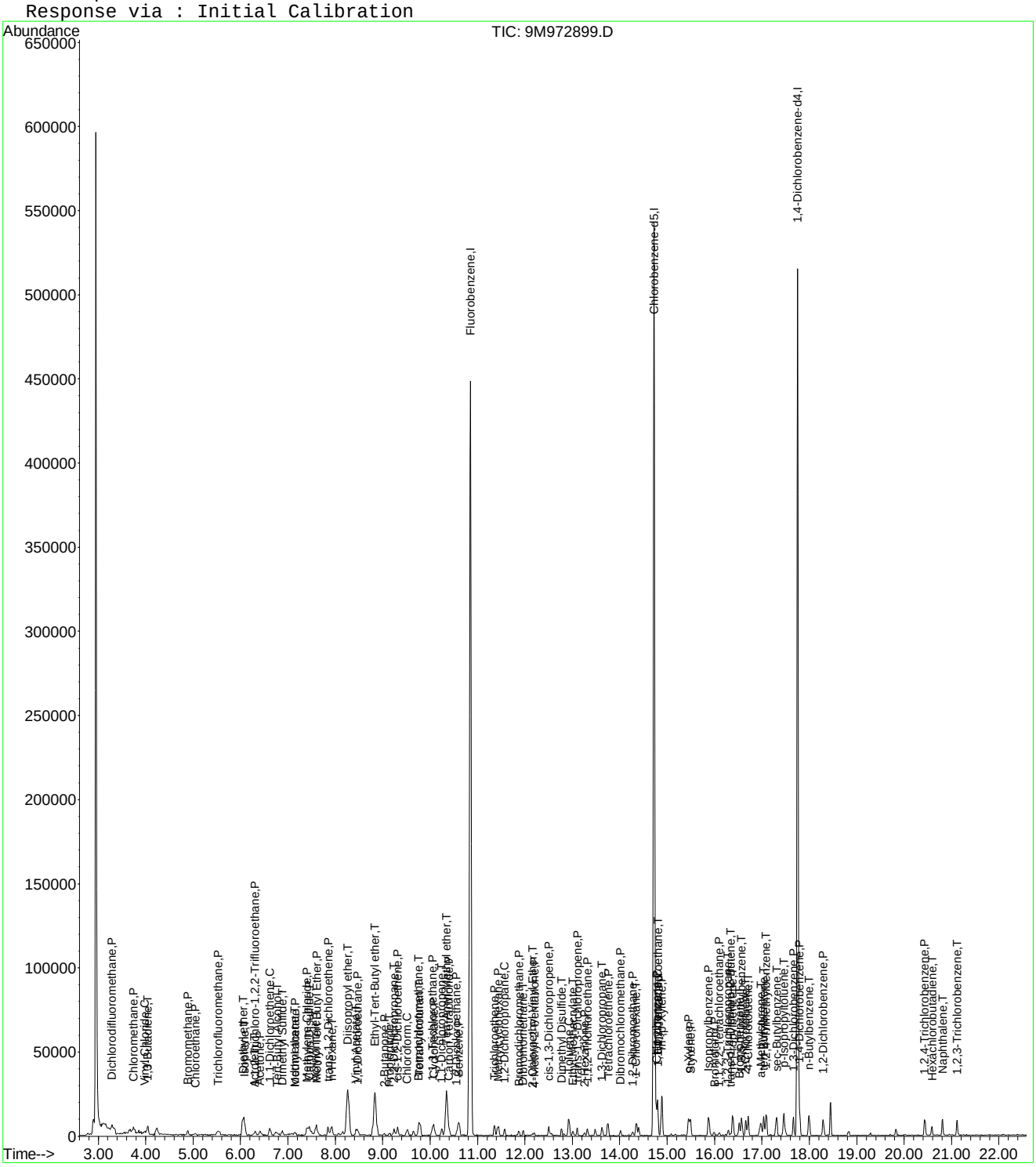

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	0.9518	0.0	100	0.00
3	P	Chloromethane	-1.0000	1.1891	0.0	100	0.00
4	C	Vinyl Chloride	1.0000	0.7642	23.6#	100	0.00
5	T	1,3-Butadiene	-1.0000	0.9139	0.0	0	0.00
6	P	Bromomethane	1.0000	1.1114	-11.1	100	0.00
7	P	Chloroethane	-1.0000	0.8072	0.0	100	0.00
8	P	Trichlorofluoromethane	1.0000	1.0561	-5.6	100	0.00
9	T	Diethyl ether	5.0000	4.6784	6.4	100	0.00
10	T	Isoprene	-1.0000	0.9421	0.0	0	0.00
11	T	Acrolein	2.5000	2.2122	11.5	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.7132	0.0	100	0.00
13	P	Acetone	-1.0000	5.8863	0.0	0	0.00
14	C	1,1-Dichloroethene	1.0000	0.9932	0.7	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	10.3548	0.0	100	0.00
16	T	Dimethyl Sulfide	1.0000	0.7615	23.9	100	0.00
17	T	Iodomethane	-1.0000	3.3944	0.0	0	0.01
18	P	Methyl acetate	-1.0000	0.9364	0.0	0	0.02
19	P	Methylene Chloride	-1.0000	1.0849	0.0	100	0.00
20	P	Carbon Disulfide	-1.0000	1.2619	0.0	0	0.00
21	T	Acrylonitrile	2.5000	2.3282	6.9	100	0.00
22	P	Methyl Tert Butyl Ether	1.0000	0.9229	7.7	100	0.00
23	P	trans-1,2-Dichloroethene	1.0000	0.9612	3.9	100	0.00
24	T	n-Hexane	-1.0000	0.9720	0.0	0	0.01
25	T	Diisopropyl ether	5.0000	4.7022	6.0	100	0.00
26	T	Vinyl Acetate	-1.0000	0.8597	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0483	-4.8	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.6979	6.0	100	0.00
29	P	2-Butanone	-1.0000	1.0263	0.0	100	0.00
30	T	Propionitrile	5.0000	4.2599	14.8	100	0.00
31	T	2,2-Dichloropropane	-1.0000	1.0506	0.0	100	0.00
32	P	cis-1,2-Dichloroethene	1.0000	0.9040	9.6	100	0.00
33	C	Chloroform	1.0000	0.9836	1.6	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.65#
35	T	Bromochloromethane	1.0000	0.7395	26.1#	100	0.00
36	T	Tetrahydrofuran	-1.0000	6.0054	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	1.0000	0.9793	2.1	100	0.00
39	P	Cyclohexane	1.0000	0.9818	1.8	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0315	-3.1	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	4.6780	6.4	100	0.00
42	P	Carbon Tetrachloride	-1.0000	0.9939	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	1.0000	0.8649	13.5	100	0.00
46	P	Benzene	1.0000	0.9703	3.0	100	0.00
47	P	Trichloroethene	1.0000	1.0012	-0.1	100	0.00
48	P	Methylcyclohexane	1.0000	0.8215	17.8	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.8752	12.5	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.88#
51	P	Bromodichloromethane	-1.0000	0.9198	0.0	100	0.00
52	T	Dibromomethane	1.0000	0.8672	13.3	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	3.0851	0.0	0	0.00
54	P	4-Methyl-2-Pentanone	-1.0000	0.5960	0.0	100	0.01

(#) = Out of Range

9M972899.D 8260SL.M Fri Feb 26 11:12:31 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	-1.0000	0.8966	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.7387	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0978	0.0	100	0.00
59	C	Toluene	1.0000	0.9831	1.7	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.6401	0.0	0	0.00
61	P	trans-1,3-Dichloropropene	-1.0000	0.9614	0.0	100	0.00
62	P	1,1,2-Trichloroethane	1.0000	0.9227	7.7	100	0.00
63	P	2-Hexanone	-1.0000	0.7727	0.0	100	0.00
64	T	1,3-Dichloropropane	1.0000	0.9322	6.8	100	0.00
65	P	Tetrachloroethene	1.0000	1.0890	-8.9	100	0.00
66	P	Dibromochloromethane	-1.0000	1.0199	0.0	100	0.00
67	P	1,2-Dibromoethane	-1.0000	0.9047	0.0	100	0.00
68	T	1-Chlorohexane	1.0000	0.9410	5.9	100	0.00
69	P	Chlorobenzene	1.0000	1.0249	-2.5	100	0.00
70	T	1,1,1,2-Tetrachloroethane	-1.0000	0.8852	0.0	100	0.00
71	C	Ethylbenzene	1.0000	0.9987	0.1	100	0.00
72	P	m-,p-Xylene	2.0000	1.9388	3.1	100	0.00
73	P	o-Xylene	1.0000	0.9202	8.0	100	0.00
74	P	Styrene	1.0000	0.9178	8.2	100	0.00
75	P	Bromoform	-1.0000	0.8235	0.0	100	0.00
76	P	Isopropylbenzene	1.0000	0.9351	6.5	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	1.0000	0.8118	18.8	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.1351	0.0	100	0.00
80	T	1,2,3-Trichloropropane	1.0000	0.8568	14.3	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.8073	0.0	0	0.00
82	T	n-Propylbenzene	1.0000	1.0145	-1.4	100	0.00
83	T	Bromobenzene	1.0000	0.9095	9.1	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	1.0509	0.0	100	0.00
85	T	2-Chlorotoluene	-1.0000	1.1332	0.0	100	0.00
86	T	4-Chlorotoluene	1.0000	1.0518	-5.2	100	0.00
87	T	a-Methylstyrene	-1.0000	0.8544	0.0	0	0.00
88	T	tert-Butylbenzene	-1.0000	0.9540	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	1.0000	1.1053	-10.5	100	0.00
90	T	sec-Butylbenzene	1.0000	1.0320	-3.2	100	0.00
91	T	p-Isopropyltoluene	-1.0000	0.8918	0.0	100	0.00
92	P	1,3-Dichlorobenzene	1.0000	1.1370	-13.7	100	0.00
93	P	1,4-Dichlorobenzene	1.0000	1.1581	-15.8	100	0.00
94	T	n-Butylbenzene	1.0000	1.0498	-5.0	100	0.00
95	P	1,2-Dichlorobenzene	1.0000	1.0560	-5.6	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	0.3514	0.0	100	0.00
97	P	1,2,4-Trichlorobenzene	1.0000	1.1291	-12.9	100	0.00
98	T	Hexachlorobutadiene	1.0000	0.8939	10.6	100	0.00
99	T	Naphthalene	-1.0000	1.0826	0.0	100	0.00
100	T	1,2,3-Trichlorobenzene	1.0000	1.1232	-12.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1
9M972899.D 8260SL.M Fri Feb 26 11:12:31 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	472115	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	342668	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	156993	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.83	98	772	0.0891 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.18%#	
79) p-Bromofluorobenzene	16.23	95	570	0.1865 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.38%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.29	85	6383	1.9809 ug/kg#	78
3) Chloromethane	3.74	50	7027	2.2750 ug/kg	100
4) Vinyl Chloride	4.00	62	6001	1.9408 ug/kg	97
5) 1,3-Butadiene	4.04	54	6545	2.2249 ug/kg	95
6) Bromomethane	4.90	94	5050	2.5146 ug/kg	81
7) Chloroethane	5.04	64	2391	1.7357 ug/kg#	70
8) Trichlorofluoromethane	5.54	101	9777	2.1082 ug/kg#	94
9) Diethyl ether	6.06	59	58156	26.8255 ug/kg	97
10) Isoprene	6.09	67	5698	2.0580 ug/kg	89
11) Acrolein	6.30	56	5427	12.5543 ug/kg	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	4756	1.9886 ug/kg	93
13) Acetone	6.40	43	6167	6.9886 ug/kg	93
14) 1,1-Dichloroethene	6.62	61	9652	2.1877 ug/kg	91
15) Tert-Butyl Alcohol	6.75	59	26757	55.4271 ug/kg#	91
16) Dimethyl Sulfide	6.89	62	3840	2.0594 ug/kg	97
17) Iodomethane	7.14	142	1541	3.9079 ug/kg#	56
18) Methyl acetate	7.15	43	5334	2.2240 ug/kg#	69
19) Methylene Chloride	7.40	84	5116	2.1292 ug/kg	98
20) Carbon Disulfide	7.44	76	15010	2.2085 ug/kg	94
21) Acrylonitrile	7.59	53	14961	12.6096 ug/kg	100
22) Methyl Tert Butyl Ether	7.61	73	13630	1.9917 ug/kg	93
23) trans-1,2-Dichloroethene	7.85	61	7964	2.0255 ug/kg	100
24) n-Hexane	7.92	57	8619	2.1253 ug/kg	100
25) Diisopropyl ether	8.26	45	252190	26.7748 ug/kg	99
26) Vinyl Acetate	8.43	43	11207	2.0872 ug/kg	95
27) 1,1-Dichloroethane	8.47	63	10529	2.1320 ug/kg#	93
28) Ethyl-Tert-Butyl ether	8.83	59	234163	26.7377 ug/kg	99
29) 2-Butanone	9.03	43	3346	2.1978 ug/kg#	76
30) Propionitrile	9.14	54	12899	27.6861 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	8085	2.1934 ug/kg	88
32) cis-1,2-Dichloroethene	9.32	96	4861	1.8850 ug/kg	98
33) Chloroform	9.53	83	10005	2.2054 ug/kg	95
34) 1-Bromopropane	9.64	122	209	1.5465 ug/kg	96
35) Bromochloromethane	9.75	130	3273	1.9539 ug/kg	81
36) Tetrahydrofuran	9.78	42	26192	26.6900 ug/kg	94
38) 1,1,1-Trichloroethane	10.04	97	8229	2.0058 ug/kg	97
39) Cyclohexane	10.09	56	9354	2.0912 ug/kg	96
40) 1,1-Dichloropropene	10.23	75	6787	2.1024 ug/kg	88
41) Tert-Amyl-Methyl ether	10.34	73	167275	26.2768 ug/kg	98
42) Carbon Tetrachloride	10.39	117	7920	2.0823 ug/kg#	95

(#) = qualifier out of range (m) = manual integration
9M972900.D 8260SL.M Fri Feb 26 11:13:39 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	8488	2.1271 ug/kg	89
46)	Benzene	10.60	78	19454	2.1525 ug/kg	96
47)	Trichloroethene	11.35	130	6073	2.1207 ug/kg	96
48)	Methylcyclohexane	11.44	83	7523	2.0945 ug/kg	95
49)	1,2-Dichloropropane	11.58	63	5118	2.0621 ug/kg	93
50)	1,4-Dioxane	11.88	88	1938	52.0499 ug/kg	84
51)	Bromodichloromethane	11.87	83	7148	2.0436 ug/kg#	95
52)	Dibromomethane	11.97	174	3572	2.1721 ug/kg	91
53)	2-Chloroethyl Vinyl Ether	12.17	63	474	3.4830 ug/kg#	47
54)	4-Methyl-2-Pentanone	12.19	58	2111	1.9378 ug/kg#	64
55)	cis-1,3-Dichloropropene	12.50	75	7048	1.9341 ug/kg	92
56)	Dimethyl Disulfide	12.77	94	5832	1.5925 ug/kg	95
59)	Toluene	12.93	91	20786	2.1230 ug/kg	97
60)	Ethyl Methacrylate	13.01	69	4184	1.5417 ug/kg	98
61)	trans-1,3-Dichloropropene	13.11	75	6895	1.9553 ug/kg	92
62)	1,1,2-Trichloroethane	13.33	97	4055	1.9716 ug/kg	86
63)	2-Hexanone	13.25	43	3773	1.8373 ug/kg#	82
64)	1,3-Dichloropropane	13.62	76	7643	2.2302 ug/kg	97
65)	Tetrachloroethene	13.75	164	4327	2.0615 ug/kg	94
66)	Dibromochloromethane	14.01	129	6170	2.1465 ug/kg	87
67)	1,2-Dibromoethane	14.28	107	4656	2.0410 ug/kg	88
68)	1-Chlorohexane	14.35	91	5610	1.9430 ug/kg	97
69)	Chlorobenzene	14.77	112	14885	2.1632 ug/kg	95
70)	1,1,1,2-Tetrachloroethane	14.80	131	5145	1.9910 ug/kg	86
71)	Ethylbenzene	14.79	106	7287	2.0555 ug/kg	99
72)	m-,p-Xylene	14.89	106	19133	4.3702 ug/kg	93
73)	o-Xylene	15.45	106	8413	2.0024 ug/kg	94
74)	Styrene	15.49	104	14533	2.0313 ug/kg	97
75)	Bromoform	15.99	173	3135	1.6611 ug/kg	97
76)	Isopropylbenzene	15.87	105	23266	2.0628 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	5252	2.2053 ug/kg#	89
80)	1,2,3-Trichloropropane	16.28	110	1851	2.0495 ug/kg#	89
81)	trans-1,4-Dichloro-2-Buten	16.33	53	1413	1.5521 ug/kg	47
82)	n-Propylbenzene	16.38	91	25735	2.0854 ug/kg	99
83)	Bromobenzene	16.52	156	7006	2.4049 ug/kg	83
84)	1,3,5-Trimethylbenzene	16.57	105	18571	2.0048 ug/kg	99
85)	2-Chlorotoluene	16.66	91	18793	2.2705 ug/kg	97
86)	4-Chlorotoluene	16.70	91	16240	2.1222 ug/kg	96
87)	a-Methylstyrene	16.98	118	7524	1.7826 ug/kg	97
88)	tert-Butylbenzene	17.04	134	3654	1.8815 ug/kg	64
89)	1,2,4-Trimethylbenzene	17.09	105	20119	2.0739 ug/kg	99
90)	sec-Butylbenzene	17.31	105	24858	2.0835 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	20956	2.0813 ug/kg	96
92)	1,3-Dichlorobenzene	17.66	146	13695	2.3653 ug/kg	94
93)	1,4-Dichlorobenzene	17.79	146	12975	2.2416 ug/kg	82
94)	n-Butylbenzene	17.99	91	19734	2.1080 ug/kg	95
95)	1,2-Dichlorobenzene	18.30	146	11568	2.1533 ug/kg	91
96)	1,2-Dibromo-3-Chloropropan	19.30	157	941	1.3644 ug/kg	84
97)	1,2,4-Trichlorobenzene	20.44	180	8356	2.1910 ug/kg	98
98)	Hexachlorobutadiene	20.59	225	4571	2.2738 ug/kg	87
99)	Naphthalene	20.81	128	20072	2.0983 ug/kg	96
100)	1,2,3-Trichlorobenzene	21.11	180	7948	2.1487 ug/kg	96

(#) = qualifier out of range (m) = manual integration
9M972900.D 8260SL.M Fri Feb 26 11:13:39 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration

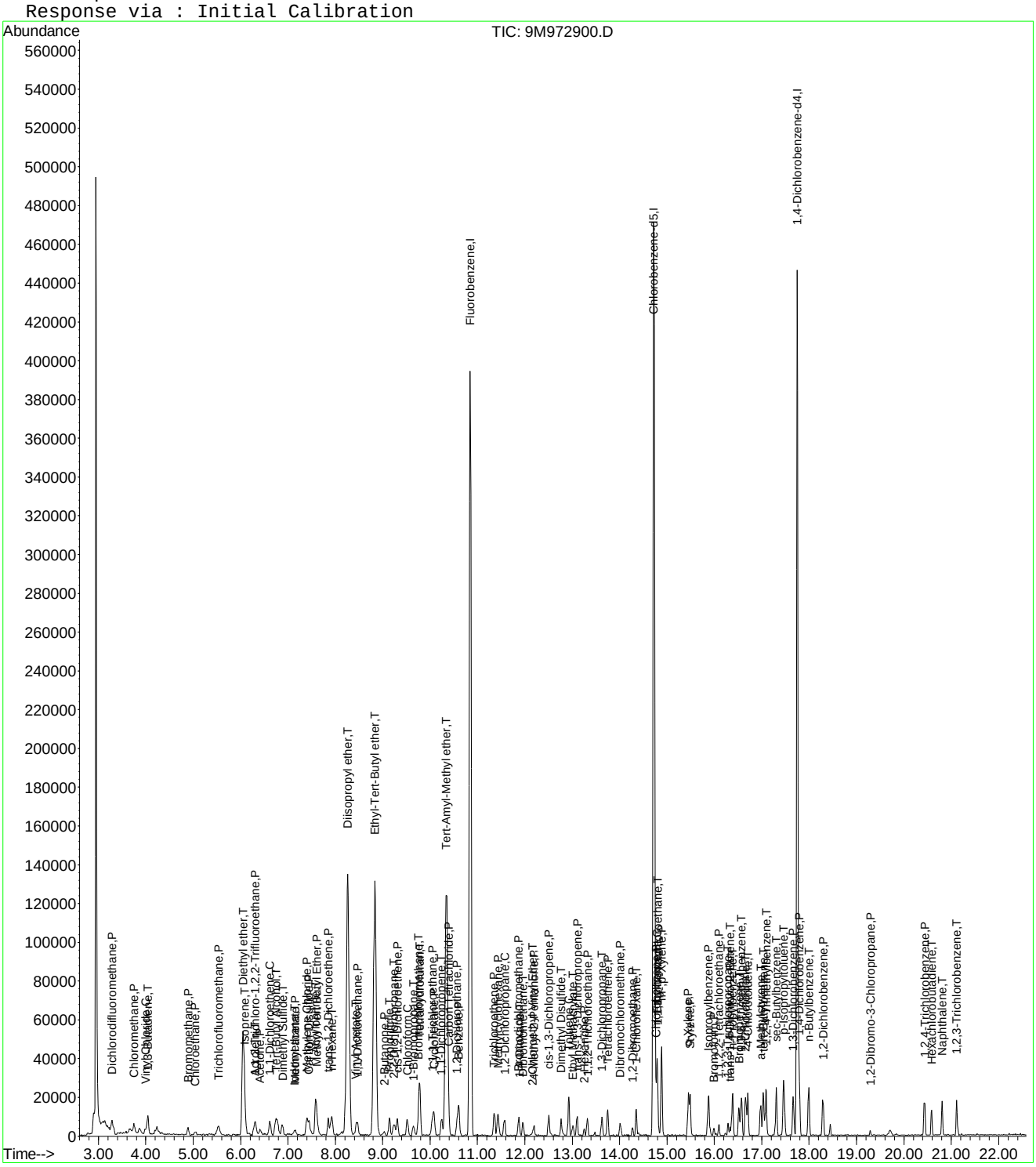

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	1.9809	0.0	100	0.01
3	P	Chloromethane	2.0000	2.2750	-13.7	100	0.00
4	C	Vinyl Chloride	2.0000	1.9408	3.0	100	0.01
5	T	1,3-Butadiene	2.0000	2.2249	-11.2	100	0.00
6	P	Bromomethane	2.0000	2.5146	-25.7#	100	0.01
7	P	Chloroethane	2.0000	1.7357	13.2	100	0.00
8	P	Trichlorofluoromethane	2.0000	2.1082	-5.4	100	0.01
9	T	Diethyl ether	25.0000	26.8255	-7.3	100	0.01
10	T	Isoprene	2.0000	2.0580	-2.9	100	0.00
11	T	Acrolein	12.5000	12.5543	-0.4	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.9886	0.6	100	0.01
13	P	Acetone	-1.0000	6.9886	0.0	0	0.00
14	C	1,1-Dichloroethene	2.0000	2.1877	-9.4	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	55.4271	-10.9	100	0.00
16	T	Dimethyl Sulfide	2.0000	2.0594	-3.0	100	0.01
17	T	Iodomethane	-1.0000	3.9079	0.0	0	0.01
18	P	Methyl acetate	2.0000	2.2240	-11.2	100	0.01
19	P	Methylene Chloride	2.0000	2.1292	-6.5	100	0.00
20	P	Carbon Disulfide	2.0000	2.2085	-10.4	100	0.00
21	T	Acrylonitrile	12.5000	12.6096	-0.9	100	0.00
22	P	Methyl Tert Butyl Ether	2.0000	1.9917	0.4	100	0.00
23	P	trans-1,2-Dichloroethene	2.0000	2.0255	-1.3	100	0.00
24	T	n-Hexane	2.0000	2.1253	-6.3	100	0.01
25	T	Diisopropyl ether	25.0000	26.7748	-7.1	100	0.00
26	T	Vinyl Acetate	2.0000	2.0872	-4.4	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.1320	-6.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	26.7377	-7.0	100	0.00
29	P	2-Butanone	2.0000	2.1978	-9.9	100	0.00
30	T	Propionitrile	25.0000	27.6861	-10.7	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1934	-9.7	100	0.00
32	P	cis-1,2-Dichloroethene	2.0000	1.8850	5.8	100	0.01
33	C	Chloroform	2.0000	2.2054	-10.3	100	0.01
34	T	1-Bromopropane	2.0000	1.5465	22.7	100	0.00
35	T	Bromochloromethane	2.0000	1.9539	2.3	100	0.00
36	T	Tetrahydrofuran	25.0000	26.6900	-6.8	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	2.0000	2.0058	-0.3	100	0.00
39	P	Cyclohexane	2.0000	2.0913	-4.6	100	0.01
40	T	1,1-Dichloropropene	2.0000	2.1023	-5.1	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	26.2768	-5.1	100	0.00
42	P	Carbon Tetrachloride	2.0000	2.0823	-4.1	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	2.0000	2.1271	-6.4	100	0.00
46	P	Benzene	2.0000	2.1525	-7.6	100	0.00
47	P	Trichloroethene	2.0000	2.1207	-6.0	100	0.00
48	P	Methylcyclohexane	2.0000	2.0945	-4.7	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0621	-3.1	100	0.01
50	T	1,4-Dioxane	50.0000	52.0499	-4.1	100	0.00
51	P	Bromodichloromethane	2.0000	2.0436	-2.2	100	0.00
52	T	Dibromomethane	2.0000	2.1721	-8.6	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	3.4830	0.0	0	0.00
54	P	4-Methyl-2-Pentanone	-1.0000	1.9378	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	2.0000	1.9341	3.3	100	0.00
56	T	Dimethyl Disulfide	2.0000	1.5925	20.4	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0891	0.0	100	0.00
59	C	Toluene	2.0000	2.1230	-6.2	100	0.00
60	T	Ethyl Methacrylate	-1.0000	1.5417	0.0	0	0.00
61	P	trans-1,3-Dichloropropene	2.0000	1.9553	2.2	100	0.00
62	P	1,1,2-Trichloroethane	2.0000	1.9716	1.4	100	0.00
63	P	2-Hexanone	-1.0000	1.8373	0.0	100	0.00
64	T	1,3-Dichloropropane	2.0000	2.2302	-11.5	100	0.00
65	P	Tetrachloroethene	2.0000	2.0616	-3.1	100	0.00
66	P	Dibromochloromethane	2.0000	2.1465	-7.3	100	0.00
67	P	1,2-Dibromoethane	-1.0000	2.0410	0.0	100	0.00
68	T	1-Chlorohexane	2.0000	1.9430	2.8	100	0.00
69	P	Chlorobenzene	2.0000	2.1632	-8.2	100	0.00
70	T	1,1,1,2-Tetrachloroethane	2.0000	1.9910	0.4	100	0.00
71	C	Ethylbenzene	2.0000	2.0555	-2.8	100	0.00
72	P	m-,p-Xylene	4.0000	4.3702	-9.3	100	0.00
73	P	o-Xylene	2.0000	2.0024	-0.1	100	0.00
74	P	Styrene	2.0000	2.0313	-1.6	100	0.00
75	P	Bromoform	2.0000	1.6611	16.9	100	0.00
76	P	Isopropylbenzene	2.0000	2.0628	-3.1	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	2.0000	2.2053	-10.3	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.1865	0.0	100	0.00
80	T	1,2,3-Trichloropropane	2.0000	2.0495	-2.5	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	2.0000	1.5521	22.4	100	0.00
82	T	n-Propylbenzene	2.0000	2.0854	-4.3	100	0.00
83	T	Bromobenzene	2.0000	2.4049	-20.2	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	2.0048	0.0	100	0.00
85	T	2-Chlorotoluene	2.0000	2.2705	-13.5	100	0.00
86	T	4-Chlorotoluene	2.0000	2.1222	-6.1	100	0.00
87	T	a-Methylstyrene	-1.0000	1.7826	0.0	0	0.00
88	T	tert-Butylbenzene	-1.0000	1.8815	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	2.0000	2.0739	-3.7	100	0.00
90	T	sec-Butylbenzene	2.0000	2.0835	-4.2	100	0.00
91	T	p-Isopropyltoluene	-1.0000	2.0813	0.0	100	0.00
92	P	1,3-Dichlorobenzene	2.0000	2.3653	-18.3	100	0.00
93	P	1,4-Dichlorobenzene	2.0000	2.2416	-12.1	100	0.00
94	T	n-Butylbenzene	2.0000	2.1080	-5.4	100	0.00
95	P	1,2-Dichlorobenzene	2.0000	2.1533	-7.7	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	1.3644	0.0	100	0.00
97	P	1,2,4-Trichlorobenzene	2.0000	2.1910	-9.6	100	0.00
98	T	Hexachlorobutadiene	2.0000	2.2738	-13.7	100	0.00
99	T	Naphthalene	2.0000	2.0983	-4.9	100	0.00
100	T	1,2,3-Trichlorobenzene	2.0000	2.1487	-7.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972900.D 8260SL.M Fri Feb 26 11:13:36 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	544259	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	391881	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.76	152	178969	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	29036	9.8422 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 19.68%#		
43) 1,2-Dichloroethane-d4	10.44	65	38093	10.2911 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 20.58%#		
58) Toluene-d8	12.83	98	95044	9.5885 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 19.18%#		
79) p-Bromofluorobenzene	16.23	95	32806	9.4138 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 18.82%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	14756	3.9724 ug/kg	92
3) Chloromethane	3.74	50	15227	4.2763 ug/kg	91
4) Vinyl Chloride	3.99	62	17097	4.7964 ug/kg	89
5) 1,3-Butadiene	4.04	54	14484	4.2710 ug/kg	97
6) Bromomethane	4.89	94	9847	4.2533 ug/kg	95
7) Chloroethane	5.04	64	6311	3.9741 ug/kg	93
8) Trichlorofluoromethane	5.53	101	22668	4.2400 ug/kg	100
9) Diethyl ether	6.05	59	118004	47.2164 ug/kg	99
10) Isoprene	6.10	67	13644	4.2747 ug/kg	95
11) Acrolein	6.30	56	12131	24.3428 ug/kg	84
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	12752	4.6251 ug/kg	95
13) Acetone	6.41	43	9765	4.9429 ug/kg	94
14) 1,1-Dichloroethene	6.62	61	21760	4.2784 ug/kg	99
15) Tert-Butyl Alcohol	6.76	59	50500	90.7440 ug/kg	98
16) Dimethyl Sulfide	6.88	62	10098	4.6977 ug/kg	87
17) Iodomethane	7.13	142	4147	5.3886 ug/kg	97
18) Methyl acetate	7.15	43	12159	4.3976 ug/kg#	87
19) Methylene Chloride	7.41	84	11825	4.2690 ug/kg	99
20) Carbon Disulfide	7.45	76	34078	4.3495 ug/kg	94
21) Acrylonitrile	7.58	53	31012	22.6731 ug/kg	100
22) Methyl Tert Butyl Ether	7.61	73	34936	4.4284 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	20503	4.5233 ug/kg	95
24) n-Hexane	7.92	57	20970	4.4853 ug/kg	98
25) Diisopropyl ether	8.26	45	505084	46.5162 ug/kg	100
26) Vinyl Acetate	8.44	43	28253	4.5644 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	24239	4.2575 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	463447	45.9037 ug/kg	99
29) 2-Butanone	9.03	43	8265	4.7092 ug/kg	88
30) Propionitrile	9.15	54	25938	48.2931 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	17954	4.2251 ug/kg	91
32) cis-1,2-Dichloroethene	9.32	96	13479	4.5340 ug/kg	84
33) Chloroform	9.52	83	23525	4.4982 ug/kg	95
34) 1-Bromopropane	9.65	122	2239	5.8652 ug/kg	90
35) Bromochloromethane	9.75	130	9205	4.7667 ug/kg	97
36) Tetrahydrofuran	9.78	42	53635	47.4100 ug/kg	99
38) 1,1,1-Trichloroethane	10.04	97	20945	4.4285 ug/kg	91
39) Cyclohexane	10.09	56	23110	4.4818 ug/kg	98
40) 1,1-Dichloropropene	10.24	75	16349	4.3930 ug/kg	99
41) Tert-Amyl-Methyl ether	10.35	73	343692	46.8330 ug/kg	98
42) Carbon Tetrachloride	10.39	117	18527	4.2254 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	21553	4.6852 ug/kg	99
46)	Benzene	10.60	78	45352	4.3528 ug/kg	99
47)	Trichloroethene	11.35	130	14266	4.3213 ug/kg	97
48)	Methylcyclohexane	11.44	83	17527	4.2330 ug/kg	97
49)	1,2-Dichloropropane	11.56	63	13071	4.5684 ug/kg	100
50)	1,4-Dioxane	11.88	88	3926	91.4657 ug/kg	99
51)	Bromodichloromethane	11.87	83	18008	4.4660 ug/kg	97
52)	Dibromomethane	11.96	174	8993	4.7438 ug/kg	95
53)	2-Chloroethyl Vinyl Ether	12.16	63	2468	5.7758 ug/kg#	66
54)	4-Methyl-2-Pentanone	12.19	58	4862	3.8716 ug/kg	95
55)	cis-1,3-Dichloropropene	12.50	75	18341	4.3659 ug/kg	96
56)	Dimethyl Disulfide	12.77	94	17792	4.2144 ug/kg	91
59)	Toluene	12.92	91	48377	4.3206 ug/kg	96
60)	Ethyl Methacrylate	13.02	69	12442	4.0089 ug/kg	96
61)	trans-1,3-Dichloropropene	13.10	75	17626	4.3707 ug/kg	95
62)	1,1,2-Trichloroethane	13.33	97	10657	4.5308 ug/kg	99
63)	2-Hexanone	13.25	43	10194	4.3408 ug/kg	96
64)	1,3-Dichloropropane	13.62	76	17885	4.5633 ug/kg	100
65)	Tetrachloroethene	13.75	164	10317	4.2981 ug/kg	97
66)	Dibromochloromethane	14.01	129	14152	4.3052 ug/kg	98
67)	1,2-Dibromoethane	14.28	107	12182	4.6694 ug/kg	99
68)	1-Chlorohexane	14.35	91	12970	3.9281 ug/kg	87
69)	Chlorobenzene	14.77	112	36017	4.5769 ug/kg	85
70)	1,1,1,2-Tetrachloroethane	14.80	131	12746	4.3130 ug/kg	95
71)	Ethylbenzene	14.80	106	17828	4.3974 ug/kg	92
72)	m-,p-Xylene	14.89	106	45904	9.1683 ug/kg	95
73)	o-Xylene	15.46	106	21754	4.5275 ug/kg	91
74)	Styrene	15.49	104	35390	4.3253 ug/kg	98
75)	Bromoform	15.98	173	9363	4.3382 ug/kg	96
76)	Isopropylbenzene	15.88	105	55721	4.3198 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	13197	4.8610 ug/kg	97
80)	1,2,3-Trichloropropane	16.29	110	5070	4.9243 ug/kg#	28
81)	trans-1,4-Dichloro-2-Buten	16.33	53	4246	4.0913 ug/kg#	39
82)	n-Propylbenzene	16.39	91	64689	4.5983 ug/kg	100
83)	Bromobenzene	16.52	156	15405	4.6386 ug/kg	90
84)	1,3,5-Trimethylbenzene	16.58	105	49527	4.6900 ug/kg	98
85)	2-Chlorotoluene	16.66	91	41422	4.3899 ug/kg	97
86)	4-Chlorotoluene	16.70	91	40985	4.6981 ug/kg	99
87)	a-Methylstyrene	16.98	118	20049	4.1667 ug/kg	90
88)	tert-Butylbenzene	17.04	134	10027	4.5290 ug/kg	84
89)	1,2,4-Trimethylbenzene	17.09	105	51253	4.6345 ug/kg	98
90)	sec-Butylbenzene	17.30	105	60716	4.4642 ug/kg	98
91)	p-Isopropyltoluene	17.46	119	53318	4.6453 ug/kg	98
92)	1,3-Dichlorobenzene	17.66	146	29255	4.4323 ug/kg	98
93)	1,4-Dichlorobenzene	17.79	146	30175	4.5730 ug/kg	91
94)	n-Butylbenzene	17.99	91	45964	4.3071 ug/kg	98
95)	1,2-Dichlorobenzene	18.30	146	27310	4.4593 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.30	157	3147	4.0028 ug/kg	87
97)	1,2,4-Trichlorobenzene	20.44	180	18372	4.2258 ug/kg	95
98)	Hexachlorobutadiene	20.59	225	9618	4.1968 ug/kg	90
99)	Naphthalene	20.81	128	47189	4.3274 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.11	180	17859	4.2352 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972901.D 8260SL.M Fri Feb 26 11:21:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

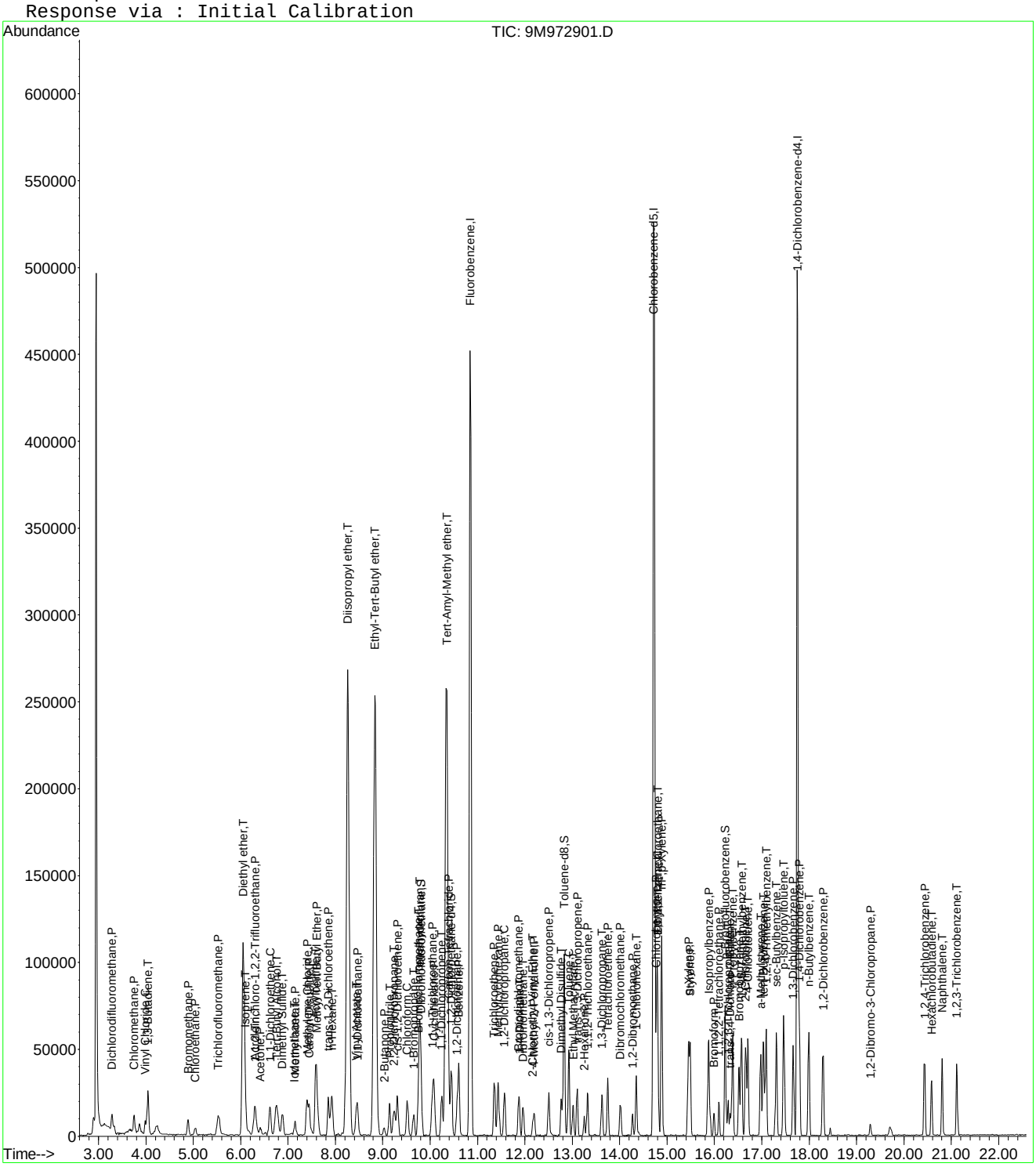

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	5.0000	3.9724	20.6	100	0.00
3	P	Chloromethane	5.0000	4.2763	14.5	100	0.00
4	C	Vinyl Chloride	5.0000	4.7964	4.1	100	0.00
5	T	1,3-Butadiene	5.0000	4.2710	14.6	100	0.00
6	P	Bromomethane	5.0000	4.2534	14.9	100	0.00
7	P	Chloroethane	5.0000	3.9741	20.5	100	0.00
8	P	Trichlorofluoromethane	5.0000	4.2400	15.2	100	0.00
9	T	Diethyl ether	50.0000	47.2164	5.6	100	0.00
10	T	Isoprene	5.0000	4.2747	14.5	100	0.01
11	T	Acrolein	25.0000	24.3428	2.6	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.6251	7.5	100	0.00
13	P	Acetone	5.0000	4.9429	1.1	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.2784	14.4	100	0.01
15	T	Tert-Butyl Alcohol	100.0000	90.7440	9.3	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.6977	6.0	100	0.00
17	T	Iodomethane	5.0000	5.3886	-7.8	100	0.00
18	P	Methyl acetate	5.0000	4.3976	12.0	100	0.01
19	P	Methylene Chloride	5.0000	4.2690	14.6	100	0.00
20	P	Carbon Disulfide	5.0000	4.3495	13.0	100	0.00
21	T	Acrylonitrile	25.0000	22.6731	9.3	100	0.00
22	P	Methyl Tert Butyl Ether	5.0000	4.4284	11.4	100	0.00
23	P	trans-1,2-Dichloroethene	5.0000	4.5233	9.5	100	0.00
24	T	n-Hexane	5.0000	4.4854	10.3	100	0.01
25	T	Diisopropyl ether	50.0000	46.5162	7.0	100	0.00
26	T	Vinyl Acetate	5.0000	4.5644	8.7	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.2575	14.8	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	45.9037	8.2	100	0.00
29	P	2-Butanone	5.0000	4.7092	5.8	100	0.00
30	T	Propionitrile	50.0000	48.2931	3.4	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.2251	15.5	100	-0.01
32	P	cis-1,2-Dichloroethene	5.0000	4.5340	9.3	100	0.00
33	C	Chloroform	5.0000	4.4982	10.0	100	0.00
34	T	1-Bromopropane	5.0000	5.8651	-17.3	100	0.00
35	T	Bromochloromethane	5.0000	4.7667	4.7	100	0.00
36	T	Tetrahydrofuran	50.0000	47.4100	5.2	100	0.00
37	S	Dibromofluoromethane	10.0000	9.8422	1.6	100	0.00
38	P	1,1,1-Trichloroethane	5.0000	4.4285	11.4	100	0.00
39	P	Cyclohexane	5.0000	4.4818	10.4	100	0.01
40	T	1,1-Dichloropropene	5.0000	4.3930	12.1	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	46.8330	6.3	100	0.00
42	P	Carbon Tetrachloride	5.0000	4.2254	15.5	100	0.00
43	S	1,2-Dichloroethane-d4	10.0000	10.2911	-2.9	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	5.0000	4.6852	6.3	100	0.00
46	P	Benzene	5.0000	4.3528	12.9	100	0.00
47	P	Trichloroethene	5.0000	4.3213	13.6	100	0.00
48	P	Methylcyclohexane	5.0000	4.2330	15.3	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.5684	8.6	100	0.00
50	T	1,4-Dioxane	100.0000	91.4657	8.5	100	0.00
51	P	Bromodichloromethane	5.0000	4.4660	10.7	100	0.00
52	T	Dibromomethane	5.0000	4.7438	5.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	5.7758	-15.5	100	0.00
54	P	4-Methyl-2-Pentanone	5.0000	3.8716	22.6	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	5.0000	4.3659	12.7	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.2144	15.7	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	-0.01
58	S	Toluene-d8	10.0000	9.5885	4.1	100	0.00
59	C	Toluene	5.0000	4.3206	13.6	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.0089	19.8	100	0.00
61	P	trans-1,3-Dichloropropene	5.0000	4.3707	12.6	100	0.00
62	P	1,1,2-Trichloroethane	5.0000	4.5309	9.4	100	0.00
63	P	2-Hexanone	5.0000	4.3408	13.2	100	0.00
64	T	1,3-Dichloropropane	5.0000	4.5633	8.7	100	-0.01
65	P	Tetrachloroethene	5.0000	4.2981	14.0	100	0.00
66	P	Dibromochloromethane	5.0000	4.3052	13.9	100	0.00
67	P	1,2-Dibromoethane	5.0000	4.6694	6.6	100	0.00
68	T	1-Chlorohexane	5.0000	3.9281	21.4	100	0.00
69	P	Chlorobenzene	5.0000	4.5769	8.5	100	0.00
70	T	1,1,1,2-Tetrachloroethane	5.0000	4.3130	13.7	100	0.00
71	C	Ethylbenzene	5.0000	4.3974	12.1	100	0.00
72	P	m-,p-Xylene	10.0000	9.1683	8.3	100	0.00
73	P	o-Xylene	5.0000	4.5275	9.5	100	0.00
74	P	Styrene	5.0000	4.3253	13.5	100	0.00
75	P	Bromoform	5.0000	4.3382	13.2	100	-0.01
76	P	Isopropylbenzene	5.0000	4.3198	13.6	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	5.0000	4.8610	2.8	100	-0.01
79	S	p-Bromofluorobenzene	10.0000	9.4138	5.9	100	0.00
80	T	1,2,3-Trichloropropane	5.0000	4.9243	1.5	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	5.0000	4.0913	18.2	100	0.00
82	T	n-Propylbenzene	5.0000	4.5983	8.0	100	0.00
83	T	Bromobenzene	5.0000	4.6386	7.2	100	0.00
84	T	1,3,5-Trimethylbenzene	5.0000	4.6900	6.2	100	0.00
85	T	2-Chlorotoluene	5.0000	4.3899	12.2	100	0.00
86	T	4-Chlorotoluene	5.0000	4.6981	6.0	100	0.00
87	T	a-Methylstyrene	5.0000	4.1667	16.7	100	0.00
88	T	tert-Butylbenzene	5.0000	4.5290	9.4	100	0.00
89	T	1,2,4-Trimethylbenzene	5.0000	4.6345	7.3	100	0.00
90	T	sec-Butylbenzene	5.0000	4.4642	10.7	100	0.00
91	T	p-Isopropyltoluene	5.0000	4.6453	7.1	100	0.00
92	P	1,3-Dichlorobenzene	5.0000	4.4323	11.4	100	0.00
93	P	1,4-Dichlorobenzene	5.0000	4.5730	8.5	100	-0.01
94	T	n-Butylbenzene	5.0000	4.3071	13.9	100	0.00
95	P	1,2-Dichlorobenzene	5.0000	4.4593	10.8	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	5.0000	4.0028	19.9	100	0.00
97	P	1,2,4-Trichlorobenzene	5.0000	4.2258	15.5	100	0.00
98	T	Hexachlorobutadiene	5.0000	4.1968	16.1	100	0.00
99	T	Naphthalene	5.0000	4.3274	13.5	100	0.00
100	T	1,2,3-Trichlorobenzene	5.0000	4.2352	15.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972901.D 8260SL.M Fri Feb 26 11:21:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972902.D Vial: 7
Acq On : 25 Feb 2016 18:59 Operator: ADC
Sample : WG558732-07 20.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	491006	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	357658	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	168257	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	47666	17.9094 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 35.82%#		
43) 1,2-Dichloroethane-d4	10.45	65	60269	18.0480 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 36.10%#		
58) Toluene-d8	12.82	98	163811	18.1074 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 36.22%#		
79) p-Bromofluorobenzene	16.23	95	58931	17.9870 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 35.98%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	78283	23.3598 ug/kg	99
3) Chloromethane	3.75	50	64951	20.2188 ug/kg	98
4) Vinyl Chloride	3.99	62	73167	22.7523 ug/kg	97
5) 1,3-Butadiene	4.04	54	64372	21.0404 ug/kg	98
6) Bromomethane	4.88	94	40556	19.4178 ug/kg	97
7) Chloroethane	5.04	64	27981	19.5307 ug/kg	97
8) Trichlorofluoromethane	5.53	101	98871	20.4994 ug/kg	98
9) Diethyl ether	6.06	59	191078	84.7472 ug/kg	99
10) Isoprene	6.10	67	59437	20.6414 ug/kg	98
11) Acrolein	6.30	56	18057	40.1641 ug/kg	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	50002	20.1026 ug/kg	100
13) Acetone	6.42	43	27164	20.4768 ug/kg	100
14) 1,1-Dichloroethene	6.62	61	94732	20.6460 ug/kg	98
15) Tert-Butyl Alcohol	6.75	59	85695	170.6872 ug/kg	97
16) Dimethyl Sulfide	6.88	62	40580	20.9258 ug/kg	99
17) Iodomethane	7.13	142	21330	17.5663 ug/kg	96
18) Methyl acetate	7.15	43	54770	21.9573 ug/kg	99
19) Methylene Chloride	7.41	84	51619	20.6564 ug/kg	95
20) Carbon Disulfide	7.45	76	145286	20.5545 ug/kg	97
21) Acrylonitrile	7.59	53	50918	41.2640 ug/kg	97
22) Methyl Tert Butyl Ether	7.61	73	149271	20.9731 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	84416	20.6434 ug/kg	98
24) n-Hexane	7.92	57	82582	19.5795 ug/kg	98
25) Diisopropyl ether	8.26	45	841729	85.9275 ug/kg	99
26) Vinyl Acetate	8.44	43	107114	19.1814 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	104490	20.3440 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	777976	85.4147 ug/kg	99
29) 2-Butanone	9.02	43	30691	19.3834 ug/kg	100
30) Propionitrile	9.14	54	41719	86.0996 ug/kg	99
31) 2,2-Dichloropropane	9.24	77	73960	19.2927 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	56404	21.0307 ug/kg	100
33) Chloroform	9.52	83	94621	20.0546 ug/kg	98
34) 1-Bromopropane	9.65	122	8251	20.7938 ug/kg	98
35) Bromochloromethane	9.75	130	38059	21.8457 ug/kg	99
36) Tetrahydrofuran	9.77	42	86589	84.8405 ug/kg	100
38) 1,1,1-Trichloroethane	10.05	97	85938	20.1411 ug/kg	99
39) Cyclohexane	10.09	56	96933	20.8373 ug/kg	98
40) 1,1-Dichloropropene	10.25	75	67544	20.1175 ug/kg	96
41) Tert-Amyl-Methyl ether	10.34	73	562826	85.0111 ug/kg	99
42) Carbon Tetrachloride	10.39	117	79566	20.1143 ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972902.D 8260SL.M Fri Feb 26 11:21:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972902.D Vial: 7
Acq On : 25 Feb 2016 18:59 Operator: ADC
Sample : WG558732-07 20.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	86857	20.9287 ug/kg	98
46)	Benzene	10.60	78	190747	20.2931 ug/kg	98
47)	Trichloroethene	11.35	130	61315	20.5871 ug/kg	99
48)	Methylcyclohexane	11.44	83	79384	21.2516 ug/kg	99
49)	1,2-Dichloropropane	11.56	63	54356	21.0584 ug/kg	98
50)	1,4-Dioxane	11.88	88	7054	182.1639 ug/kg	93
51)	Bromodichloromethane	11.87	83	73160	20.1115 ug/kg	99
52)	Dibromomethane	11.97	174	35844	20.9583 ug/kg	97
53)	2-Chloroethyl Vinyl Ether	12.17	63	11048	17.4432 ug/kg	94
54)	4-Methyl-2-Pentanone	12.20	58	22247	19.6364 ug/kg	96
55)	cis-1,3-Dichloropropene	12.50	75	77533	20.4577 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	77400	20.3222 ug/kg	99
59)	Toluene	12.93	91	209919	20.5421 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	58827	20.7683 ug/kg	99
61)	trans-1,3-Dichloropropene	13.11	75	73778	20.0452 ug/kg	98
62)	1,1,2-Trichloroethane	13.32	97	45475	21.1838 ug/kg	98
63)	2-Hexanone	13.25	43	40183	18.7479 ug/kg	97
64)	1,3-Dichloropropane	13.62	76	73060	20.4249 ug/kg	95
65)	Tetrachloroethene	13.75	164	44423	20.2778 ug/kg	96
66)	Dibromochloromethane	14.01	129	59220	19.7391 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	48648	20.4311 ug/kg	97
68)	1-Chlorohexane	14.35	91	64519	21.4099 ug/kg	96
69)	Chlorobenzene	14.77	112	150639	20.9742 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	55462	20.5631 ug/kg	99
71)	Ethylbenzene	14.79	106	77813	21.0297 ug/kg	100
72)	m-,p-Xylene	14.89	106	192168	42.0536 ug/kg	98
73)	o-Xylene	15.45	106	92490	21.0911 ug/kg	98
74)	Styrene	15.49	104	154534	20.6939 ug/kg	100
75)	Bromoform	16.00	173	39818	20.2142 ug/kg	98
76)	Isopropylbenzene	15.87	105	249418	21.1865 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	53687	21.0342 ug/kg	98
80)	1,2,3-Trichloropropane	16.28	110	19658	20.3087 ug/kg	98
81)	trans-1,4-Dichloro-2-Buten	16.33	53	21143	21.6696 ug/kg	89
82)	n-Propylbenzene	16.39	91	283998	21.4728 ug/kg	98
83)	Bromobenzene	16.52	156	65363	20.9343 ug/kg	95
84)	1,3,5-Trimethylbenzene	16.57	105	212735	21.4278 ug/kg	99
85)	2-Chlorotoluene	16.66	91	189159	21.3235 ug/kg	99
86)	4-Chlorotoluene	16.70	91	171741	20.9401 ug/kg	99
87)	a-Methylstyrene	16.98	118	95360	21.0801 ug/kg	99
88)	tert-Butylbenzene	17.03	134	43749	21.0188 ug/kg	90
89)	1,2,4-Trimethylbenzene	17.08	105	218350	21.0010 ug/kg	99
90)	sec-Butylbenzene	17.31	105	268054	20.9635 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	225612	20.9076 ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	122605	19.7580 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	124659	20.0949 ug/kg	99
94)	n-Butylbenzene	17.99	91	199655	19.8998 ug/kg	99
95)	1,2-Dichlorobenzene	18.30	146	115021	19.9768 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	14138	19.1277 ug/kg	95
97)	1,2,4-Trichlorobenzene	20.43	180	77418	18.9408 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	41508	19.2651 ug/kg	96
99)	Naphthalene	20.81	128	204933	19.9897 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.12	180	75616	19.0736 ug/kg	98

(#) = qualifier out of range (m) = manual integration
9M972902.D 8260SL.M Fri Feb 26 11:21:57 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972902.D Vial: 7
Acq On : 25 Feb 2016 18:59 Operator: ADC
Sample : WG558732-07 20.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

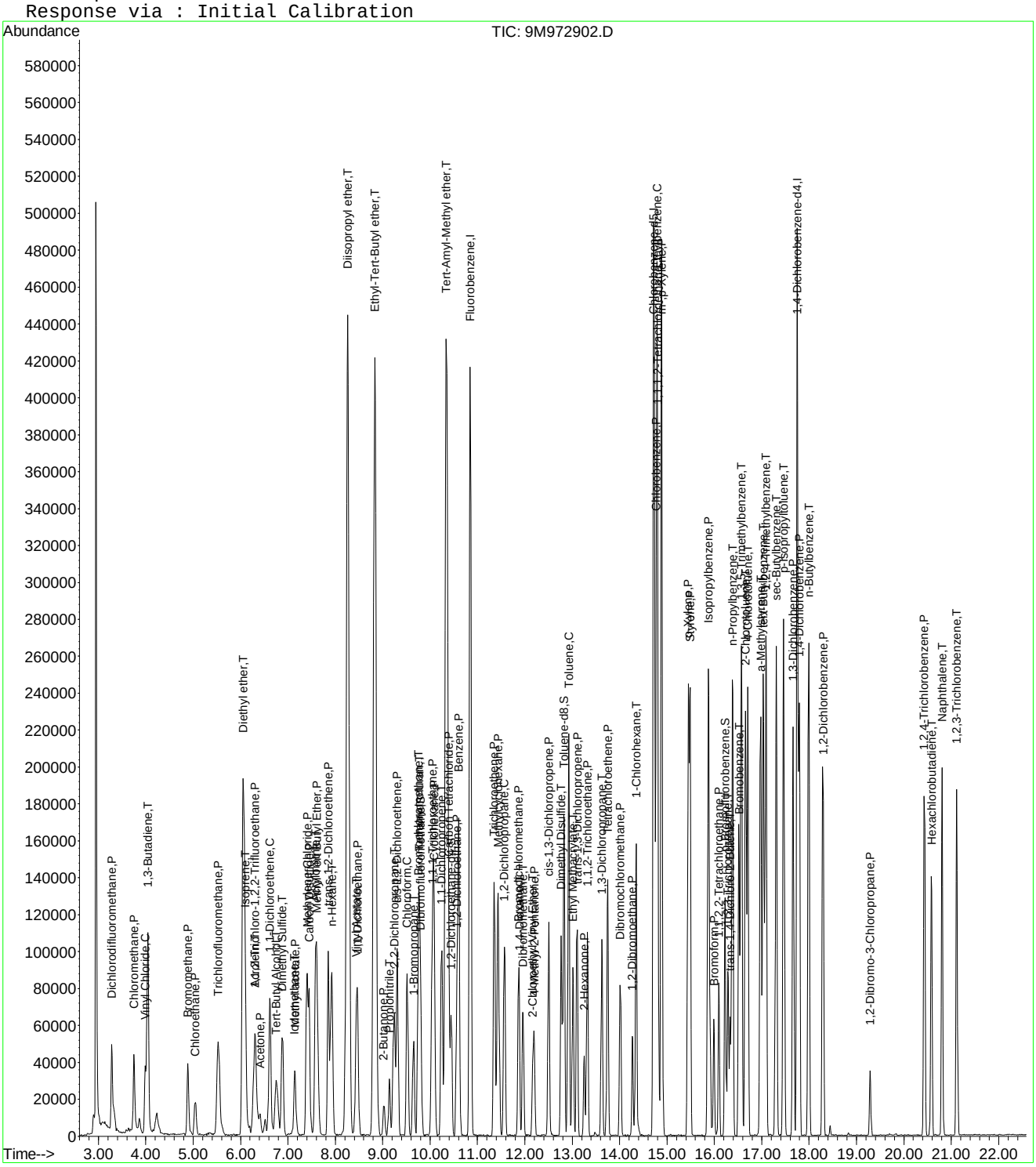

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972903.D Vial: 8
Acq On : 25 Feb 2016 19:29 Operator: ADC
Sample : WG558732-08 100.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:57 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	535022	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	390279	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.75	152	187456	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	305515	105.3466 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 210.70%#		
43) 1,2-Dichloroethane-d4	10.45	65	383447	105.3793 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 210.76%#		
58) Toluene-d8	12.83	98	1052175	106.5842 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 213.16%#		
79) p-Bromofluorobenzene	16.23	95	403966	110.6707 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 221.34%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	340079	93.1314 ug/kg	98
3) Chloromethane	3.74	50	316834	90.5143 ug/kg	100
4) Vinyl Chloride	3.99	62	366384	104.5591 ug/kg	99
5) 1,3-Butadiene	4.04	54	317949	95.3739 ug/kg	98
6) Bromomethane	4.88	94	198493	87.2180 ug/kg	99
7) Chloroethane	5.04	64	148539	95.1503 ug/kg	96
8) Trichlorofluoromethane	5.53	101	502703	95.6532 ug/kg	99
9) Diethyl ether	6.06	59	457873	186.3696 ug/kg	99
10) Isoprene	6.09	67	302269	96.3367 ug/kg	100
11) Acrolein	6.30	56	49319	100.6749 ug/kg	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	264925	97.7467 ug/kg	100
13) Acetone	6.41	43	126959	96.0965 ug/kg	97
14) 1,1-Dichloroethene	6.61	61	485466	97.0986 ug/kg	99
15) Tert-Butyl Alcohol	6.77	59	202804	370.7125 ug/kg	97
16) Dimethyl Sulfide	6.88	62	209613	99.1979 ug/kg	97
17) Iodomethane	7.14	142	134789	88.4431 ug/kg	96
18) Methyl acetate	7.15	43	256770	94.4705 ug/kg	99
19) Methylene Chloride	7.40	84	256919	94.3530 ug/kg	100
20) Carbon Disulfide	7.45	76	725343	94.1764 ug/kg	99
21) Acrylonitrile	7.59	53	131913	98.1077 ug/kg	97
22) Methyl Tert Butyl Ether	7.61	73	763125	98.4009 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	435514	97.7404 ug/kg	99
24) n-Hexane	7.92	57	458951	99.8615 ug/kg	98
25) Diisopropyl ether	8.26	45	1991599	186.5850 ug/kg	99
26) Vinyl Acetate	8.44	43	593217	97.4908 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	533571	95.3384 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	1850360	186.4394 ug/kg	100
29) 2-Butanone	9.03	43	167064	96.8316 ug/kg	99
30) Propionitrile	9.14	54	102467	194.0735 ug/kg	99
31) 2,2-Dichloropropane	9.24	77	409808	98.1051 ug/kg	98
32) cis-1,2-Dichloroethene	9.31	96	291782	99.8428 ug/kg	100
33) Chloroform	9.52	83	491651	95.6310 ug/kg	100
34) 1-Bromopropane	9.65	122	43084	95.7559 ug/kg	98
35) Bromochloromethane	9.75	130	191150	100.6929 ug/kg	97
36) Tetrahydrofuran	9.78	42	206962	186.0999 ug/kg	99
38) 1,1,1-Trichloroethane	10.04	97	454248	97.7025 ug/kg	99
39) Cyclohexane	10.08	56	497594	98.1657 ug/kg	99
40) 1,1-Dichloropropene	10.24	75	355996	97.3080 ug/kg	98
41) Tert-Amyl-Methyl ether	10.35	73	1353122	187.5659 ug/kg	99
42) Carbon Tetrachloride	10.39	117	419252	97.2674 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972903.D 8260SL.M Fri Feb 26 11:21:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972903.D Vial: 8
Acq On : 25 Feb 2016 19:29 Operator: ADC
Sample : WG558732-08 100.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:57 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	441828	97.7027	ug/kg	98
46)	Benzene	10.60	78	946247	92.3868	ug/kg	100
47)	Trichloroethene	11.35	130	316701	97.5872	ug/kg	98
48)	Methylcyclohexane	11.44	83	420776	103.3770	ug/kg	100
49)	1,2-Dichloropropane	11.56	63	273398	97.2049	ug/kg	97
50)	1,4-Dioxane	11.89	88	15240	361.1826	ug/kg	95
51)	Bromodichloromethane	11.87	83	384453	96.9905	ug/kg	100
52)	Dibromomethane	11.96	174	178770	95.9288	ug/kg	100
53)	2-Chloroethyl Vinyl Ether	12.17	63	71336	89.4187	ug/kg	97
54)	4-Methyl-2-Pentanone	12.19	58	126118	102.1606	ug/kg	99
55)	cis-1,3-Dichloropropene	12.50	75	407392	98.6500	ug/kg	99
56)	Dimethyl Disulfide	12.77	94	430523	103.7388	ug/kg	99
59)	Toluene	12.93	91	1070303	95.9828	ug/kg	100
60)	Ethyl Methacrylate	13.01	69	310336	100.4033	ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	395340	98.4345	ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	234168	99.9657	ug/kg	97
63)	2-Hexanone	13.25	43	238254	101.8692	ug/kg	99
64)	1,3-Dichloropropane	13.62	76	372307	95.3836	ug/kg	98
65)	Tetrachloroethene	13.75	164	235384	98.4650	ug/kg	97
66)	Dibromochloromethane	14.01	129	316240	96.5980	ug/kg	100
67)	1,2-Dibromoethane	14.28	107	254663	98.0133	ug/kg	98
68)	1-Chlorohexane	14.35	91	341938	103.9841	ug/kg	98
69)	Chlorobenzene	14.77	112	744916	95.0493	ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.80	131	289798	98.4650	ug/kg	98
71)	Ethylbenzene	14.79	106	397428	98.4311	ug/kg	99
72)	m-,p-Xylene	14.89	106	955121	191.5462	ug/kg	97
73)	o-Xylene	15.45	106	475355	99.3381	ug/kg	100
74)	Styrene	15.49	104	817155	100.2803	ug/kg	100
75)	Bromoform	15.99	173	212807	99.0046	ug/kg	98
76)	Isopropylbenzene	15.88	105	1283494	99.9122	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	279744	98.3764	ug/kg	100
80)	1,2,3-Trichloropropane	16.29	110	110421	102.3924	ug/kg	94
81)	trans-1,4-Dichloro-2-Buten	16.33	53	116410	107.0899	ug/kg	87
82)	n-Propylbenzene	16.39	91	1458178	98.9594	ug/kg	99
83)	Bromobenzene	16.52	156	334600	96.1892	ug/kg	97
84)	1,3,5-Trimethylbenzene	16.57	105	1100766	99.5195	ug/kg	99
85)	2-Chlorotoluene	16.66	91	937812	94.8900	ug/kg	100
86)	4-Chlorotoluene	16.70	91	906777	99.2383	ug/kg	100
87)	a-Methylstyrene	16.98	118	508276	100.8508	ug/kg	99
88)	tert-Butylbenzene	17.04	134	234437	101.0972	ug/kg	99
89)	1,2,4-Trimethylbenzene	17.09	105	1125260	97.1435	ug/kg	99
90)	sec-Butylbenzene	17.30	105	1425754	100.0828	ug/kg	100
91)	p-Isopropyltoluene	17.46	119	1215596	101.1125	ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	644471	93.2206	ug/kg	100
93)	1,4-Dichlorobenzene	17.79	146	646907	93.6002	ug/kg	99
94)	n-Butylbenzene	17.99	91	1131901	101.2628	ug/kg	99
95)	1,2-Dichlorobenzene	18.30	146	622851	97.0971	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.30	157	88939	108.0040	ug/kg	99
97)	1,2,4-Trichlorobenzene	20.44	180	466688	102.4843	ug/kg	99
98)	Hexachlorobutadiene	20.59	225	252514	105.1960	ug/kg	99
99)	Naphthalene	20.81	128	1208454	105.8030	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	456274	103.3044	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972903.D 8260SL.M Fri Feb 26 11:21:58 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972903.D Vial: 8
Acq On : 25 Feb 2016 19:29 Operator: ADC
Sample : WG558732-08 100.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

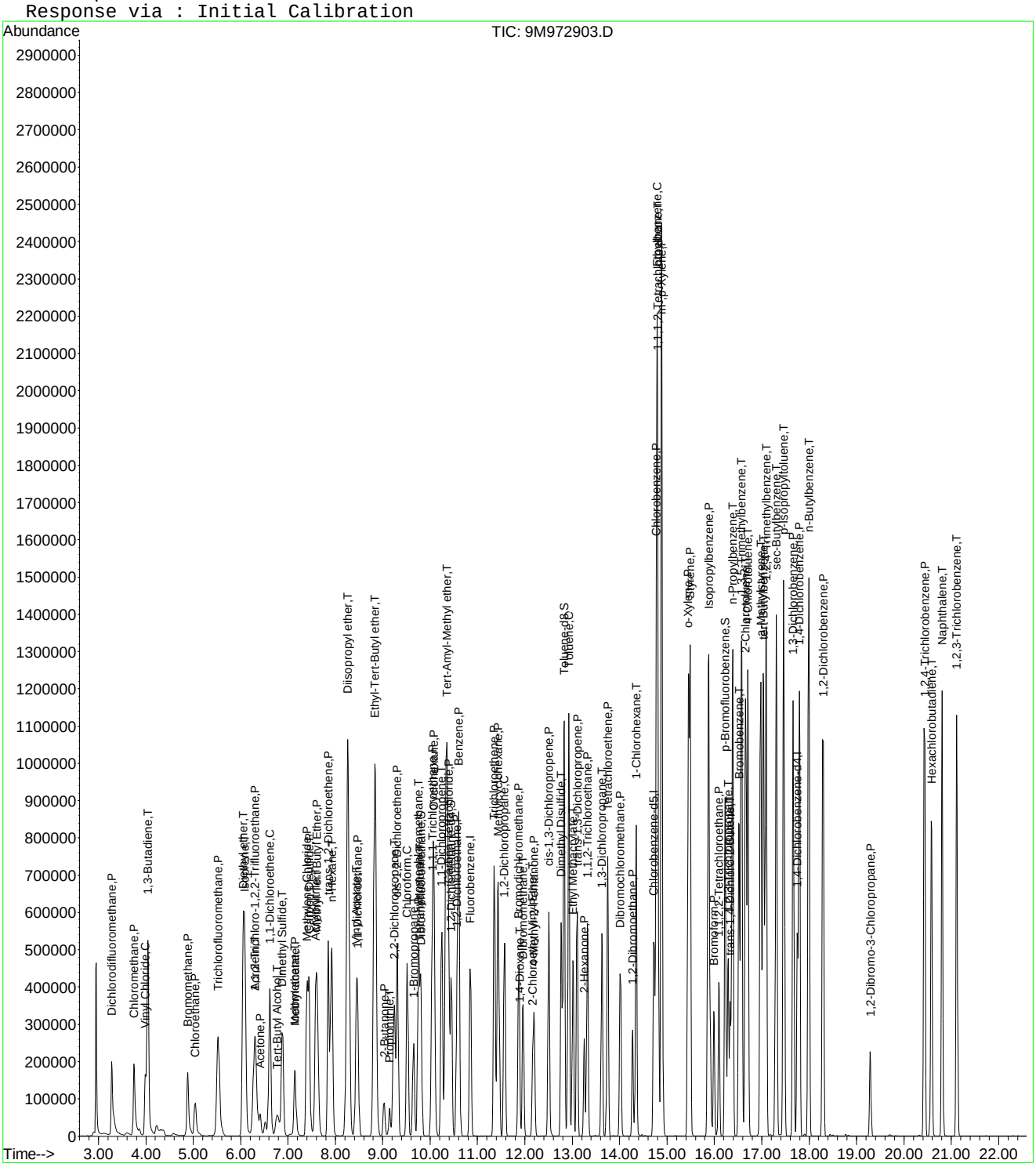

9M972903.D 8260SL.M Fri Feb 26 11:21:58 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972904.D Vial: 9
Acq On : 25 Feb 2016 20:00 Operator: ADC
Sample : WG558732-09 200.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:58 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	542388	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	396894	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	212175	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	595362	202.5026 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery	= 405.00%#	
43) 1,2-Dichloroethane-d4	10.45	65	716316	194.1852 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery	= 388.38%#	
58) Toluene-d8	12.82	98	2013255	200.5415 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery	= 401.08%#	
79) p-Bromofluorobenzene	16.23	95	807150	195.3653 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery	= 390.74%#	

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.28	85	774894	209.3245 ug/kg	100
3) Chloromethane	3.75	50	750862	211.5959 ug/kg	100
4) Vinyl Chloride	3.99	62	770550	216.9141 ug/kg	100
5) 1,3-Butadiene	4.04	54	695631	205.8318 ug/kg	99
6) Bromomethane	4.88	94	470946	204.1239 ug/kg	97
7) Chloroethane	5.04	64	374502	236.6386 ug/kg	98
8) Trichlorofluoromethane	5.52	101	1120886	210.3832 ug/kg	99
10) Isoprene	6.09	67	690766	217.1654 ug/kg	97
11) Acrolein	6.31	56	2288	4.6071 ug/kg	86
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	592415	215.6090 ug/kg	100
13) Acetone	6.42	43	268070	202.8703 ug/kg	99
14) 1,1-Dichloroethene	6.62	61	1084122	213.8917 ug/kg	99
15) Tert-Butyl Alcohol	6.78	59	290	0.5229 ug/kg#	58
16) Dimethyl Sulfide	6.88	62	486231	226.9805 ug/kg	99
17) Iodomethane	7.14	142	341644	216.9305 ug/kg	98
18) Methyl acetate	7.15	43	558766	202.7886 ug/kg	97
19) Methylene Chloride	7.40	84	606998	219.8913 ug/kg	98
20) Carbon Disulfide	7.44	76	1650167	211.3432 ug/kg	98
21) Acrylonitrile	7.61	53	18860	13.8363 ug/kg#	28
22) Methyl Tert Butyl Ether	7.61	73	1710517	217.5666 ug/kg	99
23) trans-1,2-Dichloroethene	7.84	61	967656	214.2173 ug/kg	99
24) n-Hexane	7.92	57	1006142	215.9497 ug/kg	97
26) Vinyl Acetate	8.43	43	1320060	213.9959 ug/kg	98
27) 1,1-Dichloroethane	8.46	63	1199515	211.4185 ug/kg	100
29) 2-Butanone	9.02	43	373284	213.4201 ug/kg	100
31) 2,2-Dichloropropane	9.24	77	904865	213.6764 ug/kg	100
32) cis-1,2-Dichloroethene	9.31	96	649726	219.3058 ug/kg	100
33) Chloroform	9.52	83	1094765	210.0507 ug/kg	100
34) 1-Bromopropane	9.66	122	98189	213.9851 ug/kg	100
35) Bromochloromethane	9.75	130	427351	222.0603 ug/kg	99
36) Tetrahydrofuran	9.77	42	2491	2.2095 ug/kg	93
38) 1,1,1-Trichloroethane	10.05	97	1020636	216.5435 ug/kg	100
39) Cyclohexane	10.08	56	1092323	212.5677 ug/kg	98
40) 1,1-Dichloropropene	10.24	75	780375	210.4109 ug/kg	98
42) Carbon Tetrachloride	10.39	117	950685	217.5657 ug/kg	100
45) 1,2-Dichloroethane	10.56	62	975428	212.7698 ug/kg	98
46) Benzene	10.61	78	2107212	202.9435 ug/kg	100
47) Trichloroethene	11.36	130	696420	211.6783 ug/kg	98
48) Methylcyclohexane	11.43	83	922594	223.5862 ug/kg	100
49) 1,2-Dichloropropane	11.57	63	613480	215.1567 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972904.D Vial: 9
Acq On : 25 Feb 2016 20:00 Operator: ADC
Sample : WG558732-09 200.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:58 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
50)	1,4-Dioxane	11.86	88	821	19.1932	ug/kg#	7
51)	Bromodichloromethane	11.87	83	861318	214.3439	ug/kg	99
52)	Dibromomethane	11.96	174	401145	212.3328	ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	173854	210.9891	ug/kg	98
54)	4-Methyl-2-Pentanone	12.19	58	281550	224.9694	ug/kg	99
55)	cis-1,3-Dichloropropene	12.51	75	917528	219.1621	ug/kg	100
56)	Dimethyl Disulfide	12.77	94	993447	236.1300	ug/kg	99
59)	Toluene	12.93	91	2353264	207.5190	ug/kg	100
60)	Ethyl Methacrylate	13.01	69	698780	222.3090	ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	892986	218.6361	ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	510766	214.4105	ug/kg	98
63)	2-Hexanone	13.26	43	551431	231.8433	ug/kg	99
64)	1,3-Dichloropropane	13.63	76	842104	212.1481	ug/kg	99
65)	Tetrachloroethene	13.75	164	518091	213.1138	ug/kg	97
66)	Dibromochloromethane	14.02	129	723489	217.3121	ug/kg	99
67)	1,2-Dibromoethane	14.27	107	560802	212.2411	ug/kg	99
68)	1-Chlorohexane	14.35	91	757279	226.4519	ug/kg	100
69)	Chlorobenzene	14.78	112	1626715	204.1050	ug/kg	98
70)	1,1,1,2-Tetrachloroethane	14.81	131	649903	217.1378	ug/kg	97
71)	Ethylbenzene	14.80	106	871321	212.2035	ug/kg	99
72)	m-,p-Xylene	14.89	106	2089330	412.0243	ug/kg	98
73)	o-Xylene	15.45	106	1065692	218.9929	ug/kg	98
74)	Styrene	15.49	104	1839951	222.0334	ug/kg	100
75)	Bromoform	15.99	173	511700	234.0915	ug/kg	99
76)	Isopropylbenzene	15.87	105	2873816	219.9805	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	662688	205.8943	ug/kg	99
80)	1,2,3-Trichloropropane	16.29	110	257281	210.7797	ug/kg	98
81)	trans-1,4-Dichloro-2-Buten	16.34	53	281460	228.7601	ug/kg	90
82)	n-Propylbenzene	16.38	91	3244636	194.5439	ug/kg	100
83)	Bromobenzene	16.52	156	759998	193.0269	ug/kg	95
84)	1,3,5-Trimethylbenzene	16.57	105	2471747	197.4342	ug/kg	99
85)	2-Chlorotoluene	16.66	91	2218317	198.3049	ug/kg	100
86)	4-Chlorotoluene	16.71	91	1934954	187.0917	ug/kg	100
87)	a-Methylstyrene	16.98	118	1205032	211.2436	ug/kg	99
88)	tert-Butylbenzene	17.03	134	526001	200.4032	ug/kg	87
89)	1,2,4-Trimethylbenzene	17.09	105	2520611	192.2523	ug/kg	100
90)	sec-Butylbenzene	17.31	105	3206494	198.8615	ug/kg	100
91)	p-Isopropyltoluene	17.47	119	2752661	202.2895	ug/kg	100
92)	1,3-Dichlorobenzene	17.67	146	1508843	192.8225	ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	1522857	194.6701	ug/kg	99
94)	n-Butylbenzene	17.99	91	2603240	205.7600	ug/kg	100
95)	1,2-Dichlorobenzene	18.29	146	1515803	208.7710	ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	205456	220.4304	ug/kg	98
97)	1,2,4-Trichlorobenzene	20.43	180	1061631	205.9726	ug/kg	99
98)	Hexachlorobutadiene	20.58	225	612598	225.4729	ug/kg	100
99)	Naphthalene	20.81	128	2666581	206.2661	ug/kg	99
100)	1,2,3-Trichlorobenzene	21.12	180	1022740	204.5802	ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972904.D Vial: 9
Acq On : 25 Feb 2016 20:00 Operator: ADC
Sample : WG558732-09 200.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

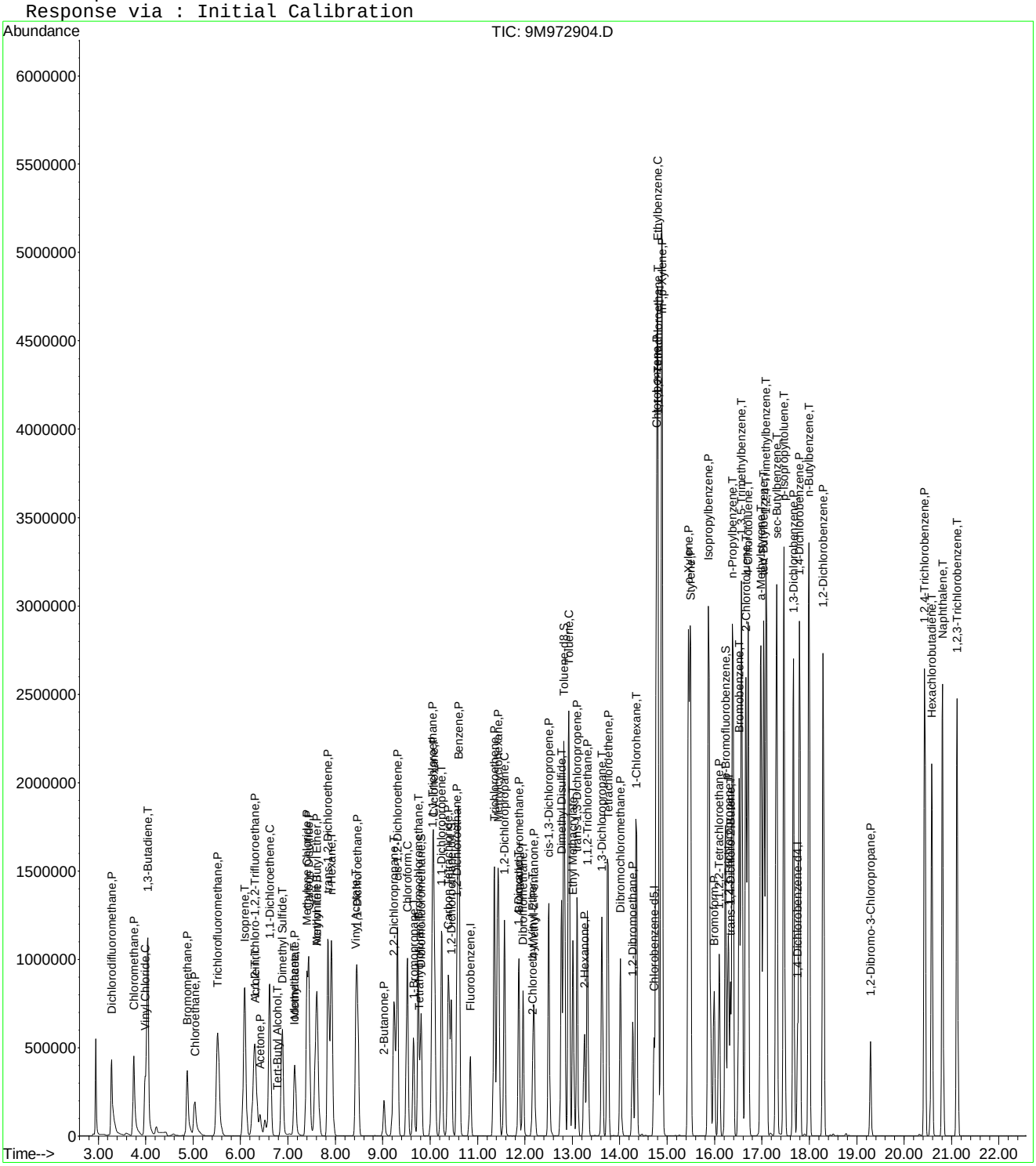

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972905.D Vial: 10
Acq On : 25 Feb 2016 20:30 Operator: ADC
Sample : WG558732-10 300.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:59 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.85	96	626979	50.00	ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	468521	50.00	ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	224223	50.00	ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	520	0.1530	ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.30%#		
43) 1,2-Dichloroethane-d4	10.45	65	1794	0.4207	ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.84%#		
58) Toluene-d8	12.82	98	7789	0.6573	ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	1.32%#		
79) p-Bromofluorobenzene	16.23	95	6216	1.4237	ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	2.84%#		

Target Compounds

						Qvalue
2) Dichlorodifluoromethane	3.28	85	1155483	270.0216	ug/kg	98
3) Chloromethane	3.75	50	1142773	278.5891	ug/kg	100
4) Vinyl Chloride	3.98	62	1112221	270.8539	ug/kg	99
5) 1,3-Butadiene	4.03	54	1100483	281.6917	ug/kg	98
6) Bromomethane	4.87	94	749711	281.1083	ug/kg	98
7) Chloroethane	5.04	64	601337	328.7051	ug/kg	98
8) Trichlorofluoromethane	5.52	101	1778447	288.7670	ug/kg	99
9) Diethyl ether	6.06	59	869609	302.0457	ug/kg	99
10) Isoprene	6.08	67	1108410	301.4513	ug/kg	98
11) Acrolein	6.30	56	93621	163.0794	ug/kg	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	943691	297.1172	ug/kg	99
13) Acetone	6.42	43	369915	242.6618	ug/kg	95
14) 1,1-Dichloroethene	6.61	61	1715009	292.7111	ug/kg	98
15) Tert-Butyl Alcohol	6.80	59	188151	293.4850	ug/kg	89
16) Dimethyl Sulfide	6.88	62	763075	308.1557	ug/kg	99
17) Iodomethane	7.14	142	532480	291.5128	ug/kg	99
18) Methyl acetate	7.15	43	879657	276.1748	ug/kg	98
19) Methylene Chloride	7.40	84	937262	293.7237	ug/kg	96
20) Carbon Disulfide	7.44	76	2640380	292.5391	ug/kg	98
21) Acrylonitrile	7.59	53	252681	160.3640	ug/kg	94
22) Methyl Tert Butyl Ether	7.61	73	2699681	297.0533	ug/kg	98
23) trans-1,2-Dichloroethene	7.84	61	1548353	296.5245	ug/kg	100
24) n-Hexane	7.92	57	1608467	298.6501	ug/kg	98
25) Diisopropyl ether	8.26	45	3742238	299.1747	ug/kg	100
26) Vinyl Acetate	8.43	43	2097407	294.1383	ug/kg	99
27) 1,1-Dichloroethane	8.47	63	1881635	286.8995	ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	3515202	302.2390	ug/kg	99
29) 2-Butanone	9.02	43	559900	276.9258	ug/kg	100
30) Propionitrile	9.14	54	182998	295.7653	ug/kg	100
31) 2,2-Dichloropropane	9.24	77	1439671	294.0988	ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	1040893	303.9366	ug/kg	99
33) Chloroform	9.52	83	1708608	283.5977	ug/kg	99
34) 1-Bromopropane	9.65	122	152776	287.6719	ug/kg	98
35) Bromochloromethane	9.75	130	668631	300.5590	ug/kg	98
36) Tetrahydrofuran	9.77	42	365915	280.7723	ug/kg	97
38) 1,1,1-Trichloroethane	10.05	97	1606962	294.9423	ug/kg	100
39) Cyclohexane	10.08	56	1746722	294.0540	ug/kg	99
40) 1,1-Dichloropropene	10.24	75	1258569	293.5615	ug/kg	98
41) Tert-Amyl-Methyl ether	10.34	73	2573262	304.3824	ug/kg	98
42) Carbon Tetrachloride	10.39	117	1494872	295.9476	ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972905.D Vial: 10
Acq On : 25 Feb 2016 20:30 Operator: ADC
Sample : WG558732-10 300.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:59 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.57	62	1526616	288.0725 ug/kg	98
46)	Benzene	10.61	78	3320959	276.6861 ug/kg	99
47)	Trichloroethene	11.36	130	1102750	289.9607 ug/kg	98
48)	Methylcyclohexane	11.43	83	1476436	309.5324 ug/kg	98
49)	1,2-Dichloropropane	11.57	63	980423	297.4576 ug/kg	99
50)	1,4-Dioxane	11.89	88	31126	629.4828 ug/kg	81
51)	Bromodichloromethane	11.87	83	1358159	292.3851 ug/kg	99
52)	Dibromomethane	11.96	174	632731	289.7290 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	287132	300.2354 ug/kg	96
54)	4-Methyl-2-Pentanone	12.19	58	438042	302.7895 ug/kg	99
55)	cis-1,3-Dichloropropene	12.51	75	1436858	296.9047 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	1505953	309.6528 ug/kg	95
59)	Toluene	12.93	91	3720819	277.9530 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	1096301	295.4554 ug/kg	100
61)	trans-1,3-Dichloropropene	13.10	75	1416217	293.7329 ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	820836	291.8946 ug/kg	99
63)	2-Hexanone	13.26	43	814427	290.0688 ug/kg	100
64)	1,3-Dichloropropane	13.63	76	1322191	282.1714 ug/kg	100
65)	Tetrachloroethene	13.75	164	815946	284.3233 ug/kg	98
66)	Dibromochloromethane	14.02	129	1136128	289.0845 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	889642	285.2204 ug/kg	99
68)	1-Chlorohexane	14.34	91	1188786	301.1405 ug/kg	99
69)	Chlorobenzene	14.78	112	2558374	271.9265 ug/kg	97
70)	1,1,1,2-Tetrachloroethane	14.81	131	1019464	288.5389 ug/kg	97
71)	Ethylbenzene	14.80	106	1372834	283.2291 ug/kg	97
72)	m-,p-Xylene	14.89	106	3241616	541.5304 ug/kg	97
73)	o-Xylene	15.45	106	1663016	289.4945 ug/kg	99
74)	Styrene	15.49	104	2869824	293.3680 ug/kg	99
75)	Bromoform	15.99	173	788638	305.6282 ug/kg	99
76)	Isopropylbenzene	15.87	105	4421589	286.7141 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	1002445	294.7201 ug/kg	99
80)	1,2,3-Trichloropropane	16.28	110	380025	294.6098 ug/kg	66
81)	trans-1,4-Dichloro-2-Buten	16.34	53	413901	318.3274 ug/kg	57
82)	n-Propylbenzene	16.38	91	4980503	282.5783 ug/kg	99
83)	Bromobenzene	16.52	156	1176440	282.7414 ug/kg	93
84)	1,3,5-Trimethylbenzene	16.57	105	3788936	286.3846 ug/kg	99
85)	2-Chlorotoluene	16.66	91	3458872	292.5892 ug/kg	100
86)	4-Chlorotoluene	16.71	91	2929432	268.0287 ug/kg	100
87)	a-Methylstyrene	16.98	118	1823514	302.4880 ug/kg	100
88)	tert-Butylbenzene	17.03	134	795019	286.6221 ug/kg	86
89)	1,2,4-Trimethylbenzene	17.09	105	3829230	276.3702 ug/kg	100
90)	sec-Butylbenzene	17.31	105	4833765	283.6742 ug/kg	99
91)	p-Isopropyltoluene	17.47	119	4134027	287.4802 ug/kg	99
92)	1,3-Dichlorobenzene	17.67	146	2260017	273.2999 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	2229106	269.6404 ug/kg	99
94)	n-Butylbenzene	17.99	91	3871124	289.5329 ug/kg	100
95)	1,2-Dichlorobenzene	18.29	146	2162642	281.8552 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	293112	297.5776 ug/kg	98
97)	1,2,4-Trichlorobenzene	20.43	180	1514973	278.1345 ug/kg	100
98)	Hexachlorobutadiene	20.58	225	846867	294.9498 ug/kg	99
99)	Naphthalene	20.81	128	3754823	274.8379 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.12	180	1451357	274.7177 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972905.D 8260SL.M Fri Feb 26 11:21:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972905.D Vial: 10
Acq On : 25 Feb 2016 20:30 Operator: ADC
Sample : WG558732-10 300.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

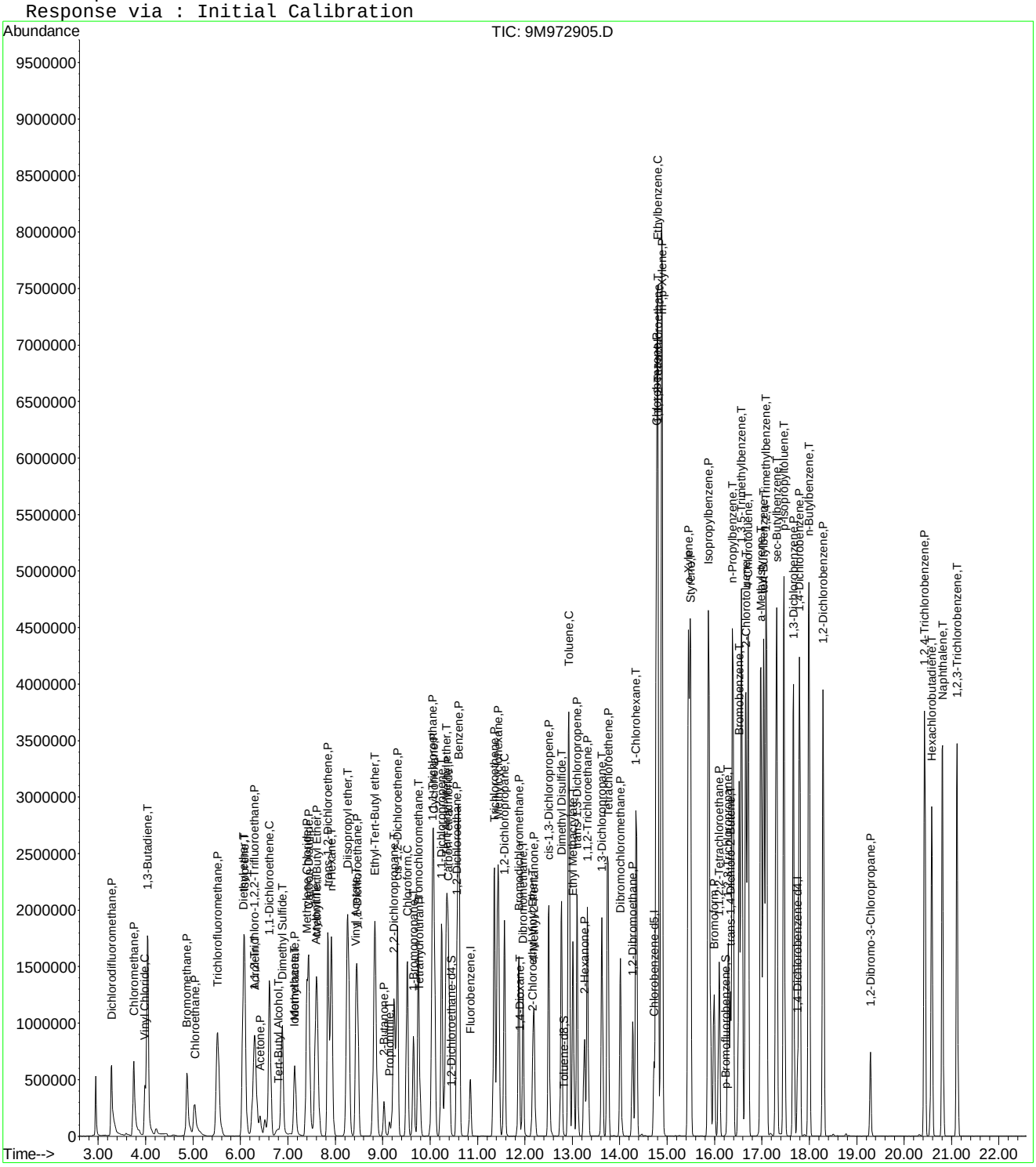

9M972905.D 8260SL.M Fri Feb 26 11:21:59 2016 Page 3

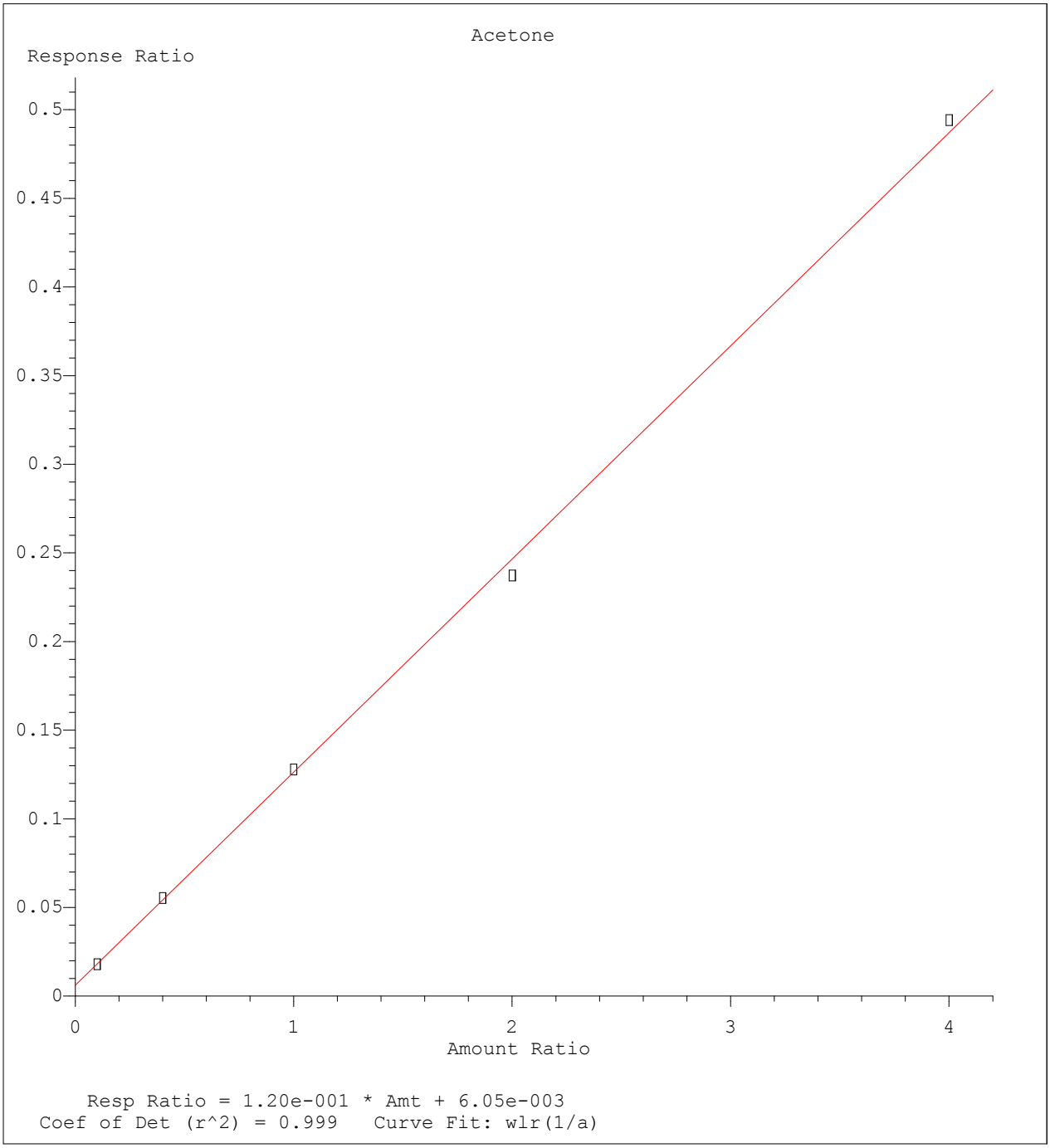

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

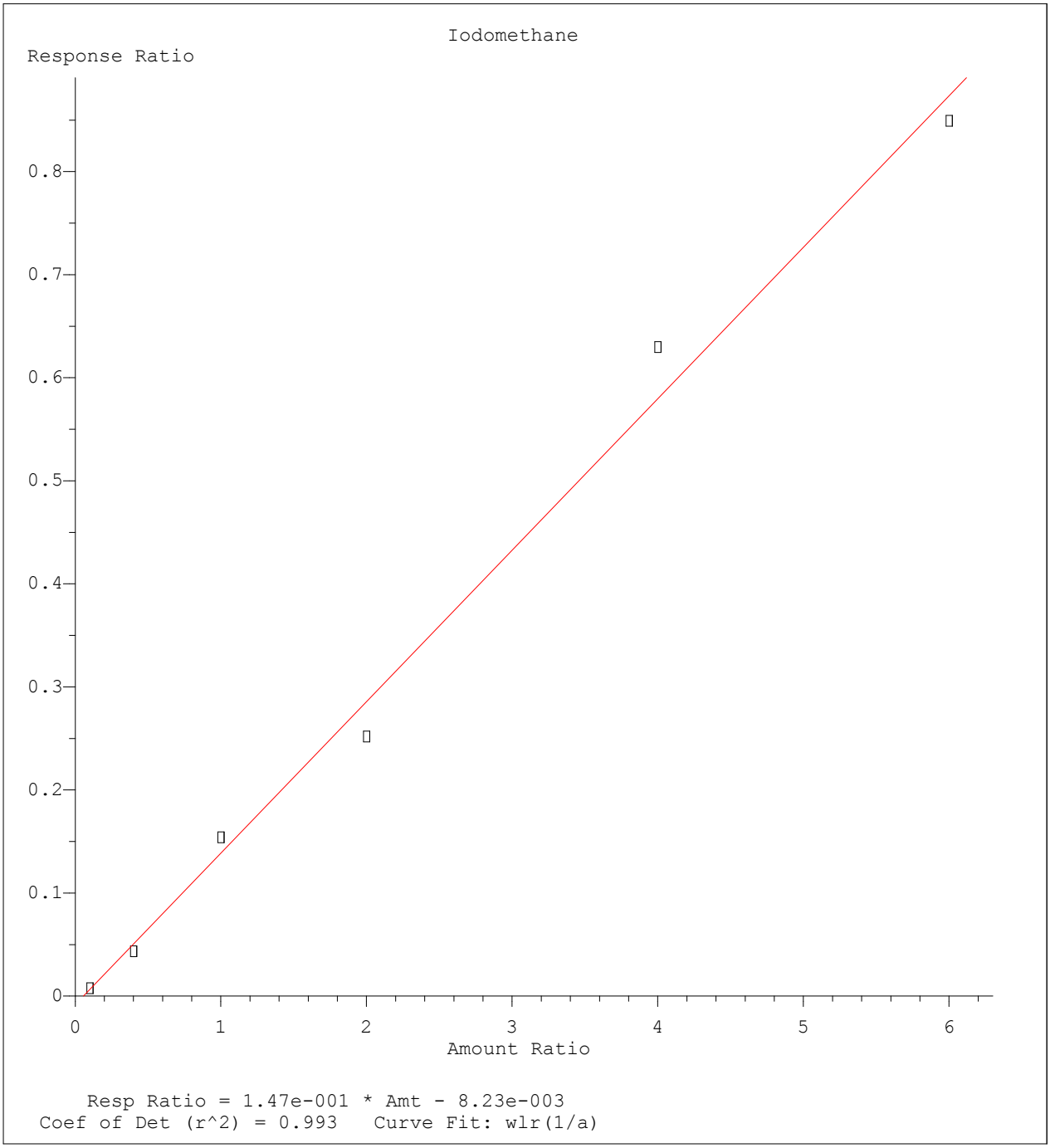

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

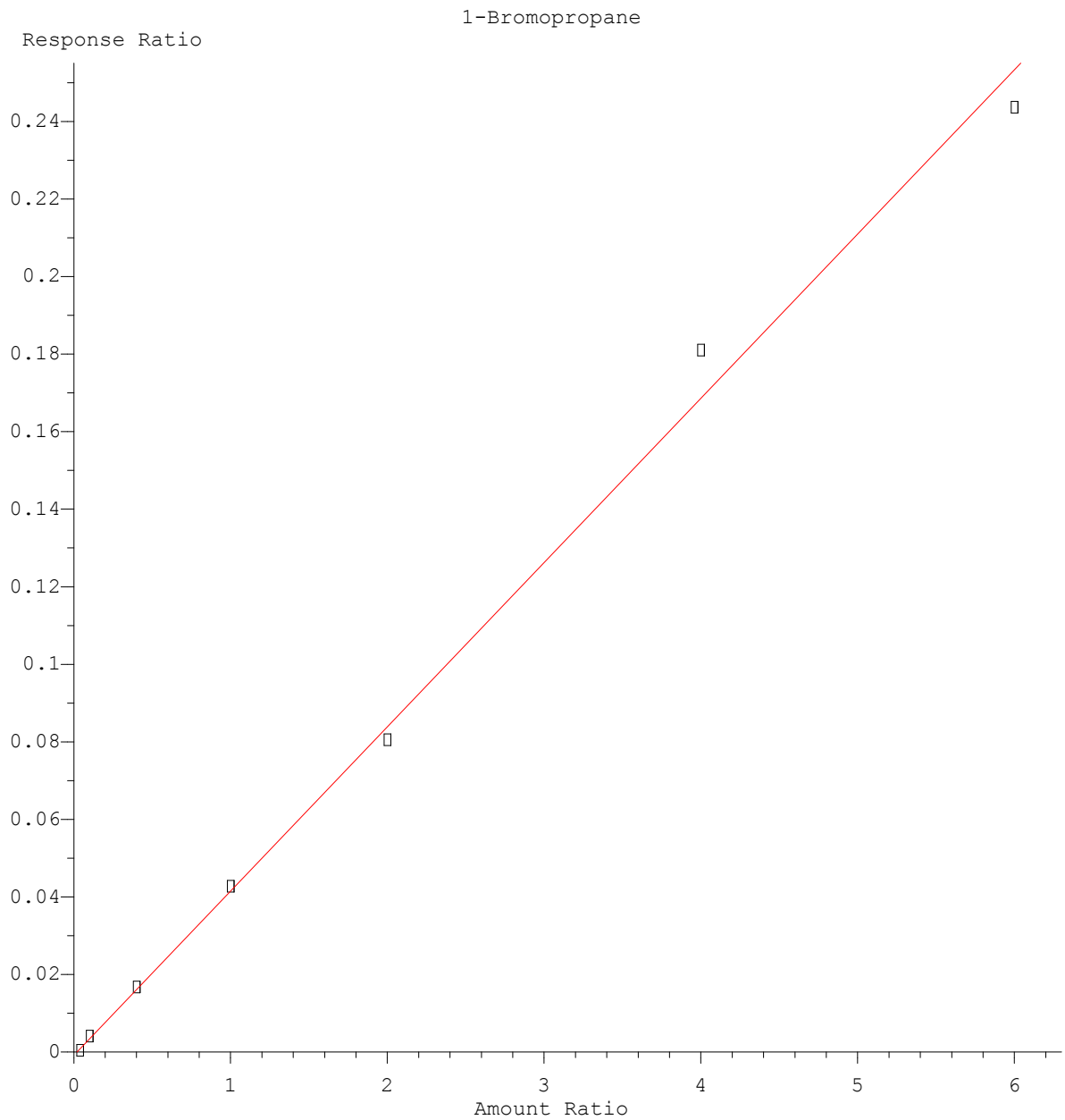

Resp Ratio = 4.25e-002 * Amt - 8.72e-004
Coef of Det (r^2) = 0.997 Curve Fit: wlr(1/a)

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

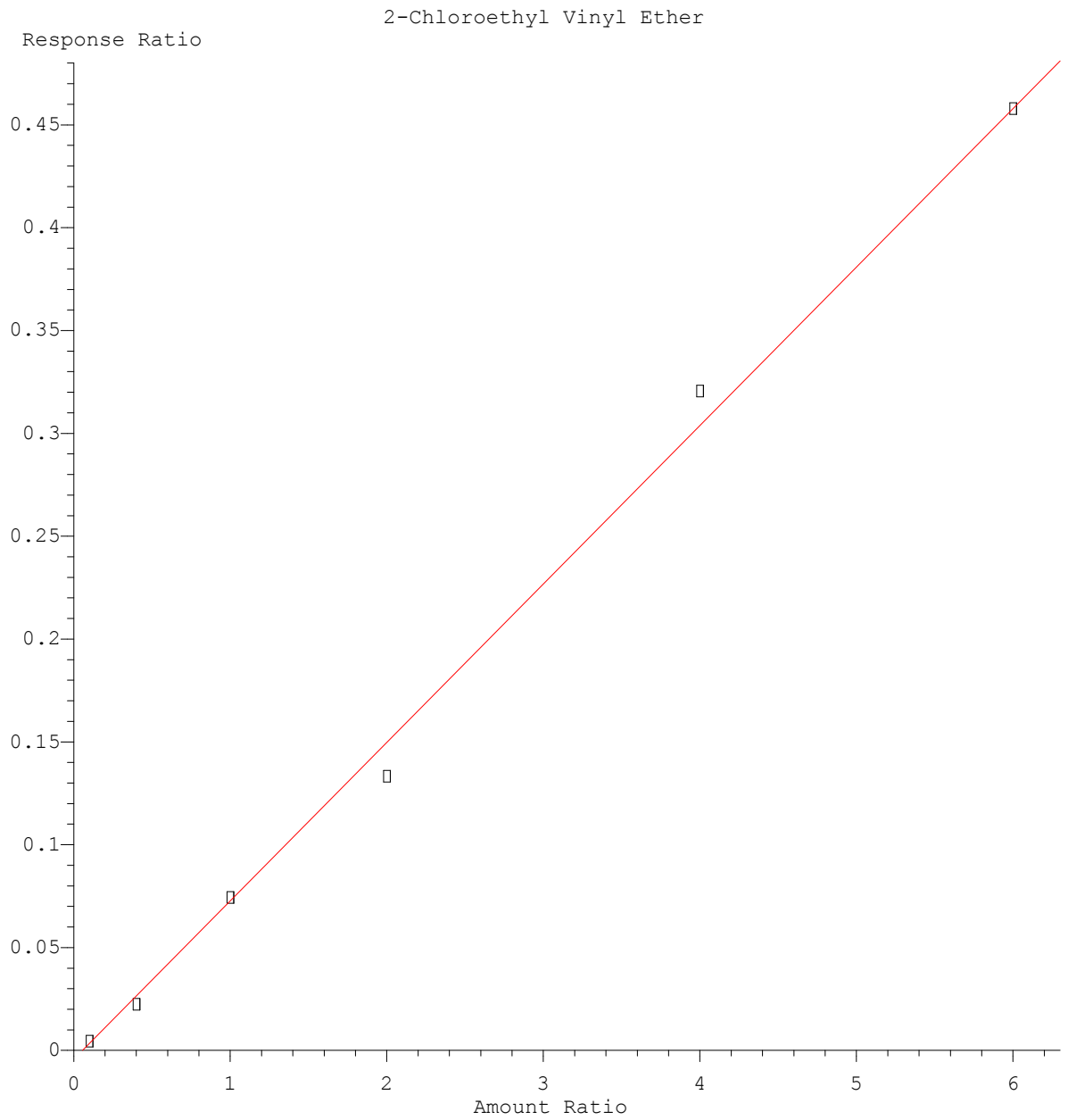

Resp Ratio = 7.70e-002 * Amt - 4.36e-003
Coef of Det (r^2) = 0.996 Curve Fit: wlr(1/a)

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:39:12 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	582126	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	421408	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	194909	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	163260	51.7395 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 103.48%		
43) 1,2-Dichloroethane-d4	10.45	65	197344	49.8458 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.70%		
58) Toluene-d8	12.82	98	564883	52.9951 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.00%		
79) p-Bromofluorobenzene	16.23	95	212358	55.9531 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 111.90%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	251431	63.3698 ug/kg	100
3) Chloromethane	3.74	50	200793	52.7216 ug/kg	100
4) Vinyl Chloride	3.99	62	228101	59.8284 ug/kg	99
5) 1,3-Butadiene	4.04	54	19055	5.2533 ug/kg	94
6) Bromomethane	4.88	94	121270	48.9744 ug/kg	100
7) Chloroethane	5.04	64	92003	54.1660 ug/kg	100
8) Trichlorofluoromethane	5.52	101	271981	47.5643 ug/kg	98
9) Diethyl ether	6.06	59	198146	74.1259 ug/kg	98
10) Isoprene	6.09	67	201645	59.0663 ug/kg	95
11) Acrolein	6.30	56	34569	64.8558 ug/kg	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	151498	51.3737 ug/kg	99
13) Acetone	6.41	43	65044	43.9190 ug/kg	98
14) 1,1-Dichloroethene	6.62	61	264179	48.5632 ug/kg	99
15) Tert-Butyl Alcohol	6.77	59	122141	205.1997 ug/kg	96
16) Dimethyl Sulfide	6.88	62	168266	73.1872 ug/kg	98
17) Iodomethane	7.13	142	81070	50.1419 ug/kg	99
18) Methyl acetate	7.15	43	155780	52.6767 ug/kg	99
19) Methylene Chloride	7.41	84	147546	49.8014 ug/kg	97
20) Carbon Disulfide	7.45	76	369798	44.1284 ug/kg	98
21) Acrylonitrile	7.59	53	71462	48.8478 ug/kg	99
22) Methyl Tert Butyl Ether	7.61	73	402298	47.6767 ug/kg	100
23) trans-1,2-Dichloroethene	7.85	61	245432	50.6242 ug/kg	100
24) n-Hexane	7.91	57	240056	48.0064 ug/kg	97
25) Diisopropyl ether	8.26	45	951889	81.9626 ug/kg	100
26) Vinyl Acetate	8.44	43	224385	33.8921 ug/kg	98
27) 1,1-Dichloroethane	8.47	63	282537	46.3987 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	854399	79.1219 ug/kg	99
29) 2-Butanone	9.03	43	88970	47.3950 ug/kg	99
30) Propionitrile	9.14	54	53106	92.4444 ug/kg	97
31) 2,2-Dichloropropane	9.24	77	213921	47.0673 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	167198	52.5828 ug/kg	96
33) Chloroform	9.52	83	268532	48.0056 ug/kg	99
34) 1-Bromopropane	9.65	122	36381	74.5451 ug/kg	96
35) Bromochloromethane	9.75	130	106386	51.5067 ug/kg	96
36) Tetrahydrofuran	9.78	42	101921	84.2313 ug/kg	98
38) 1,1,1-Trichloroethane	10.04	97	236420	46.7360 ug/kg	100
39) Cyclohexane	10.08	56	267623	48.5247 ug/kg	98
40) 1,1-Dichloropropene	10.25	75	193208	48.5381 ug/kg	99
41) Tert-Amyl-Methyl ether	10.34	73	688412	87.7041 ug/kg	100
42) Carbon Tetrachloride	10.39	117	218086	46.5023 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:39:12 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	241996	49.1831 ug/kg	99
46)	Benzene	10.60	78	545692	48.9674 ug/kg	99
47)	Trichloroethene	11.35	130	174371	49.3824 ug/kg	96
48)	Methylcyclohexane	11.44	83	228572	51.6120 ug/kg	98
49)	1,2-Dichloropropane	11.56	63	160075	52.3084 ug/kg	99
50)	1,4-Dioxane	11.88	88	7749	168.7883 ug/kg	88
51)	Bromodichloromethane	11.87	83	205164	47.5709 ug/kg	100
52)	Dibromomethane	11.96	174	95223	46.9624 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	36447	43.4907 ug/kg	97
54)	4-Methyl-2-Pentanone	12.19	58	64228	47.8173 ug/kg	96
55)	cis-1,3-Dichloropropene	12.50	75	238969	53.1840 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	243519	53.9302 ug/kg	99
59)	Toluene	12.93	91	610944	50.7412 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	172650	51.7315 ug/kg	99
61)	trans-1,3-Dichloropropene	13.11	75	216958	50.0293 ug/kg	98
62)	1,1,2-Trichloroethane	13.32	97	130293	51.5130 ug/kg	96
63)	2-Hexanone	13.25	43	121727	48.2017 ug/kg	99
64)	1,3-Dichloropropane	13.62	76	226811	53.8157 ug/kg	99
65)	Tetrachloroethene	13.75	164	128602	49.8224 ug/kg	96
66)	Dibromochloromethane	14.01	129	171284	48.4552 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	142409	50.7609 ug/kg	97
68)	1-Chlorohexane	14.35	91	184711	52.0217 ug/kg	98
69)	Chlorobenzene	14.77	112	433181	51.1898 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	157986	49.7138 ug/kg	100
71)	Ethylbenzene	14.79	106	223582	51.2841 ug/kg	100
72)	m-,p-Xylene	14.89	106	552299	102.5798 ug/kg	98
73)	o-Xylene	15.45	106	276739	53.5600 ug/kg	99
74)	Styrene	15.49	104	464515	52.7939 ug/kg	99
75)	Bromoform	15.99	173	109809	47.3129 ug/kg	99
76)	Isopropylbenzene	15.87	105	721376	52.0066 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	153818	52.0241 ug/kg	97
80)	1,2,3-Trichloropropane	16.29	110	60794	54.2181 ug/kg	92
81)	trans-1,4-Dichloro-2-Buten	16.33	53	48561	42.9649 ug/kg	74
82)	n-Propylbenzene	16.39	91	841260	54.9091 ug/kg	100
83)	Bromobenzene	16.52	156	188730	52.1806 ug/kg	96
84)	1,3,5-Trimethylbenzene	16.57	105	624761	54.3244 ug/kg	99
85)	2-Chlorotoluene	16.66	91	556729	54.1771 ug/kg	100
86)	4-Chlorotoluene	16.70	91	503918	53.0403 ug/kg	99
87)	a-Methylstyrene	16.98	118	305038	58.2105 ug/kg	98
88)	tert-Butylbenzene	17.03	134	133555	55.3912 ug/kg	90
89)	1,2,4-Trimethylbenzene	17.08	105	620621	51.5293 ug/kg	99
90)	sec-Butylbenzene	17.31	105	810765	54.7366 ug/kg	99
91)	p-Isopropyltoluene	17.46	119	675672	54.0529 ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	365216	50.8073 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	367190	51.0968 ug/kg	99
94)	n-Butylbenzene	17.99	91	609687	52.4585 ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	351826	52.7494 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	46623	54.4522 ug/kg	96
97)	1,2,4-Trichlorobenzene	20.43	180	244804	51.7031 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	136025	54.5004 ug/kg	99
99)	Naphthalene	20.81	128	603753	50.8387 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	241600	52.6087 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972907.D 8260SL.M Fri Feb 26 11:39:13 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:39 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

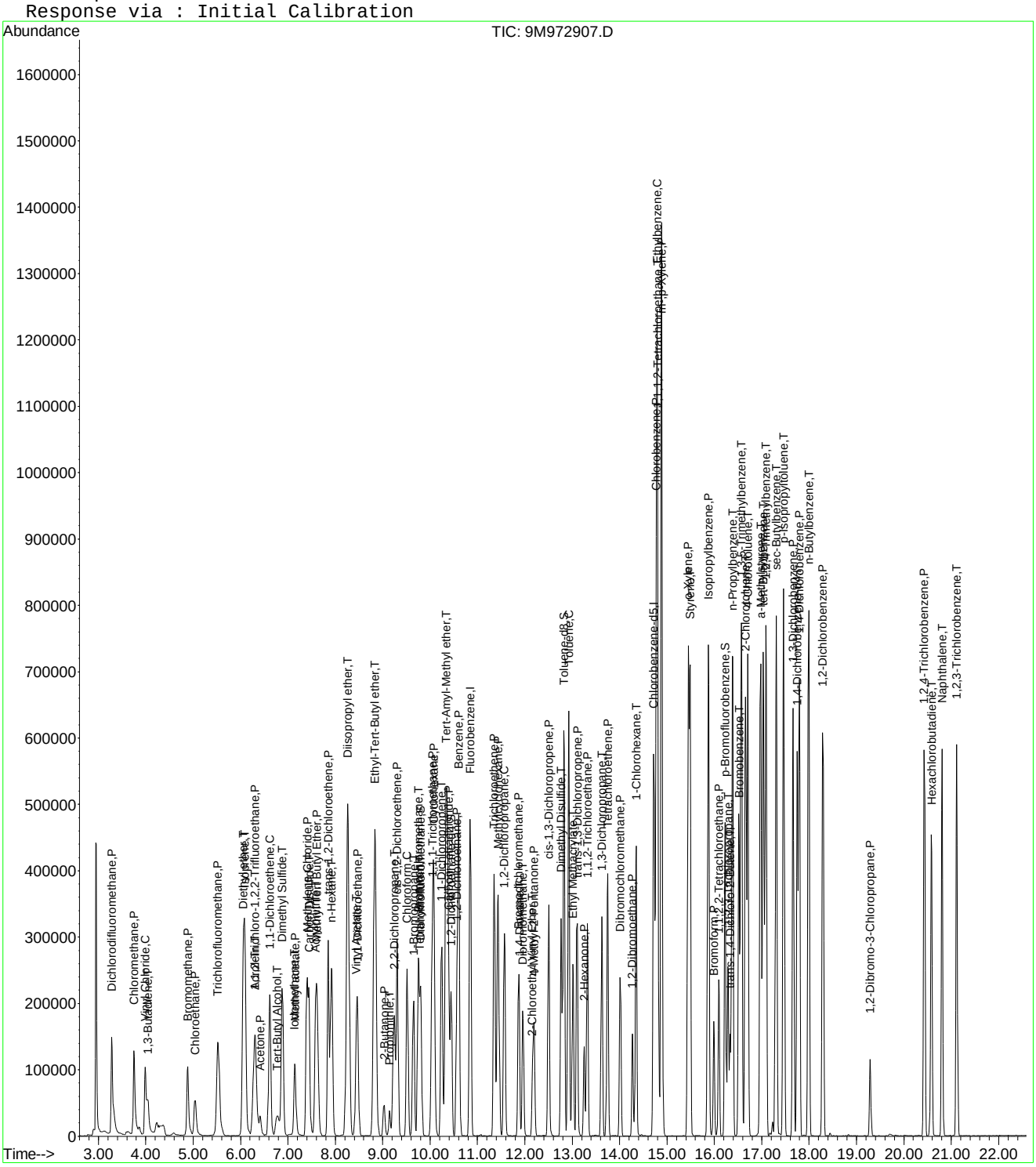

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	112	0.00
2	P	Dichlorodifluoromethane	50.0000	63.3698	-26.7#	123	0.00
3	P	Chloromethane	50.0000	52.7216	-5.4	107	0.00
4	C	Vinyl Chloride	50.0000	59.8284	-19.7	118	0.00
5	T	1,3-Butadiene	50.0000	5.2533	89.5#	11	0.00
6	P	Bromomethane	50.0000	48.9744	2.1	112	0.00
7	P	Chloroethane	50.0000	54.1660	-8.3	108	0.00
8	P	Trichlorofluoromethane	50.0000	47.5643	4.9	102	0.00
9	T	Diethyl ether	100.0000	74.1259	25.9#	79	0.01
10	T	Isoprene	50.0000	59.0664	-18.1	129	0.00
11	T	Acrolein	50.0000	64.8558	-29.7#	140	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	51.3737	-2.7	112	0.00
13	P	Acetone	50.0000	43.9190	12.2	98	0.00
14	C	1,1-Dichloroethene	50.0000	48.5632	2.9	108	0.00
15	T	Tert-Butyl Alcohol	200.0000	205.1997	-2.6	116	0.01
16	T	Dimethyl Sulfide	50.0000	73.1872	-46.4#	154	0.00
17	T	Iodomethane	50.0000	50.1419	-0.3	102	0.00
18	P	Methyl acetate	50.0000	52.6767	-5.4	115	0.01
19	P	Methylene Chloride	50.0000	49.8014	0.4	109	0.01
20	P	Carbon Disulfide	50.0000	44.1284	11.7	97	0.00
21	T	Acrylonitrile	50.0000	48.8478	2.3	103	0.00
22	P	Methyl Tert Butyl Ether	50.0000	47.6767	4.6	99	0.00
23	P	trans-1,2-Dichloroethene	50.0000	50.6242	-1.2	108	0.00
24	T	n-Hexane	50.0000	48.0064	4.0	109	0.00
25	T	Diisopropyl ether	100.0000	81.9626	18.0	87	0.00
26	T	Vinyl Acetate	50.0000	33.8921	32.2#	72	0.01
27	P	1,1-Dichloroethane	50.0000	46.3987	7.2	99	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	79.1219	20.9	83	0.00
29	P	2-Butanone	50.0000	47.3950	5.2	103	0.00
30	T	Propionitrile	100.0000	92.4444	7.6	100	0.00
31	T	2,2-Dichloropropane	50.0000	47.0673	5.9	99	0.00
32	P	cis-1,2-Dichloroethene	50.0000	52.5828	-5.2	109	0.00
33	C	Chloroform	50.0000	48.0057	4.0	102	0.00
34	T	1-Bromopropane	50.0000	74.5451	-49.1#	164	0.00
35	T	Bromochloromethane	50.0000	51.5067	-3.0	104	0.00
36	T	Tetrahydrofuran	100.0000	84.2314	15.8	90	0.00
37	S	Dibromofluoromethane	50.0000	51.7395	-3.5	110	0.00
38	P	1,1,1-Trichloroethane	50.0000	46.7360	6.5	97	0.00
39	P	Cyclohexane	50.0000	48.5247	3.0	108	0.00
40	T	1,1-Dichloropropene	50.0000	48.5381	2.9	106	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	87.7041	12.3	93	0.00
42	P	Carbon Tetrachloride	50.0000	46.5023	7.0	99	0.00
43	S	1,2-Dichloroethane-d4	50.0000	49.8458	0.3	107	0.00
44		Heptane	-1.0000	0.0000	0.0	104	0.00
45	P	1,2-Dichloroethane	50.0000	49.1831	1.6	102	0.00
46	P	Benzene	50.0000	48.9674	2.1	108	0.00
47	P	Trichloroethene	50.0000	49.3824	1.2	106	0.00
48	P	Methylcyclohexane	50.0000	51.6120	-3.2	112	0.00
49	C	1,2-Dichloropropane	50.0000	52.3083	-4.6	108	0.00
50	T	1,4-Dioxane	200.0000	168.7883	15.6	99	0.00
51	P	Bromodichloromethane	50.0000	47.5710	4.9	101	0.00
52	T	Dibromomethane	50.0000	46.9624	6.1	99	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	43.4907	13.0	95	0.00
54	P	4-Methyl-2-Pentanone	50.0000	47.8173	4.4	99	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	53.1840	-6.4	112	0.00
56	T	Dimethyl Disulfide	50.0000	53.9302	-7.9	111	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	111	0.00
58	S	Toluene-d8	50.0000	52.9951	-6.0	110	0.00
59	C	Toluene	50.0000	50.7412	-1.5	108	0.00
60	T	Ethyl Methacrylate	50.0000	51.7315	-3.5	109	0.00
61	P	trans-1,3-Dichloropropene	50.0000	50.0293	-0.1	102	0.00
62	P	1,1,2-Trichloroethane	50.0000	51.5130	-3.0	106	0.00
63	P	2-Hexanone	50.0000	48.2017	3.6	102	0.00
64	T	1,3-Dichloropropane	50.0000	53.8157	-7.6	113	0.00
65	P	Tetrachloroethene	50.0000	49.8224	0.4	110	0.00
66	P	Dibromochloromethane	50.0000	48.4552	3.1	101	0.00
67	P	1,2-Dibromoethane	50.0000	50.7609	-1.5	107	0.00
68	T	1-Chlorohexane	50.0000	52.0217	-4.0	110	0.00
69	P	Chlorobenzene	50.0000	51.1898	-2.4	108	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	49.7138	0.6	102	0.00
71	C	Ethylbenzene	50.0000	51.2841	-2.6	108	0.00
72	P	m-,p-Xylene	100.0000	102.5798	-2.6	111	0.00
73	P	o-Xylene	50.0000	53.5600	-7.1	112	0.00
74	P	Styrene	50.0000	52.7939	-5.6	109	0.00
75	P	Bromoform	50.0000	47.3129	5.4	95	0.00
76	P	Isopropylbenzene	50.0000	52.0066	-4.0	110	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	107	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	52.0241	-4.0	104	0.00
79	S	p-Bromofluorobenzene	50.0000	55.9531	-11.9	111	0.00
80	T	1,2,3-Trichloropropane	50.0000	54.2181	-8.4	109	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	42.9649	14.1	87	0.00
82	T	n-Propylbenzene	50.0000	54.9091	-9.8	112	0.00
83	T	Bromobenzene	50.0000	52.1806	-4.4	106	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	54.3244	-8.6	110	0.00
85	T	2-Chlorotoluene	50.0000	54.1771	-8.4	115	0.00
86	T	4-Chlorotoluene	50.0000	53.0403	-6.1	105	0.00
87	T	a-Methylstyrene	50.0000	58.2105	-16.4	119	0.00
88	T	tert-Butylbenzene	50.0000	55.3912	-10.8	110	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	51.5293	-3.1	107	0.00
90	T	sec-Butylbenzene	50.0000	54.7366	-9.5	112	0.00
91	T	p-Isopropyltoluene	50.0000	54.0529	-8.1	110	0.00
92	P	1,3-Dichlorobenzene	50.0000	50.8073	-1.6	108	0.00
93	P	1,4-Dichlorobenzene	50.0000	51.0968	-2.2	110	0.00
94	T	n-Butylbenzene	50.0000	52.4585	-4.9	108	0.00
95	P	1,2-Dichlorobenzene	50.0000	52.7494	-5.5	110	0.00
96	P	1,2-Dibromo-3-Chloropropane	50.0000	54.4522	-8.9	109	0.00
97	P	1,2,4-Trichlorobenzene	50.0000	51.7031	-3.4	110	0.00
98	T	Hexachlorobutadiene	50.0000	54.5004	-9.0	116	0.00
99	T	Naphthalene	50.0000	50.8387	-1.7	100	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	52.6087	-5.2	109	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972907.D 8260SL.M Fri Feb 26 11:39:16 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030616\9M973099.D Vial: 3
Acq On : 6 Mar 2016 15:56 Operator: ADC
Sample : WG559858-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 06 16:18:41 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	540271	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	409527	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.75	152	218878	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	142842	48.7757 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.56%		
43) 1,2-Dichloroethane-d4	10.44	65	179724	48.9121 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.82%		
58) Toluene-d8	12.83	98	506431	48.8897 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 97.78%		
79) p-Bromofluorobenzene	16.23	95	211772	49.6883 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 99.38%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	152852	41.5088 ug/kg	100
3) Chloromethane	3.74	50	156738	44.3425 ug/kg	99
4) Vinyl Chloride	3.99	62	182496	51.5749 ug/kg	99
5) 1,3-Butadiene	4.04	54	191273	56.8180 ug/kg	98
6) Bromomethane	4.88	94	96576	42.0233 ug/kg	97
7) Chloroethane	5.04	64	76033	48.2316 ug/kg	97
8) Trichlorofluoromethane	5.53	101	253324	47.7336 ug/kg	99
9) Diethyl ether	6.05	59	263983	106.4060 ug/kg	98
10) Isoprene	6.10	67	174062	54.9366 ug/kg	98
11) Acrolein	6.30	56	26216	52.9948 ug/kg	84
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	135596	49.5434 ug/kg	97
13) Acetone	6.40	43	68915	50.4935 ug/kg	100
14) 1,1-Dichloroethene	6.61	61	254517	50.4116 ug/kg	99
15) Tert-Butyl Alcohol	6.75	59	117182	212.1200 ug/kg	98
16) Dimethyl Sulfide	6.88	62	111297	52.1588 ug/kg	97
17) Iodomethane	7.14	142	63424	42.7063 ug/kg	98
18) Methyl acetate	7.14	43	166073	60.5078 ug/kg	97
19) Methylene Chloride	7.40	84	136418	49.6125 ug/kg	93
20) Carbon Disulfide	7.45	76	404084	51.9554 ug/kg	99
21) Acrylonitrile	7.59	53	77407	57.0106 ug/kg	99
22) Methyl Tert Butyl Ether	7.61	73	416760	53.2169 ug/kg	98
23) trans-1,2-Dichloroethene	7.85	61	235917	52.4314 ug/kg	96
24) n-Hexane	7.92	57	263016	56.6727 ug/kg	100
25) Diisopropyl ether	8.26	45	1195367	110.9012 ug/kg	98
26) Vinyl Acetate	8.43	43	313012	50.9414 ug/kg	99
27) 1,1-Dichloroethane	8.47	63	287207	50.8195 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	1064834	106.2487 ug/kg	98
29) 2-Butanone	9.02	43	93561	53.7018 ug/kg	98
30) Propionitrile	9.14	54	60333	113.1611 ug/kg	99
31) 2,2-Dichloropropane	9.24	77	211528	50.1463 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	153158	51.8989 ug/kg	93
33) Chloroform	9.52	83	261190	50.3104 ug/kg	100
34) 1-Bromopropane	9.65	122	22000	48.9279 ug/kg	99
35) Bromochloromethane	9.75	130	99779	52.0504 ug/kg	91
36) Tetrahydrofuran	9.78	42	129342	115.1741 ug/kg	98
38) 1,1,1-Trichloroethane	10.04	97	235016	50.0576 ug/kg	95
39) Cyclohexane	10.08	56	290166	56.6880 ug/kg	98
40) 1,1-Dichloropropene	10.24	75	186325	50.4353 ug/kg	99
41) Tert-Amyl-Methyl ether	10.34	73	761065	104.4717 ug/kg	98
42) Carbon Tetrachloride	10.39	117	215214	49.4450 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M973099.D 8260SL.M Sun Mar 06 16:18:42 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030616\9M973099.D Vial: 3
Acq On : 6 Mar 2016 15:56 Operator: ADC
Sample : WG559858-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 06 16:18:41 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	251601	55.0967 ug/kg	97
46)	Benzene	10.60	78	517616	50.0464 ug/kg	99
47)	Trichloroethene	11.35	130	165110	50.3822 ug/kg	96
48)	Methylcyclohexane	11.44	83	229191	55.7610 ug/kg	96
49)	1,2-Dichloropropane	11.57	63	152881	53.8278 ug/kg	100
50)	1,4-Dioxane	11.88	88	10267	240.9603 ug/kg	97
51)	Bromodichloromethane	11.87	83	203332	50.7986 ug/kg	98
52)	Dibromomethane	11.96	174	98058	52.1071 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.17	63	36203	46.3473 ug/kg	97
54)	4-Methyl-2-Pentanone	12.19	58	69290	55.5824 ug/kg	99
55)	cis-1,3-Dichloropropene	12.50	75	217717	52.2080 ug/kg	98
56)	Dimethyl Disulfide	12.77	94	231653	55.2768 ug/kg	98
59)	Toluene	12.92	91	580049	49.5729 ug/kg	100
60)	Ethyl Methacrylate	13.02	69	181833	56.0636 ug/kg	97
61)	trans-1,3-Dichloropropene	13.10	75	215831	51.2133 ug/kg	99
62)	1,1,2-Trichloroethane	13.32	97	133530	54.3244 ug/kg	100
63)	2-Hexanone	13.25	43	133511	54.4017 ug/kg	99
64)	1,3-Dichloropropane	13.62	76	209116	51.0567 ug/kg	93
65)	Tetrachloroethene	13.75	164	123539	49.2495 ug/kg	96
66)	Dibromochloromethane	14.01	129	172466	50.2051 ug/kg	97
67)	1,2-Dibromoethane	14.28	107	135412	49.6671 ug/kg	98
68)	1-Chlorohexane	14.35	91	186775	54.1291 ug/kg	94
69)	Chlorobenzene	14.77	112	403713	49.0916 ug/kg	98
70)	1,1,1,2-Tetrachloroethane	14.80	131	155707	50.4182 ug/kg	94
71)	Ethylbenzene	14.79	106	215364	50.8323 ug/kg	100
72)	m-,p-Xylene	14.89	106	531429	101.5671 ug/kg	97
73)	o-Xylene	15.45	106	257893	51.3606 ug/kg	99
74)	Styrene	15.49	104	440272	51.4903 ug/kg	99
75)	Bromoform	15.99	173	114415	50.7277 ug/kg	99
76)	Isopropylbenzene	15.87	105	694457	51.5184 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	154978	46.6764 ug/kg	100
80)	1,2,3-Trichloropropane	16.29	110	59930	47.5946 ug/kg	99
81)	trans-1,4-Dichloro-2-Buten	16.33	53	70039	55.1818 ug/kg	79
82)	n-Propylbenzene	16.39	91	801774	46.6010 ug/kg	98
83)	Bromobenzene	16.52	156	179091	44.0932 ug/kg	93
84)	1,3,5-Trimethylbenzene	16.57	105	589463	45.6422 ug/kg	99
85)	2-Chlorotoluene	16.66	91	523842	45.3944 ug/kg	100
86)	4-Chlorotoluene	16.70	91	484086	45.3731 ug/kg	99
87)	a-Methylstyrene	16.98	118	293131	49.8126 ug/kg	100
88)	tert-Butylbenzene	17.04	134	125771	46.4505 ug/kg	99
89)	1,2,4-Trimethylbenzene	17.09	105	604060	44.6620 ug/kg	100
90)	sec-Butylbenzene	17.30	105	771716	46.3949 ug/kg	99
91)	p-Isopropyltoluene	17.46	119	643926	45.8721 ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	343352	42.5349 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	342896	42.4908 ug/kg	100
94)	n-Butylbenzene	17.99	91	613993	47.0438 ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	330049	44.0654 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	42809	44.5225 ug/kg	98
97)	1,2,4-Trichlorobenzene	20.43	180	227738	42.8315 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	120658	43.0494 ug/kg	99
99)	Naphthalene	20.81	128	614969	46.1125 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	228091	44.2281 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030616\9M973099.D Vial: 3
Acq On : 6 Mar 2016 15:56 Operator: ADC
Sample : WG559858-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 6 16:18 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

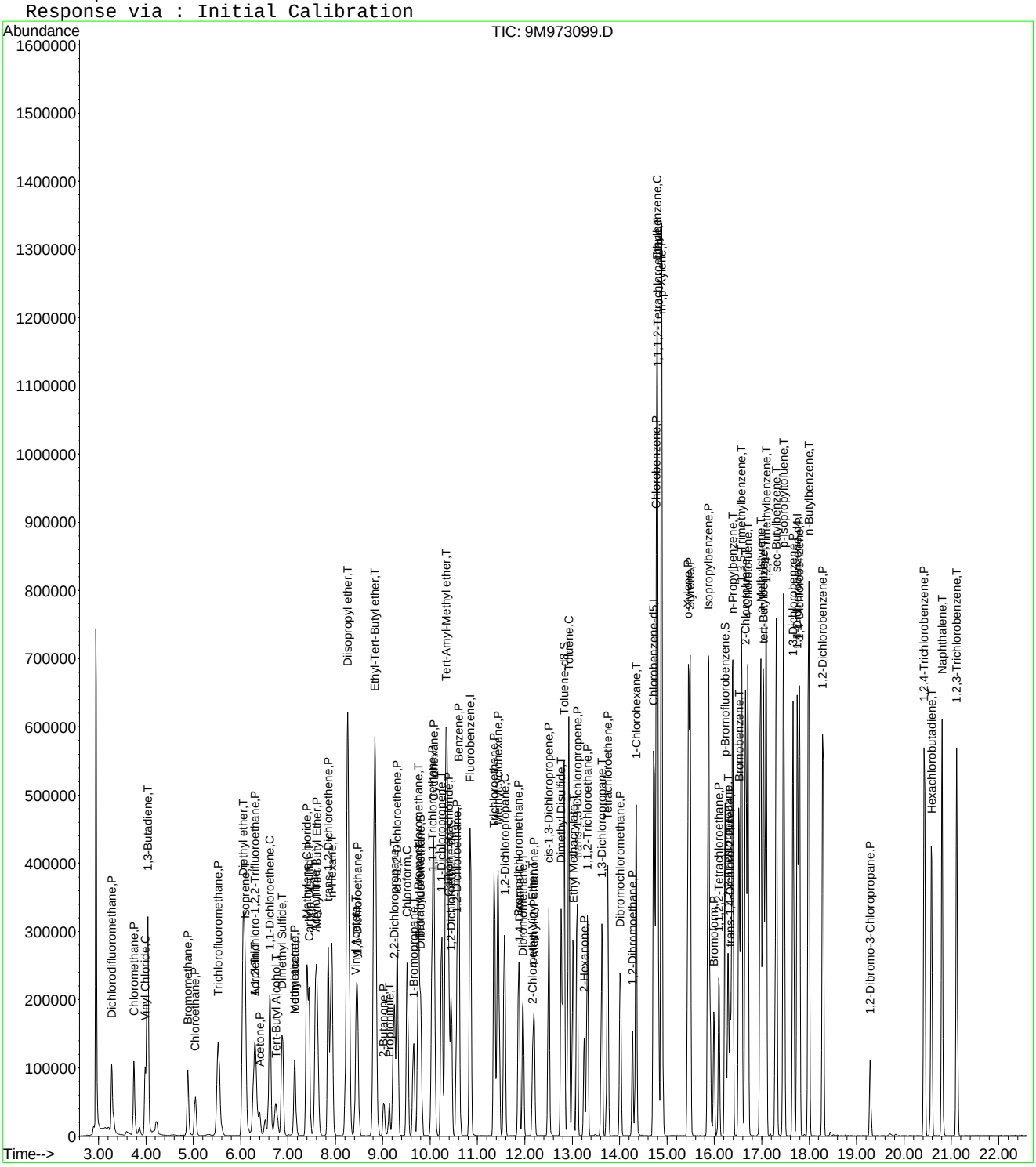

9M973099.D 8260SL.M Sun Mar 06 16:18:42 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\030616\9M973099.D Vial: 3
Acq On : 6 Mar 2016 15:56 Operator: ADC
Sample : WG559858-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	104	0.00
2	P	Dichlorodifluoromethane	0.3408	0.2829	17.0	75	0.00
3	P	Chloromethane	0.3271	0.2901	11.3	84	0.00
4	C	Vinyl Chloride	0.3275	0.3378	-3.2	95	0.00
5	T	1,3-Butadiene	0.3115	0.3540	-13.6	112	0.00
6	P	Bromomethane	0.2127	0.1787	16.0	89	0.00
7	P	Chloroethane	0.1459	0.1407	3.5	89	0.00
8	P	Trichlorofluoromethane	0.4911	0.4689	4.5	95	0.00
9	T	Diethyl ether	0.2296	0.2443	-6.4	106	0.01
10	T	Isoprene	0.2932	0.3222	-9.9	111	0.01
11	T	Acrolein	0.0458	0.0485	-6.0	106	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	0.2533	0.2510	0.9	100	0.00
13	P	Acetone	0.1376	0.1276	7.3	104	0.00
14	C	1,1-Dichloroethene	0.4672	0.4711	-0.8	104	0.00
15	T	Tert-Butyl Alcohol	0.0511	0.0542	-6.0	112	-0.01
16	T	Dimethyl Sulfide	0.1975	0.2060	-4.3	102	0.00
17	T	Iodomethane	0.1273	0.1174	7.8	80	0.01
18	P	Methyl acetate	0.2540	0.3074	-21.0	122	0.00
19	P	Methylene Chloride	0.2545	0.2525	0.8	101	0.00
20	P	Carbon Disulfide	0.7198	0.7479	-3.9	106	0.00
21	T	Acrylonitrile	0.1257	0.1433	-14.0	111	0.00
22	P	Methyl Tert Butyl Ether	0.7248	0.7714	-6.4	102	0.00
23	P	trans-1,2-Dichloroethene	0.4164	0.4367	-4.9	104	0.00
24	T	n-Hexane	0.4295	0.4868	-13.3	120	0.01
25	T	Diisopropyl ether	0.9975	1.1063	-10.9	110	0.00
26	T	Vinyl Acetate	0.5686	0.5794	-1.9	100	0.00
27	P	1,1-Dichloroethane	0.5230	0.5316	-1.6	101	0.00
28	T	Ethyl-Tert-Butyl ether	0.9275	0.9855	-6.2	104	0.00
29	P	2-Butanone	0.1612	0.1732	-7.4	109	-0.01
30	T	Propionitrile	0.0493	0.0558	-13.2	113	0.00
31	T	2,2-Dichloropropane	0.3904	0.3915	-0.3	98	0.00
32	P	cis-1,2-Dichloroethene	0.2731	0.2835	-3.8	100	0.00
33	C	Chloroform	0.4805	0.4834	-0.6	99	0.00
34	T	1-Bromopropane	0.0376	0.0407	-8.3	99	0.00
35	T	Bromochloromethane	0.1774	0.1847	-4.1	97	0.00
36	T	Tetrahydrofuran	0.1039	0.1197	-15.2	114	0.00
37	S	Dibromofluoromethane	0.2710	0.2644	2.4	97	0.00
38	P	1,1,1-Trichloroethane	0.4345	0.4350	-0.1	97	0.00
39	P	Cyclohexane	0.4737	0.5371	-13.4	117	0.00
40	T	1,1-Dichloropropene	0.3419	0.3449	-0.9	102	0.00
41	T	Tert-Amyl-Methyl ether	0.6742	0.7043	-4.5	103	0.00
42	P	Carbon Tetrachloride	0.4028	0.3983	1.1	97	0.00
43	S	1,2-Dichloroethane-d4	0.3401	0.3327	2.2	98	0.00
44		Heptane	0.0000	0.0000	0.0	110	0.00
45	P	1,2-Dichloroethane	0.4226	0.4657	-10.2	106	0.00
46	P	Benzene	0.9572	0.9581	-0.1	103	0.00
47	P	Trichloroethene	0.3033	0.3056	-0.8	101	0.00
48	P	Methylcyclohexane	0.3804	0.4242	-11.5	112	0.00
49	C	1,2-Dichloropropane	0.2628	0.2830	-7.7	103	0.01
50	T	1,4-Dioxane	0.0039	0.0047	-20.6	132	0.00
51	P	Bromodichloromethane	0.3704	0.3764	-1.6	100	0.00
52	T	Dibromomethane	0.1742	0.1815	-4.2	102	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0665	0.0670	-0.7	94	0.00
54	P	4-Methyl-2-Pentanone	0.1154	0.1283	-11.2	107	0.00

(#) = Out of Range
9M973099.D 8260SL.M Mon Mar 07 08:50:47 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\030616\9M973099.D Vial: 3
Acq On : 6 Mar 2016 15:56 Operator: ADC
Sample : WG559858-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	0.3859	0.4030	-4.4	102	0.00
56	T	Dimethyl Disulfide	0.3878	0.4288	-10.6	105	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	108	-0.01
58	S	Toluene-d8	1.2647	1.2366	2.2	99	0.00
59	C	Toluene	1.4286	1.4164	0.9	103	0.00
60	T	Ethyl Methacrylate	0.3960	0.4440	-12.1	114	0.00
61	P	trans-1,3-Dichloropropene	0.5145	0.5270	-2.4	102	0.00
62	P	1,1,2-Trichloroethane	0.3001	0.3261	-8.7	109	-0.01
63	P	2-Hexanone	0.2996	0.3260	-8.8	112	0.00
64	T	1,3-Dichloropropane	0.5001	0.5106	-2.1	104	-0.01
65	P	Tetrachloroethene	0.3063	0.3017	1.5	106	0.00
66	P	Dibromochloromethane	0.4194	0.4211	-0.4	102	0.00
67	P	1,2-Dibromoethane	0.3329	0.3307	0.7	102	0.00
68	T	1-Chlorohexane	0.4213	0.4561	-8.3	111	0.00
69	P	Chlorobenzene	1.0041	0.9858	1.8	101	0.00
70	T	1,1,1,2-Tetrachloroethane	0.3771	0.3802	-0.8	101	0.00
71	C	Ethylbenzene	0.5173	0.5259	-1.7	104	-0.01
72	P	m-,p-Xylene	0.6388	0.6488	-1.6	107	0.00
73	P	o-Xylene	0.6130	0.6297	-2.7	104	0.00
74	P	Styrene	1.0440	1.0751	-3.0	103	0.00
75	P	Bromoform	0.2754	0.2794	-1.5	99	-0.01
76	P	Isopropylbenzene	1.6458	1.6958	-3.0	105	-0.01
77	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	120	-0.01
78	P	1,1,2,2-Tetrachloroethane	0.7585	0.7081	6.6	105	-0.01
79	S	p-Bromofluorobenzene	0.9736	0.9675	0.6	110	0.00
80	T	1,2,3-Trichloropropane	0.2876	0.2738	4.8	108	0.00
81	T	trans-1,4-Dichloro-2-Butene	0.2899	0.3200	-10.4	126	0.00
82	T	n-Propylbenzene	3.9303	3.6631	6.8	107	0.00
83	T	Bromobenzene	0.9278	0.8182	11.8	101	0.00
84	T	1,3,5-Trimethylbenzene	2.9502	2.6931	8.7	104	-0.01
85	T	2-Chlorotoluene	2.6361	2.3933	9.2	108	0.00
86	T	4-Chlorotoluene	2.4372	2.2117	9.3	101	0.00
87	T	a-Methylstyrene	1.3443	1.3392	0.4	115	0.00
88	T	tert-Butylbenzene	0.6185	0.5746	7.1	103	0.00
89	T	1,2,4-Trimethylbenzene	3.0897	2.7598	10.7	104	0.00
90	T	sec-Butylbenzene	3.7998	3.5258	7.2	106	0.00
91	T	p-Isopropyltoluene	3.2067	2.9419	8.3	105	0.00
92	P	1,3-Dichlorobenzene	1.8440	1.5687	14.9	102	0.00
93	P	1,4-Dichlorobenzene	1.8435	1.5666	15.0	102	-0.01
94	T	n-Butylbenzene	2.9815	2.8052	5.9	109	0.00
95	P	1,2-Dichlorobenzene	1.7110	1.5079	11.9	103	-0.01
96	P	1,2-Dibromo-3-Chloropropane	0.2197	0.1956	11.0	100	-0.01
97	P	1,2,4-Trichlorobenzene	1.2146	1.0405	14.3	102	-0.01
98	T	Hexachlorobutadiene	0.6403	0.5513	13.9	103	0.00
99	T	Naphthalene	3.0465	2.8096	7.8	102	0.00
100	T	1,2,3-Trichlorobenzene	1.1781	1.0421	11.5	103	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M973099.D 8260SL.M Mon Mar 07 08:50:47 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\030616\9M973099.D Vial: 3
Acq On : 6 Mar 2016 15:56 Operator: ADC
Sample : WG559858-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	104	0.00
2	P	Dichlorodifluoromethane	50.0000	41.5088	17.0	75	0.00
3	P	Chloromethane	50.0000	44.3425	11.3	84	0.00
4	C	Vinyl Chloride	50.0000	51.5749	-3.1	95	0.00
5	T	1,3-Butadiene	50.0000	56.8180	-13.6	112	0.00
6	P	Bromomethane	50.0000	42.0233	16.0	89	0.00
7	P	Chloroethane	50.0000	48.2316	3.5	89	0.00
8	P	Trichlorofluoromethane	50.0000	47.7336	4.5	95	0.00
9	T	Diethyl ether	100.0000	106.4060	-6.4	106	0.01
10	T	Isoprene	50.0000	54.9366	-9.9	111	0.01
11	T	Acrolein	50.0000	52.9948	-6.0	106	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	49.5434	0.9	100	0.00
13	P	Acetone	50.0000	50.4935	-1.0	104	0.00
14	C	1,1-Dichloroethene	50.0000	50.4117	-0.8	104	0.00
15	T	Tert-Butyl Alcohol	200.0000	212.1200	-6.1	112	-0.01
16	T	Dimethyl Sulfide	50.0000	52.1588	-4.3	102	0.00
17	T	Iodomethane	50.0000	42.7063	14.6	80	0.01
18	P	Methyl acetate	50.0000	60.5078	-21.0	122	0.00
19	P	Methylene Chloride	50.0000	49.6125	0.8	101	0.00
20	P	Carbon Disulfide	50.0000	51.9554	-3.9	106	0.00
21	T	Acrylonitrile	50.0000	57.0106	-14.0	111	0.00
22	P	Methyl Tert Butyl Ether	50.0000	53.2169	-6.4	102	0.00
23	P	trans-1,2-Dichloroethene	50.0000	52.4314	-4.9	104	0.00
24	T	n-Hexane	50.0000	56.6727	-13.3	120	0.01
25	T	Diisopropyl ether	100.0000	110.9012	-10.9	110	0.00
26	T	Vinyl Acetate	50.0000	50.9414	-1.9	100	0.00
27	P	1,1-Dichloroethane	50.0000	50.8195	-1.6	101	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	106.2487	-6.2	104	0.00
29	P	2-Butanone	50.0000	53.7018	-7.4	109	-0.01
30	T	Propionitrile	100.0000	113.1611	-13.2	113	0.00
31	T	2,2-Dichloropropane	50.0000	50.1463	-0.3	98	0.00
32	P	cis-1,2-Dichloroethene	50.0000	51.8989	-3.8	100	0.00
33	C	Chloroform	50.0000	50.3104	-0.6	99	0.00
34	T	1-Bromopropane	50.0000	48.9279	2.1	99	0.00
35	T	Bromochloromethane	50.0000	52.0504	-4.1	97	0.00
36	T	Tetrahydrofuran	100.0000	115.1741	-15.2	114	0.00
37	S	Dibromofluoromethane	50.0000	48.7757	2.4	97	0.00
38	P	1,1,1-Trichloroethane	50.0000	50.0576	-0.1	97	0.00
39	P	Cyclohexane	50.0000	56.6880	-13.4	117	0.00
40	T	1,1-Dichloropropene	50.0000	50.4353	-0.9	102	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	104.4717	-4.5	103	0.00
42	P	Carbon Tetrachloride	50.0000	49.4450	1.1	97	0.00
43	S	1,2-Dichloroethane-d4	50.0000	48.9121	2.2	98	0.00
44		Heptane	-1.0000	0.0000	0.0	110	0.00
45	P	1,2-Dichloroethane	50.0000	55.0967	-10.2	106	0.00
46	P	Benzene	50.0000	50.0464	-0.1	103	0.00
47	P	Trichloroethene	50.0000	50.3822	-0.8	101	0.00
48	P	Methylcyclohexane	50.0000	55.7610	-11.5	112	0.00
49	C	1,2-Dichloropropane	50.0000	53.8278	-7.7	103	0.01
50	T	1,4-Dioxane	200.0000	240.9603	-20.5	132	0.00
51	P	Bromodichloromethane	50.0000	50.7986	-1.6	100	0.00
52	T	Dibromomethane	50.0000	52.1071	-4.2	102	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	46.3473	7.3	94	0.00
54	P	4-Methyl-2-Pentanone	50.0000	55.5824	-11.2	107	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\030616\9M973099.D Vial: 3
Acq On : 6 Mar 2016 15:56 Operator: ADC
Sample : WG559858-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	52.2080	-4.4	102	0.00
56	T	Dimethyl Disulfide	50.0000	55.2768	-10.6	105	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	108	-0.01
58	S	Toluene-d8	50.0000	48.8897	2.2	99	0.00
59	C	Toluene	50.0000	49.5729	0.9	103	0.00
60	T	Ethyl Methacrylate	50.0000	56.0637	-12.1	114	0.00
61	P	trans-1,3-Dichloropropene	50.0000	51.2133	-2.4	102	0.00
62	P	1,1,2-Trichloroethane	50.0000	54.3244	-8.6	109	-0.01
63	P	2-Hexanone	50.0000	54.4017	-8.8	112	0.00
64	T	1,3-Dichloropropane	50.0000	51.0567	-2.1	104	-0.01
65	P	Tetrachloroethene	50.0000	49.2495	1.5	106	0.00
66	P	Dibromochloromethane	50.0000	50.2051	-0.4	102	0.00
67	P	1,2-Dibromoethane	50.0000	49.6671	0.7	102	0.00
68	T	1-Chlorohexane	50.0000	54.1291	-8.3	111	0.00
69	P	Chlorobenzene	50.0000	49.0916	1.8	101	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	50.4182	-0.8	101	0.00
71	C	Ethylbenzene	50.0000	50.8323	-1.7	104	-0.01
72	P	m-,p-Xylene	100.0000	101.5671	-1.6	107	0.00
73	P	o-Xylene	50.0000	51.3606	-2.7	104	0.00
74	P	Styrene	50.0000	51.4903	-3.0	103	0.00
75	P	Bromoform	50.0000	50.7277	-1.5	99	-0.01
76	P	Isopropylbenzene	50.0000	51.5184	-3.0	105	-0.01
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	120	-0.01
78	P	1,1,2,2-Tetrachloroethane	50.0000	46.6764	6.6	105	-0.01
79	S	p-Bromofluorobenzene	50.0000	49.6883	0.6	110	0.00
80	T	1,2,3-Trichloropropane	50.0000	47.5946	4.8	108	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	55.1818	-10.4	126	0.00
82	T	n-Propylbenzene	50.0000	46.6011	6.8	107	0.00
83	T	Bromobenzene	50.0000	44.0932	11.8	101	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	45.6422	8.7	104	-0.01
85	T	2-Chlorotoluene	50.0000	45.3944	9.2	108	0.00
86	T	4-Chlorotoluene	50.0000	45.3731	9.3	101	0.00
87	T	a-Methylstyrene	50.0000	49.8126	0.4	115	0.00
88	T	tert-Butylbenzene	50.0000	46.4505	7.1	103	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	44.6620	10.7	104	0.00
90	T	sec-Butylbenzene	50.0000	46.3948	7.2	106	0.00
91	T	p-Isopropyltoluene	50.0000	45.8721	8.3	105	0.00
92	P	1,3-Dichlorobenzene	50.0000	42.5349	14.9	102	0.00
93	P	1,4-Dichlorobenzene	50.0000	42.4908	15.0	102	-0.01
94	T	n-Butylbenzene	50.0000	47.0438	5.9	109	0.00
95	P	1,2-Dichlorobenzene	50.0000	44.0654	11.9	103	-0.01
96	P	1,2-Dibromo-3-Chloropropane	50.0000	44.5225	11.0	100	-0.01
97	P	1,2,4-Trichlorobenzene	50.0000	42.8315	14.3	102	-0.01
98	T	Hexachlorobutadiene	50.0000	43.0494	13.9	103	0.00
99	T	Naphthalene	50.0000	46.1125	7.8	102	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	44.2281	11.5	103	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M973099.D 8260SL.M Mon Mar 07 08:50:46 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030716\9M973121.D Vial: 1
Acq On : 7 Mar 2016 15:17 Operator: ADC
Sample : WG559980-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 15:39:41 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	541092	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	410315	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	216745	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	136467	46.5282 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.06%		
43) 1,2-Dichloroethane-d4	10.45	65	183191	49.7800 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.56%		
58) Toluene-d8	12.83	98	484876	46.7190 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 93.44%		
79) p-Bromofluorobenzene	16.23	95	209340	49.6010 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 99.20%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	165796	44.9556 ug/kg	94
3) Chloromethane	3.75	50	169574	47.9011 ug/kg	100
4) Vinyl Chloride	3.99	62	197450	55.7164 ug/kg	98
5) 1,3-Butadiene	4.04	54	219394	65.0725 ug/kg	97
6) Bromomethane	4.88	94	98848	42.9467 ug/kg	98
7) Chloroethane	5.04	64	86411	54.7318 ug/kg	95
8) Trichlorofluoromethane	5.52	101	293802	55.2768 ug/kg	99
9) Diethyl ether	6.05	59	250267	100.7243 ug/kg	95
10) Isoprene	6.09	67	187307	59.0273 ug/kg	94
11) Acrolein	6.29	56	24619	49.6910 ug/kg	88
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	150516	54.9114 ug/kg	98
13) Acetone	6.40	43	68407	50.0230 ug/kg	98
14) 1,1-Dichloroethene	6.62	61	269678	53.3335 ug/kg	98
15) Tert-Butyl Alcohol	6.75	59	100671	181.9557 ug/kg	95
16) Dimethyl Sulfide	6.88	62	110228	51.5795 ug/kg	89
17) Iodomethane	7.13	142	69289	46.3306 ug/kg	91
18) Methyl acetate	7.14	43	160928	58.5442 ug/kg	96
19) Methylene Chloride	7.40	84	137592	49.9635 ug/kg	89
20) Carbon Disulfide	7.44	76	422471	54.2371 ug/kg	98
21) Acrylonitrile	7.58	53	72603	53.3913 ug/kg	98
22) Methyl Tert Butyl Ether	7.61	73	405307	51.6759 ug/kg	98
23) trans-1,2-Dichloroethene	7.84	61	247137	54.8416 ug/kg	95
24) n-Hexane	7.91	57	280159	60.2750 ug/kg	98
25) Diisopropyl ether	8.25	45	1208461	111.9458 ug/kg	98
26) Vinyl Acetate	8.43	43	292604	47.5479 ug/kg	99
27) 1,1-Dichloroethane	8.46	63	305499	53.9742 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	1056064	105.2137 ug/kg	98
29) 2-Butanone	9.02	43	91173	52.2518 ug/kg	97
30) Propionitrile	9.14	54	54756	102.5450 ug/kg	100
31) 2,2-Dichloropropane	9.24	77	244010	57.7590 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	157098	53.1532 ug/kg	92
33) Chloroform	9.52	83	270735	52.0699 ug/kg	100
34) 1-Bromopropane	9.65	122	22771	50.5314 ug/kg	95
35) Bromochloromethane	9.75	130	98927	51.5276 ug/kg	89
36) Tetrahydrofuran	9.77	42	121362	107.9043 ug/kg	95
38) 1,1,1-Trichloroethane	10.05	97	258323	54.9384 ug/kg	94
39) Cyclohexane	10.08	56	303283	59.1607 ug/kg	97
40) 1,1-Dichloropropene	10.25	75	197941	53.4983 ug/kg	100
41) Tert-Amyl-Methyl ether	10.34	73	740706	101.5227 ug/kg	97
42) Carbon Tetrachloride	10.39	117	244485	56.0848 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030716\9M973121.D Vial: 1
Acq On : 7 Mar 2016 15:17 Operator: ADC
Sample : WG559980-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 15:39:41 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	244854	53.5379 ug/kg	97
46)	Benzene	10.60	78	520143	50.2144 ug/kg	98
47)	Trichloroethene	11.35	130	175462	53.4598 ug/kg	96
48)	Methylcyclohexane	11.44	83	244539	59.4048 ug/kg	97
49)	1,2-Dichloropropane	11.56	63	155975	54.8338 ug/kg	98
50)	1,4-Dioxane	11.88	88	8310	194.7348 ug/kg	100
51)	Bromodichloromethane	11.87	83	206988	51.6335 ug/kg	99
52)	Dibromomethane	11.97	174	93684	49.7073 ug/kg	96
53)	2-Chloroethyl Vinyl Ether	12.17	63	31739	40.9236 ug/kg	92
54)	4-Methyl-2-Pentanone	12.19	58	63874	51.1601 ug/kg	99
55)	cis-1,3-Dichloropropene	12.50	75	219123	52.4654 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	222676	53.0541 ug/kg	99
59)	Toluene	12.93	91	594424	50.7038 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	166383	51.2015 ug/kg	99
61)	trans-1,3-Dichloropropene	13.11	75	215529	51.0435 ug/kg	99
62)	1,1,2-Trichloroethane	13.32	97	123564	50.1734 ug/kg	99
63)	2-Hexanone	13.25	43	124506	50.6350 ug/kg	97
64)	1,3-Dichloropropane	13.62	76	202800	49.4195 ug/kg	91
65)	Tetrachloroethene	13.75	164	130531	51.9369 ug/kg	96
66)	Dibromochloromethane	14.01	129	168020	48.8169 ug/kg	98
67)	1,2-Dibromoethane	14.28	107	131380	48.0957 ug/kg	98
68)	1-Chlorohexane	14.35	91	198492	57.4143 ug/kg	94
69)	Chlorobenzene	14.77	112	418018	50.7334 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	157509	50.9037 ug/kg	98
71)	Ethylbenzene	14.79	106	220173	51.8675 ug/kg	96
72)	m-,p-Xylene	14.89	106	540452	103.0932 ug/kg	97
73)	o-Xylene	15.45	106	263463	52.3691 ug/kg	100
74)	Styrene	15.49	104	447543	52.2401 ug/kg	99
75)	Bromoform	16.00	173	115336	51.0378 ug/kg	99
76)	Isopropylbenzene	15.88	105	725612	53.7263 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	148425	45.1427 ug/kg	100
80)	1,2,3-Trichloropropane	16.29	110	58528	46.9386 ug/kg	97
81)	trans-1,4-Dichloro-2-Buten	16.33	53	66485	52.8972 ug/kg	85
82)	n-Propylbenzene	16.39	91	847299	49.7317 ug/kg	99
83)	Bromobenzene	16.52	156	182379	45.3446 ug/kg	94
84)	1,3,5-Trimethylbenzene	16.57	105	618570	48.3674 ug/kg	99
85)	2-Chlorotoluene	16.66	91	536292	46.9306 ug/kg	100
86)	4-Chlorotoluene	16.70	91	523267	49.5282 ug/kg	99
87)	a-Methylstyrene	16.98	118	292498	50.1941 ug/kg	99
88)	tert-Butylbenzene	17.04	134	128780	48.0299 ug/kg	94
89)	1,2,4-Trimethylbenzene	17.09	105	636478	47.5220 ug/kg	100
90)	sec-Butylbenzene	17.31	105	815584	49.5147 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	688161	49.5058 ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	362161	45.3065 ug/kg	98
93)	1,4-Dichlorobenzene	17.79	146	362635	45.3790 ug/kg	100
94)	n-Butylbenzene	17.99	91	663055	51.3028 ug/kg	99
95)	1,2-Dichlorobenzene	18.30	146	340271	45.8773 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	42077	44.1919 ug/kg	97
97)	1,2,4-Trichlorobenzene	20.44	180	243320	46.2124 ug/kg	98
98)	Hexachlorobutadiene	20.59	225	135057	48.6610 ug/kg	98
99)	Naphthalene	20.81	128	599108	45.3652 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.12	180	235710	46.1553 ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M973121.D 8260SL.M Mon Mar 07 15:39:42 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030716\9M973121.D Vial: 1
Acq On : 7 Mar 2016 15:17 Operator: ADC
Sample : WG559980-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 7 15:39 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

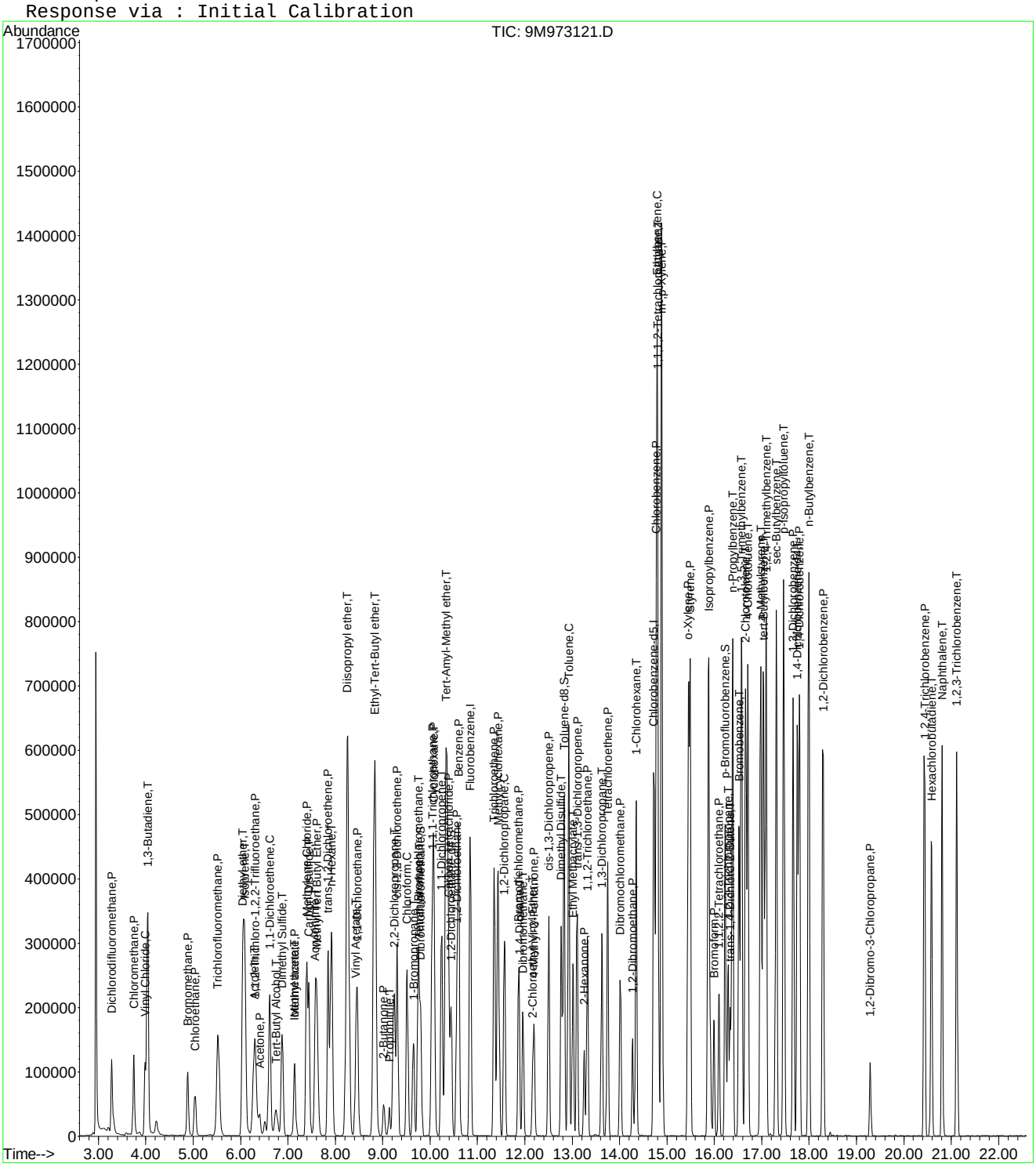

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\030716\9M973121.D Vial: 1
Acq On : 7 Mar 2016 15:17 Operator: ADC
Sample : WG559980-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	105	0.00
2	P	Dichlorodifluoromethane	0.3408	0.3064	10.1	81	0.00
3	P	Chloromethane	0.3271	0.3134	4.2	91	0.00
4	C	Vinyl Chloride	0.3275	0.3649	-11.4	103	0.00
5	T	1,3-Butadiene	0.3115	0.4055	-30.1#	128	0.00
6	P	Bromomethane	0.2127	0.1827	14.1	92	0.00
7	P	Chloroethane	0.1459	0.1597	-9.5	101	0.00
8	P	Trichlorofluoromethane	0.4911	0.5430	-10.6	110	0.00
9	T	Diethyl ether	0.2296	0.2313	-0.7	100	0.00
10	T	Isoprene	0.2932	0.3462	-18.1	120	0.00
11	T	Acrolein	0.0458	0.0455	0.6	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	0.2533	0.2782	-9.8	111	0.01
13	P	Acetone	0.1376	0.1264	8.1	103	0.00
14	C	1,1-Dichloroethene	0.4672	0.4984	-6.7	111	0.00
15	T	Tert-Butyl Alcohol	0.0511	0.0465	9.0	96	0.00
16	T	Dimethyl Sulfide	0.1975	0.2037	-3.2	101	0.00
17	T	Iodomethane	0.1273	0.1281	-0.6	87	0.00
18	P	Methyl acetate	0.2540	0.2974	-17.1	119	0.00
19	P	Methylene Chloride	0.2545	0.2543	0.1	102	0.00
20	P	Carbon Disulfide	0.7198	0.7808	-8.5	111	0.00
21	T	Acrylonitrile	0.1257	0.1342	-6.8	104	0.00
22	P	Methyl Tert Butyl Ether	0.7248	0.7490	-3.4	100	0.00
23	P	trans-1,2-Dichloroethene	0.4164	0.4567	-9.7	109	0.00
24	T	n-Hexane	0.4295	0.5178	-20.6	128	0.00
25	T	Diisopropyl ether	0.9975	1.1167	-11.9	111	0.00
26	T	Vinyl Acetate	0.5686	0.5408	4.9	94	0.00
27	P	1,1-Dichloroethane	0.5230	0.5646	-7.9	107	0.00
28	T	Ethyl-Tert-Butyl ether	0.9275	0.9759	-5.2	103	0.00
29	P	2-Butanone	0.1612	0.1685	-4.5	106	0.00
30	T	Propionitrile	0.0493	0.0506	-2.6	103	0.00
31	T	2,2-Dichloropropane	0.3904	0.4510	-15.5	113	0.00
32	P	cis-1,2-Dichloroethene	0.2731	0.2903	-6.3	102	0.00
33	C	Chloroform	0.4805	0.5003	-4.1	103	0.00
34	T	1-Bromopropane	0.0376	0.0421	-11.9	103	0.00
35	T	Bromochloromethane	0.1774	0.1828	-3.1	96	0.00
36	T	Tetrahydrofuran	0.1039	0.1122	-7.9	107	0.00
37	S	Dibromofluoromethane	0.2710	0.2522	6.9	92	0.00
38	P	1,1,1-Trichloroethane	0.4345	0.4774	-9.9	106	0.00
39	P	Cyclohexane	0.4737	0.5605	-18.3	122	0.00
40	T	1,1-Dichloropropene	0.3419	0.3658	-7.0	109	0.00
41	T	Tert-Amyl-Methyl ether	0.6742	0.6845	-1.5	100	0.00
42	P	Carbon Tetrachloride	0.4028	0.4518	-12.2	110	0.00
43	S	1,2-Dichloroethane-d4	0.3401	0.3386	0.4	100	0.00
44		Heptane	0.0000	0.0000	0.0	105	0.00
45	P	1,2-Dichloroethane	0.4226	0.4525	-7.1	103	0.00
46	P	Benzene	0.9572	0.9613	-0.4	103	0.00
47	P	Trichloroethene	0.3033	0.3243	-6.9	107	0.00
48	P	Methylcyclohexane	0.3804	0.4519	-18.8	120	0.00
49	C	1,2-Dichloropropane	0.2628	0.2883	-9.7	105	0.00
50	T	1,4-Dioxane	0.0039	0.0038	2.5	107	0.00
51	P	Bromodichloromethane	0.3704	0.3825	-3.3	102	0.00
52	T	Dibromomethane	0.1742	0.1731	0.6	98	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0665	0.0587	11.8	82	0.00
54	P	4-Methyl-2-Pentanone	0.1154	0.1181	-2.3	98	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\030716\9M973121.D Vial: 1
Acq On : 7 Mar 2016 15:17 Operator: ADC
Sample : WG559980-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	0.3859	0.4050	-4.9	103	0.00
56	T	Dimethyl Disulfide	0.3878	0.4115	-6.1	101	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	108	0.00
58	S	Toluene-d8	1.2647	1.1817	6.6	95	0.00
59	C	Toluene	1.4286	1.4487	-1.4	105	0.00
60	T	Ethyl Methacrylate	0.3960	0.4055	-2.4	105	0.00
61	P	trans-1,3-Dichloropropene	0.5145	0.5253	-2.1	101	0.00
62	P	1,1,2-Trichloroethane	0.3001	0.3011	-0.3	100	0.00
63	P	2-Hexanone	0.2996	0.3034	-1.3	104	0.00
64	T	1,3-Dichloropropane	0.5001	0.4943	1.2	101	0.00
65	P	Tetrachloroethene	0.3063	0.3181	-3.9	112	0.00
66	P	Dibromochloromethane	0.4194	0.4095	2.4	99	0.00
67	P	1,2-Dibromoethane	0.3329	0.3202	3.8	99	0.00
68	T	1-Chlorohexane	0.4213	0.4838	-14.8	118	0.00
69	P	Chlorobenzene	1.0041	1.0188	-1.5	104	0.00
70	T	1,1,1,2-Tetrachloroethane	0.3771	0.3839	-1.8	102	0.00
71	C	Ethylbenzene	0.5173	0.5366	-3.7	106	0.00
72	P	m-,p-Xylene	0.6388	0.6586	-3.1	109	0.00
73	P	o-Xylene	0.6130	0.6421	-4.7	106	0.00
74	P	Styrene	1.0440	1.0907	-4.5	105	0.00
75	P	Bromoform	0.2754	0.2811	-2.1	99	0.00
76	P	Isopropylbenzene	1.6458	1.7684	-7.5	110	0.00
77	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	118	0.00
78	P	1,1,2,2-Tetrachloroethane	0.7585	0.6848	9.7	100	0.00
79	S	p-Bromofluorobenzene	0.9736	0.9658	0.8	109	0.00
80	T	1,2,3-Trichloropropane	0.2876	0.2700	6.1	105	0.00
81	T	trans-1,4-Dichloro-2-Butene	0.2899	0.3067	-5.8	120	0.00
82	T	n-Propylbenzene	3.9303	3.9092	0.5	113	0.00
83	T	Bromobenzene	0.9278	0.8415	9.3	103	0.00
84	T	1,3,5-Trimethylbenzene	2.9502	2.8539	3.3	109	0.00
85	T	2-Chlorotoluene	2.6361	2.4743	6.1	111	0.00
86	T	4-Chlorotoluene	2.4372	2.4142	0.9	109	0.00
87	T	a-Methylstyrene	1.3443	1.3495	-0.4	114	0.00
88	T	tert-Butylbenzene	0.6185	0.5941	3.9	106	0.00
89	T	1,2,4-Trimethylbenzene	3.0897	2.9365	5.0	110	0.00
90	T	sec-Butylbenzene	3.7998	3.7629	1.0	112	0.00
91	T	p-Isopropyltoluene	3.2067	3.1750	1.0	112	0.00
92	P	1,3-Dichlorobenzene	1.8440	1.6709	9.4	107	0.00
93	P	1,4-Dichlorobenzene	1.8435	1.6731	9.2	108	0.00
94	T	n-Butylbenzene	2.9815	3.0591	-2.6	118	0.00
95	P	1,2-Dichlorobenzene	1.7110	1.5699	8.2	106	0.00
96	P	1,2-Dibromo-3-Chloropropane	0.2197	0.1941	11.6	98	0.00
97	P	1,2,4-Trichlorobenzene	1.2146	1.1226	7.6	109	0.00
98	T	Hexachlorobutadiene	0.6403	0.6231	2.7	115	0.00
99	T	Naphthalene	3.0465	2.7641	9.3	99	0.00
100	T	1,2,3-Trichlorobenzene	1.1781	1.0875	7.7	106	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M973121.D 8260SL.M Tue Mar 08 08:55:20 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\030716\9M973121.D Vial: 1
Acq On : 7 Mar 2016 15:17 Operator: ADC
Sample : WG559980-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	105	0.00
2	P	Dichlorodifluoromethane	50.0000	44.9556	10.1	81	0.00
3	P	Chloromethane	50.0000	47.9011	4.2	91	0.00
4	C	Vinyl Chloride	50.0000	55.7164	-11.4	103	0.00
5	T	1,3-Butadiene	50.0000	65.0725	-30.1#	128	0.00
6	P	Bromomethane	50.0000	42.9467	14.1	92	0.00
7	P	Chloroethane	50.0000	54.7317	-9.5	101	0.00
8	P	Trichlorofluoromethane	50.0000	55.2769	-10.6	110	0.00
9	T	Diethyl ether	100.0000	100.7243	-0.7	100	0.00
10	T	Isoprene	50.0000	59.0273	-18.1	120	0.00
11	T	Acrolein	50.0000	49.6910	0.6	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	54.9114	-9.8	111	0.01
13	P	Acetone	50.0000	50.0230	-0.0	103	0.00
14	C	1,1-Dichloroethene	50.0000	53.3335	-6.7	111	0.00
15	T	Tert-Butyl Alcohol	200.0000	181.9557	9.0	96	0.00
16	T	Dimethyl Sulfide	50.0000	51.5795	-3.2	101	0.00
17	T	Iodomethane	50.0000	46.3306	7.3	87	0.00
18	P	Methyl acetate	50.0000	58.5442	-17.1	119	0.00
19	P	Methylene Chloride	50.0000	49.9635	0.1	102	0.00
20	P	Carbon Disulfide	50.0000	54.2371	-8.5	111	0.00
21	T	Acrylonitrile	50.0000	53.3913	-6.8	104	0.00
22	P	Methyl Tert Butyl Ether	50.0000	51.6759	-3.4	100	0.00
23	P	trans-1,2-Dichloroethene	50.0000	54.8416	-9.7	109	0.00
24	T	n-Hexane	50.0000	60.2750	-20.5	128	0.00
25	T	Diisopropyl ether	100.0000	111.9458	-11.9	111	0.00
26	T	Vinyl Acetate	50.0000	47.5479	4.9	94	0.00
27	P	1,1-Dichloroethane	50.0000	53.9742	-7.9	107	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	105.2137	-5.2	103	0.00
29	P	2-Butanone	50.0000	52.2518	-4.5	106	0.00
30	T	Propionitrile	100.0000	102.5450	-2.5	103	0.00
31	T	2,2-Dichloropropane	50.0000	57.7590	-15.5	113	0.00
32	P	cis-1,2-Dichloroethene	50.0000	53.1532	-6.3	102	0.00
33	C	Chloroform	50.0000	52.0699	-4.1	103	0.00
34	T	1-Bromopropane	50.0000	50.5314	-1.1	103	0.00
35	T	Bromochloromethane	50.0000	51.5276	-3.1	96	0.00
36	T	Tetrahydrofuran	100.0000	107.9043	-7.9	107	0.00
37	S	Dibromofluoromethane	50.0000	46.5282	6.9	92	0.00
38	P	1,1,1-Trichloroethane	50.0000	54.9385	-9.9	106	0.00
39	P	Cyclohexane	50.0000	59.1607	-18.3	122	0.00
40	T	1,1-Dichloropropene	50.0000	53.4983	-7.0	109	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	101.5227	-1.5	100	0.00
42	P	Carbon Tetrachloride	50.0000	56.0848	-12.2	110	0.00
43	S	1,2-Dichloroethane-d4	50.0000	49.7800	0.4	100	0.00
44		Heptane	-1.0000	0.0000	0.0	105	0.00
45	P	1,2-Dichloroethane	50.0000	53.5379	-7.1	103	0.00
46	P	Benzene	50.0000	50.2144	-0.4	103	0.00
47	P	Trichloroethene	50.0000	53.4598	-6.9	107	0.00
48	P	Methylcyclohexane	50.0000	59.4048	-18.8	120	0.00
49	C	1,2-Dichloropropane	50.0000	54.8338	-9.7	105	0.00
50	T	1,4-Dioxane	200.0000	194.7347	2.6	107	0.00
51	P	Bromodichloromethane	50.0000	51.6335	-3.3	102	0.00
52	T	Dibromomethane	50.0000	49.7073	0.6	98	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	40.9236	18.2	82	0.00
54	P	4-Methyl-2-Pentanone	50.0000	51.1601	-2.3	98	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\030716\9M973121.D Vial: 1
Acq On : 7 Mar 2016 15:17 Operator: ADC
Sample : WG559980-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	52.4654	-4.9	103	0.00
56	T	Dimethyl Disulfide	50.0000	53.0541	-6.1	101	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	108	0.00
58	S	Toluene-d8	50.0000	46.7190	6.6	95	0.00
59	C	Toluene	50.0000	50.7038	-1.4	105	0.00
60	T	Ethyl Methacrylate	50.0000	51.2015	-2.4	105	0.00
61	P	trans-1,3-Dichloropropene	50.0000	51.0435	-2.1	101	0.00
62	P	1,1,2-Trichloroethane	50.0000	50.1734	-0.3	100	0.00
63	P	2-Hexanone	50.0000	50.6350	-1.3	104	0.00
64	T	1,3-Dichloropropane	50.0000	49.4195	1.2	101	0.00
65	P	Tetrachloroethene	50.0000	51.9369	-3.9	112	0.00
66	P	Dibromochloromethane	50.0000	48.8169	2.4	99	0.00
67	P	1,2-Dibromoethane	50.0000	48.0957	3.8	99	0.00
68	T	1-Chlorohexane	50.0000	57.4143	-14.8	118	0.00
69	P	Chlorobenzene	50.0000	50.7334	-1.5	104	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	50.9037	-1.8	102	0.00
71	C	Ethylbenzene	50.0000	51.8675	-3.7	106	0.00
72	P	m-,p-Xylene	100.0000	103.0932	-3.1	109	0.00
73	P	o-Xylene	50.0000	52.3691	-4.7	106	0.00
74	P	Styrene	50.0000	52.2401	-4.5	105	0.00
75	P	Bromoform	50.0000	51.0378	-2.1	99	0.00
76	P	Isopropylbenzene	50.0000	53.7263	-7.5	110	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	118	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	45.1427	9.7	100	0.00
79	S	p-Bromofluorobenzene	50.0000	49.6010	0.8	109	0.00
80	T	1,2,3-Trichloropropane	50.0000	46.9386	6.1	105	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	52.8972	-5.8	120	0.00
82	T	n-Propylbenzene	50.0000	49.7317	0.5	113	0.00
83	T	Bromobenzene	50.0000	45.3446	9.3	103	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	48.3674	3.3	109	0.00
85	T	2-Chlorotoluene	50.0000	46.9306	6.1	111	0.00
86	T	4-Chlorotoluene	50.0000	49.5282	0.9	109	0.00
87	T	a-Methylstyrene	50.0000	50.1941	-0.4	114	0.00
88	T	tert-Butylbenzene	50.0000	48.0299	3.9	106	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	47.5220	5.0	110	0.00
90	T	sec-Butylbenzene	50.0000	49.5147	1.0	112	0.00
91	T	p-Isopropyltoluene	50.0000	49.5058	1.0	112	0.00
92	P	1,3-Dichlorobenzene	50.0000	45.3065	9.4	107	0.00
93	P	1,4-Dichlorobenzene	50.0000	45.3790	9.2	108	0.00
94	T	n-Butylbenzene	50.0000	51.3028	-2.6	118	0.00
95	P	1,2-Dichlorobenzene	50.0000	45.8772	8.2	106	0.00
96	P	1,2-Dibromo-3-Chloropropane	50.0000	44.1919	11.6	98	0.00
97	P	1,2,4-Trichlorobenzene	50.0000	46.2124	7.6	109	0.00
98	T	Hexachlorobutadiene	50.0000	48.6610	2.7	115	0.00
99	T	Naphthalene	50.0000	45.3653	9.3	99	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	46.1553	7.7	106	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M973121.D 8260SL.M Tue Mar 08 08:55:18 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\1\DATA\022516\9M972894.D          Vial: 3
Acq On    : 25 Feb 2016  14:45                       Operator: ADC
Sample    : WG558732-01 BFB 50ng                     Inst    : hpms9
Misc      : 7,1 STD74773                             Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 02/15/16  HPMS9
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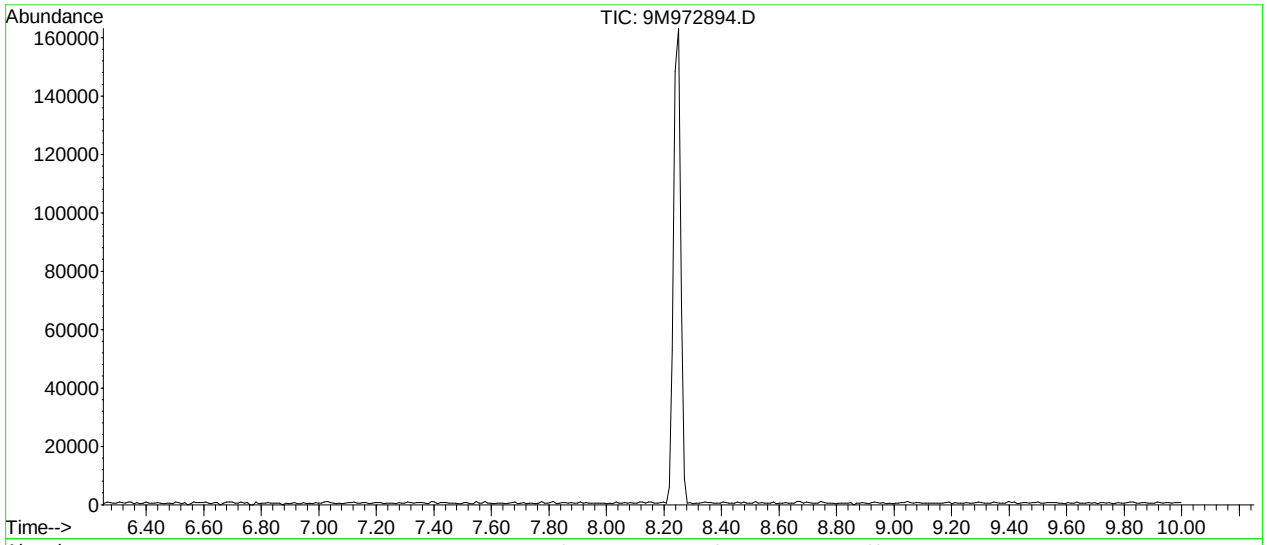

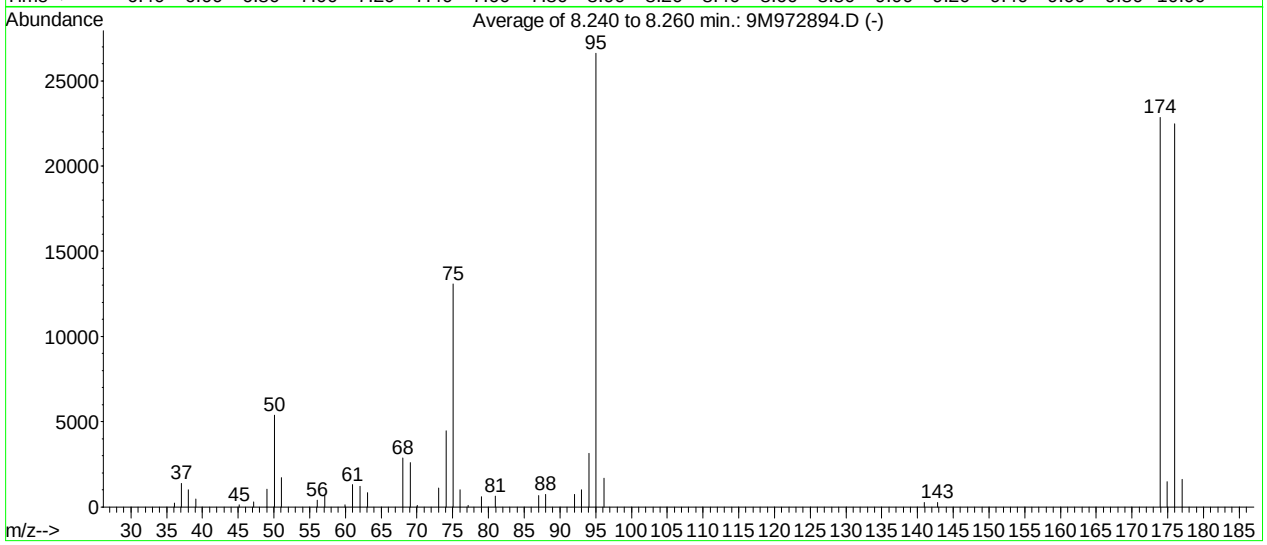

AutoFind: Scans 305, 306, 307; Background Corrected with Scan 300

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.2	5378	PASS
75	95	30	60	49.1	13067	PASS
95	95	100	100	100.0	26621	PASS
96	95	5	9	6.3	1683	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	85.8	22851	PASS
175	174	5	9	6.5	1485	PASS
176	174	95	101	98.3	22461	PASS
177	176	5	9	7.2	1619	PASS

9M972894.D 8260SL.M Fri Feb 26 11:11:03 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\030616\9M973096.D          Vial: 2
Acq On    :  6 Mar 2016  14:28                        Operator: ADC
Sample    : WG559858-01 BFB 50ng 8260                 Inst    : hpms9
Misc      : 7,1 STD74606                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 02/25/16  HPMS9
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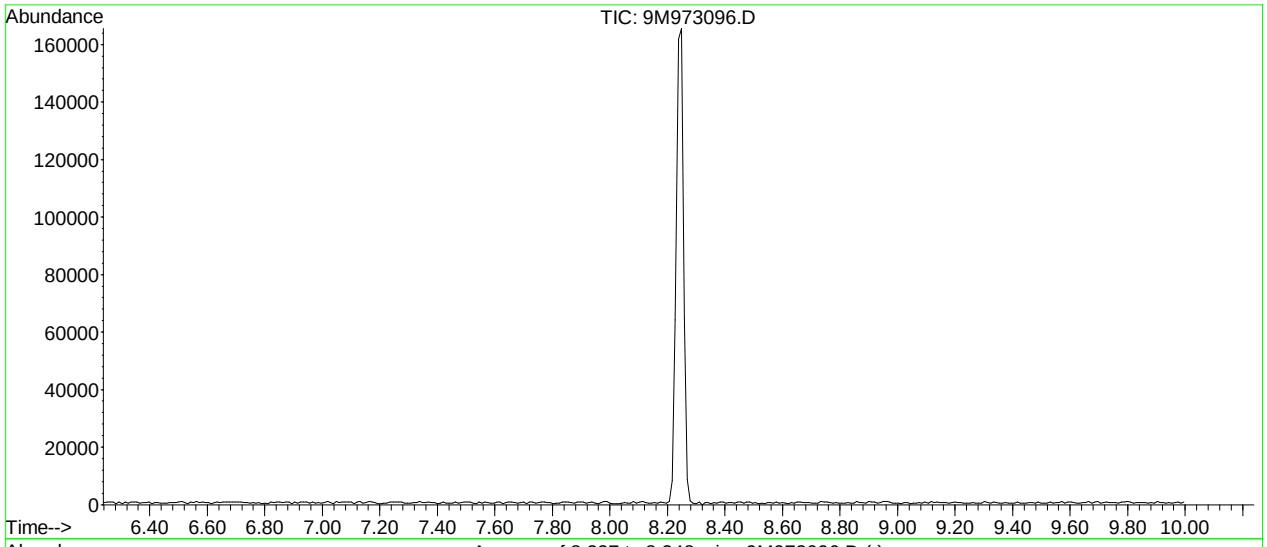

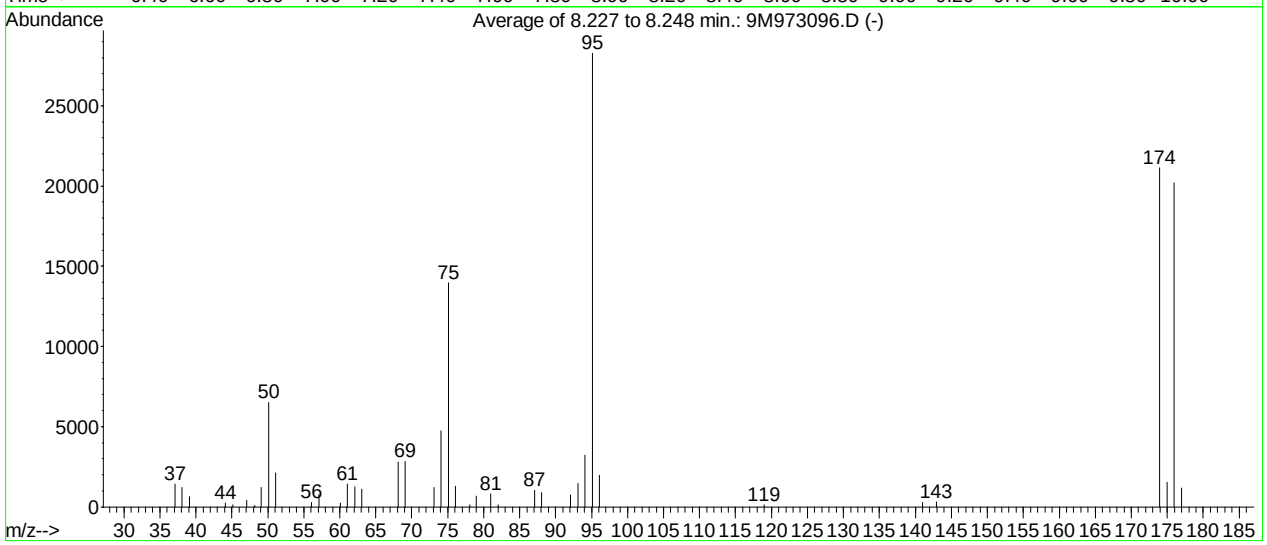

AutoFind: Scans 304, 305, 306; Background Corrected with Scan 300

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	23.0	6500	PASS
75	95	30	60	49.4	13966	PASS
95	95	100	100	100.0	28287	PASS
96	95	5	9	6.9	1954	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	74.8	21150	PASS
175	174	5	9	7.3	1550	PASS
176	174	95	101	95.6	20221	PASS
177	176	5	9	5.9	1186	PASS

9M973096.D 8260SL.M Mon Mar 07 08:50:59 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\030716\9M973120.D          Vial: 1
Acq On    :  7 Mar 2016  14:48                        Operator: ADC
Sample    : WG559980-01 BFB 50ng 8260                 Inst    : hpms9
Misc      : 7,1 STD74606                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 02/25/16  HPMS9
```

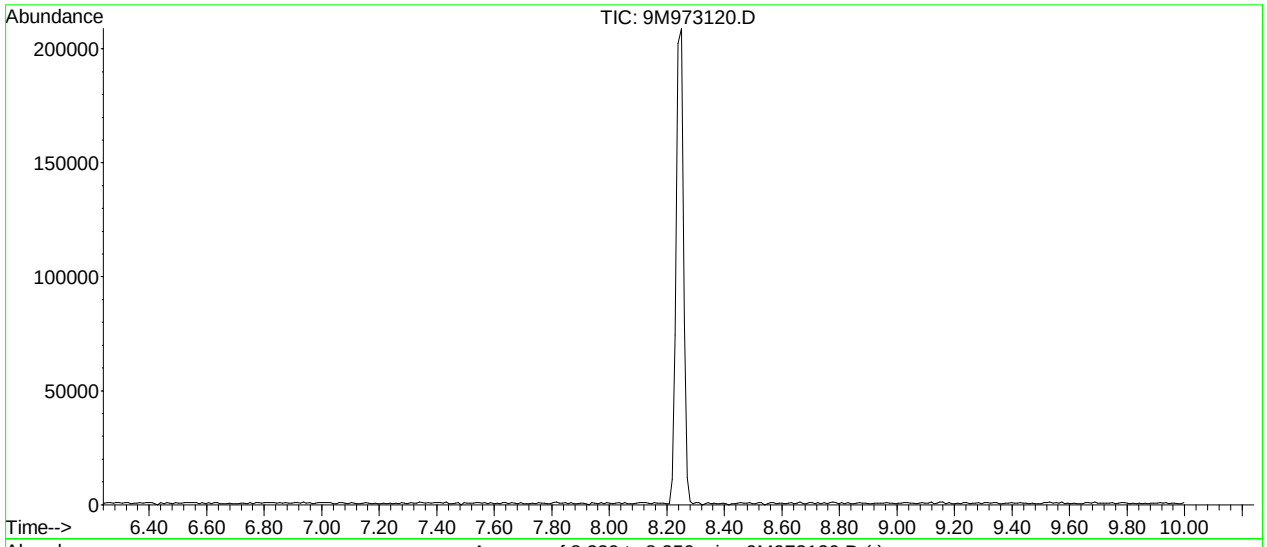

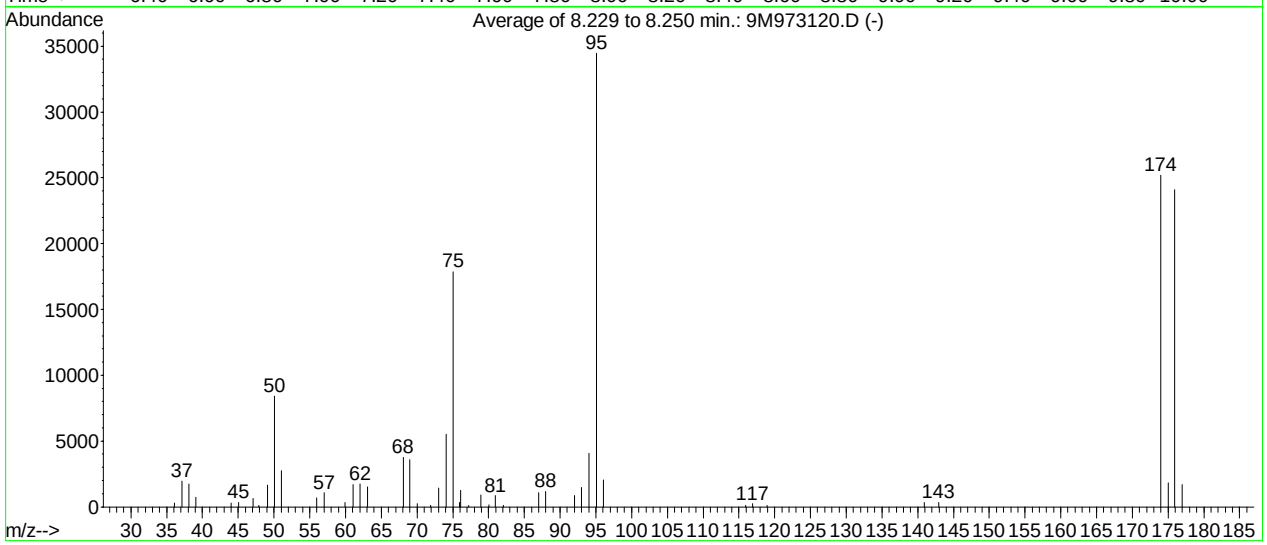

AutoFind: Scans 304, 305, 306; Background Corrected with Scan 300

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	24.3	8393	PASS
75	95	30	60	51.9	17879	PASS
95	95	100	100	100.0	34471	PASS
96	95	5	9	6.0	2058	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	73.1	25197	PASS
175	174	5	9	7.2	1804	PASS
176	174	95	101	95.6	24090	PASS
177	176	5	9	7.0	1676	PASS

9M973120.D 8260SL.M Tue Mar 08 08:55:09 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973101.D Vial: 5
Acq On : 6 Mar 2016 16:57 Operator: ADC
Sample : WG559859-01 VBLK0306 BLANK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 12:19:05 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	561969	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	419175	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	209918	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	146974	48.2489 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.50%		
43) 1,2-Dichloroethane-d4	10.45	65	190439	49.8270 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.66%		
58) Toluene-d8	12.83	98	526746	49.6805 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.36%		
79) p-Bromofluorobenzene	16.23	95	209348	51.2161 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.44%		

Target Compounds

					Qvalue
13) Acetone	6.40	43	5001	1.1851 ug/kg	85
36) Tetrahydrofuran	9.78	42	1481	1.2679 ug/kg#	43
56) Dimethyl Disulfide	12.83	94	15709	3.6037 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M973101.D 8260SL.M Mon Mar 07 12:19:05 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973101.D Vial: 5
Acq On : 6 Mar 2016 16:57 Operator: ADC
Sample : WG559859-01 VBLK0306 BLANK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 7 12:19 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

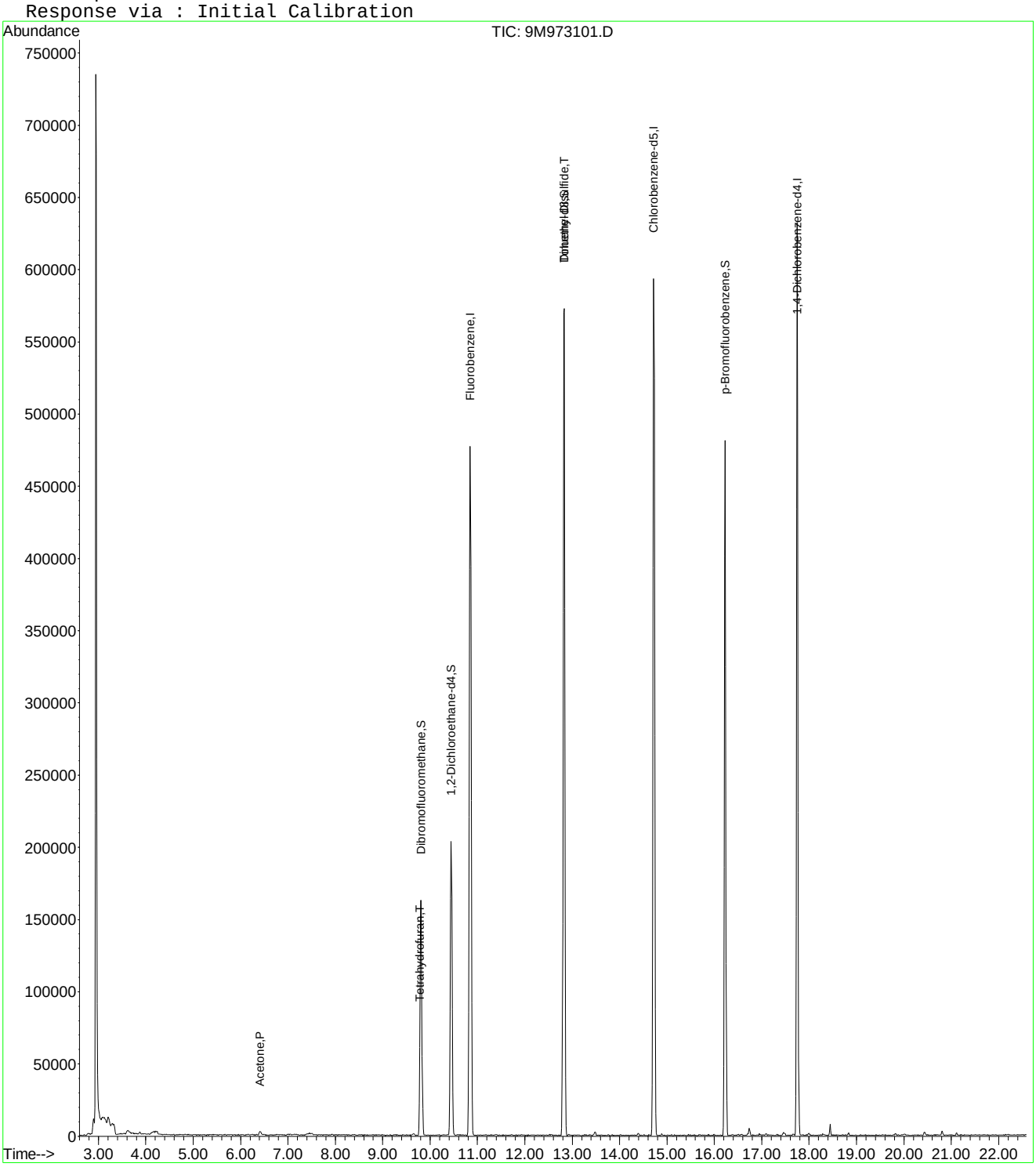

9M973101.D 8260SL.M Mon Mar 07 12:19:05 2016 Page 2

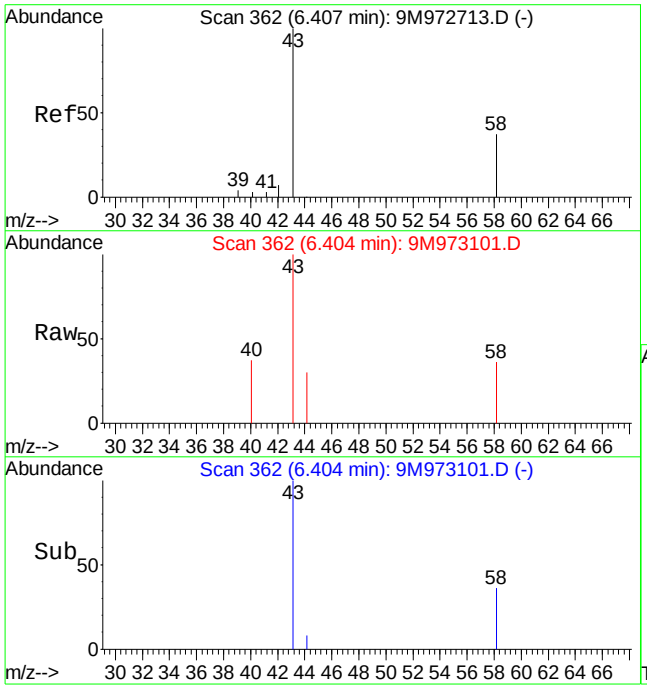

#13
Acetone
Concen: 1.19 ug/kg
RT: 6.40 min Scan# 362
Delta R.T. -0.01 min
Lab File: 9M973101.D
Acq: 6 Mar 2016 16:57

Tgt Ion: 43 Resp: 5001

Ion	Ratio	Lower	Upper
43	100		
58	35.8	16.9	39.3

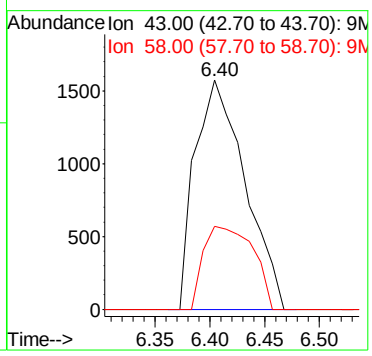

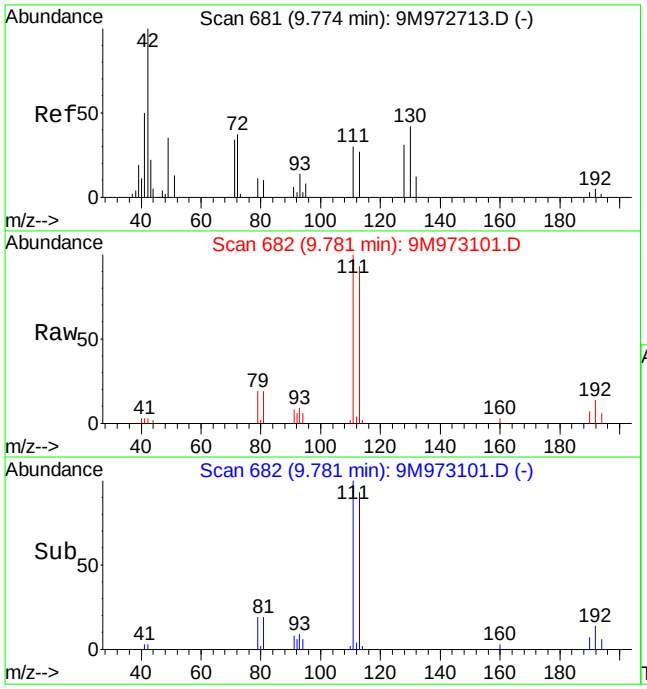

#36
Tetrahydrofuran
Concen: 1.27 ug/kg
RT: 9.78 min Scan# 682
Delta R.T. 0.00 min
Lab File: 9M973101.D
Acq: 6 Mar 2016 16:57

Tgt Ion: 42 Resp: 1481

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

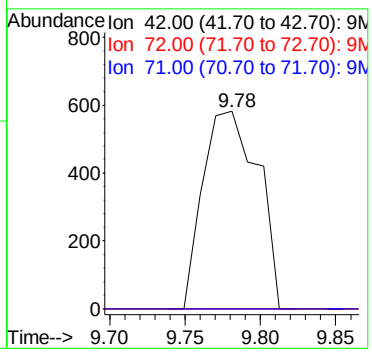

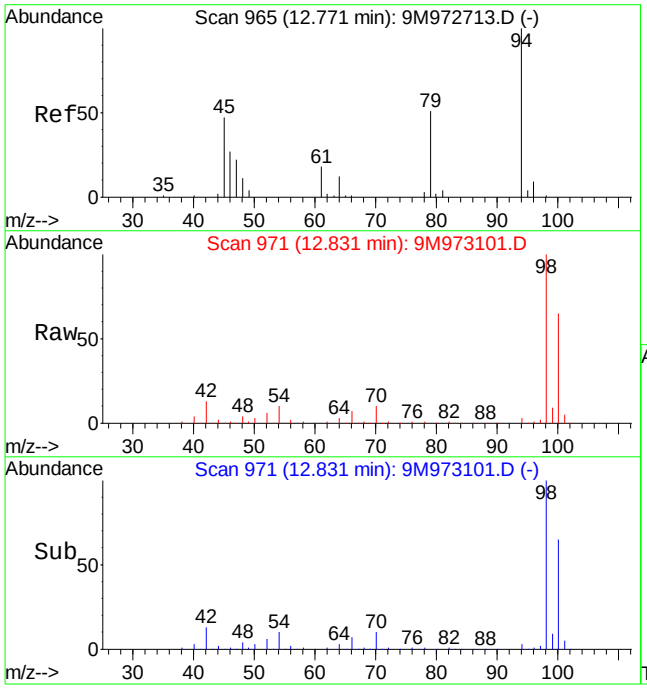

#56
Dimethyl Disulfide
Concen: 3.60 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.06 min
Lab File: 9M973101.D
Acq: 6 Mar 2016 16:57

Tgt Ion: 94 Resp: 15709

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

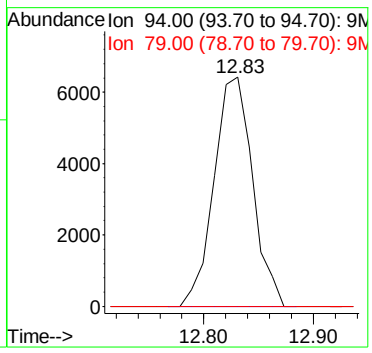

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030716\9M973123.D Vial: 3
Acq On : 7 Mar 2016 16:18 Operator: ADC
Sample : WG559982-01 VBLK0307 BLANK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 08 14:13:41 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	512722	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	377724	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	193847	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	135118	48.6173 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.24%		
43) 1,2-Dichloroethane-d4	10.45	65	176534	50.6253 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 101.26%		
58) Toluene-d8	12.82	98	473876	49.5987 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.20%		
79) p-Bromofluorobenzene	16.23	95	194741	51.5924 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 103.18%		

Target Compounds					Qvalue
13) Acetone	6.41	43	4966	1.5119 ug/kg	91
36) Tetrahydrofuran	9.77	42	968	0.9083 ug/kg#	43
56) Dimethyl Disulfide	12.82	94	12603	3.1689 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M973123.D 8260SL.M Tue Mar 08 14:13:41 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030716\9M973123.D Vial: 3
Acq On : 7 Mar 2016 16:18 Operator: ADC
Sample : WG559982-01 VBLK0307 BLANK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 8 14:13 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

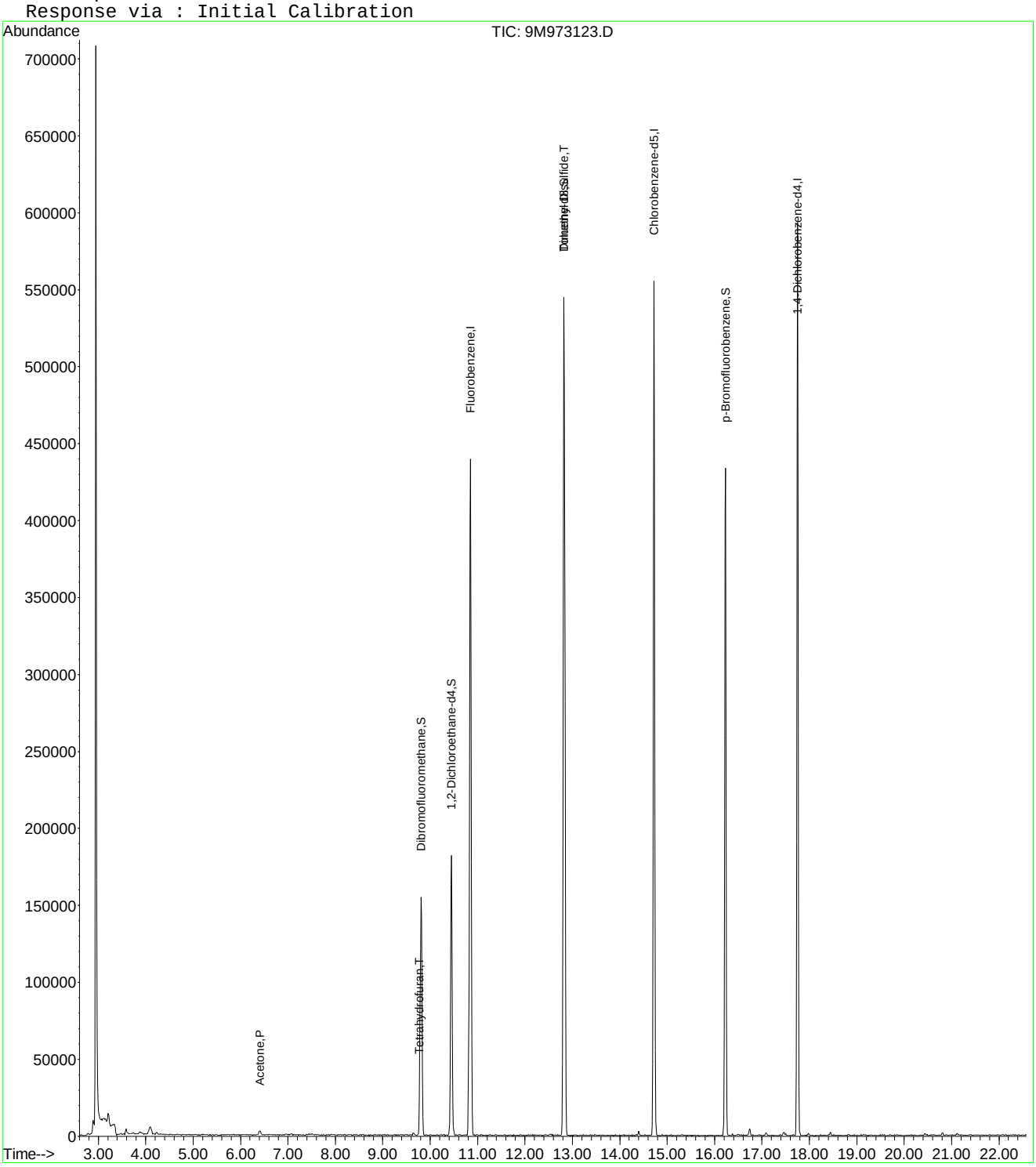

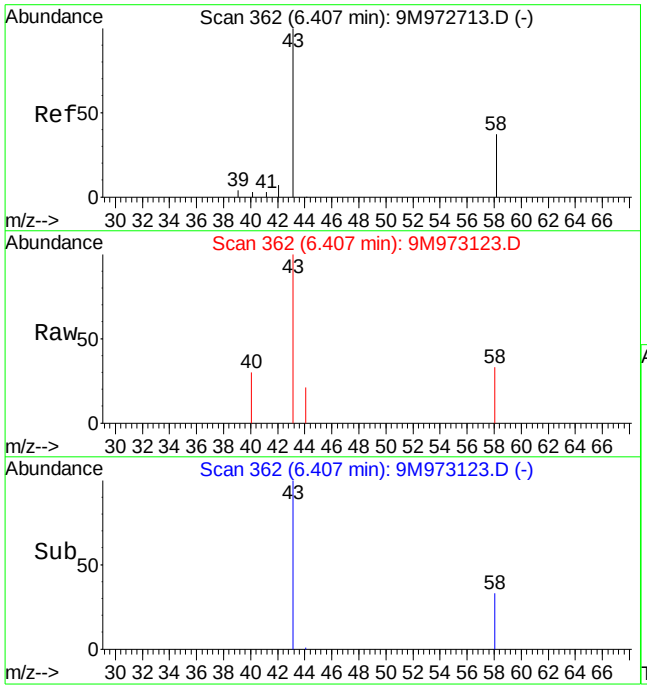

#13
Acetone
Concen: 1.51 ug/kg
RT: 6.41 min Scan# 362
Delta R.T. -0.01 min
Lab File: 9M973123.D
Acq: 7 Mar 2016 16:18

Tgt Ion: 43 Resp: 4966

Ion	Ratio	Lower	Upper
43	100		
58	33.0	16.9	39.3

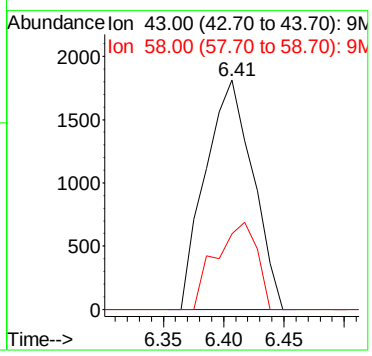

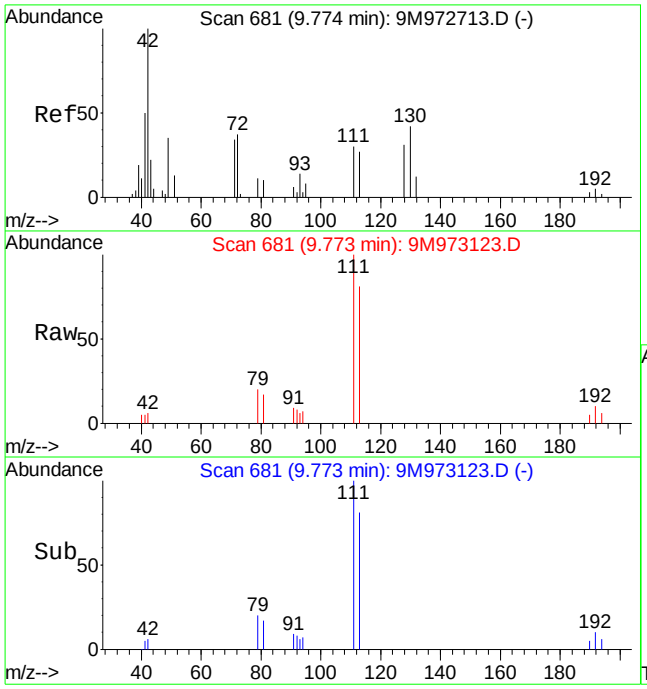

#36
Tetrahydrofuran
Concen: 0.91 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. -0.01 min
Lab File: 9M973123.D
Acq: 7 Mar 2016 16:18

Tgt Ion: 42 Resp: 968

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

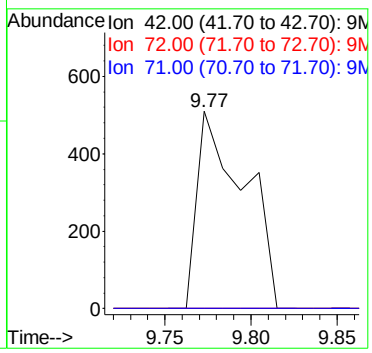

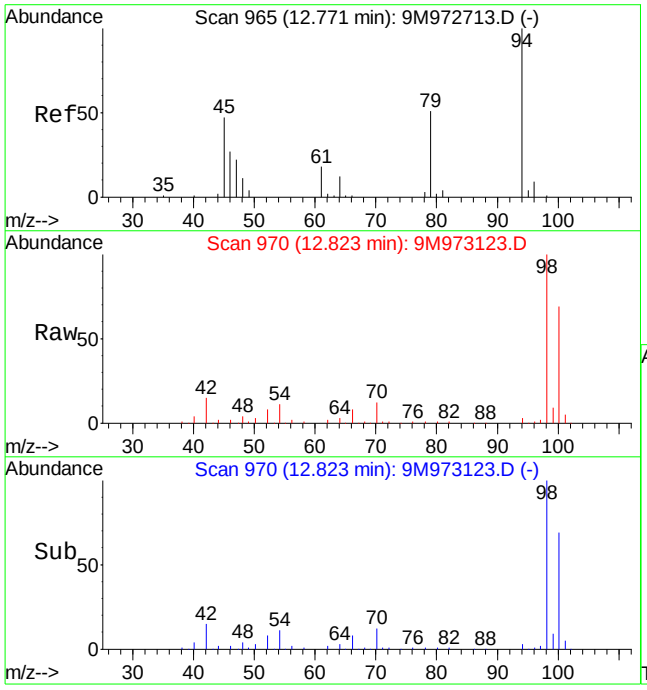

#56
Dimethyl Disulfide
Concen: 3.17 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M973123.D
Acq: 7 Mar 2016 16:18

Tgt Ion: 94 Resp: 12603

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

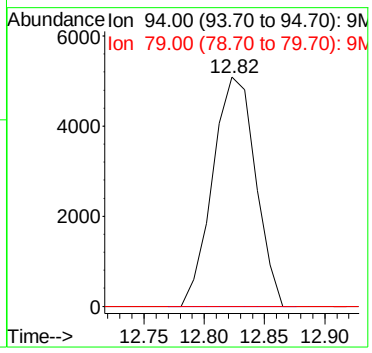

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030616\9M973102.D Vial: 6
Acq On : 6 Mar 2016 17:27 Operator: ADC
Sample : WG559859-02 20ug/L LCS 8260 Inst : hpms9
Misc : 7,1 STD74900 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 06 17:50:34 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	599667	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	449882	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	236934	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	159128	48.9549 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.90%		
43) 1,2-Dichloroethane-d4	10.45	65	198949	48.7813 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.56%		
58) Toluene-d8	12.82	98	571237	50.1993 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 100.40%		
79) p-Bromofluorobenzene	16.22	95	236329	51.2244 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.44%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	94480	23.1159 ug/kg	99
3) Chloromethane	3.75	50	77310	19.7053 ug/kg	98
4) Vinyl Chloride	3.99	62	82712	21.0599 ug/kg	100
5) 1,3-Butadiene	4.03	54	22381	5.9898 ug/kg	96
6) Bromomethane	4.89	94	46739	18.3232 ug/kg	96
7) Chloroethane	5.05	64	33247	19.0013 ug/kg	92
8) Trichlorofluoromethane	5.53	101	109280	18.5520 ug/kg	97
9) Diethyl ether	6.05	59	320855	116.5199 ug/kg	98
10) Isoprene	6.09	67	85179	24.2210 ug/kg	99
11) Acrolein	6.29	56	61647	112.2744 ug/kg	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	60451	19.8996 ug/kg	96
13) Acetone	6.41	43	33465	20.6774 ug/kg	96
14) 1,1-Dichloroethene	6.62	61	108890	19.4314 ug/kg	100
15) Tert-Butyl Alcohol	6.75	59	112894	184.1166 ug/kg	97
16) Dimethyl Sulfide	6.88	62	70485	29.7607 ug/kg	91
17) Iodomethane	7.14	142	25284	17.1319 ug/kg	96
18) Methyl acetate	7.15	43	65055	21.3547 ug/kg	98
19) Methylene Chloride	7.40	84	60446	19.8056 ug/kg	98
20) Carbon Disulfide	7.44	76	160362	18.5764 ug/kg	99
21) Acrylonitrile	7.59	53	31258	20.7414 ug/kg	97
22) Methyl Tert Butyl Ether	7.61	73	183920	21.1589 ug/kg	98
23) trans-1,2-Dichloroethene	7.84	61	101561	20.3358 ug/kg	98
24) n-Hexane	7.92	57	107355	20.8409 ug/kg	100
25) Diisopropyl ether	8.25	45	1351528	112.9695 ug/kg	99
26) Vinyl Acetate	8.43	43	148420	21.7623 ug/kg	99
27) 1,1-Dichloroethane	8.47	63	118305	18.8599 ug/kg	98
28) Ethyl-Tert-Butyl ether	8.83	59	1146457	103.0625 ug/kg	98
29) 2-Butanone	9.02	43	41754	21.5920 ug/kg	96
30) Propionitrile	9.14	54	60026	101.4339 ug/kg	97
31) 2,2-Dichloropropane	9.25	77	84514	18.0510 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	66111	20.1834 ug/kg	95
33) Chloroform	9.52	83	112899	19.5927 ug/kg	96
34) 1-Bromopropane	9.66	122	14310	29.0977 ug/kg	94
35) Bromochloromethane	9.75	130	42111	19.7916 ug/kg	94
36) Tetrahydrofuran	9.77	42	130566	104.7483 ug/kg	98
38) 1,1,1-Trichloroethane	10.05	97	96178	18.4565 ug/kg	94
39) Cyclohexane	10.08	56	123598	21.7549 ug/kg	99
40) 1,1-Dichloropropene	10.25	75	75864	18.5012 ug/kg	100
41) Tert-Amyl-Methyl ether	10.34	73	878194	108.6097 ug/kg	98
42) Carbon Tetrachloride	10.39	117	86746	17.9557 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030616\9M973102.D Vial: 6
Acq On : 6 Mar 2016 17:27 Operator: ADC
Sample : WG559859-02 20ug/L LCS 8260 Inst : hpms9
Misc : 7,1 STD74900 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 06 17:50:34 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.57	62	106382	20.9886 ug/kg	97
46)	Benzene	10.61	78	225013	19.6008 ug/kg	99
47)	Trichloroethene	11.36	130	70503	19.3826 ug/kg	95
48)	Methylcyclohexane	11.43	83	101608	22.2722 ug/kg	98
49)	1,2-Dichloropropane	11.57	63	68542	21.7426 ug/kg	97
50)	1,4-Dioxane	11.87	88	9997	211.3845 ug/kg	88
51)	Bromodichloromethane	11.87	83	84670	19.0580 ug/kg	99
52)	Dibromomethane	11.96	174	39104	18.7213 ug/kg	97
53)	2-Chloroethyl Vinyl Ether	12.16	63	15824	19.9676 ug/kg	93
54)	4-Methyl-2-Pentanone	12.19	58	29735	21.4900 ug/kg	98
55)	cis-1,3-Dichloropropene	12.51	75	93892	20.2850 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	112219	24.1253 ug/kg	93
59)	Toluene	12.93	91	247990	19.2929 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	76225	21.3939 ug/kg	96
61)	trans-1,3-Dichloropropene	13.10	75	87011	18.7944 ug/kg	98
62)	1,1,2-Trichloroethane	13.32	97	54400	20.1465 ug/kg	100
63)	2-Hexanone	13.25	43	56201	20.8460 ug/kg	95
64)	1,3-Dichloropropane	13.63	76	92634	20.5883 ug/kg	95
65)	Tetrachloroethene	13.75	164	47720	17.3174 ug/kg	94
66)	Dibromochloromethane	14.02	129	68707	18.2066 ug/kg	100
67)	1,2-Dibromoethane	14.27	107	54923	18.3379 ug/kg	96
68)	1-Chlorohexane	14.34	91	83470	22.0205 ug/kg	99
69)	Chlorobenzene	14.78	112	174797	19.3487 ug/kg	95
70)	1,1,1,2-Tetrachloroethane	14.81	131	64255	18.9396 ug/kg	100
71)	Ethylbenzene	14.80	106	92540	19.8829 ug/kg	100
72)	m-,p-Xylene	14.88	106	226968	39.4872 ug/kg	99
73)	o-Xylene	15.45	106	110469	20.0269 ug/kg	99
74)	Styrene	15.49	104	184923	19.6870 ug/kg	100
75)	Bromoform	15.99	173	40755	16.4485 ug/kg	97
76)	Isopropylbenzene	15.87	105	290509	19.6183 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	62302	17.3342 ug/kg	98
80)	1,2,3-Trichloropropane	16.28	110	23832	17.4843 ug/kg	89
81)	trans-1,4-Dichloro-2-Buten	16.33	53	23441	17.0611 ug/kg	89
82)	n-Propylbenzene	16.38	91	343369	18.4365 ug/kg	99
83)	Bromobenzene	16.52	156	76031	17.2927 ug/kg	73
84)	1,3,5-Trimethylbenzene	16.57	105	254517	18.2055 ug/kg	99
85)	2-Chlorotoluene	16.66	91	238316	19.0779 ug/kg	100
86)	4-Chlorotoluene	16.71	91	192135	16.6363 ug/kg	99
87)	a-Methylstyrene	16.97	118	133550	20.9650 ug/kg	96
88)	tert-Butylbenzene	17.03	134	53098	18.1160 ug/kg	83
89)	1,2,4-Trimethylbenzene	17.09	105	254797	17.4031 ug/kg	99
90)	sec-Butylbenzene	17.31	105	325663	18.0865 ug/kg	100
91)	p-Isopropyltoluene	17.47	119	261769	17.2268 ug/kg	100
92)	1,3-Dichlorobenzene	17.67	146	142348	16.2904 ug/kg	98
93)	1,4-Dichlorobenzene	17.79	146	148255	16.9713 ug/kg	100
94)	n-Butylbenzene	17.99	91	234575	16.6033 ug/kg	98
95)	1,2-Dichlorobenzene	18.29	146	141050	17.3967 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	16074	15.4434 ug/kg	96
97)	1,2,4-Trichlorobenzene	20.43	180	87140	15.1398 ug/kg	99
98)	Hexachlorobutadiene	20.58	225	48996	16.1490 ug/kg	98
99)	Naphthalene	20.80	128	207013	14.3396 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.12	180	85622	15.3374 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030616\9M973102.D Vial: 6
Acq On : 6 Mar 2016 17:27 Operator: ADC
Sample : WG559859-02 20ug/L LCS 8260 Inst : hpms9
Misc : 7,1 STD74900 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 6 17:50 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

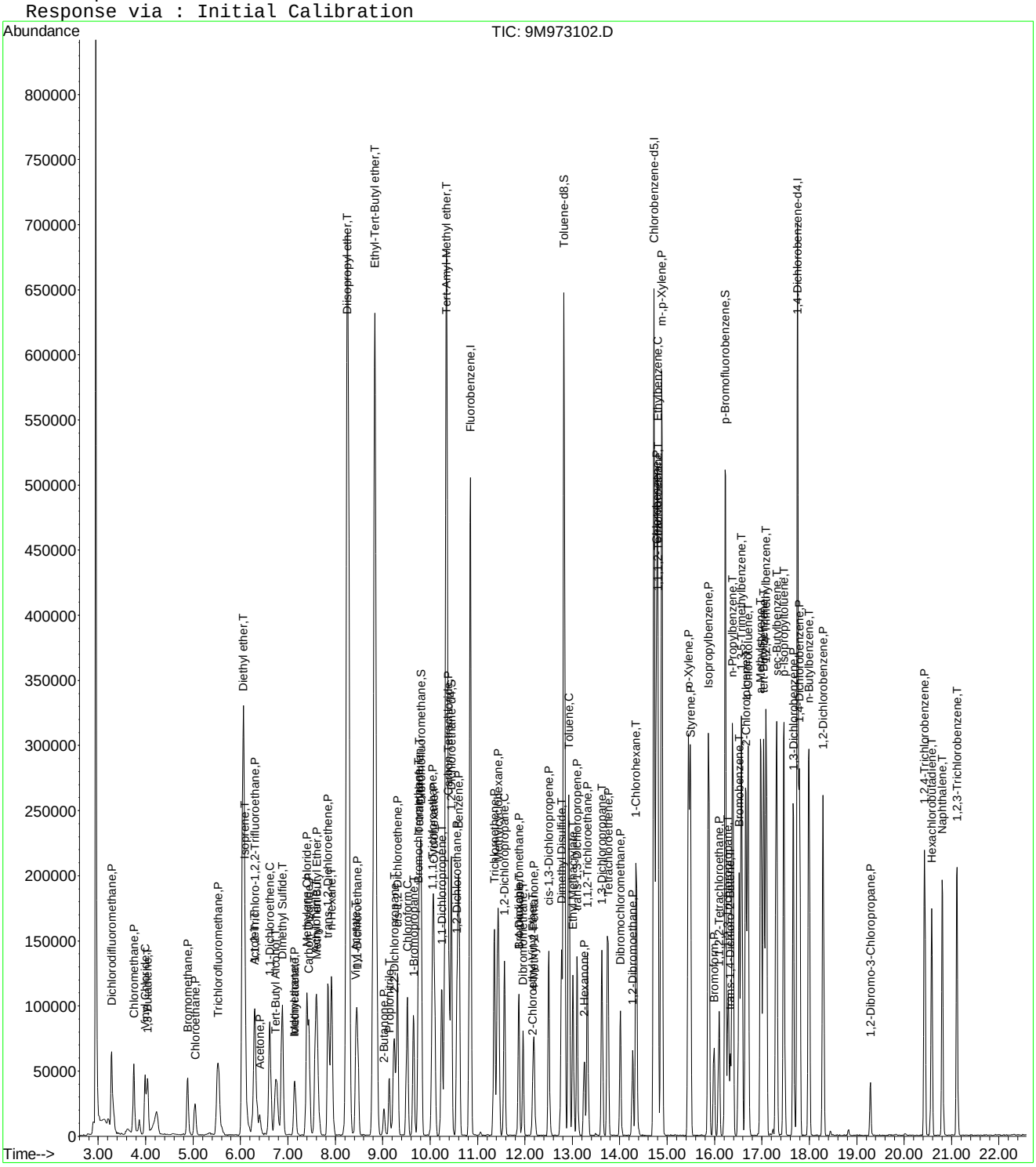

9M973102.D 8260SL.M Sun Mar 06 17:50:35 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030716\9M973124.D Vial: 4
Acq On : 7 Mar 2016 16:49 Operator: ADC
Sample : WG559982-02 20ug/L LCS 8260 Inst : hpms9
Misc : 7,1 STD74900 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 17:12:31 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	497008	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	374762	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	201592	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	127386	47.2844 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.56%		
43) 1,2-Dichloroethane-d4	10.45	65	165046	48.8274 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.66%		
58) Toluene-d8	12.82	98	451751	47.6566 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 95.32%		
79) p-Bromofluorobenzene	16.23	95	189263	48.2147 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 96.42%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	81189	23.9670 ug/kg	94
3) Chloromethane	3.75	50	68926	21.1971 ug/kg	98
4) Vinyl Chloride	3.99	62	60809	18.6811 ug/kg	99
5) 1,3-Butadiene	4.04	54	12770	4.1235 ug/kg	98
6) Bromomethane	4.89	94	38796	18.3509 ug/kg	98
7) Chloroethane	5.04	64	28617	19.7334 ug/kg	94
8) Trichlorofluoromethane	5.53	101	96596	19.7859 ug/kg	98
9) Diethyl ether	6.06	59	246109	107.8365 ug/kg	98
10) Isoprene	6.09	67	72116	24.7422 ug/kg	95
11) Acrolein	6.29	56	47397	104.1517 ug/kg	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	54379	21.5983 ug/kg	94
13) Acetone	6.42	43	28675	21.4625 ug/kg	97
14) 1,1-Dichloroethene	6.62	61	94036	20.2468 ug/kg	98
15) Tert-Butyl Alcohol	6.75	59	97912	192.6659 ug/kg	99
16) Dimethyl Sulfide	6.88	62	59428	30.2750 ug/kg	92
17) Iodomethane	7.13	142	21234	17.3223 ug/kg	90
18) Methyl acetate	7.14	43	54828	21.7151 ug/kg	96
19) Methylene Chloride	7.40	84	48026	18.9865 ug/kg	90
20) Carbon Disulfide	7.44	76	133241	18.6228 ug/kg	98
21) Acrylonitrile	7.59	53	28280	22.6414 ug/kg	97
22) Methyl Tert Butyl Ether	7.61	73	149798	20.7930 ug/kg	97
23) trans-1,2-Dichloroethene	7.85	61	85524	20.6618 ug/kg	95
24) n-Hexane	7.91	57	93250	21.8418 ug/kg	98
25) Diisopropyl ether	8.26	45	1051190	106.0143 ug/kg	98
26) Vinyl Acetate	8.43	43	109480	19.3684 ug/kg	98
27) 1,1-Dichloroethane	8.46	63	101617	19.5457 ug/kg	97
28) Ethyl-Tert-Butyl ether	8.83	59	880890	95.5458 ug/kg	98
29) 2-Butanone	9.03	43	36108	22.5292 ug/kg	95
30) Propionitrile	9.14	54	49899	101.7378 ug/kg	97
31) 2,2-Dichloropropane	9.23	77	76852	19.8050 ug/kg	96
32) cis-1,2-Dichloroethene	9.31	96	55136	20.3096 ug/kg	94
33) Chloroform	9.52	83	91986	19.2607 ug/kg	99
34) 1-Bromopropane	9.65	122	12690	31.0617 ug/kg	99
35) Bromochloromethane	9.75	130	34136	19.3573 ug/kg	89
36) Tetrahydrofuran	9.77	42	103869	100.5425 ug/kg	97
38) 1,1,1-Trichloroethane	10.05	97	87305	20.2144 ug/kg	96
39) Cyclohexane	10.08	56	104376	22.1663 ug/kg	99
40) 1,1-Dichloropropene	10.25	75	65978	19.4138 ug/kg	98
41) Tert-Amyl-Methyl ether	10.34	73	660335	98.5348 ug/kg	97
42) Carbon Tetrachloride	10.39	117	77261	19.2957 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030716\9M973124.D Vial: 4
Acq On : 7 Mar 2016 16:49 Operator: ADC
Sample : WG559982-02 20ug/L LCS 8260 Inst : hpms9
Misc : 7,1 STD74900 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 17:12:31 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	89150	21.2218 ug/kg	99
46)	Benzene	10.60	78	188881	19.8519 ug/kg	98
47)	Trichloroethene	11.35	130	62138	20.6115 ug/kg	99
48)	Methylcyclohexane	11.44	83	84241	22.2795 ug/kg	96
49)	1,2-Dichloropropane	11.57	63	55104	21.0904 ug/kg	95
50)	1,4-Dioxane	11.87	88	8680	221.4470 ug/kg	99
51)	Bromodichloromethane	11.87	83	70735	19.2101 ug/kg	99
52)	Dibromomethane	11.97	174	31009	17.9123 ug/kg	93
53)	2-Chloroethyl Vinyl Ether	12.16	63	12395	19.0268 ug/kg	93
54)	4-Methyl-2-Pentanone	12.19	58	24925	21.7345 ug/kg	97
55)	cis-1,3-Dichloropropene	12.50	75	79005	20.5943 ug/kg	96
56)	Dimethyl Disulfide	12.77	94	85293	22.1241 ug/kg	95
59)	Toluene	12.93	91	210601	19.6683 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	62622	21.0990 ug/kg	97
61)	trans-1,3-Dichloropropene	13.11	75	74526	19.3243 ug/kg	99
62)	1,1,2-Trichloroethane	13.32	97	45328	20.1516 ug/kg	97
63)	2-Hexanone	13.25	43	47427	21.1178 ug/kg	94
64)	1,3-Dichloropropane	13.62	76	77933	20.7928 ug/kg	96
65)	Tetrachloroethene	13.75	164	44150	19.2334 ug/kg	96
66)	Dibromochloromethane	14.01	129	57552	18.3076 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	47056	18.8605 ug/kg	99
68)	1-Chlorohexane	14.35	91	66412	21.0322 ug/kg	92
69)	Chlorobenzene	14.77	112	151707	20.1589 ug/kg	98
70)	1,1,1,2-Tetrachloroethane	14.80	131	54601	19.3200 ug/kg	98
71)	Ethylbenzene	14.79	106	79683	20.5522 ug/kg	98
72)	m-,p-Xylene	14.89	106	194644	40.6514 ug/kg	99
73)	o-Xylene	15.45	106	93573	20.3642 ug/kg	98
74)	Styrene	15.49	104	154867	19.7920 ug/kg	100
75)	Bromoform	16.00	173	35185	17.0470 ug/kg	99
76)	Isopropylbenzene	15.87	105	250079	20.2732 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	49163	16.0766 ug/kg	99
80)	1,2,3-Trichloropropane	16.28	110	20911	18.0309 ug/kg	84
81)	trans-1,4-Dichloro-2-Buten	16.33	53	20041	17.1437 ug/kg	87
82)	n-Propylbenzene	16.38	91	294383	18.5774 ug/kg	99
83)	Bromobenzene	16.51	156	60436	16.1556 ug/kg	63
84)	1,3,5-Trimethylbenzene	16.57	105	218930	18.4054 ug/kg	98
85)	2-Chlorotoluene	16.66	91	195931	18.4346 ug/kg	99
86)	4-Chlorotoluene	16.70	91	176507	17.9625 ug/kg	100
87)	a-Methylstyrene	16.98	118	109195	20.1469 ug/kg	96
88)	tert-Butylbenzene	17.03	134	46507	18.6491 ug/kg	97
89)	1,2,4-Trimethylbenzene	17.08	105	213672	17.1528 ug/kg	98
90)	sec-Butylbenzene	17.31	105	285822	18.6568 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	230460	17.8253 ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	124077	16.6888 ug/kg	100
93)	1,4-Dichlorobenzene	17.79	146	122848	16.5283 ug/kg	96
94)	n-Butylbenzene	17.99	91	209200	17.4032 ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	120053	17.4029 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	13417	15.1506 ug/kg	95
97)	1,2,4-Trichlorobenzene	20.43	180	75129	15.3414 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	42664	16.5273 ug/kg	98
99)	Naphthalene	20.81	128	178894	14.5643 ug/kg	99
100)	1,2,3-Trichlorobenzene	21.12	180	72797	15.3261 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030716\9M973124.D Vial: 4
Acq On : 7 Mar 2016 16:49 Operator: ADC
Sample : WG559982-02 20ug/L LCS 8260 Inst : hpms9
Misc : 7,1 STD74900 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 7 17:12 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

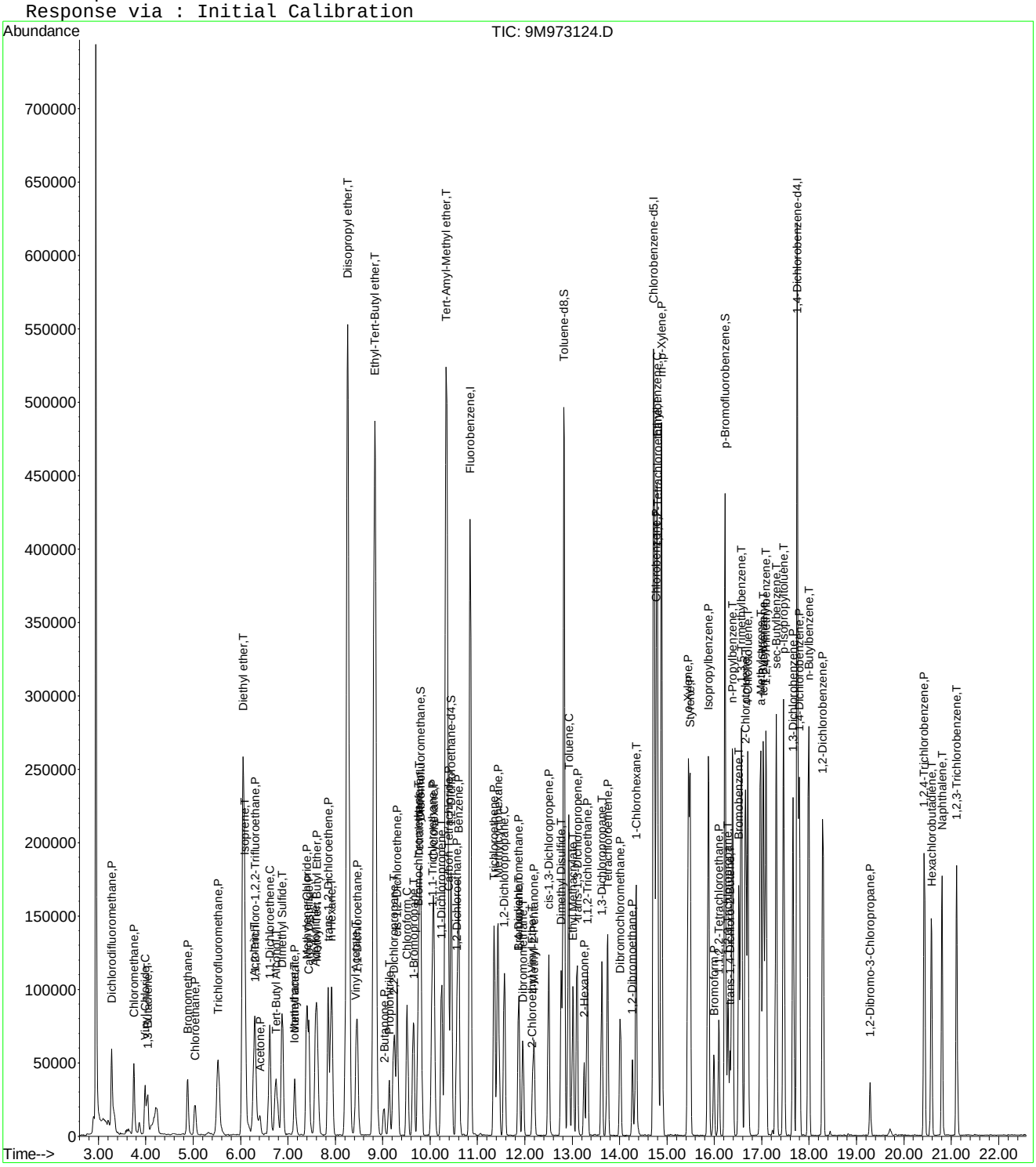

9M973124.D 8260SL.M Mon Mar 07 17:12:31 2016 Page 3

2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030234-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT08(5-5.5)030316	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/04/2016 18:31
Collect Date:	03/03/2016 13:15	**Dilution:**	1	**File ID:**	1LM.LM33716
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.28	U	4.58	2.28	1.14

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030234-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT08(15-15.5)030316	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/04/2016 18:50
Collect Date:	03/03/2016 13:49	**Dilution:**	1	**File ID:**	1LM.LM33717
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.34	U	4.68	2.34	1.17

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030234-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT08(10-10.5)030316	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/04/2016 19:09
Collect Date:	03/03/2016 14:40	**Dilution:**	1	**File ID:**	1LM.LM33718
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.32	U	4.62	2.32	1.16

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030234-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT08(21-21.5)030316	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/04/2016 19:28
Collect Date:	03/03/2016 14:50	**Dilution:**	1	**File ID:**	1LM.LM33719
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	18.9		4.67	2.34	1.17

Certificate of Analysis

Sample #:	L16030234-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT08(26-26.5)030316	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/04/2016 19:47
Collect Date:	03/03/2016 14:55	**Dilution:**	1	**File ID:**	1LM.LM33720
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	31.3		4.85	2.42	1.21

Certificate of Analysis

Sample #:	L16030234-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT08(35-35.5)030316	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/04/2016 20:06
Collect Date:	03/03/2016 15:05	**Dilution:**	1	**File ID:**	1LM.LM33721
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	4.62	J	4.79	2.40	1.20

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

MICROBAC

Semivolatile Sample Extract Log

Parameter: 6850
SOP #: HPLC06
Analyst: ADC, WD
Spike/Surrogate analyst: WD
Surrogate #: NA
Spike # A: STD 72686
Ext Solvent: DI Water
Ext Solvent: NA
Ext Disk: NA

Matrix: Soil
Rev #: 07
Date/Time Extracted: 03/04/2016 15:30
Witness: ADC

Spike # B: NA
Lot #: NA
Lot #: NA
Lot #: NA

Extraction Work Group: WG-559804
Analytical Work Group: WG-559808
Run ID: R4485579

Pipetter(s): 403
Analytical Balance ID: BAL014
Reagent: Sand Lot #: A0A16150
Reagent: Tubes Lot #: RCT34011
Other: IS = COA18071 Lot #: COA18071

Color Code
T = Transparent
C = Colored
O = Opaque

	Sample ID	Test Code	pH	Initial Wt / Vol	IS ~~Amount Surrogate~~	Amount Spike	Final Volume	Extract Color	Comments
1	WG-559804-01	6850		5.008g	0.250ml	1.0ml	50ml		MCT
2	WG-559804-02			5.007					Blk
3	WG-559804-03			5.002		1.0ml			LCS
4	L16030234-01			5.242					
5	-02			5.228					
6	-03			5.125					
7	-04			5.139					
8	-05			5.030					
9	-06			5.211					
10	L16030235-01			5.096					
11	-02			5.116					
12	RS -03			5.075					Ref WG559804-04
13	MS -04			5.074		1.0ml			MS WG559804-05
14	MSD -05			5.072		1.0ml			MSD WG559804-06
15	-06			5.208					
16	-07			5.113					
17	-08			5.069					
18									
19									
20									
21									
22									
23									
24									

Reviewed by: [illegible]

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1390 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG559808-01 MCT	9,860	
-02 Blk	11.21	
-03 LCS	6.74	
L16030234-01	218	
-02	81.5	
-03	173	
-04	58.2	
-05	36.4	
-06	37.7	
L16030235-01	8.45	
-02	64.5	
-03 Ref	3.72	
-04 MS	3.77	
-05 MSD	5.52	
-06	8.05	
-07	4.22	
-08	5.94	

Analyst: Andrew Ewing

Date/Time: 3-6-16 / 1345

DCN#117045

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030216_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015, WG559292

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 MS/MSD STD: STD72685

Comments: L16021262s and L16021255s diluted based on historical data.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM33567	WG559340-01 CCB	1	1		03/02/16 08:34
2	1LM.LM33568	WG559340-02 STD (0.1 ug/L)	1	1	STD72683	03/02/16 08:53
3	1LM.LM33569	WG559340-03 STD (0.2 ug/L)	1	1	STD72683	03/02/16 09:12
4	1LM.LM33570	WG559340-04 STD (0.5 ug/L)	1	1	STD72683	03/02/16 09:31
5	1LM.LM33571	WG559340-05 STD (1.0 ug/L)	1	1	STD72683	03/02/16 09:50
6	1LM.LM33572	WG559340-06 STD (2.0 ug/L)	1	1	STD72683	03/02/16 10:09
7	1LM.LM33573	WG559340-07 STD (5.0 ug/L)	1	1	STD72683	03/02/16 10:28
8	1LM.LM33574	WG559340-08 STD (10 ug/L)	1	1	STD72683	03/02/16 10:46
9	1LM.LM33575	WG559340-09 SSCV (1.0 ug/L)	1	1	STD72685	03/02/16 11:05
10	1LM.LM33576	WG559291-01 CCB	1	1		03/02/16 11:25
11	1LM.LM33577	WG559291-02 CCV (1.0ug/L)	1	1	STD72683	03/02/16 11:44
12	1LM.LM33578	WG559015-05 MRL (0.2ug/L)	1	1	STD72683	03/02/16 12:03
13	1LM.LM33579	WG559015-01 MCT (0.2ug/L)	1	1	STD72685	03/02/16 12:22
14	1LM.LM33580	WG559015-02 BLANK	1	1		03/02/16 12:41
15	1LM.LM33581	WG559015-05 MRL (0.2ug/L)	1	1	STD72683	03/02/16 13:01
16	1LM.LM33582	WG559015-03 LCS (0.2ug/L)	1	1	STD72685	03/02/16 13:20
17	1LM.LM33583	WG559015-04 LCS2 (0.2ug/L)	1	1	STD72685	03/02/16 13:39
18	1LM.LM33584	L16021060-01 ADC	1	1	STD72685	03/02/16 13:58
19	1LM.LM33585	L16021060-02 ADC	1	1	STD72685	03/02/16 14:17
20	1LM.LM33586	L16021060-03 ADC	1	1	STD72685	03/02/16 14:36
21	1LM.LM33587	L16021060-04 ADC	1	1	STD72685	03/02/16 14:55
22	1LM.LM33588	L16021262-01 (20x)	1	20		03/02/16 15:13
23	1LM.LM33589	L16021262-02 (5000x)	1	5000		03/02/16 15:32
24	1LM.LM33590	WG559291-03 CCV (1.0ug/L)	1	1	STD72683	03/02/16 15:51
25	1LM.LM33591	WG559015-06 MRL (0.2ug/L)	1	1	STD72683	03/02/16 16:10
26	1LM.LM33592	WG559291-04 CCB	1	1		03/02/16 16:29
27	1LM.LM33593	L16021262-03 (100X)	1	100		03/02/16 16:48
28	1LM.LM33594	L16021262-04 (2000X)	1	2000		03/02/16 17:07
29	1LM.LM33595	L16021262-05 (1000X)	1	1000		03/02/16 17:26
30	1LM.LM33596	L16021262-06 (10,000X)	1	10000		03/02/16 17:45
31	1LM.LM33597	L16021262-07 (10,000X)	1	10000		03/02/16 18:04
32	1LM.LM33598	L16021262-08 (5000X)	1	5000		03/02/16 18:23
33	1LM.LM33599	L16021262-09 (5000X)	1	5000		03/02/16 18:42

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030216_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015, WG559292

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM33600	L16021262-10 (100,000X)	1	100000		03/02/16 19:01
35	1LM.LM33601	L16021262-11 (10,000X)	1	10000		03/02/16 19:20
36	1LM.LM33602	L16021262-12 (10,000X)	1	10000		03/02/16 19:39
37	1LM.LM33603	WG559291-05 CCV (1.0ug/L)	1	1	STD72683	03/02/16 19:58
38	1LM.LM33604	WG559015-07 MRL (0.2ug/L)	1	1	STD72683	03/02/16 20:17
39	1LM.LM33605	WG559291-06 CCB	1	1		03/02/16 20:35
40	1LM.LM33606	L16021262-13 (10,000X)	1	10000		03/02/16 20:54
41	1LM.LM33607	L16021262-14 (10,000X)	1	10000		03/02/16 21:13
42	1LM.LM33608	WG559291-07 CCV (1.0ug/L)	1	1	STD72683	03/02/16 21:32
43	1LM.LM33609	WG559015-08 MRL (0.2ug/L)	1	1	STD72683	03/02/16 21:51
44	1LM.LM33610	WG559291-08 CCB	1	1		03/02/16 22:10
45	1LM.LM33611	WG559292-07 MRL (0.2ug/L)	1	1	STD72685	03/02/16 22:29
46	1LM.LM33612	WG559292-01 MCT (0.2ug/L)	1	1	STD72685	03/02/16 22:48
47	1LM.LM33613	WG559292-02 BLANK	1	1		03/02/16 23:07
48	1LM.LM33614	WG559292-03 LCS (0.2ug/L)	1	1	STD72685	03/02/16 23:26
93	1LM.LM33615	L16021255-01 REF 100X	1	100		03/02/16 23:45
50	1LM.LM33616	L16021255-02 MS 100X	1	100	STD72685	03/03/16 00:04
51	1LM.LM33617	L16021255-03 MSD 100X	1	100	STD72685	03/03/16 00:23
94	1LM.LM33618	L16021255-04 20X	1	20		03/03/16 00:42
53	1LM.LM33619	L16021255-05 20X	1	20		03/03/16 01:01
54	1LM.LM33620	L16021255-06 200X	1	200		03/03/16 01:20
55	1LM.LM33621	L16021255-07 100X	1	100		03/03/16 01:39
56	1LM.LM33622	WG559291-09 CCV (1.0ug/L)	1	1	STD72685	03/03/16 01:57
57	1LM.LM33623	WG559292-08 MRL (0.2ug/L)	1	1	STD72685	03/03/16 02:16
58	1LM.LM33624	WG559291-10 CCB	1	1		03/03/16 02:35
59	1LM.LM33625	L16021255-08	1	1		03/03/16 02:54
60	1LM.LM33626	L16021255-09 500X	1	500		03/03/16 03:13
61	1LM.LM33627	L16021255-10 5000X	1	5000		03/03/16 03:32
62	1LM.LM33628	L16021255-11 5000X	1	5000		03/03/16 03:51
63	1LM.LM33629	L16021255-12 100X	1	100		03/03/16 04:10
64	1LM.LM33630	L16021255-13 10,000X	1	10000		03/03/16 04:29
65	1LM.LM33631	L16021255-14 10,000X	1	10000		03/03/16 04:48
66	1LM.LM33632	L16030008-01	1	1		03/03/16 05:07
67	1LM.LM33633	L16030008-01 10X	1	10		03/03/16 05:26
68	1LM.LM33634	L16021328-01	1	1		03/03/16 05:45
69	1LM.LM33635	WG559291-11 CCV (1.0ug/L)	1	1	STD72685	03/03/16 06:04

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030216_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015, WG559292

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
70	1LM.LM33636	WG559292-09 MRL (0.2ug/L)	1	1	STD72685	03/03/16 06:23
71	1LM.LM33637	WG559291-12 CCB	1	1		03/03/16 06:41
72	1LM.LM33638	L16021328-02	1	1		03/03/16 07:00
73	1LM.LM33639	L16021328-03	1	1		03/03/16 07:19
74	1LM.LM33640	L16021328-04	1	1		03/03/16 07:38
75	1LM.LM33641	L16021328-05	1	1		03/03/16 07:57
76	1LM.LM33642	WG559291-13 CCV (1.0ug/L)	1	1	STD72685	03/03/16 08:16
77	1LM.LM33643	WG559292-10 MRL (0.2ug/L)	1	1	STD72685	03/03/16 08:35
78	1LM.LM33644	WG559291-14 CCB	1	1		03/03/16 08:54
79	1LM.LM33645	L16021255-05 200X	1	200		03/03/16 09:13
80	1LM.LM33646	L16021255-06	1	1		03/03/16 09:32
81	1LM.LM33647	L16021255-12 1000X	1	1000		03/03/16 09:51
95	1LM.LM33648	L16021255-04	1	1		03/03/16 10:10
96	1LM.LM33649	L16021255-02 MS	1	1	STD72685	03/03/16 10:29
97	1LM.LM33650	L16021255-03 MSD	1	1	STD72685	03/03/16 10:48
85	1LM.LM33651	WG559291-15 CCV (1.0ug/L)	1	1	STD72685	03/03/16 11:07
86	1LM.LM33652	WG559292-11 MRL (0.2ug/L)	1	1	STD72685	03/03/16 11:25
87	1LM.LM33653	WG559291-16 CCB	1	1		03/03/16 11:44

Comments

Seq.	Rerun	Dil.	Reason	Analytes
12	X			
	WG559015-05 incorrect vial location.			
50				
	DNR. Incorrect information on the supplied Chain of Custody.			
51				
	DNR. Incorrect information on the supplied Chain of Custody.			
94	X	1	Analyzed too dilute	
	L16021255-04			
53	X	200	Over Calibration Range	Perchlorate
	L16021255-05			
54	X	1	Analyzed too dilute	
	L16021255-06			
63	X	1000	Over Calibration Range	
	L16021255-12 100X			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030416_WTD.TXT
Analyst1: ADC/WTD Analyst2: JWR
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG559808 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD72683 (03/02/2016)

CCV STD: STD72683 LCS STD: STD72685 MS/MSD STD: STD72685

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM33710	WG559812-01 CCB	1	1		03/04/16 16:38
2	1LM.LM33711	WG559812-02 CCV (1.0ug/L)	1	1	STD72683	03/04/16 16:57
3	1LM.LM33712	WG559808-07 MRL (2.0ug/kg)	7	1	STD72683	03/04/16 17:16
4	1LM.LM33713	WG559808-01 MCT (2.0ug/kg)	7	1	STD72685	03/04/16 17:35
5	1LM.LM33714	WG559808-02 BLK	7	1		03/04/16 17:53
6	1LM.LM33715	WG559808-03 LCS (2.0ug/kg)	7	1	STD72685	03/04/16 18:12
7	1LM.LM33716	L16030234-01	7	1		03/04/16 18:31
8	1LM.LM33717	L16030234-02	7	1		03/04/16 18:50
9	1LM.LM33718	L16030234-03	7	1		03/04/16 19:09
10	1LM.LM33719	L16030234-04	7	1		03/04/16 19:28
11	1LM.LM33720	L16030234-05	7	1		03/04/16 19:47
12	1LM.LM33721	L16030234-06	7	1		03/04/16 20:06
13	1LM.LM33722	L16030235-01	7	1		03/04/16 20:25
14	1LM.LM33723	WG559812-03 CCV (1.0ug/L)	1	1	STD72683	03/04/16 20:44
15	1LM.LM33724	WG559808-08 MRL (2.0ug/kg)	7	1	STD72683	03/04/16 21:03
16	1LM.LM33725	WG559812-04 CCB	1	1		03/04/16 21:22
17	1LM.LM33726	L16030235-02	7	1		03/04/16 21:41
18	1LM.LM33727	L16030235-03 RS (NR)	7	1		03/04/16 22:00
19	1LM.LM33728	L16030235-04 MS (NR)	7	1	STD72685	03/04/16 22:19
20	1LM.LM33729	L16030235-05 MSD (NR)	7	1	STD72685	03/04/16 22:38
21	1LM.LM33730	L16030235-06 (NR)	7	1		03/04/16 22:56
22	1LM.LM33731	L16030235-07 (NR)	7	1		03/04/16 23:15
23	1LM.LM33732	L16030235-08 (NR)	7	1		03/04/16 23:34
24	1LM.LM33733	WG559812-05 CCV (1.0ug/L)	1	1	STD72683	03/04/16 23:53
25	1LM.LM33734	WG559808-09 MRL (2.0ug/kg)	7	1	STD72683	03/05/16 00:12
26	1LM.LM33735	WG559812-06 CCB	1	1		03/05/16 00:31
27	1LM.LM33736	WG559899-01 CCB	1	1		03/07/16 09:54
28	1LM.LM33737	WG559899-02 CCV (1.0ug/L)	1	1	STD72683	03/07/16 10:13
29	1LM.LM33738	WG559808-10 MRL (2.0ug/kg)	7	1	STD72683	03/07/16 10:32
30	1LM.LM33739	L16030235-03 RS (RR 100x)	7	100		03/07/16 10:51
31	1LM.LM33740	L16030235-04 MS (RR 100x)	7	100	STD72685	03/07/16 11:10
32	1LM.LM33741	L16030235-05 MSD (RR 100x)	7	100	STD72685	03/07/16 11:29
33	1LM.LM33742	L16030235-06 (RR 10x)	7	10		03/07/16 11:48

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Wadei D

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030416_WTD.TXT
Analyst1: ADC/WTD Analyst2: JWR
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA
Analytical WG559808 (soils)
Internal STD: COA18071 Surrogate STD: NA STD72683 (03/02/2016)
CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM33743	L16030235-07 (RR 10x)	7	10		03/07/16 12:07
35	1LM.LM33744	L16030235-08 (RR 100x)	7	100		03/07/16 12:26
36	1LM.LM33745	WG559899-03 CCV (1.0ug/L)	1	1	STD72683	03/07/16 12:45
37	1LM.LM33746	WG559808-11 MRL (2.0ug/kg)	7	1	STD72683	03/07/16 13:04
38	1LM.LM33747	WG559899-04 CCB	1	1		03/07/16 13:22

Comments

Seq.	Rerun	Dil.	Reason	Analytes
18	X	100	Over Calibration Range	
	L16030235-03 RS (NR) : This sample was reanalyzed at a 100x dilution on the end of this run.			
19	X	100	Over Calibration Range	
	L16030235-04 MS (NR) : This sample was reanalyzed at a 100x dilution on the end of this run.			
20	X	100	Over Calibration Range	
	L16030235-05 MSD (NR) : This sample was reanalyzed at a 100x dilution on the end of this run.			
21	X	10	Over Calibration Range	
	L16030235-06 (NR) : This sample was reanalyzed at a 10x dilution on the end of this run.			
22	X	10	Over Calibration Range	
	L16030235-07 (NR) : This sample was reanalyzed at a 10x dilution on the end of this run.			
23	X	100	Over Calibration Range	
	L16030235-08 (NR) : This sample was reanalyzed at a 100x dilution on the end of this run.			
31				
	L16030235-04 MS (RR 100x) : The MS %Rec is below the advisory limit. The parent sample to this MS has a result greater than 900 times that of the MS-spiked amount.			
32				
	L16030235-05 MSD (RR 100x) : The MSD %Rec is above the advisory limit. The parent sample to this MSD has a result greater than 900 times that of the MSD-spiked amount.			

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Wadei D

Microbac Laboratories Inc.

Data Checklist

Date: 02-MAR-2016
Analyst: WTD
Analyst: ADC
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 73617
Analytical Workgroups: L16021255,L16021328,030008,021262,021060

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	WTD
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MES

Primary Reviewer: 03-MAR-2016

Secondary Reviewer: 04-MAR-2016

CHECKLIST1 - Modified 03/05/2008

Generated: MAR-04-2016 13:53:03

Microbac Laboratories Inc.

Data Checklist

Date: 04-MAR-2016
Analyst: ADC/WTD
Analyst: JWR
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 73668
Analytical Workgroups: L16030234, 0235 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	DL @ 100X DILUTION
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 07-MAR-2016 John Richards

Secondary Reviewer: 08-MAR-2016 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-08-2016 11:01:02

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG559808

Login Number: L16030234

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18DPT08(5-5.5)030316	01	03/03/16					03/04/2016	1.1	28		03/04/16	.1	28	
18DPT08(15-15.5)030316	02	03/03/16					03/04/2016	1.1	28		03/04/16	.1	28	
18DPT08(10-10.5)030316	03	03/03/16					03/04/2016	1	28		03/04/16	.2	28	
18DPT08(21-21.5)030316	04	03/03/16					03/04/2016	1	28		03/04/16	.2	28	
18DPT08(26-26.5)030316	05	03/03/16					03/04/2016	1	28		03/04/16	.2	28	
18DPT08(35-35.5)030316	06	03/03/16					03/04/2016	1	28		03/04/16	.2	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4659869
Report generated 03/08/2016 11:11

METHOD BLANK SUMMARY

Login Number: L16030234
Blank File ID: 1LM.LM33714
Prep Date: 03/04/16 15:30
Analyzed Date: 03/04/16 17:53
Analyst: JWR

Work Group: WG559808
Blank Sample ID: WG559808-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG559808-07	1LM.LM33712	03/04/16 17:16	01
MCT	WG559808-01	1LM.LM33713	03/04/16 17:35	01
LCS	WG559808-03	1LM.LM33715	03/04/16 18:12	01
18DPT08(5-5.5)030316	L16030234-01	1LM.LM33716	03/04/16 18:31	01
18DPT08(15-15.5)030316	L16030234-02	1LM.LM33717	03/04/16 18:50	01
18DPT08(10-10.5)030316	L16030234-03	1LM.LM33718	03/04/16 19:09	01
18DPT08(21-21.5)030316	L16030234-04	1LM.LM33719	03/04/16 19:28	01
18DPT08(26-26.5)030316	L16030234-05	1LM.LM33720	03/04/16 19:47	01
18DPT08(35-35.5)030316	L16030234-06	1LM.LM33721	03/04/16 20:06	01
QCMRL	WG559808-08	1LM.LM33724	03/04/16 21:03	01
QCMRL	WG559808-09	1LM.LM33734	03/05/16 00:12	01
QCMRL	WG559808-10	1LM.LM33738	03/07/16 10:32	01
QCMRL	WG559808-11	1LM.LM33746	03/07/16 13:04	01

Report Name: BLANK_SUMMARY
PDF File ID: 4659870
Report generated 03/08/2016 11:11

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16030234 Prep Date: 03/04/16 15:30 Sample ID: WG559808-02
Instrument ID: LCMS1 Run Date: 03/04/16 17:53 Prep Method: 6850
File ID: 1LM.LM33714 Analyst: JWR Method: 6850
Workgroup (AAB#): WG559808 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.999	3.99	0.999	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4659871
08-MAR-2016 11:11

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030234 Run Date: 03/04/2016 Sample ID: WG559808-03
Instrument ID: LCMS1 Run Time: 18:12 Prep Method: 6850
File ID: 1LM.LM33715 Analyst: JWR Method: 6850
Workgroup (AAB#): WG559808 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD72685 Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	2.00	2.35	118	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4659872
Report generated: 03/08/2016 11:11

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16030234
Analytical Method: 6850
ICAL Workgroup: WG559340

Instrument ID: LCMS1
Initial Calibration Date: 02-MAR-16 10:46
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.808	3.97	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4660460
Report generated 03/08/2016 11:11

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16030234

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 02-MAR-16 10:46

Column ID: F

Analyte	WG559340-02			WG559340-03			WG559340-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	18400.0000	1.879	0.200	37000.0000	1.850	0.500	89000.0000	1.810

INT_CAL - Modified 03/06/2008
PDF File ID: 4660460
Report generated 03/08/2016 11:11

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16030234

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 02-MAR-16 10:46

Column ID: F

Analyte	WG559340-05			WG559340-06			WG559340-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	183000.000	1.829	2.00	363000.000	1.777	5.00	871000.000	1.779

INT_CAL - Modified 03/06/2008
PDF File ID: 4660460
Report generated 03/08/2016 11:11

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16030234

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 02-MAR-16 10:46

Column ID: F

Analyte	WG559340-08		
	CONC	RESP	RF
Perchlorate	10.0	1650000.00	1.729

INT_CAL - Modified 03/06/2008

PDF File ID: 4660460

Report generated 03/08/2016 11:11

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16030234 Run Date: 03/02/2016 Sample ID: WG559340-09
Instrument ID: LCMS1 Run Time: 11:05 Method: 6850
File ID: 1LM.LM33575 Analyst: WTD QC Key: DOD4
ICal Workgroup: WG559340 Cal ID: LCMS1 - 02-MAR-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.83	3.00	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4660461
Report generated 03/08/2016 11:11

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030234
Run Date: 03/04/2016
Sample ID: WG559812-01
Instrument ID: LCMS1
Run Time: 16:38
Method: 6850
File ID: 1LM.LM33710
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG559808
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4659875
Report generated 03/08/2016 11:12

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030234
Run Date: 03/04/2016
Sample ID: WG559812-04
Instrument ID: LCMS1
Run Time: 21:22
Method: 6850
File ID: 1LM.LM33725
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG559808
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4659875
Report generated 03/08/2016 11:12

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030234
Run Date: 03/05/2016
Sample ID: WG559812-06
Instrument ID: LCMS1
Run Time: 00:31
Method: 6850
File ID: 1LM.LM33735
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG559808
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4659875
Report generated 03/08/2016 11:12

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030234
Run Date: 03/07/2016
Sample ID: WG559899-01
Instrument ID: LCMS1
Run Time: 09:54
Method: 6850
File ID: 1LM.LM33736
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG559808
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4659875
Report generated 03/08/2016 11:12

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030234
Run Date: 03/07/2016
Sample ID: WG559899-04
Instrument ID: LCMS1
Run Time: 13:22
Method: 6850
File ID: 1LM.LM33747
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG559808
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4659875
Report generated 03/08/2016 11:12

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030234
Run Date: 03/04/2016
Sample ID: WG559812-02
Instrument ID: LCMS1
Run Time: 16:57
Method: 6850
File ID: 1LM.LM33711
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG559808
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.969	ug/kg	1.72	3.10	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4659874
Report generated 03/08/2016 11:12

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030234
Run Date: 03/04/2016
Sample ID: WG559812-03
Instrument ID: LCMS1
Run Time: 20:44
Method: 6850
File ID: 1LM.LM33723
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG559808
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.975	ug/kg	1.73	2.50	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4659874
Report generated 03/08/2016 11:12

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030234
Run Date: 03/04/2016
Sample ID: WG559812-05
Instrument ID: LCMS1
Run Time: 23:53
Method: 6850
File ID: 1LM.LM33733
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG559808
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.978	ug/kg	1.73	2.20	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4659874
Report generated 03/08/2016 11:12

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030234
Run Date: 03/07/2016
Sample ID: WG559899-02
Instrument ID: LCMS1
Run Time: 10:13
Method: 6850
File ID: 1LM.LM33737
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG559808
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.999	ug/kg	1.77	0.100	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4659874
Report generated 03/08/2016 11:12

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030234
Run Date: 03/07/2016
Sample ID: WG559899-03
Instrument ID: LCMS1
Run Time: 12:45
Method: 6850
File ID: 1LM.LM33745
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG559808
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.951	ug/kg	1.69	4.90	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4659874
Report generated 03/08/2016 11:12

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030234 Run Date: 03/04/2016 Sample ID: WG559808-07
Instrument ID: LCMS1 Run Time: 17:16 Prep Method: 6850
File ID: 1LM.LM33712 Analyst: JWR Method: 6850
Workgroup (AAB#): WG559808 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.96	98.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4659873
Report generated 03/08/2016 11:11

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030234 Run Date: 03/04/2016 Sample ID: WG559808-08
Instrument ID: LCMS1 Run Time: 21:03 Prep Method: 6850
File ID: 1LM.LM33724 Analyst: JWR Method: 6850
Workgroup (AAB#): WG559808 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.97	98.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4659873
Report generated 03/08/2016 11:11

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030234 Run Date: 03/05/2016 Sample ID: WG559808-09

Instrument ID: LCMS1 Run Time: 00:12 Prep Method: 6850

File ID: 1LM.LM33734 Analyst: JWR Method: 6850

Workgroup (AAB#): WG559808 Matrix: Soil Units: ug/kg

Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.95	97.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4659873
Report generated 03/08/2016 11:11

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030234 Run Date: 03/07/2016 Sample ID: WG559808-10

Instrument ID: LCMS1 Run Time: 10:32 Prep Method: 6850

File ID: 1LM.LM33738 Analyst: JWR Method: 6850

Workgroup (AAB#): WG559808 Matrix: Soil Units: ug/kg

Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.88	94.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4659873
Report generated 03/08/2016 11:11

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030234 Run Date: 03/07/2016 Sample ID: WG559808-11
Instrument ID: LCMS1 Run Time: 13:04 Prep Method: 6850
File ID: 1LM.LM33746 Analyst: JWR Method: 6850
Workgroup (AAB#): WG559808 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.95	97.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4659873
Report generated 03/08/2016 11:11

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16030234
Instrument ID: LCMS1
Workgroup (AAB#): WG559808

ICAL CCV Number: WG559340-05
CAL ID: LCMS1-02-MAR-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1
WG559340	NA	NA	494000
Upper Limit	NA	NA	741000
Lower Limit	NA	NA	247000
L16030234-01	1.00	01	528000
L16030234-02	1.00	01	535000
L16030234-03	1.00	01	538000
L16030234-04	1.00	01	526000
L16030234-05	1.00	01	526000
L16030234-06	1.00	01	565000
WG559808-02	1.00	01	530000
WG559808-03	1.00	01	516000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4659876
Report generated 03/08/2016 11:12

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**	6850	**Samplenum:**	L16030234-01
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33716
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/04/2016 18:31	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	5330	2210	2.41	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**	6850	**Samplenum:**	L16030234-02
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33717
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/04/2016 18:50	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1680	631	2.66	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**	6850	**Samplenum:**	L16030234-03
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33718
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/04/2016 19:09	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1740	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**	6850	**Samplenum:**	L16030234-04
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33719
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/04/2016 19:28	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	301000	95000	3.17	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**	6850	**Samplenum:**	L16030234-05
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33720
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/04/2016 19:47	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	477000	152000	3.14	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**	6850	**Samplenum:**	L16030234-06
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33721
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/04/2016 20:06	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	78800	26200	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**		**Samplenum:**	WG559340-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33568
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/02/2016 08:53	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	18400	5910	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**		**Samplenum:**	WG559340-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33569
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/02/2016 09:12	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37000	11900	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**		**Samplenum:**	WG559340-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33570
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/02/2016 09:31	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	89000	30400	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**		**Samplenum:**	WG559340-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33571
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/02/2016 09:50	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	183000	56800	3.22	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**		**Samplenum:**	WG559340-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33572
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/02/2016 10:09	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	363000	117000	3.10	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**		**Samplenum:**	WG559340-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33573
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/02/2016 10:28	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	871000	282000	3.09	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**		**Samplenum:**	WG559340-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33574
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/02/2016 10:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1650000	530000	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**		**Samplenum:**	WG559340-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33575
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/02/2016 11:05	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	190000	62200	3.05	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**	6850	**Samplenum:**	WG559808-01
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33713
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/04/2016 17:35	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38400	12700	3.02	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**	6850	**Samplenum:**	WG559808-02
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33714
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/04/2016 17:53	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	390	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**	6850	**Samplenum:**	WG559808-03
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33715
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/04/2016 18:12	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	44800	16800	2.67	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**	6850	**Samplenum:**	WG559808-07
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33712
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/04/2016 17:16	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38900	12900	3.02	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**	6850	**Samplenum:**	WG559808-08
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33724
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/04/2016 21:03	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	42600	13400	3.18	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**	6850	**Samplenum:**	WG559808-09
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33734
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/05/2016 00:12	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	41400	12600	3.29	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**	6850	**Samplenum:**	WG559808-10
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33738
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/07/2016 10:32	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	39400	13500	2.92	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**	6850	**Samplenum:**	WG559808-11
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33746
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/07/2016 13:04	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38300	12600	3.04	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**		**Samplenum:**	WG559812-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33710
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/04/2016 16:38	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**		**Samplenum:**	WG559812-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33711
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/04/2016 16:57	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	177000	56200	3.15	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**		**Samplenum:**	WG559812-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33723
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/04/2016 20:44	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	200000	62200	3.22	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**		**Samplenum:**	WG559812-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33725
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/04/2016 21:22	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**		**Samplenum:**	WG559812-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33733
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/04/2016 23:53	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	195000	61500	3.17	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**		**Samplenum:**	WG559812-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33735
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/05/2016 00:31	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**		**Samplenum:**	WG559899-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33736
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/07/2016 09:54	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**		**Samplenum:**	WG559899-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33737
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/07/2016 10:13	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	198000	64300	3.08	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**		**Samplenum:**	WG559899-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33745
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/07/2016 12:45	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	183000	60200	3.04	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**		**Samplenum:**	WG559899-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33747
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/07/2016 13:22	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	195	0.000	2.3	3.8	*

2.2.1.3 Sample Data

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Data File	LM33716.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 6:31:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030234-01	**Injection Vial**	7.00
Data File	LM33716.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 6:31:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	L16030234-01	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.280e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.330e+03	9.84	N/A	0.0163
Perchlorate conf	2.210e+03	9.85	N/A	0.0231

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

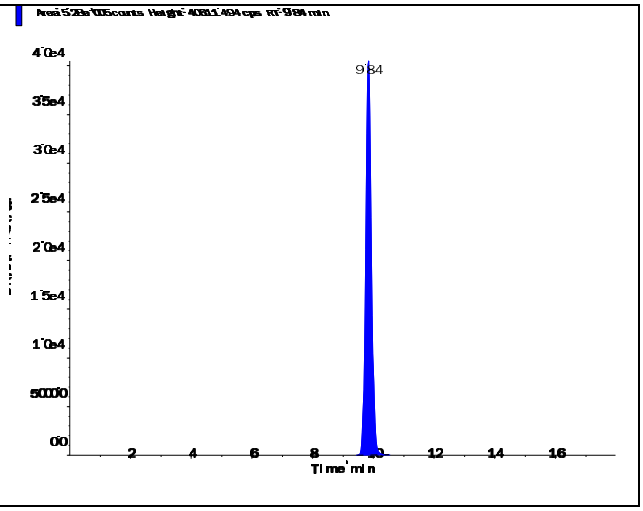

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.94) min
Calculated conc:	0.0163 ng/ml
Area Ratio:	0.01
Sample Type:	(Unknown)

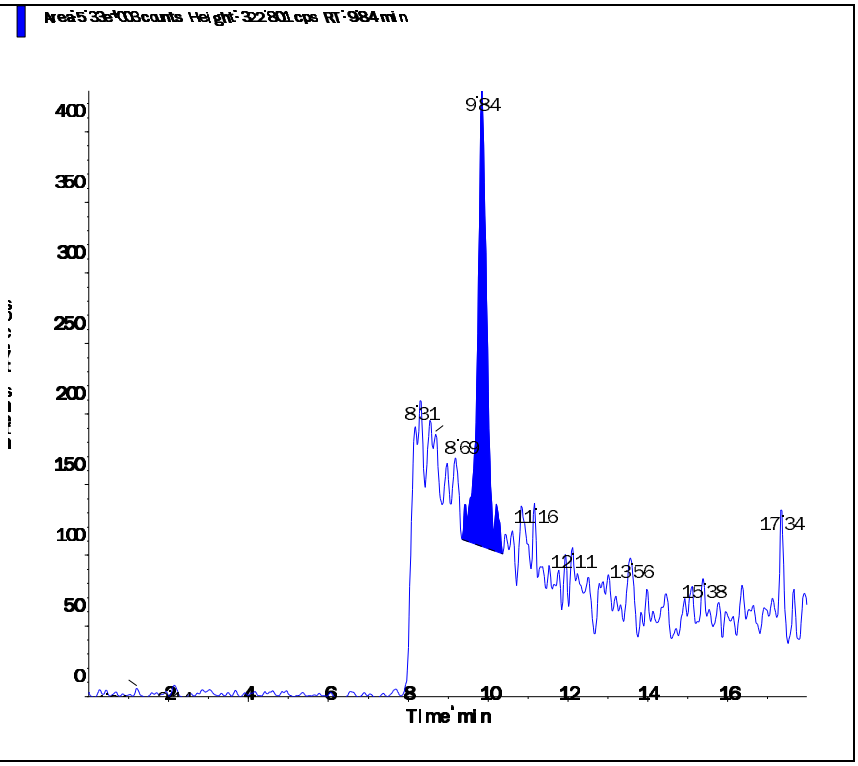

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.85 (9.92) min
Calculated conc:	0.0231 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)

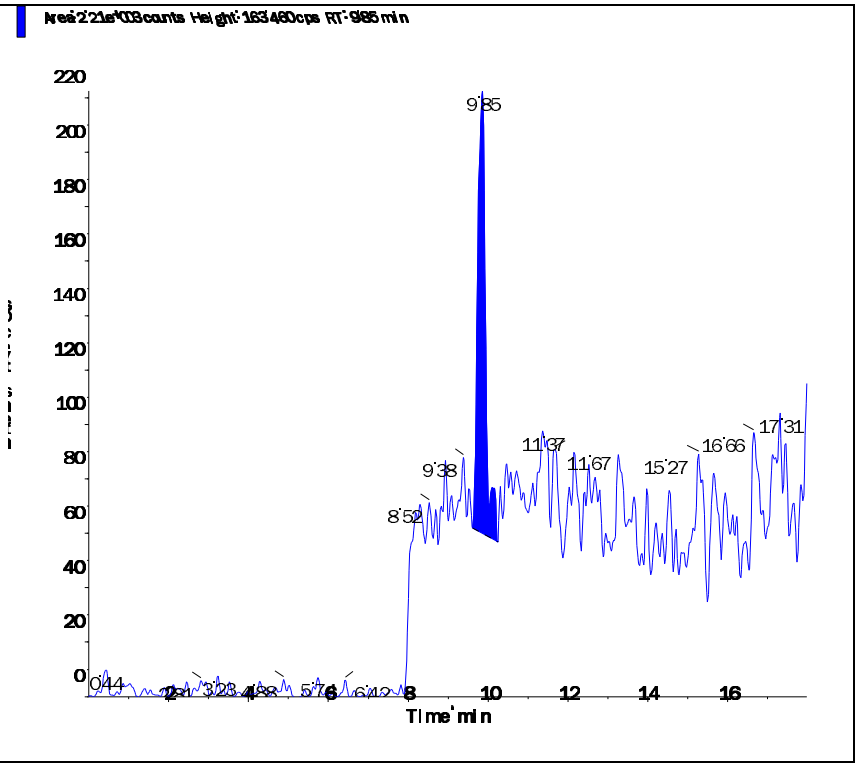

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Data File	LM33717.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 6:50:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030234-02	**Injection Vial**	8.00
Data File	LM33717.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 6:50:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	L16030234-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.350e+05	9.89	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+03	9.93	N/A	< 0
Perchlorate conf	6.310e+02	9.88	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.89(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

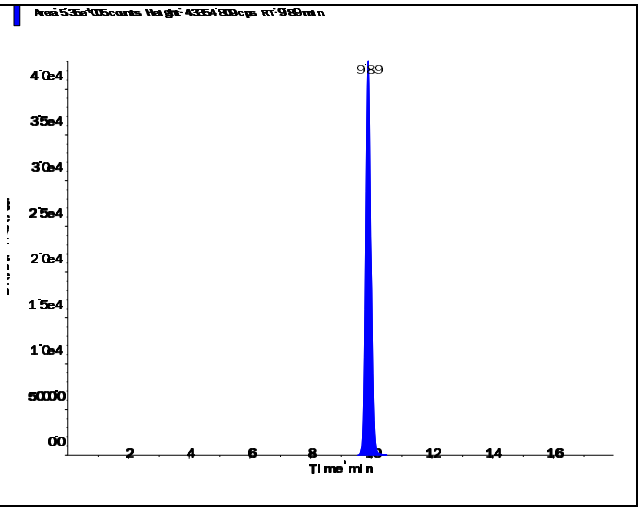

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.003
Sample Type:	(Unknown)

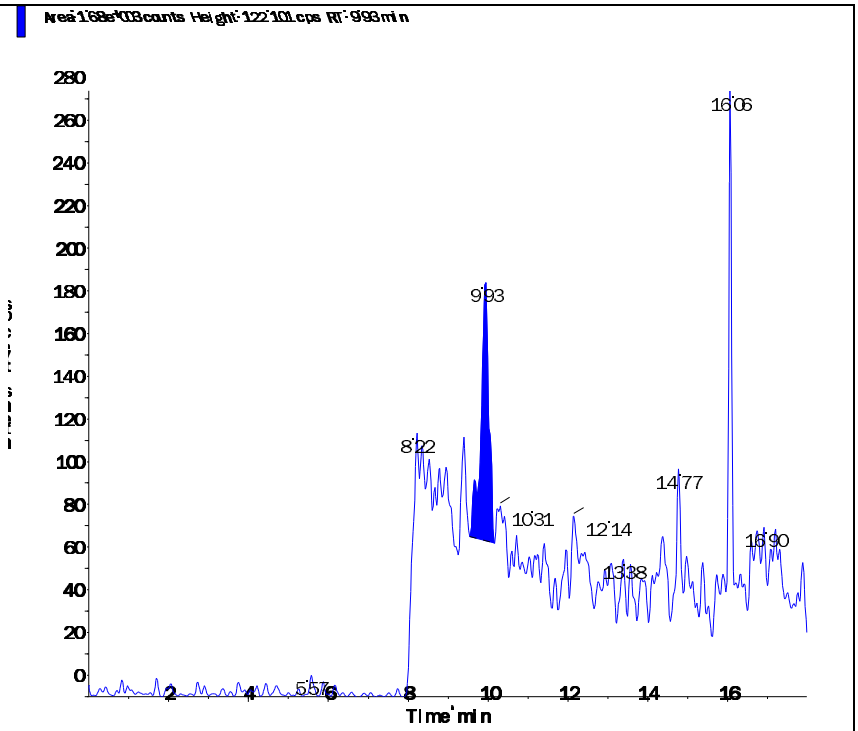

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.88 (9.92) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

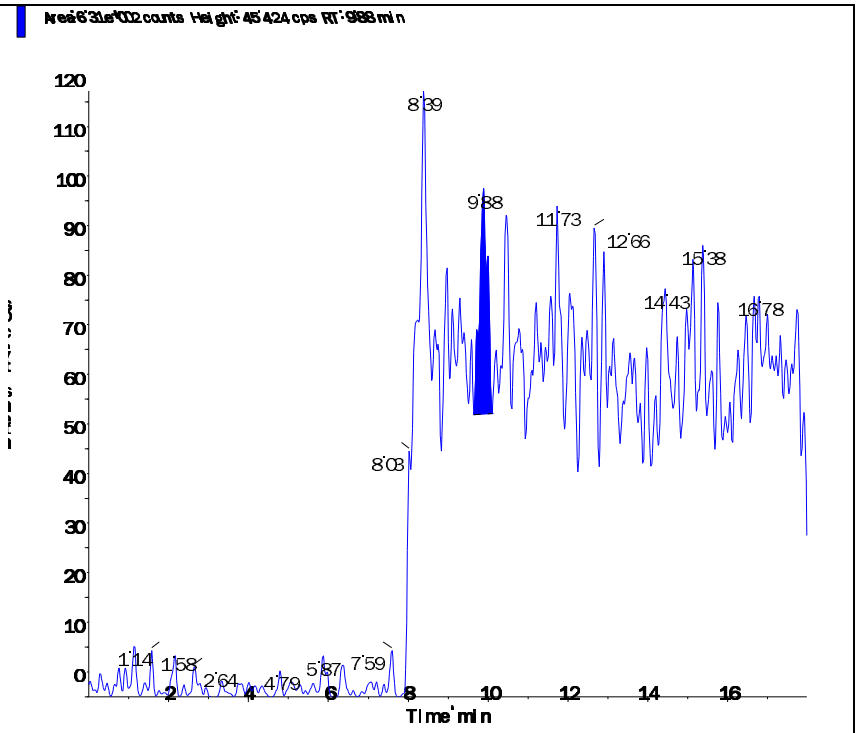

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Data File	LM33718.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 7:09:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030234-03	**Injection Vial**	9.00
Data File	LM33718.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 7:09:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	L16030234-03	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.380e+05	9.87	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.740e+03	9.88	N/A	< 0
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.87(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

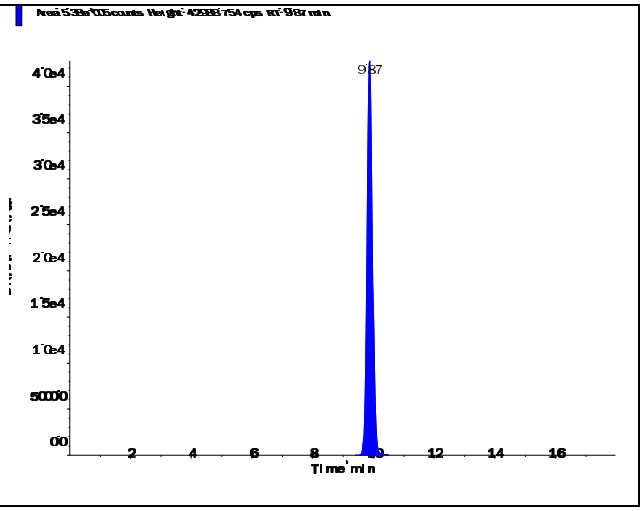

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.88 (9.94) min Calculated conc: < 0 ng/ml Area Ratio: 0.003 Sample Type: (Unknown)	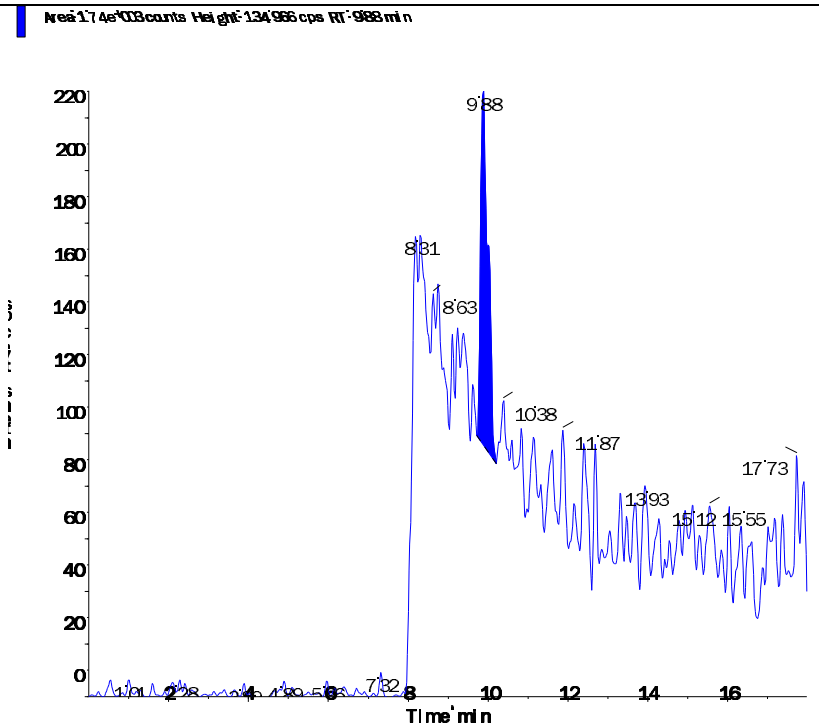
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.92) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	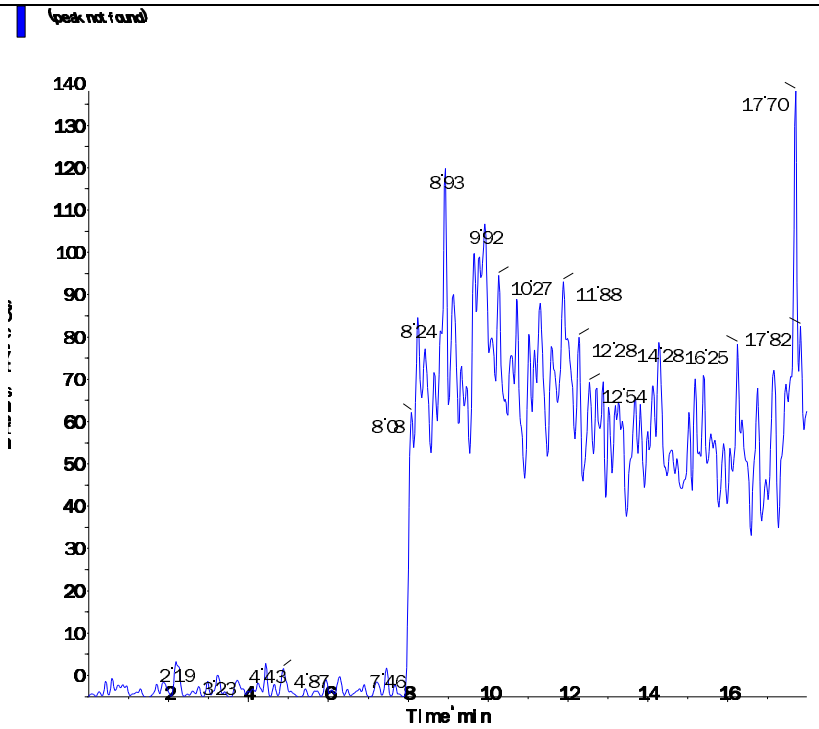

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Data File	LM33719.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 7:28:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030234-04	**Injection Vial**	10.00
Data File	LM33719.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 7:28:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	L16030234-04	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.260e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.010e+05	9.93	N/A	1.62
Perchlorate conf	9.500e+04	9.91	N/A	1.59

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

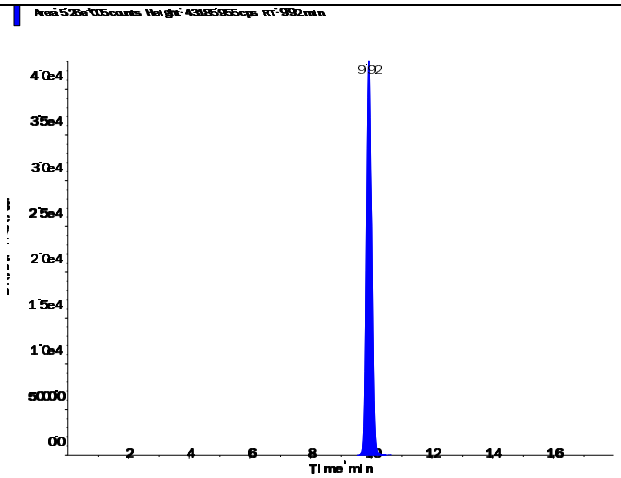

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	1.62 ng/ml
Area Ratio:	0.572
Sample Type:	(Unknown)

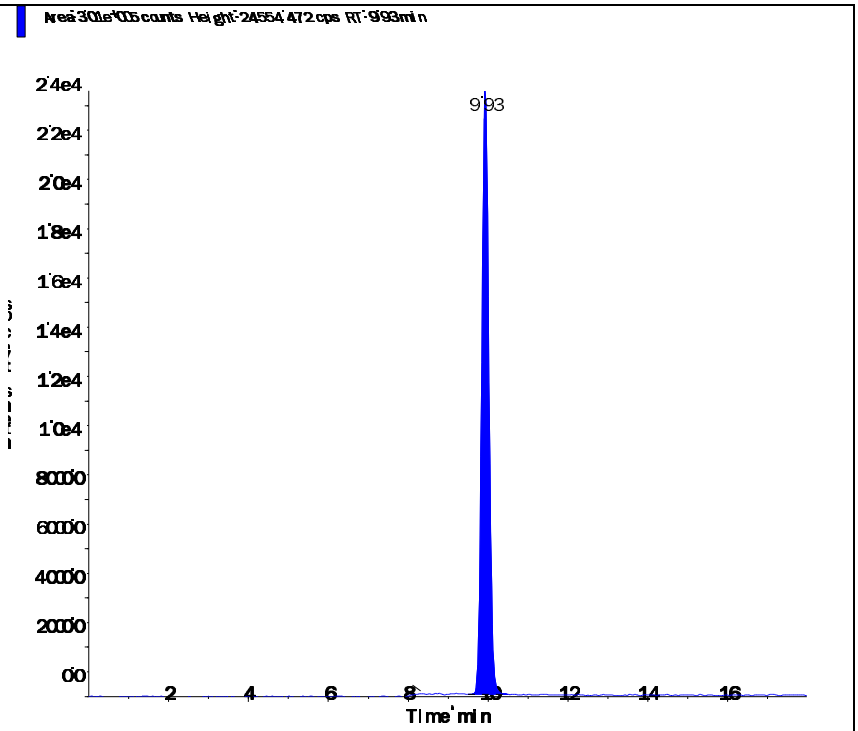

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.92) min
Calculated conc:	1.59 ng/ml
Area Ratio:	0.181
Sample Type:	(Unknown)

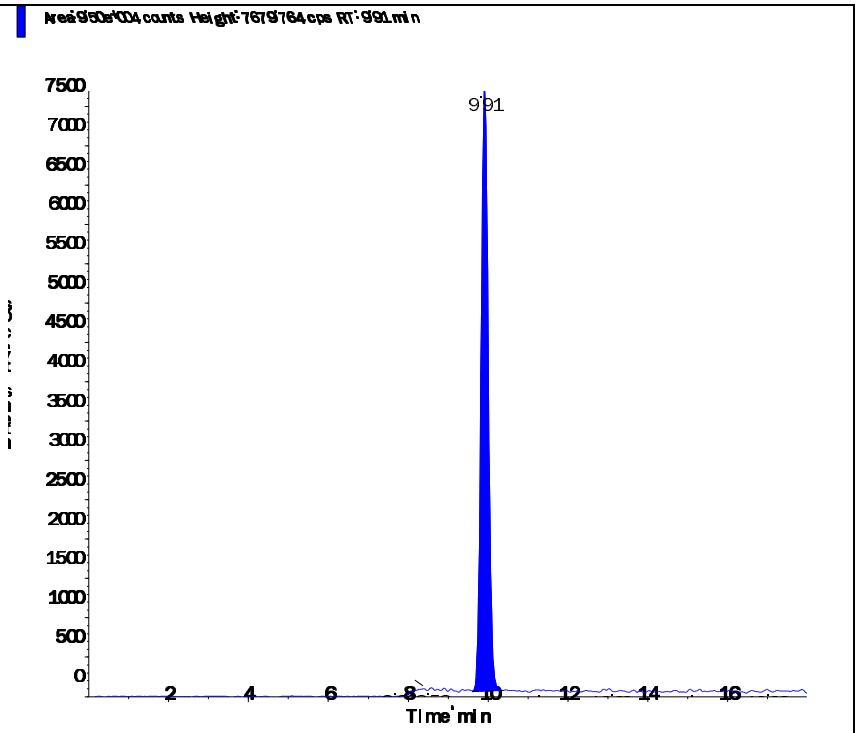

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Printed: 3/7/2016 5:43 PM

Data File	LM33720.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 7:47:41 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030234-05	**Injection Vial**	11.00
Data File	LM33720.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 7:47:41 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	L16030234-05	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.260e+05	9.89	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.770e+05	9.91	N/A	2.58
Perchlorate conf	1.520e+05	9.89	N/A	2.55

O18LP (Internal Standard)

RT (Exp. RT): 9.89(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

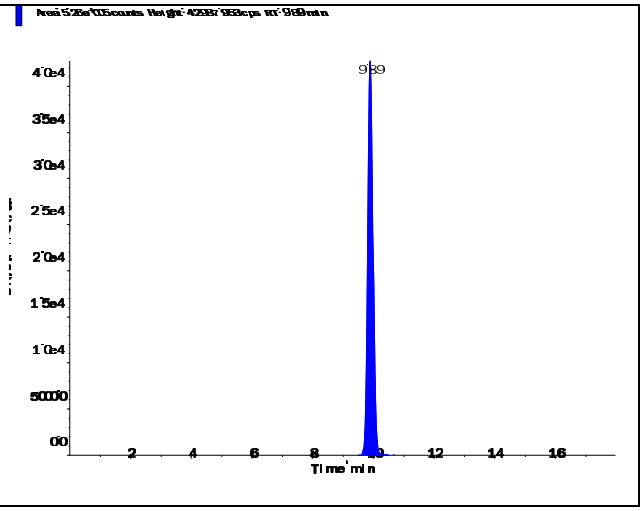

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.91 (9.94) min Calculated conc: 2.58 ng/ml Area Ratio: 0.906 Sample Type: (Unknown)	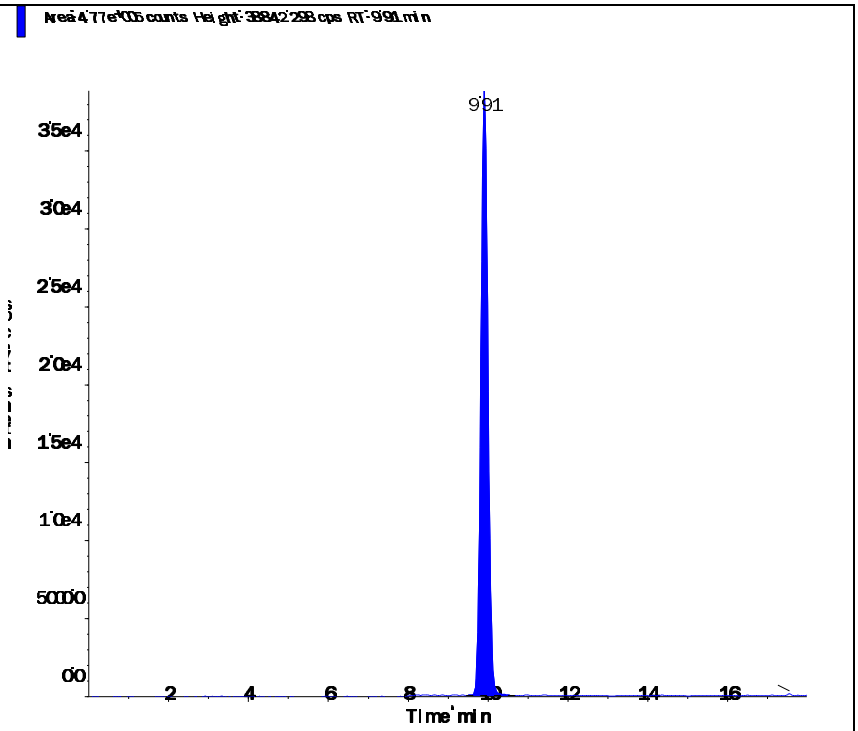
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.89 (9.92) min Calculated conc: 2.55 ng/ml Area Ratio: 0.288 Sample Type: (Unknown)	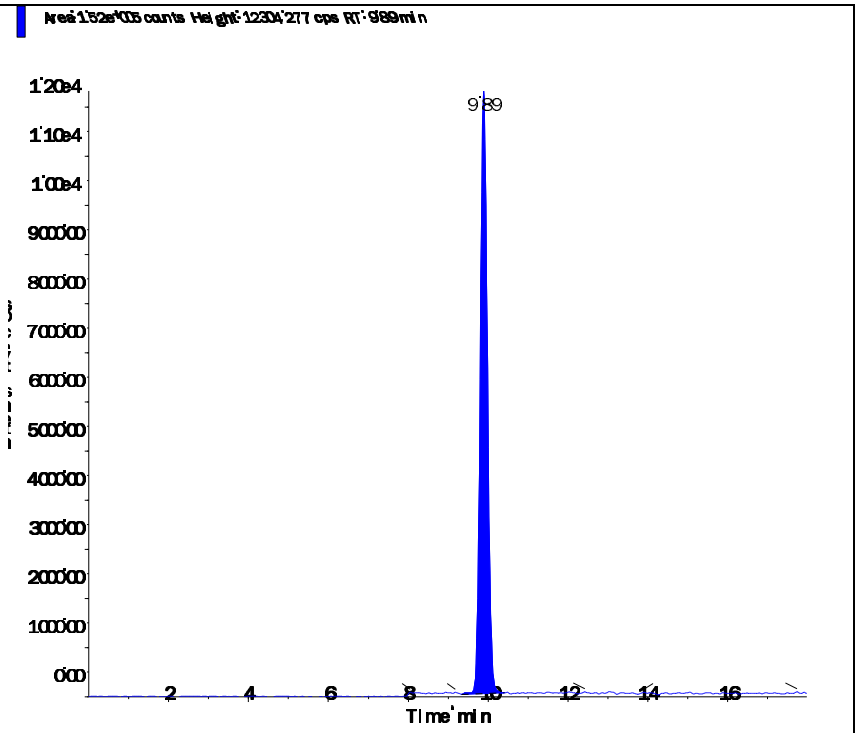

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Data File	LM33721.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 8:06:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030234-06	**Injection Vial**	12.00
Data File	LM33721.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 8:06:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	L16030234-06	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.650e+05	9.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.880e+04	9.91	N/A	0.386
Perchlorate conf	2.620e+04	9.90	N/A	0.398

O18LP (Internal Standard)

RT (Exp. RT): 9.90(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

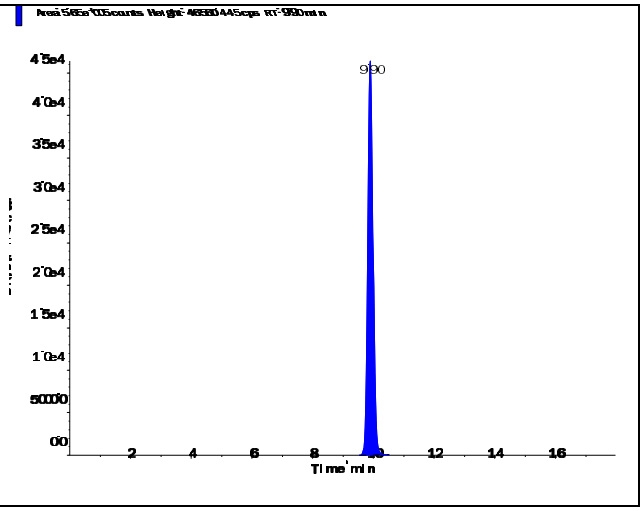

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.91 (9.94) min
Calculated conc:	0.386 ng/ml
Area Ratio:	0.139
Sample Type:	(Unknown)

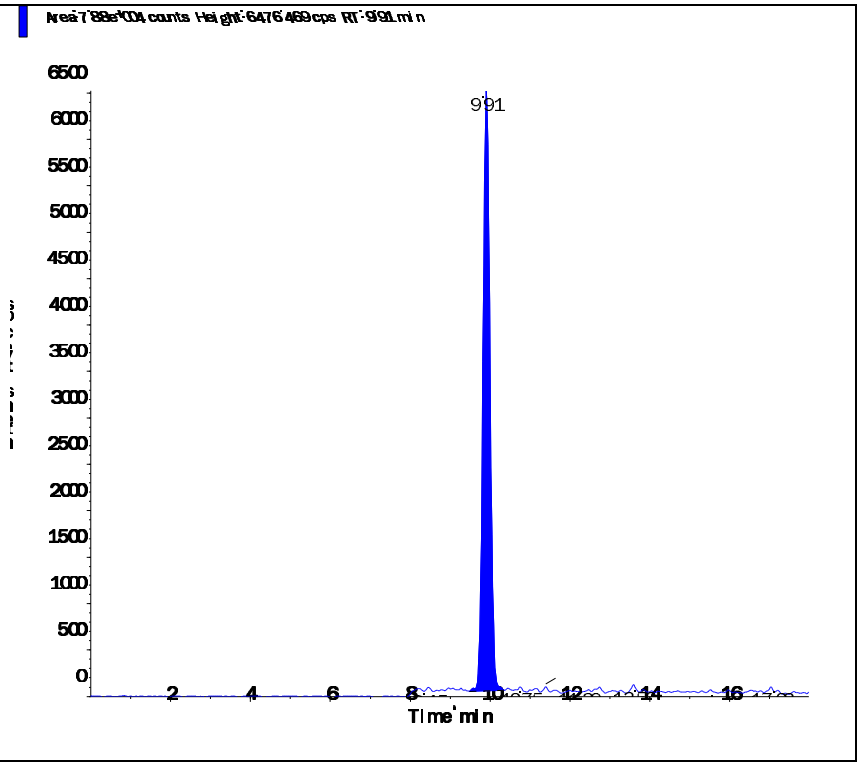

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.90 (9.92) min
Calculated conc:	0.398 ng/ml
Area Ratio:	0.046
Sample Type:	(Unknown)

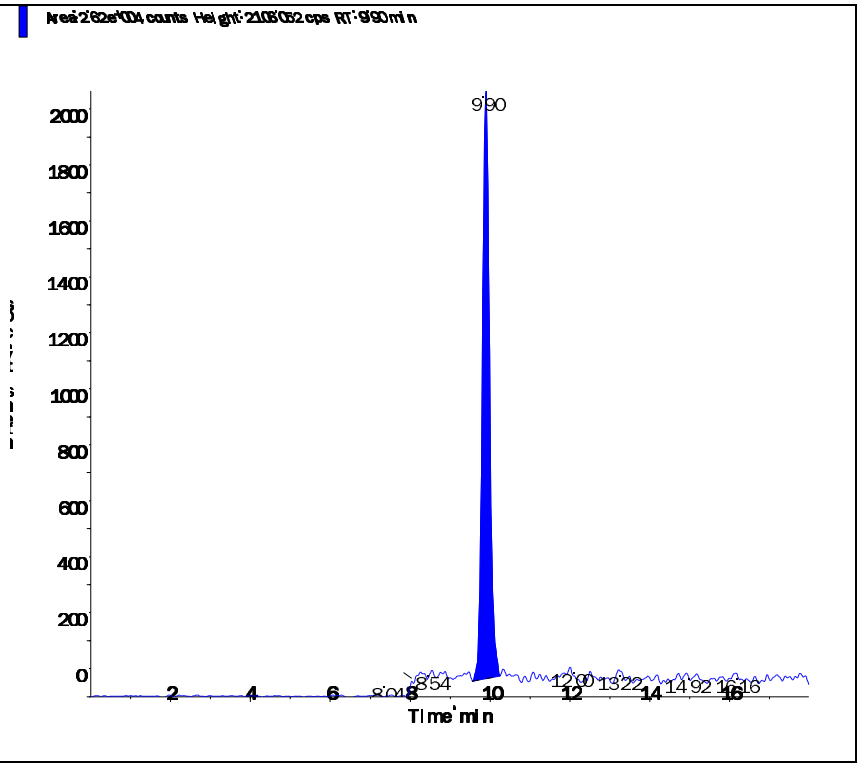

2.2.1.4 Standards Data

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Data File	LM33567.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-01 CCB	**Injection Vial**	51.00
Data File	LM33567.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559340-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.710e+05	9.99	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.99(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

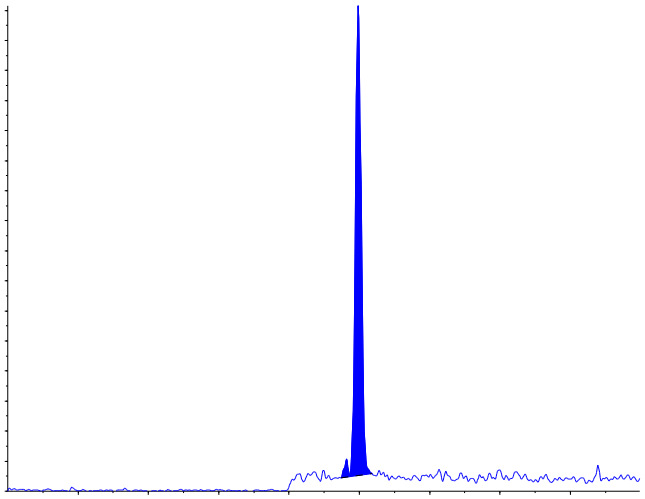

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

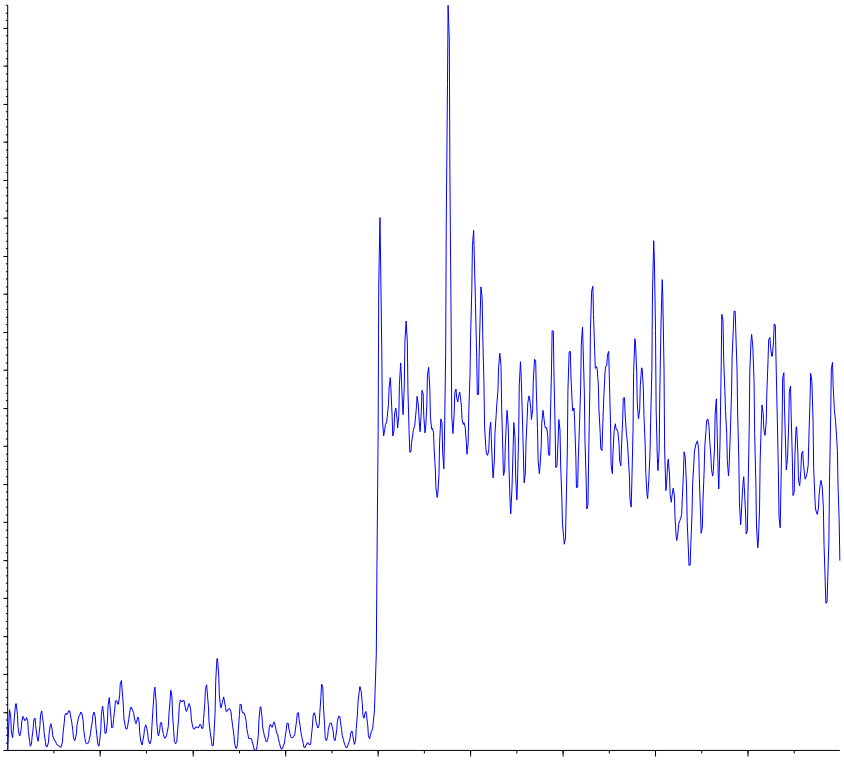

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

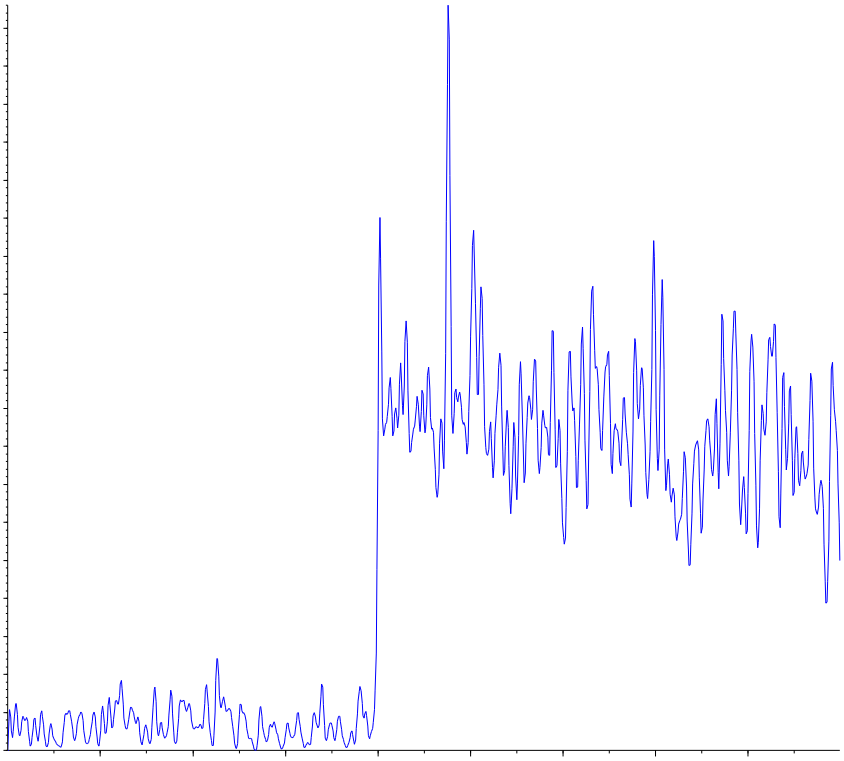

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Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM33567.wiff	**Result Table**	030216_WTD.rdb
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.75 x + 0.00437 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	95.0	N/A	N/A
0.20	1	0.20	99.5	N/A	N/A
0.50	1	0.50	101.0	N/A	N/A
1.00	1	1.03	103.4	N/A	N/A
2.00	1	2.02	101.0	N/A	N/A
5.00	1	5.07	101.5	N/A	N/A
10.00	1	9.87	98.7	N/A	N/A

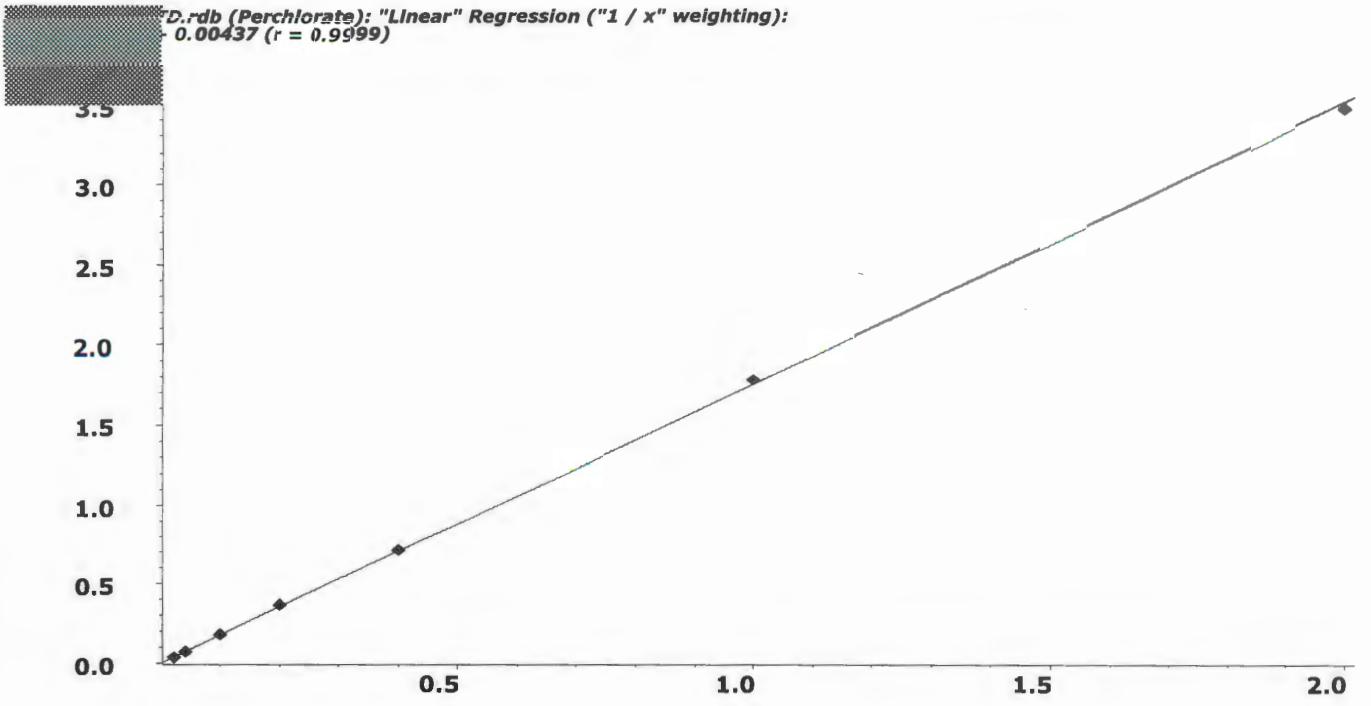

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Printed: 3/3/2016 1:59 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM33567.wiff	**Result Table**	030216_WTD.rdb
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.562 x + 0.00157 (r = 0.9998)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	93.4	N/A	N/A
0.20	1	0.20	98.6	N/A	N/A
0.50	1	0.54	107.2	N/A	N/A
1.00	1	1.00	99.5	N/A	N/A
2.00	1	2.01	100.7	N/A	N/A
5.00	1	5.11	102.2	N/A	N/A
10.00	1	9.85	98.5	N/A	N/A

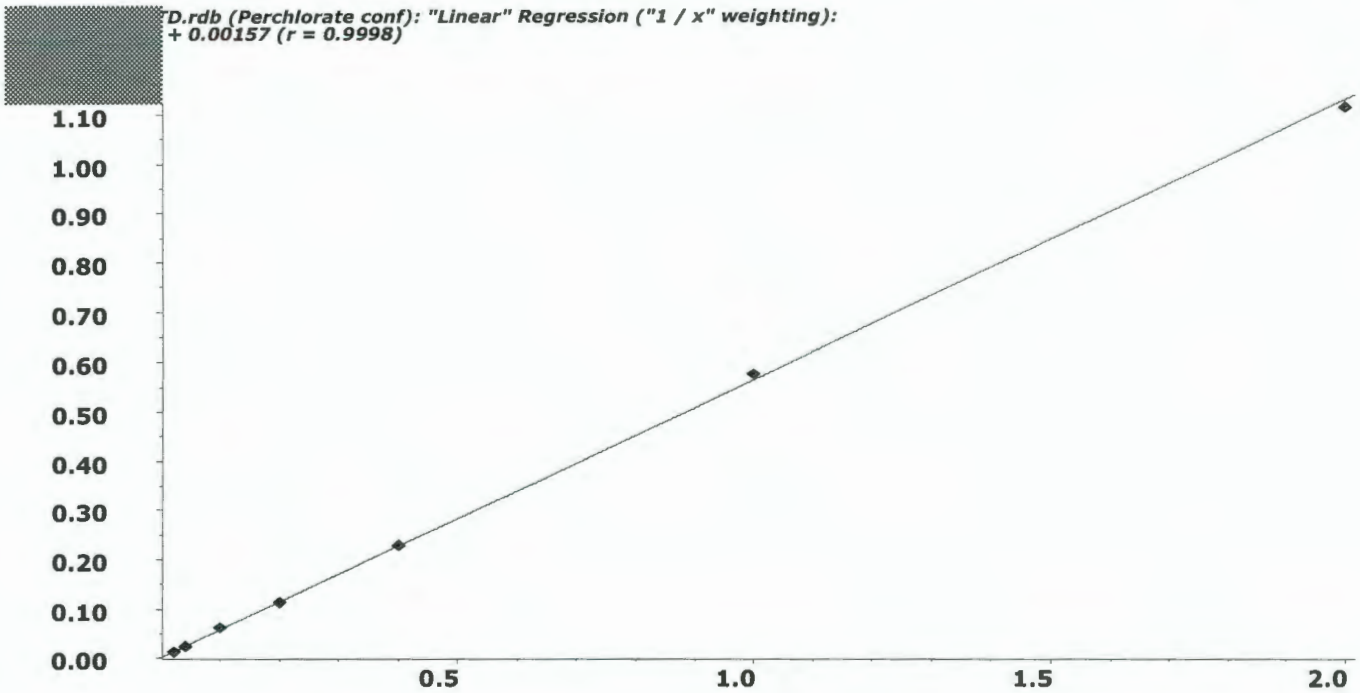

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Data File	LM33568.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/2/2016 8:53:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-02 STD (0.1 ug/L)	**Injection Vial**	52.00
Data File	LM33568.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 8:53:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559340-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.900e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.840e+04	9.97	0.10	0.095
Perchlorate conf	5.910e+03	9.94	0.10	0.0934

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

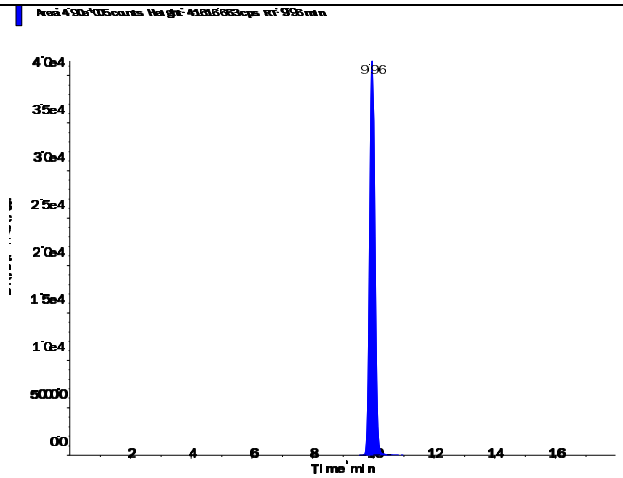

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.97 (9.94) min
Calculated conc:	0.095 ng/ml
Area Ratio:	0.038
Sample Type:	(Standard)

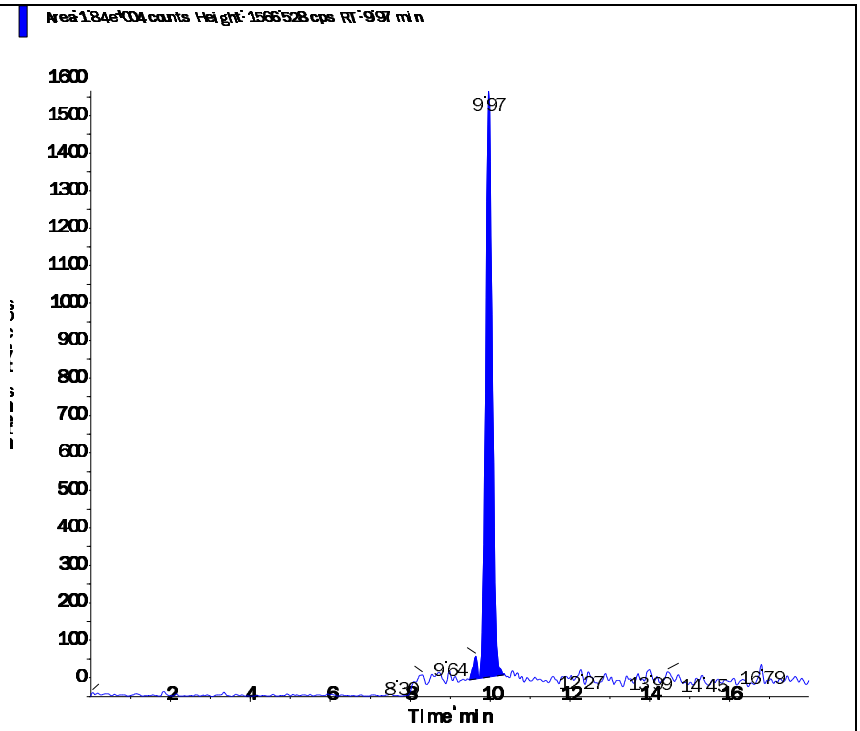

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.0934 ng/ml
Area Ratio:	0.012
Sample Type:	(Standard)

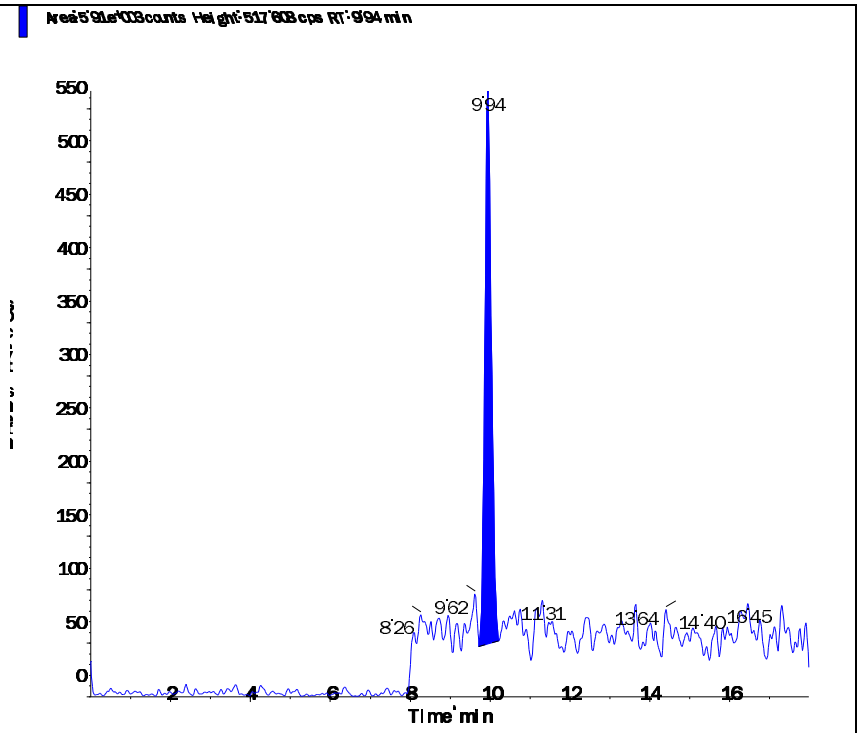

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Data File	LM33569.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/2/2016 9:12:17 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-03 STD (0.2 ug/L)	**Injection Vial**	53.00
Data File	LM33569.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 9:12:17 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559340-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.990e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.700e+04	9.99	0.20	0.199
Perchlorate conf	1.190e+04	9.98	0.20	0.197

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

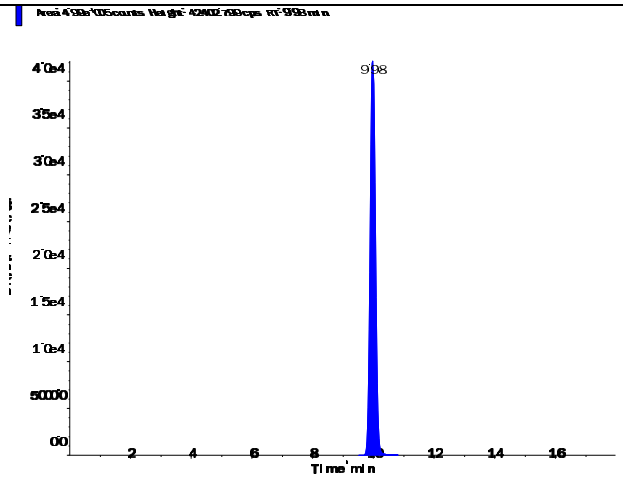

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.99 (9.94) min
Calculated conc:	0.199 ng/ml
Area Ratio:	0.074
Sample Type:	(Standard)

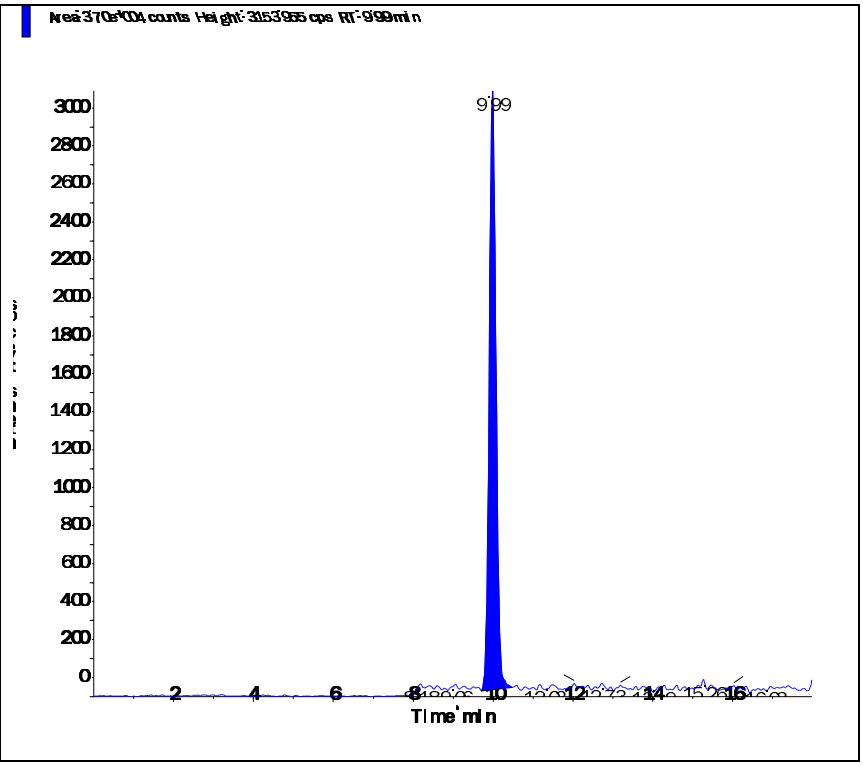

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.98 (9.92) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

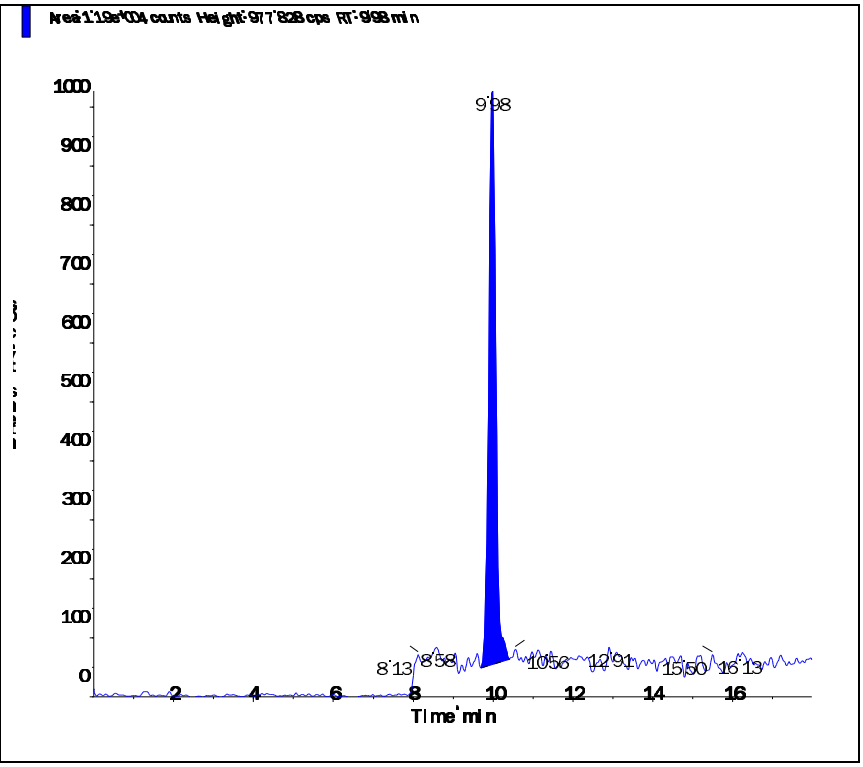

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Data File	LM33570.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/2/2016 9:31:14 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-04 STD (0.5 ug/L)	**Injection Vial**	54.00
Data File	LM33570.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 9:31:14 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559340-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.920e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.900e+04	10.00	0.50	0.505
Perchlorate conf	3.040e+04	9.98	0.50	0.536

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

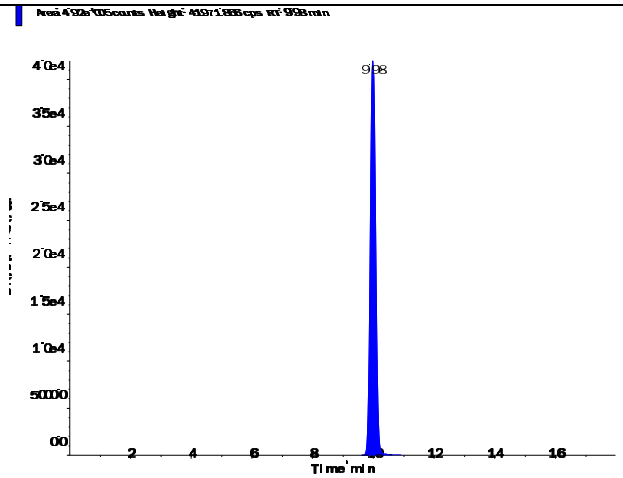

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.00 (9.94) min
Calculated conc:	0.505 ng/ml
Area Ratio:	0.181
Sample Type:	(Standard)

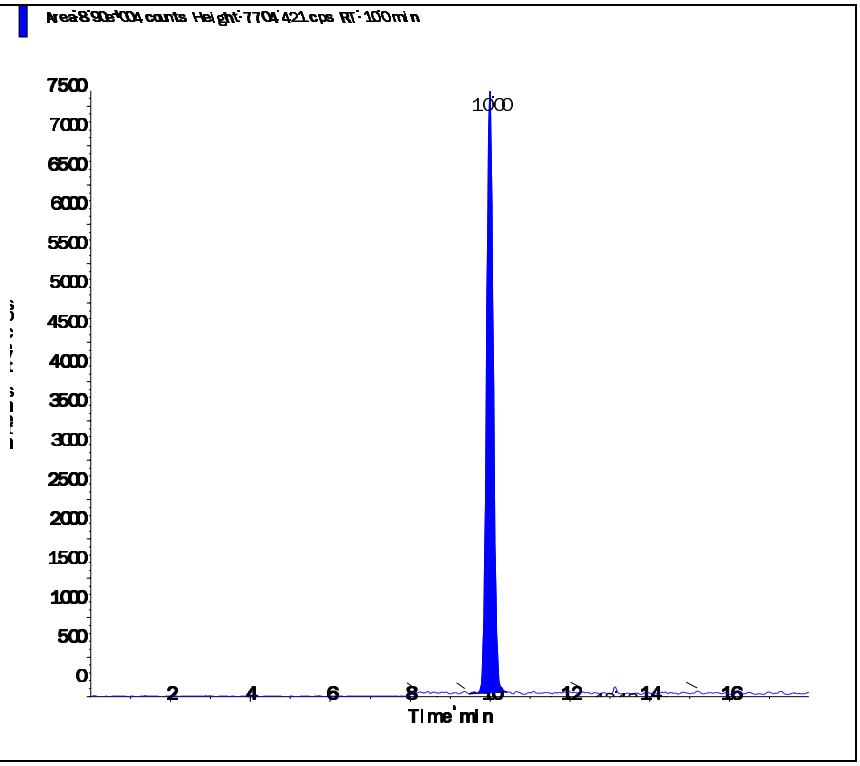

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.98 (9.92) min
Calculated conc:	0.536 ng/ml
Area Ratio:	0.062
Sample Type:	(Standard)

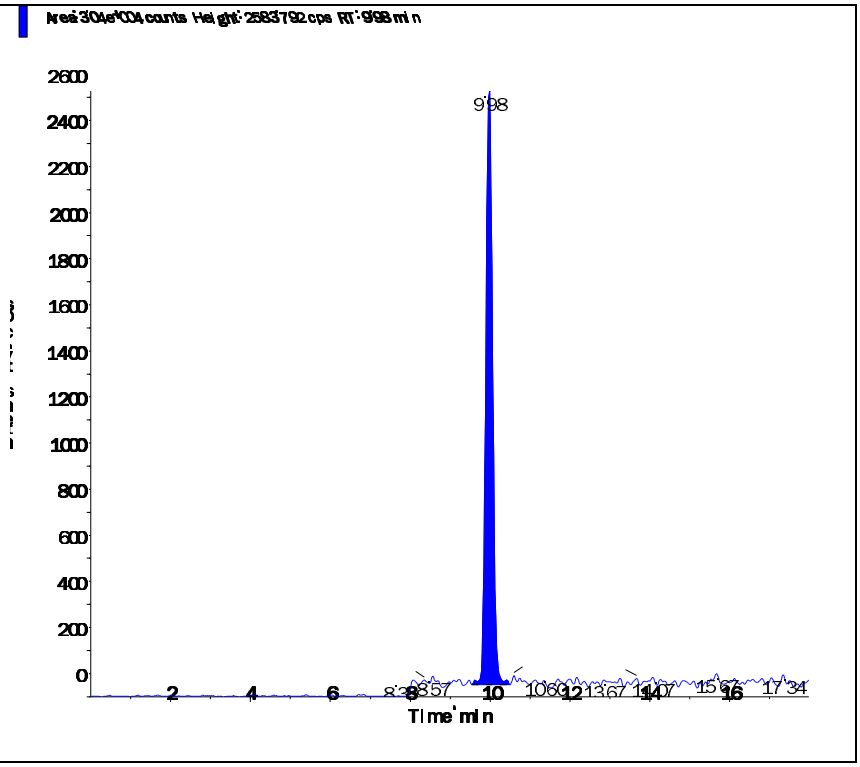

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Data File	LM33571.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/2/2016 9:50:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-05 STD (1.0 ug/L)	**Injection Vial**	55.00
Data File	LM33571.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 9:50:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559340-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.010e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.830e+05	9.99	1.00	1.03
Perchlorate conf	5.680e+04	9.98	1.00	0.995

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

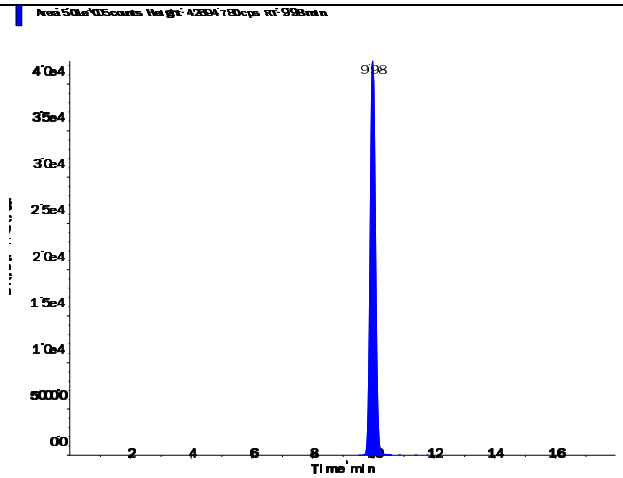

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.99 (9.94) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.366
Sample Type:	(Standard)

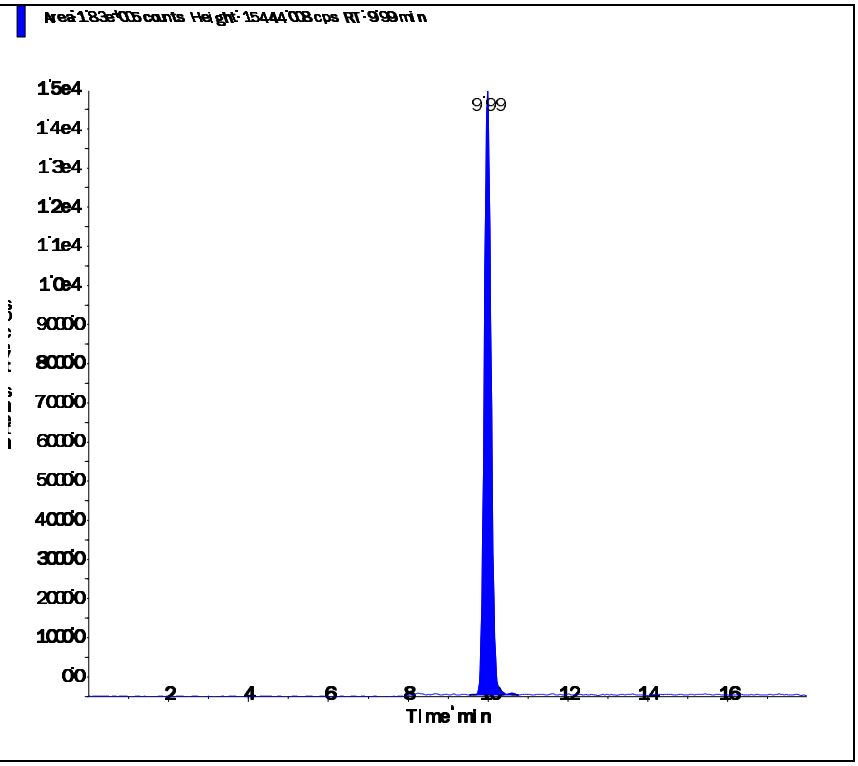

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.98 (9.92) min
Calculated conc:	0.995 ng/ml
Area Ratio:	0.113
Sample Type:	(Standard)

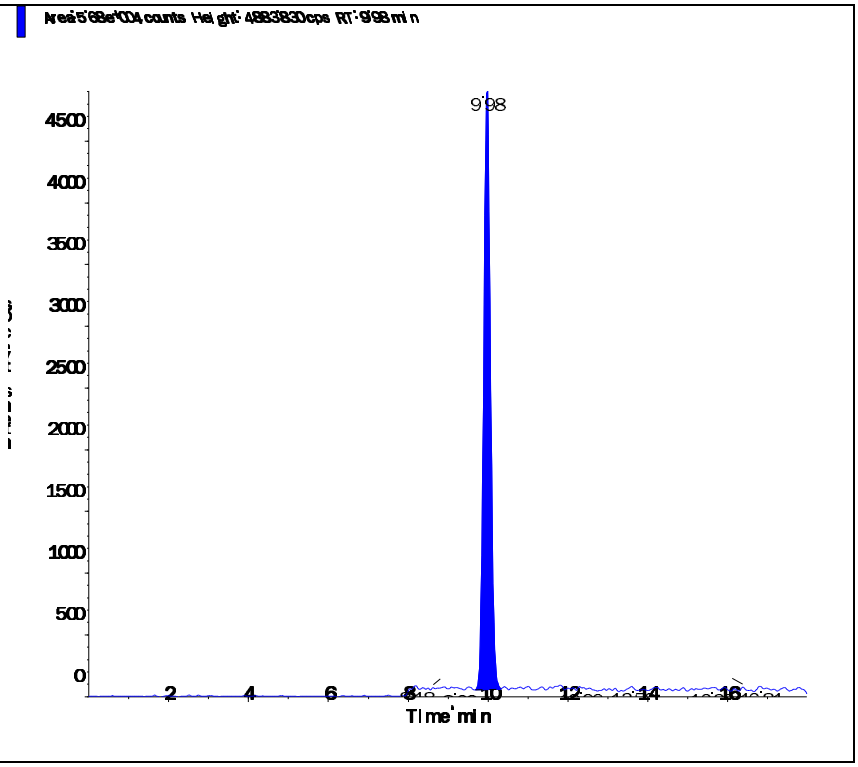

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Data File	LM33572.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/2/2016 10:09:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-06 STD (2.0 ug/L)	**Injection Vial**	56.00
Data File	LM33572.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 10:09:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559340-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.99	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.630e+05	10.00	2.00	2.02
Perchlorate conf	1.170e+05	9.99	2.00	2.01

O18LP (Internal Standard)

RT (Exp. RT): 9.99(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

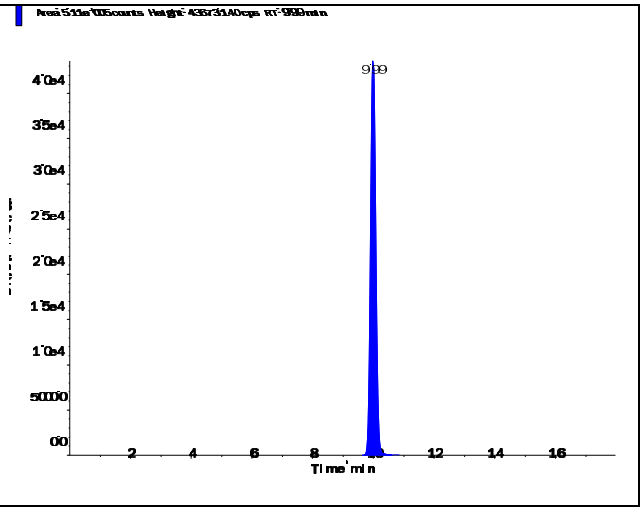

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.00 (9.94) min Calculated conc: 2.02 ng/ml Area Ratio: 0.711 Sample Type: (Standard)	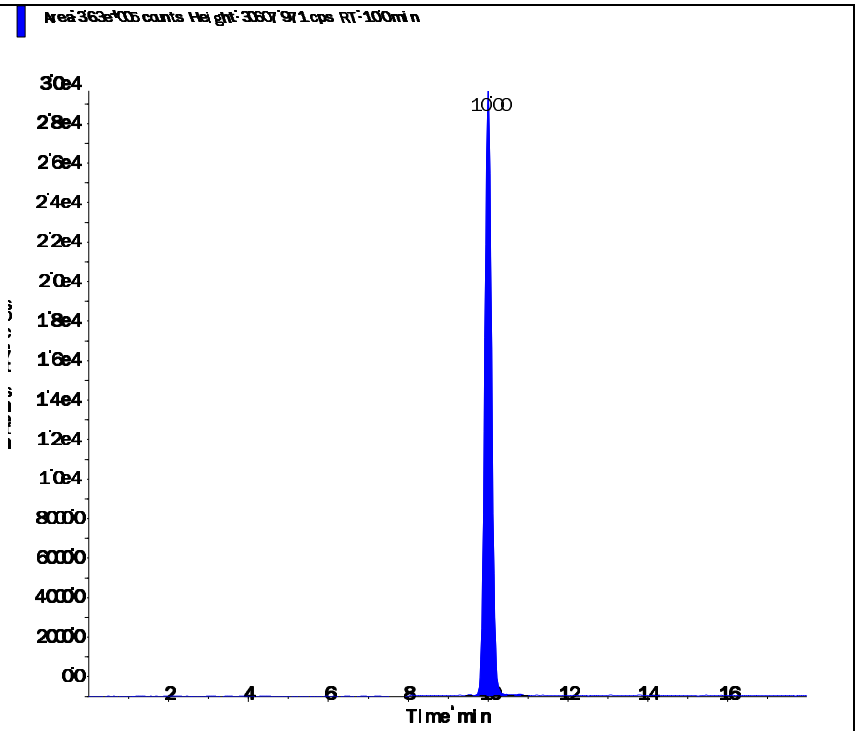
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.99 (9.92) min Calculated conc: 2.01 ng/ml Area Ratio: 0.228 Sample Type: (Standard)	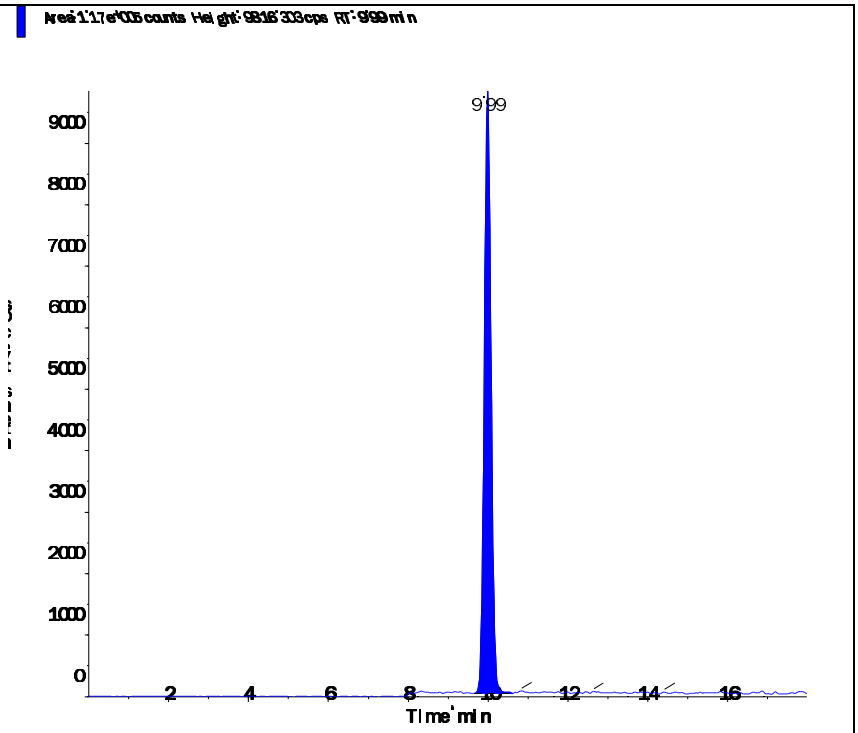

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Data File	LM33573.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/2/2016 10:28:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-07 STD (5.0 ug/L)	**Injection Vial**	57.00
Data File	LM33573.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 10:28:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559340-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.900e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.710e+05	9.98	5.00	5.07
Perchlorate conf	2.820e+05	9.97	5.00	5.11

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

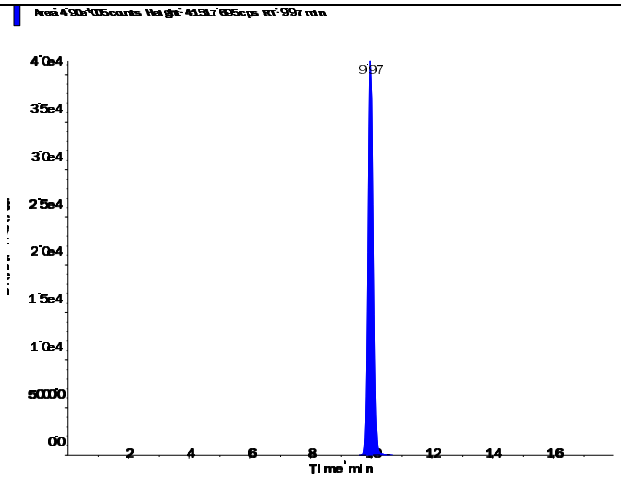

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.98 (9.94) min
Calculated conc:	5.07 ng/ml
Area Ratio:	1.779
Sample Type:	(Standard)

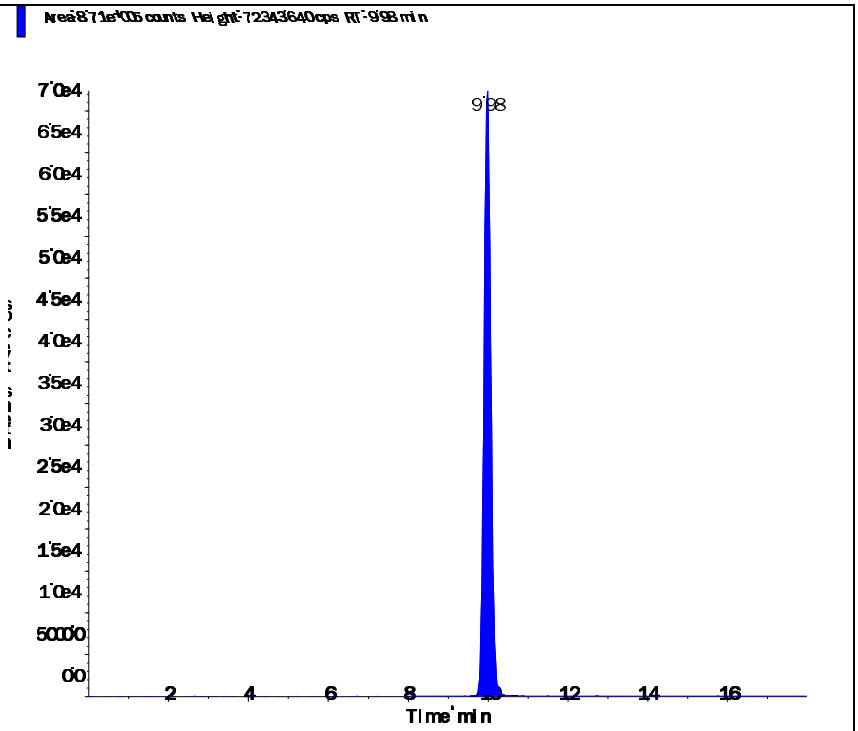

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.97 (9.92) min
Calculated conc:	5.11 ng/ml
Area Ratio:	0.576
Sample Type:	(Standard)

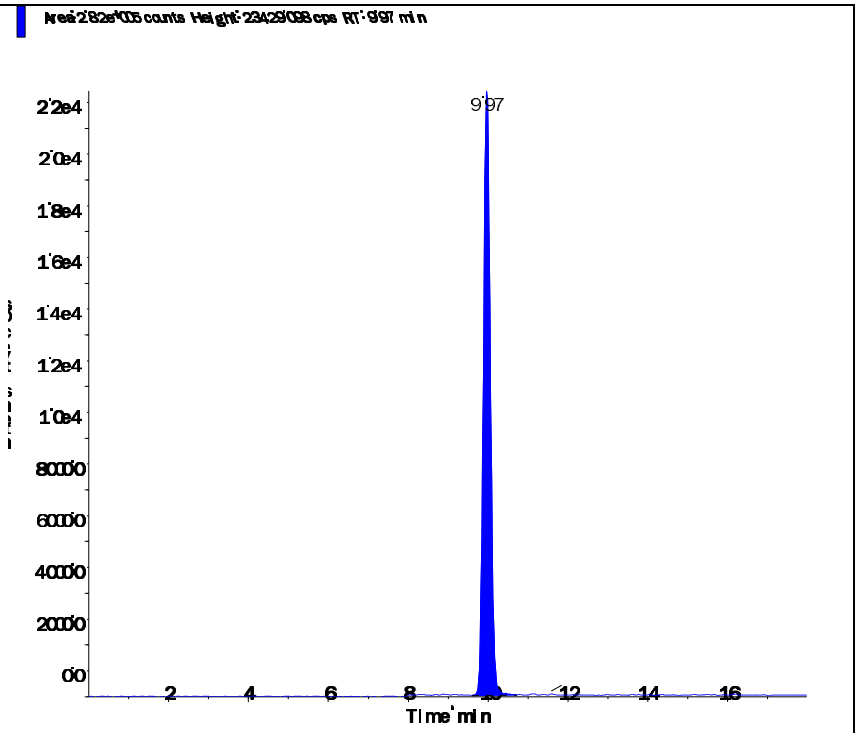

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Data File	LM33574.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/2/2016 10:46:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-08 STD (10 ug/L)	**Injection Vial**	58.00
Data File	LM33574.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 10:46:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559340-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.650e+06	9.98	10.00	9.87
Perchlorate conf	5.300e+05	9.96	10.00	9.85

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

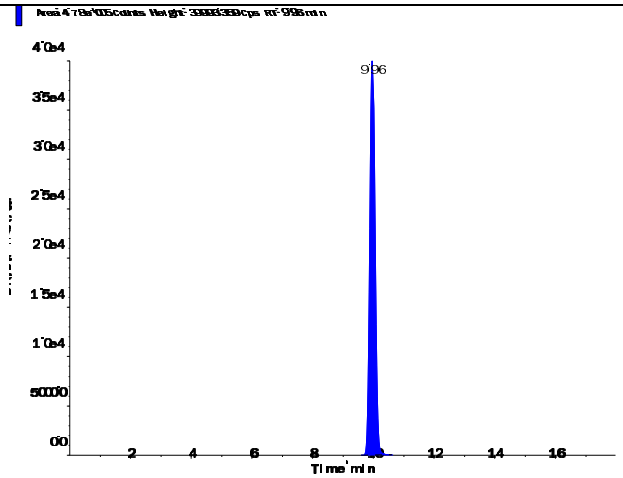

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.98 (9.94) min
Calculated conc:	9.87 ng/ml
Area Ratio:	3.458
Sample Type:	(Standard)

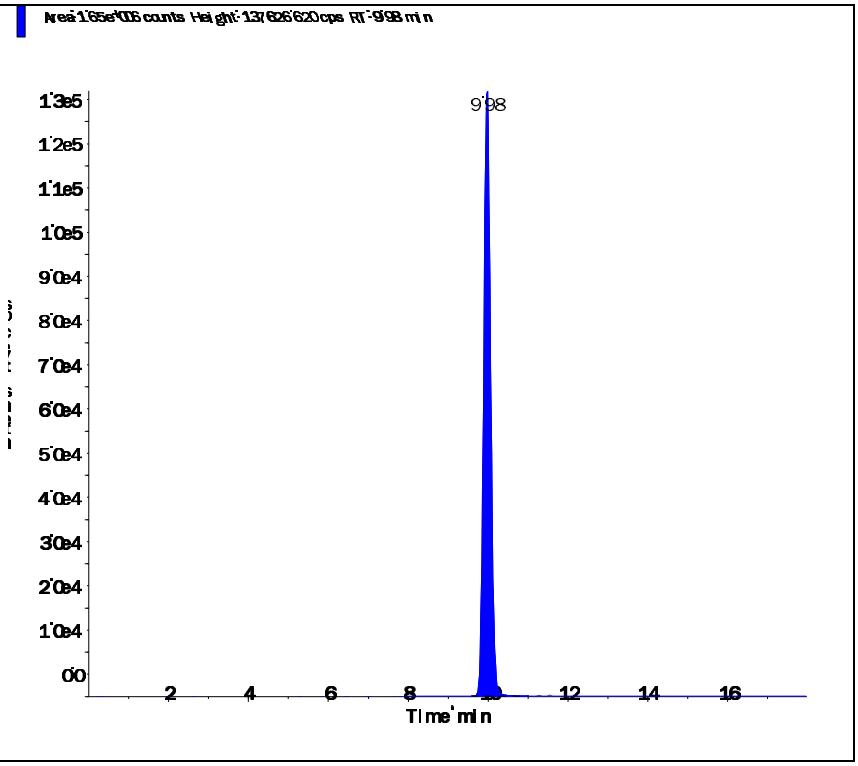

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.96 (9.92) min
Calculated conc:	9.85 ng/ml
Area Ratio:	1.11
Sample Type:	(Standard)

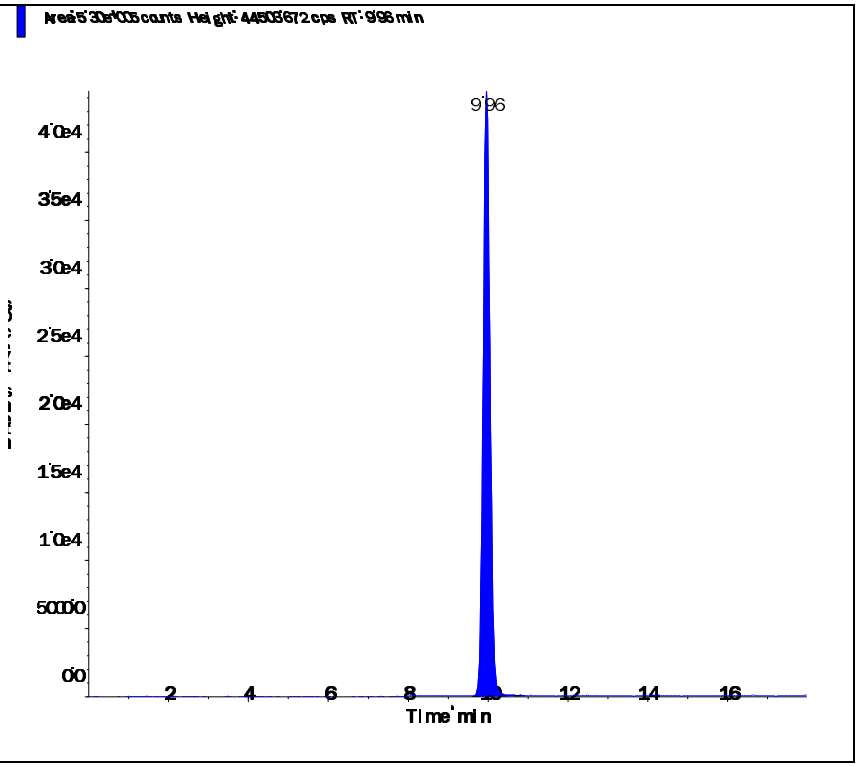

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Data File	LM33575.wiff	**Result Table**	030216_WTD.rdb
Acquisition Date	3/2/2016 11:05:52 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-09 SSCV (1.0 ug/L)	**Injection Vial**	59.00
Data File	LM33575.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 11:05:52 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030216_WTD.rdb
Sample ID	WG559340-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.200e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.900e+05	9.98	1.00	1.03
Perchlorate conf	6.220e+04	9.97	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

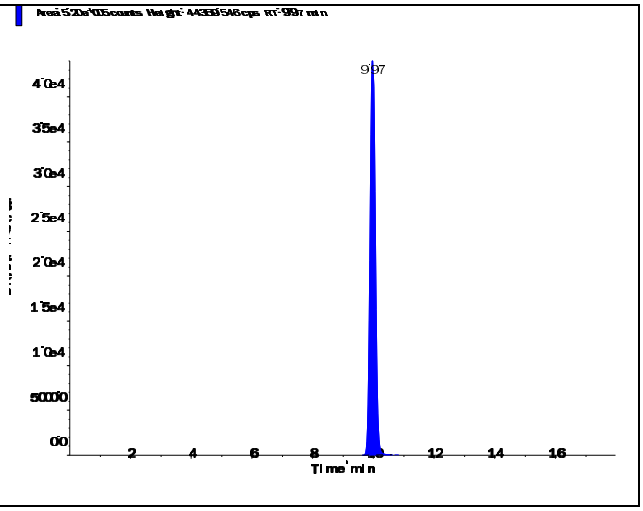

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.98 (9.94) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.366
Sample Type:	(Quality Control)

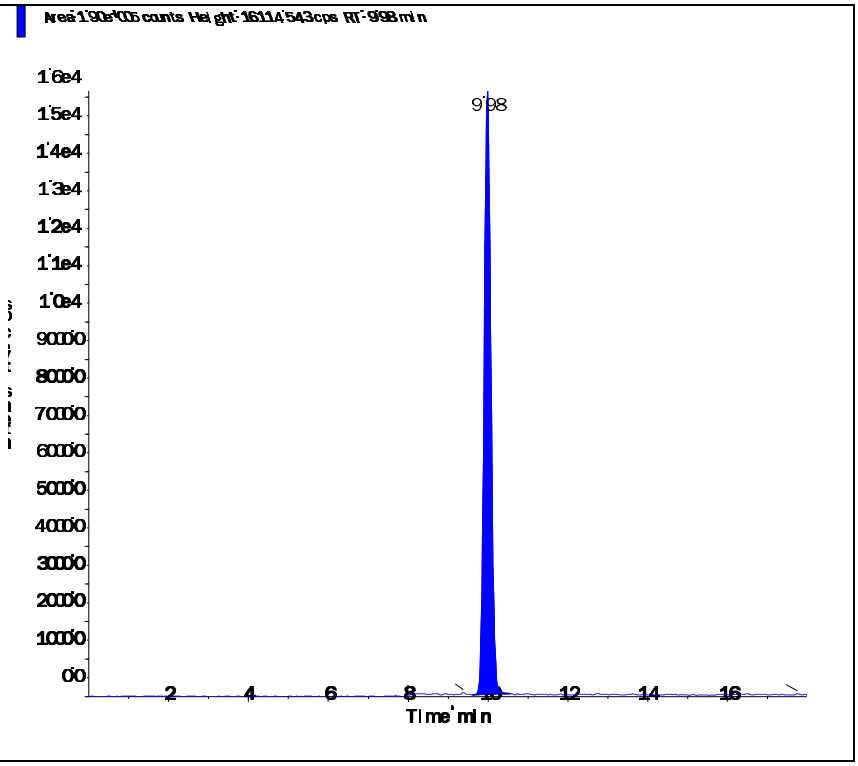

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.97 (9.92) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.12
Sample Type:	(Quality Control)

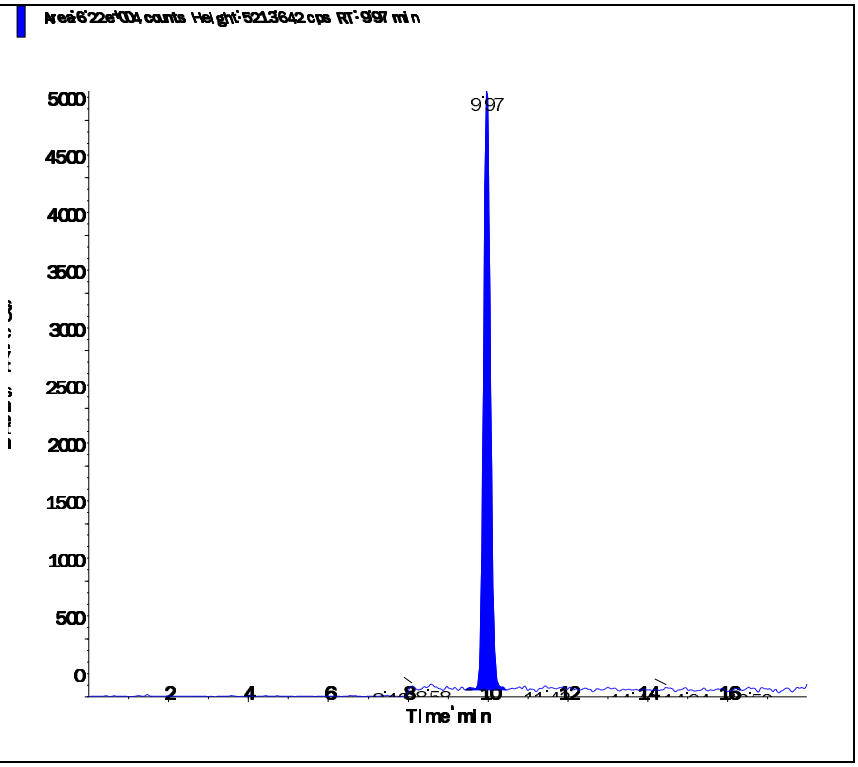

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Data File	LM33711.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 4:57:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559812-02 CCV (1.0ug/L)	**Injection Vial**	2.00
Data File	LM33711.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 4:57:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559812-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.160e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.770e+05	9.95	1.00	0.969
Perchlorate conf	5.620e+04	9.94	1.00	0.954

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

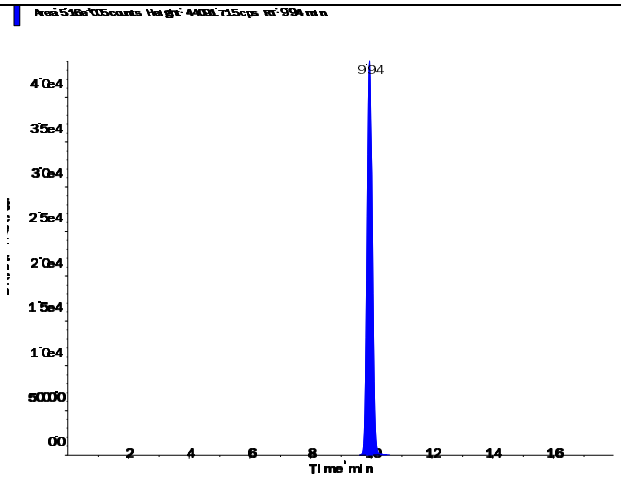

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	0.969 ng/ml
Area Ratio:	0.343
Sample Type:	(Quality Control)

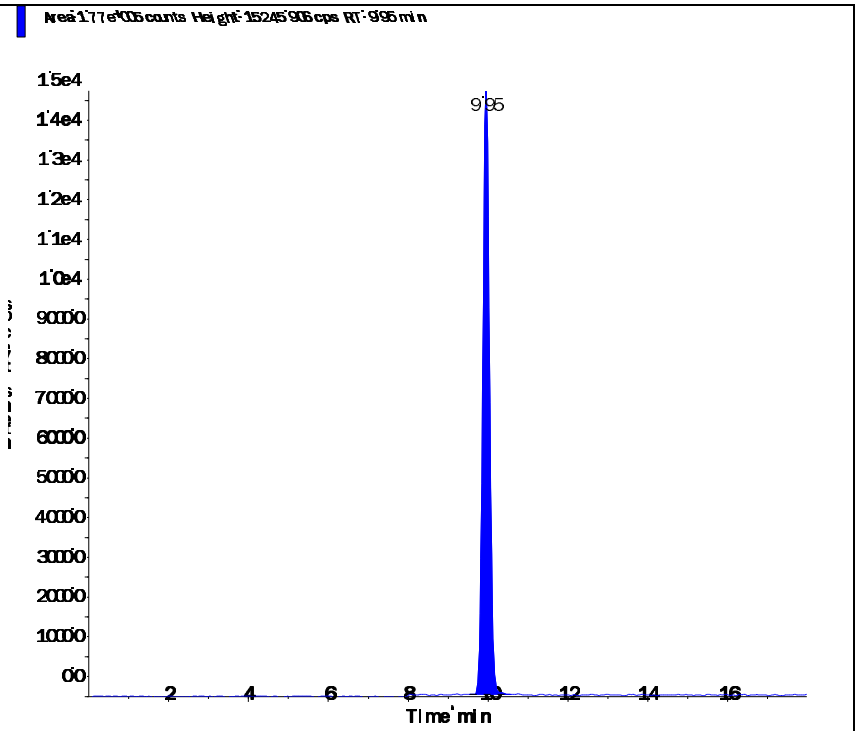

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.954 ng/ml
Area Ratio:	0.109
Sample Type:	(Quality Control)

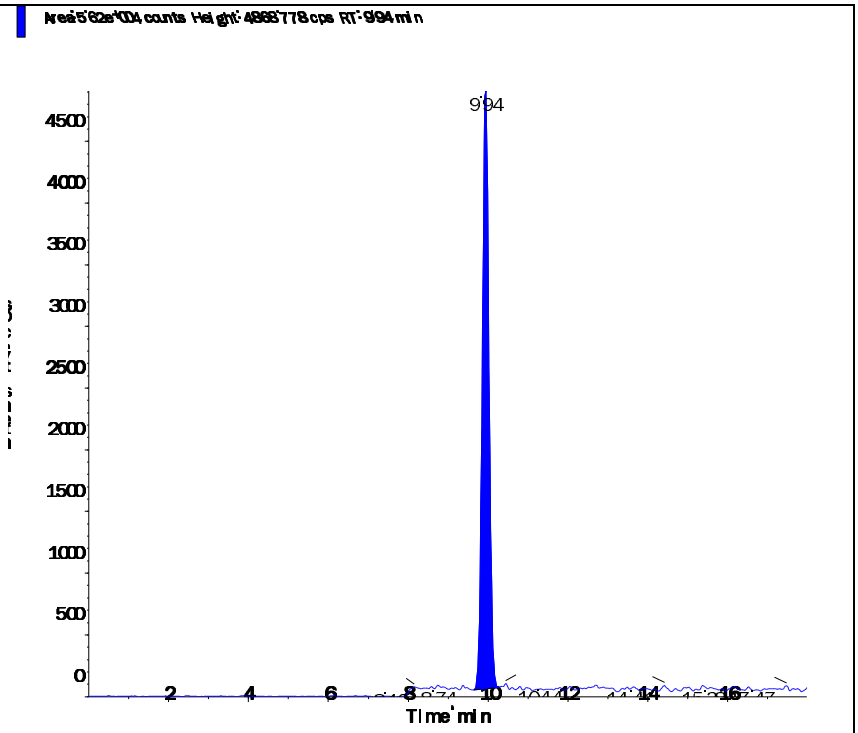

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Data File	LM33723.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 8:44:26 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559812-03 CCV (1.0ug/L)	**Injection Vial**	2.00
Data File	LM33723.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 8:44:26 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559812-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.800e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.000e+05	9.92	1.00	0.975
Perchlorate conf	6.220e+04	9.90	1.00	0.939

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

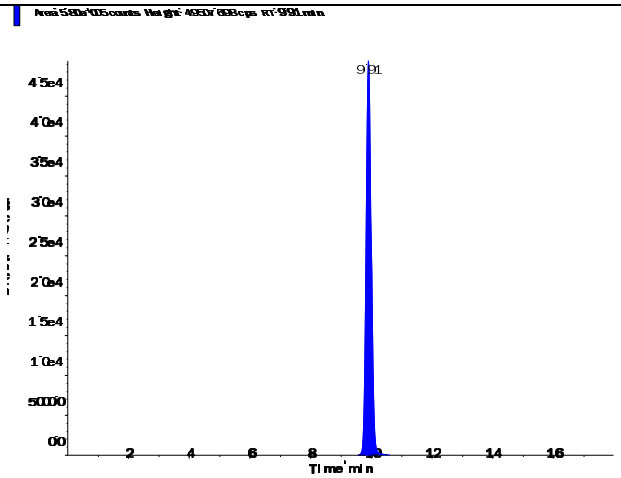

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.92 (9.94) min
Calculated conc:	0.975 ng/ml
Area Ratio:	0.345
Sample Type:	(Quality Control)

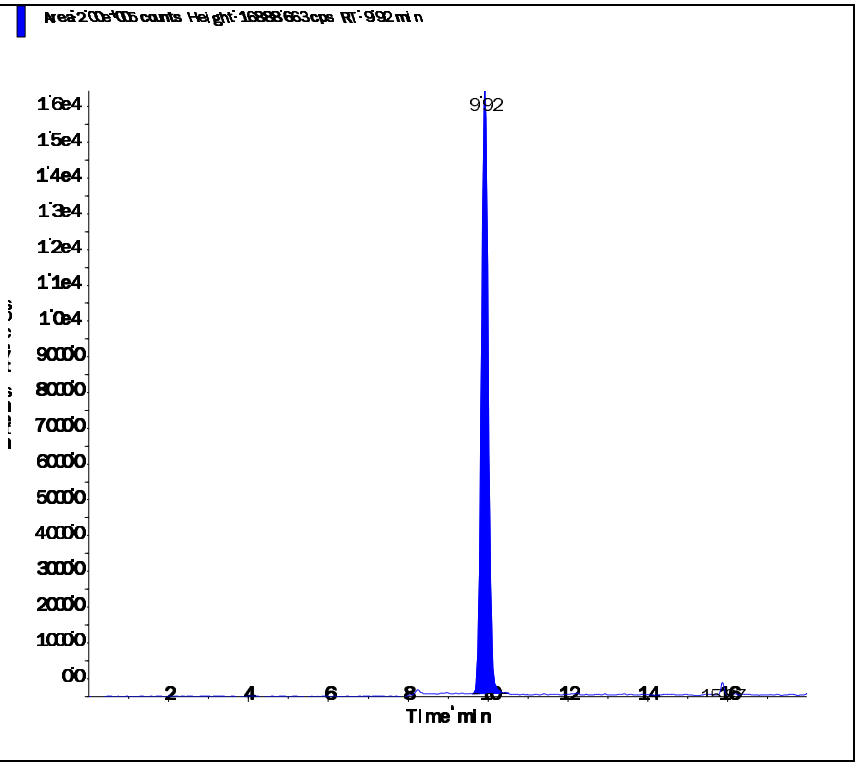

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.90 (9.92) min
Calculated conc:	0.939 ng/ml
Area Ratio:	0.107
Sample Type:	(Quality Control)

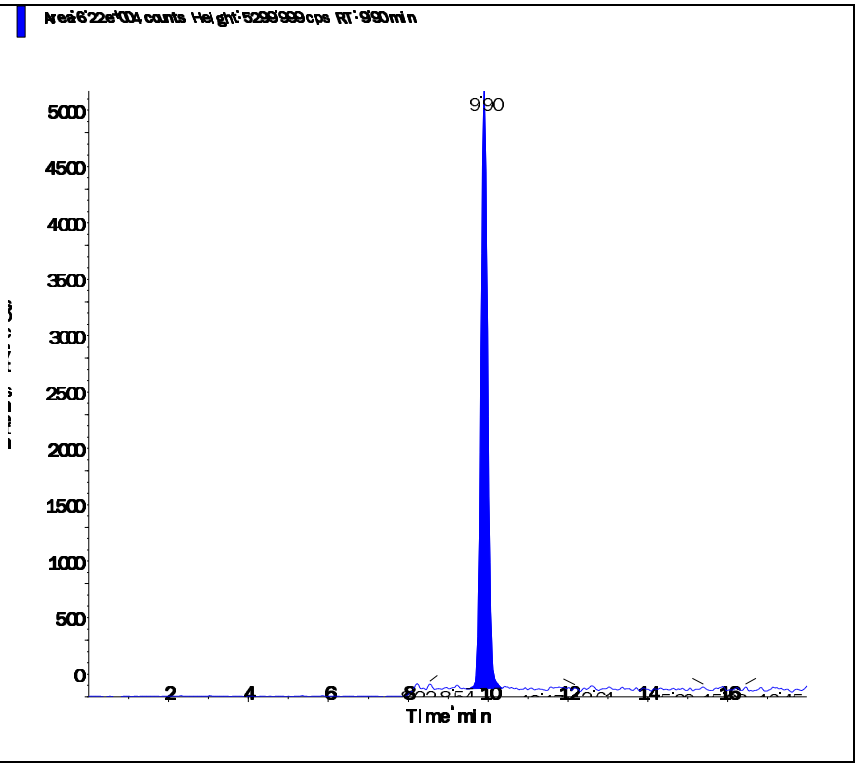

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Data File	LM33733.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 11:53:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559812-05 CCV (1.0ug/L)	**Injection Vial**	2.00
Data File	LM33733.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 11:53:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559812-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.630e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.950e+05	9.94	1.00	0.978
Perchlorate conf	6.150e+04	9.92	1.00	0.958

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

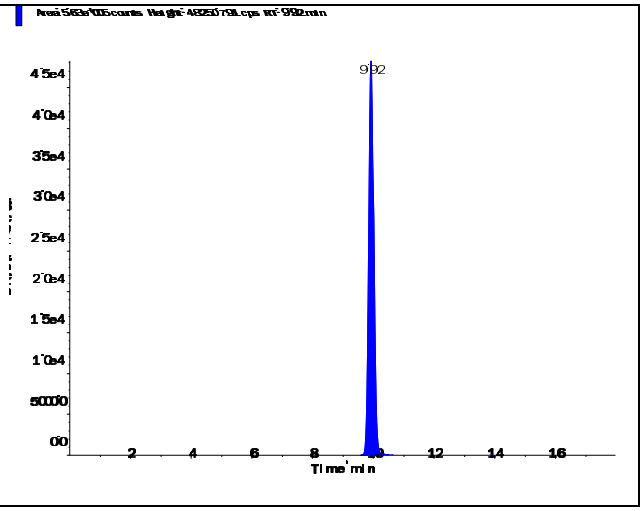

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.978 ng/ml
Area Ratio:	0.346
Sample Type:	(Quality Control)

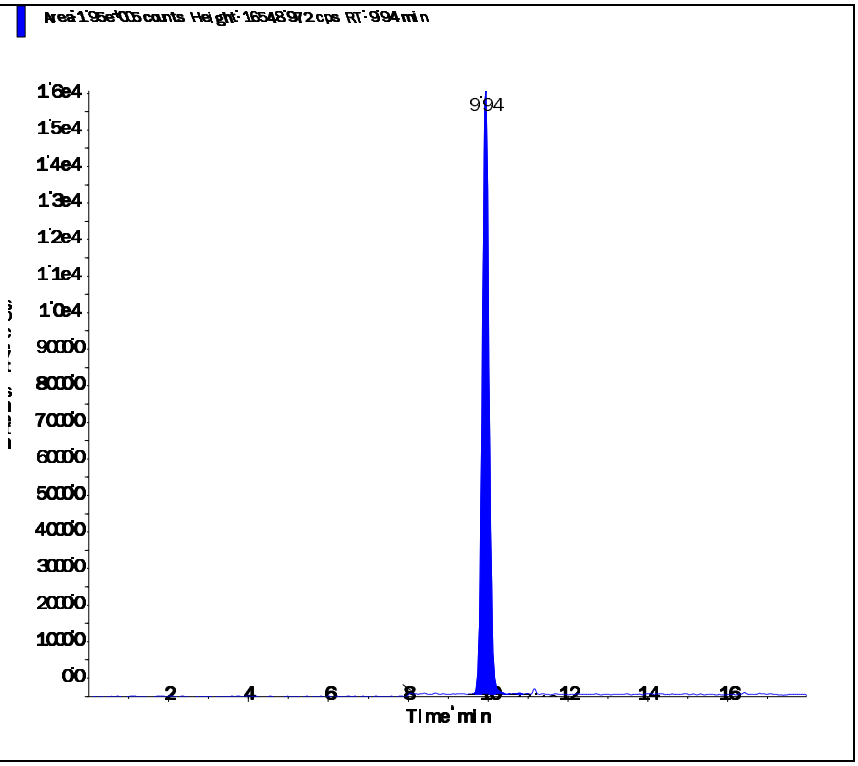

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	0.958 ng/ml
Area Ratio:	0.109
Sample Type:	(Quality Control)

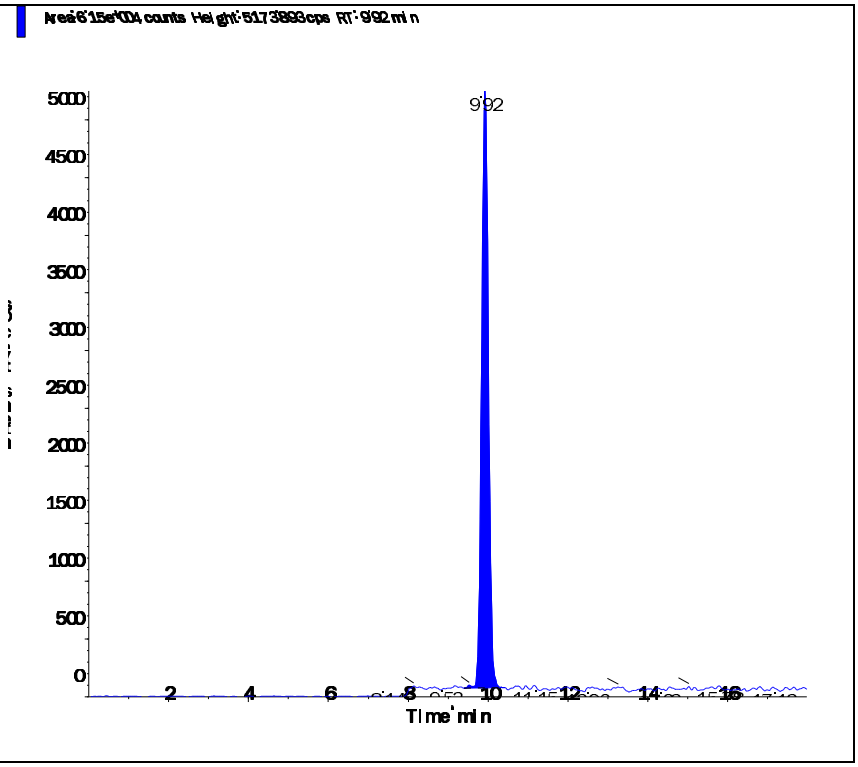

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Data File	LM33737.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/7/2016 10:13:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559899-02 CCV (1.0ug/L)	**Injection Vial**	2.00
Data File	LM33737.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 10:13:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559899-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.590e+05	9.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.980e+05	9.90	1.00	0.999
Perchlorate conf	6.430e+04	9.89	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.90(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

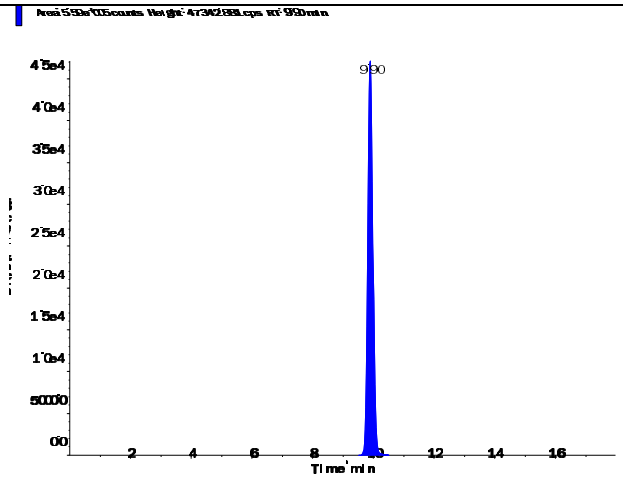

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.90 (9.94) min
Calculated conc:	0.999 ng/ml
Area Ratio:	0.354
Sample Type:	(Quality Control)

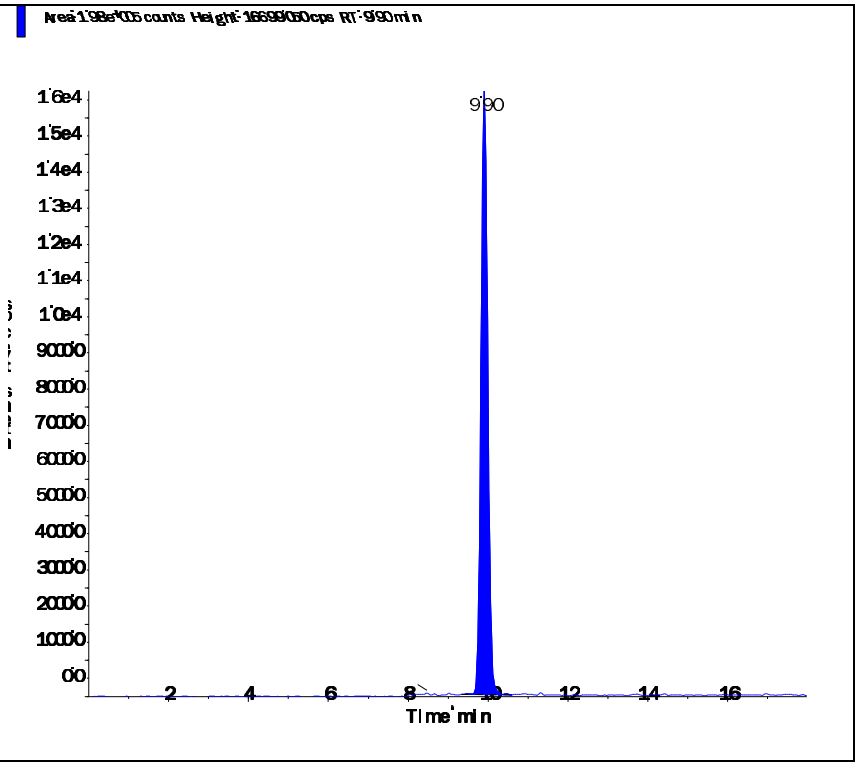

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.89 (9.92) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.115
Sample Type:	(Quality Control)

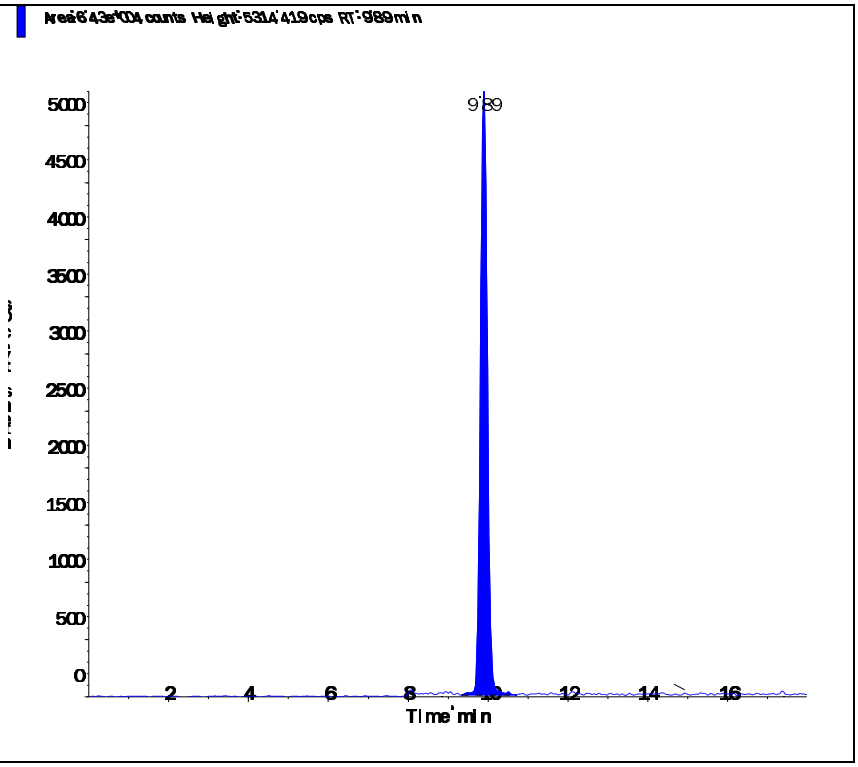

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Printed: 3/7/2016 5:52 PM

Data File	LM33745.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/7/2016 12:45:07 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559899-03 CCV (1.0ug/L)	**Injection Vial**	2.00
Data File	LM33745.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 12:45:07 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559899-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.420e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.830e+05	9.93	1.00	0.951
Perchlorate conf	6.020e+04	9.92	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

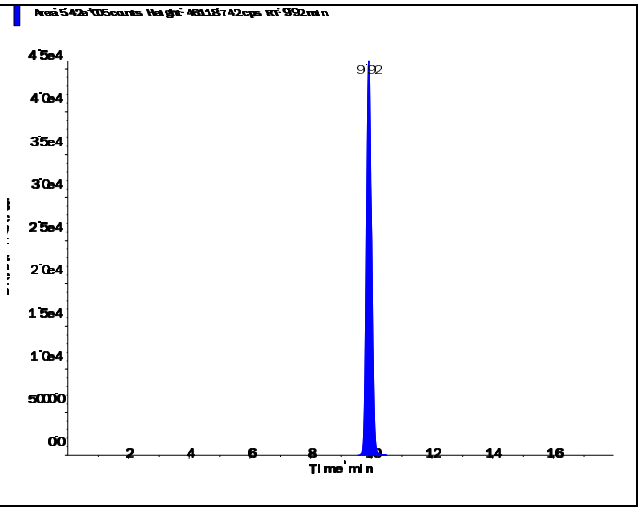

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.93 (9.94) min Calculated conc: 0.951 ng/ml Area Ratio: 0.337 Sample Type: (Quality Control)	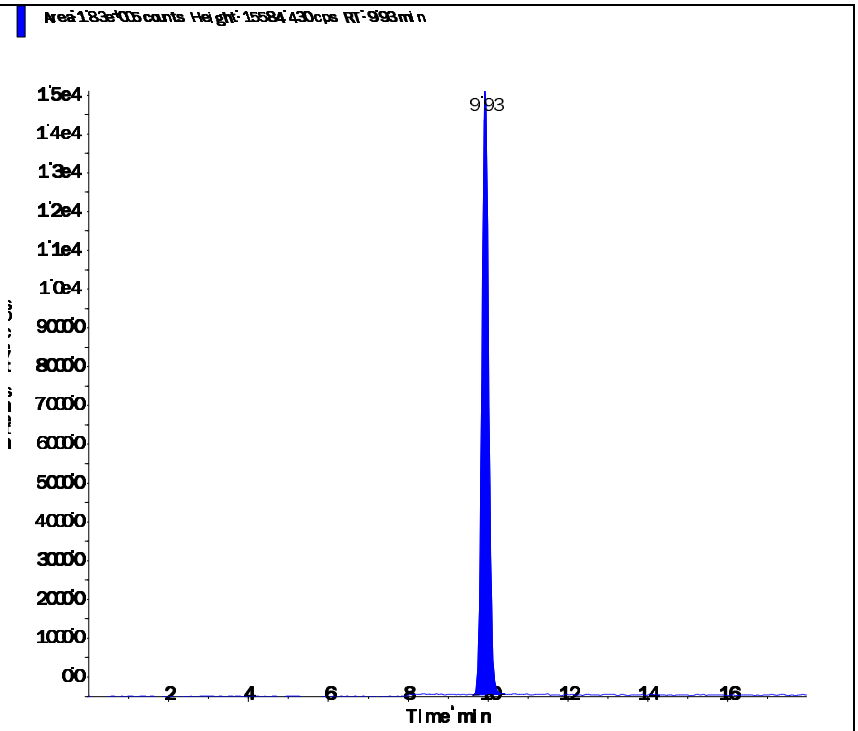
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.92 (9.92) min Calculated conc: 0.973 ng/ml Area Ratio: 0.111 Sample Type: (Quality Control)	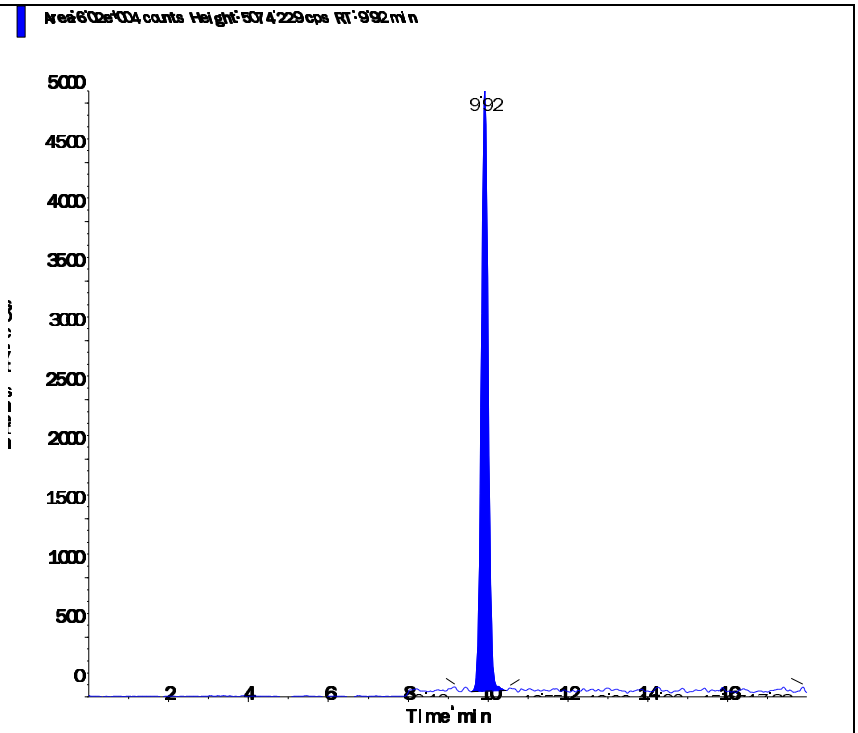

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Data File	LM33712.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 5:16:08 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559808-07 MRL (2.0ug/kg)	**Injection Vial**	3.00
Data File	LM33712.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 5:16:08 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559808-07	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.340e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.890e+04	9.96	N/A	0.196
Perchlorate conf	1.290e+04	9.94	N/A	0.201

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

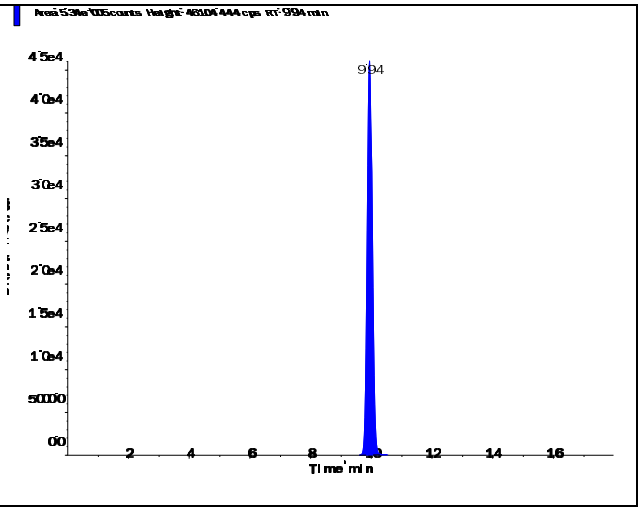

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	0.196 ng/ml
Area Ratio:	0.073
Sample Type:	(Unknown)

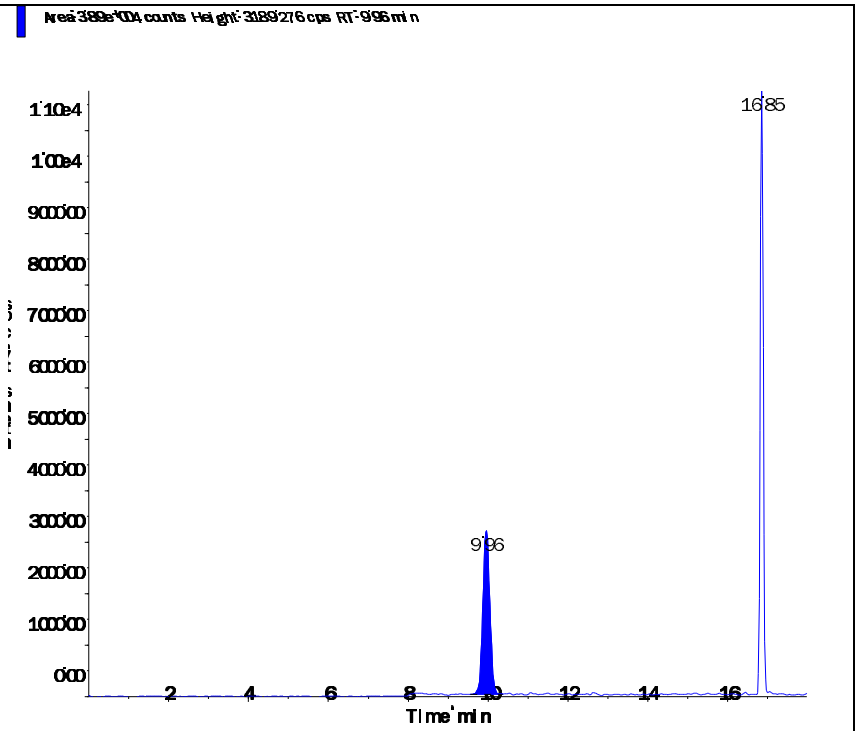

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

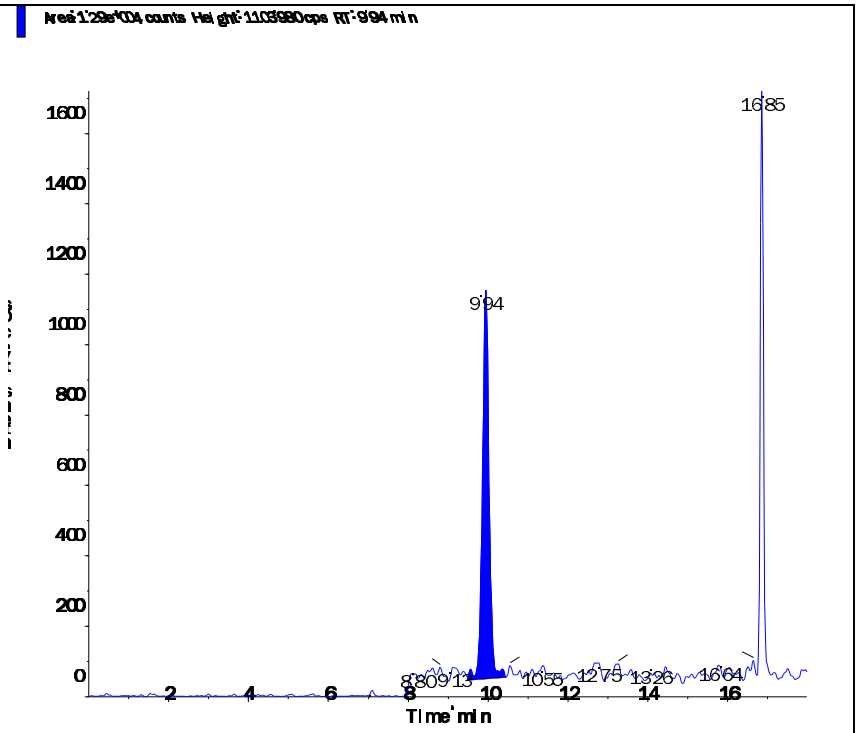

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Data File	LM33724.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 9:03:23 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559808-08 MRL (2.0ug/kg)	**Injection Vial**	3.00
Data File	LM33724.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 9:03:23 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559808-08	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.820e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.260e+04	9.94	N/A	0.197
Perchlorate conf	1.340e+04	9.92	N/A	0.191

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

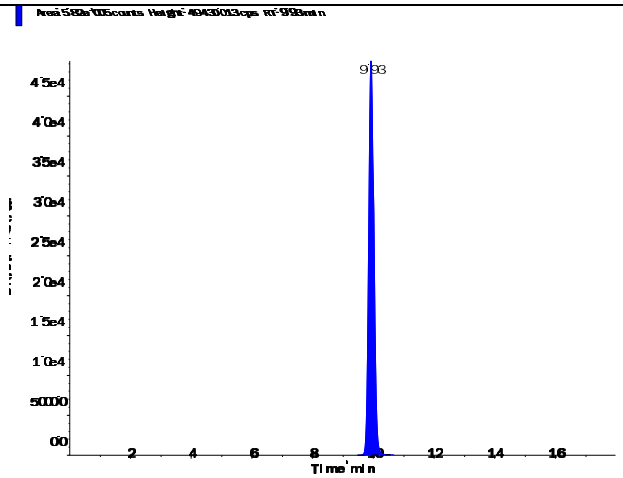

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.073
Sample Type:	(Unknown)

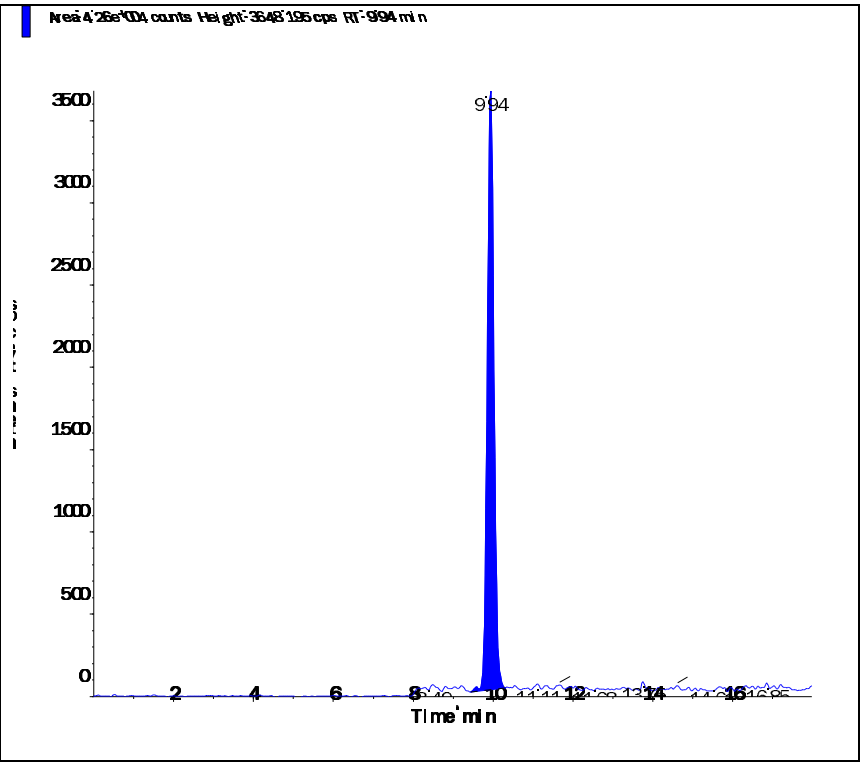

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	0.191 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

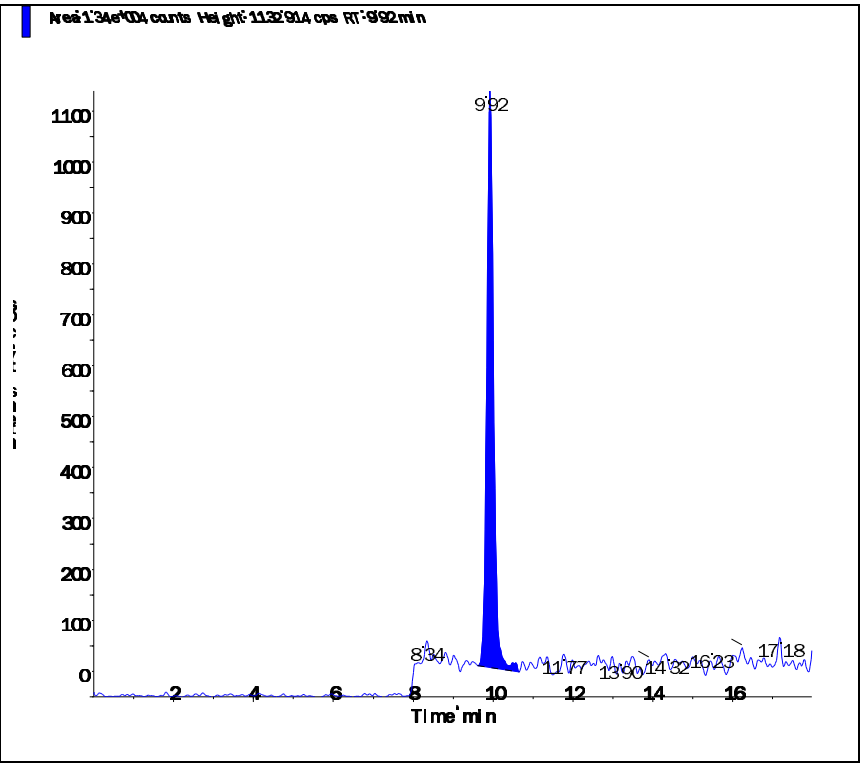

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Data File	LM33734.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/5/2016 12:12:48 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559808-09 MRL (2.0ug/kg)	**Injection Vial**	3.00
Data File	LM33734.wiff	**Injection Volume**	10.00
Acquisition Date	3/5/2016 12:12:48 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559808-09	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.690e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.140e+04	9.94	N/A	0.195
Perchlorate conf	1.260e+04	9.92	N/A	0.183

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

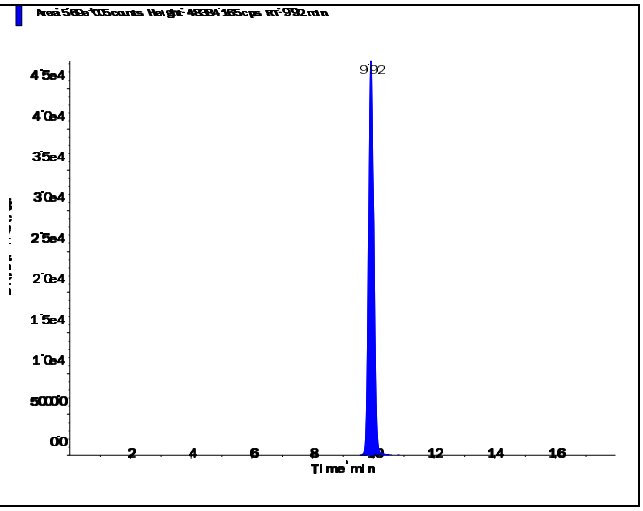

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.195 ng/ml
Area Ratio:	0.073
Sample Type:	(Unknown)

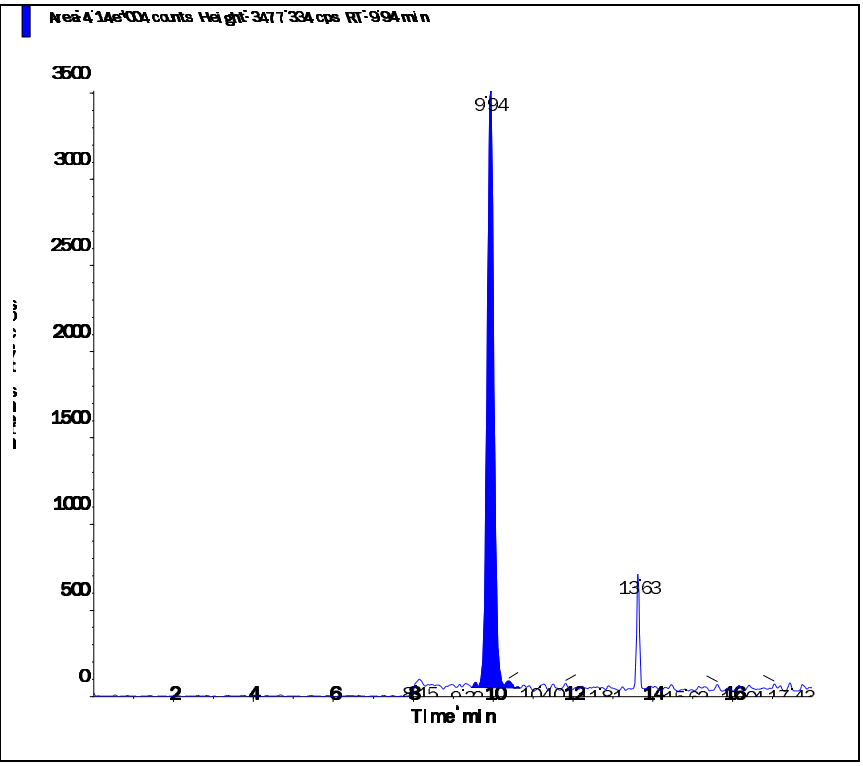

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	0.183 ng/ml
Area Ratio:	0.022
Sample Type:	(Unknown)

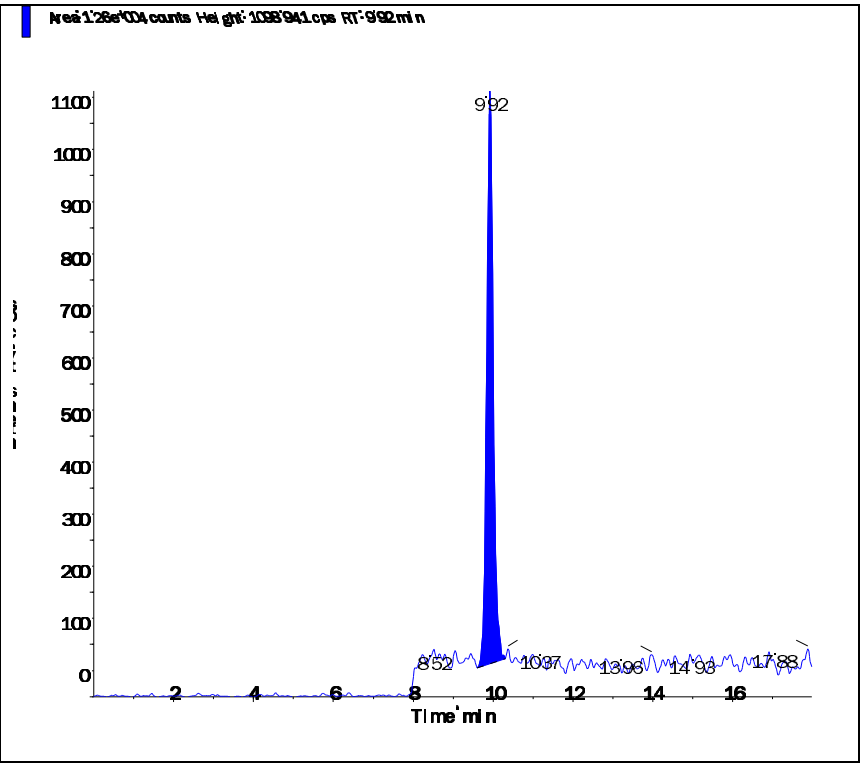

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Data File	LM33738.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/7/2016 10:32:32 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559808-10 MRL (2.0ug/kg)	**Injection Vial**	3.00
Data File	LM33738.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 10:32:32 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559808-10	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.610e+05	9.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.940e+04	9.91	N/A	0.188
Perchlorate conf	1.350e+04	9.90	N/A	0.199

O18LP (Internal Standard)

RT (Exp. RT): 9.90(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

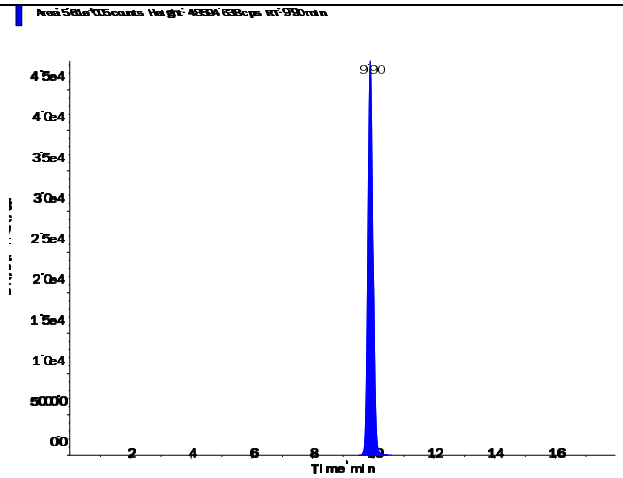

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.91 (9.94) min Calculated conc: 0.188 ng/ml Area Ratio: 0.07 Sample Type: (Unknown)	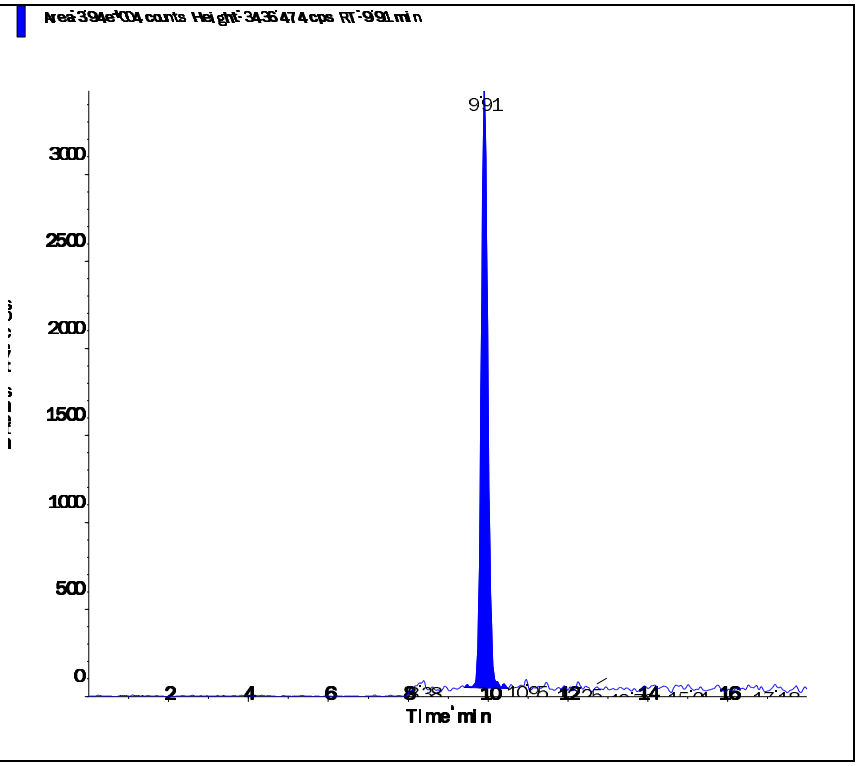
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.90 (9.92) min Calculated conc: 0.199 ng/ml Area Ratio: 0.024 Sample Type: (Unknown)	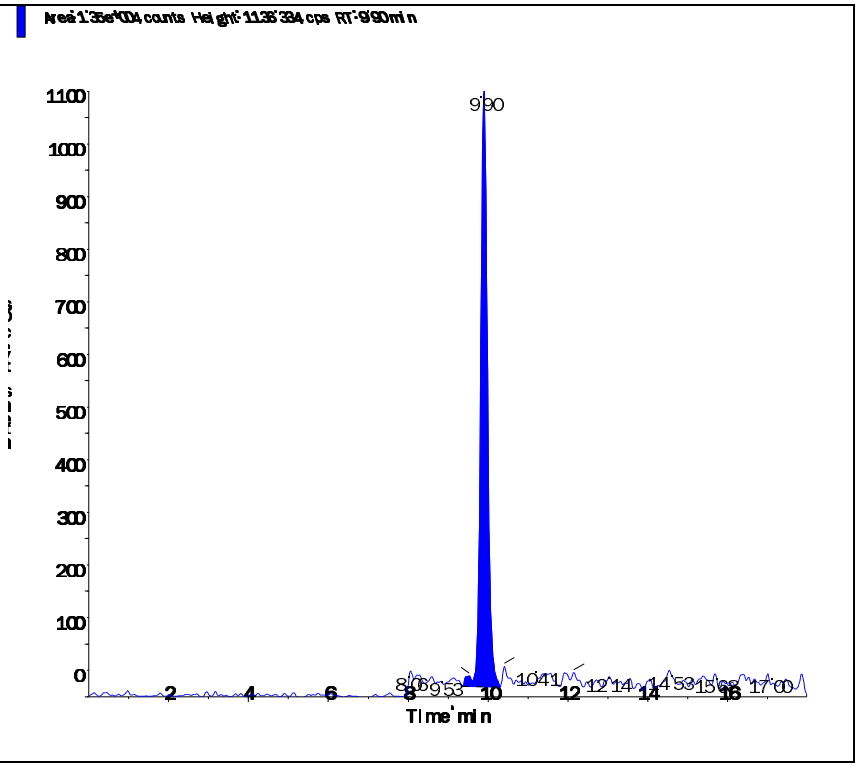

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Data File	LM33746.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/7/2016 1:04:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559808-11 MRL (2.0ug/kg)	**Injection Vial**	3.00
Data File	LM33746.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 1:04:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559808-11	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.270e+05	9.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.830e+04	9.91	N/A	0.195
Perchlorate conf	1.260e+04	9.90	N/A	0.198

O18LP (Internal Standard)

RT (Exp. RT): 9.90(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

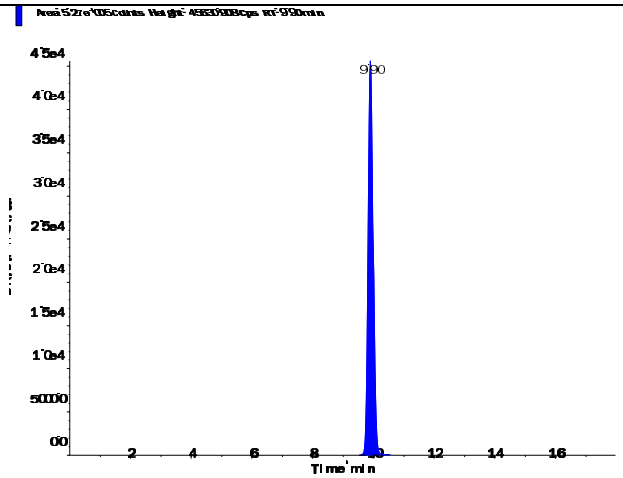

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.91 (9.94) min
Calculated conc:	0.195 ng/ml
Area Ratio:	0.073
Sample Type:	(Unknown)

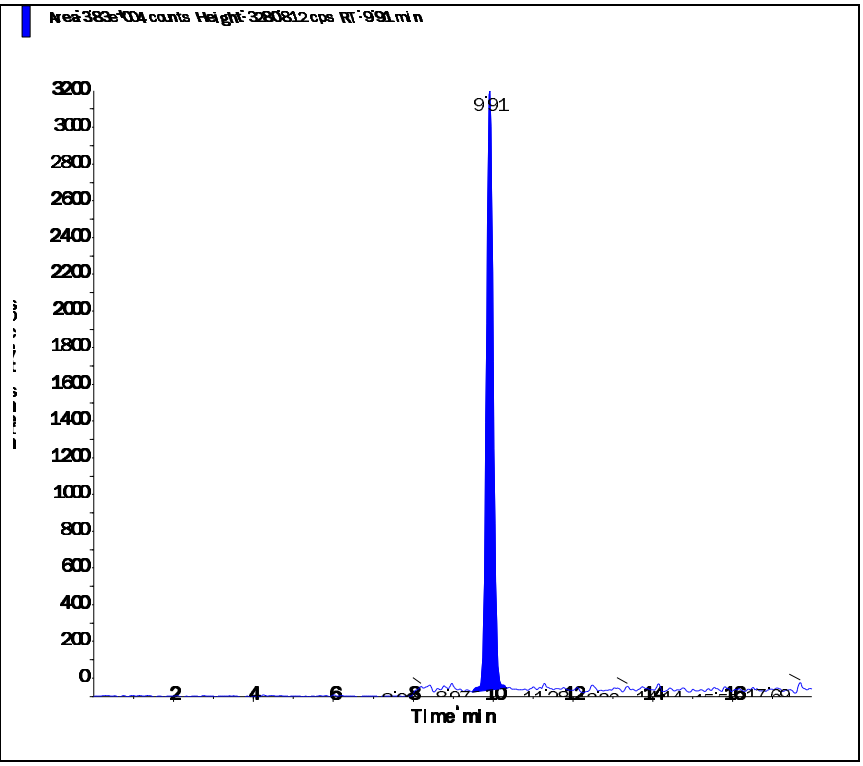

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.90 (9.92) min
Calculated conc:	0.198 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

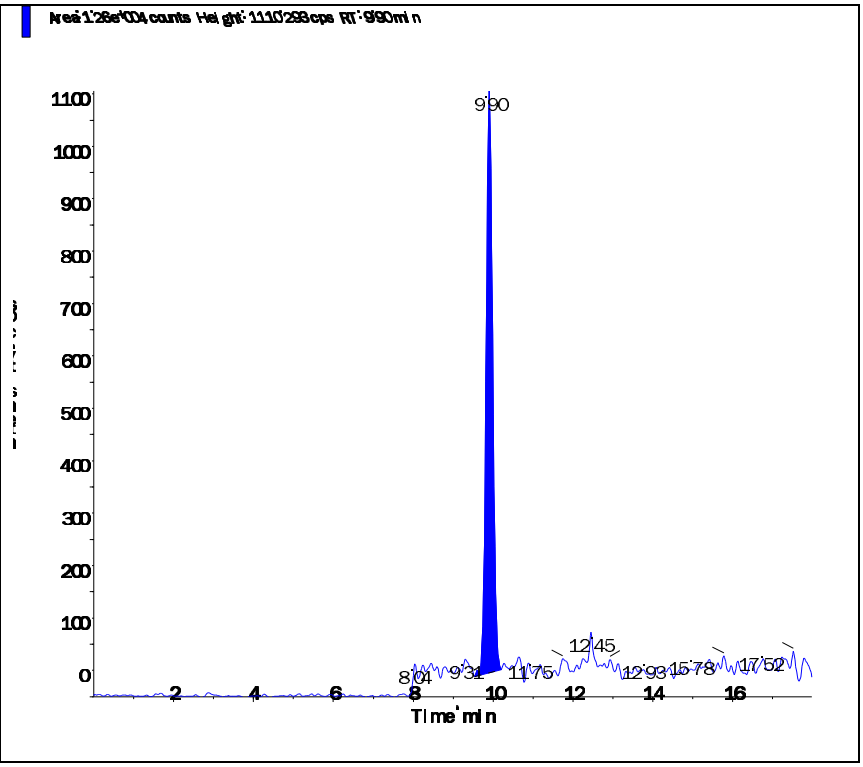

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Data File	LM33710.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 4:38:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559812-01 CCB	**Injection Vial**	1.00
Data File	LM33710.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 4:38:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559812-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.980e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

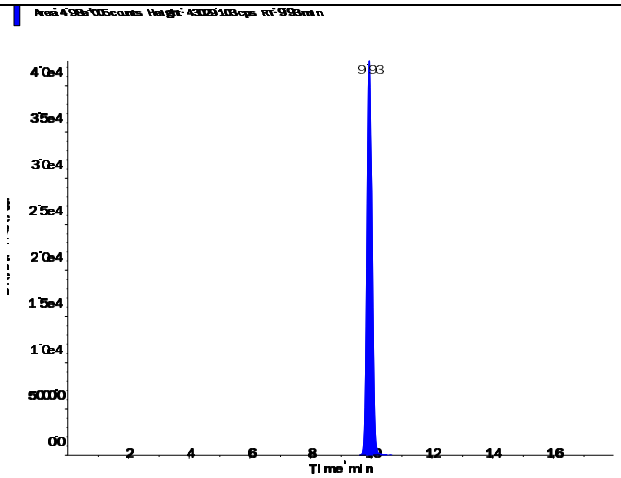

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

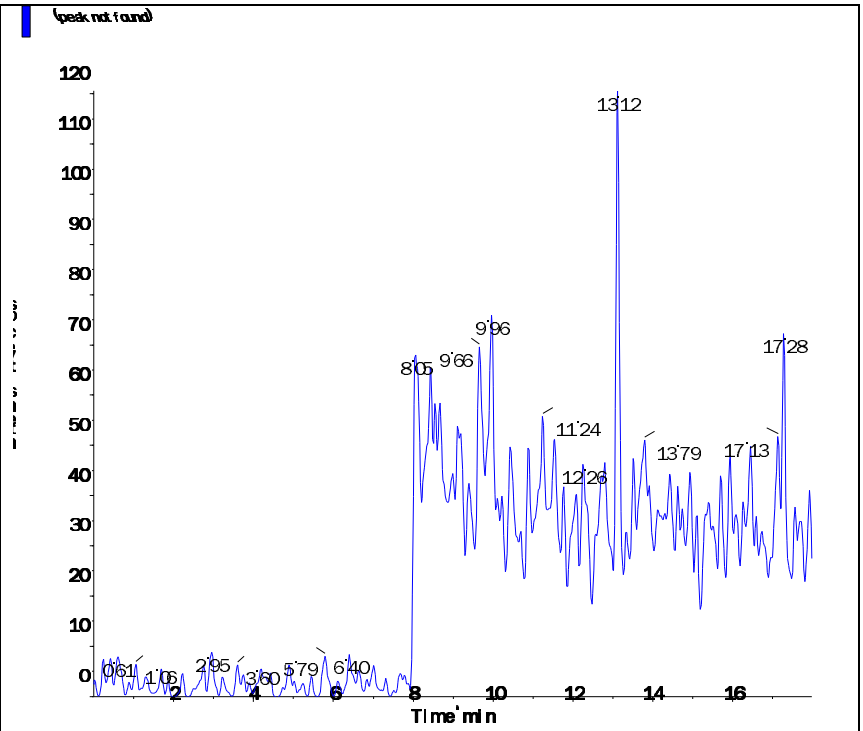

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

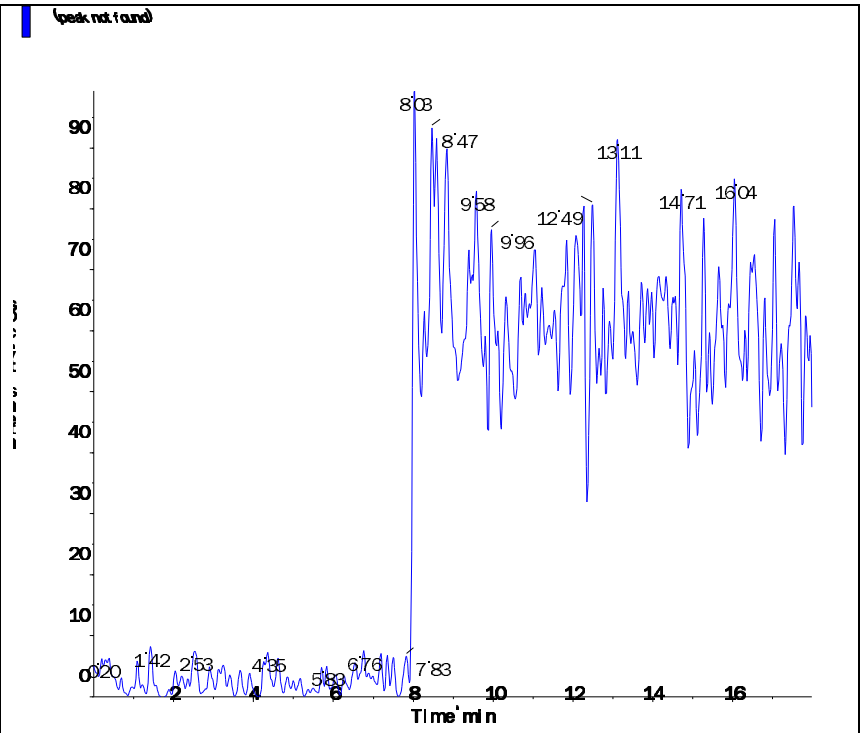

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Data File	LM33725.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 9:22:19 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559812-04 CCB	**Injection Vial**	1.00
Data File	LM33725.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 9:22:19 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559812-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.700e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

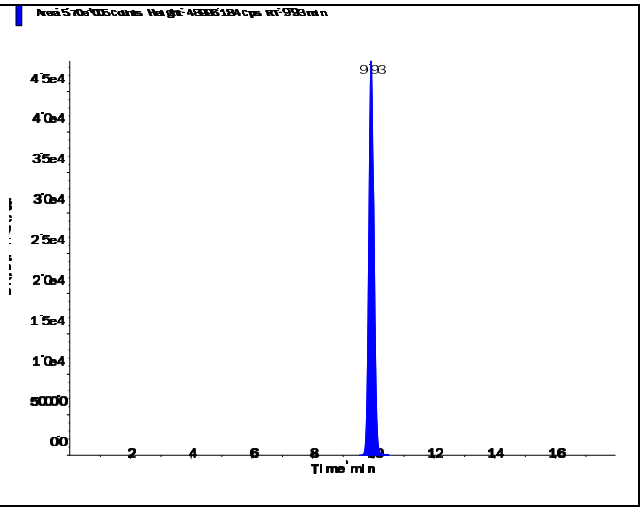

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

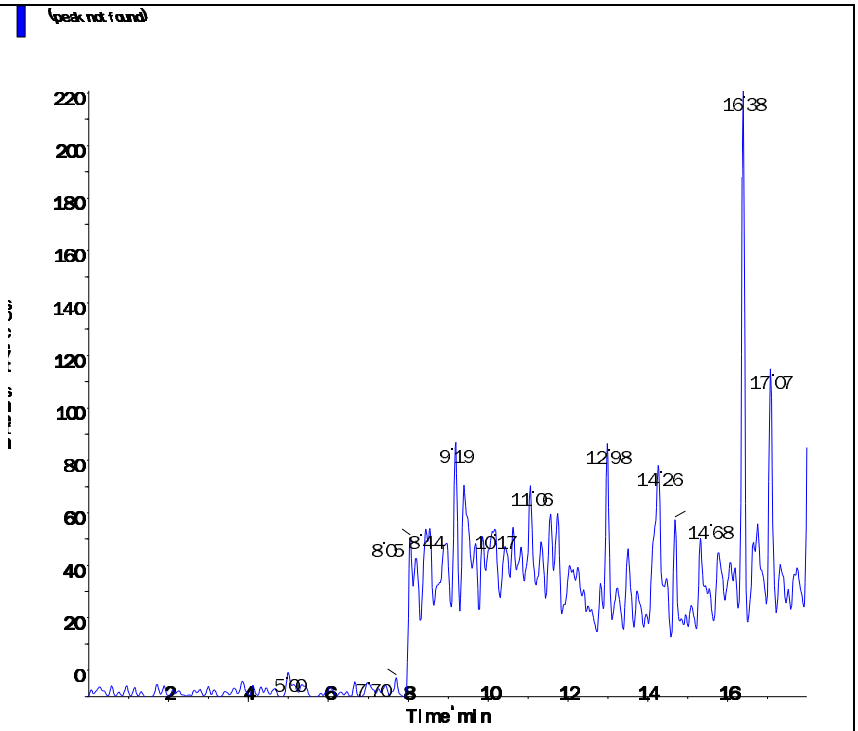

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

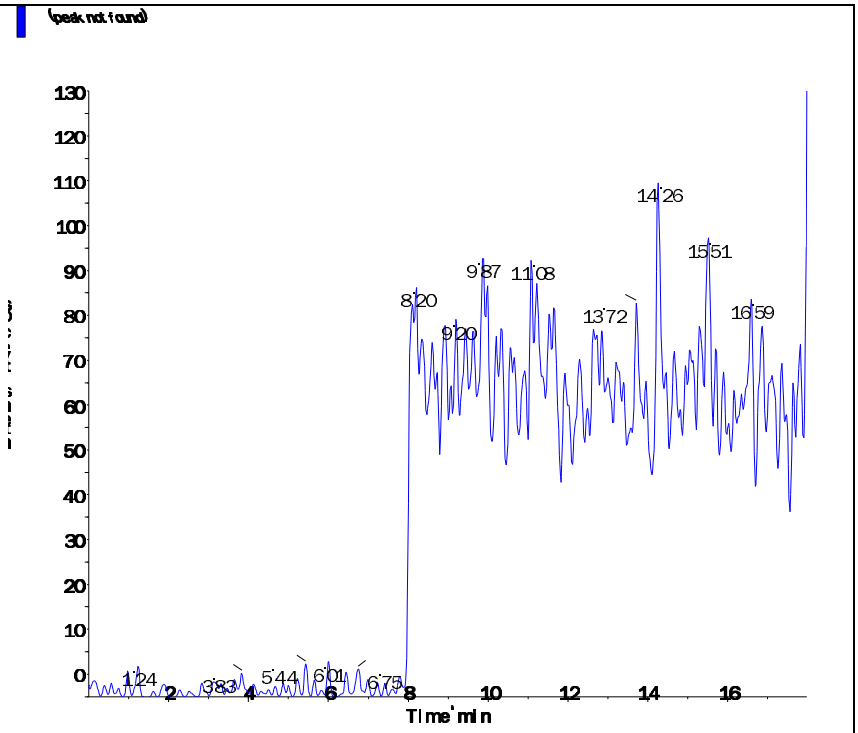

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Printed: 3/7/2016 5:49 PM

Data File	LM33735.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/5/2016 12:31:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559812-06 CCB	**Injection Vial**	1.00
Data File	LM33735.wiff	**Injection Volume**	10.00
Acquisition Date	3/5/2016 12:31:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559812-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.590e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

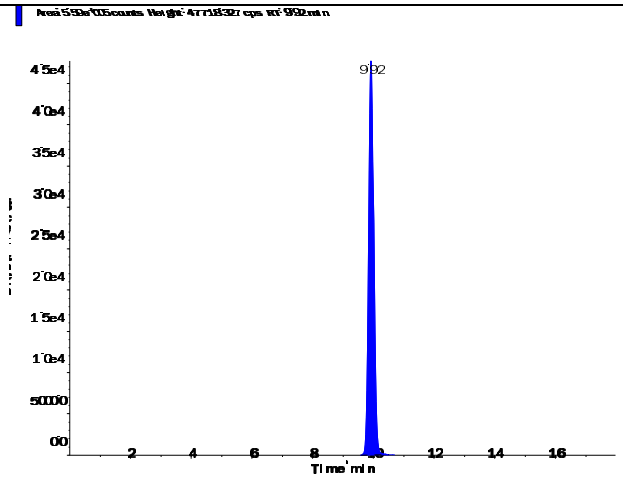

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.94) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	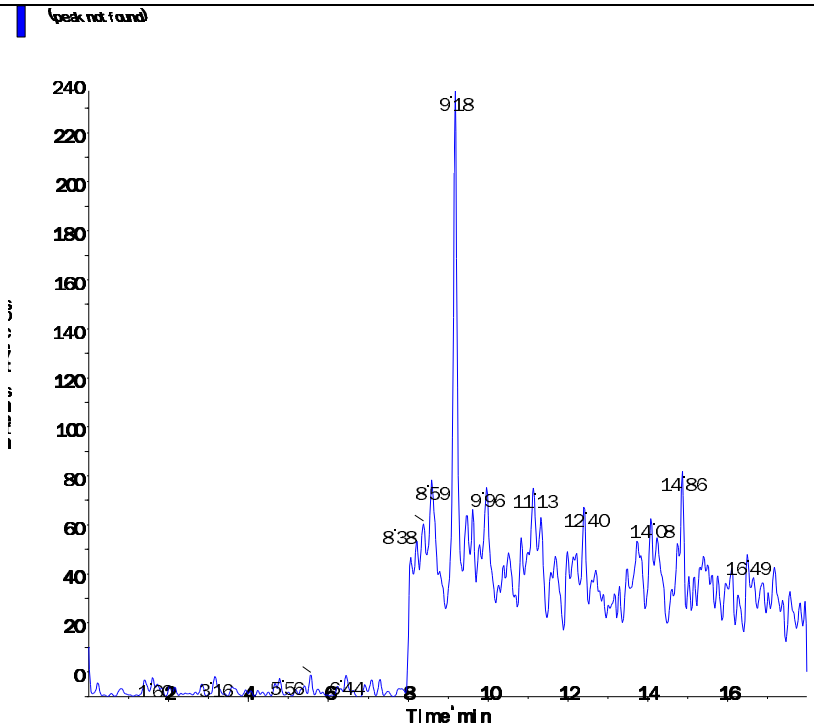
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.92) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	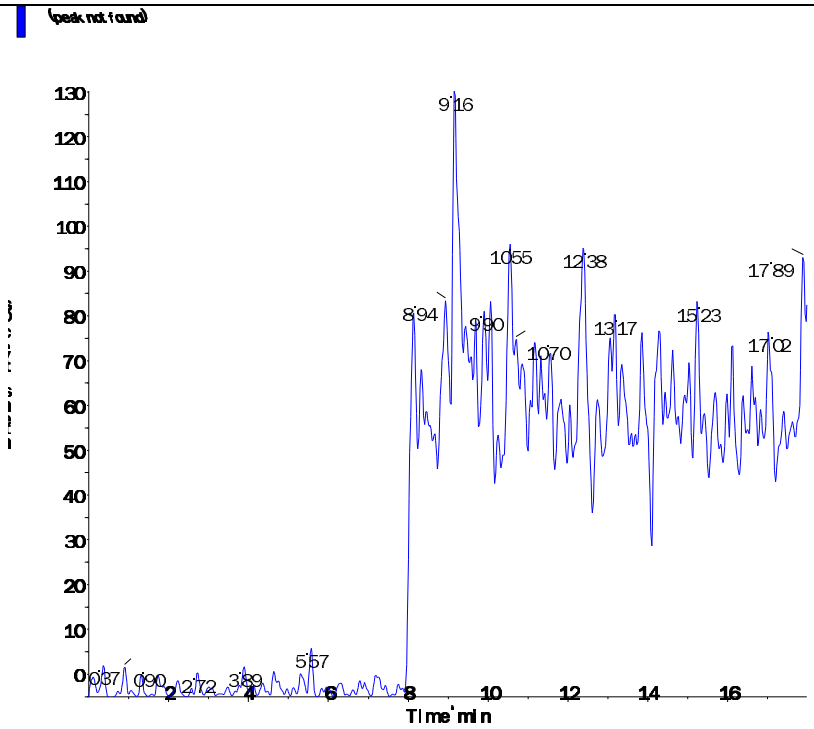

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Printed: 3/7/2016 5:49 PM

Data File	LM33736.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/7/2016 9:54:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559899-01 CCB	**Injection Vial**	1.00
Data File	LM33736.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 9:54:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559899-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.540e+05	9.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.90(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

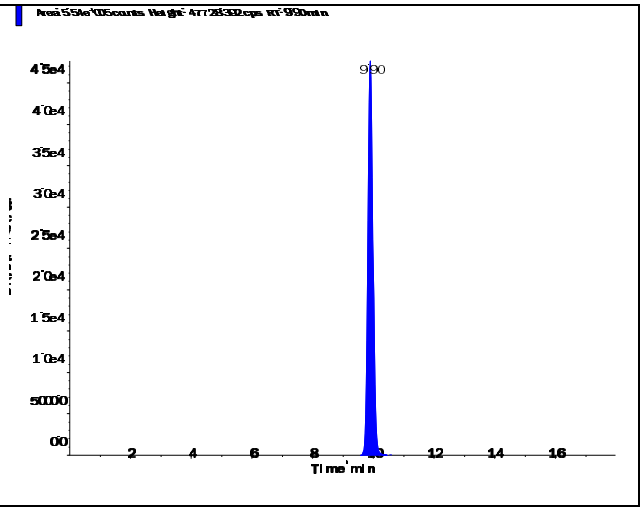

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

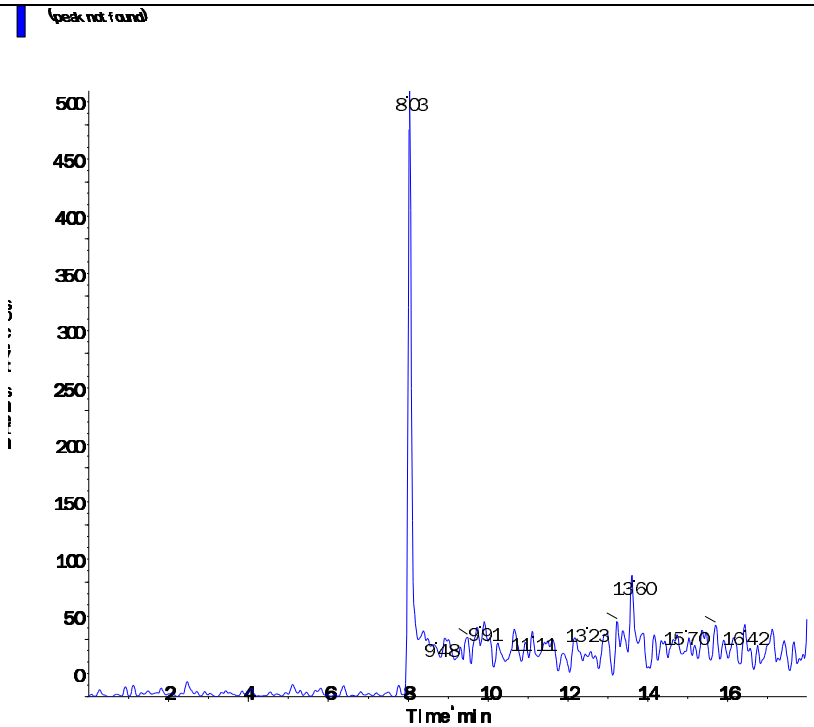

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

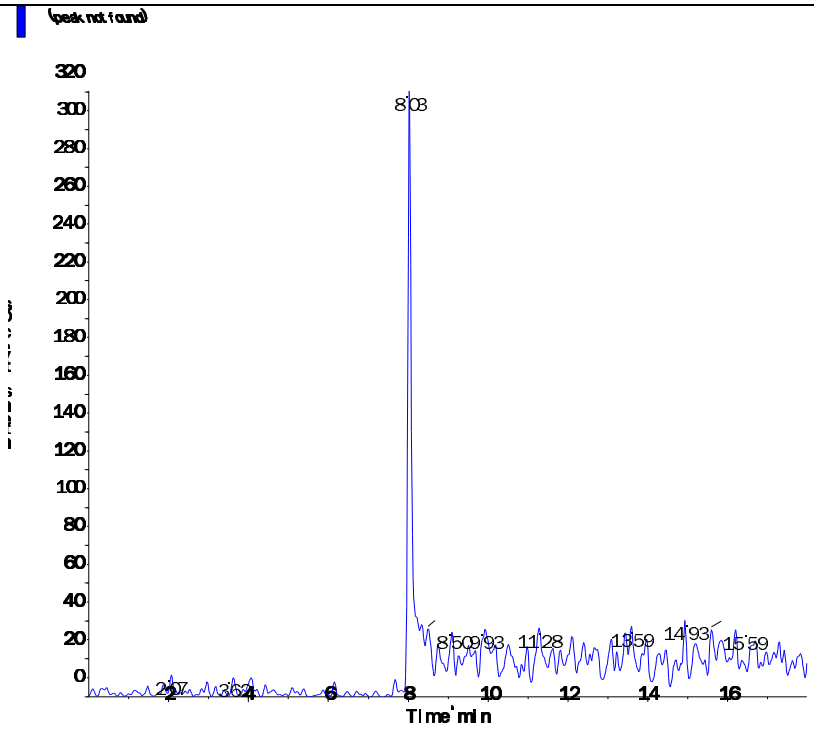

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Printed: 3/7/2016 5:53 PM

Data File	LM33747.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/7/2016 1:22:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559899-04 CCB	**Injection Vial**	1.00
Data File	LM33747.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 1:22:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559899-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.260e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	1.950e+02	9.81	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

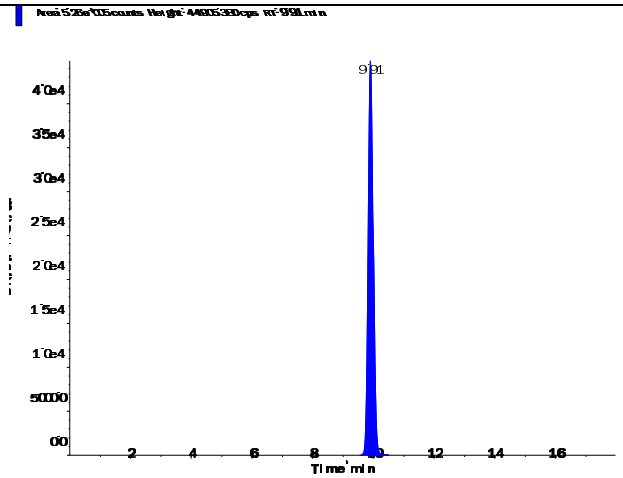

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

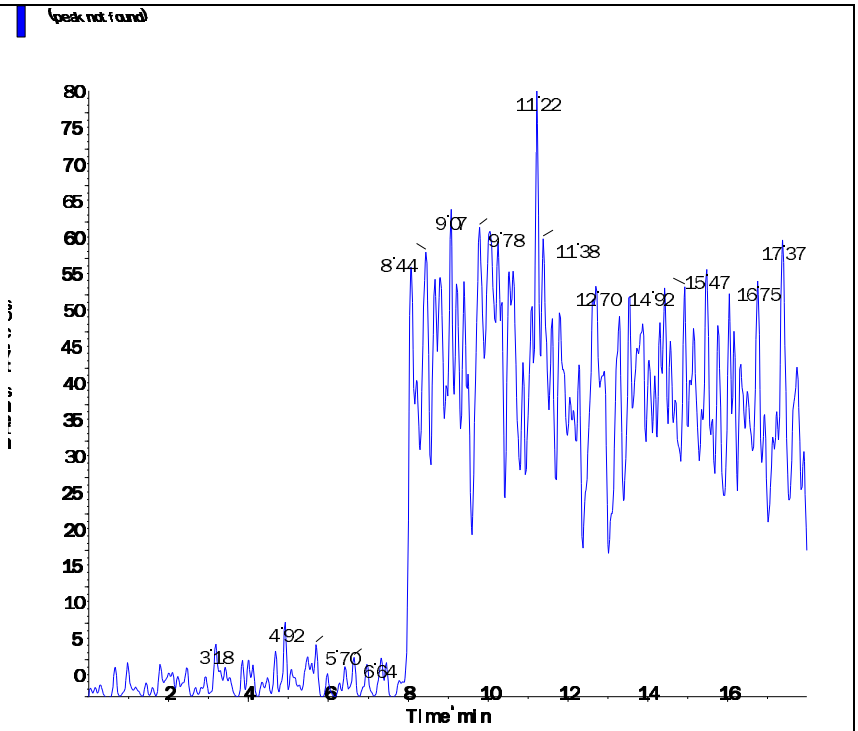

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.81 (9.92) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

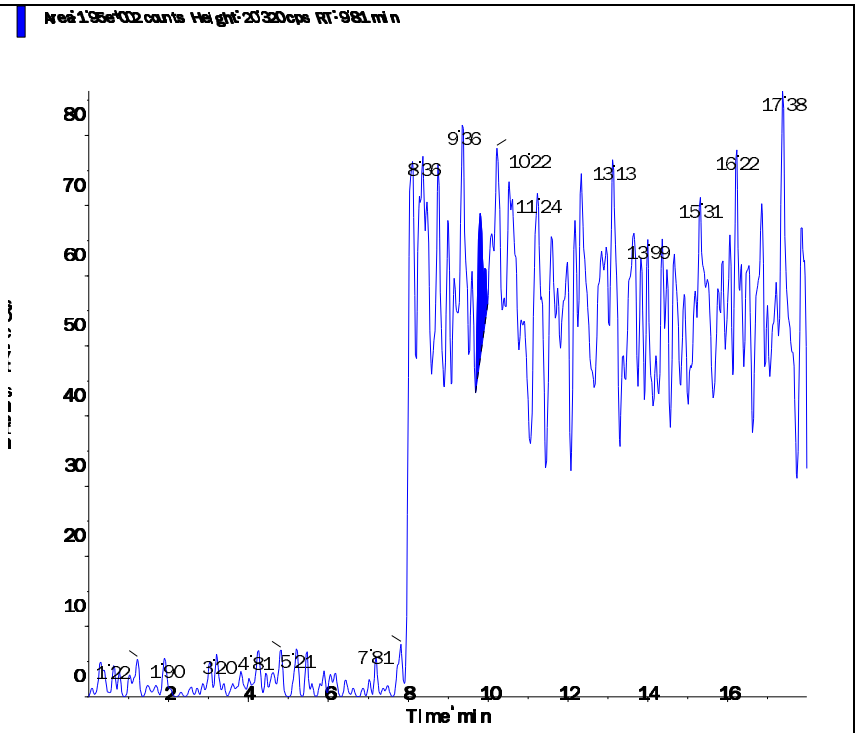

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Printed: 3/7/2016 5:41 PM

Data File	LM33713.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 5:35:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559808-01 MCT (2.0ug/kg)	**Injection Vial**	4.00
Data File	LM33713.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 5:35:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559808-01	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.680e+05	9.54	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.840e+04	9.54	N/A	0.181
Perchlorate conf	1.270e+04	9.51	N/A	0.184

O18LP (Internal Standard)

RT (Exp. RT): 9.54(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

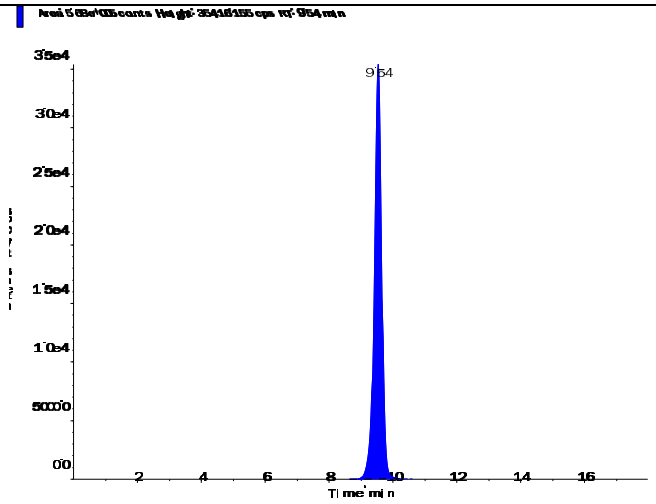

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Printed: 3/7/2016 5:41 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.54 (9.94) min
Calculated conc:	0.181 ng/ml
Area Ratio:	0.068
Sample Type:	(Unknown)

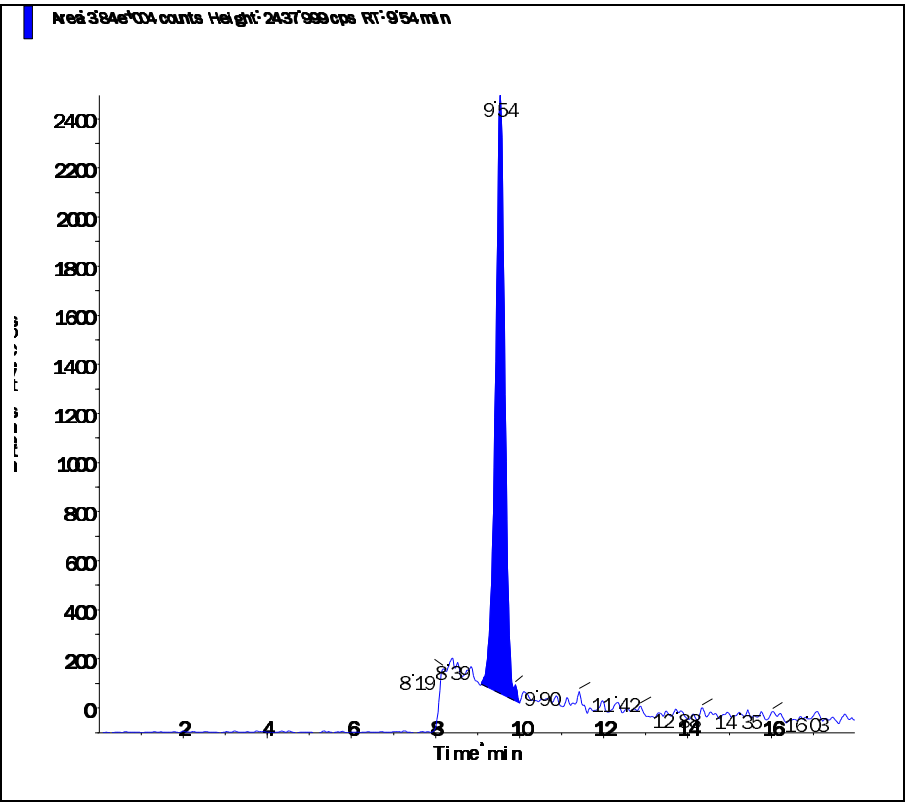

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.51 (9.92) min
Calculated conc:	0.184 ng/ml
Area Ratio:	0.022
Sample Type:	(Unknown)

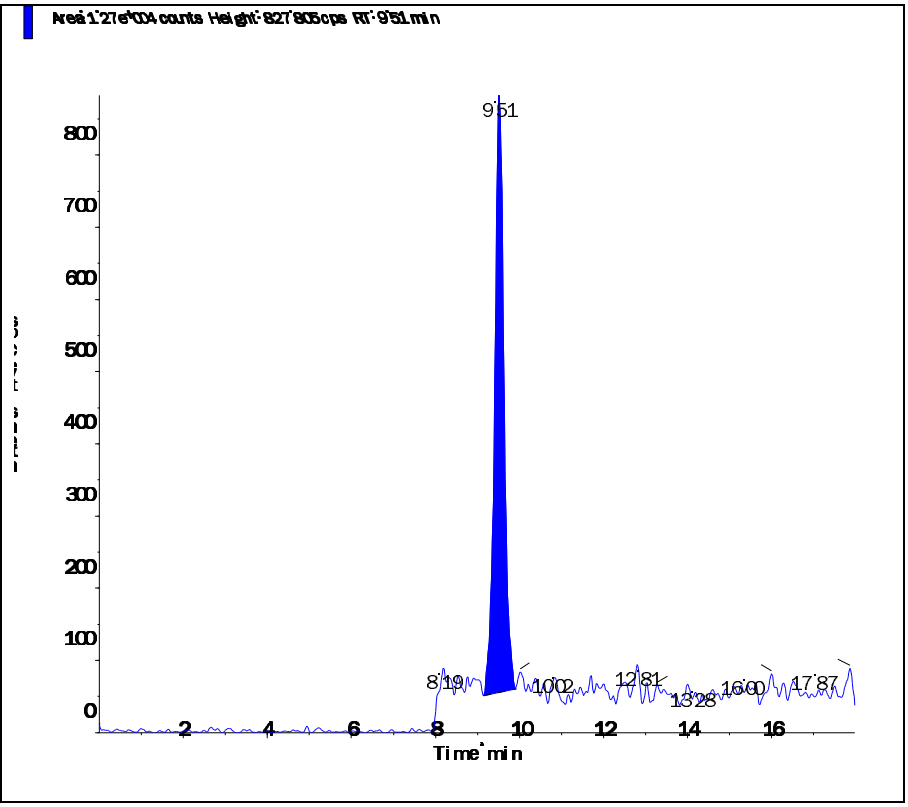

Printing Time: 11:17:21 AM
Printing Date: Monday, March 07, 2016

Sample Name: "WG559808-01 MCT (2.0ug/KG)" Sample ID: "WG559808-01" File: "LM33713.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "7,1 STD72686" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.199 ug/L
Acq. Date:	3/4/2016
Acq. Time:	5:35:05 PM
Modified:	No
Proc. Algorithm:	Analyst Classic
Bunching Factor:	3
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Sep. Width:	0.20
Sep. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.94 min
Use Relative RT:	Yes
Int. Type:	Valley
Retention Time:	9.54 min
Area:	4.21e+004 counts
Height:	2503.030 cps
Start Time:	9.073 min
End Time:	10.004 min

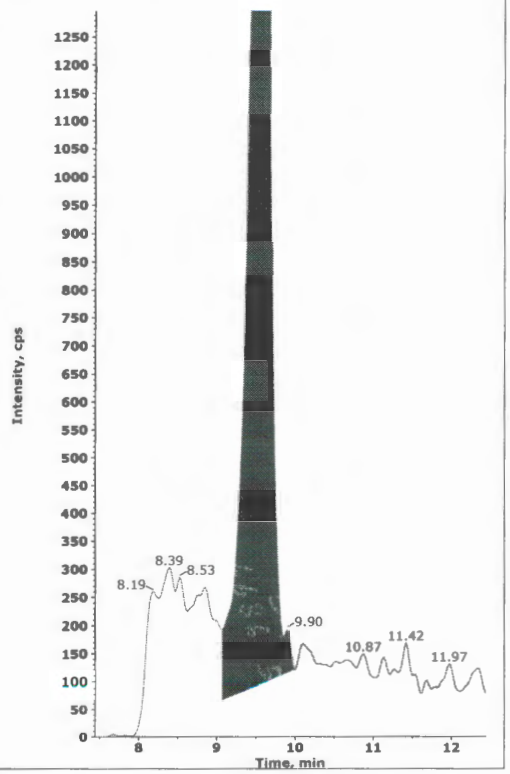

Collected by: N/A
Electronic Signature: no
Operator: lcms1

Printing Time: 11:18:03 AM
Printing Date: Monday, March 07, 2016

Sample Name: "WG559808-01 MCT (2.0ug/KG)" Sample ID: "WG559808-01" File: "LM33713.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "7,1 STD72686" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.181 ng/L
Acq. Date:	3/4/2016
Acq. Time:	5:35:05 PM
Modified:	Yes
Proc. Algorithm:	Analyst Classic
Bunching Factor:	1
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Sep. Width:	0.20
Sep. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.94 min
Use Relative RT:	Yes
Int. Type:	Base To Base
Retention Time:	9.54 min
Area:	3.84e+004 counts
Height:	2437.999 cps
Start Time:	9.093 min
End Time:	10.004 min

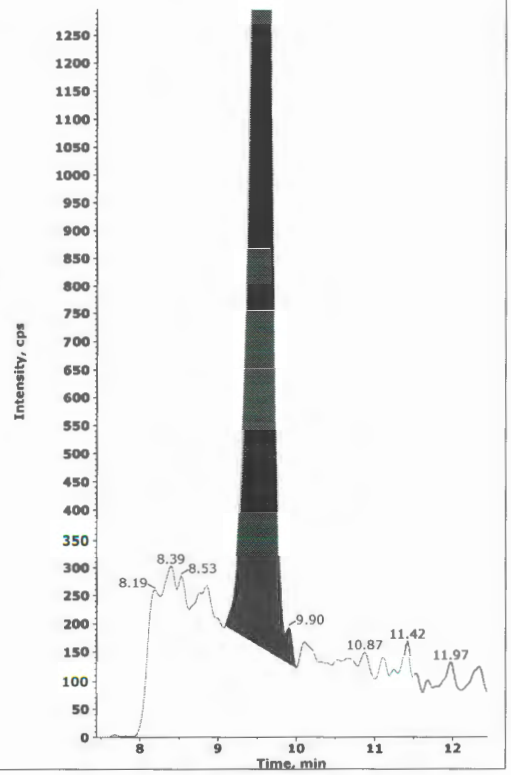

#4
JWR 03/07/16

✓ WD
3-8-16

Collected by: N/A
Electronic Signature: no
Operator: lcms1

2.2.1.5 Raw QC Data

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Data File	LM33714.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 5:53:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559808-02 BLK	**Injection Vial**	5.00
Data File	LM33714.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 5:53:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559808-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.300e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	3.900e+02	9.97	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

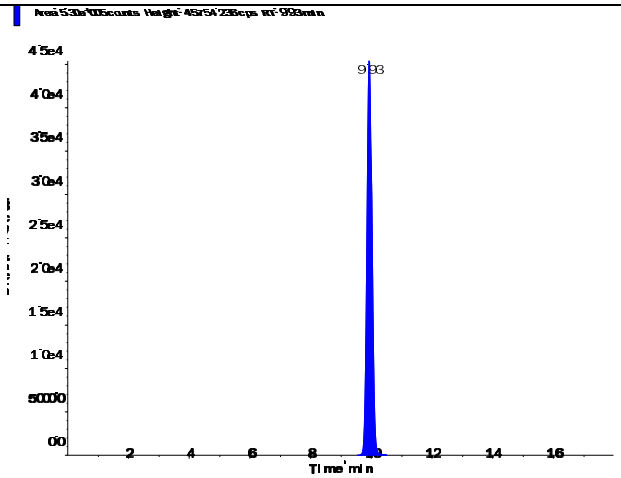

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

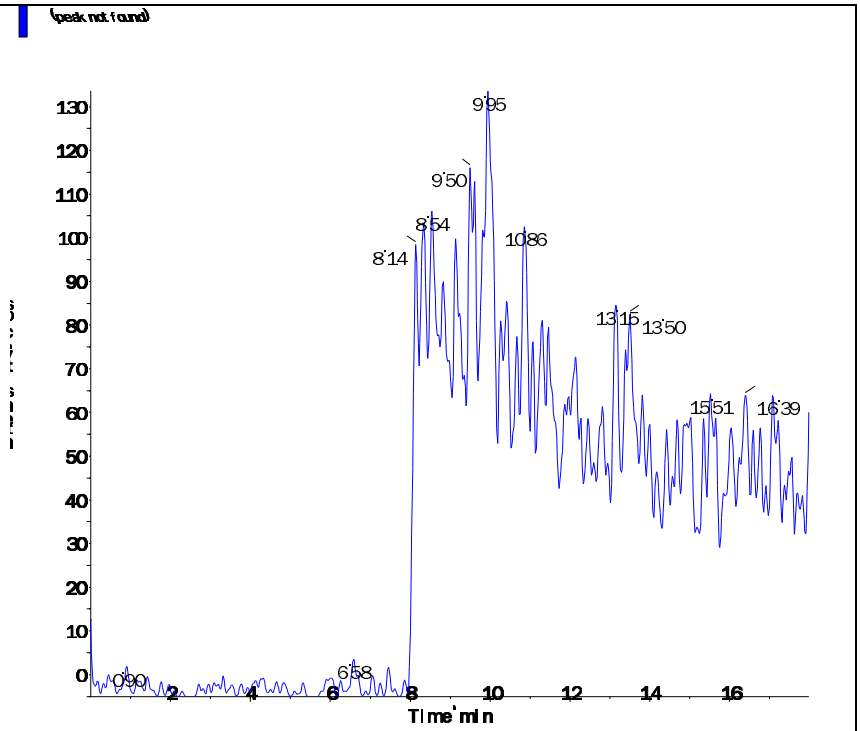

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.97 (9.92) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

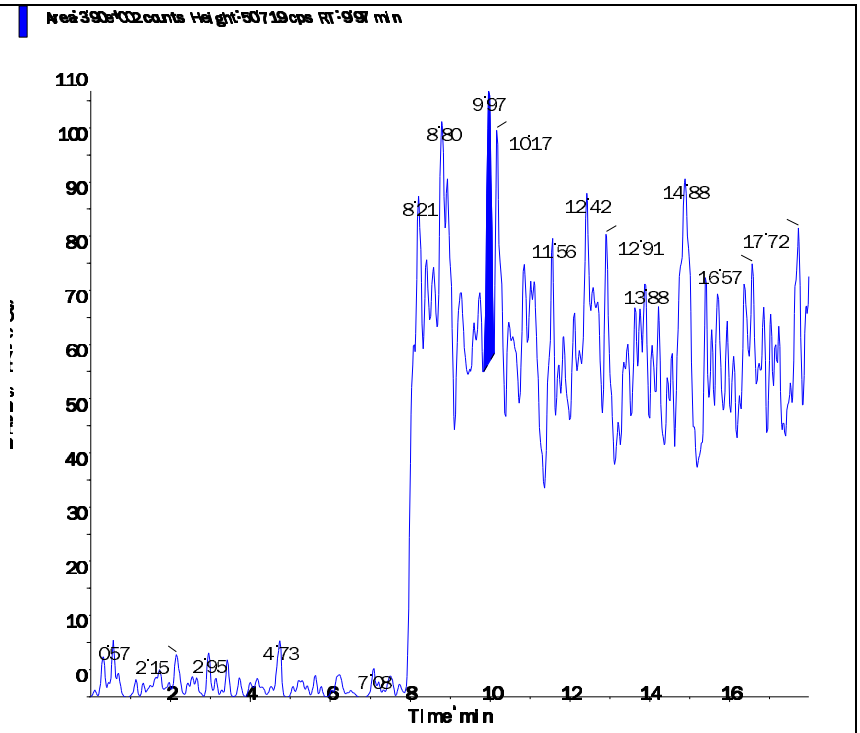

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Data File	LM33715.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 6:12:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559808-03 LCS (2.0ug/kg)	**Injection Vial**	6.00
Data File	LM33715.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 6:12:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559808-03	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.160e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.480e+04	9.95	N/A	0.235
Perchlorate conf	1.680e+04	10.00	N/A	0.276

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

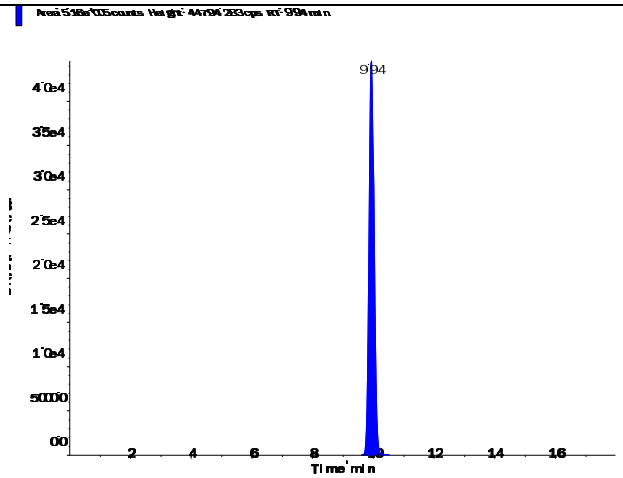

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	0.235 ng/ml
Area Ratio:	0.087
Sample Type:	(Unknown)

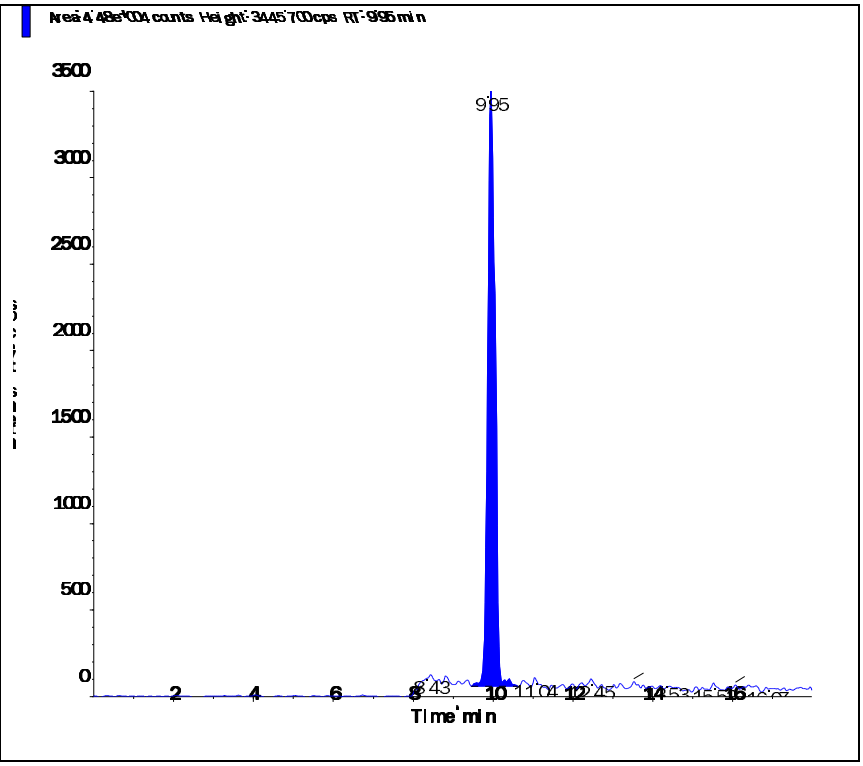

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.00 (9.92) min
Calculated conc:	0.276 ng/ml
Area Ratio:	0.033
Sample Type:	(Unknown)

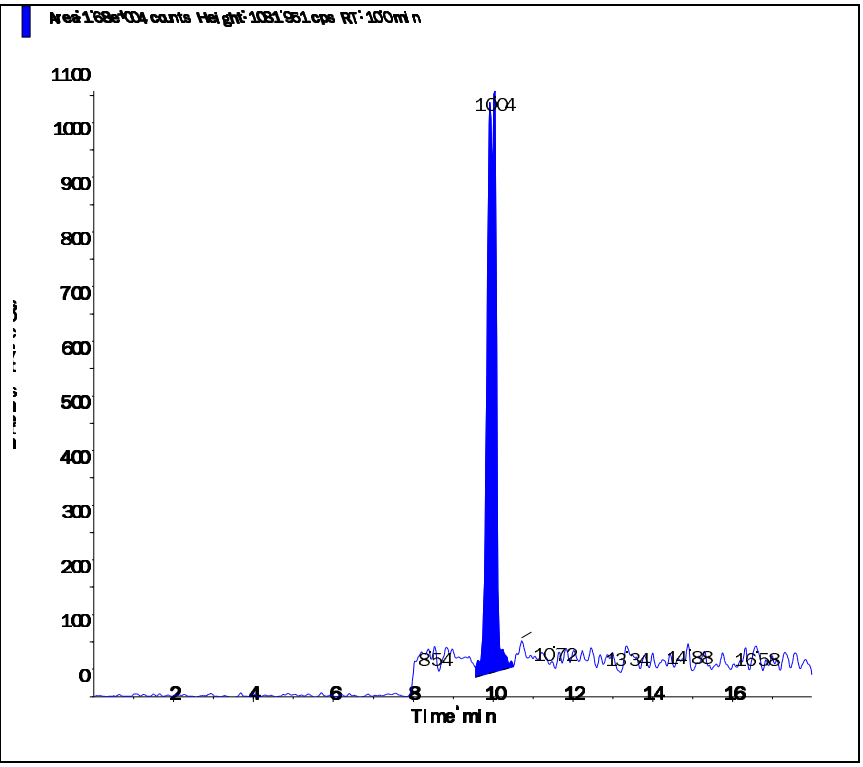

s.dataFile Page 2 of 2

2.3 General Chemistry Data

2.3.1 Percent Solids Data

2.3.1.1 Raw Data

Example Percent Solids Calculations

1.0 Calculating the percent solids of a sample.

$$\%Solids = \frac{WT3 - WT1}{WT2 - WT1} \times F$$

Where:	
WT1 = Weight, in grams, of the empty container	1.30 g
WT2 = Weight, in grams, of the container and wet sample	21.274 g
WT3 = Weight, in grams, of the container and dried sample	5.21 g
F = Factor to get units as percent weight	100
%Solids = Percent solids present in sample.	19.58%

2.0 Calculating the percent moisture of a sample.

% Moisture = 100 - % Solids from 1.0 calculation

Microbac Laboratories Inc.

PERCENT SOLIDS

Workgroup (AAB#): WG559839 Analyst: AC ADT(on): 03/04/2016 16:46
Method: D2216-90 Instrument: BAL021 ADT(off): 03/07/2016 08:20
SOP: K0003 Rev: 14

SAMPLE NUMBER	EMPTY PAN WT 1	WET WT 2	DRY WT 3A	DRY WT 3B	DRY WT 3C	PERCENT SOLID	PERCENT MOISTURE
L16030168-01	1.293	24.781	20.83			83.18	
L16030234-01	1.296	23.803	20.059			83.37	
L16030234-02	1.294	25.21	20.85			81.77	
L16030234-03	1.301	24.789	21.13			84.42	
L16030234-04	1.298	21.74	18.35			83.42	
L16030234-05	1.305	34.235	28.317			82.03	
L16030234-06	1.295	23.294	18.927			80.15	
L16030235-01	1.29	24.686	20.549			82.32	
L16030235-02	1.291	30.193	23.38			76.43	
L16030235-03	1.29	22.228	18.498			82.19	
L16030235-04	1.29	22.228	18.498			82.19	
L16030235-05	1.29	22.228	18.498			82.19	
L16030235-06	1.292	31.806	24.36			75.60	
L16030235-07	1.291	22.21	17.102			75.58	
L16030235-08	1.292	29.965	25.133			83.15	
L16030270-02	1.296	14.159	4.824			27.43	
L16030283-01	1.296	10.349	8.424			78.74	
L16030285-01	1.301	13.985	5.872			36.04	
L16030288-01	1.302	17.719	3.628			14.17	
L16030298-01	1.291	8.347	2.976			23.88	
WG559839-01	1.291	8.347	2.976			23.88	76.12
WG559839-02	1.298	9.63	3.292			23.93	76.07

Analyst: Andrea R Cochran

PERCENT_SOLIDS - Modified 04/24/2008
PDF ID: 4658333
Report generated: 03/07/2016 08:24

Microbac

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
March 15, 2016

001 - BIO-CHEM TESTING WVDEP 220	002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental	004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES	006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES	008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND	AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER	ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS	ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG	AZH - AFTER HOURS
BJO - BRIAN J. OGDEN	BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT	BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN	CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES	CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD	CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS	CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL	DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE	DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON	DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE	DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR	ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK	ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN	JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON	JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE	JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG	JLL - JOHN L. LENT
JMW - JEANA M. WHITE	JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS	JWS - JACK W. SHEAVES
JYH - JI Y. HU	KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER	KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES	KHR - KIM H. RHODES
KKB - KERRI K. BUCK	KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER	KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER	LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS	LSB - LESLIE S. BUCINA
MBK - MORGAN B. KNOWLTON	MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN	MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE	MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR	MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS	PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB	PSW - PEGGY S. WEBB
QX - QIN XU	RAH - ROY A. HALSTEAD
REK - BOB E. KYER	RLB - BOB BUCHANAN
RM - RAYMOND MALEKE	RNP - RICK N. PETTY
RST - ROBIN S. TURNER	SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN	SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG	SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE	TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY	TMM - TAMMY M. MORRIS
VC - VICKI COLLIER	WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS	WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT	

Microbac Laboratories Inc.
List of Valid Qualifiers
March 15, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
March 15, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Stephanie Mossburg	Project Manager: Debra Richmon	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): KAYLA PALLANES	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Kayla Pallanes	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205	pH:	Program:	
Turn Around Time: STANDARD			
Project Name/Location: Longhorn			
Project Number: 60274185 11DASOW16 DGI RPT OL			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC 8260	PERSH DEPTH 16050	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
	18DPT08(5-5.5)030316			3/3/16	1315		X	S	2	X	X					
	18DPT08(15-15.5)030316			3/3/16	1349		X	S	2	X	X					
	18DPT08(10-10.5)030316			3/3/16	1440		X	S	2	X	X					
	18DPT08(21-21.5)030316			3/3/16	1450		X	S	2	X	X					
	18DPT08(26-26.5)030316			3/3/16	1455		X	S	2	X	X					
	18DPT08(35-35.5)030316			3/3/16	1505		X	S	2	X	X					

ERPIMS REQUIRED FIELDS

Comments: **STANDARD TAT**

Relinquished by: (Signature) Kayla Pallanes	Date 3/3/16	Time 1700	Received by	Time	Relinquished by: (Signature)	
Relinquished by: (Signature)	Date	Time	Received for (Signature)		Remarks:	

Microbac OVD
Received: 03/04/2016 10:17
By: CARA STRICKLER 221000082755
Cara Strickler

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030234
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 08-MAR-2016

Samplenum	Container ID	Products
L16030234-01	709943	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-MAR-2016 11:51	CLS		
2	ANALYZ	V1	ORG4	04-MAR-2016 12:19	AWE	CLS	

Samplenum	Container ID	Products
L16030234-01	709944	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	04-MAR-2016 11:51	CLS		
2	ANALYZ	W1	SEM	04-MAR-2016 12:23	AWE	CLS	
3	STORE	DIG	A1	07-MAR-2016 13:51	BRG	AC	

Samplenum	Container ID	Products
L16030234-02	709945	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-MAR-2016 11:51	CLS		
2	ANALYZ	V1	ORG4	04-MAR-2016 12:19	AWE	CLS	

Samplenum	Container ID	Products
L16030234-02	709946	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	04-MAR-2016 11:51	CLS		
2	ANALYZ	W1	SEM	04-MAR-2016 12:23	AWE	CLS	
3	STORE	DIG	A1	07-MAR-2016 13:51	BRG	AC	

Samplenum	Container ID	Products
L16030234-03	709947	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-MAR-2016 11:51	CLS		
2	ANALYZ	V1	ORG4	04-MAR-2016 12:19	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030234
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 08-MAR-2016

Samplenum	Container ID	Products
L16030234-03	709948	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	04-MAR-2016 11:51	CLS		
2	ANALYZ	W1	SEM	04-MAR-2016 12:22	AWE	CLS	
3	STORE	DIG	A1	07-MAR-2016 13:51	BRG	AC	

Samplenum	Container ID	Products
L16030234-04	709949	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-MAR-2016 11:51	CLS		
2	ANALYZ	V1	ORG4	04-MAR-2016 12:19	AWE	CLS	

Samplenum	Container ID	Products
L16030234-04	709950	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	04-MAR-2016 11:51	CLS		
2	ANALYZ	W1	SEM	04-MAR-2016 12:22	AWE	CLS	
3	STORE	DIG	A1	07-MAR-2016 13:50	BRG	AC	

Samplenum	Container ID	Products
L16030234-05	709951	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-MAR-2016 11:51	CLS		
2	ANALYZ	V1	ORG4	04-MAR-2016 12:19	AWE	CLS	

Samplenum	Container ID	Products
L16030234-05	709952	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	04-MAR-2016 11:51	CLS		
2	ANALYZ	W1	SEM	04-MAR-2016 12:22	AWE	CLS	
3	STORE	DIG	A1	07-MAR-2016 13:50	BRG	AC	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030234
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 08-MAR-2016

Samplenum	Container ID	Products
L16030234-06	709953	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-MAR-2016 11:51	CLS		
2	ANALYZ	V1	ORG4	04-MAR-2016 12:19	AWE	CLS	

Samplenum	Container ID	Products
L16030234-06	709954	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	04-MAR-2016 11:51	CLS		
2	ANALYZ	W1	SEM	04-MAR-2016 12:22	AWE	CLS	
3	STORE	DIG	A1	07-MAR-2016 13:50	BRG	AC	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16030235

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on March 15 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00113624	I	0.0		J2317165901	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	NA
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	NA

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18DPT07(5-5.5)020316	L16030235-01	03/02/2016 16:00	03/04/2016 10:17
18DPT07(15-15.5)020316	L16030235-02	03/02/2016 16:25	03/04/2016 10:17
18DPT07(33.5-34.5)030316	L16030235-03	03/03/2016 10:00	03/04/2016 10:17
18DPT07(33.5-34.5)030316 MS	L16030235-04	03/03/2016 10:00	03/04/2016 10:17
18DPT07(33.5-34.5)030316 MSD	L16030235-05	03/03/2016 10:00	03/04/2016 10:17
18DPT07(38-39)030316	L16030235-06	03/03/2016 10:10	03/04/2016 10:17
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Microbac REPORT L16030235
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030235
Project Name:		**Method:**	8260
Prep Batch Number(s):	559982,	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-03-14 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden		Analyst I	2016-03-14 20:02:48

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030235
Project Name:		**Method:**	8260
Prep Batch Number(s):	559982,	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-03-14 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				
Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030235
Project Name:		**Method:**	8260
Prep Batch Number(s):	559982,	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-03-14 00:00:00		

Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				
Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030235
Project Name:		**Method:**	8260
Prep Batch Number(s):	559982,	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-03-14 00:00:00		

Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?		X			1
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					
Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030235
Project Name:		**Method:**	8260
Prep Batch Number(s):	559982,	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-03-14 00:00:00		

Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) Dichlorodifluoromethane exceeded the UCL in the ICV.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030235
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559808	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-08 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-03-08 19:56:31

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030235
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559808	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-08 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030235
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559808	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-08 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			1
Were MS/MSD RPDs within laboratory QC limits?		X			1
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030235
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559808	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-08 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030235
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559808	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-08 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030235
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559808	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-08 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. The MS failed low, the MSD failed high, and the RPD was beyond the acceptance limit. These were all due to a large amount of perchlorate in the reference sample.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030235
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559839	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-07 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2016-03-07 17:48:04

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030235
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559839	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-07 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?			X		
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?			X		
Were sample detection limits reported for all analytes not detected?			X		
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?			X		
Were blanks analyzed at the appropriate frequency?			X		
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?			X		
Were blank concentrations < MQL?			X		
Laboratory control samples (LCS):			X		
Were all COCs included in the LCS?			X		

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030235
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559839	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-07 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?			X		
Were LCSs analyzed at the required frequency?			X		
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?			X		
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?			X		
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?			X		
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?			X		
Are unadjusted MQLs and DCSs included in the laboratory data package?			X		
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?			X		
Were percent RSDs or correlation coefficient criteria met?			X		

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030235
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559839	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-07 00:00:00		

Was the number of standards recommended in the method used for all analytes?			X		
Were all points generated between the lowest and highest standard used to calculate the curve?			X		
Are ICAL data available for all instruments used?			X		
Has the initial calibration curve been verified using an appropriate second source standard?			X		
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030235
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559839	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-07 00:00:00		

Was a MDL study performed for each reported analyte?			X		
Is the MDL either adjusted or supported by the analysis of DCSs?			X		
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?			X		
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030235
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559839	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-07 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030235-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT07(5-5.5)020316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:06
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559982	**Analyst:**	ADC	**Run Date:**	03/07/2016 18:21
Collect Date:	03/02/2016 16:00	**Dilution:**	1	**File ID:**	9M973127
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	20.8	J	24.7	12.3	6.17
Benzene	71-43-2	1.23	U	6.17	1.23	0.617
Bromobenzene	108-86-1	1.23	U	6.17	1.23	0.617
Bromochloromethane	74-97-5	2.46	U	6.17	2.46	1.23
Bromodichloromethane	75-27-4	1.23	U	6.17	1.23	0.617
Bromoform	75-25-2	1.23	U	6.17	1.23	0.617
Bromomethane	74-83-9	2.46	U	6.17	2.46	1.23
2-Butanone	78-93-3	6.18	U	12.3	6.18	3.09
n-Butylbenzene	104-51-8	1.23	U	6.17	1.23	0.617
sec-Butylbenzene	135-98-8	1.23	U	6.17	1.23	0.617
tert-Butylbenzene	98-06-6	1.23	U	6.17	1.23	0.617
Carbon disulfide	75-15-0	1.23	U	6.17	1.23	0.617
Carbon tetrachloride	56-23-5	1.23	U	6.17	1.23	0.617
Chlorobenzene	108-90-7	1.23	U	6.17	1.23	0.617
Chlorodibromomethane	124-48-1	1.23	U	6.17	1.23	0.617
Chloroethane	75-00-3	2.46	U	6.17	2.46	1.23
Chloroform	67-66-3	1.23	U	6.17	1.23	0.617
Chloromethane	74-87-3	4.94	U	12.3	4.94	2.47
2-Chlorotoluene	95-49-8	1.23	U	6.17	1.23	0.617
4-Chlorotoluene	106-43-4	1.23	U	6.17	1.23	0.617
1,2-Dibromo-3-chloropropane	96-12-8	4.94	U	12.3	4.94	2.47
1,2-Dibromoethane	106-93-4	1.23	U	6.17	1.23	0.617
Dibromomethane	74-95-3	1.23	U	6.17	1.23	0.617
1,2-Dichlorobenzene	95-50-1	1.23	U	6.17	1.23	0.617
1,3-Dichlorobenzene	541-73-1	1.23	U	6.17	1.23	0.617
1,4-Dichlorobenzene	106-46-7	1.23	U	6.17	1.23	0.617
Dichlorodifluoromethane	75-71-8	2.46	U	6.17	2.46	1.23
1,1-Dichloroethane	75-34-3	2.46	U	6.17	2.46	1.23
1,2-Dichloroethane	107-06-2	1.23	U	6.17	1.23	0.617
1,1-Dichloroethene	75-35-4	1.23	U	6.17	1.23	0.617
cis-1,2-Dichloroethene	156-59-2	1.23	U	6.17	1.23	0.617
trans-1,2-Dichloroethene	156-60-5	1.23	U	6.17	1.23	0.617

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.23	U	6.17	1.23	0.617
1,3-Dichloropropane	142-28-9	1.23	U	6.17	1.23	0.617
2,2-Dichloropropane	594-20-7	1.23	U	6.17	1.23	0.617
cis-1,3-Dichloropropene	10061-01-5	1.23	U	6.17	1.23	0.617
trans-1,3-Dichloropropene	10061-02-6	1.23	U	6.17	1.23	0.617
1,1-Dichloropropene	563-58-6	1.23	U	6.17	1.23	0.617
Ethylbenzene	100-41-4	1.23	U	6.17	1.23	0.617
2-Hexanone	591-78-6	6.18	U	12.3	6.18	3.09
Hexachlorobutadiene	87-68-3	1.23	U	6.17	1.23	0.617
Isopropylbenzene	98-82-8	1.23	U	6.17	1.23	0.617
p-Isopropyltoluene	99-87-6	1.23	U	6.17	1.23	0.617
4-Methyl-2-pentanone	108-10-1	6.18	U	12.3	6.18	3.09
Methylene chloride	75-09-2	2.46	U	6.17	2.46	1.23
Naphthalene	91-20-3	1.23	U	6.17	1.23	0.617
n-Propylbenzene	103-65-1	1.23	U	6.17	1.23	0.617
Styrene	100-42-5	1.23	U	6.17	1.23	0.617
1,1,1,2-Tetrachloroethane	630-20-6	1.23	U	6.17	1.23	0.617
1,1,2,2-Tetrachloroethane	79-34-5	1.23	U	6.17	1.23	0.617
Tetrachloroethene	127-18-4	1.23	U	6.17	1.23	0.617
Toluene	108-88-3	1.23	U	6.17	1.23	0.617
1,2,3-Trichlorobenzene	87-61-6	1.23	U	6.17	1.23	0.617
1,2,4-Trichlorobenzene	120-82-1	1.23	U	6.17	1.23	0.617
1,1,1-Trichloroethane	71-55-6	1.23	U	6.17	1.23	0.617
1,1,2-Trichloroethane	79-00-5	1.23	U	6.17	1.23	0.617
Trichloroethene	79-01-6	1.23	U	6.17	1.23	0.617
Trichlorofluoromethane	75-69-4	2.46	U	6.17	2.46	1.23
1,2,3-Trichloropropane	96-18-4	2.46	U	6.17	2.46	1.23
1,2,4-Trimethylbenzene	95-63-6	1.23	U	6.17	1.23	0.617
1,3,5-Trimethylbenzene	108-67-8	1.23	U	6.17	1.23	0.617
Vinyl chloride	75-01-4	2.46	U	6.17	2.46	1.23
o-Xylene	95-47-6	1.23	U	6.17	1.23	0.617
m-,p-Xylene	179601-23-1	1.23	U	6.17	1.23	0.617

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.7	80	120	
1,2-Dichloroethane-d4	102	80	120	
Toluene-d8	98.8	85	115	
4-Bromofluorobenzene	105	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030235-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT07(5-5.5)020316	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/04/2016 20:25
Collect Date:	03/02/2016 16:00	**Dilution:**	1	**File ID:**	1LM.LM33722
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.38	U	4.77	2.38	1.19

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030235-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT07(15-15.5)020316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:06
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559982	**Analyst:**	ADC	**Run Date:**	03/07/2016 18:51
Collect Date:	03/02/2016 16:25	**Dilution:**	1	**File ID:**	9M973128
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	76.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	24.9	12.5	6.23
Benzene	71-43-2	1.25	U	6.23	1.25	0.623
Bromobenzene	108-86-1	1.25	U	6.23	1.25	0.623
Bromochloromethane	74-97-5	2.50	U	6.23	2.50	1.25
Bromodichloromethane	75-27-4	1.25	U	6.23	1.25	0.623
Bromoform	75-25-2	1.25	U	6.23	1.25	0.623
Bromomethane	74-83-9	2.50	U	6.23	2.50	1.25
2-Butanone	78-93-3	6.24	U	12.5	6.24	3.12
n-Butylbenzene	104-51-8	1.25	U	6.23	1.25	0.623
sec-Butylbenzene	135-98-8	1.25	U	6.23	1.25	0.623
tert-Butylbenzene	98-06-6	1.25	U	6.23	1.25	0.623
Carbon disulfide	75-15-0	1.25	U	6.23	1.25	0.623
Carbon tetrachloride	56-23-5	1.25	U	6.23	1.25	0.623
Chlorobenzene	108-90-7	1.25	U	6.23	1.25	0.623
Chlorodibromomethane	124-48-1	1.25	U	6.23	1.25	0.623
Chloroethane	75-00-3	2.50	U	6.23	2.50	1.25
Chloroform	67-66-3	1.25	U	6.23	1.25	0.623
Chloromethane	74-87-3	4.98	U	12.5	4.98	2.49
2-Chlorotoluene	95-49-8	1.25	U	6.23	1.25	0.623
4-Chlorotoluene	106-43-4	1.25	U	6.23	1.25	0.623
1,2-Dibromo-3-chloropropane	96-12-8	4.98	U	12.5	4.98	2.49
1,2-Dibromoethane	106-93-4	1.25	U	6.23	1.25	0.623
Dibromomethane	74-95-3	1.25	U	6.23	1.25	0.623
1,2-Dichlorobenzene	95-50-1	1.25	U	6.23	1.25	0.623
1,3-Dichlorobenzene	541-73-1	1.25	U	6.23	1.25	0.623
1,4-Dichlorobenzene	106-46-7	1.25	U	6.23	1.25	0.623
Dichlorodifluoromethane	75-71-8	2.50	U	6.23	2.50	1.25
1,1-Dichloroethane	75-34-3	2.50	U	6.23	2.50	1.25
1,2-Dichloroethane	107-06-2	1.25	U	6.23	1.25	0.623
1,1-Dichloroethene	75-35-4	1.25	U	6.23	1.25	0.623
cis-1,2-Dichloroethene	156-59-2	1.36	J	6.23	1.25	0.623

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.25	U	6.23	1.25	0.623
1,2-Dichloropropane	78-87-5	1.25	U	6.23	1.25	0.623
1,3-Dichloropropane	142-28-9	1.25	U	6.23	1.25	0.623
2,2-Dichloropropane	594-20-7	1.25	U	6.23	1.25	0.623
cis-1,3-Dichloropropene	10061-01-5	1.25	U	6.23	1.25	0.623
trans-1,3-Dichloropropene	10061-02-6	1.25	U	6.23	1.25	0.623
1,1-Dichloropropene	563-58-6	1.25	U	6.23	1.25	0.623
Ethylbenzene	100-41-4	1.25	U	6.23	1.25	0.623
2-Hexanone	591-78-6	6.24	U	12.5	6.24	3.12
Hexachlorobutadiene	87-68-3	1.25	U	6.23	1.25	0.623
Isopropylbenzene	98-82-8	1.25	U	6.23	1.25	0.623
p-Isopropyltoluene	99-87-6	1.25	U	6.23	1.25	0.623
4-Methyl-2-pentanone	108-10-1	6.24	U	12.5	6.24	3.12
Methylene chloride	75-09-2	2.50	U	6.23	2.50	1.25
Naphthalene	91-20-3	1.25	U	6.23	1.25	0.623
n-Propylbenzene	103-65-1	1.25	U	6.23	1.25	0.623
Styrene	100-42-5	1.25	U	6.23	1.25	0.623
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	6.23	1.25	0.623
1,1,2,2-Tetrachloroethane	79-34-5	1.25	U	6.23	1.25	0.623
Tetrachloroethene	127-18-4	1.25	U	6.23	1.25	0.623
Toluene	108-88-3	1.25	U	6.23	1.25	0.623
1,2,3-Trichlorobenzene	87-61-6	1.25	U	6.23	1.25	0.623
1,2,4-Trichlorobenzene	120-82-1	1.25	U	6.23	1.25	0.623
1,1,1-Trichloroethane	71-55-6	1.25	U	6.23	1.25	0.623
1,1,2-Trichloroethane	79-00-5	1.25	U	6.23	1.25	0.623
Trichloroethene	79-01-6	2.73	J	6.23	1.25	0.623
Trichlorofluoromethane	75-69-4	2.50	U	6.23	2.50	1.25
1,2,3-Trichloropropane	96-18-4	2.50	U	6.23	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	6.23	1.25	0.623
1,3,5-Trimethylbenzene	108-67-8	1.25	U	6.23	1.25	0.623
Vinyl chloride	75-01-4	2.50	U	6.23	2.50	1.25
o-Xylene	95-47-6	1.25	U	6.23	1.25	0.623
m-,p-Xylene	179601-23-1	1.25	U	6.23	1.25	0.623

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.8	80	120	
1,2-Dichloroethane-d4	113	80	120	
Toluene-d8	97.2	85	115	
4-Bromofluorobenzene	99.7	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030235-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT07(15-15.5)020316	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/04/2016 21:41
Collect Date:	03/02/2016 16:25	**Dilution:**	1	**File ID:**	1LM.LM33726
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	76.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.47	J	5.12	2.56	1.28

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030235-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT07(33.5-34.5)030316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:07
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559982	**Analyst:**	ADC	**Run Date:**	03/07/2016 19:22
Collect Date:	03/03/2016 10:00	**Dilution:**	1	**File ID:**	9M973129
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.1	U	22.2	11.1	5.55
Benzene	71-43-2	1.11	U	5.55	1.11	0.555
Bromobenzene	108-86-1	1.11	U	5.55	1.11	0.555
Bromochloromethane	74-97-5	2.22	U	5.55	2.22	1.11
Bromodichloromethane	75-27-4	1.11	U	5.55	1.11	0.555
Bromoform	75-25-2	1.11	U	5.55	1.11	0.555
Bromomethane	74-83-9	2.22	U	5.55	2.22	1.11
2-Butanone	78-93-3	5.56	U	11.1	5.56	2.78
n-Butylbenzene	104-51-8	1.11	U	5.55	1.11	0.555
sec-Butylbenzene	135-98-8	1.11	U	5.55	1.11	0.555
tert-Butylbenzene	98-06-6	1.11	U	5.55	1.11	0.555
Carbon disulfide	75-15-0	1.11	U	5.55	1.11	0.555
Carbon tetrachloride	56-23-5	1.11	U	5.55	1.11	0.555
Chlorobenzene	108-90-7	1.11	U	5.55	1.11	0.555
Chlorodibromomethane	124-48-1	1.11	U	5.55	1.11	0.555
Chloroethane	75-00-3	2.22	U	5.55	2.22	1.11
Chloroform	67-66-3	1.11	U	5.55	1.11	0.555
Chloromethane	74-87-3	4.44	U	11.1	4.44	2.22
2-Chlorotoluene	95-49-8	1.11	U	5.55	1.11	0.555
4-Chlorotoluene	106-43-4	1.11	U	5.55	1.11	0.555
1,2-Dibromo-3-chloropropane	96-12-8	4.44	U	11.1	4.44	2.22
1,2-Dibromoethane	106-93-4	1.11	U	5.55	1.11	0.555
Dibromomethane	74-95-3	1.11	U	5.55	1.11	0.555
1,2-Dichlorobenzene	95-50-1	1.11	U	5.55	1.11	0.555
1,3-Dichlorobenzene	541-73-1	1.11	U	5.55	1.11	0.555
1,4-Dichlorobenzene	106-46-7	1.11	U	5.55	1.11	0.555
Dichlorodifluoromethane	75-71-8	2.22	U	5.55	2.22	1.11
1,1-Dichloroethane	75-34-3	2.22	U	5.55	2.22	1.11
1,2-Dichloroethane	107-06-2	1.11	U	5.55	1.11	0.555
1,1-Dichloroethene	75-35-4	1.11	U	5.55	1.11	0.555
cis-1,2-Dichloroethene	156-59-2	1.11	U	5.55	1.11	0.555

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Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.11	U	5.55	1.11	0.555
1,2-Dichloropropane	78-87-5	1.11	U	5.55	1.11	0.555
1,3-Dichloropropane	142-28-9	1.11	U	5.55	1.11	0.555
2,2-Dichloropropane	594-20-7	1.11	U	5.55	1.11	0.555
cis-1,3-Dichloropropene	10061-01-5	1.11	U	5.55	1.11	0.555
trans-1,3-Dichloropropene	10061-02-6	1.11	U	5.55	1.11	0.555
1,1-Dichloropropene	563-58-6	1.11	U	5.55	1.11	0.555
Ethylbenzene	100-41-4	1.11	U	5.55	1.11	0.555
2-Hexanone	591-78-6	5.56	U	11.1	5.56	2.78
Hexachlorobutadiene	87-68-3	1.11	U	5.55	1.11	0.555
Isopropylbenzene	98-82-8	1.11	U	5.55	1.11	0.555
p-Isopropyltoluene	99-87-6	1.11	U	5.55	1.11	0.555
4-Methyl-2-pentanone	108-10-1	5.56	U	11.1	5.56	2.78
Methylene chloride	75-09-2	2.22	U	5.55	2.22	1.11
Naphthalene	91-20-3	1.11	U	5.55	1.11	0.555
n-Propylbenzene	103-65-1	1.11	U	5.55	1.11	0.555
Styrene	100-42-5	1.11	U	5.55	1.11	0.555
1,1,1,2-Tetrachloroethane	630-20-6	1.11	U	5.55	1.11	0.555
1,1,2,2-Tetrachloroethane	79-34-5	1.11	U	5.55	1.11	0.555
Tetrachloroethene	127-18-4	1.11	U	5.55	1.11	0.555
Toluene	108-88-3	1.11	U	5.55	1.11	0.555
1,2,3-Trichlorobenzene	87-61-6	1.11	U	5.55	1.11	0.555
1,2,4-Trichlorobenzene	120-82-1	1.11	U	5.55	1.11	0.555
1,1,1-Trichloroethane	71-55-6	1.11	U	5.55	1.11	0.555
1,1,2-Trichloroethane	79-00-5	1.11	U	5.55	1.11	0.555
Trichloroethene	79-01-6	5.03	J	5.55	1.11	0.555
Trichlorofluoromethane	75-69-4	2.22	U	5.55	2.22	1.11
1,2,3-Trichloropropane	96-18-4	2.22	U	5.55	2.22	1.11
1,2,4-Trimethylbenzene	95-63-6	1.11	U	5.55	1.11	0.555
1,3,5-Trimethylbenzene	108-67-8	1.11	U	5.55	1.11	0.555
Vinyl chloride	75-01-4	2.22	U	5.55	2.22	1.11
o-Xylene	95-47-6	1.11	U	5.55	1.11	0.555
m-,p-Xylene	179601-23-1	1.11	U	5.55	1.11	0.555

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.8	80	120	
1,2-Dichloroethane-d4	100	80	120	
Toluene-d8	97.6	85	115	
4-Bromofluorobenzene	98.9	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030235-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT07(33.5-34.5)030316	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/07/2016 10:51
Collect Date:	03/03/2016 10:00	**Dilution:**	100	**File ID:**	1LM.LM33739
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	82.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2180		480	240	120

Certificate of Analysis

Sample #:	L16030235-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT07(33.5-34.5)030316 MS	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:07
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559982	**Analyst:**	ADC	**Run Date:**	03/07/2016 21:26
Collect Date:	03/03/2016 10:00	**Dilution:**	1	**File ID:**	9M973133
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	22.3	J	23.5	11.8	5.88
Benzene	71-43-2	22.9		5.88	1.18	0.588
Bromobenzene	108-86-1	18.8		5.88	1.18	0.588
Bromochloromethane	74-97-5	23.1		5.88	2.36	1.18
Bromodichloromethane	75-27-4	23.2		5.88	1.18	0.588
Bromoform	75-25-2	18.9		5.88	1.18	0.588
Bromomethane	74-83-9	20.9		5.88	2.36	1.18
2-Butanone	78-93-3	22.1		11.8	5.88	2.94
n-Butylbenzene	104-51-8	19.2		5.88	1.18	0.588
sec-Butylbenzene	135-98-8	20.5		5.88	1.18	0.588
tert-Butylbenzene	98-06-6	21.2		5.88	1.18	0.588
Carbon disulfide	75-15-0	19.6		5.88	1.18	0.588
Carbon tetrachloride	56-23-5	22.9		5.88	1.18	0.588
Chlorobenzene	108-90-7	22.8		5.88	1.18	0.588
Chlorodibromomethane	124-48-1	21.1		5.88	1.18	0.588
Chloroethane	75-00-3	25.1		5.88	2.36	1.18
Chloroform	67-66-3	23.5		5.88	1.18	0.588
Chloromethane	74-87-3	23.8		11.8	4.70	2.35
2-Chlorotoluene	95-49-8	20.1		5.88	1.18	0.588

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Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
4-Chlorotoluene	106-43-4	20.8		5.88	1.18	0.588
1,2-Dibromo-3-chloropropane	96-12-8	14.6		11.8	4.70	2.35
1,2-Dibromoethane	106-93-4	21.2		5.88	1.18	0.588
Dibromomethane	74-95-3	21.4		5.88	1.18	0.588
1,2-Dichlorobenzene	95-50-1	18.9		5.88	1.18	0.588
1,3-Dichlorobenzene	541-73-1	18.1		5.88	1.18	0.588
1,4-Dichlorobenzene	106-46-7	18.3		5.88	1.18	0.588
Dichlorodifluoromethane	75-71-8	29.9		5.88	2.36	1.18
1,1-Dichloroethane	75-34-3	22.3		5.88	2.36	1.18
1,2-Dichloroethane	107-06-2	24.9		5.88	1.18	0.588
1,1-Dichloroethene	75-35-4	24.1		5.88	1.18	0.588
cis-1,2-Dichloroethene	156-59-2	24.2		5.88	1.18	0.588
trans-1,2-Dichloroethene	156-60-5	24.5		5.88	1.18	0.588
1,2-Dichloropropane	78-87-5	25.7		5.88	1.18	0.588
1,3-Dichloropropane	142-28-9	23.0		5.88	1.18	0.588
2,2-Dichloropropane	594-20-7	21.6		5.88	1.18	0.588
cis-1,3-Dichloropropene	10061-01-5	24.2		5.88	1.18	0.588
trans-1,3-Dichloropropene	10061-02-6	21.6		5.88	1.18	0.588
1,1-Dichloropropene	563-58-6	22.9		5.88	1.18	0.588
Ethylbenzene	100-41-4	23.2		5.88	1.18	0.588
2-Hexanone	591-78-6	19.9		11.8	5.88	2.94
Hexachlorobutadiene	87-68-3	19.0		5.88	1.18	0.588
Isopropylbenzene	98-82-8	23.5		5.88	1.18	0.588
p-Isopropyltoluene	99-87-6	19.6		5.88	1.18	0.588
4-Methyl-2-pentanone	108-10-1	21.3		11.8	5.88	2.94
Methylene chloride	75-09-2	23.0		5.88	2.36	1.18
Naphthalene	91-20-3	14.9		5.88	1.18	0.588
n-Propylbenzene	103-65-1	21.0		5.88	1.18	0.588
Styrene	100-42-5	22.6		5.88	1.18	0.588
1,1,1,2-Tetrachloroethane	630-20-6	22.5		5.88	1.18	0.588
1,1,2,2-Tetrachloroethane	79-34-5	17.3		5.88	1.18	0.588
Tetrachloroethene	127-18-4	21.9		5.88	1.18	0.588
Toluene	108-88-3	22.5		5.88	1.18	0.588
1,2,3-Trichlorobenzene	87-61-6	16.8		5.88	1.18	0.588
1,2,4-Trichlorobenzene	120-82-1	16.1		5.88	1.18	0.588
1,1,1-Trichloroethane	71-55-6	24.0		5.88	1.18	0.588
1,1,2-Trichloroethane	79-00-5	21.8		5.88	1.18	0.588
Trichloroethene	79-01-6	29.4		5.88	1.18	0.588
Trichlorofluoromethane	75-69-4	24.2		5.88	2.36	1.18

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Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,3-Trichloropropane	96-18-4	20.1		5.88	2.36	1.18
1,2,4-Trimethylbenzene	95-63-6	19.1		5.88	1.18	0.588
1,3,5-Trimethylbenzene	108-67-8	20.3		5.88	1.18	0.588
Vinyl chloride	75-01-4	24.7		5.88	2.36	1.18
o-Xylene	95-47-6	23.5		5.88	1.18	0.588
m-,p-Xylene	179601-23-1	46.6		5.88	1.18	0.588

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.5	80	120	
1,2-Dichloroethane-d4	103	80	120	
Toluene-d8	95.9	85	115	
4-Bromofluorobenzene	96.3	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030235-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT07(33.5-34.5)030316 MS	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/07/2016 11:10
Collect Date:	03/03/2016 10:00	**Dilution:**	100	**File ID:**	1LM.LM33740
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	82.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2170		480	240	120

Certificate of Analysis

Sample #:	L16030235-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT07(33.5-34.5)030316 MSD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:08
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559982	**Analyst:**	ADC	**Run Date:**	03/07/2016 21:58
Collect Date:	03/03/2016 10:00	**Dilution:**	1	**File ID:**	9M973134
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	23.9	J	24.0	12.0	6.00
Benzene	71-43-2	25.1		6.00	1.20	0.600
Bromobenzene	108-86-1	21.5		6.00	1.20	0.600
Bromochloromethane	74-97-5	23.7		6.00	2.40	1.20
Bromodichloromethane	75-27-4	24.9		6.00	1.20	0.600
Bromoform	75-25-2	20.2		6.00	1.20	0.600
Bromomethane	74-83-9	22.7		6.00	2.40	1.20
2-Butanone	78-93-3	24.3		12.0	6.00	3.00
n-Butylbenzene	104-51-8	22.7		6.00	1.20	0.600
sec-Butylbenzene	135-98-8	24.3		6.00	1.20	0.600
tert-Butylbenzene	98-06-6	24.6		6.00	1.20	0.600
Carbon disulfide	75-15-0	22.6		6.00	1.20	0.600
Carbon tetrachloride	56-23-5	25.3		6.00	1.20	0.600
Chlorobenzene	108-90-7	24.4		6.00	1.20	0.600
Chlorodibromomethane	124-48-1	22.1		6.00	1.20	0.600
Chloroethane	75-00-3	25.4		6.00	2.40	1.20
Chloroform	67-66-3	25.0		6.00	1.20	0.600
Chloromethane	74-87-3	26.3		12.0	4.80	2.40
2-Chlorotoluene	95-49-8	24.2		6.00	1.20	0.600

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Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
4-Chlorotoluene	106-43-4	22.4		6.00	1.20	0.600
1,2-Dibromo-3-chloropropane	96-12-8	18.0		12.0	4.80	2.40
1,2-Dibromoethane	106-93-4	22.9		6.00	1.20	0.600
Dibromomethane	74-95-3	22.4		6.00	1.20	0.600
1,2-Dichlorobenzene	95-50-1	21.5		6.00	1.20	0.600
1,3-Dichlorobenzene	541-73-1	21.4		6.00	1.20	0.600
1,4-Dichlorobenzene	106-46-7	21.4		6.00	1.20	0.600
Dichlorodifluoromethane	75-71-8	32.2		6.00	2.40	1.20
1,1-Dichloroethane	75-34-3	24.3		6.00	2.40	1.20
1,2-Dichloroethane	107-06-2	27.3		6.00	1.20	0.600
1,1-Dichloroethene	75-35-4	25.5		6.00	1.20	0.600
cis-1,2-Dichloroethene	156-59-2	25.8		6.00	1.20	0.600
trans-1,2-Dichloroethene	156-60-5	26.9		6.00	1.20	0.600
1,2-Dichloropropane	78-87-5	26.8		6.00	1.20	0.600
1,3-Dichloropropane	142-28-9	24.5		6.00	1.20	0.600
2,2-Dichloropropane	594-20-7	22.9		6.00	1.20	0.600
cis-1,3-Dichloropropene	10061-01-5	25.8		6.00	1.20	0.600
trans-1,3-Dichloropropene	10061-02-6	23.0		6.00	1.20	0.600
1,1-Dichloropropene	563-58-6	24.9		6.00	1.20	0.600
Ethylbenzene	100-41-4	25.1		6.00	1.20	0.600
2-Hexanone	591-78-6	23.3		12.0	6.00	3.00
Hexachlorobutadiene	87-68-3	22.5		6.00	1.20	0.600
Isopropylbenzene	98-82-8	25.8		6.00	1.20	0.600
p-Isopropyltoluene	99-87-6	22.8		6.00	1.20	0.600
4-Methyl-2-pentanone	108-10-1	24.0		12.0	6.00	3.00
Methylene chloride	75-09-2	24.0		6.00	2.40	1.20
Naphthalene	91-20-3	17.3		6.00	1.20	0.600
n-Propylbenzene	103-65-1	24.2		6.00	1.20	0.600
Styrene	100-42-5	25.0		6.00	1.20	0.600
1,1,1,2-Tetrachloroethane	630-20-6	24.0		6.00	1.20	0.600
1,1,2,2-Tetrachloroethane	79-34-5	19.1		6.00	1.20	0.600
Tetrachloroethene	127-18-4	23.6		6.00	1.20	0.600
Toluene	108-88-3	24.4		6.00	1.20	0.600
1,2,3-Trichlorobenzene	87-61-6	20.0		6.00	1.20	0.600
1,2,4-Trichlorobenzene	120-82-1	19.9		6.00	1.20	0.600
1,1,1-Trichloroethane	71-55-6	25.7		6.00	1.20	0.600
1,1,2-Trichloroethane	79-00-5	23.3		6.00	1.20	0.600
Trichloroethene	79-01-6	30.2		6.00	1.20	0.600
Trichlorofluoromethane	75-69-4	25.2		6.00	2.40	1.20

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Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,3-Trichloropropane	96-18-4	21.1		6.00	2.40	1.20
1,2,4-Trimethylbenzene	95-63-6	22.3		6.00	1.20	0.600
1,3,5-Trimethylbenzene	108-67-8	23.3		6.00	1.20	0.600
Vinyl chloride	75-01-4	27.0		6.00	2.40	1.20
o-Xylene	95-47-6	25.7		6.00	1.20	0.600
m-,p-Xylene	179601-23-1	50.7		6.00	1.20	0.600

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.5	80	120	
1,2-Dichloroethane-d4	99.7	80	120	
Toluene-d8	95.4	85	115	
4-Bromofluorobenzene	99.5	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

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Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030235-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT07(33.5-34.5)030316 MSD	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/07/2016 11:29
Collect Date:	03/03/2016 10:00	**Dilution:**	100	**File ID:**	1LM.LM33741
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	82.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2350		480	240	120

Certificate of Analysis

Sample #:	L16030235-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT07(38-39)030316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:09
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559982	**Analyst:**	ADC	**Run Date:**	03/07/2016 19:53
Collect Date:	03/03/2016 10:10	**Dilution:**	1	**File ID:**	9M973130
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	75.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	15.3	J	25.6	12.8	6.41
Benzene	71-43-2	1.28	U	6.41	1.28	0.641
Bromobenzene	108-86-1	1.28	U	6.41	1.28	0.641
Bromochloromethane	74-97-5	2.56	U	6.41	2.56	1.28
Bromodichloromethane	75-27-4	1.28	U	6.41	1.28	0.641
Bromoform	75-25-2	1.28	U	6.41	1.28	0.641
Bromomethane	74-83-9	2.56	U	6.41	2.56	1.28
2-Butanone	78-93-3	6.40	U	12.8	6.40	3.20
n-Butylbenzene	104-51-8	1.28	U	6.41	1.28	0.641
sec-Butylbenzene	135-98-8	1.28	U	6.41	1.28	0.641
tert-Butylbenzene	98-06-6	1.28	U	6.41	1.28	0.641
Carbon disulfide	75-15-0	1.28	U	6.41	1.28	0.641
Carbon tetrachloride	56-23-5	1.28	U	6.41	1.28	0.641
Chlorobenzene	108-90-7	1.28	U	6.41	1.28	0.641
Chlorodibromomethane	124-48-1	1.28	U	6.41	1.28	0.641
Chloroethane	75-00-3	2.56	U	6.41	2.56	1.28
Chloroform	67-66-3	1.28	U	6.41	1.28	0.641
Chloromethane	74-87-3	5.12	U	12.8	5.12	2.56
2-Chlorotoluene	95-49-8	1.28	U	6.41	1.28	0.641

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
4-Chlorotoluene	106-43-4	1.28	U	6.41	1.28	0.641
1,2-Dibromo-3-chloropropane	96-12-8	5.12	U	12.8	5.12	2.56
1,2-Dibromoethane	106-93-4	1.28	U	6.41	1.28	0.641
Dibromomethane	74-95-3	1.28	U	6.41	1.28	0.641
1,2-Dichlorobenzene	95-50-1	1.28	U	6.41	1.28	0.641
1,3-Dichlorobenzene	541-73-1	1.28	U	6.41	1.28	0.641
1,4-Dichlorobenzene	106-46-7	1.28	U	6.41	1.28	0.641
Dichlorodifluoromethane	75-71-8	2.56	U	6.41	2.56	1.28
1,1-Dichloroethane	75-34-3	2.56	U	6.41	2.56	1.28
1,2-Dichloroethane	107-06-2	1.28	U	6.41	1.28	0.641
1,1-Dichloroethene	75-35-4	1.28	U	6.41	1.28	0.641
cis-1,2-Dichloroethene	156-59-2	1.28	U	6.41	1.28	0.641
trans-1,2-Dichloroethene	156-60-5	1.28	U	6.41	1.28	0.641
1,2-Dichloropropane	78-87-5	1.28	U	6.41	1.28	0.641
1,3-Dichloropropane	142-28-9	1.28	U	6.41	1.28	0.641
2,2-Dichloropropane	594-20-7	1.28	U	6.41	1.28	0.641
cis-1,3-Dichloropropene	10061-01-5	1.28	U	6.41	1.28	0.641
trans-1,3-Dichloropropene	10061-02-6	1.28	U	6.41	1.28	0.641
1,1-Dichloropropene	563-58-6	1.28	U	6.41	1.28	0.641
Ethylbenzene	100-41-4	1.28	U	6.41	1.28	0.641
2-Hexanone	591-78-6	6.40	U	12.8	6.40	3.20
Hexachlorobutadiene	87-68-3	1.28	U	6.41	1.28	0.641
Isopropylbenzene	98-82-8	1.28	U	6.41	1.28	0.641
p-Isopropyltoluene	99-87-6	1.28	U	6.41	1.28	0.641
4-Methyl-2-pentanone	108-10-1	6.40	U	12.8	6.40	3.20
Methylene chloride	75-09-2	2.56	U	6.41	2.56	1.28
Naphthalene	91-20-3	1.28	U	6.41	1.28	0.641
n-Propylbenzene	103-65-1	1.28	U	6.41	1.28	0.641
Styrene	100-42-5	1.28	U	6.41	1.28	0.641
1,1,1,2-Tetrachloroethane	630-20-6	1.28	U	6.41	1.28	0.641
1,1,2,2-Tetrachloroethane	79-34-5	1.28	U	6.41	1.28	0.641
Tetrachloroethene	127-18-4	1.28	U	6.41	1.28	0.641
Toluene	108-88-3	1.28	U	6.41	1.28	0.641
1,2,3-Trichlorobenzene	87-61-6	1.28	U	6.41	1.28	0.641
1,2,4-Trichlorobenzene	120-82-1	1.28	U	6.41	1.28	0.641
1,1,1-Trichloroethane	71-55-6	1.28	U	6.41	1.28	0.641
1,1,2-Trichloroethane	79-00-5	1.28	U	6.41	1.28	0.641
Trichloroethene	79-01-6	20.9		6.41	1.28	0.641
Trichlorofluoromethane	75-69-4	2.56	U	6.41	2.56	1.28

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Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,3-Trichloropropane	96-18-4	2.56	U	6.41	2.56	1.28
1,2,4-Trimethylbenzene	95-63-6	1.28	U	6.41	1.28	0.641
1,3,5-Trimethylbenzene	108-67-8	1.28	U	6.41	1.28	0.641
Vinyl chloride	75-01-4	2.56	U	6.41	2.56	1.28
o-Xylene	95-47-6	1.28	U	6.41	1.28	0.641
m-,p-Xylene	179601-23-1	1.28	U	6.41	1.28	0.641

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.1	80	120	
1,2-Dichloroethane-d4	105	80	120	
Toluene-d8	96.0	85	115	
4-Bromofluorobenzene	99.2	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030235-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT07(38-39)030316	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/07/2016 11:48
Collect Date:	03/03/2016 10:10	**Dilution:**	10	**File ID:**	1LM.LM33742
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	75.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	697		50.8	25.4	12.7

Certificate of Analysis

Sample #:	L16030235-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT07(38-39)030316 FD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:10
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559982	**Analyst:**	ADC	**Run Date:**	03/07/2016 20:24
Collect Date:	03/03/2016 10:10	**Dilution:**	1	**File ID:**	9M973131
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	75.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	16.0	J	28.5	14.3	7.13
Benzene	71-43-2	1.43	U	7.13	1.43	0.713
Bromobenzene	108-86-1	1.43	U	7.13	1.43	0.713
Bromochloromethane	74-97-5	2.86	U	7.13	2.86	1.43
Bromodichloromethane	75-27-4	1.43	U	7.13	1.43	0.713
Bromoform	75-25-2	1.43	U	7.13	1.43	0.713
Bromomethane	74-83-9	2.86	U	7.13	2.86	1.43
2-Butanone	78-93-3	7.12	U	14.3	7.12	3.56
n-Butylbenzene	104-51-8	1.43	U	7.13	1.43	0.713
sec-Butylbenzene	135-98-8	1.43	U	7.13	1.43	0.713
tert-Butylbenzene	98-06-6	1.43	U	7.13	1.43	0.713
Carbon disulfide	75-15-0	1.43	U	7.13	1.43	0.713
Carbon tetrachloride	56-23-5	1.43	U	7.13	1.43	0.713
Chlorobenzene	108-90-7	1.43	U	7.13	1.43	0.713
Chlorodibromomethane	124-48-1	1.43	U	7.13	1.43	0.713
Chloroethane	75-00-3	2.86	U	7.13	2.86	1.43
Chloroform	67-66-3	1.43	U	7.13	1.43	0.713
Chloromethane	74-87-3	5.70	U	14.3	5.70	2.85
2-Chlorotoluene	95-49-8	1.43	U	7.13	1.43	0.713
4-Chlorotoluene	106-43-4	1.43	U	7.13	1.43	0.713

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Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	5.70	U	14.3	5.70	2.85
1,2-Dibromoethane	106-93-4	1.43	U	7.13	1.43	0.713
Dibromomethane	74-95-3	1.43	U	7.13	1.43	0.713
1,2-Dichlorobenzene	95-50-1	1.43	U	7.13	1.43	0.713
1,3-Dichlorobenzene	541-73-1	1.43	U	7.13	1.43	0.713
1,4-Dichlorobenzene	106-46-7	1.43	U	7.13	1.43	0.713
Dichlorodifluoromethane	75-71-8	2.86	U	7.13	2.86	1.43
1,1-Dichloroethane	75-34-3	2.86	U	7.13	2.86	1.43
1,2-Dichloroethane	107-06-2	1.43	U	7.13	1.43	0.713
1,1-Dichloroethene	75-35-4	1.43	U	7.13	1.43	0.713
cis-1,2-Dichloroethene	156-59-2	1.43	U	7.13	1.43	0.713
trans-1,2-Dichloroethene	156-60-5	1.43	U	7.13	1.43	0.713
1,2-Dichloropropane	78-87-5	1.43	U	7.13	1.43	0.713
1,3-Dichloropropane	142-28-9	1.43	U	7.13	1.43	0.713
2,2-Dichloropropane	594-20-7	1.43	U	7.13	1.43	0.713
cis-1,3-Dichloropropene	10061-01-5	1.43	U	7.13	1.43	0.713
trans-1,3-Dichloropropene	10061-02-6	1.43	U	7.13	1.43	0.713
1,1-Dichloropropene	563-58-6	1.43	U	7.13	1.43	0.713
Ethylbenzene	100-41-4	1.43	U	7.13	1.43	0.713
2-Hexanone	591-78-6	7.12	U	14.3	7.12	3.56
Hexachlorobutadiene	87-68-3	1.43	U	7.13	1.43	0.713
Isopropylbenzene	98-82-8	1.43	U	7.13	1.43	0.713
p-Isopropyltoluene	99-87-6	1.43	U	7.13	1.43	0.713
4-Methyl-2-pentanone	108-10-1	7.12	U	14.3	7.12	3.56
Methylene chloride	75-09-2	2.86	U	7.13	2.86	1.43
Naphthalene	91-20-3	1.43	U	7.13	1.43	0.713
n-Propylbenzene	103-65-1	1.43	U	7.13	1.43	0.713
Styrene	100-42-5	1.43	U	7.13	1.43	0.713
1,1,1,2-Tetrachloroethane	630-20-6	1.43	U	7.13	1.43	0.713
1,1,2,2-Tetrachloroethane	79-34-5	1.43	U	7.13	1.43	0.713
Tetrachloroethene	127-18-4	1.43	U	7.13	1.43	0.713
Toluene	108-88-3	1.43	U	7.13	1.43	0.713
1,2,3-Trichlorobenzene	87-61-6	1.43	U	7.13	1.43	0.713
1,2,4-Trichlorobenzene	120-82-1	1.43	U	7.13	1.43	0.713
1,1,1-Trichloroethane	71-55-6	1.43	U	7.13	1.43	0.713
1,1,2-Trichloroethane	79-00-5	1.43	U	7.13	1.43	0.713
Trichloroethene	79-01-6	17.4		7.13	1.43	0.713
Trichlorofluoromethane	75-69-4	2.86	U	7.13	2.86	1.43
1,2,3-Trichloropropane	96-18-4	2.86	U	7.13	2.86	1.43

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Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.43	U	7.13	1.43	0.713
1,3,5-Trimethylbenzene	108-67-8	1.43	U	7.13	1.43	0.713
Vinyl chloride	75-01-4	2.86	U	7.13	2.86	1.43
o-Xylene	95-47-6	1.43	U	7.13	1.43	0.713
m-,p-Xylene	179601-23-1	1.43	U	7.13	1.43	0.713

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.7	80	120	
1,2-Dichloroethane-d4	106	80	120	
Toluene-d8	101	85	115	
4-Bromofluorobenzene	101	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030235-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT07(38-39)030316 FD	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/07/2016 12:07
Collect Date:	03/03/2016 10:10	**Dilution:**	10	**File ID:**	1LM.LM33743
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	75.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	622		51.8	25.8	12.9

Certificate of Analysis

Sample #:	L16030235-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT07(27-27.5)030316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:10
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559982	**Analyst:**	ADC	**Run Date:**	03/07/2016 20:55
Collect Date:	03/03/2016 10:15	**Dilution:**	1	**File ID:**	9M973132
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.5	U	23.0	11.5	5.74
Benzene	71-43-2	1.15	U	5.74	1.15	0.574
Bromobenzene	108-86-1	1.15	U	5.74	1.15	0.574
Bromochloromethane	74-97-5	2.30	U	5.74	2.30	1.15
Bromodichloromethane	75-27-4	1.15	U	5.74	1.15	0.574
Bromoform	75-25-2	1.15	U	5.74	1.15	0.574
Bromomethane	74-83-9	2.30	U	5.74	2.30	1.15
2-Butanone	78-93-3	5.74	U	11.5	5.74	2.87
n-Butylbenzene	104-51-8	1.15	U	5.74	1.15	0.574
sec-Butylbenzene	135-98-8	1.15	U	5.74	1.15	0.574
tert-Butylbenzene	98-06-6	1.15	U	5.74	1.15	0.574
Carbon disulfide	75-15-0	1.15	U	5.74	1.15	0.574
Carbon tetrachloride	56-23-5	1.15	U	5.74	1.15	0.574
Chlorobenzene	108-90-7	1.15	U	5.74	1.15	0.574
Chlorodibromomethane	124-48-1	1.15	U	5.74	1.15	0.574
Chloroethane	75-00-3	2.30	U	5.74	2.30	1.15
Chloroform	67-66-3	1.15	U	5.74	1.15	0.574
Chloromethane	74-87-3	4.60	U	11.5	4.60	2.30
2-Chlorotoluene	95-49-8	1.15	U	5.74	1.15	0.574
4-Chlorotoluene	106-43-4	1.15	U	5.74	1.15	0.574

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Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	4.60	U	11.5	4.60	2.30
1,2-Dibromoethane	106-93-4	1.15	U	5.74	1.15	0.574
Dibromomethane	74-95-3	1.15	U	5.74	1.15	0.574
1,2-Dichlorobenzene	95-50-1	1.15	U	5.74	1.15	0.574
1,3-Dichlorobenzene	541-73-1	1.15	U	5.74	1.15	0.574
1,4-Dichlorobenzene	106-46-7	1.15	U	5.74	1.15	0.574
Dichlorodifluoromethane	75-71-8	2.30	U	5.74	2.30	1.15
1,1-Dichloroethane	75-34-3	2.30	U	5.74	2.30	1.15
1,2-Dichloroethane	107-06-2	1.15	U	5.74	1.15	0.574
1,1-Dichloroethene	75-35-4	1.15	U	5.74	1.15	0.574
cis-1,2-Dichloroethene	156-59-2	2.80	J	5.74	1.15	0.574
trans-1,2-Dichloroethene	156-60-5	1.15	U	5.74	1.15	0.574
1,2-Dichloropropane	78-87-5	1.15	U	5.74	1.15	0.574
1,3-Dichloropropane	142-28-9	1.15	U	5.74	1.15	0.574
2,2-Dichloropropane	594-20-7	1.15	U	5.74	1.15	0.574
cis-1,3-Dichloropropene	10061-01-5	1.15	U	5.74	1.15	0.574
trans-1,3-Dichloropropene	10061-02-6	1.15	U	5.74	1.15	0.574
1,1-Dichloropropene	563-58-6	1.15	U	5.74	1.15	0.574
Ethylbenzene	100-41-4	1.15	U	5.74	1.15	0.574
2-Hexanone	591-78-6	5.74	U	11.5	5.74	2.87
Hexachlorobutadiene	87-68-3	1.15	U	5.74	1.15	0.574
Isopropylbenzene	98-82-8	1.15	U	5.74	1.15	0.574
p-Isopropyltoluene	99-87-6	1.15	U	5.74	1.15	0.574
4-Methyl-2-pentanone	108-10-1	5.74	U	11.5	5.74	2.87
Methylene chloride	75-09-2	2.30	U	5.74	2.30	1.15
Naphthalene	91-20-3	1.15	U	5.74	1.15	0.574
n-Propylbenzene	103-65-1	1.15	U	5.74	1.15	0.574
Styrene	100-42-5	1.15	U	5.74	1.15	0.574
1,1,1,2-Tetrachloroethane	630-20-6	1.15	U	5.74	1.15	0.574
1,1,2,2-Tetrachloroethane	79-34-5	1.15	U	5.74	1.15	0.574
Tetrachloroethene	127-18-4	1.15	U	5.74	1.15	0.574
Toluene	108-88-3	1.15	U	5.74	1.15	0.574
1,2,3-Trichlorobenzene	87-61-6	1.15	U	5.74	1.15	0.574
1,2,4-Trichlorobenzene	120-82-1	1.15	U	5.74	1.15	0.574
1,1,1-Trichloroethane	71-55-6	1.15	U	5.74	1.15	0.574
1,1,2-Trichloroethane	79-00-5	1.15	U	5.74	1.15	0.574
Trichloroethene	79-01-6	3.00	J	5.74	1.15	0.574
Trichlorofluoromethane	75-69-4	2.30	U	5.74	2.30	1.15
1,2,3-Trichloropropane	96-18-4	2.30	U	5.74	2.30	1.15

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Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.15	U	5.74	1.15	0.574
1,3,5-Trimethylbenzene	108-67-8	1.15	U	5.74	1.15	0.574
Vinyl chloride	75-01-4	2.30	U	5.74	2.30	1.15
o-Xylene	95-47-6	1.15	U	5.74	1.15	0.574
m-,p-Xylene	179601-23-1	1.15	U	5.74	1.15	0.574

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.8	80	120	
1,2-Dichloroethane-d4	103	80	120	
Toluene-d8	97.8	85	115	
4-Bromofluorobenzene	102	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030235-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT07(27-27.5)030316	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/07/2016 12:26
Collect Date:	03/03/2016 10:15	**Dilution:**	100	**File ID:**	1LM.LM33744
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	83.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1200		475	238	119

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #: L16030235-01 **Client ID:** 18DPT07(5-5.5)020316 **Matrix:** Soil **Collect Date:** 03/02/2016 16:00

Analyte	Result	Units	Qualifier
Percent Solids	82.3	weight %	

Sample #: L16030235-02 **Client ID:** 18DPT07(15-15.5)020316 **Matrix:** Soil **Collect Date:** 03/02/2016 16:25

Analyte	Result	Units	Qualifier
Percent Solids	76.4	weight %	

Sample #: L16030235-03 **Client ID:** 18DPT07(33.5-34.5)030316 **Matrix:** Soil **Collect Date:** 03/03/2016 10:00

Analyte	Result	Units	Qualifier
Percent Solids	82.2	weight %	

Sample #: L16030235-04 **Client ID:** 18DPT07(33.5-34.5)030316 MS **Matrix:** Soil **Collect Date:** 03/03/2016 10:00

Analyte	Result	Units	Qualifier
Percent Solids	82.2	weight %	

Sample #: L16030235-05 **Client ID:** 18DPT07(33.5-34.5)030316 MSD **Matrix:** Soil **Collect Date:** 03/03/2016 10:00

Analyte	Result	Units	Qualifier
Percent Solids	82.2	weight %	

Sample #: L16030235-06 **Client ID:** 18DPT07(38-39)030316 **Matrix:** Soil **Collect Date:** 03/03/2016 10:10

Analyte	Result	Units	Qualifier
Percent Solids	75.6	weight %	

Sample #: L16030235-07 **Client ID:** 18DPT07(38-39)030316 FD **Matrix:** Soil **Collect Date:** 03/03/2016 10:10

Analyte	Result	Units	Qualifier
Percent Solids	75.6	weight %	

Sample #: L16030235-08 **Client ID:** 18DPT07(27-27.5)030316 **Matrix:** Soil **Collect Date:** 03/03/2016 10:15

Analyte	Result	Units	Qualifier
Percent Solids	83.1	weight %	

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

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Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030235-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT07(5-5.5)020316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:06
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559982	**Analyst:**	ADC	**Run Date:**	03/07/2016 18:21
Collect Date:	03/02/2016 16:00	**Dilution:**	1	**File ID:**	9M973127
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	20.8	J	24.7	12.3	6.17
Benzene	71-43-2	1.23	U	6.17	1.23	0.617
Bromobenzene	108-86-1	1.23	U	6.17	1.23	0.617
Bromochloromethane	74-97-5	2.46	U	6.17	2.46	1.23
Bromodichloromethane	75-27-4	1.23	U	6.17	1.23	0.617
Bromoform	75-25-2	1.23	U	6.17	1.23	0.617
Bromomethane	74-83-9	2.46	U	6.17	2.46	1.23
2-Butanone	78-93-3	6.18	U	12.3	6.18	3.09
n-Butylbenzene	104-51-8	1.23	U	6.17	1.23	0.617
sec-Butylbenzene	135-98-8	1.23	U	6.17	1.23	0.617
tert-Butylbenzene	98-06-6	1.23	U	6.17	1.23	0.617
Carbon disulfide	75-15-0	1.23	U	6.17	1.23	0.617
Carbon tetrachloride	56-23-5	1.23	U	6.17	1.23	0.617
Chlorobenzene	108-90-7	1.23	U	6.17	1.23	0.617
Chlorodibromomethane	124-48-1	1.23	U	6.17	1.23	0.617
Chloroethane	75-00-3	2.46	U	6.17	2.46	1.23
Chloroform	67-66-3	1.23	U	6.17	1.23	0.617
Chloromethane	74-87-3	4.94	U	12.3	4.94	2.47
2-Chlorotoluene	95-49-8	1.23	U	6.17	1.23	0.617
4-Chlorotoluene	106-43-4	1.23	U	6.17	1.23	0.617
1,2-Dibromo-3-chloropropane	96-12-8	4.94	U	12.3	4.94	2.47
1,2-Dibromoethane	106-93-4	1.23	U	6.17	1.23	0.617
Dibromomethane	74-95-3	1.23	U	6.17	1.23	0.617
1,2-Dichlorobenzene	95-50-1	1.23	U	6.17	1.23	0.617
1,3-Dichlorobenzene	541-73-1	1.23	U	6.17	1.23	0.617
1,4-Dichlorobenzene	106-46-7	1.23	U	6.17	1.23	0.617
Dichlorodifluoromethane	75-71-8	2.46	U	6.17	2.46	1.23
1,1-Dichloroethane	75-34-3	2.46	U	6.17	2.46	1.23
1,2-Dichloroethane	107-06-2	1.23	U	6.17	1.23	0.617
1,1-Dichloroethene	75-35-4	1.23	U	6.17	1.23	0.617
cis-1,2-Dichloroethene	156-59-2	1.23	U	6.17	1.23	0.617
trans-1,2-Dichloroethene	156-60-5	1.23	U	6.17	1.23	0.617

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Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.23	U	6.17	1.23	0.617
1,3-Dichloropropane	142-28-9	1.23	U	6.17	1.23	0.617
2,2-Dichloropropane	594-20-7	1.23	U	6.17	1.23	0.617
cis-1,3-Dichloropropene	10061-01-5	1.23	U	6.17	1.23	0.617
trans-1,3-Dichloropropene	10061-02-6	1.23	U	6.17	1.23	0.617
1,1-Dichloropropene	563-58-6	1.23	U	6.17	1.23	0.617
Ethylbenzene	100-41-4	1.23	U	6.17	1.23	0.617
2-Hexanone	591-78-6	6.18	U	12.3	6.18	3.09
Hexachlorobutadiene	87-68-3	1.23	U	6.17	1.23	0.617
Isopropylbenzene	98-82-8	1.23	U	6.17	1.23	0.617
p-Isopropyltoluene	99-87-6	1.23	U	6.17	1.23	0.617
4-Methyl-2-pentanone	108-10-1	6.18	U	12.3	6.18	3.09
Methylene chloride	75-09-2	2.46	U	6.17	2.46	1.23
Naphthalene	91-20-3	1.23	U	6.17	1.23	0.617
n-Propylbenzene	103-65-1	1.23	U	6.17	1.23	0.617
Styrene	100-42-5	1.23	U	6.17	1.23	0.617
1,1,1,2-Tetrachloroethane	630-20-6	1.23	U	6.17	1.23	0.617
1,1,2,2-Tetrachloroethane	79-34-5	1.23	U	6.17	1.23	0.617
Tetrachloroethene	127-18-4	1.23	U	6.17	1.23	0.617
Toluene	108-88-3	1.23	U	6.17	1.23	0.617
1,2,3-Trichlorobenzene	87-61-6	1.23	U	6.17	1.23	0.617
1,2,4-Trichlorobenzene	120-82-1	1.23	U	6.17	1.23	0.617
1,1,1-Trichloroethane	71-55-6	1.23	U	6.17	1.23	0.617
1,1,2-Trichloroethane	79-00-5	1.23	U	6.17	1.23	0.617
Trichloroethene	79-01-6	1.23	U	6.17	1.23	0.617
Trichlorofluoromethane	75-69-4	2.46	U	6.17	2.46	1.23
1,2,3-Trichloropropane	96-18-4	2.46	U	6.17	2.46	1.23
1,2,4-Trimethylbenzene	95-63-6	1.23	U	6.17	1.23	0.617
1,3,5-Trimethylbenzene	108-67-8	1.23	U	6.17	1.23	0.617
Vinyl chloride	75-01-4	2.46	U	6.17	2.46	1.23
o-Xylene	95-47-6	1.23	U	6.17	1.23	0.617
m-,p-Xylene	179601-23-1	1.23	U	6.17	1.23	0.617

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.7	80	120	
1,2-Dichloroethane-d4	102	80	120	
Toluene-d8	98.8	85	115	
4-Bromofluorobenzene	105	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030235-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT07(15-15.5)020316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:06
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559982	**Analyst:**	ADC	**Run Date:**	03/07/2016 18:51
Collect Date:	03/02/2016 16:25	**Dilution:**	1	**File ID:**	9M973128
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	76.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	24.9	12.5	6.23
Benzene	71-43-2	1.25	U	6.23	1.25	0.623
Bromobenzene	108-86-1	1.25	U	6.23	1.25	0.623
Bromochloromethane	74-97-5	2.50	U	6.23	2.50	1.25
Bromodichloromethane	75-27-4	1.25	U	6.23	1.25	0.623
Bromoform	75-25-2	1.25	U	6.23	1.25	0.623
Bromomethane	74-83-9	2.50	U	6.23	2.50	1.25
2-Butanone	78-93-3	6.24	U	12.5	6.24	3.12
n-Butylbenzene	104-51-8	1.25	U	6.23	1.25	0.623
sec-Butylbenzene	135-98-8	1.25	U	6.23	1.25	0.623
tert-Butylbenzene	98-06-6	1.25	U	6.23	1.25	0.623
Carbon disulfide	75-15-0	1.25	U	6.23	1.25	0.623
Carbon tetrachloride	56-23-5	1.25	U	6.23	1.25	0.623
Chlorobenzene	108-90-7	1.25	U	6.23	1.25	0.623
Chlorodibromomethane	124-48-1	1.25	U	6.23	1.25	0.623
Chloroethane	75-00-3	2.50	U	6.23	2.50	1.25
Chloroform	67-66-3	1.25	U	6.23	1.25	0.623
Chloromethane	74-87-3	4.98	U	12.5	4.98	2.49
2-Chlorotoluene	95-49-8	1.25	U	6.23	1.25	0.623
4-Chlorotoluene	106-43-4	1.25	U	6.23	1.25	0.623
1,2-Dibromo-3-chloropropane	96-12-8	4.98	U	12.5	4.98	2.49
1,2-Dibromoethane	106-93-4	1.25	U	6.23	1.25	0.623
Dibromomethane	74-95-3	1.25	U	6.23	1.25	0.623
1,2-Dichlorobenzene	95-50-1	1.25	U	6.23	1.25	0.623
1,3-Dichlorobenzene	541-73-1	1.25	U	6.23	1.25	0.623
1,4-Dichlorobenzene	106-46-7	1.25	U	6.23	1.25	0.623
Dichlorodifluoromethane	75-71-8	2.50	U	6.23	2.50	1.25
1,1-Dichloroethane	75-34-3	2.50	U	6.23	2.50	1.25
1,2-Dichloroethane	107-06-2	1.25	U	6.23	1.25	0.623
1,1-Dichloroethene	75-35-4	1.25	U	6.23	1.25	0.623
cis-1,2-Dichloroethene	156-59-2	1.36	J	6.23	1.25	0.623

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Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.25	U	6.23	1.25	0.623
1,2-Dichloropropane	78-87-5	1.25	U	6.23	1.25	0.623
1,3-Dichloropropane	142-28-9	1.25	U	6.23	1.25	0.623
2,2-Dichloropropane	594-20-7	1.25	U	6.23	1.25	0.623
cis-1,3-Dichloropropene	10061-01-5	1.25	U	6.23	1.25	0.623
trans-1,3-Dichloropropene	10061-02-6	1.25	U	6.23	1.25	0.623
1,1-Dichloropropene	563-58-6	1.25	U	6.23	1.25	0.623
Ethylbenzene	100-41-4	1.25	U	6.23	1.25	0.623
2-Hexanone	591-78-6	6.24	U	12.5	6.24	3.12
Hexachlorobutadiene	87-68-3	1.25	U	6.23	1.25	0.623
Isopropylbenzene	98-82-8	1.25	U	6.23	1.25	0.623
p-Isopropyltoluene	99-87-6	1.25	U	6.23	1.25	0.623
4-Methyl-2-pentanone	108-10-1	6.24	U	12.5	6.24	3.12
Methylene chloride	75-09-2	2.50	U	6.23	2.50	1.25
Naphthalene	91-20-3	1.25	U	6.23	1.25	0.623
n-Propylbenzene	103-65-1	1.25	U	6.23	1.25	0.623
Styrene	100-42-5	1.25	U	6.23	1.25	0.623
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	6.23	1.25	0.623
1,1,2,2-Tetrachloroethane	79-34-5	1.25	U	6.23	1.25	0.623
Tetrachloroethene	127-18-4	1.25	U	6.23	1.25	0.623
Toluene	108-88-3	1.25	U	6.23	1.25	0.623
1,2,3-Trichlorobenzene	87-61-6	1.25	U	6.23	1.25	0.623
1,2,4-Trichlorobenzene	120-82-1	1.25	U	6.23	1.25	0.623
1,1,1-Trichloroethane	71-55-6	1.25	U	6.23	1.25	0.623
1,1,2-Trichloroethane	79-00-5	1.25	U	6.23	1.25	0.623
Trichloroethene	79-01-6	2.73	J	6.23	1.25	0.623
Trichlorofluoromethane	75-69-4	2.50	U	6.23	2.50	1.25
1,2,3-Trichloropropane	96-18-4	2.50	U	6.23	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	6.23	1.25	0.623
1,3,5-Trimethylbenzene	108-67-8	1.25	U	6.23	1.25	0.623
Vinyl chloride	75-01-4	2.50	U	6.23	2.50	1.25
o-Xylene	95-47-6	1.25	U	6.23	1.25	0.623
m-,p-Xylene	179601-23-1	1.25	U	6.23	1.25	0.623

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.8	80	120	
1,2-Dichloroethane-d4	113	80	120	
Toluene-d8	97.2	85	115	
4-Bromofluorobenzene	99.7	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

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Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030235-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT07(33.5-34.5)030316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:07
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559982	**Analyst:**	ADC	**Run Date:**	03/07/2016 19:22
Collect Date:	03/03/2016 10:00	**Dilution:**	1	**File ID:**	9M973129
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.1	U	22.2	11.1	5.55
Benzene	71-43-2	1.11	U	5.55	1.11	0.555
Bromobenzene	108-86-1	1.11	U	5.55	1.11	0.555
Bromochloromethane	74-97-5	2.22	U	5.55	2.22	1.11
Bromodichloromethane	75-27-4	1.11	U	5.55	1.11	0.555
Bromoform	75-25-2	1.11	U	5.55	1.11	0.555
Bromomethane	74-83-9	2.22	U	5.55	2.22	1.11
2-Butanone	78-93-3	5.56	U	11.1	5.56	2.78
n-Butylbenzene	104-51-8	1.11	U	5.55	1.11	0.555
sec-Butylbenzene	135-98-8	1.11	U	5.55	1.11	0.555
tert-Butylbenzene	98-06-6	1.11	U	5.55	1.11	0.555
Carbon disulfide	75-15-0	1.11	U	5.55	1.11	0.555
Carbon tetrachloride	56-23-5	1.11	U	5.55	1.11	0.555
Chlorobenzene	108-90-7	1.11	U	5.55	1.11	0.555
Chlorodibromomethane	124-48-1	1.11	U	5.55	1.11	0.555
Chloroethane	75-00-3	2.22	U	5.55	2.22	1.11
Chloroform	67-66-3	1.11	U	5.55	1.11	0.555
Chloromethane	74-87-3	4.44	U	11.1	4.44	2.22
2-Chlorotoluene	95-49-8	1.11	U	5.55	1.11	0.555
4-Chlorotoluene	106-43-4	1.11	U	5.55	1.11	0.555
1,2-Dibromo-3-chloropropane	96-12-8	4.44	U	11.1	4.44	2.22
1,2-Dibromoethane	106-93-4	1.11	U	5.55	1.11	0.555
Dibromomethane	74-95-3	1.11	U	5.55	1.11	0.555
1,2-Dichlorobenzene	95-50-1	1.11	U	5.55	1.11	0.555
1,3-Dichlorobenzene	541-73-1	1.11	U	5.55	1.11	0.555
1,4-Dichlorobenzene	106-46-7	1.11	U	5.55	1.11	0.555
Dichlorodifluoromethane	75-71-8	2.22	U	5.55	2.22	1.11
1,1-Dichloroethane	75-34-3	2.22	U	5.55	2.22	1.11
1,2-Dichloroethane	107-06-2	1.11	U	5.55	1.11	0.555
1,1-Dichloroethene	75-35-4	1.11	U	5.55	1.11	0.555
cis-1,2-Dichloroethene	156-59-2	1.11	U	5.55	1.11	0.555

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Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.11	U	5.55	1.11	0.555
1,2-Dichloropropane	78-87-5	1.11	U	5.55	1.11	0.555
1,3-Dichloropropane	142-28-9	1.11	U	5.55	1.11	0.555
2,2-Dichloropropane	594-20-7	1.11	U	5.55	1.11	0.555
cis-1,3-Dichloropropene	10061-01-5	1.11	U	5.55	1.11	0.555
trans-1,3-Dichloropropene	10061-02-6	1.11	U	5.55	1.11	0.555
1,1-Dichloropropene	563-58-6	1.11	U	5.55	1.11	0.555
Ethylbenzene	100-41-4	1.11	U	5.55	1.11	0.555
2-Hexanone	591-78-6	5.56	U	11.1	5.56	2.78
Hexachlorobutadiene	87-68-3	1.11	U	5.55	1.11	0.555
Isopropylbenzene	98-82-8	1.11	U	5.55	1.11	0.555
p-Isopropyltoluene	99-87-6	1.11	U	5.55	1.11	0.555
4-Methyl-2-pentanone	108-10-1	5.56	U	11.1	5.56	2.78
Methylene chloride	75-09-2	2.22	U	5.55	2.22	1.11
Naphthalene	91-20-3	1.11	U	5.55	1.11	0.555
n-Propylbenzene	103-65-1	1.11	U	5.55	1.11	0.555
Styrene	100-42-5	1.11	U	5.55	1.11	0.555
1,1,1,2-Tetrachloroethane	630-20-6	1.11	U	5.55	1.11	0.555
1,1,2,2-Tetrachloroethane	79-34-5	1.11	U	5.55	1.11	0.555
Tetrachloroethene	127-18-4	1.11	U	5.55	1.11	0.555
Toluene	108-88-3	1.11	U	5.55	1.11	0.555
1,2,3-Trichlorobenzene	87-61-6	1.11	U	5.55	1.11	0.555
1,2,4-Trichlorobenzene	120-82-1	1.11	U	5.55	1.11	0.555
1,1,1-Trichloroethane	71-55-6	1.11	U	5.55	1.11	0.555
1,1,2-Trichloroethane	79-00-5	1.11	U	5.55	1.11	0.555
Trichloroethene	79-01-6	5.03	J	5.55	1.11	0.555
Trichlorofluoromethane	75-69-4	2.22	U	5.55	2.22	1.11
1,2,3-Trichloropropane	96-18-4	2.22	U	5.55	2.22	1.11
1,2,4-Trimethylbenzene	95-63-6	1.11	U	5.55	1.11	0.555
1,3,5-Trimethylbenzene	108-67-8	1.11	U	5.55	1.11	0.555
Vinyl chloride	75-01-4	2.22	U	5.55	2.22	1.11
o-Xylene	95-47-6	1.11	U	5.55	1.11	0.555
m-,p-Xylene	179601-23-1	1.11	U	5.55	1.11	0.555

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.8	80	120	
1,2-Dichloroethane-d4	100	80	120	
Toluene-d8	97.6	85	115	
4-Bromofluorobenzene	98.9	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030235-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT07(33.5-34.5)030316 MS	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:07
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559982	**Analyst:**	ADC	**Run Date:**	03/07/2016 21:26
Collect Date:	03/03/2016 10:00	**Dilution:**	1	**File ID:**	9M973133
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	22.3	J	23.5	11.8	5.88
Benzene	71-43-2	22.9		5.88	1.18	0.588
Bromobenzene	108-86-1	18.8		5.88	1.18	0.588
Bromochloromethane	74-97-5	23.1		5.88	2.36	1.18
Bromodichloromethane	75-27-4	23.2		5.88	1.18	0.588
Bromoform	75-25-2	18.9		5.88	1.18	0.588
Bromomethane	74-83-9	20.9		5.88	2.36	1.18
2-Butanone	78-93-3	22.1		11.8	5.88	2.94
n-Butylbenzene	104-51-8	19.2		5.88	1.18	0.588
sec-Butylbenzene	135-98-8	20.5		5.88	1.18	0.588
tert-Butylbenzene	98-06-6	21.2		5.88	1.18	0.588
Carbon disulfide	75-15-0	19.6		5.88	1.18	0.588
Carbon tetrachloride	56-23-5	22.9		5.88	1.18	0.588
Chlorobenzene	108-90-7	22.8		5.88	1.18	0.588
Chlorodibromomethane	124-48-1	21.1		5.88	1.18	0.588
Chloroethane	75-00-3	25.1		5.88	2.36	1.18
Chloroform	67-66-3	23.5		5.88	1.18	0.588
Chloromethane	74-87-3	23.8		11.8	4.70	2.35
2-Chlorotoluene	95-49-8	20.1		5.88	1.18	0.588
4-Chlorotoluene	106-43-4	20.8		5.88	1.18	0.588
1,2-Dibromo-3-chloropropane	96-12-8	14.6		11.8	4.70	2.35
1,2-Dibromoethane	106-93-4	21.2		5.88	1.18	0.588
Dibromomethane	74-95-3	21.4		5.88	1.18	0.588
1,2-Dichlorobenzene	95-50-1	18.9		5.88	1.18	0.588
1,3-Dichlorobenzene	541-73-1	18.1		5.88	1.18	0.588
1,4-Dichlorobenzene	106-46-7	18.3		5.88	1.18	0.588
Dichlorodifluoromethane	75-71-8	29.9		5.88	2.36	1.18
1,1-Dichloroethane	75-34-3	22.3		5.88	2.36	1.18
1,2-Dichloroethane	107-06-2	24.9		5.88	1.18	0.588
1,1-Dichloroethene	75-35-4	24.1		5.88	1.18	0.588

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	24.2		5.88	1.18	0.588
trans-1,2-Dichloroethene	156-60-5	24.5		5.88	1.18	0.588
1,2-Dichloropropane	78-87-5	25.7		5.88	1.18	0.588
1,3-Dichloropropane	142-28-9	23.0		5.88	1.18	0.588
2,2-Dichloropropane	594-20-7	21.6		5.88	1.18	0.588
cis-1,3-Dichloropropene	10061-01-5	24.2		5.88	1.18	0.588
trans-1,3-Dichloropropene	10061-02-6	21.6		5.88	1.18	0.588
1,1-Dichloropropene	563-58-6	22.9		5.88	1.18	0.588
Ethylbenzene	100-41-4	23.2		5.88	1.18	0.588
2-Hexanone	591-78-6	19.9		11.8	5.88	2.94
Hexachlorobutadiene	87-68-3	19.0		5.88	1.18	0.588
Isopropylbenzene	98-82-8	23.5		5.88	1.18	0.588
p-Isopropyltoluene	99-87-6	19.6		5.88	1.18	0.588
4-Methyl-2-pentanone	108-10-1	21.3		11.8	5.88	2.94
Methylene chloride	75-09-2	23.0		5.88	2.36	1.18
Naphthalene	91-20-3	14.9		5.88	1.18	0.588
n-Propylbenzene	103-65-1	21.0		5.88	1.18	0.588
Styrene	100-42-5	22.6		5.88	1.18	0.588
1,1,1,2-Tetrachloroethane	630-20-6	22.5		5.88	1.18	0.588
1,1,2,2-Tetrachloroethane	79-34-5	17.3		5.88	1.18	0.588
Tetrachloroethene	127-18-4	21.9		5.88	1.18	0.588
Toluene	108-88-3	22.5		5.88	1.18	0.588
1,2,3-Trichlorobenzene	87-61-6	16.8		5.88	1.18	0.588
1,2,4-Trichlorobenzene	120-82-1	16.1		5.88	1.18	0.588
1,1,1-Trichloroethane	71-55-6	24.0		5.88	1.18	0.588
1,1,2-Trichloroethane	79-00-5	21.8		5.88	1.18	0.588
Trichloroethene	79-01-6	29.4		5.88	1.18	0.588
Trichlorofluoromethane	75-69-4	24.2		5.88	2.36	1.18
1,2,3-Trichloropropane	96-18-4	20.1		5.88	2.36	1.18
1,2,4-Trimethylbenzene	95-63-6	19.1		5.88	1.18	0.588
1,3,5-Trimethylbenzene	108-67-8	20.3		5.88	1.18	0.588
Vinyl chloride	75-01-4	24.7		5.88	2.36	1.18
o-Xylene	95-47-6	23.5		5.88	1.18	0.588
m-,p-Xylene	179601-23-1	46.6		5.88	1.18	0.588

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.5	80	120	
1,2-Dichloroethane-d4	103	80	120	
Toluene-d8	95.9	85	115	
4-Bromofluorobenzene	96.3	85	120	

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Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030235-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT07(33.5-34.5)030316 MSD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:08
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559982	**Analyst:**	ADC	**Run Date:**	03/07/2016 21:58
Collect Date:	03/03/2016 10:00	**Dilution:**	1	**File ID:**	9M973134
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	23.9	J	24.0	12.0	6.00
Benzene	71-43-2	25.1		6.00	1.20	0.600
Bromobenzene	108-86-1	21.5		6.00	1.20	0.600
Bromochloromethane	74-97-5	23.7		6.00	2.40	1.20
Bromodichloromethane	75-27-4	24.9		6.00	1.20	0.600
Bromoform	75-25-2	20.2		6.00	1.20	0.600
Bromomethane	74-83-9	22.7		6.00	2.40	1.20
2-Butanone	78-93-3	24.3		12.0	6.00	3.00
n-Butylbenzene	104-51-8	22.7		6.00	1.20	0.600
sec-Butylbenzene	135-98-8	24.3		6.00	1.20	0.600
tert-Butylbenzene	98-06-6	24.6		6.00	1.20	0.600
Carbon disulfide	75-15-0	22.6		6.00	1.20	0.600
Carbon tetrachloride	56-23-5	25.3		6.00	1.20	0.600
Chlorobenzene	108-90-7	24.4		6.00	1.20	0.600
Chlorodibromomethane	124-48-1	22.1		6.00	1.20	0.600
Chloroethane	75-00-3	25.4		6.00	2.40	1.20
Chloroform	67-66-3	25.0		6.00	1.20	0.600
Chloromethane	74-87-3	26.3		12.0	4.80	2.40
2-Chlorotoluene	95-49-8	24.2		6.00	1.20	0.600
4-Chlorotoluene	106-43-4	22.4		6.00	1.20	0.600
1,2-Dibromo-3-chloropropane	96-12-8	18.0		12.0	4.80	2.40
1,2-Dibromoethane	106-93-4	22.9		6.00	1.20	0.600
Dibromomethane	74-95-3	22.4		6.00	1.20	0.600
1,2-Dichlorobenzene	95-50-1	21.5		6.00	1.20	0.600
1,3-Dichlorobenzene	541-73-1	21.4		6.00	1.20	0.600
1,4-Dichlorobenzene	106-46-7	21.4		6.00	1.20	0.600
Dichlorodifluoromethane	75-71-8	32.2		6.00	2.40	1.20
1,1-Dichloroethane	75-34-3	24.3		6.00	2.40	1.20
1,2-Dichloroethane	107-06-2	27.3		6.00	1.20	0.600
1,1-Dichloroethene	75-35-4	25.5		6.00	1.20	0.600

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Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	25.8		6.00	1.20	0.600
trans-1,2-Dichloroethene	156-60-5	26.9		6.00	1.20	0.600
1,2-Dichloropropane	78-87-5	26.8		6.00	1.20	0.600
1,3-Dichloropropane	142-28-9	24.5		6.00	1.20	0.600
2,2-Dichloropropane	594-20-7	22.9		6.00	1.20	0.600
cis-1,3-Dichloropropene	10061-01-5	25.8		6.00	1.20	0.600
trans-1,3-Dichloropropene	10061-02-6	23.0		6.00	1.20	0.600
1,1-Dichloropropene	563-58-6	24.9		6.00	1.20	0.600
Ethylbenzene	100-41-4	25.1		6.00	1.20	0.600
2-Hexanone	591-78-6	23.3		12.0	6.00	3.00
Hexachlorobutadiene	87-68-3	22.5		6.00	1.20	0.600
Isopropylbenzene	98-82-8	25.8		6.00	1.20	0.600
p-Isopropyltoluene	99-87-6	22.8		6.00	1.20	0.600
4-Methyl-2-pentanone	108-10-1	24.0		12.0	6.00	3.00
Methylene chloride	75-09-2	24.0		6.00	2.40	1.20
Naphthalene	91-20-3	17.3		6.00	1.20	0.600
n-Propylbenzene	103-65-1	24.2		6.00	1.20	0.600
Styrene	100-42-5	25.0		6.00	1.20	0.600
1,1,1,2-Tetrachloroethane	630-20-6	24.0		6.00	1.20	0.600
1,1,2,2-Tetrachloroethane	79-34-5	19.1		6.00	1.20	0.600
Tetrachloroethene	127-18-4	23.6		6.00	1.20	0.600
Toluene	108-88-3	24.4		6.00	1.20	0.600
1,2,3-Trichlorobenzene	87-61-6	20.0		6.00	1.20	0.600
1,2,4-Trichlorobenzene	120-82-1	19.9		6.00	1.20	0.600
1,1,1-Trichloroethane	71-55-6	25.7		6.00	1.20	0.600
1,1,2-Trichloroethane	79-00-5	23.3		6.00	1.20	0.600
Trichloroethene	79-01-6	30.2		6.00	1.20	0.600
Trichlorofluoromethane	75-69-4	25.2		6.00	2.40	1.20
1,2,3-Trichloropropane	96-18-4	21.1		6.00	2.40	1.20
1,2,4-Trimethylbenzene	95-63-6	22.3		6.00	1.20	0.600
1,3,5-Trimethylbenzene	108-67-8	23.3		6.00	1.20	0.600
Vinyl chloride	75-01-4	27.0		6.00	2.40	1.20
o-Xylene	95-47-6	25.7		6.00	1.20	0.600
m-,p-Xylene	179601-23-1	50.7		6.00	1.20	0.600

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.5	80	120	
1,2-Dichloroethane-d4	99.7	80	120	
Toluene-d8	95.4	85	115	
4-Bromofluorobenzene	99.5	85	120	

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030235-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT07(38-39)030316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:09
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559982	**Analyst:**	ADC	**Run Date:**	03/07/2016 19:53
Collect Date:	03/03/2016 10:10	**Dilution:**	1	**File ID:**	9M973130
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	75.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	15.3	J	25.6	12.8	6.41
Benzene	71-43-2	1.28	U	6.41	1.28	0.641
Bromobenzene	108-86-1	1.28	U	6.41	1.28	0.641
Bromochloromethane	74-97-5	2.56	U	6.41	2.56	1.28
Bromodichloromethane	75-27-4	1.28	U	6.41	1.28	0.641
Bromoform	75-25-2	1.28	U	6.41	1.28	0.641
Bromomethane	74-83-9	2.56	U	6.41	2.56	1.28
2-Butanone	78-93-3	6.40	U	12.8	6.40	3.20
n-Butylbenzene	104-51-8	1.28	U	6.41	1.28	0.641
sec-Butylbenzene	135-98-8	1.28	U	6.41	1.28	0.641
tert-Butylbenzene	98-06-6	1.28	U	6.41	1.28	0.641
Carbon disulfide	75-15-0	1.28	U	6.41	1.28	0.641
Carbon tetrachloride	56-23-5	1.28	U	6.41	1.28	0.641
Chlorobenzene	108-90-7	1.28	U	6.41	1.28	0.641
Chlorodibromomethane	124-48-1	1.28	U	6.41	1.28	0.641
Chloroethane	75-00-3	2.56	U	6.41	2.56	1.28
Chloroform	67-66-3	1.28	U	6.41	1.28	0.641
Chloromethane	74-87-3	5.12	U	12.8	5.12	2.56
2-Chlorotoluene	95-49-8	1.28	U	6.41	1.28	0.641
4-Chlorotoluene	106-43-4	1.28	U	6.41	1.28	0.641
1,2-Dibromo-3-chloropropane	96-12-8	5.12	U	12.8	5.12	2.56
1,2-Dibromoethane	106-93-4	1.28	U	6.41	1.28	0.641
Dibromomethane	74-95-3	1.28	U	6.41	1.28	0.641
1,2-Dichlorobenzene	95-50-1	1.28	U	6.41	1.28	0.641
1,3-Dichlorobenzene	541-73-1	1.28	U	6.41	1.28	0.641
1,4-Dichlorobenzene	106-46-7	1.28	U	6.41	1.28	0.641
Dichlorodifluoromethane	75-71-8	2.56	U	6.41	2.56	1.28
1,1-Dichloroethane	75-34-3	2.56	U	6.41	2.56	1.28
1,2-Dichloroethane	107-06-2	1.28	U	6.41	1.28	0.641
1,1-Dichloroethene	75-35-4	1.28	U	6.41	1.28	0.641
cis-1,2-Dichloroethene	156-59-2	1.28	U	6.41	1.28	0.641

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.28	U	6.41	1.28	0.641
1,2-Dichloropropane	78-87-5	1.28	U	6.41	1.28	0.641
1,3-Dichloropropane	142-28-9	1.28	U	6.41	1.28	0.641
2,2-Dichloropropane	594-20-7	1.28	U	6.41	1.28	0.641
cis-1,3-Dichloropropene	10061-01-5	1.28	U	6.41	1.28	0.641
trans-1,3-Dichloropropene	10061-02-6	1.28	U	6.41	1.28	0.641
1,1-Dichloropropene	563-58-6	1.28	U	6.41	1.28	0.641
Ethylbenzene	100-41-4	1.28	U	6.41	1.28	0.641
2-Hexanone	591-78-6	6.40	U	12.8	6.40	3.20
Hexachlorobutadiene	87-68-3	1.28	U	6.41	1.28	0.641
Isopropylbenzene	98-82-8	1.28	U	6.41	1.28	0.641
p-Isopropyltoluene	99-87-6	1.28	U	6.41	1.28	0.641
4-Methyl-2-pentanone	108-10-1	6.40	U	12.8	6.40	3.20
Methylene chloride	75-09-2	2.56	U	6.41	2.56	1.28
Naphthalene	91-20-3	1.28	U	6.41	1.28	0.641
n-Propylbenzene	103-65-1	1.28	U	6.41	1.28	0.641
Styrene	100-42-5	1.28	U	6.41	1.28	0.641
1,1,1,2-Tetrachloroethane	630-20-6	1.28	U	6.41	1.28	0.641
1,1,2,2-Tetrachloroethane	79-34-5	1.28	U	6.41	1.28	0.641
Tetrachloroethene	127-18-4	1.28	U	6.41	1.28	0.641
Toluene	108-88-3	1.28	U	6.41	1.28	0.641
1,2,3-Trichlorobenzene	87-61-6	1.28	U	6.41	1.28	0.641
1,2,4-Trichlorobenzene	120-82-1	1.28	U	6.41	1.28	0.641
1,1,1-Trichloroethane	71-55-6	1.28	U	6.41	1.28	0.641
1,1,2-Trichloroethane	79-00-5	1.28	U	6.41	1.28	0.641
Trichloroethene	79-01-6	20.9		6.41	1.28	0.641
Trichlorofluoromethane	75-69-4	2.56	U	6.41	2.56	1.28
1,2,3-Trichloropropane	96-18-4	2.56	U	6.41	2.56	1.28
1,2,4-Trimethylbenzene	95-63-6	1.28	U	6.41	1.28	0.641
1,3,5-Trimethylbenzene	108-67-8	1.28	U	6.41	1.28	0.641
Vinyl chloride	75-01-4	2.56	U	6.41	2.56	1.28
o-Xylene	95-47-6	1.28	U	6.41	1.28	0.641
m-,p-Xylene	179601-23-1	1.28	U	6.41	1.28	0.641

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.1	80	120	
1,2-Dichloroethane-d4	105	80	120	
Toluene-d8	96.0	85	115	
4-Bromofluorobenzene	99.2	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030235-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT07(38-39)030316 FD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:10
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559982	**Analyst:**	ADC	**Run Date:**	03/07/2016 20:24
Collect Date:	03/03/2016 10:10	**Dilution:**	1	**File ID:**	9M973131
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	75.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	16.0	J	28.5	14.3	7.13
Benzene	71-43-2	1.43	U	7.13	1.43	0.713
Bromobenzene	108-86-1	1.43	U	7.13	1.43	0.713
Bromochloromethane	74-97-5	2.86	U	7.13	2.86	1.43
Bromodichloromethane	75-27-4	1.43	U	7.13	1.43	0.713
Bromoform	75-25-2	1.43	U	7.13	1.43	0.713
Bromomethane	74-83-9	2.86	U	7.13	2.86	1.43
2-Butanone	78-93-3	7.12	U	14.3	7.12	3.56
n-Butylbenzene	104-51-8	1.43	U	7.13	1.43	0.713
sec-Butylbenzene	135-98-8	1.43	U	7.13	1.43	0.713
tert-Butylbenzene	98-06-6	1.43	U	7.13	1.43	0.713
Carbon disulfide	75-15-0	1.43	U	7.13	1.43	0.713
Carbon tetrachloride	56-23-5	1.43	U	7.13	1.43	0.713
Chlorobenzene	108-90-7	1.43	U	7.13	1.43	0.713
Chlorodibromomethane	124-48-1	1.43	U	7.13	1.43	0.713
Chloroethane	75-00-3	2.86	U	7.13	2.86	1.43
Chloroform	67-66-3	1.43	U	7.13	1.43	0.713
Chloromethane	74-87-3	5.70	U	14.3	5.70	2.85
2-Chlorotoluene	95-49-8	1.43	U	7.13	1.43	0.713
4-Chlorotoluene	106-43-4	1.43	U	7.13	1.43	0.713
1,2-Dibromo-3-chloropropane	96-12-8	5.70	U	14.3	5.70	2.85
1,2-Dibromoethane	106-93-4	1.43	U	7.13	1.43	0.713
Dibromomethane	74-95-3	1.43	U	7.13	1.43	0.713
1,2-Dichlorobenzene	95-50-1	1.43	U	7.13	1.43	0.713
1,3-Dichlorobenzene	541-73-1	1.43	U	7.13	1.43	0.713
1,4-Dichlorobenzene	106-46-7	1.43	U	7.13	1.43	0.713
Dichlorodifluoromethane	75-71-8	2.86	U	7.13	2.86	1.43
1,1-Dichloroethane	75-34-3	2.86	U	7.13	2.86	1.43
1,2-Dichloroethane	107-06-2	1.43	U	7.13	1.43	0.713
1,1-Dichloroethene	75-35-4	1.43	U	7.13	1.43	0.713
cis-1,2-Dichloroethene	156-59-2	1.43	U	7.13	1.43	0.713

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.43	U	7.13	1.43	0.713
1,2-Dichloropropane	78-87-5	1.43	U	7.13	1.43	0.713
1,3-Dichloropropane	142-28-9	1.43	U	7.13	1.43	0.713
2,2-Dichloropropane	594-20-7	1.43	U	7.13	1.43	0.713
cis-1,3-Dichloropropene	10061-01-5	1.43	U	7.13	1.43	0.713
trans-1,3-Dichloropropene	10061-02-6	1.43	U	7.13	1.43	0.713
1,1-Dichloropropene	563-58-6	1.43	U	7.13	1.43	0.713
Ethylbenzene	100-41-4	1.43	U	7.13	1.43	0.713
2-Hexanone	591-78-6	7.12	U	14.3	7.12	3.56
Hexachlorobutadiene	87-68-3	1.43	U	7.13	1.43	0.713
Isopropylbenzene	98-82-8	1.43	U	7.13	1.43	0.713
p-Isopropyltoluene	99-87-6	1.43	U	7.13	1.43	0.713
4-Methyl-2-pentanone	108-10-1	7.12	U	14.3	7.12	3.56
Methylene chloride	75-09-2	2.86	U	7.13	2.86	1.43
Naphthalene	91-20-3	1.43	U	7.13	1.43	0.713
n-Propylbenzene	103-65-1	1.43	U	7.13	1.43	0.713
Styrene	100-42-5	1.43	U	7.13	1.43	0.713
1,1,1,2-Tetrachloroethane	630-20-6	1.43	U	7.13	1.43	0.713
1,1,2,2-Tetrachloroethane	79-34-5	1.43	U	7.13	1.43	0.713
Tetrachloroethene	127-18-4	1.43	U	7.13	1.43	0.713
Toluene	108-88-3	1.43	U	7.13	1.43	0.713
1,2,3-Trichlorobenzene	87-61-6	1.43	U	7.13	1.43	0.713
1,2,4-Trichlorobenzene	120-82-1	1.43	U	7.13	1.43	0.713
1,1,1-Trichloroethane	71-55-6	1.43	U	7.13	1.43	0.713
1,1,2-Trichloroethane	79-00-5	1.43	U	7.13	1.43	0.713
Trichloroethene	79-01-6	17.4		7.13	1.43	0.713
Trichlorofluoromethane	75-69-4	2.86	U	7.13	2.86	1.43
1,2,3-Trichloropropane	96-18-4	2.86	U	7.13	2.86	1.43
1,2,4-Trimethylbenzene	95-63-6	1.43	U	7.13	1.43	0.713
1,3,5-Trimethylbenzene	108-67-8	1.43	U	7.13	1.43	0.713
Vinyl chloride	75-01-4	2.86	U	7.13	2.86	1.43
o-Xylene	95-47-6	1.43	U	7.13	1.43	0.713
m-,p-Xylene	179601-23-1	1.43	U	7.13	1.43	0.713

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.7	80	120	
1,2-Dichloroethane-d4	106	80	120	
Toluene-d8	101	85	115	
4-Bromofluorobenzene	101	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030235-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT07(27-27.5)030316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:10
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559982	**Analyst:**	ADC	**Run Date:**	03/07/2016 20:55
Collect Date:	03/03/2016 10:15	**Dilution:**	1	**File ID:**	9M973132
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.5	U	23.0	11.5	5.74
Benzene	71-43-2	1.15	U	5.74	1.15	0.574
Bromobenzene	108-86-1	1.15	U	5.74	1.15	0.574
Bromochloromethane	74-97-5	2.30	U	5.74	2.30	1.15
Bromodichloromethane	75-27-4	1.15	U	5.74	1.15	0.574
Bromoform	75-25-2	1.15	U	5.74	1.15	0.574
Bromomethane	74-83-9	2.30	U	5.74	2.30	1.15
2-Butanone	78-93-3	5.74	U	11.5	5.74	2.87
n-Butylbenzene	104-51-8	1.15	U	5.74	1.15	0.574
sec-Butylbenzene	135-98-8	1.15	U	5.74	1.15	0.574
tert-Butylbenzene	98-06-6	1.15	U	5.74	1.15	0.574
Carbon disulfide	75-15-0	1.15	U	5.74	1.15	0.574
Carbon tetrachloride	56-23-5	1.15	U	5.74	1.15	0.574
Chlorobenzene	108-90-7	1.15	U	5.74	1.15	0.574
Chlorodibromomethane	124-48-1	1.15	U	5.74	1.15	0.574
Chloroethane	75-00-3	2.30	U	5.74	2.30	1.15
Chloroform	67-66-3	1.15	U	5.74	1.15	0.574
Chloromethane	74-87-3	4.60	U	11.5	4.60	2.30
2-Chlorotoluene	95-49-8	1.15	U	5.74	1.15	0.574
4-Chlorotoluene	106-43-4	1.15	U	5.74	1.15	0.574
1,2-Dibromo-3-chloropropane	96-12-8	4.60	U	11.5	4.60	2.30
1,2-Dibromoethane	106-93-4	1.15	U	5.74	1.15	0.574
Dibromomethane	74-95-3	1.15	U	5.74	1.15	0.574
1,2-Dichlorobenzene	95-50-1	1.15	U	5.74	1.15	0.574
1,3-Dichlorobenzene	541-73-1	1.15	U	5.74	1.15	0.574
1,4-Dichlorobenzene	106-46-7	1.15	U	5.74	1.15	0.574
Dichlorodifluoromethane	75-71-8	2.30	U	5.74	2.30	1.15
1,1-Dichloroethane	75-34-3	2.30	U	5.74	2.30	1.15
1,2-Dichloroethane	107-06-2	1.15	U	5.74	1.15	0.574
1,1-Dichloroethene	75-35-4	1.15	U	5.74	1.15	0.574
cis-1,2-Dichloroethene	156-59-2	2.80	J	5.74	1.15	0.574

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.15	U	5.74	1.15	0.574
1,2-Dichloropropane	78-87-5	1.15	U	5.74	1.15	0.574
1,3-Dichloropropane	142-28-9	1.15	U	5.74	1.15	0.574
2,2-Dichloropropane	594-20-7	1.15	U	5.74	1.15	0.574
cis-1,3-Dichloropropene	10061-01-5	1.15	U	5.74	1.15	0.574
trans-1,3-Dichloropropene	10061-02-6	1.15	U	5.74	1.15	0.574
1,1-Dichloropropene	563-58-6	1.15	U	5.74	1.15	0.574
Ethylbenzene	100-41-4	1.15	U	5.74	1.15	0.574
2-Hexanone	591-78-6	5.74	U	11.5	5.74	2.87
Hexachlorobutadiene	87-68-3	1.15	U	5.74	1.15	0.574
Isopropylbenzene	98-82-8	1.15	U	5.74	1.15	0.574
p-Isopropyltoluene	99-87-6	1.15	U	5.74	1.15	0.574
4-Methyl-2-pentanone	108-10-1	5.74	U	11.5	5.74	2.87
Methylene chloride	75-09-2	2.30	U	5.74	2.30	1.15
Naphthalene	91-20-3	1.15	U	5.74	1.15	0.574
n-Propylbenzene	103-65-1	1.15	U	5.74	1.15	0.574
Styrene	100-42-5	1.15	U	5.74	1.15	0.574
1,1,1,2-Tetrachloroethane	630-20-6	1.15	U	5.74	1.15	0.574
1,1,2,2-Tetrachloroethane	79-34-5	1.15	U	5.74	1.15	0.574
Tetrachloroethene	127-18-4	1.15	U	5.74	1.15	0.574
Toluene	108-88-3	1.15	U	5.74	1.15	0.574
1,2,3-Trichlorobenzene	87-61-6	1.15	U	5.74	1.15	0.574
1,2,4-Trichlorobenzene	120-82-1	1.15	U	5.74	1.15	0.574
1,1,1-Trichloroethane	71-55-6	1.15	U	5.74	1.15	0.574
1,1,2-Trichloroethane	79-00-5	1.15	U	5.74	1.15	0.574
Trichloroethene	79-01-6	3.00	J	5.74	1.15	0.574
Trichlorofluoromethane	75-69-4	2.30	U	5.74	2.30	1.15
1,2,3-Trichloropropane	96-18-4	2.30	U	5.74	2.30	1.15
1,2,4-Trimethylbenzene	95-63-6	1.15	U	5.74	1.15	0.574
1,3,5-Trimethylbenzene	108-67-8	1.15	U	5.74	1.15	0.574
Vinyl chloride	75-01-4	2.30	U	5.74	2.30	1.15
o-Xylene	95-47-6	1.15	U	5.74	1.15	0.574
m-,p-Xylene	179601-23-1	1.15	U	5.74	1.15	0.574

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.8	80	120	
1,2-Dichloroethane-d4	103	80	120	
Toluene-d8	97.8	85	115	
4-Bromofluorobenzene	102	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.
VOA Preparation/Preservation/Extraction Log

Batch #: WG559855
Analyst: AWE
Method: 5030B/5030C/5035
Run Date: 03/06/2016 12:56
Product: 8260
Purge and trap methanol COA18540
Purified Lab Sand Lot # COA18552

SAMPLE #	Fraction	Collected	Preserved	PCT-S	Tare Wt	Total Wt	Sample Wt	Water	MeOH	Vt	Comments
L16030134-01	A	03/02/16 08:58	03/06/16 12:56	80.7			4.62	5		5	
L16030134-02	A	03/02/16 08:58	03/06/16 12:56	80.8			5.17	5		5	
L16030134-03	A	03/02/16 10:35	03/06/16 12:57	88.1			4.94	5		5	
L16030134-04	A	03/02/16 11:11	03/06/16 12:58	82.3			4.75	5		5	
L16030134-05	A	03/02/16 12:05	03/06/16 12:58	82.1			4.70	5		5	
L16030134-06	A	03/02/16 15:00	03/06/16 12:59	80.0			4.77	5		5	
L16030234-01	A	03/03/16 13:15	03/06/16 13:01	83.4			4.61	5		5	
L16030234-02	A	03/03/16 13:49	03/06/16 13:02	81.8			4.73	5		5	
L16030234-03	A	03/03/16 14:40	03/06/16 13:03	84.4			4.79	5		5	
L16030234-04	A	03/03/16 14:50	03/06/16 13:04	83.4			4.56	5		5	
L16030234-05	A	03/03/16 14:55	03/06/16 13:04	82.0			5.43	5		5	
L16030234-06	A	03/03/16 15:05	03/06/16 13:05	80.1			5.03	5		5	
L16030235-01	A	03/02/16 16:00	03/06/16 13:06	82.3			4.92	5		5	
L16030235-02	A	03/02/16 16:25	03/06/16 13:06	76.4			5.25	5		5	
L16030235-03	A	03/03/16 10:00	03/06/16 13:07	82.2			5.48	5		5	
L16030235-04	A	03/03/16 10:00	03/06/16 13:07	82.2			5.17	5		5	
L16030235-05	A	03/03/16 10:00	03/06/16 13:08	82.2			5.07	5		5	
L16030235-06	A	03/03/16 10:10	03/06/16 13:09	75.6			5.16	5		5	
L16030235-07	A	03/03/16 10:10	03/06/16 13:10	75.6			4.64	5		5	
L16030235-08	A	03/03/16 10:15	03/06/16 13:10	83.1			5.24	5		5	
WG559855-01	A		03/06/16 12:59	80.0			4.77	5		5	
WG559855-02	A		03/06/16 13:00	80.0			5.05	5		5	
WG559855-03	A		03/06/16 13:00	80.0			4.75	5		5	

Comments:
1 = improperly sealed cap
2 = preserved out of hold
3 = effervesced
4 = preserved with NaHSO4
5 = preserved by freezing
6 = preserved in field

Analyst: Andrew Baeg

VOA_EXT - Modified 05/22/2008
PDF ID: 4658101
Report generated: 03/08/2016 15:07

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 012516
Analyst1: ADC Analyst2: NA
Method: 8260B/8260C SOP: MSV01(-C) Rev: 23 (2)
Method: 5030B/5030C/5035 SOP: PAT01 Rev: 18
Method: 624 SOP: MSV10 Rev: 12
Maintenance Log ID:

Internal Standard: STD74414 Surrogate Standard: STD74126
CCV: STD74488 LCS: STD74459 MS/MSD: STD74459

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG555000 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M972470	WG555000-01 BFB 50ng A9	NA	7	1	STD74202	01/25/16 10:27
9M972471	RINSE	NA	7	1		01/25/16 10:52
9M972472	WG555000-02 5ug/Kg STD A9	NA	7	1	STD74406	01/25/16 11:22
9M972473	WG555000-03 20ug/Kg STD A9	NA	7	1	STD74406	01/25/16 11:52
9M972474	WG555000-04 50ug/Kg STD A9	NA	7	1	STD74406	01/25/16 12:23
9M972475	WG555000-05 100ug/Kg STD A9	NA	7	1	STD74406	01/25/16 12:53
9M972476	WG555000-06 200ug/Kg STD A9	NA	7	1	STD74406	01/25/16 13:23
9M972477	WG555000-07 300ug/Kg STD A9	NA	7	1	STD74406	01/25/16 13:54
9M972478	WG555000-08 400ug/Kg STD A9	NA	7	1	STD74406	01/25/16 14:25
9M972479	WG555000-09 500ug/Kg STD A9	NA	7	1	STD74406	01/25/16 14:56
9M972480	RINSE	NA	7	1		01/25/16 15:26
9M972481	WG555000-10 100ug/Kg ICV A9	NA	7	1	STD74461	01/25/16 15:56
9M972482	RINSE	NA	7	1		01/25/16 16:28

Approved: January 29, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 022516
Analyst1: ADC Analyst2: NA
Method: 8260 SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD74726 Surrogate Standard: STD74815
CCV: STD74488 LCS: STD74755 MS/MSD: STD74755

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG558732 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M972892	WG558732-01 BFB 50ng	NA	7	1	STD74773	02/25/16 14:26
9M972894	WG558732-01 BFB 50ng	NA	7	1	STD74773	02/25/16 14:45
9M972895	WG558732-02 50ug/L CCV 8260C	NA	7	1	STD74773	02/25/16 15:11
9M972896	WG558732-02 50ug/L CCV 8260C	NA	7	1	STD74773	02/25/16 15:48
9M972897	RINSE	NA	7	1		02/25/16 16:25
9M972898	WG558732-03 0.5ug/kg STD	NA	7	1	STD74773	02/25/16 16:55
9M972899	WG558732-04 1.0ug/kg STD	NA	7	1	STD74773	02/25/16 17:27
9M972900	WG558732-05 2.0ug/kg STD	NA	7	1	STD74773	02/25/16 17:57
9M972901	WG558732-06 5.0ug/kg STD	NA	7	1	STD74773	02/25/16 18:28
9M972902	WG558732-07 20.0ug/kg STD	NA	7	1	STD74773	02/25/16 18:59
9M972903	WG558732-08 100.0ug/kg STD	NA	7	1	STD74773	02/25/16 19:29
9M972904	WG558732-09 200.0ug/kg STD	NA	7	1	STD74773	02/25/16 20:00
9M972905	WG558732-10 300.0ug/kg STD	NA	7	1	STD74773	02/25/16 20:30
9M972906	RINSE	NA	7	1	STD74773	02/25/16 21:01
9M972907	WG558732-11 50.0ug/kg ALTSRC	NA	7	1	STD74755	02/25/16 21:31

Approved: February 29, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 030716
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD74726 Surrogate Standard: STD74815
CCV: STD74773 LCS: STD74900 MS/MSD: STD74900

Column 1 ID: RTX502.1 Column 2 ID: NA
Workgroups: WG559982

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M973120	WG559980-01 BFB 50ng 8260	NA	7	1	STD74606	03/07/16 14:48
9M973121	WG559980-02 50ug/Kg CCV 8260	NA	7	1	STD74773	03/07/16 15:17
9M973122	WGXXXXXX-01 A9FOO QC 100ug/kg	NA	7	1		03/07/16 15:48
9M973123	WG559982-01 VBLK0307 BLANK 8260	NA	7	1		03/07/16 16:18
9M973124	WG559982-02 20ug/L LCS 8260	NA	7	1	STD74900	03/07/16 16:49
9M973125	RINSE	NA	7	1		03/07/16 17:20
9M973126	L16030234-05 A 8260 4.88g	NA	7	1		03/07/16 17:51
9M973127	L16030235-01 A 8260 4.92g	NA	7	1		03/07/16 18:21
9M973128	L16030235-02 A 8260 5.25g	NA	7	1		03/07/16 18:51
9M973129	L16030235-03 A RS 8260 5.48g	NA	7	1		03/07/16 19:22
9M973130	L16030235-06 A 8260 5.16g	NA	7	1		03/07/16 19:53
9M973131	L16030235-07 A 8260 4.64g	NA	7	1		03/07/16 20:24
9M973132	L16030235-08 A 8260 5.24g	NA	7	1		03/07/16 20:55
9M973133	L16030235-04 A MS 8260 5.17g	NA	7	1		03/07/16 21:26
9M973134	L16030235-05 A MSD 8260 5.07g	NA	7	1		03/07/16 21:58
9M973135	RINSE	NA	7	1		03/07/16 22:29
9M973136	L16030176-02 A 8260 0.94g	NA	10	1		03/07/16 23:00
9M973137	RINSE	NA	7	1		03/07/16 23:30
9M973138	SCREEN 10X 0323-01	NA	7	1		03/08/16 00:01
9M973139	SCREEN 10X 0323-02	NA	7	1		03/08/16 00:31
9M973140	SCREEN 10X 0323-03	NA	7	1		03/08/16 01:01
9M973141	SCREEN 10X 0323-04	NA	7	1		03/08/16 01:32
9M973142	SCREEN 10X 0323-05	NA	7	1		03/08/16 02:02
9M973143	SCREEN 10X 0323-06	NA	7	1		03/08/16 02:32
9M973144	SCREEN 1000X 0168-01	NA	7	1		03/08/16 03:03
9M973145	RINSE	NA	7	1		03/08/16 03:33
9M973146	RINSE	NA	7	1		03/08/16 04:03

Comments

Seq.	Rerun	Dil.	Reason	Analytes
3				
File ID: 9M973122				
Not needed. DNR.				

Approved: March 08, 2016

Tiffany Bailey

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 030716
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD74726 Surrogate Standard: STD74815
CCV: STD74773 LCS: STD74900 MS/MSD: STD74900

Column 1 ID: RTX502.1 Column 2 ID: NA
Workgroups: WG559982

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17	X	1	Analyzed too dilute	
File ID: 9M973136				
IS/SS failures				

Approved: March 08, 2016

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 25-JAN-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 72995
Analytical Workgroups: WG555000

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
28-JAN-2016

Secondary Reviewer:
29-JAN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JAN-29-2016 16:00:23

Microbac Laboratories Inc.

Data Checklist

Date: 25-FEB-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 73547
Analytical Workgroups: WG558732

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
29-FEB-2016

Secondary Reviewer:
29-FEB-2016

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-29-2016 15:30:51

Microbac Laboratories Inc.

Data Checklist

Date: 07-MAR-2016
Analyst: ADC
Analyst: NA
Method: 8260B
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 73696
Analytical Workgroups: WG559982

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	FJB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	FJB
Secondary Reviewer	TMB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer: 08-MAR-2016

Secondary Reviewer: 08-MAR-2016

CHECKLIST1 - Modified 03/05/2008

Generated: MAR-08-2016 15:47:34

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG559982

Login Number: L16030235

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18DPT07(5-5.5)020316	01	03/02/16					03/06/2016	3.9	14		03/07/16	5.1	14	
18DPT07(15-15.5)020316	02	03/02/16					03/06/2016	3.9	14		03/07/16	5.1	14	
18DPT07(33.5-34.5)030316	03	03/03/16					03/06/2016	3.1	14		03/07/16	4.4	14	
18DPT07(33.5-34.5)030316	04	03/03/16					03/06/2016	3.1	14		03/07/16	4.5	14	
18DPT07(33.5-34.5)030316	05	03/03/16					03/06/2016	3.1	14		03/07/16	4.5	14	
18DPT07(38-39)030316	06	03/03/16					03/06/2016	3.1	14		03/07/16	4.4	14	
18DPT07(38-39)030316 FD	07	03/03/16					03/06/2016	3.1	14		03/07/16	4.4	14	
18DPT07(27-27.5)030316	08	03/03/16					03/06/2016	3.1	14		03/07/16	4.4	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4661480
Report generated 03/14/2016 11:22

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16030235
Instrument Id: HPMS9
Workgroup (AAB#): WG559982

Method: 8260
CAL ID: HPMS9-25-FEB-16
Matrix: Soil

Sample Number	Dilution	Tag	1	2	3	4
L16030235-01	1.00	01	102	95.7	105	98.8
L16030235-02	1.00	01	113	99.8	99.7	97.2
L16030235-03	1.00	01	100	95.8	98.9	97.6
L16030235-04	1.00	01	103	97.5	96.3	95.9
L16030235-05	1.00	01	99.7	96.5	99.5	95.4
L16030235-06	1.00	01	105	99.1	99.2	96.0
L16030235-07	1.00	01	106	98.7	101	101
L16030235-08	1.00	01	103	97.8	102	97.8
WG559982-01	1.00	01	101	97.2	103	99.2
WG559982-02	1.00	01	97.7	94.6	96.4	95.3

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	80	-	120
2 - Dibromofluoromethane	80	-	120
3 - 4-Bromofluorobenzene	85	-	120
4 - Toluene-d8	85	-	115

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4661490
Report generated: 03/14/2016 11:22

METHOD BLANK SUMMARY

Login Number: L16030235
Blank File ID: 9M973123
Prep Date: 03/07/16 16:18
Analyzed Date: 03/07/16 16:18
Analyst: ADC

Work Group: WG559982
Blank Sample ID: WG559982-01
Instrument ID: HPMS9
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG559982-02	9M973124	03/07/16 16:49	01
18DPT07(5-5.5)020316	L16030235-01	9M973127	03/07/16 18:21	01
18DPT07(15-15.5)020316	L16030235-02	9M973128	03/07/16 18:51	01
18DPT07(33.5-34.5)030316	L16030235-03	9M973129	03/07/16 19:22	01
18DPT07(38-39)030316	L16030235-06	9M973130	03/07/16 19:53	01
18DPT07(38-39)030316 FD	L16030235-07	9M973131	03/07/16 20:24	01
18DPT07(27-27.5)030316	L16030235-08	9M973132	03/07/16 20:55	01
18DPT07(33.5-34.5)030316 MS	L16030235-04	9M973133	03/07/16 21:26	01
18DPT07(33.5-34.5)030316 MSD	L16030235-05	9M973134	03/07/16 21:58	01

Report Name: BLANK_SUMMARY
PDF File ID: 4661481
Report generated 03/14/2016 11:22

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16030235 Prep Date: 03/07/16 16:18 Sample ID: WG559982-01
Instrument ID: HPMS9 Run Date: 03/07/16 16:18 Prep Method: 5030B/5030C/503
File ID: 9M973123 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG559982 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-25-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	5.00	20.0	5.00	1	U
Benzene	0.500	5.00	0.500	1	U
Bromobenzene	0.500	5.00	0.500	1	U
Bromochloromethane	1.00	5.00	1.00	1	U
Bromodichloromethane	0.500	5.00	0.500	1	U
Bromoform	0.500	5.00	0.500	1	U
Bromomethane	1.00	5.00	1.00	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.500	5.00	0.500	1	U
sec-Butylbenzene	0.500	5.00	0.500	1	U
tert-Butylbenzene	0.500	5.00	0.500	1	U
Carbon disulfide	0.500	5.00	0.500	1	U
Carbon tetrachloride	0.500	5.00	0.500	1	U
Chlorobenzene	0.500	5.00	0.500	1	U
Chlorodibromomethane	0.500	5.00	0.500	1	U
Chloroethane	1.00	5.00	1.00	1	U
Chloroform	0.500	5.00	0.500	1	U
Chloromethane	2.00	10.0	2.00	1	U
2-Chlorotoluene	0.500	5.00	0.500	1	U
4-Chlorotoluene	0.500	5.00	0.500	1	U
1,2-Dibromo-3-chloropropane	2.00	10.0	2.00	1	U
1,2-Dibromoethane	0.500	5.00	0.500	1	U
Dibromomethane	0.500	5.00	0.500	1	U
1,2-Dichlorobenzene	0.500	5.00	0.500	1	U
1,3-Dichlorobenzene	0.500	5.00	0.500	1	U
1,4-Dichlorobenzene	0.500	5.00	0.500	1	U
Dichlorodifluoromethane	1.00	5.00	1.00	1	U
1,1-Dichloroethane	1.00	5.00	1.00	1	U
1,2-Dichloroethane	0.500	5.00	0.500	1	U
1,1-Dichloroethene	0.500	5.00	0.500	1	U
cis-1,2-Dichloroethene	0.500	5.00	0.500	1	U
trans-1,2-Dichloroethene	0.500	5.00	0.500	1	U
1,2-Dichloropropane	0.500	5.00	0.500	1	U
1,3-Dichloropropane	0.500	5.00	0.500	1	U
2,2-Dichloropropane	0.500	5.00	0.500	1	U
cis-1,3-Dichloropropene	0.500	5.00	0.500	1	U
trans-1,3-Dichloropropene	0.500	5.00	0.500	1	U
1,1-Dichloropropene	0.500	5.00	0.500	1	U
Ethylbenzene	0.500	5.00	0.500	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.500	5.00	0.500	1	U
Isopropylbenzene	0.500	5.00	0.500	1	U

Report Name: BLANK
PDF ID: 4661482
14-MAR-2016 11:22

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16030235 Prep Date: 03/07/16 16:18 Sample ID: WG559982-01
Instrument ID: HPMS9 Run Date: 03/07/16 16:18 Prep Method: 5030B/5030C/503
File ID: 9M973123 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG559982 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-25-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.500	5.00	0.500	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	1.00	5.00	1.00	1	U
Naphthalene	0.500	5.00	0.500	1	U
n-Propylbenzene	0.500	5.00	0.500	1	U
Styrene	0.500	5.00	0.500	1	U
1,1,1,2-Tetrachloroethane	0.500	5.00	0.500	1	U
1,1,2,2-Tetrachloroethane	0.500	5.00	0.500	1	U
Tetrachloroethene	0.500	5.00	0.500	1	U
Toluene	0.500	5.00	0.500	1	U
1,2,3-Trichlorobenzene	0.500	5.00	0.500	1	U
1,2,4-Trichlorobenzene	0.500	5.00	0.500	1	U
1,1,1-Trichloroethane	0.500	5.00	0.500	1	U
1,1,2-Trichloroethane	0.500	5.00	0.500	1	U
Trichloroethene	0.500	5.00	0.500	1	U
Trichlorofluoromethane	1.00	5.00	1.00	1	U
1,2,3-Trichloropropane	1.00	5.00	1.00	1	U
1,2,4-Trimethylbenzene	0.500	5.00	0.500	1	U
1,3,5-Trimethylbenzene	0.500	5.00	0.500	1	U
Vinyl chloride	1.00	5.00	1.00	1	U
o-Xylene	0.500	5.00	0.500	1	U
m-,p-Xylene	0.500	5.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	97.2	80 - 120	PASS
1,2-Dichloroethane-d4	101	80 - 120	PASS
Toluene-d8	99.2	85 - 115	PASS
4-Bromofluorobenzene	103	85 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4661482
14-MAR-2016 11:22

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030235 | Run Date: 03/07/2016 | Sample ID: WG559982-02
Instrument ID: HPMS9 | Run Time: 16:49 | Prep Method: 5030B/5030C/503
File ID: 9M973124 | Analyst: ADC | Method: 8260B
Workgroup (AAB#): WG559982 | Matrix: Soil | Units: ug/kg
QC Key: DOD4 | Lot#: STD74900 | Cal ID: HPMS9-25-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	21.5	107	20 - 160	
Benzene	20.0	19.9	99.3	75 - 125	
Bromobenzene	20.0	16.2	80.8	65 - 120	
Bromochloromethane	20.0	19.4	96.8	70 - 125	
Bromodichloromethane	20.0	19.2	96.1	70 - 130	
Bromoform	20.0	17.0	85.2	55 - 135	
Bromomethane	20.0	18.4	91.8	30 - 160	
2-Butanone	20.0	22.5	113	30 - 160	
n-Butylbenzene	20.0	17.4	87.0	65 - 140	
sec-Butylbenzene	20.0	18.7	93.3	65 - 130	
tert-Butylbenzene	20.0	18.6	93.2	65 - 130	
Carbon disulfide	20.0	18.6	93.1	45 - 160	
Carbon tetrachloride	20.0	19.3	96.5	65 - 135	
Chlorobenzene	20.0	20.2	101	75 - 125	
Chlorodibromomethane	20.0	18.3	91.5	65 - 130	
Chloroethane	20.0	19.7	98.7	40 - 155	
Chloroform	20.0	19.3	96.3	70 - 125	
Chloromethane	20.0	21.2	106	50 - 130	
2-Chlorotoluene	20.0	18.4	92.2	70 - 130	
4-Chlorotoluene	20.0	18.0	89.8	75 - 125	
1,2-Dibromo-3-chloropropane	20.0	15.2	75.8	40 - 135	
1,2-Dibromoethane	20.0	18.9	94.3	70 - 125	
Dibromomethane	20.0	17.9	89.6	75 - 130	
1,2-Dichlorobenzene	20.0	17.4	87.0	75 - 120	
1,3-Dichlorobenzene	20.0	16.7	83.4	70 - 125	
1,4-Dichlorobenzene	20.0	16.5	82.6	70 - 125	
Dichlorodifluoromethane	20.0	24.0	120	35 - 135	
1,1-Dichloroethane	20.0	19.5	97.7	75 - 125	
1,2-Dichloroethane	20.0	21.2	106	70 - 135	
1,1-Dichloroethene	20.0	20.2	101	65 - 135	
cis-1,2-Dichloroethene	20.0	20.3	102	65 - 125	
trans-1,2-Dichloroethene	20.0	20.7	103	65 - 135	
1,2-Dichloropropane	20.0	21.1	105	70 - 120	
1,3-Dichloropropane	20.0	20.8	104	75 - 125	
2,2-Dichloropropane	20.0	19.8	99.0	65 - 135	
cis-1,3-Dichloropropene	20.0	20.6	103	70 - 125	
trans-1,3-Dichloropropene	20.0	19.3	96.6	65 - 125	
1,1-Dichloropropene	20.0	19.4	97.1	70 - 135	
Ethylbenzene	20.0	20.6	103	75 - 125	
2-Hexanone	20.0	21.1	106	45 - 145	
Hexachlorobutadiene	20.0	16.5	82.6	55 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4661483
Report generated: 03/14/2016 11:22

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030235 Run Date: 03/07/2016 Sample ID: WG559982-02
Instrument ID: HPMS9 Run Time: 16:49 Prep Method: 5030B/5030C/503
File ID: 9M973124 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG559982 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD74900 Cal ID: HPMS9-25-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	20.3	101	75 - 130	
p-Isopropyltoluene	20.0	17.8	89.1	75 - 135	
4-Methyl-2-pentanone	20.0	21.7	109	45 - 145	
Methylene chloride	20.0	19.0	94.9	55 - 140	
Naphthalene	20.0	14.6	72.8	40 - 125	
n-Propylbenzene	20.0	18.6	92.9	65 - 135	
Styrene	20.0	19.8	99.0	75 - 125	
1,1,1,2-Tetrachloroethane	20.0	19.3	96.6	75 - 125	
1,1,2,2-Tetrachloroethane	20.0	16.1	80.4	55 - 130	
Tetrachloroethene	20.0	19.2	96.2	65 - 140	
Toluene	20.0	19.7	98.3	70 - 125	
1,2,3-Trichlorobenzene	20.0	15.3	76.6	60 - 135	
1,2,4-Trichlorobenzene	20.0	15.3	76.7	65 - 130	
1,1,1-Trichloroethane	20.0	20.2	101	70 - 135	
1,1,2-Trichloroethane	20.0	20.2	101	60 - 125	
Trichloroethene	20.0	20.6	103	75 - 125	
Trichlorofluoromethane	20.0	19.8	98.9	25 - 185	
1,2,3-Trichloropropane	20.0	18.0	90.2	65 - 130	
1,2,4-Trimethylbenzene	20.0	17.2	85.8	65 - 135	
1,3,5-Trimethylbenzene	20.0	18.4	92.0	65 - 135	
Vinyl chloride	20.0	18.7	93.4	60 - 125	
o-Xylene	20.0	20.4	102	75 - 125	
m-,p-Xylene	40.0	40.7	102	80 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	94.6	80 - 120	PASS
1,2-Dichloroethane-d4	97.7	80 - 120	PASS
Toluene-d8	95.3	85 - 115	PASS
4-Bromofluorobenzene	96.4	85 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4661483
Report generated: 03/14/2016 11:22

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16030235 Cal ID: HPMS9- 25-FEB-16 Worknum: WG559982

Instrument ID: HPMS9 Contract #: Prep Method: 5030B/5030C/

Parent ID: L16030235-03 File ID: 9M973129 Dil: 1 Method: 5035A

Sample ID: L16030235-04 MS File ID: 9M973133 Dil: 1 Matrix: 8260B

Sample ID: L16030235-05 MSD File ID: 9M973134 Dil: 1 Units: Soil

Percent Solid: ug/kg 82.2

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,1,1,2-Tetrachloroethane	U	23.5	22.5	95.8	24.0	24.0	99.9	6.13	75 - 125	30	
1,1,1-Trichloroethane	U	23.5	24.0	102	24.0	25.7	107	7.08	70 - 135	30	
1,1,2,2-Tetrachloroethane	U	23.5	17.3	73.3	24.0	19.1	79.7	10.4	55 - 130	30	
1,1,2-Trichloroethane	U	23.5	21.8	92.5	24.0	23.3	97.3	7.06	60 - 125	30	
1,1-Dichloroethane	U	23.5	22.3	95	24.0	24.3	101	8.48	75 - 125	30	
1,1-Dichloroethene	U	23.5	24.1	102	24.0	25.5	106	5.58	65 - 135	30	
1,1-Dichloropropene	U	23.5	22.9	97.4	24.0	24.9	104	8.21	70 - 135	30	
1,2,3-Trichlorobenzene	U	23.5	16.8	71.4	24.0	20.0	83.2	17.2	60 - 135	30	
1,2,3-Trichloropropane	U	23.5	20.1	85.5	24.0	21.1	88.1	4.95	65 - 130	30	
1,2,4-Trichlorobenzene	U	23.5	16.1	68.3	24.0	19.9	82.8	21.1	65 - 130	30	
1,2,4-Trimethylbenzene	U	23.5	19.1	81	24.0	22.3	92.9	15.7	65 - 135	30	
1,2-Dibromo-3-chloropropane	U	23.5	14.6	62	24.0	18.0	75.2	21.2	40 - 135	30	
1,2-Dibromoethane	U	23.5	21.2	90.1	24.0	22.9	95.4	7.71	70 - 125	30	
1,2-Dichlorobenzene	U	23.5	18.9	80.2	24.0	21.5	89.6	13.1	75 - 120	30	
1,2-Dichloroethane	U	23.5	24.9	106	24.0	27.3	114	9.24	70 - 135	30	
1,2-Dichloropropane	U	23.5	25.7	109	24.0	26.8	111	4.16	70 - 120	30	
1,3,5-Trimethylbenzene	U	23.5	20.3	86.1	24.0	23.3	97.1	13.9	65 - 135	30	
1,3-Dichlorobenzene	U	23.5	18.1	77	24.0	21.4	89.3	16.8	70 - 125	30	
1,3-Dichloropropane	U	23.5	23.0	97.8	24.0	24.5	102	6.32	75 - 125	30	
1,4-Dichlorobenzene	U	23.5	18.3	77.8	24.0	21.4	89	15.3	70 - 125	30	
2,2-Dichloropropane	U	23.5	21.6	92	24.0	22.9	95.5	5.73	65 - 135	30	
2-Butanone	U	23.5	22.1	93.8	24.0	24.3	101	9.76	30 - 160	30	
2-Chlorotoluene	U	23.5	20.1	85.3	24.0	24.2	101	18.7	70 - 130	30	
2-Hexanone	U	23.5	19.9	84.5	24.0	23.3	97	15.7	45 - 145	30	
4-Chlorotoluene	U	23.5	20.8	88.6	24.0	22.4	93.4	7.23	75 - 125	30	
4-Methyl-2-pentanone	U	23.5	21.3	90.3	24.0	24.0	99.9	12.0	45 - 145	30	
Acetone	U	23.5	22.3	94.9	24.0	23.9	99.7	6.84	20 - 160	30	
Benzene	U	23.5	22.9	97.4	24.0	25.1	105	9.09	75 - 125	30	
Bromobenzene	U	23.5	18.8	79.7	24.0	21.5	89.8	13.9	65 - 120	30	
Bromochloromethane	U	23.5	23.1	98	24.0	23.7	98.9	2.81	70 - 125	30	
Bromodichloromethane	U	23.5	23.2	98.7	24.0	24.9	104	6.94	70 - 130	30	
Bromoform	U	23.5	18.9	80.3	24.0	20.2	84	6.40	55 - 135	30	
Bromomethane	U	23.5	20.9	88.9	24.0	22.7	94.7	8.30	30 - 160	30	
Carbon disulfide	U	23.5	19.6	83.4	24.0	22.6	94	13.9	45 - 160	30	
Carbon tetrachloride	U	23.5	22.9	97.3	24.0	25.3	105	10.0	65 - 135	30	
Chlorobenzene	U	23.5	22.8	96.8	24.0	24.4	101	6.67	75 - 125	30	
Chloroethane	U	23.5	25.1	107	24.0	25.4	106	1.23	40 - 155	30	
Chloroform	U	23.5	23.5	99.9	24.0	25.0	104	6.12	70 - 125	30	
Chloromethane	U	23.5	23.8	101	24.0	26.3	110	10.3	50 - 130	30	
cis-1,2-Dichloroethene	U	23.5	24.2	103	24.0	25.8	107	6.28	65 - 125	30	
cis-1,3-Dichloropropene	U	23.5	24.2	103	24.0	25.8	108	6.76	70 - 125	30	

MS_MSD - Modified 03/06/2008
PDF File ID: 4661499
Report generated 03/08/2016 16:16

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16030235 Cal ID: HPMS9 25-FEB-16 Worknum: WG559982

Instrument ID: HPMS9 Contract #: Prep Method: 5030B/5030C/

Parent ID: L16030235-03 File ID: 9M973129 Dil: 1 Method: 5035A

Sample ID: L16030235-04 MS File ID: 9M973133 Dil: 1 Matrix: 8260B

Sample ID: L16030235-05 MSD File ID: 9M973134 Dil: 1 Units: Soil

ug/kg

Percent Solid: 82.2

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chlorodibromomethane	U	23.5	21.1	89.7	24.0	22.1	92.3	4.84	65 - 130	30	
Dibromomethane	U	23.5	21.4	90.8	24.0	22.4	93.3	4.64	75 - 130	30	
Dichlorodifluoromethane	U	23.5	29.9	127	24.0	32.2	134	7.49	35 - 135	30	
Ethylbenzene	U	23.5	23.2	98.7	24.0	25.1	105	7.69	75 - 125	30	
Hexachlorobutadiene	U	23.5	19.0	80.7	24.0	22.5	93.6	16.8	55 - 140	30	
Isopropylbenzene	U	23.5	23.5	99.7	24.0	25.8	107	9.47	75 - 130	30	
m-,p-Xylene	U	47.1	46.6	99.1	48.0	50.7	106	8.30	80 - 125	30	
Methylene chloride	U	23.5	23.0	97.7	24.0	24.0	99.9	4.14	55 - 140	30	
n-Butylbenzene	U	23.5	19.2	81.7	24.0	22.7	94.6	16.6	65 - 140	30	
n-Propylbenzene	U	23.5	21.0	89.2	24.0	24.2	101	14.2	65 - 135	30	
Naphthalene	U	23.5	14.9	63.5	24.0	17.3	72.2	14.8	40 - 125	30	
o-Xylene	U	23.5	23.5	99.7	24.0	25.7	107	9.22	75 - 125	30	
p-Isopropyltoluene	U	23.5	19.6	83.1	24.0	22.8	94.9	15.1	75 - 135	30	
sec-Butylbenzene	U	23.5	20.5	87	24.0	24.3	101	17.0	65 - 130	30	
Styrene	U	23.5	22.6	96	24.0	25.0	104	10.1	75 - 125	30	
tert-Butylbenzene	U	23.5	21.2	89.9	24.0	24.6	103	15.2	65 - 130	30	
Tetrachloroethene	U	23.5	21.9	93.2	24.0	23.6	98.2	7.15	65 - 140	30	
Toluene	U	23.5	22.5	95.8	24.0	24.4	102	7.89	70 - 125	30	
trans-1,2-Dichloroethene	U	23.5	24.5	104	24.0	26.9	112	9.39	65 - 135	30	
trans-1,3-Dichloropropene	U	23.5	21.6	91.7	24.0	23.0	95.7	6.16	65 - 125	30	
Trichloroethene	5.03	23.5	29.4	103	24.0	30.2	105	2.95	75 - 125	30	
Trichlorofluoromethane	U	23.5	24.2	103	24.0	25.2	105	4.15	25 - 185	30	
Vinyl chloride	U	23.5	24.7	105	24.0	27.0	112	9.07	60 - 125	30	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4661499
Report generated 03/08/2016 16:16

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16030235
Instrument: HPMS9
Analyst: FJB
Workgroup: WG555000

Tune ID: WG555000-01
Run Date: 01/25/2016
Run Time: 10:27
File ID: 9M972470
Cal ID: HPMS9 - 25-JAN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	23.0	10289	PASS
75.0	95.0	30.0	60.0	49.3	22030	PASS
95.0	95.0	100	100	100	44728	PASS
96.0	95.0	5.00	9.00	6.98	3122	PASS
173	174	0	2.00	0.381	160	PASS
174	95.0	50.0	100	93.9	41989	PASS
175	174	5.00	9.00	6.62	2778	PASS
176	174	95.0	101	95.6	40133	PASS
177	176	5.00	9.00	6.39	2564	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG555000-02	STD-S	01	01/25/2016 11:22	
WG555000-03	STD-S	01	01/25/2016 11:52	
WG555000-04	STD-S	01	01/25/2016 12:23	
WG555000-05	STD-CCV-S	01	01/25/2016 12:53	
WG555000-06	STD-S	01	01/25/2016 13:23	
WG555000-07	STD-S	01	01/25/2016 13:54	
WG555000-08	STD-S	01	01/25/2016 14:25	
WG555000-09	STD-S	01	01/25/2016 14:56	
WG555000-10	SSCV-S	01	01/25/2016 15:56	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4661486
Report generated 03/14/2016 11:22

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16030235
Instrument: HPMS9
Analyst: ADC
Workgroup: WG558732

Tune ID: WG558732-01
Run Date: 02/25/2016
Run Time: 14:45
File ID: 9M972894
Cal ID: HPMS9 - 25-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.2	5378	PASS
75.0	95.0	30.0	60.0	49.1	13067	PASS
95.0	95.0	100	100	100	26621	PASS
96.0	95.0	5.00	9.00	6.32	1683	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	85.8	22851	PASS
175	174	5.00	9.00	6.50	1485	PASS
176	174	95.0	101	98.3	22461	PASS
177	176	5.00	9.00	7.21	1619	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG558732-02	STD-CCV-S	01	02/25/2016 15:48	
WG558732-03	STD-S	01	02/25/2016 16:55	
WG558732-04	STD-S	01	02/25/2016 17:27	
WG558732-05	STD-S	01	02/25/2016 17:57	
WG558732-06	STD-S	01	02/25/2016 18:28	
WG558732-07	STD-S	01	02/25/2016 18:59	
WG558732-08	STD-S	01	02/25/2016 19:29	
WG558732-09	STD-S	01	02/25/2016 20:00	
WG558732-10	STD-S	01	02/25/2016 20:30	
WG558732-11	SSCV-S	01	02/25/2016 21:31	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4661486
Report generated 03/14/2016 11:22

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16030235
Instrument: HPMS9
Analyst: ADC
Workgroup: WG559980

Tune ID: WG559980-01
Run Date: 03/07/2016
Run Time: 14:48
File ID: 9M973120
Cal ID: HPMS9 - 25-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	24.3	8393	PASS
75.0	95.0	30.0	60.0	51.9	17879	PASS
95.0	95.0	100	100	100	34471	PASS
96.0	95.0	5.00	9.00	5.97	2058	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	73.1	25197	PASS
175	174	5.00	9.00	7.16	1804	PASS
176	174	95.0	101	95.6	24090	PASS
177	176	5.00	9.00	6.96	1676	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG559980-02	CCV-S	01	03/07/2016 15:17	
WG559982-01	BLANK	01	03/07/2016 16:18	
WG559982-02	LCS	01	03/07/2016 16:49	
L16030235-01	18DPT07(5-5.5)020316	01	03/07/2016 18:21	
L16030235-02	18DPT07(15-15.5)020316	01	03/07/2016 18:51	
L16030235-03	18DPT07(33.5-34.5)030316	01	03/07/2016 19:22	
L16030235-06	18DPT07(38-39)030316	01	03/07/2016 19:53	
L16030235-07	18DPT07(38-39)030316 FD	01	03/07/2016 20:24	
L16030235-08	18DPT07(27-27.5)030316	01	03/07/2016 20:55	
L16030235-04	18DPT07(33.5-34.5)030316 MS	01	03/07/2016 21:26	
L16030235-05	18DPT07(33.5-34.5)030316 MSD	01	03/07/2016 21:58	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4661486
Report generated 03/14/2016 11:22

Calibration Table Report
Method: A9FOO_SL.M
Title: FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Calibration: Wed Jan 27 09:49:02 2016
Curve: WG555000
Calibration Files

Compound	5 9M972472.D	20 9M972473.D	50 9M972474.D	100 9M972475.D	200 9M972476.D	300 9M972477.D	400 9M972478.D	500 9M972479.D	Avg	%RSD	R^2 Linear
Fluorobenzene	ISTD										
Acetonitrile		0.053	0.046	0.048	0.052	0.046	0.052	0.054	0.050	6.657	
3-Chloro-1-propene	0.498	0.524	0.450	0.519	0.514	0.434	0.507	0.503	0.494	6.719	
2-Chloro-1,3-butadiene	0.534	0.576	0.519	0.592	0.585	0.509	0.593	0.584	0.561	6.202	
Ethyl Acetate		0.333	0.313	0.339	0.338	0.300	0.341	0.344	0.330	5.124	
Methacrylonitrile	0.102	0.109	0.101	0.112	0.110	0.096	0.112	0.112	0.107	5.912	
Isobutyl Alcohol	0.014	0.018	0.018	0.021	0.024	0.021	0.025	0.025	0.021	18.016	0.993
1-Butanol		0.010	0.013	0.015	0.017	0.015	0.018	0.018	0.015	17.838	0.992
Methyl methacrylate	0.236	0.246	0.231	0.265	0.265	0.231	0.271	0.269	0.252	7.005	
2-Nitropropane	0.069	0.073	0.074	0.083	0.089	0.079	0.093	0.095	0.082	12.090	
Chlorobenzene-d5	ISTD										
Cyclohexanone		0.020	0.022	0.025	0.028	0.023	0.027	0.028	0.025	12.963	
1,4-Dichlorobenzene-d4	ISTD										

Wed Jan 27 10:01:56 2016

Calibration Table Report
Method: 8260SL.M
Title: 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Calibration: Fri Feb 26 11:38:33 2016
Curve: WG558732
Calibration Files

Compound	0.5 9M972898.D	1 9M972899.D	2 9M972900.D	5 9M972901.D	20 9M972902.D	50 9M972896.D	100 9M972903.D	200 9M972904.D	300 9M972905.D	Avg	%RSD	R^2 Linear	Quadratic
Fluorobenzene	ISTD												
Dichlorodifluoromethane			0.338	0.271	0.399	0.396	0.318	0.357	0.307	0.341	13.734		
Chloromethane			0.372	0.280	0.331	0.361	0.296	0.346	0.304	0.327	10.674		
Vinyl Chloride		0.250	0.318	0.314	0.373	0.372	0.342	0.355	0.296	0.327	12.768		
1,3-Butadiene			0.347	0.266	0.328	0.330	0.297	0.321	0.293	0.312	8.837		
Bromomethane		0.236	0.267	0.181	0.206	0.208	0.186	0.217	0.199	0.213	13.250		
Chloroethane			0.127	0.116	0.142	0.165	0.139	0.173	0.160	0.146	14.271		
Trichlorofluoromethane		0.519	0.518	0.416	0.503	0.514	0.470	0.517	0.473	0.491	7.357		
Diethyl ether		0.215	0.246	0.217	0.243	0.241	0.214		0.231	0.230	6.215		
Isoprene			0.302	0.251	0.303	0.302	0.282	0.318	0.295	0.293	7.364		
Acrolein		0.041	0.046	0.045	0.046	0.048	0.046		0.050	0.046	6.212		
1,1,2-Trichloro-1,2,2-Trifluoroethane			0.252	0.234	0.255	0.261	0.248	0.273	0.251	0.253	4.699		
Acetone				0.179	0.138	0.128	0.119	0.124		0.138	17.810	0.999	
1,1-Dichloroethene		0.464	0.511	0.400	0.482	0.471	0.454	0.500	0.456	0.467	7.277		
Tert-Butyl Alcohol			0.057	0.046	0.055	0.051	0.047			0.051	8.698		
Dimethyl Sulfide		0.150	0.203	0.186	0.207	0.211	0.196	0.224	0.203	0.197	11.169		
Iodomethane				0.076	0.109	0.154	0.126	0.157	0.142	0.127	24.315	0.993	
Methyl acetate			0.282	0.223	0.279	0.262	0.240	0.258	0.234	0.254	8.867		
Methylene Chloride			0.271	0.217	0.263	0.261	0.240	0.280	0.249	0.254	8.252		
Carbon Disulfide			0.795	0.626	0.740	0.737	0.678	0.761	0.702	0.720	7.788		
Acrylonitrile		0.117	0.127	0.114	0.130	0.135	0.123		0.134	0.126	6.412		
Methyl Tert Butyl Ether		0.669	0.722	0.642	0.760	0.786	0.713	0.788	0.718	0.725	7.239		
trans-1,2-Dichloroethene		0.400	0.422	0.377	0.430	0.438	0.407	0.446	0.412	0.416	5.376		
n-Hexane			0.456	0.385	0.420	0.424	0.429	0.464	0.428	0.430	5.986		
Diisopropyl ether		0.938	1.068	0.928	1.071	1.051	0.931		0.995	0.998	6.627		
Vinyl Acetate			0.593	0.519	0.545	0.602	0.554	0.608	0.558	0.569	5.855		
1,1-Dichloroethane		0.548	0.558	0.445	0.532	0.549	0.499	0.553	0.500	0.523	7.454		
Ethyl-Tert-Butyl ether		0.871	0.992	0.852	0.990	0.988	0.865		0.934	0.928	6.918		
2-Butanone			0.177	0.152	0.156	0.166	0.156	0.172	0.149	0.161	6.650		
Propionitrile		0.042	0.055	0.048	0.053	0.051	0.048		0.049	0.049	8.494		
2,2-Dichloropropane			0.428	0.330	0.377	0.415	0.383	0.417	0.383	0.390	8.575		
cis-1,2-Dichloroethene		0.247	0.257	0.248	0.287	0.297	0.273	0.299	0.277	0.273	7.647		
Chloroform		0.473	0.530	0.432	0.482	0.509	0.459	0.505	0.454	0.480	6.746		
1-Bromopropane			0.011	0.041	0.042	0.043	0.040	0.045	0.041	0.038	31.434	0.997	
Bromochloromethane		0.131	0.173	0.169	0.194	0.199	0.179	0.197	0.178	0.177	12.275		
Tetrahydrofuran			0.111	0.099	0.110	0.110	0.097		0.097	0.104	6.802		
Dibromofluoromethane				0.267	0.243	0.286	0.286	0.274		0.271	6.547		
1,1,1-Trichloroethane		0.426	0.436	0.385	0.438	0.470	0.425	0.470	0.427	0.434	6.319		
Cyclohexane		0.465	0.495	0.425	0.494	0.478	0.465	0.503	0.464	0.474	5.302		
1,1-Dichloropropene		0.353	0.359	0.300	0.344	0.352	0.333	0.360	0.335	0.342	5.748		
Tert-Amyl-Methyl ether		0.631	0.709	0.631	0.716	0.716	0.632		0.684	0.674	6.133		
Carbon Tetrachloride			0.41939	0.34041	0.40512	0.42742	0.39181	0.43819	0.39737	0.40282	7.96886		
1,2-Dichloroethane-d4				0.34995	0.30686	0.35494	0.35835	0.33017		0.34005	6.33015		
Heptane										0	0		
1,2-Dichloroethane		0.36551	0.44947	0.39601	0.44224	0.45938	0.41291	0.4496	0.40581	0.42262	7.76179		
Benzene	1.14079	0.92872	1.03015	0.83328	0.97121	0.9721	0.88431	0.97127	0.88279	0.95718	9.53654		
Trichloroethene		0.30364	0.32158	0.26212	0.31219	0.31666	0.29597	0.321	0.29314	0.30329	6.54492		
Methylcyclohexane		0.31249	0.39837	0.32203	0.40419	0.39506	0.39323	0.42525	0.39247	0.38039	10.6291		
1,2-Dichloropropane		0.23004	0.27101	0.24016	0.27676	0.28593	0.2555	0.28277	0.26062	0.26285	7.66268		
1,4-Dioxane			0.0041	0.00361	0.00449	0.00376	0.00356		0.00414	0.00394	9.17892		
Bromodichloromethane			0.37851	0.33087	0.3725	0.39384	0.35929	0.397	0.36103	0.37044	6.13725		
Dibromomethane		0.15103	0.18915	0.16523	0.1825	0.18519	0.16707	0.1849	0.1682	0.17416	7.61692		
2-Chloroethyl Vinyl Ether				0.04535	0.05625	0.07439	0.06667	0.08013	0.07633	0.06652	20.1377	0.996	
4-Methyl-2-Pentanone				0.08933	0.11327	0.12554	0.11786	0.12977	0.11644	0.11537	12.2612		
cis-1,3-Dichloropropene			0.37321	0.33699	0.39477	0.41098	0.38072	0.42291	0.38195	0.38594	7.23123		
Dimethyl Disulfide			0.30882	0.3269	0.39409	0.4245	0.40234	0.4579	0.40032	0.38784	13.5683		
Chlorobenzene-d5	ISTD												
Toluene-d8				1.21266	1.14503	1.34974	1.34798	1.26813		1.26471	6.98417		
Toluene	1.57001	1.40445	1.51648	1.23448	1.46732	1.48749	1.3712	1.4823	1.3236	1.42859	7.34792		
Ethyl Methacrylate				0.31749	0.4112	0.4195	0.39758	0.44016	0.38999	0.39599	10.6751		
trans-1,3-Dichloropropene			0.50304	0.44978	0.5157	0.56049	0.50648	0.56248	0.50379	0.51454	7.49294		
1,1,2-Trichloroethane		0.27692	0.29584	0.27194	0.31787	0.32454	0.3	0.32173	0.292	0.3001	6.65768		
2-Hexanone				0.26013	0.28088	0.31451	0.30524	0.34734	0.28972	0.29964	10.056		
1,3-Dichloropropane		0.46617	0.55761	0.45639	0.51068	0.53187	0.47698	0.53043	0.47034	0.50006	7.49429		
Tetrachloroethene		0.33351	0.31568	0.26327	0.31051	0.30894	0.30156	0.32634	0.29026	0.30626	7.18201		
Dibromochloromethane			0.45014	0.36113	0.41394	0.44566	0.40515	0.45572	0.40415	0.41941	8.03547		
1,2-Dibromoethane				0.31086	0.34005	0.35035	0.32626	0.35324	0.31647	0.33287	5.32182		
1-Chlorohexane		0.39643	0.40929	0.33097	0.45098	0.44465	0.43807	0.477	0.42289	0.42128	10.5148		
Chlorobenzene		1.02904	1.08596	0.91908	1.05295	1.05625	0.95434	1.02465	0.91009	1.00405	6.67004		
1,1,1,2-Tetrachloroethane			0.37536	0.32525	0.38767	0.40783	0.37127	0.40937	0.36265	0.37706	7.67975		
Ethylbenzene	0.5157	0.51658	0.53164	0.45493	0.54391	0.54636	0.50916	0.54884	0.48836	0.51728	5.93862		
m-,p-Xylene	0.67213	0.61926	0.69794	0.58569	0.67162	0.65634	0.61182	0.65803	0.57657	0.63882	6.58722		
o-Xylene	0.61273	0.56415	0.61379	0.55512	0.6465	0.65334	0.60899	0.67127	0.59158	0.61305	6.41073		
Styrene		0.95813	1.06028	0.90308	1.08018	1.12326	1.04689	1.15897	1.02088	1.04396	8.002		
Bromoform			0.22872	0.23892	0.27832	0.30617	0.27263	0.32232	0.28054	0.27538	12.1348		
Isopropylbenzene		1.53891	1.69742	1.42189	1.74341	1.73716	1.64433	1.81019	1.57289	1.64577	7.76922		
1,4-Dichlorobenzene-d4	ISTD												
1,1,2,2-Tetrachloroethane		0.61571	0.83634	0.73739	0.79769	0.80854	0.74616	0.78083	0.74513	0.75847	8.88143		
p-Bromofluorobenzene				0.91653	0.87561	1.04735	1.0775	0.95104		0.97361	8.83571		
1,2,3-Trichloropropane		0.24645	0.29476	0.28329	0.29208	0.30442	0.29453	0.30315	0.28248	0.28764	6.41284		

trans-1,4-Dichloro-2-Butene		0.22501	0.23725	0.31415	0.3034	0.3105	0.33164	0.30766	0.28994	14.2446
n-Propylbenzene	3.98718	4.09811	3.61454	4.21971	4.10826	3.88939	3.82307	3.70205	3.93029	5.36989
Bromobenzene	0.84385	1.11565	0.86076	0.97118	0.9688	0.89248	0.89548	0.87446	0.92783	9.59949
1,3,5-Trimethylbenzene			2.76735	3.16086	3.10843	2.93606	2.91239	2.81635	2.95024	5.30322
2-Chlorotoluene		2.99265	2.31448	2.81057	2.64897	2.50142	2.61378	2.57101	2.63612	8.25378
4-Chlorotoluene	2.56339	2.5861	2.29006	2.55177	2.63031	2.41864	2.2799	2.17747	2.4372	6.98222
a-Methylstyrene			1.12025	1.41688	1.39756	1.35572	1.41986	1.35543	1.34428	8.43365
tert-Butylbenzene			0.56026	0.65003	0.66483	0.62531	0.61977	0.59094	0.61853	6.19423
1,2,4-Trimethylbenzene	3.41485	3.20381	2.86379	3.24429	3.17284	3.0014	2.96997	2.8463	3.08966	6.49589
sec-Butylbenzene	3.92127	3.95846	3.39254	3.98281	3.96896	3.8029	3.77812	3.59297	3.79976	5.54855
p-Isopropyltoluene			2.97918	3.35219	3.3501	3.24235	3.24339	3.07285	3.20668	4.70949
1,3-Dichlorobenzene	2.09668	2.18083	1.63464	1.82169	1.84149	1.71899	1.77783	1.67989	1.84401	10.6223
1,4-Dichlorobenzene	2.13498	2.06617	1.68605	1.85221	1.83159	1.72549	1.79434	1.65691	1.84347	9.41157
n-Butylbenzene	3.12981	3.1425	2.56827	2.96652	3.08072	3.01911	3.06733	2.87744	2.98146	6.31771
1,2-Dichlorobenzene	1.80685	1.84212	1.52596	1.70901	1.74915	1.66133	1.78603	1.60751	1.71099	6.28256
1,2-Dibromo-3-Chloropropane			0.17584	0.21007	0.23479	0.23723	0.24208	0.21787	0.21965	11.2549
1,2,4-Trichlorobenzene	1.3714	1.33063	1.02655	1.15029	1.2163	1.24479	1.25089	1.12609	1.21462	9.21088
Hexachlorobutadiene	0.57233	0.7279	0.53741	0.61674	0.64289	0.67353	0.72181	0.62948	0.64026	10.4449
Naphthalene		3.19632	2.63671	3.04494	3.29135	3.2233	3.14196	2.79099	3.04651	7.99534
1,2,3-Trichlorobenzene	1.32324	1.26566	0.99788	1.12352	1.21351	1.21702	1.20507	1.0788	1.17809	8.93408

Fri Feb 26 11:40:14 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16030235 Run Date: 02/25/2016 Sample ID: WG558732-11
Instrument ID: HPMS9 Run Time: 21:31 Method: 8260B
File ID: 9M972907 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG558732 Cal ID: HPMS9 - 25-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	48.0	ug/kg	0.461	4.00	20	
1,1-Dichloroethene	CCC	50.0	48.6	ug/kg	0.454	2.90	20	
1,2-Dichloropropane	CCC	50.0	52.3	ug/kg	0.275	4.60	20	
Ethylbenzene	CCC	50.0	51.3	ug/kg	0.531	2.60	20	
Toluene	CCC	50.0	50.7	ug/kg	1.45	1.50	20	
Vinyl Chloride	CCC	50.0	59.8	ug/kg	0.392	19.7	20	
Bromoform	SPCC	50.0	47.3	ug/kg	0.261	5.40	20	
Chlorobenzene	SPCC	50.0	51.2	ug/kg	1.03	2.40	20	
Chloromethane	SPCC	50.0	52.7	ug/kg	0.345	5.40	20	
1,1-Dichloroethane	SPCC	50.0	46.4	ug/kg	0.485	7.20	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	52.0	ug/kg	0.789	4.00	20	
Acetone		50.0	43.9	ug/kg	0.112	12.2	20	
Benzene		50.0	49.0	ug/kg	0.937	2.10	20	
Bromobenzene		50.0	52.2	ug/kg	0.968	4.40	20	
Bromochloromethane		50.0	51.5	ug/kg	0.183	3.00	20	
Bromodichloromethane		50.0	47.6	ug/kg	0.352	4.90	20	
Bromomethane		50.0	49.0	ug/kg	0.208	2.10	20	
2-Butanone		50.0	47.4	ug/kg	0.153	5.20	20	
n-Butylbenzene		50.0	52.5	ug/kg	3.13	4.90	20	
sec-Butylbenzene		50.0	54.7	ug/kg	4.16	9.50	20	
tert-Butylbenzene		50.0	55.4	ug/kg	0.685	10.8	20	
Carbon Disulfide		50.0	44.1	ug/kg	0.635	11.7	20	
Carbon Tetrachloride		50.0	46.5	ug/kg	0.375	7.00	20	
Dibromochloromethane		50.0	48.5	ug/kg	0.407	3.10	20	
Chloroethane		50.0	54.2	ug/kg	0.158	8.30	20	
2-Chlorotoluene		50.0	54.2	ug/kg	2.86	8.40	20	
4-Chlorotoluene		50.0	53.0	ug/kg	2.59	6.10	20	
1,2-Dibromo-3-Chloropropane		50.0	54.5	ug/kg	0.239	8.90	20	
1,2-Dibromoethane		50.0	50.8	ug/kg	0.338	1.50	20	
Dibromomethane		50.0	47.0	ug/kg	0.164	6.10	20	
1,2-Dichlorobenzene		50.0	52.7	ug/kg	1.81	5.50	20	
1,3-Dichlorobenzene		50.0	50.8	ug/kg	1.87	1.60	20	
1,4-Dichlorobenzene		50.0	51.1	ug/kg	1.88	2.20	20	
Dichlorodifluoromethane		50.0	63.4	ug/kg	0.432	26.7	20	*
1,2-Dichloroethane		50.0	49.2	ug/kg	0.416	1.60	20	
cis-1,2-Dichloroethene		50.0	52.6	ug/kg	0.287	5.20	20	
trans-1,2-Dichloroethene		50.0	50.6	ug/kg	0.422	1.20	20	
1,3-Dichloropropane		50.0	53.8	ug/kg	0.538	7.60	20	
2,2-Dichloropropane		50.0	47.1	ug/kg	0.368	5.90	20	
cis-1,3-Dichloropropene		50.0	53.2	ug/kg	0.411	6.40	20	
trans-1,3-Dichloropropene		50.0	50.0	ug/kg	0.515	0.100	20	
1,1-Dichloropropene		50.0	48.5	ug/kg	0.332	2.90	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4661485
Report generated 03/14/2016 11:22

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16030235 Run Date: 02/25/2016 Sample ID: WG558732-11
Instrument ID: HPMS9 Run Time: 21:31 Method: 8260B
File ID: 9M972907 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG558732 Cal ID: HPMS9 - 25-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	48.2	ug/kg	0.289	3.60	20	
Hexachlorobutadiene		50.0	54.5	ug/kg	0.698	9.00	20	
Isopropylbenzene		50.0	52.0	ug/kg	1.71	4.00	20	
p-Isopropyltoluene		50.0	54.1	ug/kg	3.47	8.10	20	
4-Methyl-2-Pentanone		50.0	47.8	ug/kg	0.110	4.40	20	
Methylene Chloride		50.0	49.8	ug/kg	0.254	0.400	20	
Naphthalene		50.0	50.8	ug/kg	3.10	1.70	20	
n-Propylbenzene		50.0	54.9	ug/kg	4.32	9.80	20	
Styrene		50.0	52.8	ug/kg	1.10	5.60	20	
1,1,1,2-Tetrachloroethane		50.0	49.7	ug/kg	0.375	0.600	20	
Tetrachloroethene		50.0	49.8	ug/kg	0.305	0.400	20	
1,2,3-Trichlorobenzene		50.0	52.6	ug/kg	1.24	5.20	20	
1,2,4-Trichlorobenzene		50.0	51.7	ug/kg	1.26	3.40	20	
1,1,1-Trichloroethane		50.0	46.7	ug/kg	0.406	6.50	20	
1,1,2-Trichloroethane		50.0	51.5	ug/kg	0.309	3.00	20	
Trichloroethene		50.0	49.4	ug/kg	0.300	1.20	20	
Trichlorofluoromethane		50.0	47.6	ug/kg	0.467	4.90	20	
1,2,3-Trichloropropane		50.0	54.2	ug/kg	0.312	8.40	20	
1,2,4-Trimethylbenzene		50.0	51.5	ug/kg	3.18	3.10	20	
1,3,5-Trimethylbenzene		50.0	54.3	ug/kg	3.21	8.60	20	
o-Xylene		50.0	53.6	ug/kg	0.657	7.10	20	
m-,p-Xylene		100	103	ug/kg	0.655	2.60	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4661485
Report generated 03/14/2016 11:22

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030235 Run Date: 03/07/2016 Sample ID: WG559980-02
Instrument ID: HPMS9 Run Time: 15:17 Method: 8260B
File ID: 9M973121 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG559982 Cal ID: HPMS9 - 25-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	52.1	ug/kg	0.500	4.14	20	
1,1-Dichloroethene	CCC	50.0	53.3	ug/kg	0.498	6.67	20	
1,2-Dichloropropane	CCC	50.0	54.8	ug/kg	0.288	9.67	20	
Ethylbenzene	CCC	50.0	51.9	ug/kg	0.537	3.74	20	
Toluene	CCC	50.0	50.7	ug/kg	1.45	1.41	20	
Vinyl Chloride	CCC	50.0	55.7	ug/kg	0.365	11.4	20	
Bromoform	SPCC	50.0	51.0	ug/kg	0.281	2.08	20	
Chlorobenzene	SPCC	50.0	50.7	ug/kg	1.02	1.47	20	
Chloromethane	SPCC	50.0	47.9	ug/kg	0.313	4.20	20	
1,1-Dichloroethane	SPCC	50.0	54.0	ug/kg	0.565	7.95	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	45.1	ug/kg	0.685	9.71	20	
Xylenes		150	155	ug/kg	0.650	3.64	40	
Acetone		50.0	50.0	ug/kg	0.126	0.0460	20	
Benzene		50.0	50.2	ug/kg	0.961	0.429	20	
Bromobenzene		50.0	45.3	ug/kg	0.841	9.31	20	
Bromochloromethane		50.0	51.5	ug/kg	0.183	3.06	20	
Bromodichloromethane		50.0	51.6	ug/kg	0.383	3.27	20	
Bromomethane		50.0	42.9	ug/kg	0.183	14.1	20	
2-Butanone		50.0	52.3	ug/kg	0.169	4.50	20	
n-Butylbenzene		50.0	51.3	ug/kg	3.06	2.61	20	
sec-Butylbenzene		50.0	49.5	ug/kg	3.76	0.971	20	
tert-Butylbenzene		50.0	48.0	ug/kg	0.594	3.94	20	
Carbon Disulfide		50.0	54.2	ug/kg	0.781	8.47	20	
Carbon Tetrachloride		50.0	56.1	ug/kg	0.452	12.2	20	
Dibromochloromethane		50.0	48.8	ug/kg	0.410	2.37	20	
Chloroethane		50.0	54.7	ug/kg	0.160	9.46	20	
2-Chlorotoluene		50.0	46.9	ug/kg	2.47	6.14	20	
4-Chlorotoluene		50.0	49.5	ug/kg	2.41	0.944	20	
1,2-Dibromo-3-Chloropropane		50.0	44.2	ug/kg	0.194	11.6	20	
1,2-Dibromoethane		50.0	48.1	ug/kg	0.320	3.81	20	
Dibromomethane		50.0	49.7	ug/kg	0.173	0.585	20	
1,2-Dichlorobenzene		50.0	45.9	ug/kg	1.57	8.25	20	
1,3-Dichlorobenzene		50.0	45.3	ug/kg	1.67	9.39	20	
1,4-Dichlorobenzene		50.0	45.4	ug/kg	1.67	9.24	20	
Dichlorodifluoromethane		50.0	45.0	ug/kg	0.306	10.1	20	
1,2-Dichloroethane		50.0	53.5	ug/kg	0.453	7.08	20	
cis-1,2-Dichloroethene		50.0	53.2	ug/kg	0.290	6.31	20	
trans-1,2-Dichloroethene		50.0	54.8	ug/kg	0.457	9.68	20	
1,3-Dichloropropane		50.0	49.4	ug/kg	0.494	1.16	20	
2,2-Dichloropropane		50.0	57.8	ug/kg	0.451	15.5	20	
cis-1,3-Dichloropropene		50.0	52.5	ug/kg	0.405	4.93	20	
trans-1,3-Dichloropropene		50.0	51.0	ug/kg	0.525	2.09	20	

CCV - Modified 03/05/2008
PDF File ID: 4661488
Report generated 03/14/2016 11:22

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030235 Run Date: 03/07/2016 Sample ID: WG559980-02
Instrument ID: HPMS9 Run Time: 15:17 Method: 8260B
File ID: 9M973121 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG559982 Cal ID: HPMS9 - 25-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	53.5	ug/kg	0.366	7.00	20	
2-Hexanone		50.0	50.6	ug/kg	0.303	1.27	20	
Hexachlorobutadiene		50.0	48.7	ug/kg	0.623	2.68	20	
Isopropylbenzene		50.0	53.7	ug/kg	1.77	7.45	20	
p-Isopropyltoluene		50.0	49.5	ug/kg	3.18	0.988	20	
4-Methyl-2-Pentanone		50.0	51.2	ug/kg	0.118	2.32	20	
Methylene Chloride		50.0	50.0	ug/kg	0.254	0.0730	20	
Naphthalene		50.0	45.4	ug/kg	2.76	9.27	20	
n-Propylbenzene		50.0	49.7	ug/kg	3.91	0.537	20	
Styrene		50.0	52.2	ug/kg	1.09	4.48	20	
1,1,1,2-Tetrachloroethane		50.0	50.9	ug/kg	0.384	1.81	20	
Tetrachloroethene		50.0	51.9	ug/kg	0.318	3.87	20	
1,2,3-Trichlorobenzene		50.0	46.2	ug/kg	1.09	7.69	20	
1,2,4-Trichlorobenzene		50.0	46.2	ug/kg	1.12	7.58	20	
1,1,1-Trichloroethane		50.0	54.9	ug/kg	0.477	9.88	20	
1,1,2-Trichloroethane		50.0	50.2	ug/kg	0.301	0.347	20	
Trichloroethene		50.0	53.5	ug/kg	0.324	6.92	20	
Trichlorofluoromethane		50.0	55.3	ug/kg	0.543	10.6	20	
1,2,3-Trichloropropane		50.0	46.9	ug/kg	0.270	6.12	20	
1,2,4-Trimethylbenzene		50.0	47.5	ug/kg	2.94	4.96	20	
1,3,5-Trimethylbenzene		50.0	48.4	ug/kg	2.85	3.27	20	
o-Xylene		50.0	52.4	ug/kg	0.642	4.74	20	
m-,p-Xylene		100	103	ug/kg	0.659	3.09	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4661488
Report generated 03/14/2016 11:22

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16030235
Instrument ID: HPMS9
Workgroup (AAB#): WG559982

ICAL CCV Number: WG558732-02
CAL ID: HPMS9-25-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558732-02	NA	NA	183008	378926	517775
Upper Limit	NA	NA	366016	757852	1035550
Lower Limit	NA	NA	91504	189463	258888
L16030235-01	1.00	01	172842	340891	455762
L16030235-02	1.00	01	176046	325796	427501
L16030235-03	1.00	01	176771	336256	449854
L16030235-04	1.00	01	188874	343186	441025
L16030235-05	1.00	01	186361	353597	457727
L16030235-06	1.00	01	160139	307448	402998
L16030235-07	1.00	01	144215	273935	372592
L16030235-08	1.00	01	167619	325813	430643
WG559982-01	1.00	01	193847	377724	512722
WG559982-02	1.00	01	201592	374762	497008

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4661489
Report generated 03/14/2016 11:22

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16030235
Instrument ID: HPMS9
Workgroup (AAB#): WG559982

ICAL CCV Number: WG558732-02
CAL ID: HPMS9-25-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558732-02	NA	NA	17.76	14.73	10.85
Upper Limit	NA	NA	18.26	15.23	11.35
Lower Limit	NA	NA	17.26	14.23	10.35
L16030235-01	1.00	01	17.75	14.72	10.85
L16030235-02	1.00	01	17.75	14.72	10.85
L16030235-03	1.00	01	17.75	14.72	10.85
L16030235-04	1.00	01	17.75	14.72	10.85
L16030235-05	1.00	01	17.75	14.72	10.85
L16030235-06	1.00	01	17.75	14.72	10.85
L16030235-07	1.00	01	17.75	14.72	10.85
L16030235-08	1.00	01	17.75	14.72	10.85
WG559982-01	1.00	01	17.75	14.72	10.85
WG559982-02	1.00	01	17.75	14.72	10.85

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4661491
Report generated: 03/14/2016 11:22

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030716\9M973127.D Vial: 7
Acq On : 7 Mar 2016 18:21 Operator: ADC
Sample : L16030235-01 A 8260 4.92g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 08 14:13:43 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	455762	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	340891	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	172842	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	118216	47.8517 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.70%		
43) 1,2-Dichloroethane-d4	10.45	65	158841	51.2444 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 102.48%		
58) Toluene-d8	12.82	98	425851	49.3881 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.78%		
79) p-Bromofluorobenzene	16.23	95	175980	52.2879 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 104.58%		

Target Compounds					Qvalue
13) Acetone	6.39	43	21229	16.8432 ug/kg	90
29) 2-Butanone	9.03	43	2707	1.8419 ug/kg#	58
36) Tetrahydrofuran	9.78	42	976	1.0302 ug/kg#	43
56) Dimethyl Disulfide	12.83	94	12524	3.5426 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M973127.D 8260SL.M Tue Mar 08 14:13:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030716\9M973127.D Vial: 7
Acq On : 7 Mar 2016 18:21 Operator: ADC
Sample : L16030235-01 A 8260 4.92g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 8 14:13 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

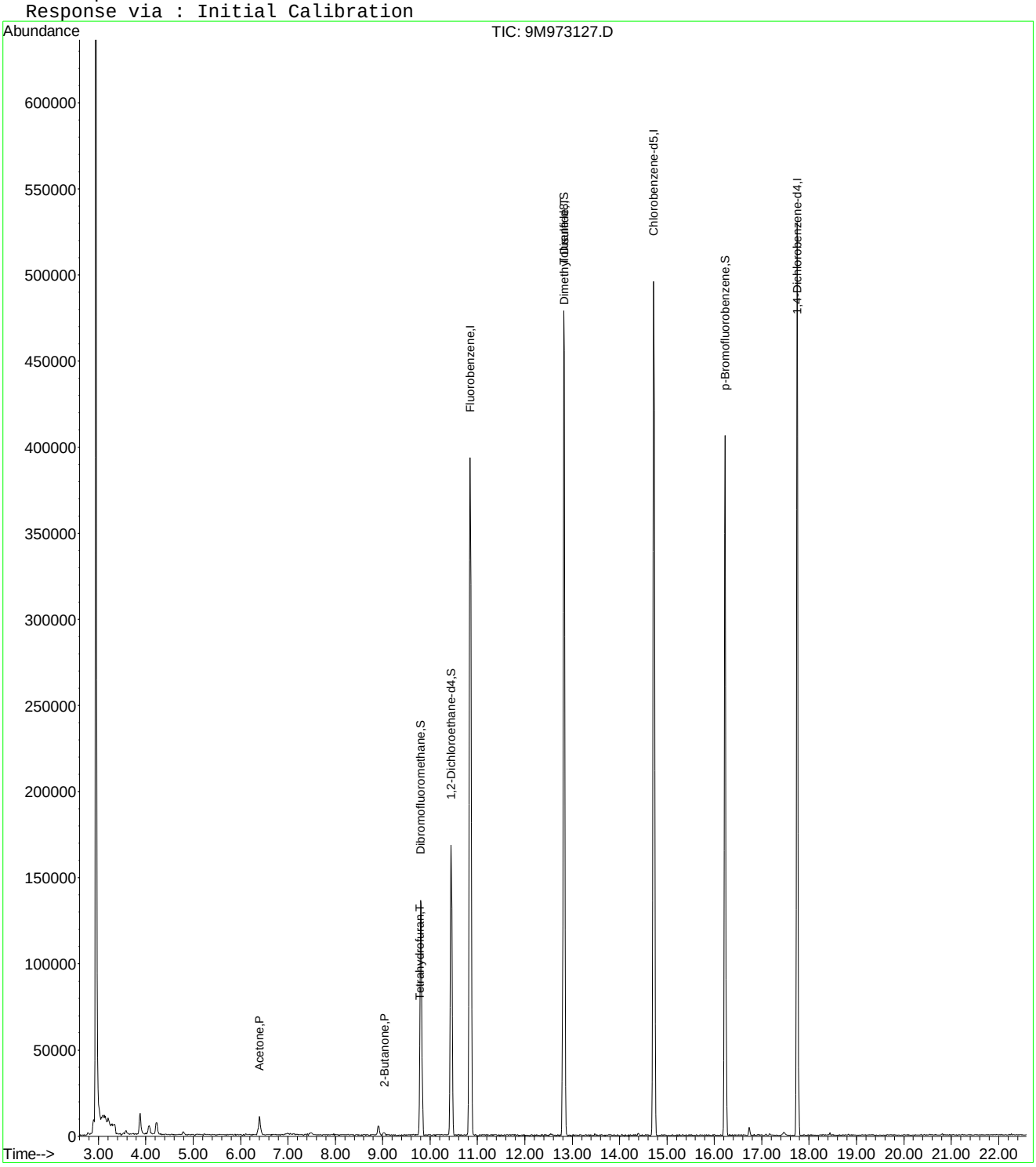

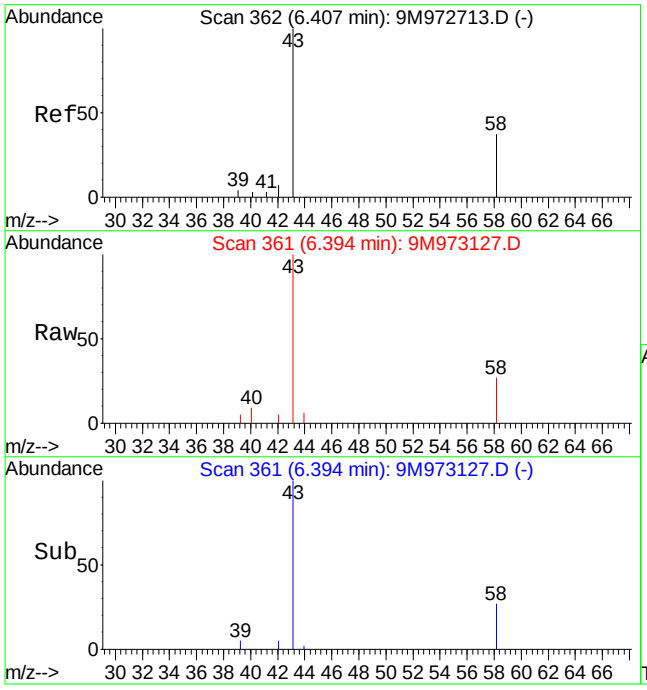

#13
Acetone
Concen: 16.84 ug/kg
RT: 6.39 min Scan# 361
Delta R.T. -0.02 min
Lab File: 9M973127.D
Acq: 7 Mar 2016 18:21

Tgt Ion: 43 Resp: 21229

Ion	Ratio	Lower	Upper
43	100		
58	33.6	16.9	39.3

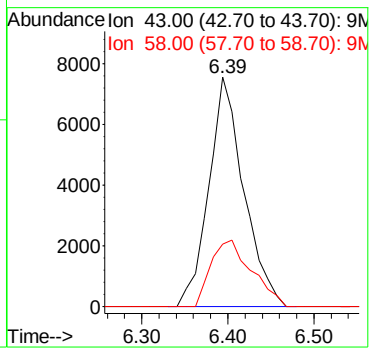

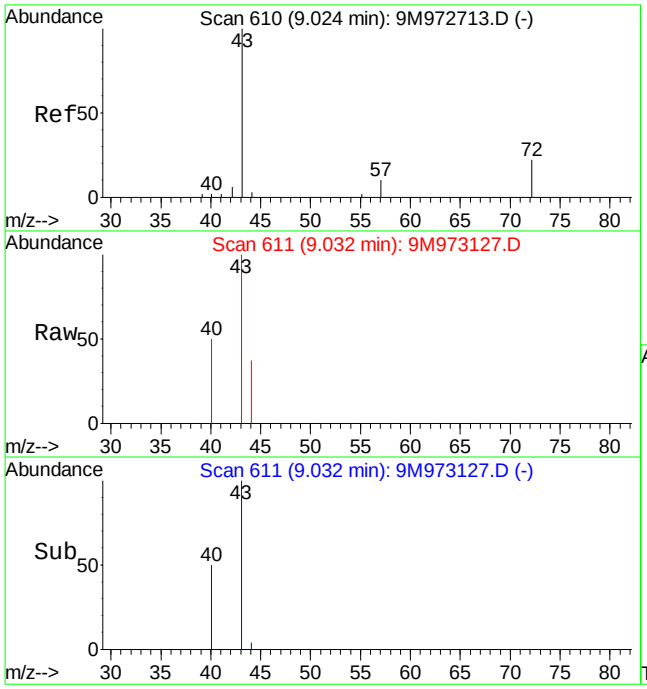

#29
2-Butanone
Concen: 1.84 ug/kg
RT: 9.03 min Scan# 611
Delta R.T. 0.00 min
Lab File: 9M973127.D
Acq: 7 Mar 2016 18:21

Tgt Ion: 43 Resp: 2707

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

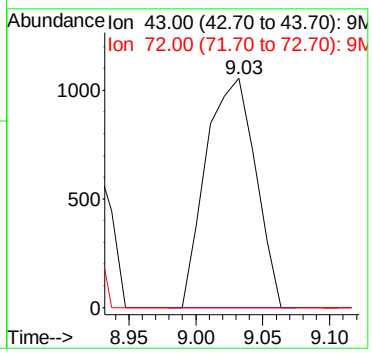

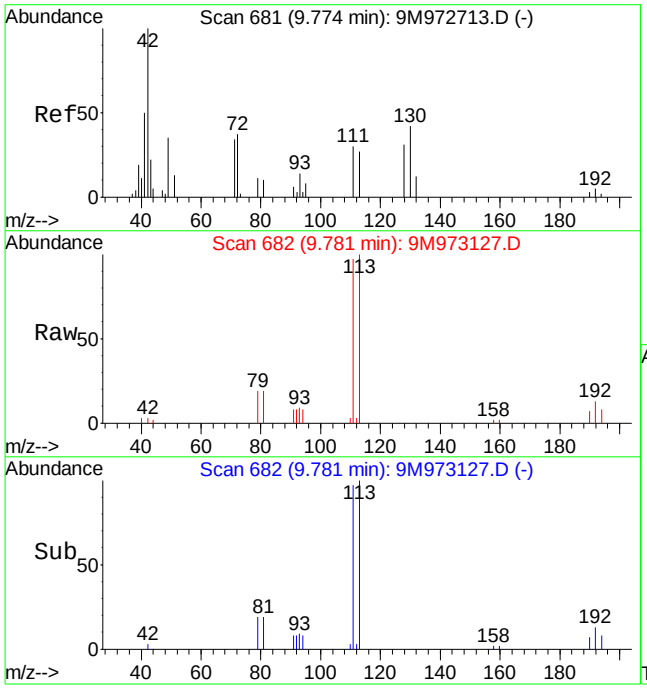

#36
Tetrahydrofuran
Concen: 1.03 ug/kg
RT: 9.78 min Scan# 682
Delta R.T. 0.00 min
Lab File: 9M973127.D
Acq: 7 Mar 2016 18:21

Tgt Ion: 42 Resp: 976

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

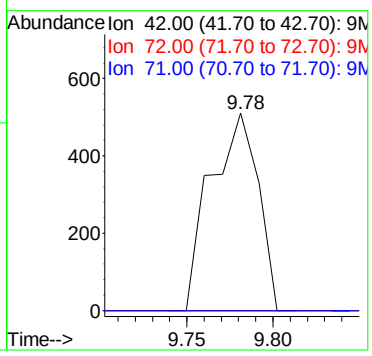

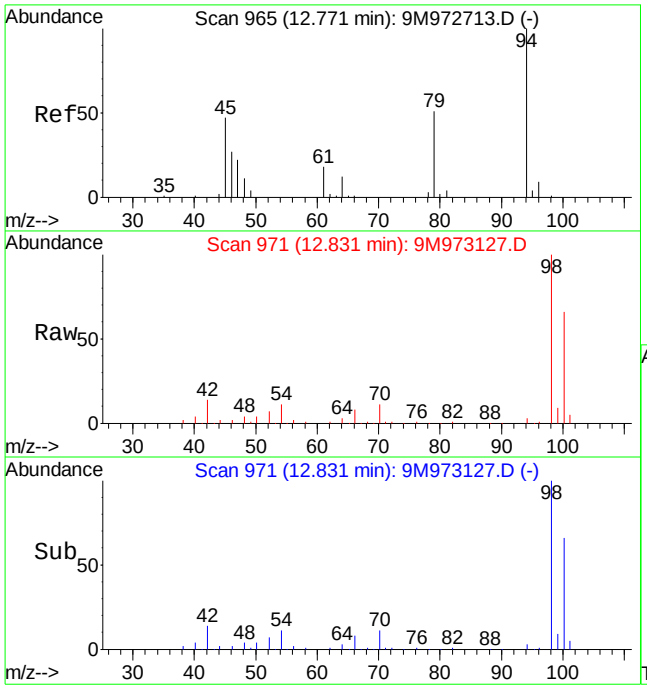

#56
Dimethyl Disulfide
Concen: 3.54 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.07 min
Lab File: 9M973127.D
Acq: 7 Mar 2016 18:21

Tgt Ion: 94 Resp: 12524

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

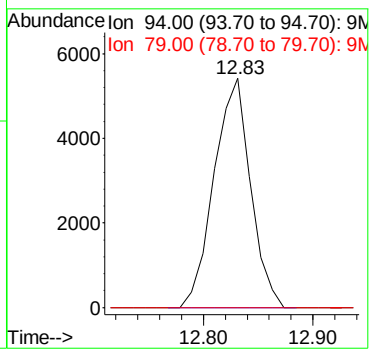

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030716\9M973128.D Vial: 8
Acq On : 7 Mar 2016 18:51 Operator: ADC
Sample : L16030235-02 A 8260 45.25g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 08 14:13:44 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	427501	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	325796	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	176046	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	115595	49.8840 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.76%		
43) 1,2-Dichloroethane-d4	10.45	65	163598	56.2681 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 112.54%		
58) Toluene-d8	12.82	98	400551	48.6062 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 97.22%		
79) p-Bromofluorobenzene	16.23	95	170823	49.8319 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 99.66%		

Target Compounds					Qvalue
13) Acetone	6.40	43	7121	4.4091 ug/kg	87
15) Tert-Butyl Alcohol	6.75	59	206	0.4713 ug/kg#	58
29) 2-Butanone	9.02	43	910	0.6601 ug/kg#	58
32) cis-1,2-Dichloroethene	9.32	96	2548	1.0912 ug/kg	99
36) Tetrahydrofuran	9.79	42	1083	1.2188 ug/kg#	43
47) Trichloroethene	11.35	130	5687	2.1931 ug/kg	94
56) Dimethyl Disulfide	12.83	94	11260	3.3956 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M973128.D 8260SL.M Tue Mar 08 14:13:44 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030716\9M973128.D Vial: 8
Acq On : 7 Mar 2016 18:51 Operator: ADC
Sample : L16030235-02 A 8260 45.25g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 8 14:13 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

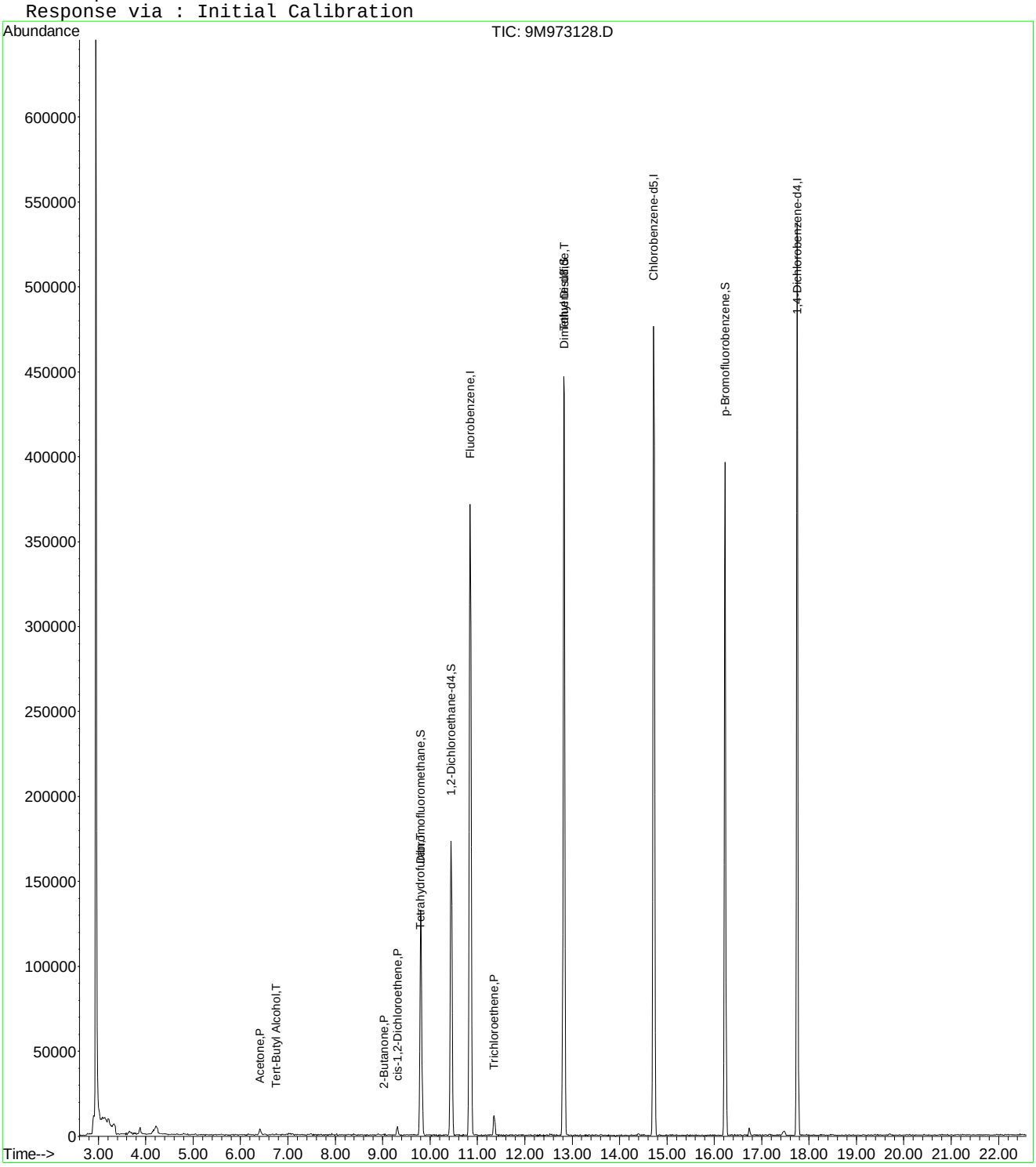

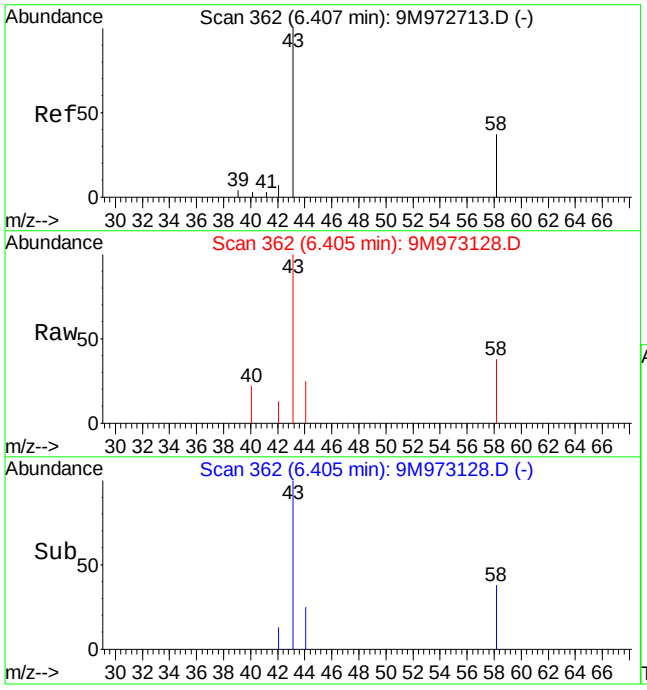

#13
Acetone
Concen: 4.41 ug/kg
RT: 6.40 min Scan# 362
Delta R.T. -0.01 min
Lab File: 9M973128.D
Acq: 7 Mar 2016 18:51

Tgt Ion: 43 Resp: 7121

Ion	Ratio	Lower	Upper
43	100		
58	34.8	16.9	39.3

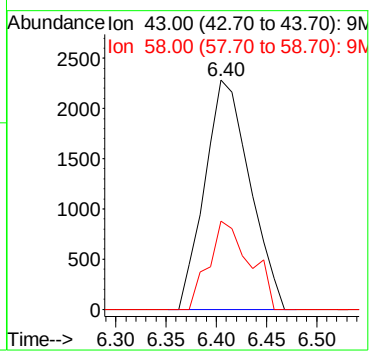

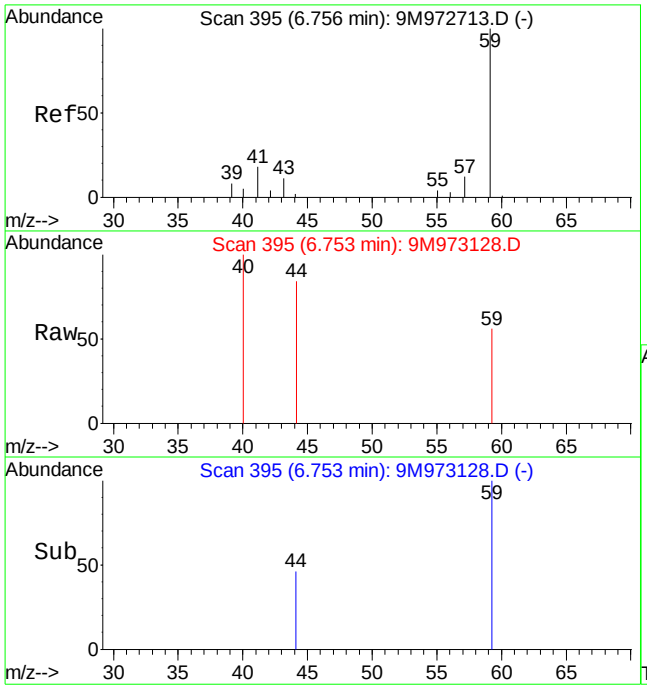

#15
Tert-Butyl Alcohol
Concen: 0.47 ug/kg
RT: 6.75 min Scan# 395
Delta R.T. -0.01 min
Lab File: 9M973128.D
Acq: 7 Mar 2016 18:51

Tgt Ion: 59 Resp: 206

Ion	Ratio	Lower	Upper
59	100		
41	0.0	14.1	32.9#
57	0.0	6.4	15.0#

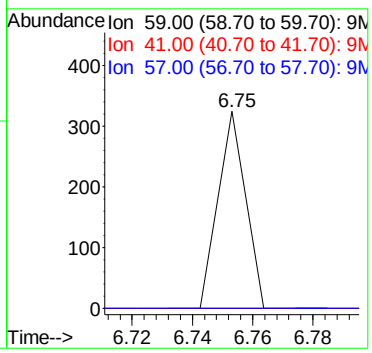

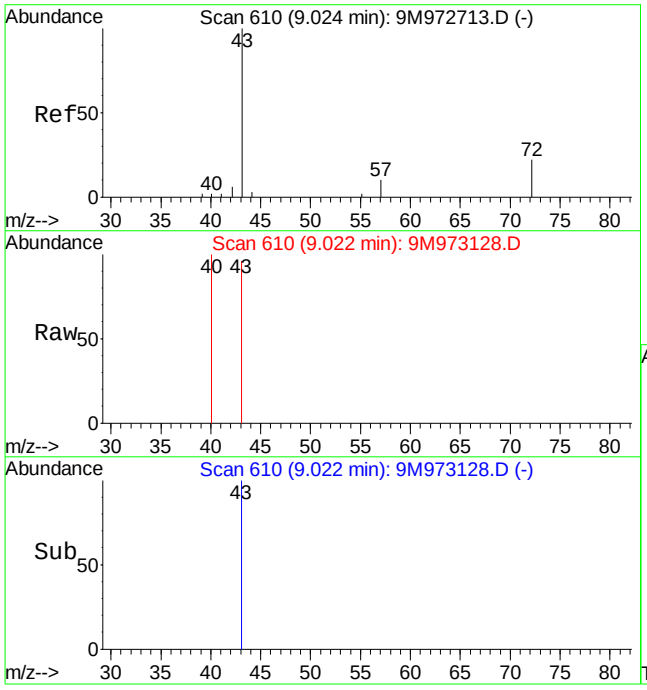

#29
2-Butanone
Concen: 0.66 ug/kg
RT: 9.02 min Scan# 610
Delta R.T. -0.01 min
Lab File: 9M973128.D
Acq: 7 Mar 2016 18:51

Tgt Ion: 43 Resp: 910

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

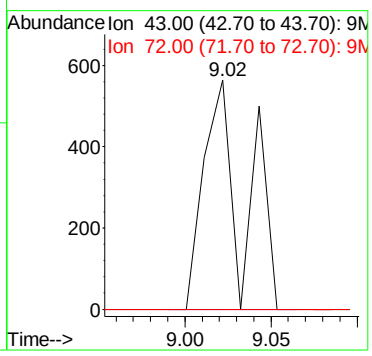

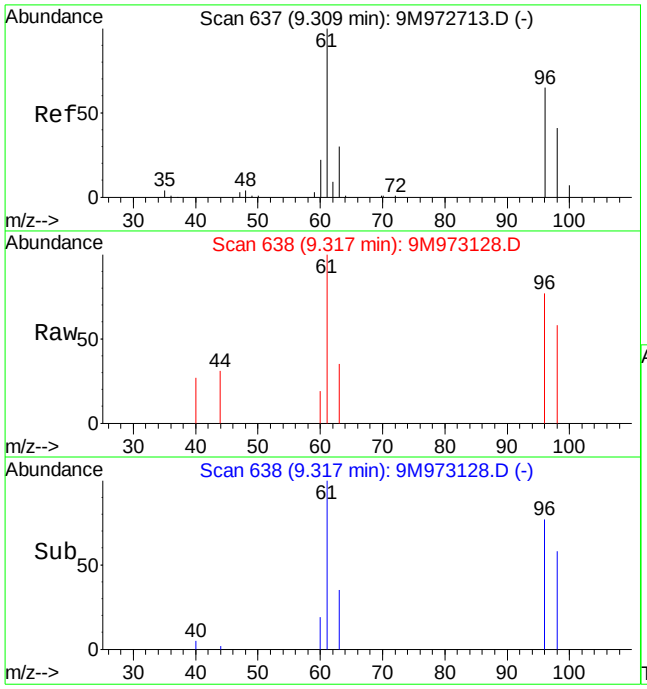

#32
cis-1,2-Dichloroethene
Concen: 1.09 ug/kg
RT: 9.32 min Scan# 638
Delta R.T. 0.01 min
Lab File: 9M973128.D
Acq: 7 Mar 2016 18:51

Tgt Ion: 96 Resp: 2548

Ion	Ratio	Lower	Upper
96	100		
61	172.5	102.6	239.4

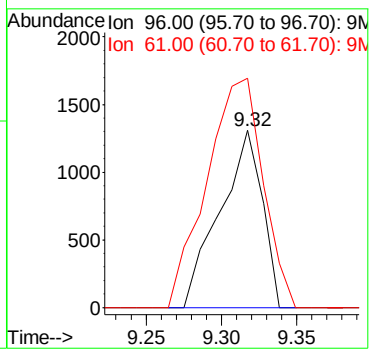

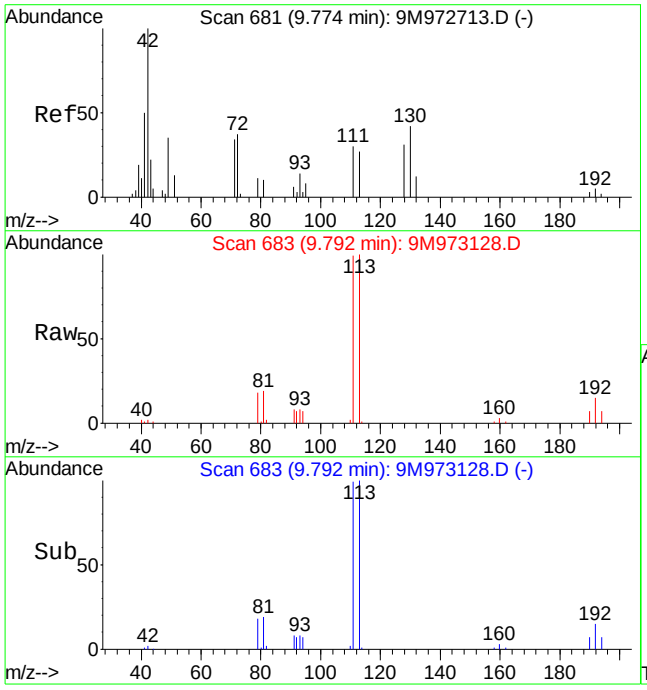

#36
Tetrahydrofuran
Concen: 1.22 ug/kg
RT: 9.79 min Scan# 683
Delta R.T. 0.01 min
Lab File: 9M973128.D
Acq: 7 Mar 2016 18:51

Tgt Ion: 42 Resp: 1083

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

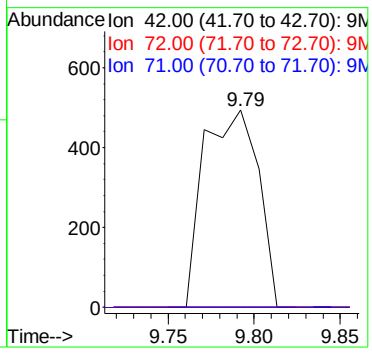

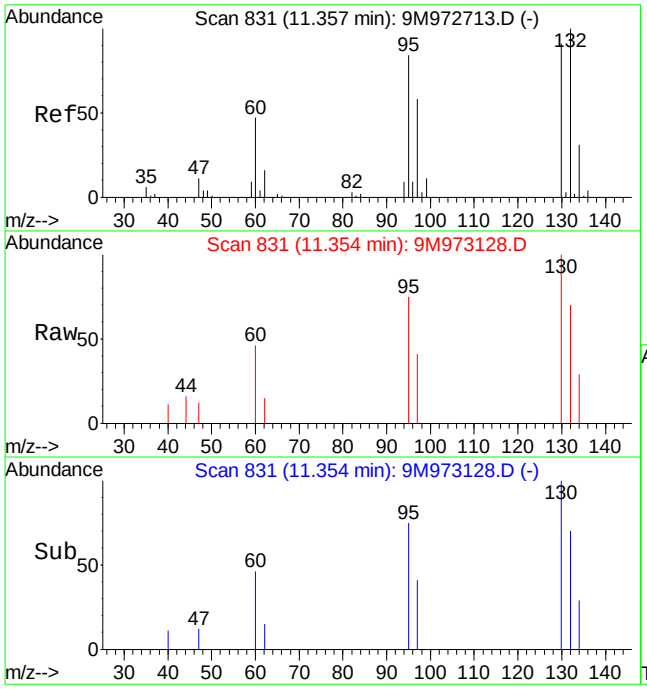

#47
Trichloroethene
Concen: 2.19 ug/kg
RT: 11.35 min Scan# 831
Delta R.T. 0.00 min
Lab File: 9M973128.D
Acq: 7 Mar 2016 18:51

Tgt Ion:130 Resp: 5687

Ion	Ratio	Lower	Upper
130	100		
132	86.6	56.5	131.7
95	95.8	55.4	129.4

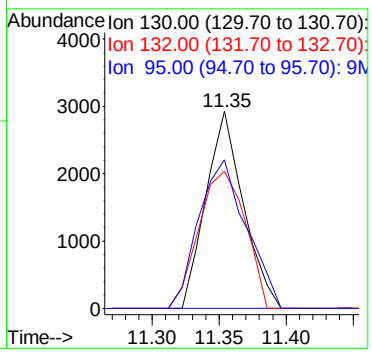

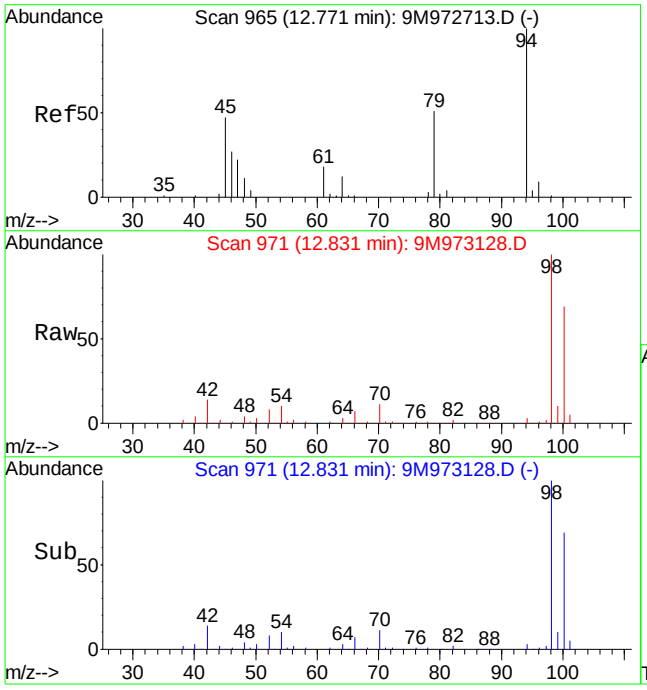

#56
Dimethyl Disulfide
Concen: 3.40 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.07 min
Lab File: 9M973128.D
Acq: 7 Mar 2016 18:51

Tgt Ion: 94 Resp: 11260

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

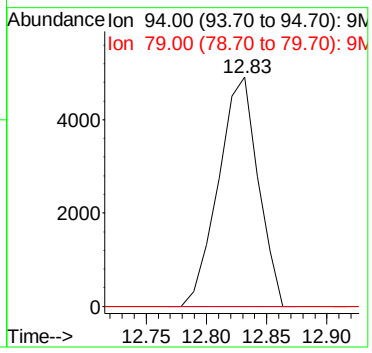

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030716\9M973129.D Vial: 9
Acq On : 7 Mar 2016 19:22 Operator: ADC
Sample : L16030235-03 A RS 8260 5.48g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 08 14:13:45 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	449854	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	336256	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	176771	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	116795	47.8974 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.80%		
43) 1,2-Dichloroethane-d4	10.45	65	153312	50.1102 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.22%		
58) Toluene-d8	12.83	98	415185	48.8148 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 97.62%		
79) p-Bromofluorobenzene	16.23	95	170140	49.4291 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 98.86%		

Target Compounds

					Qvalue
13) Acetone	6.41	43	5371	2.4485 ug/kg	88
29) 2-Butanone	9.02	43	1283	0.8844 ug/kg#	58
36) Tetrahydrofuran	9.79	42	1253	1.3400 ug/kg#	43
47) Trichloroethene	11.35	130	12355	4.5278 ug/kg	90
56) Dimethyl Disulfide	12.82	94	12226	3.5037 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M973129.D 8260SL.M Tue Mar 08 14:13:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030716\9M973129.D Vial: 9
Acq On : 7 Mar 2016 19:22 Operator: ADC
Sample : L16030235-03 A RS 8260 5.48g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 8 14:13 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

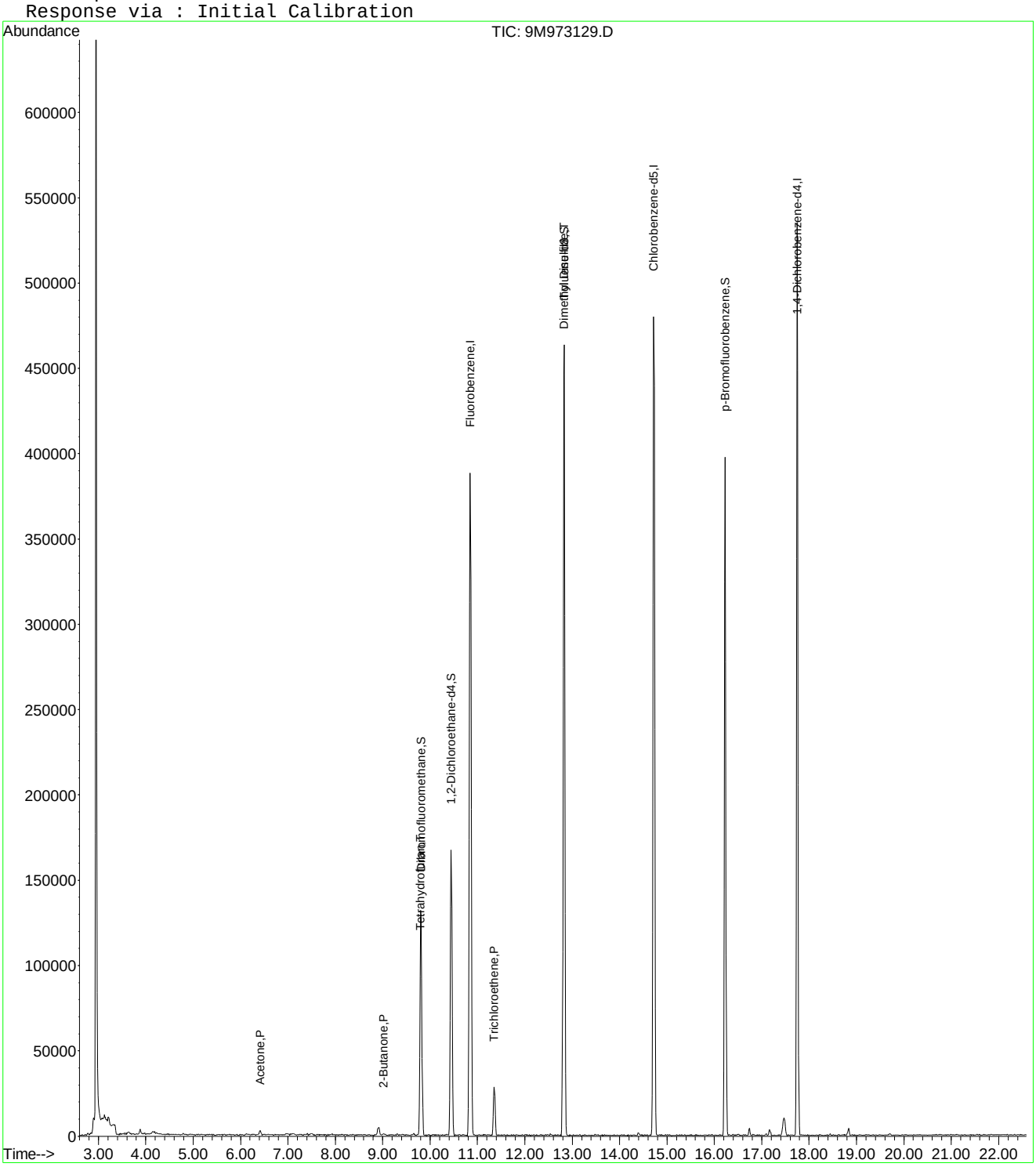

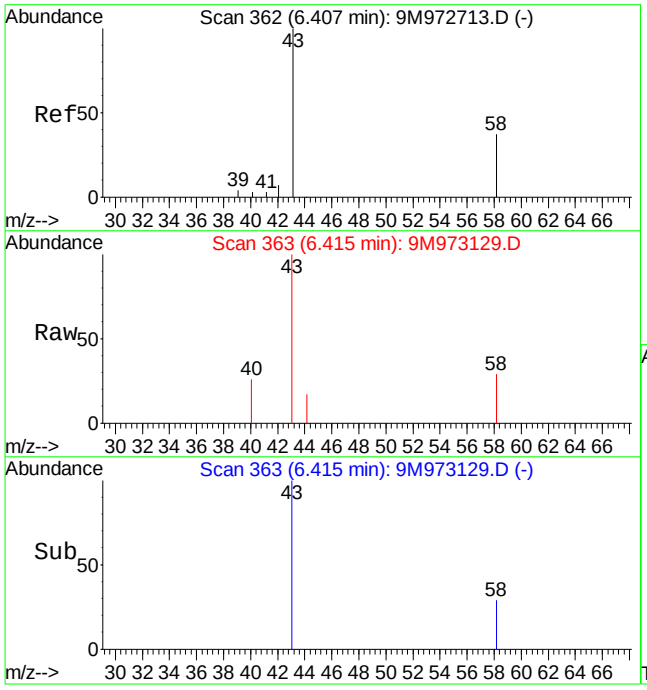

#13
Acetone
Concen: 2.45 ug/kg
RT: 6.41 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M973129.D
Acq: 7 Mar 2016 19:22

Tgt Ion: 43 Resp: 5371

Ion	Ratio	Lower	Upper
43	100		
58	21.8	16.9	39.3

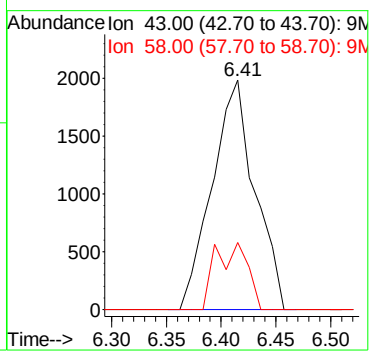

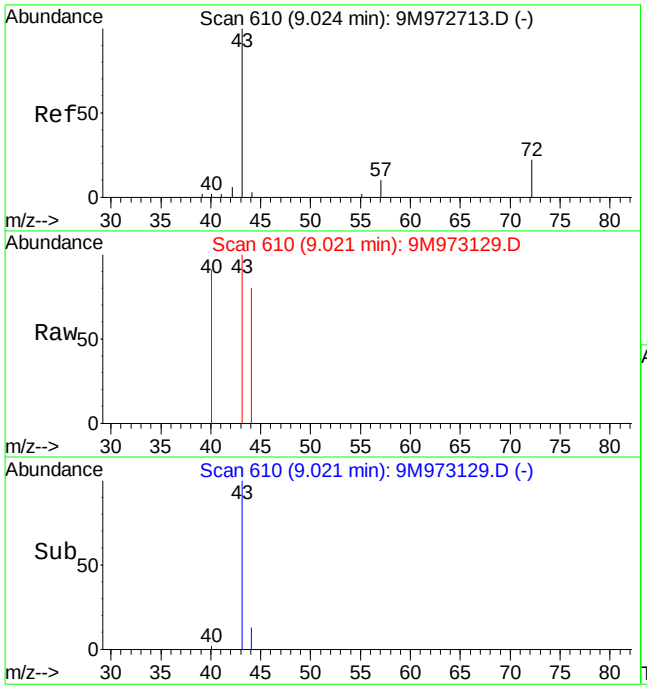

#29
2-Butanone
Concen: 0.88 ug/kg
RT: 9.02 min Scan# 610
Delta R.T. -0.01 min
Lab File: 9M973129.D
Acq: 7 Mar 2016 19:22

Tgt Ion: 43 Resp: 1283

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

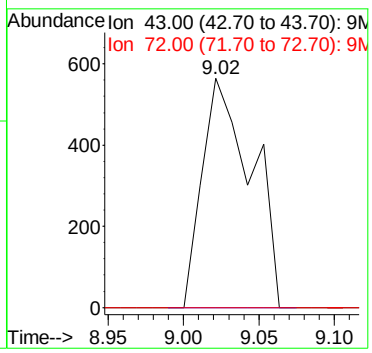

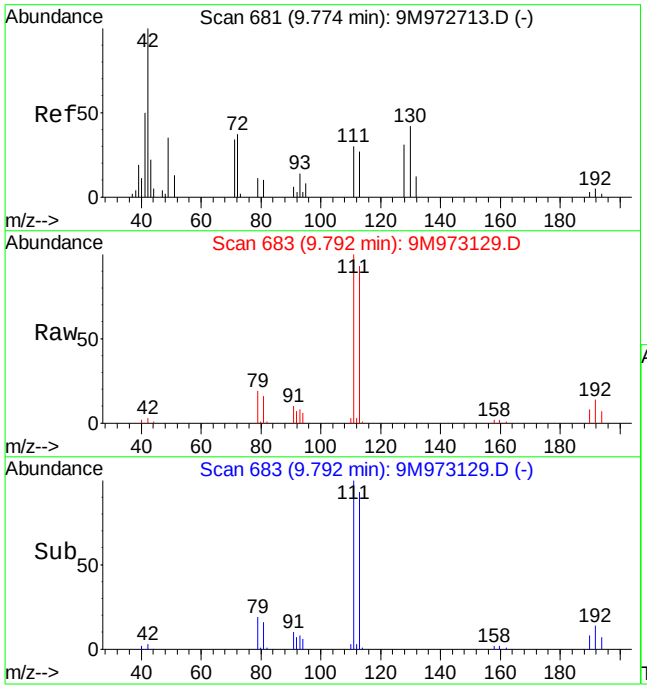

#36
Tetrahydrofuran
Concen: 1.34 ug/kg
RT: 9.79 min Scan# 683
Delta R.T. 0.01 min
Lab File: 9M973129.D
Acq: 7 Mar 2016 19:22

Tgt Ion: 42 Resp: 1253

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

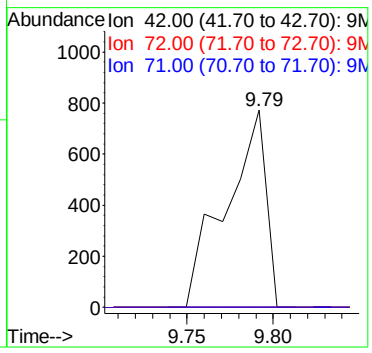

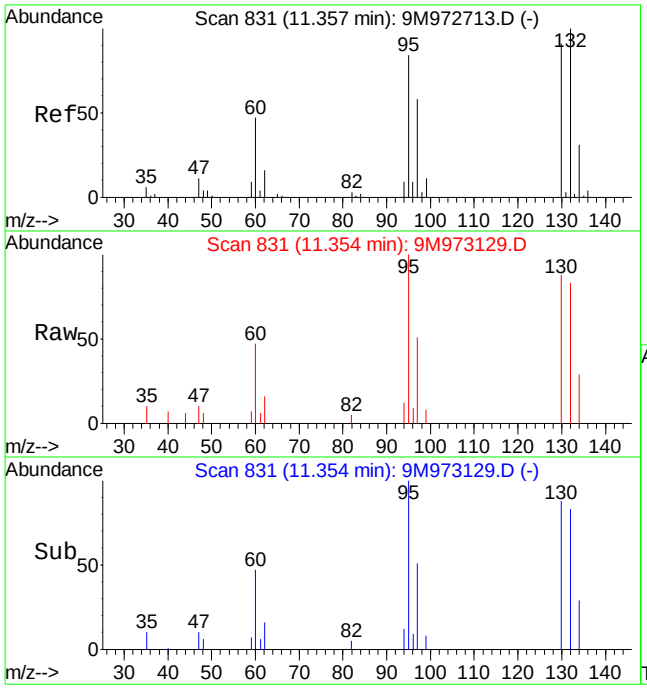

#47
Trichloroethene
Concen: 4.53 ug/kg
RT: 11.35 min Scan# 831
Delta R.T. 0.00 min
Lab File: 9M973129.D
Acq: 7 Mar 2016 19:22

Tgt Ion:130 Resp: 12355

Ion	Ratio	Lower	Upper
130	100		
132	100.2	56.5	131.7
95	106.0	55.4	129.4

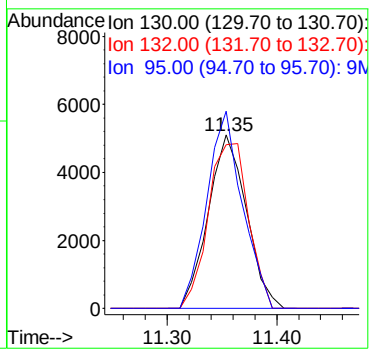

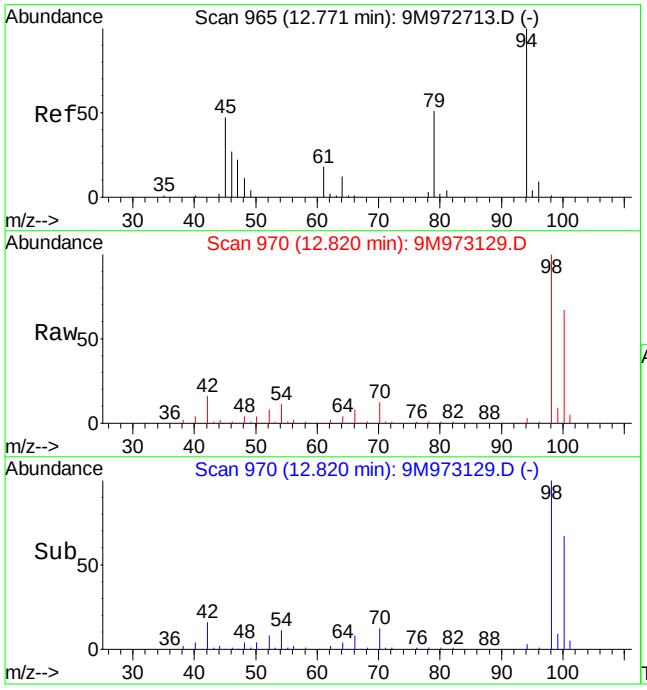

#56
Dimethyl Disulfide
Concen: 3.50 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M973129.D
Acq: 7 Mar 2016 19:22

Tgt Ion: 94 Resp: 12226

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

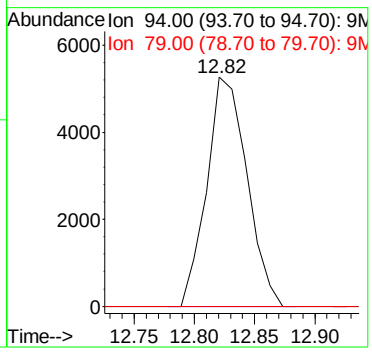

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030716\9M973133.D Vial: 13
Acq On : 7 Mar 2016 21:26 Operator: ADC
Sample : L16030235-04 A MS 8260 5.17g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 21:49:30 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	441025	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	343186	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.75	152	188874	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	116551	48.7542 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.50%		
43) 1,2-Dichloroethane-d4	10.44	65	154742	51.5901 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 103.18%		
58) Toluene-d8	12.83	98	416451	47.9749 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 95.94%		
79) p-Bromofluorobenzene	16.23	95	177077	48.1479 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 96.30%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	76258	25.3690 ug/kg	100
3) Chloromethane	3.74	50	58272	20.1955 ug/kg	99
4) Vinyl Chloride	3.99	62	60518	20.9517 ug/kg	97
6) Bromomethane	4.88	94	33343	17.7736 ug/kg	94
7) Chloroethane	5.04	64	27416	21.3050 ug/kg	97
8) Trichlorofluoromethane	5.53	101	89002	20.5445 ug/kg	98
10) Isoprene	6.09	67	53979	20.8704 ug/kg	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	47532	21.2752 ug/kg	96
13) Acetone	6.41	43	22813	18.9825 ug/kg	99
14) 1,1-Dichloroethene	6.61	61	84392	20.4769 ug/kg	96
16) Dimethyl Sulfide	6.88	62	46533	26.7149 ug/kg	92
17) Iodomethane	7.13	142	15032	14.3853 ug/kg	89
18) Methyl acetate	7.15	43	39395	17.5833 ug/kg	94
19) Methylene Chloride	7.39	84	43866	19.5432 ug/kg	92
20) Carbon Disulfide	7.45	76	105867	16.6751 ug/kg	100
21) Acrylonitrile	7.58	53	19875	17.9321 ug/kg	96
22) Methyl Tert Butyl Ether	7.62	73	120050	18.7791 ug/kg	96
23) trans-1,2-Dichloroethene	7.85	61	76481	20.8226 ug/kg	95
24) n-Hexane	7.92	57	74558	19.6804 ug/kg	98
27) 1,1-Dichloroethane	8.47	63	87608	18.9901 ug/kg	99
29) 2-Butanone	9.02	43	26668	18.7514 ug/kg	93
31) 2,2-Dichloropropane	9.24	77	63350	18.3978 ug/kg	98
32) cis-1,2-Dichloroethene	9.32	96	49590	20.5855 ug/kg	91
33) Chloroform	9.52	83	84692	19.9845 ug/kg	100
34) 1-Bromopropane	9.65	122	10232	28.3181 ug/kg	96
35) Bromochloromethane	9.75	130	30678	19.6047 ug/kg	89
36) Tetrahydrofuran	9.78	42	1210	1.3199 ug/kg#	43
38) 1,1,1-Trichloroethane	10.04	97	78120	20.3837 ug/kg	96
39) Cyclohexane	10.08	56	84109	20.1296 ug/kg	97
40) 1,1-Dichloropropene	10.24	75	58757	19.4837 ug/kg	98
41) Tert-Amyl-Methyl ether	10.24	73	9403	1.5812 ug/kg#	45
42) Carbon Tetrachloride	10.39	117	69123	19.4546 ug/kg	99
45) 1,2-Dichloroethane	10.56	62	78897	21.1652 ug/kg	99
46) Benzene	10.60	78	164415	19.4740 ug/kg	98
47) Trichloroethene	11.35	130	66769	24.9590 ug/kg	98
48) Methylcyclohexane	11.44	83	68335	20.3669 ug/kg	94
49) 1,2-Dichloropropane	11.56	63	50571	21.8124 ug/kg	97
51) Bromodichloromethane	11.87	83	64496	19.7391 ug/kg	99
52) Dibromomethane	11.96	174	27908	18.1673 ug/kg	100
53) 2-Chloroethyl Vinyl Ether	12.15	63	8301	15.0542 ug/kg	88

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030716\9M973133.D Vial: 13
Acq On : 7 Mar 2016 21:26 Operator: ADC
Sample : L16030235-04 A MS 8260 5.17g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 21:49:30 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
54)	4-Methyl-2-Pentanone	12.20	58	18385	18.0667 ug/kg	98
55)	cis-1,3-Dichloropropene	12.50	75	69873	20.5259 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	70015	20.4665 ug/kg	91
59)	Toluene	12.92	91	187899	19.1627 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	48423	17.8161 ug/kg	97
61)	trans-1,3-Dichloropropene	13.10	75	64790	18.3455 ug/kg	97
62)	1,1,2-Trichloroethane	13.31	97	38087	18.4904 ug/kg	94
63)	2-Hexanone	13.25	43	34761	16.9021 ug/kg	97
64)	1,3-Dichloropropane	13.62	76	67139	19.5611 ug/kg	91
65)	Tetrachloroethene	13.75	164	39187	18.6420 ug/kg	96
66)	Dibromochloromethane	14.01	129	51619	17.9311 ug/kg	100
67)	1,2-Dibromoethane	14.28	107	41165	18.0174 ug/kg	98
68)	1-Chlorohexane	14.35	91	54799	18.9512 ug/kg	92
69)	Chlorobenzene	14.77	112	133397	19.3568 ug/kg	96
70)	1,1,1,2-Tetrachloroethane	14.80	131	49573	19.1548 ug/kg	98
71)	Ethylbenzene	14.79	106	70120	19.7497 ug/kg	98
72)	m-,p-Xylene	14.89	106	173723	39.6203 ug/kg	97
73)	o-Xylene	15.45	106	83913	19.9422 ug/kg	98
74)	Styrene	15.49	104	137561	19.1978 ug/kg	99
75)	Bromoform	15.98	173	30370	16.0679 ug/kg	98
76)	Isopropylbenzene	15.88	105	225143	19.9310 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	42000	14.6591 ug/kg	99
80)	1,2,3-Trichloropropane	16.29	110	18579	17.0988 ug/kg	76
81)	trans-1,4-Dichloro-2-Buten	16.33	53	15364	14.0278 ug/kg	94
82)	n-Propylbenzene	16.39	91	264724	17.8306 ug/kg	98
83)	Bromobenzene	16.52	156	55849	15.9347 ug/kg	93
84)	1,3,5-Trimethylbenzene	16.57	105	192006	17.2288 ug/kg	98
85)	2-Chlorotoluene	16.66	91	169842	17.0560 ug/kg	100
86)	4-Chlorotoluene	16.70	91	163068	17.7123 ug/kg	97
87)	a-Methylstyrene	16.98	118	90621	17.8458 ug/kg	97
88)	tert-Butylbenzene	17.04	134	42016	17.9827 ug/kg	87
89)	1,2,4-Trimethylbenzene	17.09	105	188971	16.1913 ug/kg	99
90)	sec-Butylbenzene	17.30	105	249679	17.3950 ug/kg	99
91)	p-Isopropyltoluene	17.46	119	201403	16.6268 ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	107216	15.3920 ug/kg	97
93)	1,4-Dichlorobenzene	17.79	146	108417	15.5690 ug/kg	96
94)	n-Butylbenzene	17.99	91	184114	16.3477 ug/kg	98
95)	1,2-Dichlorobenzene	18.30	146	103649	16.0367 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	10284	12.3947 ug/kg	85
97)	1,2,4-Trichlorobenzene	20.43	180	62689	13.6631 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	39022	16.1343 ug/kg	98
99)	Naphthalene	20.81	128	146077	12.6934 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.11	180	63511	14.2715 ug/kg	98

(#) = qualifier out of range (m) = manual integration
9M973133.D 8260SL.M Mon Mar 07 21:49:30 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030716\9M973133.D Vial: 13
Acq On : 7 Mar 2016 21:26 Operator: ADC
Sample : L16030235-04 A MS 8260 5.17g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 7 21:49 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

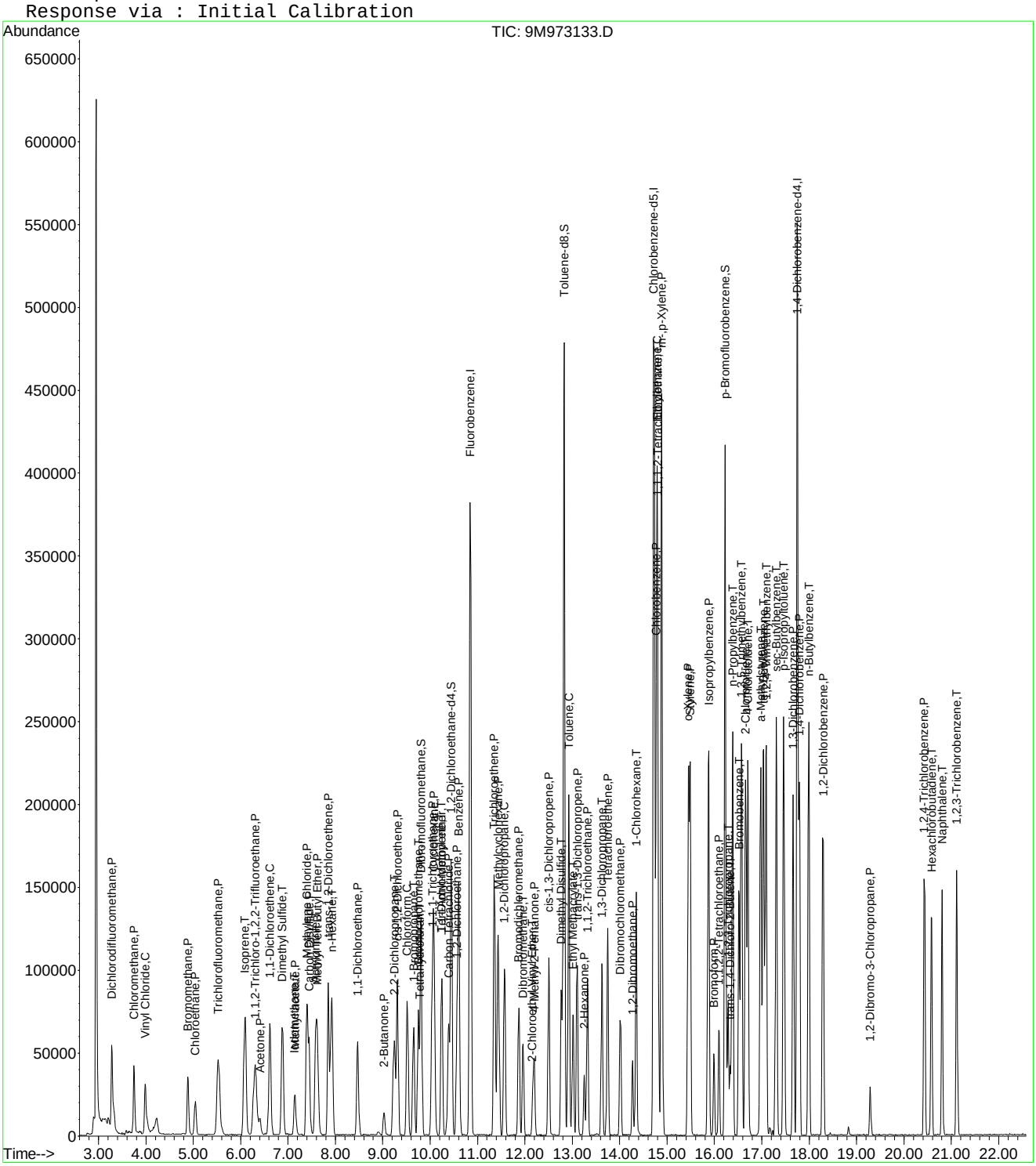

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030716\9M973134.D Vial: 14
Acq On : 7 Mar 2016 21:58 Operator: ADC
Sample : L16030235-05 A MSD 8260 5.07g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 22:20:40 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	457727	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	353597	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	186361	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	119653	48.2255 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.46%		
43) 1,2-Dichloroethane-d4	10.45	65	155219	49.8609 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.72%		
58) Toluene-d8	12.82	98	426736	47.7123 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 95.42%		
79) p-Bromofluorobenzene	16.23	95	180478	49.7344 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 99.46%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	83656	26.8146 ug/kg	97
3) Chloromethane	3.75	50	65733	21.9500 ug/kg	100
4) Vinyl Chloride	3.99	62	67446	22.4981 ug/kg	100
6) Bromomethane	4.89	94	36875	18.9391 ug/kg	100
7) Chloroethane	5.05	64	28249	21.1513 ug/kg	96
8) Trichlorofluoromethane	5.52	101	94423	21.0006 ug/kg	98
10) Isoprene	6.09	67	66778	24.8769 ug/kg	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	51862	22.3663 ug/kg	96
13) Acetone	6.41	43	24724	19.9331 ug/kg	97
14) 1,1-Dichloroethene	6.62	61	90820	21.2325 ug/kg	97
16) Dimethyl Sulfide	6.88	62	56169	31.0704 ug/kg	92
17) Iodomethane	7.14	142	19241	17.0885 ug/kg	92
18) Methyl acetate	7.15	43	44190	19.0038 ug/kg	96
19) Methylene Chloride	7.40	84	46535	19.9758 ug/kg	88
20) Carbon Disulfide	7.45	76	123852	18.7961 ug/kg	99
21) Acrylonitrile	7.59	53	23819	20.7064 ug/kg	96
22) Methyl Tert Butyl Ether	7.61	73	140835	21.2265 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	85515	22.4326 ug/kg	95
24) n-Hexane	7.93	57	90449	23.0039 ug/kg	99
27) 1,1-Dichloroethane	8.48	63	97068	20.2730 ug/kg	98
29) 2-Butanone	9.03	43	29929	20.2764 ug/kg	94
31) 2,2-Dichloropropane	9.25	77	68283	19.1068 ug/kg	100
32) cis-1,2-Dichloroethene	9.31	96	53744	21.4958 ug/kg	96
33) Chloroform	9.52	83	91641	20.8351 ug/kg	98
34) 1-Bromopropane	9.66	122	11504	30.5913 ug/kg	99
35) Bromochloromethane	9.75	130	32114	19.7735 ug/kg	90
36) Tetrahydrofuran	9.77	42	941	0.9890 ug/kg#	43
38) 1,1,1-Trichloroethane	10.05	97	85344	21.4561 ug/kg	98
39) Cyclohexane	10.08	56	102792	23.7033 ug/kg	97
40) 1,1-Dichloropropene	10.25	75	64923	20.7428 ug/kg	96
41) Tert-Amyl-Methyl ether	10.25	73	9726	1.5759 ug/kg#	45
42) Carbon Tetrachloride	10.40	117	77786	21.0940 ug/kg	98
45) 1,2-Dichloroethane	10.56	62	88081	22.7667 ug/kg	97
46) Benzene	10.61	78	183280	20.9163 ug/kg	99
47) Trichloroethene	11.36	130	69992	25.2091 ug/kg	97
48) Methylcyclohexane	11.43	83	82483	23.6866 ug/kg	96
49) 1,2-Dichloropropane	11.57	63	53656	22.2985 ug/kg	97
51) Bromodichloromethane	11.87	83	70361	20.7483 ug/kg	99
52) Dibromomethane	11.96	174	29753	18.6616 ug/kg	94
53) 2-Chloroethyl Vinyl Ether	12.16	63	9392	16.1561 ug/kg	94

(#) = qualifier out of range (m) = manual integration
9M973134.D 8260SL.M Mon Mar 07 22:20:41 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030716\9M973134.D Vial: 14
Acq On : 7 Mar 2016 21:58 Operator: ADC
Sample : L16030235-05 A MSD 8260 5.07g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 22:20:40 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
54)	4-Methyl-2-Pentanone	12.19	58	21103	19.9809 ug/kg	95
55)	cis-1,3-Dichloropropene	12.51	75	76093	21.5375 ug/kg	98
56)	Dimethyl Disulfide	12.77	94	83231	23.4420 ug/kg	92
59)	Toluene	12.93	91	205443	20.3350 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	57301	20.4618 ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	69628	19.1349 ug/kg	98
62)	1,1,2-Trichloroethane	13.32	97	41298	19.4589 ug/kg	94
63)	2-Hexanone	13.26	43	41107	19.3993 ug/kg	95
64)	1,3-Dichloropropane	13.63	76	72264	20.4344 ug/kg	87
65)	Tetrachloroethene	13.74	164	42531	19.6371 ug/kg	98
66)	Dibromochloromethane	14.02	129	54744	18.4567 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	44930	19.0863 ug/kg	95
68)	1-Chlorohexane	14.35	91	66471	22.3110 ug/kg	93
69)	Chlorobenzene	14.78	112	144090	20.2928 ug/kg	96
70)	1,1,1,2-Tetrachloroethane	14.81	131	53254	19.9712 ug/kg	100
71)	Ethylbenzene	14.80	106	76518	20.9172 ug/kg	98
72)	m-,p-Xylene	14.89	106	190731	42.2185 ug/kg	100
73)	o-Xylene	15.45	106	92979	21.4461 ug/kg	99
74)	Styrene	15.49	104	153744	20.8246 ug/kg	98
75)	Bromoform	15.99	173	32715	16.7990 ug/kg	98
76)	Isopropylbenzene	15.87	105	250100	21.4884 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	45090	15.9498 ug/kg	99
80)	1,2,3-Trichloropropane	16.30	110	18890	17.6194 ug/kg	87
81)	trans-1,4-Dichloro-2-Buten	16.33	53	17970	16.6284 ug/kg	92
82)	n-Propylbenzene	16.38	91	295230	20.1535 ug/kg	99
83)	Bromobenzene	16.52	156	62083	17.9522 ug/kg	94
84)	1,3,5-Trimethylbenzene	16.57	105	213439	19.4103 ug/kg	100
85)	2-Chlorotoluene	16.66	91	198285	20.1808 ug/kg	100
86)	4-Chlorotoluene	16.71	91	169619	18.6723 ug/kg	98
87)	a-Methylstyrene	16.98	118	112163	22.3859 ug/kg	97
88)	tert-Butylbenzene	17.03	134	47344	20.5363 ug/kg	88
89)	1,2,4-Trimethylbenzene	17.09	105	213938	18.5777 ug/kg	100
90)	sec-Butylbenzene	17.31	105	286363	20.2198 ug/kg	99
91)	p-Isopropyltoluene	17.47	119	226807	18.9765 ug/kg	99
92)	1,3-Dichlorobenzene	17.67	146	122733	17.8572 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	122339	17.8051 ug/kg	98
94)	n-Butylbenzene	17.99	91	210303	18.9248 ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	114326	17.9272 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	12311	15.0378 ug/kg	100
97)	1,2,4-Trichlorobenzene	20.43	180	74948	16.5552 ug/kg	97
98)	Hexachlorobutadiene	20.58	225	44689	18.7266 ug/kg	98
99)	Naphthalene	20.81	128	163942	14.4378 ug/kg	99
100)	1,2,3-Trichlorobenzene	21.12	180	73028	16.6313 ug/kg	98

(#) = qualifier out of range (m) = manual integration
9M973134.D 8260SL.M Mon Mar 07 22:20:41 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030716\9M973134.D Vial: 14
Acq On : 7 Mar 2016 21:58 Operator: ADC
Sample : L16030235-05 A MSD 8260 5.07g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 7 22:20 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

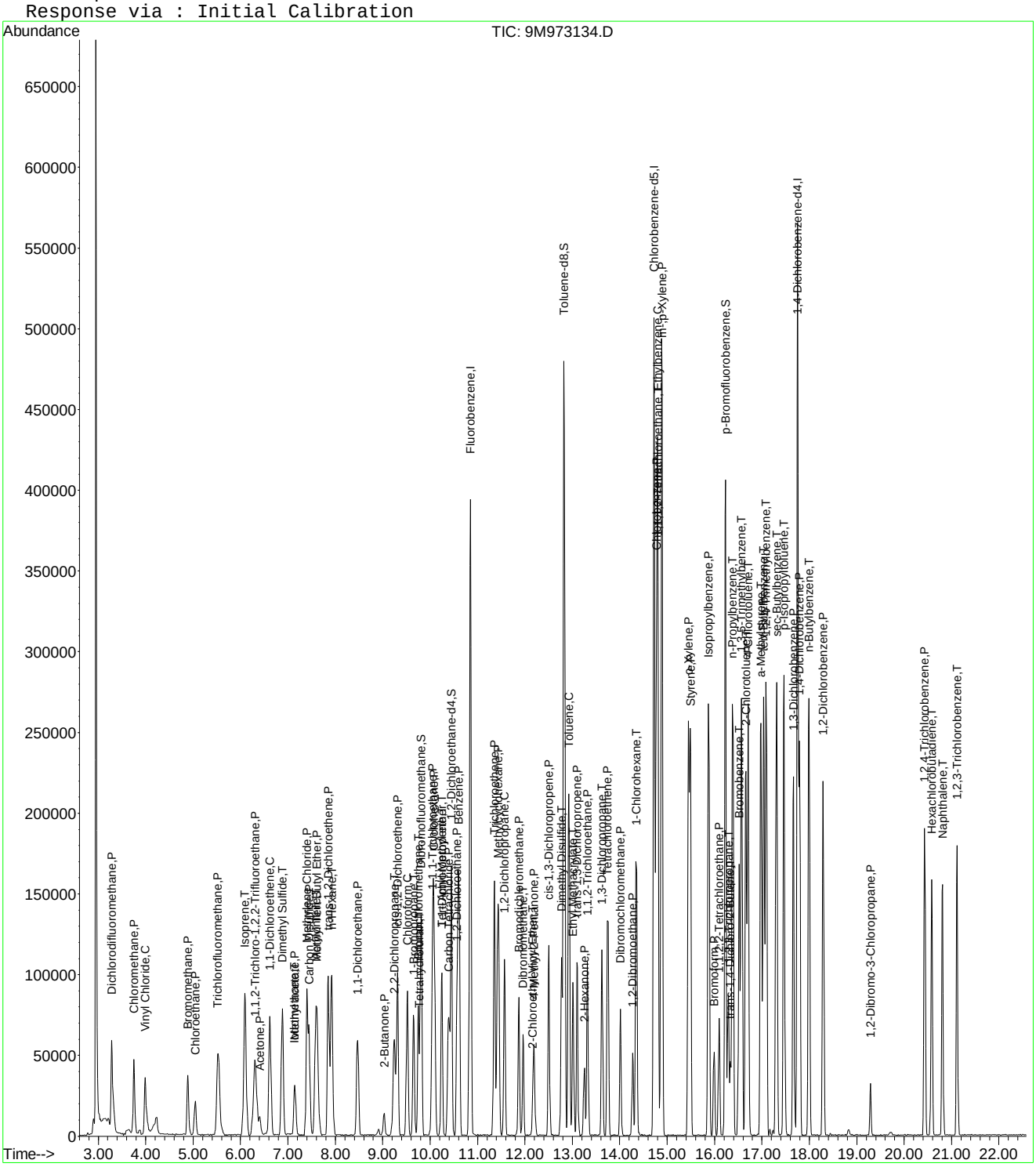

9M973134.D 8260SL.M Mon Mar 07 22:20:41 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030716\9M973130.D Vial: 10
Acq On : 7 Mar 2016 19:53 Operator: ADC
Sample : L16030235-06 A 8260 5.16g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 08 14:13:46 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	402998	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	307448	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	160139	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	108206	49.5345 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.06%		
43) 1,2-Dichloroethane-d4	10.45	65	143240	52.2616 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.52%		
58) Toluene-d8	12.83	98	373301	48.0029 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 96.00%		
79) p-Bromofluorobenzene	16.23	95	154705	49.6129 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 99.22%		

Target Compounds					Qvalue
13) Acetone	6.41	43	13977	11.8995 ug/kg#	76
20) Carbon Disulfide	7.45	76	4756	0.8198 ug/kg#	76
29) 2-Butanone	9.03	43	2862	2.2023 ug/kg#	58
36) Tetrahydrofuran	9.79	42	772	0.9216 ug/kg#	43
47) Trichloroethene	11.35	130	39784	16.2750 ug/kg	99
56) Dimethyl Disulfide	12.83	94	10096	3.2297 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M973130.D 8260SL.M Tue Mar 08 14:13:47 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030716\9M973130.D Vial: 10
Acq On : 7 Mar 2016 19:53 Operator: ADC
Sample : L16030235-06 A 8260 5.16g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 8 14:13 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

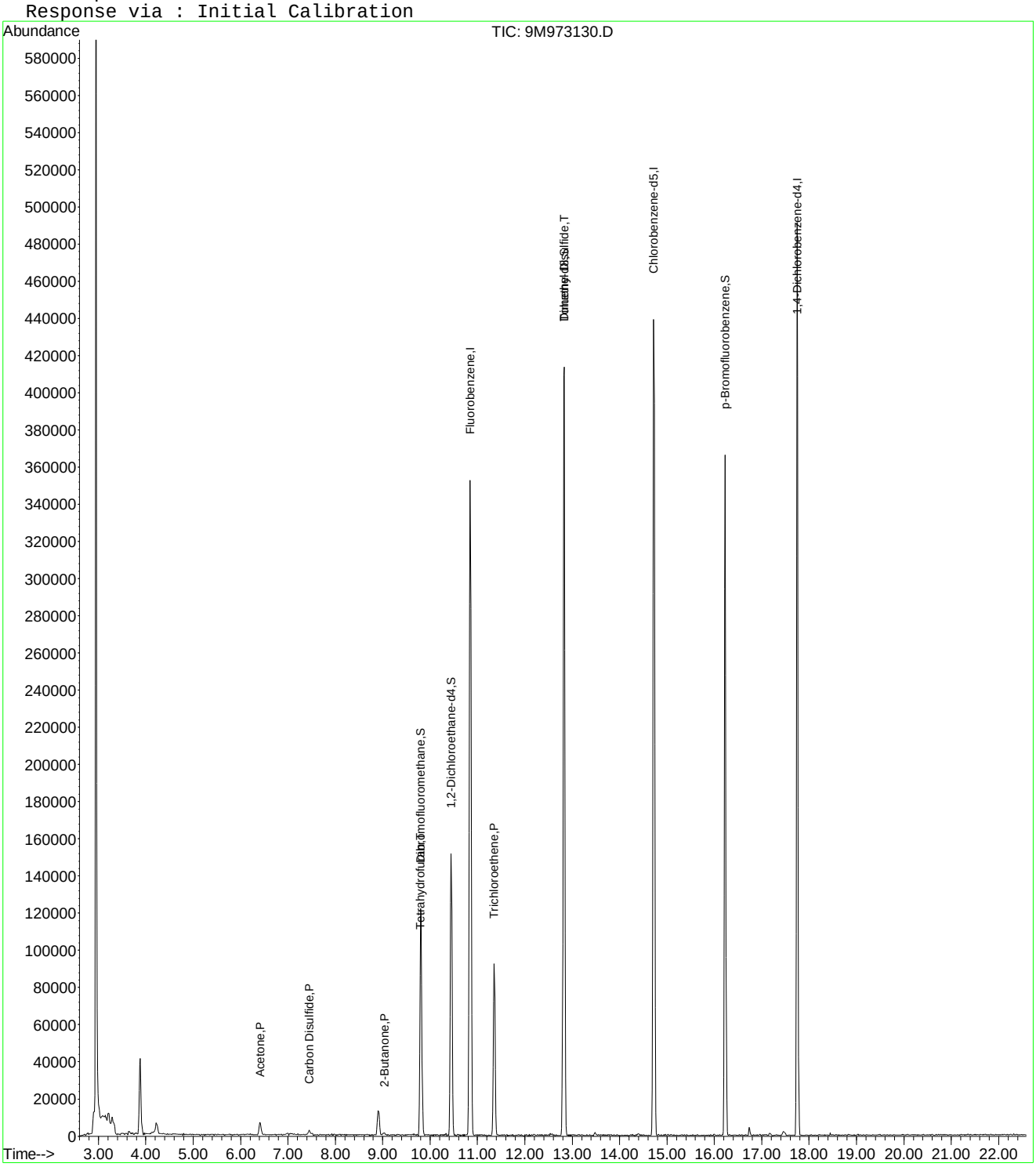

9M973130.D 8260SL.M Tue Mar 08 14:13:47 2016 Page 2

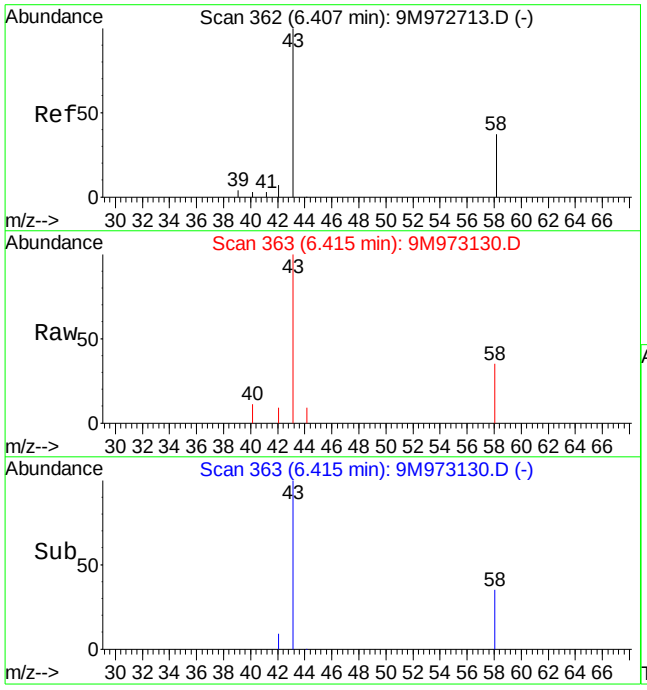

#13
Acetone
Concen: 11.90 ug/kg
RT: 6.41 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M973130.D
Acq: 7 Mar 2016 19:53

Tgt Ion: 43 Resp: 13977

Ion	Ratio	Lower	Upper
43	100		
58	40.7	16.9	39.3#

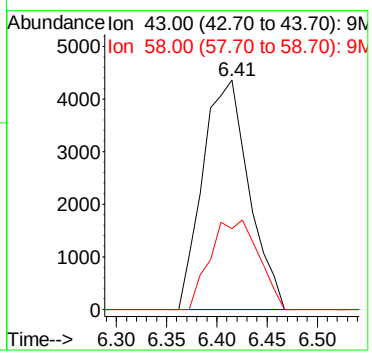

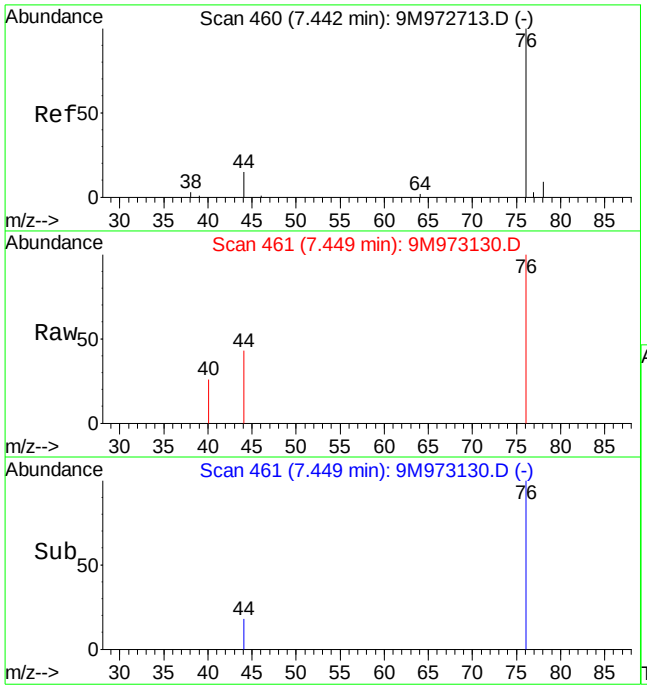

#20
Carbon Disulfide
Concen: 0.82 ug/kg
RT: 7.45 min Scan# 461
Delta R.T. 0.00 min
Lab File: 9M973130.D
Acq: 7 Mar 2016 19:53

Tgt Ion: 76 Resp: 4756

Ion	Ratio	Lower	Upper
76	100		
78	0.0	5.2	12.0#

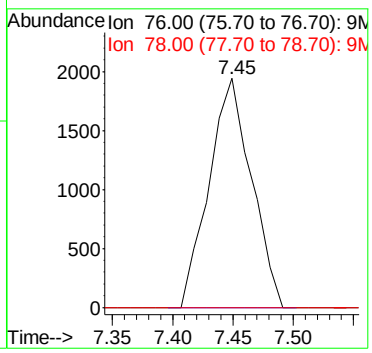

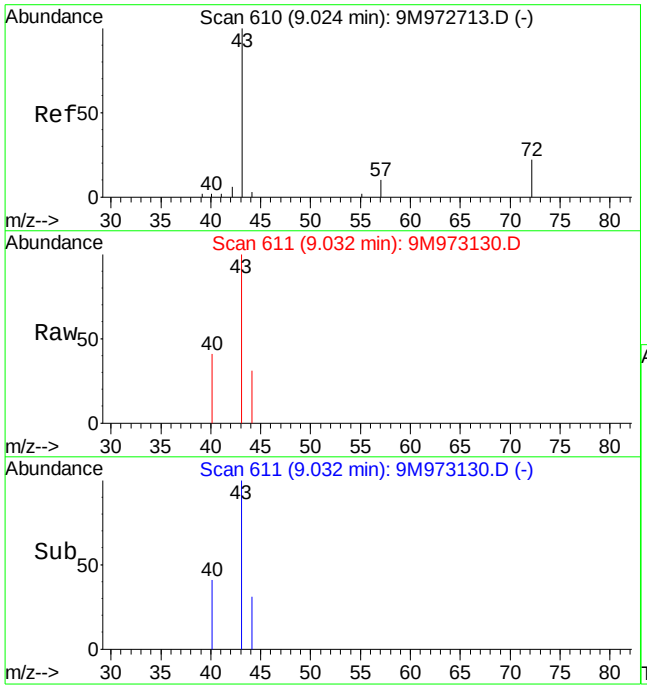

#29
2-Butanone
Concen: 2.20 ug/kg
RT: 9.03 min Scan# 611
Delta R.T. 0.00 min
Lab File: 9M973130.D
Acq: 7 Mar 2016 19:53

Tgt Ion: 43 Resp: 2862

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

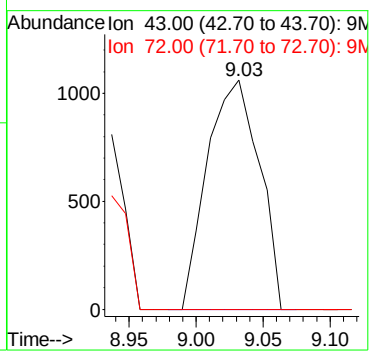

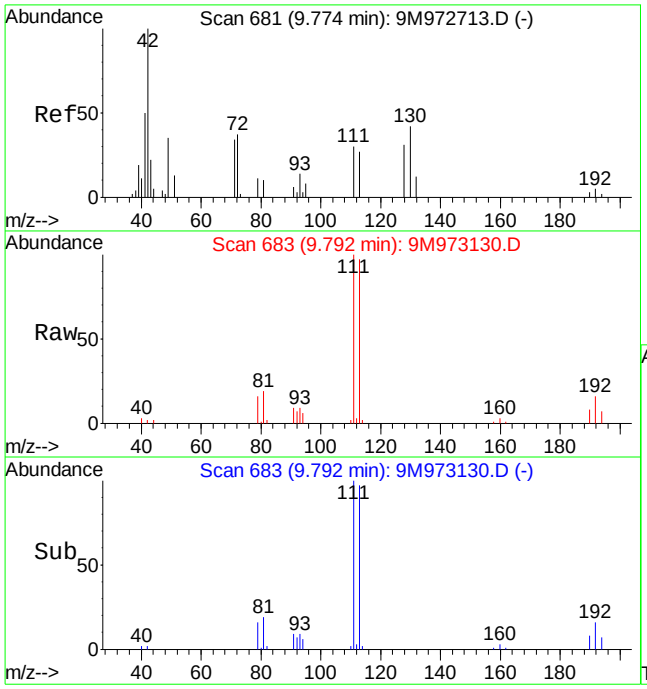

#36
Tetrahydrofuran
Concen: 0.92 ug/kg
RT: 9.79 min Scan# 683
Delta R.T. 0.01 min
Lab File: 9M973130.D
Acq: 7 Mar 2016 19:53

Tgt Ion: 42 Resp: 772

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

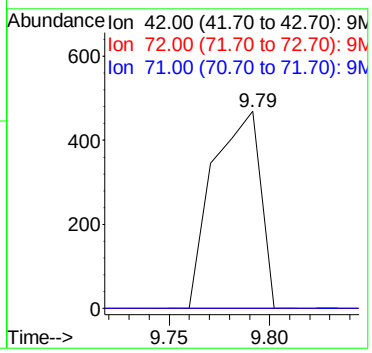

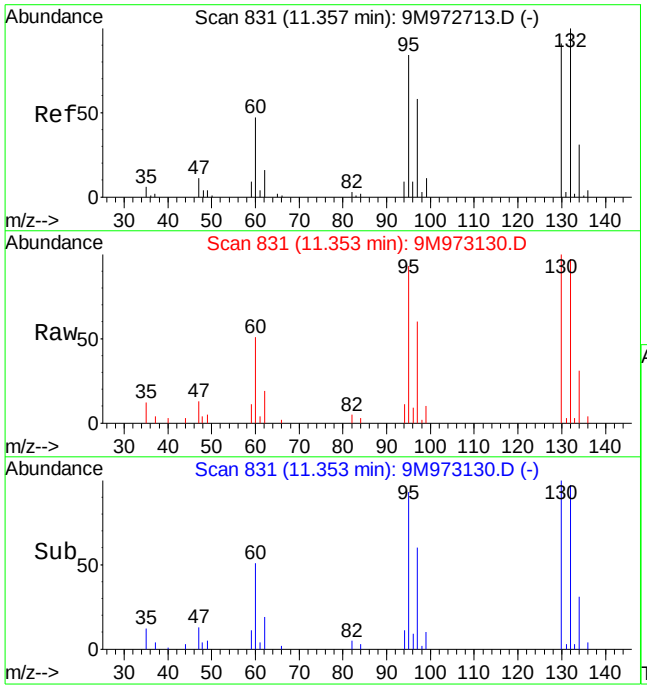

#47
Trichloroethene
Concen: 16.27 ug/kg
RT: 11.35 min Scan# 831
Delta R.T. 0.00 min
Lab File: 9M973130.D
Acq: 7 Mar 2016 19:53

Tgt Ion:130 Resp: 39784

Ion	Ratio	Lower	Upper
130	100		
132	95.3	56.5	131.7
95	92.3	55.4	129.4

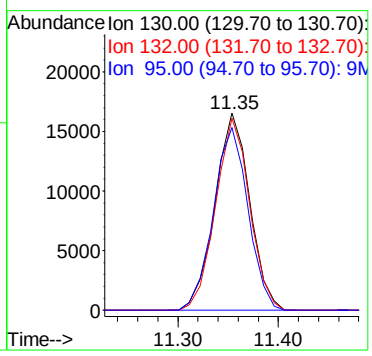

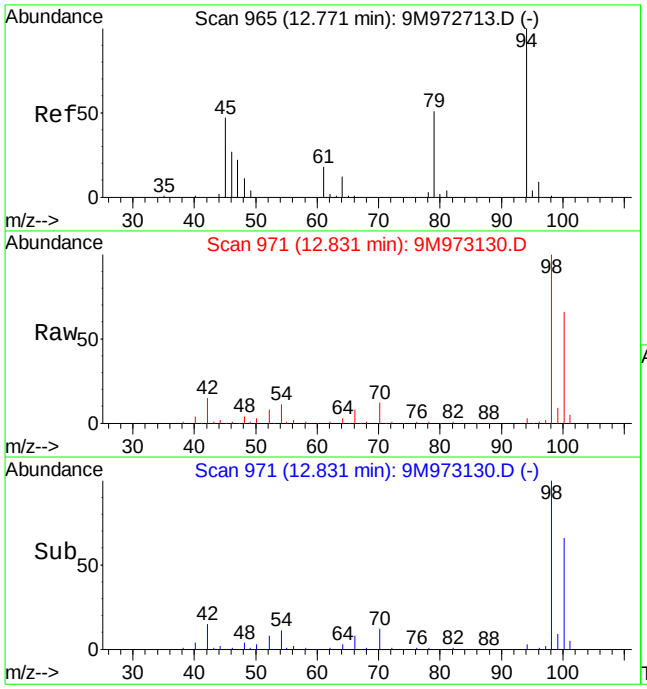

#56
Dimethyl Disulfide
Concen: 3.23 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.06 min
Lab File: 9M973130.D
Acq: 7 Mar 2016 19:53

Tgt Ion: 94 Resp: 10096

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

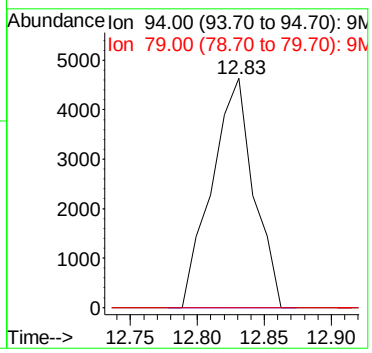

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030716\9M973131.D Vial: 11
Acq On : 7 Mar 2016 20:24 Operator: ADC
Sample : L16030235-07 A 8260 4.64g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 08 14:13:47 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	372592	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	273935	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	144215	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	99705	49.3677 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.74%		
43) 1,2-Dichloroethane-d4	10.45	65	134540	53.0933 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 106.18%		
58) Toluene-d8	12.82	98	348623	50.3140 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 100.62%		
79) p-Bromofluorobenzene	16.23	95	141633	50.4361 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 100.88%		

Target Compounds					Qvalue
13) Acetone	6.41	43	12313	11.2198 ug/kg#	67
20) Carbon Disulfide	7.45	76	4468	0.8330 ug/kg#	76
29) 2-Butanone	9.03	43	2356	1.9609 ug/kg#	58
36) Tetrahydrofuran	9.78	42	795	1.0265 ug/kg#	43
47) Trichloroethene	11.36	130	27578	12.2024 ug/kg	98
56) Dimethyl Disulfide	12.83	94	9808	3.3936 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M973131.D 8260SL.M Tue Mar 08 14:13:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030716\9M973131.D Vial: 11
Acq On : 7 Mar 2016 20:24 Operator: ADC
Sample : L16030235-07 A 8260 4.64g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 8 14:13 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

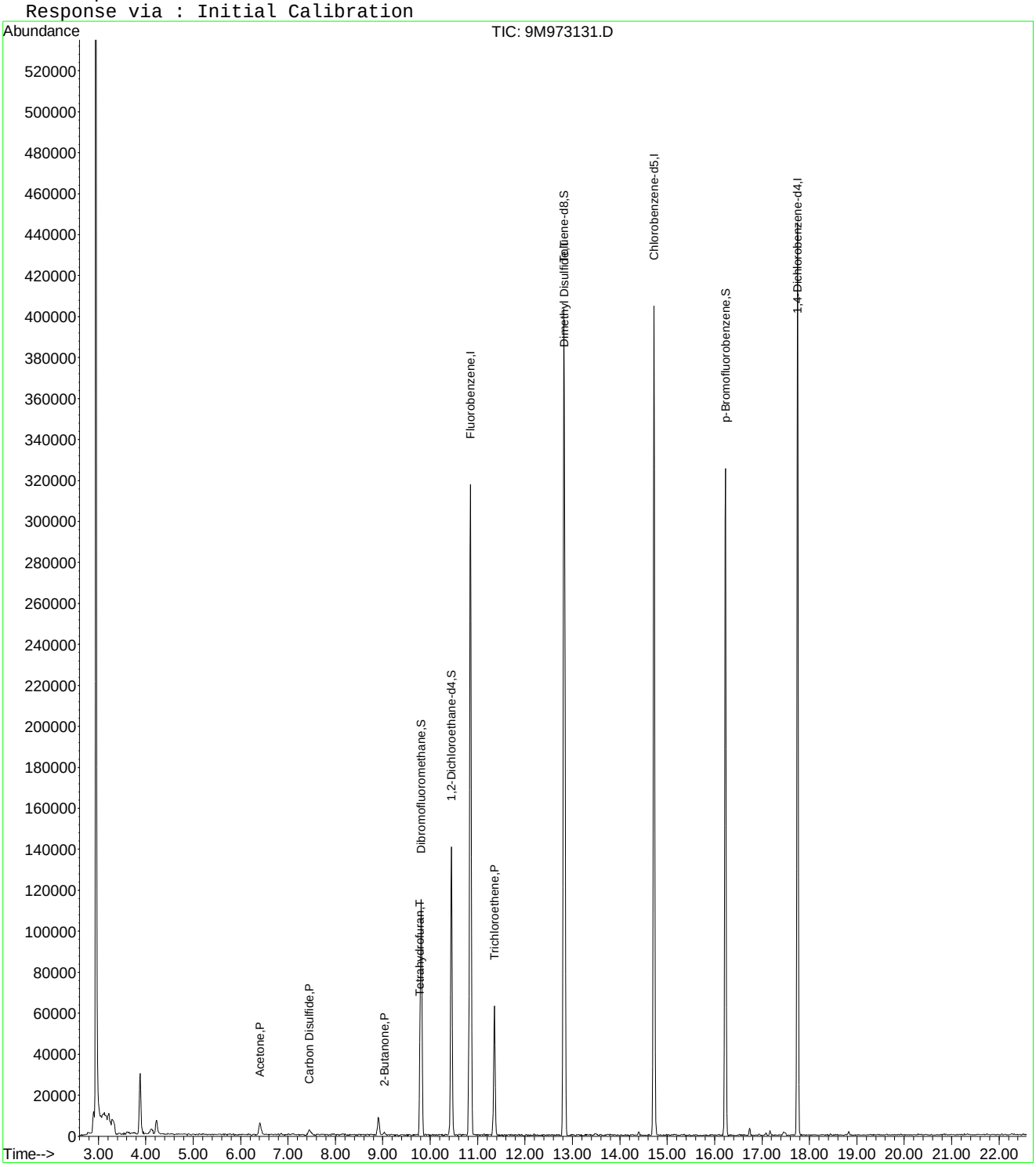

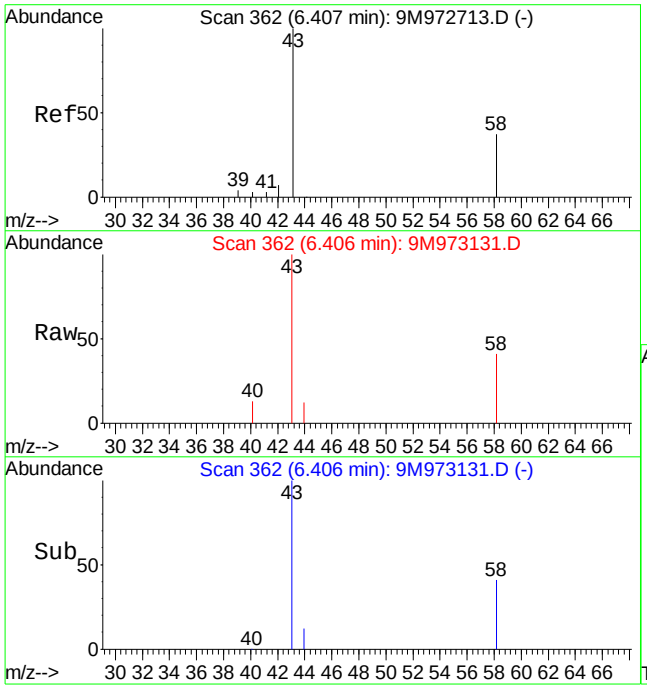

#13
Acetone
Concen: 11.22 ug/kg
RT: 6.41 min Scan# 362
Delta R.T. -0.01 min
Lab File: 9M973131.D
Acq: 7 Mar 2016 20:24

Tgt Ion: 43 Resp: 12313

Ion	Ratio	Lower	Upper
43	100		
58	45.3	16.9	39.3#

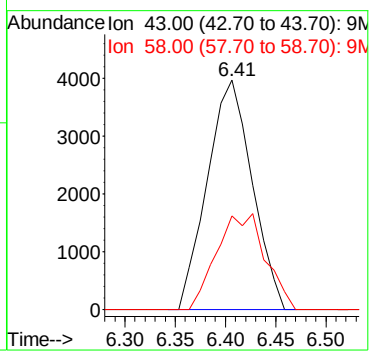

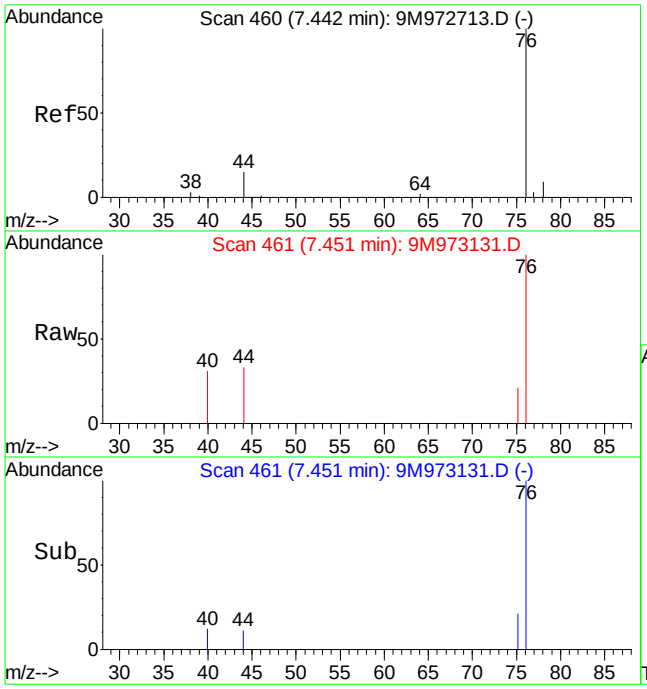

#20
Carbon Disulfide
Concen: 0.83 ug/kg
RT: 7.45 min Scan# 461
Delta R.T. 0.00 min
Lab File: 9M973131.D
Acq: 7 Mar 2016 20:24

Tgt Ion: 76 Resp: 4468

Ion	Ratio	Lower	Upper
76	100		
78	0.0	5.2	12.0#

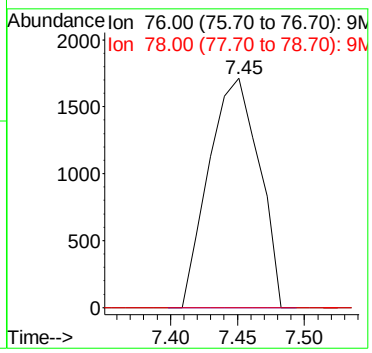

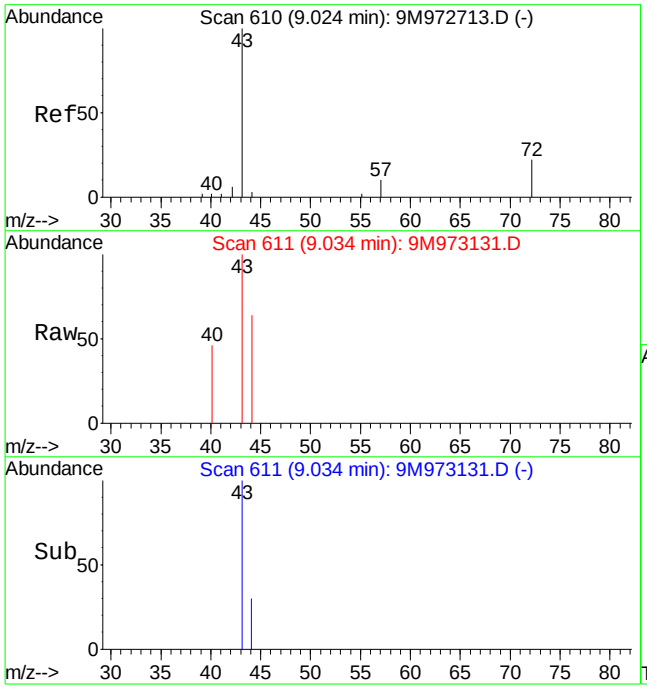

#29
2-Butanone
Concen: 1.96 ug/kg
RT: 9.03 min Scan# 611
Delta R.T. 0.00 min
Lab File: 9M973131.D
Acq: 7 Mar 2016 20:24

Tgt Ion: 43 Resp: 2356

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

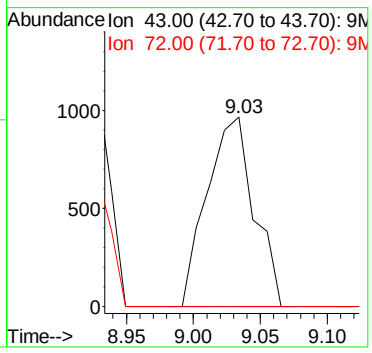

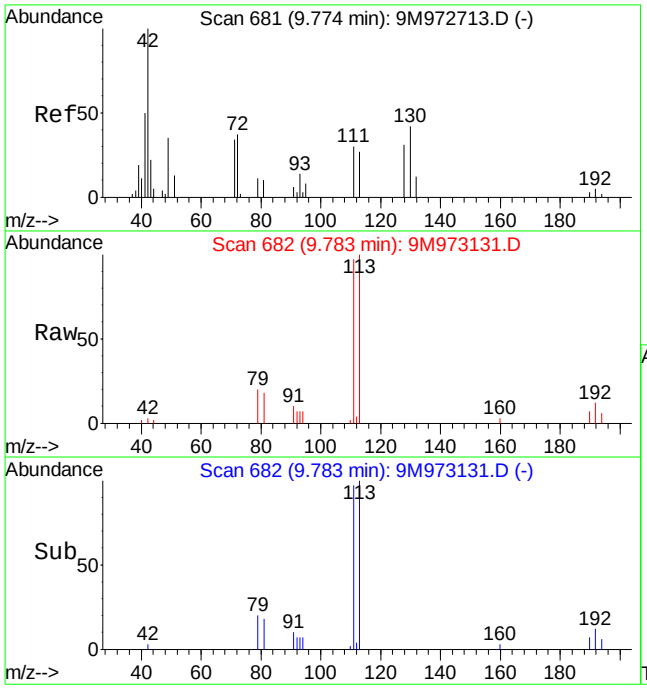

#36
Tetrahydrofuran
Concen: 1.03 ug/kg
RT: 9.78 min Scan# 682
Delta R.T. 0.00 min
Lab File: 9M973131.D
Acq: 7 Mar 2016 20:24

Tgt Ion: 42 Resp: 795

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

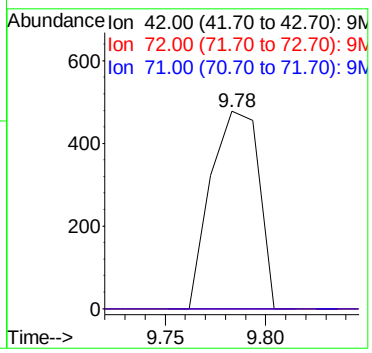

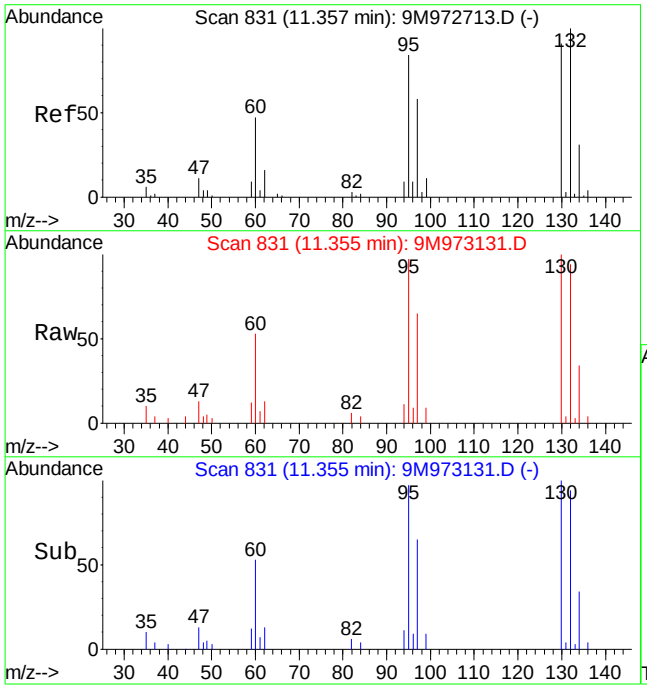

#47
Trichloroethene
Concen: 12.20 ug/kg
RT: 11.36 min Scan# 831
Delta R.T. 0.00 min
Lab File: 9M973131.D
Acq: 7 Mar 2016 20:24

Tgt Ion:130 Resp: 27578

Ion	Ratio	Lower	Upper
130	100		
132	91.9	56.5	131.7
95	94.0	55.4	129.4

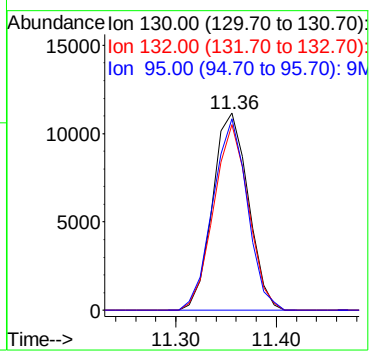

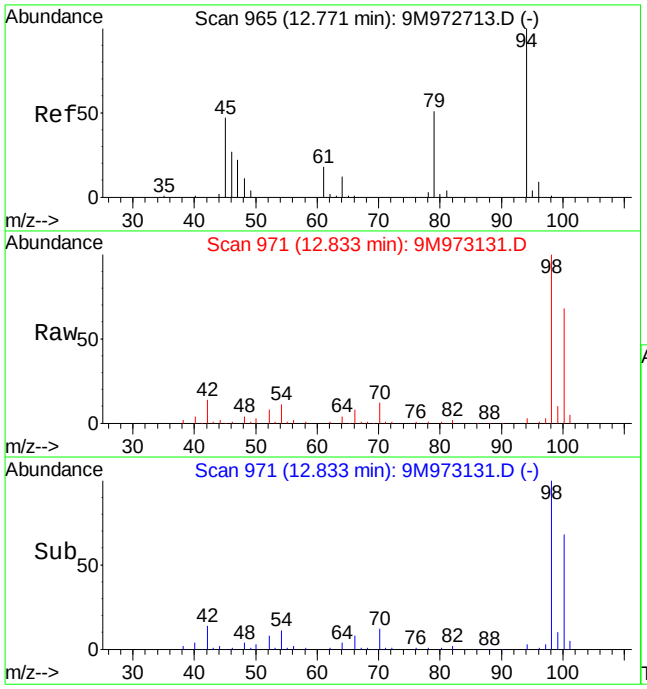

#56
Dimethyl Disulfide
Concen: 3.39 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.07 min
Lab File: 9M973131.D
Acq: 7 Mar 2016 20:24

Tgt Ion: 94 Resp: 9808

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

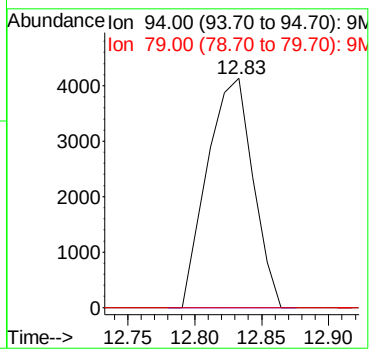

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030716\9M973132.D Vial: 12
Acq On : 7 Mar 2016 20:55 Operator: ADC
Sample : L16030235-08 A 8260 5.24g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 08 14:13:49 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	430643	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	325813	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	167619	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	114115	48.8860 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.78%		
43) 1,2-Dichloroethane-d4	10.45	65	151419	51.6993 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 103.40%		
58) Toluene-d8	12.82	98	402842	48.8817 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 97.76%		
79) p-Bromofluorobenzene	16.23	95	166939	51.1472 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.30%		

Target Compounds

					Qvalue
13) Acetone	6.40	43	4250	1.5882 ug/kg	83
29) 2-Butanone	9.03	43	680	0.4897 ug/kg#	58
32) cis-1,2-Dichloroethene	9.32	96	5744	2.4419 ug/kg	95
36) Tetrahydrofuran	9.77	42	953	1.0646 ug/kg#	43
47) Trichloroethene	11.36	130	6839	2.6181 ug/kg	98
56) Dimethyl Disulfide	12.82	94	11332	3.3924 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M973132.D 8260SL.M Tue Mar 08 14:13:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030716\9M973132.D Vial: 12
Acq On : 7 Mar 2016 20:55 Operator: ADC
Sample : L16030235-08 A 8260 5.24g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 8 14:13 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

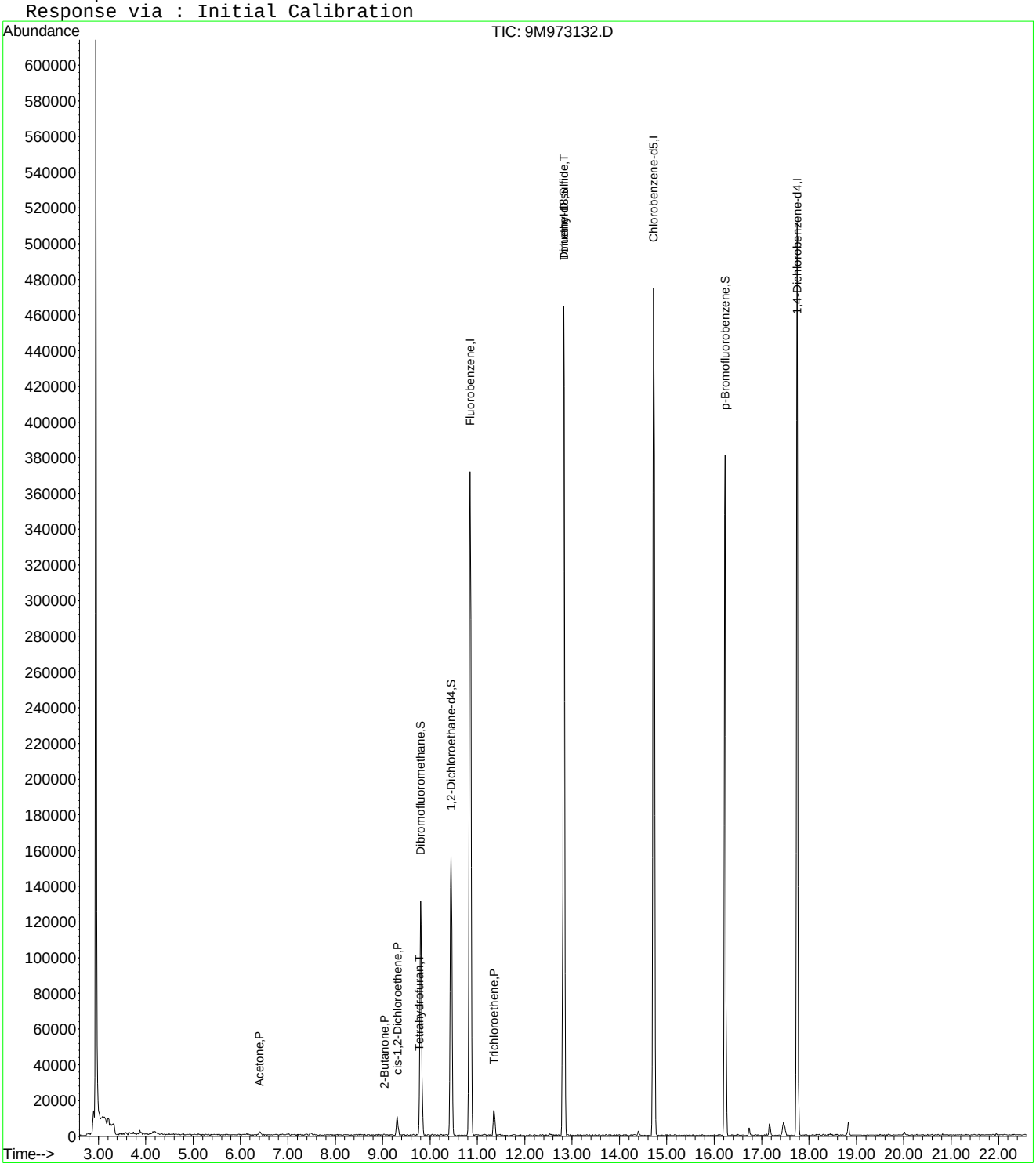

9M973132.D 8260SL.M Tue Mar 08 14:13:49 2016 Page 2

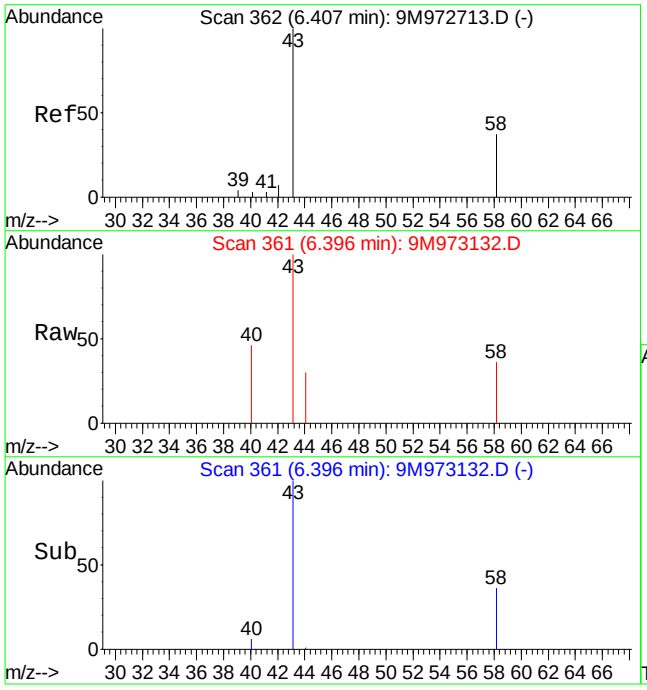

#13
Acetone
Concen: 1.59 ug/kg
RT: 6.40 min Scan# 361
Delta R.T. -0.02 min
Lab File: 9M973132.D
Acq: 7 Mar 2016 20:55

Tgt Ion: 43 Resp: 4250

Ion	Ratio	Lower	Upper
43	100		
58	19.3	16.9	39.3

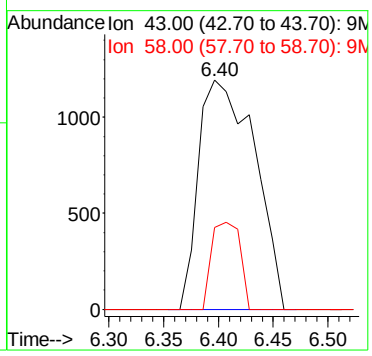

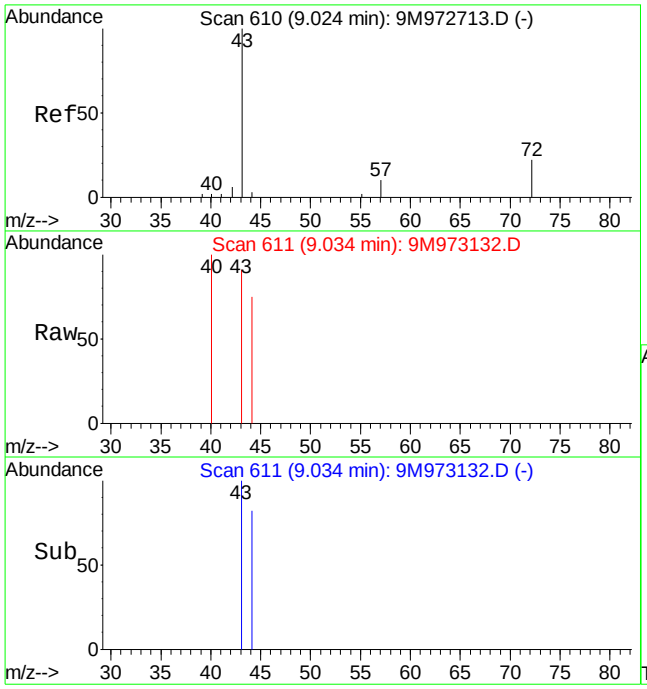

#29
2-Butanone
Concen: 0.49 ug/kg
RT: 9.03 min Scan# 611
Delta R.T. 0.00 min
Lab File: 9M973132.D
Acq: 7 Mar 2016 20:55

Tgt Ion: 43 Resp: 680

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

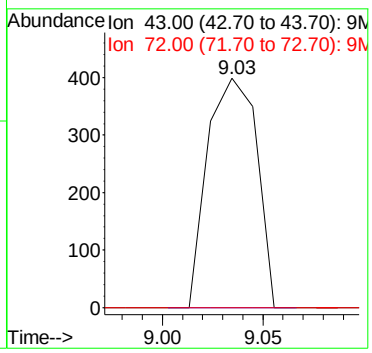

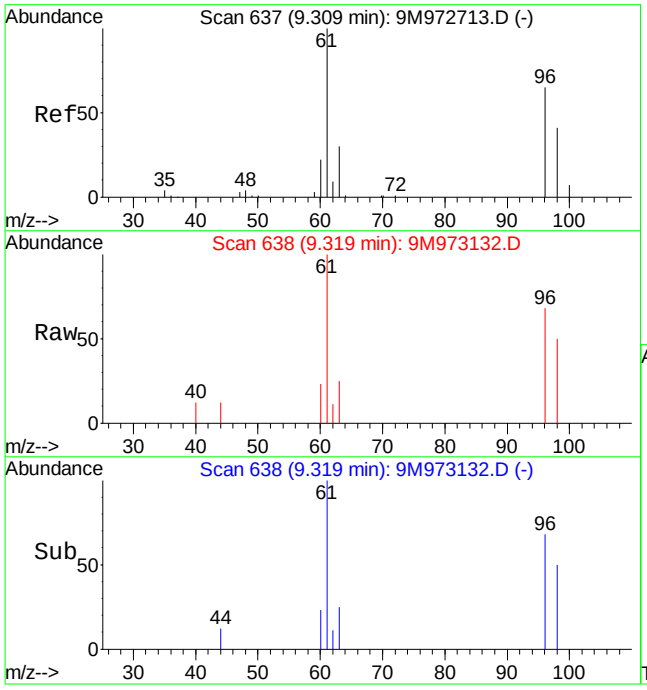

#32
cis-1,2-Dichloroethene
Concen: 2.44 ug/kg
RT: 9.32 min Scan# 638
Delta R.T. 0.01 min
Lab File: 9M973132.D
Acq: 7 Mar 2016 20:55

Tgt Ion: 96 Resp: 5744

Ion	Ratio	Lower	Upper
96	100		
61	163.8	102.6	239.4

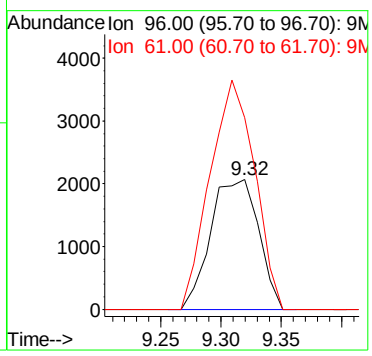

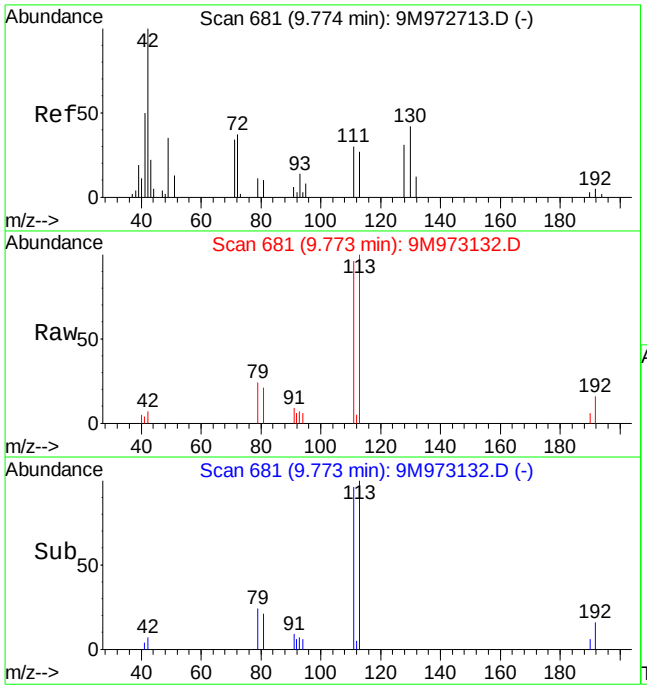

#36
Tetrahydrofuran
Concen: 1.06 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. -0.01 min
Lab File: 9M973132.D
Acq: 7 Mar 2016 20:55

Tgt Ion: 42 Resp: 953

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

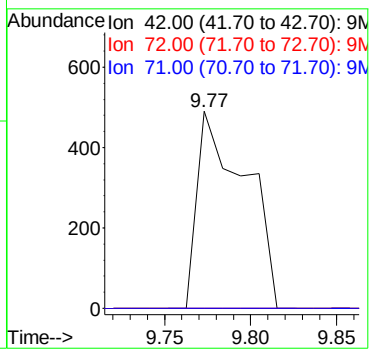

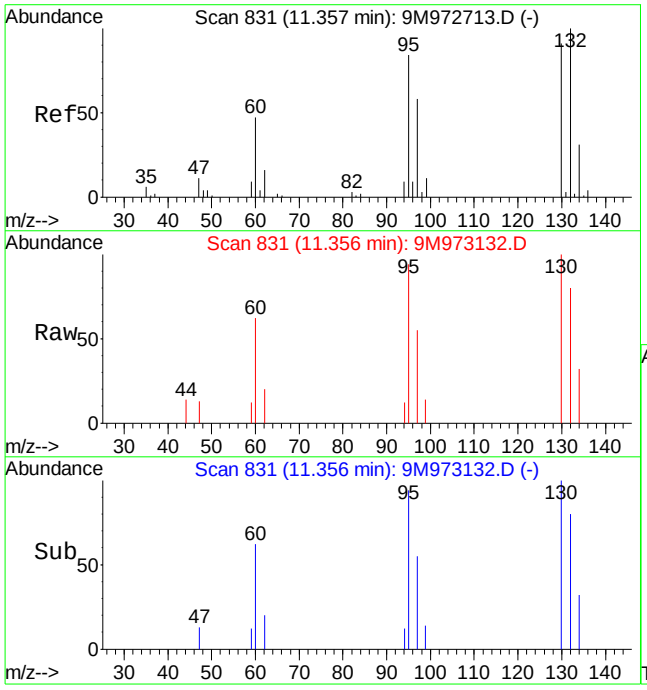

#47
Trichloroethene
Concen: 2.62 ug/kg
RT: 11.36 min Scan# 831
Delta R.T. 0.00 min
Lab File: 9M973132.D
Acq: 7 Mar 2016 20:55

Tgt Ion:130 Resp: 6839

Ion	Ratio	Lower	Upper
130	100		
132	91.2	56.5	131.7
95	94.1	55.4	129.4

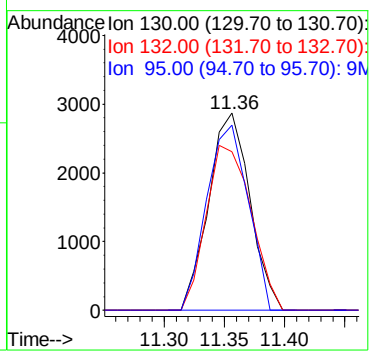

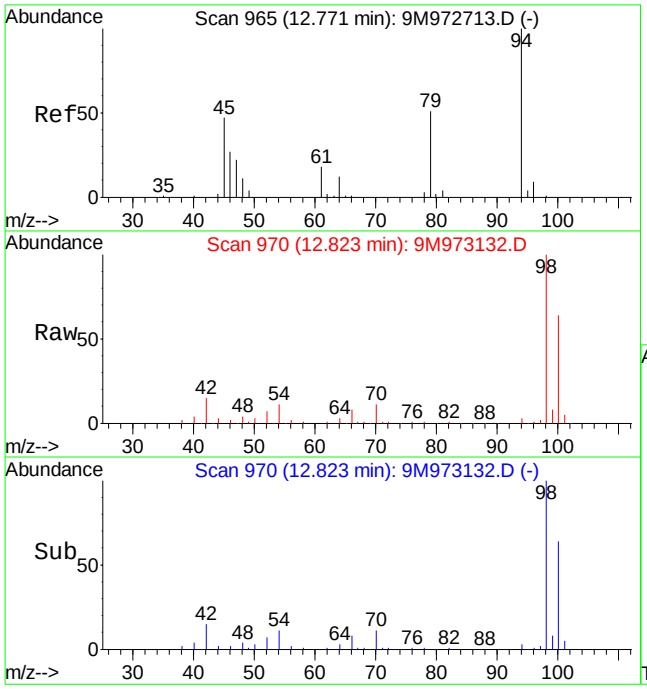

#56
Dimethyl Disulfide
Concen: 3.39 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M973132.D
Acq: 7 Mar 2016 20:55

Tgt Ion: 94 Resp: 11332

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

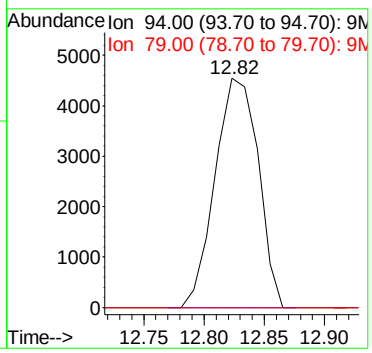

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972472.D Vial: 3
Acq On : 25 Jan 2016 11:22 Operator: FJB
Sample : WG555000-02 5ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:05 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	367739	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	266763	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.77	152	148882	50.00 ug/kg	0.01

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	1974	5.3580 ug/kg#	1
3) 3-Chloro-1-propene	7.23	41	18322	5.0468 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	19639	4.7564 ug/kg	98
5) Ethyl Acetate	9.24	43	12755	5.2595 ug/kg	91
6) Methacrylonitrile	9.40	67	3744	4.7691 ug/kg	95
7) Isobutyl Alcohol	9.42	43	1055	12.9700 ug/kg#	62
8) 1-Butanol	10.36	56	203	11.8711 ug/kg#	26
9) Methyl methacrylate	11.56	41	8689	4.6908 ug/kg	95
10) 2-Nitropropane	11.90	43	2531	4.2058 ug/kg	96

(#) = qualifier out of range (m) = manual integration
9M972472.D A9FOO_SL.M Wed Jan 27 11:22:42 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972472.D Vial: 3
Acq On : 25 Jan 2016 11:22 Operator: FJB
Sample : WG555000-02 5ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

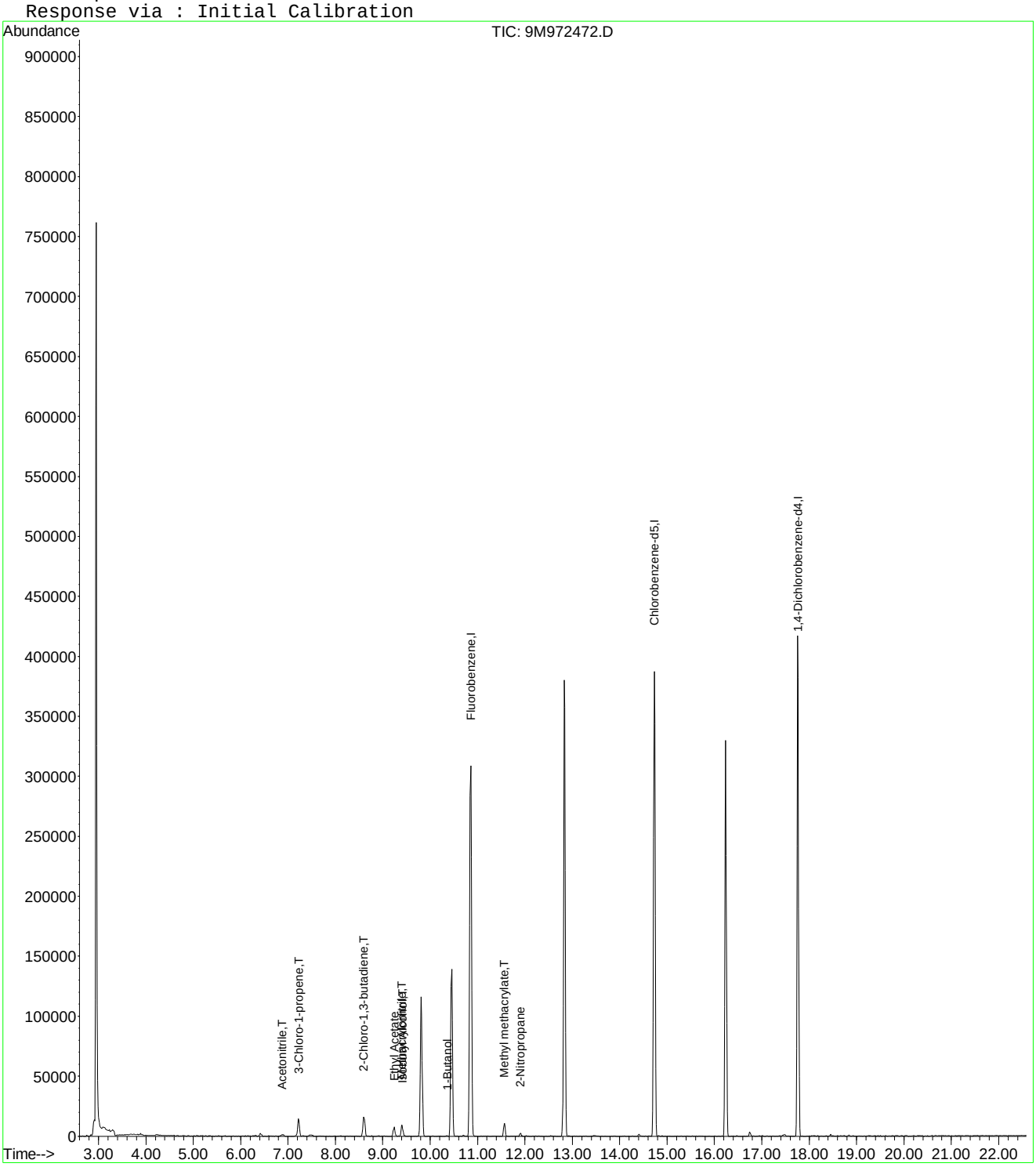

9M972472.D A9FOO_SL.M Wed Jan 27 11:22:42 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972473.D Vial: 4
Acq On : 25 Jan 2016 11:52 Operator: FJB
Sample : WG555000-03 20ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:05 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	359691	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	265773	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	149223	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	7669	21.2815 ug/kg#	77
3) 3-Chloro-1-propene	7.23	41	75360	21.2224 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	82865	20.5181 ug/kg	100
5) Ethyl Acetate	9.23	43	47912	20.1986 ug/kg	97
6) Methacrylonitrile	9.40	67	15740	20.4980 ug/kg	98
7) Isobutyl Alcohol	9.42	43	5287	37.9280 ug/kg	95
8) 1-Butanol	10.35	56	1509	22.3153 ug/kg#	81
9) Methyl methacrylate	11.56	41	35437	19.5588 ug/kg	98
10) 2-Nitropropane	11.90	43	10433	17.7247 ug/kg	98
12) Cyclohexanone	16.01	55	2157	16.3929 ug/kg#	86

(#) = qualifier out of range (m) = manual integration
9M972473.D A9FOO_SL.M Wed Jan 27 11:22:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972473.D Vial: 4
Acq On : 25 Jan 2016 11:52 Operator: FJB
Sample : WG555000-03 20ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

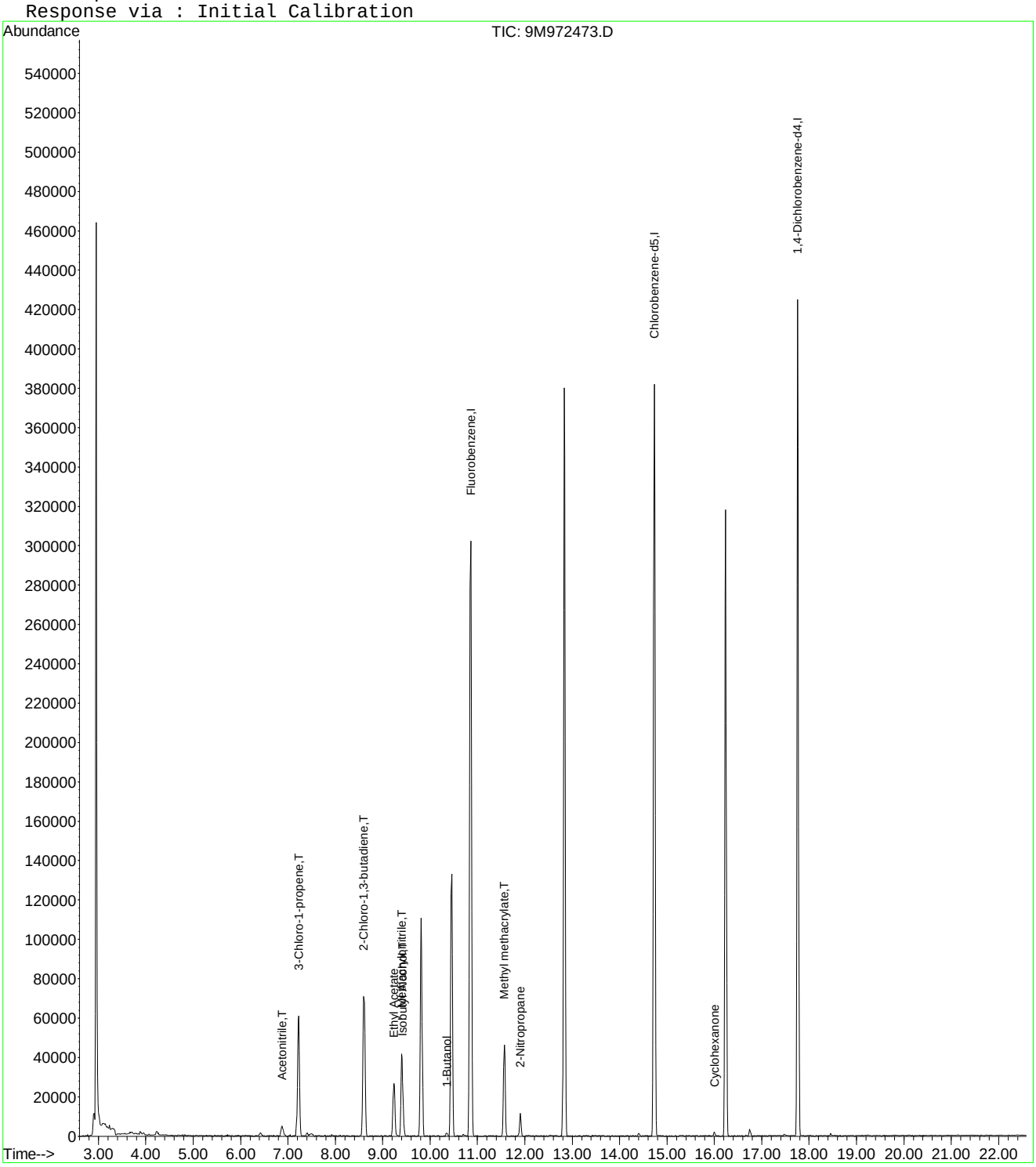

9M972473.D A9FOO_SL.M Wed Jan 27 11:22:46 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972474.D Vial: 5
Acq On : 25 Jan 2016 12:23 Operator: FJB
Sample : WG555000-04 50ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:06 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	356886	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	259679	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	147334	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	16583	46.3795 ug/kg#	94
3) 3-Chloro-1-propene	7.23	41	160601	45.5828 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.61	53	185316	46.2464 ug/kg	99
5) Ethyl Acetate	9.23	43	111538	47.3915 ug/kg	99
6) Methacrylonitrile	9.40	67	36081	47.3572 ug/kg	99
7) Isobutyl Alcohol	9.42	43	12624	81.5447 ug/kg	95
8) 1-Butanol	10.35	56	4707	48.0983 ug/kg#	50
9) Methyl methacrylate	11.56	41	82406	45.8400 ug/kg	99
10) 2-Nitropropane	11.90	43	26302	45.0359 ug/kg	97
12) Cyclohexanone	16.01	55	5625	43.7525 ug/kg	93

(#) = qualifier out of range (m) = manual integration
9M972474.D A9FOO_SL.M Wed Jan 27 11:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972474.D Vial: 5
Acq On : 25 Jan 2016 12:23 Operator: FJB
Sample : WG555000-04 50ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

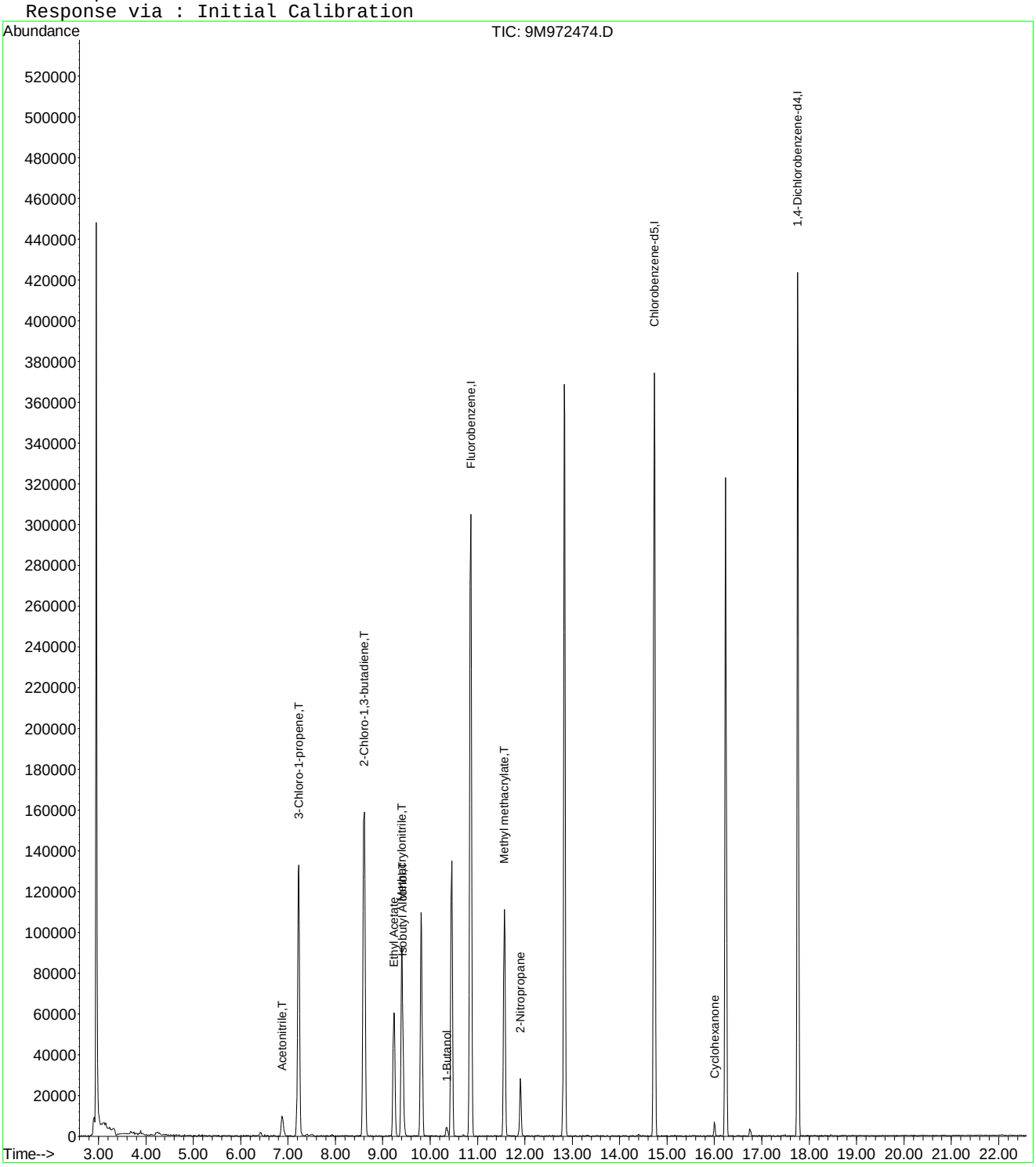

9M972474.D A9FOO_SL.M Wed Jan 27 11:22:51 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972475.D Vial: 6
Acq On : 25 Jan 2016 12:53 Operator: FJB
Sample : WG555000-05 100ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:06 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	394669	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	285851	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	161505	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	37767	95.5151	ug/kg#	100
3) 3-Chloro-1-propene	7.23	41	409870	105.1952	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.61	53	467514	105.5010	ug/kg	100
5) Ethyl Acetate	9.23	43	267513	102.7824	ug/kg	100
6) Methacrylonitrile	9.40	67	88054	104.5088	ug/kg	100
7) Isobutyl Alcohol	9.42	43	33721	187.1766	ug/kg	100
8) 1-Butanol	10.36	56	11671	95.0627	ug/kg	100
9) Methyl methacrylate	11.56	41	209503	105.3834	ug/kg	100
10) 2-Nitropropane	11.90	43	65435	101.3157	ug/kg	100
12) Cyclohexanone	16.01	55	14062	99.3630	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972475.D A9FOO_SL.M Wed Jan 27 11:22:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972475.D Vial: 6
Acq On : 25 Jan 2016 12:53 Operator: FJB
Sample : WG555000-05 100ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

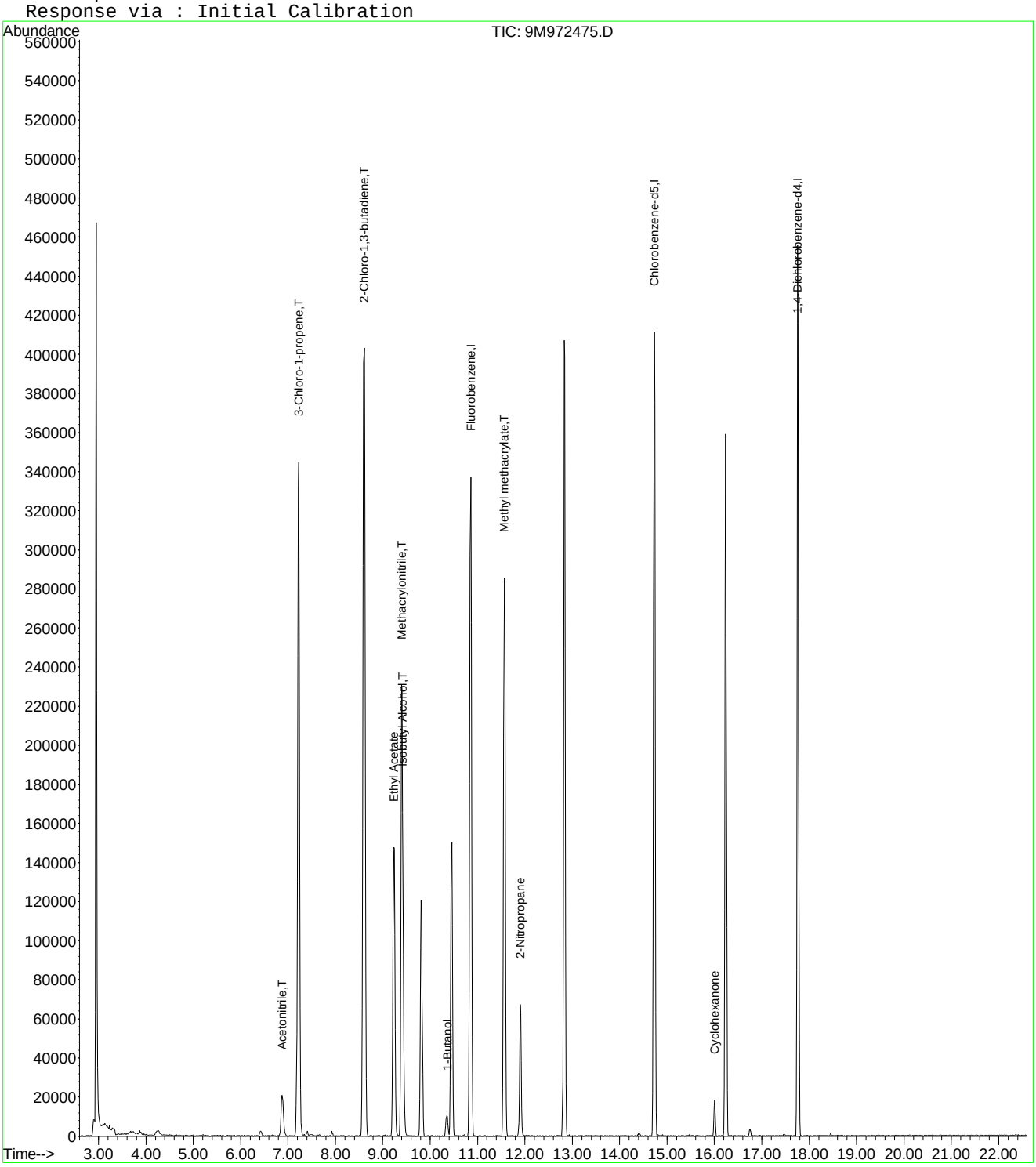

9M972475.D A9FOO_SL.M Wed Jan 27 11:22:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972476.D Vial: 7
Acq On : 25 Jan 2016 13:23 Operator: FJB
Sample : WG555000-06 200ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 09:51:10 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	361792	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	264283	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	150478	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.87	41	75099	207.1896	ug/kg#	94
3) 3-Chloro-1-propene	7.22	41	743262	208.0969	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	846271	208.3269	ug/kg	100
5) Ethyl Acetate	9.23	43	489855	205.3125	ug/kg	100
6) Methacrylonitrile	9.40	67	159879	206.9995	ug/kg	100
7) Isobutyl Alcohol	9.42	43	68551	406.6640	ug/kg	99
8) 1-Butanol	10.35	56	24111	201.3375	ug/kg	97
9) Methyl methacrylate	11.57	41	382820	210.0636	ug/kg	99
10) 2-Nitropropane	11.90	43	129000	217.8866	ug/kg	95
12) Cyclohexanone	16.00	55	30065	229.7785	ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972476.D A9FOO_SL.M Wed Jan 27 09:51:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972476.D Vial: 7
Acq On : 25 Jan 2016 13:23 Operator: FJB
Sample : WG555000-06 200ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 9:51 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

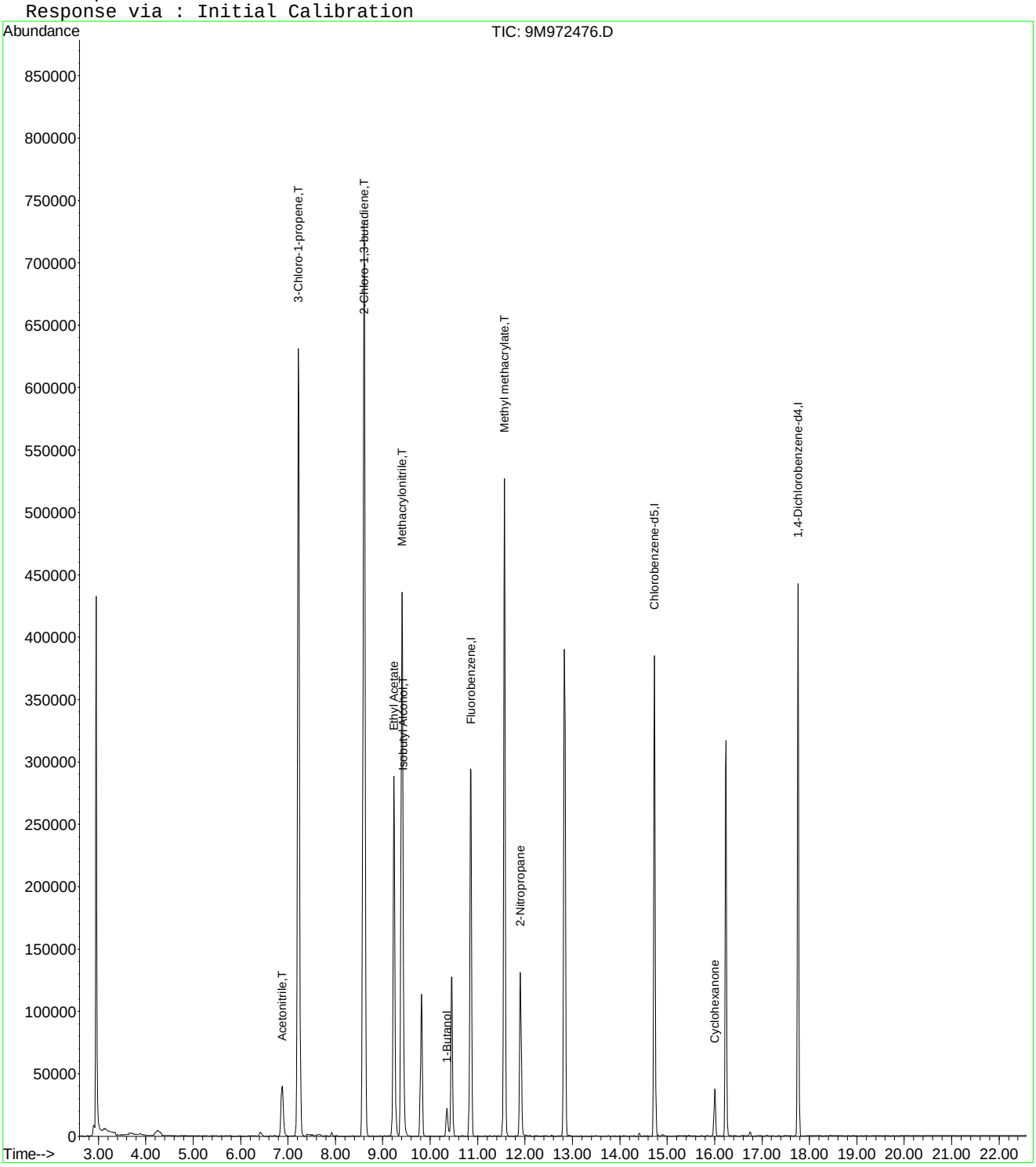

9M972476.D A9FOO_SL.M Wed Jan 27 09:51:10 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972477.D Vial: 8
Acq On : 25 Jan 2016 13:54 Operator: FJB
Sample : WG555000-07 300ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:07 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.85	96	362779	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	265659	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	153468	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	99618	274.0870	ug/kg#	97
3) 3-Chloro-1-propene	7.22	41	944879	263.8255	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	1107217	271.8226	ug/kg	99
5) Ethyl Acetate	9.24	43	652386	272.6900	ug/kg	99
6) Methacrylonitrile	9.40	67	208153	268.7679	ug/kg	98
7) Isobutyl Alcohol	9.43	43	89707	528.6093	ug/kg#	99
8) 1-Butanol	10.35	56	31640	260.3131	ug/kg	98
9) Methyl methacrylate	11.57	41	502506	274.9883	ug/kg	98
10) 2-Nitropropane	11.90	43	172692	290.8907	ug/kg	95
12) Cyclohexanone	16.00	55	36951	280.9436	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972477.D A9FOO_SL.M Wed Jan 27 11:23:05 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972477.D Vial: 8
Acq On : 25 Jan 2016 13:54 Operator: FJB
Sample : WG555000-07 300ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

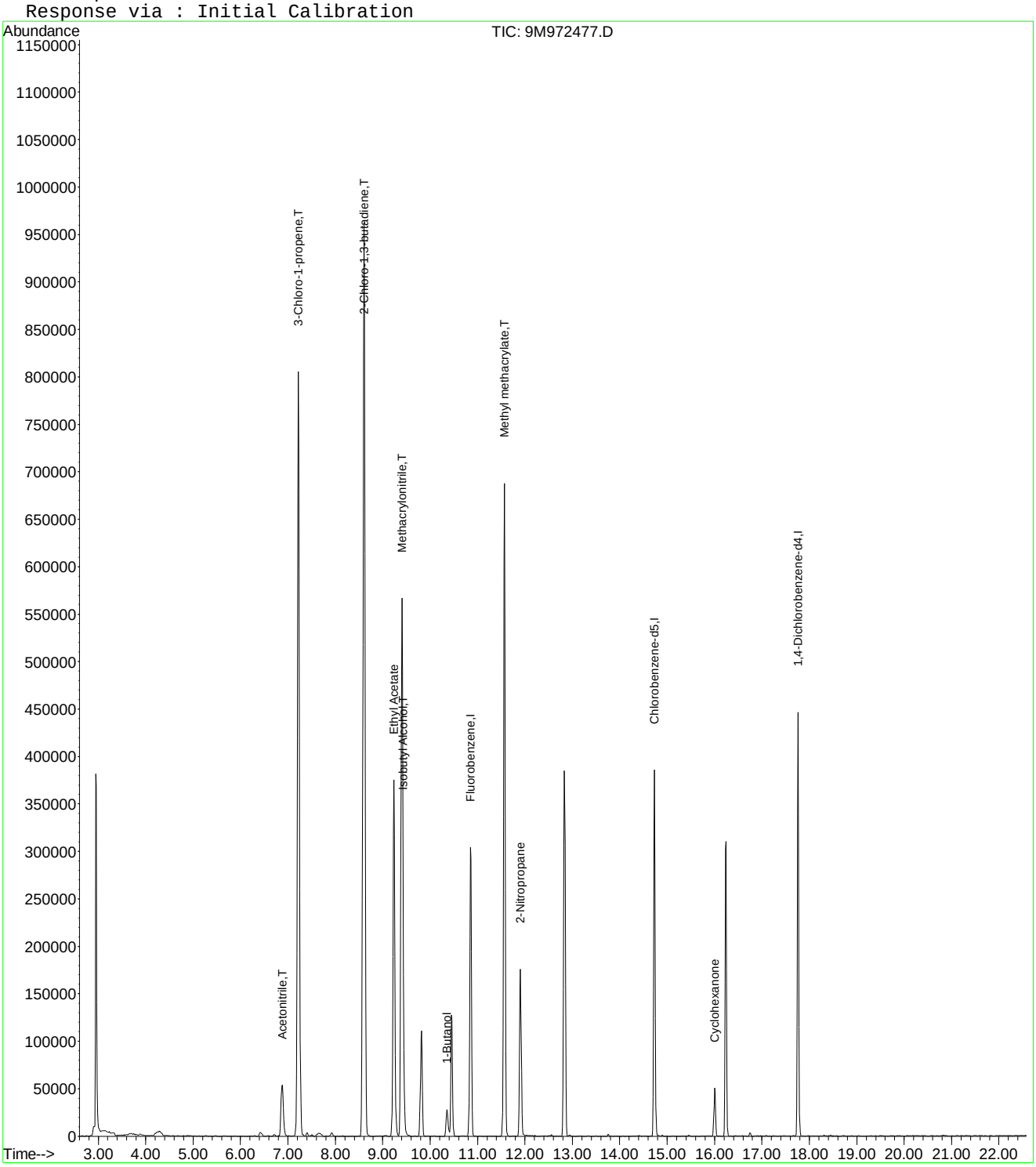

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972478.D Vial: 9
Acq On : 25 Jan 2016 14:25 Operator: FJB
Sample : WG555000-08 400ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 09:51:10 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	359343	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	261674	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	149058	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.89	41	148074	411.3034	ug/kg#	96
3) 3-Chloro-1-propene	7.22	41	1457717	410.9100	ug/kg	99
4) 2-Chloro-1,3-butadiene	8.61	53	1703971	422.3261	ug/kg	100
5) Ethyl Acetate	9.23	43	980479	413.7480	ug/kg	100
6) Methacrylonitrile	9.40	67	321602	419.2243	ug/kg	99
7) Isobutyl Alcohol	9.43	43	142361	842.7355	ug/kg#	98
8) 1-Butanol	10.36	56	51732	422.9922	ug/kg	99
9) Methyl methacrylate	11.56	41	779879	430.8570	ug/kg	98
10) 2-Nitropropane	11.90	43	267565	455.0088	ug/kg	96
12) Cyclohexanone	16.01	55	56623	437.0688	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972478.D A9FOO_SL.M Wed Jan 27 09:51:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972478.D Vial: 9
Acq On : 25 Jan 2016 14:25 Operator: FJB
Sample : WG555000-08 400ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 9:51 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

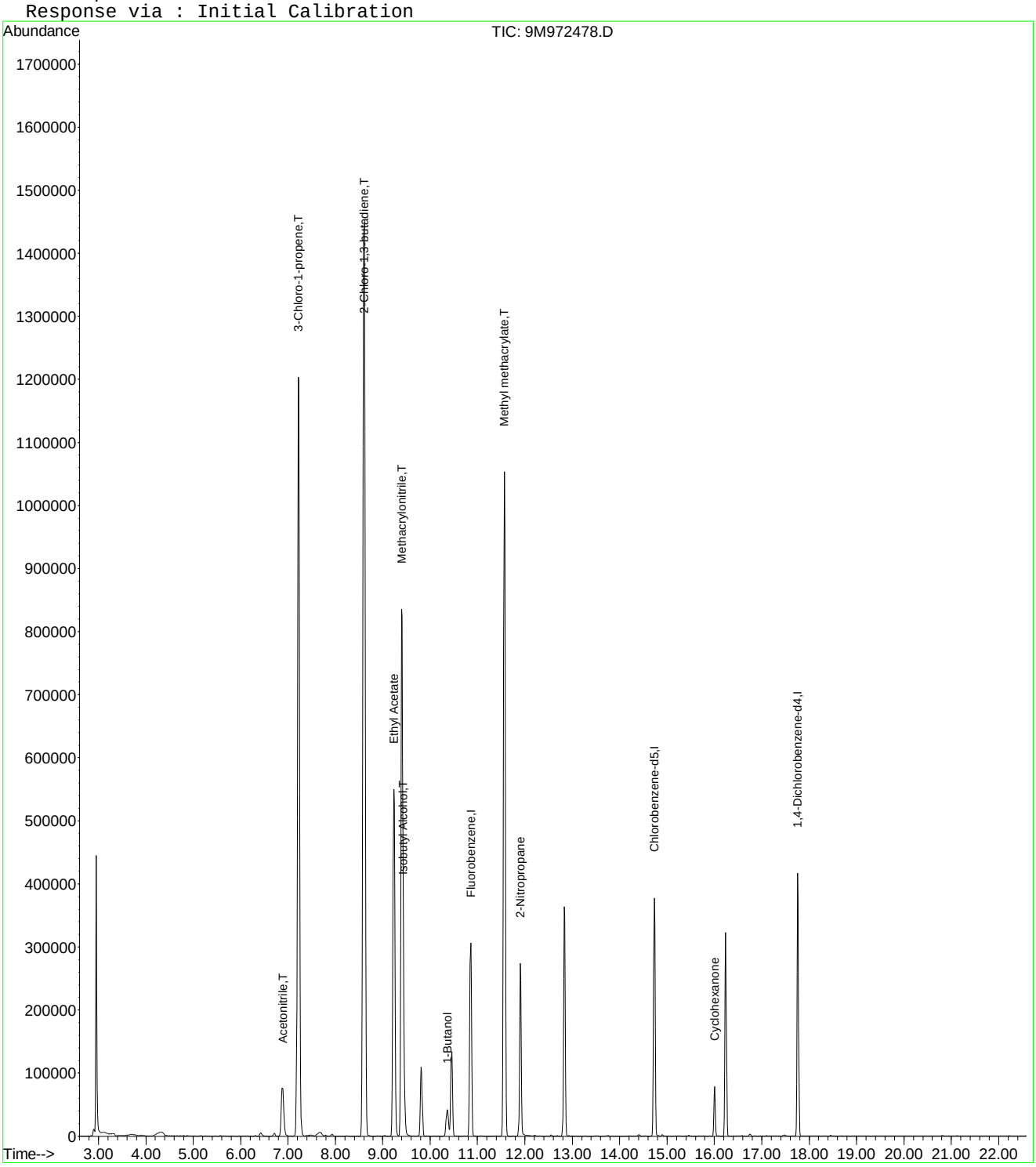

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972479.D Vial: 10
Acq On : 25 Jan 2016 14:56 Operator: FJB
Sample : WG555000-09 500ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:08 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	364474	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	266311	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	151707	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	196334	537.6773	ug/kg#	94
3) 3-Chloro-1-propene	7.22	41	1832802	509.3680	ug/kg	99
4) 2-Chloro-1,3-butadiene	8.60	53	2126710	519.6807	ug/kg	100
5) Ethyl Acetate	9.23	43	1255294	522.2587	ug/kg	100
6) Methacrylonitrile	9.40	67	408537	525.0513	ug/kg	100
7) Isobutyl Alcohol	9.43	43	180610	1052.3719	ug/kg	98
8) 1-Butanol	10.36	56	64789	519.8809	ug/kg	97
9) Methyl methacrylate	11.56	41	981460	534.5904	ug/kg	100
10) 2-Nitropropane	11.90	43	346571	581.0659	ug/kg	97
12) Cyclohexanone	16.01	55	74733	566.8143	ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972479.D A9FOO_SL.M Wed Jan 27 11:30:29 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972479.D Vial: 10
Acq On : 25 Jan 2016 14:56 Operator: FJB
Sample : WG555000-09 500ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

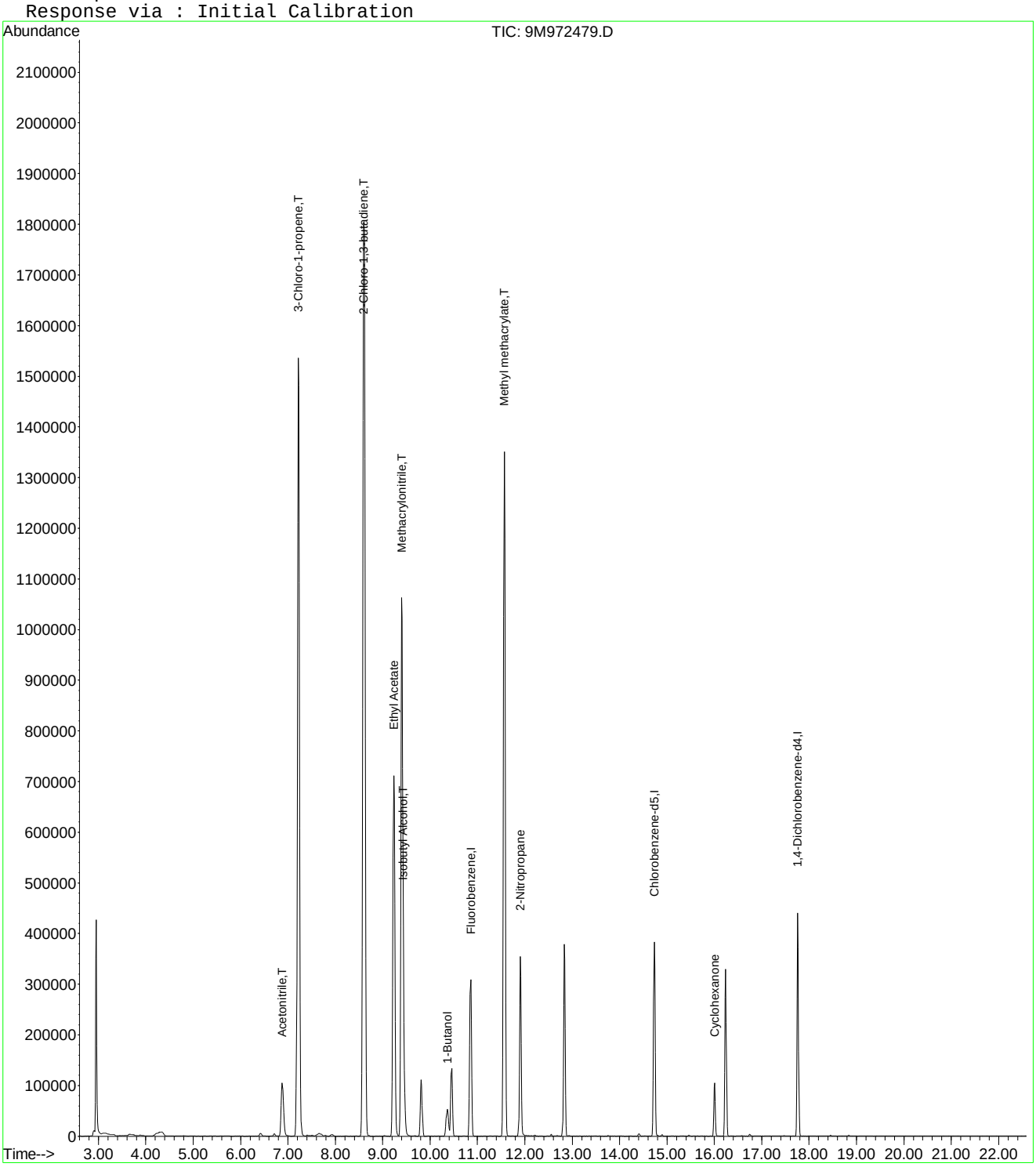

9M972479.D A9FOO_SL.M Wed Jan 27 11:30:29 2016 Page 2

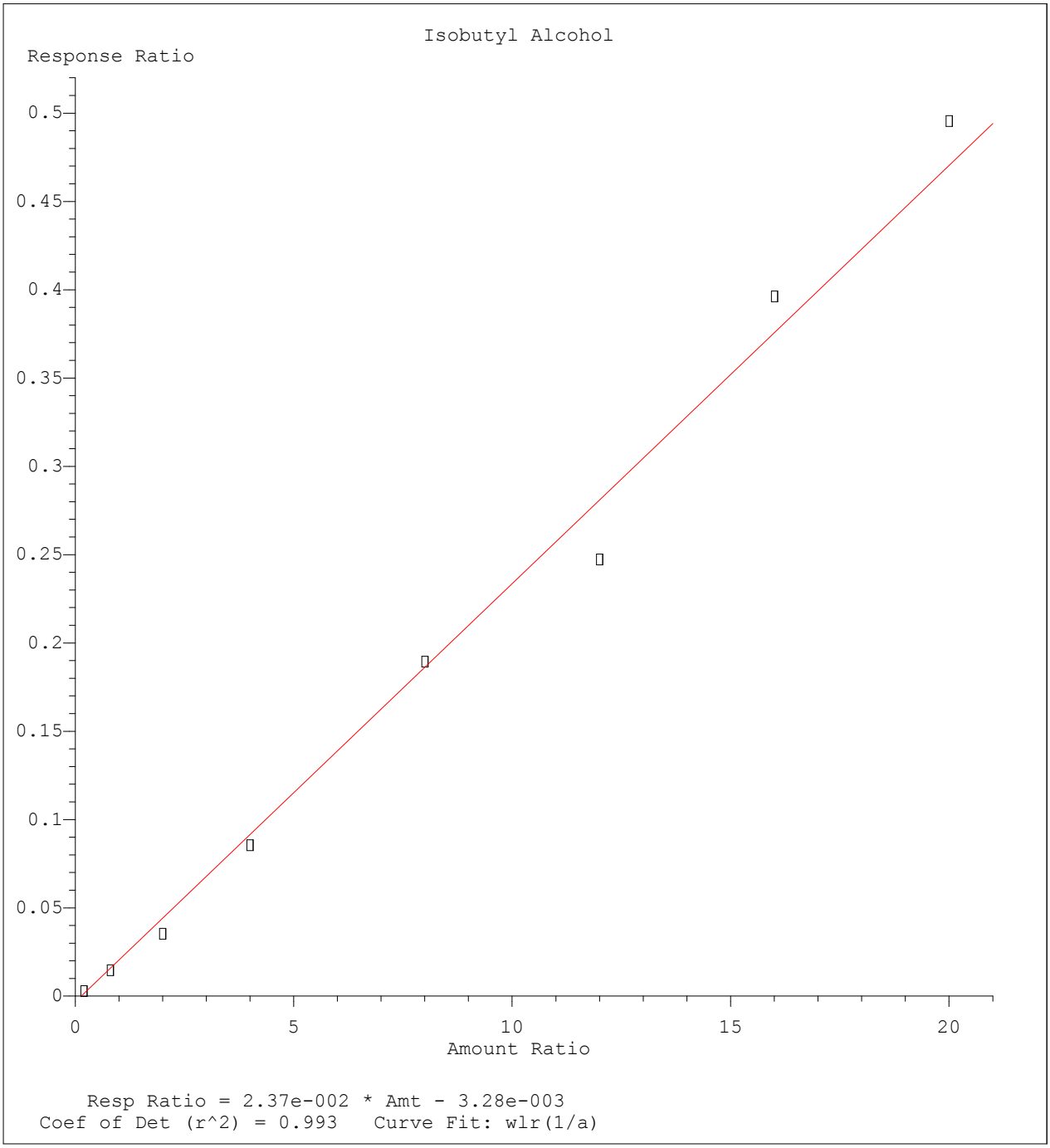

Method Name: C:\MSDCHEM\1\METHODS\A9FOO_SL.M
Calibration Table Last Updated: Wed Jan 27 09:49:02 2016

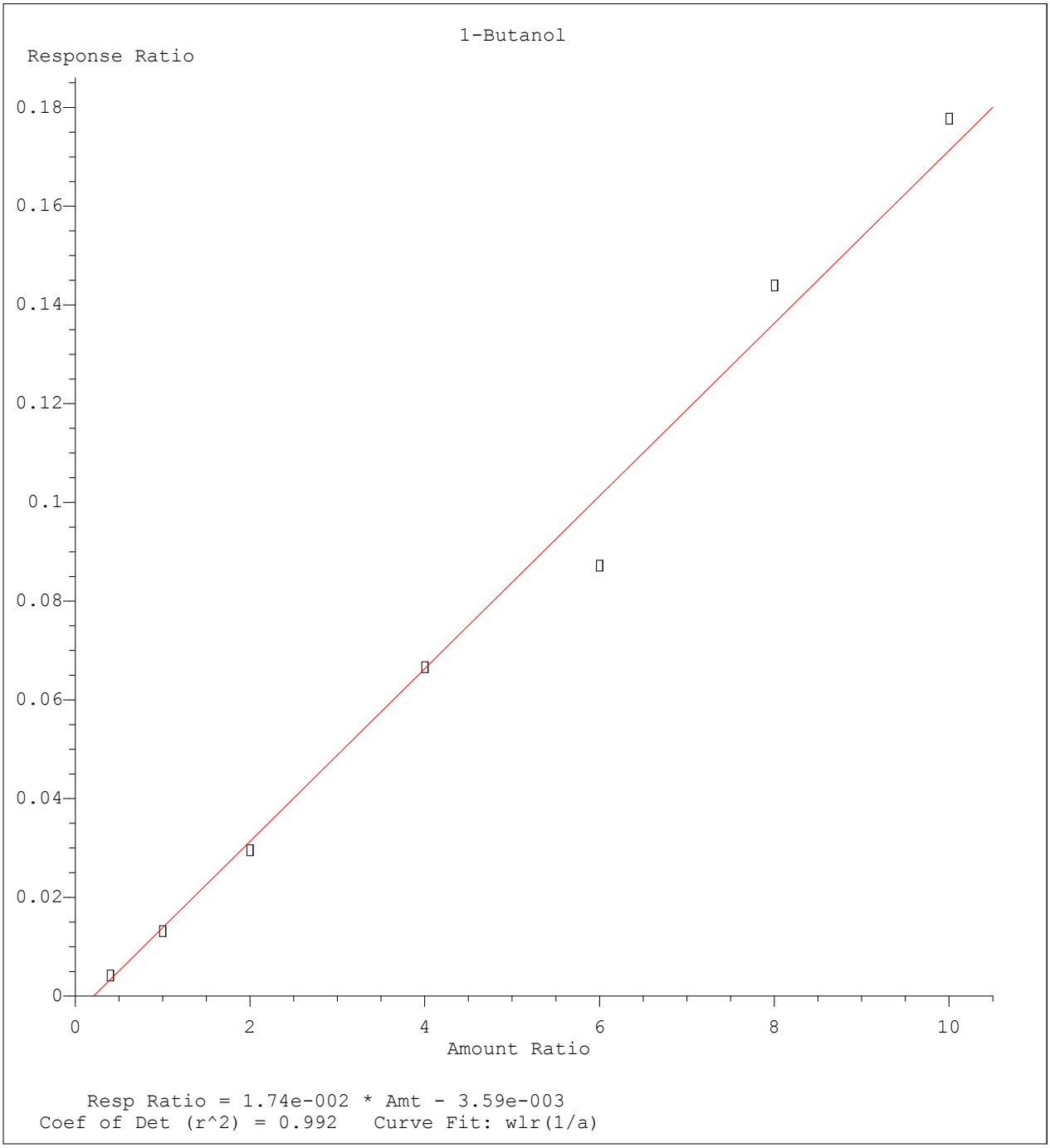

Method Name: C:\MSDCHEM\1\METHODS\A9FOO_SL.M
Calibration Table Last Updated: Wed Jan 27 09:49:02 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:09 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	394765	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	285754	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	159586	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	40054	101.2745 ug/kg#	100
3) 3-Chloro-1-propene	7.22	41	402890	103.3786 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	572568	129.1764 ug/kg	99
5) Ethyl Acetate	9.23	43	275962	106.0028 ug/kg	99
6) Methacrylonitrile	9.40	67	90289	107.1354 ug/kg	96
7) Isobutyl Alcohol	9.42	43	34031	188.7895 ug/kg	99
8) 1-Butanol	10.35	56	12038	97.7072 ug/kg	97
9) Methyl methacrylate	11.56	41	219363	110.3163 ug/kg	100
10) 2-Nitropropane	11.90	43	69288	107.2554 ug/kg	93
12) Cyclohexanone	16.01	55	14203	100.3934 ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972481.D A9FOO_SL.M Wed Jan 27 11:15:09 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

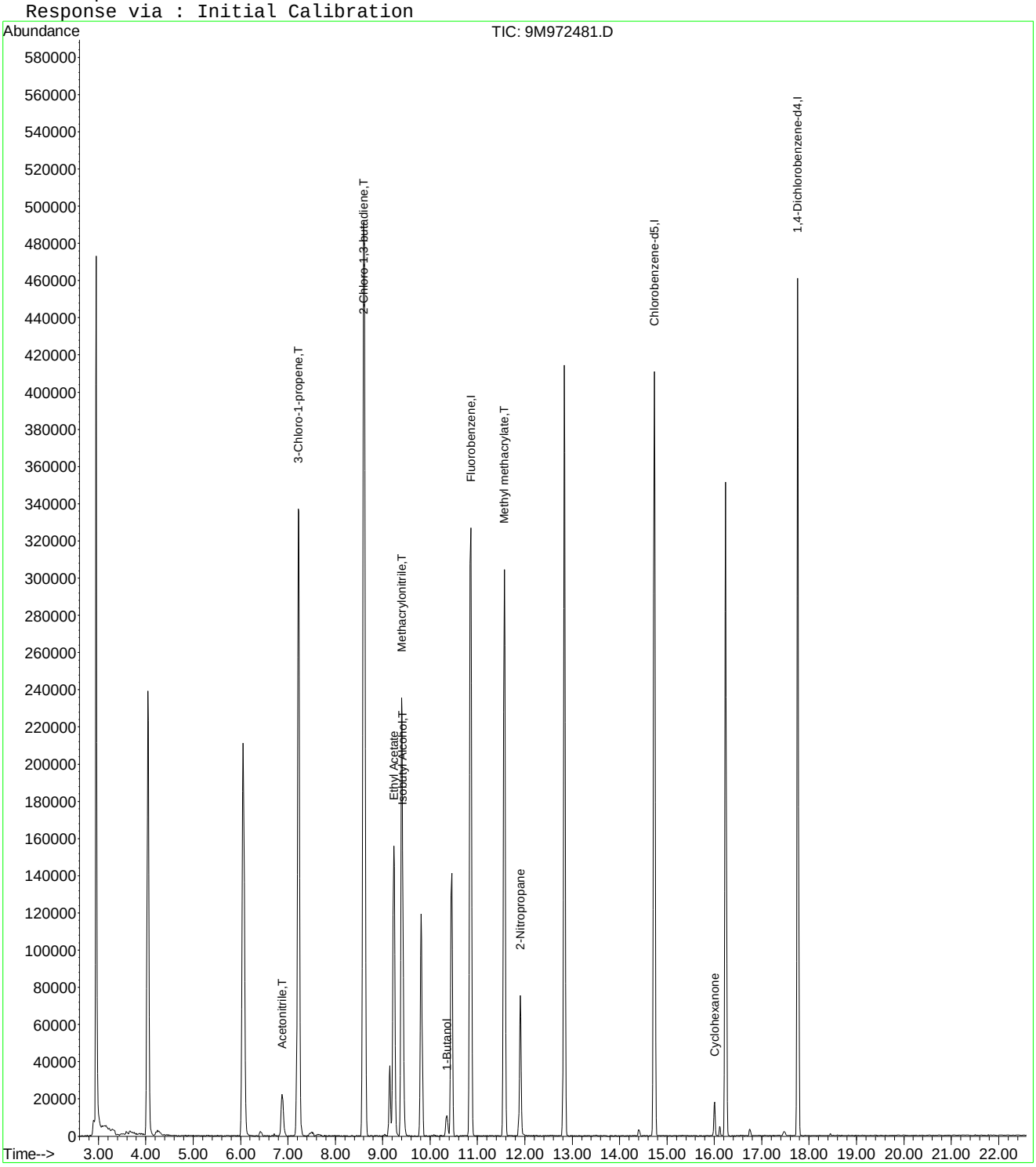

9M972481.D A9FOO_SL.M Wed Jan 27 11:15:09 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	101.2745	-1.3	106	0.00
3	T	3-Chloro-1-propene	100.0000	103.3786	-3.4	98	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	129.1764	-29.2	122	0.00
5		Ethyl Acetate	100.0000	106.0028	-6.0	103	0.00
6	T	Methacrylonitrile	100.0000	107.1354	-7.1	103	0.00
7	T	Isobutyl Alcohol	200.0000	188.7895	5.6	101	0.00
8		1-Butanol	100.0000	97.7072	2.3	103	0.00
9	T	Methyl methacrylate	100.0000	110.3163	-10.3	105	0.00
10		2-Nitropropane	100.0000	107.2554	-7.3	106	0.00
11	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
12		Cyclohexanone	100.0000	100.3934	-0.4	101	0.00
13	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	99	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972481.D A9FOO_SL.M Wed Jan 27 11:32:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972896.D Vial: 3
Acq On : 25 Feb 2016 15:48 Operator: ADC
Sample : WG558732-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:54 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260B_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	517775	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.73	117	378926	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.76	152	183008	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	147955	52.7167 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.44%		
43) 1,2-Dichloroethane-d4	10.44	65	183779	52.1887 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.38%		
58) Toluene-d8	12.83	98	511451	53.3617 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.72%		
79) p-Bromofluorobenzene	16.23	95	191673	53.7871 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 107.58%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.28	85	204882	57.9763 ug/kg	100
3) Chloromethane	3.74	50	183152	54.0664 ug/kg	100
4) Vinyl Chloride	3.99	62	192536	56.7764 ug/kg	100
5) 1,3-Butadiene	4.04	54	170907	52.9740 ug/kg	100
6) Bromomethane	4.88	94	107911	48.9956 ug/kg	100
7) Chloroethane	5.04	64	85391	56.5213 ug/kg	100
8) Trichlorofluoromethane	5.53	101	265962	52.2923 ug/kg	100
9) Diethyl ether	6.04	59	249400	104.8955 ug/kg	100
10) Isoprene	6.09	67	156373	51.4980 ug/kg	100
11) Acrolein	6.30	56	24630	51.9520 ug/kg	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	135036	51.4825 ug/kg	100
13) Acetone	6.41	43	66195	50.6135 ug/kg	100
14) 1,1-Dichloroethene	6.61	61	244051	50.4389 ug/kg	100
15) Tert-Butyl Alcohol	6.76	59	110494	208.7036 ug/kg	98
16) Dimethyl Sulfide	6.88	62	109294	53.4455 ug/kg	100
17) Iodomethane	7.13	142	79749	55.1586 ug/kg	100
18) Methyl acetate	7.14	43	135648	51.5699 ug/kg	100
19) Methylene Chloride	7.40	84	135280	51.3362 ug/kg	100
20) Carbon Disulfide	7.45	76	381814	51.2249 ug/kg	100
21) Acrylonitrile	7.59	53	69697	53.5624 ug/kg	100
22) Methyl Tert Butyl Ether	7.61	73	407131	54.2460 ug/kg	100
23) trans-1,2-Dichloroethene	7.85	61	226890	52.6160 ug/kg	100
24) n-Hexane	7.91	57	219597	49.3729 ug/kg	100
25) Diisopropyl ether	8.26	45	1088740	105.3973 ug/kg	100
26) Vinyl Acetate	8.43	43	311838	52.9553 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	284391	52.5076 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	1023392	106.5502 ug/kg	100
29) 2-Butanone	9.03	43	86123	51.5803 ug/kg	100
30) Propionitrile	9.14	54	53253	104.2214 ug/kg	100
31) 2,2-Dichloropropane	9.24	77	215042	53.1943 ug/kg	100
32) cis-1,2-Dichloroethene	9.31	96	153722	54.3532 ug/kg	100
33) Chloroform	9.52	83	263571	52.9749 ug/kg	100
34) 1-Bromopropane	9.65	122	22164	51.3817 ug/kg	100
35) Bromochloromethane	9.75	130	102780	55.9453 ug/kg	100
36) Tetrahydrofuran	9.78	42	113791	105.7289 ug/kg	100
38) 1,1,1-Trichloroethane	10.04	97	243452	54.1074 ug/kg	100
39) Cyclohexane	10.08	56	247641	50.4821 ug/kg	100
40) 1,1-Dichloropropene	10.24	75	182199	51.4612 ug/kg	100
41) Tert-Amyl-Methyl ether	10.34	73	741165	106.1603 ug/kg	100
42) Carbon Tetrachloride	10.39	117	221306	53.0537 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972896.D Vial: 3
Acq On : 25 Feb 2016 15:48 Operator: ADC
Sample : WG558732-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:54 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260B_SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	237857	54.3500	ug/kg	100
46)	Benzene	10.60	78	503328	50.7793	ug/kg	100
47)	Trichloroethene	11.35	130	163959	52.2047	ug/kg	100
48)	Methylcyclohexane	11.44	83	204551	51.9284	ug/kg	100
49)	1,2-Dichloropropane	11.56	63	148045	54.3898	ug/kg	100
50)	1,4-Dioxane	11.88	88	7789	190.7454	ug/kg	100
51)	Bromodichloromethane	11.87	83	203922	53.1595	ug/kg	100
52)	Dibromomethane	11.96	174	95887	53.1673	ug/kg	100
53)	2-Chloroethyl Vinyl Ether	12.17	63	38515	51.1377	ug/kg	100
54)	4-Methyl-2-Pentanone	12.19	58	64999	54.4056	ug/kg	100
55)	cis-1,3-Dichloropropene	12.50	75	212797	53.2452	ug/kg	100
56)	Dimethyl Disulfide	12.77	94	219798	54.7267	ug/kg	100
59)	Toluene	12.92	91	563647	52.0613	ug/kg	100
60)	Ethyl Methacrylate	13.02	69	158958	52.9687	ug/kg	100
61)	trans-1,3-Dichloropropene	13.10	75	212386	54.4657	ug/kg	100
62)	1,1,2-Trichloroethane	13.33	97	122975	54.0706	ug/kg	100
63)	2-Hexanone	13.25	43	119176	52.4822	ug/kg	100
64)	1,3-Dichloropropane	13.63	76	201541	53.1810	ug/kg	100
65)	Tetrachloroethene	13.75	164	117066	50.4378	ug/kg	100
66)	Dibromochloromethane	14.01	129	168874	53.1294	ug/kg	100
67)	1,2-Dibromoethane	14.28	107	132755	52.6249	ug/kg	100
68)	1-Chlorohexane	14.35	91	168490	52.7733	ug/kg	100
69)	Chlorobenzene	14.77	112	400241	52.5998	ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.80	131	154536	54.0800	ug/kg	100
71)	Ethylbenzene	14.80	106	207031	52.8117	ug/kg	100
72)	m-,p-Xylene	14.89	106	497405	102.7415	ug/kg	100
73)	o-Xylene	15.45	106	247567	53.2858	ug/kg	100
74)	Styrene	15.49	104	425634	53.7983	ug/kg	100
75)	Bromoform	16.00	173	116015	55.5910	ug/kg	100
76)	Isopropylbenzene	15.88	105	658255	52.7764	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.10	83	147970	53.3007	ug/kg	100
80)	1,2,3-Trichloropropane	16.29	110	55711	52.9159	ug/kg	100
81)	trans-1,4-Dichloro-2-Buten	16.33	53	55525	52.3210	ug/kg	100
82)	n-Propylbenzene	16.39	91	751844	52.2641	ug/kg	100
83)	Bromobenzene	16.52	156	177299	52.2079	ug/kg	100
84)	1,3,5-Trimethylbenzene	16.58	105	568867	52.6809	ug/kg	100
85)	2-Chlorotoluene	16.66	91	484783	50.2437	ug/kg	100
86)	4-Chlorotoluene	16.70	91	481367	53.9615	ug/kg	100
87)	a-Methylstyrene	16.98	118	255765	51.9817	ug/kg	100
88)	tert-Butylbenzene	17.04	134	121669	53.7430	ug/kg	100
89)	1,2,4-Trimethylbenzene	17.09	105	580656	51.3463	ug/kg	100
90)	sec-Butylbenzene	17.30	105	726352	52.2266	ug/kg	100
91)	p-Isopropyltoluene	17.46	119	613096	52.2364	ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	337008	49.9319	ug/kg	100
93)	1,4-Dichlorobenzene	17.80	146	335195	49.6777	ug/kg	100
94)	n-Butylbenzene	17.99	91	563797	51.6647	ug/kg	100
95)	1,2-Dichlorobenzene	18.30	146	320108	51.1150	ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.30	157	42968	53.4468	ug/kg	100
97)	1,2,4-Trichlorobenzene	20.44	180	222592	50.0691	ug/kg	100
98)	Hexachlorobutadiene	20.59	225	117654	50.2053	ug/kg	100
99)	Naphthalene	20.81	128	602344	54.0184	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	222082	51.5034	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972896.D 8260SL.M Fri Feb 26 11:21:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972896.D Vial: 3
Acq On : 25 Feb 2016 15:48 Operator: ADC
Sample : WG558732-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

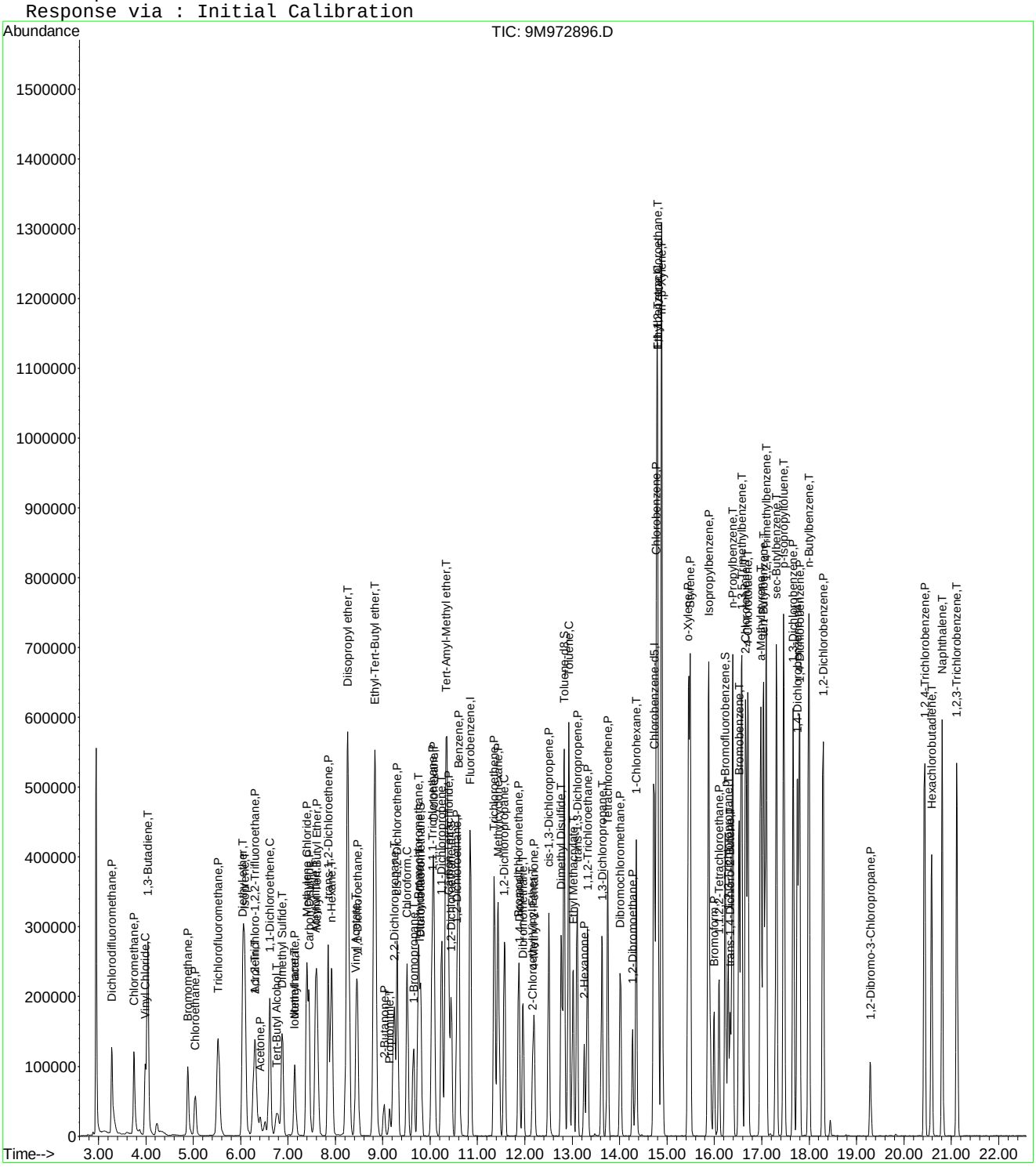

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:15 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	491503	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	353502	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	169028	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.83	98	923	0.1032 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.20%#	
79) p-Bromofluorobenzene	16.22	95	770	0.2339 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.46%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	1359	0.4051 ug/kg#	69
3) Chloromethane	3.75	50	2926	0.9099 ug/kg	95
4) Vinyl Chloride	3.98	62	1474	0.4579 ug/kg#	67
5) 1,3-Butadiene	4.03	54	1519	0.4960 ug/kg	82
6) Bromomethane	4.89	94	2071	0.9906 ug/kg	100
8) Trichlorofluoromethane	5.53	101	2609	0.5404 ug/kg#	51
10) Isoprene	6.08	67	1239	0.4298 ug/kg	70
13) Acetone	6.43	43	4251	5.5216 ug/kg#	75
14) 1,1-Dichloroethene	6.63	61	2149	0.4679 ug/kg#	66
17) Iodomethane	7.14	142	943	3.4505 ug/kg#	34
18) Methyl acetate	7.16	43	1334	0.5343 ug/kg#	45
19) Methylene Chloride	7.40	84	1287	0.5145 ug/kg	81
20) Carbon Disulfide	7.44	76	6762	0.9557 ug/kg#	76
23) trans-1,2-Dichloroethene	7.84	61	2196	0.5365 ug/kg	86
24) n-Hexane	7.92	57	2239	0.5303 ug/kg#	62
26) Vinyl Acetate	8.44	43	2494	0.4462 ug/kg#	78
27) 1,1-Dichloroethane	8.48	63	2396	0.4660 ug/kg#	63
29) 2-Butanone	9.02	43	778	0.4909 ug/kg#	58
31) 2,2-Dichloropropane	9.24	77	1877	0.4891 ug/kg#	42
32) cis-1,2-Dichloroethene	9.32	96	1178	0.4388 ug/kg	74
33) Chloroform	9.52	83	2007	0.4249 ug/kg	81
35) Bromochloromethane	9.74	130	828	0.4748 ug/kg#	68
36) Tetrahydrofuran	9.76	42	1603	1.5690 ug/kg#	57
38) 1,1,1-Trichloroethane	10.05	97	1773	0.4151 ug/kg	92
40) 1,1-Dichloropropene	10.25	75	1521	0.4526 ug/kg#	38
42) Carbon Tetrachloride	10.40	117	1765	0.4457 ug/kg#	85
45) 1,2-Dichloroethane	10.57	62	1885	0.4537 ug/kg#	68
46) Benzene	10.61	78	5607	0.5959 ug/kg#	83
47) Trichloroethene	11.36	130	1808	0.6064 ug/kg	88
48) Methylcyclohexane	11.44	83	1930	0.5161 ug/kg	96
55) cis-1,3-Dichloropropene	12.51	75	1714	0.4518 ug/kg#	51
59) Toluene	12.93	91	5550	0.5495 ug/kg	88
61) trans-1,3-Dichloropropene	13.10	75	1920	0.5278 ug/kg#	51
63) 2-Hexanone	13.25	43	877	0.4140 ug/kg#	63
64) 1,3-Dichloropropane	13.63	76	1615	0.4568 ug/kg	91
65) Tetrachloroethene	13.75	164	1154	0.5330 ug/kg#	74
67) 1,2-Dibromoethane	14.27	107	988	0.4198 ug/kg	87
68) 1-Chlorohexane	14.35	91	1436	0.4821 ug/kg	83
69) Chlorobenzene	14.78	112	4578	0.6449 ug/kg	87
70) 1,1,1,2-Tetrachloroethane	14.81	131	1078	0.4044 ug/kg	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:15 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
71)	Ethylbenzene	14.80	106	1823	0.4985 ug/kg	68
72)	m-,p-Xylene	14.88	106	4752	1.0521 ug/kg	95
73)	o-Xylene	15.44	106	2166	0.4997 ug/kg	94
74)	Styrene	15.49	104	3544	0.4802 ug/kg	91
76)	Isopropylbenzene	15.87	105	6349	0.5456 ug/kg	97
78)	1,1,2,2-Tetrachloroethane	16.09	83	1326	0.5171 ug/kg#	89
82)	n-Propylbenzene	16.38	91	7679	0.5780 ug/kg	98
83)	Bromobenzene	16.52	156	1798	0.5732 ug/kg	88
84)	1,3,5-Trimethylbenzene	16.57	105	4554	0.4566 ug/kg	92
85)	2-Chlorotoluene	16.66	91	5237	0.5877 ug/kg	84
86)	4-Chlorotoluene	16.71	91	5645	0.6851 ug/kg	93
87)	a-Methylstyrene	16.97	118	2091	0.4601 ug/kg	93
89)	1,2,4-Trimethylbenzene	17.09	105	6291	0.6023 ug/kg	84
90)	sec-Butylbenzene	17.31	105	7013	0.5460 ug/kg	93
91)	p-Isopropyltoluene	17.47	119	5681	0.5241 ug/kg	95
92)	1,3-Dichlorobenzene	17.67	146	4446	0.7132 ug/kg	91
93)	1,4-Dichlorobenzene	17.79	146	4603	0.7386 ug/kg#	73
94)	n-Butylbenzene	17.99	91	6750	0.6697 ug/kg#	90
95)	1,2-Dichlorobenzene	18.29	146	3889	0.6724 ug/kg	82
97)	1,2,4-Trichlorobenzene	20.43	180	3506	0.8539 ug/kg	94
98)	Hexachlorobutadiene	20.58	225	1493	0.6898 ug/kg#	70
99)	Naphthalene	20.81	128	10277	0.9979 ug/kg	93
100)	1,2,3-Trichlorobenzene	21.12	180	3961	0.9946 ug/kg	80

(#) = qualifier out of range (m) = manual integration
9M972898.D 8260SL.M Fri Feb 26 11:11:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration

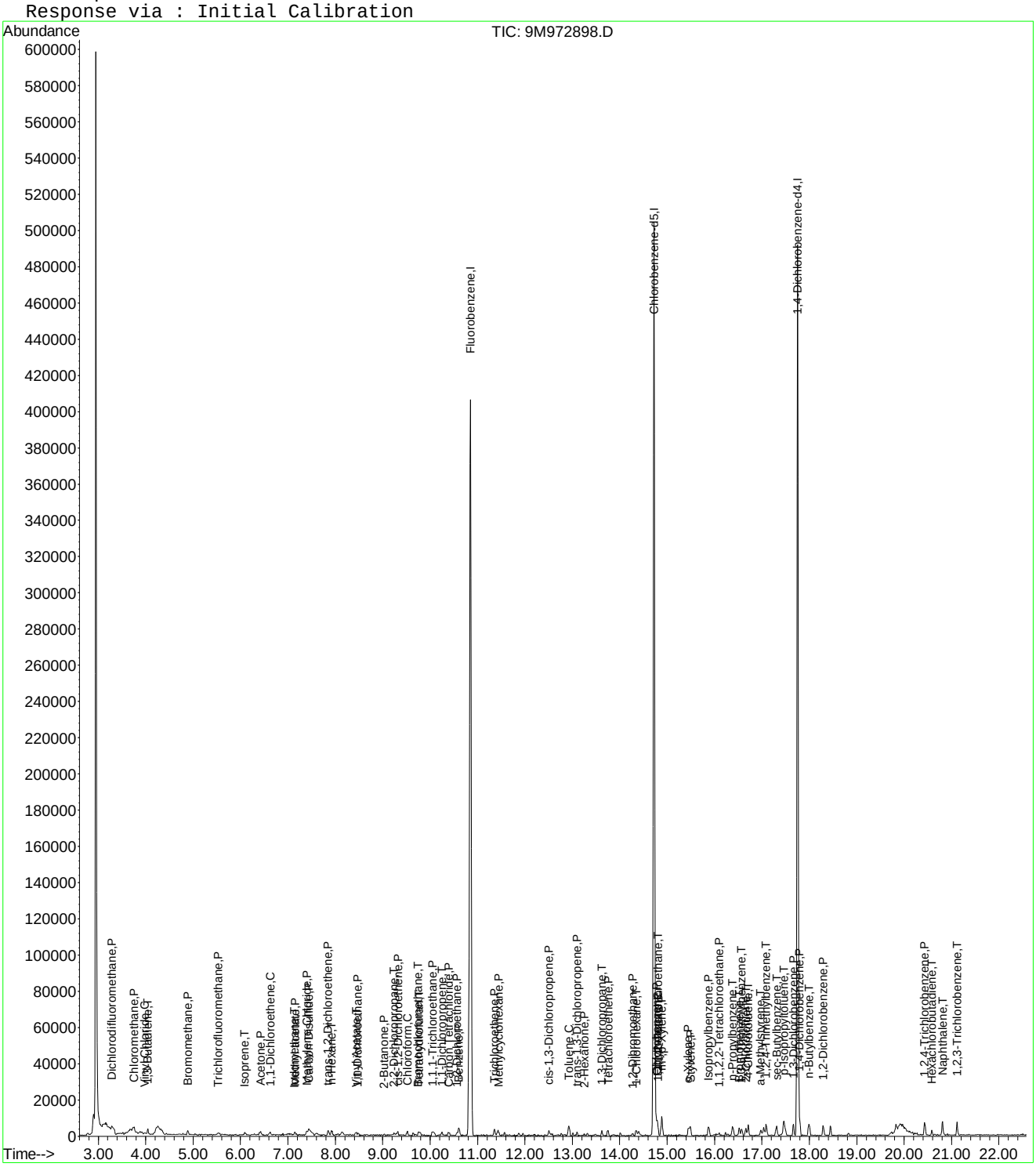

9M972898.D 8260SL.M Fri Feb 26 11:11:55 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	0.4051	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.9099	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.4579	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	0.4960	0.0	0	0.00
6	P	Bromomethane	-1.0000	0.9906	0.0	100	0.00
7	P	Chloroethane	-1.0000	0.2845	0.0	100	0.01
8	P	Trichlorofluoromethane	-1.0000	0.5404	0.0	100	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.04#
10	T	Isoprene	-1.0000	0.4298	0.0	0	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.30#
12	P	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.0779	0.0	100	0.00
13	P	Acetone	-1.0000	5.5216	0.0	0	0.02
14	C	1,1-Dichloroethene	-1.0000	0.4679	0.0	100	0.01
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.76#
16	T	Dimethyl Sulfide	-1.0000	0.1242	0.0	0	0.01
17	T	Iodomethane	-1.0000	3.4505	0.0	0	0.00
18	P	Methyl acetate	-1.0000	0.5343	0.0	0	0.02
19	P	Methylene Chloride	-1.0000	0.5145	0.0	100	0.00
20	P	Carbon Disulfide	-1.0000	0.9557	0.0	0	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.59#
22	P	Methyl Tert Butyl Ether	-1.0000	0.3878	0.0	100	0.00
23	P	trans-1,2-Dichloroethene	-1.0000	0.5365	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.5303	0.0	0	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.26#
26	T	Vinyl Acetate	-1.0000	0.4462	0.0	100	0.01
27	P	1,1-Dichloroethane	-1.0000	0.4660	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.83#
29	P	2-Butanone	-1.0000	0.4909	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.14#
31	T	2,2-Dichloropropane	-1.0000	0.4891	0.0	100	0.00
32	P	cis-1,2-Dichloroethene	-1.0000	0.4388	0.0	100	0.01
33	C	Chloroform	-1.0000	0.4249	0.0	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.65#
35	T	Bromochloromethane	-1.0000	0.4748	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	1.5690	0.0	100	-0.02
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	-1.0000	0.4151	0.0	100	0.00
39	P	Cyclohexane	-1.0000	0.3314	0.0	0	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4526	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.34#
42	P	Carbon Tetrachloride	-1.0000	0.4457	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	-1.0000	0.4537	0.0	100	0.00
46	P	Benzene	0.5000	0.5959	-19.2	100	0.00
47	P	Trichloroethene	-1.0000	0.6064	0.0	100	0.00
48	P	Methylcyclohexane	-1.0000	0.5161	0.0	0	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2930	0.0	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.88#
51	P	Bromodichloromethane	-1.0000	0.3238	0.0	100	0.00
52	T	Dibromomethane	-1.0000	0.1630	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.0000	0.0	0	-12.16#
54	P	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.19#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	-1.0000	0.4518	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2529	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.1032	0.0	100	0.00
59	C	Toluene	0.5000	0.5495	-9.9	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2340	0.0	0	0.00
61	P	trans-1,3-Dichloropropene	-1.0000	0.5278	0.0	100	0.00
62	P	1,1,2-Trichloroethane	-1.0000	0.3964	0.0	100	0.00
63	P	2-Hexanone	-1.0000	0.4140	0.0	100	0.00
64	T	1,3-Dichloropropane	-1.0000	0.4568	0.0	100	0.00
65	P	Tetrachloroethene	-1.0000	0.5330	0.0	100	0.00
66	P	Dibromochloromethane	-1.0000	0.3541	0.0	100	0.00
67	P	1,2-Dibromoethane	-1.0000	0.4198	0.0	100	0.00
68	T	1-Chlorohexane	-1.0000	0.4821	0.0	0	0.00
69	P	Chlorobenzene	-1.0000	0.6449	0.0	100	0.00
70	T	1,1,1,2-Tetrachloroethane	-1.0000	0.4044	0.0	100	0.00
71	C	Ethylbenzene	0.5000	0.4985	0.3	100	0.00
72	P	m-,p-Xylene	1.0000	1.0521	-5.2	100	0.00
73	P	o-Xylene	0.5000	0.4997	0.1	100	0.00
74	P	Styrene	-1.0000	0.4802	0.0	100	0.00
75	P	Bromoform	-1.0000	0.3955	0.0	100	0.00
76	P	Isopropylbenzene	-1.0000	0.5456	0.0	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	-1.0000	0.5171	0.0	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.2339	0.0	100	0.00
80	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.29#
81	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.33#
82	T	n-Propylbenzene	-1.0000	0.5780	0.0	100	0.00
83	T	Bromobenzene	-1.0000	0.5732	0.0	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	0.4566	0.0	100	0.00
85	T	2-Chlorotoluene	-1.0000	0.5877	0.0	100	0.00
86	T	4-Chlorotoluene	-1.0000	0.6851	0.0	100	0.00
87	T	a-Methylstyrene	-1.0000	0.4601	0.0	0	0.00
88	T	tert-Butylbenzene	-1.0000	0.2860	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	-1.0000	0.6023	0.0	100	0.00
90	T	sec-Butylbenzene	-1.0000	0.5460	0.0	100	0.00
91	T	p-Isopropyltoluene	-1.0000	0.5241	0.0	100	0.00
92	P	1,3-Dichlorobenzene	-1.0000	0.7132	0.0	100	0.00
93	P	1,4-Dichlorobenzene	-1.0000	0.7386	0.0	100	0.00
94	T	n-Butylbenzene	-1.0000	0.6697	0.0	100	0.00
95	P	1,2-Dichlorobenzene	-1.0000	0.6724	0.0	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.30#
97	P	1,2,4-Trichlorobenzene	-1.0000	0.8539	0.0	100	0.00
98	T	Hexachlorobutadiene	-1.0000	0.6898	0.0	100	0.00
99	T	Naphthalene	-1.0000	0.9979	0.0	100	0.00
100	T	1,2,3-Trichlorobenzene	-1.0000	0.9946	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972898.D 8260SL.M Fri Feb 26 11:11:52 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	536651	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	387839	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	177519	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.82	98	959	0.0978 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.20%#	
79) p-Bromofluorobenzene	16.22	95	467	0.1351 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	3486	0.9518 ug/kg#	85
3) Chloromethane	3.74	50	4175	1.1891 ug/kg	88
4) Vinyl Chloride	3.98	62	2686	0.7642 ug/kg	80
5) 1,3-Butadiene	4.03	54	3056	0.9139 ug/kg	91
6) Bromomethane	4.89	94	2537	1.1114 ug/kg	94
7) Chloroethane	5.05	64	1264	0.8072 ug/kg#	45
8) Trichlorofluoromethane	5.53	101	5567	1.0561 ug/kg#	93
9) Diethyl ether	6.05	59	11529	4.6784 ug/kg	97
10) Isoprene	6.08	67	2965	0.9421 ug/kg	97
11) Acrolein	6.29	56	1087	2.2122 ug/kg#	35
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	1939	0.7132 ug/kg	88
13) Acetone	6.41	43	5231	5.8863 ug/kg	95
14) 1,1-Dichloroethene	6.62	61	4981	0.9932 ug/kg	92
15) Tert-Butyl Alcohol	6.77	59	5682	10.3548 ug/kg#	63
16) Dimethyl Sulfide	6.88	62	1614	0.7615 ug/kg	91
17) Iodomethane	7.15	142	941	3.3944 ug/kg#	66
18) Methyl acetate	7.16	43	2553	0.9364 ug/kg#	65
19) Methylene Chloride	7.40	84	2963	1.0849 ug/kg	92
20) Carbon Disulfide	7.45	76	9749	1.2619 ug/kg	95
21) Acrylonitrile	7.58	53	3140	2.3282 ug/kg	85
22) Methyl Tert Butyl Ether	7.61	73	7179	0.9229 ug/kg	83
23) trans-1,2-Dichloroethene	7.85	61	4296	0.9612 ug/kg	95
24) n-Hexane	7.93	57	4481	0.9720 ug/kg	95
25) Diisopropyl ether	8.26	45	50344	4.7022 ug/kg	98
26) Vinyl Acetate	8.43	43	5247	0.8597 ug/kg#	90
27) 1,1-Dichloroethane	8.48	63	5885	1.0483 ug/kg#	85
28) Ethyl-Tert-Butyl ether	8.83	59	46767	4.6979 ug/kg	99
29) 2-Butanone	9.03	43	1776	1.0263 ug/kg#	58
30) Propionitrile	9.14	54	2256	4.2599 ug/kg#	60
31) 2,2-Dichloropropane	9.24	77	4402	1.0506 ug/kg#	71
32) cis-1,2-Dichloroethene	9.31	96	2650	0.9040 ug/kg	94
33) Chloroform	9.51	83	5072	0.9836 ug/kg	96
35) Bromochloromethane	9.75	130	1408	0.7394 ug/kg	86
36) Tetrahydrofuran	9.77	42	6699	6.0054 ug/kg	95
38) 1,1,1-Trichloroethane	10.05	97	4567	0.9793 ug/kg	91
39) Cyclohexane	10.08	56	4992	0.9818 ug/kg#	85
40) 1,1-Dichloropropene	10.24	75	3785	1.0315 ug/kg	90
41) Tert-Amyl-Methyl ether	10.34	73	33850	4.6779 ug/kg	95
42) Carbon Tetrachloride	10.40	117	4297	0.9939 ug/kg#	90
45) 1,2-Dichloroethane	10.55	62	3923	0.8649 ug/kg	93

(#) = qualifier out of range (m) = manual integration
9M972899.D 8260SL.M Fri Feb 26 11:12:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
46)	Benzene	10.61	78	9968	0.9703 ug/kg	96
47)	Trichloroethene	11.36	130	3259	1.0012 ug/kg	99
48)	Methylcyclohexane	11.43	83	3354	0.8215 ug/kg	76
49)	1,2-Dichloropropane	11.57	63	2469	0.8752 ug/kg	94
51)	Bromodichloromethane	11.87	83	3657	0.9198 ug/kg#	94
52)	Dibromomethane	11.96	174	1621	0.8672 ug/kg	93
53)	2-Chloroethyl Vinyl Ether	12.16	63	210	3.0851 ug/kg#	47
54)	4-Methyl-2-Pentanone	12.20	58	738	0.5960 ug/kg#	40
55)	cis-1,3-Dichloropropene	12.51	75	3714	0.8966 ug/kg	86
56)	Dimethyl Disulfide	12.77	94	3075	0.7387 ug/kg	83
59)	Toluene	12.93	91	10894	0.9831 ug/kg	97
60)	Ethyl Methacrylate	13.01	69	1966	0.6401 ug/kg#	53
61)	trans-1,3-Dichloropropene	13.11	75	3837	0.9614 ug/kg#	79
62)	1,1,2-Trichloroethane	13.32	97	2148	0.9227 ug/kg	94
63)	2-Hexanone	13.26	43	1796	0.7727 ug/kg#	80
64)	1,3-Dichloropropane	13.63	76	3616	0.9322 ug/kg	99
65)	Tetrachloroethene	13.75	164	2587	1.0890 ug/kg	79
66)	Dibromochloromethane	14.02	129	3318	1.0199 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	2336	0.9047 ug/kg	97
68)	1-Chlorohexane	14.34	91	3075	0.9410 ug/kg	85
69)	Chlorobenzene	14.78	112	7982	1.0249 ug/kg	88
70)	1,1,1,2-Tetrachloroethane	14.81	131	2589	0.8852 ug/kg	86
71)	Ethylbenzene	14.80	106	4007	0.9987 ug/kg	89
72)	m-,p-Xylene	14.88	106	9607	1.9388 ug/kg	98
73)	o-Xylene	15.45	106	4376	0.9202 ug/kg	99
74)	Styrene	15.49	104	7432	0.9178 ug/kg	92
75)	Bromoform	16.00	173	1759	0.8235 ug/kg#	79
76)	Isopropylbenzene	15.87	105	11937	0.9351 ug/kg	98
78)	1,1,2,2-Tetrachloroethane	16.09	83	2186	0.8118 ug/kg#	83
80)	1,2,3-Trichloropropane	16.28	110	875	0.8568 ug/kg#	81
81)	trans-1,4-Dichloro-2-Buten	16.34	53	831	0.8073 ug/kg#	74
82)	n-Propylbenzene	16.38	91	14156	1.0145 ug/kg	99
83)	Bromobenzene	16.53	156	2996	0.9095 ug/kg#	39
84)	1,3,5-Trimethylbenzene	16.57	105	11008	1.0509 ug/kg	88
85)	2-Chlorotoluene	16.65	91	10606	1.1332 ug/kg	84
86)	4-Chlorotoluene	16.71	91	9101	1.0518 ug/kg	95
87)	a-Methylstyrene	16.98	118	4078	0.8544 ug/kg	85
88)	tert-Butylbenzene	17.03	134	2095	0.9540 ug/kg	74
89)	1,2,4-Trimethylbenzene	17.09	105	12124	1.1053 ug/kg	83
90)	sec-Butylbenzene	17.31	105	13922	1.0320 ug/kg	100
91)	p-Isopropyltoluene	17.47	119	10153	0.8918 ug/kg	98
92)	1,3-Dichlorobenzene	17.67	146	7444	1.1370 ug/kg	90
93)	1,4-Dichlorobenzene	17.79	146	7580	1.1581 ug/kg	92
94)	n-Butylbenzene	17.99	91	11112	1.0498 ug/kg	91
95)	1,2-Dichlorobenzene	18.29	146	6415	1.0560 ug/kg	97
97)	1,2,4-Trichlorobenzene	20.43	180	4869	1.1291 ug/kg	98
98)	Hexachlorobutadiene	20.59	225	2032	0.8939 ug/kg	87
99)	Naphthalene	20.81	128	11710	1.0826 ug/kg	92
100)	1,2,3-Trichlorobenzene	21.12	180	4698	1.1232 ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972899.D 8260SL.M Fri Feb 26 11:12:33 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration

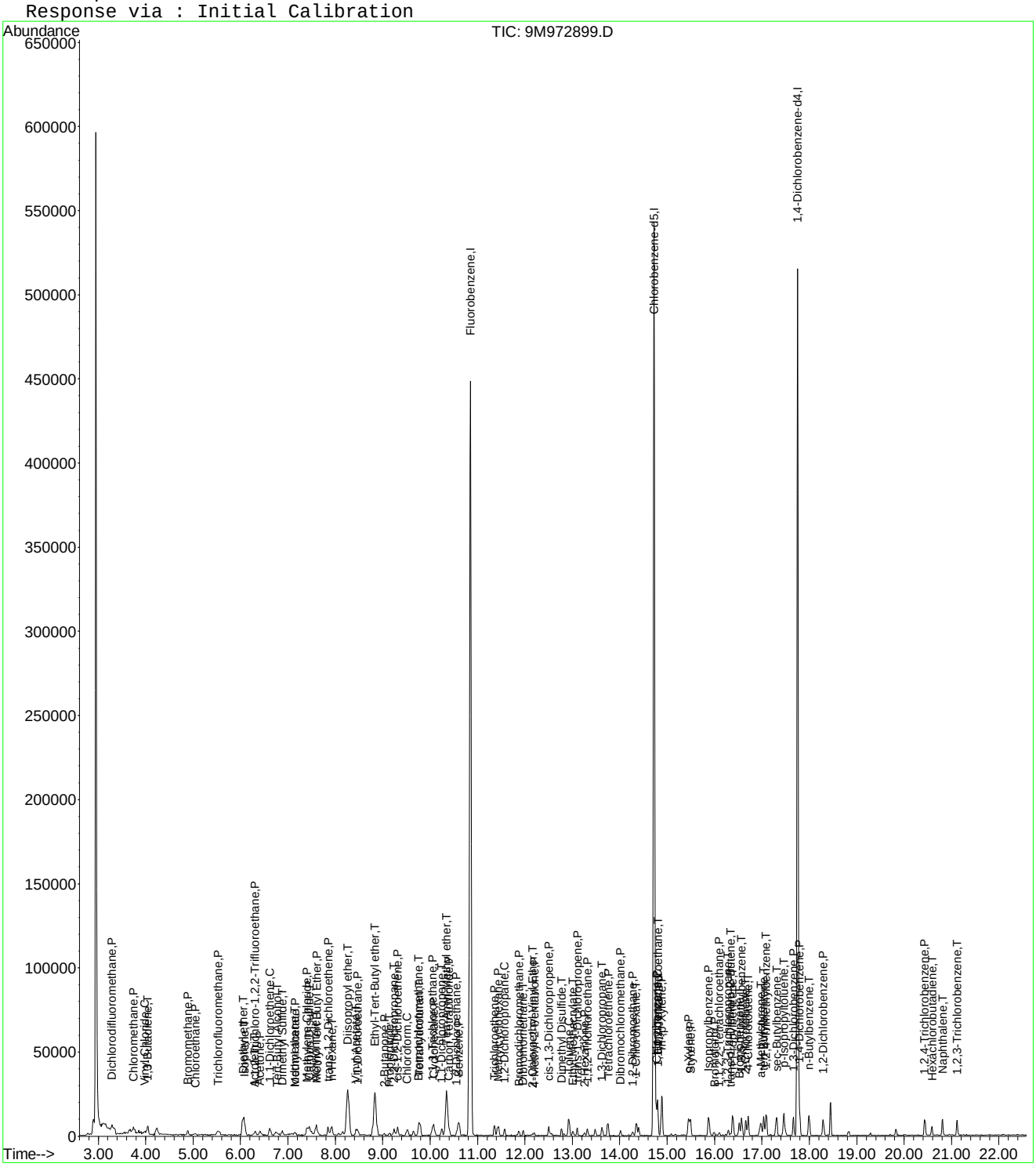

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	0.9518	0.0	100	0.00
3	P	Chloromethane	-1.0000	1.1891	0.0	100	0.00
4	C	Vinyl Chloride	1.0000	0.7642	23.6#	100	0.00
5	T	1,3-Butadiene	-1.0000	0.9139	0.0	0	0.00
6	P	Bromomethane	1.0000	1.1114	-11.1	100	0.00
7	P	Chloroethane	-1.0000	0.8072	0.0	100	0.00
8	P	Trichlorofluoromethane	1.0000	1.0561	-5.6	100	0.00
9	T	Diethyl ether	5.0000	4.6784	6.4	100	0.00
10	T	Isoprene	-1.0000	0.9421	0.0	0	0.00
11	T	Acrolein	2.5000	2.2122	11.5	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.7132	0.0	100	0.00
13	P	Acetone	-1.0000	5.8863	0.0	0	0.00
14	C	1,1-Dichloroethene	1.0000	0.9932	0.7	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	10.3548	0.0	100	0.00
16	T	Dimethyl Sulfide	1.0000	0.7615	23.9	100	0.00
17	T	Iodomethane	-1.0000	3.3944	0.0	0	0.01
18	P	Methyl acetate	-1.0000	0.9364	0.0	0	0.02
19	P	Methylene Chloride	-1.0000	1.0849	0.0	100	0.00
20	P	Carbon Disulfide	-1.0000	1.2619	0.0	0	0.00
21	T	Acrylonitrile	2.5000	2.3282	6.9	100	0.00
22	P	Methyl Tert Butyl Ether	1.0000	0.9229	7.7	100	0.00
23	P	trans-1,2-Dichloroethene	1.0000	0.9612	3.9	100	0.00
24	T	n-Hexane	-1.0000	0.9720	0.0	0	0.01
25	T	Diisopropyl ether	5.0000	4.7022	6.0	100	0.00
26	T	Vinyl Acetate	-1.0000	0.8597	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0483	-4.8	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.6979	6.0	100	0.00
29	P	2-Butanone	-1.0000	1.0263	0.0	100	0.00
30	T	Propionitrile	5.0000	4.2599	14.8	100	0.00
31	T	2,2-Dichloropropane	-1.0000	1.0506	0.0	100	0.00
32	P	cis-1,2-Dichloroethene	1.0000	0.9040	9.6	100	0.00
33	C	Chloroform	1.0000	0.9836	1.6	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.65#
35	T	Bromochloromethane	1.0000	0.7395	26.1#	100	0.00
36	T	Tetrahydrofuran	-1.0000	6.0054	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	1.0000	0.9793	2.1	100	0.00
39	P	Cyclohexane	1.0000	0.9818	1.8	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0315	-3.1	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	4.6780	6.4	100	0.00
42	P	Carbon Tetrachloride	-1.0000	0.9939	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	1.0000	0.8649	13.5	100	0.00
46	P	Benzene	1.0000	0.9703	3.0	100	0.00
47	P	Trichloroethene	1.0000	1.0012	-0.1	100	0.00
48	P	Methylcyclohexane	1.0000	0.8215	17.8	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.8752	12.5	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.88#
51	P	Bromodichloromethane	-1.0000	0.9198	0.0	100	0.00
52	T	Dibromomethane	1.0000	0.8672	13.3	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	3.0851	0.0	0	0.00
54	P	4-Methyl-2-Pentanone	-1.0000	0.5960	0.0	100	0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	-1.0000	0.8966	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.7387	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0978	0.0	100	0.00
59	C	Toluene	1.0000	0.9831	1.7	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.6401	0.0	0	0.00
61	P	trans-1,3-Dichloropropene	-1.0000	0.9614	0.0	100	0.00
62	P	1,1,2-Trichloroethane	1.0000	0.9227	7.7	100	0.00
63	P	2-Hexanone	-1.0000	0.7727	0.0	100	0.00
64	T	1,3-Dichloropropane	1.0000	0.9322	6.8	100	0.00
65	P	Tetrachloroethene	1.0000	1.0890	-8.9	100	0.00
66	P	Dibromochloromethane	-1.0000	1.0199	0.0	100	0.00
67	P	1,2-Dibromoethane	-1.0000	0.9047	0.0	100	0.00
68	T	1-Chlorohexane	1.0000	0.9410	5.9	100	0.00
69	P	Chlorobenzene	1.0000	1.0249	-2.5	100	0.00
70	T	1,1,1,2-Tetrachloroethane	-1.0000	0.8852	0.0	100	0.00
71	C	Ethylbenzene	1.0000	0.9987	0.1	100	0.00
72	P	m-,p-Xylene	2.0000	1.9388	3.1	100	0.00
73	P	o-Xylene	1.0000	0.9202	8.0	100	0.00
74	P	Styrene	1.0000	0.9178	8.2	100	0.00
75	P	Bromoform	-1.0000	0.8235	0.0	100	0.00
76	P	Isopropylbenzene	1.0000	0.9351	6.5	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	1.0000	0.8118	18.8	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.1351	0.0	100	0.00
80	T	1,2,3-Trichloropropane	1.0000	0.8568	14.3	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.8073	0.0	0	0.00
82	T	n-Propylbenzene	1.0000	1.0145	-1.4	100	0.00
83	T	Bromobenzene	1.0000	0.9095	9.1	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	1.0509	0.0	100	0.00
85	T	2-Chlorotoluene	-1.0000	1.1332	0.0	100	0.00
86	T	4-Chlorotoluene	1.0000	1.0518	-5.2	100	0.00
87	T	a-Methylstyrene	-1.0000	0.8544	0.0	0	0.00
88	T	tert-Butylbenzene	-1.0000	0.9540	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	1.0000	1.1053	-10.5	100	0.00
90	T	sec-Butylbenzene	1.0000	1.0320	-3.2	100	0.00
91	T	p-Isopropyltoluene	-1.0000	0.8918	0.0	100	0.00
92	P	1,3-Dichlorobenzene	1.0000	1.1370	-13.7	100	0.00
93	P	1,4-Dichlorobenzene	1.0000	1.1581	-15.8	100	0.00
94	T	n-Butylbenzene	1.0000	1.0498	-5.0	100	0.00
95	P	1,2-Dichlorobenzene	1.0000	1.0560	-5.6	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	0.3514	0.0	100	0.00
97	P	1,2,4-Trichlorobenzene	1.0000	1.1291	-12.9	100	0.00
98	T	Hexachlorobutadiene	1.0000	0.8939	10.6	100	0.00
99	T	Naphthalene	-1.0000	1.0826	0.0	100	0.00
100	T	1,2,3-Trichlorobenzene	1.0000	1.1232	-12.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1
9M972899.D 8260SL.M Fri Feb 26 11:12:31 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	472115	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	342668	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	156993	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.83	98	772	0.0891 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.18%#	
79) p-Bromofluorobenzene	16.23	95	570	0.1865 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.38%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.29	85	6383	1.9809 ug/kg#	78
3) Chloromethane	3.74	50	7027	2.2750 ug/kg	100
4) Vinyl Chloride	4.00	62	6001	1.9408 ug/kg	97
5) 1,3-Butadiene	4.04	54	6545	2.2249 ug/kg	95
6) Bromomethane	4.90	94	5050	2.5146 ug/kg	81
7) Chloroethane	5.04	64	2391	1.7357 ug/kg#	70
8) Trichlorofluoromethane	5.54	101	9777	2.1082 ug/kg#	94
9) Diethyl ether	6.06	59	58156	26.8255 ug/kg	97
10) Isoprene	6.09	67	5698	2.0580 ug/kg	89
11) Acrolein	6.30	56	5427	12.5543 ug/kg	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	4756	1.9886 ug/kg	93
13) Acetone	6.40	43	6167	6.9886 ug/kg	93
14) 1,1-Dichloroethene	6.62	61	9652	2.1877 ug/kg	91
15) Tert-Butyl Alcohol	6.75	59	26757	55.4271 ug/kg#	91
16) Dimethyl Sulfide	6.89	62	3840	2.0594 ug/kg	97
17) Iodomethane	7.14	142	1541	3.9079 ug/kg#	56
18) Methyl acetate	7.15	43	5334	2.2240 ug/kg#	69
19) Methylene Chloride	7.40	84	5116	2.1292 ug/kg	98
20) Carbon Disulfide	7.44	76	15010	2.2085 ug/kg	94
21) Acrylonitrile	7.59	53	14961	12.6096 ug/kg	100
22) Methyl Tert Butyl Ether	7.61	73	13630	1.9917 ug/kg	93
23) trans-1,2-Dichloroethene	7.85	61	7964	2.0255 ug/kg	100
24) n-Hexane	7.92	57	8619	2.1253 ug/kg	100
25) Diisopropyl ether	8.26	45	252190	26.7748 ug/kg	99
26) Vinyl Acetate	8.43	43	11207	2.0872 ug/kg	95
27) 1,1-Dichloroethane	8.47	63	10529	2.1320 ug/kg#	93
28) Ethyl-Tert-Butyl ether	8.83	59	234163	26.7377 ug/kg	99
29) 2-Butanone	9.03	43	3346	2.1978 ug/kg#	76
30) Propionitrile	9.14	54	12899	27.6861 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	8085	2.1934 ug/kg	88
32) cis-1,2-Dichloroethene	9.32	96	4861	1.8850 ug/kg	98
33) Chloroform	9.53	83	10005	2.2054 ug/kg	95
34) 1-Bromopropane	9.64	122	209	1.5465 ug/kg	96
35) Bromochloromethane	9.75	130	3273	1.9539 ug/kg	81
36) Tetrahydrofuran	9.78	42	26192	26.6900 ug/kg	94
38) 1,1,1-Trichloroethane	10.04	97	8229	2.0058 ug/kg	97
39) Cyclohexane	10.09	56	9354	2.0912 ug/kg	96
40) 1,1-Dichloropropene	10.23	75	6787	2.1024 ug/kg	88
41) Tert-Amyl-Methyl ether	10.34	73	167275	26.2768 ug/kg	98
42) Carbon Tetrachloride	10.39	117	7920	2.0823 ug/kg#	95

(#) = qualifier out of range (m) = manual integration
9M972900.D 8260SL.M Fri Feb 26 11:13:39 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	8488	2.1271 ug/kg	89
46)	Benzene	10.60	78	19454	2.1525 ug/kg	96
47)	Trichloroethene	11.35	130	6073	2.1207 ug/kg	96
48)	Methylcyclohexane	11.44	83	7523	2.0945 ug/kg	95
49)	1,2-Dichloropropane	11.58	63	5118	2.0621 ug/kg	93
50)	1,4-Dioxane	11.88	88	1938	52.0499 ug/kg	84
51)	Bromodichloromethane	11.87	83	7148	2.0436 ug/kg#	95
52)	Dibromomethane	11.97	174	3572	2.1721 ug/kg	91
53)	2-Chloroethyl Vinyl Ether	12.17	63	474	3.4830 ug/kg#	47
54)	4-Methyl-2-Pentanone	12.19	58	2111	1.9378 ug/kg#	64
55)	cis-1,3-Dichloropropene	12.50	75	7048	1.9341 ug/kg	92
56)	Dimethyl Disulfide	12.77	94	5832	1.5925 ug/kg	95
59)	Toluene	12.93	91	20786	2.1230 ug/kg	97
60)	Ethyl Methacrylate	13.01	69	4184	1.5417 ug/kg	98
61)	trans-1,3-Dichloropropene	13.11	75	6895	1.9553 ug/kg	92
62)	1,1,2-Trichloroethane	13.33	97	4055	1.9716 ug/kg	86
63)	2-Hexanone	13.25	43	3773	1.8373 ug/kg#	82
64)	1,3-Dichloropropane	13.62	76	7643	2.2302 ug/kg	97
65)	Tetrachloroethene	13.75	164	4327	2.0615 ug/kg	94
66)	Dibromochloromethane	14.01	129	6170	2.1465 ug/kg	87
67)	1,2-Dibromoethane	14.28	107	4656	2.0410 ug/kg	88
68)	1-Chlorohexane	14.35	91	5610	1.9430 ug/kg	97
69)	Chlorobenzene	14.77	112	14885	2.1632 ug/kg	95
70)	1,1,1,2-Tetrachloroethane	14.80	131	5145	1.9910 ug/kg	86
71)	Ethylbenzene	14.79	106	7287	2.0555 ug/kg	99
72)	m-,p-Xylene	14.89	106	19133	4.3702 ug/kg	93
73)	o-Xylene	15.45	106	8413	2.0024 ug/kg	94
74)	Styrene	15.49	104	14533	2.0313 ug/kg	97
75)	Bromoform	15.99	173	3135	1.6611 ug/kg	97
76)	Isopropylbenzene	15.87	105	23266	2.0628 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	5252	2.2053 ug/kg#	89
80)	1,2,3-Trichloropropane	16.28	110	1851	2.0495 ug/kg#	89
81)	trans-1,4-Dichloro-2-Buten	16.33	53	1413	1.5521 ug/kg	47
82)	n-Propylbenzene	16.38	91	25735	2.0854 ug/kg	99
83)	Bromobenzene	16.52	156	7006	2.4049 ug/kg	83
84)	1,3,5-Trimethylbenzene	16.57	105	18571	2.0048 ug/kg	99
85)	2-Chlorotoluene	16.66	91	18793	2.2705 ug/kg	97
86)	4-Chlorotoluene	16.70	91	16240	2.1222 ug/kg	96
87)	a-Methylstyrene	16.98	118	7524	1.7826 ug/kg	97
88)	tert-Butylbenzene	17.04	134	3654	1.8815 ug/kg	64
89)	1,2,4-Trimethylbenzene	17.09	105	20119	2.0739 ug/kg	99
90)	sec-Butylbenzene	17.31	105	24858	2.0835 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	20956	2.0813 ug/kg	96
92)	1,3-Dichlorobenzene	17.66	146	13695	2.3653 ug/kg	94
93)	1,4-Dichlorobenzene	17.79	146	12975	2.2416 ug/kg	82
94)	n-Butylbenzene	17.99	91	19734	2.1080 ug/kg	95
95)	1,2-Dichlorobenzene	18.30	146	11568	2.1533 ug/kg	91
96)	1,2-Dibromo-3-Chloropropan	19.30	157	941	1.3644 ug/kg	84
97)	1,2,4-Trichlorobenzene	20.44	180	8356	2.1910 ug/kg	98
98)	Hexachlorobutadiene	20.59	225	4571	2.2738 ug/kg	87
99)	Naphthalene	20.81	128	20072	2.0983 ug/kg	96
100)	1,2,3-Trichlorobenzene	21.11	180	7948	2.1487 ug/kg	96

(#) = qualifier out of range (m) = manual integration
9M972900.D 8260SL.M Fri Feb 26 11:13:39 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration

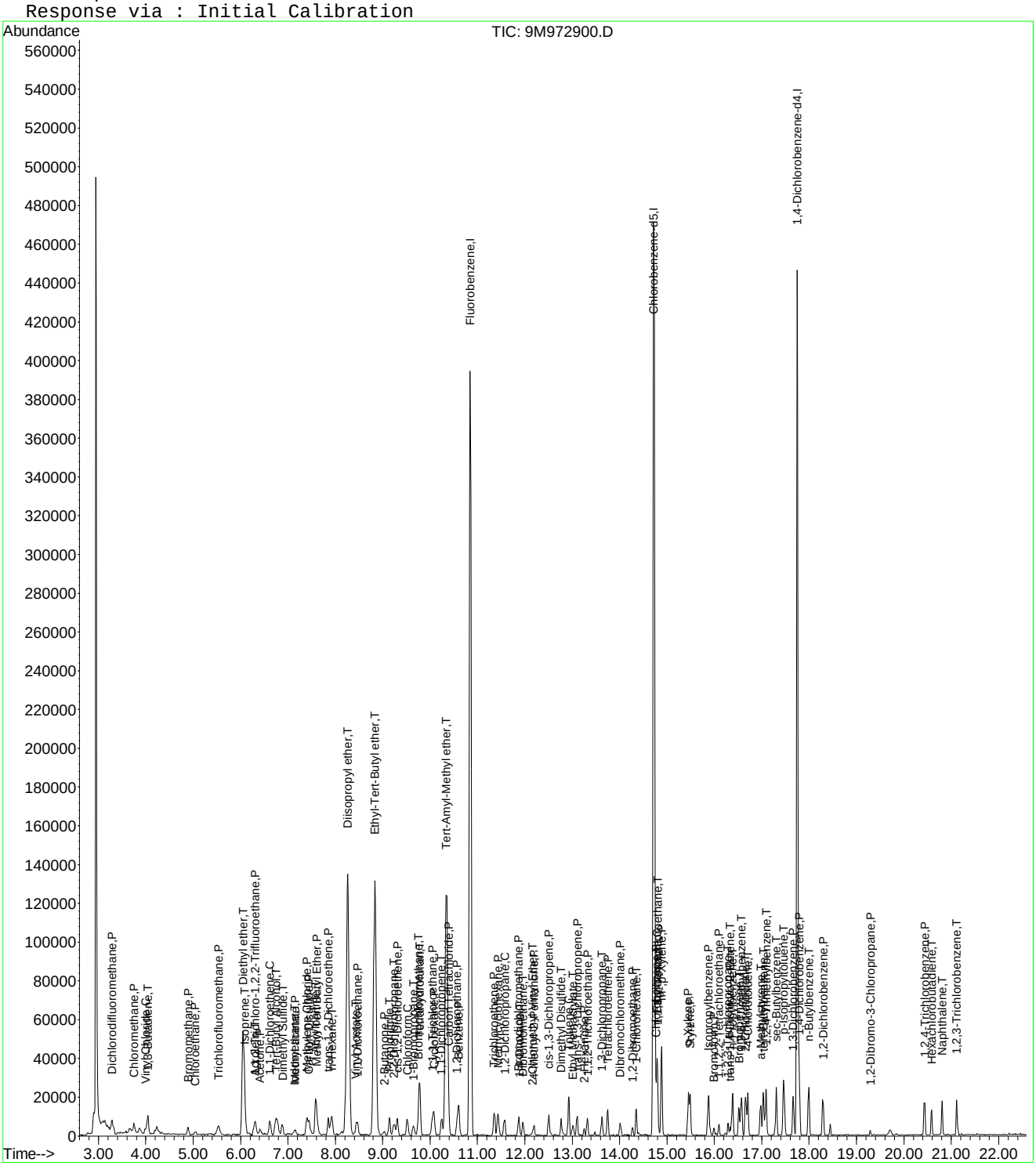

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	1.9809	0.0	100	0.01
3	P	Chloromethane	2.0000	2.2750	-13.7	100	0.00
4	C	Vinyl Chloride	2.0000	1.9408	3.0	100	0.01
5	T	1,3-Butadiene	2.0000	2.2249	-11.2	100	0.00
6	P	Bromomethane	2.0000	2.5146	-25.7#	100	0.01
7	P	Chloroethane	2.0000	1.7357	13.2	100	0.00
8	P	Trichlorofluoromethane	2.0000	2.1082	-5.4	100	0.01
9	T	Diethyl ether	25.0000	26.8255	-7.3	100	0.01
10	T	Isoprene	2.0000	2.0580	-2.9	100	0.00
11	T	Acrolein	12.5000	12.5543	-0.4	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.9886	0.6	100	0.01
13	P	Acetone	-1.0000	6.9886	0.0	0	0.00
14	C	1,1-Dichloroethene	2.0000	2.1877	-9.4	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	55.4271	-10.9	100	0.00
16	T	Dimethyl Sulfide	2.0000	2.0594	-3.0	100	0.01
17	T	Iodomethane	-1.0000	3.9079	0.0	0	0.01
18	P	Methyl acetate	2.0000	2.2240	-11.2	100	0.01
19	P	Methylene Chloride	2.0000	2.1292	-6.5	100	0.00
20	P	Carbon Disulfide	2.0000	2.2085	-10.4	100	0.00
21	T	Acrylonitrile	12.5000	12.6096	-0.9	100	0.00
22	P	Methyl Tert Butyl Ether	2.0000	1.9917	0.4	100	0.00
23	P	trans-1,2-Dichloroethene	2.0000	2.0255	-1.3	100	0.00
24	T	n-Hexane	2.0000	2.1253	-6.3	100	0.01
25	T	Diisopropyl ether	25.0000	26.7748	-7.1	100	0.00
26	T	Vinyl Acetate	2.0000	2.0872	-4.4	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.1320	-6.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	26.7377	-7.0	100	0.00
29	P	2-Butanone	2.0000	2.1978	-9.9	100	0.00
30	T	Propionitrile	25.0000	27.6861	-10.7	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1934	-9.7	100	0.00
32	P	cis-1,2-Dichloroethene	2.0000	1.8850	5.8	100	0.01
33	C	Chloroform	2.0000	2.2054	-10.3	100	0.01
34	T	1-Bromopropane	2.0000	1.5465	22.7	100	0.00
35	T	Bromochloromethane	2.0000	1.9539	2.3	100	0.00
36	T	Tetrahydrofuran	25.0000	26.6900	-6.8	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	2.0000	2.0058	-0.3	100	0.00
39	P	Cyclohexane	2.0000	2.0913	-4.6	100	0.01
40	T	1,1-Dichloropropene	2.0000	2.1023	-5.1	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	26.2768	-5.1	100	0.00
42	P	Carbon Tetrachloride	2.0000	2.0823	-4.1	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	2.0000	2.1271	-6.4	100	0.00
46	P	Benzene	2.0000	2.1525	-7.6	100	0.00
47	P	Trichloroethene	2.0000	2.1207	-6.0	100	0.00
48	P	Methylcyclohexane	2.0000	2.0945	-4.7	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0621	-3.1	100	0.01
50	T	1,4-Dioxane	50.0000	52.0499	-4.1	100	0.00
51	P	Bromodichloromethane	2.0000	2.0436	-2.2	100	0.00
52	T	Dibromomethane	2.0000	2.1721	-8.6	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	3.4830	0.0	0	0.00
54	P	4-Methyl-2-Pentanone	-1.0000	1.9378	0.0	100	0.00

(#) = Out of Range

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	2.0000	1.9341	3.3	100	0.00
56	T	Dimethyl Disulfide	2.0000	1.5925	20.4	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0891	0.0	100	0.00
59	C	Toluene	2.0000	2.1230	-6.2	100	0.00
60	T	Ethyl Methacrylate	-1.0000	1.5417	0.0	0	0.00
61	P	trans-1,3-Dichloropropene	2.0000	1.9553	2.2	100	0.00
62	P	1,1,2-Trichloroethane	2.0000	1.9716	1.4	100	0.00
63	P	2-Hexanone	-1.0000	1.8373	0.0	100	0.00
64	T	1,3-Dichloropropane	2.0000	2.2302	-11.5	100	0.00
65	P	Tetrachloroethene	2.0000	2.0616	-3.1	100	0.00
66	P	Dibromochloromethane	2.0000	2.1465	-7.3	100	0.00
67	P	1,2-Dibromoethane	-1.0000	2.0410	0.0	100	0.00
68	T	1-Chlorohexane	2.0000	1.9430	2.8	100	0.00
69	P	Chlorobenzene	2.0000	2.1632	-8.2	100	0.00
70	T	1,1,1,2-Tetrachloroethane	2.0000	1.9910	0.4	100	0.00
71	C	Ethylbenzene	2.0000	2.0555	-2.8	100	0.00
72	P	m-,p-Xylene	4.0000	4.3702	-9.3	100	0.00
73	P	o-Xylene	2.0000	2.0024	-0.1	100	0.00
74	P	Styrene	2.0000	2.0313	-1.6	100	0.00
75	P	Bromoform	2.0000	1.6611	16.9	100	0.00
76	P	Isopropylbenzene	2.0000	2.0628	-3.1	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	2.0000	2.2053	-10.3	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.1865	0.0	100	0.00
80	T	1,2,3-Trichloropropane	2.0000	2.0495	-2.5	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	2.0000	1.5521	22.4	100	0.00
82	T	n-Propylbenzene	2.0000	2.0854	-4.3	100	0.00
83	T	Bromobenzene	2.0000	2.4049	-20.2	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	2.0048	0.0	100	0.00
85	T	2-Chlorotoluene	2.0000	2.2705	-13.5	100	0.00
86	T	4-Chlorotoluene	2.0000	2.1222	-6.1	100	0.00
87	T	a-Methylstyrene	-1.0000	1.7826	0.0	0	0.00
88	T	tert-Butylbenzene	-1.0000	1.8815	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	2.0000	2.0739	-3.7	100	0.00
90	T	sec-Butylbenzene	2.0000	2.0835	-4.2	100	0.00
91	T	p-Isopropyltoluene	-1.0000	2.0813	0.0	100	0.00
92	P	1,3-Dichlorobenzene	2.0000	2.3653	-18.3	100	0.00
93	P	1,4-Dichlorobenzene	2.0000	2.2416	-12.1	100	0.00
94	T	n-Butylbenzene	2.0000	2.1080	-5.4	100	0.00
95	P	1,2-Dichlorobenzene	2.0000	2.1533	-7.7	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	1.3644	0.0	100	0.00
97	P	1,2,4-Trichlorobenzene	2.0000	2.1910	-9.6	100	0.00
98	T	Hexachlorobutadiene	2.0000	2.2738	-13.7	100	0.00
99	T	Naphthalene	2.0000	2.0983	-4.9	100	0.00
100	T	1,2,3-Trichlorobenzene	2.0000	2.1487	-7.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	544259	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	391881	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.76	152	178969	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	29036	9.8422 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 19.68%#		
43) 1,2-Dichloroethane-d4	10.44	65	38093	10.2911 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 20.58%#		
58) Toluene-d8	12.83	98	95044	9.5885 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 19.18%#		
79) p-Bromofluorobenzene	16.23	95	32806	9.4138 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 18.82%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	14756	3.9724 ug/kg	92
3) Chloromethane	3.74	50	15227	4.2763 ug/kg	91
4) Vinyl Chloride	3.99	62	17097	4.7964 ug/kg	89
5) 1,3-Butadiene	4.04	54	14484	4.2710 ug/kg	97
6) Bromomethane	4.89	94	9847	4.2533 ug/kg	95
7) Chloroethane	5.04	64	6311	3.9741 ug/kg	93
8) Trichlorofluoromethane	5.53	101	22668	4.2400 ug/kg	100
9) Diethyl ether	6.05	59	118004	47.2164 ug/kg	99
10) Isoprene	6.10	67	13644	4.2747 ug/kg	95
11) Acrolein	6.30	56	12131	24.3428 ug/kg	84
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	12752	4.6251 ug/kg	95
13) Acetone	6.41	43	9765	4.9429 ug/kg	94
14) 1,1-Dichloroethene	6.62	61	21760	4.2784 ug/kg	99
15) Tert-Butyl Alcohol	6.76	59	50500	90.7440 ug/kg	98
16) Dimethyl Sulfide	6.88	62	10098	4.6977 ug/kg	87
17) Iodomethane	7.13	142	4147	5.3886 ug/kg	97
18) Methyl acetate	7.15	43	12159	4.3976 ug/kg#	87
19) Methylene Chloride	7.41	84	11825	4.2690 ug/kg	99
20) Carbon Disulfide	7.45	76	34078	4.3495 ug/kg	94
21) Acrylonitrile	7.58	53	31012	22.6731 ug/kg	100
22) Methyl Tert Butyl Ether	7.61	73	34936	4.4284 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	20503	4.5233 ug/kg	95
24) n-Hexane	7.92	57	20970	4.4853 ug/kg	98
25) Diisopropyl ether	8.26	45	505084	46.5162 ug/kg	100
26) Vinyl Acetate	8.44	43	28253	4.5644 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	24239	4.2575 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	463447	45.9037 ug/kg	99
29) 2-Butanone	9.03	43	8265	4.7092 ug/kg	88
30) Propionitrile	9.15	54	25938	48.2931 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	17954	4.2251 ug/kg	91
32) cis-1,2-Dichloroethene	9.32	96	13479	4.5340 ug/kg	84
33) Chloroform	9.52	83	23525	4.4982 ug/kg	95
34) 1-Bromopropane	9.65	122	2239	5.8652 ug/kg	90
35) Bromochloromethane	9.75	130	9205	4.7667 ug/kg	97
36) Tetrahydrofuran	9.78	42	53635	47.4100 ug/kg	99
38) 1,1,1-Trichloroethane	10.04	97	20945	4.4285 ug/kg	91
39) Cyclohexane	10.09	56	23110	4.4818 ug/kg	98
40) 1,1-Dichloropropene	10.24	75	16349	4.3930 ug/kg	99
41) Tert-Amyl-Methyl ether	10.35	73	343692	46.8330 ug/kg	98
42) Carbon Tetrachloride	10.39	117	18527	4.2254 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	21553	4.6852 ug/kg	99
46)	Benzene	10.60	78	45352	4.3528 ug/kg	99
47)	Trichloroethene	11.35	130	14266	4.3213 ug/kg	97
48)	Methylcyclohexane	11.44	83	17527	4.2330 ug/kg	97
49)	1,2-Dichloropropane	11.56	63	13071	4.5684 ug/kg	100
50)	1,4-Dioxane	11.88	88	3926	91.4657 ug/kg	99
51)	Bromodichloromethane	11.87	83	18008	4.4660 ug/kg	97
52)	Dibromomethane	11.96	174	8993	4.7438 ug/kg	95
53)	2-Chloroethyl Vinyl Ether	12.16	63	2468	5.7758 ug/kg#	66
54)	4-Methyl-2-Pentanone	12.19	58	4862	3.8716 ug/kg	95
55)	cis-1,3-Dichloropropene	12.50	75	18341	4.3659 ug/kg	96
56)	Dimethyl Disulfide	12.77	94	17792	4.2144 ug/kg	91
59)	Toluene	12.92	91	48377	4.3206 ug/kg	96
60)	Ethyl Methacrylate	13.02	69	12442	4.0089 ug/kg	96
61)	trans-1,3-Dichloropropene	13.10	75	17626	4.3707 ug/kg	95
62)	1,1,2-Trichloroethane	13.33	97	10657	4.5308 ug/kg	99
63)	2-Hexanone	13.25	43	10194	4.3408 ug/kg	96
64)	1,3-Dichloropropane	13.62	76	17885	4.5633 ug/kg	100
65)	Tetrachloroethene	13.75	164	10317	4.2981 ug/kg	97
66)	Dibromochloromethane	14.01	129	14152	4.3052 ug/kg	98
67)	1,2-Dibromoethane	14.28	107	12182	4.6694 ug/kg	99
68)	1-Chlorohexane	14.35	91	12970	3.9281 ug/kg	87
69)	Chlorobenzene	14.77	112	36017	4.5769 ug/kg	85
70)	1,1,1,2-Tetrachloroethane	14.80	131	12746	4.3130 ug/kg	95
71)	Ethylbenzene	14.80	106	17828	4.3974 ug/kg	92
72)	m-,p-Xylene	14.89	106	45904	9.1683 ug/kg	95
73)	o-Xylene	15.46	106	21754	4.5275 ug/kg	91
74)	Styrene	15.49	104	35390	4.3253 ug/kg	98
75)	Bromoform	15.98	173	9363	4.3382 ug/kg	96
76)	Isopropylbenzene	15.88	105	55721	4.3198 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	13197	4.8610 ug/kg	97
80)	1,2,3-Trichloropropane	16.29	110	5070	4.9243 ug/kg#	28
81)	trans-1,4-Dichloro-2-Buten	16.33	53	4246	4.0913 ug/kg#	39
82)	n-Propylbenzene	16.39	91	64689	4.5983 ug/kg	100
83)	Bromobenzene	16.52	156	15405	4.6386 ug/kg	90
84)	1,3,5-Trimethylbenzene	16.58	105	49527	4.6900 ug/kg	98
85)	2-Chlorotoluene	16.66	91	41422	4.3899 ug/kg	97
86)	4-Chlorotoluene	16.70	91	40985	4.6981 ug/kg	99
87)	a-Methylstyrene	16.98	118	20049	4.1667 ug/kg	90
88)	tert-Butylbenzene	17.04	134	10027	4.5290 ug/kg	84
89)	1,2,4-Trimethylbenzene	17.09	105	51253	4.6345 ug/kg	98
90)	sec-Butylbenzene	17.30	105	60716	4.4642 ug/kg	98
91)	p-Isopropyltoluene	17.46	119	53318	4.6453 ug/kg	98
92)	1,3-Dichlorobenzene	17.66	146	29255	4.4323 ug/kg	98
93)	1,4-Dichlorobenzene	17.79	146	30175	4.5730 ug/kg	91
94)	n-Butylbenzene	17.99	91	45964	4.3071 ug/kg	98
95)	1,2-Dichlorobenzene	18.30	146	27310	4.4593 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.30	157	3147	4.0028 ug/kg	87
97)	1,2,4-Trichlorobenzene	20.44	180	18372	4.2258 ug/kg	95
98)	Hexachlorobutadiene	20.59	225	9618	4.1968 ug/kg	90
99)	Naphthalene	20.81	128	47189	4.3274 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.11	180	17859	4.2352 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972901.D 8260SL.M Fri Feb 26 11:21:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

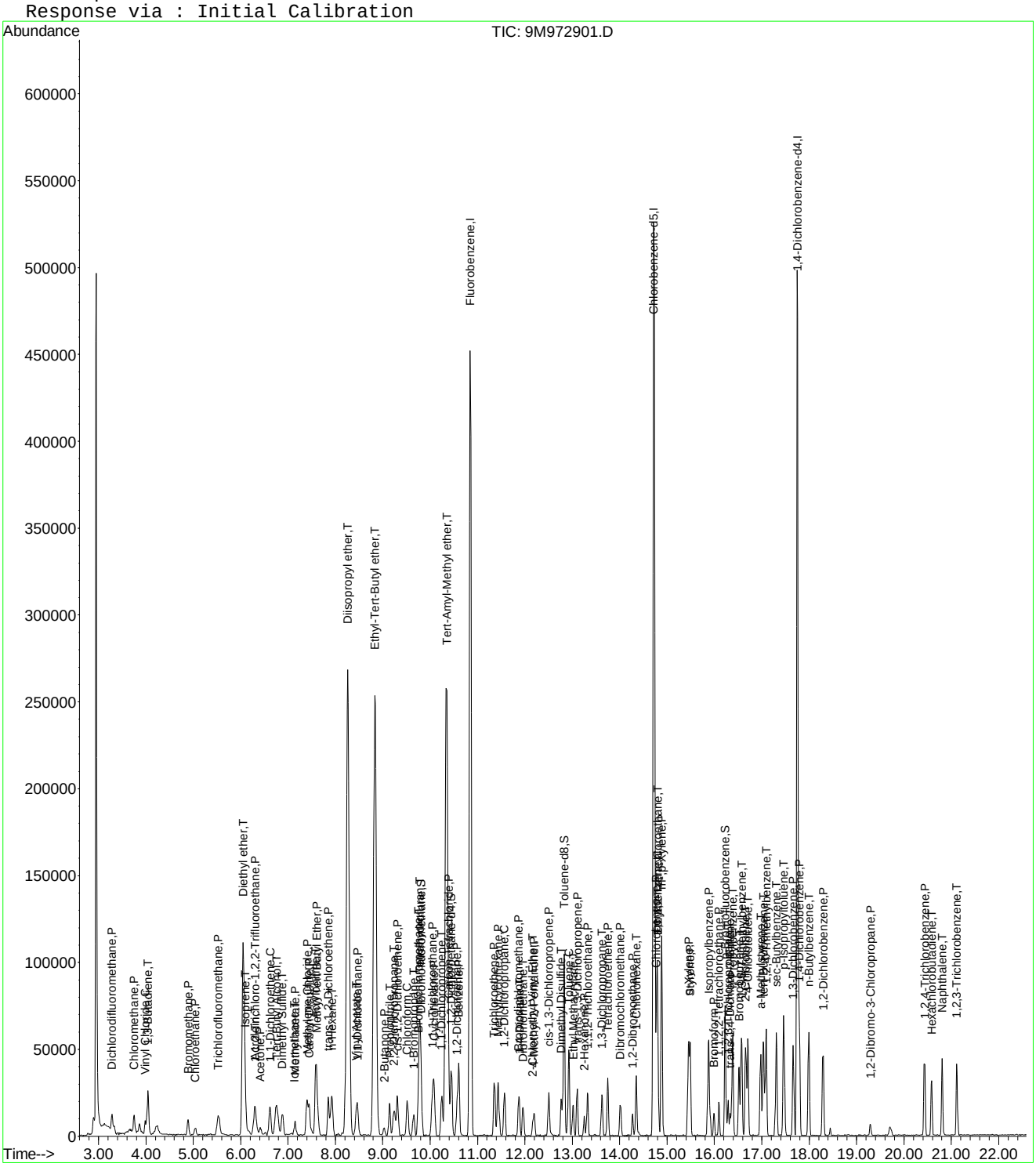

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	5.0000	3.9724	20.6	100	0.00
3	P	Chloromethane	5.0000	4.2763	14.5	100	0.00
4	C	Vinyl Chloride	5.0000	4.7964	4.1	100	0.00
5	T	1,3-Butadiene	5.0000	4.2710	14.6	100	0.00
6	P	Bromomethane	5.0000	4.2534	14.9	100	0.00
7	P	Chloroethane	5.0000	3.9741	20.5	100	0.00
8	P	Trichlorofluoromethane	5.0000	4.2400	15.2	100	0.00
9	T	Diethyl ether	50.0000	47.2164	5.6	100	0.00
10	T	Isoprene	5.0000	4.2747	14.5	100	0.01
11	T	Acrolein	25.0000	24.3428	2.6	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.6251	7.5	100	0.00
13	P	Acetone	5.0000	4.9429	1.1	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.2784	14.4	100	0.01
15	T	Tert-Butyl Alcohol	100.0000	90.7440	9.3	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.6977	6.0	100	0.00
17	T	Iodomethane	5.0000	5.3886	-7.8	100	0.00
18	P	Methyl acetate	5.0000	4.3976	12.0	100	0.01
19	P	Methylene Chloride	5.0000	4.2690	14.6	100	0.00
20	P	Carbon Disulfide	5.0000	4.3495	13.0	100	0.00
21	T	Acrylonitrile	25.0000	22.6731	9.3	100	0.00
22	P	Methyl Tert Butyl Ether	5.0000	4.4284	11.4	100	0.00
23	P	trans-1,2-Dichloroethene	5.0000	4.5233	9.5	100	0.00
24	T	n-Hexane	5.0000	4.4854	10.3	100	0.01
25	T	Diisopropyl ether	50.0000	46.5162	7.0	100	0.00
26	T	Vinyl Acetate	5.0000	4.5644	8.7	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.2575	14.8	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	45.9037	8.2	100	0.00
29	P	2-Butanone	5.0000	4.7092	5.8	100	0.00
30	T	Propionitrile	50.0000	48.2931	3.4	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.2251	15.5	100	-0.01
32	P	cis-1,2-Dichloroethene	5.0000	4.5340	9.3	100	0.00
33	C	Chloroform	5.0000	4.4982	10.0	100	0.00
34	T	1-Bromopropane	5.0000	5.8651	-17.3	100	0.00
35	T	Bromochloromethane	5.0000	4.7667	4.7	100	0.00
36	T	Tetrahydrofuran	50.0000	47.4100	5.2	100	0.00
37	S	Dibromofluoromethane	10.0000	9.8422	1.6	100	0.00
38	P	1,1,1-Trichloroethane	5.0000	4.4285	11.4	100	0.00
39	P	Cyclohexane	5.0000	4.4818	10.4	100	0.01
40	T	1,1-Dichloropropene	5.0000	4.3930	12.1	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	46.8330	6.3	100	0.00
42	P	Carbon Tetrachloride	5.0000	4.2254	15.5	100	0.00
43	S	1,2-Dichloroethane-d4	10.0000	10.2911	-2.9	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	5.0000	4.6852	6.3	100	0.00
46	P	Benzene	5.0000	4.3528	12.9	100	0.00
47	P	Trichloroethene	5.0000	4.3213	13.6	100	0.00
48	P	Methylcyclohexane	5.0000	4.2330	15.3	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.5684	8.6	100	0.00
50	T	1,4-Dioxane	100.0000	91.4657	8.5	100	0.00
51	P	Bromodichloromethane	5.0000	4.4660	10.7	100	0.00
52	T	Dibromomethane	5.0000	4.7438	5.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	5.7758	-15.5	100	0.00
54	P	4-Methyl-2-Pentanone	5.0000	3.8716	22.6	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	5.0000	4.3659	12.7	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.2144	15.7	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	-0.01
58	S	Toluene-d8	10.0000	9.5885	4.1	100	0.00
59	C	Toluene	5.0000	4.3206	13.6	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.0089	19.8	100	0.00
61	P	trans-1,3-Dichloropropene	5.0000	4.3707	12.6	100	0.00
62	P	1,1,2-Trichloroethane	5.0000	4.5309	9.4	100	0.00
63	P	2-Hexanone	5.0000	4.3408	13.2	100	0.00
64	T	1,3-Dichloropropane	5.0000	4.5633	8.7	100	-0.01
65	P	Tetrachloroethene	5.0000	4.2981	14.0	100	0.00
66	P	Dibromochloromethane	5.0000	4.3052	13.9	100	0.00
67	P	1,2-Dibromoethane	5.0000	4.6694	6.6	100	0.00
68	T	1-Chlorohexane	5.0000	3.9281	21.4	100	0.00
69	P	Chlorobenzene	5.0000	4.5769	8.5	100	0.00
70	T	1,1,1,2-Tetrachloroethane	5.0000	4.3130	13.7	100	0.00
71	C	Ethylbenzene	5.0000	4.3974	12.1	100	0.00
72	P	m-,p-Xylene	10.0000	9.1683	8.3	100	0.00
73	P	o-Xylene	5.0000	4.5275	9.5	100	0.00
74	P	Styrene	5.0000	4.3253	13.5	100	0.00
75	P	Bromoform	5.0000	4.3382	13.2	100	-0.01
76	P	Isopropylbenzene	5.0000	4.3198	13.6	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	5.0000	4.8610	2.8	100	-0.01
79	S	p-Bromofluorobenzene	10.0000	9.4138	5.9	100	0.00
80	T	1,2,3-Trichloropropane	5.0000	4.9243	1.5	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	5.0000	4.0913	18.2	100	0.00
82	T	n-Propylbenzene	5.0000	4.5983	8.0	100	0.00
83	T	Bromobenzene	5.0000	4.6386	7.2	100	0.00
84	T	1,3,5-Trimethylbenzene	5.0000	4.6900	6.2	100	0.00
85	T	2-Chlorotoluene	5.0000	4.3899	12.2	100	0.00
86	T	4-Chlorotoluene	5.0000	4.6981	6.0	100	0.00
87	T	a-Methylstyrene	5.0000	4.1667	16.7	100	0.00
88	T	tert-Butylbenzene	5.0000	4.5290	9.4	100	0.00
89	T	1,2,4-Trimethylbenzene	5.0000	4.6345	7.3	100	0.00
90	T	sec-Butylbenzene	5.0000	4.4642	10.7	100	0.00
91	T	p-Isopropyltoluene	5.0000	4.6453	7.1	100	0.00
92	P	1,3-Dichlorobenzene	5.0000	4.4323	11.4	100	0.00
93	P	1,4-Dichlorobenzene	5.0000	4.5730	8.5	100	-0.01
94	T	n-Butylbenzene	5.0000	4.3071	13.9	100	0.00
95	P	1,2-Dichlorobenzene	5.0000	4.4593	10.8	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	5.0000	4.0028	19.9	100	0.00
97	P	1,2,4-Trichlorobenzene	5.0000	4.2258	15.5	100	0.00
98	T	Hexachlorobutadiene	5.0000	4.1968	16.1	100	0.00
99	T	Naphthalene	5.0000	4.3274	13.5	100	0.00
100	T	1,2,3-Trichlorobenzene	5.0000	4.2352	15.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972901.D 8260SL.M Fri Feb 26 11:21:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972902.D Vial: 7
Acq On : 25 Feb 2016 18:59 Operator: ADC
Sample : WG558732-07 20.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	491006	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	357658	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	168257	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	47666	17.9094 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 35.82%#		
43) 1,2-Dichloroethane-d4	10.45	65	60269	18.0480 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 36.10%#		
58) Toluene-d8	12.82	98	163811	18.1074 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 36.22%#		
79) p-Bromofluorobenzene	16.23	95	58931	17.9870 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 35.98%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	78283	23.3598 ug/kg	99
3) Chloromethane	3.75	50	64951	20.2188 ug/kg	98
4) Vinyl Chloride	3.99	62	73167	22.7523 ug/kg	97
5) 1,3-Butadiene	4.04	54	64372	21.0404 ug/kg	98
6) Bromomethane	4.88	94	40556	19.4178 ug/kg	97
7) Chloroethane	5.04	64	27981	19.5307 ug/kg	97
8) Trichlorofluoromethane	5.53	101	98871	20.4994 ug/kg	98
9) Diethyl ether	6.06	59	191078	84.7472 ug/kg	99
10) Isoprene	6.10	67	59437	20.6414 ug/kg	98
11) Acrolein	6.30	56	18057	40.1641 ug/kg	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	50002	20.1026 ug/kg	100
13) Acetone	6.42	43	27164	20.4768 ug/kg	100
14) 1,1-Dichloroethene	6.62	61	94732	20.6460 ug/kg	98
15) Tert-Butyl Alcohol	6.75	59	85695	170.6872 ug/kg	97
16) Dimethyl Sulfide	6.88	62	40580	20.9258 ug/kg	99
17) Iodomethane	7.13	142	21330	17.5663 ug/kg	96
18) Methyl acetate	7.15	43	54770	21.9573 ug/kg	99
19) Methylene Chloride	7.41	84	51619	20.6564 ug/kg	95
20) Carbon Disulfide	7.45	76	145286	20.5545 ug/kg	97
21) Acrylonitrile	7.59	53	50918	41.2640 ug/kg	97
22) Methyl Tert Butyl Ether	7.61	73	149271	20.9731 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	84416	20.6434 ug/kg	98
24) n-Hexane	7.92	57	82582	19.5795 ug/kg	98
25) Diisopropyl ether	8.26	45	841729	85.9275 ug/kg	99
26) Vinyl Acetate	8.44	43	107114	19.1814 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	104490	20.3440 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	777976	85.4147 ug/kg	99
29) 2-Butanone	9.02	43	30691	19.3834 ug/kg	100
30) Propionitrile	9.14	54	41719	86.0996 ug/kg	99
31) 2,2-Dichloropropane	9.24	77	73960	19.2927 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	56404	21.0307 ug/kg	100
33) Chloroform	9.52	83	94621	20.0546 ug/kg	98
34) 1-Bromopropane	9.65	122	8251	20.7938 ug/kg	98
35) Bromochloromethane	9.75	130	38059	21.8457 ug/kg	99
36) Tetrahydrofuran	9.77	42	86589	84.8405 ug/kg	100
38) 1,1,1-Trichloroethane	10.05	97	85938	20.1411 ug/kg	99
39) Cyclohexane	10.09	56	96933	20.8373 ug/kg	98
40) 1,1-Dichloropropene	10.25	75	67544	20.1175 ug/kg	96
41) Tert-Amyl-Methyl ether	10.34	73	562826	85.0111 ug/kg	99
42) Carbon Tetrachloride	10.39	117	79566	20.1143 ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972902.D 8260SL.M Fri Feb 26 11:21:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972902.D Vial: 7
Acq On : 25 Feb 2016 18:59 Operator: ADC
Sample : WG558732-07 20.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	86857	20.9287 ug/kg	98
46)	Benzene	10.60	78	190747	20.2931 ug/kg	98
47)	Trichloroethene	11.35	130	61315	20.5871 ug/kg	99
48)	Methylcyclohexane	11.44	83	79384	21.2516 ug/kg	99
49)	1,2-Dichloropropane	11.56	63	54356	21.0584 ug/kg	98
50)	1,4-Dioxane	11.88	88	7054	182.1639 ug/kg	93
51)	Bromodichloromethane	11.87	83	73160	20.1115 ug/kg	99
52)	Dibromomethane	11.97	174	35844	20.9583 ug/kg	97
53)	2-Chloroethyl Vinyl Ether	12.17	63	11048	17.4432 ug/kg	94
54)	4-Methyl-2-Pentanone	12.20	58	22247	19.6364 ug/kg	96
55)	cis-1,3-Dichloropropene	12.50	75	77533	20.4577 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	77400	20.3222 ug/kg	99
59)	Toluene	12.93	91	209919	20.5421 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	58827	20.7683 ug/kg	99
61)	trans-1,3-Dichloropropene	13.11	75	73778	20.0452 ug/kg	98
62)	1,1,2-Trichloroethane	13.32	97	45475	21.1838 ug/kg	98
63)	2-Hexanone	13.25	43	40183	18.7479 ug/kg	97
64)	1,3-Dichloropropane	13.62	76	73060	20.4249 ug/kg	95
65)	Tetrachloroethene	13.75	164	44423	20.2778 ug/kg	96
66)	Dibromochloromethane	14.01	129	59220	19.7391 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	48648	20.4311 ug/kg	97
68)	1-Chlorohexane	14.35	91	64519	21.4099 ug/kg	96
69)	Chlorobenzene	14.77	112	150639	20.9742 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	55462	20.5631 ug/kg	99
71)	Ethylbenzene	14.79	106	77813	21.0297 ug/kg	100
72)	m-,p-Xylene	14.89	106	192168	42.0536 ug/kg	98
73)	o-Xylene	15.45	106	92490	21.0911 ug/kg	98
74)	Styrene	15.49	104	154534	20.6939 ug/kg	100
75)	Bromoform	16.00	173	39818	20.2142 ug/kg	98
76)	Isopropylbenzene	15.87	105	249418	21.1865 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	53687	21.0342 ug/kg	98
80)	1,2,3-Trichloropropane	16.28	110	19658	20.3087 ug/kg	98
81)	trans-1,4-Dichloro-2-Buten	16.33	53	21143	21.6696 ug/kg	89
82)	n-Propylbenzene	16.39	91	283998	21.4728 ug/kg	98
83)	Bromobenzene	16.52	156	65363	20.9343 ug/kg	95
84)	1,3,5-Trimethylbenzene	16.57	105	212735	21.4278 ug/kg	99
85)	2-Chlorotoluene	16.66	91	189159	21.3235 ug/kg	99
86)	4-Chlorotoluene	16.70	91	171741	20.9401 ug/kg	99
87)	a-Methylstyrene	16.98	118	95360	21.0801 ug/kg	99
88)	tert-Butylbenzene	17.03	134	43749	21.0188 ug/kg	90
89)	1,2,4-Trimethylbenzene	17.08	105	218350	21.0010 ug/kg	99
90)	sec-Butylbenzene	17.31	105	268054	20.9635 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	225612	20.9076 ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	122605	19.7580 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	124659	20.0949 ug/kg	99
94)	n-Butylbenzene	17.99	91	199655	19.8998 ug/kg	99
95)	1,2-Dichlorobenzene	18.30	146	115021	19.9768 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	14138	19.1277 ug/kg	95
97)	1,2,4-Trichlorobenzene	20.43	180	77418	18.9408 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	41508	19.2651 ug/kg	96
99)	Naphthalene	20.81	128	204933	19.9897 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.12	180	75616	19.0736 ug/kg	98

(#) = qualifier out of range (m) = manual integration
9M972902.D 8260SL.M Fri Feb 26 11:21:57 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972902.D Vial: 7
Acq On : 25 Feb 2016 18:59 Operator: ADC
Sample : WG558732-07 20.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

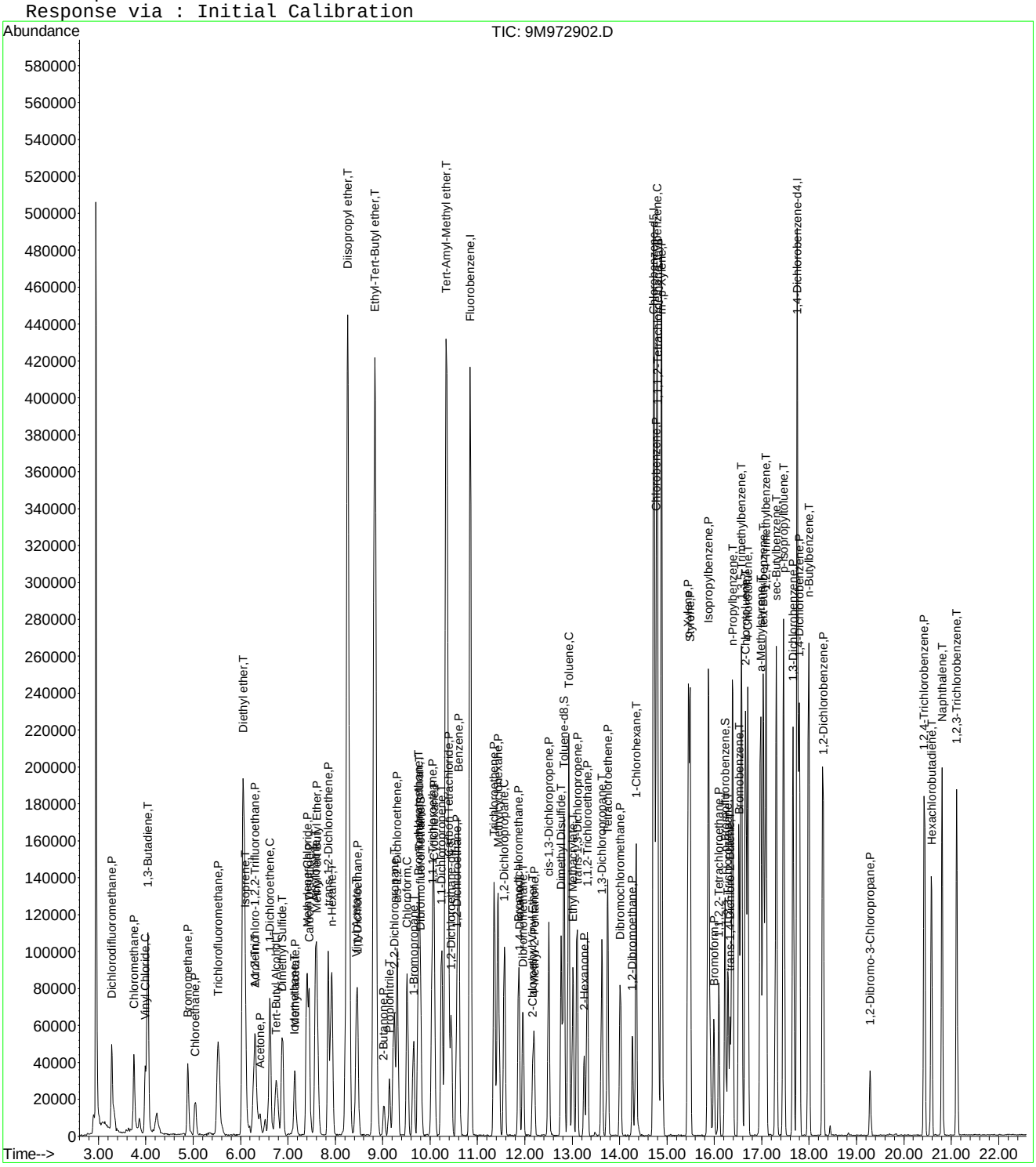

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972903.D Vial: 8
Acq On : 25 Feb 2016 19:29 Operator: ADC
Sample : WG558732-08 100.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:57 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	535022	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	390279	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.75	152	187456	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	305515	105.3466 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 210.70%#		
43) 1,2-Dichloroethane-d4	10.45	65	383447	105.3793 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 210.76%#		
58) Toluene-d8	12.83	98	1052175	106.5842 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 213.16%#		
79) p-Bromofluorobenzene	16.23	95	403966	110.6707 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 221.34%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	340079	93.1314 ug/kg	98
3) Chloromethane	3.74	50	316834	90.5143 ug/kg	100
4) Vinyl Chloride	3.99	62	366384	104.5591 ug/kg	99
5) 1,3-Butadiene	4.04	54	317949	95.3739 ug/kg	98
6) Bromomethane	4.88	94	198493	87.2180 ug/kg	99
7) Chloroethane	5.04	64	148539	95.1503 ug/kg	96
8) Trichlorofluoromethane	5.53	101	502703	95.6532 ug/kg	99
9) Diethyl ether	6.06	59	457873	186.3696 ug/kg	99
10) Isoprene	6.09	67	302269	96.3367 ug/kg	100
11) Acrolein	6.30	56	49319	100.6749 ug/kg	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	264925	97.7467 ug/kg	100
13) Acetone	6.41	43	126959	96.0965 ug/kg	97
14) 1,1-Dichloroethene	6.61	61	485466	97.0986 ug/kg	99
15) Tert-Butyl Alcohol	6.77	59	202804	370.7125 ug/kg	97
16) Dimethyl Sulfide	6.88	62	209613	99.1979 ug/kg	97
17) Iodomethane	7.14	142	134789	88.4431 ug/kg	96
18) Methyl acetate	7.15	43	256770	94.4705 ug/kg	99
19) Methylene Chloride	7.40	84	256919	94.3530 ug/kg	100
20) Carbon Disulfide	7.45	76	725343	94.1764 ug/kg	99
21) Acrylonitrile	7.59	53	131913	98.1077 ug/kg	97
22) Methyl Tert Butyl Ether	7.61	73	763125	98.4009 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	435514	97.7404 ug/kg	99
24) n-Hexane	7.92	57	458951	99.8615 ug/kg	98
25) Diisopropyl ether	8.26	45	1991599	186.5850 ug/kg	99
26) Vinyl Acetate	8.44	43	593217	97.4908 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	533571	95.3384 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	1850360	186.4394 ug/kg	100
29) 2-Butanone	9.03	43	167064	96.8316 ug/kg	99
30) Propionitrile	9.14	54	102467	194.0735 ug/kg	99
31) 2,2-Dichloropropane	9.24	77	409808	98.1051 ug/kg	98
32) cis-1,2-Dichloroethene	9.31	96	291782	99.8428 ug/kg	100
33) Chloroform	9.52	83	491651	95.6310 ug/kg	100
34) 1-Bromopropane	9.65	122	43084	95.7559 ug/kg	98
35) Bromochloromethane	9.75	130	191150	100.6929 ug/kg	97
36) Tetrahydrofuran	9.78	42	206962	186.0999 ug/kg	99
38) 1,1,1-Trichloroethane	10.04	97	454248	97.7025 ug/kg	99
39) Cyclohexane	10.08	56	497594	98.1657 ug/kg	99
40) 1,1-Dichloropropene	10.24	75	355996	97.3080 ug/kg	98
41) Tert-Amyl-Methyl ether	10.35	73	1353122	187.5659 ug/kg	99
42) Carbon Tetrachloride	10.39	117	419252	97.2674 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972903.D 8260SL.M Fri Feb 26 11:21:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972903.D Vial: 8
Acq On : 25 Feb 2016 19:29 Operator: ADC
Sample : WG558732-08 100.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:57 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	441828	97.7027	ug/kg	98
46)	Benzene	10.60	78	946247	92.3868	ug/kg	100
47)	Trichloroethene	11.35	130	316701	97.5872	ug/kg	98
48)	Methylcyclohexane	11.44	83	420776	103.3770	ug/kg	100
49)	1,2-Dichloropropane	11.56	63	273398	97.2049	ug/kg	97
50)	1,4-Dioxane	11.89	88	15240	361.1826	ug/kg	95
51)	Bromodichloromethane	11.87	83	384453	96.9905	ug/kg	100
52)	Dibromomethane	11.96	174	178770	95.9288	ug/kg	100
53)	2-Chloroethyl Vinyl Ether	12.17	63	71336	89.4187	ug/kg	97
54)	4-Methyl-2-Pentanone	12.19	58	126118	102.1606	ug/kg	99
55)	cis-1,3-Dichloropropene	12.50	75	407392	98.6500	ug/kg	99
56)	Dimethyl Disulfide	12.77	94	430523	103.7388	ug/kg	99
59)	Toluene	12.93	91	1070303	95.9828	ug/kg	100
60)	Ethyl Methacrylate	13.01	69	310336	100.4033	ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	395340	98.4345	ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	234168	99.9657	ug/kg	97
63)	2-Hexanone	13.25	43	238254	101.8692	ug/kg	99
64)	1,3-Dichloropropane	13.62	76	372307	95.3836	ug/kg	98
65)	Tetrachloroethene	13.75	164	235384	98.4650	ug/kg	97
66)	Dibromochloromethane	14.01	129	316240	96.5980	ug/kg	100
67)	1,2-Dibromoethane	14.28	107	254663	98.0133	ug/kg	98
68)	1-Chlorohexane	14.35	91	341938	103.9841	ug/kg	98
69)	Chlorobenzene	14.77	112	744916	95.0493	ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.80	131	289798	98.4650	ug/kg	98
71)	Ethylbenzene	14.79	106	397428	98.4311	ug/kg	99
72)	m-,p-Xylene	14.89	106	955121	191.5462	ug/kg	97
73)	o-Xylene	15.45	106	475355	99.3381	ug/kg	100
74)	Styrene	15.49	104	817155	100.2803	ug/kg	100
75)	Bromoform	15.99	173	212807	99.0046	ug/kg	98
76)	Isopropylbenzene	15.88	105	1283494	99.9122	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	279744	98.3764	ug/kg	100
80)	1,2,3-Trichloropropane	16.29	110	110421	102.3924	ug/kg	94
81)	trans-1,4-Dichloro-2-Buten	16.33	53	116410	107.0899	ug/kg	87
82)	n-Propylbenzene	16.39	91	1458178	98.9594	ug/kg	99
83)	Bromobenzene	16.52	156	334600	96.1892	ug/kg	97
84)	1,3,5-Trimethylbenzene	16.57	105	1100766	99.5195	ug/kg	99
85)	2-Chlorotoluene	16.66	91	937812	94.8900	ug/kg	100
86)	4-Chlorotoluene	16.70	91	906777	99.2383	ug/kg	100
87)	a-Methylstyrene	16.98	118	508276	100.8508	ug/kg	99
88)	tert-Butylbenzene	17.04	134	234437	101.0972	ug/kg	99
89)	1,2,4-Trimethylbenzene	17.09	105	1125260	97.1435	ug/kg	99
90)	sec-Butylbenzene	17.30	105	1425754	100.0828	ug/kg	100
91)	p-Isopropyltoluene	17.46	119	1215596	101.1125	ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	644471	93.2206	ug/kg	100
93)	1,4-Dichlorobenzene	17.79	146	646907	93.6002	ug/kg	99
94)	n-Butylbenzene	17.99	91	1131901	101.2628	ug/kg	99
95)	1,2-Dichlorobenzene	18.30	146	622851	97.0971	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.30	157	88939	108.0040	ug/kg	99
97)	1,2,4-Trichlorobenzene	20.44	180	466688	102.4843	ug/kg	99
98)	Hexachlorobutadiene	20.59	225	252514	105.1960	ug/kg	99
99)	Naphthalene	20.81	128	1208454	105.8030	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	456274	103.3044	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972903.D 8260SL.M Fri Feb 26 11:21:58 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972903.D Vial: 8
Acq On : 25 Feb 2016 19:29 Operator: ADC
Sample : WG558732-08 100.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

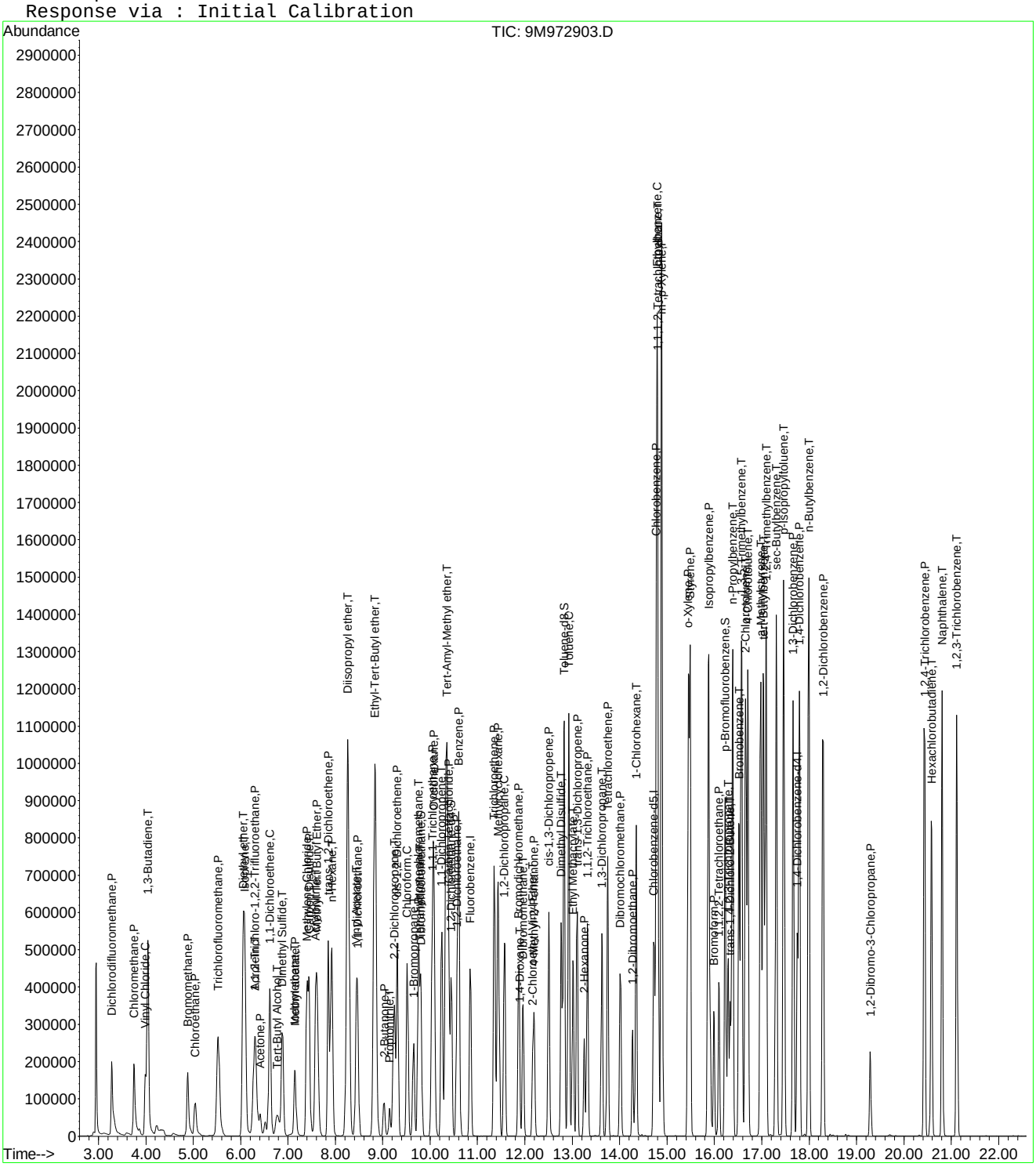

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972904.D Vial: 9
Acq On : 25 Feb 2016 20:00 Operator: ADC
Sample : WG558732-09 200.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:58 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	542388	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	396894	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	212175	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	595362	202.5026 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery	= 405.00%#	
43) 1,2-Dichloroethane-d4	10.45	65	716316	194.1852 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery	= 388.38%#	
58) Toluene-d8	12.82	98	2013255	200.5415 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery	= 401.08%#	
79) p-Bromofluorobenzene	16.23	95	807150	195.3653 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery	= 390.74%#	

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.28	85	774894	209.3245 ug/kg	100
3) Chloromethane	3.75	50	750862	211.5959 ug/kg	100
4) Vinyl Chloride	3.99	62	770550	216.9141 ug/kg	100
5) 1,3-Butadiene	4.04	54	695631	205.8318 ug/kg	99
6) Bromomethane	4.88	94	470946	204.1239 ug/kg	97
7) Chloroethane	5.04	64	374502	236.6386 ug/kg	98
8) Trichlorofluoromethane	5.52	101	1120886	210.3832 ug/kg	99
10) Isoprene	6.09	67	690766	217.1654 ug/kg	97
11) Acrolein	6.31	56	2288	4.6071 ug/kg	86
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	592415	215.6090 ug/kg	100
13) Acetone	6.42	43	268070	202.8703 ug/kg	99
14) 1,1-Dichloroethene	6.62	61	1084122	213.8917 ug/kg	99
15) Tert-Butyl Alcohol	6.78	59	290	0.5229 ug/kg#	58
16) Dimethyl Sulfide	6.88	62	486231	226.9805 ug/kg	99
17) Iodomethane	7.14	142	341644	216.9305 ug/kg	98
18) Methyl acetate	7.15	43	558766	202.7886 ug/kg	97
19) Methylene Chloride	7.40	84	606998	219.8913 ug/kg	98
20) Carbon Disulfide	7.44	76	1650167	211.3432 ug/kg	98
21) Acrylonitrile	7.61	53	18860	13.8363 ug/kg#	28
22) Methyl Tert Butyl Ether	7.61	73	1710517	217.5666 ug/kg	99
23) trans-1,2-Dichloroethene	7.84	61	967656	214.2173 ug/kg	99
24) n-Hexane	7.92	57	1006142	215.9497 ug/kg	97
26) Vinyl Acetate	8.43	43	1320060	213.9959 ug/kg	98
27) 1,1-Dichloroethane	8.46	63	1199515	211.4185 ug/kg	100
29) 2-Butanone	9.02	43	373284	213.4201 ug/kg	100
31) 2,2-Dichloropropane	9.24	77	904865	213.6764 ug/kg	100
32) cis-1,2-Dichloroethene	9.31	96	649726	219.3058 ug/kg	100
33) Chloroform	9.52	83	1094765	210.0507 ug/kg	100
34) 1-Bromopropane	9.66	122	98189	213.9851 ug/kg	100
35) Bromochloromethane	9.75	130	427351	222.0603 ug/kg	99
36) Tetrahydrofuran	9.77	42	2491	2.2095 ug/kg	93
38) 1,1,1-Trichloroethane	10.05	97	1020636	216.5435 ug/kg	100
39) Cyclohexane	10.08	56	1092323	212.5677 ug/kg	98
40) 1,1-Dichloropropene	10.24	75	780375	210.4109 ug/kg	98
42) Carbon Tetrachloride	10.39	117	950685	217.5657 ug/kg	100
45) 1,2-Dichloroethane	10.56	62	975428	212.7698 ug/kg	98
46) Benzene	10.61	78	2107212	202.9435 ug/kg	100
47) Trichloroethene	11.36	130	696420	211.6783 ug/kg	98
48) Methylcyclohexane	11.43	83	922594	223.5862 ug/kg	100
49) 1,2-Dichloropropane	11.57	63	613480	215.1567 ug/kg	98

(#) = qualifier out of range (m) = manual integration
9M972904.D 8260SL.M Fri Feb 26 11:21:58 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972904.D Vial: 9
Acq On : 25 Feb 2016 20:00 Operator: ADC
Sample : WG558732-09 200.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:58 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
50)	1,4-Dioxane	11.86	88	821	19.1932	ug/kg#	7
51)	Bromodichloromethane	11.87	83	861318	214.3439	ug/kg	99
52)	Dibromomethane	11.96	174	401145	212.3328	ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	173854	210.9891	ug/kg	98
54)	4-Methyl-2-Pentanone	12.19	58	281550	224.9694	ug/kg	99
55)	cis-1,3-Dichloropropene	12.51	75	917528	219.1621	ug/kg	100
56)	Dimethyl Disulfide	12.77	94	993447	236.1300	ug/kg	99
59)	Toluene	12.93	91	2353264	207.5190	ug/kg	100
60)	Ethyl Methacrylate	13.01	69	698780	222.3090	ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	892986	218.6361	ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	510766	214.4105	ug/kg	98
63)	2-Hexanone	13.26	43	551431	231.8433	ug/kg	99
64)	1,3-Dichloropropane	13.63	76	842104	212.1481	ug/kg	99
65)	Tetrachloroethene	13.75	164	518091	213.1138	ug/kg	97
66)	Dibromochloromethane	14.02	129	723489	217.3121	ug/kg	99
67)	1,2-Dibromoethane	14.27	107	560802	212.2411	ug/kg	99
68)	1-Chlorohexane	14.35	91	757279	226.4519	ug/kg	100
69)	Chlorobenzene	14.78	112	1626715	204.1050	ug/kg	98
70)	1,1,1,2-Tetrachloroethane	14.81	131	649903	217.1378	ug/kg	97
71)	Ethylbenzene	14.80	106	871321	212.2035	ug/kg	99
72)	m-,p-Xylene	14.89	106	2089330	412.0243	ug/kg	98
73)	o-Xylene	15.45	106	1065692	218.9929	ug/kg	98
74)	Styrene	15.49	104	1839951	222.0334	ug/kg	100
75)	Bromoform	15.99	173	511700	234.0915	ug/kg	99
76)	Isopropylbenzene	15.87	105	2873816	219.9805	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	662688	205.8943	ug/kg	99
80)	1,2,3-Trichloropropane	16.29	110	257281	210.7797	ug/kg	98
81)	trans-1,4-Dichloro-2-Buten	16.34	53	281460	228.7601	ug/kg	90
82)	n-Propylbenzene	16.38	91	3244636	194.5439	ug/kg	100
83)	Bromobenzene	16.52	156	759998	193.0269	ug/kg	95
84)	1,3,5-Trimethylbenzene	16.57	105	2471747	197.4342	ug/kg	99
85)	2-Chlorotoluene	16.66	91	2218317	198.3049	ug/kg	100
86)	4-Chlorotoluene	16.71	91	1934954	187.0917	ug/kg	100
87)	a-Methylstyrene	16.98	118	1205032	211.2436	ug/kg	99
88)	tert-Butylbenzene	17.03	134	526001	200.4032	ug/kg	87
89)	1,2,4-Trimethylbenzene	17.09	105	2520611	192.2523	ug/kg	100
90)	sec-Butylbenzene	17.31	105	3206494	198.8615	ug/kg	100
91)	p-Isopropyltoluene	17.47	119	2752661	202.2895	ug/kg	100
92)	1,3-Dichlorobenzene	17.67	146	1508843	192.8225	ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	1522857	194.6701	ug/kg	99
94)	n-Butylbenzene	17.99	91	2603240	205.7600	ug/kg	100
95)	1,2-Dichlorobenzene	18.29	146	1515803	208.7710	ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	205456	220.4304	ug/kg	98
97)	1,2,4-Trichlorobenzene	20.43	180	1061631	205.9726	ug/kg	99
98)	Hexachlorobutadiene	20.58	225	612598	225.4729	ug/kg	100
99)	Naphthalene	20.81	128	2666581	206.2661	ug/kg	99
100)	1,2,3-Trichlorobenzene	21.12	180	1022740	204.5802	ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972904.D Vial: 9
Acq On : 25 Feb 2016 20:00 Operator: ADC
Sample : WG558732-09 200.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

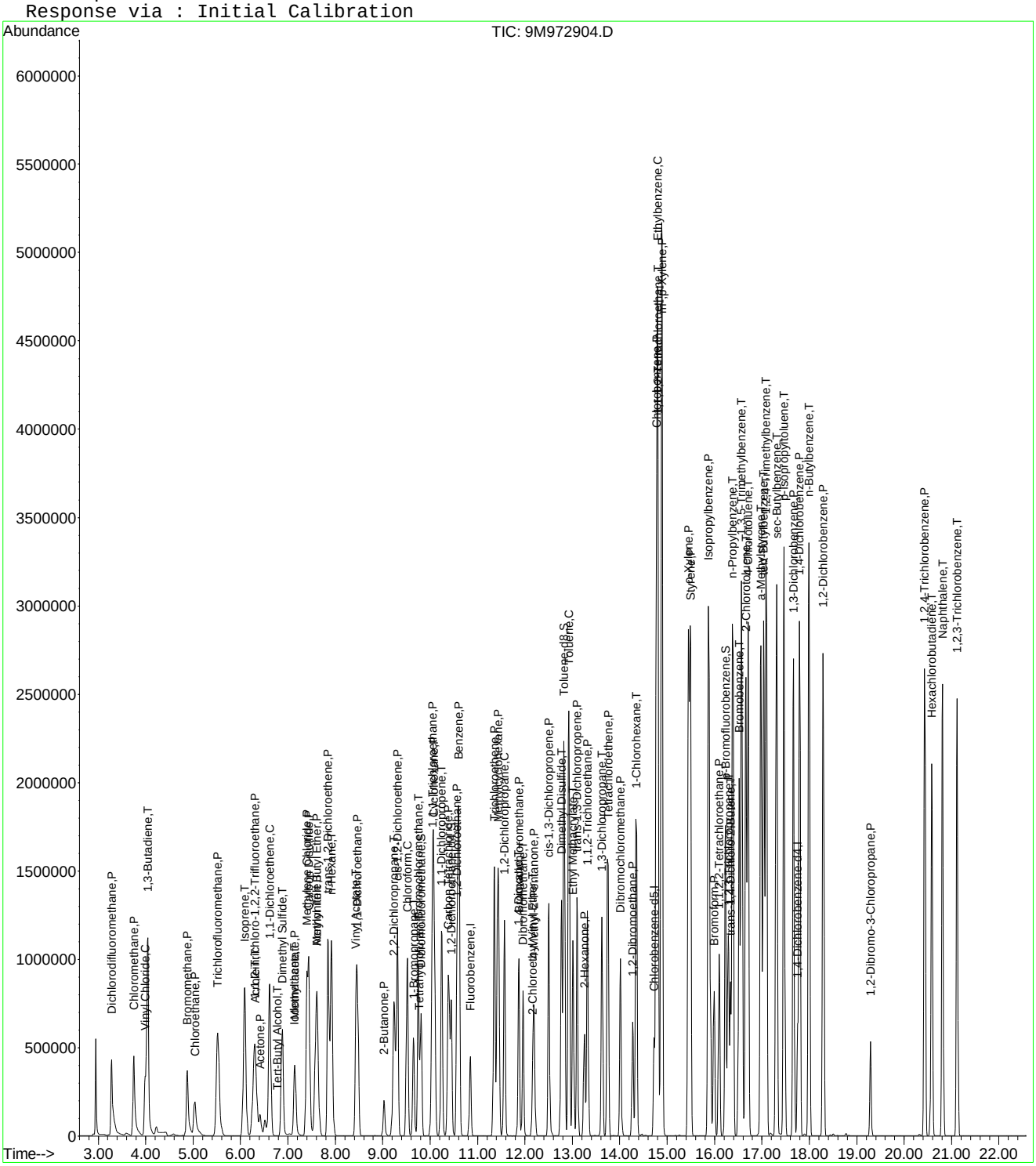

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972905.D Vial: 10
Acq On : 25 Feb 2016 20:30 Operator: ADC
Sample : WG558732-10 300.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:59 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.85	96	626979	50.00	ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	468521	50.00	ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	224223	50.00	ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	520	0.1530	ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.30%#		
43) 1,2-Dichloroethane-d4	10.45	65	1794	0.4207	ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.84%#		
58) Toluene-d8	12.82	98	7789	0.6573	ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	1.32%#		
79) p-Bromofluorobenzene	16.23	95	6216	1.4237	ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	2.84%#		

Target Compounds

						Qvalue
2) Dichlorodifluoromethane	3.28	85	1155483	270.0216	ug/kg	98
3) Chloromethane	3.75	50	1142773	278.5891	ug/kg	100
4) Vinyl Chloride	3.98	62	1112221	270.8539	ug/kg	99
5) 1,3-Butadiene	4.03	54	1100483	281.6917	ug/kg	98
6) Bromomethane	4.87	94	749711	281.1083	ug/kg	98
7) Chloroethane	5.04	64	601337	328.7051	ug/kg	98
8) Trichlorofluoromethane	5.52	101	1778447	288.7670	ug/kg	99
9) Diethyl ether	6.06	59	869609	302.0457	ug/kg	99
10) Isoprene	6.08	67	1108410	301.4513	ug/kg	98
11) Acrolein	6.30	56	93621	163.0794	ug/kg	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	943691	297.1172	ug/kg	99
13) Acetone	6.42	43	369915	242.6618	ug/kg	95
14) 1,1-Dichloroethene	6.61	61	1715009	292.7111	ug/kg	98
15) Tert-Butyl Alcohol	6.80	59	188151	293.4850	ug/kg	89
16) Dimethyl Sulfide	6.88	62	763075	308.1557	ug/kg	99
17) Iodomethane	7.14	142	532480	291.5128	ug/kg	99
18) Methyl acetate	7.15	43	879657	276.1748	ug/kg	98
19) Methylene Chloride	7.40	84	937262	293.7237	ug/kg	96
20) Carbon Disulfide	7.44	76	2640380	292.5391	ug/kg	98
21) Acrylonitrile	7.59	53	252681	160.3640	ug/kg	94
22) Methyl Tert Butyl Ether	7.61	73	2699681	297.0533	ug/kg	98
23) trans-1,2-Dichloroethene	7.84	61	1548353	296.5245	ug/kg	100
24) n-Hexane	7.92	57	1608467	298.6501	ug/kg	98
25) Diisopropyl ether	8.26	45	3742238	299.1747	ug/kg	100
26) Vinyl Acetate	8.43	43	2097407	294.1383	ug/kg	99
27) 1,1-Dichloroethane	8.47	63	1881635	286.8995	ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	3515202	302.2390	ug/kg	99
29) 2-Butanone	9.02	43	559900	276.9258	ug/kg	100
30) Propionitrile	9.14	54	182998	295.7653	ug/kg	100
31) 2,2-Dichloropropane	9.24	77	1439671	294.0988	ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	1040893	303.9366	ug/kg	99
33) Chloroform	9.52	83	1708608	283.5977	ug/kg	99
34) 1-Bromopropane	9.65	122	152776	287.6719	ug/kg	98
35) Bromochloromethane	9.75	130	668631	300.5590	ug/kg	98
36) Tetrahydrofuran	9.77	42	365915	280.7723	ug/kg	97
38) 1,1,1-Trichloroethane	10.05	97	1606962	294.9423	ug/kg	100
39) Cyclohexane	10.08	56	1746722	294.0540	ug/kg	99
40) 1,1-Dichloropropene	10.24	75	1258569	293.5615	ug/kg	98
41) Tert-Amyl-Methyl ether	10.34	73	2573262	304.3824	ug/kg	98
42) Carbon Tetrachloride	10.39	117	1494872	295.9476	ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972905.D Vial: 10
Acq On : 25 Feb 2016 20:30 Operator: ADC
Sample : WG558732-10 300.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:59 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.57	62	1526616	288.0725 ug/kg	98
46)	Benzene	10.61	78	3320959	276.6861 ug/kg	99
47)	Trichloroethene	11.36	130	1102750	289.9607 ug/kg	98
48)	Methylcyclohexane	11.43	83	1476436	309.5324 ug/kg	98
49)	1,2-Dichloropropane	11.57	63	980423	297.4576 ug/kg	99
50)	1,4-Dioxane	11.89	88	31126	629.4828 ug/kg	81
51)	Bromodichloromethane	11.87	83	1358159	292.3851 ug/kg	99
52)	Dibromomethane	11.96	174	632731	289.7290 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	287132	300.2354 ug/kg	96
54)	4-Methyl-2-Pentanone	12.19	58	438042	302.7895 ug/kg	99
55)	cis-1,3-Dichloropropene	12.51	75	1436858	296.9047 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	1505953	309.6528 ug/kg	95
59)	Toluene	12.93	91	3720819	277.9530 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	1096301	295.4554 ug/kg	100
61)	trans-1,3-Dichloropropene	13.10	75	1416217	293.7329 ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	820836	291.8946 ug/kg	99
63)	2-Hexanone	13.26	43	814427	290.0688 ug/kg	100
64)	1,3-Dichloropropane	13.63	76	1322191	282.1714 ug/kg	100
65)	Tetrachloroethene	13.75	164	815946	284.3233 ug/kg	98
66)	Dibromochloromethane	14.02	129	1136128	289.0845 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	889642	285.2204 ug/kg	99
68)	1-Chlorohexane	14.34	91	1188786	301.1405 ug/kg	99
69)	Chlorobenzene	14.78	112	2558374	271.9265 ug/kg	97
70)	1,1,1,2-Tetrachloroethane	14.81	131	1019464	288.5389 ug/kg	97
71)	Ethylbenzene	14.80	106	1372834	283.2291 ug/kg	97
72)	m-,p-Xylene	14.89	106	3241616	541.5304 ug/kg	97
73)	o-Xylene	15.45	106	1663016	289.4945 ug/kg	99
74)	Styrene	15.49	104	2869824	293.3680 ug/kg	99
75)	Bromoform	15.99	173	788638	305.6282 ug/kg	99
76)	Isopropylbenzene	15.87	105	4421589	286.7141 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	1002445	294.7201 ug/kg	99
80)	1,2,3-Trichloropropane	16.28	110	380025	294.6098 ug/kg	66
81)	trans-1,4-Dichloro-2-Buten	16.34	53	413901	318.3274 ug/kg	57
82)	n-Propylbenzene	16.38	91	4980503	282.5783 ug/kg	99
83)	Bromobenzene	16.52	156	1176440	282.7414 ug/kg	93
84)	1,3,5-Trimethylbenzene	16.57	105	3788936	286.3846 ug/kg	99
85)	2-Chlorotoluene	16.66	91	3458872	292.5892 ug/kg	100
86)	4-Chlorotoluene	16.71	91	2929432	268.0287 ug/kg	100
87)	a-Methylstyrene	16.98	118	1823514	302.4880 ug/kg	100
88)	tert-Butylbenzene	17.03	134	795019	286.6221 ug/kg	86
89)	1,2,4-Trimethylbenzene	17.09	105	3829230	276.3702 ug/kg	100
90)	sec-Butylbenzene	17.31	105	4833765	283.6742 ug/kg	99
91)	p-Isopropyltoluene	17.47	119	4134027	287.4802 ug/kg	99
92)	1,3-Dichlorobenzene	17.67	146	2260017	273.2999 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	2229106	269.6404 ug/kg	99
94)	n-Butylbenzene	17.99	91	3871124	289.5329 ug/kg	100
95)	1,2-Dichlorobenzene	18.29	146	2162642	281.8552 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	293112	297.5776 ug/kg	98
97)	1,2,4-Trichlorobenzene	20.43	180	1514973	278.1345 ug/kg	100
98)	Hexachlorobutadiene	20.58	225	846867	294.9498 ug/kg	99
99)	Naphthalene	20.81	128	3754823	274.8379 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.12	180	1451357	274.7177 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972905.D 8260SL.M Fri Feb 26 11:21:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972905.D Vial: 10
Acq On : 25 Feb 2016 20:30 Operator: ADC
Sample : WG558732-10 300.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

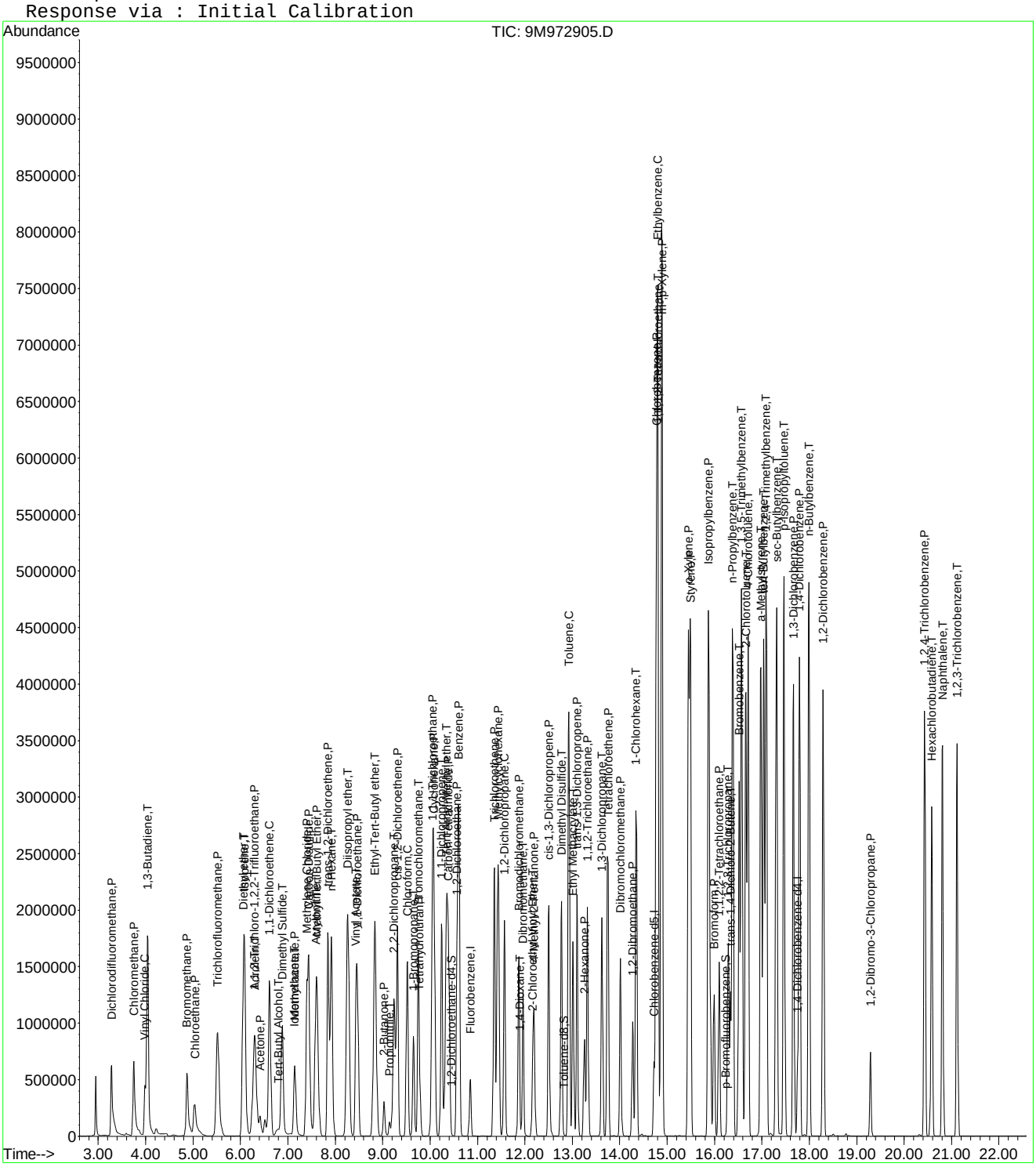

9M972905.D 8260SL.M Fri Feb 26 11:21:59 2016 Page 3

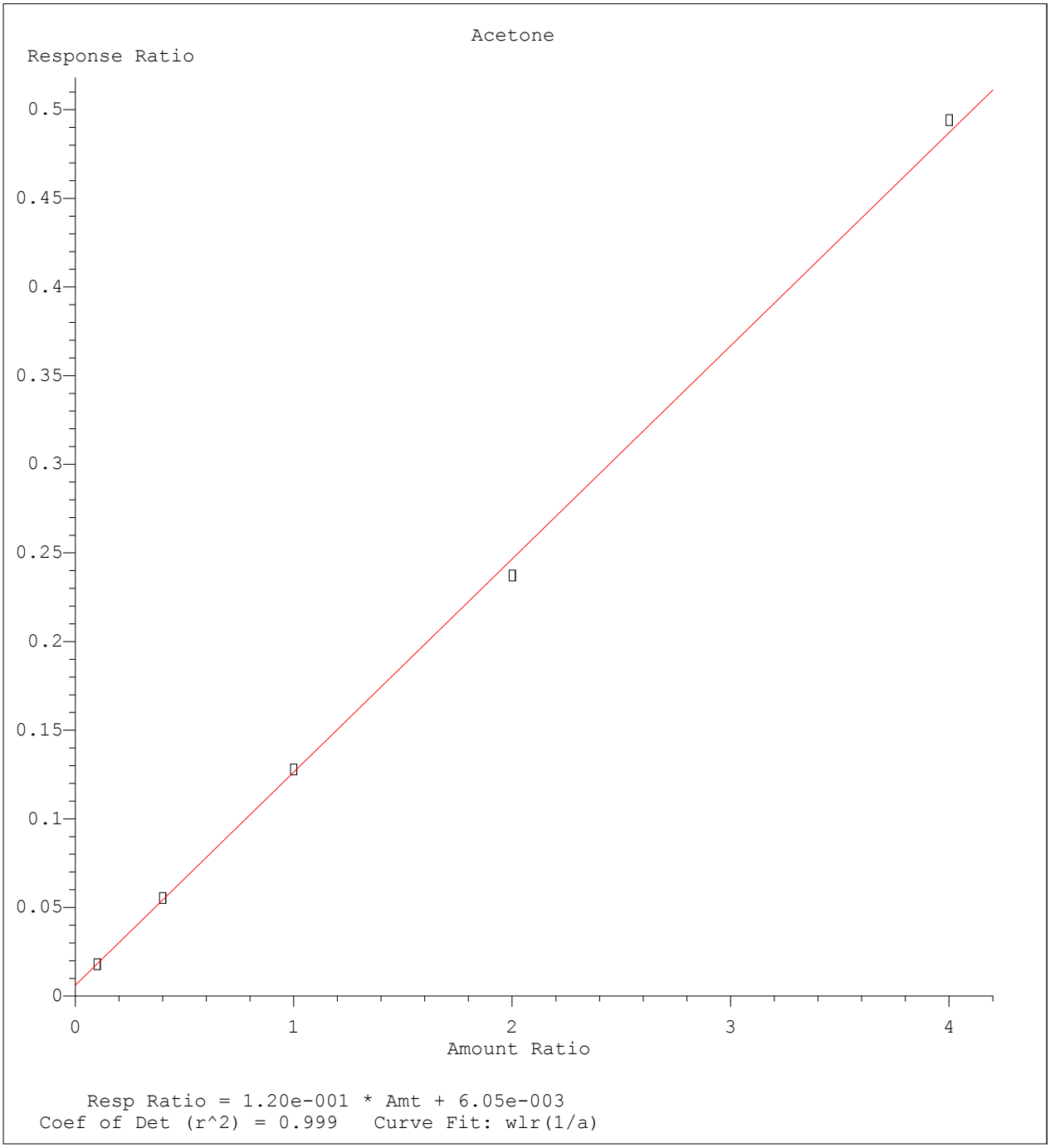

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

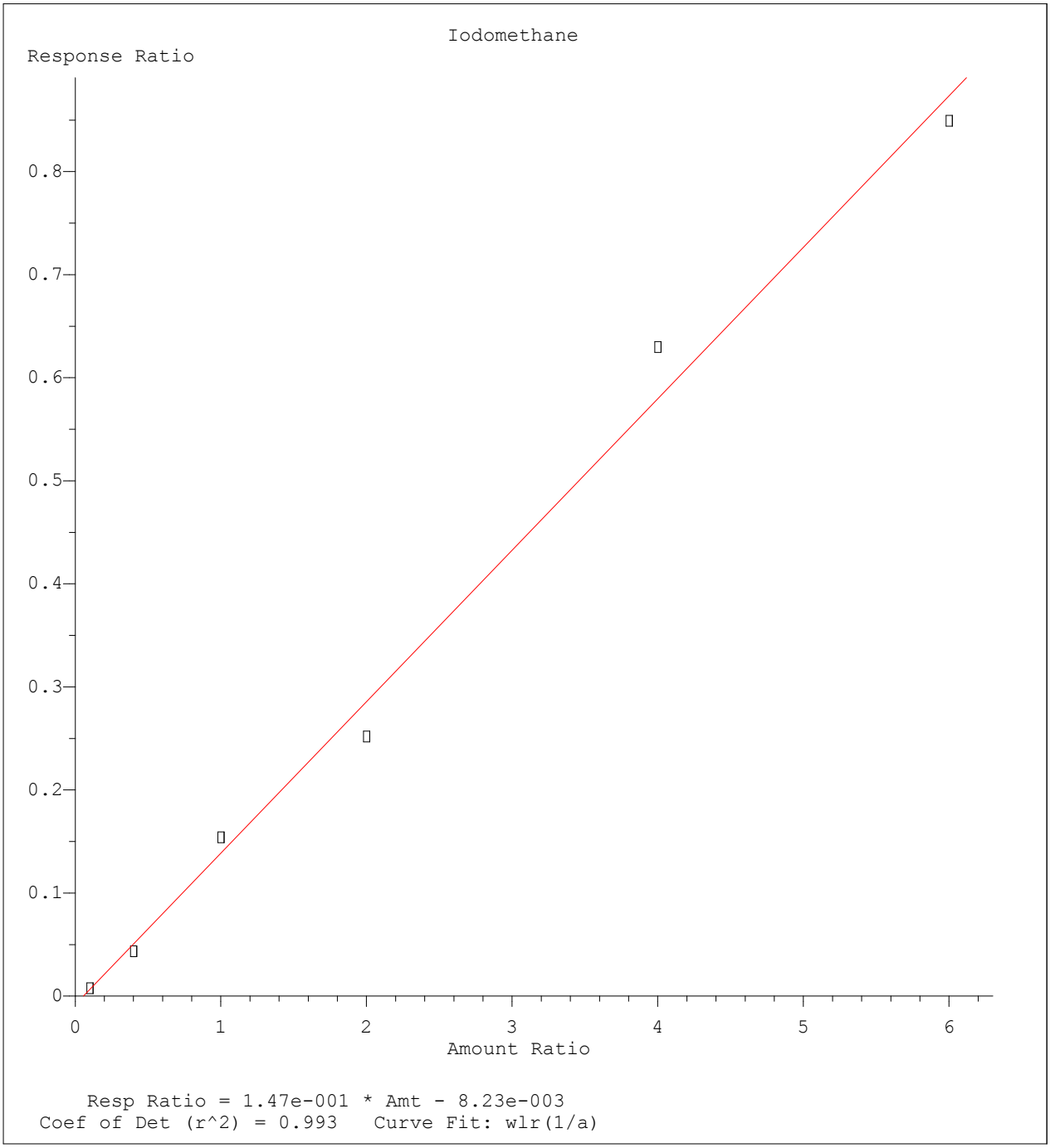

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

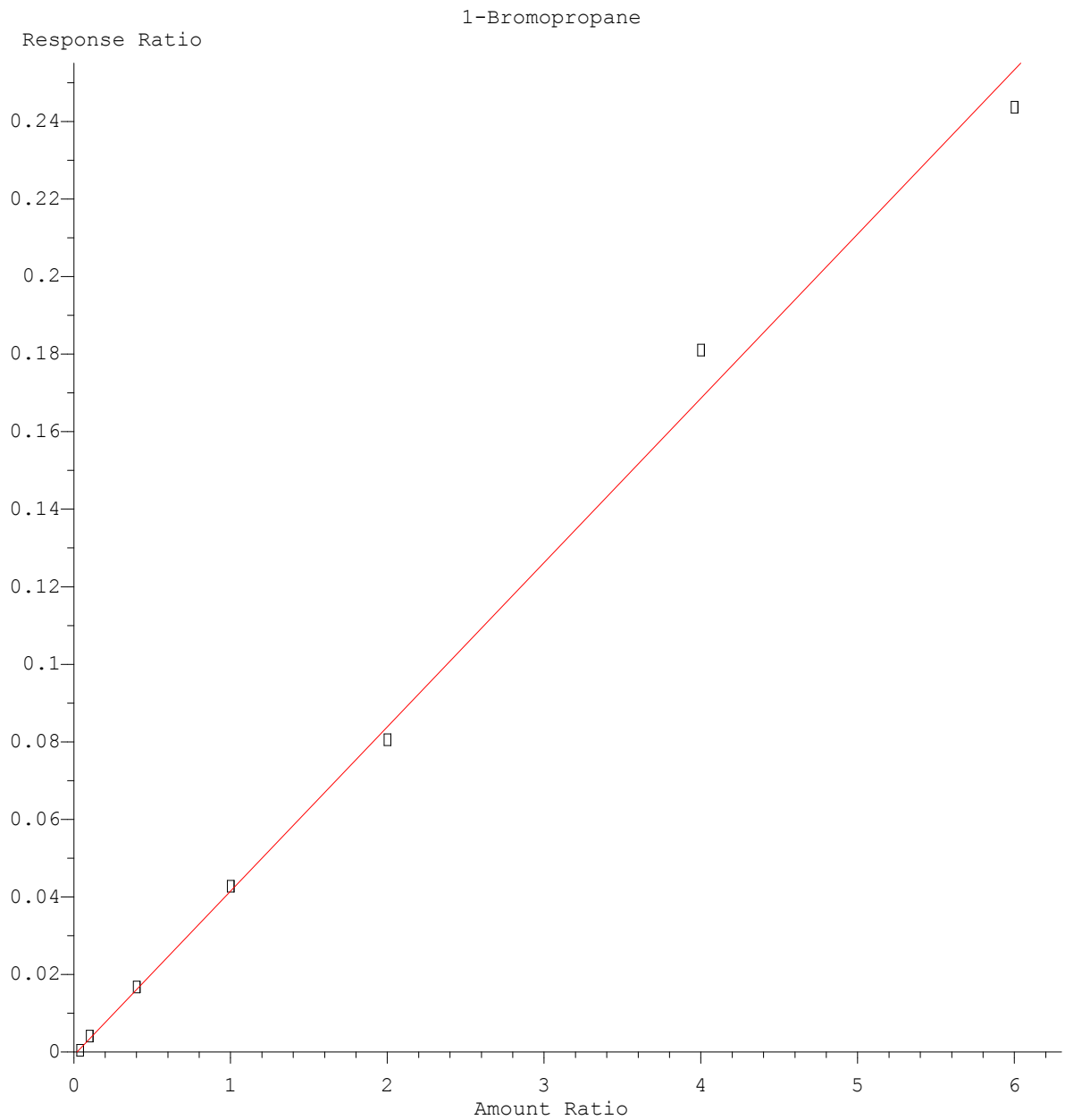

Resp Ratio = 4.25e-002 * Amt - 8.72e-004
Coef of Det (r^2) = 0.997 Curve Fit: wlr(1/a)

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

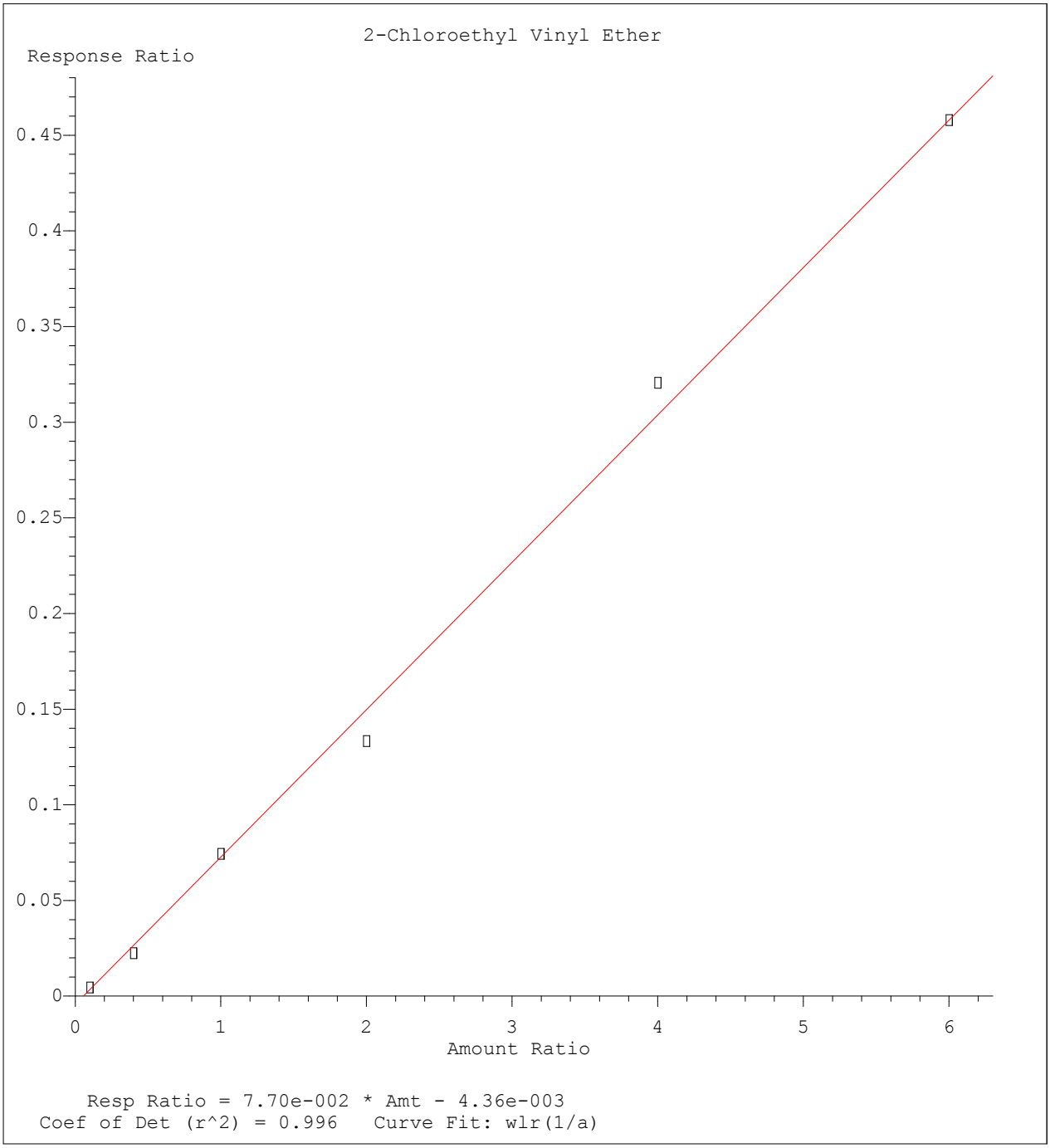

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:39:12 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	582126	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	421408	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	194909	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	163260	51.7395 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 103.48%		
43) 1,2-Dichloroethane-d4	10.45	65	197344	49.8458 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.70%		
58) Toluene-d8	12.82	98	564883	52.9951 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.00%		
79) p-Bromofluorobenzene	16.23	95	212358	55.9531 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 111.90%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	251431	63.3698 ug/kg	100
3) Chloromethane	3.74	50	200793	52.7216 ug/kg	100
4) Vinyl Chloride	3.99	62	228101	59.8284 ug/kg	99
5) 1,3-Butadiene	4.04	54	19055	5.2533 ug/kg	94
6) Bromomethane	4.88	94	121270	48.9744 ug/kg	100
7) Chloroethane	5.04	64	92003	54.1660 ug/kg	100
8) Trichlorofluoromethane	5.52	101	271981	47.5643 ug/kg	98
9) Diethyl ether	6.06	59	198146	74.1259 ug/kg	98
10) Isoprene	6.09	67	201645	59.0663 ug/kg	95
11) Acrolein	6.30	56	34569	64.8558 ug/kg	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	151498	51.3737 ug/kg	99
13) Acetone	6.41	43	65044	43.9190 ug/kg	98
14) 1,1-Dichloroethene	6.62	61	264179	48.5632 ug/kg	99
15) Tert-Butyl Alcohol	6.77	59	122141	205.1997 ug/kg	96
16) Dimethyl Sulfide	6.88	62	168266	73.1872 ug/kg	98
17) Iodomethane	7.13	142	81070	50.1419 ug/kg	99
18) Methyl acetate	7.15	43	155780	52.6767 ug/kg	99
19) Methylene Chloride	7.41	84	147546	49.8014 ug/kg	97
20) Carbon Disulfide	7.45	76	369798	44.1284 ug/kg	98
21) Acrylonitrile	7.59	53	71462	48.8478 ug/kg	99
22) Methyl Tert Butyl Ether	7.61	73	402298	47.6767 ug/kg	100
23) trans-1,2-Dichloroethene	7.85	61	245432	50.6242 ug/kg	100
24) n-Hexane	7.91	57	240056	48.0064 ug/kg	97
25) Diisopropyl ether	8.26	45	951889	81.9626 ug/kg	100
26) Vinyl Acetate	8.44	43	224385	33.8921 ug/kg	98
27) 1,1-Dichloroethane	8.47	63	282537	46.3987 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	854399	79.1219 ug/kg	99
29) 2-Butanone	9.03	43	88970	47.3950 ug/kg	99
30) Propionitrile	9.14	54	53106	92.4444 ug/kg	97
31) 2,2-Dichloropropane	9.24	77	213921	47.0673 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	167198	52.5828 ug/kg	96
33) Chloroform	9.52	83	268532	48.0056 ug/kg	99
34) 1-Bromopropane	9.65	122	36381	74.5451 ug/kg	96
35) Bromochloromethane	9.75	130	106386	51.5067 ug/kg	96
36) Tetrahydrofuran	9.78	42	101921	84.2313 ug/kg	98
38) 1,1,1-Trichloroethane	10.04	97	236420	46.7360 ug/kg	100
39) Cyclohexane	10.08	56	267623	48.5247 ug/kg	98
40) 1,1-Dichloropropene	10.25	75	193208	48.5381 ug/kg	99
41) Tert-Amyl-Methyl ether	10.34	73	688412	87.7041 ug/kg	100
42) Carbon Tetrachloride	10.39	117	218086	46.5023 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:39:12 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	241996	49.1831 ug/kg	99
46)	Benzene	10.60	78	545692	48.9674 ug/kg	99
47)	Trichloroethene	11.35	130	174371	49.3824 ug/kg	96
48)	Methylcyclohexane	11.44	83	228572	51.6120 ug/kg	98
49)	1,2-Dichloropropane	11.56	63	160075	52.3084 ug/kg	99
50)	1,4-Dioxane	11.88	88	7749	168.7883 ug/kg	88
51)	Bromodichloromethane	11.87	83	205164	47.5709 ug/kg	100
52)	Dibromomethane	11.96	174	95223	46.9624 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	36447	43.4907 ug/kg	97
54)	4-Methyl-2-Pentanone	12.19	58	64228	47.8173 ug/kg	96
55)	cis-1,3-Dichloropropene	12.50	75	238969	53.1840 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	243519	53.9302 ug/kg	99
59)	Toluene	12.93	91	610944	50.7412 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	172650	51.7315 ug/kg	99
61)	trans-1,3-Dichloropropene	13.11	75	216958	50.0293 ug/kg	98
62)	1,1,2-Trichloroethane	13.32	97	130293	51.5130 ug/kg	96
63)	2-Hexanone	13.25	43	121727	48.2017 ug/kg	99
64)	1,3-Dichloropropane	13.62	76	226811	53.8157 ug/kg	99
65)	Tetrachloroethene	13.75	164	128602	49.8224 ug/kg	96
66)	Dibromochloromethane	14.01	129	171284	48.4552 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	142409	50.7609 ug/kg	97
68)	1-Chlorohexane	14.35	91	184711	52.0217 ug/kg	98
69)	Chlorobenzene	14.77	112	433181	51.1898 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	157986	49.7138 ug/kg	100
71)	Ethylbenzene	14.79	106	223582	51.2841 ug/kg	100
72)	m-,p-Xylene	14.89	106	552299	102.5798 ug/kg	98
73)	o-Xylene	15.45	106	276739	53.5600 ug/kg	99
74)	Styrene	15.49	104	464515	52.7939 ug/kg	99
75)	Bromoform	15.99	173	109809	47.3129 ug/kg	99
76)	Isopropylbenzene	15.87	105	721376	52.0066 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	153818	52.0241 ug/kg	97
80)	1,2,3-Trichloropropane	16.29	110	60794	54.2181 ug/kg	92
81)	trans-1,4-Dichloro-2-Buten	16.33	53	48561	42.9649 ug/kg	74
82)	n-Propylbenzene	16.39	91	841260	54.9091 ug/kg	100
83)	Bromobenzene	16.52	156	188730	52.1806 ug/kg	96
84)	1,3,5-Trimethylbenzene	16.57	105	624761	54.3244 ug/kg	99
85)	2-Chlorotoluene	16.66	91	556729	54.1771 ug/kg	100
86)	4-Chlorotoluene	16.70	91	503918	53.0403 ug/kg	99
87)	a-Methylstyrene	16.98	118	305038	58.2105 ug/kg	98
88)	tert-Butylbenzene	17.03	134	133555	55.3912 ug/kg	90
89)	1,2,4-Trimethylbenzene	17.08	105	620621	51.5293 ug/kg	99
90)	sec-Butylbenzene	17.31	105	810765	54.7366 ug/kg	99
91)	p-Isopropyltoluene	17.46	119	675672	54.0529 ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	365216	50.8073 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	367190	51.0968 ug/kg	99
94)	n-Butylbenzene	17.99	91	609687	52.4585 ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	351826	52.7494 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	46623	54.4522 ug/kg	96
97)	1,2,4-Trichlorobenzene	20.43	180	244804	51.7031 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	136025	54.5004 ug/kg	99
99)	Naphthalene	20.81	128	603753	50.8387 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	241600	52.6087 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972907.D 8260SL.M Fri Feb 26 11:39:13 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:39 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

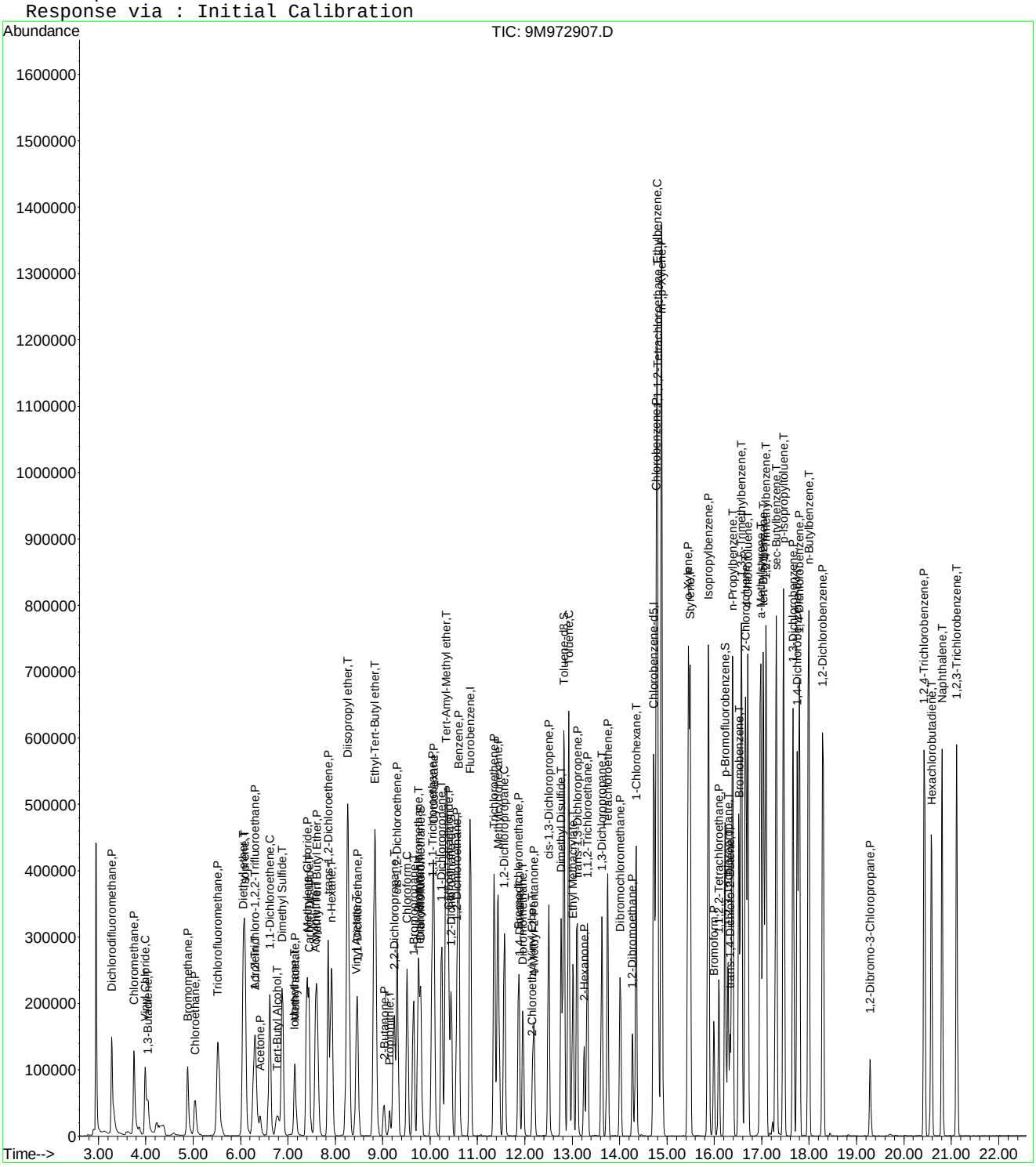

9M972907.D 8260SL.M Fri Feb 26 11:39:13 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	112	0.00
2	P	Dichlorodifluoromethane	50.0000	63.3698	-26.7#	123	0.00
3	P	Chloromethane	50.0000	52.7216	-5.4	107	0.00
4	C	Vinyl Chloride	50.0000	59.8284	-19.7	118	0.00
5	T	1,3-Butadiene	50.0000	5.2533	89.5#	11	0.00
6	P	Bromomethane	50.0000	48.9744	2.1	112	0.00
7	P	Chloroethane	50.0000	54.1660	-8.3	108	0.00
8	P	Trichlorofluoromethane	50.0000	47.5643	4.9	102	0.00
9	T	Diethyl ether	100.0000	74.1259	25.9#	79	0.01
10	T	Isoprene	50.0000	59.0664	-18.1	129	0.00
11	T	Acrolein	50.0000	64.8558	-29.7#	140	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	51.3737	-2.7	112	0.00
13	P	Acetone	50.0000	43.9190	12.2	98	0.00
14	C	1,1-Dichloroethene	50.0000	48.5632	2.9	108	0.00
15	T	Tert-Butyl Alcohol	200.0000	205.1997	-2.6	116	0.01
16	T	Dimethyl Sulfide	50.0000	73.1872	-46.4#	154	0.00
17	T	Iodomethane	50.0000	50.1419	-0.3	102	0.00
18	P	Methyl acetate	50.0000	52.6767	-5.4	115	0.01
19	P	Methylene Chloride	50.0000	49.8014	0.4	109	0.01
20	P	Carbon Disulfide	50.0000	44.1284	11.7	97	0.00
21	T	Acrylonitrile	50.0000	48.8478	2.3	103	0.00
22	P	Methyl Tert Butyl Ether	50.0000	47.6767	4.6	99	0.00
23	P	trans-1,2-Dichloroethene	50.0000	50.6242	-1.2	108	0.00
24	T	n-Hexane	50.0000	48.0064	4.0	109	0.00
25	T	Diisopropyl ether	100.0000	81.9626	18.0	87	0.00
26	T	Vinyl Acetate	50.0000	33.8921	32.2#	72	0.01
27	P	1,1-Dichloroethane	50.0000	46.3987	7.2	99	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	79.1219	20.9	83	0.00
29	P	2-Butanone	50.0000	47.3950	5.2	103	0.00
30	T	Propionitrile	100.0000	92.4444	7.6	100	0.00
31	T	2,2-Dichloropropane	50.0000	47.0673	5.9	99	0.00
32	P	cis-1,2-Dichloroethene	50.0000	52.5828	-5.2	109	0.00
33	C	Chloroform	50.0000	48.0057	4.0	102	0.00
34	T	1-Bromopropane	50.0000	74.5451	-49.1#	164	0.00
35	T	Bromochloromethane	50.0000	51.5067	-3.0	104	0.00
36	T	Tetrahydrofuran	100.0000	84.2314	15.8	90	0.00
37	S	Dibromofluoromethane	50.0000	51.7395	-3.5	110	0.00
38	P	1,1,1-Trichloroethane	50.0000	46.7360	6.5	97	0.00
39	P	Cyclohexane	50.0000	48.5247	3.0	108	0.00
40	T	1,1-Dichloropropene	50.0000	48.5381	2.9	106	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	87.7041	12.3	93	0.00
42	P	Carbon Tetrachloride	50.0000	46.5023	7.0	99	0.00
43	S	1,2-Dichloroethane-d4	50.0000	49.8458	0.3	107	0.00
44		Heptane	-1.0000	0.0000	0.0	104	0.00
45	P	1,2-Dichloroethane	50.0000	49.1831	1.6	102	0.00
46	P	Benzene	50.0000	48.9674	2.1	108	0.00
47	P	Trichloroethene	50.0000	49.3824	1.2	106	0.00
48	P	Methylcyclohexane	50.0000	51.6120	-3.2	112	0.00
49	C	1,2-Dichloropropane	50.0000	52.3083	-4.6	108	0.00
50	T	1,4-Dioxane	200.0000	168.7883	15.6	99	0.00
51	P	Bromodichloromethane	50.0000	47.5710	4.9	101	0.00
52	T	Dibromomethane	50.0000	46.9624	6.1	99	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	43.4907	13.0	95	0.00
54	P	4-Methyl-2-Pentanone	50.0000	47.8173	4.4	99	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	53.1840	-6.4	112	0.00
56	T	Dimethyl Disulfide	50.0000	53.9302	-7.9	111	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	111	0.00
58	S	Toluene-d8	50.0000	52.9951	-6.0	110	0.00
59	C	Toluene	50.0000	50.7412	-1.5	108	0.00
60	T	Ethyl Methacrylate	50.0000	51.7315	-3.5	109	0.00
61	P	trans-1,3-Dichloropropene	50.0000	50.0293	-0.1	102	0.00
62	P	1,1,2-Trichloroethane	50.0000	51.5130	-3.0	106	0.00
63	P	2-Hexanone	50.0000	48.2017	3.6	102	0.00
64	T	1,3-Dichloropropane	50.0000	53.8157	-7.6	113	0.00
65	P	Tetrachloroethene	50.0000	49.8224	0.4	110	0.00
66	P	Dibromochloromethane	50.0000	48.4552	3.1	101	0.00
67	P	1,2-Dibromoethane	50.0000	50.7609	-1.5	107	0.00
68	T	1-Chlorohexane	50.0000	52.0217	-4.0	110	0.00
69	P	Chlorobenzene	50.0000	51.1898	-2.4	108	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	49.7138	0.6	102	0.00
71	C	Ethylbenzene	50.0000	51.2841	-2.6	108	0.00
72	P	m-,p-Xylene	100.0000	102.5798	-2.6	111	0.00
73	P	o-Xylene	50.0000	53.5600	-7.1	112	0.00
74	P	Styrene	50.0000	52.7939	-5.6	109	0.00
75	P	Bromoform	50.0000	47.3129	5.4	95	0.00
76	P	Isopropylbenzene	50.0000	52.0066	-4.0	110	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	107	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	52.0241	-4.0	104	0.00
79	S	p-Bromofluorobenzene	50.0000	55.9531	-11.9	111	0.00
80	T	1,2,3-Trichloropropane	50.0000	54.2181	-8.4	109	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	42.9649	14.1	87	0.00
82	T	n-Propylbenzene	50.0000	54.9091	-9.8	112	0.00
83	T	Bromobenzene	50.0000	52.1806	-4.4	106	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	54.3244	-8.6	110	0.00
85	T	2-Chlorotoluene	50.0000	54.1771	-8.4	115	0.00
86	T	4-Chlorotoluene	50.0000	53.0403	-6.1	105	0.00
87	T	a-Methylstyrene	50.0000	58.2105	-16.4	119	0.00
88	T	tert-Butylbenzene	50.0000	55.3912	-10.8	110	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	51.5293	-3.1	107	0.00
90	T	sec-Butylbenzene	50.0000	54.7366	-9.5	112	0.00
91	T	p-Isopropyltoluene	50.0000	54.0529	-8.1	110	0.00
92	P	1,3-Dichlorobenzene	50.0000	50.8073	-1.6	108	0.00
93	P	1,4-Dichlorobenzene	50.0000	51.0968	-2.2	110	0.00
94	T	n-Butylbenzene	50.0000	52.4585	-4.9	108	0.00
95	P	1,2-Dichlorobenzene	50.0000	52.7494	-5.5	110	0.00
96	P	1,2-Dibromo-3-Chloropropane	50.0000	54.4522	-8.9	109	0.00
97	P	1,2,4-Trichlorobenzene	50.0000	51.7031	-3.4	110	0.00
98	T	Hexachlorobutadiene	50.0000	54.5004	-9.0	116	0.00
99	T	Naphthalene	50.0000	50.8387	-1.7	100	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	52.6087	-5.2	109	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972907.D 8260SL.M Fri Feb 26 11:39:16 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030716\9M973121.D Vial: 1
Acq On : 7 Mar 2016 15:17 Operator: ADC
Sample : WG559980-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 15:39:41 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	541092	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	410315	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	216745	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	136467	46.5282 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.06%		
43) 1,2-Dichloroethane-d4	10.45	65	183191	49.7800 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.56%		
58) Toluene-d8	12.83	98	484876	46.7190 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 93.44%		
79) p-Bromofluorobenzene	16.23	95	209340	49.6010 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 99.20%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	165796	44.9556 ug/kg	94
3) Chloromethane	3.75	50	169574	47.9011 ug/kg	100
4) Vinyl Chloride	3.99	62	197450	55.7164 ug/kg	98
5) 1,3-Butadiene	4.04	54	219394	65.0725 ug/kg	97
6) Bromomethane	4.88	94	98848	42.9467 ug/kg	98
7) Chloroethane	5.04	64	86411	54.7318 ug/kg	95
8) Trichlorofluoromethane	5.52	101	293802	55.2768 ug/kg	99
9) Diethyl ether	6.05	59	250267	100.7243 ug/kg	95
10) Isoprene	6.09	67	187307	59.0273 ug/kg	94
11) Acrolein	6.29	56	24619	49.6910 ug/kg	88
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	150516	54.9114 ug/kg	98
13) Acetone	6.40	43	68407	50.0230 ug/kg	98
14) 1,1-Dichloroethene	6.62	61	269678	53.3335 ug/kg	98
15) Tert-Butyl Alcohol	6.75	59	100671	181.9557 ug/kg	95
16) Dimethyl Sulfide	6.88	62	110228	51.5795 ug/kg	89
17) Iodomethane	7.13	142	69289	46.3306 ug/kg	91
18) Methyl acetate	7.14	43	160928	58.5442 ug/kg	96
19) Methylene Chloride	7.40	84	137592	49.9635 ug/kg	89
20) Carbon Disulfide	7.44	76	422471	54.2371 ug/kg	98
21) Acrylonitrile	7.58	53	72603	53.3913 ug/kg	98
22) Methyl Tert Butyl Ether	7.61	73	405307	51.6759 ug/kg	98
23) trans-1,2-Dichloroethene	7.84	61	247137	54.8416 ug/kg	95
24) n-Hexane	7.91	57	280159	60.2750 ug/kg	98
25) Diisopropyl ether	8.25	45	1208461	111.9458 ug/kg	98
26) Vinyl Acetate	8.43	43	292604	47.5479 ug/kg	99
27) 1,1-Dichloroethane	8.46	63	305499	53.9742 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	1056064	105.2137 ug/kg	98
29) 2-Butanone	9.02	43	91173	52.2518 ug/kg	97
30) Propionitrile	9.14	54	54756	102.5450 ug/kg	100
31) 2,2-Dichloropropane	9.24	77	244010	57.7590 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	157098	53.1532 ug/kg	92
33) Chloroform	9.52	83	270735	52.0699 ug/kg	100
34) 1-Bromopropane	9.65	122	22771	50.5314 ug/kg	95
35) Bromochloromethane	9.75	130	98927	51.5276 ug/kg	89
36) Tetrahydrofuran	9.77	42	121362	107.9043 ug/kg	95
38) 1,1,1-Trichloroethane	10.05	97	258323	54.9384 ug/kg	94
39) Cyclohexane	10.08	56	303283	59.1607 ug/kg	97
40) 1,1-Dichloropropene	10.25	75	197941	53.4983 ug/kg	100
41) Tert-Amyl-Methyl ether	10.34	73	740706	101.5227 ug/kg	97
42) Carbon Tetrachloride	10.39	117	244485	56.0848 ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M973121.D 8260SL.M Mon Mar 07 15:39:42 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030716\9M973121.D Vial: 1
Acq On : 7 Mar 2016 15:17 Operator: ADC
Sample : WG559980-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 15:39:41 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	244854	53.5379	ug/kg	97
46)	Benzene	10.60	78	520143	50.2144	ug/kg	98
47)	Trichloroethene	11.35	130	175462	53.4598	ug/kg	96
48)	Methylcyclohexane	11.44	83	244539	59.4048	ug/kg	97
49)	1,2-Dichloropropane	11.56	63	155975	54.8338	ug/kg	98
50)	1,4-Dioxane	11.88	88	8310	194.7348	ug/kg	100
51)	Bromodichloromethane	11.87	83	206988	51.6335	ug/kg	99
52)	Dibromomethane	11.97	174	93684	49.7073	ug/kg	96
53)	2-Chloroethyl Vinyl Ether	12.17	63	31739	40.9236	ug/kg	92
54)	4-Methyl-2-Pentanone	12.19	58	63874	51.1601	ug/kg	99
55)	cis-1,3-Dichloropropene	12.50	75	219123	52.4654	ug/kg	99
56)	Dimethyl Disulfide	12.77	94	222676	53.0541	ug/kg	99
59)	Toluene	12.93	91	594424	50.7038	ug/kg	99
60)	Ethyl Methacrylate	13.01	69	166383	51.2015	ug/kg	99
61)	trans-1,3-Dichloropropene	13.11	75	215529	51.0435	ug/kg	99
62)	1,1,2-Trichloroethane	13.32	97	123564	50.1734	ug/kg	99
63)	2-Hexanone	13.25	43	124506	50.6350	ug/kg	97
64)	1,3-Dichloropropane	13.62	76	202800	49.4195	ug/kg	91
65)	Tetrachloroethene	13.75	164	130531	51.9369	ug/kg	96
66)	Dibromochloromethane	14.01	129	168020	48.8169	ug/kg	98
67)	1,2-Dibromoethane	14.28	107	131380	48.0957	ug/kg	98
68)	1-Chlorohexane	14.35	91	198492	57.4143	ug/kg	94
69)	Chlorobenzene	14.77	112	418018	50.7334	ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	157509	50.9037	ug/kg	98
71)	Ethylbenzene	14.79	106	220173	51.8675	ug/kg	96
72)	m-,p-Xylene	14.89	106	540452	103.0932	ug/kg	97
73)	o-Xylene	15.45	106	263463	52.3691	ug/kg	100
74)	Styrene	15.49	104	447543	52.2401	ug/kg	99
75)	Bromoform	16.00	173	115336	51.0378	ug/kg	99
76)	Isopropylbenzene	15.88	105	725612	53.7263	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	148425	45.1427	ug/kg	100
80)	1,2,3-Trichloropropane	16.29	110	58528	46.9386	ug/kg	97
81)	trans-1,4-Dichloro-2-Buten	16.33	53	66485	52.8972	ug/kg	85
82)	n-Propylbenzene	16.39	91	847299	49.7317	ug/kg	99
83)	Bromobenzene	16.52	156	182379	45.3446	ug/kg	94
84)	1,3,5-Trimethylbenzene	16.57	105	618570	48.3674	ug/kg	99
85)	2-Chlorotoluene	16.66	91	536292	46.9306	ug/kg	100
86)	4-Chlorotoluene	16.70	91	523267	49.5282	ug/kg	99
87)	a-Methylstyrene	16.98	118	292498	50.1941	ug/kg	99
88)	tert-Butylbenzene	17.04	134	128780	48.0299	ug/kg	94
89)	1,2,4-Trimethylbenzene	17.09	105	636478	47.5220	ug/kg	100
90)	sec-Butylbenzene	17.31	105	815584	49.5147	ug/kg	100
91)	p-Isopropyltoluene	17.46	119	688161	49.5058	ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	362161	45.3065	ug/kg	98
93)	1,4-Dichlorobenzene	17.79	146	362635	45.3790	ug/kg	100
94)	n-Butylbenzene	17.99	91	663055	51.3028	ug/kg	99
95)	1,2-Dichlorobenzene	18.30	146	340271	45.8773	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	42077	44.1919	ug/kg	97
97)	1,2,4-Trichlorobenzene	20.44	180	243320	46.2124	ug/kg	98
98)	Hexachlorobutadiene	20.59	225	135057	48.6610	ug/kg	98
99)	Naphthalene	20.81	128	599108	45.3652	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.12	180	235710	46.1553	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M973121.D 8260SL.M Mon Mar 07 15:39:42 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030716\9M973121.D Vial: 1
Acq On : 7 Mar 2016 15:17 Operator: ADC
Sample : WG559980-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 7 15:39 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

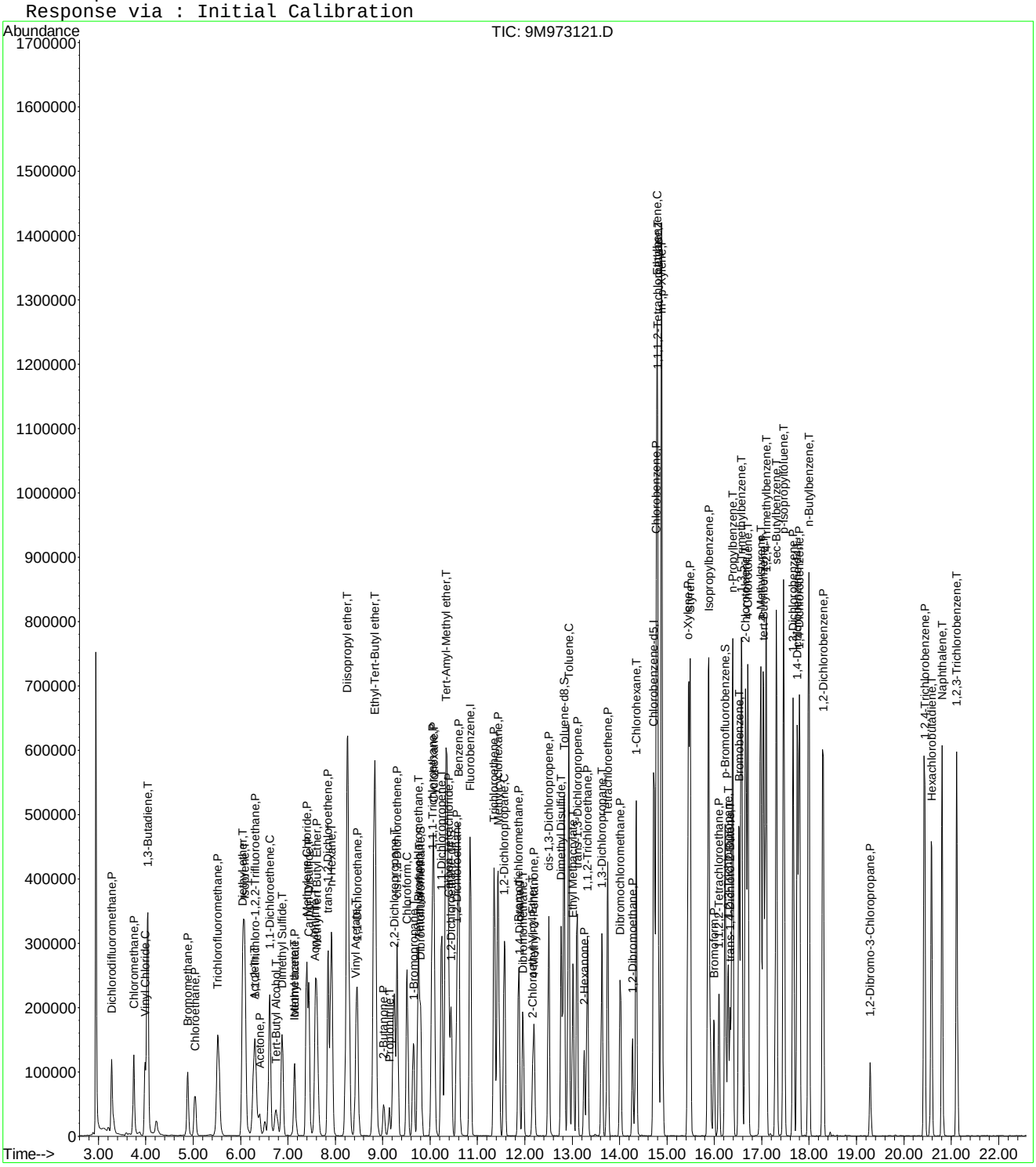

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\030716\9M973121.D Vial: 1
Acq On : 7 Mar 2016 15:17 Operator: ADC
Sample : WG559980-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	105	0.00
2	P	Dichlorodifluoromethane	0.3408	0.3064	10.1	81	0.00
3	P	Chloromethane	0.3271	0.3134	4.2	91	0.00
4	C	Vinyl Chloride	0.3275	0.3649	-11.4	103	0.00
5	T	1,3-Butadiene	0.3115	0.4055	-30.1#	128	0.00
6	P	Bromomethane	0.2127	0.1827	14.1	92	0.00
7	P	Chloroethane	0.1459	0.1597	-9.5	101	0.00
8	P	Trichlorofluoromethane	0.4911	0.5430	-10.6	110	0.00
9	T	Diethyl ether	0.2296	0.2313	-0.7	100	0.00
10	T	Isoprene	0.2932	0.3462	-18.1	120	0.00
11	T	Acrolein	0.0458	0.0455	0.6	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	0.2533	0.2782	-9.8	111	0.01
13	P	Acetone	0.1376	0.1264	8.1	103	0.00
14	C	1,1-Dichloroethene	0.4672	0.4984	-6.7	111	0.00
15	T	Tert-Butyl Alcohol	0.0511	0.0465	9.0	96	0.00
16	T	Dimethyl Sulfide	0.1975	0.2037	-3.2	101	0.00
17	T	Iodomethane	0.1273	0.1281	-0.6	87	0.00
18	P	Methyl acetate	0.2540	0.2974	-17.1	119	0.00
19	P	Methylene Chloride	0.2545	0.2543	0.1	102	0.00
20	P	Carbon Disulfide	0.7198	0.7808	-8.5	111	0.00
21	T	Acrylonitrile	0.1257	0.1342	-6.8	104	0.00
22	P	Methyl Tert Butyl Ether	0.7248	0.7490	-3.4	100	0.00
23	P	trans-1,2-Dichloroethene	0.4164	0.4567	-9.7	109	0.00
24	T	n-Hexane	0.4295	0.5178	-20.6	128	0.00
25	T	Diisopropyl ether	0.9975	1.1167	-11.9	111	0.00
26	T	Vinyl Acetate	0.5686	0.5408	4.9	94	0.00
27	P	1,1-Dichloroethane	0.5230	0.5646	-7.9	107	0.00
28	T	Ethyl-Tert-Butyl ether	0.9275	0.9759	-5.2	103	0.00
29	P	2-Butanone	0.1612	0.1685	-4.5	106	0.00
30	T	Propionitrile	0.0493	0.0506	-2.6	103	0.00
31	T	2,2-Dichloropropane	0.3904	0.4510	-15.5	113	0.00
32	P	cis-1,2-Dichloroethene	0.2731	0.2903	-6.3	102	0.00
33	C	Chloroform	0.4805	0.5003	-4.1	103	0.00
34	T	1-Bromopropane	0.0376	0.0421	-11.9	103	0.00
35	T	Bromochloromethane	0.1774	0.1828	-3.1	96	0.00
36	T	Tetrahydrofuran	0.1039	0.1122	-7.9	107	0.00
37	S	Dibromofluoromethane	0.2710	0.2522	6.9	92	0.00
38	P	1,1,1-Trichloroethane	0.4345	0.4774	-9.9	106	0.00
39	P	Cyclohexane	0.4737	0.5605	-18.3	122	0.00
40	T	1,1-Dichloropropene	0.3419	0.3658	-7.0	109	0.00
41	T	Tert-Amyl-Methyl ether	0.6742	0.6845	-1.5	100	0.00
42	P	Carbon Tetrachloride	0.4028	0.4518	-12.2	110	0.00
43	S	1,2-Dichloroethane-d4	0.3401	0.3386	0.4	100	0.00
44		Heptane	0.0000	0.0000	0.0	105	0.00
45	P	1,2-Dichloroethane	0.4226	0.4525	-7.1	103	0.00
46	P	Benzene	0.9572	0.9613	-0.4	103	0.00
47	P	Trichloroethene	0.3033	0.3243	-6.9	107	0.00
48	P	Methylcyclohexane	0.3804	0.4519	-18.8	120	0.00
49	C	1,2-Dichloropropane	0.2628	0.2883	-9.7	105	0.00
50	T	1,4-Dioxane	0.0039	0.0038	2.5	107	0.00
51	P	Bromodichloromethane	0.3704	0.3825	-3.3	102	0.00
52	T	Dibromomethane	0.1742	0.1731	0.6	98	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0665	0.0587	11.8	82	0.00
54	P	4-Methyl-2-Pentanone	0.1154	0.1181	-2.3	98	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\030716\9M973121.D Vial: 1
Acq On : 7 Mar 2016 15:17 Operator: ADC
Sample : WG559980-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	0.3859	0.4050	-4.9	103	0.00
56	T	Dimethyl Disulfide	0.3878	0.4115	-6.1	101	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	108	0.00
58	S	Toluene-d8	1.2647	1.1817	6.6	95	0.00
59	C	Toluene	1.4286	1.4487	-1.4	105	0.00
60	T	Ethyl Methacrylate	0.3960	0.4055	-2.4	105	0.00
61	P	trans-1,3-Dichloropropene	0.5145	0.5253	-2.1	101	0.00
62	P	1,1,2-Trichloroethane	0.3001	0.3011	-0.3	100	0.00
63	P	2-Hexanone	0.2996	0.3034	-1.3	104	0.00
64	T	1,3-Dichloropropane	0.5001	0.4943	1.2	101	0.00
65	P	Tetrachloroethene	0.3063	0.3181	-3.9	112	0.00
66	P	Dibromochloromethane	0.4194	0.4095	2.4	99	0.00
67	P	1,2-Dibromoethane	0.3329	0.3202	3.8	99	0.00
68	T	1-Chlorohexane	0.4213	0.4838	-14.8	118	0.00
69	P	Chlorobenzene	1.0041	1.0188	-1.5	104	0.00
70	T	1,1,1,2-Tetrachloroethane	0.3771	0.3839	-1.8	102	0.00
71	C	Ethylbenzene	0.5173	0.5366	-3.7	106	0.00
72	P	m-,p-Xylene	0.6388	0.6586	-3.1	109	0.00
73	P	o-Xylene	0.6130	0.6421	-4.7	106	0.00
74	P	Styrene	1.0440	1.0907	-4.5	105	0.00
75	P	Bromoform	0.2754	0.2811	-2.1	99	0.00
76	P	Isopropylbenzene	1.6458	1.7684	-7.5	110	0.00
77	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	118	0.00
78	P	1,1,2,2-Tetrachloroethane	0.7585	0.6848	9.7	100	0.00
79	S	p-Bromofluorobenzene	0.9736	0.9658	0.8	109	0.00
80	T	1,2,3-Trichloropropane	0.2876	0.2700	6.1	105	0.00
81	T	trans-1,4-Dichloro-2-Butene	0.2899	0.3067	-5.8	120	0.00
82	T	n-Propylbenzene	3.9303	3.9092	0.5	113	0.00
83	T	Bromobenzene	0.9278	0.8415	9.3	103	0.00
84	T	1,3,5-Trimethylbenzene	2.9502	2.8539	3.3	109	0.00
85	T	2-Chlorotoluene	2.6361	2.4743	6.1	111	0.00
86	T	4-Chlorotoluene	2.4372	2.4142	0.9	109	0.00
87	T	a-Methylstyrene	1.3443	1.3495	-0.4	114	0.00
88	T	tert-Butylbenzene	0.6185	0.5941	3.9	106	0.00
89	T	1,2,4-Trimethylbenzene	3.0897	2.9365	5.0	110	0.00
90	T	sec-Butylbenzene	3.7998	3.7629	1.0	112	0.00
91	T	p-Isopropyltoluene	3.2067	3.1750	1.0	112	0.00
92	P	1,3-Dichlorobenzene	1.8440	1.6709	9.4	107	0.00
93	P	1,4-Dichlorobenzene	1.8435	1.6731	9.2	108	0.00
94	T	n-Butylbenzene	2.9815	3.0591	-2.6	118	0.00
95	P	1,2-Dichlorobenzene	1.7110	1.5699	8.2	106	0.00
96	P	1,2-Dibromo-3-Chloropropane	0.2197	0.1941	11.6	98	0.00
97	P	1,2,4-Trichlorobenzene	1.2146	1.1226	7.6	109	0.00
98	T	Hexachlorobutadiene	0.6403	0.6231	2.7	115	0.00
99	T	Naphthalene	3.0465	2.7641	9.3	99	0.00
100	T	1,2,3-Trichlorobenzene	1.1781	1.0875	7.7	106	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\030716\9M973121.D Vial: 1
Acq On : 7 Mar 2016 15:17 Operator: ADC
Sample : WG559980-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	105	0.00
2	P	Dichlorodifluoromethane	50.0000	44.9556	10.1	81	0.00
3	P	Chloromethane	50.0000	47.9011	4.2	91	0.00
4	C	Vinyl Chloride	50.0000	55.7164	-11.4	103	0.00
5	T	1,3-Butadiene	50.0000	65.0725	-30.1#	128	0.00
6	P	Bromomethane	50.0000	42.9467	14.1	92	0.00
7	P	Chloroethane	50.0000	54.7317	-9.5	101	0.00
8	P	Trichlorofluoromethane	50.0000	55.2769	-10.6	110	0.00
9	T	Diethyl ether	100.0000	100.7243	-0.7	100	0.00
10	T	Isoprene	50.0000	59.0273	-18.1	120	0.00
11	T	Acrolein	50.0000	49.6910	0.6	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	54.9114	-9.8	111	0.01
13	P	Acetone	50.0000	50.0230	-0.0	103	0.00
14	C	1,1-Dichloroethene	50.0000	53.3335	-6.7	111	0.00
15	T	Tert-Butyl Alcohol	200.0000	181.9557	9.0	96	0.00
16	T	Dimethyl Sulfide	50.0000	51.5795	-3.2	101	0.00
17	T	Iodomethane	50.0000	46.3306	7.3	87	0.00
18	P	Methyl acetate	50.0000	58.5442	-17.1	119	0.00
19	P	Methylene Chloride	50.0000	49.9635	0.1	102	0.00
20	P	Carbon Disulfide	50.0000	54.2371	-8.5	111	0.00
21	T	Acrylonitrile	50.0000	53.3913	-6.8	104	0.00
22	P	Methyl Tert Butyl Ether	50.0000	51.6759	-3.4	100	0.00
23	P	trans-1,2-Dichloroethene	50.0000	54.8416	-9.7	109	0.00
24	T	n-Hexane	50.0000	60.2750	-20.5	128	0.00
25	T	Diisopropyl ether	100.0000	111.9458	-11.9	111	0.00
26	T	Vinyl Acetate	50.0000	47.5479	4.9	94	0.00
27	P	1,1-Dichloroethane	50.0000	53.9742	-7.9	107	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	105.2137	-5.2	103	0.00
29	P	2-Butanone	50.0000	52.2518	-4.5	106	0.00
30	T	Propionitrile	100.0000	102.5450	-2.5	103	0.00
31	T	2,2-Dichloropropane	50.0000	57.7590	-15.5	113	0.00
32	P	cis-1,2-Dichloroethene	50.0000	53.1532	-6.3	102	0.00
33	C	Chloroform	50.0000	52.0699	-4.1	103	0.00
34	T	1-Bromopropane	50.0000	50.5314	-1.1	103	0.00
35	T	Bromochloromethane	50.0000	51.5276	-3.1	96	0.00
36	T	Tetrahydrofuran	100.0000	107.9043	-7.9	107	0.00
37	S	Dibromofluoromethane	50.0000	46.5282	6.9	92	0.00
38	P	1,1,1-Trichloroethane	50.0000	54.9385	-9.9	106	0.00
39	P	Cyclohexane	50.0000	59.1607	-18.3	122	0.00
40	T	1,1-Dichloropropene	50.0000	53.4983	-7.0	109	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	101.5227	-1.5	100	0.00
42	P	Carbon Tetrachloride	50.0000	56.0848	-12.2	110	0.00
43	S	1,2-Dichloroethane-d4	50.0000	49.7800	0.4	100	0.00
44		Heptane	-1.0000	0.0000	0.0	105	0.00
45	P	1,2-Dichloroethane	50.0000	53.5379	-7.1	103	0.00
46	P	Benzene	50.0000	50.2144	-0.4	103	0.00
47	P	Trichloroethene	50.0000	53.4598	-6.9	107	0.00
48	P	Methylcyclohexane	50.0000	59.4048	-18.8	120	0.00
49	C	1,2-Dichloropropane	50.0000	54.8338	-9.7	105	0.00
50	T	1,4-Dioxane	200.0000	194.7347	2.6	107	0.00
51	P	Bromodichloromethane	50.0000	51.6335	-3.3	102	0.00
52	T	Dibromomethane	50.0000	49.7073	0.6	98	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	40.9236	18.2	82	0.00
54	P	4-Methyl-2-Pentanone	50.0000	51.1601	-2.3	98	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\030716\9M973121.D Vial: 1
Acq On : 7 Mar 2016 15:17 Operator: ADC
Sample : WG559980-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	52.4654	-4.9	103	0.00
56	T	Dimethyl Disulfide	50.0000	53.0541	-6.1	101	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	108	0.00
58	S	Toluene-d8	50.0000	46.7190	6.6	95	0.00
59	C	Toluene	50.0000	50.7038	-1.4	105	0.00
60	T	Ethyl Methacrylate	50.0000	51.2015	-2.4	105	0.00
61	P	trans-1,3-Dichloropropene	50.0000	51.0435	-2.1	101	0.00
62	P	1,1,2-Trichloroethane	50.0000	50.1734	-0.3	100	0.00
63	P	2-Hexanone	50.0000	50.6350	-1.3	104	0.00
64	T	1,3-Dichloropropane	50.0000	49.4195	1.2	101	0.00
65	P	Tetrachloroethene	50.0000	51.9369	-3.9	112	0.00
66	P	Dibromochloromethane	50.0000	48.8169	2.4	99	0.00
67	P	1,2-Dibromoethane	50.0000	48.0957	3.8	99	0.00
68	T	1-Chlorohexane	50.0000	57.4143	-14.8	118	0.00
69	P	Chlorobenzene	50.0000	50.7334	-1.5	104	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	50.9037	-1.8	102	0.00
71	C	Ethylbenzene	50.0000	51.8675	-3.7	106	0.00
72	P	m-,p-Xylene	100.0000	103.0932	-3.1	109	0.00
73	P	o-Xylene	50.0000	52.3691	-4.7	106	0.00
74	P	Styrene	50.0000	52.2401	-4.5	105	0.00
75	P	Bromoform	50.0000	51.0378	-2.1	99	0.00
76	P	Isopropylbenzene	50.0000	53.7263	-7.5	110	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	118	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	45.1427	9.7	100	0.00
79	S	p-Bromofluorobenzene	50.0000	49.6010	0.8	109	0.00
80	T	1,2,3-Trichloropropane	50.0000	46.9386	6.1	105	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	52.8972	-5.8	120	0.00
82	T	n-Propylbenzene	50.0000	49.7317	0.5	113	0.00
83	T	Bromobenzene	50.0000	45.3446	9.3	103	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	48.3674	3.3	109	0.00
85	T	2-Chlorotoluene	50.0000	46.9306	6.1	111	0.00
86	T	4-Chlorotoluene	50.0000	49.5282	0.9	109	0.00
87	T	a-Methylstyrene	50.0000	50.1941	-0.4	114	0.00
88	T	tert-Butylbenzene	50.0000	48.0299	3.9	106	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	47.5220	5.0	110	0.00
90	T	sec-Butylbenzene	50.0000	49.5147	1.0	112	0.00
91	T	p-Isopropyltoluene	50.0000	49.5058	1.0	112	0.00
92	P	1,3-Dichlorobenzene	50.0000	45.3065	9.4	107	0.00
93	P	1,4-Dichlorobenzene	50.0000	45.3790	9.2	108	0.00
94	T	n-Butylbenzene	50.0000	51.3028	-2.6	118	0.00
95	P	1,2-Dichlorobenzene	50.0000	45.8772	8.2	106	0.00
96	P	1,2-Dibromo-3-Chloropropane	50.0000	44.1919	11.6	98	0.00
97	P	1,2,4-Trichlorobenzene	50.0000	46.2124	7.6	109	0.00
98	T	Hexachlorobutadiene	50.0000	48.6610	2.7	115	0.00
99	T	Naphthalene	50.0000	45.3653	9.3	99	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	46.1553	7.7	106	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M973121.D 8260SL.M Tue Mar 08 08:55:18 2016 Page 2

2.1.1.5 Raw QC Data

BFB

Data File : C:\MSDCHEM\1\DATA\022516\9M972894.D Vial: 3
Acq On : 25 Feb 2016 14:45 Operator: ADC
Sample : WG558732-01 BFB 50ng Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9

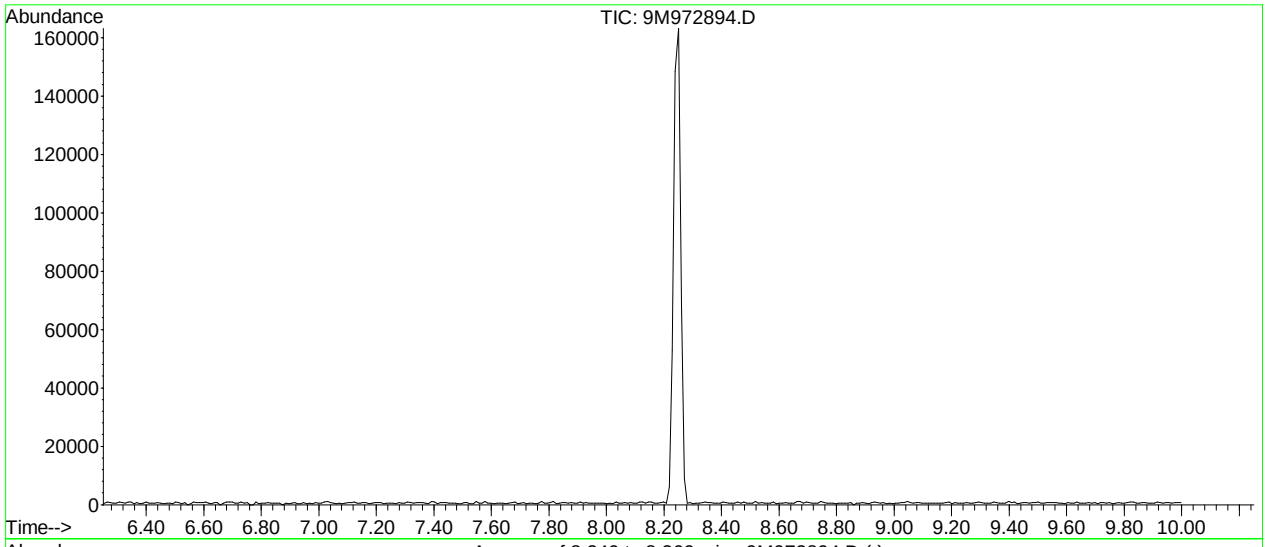

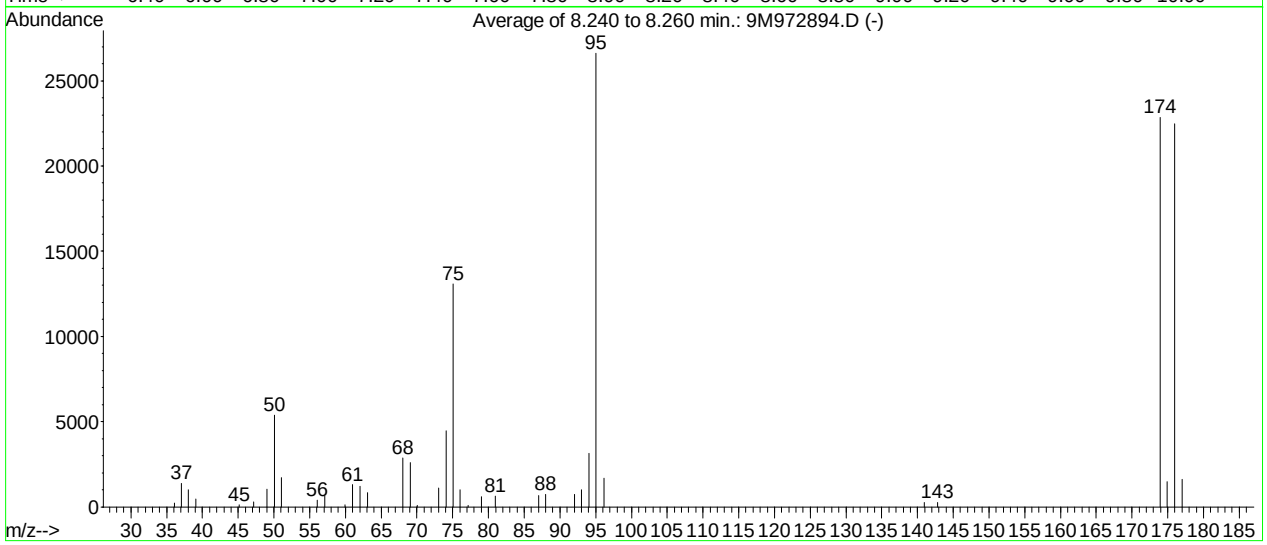

AutoFind: Scans 305, 306, 307; Background Corrected with Scan 300

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.2	5378	PASS
75	95	30	60	49.1	13067	PASS
95	95	100	100	100.0	26621	PASS
96	95	5	9	6.3	1683	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	85.8	22851	PASS
175	174	5	9	6.5	1485	PASS
176	174	95	101	98.3	22461	PASS
177	176	5	9	7.2	1619	PASS

9M972894.D 8260SL.M Fri Feb 26 11:11:03 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\030716\9M973120.D          Vial: 1
Acq On    :  7 Mar 2016  14:48                        Operator: ADC
Sample    : WG559980-01 BFB 50ng 8260                 Inst    : hpms9
Misc      : 7,1 STD74606                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 02/25/16  HPMS9
```

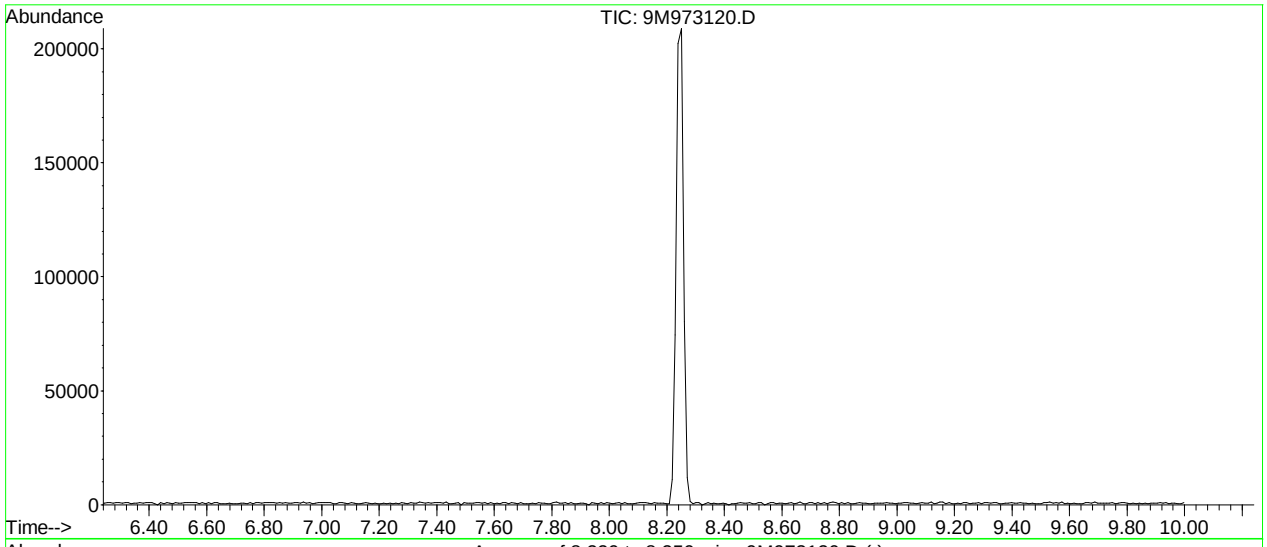

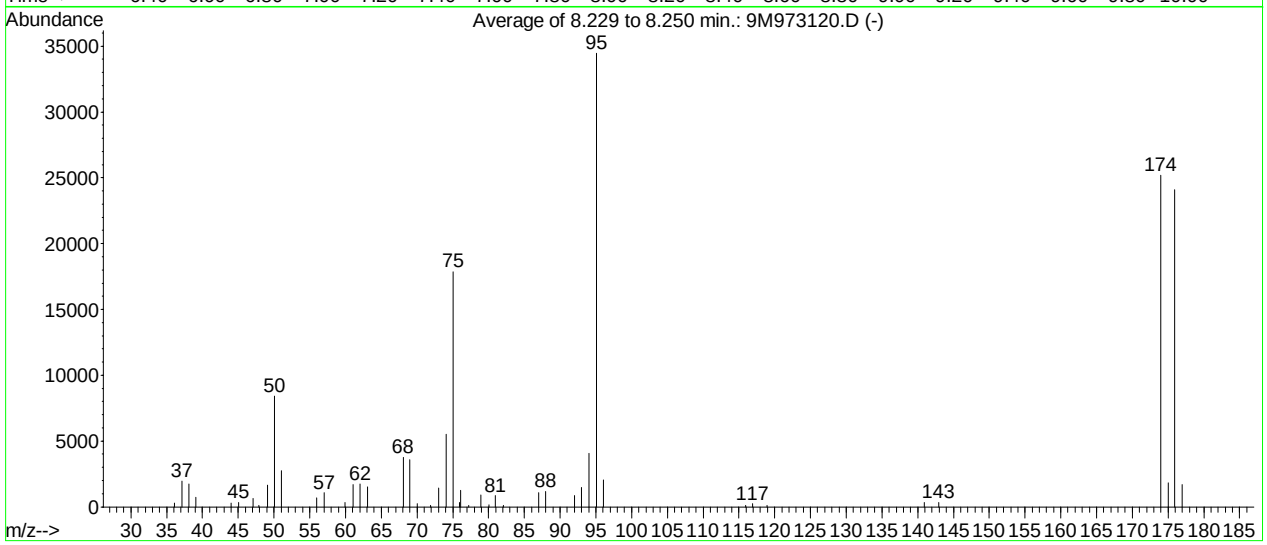

AutoFind: Scans 304, 305, 306; Background Corrected with Scan 300

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	24.3	8393	PASS
75	95	30	60	51.9	17879	PASS
95	95	100	100	100.0	34471	PASS
96	95	5	9	6.0	2058	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	73.1	25197	PASS
175	174	5	9	7.2	1804	PASS
176	174	95	101	95.6	24090	PASS
177	176	5	9	7.0	1676	PASS

9M973120.D 8260SL.M Tue Mar 08 08:55:09 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030716\9M973123.D Vial: 3
Acq On : 7 Mar 2016 16:18 Operator: ADC
Sample : WG559982-01 VBLK0307 BLANK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 08 14:13:41 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	512722	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	377724	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	193847	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	135118	48.6173 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.24%		
43) 1,2-Dichloroethane-d4	10.45	65	176534	50.6253 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 101.26%		
58) Toluene-d8	12.82	98	473876	49.5987 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.20%		
79) p-Bromofluorobenzene	16.23	95	194741	51.5924 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 103.18%		

Target Compounds					Qvalue
13) Acetone	6.41	43	4966	1.5119 ug/kg	91
36) Tetrahydrofuran	9.77	42	968	0.9083 ug/kg#	43
56) Dimethyl Disulfide	12.82	94	12603	3.1689 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M973123.D 8260SL.M Tue Mar 08 14:13:41 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030716\9M973123.D Vial: 3
Acq On : 7 Mar 2016 16:18 Operator: ADC
Sample : WG559982-01 VBLK0307 BLANK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 8 14:13 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

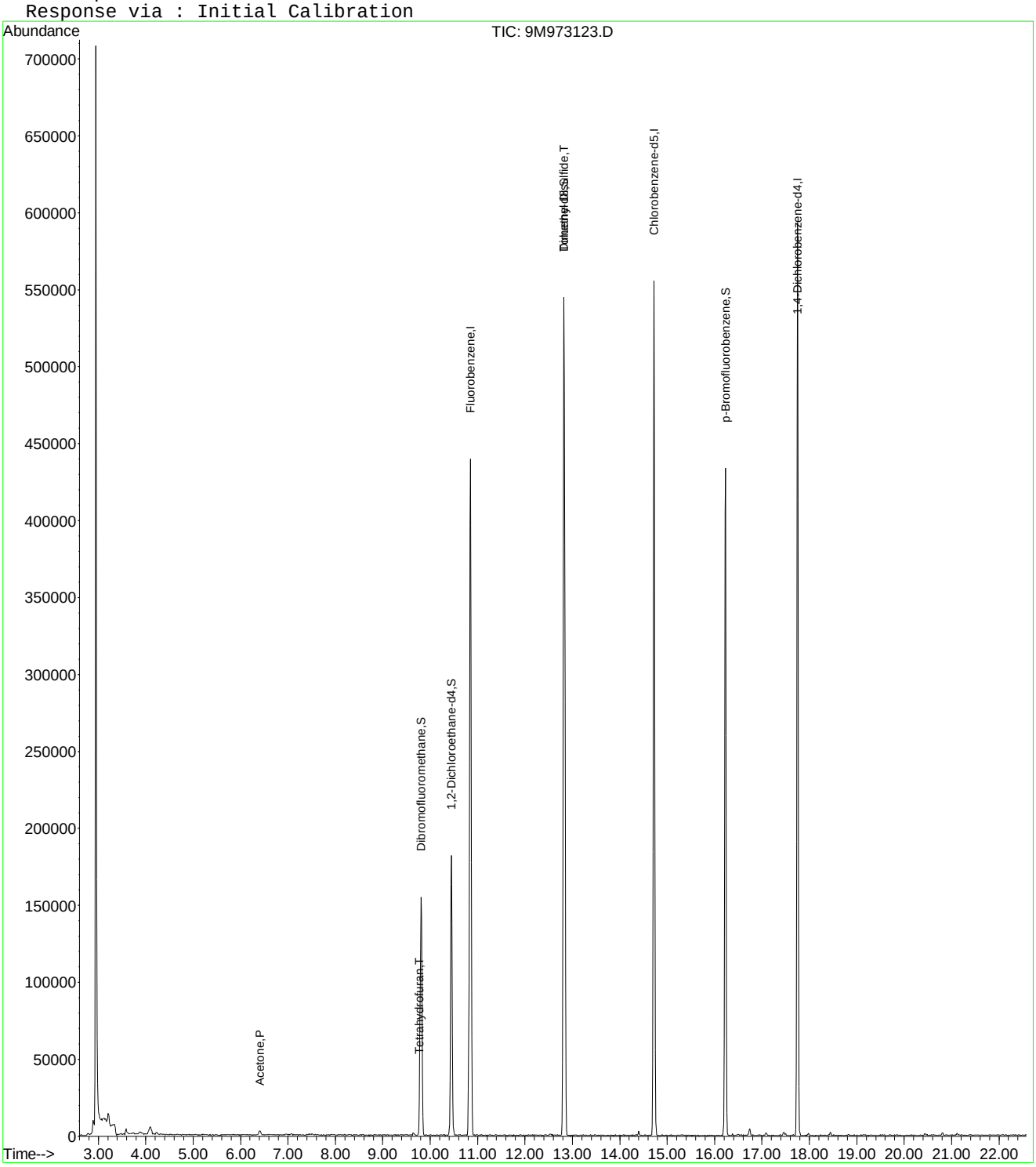

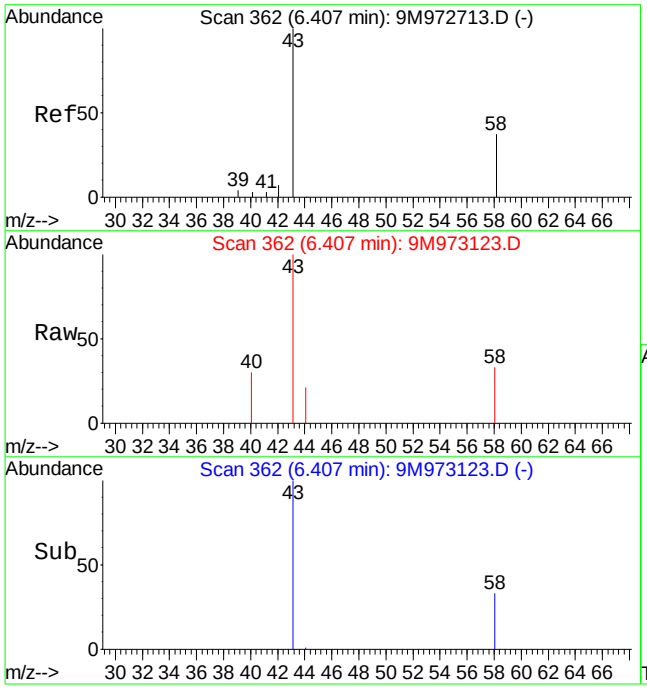

#13
Acetone
Concen: 1.51 ug/kg
RT: 6.41 min Scan# 362
Delta R.T. -0.01 min
Lab File: 9M973123.D
Acq: 7 Mar 2016 16:18

Tgt Ion: 43 Resp: 4966

Ion	Ratio	Lower	Upper
43	100		
58	33.0	16.9	39.3

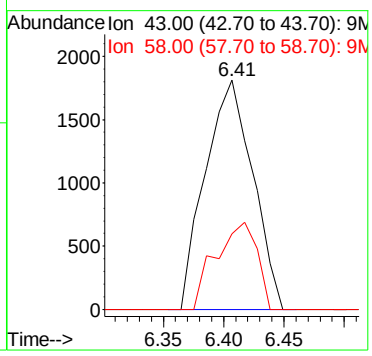

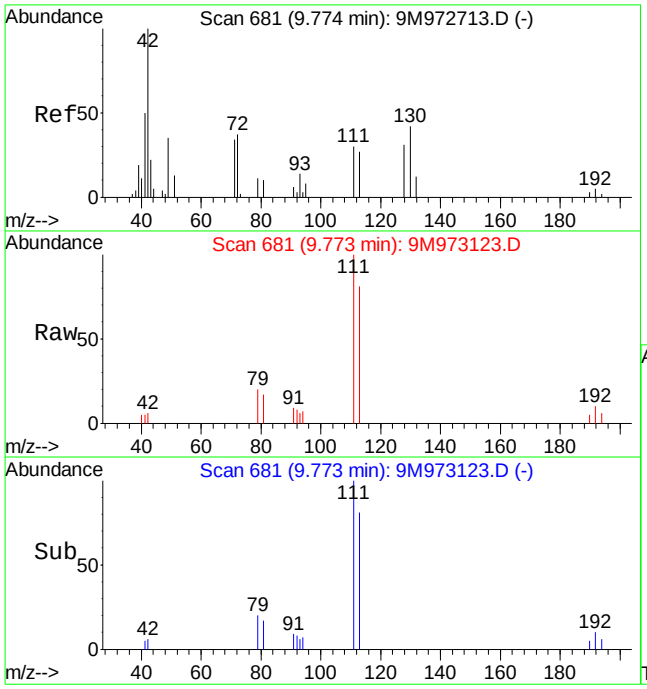

#36
Tetrahydrofuran
Concen: 0.91 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. -0.01 min
Lab File: 9M973123.D
Acq: 7 Mar 2016 16:18

Tgt Ion: 42 Resp: 968

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

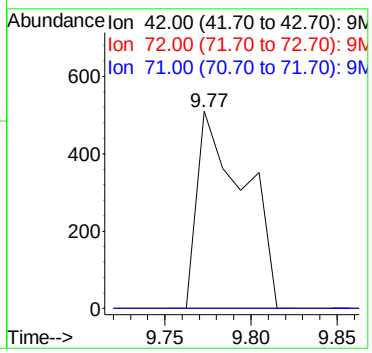

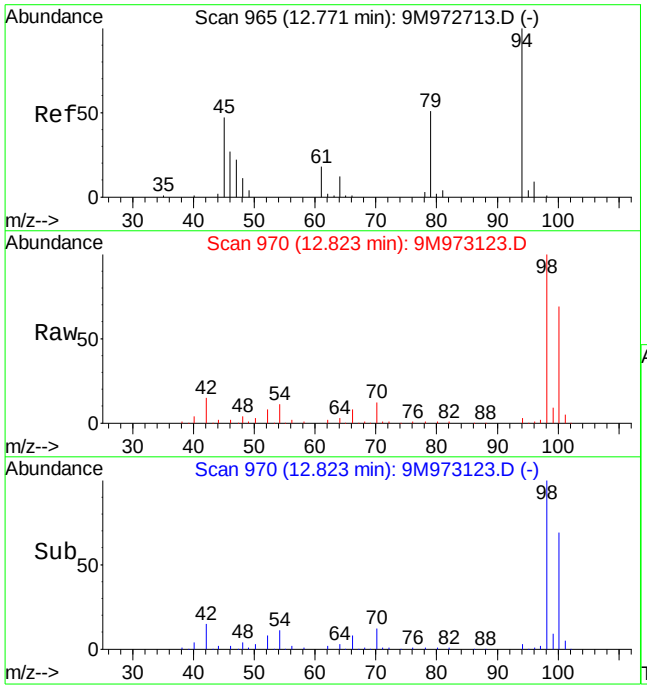

#56
Dimethyl Disulfide
Concen: 3.17 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M973123.D
Acq: 7 Mar 2016 16:18

Tgt Ion: 94 Resp: 12603

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

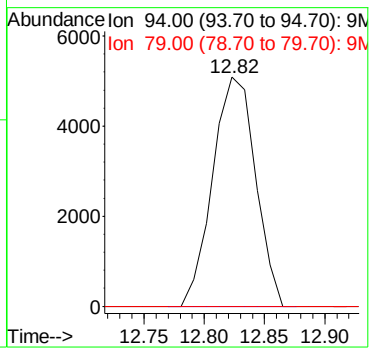

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030716\9M973124.D Vial: 4
Acq On : 7 Mar 2016 16:49 Operator: ADC
Sample : WG559982-02 20ug/L LCS 8260 Inst : hpms9
Misc : 7,1 STD74900 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 17:12:31 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	497008	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	374762	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	201592	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	127386	47.2844 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.56%		
43) 1,2-Dichloroethane-d4	10.45	65	165046	48.8274 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.66%		
58) Toluene-d8	12.82	98	451751	47.6566 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 95.32%		
79) p-Bromofluorobenzene	16.23	95	189263	48.2147 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 96.42%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	81189	23.9670 ug/kg	94
3) Chloromethane	3.75	50	68926	21.1971 ug/kg	98
4) Vinyl Chloride	3.99	62	60809	18.6811 ug/kg	99
5) 1,3-Butadiene	4.04	54	12770	4.1235 ug/kg	98
6) Bromomethane	4.89	94	38796	18.3509 ug/kg	98
7) Chloroethane	5.04	64	28617	19.7334 ug/kg	94
8) Trichlorofluoromethane	5.53	101	96596	19.7859 ug/kg	98
9) Diethyl ether	6.06	59	246109	107.8365 ug/kg	98
10) Isoprene	6.09	67	72116	24.7422 ug/kg	95
11) Acrolein	6.29	56	47397	104.1517 ug/kg	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	54379	21.5983 ug/kg	94
13) Acetone	6.42	43	28675	21.4625 ug/kg	97
14) 1,1-Dichloroethene	6.62	61	94036	20.2468 ug/kg	98
15) Tert-Butyl Alcohol	6.75	59	97912	192.6659 ug/kg	99
16) Dimethyl Sulfide	6.88	62	59428	30.2750 ug/kg	92
17) Iodomethane	7.13	142	21234	17.3223 ug/kg	90
18) Methyl acetate	7.14	43	54828	21.7151 ug/kg	96
19) Methylene Chloride	7.40	84	48026	18.9865 ug/kg	90
20) Carbon Disulfide	7.44	76	133241	18.6228 ug/kg	98
21) Acrylonitrile	7.59	53	28280	22.6414 ug/kg	97
22) Methyl Tert Butyl Ether	7.61	73	149798	20.7930 ug/kg	97
23) trans-1,2-Dichloroethene	7.85	61	85524	20.6618 ug/kg	95
24) n-Hexane	7.91	57	93250	21.8418 ug/kg	98
25) Diisopropyl ether	8.26	45	1051190	106.0143 ug/kg	98
26) Vinyl Acetate	8.43	43	109480	19.3684 ug/kg	98
27) 1,1-Dichloroethane	8.46	63	101617	19.5457 ug/kg	97
28) Ethyl-Tert-Butyl ether	8.83	59	880890	95.5458 ug/kg	98
29) 2-Butanone	9.03	43	36108	22.5292 ug/kg	95
30) Propionitrile	9.14	54	49899	101.7378 ug/kg	97
31) 2,2-Dichloropropane	9.23	77	76852	19.8050 ug/kg	96
32) cis-1,2-Dichloroethene	9.31	96	55136	20.3096 ug/kg	94
33) Chloroform	9.52	83	91986	19.2607 ug/kg	99
34) 1-Bromopropane	9.65	122	12690	31.0617 ug/kg	99
35) Bromochloromethane	9.75	130	34136	19.3573 ug/kg	89
36) Tetrahydrofuran	9.77	42	103869	100.5425 ug/kg	97
38) 1,1,1-Trichloroethane	10.05	97	87305	20.2144 ug/kg	96
39) Cyclohexane	10.08	56	104376	22.1663 ug/kg	99
40) 1,1-Dichloropropene	10.25	75	65978	19.4138 ug/kg	98
41) Tert-Amyl-Methyl ether	10.34	73	660335	98.5348 ug/kg	97
42) Carbon Tetrachloride	10.39	117	77261	19.2957 ug/kg	98

(#) = qualifier out of range (m) = manual integration
9M973124.D 8260SL.M Mon Mar 07 17:12:31 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030716\9M973124.D Vial: 4
Acq On : 7 Mar 2016 16:49 Operator: ADC
Sample : WG559982-02 20ug/L LCS 8260 Inst : hpms9
Misc : 7,1 STD74900 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 17:12:31 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	89150	21.2218 ug/kg	99
46)	Benzene	10.60	78	188881	19.8519 ug/kg	98
47)	Trichloroethene	11.35	130	62138	20.6115 ug/kg	99
48)	Methylcyclohexane	11.44	83	84241	22.2795 ug/kg	96
49)	1,2-Dichloropropane	11.57	63	55104	21.0904 ug/kg	95
50)	1,4-Dioxane	11.87	88	8680	221.4470 ug/kg	99
51)	Bromodichloromethane	11.87	83	70735	19.2101 ug/kg	99
52)	Dibromomethane	11.97	174	31009	17.9123 ug/kg	93
53)	2-Chloroethyl Vinyl Ether	12.16	63	12395	19.0268 ug/kg	93
54)	4-Methyl-2-Pentanone	12.19	58	24925	21.7345 ug/kg	97
55)	cis-1,3-Dichloropropene	12.50	75	79005	20.5943 ug/kg	96
56)	Dimethyl Disulfide	12.77	94	85293	22.1241 ug/kg	95
59)	Toluene	12.93	91	210601	19.6683 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	62622	21.0990 ug/kg	97
61)	trans-1,3-Dichloropropene	13.11	75	74526	19.3243 ug/kg	99
62)	1,1,2-Trichloroethane	13.32	97	45328	20.1516 ug/kg	97
63)	2-Hexanone	13.25	43	47427	21.1178 ug/kg	94
64)	1,3-Dichloropropane	13.62	76	77933	20.7928 ug/kg	96
65)	Tetrachloroethene	13.75	164	44150	19.2334 ug/kg	96
66)	Dibromochloromethane	14.01	129	57552	18.3076 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	47056	18.8605 ug/kg	99
68)	1-Chlorohexane	14.35	91	66412	21.0322 ug/kg	92
69)	Chlorobenzene	14.77	112	151707	20.1589 ug/kg	98
70)	1,1,1,2-Tetrachloroethane	14.80	131	54601	19.3200 ug/kg	98
71)	Ethylbenzene	14.79	106	79683	20.5522 ug/kg	98
72)	m-,p-Xylene	14.89	106	194644	40.6514 ug/kg	99
73)	o-Xylene	15.45	106	93573	20.3642 ug/kg	98
74)	Styrene	15.49	104	154867	19.7920 ug/kg	100
75)	Bromoform	16.00	173	35185	17.0470 ug/kg	99
76)	Isopropylbenzene	15.87	105	250079	20.2732 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	49163	16.0766 ug/kg	99
80)	1,2,3-Trichloropropane	16.28	110	20911	18.0309 ug/kg	84
81)	trans-1,4-Dichloro-2-Buten	16.33	53	20041	17.1437 ug/kg	87
82)	n-Propylbenzene	16.38	91	294383	18.5774 ug/kg	99
83)	Bromobenzene	16.51	156	60436	16.1556 ug/kg	63
84)	1,3,5-Trimethylbenzene	16.57	105	218930	18.4054 ug/kg	98
85)	2-Chlorotoluene	16.66	91	195931	18.4346 ug/kg	99
86)	4-Chlorotoluene	16.70	91	176507	17.9625 ug/kg	100
87)	a-Methylstyrene	16.98	118	109195	20.1469 ug/kg	96
88)	tert-Butylbenzene	17.03	134	46507	18.6491 ug/kg	97
89)	1,2,4-Trimethylbenzene	17.08	105	213672	17.1528 ug/kg	98
90)	sec-Butylbenzene	17.31	105	285822	18.6568 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	230460	17.8253 ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	124077	16.6888 ug/kg	100
93)	1,4-Dichlorobenzene	17.79	146	122848	16.5283 ug/kg	96
94)	n-Butylbenzene	17.99	91	209200	17.4032 ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	120053	17.4029 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	13417	15.1506 ug/kg	95
97)	1,2,4-Trichlorobenzene	20.43	180	75129	15.3414 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	42664	16.5273 ug/kg	98
99)	Naphthalene	20.81	128	178894	14.5643 ug/kg	99
100)	1,2,3-Trichlorobenzene	21.12	180	72797	15.3261 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030716\9M973124.D Vial: 4
Acq On : 7 Mar 2016 16:49 Operator: ADC
Sample : WG559982-02 20ug/L LCS 8260 Inst : hpms9
Misc : 7,1 STD74900 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 7 17:12 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

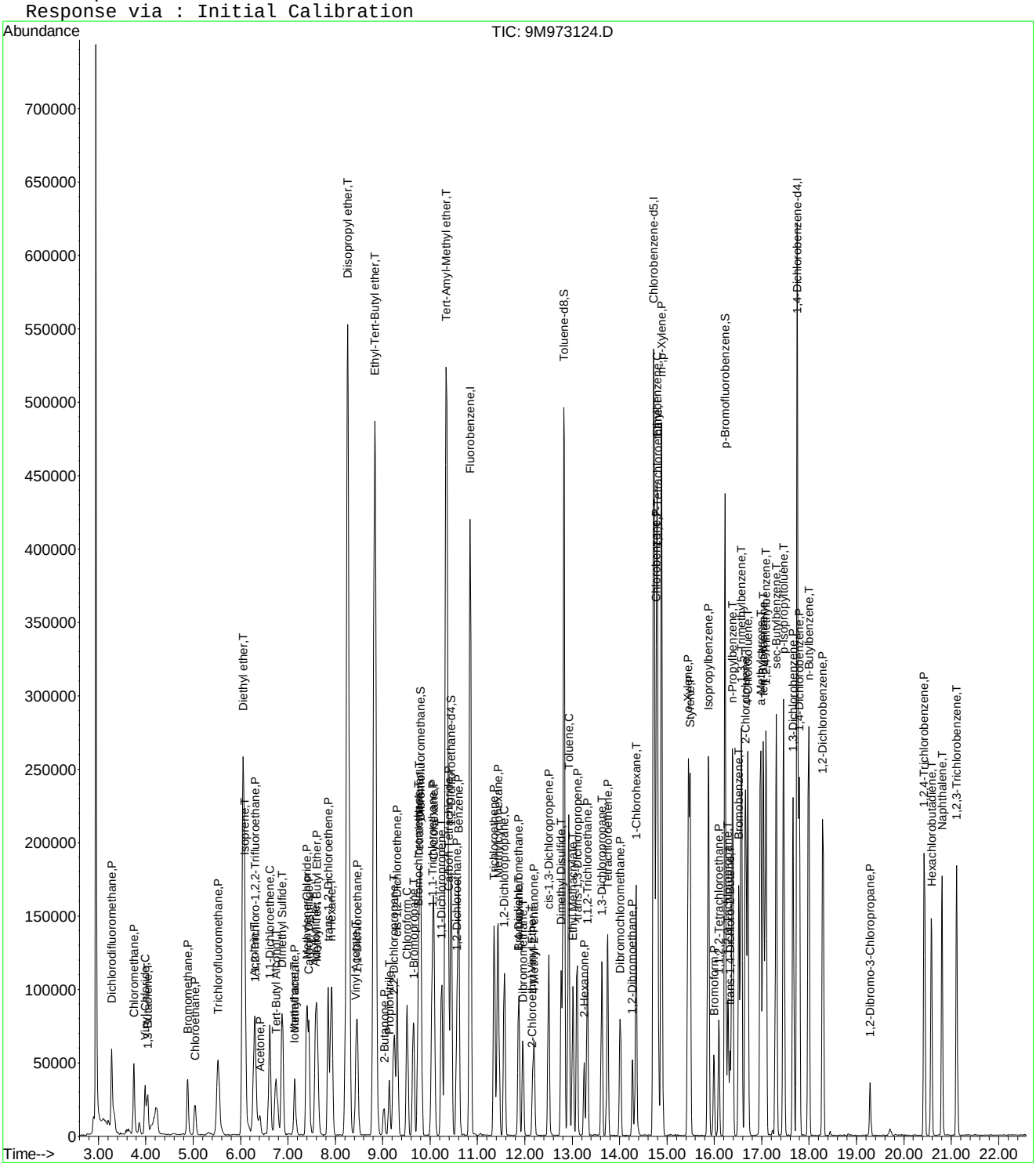

2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030235-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT07(5-5.5)020316	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/04/2016 20:25
Collect Date:	03/02/2016 16:00	**Dilution:**	1	**File ID:**	1LM.LM33722
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.38	U	4.77	2.38	1.19

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030235-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT07(15-15.5)020316	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/04/2016 21:41
Collect Date:	03/02/2016 16:25	**Dilution:**	1	**File ID:**	1LM.LM33726
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	76.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.47	J	5.12	2.56	1.28

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030235-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT07(33.5-34.5)030316	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/07/2016 10:51
Collect Date:	03/03/2016 10:00	**Dilution:**	100	**File ID:**	1LM.LM33739
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	82.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2180		480	240	120

Certificate of Analysis

Sample #:	L16030235-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT07(33.5-34.5)030316 MS	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/07/2016 11:10
Collect Date:	03/03/2016 10:00	**Dilution:**	100	**File ID:**	1LM.LM33740
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	82.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2170		480	240	120

Certificate of Analysis

Sample #:	L16030235-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT07(33.5-34.5)030316 MSD	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/07/2016 11:29
Collect Date:	03/03/2016 10:00	**Dilution:**	100	**File ID:**	1LM.LM33741
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	82.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2350		480	240	120

Certificate of Analysis

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L16030235-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT07(38-39)030316	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/07/2016 11:48
Collect Date:	03/03/2016 10:10	**Dilution:**	10	**File ID:**	1LM.LM33742
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	75.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	697		50.8	25.4	12.7

Certificate of Analysis

Sample #:	L16030235-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT07(38-39)030316 FD	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/07/2016 12:07
Collect Date:	03/03/2016 10:10	**Dilution:**	10	**File ID:**	1LM.LM33743
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	75.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	622		51.8	25.8	12.9

Certificate of Analysis

Sample #:	L16030235-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT07(27-27.5)030316	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/07/2016 12:26
Collect Date:	03/03/2016 10:15	**Dilution:**	100	**File ID:**	1LM.LM33744
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	83.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1200		475	238	119

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

MICROBAC

Semivolatile Sample Extract Log

Parameter: 6850
SOP #: HPLC06
Analyst: ADC, WD
Spike/Surrogate analyst: WD
Surrogate #: NA
Spike # A: STD 72686
Ext Solvent: DI Water
Ext Solvent: NA
Ext Disk: NA

Matrix: Soil
Rev #: 07
Date/Time Extracted: 03/04/2016 15:30
Witness: ADC

Spike # B: NA
Lot #: NA
Lot #: NA
Lot #: NA

Extraction Work Group: WG-559804
Analytical Work Group: WG-559808
Run ID: R4485579

Pipetter(s): 403
Analytical Balance ID: BAL014
Reagent: Sand Lot #: A0A16150
Reagent: Tubes Lot #: RCT34011
Other: IS = COA18071 Lot #: COA18071

Color Code
T = Transparent
C = Colored
O = Opaque

	Sample ID	Test Code	pH	Initial Wt / Vol	IS ~~Amount Surrogate~~	Amount Spike	Final Volume	Extract Color	Comments
1	WG-559804-01	6850		5.008g	0.250ml	1.0ml	50ml		MCT
2	WG-559804-02			5.007					Blk
3	WG-559804-03			5.002		1.0ml			LCS
4	L16030234-01			5.242					
5	-02			5.228					
6	-03			5.125					
7	-04			5.139					
8	-05			5.030					
9	-06			5.211					
10	L16030235-01			5.096					
11	-02			5.116					
12	RS -03			5.075					Ref WG559804-04
13	MS -04			5.074		1.0ml			MS WG559804-05
14	MSD -05			5.072		1.0ml			MSD WG559804-06
15	-06			5.208					
16	-07			5.113					
17	-08			5.069					
18									
19									
20									
21									
22									
23									
24									

Reviewed by: [illegible]

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1390 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG559808-01 MCT	9,860	
-02 Blk	11.21	
-03 LCS	6.74	
L16030234-01	218	
-02	81.5	
-03	173	
-04	58.2	
-05	36.4	
-06	37.7	
L16030235-01	8.45	
-02	64.5	
-03 Ref	3.72	
-04 MS	3.77	
-05 MSD	5.52	
-06	8.05	
-07	4.22	
-08	5.94	

Analyst: Andrew Ewing

Date/Time: 3-6-16 / 1345

DCN#117045

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030216_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015, WG559292

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 MS/MSD STD: STD72685

Comments: L16021262s and L16021255s diluted based on historical data.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM33567	WG559340-01 CCB	1	1		03/02/16 08:34
2	1LM.LM33568	WG559340-02 STD (0.1 ug/L)	1	1	STD72683	03/02/16 08:53
3	1LM.LM33569	WG559340-03 STD (0.2 ug/L)	1	1	STD72683	03/02/16 09:12
4	1LM.LM33570	WG559340-04 STD (0.5 ug/L)	1	1	STD72683	03/02/16 09:31
5	1LM.LM33571	WG559340-05 STD (1.0 ug/L)	1	1	STD72683	03/02/16 09:50
6	1LM.LM33572	WG559340-06 STD (2.0 ug/L)	1	1	STD72683	03/02/16 10:09
7	1LM.LM33573	WG559340-07 STD (5.0 ug/L)	1	1	STD72683	03/02/16 10:28
8	1LM.LM33574	WG559340-08 STD (10 ug/L)	1	1	STD72683	03/02/16 10:46
9	1LM.LM33575	WG559340-09 SSCV (1.0 ug/L)	1	1	STD72685	03/02/16 11:05
10	1LM.LM33576	WG559291-01 CCB	1	1		03/02/16 11:25
11	1LM.LM33577	WG559291-02 CCV (1.0ug/L)	1	1	STD72683	03/02/16 11:44
12	1LM.LM33578	WG559015-05 MRL (0.2ug/L)	1	1	STD72683	03/02/16 12:03
13	1LM.LM33579	WG559015-01 MCT (0.2ug/L)	1	1	STD72685	03/02/16 12:22
14	1LM.LM33580	WG559015-02 BLANK	1	1		03/02/16 12:41
15	1LM.LM33581	WG559015-05 MRL (0.2ug/L)	1	1	STD72683	03/02/16 13:01
16	1LM.LM33582	WG559015-03 LCS (0.2ug/L)	1	1	STD72685	03/02/16 13:20
17	1LM.LM33583	WG559015-04 LCS2 (0.2ug/L)	1	1	STD72685	03/02/16 13:39
18	1LM.LM33584	L16021060-01 ADC	1	1	STD72685	03/02/16 13:58
19	1LM.LM33585	L16021060-02 ADC	1	1	STD72685	03/02/16 14:17
20	1LM.LM33586	L16021060-03 ADC	1	1	STD72685	03/02/16 14:36
21	1LM.LM33587	L16021060-04 ADC	1	1	STD72685	03/02/16 14:55
22	1LM.LM33588	L16021262-01 (20x)	1	20		03/02/16 15:13
23	1LM.LM33589	L16021262-02 (5000x)	1	5000		03/02/16 15:32
24	1LM.LM33590	WG559291-03 CCV (1.0ug/L)	1	1	STD72683	03/02/16 15:51
25	1LM.LM33591	WG559015-06 MRL (0.2ug/L)	1	1	STD72683	03/02/16 16:10
26	1LM.LM33592	WG559291-04 CCB	1	1		03/02/16 16:29
27	1LM.LM33593	L16021262-03 (100X)	1	100		03/02/16 16:48
28	1LM.LM33594	L16021262-04 (2000X)	1	2000		03/02/16 17:07
29	1LM.LM33595	L16021262-05 (1000X)	1	1000		03/02/16 17:26
30	1LM.LM33596	L16021262-06 (10,000X)	1	10000		03/02/16 17:45
31	1LM.LM33597	L16021262-07 (10,000X)	1	10000		03/02/16 18:04
32	1LM.LM33598	L16021262-08 (5000X)	1	5000		03/02/16 18:23
33	1LM.LM33599	L16021262-09 (5000X)	1	5000		03/02/16 18:42

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030216_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015, WG559292

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM33600	L16021262-10 (100,000X)	1	100000		03/02/16 19:01
35	1LM.LM33601	L16021262-11 (10,000X)	1	10000		03/02/16 19:20
36	1LM.LM33602	L16021262-12 (10,000X)	1	10000		03/02/16 19:39
37	1LM.LM33603	WG559291-05 CCV (1.0ug/L)	1	1	STD72683	03/02/16 19:58
38	1LM.LM33604	WG559015-07 MRL (0.2ug/L)	1	1	STD72683	03/02/16 20:17
39	1LM.LM33605	WG559291-06 CCB	1	1		03/02/16 20:35
40	1LM.LM33606	L16021262-13 (10,000X)	1	10000		03/02/16 20:54
41	1LM.LM33607	L16021262-14 (10,000X)	1	10000		03/02/16 21:13
42	1LM.LM33608	WG559291-07 CCV (1.0ug/L)	1	1	STD72683	03/02/16 21:32
43	1LM.LM33609	WG559015-08 MRL (0.2ug/L)	1	1	STD72683	03/02/16 21:51
44	1LM.LM33610	WG559291-08 CCB	1	1		03/02/16 22:10
45	1LM.LM33611	WG559292-07 MRL (0.2ug/L)	1	1	STD72685	03/02/16 22:29
46	1LM.LM33612	WG559292-01 MCT (0.2ug/L)	1	1	STD72685	03/02/16 22:48
47	1LM.LM33613	WG559292-02 BLANK	1	1		03/02/16 23:07
48	1LM.LM33614	WG559292-03 LCS (0.2ug/L)	1	1	STD72685	03/02/16 23:26
93	1LM.LM33615	L16021255-01 REF 100X	1	100		03/02/16 23:45
50	1LM.LM33616	L16021255-02 MS 100X	1	100	STD72685	03/03/16 00:04
51	1LM.LM33617	L16021255-03 MSD 100X	1	100	STD72685	03/03/16 00:23
94	1LM.LM33618	L16021255-04 20X	1	20		03/03/16 00:42
53	1LM.LM33619	L16021255-05 20X	1	20		03/03/16 01:01
54	1LM.LM33620	L16021255-06 200X	1	200		03/03/16 01:20
55	1LM.LM33621	L16021255-07 100X	1	100		03/03/16 01:39
56	1LM.LM33622	WG559291-09 CCV (1.0ug/L)	1	1	STD72685	03/03/16 01:57
57	1LM.LM33623	WG559292-08 MRL (0.2ug/L)	1	1	STD72685	03/03/16 02:16
58	1LM.LM33624	WG559291-10 CCB	1	1		03/03/16 02:35
59	1LM.LM33625	L16021255-08	1	1		03/03/16 02:54
60	1LM.LM33626	L16021255-09 500X	1	500		03/03/16 03:13
61	1LM.LM33627	L16021255-10 5000X	1	5000		03/03/16 03:32
62	1LM.LM33628	L16021255-11 5000X	1	5000		03/03/16 03:51
63	1LM.LM33629	L16021255-12 100X	1	100		03/03/16 04:10
64	1LM.LM33630	L16021255-13 10,000X	1	10000		03/03/16 04:29
65	1LM.LM33631	L16021255-14 10,000X	1	10000		03/03/16 04:48
66	1LM.LM33632	L16030008-01	1	1		03/03/16 05:07
67	1LM.LM33633	L16030008-01 10X	1	10		03/03/16 05:26
68	1LM.LM33634	L16021328-01	1	1		03/03/16 05:45
69	1LM.LM33635	WG559291-11 CCV (1.0ug/L)	1	1	STD72685	03/03/16 06:04

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030216_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015, WG559292

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
70	1LM.LM33636	WG559292-09 MRL (0.2ug/L)	1	1	STD72685	03/03/16 06:23
71	1LM.LM33637	WG559291-12 CCB	1	1		03/03/16 06:41
72	1LM.LM33638	L16021328-02	1	1		03/03/16 07:00
73	1LM.LM33639	L16021328-03	1	1		03/03/16 07:19
74	1LM.LM33640	L16021328-04	1	1		03/03/16 07:38
75	1LM.LM33641	L16021328-05	1	1		03/03/16 07:57
76	1LM.LM33642	WG559291-13 CCV (1.0ug/L)	1	1	STD72685	03/03/16 08:16
77	1LM.LM33643	WG559292-10 MRL (0.2ug/L)	1	1	STD72685	03/03/16 08:35
78	1LM.LM33644	WG559291-14 CCB	1	1		03/03/16 08:54
79	1LM.LM33645	L16021255-05 200X	1	200		03/03/16 09:13
80	1LM.LM33646	L16021255-06	1	1		03/03/16 09:32
81	1LM.LM33647	L16021255-12 1000X	1	1000		03/03/16 09:51
95	1LM.LM33648	L16021255-04	1	1		03/03/16 10:10
96	1LM.LM33649	L16021255-02 MS	1	1	STD72685	03/03/16 10:29
97	1LM.LM33650	L16021255-03 MSD	1	1	STD72685	03/03/16 10:48
85	1LM.LM33651	WG559291-15 CCV (1.0ug/L)	1	1	STD72685	03/03/16 11:07
86	1LM.LM33652	WG559292-11 MRL (0.2ug/L)	1	1	STD72685	03/03/16 11:25
87	1LM.LM33653	WG559291-16 CCB	1	1		03/03/16 11:44

Comments

Seq.	Rerun	Dil.	Reason	Analytes
12	X			
	WG559015-05 incorrect vial location.			
50				
	DNR. Incorrect information on the supplied Chain of Custody.			
51				
	DNR. Incorrect information on the supplied Chain of Custody.			
94	X	1	Analyzed too dilute	
	L16021255-04			
53	X	200	Over Calibration Range	Perchlorate
	L16021255-05			
54	X	1	Analyzed too dilute	
	L16021255-06			
63	X	1000	Over Calibration Range	
	L16021255-12 100X			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030416_WTD.TXT
Analyst1: ADC/WTD Analyst2: JWR
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG559808 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD72683 (03/02/2016)

CCV STD: STD72683 LCS STD: STD72685 MS/MSD STD: STD72685

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM33710	WG559812-01 CCB	1	1		03/04/16 16:38
2	1LM.LM33711	WG559812-02 CCV (1.0ug/L)	1	1	STD72683	03/04/16 16:57
3	1LM.LM33712	WG559808-07 MRL (2.0ug/kg)	7	1	STD72683	03/04/16 17:16
4	1LM.LM33713	WG559808-01 MCT (2.0ug/kg)	7	1	STD72685	03/04/16 17:35
5	1LM.LM33714	WG559808-02 BLK	7	1		03/04/16 17:53
6	1LM.LM33715	WG559808-03 LCS (2.0ug/kg)	7	1	STD72685	03/04/16 18:12
7	1LM.LM33716	L16030234-01	7	1		03/04/16 18:31
8	1LM.LM33717	L16030234-02	7	1		03/04/16 18:50
9	1LM.LM33718	L16030234-03	7	1		03/04/16 19:09
10	1LM.LM33719	L16030234-04	7	1		03/04/16 19:28
11	1LM.LM33720	L16030234-05	7	1		03/04/16 19:47
12	1LM.LM33721	L16030234-06	7	1		03/04/16 20:06
13	1LM.LM33722	L16030235-01	7	1		03/04/16 20:25
14	1LM.LM33723	WG559812-03 CCV (1.0ug/L)	1	1	STD72683	03/04/16 20:44
15	1LM.LM33724	WG559808-08 MRL (2.0ug/kg)	7	1	STD72683	03/04/16 21:03
16	1LM.LM33725	WG559812-04 CCB	1	1		03/04/16 21:22
17	1LM.LM33726	L16030235-02	7	1		03/04/16 21:41
18	1LM.LM33727	L16030235-03 RS (NR)	7	1		03/04/16 22:00
19	1LM.LM33728	L16030235-04 MS (NR)	7	1	STD72685	03/04/16 22:19
20	1LM.LM33729	L16030235-05 MSD (NR)	7	1	STD72685	03/04/16 22:38
21	1LM.LM33730	L16030235-06 (NR)	7	1		03/04/16 22:56
22	1LM.LM33731	L16030235-07 (NR)	7	1		03/04/16 23:15
23	1LM.LM33732	L16030235-08 (NR)	7	1		03/04/16 23:34
24	1LM.LM33733	WG559812-05 CCV (1.0ug/L)	1	1	STD72683	03/04/16 23:53
25	1LM.LM33734	WG559808-09 MRL (2.0ug/kg)	7	1	STD72683	03/05/16 00:12
26	1LM.LM33735	WG559812-06 CCB	1	1		03/05/16 00:31
27	1LM.LM33736	WG559899-01 CCB	1	1		03/07/16 09:54
28	1LM.LM33737	WG559899-02 CCV (1.0ug/L)	1	1	STD72683	03/07/16 10:13
29	1LM.LM33738	WG559808-10 MRL (2.0ug/kg)	7	1	STD72683	03/07/16 10:32
30	1LM.LM33739	L16030235-03 RS (RR 100x)	7	100		03/07/16 10:51
31	1LM.LM33740	L16030235-04 MS (RR 100x)	7	100	STD72685	03/07/16 11:10
32	1LM.LM33741	L16030235-05 MSD (RR 100x)	7	100	STD72685	03/07/16 11:29
33	1LM.LM33742	L16030235-06 (RR 10x)	7	10		03/07/16 11:48

Page: 1 Approved: 08-MAR-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030416_WTD.TXT
Analyst1: ADC/WTD Analyst2: JWR
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG559808 (soils)

Internal STD: COA18071 Surrogate STD: NA STD72683 (03/02/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM33743	L16030235-07 (RR 10x)	7	10		03/07/16 12:07
35	1LM.LM33744	L16030235-08 (RR 100x)	7	100		03/07/16 12:26
36	1LM.LM33745	WG559899-03 CCV (1.0ug/L)	1	1	STD72683	03/07/16 12:45
37	1LM.LM33746	WG559808-11 MRL (2.0ug/kg)	7	1	STD72683	03/07/16 13:04
38	1LM.LM33747	WG559899-04 CCB	1	1		03/07/16 13:22

Comments

Seq.	Rerun	Dil.	Reason	Analytes
18	X	100	Over Calibration Range	
	L16030235-03 RS (NR) : This sample was reanalyzed at a 100x dilution on the end of this run.			
19	X	100	Over Calibration Range	
	L16030235-04 MS (NR) : This sample was reanalyzed at a 100x dilution on the end of this run.			
20	X	100	Over Calibration Range	
	L16030235-05 MSD (NR) : This sample was reanalyzed at a 100x dilution on the end of this run.			
21	X	10	Over Calibration Range	
	L16030235-06 (NR) : This sample was reanalyzed at a 10x dilution on the end of this run.			
22	X	10	Over Calibration Range	
	L16030235-07 (NR) : This sample was reanalyzed at a 10x dilution on the end of this run.			
23	X	100	Over Calibration Range	
	L16030235-08 (NR) : This sample was reanalyzed at a 100x dilution on the end of this run.			
31				
	L16030235-04 MS (RR 100x) : The MS %Rec is below the advisory limit. The parent sample to this MS has a result greater than 900 times that of the MS-spiked amount.			
32				
	L16030235-05 MSD (RR 100x) : The MSD %Rec is above the advisory limit. The parent sample to this MSD has a result greater than 900 times that of the MSD-spiked amount.			

Page: 2 Approved: 08-MAR-16

Microbac Laboratories Inc.

Data Checklist

Date: 02-MAR-2016
Analyst: WTD
Analyst: ADC
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 73617
Analytical Workgroups: L16021255,L16021328,030008,021262,021060

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	WTD
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MES

Primary Reviewer: 03-MAR-2016

Secondary Reviewer: 04-MAR-2016

CHECKLIST1 - Modified 03/05/2008

Generated: MAR-04-2016 13:53:03

Microbac Laboratories Inc.

Data Checklist

Date: 04-MAR-2016
Analyst: ADC/WTD
Analyst: JWR
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 73668
Analytical Workgroups: L16030234, 0235 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	DL @ 100X DILUTION
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 07-MAR-2016 John Richards

Secondary Reviewer: 08-MAR-2016 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-08-2016 11:01:02

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG559808

Login Number: L16030235

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18DPT07(5-5.5)020316	01	03/02/16					03/04/2016	2	28		03/04/16	.2	28	
18DPT07(15-15.5)020316	02	03/02/16					03/04/2016	2	28		03/04/16	.3	28	
18DPT07(33.5-34.5)030316	03	03/03/16					03/04/2016	1.2	28		03/07/16	2.8	28	
18DPT07(33.5-34.5)030316	04	03/03/16					03/04/2016	1.2	28		03/07/16	2.8	28	
18DPT07(33.5-34.5)030316	05	03/03/16					03/04/2016	1.2	28		03/07/16	2.8	28	
18DPT07(38-39)030316	06	03/03/16					03/04/2016	1.2	28		03/07/16	2.8	28	
18DPT07(38-39)030316 FD	07	03/03/16					03/04/2016	1.2	28		03/07/16	2.9	28	
18DPT07(27-27.5)030316	08	03/03/16					03/04/2016	1.2	28		03/07/16	2.9	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4659877
Report generated 03/08/2016 11:13

METHOD BLANK SUMMARY

Login Number: L16030235
Blank File ID: 1LM.LM33714
Prep Date: 03/04/16 15:30
Analyzed Date: 03/04/16 17:53
Analyst: JWR

Work Group: WG559808
Blank Sample ID: WG559808-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG559808-07	1LM.LM33712	03/04/16 17:16	01
MCT	WG559808-01	1LM.LM33713	03/04/16 17:35	01
LCS	WG559808-03	1LM.LM33715	03/04/16 18:12	01
18DPT07(5-5.5)020316	L16030235-01	1LM.LM33722	03/04/16 20:25	01
QCMRL	WG559808-08	1LM.LM33724	03/04/16 21:03	01
18DPT07(15-15.5)020316	L16030235-02	1LM.LM33726	03/04/16 21:41	01
QCMRL	WG559808-09	1LM.LM33734	03/05/16 00:12	01
QCMRL	WG559808-10	1LM.LM33738	03/07/16 10:32	01
18DPT07(33.5-34.5)030316	L16030235-03	1LM.LM33739	03/07/16 10:51	DL01
18DPT07(33.5-34.5)030316 MS	L16030235-04	1LM.LM33740	03/07/16 11:10	DL01
18DPT07(33.5-34.5)030316 MSD	L16030235-05	1LM.LM33741	03/07/16 11:29	DL01
18DPT07(38-39)030316	L16030235-06	1LM.LM33742	03/07/16 11:48	DL01
18DPT07(38-39)030316 FD	L16030235-07	1LM.LM33743	03/07/16 12:07	DL01
18DPT07(27-27.5)030316	L16030235-08	1LM.LM33744	03/07/16 12:26	DL01
QCMRL	WG559808-11	1LM.LM33746	03/07/16 13:04	01

Report Name: BLANK_SUMMARY
PDF File ID: 4659878
Report generated 03/08/2016 11:13

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16030235 Prep Date: 03/04/16 15:30 Sample ID: WG559808-02
Instrument ID: LCMS1 Run Date: 03/04/16 17:53 Prep Method: 6850
File ID: 1LM.LM33714 Analyst: JWR Method: 6850
Workgroup (AAB#): WG559808 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.999	3.99	0.999	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4659879
08-MAR-2016 11:13

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030235 Run Date: 03/04/2016 Sample ID: WG559808-03
Instrument ID: LCMS1 Run Time: 18:12 Prep Method: 6850
File ID: 1LM.LM33715 Analyst: JWR Method: 6850
Workgroup (AAB#): WG559808 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD72685 Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	2.00	2.35	118	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4659880
Report generated: 03/08/2016 11:13

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16030235 Cal ID: LCMS1- 02-MAR-16 Worknum: WG559808
Instrument ID: LCMS1 Contract #: Prep Method: 6850
Parent ID: L16030235-03 File ID: 1LM.LM33739 Dil: 100 Method: 6850
Sample ID: L16030235-04 MS File ID: 1LM.LM33740 Dil: 100 Matrix: Soil
Sample ID: L16030235-05 MSD File ID: 1LM.LM33741 Dil: 100 Units: ug/kg
Percent Solid: 82.2

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Perchlorate	2180	2.40	2170	-482	2.40	2350	7050	8.00	80 - 120	15	*

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4659881
Report generated 03/08/2016 11:13

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16030235
Analytical Method: 6850
ICAL Workgroup: WG559340

Instrument ID: LCMS1
Initial Calibration Date: 02-MAR-16 10:46
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.808	3.97	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4660463
Report generated 03/08/2016 11:13

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16030235

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 02-MAR-16 10:46

Column ID: F

Analyte	WG559340-02			WG559340-03			WG559340-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	18400.0000	1.879	0.200	37000.0000	1.850	0.500	89000.0000	1.810

INT_CAL - Modified 03/06/2008
PDF File ID: 4660463
Report generated 03/08/2016 11:13

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16030235

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 02-MAR-16 10:46

Column ID: F

Analyte	WG559340-05			WG559340-06			WG559340-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	183000.000	1.829	2.00	363000.000	1.777	5.00	871000.000	1.779

INT_CAL - Modified 03/06/2008
PDF File ID: 4660463
Report generated 03/08/2016 11:13

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16030235

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 02-MAR-16 10:46

Column ID: F

Analyte	WG559340-08		
	CONC	RESP	RF
Perchlorate	10.0	1650000.00	1.729

INT_CAL - Modified 03/06/2008

PDF File ID: 4660463

Report generated 03/08/2016 11:13

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16030235 Run Date: 03/02/2016 Sample ID: WG559340-09
Instrument ID: LCMS1 Run Time: 11:05 Method: 6850
File ID: 1LM.LM33575 Analyst: WTD QC Key: DOD4
ICal Workgroup: WG559340 Cal ID: LCMS1 - 02-MAR-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.83	3.00	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4660467
Report generated 03/08/2016 11:13

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030235
Run Date: 03/04/2016
Sample ID: WG559812-01
Instrument ID: LCMS1
Run Time: 16:38
Method: 6850
File ID: 1LM.LM33710
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG559808
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4659884
Report generated 03/08/2016 11:14

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030235
Run Date: 03/04/2016
Sample ID: WG559812-04
Instrument ID: LCMS1
Run Time: 21:22
Method: 6850
File ID: 1LM.LM33725
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG559808
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4659884
Report generated 03/08/2016 11:14

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030235
Run Date: 03/05/2016
Sample ID: WG559812-06
Instrument ID: LCMS1
Run Time: 00:31
Method: 6850
File ID: 1LM.LM33735
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG559808
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4659884
Report generated 03/08/2016 11:14

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030235
Run Date: 03/07/2016
Sample ID: WG559899-01
Instrument ID: LCMS1
Run Time: 09:54
Method: 6850
File ID: 1LM.LM33736
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG559808
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4659884
Report generated 03/08/2016 11:14

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030235
Run Date: 03/07/2016
Sample ID: WG559899-04
Instrument ID: LCMS1
Run Time: 13:22
Method: 6850
File ID: 1LM.LM33747
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG559808
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4659884
Report generated 03/08/2016 11:14

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030235
Run Date: 03/04/2016
Sample ID: WG559812-02
Instrument ID: LCMS1
Run Time: 16:57
Method: 6850
File ID: 1LM.LM33711
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG559808
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.969	ug/kg	1.72	3.10	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4659883
Report generated 03/08/2016 11:14

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030235
Run Date: 03/04/2016
Sample ID: WG559812-03
Instrument ID: LCMS1
Run Time: 20:44
Method: 6850
File ID: 1LM.LM33723
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG559808
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.975	ug/kg	1.73	2.50	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4659883
Report generated 03/08/2016 11:14

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030235
Run Date: 03/04/2016
Sample ID: WG559812-05
Instrument ID: LCMS1
Run Time: 23:53
Method: 6850
File ID: 1LM.LM33733
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG559808
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.978	ug/kg	1.73	2.20	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4659883
Report generated 03/08/2016 11:14

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030235
Run Date: 03/07/2016
Sample ID: WG559899-02
Instrument ID: LCMS1
Run Time: 10:13
Method: 6850
File ID: 1LM.LM33737
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG559808
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.999	ug/kg	1.77	0.100	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4659883
Report generated 03/08/2016 11:14

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030235
Run Date: 03/07/2016
Sample ID: WG559899-03
Instrument ID: LCMS1
Run Time: 12:45
Method: 6850
File ID: 1LM.LM33745
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG559808
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.951	ug/kg	1.69	4.90	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4659883
Report generated 03/08/2016 11:14

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030235 Run Date: 03/04/2016 Sample ID: WG559808-07
Instrument ID: LCMS1 Run Time: 17:16 Prep Method: 6850
File ID: 1LM.LM33712 Analyst: JWR Method: 6850
Workgroup (AAB#): WG559808 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.96	98.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4659882
Report generated 03/08/2016 11:13

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030235 Run Date: 03/04/2016 Sample ID: WG559808-08
Instrument ID: LCMS1 Run Time: 21:03 Prep Method: 6850
File ID: 1LM.LM33724 Analyst: JWR Method: 6850
Workgroup (AAB#): WG559808 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.97	98.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4659882
Report generated 03/08/2016 11:13

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030235 Run Date: 03/05/2016 Sample ID: WG559808-09

Instrument ID: LCMS1 Run Time: 00:12 Prep Method: 6850

File ID: 1LM.LM33734 Analyst: JWR Method: 6850

Workgroup (AAB#): WG559808 Matrix: Soil Units: ug/kg

Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.95	97.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4659882
Report generated 03/08/2016 11:13

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030235 Run Date: 03/07/2016 Sample ID: WG559808-10
Instrument ID: LCMS1 Run Time: 10:32 Prep Method: 6850
File ID: 1LM.LM33738 Analyst: JWR Method: 6850
Workgroup (AAB#): WG559808 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.88	94.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4659882
Report generated 03/08/2016 11:13

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030235 Run Date: 03/07/2016 Sample ID: WG559808-11
Instrument ID: LCMS1 Run Time: 13:04 Prep Method: 6850
File ID: 1LM.LM33746 Analyst: JWR Method: 6850
Workgroup (AAB#): WG559808 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.95	97.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4659882
Report generated 03/08/2016 11:13

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16030235
Instrument ID: LCMS1
Workgroup (AAB#): WG559808

ICAL CCV Number: WG559340-05
CAL ID: LCMS1-02-MAR-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1
WG559340	NA	NA	494000
Upper Limit	NA	NA	741000
Lower Limit	NA	NA	247000
L16030235-01	1.00	01	567000
L16030235-02	1.00	01	567000
L16030235-03	100	DL01	534000
L16030235-04	100	DL01	526000
L16030235-05	100	DL01	534000
L16030235-06	10.0	DL01	502000
L16030235-07	10.0	DL01	507000
L16030235-08	100	DL01	531000
WG559808-02	1.00	01	530000
WG559808-03	1.00	01	516000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4659885
Report generated 03/08/2016 11:14

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**	6850	**Samplenum:**	L16030235-01
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33722
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/04/2016 20:25	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	16300	5770	2.82	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**	6850	**Samplenum:**	L16030235-02
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33726
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/04/2016 21:41	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	40800	13900	2.94	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**	6850	**Samplenum:**	L16030235-03
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33739
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/07/2016 10:51	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	342000	110000	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**	6850	**Samplenum:**	L16030235-04
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33740
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/07/2016 11:10	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	335000	108000	3.10	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**	6850	**Samplenum:**	L16030235-05
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33741
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/07/2016 11:29	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	368000	118000	3.12	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**	6850	**Samplenum:**	L16030235-06
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33742
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/07/2016 11:48	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	967000	309000	3.13	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**	6850	**Samplenum:**	L16030235-07
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33743
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/07/2016 12:07	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	856000	277000	3.09	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**	6850	**Samplenum:**	L16030235-08
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33744
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/07/2016 12:26	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	190000	63300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**		**Samplenum:**	WG559340-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33568
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/02/2016 08:53	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	18400	5910	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**		**Samplenum:**	WG559340-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33569
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/02/2016 09:12	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37000	11900	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**		**Samplenum:**	WG559340-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33570
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/02/2016 09:31	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	89000	30400	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**		**Samplenum:**	WG559340-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33571
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/02/2016 09:50	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	183000	56800	3.22	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**		**Samplenum:**	WG559340-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33572
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/02/2016 10:09	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	363000	117000	3.10	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**		**Samplenum:**	WG559340-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33573
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/02/2016 10:28	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	871000	282000	3.09	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**		**Samplenum:**	WG559340-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33574
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/02/2016 10:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1650000	530000	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**		**Samplenum:**	WG559340-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33575
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/02/2016 11:05	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	190000	62200	3.05	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**	6850	**Samplenum:**	WG559808-01
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33713
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/04/2016 17:35	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38400	12700	3.02	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**	6850	**Samplenum:**	WG559808-02
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33714
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/04/2016 17:53	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	390	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**	6850	**Samplenum:**	WG559808-03
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33715
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/04/2016 18:12	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	44800	16800	2.67	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**	6850	**Samplenum:**	WG559808-07
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33712
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/04/2016 17:16	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38900	12900	3.02	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**	6850	**Samplenum:**	WG559808-08
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33724
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/04/2016 21:03	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	42600	13400	3.18	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**	6850	**Samplenum:**	WG559808-09
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33734
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/05/2016 00:12	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	41400	12600	3.29	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**	6850	**Samplenum:**	WG559808-10
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33738
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/07/2016 10:32	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	39400	13500	2.92	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**	6850	**Samplenum:**	WG559808-11
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33746
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/07/2016 13:04	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38300	12600	3.04	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**		**Samplenum:**	WG559812-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33710
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/04/2016 16:38	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**		**Samplenum:**	WG559812-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33711
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/04/2016 16:57	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	177000	56200	3.15	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**		**Samplenum:**	WG559812-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33723
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/04/2016 20:44	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	200000	62200	3.22	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**		**Samplenum:**	WG559812-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33725
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/04/2016 21:22	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**		**Samplenum:**	WG559812-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33733
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/04/2016 23:53	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	195000	61500	3.17	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**		**Samplenum:**	WG559812-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33735
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/05/2016 00:31	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**		**Samplenum:**	WG559899-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33736
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/07/2016 09:54	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**		**Samplenum:**	WG559899-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33737
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/07/2016 10:13	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	198000	64300	3.08	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**		**Samplenum:**	WG559899-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33745
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/07/2016 12:45	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	183000	60200	3.04	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**		**Samplenum:**	WG559899-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33747
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/07/2016 13:22	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	195	0.000	2.3	3.8	*

2.2.1.3 Sample Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 3/7/2016 5:44 PM

Data File	LM33722.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 8:25:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030235-01	**Injection Vial**	13.00
Data File	LM33722.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 8:25:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	L16030235-01	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.670e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.630e+04	9.94	N/A	0.0697
Perchlorate conf	5.770e+03	9.93	N/A	0.0766

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

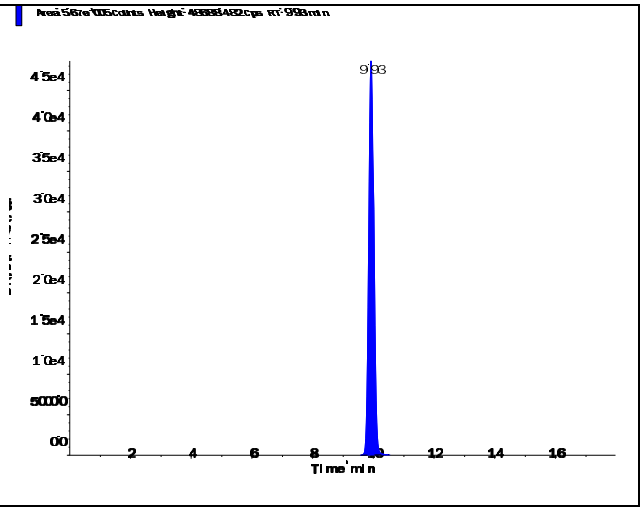

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 3/7/2016 5:44 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.0697 ng/ml
Area Ratio:	0.029
Sample Type:	(Unknown)

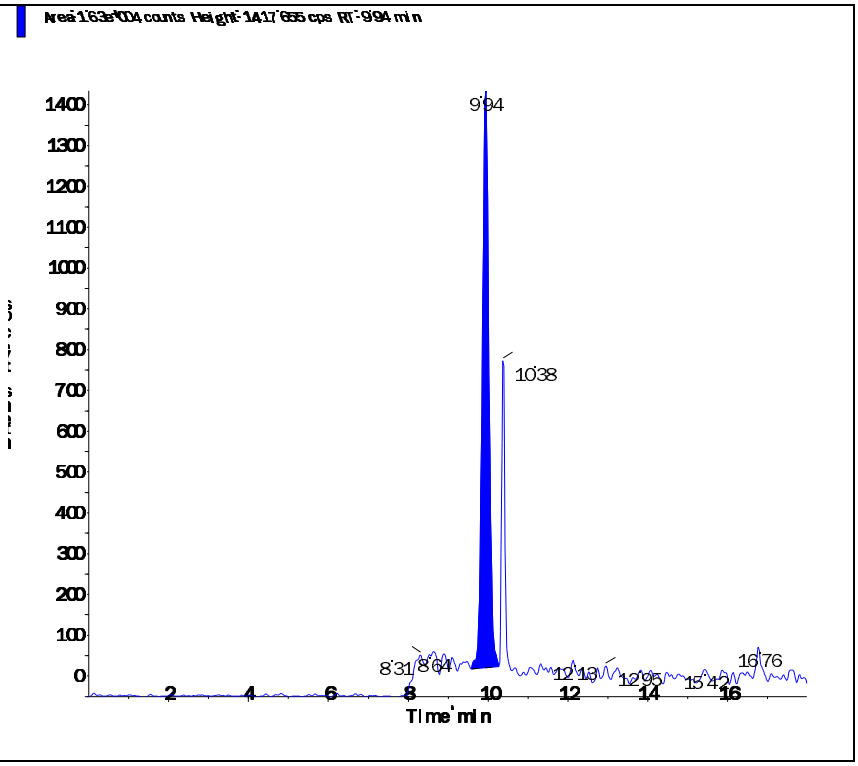

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	0.0766 ng/ml
Area Ratio:	0.01
Sample Type:	(Unknown)

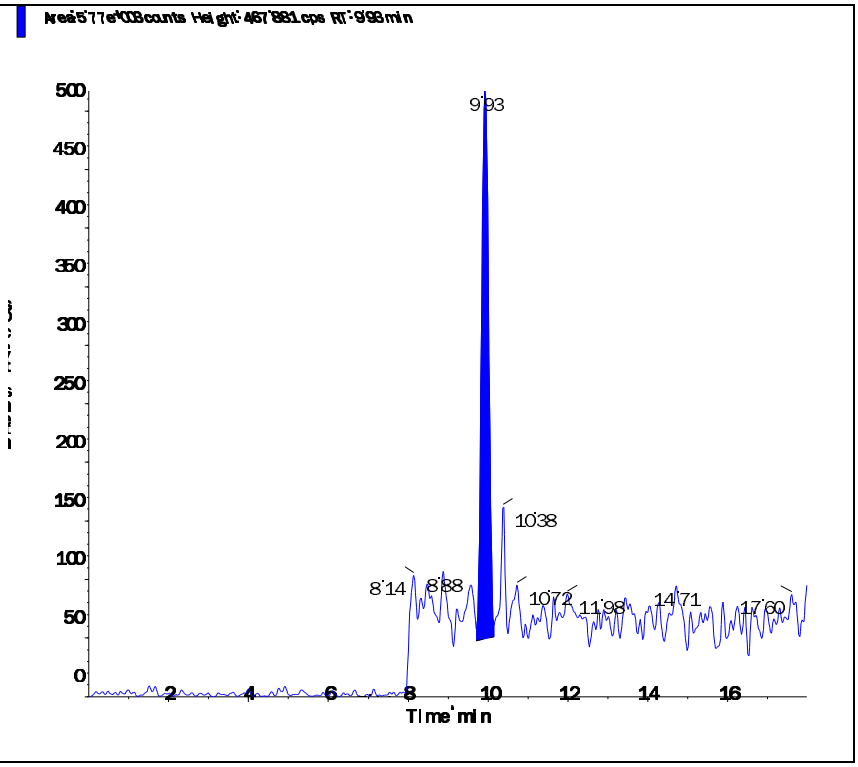

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 3/7/2016 5:46 PM

Data File	LM33726.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 9:41:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030235-02	**Injection Vial**	14.00
Data File	LM33726.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 9:41:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	L16030235-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.670e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.080e+04	9.92	N/A	0.193
Perchlorate conf	1.390e+04	9.90	N/A	0.204

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

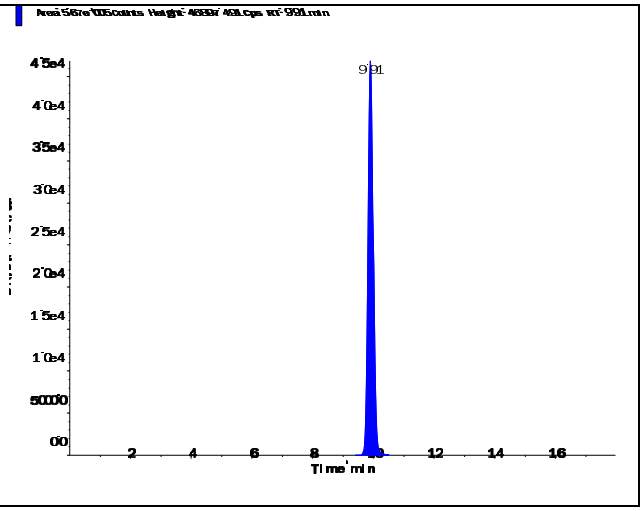

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.92 (9.94) min
Calculated conc:	0.193 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

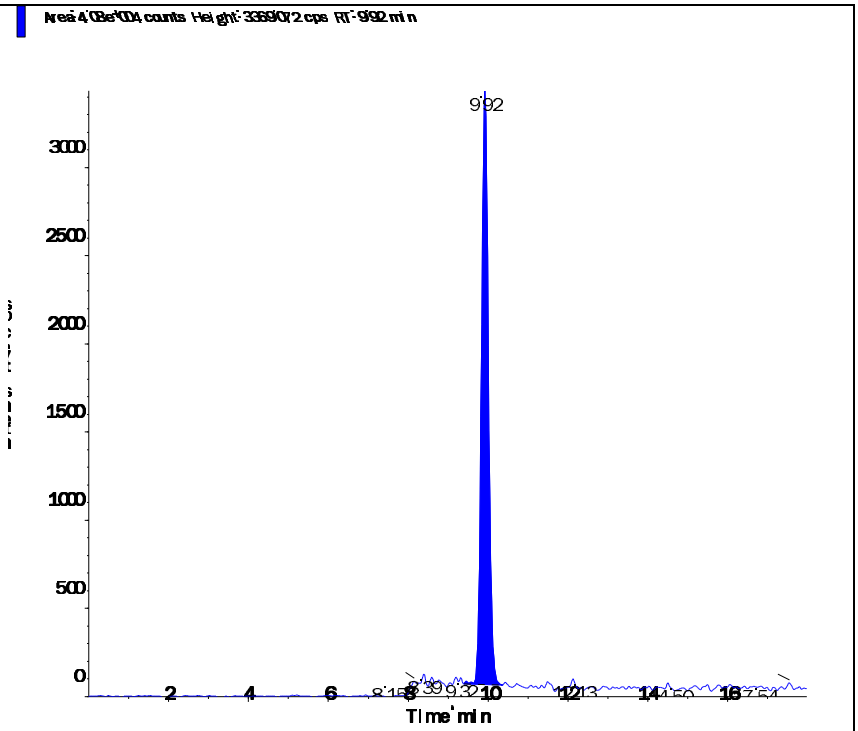

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.90 (9.92) min
Calculated conc:	0.204 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

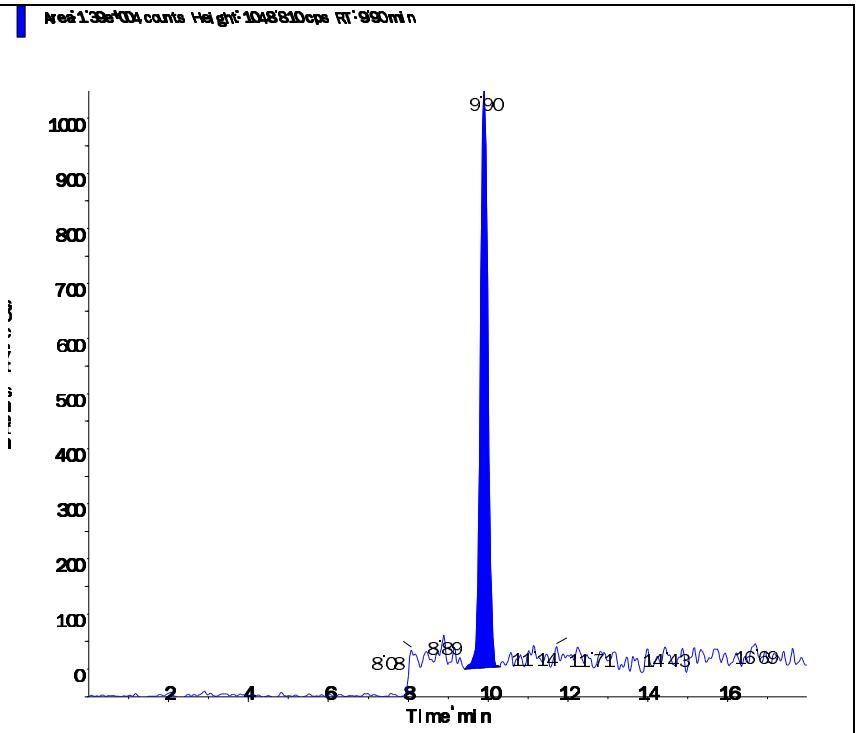

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Data File	LM33739.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/7/2016 10:51:30 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030235-03 RS (RR 100x)	**Injection Vial**	21.00
Data File	LM33739.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 10:51:30 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559808-04	**Dilution Factor**	1.00
Sample Comment	7,100.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.340e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.420e+05	9.92	N/A	1.82
Perchlorate conf	1.100e+05	9.91	N/A	1.81

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

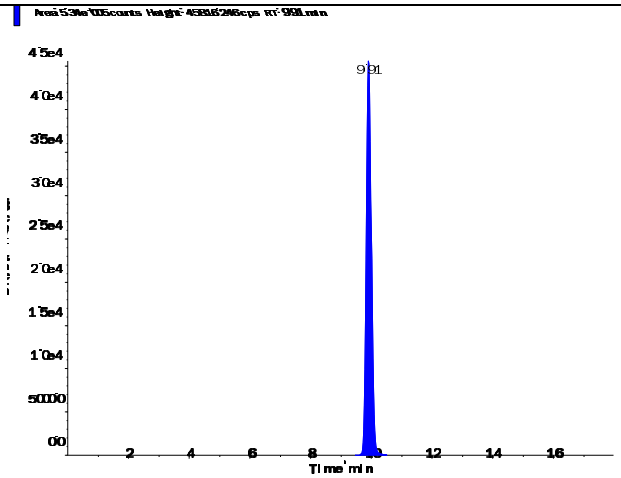

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.92 (9.94) min
Calculated conc:	1.82 ng/ml
Area Ratio:	0.641
Sample Type:	(Unknown)

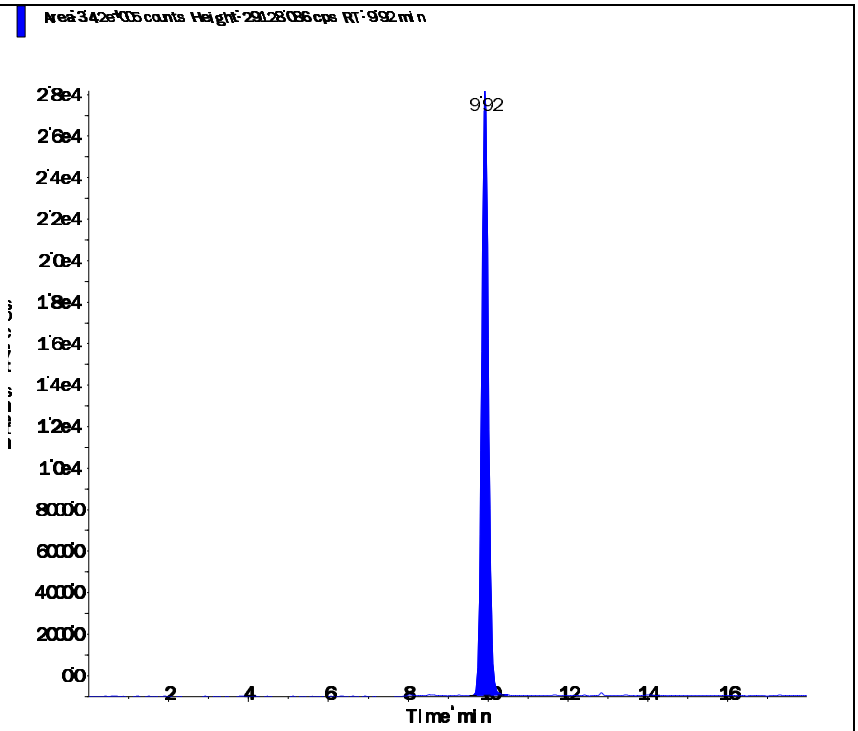

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.92) min
Calculated conc:	1.81 ng/ml
Area Ratio:	0.205
Sample Type:	(Unknown)

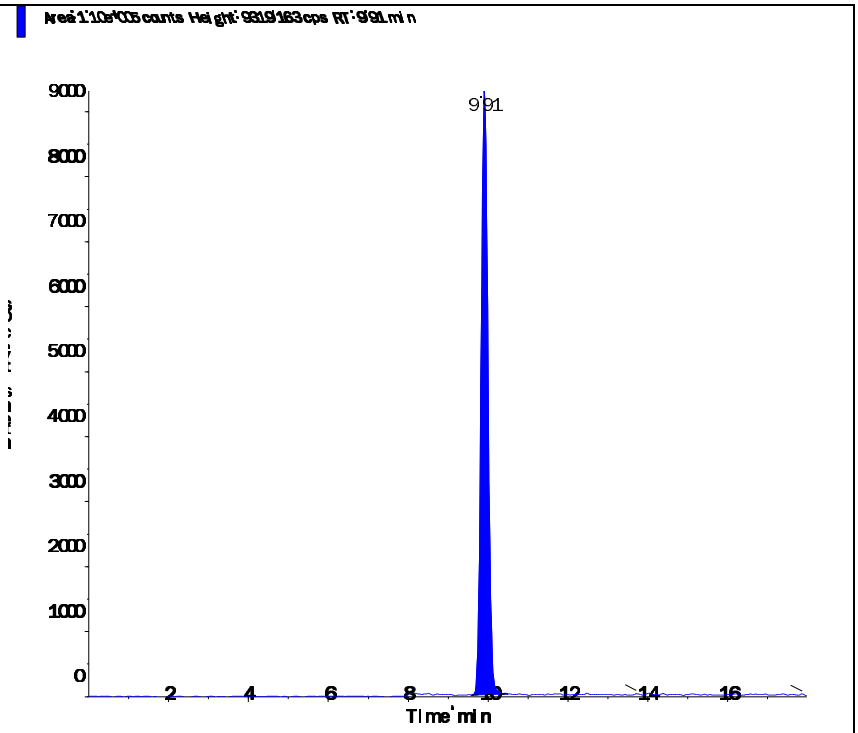

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Data File	LM33740.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/7/2016 11:10:27 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030235-04 MS (RR 100x)	**Injection Vial**	22.00
Data File	LM33740.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 11:10:27 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559808-05	**Dilution Factor**	1.00
Sample Comment	7,100 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.260e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.350e+05	9.92	N/A	1.81
Perchlorate conf	1.080e+05	9.91	N/A	1.80

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

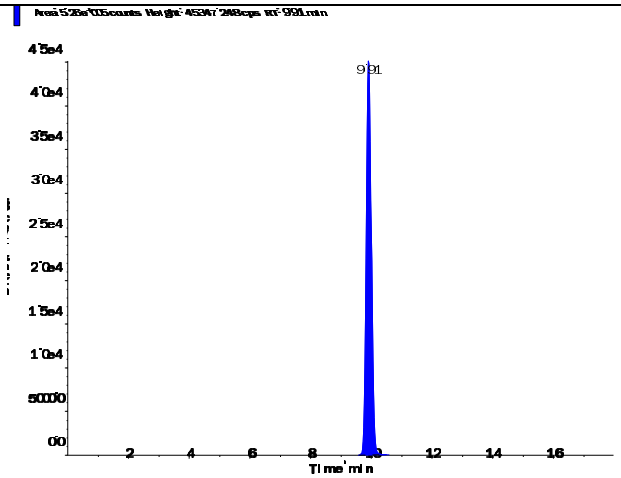

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.92 (9.94) min
Calculated conc:	1.81 ng/ml
Area Ratio:	0.636
Sample Type:	(Unknown)

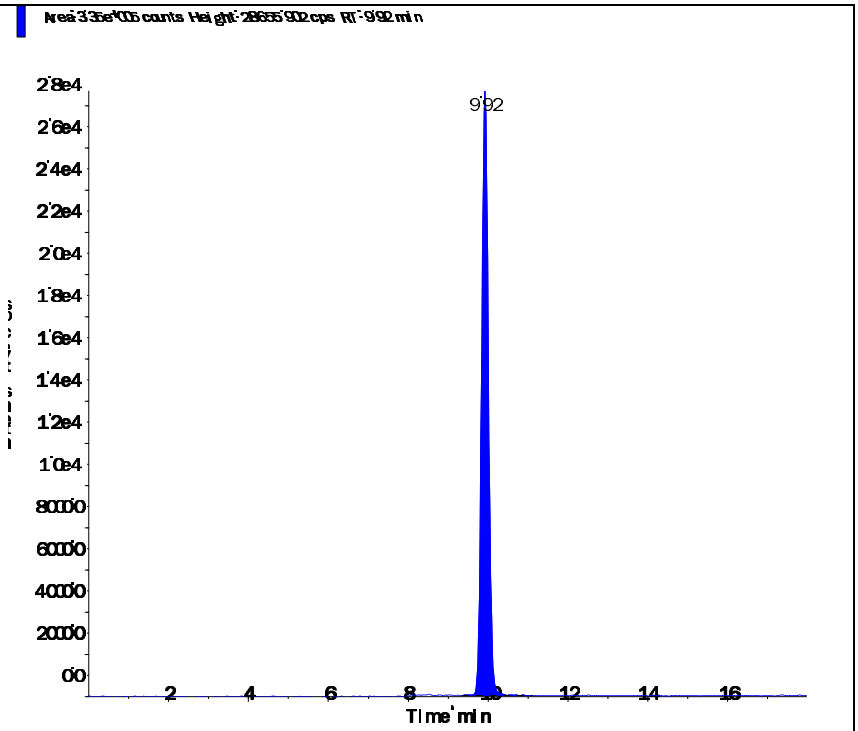

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.92) min
Calculated conc:	1.80 ng/ml
Area Ratio:	0.204
Sample Type:	(Unknown)

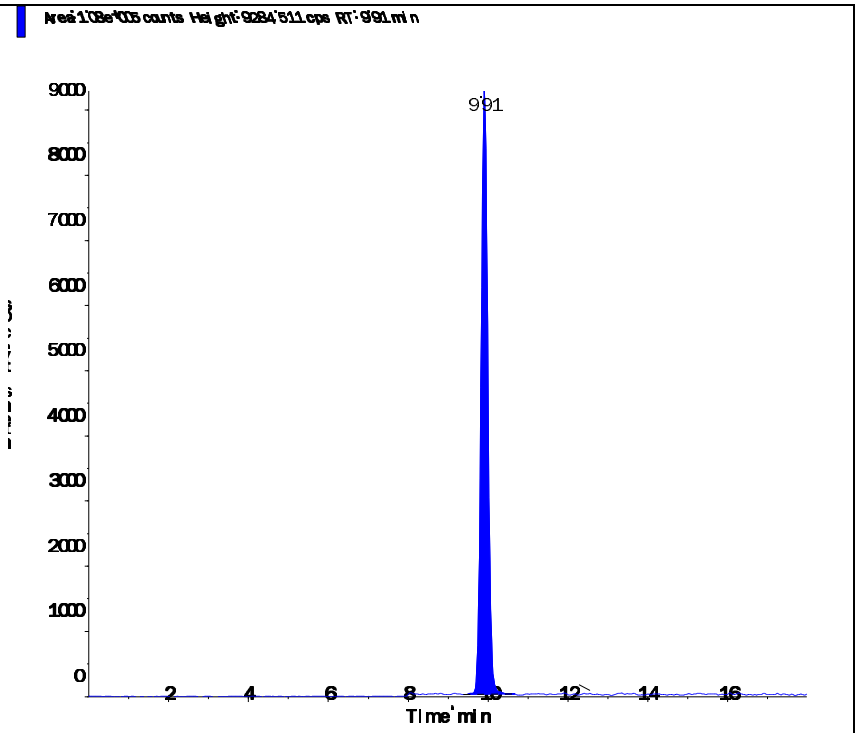

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Data File	LM33741.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/7/2016 11:29:22 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030235-05 MSD (RR 100x)	**Injection Vial**	23.00
Data File	LM33741.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 11:29:22 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559808-06	**Dilution Factor**	1.00
Sample Comment	7,100 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.340e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.680e+05	9.93	N/A	1.96
Perchlorate conf	1.180e+05	9.91	N/A	1.96

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

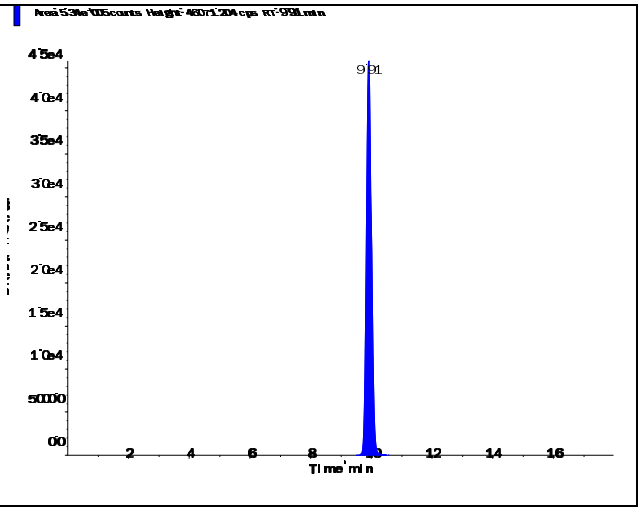

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	1.96 ng/ml
Area Ratio:	0.689
Sample Type:	(Unknown)

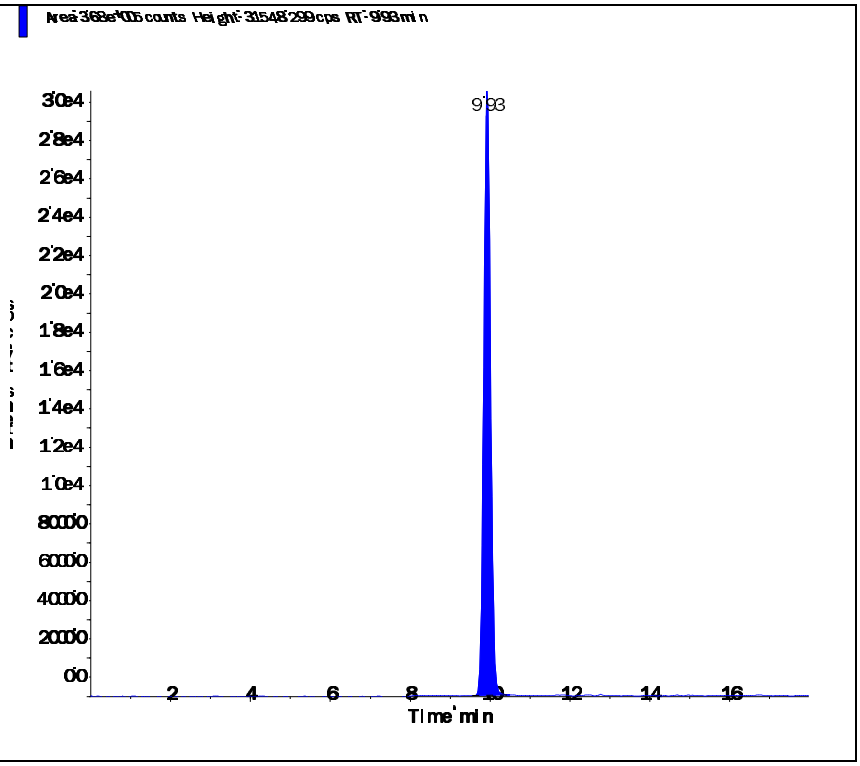

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.92) min
Calculated conc:	1.96 ng/ml
Area Ratio:	0.221
Sample Type:	(Unknown)

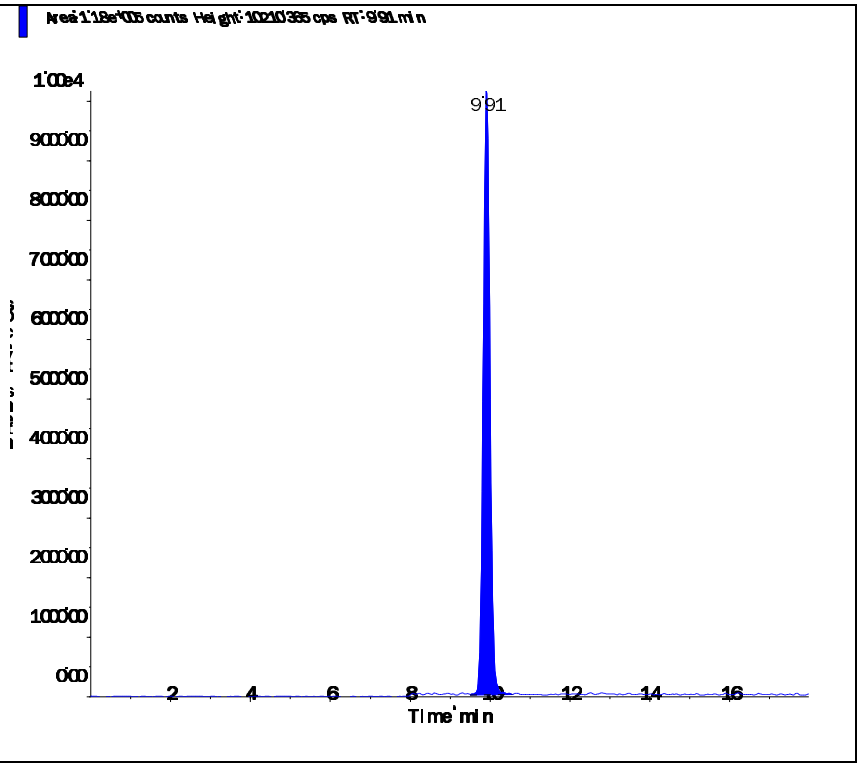

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Data File	LM33742.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/7/2016 11:48:20 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030235-06 (RR 10x)	**Injection Vial**	24.00
Data File	LM33742.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 11:48:20 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	L16030235-06	**Dilution Factor**	1.00
Sample Comment	710.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	9.670e+05	9.91	N/A	5.49
Perchlorate conf	3.090e+05	9.90	N/A	5.45

O18LP (Internal Standard)

RT (Exp. RT): 9.90(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

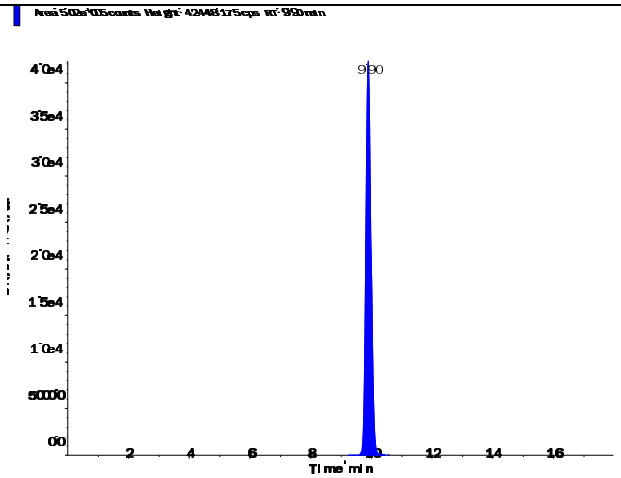

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.91 (9.94) min Calculated conc: 5.49 ng/ml Area Ratio: 1.925 Sample Type: (Unknown)	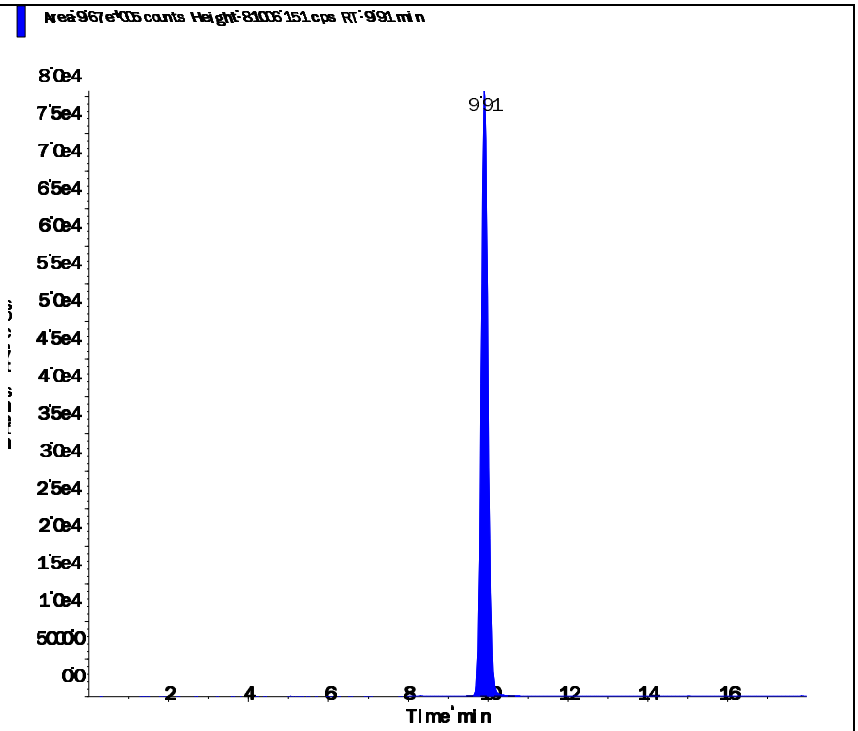
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.90 (9.92) min Calculated conc: 5.45 ng/ml Area Ratio: 0.614 Sample Type: (Unknown)	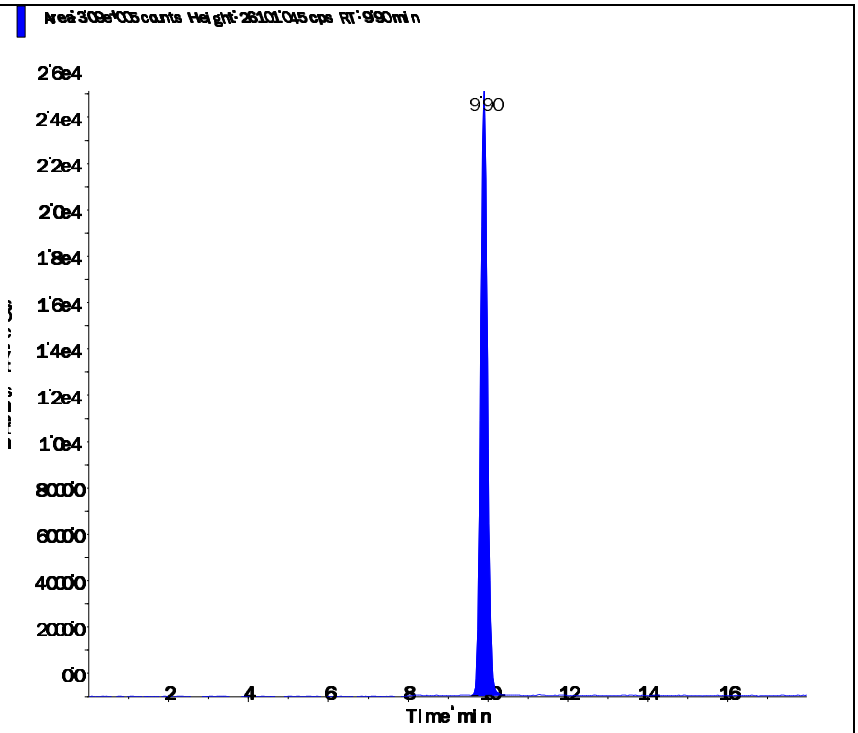

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Data File	LM33743.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/7/2016 12:07:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030235-07 (RR 10x)	**Injection Vial**	25.00
Data File	LM33743.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 12:07:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	L16030235-07	**Dilution Factor**	1.00
Sample Comment	710.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.070e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.560e+05	9.92	N/A	4.81
Perchlorate conf	2.770e+05	9.91	N/A	4.84

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

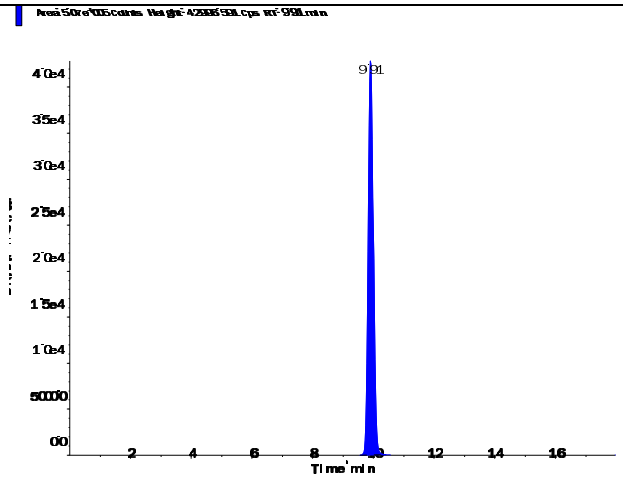

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.92 (9.94) min
Calculated conc:	4.81 ng/ml
Area Ratio:	1.688
Sample Type:	(Unknown)

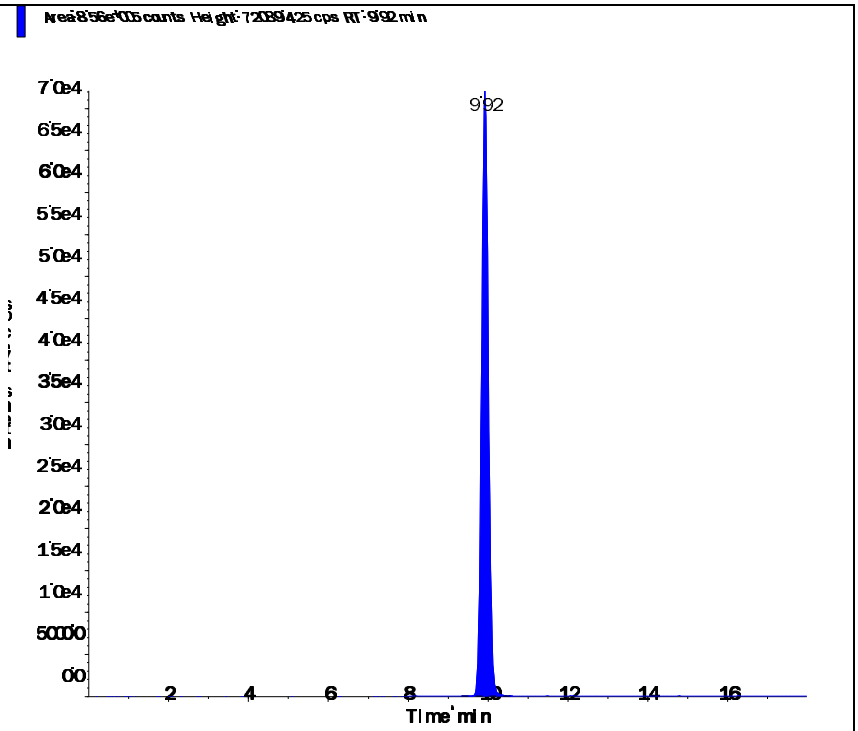

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.92) min
Calculated conc:	4.84 ng/ml
Area Ratio:	0.546
Sample Type:	(Unknown)

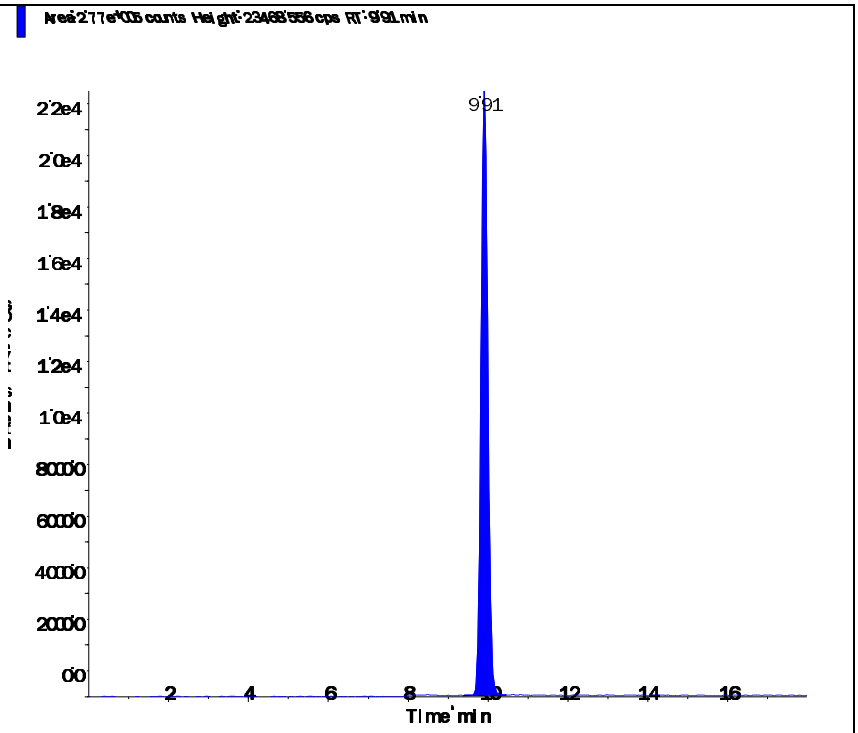

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Data File	LM33744.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/7/2016 12:26:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030235-08 (RR 100x)	**Injection Vial**	26.00
Data File	LM33744.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 12:26:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	L16030235-08	**Dilution Factor**	1.00
Sample Comment	7,100.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.310e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.900e+05	9.93	N/A	1.01
Perchlorate conf	6.330e+04	9.91	N/A	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

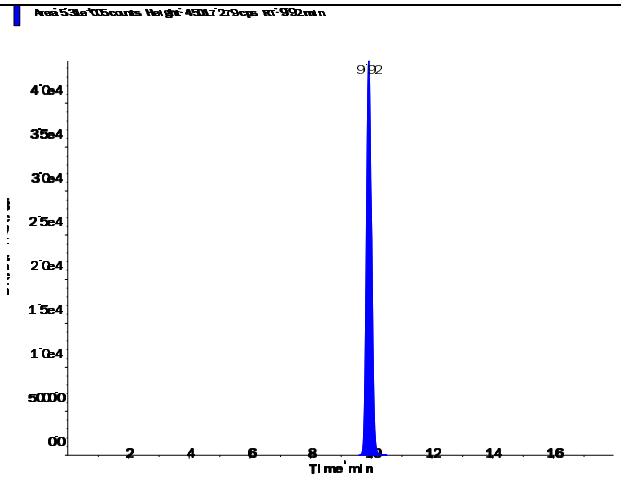

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.359
Sample Type:	(Unknown)

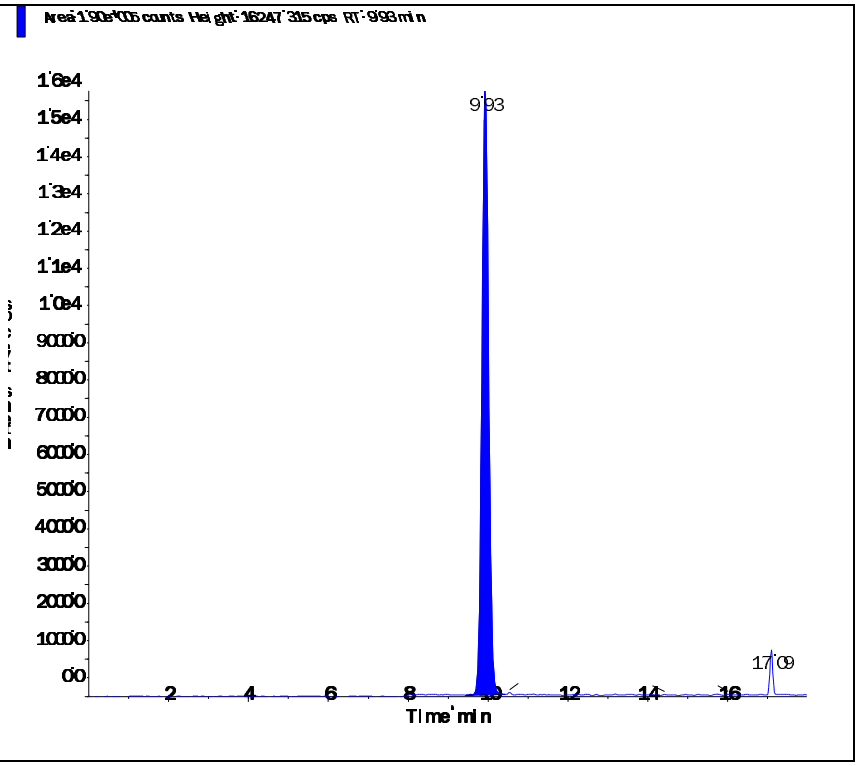

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.92) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.119
Sample Type:	(Unknown)

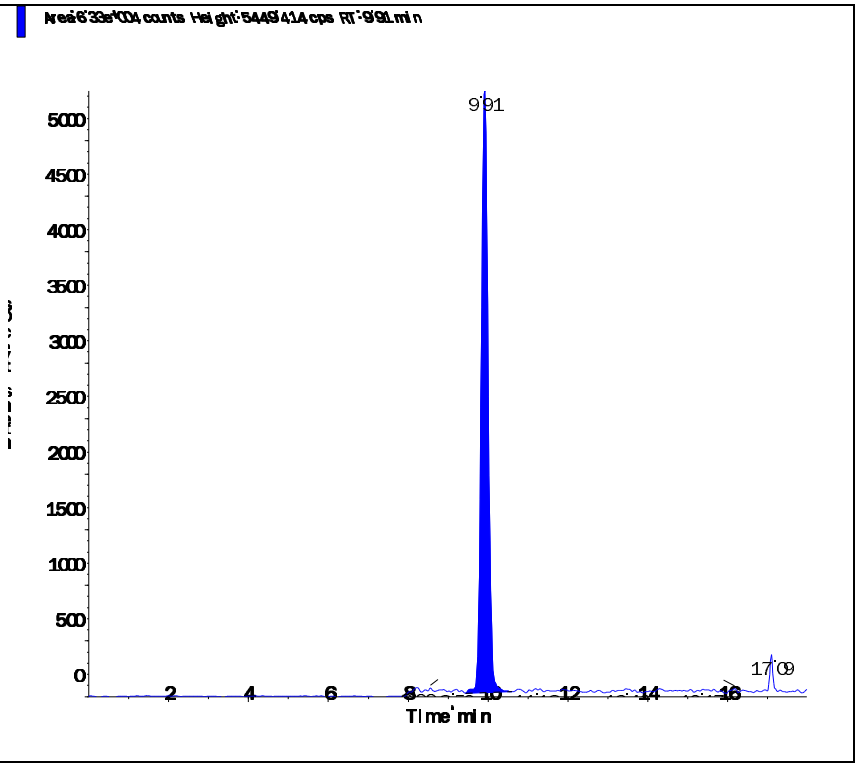

2.2.1.4 Standards Data

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Data File	LM33567.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-01 CCB	**Injection Vial**	51.00
Data File	LM33567.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559340-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.710e+05	9.99	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.99(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

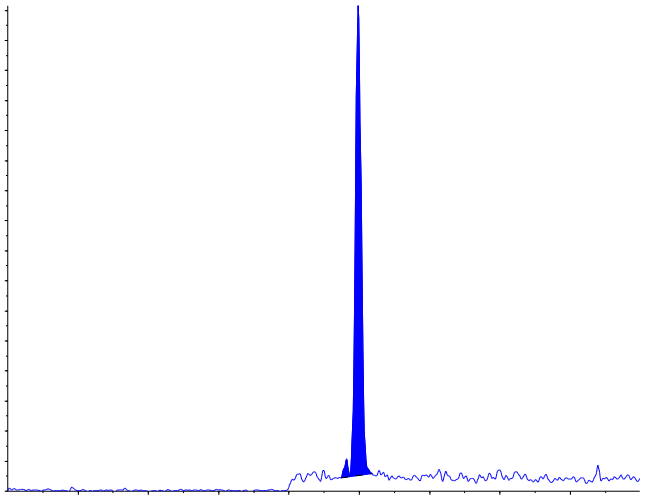

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

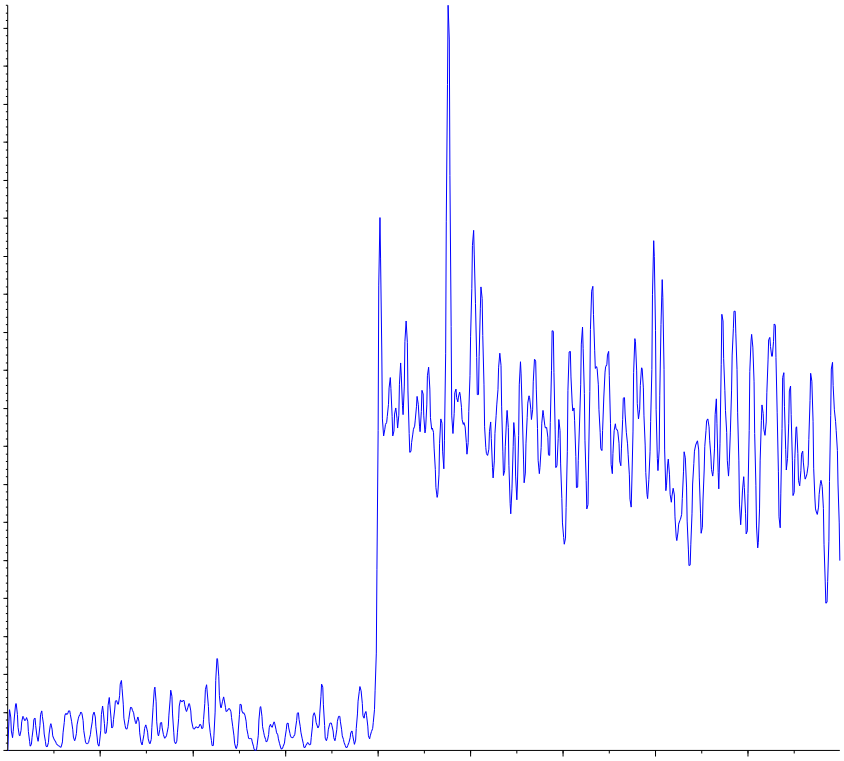

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

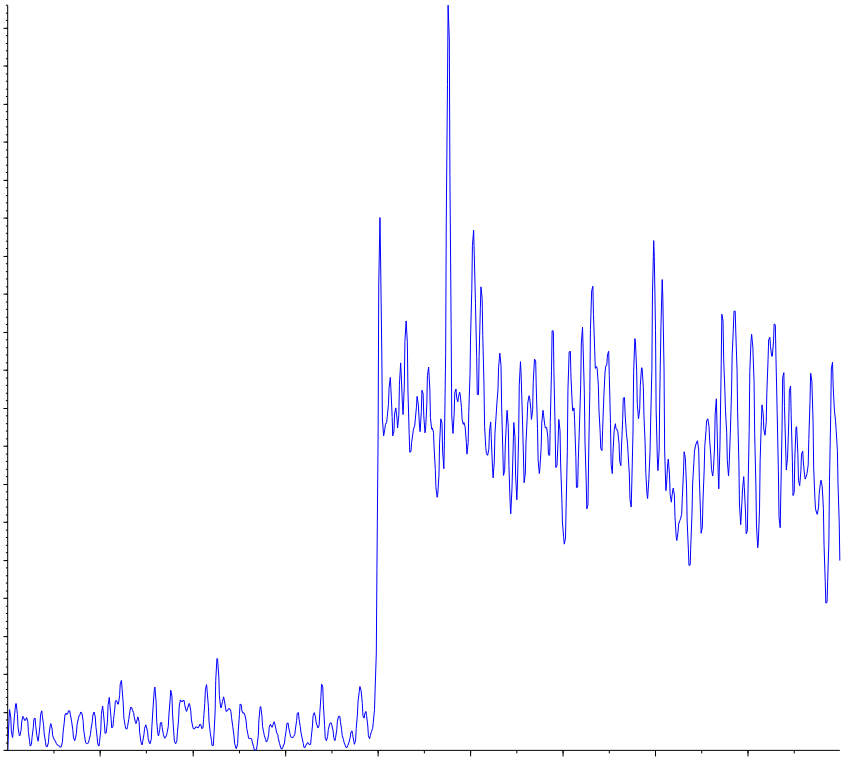

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Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM33567.wiff	**Result Table**	030216_WTD.rdb
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.75 x + 0.00437 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	95.0	N/A	N/A
0.20	1	0.20	99.5	N/A	N/A
0.50	1	0.50	101.0	N/A	N/A
1.00	1	1.03	103.4	N/A	N/A
2.00	1	2.02	101.0	N/A	N/A
5.00	1	5.07	101.5	N/A	N/A
10.00	1	9.87	98.7	N/A	N/A

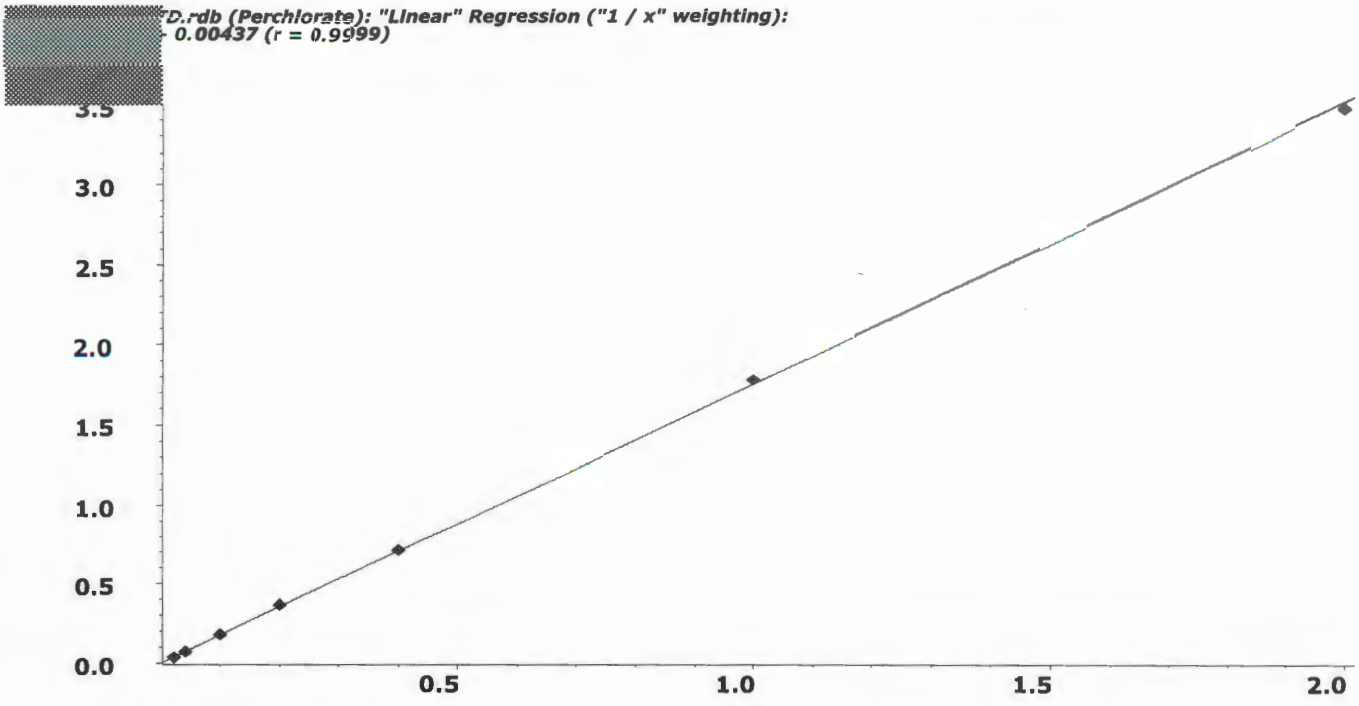

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Printed: 3/3/2016 1:59 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM33567.wiff	**Result Table**	030216_WTD.rdb
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.562 x + 0.00157 (r = 0.9998)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	93.4	N/A	N/A
0.20	1	0.20	98.6	N/A	N/A
0.50	1	0.54	107.2	N/A	N/A
1.00	1	1.00	99.5	N/A	N/A
2.00	1	2.01	100.7	N/A	N/A
5.00	1	5.11	102.2	N/A	N/A
10.00	1	9.85	98.5	N/A	N/A

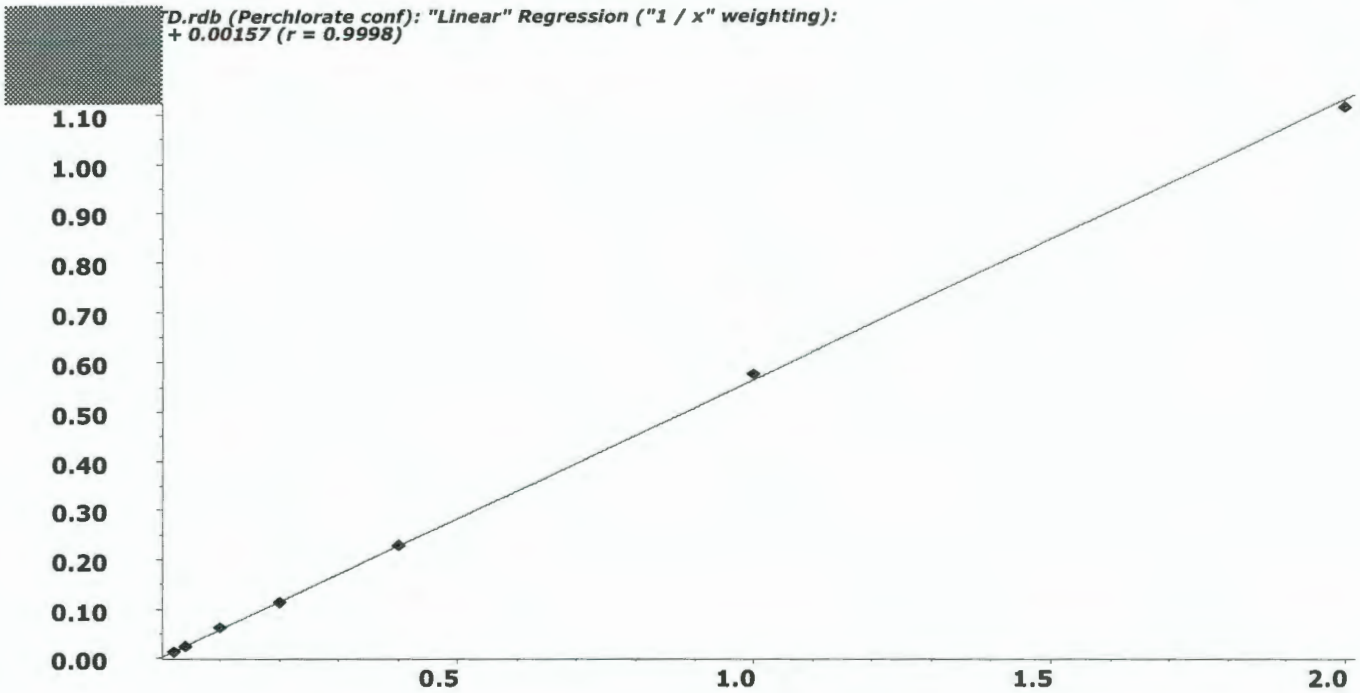

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Data File	LM33568.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/2/2016 8:53:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-02 STD (0.1 ug/L)	**Injection Vial**	52.00
Data File	LM33568.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 8:53:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559340-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.900e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.840e+04	9.97	0.10	0.095
Perchlorate conf	5.910e+03	9.94	0.10	0.0934

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

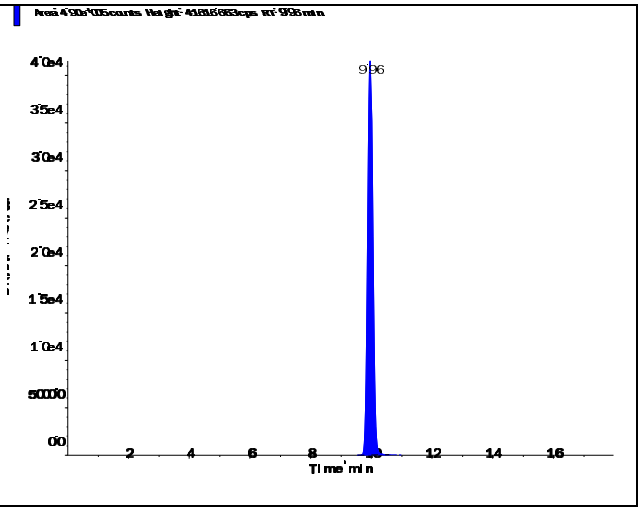

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.97 (9.94) min
Calculated conc:	0.095 ng/ml
Area Ratio:	0.038
Sample Type:	(Standard)

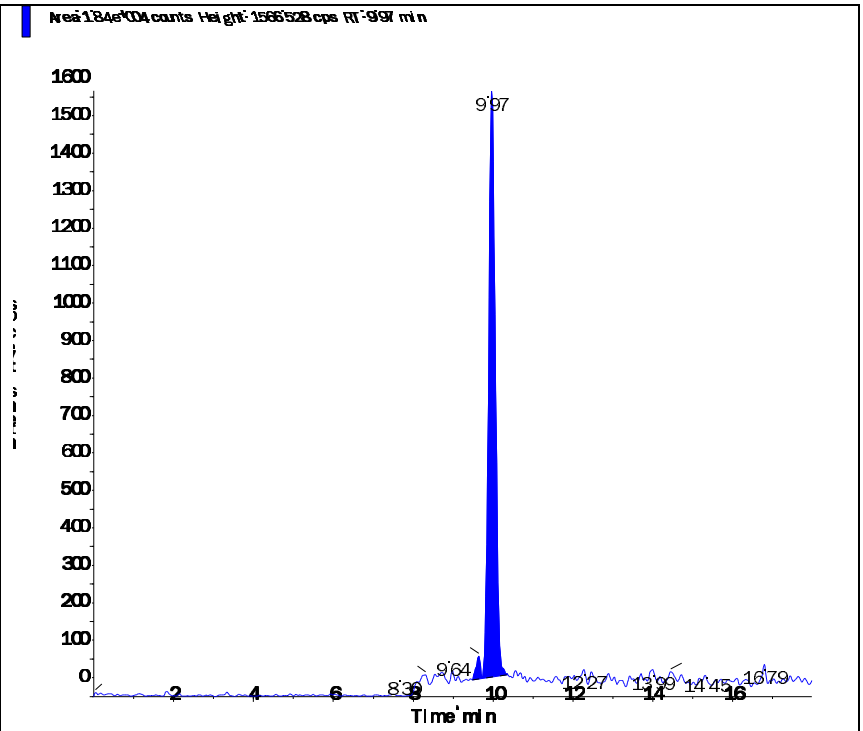

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.0934 ng/ml
Area Ratio:	0.012
Sample Type:	(Standard)

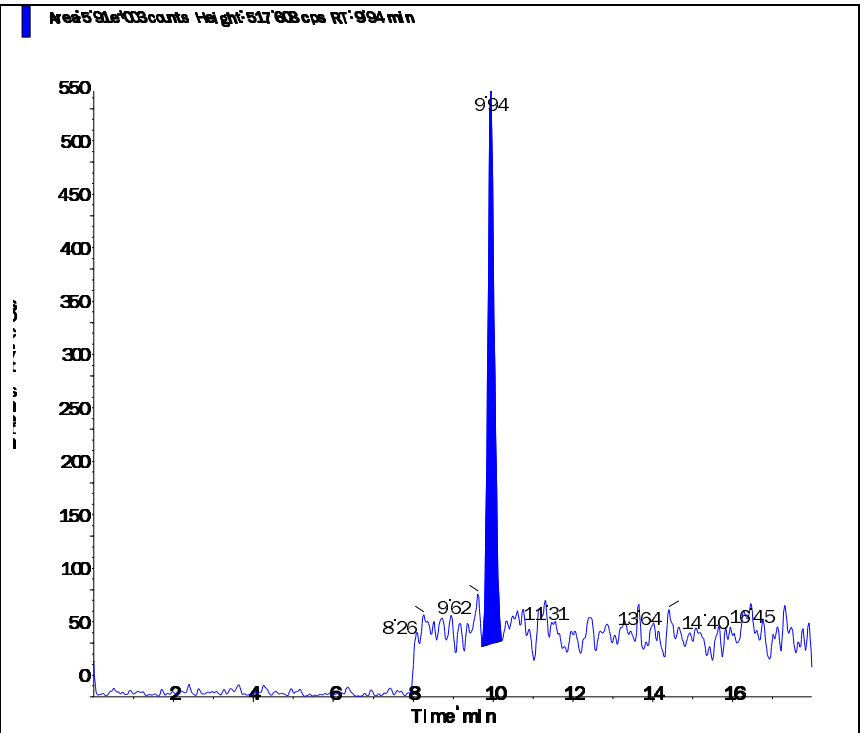

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Data File	LM33569.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/2/2016 9:12:17 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-03 STD (0.2 ug/L)	**Injection Vial**	53.00
Data File	LM33569.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 9:12:17 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559340-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.990e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.700e+04	9.99	0.20	0.199
Perchlorate conf	1.190e+04	9.98	0.20	0.197

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

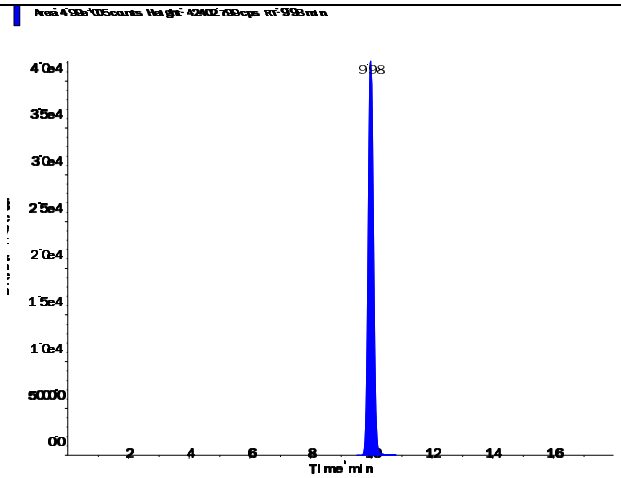

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.99 (9.94) min
Calculated conc:	0.199 ng/ml
Area Ratio:	0.074
Sample Type:	(Standard)

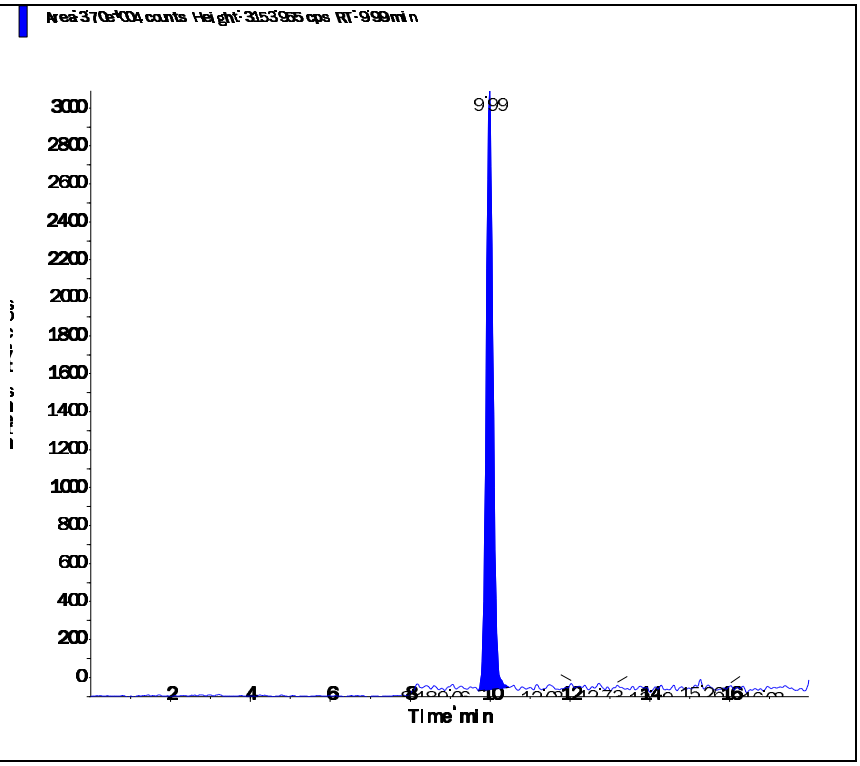

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.98 (9.92) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

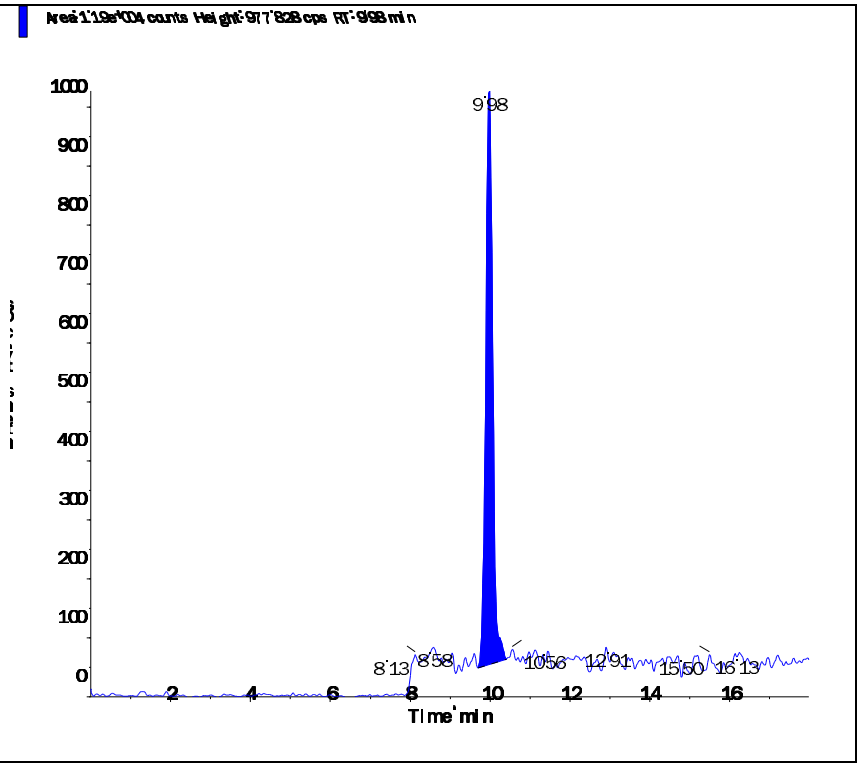

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Data File	LM33570.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/2/2016 9:31:14 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-04 STD (0.5 ug/L)	**Injection Vial**	54.00
Data File	LM33570.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 9:31:14 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559340-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.920e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.900e+04	10.00	0.50	0.505
Perchlorate conf	3.040e+04	9.98	0.50	0.536

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

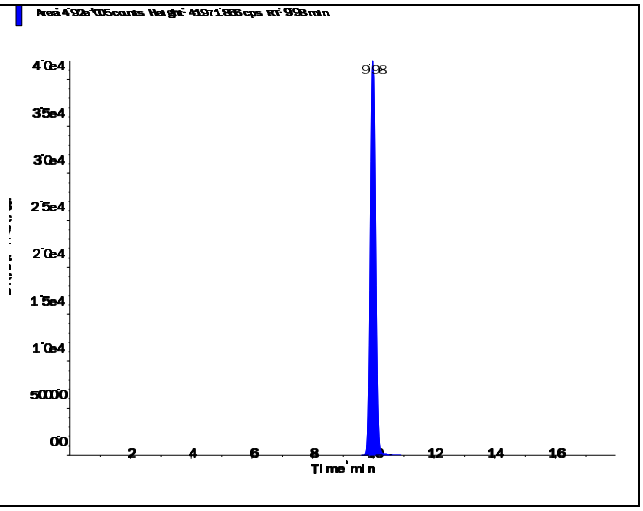

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.00 (9.94) min
Calculated conc:	0.505 ng/ml
Area Ratio:	0.181
Sample Type:	(Standard)

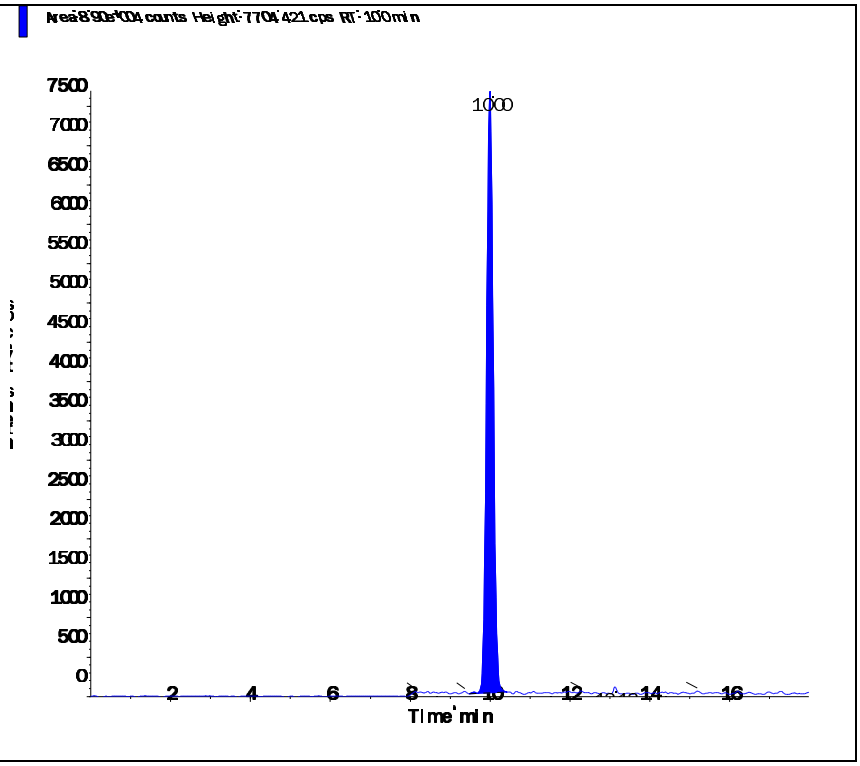

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.98 (9.92) min
Calculated conc:	0.536 ng/ml
Area Ratio:	0.062
Sample Type:	(Standard)

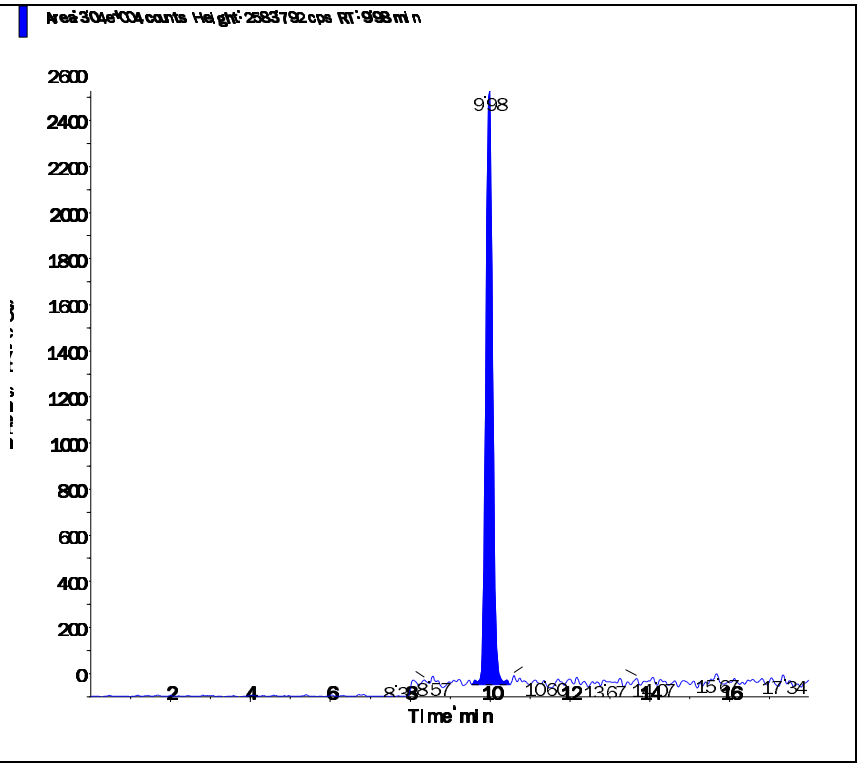

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Data File	LM33571.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/2/2016 9:50:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-05 STD (1.0 ug/L)	**Injection Vial**	55.00
Data File	LM33571.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 9:50:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559340-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.010e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.830e+05	9.99	1.00	1.03
Perchlorate conf	5.680e+04	9.98	1.00	0.995

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

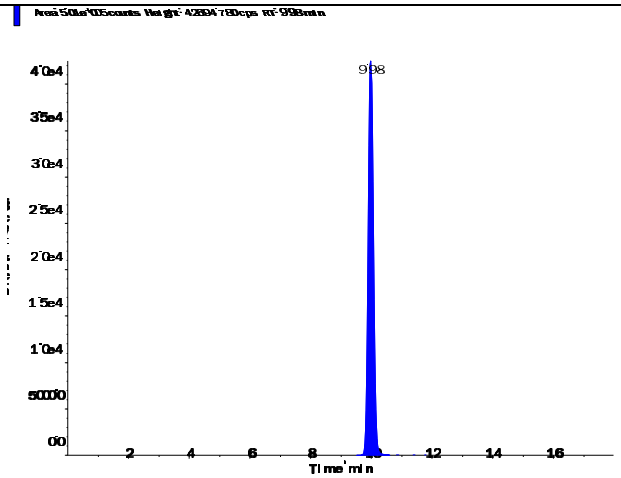

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.99 (9.94) min Calculated conc: 1.03 ng/ml Area Ratio: 0.366 Sample Type: (Standard)	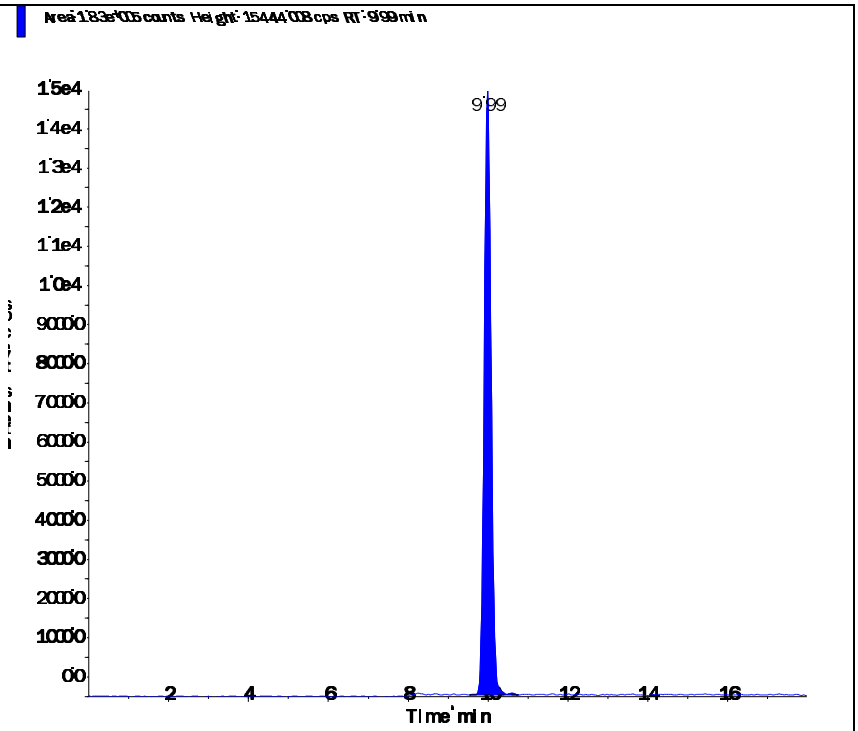
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.98 (9.92) min Calculated conc: 0.995 ng/ml Area Ratio: 0.113 Sample Type: (Standard)	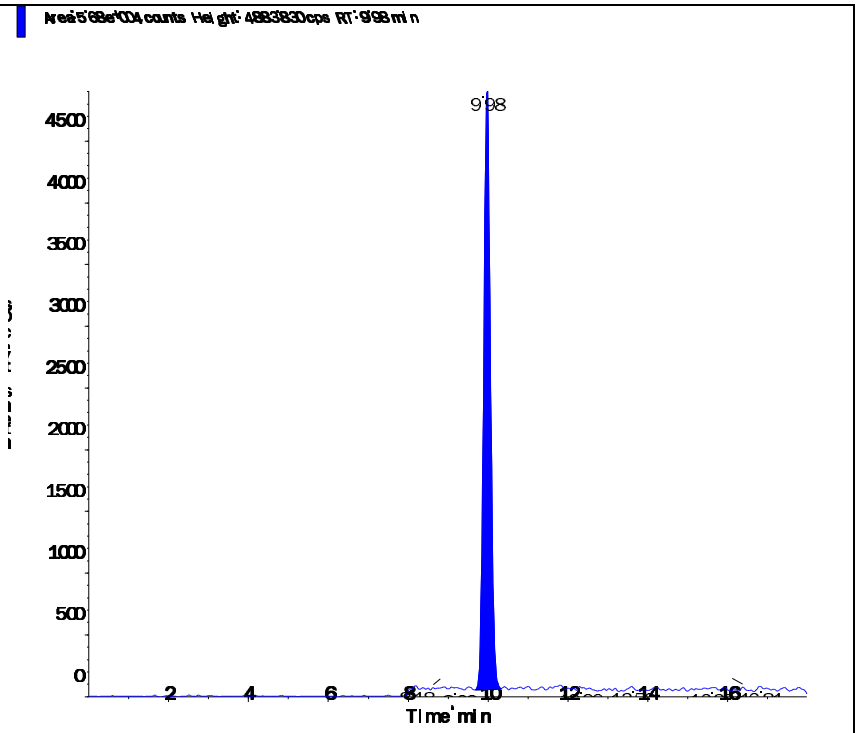

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Data File	LM33572.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/2/2016 10:09:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-06 STD (2.0 ug/L)	**Injection Vial**	56.00
Data File	LM33572.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 10:09:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559340-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.99	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.630e+05	10.00	2.00	2.02
Perchlorate conf	1.170e+05	9.99	2.00	2.01

O18LP (Internal Standard)

RT (Exp. RT): 9.99(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

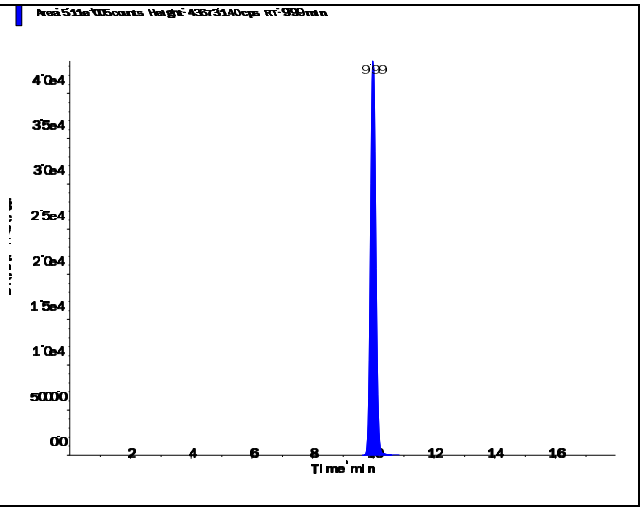

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.00 (9.94) min
Calculated conc:	2.02 ng/ml
Area Ratio:	0.711
Sample Type:	(Standard)

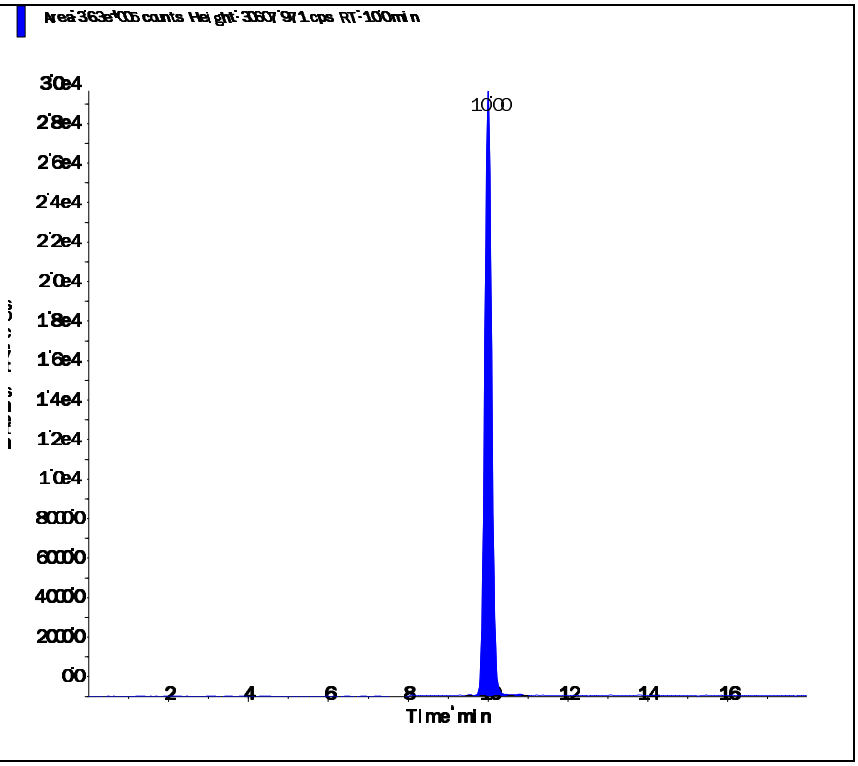

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.99 (9.92) min
Calculated conc:	2.01 ng/ml
Area Ratio:	0.228
Sample Type:	(Standard)

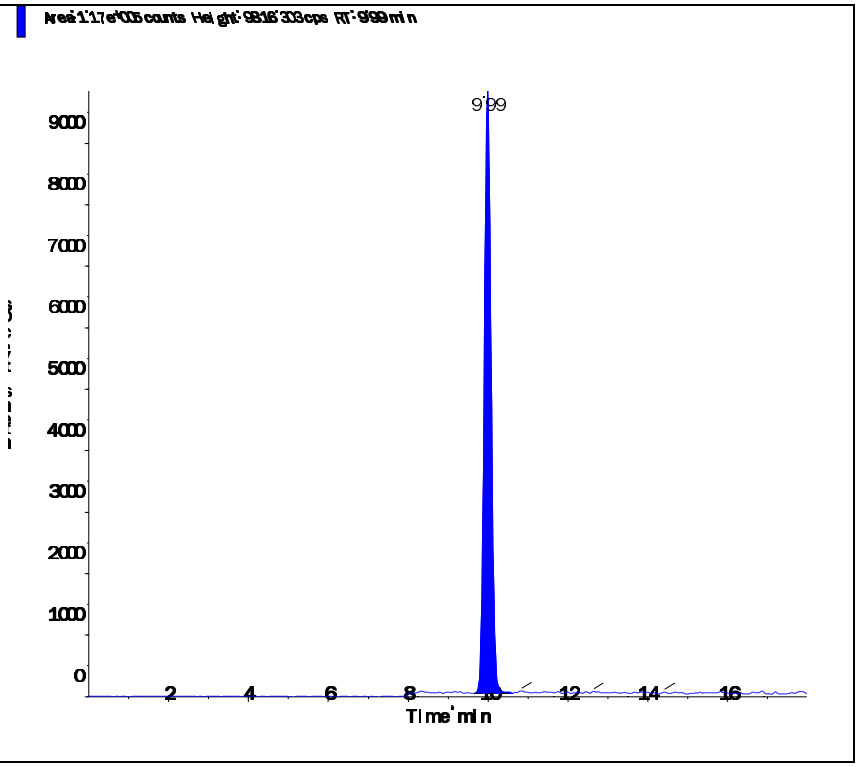

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Data File	LM33573.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/2/2016 10:28:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-07 STD (5.0 ug/L)	**Injection Vial**	57.00
Data File	LM33573.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 10:28:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559340-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.900e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.710e+05	9.98	5.00	5.07
Perchlorate conf	2.820e+05	9.97	5.00	5.11

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

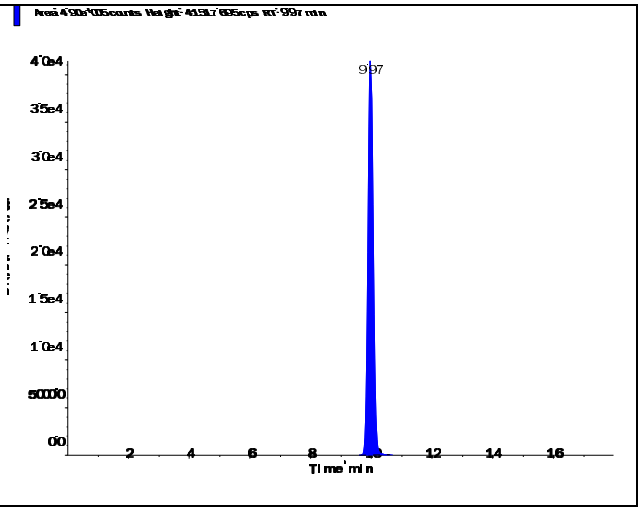

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.98 (9.94) min Calculated conc: 5.07 ng/ml Area Ratio: 1.779 Sample Type: (Standard)	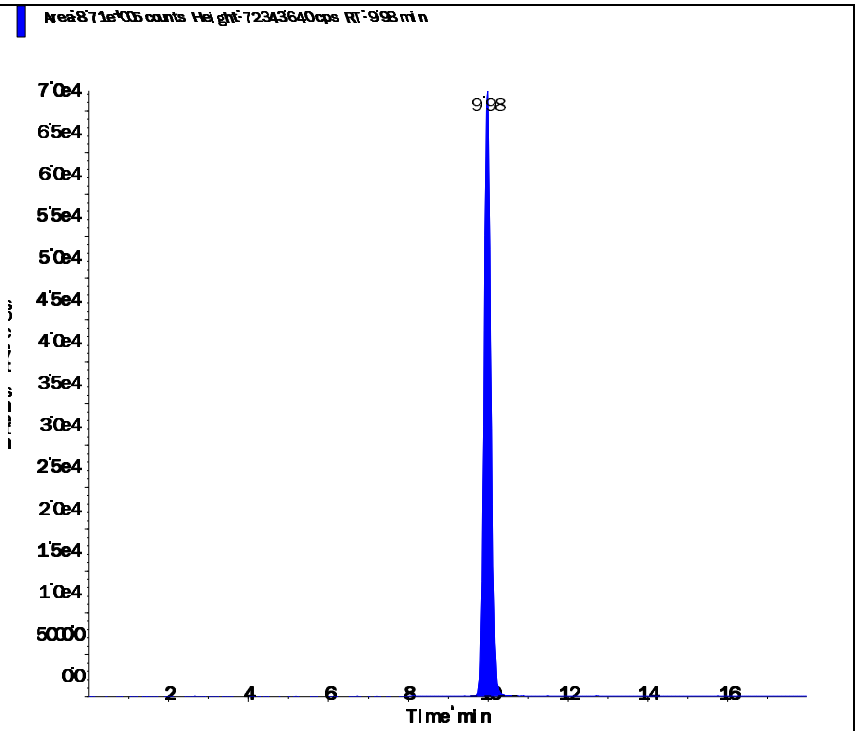
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.97 (9.92) min Calculated conc: 5.11 ng/ml Area Ratio: 0.576 Sample Type: (Standard)	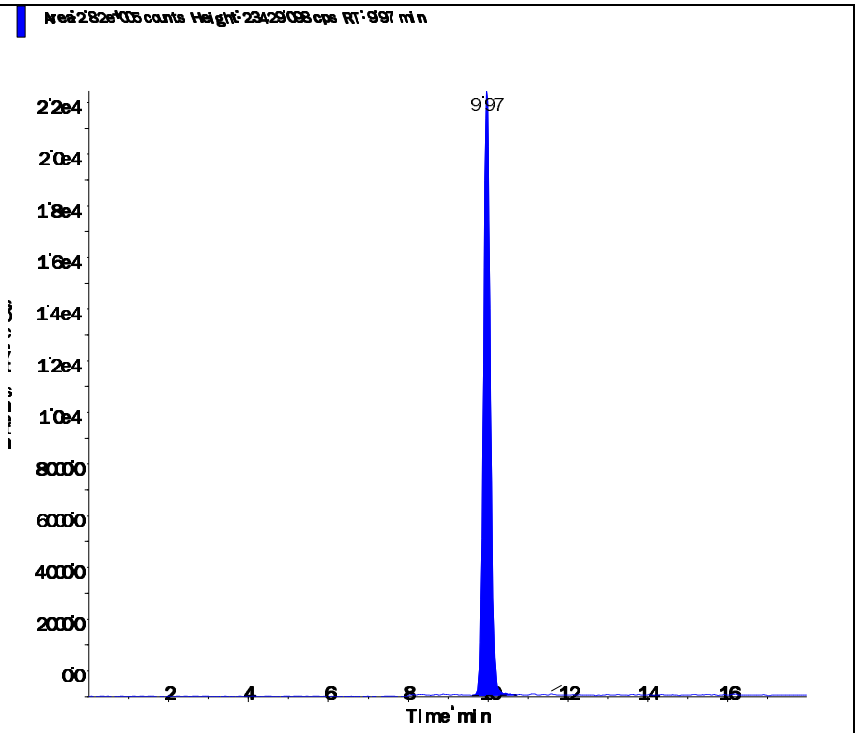

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Data File	LM33574.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/2/2016 10:46:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-08 STD (10 ug/L)	**Injection Vial**	58.00
Data File	LM33574.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 10:46:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559340-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.650e+06	9.98	10.00	9.87
Perchlorate conf	5.300e+05	9.96	10.00	9.85

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

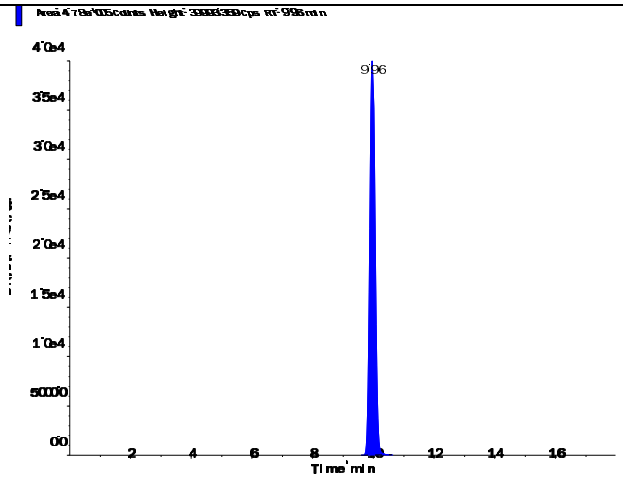

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.98 (9.94) min
Calculated conc:	9.87 ng/ml
Area Ratio:	3.458
Sample Type:	(Standard)

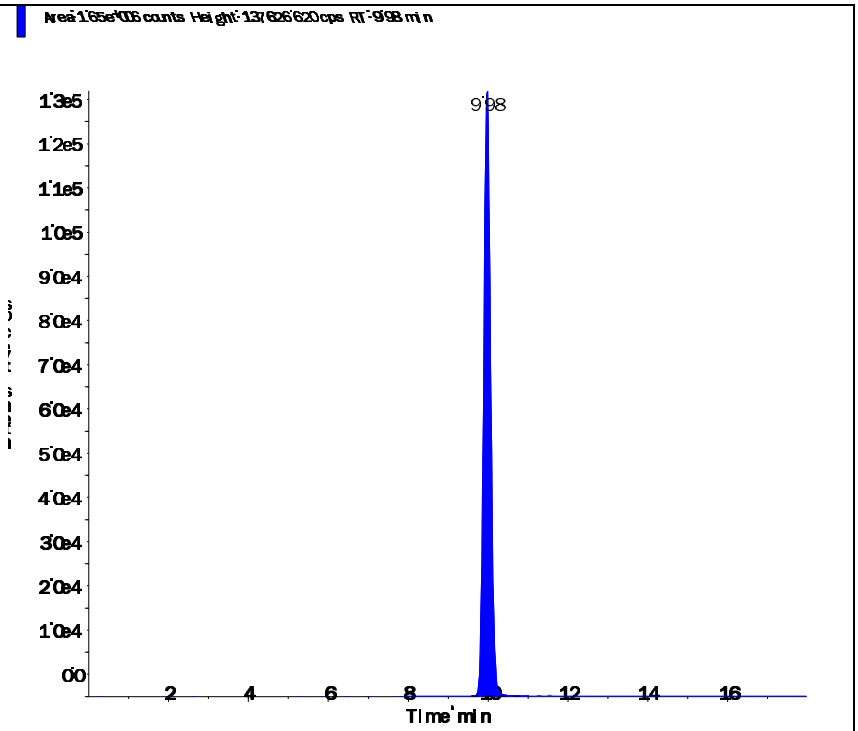

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.96 (9.92) min
Calculated conc:	9.85 ng/ml
Area Ratio:	1.11
Sample Type:	(Standard)

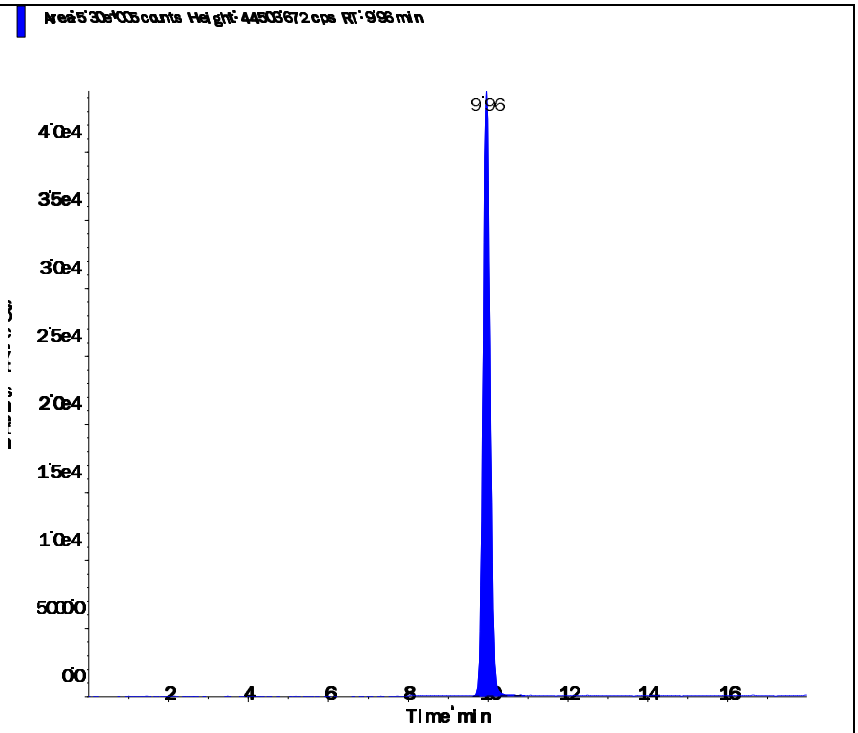

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Data File	LM33575.wiff	**Result Table**	030216_WTD.rdb
Acquisition Date	3/2/2016 11:05:52 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-09 SSCV (1.0 ug/L)	**Injection Vial**	59.00
Data File	LM33575.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 11:05:52 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030216_WTD.rdb
Sample ID	WG559340-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.200e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.900e+05	9.98	1.00	1.03
Perchlorate conf	6.220e+04	9.97	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

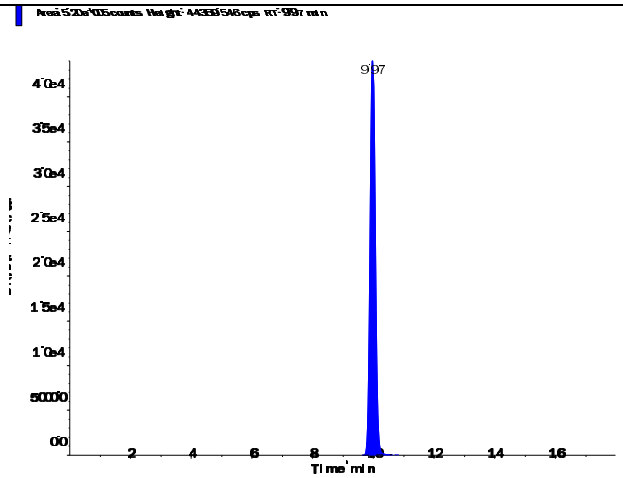

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.98 (9.94) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.366
Sample Type:	(Quality Control)

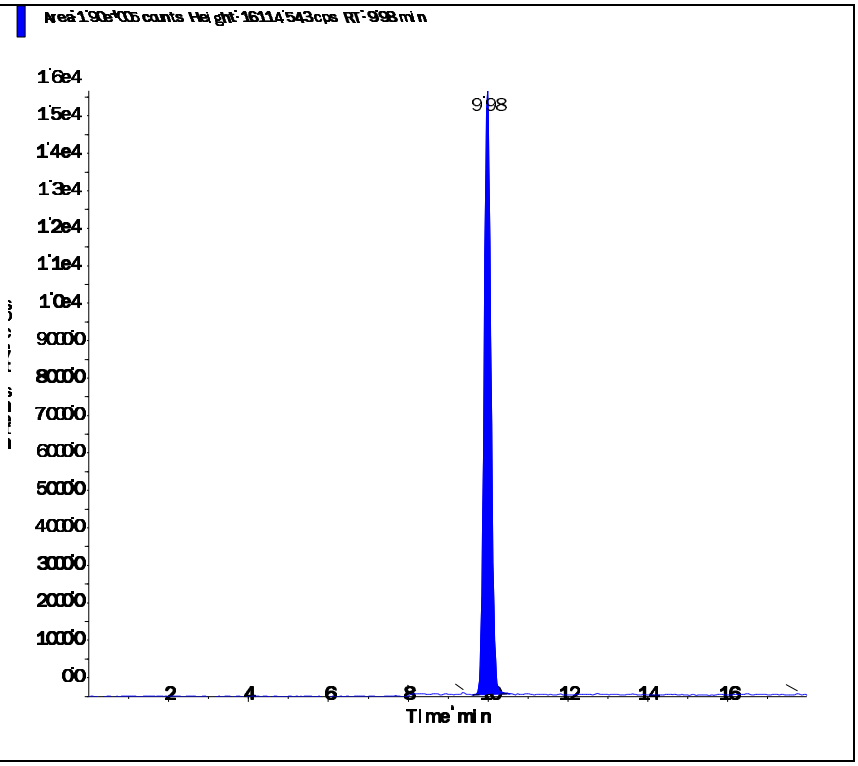

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.97 (9.92) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.12
Sample Type:	(Quality Control)

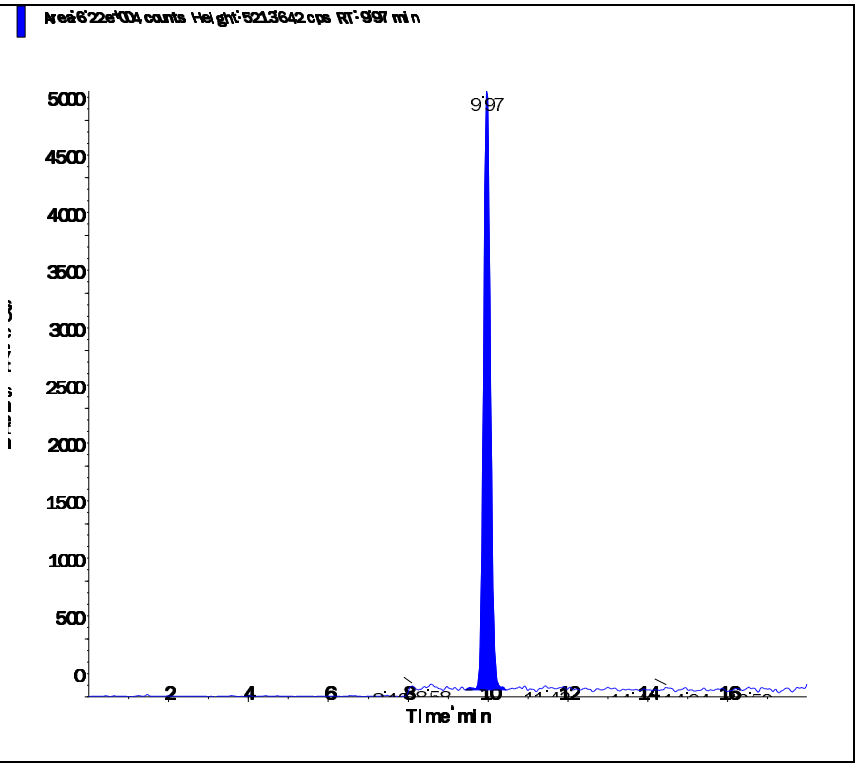

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Data File	LM33711.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 4:57:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559812-02 CCV (1.0ug/L)	**Injection Vial**	2.00
Data File	LM33711.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 4:57:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559812-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.160e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.770e+05	9.95	1.00	0.969
Perchlorate conf	5.620e+04	9.94	1.00	0.954

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

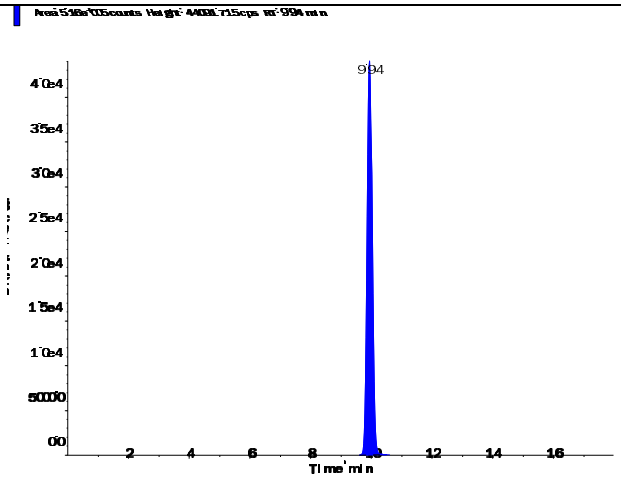

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	0.969 ng/ml
Area Ratio:	0.343
Sample Type:	(Quality Control)

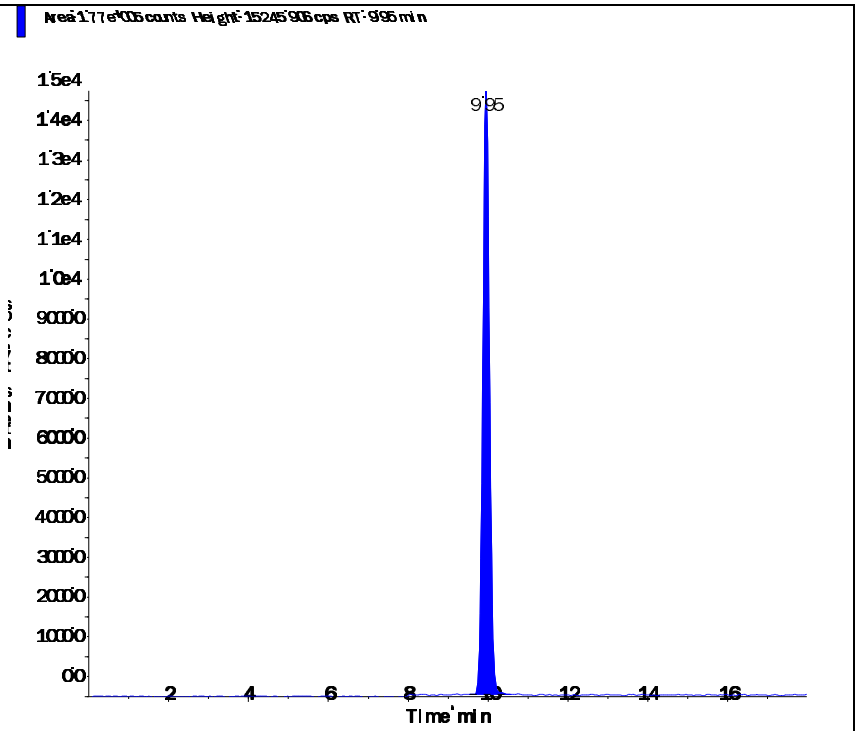

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.954 ng/ml
Area Ratio:	0.109
Sample Type:	(Quality Control)

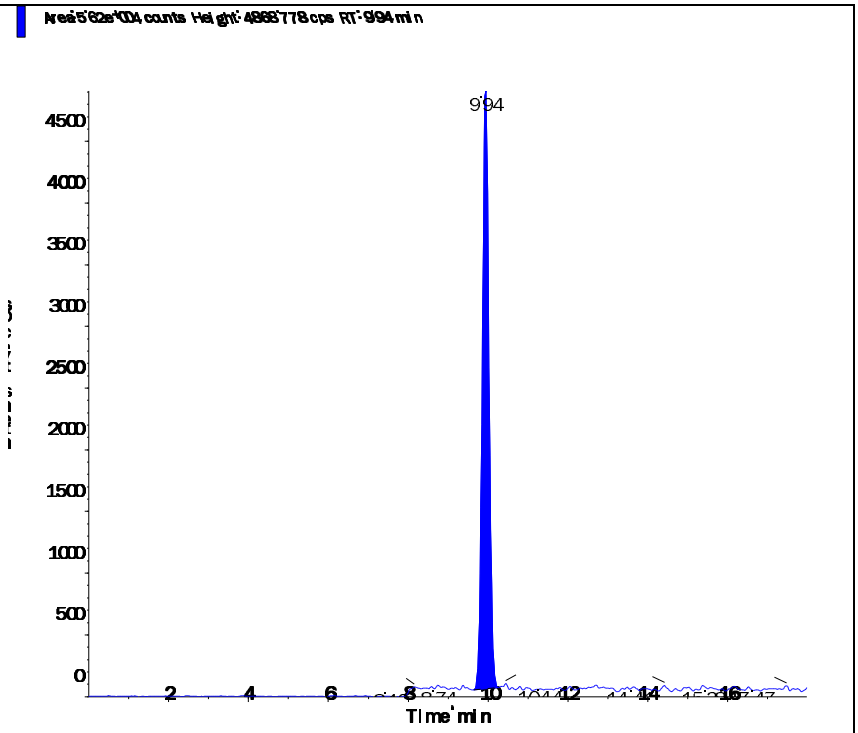

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Data File	LM33723.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 8:44:26 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559812-03 CCV (1.0ug/L)	**Injection Vial**	2.00
Data File	LM33723.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 8:44:26 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559812-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.800e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.000e+05	9.92	1.00	0.975
Perchlorate conf	6.220e+04	9.90	1.00	0.939

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

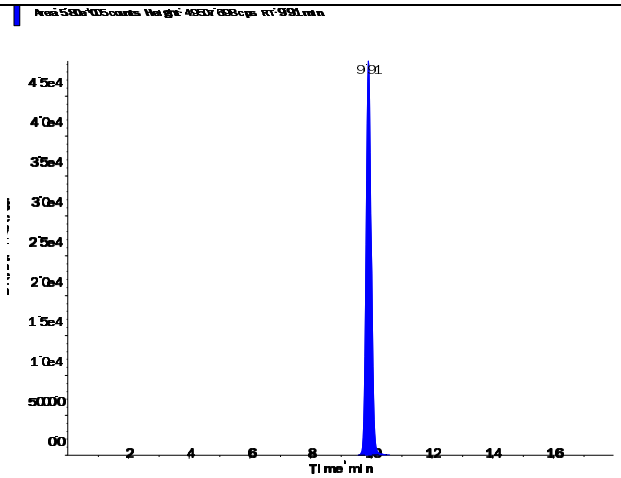

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.92 (9.94) min Calculated conc: 0.975 ng/ml Area Ratio: 0.345 Sample Type: (Quality Control)	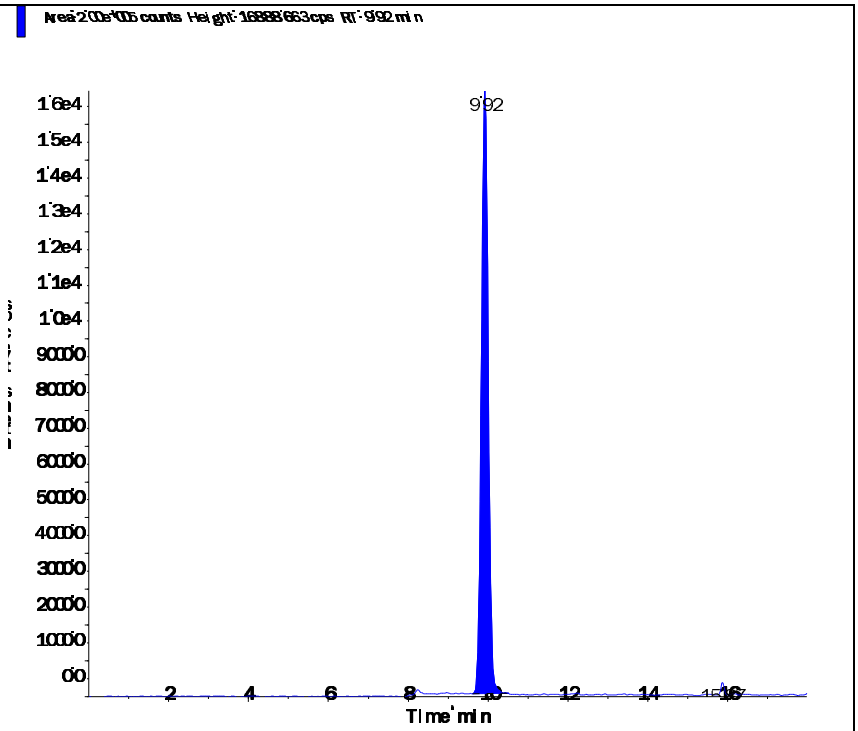
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.90 (9.92) min Calculated conc: 0.939 ng/ml Area Ratio: 0.107 Sample Type: (Quality Control)	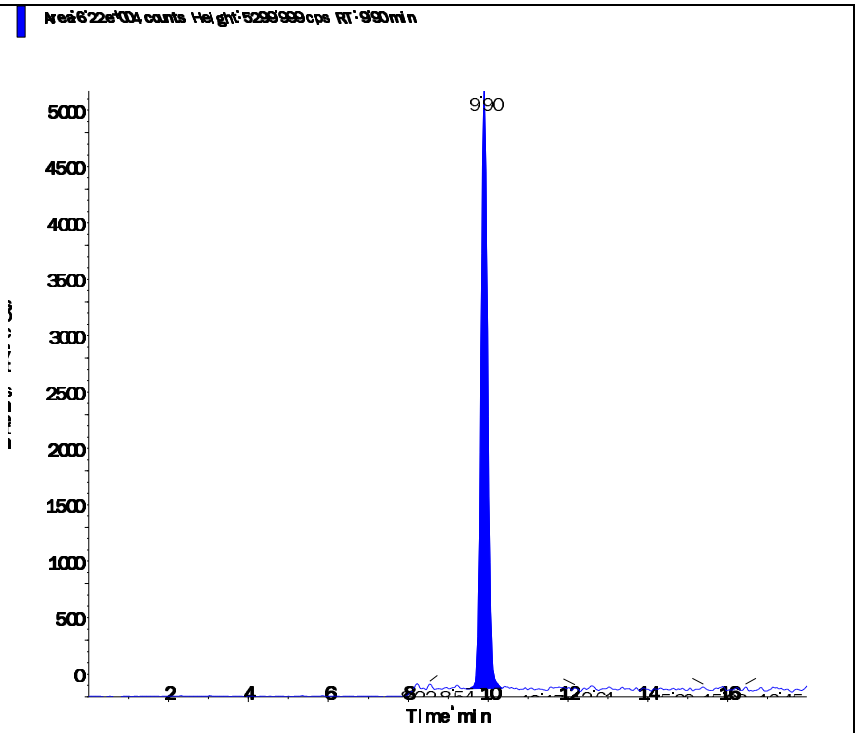

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Data File	LM33733.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 11:53:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559812-05 CCV (1.0ug/L)	**Injection Vial**	2.00
Data File	LM33733.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 11:53:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559812-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.630e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.950e+05	9.94	1.00	0.978
Perchlorate conf	6.150e+04	9.92	1.00	0.958

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

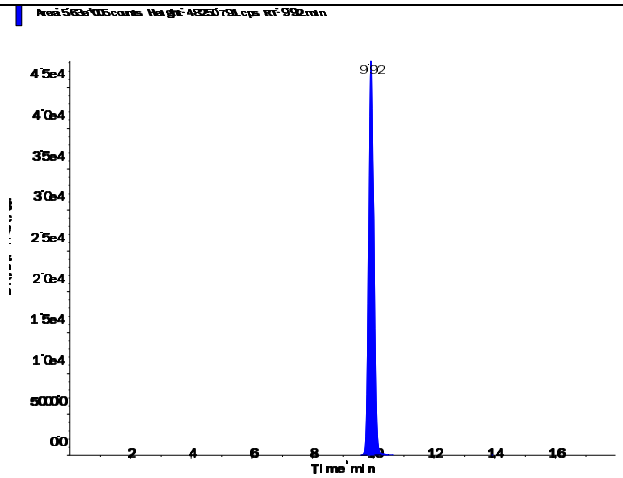

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.978 ng/ml
Area Ratio:	0.346
Sample Type:	(Quality Control)

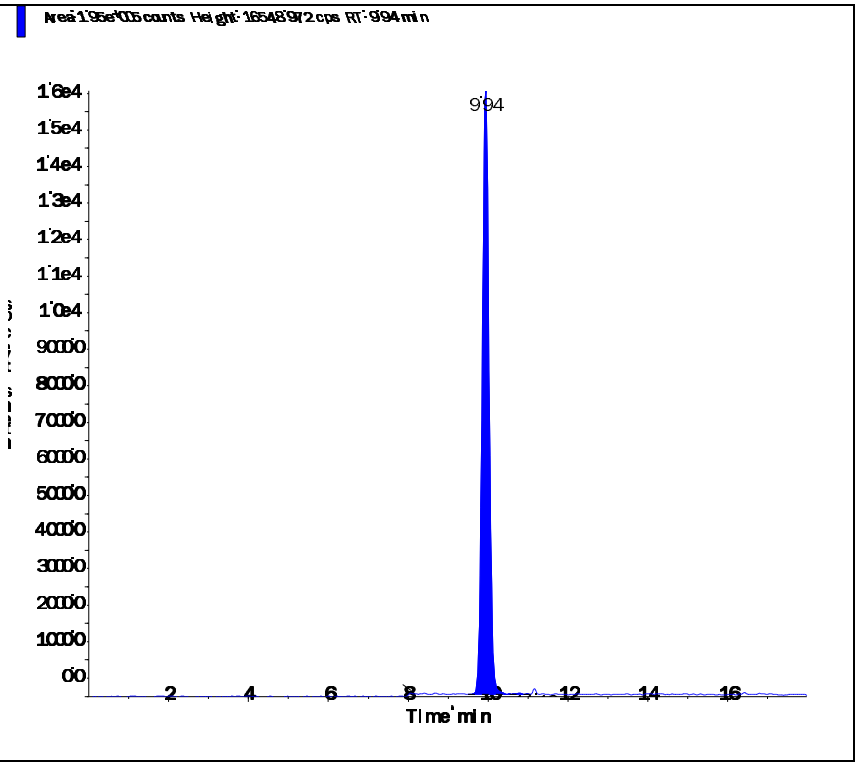

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	0.958 ng/ml
Area Ratio:	0.109
Sample Type:	(Quality Control)

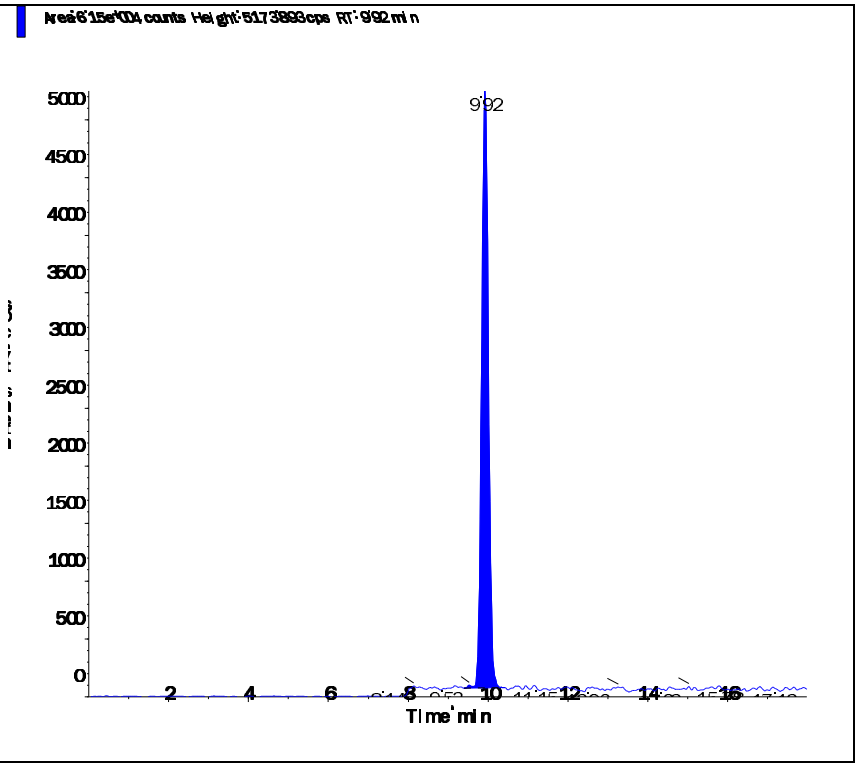

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Data File	LM33737.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/7/2016 10:13:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559899-02 CCV (1.0ug/L)	**Injection Vial**	2.00
Data File	LM33737.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 10:13:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559899-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.590e+05	9.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.980e+05	9.90	1.00	0.999
Perchlorate conf	6.430e+04	9.89	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.90(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

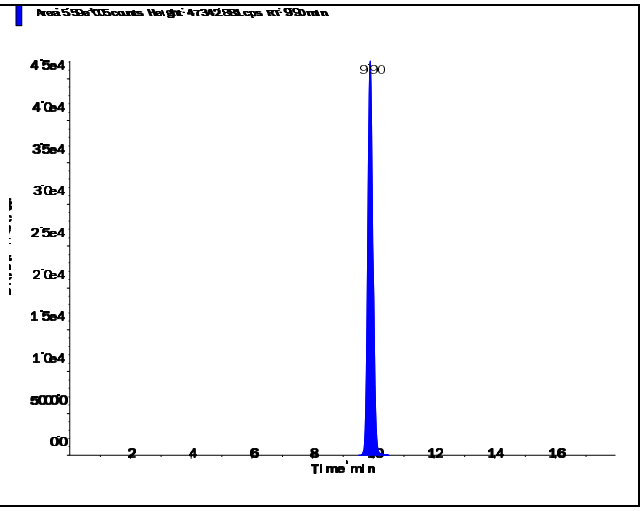

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.90 (9.94) min Calculated conc: 0.999 ng/ml Area Ratio: 0.354 Sample Type: (Quality Control)	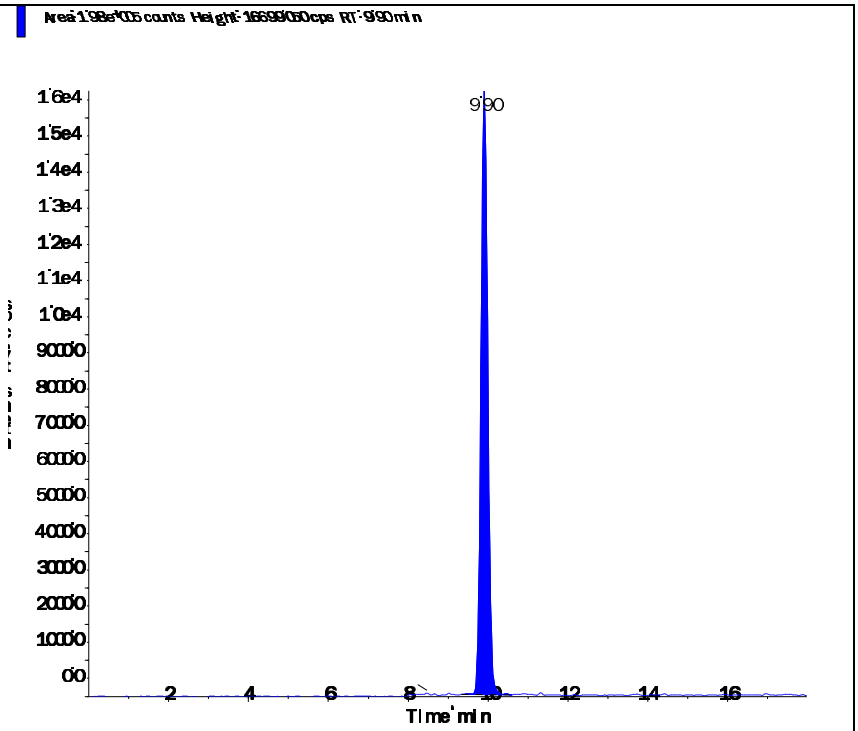
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.89 (9.92) min Calculated conc: 1.01 ng/ml Area Ratio: 0.115 Sample Type: (Quality Control)	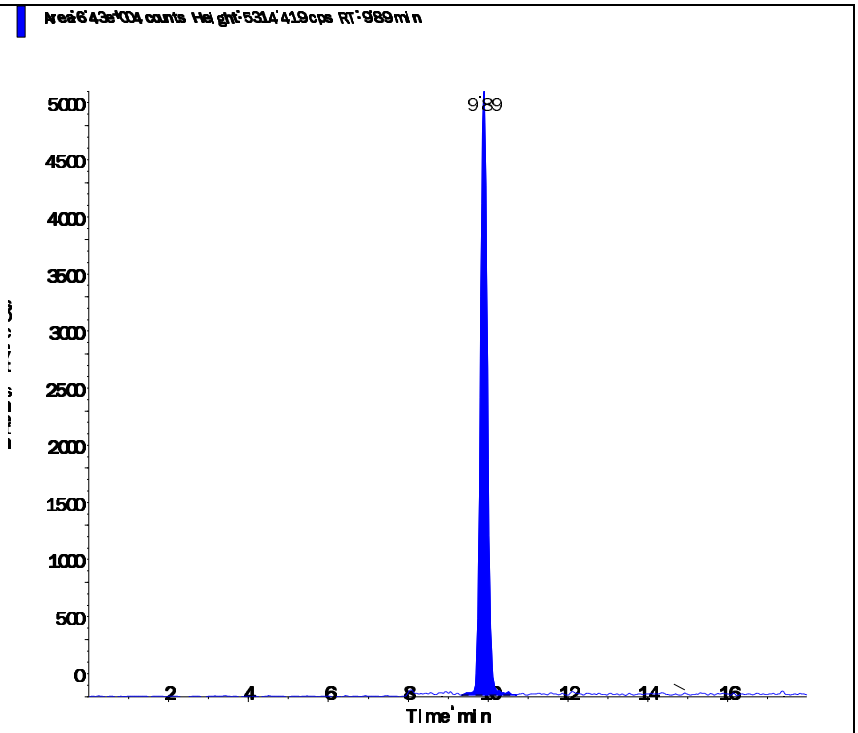

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Data File	LM33745.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/7/2016 12:45:07 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559899-03 CCV (1.0ug/L)	**Injection Vial**	2.00
Data File	LM33745.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 12:45:07 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559899-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.420e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.830e+05	9.93	1.00	0.951
Perchlorate conf	6.020e+04	9.92	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

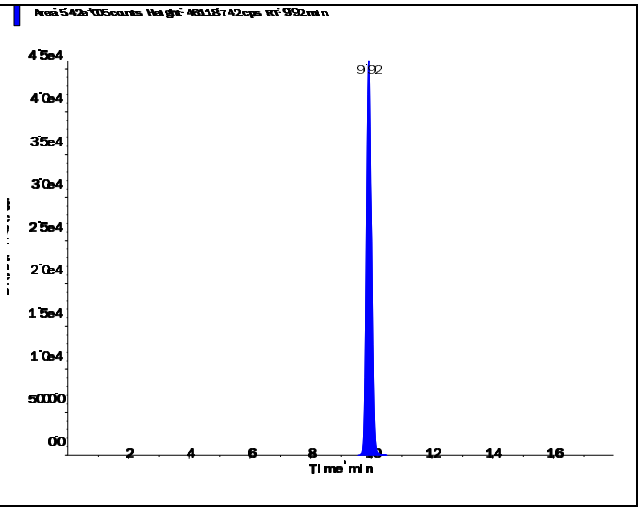

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.93 (9.94) min Calculated conc: 0.951 ng/ml Area Ratio: 0.337 Sample Type: (Quality Control)	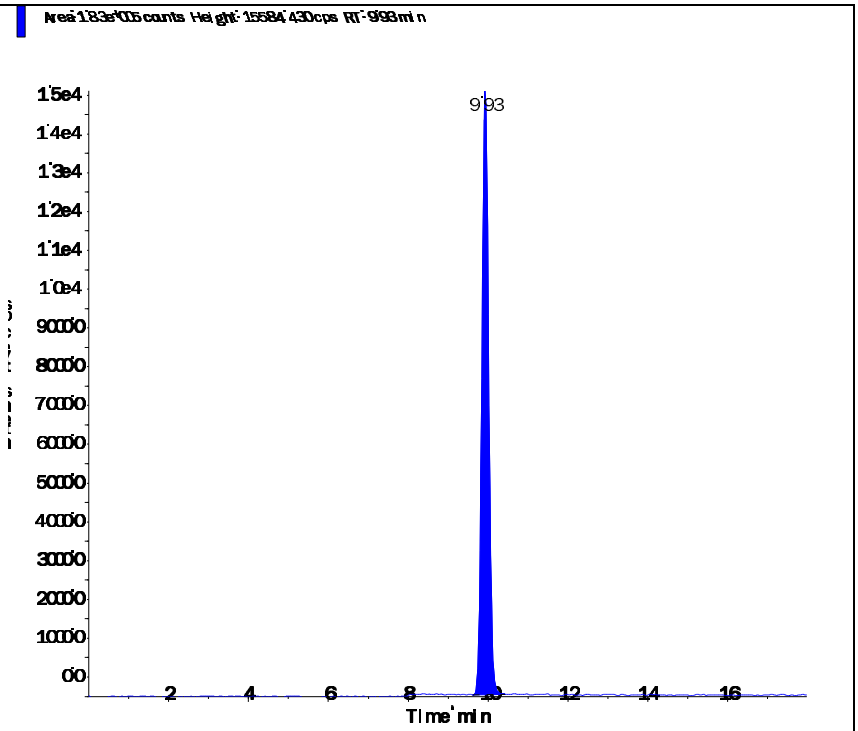
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.92 (9.92) min Calculated conc: 0.973 ng/ml Area Ratio: 0.111 Sample Type: (Quality Control)	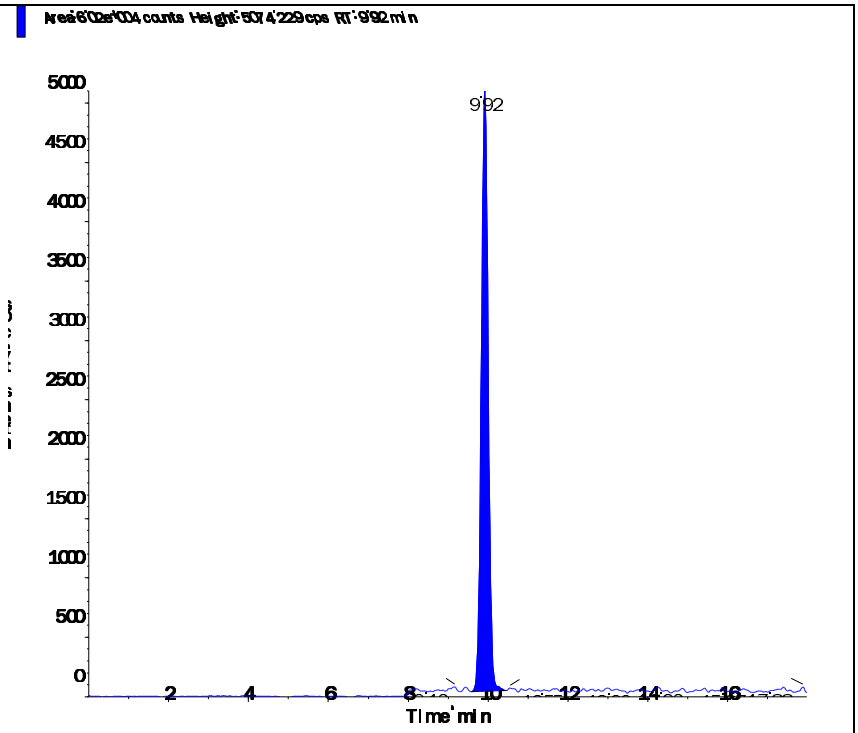

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Data File	LM33712.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 5:16:08 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559808-07 MRL (2.0ug/kg)	**Injection Vial**	3.00
Data File	LM33712.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 5:16:08 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559808-07	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.340e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.890e+04	9.96	N/A	0.196
Perchlorate conf	1.290e+04	9.94	N/A	0.201

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

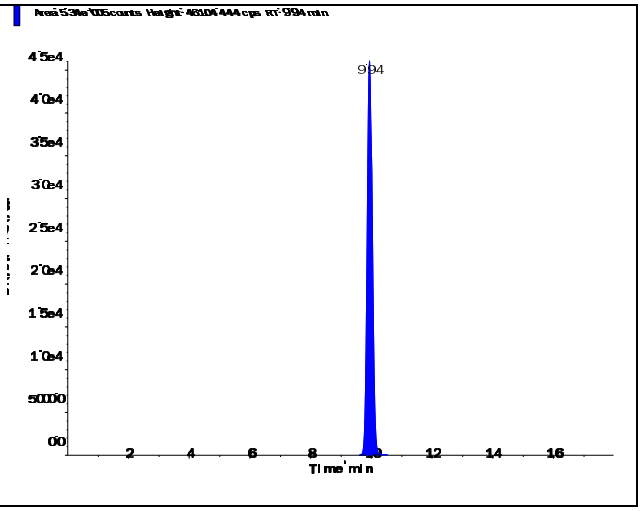

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	0.196 ng/ml
Area Ratio:	0.073
Sample Type:	(Unknown)

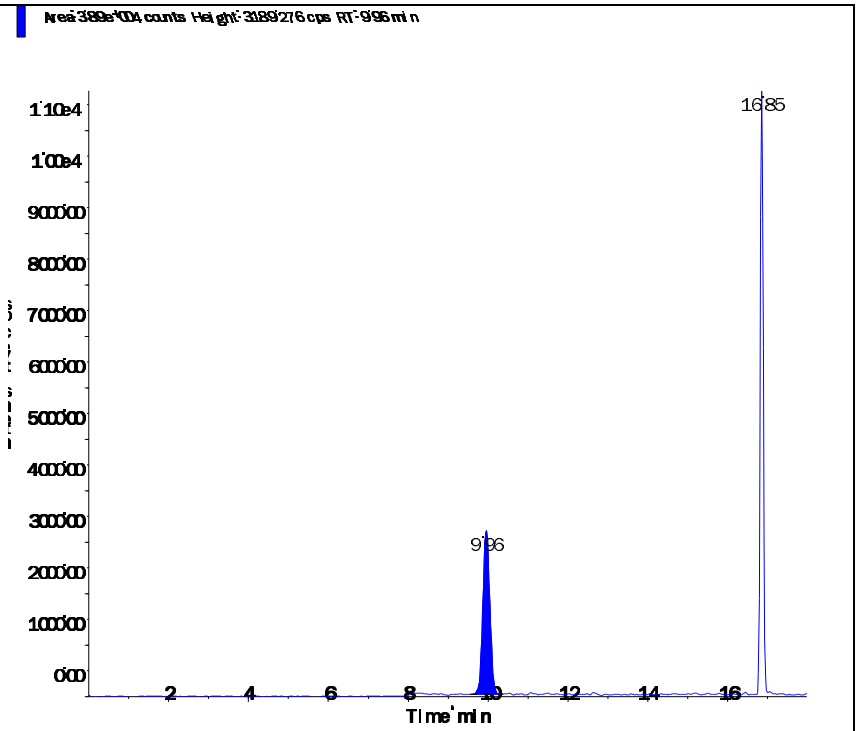

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

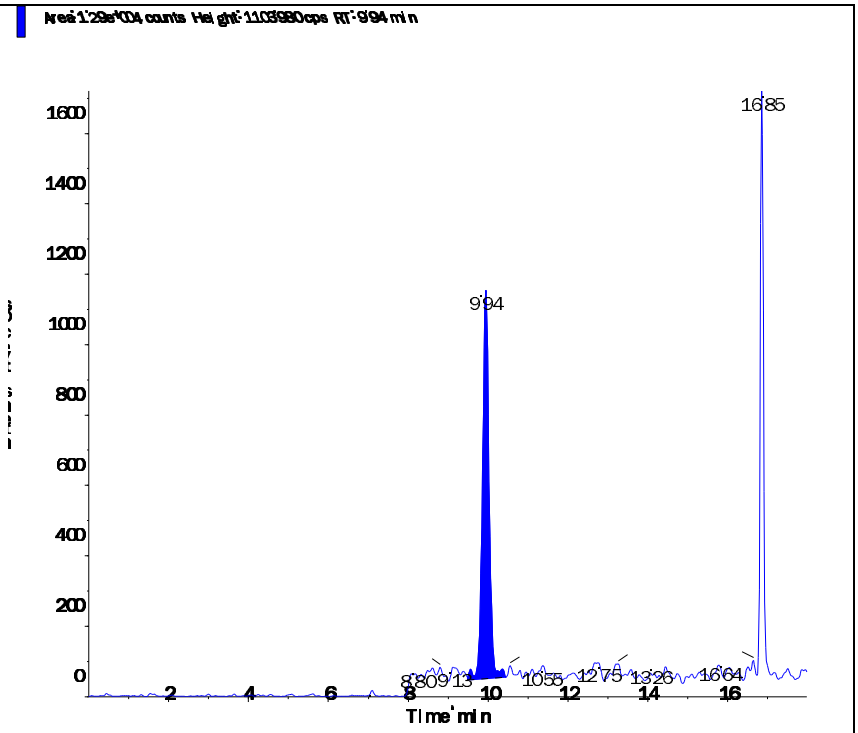

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Data File	LM33724.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 9:03:23 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559808-08 MRL (2.0ug/kg)	**Injection Vial**	3.00
Data File	LM33724.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 9:03:23 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559808-08	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.820e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.260e+04	9.94	N/A	0.197
Perchlorate conf	1.340e+04	9.92	N/A	0.191

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

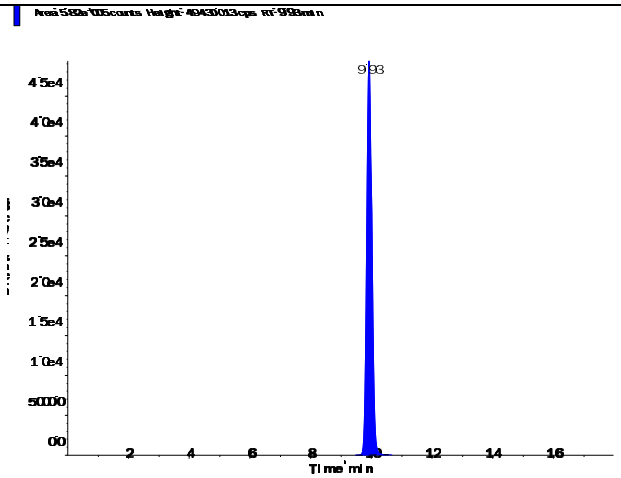

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.073
Sample Type:	(Unknown)

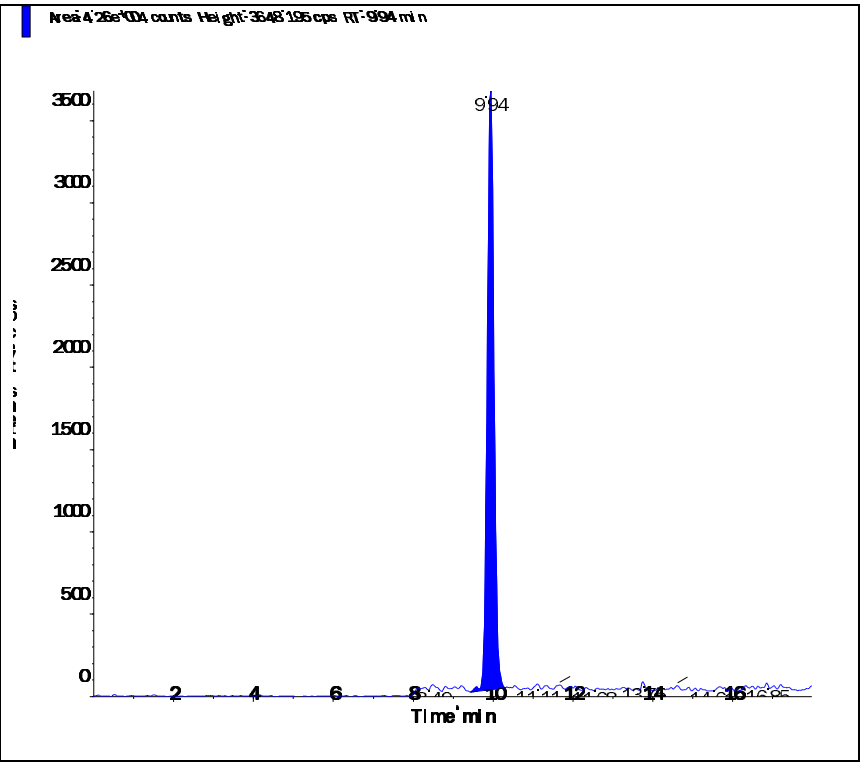

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	0.191 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

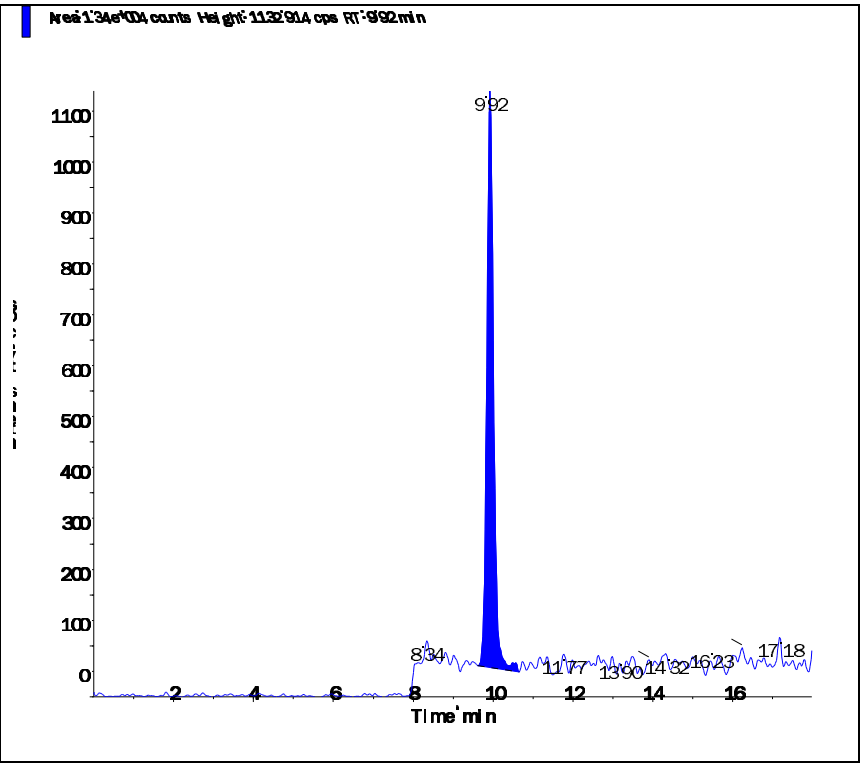

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Printed: 3/7/2016 5:49 PM

Data File	LM33734.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/5/2016 12:12:48 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559808-09 MRL (2.0ug/kg)	**Injection Vial**	3.00
Data File	LM33734.wiff	**Injection Volume**	10.00
Acquisition Date	3/5/2016 12:12:48 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559808-09	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.690e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.140e+04	9.94	N/A	0.195
Perchlorate conf	1.260e+04	9.92	N/A	0.183

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

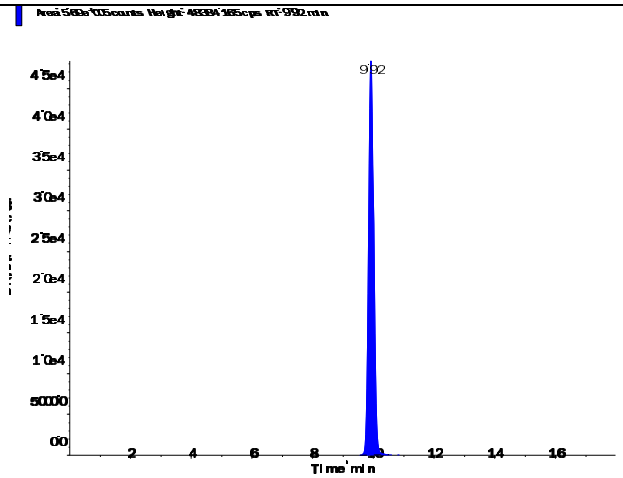

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.195 ng/ml
Area Ratio:	0.073
Sample Type:	(Unknown)

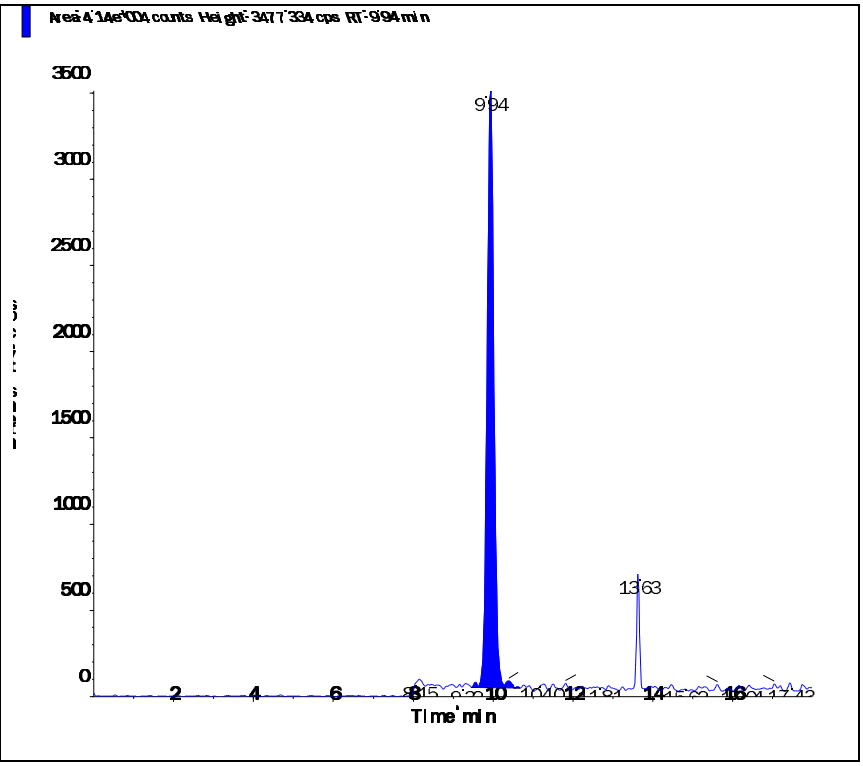

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	0.183 ng/ml
Area Ratio:	0.022
Sample Type:	(Unknown)

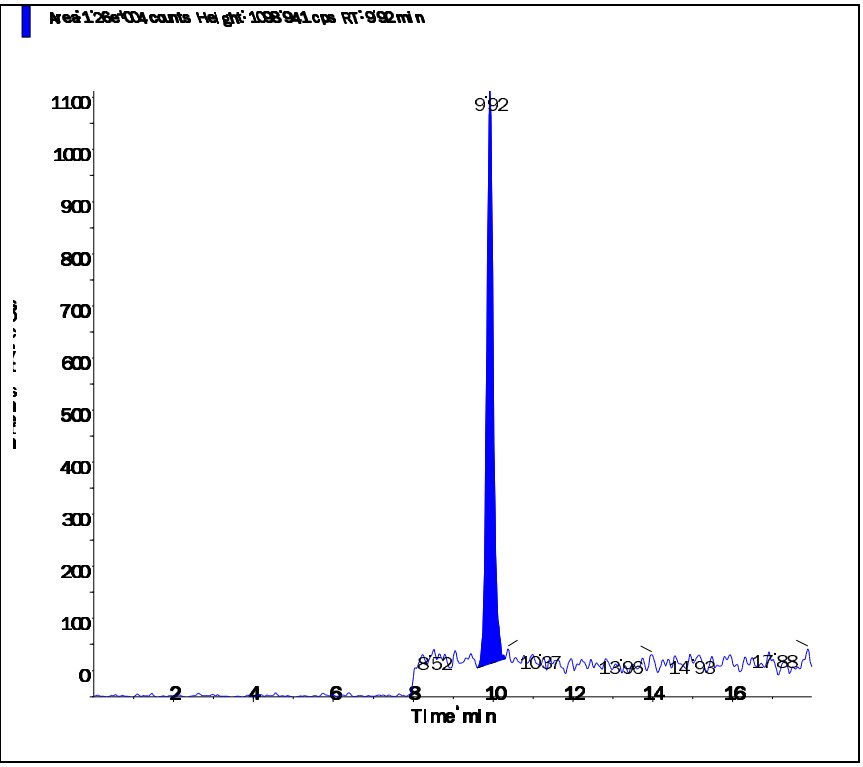

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Printed: 3/7/2016 5:50 PM

Data File	LM33738.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/7/2016 10:32:32 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559808-10 MRL (2.0ug/kg)	**Injection Vial**	3.00
Data File	LM33738.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 10:32:32 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559808-10	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.610e+05	9.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.940e+04	9.91	N/A	0.188
Perchlorate conf	1.350e+04	9.90	N/A	0.199

O18LP (Internal Standard)

RT (Exp. RT): 9.90(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

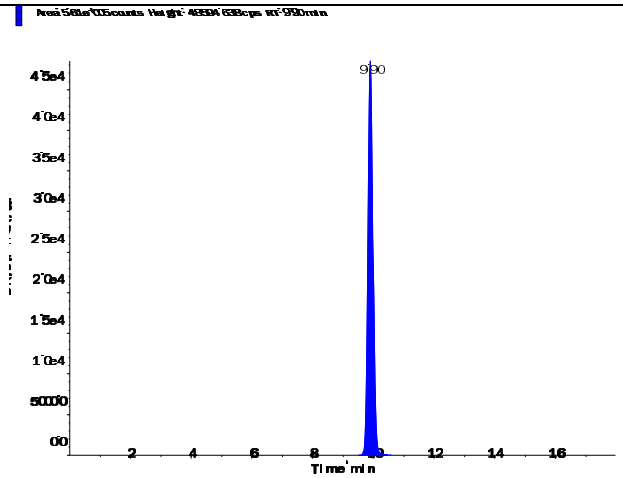

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.91 (9.94) min Calculated conc: 0.188 ng/ml Area Ratio: 0.07 Sample Type: (Unknown)	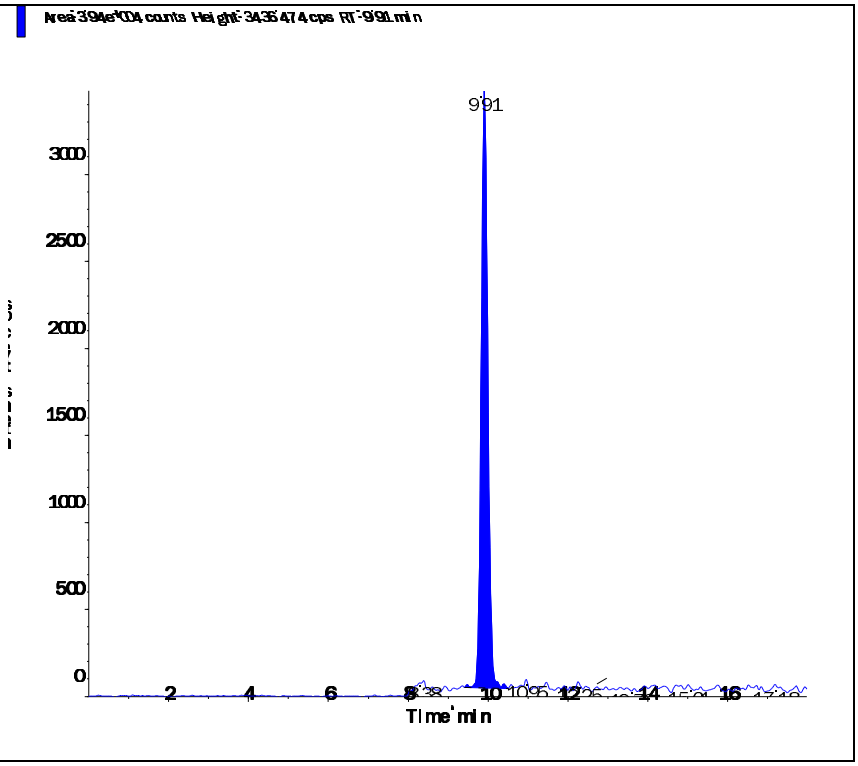
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.90 (9.92) min Calculated conc: 0.199 ng/ml Area Ratio: 0.024 Sample Type: (Unknown)	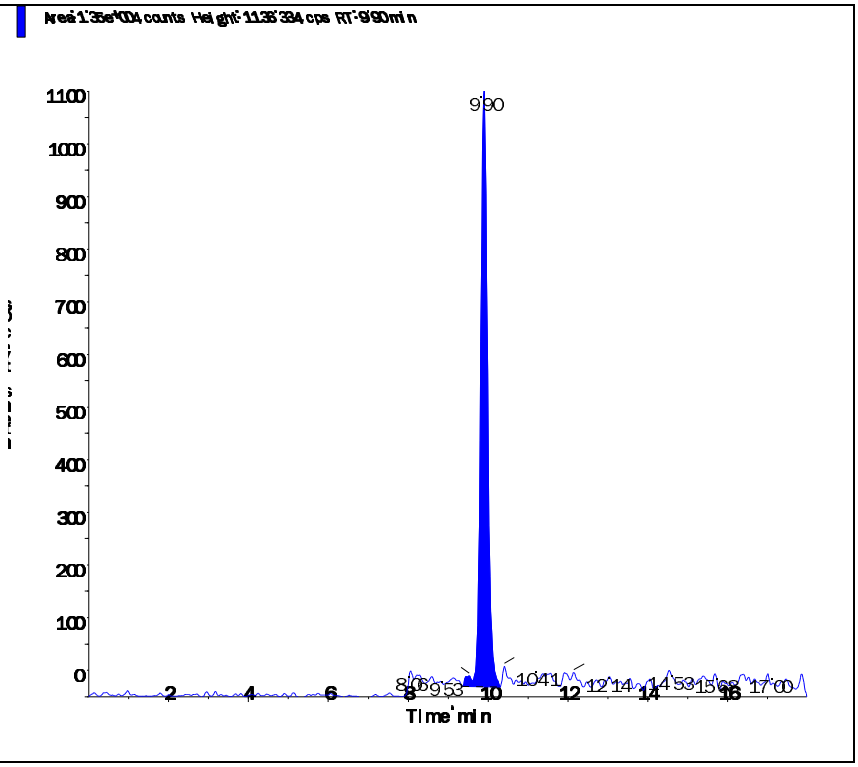

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Data File	LM33746.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/7/2016 1:04:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559808-11 MRL (2.0ug/kg)	**Injection Vial**	3.00
Data File	LM33746.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 1:04:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559808-11	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.270e+05	9.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.830e+04	9.91	N/A	0.195
Perchlorate conf	1.260e+04	9.90	N/A	0.198

O18LP (Internal Standard)

RT (Exp. RT): 9.90(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

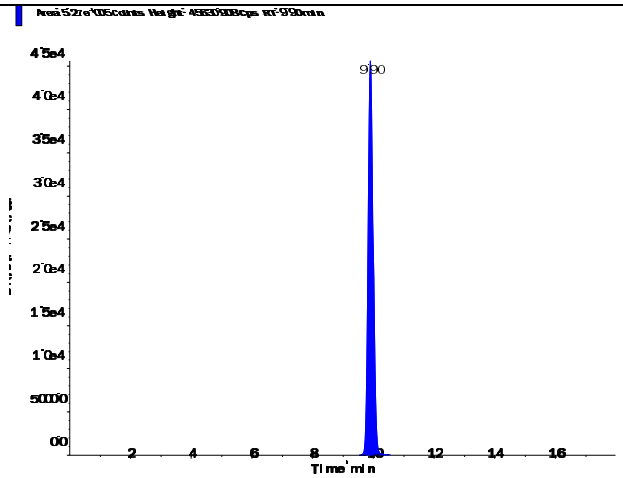

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.91 (9.94) min
Calculated conc:	0.195 ng/ml
Area Ratio:	0.073
Sample Type:	(Unknown)

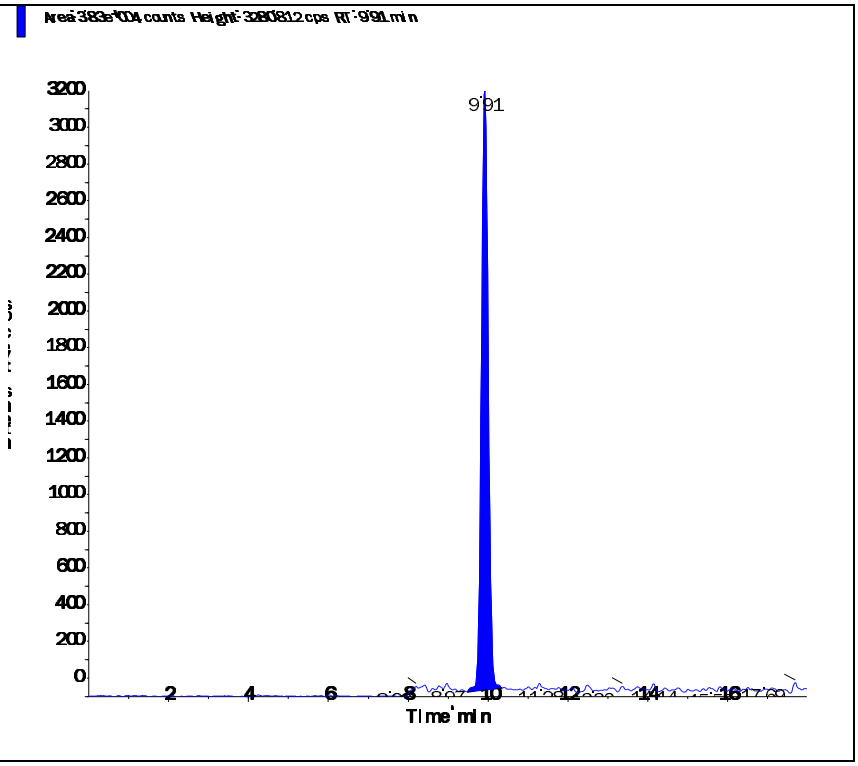

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.90 (9.92) min
Calculated conc:	0.198 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

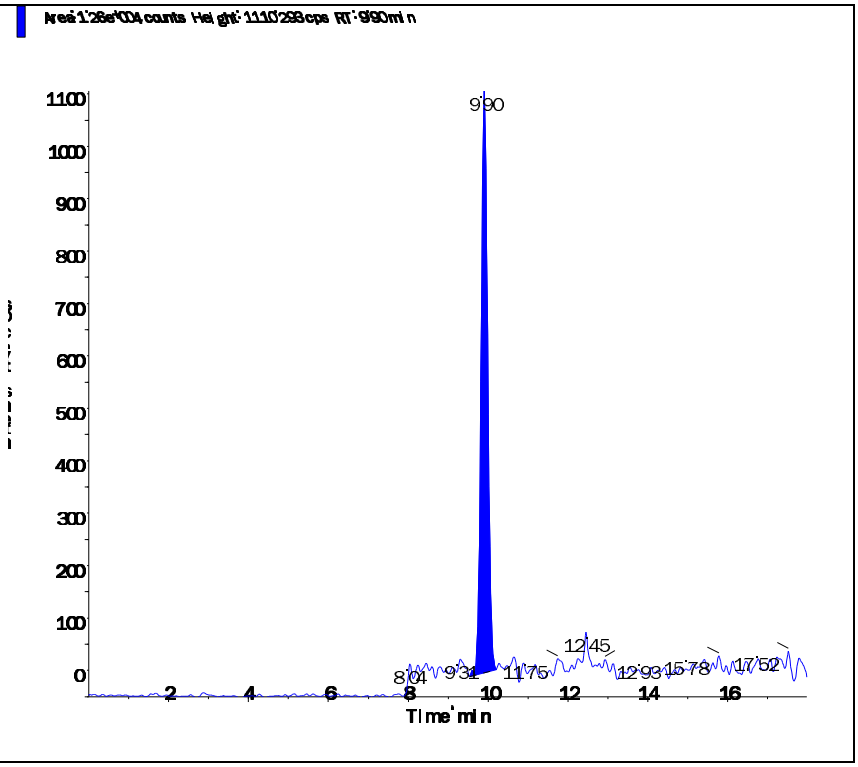

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Data File	LM33710.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 4:38:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559812-01 CCB	**Injection Vial**	1.00
Data File	LM33710.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 4:38:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559812-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.980e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

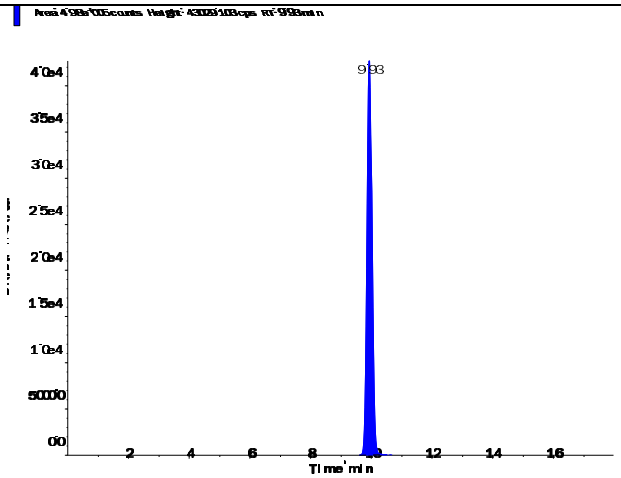

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

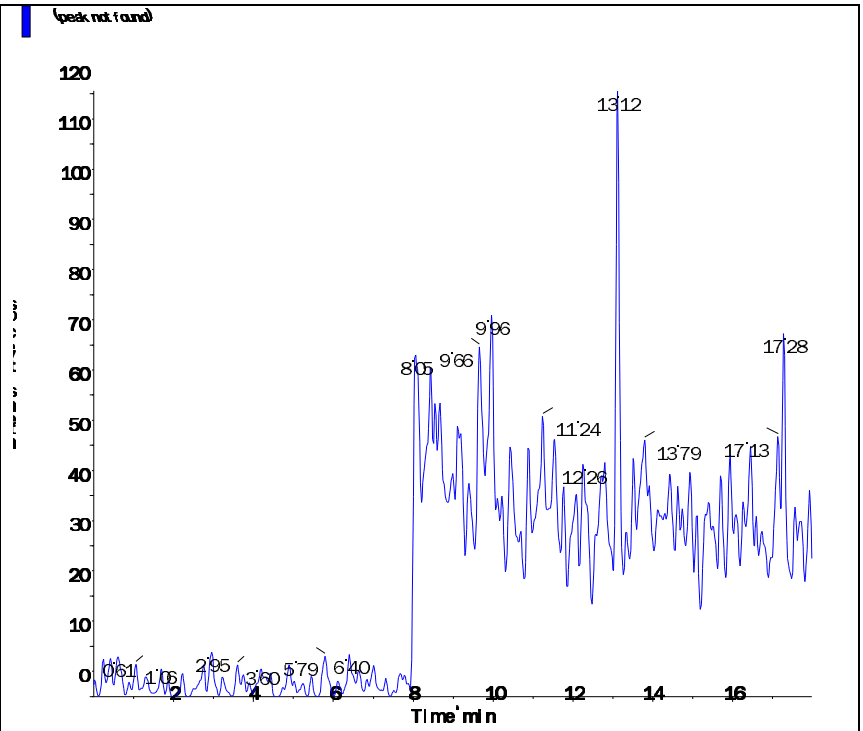

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

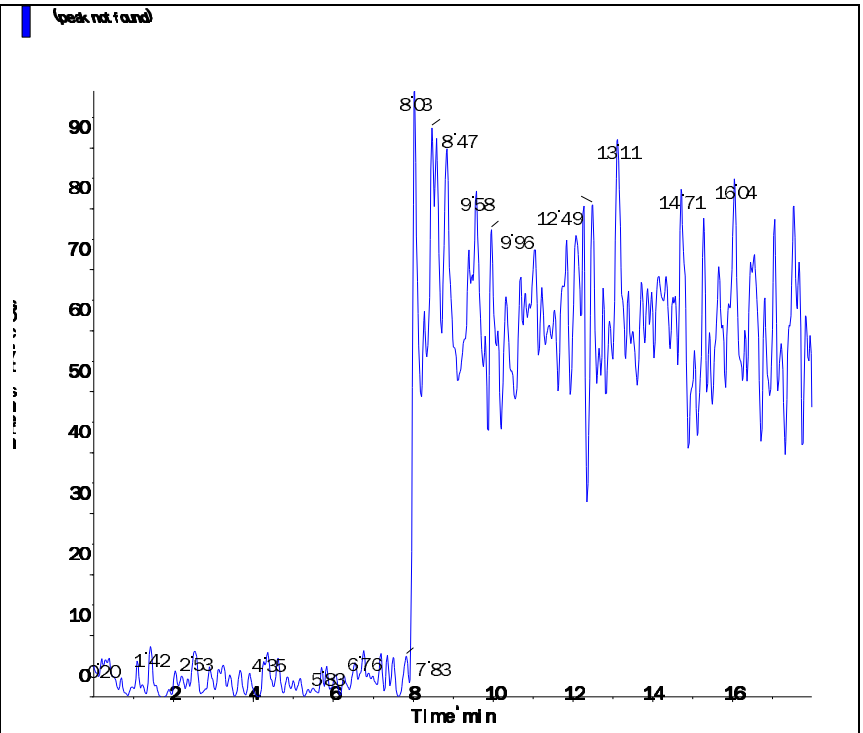

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Data File	LM33725.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 9:22:19 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559812-04 CCB	**Injection Vial**	1.00
Data File	LM33725.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 9:22:19 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559812-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.700e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

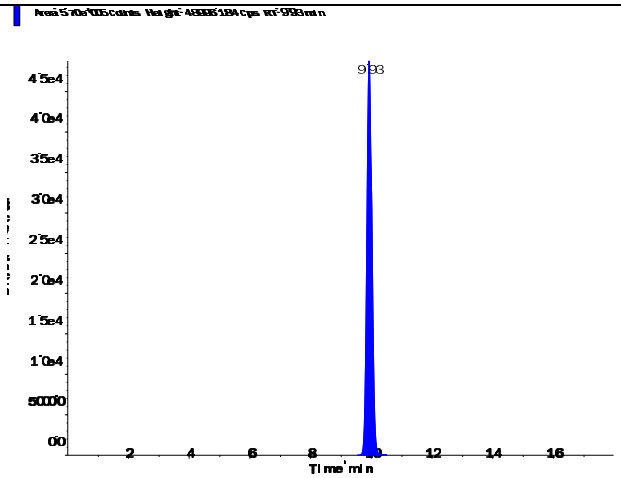

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

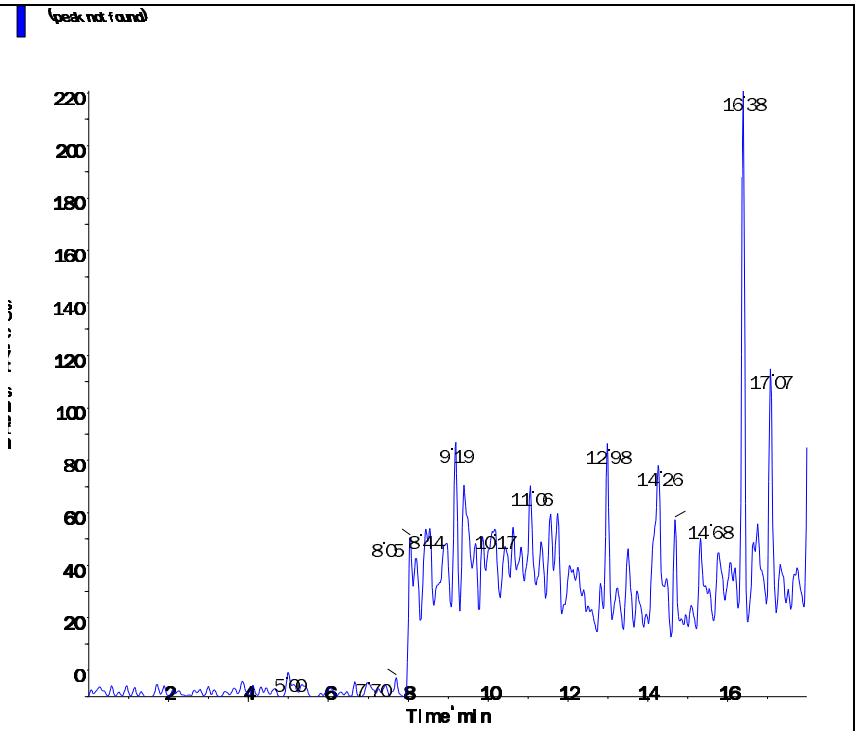

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

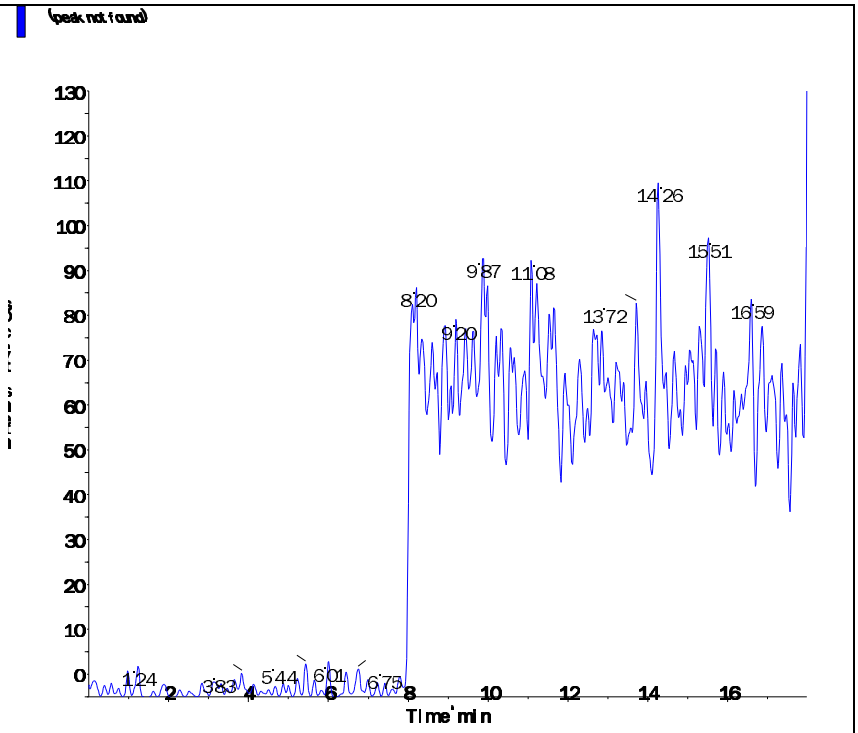

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Data File	LM33735.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/5/2016 12:31:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559812-06 CCB	**Injection Vial**	1.00
Data File	LM33735.wiff	**Injection Volume**	10.00
Acquisition Date	3/5/2016 12:31:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559812-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.590e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

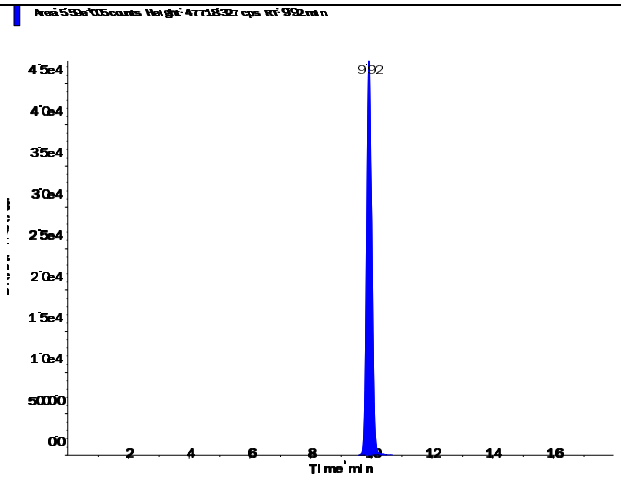

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

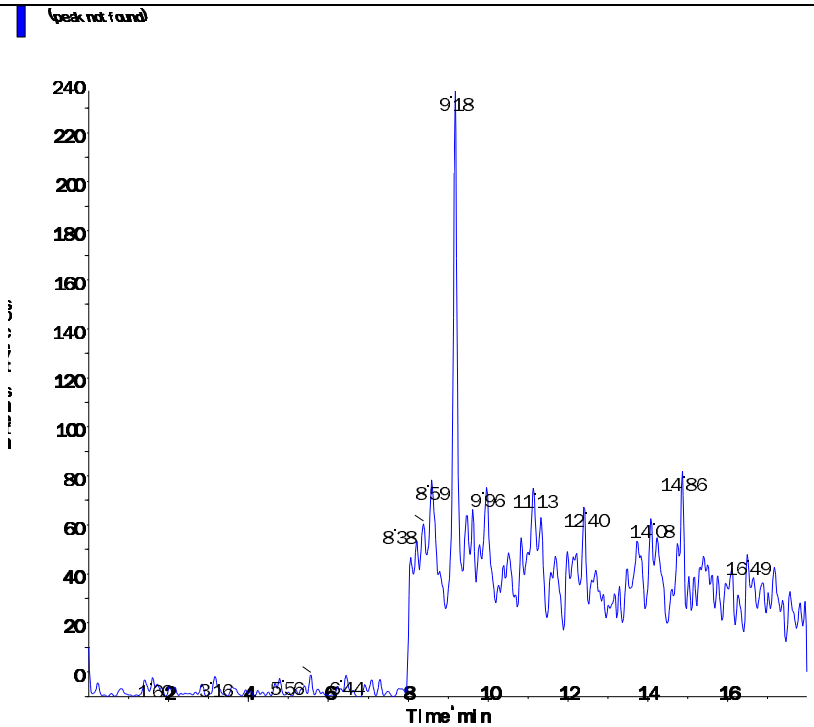

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

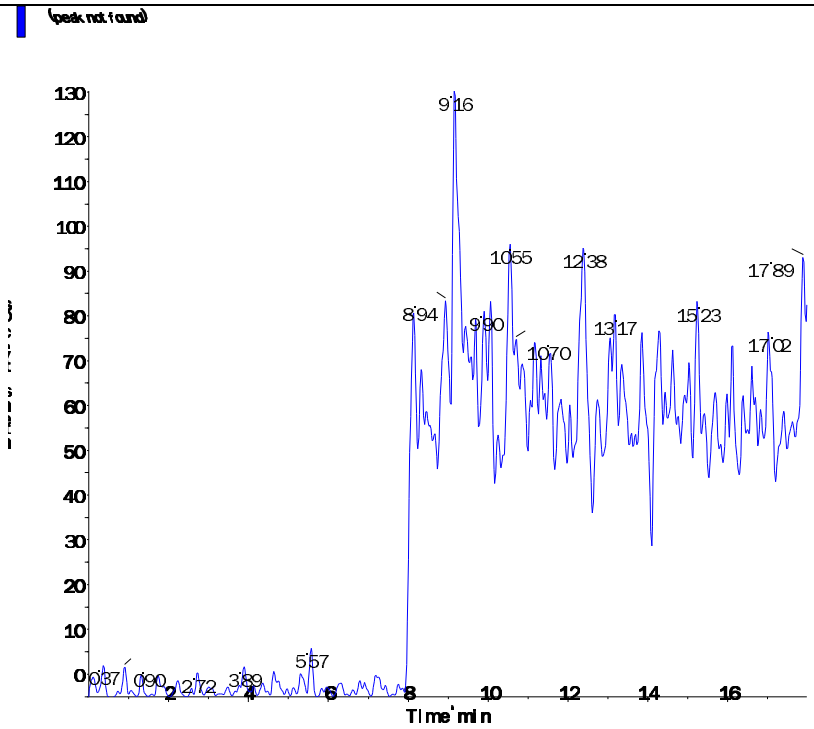

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Data File	LM33736.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/7/2016 9:54:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559899-01 CCB	**Injection Vial**	1.00
Data File	LM33736.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 9:54:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559899-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.540e+05	9.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.90(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

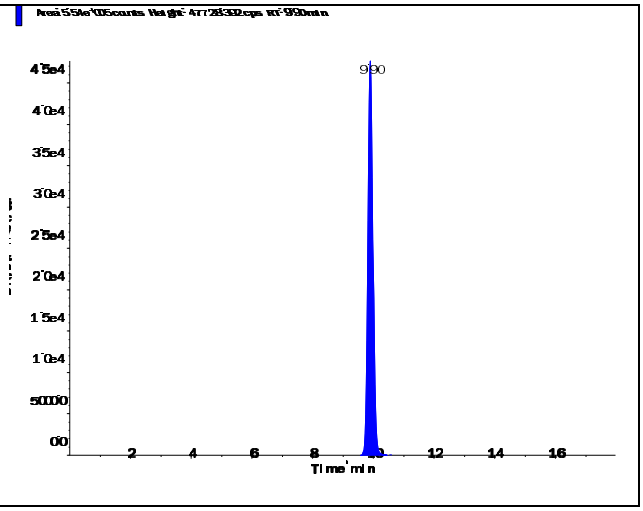

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

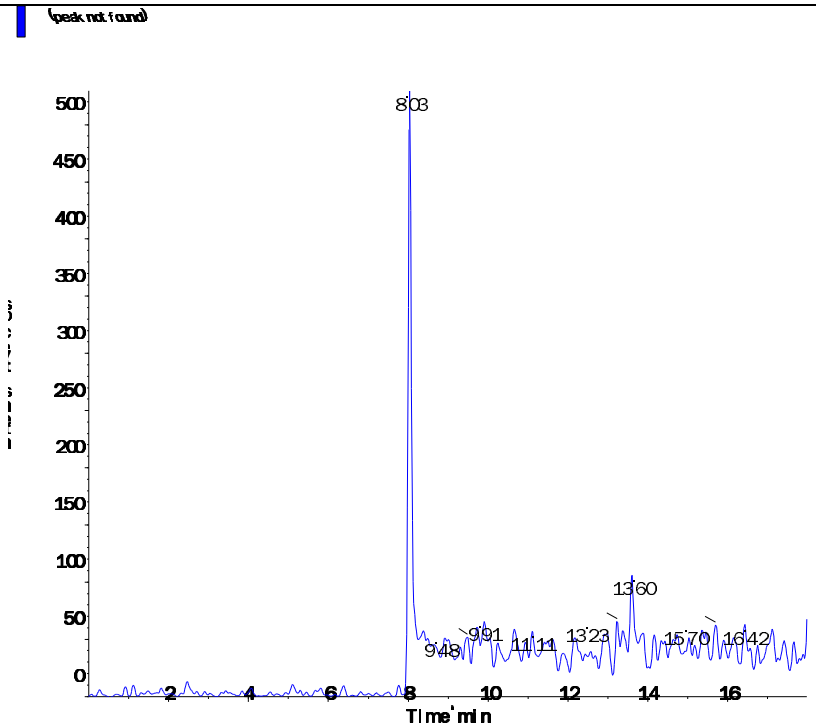

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

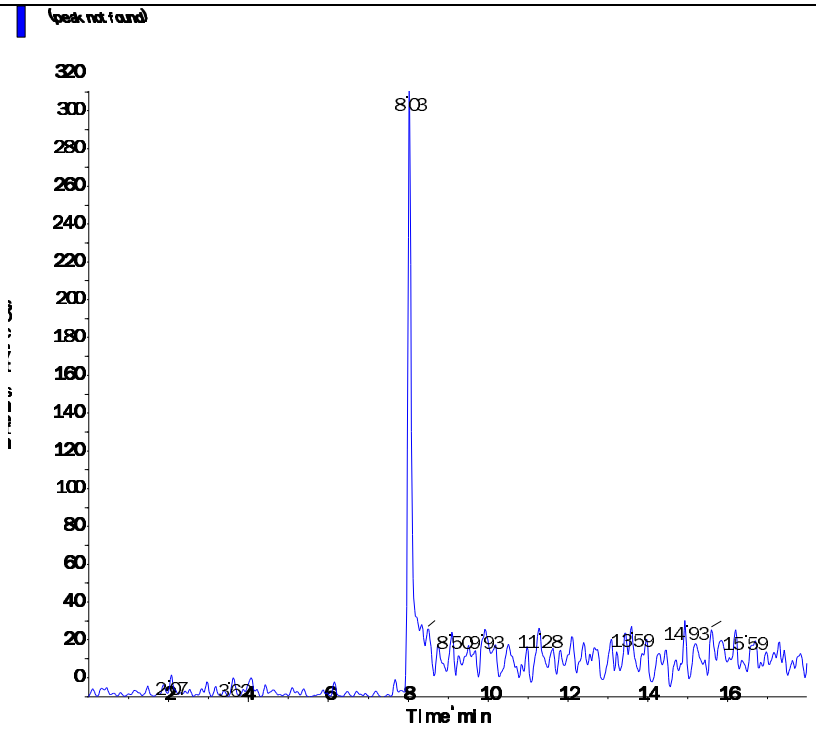

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Data File	LM33747.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/7/2016 1:22:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559899-04 CCB	**Injection Vial**	1.00
Data File	LM33747.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 1:22:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559899-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.260e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	1.950e+02	9.81	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

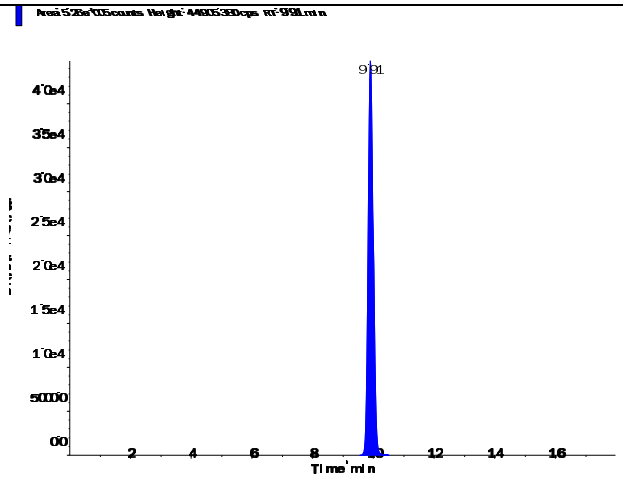

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.94) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	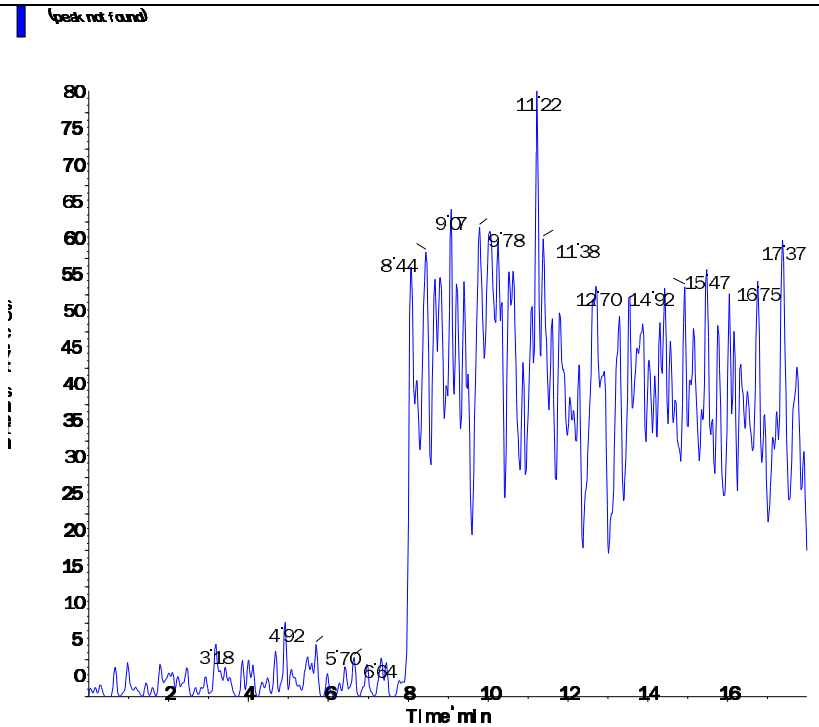
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.81 (9.92) min Calculated conc: < 0 ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	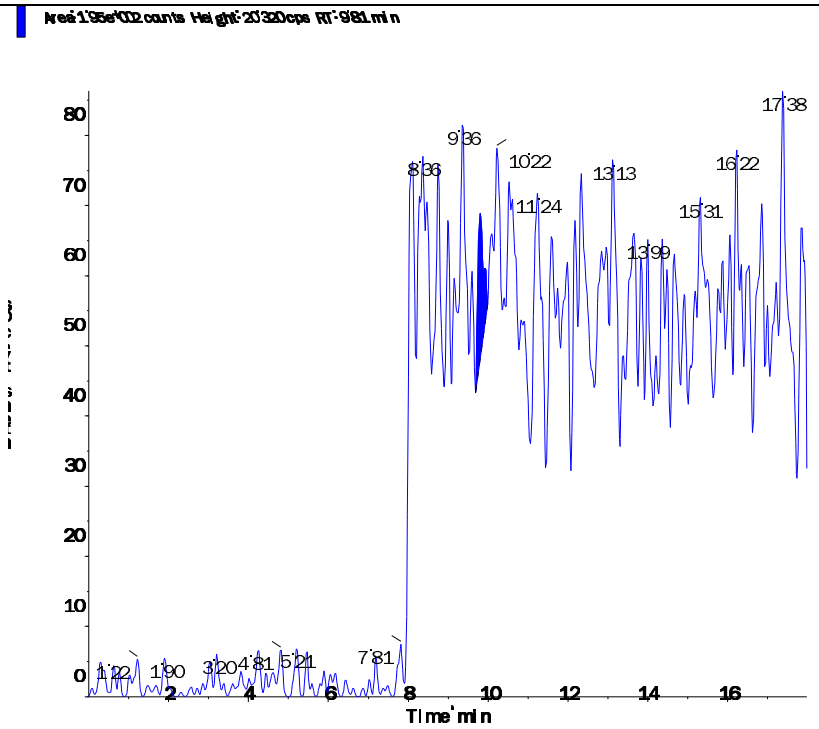

s.dataFile Page 2 of 2

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Printed: 3/7/2016 5:41 PM

Data File	LM33713.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 5:35:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559808-01 MCT (2.0ug/kg)	**Injection Vial**	4.00
Data File	LM33713.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 5:35:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559808-01	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.680e+05	9.54	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.840e+04	9.54	N/A	0.181
Perchlorate conf	1.270e+04	9.51	N/A	0.184

O18LP (Internal Standard)

RT (Exp. RT): 9.54(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

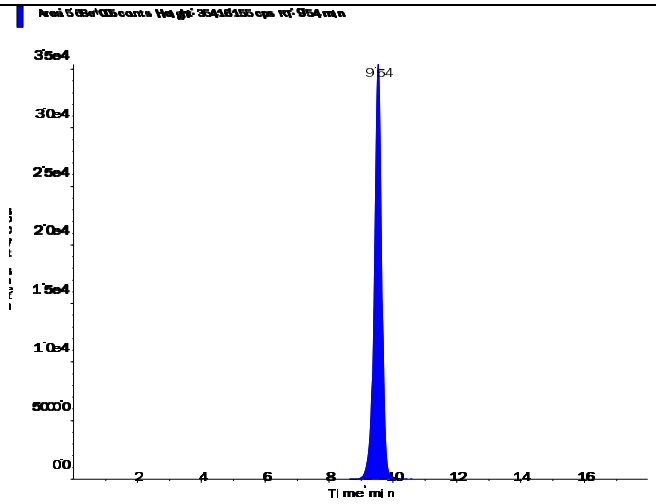

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Printed: 3/7/2016 5:41 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.54 (9.94) min
Calculated conc:	0.181 ng/ml
Area Ratio:	0.068
Sample Type:	(Unknown)

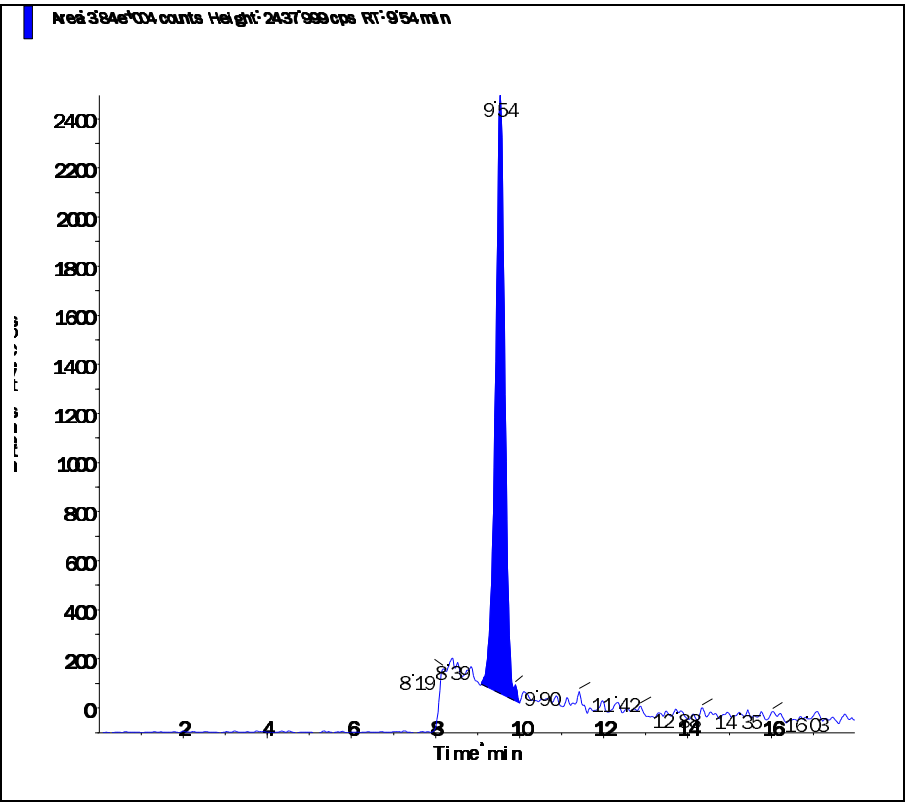

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.51 (9.92) min
Calculated conc:	0.184 ng/ml
Area Ratio:	0.022
Sample Type:	(Unknown)

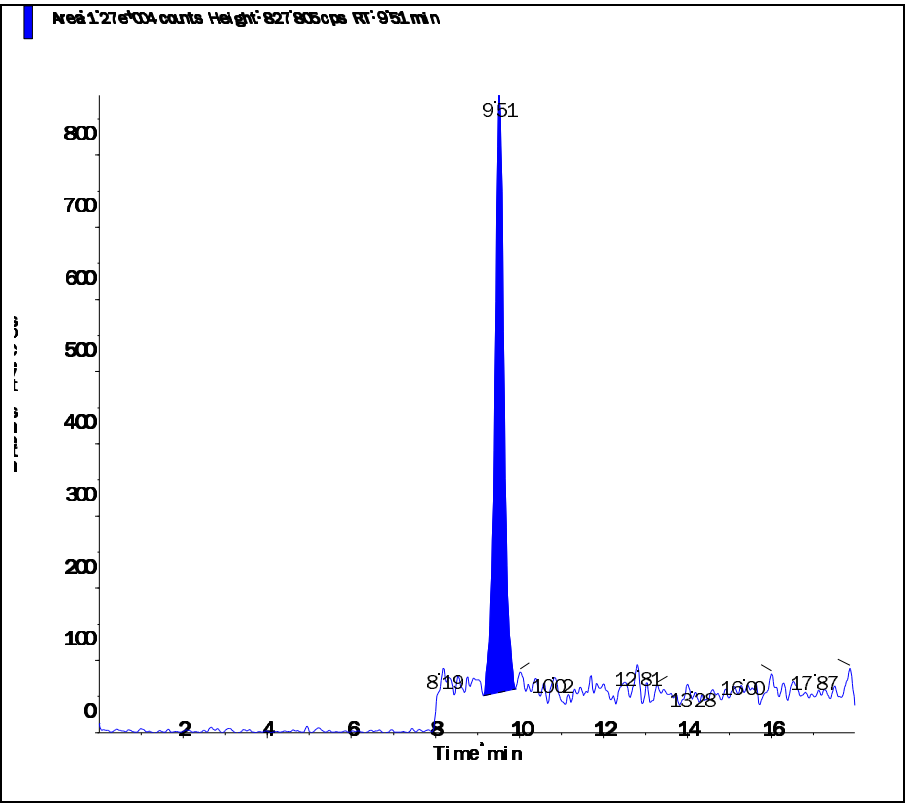

Printing Time: 11:17:21 AM
Printing Date: Monday, March 07, 2016

Sample Name: "WG559808-01 MCT (2.0ug/KG)" Sample ID: "WG559808-01" File: "LM33713.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "7,1 STD72686" Annotation: ""

Sample Index:	1	
Sample Type:	Unknown	
Concentration:	N/A	
Calculated Conc:	0.199	ug/L
Acq. Date:	3/4/2016	
Acq. Time:	5:35:05 PM	
Modified:	No	
Proc. Algorithm:	Analyst Classic	
Bunching Factor:	3	
Noise Threshold:	18.48	cps
Area Threshold:	92.40	cps
Num. Smooths:	5	
Sep. Width:	0.20	
Sep. Height:	0.01	
Exp. Peak Ratio:	5.00	
Exp. Adj. Ratio:	4.00	
Exp. Val. Ratio:	3.00	
RT Window:	30.000	sec
Expected RT:	9.94	min
Use Relative RT:	Yes	
Int. Type:	Valley	
Retention Time:	9.54	min
Area:	4.21e+004	counts
Height:	2503.030	cps
Start Time:	9.073	min
End Time:	10.004	min

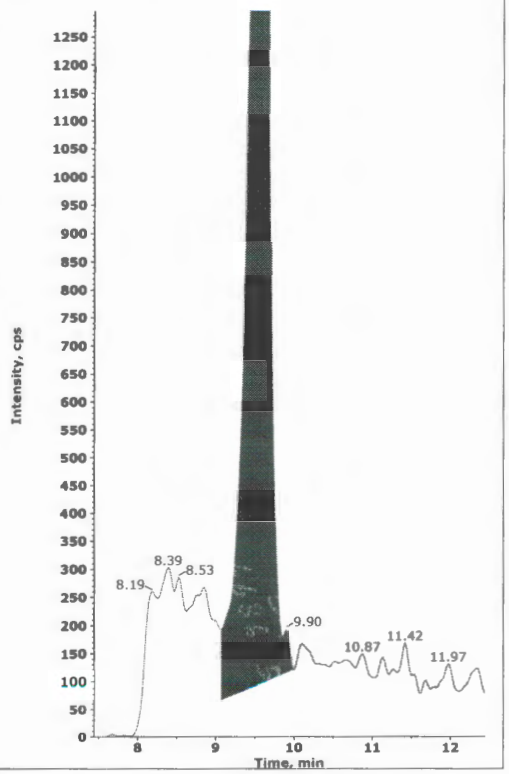

Collected by: N/A
Electronic Signature: no
Operator: lcms1

Printing Time: 11:18:03 AM
Printing Date: Monday, March 07, 2016

Sample Name: "WG559808-01 MCT (2.0ug/KG)" Sample ID: "WG559808-01" File: "LM33713.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "7,1 STD72686" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.181 ng/L
Acq. Date:	3/4/2016
Acq. Time:	5:35:05 PM
Modified:	Yes
Proc. Algorithm:	Analyst Classic
Bunching Factor:	1
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Sep. Width:	0.20
Sep. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.94 min
Use Relative RT:	Yes
Int. Type:	Base To Base
Retention Time:	9.54 min
Area:	3.84e+004 counts
Height:	2437.999 cps
Start Time:	9.093 min
End Time:	10.004 min

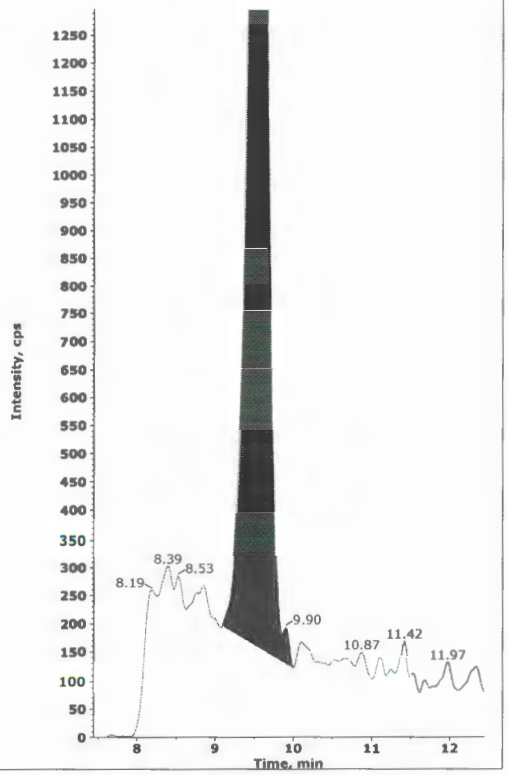

#4
JWR 03/07/16

✓ WD
3-8-16

Collected by: N/A
Electronic Signature: no
Operator: lcms1

2.2.1.5 Raw QC Data

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Data File	LM33714.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 5:53:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559808-02 BLK	**Injection Vial**	5.00
Data File	LM33714.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 5:53:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559808-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.300e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	3.900e+02	9.97	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

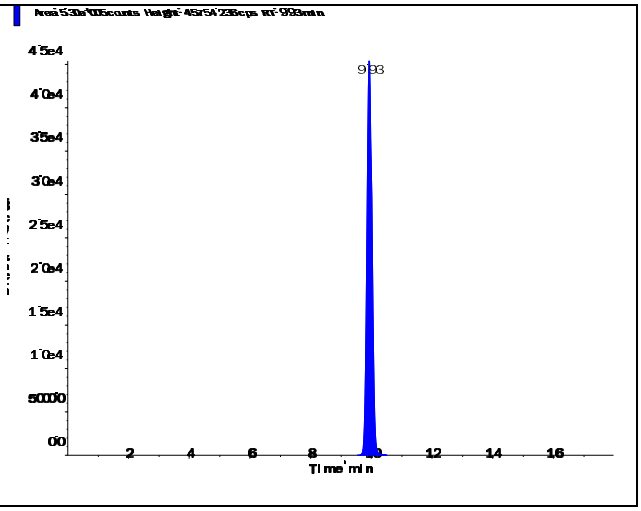

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.94) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	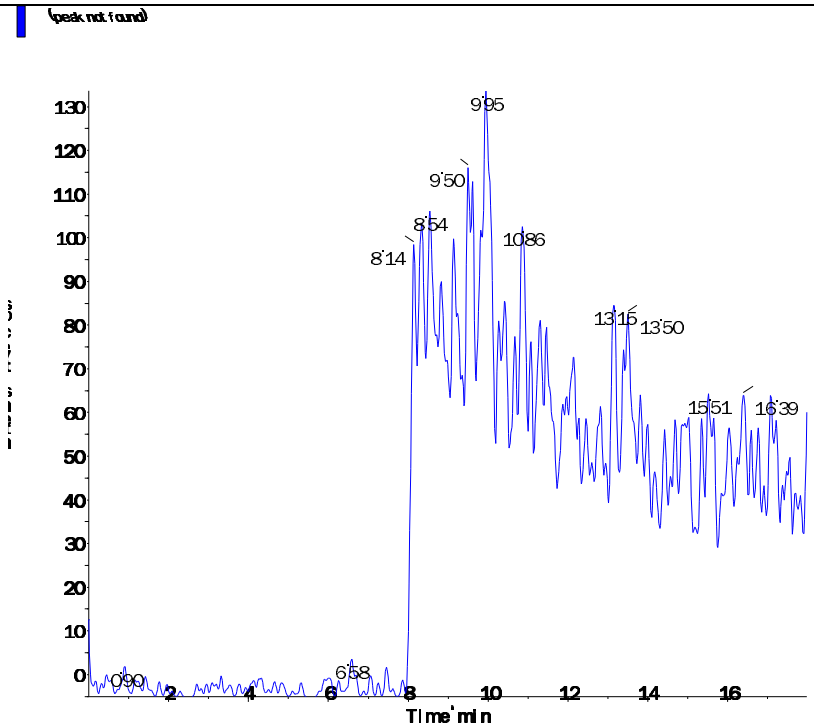
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.97 (9.92) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	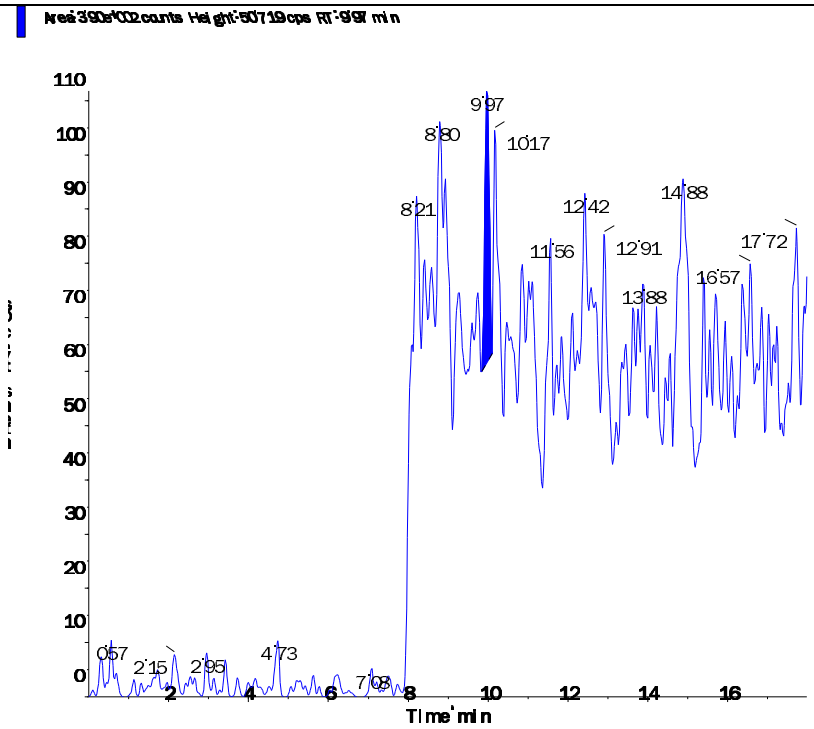

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Data File	LM33715.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 6:12:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559808-03 LCS (2.0ug/kg)	**Injection Vial**	6.00
Data File	LM33715.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 6:12:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559808-03	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.160e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.480e+04	9.95	N/A	0.235
Perchlorate conf	1.680e+04	10.00	N/A	0.276

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

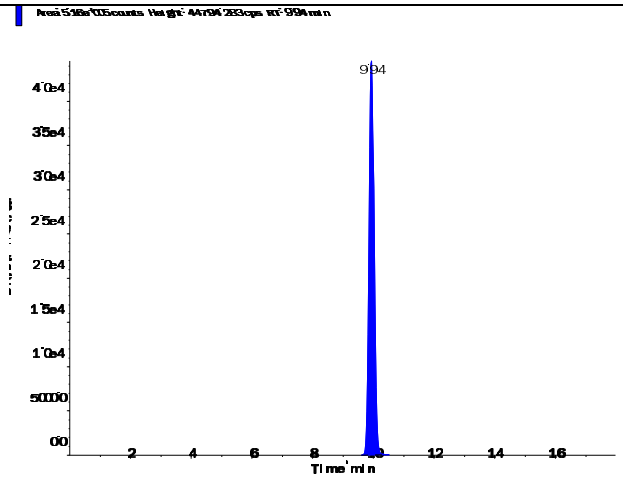

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Printed: 3/7/2016 5:41 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.95 (9.94) min Calculated conc: 0.235 ng/ml Area Ratio: 0.087 Sample Type: (Unknown)	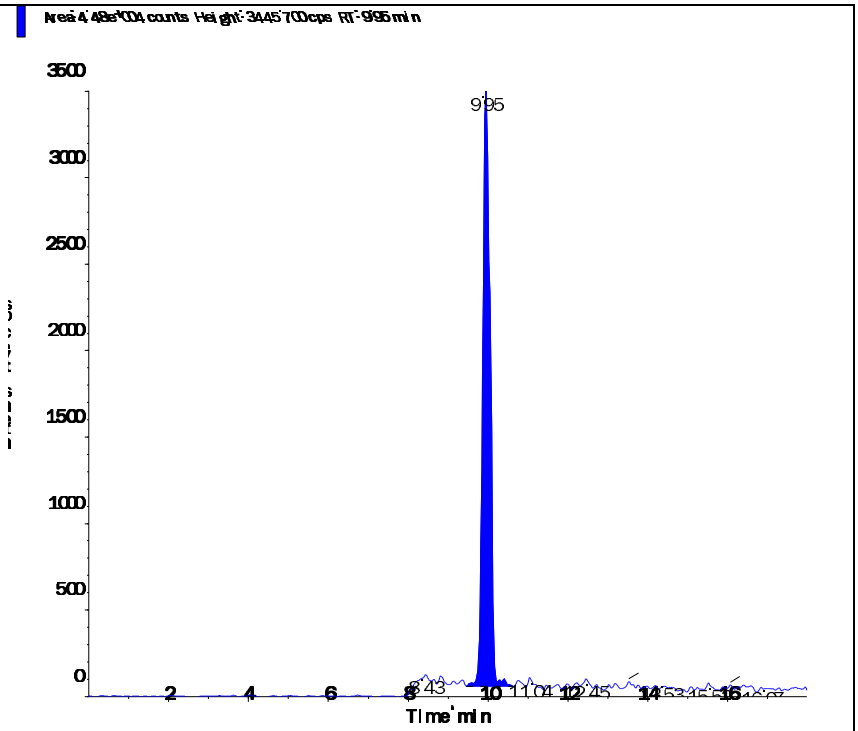
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 10.00 (9.92) min Calculated conc: 0.276 ng/ml Area Ratio: 0.033 Sample Type: (Unknown)	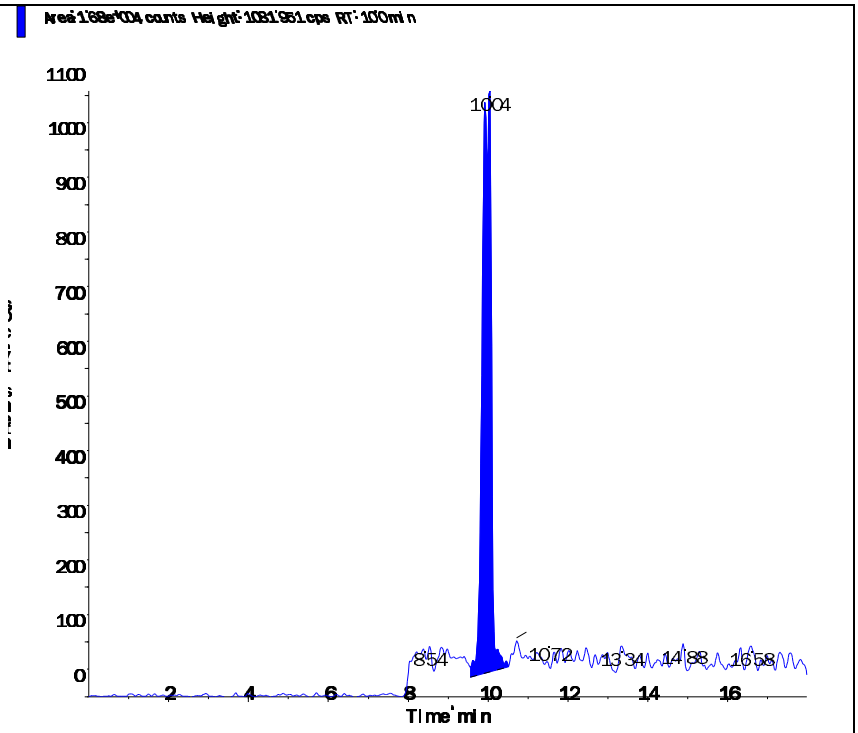

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2.3 General Chemistry Data

2.3.1 Percent Solids Data

2.3.1.1 Raw Data

Example Percent Solids Calculations

1.0 Calculating the percent solids of a sample.

$$\%Solids = \frac{WT3 - WT1}{WT2 - WT1} \times F$$

Where:	
WT1 = Weight, in grams, of the empty container	1.30 g
WT2 = Weight, in grams, of the container and wet sample	21.274 g
WT3 = Weight, in grams, of the container and dried sample	5.21 g
F = Factor to get units as percent weight	100
%Solids = Percent solids present in sample.	19.58%

2.0 Calculating the percent moisture of a sample.

% Moisture = 100 - % Solids from 1.0 calculation

Microbac Laboratories Inc.

PERCENT SOLIDS

Workgroup (AAB#): WG559839 Analyst: AC ADT(on): 03/04/2016 16:46
Method: D2216-90 Instrument: BAL021 ADT(off): 03/07/2016 08:20
SOP: K0003 Rev: 14

SAMPLE NUMBER	EMPTY PAN WT 1	WET WT 2	DRY WT 3A	DRY WT 3B	DRY WT 3C	PERCENT SOLID	PERCENT MOISTURE
L16030168-01	1.293	24.781	20.83			83.18	
L16030234-01	1.296	23.803	20.059			83.37	
L16030234-02	1.294	25.21	20.85			81.77	
L16030234-03	1.301	24.789	21.13			84.42	
L16030234-04	1.298	21.74	18.35			83.42	
L16030234-05	1.305	34.235	28.317			82.03	
L16030234-06	1.295	23.294	18.927			80.15	
L16030235-01	1.29	24.686	20.549			82.32	
L16030235-02	1.291	30.193	23.38			76.43	
L16030235-03	1.29	22.228	18.498			82.19	
L16030235-04	1.29	22.228	18.498			82.19	
L16030235-05	1.29	22.228	18.498			82.19	
L16030235-06	1.292	31.806	24.36			75.60	
L16030235-07	1.291	22.21	17.102			75.58	
L16030235-08	1.292	29.965	25.133			83.15	
L16030270-02	1.296	14.159	4.824			27.43	
L16030283-01	1.296	10.349	8.424			78.74	
L16030285-01	1.301	13.985	5.872			36.04	
L16030288-01	1.302	17.719	3.628			14.17	
L16030298-01	1.291	8.347	2.976			23.88	
WG559839-01	1.291	8.347	2.976			23.88	76.12
WG559839-02	1.298	9.63	3.292			23.93	76.07

Analyst: Andrea R Cochran

PERCENT_SOLIDS - Modified 04/24/2008
PDF ID: 4658331
Report generated: 03/07/2016 08:24

Microbac

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
March 15, 2016

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001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
March 15, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
March 15, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Debra Richmon	Mail to:	Linda Raabe
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000		112 East Pecan STE. 400
	Marietta, OH 45750	Sampler (print):	KAYLA PALLANES		San Antonio, TX 78205
Phone:	1-800-373-4071				210-296-2000
Client:	AECOM	Signature:	Kayla Pallanes	Fed Ex Airbill No:	
Address:	112 East Pecan Ste. 400				
	San Antonio, TX 78205	pH:		Program:	
Turn Around Time:	STANDARD				
Project Name/Location:	Longhorn				
Project Number:	60274185 11DASOW16 DG1 - RPTOL				

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp-	Grab	Matrix	Number of Containers	VOCs 8260	PERCHLORATE 6850	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
18DPT07(5-5.5)030316	18DPT07(5-5.5)030316			3/2/16	1600		X	S	2	X	X					
	18DPT07(15-15.5)030316			3/2/16	1625		X	S	2	X	X					
	18DPT07(33.5-34.5)030316			3/3/16	1000		X	S	2	X	X					
	18DPT07(33.5-34.5)030316MS			3/3/16	1000		X	S	2	X	X					
	18DPT07(33.5-34.5)030316MSD			3/3/16	1000		X	S	2	X	X					
	18DPT07(38-39)030316			3/3/16	1010		X	S	2	X	X					
	18DPT07(38-39)030316FD			3/3/16	1010		X	S	2	X	X					
	18DPT07(27-27.5)030316			3/3/16	1015		X	S	2	X	X					

Comments: **STANDARD TAT**

Relinquished by: (Signature) Kayla Pallanes	Date 3/3/16	Time 1700	Received by: (Signature	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory (Signature) Cara Strickler	Remarks:

Microbac OVD
Received: 03/04/2016 10:17
By: CARA STRICKLER 221000082754

•Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030235
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 08-MAR-2016

Samplenum	Container ID	Products
L16030235-01	709955	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-MAR-2016 11:56	CLS		
2	ANALYZ	V1	ORG4	04-MAR-2016 12:19	AWE	CLS	

Samplenum	Container ID	Products
L16030235-01	709956	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	04-MAR-2016 11:56	CLS		
2	ANALYZ	W1	SEM	04-MAR-2016 12:23	AWE	CLS	
3	STORE	DIG	A1	07-MAR-2016 13:50	BRG	AC	

Samplenum	Container ID	Products
L16030235-02	709957	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-MAR-2016 11:56	CLS		
2	ANALYZ	V1	ORG4	04-MAR-2016 12:19	AWE	CLS	

Samplenum	Container ID	Products
L16030235-02	709958	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	04-MAR-2016 11:56	CLS		
2	ANALYZ	W1	SEM	04-MAR-2016 12:23	AWE	CLS	
3	STORE	DIG	A1	07-MAR-2016 13:50	BRG	AC	

Samplenum	Container ID	Products
L16030235-03	709959	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-MAR-2016 11:56	CLS		
2	ANALYZ	V1	ORG4	04-MAR-2016 12:19	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030235
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 08-MAR-2016

Samplenum	Container ID	Products
L16030235-03	709960	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	04-MAR-2016 11:56	CLS		
2	ANALYZ	W1	SEM	04-MAR-2016 12:23	AWE	CLS	
3	STORE	DIG	A1	07-MAR-2016 13:50	BRG	AC	

Samplenum	Container ID	Products
L16030235-04	709961	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-MAR-2016 11:56	CLS		
2	ANALYZ	V1	ORG4	04-MAR-2016 12:19	AWE	CLS	

Samplenum	Container ID	Products
L16030235-04	709962	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	04-MAR-2016 11:56	CLS		
2	ANALYZ	W1	SEM	04-MAR-2016 12:22	AWE	CLS	
3	STORE	DIG	A1	07-MAR-2016 13:50	BRG	AC	

Samplenum	Container ID	Products
L16030235-05	709963	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-MAR-2016 11:56	CLS		
2	ANALYZ	V1	ORG4	04-MAR-2016 12:19	AWE	CLS	

Samplenum	Container ID	Products
L16030235-05	709964	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	04-MAR-2016 11:56	CLS		
2	ANALYZ	W1	SEM	04-MAR-2016 12:23	AWE	CLS	
3	STORE	DIG	A1	07-MAR-2016 13:50	BRG	AC	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030235
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 08-MAR-2016

Samplenum	Container ID	Products
L16030235-06	709965	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-MAR-2016 11:56	CLS		
2	ANALYZ	V1	ORG4	04-MAR-2016 12:19	AWE	CLS	

Samplenum	Container ID	Products
L16030235-06	709966	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	04-MAR-2016 11:56	CLS		
2	ANALYZ	W1	SEM	04-MAR-2016 12:23	AWE	CLS	
3	STORE	DIG	A1	07-MAR-2016 13:50	BRG	AC	

Samplenum	Container ID	Products
L16030235-07	709967	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-MAR-2016 11:56	CLS		
2	ANALYZ	V1	ORG4	04-MAR-2016 12:19	AWE	CLS	

Samplenum	Container ID	Products
L16030235-07	709968	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	04-MAR-2016 11:56	CLS		
2	ANALYZ	W1	SEM	04-MAR-2016 12:23	AWE	CLS	
3	STORE	DIG	A1	07-MAR-2016 13:50	BRG	AC	

Samplenum	Container ID	Products
L16030235-08	709969	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-MAR-2016 11:56	CLS		
2	ANALYZ	V1	ORG4	04-MAR-2016 12:19	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030235
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 08-MAR-2016

Samplenum	Container ID	Products
L16030235-08	709970	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	04-MAR-2016 11:56	CLS		
2	ANALYZ	W1	SEM	04-MAR-2016 12:22	AWE	CLS	
3	STORE	DIG	A1	07-MAR-2016 13:50	BRG	AC	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16030323

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on March 10 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
0017841	H	1.0		J2317165894	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	NA
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	NA

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18DPT09(5-5.5)040316	L16030323-01	03/04/2016 10:30	03/07/2016 09:22
18DPT09(11-11.5)040316	L16030323-02	03/04/2016 10:35	03/07/2016 09:22
18DPT09(13.5-14)040316	L16030323-03	03/04/2016 10:40	03/07/2016 09:22
18DPT10(5-5.5)040316	L16030323-04	03/04/2016 11:25	03/07/2016 09:22
18DPT10(15.5-16)040316	L16030323-05	03/04/2016 11:55	03/07/2016 09:22
18DPT10(23.5-24)040316	L16030323-06	03/04/2016 12:40	03/07/2016 09:22

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16030323
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.1 Narratives

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030323
Project Name:		**Method:**	8260
Prep Batch Number(s):	560074	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-03-10 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden	Franci Bolden	Analyst I	2016-03-10 21:42:40

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030323
Project Name:		**Method:**	8260
Prep Batch Number(s):	560074	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-03-10 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				
Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030323
Project Name:		**Method:**	8260
Prep Batch Number(s):	560074	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-03-10 00:00:00		

Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				
Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030323
Project Name:		**Method:**	8260
Prep Batch Number(s):	560074	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-03-10 00:00:00		

Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					
Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030323
Project Name:		**Method:**	8260
Prep Batch Number(s):	560074	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-03-10 00:00:00		

Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030323
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559975	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-09 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-03-09 19:05:32

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030323
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559975	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-09 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030323
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559975	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-09 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030323
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559975	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-09 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030323
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559975	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-09 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030323
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559975	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-09 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030323
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559963	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-08 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2016-03-08 20:05:11

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030323
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559963	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-08 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?			X		
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?			X		
Were sample detection limits reported for all analytes not detected?			X		
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?			X		
Were blanks analyzed at the appropriate frequency?			X		
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?			X		
Were blank concentrations < MQL?			X		
Laboratory control samples (LCS):			X		
Were all COCs included in the LCS?			X		

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030323
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559963	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-08 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?			X		
Were LCSs analyzed at the required frequency?			X		
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?			X		
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?			X		
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?			X		
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?			X		
Are unadjusted MQLs and DCSs included in the laboratory data package?			X		
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?			X		
Were percent RSDs or correlation coefficient criteria met?			X		

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030323
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559963	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-08 00:00:00		

Was the number of standards recommended in the method used for all analytes?			X		
Were all points generated between the lowest and highest standard used to calculate the curve?			X		
Are ICAL data available for all instruments used?			X		
Has the initial calibration curve been verified using an appropriate second source standard?			X		
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030323
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559963	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-08 00:00:00		

Was a MDL study performed for each reported analyte?			X		
Is the MDL either adjusted or supported by the analysis of DCSs?			X		
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?			X		
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

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The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030323
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559963	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-08 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030323-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT09(5-5.5)040316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/08/2016 09:22
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560074	**Analyst:**	TMB	**Run Date:**	03/08/2016 15:54
Collect Date:	03/04/2016 10:30	**Dilution:**	1	**File ID:**	6M137653
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	67.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	15.7	U	31.4	15.7	7.86
Benzene	71-43-2	1.57	U	7.86	1.57	0.786
Bromobenzene	108-86-1	1.57	U	7.86	1.57	0.786
Bromochloromethane	74-97-5	3.14	U	7.86	3.14	1.57
Bromodichloromethane	75-27-4	1.57	U	7.86	1.57	0.786
Bromoform	75-25-2	1.57	U	7.86	1.57	0.786
Bromomethane	74-83-9	3.14	U	7.86	3.14	1.57
2-Butanone	78-93-3	7.86	U	15.7	7.86	3.93
n-Butylbenzene	104-51-8	1.57	U	7.86	1.57	0.786
sec-Butylbenzene	135-98-8	1.57	U	7.86	1.57	0.786
tert-Butylbenzene	98-06-6	1.57	U	7.86	1.57	0.786
Carbon disulfide	75-15-0	1.57	U	7.86	1.57	0.786
Carbon tetrachloride	56-23-5	1.57	U	7.86	1.57	0.786
Chlorobenzene	108-90-7	1.57	U	7.86	1.57	0.786
Chlorodibromomethane	124-48-1	1.57	U	7.86	1.57	0.786
Chloroethane	75-00-3	3.14	U	7.86	3.14	1.57
Chloroform	67-66-3	1.57	U	7.86	1.57	0.786
Chloromethane	74-87-3	6.28	U	15.7	6.28	3.14
2-Chlorotoluene	95-49-8	1.57	U	7.86	1.57	0.786
4-Chlorotoluene	106-43-4	1.57	U	7.86	1.57	0.786
1,2-Dibromo-3-chloropropane	96-12-8	6.28	U	15.7	6.28	3.14
1,2-Dibromoethane	106-93-4	1.57	U	7.86	1.57	0.786
Dibromomethane	74-95-3	1.57	U	7.86	1.57	0.786
1,2-Dichlorobenzene	95-50-1	1.57	U	7.86	1.57	0.786
1,3-Dichlorobenzene	541-73-1	1.57	U	7.86	1.57	0.786
1,4-Dichlorobenzene	106-46-7	1.57	U	7.86	1.57	0.786
Dichlorodifluoromethane	75-71-8	3.14	U	7.86	3.14	1.57
1,1-Dichloroethane	75-34-3	3.14	U	7.86	3.14	1.57
1,2-Dichloroethane	107-06-2	1.57	U	7.86	1.57	0.786
1,1-Dichloroethene	75-35-4	1.57	U	7.86	1.57	0.786
cis-1,2-Dichloroethene	156-59-2	1.57	U	7.86	1.57	0.786
trans-1,2-Dichloroethene	156-60-5	1.57	U	7.86	1.57	0.786

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.57	U	7.86	1.57	0.786
1,3-Dichloropropane	142-28-9	1.57	U	7.86	1.57	0.786
2,2-Dichloropropane	594-20-7	1.57	U	7.86	1.57	0.786
cis-1,3-Dichloropropene	10061-01-5	1.57	U	7.86	1.57	0.786
trans-1,3-Dichloropropene	10061-02-6	1.57	U	7.86	1.57	0.786
1,1-Dichloropropene	563-58-6	1.57	U	7.86	1.57	0.786
Ethylbenzene	100-41-4	1.57	U	7.86	1.57	0.786
2-Hexanone	591-78-6	7.86	U	15.7	7.86	3.93
Hexachlorobutadiene	87-68-3	1.57	U	7.86	1.57	0.786
Isopropylbenzene	98-82-8	1.57	U	7.86	1.57	0.786
p-Isopropyltoluene	99-87-6	1.47	J	7.86	1.57	0.786
4-Methyl-2-pentanone	108-10-1	7.86	U	15.7	7.86	3.93
Methylene chloride	75-09-2	3.14	U	7.86	3.14	1.57
Naphthalene	91-20-3	1.57	U	7.86	1.57	0.786
n-Propylbenzene	103-65-1	1.57	U	7.86	1.57	0.786
Styrene	100-42-5	1.57	U	7.86	1.57	0.786
1,1,1,2-Tetrachloroethane	630-20-6	1.57	U	7.86	1.57	0.786
1,1,2,2-Tetrachloroethane	79-34-5	1.57	U	7.86	1.57	0.786
Tetrachloroethene	127-18-4	1.57	U	7.86	1.57	0.786
Toluene	108-88-3	1.57	U	7.86	1.57	0.786
1,2,3-Trichlorobenzene	87-61-6	1.57	U	7.86	1.57	0.786
1,2,4-Trichlorobenzene	120-82-1	1.57	U	7.86	1.57	0.786
1,1,1-Trichloroethane	71-55-6	1.57	U	7.86	1.57	0.786
1,1,2-Trichloroethane	79-00-5	1.57	U	7.86	1.57	0.786
Trichloroethene	79-01-6	1.57	U	7.86	1.57	0.786
Trichlorofluoromethane	75-69-4	3.14	U	7.86	3.14	1.57
1,2,3-Trichloropropane	96-18-4	3.14	U	7.86	3.14	1.57
1,2,4-Trimethylbenzene	95-63-6	1.57	U	7.86	1.57	0.786
1,3,5-Trimethylbenzene	108-67-8	1.57	U	7.86	1.57	0.786
Vinyl chloride	75-01-4	3.14	U	7.86	3.14	1.57
o-Xylene	95-47-6	1.57	U	7.86	1.57	0.786
m-,p-Xylene	179601-23-1	1.57	U	7.86	1.57	0.786

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	89.6	80	120	
1,2-Dichloroethane-d4	81.6	80	120	
Toluene-d8	100	85	115	
4-Bromofluorobenzene	99.9	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030323-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT09(5-5.5)040316	**Prep Method:**	6850	**Prep Date:**	03/07/2016 14:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559975	**Analyst:**	JWR	**Run Date:**	03/07/2016 18:39
Collect Date:	03/04/2016 10:30	**Dilution:**	1	**File ID:**	1LM.LM33757
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	67.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.84	U	5.70	2.84	1.42

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030323-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT09(11-11.5)040316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/08/2016 09:23
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560074	**Analyst:**	TMB	**Run Date:**	03/08/2016 16:28
Collect Date:	03/04/2016 10:35	**Dilution:**	1	**File ID:**	6M137654
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	86.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	25.0	12.5	6.24
Benzene	71-43-2	1.25	U	6.24	1.25	0.624
Bromobenzene	108-86-1	1.25	U	6.24	1.25	0.624
Bromochloromethane	74-97-5	2.50	U	6.24	2.50	1.25
Bromodichloromethane	75-27-4	1.25	U	6.24	1.25	0.624
Bromoform	75-25-2	1.25	U	6.24	1.25	0.624
Bromomethane	74-83-9	2.50	U	6.24	2.50	1.25
2-Butanone	78-93-3	6.24	U	12.5	6.24	3.12
n-Butylbenzene	104-51-8	1.25	U	6.24	1.25	0.624
sec-Butylbenzene	135-98-8	1.25	U	6.24	1.25	0.624
tert-Butylbenzene	98-06-6	1.25	U	6.24	1.25	0.624
Carbon disulfide	75-15-0	1.25	U	6.24	1.25	0.624
Carbon tetrachloride	56-23-5	1.25	U	6.24	1.25	0.624
Chlorobenzene	108-90-7	1.25	U	6.24	1.25	0.624
Chlorodibromomethane	124-48-1	1.25	U	6.24	1.25	0.624
Chloroethane	75-00-3	2.50	U	6.24	2.50	1.25
Chloroform	67-66-3	1.25	U	6.24	1.25	0.624
Chloromethane	74-87-3	5.00	U	12.5	5.00	2.50
2-Chlorotoluene	95-49-8	1.25	U	6.24	1.25	0.624
4-Chlorotoluene	106-43-4	1.25	U	6.24	1.25	0.624
1,2-Dibromo-3-chloropropane	96-12-8	5.00	U	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	6.24	1.25	0.624
Dibromomethane	74-95-3	1.25	U	6.24	1.25	0.624
1,2-Dichlorobenzene	95-50-1	1.25	U	6.24	1.25	0.624
1,3-Dichlorobenzene	541-73-1	1.25	U	6.24	1.25	0.624
1,4-Dichlorobenzene	106-46-7	1.25	U	6.24	1.25	0.624
Dichlorodifluoromethane	75-71-8	2.50	U	6.24	2.50	1.25
1,1-Dichloroethane	75-34-3	2.50	U	6.24	2.50	1.25
1,2-Dichloroethane	107-06-2	1.25	U	6.24	1.25	0.624
1,1-Dichloroethene	75-35-4	1.25	U	6.24	1.25	0.624
cis-1,2-Dichloroethene	156-59-2	1.25	U	6.24	1.25	0.624

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.25	U	6.24	1.25	0.624
1,2-Dichloropropane	78-87-5	1.25	U	6.24	1.25	0.624
1,3-Dichloropropane	142-28-9	1.25	U	6.24	1.25	0.624
2,2-Dichloropropane	594-20-7	1.25	U	6.24	1.25	0.624
cis-1,3-Dichloropropene	10061-01-5	1.25	U	6.24	1.25	0.624
trans-1,3-Dichloropropene	10061-02-6	1.25	U	6.24	1.25	0.624
1,1-Dichloropropene	563-58-6	1.25	U	6.24	1.25	0.624
Ethylbenzene	100-41-4	1.25	U	6.24	1.25	0.624
2-Hexanone	591-78-6	6.24	U	12.5	6.24	3.12
Hexachlorobutadiene	87-68-3	1.25	U	6.24	1.25	0.624
Isopropylbenzene	98-82-8	1.25	U	6.24	1.25	0.624
p-Isopropyltoluene	99-87-6	1.25	U	6.24	1.25	0.624
4-Methyl-2-pentanone	108-10-1	6.24	U	12.5	6.24	3.12
Methylene chloride	75-09-2	2.50	U	6.24	2.50	1.25
Naphthalene	91-20-3	1.25	U	6.24	1.25	0.624
n-Propylbenzene	103-65-1	1.25	U	6.24	1.25	0.624
Styrene	100-42-5	1.25	U	6.24	1.25	0.624
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	6.24	1.25	0.624
1,1,2,2-Tetrachloroethane	79-34-5	1.25	U	6.24	1.25	0.624
Tetrachloroethene	127-18-4	1.25	U	6.24	1.25	0.624
Toluene	108-88-3	1.25	U	6.24	1.25	0.624
1,2,3-Trichlorobenzene	87-61-6	1.25	U	6.24	1.25	0.624
1,2,4-Trichlorobenzene	120-82-1	1.25	U	6.24	1.25	0.624
1,1,1-Trichloroethane	71-55-6	1.25	U	6.24	1.25	0.624
1,1,2-Trichloroethane	79-00-5	1.25	U	6.24	1.25	0.624
Trichloroethene	79-01-6	1.25	U	6.24	1.25	0.624
Trichlorofluoromethane	75-69-4	2.50	U	6.24	2.50	1.25
1,2,3-Trichloropropane	96-18-4	2.50	U	6.24	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	6.24	1.25	0.624
1,3,5-Trimethylbenzene	108-67-8	1.25	U	6.24	1.25	0.624
Vinyl chloride	75-01-4	2.50	U	6.24	2.50	1.25
o-Xylene	95-47-6	1.25	U	6.24	1.25	0.624
m-,p-Xylene	179601-23-1	1.25	U	6.24	1.25	0.624

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.2	80	120	
1,2-Dichloroethane-d4	87.2	80	120	
Toluene-d8	98.2	85	115	
4-Bromofluorobenzene	97.6	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030323-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT09(11-11.5)040316	**Prep Method:**	6850	**Prep Date:**	03/07/2016 14:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559975	**Analyst:**	JWR	**Run Date:**	03/07/2016 18:58
Collect Date:	03/04/2016 10:35	**Dilution:**	1	**File ID:**	1LM.LM33758
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	86.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.26	U	4.51	2.26	1.13

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030323-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT09(13.5-14)040316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/08/2016 09:24
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560074	**Analyst:**	TMB	**Run Date:**	03/08/2016 17:01
Collect Date:	03/04/2016 10:40	**Dilution:**	1	**File ID:**	6M137655
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.6	U	27.1	13.6	6.78
Benzene	71-43-2	1.36	U	6.78	1.36	0.678
Bromobenzene	108-86-1	1.36	U	6.78	1.36	0.678
Bromochloromethane	74-97-5	2.72	U	6.78	2.72	1.36
Bromodichloromethane	75-27-4	1.36	U	6.78	1.36	0.678
Bromoform	75-25-2	1.36	U	6.78	1.36	0.678
Bromomethane	74-83-9	2.72	U	6.78	2.72	1.36
2-Butanone	78-93-3	6.78	U	13.6	6.78	3.39
n-Butylbenzene	104-51-8	1.36	U	6.78	1.36	0.678
sec-Butylbenzene	135-98-8	1.36	U	6.78	1.36	0.678
tert-Butylbenzene	98-06-6	1.36	U	6.78	1.36	0.678
Carbon disulfide	75-15-0	1.36	U	6.78	1.36	0.678
Carbon tetrachloride	56-23-5	1.36	U	6.78	1.36	0.678
Chlorobenzene	108-90-7	1.36	U	6.78	1.36	0.678
Chlorodibromomethane	124-48-1	1.36	U	6.78	1.36	0.678
Chloroethane	75-00-3	2.72	U	6.78	2.72	1.36
Chloroform	67-66-3	1.36	U	6.78	1.36	0.678
Chloromethane	74-87-3	5.42	U	13.6	5.42	2.71
2-Chlorotoluene	95-49-8	1.36	U	6.78	1.36	0.678
4-Chlorotoluene	106-43-4	1.36	U	6.78	1.36	0.678
1,2-Dibromo-3-chloropropane	96-12-8	5.42	U	13.6	5.42	2.71
1,2-Dibromoethane	106-93-4	1.36	U	6.78	1.36	0.678
Dibromomethane	74-95-3	1.36	U	6.78	1.36	0.678
1,2-Dichlorobenzene	95-50-1	1.36	U	6.78	1.36	0.678
1,3-Dichlorobenzene	541-73-1	1.36	U	6.78	1.36	0.678
1,4-Dichlorobenzene	106-46-7	1.36	U	6.78	1.36	0.678
Dichlorodifluoromethane	75-71-8	2.72	U	6.78	2.72	1.36
1,1-Dichloroethane	75-34-3	2.72	U	6.78	2.72	1.36
1,2-Dichloroethane	107-06-2	1.36	U	6.78	1.36	0.678
1,1-Dichloroethene	75-35-4	1.36	U	6.78	1.36	0.678
cis-1,2-Dichloroethene	156-59-2	1.36	U	6.78	1.36	0.678

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.36	U	6.78	1.36	0.678
1,2-Dichloropropane	78-87-5	1.36	U	6.78	1.36	0.678
1,3-Dichloropropane	142-28-9	1.36	U	6.78	1.36	0.678
2,2-Dichloropropane	594-20-7	1.36	U	6.78	1.36	0.678
cis-1,3-Dichloropropene	10061-01-5	1.36	U	6.78	1.36	0.678
trans-1,3-Dichloropropene	10061-02-6	1.36	U	6.78	1.36	0.678
1,1-Dichloropropene	563-58-6	1.36	U	6.78	1.36	0.678
Ethylbenzene	100-41-4	1.36	U	6.78	1.36	0.678
2-Hexanone	591-78-6	6.78	U	13.6	6.78	3.39
Hexachlorobutadiene	87-68-3	1.36	U	6.78	1.36	0.678
Isopropylbenzene	98-82-8	1.36	U	6.78	1.36	0.678
p-Isopropyltoluene	99-87-6	1.36	U	6.78	1.36	0.678
4-Methyl-2-pentanone	108-10-1	6.78	U	13.6	6.78	3.39
Methylene chloride	75-09-2	2.72	U	6.78	2.72	1.36
Naphthalene	91-20-3	1.36	U	6.78	1.36	0.678
n-Propylbenzene	103-65-1	1.36	U	6.78	1.36	0.678
Styrene	100-42-5	1.36	U	6.78	1.36	0.678
1,1,1,2-Tetrachloroethane	630-20-6	1.36	U	6.78	1.36	0.678
1,1,2,2-Tetrachloroethane	79-34-5	1.36	U	6.78	1.36	0.678
Tetrachloroethene	127-18-4	1.36	U	6.78	1.36	0.678
Toluene	108-88-3	1.36	U	6.78	1.36	0.678
1,2,3-Trichlorobenzene	87-61-6	1.36	U	6.78	1.36	0.678
1,2,4-Trichlorobenzene	120-82-1	1.36	U	6.78	1.36	0.678
1,1,1-Trichloroethane	71-55-6	1.36	U	6.78	1.36	0.678
1,1,2-Trichloroethane	79-00-5	1.36	U	6.78	1.36	0.678
Trichloroethene	79-01-6	1.36	U	6.78	1.36	0.678
Trichlorofluoromethane	75-69-4	2.72	U	6.78	2.72	1.36
1,2,3-Trichloropropane	96-18-4	2.72	U	6.78	2.72	1.36
1,2,4-Trimethylbenzene	95-63-6	1.36	U	6.78	1.36	0.678
1,3,5-Trimethylbenzene	108-67-8	1.36	U	6.78	1.36	0.678
Vinyl chloride	75-01-4	2.72	U	6.78	2.72	1.36
o-Xylene	95-47-6	1.36	U	6.78	1.36	0.678
m-,p-Xylene	179601-23-1	1.36	U	6.78	1.36	0.678

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.7	80	120	
1,2-Dichloroethane-d4	90.4	80	120	
Toluene-d8	98.3	85	115	
4-Bromofluorobenzene	97.6	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030323-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT09(13.5-14)040316	**Prep Method:**	6850	**Prep Date:**	03/07/2016 14:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559975	**Analyst:**	JWR	**Run Date:**	03/07/2016 19:17
Collect Date:	03/04/2016 10:40	**Dilution:**	1	**File ID:**	1LM.LM33759
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.44	U	4.89	2.44	1.22

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030323-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT10(5-5.5)040316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/08/2016 09:24
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560074	**Analyst:**	TMB	**Run Date:**	03/08/2016 17:34
Collect Date:	03/04/2016 11:25	**Dilution:**	1	**File ID:**	6M137656
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	74.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.1	U	26.2	13.1	6.56
Benzene	71-43-2	1.31	U	6.56	1.31	0.656
Bromobenzene	108-86-1	1.31	U	6.56	1.31	0.656
Bromochloromethane	74-97-5	2.62	U	6.56	2.62	1.31
Bromodichloromethane	75-27-4	1.31	U	6.56	1.31	0.656
Bromoform	75-25-2	1.31	U	6.56	1.31	0.656
Bromomethane	74-83-9	2.62	U	6.56	2.62	1.31
2-Butanone	78-93-3	6.56	U	13.1	6.56	3.28
n-Butylbenzene	104-51-8	1.31	U	6.56	1.31	0.656
sec-Butylbenzene	135-98-8	1.31	U	6.56	1.31	0.656
tert-Butylbenzene	98-06-6	1.31	U	6.56	1.31	0.656
Carbon disulfide	75-15-0	1.31	U	6.56	1.31	0.656
Carbon tetrachloride	56-23-5	1.31	U	6.56	1.31	0.656
Chlorobenzene	108-90-7	1.31	U	6.56	1.31	0.656
Chlorodibromomethane	124-48-1	1.31	U	6.56	1.31	0.656
Chloroethane	75-00-3	2.62	U	6.56	2.62	1.31
Chloroform	67-66-3	1.31	U	6.56	1.31	0.656
Chloromethane	74-87-3	5.24	U	13.1	5.24	2.62
2-Chlorotoluene	95-49-8	1.31	U	6.56	1.31	0.656
4-Chlorotoluene	106-43-4	1.31	U	6.56	1.31	0.656
1,2-Dibromo-3-chloropropane	96-12-8	5.24	U	13.1	5.24	2.62
1,2-Dibromoethane	106-93-4	1.31	U	6.56	1.31	0.656
Dibromomethane	74-95-3	1.31	U	6.56	1.31	0.656
1,2-Dichlorobenzene	95-50-1	1.31	U	6.56	1.31	0.656
1,3-Dichlorobenzene	541-73-1	1.31	U	6.56	1.31	0.656
1,4-Dichlorobenzene	106-46-7	1.31	U	6.56	1.31	0.656
Dichlorodifluoromethane	75-71-8	2.62	U	6.56	2.62	1.31
1,1-Dichloroethane	75-34-3	2.62	U	6.56	2.62	1.31
1,2-Dichloroethane	107-06-2	1.31	U	6.56	1.31	0.656
1,1-Dichloroethene	75-35-4	1.31	U	6.56	1.31	0.656
cis-1,2-Dichloroethene	156-59-2	1.31	U	6.56	1.31	0.656

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.31	U	6.56	1.31	0.656
1,2-Dichloropropane	78-87-5	1.31	U	6.56	1.31	0.656
1,3-Dichloropropane	142-28-9	1.31	U	6.56	1.31	0.656
2,2-Dichloropropane	594-20-7	1.31	U	6.56	1.31	0.656
cis-1,3-Dichloropropene	10061-01-5	1.31	U	6.56	1.31	0.656
trans-1,3-Dichloropropene	10061-02-6	1.31	U	6.56	1.31	0.656
1,1-Dichloropropene	563-58-6	1.31	U	6.56	1.31	0.656
Ethylbenzene	100-41-4	1.31	U	6.56	1.31	0.656
2-Hexanone	591-78-6	6.56	U	13.1	6.56	3.28
Hexachlorobutadiene	87-68-3	1.31	U	6.56	1.31	0.656
Isopropylbenzene	98-82-8	1.31	U	6.56	1.31	0.656
p-Isopropyltoluene	99-87-6	1.31	U	6.56	1.31	0.656
4-Methyl-2-pentanone	108-10-1	6.56	U	13.1	6.56	3.28
Methylene chloride	75-09-2	2.62	U	6.56	2.62	1.31
Naphthalene	91-20-3	1.31	U	6.56	1.31	0.656
n-Propylbenzene	103-65-1	1.31	U	6.56	1.31	0.656
Styrene	100-42-5	1.31	U	6.56	1.31	0.656
1,1,1,2-Tetrachloroethane	630-20-6	1.31	U	6.56	1.31	0.656
1,1,2,2-Tetrachloroethane	79-34-5	1.31	U	6.56	1.31	0.656
Tetrachloroethene	127-18-4	1.31	U	6.56	1.31	0.656
Toluene	108-88-3	1.31	U	6.56	1.31	0.656
1,2,3-Trichlorobenzene	87-61-6	1.31	U	6.56	1.31	0.656
1,2,4-Trichlorobenzene	120-82-1	1.31	U	6.56	1.31	0.656
1,1,1-Trichloroethane	71-55-6	1.31	U	6.56	1.31	0.656
1,1,2-Trichloroethane	79-00-5	1.31	U	6.56	1.31	0.656
Trichloroethene	79-01-6	1.31	U	6.56	1.31	0.656
Trichlorofluoromethane	75-69-4	2.62	U	6.56	2.62	1.31
1,2,3-Trichloropropane	96-18-4	2.62	U	6.56	2.62	1.31
1,2,4-Trimethylbenzene	95-63-6	1.31	U	6.56	1.31	0.656
1,3,5-Trimethylbenzene	108-67-8	1.31	U	6.56	1.31	0.656
Vinyl chloride	75-01-4	2.62	U	6.56	2.62	1.31
o-Xylene	95-47-6	1.31	U	6.56	1.31	0.656
m-,p-Xylene	179601-23-1	1.31	U	6.56	1.31	0.656

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.0	80	120	
1,2-Dichloroethane-d4	87.5	80	120	
Toluene-d8	98.4	85	115	
4-Bromofluorobenzene	98.1	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030323-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT10(5-5.5)040316	**Prep Method:**	6850	**Prep Date:**	03/07/2016 14:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559975	**Analyst:**	JWR	**Run Date:**	03/07/2016 19:36
Collect Date:	03/04/2016 11:25	**Dilution:**	1	**File ID:**	1LM.LM33760
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	74.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.60	U	5.21	2.60	1.30

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030323-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT10(15.5-16)040316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/08/2016 09:25
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560074	**Analyst:**	TMB	**Run Date:**	03/08/2016 18:08
Collect Date:	03/04/2016 11:55	**Dilution:**	1	**File ID:**	6M137657
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	94.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.5	U	22.9	11.5	5.73
Benzene	71-43-2	1.15	U	5.73	1.15	0.573
Bromobenzene	108-86-1	1.15	U	5.73	1.15	0.573
Bromochloromethane	74-97-5	2.30	U	5.73	2.30	1.15
Bromodichloromethane	75-27-4	1.15	U	5.73	1.15	0.573
Bromoform	75-25-2	1.15	U	5.73	1.15	0.573
Bromomethane	74-83-9	2.30	U	5.73	2.30	1.15
2-Butanone	78-93-3	5.74	U	11.5	5.74	2.87
n-Butylbenzene	104-51-8	1.15	U	5.73	1.15	0.573
sec-Butylbenzene	135-98-8	1.15	U	5.73	1.15	0.573
tert-Butylbenzene	98-06-6	1.15	U	5.73	1.15	0.573
Carbon disulfide	75-15-0	1.15	U	5.73	1.15	0.573
Carbon tetrachloride	56-23-5	1.15	U	5.73	1.15	0.573
Chlorobenzene	108-90-7	1.15	U	5.73	1.15	0.573
Chlorodibromomethane	124-48-1	1.15	U	5.73	1.15	0.573
Chloroethane	75-00-3	2.30	U	5.73	2.30	1.15
Chloroform	67-66-3	1.15	U	5.73	1.15	0.573
Chloromethane	74-87-3	4.58	U	11.5	4.58	2.29
2-Chlorotoluene	95-49-8	1.15	U	5.73	1.15	0.573
4-Chlorotoluene	106-43-4	1.15	U	5.73	1.15	0.573
1,2-Dibromo-3-chloropropane	96-12-8	4.58	U	11.5	4.58	2.29
1,2-Dibromoethane	106-93-4	1.15	U	5.73	1.15	0.573
Dibromomethane	74-95-3	1.15	U	5.73	1.15	0.573
1,2-Dichlorobenzene	95-50-1	1.15	U	5.73	1.15	0.573
1,3-Dichlorobenzene	541-73-1	1.15	U	5.73	1.15	0.573
1,4-Dichlorobenzene	106-46-7	1.15	U	5.73	1.15	0.573
Dichlorodifluoromethane	75-71-8	2.30	U	5.73	2.30	1.15
1,1-Dichloroethane	75-34-3	2.30	U	5.73	2.30	1.15
1,2-Dichloroethane	107-06-2	1.15	U	5.73	1.15	0.573
1,1-Dichloroethene	75-35-4	1.15	U	5.73	1.15	0.573
cis-1,2-Dichloroethene	156-59-2	1.15	U	5.73	1.15	0.573

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Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.15	U	5.73	1.15	0.573
1,2-Dichloropropane	78-87-5	1.15	U	5.73	1.15	0.573
1,3-Dichloropropane	142-28-9	1.15	U	5.73	1.15	0.573
2,2-Dichloropropane	594-20-7	1.15	U	5.73	1.15	0.573
cis-1,3-Dichloropropene	10061-01-5	1.15	U	5.73	1.15	0.573
trans-1,3-Dichloropropene	10061-02-6	1.15	U	5.73	1.15	0.573
1,1-Dichloropropene	563-58-6	1.15	U	5.73	1.15	0.573
Ethylbenzene	100-41-4	1.15	U	5.73	1.15	0.573
2-Hexanone	591-78-6	5.74	U	11.5	5.74	2.87
Hexachlorobutadiene	87-68-3	1.15	U	5.73	1.15	0.573
Isopropylbenzene	98-82-8	1.15	U	5.73	1.15	0.573
p-Isopropyltoluene	99-87-6	1.15	U	5.73	1.15	0.573
4-Methyl-2-pentanone	108-10-1	5.74	U	11.5	5.74	2.87
Methylene chloride	75-09-2	2.30	U	5.73	2.30	1.15
Naphthalene	91-20-3	1.15	U	5.73	1.15	0.573
n-Propylbenzene	103-65-1	1.15	U	5.73	1.15	0.573
Styrene	100-42-5	1.15	U	5.73	1.15	0.573
1,1,1,2-Tetrachloroethane	630-20-6	1.15	U	5.73	1.15	0.573
1,1,2,2-Tetrachloroethane	79-34-5	1.15	U	5.73	1.15	0.573
Tetrachloroethene	127-18-4	1.15	U	5.73	1.15	0.573
Toluene	108-88-3	1.15	U	5.73	1.15	0.573
1,2,3-Trichlorobenzene	87-61-6	1.15	U	5.73	1.15	0.573
1,2,4-Trichlorobenzene	120-82-1	1.15	U	5.73	1.15	0.573
1,1,1-Trichloroethane	71-55-6	1.15	U	5.73	1.15	0.573
1,1,2-Trichloroethane	79-00-5	1.15	U	5.73	1.15	0.573
Trichloroethene	79-01-6	1.15	U	5.73	1.15	0.573
Trichlorofluoromethane	75-69-4	2.30	U	5.73	2.30	1.15
1,2,3-Trichloropropane	96-18-4	2.30	U	5.73	2.30	1.15
1,2,4-Trimethylbenzene	95-63-6	1.15	U	5.73	1.15	0.573
1,3,5-Trimethylbenzene	108-67-8	1.15	U	5.73	1.15	0.573
Vinyl chloride	75-01-4	2.30	U	5.73	2.30	1.15
o-Xylene	95-47-6	1.15	U	5.73	1.15	0.573
m-,p-Xylene	179601-23-1	1.15	U	5.73	1.15	0.573

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.8	80	120	
1,2-Dichloroethane-d4	87.8	80	120	
Toluene-d8	97.4	85	115	
4-Bromofluorobenzene	97.0	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030323-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT10(15.5-16)040316	**Prep Method:**	6850	**Prep Date:**	03/07/2016 14:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559975	**Analyst:**	JWR	**Run Date:**	03/08/2016 11:35
Collect Date:	03/04/2016 11:55	**Dilution:**	10	**File ID:**	1LM.LM33776
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	94.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	175		41.8	21.0	10.5

Certificate of Analysis

Sample #:	L16030323-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT10(23.5-24)040316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/08/2016 09:27
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560074	**Analyst:**	TMB	**Run Date:**	03/08/2016 18:42
Collect Date:	03/04/2016 12:40	**Dilution:**	1	**File ID:**	6M137658
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	86.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.4	U	22.9	11.4	5.71
Benzene	71-43-2	1.14	U	5.71	1.14	0.571
Bromobenzene	108-86-1	1.14	U	5.71	1.14	0.571
Bromochloromethane	74-97-5	2.28	U	5.71	2.28	1.14
Bromodichloromethane	75-27-4	1.14	U	5.71	1.14	0.571
Bromoform	75-25-2	1.14	U	5.71	1.14	0.571
Bromomethane	74-83-9	2.28	U	5.71	2.28	1.14
2-Butanone	78-93-3	5.72	U	11.4	5.72	2.86
n-Butylbenzene	104-51-8	1.14	U	5.71	1.14	0.571
sec-Butylbenzene	135-98-8	1.14	U	5.71	1.14	0.571
tert-Butylbenzene	98-06-6	1.14	U	5.71	1.14	0.571
Carbon disulfide	75-15-0	1.14	U	5.71	1.14	0.571
Carbon tetrachloride	56-23-5	1.14	U	5.71	1.14	0.571
Chlorobenzene	108-90-7	1.14	U	5.71	1.14	0.571
Chlorodibromomethane	124-48-1	1.14	U	5.71	1.14	0.571
Chloroethane	75-00-3	2.28	U	5.71	2.28	1.14
Chloroform	67-66-3	1.14	U	5.71	1.14	0.571
Chloromethane	74-87-3	4.58	U	11.4	4.58	2.29
2-Chlorotoluene	95-49-8	1.14	U	5.71	1.14	0.571
4-Chlorotoluene	106-43-4	1.14	U	5.71	1.14	0.571

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Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	4.58	U	11.4	4.58	2.29
1,2-Dibromoethane	106-93-4	1.14	U	5.71	1.14	0.571
Dibromomethane	74-95-3	1.14	U	5.71	1.14	0.571
1,2-Dichlorobenzene	95-50-1	1.14	U	5.71	1.14	0.571
1,3-Dichlorobenzene	541-73-1	1.14	U	5.71	1.14	0.571
1,4-Dichlorobenzene	106-46-7	1.14	U	5.71	1.14	0.571
Dichlorodifluoromethane	75-71-8	2.28	U	5.71	2.28	1.14
1,1-Dichloroethane	75-34-3	2.28	U	5.71	2.28	1.14
1,2-Dichloroethane	107-06-2	1.14	U	5.71	1.14	0.571
1,1-Dichloroethene	75-35-4	1.14	U	5.71	1.14	0.571
cis-1,2-Dichloroethene	156-59-2	1.14	U	5.71	1.14	0.571
trans-1,2-Dichloroethene	156-60-5	1.14	U	5.71	1.14	0.571
1,2-Dichloropropane	78-87-5	1.14	U	5.71	1.14	0.571
1,3-Dichloropropane	142-28-9	1.14	U	5.71	1.14	0.571
2,2-Dichloropropane	594-20-7	1.14	U	5.71	1.14	0.571
cis-1,3-Dichloropropene	10061-01-5	1.14	U	5.71	1.14	0.571
trans-1,3-Dichloropropene	10061-02-6	1.14	U	5.71	1.14	0.571
1,1-Dichloropropene	563-58-6	1.14	U	5.71	1.14	0.571
Ethylbenzene	100-41-4	1.14	U	5.71	1.14	0.571
2-Hexanone	591-78-6	5.72	U	11.4	5.72	2.86
Hexachlorobutadiene	87-68-3	1.14	U	5.71	1.14	0.571
Isopropylbenzene	98-82-8	1.14	U	5.71	1.14	0.571
p-Isopropyltoluene	99-87-6	1.14	U	5.71	1.14	0.571
4-Methyl-2-pentanone	108-10-1	5.72	U	11.4	5.72	2.86
Methylene chloride	75-09-2	2.28	U	5.71	2.28	1.14
Naphthalene	91-20-3	1.14	U	5.71	1.14	0.571
n-Propylbenzene	103-65-1	1.14	U	5.71	1.14	0.571
Styrene	100-42-5	1.14	U	5.71	1.14	0.571
1,1,1,2-Tetrachloroethane	630-20-6	1.14	U	5.71	1.14	0.571
1,1,2,2-Tetrachloroethane	79-34-5	1.14	U	5.71	1.14	0.571
Tetrachloroethene	127-18-4	1.14	U	5.71	1.14	0.571
Toluene	108-88-3	1.14	U	5.71	1.14	0.571
1,2,3-Trichlorobenzene	87-61-6	1.14	U	5.71	1.14	0.571
1,2,4-Trichlorobenzene	120-82-1	1.14	U	5.71	1.14	0.571
1,1,1-Trichloroethane	71-55-6	1.14	U	5.71	1.14	0.571
1,1,2-Trichloroethane	79-00-5	1.14	U	5.71	1.14	0.571
Trichloroethene	79-01-6	1.14	U	5.71	1.14	0.571
Trichlorofluoromethane	75-69-4	2.28	U	5.71	2.28	1.14
1,2,3-Trichloropropane	96-18-4	2.28	U	5.71	2.28	1.14

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Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.14	U	5.71	1.14	0.571
1,3,5-Trimethylbenzene	108-67-8	1.14	U	5.71	1.14	0.571
Vinyl chloride	75-01-4	2.28	U	5.71	2.28	1.14
o-Xylene	95-47-6	1.14	U	5.71	1.14	0.571
m-,p-Xylene	179601-23-1	1.14	U	5.71	1.14	0.571

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	90.2	80	120	
1,2-Dichloroethane-d4	84.3	80	120	
Toluene-d8	99.9	85	115	
4-Bromofluorobenzene	96.8	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030323-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT10(23.5-24)040316	**Prep Method:**	6850	**Prep Date:**	03/07/2016 14:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559975	**Analyst:**	JWR	**Run Date:**	03/07/2016 21:11
Collect Date:	03/04/2016 12:40	**Dilution:**	1	**File ID:**	1LM.LM33765
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	86.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	15.9		4.55	2.28	1.14

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #: L16030323-01 **Client ID:** 18DPT09(5-5.5)040316 **Matrix:** Soil **Collect Date:** 03/04/2016 10:30

Analyte	Result	Units	Qualifier
Percent Solids	67.6	weight %	

Sample #: L16030323-02 **Client ID:** 18DPT09(11-11.5)040316 **Matrix:** Soil **Collect Date:** 03/04/2016 10:35

Analyte	Result	Units	Qualifier
Percent Solids	86.3	weight %	

Sample #: L16030323-03 **Client ID:** 18DPT09(13.5-14)040316 **Matrix:** Soil **Collect Date:** 03/04/2016 10:40

Analyte	Result	Units	Qualifier
Percent Solids	79.6	weight %	

Sample #: L16030323-04 **Client ID:** 18DPT10(5-5.5)040316 **Matrix:** Soil **Collect Date:** 03/04/2016 11:25

Analyte	Result	Units	Qualifier
Percent Solids	74.0	weight %	

Sample #: L16030323-05 **Client ID:** 18DPT10(15.5-16)040316 **Matrix:** Soil **Collect Date:** 03/04/2016 11:55

Analyte	Result	Units	Qualifier
Percent Solids	94.0	weight %	

Sample #: L16030323-06 **Client ID:** 18DPT10(23.5-24)040316 **Matrix:** Soil **Collect Date:** 03/04/2016 12:40

Analyte	Result	Units	Qualifier
Percent Solids	86.3	weight %	

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030323-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT09(5-5.5)040316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/08/2016 09:22
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560074	**Analyst:**	TMB	**Run Date:**	03/08/2016 15:54
Collect Date:	03/04/2016 10:30	**Dilution:**	1	**File ID:**	6M137653
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	67.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	15.7	U	31.4	15.7	7.86
Benzene	71-43-2	1.57	U	7.86	1.57	0.786
Bromobenzene	108-86-1	1.57	U	7.86	1.57	0.786
Bromochloromethane	74-97-5	3.14	U	7.86	3.14	1.57
Bromodichloromethane	75-27-4	1.57	U	7.86	1.57	0.786
Bromoform	75-25-2	1.57	U	7.86	1.57	0.786
Bromomethane	74-83-9	3.14	U	7.86	3.14	1.57
2-Butanone	78-93-3	7.86	U	15.7	7.86	3.93
n-Butylbenzene	104-51-8	1.57	U	7.86	1.57	0.786
sec-Butylbenzene	135-98-8	1.57	U	7.86	1.57	0.786
tert-Butylbenzene	98-06-6	1.57	U	7.86	1.57	0.786
Carbon disulfide	75-15-0	1.57	U	7.86	1.57	0.786
Carbon tetrachloride	56-23-5	1.57	U	7.86	1.57	0.786
Chlorobenzene	108-90-7	1.57	U	7.86	1.57	0.786
Chlorodibromomethane	124-48-1	1.57	U	7.86	1.57	0.786
Chloroethane	75-00-3	3.14	U	7.86	3.14	1.57
Chloroform	67-66-3	1.57	U	7.86	1.57	0.786
Chloromethane	74-87-3	6.28	U	15.7	6.28	3.14
2-Chlorotoluene	95-49-8	1.57	U	7.86	1.57	0.786
4-Chlorotoluene	106-43-4	1.57	U	7.86	1.57	0.786
1,2-Dibromo-3-chloropropane	96-12-8	6.28	U	15.7	6.28	3.14
1,2-Dibromoethane	106-93-4	1.57	U	7.86	1.57	0.786
Dibromomethane	74-95-3	1.57	U	7.86	1.57	0.786
1,2-Dichlorobenzene	95-50-1	1.57	U	7.86	1.57	0.786
1,3-Dichlorobenzene	541-73-1	1.57	U	7.86	1.57	0.786
1,4-Dichlorobenzene	106-46-7	1.57	U	7.86	1.57	0.786
Dichlorodifluoromethane	75-71-8	3.14	U	7.86	3.14	1.57
1,1-Dichloroethane	75-34-3	3.14	U	7.86	3.14	1.57
1,2-Dichloroethane	107-06-2	1.57	U	7.86	1.57	0.786
1,1-Dichloroethene	75-35-4	1.57	U	7.86	1.57	0.786
cis-1,2-Dichloroethene	156-59-2	1.57	U	7.86	1.57	0.786
trans-1,2-Dichloroethene	156-60-5	1.57	U	7.86	1.57	0.786

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Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.57	U	7.86	1.57	0.786
1,3-Dichloropropane	142-28-9	1.57	U	7.86	1.57	0.786
2,2-Dichloropropane	594-20-7	1.57	U	7.86	1.57	0.786
cis-1,3-Dichloropropene	10061-01-5	1.57	U	7.86	1.57	0.786
trans-1,3-Dichloropropene	10061-02-6	1.57	U	7.86	1.57	0.786
1,1-Dichloropropene	563-58-6	1.57	U	7.86	1.57	0.786
Ethylbenzene	100-41-4	1.57	U	7.86	1.57	0.786
2-Hexanone	591-78-6	7.86	U	15.7	7.86	3.93
Hexachlorobutadiene	87-68-3	1.57	U	7.86	1.57	0.786
Isopropylbenzene	98-82-8	1.57	U	7.86	1.57	0.786
p-Isopropyltoluene	99-87-6	1.47	J	7.86	1.57	0.786
4-Methyl-2-pentanone	108-10-1	7.86	U	15.7	7.86	3.93
Methylene chloride	75-09-2	3.14	U	7.86	3.14	1.57
Naphthalene	91-20-3	1.57	U	7.86	1.57	0.786
n-Propylbenzene	103-65-1	1.57	U	7.86	1.57	0.786
Styrene	100-42-5	1.57	U	7.86	1.57	0.786
1,1,1,2-Tetrachloroethane	630-20-6	1.57	U	7.86	1.57	0.786
1,1,2,2-Tetrachloroethane	79-34-5	1.57	U	7.86	1.57	0.786
Tetrachloroethene	127-18-4	1.57	U	7.86	1.57	0.786
Toluene	108-88-3	1.57	U	7.86	1.57	0.786
1,2,3-Trichlorobenzene	87-61-6	1.57	U	7.86	1.57	0.786
1,2,4-Trichlorobenzene	120-82-1	1.57	U	7.86	1.57	0.786
1,1,1-Trichloroethane	71-55-6	1.57	U	7.86	1.57	0.786
1,1,2-Trichloroethane	79-00-5	1.57	U	7.86	1.57	0.786
Trichloroethene	79-01-6	1.57	U	7.86	1.57	0.786
Trichlorofluoromethane	75-69-4	3.14	U	7.86	3.14	1.57
1,2,3-Trichloropropane	96-18-4	3.14	U	7.86	3.14	1.57
1,2,4-Trimethylbenzene	95-63-6	1.57	U	7.86	1.57	0.786
1,3,5-Trimethylbenzene	108-67-8	1.57	U	7.86	1.57	0.786
Vinyl chloride	75-01-4	3.14	U	7.86	3.14	1.57
o-Xylene	95-47-6	1.57	U	7.86	1.57	0.786
m-,p-Xylene	179601-23-1	1.57	U	7.86	1.57	0.786

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	89.6	80	120	
1,2-Dichloroethane-d4	81.6	80	120	
Toluene-d8	100	85	115	
4-Bromofluorobenzene	99.9	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030323-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT09(11-11.5)040316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/08/2016 09:23
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560074	**Analyst:**	TMB	**Run Date:**	03/08/2016 16:28
Collect Date:	03/04/2016 10:35	**Dilution:**	1	**File ID:**	6M137654
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	86.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	25.0	12.5	6.24
Benzene	71-43-2	1.25	U	6.24	1.25	0.624
Bromobenzene	108-86-1	1.25	U	6.24	1.25	0.624
Bromochloromethane	74-97-5	2.50	U	6.24	2.50	1.25
Bromodichloromethane	75-27-4	1.25	U	6.24	1.25	0.624
Bromoform	75-25-2	1.25	U	6.24	1.25	0.624
Bromomethane	74-83-9	2.50	U	6.24	2.50	1.25
2-Butanone	78-93-3	6.24	U	12.5	6.24	3.12
n-Butylbenzene	104-51-8	1.25	U	6.24	1.25	0.624
sec-Butylbenzene	135-98-8	1.25	U	6.24	1.25	0.624
tert-Butylbenzene	98-06-6	1.25	U	6.24	1.25	0.624
Carbon disulfide	75-15-0	1.25	U	6.24	1.25	0.624
Carbon tetrachloride	56-23-5	1.25	U	6.24	1.25	0.624
Chlorobenzene	108-90-7	1.25	U	6.24	1.25	0.624
Chlorodibromomethane	124-48-1	1.25	U	6.24	1.25	0.624
Chloroethane	75-00-3	2.50	U	6.24	2.50	1.25
Chloroform	67-66-3	1.25	U	6.24	1.25	0.624
Chloromethane	74-87-3	5.00	U	12.5	5.00	2.50
2-Chlorotoluene	95-49-8	1.25	U	6.24	1.25	0.624
4-Chlorotoluene	106-43-4	1.25	U	6.24	1.25	0.624
1,2-Dibromo-3-chloropropane	96-12-8	5.00	U	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	6.24	1.25	0.624
Dibromomethane	74-95-3	1.25	U	6.24	1.25	0.624
1,2-Dichlorobenzene	95-50-1	1.25	U	6.24	1.25	0.624
1,3-Dichlorobenzene	541-73-1	1.25	U	6.24	1.25	0.624
1,4-Dichlorobenzene	106-46-7	1.25	U	6.24	1.25	0.624
Dichlorodifluoromethane	75-71-8	2.50	U	6.24	2.50	1.25
1,1-Dichloroethane	75-34-3	2.50	U	6.24	2.50	1.25
1,2-Dichloroethane	107-06-2	1.25	U	6.24	1.25	0.624
1,1-Dichloroethene	75-35-4	1.25	U	6.24	1.25	0.624
cis-1,2-Dichloroethene	156-59-2	1.25	U	6.24	1.25	0.624

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Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.25	U	6.24	1.25	0.624
1,2-Dichloropropane	78-87-5	1.25	U	6.24	1.25	0.624
1,3-Dichloropropane	142-28-9	1.25	U	6.24	1.25	0.624
2,2-Dichloropropane	594-20-7	1.25	U	6.24	1.25	0.624
cis-1,3-Dichloropropene	10061-01-5	1.25	U	6.24	1.25	0.624
trans-1,3-Dichloropropene	10061-02-6	1.25	U	6.24	1.25	0.624
1,1-Dichloropropene	563-58-6	1.25	U	6.24	1.25	0.624
Ethylbenzene	100-41-4	1.25	U	6.24	1.25	0.624
2-Hexanone	591-78-6	6.24	U	12.5	6.24	3.12
Hexachlorobutadiene	87-68-3	1.25	U	6.24	1.25	0.624
Isopropylbenzene	98-82-8	1.25	U	6.24	1.25	0.624
p-Isopropyltoluene	99-87-6	1.25	U	6.24	1.25	0.624
4-Methyl-2-pentanone	108-10-1	6.24	U	12.5	6.24	3.12
Methylene chloride	75-09-2	2.50	U	6.24	2.50	1.25
Naphthalene	91-20-3	1.25	U	6.24	1.25	0.624
n-Propylbenzene	103-65-1	1.25	U	6.24	1.25	0.624
Styrene	100-42-5	1.25	U	6.24	1.25	0.624
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	6.24	1.25	0.624
1,1,2,2-Tetrachloroethane	79-34-5	1.25	U	6.24	1.25	0.624
Tetrachloroethene	127-18-4	1.25	U	6.24	1.25	0.624
Toluene	108-88-3	1.25	U	6.24	1.25	0.624
1,2,3-Trichlorobenzene	87-61-6	1.25	U	6.24	1.25	0.624
1,2,4-Trichlorobenzene	120-82-1	1.25	U	6.24	1.25	0.624
1,1,1-Trichloroethane	71-55-6	1.25	U	6.24	1.25	0.624
1,1,2-Trichloroethane	79-00-5	1.25	U	6.24	1.25	0.624
Trichloroethene	79-01-6	1.25	U	6.24	1.25	0.624
Trichlorofluoromethane	75-69-4	2.50	U	6.24	2.50	1.25
1,2,3-Trichloropropane	96-18-4	2.50	U	6.24	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	6.24	1.25	0.624
1,3,5-Trimethylbenzene	108-67-8	1.25	U	6.24	1.25	0.624
Vinyl chloride	75-01-4	2.50	U	6.24	2.50	1.25
o-Xylene	95-47-6	1.25	U	6.24	1.25	0.624
m-,p-Xylene	179601-23-1	1.25	U	6.24	1.25	0.624

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.2	80	120	
1,2-Dichloroethane-d4	87.2	80	120	
Toluene-d8	98.2	85	115	
4-Bromofluorobenzene	97.6	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030323-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT09(13.5-14)040316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/08/2016 09:24
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560074	**Analyst:**	TMB	**Run Date:**	03/08/2016 17:01
Collect Date:	03/04/2016 10:40	**Dilution:**	1	**File ID:**	6M137655
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.6	U	27.1	13.6	6.78
Benzene	71-43-2	1.36	U	6.78	1.36	0.678
Bromobenzene	108-86-1	1.36	U	6.78	1.36	0.678
Bromochloromethane	74-97-5	2.72	U	6.78	2.72	1.36
Bromodichloromethane	75-27-4	1.36	U	6.78	1.36	0.678
Bromoform	75-25-2	1.36	U	6.78	1.36	0.678
Bromomethane	74-83-9	2.72	U	6.78	2.72	1.36
2-Butanone	78-93-3	6.78	U	13.6	6.78	3.39
n-Butylbenzene	104-51-8	1.36	U	6.78	1.36	0.678
sec-Butylbenzene	135-98-8	1.36	U	6.78	1.36	0.678
tert-Butylbenzene	98-06-6	1.36	U	6.78	1.36	0.678
Carbon disulfide	75-15-0	1.36	U	6.78	1.36	0.678
Carbon tetrachloride	56-23-5	1.36	U	6.78	1.36	0.678
Chlorobenzene	108-90-7	1.36	U	6.78	1.36	0.678
Chlorodibromomethane	124-48-1	1.36	U	6.78	1.36	0.678
Chloroethane	75-00-3	2.72	U	6.78	2.72	1.36
Chloroform	67-66-3	1.36	U	6.78	1.36	0.678
Chloromethane	74-87-3	5.42	U	13.6	5.42	2.71
2-Chlorotoluene	95-49-8	1.36	U	6.78	1.36	0.678
4-Chlorotoluene	106-43-4	1.36	U	6.78	1.36	0.678
1,2-Dibromo-3-chloropropane	96-12-8	5.42	U	13.6	5.42	2.71
1,2-Dibromoethane	106-93-4	1.36	U	6.78	1.36	0.678
Dibromomethane	74-95-3	1.36	U	6.78	1.36	0.678
1,2-Dichlorobenzene	95-50-1	1.36	U	6.78	1.36	0.678
1,3-Dichlorobenzene	541-73-1	1.36	U	6.78	1.36	0.678
1,4-Dichlorobenzene	106-46-7	1.36	U	6.78	1.36	0.678
Dichlorodifluoromethane	75-71-8	2.72	U	6.78	2.72	1.36
1,1-Dichloroethane	75-34-3	2.72	U	6.78	2.72	1.36
1,2-Dichloroethane	107-06-2	1.36	U	6.78	1.36	0.678
1,1-Dichloroethene	75-35-4	1.36	U	6.78	1.36	0.678
cis-1,2-Dichloroethene	156-59-2	1.36	U	6.78	1.36	0.678

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Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.36	U	6.78	1.36	0.678
1,2-Dichloropropane	78-87-5	1.36	U	6.78	1.36	0.678
1,3-Dichloropropane	142-28-9	1.36	U	6.78	1.36	0.678
2,2-Dichloropropane	594-20-7	1.36	U	6.78	1.36	0.678
cis-1,3-Dichloropropene	10061-01-5	1.36	U	6.78	1.36	0.678
trans-1,3-Dichloropropene	10061-02-6	1.36	U	6.78	1.36	0.678
1,1-Dichloropropene	563-58-6	1.36	U	6.78	1.36	0.678
Ethylbenzene	100-41-4	1.36	U	6.78	1.36	0.678
2-Hexanone	591-78-6	6.78	U	13.6	6.78	3.39
Hexachlorobutadiene	87-68-3	1.36	U	6.78	1.36	0.678
Isopropylbenzene	98-82-8	1.36	U	6.78	1.36	0.678
p-Isopropyltoluene	99-87-6	1.36	U	6.78	1.36	0.678
4-Methyl-2-pentanone	108-10-1	6.78	U	13.6	6.78	3.39
Methylene chloride	75-09-2	2.72	U	6.78	2.72	1.36
Naphthalene	91-20-3	1.36	U	6.78	1.36	0.678
n-Propylbenzene	103-65-1	1.36	U	6.78	1.36	0.678
Styrene	100-42-5	1.36	U	6.78	1.36	0.678
1,1,1,2-Tetrachloroethane	630-20-6	1.36	U	6.78	1.36	0.678
1,1,2,2-Tetrachloroethane	79-34-5	1.36	U	6.78	1.36	0.678
Tetrachloroethene	127-18-4	1.36	U	6.78	1.36	0.678
Toluene	108-88-3	1.36	U	6.78	1.36	0.678
1,2,3-Trichlorobenzene	87-61-6	1.36	U	6.78	1.36	0.678
1,2,4-Trichlorobenzene	120-82-1	1.36	U	6.78	1.36	0.678
1,1,1-Trichloroethane	71-55-6	1.36	U	6.78	1.36	0.678
1,1,2-Trichloroethane	79-00-5	1.36	U	6.78	1.36	0.678
Trichloroethene	79-01-6	1.36	U	6.78	1.36	0.678
Trichlorofluoromethane	75-69-4	2.72	U	6.78	2.72	1.36
1,2,3-Trichloropropane	96-18-4	2.72	U	6.78	2.72	1.36
1,2,4-Trimethylbenzene	95-63-6	1.36	U	6.78	1.36	0.678
1,3,5-Trimethylbenzene	108-67-8	1.36	U	6.78	1.36	0.678
Vinyl chloride	75-01-4	2.72	U	6.78	2.72	1.36
o-Xylene	95-47-6	1.36	U	6.78	1.36	0.678
m-,p-Xylene	179601-23-1	1.36	U	6.78	1.36	0.678

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.7	80	120	
1,2-Dichloroethane-d4	90.4	80	120	
Toluene-d8	98.3	85	115	
4-Bromofluorobenzene	97.6	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030323-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT10(5-5.5)040316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/08/2016 09:24
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560074	**Analyst:**	TMB	**Run Date:**	03/08/2016 17:34
Collect Date:	03/04/2016 11:25	**Dilution:**	1	**File ID:**	6M137656
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	74.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.1	U	26.2	13.1	6.56
Benzene	71-43-2	1.31	U	6.56	1.31	0.656
Bromobenzene	108-86-1	1.31	U	6.56	1.31	0.656
Bromochloromethane	74-97-5	2.62	U	6.56	2.62	1.31
Bromodichloromethane	75-27-4	1.31	U	6.56	1.31	0.656
Bromoform	75-25-2	1.31	U	6.56	1.31	0.656
Bromomethane	74-83-9	2.62	U	6.56	2.62	1.31
2-Butanone	78-93-3	6.56	U	13.1	6.56	3.28
n-Butylbenzene	104-51-8	1.31	U	6.56	1.31	0.656
sec-Butylbenzene	135-98-8	1.31	U	6.56	1.31	0.656
tert-Butylbenzene	98-06-6	1.31	U	6.56	1.31	0.656
Carbon disulfide	75-15-0	1.31	U	6.56	1.31	0.656
Carbon tetrachloride	56-23-5	1.31	U	6.56	1.31	0.656
Chlorobenzene	108-90-7	1.31	U	6.56	1.31	0.656
Chlorodibromomethane	124-48-1	1.31	U	6.56	1.31	0.656
Chloroethane	75-00-3	2.62	U	6.56	2.62	1.31
Chloroform	67-66-3	1.31	U	6.56	1.31	0.656
Chloromethane	74-87-3	5.24	U	13.1	5.24	2.62
2-Chlorotoluene	95-49-8	1.31	U	6.56	1.31	0.656
4-Chlorotoluene	106-43-4	1.31	U	6.56	1.31	0.656
1,2-Dibromo-3-chloropropane	96-12-8	5.24	U	13.1	5.24	2.62
1,2-Dibromoethane	106-93-4	1.31	U	6.56	1.31	0.656
Dibromomethane	74-95-3	1.31	U	6.56	1.31	0.656
1,2-Dichlorobenzene	95-50-1	1.31	U	6.56	1.31	0.656
1,3-Dichlorobenzene	541-73-1	1.31	U	6.56	1.31	0.656
1,4-Dichlorobenzene	106-46-7	1.31	U	6.56	1.31	0.656
Dichlorodifluoromethane	75-71-8	2.62	U	6.56	2.62	1.31
1,1-Dichloroethane	75-34-3	2.62	U	6.56	2.62	1.31
1,2-Dichloroethane	107-06-2	1.31	U	6.56	1.31	0.656
1,1-Dichloroethene	75-35-4	1.31	U	6.56	1.31	0.656
cis-1,2-Dichloroethene	156-59-2	1.31	U	6.56	1.31	0.656

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.31	U	6.56	1.31	0.656
1,2-Dichloropropane	78-87-5	1.31	U	6.56	1.31	0.656
1,3-Dichloropropane	142-28-9	1.31	U	6.56	1.31	0.656
2,2-Dichloropropane	594-20-7	1.31	U	6.56	1.31	0.656
cis-1,3-Dichloropropene	10061-01-5	1.31	U	6.56	1.31	0.656
trans-1,3-Dichloropropene	10061-02-6	1.31	U	6.56	1.31	0.656
1,1-Dichloropropene	563-58-6	1.31	U	6.56	1.31	0.656
Ethylbenzene	100-41-4	1.31	U	6.56	1.31	0.656
2-Hexanone	591-78-6	6.56	U	13.1	6.56	3.28
Hexachlorobutadiene	87-68-3	1.31	U	6.56	1.31	0.656
Isopropylbenzene	98-82-8	1.31	U	6.56	1.31	0.656
p-Isopropyltoluene	99-87-6	1.31	U	6.56	1.31	0.656
4-Methyl-2-pentanone	108-10-1	6.56	U	13.1	6.56	3.28
Methylene chloride	75-09-2	2.62	U	6.56	2.62	1.31
Naphthalene	91-20-3	1.31	U	6.56	1.31	0.656
n-Propylbenzene	103-65-1	1.31	U	6.56	1.31	0.656
Styrene	100-42-5	1.31	U	6.56	1.31	0.656
1,1,1,2-Tetrachloroethane	630-20-6	1.31	U	6.56	1.31	0.656
1,1,2,2-Tetrachloroethane	79-34-5	1.31	U	6.56	1.31	0.656
Tetrachloroethene	127-18-4	1.31	U	6.56	1.31	0.656
Toluene	108-88-3	1.31	U	6.56	1.31	0.656
1,2,3-Trichlorobenzene	87-61-6	1.31	U	6.56	1.31	0.656
1,2,4-Trichlorobenzene	120-82-1	1.31	U	6.56	1.31	0.656
1,1,1-Trichloroethane	71-55-6	1.31	U	6.56	1.31	0.656
1,1,2-Trichloroethane	79-00-5	1.31	U	6.56	1.31	0.656
Trichloroethene	79-01-6	1.31	U	6.56	1.31	0.656
Trichlorofluoromethane	75-69-4	2.62	U	6.56	2.62	1.31
1,2,3-Trichloropropane	96-18-4	2.62	U	6.56	2.62	1.31
1,2,4-Trimethylbenzene	95-63-6	1.31	U	6.56	1.31	0.656
1,3,5-Trimethylbenzene	108-67-8	1.31	U	6.56	1.31	0.656
Vinyl chloride	75-01-4	2.62	U	6.56	2.62	1.31
o-Xylene	95-47-6	1.31	U	6.56	1.31	0.656
m-,p-Xylene	179601-23-1	1.31	U	6.56	1.31	0.656

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.0	80	120	
1,2-Dichloroethane-d4	87.5	80	120	
Toluene-d8	98.4	85	115	
4-Bromofluorobenzene	98.1	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030323-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT10(15.5-16)040316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/08/2016 09:25
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560074	**Analyst:**	TMB	**Run Date:**	03/08/2016 18:08
Collect Date:	03/04/2016 11:55	**Dilution:**	1	**File ID:**	6M137657
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	94.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.5	U	22.9	11.5	5.73
Benzene	71-43-2	1.15	U	5.73	1.15	0.573
Bromobenzene	108-86-1	1.15	U	5.73	1.15	0.573
Bromochloromethane	74-97-5	2.30	U	5.73	2.30	1.15
Bromodichloromethane	75-27-4	1.15	U	5.73	1.15	0.573
Bromoform	75-25-2	1.15	U	5.73	1.15	0.573
Bromomethane	74-83-9	2.30	U	5.73	2.30	1.15
2-Butanone	78-93-3	5.74	U	11.5	5.74	2.87
n-Butylbenzene	104-51-8	1.15	U	5.73	1.15	0.573
sec-Butylbenzene	135-98-8	1.15	U	5.73	1.15	0.573
tert-Butylbenzene	98-06-6	1.15	U	5.73	1.15	0.573
Carbon disulfide	75-15-0	1.15	U	5.73	1.15	0.573
Carbon tetrachloride	56-23-5	1.15	U	5.73	1.15	0.573
Chlorobenzene	108-90-7	1.15	U	5.73	1.15	0.573
Chlorodibromomethane	124-48-1	1.15	U	5.73	1.15	0.573
Chloroethane	75-00-3	2.30	U	5.73	2.30	1.15
Chloroform	67-66-3	1.15	U	5.73	1.15	0.573
Chloromethane	74-87-3	4.58	U	11.5	4.58	2.29
2-Chlorotoluene	95-49-8	1.15	U	5.73	1.15	0.573
4-Chlorotoluene	106-43-4	1.15	U	5.73	1.15	0.573
1,2-Dibromo-3-chloropropane	96-12-8	4.58	U	11.5	4.58	2.29
1,2-Dibromoethane	106-93-4	1.15	U	5.73	1.15	0.573
Dibromomethane	74-95-3	1.15	U	5.73	1.15	0.573
1,2-Dichlorobenzene	95-50-1	1.15	U	5.73	1.15	0.573
1,3-Dichlorobenzene	541-73-1	1.15	U	5.73	1.15	0.573
1,4-Dichlorobenzene	106-46-7	1.15	U	5.73	1.15	0.573
Dichlorodifluoromethane	75-71-8	2.30	U	5.73	2.30	1.15
1,1-Dichloroethane	75-34-3	2.30	U	5.73	2.30	1.15
1,2-Dichloroethane	107-06-2	1.15	U	5.73	1.15	0.573
1,1-Dichloroethene	75-35-4	1.15	U	5.73	1.15	0.573
cis-1,2-Dichloroethene	156-59-2	1.15	U	5.73	1.15	0.573

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Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.15	U	5.73	1.15	0.573
1,2-Dichloropropane	78-87-5	1.15	U	5.73	1.15	0.573
1,3-Dichloropropane	142-28-9	1.15	U	5.73	1.15	0.573
2,2-Dichloropropane	594-20-7	1.15	U	5.73	1.15	0.573
cis-1,3-Dichloropropene	10061-01-5	1.15	U	5.73	1.15	0.573
trans-1,3-Dichloropropene	10061-02-6	1.15	U	5.73	1.15	0.573
1,1-Dichloropropene	563-58-6	1.15	U	5.73	1.15	0.573
Ethylbenzene	100-41-4	1.15	U	5.73	1.15	0.573
2-Hexanone	591-78-6	5.74	U	11.5	5.74	2.87
Hexachlorobutadiene	87-68-3	1.15	U	5.73	1.15	0.573
Isopropylbenzene	98-82-8	1.15	U	5.73	1.15	0.573
p-Isopropyltoluene	99-87-6	1.15	U	5.73	1.15	0.573
4-Methyl-2-pentanone	108-10-1	5.74	U	11.5	5.74	2.87
Methylene chloride	75-09-2	2.30	U	5.73	2.30	1.15
Naphthalene	91-20-3	1.15	U	5.73	1.15	0.573
n-Propylbenzene	103-65-1	1.15	U	5.73	1.15	0.573
Styrene	100-42-5	1.15	U	5.73	1.15	0.573
1,1,1,2-Tetrachloroethane	630-20-6	1.15	U	5.73	1.15	0.573
1,1,2,2-Tetrachloroethane	79-34-5	1.15	U	5.73	1.15	0.573
Tetrachloroethene	127-18-4	1.15	U	5.73	1.15	0.573
Toluene	108-88-3	1.15	U	5.73	1.15	0.573
1,2,3-Trichlorobenzene	87-61-6	1.15	U	5.73	1.15	0.573
1,2,4-Trichlorobenzene	120-82-1	1.15	U	5.73	1.15	0.573
1,1,1-Trichloroethane	71-55-6	1.15	U	5.73	1.15	0.573
1,1,2-Trichloroethane	79-00-5	1.15	U	5.73	1.15	0.573
Trichloroethene	79-01-6	1.15	U	5.73	1.15	0.573
Trichlorofluoromethane	75-69-4	2.30	U	5.73	2.30	1.15
1,2,3-Trichloropropane	96-18-4	2.30	U	5.73	2.30	1.15
1,2,4-Trimethylbenzene	95-63-6	1.15	U	5.73	1.15	0.573
1,3,5-Trimethylbenzene	108-67-8	1.15	U	5.73	1.15	0.573
Vinyl chloride	75-01-4	2.30	U	5.73	2.30	1.15
o-Xylene	95-47-6	1.15	U	5.73	1.15	0.573
m-,p-Xylene	179601-23-1	1.15	U	5.73	1.15	0.573

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.8	80	120	
1,2-Dichloroethane-d4	87.8	80	120	
Toluene-d8	97.4	85	115	
4-Bromofluorobenzene	97.0	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030323-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT10(23.5-24)040316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/08/2016 09:27
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560074	**Analyst:**	TMB	**Run Date:**	03/08/2016 18:42
Collect Date:	03/04/2016 12:40	**Dilution:**	1	**File ID:**	6M137658
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	86.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.4	U	22.9	11.4	5.71
Benzene	71-43-2	1.14	U	5.71	1.14	0.571
Bromobenzene	108-86-1	1.14	U	5.71	1.14	0.571
Bromochloromethane	74-97-5	2.28	U	5.71	2.28	1.14
Bromodichloromethane	75-27-4	1.14	U	5.71	1.14	0.571
Bromoform	75-25-2	1.14	U	5.71	1.14	0.571
Bromomethane	74-83-9	2.28	U	5.71	2.28	1.14
2-Butanone	78-93-3	5.72	U	11.4	5.72	2.86
n-Butylbenzene	104-51-8	1.14	U	5.71	1.14	0.571
sec-Butylbenzene	135-98-8	1.14	U	5.71	1.14	0.571
tert-Butylbenzene	98-06-6	1.14	U	5.71	1.14	0.571
Carbon disulfide	75-15-0	1.14	U	5.71	1.14	0.571
Carbon tetrachloride	56-23-5	1.14	U	5.71	1.14	0.571
Chlorobenzene	108-90-7	1.14	U	5.71	1.14	0.571
Chlorodibromomethane	124-48-1	1.14	U	5.71	1.14	0.571
Chloroethane	75-00-3	2.28	U	5.71	2.28	1.14
Chloroform	67-66-3	1.14	U	5.71	1.14	0.571
Chloromethane	74-87-3	4.58	U	11.4	4.58	2.29
2-Chlorotoluene	95-49-8	1.14	U	5.71	1.14	0.571
4-Chlorotoluene	106-43-4	1.14	U	5.71	1.14	0.571
1,2-Dibromo-3-chloropropane	96-12-8	4.58	U	11.4	4.58	2.29
1,2-Dibromoethane	106-93-4	1.14	U	5.71	1.14	0.571
Dibromomethane	74-95-3	1.14	U	5.71	1.14	0.571
1,2-Dichlorobenzene	95-50-1	1.14	U	5.71	1.14	0.571
1,3-Dichlorobenzene	541-73-1	1.14	U	5.71	1.14	0.571
1,4-Dichlorobenzene	106-46-7	1.14	U	5.71	1.14	0.571
Dichlorodifluoromethane	75-71-8	2.28	U	5.71	2.28	1.14
1,1-Dichloroethane	75-34-3	2.28	U	5.71	2.28	1.14
1,2-Dichloroethane	107-06-2	1.14	U	5.71	1.14	0.571
1,1-Dichloroethene	75-35-4	1.14	U	5.71	1.14	0.571
cis-1,2-Dichloroethene	156-59-2	1.14	U	5.71	1.14	0.571

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Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.14	U	5.71	1.14	0.571
1,2-Dichloropropane	78-87-5	1.14	U	5.71	1.14	0.571
1,3-Dichloropropane	142-28-9	1.14	U	5.71	1.14	0.571
2,2-Dichloropropane	594-20-7	1.14	U	5.71	1.14	0.571
cis-1,3-Dichloropropene	10061-01-5	1.14	U	5.71	1.14	0.571
trans-1,3-Dichloropropene	10061-02-6	1.14	U	5.71	1.14	0.571
1,1-Dichloropropene	563-58-6	1.14	U	5.71	1.14	0.571
Ethylbenzene	100-41-4	1.14	U	5.71	1.14	0.571
2-Hexanone	591-78-6	5.72	U	11.4	5.72	2.86
Hexachlorobutadiene	87-68-3	1.14	U	5.71	1.14	0.571
Isopropylbenzene	98-82-8	1.14	U	5.71	1.14	0.571
p-Isopropyltoluene	99-87-6	1.14	U	5.71	1.14	0.571
4-Methyl-2-pentanone	108-10-1	5.72	U	11.4	5.72	2.86
Methylene chloride	75-09-2	2.28	U	5.71	2.28	1.14
Naphthalene	91-20-3	1.14	U	5.71	1.14	0.571
n-Propylbenzene	103-65-1	1.14	U	5.71	1.14	0.571
Styrene	100-42-5	1.14	U	5.71	1.14	0.571
1,1,1,2-Tetrachloroethane	630-20-6	1.14	U	5.71	1.14	0.571
1,1,2,2-Tetrachloroethane	79-34-5	1.14	U	5.71	1.14	0.571
Tetrachloroethene	127-18-4	1.14	U	5.71	1.14	0.571
Toluene	108-88-3	1.14	U	5.71	1.14	0.571
1,2,3-Trichlorobenzene	87-61-6	1.14	U	5.71	1.14	0.571
1,2,4-Trichlorobenzene	120-82-1	1.14	U	5.71	1.14	0.571
1,1,1-Trichloroethane	71-55-6	1.14	U	5.71	1.14	0.571
1,1,2-Trichloroethane	79-00-5	1.14	U	5.71	1.14	0.571
Trichloroethene	79-01-6	1.14	U	5.71	1.14	0.571
Trichlorofluoromethane	75-69-4	2.28	U	5.71	2.28	1.14
1,2,3-Trichloropropane	96-18-4	2.28	U	5.71	2.28	1.14
1,2,4-Trimethylbenzene	95-63-6	1.14	U	5.71	1.14	0.571
1,3,5-Trimethylbenzene	108-67-8	1.14	U	5.71	1.14	0.571
Vinyl chloride	75-01-4	2.28	U	5.71	2.28	1.14
o-Xylene	95-47-6	1.14	U	5.71	1.14	0.571
m-,p-Xylene	179601-23-1	1.14	U	5.71	1.14	0.571

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	90.2	80	120	
1,2-Dichloroethane-d4	84.3	80	120	
Toluene-d8	99.9	85	115	
4-Bromofluorobenzene	96.8	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.
VOA Preparation/Preservation/Extraction Log

Batch #: WG560060
Method: 5030B/5030C/5035
Product: 8260

Analyst: AWE
Run Date: 03/08/2016 09:22
Purge and trap methanol COA18540
Purified Lab Sand Lot # COA18552

SAMPLE #	Fraction	Collected	Preserved	PCT-S	Tare Wt	Total Wt	Sample Wt	Water	MeOH	Vt	Comments
L16030323-01	A	03/04/16 10:30	03/08/16 09:22	67.6			4.71	5		5	
L16030323-02	A	03/04/16 10:35	03/08/16 09:23	86.3			4.64	5		5	
L16030323-03	A	03/04/16 10:40	03/08/16 09:24	79.6			4.63	5		5	
L16030323-04	A	03/04/16 11:25	03/08/16 09:24	74.0			5.15	5		5	
L16030323-05	A	03/04/16 11:55	03/08/16 09:25	94.0			4.64	5		5	
L16030323-06	A	03/04/16 12:40	03/08/16 09:27	86.3			5.07	5		5	
WG560060-01	A		03/08/16 09:25	94.0			4.64	5		5	
WG560060-02	A		03/08/16 09:26	94.0			5.27	5		5	
WG560060-03	A		03/08/16 09:26	94.0			4.76	5		5	

Comments:
1 = improperly sealed cap
2 = preserved out of hold
3 = effervesced
4 = preserved with NaHSO4
5 = preserved by freezing
6 = preserved in field

Analyst: Andrew Casey

VOA_EXT - Modified 05/22/2008
PDF ID: 4660108
Report generated: 03/08/2016 10:01

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 022616
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Method: 8260C SOP: MSV01-C Rev: 2
Maintenance Log ID:

Internal Standard: STD74756 Surrogate Standard: STD74756
CCV: STD74897 LCS: STD74755 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG558920

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M137521	RINSE	NA	7	1		02/26/16 12:22
6M137522	WG558920-01 50ng BFB STD 8260	NA	7	1	STD74606	02/26/16 13:16
6M137523	WG558920-02 0.5ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 13:41
6M137524	WG558920-03 1ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 14:13
6M137525	WG558920-04 2ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 14:46
6M137526	WG558920-05 5ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 15:26
6M137527	WG558920-06 10ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 15:58
6M137528	WG558920-07 20ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 16:30
6M137529	WG558920-08 50ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 17:03
6M137530	WG558920-09 100ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 17:35
6M137531	WG558920-10 200ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 18:07
6M137532	WG558920-11 300ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 18:39
6M137533	RINSE	NA	7	1		02/26/16 19:11
6M137534	RINSE	NA	7	1		02/26/16 19:43
6M137535	WG558920-12 50ug/Kg ALT SRC STD 826	NA	7	1	STD74755	02/26/16 20:15
6M137536	RINSE	NA	7	1		02/26/16 20:48

Comments

Seq.	Rerun	Dil.	Reason	Analytes
15				
File ID: 6M137535				
Surrogates are spiked at 25 not 50.				

Approved: March 02, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 030816
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD74902 Surrogate Standard: STD74902
CCV: STD75017 LCS: STD74973 MS/MSD: STD74973

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG560074

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M137644	WG560072-01 50ng BFB STD 8260	NA	7	1	STD75004	03/08/16 10:59
6M137645	WG560072-02 50ug/Kg CCV STD 8260	NA	7	1	STD75017	03/08/16 11:24
6M137646	WG560072-02 50ug/Kg CCV STD 8260	NA	7	1	STD75017	03/08/16 11:58
6M137647	WG000000-01 100ug/Kg A9 CCV STD 826	NA	7	1	STD74831	03/08/16 12:32
6M137648	WG560074-01 VBLK0308 BLANK STD 826	NA	7	1		03/08/16 13:05
6M137649	WG560074-02 20ug/Kg LCS STD 8260	NA	7	1	STD74973	03/08/16 13:38
6M137650	WG560060-02 MS 323-05 8260 5.27g	NA	7	1	STD74973	03/08/16 14:12
6M137651	WG560060-03 MSD 323-05 8260 4.76g	NA	7	1	STD74973	03/08/16 14:46
6M137652	RINSE	NA	7	1		03/08/16 15:20
6M137653	L16030323-01 8260 4.71g	NA	7	1		03/08/16 15:54
6M137654	L16030323-02 8260 4.64g	NA	7	1		03/08/16 16:28
6M137655	L16030323-03 8260 4.63g	NA	7	1		03/08/16 17:01
6M137656	L16030323-04 8260 5.15g	NA	7	1		03/08/16 17:34
6M137657	WG560060-01 L16030323-05 8260 4.64g	NA	7	1		03/08/16 18:08
6M137658	L16030323-06 8260 5.07g	NA	7	1		03/08/16 18:42
6M137659	L16030176-02 5X 8260 0.98g A1	NA	10	1		03/08/16 19:15
6M137660	RINSE	NA	7	1		03/08/16 19:48
6M137661	L16030366-01 5X 8260	NA	7	1		03/08/16 20:22
6M137662	L16030366-02 5X 8260	NA	7	1		03/08/16 20:55
6M137663	L16030366-03 5X 8260	NA	7	1		03/08/16 21:28
6M137664	L16030366-04 5X 8260	NA	7	1		03/08/16 22:01
6M137665	L16030366-05 5X 8260	NA	7	1		03/08/16 22:34
6M137666	L16030366-06 5X 8260	NA	7	1		03/08/16 23:07
6M137667	L16030366-07 5X 8260	NA	7	1		03/08/16 23:39
6M137668	L16030366-08 5X 8260	NA	7	1		03/09/16 00:11
6M137669	L16030366-09 5X 8260	NA	7	1		03/09/16 00:44
6M137670	L16030366-10 5X 8260	NA	7	1		03/09/16 01:16
6M137671	L16030366-11 5X 8260	NA	7	1		03/09/16 01:47
6M137672	L16030366-12 5X 8260	NA	7	1		03/09/16 02:20
6M137673	RINSE	NA	7	1		03/09/16 02:52
6M137674	RINSE	NA	7	1		03/09/16 03:24

Comments

Approved: March 10, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 030816
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD74902 Surrogate Standard: STD74902
CCV: STD75017 LCS: STD74973 MS/MSD: STD74973

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG560074

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X		Surrogate standard failure	
File ID: 6M137645				
	Surrogates weren't spiked. DNR.			
4				
File ID: 6M137647				
	Not needed, DNR.			
8				
File ID: 6M137651				
	Internals were low. Non-client msd.			
18	X	1	Analyzed too dilute	
File ID: 6M137661				
19	X	1	Analyzed too dilute	
File ID: 6M137662				
20	X	1	Analyzed too dilute	
File ID: 6M137663				
21	X	1	Analyzed too dilute	
File ID: 6M137664				
22	X	1	Analyzed too dilute	
File ID: 6M137665				
23	X	1	Analyzed too dilute	
File ID: 6M137666				
24	X	1	Analyzed too dilute	
File ID: 6M137667				
25	X	1	Analyzed too dilute	
File ID: 6M137668				
26	X	1	Analyzed too dilute	
File ID: 6M137669				

Approved: March 10, 2016

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 030816
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD74902 Surrogate Standard: STD74902
CCV: STD75017 LCS: STD74973 MS/MSD: STD74973

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG560074

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
27	X	1	Analyzed too dilute	
File ID: 6M137670				
28	X	1	Analyzed too dilute	
File ID: 6M137671				
29	X	1	Analyzed too dilute	
File ID: 6M137672				

Approved: March 10, 2016

Page: 3

Microbac Laboratories Inc.

Data Checklist

Date: 26-FEB-2016
Analyst: TMB
Analyst: NA
Method: 8260B/C
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 73548
Analytical Workgroups: WG558920

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	NA
TCL Hits	NA
Spectra of TCL Hits	NA
Surrogates	NA
Internal Standards Criteria	NA
Library Searches	NA
Calculations & Correct Factors	NA
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
29-FEB-2016
Tiffany Bailey

Secondary Reviewer:
02-MAR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-02-2016 12:31:18

Microbac Laboratories Inc.

Data Checklist

Date: 08-MAR-2016
Analyst: TMB
Analyst: NA
Method: 8260B
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 73709
Analytical Workgroups: WG560074

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
09-MAR-2016
Tiffany Bailey

Secondary Reviewer:
10-MAR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-10-2016 15:41:31

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG560074

Login Number: L16030323

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18DPT09(5-5.5)040316	01	03/04/16					03/08/2016	4	14		03/08/16	4.2	14	
18DPT09(11-11.5)040316	02	03/04/16					03/08/2016	4	14		03/08/16	4.2	14	
18DPT09(13.5-14)040316	03	03/04/16					03/08/2016	3.9	14		03/08/16	4.3	14	
18DPT10(5-5.5)040316	04	03/04/16					03/08/2016	3.9	14		03/08/16	4.3	14	
18DPT10(15.5-16)040316	05	03/04/16					03/08/2016	3.9	14		03/08/16	4.3	14	
18DPT10(23.5-24)040316	06	03/04/16					03/08/2016	3.9	14		03/08/16	4.3	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4662197
Report generated 03/10/2016 16:26

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16030323
Instrument Id: HPMS6
Workgroup (AAB#): WG560074

Method: 8260
CAL ID: HPMS6-26-FEB-16
Matrix: Soil

Sample Number	Dilution	Tag	1	2	3	4
L16030323-01	1.00	01	81.6	89.6	99.9	100
L16030323-02	1.00	01	87.2	92.2	97.6	98.2
L16030323-03	1.00	01	90.4	92.7	97.6	98.3
L16030323-04	1.00	01	87.5	92.0	98.1	98.4
L16030323-05	1.00	01	87.8	93.8	97.0	97.4
L16030323-06	1.00	01	84.3	90.2	96.8	99.9
WG560074-01	1.00	01	85.8	91.5	98.3	98.3
WG560074-02	1.00	01	85.3	93.7	97.9	99.6

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	80	-	120
2 - Dibromofluoromethane	80	-	120
3 - 4-Bromofluorobenzene	85	-	120
4 - Toluene-d8	85	-	115

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4662203
Report generated: 03/10/2016 16:26

METHOD BLANK SUMMARY

Login Number: L16030323
Blank File ID: 6M137648
Prep Date: 03/08/16 13:05
Analyzed Date: 03/08/16 13:05
Analyst: TMB

Work Group: WG560074
Blank Sample ID: WG560074-01
Instrument ID: HPMS6
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG560074-02	6M137649	03/08/16 13:38	01
18DPT09(5-5.5)040316	L16030323-01	6M137653	03/08/16 15:54	01
18DPT09(11-11.5)040316	L16030323-02	6M137654	03/08/16 16:28	01
18DPT09(13.5-14)040316	L16030323-03	6M137655	03/08/16 17:01	01
18DPT10(5-5.5)040316	L16030323-04	6M137656	03/08/16 17:34	01
18DPT10(15.5-16)040316	L16030323-05	6M137657	03/08/16 18:08	01
18DPT10(23.5-24)040316	L16030323-06	6M137658	03/08/16 18:42	01

Report Name: BLANK_SUMMARY
PDF File ID: 4666018
Report generated 03/10/2016 16:26

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16030323 Prep Date: 03/08/16 13:05 Sample ID: WG560074-01
Instrument ID: HPMS6 Run Date: 03/08/16 13:05 Prep Method: 5030B/5030C/503
File ID: 6M137648 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG560074 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS6-26-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	5.00	20.0	5.00	1	U
Benzene	0.500	5.00	0.500	1	U
Bromobenzene	0.500	5.00	0.500	1	U
Bromochloromethane	1.00	5.00	1.00	1	U
Bromodichloromethane	0.500	5.00	0.500	1	U
Bromoform	0.500	5.00	0.500	1	U
Bromomethane	1.00	5.00	1.00	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.500	5.00	0.500	1	U
sec-Butylbenzene	0.500	5.00	0.500	1	U
tert-Butylbenzene	0.500	5.00	0.500	1	U
Carbon disulfide	0.500	5.00	0.500	1	U
Carbon tetrachloride	0.500	5.00	0.500	1	U
Chlorobenzene	0.500	5.00	0.500	1	U
Chlorodibromomethane	0.500	5.00	0.500	1	U
Chloroethane	1.00	5.00	1.00	1	U
Chloroform	0.500	5.00	0.500	1	U
Chloromethane	2.00	10.0	2.00	1	U
2-Chlorotoluene	0.500	5.00	0.500	1	U
4-Chlorotoluene	0.500	5.00	0.500	1	U
1,2-Dibromo-3-chloropropane	2.00	10.0	2.00	1	U
1,2-Dibromoethane	0.500	5.00	0.500	1	U
Dibromomethane	0.500	5.00	0.500	1	U
1,2-Dichlorobenzene	0.500	5.00	0.500	1	U
1,3-Dichlorobenzene	0.500	5.00	0.500	1	U
1,4-Dichlorobenzene	0.500	5.00	0.500	1	U
Dichlorodifluoromethane	1.00	5.00	1.00	1	U
1,1-Dichloroethane	1.00	5.00	1.00	1	U
1,2-Dichloroethane	0.500	5.00	0.500	1	U
1,1-Dichloroethene	0.500	5.00	0.500	1	U
cis-1,2-Dichloroethene	0.500	5.00	0.500	1	U
trans-1,2-Dichloroethene	0.500	5.00	0.500	1	U
1,2-Dichloropropane	0.500	5.00	0.500	1	U
1,3-Dichloropropane	0.500	5.00	0.500	1	U
2,2-Dichloropropane	0.500	5.00	0.500	1	U
cis-1,3-Dichloropropene	0.500	5.00	0.500	1	U
trans-1,3-Dichloropropene	0.500	5.00	0.500	1	U
1,1-Dichloropropene	0.500	5.00	0.500	1	U
Ethylbenzene	0.500	5.00	0.500	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.500	5.00	0.500	1	U
Isopropylbenzene	0.500	5.00	0.500	1	U

Report Name: BLANK
PDF ID: 4666019
10-MAR-2016 16:26

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16030323 Prep Date: 03/08/16 13:05 Sample ID: WG560074-01
Instrument ID: HPMS6 Run Date: 03/08/16 13:05 Prep Method: 5030B/5030C/503
File ID: 6M137648 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG560074 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS6-26-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.500	5.00	0.500	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	1.00	5.00	1.00	1	U
Naphthalene	0.500	5.00	0.500	1	U
n-Propylbenzene	0.500	5.00	0.500	1	U
Styrene	0.500	5.00	0.500	1	U
1,1,1,2-Tetrachloroethane	0.500	5.00	0.500	1	U
1,1,2,2-Tetrachloroethane	0.500	5.00	0.500	1	U
Tetrachloroethene	0.500	5.00	0.500	1	U
Toluene	0.500	5.00	0.500	1	U
1,2,3-Trichlorobenzene	0.500	5.00	0.500	1	U
1,2,4-Trichlorobenzene	0.500	5.00	0.500	1	U
1,1,1-Trichloroethane	0.500	5.00	0.500	1	U
1,1,2-Trichloroethane	0.500	5.00	0.500	1	U
Trichloroethene	0.500	5.00	0.500	1	U
Trichlorofluoromethane	1.00	5.00	1.00	1	U
1,2,3-Trichloropropane	1.00	5.00	1.00	1	U
1,2,4-Trimethylbenzene	0.500	5.00	0.500	1	U
1,3,5-Trimethylbenzene	0.500	5.00	0.500	1	U
Vinyl chloride	1.00	5.00	1.00	1	U
o-Xylene	0.500	5.00	0.500	1	U
m-,p-Xylene	0.500	5.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	91.5	80 - 120	PASS
1,2-Dichloroethane-d4	85.8	80 - 120	PASS
Toluene-d8	98.3	85 - 115	PASS
4-Bromofluorobenzene	98.3	85 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4666019
10-MAR-2016 16:26

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030323 | Run Date: 03/08/2016 | Sample ID: WG560074-02
Instrument ID: HPMS6 | Run Time: 13:38 | Prep Method: 5030B/5030C/503
File ID: 6M137649 | Analyst: TMB | Method: 8260B
Workgroup (AAB#): WG560074 | Matrix: Soil | Units: ug/kg
QC Key: DOD4 | Lot#: STD74973 | Cal ID: HPMS6-26-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	17.5	87.3	20 - 160	
Benzene	20.0	20.2	101	75 - 125	
Bromobenzene	20.0	20.2	101	65 - 120	
Bromochloromethane	20.0	19.6	98.0	70 - 125	
Bromodichloromethane	20.0	19.5	97.4	70 - 130	
Bromoform	20.0	17.0	85.1	55 - 135	
Bromomethane	20.0	20.7	103	30 - 160	
2-Butanone	20.0	18.9	94.5	30 - 160	
n-Butylbenzene	20.0	20.5	102	65 - 140	
sec-Butylbenzene	20.0	22.1	110	65 - 130	
tert-Butylbenzene	20.0	22.4	112	65 - 130	
Carbon disulfide	20.0	18.7	93.3	45 - 160	
Carbon tetrachloride	20.0	20.1	101	65 - 135	
Chlorobenzene	20.0	20.7	103	75 - 125	
Chlorodibromomethane	20.0	19.2	95.8	65 - 130	
Chloroethane	20.0	21.8	109	40 - 155	
Chloroform	20.0	19.8	98.8	70 - 125	
Chloromethane	20.0	17.1	85.6	50 - 130	
2-Chlorotoluene	20.0	20.9	105	70 - 130	
4-Chlorotoluene	20.0	21.4	107	75 - 125	
1,2-Dibromo-3-chloropropane	20.0	18.8	93.8	40 - 135	
1,2-Dibromoethane	20.0	20.0	99.9	70 - 125	
Dibromomethane	20.0	18.5	92.6	75 - 130	
1,2-Dichlorobenzene	20.0	20.6	103	75 - 120	
1,3-Dichlorobenzene	20.0	20.4	102	70 - 125	
1,4-Dichlorobenzene	20.0	20.4	102	70 - 125	
Dichlorodifluoromethane	20.0	20.2	101	35 - 135	
1,1-Dichloroethane	20.0	19.7	98.7	75 - 125	
1,2-Dichloroethane	20.0	19.2	95.9	70 - 135	
1,1-Dichloroethene	20.0	20.1	101	65 - 135	
cis-1,2-Dichloroethene	20.0	20.7	104	65 - 125	
trans-1,2-Dichloroethene	20.0	21.5	107	65 - 135	
1,2-Dichloropropane	20.0	20.9	104	70 - 120	
1,3-Dichloropropane	20.0	20.8	104	75 - 125	
2,2-Dichloropropane	20.0	20.2	101	65 - 135	
cis-1,3-Dichloropropene	20.0	21.9	109	70 - 125	
trans-1,3-Dichloropropene	20.0	19.5	97.5	65 - 125	
1,1-Dichloropropene	20.0	20.8	104	70 - 135	
Ethylbenzene	20.0	21.2	106	75 - 125	
2-Hexanone	20.0	19.0	94.8	45 - 145	
Hexachlorobutadiene	20.0	22.6	113	55 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4662198
Report generated: 03/10/2016 16:26

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030323 Run Date: 03/08/2016 Sample ID: WG560074-02
Instrument ID: HPMS6 Run Time: 13:38 Prep Method: 5030B/5030C/503
File ID: 6M137649 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG560074 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD74973 Cal ID: HPMS6-26-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	22.2	111	75 - 130	
p-Isopropyltoluene	20.0	21.6	108	75 - 135	
4-Methyl-2-pentanone	20.0	19.5	97.6	45 - 145	
Methylene chloride	20.0	20.6	103	55 - 140	
Naphthalene	20.0	18.7	93.3	40 - 125	
n-Propylbenzene	20.0	22.1	110	65 - 135	
Styrene	20.0	21.1	105	75 - 125	
1,1,1,2-Tetrachloroethane	20.0	19.9	99.6	75 - 125	
1,1,2,2-Tetrachloroethane	20.0	18.8	93.9	55 - 130	
Tetrachloroethene	20.0	21.3	106	65 - 140	
Toluene	20.0	20.7	103	70 - 125	
1,2,3-Trichlorobenzene	20.0	20.0	100	60 - 135	
1,2,4-Trichlorobenzene	20.0	20.7	103	65 - 130	
1,1,1-Trichloroethane	20.0	20.5	102	70 - 135	
1,1,2-Trichloroethane	20.0	19.8	99.1	60 - 125	
Trichloroethene	20.0	21.4	107	75 - 125	
Trichlorofluoromethane	20.0	19.1	95.3	25 - 185	
1,2,3-Trichloropropane	20.0	19.8	98.8	65 - 130	
1,2,4-Trimethylbenzene	20.0	20.8	104	65 - 135	
1,3,5-Trimethylbenzene	20.0	21.7	108	65 - 135	
Vinyl chloride	20.0	19.6	97.8	60 - 125	
o-Xylene	20.0	22.3	111	75 - 125	
m-,p-Xylene	40.0	42.3	106	80 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	93.7	80 - 120	PASS
1,2-Dichloroethane-d4	85.3	80 - 120	PASS
Toluene-d8	99.6	85 - 115	PASS
4-Bromofluorobenzene	97.9	85 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4662198
Report generated: 03/10/2016 16:26

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16030323 Cal ID: HPMS6 - Worknum: WG560074
Instrument ID: HPMS6 Contract #: Method: 8260B
Parent ID: WG560060-01 File ID: 6M137657 Dil: 1 Matrix: SOLID
Sample ID: WG560060-02 MS File ID: 6M137650 Dil: 1 Units: ug/kg
Sample ID: WG560060-03 MSD File ID: 6M137651 Dil: 1 Percent Solid: 94.0

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,1,1,2-Tetrachloroethane	ND	20.2	19.6	97.0	22.3	20.6	92.1	4.97	75 - 125	30	
1,1,1-Trichloroethane	ND	20.2	20.1	99.6	22.3	20.4	91.2	1.38	70 - 135	30	
1,1,2,2-Tetrachloroethane	ND	20.2	21.8	108	22.3	22.7	102	4.32	55 - 130	30	
1,1,2-Trichloroethane	ND	20.2	21.1	104	22.3	21.4	96.0	1.77	60 - 125	30	
1,1-Dichloroethane	ND	20.2	19.2	95.4	22.3	19.8	88.8	2.98	75 - 125	30	
1,1-Dichloroethene	ND	20.2	19.8	97.9	22.3	20.1	89.8	1.49	65 - 135	30	
1,1-Dichloropropene	ND	20.2	20.8	103	22.3	20.8	93.0	0.0213	70 - 135	30	
1,2,3-Trichlorobenzene	ND	20.2	21.4	106	22.3	20.3	90.8	5.41	60 - 135	30	
1,2,3-Trichloropropane	ND	20.2	22.6	112	22.3	23.6	106	4.39	65 - 130	30	
1,2,4-Trichlorobenzene	ND	20.2	21.6	107	22.3	20.7	92.5	4.57	65 - 130	30	
1,2,4-Trimethylbenzene	ND	20.2	20.3	101	22.3	21.8	97.8	7.19	65 - 135	30	
1,2-Dibromo-3-chloropropane	ND	20.2	21.7	107	22.3	21.1	94.6	2.46	40 - 135	30	
1,2-Dibromoethane	ND	20.2	20.6	102	22.3	20.7	92.8	0.429	70 - 125	30	
1,2-Dichlorobenzene	ND	20.2	20.9	104	22.3	22.3	99.8	6.43	75 - 120	30	
1,2-Dichloroethane	ND	20.2	20.1	99.4	22.3	20.6	92.3	2.79	70 - 135	30	
1,2-Dichloropropane	ND	20.2	21.3	105	22.3	21.4	95.8	0.664	70 - 120	30	
1,3,5-Trimethylbenzene	ND	20.2	21.3	106	22.3	22.6	101	5.93	65 - 135	30	
1,3-Dichlorobenzene	ND	20.2	20.6	102	22.3	22.3	99.8	7.81	70 - 125	30	
1,3-Dichloropropane	ND	20.2	21.9	108	22.3	22.7	101	3.58	75 - 125	30	
1,4-Dichlorobenzene	ND	20.2	20.7	103	22.3	21.9	98.1	5.67	70 - 125	30	
2,2-Dichloropropane	ND	20.2	20.7	103	22.3	20.9	93.7	1.15	65 - 135	30	
2-Butanone	ND	20.2	22.0	109	22.3	24.1	108	9.05	30 - 160	30	
2-Chlorotoluene	ND	20.2	20.9	103	22.3	22.5	101	7.38	70 - 130	30	
2-Hexanone	ND	20.2	21.5	107	22.3	23.3	104	7.77	45 - 145	30	
4-Chlorotoluene	ND	20.2	20.9	104	22.3	22.5	101	7.65	75 - 125	30	
4-Methyl-2-pentanone	ND	20.2	22.9	114	22.3	24.3	109	5.77	45 - 145	30	
Acetone	ND	20.2	20.4	101	22.3	23.9	107	15.9	20 - 160	30	
Benzene	ND	20.2	19.8	98.0	22.3	20.2	90.5	2.24	75 - 125	30	
Bromobenzene	ND	20.2	20.2	99.9	22.3	21.7	97.3	7.52	65 - 120	30	
Bromochloromethane	ND	20.2	19.9	98.7	22.3	20.4	91.2	2.27	70 - 125	30	
Bromodichloromethane	ND	20.2	19.6	97.3	22.3	19.5	87.3	0.674	70 - 130	30	
Bromoform	ND	20.2	18.8	93.4	22.3	18.1	81.0	4.04	55 - 135	30	
Bromomethane	ND	20.2	19.9	98.6	22.3	21.2	95.0	6.47	30 - 160	30	
Carbon disulfide	ND	20.2	18.5	91.6	22.3	20.6	92.3	10.9	45 - 160	30	
Carbon tetrachloride	ND	20.2	20.0	98.9	22.3	19.9	88.9	0.474	65 - 135	30	
Chlorobenzene	ND	20.2	20.3	101	22.3	21.8	97.4	6.89	75 - 125	30	
Chlorodibromomethane	ND	20.2	19.7	97.6	22.3	19.4	86.9	1.46	65 - 130	30	
Chloroethane	ND	20.2	21.3	106	22.3	21.2	94.9	0.448	40 - 155	30	
Chloroform	ND	20.2	19.5	96.7	22.3	20.0	89.5	2.47	70 - 125	30	

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4662199
Report generated 03/09/2016 08:59

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16030323 Cal ID: HPMS6 Worknum: WG560074
Instrument ID: HPMS6 Contract #: Method: 8260B
Parent ID: WG560060-01 File ID: 6M137657 Dil: 1 Matrix: SOLID
Sample ID: WG560060-02 MS File ID: 6M137650 Dil: 1 Units: ug/kg
Sample ID: WG560060-03 MSD File ID: 6M137651 Dil: 1 Percent Solid: 94.0

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chloromethane	ND	20.2	16.3	80.8	22.3	16.7	74.8	2.44	50 - 130	30	
Dibromomethane	ND	20.2	20.1	99.6	22.3	19.8	88.6	1.52	75 - 130	30	
Dichlorodifluoromethane	ND	20.2	19.8	98.3	22.3	19.7	88.1	0.827	35 - 135	30	
Ethylbenzene	ND	20.2	20.9	104	22.3	21.4	95.8	2.41	75 - 125	30	
Hexachlorobutadiene	ND	20.2	22.9	113	22.3	23.5	105	2.51	55 - 140	30	
Isopropylbenzene	ND	20.2	21.4	106	22.3	22.2	99.2	3.38	75 - 130	30	
Methylene chloride	ND	20.2	20.5	102	22.3	21.4	95.9	4.30	55 - 140	30	
Naphthalene	ND	20.2	21.5	107	22.3	19.5	87.1	10.1	40 - 125	30	
Styrene	ND	20.2	20.5	102	22.3	20.6	92.3	0.431	75 - 125	30	
Tetrachloroethene	ND	20.2	20.5	102	22.3	21.2	94.9	3.47	65 - 140	30	
Toluene	ND	20.2	20.0	99.2	22.3	21.3	95.3	6.19	70 - 125	30	
Trichloroethene	ND	20.2	21.8	108	22.3	21.4	95.8	1.98	75 - 125	30	
Trichlorofluoromethane	ND	20.2	19.1	94.8	22.3	19.2	85.8	0.173	25 - 185	30	
Vinyl chloride	ND	20.2	19.8	98.1	22.3	20.2	90.3	1.82	60 - 125	30	
cis-1,2-Dichloroethene	ND	20.2	20.4	101	22.3	20.7	92.6	1.31	65 - 125	30	
cis-1,3-Dichloropropene	ND	20.2	22.2	110	22.3	21.7	97.2	2.44	70 - 125	30	
m-,p-Xylene	ND	40.4	41.8	104	44.7	43.0	96.2	2.86	80 - 125	30	
n-Butylbenzene	ND	20.2	20.9	104	22.3	21.2	94.8	1.15	65 - 140	30	
n-Propylbenzene	ND	20.2	21.7	107	22.3	23.0	103	5.99	65 - 135	30	
o-Xylene	ND	20.2	21.7	108	22.3	21.6	96.5	0.795	75 - 125	30	
p-Isopropyltoluene	ND	20.2	21.4	106	22.3	22.5	101	5.10	75 - 135	30	
sec-Butylbenzene	ND	20.2	21.9	108	22.3	23.2	104	5.84	65 - 130	30	
tert-Butylbenzene	ND	20.2	21.5	107	22.3	23.3	104	8.00	65 - 130	30	
trans-1,2-Dichloroethene	ND	20.2	21.1	105	22.3	21.4	95.8	1.19	65 - 135	30	
trans-1,3-Dichloropropene	ND	20.2	20.2	100	22.3	20.3	91.0	0.722	65 - 125	30	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4662199
Report generated 03/09/2016 08:59

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16030323
Instrument: HPMS6
Analyst: TMB
Workgroup: WG558920

Tune ID: WG558920-01
Run Date: 02/26/2016
Run Time: 13:16
File ID: 6M137522
Cal ID: HPMS6 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	25.4	9030	PASS
75.0	95.0	30.0	60.0	55.4	19666	PASS
95.0	95.0	100	100	100	35512	PASS
96.0	95.0	5.00	9.00	7.25	2576	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	73.2	26011	PASS
175	174	5.00	9.00	7.36	1914	PASS
176	174	95.0	101	96.1	24992	PASS
177	176	5.00	9.00	6.64	1660	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG558920-02	STD-S	01	02/26/2016 13:41	
WG558920-03	STD-S	01	02/26/2016 14:13	
WG558920-04	STD-S	01	02/26/2016 14:46	
WG558920-05	STD-S	01	02/26/2016 15:26	
WG558920-06	STD-S	01	02/26/2016 15:58	
WG558920-07	STD-S	01	02/26/2016 16:30	
WG558920-08	STD-CCV-S	01	02/26/2016 17:03	
WG558920-09	STD-S	01	02/26/2016 17:35	
WG558920-10	STD-S	01	02/26/2016 18:07	
WG558920-11	STD-S	01	02/26/2016 18:39	
WG558920-12	SSCV-S	01	02/26/2016 20:15	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4662201
Report generated 03/10/2016 16:26

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16030323
Instrument: HPMS6
Analyst: TMB
Workgroup: WG560072

Tune ID: WG560072-01
Run Date: 03/08/2016
Run Time: 10:59
File ID: 6M137644
Cal ID: HPMS6 - 26-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	23.4	11246	PASS
75.0	95.0	30.0	60.0	51.7	24897	PASS
95.0	95.0	100	100	100	48162	PASS
96.0	95.0	5.00	9.00	6.86	3304	PASS
173	174	0	2.00	0.325	109	PASS
174	95.0	50.0	100	69.5	33487	PASS
175	174	5.00	9.00	7.71	2582	PASS
176	174	95.0	101	99.1	33199	PASS
177	176	5.00	9.00	6.88	2283	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG560072-02	CCV-S	01	03/08/2016 11:58	
WG560074-01	BLANK	01	03/08/2016 13:05	
WG560074-02	LCS	01	03/08/2016 13:38	
WG560060-02	MS	01	03/08/2016 14:12	
WG560060-03	MSD	01	03/08/2016 14:46	
L16030323-01	18DPT09(5-5.5)040316	01	03/08/2016 15:54	
L16030323-02	18DPT09(11-11.5)040316	01	03/08/2016 16:28	
L16030323-03	18DPT09(13.5-14)040316	01	03/08/2016 17:01	
L16030323-04	18DPT10(5-5.5)040316	01	03/08/2016 17:34	
L16030323-05	18DPT10(15.5-16)040316	01	03/08/2016 18:08	
L16030323-06	18DPT10(23.5-24)040316	01	03/08/2016 18:42	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4662201
Report generated 03/10/2016 16:26

Calibration Table Report
Method: 826_SL.M
Title: 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Calibration: Mon Feb 29 15:59:52 2016
Curve: WG558920
Calibration Files

	Compound	0.5 6M137523.D	1 6M137524.D	2 6M137525.D	5 6M137526.D	10 6M137527.D	20 6M137528.D	50 6M137529.D	100 6M137530.D	200 6M137531.D	300 6M137532.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.386	0.437	0.426	0.515	0.537	0.438	0.464	0.471	0.459	10.647		
P	Chloromethane			0.578	0.509	0.480	0.500	0.503	0.398	0.425	0.436	0.479	11.984		
C	Vinyl Chloride			0.371	0.405	0.376	0.415	0.431	0.353	0.374	0.357	0.385	7.341		
T	1,3-Butadiene				0.369	0.322	0.361	0.344	0.289	0.282	0.277	0.320	11.982		
T	Bromomethane			0.192	0.207	0.206	0.215	0.213	0.184	0.207	0.218	0.205	5.643		
T	Chloroethane			0.199	0.219	0.208	0.232	0.244	0.202	0.219	0.224	0.218	6.941		
T	Trichlorofluoromethane			0.535	0.557	0.513	0.525	0.558	0.462	0.490	0.501	0.518	6.398		
T	Diethyl ether		0.243	0.231	0.234	0.251	0.241	0.233	0.233		0.238	0.238	2.758		
T	Isoprene				0.333	0.322	0.327	0.355	0.334	0.338	0.351	0.337	3.613		
T	Acrolein		0.044	0.045	0.044	0.050	0.045	0.042	0.045		0.047	0.045	5.301		
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.199	0.268	0.248	0.256	0.277	0.230	0.245	0.252	0.247	9.700		
T	Acetone					0.152	0.130	0.112	0.104	0.110	0.106	0.119	15.588	0.999	
C	1,1-Dichloroethene			0.380	0.462	0.424	0.453	0.487	0.410	0.439	0.447	0.438	7.530		
T	Tert-Butyl Alcohol		0.039	0.035	0.040	0.044	0.044	0.040	0.040		0.044	0.041	7.378		
T	Dimethyl Sulfide				0.204	0.210	0.197	0.223	0.210	0.218	0.224	0.212	4.669		
T	Iodomethane				0.056	0.082	0.123	0.197	0.197	0.211	0.207	0.153	42.723	0.998	
T	Methyl acetate				0.309	0.317	0.309	0.308	0.292	0.293	0.300	0.304	3.023		
T	Methylene Chloride			0.256	0.273	0.264	0.268	0.287	0.242	0.257	0.260	0.264	5.015		
T	Carbon Disulfide			0.821	0.880	0.808	0.840	0.872	0.808	0.825	0.844	0.837	3.273		
T	Acrylonitrile		0.108	0.114	0.119	0.133	0.128	0.130	0.129		0.140	0.125	8.391		
T	Methyl Tert Butyl Ether	0.732	0.693	0.663	0.725	0.773	0.787	0.833	0.734	0.785	0.799	0.753	6.930		
T	trans-1,2-Dichloroethene			0.227	0.244	0.240	0.247	0.265	0.226	0.240	0.244	0.242	5.097		
T	n-Hexane			0.407	0.452	0.430	0.435	0.466	0.433	0.438	0.452	0.439	4.050		
T	Diisopropyl ether		1.143	1.120	1.122	1.188	1.168	1.117	1.121		1.127	1.138	2.317		
T	Vinyl Acetate				0.493	0.583	0.630	0.596	0.570	0.626	0.621	0.588	8.090		
P	1,1-Dichloroethane			0.484	0.538	0.522	0.539	0.568	0.484	0.514	0.521	0.521	5.427		
T	Ethyl-Tert-Butyl ether		0.841	0.891	0.897	0.963	0.947	0.909	0.912		0.938	0.912	4.185		
T	2-Butanone				0.186	0.176	0.176	0.169	0.161	0.170	0.172	0.173	4.334		
T	Propionitrile		0.047	0.045	0.045	0.051	0.050	0.048	0.047		0.049	0.048	4.489		
T	2,2-Dichloropropane			0.413	0.427	0.425	0.415	0.454	0.383	0.410	0.420	0.418	4.750		
T	cis-1,2-Dichloroethene			0.265	0.274	0.263	0.275	0.290	0.250	0.269	0.273	0.270	4.259		
C	Chloroform			0.502	0.499	0.475	0.499	0.520	0.443	0.476	0.481	0.487	4.825		
T	1-Bromopropane				0.033	0.034	0.037	0.040	0.037	0.038	0.039	0.037	7.440		
T	Bromochloromethane			0.151	0.148	0.152	0.165	0.176	0.151	0.162	0.164	0.159	6.123		
T	Tetrahydrofuran		0.173	0.111	0.113	0.121	0.123	0.115	0.112		0.116	0.123	16.774	0.998	
S	Dibromofluoromethane			0.280	0.265	0.272	0.276	0.272	0.253	0.265	0.262	0.268	3.189		
T	1,1,1-Trichloroethane			0.412	0.417	0.434	0.435	0.474	0.398	0.430	0.438	0.430	5.218		
T	Cyclohexane			0.396	0.493	0.473	0.495	0.533	0.492	0.499	0.519	0.487	8.433		
T	1,1-Dichloropropene			0.306	0.372	0.338	0.347	0.383	0.324	0.345	0.355	0.346	7.125		
T	Tert-Amyl-Methyl ether		0.664	0.687	0.706	0.759	0.757	0.723	0.732		0.762	0.724	4.986		
T	Carbon Tetrachloride			0.351	0.409	0.4	0.412	0.445	0.378	0.403	0.416	0.4017	6.9015		
S	1,2-Dichloroethane-d4			0.36	0.365	0.337	0.366	0.353	0.329	0.34	0.336	0.3482	4.16		
T	Heptane											0	0		
T	1,2-Dichloroethane			0.387	0.414	0.422	0.43	0.449	0.388	0.415	0.419	0.4154	4.951		
T	Benzene	1.229	1.128	1.036	1.038	1.011	1.023	1.078	0.921	0.973	0.979	1.0416	8.3738		
T	Trichloroethene			0.223	0.257	0.243	0.254	0.268	0.229	0.245	0.249	0.2461	6.0218		
T	Methylcyclohexane			0.321	0.406	0.387	0.403	0.435	0.401	0.406	0.424	0.3978	8.6044		
C	1,2-Dichloropropane			0.249	0.279	0.277	0.29	0.305	0.266	0.286	0.29	0.2802	6.0373		
T	1,4-Dioxane			0.002	0.003	0.003	0.003	0.003	0.003		0.004	0.0031	18.585	0.996	
T	Bromodichloromethane			0.336	0.359	0.35	0.37	0.402	0.352	0.384	0.39	0.3678	6.1125		
T	Dibromomethane			0.145	0.152	0.16	0.169	0.185	0.158	0.171	0.173	0.1639	7.836		
T	2-Chloroethyl Vinyl Ether				0.126	0.141	0.155	0.164	0.161	0.178		0.1541	11.732		
T	4-Methyl-2-Pentanone				0.101	0.11	0.122	0.117	0.113	0.125	0.128	0.1167	8.1948		
T	cis-1,3-Dichloropropene			0.338	0.374	0.39	0.412	0.454	0.396	0.435	0.442	0.4052	9.5304		
T	Dimethyl Disulfide				0.171	0.174	0.192	0.225	0.22	0.245		0.2044	14.756		
I	Chlorobenzene-d5	ISTD													
S	Toluene-d8			1.274	1.278	1.167	1.22	1.21	1.113	1.144	1.105	1.1888	5.6789		
C	Toluene	1.627	1.459	1.33	1.431	1.418	1.424	1.504	1.27	1.35	1.331	1.4144	7.2521		
T	Ethyl Methacrylate			0.326	0.401	0.428	0.461	0.503	0.477	0.511	0.518	0.4532	14.498		
T	Paraldehyde											0	0		
T	trans-1,3-Dichloropropene			0.461	0.507	0.529	0.558	0.603	0.53	0.579	0.582	0.5439	8.4811		
T	1,1,2-Trichloroethane			0.265	0.288	0.302	0.309	0.319	0.28	0.302	0.299	0.2956	5.771		
T	2-Hexanone				0.298	0.324	0.345	0.341	0.328	0.359	0.366	0.3373	6.878		
T	1,3-Dichloropropane			0.488	0.541	0.538	0.558	0.579	0.503	0.54	0.54	0.5358	5.3786		
T	Tetrachloroethene			0.332	0.375	0.358	0.359	0.376	0.318	0.336	0.337	0.3489	6.0417		
T	Dibromochloromethane			0.318	0.369	0.378	0.394	0.425	0.373	0.407	0.41	0.3845	8.6342		
T	1,2-Dibromoethane			0.271	0.289	0.29	0.309	0.332	0.29	0.318	0.32	0.3023	6.7531		
T	1-Chlorohexane			0.358	0.417	0.417	0.441	0.485	0.451	0.47	0.474	0.4392	9.3805		
P	Chlorobenzene			0.915	0.966	0.916	0.927	0.958	0.821	0.89	0.88	0.909	5.1018		
T	1,1,1,2-Tetrachloroethane			0.348	0.343	0.362	0.374	0.393	0.344	0.376	0.38	0.365	5.0679		
C	Ethylbenzene	0.49	0.466	0.473	0.486	0.481	0.497	0.531	0.453	0.494	0.494	0.4864	4.3098		
T	m-,p-Xylene	0.674	0.598	0.537	0.6	0.59	0.605	0.637	0.546	0.585	0.58	0.5952	6.6768		
T	o-Xylene	0.574	0.512	0.494	0.539	0.544	0.588	0.634	0.54	0.59	0.591	0.5606	7.5243		
T	Styrene			0.772	0.876	0.918	0.982	1.071	0.935	1.037	1.041	0.9542	10.466		
P	Bromoform			0.222	0.256	0.259	0.275	0.298	0.261	0.293	0.307	0.2715	10.256		
T	Isopropylbenzene			1.284	1.474	1.498	1.583	1.683	1.433	1.559	1.542	1.507	7.8153		
I	1,4-Dichlorobenzene-d4	ISTD													
P	1,1,2,2-Tetrachloroethane			0.689	0.783	0.798	0.815	0.842	0.74	0.785	0.797	0.7811	6.0053		
S	p-Bromofluorobenzene			0.997	0.956	0.921	0.925	0.941	0.864	0.892	0.852	0.9184	5.2432		

T	1,2,3-Trichloropropane	0.202	0.247	0.251	0.244	0.258	0.225	0.243	0.244	0.2391	7.3405
T	trans-1,4-Dichloro-2-Butene	0.247	0.255	0.285	0.287	0.308	0.295	0.311	0.318	0.2883	8.9009
T	n-Propylbenzene	3.037	3.536	3.508	3.571	3.802	3.207	3.325	3.178	3.3956	7.429
T	Bromobenzene	0.67	0.762	0.744	0.775	0.808	0.694	0.733	0.719	0.7381	6.0417
T	1,3,5-Trimethylbenzene	2.096	2.503	2.443	2.485	2.702	2.295	2.435	2.377	2.417	7.2332
T	2-Chlorotoluene	1.974	2.457	2.366	2.375	2.437	2.106	2.239	2.178	2.2664	7.5835
T	4-Chlorotoluene	2.163	2.182	2.123	2.094	2.235	1.885	1.964	1.933	2.0723	6.208
T	a-Methylstyrene	0.921	1.071	1.127	1.156	1.295	1.234	1.294	1.291	1.1737	11.321
T	tert-Butylbenzene	0.437	0.508	0.504	0.521	0.567	0.48	0.511	0.502	0.5037	7.2697
T	1,2,4-Trimethylbenzene	2.274	2.614	2.634	2.636	2.804	2.386	2.535	2.452	2.5419	6.5668
T	sec-Butylbenzene	2.804	3.169	3.104	3.238	3.474	2.92	3.078	2.976	3.0953	6.6823
T	p-Isopropyltoluene	2.183	2.603	2.54	2.657	2.885	2.449	2.589	2.523	2.5537	7.7414
T	1,3-Dichlorobenzene	1.331	1.516	1.491	1.451	1.537	1.319	1.391	1.389	1.4282	5.8154
T	1,4-Dichlorobenzene	1.528	1.507	1.501	1.476	1.529	1.31	1.39	1.389	1.4537	5.5603
T	n-Butylbenzene	2.282	2.598	2.578	2.654	2.852	2.445	2.576	2.563	2.5684	6.3469
T	1,2-Dichlorobenzene	1.324	1.401	1.407	1.397	1.474	1.278	1.357	1.356	1.3743	4.3244
T	1,2-Dibromo-3-Chloropropane		0.159	0.163	0.176	0.183	0.167	0.179	0.182	0.1728	5.5543
T	1,2,4-Trichlorobenzene	0.968	0.981	1.002	1.008	1.105	0.936	0.963	0.985	0.9935	5.0666
T	Hexachlorobutadiene	0.528	0.583	0.572	0.579	0.635	0.532	0.546	0.571	0.5682	6.0591
T	Naphthalene	1.901	2.081	2.291	2.365	2.601	2.29	2.356	2.387	2.2839	9.2287
T	1,2,3-Trichlorobenzene	0.961	0.977	0.98	0.987	1.094	0.917	0.949	0.961	0.9783	5.2988

Mon Feb 29 16:03:43 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16030323 Run Date: 02/26/2016 Sample ID: WG558920-12
Instrument ID: HPMS6 Run Time: 20:15 Method: 8260B
File ID: 6M137535 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG558920 Cal ID: HPMS6 - 26-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.7	ug/kg	0.494	1.40	20	
1,1-Dichloroethene	CCC	50.0	51.6	ug/kg	0.452	3.30	20	
1,2-Dichloropropane	CCC	50.0	55.0	ug/kg	0.308	10.1	20	
Ethylbenzene	CCC	50.0	52.4	ug/kg	0.510	4.80	20	
Toluene	CCC	50.0	51.4	ug/kg	1.45	2.80	20	
Vinyl Chloride	CCC	50.0	43.3	ug/kg	0.334	13.3	20	
Bromoform	SPCC	50.0	49.2	ug/kg	0.267	1.50	20	
Chlorobenzene	SPCC	50.0	52.9	ug/kg	0.961	5.70	20	
Chloromethane	SPCC	50.0	50.9	ug/kg	0.487	1.80	20	
1,1-Dichloroethane	SPCC	50.0	50.3	ug/kg	0.525	0.700	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	52.1	ug/kg	0.815	4.30	20	
Acetone		50.0	48.7	ug/kg	0.111	2.70	20	
Benzene		50.0	50.4	ug/kg	1.05	0.900	20	
Bromobenzene		50.0	51.8	ug/kg	0.765	3.70	20	
Bromochloromethane		50.0	52.1	ug/kg	0.165	4.20	20	
Bromodichloromethane		50.0	51.6	ug/kg	0.380	3.30	20	
Bromomethane		50.0	58.6	ug/kg	0.240	17.1	20	
2-Butanone		50.0	49.2	ug/kg	0.170	1.50	20	
n-Butylbenzene		50.0	48.8	ug/kg	2.50	2.50	20	
sec-Butylbenzene		50.0	50.7	ug/kg	3.14	1.40	20	
tert-Butylbenzene		50.0	53.2	ug/kg	0.536	6.40	20	
Carbon Disulfide		50.0	44.4	ug/kg	0.743	11.2	20	
Carbon Tetrachloride		50.0	51.2	ug/kg	0.411	2.30	20	
Dibromochloromethane		50.0	51.8	ug/kg	0.399	3.70	20	
Chloroethane		50.0	56.6	ug/kg	0.247	13.2	20	
2-Chlorotoluene		50.0	52.1	ug/kg	2.36	4.20	20	
4-Chlorotoluene		50.0	52.1	ug/kg	2.16	4.10	20	
1,2-Dibromo-3-Chloropropane		50.0	52.1	ug/kg	0.180	4.30	20	
1,2-Dibromoethane		50.0	53.7	ug/kg	0.325	7.30	20	
Dibromomethane		50.0	50.4	ug/kg	0.165	0.800	20	
1,2-Dichlorobenzene		50.0	54.5	ug/kg	1.50	9.00	20	
1,3-Dichlorobenzene		50.0	52.0	ug/kg	1.49	4.00	20	
1,4-Dichlorobenzene		50.0	51.8	ug/kg	1.51	3.60	20	
Dichlorodifluoromethane		50.0	55.5	ug/kg	0.509	10.9	20	
1,2-Dichloroethane		50.0	51.3	ug/kg	0.426	2.50	20	
cis-1,2-Dichloroethene		50.0	54.1	ug/kg	0.292	8.30	20	
trans-1,2-Dichloroethene		50.0	53.7	ug/kg	0.260	7.50	20	
1,3-Dichloropropane		50.0	54.9	ug/kg	0.589	9.80	20	
2,2-Dichloropropane		50.0	53.1	ug/kg	0.444	6.20	20	
cis-1,3-Dichloropropene		50.0	58.8	ug/kg	0.476	17.5	20	
trans-1,3-Dichloropropene		50.0	52.9	ug/kg	0.575	5.70	20	
1,1-Dichloropropene		50.0	52.8	ug/kg	0.365	5.50	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4662200
Report generated 03/10/2016 16:26

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16030323 Run Date: 02/26/2016 Sample ID: WG558920-12
Instrument ID: HPMS6 Run Time: 20:15 Method: 8260B
File ID: 6M137535 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG558920 Cal ID: HPMS6 - 26-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	51.3	ug/kg	0.346	2.60	20	
Hexachlorobutadiene		50.0	47.6	ug/kg	0.541	4.80	20	
Isopropylbenzene		50.0	54.6	ug/kg	1.64	9.10	20	
p-Isopropyltoluene		50.0	50.9	ug/kg	2.60	1.80	20	
4-Methyl-2-Pentanone		50.0	51.3	ug/kg	0.120	2.50	20	
Methylene Chloride		50.0	53.4	ug/kg	0.281	6.80	20	
Naphthalene		50.0	49.8	ug/kg	2.28	0.300	20	
n-Propylbenzene		50.0	52.6	ug/kg	3.57	5.30	20	
Styrene		50.0	55.3	ug/kg	1.06	10.6	20	
1,1,1,2-Tetrachloroethane		50.0	51.8	ug/kg	0.379	3.70	20	
Tetrachloroethene		50.0	51.1	ug/kg	0.357	2.20	20	
1,2,3-Trichlorobenzene		50.0	51.0	ug/kg	0.997	2.00	20	
1,2,4-Trichlorobenzene		50.0	51.0	ug/kg	1.01	2.10	20	
1,1,1-Trichloroethane		50.0	52.0	ug/kg	0.447	4.00	20	
1,1,2-Trichloroethane		50.0	53.2	ug/kg	0.315	6.40	20	
Trichloroethene		50.0	54.7	ug/kg	0.269	9.40	20	
Trichlorofluoromethane		50.0	47.9	ug/kg	0.496	4.20	20	
1,2,3-Trichloropropane		50.0	53.2	ug/kg	0.254	6.30	20	
1,2,4-Trimethylbenzene		50.0	51.1	ug/kg	2.60	2.30	20	
1,3,5-Trimethylbenzene		50.0	52.7	ug/kg	2.55	5.30	20	
o-Xylene		50.0	56.9	ug/kg	0.638	13.8	20	
m-,p-Xylene		100	105	ug/kg	0.626	5.20	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4662200
Report generated 03/10/2016 16:26

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030323 Run Date: 03/08/2016 Sample ID: WG560072-02
Instrument ID: HPMS6 Run Time: 11:58 Method: 8260B
File ID: 6M137646 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG560074 Cal ID: HPMS6 - 26-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	49.1	ug/kg	0.478	1.90	20	
1,1-Dichloroethene	CCC	50.0	52.3	ug/kg	0.457	4.51	20	
1,2-Dichloropropane	CCC	50.0	51.2	ug/kg	0.287	2.36	20	
Ethylbenzene	CCC	50.0	51.9	ug/kg	0.505	3.72	20	
Toluene	CCC	50.0	50.4	ug/kg	1.43	0.845	20	
Vinyl Chloride	CCC	50.0	50.5	ug/kg	0.389	0.912	20	
Bromoform	SPCC	50.0	50.3	ug/kg	0.273	0.507	20	
Chlorobenzene	SPCC	50.0	50.0	ug/kg	0.909	0.0192	20	
Chloromethane	SPCC	50.0	41.8	ug/kg	0.400	16.5	20	
1,1-Dichloroethane	SPCC	50.0	50.4	ug/kg	0.525	0.821	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	52.5	ug/kg	0.820	5.00	20	
Xylenes		150	155	ug/kg	0.601	3.51	40	
Acetone		50.0	54.1	ug/kg	0.122	8.17	20	
Benzene		50.0	49.5	ug/kg	1.03	0.967	20	
Bromobenzene		50.0	51.0	ug/kg	0.753	2.00	20	
Bromochloromethane		50.0	51.8	ug/kg	0.164	3.68	20	
Bromodichloromethane		50.0	50.5	ug/kg	0.371	0.909	20	
Bromomethane		50.0	51.8	ug/kg	0.213	3.58	20	
2-Butanone		50.0	54.9	ug/kg	0.190	9.72	20	
n-Butylbenzene		50.0	51.5	ug/kg	2.65	3.02	20	
sec-Butylbenzene		50.0	52.3	ug/kg	3.24	4.54	20	
tert-Butylbenzene		50.0	52.0	ug/kg	0.524	4.09	20	
Carbon Disulfide		50.0	49.9	ug/kg	0.836	0.101	20	
Carbon Tetrachloride		50.0	51.1	ug/kg	0.411	2.24	20	
Dibromochloromethane		50.0	50.1	ug/kg	0.385	0.170	20	
Chloroethane		50.0	52.5	ug/kg	0.229	4.99	20	
2-Chlorotoluene		50.0	47.2	ug/kg	2.14	5.63	20	
4-Chlorotoluene		50.0	54.6	ug/kg	2.26	9.29	20	
1,2-Dibromo-3-Chloropropane		50.0	50.8	ug/kg	0.176	1.58	20	
1,2-Dibromoethane		50.0	52.5	ug/kg	0.317	4.91	20	
Dibromomethane		50.0	50.2	ug/kg	0.165	0.339	20	
1,2-Dichlorobenzene		50.0	49.2	ug/kg	1.35	1.63	20	
1,3-Dichlorobenzene		50.0	50.3	ug/kg	1.44	0.634	20	
1,4-Dichlorobenzene		50.0	49.3	ug/kg	1.43	1.39	20	
Dichlorodifluoromethane		50.0	53.2	ug/kg	0.489	6.44	20	
1,2-Dichloroethane		50.0	48.4	ug/kg	0.402	3.25	20	
cis-1,2-Dichloroethene		50.0	51.6	ug/kg	0.279	3.27	20	
trans-1,2-Dichloroethene		50.0	52.5	ug/kg	0.254	4.95	20	
1,3-Dichloropropane		50.0	50.7	ug/kg	0.544	1.43	20	
2,2-Dichloropropane		50.0	52.1	ug/kg	0.436	4.28	20	
cis-1,3-Dichloropropene		50.0	52.8	ug/kg	0.428	5.62	20	
trans-1,3-Dichloropropene		50.0	51.9	ug/kg	0.565	3.82	20	

CCV - Modified 03/05/2008
PDF File ID: 4662202
Report generated 03/10/2016 16:26

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030323 Run Date: 03/08/2016 Sample ID: WG560072-02
Instrument ID: HPMS6 Run Time: 11:58 Method: 8260B
File ID: 6M137646 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG560074 Cal ID: HPMS6 - 26-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	53.5	ug/kg	0.370	6.90	20	
2-Hexanone		50.0	56.5	ug/kg	0.382	13.1	20	
Hexachlorobutadiene		50.0	50.1	ug/kg	0.569	0.129	20	
Isopropylbenzene		50.0	52.8	ug/kg	1.59	5.67	20	
p-Isopropyltoluene		50.0	52.6	ug/kg	2.69	5.18	20	
4-Methyl-2-Pentanone		50.0	57.8	ug/kg	0.135	15.5	20	
Methylene Chloride		50.0	50.6	ug/kg	0.267	1.13	20	
Naphthalene		50.0	54.0	ug/kg	2.47	8.09	20	
n-Propylbenzene		50.0	52.7	ug/kg	3.58	5.39	20	
Styrene		50.0	53.3	ug/kg	1.02	6.53	20	
1,1,1,2-Tetrachloroethane		50.0	49.4	ug/kg	0.360	1.27	20	
Tetrachloroethene		50.0	52.3	ug/kg	0.365	4.51	20	
1,2,3-Trichlorobenzene		50.0	49.3	ug/kg	0.965	1.34	20	
1,2,4-Trichlorobenzene		50.0	50.1	ug/kg	0.995	0.108	20	
1,1,1-Trichloroethane		50.0	51.2	ug/kg	0.441	2.47	20	
1,1,2-Trichloroethane		50.0	51.3	ug/kg	0.303	2.54	20	
Trichloroethene		50.0	51.9	ug/kg	0.256	3.84	20	
Trichlorofluoromethane		50.0	50.6	ug/kg	0.524	1.17	20	
1,2,3-Trichloropropane		50.0	53.8	ug/kg	0.257	7.61	20	
1,2,4-Trimethylbenzene		50.0	50.9	ug/kg	2.59	1.77	20	
1,3,5-Trimethylbenzene		50.0	52.0	ug/kg	2.51	3.99	20	
o-Xylene		50.0	52.9	ug/kg	0.594	5.87	20	
m-,p-Xylene		100	102	ug/kg	0.609	2.33	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4662202
Report generated 03/10/2016 16:26

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16030323
Instrument ID: HPMS6
Workgroup (AAB#): WG560074

ICAL CCV Number: WG558920-08
CAL ID: HPMS6-26-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558920-08	NA	NA	237573	439950	607631
Upper Limit	NA	NA	475146	879900	1215262
Lower Limit	NA	NA	118787	219975	303816
L16030323-01	1.00	01	193297	373305	530995
L16030323-02	1.00	01	207806	393106	539806
L16030323-03	1.00	01	205060	385930	530956
L16030323-04	1.00	01	196388	374000	513529
L16030323-05	1.00	01	219502	411354	562512
L16030323-06	1.00	01	183781	349731	487901
WG560074-01	1.00	01	216022	411041	570797
WG560074-02	1.00	01	226756	418780	578167

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4666020
Report generated 03/10/2016 16:26

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16030323
Instrument ID: HPMS6
Workgroup (AAB#): WG560074

ICAL CCV Number: WG558920-08
CAL ID: HPMS6-26-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558920-08	NA	NA	19.6	16.01	11.51
Upper Limit	NA	NA	20.1	16.51	12.01
Lower Limit	NA	NA	19.1	15.51	11.01
L16030323-01	1.00	01	19.59	16.01	11.51
L16030323-02	1.00	01	19.6	16.01	11.52
L16030323-03	1.00	01	19.6	16.01	11.52
L16030323-04	1.00	01	19.59	16.01	11.51
L16030323-05	1.00	01	19.59	16.01	11.51
L16030323-06	1.00	01	19.59	16.01	11.51
WG560074-01	1.00	01	19.59	16.01	11.51
WG560074-02	1.00	01	19.6	16.01	11.52

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4666021
Report generated: 03/10/2016 16:26

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030816\6M137653.D Vial: 10
Acq On : 8 Mar 2016 15:54 Operator: TMB
Sample : L16030323-01 8260 4.71g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 09 08:30:21 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	530995	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	373305	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	193297	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.34	111	127642	44.8110 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 89.62%		
43) 1,2-Dichloroethane-d4	11.06	65	150961	40.8184 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 81.64%		
58) Toluene-d8	13.80	98	445735	50.2209 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 100.44%		
80) p-Bromofluorobenzene	17.79	95	177288	49.9338 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 99.86%		

Target Compounds

					Qvalue
13) Acetone	6.61	43	2756	Below Cal	# 48
36) Tetrahydrofuran	10.29	42	1567	Below Cal	# 40
77) Isopropylbenzene	17.24	105	7944	0.7061 ug/L	# 48
87) 4-Chlorotoluene	18.35	91	2186	0.2729 ug/L	# 47
92) p-Isopropyltoluene	19.27	119	9225	0.9344 ug/L	90

(#) = qualifier out of range (m) = manual integration
6M137653.D 826_SL.M Wed Mar 09 08:30:21 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030816\6M137653.D Vial: 10
Acq On : 8 Mar 2016 15:54 Operator: TMB
Sample : L16030323-01 8260 4.71g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 8:30 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

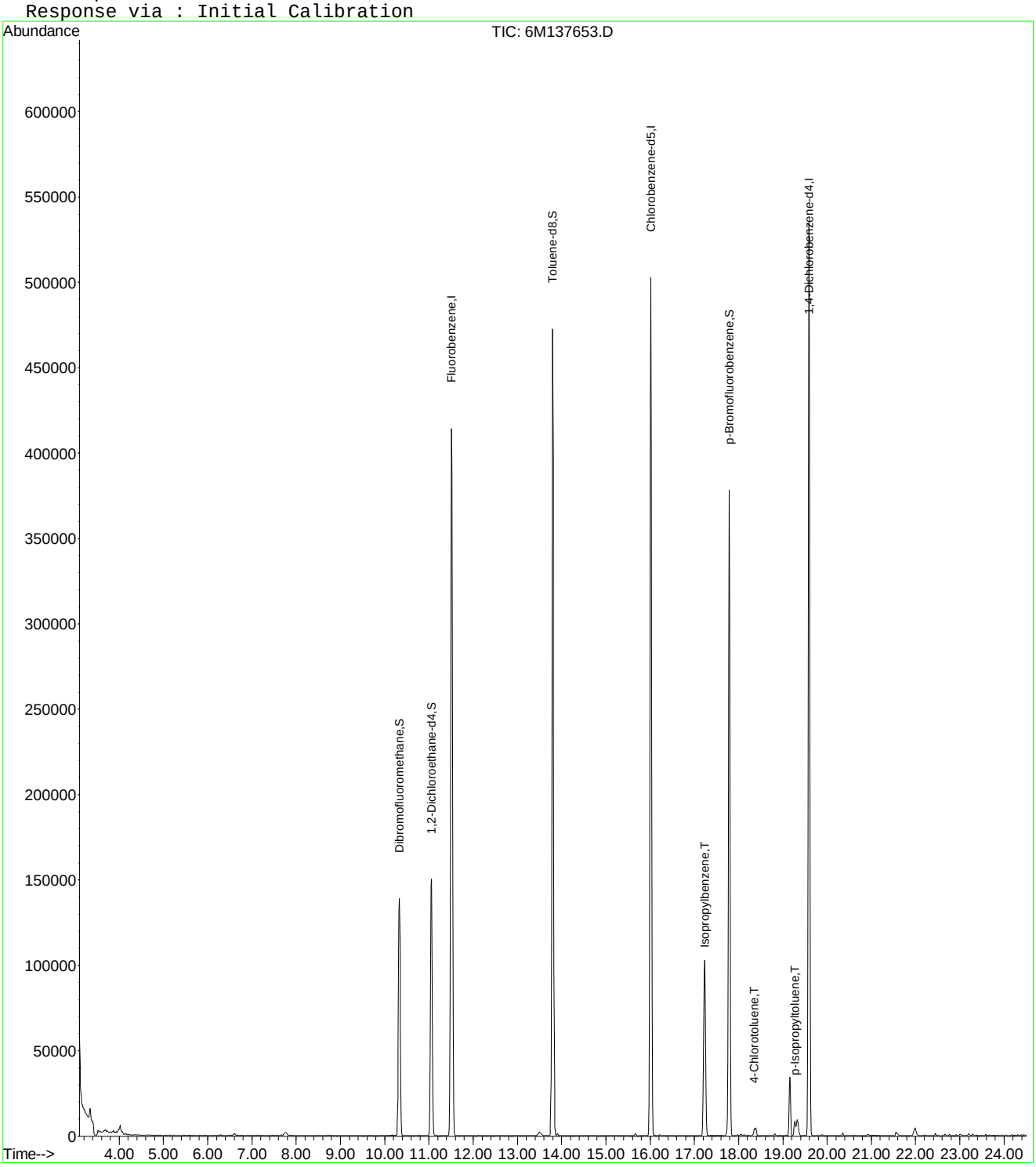

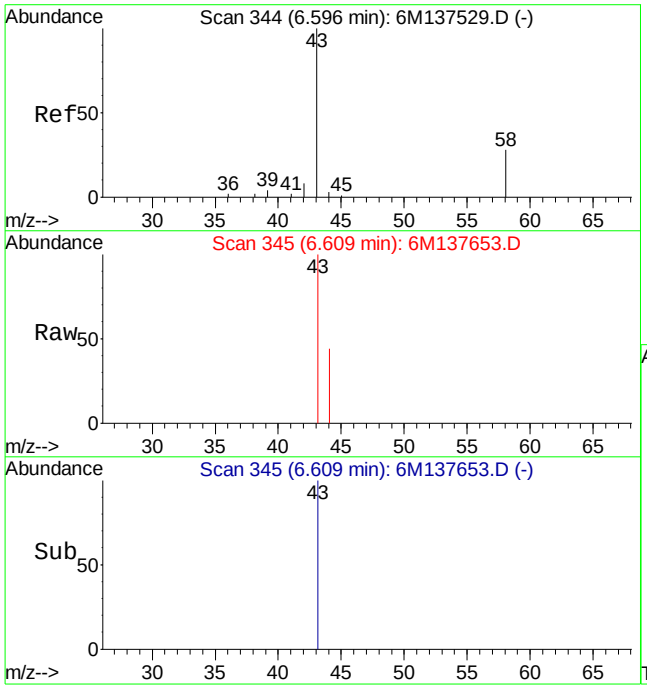

#13
Acetone
Concen: Below Cal
RT: 6.61 min Scan# 345
Delta R.T. 0.02 min
Lab File: 6M137653.D
Acq: 8 Mar 2016 15:54

Tgt Ion: 43 Resp: 2756

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.1	37.7#

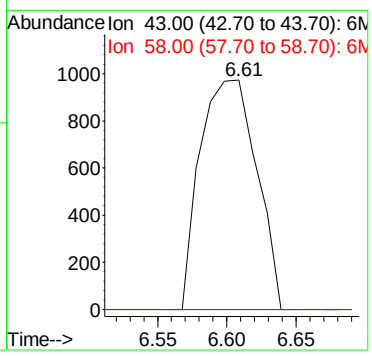

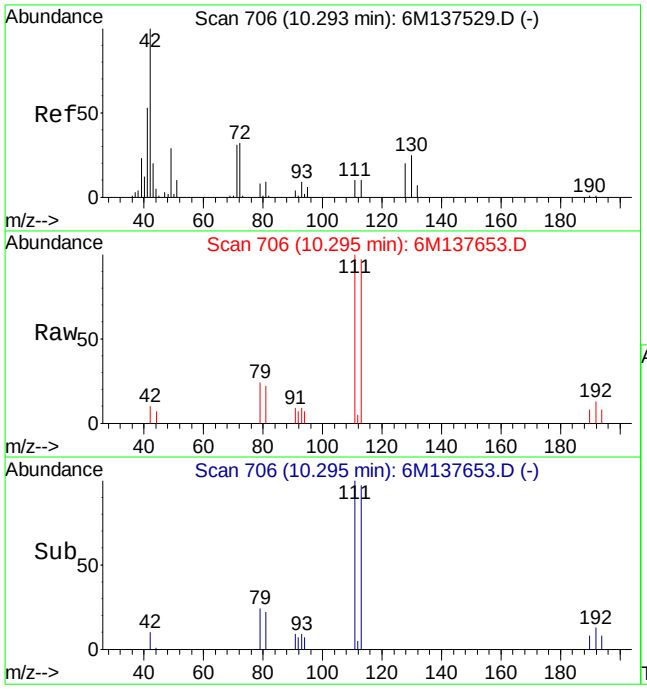

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.29 min Scan# 706
Delta R.T. 0.00 min
Lab File: 6M137653.D
Acq: 8 Mar 2016 15:54

Tgt Ion: 42 Resp: 1567

Ion	Ratio	Lower	Upper
42	100		
72	0.0	21.0	49.0#
71	0.0	20.6	48.2#

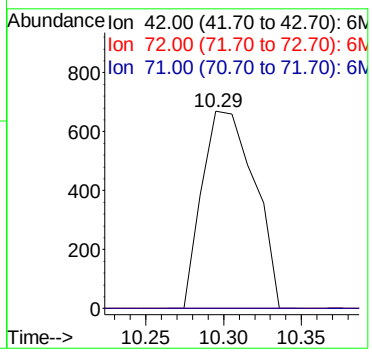

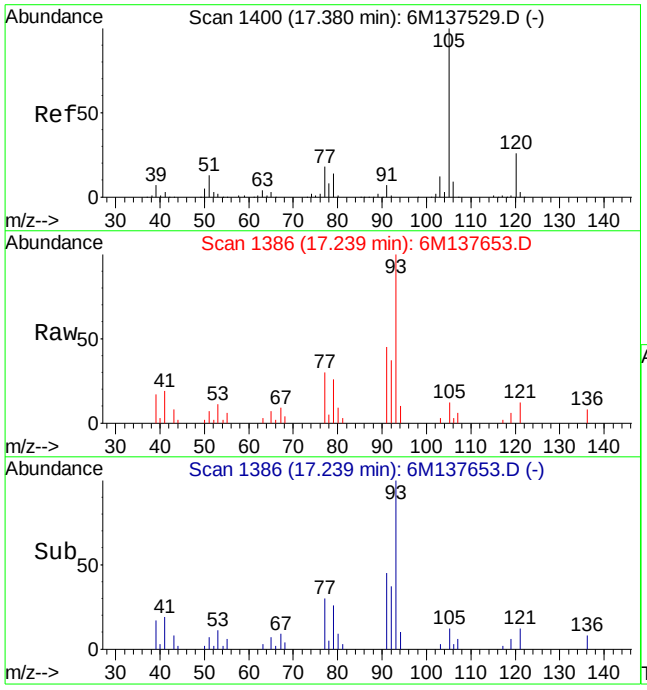

#77
Isopropylbenzene
Concen: 0.71 ug/L
RT: 17.24 min Scan# 1386
Delta R.T. -0.14 min
Lab File: 6M137653.D
Acq: 8 Mar 2016 15:54

Tgt Ion:105 Resp: 7944

Ion	Ratio	Lower	Upper
105	100		
120	0.0	16.3	38.1#

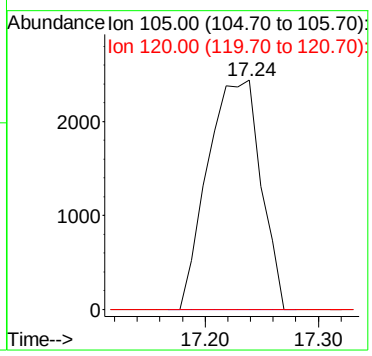

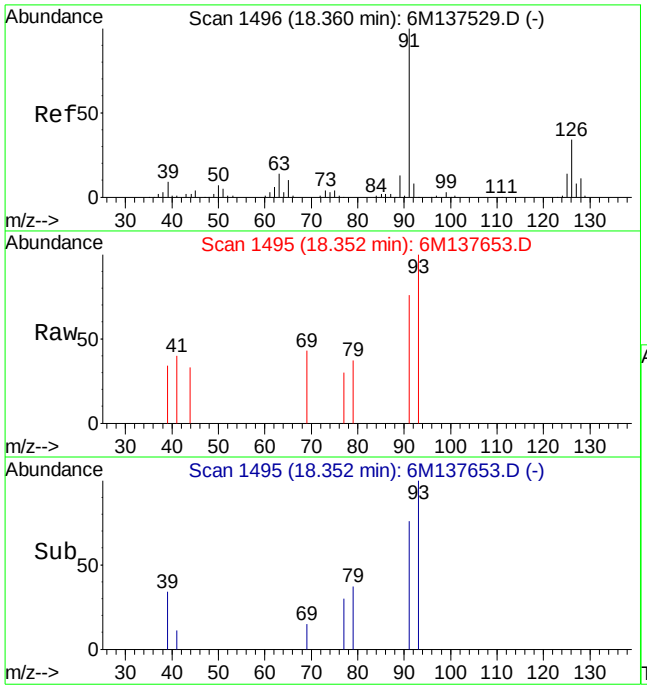

#87
4-Chlorotoluene
Concen: 0.27 ug/L
RT: 18.35 min Scan# 1495
Delta R.T. 0.00 min
Lab File: 6M137653.D
Acq: 8 Mar 2016 15:54

Tgt Ion: 91 Resp: 2186

Ion	Ratio	Lower	Upper
91	100		
126	0.0	21.0	49.0#
63	0.0	8.8	20.6#

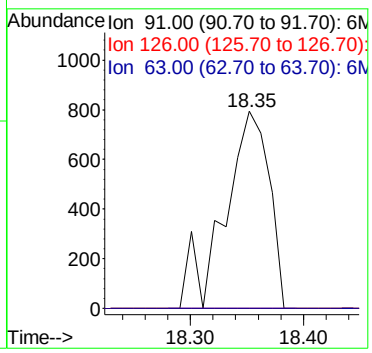

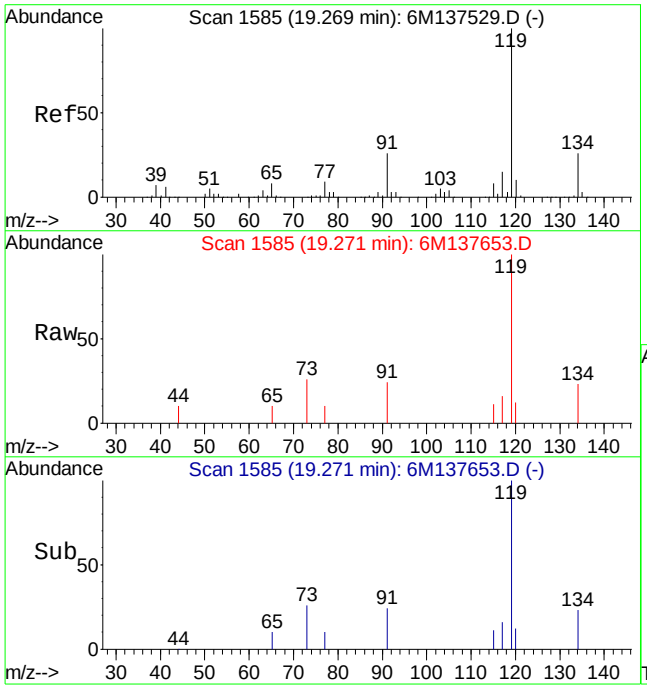

#92
p-Isopropyltoluene
Concen: 0.93 ug/L
RT: 19.27 min Scan# 1585
Delta R.T. 0.01 min
Lab File: 6M137653.D
Acq: 8 Mar 2016 15:54

Tgt Ion:119 Resp: 9225

Ion	Ratio	Lower	Upper
119	100		
134	20.9	15.6	36.4

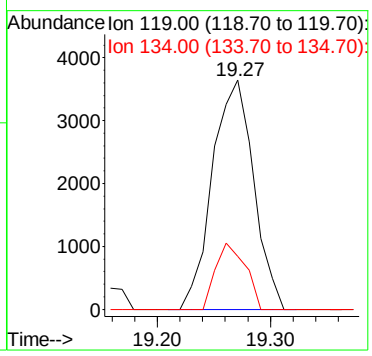

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030816\6M137654.D Vial: 11
Acq On : 8 Mar 2016 16:28 Operator: TMB
Sample : L16030323-02 8260 4.64g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 09 08:30:22 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	539806	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	393106	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	207806	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	133557	46.1223 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 92.24%		
43) 1,2-Dichloroethane-d4	11.06	65	163932	43.6022 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 87.20%		
58) Toluene-d8	13.80	98	459061	49.1171 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.24%		
80) p-Bromofluorobenzene	17.79	95	186225	48.7888 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 97.58%		

Target Compounds					Qvalue
13) Acetone	6.60	43	3453	Below Cal	84
36) Tetrahydrofuran	10.30	42	1406	Below Cal #	40

(#) = qualifier out of range (m) = manual integration
6M137654.D 826_SL.M Wed Mar 09 08:30:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030816\6M137654.D Vial: 11
Acq On : 8 Mar 2016 16:28 Operator: TMB
Sample : L16030323-02 8260 4.64g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 8:30 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

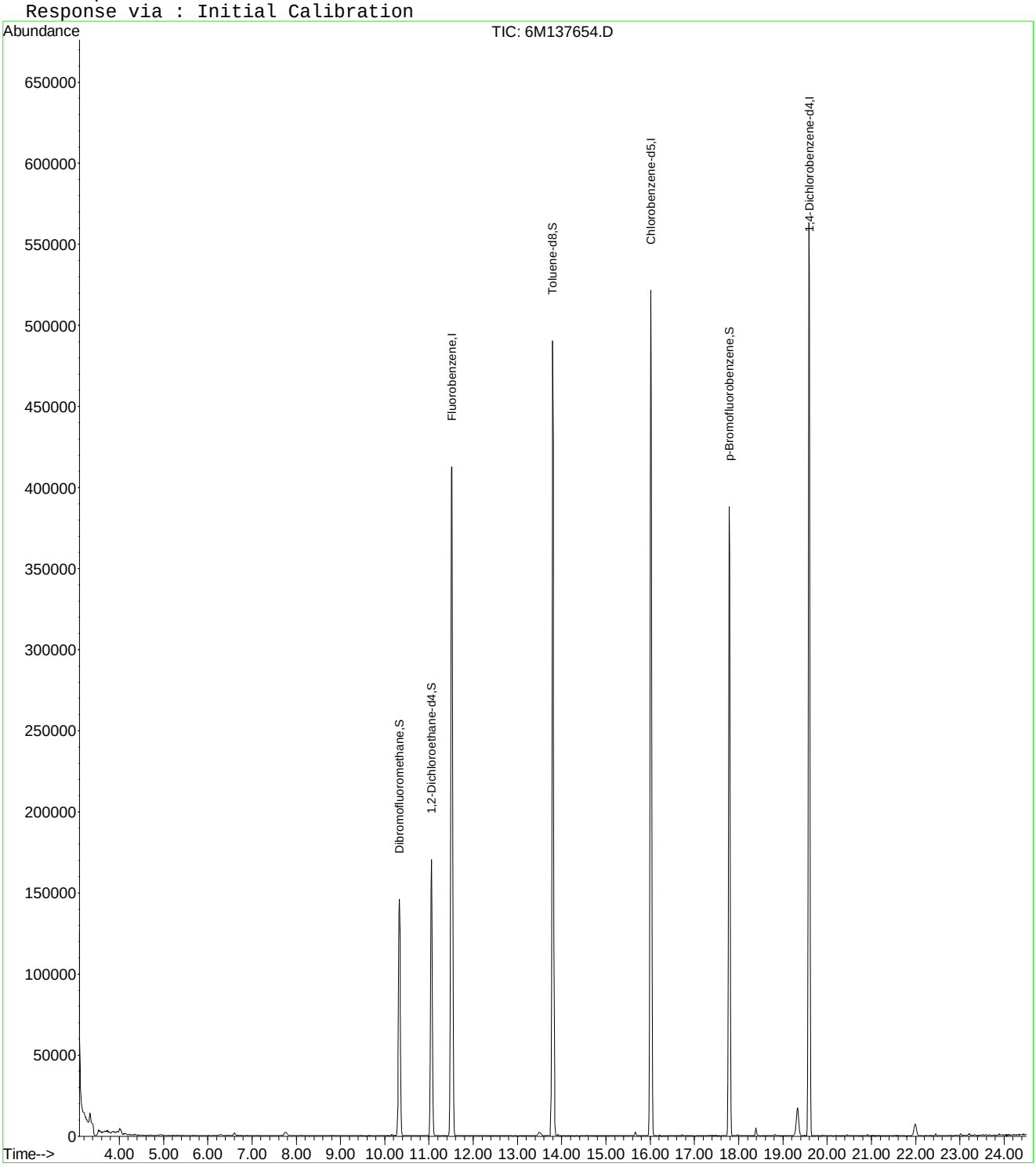

6M137654.D 826_SL.M Wed Mar 09 08:30:22 2016 Page 2

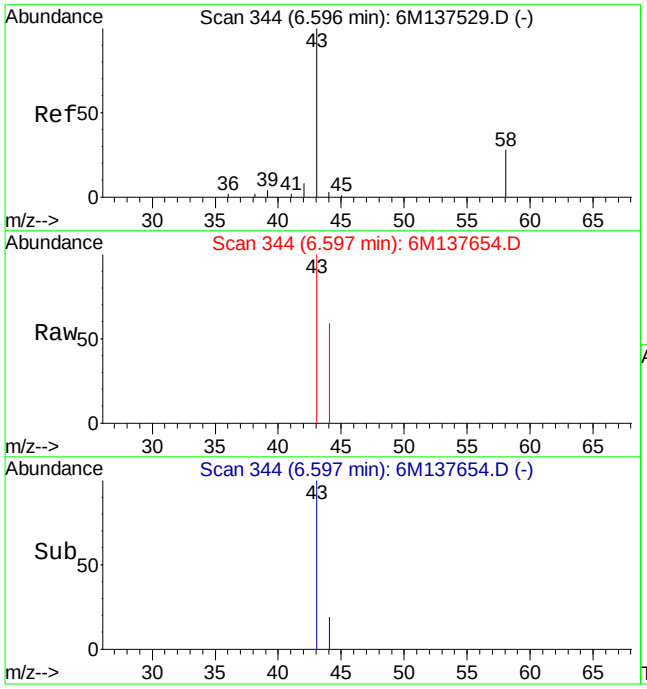

#13
Acetone
Concen: Below Cal
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137654.D
Acq: 8 Mar 2016 16:28

Tgt Ion: 43 Resp: 3453

Ion	Ratio	Lower	Upper
43	100		
58	18.8	16.1	37.7

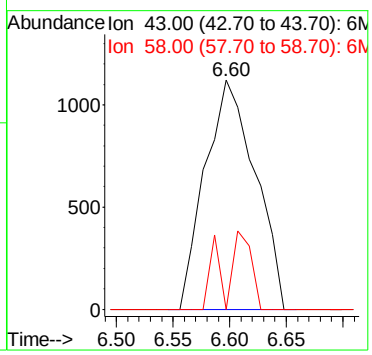

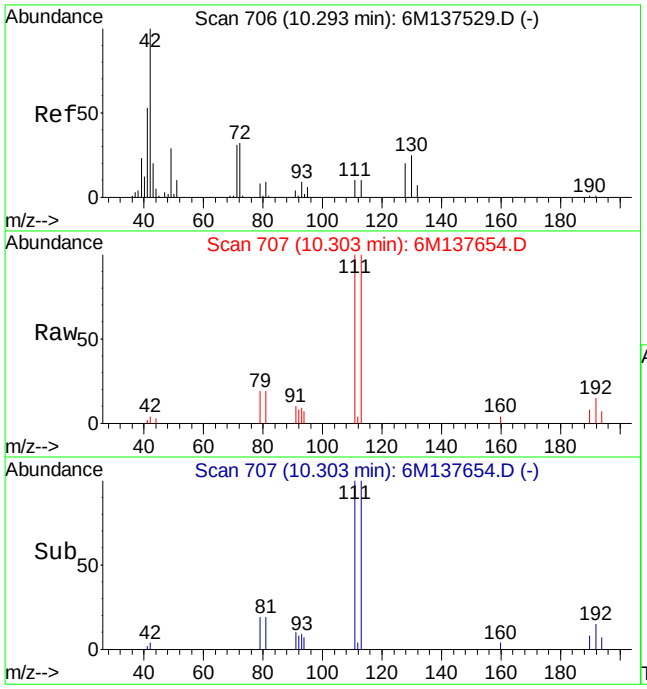

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.30 min Scan# 707
Delta R.T. 0.01 min
Lab File: 6M137654.D
Acq: 8 Mar 2016 16:28

Tgt Ion: 42 Resp: 1406

Ion	Ratio	Lower	Upper
42	100		
72	0.0	21.0	49.0#
71	0.0	20.6	48.2#

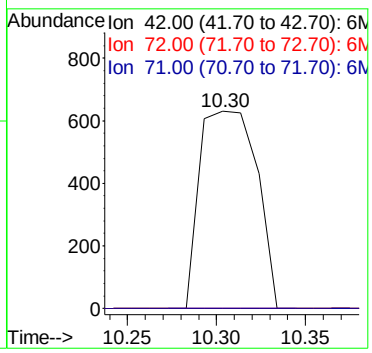

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030816\6M137655.D Vial: 12
Acq On : 8 Mar 2016 17:01 Operator: TMB
Sample : L16030323-03 8260 4.63g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 09 08:30:23 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	530956	50.00 ug/L	0.01
57) Chlorobenzene-d5	16.01	117	385930	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	205060	50.00 ug/L	0.01

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	132008	46.3472 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 92.70%		
43) 1,2-Dichloroethane-d4	11.06	65	167154	45.2002 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 90.40%		
58) Toluene-d8	13.80	98	451001	49.1519 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.30%		
80) p-Bromofluorobenzene	17.79	95	183785	48.7944 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 97.58%		

Target Compounds					Qvalue
13) Acetone	6.60	43	2290	Below Cal #	48
36) Tetrahydrofuran	10.29	42	1633	Below Cal #	40
60) Ethyl Methacrylate	13.81	69	1218	0.3482 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M137655.D 826_SL.M Wed Mar 09 08:30:23 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030816\6M137655.D Vial: 12
Acq On : 8 Mar 2016 17:01 Operator: TMB
Sample : L16030323-03 8260 4.63g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 8:30 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

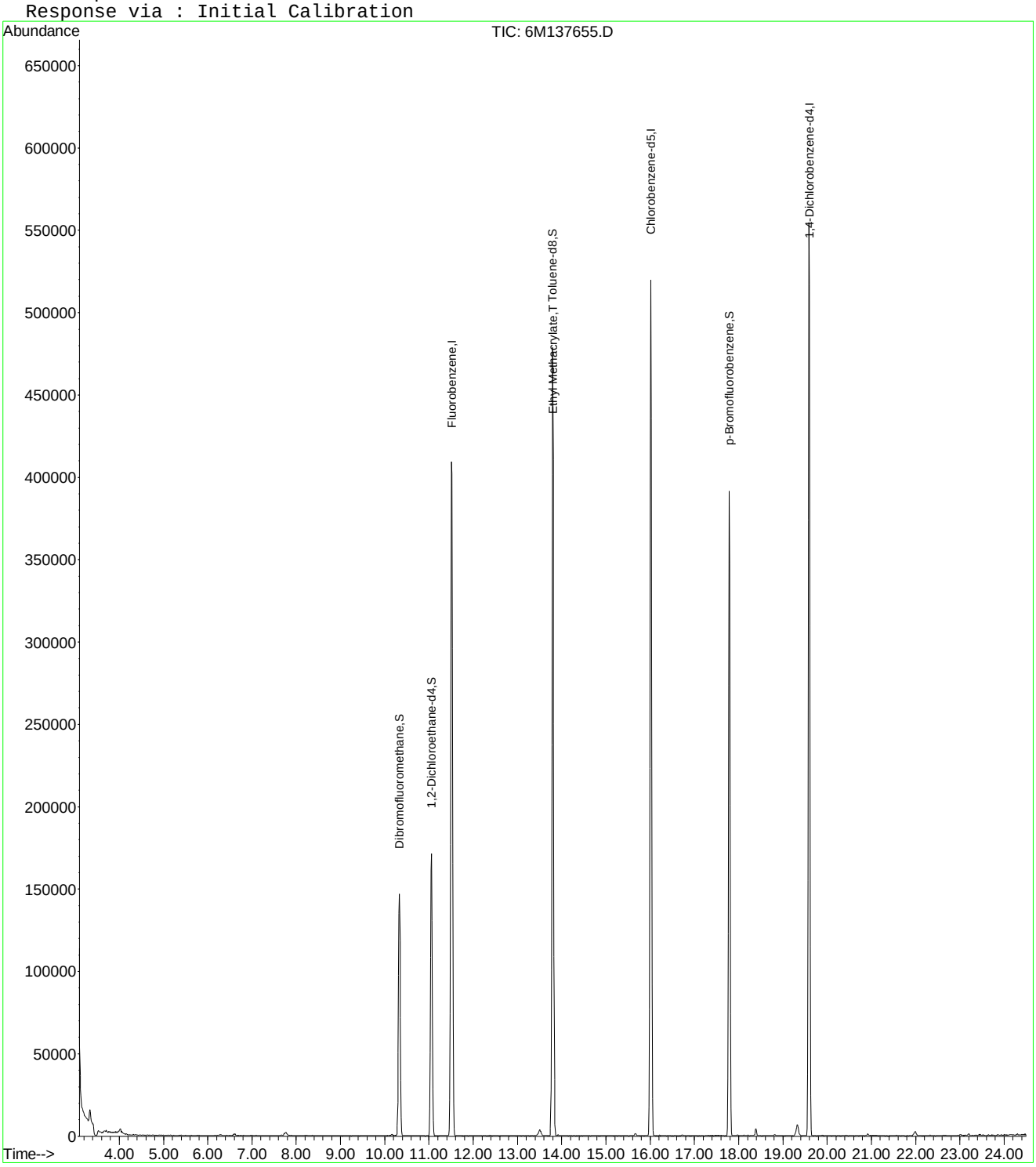

6M137655.D 826_SL.M Wed Mar 09 08:30:23 2016 Page 2

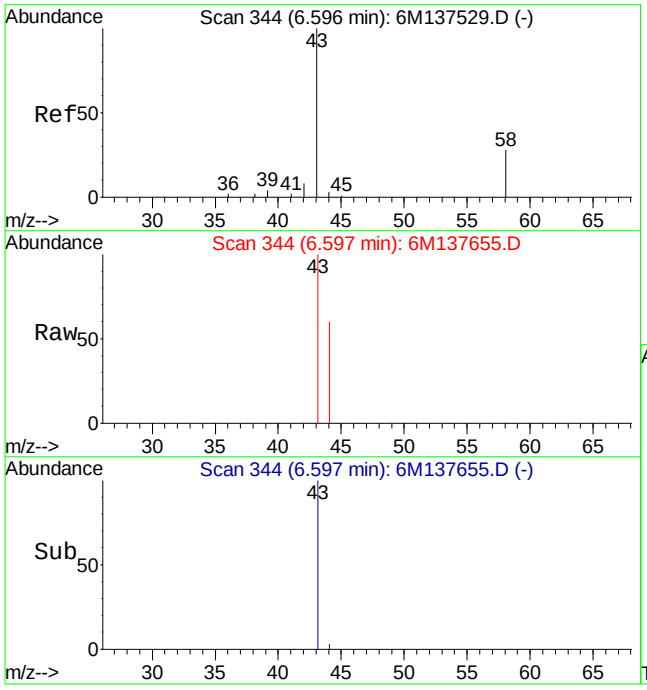

#13
Acetone
Concen: Below Cal
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137655.D
Acq: 8 Mar 2016 17:01

Tgt Ion: 43 Resp: 2290

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.1	37.7#

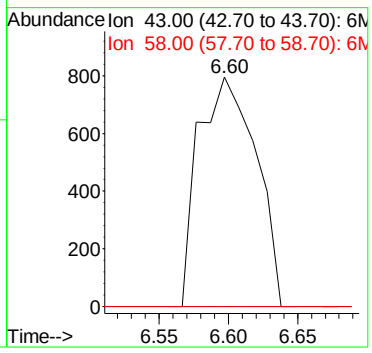

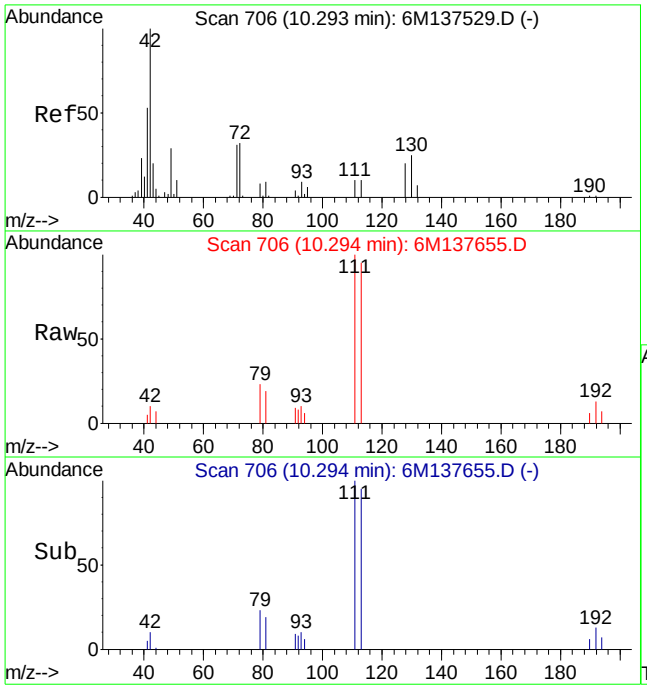

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.29 min Scan# 706
Delta R.T. 0.00 min
Lab File: 6M137655.D
Acq: 8 Mar 2016 17:01

Tgt Ion: 42 Resp: 1633

Ion	Ratio	Lower	Upper
42	100		
72	0.0	21.0	49.0#
71	0.0	20.6	48.2#

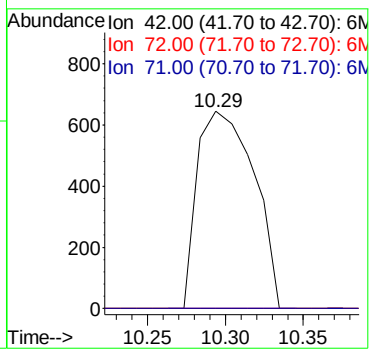

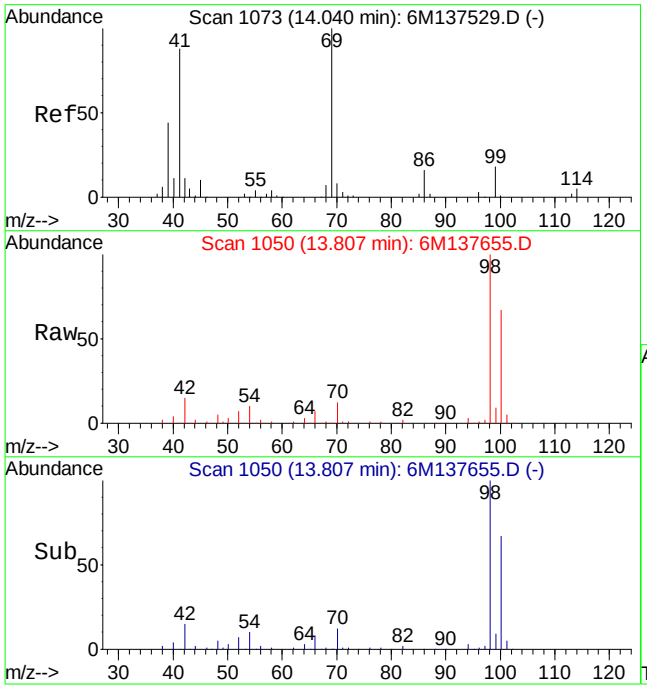

#60
Ethyl Methacrylate
Concen: 0.35 ug/L
RT: 13.81 min Scan# 1050
Delta R.T. -0.22 min
Lab File: 6M137655.D
Acq: 8 Mar 2016 17:01

Tgt Ion: 69 Resp: 1218

Ion	Ratio	Lower	Upper
69	100		
41	72.4	50.6	118.2

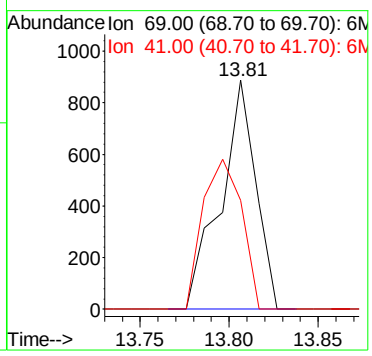

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030816\6M137656.D Vial: 13
Acq On : 8 Mar 2016 17:34 Operator: TMB
Sample : L16030323-04 8260 5.15g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 09 08:30:24 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	513529	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	374000	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	196388	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.34	111	126691	45.9899 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 91.98%		
43) 1,2-Dichloroethane-d4	11.06	65	156474	43.7481 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 87.50%		
58) Toluene-d8	13.80	98	437334	49.1828 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.36%		
80) p-Bromofluorobenzene	17.79	95	176891	49.0378 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 98.08%		

Target Compounds					Qvalue
3) Chloromethane	3.91	50	1258	0.2560 ug/L #	43
13) Acetone	6.60	43	1123	Below Cal #	48
36) Tetrahydrofuran	10.30	42	1798	Below Cal #	40

(#) = qualifier out of range (m) = manual integration
6M137656.D 826_SL.M Wed Mar 09 08:30:24 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030816\6M137656.D Vial: 13
Acq On : 8 Mar 2016 17:34 Operator: TMB
Sample : L16030323-04 8260 5.15g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 8:30 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

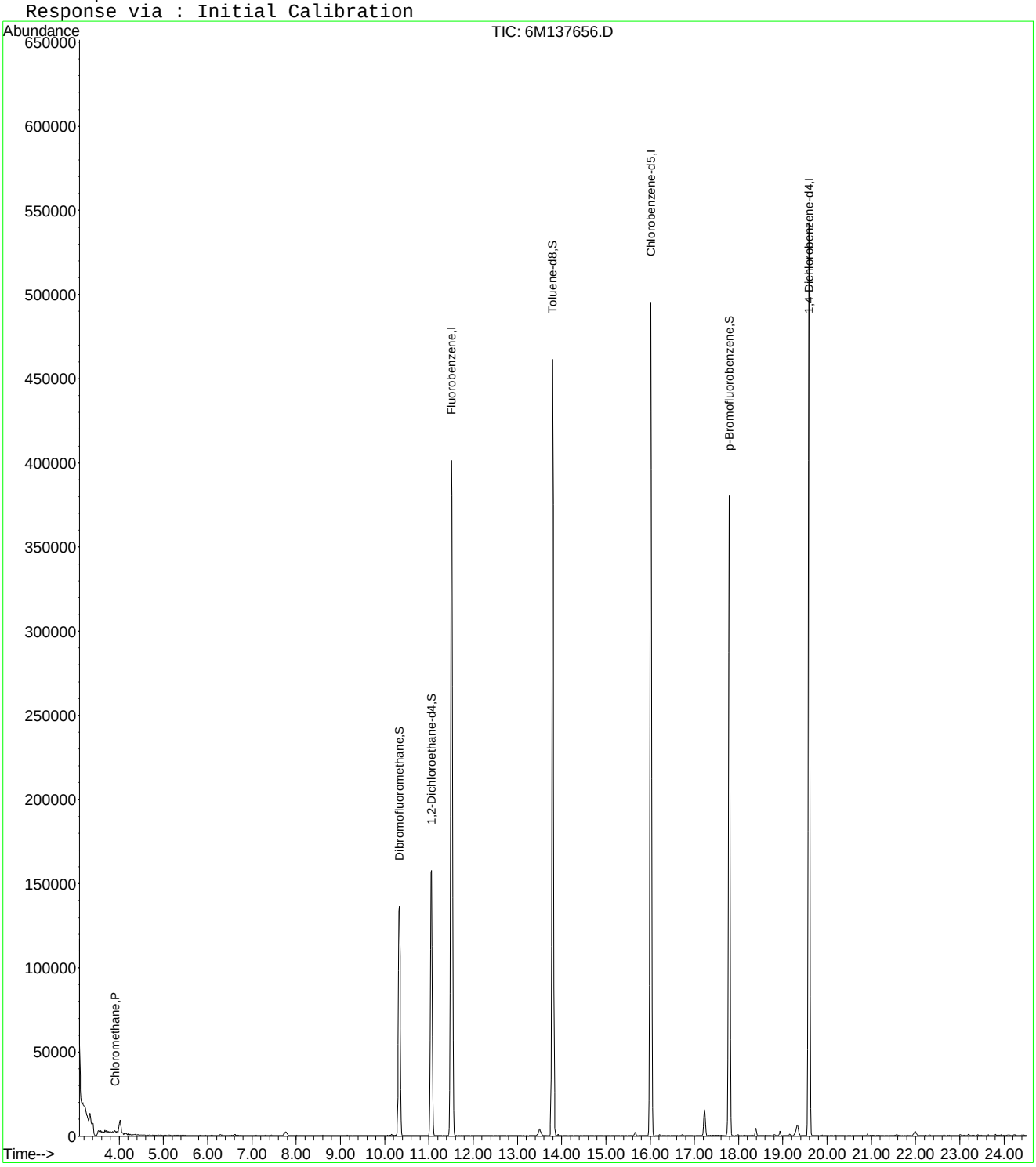

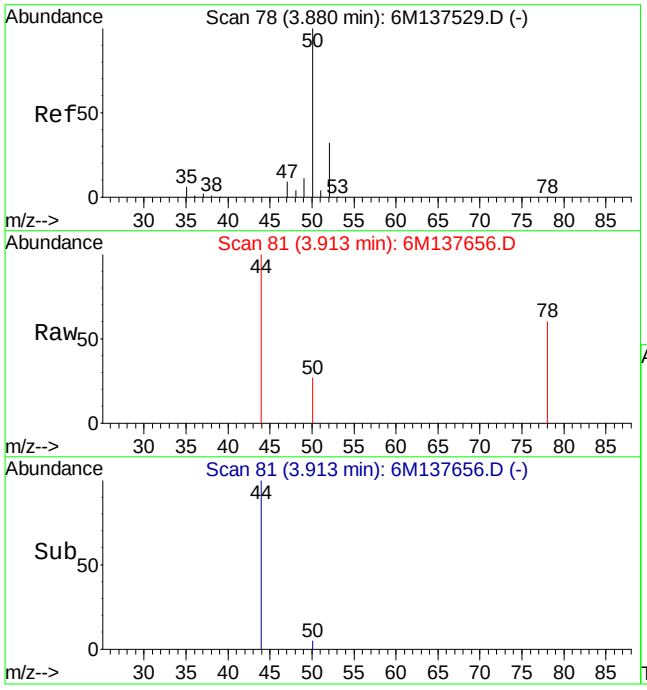

#3
Chloromethane
Concen: 0.26 ug/L
RT: 3.91 min Scan# 81
Delta R.T. 0.03 min
Lab File: 6M137656.D
Acq: 8 Mar 2016 17:34

Tgt Ion: 50 Resp: 1258

Ion	Ratio	Lower	Upper
50	100		
52	0.0	18.8	44.0#

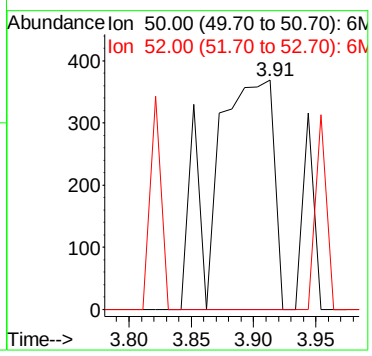

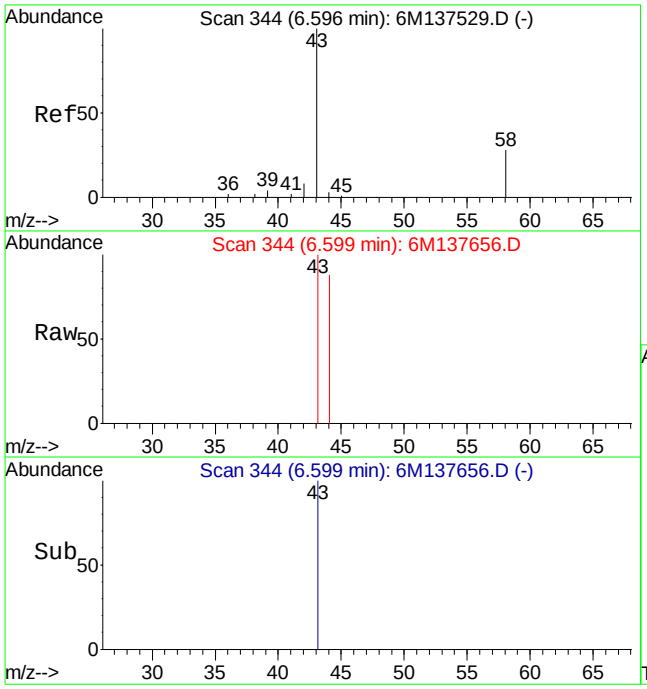

#13
Acetone
Concen: Below Cal
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137656.D
Acq: 8 Mar 2016 17:34

Tgt Ion: 43 Resp: 1123

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.1	37.7#

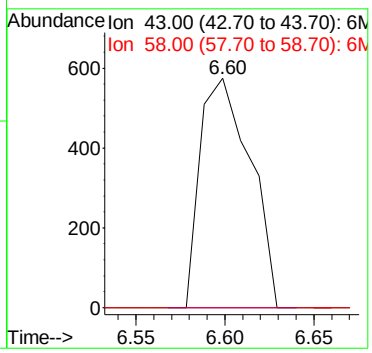

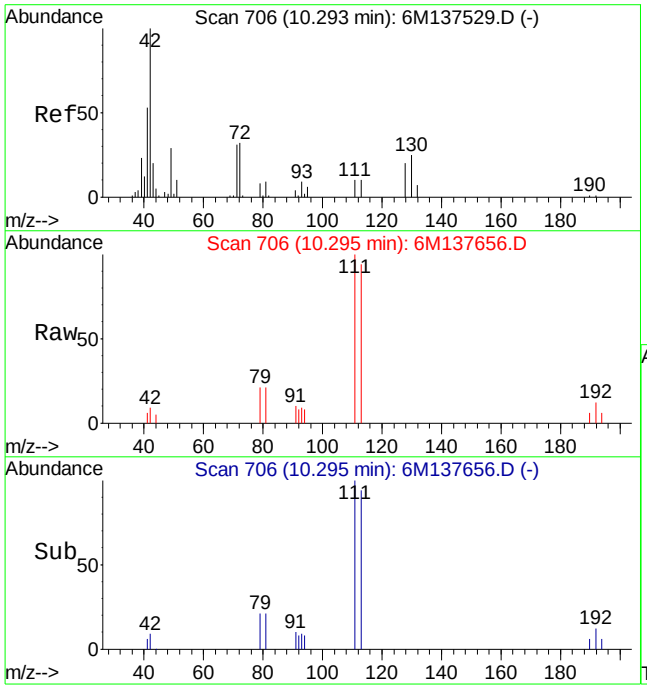

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.30 min Scan# 706
Delta R.T. 0.00 min
Lab File: 6M137656.D
Acq: 8 Mar 2016 17:34

Tgt Ion: 42 Resp: 1798

Ion	Ratio	Lower	Upper
42	100		
72	0.0	21.0	49.0#
71	0.0	20.6	48.2#

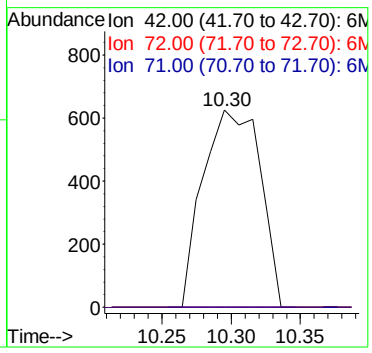

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030816\6M137657.D Vial: 14
Acq On : 8 Mar 2016 18:08 Operator: TMB
Sample : WG560060-01 L16030323-05 8260 4.64g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 09 08:30:25 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	562512	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	411354	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	219502	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	141558	46.9121 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.82%		
43) 1,2-Dichloroethane-d4	11.05	65	171966	43.8927 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 87.78%		
58) Toluene-d8	13.80	98	476125	48.6829 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 97.36%		
80) p-Bromofluorobenzene	17.79	95	195487	48.4864 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 96.98%		

Target Compounds

					Qvalue
13) Acetone	6.59	43	3024	Below Cal	# 72
36) Tetrahydrofuran	10.30	42	1891	Below Cal	# 51
60) Ethyl Methacrylate	13.81	69	946	0.2537 ug/L	# 57

(#) = qualifier out of range (m) = manual integration
6M137657.D 826_SL.M Wed Mar 09 08:30:25 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030816\6M137657.D Vial: 14
Acq On : 8 Mar 2016 18:08 Operator: TMB
Sample : WG560060-01 L16030323-05 8260 4.64g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 8:30 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

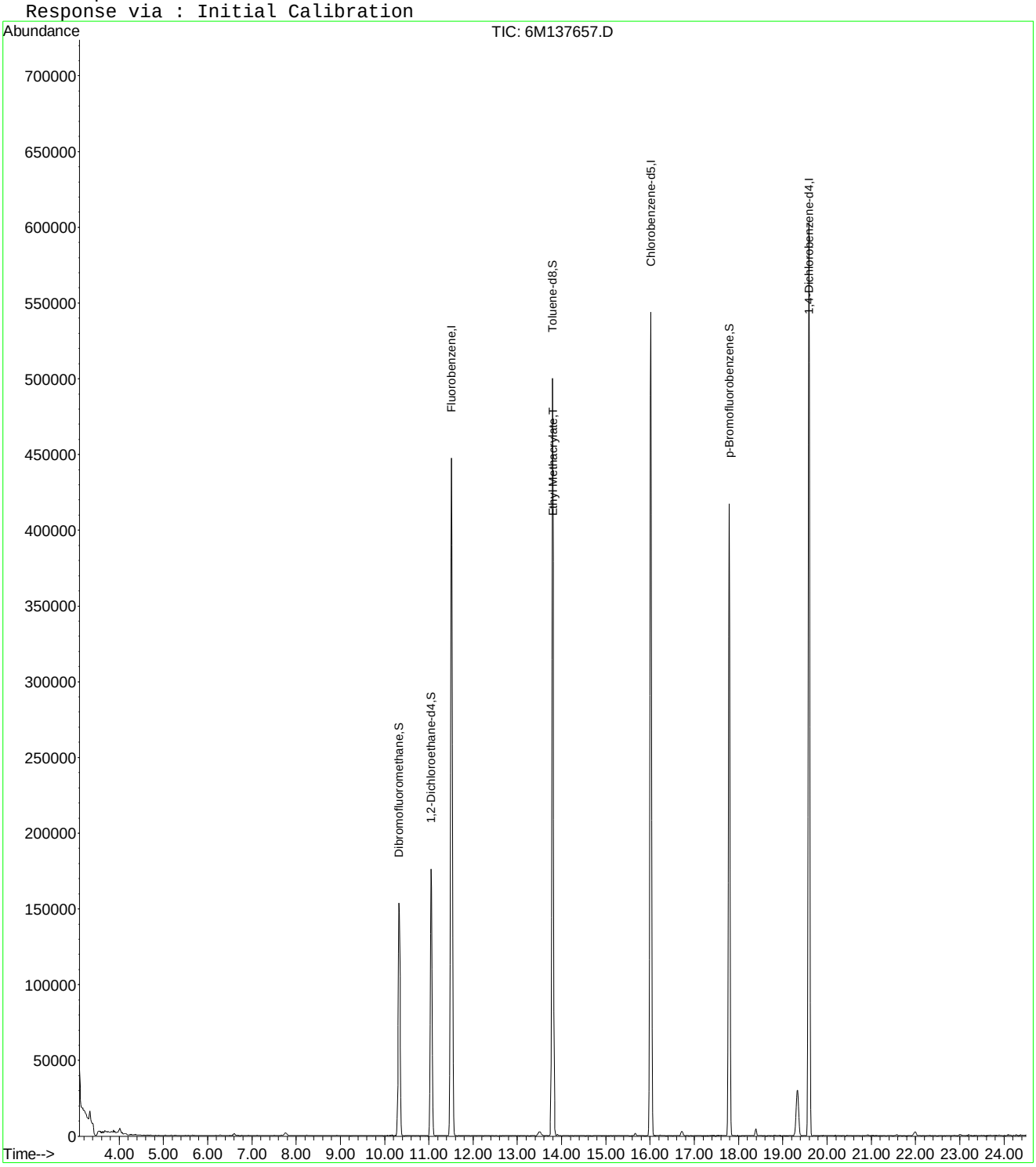

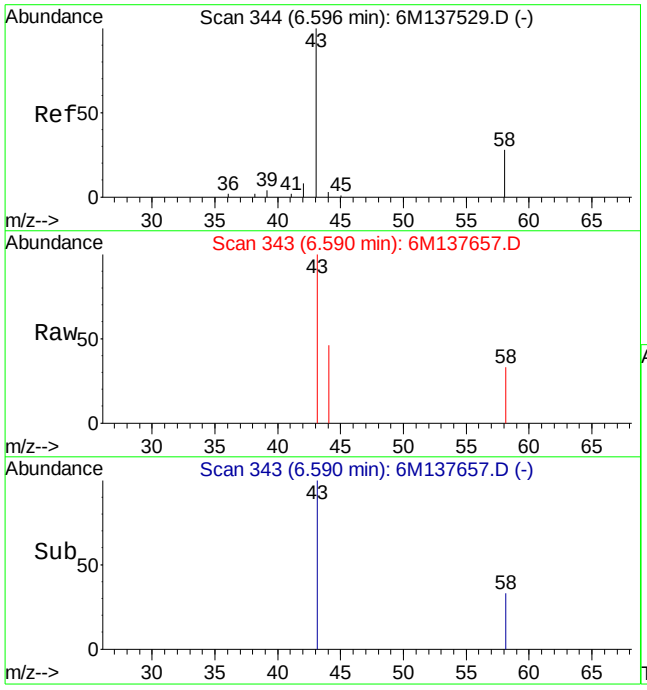

#13
Acetone
Concen: Below Cal
RT: 6.59 min Scan# 343
Delta R.T. 0.00 min
Lab File: 6M137657.D
Acq: 8 Mar 2016 18:08

Tgt Ion: 43 Resp: 3024

Ion	Ratio	Lower	Upper
43	100		
58	12.7	16.1	37.7#

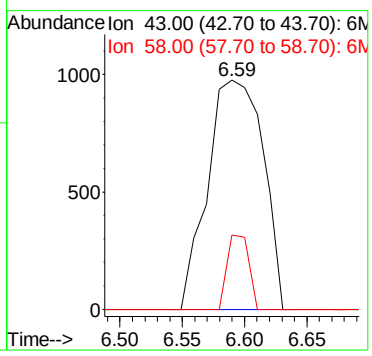

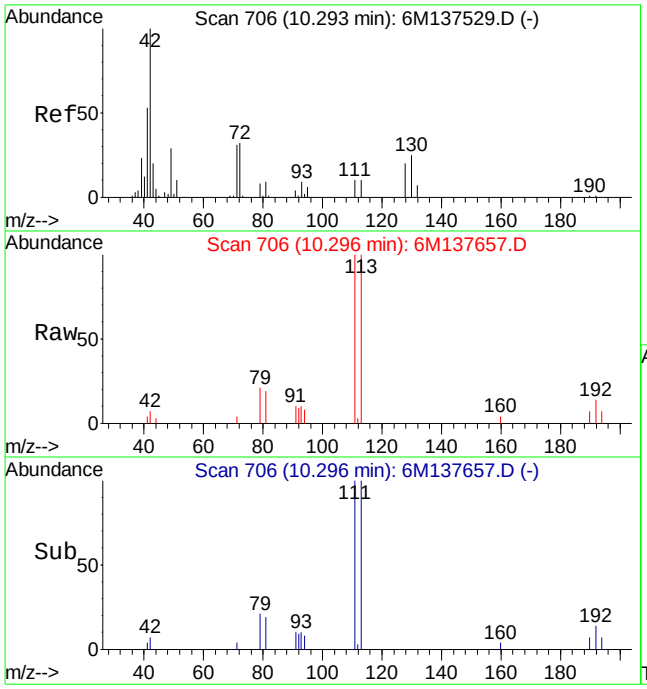

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.30 min Scan# 706
Delta R.T. 0.00 min
Lab File: 6M137657.D
Acq: 8 Mar 2016 18:08

Tgt Ion: 42 Resp: 1891

Ion	Ratio	Lower	Upper
42	100		
72	0.0	21.0	49.0#
71	13.0	20.6	48.2#

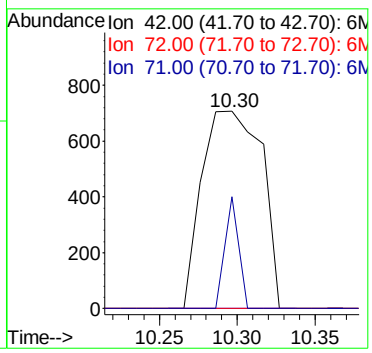

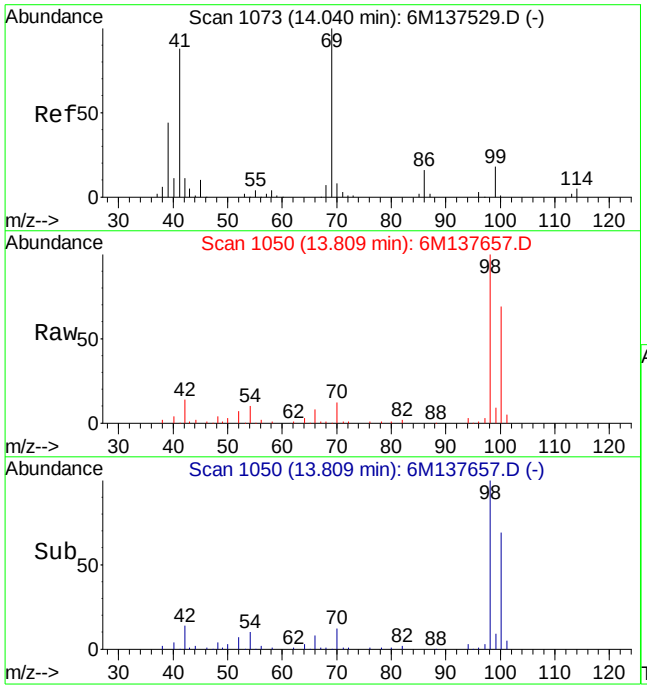

#60
Ethyl Methacrylate
Concen: 0.25 ug/L
RT: 13.81 min Scan# 1050
Delta R.T. -0.22 min
Lab File: 6M137657.D
Acq: 8 Mar 2016 18:08

Tgt Ion: 69 Resp: 946

Ion	Ratio	Lower	Upper
69	100		
41	123.7	50.6	118.2#

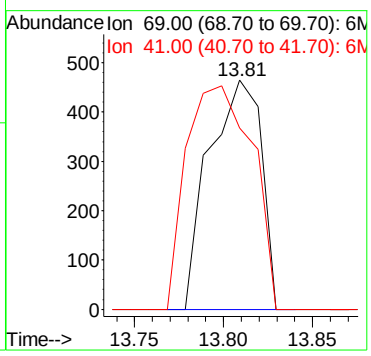

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030816\6M137658.D Vial: 15
Acq On : 8 Mar 2016 18:42 Operator: TMB
Sample : L16030323-06 8260 5.07g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 09 08:30:26 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	487901	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	349731	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	183781	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	118093	45.1205 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 90.24%		
43) 1,2-Dichloroethane-d4	11.06	65	143299	42.1690 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 84.34%		
58) Toluene-d8	13.80	98	415519	49.9722 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.94%		
80) p-Bromofluorobenzene	17.79	95	163464	48.4242 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 96.84%		

Target Compounds					Qvalue
13) Acetone	6.59	43	3741	Below Cal	# 1
36) Tetrahydrofuran	10.29	42	1753	Below Cal	# 40

(#) = qualifier out of range (m) = manual integration
6M137658.D 826_SL.M Wed Mar 09 08:30:26 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030816\6M137658.D Vial: 15
Acq On : 8 Mar 2016 18:42 Operator: TMB
Sample : L16030323-06 8260 5.07g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 8:30 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

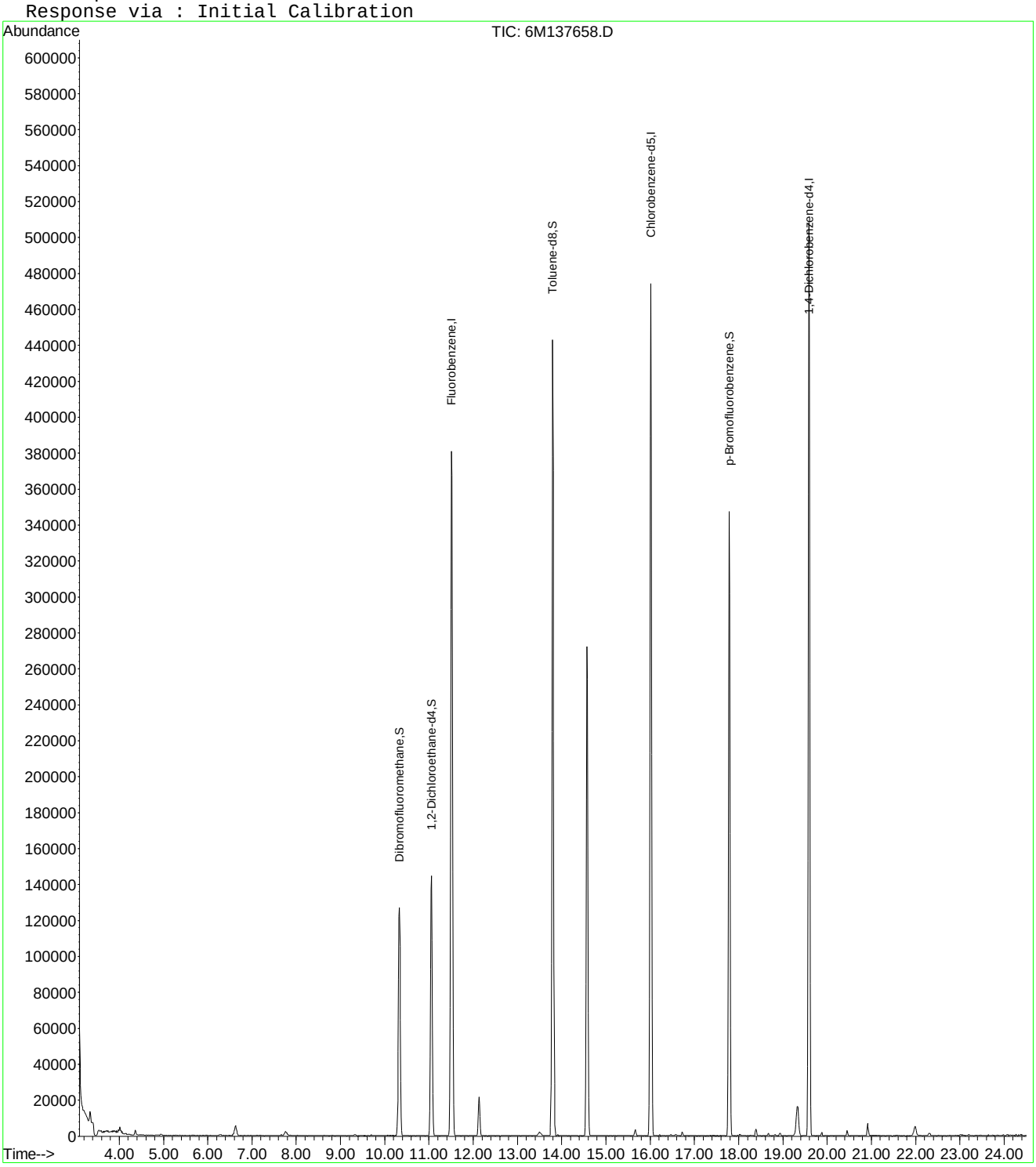

6M137658.D 826_SL.M Wed Mar 09 08:30:26 2016 Page 2

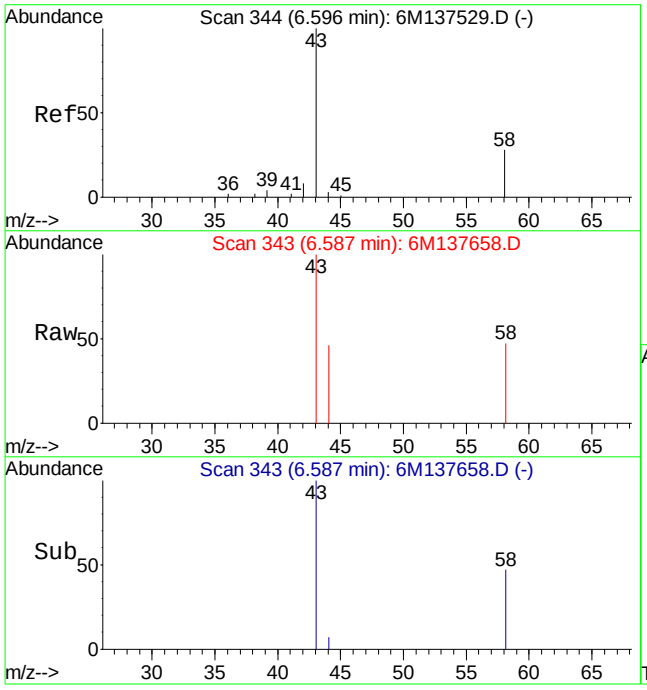

#13
Acetone
Concen: Below Cal
RT: 6.59 min Scan# 343
Delta R.T. 0.00 min
Lab File: 6M137658.D
Acq: 8 Mar 2016 18:42

Tgt Ion: 43 Resp: 3741

Ion	Ratio	Lower	Upper
43	100		
58	306.2	16.1	37.7#

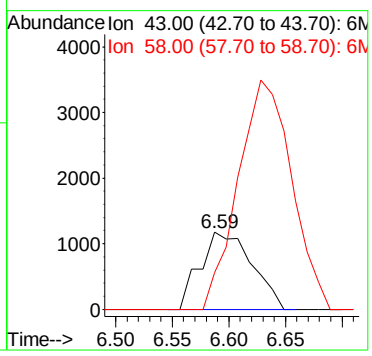

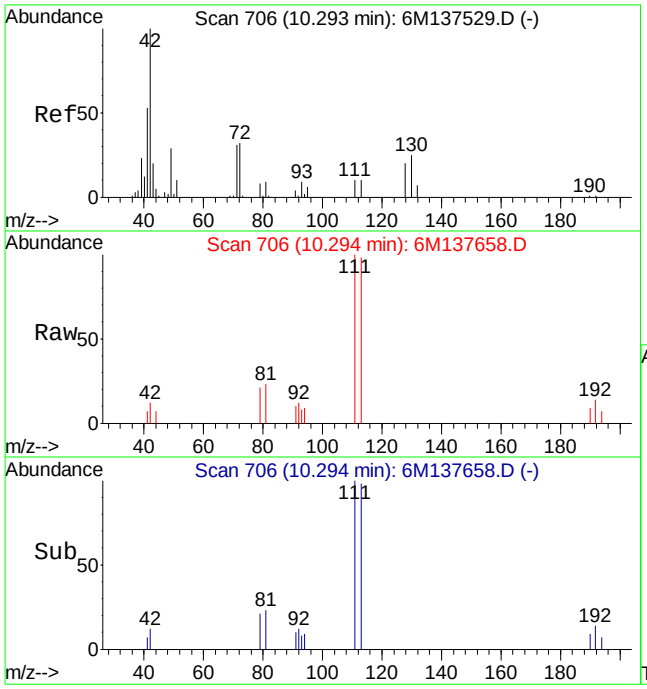

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.29 min Scan# 706
Delta R.T. 0.00 min
Lab File: 6M137658.D
Acq: 8 Mar 2016 18:42

Tgt Ion: 42 Resp: 1753

Ion	Ratio	Lower	Upper
42	100		
72	0.0	21.0	49.0#
71	0.0	20.6	48.2#

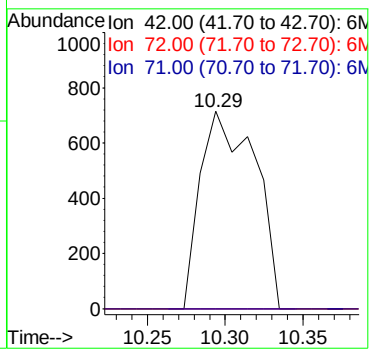

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:35 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:12:24 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	662608	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	467802	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	239669	50.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.32	111	1132	0.3185 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.64%#	
43) 1,2-Dichloroethane-d4	11.05	65	1872	0.4056 ug/L	-0.01
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.82%#	
58) Toluene-d8	13.80	98	5704	0.5128 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	1.02%#	
80) p-Bromofluorobenzene	17.79	95	2210	0.5020 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	1.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	3454	0.5676 ug/L #	66
3) Chloromethane	3.88	50	8579	1.3528 ug/L	90
4) Vinyl Chloride	4.12	62	3760	0.7367 ug/L #	74
5) 1,3-Butadiene	4.18	54	3027	0.7128 ug/L #	61
6) Bromomethane	5.03	94	1550	0.5697 ug/L	88
7) Chloroethane	5.19	64	1482	0.5121 ug/L #	45
8) Trichlorofluoromethane	5.69	101	6717	0.9794 ug/L #	89
10) Isoprene	6.27	67	1888	0.4226 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	1199	0.3663 ug/L #	55
13) Acetone	6.59	43	9375	2.3758 ug/L	94
14) 1,1-Dichloroethene	6.83	61	2956	0.5098 ug/L	84
15) Tert-Butyl Alcohol	6.94	59	200	0.3696 ug/L #	57
18) Methyl acetate	7.39	43	2867	0.7115 ug/L #	64
19) Methylene Chloride	7.67	84	2652	0.7594 ug/L	75
20) Carbon Disulfide	7.72	76	8199	0.7390 ug/L #	82
22) Methyl Tert Butyl Ether	7.88	73	4851	0.4864 ug/L #	63
23) trans-1,2-Dichloroethene	8.16	96	1352	0.4221 ug/L #	10
24) n-Hexane	8.23	57	3942	0.6777 ug/L	92
26) Vinyl Acetate	8.79	43	2062	0.2645 ug/L #	78
27) 1,1-Dichloroethane	8.82	63	3798	0.5499 ug/L #	68
29) 2-Butanone	9.46	43	1832	0.7999 ug/L #	56
31) 2,2-Dichloropropane	9.69	77	2885	0.5204 ug/L	96
32) cis-1,2-Dichloroethene	9.76	96	1812	0.5067 ug/L	93
33) Chloroform	10.01	83	3647	0.5654 ug/L	91
35) Bromochloromethane	10.26	130	694	0.3303 ug/L #	47
36) Tetrahydrofuran	10.29	42	9683	4.2648 ug/L	95
38) 1,1,1-Trichloroethane	10.59	97	2858	0.5017 ug/L	84
39) Cyclohexane	10.62	56	2886	0.4467 ug/L	94
40) 1,1-Dichloropropene	10.82	75	2042	0.4451 ug/L #	76
42) Carbon Tetrachloride	10.99	117	2712	0.5095 ug/L #	85
45) 1,2-Dichloroethane	11.19	62	3101	0.5633 ug/L #	75
46) Benzene	11.23	78	8142	0.5899 ug/L	89
47) Trichloroethene	12.09	130	1950	0.5980 ug/L	81
48) Methylcyclohexane	12.18	83	2990	0.5672 ug/L #	73
49) 1,2-Dichloropropane	12.34	63	1667	0.4489 ug/L #	69
51) Bromodichloromethane	12.68	83	2589	0.5312 ug/L	92
52) Dibromomethane	12.78	93	741	0.3411 ug/L	80
55) cis-1,3-Dichloropropene	13.42	75	2628	0.4894 ug/L #	74
56) Dimethyl Disulfide	13.71	79	853	0.3150 ug/L #	49
59) Toluene	13.92	91	7610	0.5751 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M137523.D 826_SL.M Mon Feb 29 16:01:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:35 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:12:24 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
60)	Ethyl Methacrylate	14.04	69	1764	0.4160 ug/L		85
62)	trans-1,3-Dichloropropene	14.12	75	2064	0.4056 ug/L	#	71
63)	1,1,2-Trichloroethane	14.37	97	1621	0.5861 ug/L	#	75
64)	2-Hexanone	14.32	43	1822	0.5773 ug/L	#	48
65)	1,3-Dichloropropane	14.75	76	2715	0.5416 ug/L		83
66)	Tetrachloroethene	14.86	166	1836	0.5624 ug/L		91
67)	Dibromochloromethane	15.18	129	1663	0.4623 ug/L		94
68)	1,2-Dibromoethane	15.48	107	1262	0.4462 ug/L		99
69)	1-Chlorohexane	15.59	91	2113	0.5142 ug/L		96
70)	Chlorobenzene	16.07	112	4991	0.5869 ug/L		75
71)	1,1,1,2-Tetrachloroethane	16.11	131	1409	0.4126 ug/L	#	79
72)	Ethylbenzene	16.11	106	2290	0.5032 ug/L		61
73)	m-,p-Xylene	16.22	106	6307	1.1326 ug/L		90
74)	o-Xylene	16.88	106	2685	0.5119 ug/L		71
75)	Styrene	16.92	104	4645	0.5203 ug/L		93
76)	Bromoform	17.49	173	756	0.2977 ug/L	#	62
77)	Isopropylbenzene	17.38	105	7047	0.4998 ug/L		82
79)	1,1,2,2-Tetrachloroethane	17.64	83	1948	0.5203 ug/L		84
83)	n-Propylbenzene	17.98	91	9243	0.5679 ug/L	#	92
84)	Bromobenzene	18.13	156	1885	0.5328 ug/L		100
85)	1,3,5-Trimethylbenzene	18.21	105	6007	0.5185 ug/L		90
86)	2-Chlorotoluene	18.29	91	5403	0.4973 ug/L		88
87)	4-Chlorotoluene	18.35	91	5598	0.5635 ug/L	#	83
88)	a-Methylstyrene	18.69	118	3780	0.6719 ug/L		93
89)	tert-Butylbenzene	18.76	134	1072	0.4440 ug/L		84
90)	1,2,4-Trimethylbenzene	18.82	105	7288	0.5982 ug/L		78
91)	sec-Butylbenzene	19.08	105	8207	0.5532 ug/L		85
92)	p-Isopropyltoluene	19.27	119	6156	0.5029 ug/L		99
93)	1,3-Dichlorobenzene	19.48	146	3876	0.5662 ug/L		99
94)	1,4-Dichlorobenzene	19.64	146	4389	0.6299 ug/L	#	36
95)	n-Butylbenzene	19.89	91	6993	0.5680 ug/L		91
96)	1,2-Dichlorobenzene	20.23	146	3739	0.5676 ug/L		89
98)	1,2,4-Trichlorobenzene	22.76	180	2881	0.6050 ug/L		89
99)	Hexachlorobutadiene	22.95	225	1268	0.4656 ug/L		81
100)	Naphthalene	23.20	128	5965	0.5449 ug/L		95
101)	1,2,3-Trichlorobenzene	23.58	180	2914	0.6214 ug/L	#	69

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

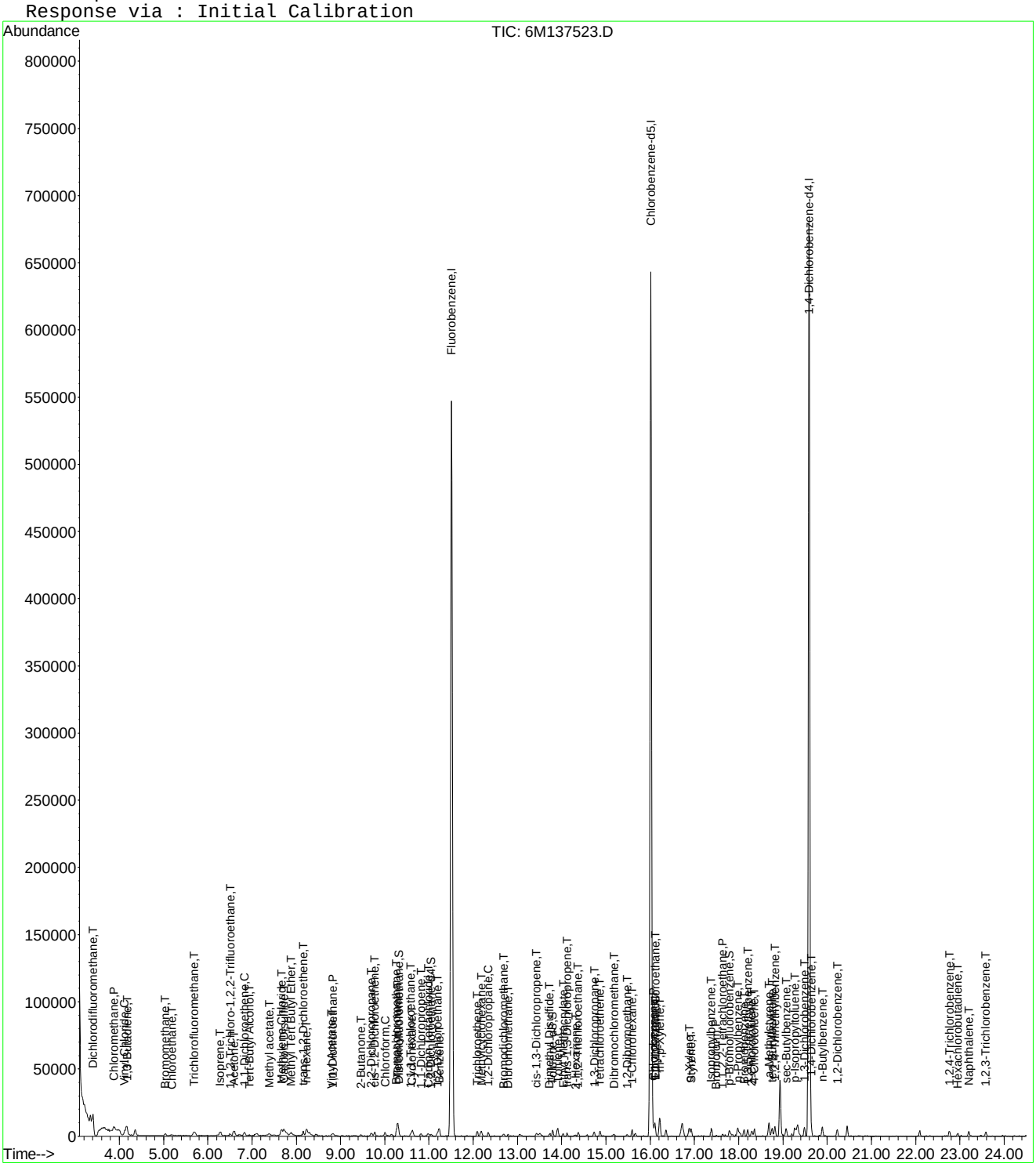

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.5676	0.0	0	0.00
3	P	Chloromethane	-1.0000	1.3528	0.0	0	0.00
4	C	Vinyl Chloride	-1.0000	0.7367	0.0	0	0.00
5	T	1,3-Butadiene	-1.0000	0.7128	0.0	0	0.01
6	T	Bromomethane	-1.0000	0.5697	0.0	0	0.00
7	T	Chloroethane	-1.0000	0.5121	0.0	0	0.00
8	T	Trichlorofluoromethane	-1.0000	0.9794	0.0	0	-0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.24#
10	T	Isoprene	-1.0000	0.4226	0.0	0	-0.01
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.48#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3663	0.0	0	0.00
13	T	Acetone	-1.0000	2.3758	0.0	0	0.00
14	C	1,1-Dichloroethene	-1.0000	0.5098	0.0	0	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.3696	0.0	0	0.00
16	T	Dimethyl Sulfide	-1.0000	0.2328	0.0	0	-0.02
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.38#
18	T	Methyl acetate	-1.0000	0.7115	0.0	0	0.00
19	T	Methylene Chloride	-1.0000	0.7594	0.0	0	0.00
20	T	Carbon Disulfide	-1.0000	0.7390	0.0	0	0.00
21	T	Acrylonitrile	-1.0000	0.1371	0.0	0	0.02
22	T	Methyl Tert Butyl Ether	0.5000	0.4864	2.7	100	-0.01
23	T	trans-1,2-Dichloroethene	-1.0000	0.4221	0.0	0	0.00
24	T	n-Hexane	-1.0000	0.6777	0.0	0	-0.01
25	T	Diisopropyl ether	-1.0000	0.1069	0.0	0	-0.16
26	T	Vinyl Acetate	-1.0000	0.2645	0.0	0	0.00
27	P	1,1-Dichloroethane	-1.0000	0.5499	0.0	0	-0.01
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-9.24#
29	T	2-Butanone	-1.0000	0.7999	0.0	0	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.58#
31	T	2,2-Dichloropropane	-1.0000	0.5204	0.0	0	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.5067	0.0	0	-0.01
33	C	Chloroform	-1.0000	0.5654	0.0	0	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-10.16#
35	T	Bromochloromethane	-1.0000	0.3303	0.0	0	0.00
36	T	Tetrahydrofuran	-1.0000	4.2648	0.0	0	0.00
37	S	Dibromofluoromethane	-1.0000	0.3185	0.0	0	0.00
38	T	1,1,1-Trichloroethane	-1.0000	0.5017	0.0	0	-0.01
39	T	Cyclohexane	-1.0000	0.4467	0.0	0	-0.02
40	T	1,1-Dichloropropene	-1.0000	0.4451	0.0	0	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.94#
42	T	Carbon Tetrachloride	-1.0000	0.5095	0.0	0	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.4056	0.0	0	-0.01
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	-1.0000	0.5633	0.0	0	0.00
46	T	Benzene	0.5000	0.5899	-18.0	100	0.00
47	T	Trichloroethene	-1.0000	0.5980	0.0	0	0.00
48	T	Methylcyclohexane	-1.0000	0.5672	0.0	0	0.00
49	C	1,2-Dichloropropane	-1.0000	0.4489	0.0	0	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-12.67#
51	T	Bromodichloromethane	-1.0000	0.5312	0.0	0	0.00
52	T	Dibromomethane	-1.0000	0.3411	0.0	0	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1346	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-13.07#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.4894	0.0	0	-0.01
56	T	Dimethyl Disulfide	-1.0000	0.3150	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.5128	0.0	0	0.00
59	C	Toluene	0.5000	0.5751	-15.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.4160	0.0	0	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	-1.0000	0.4056	0.0	0	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.5861	0.0	0	0.00
64	T	2-Hexanone	-1.0000	0.5773	0.0	0	0.00
65	T	1,3-Dichloropropane	-1.0000	0.5416	0.0	0	0.00
66	T	Tetrachloroethene	-1.0000	0.5624	0.0	0	-0.01
67	T	Dibromochloromethane	-1.0000	0.4623	0.0	0	0.00
68	T	1,2-Dibromoethane	-1.0000	0.4462	0.0	0	0.00
69	T	1-Chlorohexane	-1.0000	0.5142	0.0	0	0.00
70	P	Chlorobenzene	-1.0000	0.5869	0.0	0	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.4126	0.0	0	0.00
72	C	Ethylbenzene	0.5000	0.5032	-0.6	100	0.00
73	T	m-,p-Xylene	1.0000	1.1326	-13.3	100	0.00
74	T	o-Xylene	0.5000	0.5119	-2.4	100	0.00
75	T	Styrene	-1.0000	0.5203	0.0	0	0.00
76	P	Bromoform	-1.0000	0.2977	0.0	0	0.00
77	T	Isopropylbenzene	-1.0000	0.4998	0.0	0	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.5203	0.0	0	-0.01
80	S	p-Bromofluorobenzene	-1.0000	0.5020	0.0	0	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.1823	0.0	0	0.01
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.1476	0.0	0	0.00
83	T	n-Propylbenzene	-1.0000	0.5679	0.0	0	0.00
84	T	Bromobenzene	-1.0000	0.5328	0.0	0	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.5185	0.0	0	0.00
86	T	2-Chlorotoluene	-1.0000	0.4973	0.0	0	-0.01
87	T	4-Chlorotoluene	-1.0000	0.5635	0.0	0	0.00
88	T	a-Methylstyrene	-1.0000	0.6719	0.0	0	0.00
89	T	tert-Butylbenzene	-1.0000	0.4440	0.0	0	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.5982	0.0	0	0.00
91	T	sec-Butylbenzene	-1.0000	0.5532	0.0	0	0.00
92	T	p-Isopropyltoluene	-1.0000	0.5029	0.0	0	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.5662	0.0	0	0.00
94	T	1,4-Dichlorobenzene	-1.0000	0.6299	0.0	0	0.00
95	T	n-Butylbenzene	-1.0000	0.5680	0.0	0	0.00
96	T	1,2-Dichlorobenzene	-1.0000	0.5676	0.0	0	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-21.41#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.6050	0.0	0	0.00
99	T	Hexachlorobutadiene	-1.0000	0.4656	0.0	0	-0.01
100	T	Naphthalene	-1.0000	0.5449	0.0	0	0.00
101	T	1,2,3-Trichlorobenzene	-1.0000	0.6214	0.0	0	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137523.D 826_SL.M Mon Feb 29 16:01:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:37 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	594307	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	418336	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	217318	50.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.34	111	2084	0.6537 ug/L	0.02
Spiked Amount 50.000	Range 80 - 120		Recovery =	1.30%#	
43) 1,2-Dichloroethane-d4	11.06	65	2834	0.6847 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	1.36%#	
58) Toluene-d8	13.80	98	7503	0.7544 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	1.50%#	
80) p-Bromofluorobenzene	17.79	95	3135	0.7854 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	1.58%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	6025	1.1039 ug/L	88
3) Chloromethane	3.88	50	8942	1.5721 ug/L	80
4) Vinyl Chloride	4.13	62	5159	1.1269 ug/L	96
5) 1,3-Butadiene	4.18	54	4578	1.2019 ug/L #	67
6) Bromomethane	5.03	94	2477	1.0150 ug/L	94
7) Chloroethane	5.20	64	2347	0.9041 ug/L #	77
8) Trichlorofluoromethane	5.70	101	7751	1.2600 ug/L #	92
9) Diethyl ether	6.23	59	14414	5.0935 ug/L	81
10) Isoprene	6.28	67	3598	0.8978 ug/L	94
11) Acrolein	6.48	56	1307	2.4320 ug/L #	51
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	3197	1.0888 ug/L	73
13) Acetone	6.60	43	5933	0.3832 ug/L	97
14) 1,1-Dichloroethene	6.84	61	5455	1.0489 ug/L	83
15) Tert-Butyl Alcohol	6.93	59	4660	9.6025 ug/L #	86
16) Dimethyl Sulfide	7.13	62	2208	0.8750 ug/L	94
18) Methyl acetate	7.40	43	3574	0.9889 ug/L #	64
19) Methylene Chloride	7.66	84	3682	1.1755 ug/L	75
20) Carbon Disulfide	7.72	76	11945	1.2004 ug/L	97
21) Acrylonitrile	7.86	53	3216	2.1651 ug/L	84
22) Methyl Tert Butyl Ether	7.90	73	8242	0.9214 ug/L	91
23) trans-1,2-Dichloroethene	8.17	96	2437	0.8482 ug/L	60
24) n-Hexane	8.23	57	4827	0.9252 ug/L	90
25) Diisopropyl ether	8.62	45	67920	5.0212 ug/L	97
26) Vinyl Acetate	8.80	43	6077	0.8691 ug/L #	78
27) 1,1-Dichloroethane	8.83	63	6295	1.0162 ug/L	88
28) Ethyl-Tert-Butyl ether	9.25	59	49996	4.6114 ug/L	96
29) 2-Butanone	9.47	43	2247	1.0938 ug/L #	56
30) Propionitrile	9.57	54	2816	4.9529 ug/L #	71
31) 2,2-Dichloropropane	9.70	77	5030	1.0116 ug/L	94
32) cis-1,2-Dichloroethene	9.77	96	2740	0.8542 ug/L	83
33) Chloroform	10.00	83	6439	1.1130 ug/L	98
35) Bromochloromethane	10.26	130	1361	0.7221 ug/L	97
36) Tetrahydrofuran	10.29	42	10271	5.4403 ug/L	94
38) 1,1,1-Trichloroethane	10.61	97	5241	1.0257 ug/L	95
39) Cyclohexane	10.63	56	5811	1.0029 ug/L	86
40) 1,1-Dichloropropene	10.82	75	4038	0.9813 ug/L #	89
41) Tert-Amyl-Methyl ether	10.95	73	39464	4.5884 ug/L #	83
42) Carbon Tetrachloride	11.00	117	4871	1.0202 ug/L #	88
45) 1,2-Dichloroethane	11.19	62	4707	0.9533 ug/L #	86
46) Benzene	11.23	78	13412	1.0834 ug/L	93

(#) = qualifier out of range (m) = manual integration
6M137524.D 826_SL.M Mon Feb 29 16:01:38 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:37 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
47)	Trichloroethene	12.09	130	2983	1.0199 ug/L		90
48)	Methylcyclohexane	12.19	83	4295	0.9084 ug/L		77
49)	1,2-Dichloropropane	12.35	63	3111	0.9339 ug/L	#	69
51)	Bromodichloromethane	12.68	83	4337	0.9921 ug/L		97
52)	Dibromomethane	12.77	93	1629	0.8361 ug/L		91
53)	2-Chloroethyl Vinyl Ether	13.04	63	1268	0.6921 ug/L	#	43
54)	4-Methyl-2-Pentanone	13.08	58	633	0.4563 ug/L	#	34
55)	cis-1,3-Dichloropropene	13.43	75	4040	0.8388 ug/L		98
56)	Dimethyl Disulfide	13.72	79	1323	0.5447 ug/L	#	49
59)	Toluene	13.91	91	12207	1.0316 ug/L		97
60)	Ethyl Methacrylate	14.03	69	2818	0.7432 ug/L		100
62)	trans-1,3-Dichloropropene	14.12	75	3878	0.8522 ug/L		100
63)	1,1,2-Trichloroethane	14.38	97	2441	0.9869 ug/L		93
64)	2-Hexanone	14.31	43	2064	0.7313 ug/L		93
65)	1,3-Dichloropropane	14.73	76	4145	0.9246 ug/L		83
66)	Tetrachloroethene	14.87	166	3009	1.0308 ug/L		96
67)	Dibromochloromethane	15.17	129	2840	0.8829 ug/L		96
68)	1,2-Dibromoethane	15.48	107	1912	0.7559 ug/L		85
69)	1-Chlorohexane	15.59	91	3045	0.8286 ug/L	#	59
70)	Chlorobenzene	16.06	112	8053	1.0589 ug/L	#	66
71)	1,1,1,2-Tetrachloroethane	16.11	131	2914	0.9542 ug/L		92
72)	Ethylbenzene	16.10	106	3899	0.9580 ug/L		89
73)	m-,p-Xylene	16.21	106	9999	2.0079 ug/L		90
74)	o-Xylene	16.88	106	4283	0.9131 ug/L		84
75)	Styrene	16.92	104	6414	0.8034 ug/L		92
76)	Bromoform	17.49	173	1706	0.7511 ug/L	#	70
77)	Isopropylbenzene	17.38	105	11886	0.9427 ug/L		95
79)	1,1,2,2-Tetrachloroethane	17.65	83	3500	1.0310 ug/L		95
81)	1,2,3-Trichloropropane	17.87	110	811	0.7802 ug/L	#	55
82)	trans-1,4-Dichloro-2-Buten	17.93	53	959	0.7652 ug/L		70
83)	n-Propylbenzene	17.98	91	14256	0.9660 ug/L	#	91
84)	Bromobenzene	18.13	156	3248	1.0125 ug/L		98
85)	1,3,5-Trimethylbenzene	18.21	105	9438	0.8984 ug/L		95
86)	2-Chlorotoluene	18.30	91	9880	1.0030 ug/L		97
87)	4-Chlorotoluene	18.35	91	8357	0.9278 ug/L		93
88)	a-Methylstyrene	18.68	118	4374	0.8574 ug/L		95
89)	tert-Butylbenzene	18.75	134	1999	0.9131 ug/L		84
90)	1,2,4-Trimethylbenzene	18.82	105	10630	0.9622 ug/L		79
91)	sec-Butylbenzene	19.07	105	13062	0.9709 ug/L		95
92)	p-Isopropyltoluene	19.27	119	10400	0.9370 ug/L		89
93)	1,3-Dichlorobenzene	19.48	146	6397	1.0306 ug/L		97
94)	1,4-Dichlorobenzene	19.64	146	7211	1.1413 ug/L		83
95)	n-Butylbenzene	19.88	91	10811	0.9684 ug/L		88
96)	1,2-Dichlorobenzene	20.22	146	5973	1.0000 ug/L		96
97)	1,2-Dibromo-3-Chloropropan	21.41	75	191	0.2543 ug/L	#	1
98)	1,2,4-Trichlorobenzene	22.76	180	4430	1.0259 ug/L		93
99)	Hexachlorobutadiene	22.94	225	2385	0.9658 ug/L		90
100)	Naphthalene	23.20	128	8770	0.8835 ug/L		92
101)	1,2,3-Trichlorobenzene	23.59	180	4309	1.0134 ug/L		95

(#) = qualifier out of range (m) = manual integration
6M137524.D 826_SL.M Mon Feb 29 16:01:38 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

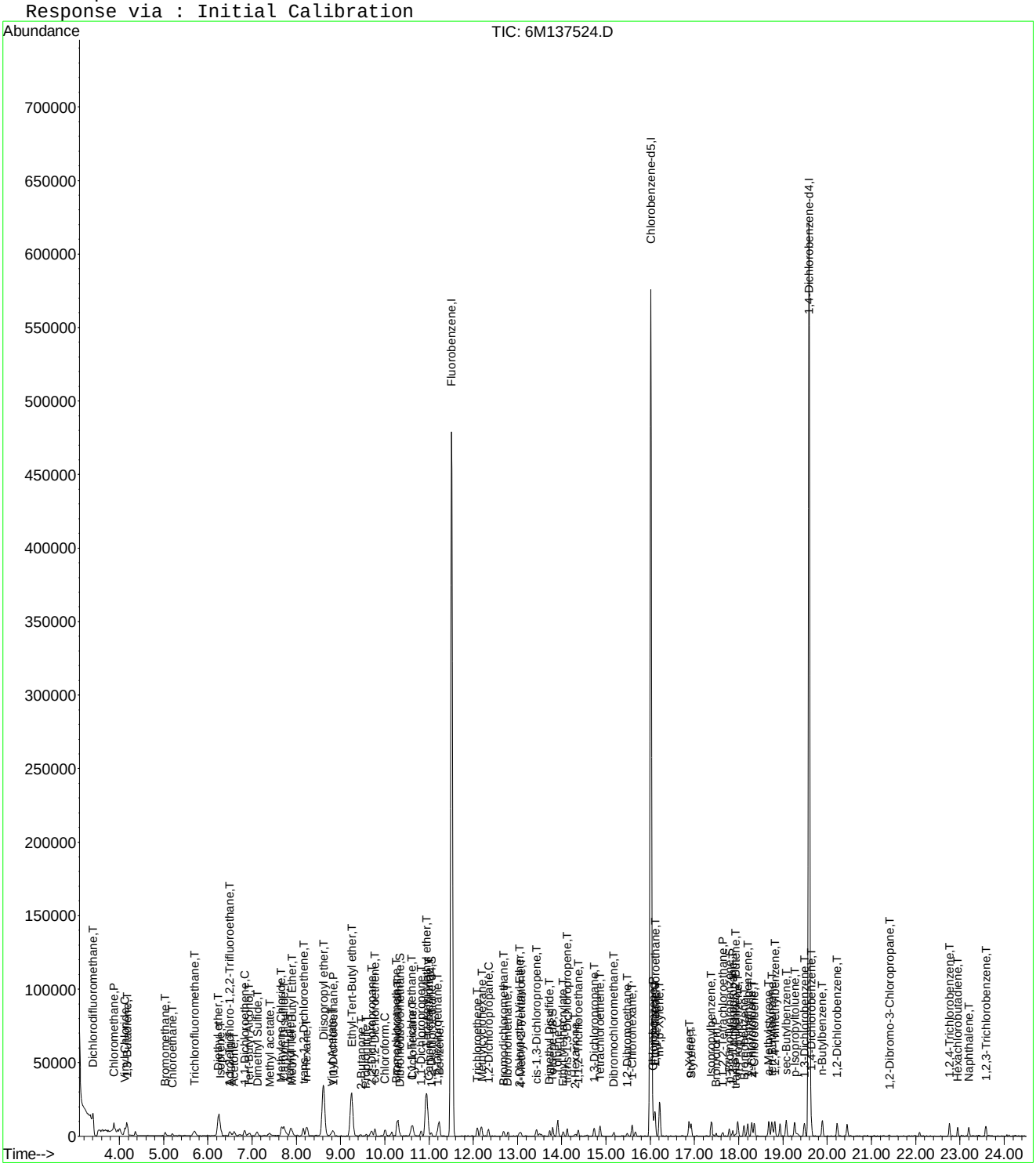

6M137524.D 826_SL.M Mon Feb 29 16:01:38 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	1.1039	0.0	0	0.00
3	P	Chloromethane	-1.0000	1.5721	0.0	0	0.00
4	C	Vinyl Chloride	-1.0000	1.1269	0.0	0	0.01
5	T	1,3-Butadiene	-1.0000	1.2019	0.0	0	0.01
6	T	Bromomethane	-1.0000	1.0150	0.0	0	0.00
7	T	Chloroethane	-1.0000	0.9041	0.0	0	0.00
8	T	Trichlorofluoromethane	-1.0000	1.2600	0.0	0	0.00
9	T	Diethyl ether	5.0000	5.0935	-1.9	100	-0.01
10	T	Isoprene	-1.0000	0.8978	0.0	0	0.00
11	T	Acrolein	2.5000	2.4320	2.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	1.0888	0.0	0	-0.01
13	T	Acetone	-1.0000	0.3832	0.0	0	0.01
14	C	1,1-Dichloroethene	-1.0000	1.0489	0.0	0	0.00
15	T	Tert-Butyl Alcohol	10.0000	9.6025	4.0	100	0.00
16	T	Dimethyl Sulfide	-1.0000	0.8750	0.0	0	0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.38#
18	T	Methyl acetate	-1.0000	0.9889	0.0	0	0.01
19	T	Methylene Chloride	-1.0000	1.1755	0.0	0	-0.01
20	T	Carbon Disulfide	-1.0000	1.2004	0.0	0	0.00
21	T	Acrylonitrile	2.5000	2.1651	13.4	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9214	7.9	100	0.00
23	T	trans-1,2-Dichloroethene	-1.0000	0.8482	0.0	0	0.00
24	T	n-Hexane	-1.0000	0.9252	0.0	0	-0.01
25	T	Diisopropyl ether	5.0000	5.0212	-0.4	100	0.01
26	T	Vinyl Acetate	-1.0000	0.8691	0.0	0	0.00
27	P	1,1-Dichloroethane	-1.0000	1.0162	0.0	0	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.6114	7.8	100	0.01
29	T	2-Butanone	-1.0000	1.0938	0.0	0	0.02
30	T	Propionitrile	5.0000	4.9529	0.9	100	-0.01
31	T	2,2-Dichloropropane	-1.0000	1.0116	0.0	0	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.8542	0.0	0	0.00
33	C	Chloroform	-1.0000	1.1130	0.0	0	-0.01
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-10.16#
35	T	Bromochloromethane	-1.0000	0.7221	0.0	0	0.00
36	T	Tetrahydrofuran	5.0000	5.4403	-8.8	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.6537	0.0	0	0.02
38	T	1,1,1-Trichloroethane	-1.0000	1.0257	0.0	0	0.00
39	T	Cyclohexane	-1.0000	1.0029	0.0	0	-0.01
40	T	1,1-Dichloropropene	-1.0000	0.9813	0.0	0	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	4.5884	8.2	100	0.00
42	T	Carbon Tetrachloride	-1.0000	1.0202	0.0	0	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.6847	0.0	0	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	-1.0000	0.9533	0.0	0	0.00
46	T	Benzene	1.0000	1.0834	-8.3	100	0.00
47	T	Trichloroethene	-1.0000	1.0199	0.0	0	0.00
48	T	Methylcyclohexane	-1.0000	0.9084	0.0	0	0.01
49	C	1,2-Dichloropropane	-1.0000	0.9339	0.0	0	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-12.67#
51	T	Bromodichloromethane	-1.0000	0.9921	0.0	0	0.00
52	T	Dibromomethane	-1.0000	0.8361	0.0	0	-0.01
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.6921	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.4563	0.0	0	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.8388	0.0	0	0.00
56	T	Dimethyl Disulfide	-1.0000	0.5447	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.7544	0.0	0	0.00
59	C	Toluene	1.0000	1.0316	-3.2	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.7432	0.0	0	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	-1.0000	0.8522	0.0	0	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.9869	0.0	0	0.00
64	T	2-Hexanone	-1.0000	0.7313	0.0	0	0.00
65	T	1,3-Dichloropropane	-1.0000	0.9246	0.0	0	0.00
66	T	Tetrachloroethene	-1.0000	1.0308	0.0	0	0.00
67	T	Dibromochloromethane	-1.0000	0.8829	0.0	0	0.00
68	T	1,2-Dibromoethane	-1.0000	0.7559	0.0	0	0.00
69	T	1-Chlorohexane	-1.0000	0.8286	0.0	0	0.00
70	P	Chlorobenzene	-1.0000	1.0589	0.0	0	-0.01
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.9542	0.0	0	0.00
72	C	Ethylbenzene	1.0000	0.9580	4.2	100	0.00
73	T	m-,p-Xylene	2.0000	2.0079	-0.4	100	-0.01
74	T	o-Xylene	1.0000	0.9132	8.7	100	0.00
75	T	Styrene	-1.0000	0.8034	0.0	0	0.00
76	P	Bromoform	-1.0000	0.7511	0.0	0	0.00
77	T	Isopropylbenzene	-1.0000	0.9427	0.0	0	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	1.0310	0.0	0	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.7854	0.0	0	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.7802	0.0	0	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.7652	0.0	0	0.00
83	T	n-Propylbenzene	-1.0000	0.9660	0.0	0	0.00
84	T	Bromobenzene	-1.0000	1.0125	0.0	0	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.8984	0.0	0	0.00
86	T	2-Chlorotoluene	-1.0000	1.0030	0.0	0	0.00
87	T	4-Chlorotoluene	-1.0000	0.9278	0.0	0	0.00
88	T	a-Methylstyrene	-1.0000	0.8574	0.0	0	-0.01
89	T	tert-Butylbenzene	-1.0000	0.9131	0.0	0	-0.01
90	T	1,2,4-Trimethylbenzene	-1.0000	0.9622	0.0	0	0.00
91	T	sec-Butylbenzene	-1.0000	0.9709	0.0	0	0.00
92	T	p-Isopropyltoluene	-1.0000	0.9370	0.0	0	0.00
93	T	1,3-Dichlorobenzene	-1.0000	1.0306	0.0	0	0.00
94	T	1,4-Dichlorobenzene	-1.0000	1.1413	0.0	0	0.00
95	T	n-Butylbenzene	-1.0000	0.9684	0.0	0	-0.01
96	T	1,2-Dichlorobenzene	-1.0000	1.0000	0.0	0	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.2543	0.0	0	0.00
98	T	1,2,4-Trichlorobenzene	-1.0000	1.0259	0.0	0	0.00
99	T	Hexachlorobutadiene	-1.0000	0.9658	0.0	0	-0.01
100	T	Naphthalene	-1.0000	0.8835	0.0	0	0.00
101	T	1,2,3-Trichlorobenzene	-1.0000	1.0134	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137524.D 826_SL.M Mon Feb 29 16:02:09 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:38 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	572212	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	404562	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	206668	50.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.32	111	3202	1.0431 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	2.08%#	
43) 1,2-Dichloroethane-d4	11.05	65	4123	1.0345 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	2.06%#	
58) Toluene-d8	13.80	98	10309	1.0718 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	2.14%#	
80) p-Bromofluorobenzene	17.79	95	4120	1.0853 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	2.18%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	8843	1.6827 ug/L	90
3) Chloromethane	3.88	50	13225	2.4149 ug/L	95
4) Vinyl Chloride	4.12	62	8482	1.9243 ug/L	95
5) 1,3-Butadiene	4.18	54	8044	2.1934 ug/L	77
6) Bromomethane	5.04	94	4396	1.8709 ug/L	94
7) Chloroethane	5.20	64	4555	1.8225 ug/L	99
8) Trichlorofluoromethane	5.70	101	12235	2.0657 ug/L #	96
9) Diethyl ether	6.24	59	66018	24.2296 ug/L	90
10) Isoprene	6.28	67	6318	1.6374 ug/L	84
11) Acrolein	6.49	56	6390	12.3492 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	4561	1.6133 ug/L	91
13) Acetone	6.60	43	7504	1.8809 ug/L	97
14) 1,1-Dichloroethene	6.83	61	8701	1.7376 ug/L	89
15) Tert-Butyl Alcohol	6.94	59	20238	43.3134 ug/L	94
16) Dimethyl Sulfide	7.11	62	4075	1.6773 ug/L	98
17) Iodomethane	7.39	142	581	5.2052 ug/L #	30
18) Methyl acetate	7.39	43	6390	1.8363 ug/L #	70
19) Methylene Chloride	7.67	84	5869	1.9461 ug/L	65
20) Carbon Disulfide	7.71	76	18795	1.9617 ug/L	99
21) Acrylonitrile	7.86	53	16272	11.3775 ug/L	99
22) Methyl Tert Butyl Ether	7.89	73	15172	1.7617 ug/L	96
23) trans-1,2-Dichloroethene	8.16	96	5205	1.8816 ug/L	79
24) n-Hexane	8.23	57	9310	1.8534 ug/L	99
25) Diisopropyl ether	8.61	45	320400	24.6012 ug/L	97
26) Vinyl Acetate	8.80	43	10816	1.6066 ug/L #	78
27) 1,1-Dichloroethane	8.83	63	11076	1.8571 ug/L	98
28) Ethyl-Tert-Butyl ether	9.25	59	254827	24.4116 ug/L	95
29) 2-Butanone	9.45	43	4021	2.0330 ug/L #	56
30) Propionitrile	9.58	54	12821	23.4210 ug/L	98
31) 2,2-Dichloropropane	9.69	77	9442	1.9723 ug/L	95
32) cis-1,2-Dichloroethene	9.77	96	6066	1.9642 ug/L	93
33) Chloroform	10.01	83	11484	2.0618 ug/L	99
34) 1-Bromopropane	10.16	122	398	0.9400 ug/L	97
35) Bromochloromethane	10.27	130	3448	1.9001 ug/L	92
36) Tetrahydrofuran	10.29	42	31678	22.2128 ug/L	93
38) 1,1,1-Trichloroethane	10.60	97	9432	1.9171 ug/L	98
39) Cyclohexane	10.63	56	9073	1.6263 ug/L	92
40) 1,1-Dichloropropene	10.82	75	7003	1.7675 ug/L	93
41) Tert-Amyl-Methyl ether	10.95	73	196452	23.7231 ug/L #	87
42) Carbon Tetrachloride	10.99	117	8034	1.7476 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:38 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	8853	1.8622 ug/L #	93
46)	Benzene	11.23	78	23723	1.9902 ug/L	97
47)	Trichloroethene	12.09	130	5099	1.8107 ug/L	92
48)	Methylcyclohexane	12.17	83	7350	1.6146 ug/L	79
49)	1,2-Dichloropropane	12.34	63	5698	1.7766 ug/L	95
50)	1,4-Dioxane	12.67	88	1122	55.6272 ug/L	88
51)	Bromodichloromethane	12.68	83	7699	1.8293 ug/L	96
52)	Dibromomethane	12.79	93	3316	1.7677 ug/L	91
53)	2-Chloroethyl Vinyl Ether	13.04	63	2386	1.3526 ug/L #	61
54)	4-Methyl-2-Pentanone	13.06	58	1423	1.0653 ug/L #	60
55)	cis-1,3-Dichloropropene	13.43	75	7739	1.6689 ug/L	96
56)	Dimethyl Disulfide	13.72	79	3072	1.3135 ug/L #	66
59)	Toluene	13.91	91	21516	1.8801 ug/L	99
60)	Ethyl Methacrylate	14.03	69	5274	1.4383 ug/L	90
62)	trans-1,3-Dichloropropene	14.12	75	7466	1.6966 ug/L	95
63)	1,1,2-Trichloroethane	14.37	97	4294	1.7952 ug/L	96
64)	2-Hexanone	14.32	43	4342	1.5908 ug/L	87
65)	1,3-Dichloropropane	14.74	76	7896	1.8213 ug/L	99
66)	Tetrachloroethene	14.88	166	5376	1.9043 ug/L	96
67)	Dibromochloromethane	15.17	129	5153	1.6564 ug/L	94
68)	1,2-Dibromoethane	15.47	107	4387	1.7934 ug/L	97
69)	1-Chlorohexane	15.58	91	5799	1.6318 ug/L	88
70)	Chlorobenzene	16.07	112	14803	2.0127 ug/L	82
71)	1,1,1,2-Tetrachloroethane	16.11	131	5636	1.9085 ug/L	89
72)	Ethylbenzene	16.10	106	7654	1.9447 ug/L	97
73)	m-,p-Xylene	16.22	106	17383	3.6096 ug/L	95
74)	o-Xylene	16.88	106	7997	1.7630 ug/L	95
75)	Styrene	16.92	104	12496	1.6186 ug/L	87
76)	Bromoform	17.49	173	3589	1.6340 ug/L	95
77)	Isopropylbenzene	17.38	105	20776	1.7039 ug/L	96
79)	1,1,2,2-Tetrachloroethane	17.64	83	5699	1.7652 ug/L	97
81)	1,2,3-Trichloropropane	17.86	110	1672	1.6915 ug/L	85
82)	trans-1,4-Dichloro-2-Buten	17.93	53	2042	1.7133 ug/L	78
83)	n-Propylbenzene	17.98	91	25104	1.7886 ug/L #	95
84)	Bromobenzene	18.13	156	5535	1.8143 ug/L	100
85)	1,3,5-Trimethylbenzene	18.21	105	17326	1.7343 ug/L	94
86)	2-Chlorotoluene	18.30	91	16320	1.7421 ug/L	90
87)	4-Chlorotoluene	18.35	91	17884	2.0879 ug/L	93
88)	a-Methylstyrene	18.69	118	7613	1.5692 ug/L	95
89)	tert-Butylbenzene	18.76	134	3612	1.7349 ug/L	82
90)	1,2,4-Trimethylbenzene	18.82	105	18800	1.7894 ug/L	86
91)	sec-Butylbenzene	19.08	105	23176	1.8115 ug/L	95
92)	p-Isopropyltoluene	19.26	119	18048	1.7099 ug/L	98
93)	1,3-Dichlorobenzene	19.48	146	10999	1.8633 ug/L	93
94)	1,4-Dichlorobenzene	19.64	146	12629	2.1018 ug/L	96
95)	n-Butylbenzene	19.89	91	18864	1.7769 ug/L	98
96)	1,2-Dichlorobenzene	20.23	146	10946	1.9270 ug/L	93
97)	1,2-Dibromo-3-Chloropropan	21.40	75	890	1.2459 ug/L	91
98)	1,2,4-Trichlorobenzene	22.77	180	8004	1.9491 ug/L	94
99)	Hexachlorobutadiene	22.95	225	4367	1.8595 ug/L	98
100)	Naphthalene	23.20	128	15712	1.6644 ug/L	96
101)	1,2,3-Trichlorobenzene	23.59	180	7942	1.9641 ug/L	93

(#) = qualifier out of range (m) = manual integration
6M137525.D 826_SL.M Mon Feb 29 16:01:38 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

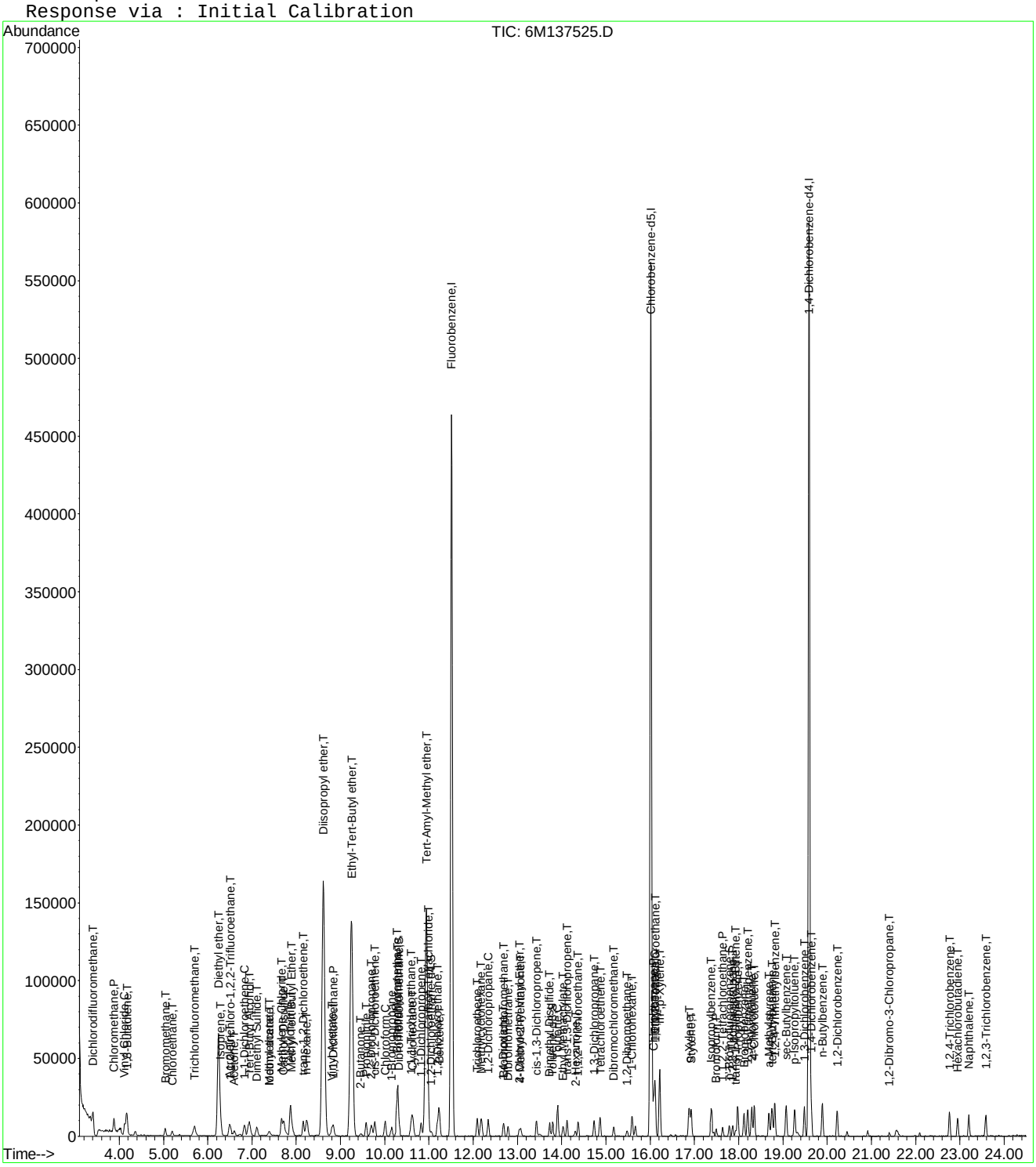

6M137525.D 826_SL.M Mon Feb 29 16:01:39 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.6827	15.9	100	0.00
3	P	Chloromethane	2.0000	2.4150	-20.7	100	0.00
4	C	Vinyl Chloride	2.0000	1.9243	3.8	100	0.00
5	T	1,3-Butadiene	-1.0000	2.1934	0.0	0	0.01
6	T	Bromomethane	2.0000	1.8709	6.5	100	0.01
7	T	Chloroethane	2.0000	1.8225	8.9	100	0.01
8	T	Trichlorofluoromethane	2.0000	2.0658	-3.3	100	0.00
9	T	Diethyl ether	25.0000	24.2296	3.1	100	0.00
10	T	Isoprene	-1.0000	1.6374	0.0	0	0.00
11	T	Acrolein	12.5000	12.3492	1.2	100	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.6134	19.3	100	0.00
13	T	Acetone	-1.0000	1.8809	0.0	0	0.01
14	C	1,1-Dichloroethene	2.0000	1.7376	13.1	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	43.3134	13.4	100	0.01
16	T	Dimethyl Sulfide	-1.0000	1.6773	0.0	0	0.00
17	T	Iodomethane	-1.0000	5.2052	0.0	0	0.01
18	T	Methyl acetate	-1.0000	1.8363	0.0	0	0.00
19	T	Methylene Chloride	2.0000	1.9461	2.7	100	0.00
20	T	Carbon Disulfide	2.0000	1.9617	1.9	100	0.00
21	T	Acrylonitrile	12.5000	11.3775	9.0	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.7617	11.9	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.8816	5.9	100	0.00
24	T	n-Hexane	2.0000	1.8534	7.3	100	-0.01
25	T	Diisopropyl ether	25.0000	24.6012	1.6	100	0.00
26	T	Vinyl Acetate	-1.0000	1.6066	0.0	0	0.00
27	P	1,1-Dichloroethane	2.0000	1.8571	7.1	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	24.4116	2.4	100	0.01
29	T	2-Butanone	-1.0000	2.0330	0.0	0	0.00
30	T	Propionitrile	25.0000	23.4210	6.3	100	0.00
31	T	2,2-Dichloropropane	2.0000	1.9723	1.4	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	1.9642	1.8	100	0.00
33	C	Chloroform	2.0000	2.0618	-3.1	100	0.00
34		1-Bromopropane	-1.0000	0.9400	0.0	0	0.00
35	T	Bromochloromethane	2.0000	1.9001	5.0	100	0.01
36	T	Tetrahydrofuran	25.0000	22.2128	11.1	100	0.00
37	S	Dibromofluoromethane	1.0000	1.0432	-4.3	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.9171	4.1	100	0.00
39	T	Cyclohexane	2.0000	1.6263	18.7	100	-0.01
40	T	1,1-Dichloropropene	2.0000	1.7675	11.6	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	23.7231	5.1	100	0.01
42	T	Carbon Tetrachloride	2.0000	1.7476	12.6	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0345	-3.5	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	2.0000	1.8622	6.9	100	0.00
46	T	Benzene	2.0000	1.9902	0.5	100	0.00
47	T	Trichloroethene	2.0000	1.8108	9.5	100	0.00
48	T	Methylcyclohexane	2.0000	1.6146	19.3	100	0.00
49	C	1,2-Dichloropropane	2.0000	1.7766	11.2	100	0.00
50	T	1,4-Dioxane	50.0000	55.6272	-11.3	100	0.00
51	T	Bromodichloromethane	2.0000	1.8293	8.5	100	0.00
52	T	Dibromomethane	2.0000	1.7677	11.6	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	1.3526	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.0653	0.0	0	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.6689	16.6	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.3135	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	1.0718	-7.2	100	0.00
59	C	Toluene	2.0000	1.8801	6.0	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.4383	28.1#	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	2.0000	1.6966	15.2	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.7952	10.2	100	0.00
64	T	2-Hexanone	-1.0000	1.5908	0.0	0	0.01
65	T	1,3-Dichloropropane	2.0000	1.8213	8.9	100	0.00
66	T	Tetrachloroethene	2.0000	1.9043	4.8	100	0.01
67	T	Dibromochloromethane	2.0000	1.6565	17.2	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.7934	10.3	100	-0.01
69	T	1-Chlorohexane	2.0000	1.6318	18.4	100	-0.01
70	P	Chlorobenzene	2.0000	2.0127	-0.6	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.9085	4.6	100	0.01
72	C	Ethylbenzene	2.0000	1.9447	2.8	100	0.00
73	T	m-,p-Xylene	4.0000	3.6096	9.8	100	0.00
74	T	o-Xylene	2.0000	1.7630	11.8	100	0.00
75	T	Styrene	2.0000	1.6186	19.1	100	0.00
76	P	Bromoform	2.0000	1.6340	18.3	100	0.00
77	T	Isopropylbenzene	2.0000	1.7039	14.8	100	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	1.7653	11.7	100	-0.01
80	S	p-Bromofluorobenzene	1.0000	1.0853	-8.5	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	1.6915	15.4	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	1.7133	14.3	100	0.00
83	T	n-Propylbenzene	2.0000	1.7886	10.6	100	0.00
84	T	Bromobenzene	2.0000	1.8143	9.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	1.7343	13.3	100	0.00
86	T	2-Chlorotoluene	2.0000	1.7421	12.9	100	0.00
87	T	4-Chlorotoluene	2.0000	2.0879	-4.4	100	0.00
88	T	a-Methylstyrene	2.0000	1.5692	21.5	100	0.00
89	T	tert-Butylbenzene	2.0000	1.7349	13.3	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	1.7894	10.5	100	0.00
91	T	sec-Butylbenzene	2.0000	1.8115	9.4	100	0.00
92	T	p-Isopropyltoluene	2.0000	1.7099	14.5	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	1.8633	6.8	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.1018	-5.1	100	0.00
95	T	n-Butylbenzene	2.0000	1.7769	11.2	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	1.9270	3.6	100	0.01
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.2459	0.0	0	-0.01
98	T	1,2,4-Trichlorobenzene	2.0000	1.9491	2.5	100	0.01
99	T	Hexachlorobutadiene	2.0000	1.8596	7.0	100	-0.01
100	T	Naphthalene	2.0000	1.6644	16.8	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9641	1.8	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137525.D 826_SL.M Mon Feb 29 16:02:19 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:39 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	643219	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	454348	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	233655	50.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.32	111	8526	2.4710 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	4.94%#	
43) 1,2-Dichloroethane-d4	11.06	65	11725	2.6172 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	5.24%#	
58) Toluene-d8	13.80	98	29032	2.6876 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	5.38%#	
80) p-Bromofluorobenzene	17.79	95	11167	2.6020 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	5.20%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	28102	4.7571 ug/L	100
3) Chloromethane	3.88	50	32755	5.3209 ug/L	91
4) Vinyl Chloride	4.12	62	26049	5.2573 ug/L	99
5) 1,3-Butadiene	4.17	54	23717	5.7531 ug/L	82
6) Bromomethane	5.03	94	13346	5.0529 ug/L	95
7) Chloroethane	5.19	64	14096	5.0173 ug/L	95
8) Trichlorofluoromethane	5.70	101	35831	5.3818 ug/L	98
9) Diethyl ether	6.24	59	150730	49.2132 ug/L	93
10) Isoprene	6.28	67	21438	4.9428 ug/L	81
11) Acrolein	6.48	56	14248	24.4956 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	17247	5.4273 ug/L	95
13) Acetone	6.59	43	13051	5.3136 ug/L	94
14) 1,1-Dichloroethene	6.83	61	29698	5.2760 ug/L	91
15) Tert-Butyl Alcohol	6.93	59	51304	97.6795 ug/L	93
16) Dimethyl Sulfide	7.12	62	13140	4.8115 ug/L	98
17) Iodomethane	7.38	142	3580	6.2818 ug/L	92
18) Methyl acetate	7.39	43	19888	5.0842 ug/L	93
19) Methylene Chloride	7.67	84	17567	5.1820 ug/L	73
20) Carbon Disulfide	7.72	76	56579	5.2535 ug/L	99
21) Acrylonitrile	7.86	53	38170	23.7426 ug/L	95
22) Methyl Tert Butyl Ether	7.89	73	46633	4.8170 ug/L	97
23) trans-1,2-Dichloroethene	8.16	96	15681	5.0428 ug/L	87
24) n-Hexane	8.24	57	29042	5.1432 ug/L	92
25) Diisopropyl ether	8.61	45	721466	49.2807 ug/L	97
26) Vinyl Acetate	8.80	43	31741	4.1943 ug/L	93
27) 1,1-Dichloroethane	8.83	63	34581	5.1581 ug/L	100
28) Ethyl-Tert-Butyl ether	9.24	59	576725	49.1494 ug/L	95
29) 2-Butanone	9.45	43	11939	5.3698 ug/L	87
30) Propionitrile	9.58	54	29074	47.2483 ug/L	96
31) 2,2-Dichloropropane	9.69	77	27493	5.1089 ug/L	98
32) cis-1,2-Dichloroethene	9.77	96	17624	5.0766 ug/L	93
33) Chloroform	10.01	83	32075	5.1228 ug/L	96
34) 1-Bromopropane	10.16	122	2123	4.4605 ug/L	82
35) Bromochloromethane	10.26	130	9542	4.6779 ug/L	100
36) Tetrahydrofuran	10.29	42	72518	47.4879 ug/L	94
38) 1,1,1-Trichloroethane	10.60	97	26846	4.8542 ug/L	94
39) Cyclohexane	10.64	56	31697	5.0544 ug/L	89
40) 1,1-Dichloropropene	10.82	75	23898	5.3658 ug/L	97
41) Tert-Amyl-Methyl ether	10.94	73	454105	48.7831 ug/L #	89
42) Carbon Tetrachloride	10.99	117	26296	5.0887 ug/L	96

(#) = qualifier out of range (m) = manual integration
6M137526.D 826_SL.M Mon Feb 29 16:01:39 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:39 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	11.19	62	26611	4.9796	ug/L		97
46)	Benzene	11.23	78	66739	4.9809	ug/L		93
47)	Trichloroethene	12.09	130	16560	5.2316	ug/L		93
48)	Methylcyclohexane	12.18	83	26100	5.1005	ug/L		86
49)	1,2-Dichloropropane	12.34	63	17955	4.9803	ug/L		94
50)	1,4-Dioxane	12.67	88	3919	107.9166	ug/L		93
51)	Bromodichloromethane	12.68	83	23069	4.8760	ug/L		92
52)	Dibromomethane	12.79	93	9757	4.6271	ug/L		97
53)	2-Chloroethyl Vinyl Ether	13.04	63	8133	4.1014	ug/L		99
54)	4-Methyl-2-Pentanone	13.07	58	6484	4.3183	ug/L		81
55)	cis-1,3-Dichloropropene	13.43	75	24075	4.6186	ug/L		98
56)	Dimethyl Disulfide	13.72	79	10983	4.1777	ug/L		91
59)	Toluene	13.91	91	65025	5.0594	ug/L		100
60)	Ethyl Methacrylate	14.03	69	18200	4.4195	ug/L		95
62)	trans-1,3-Dichloropropene	14.12	75	23055	4.6650	ug/L		96
63)	1,1,2-Trichloroethane	14.37	97	13105	4.8784	ug/L		97
64)	2-Hexanone	14.31	43	13531	4.4142	ug/L		93
65)	1,3-Dichloropropane	14.74	76	24567	5.0457	ug/L		96
66)	Tetrachloroethene	14.87	166	17025	5.3699	ug/L		96
67)	Dibromochloromethane	15.17	129	16779	4.8026	ug/L		98
68)	1,2-Dibromoethane	15.48	107	13121	4.7760	ug/L		98
69)	1-Chlorohexane	15.59	91	18960	4.7505	ug/L		75
70)	Chlorobenzene	16.07	112	43871	5.3112	ug/L	#	60
71)	1,1,1,2-Tetrachloroethane	16.10	131	15603	4.7045	ug/L		95
72)	Ethylbenzene	16.10	106	22079	4.9950	ug/L		94
73)	m-,p-Xylene	16.22	106	54549	10.0858	ug/L		96
74)	o-Xylene	16.88	106	24478	4.8051	ug/L		92
75)	Styrene	16.92	104	39808	4.5913	ug/L		95
76)	Bromoform	17.49	173	11643	4.7199	ug/L		97
77)	Isopropylbenzene	17.38	105	66989	4.8919	ug/L		99
79)	1,1,2,2-Tetrachloroethane	17.65	83	18286	5.0098	ug/L		96
81)	1,2,3-Trichloropropane	17.87	110	5764	5.1577	ug/L		93
82)	trans-1,4-Dichloro-2-Buten	17.93	53	5968	4.4290	ug/L		92
83)	n-Propylbenzene	17.98	91	82621	5.2068	ug/L		98
84)	Bromobenzene	18.13	156	17797	5.1598	ug/L		96
85)	1,3,5-Trimethylbenzene	18.21	105	58488	5.1783	ug/L		94
86)	2-Chlorotoluene	18.30	91	57419	5.4213	ug/L		96
87)	4-Chlorotoluene	18.35	91	50976	5.2638	ug/L		97
88)	a-Methylstyrene	18.69	118	25024	4.5623	ug/L		100
89)	tert-Butylbenzene	18.76	134	11873	5.0441	ug/L		95
90)	1,2,4-Trimethylbenzene	18.82	105	61081	5.1422	ug/L		83
91)	sec-Butylbenzene	19.08	105	74051	5.1195	ug/L		98
92)	p-Isopropyltoluene	19.26	119	60824	5.0969	ug/L		97
93)	1,3-Dichlorobenzene	19.48	146	35412	5.3060	ug/L		98
94)	1,4-Dichlorobenzene	19.64	146	35211	5.1831	ug/L		83
95)	n-Butylbenzene	19.89	91	60714	5.0584	ug/L		95
96)	1,2-Dichlorobenzene	20.22	146	32728	5.0962	ug/L		95
97)	1,2-Dibromo-3-Chloropropan	21.41	75	3714	4.5988	ug/L		88
98)	1,2,4-Trichlorobenzene	22.76	180	22925	4.9379	ug/L		93
99)	Hexachlorobutadiene	22.96	225	13612	5.1268	ug/L		94
100)	Naphthalene	23.20	128	48617	4.5551	ug/L		99
101)	1,2,3-Trichlorobenzene	23.59	180	22839	4.9959	ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

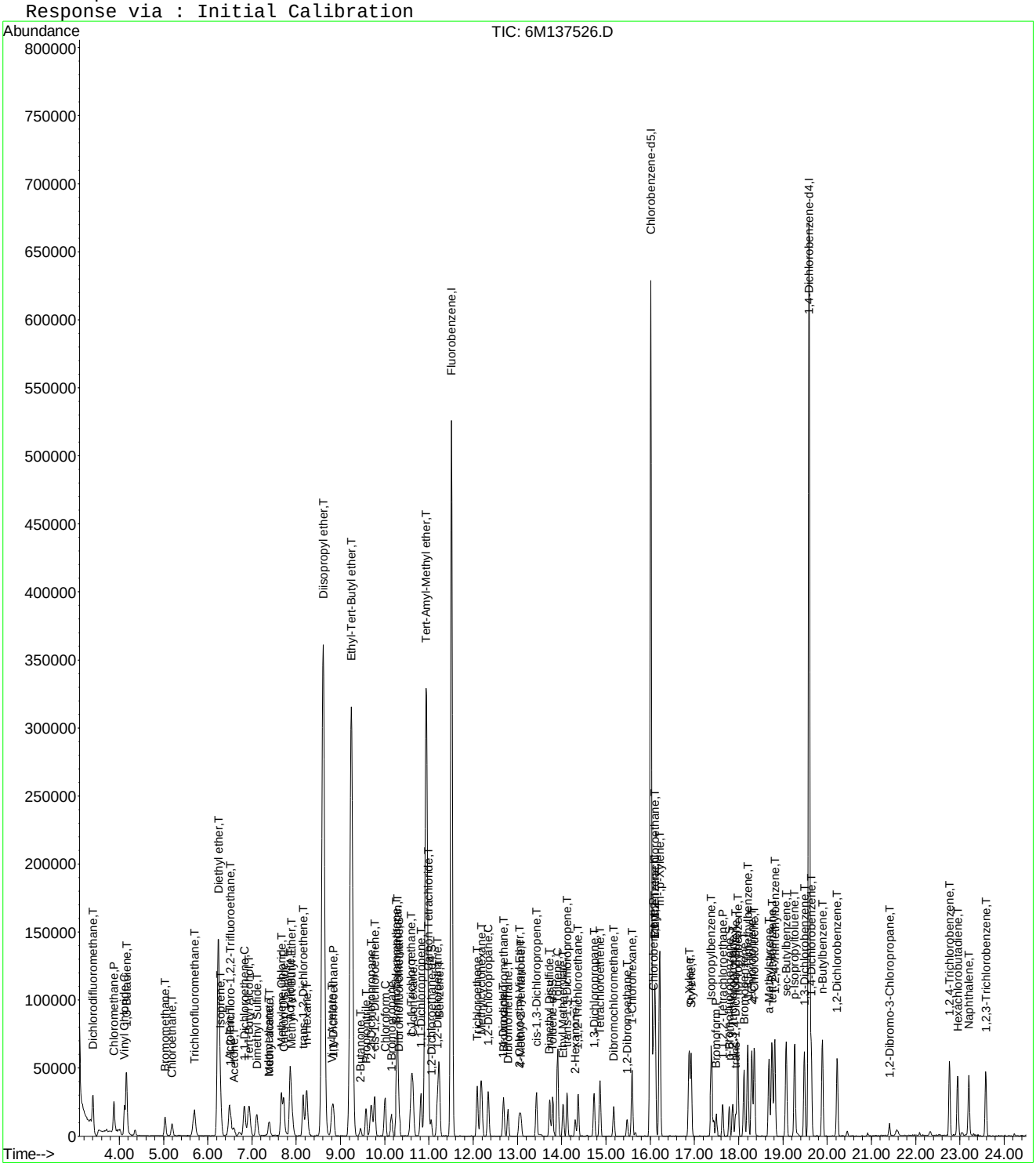

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.7571	4.9	100	0.00
3	P	Chloromethane	5.0000	5.3209	-6.4	100	0.00
4	C	Vinyl Chloride	5.0000	5.2573	-5.1	100	0.00
5	T	1,3-Butadiene	5.0000	5.7531	-15.1	100	0.00
6	T	Bromomethane	5.0000	5.0529	-1.1	100	0.00
7	T	Chloroethane	5.0000	5.0173	-0.3	100	0.00
8	T	Trichlorofluoromethane	5.0000	5.3818	-7.6	100	0.00
9	T	Diethyl ether	50.0000	49.2132	1.6	100	0.00
10	T	Isoprene	5.0000	4.9428	1.1	100	0.00
11	T	Acrolein	25.0000	24.4957	2.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	5.4272	-8.5	100	0.00
13	T	Acetone	-1.0000	5.3136	0.0	0	0.00
14	C	1,1-Dichloroethene	5.0000	5.2760	-5.5	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	97.6795	2.3	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.8115	3.8	100	0.00
17	T	Iodomethane	5.0000	6.2818	-25.6#	100	0.00
18	T	Methyl acetate	5.0000	5.0842	-1.7	100	0.00
19	T	Methylene Chloride	5.0000	5.1820	-3.6	100	0.00
20	T	Carbon Disulfide	5.0000	5.2535	-5.1	100	0.00
21	T	Acrylonitrile	25.0000	23.7426	5.0	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.8170	3.7	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	5.0428	-0.9	100	0.00
24	T	n-Hexane	5.0000	5.1432	-2.9	100	0.00
25	T	Diisopropyl ether	50.0000	49.2807	1.4	100	0.00
26	T	Vinyl Acetate	5.0000	4.1943	16.1	100	0.00
27	P	1,1-Dichloroethane	5.0000	5.1581	-3.2	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	49.1494	1.7	100	0.00
29	T	2-Butanone	5.0000	5.3698	-7.4	100	0.00
30	T	Propionitrile	50.0000	47.2483	5.5	100	0.00
31	T	2,2-Dichloropropane	5.0000	5.1089	-2.2	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	5.0766	-1.5	100	0.00
33	C	Chloroform	5.0000	5.1228	-2.5	100	0.00
34		1-Bromopropane	5.0000	4.4605	10.8	100	0.00
35	T	Bromochloromethane	5.0000	4.6779	6.4	100	0.00
36	T	Tetrahydrofuran	50.0000	47.4879	5.0	100	0.00
37	S	Dibromofluoromethane	2.5000	2.4710	1.2	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.8542	2.9	100	0.00
39	T	Cyclohexane	5.0000	5.0544	-1.1	100	0.00
40	T	1,1-Dichloropropene	5.0000	5.3658	-7.3	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	48.7831	2.4	100	0.00
42	T	Carbon Tetrachloride	5.0000	5.0887	-1.8	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.6172	-4.7	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	5.0000	4.9796	0.4	100	0.00
46	T	Benzene	5.0000	4.9809	0.4	100	0.00
47	T	Trichloroethene	5.0000	5.2316	-4.6	100	0.00
48	T	Methylcyclohexane	5.0000	5.1005	-2.0	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.9803	0.4	100	0.00
50	T	1,4-Dioxane	100.0000	107.9166	-7.9	100	0.00
51	T	Bromodichloromethane	5.0000	4.8760	2.5	100	0.00
52	T	Dibromomethane	5.0000	4.6271	7.5	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.1014	18.0	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.3183	13.6	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.6186	7.6	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.1777	16.4	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.6876	-7.5	100	0.00
59	C	Toluene	5.0000	5.0594	-1.2	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.4195	11.6	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	5.0000	4.6650	6.7	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.8784	2.4	100	0.00
64	T	2-Hexanone	5.0000	4.4142	11.7	100	0.00
65	T	1,3-Dichloropropane	5.0000	5.0457	-0.9	100	0.00
66	T	Tetrachloroethene	5.0000	5.3699	-7.4	100	0.00
67	T	Dibromochloromethane	5.0000	4.8026	3.9	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.7760	4.5	100	0.00
69	T	1-Chlorohexane	5.0000	4.7505	5.0	100	0.00
70	P	Chlorobenzene	5.0000	5.3112	-6.2	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.7045	5.9	100	0.00
72	C	Ethylbenzene	5.0000	4.9950	0.1	100	0.00
73	T	m-,p-Xylene	10.0000	10.0858	-0.9	100	0.00
74	T	o-Xylene	5.0000	4.8051	3.9	100	0.00
75	T	Styrene	5.0000	4.5913	8.2	100	0.00
76	P	Bromoform	5.0000	4.7199	5.6	100	0.00
77	T	Isopropylbenzene	5.0000	4.8919	2.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	5.0098	-0.2	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.6020	-4.1	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.1577	-3.2	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.4290	11.4	100	0.00
83	T	n-Propylbenzene	5.0000	5.2068	-4.1	100	0.00
84	T	Bromobenzene	5.0000	5.1597	-3.2	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	5.1783	-3.6	100	0.00
86	T	2-Chlorotoluene	5.0000	5.4214	-8.4	100	0.00
87	T	4-Chlorotoluene	5.0000	5.2638	-5.3	100	0.00
88	T	a-Methylstyrene	5.0000	4.5623	8.8	100	0.00
89	T	tert-Butylbenzene	5.0000	5.0441	-0.9	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.1422	-2.8	100	0.00
91	T	sec-Butylbenzene	5.0000	5.1195	-2.4	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.0969	-1.9	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	5.3060	-6.1	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	5.1831	-3.7	100	0.00
95	T	n-Butylbenzene	5.0000	5.0584	-1.2	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	5.0962	-1.9	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	4.5988	8.0	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.9379	1.2	100	0.00
99	T	Hexachlorobutadiene	5.0000	5.1268	-2.5	100	0.00
100	T	Naphthalene	5.0000	4.5552	8.9	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.9959	0.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137526.D 826_SL.M Mon Feb 29 16:02:29 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:40 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	607286	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	435504	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	227713	50.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.33	111	16492	5.0625 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 10.12%#		
43) 1,2-Dichloroethane-d4	11.06	65	20491	4.8445 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 9.68%#		
58) Toluene-d8	13.80	98	50808	4.9069 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 9.82%#		
80) p-Bromofluorobenzene	17.79	95	20967	5.0129 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 10.02%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	51684	9.2668 ug/L	100
3) Chloromethane	3.88	50	58275	10.0267 ug/L	97
4) Vinyl Chloride	4.12	62	45684	9.7657 ug/L	98
5) 1,3-Butadiene	4.16	54	39114	10.0495 ug/L	90
6) Bromomethane	5.03	94	25017	10.0321 ug/L	98
7) Chloroethane	5.20	64	25248	9.5185 ug/L	95
8) Trichlorofluoromethane	5.69	101	62268	9.9061 ug/L	98
9) Diethyl ether	6.24	59	197846	68.4186 ug/L	92
10) Isoprene	6.28	67	39072	9.5415 ug/L	91
11) Acrolein	6.48	56	19614	35.7163 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	30114	10.0369 ug/L	94
13) Acetone	6.60	43	18461	10.1493 ug/L	97
14) 1,1-Dichloroethene	6.83	61	51482	9.6871 ug/L	94
15) Tert-Butyl Alcohol	6.93	59	70054	141.2703 ug/L	95
16) Dimethyl Sulfide	7.12	62	25452	9.8712 ug/L	97
17) Iodomethane	7.38	142	9906	8.8243 ug/L	91
18) Methyl acetate	7.39	43	38451	10.4113 ug/L	93
19) Methylene Chloride	7.67	84	32006	10.0000 ug/L	78
20) Carbon Disulfide	7.72	76	98104	9.6481 ug/L	100
21) Acrylonitrile	7.86	53	52450	34.5555 ug/L	97
22) Methyl Tert Butyl Ether	7.89	73	93836	10.2663 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	29186	9.9411 ug/L	85
24) n-Hexane	8.24	57	52226	9.7962 ug/L	99
25) Diisopropyl ether	8.61	45	937664	67.8382 ug/L	97
26) Vinyl Acetate	8.80	43	70808	9.9102 ug/L	96
27) 1,1-Dichloroethane	8.83	63	63440	10.0226 ug/L	98
28) Ethyl-Tert-Butyl ether	9.24	59	760504	68.6462 ug/L	96
29) 2-Butanone	9.45	43	21373	10.1817 ug/L	94
30) Propionitrile	9.58	54	40026	68.8953 ug/L	100
31) 2,2-Dichloropropane	9.69	77	51602	10.1564 ug/L	98
32) cis-1,2-Dichloroethene	9.77	96	31900	9.7326 ug/L	99
33) Chloroform	10.01	83	57702	9.7611 ug/L	96
34) 1-Bromopropane	10.15	122	4101	9.1261 ug/L	96
35) Bromochloromethane	10.26	130	18414	9.5616 ug/L	96
36) Tetrahydrofuran	10.29	42	95905	67.3892 ug/L	94
38) 1,1,1-Trichloroethane	10.60	97	52695	10.0919 ug/L	100
39) Cyclohexane	10.63	56	57419	9.6977 ug/L	90
40) 1,1-Dichloropropene	10.82	75	41095	9.7729 ug/L	98
41) Tert-Amyl-Methyl ether	10.95	73	598972	68.1530 ug/L	90
42) Carbon Tetrachloride	10.99	117	48542	9.9495 ug/L	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:40 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	51284	10.1644 ug/L	99
46)	Benzene	11.23	78	122737	9.7022 ug/L	94
47)	Trichloroethene	12.09	130	29481	9.8646 ug/L	92
48)	Methylcyclohexane	12.18	83	46982	9.7245 ug/L	87
49)	1,2-Dichloropropane	12.34	63	33640	9.8830 ug/L	97
50)	1,4-Dioxane	12.68	88	4932	133.5880 ug/L	83
51)	Bromodichloromethane	12.68	83	42482	9.5106 ug/L	92
52)	Dibromomethane	12.78	93	19421	9.7551 ug/L	99
53)	2-Chloroethyl Vinyl Ether	13.04	63	17139	9.1546 ug/L	98
54)	4-Methyl-2-Pentanone	13.07	58	13343	9.4122 ug/L	90
55)	cis-1,3-Dichloropropene	13.43	75	47323	9.6158 ug/L	96
56)	Dimethyl Disulfide	13.72	79	21113	8.5060 ug/L	97
59)	Toluene	13.91	91	123480	10.0233 ug/L	99
60)	Ethyl Methacrylate	14.04	69	37321	9.4549 ug/L	94
62)	trans-1,3-Dichloropropene	14.12	75	46119	9.7357 ug/L	96
63)	1,1,2-Trichloroethane	14.38	97	26300	10.2139 ug/L	99
64)	2-Hexanone	14.31	43	28213	9.6021 ug/L	99
65)	1,3-Dichloropropane	14.73	76	46832	10.0347 ug/L	94
66)	Tetrachloroethene	14.87	166	31153	10.2512 ug/L	97
67)	Dibromochloromethane	15.18	129	32946	9.8381 ug/L	99
68)	1,2-Dibromoethane	15.48	107	25271	9.5966 ug/L	95
69)	1-Chlorohexane	15.59	91	36355	9.5030 ug/L	82
70)	Chlorobenzene	16.07	112	79785	10.0771 ug/L #	63
71)	1,1,1,2-Tetrachloroethane	16.11	131	31524	9.9162 ug/L	97
72)	Ethylbenzene	16.10	106	41898	9.8889 ug/L	95
73)	m-,p-Xylene	16.22	106	102847	19.8387 ug/L	96
74)	o-Xylene	16.88	106	47393	9.7060 ug/L	93
75)	Styrene	16.92	104	79997	9.6257 ug/L	97
76)	Bromoform	17.49	173	22569	9.5450 ug/L	99
77)	Isopropylbenzene	17.38	105	130459	9.9391 ug/L	96
79)	1,1,2,2-Tetrachloroethane	17.65	83	36327	10.2123 ug/L	95
81)	1,2,3-Trichloropropane	17.87	110	11417	10.4826 ug/L	96
82)	trans-1,4-Dichloro-2-Buten	17.93	53	12994	9.8948 ug/L	85
83)	n-Propylbenzene	17.98	91	159783	10.3323 ug/L	98
84)	Bromobenzene	18.13	156	33893	10.0828 ug/L	95
85)	1,3,5-Trimethylbenzene	18.21	105	111252	10.1069 ug/L	94
86)	2-Chlorotoluene	18.30	91	107737	10.4377 ug/L	98
87)	4-Chlorotoluene	18.36	91	96695	10.2453 ug/L	95
88)	a-Methylstyrene	18.69	118	51340	9.6043 ug/L	97
89)	tert-Butylbenzene	18.76	134	22949	10.0040 ug/L	90
90)	1,2,4-Trimethylbenzene	18.82	105	119948	10.3616 ug/L	79
91)	sec-Butylbenzene	19.07	105	141383	10.0296 ug/L	97
92)	p-Isopropyltoluene	19.27	119	115695	9.9480 ug/L	99
93)	1,3-Dichlorobenzene	19.48	146	67906	10.4404 ug/L	100
94)	1,4-Dichlorobenzene	19.64	146	68350	10.3238 ug/L	93
95)	n-Butylbenzene	19.89	91	117398	10.0364 ug/L	96
96)	1,2-Dichlorobenzene	20.22	146	64067	10.2365 ug/L	98
97)	1,2-Dibromo-3-Chloropropan	21.40	75	7444	9.4579 ug/L	93
98)	1,2,4-Trichlorobenzene	22.76	180	45615	10.0816 ug/L	99
99)	Hexachlorobutadiene	22.94	225	26046	10.0659 ug/L	100
100)	Naphthalene	23.20	128	104354	10.0325 ug/L	99
101)	1,2,3-Trichlorobenzene	23.59	180	44630	10.0173 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

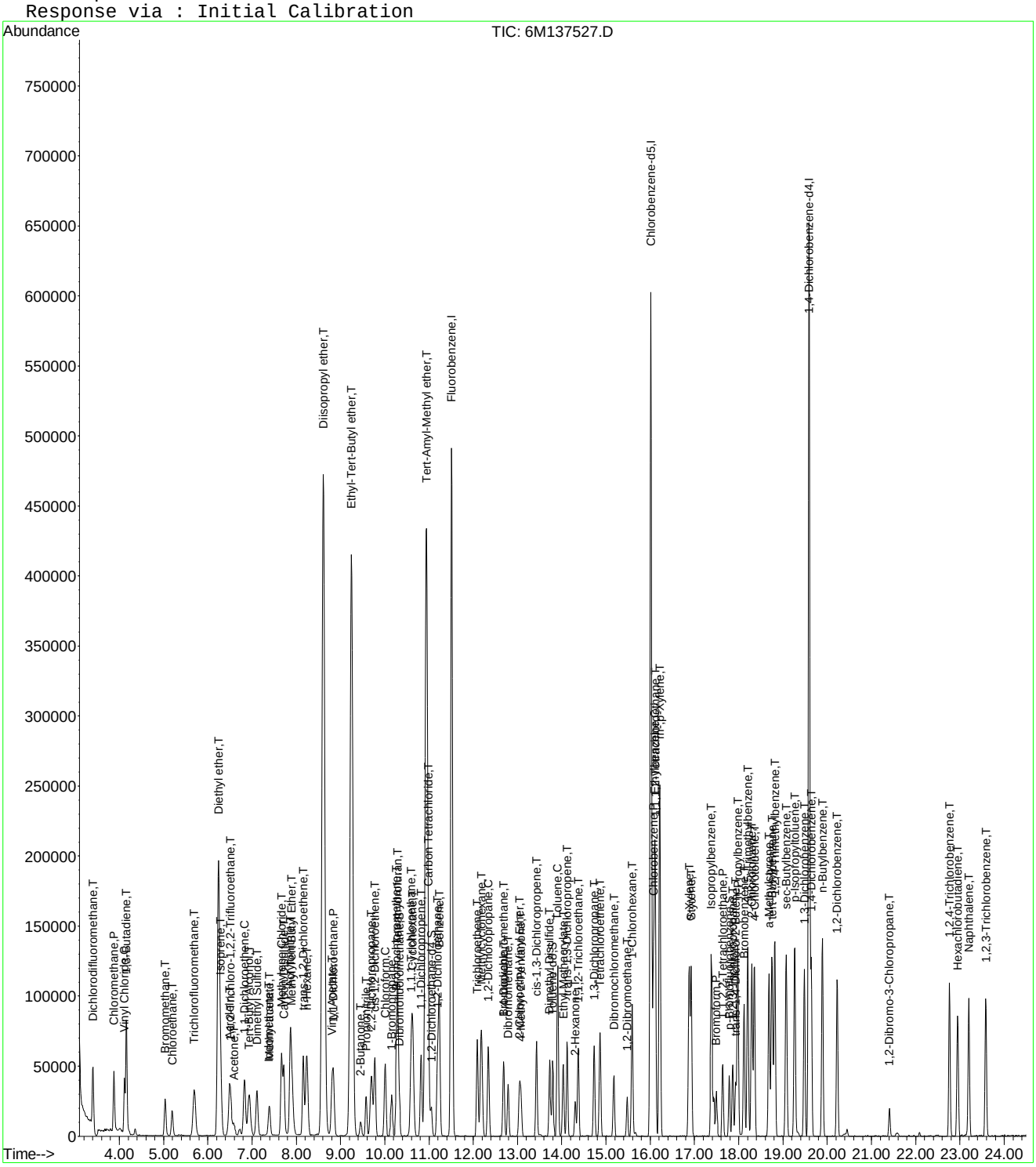

6M137527.D 826_SL.M Mon Feb 29 16:01:40 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	10.0000	9.2668	7.3	100	0.00
3	P	Chloromethane	10.0000	10.0267	-0.3	100	0.00
4	C	Vinyl Chloride	10.0000	9.7657	2.3	100	0.00
5	T	1,3-Butadiene	10.0000	10.0495	-0.5	100	-0.01
6	T	Bromomethane	10.0000	10.0321	-0.3	100	0.00
7	T	Chloroethane	10.0000	9.5185	4.8	100	0.00
8	T	Trichlorofluoromethane	10.0000	9.9061	0.9	100	-0.01
9	T	Diethyl ether	65.0000	68.4186	-5.3	100	0.00
10	T	Isoprene	10.0000	9.5415	4.6	100	0.00
11	T	Acrolein	32.5000	35.7163	-9.9	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	10.0000	10.0369	-0.4	100	0.00
13	T	Acetone	10.0000	10.1493	-1.5	100	0.01
14	C	1,1-Dichloroethene	10.0000	9.6871	3.1	100	0.00
15	T	Tert-Butyl Alcohol	130.0000	141.2703	-8.7	100	0.00
16	T	Dimethyl Sulfide	10.0000	9.8712	1.3	100	0.00
17	T	Iodomethane	10.0000	8.8243	11.8	100	0.00
18	T	Methyl acetate	10.0000	10.4113	-4.1	100	0.00
19	T	Methylene Chloride	10.0000	10.0000	0.0	100	0.00
20	T	Carbon Disulfide	10.0000	9.6481	3.5	100	0.00
21	T	Acrylonitrile	32.5000	34.5555	-6.3	100	0.00
22	T	Methyl Tert Butyl Ether	10.0000	10.2663	-2.7	100	0.00
23	T	trans-1,2-Dichloroethene	10.0000	9.9411	0.6	100	0.00
24	T	n-Hexane	10.0000	9.7962	2.0	100	0.00
25	T	Diisopropyl ether	65.0000	67.8382	-4.4	100	0.00
26	T	Vinyl Acetate	10.0000	9.9102	0.9	100	0.00
27	P	1,1-Dichloroethane	10.0000	10.0226	-0.2	100	0.00
28	T	Ethyl-Tert-Butyl ether	65.0000	68.6462	-5.6	100	0.00
29	T	2-Butanone	10.0000	10.1817	-1.8	100	0.00
30	T	Propionitrile	65.0000	68.8953	-6.0	100	0.00
31	T	2,2-Dichloropropane	10.0000	10.1564	-1.6	100	0.00
32	T	cis-1,2-Dichloroethene	10.0000	9.7326	2.7	100	0.00
33	C	Chloroform	10.0000	9.7611	2.4	100	0.00
34		1-Bromopropane	10.0000	9.1261	8.7	100	-0.01
35	T	Bromochloromethane	10.0000	9.5616	4.4	100	0.00
36	T	Tetrahydrofuran	65.0000	67.3892	-3.7	100	0.00
37	S	Dibromofluoromethane	5.0000	5.0625	-1.2	100	0.00
38	T	1,1,1-Trichloroethane	10.0000	10.0919	-0.9	100	0.00
39	T	Cyclohexane	10.0000	9.6977	3.0	100	-0.01
40	T	1,1-Dichloropropene	10.0000	9.7729	2.3	100	0.00
41	T	Tert-Amyl-Methyl ether	65.0000	68.1530	-4.9	100	0.00
42	T	Carbon Tetrachloride	10.0000	9.9495	0.5	100	0.00
43	S	1,2-Dichloroethane-d4	5.0000	4.8445	3.1	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	10.0000	10.1644	-1.6	100	0.00
46	T	Benzene	10.0000	9.7022	3.0	100	0.00
47	T	Trichloroethene	10.0000	9.8646	1.4	100	0.00
48	T	Methylcyclohexane	10.0000	9.7245	2.8	100	0.00
49	C	1,2-Dichloropropane	10.0000	9.8831	1.2	100	0.00
50	T	1,4-Dioxane	130.0000	133.5880	-2.8	100	0.00
51	T	Bromodichloromethane	10.0000	9.5106	4.9	100	0.00
52	T	Dibromomethane	10.0000	9.7551	2.4	100	0.00
53	T	2-Chloroethyl Vinyl Ether	10.0000	9.1546	8.5	100	0.00
54	T	4-Methyl-2-Pentanone	10.0000	9.4122	5.9	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	10.0000	9.6158	3.8	100	0.00
56	T	Dimethyl Disulfide	10.0000	8.5060	14.9	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	5.0000	4.9070	1.9	100	0.00
59	C	Toluene	10.0000	10.0233	-0.2	100	0.00
60	T	Ethyl Methacrylate	10.0000	9.4549	5.5	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	10.0000	9.7357	2.6	100	0.00
63	T	1,1,2-Trichloroethane	10.0000	10.2139	-2.1	100	0.00
64	T	2-Hexanone	10.0000	9.6021	4.0	100	0.00
65	T	1,3-Dichloropropane	10.0000	10.0347	-0.3	100	0.00
66	T	Tetrachloroethene	10.0000	10.2512	-2.5	100	0.00
67	T	Dibromochloromethane	10.0000	9.8381	1.6	100	0.00
68	T	1,2-Dibromoethane	10.0000	9.5966	4.0	100	0.00
69	T	1-Chlorohexane	10.0000	9.5030	5.0	100	0.00
70	P	Chlorobenzene	10.0000	10.0771	-0.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	10.0000	9.9162	0.8	100	0.00
72	C	Ethylbenzene	10.0000	9.8889	1.1	100	0.00
73	T	m-,p-Xylene	20.0000	19.8387	0.8	100	0.00
74	T	o-Xylene	10.0000	9.7060	2.9	100	0.00
75	T	Styrene	10.0000	9.6258	3.7	100	0.00
76	P	Bromoform	10.0000	9.5450	4.6	100	0.00
77	T	Isopropylbenzene	10.0000	9.9391	0.6	100	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	10.0000	10.2123	-2.1	100	0.00
80	S	p-Bromofluorobenzene	5.0000	5.0129	-0.3	100	0.00
81	T	1,2,3-Trichloropropane	10.0000	10.4826	-4.8	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	10.0000	9.8948	1.1	100	0.00
83	T	n-Propylbenzene	10.0000	10.3323	-3.3	100	0.00
84	T	Bromobenzene	10.0000	10.0828	-0.8	100	0.00
85	T	1,3,5-Trimethylbenzene	10.0000	10.1069	-1.1	100	0.00
86	T	2-Chlorotoluene	10.0000	10.4377	-4.4	100	0.00
87	T	4-Chlorotoluene	10.0000	10.2453	-2.5	100	0.00
88	T	a-Methylstyrene	10.0000	9.6043	4.0	100	0.00
89	T	tert-Butylbenzene	10.0000	10.0040	-0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	10.0000	10.3616	-3.6	100	0.00
91	T	sec-Butylbenzene	10.0000	10.0296	-0.3	100	0.00
92	T	p-Isopropyltoluene	10.0000	9.9480	0.5	100	0.00
93	T	1,3-Dichlorobenzene	10.0000	10.4404	-4.4	100	0.00
94	T	1,4-Dichlorobenzene	10.0000	10.3238	-3.2	100	0.00
95	T	n-Butylbenzene	10.0000	10.0364	-0.4	100	0.00
96	T	1,2-Dichlorobenzene	10.0000	10.2365	-2.4	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	10.0000	9.4579	5.4	100	-0.01
98	T	1,2,4-Trichlorobenzene	10.0000	10.0816	-0.8	100	0.00
99	T	Hexachlorobutadiene	10.0000	10.0659	-0.7	100	-0.01
100	T	Naphthalene	10.0000	10.0325	-0.3	100	0.00
101	T	1,2,3-Trichlorobenzene	10.0000	10.0173	-0.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137527.D 826_SL.M Mon Feb 29 16:02:41 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137528.D Vial: 7
Acq On : 26 Feb 2016 16:30 Operator: TMB
Sample : WG558920-07 20ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:40 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	604454	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	432511	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	231578	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	33417	10.3059 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 20.62%#		
43) 1,2-Dichloroethane-d4	11.05	65	44264	10.5140 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 21.02%#		
58) Toluene-d8	13.80	98	105494	10.2589 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 20.52%#		
80) p-Bromofluorobenzene	17.79	95	42856	10.0752 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 20.16%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	124530	22.4325 ug/L	99
3) Chloromethane	3.88	50	120837	20.8884 ug/L	97
4) Vinyl Chloride	4.12	62	100224	21.5249 ug/L	99
5) 1,3-Butadiene	4.17	54	87169	22.5011 ug/L	89
6) Bromomethane	5.03	94	52021	20.9587 ug/L	100
7) Chloroethane	5.20	64	56109	21.2522 ug/L	96
8) Trichlorofluoromethane	5.70	101	126994	20.2979 ug/L	100
9) Diethyl ether	6.24	59	233490	81.1233 ug/L	92
10) Isoprene	6.28	67	78978	19.3770 ug/L	88
11) Acrolein	6.48	56	21732	39.7585 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	61970	20.7512 ug/L	94
13) Acetone	6.60	43	31313	20.3882 ug/L	94
14) 1,1-Dichloroethene	6.83	61	109604	20.7203 ug/L	92
15) Tert-Butyl Alcohol	6.93	59	84577	171.3564 ug/L	95
16) Dimethyl Sulfide	7.12	62	47686	18.5811 ug/L	91
17) Iodomethane	7.38	142	29628	16.5619 ug/L	87
18) Methyl acetate	7.39	43	74780	20.3429 ug/L	95
19) Methylene Chloride	7.67	84	64851	20.3571 ug/L	76
20) Carbon Disulfide	7.72	76	202990	20.0567 ug/L	99
21) Acrylonitrile	7.86	53	61697	40.8381 ug/L	94
22) Methyl Tert Butyl Ether	7.89	73	190370	20.9254 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	59769	20.4535 ug/L	87
24) n-Hexane	8.24	57	105156	19.8169 ug/L	97
25) Diisopropyl ether	8.61	45	1129584	82.1061 ug/L	96
26) Vinyl Acetate	8.80	43	152272	21.4117 ug/L	97
27) 1,1-Dichloroethane	8.83	63	130302	20.6823 ug/L	99
28) Ethyl-Tert-Butyl ether	9.24	59	915394	83.0143 ug/L	96
29) 2-Butanone	9.46	43	42524	20.3527 ug/L	97
30) Propionitrile	9.58	54	48414	83.7237 ug/L	100
31) 2,2-Dichloropropane	9.69	77	100380	19.8495 ug/L	98
32) cis-1,2-Dichloroethene	9.77	96	66403	20.3543 ug/L	100
33) Chloroform	10.01	83	120566	20.4910 ug/L	97
34) 1-Bromopropane	10.15	122	8978	20.0727 ug/L	94
35) Bromochloromethane	10.26	130	39989	20.8618 ug/L	98
36) Tetrahydrofuran	10.29	42	119054	84.5841 ug/L	93
38) 1,1,1-Trichloroethane	10.60	97	105282	20.2577 ug/L	96
39) Cyclohexane	10.63	56	119680	20.3079 ug/L	89
40) 1,1-Dichloropropene	10.82	75	83869	20.0386 ug/L	96
41) Tert-Amyl-Methyl ether	10.94	73	732522	83.7393 ug/L	91
42) Carbon Tetrachloride	10.99	117	99704	20.5318 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M137528.D 826_SL.M Mon Feb 29 16:01:41 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137528.D Vial: 7
Acq On : 26 Feb 2016 16:30 Operator: TMB
Sample : WG558920-07 20ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:40 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	11.19	62	103881	20.6854 ug/L		99
46)	Benzene	11.23	78	247381	19.6467 ug/L		92
47)	Trichloroethene	12.09	130	61373	20.6321 ug/L		91
48)	Methylcyclohexane	12.18	83	97333	20.2407 ug/L		88
49)	1,2-Dichloropropane	12.34	63	69997	20.6607 ug/L		99
50)	1,4-Dioxane	12.68	88	6222	161.0769 ug/L		84
51)	Bromodichloromethane	12.68	83	89367	20.1007 ug/L		96
52)	Dibromomethane	12.79	93	40905	20.6426 ug/L		98
53)	2-Chloroethyl Vinyl Ether	13.04	63	37392	20.0660 ug/L		99
54)	4-Methyl-2-Pentanone	13.07	58	29543	20.9375 ug/L		90
55)	cis-1,3-Dichloropropene	13.43	75	99671	20.3475 ug/L		97
56)	Dimethyl Disulfide	13.72	79	46329	18.7525 ug/L		98
59)	Toluene	13.91	91	246419	20.1412 ug/L		99
60)	Ethyl Methacrylate	14.04	69	79829	20.3638 ug/L		96
62)	trans-1,3-Dichloropropene	14.12	75	96621	20.5377 ug/L		98
63)	1,1,2-Trichloroethane	14.38	97	53425	20.8919 ug/L		97
64)	2-Hexanone	14.31	43	59605	20.4265 ug/L		97
65)	1,3-Dichloropropane	14.74	76	96517	20.8239 ug/L		94
66)	Tetrachloroethene	14.87	166	62111	20.5796 ug/L		96
67)	Dibromochloromethane	15.17	129	68185	20.5019 ug/L		99
68)	1,2-Dibromoethane	15.48	107	53387	20.4138 ug/L		100
69)	1-Chlorohexane	15.59	91	76216	20.0602 ug/L		83
70)	Chlorobenzene	16.07	112	160312	20.3880 ug/L	#	66
71)	1,1,1,2-Tetrachloroethane	16.11	131	64649	20.4768 ug/L		97
72)	Ethylbenzene	16.10	106	86018	20.4427 ug/L		96
73)	m-,p-Xylene	16.22	106	209303	40.6530 ug/L		95
74)	o-Xylene	16.87	106	101781	20.9889 ug/L		94
75)	Styrene	16.92	104	169811	20.5741 ug/L		94
76)	Bromoform	17.49	173	47615	20.2769 ug/L		98
77)	Isopropylbenzene	17.38	105	273784	21.0027 ug/L		97
79)	1,1,2,2-Tetrachloroethane	17.65	83	75470	20.8621 ug/L		95
81)	1,2,3-Trichloropropane	17.87	110	22588	20.3932 ug/L		90
82)	trans-1,4-Dichloro-2-Buten	17.93	53	26581	19.9034 ug/L		88
83)	n-Propylbenzene	17.98	91	330830	21.0359 ug/L		97
84)	Bromobenzene	18.13	156	71833	21.0128 ug/L		95
85)	1,3,5-Trimethylbenzene	18.21	105	230218	20.5655 ug/L		96
86)	2-Chlorotoluene	18.30	91	219979	20.9561 ug/L		97
87)	4-Chlorotoluene	18.35	91	193947	20.2066 ug/L		97
88)	a-Methylstyrene	18.69	118	107098	19.7008 ug/L		96
89)	tert-Butylbenzene	18.75	134	48246	20.6806 ug/L		94
90)	1,2,4-Trimethylbenzene	18.82	105	244152	20.7388 ug/L		84
91)	sec-Butylbenzene	19.08	105	299927	20.9214 ug/L		98
92)	p-Isopropyltoluene	19.27	119	246088	20.8066 ug/L		100
93)	1,3-Dichlorobenzene	19.48	146	134407	20.3198 ug/L		98
94)	1,4-Dichlorobenzene	19.64	146	136759	20.3118 ug/L		97
95)	n-Butylbenzene	19.89	91	245859	20.6677 ug/L		97
96)	1,2-Dichlorobenzene	20.22	146	129420	20.3333 ug/L		96
97)	1,2-Dibromo-3-Chloropropan	21.41	75	16283	20.3429 ug/L		85
98)	1,2,4-Trichlorobenzene	22.76	180	93373	20.2924 ug/L		99
99)	Hexachlorobutadiene	22.95	225	53674	20.3969 ug/L		99
100)	Naphthalene	23.20	128	219058	20.7086 ug/L		99
101)	1,2,3-Trichlorobenzene	23.58	180	91461	20.1860 ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137528.D Vial: 7
Acq On : 26 Feb 2016 16:30 Operator: TMB
Sample : WG558920-07 20ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

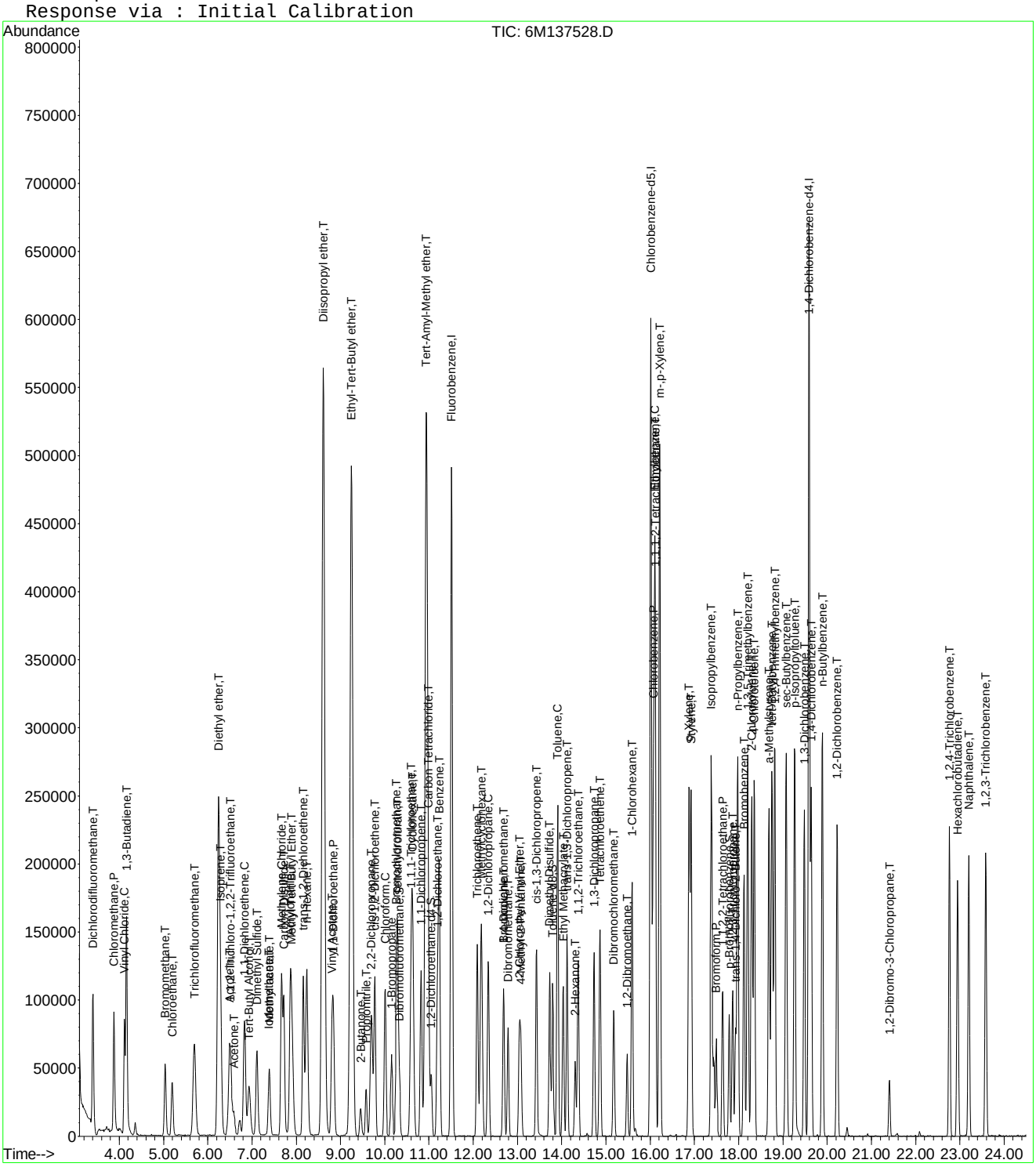

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137529.D Vial: 8
Acq On : 26 Feb 2016 17:03 Operator: TMB
Sample : WG558920-08 50ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:41 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	607631	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	439950	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	237573	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	82729	25.3805 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 50.76%#		
43) 1,2-Dichloroethane-d4	11.06	65	107163	25.3214 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 50.64%#		
58) Toluene-d8	13.80	98	266157	25.4452 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 50.90%#		
80) p-Bromofluorobenzene	17.79	95	111797	25.6197 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 51.24%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	326358	58.4819 ug/L	99
3) Chloromethane	3.88	50	305583	52.5483 ug/L	99
4) Vinyl Chloride	4.11	62	261948	55.9639 ug/L	98
5) 1,3-Butadiene	4.17	54	208973	53.6605 ug/L	91
6) Bromomethane	5.03	94	129157	51.7638 ug/L	100
7) Chloroethane	5.20	64	147959	55.7489 ug/L	95
8) Trichlorofluoromethane	5.70	101	339023	53.9039 ug/L	99
9) Diethyl ether	6.24	59	283385	97.9439 ug/L	93
10) Isoprene	6.28	67	215850	52.6813 ug/L	86
11) Acrolein	6.48	56	25264	45.9786 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	168394	56.0934 ug/L	94
13) Acetone	6.60	43	68176	49.2786 ug/L	100
14) 1,1-Dichloroethene	6.83	61	295734	55.6154 ug/L	92
15) Tert-Butyl Alcohol	6.94	59	97040	195.5789 ug/L	97
16) Dimethyl Sulfide	7.12	62	135657	52.5830 ug/L	94
17) Iodomethane	7.38	142	119726	51.5829 ug/L	91
18) Methyl acetate	7.39	43	187187	50.6554 ug/L	95
19) Methylene Chloride	7.67	84	174497	54.4892 ug/L	80
20) Carbon Disulfide	7.72	76	530150	52.1084 ug/L	98
21) Acrylonitrile	7.86	53	78970	51.9980 ug/L	98
22) Methyl Tert Butyl Ether	7.89	73	506330	55.3647 ug/L	93
23) trans-1,2-Dichloroethene	8.16	96	161116	54.8470 ug/L	86
24) n-Hexane	8.24	57	282956	53.0449 ug/L	98
25) Diisopropyl ether	8.61	45	1357488	98.1559 ug/L	97
26) Vinyl Acetate	8.80	43	361913	50.6243 ug/L	97
27) 1,1-Dichloroethane	8.84	63	345084	54.4873 ug/L	98
28) Ethyl-Tert-Butyl ether	9.24	59	1104598	99.6489 ug/L	96
29) 2-Butanone	9.45	43	102919	49.0011 ug/L	94
30) Propionitrile	9.58	54	57786	99.4084 ug/L	100
31) 2,2-Dichloropropane	9.70	77	275709	54.2347 ug/L	99
32) cis-1,2-Dichloroethene	9.77	96	176368	53.7788 ug/L	98
33) Chloroform	10.01	83	316097	53.4420 ug/L	96
34) 1-Bromopropane	10.16	122	24579	54.6655 ug/L	98
35) Bromochloromethane	10.26	130	106752	55.4000 ug/L	99
36) Tetrahydrofuran	10.29	42	139800	99.1693 ug/L	94
38) 1,1,1-Trichloroethane	10.60	97	287959	55.1175 ug/L	98
39) Cyclohexane	10.63	56	324068	54.7019 ug/L	90
40) 1,1-Dichloropropene	10.82	75	232925	55.3612 ug/L	98
41) Tert-Amyl-Methyl ether	10.95	73	878188	99.8664 ug/L	92
42) Carbon Tetrachloride	10.99	117	270388	55.3891 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137529.D Vial: 8
Acq On : 26 Feb 2016 17:03 Operator: TMB
Sample : WG558920-08 50ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:41 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	11.19	62	272804	54.0384	ug/L		98
46)	Benzene	11.23	78	654918	51.7410	ug/L		91
47)	Trichloroethene	12.09	130	163002	54.5109	ug/L		91
48)	Methylcyclohexane	12.18	83	264045	54.6220	ug/L		88
49)	1,2-Dichloropropane	12.34	63	185139	54.3608	ug/L		99
50)	1,4-Dioxane	12.67	88	7470	186.3872	ug/L		86
51)	Bromodichloromethane	12.68	83	244077	54.6116	ug/L		96
52)	Dibromomethane	12.78	93	112269	56.3600	ug/L		97
53)	2-Chloroethyl Vinyl Ether	13.04	63	99869	53.3134	ug/L		98
54)	4-Methyl-2-Pentanone	13.07	58	71173	50.1774	ug/L		95
55)	cis-1,3-Dichloropropene	13.43	75	275770	56.0032	ug/L		97
56)	Dimethyl Disulfide	13.72	79	136937	55.1380	ug/L		96
59)	Toluene	13.91	91	661797	53.1777	ug/L		100
60)	Ethyl Methacrylate	14.04	69	221335	55.5062	ug/L		94
62)	trans-1,3-Dichloropropene	14.12	75	265281	55.4346	ug/L		99
63)	1,1,2-Trichloroethane	14.38	97	140534	54.0266	ug/L		99
64)	2-Hexanone	14.31	43	150141	50.5831	ug/L		99
65)	1,3-Dichloropropane	14.73	76	254916	54.0691	ug/L		94
66)	Tetrachloroethene	14.87	166	165478	53.9016	ug/L		97
67)	Dibromochloromethane	15.17	129	187125	55.3134	ug/L		98
68)	1,2-Dibromoethane	15.48	107	145905	54.8470	ug/L		99
69)	1-Chlorohexane	15.59	91	213275	55.1854	ug/L		86
70)	Chlorobenzene	16.07	112	421684	52.7217	ug/L	#	68
71)	1,1,1,2-Tetrachloroethane	16.11	131	172886	53.8335	ug/L		98
72)	Ethylbenzene	16.11	106	233514	54.5577	ug/L		98
73)	m-,p-Xylene	16.22	106	560207	106.9693	ug/L		96
74)	o-Xylene	16.88	106	278846	56.5302	ug/L		96
75)	Styrene	16.92	104	471370	56.1451	ug/L		94
76)	Bromoform	17.49	173	131127	54.8964	ug/L		99
77)	Isopropylbenzene	17.38	105	740395	55.8373	ug/L		98
79)	1,1,2,2-Tetrachloroethane	17.65	83	199941	53.8747	ug/L		96
81)	1,2,3-Trichloropropane	17.87	110	61269	53.9200	ug/L		97
82)	trans-1,4-Dichloro-2-Buten	17.93	53	73183	53.4153	ug/L		91
83)	n-Propylbenzene	17.98	91	903295	55.9869	ug/L		98
84)	Bromobenzene	18.12	156	191943	54.7308	ug/L		98
85)	1,3,5-Trimethylbenzene	18.21	105	641908	55.8951	ug/L		95
86)	2-Chlorotoluene	18.30	91	578848	53.7519	ug/L		97
87)	4-Chlorotoluene	18.36	91	530900	53.9168	ug/L		97
88)	a-Methylstyrene	18.69	118	307671	55.1682	ug/L		99
89)	tert-Butylbenzene	18.76	134	134676	56.2719	ug/L		98
90)	1,2,4-Trimethylbenzene	18.82	105	666066	55.1494	ug/L		81
91)	sec-Butylbenzene	19.07	105	825213	56.1103	ug/L		99
92)	p-Isopropyltoluene	19.27	119	685445	56.4914	ug/L		100
93)	1,3-Dichlorobenzene	19.48	146	365219	53.8210	ug/L		96
94)	1,4-Dichlorobenzene	19.64	146	363309	52.5979	ug/L		98
95)	n-Butylbenzene	19.89	91	677494	55.5152	ug/L		98
96)	1,2-Dichlorobenzene	20.23	146	350298	53.6470	ug/L		96
97)	1,2-Dibromo-3-Chloropropan	21.41	75	43537	53.0196	ug/L		90
98)	1,2,4-Trichlorobenzene	22.76	180	262463	55.6006	ug/L		99
99)	Hexachlorobutadiene	22.95	225	150922	55.9053	ug/L		100
100)	Naphthalene	23.20	128	617866	56.9360	ug/L		100
101)	1,2,3-Trichlorobenzene	23.59	180	259953	55.9254	ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137529.D Vial: 8
Acq On : 26 Feb 2016 17:03 Operator: TMB
Sample : WG558920-08 50ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

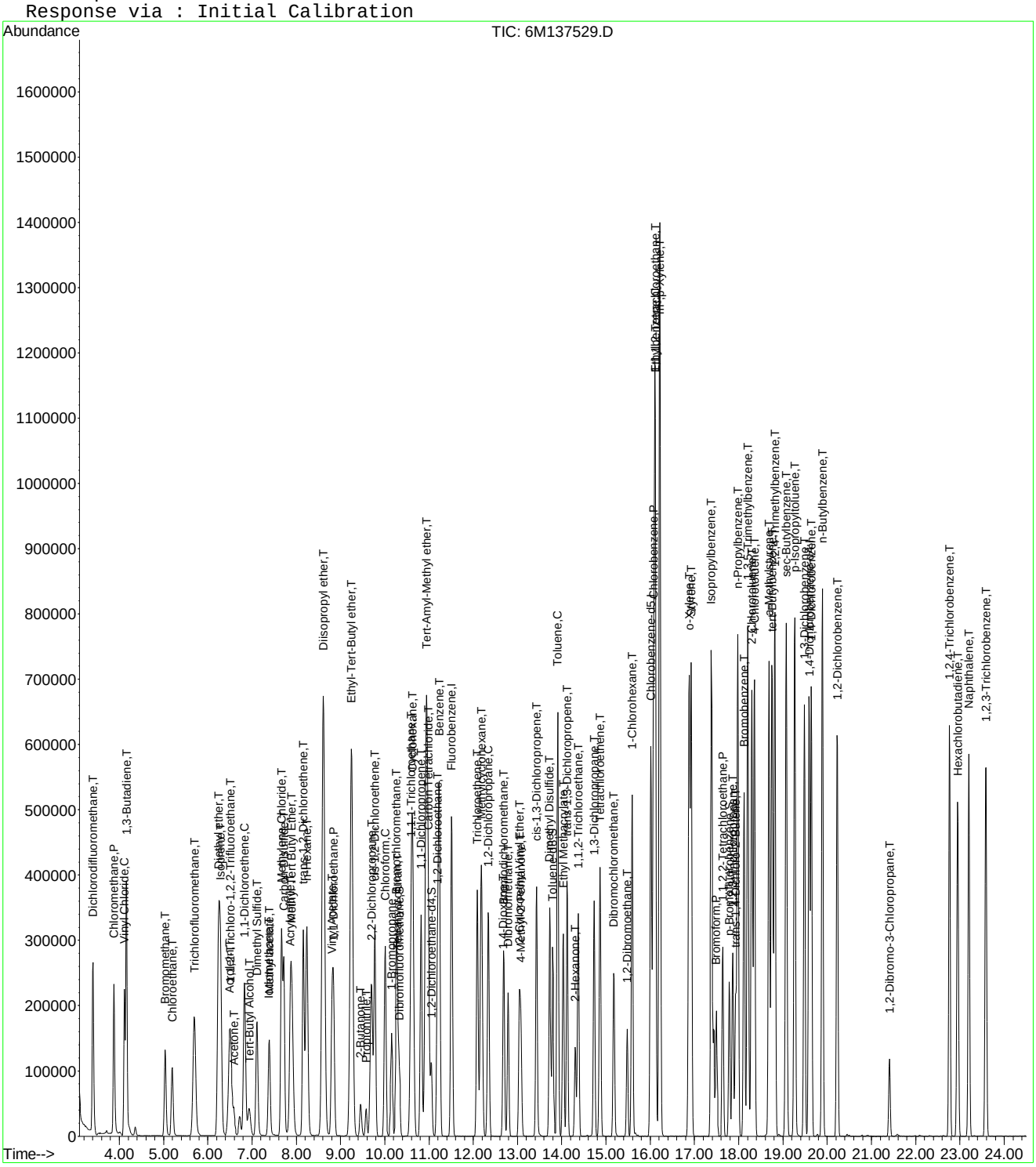

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137530.D Vial: 9
Acq On : 26 Feb 2016 17:35 Operator: TMB
Sample : WG558920-09 100ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:42 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	642087	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	466249	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	253947	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.32	111	162548	47.1921 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.38%		
43) 1,2-Dichloroethane-d4	11.06	65	210928	47.1653 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.34%		
58) Toluene-d8	13.80	98	518743	46.7957 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 93.60%		
80) p-Bromofluorobenzene	17.79	95	219336	47.0227 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 94.04%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	562397	95.3710 ug/L	99
3) Chloromethane	3.88	50	511342	83.2121 ug/L	98
4) Vinyl Chloride	4.12	62	453722	91.7337 ug/L	97
5) 1,3-Butadiene	4.16	54	371216	90.2064 ug/L	92
6) Bromomethane	5.03	94	236484	89.6925 ug/L	99
7) Chloroethane	5.19	64	259484	92.5233 ug/L	94
8) Trichlorofluoromethane	5.69	101	593589	89.3146 ug/L	99
9) Diethyl ether	6.23	59	599424	196.0563 ug/L	94
10) Isoprene	6.28	67	429478	99.1954 ug/L	86
11) Acrolein	6.48	56	58142	100.1359 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	295880	93.2711 ug/L	94
13) Acetone	6.59	43	134155	95.5525 ug/L	97
14) 1,1-Dichloroethene	6.83	61	525920	93.5964 ug/L	92
15) Tert-Butyl Alcohol	6.94	59	207755	396.2496 ug/L	97
16) Dimethyl Sulfide	7.11	62	269784	98.9613 ug/L	92
17) Iodomethane	7.38	142	252699	98.0787 ug/L	90
18) Methyl acetate	7.39	43	375036	96.0437 ug/L	97
19) Methylene Chloride	7.67	84	311212	91.9654 ug/L	80
20) Carbon Disulfide	7.72	76	1037082	96.4646 ug/L	99
21) Acrylonitrile	7.86	53	165829	103.3311 ug/L	99
22) Methyl Tert Butyl Ether	7.89	73	942489	97.5263 ug/L	93
23) trans-1,2-Dichloroethene	8.16	96	289637	93.3071 ug/L	87
24) n-Hexane	8.23	57	555752	98.5944 ug/L	98
25) Diisopropyl ether	8.61	45	2877959	196.9296 ug/L	96
26) Vinyl Acetate	8.80	43	731541	96.8365 ug/L	99
27) 1,1-Dichloroethane	8.83	63	621539	92.8721 ug/L	98
28) Ethyl-Tert-Butyl ether	9.24	59	2342177	199.9557 ug/L	96
29) 2-Butanone	9.45	43	207126	93.3235 ug/L	95
30) Propionitrile	9.57	54	121992	198.5994 ug/L	98
31) 2,2-Dichloropropane	9.69	77	491609	91.5150 ug/L	98
32) cis-1,2-Dichloroethene	9.77	96	321521	92.7784 ug/L	96
33) Chloroform	10.01	83	568519	90.9606 ug/L	95
34) 1-Bromopropane	10.16	122	47570	100.1217 ug/L	99
35) Bromochloromethane	10.26	130	193434	94.9975 ug/L	100
36) Tetrahydrofuran	10.29	42	287880	195.3143 ug/L	95
38) 1,1,1-Trichloroethane	10.60	97	511473	92.6461 ug/L	98
39) Cyclohexane	10.63	56	631373	100.8552 ug/L	90
40) 1,1-Dichloropropene	10.82	75	416243	93.6230 ug/L	97
41) Tert-Amyl-Methyl ether	10.94	73	1879478	202.2624 ug/L	92
42) Carbon Tetrachloride	10.99	117	485191	94.0581 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137530.D Vial: 9
Acq On : 26 Feb 2016 17:35 Operator: TMB
Sample : WG558920-09 100ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:42 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	498315	93.4118	ug/L	98
46)	Benzene	11.23	78	1182199	88.3862	ug/L	91
47)	Trichloroethene	12.09	130	294176	93.0987	ug/L	90
48)	Methylcyclohexane	12.18	83	515585	100.9337	ug/L	88
49)	1,2-Dichloropropane	12.34	63	342055	95.0452	ug/L	100
50)	1,4-Dioxane	12.67	88	17776	381.1583	ug/L	84
51)	Bromodichloromethane	12.68	83	452280	95.7660	ug/L	97
52)	Dibromomethane	12.79	93	202292	96.1028	ug/L	98
53)	2-Chloroethyl Vinyl Ether	13.04	63	206349	104.2447	ug/L	97
54)	4-Methyl-2-Pentanone	13.07	58	145646	97.1712	ug/L	93
55)	cis-1,3-Dichloropropene	13.43	75	509093	97.8384	ug/L	95
56)	Dimethyl Disulfide	13.72	79	282091	107.4894	ug/L	96
59)	Toluene	13.91	91	1184465	89.8074	ug/L	100
60)	Ethyl Methacrylate	14.04	69	445228	105.3560	ug/L	94
62)	trans-1,3-Dichloropropene	14.12	75	494673	97.5390	ug/L	99
63)	1,1,2-Trichloroethane	14.38	97	261258	94.7723	ug/L	99
64)	2-Hexanone	14.31	43	305856	97.2318	ug/L	100
65)	1,3-Dichloropropane	14.74	76	469121	93.8906	ug/L	93
66)	Tetrachloroethene	14.87	166	296672	91.1851	ug/L	98
67)	Dibromochloromethane	15.17	129	347661	96.9706	ug/L	98
68)	1,2-Dibromoethane	15.48	107	270599	95.9830	ug/L	97
69)	1-Chlorohexane	15.59	91	420885	102.7620	ug/L	86
70)	Chlorobenzene	16.07	112	765249	90.2797	ug/L	69
71)	1,1,1,2-Tetrachloroethane	16.11	131	320669	94.2184	ug/L	97
72)	Ethylbenzene	16.10	106	422350	93.1110	ug/L	97
73)	m-,p-Xylene	16.22	106	1018750	183.5539	ug/L	96
74)	o-Xylene	16.87	106	503867	96.3867	ug/L	94
75)	Styrene	16.92	104	871975	98.0029	ug/L	94
76)	Bromoform	17.49	173	243410	96.1558	ug/L	99
77)	Isopropylbenzene	17.38	105	1335991	95.0715	ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.65	83	376052	94.7950	ug/L	96
81)	1,2,3-Trichloropropane	17.87	110	114333	94.1314	ug/L	95
82)	trans-1,4-Dichloro-2-Buten	17.93	53	150048	102.4566	ug/L	89
83)	n-Propylbenzene	17.98	91	1628674	94.4377	ug/L	98
84)	Bromobenzene	18.13	156	352357	93.9933	ug/L	98
85)	1,3,5-Trimethylbenzene	18.21	105	1165530	94.9464	ug/L	95
86)	2-Chlorotoluene	18.30	91	1069398	92.9015	ug/L	97
87)	4-Chlorotoluene	18.35	91	957337	90.9557	ug/L	97
88)	a-Methylstyrene	18.69	118	626810	105.1459	ug/L	98
89)	tert-Butylbenzene	18.75	134	243763	95.2846	ug/L	87
90)	1,2,4-Trimethylbenzene	18.82	105	1211949	93.8776	ug/L	81
91)	sec-Butylbenzene	19.08	105	1482811	94.3227	ug/L	99
92)	p-Isopropyltoluene	19.27	119	1243718	95.8928	ug/L	100
93)	1,3-Dichlorobenzene	19.48	146	670076	92.3797	ug/L	97
94)	1,4-Dichlorobenzene	19.64	146	665185	90.0925	ug/L	97
95)	n-Butylbenzene	19.89	91	1241772	95.1924	ug/L	98
96)	1,2-Dichlorobenzene	20.22	146	649160	93.0065	ug/L	96
97)	1,2-Dibromo-3-Chloropropan	21.41	75	84975	96.8107	ug/L	89
98)	1,2,4-Trichlorobenzene	22.76	180	475402	94.2164	ug/L	99
99)	Hexachlorobutadiene	22.95	225	270006	93.5681	ug/L	100
100)	Naphthalene	23.20	128	1163220	100.2786	ug/L	100
101)	1,2,3-Trichlorobenzene	23.58	180	465522	93.6933	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137530.D Vial: 9
Acq On : 26 Feb 2016 17:35 Operator: TMB
Sample : WG558920-09 100ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

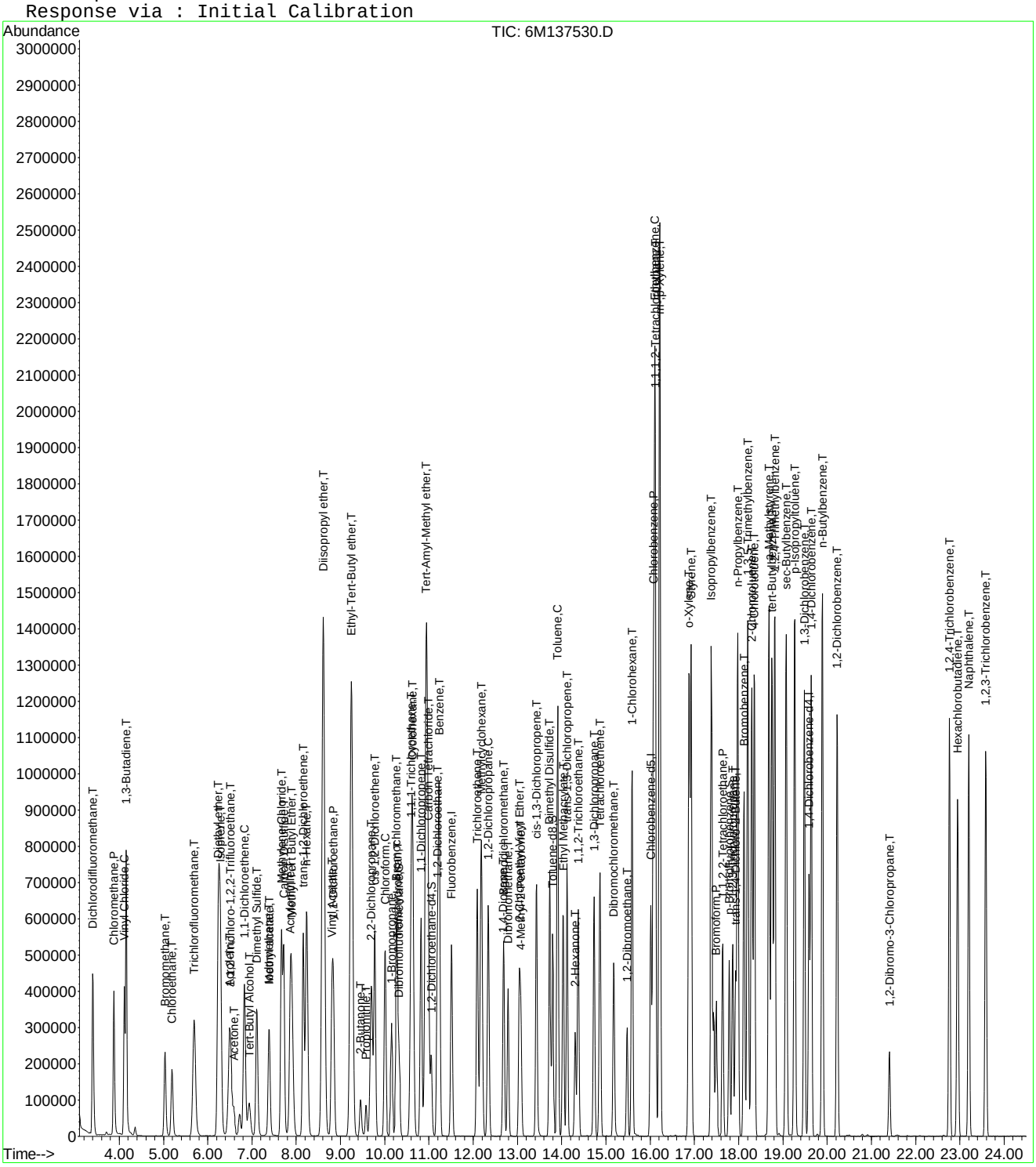

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137531.D Vial: 10
Acq On : 26 Feb 2016 18:07 Operator: TMB
Sample : WG558920-10 200ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:43 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	661999	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	479329	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	273657	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	351336	98.9344 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 197.86%#		
43) 1,2-Dichloroethane-d4	11.05	65	450300	97.6622 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 195.32%#		
58) Toluene-d8	13.80	98	1096959	96.2561 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 192.52%#		
80) p-Bromofluorobenzene	17.79	95	487968	97.0790 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 194.16%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	1228760	202.1049 ug/L	98
3) Chloromethane	3.88	50	1125279	177.6118 ug/L	98
4) Vinyl Chloride	4.12	62	989076	193.9570 ug/L	97
5) 1,3-Butadiene	4.16	54	745589	175.7303 ug/L	94
6) Bromomethane	5.03	94	548799	201.8852 ug/L	100
7) Chloroethane	5.19	64	579871	200.5435 ug/L	96
8) Trichlorofluoromethane	5.69	101	1297014	189.2858 ug/L	100
9) Diethyl ether	6.23	59	1563	0.4958 ug/L #	49
10) Isoprene	6.27	67	894422	200.3686 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	649915	198.7121 ug/L	93
13) Acetone	6.59	43	290441	205.4763 ug/L	99
14) 1,1-Dichloroethene	6.83	61	1161250	200.4481 ug/L	92
15) Tert-Butyl Alcohol	6.83	59	39858	73.7343 ug/L #	57
16) Dimethyl Sulfide	7.11	62	576142	204.9817 ug/L	92
17) Iodomethane	7.38	142	559892	205.0669 ug/L	91
18) Methyl acetate	7.39	43	775842	192.7107 ug/L	97
19) Methylene Chloride	7.67	84	681801	195.4170 ug/L	78
20) Carbon Disulfide	7.72	76	2184454	197.0763 ug/L	98
21) Acrylonitrile	7.90	53	25391	15.3457 ug/L #	34
22) Methyl Tert Butyl Ether	7.90	73	2079733	208.7322 ug/L	92
23) trans-1,2-Dichloroethene	8.16	96	635434	198.5489 ug/L	86
24) n-Hexane	8.23	57	1159756	199.5603 ug/L	99
25) Diisopropyl ether	8.63	45	8975	0.5957 ug/L #	37
26) Vinyl Acetate	8.80	43	1656751	212.7131 ug/L	98
27) 1,1-Dichloroethane	8.83	63	1360017	197.1051 ug/L	97
28) Ethyl-Tert-Butyl ether	9.23	59	4690	0.3884 ug/L #	76
29) 2-Butanone	9.45	43	450489	196.8688 ug/L	97
30) Propionitrile	9.59	54	193	0.3047 ug/L #	55
31) 2,2-Dichloropropane	9.69	77	1084788	195.8637 ug/L	97
32) cis-1,2-Dichloroethene	9.77	96	711282	199.0746 ug/L	99
33) Chloroform	10.00	83	1259701	195.4845 ug/L	96
34) 1-Bromopropane	10.16	122	101190	206.5710 ug/L	98
35) Bromochloromethane	10.26	130	430294	204.9658 ug/L	100
36) Tetrahydrofuran	10.31	42	4560	0.8620 ug/L #	82
38) 1,1,1-Trichloroethane	10.60	97	1139307	200.1621 ug/L	98
39) Cyclohexane	10.63	56	1322081	204.8363 ug/L	90
40) 1,1-Dichloropropene	10.83	75	913448	199.2765 ug/L	99
41) Tert-Amyl-Methyl ether	10.93	73	3689	0.3851 ug/L #	57
42) Carbon Tetrachloride	10.99	117	1067649	200.7466 ug/L	97
45) 1,2-Dichloroethane	11.19	62	1098127	199.6582 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M137531.D 826_SL.M Mon Feb 29 16:01:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137531.D Vial: 10
Acq On : 26 Feb 2016 18:07 Operator: TMB
Sample : WG558920-10 200ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:43 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
46)	Benzene	11.23	78	2576436	186.8313 ug/L	90
47)	Trichloroethene	12.09	130	648704	199.1220 ug/L	90
48)	Methylcyclohexane	12.18	83	1075003	204.1184 ug/L	87
49)	1,2-Dichloropropane	12.34	63	757110	204.0468 ug/L	100
50)	1,4-Dioxane	12.68	88	863	47.3107 ug/L #	17
51)	Bromodichloromethane	12.68	83	1017483	208.9621 ug/L	97
52)	Dibromomethane	12.79	93	451601	208.0889 ug/L	97
53)	2-Chloroethyl Vinyl Ether	13.03	63	470311	230.4481 ug/L	98
54)	4-Methyl-2-Pentanone	13.07	58	332135	214.9265 ug/L	95
55)	cis-1,3-Dichloropropene	13.43	75	1150962	214.5407 ug/L	96
56)	Dimethyl Disulfide	13.73	79	648612	239.7166 ug/L	96
59)	Toluene	13.91	91	2588299	190.8923 ug/L	99
60)	Ethyl Methacrylate	14.03	69	978791	225.2947 ug/L	94
62)	trans-1,3-Dichloropropene	14.12	75	1110336	212.9604 ug/L	98
63)	1,1,2-Trichloroethane	14.38	97	578586	204.1568 ug/L	99
64)	2-Hexanone	14.31	43	689071	213.0784 ug/L	99
65)	1,3-Dichloropropane	14.74	76	1034423	201.3815 ug/L	93
66)	Tetrachloroethene	14.87	166	644718	192.7530 ug/L	97
67)	Dibromochloromethane	15.18	129	780769	211.8317 ug/L	100
68)	1,2-Dibromoethane	15.48	107	610277	210.5616 ug/L	98
69)	1-Chlorohexane	15.59	91	900931	213.9661 ug/L	86
70)	Chlorobenzene	16.07	112	1706160	195.7904 ug/L #	68
71)	1,1,1,2-Tetrachloroethane	16.11	131	721225	206.1264 ug/L	97
72)	Ethylbenzene	16.11	106	946980	203.0736 ug/L	98
73)	m-,p-Xylene	16.22	106	2242794	393.0696 ug/L	97
74)	o-Xylene	16.87	106	1130903	210.4315 ug/L	95
75)	Styrene	16.92	104	1988734	217.4182 ug/L	93
76)	Bromoform	17.49	173	561872	215.9030 ug/L	99
77)	Isopropylbenzene	17.38	105	2989967	206.9652 ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.64	83	859540	201.0666 ug/L	95
81)	1,2,3-Trichloropropane	17.87	110	265884	203.1382 ug/L	89
82)	trans-1,4-Dichloro-2-Buten	17.93	53	340440	215.7181 ug/L	90
83)	n-Propylbenzene	17.98	91	3639812	195.8513 ug/L	98
84)	Bromobenzene	18.13	156	802539	198.6628 ug/L	99
85)	1,3,5-Trimethylbenzene	18.21	105	2665531	201.5000 ug/L	96
86)	2-Chlorotoluene	18.30	91	2450953	197.5855 ug/L	97
87)	4-Chlorotoluene	18.35	91	2149568	189.5191 ug/L	97
88)	a-Methylstyrene	18.69	118	1416560	220.5099 ug/L	98
89)	tert-Butylbenzene	18.75	134	559469	202.9400 ug/L	85
90)	1,2,4-Trimethylbenzene	18.82	105	2775173	199.4822 ug/L	81
91)	sec-Butylbenzene	19.08	105	3369131	198.8771 ug/L	100
92)	p-Isopropyltoluene	19.26	119	2833911	202.7621 ug/L	99
93)	1,3-Dichlorobenzene	19.49	146	1523154	194.8646 ug/L	95
94)	1,4-Dichlorobenzene	19.64	146	1521474	191.2260 ug/L	97
95)	n-Butylbenzene	19.89	91	2819417	200.5655 ug/L	98
96)	1,2-Dichlorobenzene	20.22	146	1485290	197.4738 ug/L	95
97)	1,2-Dibromo-3-Chloropropan	21.41	75	195547	206.7378 ug/L	89
98)	1,2,4-Trichlorobenzene	22.76	180	1054519	193.9351 ug/L	98
99)	Hexachlorobutadiene	22.95	225	597195	192.0469 ug/L	99
100)	Naphthalene	23.20	128	2579088	206.3237 ug/L	99
101)	1,2,3-Trichlorobenzene	23.58	180	1038439	193.9482 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M137531.D 826_SL.M Mon Feb 29 16:01:43 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137531.D Vial: 10
Acq On : 26 Feb 2016 18:07 Operator: TMB
Sample : WG558920-10 200ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

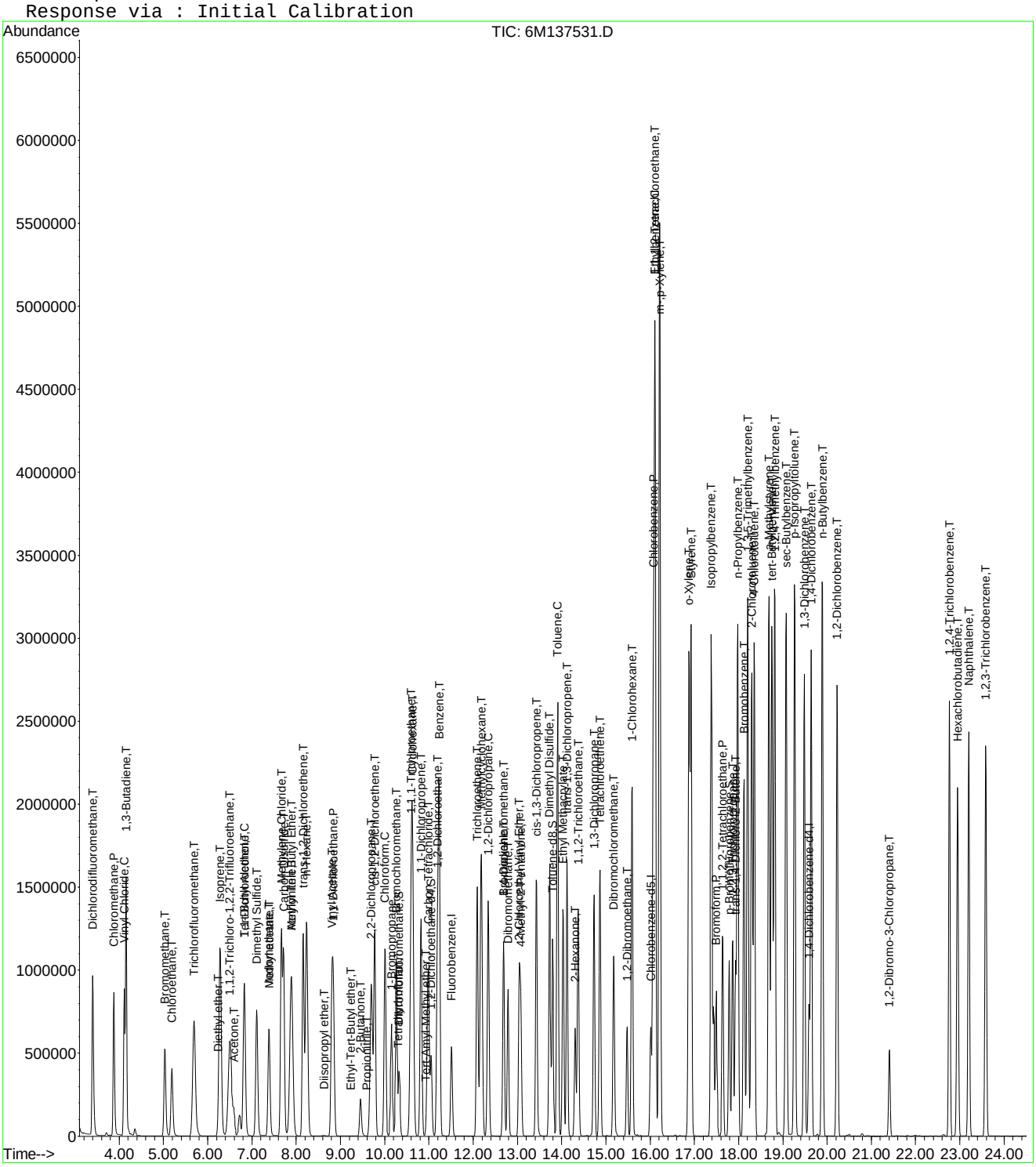

6M137531.D 826_SL.M Mon Feb 29 16:01:43 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137532.D Vial: 11
Acq On : 26 Feb 2016 18:39 Operator: TMB
Sample : WG558920-11 300ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:43 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	707233	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	525178	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	308135	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	555974	146.5460 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 293.10%#		
43) 1,2-Dichloroethane-d4	11.05	65	713394	144.8268 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 289.66%#		
58) Toluene-d8	13.80	98	1741152	139.4446 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 278.88%#		
80) p-Bromofluorobenzene	17.79	95	787625	139.1615 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 278.32%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	1997367	307.5122 ug/L	98
3) Chloromethane	3.88	50	1848014	273.0309 ug/L	98
4) Vinyl Chloride	4.11	62	1515327	278.1486 ug/L	97
5) 1,3-Butadiene	4.15	54	1176840	259.6328 ug/L	94
6) Bromomethane	5.03	94	924558	318.3612 ug/L	100
7) Chloroethane	5.18	64	952580	308.3709 ug/L	96
8) Trichlorofluoromethane	5.68	101	2124957	290.2808 ug/L	99
9) Diethyl ether	6.23	59	1011802	300.4509 ug/L	94
10) Isoprene	6.27	67	1489357	312.3064 ug/L	86
11) Acrolein	6.49	56	100305	156.8389 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	1067610	305.5451 ug/L	94
13) Acetone	6.59	43	448789	299.1551 ug/L	99
14) 1,1-Dichloroethene	6.82	61	1895304	306.2315 ug/L	92
15) Tert-Butyl Alcohol	6.95	59	370925	642.2954 ug/L	99
16) Dimethyl Sulfide	7.11	62	950681	316.6032 ug/L	94
17) Iodomethane	7.38	142	877751	298.6036 ug/L	91
18) Methyl acetate	7.40	43	1274555	296.3371 ug/L	98
19) Methylene Chloride	7.66	84	1102725	295.8467 ug/L	79
20) Carbon Disulfide	7.71	76	3583096	302.5832 ug/L	98
21) Acrylonitrile	7.86	53	296066	167.4906 ug/L	98
22) Methyl Tert Butyl Ether	7.90	73	3392519	318.7124 ug/L	92
23) trans-1,2-Dichloroethene	8.16	96	1037130	303.3368 ug/L	86
24) n-Hexane	8.23	57	1917686	308.8729 ug/L	99
25) Diisopropyl ether	8.61	45	4780310	296.9708 ug/L	96
26) Vinyl Acetate	8.80	43	2633859	316.5369 ug/L	99
27) 1,1-Dichloroethane	8.83	63	2210234	299.8379 ug/L	97
28) Ethyl-Tert-Butyl ether	9.24	59	3979837	308.4685 ug/L	96
29) 2-Butanone	9.45	43	727982	297.7887 ug/L	98
30) Propionitrile	9.58	54	209887	310.2156 ug/L	99
31) 2,2-Dichloropropane	9.69	77	1783568	301.4350 ug/L	96
32) cis-1,2-Dichloroethene	9.77	96	1159875	303.8646 ug/L	98
33) Chloroform	10.00	83	2040554	296.4065 ug/L	96
34) 1-Bromopropane	10.15	122	167090	319.2839 ug/L	98
35) Bromochloromethane	10.26	130	694571	309.6903 ug/L	99
36) Tetrahydrofuran	10.30	42	490636	303.4020 ug/L	96
38) 1,1,1-Trichloroethane	10.60	97	1858746	305.6722 ug/L	98
39) Cyclohexane	10.63	56	2201094	319.2142 ug/L	89
40) 1,1-Dichloropropene	10.83	75	1504422	307.2111 ug/L	99
41) Tert-Amyl-Methyl ether	10.94	73	3231746	315.7523 ug/L	93
42) Carbon Tetrachloride	10.99	117	1763858	310.4404 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M137532.D 826_SL.M Mon Feb 29 16:01:44 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137532.D Vial: 11
Acq On : 26 Feb 2016 18:39 Operator: TMB
Sample : WG558920-11 300ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:43 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	11.19	62	1778788	302.7287	ug/L		98
46)	Benzene	11.23	78	4155462	282.0619	ug/L		90
47)	Trichloroethene	12.09	130	1058154	304.0300	ug/L		90
48)	Methylcyclohexane	12.18	83	1798917	319.7263	ug/L		88
49)	1,2-Dichloropropane	12.34	63	1232481	310.9180	ug/L		100
50)	1,4-Dioxane	12.67	88	32606	614.2458	ug/L		84
51)	Bromodichloromethane	12.68	83	1653218	317.8084	ug/L		96
52)	Dibromomethane	12.79	93	733410	316.3265	ug/L		98
53)	2-Chloroethyl Vinyl Ether	13.03	63	766489	351.5513	ug/L		97
54)	4-Methyl-2-Pentanone	13.07	58	543988	329.5031	ug/L		95
55)	cis-1,3-Dichloropropene	13.42	75	1877090	327.5130	ug/L		95
56)	Dimethyl Disulfide	13.73	79	1088350	376.5100	ug/L		96
59)	Toluene	13.91	91	4193210	282.2590	ug/L		99
60)	Ethyl Methacrylate	14.03	69	1632375	342.9321	ug/L		95
62)	trans-1,3-Dichloropropene	14.12	75	1832609	320.8053	ug/L		98
63)	1,1,2-Trichloroethane	14.38	97	942438	303.5120	ug/L		98
64)	2-Hexanone	14.31	43	1154652	325.8770	ug/L		98
65)	1,3-Dichloropropane	14.74	76	1702509	302.5088	ug/L		94
66)	Tetrachloroethene	14.87	166	1062175	289.8375	ug/L		97
67)	Dibromochloromethane	15.18	129	1292929	320.1624	ug/L		100
68)	1,2-Dibromoethane	15.48	107	1008106	317.4575	ug/L		98
69)	1-Chlorohexane	15.59	91	1494127	323.8681	ug/L		86
70)	Chlorobenzene	16.07	112	2773062	290.4413	ug/L	#	66
71)	1,1,1,2-Tetrachloroethane	16.11	131	1196001	311.9762	ug/L		97
72)	Ethylbenzene	16.11	106	1556732	304.6869	ug/L		100
73)	m-,p-Xylene	16.22	106	3653753	584.4488	ug/L		99
74)	o-Xylene	16.87	106	1861503	316.1378	ug/L		96
75)	Styrene	16.92	104	3280614	327.3419	ug/L		91
76)	Bromoform	17.49	173	968059	339.5083	ug/L		100
77)	Isopropylbenzene	17.38	105	4859396	307.0014	ug/L		99
79)	1,1,2,2-Tetrachloroethane	17.64	83	1473362	306.0898	ug/L		95
81)	1,2,3-Trichloropropane	17.87	110	450710	305.8173	ug/L		97
82)	trans-1,4-Dichloro-2-Buten	17.93	53	587175	330.4298	ug/L		92
83)	n-Propylbenzene	17.98	91	5875551	280.7771	ug/L		99
84)	Bromobenzene	18.13	156	1329308	292.2413	ug/L		98
85)	1,3,5-Trimethylbenzene	18.21	105	4394146	295.0064	ug/L		96
86)	2-Chlorotoluene	18.30	91	4027318	288.3378	ug/L		97
87)	4-Chlorotoluene	18.35	91	3574535	279.8896	ug/L		97
88)	a-Methylstyrene	18.69	118	2387215	330.0275	ug/L		99
89)	tert-Butylbenzene	18.75	134	927820	298.8965	ug/L		84
90)	1,2,4-Trimethylbenzene	18.82	105	4532965	289.3756	ug/L		82
91)	sec-Butylbenzene	19.08	105	5502198	288.4488	ug/L		100
92)	p-Isopropyltoluene	19.27	119	4664534	296.3974	ug/L		98
93)	1,3-Dichlorobenzene	19.49	146	2567994	291.7754	ug/L		95
94)	1,4-Dichlorobenzene	19.64	146	2568075	286.6525	ug/L		96
95)	n-Butylbenzene	19.89	91	4738000	299.3349	ug/L		98
96)	1,2-Dichlorobenzene	20.22	146	2506554	295.9653	ug/L		94
97)	1,2-Dibromo-3-Chloropropan	21.41	75	337125	316.5375	ug/L		88
98)	1,2,4-Trichlorobenzene	22.76	180	1820641	297.3664	ug/L		98
99)	Hexachlorobutadiene	22.95	225	1055064	301.3252	ug/L		99
100)	Naphthalene	23.20	128	4412465	313.4943	ug/L		98
101)	1,2,3-Trichlorobenzene	23.58	180	1777074	294.7650	ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137532.D Vial: 11
Acq On : 26 Feb 2016 18:39 Operator: TMB
Sample : WG558920-11 300ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

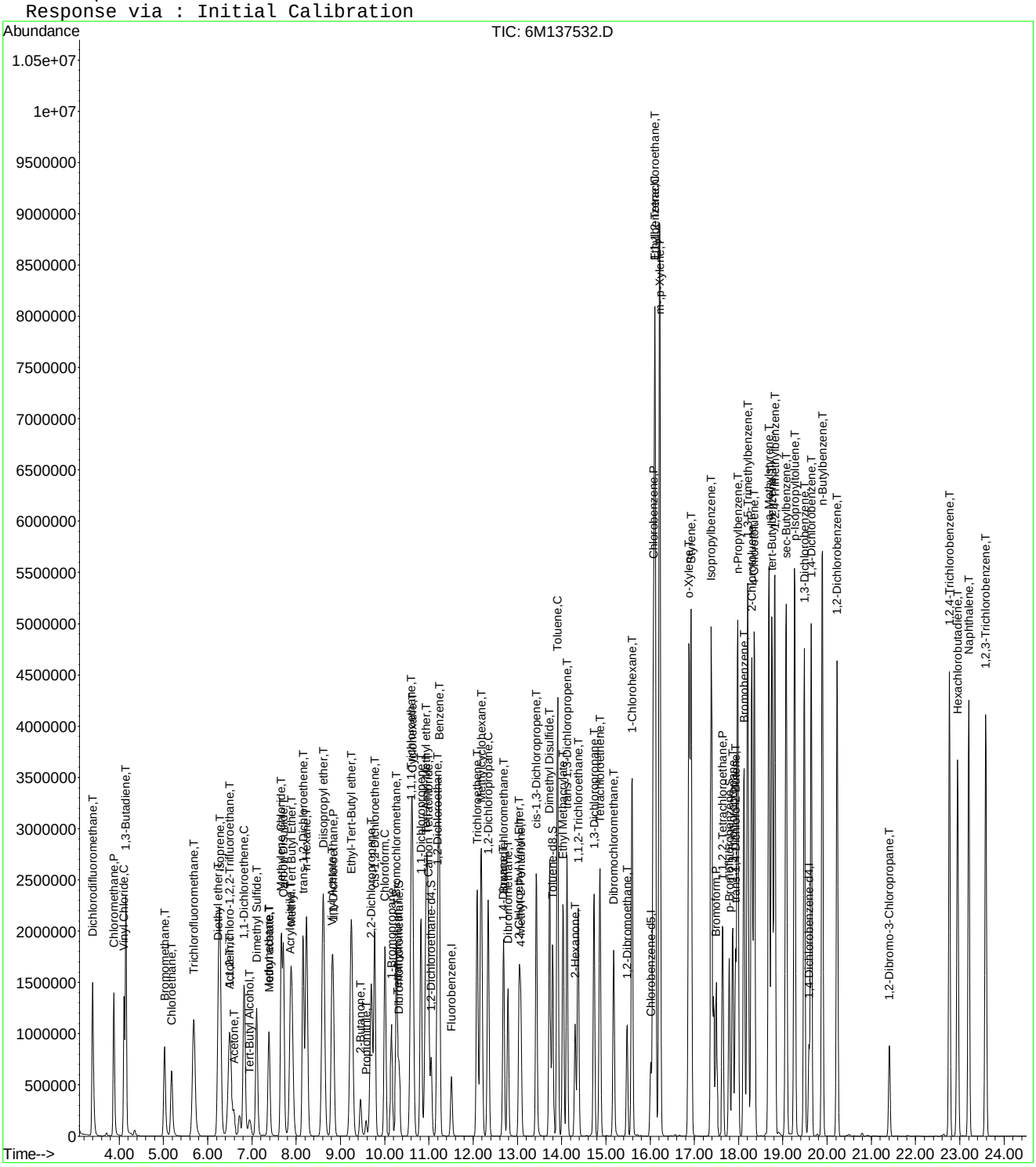

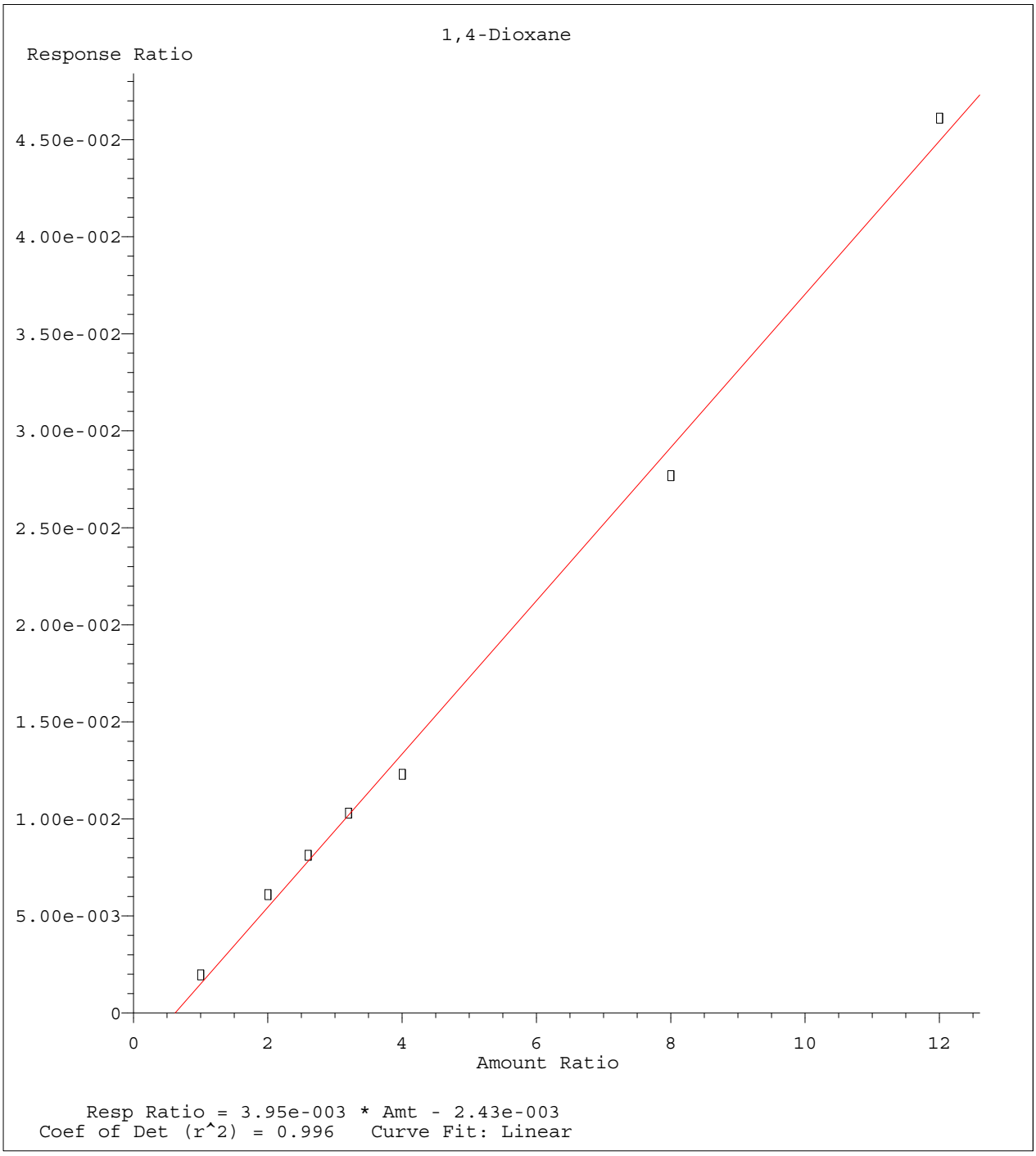

Method Name: C:\MSDCHEM\1\METHODS\826_SL.M
Calibration Table Last Updated: Mon Feb 29 08:51:12 2016

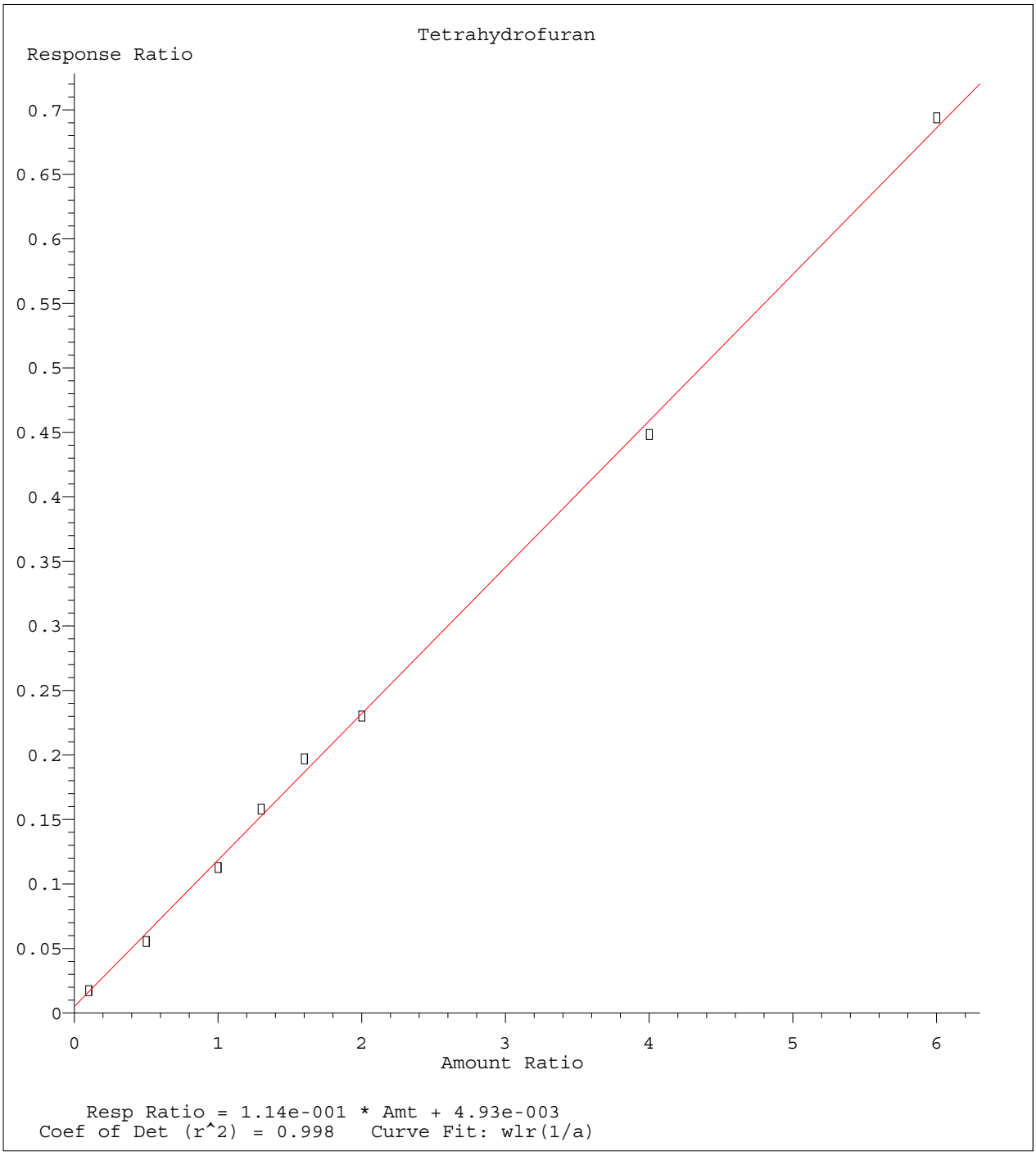

Method Name: C:\MSDCHEM\1\METHODS\826_SL.M
Calibration Table Last Updated: Mon Feb 29 08:51:12 2016

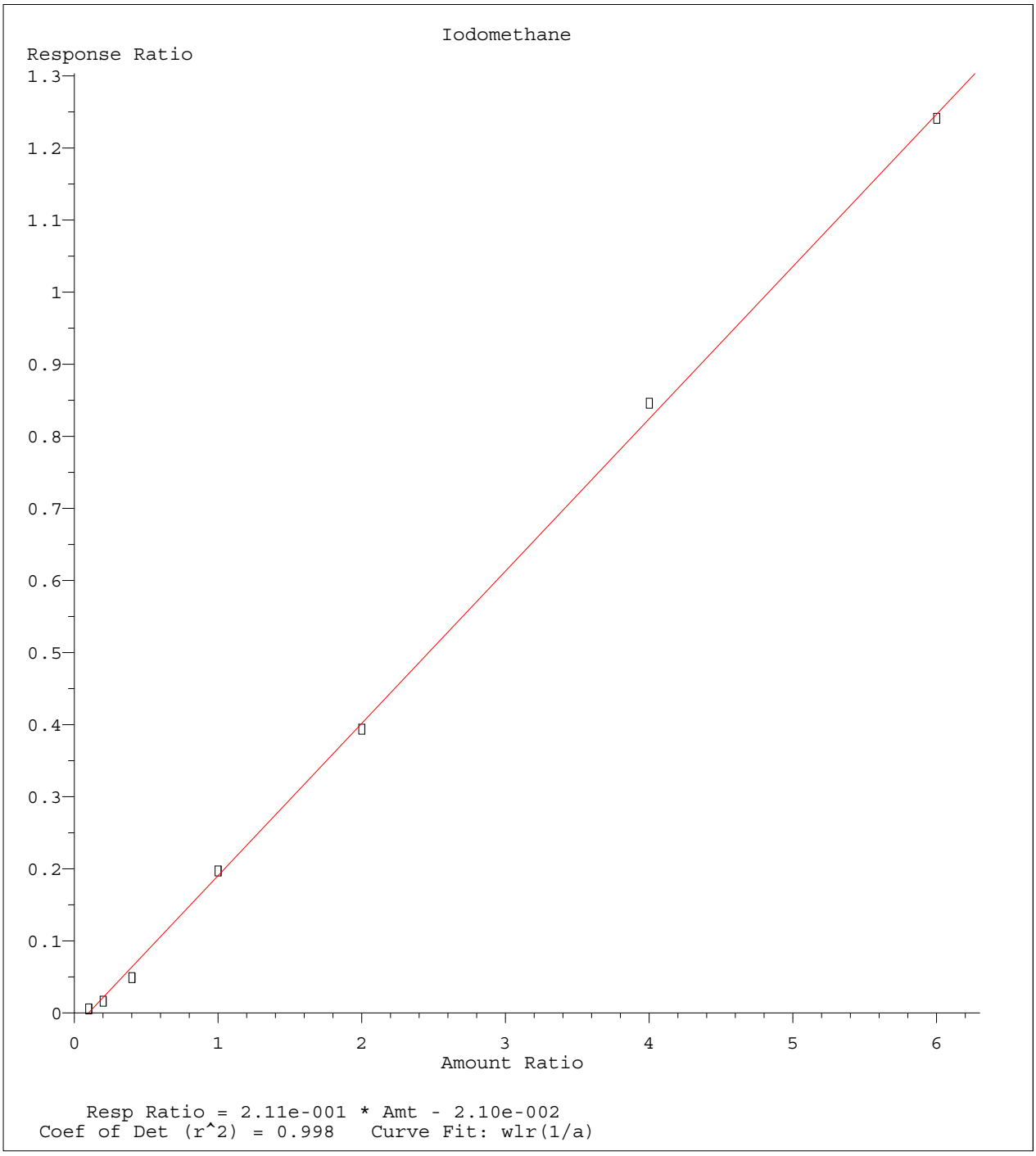

Method Name: C:\MSDCHEM\1\METHODS\826_SL.M
Calibration Table Last Updated: Mon Feb 29 08:51:12 2016

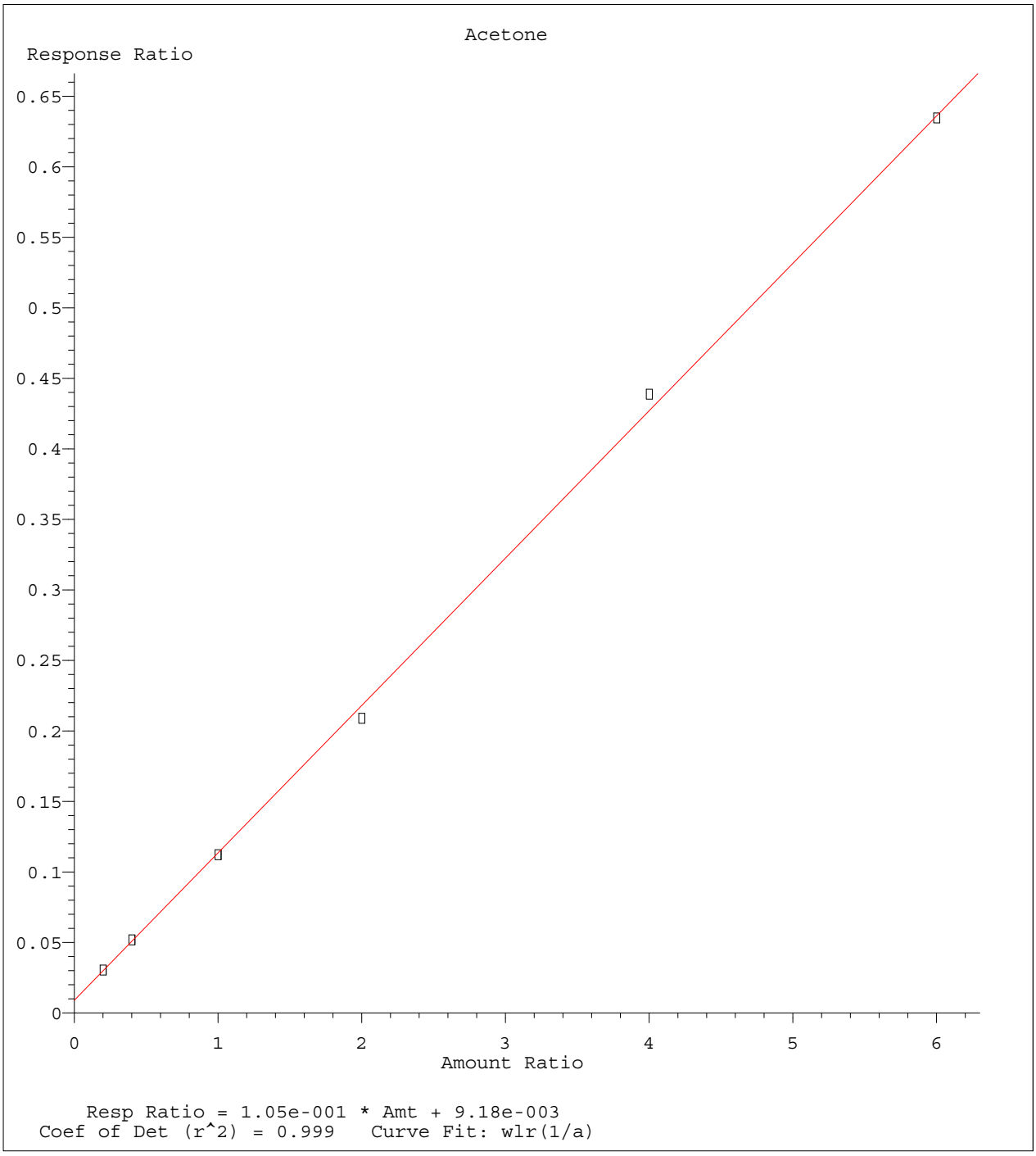

Method Name: C:\MSDCHEM\1\METHODS\826_SL.M
Calibration Table Last Updated: Mon Feb 29 08:51:12 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:44 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	697242	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	504277	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	281494	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.32	111	83790	22.4022 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 44.80%#		
43) 1,2-Dichloroethane-d4	11.05	65	107686	22.1747 ug/L	-0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 44.34%#		
58) Toluene-d8	13.80	98	259069	21.6082 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 43.22%#		
80) p-Bromofluorobenzene	17.79	95	108251	20.9365 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 41.88%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	355154	55.4626 ug/L	99
3) Chloromethane	3.88	50	339693	50.9064 ug/L	98
4) Vinyl Chloride	4.11	62	232790	43.3425 ug/L	98
5) 1,3-Butadiene	4.16	54	191696	42.8977 ug/L	93
6) Bromomethane	5.02	94	167650	58.5556 ug/L	99
7) Chloroethane	5.19	64	172370	56.5995 ug/L	98
8) Trichlorofluoromethane	5.68	101	345771	47.9110 ug/L	99
9) Diethyl ether	6.24	59	244439	73.6254 ug/L	93
10) Isoprene	6.27	67	268171	57.0391 ug/L	88
11) Acrolein	6.48	56	38698	61.3760 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	185858	53.9539 ug/L	94
13) Acetone	6.60	43	77335	48.6644 ug/L	96
14) 1,1-Dichloroethene	6.83	61	315114	51.6437 ug/L	92
15) Tert-Butyl Alcohol	6.95	59	120780	212.1401 ug/L	97
16) Dimethyl Sulfide	7.11	62	234426	79.1891 ug/L	96
17) Iodomethane	7.38	142	96886	37.8412 ug/L	92
18) Methyl acetate	7.39	43	223958	52.8169 ug/L	96
19) Methylene Chloride	7.67	84	196184	53.3878 ug/L	82
20) Carbon Disulfide	7.71	76	518243	44.3914 ug/L	99
21) Acrylonitrile	7.86	53	88595	50.8382 ug/L	99
22) Methyl Tert Butyl Ether	7.89	73	557115	53.0885 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	181115	53.7310 ug/L	84
24) n-Hexane	8.23	57	293885	48.0130 ug/L	99
25) Diisopropyl ether	8.61	45	1440779	90.7892 ug/L	96
26) Vinyl Acetate	8.80	43	309031	37.6715 ug/L	98
27) 1,1-Dichloroethane	8.83	63	365886	50.3469 ug/L	98
28) Ethyl-Tert-Butyl ether	9.25	59	1142199	89.7979 ug/L	96
29) 2-Butanone	9.46	43	118678	49.2421 ug/L	97
30) Propionitrile	9.58	54	62654	93.9303 ug/L	99
31) 2,2-Dichloropropane	9.69	77	309886	53.1233 ug/L	95
32) cis-1,2-Dichloroethene	9.77	96	203750	54.1434 ug/L	96
33) Chloroform	10.01	83	344145	50.7061 ug/L	96
34) 1-Bromopropane	10.15	122	45722	88.6198 ug/L	99
35) Bromochloromethane	10.26	130	115189	52.0956 ug/L	100
36) Tetrahydrofuran	10.29	42	140281	86.4486 ug/L	95
38) 1,1,1-Trichloroethane	10.60	97	311688	51.9918 ug/L	98
39) Cyclohexane	10.63	56	356880	52.4982 ug/L	88
40) 1,1-Dichloropropene	10.82	75	254739	52.7645 ug/L	97
41) Tert-Amyl-Methyl ether	10.95	73	1007162	99.8131 ug/L	93
42) Carbon Tetrachloride	10.99	117	286624	51.1689 ug/L	96

(#) = qualifier out of range (m) = manual integration
6M137535.D 826_SL.M Mon Feb 29 16:01:45 2016 Page 1

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:44 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	296979	51.2665 ug/L	98
46)	Benzene	11.23	78	732452	50.4293 ug/L	92
47)	Trichloroethene	12.09	130	187775	54.7248 ug/L	93
48)	Methylcyclohexane	12.18	83	293690	52.9463 ug/L	89
49)	1,2-Dichloropropane	12.33	63	215054	55.0291 ug/L	100
50)	1,4-Dioxane	12.67	88	9692	206.7214 ug/L	86
51)	Bromodichloromethane	12.68	83	264833	51.6400 ug/L	97
52)	Dibromomethane	12.78	93	115173	50.3870 ug/L	97
53)	2-Chloroethyl Vinyl Ether	13.04	63	118032	54.9113 ug/L	99
54)	4-Methyl-2-Pentanone	13.07	58	83435	51.2622 ug/L	92
55)	cis-1,3-Dichloropropene	13.43	75	332086	58.7723 ug/L	97
56)	Dimethyl Disulfide	13.72	79	160314	56.2546 ug/L	97
59)	Toluene	13.91	91	733544	51.4239 ug/L	99
60)	Ethyl Methacrylate	14.04	69	253929	55.5569 ug/L	99
62)	trans-1,3-Dichloropropene	14.12	75	289951	52.8608 ug/L	100
63)	1,1,2-Trichloroethane	14.38	97	158637	53.2065 ug/L	98
64)	2-Hexanone	14.31	43	174540	51.3021 ug/L	98
65)	1,3-Dichloropropane	14.73	76	296777	54.9182 ug/L	95
66)	Tetrachloroethene	14.87	166	179884	51.1197 ug/L	98
67)	Dibromochloromethane	15.17	129	201014	51.8393 ug/L	99
68)	1,2-Dibromoethane	15.48	107	163614	53.6583 ug/L	99
69)	1-Chlorohexane	15.59	91	237869	53.6977 ug/L	87
70)	Chlorobenzene	16.07	112	484642	52.8637 ug/L	70
71)	1,1,1,2-Tetrachloroethane	16.11	131	190856	51.8481 ug/L	98
72)	Ethylbenzene	16.10	106	257103	52.4064 ug/L	97
73)	m-,p-Xylene	16.22	106	631680	105.2305 ug/L	96
74)	o-Xylene	16.88	106	321591	56.8793 ug/L	96
75)	Styrene	16.92	104	532085	55.2923 ug/L	95
76)	Bromoform	17.49	173	134827	49.2451 ug/L	99
77)	Isopropylbenzene	17.38	105	829435	54.5730 ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.64	83	229283	52.1415 ug/L	96
81)	1,2,3-Trichloropropane	17.87	110	71564	53.1534 ug/L	99
82)	trans-1,4-Dichloro-2-Buten	17.93	53	68292	42.0681 ug/L	85
83)	n-Propylbenzene	17.98	91	1006100	52.6291 ug/L	98
84)	Bromobenzene	18.12	156	215387	51.8331 ug/L	99
85)	1,3,5-Trimethylbenzene	18.21	105	716527	52.6576 ug/L	95
86)	2-Chlorotoluene	18.30	91	664750	52.0974 ug/L	96
87)	4-Chlorotoluene	18.36	91	607350	52.0569 ug/L	97
88)	a-Methylstyrene	18.69	118	378204	57.2343 ug/L	98
89)	tert-Butylbenzene	18.76	134	150883	53.2071 ug/L	99
90)	1,2,4-Trimethylbenzene	18.82	105	731933	51.1473 ug/L	81
91)	sec-Butylbenzene	19.07	105	883157	50.6807 ug/L	100
92)	p-Isopropyltoluene	19.27	119	732050	50.9189 ug/L	99
93)	1,3-Dichlorobenzene	19.48	146	418127	52.0038 ug/L	96
94)	1,4-Dichlorobenzene	19.64	146	423834	51.7864 ug/L	98
95)	n-Butylbenzene	19.89	91	705101	48.7625 ug/L	98
96)	1,2-Dichlorobenzene	20.22	146	421505	54.4802 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	21.41	75	50722	52.1318 ug/L	89
98)	1,2,4-Trichlorobenzene	22.76	180	285471	51.0389 ug/L	97
99)	Hexachlorobutadiene	22.94	225	152283	47.6080 ug/L	99
100)	Naphthalene	23.20	128	640676	49.8263 ug/L	100
101)	1,2,3-Trichlorobenzene	23.59	180	280768	50.9788 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

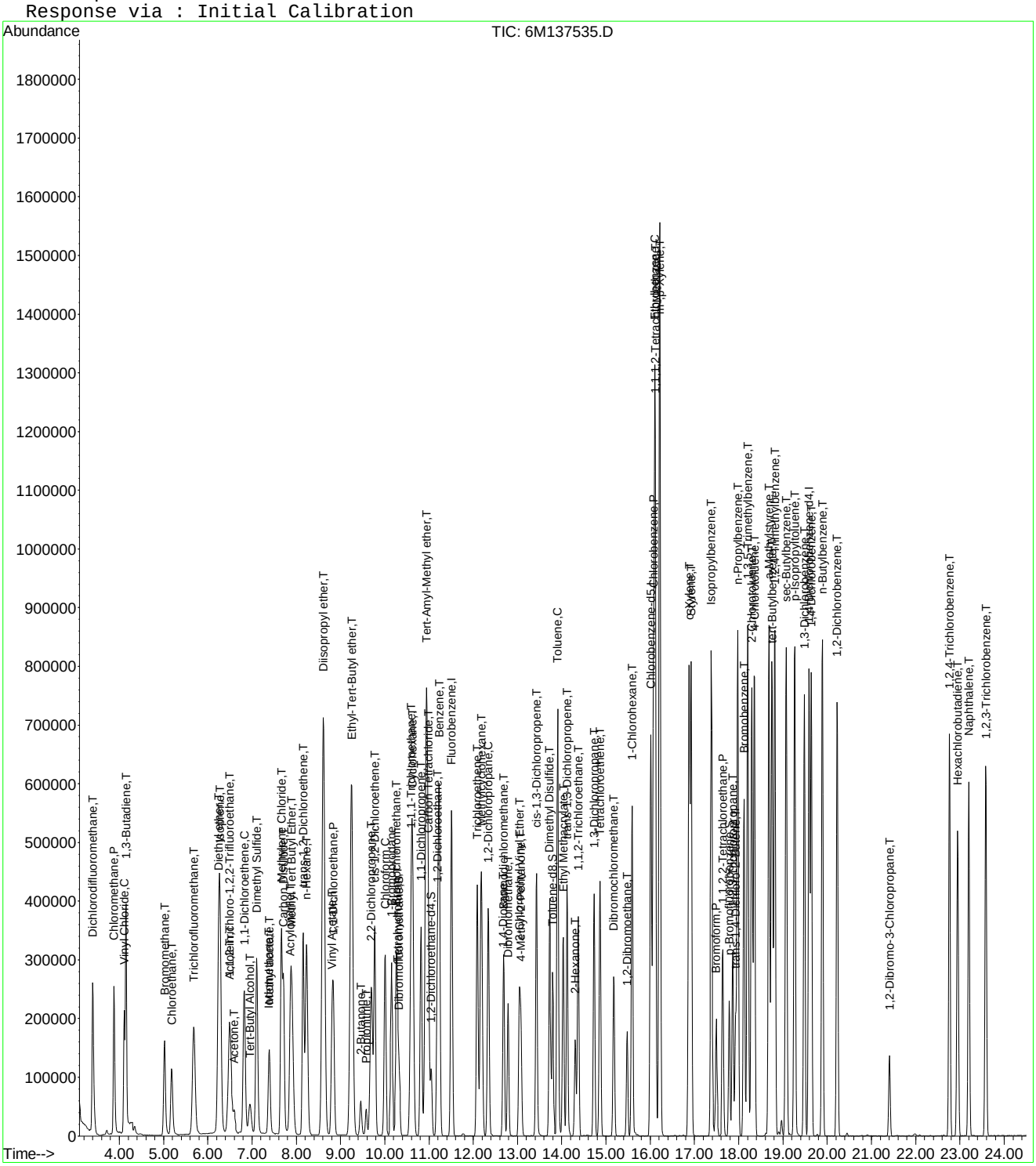

6M137535.D 826_SL.M Mon Feb 29 16:01:45 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	115	0.00
2	T	Dichlorodifluoromethane	50.0000	55.4626	-10.9	109	-0.01
3	P	Chloromethane	50.0000	50.9064	-1.8	111	0.00
4	C	Vinyl Chloride	50.0000	43.3425	13.3	89	0.00
5	T	1,3-Butadiene	50.0000	42.8977	14.2	92	-0.01
6	T	Bromomethane	50.0000	58.5556	-17.1	130	-0.01
7	T	Chloroethane	50.0000	56.5995	-13.2	116	0.00
8	T	Trichlorofluoromethane	50.0000	47.9111	4.2	102	-0.02
9	T	Diethyl ether	100.0000	73.6254	26.4#	86	0.00
10	T	Isoprene	50.0000	57.0391	-14.1	124	-0.01
11	T	Acrolein	50.0000	61.3760	-22.8	153	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	53.9539	-7.9	110	-0.01
13	T	Acetone	50.0000	48.6644	2.7	113	0.01
14	C	1,1-Dichloroethene	50.0000	51.6437	-3.3	107	0.00
15	T	Tert-Butyl Alcohol	200.0000	212.1401	-6.1	124	0.02
16	T	Dimethyl Sulfide	50.0000	79.1891	-58.4#	173	-0.01
17	T	Iodomethane	50.0000	37.8412	24.3	81	0.00
18	T	Methyl acetate	50.0000	52.8169	-5.6	120	0.00
19	T	Methylene Chloride	50.0000	53.3878	-6.8	112	0.00
20	T	Carbon Disulfide	50.0000	44.3914	11.2	98	-0.01
21	T	Acrylonitrile	50.0000	50.8382	-1.7	112	0.00
22	T	Methyl Tert Butyl Ether	50.0000	53.0885	-6.2	110	0.00
23	T	trans-1,2-Dichloroethene	50.0000	53.7311	-7.5	112	0.00
24	T	n-Hexane	50.0000	48.0130	4.0	104	-0.01
25	T	Diisopropyl ether	100.0000	90.7892	9.2	106	0.00
26	T	Vinyl Acetate	50.0000	37.6715	24.7	85	0.00
27	P	1,1-Dichloroethane	50.0000	50.3469	-0.7	106	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	89.7979	10.2	103	0.01
29	T	2-Butanone	50.0000	49.2421	1.5	115	0.00
30	T	Propionitrile	100.0000	93.9303	6.1	108	0.00
31	T	2,2-Dichloropropane	50.0000	53.1233	-6.2	112	0.00
32	T	cis-1,2-Dichloroethene	50.0000	54.1434	-8.3	116	0.00
33	C	Chloroform	50.0000	50.7061	-1.4	109	0.00
34		1-Bromopropane	50.0000	88.6198	-77.2#	186	-0.01
35	T	Bromochloromethane	50.0000	52.0956	-4.2	108	0.00
36	T	Tetrahydrofuran	100.0000	86.4486	13.6	100	0.00
37	S	Dibromofluoromethane	25.0000	22.4022	10.4	101	0.00
38	T	1,1,1-Trichloroethane	50.0000	51.9918	-4.0	108	0.00
39	T	Cyclohexane	50.0000	52.4982	-5.0	110	-0.01
40	T	1,1-Dichloropropene	50.0000	52.7645	-5.5	109	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	99.8131	0.2	115	0.00
42	T	Carbon Tetrachloride	50.0000	51.1689	-2.3	106	0.00
43	S	1,2-Dichloroethane-d4	25.0000	22.1747	11.3	100	-0.01
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	50.0000	51.2666	-2.5	109	0.00
46	T	Benzene	50.0000	50.4293	-0.9	112	0.00
47	T	Trichloroethene	50.0000	54.7248	-9.4	115	0.00
48	T	Methylcyclohexane	50.0000	52.9463	-5.9	111	0.00
49	C	1,2-Dichloropropane	50.0000	55.0291	-10.1	116	0.00
50	T	1,4-Dioxane	200.0000	206.7214	-3.4	130	0.00
51	T	Bromodichloromethane	50.0000	51.6400	-3.3	109	0.00
52	T	Dibromomethane	50.0000	50.3870	-0.8	103	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	54.9113	-9.8	118	0.00
54	T	4-Methyl-2-Pentanone	50.0000	51.2622	-2.5	117	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	58.7723	-17.5	120	0.00
56	T	Dimethyl Disulfide	50.0000	56.2546	-12.5	117	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	115	0.00
58	S	Toluene-d8	25.0000	21.6082	13.6	97	0.00
59	C	Toluene	50.0000	51.4239	-2.8	111	0.00
60	T	Ethyl Methacrylate	50.0000	55.5569	-11.1	115	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	50.0000	52.8608	-5.7	109	0.00
63	T	1,1,2-Trichloroethane	50.0000	53.2065	-6.4	113	0.00
64	T	2-Hexanone	50.0000	51.3021	-2.6	116	0.00
65	T	1,3-Dichloropropane	50.0000	54.9182	-9.8	116	0.00
66	T	Tetrachloroethene	50.0000	51.1197	-2.2	109	0.00
67	T	Dibromochloromethane	50.0000	51.8393	-3.7	107	0.00
68	T	1,2-Dibromoethane	50.0000	53.6583	-7.3	112	0.00
69	T	1-Chlorohexane	50.0000	53.6977	-7.4	112	0.00
70	P	Chlorobenzene	50.0000	52.8637	-5.7	115	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	51.8481	-3.7	110	0.00
72	C	Ethylbenzene	50.0000	52.4064	-4.8	110	0.00
73	T	m-,p-Xylene	100.0000	105.2305	-5.2	113	0.00
74	T	o-Xylene	50.0000	56.8792	-13.8	115	0.00
75	T	Styrene	50.0000	55.2923	-10.6	113	0.00
76	P	Bromoform	50.0000	49.2451	1.5	103	0.00
77	T	Isopropylbenzene	50.0000	54.5730	-9.1	112	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	118	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	52.1415	-4.3	115	0.00
80	S	p-Bromofluorobenzene	25.0000	20.9365	16.3	97	0.00
81	T	1,2,3-Trichloropropane	50.0000	53.1534	-6.3	117	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	42.0681	15.9	93	0.00
83	T	n-Propylbenzene	50.0000	52.6291	-5.3	111	0.00
84	T	Bromobenzene	50.0000	51.8331	-3.7	112	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	52.6576	-5.3	112	0.00
86	T	2-Chlorotoluene	50.0000	52.0974	-4.2	115	0.00
87	T	4-Chlorotoluene	50.0000	52.0569	-4.1	114	0.00
88	T	a-Methylstyrene	50.0000	57.2343	-14.5	123	0.00
89	T	tert-Butylbenzene	50.0000	53.2071	-6.4	112	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	51.1473	-2.3	110	0.00
91	T	sec-Butylbenzene	50.0000	50.6807	-1.4	107	0.00
92	T	p-Isopropyltoluene	50.0000	50.9189	-1.8	107	0.00
93	T	1,3-Dichlorobenzene	50.0000	52.0038	-4.0	114	0.00
94	T	1,4-Dichlorobenzene	50.0000	51.7864	-3.6	117	0.00
95	T	n-Butylbenzene	50.0000	48.7625	2.5	104	0.00
96	T	1,2-Dichlorobenzene	50.0000	54.4802	-9.0	120	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	52.1318	-4.3	117	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	51.0389	-2.1	109	0.00
99	T	Hexachlorobutadiene	50.0000	47.6080	4.8	101	-0.01
100	T	Naphthalene	50.0000	49.8263	0.3	104	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	50.9788	-2.0	108	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137535.D 826_SL.M Mon Feb 29 16:03:13 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030816\6M137646.D Vial: 3
Acq On : 8 Mar 2016 11:58 Operator: TMB
Sample : WG560072-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75017 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 08 12:23:23 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	655391	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	477375	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	256654	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	165815	47.1634 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.32%		
43) 1,2-Dichloroethane-d4	11.05	65	202395	44.3385 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 88.68%		
58) Toluene-d8	13.80	98	561373	49.4611 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.92%		
80) p-Bromofluorobenzene	17.79	95	231509	49.1089 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 98.22%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	320326	53.2180 ug/L	100
3) Chloromethane	3.88	50	261940	41.7609 ug/L	97
4) Vinyl Chloride	4.12	62	254729	50.4558 ug/L	98
5) 1,3-Butadiene	4.16	54	169268	40.2976 ug/L	93
6) Bromomethane	5.04	94	139382	51.7910 ug/L	99
7) Chloroethane	5.19	64	150269	52.4932 ug/L	99
8) Trichlorofluoromethane	5.69	101	343141	50.5828 ug/L	99
9) Diethyl ether	6.23	59	312856	100.2500 ug/L	95
10) Isoprene	6.27	67	228631	51.7344 ug/L	91
11) Acrolein	6.49	56	28217	47.6107 ug/L	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	180673	55.7979 ug/L	95
13) Acetone	6.59	43	80118	54.0836 ug/L	98
14) 1,1-Dichloroethene	6.83	61	299707	52.2553 ug/L	95
15) Tert-Butyl Alcohol	6.94	59	125609	234.7100 ug/L	99
16) Dimethyl Sulfide	7.11	62	133700	48.0478 ug/L	95
17) Iodomethane	7.39	142	101317	41.5401 ug/L	95
18) Methyl acetate	7.40	43	219112	54.9738 ug/L	97
19) Methylene Chloride	7.67	84	174666	50.5673 ug/L	84
20) Carbon Disulfide	7.72	76	548131	49.9497 ug/L	98
21) Acrylonitrile	7.87	53	92258	56.3207 ug/L	99
22) Methyl Tert Butyl Ether	7.90	73	529096	53.6381 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	166269	52.4765 ug/L	88
24) n-Hexane	8.23	57	303098	52.6802 ug/L	98
25) Diisopropyl ether	8.61	45	1454621	97.5146 ug/L	96
26) Vinyl Acetate	8.80	43	402814	52.2394 ug/L	99
27) 1,1-Dichloroethane	8.84	63	344358	50.4104 ug/L	97
28) Ethyl-Tert-Butyl ether	9.24	59	1215176	101.6358 ug/L	96
29) 2-Butanone	9.45	43	124281	54.8598 ug/L	97
30) Propionitrile	9.57	54	69023	110.0865 ug/L	97
31) 2,2-Dichloropropane	9.69	77	285888	52.1389 ug/L	95
32) cis-1,2-Dichloroethene	9.78	96	182649	51.6355 ug/L	96
33) Chloroform	10.00	83	312927	49.0506 ug/L	97
34) 1-Bromopropane	10.16	122	25397	52.3686 ug/L	100
35) Bromochloromethane	10.27	130	107742	51.8392 ug/L	100
36) Tetrahydrofuran	10.30	42	169754	111.9157 ug/L	96
38) 1,1,1-Trichloroethane	10.60	97	288721	51.2361 ug/L	100
39) Cyclohexane	10.63	56	343322	53.7288 ug/L	88
40) 1,1-Dichloropropene	10.83	75	242561	53.4503 ug/L	97
41) Tert-Amyl-Methyl ether	10.94	73	988982	104.2701 ug/L	93
42) Carbon Tetrachloride	10.99	117	269171	51.1217 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030816\6M137646.D Vial: 3
Acq On : 8 Mar 2016 11:58 Operator: TMB
Sample : WG560072-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75017 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 08 12:23:23 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	263410	48.3753 ug/L	98
46)	Benzene	11.24	78	676028	49.5167 ug/L	93
47)	Trichloroethene	12.09	130	167461	51.9210 ug/L	95
48)	Methylcyclohexane	12.18	83	286451	54.9389 ug/L	90
49)	1,2-Dichloropropane	12.34	63	188005	51.1796 ug/L	99
50)	1,4-Dioxane	12.68	88	9053	205.6160 ug/L	91
51)	Bromodichloromethane	12.69	83	243223	50.4547 ug/L	98
52)	Dibromomethane	12.79	93	107793	50.1697 ug/L	99
53)	2-Chloroethyl Vinyl Ether	13.03	63	119118	58.9552 ug/L	98
54)	4-Methyl-2-Pentanone	13.07	58	88369	57.7607 ug/L	96
55)	cis-1,3-Dichloropropene	13.42	75	280486	52.8101 ug/L	97
56)	Dimethyl Disulfide	13.73	79	141829	52.9462 ug/L	97
59)	Toluene	13.91	91	680892	50.4227 ug/L	99
60)	Ethyl Methacrylate	14.03	69	238157	55.0425 ug/L	98
62)	trans-1,3-Dichloropropene	14.13	75	269546	51.9100 ug/L	100
63)	1,1,2-Trichloroethane	14.38	97	144708	51.2699 ug/L	99
64)	2-Hexanone	14.31	43	182107	56.5426 ug/L	97
65)	1,3-Dichloropropane	14.74	76	259443	50.7151 ug/L	98
66)	Tetrachloroethene	14.87	166	174077	52.2573 ug/L	99
67)	Dibromochloromethane	15.18	129	183850	50.0848 ug/L	99
68)	1,2-Dibromoethane	15.48	107	151409	52.4539 ug/L	99
69)	1-Chlorohexane	15.60	91	232671	55.4843 ug/L	88
70)	Chlorobenzene	16.08	112	433851	49.9904 ug/L	71
71)	1,1,1,2-Tetrachloroethane	16.12	131	172016	49.3635 ug/L	98
72)	Ethylbenzene	16.11	106	240843	51.8586 ug/L	98
73)	m-,p-Xylene	16.21	106	581513	102.3325 ug/L	97
74)	o-Xylene	16.87	106	283334	52.9369 ug/L	97
75)	Styrene	16.92	104	485223	53.2641 ug/L	95
76)	Bromoform	17.49	173	130248	50.2535 ug/L	100
77)	Isopropylbenzene	17.38	105	760214	52.8373 ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.64	83	210478	52.4976 ug/L	96
81)	1,2,3-Trichloropropane	17.87	110	66047	53.8035 ug/L	99
82)	trans-1,4-Dichloro-2-Buten	17.93	53	78511	53.0439 ug/L	92
83)	n-Propylbenzene	17.99	91	918503	52.6971 ug/L	99
84)	Bromobenzene	18.13	156	193221	50.9992 ug/L	98
85)	1,3,5-Trimethylbenzene	18.21	105	645087	51.9958 ug/L	96
86)	2-Chlorotoluene	18.30	91	548923	47.1835 ug/L	92
87)	4-Chlorotoluene	18.35	91	581299	54.6462 ug/L	93
88)	a-Methylstyrene	18.69	118	320647	53.2205 ug/L	99
89)	tert-Butylbenzene	18.75	134	134570	52.0473 ug/L	87
90)	1,2,4-Trimethylbenzene	18.81	105	663949	50.8871 ug/L	83
91)	sec-Butylbenzene	19.08	105	830472	52.2698 ug/L	99
92)	p-Isopropyltoluene	19.26	119	689383	52.5920 ug/L	99
93)	1,3-Dichlorobenzene	19.49	146	368863	50.3168 ug/L	97
94)	1,4-Dichlorobenzene	19.64	146	367923	49.3058 ug/L	98
95)	n-Butylbenzene	19.88	91	679106	51.5102 ug/L	98
96)	1,2-Dichlorobenzene	20.22	146	346975	49.1875 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	21.42	75	45057	50.7913 ug/L	93
98)	1,2,4-Trichlorobenzene	22.76	180	255258	50.0541 ug/L	98
99)	Hexachlorobutadiene	22.95	225	146009	50.0644 ug/L	99
100)	Naphthalene	23.20	128	633606	54.0456 ug/L	100
101)	1,2,3-Trichlorobenzene	23.58	180	247710	49.3295 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M137646.D 826_SL.M Tue Mar 08 12:23:25 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030816\6M137646.D Vial: 3
Acq On : 8 Mar 2016 11:58 Operator: TMB
Sample : WG560072-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75017 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 8 12:23 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

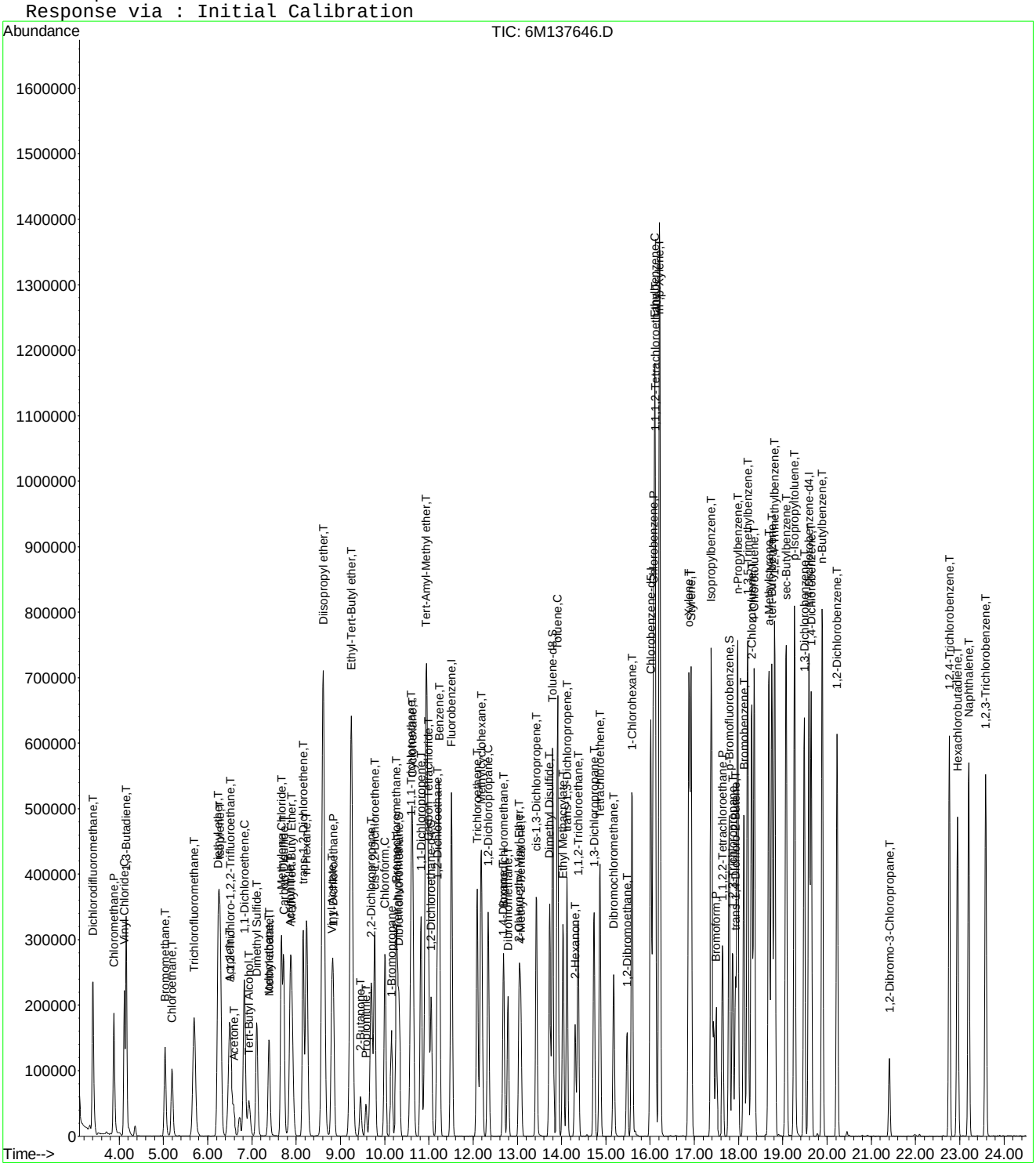

6M137646.D 826_SL.M Tue Mar 08 12:23:25 2016 Page 3

Continuing Calibration Area and RT check

Instrument: HPMS6
Initial cal date: 26 Feb 2016 17:03
CCV date: 8 Mar 2016 11:58
CCV Filename: 6M137646.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	607631	11.51	439950	16.01	237573	19.60
CCV	655391	11.51	477375	16.01	256654	19.59

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\030816\6M137646.D Vial: 3
Acq On : 8 Mar 2016 11:58 Operator: TMB
Sample : WG560072-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75017 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	108	0.00
2	T	Dichlorodifluoromethane	0.4592	0.4888	-6.4	98	0.00
3	P	Chloromethane	0.4785	0.3997	16.5	86	0.00
4	C	Vinyl Chloride	0.3852	0.3887	-0.9	97	0.00
5	T	1,3-Butadiene	0.3205	0.2583	19.4	81	0.00
6	T	Bromomethane	0.2053	0.2127	-3.6	108	0.00
7	T	Chloroethane	0.2184	0.2293	-5.0	102	0.00
8	T	Trichlorofluoromethane	0.5175	0.5236	-1.2	101	0.00
9	T	Diethyl ether	0.2381	0.2387	-0.3	110	0.00
10	T	Isoprene	0.3372	0.3488	-3.5	106	0.00
11	T	Acrolein	0.0452	0.0430	4.8	112	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2470	0.2757	-11.6	107	0.00
13	T	Acetone	0.1189	0.1222	-2.8	118	0.00
14	C	1,1-Dichloroethene	0.4376	0.4573	-4.5	101	0.00
15	T	Tert-Butyl Alcohol	0.0408	0.0479	-17.3	129	0.00
16	T	Dimethyl Sulfide	0.2123	0.2040	3.9	99	0.00
17	T	Iodomethane	0.1531	0.1546	-1.0	85	0.00
18	T	Methyl acetate	0.3041	0.3343	-9.9	117	0.00
19	T	Methylene Chloride	0.2635	0.2665	-1.1	100	0.00
20	T	Carbon Disulfide	0.8372	0.8363	0.1	103	0.00
21	T	Acrylonitrile	0.1250	0.1408	-12.6	117	0.00
22	T	Methyl Tert Butyl Ether	0.7525	0.8073	-7.3	104	0.00
23	T	trans-1,2-Dichloroethene	0.2417	0.2537	-5.0	103	0.00
24	T	n-Hexane	0.4389	0.4625	-5.4	107	0.00
25	T	Diisopropyl ether	1.1380	1.1097	2.5	107	0.00
26	T	Vinyl Acetate	0.5883	0.6146	-4.5	111	0.00
27	P	1,1-Dichloroethane	0.5212	0.5254	-0.8	100	0.00
28	T	Ethyl-Tert-Butyl ether	0.9121	0.9271	-1.6	110	0.00
29	T	2-Butanone	0.1728	0.1896	-9.7	121	0.00
30	T	Propionitrile	0.0478	0.0527	-10.1	119	0.00
31	T	2,2-Dichloropropane	0.4183	0.4362	-4.3	104	0.00
32	T	cis-1,2-Dichloroethene	0.2699	0.2787	-3.3	104	0.00
33	C	Chloroform	0.4867	0.4775	1.9	99	0.00
34		1-Bromopropane	0.0370	0.0388	-4.7	103	0.00
35	T	Bromochloromethane	0.1586	0.1644	-3.7	101	0.00
36	T	Tetrahydrofuran	0.1230	0.1295	-5.3	121	0.00
37	S	Dibromofluoromethane	0.2682	0.5060	-88.7#	200#	0.00
38	T	1,1,1-Trichloroethane	0.4299	0.4405	-2.5	100	0.00
39	T	Cyclohexane	0.4875	0.5238	-7.5	106	0.00
40	T	1,1-Dichloropropene	0.3462	0.3701	-6.9	104	0.00
41	T	Tert-Amyl-Methyl ether	0.7236	0.7545	-4.3	113	0.00
42	T	Carbon Tetrachloride	0.4017	0.4107	-2.2	100	0.00
43	S	1,2-Dichloroethane-d4	0.3483	0.6176	-77.4#	189#	0.00
44		Heptane	0.0000	0.0000	0.0	0#	0.00
45	T	1,2-Dichloroethane	0.4154	0.4019	3.2	97	0.00
46	T	Benzene	1.0416	1.0315	1.0	103	0.00
47	T	Trichloroethene	0.2461	0.2555	-3.8	103	0.00
48	T	Methylcyclohexane	0.3978	0.4371	-9.9	108	0.00
49	C	1,2-Dichloropropane	0.2803	0.2869	-2.4	102	0.00
50	T	1,4-Dioxane	0.0031	0.0034	-11.3	121	0.00
51	T	Bromodichloromethane	0.3678	0.3711	-0.9	100	0.00
52	T	Dibromomethane	0.1639	0.1645	-0.3	96	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1541	0.1817	-17.9	119	0.00
54	T	4-Methyl-2-Pentanone	0.1167	0.1348	-15.5	124	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\030816\6M137646.D Vial: 3
Acq On : 8 Mar 2016 11:58 Operator: TMB
Sample : WG560072-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75017 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4052	0.4280	-5.6	102	0.00
56	T	Dimethyl Disulfide	0.2044	0.2164	-5.9	104	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	109	0.00
58	S	Toluene-d8	1.1888	2.3519	-97.8#	211#	0.00
59	C	Toluene	1.4144	1.4263	-0.8	103	0.00
60	T	Ethyl Methacrylate	0.4532	0.4989	-10.1	108	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-15.13#
62	T	trans-1,3-Dichloropropene	0.5439	0.5646	-3.8	102	0.00
63	T	1,1,2-Trichloroethane	0.2956	0.3031	-2.5	103	0.01
64	T	2-Hexanone	0.3373	0.3815	-13.1	121	0.00
65	T	1,3-Dichloropropane	0.5358	0.5435	-1.4	102	0.00
66	T	Tetrachloroethene	0.3489	0.3646	-4.5	105	0.00
67	T	Dibromochloromethane	0.3845	0.3851	-0.2	98	0.00
68	T	1,2-Dibromoethane	0.3023	0.3172	-4.9	104	0.00
69	T	1-Chlorohexane	0.4392	0.4874	-11.0	109	0.00
70	P	Chlorobenzene	0.9090	0.9088	0.0	103	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3650	0.3603	1.3	99	0.01
72	C	Ethylbenzene	0.4864	0.5045	-3.7	103	0.00
73	T	m-,p-Xylene	0.5952	0.6091	-2.3	104	0.00
74	T	o-Xylene	0.5606	0.5935	-5.9	102	0.00
75	T	Styrene	0.9542	1.0164	-6.5	103	0.00
76	P	Bromoform	0.2715	0.2728	-0.5	99	0.00
77	T	Isopropylbenzene	1.5070	1.5925	-5.7	103	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	108	0.00
79	P	1,1,2,2-Tetrachloroethane	0.7811	0.8201	-5.0	105	0.00
80	S	p-Bromofluorobenzene	0.9184	1.8041	-96.4#	207#	0.00
81	T	1,2,3-Trichloropropane	0.2392	0.2573	-7.6	108	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.2884	0.3059	-6.1	107	0.00
83	T	n-Propylbenzene	3.3956	3.5788	-5.4	102	0.00
84	T	Bromobenzene	0.7381	0.7529	-2.0	101	0.00
85	T	1,3,5-Trimethylbenzene	2.4170	2.5135	-4.0	100	0.00
86	T	2-Chlorotoluene	2.2664	2.1388	5.6	95	0.00
87	T	4-Chlorotoluene	2.0723	2.2649	-9.3	109	0.00
88	T	a-Methylstyrene	1.1737	1.2493	-6.4	104	0.00
89	T	tert-Butylbenzene	0.5037	0.5243	-4.1	100	0.00
90	T	1,2,4-Trimethylbenzene	2.5419	2.5869	-1.8	100	0.00
91	T	sec-Butylbenzene	3.0953	3.2358	-4.5	101	0.00
92	T	p-Isopropyltoluene	2.5537	2.6860	-5.2	101	0.00
93	T	1,3-Dichlorobenzene	1.4282	1.4372	-0.6	101	0.00
94	T	1,4-Dichlorobenzene	1.4537	1.4335	1.4	101	0.00
95	T	n-Butylbenzene	2.5684	2.6460	-3.0	100	0.00
96	T	1,2-Dichlorobenzene	1.3743	1.3519	1.6	99	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1728	0.1756	-1.6	103	0.00
98	T	1,2,4-Trichlorobenzene	0.9935	0.9946	-0.1	97	0.00
99	T	Hexachlorobutadiene	0.5682	0.5689	-0.1	97	0.00
100	T	Naphthalene	2.2839	2.4687	-8.1	103	0.00
101	T	1,2,3-Trichlorobenzene	0.9783	0.9651	1.3	95	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137646.D 826_SL.M Tue Mar 08 12:45:52 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\030816\6M137646.D Vial: 3
Acq On : 8 Mar 2016 11:58 Operator: TMB
Sample : WG560072-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75017 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	108	0.00
2	T	Dichlorodifluoromethane	50.0000	53.2180	-6.4	98	0.00
3	P	Chloromethane	50.0000	41.7610	16.5	86	0.00
4	C	Vinyl Chloride	50.0000	50.4558	-0.9	97	0.00
5	T	1,3-Butadiene	50.0000	40.2976	19.4	81	0.00
6	T	Bromomethane	50.0000	51.7910	-3.6	108	0.00
7	T	Chloroethane	50.0000	52.4933	-5.0	102	0.00
8	T	Trichlorofluoromethane	50.0000	50.5828	-1.2	101	0.00
9	T	Diethyl ether	100.0000	100.2500	-0.3	110	0.00
10	T	Isoprene	50.0000	51.7344	-3.5	106	0.00
11	T	Acrolein	50.0000	47.6107	4.8	112	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	55.7979	-11.6	107	0.00
13	T	Acetone	50.0000	54.0836	-8.2	118	0.00
14	C	1,1-Dichloroethene	50.0000	52.2552	-4.5	101	0.00
15	T	Tert-Butyl Alcohol	200.0000	234.7100	-17.4	129	0.00
16	T	Dimethyl Sulfide	50.0000	48.0478	3.9	99	0.00
17	T	Iodomethane	50.0000	41.5401	16.9	85	0.00
18	T	Methyl acetate	50.0000	54.9738	-9.9	117	0.00
19	T	Methylene Chloride	50.0000	50.5673	-1.1	100	0.00
20	T	Carbon Disulfide	50.0000	49.9497	0.1	103	0.00
21	T	Acrylonitrile	50.0000	56.3207	-12.6	117	0.00
22	T	Methyl Tert Butyl Ether	50.0000	53.6381	-7.3	104	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.4765	-5.0	103	0.00
24	T	n-Hexane	50.0000	52.6802	-5.4	107	0.00
25	T	Diisopropyl ether	100.0000	97.5146	2.5	107	0.00
26	T	Vinyl Acetate	50.0000	52.2394	-4.5	111	0.00
27	P	1,1-Dichloroethane	50.0000	50.4104	-0.8	100	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	101.6358	-1.6	110	0.00
29	T	2-Butanone	50.0000	54.8598	-9.7	121	0.00
30	T	Propionitrile	100.0000	110.0865	-10.1	119	0.00
31	T	2,2-Dichloropropane	50.0000	52.1389	-4.3	104	0.00
32	T	cis-1,2-Dichloroethene	50.0000	51.6355	-3.3	104	0.00
33	C	Chloroform	50.0000	49.0506	1.9	99	0.00
34		1-Bromopropane	50.0000	52.3686	-4.7	103	0.00
35	T	Bromochloromethane	50.0000	51.8392	-3.7	101	0.00
36	T	Tetrahydrofuran	100.0000	111.9157	-11.9	121	0.00
37	S	Dibromofluoromethane	25.0000	47.1634	-88.7#	200	0.00
38	T	1,1,1-Trichloroethane	50.0000	51.2361	-2.5	100	0.00
39	T	Cyclohexane	50.0000	53.7288	-7.5	106	0.00
40	T	1,1-Dichloropropene	50.0000	53.4503	-6.9	104	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	104.2701	-4.3	113	0.00
42	T	Carbon Tetrachloride	50.0000	51.1217	-2.2	100	0.00
43	S	1,2-Dichloroethane-d4	25.0000	44.3385	-77.4#	189	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	50.0000	48.3753	3.2	97	0.00
46	T	Benzene	50.0000	49.5167	1.0	103	0.00
47	T	Trichloroethene	50.0000	51.9210	-3.8	103	0.00
48	T	Methylcyclohexane	50.0000	54.9389	-9.9	108	0.00
49	C	1,2-Dichloropropane	50.0000	51.1796	-2.4	102	0.00
50	T	1,4-Dioxane	200.0000	205.6160	-2.8	121	0.00
51	T	Bromodichloromethane	50.0000	50.4547	-0.9	100	0.00
52	T	Dibromomethane	50.0000	50.1697	-0.3	96	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	58.9552	-17.9	119	0.00
54	T	4-Methyl-2-Pentanone	50.0000	57.7607	-15.5	124	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\030816\6M137646.D Vial: 3
Acq On : 8 Mar 2016 11:58 Operator: TMB
Sample : WG560072-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75017 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	52.8101	-5.6	102	0.00
56	T	Dimethyl Disulfide	50.0000	52.9462	-5.9	104	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	109	0.00
58	S	Toluene-d8	25.0000	49.4611	-97.8#	211	0.00
59	C	Toluene	50.0000	50.4227	-0.8	103	0.00
60	T	Ethyl Methacrylate	50.0000	55.0425	-10.1	108	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	50.0000	51.9100	-3.8	102	0.00
63	T	1,1,2-Trichloroethane	50.0000	51.2699	-2.5	103	0.01
64	T	2-Hexanone	50.0000	56.5426	-13.1	121	0.00
65	T	1,3-Dichloropropane	50.0000	50.7151	-1.4	102	0.00
66	T	Tetrachloroethene	50.0000	52.2573	-4.5	105	0.00
67	T	Dibromochloromethane	50.0000	50.0848	-0.2	98	0.00
68	T	1,2-Dibromoethane	50.0000	52.4539	-4.9	104	0.00
69	T	1-Chlorohexane	50.0000	55.4843	-11.0	109	0.00
70	P	Chlorobenzene	50.0000	49.9904	0.0	103	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	49.3635	1.3	99	0.01
72	C	Ethylbenzene	50.0000	51.8586	-3.7	103	0.00
73	T	m-,p-Xylene	100.0000	102.3325	-2.3	104	0.00
74	T	o-Xylene	50.0000	52.9369	-5.9	102	0.00
75	T	Styrene	50.0000	53.2641	-6.5	103	0.00
76	P	Bromoform	50.0000	50.2535	-0.5	99	0.00
77	T	Isopropylbenzene	50.0000	52.8373	-5.7	103	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	108	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	52.4976	-5.0	105	0.00
80	S	p-Bromofluorobenzene	25.0000	49.1089	-96.4#	207	0.00
81	T	1,2,3-Trichloropropane	50.0000	53.8036	-7.6	108	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	53.0439	-6.1	107	0.00
83	T	n-Propylbenzene	50.0000	52.6971	-5.4	102	0.00
84	T	Bromobenzene	50.0000	50.9992	-2.0	101	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	51.9958	-4.0	100	0.00
86	T	2-Chlorotoluene	50.0000	47.1835	5.6	95	0.00
87	T	4-Chlorotoluene	50.0000	54.6462	-9.3	109	0.00
88	T	a-Methylstyrene	50.0000	53.2205	-6.4	104	0.00
89	T	tert-Butylbenzene	50.0000	52.0473	-4.1	100	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	50.8871	-1.8	100	0.00
91	T	sec-Butylbenzene	50.0000	52.2698	-4.5	101	0.00
92	T	p-Isopropyltoluene	50.0000	52.5920	-5.2	101	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.3168	-0.6	101	0.00
94	T	1,4-Dichlorobenzene	50.0000	49.3058	1.4	101	0.00
95	T	n-Butylbenzene	50.0000	51.5102	-3.0	100	0.00
96	T	1,2-Dichlorobenzene	50.0000	49.1875	1.6	99	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	50.7913	-1.6	103	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	50.0541	-0.1	97	0.00
99	T	Hexachlorobutadiene	50.0000	50.0644	-0.1	97	0.00
100	T	Naphthalene	50.0000	54.0456	-8.1	103	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	49.3295	1.3	95	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137646.D 826_SL.M Tue Mar 08 12:45:54 2016 Page 2

2.1.1.5 Raw QC Data

BFB

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Data File : C:\MSDCHEM\1\DATA\022616\6M137522.D          Vial: 1
Acq On    : 26 Feb 2016  13:16                       Operator: TMB
Sample    : WG558920-01 50ng BFB STD 8260            Inst    : HPMS6
Misc      : 7,1 STD74606                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP: OVL MSV01
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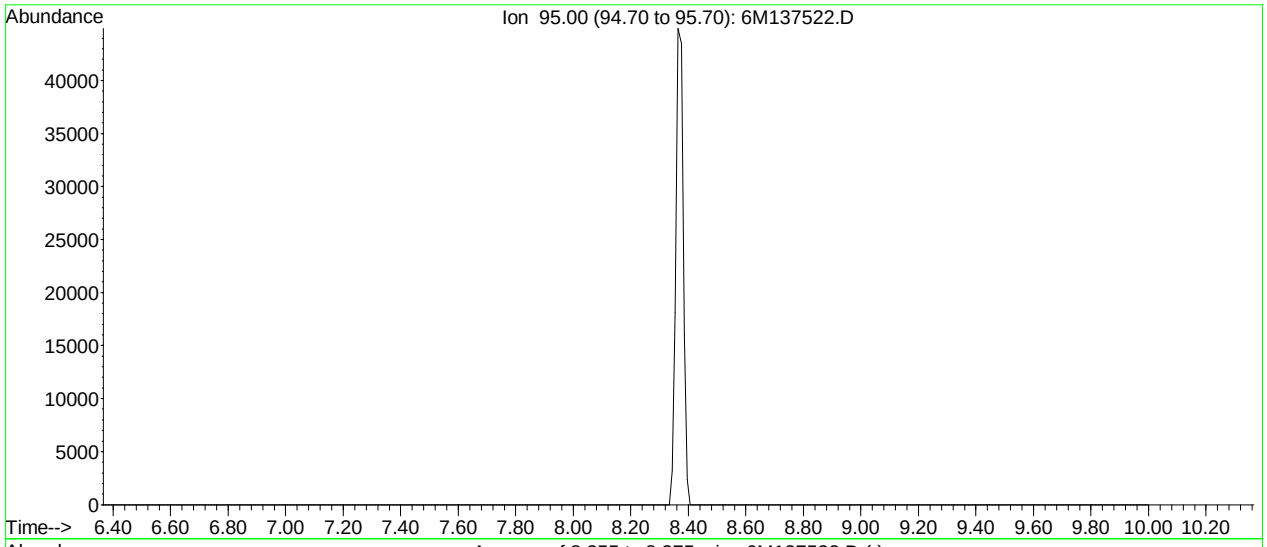

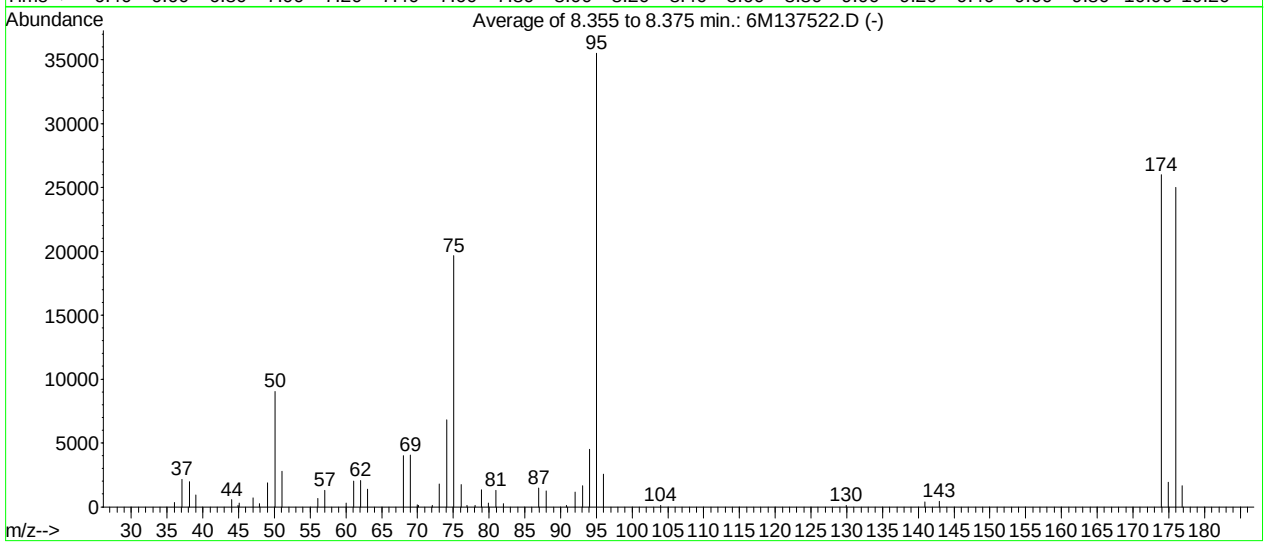

AutoFind: Scans 320, 321, 322; Background Corrected with Scan 316

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	25.4	9030	PASS
75	95	30	60	55.4	19666	PASS
95	95	100	100	100.0	35512	PASS
96	95	5	9	7.3	2576	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	73.2	26011	PASS
175	174	5	9	7.4	1914	PASS
176	174	95	101	96.1	24992	PASS
177	176	5	9	6.6	1660	PASS

6M137522.D BFB.M Fri Feb 26 13:26:46 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\030816\6M137644.D          Vial: 1
Acq On    :  8 Mar 2016  10:59                       Operator: TMB
Sample    : WG560072-01 50ng BFB STD 8260            Inst    : HPMS6
Misc      : 7,1 STD75004                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP: OVL MSV01
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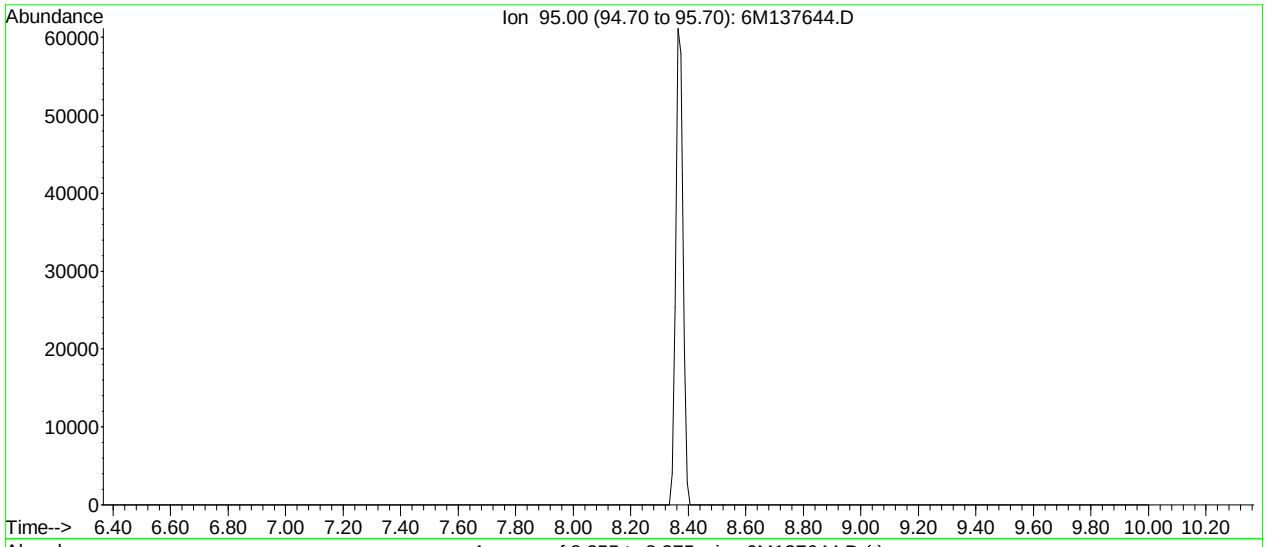

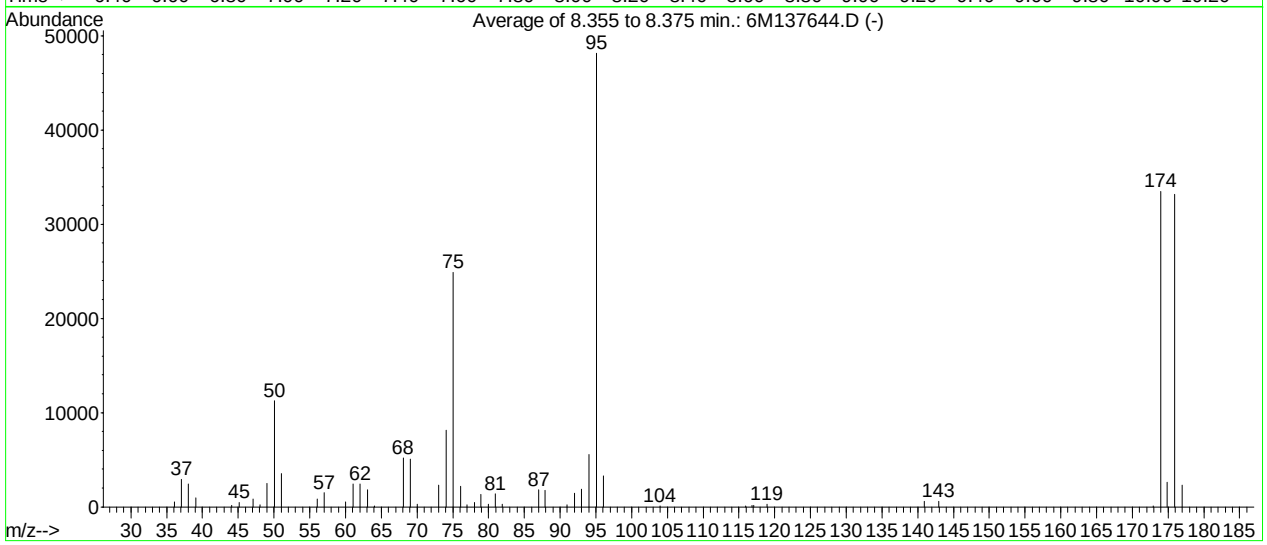

AutoFind: Scans 320, 321, 322; Background Corrected with Scan 316

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	23.4	11246	PASS
75	95	30	60	51.7	24897	PASS
95	95	100	100	100.0	48162	PASS
96	95	5	9	6.9	3304	PASS
173	174	0.00	2	0.3	109	PASS
174	95	50	100	69.5	33487	PASS
175	174	5	9	7.7	2582	PASS
176	174	95	101	99.1	33199	PASS
177	176	5	9	6.9	2283	PASS

6M137644.D BFB.M Tue Mar 08 11:09:45 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030816\6M137648.D Vial: 5
Acq On : 8 Mar 2016 13:05 Operator: TMB
Sample : WG560074-01 VBLK0308 BLANK STD 8260 Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 09 08:30:19 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	570797	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	411041	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	216022	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.34	111	140073	45.7462 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 91.50%		
43) 1,2-Dichloroethane-d4	11.06	65	170484	42.8829 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 85.76%		
58) Toluene-d8	13.80	98	480425	49.1600 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.32%		
80) p-Bromofluorobenzene	17.79	95	194961	49.1349 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 98.26%		

Target Compounds

					Qvalue
13) Acetone	6.60	43	3611	Below Cal	# 74
29) 2-Butanone	9.69	43	1218	0.6173 ug/L	# 56
36) Tetrahydrofuran	10.31	42	1732	Below Cal	# 69
100) Naphthalene	23.20	128	4501	0.4561 ug/L	# 67

(#) = qualifier out of range (m) = manual integration
6M137648.D 826_SL.M Wed Mar 09 08:30:19 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030816\6M137648.D Vial: 5
Acq On : 8 Mar 2016 13:05 Operator: TMB
Sample : WG560074-01 VBLK0308 BLANK STD 8260 Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 8:30 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

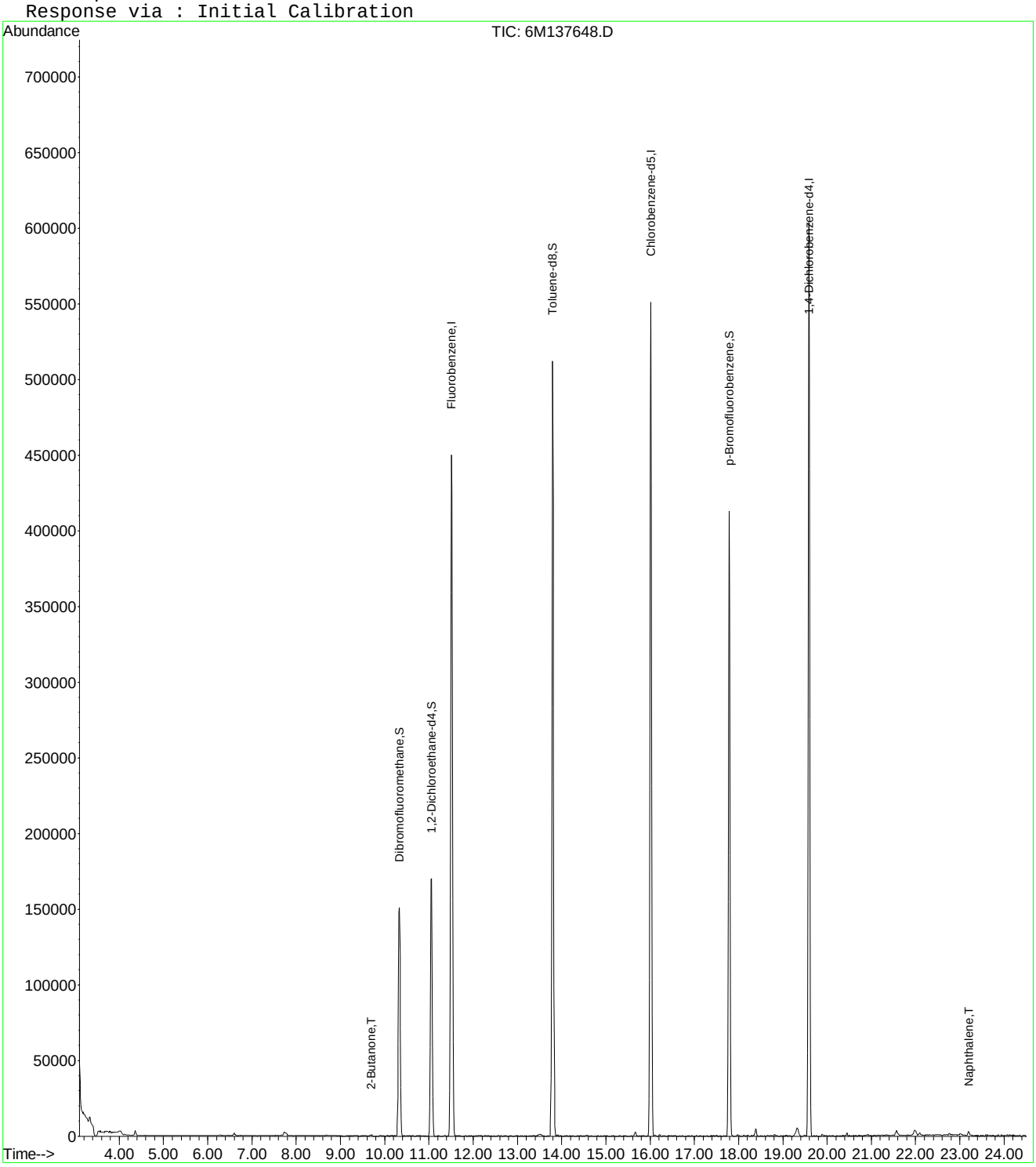

6M137648.D 826_SL.M Wed Mar 09 08:30:19 2016 Page 2

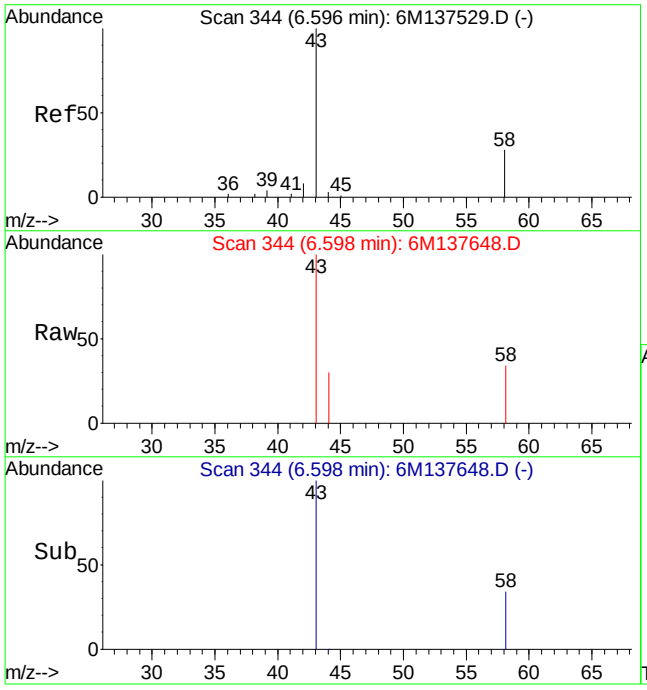

#13
Acetone
Concen: Below Cal
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137648.D
Acq: 8 Mar 2016 13:05

Tgt Ion: 43 Resp: 3611

Ion	Ratio	Lower	Upper
43	100		
58	13.5	16.1	37.7#

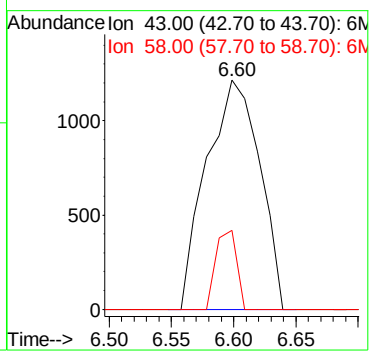

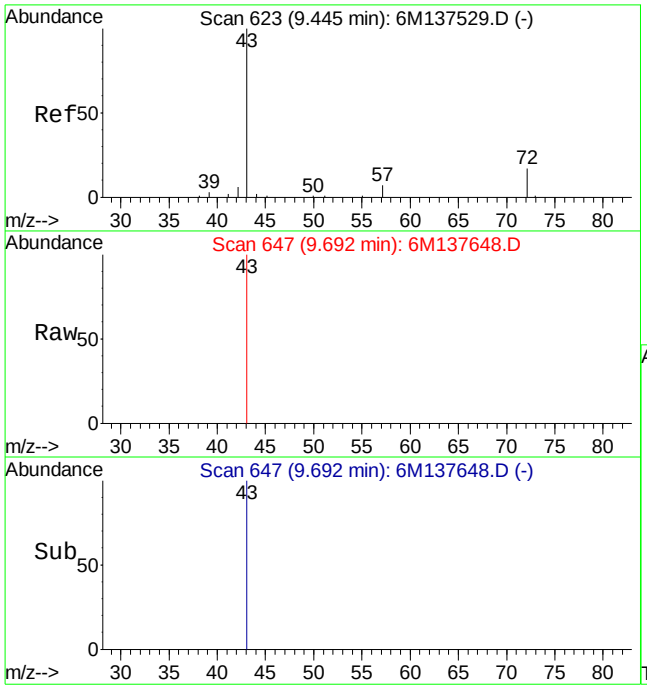

#29
2-Butanone
Concen: 0.62 ug/L
RT: 9.69 min Scan# 647
Delta R.T. 0.25 min
Lab File: 6M137648.D
Acq: 8 Mar 2016 13:05

Tgt Ion: 43 Resp: 1218

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.2	28.4#

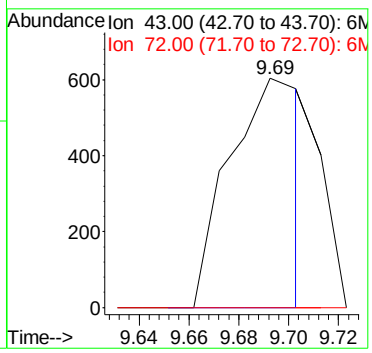

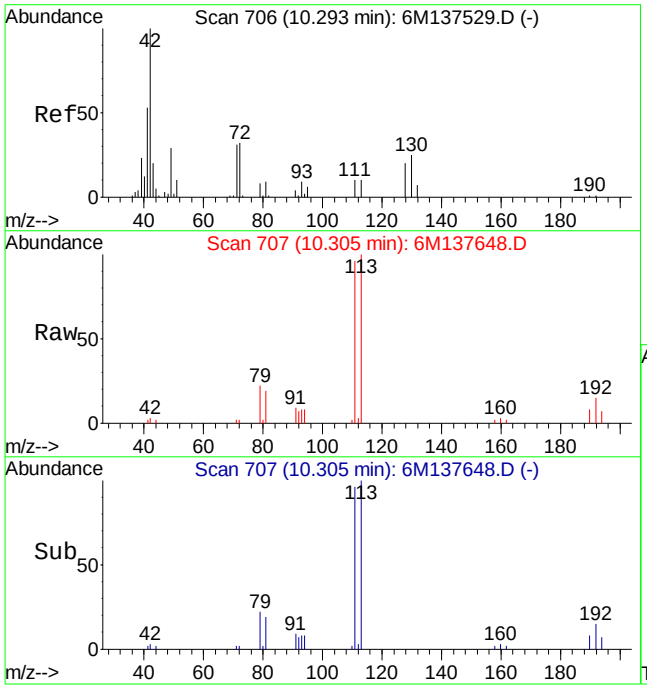

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.31 min Scan# 707
Delta R.T. 0.01 min
Lab File: 6M137648.D
Acq: 8 Mar 2016 13:05

Tgt Ion: 42 Resp: 1732

Ion	Ratio	Lower	Upper
42	100		
72	22.3	21.0	49.0
71	11.3	20.6	48.2#

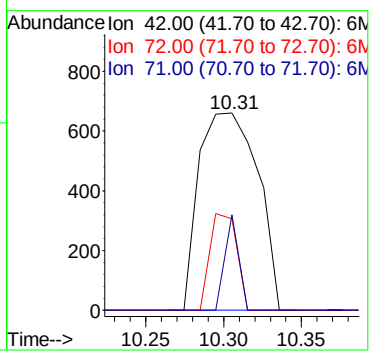

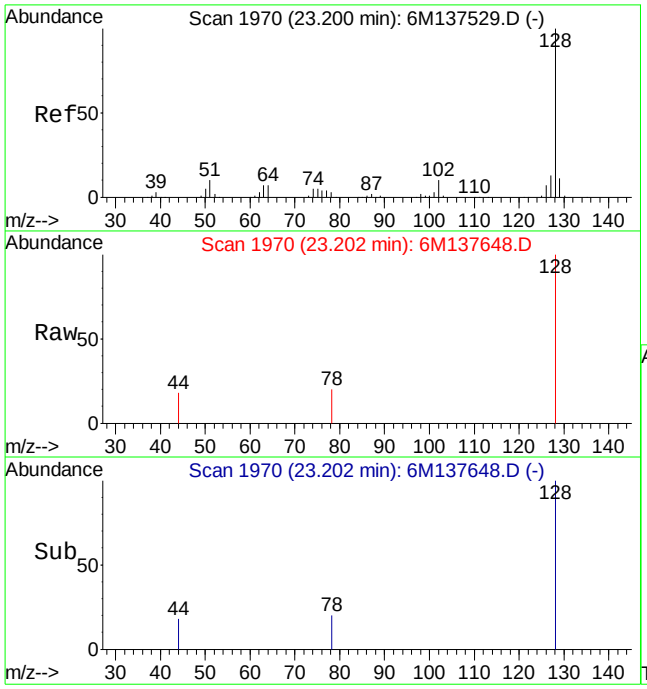

#100
Naphthalene
Concen: 0.46 ug/L
RT: 23.20 min Scan# 1970
Delta R.T. 0.00 min
Lab File: 6M137648.D
Acq: 8 Mar 2016 13:05

Tgt Ion:128 Resp: 4501

Ion	Ratio	Lower	Upper
128	100		
127	0.0	7.7	18.1#

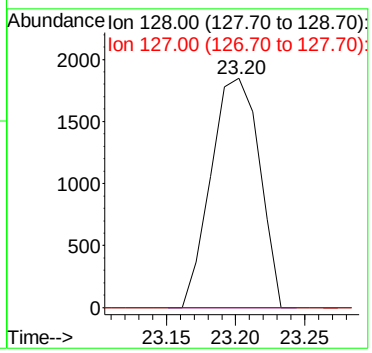

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030816\6M137649.D Vial: 6
Acq On : 8 Mar 2016 13:38 Operator: TMB
Sample : WG560074-02 20ug/Kg LCS STD 8260 Inst : HPMS6
Misc : 7,1 STD74973 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 08 14:03:32 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	578167	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	418780	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	226756	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	145249	46.8319 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.66%		
43) 1,2-Dichloroethane-d4	11.06	65	171673	42.6315 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 85.26%		
58) Toluene-d8	13.80	98	495730	49.7887 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.58%		
80) p-Bromofluorobenzene	17.79	95	203830	48.9384 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 97.88%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	107133	20.1761 ug/L	99
3) Chloromethane	3.88	50	94741	17.1220 ug/L	97
4) Vinyl Chloride	4.11	62	87091	19.5548 ug/L	99
5) 1,3-Butadiene	4.16	54	62661	16.9102 ug/L	95
6) Bromomethane	5.03	94	49122	20.6905 ug/L	99
7) Chloroethane	5.19	64	54932	21.7524 ug/L	99
8) Trichlorofluoromethane	5.69	101	114064	19.0601 ug/L	99
9) Diethyl ether	6.24	59	284959	103.5070 ug/L	95
10) Isoprene	6.28	67	89257	22.8946 ug/L	89
11) Acrolein	6.48	56	48600	92.9559 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	63899	22.3700 ug/L	94
13) Acetone	6.60	43	26407	17.4558 ug/L	94
14) 1,1-Dichloroethene	6.83	61	101871	20.1340 ug/L	95
15) Tert-Butyl Alcohol	6.94	59	88831	188.1579 ug/L	99
16) Dimethyl Sulfide	7.11	62	73097	29.7776 ug/L	97
17) Iodomethane	7.38	142	26145	15.6639 ug/L	95
18) Methyl acetate	7.39	43	63678	18.1103 ug/L	98
19) Methylene Chloride	7.67	84	62770	20.5997 ug/L	83
20) Carbon Disulfide	7.72	76	180582	18.6539 ug/L	99
21) Acrylonitrile	7.86	53	27233	18.8455 ug/L	96
22) Methyl Tert Butyl Ether	7.89	73	185404	21.3062 ug/L	95
23) trans-1,2-Dichloroethene	8.16	96	59981	21.4593 ug/L	89
24) n-Hexane	8.24	57	102750	20.2439 ug/L	100
25) Diisopropyl ether	8.61	45	1288205	97.8931 ug/L	96
26) Vinyl Acetate	8.80	43	127996	18.8164 ug/L	97
27) 1,1-Dichloroethane	8.84	63	118984	19.7445 ug/L	99
28) Ethyl-Tert-Butyl ether	9.25	59	1008316	95.5986 ug/L	96
29) 2-Butanone	9.46	43	37774	18.9012 ug/L	94
30) Propionitrile	9.58	54	49980	90.3615 ug/L	95
31) 2,2-Dichloropropane	9.70	77	97618	20.1810 ug/L	95
32) cis-1,2-Dichloroethene	9.77	96	64635	20.7131 ug/L	97
33) Chloroform	10.01	83	111244	19.7663 ug/L	97
34) 1-Bromopropane	10.16	122	14248	33.3035 ug/L	99
35) Bromochloromethane	10.27	130	35943	19.6035 ug/L	98
36) Tetrahydrofuran	10.29	42	117408	87.2746 ug/L	96
38) 1,1,1-Trichloroethane	10.60	97	101851	20.4885 ug/L	100
39) Cyclohexane	10.63	56	125240	22.2175 ug/L	87
40) 1,1-Dichloropropene	10.82	75	83244	20.7936 ug/L	97
41) Tert-Amyl-Methyl ether	10.95	73	850763	101.6780 ug/L	93
42) Carbon Tetrachloride	10.99	117	93419	20.1122 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030816\6M137649.D Vial: 6
Acq On : 8 Mar 2016 13:38 Operator: TMB
Sample : WG560074-02 20ug/Kg LCS STD 8260 Inst : HPMS6
Misc : 7,1 STD74973 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 08 14:03:32 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	11.19	62	92177	19.1894 ug/L		98
46)	Benzene	11.23	78	243009	20.1770 ug/L		93
47)	Trichloroethene	12.09	130	60967	21.4275 ug/L		95
48)	Methylcyclohexane	12.18	83	104399	22.6972 ug/L		88
49)	1,2-Dichloropropane	12.35	63	67624	20.8678 ug/L		98
50)	1,4-Dioxane	12.68	88	7192	188.2306 ug/L		91
51)	Bromodichloromethane	12.68	83	82848	19.4817 ug/L		98
52)	Dibromomethane	12.78	93	35092	18.5142 ug/L		98
53)	2-Chloroethyl Vinyl Ether	13.04	63	37777	21.1943 ug/L		99
54)	4-Methyl-2-Pentanone	13.08	58	26341	19.5169 ug/L		97
55)	cis-1,3-Dichloropropene	13.43	75	102605	21.8988 ug/L		98
56)	Dimethyl Disulfide	13.72	79	48802	20.6517 ug/L		98
59)	Toluene	13.92	91	245202	20.6988 ug/L		99
60)	Ethyl Methacrylate	14.04	69	80459	21.1974 ug/L		98
62)	trans-1,3-Dichloropropene	14.12	75	88815	19.4975 ug/L		100
63)	1,1,2-Trichloroethane	14.38	97	49081	19.8224 ug/L		99
64)	2-Hexanone	14.31	43	53546	18.9518 ug/L		100
65)	1,3-Dichloropropane	14.73	76	93456	20.8246 ug/L		98
66)	Tetrachloroethene	14.87	166	62172	21.2752 ug/L		99
67)	Dibromochloromethane	15.18	129	61716	19.1652 ug/L		98
68)	1,2-Dibromoethane	15.48	107	50600	19.9825 ug/L		100
69)	1-Chlorohexane	15.59	91	83802	22.7801 ug/L		89
70)	Chlorobenzene	16.07	112	157317	20.6631 ug/L	#	68
71)	1,1,1,2-Tetrachloroethane	16.11	131	60924	19.9296 ug/L		98
72)	Ethylbenzene	16.11	106	86206	21.1591 ug/L		98
73)	m-,p-Xylene	16.22	106	211005	42.3273 ug/L		97
74)	o-Xylene	16.88	106	104559	22.2687 ug/L		95
75)	Styrene	16.92	104	168303	21.0600 ug/L		96
76)	Bromoform	17.50	173	38700	17.0208 ug/L		99
77)	Isopropylbenzene	17.38	105	280118	22.1932 ug/L		98
79)	1,1,2,2-Tetrachloroethane	17.64	83	66505	18.7748 ug/L		95
81)	1,2,3-Trichloropropane	17.87	110	21430	19.7592 ug/L		94
82)	trans-1,4-Dichloro-2-Buten	17.93	53	19803	15.1435 ug/L		85
83)	n-Propylbenzene	17.98	91	339953	22.0757 ug/L		99
84)	Bromobenzene	18.12	156	67717	20.2300 ug/L		98
85)	1,3,5-Trimethylbenzene	18.21	105	237475	21.6649 ug/L		95
86)	2-Chlorotoluene	18.30	91	214831	20.9009 ug/L		96
87)	4-Chlorotoluene	18.36	91	201396	21.4289 ug/L		97
88)	a-Methylstyrene	18.69	118	122197	22.9563 ug/L		97
89)	tert-Butylbenzene	18.76	134	51186	22.4074 ug/L		99
90)	1,2,4-Trimethylbenzene	18.82	105	239314	20.7601 ug/L		81
91)	sec-Butylbenzene	19.07	105	309660	22.0597 ug/L		99
92)	p-Isopropyltoluene	19.27	119	250717	21.6487 ug/L		99
93)	1,3-Dichlorobenzene	19.48	146	132228	20.4155 ug/L		96
94)	1,4-Dichlorobenzene	19.64	146	134756	20.4399 ug/L		96
95)	n-Butylbenzene	19.89	91	238512	20.4765 ug/L		98
96)	1,2-Dichlorobenzene	20.23	146	128271	20.5814 ug/L		97
97)	1,2-Dibromo-3-Chloropropan	21.41	75	14706	18.7634 ug/L		92
98)	1,2,4-Trichlorobenzene	22.77	180	93107	20.6648 ug/L		99
99)	Hexachlorobutadiene	22.95	225	58317	22.6326 ug/L		98
100)	Naphthalene	23.20	128	193175	18.6501 ug/L		99
101)	1,2,3-Trichlorobenzene	23.59	180	88886	20.0348 ug/L		99

(#) = qualifier out of range (m) = manual integration
6M137649.D 826_SL.M Tue Mar 08 14:03:32 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030816\6M137649.D Vial: 6
Acq On : 8 Mar 2016 13:38 Operator: TMB
Sample : WG560074-02 20ug/Kg LCS STD 8260 Inst : HPMS6
Misc : 7,1 STD74973 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 8 14:03 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

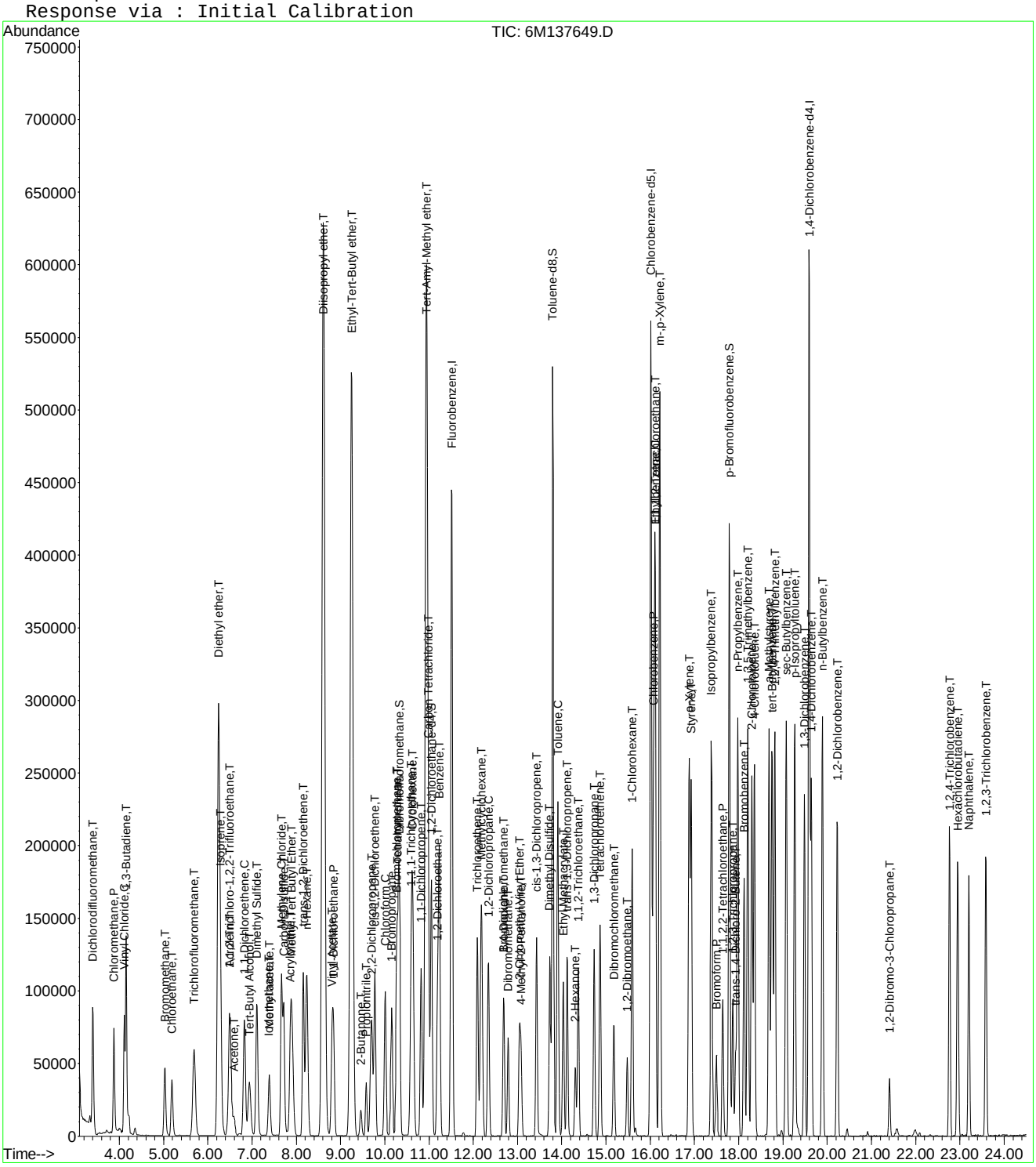

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030816\6M137650.D Vial: 7
Acq On : 8 Mar 2016 14:12 Operator: TMB
Sample : WG560060-02 MS 323-05 8260 5.27g Inst : HPMS6
Misc : 7,1 STD74973 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 08 14:37:20 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	589862	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	437379	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	236090	50.00 ug/L	0.01

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	150317	47.5050 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.02%		
43) 1,2-Dichloroethane-d4	11.06	65	184057	44.8006 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 89.60%		
58) Toluene-d8	13.80	98	507525	48.8058 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 97.62%		
80) p-Bromofluorobenzene	17.79	95	214274	49.4120 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 98.82%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	106551	19.6686 ug/L	98
3) Chloromethane	3.88	50	91256	16.1652 ug/L	98
4) Vinyl Chloride	4.12	62	89171	19.6248 ug/L	98
5) 1,3-Butadiene	4.16	54	11882	3.1430 ug/L	87
6) Bromomethane	5.04	94	47763	19.7192 ug/L	99
7) Chloroethane	5.19	64	54398	21.1138 ug/L	99
8) Trichlorofluoromethane	5.69	101	115788	18.9646 ug/L	98
9) Diethyl ether	6.24	59	2500	0.8901 ug/L #	19
10) Isoprene	6.28	67	89583	22.5227 ug/L	91
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	64190	22.0263 ug/L	96
13) Acetone	6.60	43	30291	20.1724 ug/L	96
14) 1,1-Dichloroethene	6.83	61	101098	19.5851 ug/L	95
15) Tert-Butyl Alcohol	6.94	59	603	1.2519 ug/L #	57
16) Dimethyl Sulfide	7.12	62	73754	29.4495 ug/L	98
17) Iodomethane	7.38	142	30053	17.0192 ug/L	94
18) Methyl acetate	7.39	43	74839	20.8626 ug/L	96
19) Methylene Chloride	7.67	84	63258	20.3483 ug/L	84
20) Carbon Disulfide	7.72	76	180963	18.3226 ug/L	100
21) Acrylonitrile	7.86	53	32458	22.0159 ug/L	100
22) Methyl Tert Butyl Ether	7.89	73	191661	21.5885 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	59772	20.9605 ug/L	91
24) n-Hexane	8.24	57	107625	20.7839 ug/L	100
26) Vinyl Acetate	8.80	43	140577	20.2562 ug/L	99
27) 1,1-Dichloroethane	8.83	63	117288	19.0772 ug/L	99
29) 2-Butanone	9.46	43	44451	21.8012 ug/L	98
31) 2,2-Dichloropropane	9.70	77	101190	20.5047 ug/L	95
32) cis-1,2-Dichloroethene	9.77	96	64463	20.2484 ug/L	85
33) Chloroform	10.01	83	111078	19.3455 ug/L	97
34) 1-Bromopropane	10.16	122	13515	30.9638 ug/L	98
35) Bromochloromethane	10.26	130	36936	19.7457 ug/L	100
36) Tetrahydrofuran	10.30	42	2638	Below Cal #	67
38) 1,1,1-Trichloroethane	10.60	97	101018	19.9180 ug/L	100
39) Cyclohexane	10.63	56	121794	21.1778 ug/L	89
40) 1,1-Dichloropropene	10.82	75	84058	20.5806 ug/L	97
41) Tert-Amyl-Methyl ether	10.82	73	12268	1.4371 ug/L #	52
42) Carbon Tetrachloride	10.99	117	93740	19.7812 ug/L	97
45) 1,2-Dichloroethane	11.19	62	97411	19.8769 ug/L	100
46) Benzene	11.23	78	240735	19.5919 ug/L	93
47) Trichloroethene	12.09	130	62794	21.6321 ug/L	98
48) Methylcyclohexane	12.18	83	104391	22.2455 ug/L	90

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030816\6M137650.D Vial: 7
Acq On : 8 Mar 2016 14:12 Operator: TMB
Sample : WG560060-02 MS 323-05 8260 5.27g Inst : HPMS6
Misc : 7,1 STD74973 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 08 14:37:20 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
49)	1,2-Dichloropropane	12.35	63	69678	21.0753 ug/L	96
51)	Bromodichloromethane	12.68	83	84434	19.4610 ug/L	99
52)	Dibromomethane	12.79	93	38504	19.9116 ug/L	97
53)	2-Chloroethyl Vinyl Ether	13.04	63	39638	21.7975 ug/L	98
54)	4-Methyl-2-Pentanone	13.07	58	31257	22.7002 ug/L	92
55)	cis-1,3-Dichloropropene	13.43	75	105393	22.0479 ug/L	97
56)	Dimethyl Disulfide	13.73	79	49214	20.4131 ug/L	100
59)	Toluene	13.91	91	245351	19.8307 ug/L	99
60)	Ethyl Methacrylate	14.04	69	82484	20.8069 ug/L	96
62)	trans-1,3-Dichloropropene	14.12	75	95145	19.9989 ug/L	100
63)	1,1,2-Trichloroethane	14.38	97	54001	20.8821 ug/L	100
64)	2-Hexanone	14.31	43	62965	21.3378 ug/L	99
65)	1,3-Dichloropropane	14.74	76	101608	21.6783 ug/L	98
66)	Tetrachloroethene	14.87	166	61974	20.3056 ug/L	99
67)	Dibromochloromethane	15.18	129	65639	19.5167 ug/L	99
68)	1,2-Dibromoethane	15.48	107	54102	20.4570 ug/L	96
69)	1-Chlorohexane	15.59	91	83840	21.8213 ug/L	88
70)	Chlorobenzene	16.07	112	159994	20.1211 ug/L #	68
71)	1,1,1,2-Tetrachloroethane	16.11	131	61919	19.3938 ug/L	97
72)	Ethylbenzene	16.10	106	88111	20.7071 ug/L	100
73)	m-,p-Xylene	16.22	106	215625	41.4147 ug/L	98
74)	o-Xylene	16.88	106	105618	21.5377 ug/L	96
75)	Styrene	16.92	104	169918	20.3580 ug/L	96
76)	Bromoform	17.49	173	44349	18.6759 ug/L	97
77)	Isopropylbenzene	17.38	105	279988	21.2396 ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.65	83	79551	21.5699 ug/L	96
81)	1,2,3-Trichloropropane	17.87	110	25315	22.4185 ug/L	94
82)	trans-1,4-Dichloro-2-Buten	17.93	53	23172	17.0192 ug/L	83
83)	n-Propylbenzene	17.98	91	344530	21.4884 ug/L	98
84)	Bromobenzene	18.13	156	69629	19.9788 ug/L	98
85)	1,3,5-Trimethylbenzene	18.21	105	240954	21.1132 ug/L	96
86)	2-Chlorotoluene	18.30	91	221437	20.6918 ug/L	94
87)	4-Chlorotoluene	18.36	91	202568	20.7015 ug/L	97
88)	a-Methylstyrene	18.69	118	119497	21.5615 ug/L	96
89)	tert-Butylbenzene	18.76	134	50676	21.3070 ug/L	93
90)	1,2,4-Trimethylbenzene	18.82	105	241816	20.1478 ug/L	82
91)	sec-Butylbenzene	19.08	105	316920	21.6843 ug/L	98
92)	p-Isopropyltoluene	19.27	119	255947	21.2266 ug/L	99
93)	1,3-Dichlorobenzene	19.48	146	137751	20.4274 ug/L	97
94)	1,4-Dichlorobenzene	19.64	146	140840	20.5181 ug/L	96
95)	n-Butylbenzene	19.89	91	251591	20.7454 ug/L	97
96)	1,2-Dichlorobenzene	20.23	146	134518	20.7304 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	21.41	75	17520	21.4700 ug/L	92
98)	1,2,4-Trichlorobenzene	22.76	180	100615	21.4483 ug/L	99
99)	Hexachlorobutadiene	22.96	225	60834	22.6760 ug/L	97
100)	Naphthalene	23.20	128	230055	21.3326 ug/L	100
101)	1,2,3-Trichlorobenzene	23.59	180	98070	21.2310 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M137650.D 826_SL.M Tue Mar 08 14:37:20 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030816\6M137650.D Vial: 7
Acq On : 8 Mar 2016 14:12 Operator: TMB
Sample : WG560060-02 MS 323-05 8260 5.27g Inst : HPMS6
Misc : 7,1 STD74973 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 8 14:37 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

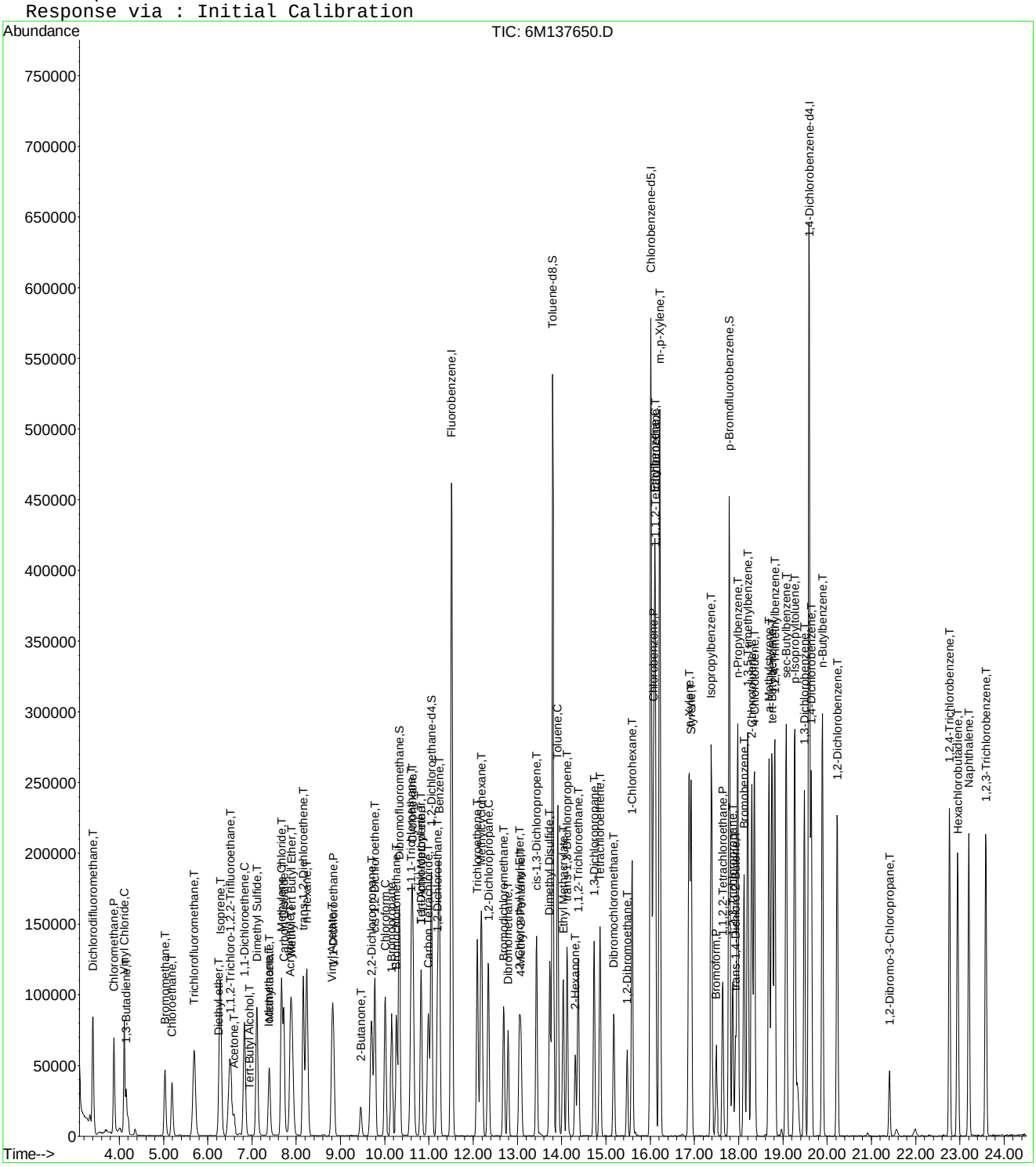

6M137650.D 826_SL.M Tue Mar 08 14:37:21 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030816\6M137651.D Vial: 8
Acq On : 8 Mar 2016 14:46 Operator: TMB
Sample : WG560060-03 MSD 323-05 8260 4.76g Inst : HPMS6
Misc : 7,1 STD74973 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 08 15:11:20 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	284633	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	205283	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	106803	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.32	111	70130	45.9304 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 91.86%		
43) 1,2-Dichloroethane-d4	11.06	65	85753	43.2560 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 86.52%		
58) Toluene-d8	13.80	98	241765	49.5350 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.06%		
80) p-Bromofluorobenzene	17.79	95	97853	49.8805 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 99.76%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	46057	17.6188 ug/L	98
3) Chloromethane	3.88	50	40757	14.9619 ug/L	98
4) Vinyl Chloride	4.12	62	39579	18.0515 ug/L	98
5) 1,3-Butadiene	4.16	54	5284	2.8966 ug/L	79
6) Bromomethane	5.03	94	22210	19.0025 ug/L	97
7) Chloroethane	5.19	64	23603	18.9853 ug/L	100
8) Trichlorofluoromethane	5.69	101	50553	17.1590 ug/L	99
10) Isoprene	6.28	67	43061	22.4359 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	27672	19.6780 ug/L	96
13) Acetone	6.59	43	15334	21.3779 ug/L	98
14) 1,1-Dichloroethene	6.83	61	44725	17.9555 ug/L	93
15) Tert-Butyl Alcohol	6.82	59	1556	6.6948 ug/L #	57
16) Dimethyl Sulfide	7.12	62	36452	30.1633 ug/L	99
17) Iodomethane	7.39	142	13770	16.4109 ug/L	97
18) Methyl acetate	7.39	43	37738	21.8014 ug/L	98
19) Methylene Chloride	7.67	84	28782	19.1866 ug/L	87
20) Carbon Disulfide	7.72	76	87969	18.4584 ug/L	98
21) Acrylonitrile	7.86	53	15546	21.8523 ug/L	98
22) Methyl Tert Butyl Ether	7.89	73	91746	21.4161 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	26362	19.1579 ug/L	88
24) n-Hexane	8.24	57	52407	20.9734 ug/L	100
26) Vinyl Acetate	8.80	43	51047	15.2433 ug/L	96
27) 1,1-Dichloroethane	8.83	63	52667	17.7527 ug/L	99
29) 2-Butanone	9.46	43	21211	21.5589 ug/L	93
31) 2,2-Dichloropropane	9.70	77	44611	18.7337 ug/L	94
32) cis-1,2-Dichloroethene	9.77	96	28465	18.5292 ug/L	97
33) Chloroform	10.01	83	49621	17.9095 ug/L	99
34) 1-Bromopropane	10.15	122	6898	32.7512 ug/L	96
35) Bromochloromethane	10.26	130	16468	18.2444 ug/L	99
36) Tetrahydrofuran	10.30	42	1310	Below Cal #	40
38) 1,1,1-Trichloroethane	10.60	97	44641	18.2409 ug/L	98
39) Cyclohexane	10.63	56	59479	21.4331 ug/L	88
40) 1,1-Dichloropropene	10.82	75	36644	18.5929 ug/L	95
41) Tert-Amyl-Methyl ether	10.82	73	4941	1.1995 ug/L #	52
42) Carbon Tetrachloride	10.99	117	40663	17.7824 ug/L	98
45) 1,2-Dichloroethane	11.19	62	43658	18.4616 ug/L	99
46) Benzene	11.23	78	107295	18.0960 ug/L	92
47) Trichloroethene	12.09	130	26832	19.1557 ug/L	98
48) Methylcyclohexane	12.18	83	50050	22.1029 ug/L	88
49) 1,2-Dichloropropane	12.34	63	30571	19.1625 ug/L	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030816\6M137651.D Vial: 8
Acq On : 8 Mar 2016 14:46 Operator: TMB
Sample : WG560060-03 MSD 323-05 8260 4.76g Inst : HPMS6
Misc : 7,1 STD74973 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 08 15:11:20 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
51)	Bromodichloromethane	12.68	83	36553	17.4596 ug/L	96
52)	Dibromomethane	12.79	93	16528	17.7128 ug/L	96
53)	2-Chloroethyl Vinyl Ether	13.04	63	17242	19.6493 ug/L	99
54)	4-Methyl-2-Pentanone	13.08	58	14433	21.7222 ug/L	92
55)	cis-1,3-Dichloropropene	13.43	75	44826	19.4335 ug/L	98
56)	Dimethyl Disulfide	13.72	79	22515	19.3534 ug/L	98
59)	Toluene	13.91	91	110651	19.0550 ug/L	99
60)	Ethyl Methacrylate	14.04	69	38867	20.8892 ug/L	98
62)	trans-1,3-Dichloropropene	14.12	75	40627	18.1945 ug/L	96
63)	1,1,2-Trichloroethane	14.38	97	23302	19.1986 ug/L	99
64)	2-Hexanone	14.31	43	28850	20.8306 ug/L	99
65)	1,3-Dichloropropane	14.74	76	44646	20.2948 ug/L	99
66)	Tetrachloroethene	14.87	166	27200	18.9881 ug/L	100
67)	Dibromochloromethane	15.18	129	27424	17.3732 ug/L	99
68)	1,2-Dibromoethane	15.48	107	23034	18.5568 ug/L	97
69)	1-Chlorohexane	15.59	91	40846	22.6508 ug/L	88
70)	Chlorobenzene	16.07	112	72668	19.4713 ug/L	69
71)	1,1,1,2-Tetrachloroethane	16.11	131	27588	18.4104 ug/L	97
72)	Ethylbenzene	16.10	106	38265	19.1600 ug/L	99
73)	m-,p-Xylene	16.22	106	94061	38.4920 ug/L	95
74)	o-Xylene	16.88	106	44420	19.2994 ug/L	89
75)	Styrene	16.92	104	72344	18.4673 ug/L	94
76)	Bromoform	17.50	173	18056	16.2003 ug/L	99
77)	Isopropylbenzene	17.38	105	122776	19.8438 ug/L	96
79)	1,1,2,2-Tetrachloroethane	17.65	83	33941	20.3433 ug/L	96
81)	1,2,3-Trichloropropane	17.87	110	10808	21.1577 ug/L	91
82)	trans-1,4-Dichloro-2-Buten	17.93	53	10492	17.0344 ug/L	76
83)	n-Propylbenzene	17.98	91	149471	20.6076 ug/L	98
84)	Bromobenzene	18.13	156	30675	19.4562 ug/L	98
85)	1,3,5-Trimethylbenzene	18.21	105	104476	20.2363 ug/L	96
86)	2-Chlorotoluene	18.30	91	97414	20.1217 ug/L	96
87)	4-Chlorotoluene	18.36	91	89354	20.1855 ug/L	97
88)	a-Methylstyrene	18.69	118	55285	22.0508 ug/L	98
89)	tert-Butylbenzene	18.76	134	22432	20.8489 ug/L	87
90)	1,2,4-Trimethylbenzene	18.82	105	106171	19.5543 ug/L	82
91)	sec-Butylbenzene	19.08	105	137287	20.7644 ug/L	98
92)	p-Isopropyltoluene	19.27	119	110053	20.1756 ug/L	98
93)	1,3-Dichlorobenzene	19.48	146	60863	19.9510 ug/L	98
94)	1,4-Dichlorobenzene	19.64	146	60903	19.6130 ug/L	95
95)	n-Butylbenzene	19.89	91	103995	18.9554 ug/L	98
96)	1,2-Dichlorobenzene	20.22	146	58616	19.9681 ug/L	99
97)	1,2-Dibromo-3-Chloropropan	21.41	75	6985	18.9216 ug/L	86
98)	1,2,4-Trichlorobenzene	22.76	180	39273	18.5063 ug/L	99
99)	Hexachlorobutadiene	22.96	225	25490	21.0031 ug/L	98
100)	Naphthalene	23.20	128	84999	17.4229 ug/L	99
101)	1,2,3-Trichlorobenzene	23.58	180	37961	18.1663 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M137651.D 826_SL.M Tue Mar 08 15:11:20 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030816\6M137651.D Vial: 8
Acq On : 8 Mar 2016 14:46 Operator: TMB
Sample : WG560060-03 MSD 323-05 8260 4.76g Inst : HPMS6
Misc : 7,1 STD74973 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 8 15:11 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

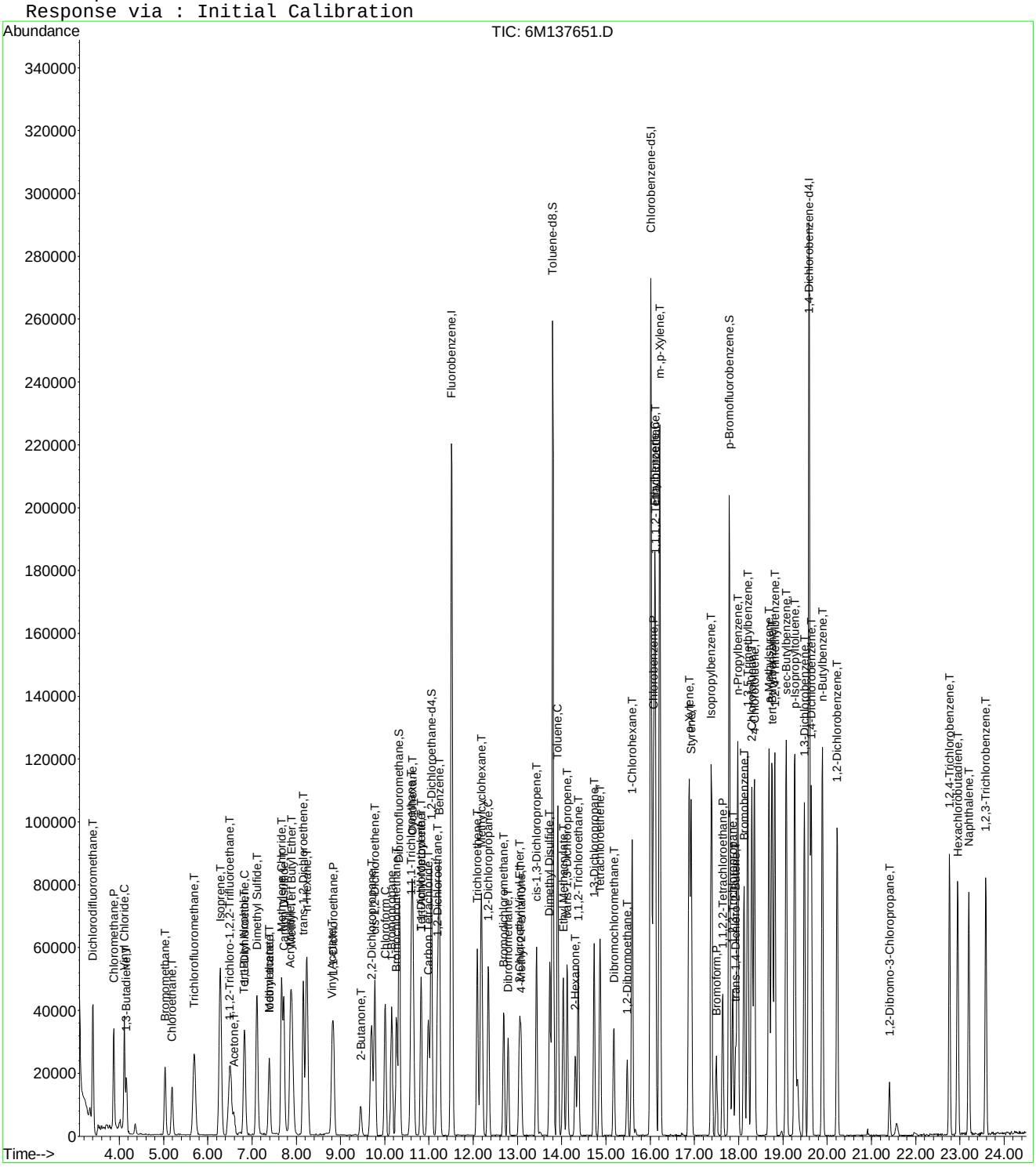

2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030323-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT09(5-5.5)040316	**Prep Method:**	6850	**Prep Date:**	03/07/2016 14:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559975	**Analyst:**	JWR	**Run Date:**	03/07/2016 18:39
Collect Date:	03/04/2016 10:30	**Dilution:**	1	**File ID:**	1LM.LM33757
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	67.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.84	U	5.70	2.84	1.42

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030323-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT09(11-11.5)040316	**Prep Method:**	6850	**Prep Date:**	03/07/2016 14:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559975	**Analyst:**	JWR	**Run Date:**	03/07/2016 18:58
Collect Date:	03/04/2016 10:35	**Dilution:**	1	**File ID:**	1LM.LM33758
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	86.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.26	U	4.51	2.26	1.13

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030323-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT09(13.5-14)040316	**Prep Method:**	6850	**Prep Date:**	03/07/2016 14:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559975	**Analyst:**	JWR	**Run Date:**	03/07/2016 19:17
Collect Date:	03/04/2016 10:40	**Dilution:**	1	**File ID:**	1LM.LM33759
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.44	U	4.89	2.44	1.22

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030323-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT10(5-5.5)040316	**Prep Method:**	6850	**Prep Date:**	03/07/2016 14:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559975	**Analyst:**	JWR	**Run Date:**	03/07/2016 19:36
Collect Date:	03/04/2016 11:25	**Dilution:**	1	**File ID:**	1LM.LM33760
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	74.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.60	U	5.21	2.60	1.30

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030323-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT10(15.5-16)040316	**Prep Method:**	6850	**Prep Date:**	03/07/2016 14:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559975	**Analyst:**	JWR	**Run Date:**	03/08/2016 11:35
Collect Date:	03/04/2016 11:55	**Dilution:**	10	**File ID:**	1LM.LM33776
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	94.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	175		41.8	21.0	10.5

Certificate of Analysis

Sample #:	L16030323-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT10(23.5-24)040316	**Prep Method:**	6850	**Prep Date:**	03/07/2016 14:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559975	**Analyst:**	JWR	**Run Date:**	03/07/2016 21:11
Collect Date:	03/04/2016 12:40	**Dilution:**	1	**File ID:**	1LM.LM33765
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	86.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	15.9		4.55	2.28	1.14

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

MICROBAC

Semivolatile Sample Extract Log

Parameter: Perchlorate
SOP #: HPLC 06
Analyst: JWR
Spike/Surrogate analyst: JWR
Surrogate #: NA
Spike # A: STD72686
Ext Solvent: DI-H2O
Ext Solvent: NA
Ext Disk: NA

Matrix: Soils
Rev #: 07
Date/Time Extracted: JWR/03/07/16/14:15
Witness: [illegible]

Spike # B: NA
Lot #: NA
Lot #: NA
Lot #: NA

Extraction Work Group: WG559971
Analytical Work Group: WG559975
Run ID: R4485580

Pipetter(s): Eppendorf #403
Analytical Balance ID: BAL014
Reagent: Tubes Lot #: RGT34011
Reagent: Sand Lot #: COA16150
Other: IS Lot #: COA18071

Color Code
T = Transparent
C = Colored
O = Opaque

	Sample ID	Test Code	pH	Initial Wt / Vol	JWR ~~Surrogate~~ Amount	IS Amount Spike	Final Volume	Extract Color	Comments
1	WG559971-01	6850		5.023 g	0.250 ml	1.0 ml	50 ml		MCT (2 ug/kg) (10,000 us)
2	WG559971-02			5.020 g		NA			Blank
3	WG559971-03			5.001 g		1.0 ml			LCS (2 ug/kg)
4	L16030323-01			5.194 g		NA			
5	-02			5.142 g		NA			
6	-03			5.141 g		NA			
7	-04			5.192 g		NA			
8	-05			5.033 g		NA			
9	-06			5.039 g		NA			
10	L16030324-01			5.204 g		NA			WG559971-04 Ref
11	MS -01			5.197 g		1.0 ml			WG559971-05 MS (@ 2 ug/kg)
12	MSD -01			5.206 g		1.0 ml			WG559971-06 MSD (@ 2 ug/kg)
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									

JWR 03/07/16

Reviewed by: [illegible] 3-9-16

Analytical WG559975 (soils)

Perchlorate Conductivity Check

(perchlorate1)

Conductivity Probe Calibration Check: 1392 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG559971-01 MCT	10,200.	
WG559971-02 Blank	1.09	
WG559971-03 LCS	1.06	
L16030324-01 Ref	52.4	
-01 MS	54.3	
-01 MSD	54.1	
L16030323-01	8.49	
-02	62.5	
-03	43.2	
-04	4.69	
-05	102.4	
-06	57.6	

Analyst: John Richards

Date/Time: 03/07/16 16:45

DCN#117079

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030216_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015, WG559292

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 MS/MSD STD: STD72685

Comments: L16021262s and L16021255s diluted based on historical data.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM33567	WG559340-01 CCB	1	1		03/02/16 08:34
2	1LM.LM33568	WG559340-02 STD (0.1 ug/L)	1	1	STD72683	03/02/16 08:53
3	1LM.LM33569	WG559340-03 STD (0.2 ug/L)	1	1	STD72683	03/02/16 09:12
4	1LM.LM33570	WG559340-04 STD (0.5 ug/L)	1	1	STD72683	03/02/16 09:31
5	1LM.LM33571	WG559340-05 STD (1.0 ug/L)	1	1	STD72683	03/02/16 09:50
6	1LM.LM33572	WG559340-06 STD (2.0 ug/L)	1	1	STD72683	03/02/16 10:09
7	1LM.LM33573	WG559340-07 STD (5.0 ug/L)	1	1	STD72683	03/02/16 10:28
8	1LM.LM33574	WG559340-08 STD (10 ug/L)	1	1	STD72683	03/02/16 10:46
9	1LM.LM33575	WG559340-09 SSCV (1.0 ug/L)	1	1	STD72685	03/02/16 11:05
10	1LM.LM33576	WG559291-01 CCB	1	1		03/02/16 11:25
11	1LM.LM33577	WG559291-02 CCV (1.0ug/L)	1	1	STD72683	03/02/16 11:44
12	1LM.LM33578	WG559015-05 MRL (0.2ug/L)	1	1	STD72683	03/02/16 12:03
13	1LM.LM33579	WG559015-01 MCT (0.2ug/L)	1	1	STD72685	03/02/16 12:22
14	1LM.LM33580	WG559015-02 BLANK	1	1		03/02/16 12:41
15	1LM.LM33581	WG559015-05 MRL (0.2ug/L)	1	1	STD72683	03/02/16 13:01
16	1LM.LM33582	WG559015-03 LCS (0.2ug/L)	1	1	STD72685	03/02/16 13:20
17	1LM.LM33583	WG559015-04 LCS2 (0.2ug/L)	1	1	STD72685	03/02/16 13:39
18	1LM.LM33584	L16021060-01 ADC	1	1	STD72685	03/02/16 13:58
19	1LM.LM33585	L16021060-02 ADC	1	1	STD72685	03/02/16 14:17
20	1LM.LM33586	L16021060-03 ADC	1	1	STD72685	03/02/16 14:36
21	1LM.LM33587	L16021060-04 ADC	1	1	STD72685	03/02/16 14:55
22	1LM.LM33588	L16021262-01 (20x)	1	20		03/02/16 15:13
23	1LM.LM33589	L16021262-02 (5000x)	1	5000		03/02/16 15:32
24	1LM.LM33590	WG559291-03 CCV (1.0ug/L)	1	1	STD72683	03/02/16 15:51
25	1LM.LM33591	WG559015-06 MRL (0.2ug/L)	1	1	STD72683	03/02/16 16:10
26	1LM.LM33592	WG559291-04 CCB	1	1		03/02/16 16:29
27	1LM.LM33593	L16021262-03 (100X)	1	100		03/02/16 16:48
28	1LM.LM33594	L16021262-04 (2000X)	1	2000		03/02/16 17:07
29	1LM.LM33595	L16021262-05 (1000X)	1	1000		03/02/16 17:26
30	1LM.LM33596	L16021262-06 (10,000X)	1	10000		03/02/16 17:45
31	1LM.LM33597	L16021262-07 (10,000X)	1	10000		03/02/16 18:04
32	1LM.LM33598	L16021262-08 (5000X)	1	5000		03/02/16 18:23
33	1LM.LM33599	L16021262-09 (5000X)	1	5000		03/02/16 18:42

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030216_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015, WG559292

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM33600	L16021262-10 (100,000X)	1	100000		03/02/16 19:01
35	1LM.LM33601	L16021262-11 (10,000X)	1	10000		03/02/16 19:20
36	1LM.LM33602	L16021262-12 (10,000X)	1	10000		03/02/16 19:39
37	1LM.LM33603	WG559291-05 CCV (1.0ug/L)	1	1	STD72683	03/02/16 19:58
38	1LM.LM33604	WG559015-07 MRL (0.2ug/L)	1	1	STD72683	03/02/16 20:17
39	1LM.LM33605	WG559291-06 CCB	1	1		03/02/16 20:35
40	1LM.LM33606	L16021262-13 (10,000X)	1	10000		03/02/16 20:54
41	1LM.LM33607	L16021262-14 (10,000X)	1	10000		03/02/16 21:13
42	1LM.LM33608	WG559291-07 CCV (1.0ug/L)	1	1	STD72683	03/02/16 21:32
43	1LM.LM33609	WG559015-08 MRL (0.2ug/L)	1	1	STD72683	03/02/16 21:51
44	1LM.LM33610	WG559291-08 CCB	1	1		03/02/16 22:10
45	1LM.LM33611	WG559292-07 MRL (0.2ug/L)	1	1	STD72685	03/02/16 22:29
46	1LM.LM33612	WG559292-01 MCT (0.2ug/L)	1	1	STD72685	03/02/16 22:48
47	1LM.LM33613	WG559292-02 BLANK	1	1		03/02/16 23:07
48	1LM.LM33614	WG559292-03 LCS (0.2ug/L)	1	1	STD72685	03/02/16 23:26
93	1LM.LM33615	L16021255-01 REF 100X	1	100		03/02/16 23:45
50	1LM.LM33616	L16021255-02 MS 100X	1	100	STD72685	03/03/16 00:04
51	1LM.LM33617	L16021255-03 MSD 100X	1	100	STD72685	03/03/16 00:23
94	1LM.LM33618	L16021255-04 20X	1	20		03/03/16 00:42
53	1LM.LM33619	L16021255-05 20X	1	20		03/03/16 01:01
54	1LM.LM33620	L16021255-06 200X	1	200		03/03/16 01:20
55	1LM.LM33621	L16021255-07 100X	1	100		03/03/16 01:39
56	1LM.LM33622	WG559291-09 CCV (1.0ug/L)	1	1	STD72685	03/03/16 01:57
57	1LM.LM33623	WG559292-08 MRL (0.2ug/L)	1	1	STD72685	03/03/16 02:16
58	1LM.LM33624	WG559291-10 CCB	1	1		03/03/16 02:35
59	1LM.LM33625	L16021255-08	1	1		03/03/16 02:54
60	1LM.LM33626	L16021255-09 500X	1	500		03/03/16 03:13
61	1LM.LM33627	L16021255-10 5000X	1	5000		03/03/16 03:32
62	1LM.LM33628	L16021255-11 5000X	1	5000		03/03/16 03:51
63	1LM.LM33629	L16021255-12 100X	1	100		03/03/16 04:10
64	1LM.LM33630	L16021255-13 10,000X	1	10000		03/03/16 04:29
65	1LM.LM33631	L16021255-14 10,000X	1	10000		03/03/16 04:48
66	1LM.LM33632	L16030008-01	1	1		03/03/16 05:07
67	1LM.LM33633	L16030008-01 10X	1	10		03/03/16 05:26
68	1LM.LM33634	L16021328-01	1	1		03/03/16 05:45
69	1LM.LM33635	WG559291-11 CCV (1.0ug/L)	1	1	STD72685	03/03/16 06:04

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030216_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015, WG559292

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
70	1LM.LM33636	WG559292-09 MRL (0.2ug/L)	1	1	STD72685	03/03/16 06:23
71	1LM.LM33637	WG559291-12 CCB	1	1		03/03/16 06:41
72	1LM.LM33638	L16021328-02	1	1		03/03/16 07:00
73	1LM.LM33639	L16021328-03	1	1		03/03/16 07:19
74	1LM.LM33640	L16021328-04	1	1		03/03/16 07:38
75	1LM.LM33641	L16021328-05	1	1		03/03/16 07:57
76	1LM.LM33642	WG559291-13 CCV (1.0ug/L)	1	1	STD72685	03/03/16 08:16
77	1LM.LM33643	WG559292-10 MRL (0.2ug/L)	1	1	STD72685	03/03/16 08:35
78	1LM.LM33644	WG559291-14 CCB	1	1		03/03/16 08:54
79	1LM.LM33645	L16021255-05 200X	1	200		03/03/16 09:13
80	1LM.LM33646	L16021255-06	1	1		03/03/16 09:32
81	1LM.LM33647	L16021255-12 1000X	1	1000		03/03/16 09:51
95	1LM.LM33648	L16021255-04	1	1		03/03/16 10:10
96	1LM.LM33649	L16021255-02 MS	1	1	STD72685	03/03/16 10:29
97	1LM.LM33650	L16021255-03 MSD	1	1	STD72685	03/03/16 10:48
85	1LM.LM33651	WG559291-15 CCV (1.0ug/L)	1	1	STD72685	03/03/16 11:07
86	1LM.LM33652	WG559292-11 MRL (0.2ug/L)	1	1	STD72685	03/03/16 11:25
87	1LM.LM33653	WG559291-16 CCB	1	1		03/03/16 11:44

Comments

Seq.	Rerun	Dil.	Reason	Analytes
12	X			
	WG559015-05 incorrect vial location.			
50				
	DNR. Incorrect information on the supplied Chain of Custody.			
51				
	DNR. Incorrect information on the supplied Chain of Custody.			
94	X	1	Analyzed too dilute	
	L16021255-04			
53	X	200	Over Calibration Range	Perchlorate
	L16021255-05			
54	X	1	Analyzed too dilute	
	L16021255-06			
63	X	1000	Over Calibration Range	
	L16021255-12 100X			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030716_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG559975 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD72683 (03/02/2016)

CCV STD: STD72683 LCS STD: STD72685 MS/MSD STD: STD72685

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM33748	WG559981-01 CCB	1	1		03/07/16 15:49
2	1LM.LM33749	WG559981-02 CCV (1.0ug/L)	1	1	STD72683	03/07/16 16:08
3	1LM.LM33750	WG559975-07 MRL (2.0ug/kg)	7	1	STD72683	03/07/16 16:27
4	1LM.LM33751	WG559975-01 MCT (2.0ug/kg)	7	1	STD72685	03/07/16 16:45
5	1LM.LM33752	WG559975-02 BLANK	7	1		03/07/16 17:04
6	1LM.LM33753	WG559975-03 LCS (2.0ug/kg)	7	1	STD72685	03/07/16 17:23
7	1LM.LM33754	L16030324-01 REF (NR)	7	1		03/07/16 17:42
8	1LM.LM33755	L16030324-01 MS (NR)	7	1	STD72685	03/07/16 18:01
9	1LM.LM33756	L16030324-01 MSD (NR)	7	1	STD72685	03/07/16 18:20
10	1LM.LM33757	L16030323-01	7	1		03/07/16 18:39
11	1LM.LM33758	L16030323-02	7	1		03/07/16 18:58
12	1LM.LM33759	L16030323-03	7	1		03/07/16 19:17
13	1LM.LM33760	L16030323-04	7	1		03/07/16 19:36
14	1LM.LM33761	WG559981-03 CCV (1.0ug/L)	1	1	STD72683	03/07/16 19:55
15	1LM.LM33762	WG559975-08 MRL (2.0ug/kg)	7	1	STD72683	03/07/16 20:14
16	1LM.LM33763	WG559981-04 CCB	1	1		03/07/16 20:33
17	1LM.LM33764	L16030323-05 (NR)	7	1		03/07/16 20:52
18	1LM.LM33765	L16030323-06	7	1		03/07/16 21:11
19	1LM.LM33766	Diluent	7	1		03/07/16 21:30
20	1LM.LM33767	WG559981-05 CCV (1.0ug/L)	1	1	STD72683	03/07/16 21:48
21	1LM.LM33768	WG559975-09 MRL (2.0ug/kg)	7	1	STD72683	03/07/16 22:07
22	1LM.LM33769	WG559981-06 CCB	1	1		03/07/16 22:26
23	1LM.LM33770	WG559981-07 CCV (1.0ug/L)	1	1	STD72683	03/08/16 09:41
24	1LM.LM33771	WG559975-10 MRL (2.0ug/kg)	7	1	STD72683	03/08/16 10:00
25	1LM.LM33772	WG559981-08 CCB	1	1		03/08/16 10:19
26	1LM.LM33773	L16030324-01 REF (RR 10x)	10	10		03/08/16 10:38
27	1LM.LM33774	L16030324-01 MS (RR 10x)	7	10	STD72685	03/08/16 10:57
28	1LM.LM33775	L16030324-01 MSD (RR 10x)	7	10	STD72685	03/08/16 11:16
29	1LM.LM33776	L16030323-05 (RR 10x)	7	10		03/08/16 11:35
30	1LM.LM33777	WG559981-09 CCV (1.0ug/L)	1	1	STD72683	03/08/16 11:54
31	1LM.LM33778	WG559975-11 MRL (2.0ug/kg)	7	1	STD72683	03/08/16 12:13
32	1LM.LM33779	WG559981-10 CCB	1	1		03/08/16 12:32

Comments

Page: 1 Approved: 09-MAR-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030716_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG559975 (soils)

Internal STD: COA18071 Surrogate STD: NA STD72683 (03/02/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Comments

Seq.	Rerun	Dil.	Reason	Analytes
7	X	10	Over Calibration Range	
	L16030324-01 REF (NR) : This sample was reanalyzed at a 10x dilution on the end of this run.			
8	X	10	Over Calibration Range	
	L16030324-01 MS (NR) : This sample was reanalyzed at a 10x dilution on the end of this run.			
9	X	10	Over Calibration Range	
	L16030324-01 MSD (NR) : This sample was reanalyzed at a 10x dilution on the end of this run.			
17	X	10	Over Calibration Range	
	L16030323-05 (NR) : This sample was reanalyzed at a 10x dilution on the end of this run.			
27				
	L16030324-01 MS (RR 10x) : The MS %Rec is below the advisory limit. The parent sample to this MS had a perchlorate result 170 times greater than that of the MS-spiked amount. In addition, at this dilution, the spiked amount has been diluted below the method detection limit.			
28				
	L16030324-01 MSD (RR 10x) : The MSD %Rec is below the advisory limit. The parent sample to this MSD had a perchlorate result 170 times greater than that of the MSD-spiked amount. In addition, at this dilution, the spiked amount has been diluted below the method detection limit.			

Page: 2 Approved: 09-MAR-16

Microbac Laboratories Inc.

Data Checklist

Date: 02-MAR-2016
Analyst: WTD
Analyst: ADC
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 73617
Analytical Workgroups: L16021255,L16021328,030008,021262,021060

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	WTD
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MES

Primary Reviewer: 03-MAR-2016

Secondary Reviewer: 04-MAR-2016

CHECKLIST1 - Modified 03/05/2008

Generated: MAR-04-2016 13:53:03

Microbac Laboratories Inc.

Data Checklist

Date: 07-MAR-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 73718
Analytical Workgroups: L16030323, 0324 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	DL @ 10X DILUTION
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 09-MAR-2016 John Richards

Secondary Reviewer: 09-MAR-2016 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-09-2016 13:33:25

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG559975

Login Number: L16030323

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18DPT09(5-5.5)040316	01	03/04/16					03/07/2016	3.2	28		03/07/16	.2	28	
18DPT09(11-11.5)040316	02	03/04/16					03/07/2016	3.2	28		03/07/16	.2	28	
18DPT09(13.5-14)040316	03	03/04/16					03/07/2016	3.1	28		03/07/16	.2	28	
18DPT10(5-5.5)040316	04	03/04/16					03/07/2016	3.1	28		03/07/16	.2	28	
18DPT10(15.5-16)040316	05	03/04/16					03/07/2016	3.1	28		03/08/16	.9	28	
18DPT10(23.5-24)040316	06	03/04/16					03/07/2016	3.1	28		03/07/16	.3	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4663104
Report generated 03/09/2016 13:47

METHOD BLANK SUMMARY

Login Number: L16030323
Blank File ID: 1LM.LM33752
Prep Date: 03/07/16 14:15
Analyzed Date: 03/07/16 17:04
Analyst: JWR

Work Group: WG559975
Blank Sample ID: WG559975-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG559975-07	1LM.LM33750	03/07/16 16:27	01
MCT	WG559975-01	1LM.LM33751	03/07/16 16:45	01
LCS	WG559975-03	1LM.LM33753	03/07/16 17:23	01
18DPT09(5-5.5)040316	L16030323-01	1LM.LM33757	03/07/16 18:39	01
18DPT09(11-11.5)040316	L16030323-02	1LM.LM33758	03/07/16 18:58	01
18DPT09(13.5-14)040316	L16030323-03	1LM.LM33759	03/07/16 19:17	01
18DPT10(5-5.5)040316	L16030323-04	1LM.LM33760	03/07/16 19:36	01
QCMRL	WG559975-08	1LM.LM33762	03/07/16 20:14	01
18DPT10(23.5-24)040316	L16030323-06	1LM.LM33765	03/07/16 21:11	01
QCMRL	WG559975-09	1LM.LM33768	03/07/16 22:07	01
QCMRL	WG559975-10	1LM.LM33771	03/08/16 10:00	01
18DPT10(15.5-16)040316	L16030323-05	1LM.LM33776	03/08/16 11:35	DL01
QCMRL	WG559975-11	1LM.LM33778	03/08/16 12:13	01

Report Name: BLANK_SUMMARY
PDF File ID: 4663105
Report generated 03/09/2016 13:47

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16030323 Prep Date: 03/07/16 14:15 Sample ID: WG559975-02
Instrument ID: LCMS1 Run Date: 03/07/16 17:04 Prep Method: 6850
File ID: 1LM.LM33752 Analyst: JWR Method: 6850
Workgroup (AAB#): WG559975 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.996	3.98	0.996	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4663106
09-MAR-2016 13:47

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030323 Run Date: 03/07/2016 Sample ID: WG559975-03
Instrument ID: LCMS1 Run Time: 17:23 Prep Method: 6850
File ID: 1LM.LM33753 Analyst: JWR Method: 6850
Workgroup (AAB#): WG559975 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD72685 Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	2.00	1.94	97.0	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4663107
Report generated: 03/09/2016 13:47

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16030323
Analytical Method: 6850
ICAL Workgroup: WG559340

Instrument ID: LCMS1
Initial Calibration Date: 02-MAR-16 10:46
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.808	3.97	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4663294
Report generated 03/09/2016 13:47

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16030323

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 02-MAR-16 10:46

Column ID: F

Analyte	WG559340-02			WG559340-03			WG559340-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	18400.0000	1.879	0.200	37000.0000	1.850	0.500	89000.0000	1.810

INT_CAL - Modified 03/06/2008
PDF File ID: 4663294
Report generated 03/09/2016 13:47

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16030323

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 02-MAR-16 10:46

Column ID: F

Analyte	WG559340-05			WG559340-06			WG559340-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	183000.000	1.829	2.00	363000.000	1.777	5.00	871000.000	1.779

INT_CAL - Modified 03/06/2008
PDF File ID: 4663294
Report generated 03/09/2016 13:47

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16030323

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 02-MAR-16 10:46

Column ID: F

Analyte	WG559340-08		
	CONC	RESP	RF
Perchlorate	10.0	1650000.00	1.729

INT_CAL - Modified 03/06/2008

PDF File ID: 4663294

Report generated 03/09/2016 13:47

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16030323 Run Date: 03/02/2016 Sample ID: WG559340-09
Instrument ID: LCMS1 Run Time: 11:05 Method: 6850
File ID: 1LM.LM33575 Analyst: WTD QC Key: DOD4
ICal Workgroup: WG559340 Cal ID: LCMS1 - 02-MAR-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.83	3.00	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4663295
Report generated 03/09/2016 13:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030323
Run Date: 03/07/2016
Sample ID: WG559981-01
Instrument ID: LCMS1
Run Time: 15:49
Method: 6850
File ID: 1LM.LM33748
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG559975
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4663110
Report generated 03/09/2016 13:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030323
Run Date: 03/07/2016
Sample ID: WG559981-04
Instrument ID: LCMS1
Run Time: 20:33
Method: 6850
File ID: 1LM.LM33763
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG559975
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4663110
Report generated 03/09/2016 13:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030323
Run Date: 03/07/2016
Sample ID: WG559981-06
Instrument ID: LCMS1
Run Time: 22:26
Method: 6850
File ID: 1LM.LM33769
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG559975
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4663110
Report generated 03/09/2016 13:47

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030323
Run Date: 03/08/2016
Sample ID: WG559981-08
Instrument ID: LCMS1
Run Time: 10:19
Method: 6850
File ID: 1LM.LM33772
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG559975
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4663110
Report generated 03/09/2016 13:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030323
Run Date: 03/08/2016
Sample ID: WG559981-10
Instrument ID: LCMS1
Run Time: 12:32
Method: 6850
File ID: 1LM.LM33779
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG559975
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4663110
Report generated 03/09/2016 13:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030323
Run Date: 03/07/2016
Sample ID: WG559981-02
Instrument ID: LCMS1
Run Time: 16:08
Method: 6850
File ID: 1LM.LM33749
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG559975
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/kg	1.79	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4663109
Report generated 03/09/2016 13:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030323
Run Date: 03/07/2016
Sample ID: WG559981-03
Instrument ID: LCMS1
Run Time: 19:55
Method: 6850
File ID: 1LM.LM33761
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG559975
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.966	ug/kg	1.71	3.40	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4663109
Report generated 03/09/2016 13:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030323
Run Date: 03/07/2016
Sample ID: WG559981-05
Instrument ID: LCMS1
Run Time: 21:48
Method: 6850
File ID: 1LM.LM33767
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG559975
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.981	ug/kg	1.74	1.90	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4663109
Report generated 03/09/2016 13:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030323
Run Date: 03/08/2016
Sample ID: WG559981-07
Instrument ID: LCMS1
Run Time: 09:41
Method: 6850
File ID: 1LM.LM33770
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG559975
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.984	ug/kg	1.74	1.60	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4663109
Report generated 03/09/2016 13:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030323
Run Date: 03/08/2016
Sample ID: WG559981-09
Instrument ID: LCMS1
Run Time: 11:54
Method: 6850
File ID: 1LM.LM33777
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG559975
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.954	ug/kg	1.69	4.60	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4663109
Report generated 03/09/2016 13:47

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030323 Run Date: 03/07/2016 Sample ID: WG559975-07

Instrument ID: LCMS1 Run Time: 16:27 Prep Method: 6850

File ID: 1LM.LM33750 Analyst: JWR Method: 6850

Workgroup (AAB#): WG559975 Matrix: Soil Units: ug/kg

Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.93	96.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4663108
Report generated 03/09/2016 13:47

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030323 Run Date: 03/07/2016 Sample ID: WG559975-08
Instrument ID: LCMS1 Run Time: 20:14 Prep Method: 6850
File ID: 1LM.LM33762 Analyst: JWR Method: 6850
Workgroup (AAB#): WG559975 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.97	98.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4663108
Report generated 03/09/2016 13:47

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030323 Run Date: 03/07/2016 Sample ID: WG559975-09
Instrument ID: LCMS1 Run Time: 22:07 Prep Method: 6850
File ID: 1LM.LM33768 Analyst: JWR Method: 6850
Workgroup (AAB#): WG559975 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.98	99.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4663108
Report generated 03/09/2016 13:47

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030323 Run Date: 03/08/2016 Sample ID: WG559975-10

Instrument ID: LCMS1 Run Time: 10:00 Prep Method: 6850

File ID: 1LM.LM33771 Analyst: JWR Method: 6850

Workgroup (AAB#): WG559975 Matrix: Soil Units: ug/kg

Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.87	93.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4663108
Report generated 03/09/2016 13:47

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030323 Run Date: 03/08/2016 Sample ID: WG559975-11
Instrument ID: LCMS1 Run Time: 12:13 Prep Method: 6850
File ID: 1LM.LM33778 Analyst: JWR Method: 6850
Workgroup (AAB#): WG559975 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.97	98.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4663108
Report generated 03/09/2016 13:47

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16030323
Instrument ID: LCMS1
Workgroup (AAB#): WG559975

ICAL CCV Number: WG559340-05
CAL ID: LCMS1-02-MAR-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1
WG559340	NA	NA	494000
Upper Limit	NA	NA	741000
Lower Limit	NA	NA	247000
L16030323-01	1.00	01	520000
L16030323-02	1.00	01	524000
L16030323-03	1.00	01	547000
L16030323-04	1.00	01	551000
L16030323-05	10.0	DL01	505000
L16030323-06	1.00	01	567000
WG559975-02	1.00	01	489000
WG559975-03	1.00	01	497000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4663111
Report generated 03/09/2016 13:48

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**	6850	**Samplenum:**	L16030323-01
Instrument:	LCMS1	**Prep Date:**	03/07/2016 14:15	**File ID:**	1LM.LM33757
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559975	**Analysis Date:**	03/07/2016 18:39	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	16500	5760	2.86	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**	6850	**Samplenum:**	L16030323-02
Instrument:	LCMS1	**Prep Date:**	03/07/2016 14:15	**File ID:**	1LM.LM33758
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559975	**Analysis Date:**	03/07/2016 18:58	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**	6850	**Samplenum:**	L16030323-03
Instrument:	LCMS1	**Prep Date:**	03/07/2016 14:15	**File ID:**	1LM.LM33759
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559975	**Analysis Date:**	03/07/2016 19:17	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1430	1220	1.17	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**	6850	**Samplenum:**	L16030323-04
Instrument:	LCMS1	**Prep Date:**	03/07/2016 14:15	**File ID:**	1LM.LM33760
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559975	**Analysis Date:**	03/07/2016 19:36	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	10500	3010	3.49	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**	6850	**Samplenum:**	L16030323-05
Instrument:	LCMS1	**Prep Date:**	03/07/2016 14:15	**File ID:**	1LM.LM33776
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559975	**Analysis Date:**	03/08/2016 11:35	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	298000	97500	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**	6850	**Samplenum:**	L16030323-06
Instrument:	LCMS1	**Prep Date:**	03/07/2016 14:15	**File ID:**	1LM.LM33765
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559975	**Analysis Date:**	03/07/2016 21:11	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	280000	91800	3.05	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**		**Samplenum:**	WG559340-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33568
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559975	**Analysis Date:**	03/02/2016 08:53	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	18400	5910	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**		**Samplenum:**	WG559340-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33569
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559975	**Analysis Date:**	03/02/2016 09:12	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37000	11900	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**		**Samplenum:**	WG559340-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33570
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559975	**Analysis Date:**	03/02/2016 09:31	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	89000	30400	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**		**Samplenum:**	WG559340-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33571
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559975	**Analysis Date:**	03/02/2016 09:50	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	183000	56800	3.22	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**		**Samplenum:**	WG559340-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33572
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559975	**Analysis Date:**	03/02/2016 10:09	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	363000	117000	3.10	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**		**Samplenum:**	WG559340-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33573
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559975	**Analysis Date:**	03/02/2016 10:28	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	871000	282000	3.09	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**		**Samplenum:**	WG559340-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33574
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559975	**Analysis Date:**	03/02/2016 10:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1650000	530000	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**		**Samplenum:**	WG559340-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33575
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559975	**Analysis Date:**	03/02/2016 11:05	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	190000	62200	3.05	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**	6850	**Samplenum:**	WG559975-01
Instrument:	LCMS1	**Prep Date:**	03/07/2016 14:15	**File ID:**	1LM.LM33751
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559975	**Analysis Date:**	03/07/2016 16:45	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35900	12800	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**	6850	**Samplenum:**	WG559975-02
Instrument:	LCMS1	**Prep Date:**	03/07/2016 14:15	**File ID:**	1LM.LM33752
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559975	**Analysis Date:**	03/07/2016 17:04	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**	6850	**Samplenum:**	WG559975-03
Instrument:	LCMS1	**Prep Date:**	03/07/2016 14:15	**File ID:**	1LM.LM33753
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559975	**Analysis Date:**	03/07/2016 17:23	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35800	11800	3.03	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**	6850	**Samplenum:**	WG559975-07
Instrument:	LCMS1	**Prep Date:**	03/07/2016 14:15	**File ID:**	1LM.LM33750
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559975	**Analysis Date:**	03/07/2016 16:27	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36200	11700	3.09	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**	6850	**Samplenum:**	WG559975-08
Instrument:	LCMS1	**Prep Date:**	03/07/2016 14:15	**File ID:**	1LM.LM33762
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559975	**Analysis Date:**	03/07/2016 20:14	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	43000	13900	3.09	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**	6850	**Samplenum:**	WG559975-09
Instrument:	LCMS1	**Prep Date:**	03/07/2016 14:15	**File ID:**	1LM.LM33768
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559975	**Analysis Date:**	03/07/2016 22:07	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	45400	15200	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**	6850	**Samplenum:**	WG559975-10
Instrument:	LCMS1	**Prep Date:**	03/07/2016 14:15	**File ID:**	1LM.LM33771
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559975	**Analysis Date:**	03/08/2016 10:00	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	39100	14300	2.73	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**	6850	**Samplenum:**	WG559975-11
Instrument:	LCMS1	**Prep Date:**	03/07/2016 14:15	**File ID:**	1LM.LM33778
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559975	**Analysis Date:**	03/08/2016 12:13	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38000	12100	3.14	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**		**Samplenum:**	WG559981-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33748
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559975	**Analysis Date:**	03/07/2016 15:49	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**		**Samplenum:**	WG559981-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33749
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559975	**Analysis Date:**	03/07/2016 16:08	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	174000	55300	3.15	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**		**Samplenum:**	WG559981-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33761
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559975	**Analysis Date:**	03/07/2016 19:55	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	196000	63700	3.08	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**		**Samplenum:**	WG559981-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33763
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559975	**Analysis Date:**	03/07/2016 20:33	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**		**Samplenum:**	WG559981-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33767
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559975	**Analysis Date:**	03/07/2016 21:48	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	209000	67400	3.10	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**		**Samplenum:**	WG559981-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33769
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559975	**Analysis Date:**	03/07/2016 22:26	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**		**Samplenum:**	WG559981-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33770
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559975	**Analysis Date:**	03/08/2016 09:41	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	195000	63100	3.09	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**		**Samplenum:**	WG559981-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33772
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559975	**Analysis Date:**	03/08/2016 10:19	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**		**Samplenum:**	WG559981-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33777
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559975	**Analysis Date:**	03/08/2016 11:54	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	178000	58000	3.07	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**		**Samplenum:**	WG559981-10
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33779
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559975	**Analysis Date:**	03/08/2016 12:32	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	640	0.000	2.3	3.8	*

2.2.1.3 Sample Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 3/8/2016 5:02 PM

Data File	LM33757.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/7/2016 6:39:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030323-01	**Injection Vial**	10.00
Data File	LM33757.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 6:39:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	L16030323-01	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.200e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.650e+04	9.94	N/A	0.0782
Perchlorate conf	5.760e+03	9.91	N/A	0.0846

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

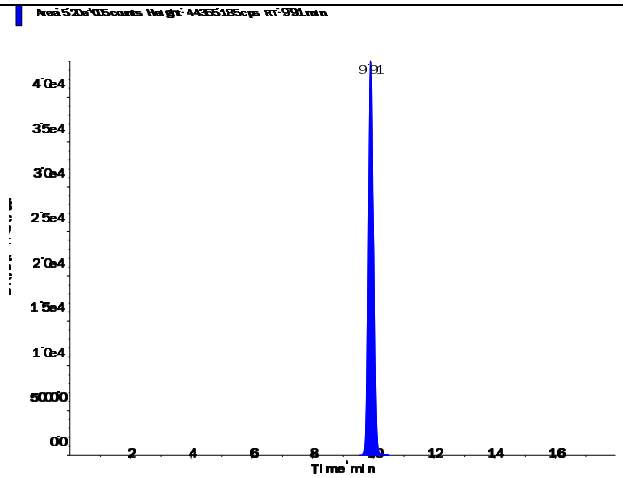

s.dataFile Page 1 of 2

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Printed: 3/8/2016 5:02 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.0782 ng/ml
Area Ratio:	0.032
Sample Type:	(Unknown)

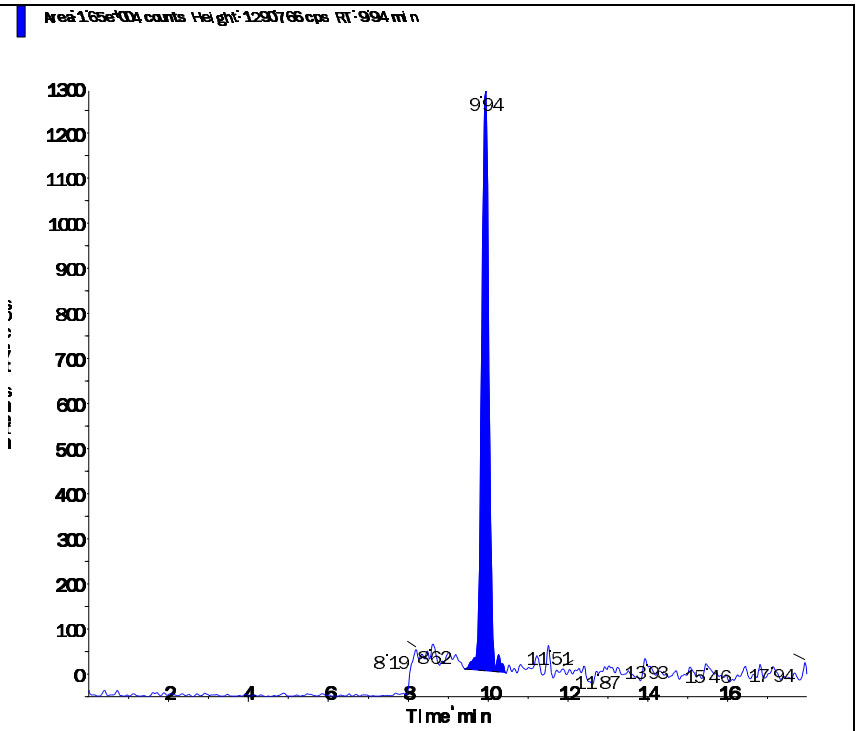

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.92) min
Calculated conc:	0.0846 ng/ml
Area Ratio:	0.011
Sample Type:	(Unknown)

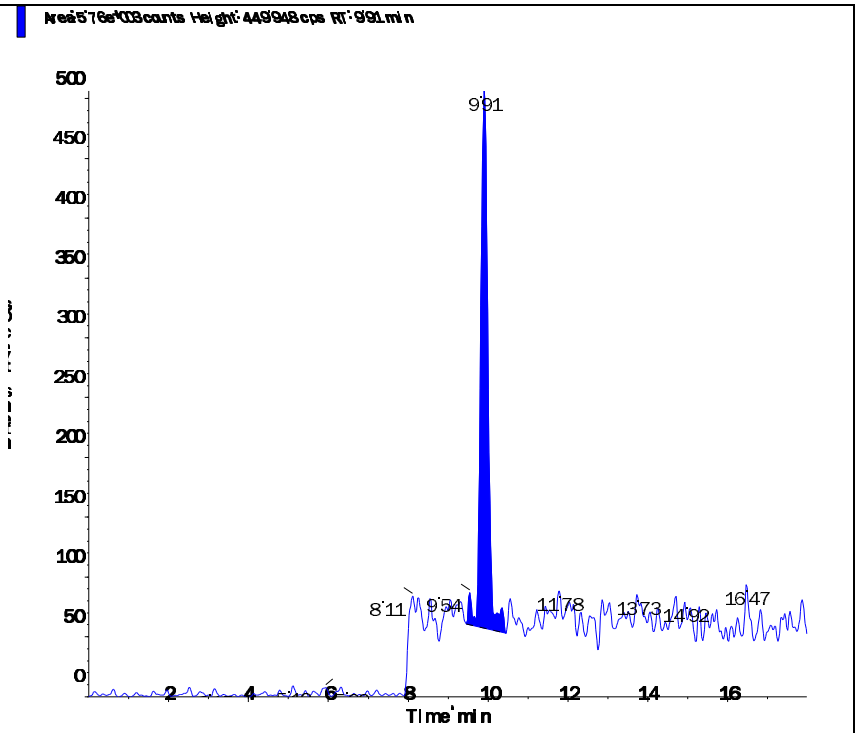

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Created with Analyst Reporter
Printed: 3/8/2016 5:03 PM

Data File	LM33758.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/7/2016 6:58:36 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030323-02	**Injection Vial**	11.00
Data File	LM33758.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 6:58:36 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	L16030323-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.240e+05	9.89	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.89(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

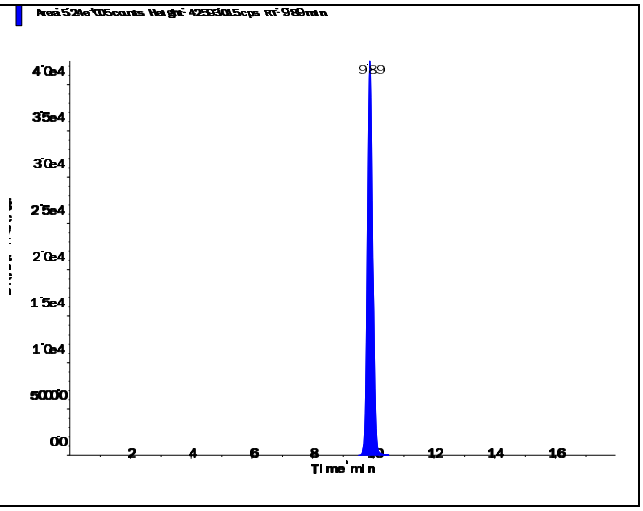

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

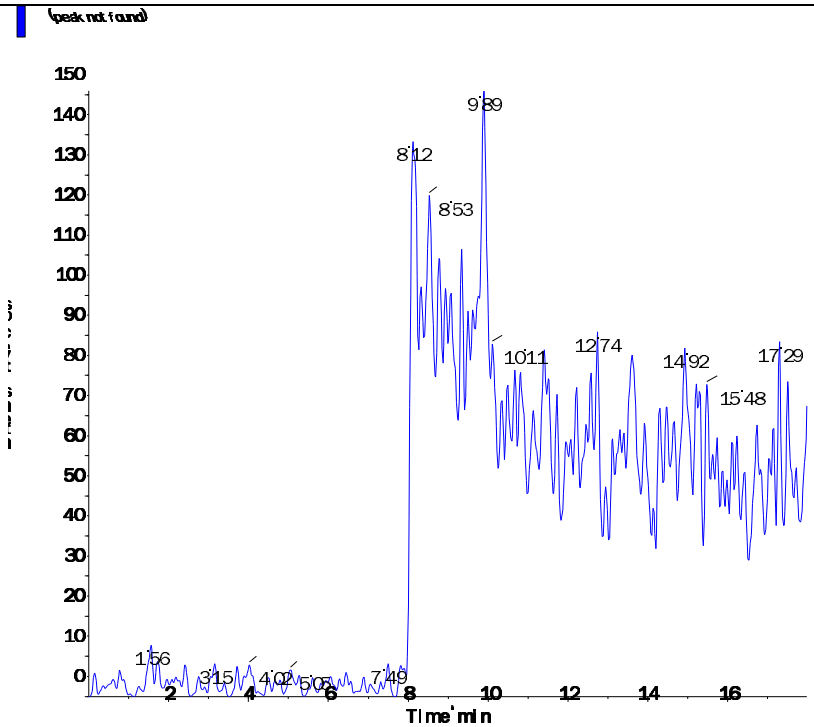

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

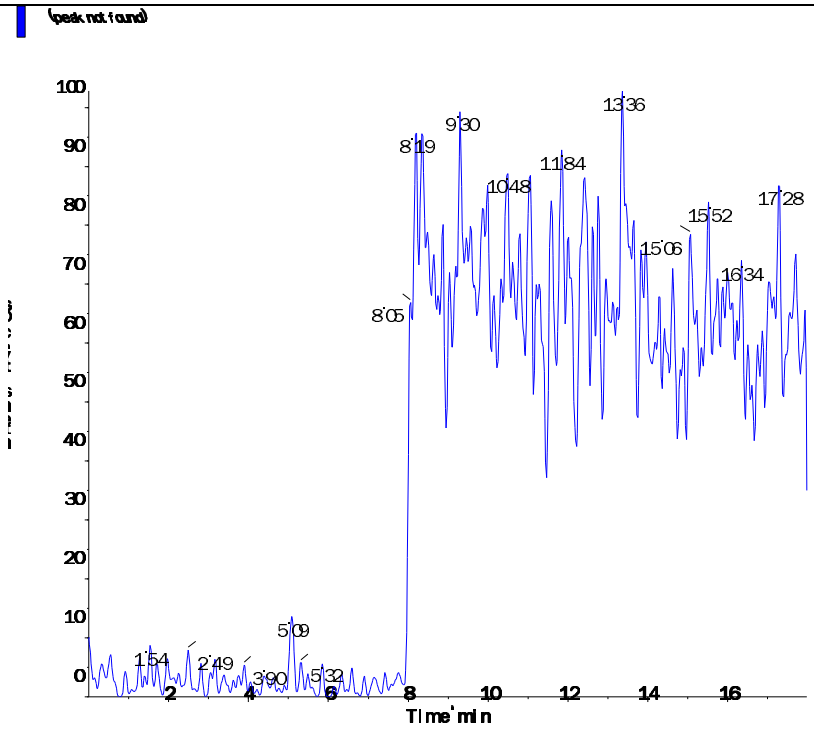

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 3/8/2016 5:03 PM

Data File	LM33759.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/7/2016 7:17:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030323-03	**Injection Vial**	12.00
Data File	LM33759.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 7:17:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	L16030323-03	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.470e+05	9.88	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.430e+03	9.89	N/A	< 0
Perchlorate conf	1.220e+03	9.91	N/A	0.0058

O18LP (Internal Standard)

RT (Exp. RT): 9.88(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

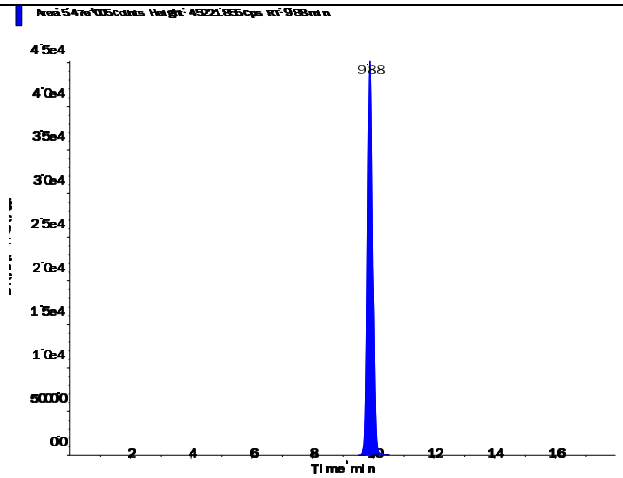

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.89 (9.94) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.003
Sample Type:	(Unknown)

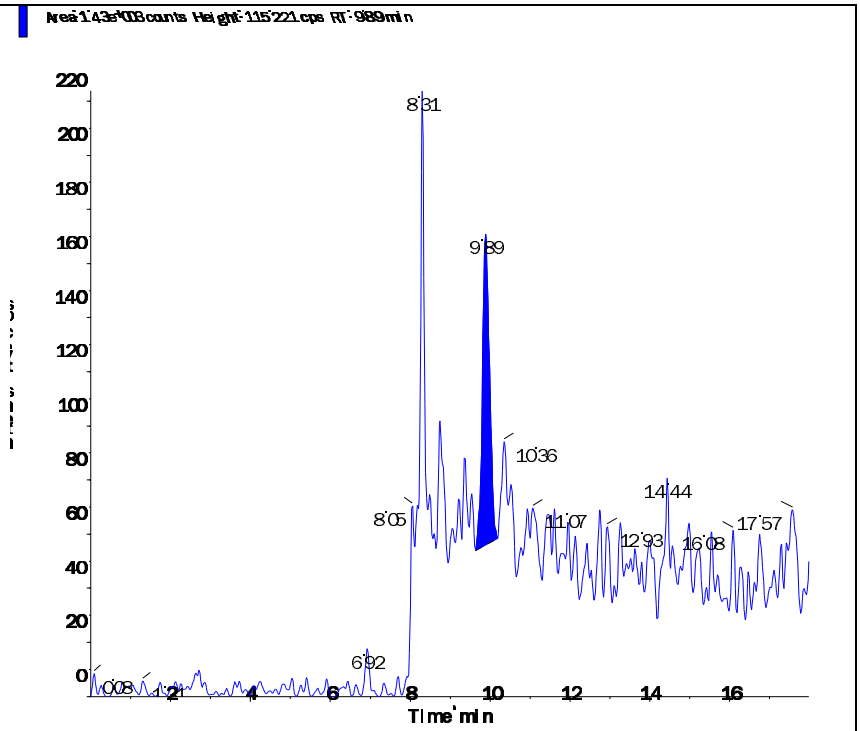

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.92) min
Calculated conc:	0.0058 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

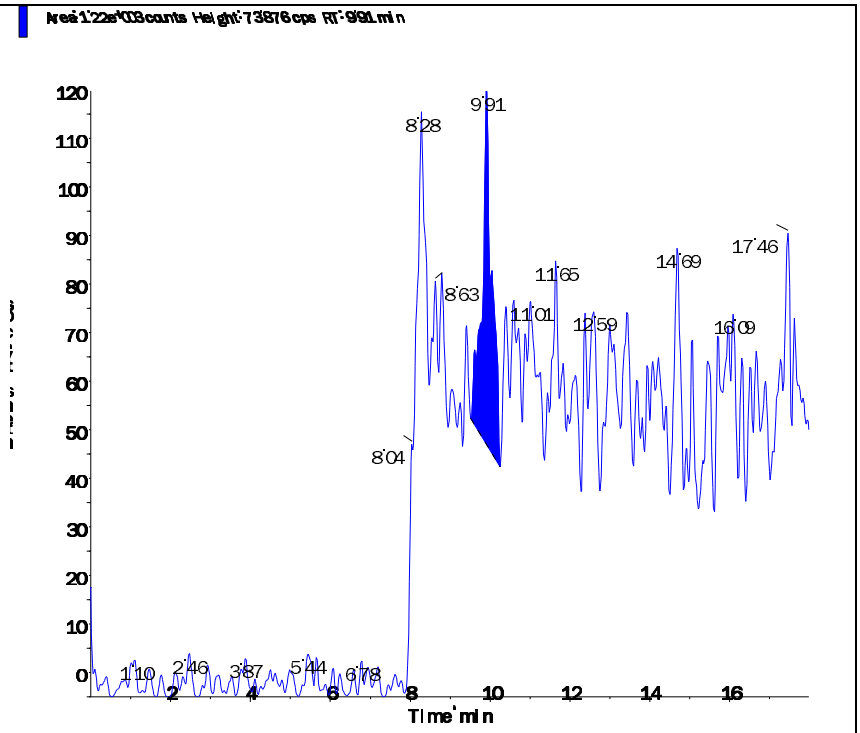

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Data File	LM33760.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/7/2016 7:36:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030323-04	**Injection Vial**	13.00
Data File	LM33760.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 7:36:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	L16030323-04	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.510e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.050e+04	9.93	N/A	0.0421
Perchlorate conf	3.010e+03	9.90	N/A	0.0347

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

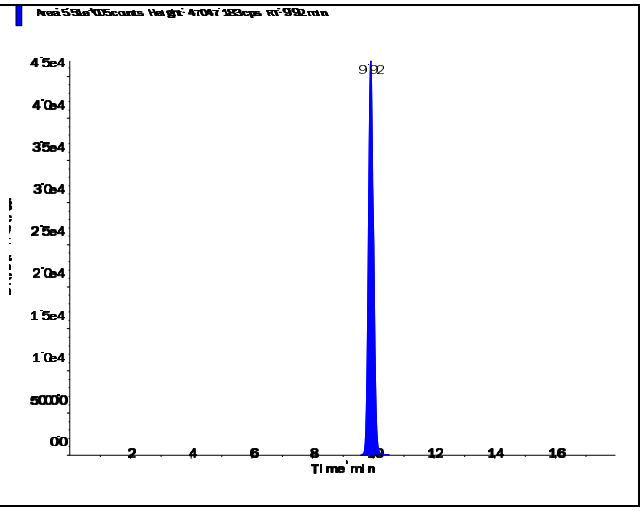

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	0.0421 ng/ml
Area Ratio:	0.019
Sample Type:	(Unknown)

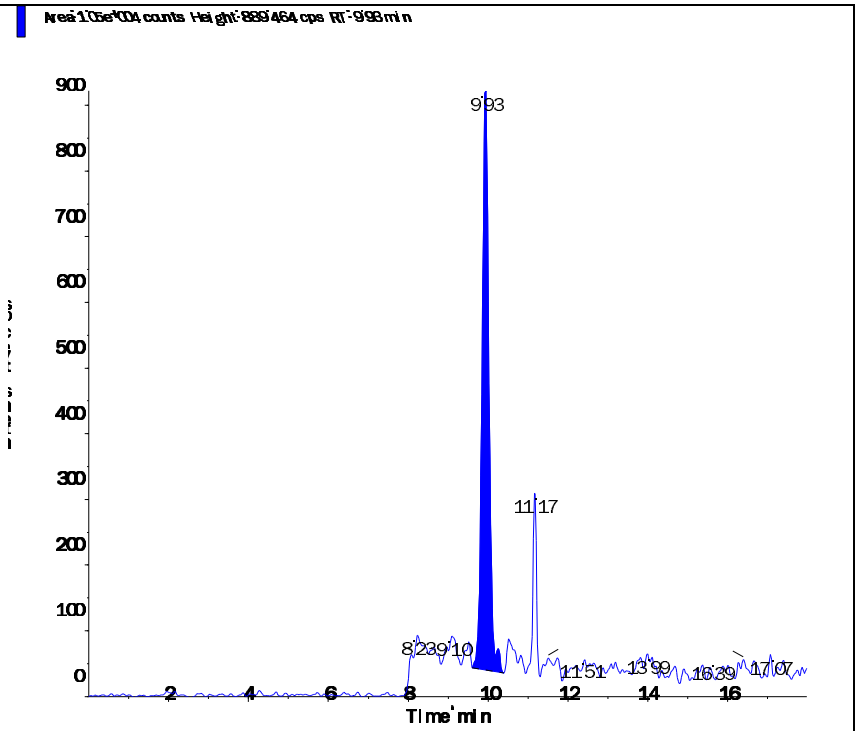

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.90 (9.92) min
Calculated conc:	0.0347 ng/ml
Area Ratio:	0.005
Sample Type:	(Unknown)

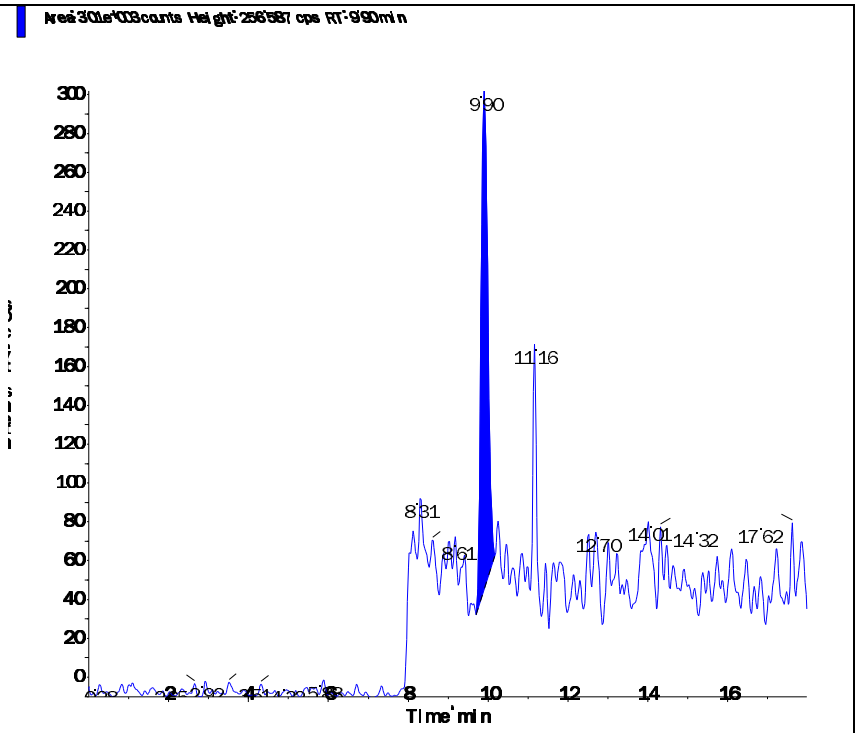

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Data File	LM33776.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/8/2016 11:35:28 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030323-05 (RR 10x)	**Injection Vial**	20.00
Data File	LM33776.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 11:35:28 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	L16030323-05	**Dilution Factor**	1.00
Sample Comment	710.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.050e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.980e+05	9.94	N/A	1.67
Perchlorate conf	9.750e+04	9.92	N/A	1.71

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

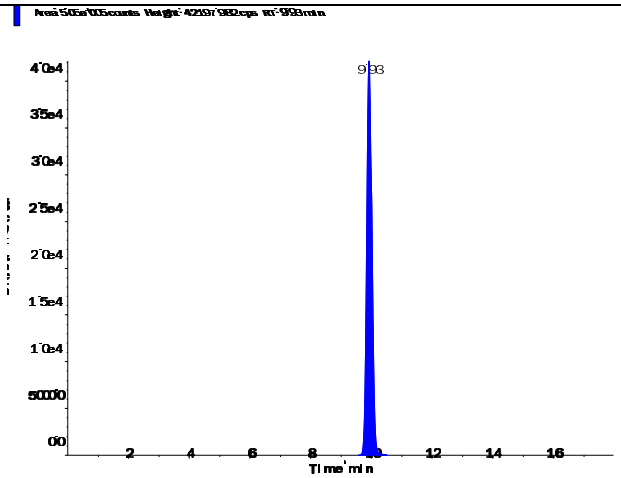

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	1.67 ng/ml
Area Ratio:	0.59
Sample Type:	(Unknown)

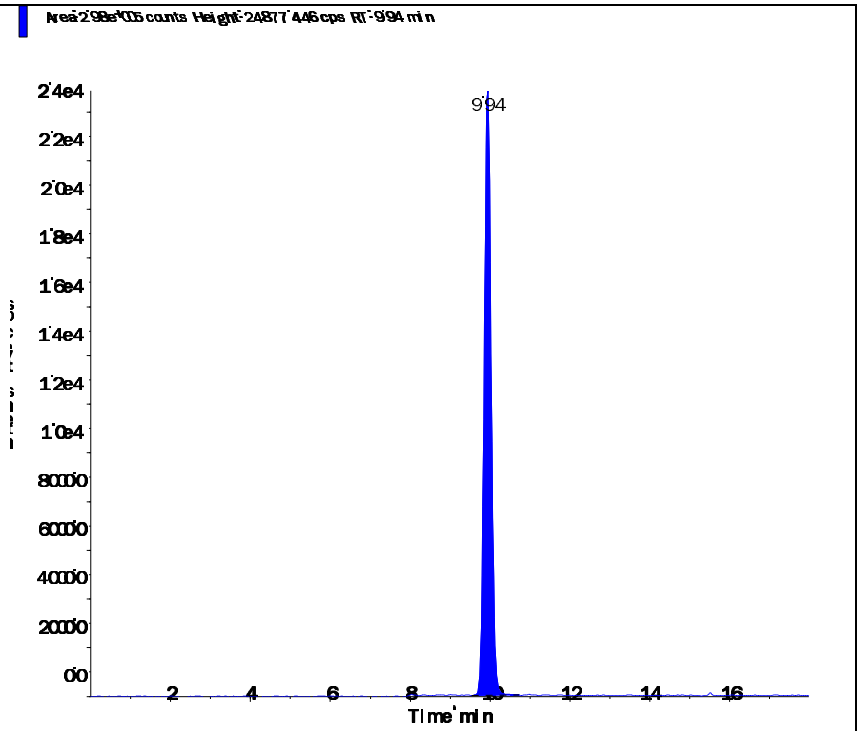

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	1.71 ng/ml
Area Ratio:	0.193
Sample Type:	(Unknown)

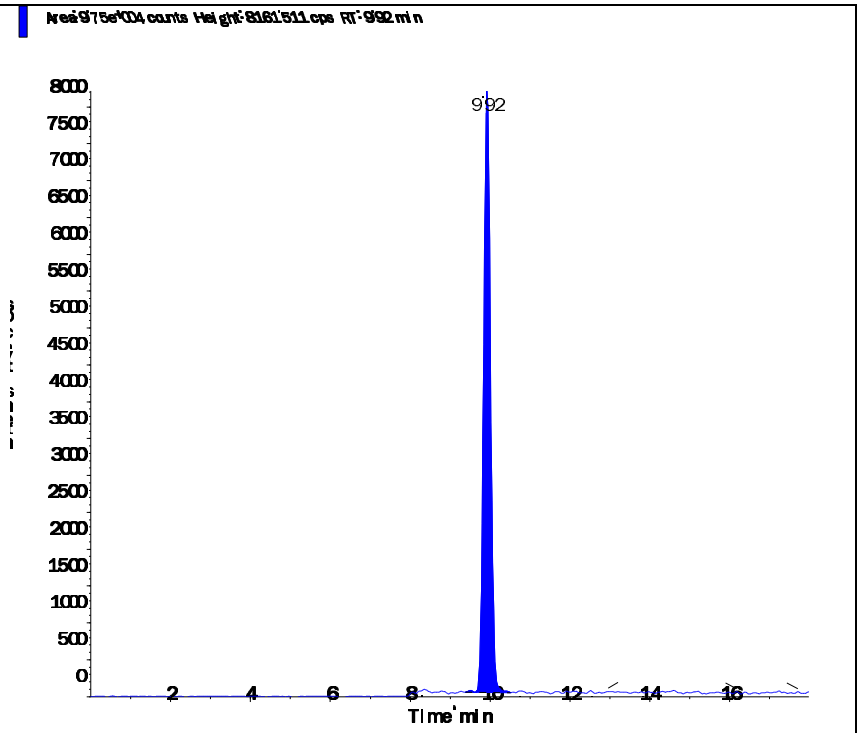

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Data File	LM33765.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/7/2016 9:11:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030323-06	**Injection Vial**	15.00
Data File	LM33765.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 9:11:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	L16030323-06	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.670e+05	9.88	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.800e+05	9.89	N/A	1.40
Perchlorate conf	9.180e+04	9.87	N/A	1.43

O18LP (Internal Standard)

RT (Exp. RT): 9.88(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

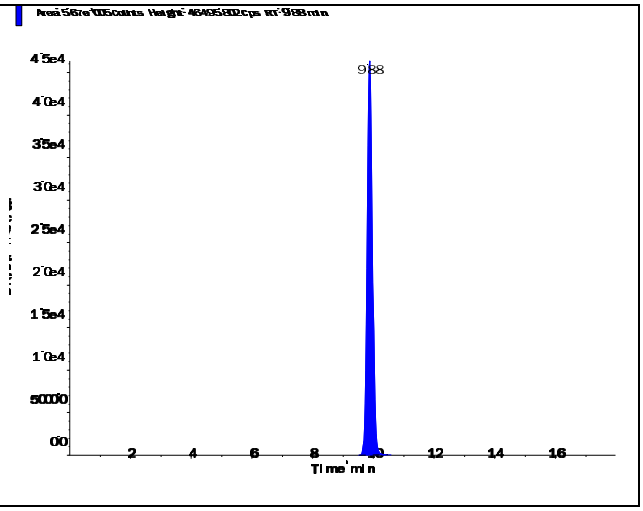

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.89 (9.94) min
Calculated conc:	1.40 ng/ml
Area Ratio:	0.494
Sample Type:	(Unknown)

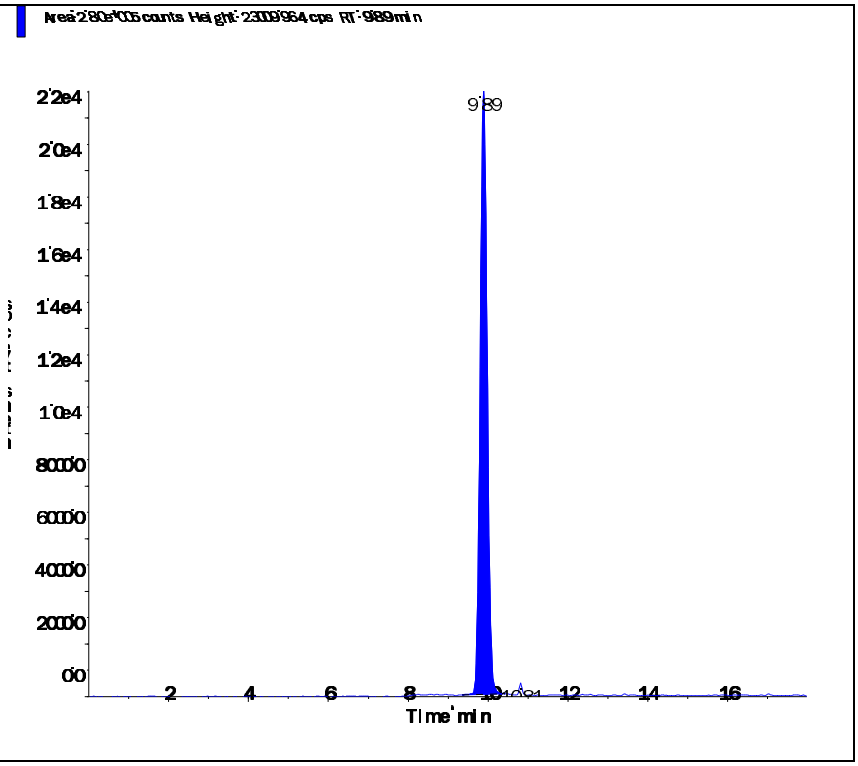

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.87 (9.92) min
Calculated conc:	1.43 ng/ml
Area Ratio:	0.162
Sample Type:	(Unknown)

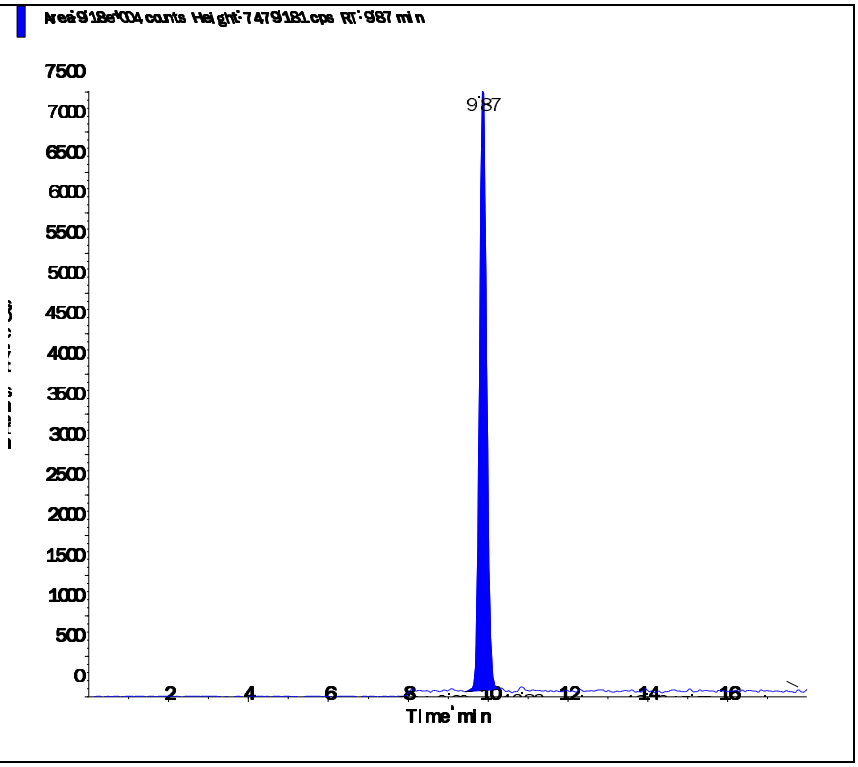

2.2.1.4 Standards Data

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Data File	LM33567.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-01 CCB	**Injection Vial**	51.00
Data File	LM33567.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559340-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.710e+05	9.99	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.99(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

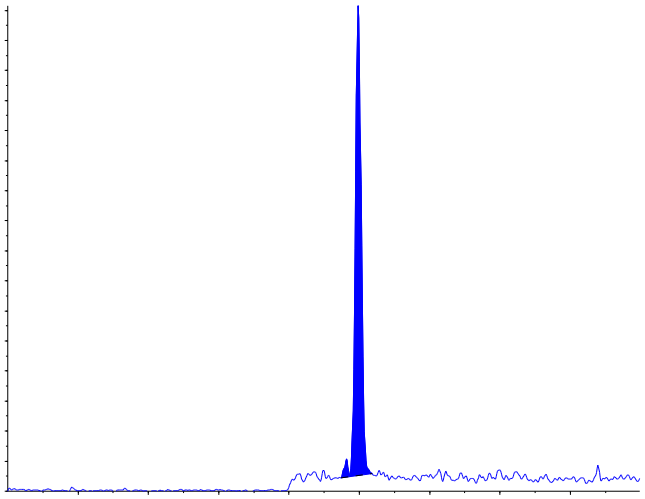

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.94) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	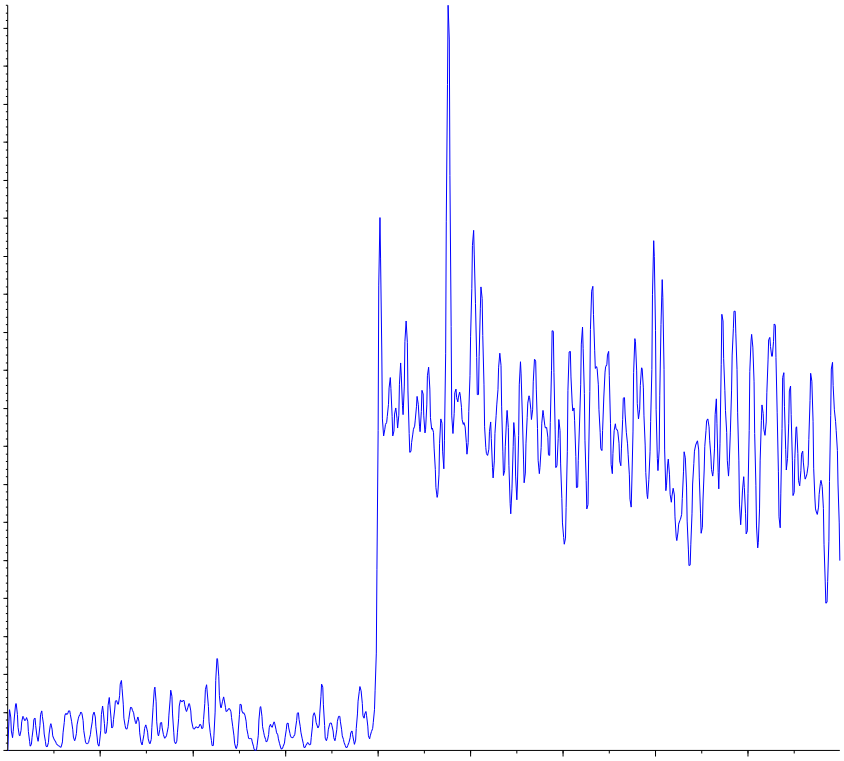
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.92) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	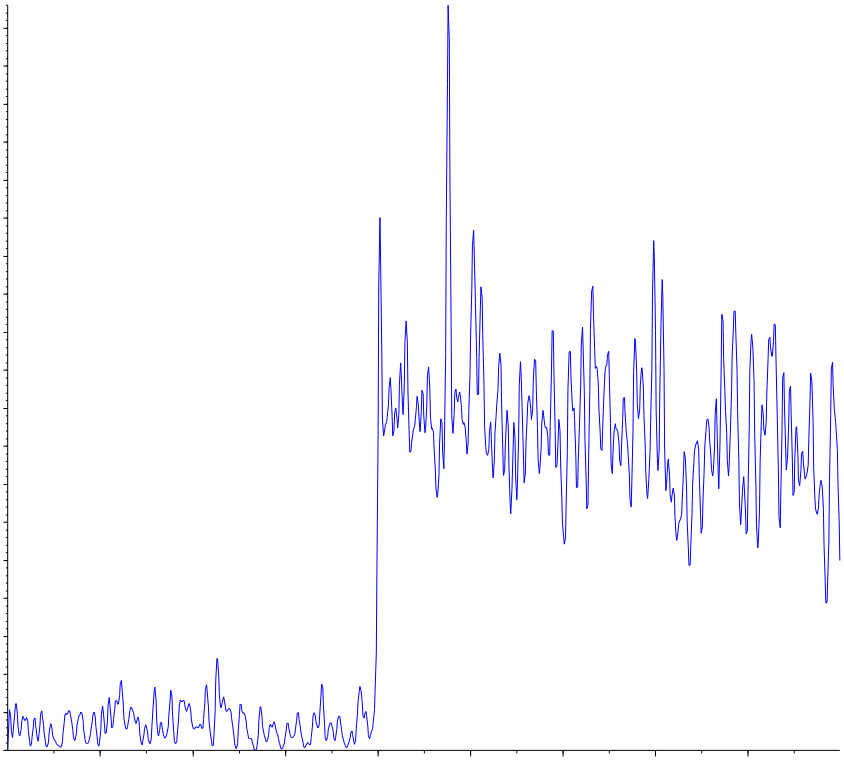

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Printed: 3/3/2016 1:59 PM

Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM33567.wiff	**Result Table**	030216_WTD.rdb
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.75 x + 0.00437 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	95.0	N/A	N/A
0.20	1	0.20	99.5	N/A	N/A
0.50	1	0.50	101.0	N/A	N/A
1.00	1	1.03	103.4	N/A	N/A
2.00	1	2.02	101.0	N/A	N/A
5.00	1	5.07	101.5	N/A	N/A
10.00	1	9.87	98.7	N/A	N/A

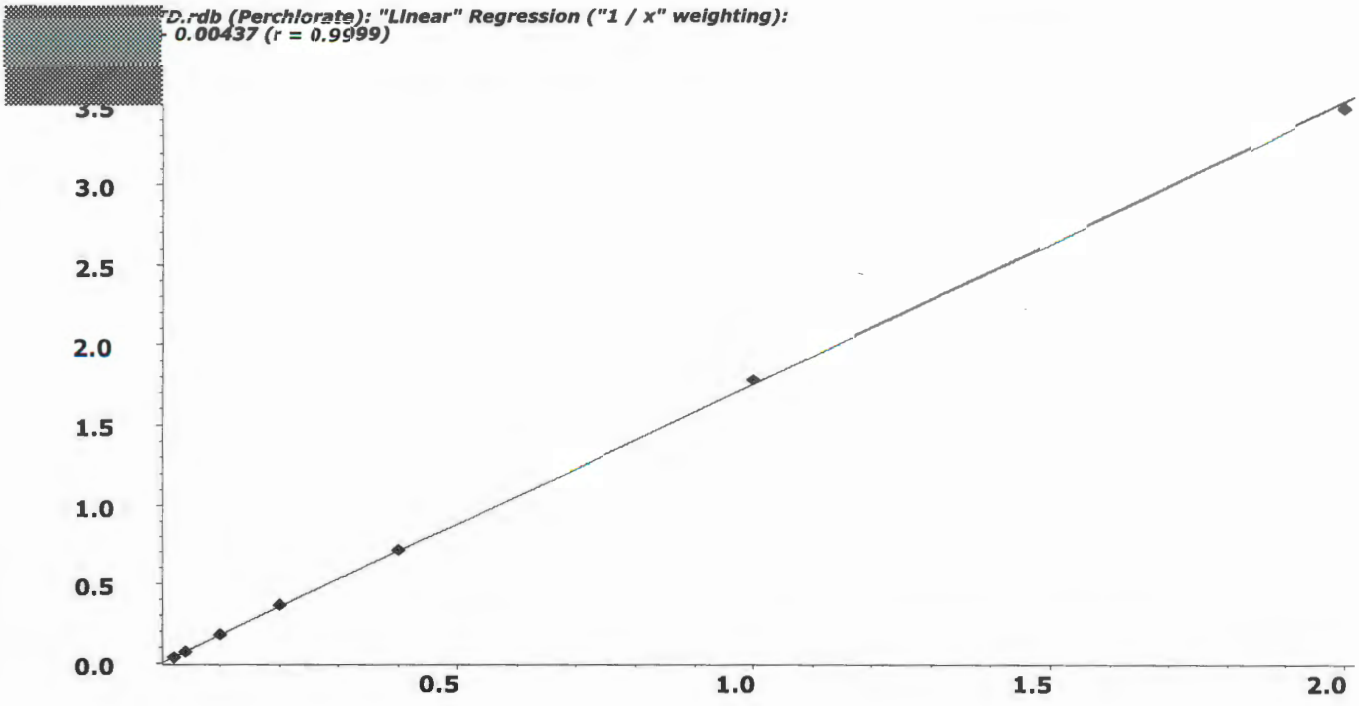

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Printed: 3/3/2016 1:59 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM33567.wiff	**Result Table**	030216_WTD.rdb
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.562 x + 0.00157 (r = 0.9998)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	93.4	N/A	N/A
0.20	1	0.20	98.6	N/A	N/A
0.50	1	0.54	107.2	N/A	N/A
1.00	1	1.00	99.5	N/A	N/A
2.00	1	2.01	100.7	N/A	N/A
5.00	1	5.11	102.2	N/A	N/A
10.00	1	9.85	98.5	N/A	N/A

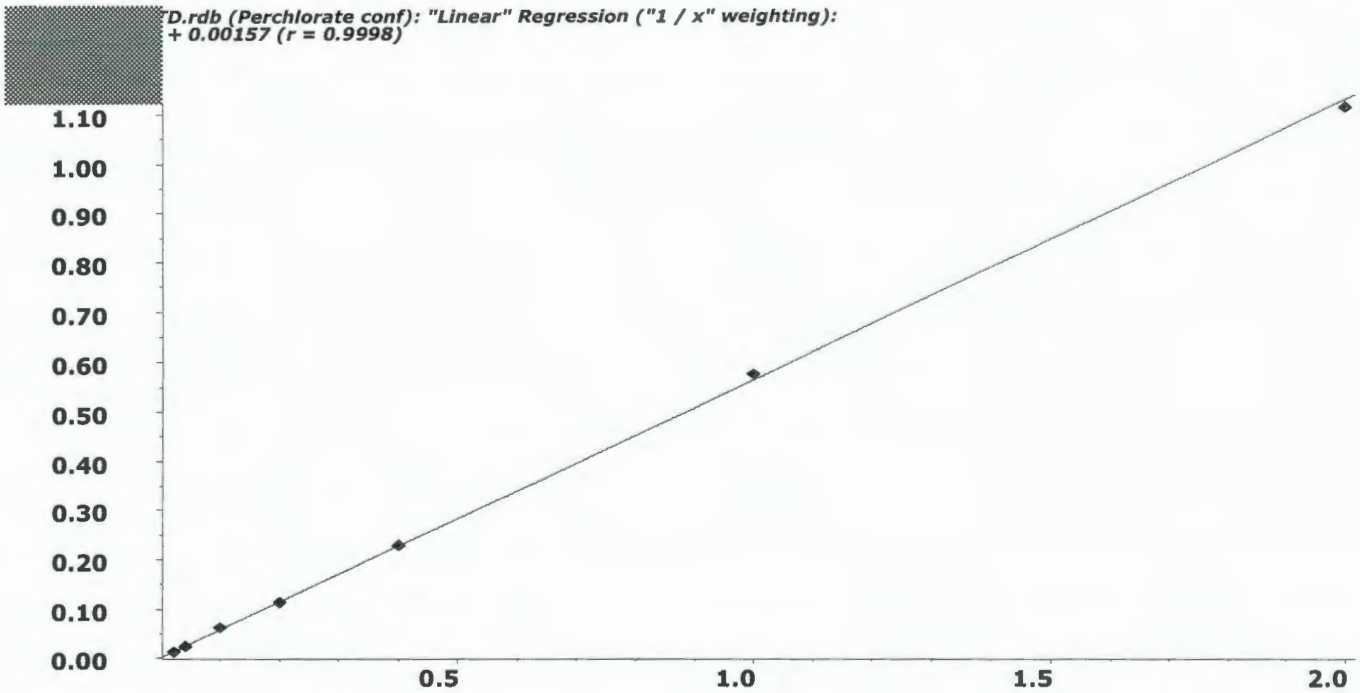

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Data File	LM33568.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/2/2016 8:53:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-02 STD (0.1 ug/L)	**Injection Vial**	52.00
Data File	LM33568.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 8:53:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559340-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.900e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.840e+04	9.97	0.10	0.095
Perchlorate conf	5.910e+03	9.94	0.10	0.0934

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

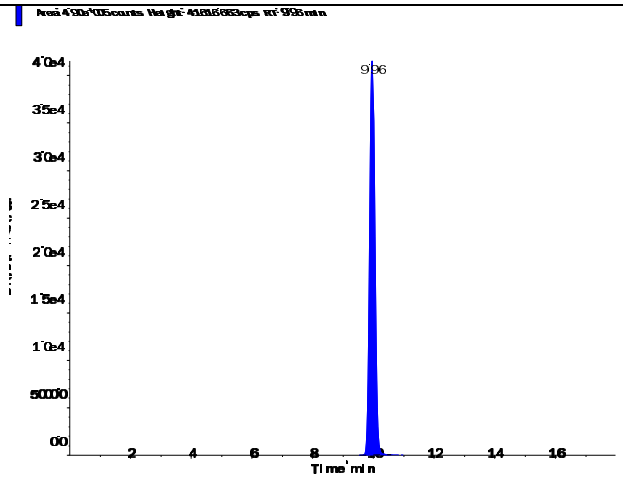

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.97 (9.94) min
Calculated conc:	0.095 ng/ml
Area Ratio:	0.038
Sample Type:	(Standard)

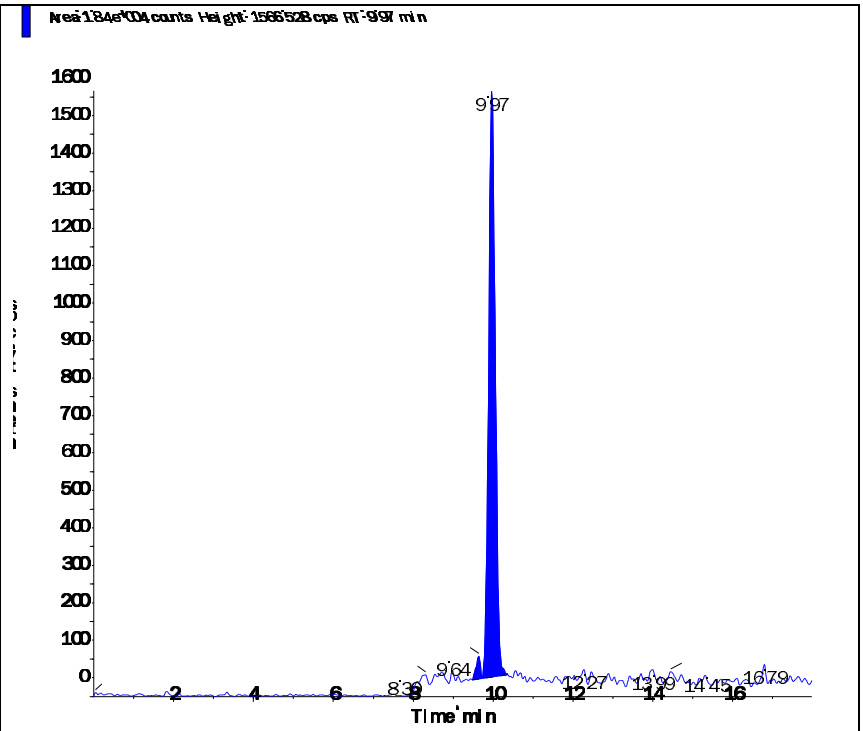

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.0934 ng/ml
Area Ratio:	0.012
Sample Type:	(Standard)

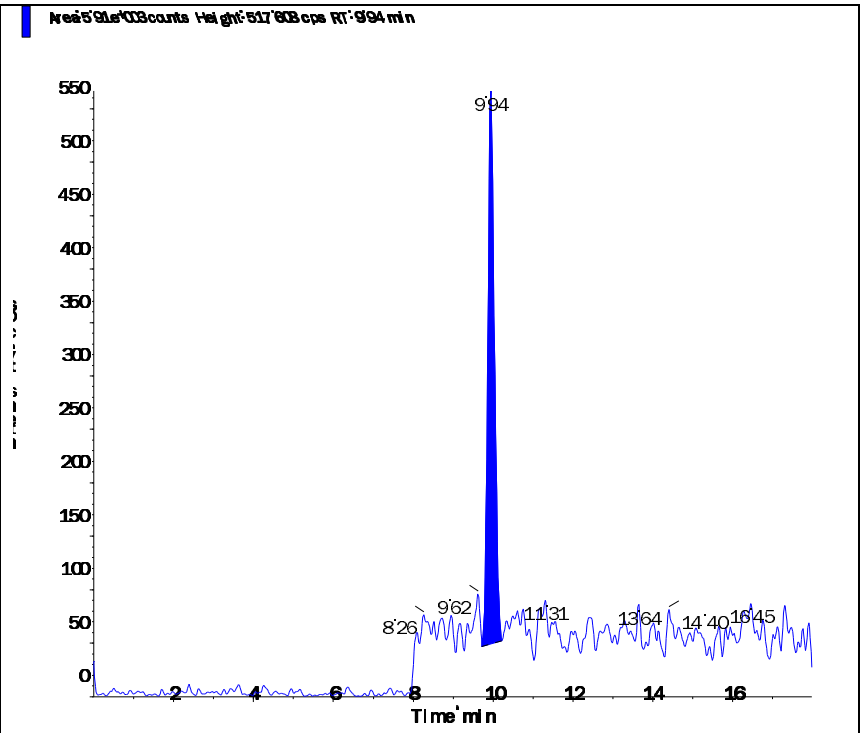

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Data File	LM33569.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/2/2016 9:12:17 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-03 STD (0.2 ug/L)	**Injection Vial**	53.00
Data File	LM33569.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 9:12:17 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559340-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.990e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.700e+04	9.99	0.20	0.199
Perchlorate conf	1.190e+04	9.98	0.20	0.197

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

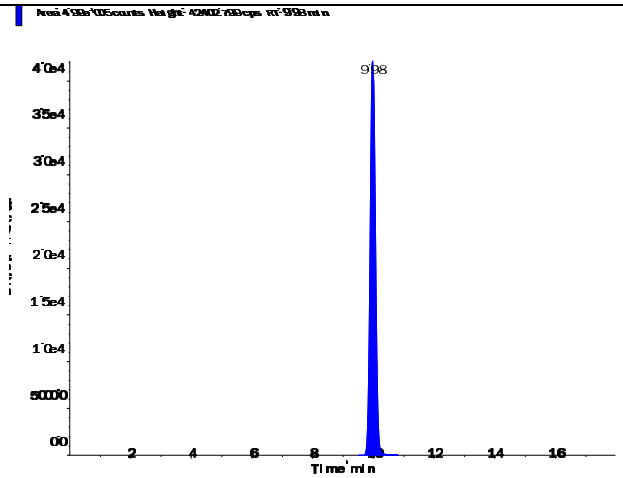

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.99 (9.94) min
Calculated conc:	0.199 ng/ml
Area Ratio:	0.074
Sample Type:	(Standard)

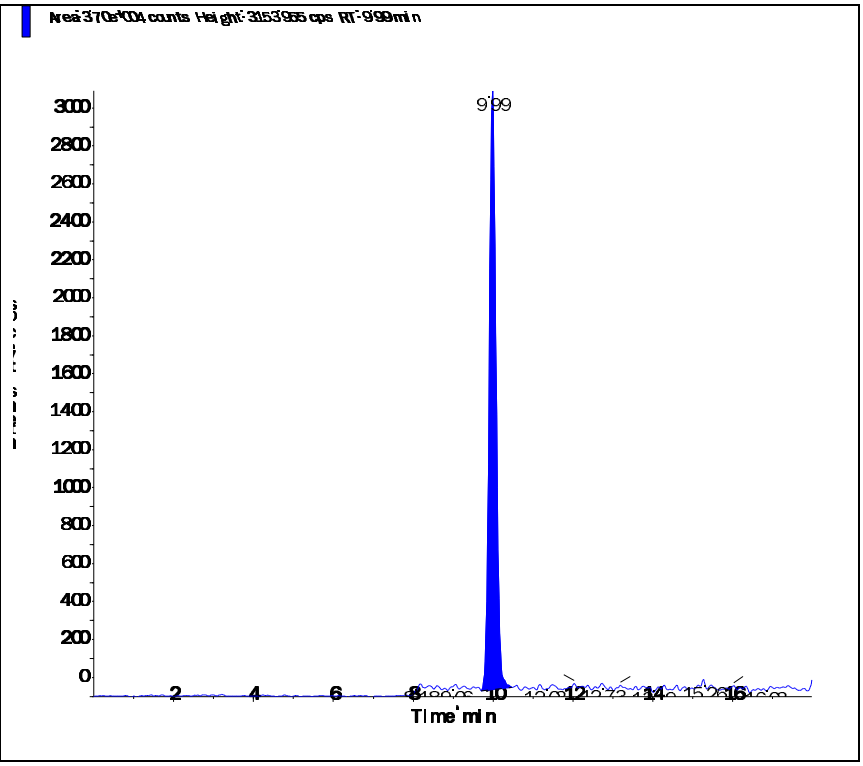

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.98 (9.92) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

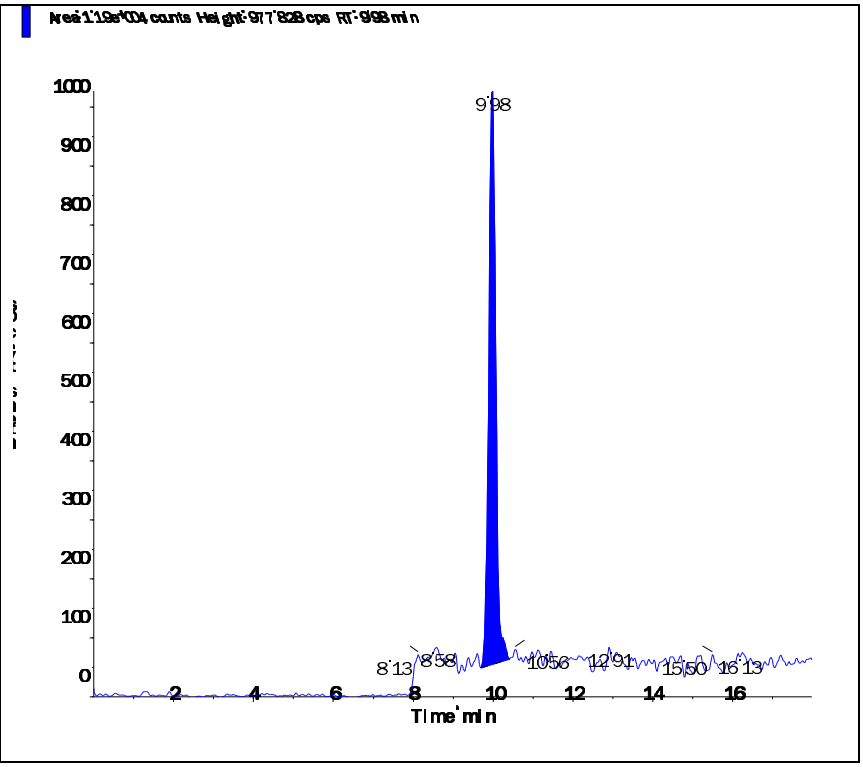

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Data File	LM33570.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/2/2016 9:31:14 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-04 STD (0.5 ug/L)	**Injection Vial**	54.00
Data File	LM33570.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 9:31:14 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559340-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.920e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.900e+04	10.00	0.50	0.505
Perchlorate conf	3.040e+04	9.98	0.50	0.536

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

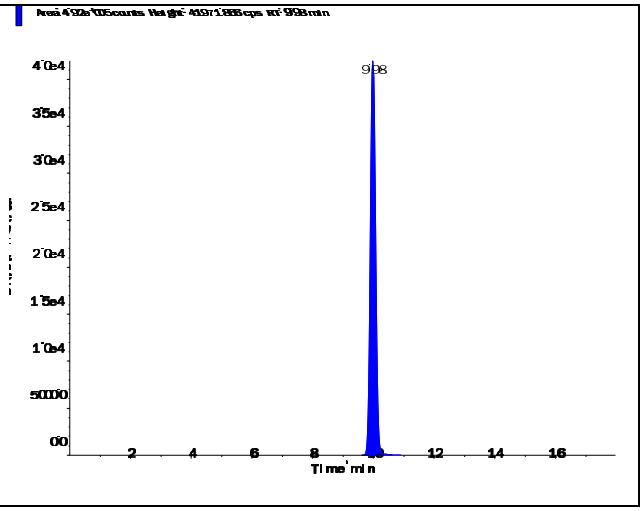

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.00 (9.94) min
Calculated conc:	0.505 ng/ml
Area Ratio:	0.181
Sample Type:	(Standard)

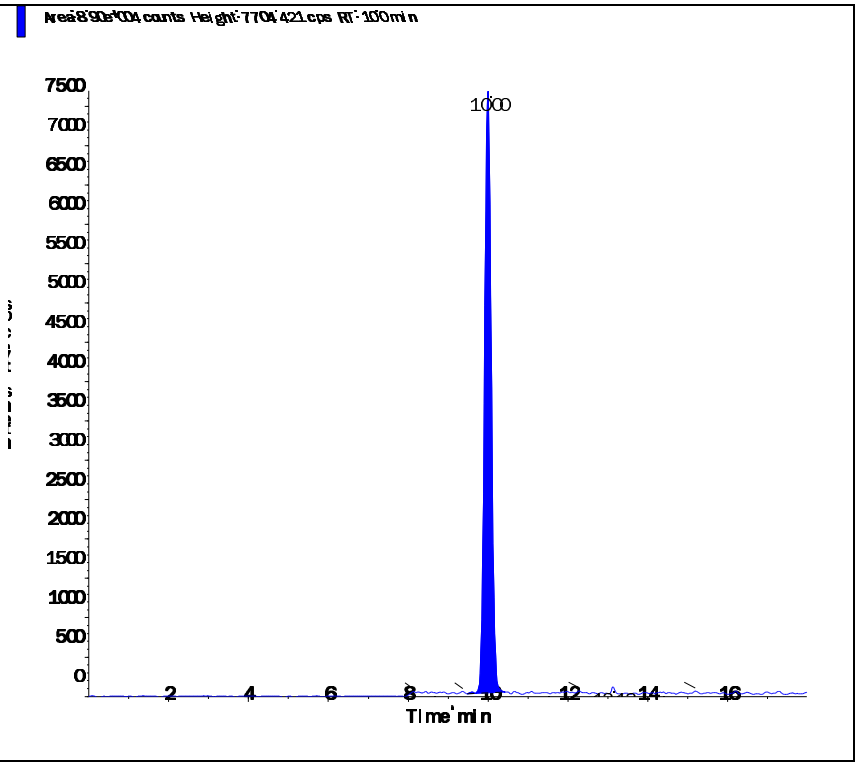

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.98 (9.92) min
Calculated conc:	0.536 ng/ml
Area Ratio:	0.062
Sample Type:	(Standard)

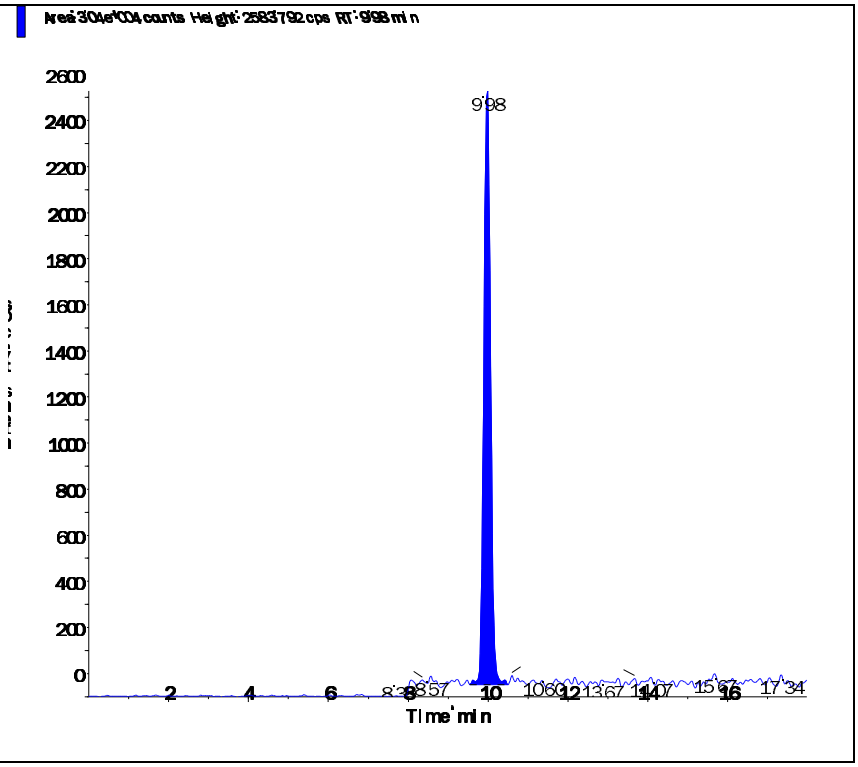

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Data File	LM33571.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/2/2016 9:50:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-05 STD (1.0 ug/L)	**Injection Vial**	55.00
Data File	LM33571.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 9:50:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559340-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.010e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.830e+05	9.99	1.00	1.03
Perchlorate conf	5.680e+04	9.98	1.00	0.995

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

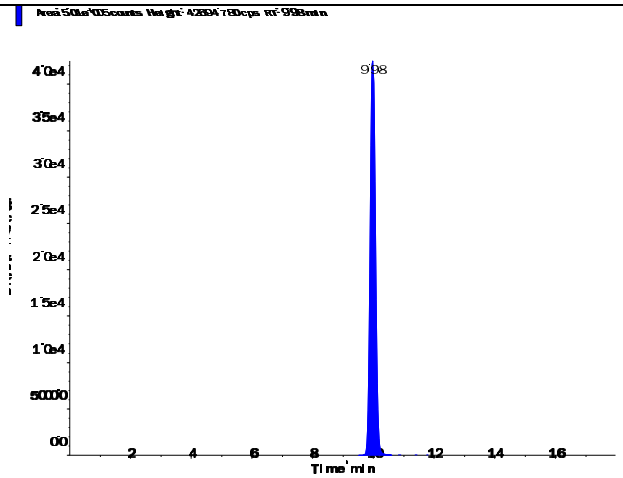

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.99 (9.94) min Calculated conc: 1.03 ng/ml Area Ratio: 0.366 Sample Type: (Standard)	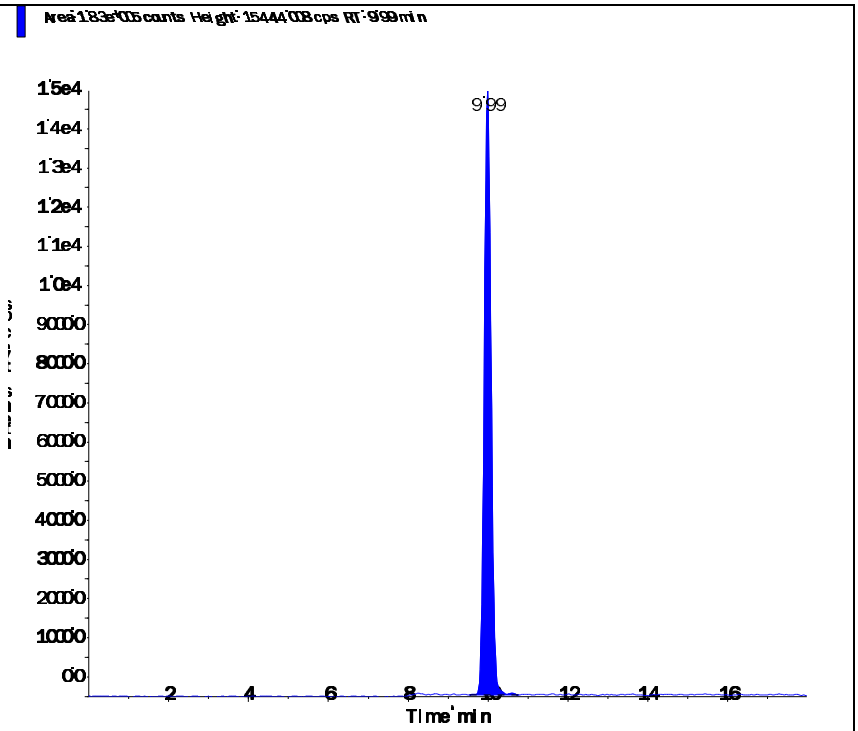
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.98 (9.92) min Calculated conc: 0.995 ng/ml Area Ratio: 0.113 Sample Type: (Standard)	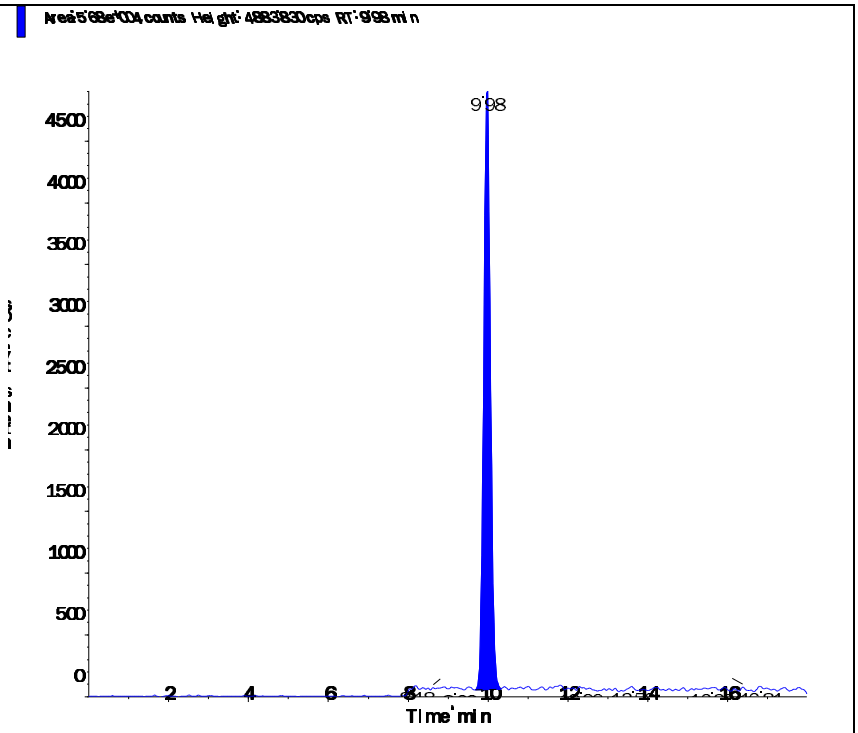

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Data File	LM33572.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/2/2016 10:09:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-06 STD (2.0 ug/L)	**Injection Vial**	56.00
Data File	LM33572.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 10:09:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559340-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.99	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.630e+05	10.00	2.00	2.02
Perchlorate conf	1.170e+05	9.99	2.00	2.01

O18LP (Internal Standard)

RT (Exp. RT): 9.99(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

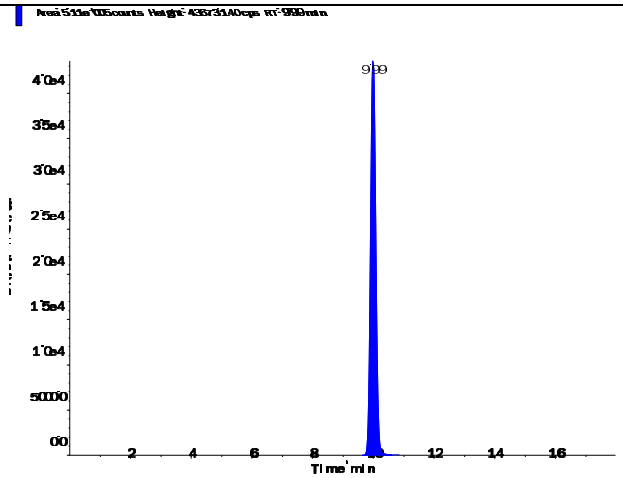

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.00 (9.94) min
Calculated conc:	2.02 ng/ml
Area Ratio:	0.711
Sample Type:	(Standard)

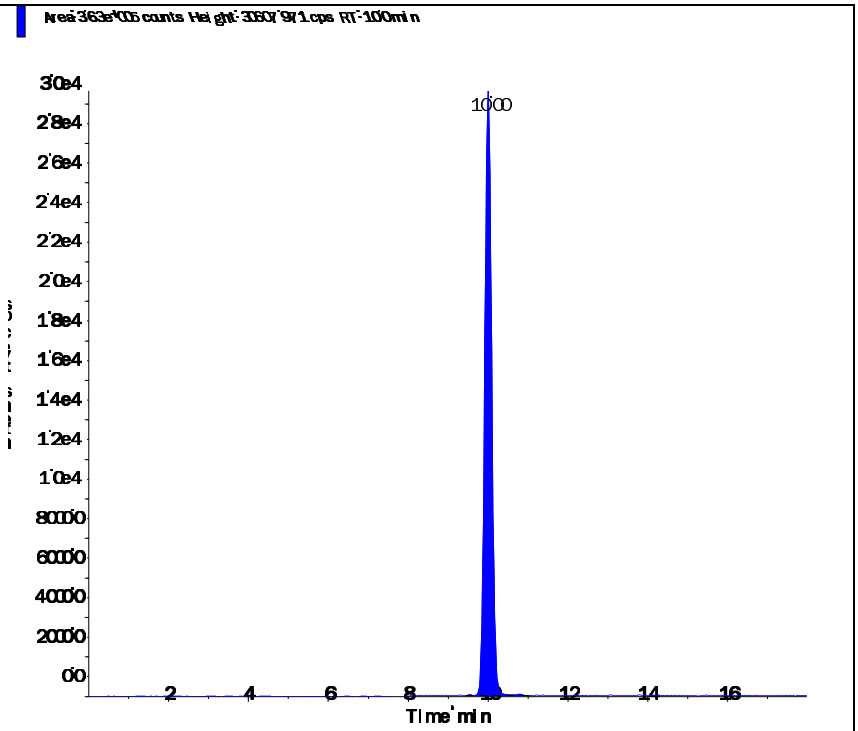

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.99 (9.92) min
Calculated conc:	2.01 ng/ml
Area Ratio:	0.228
Sample Type:	(Standard)

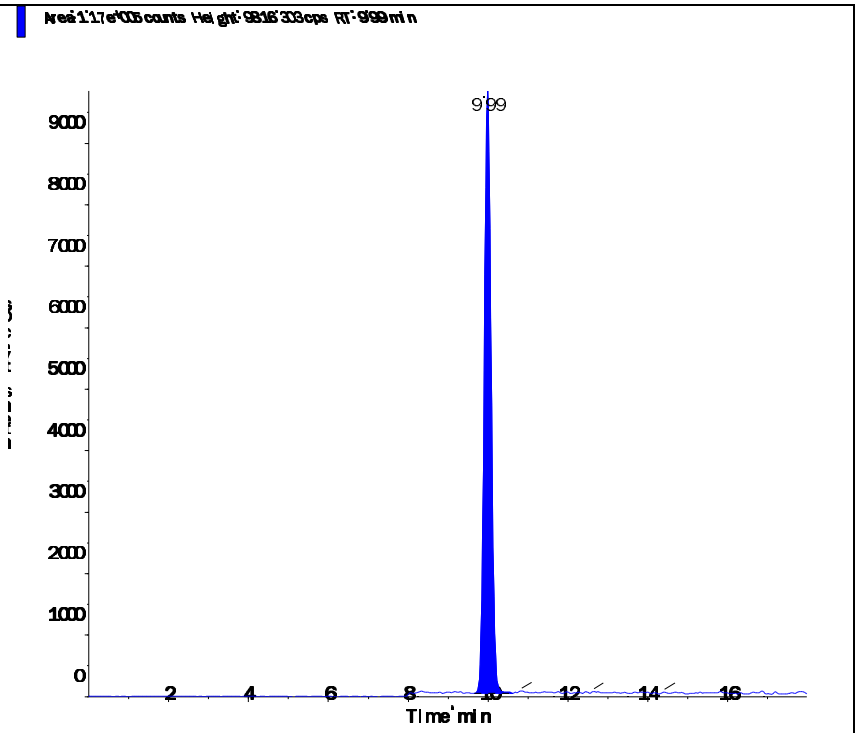

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Data File	LM33573.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/2/2016 10:28:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-07 STD (5.0 ug/L)	**Injection Vial**	57.00
Data File	LM33573.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 10:28:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559340-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.900e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.710e+05	9.98	5.00	5.07
Perchlorate conf	2.820e+05	9.97	5.00	5.11

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

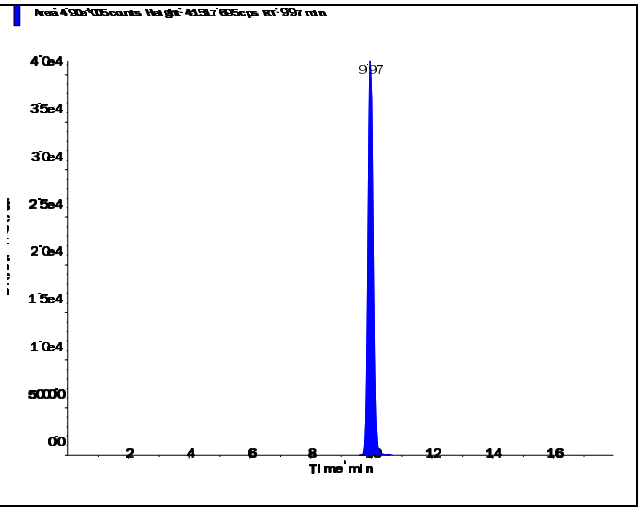

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.98 (9.94) min
Calculated conc:	5.07 ng/ml
Area Ratio:	1.779
Sample Type:	(Standard)

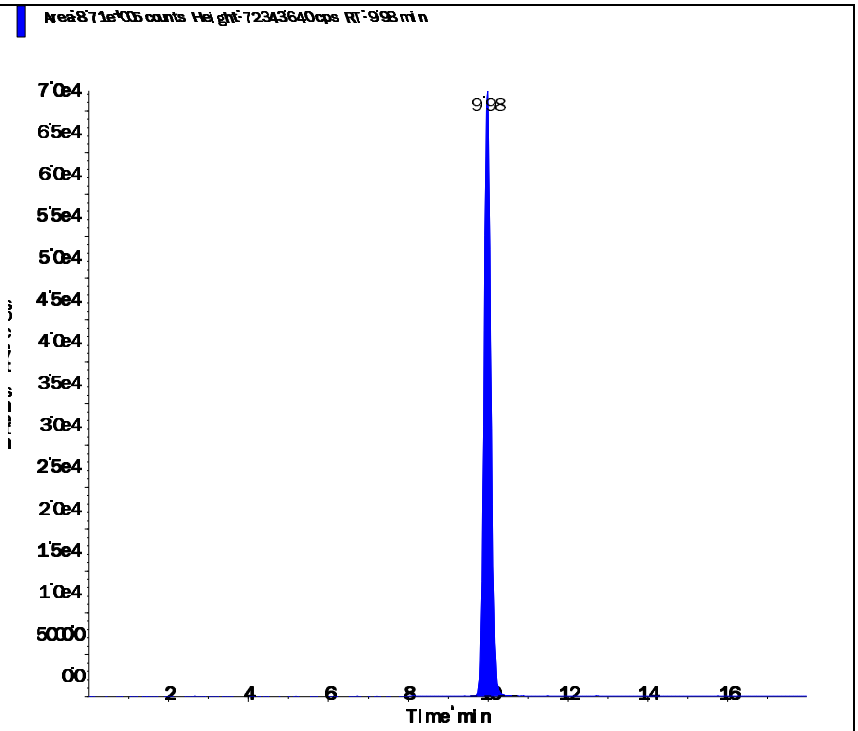

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.97 (9.92) min
Calculated conc:	5.11 ng/ml
Area Ratio:	0.576
Sample Type:	(Standard)

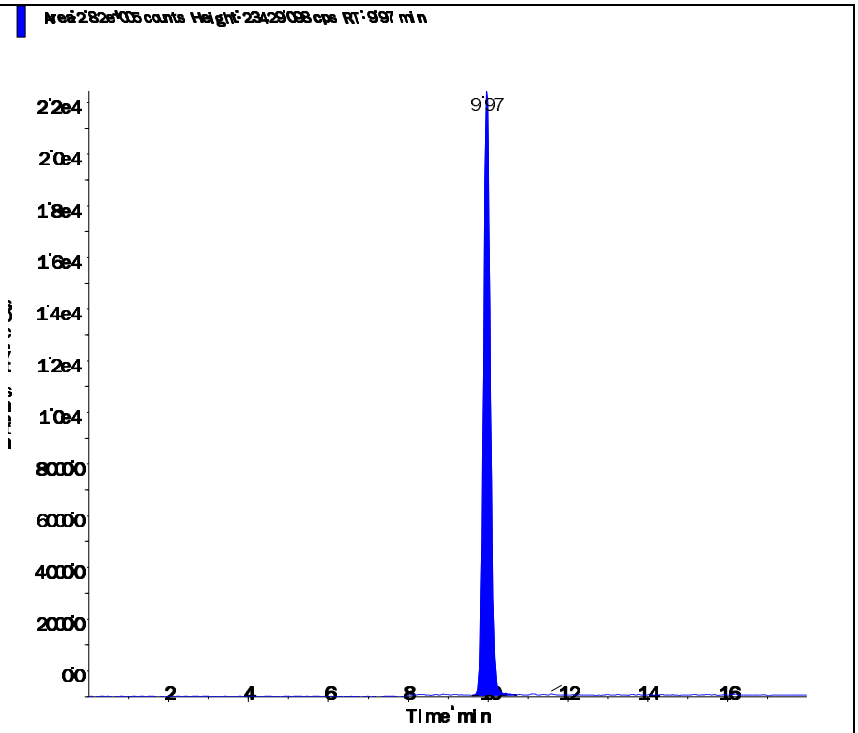

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Data File	LM33574.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/2/2016 10:46:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-08 STD (10 ug/L)	**Injection Vial**	58.00
Data File	LM33574.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 10:46:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559340-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.650e+06	9.98	10.00	9.87
Perchlorate conf	5.300e+05	9.96	10.00	9.85

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

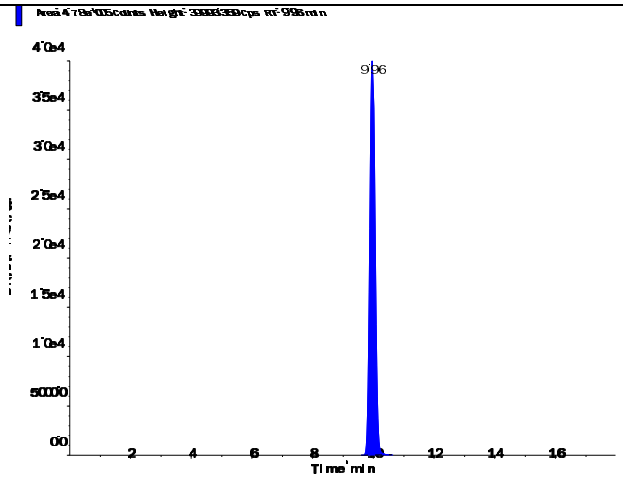

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.98 (9.94) min
Calculated conc:	9.87 ng/ml
Area Ratio:	3.458
Sample Type:	(Standard)

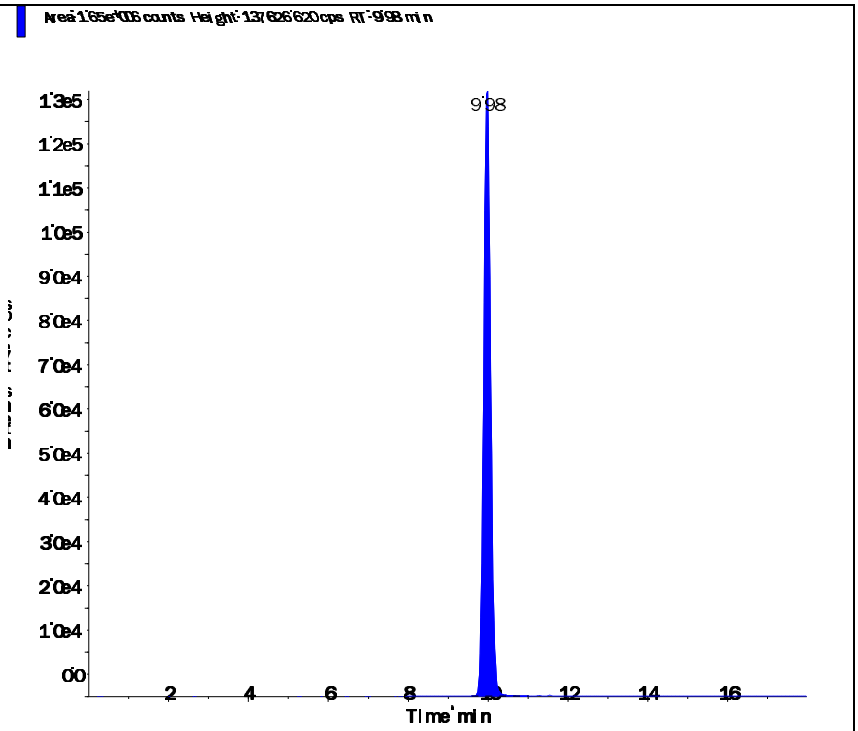

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.96 (9.92) min
Calculated conc:	9.85 ng/ml
Area Ratio:	1.11
Sample Type:	(Standard)

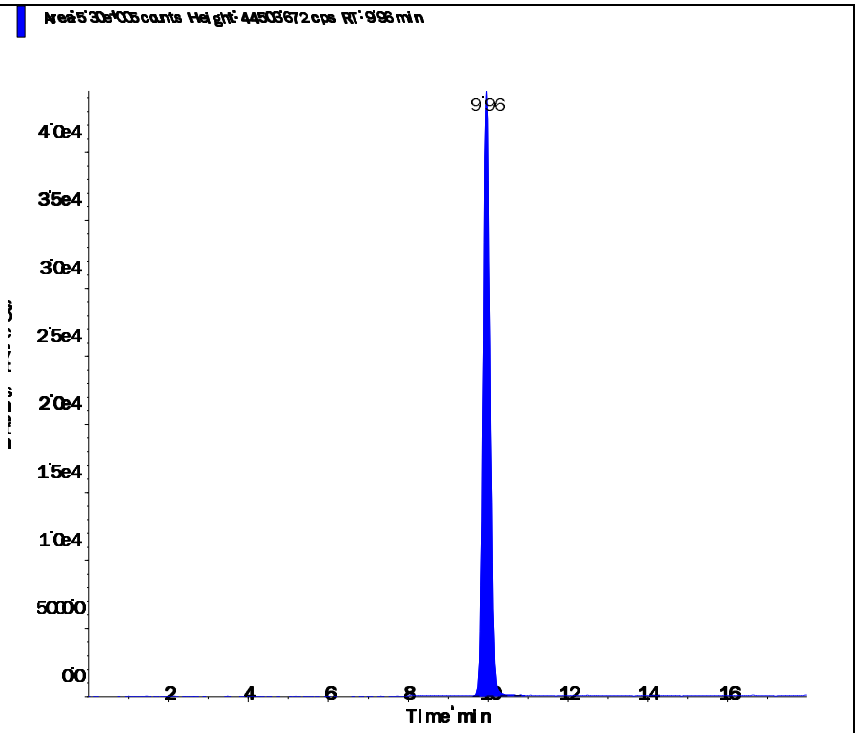

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Data File	LM33575.wiff	**Result Table**	030216_WTD.rdb
Acquisition Date	3/2/2016 11:05:52 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-09 SSCV (1.0 ug/L)	**Injection Vial**	59.00
Data File	LM33575.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 11:05:52 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030216_WTD.rdb
Sample ID	WG559340-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.200e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.900e+05	9.98	1.00	1.03
Perchlorate conf	6.220e+04	9.97	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

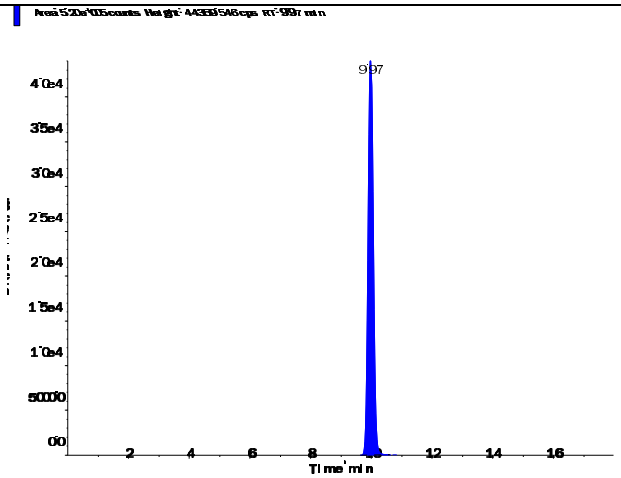

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.98 (9.94) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.366
Sample Type:	(Quality Control)

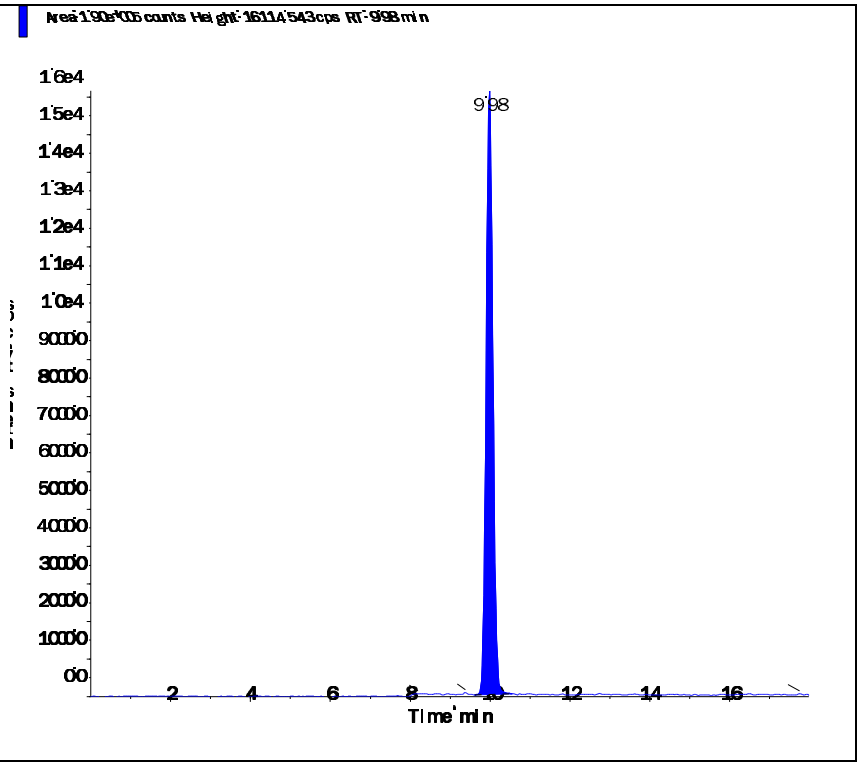

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.97 (9.92) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.12
Sample Type:	(Quality Control)

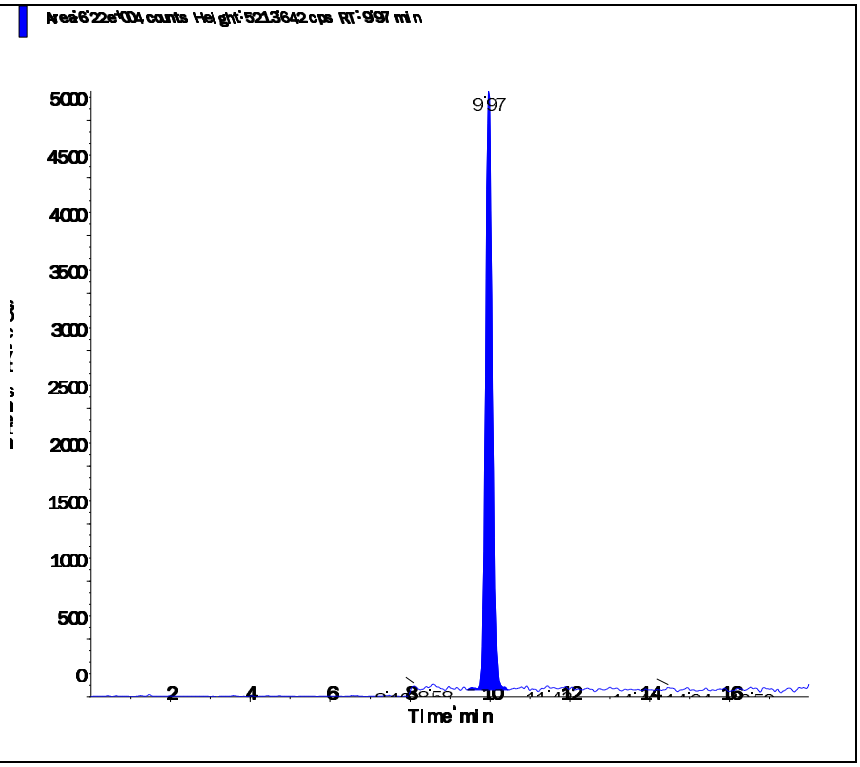

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Data File	LM33749.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/7/2016 4:08:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559981-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33749.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 4:08:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559981-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.860e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.740e+05	9.93	1.00	1.01
Perchlorate conf	5.530e+04	9.91	1.00	0.997

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

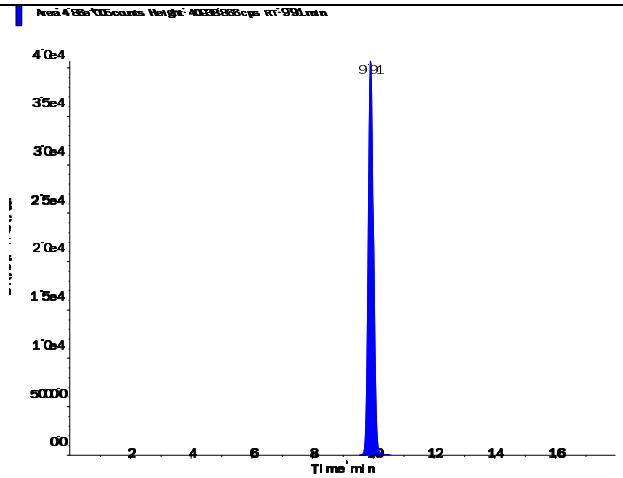

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.357
Sample Type:	(Quality Control)

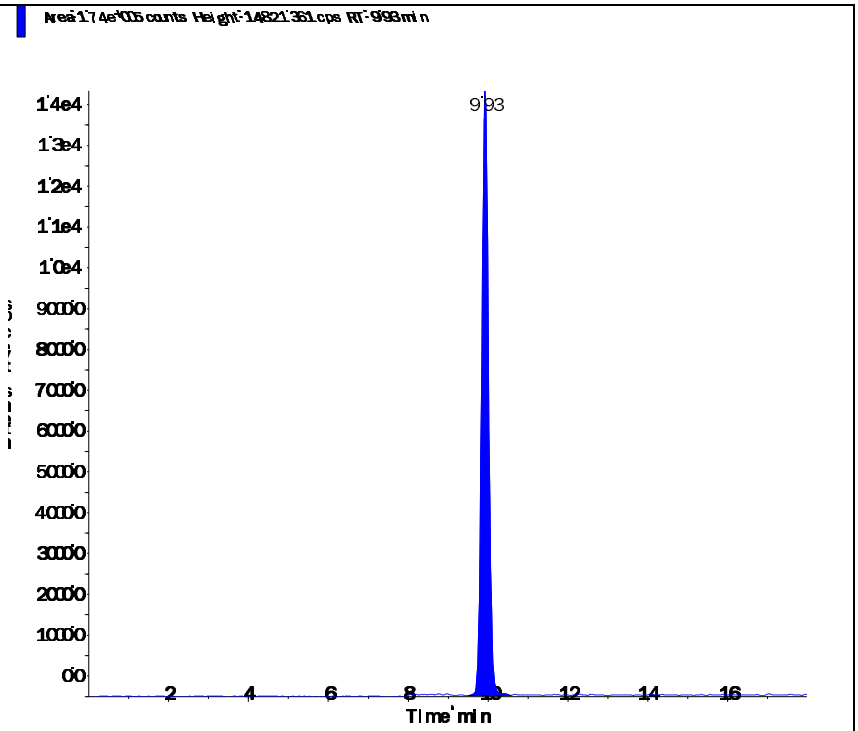

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.92) min
Calculated conc:	0.997 ng/ml
Area Ratio:	0.114
Sample Type:	(Quality Control)

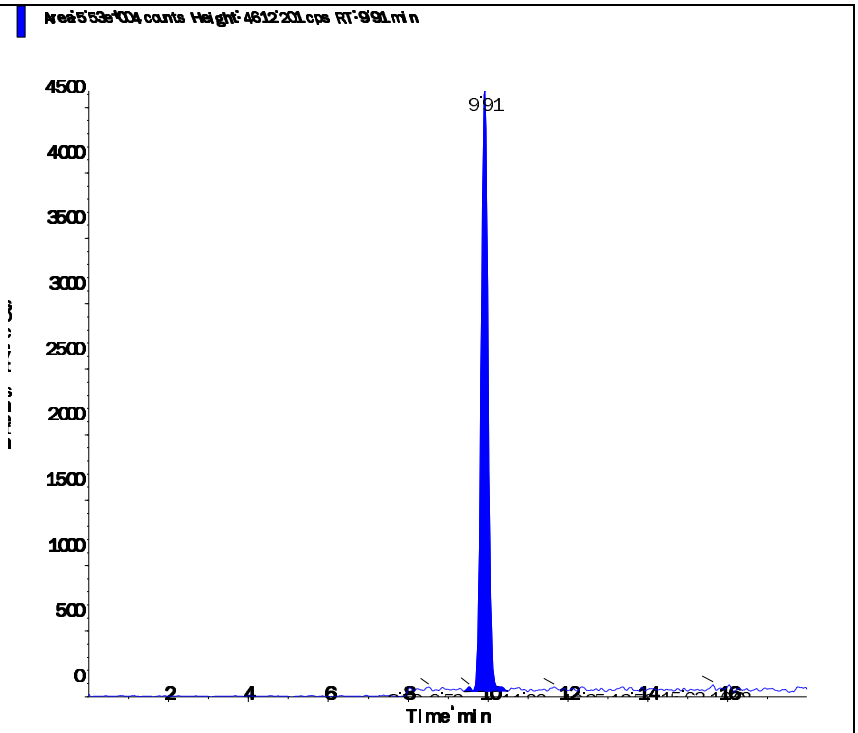

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Data File	LM33761.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/7/2016 7:55:27 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559981-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33761.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 7:55:27 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559981-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.730e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.960e+05	9.92	1.00	0.966
Perchlorate conf	6.370e+04	9.91	1.00	0.975

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

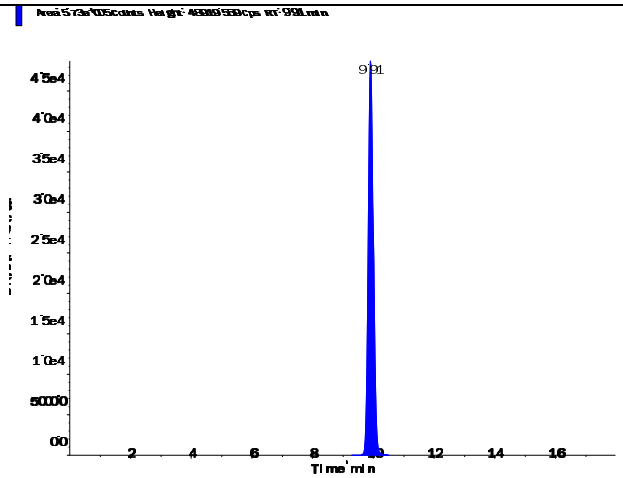

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.92 (9.94) min
Calculated conc:	0.966 ng/ml
Area Ratio:	0.342
Sample Type:	(Quality Control)

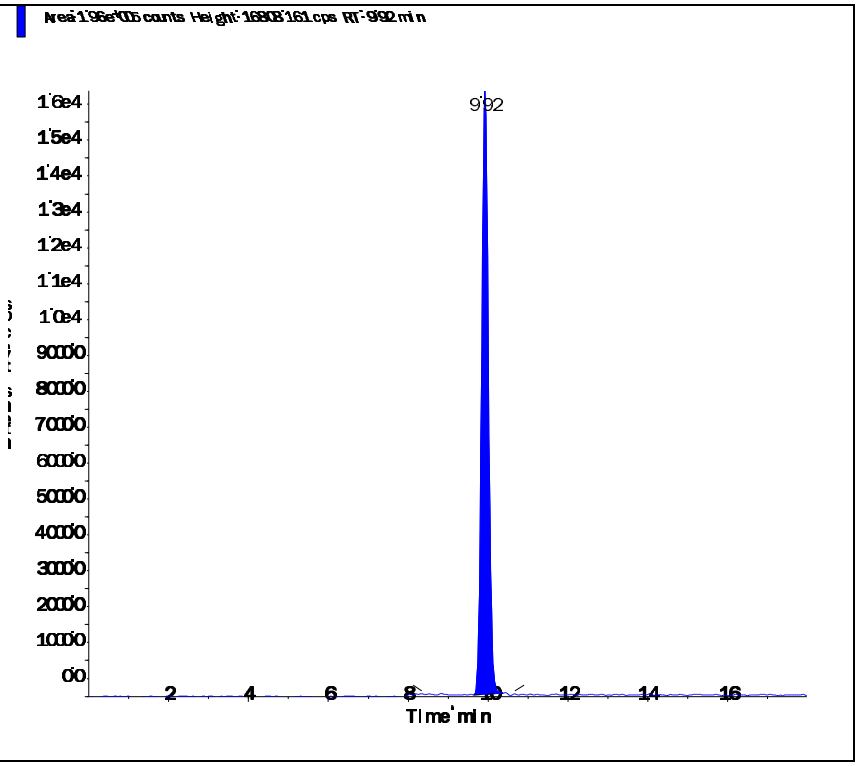

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.92) min
Calculated conc:	0.975 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

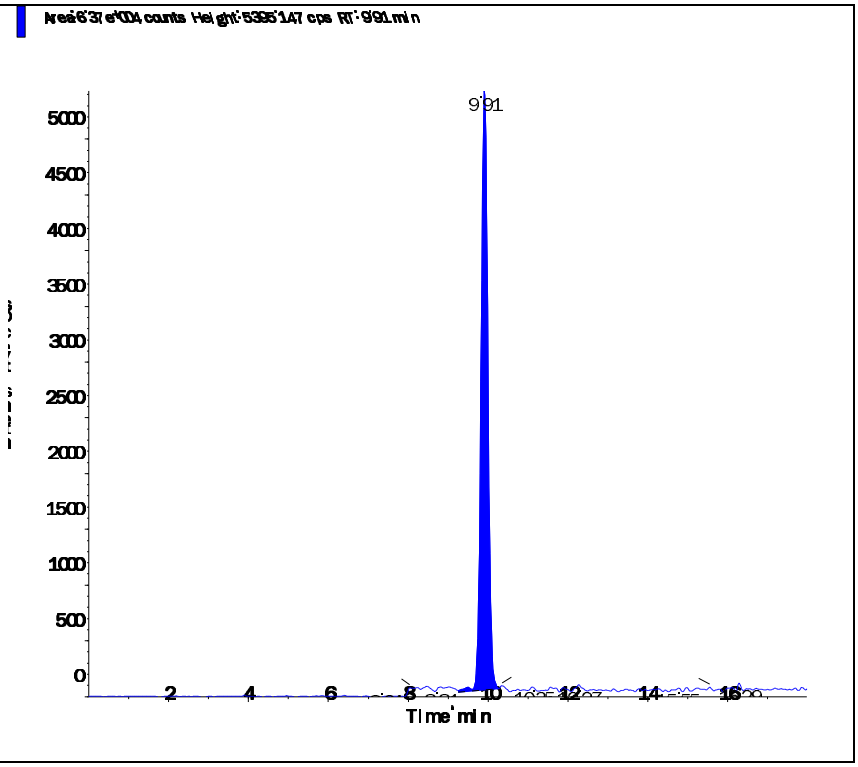

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Created with Analyst Reporter
Printed: 3/8/2016 5:06 PM

Data File	LM33767.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/7/2016 9:48:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559981-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33767.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 9:48:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559981-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	6.010e+05	9.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.090e+05	9.91	1.00	0.981
Perchlorate conf	6.740e+04	9.89	1.00	0.983

O18LP (Internal Standard)

RT (Exp. RT): 9.90(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

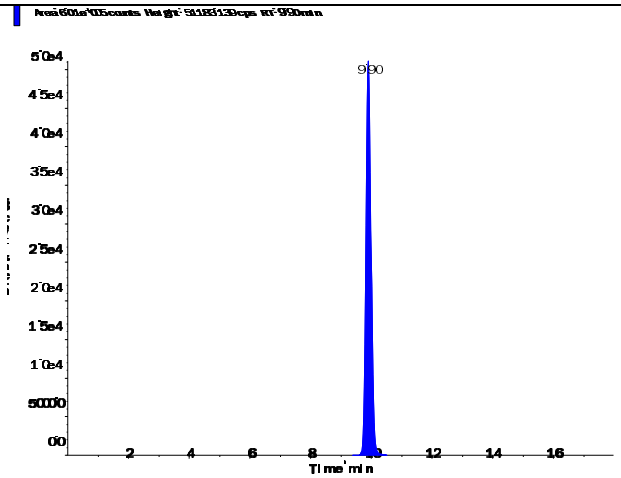

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.91 (9.94) min
Calculated conc:	0.981 ng/ml
Area Ratio:	0.347
Sample Type:	(Quality Control)

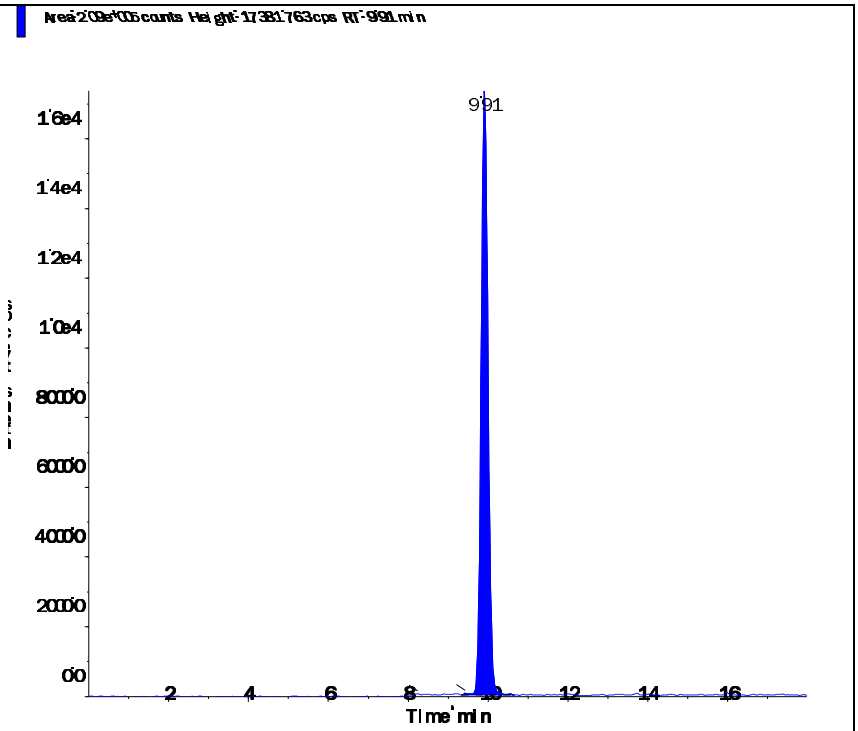

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.89 (9.92) min
Calculated conc:	0.983 ng/ml
Area Ratio:	0.112
Sample Type:	(Quality Control)

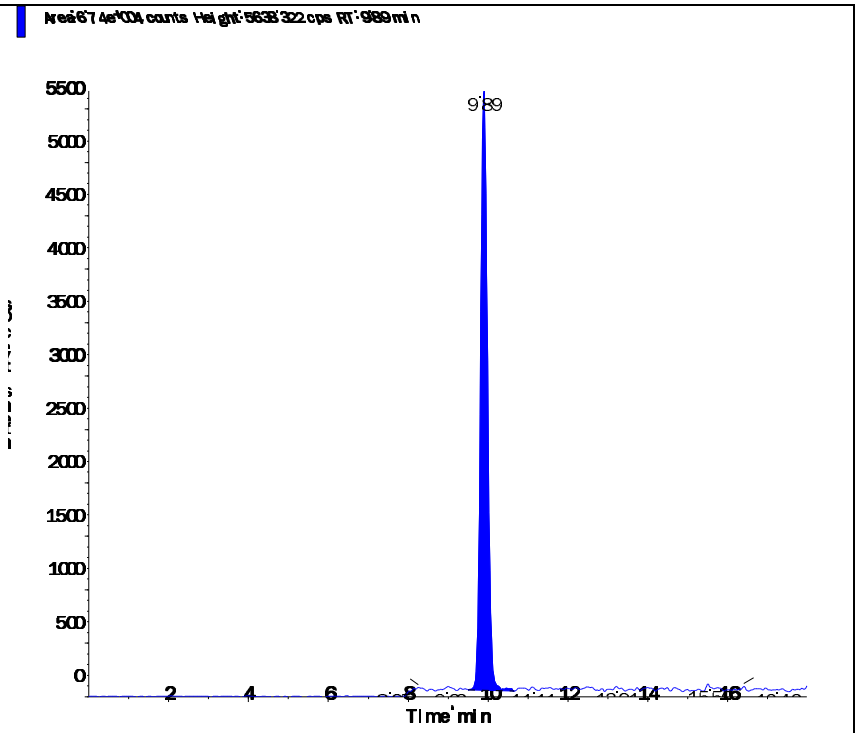

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Created with Analyst Reporter
Printed: 3/8/2016 5:07 PM

Data File	LM33770.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/8/2016 9:41:54 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559981-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33770.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 9:41:54 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559981-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.600e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.950e+05	9.93	1.00	0.984
Perchlorate conf	6.310e+04	9.92	1.00	0.987

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

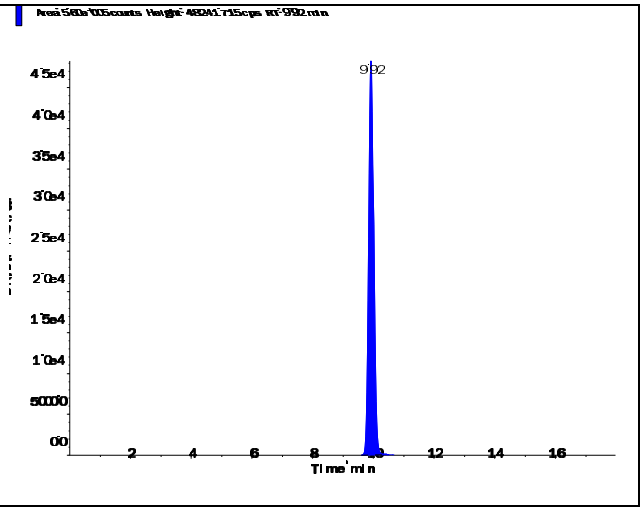

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	0.984 ng/ml
Area Ratio:	0.348
Sample Type:	(Quality Control)

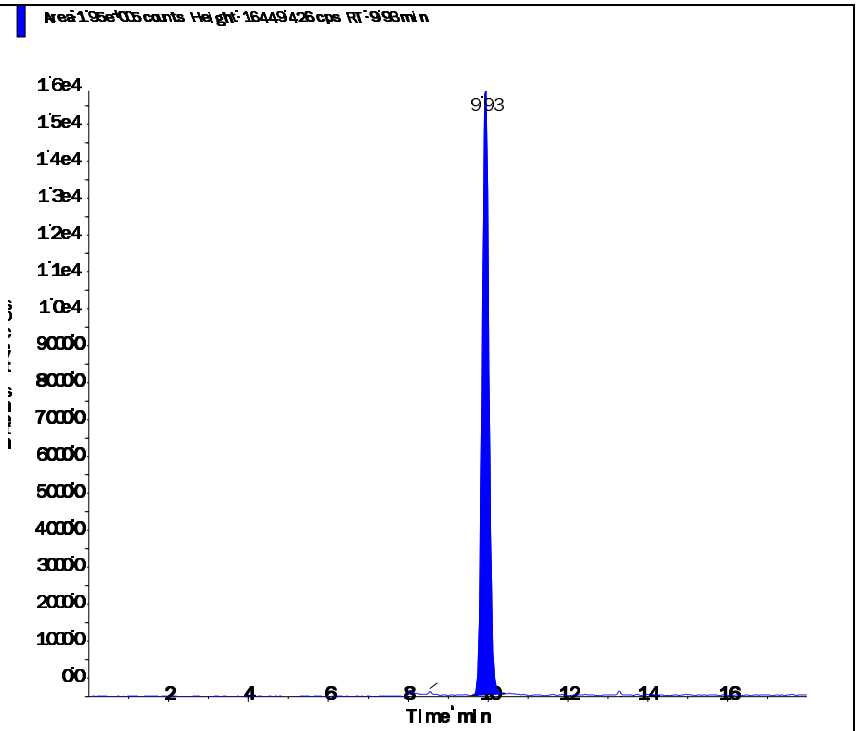

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	0.987 ng/ml
Area Ratio:	0.113
Sample Type:	(Quality Control)

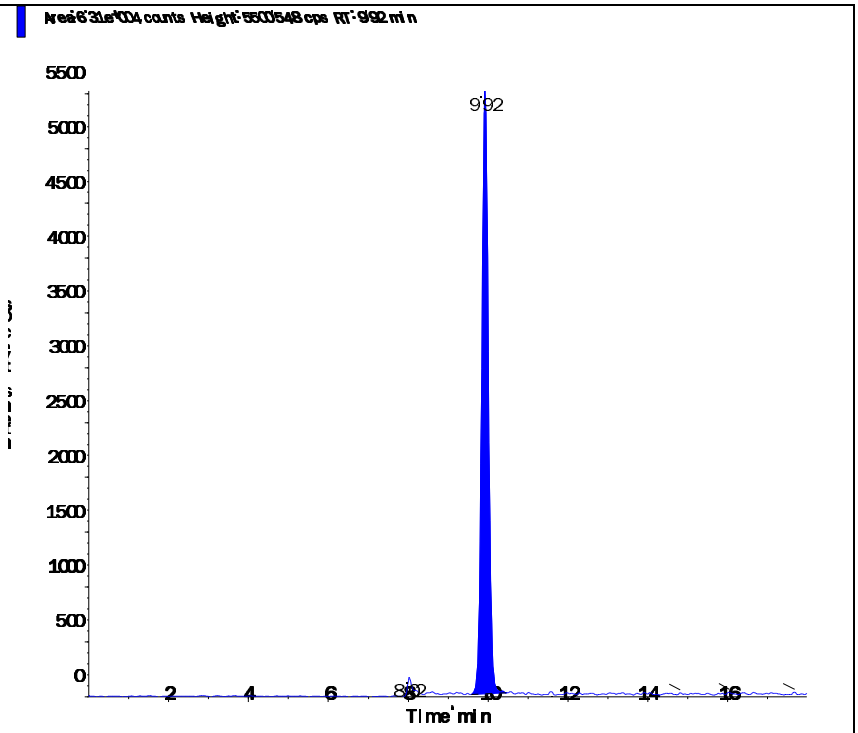

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Data File	LM33777.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/8/2016 11:54:24 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559981-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33777.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 11:54:24 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559981-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.270e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.780e+05	9.96	1.00	0.954
Perchlorate conf	5.800e+04	9.94	1.00	0.964

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

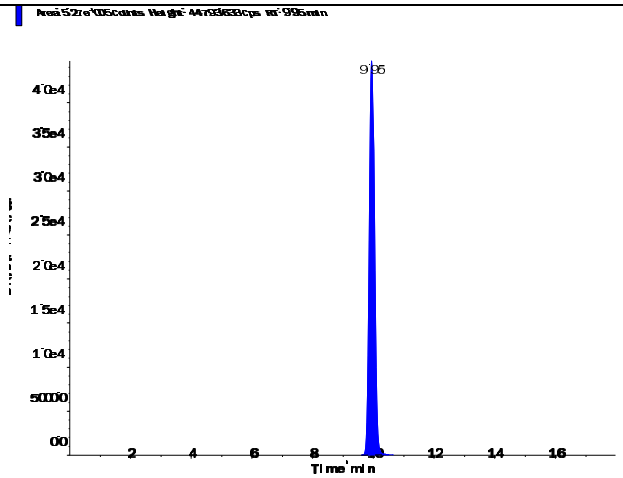

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	0.954 ng/ml
Area Ratio:	0.338
Sample Type:	(Quality Control)

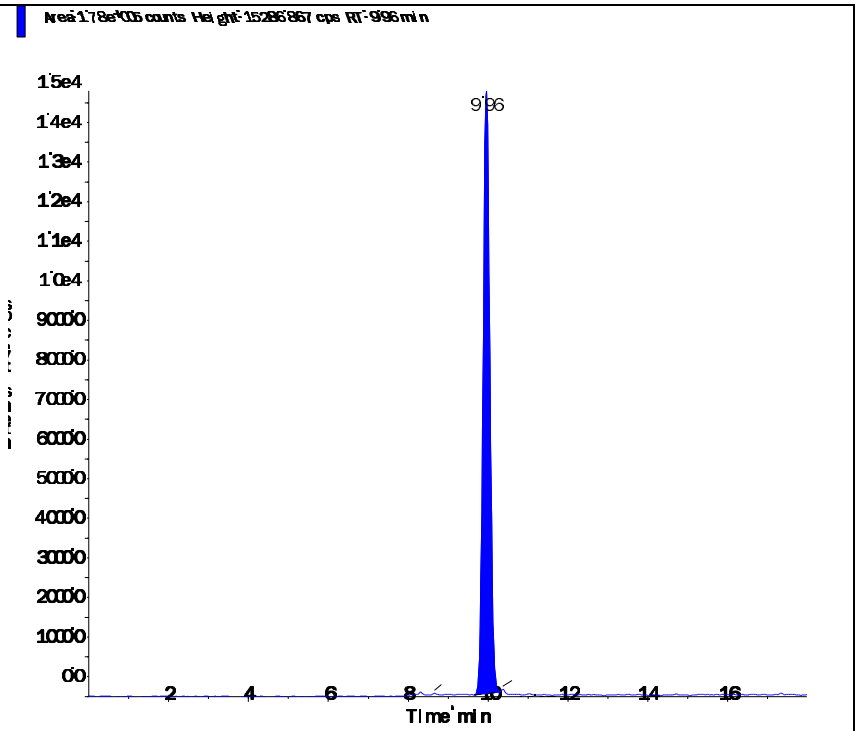

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.964 ng/ml
Area Ratio:	0.11
Sample Type:	(Quality Control)

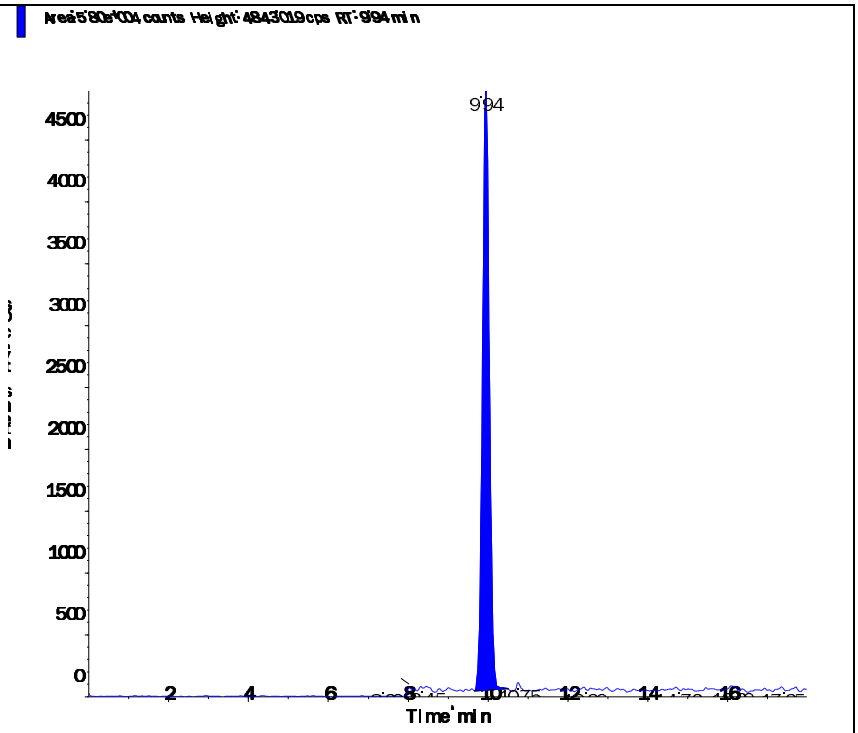

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Data File	LM33750.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/7/2016 4:27:02 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559975-07 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33750.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 4:27:02 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559975-07	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.030e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.620e+04	9.92	N/A	0.193
Perchlorate conf	1.170e+04	9.91	N/A	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

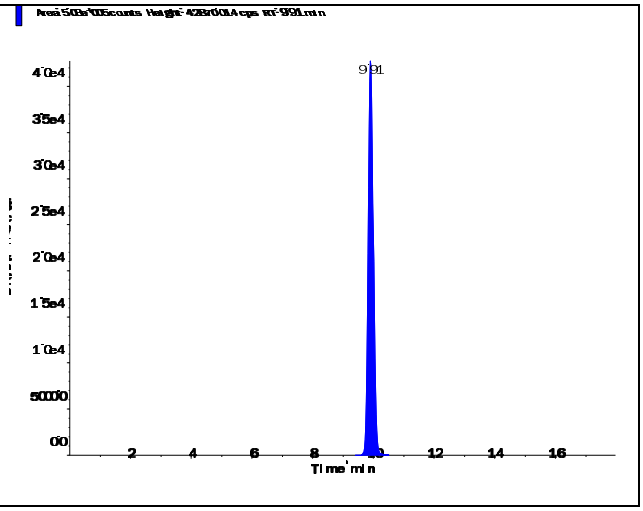

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.92 (9.94) min
Calculated conc:	0.193 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

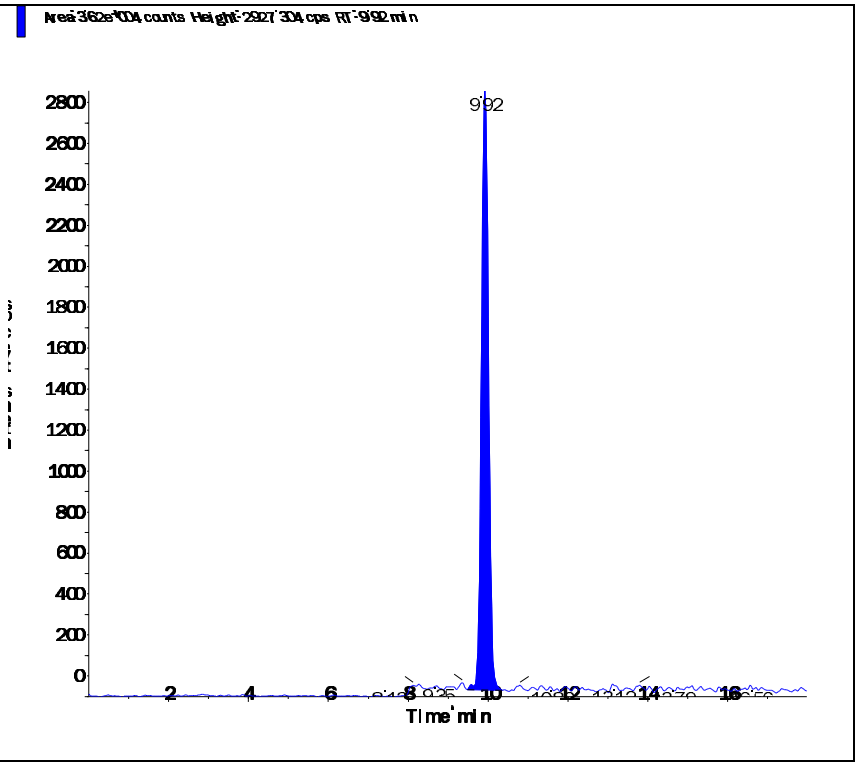

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.92) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

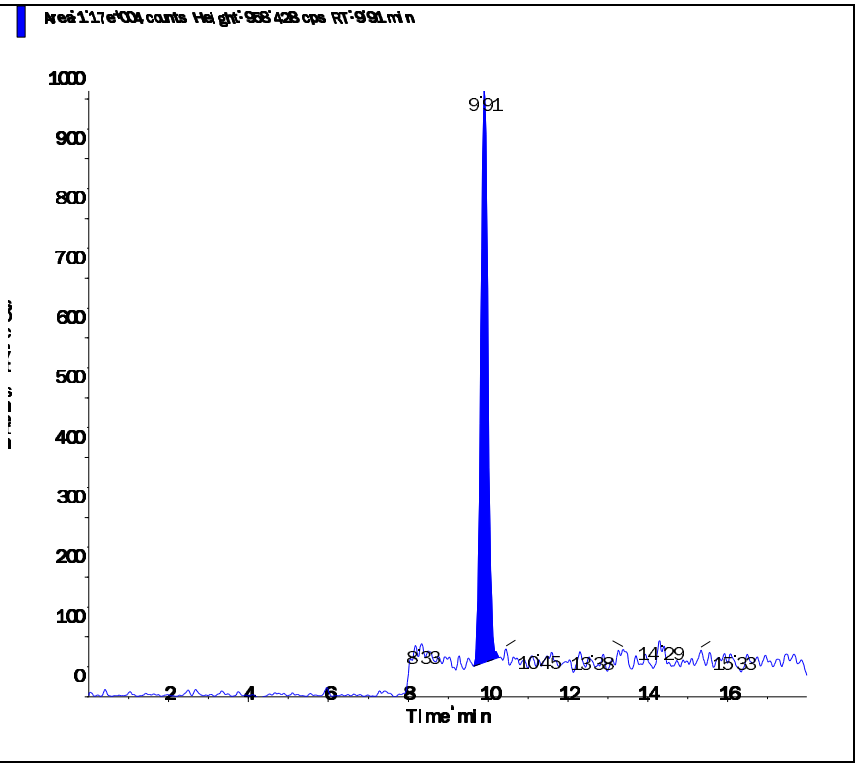

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Printed: 3/8/2016 5:04 PM

Data File	LM33762.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/7/2016 8:14:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559975-08 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33762.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 8:14:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559975-08	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.880e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.300e+04	9.92	N/A	0.197
Perchlorate conf	1.390e+04	9.90	N/A	0.196

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

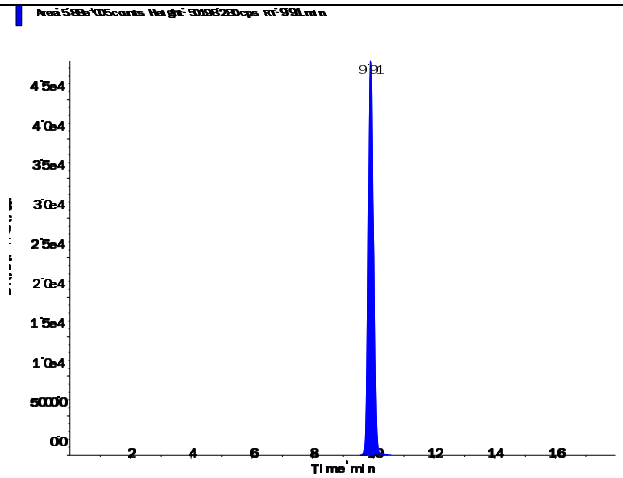

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.92 (9.94) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.073
Sample Type:	(Unknown)

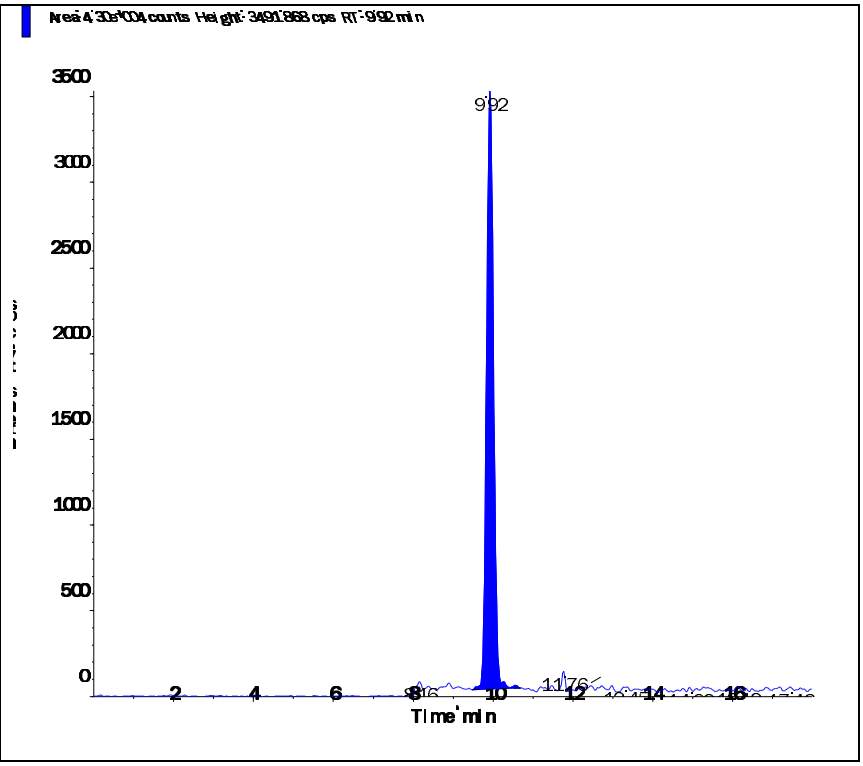

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.90 (9.92) min
Calculated conc:	0.196 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

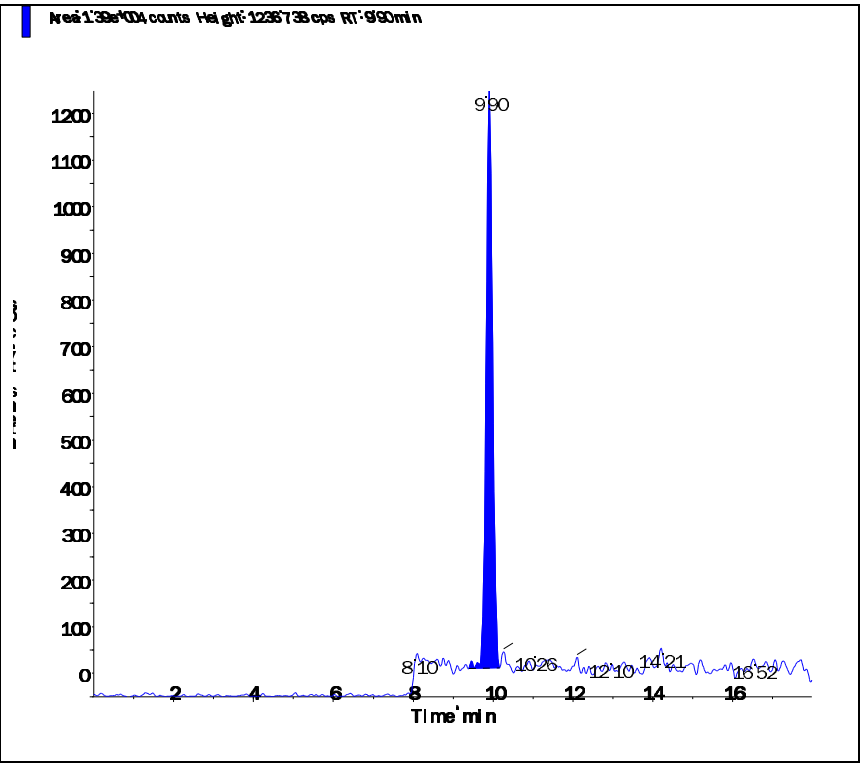

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Data File	LM33768.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/7/2016 10:07:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559975-09 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33768.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 10:07:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559975-09	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	6.160e+05	9.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.540e+04	9.91	N/A	0.198
Perchlorate conf	1.520e+04	9.89	N/A	0.206

O18LP (Internal Standard)

RT (Exp. RT): 9.90(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

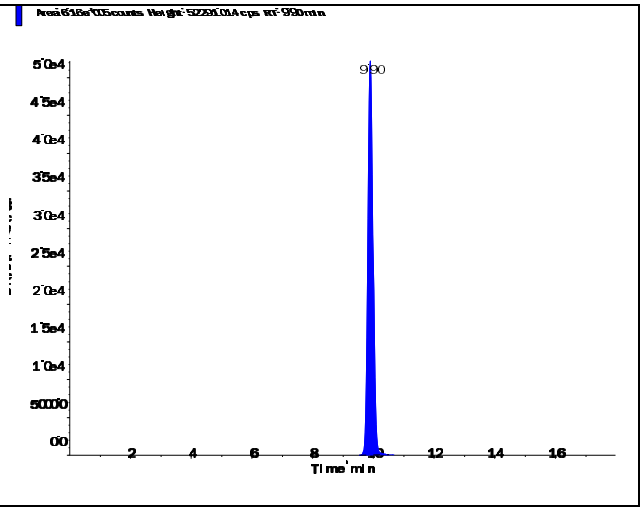

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.91 (9.94) min
Calculated conc:	0.198 ng/ml
Area Ratio:	0.074
Sample Type:	(Unknown)

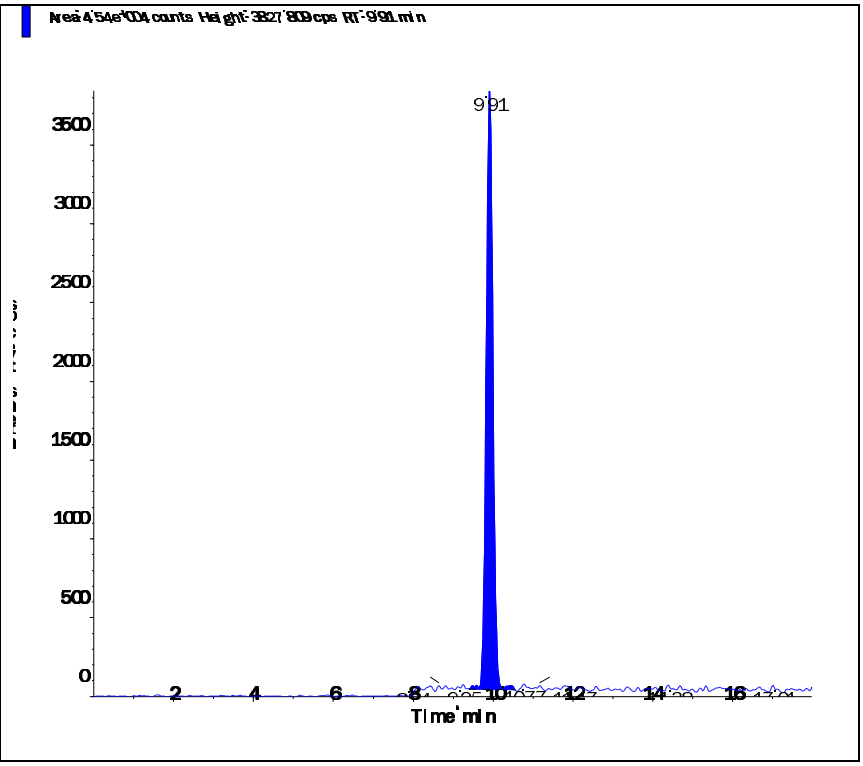

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.89 (9.92) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

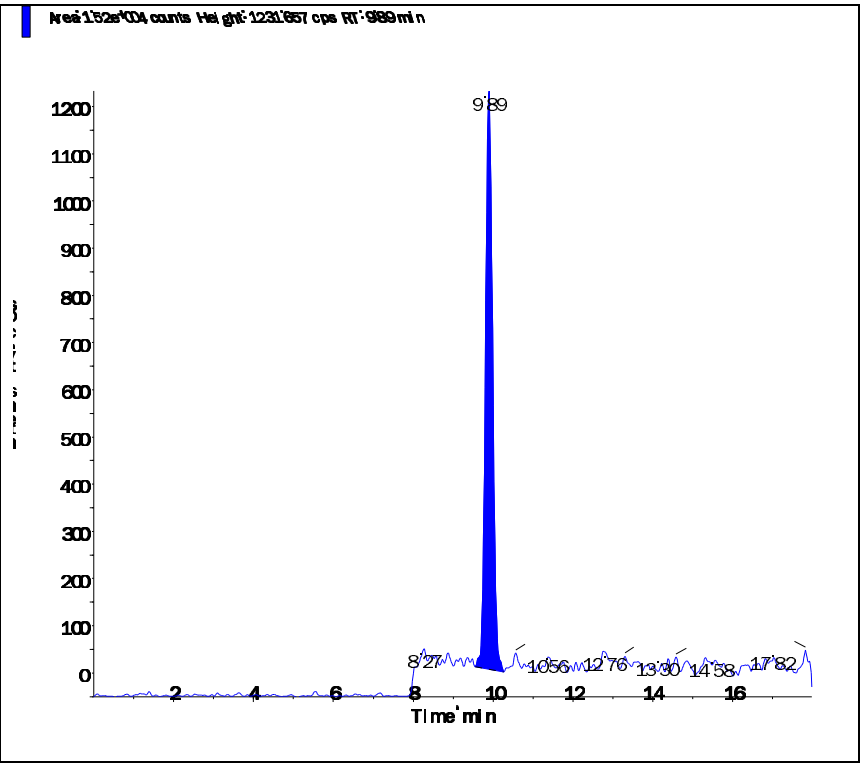

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Data File	LM33771.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/8/2016 10:00:46 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559975-10 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33771.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 10:00:46 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559975-10	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.610e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.910e+04	9.93	N/A	0.187
Perchlorate conf	1.430e+04	9.92	N/A	0.213

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

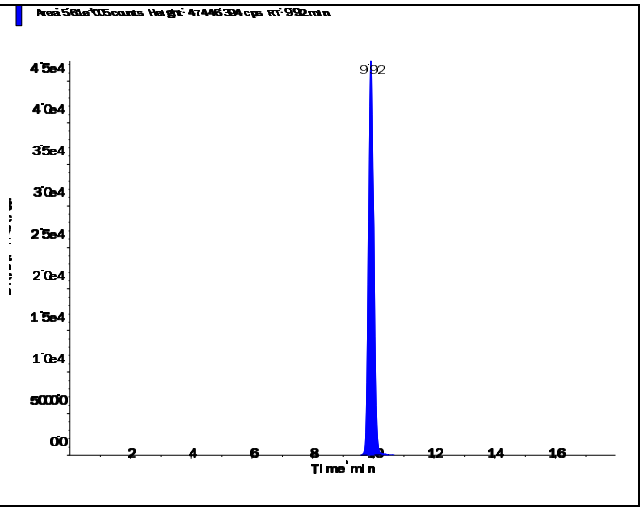

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	0.187 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

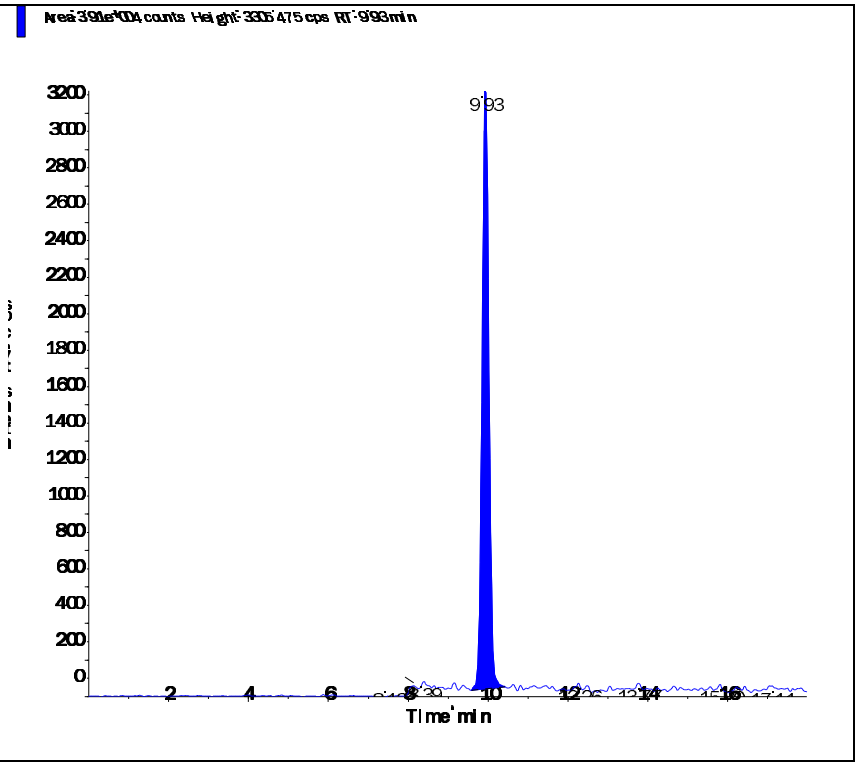

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	0.213 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

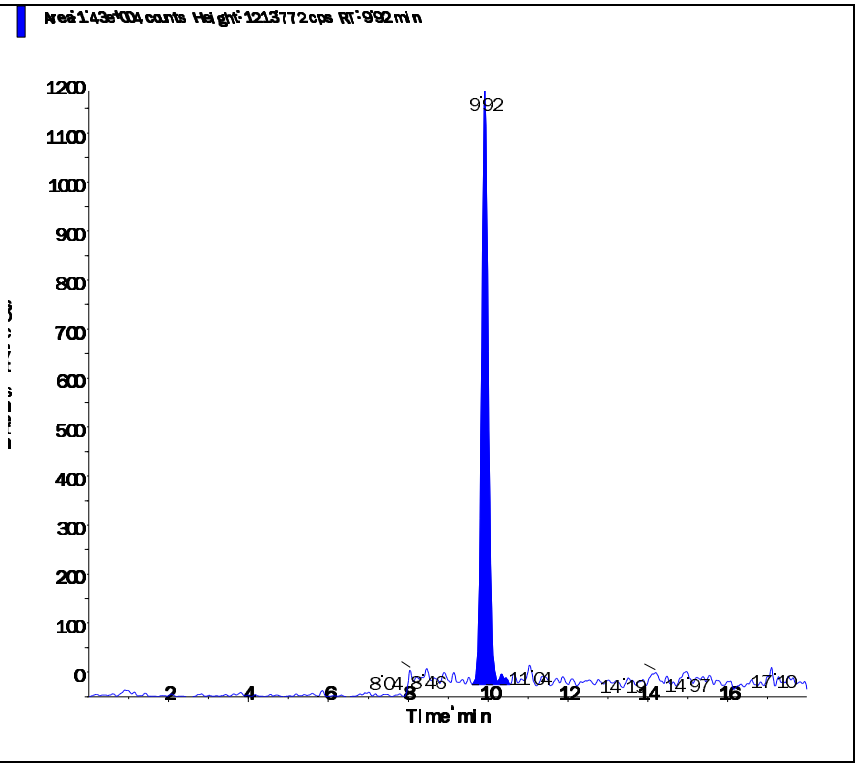

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Data File	LM33778.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/8/2016 12:13:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559975-11 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33778.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 12:13:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559975-11	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.190e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.800e+04	9.93	N/A	0.197
Perchlorate conf	1.210e+04	9.92	N/A	0.193

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

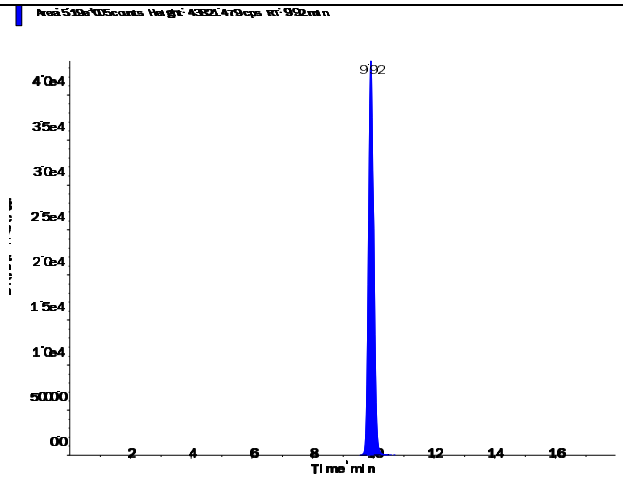

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.073
Sample Type:	(Unknown)

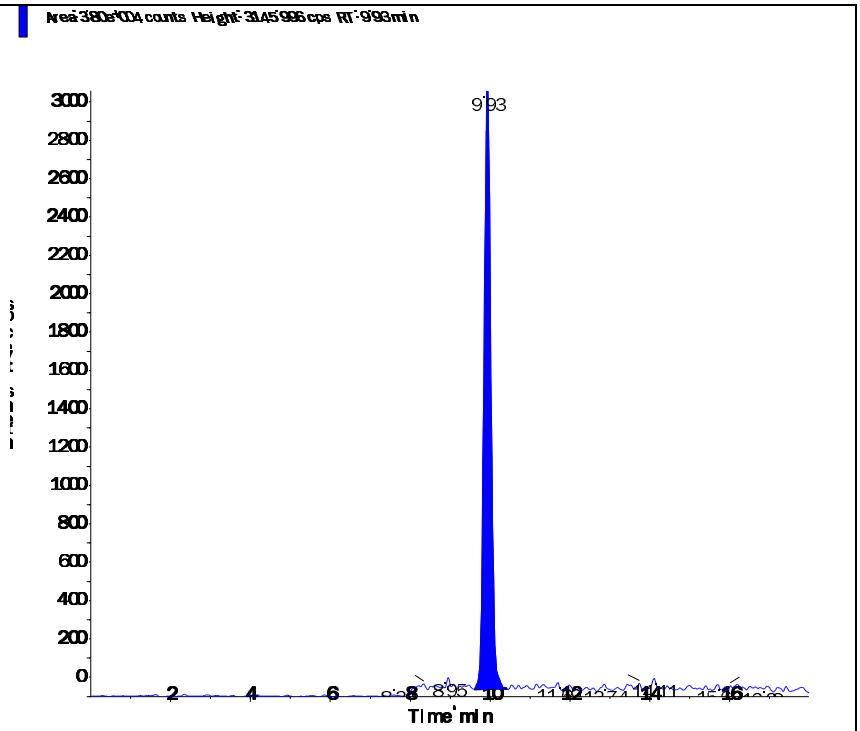

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	0.193 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

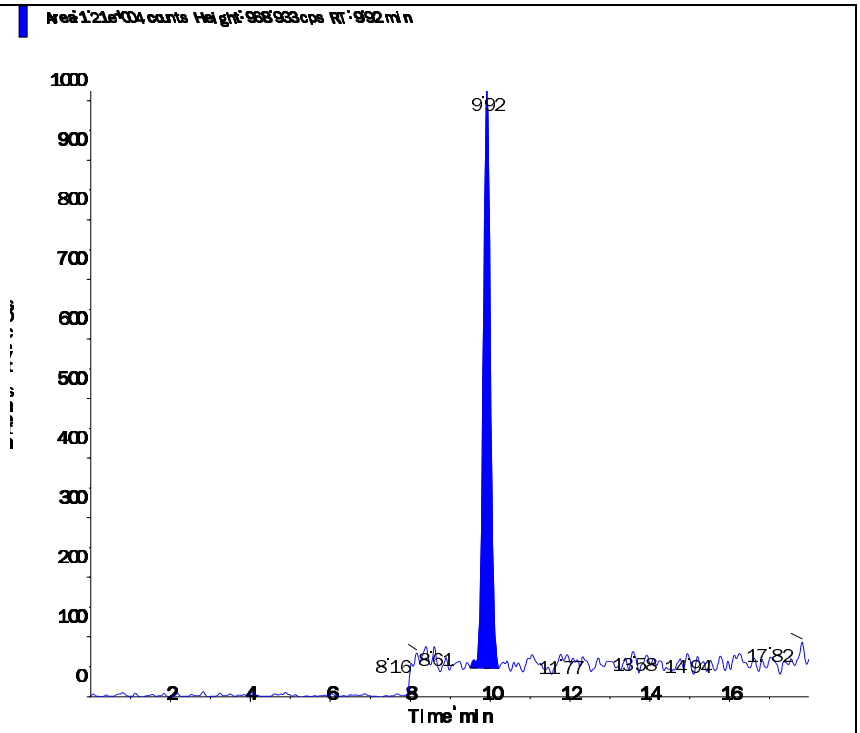

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Printed: 3/8/2016 4:59 PM

Data File	LM33748.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/7/2016 3:49:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559981-01 CCB	**Injection Vial**	1.00
Data File	LM33748.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 3:49:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559981-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.710e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

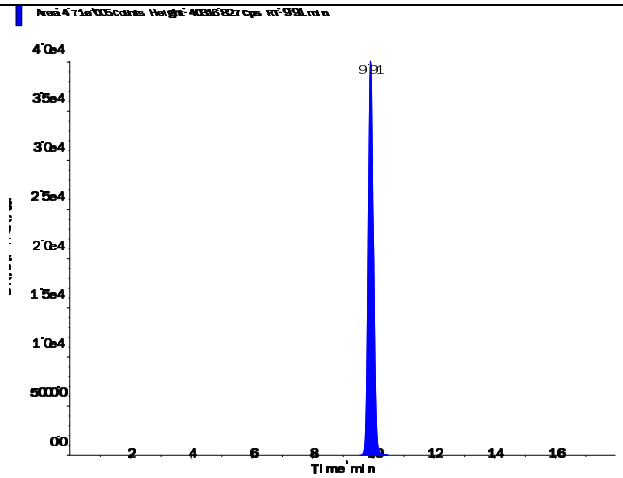

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

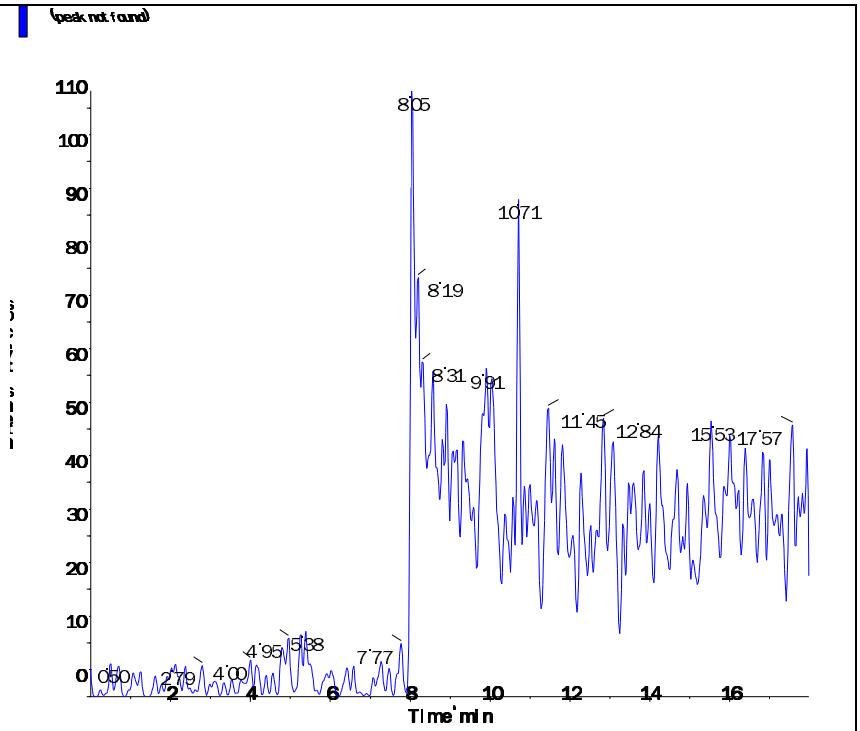

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

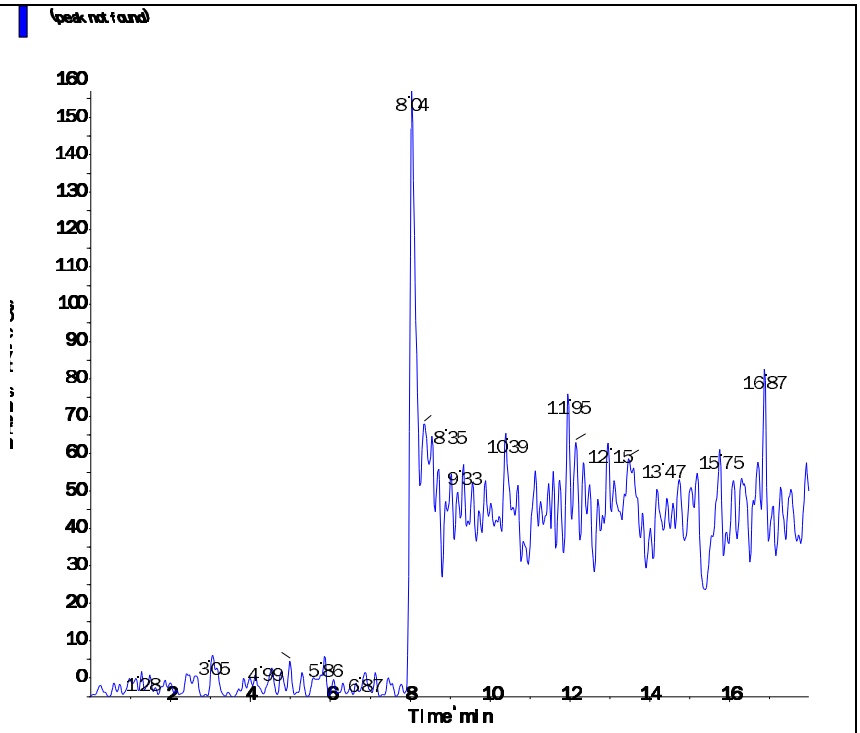

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Data File	LM33763.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/7/2016 8:33:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559981-04 CCB	**Injection Vial**	1.00
Data File	LM33763.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 8:33:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559981-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.720e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

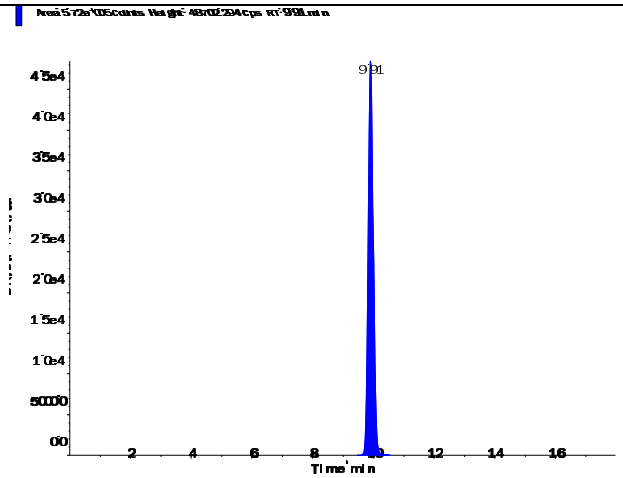

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

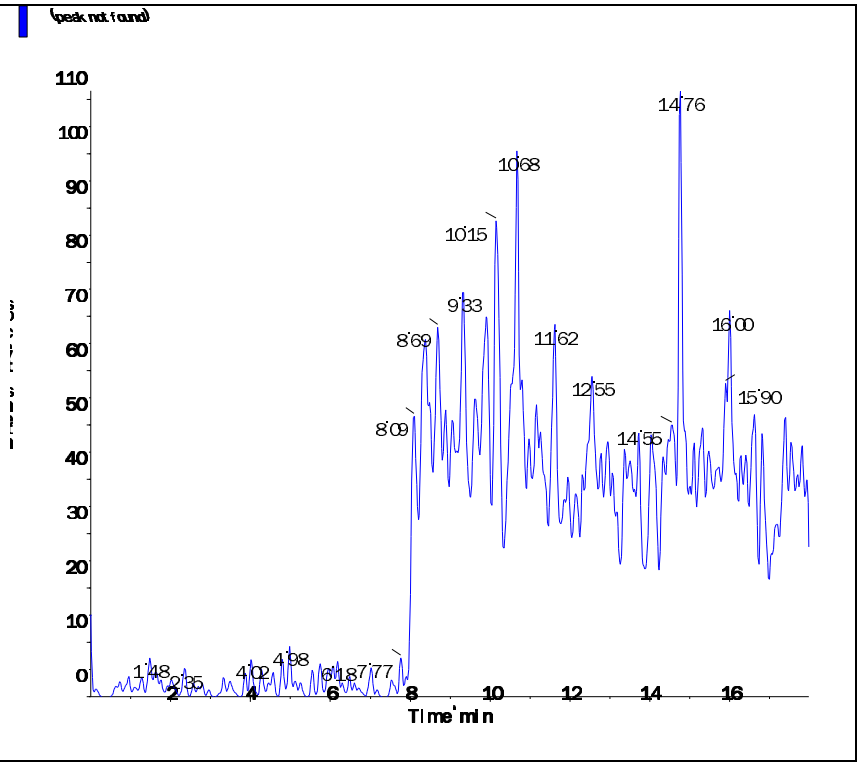

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

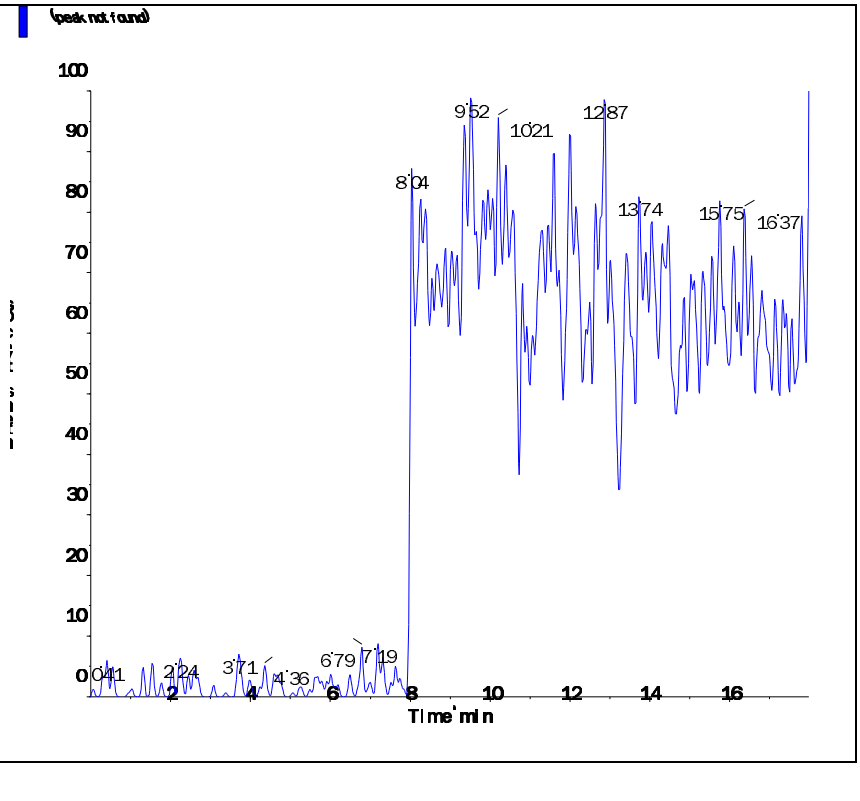

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Data File	LM33769.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/7/2016 10:26:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559981-06 CCB	**Injection Vial**	1.00
Data File	LM33769.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 10:26:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559981-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	6.010e+05	9.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.90(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

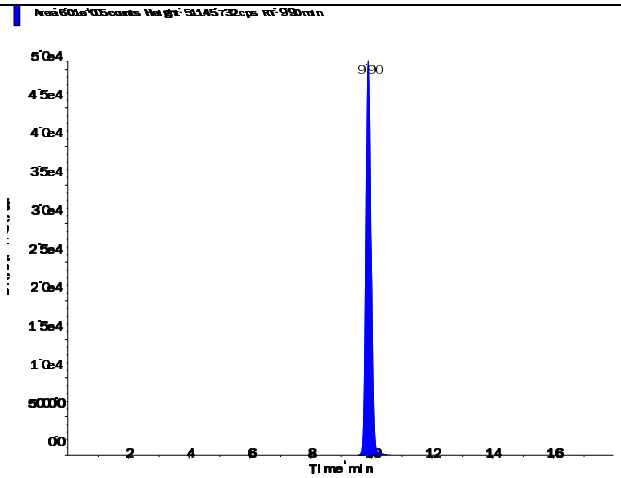

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

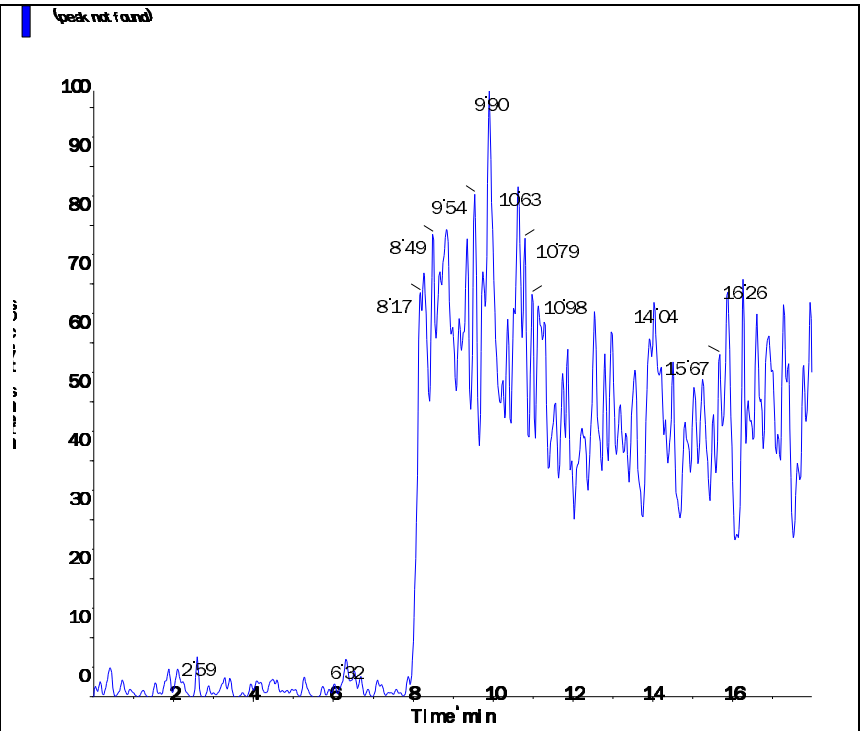

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

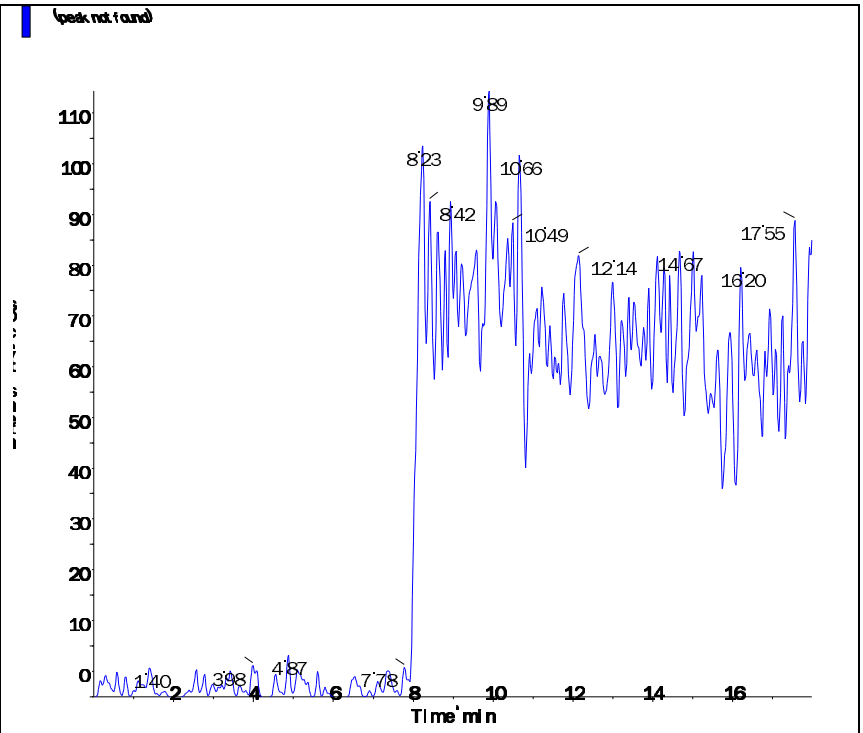

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Data File	LM33772.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/8/2016 10:19:41 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559981-08 CCB	**Injection Vial**	1.00
Data File	LM33772.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 10:19:41 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559981-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.400e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

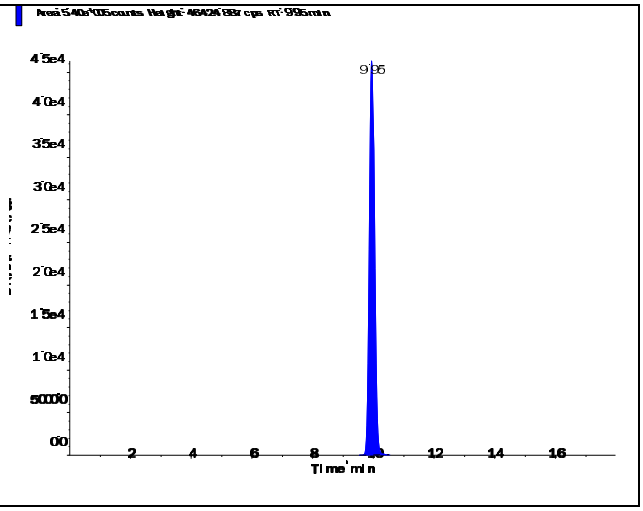

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

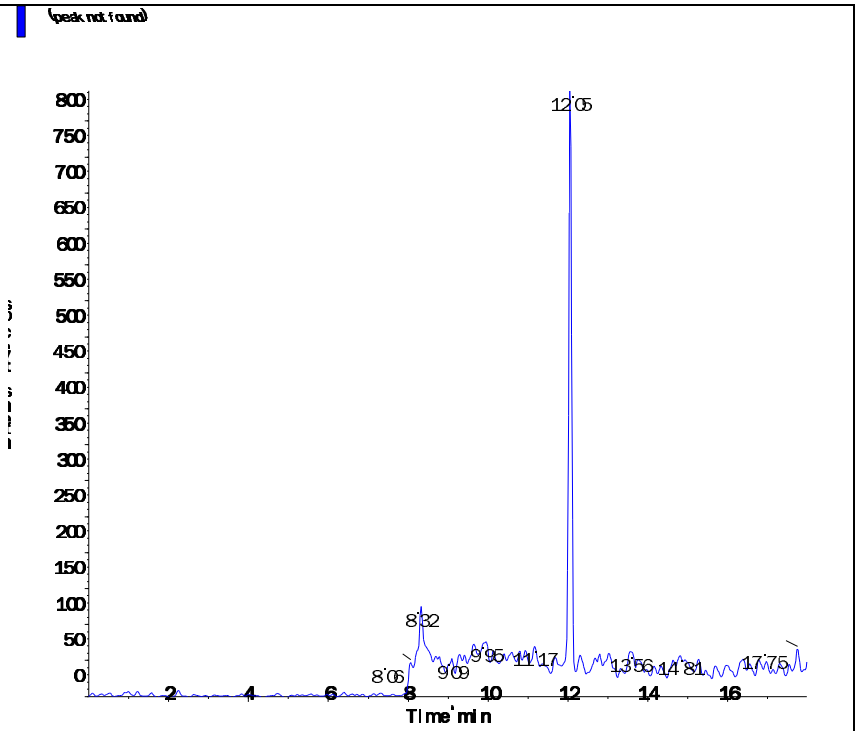

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

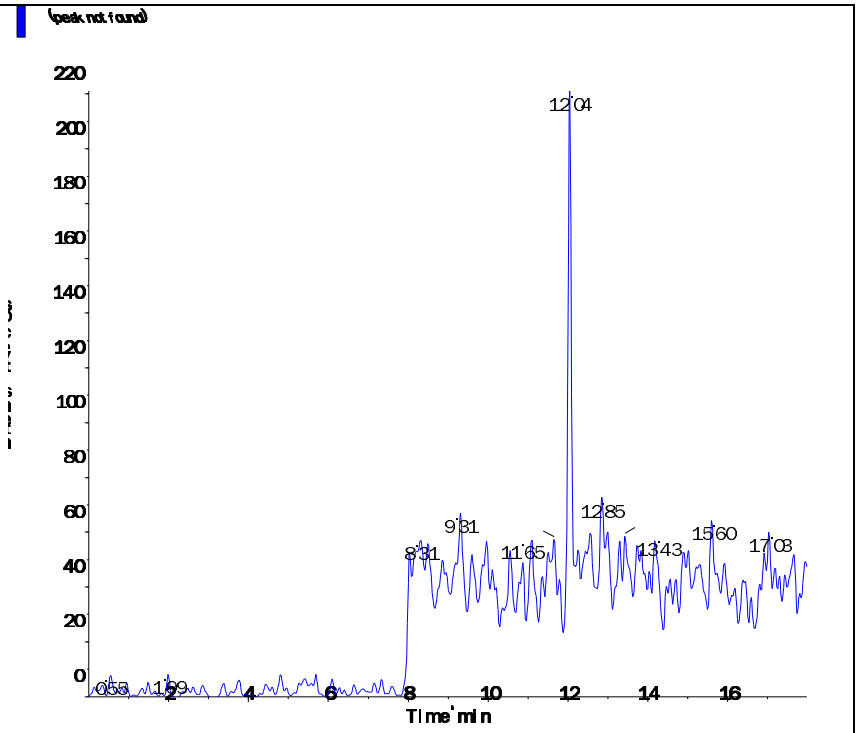

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Data File	LM33779.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/8/2016 12:32:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559981-10 CCB	**Injection Vial**	1.00
Data File	LM33779.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 12:32:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559981-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.040e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	6.400e+02	9.90	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

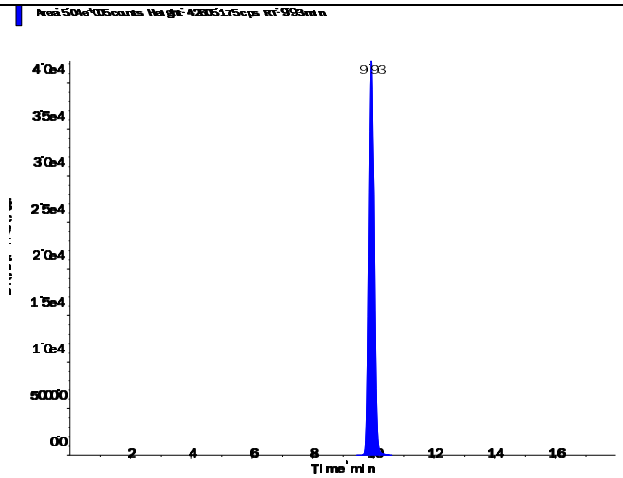

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.94) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	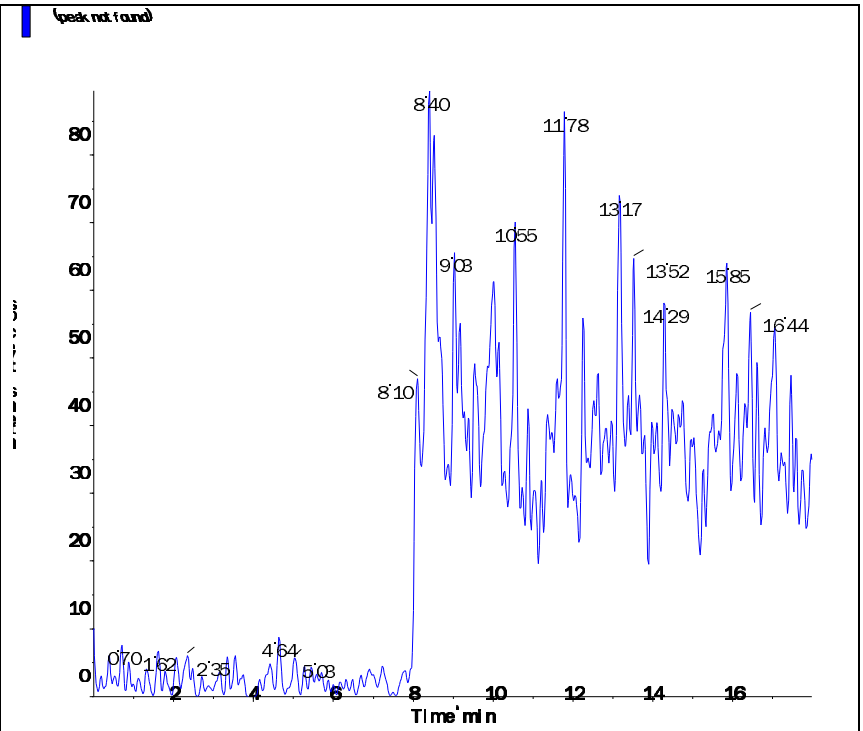
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.90 (9.92) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	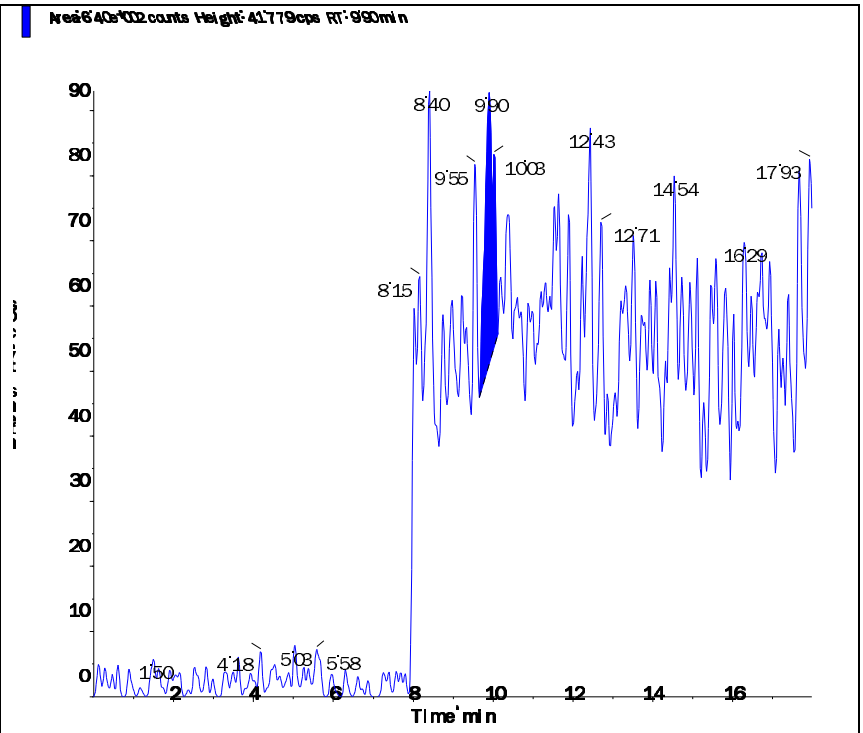

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Data File	LM33751.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/7/2016 4:45:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559975-01 MCT (2.0ug/kg)	**Injection Vial**	4.00
Data File	LM33751.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 4:45:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559975-01	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.990e+05	9.49	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.590e+04	9.50	N/A	0.193
Perchlorate conf	1.280e+04	9.50	N/A	0.215

O18LP (Internal Standard)

RT (Exp. RT): 9.49(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

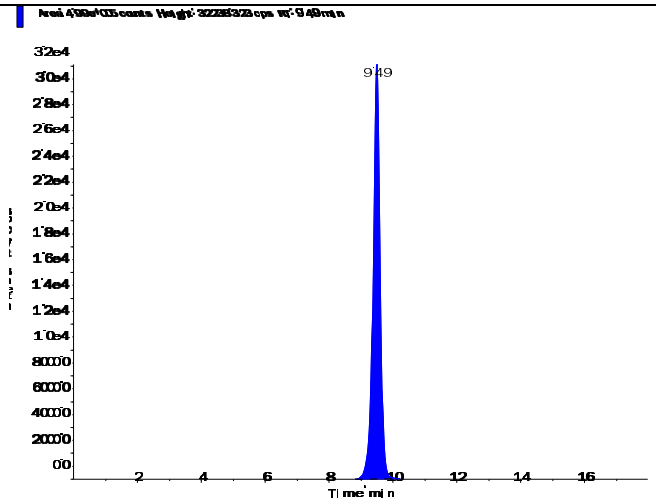

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.50 (9.94) min
Calculated conc:	0.193 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

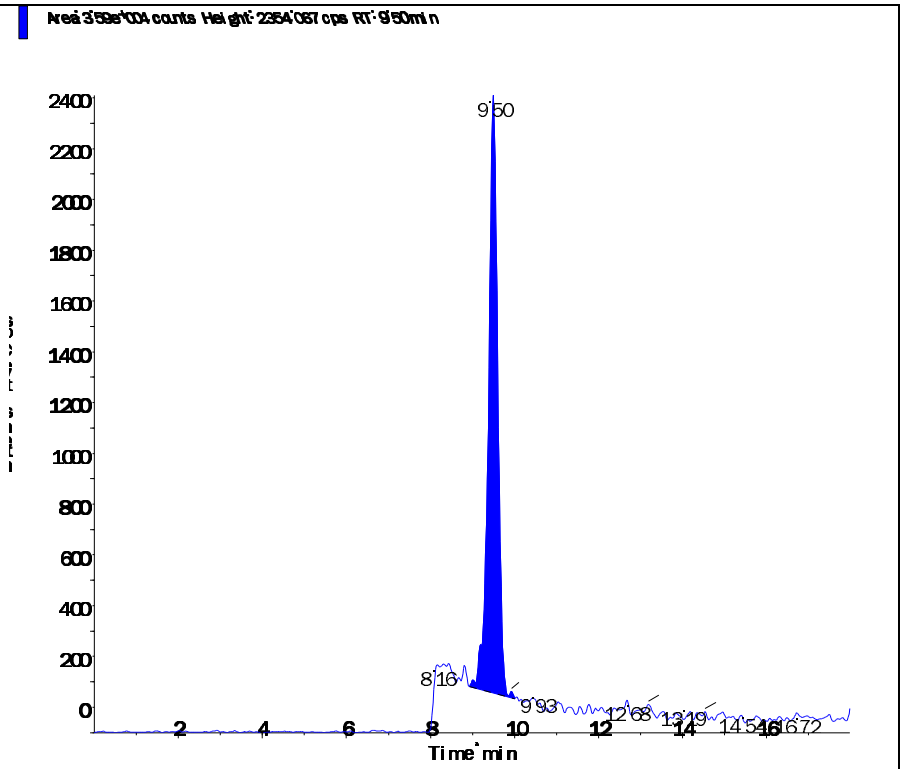

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.50 (9.92) min
Calculated conc:	0.215 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

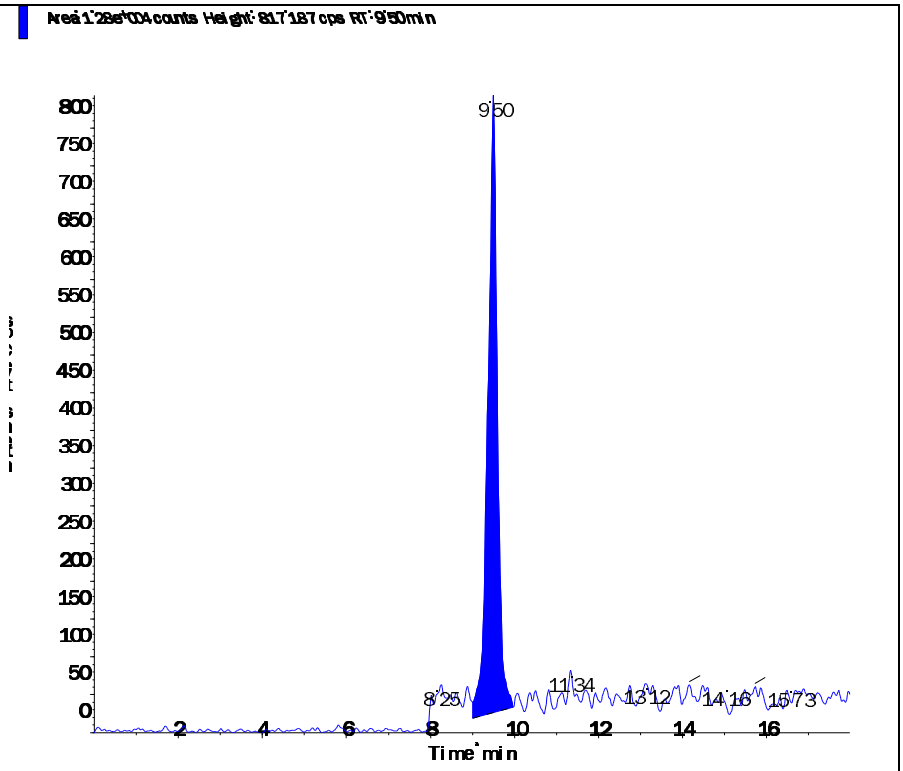

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2.2.1.5 Raw QC Data

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Data File	LM33752.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/7/2016 5:04:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559975-02 BLANK	**Injection Vial**	5.00
Data File	LM33752.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 5:04:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559975-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.890e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

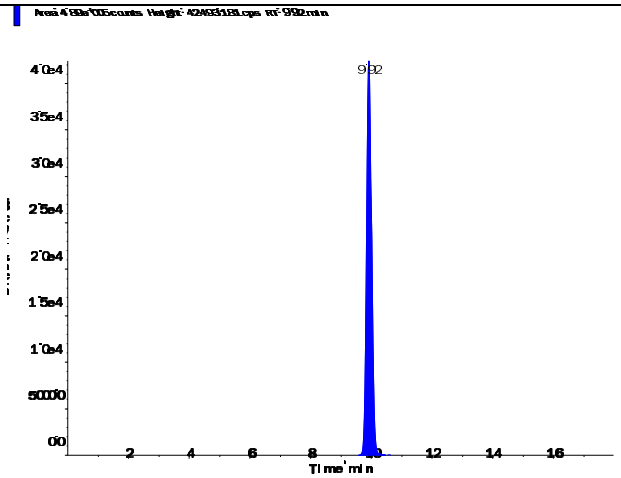

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

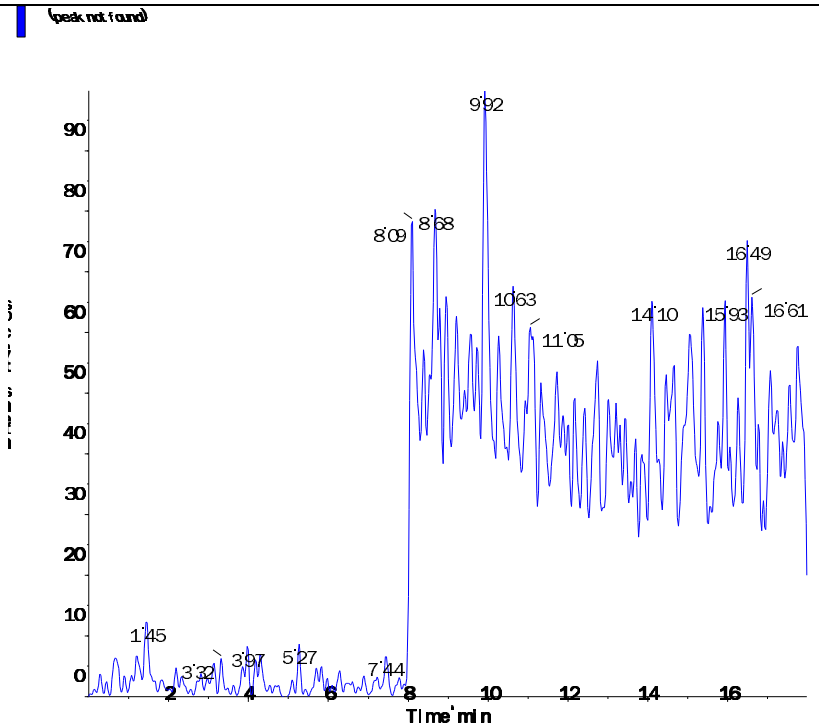

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

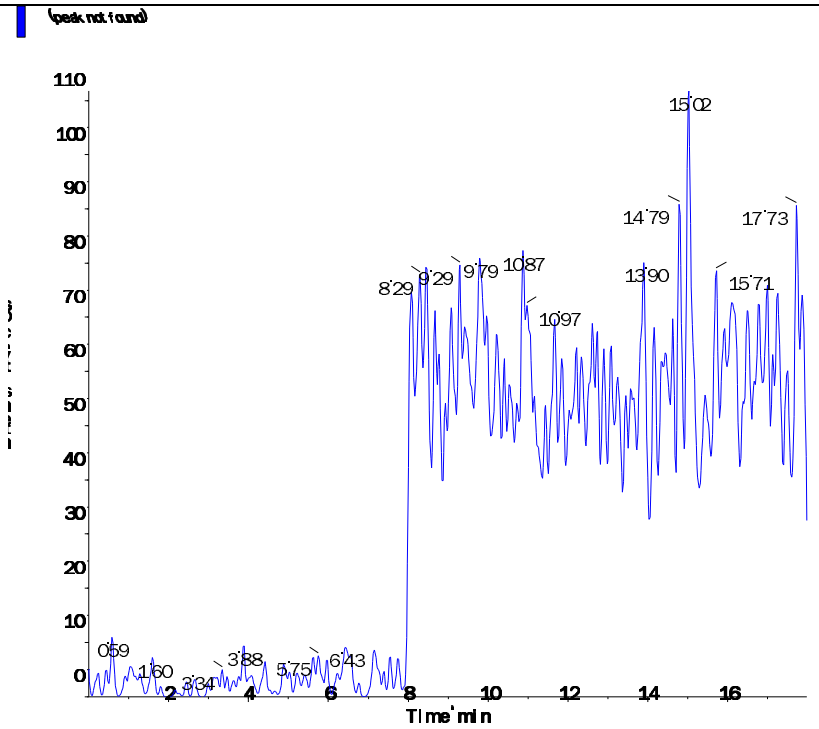

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Data File	LM33753.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/7/2016 5:23:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559975-03 LCS (2.0ug/kg)	**Injection Vial**	6.00
Data File	LM33753.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 5:23:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559975-03	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.580e+04	9.95	N/A	0.194
Perchlorate conf	1.180e+04	9.93	N/A	0.198

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

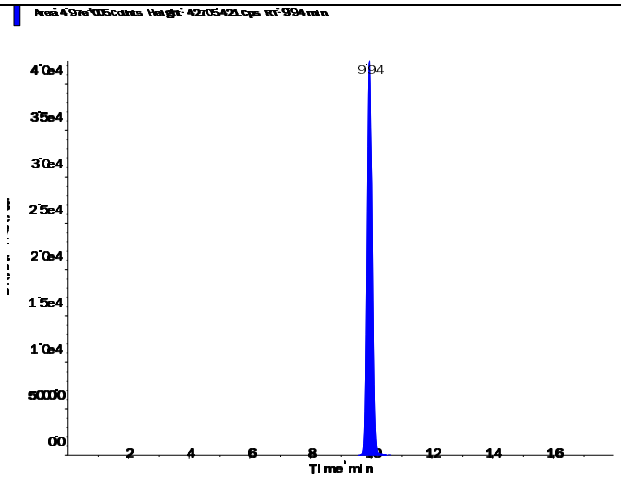

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 3/8/2016 5:01 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

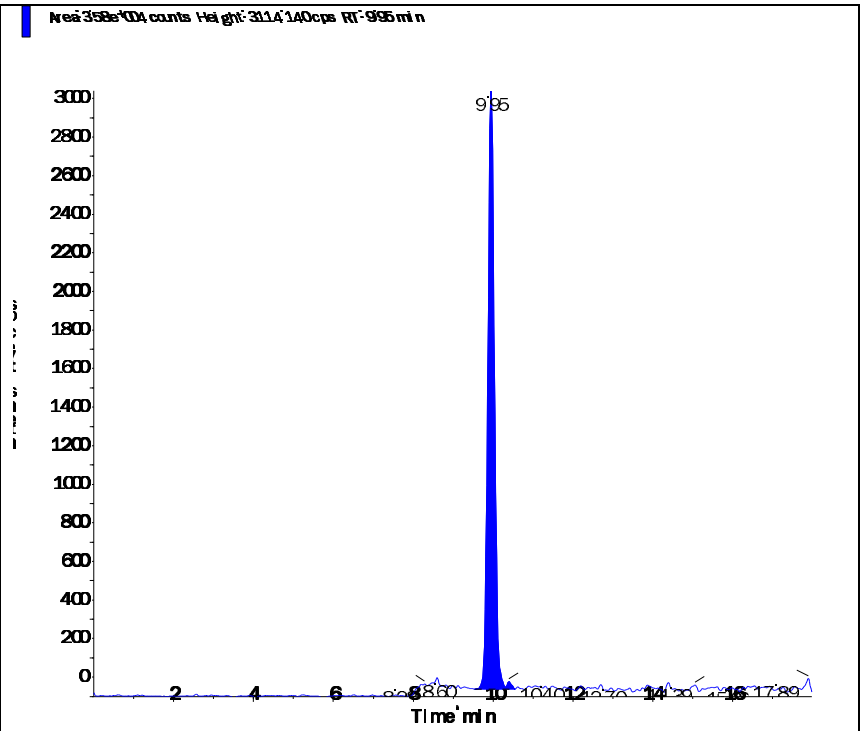

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	0.198 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

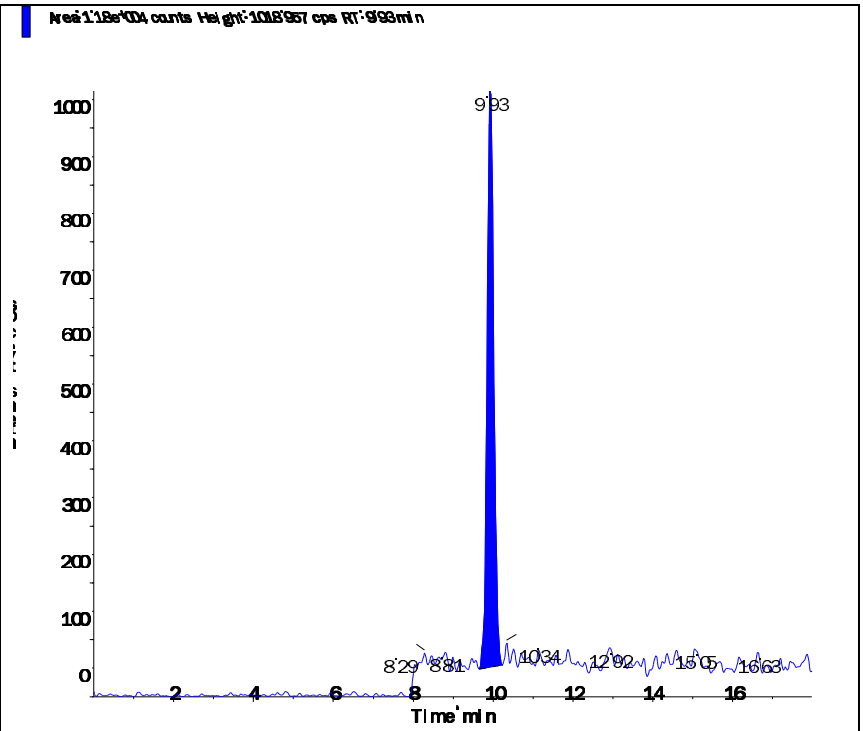

s.dataFile Page 2 of 2

2.3 General Chemistry Data

2.3.1 Percent Solids Data

2.3.1.1 Raw Data

Example Percent Solids Calculations

1.0 Calculating the percent solids of a sample.

$$\%Solids = \frac{WT3 - WT1}{WT2 - WT1} \times F$$

Where:	
WT1 = Weight, in grams, of the empty container	1.30 g
WT2 = Weight, in grams, of the container and wet sample	21.274 g
WT3 = Weight, in grams, of the container and dried sample	5.21 g
F = Factor to get units as percent weight	100
%Solids = Percent solids present in sample.	19.58%

2.0 Calculating the percent moisture of a sample.

% Moisture = 100 - % Solids from 1.0 calculation

Microbac Laboratories Inc.

PERCENT SOLIDS

Workgroup (AAB#): WG559963 Analyst: AC ADT(on): 03/07/2016 13:41
Method: D2216-90 Instrument: BAL021 ADT(off): 03/08/2016 07:21
SOP: K0003 Rev: 14

SAMPLE NUMBER	EMPTY PAN WT 1	WET WT 2	DRY WT 3A	DRY WT 3B	DRY WT 3C	PERCENT SOLID	PERCENT MOISTURE
L16030323-01	1.292	27.791	19.196			67.56	
L16030323-02	1.291	25.432	22.129			86.32	
L16030323-03	1.292	29.815	23.996			79.60	
L16030323-04	1.292	23.556	17.768			74.00	
L16030323-05	1.297	25.291	23.858			94.03	
L16030323-06	1.297	23.695	20.625			86.29	
WG559963-01	1.297	23.695	20.625			86.29	13.71
WG559963-02	1.292	27.959	24.463			86.89	13.11

Analyst: Andrea R Cochran

PERCENT_SOLIDS - Modified 04/24/2008
PDF ID: 4659892
Report generated: 03/08/2016 07:24

Microbac

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
March 10, 2016

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001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
March 10, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
March 10, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Stephanie Mossburg	Project Manager: Debra Richmon	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): KAYLA PALLANES	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Kayla Pallanes	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205			
Turn Around Time: STANDARD	pH:	Program:	
Project Name/Location: Longhorn			
Project Number: 60274185 11DAS01W16 DGI-RPT OL			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC 8260	Perchlorate 6850	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
	18DPT09(5-5.5)040316			3/4/16	1030		X	S	2	X	X					
	18DPT09(11-11.5)040316			3/4/16	1035		X	S	2	X	X					
	18DPT09(13.5-14)040316			3/4/16	1040		X	S	2	X	X					
	18DPT10(5-5.5)040316			3/4/16	1125		X	S	2	X	X					
	18DPT10(15.5-16)040316			3/4/16	1155		X	S	2	X	X					
	18DPT10(23.5-24)040316			3/4/16	1240		X	S	2	X	X					
	~~18DPT11(5-5.5)040316~~			~~3/4/16~~	~~1500~~		~~X~~	~~S~~	~~2~~	~~X~~	~~X~~					

ERPIMS REQUIRED FIELDS

Comments: ~~STANDARD TAT~~ 48 HR TAT

Relinquished by: (Signature) Kayla Pallanes	Date 3/4/16	Time 1700	Received by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)

Microbac OVD
Received: 03/07/2016 09:22
By: BRENDA GREENWALT 221000082832
Brenda Greenwalt

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030323
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 09-MAR-2016

Samplenum	Container ID	Products
L16030323-01	710484	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	07-MAR-2016 10:40	BRG		
2	ANALYZ	V1	ORG4	07-MAR-2016 10:50	AWE	CLS	

Samplenum	Container ID	Products
L16030323-01	710485	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	07-MAR-2016 10:40	BRG		
2	ANALYZ	L1	SEM	07-MAR-2016 12:50	JWR	BRG	
3	STORE	DIG	A1	07-MAR-2016 13:50	BRG	AC	

Samplenum	Container ID	Products
L16030323-02	710486	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	07-MAR-2016 10:40	BRG		
2	ANALYZ	V1	ORG4	07-MAR-2016 10:50	AWE	CLS	

Samplenum	Container ID	Products
L16030323-02	710487	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	07-MAR-2016 10:40	BRG		
2	ANALYZ	L1	SEM	07-MAR-2016 12:50	JWR	BRG	
3	STORE	DIG	A1	07-MAR-2016 13:50	BRG	AC	

Samplenum	Container ID	Products
L16030323-03	710488	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	07-MAR-2016 10:40	BRG		
2	ANALYZ	V1	ORG4	07-MAR-2016 10:51	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030323
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 09-MAR-2016

Samplenum	Container ID	Products
L16030323-03	710489	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	07-MAR-2016 10:40	BRG		
2	ANALYZ	L1	SEM	07-MAR-2016 12:50	JWR	BRG	
3	STORE	DIG	A1	07-MAR-2016 13:50	BRG	AC	

Samplenum	Container ID	Products
L16030323-04	710490	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	07-MAR-2016 10:40	BRG		
2	ANALYZ	V1	ORG4	07-MAR-2016 10:51	AWE	CLS	

Samplenum	Container ID	Products
L16030323-04	710491	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	07-MAR-2016 10:40	BRG		
2	ANALYZ	L1	SEM	07-MAR-2016 12:50	JWR	BRG	
3	STORE	DIG	A1	07-MAR-2016 13:50	BRG	AC	

Samplenum	Container ID	Products
L16030323-05	710492	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	07-MAR-2016 10:40	BRG		
2	ANALYZ	V1	ORG4	07-MAR-2016 10:51	AWE	CLS	

Samplenum	Container ID	Products
L16030323-05	710493	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	07-MAR-2016 10:40	BRG		
2	ANALYZ	L1	SEM	07-MAR-2016 12:50	JWR	BRG	
3	STORE	DIG	A1	07-MAR-2016 13:50	BRG	AC	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030323
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 09-MAR-2016

Samplenum	Container ID	Products
L16030323-06	710494	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	07-MAR-2016 10:40	BRG		
2	ANALYZ	V1	ORG4	07-MAR-2016 10:51	AWE	CLS	

Samplenum	Container ID	Products
L16030323-06	710495	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	07-MAR-2016 10:40	BRG		
2	ANALYZ	L1	SEM	07-MAR-2016 12:50	JWR	BRG	
3	STORE	DIG	A1	07-MAR-2016 13:50	BRG	AC	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16030366

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on March 11 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00110834	H	2.0		J2317165867	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	NA
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	NA

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

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Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18DPT11(5-5.5)040316	L16030366-01	03/04/2016 15:00	03/08/2016 09:50
18DPT11(15-15.5)040316	L16030366-02	03/04/2016 16:00	03/08/2016 09:50
18DPT11(20-20.5)070316	L16030366-03	03/07/2016 11:50	03/08/2016 09:50
18DPT11(29-29.5)070316	L16030366-04	03/07/2016 11:55	03/08/2016 09:50
18DPT11(25-25.5)070316	L16030366-05	03/07/2016 12:00	03/08/2016 09:50
18DPT12(5-5.5)070316	L16030366-06	03/07/2016 14:35	03/08/2016 09:50
18DPT12(8.5-9)070316	L16030366-07	03/07/2016 14:40	03/08/2016 09:50
18DPT12(18-18.5)070316	L16030366-08	03/07/2016 14:45	03/08/2016 09:50
18DPT12(12-12.5)070316	L16030366-09	03/07/2016 15:00	03/08/2016 09:50
18DPT13(5-5.5)070316	L16030366-10	03/07/2016 16:00	03/08/2016 09:50
18DPT13(12-12.5)070316	L16030366-11	03/07/2016 16:05	03/08/2016 09:50
18DPT13(17-17.5)070316	L16030366-12	03/07/2016 16:10	03/08/2016 09:50

Microbac Laboratories ● Ohio Valley Division
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Microbac REPORT L16030366
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030366
Project Name:		**Method:**	8260
Prep Batch Number(s):	560255	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-10 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2016-03-10 15:14:44

RG-366/TRRP-13 May 2010 **ID:** 7124

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Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030366
Project Name:		**Method:**	8260
Prep Batch Number(s):	560255	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-10 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030366
Project Name:		**Method:**	8260
Prep Batch Number(s):	560255	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-10 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030366
Project Name:		**Method:**	8260
Prep Batch Number(s):	560255	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-10 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

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Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030366
Project Name:		**Method:**	8260
Prep Batch Number(s):	560255	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-10 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030366
Project Name:		**Method:**	8260
Prep Batch Number(s):	560255	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-10 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030366
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG560129	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-11 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-03-11 12:59:25

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030366
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG560129	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-11 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				
Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030366
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG560129	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-11 00:00:00		

Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				
Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030366
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG560129	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-11 00:00:00		

Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					
Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030366
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG560129	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-11 00:00:00		

Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030366
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG560135	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-08 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2016-03-08 20:10:52

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030366
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG560135	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-08 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?			X		
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?			X		
Were sample detection limits reported for all analytes not detected?			X		
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?			X		
Were blanks analyzed at the appropriate frequency?			X		
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?			X		
Were blank concentrations < MQL?			X		
Laboratory control samples (LCS):			X		
Were all COCs included in the LCS?			X		

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030366
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG560135	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-08 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?			X		
Were LCSs analyzed at the required frequency?			X		
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?			X		
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?			X		
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?			X		
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?			X		
Are unadjusted MQLs and DCSs included in the laboratory data package?			X		
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?			X		
Were percent RSDs or correlation coefficient criteria met?			X		

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030366
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG560135	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-08 00:00:00		

Was the number of standards recommended in the method used for all analytes?			X		
Were all points generated between the lowest and highest standard used to calculate the curve?			X		
Are ICAL data available for all instruments used?			X		
Has the initial calibration curve been verified using an appropriate second source standard?			X		
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030366
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG560135	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-08 00:00:00		

Was a MDL study performed for each reported analyte?			X		
Is the MDL either adjusted or supported by the analysis of DCSs?			X		
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?			X		
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030366
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG560135	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-08 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT11(5-5.5)040316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/09/2016 10:01
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560255	**Analyst:**	TMB	**Run Date:**	03/09/2016 15:23
Collect Date:	03/04/2016 15:00	**Dilution:**	1	**File ID:**	6M137684
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.7	U	25.4	12.7	6.36
Benzene	71-43-2	1.27	U	6.36	1.27	0.636
Bromobenzene	108-86-1	1.27	U	6.36	1.27	0.636
Bromochloromethane	74-97-5	2.54	U	6.36	2.54	1.27
Bromodichloromethane	75-27-4	1.27	U	6.36	1.27	0.636
Bromoform	75-25-2	1.27	U	6.36	1.27	0.636
Bromomethane	74-83-9	2.54	U	6.36	2.54	1.27
2-Butanone	78-93-3	6.36	U	12.7	6.36	3.18
n-Butylbenzene	104-51-8	1.27	U	6.36	1.27	0.636
sec-Butylbenzene	135-98-8	1.27	U	6.36	1.27	0.636
tert-Butylbenzene	98-06-6	1.27	U	6.36	1.27	0.636
Carbon disulfide	75-15-0	1.27	U	6.36	1.27	0.636
Carbon tetrachloride	56-23-5	1.27	U	6.36	1.27	0.636
Chlorobenzene	108-90-7	1.27	U	6.36	1.27	0.636
Chlorodibromomethane	124-48-1	1.27	U	6.36	1.27	0.636
Chloroethane	75-00-3	2.54	U	6.36	2.54	1.27
Chloroform	67-66-3	1.27	U	6.36	1.27	0.636
Chloromethane	74-87-3	5.08	U	12.7	5.08	2.54
2-Chlorotoluene	95-49-8	1.27	U	6.36	1.27	0.636
4-Chlorotoluene	106-43-4	1.27	U	6.36	1.27	0.636
1,2-Dibromo-3-chloropropane	96-12-8	5.08	U	12.7	5.08	2.54
1,2-Dibromoethane	106-93-4	1.27	U	6.36	1.27	0.636
Dibromomethane	74-95-3	1.27	U	6.36	1.27	0.636
1,2-Dichlorobenzene	95-50-1	1.27	U	6.36	1.27	0.636
1,3-Dichlorobenzene	541-73-1	1.27	U	6.36	1.27	0.636
1,4-Dichlorobenzene	106-46-7	1.27	U	6.36	1.27	0.636
Dichlorodifluoromethane	75-71-8	2.54	U	6.36	2.54	1.27
1,1-Dichloroethane	75-34-3	2.54	U	6.36	2.54	1.27
1,2-Dichloroethane	107-06-2	1.27	U	6.36	1.27	0.636
1,1-Dichloroethene	75-35-4	1.27	U	6.36	1.27	0.636
cis-1,2-Dichloroethene	156-59-2	1.27	U	6.36	1.27	0.636
trans-1,2-Dichloroethene	156-60-5	1.27	U	6.36	1.27	0.636

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.27	U	6.36	1.27	0.636
1,3-Dichloropropane	142-28-9	1.27	U	6.36	1.27	0.636
2,2-Dichloropropane	594-20-7	1.27	U	6.36	1.27	0.636
cis-1,3-Dichloropropene	10061-01-5	1.27	U	6.36	1.27	0.636
trans-1,3-Dichloropropene	10061-02-6	1.27	U	6.36	1.27	0.636
1,1-Dichloropropene	563-58-6	1.27	U	6.36	1.27	0.636
Ethylbenzene	100-41-4	1.27	U	6.36	1.27	0.636
2-Hexanone	591-78-6	6.36	U	12.7	6.36	3.18
Hexachlorobutadiene	87-68-3	1.27	U	6.36	1.27	0.636
Isopropylbenzene	98-82-8	1.27	U	6.36	1.27	0.636
p-Isopropyltoluene	99-87-6	1.27	U	6.36	1.27	0.636
4-Methyl-2-pentanone	108-10-1	6.36	U	12.7	6.36	3.18
Methylene chloride	75-09-2	2.54	U	6.36	2.54	1.27
Naphthalene	91-20-3	1.27	U	6.36	1.27	0.636
n-Propylbenzene	103-65-1	1.27	U	6.36	1.27	0.636
Styrene	100-42-5	1.27	U	6.36	1.27	0.636
1,1,1,2-Tetrachloroethane	630-20-6	1.27	U	6.36	1.27	0.636
1,1,2,2-Tetrachloroethane	79-34-5	1.27	U	6.36	1.27	0.636
Tetrachloroethene	127-18-4	1.27	U	6.36	1.27	0.636
Toluene	108-88-3	1.27	U	6.36	1.27	0.636
1,2,3-Trichlorobenzene	87-61-6	1.27	U	6.36	1.27	0.636
1,2,4-Trichlorobenzene	120-82-1	1.27	U	6.36	1.27	0.636
1,1,1-Trichloroethane	71-55-6	1.27	U	6.36	1.27	0.636
1,1,2-Trichloroethane	79-00-5	1.27	U	6.36	1.27	0.636
Trichloroethene	79-01-6	1.27	U	6.36	1.27	0.636
Trichlorofluoromethane	75-69-4	2.54	U	6.36	2.54	1.27
1,2,3-Trichloropropane	96-18-4	2.54	U	6.36	2.54	1.27
1,2,4-Trimethylbenzene	95-63-6	1.27	U	6.36	1.27	0.636
1,3,5-Trimethylbenzene	108-67-8	1.27	U	6.36	1.27	0.636
Vinyl chloride	75-01-4	2.54	U	6.36	2.54	1.27
o-Xylene	95-47-6	1.27	U	6.36	1.27	0.636
m-,p-Xylene	179601-23-1	1.27	U	6.36	1.27	0.636

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	90.3	80	120	
1,2-Dichloroethane-d4	84.9	80	120	
Toluene-d8	99.8	85	115	
4-Bromofluorobenzene	100	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT11(5-5.5)040316	**Prep Method:**	6850	**Prep Date:**	03/08/2016 13:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG560129	**Analyst:**	JWR	**Run Date:**	03/08/2016 16:35
Collect Date:	03/04/2016 15:00	**Dilution:**	1	**File ID:**	1LM.LM33786
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.46	U	4.92	2.46	1.23

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT11(15-15.5)040316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/09/2016 10:02
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560255	**Analyst:**	TMB	**Run Date:**	03/09/2016 15:57
Collect Date:	03/04/2016 16:00	**Dilution:**	1	**File ID:**	6M137685
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.3	U	26.7	13.3	6.67
Benzene	71-43-2	1.33	U	6.67	1.33	0.667
Bromobenzene	108-86-1	1.33	U	6.67	1.33	0.667
Bromochloromethane	74-97-5	2.66	U	6.67	2.66	1.33
Bromodichloromethane	75-27-4	1.33	U	6.67	1.33	0.667
Bromoform	75-25-2	1.33	U	6.67	1.33	0.667
Bromomethane	74-83-9	2.66	U	6.67	2.66	1.33
2-Butanone	78-93-3	6.66	U	13.3	6.66	3.33
n-Butylbenzene	104-51-8	1.33	U	6.67	1.33	0.667
sec-Butylbenzene	135-98-8	1.33	U	6.67	1.33	0.667
tert-Butylbenzene	98-06-6	1.33	U	6.67	1.33	0.667
Carbon disulfide	75-15-0	1.33	U	6.67	1.33	0.667
Carbon tetrachloride	56-23-5	1.33	U	6.67	1.33	0.667
Chlorobenzene	108-90-7	1.33	U	6.67	1.33	0.667
Chlorodibromomethane	124-48-1	1.33	U	6.67	1.33	0.667
Chloroethane	75-00-3	2.66	U	6.67	2.66	1.33
Chloroform	67-66-3	1.33	U	6.67	1.33	0.667
Chloromethane	74-87-3	5.34	U	13.3	5.34	2.67
2-Chlorotoluene	95-49-8	1.33	U	6.67	1.33	0.667
4-Chlorotoluene	106-43-4	1.33	U	6.67	1.33	0.667
1,2-Dibromo-3-chloropropane	96-12-8	5.34	U	13.3	5.34	2.67
1,2-Dibromoethane	106-93-4	1.33	U	6.67	1.33	0.667
Dibromomethane	74-95-3	1.33	U	6.67	1.33	0.667
1,2-Dichlorobenzene	95-50-1	1.33	U	6.67	1.33	0.667
1,3-Dichlorobenzene	541-73-1	1.33	U	6.67	1.33	0.667
1,4-Dichlorobenzene	106-46-7	1.33	U	6.67	1.33	0.667
Dichlorodifluoromethane	75-71-8	2.66	U	6.67	2.66	1.33
1,1-Dichloroethane	75-34-3	2.66	U	6.67	2.66	1.33
1,2-Dichloroethane	107-06-2	1.33	U	6.67	1.33	0.667
1,1-Dichloroethene	75-35-4	1.33	U	6.67	1.33	0.667
cis-1,2-Dichloroethene	156-59-2	1.33	U	6.67	1.33	0.667

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.33	U	6.67	1.33	0.667
1,2-Dichloropropane	78-87-5	1.33	U	6.67	1.33	0.667
1,3-Dichloropropane	142-28-9	1.33	U	6.67	1.33	0.667
2,2-Dichloropropane	594-20-7	1.33	U	6.67	1.33	0.667
cis-1,3-Dichloropropene	10061-01-5	1.33	U	6.67	1.33	0.667
trans-1,3-Dichloropropene	10061-02-6	1.33	U	6.67	1.33	0.667
1,1-Dichloropropene	563-58-6	1.33	U	6.67	1.33	0.667
Ethylbenzene	100-41-4	1.33	U	6.67	1.33	0.667
2-Hexanone	591-78-6	6.66	U	13.3	6.66	3.33
Hexachlorobutadiene	87-68-3	1.33	U	6.67	1.33	0.667
Isopropylbenzene	98-82-8	1.33	U	6.67	1.33	0.667
p-Isopropyltoluene	99-87-6	1.33	U	6.67	1.33	0.667
4-Methyl-2-pentanone	108-10-1	6.66	U	13.3	6.66	3.33
Methylene chloride	75-09-2	2.66	U	6.67	2.66	1.33
Naphthalene	91-20-3	1.33	U	6.67	1.33	0.667
n-Propylbenzene	103-65-1	1.33	U	6.67	1.33	0.667
Styrene	100-42-5	1.33	U	6.67	1.33	0.667
1,1,1,2-Tetrachloroethane	630-20-6	1.33	U	6.67	1.33	0.667
1,1,2,2-Tetrachloroethane	79-34-5	1.33	U	6.67	1.33	0.667
Tetrachloroethene	127-18-4	1.33	U	6.67	1.33	0.667
Toluene	108-88-3	1.33	U	6.67	1.33	0.667
1,2,3-Trichlorobenzene	87-61-6	1.33	U	6.67	1.33	0.667
1,2,4-Trichlorobenzene	120-82-1	1.33	U	6.67	1.33	0.667
1,1,1-Trichloroethane	71-55-6	1.33	U	6.67	1.33	0.667
1,1,2-Trichloroethane	79-00-5	1.33	U	6.67	1.33	0.667
Trichloroethene	79-01-6	1.33	U	6.67	1.33	0.667
Trichlorofluoromethane	75-69-4	2.66	U	6.67	2.66	1.33
1,2,3-Trichloropropane	96-18-4	2.66	U	6.67	2.66	1.33
1,2,4-Trimethylbenzene	95-63-6	1.33	U	6.67	1.33	0.667
1,3,5-Trimethylbenzene	108-67-8	1.33	U	6.67	1.33	0.667
Vinyl chloride	75-01-4	2.66	U	6.67	2.66	1.33
o-Xylene	95-47-6	1.33	U	6.67	1.33	0.667
m-,p-Xylene	179601-23-1	1.33	U	6.67	1.33	0.667

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.2	80	120	
1,2-Dichloroethane-d4	86.7	80	120	
Toluene-d8	98.9	85	115	
4-Bromofluorobenzene	99.3	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT11(15-15.5)040316	**Prep Method:**	6850	**Prep Date:**	03/08/2016 13:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG560129	**Analyst:**	JWR	**Run Date:**	03/09/2016 11:29
Collect Date:	03/04/2016 16:00	**Dilution:**	10	**File ID:**	1LM.LM33809
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	81.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	379		48.4	24.2	12.1

Certificate of Analysis

Sample #:	L16030366-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT11(20-20.5)070316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/09/2016 10:03
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560255	**Analyst:**	TMB	**Run Date:**	03/09/2016 16:31
Collect Date:	03/07/2016 11:50	**Dilution:**	1	**File ID:**	6M137686
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	25.0	12.5	6.25
Benzene	71-43-2	1.25	U	6.25	1.25	0.625
Bromobenzene	108-86-1	1.25	U	6.25	1.25	0.625
Bromochloromethane	74-97-5	2.50	U	6.25	2.50	1.25
Bromodichloromethane	75-27-4	1.25	U	6.25	1.25	0.625
Bromoform	75-25-2	1.25	U	6.25	1.25	0.625
Bromomethane	74-83-9	2.50	U	6.25	2.50	1.25
2-Butanone	78-93-3	6.26	U	12.5	6.26	3.13
n-Butylbenzene	104-51-8	1.25	U	6.25	1.25	0.625
sec-Butylbenzene	135-98-8	1.25	U	6.25	1.25	0.625
tert-Butylbenzene	98-06-6	1.25	U	6.25	1.25	0.625
Carbon disulfide	75-15-0	1.25	U	6.25	1.25	0.625
Carbon tetrachloride	56-23-5	1.25	U	6.25	1.25	0.625
Chlorobenzene	108-90-7	1.25	U	6.25	1.25	0.625
Chlorodibromomethane	124-48-1	1.25	U	6.25	1.25	0.625
Chloroethane	75-00-3	2.50	U	6.25	2.50	1.25
Chloroform	67-66-3	1.25	U	6.25	1.25	0.625
Chloromethane	74-87-3	5.00	U	12.5	5.00	2.50
2-Chlorotoluene	95-49-8	1.25	U	6.25	1.25	0.625
4-Chlorotoluene	106-43-4	1.25	U	6.25	1.25	0.625

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	5.00	U	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	6.25	1.25	0.625
Dibromomethane	74-95-3	1.25	U	6.25	1.25	0.625
1,2-Dichlorobenzene	95-50-1	1.25	U	6.25	1.25	0.625
1,3-Dichlorobenzene	541-73-1	1.25	U	6.25	1.25	0.625
1,4-Dichlorobenzene	106-46-7	1.25	U	6.25	1.25	0.625
Dichlorodifluoromethane	75-71-8	2.50	U	6.25	2.50	1.25
1,1-Dichloroethane	75-34-3	2.50	U	6.25	2.50	1.25
1,2-Dichloroethane	107-06-2	1.25	U	6.25	1.25	0.625
1,1-Dichloroethene	75-35-4	1.25	U	6.25	1.25	0.625
cis-1,2-Dichloroethene	156-59-2	1.25	U	6.25	1.25	0.625
trans-1,2-Dichloroethene	156-60-5	1.25	U	6.25	1.25	0.625
1,2-Dichloropropane	78-87-5	1.25	U	6.25	1.25	0.625
1,3-Dichloropropane	142-28-9	1.25	U	6.25	1.25	0.625
2,2-Dichloropropane	594-20-7	1.25	U	6.25	1.25	0.625
cis-1,3-Dichloropropene	10061-01-5	1.25	U	6.25	1.25	0.625
trans-1,3-Dichloropropene	10061-02-6	1.25	U	6.25	1.25	0.625
1,1-Dichloropropene	563-58-6	1.25	U	6.25	1.25	0.625
Ethylbenzene	100-41-4	1.25	U	6.25	1.25	0.625
2-Hexanone	591-78-6	6.26	U	12.5	6.26	3.13
Hexachlorobutadiene	87-68-3	1.25	U	6.25	1.25	0.625
Isopropylbenzene	98-82-8	1.25	U	6.25	1.25	0.625
p-Isopropyltoluene	99-87-6	1.25	U	6.25	1.25	0.625
4-Methyl-2-pentanone	108-10-1	6.26	U	12.5	6.26	3.13
Methylene chloride	75-09-2	2.50	U	6.25	2.50	1.25
Naphthalene	91-20-3	1.25	U	6.25	1.25	0.625
n-Propylbenzene	103-65-1	1.25	U	6.25	1.25	0.625
Styrene	100-42-5	1.25	U	6.25	1.25	0.625
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	6.25	1.25	0.625
1,1,2,2-Tetrachloroethane	79-34-5	1.25	U	6.25	1.25	0.625
Tetrachloroethene	127-18-4	1.25	U	6.25	1.25	0.625
Toluene	108-88-3	1.25	U	6.25	1.25	0.625
1,2,3-Trichlorobenzene	87-61-6	1.25	U	6.25	1.25	0.625
1,2,4-Trichlorobenzene	120-82-1	1.25	U	6.25	1.25	0.625
1,1,1-Trichloroethane	71-55-6	1.25	U	6.25	1.25	0.625
1,1,2-Trichloroethane	79-00-5	1.25	U	6.25	1.25	0.625
Trichloroethene	79-01-6	1.25	U	6.25	1.25	0.625
Trichlorofluoromethane	75-69-4	2.50	U	6.25	2.50	1.25
1,2,3-Trichloropropane	96-18-4	2.50	U	6.25	2.50	1.25

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.25	U	6.25	1.25	0.625
1,3,5-Trimethylbenzene	108-67-8	1.25	U	6.25	1.25	0.625
Vinyl chloride	75-01-4	2.50	U	6.25	2.50	1.25
o-Xylene	95-47-6	1.25	U	6.25	1.25	0.625
m-,p-Xylene	179601-23-1	1.25	U	6.25	1.25	0.625

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.4	80	120	
1,2-Dichloroethane-d4	87.7	80	120	
Toluene-d8	98.0	85	115	
4-Bromofluorobenzene	99.3	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT11(20-20.5)070316	**Prep Method:**	6850	**Prep Date:**	03/08/2016 13:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG560129	**Analyst:**	JWR	**Run Date:**	03/09/2016 11:48
Collect Date:	03/07/2016 11:50	**Dilution:**	100	**File ID:**	1LM.LM33810
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	82.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3940		472	236	118

Certificate of Analysis

Sample #:	L16030366-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT11(29-29.5)070316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/09/2016 10:03
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560255	**Analyst:**	TMB	**Run Date:**	03/09/2016 17:04
Collect Date:	03/07/2016 11:55	**Dilution:**	1	**File ID:**	6M137687
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.0	U	26.1	13.0	6.52
Benzene	71-43-2	1.30	U	6.52	1.30	0.652
Bromobenzene	108-86-1	1.30	U	6.52	1.30	0.652
Bromochloromethane	74-97-5	2.60	U	6.52	2.60	1.30
Bromodichloromethane	75-27-4	1.30	U	6.52	1.30	0.652
Bromoform	75-25-2	1.30	U	6.52	1.30	0.652
Bromomethane	74-83-9	2.60	U	6.52	2.60	1.30
2-Butanone	78-93-3	6.52	U	13.0	6.52	3.26
n-Butylbenzene	104-51-8	1.30	U	6.52	1.30	0.652
sec-Butylbenzene	135-98-8	1.30	U	6.52	1.30	0.652
tert-Butylbenzene	98-06-6	1.30	U	6.52	1.30	0.652
Carbon disulfide	75-15-0	1.30	U	6.52	1.30	0.652
Carbon tetrachloride	56-23-5	1.30	U	6.52	1.30	0.652
Chlorobenzene	108-90-7	1.30	U	6.52	1.30	0.652
Chlorodibromomethane	124-48-1	1.30	U	6.52	1.30	0.652
Chloroethane	75-00-3	2.60	U	6.52	2.60	1.30
Chloroform	67-66-3	1.30	U	6.52	1.30	0.652
Chloromethane	74-87-3	5.22	U	13.0	5.22	2.61
2-Chlorotoluene	95-49-8	1.30	U	6.52	1.30	0.652
4-Chlorotoluene	106-43-4	1.30	U	6.52	1.30	0.652

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Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	5.22	U	13.0	5.22	2.61
1,2-Dibromoethane	106-93-4	1.30	U	6.52	1.30	0.652
Dibromomethane	74-95-3	1.30	U	6.52	1.30	0.652
1,2-Dichlorobenzene	95-50-1	1.30	U	6.52	1.30	0.652
1,3-Dichlorobenzene	541-73-1	1.30	U	6.52	1.30	0.652
1,4-Dichlorobenzene	106-46-7	1.30	U	6.52	1.30	0.652
Dichlorodifluoromethane	75-71-8	2.60	U	6.52	2.60	1.30
1,1-Dichloroethane	75-34-3	2.60	U	6.52	2.60	1.30
1,2-Dichloroethane	107-06-2	1.30	U	6.52	1.30	0.652
1,1-Dichloroethene	75-35-4	1.30	U	6.52	1.30	0.652
cis-1,2-Dichloroethene	156-59-2	1.30	U	6.52	1.30	0.652
trans-1,2-Dichloroethene	156-60-5	1.30	U	6.52	1.30	0.652
1,2-Dichloropropane	78-87-5	1.30	U	6.52	1.30	0.652
1,3-Dichloropropane	142-28-9	1.30	U	6.52	1.30	0.652
2,2-Dichloropropane	594-20-7	1.30	U	6.52	1.30	0.652
cis-1,3-Dichloropropene	10061-01-5	1.30	U	6.52	1.30	0.652
trans-1,3-Dichloropropene	10061-02-6	1.30	U	6.52	1.30	0.652
1,1-Dichloropropene	563-58-6	1.30	U	6.52	1.30	0.652
Ethylbenzene	100-41-4	1.30	U	6.52	1.30	0.652
2-Hexanone	591-78-6	6.52	U	13.0	6.52	3.26
Hexachlorobutadiene	87-68-3	1.30	U	6.52	1.30	0.652
Isopropylbenzene	98-82-8	1.30	U	6.52	1.30	0.652
p-Isopropyltoluene	99-87-6	1.30	U	6.52	1.30	0.652
4-Methyl-2-pentanone	108-10-1	6.52	U	13.0	6.52	3.26
Methylene chloride	75-09-2	2.60	U	6.52	2.60	1.30
Naphthalene	91-20-3	1.30	U	6.52	1.30	0.652
n-Propylbenzene	103-65-1	1.30	U	6.52	1.30	0.652
Styrene	100-42-5	1.30	U	6.52	1.30	0.652
1,1,1,2-Tetrachloroethane	630-20-6	1.30	U	6.52	1.30	0.652
1,1,2,2-Tetrachloroethane	79-34-5	1.30	U	6.52	1.30	0.652
Tetrachloroethene	127-18-4	1.30	U	6.52	1.30	0.652
Toluene	108-88-3	1.30	U	6.52	1.30	0.652
1,2,3-Trichlorobenzene	87-61-6	1.30	U	6.52	1.30	0.652
1,2,4-Trichlorobenzene	120-82-1	1.30	U	6.52	1.30	0.652
1,1,1-Trichloroethane	71-55-6	1.30	U	6.52	1.30	0.652
1,1,2-Trichloroethane	79-00-5	1.30	U	6.52	1.30	0.652
Trichloroethene	79-01-6	1.30	U	6.52	1.30	0.652
Trichlorofluoromethane	75-69-4	2.60	U	6.52	2.60	1.30
1,2,3-Trichloropropane	96-18-4	2.60	U	6.52	2.60	1.30

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Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.30	U	6.52	1.30	0.652
1,3,5-Trimethylbenzene	108-67-8	1.30	U	6.52	1.30	0.652
Vinyl chloride	75-01-4	2.60	U	6.52	2.60	1.30
o-Xylene	95-47-6	1.30	U	6.52	1.30	0.652
m-,p-Xylene	179601-23-1	1.30	U	6.52	1.30	0.652

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.6	80	120	
1,2-Dichloroethane-d4	89.6	80	120	
Toluene-d8	98.0	85	115	
4-Bromofluorobenzene	101	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT11(29-29.5)070316	**Prep Method:**	6850	**Prep Date:**	03/08/2016 13:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG560129	**Analyst:**	JWR	**Run Date:**	03/09/2016 12:07
Collect Date:	03/07/2016 11:55	**Dilution:**	100	**File ID:**	1LM.LM33811
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	79.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3370		496	248	124

Certificate of Analysis

Sample #:	L16030366-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT11(25-25.5)070316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/09/2016 10:04
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560255	**Analyst:**	TMB	**Run Date:**	03/09/2016 17:37
Collect Date:	03/07/2016 12:00	**Dilution:**	1	**File ID:**	6M137688
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.7	U	27.5	13.7	6.87
Benzene	71-43-2	1.37	U	6.87	1.37	0.687
Bromobenzene	108-86-1	1.37	U	6.87	1.37	0.687
Bromochloromethane	74-97-5	2.74	U	6.87	2.74	1.37
Bromodichloromethane	75-27-4	1.37	U	6.87	1.37	0.687
Bromoform	75-25-2	1.37	U	6.87	1.37	0.687
Bromomethane	74-83-9	2.74	U	6.87	2.74	1.37
2-Butanone	78-93-3	6.88	U	13.7	6.88	3.44
n-Butylbenzene	104-51-8	1.37	U	6.87	1.37	0.687
sec-Butylbenzene	135-98-8	1.37	U	6.87	1.37	0.687
tert-Butylbenzene	98-06-6	1.37	U	6.87	1.37	0.687
Carbon disulfide	75-15-0	1.37	U	6.87	1.37	0.687
Carbon tetrachloride	56-23-5	1.37	U	6.87	1.37	0.687
Chlorobenzene	108-90-7	1.37	U	6.87	1.37	0.687
Chlorodibromomethane	124-48-1	1.37	U	6.87	1.37	0.687
Chloroethane	75-00-3	2.74	U	6.87	2.74	1.37
Chloroform	67-66-3	1.37	U	6.87	1.37	0.687
Chloromethane	74-87-3	5.50	U	13.7	5.50	2.75
2-Chlorotoluene	95-49-8	1.37	U	6.87	1.37	0.687
4-Chlorotoluene	106-43-4	1.37	U	6.87	1.37	0.687

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Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	5.50	U	13.7	5.50	2.75
1,2-Dibromoethane	106-93-4	1.37	U	6.87	1.37	0.687
Dibromomethane	74-95-3	1.37	U	6.87	1.37	0.687
1,2-Dichlorobenzene	95-50-1	1.37	U	6.87	1.37	0.687
1,3-Dichlorobenzene	541-73-1	1.37	U	6.87	1.37	0.687
1,4-Dichlorobenzene	106-46-7	1.37	U	6.87	1.37	0.687
Dichlorodifluoromethane	75-71-8	2.74	U	6.87	2.74	1.37
1,1-Dichloroethane	75-34-3	2.74	U	6.87	2.74	1.37
1,2-Dichloroethane	107-06-2	1.37	U	6.87	1.37	0.687
1,1-Dichloroethene	75-35-4	1.37	U	6.87	1.37	0.687
cis-1,2-Dichloroethene	156-59-2	1.37	U	6.87	1.37	0.687
trans-1,2-Dichloroethene	156-60-5	1.37	U	6.87	1.37	0.687
1,2-Dichloropropane	78-87-5	1.37	U	6.87	1.37	0.687
1,3-Dichloropropane	142-28-9	1.37	U	6.87	1.37	0.687
2,2-Dichloropropane	594-20-7	1.37	U	6.87	1.37	0.687
cis-1,3-Dichloropropene	10061-01-5	1.37	U	6.87	1.37	0.687
trans-1,3-Dichloropropene	10061-02-6	1.37	U	6.87	1.37	0.687
1,1-Dichloropropene	563-58-6	1.37	U	6.87	1.37	0.687
Ethylbenzene	100-41-4	1.37	U	6.87	1.37	0.687
2-Hexanone	591-78-6	6.88	U	13.7	6.88	3.44
Hexachlorobutadiene	87-68-3	1.37	U	6.87	1.37	0.687
Isopropylbenzene	98-82-8	1.37	U	6.87	1.37	0.687
p-Isopropyltoluene	99-87-6	1.37	U	6.87	1.37	0.687
4-Methyl-2-pentanone	108-10-1	6.88	U	13.7	6.88	3.44
Methylene chloride	75-09-2	2.74	U	6.87	2.74	1.37
Naphthalene	91-20-3	1.37	U	6.87	1.37	0.687
n-Propylbenzene	103-65-1	1.37	U	6.87	1.37	0.687
Styrene	100-42-5	1.37	U	6.87	1.37	0.687
1,1,1,2-Tetrachloroethane	630-20-6	1.37	U	6.87	1.37	0.687
1,1,2,2-Tetrachloroethane	79-34-5	1.37	U	6.87	1.37	0.687
Tetrachloroethene	127-18-4	1.37	U	6.87	1.37	0.687
Toluene	108-88-3	1.37	U	6.87	1.37	0.687
1,2,3-Trichlorobenzene	87-61-6	1.37	U	6.87	1.37	0.687
1,2,4-Trichlorobenzene	120-82-1	1.37	U	6.87	1.37	0.687
1,1,1-Trichloroethane	71-55-6	1.37	U	6.87	1.37	0.687
1,1,2-Trichloroethane	79-00-5	1.37	U	6.87	1.37	0.687
Trichloroethene	79-01-6	1.37	U	6.87	1.37	0.687
Trichlorofluoromethane	75-69-4	2.74	U	6.87	2.74	1.37
1,2,3-Trichloropropane	96-18-4	2.74	U	6.87	2.74	1.37

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Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.37	U	6.87	1.37	0.687
1,3,5-Trimethylbenzene	108-67-8	1.37	U	6.87	1.37	0.687
Vinyl chloride	75-01-4	2.74	U	6.87	2.74	1.37
o-Xylene	95-47-6	1.37	U	6.87	1.37	0.687
m-,p-Xylene	179601-23-1	1.37	U	6.87	1.37	0.687

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.9	80	120	
1,2-Dichloroethane-d4	89.1	80	120	
Toluene-d8	97.7	85	115	
4-Bromofluorobenzene	100	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT11(25-25.5)070316	**Prep Method:**	6850	**Prep Date:**	03/08/2016 13:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG560129	**Analyst:**	JWR	**Run Date:**	03/09/2016 12:26
Collect Date:	03/07/2016 12:00	**Dilution:**	10	**File ID:**	1LM.LM33812
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	79.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	424		49.7	24.8	12.4

Certificate of Analysis

Sample #:	L16030366-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT12(5-5.5)070316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/09/2016 10:05
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560255	**Analyst:**	TMB	**Run Date:**	03/09/2016 18:11
Collect Date:	03/07/2016 14:35	**Dilution:**	1	**File ID:**	6M137689
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.9	U	23.7	11.9	5.93
Benzene	71-43-2	1.19	U	5.93	1.19	0.593
Bromobenzene	108-86-1	1.19	U	5.93	1.19	0.593
Bromochloromethane	74-97-5	2.38	U	5.93	2.38	1.19
Bromodichloromethane	75-27-4	1.19	U	5.93	1.19	0.593
Bromoform	75-25-2	1.19	U	5.93	1.19	0.593
Bromomethane	74-83-9	2.38	U	5.93	2.38	1.19
2-Butanone	78-93-3	5.94	U	11.9	5.94	2.97
n-Butylbenzene	104-51-8	1.19	U	5.93	1.19	0.593
sec-Butylbenzene	135-98-8	1.19	U	5.93	1.19	0.593
tert-Butylbenzene	98-06-6	1.19	U	5.93	1.19	0.593
Carbon disulfide	75-15-0	1.19	U	5.93	1.19	0.593
Carbon tetrachloride	56-23-5	1.19	U	5.93	1.19	0.593
Chlorobenzene	108-90-7	1.19	U	5.93	1.19	0.593
Chlorodibromomethane	124-48-1	1.19	U	5.93	1.19	0.593
Chloroethane	75-00-3	2.38	U	5.93	2.38	1.19
Chloroform	67-66-3	1.19	U	5.93	1.19	0.593
Chloromethane	74-87-3	4.74	U	11.9	4.74	2.37
2-Chlorotoluene	95-49-8	1.19	U	5.93	1.19	0.593
4-Chlorotoluene	106-43-4	1.19	U	5.93	1.19	0.593

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Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	4.74	U	11.9	4.74	2.37
1,2-Dibromoethane	106-93-4	1.19	U	5.93	1.19	0.593
Dibromomethane	74-95-3	1.19	U	5.93	1.19	0.593
1,2-Dichlorobenzene	95-50-1	1.19	U	5.93	1.19	0.593
1,3-Dichlorobenzene	541-73-1	1.19	U	5.93	1.19	0.593
1,4-Dichlorobenzene	106-46-7	1.19	U	5.93	1.19	0.593
Dichlorodifluoromethane	75-71-8	2.38	U	5.93	2.38	1.19
1,1-Dichloroethane	75-34-3	2.38	U	5.93	2.38	1.19
1,2-Dichloroethane	107-06-2	1.19	U	5.93	1.19	0.593
1,1-Dichloroethene	75-35-4	1.19	U	5.93	1.19	0.593
cis-1,2-Dichloroethene	156-59-2	1.19	U	5.93	1.19	0.593
trans-1,2-Dichloroethene	156-60-5	1.19	U	5.93	1.19	0.593
1,2-Dichloropropane	78-87-5	1.19	U	5.93	1.19	0.593
1,3-Dichloropropane	142-28-9	1.19	U	5.93	1.19	0.593
2,2-Dichloropropane	594-20-7	1.19	U	5.93	1.19	0.593
cis-1,3-Dichloropropene	10061-01-5	1.19	U	5.93	1.19	0.593
trans-1,3-Dichloropropene	10061-02-6	1.19	U	5.93	1.19	0.593
1,1-Dichloropropene	563-58-6	1.19	U	5.93	1.19	0.593
Ethylbenzene	100-41-4	1.19	U	5.93	1.19	0.593
2-Hexanone	591-78-6	5.94	U	11.9	5.94	2.97
Hexachlorobutadiene	87-68-3	1.19	U	5.93	1.19	0.593
Isopropylbenzene	98-82-8	1.19	U	5.93	1.19	0.593
p-Isopropyltoluene	99-87-6	1.19	U	5.93	1.19	0.593
4-Methyl-2-pentanone	108-10-1	5.94	U	11.9	5.94	2.97
Methylene chloride	75-09-2	2.38	U	5.93	2.38	1.19
Naphthalene	91-20-3	1.19	U	5.93	1.19	0.593
n-Propylbenzene	103-65-1	1.19	U	5.93	1.19	0.593
Styrene	100-42-5	1.19	U	5.93	1.19	0.593
1,1,1,2-Tetrachloroethane	630-20-6	1.19	U	5.93	1.19	0.593
1,1,2,2-Tetrachloroethane	79-34-5	1.19	U	5.93	1.19	0.593
Tetrachloroethene	127-18-4	1.19	U	5.93	1.19	0.593
Toluene	108-88-3	1.19	U	5.93	1.19	0.593
1,2,3-Trichlorobenzene	87-61-6	1.19	U	5.93	1.19	0.593
1,2,4-Trichlorobenzene	120-82-1	1.19	U	5.93	1.19	0.593
1,1,1-Trichloroethane	71-55-6	1.19	U	5.93	1.19	0.593
1,1,2-Trichloroethane	79-00-5	1.19	U	5.93	1.19	0.593
Trichloroethene	79-01-6	1.19	U	5.93	1.19	0.593
Trichlorofluoromethane	75-69-4	2.38	U	5.93	2.38	1.19
1,2,3-Trichloropropane	96-18-4	2.38	U	5.93	2.38	1.19

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Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.19	U	5.93	1.19	0.593
1,3,5-Trimethylbenzene	108-67-8	1.19	U	5.93	1.19	0.593
Vinyl chloride	75-01-4	2.38	U	5.93	2.38	1.19
o-Xylene	95-47-6	1.19	U	5.93	1.19	0.593
m-,p-Xylene	179601-23-1	1.19	U	5.93	1.19	0.593

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.3	80	120	
1,2-Dichloroethane-d4	92.1	80	120	
Toluene-d8	96.8	85	115	
4-Bromofluorobenzene	98.6	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT12(5-5.5)070316	**Prep Method:**	6850	**Prep Date:**	03/08/2016 13:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG560129	**Analyst:**	JWR	**Run Date:**	03/08/2016 19:44
Collect Date:	03/07/2016 14:35	**Dilution:**	1	**File ID:**	1LM.LM33796
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	5.53		4.73	2.36	1.18

Certificate of Analysis

Sample #:	L16030366-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT12(8.5-9)070316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/09/2016 10:06
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560255	**Analyst:**	TMB	**Run Date:**	03/09/2016 18:44
Collect Date:	03/07/2016 14:40	**Dilution:**	1	**File ID:**	6M137690
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.1	U	26.3	13.1	6.57
Benzene	71-43-2	1.31	U	6.57	1.31	0.657
Bromobenzene	108-86-1	1.31	U	6.57	1.31	0.657
Bromochloromethane	74-97-5	2.62	U	6.57	2.62	1.31
Bromodichloromethane	75-27-4	1.31	U	6.57	1.31	0.657
Bromoform	75-25-2	1.31	U	6.57	1.31	0.657
Bromomethane	74-83-9	2.62	U	6.57	2.62	1.31
2-Butanone	78-93-3	6.56	U	13.1	6.56	3.28
n-Butylbenzene	104-51-8	1.31	U	6.57	1.31	0.657
sec-Butylbenzene	135-98-8	1.31	U	6.57	1.31	0.657
tert-Butylbenzene	98-06-6	1.31	U	6.57	1.31	0.657
Carbon disulfide	75-15-0	1.31	U	6.57	1.31	0.657
Carbon tetrachloride	56-23-5	1.31	U	6.57	1.31	0.657
Chlorobenzene	108-90-7	1.31	U	6.57	1.31	0.657
Chlorodibromomethane	124-48-1	1.31	U	6.57	1.31	0.657
Chloroethane	75-00-3	2.62	U	6.57	2.62	1.31
Chloroform	67-66-3	1.31	U	6.57	1.31	0.657
Chloromethane	74-87-3	5.26	U	13.1	5.26	2.63
2-Chlorotoluene	95-49-8	1.31	U	6.57	1.31	0.657
4-Chlorotoluene	106-43-4	1.31	U	6.57	1.31	0.657

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Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	5.26	U	13.1	5.26	2.63
1,2-Dibromoethane	106-93-4	1.31	U	6.57	1.31	0.657
Dibromomethane	74-95-3	1.31	U	6.57	1.31	0.657
1,2-Dichlorobenzene	95-50-1	1.31	U	6.57	1.31	0.657
1,3-Dichlorobenzene	541-73-1	1.31	U	6.57	1.31	0.657
1,4-Dichlorobenzene	106-46-7	1.31	U	6.57	1.31	0.657
Dichlorodifluoromethane	75-71-8	2.62	U	6.57	2.62	1.31
1,1-Dichloroethane	75-34-3	2.62	U	6.57	2.62	1.31
1,2-Dichloroethane	107-06-2	1.31	U	6.57	1.31	0.657
1,1-Dichloroethene	75-35-4	1.31	U	6.57	1.31	0.657
cis-1,2-Dichloroethene	156-59-2	1.31	U	6.57	1.31	0.657
trans-1,2-Dichloroethene	156-60-5	1.31	U	6.57	1.31	0.657
1,2-Dichloropropane	78-87-5	1.31	U	6.57	1.31	0.657
1,3-Dichloropropane	142-28-9	1.31	U	6.57	1.31	0.657
2,2-Dichloropropane	594-20-7	1.31	U	6.57	1.31	0.657
cis-1,3-Dichloropropene	10061-01-5	1.31	U	6.57	1.31	0.657
trans-1,3-Dichloropropene	10061-02-6	1.31	U	6.57	1.31	0.657
1,1-Dichloropropene	563-58-6	1.31	U	6.57	1.31	0.657
Ethylbenzene	100-41-4	1.31	U	6.57	1.31	0.657
2-Hexanone	591-78-6	6.56	U	13.1	6.56	3.28
Hexachlorobutadiene	87-68-3	1.31	U	6.57	1.31	0.657
Isopropylbenzene	98-82-8	1.31	U	6.57	1.31	0.657
p-Isopropyltoluene	99-87-6	1.31	U	6.57	1.31	0.657
4-Methyl-2-pentanone	108-10-1	6.56	U	13.1	6.56	3.28
Methylene chloride	75-09-2	2.62	U	6.57	2.62	1.31
Naphthalene	91-20-3	1.31	U	6.57	1.31	0.657
n-Propylbenzene	103-65-1	1.31	U	6.57	1.31	0.657
Styrene	100-42-5	1.31	U	6.57	1.31	0.657
1,1,1,2-Tetrachloroethane	630-20-6	1.31	U	6.57	1.31	0.657
1,1,2,2-Tetrachloroethane	79-34-5	1.31	U	6.57	1.31	0.657
Tetrachloroethene	127-18-4	1.31	U	6.57	1.31	0.657
Toluene	108-88-3	1.31	U	6.57	1.31	0.657
1,2,3-Trichlorobenzene	87-61-6	1.31	U	6.57	1.31	0.657
1,2,4-Trichlorobenzene	120-82-1	1.31	U	6.57	1.31	0.657
1,1,1-Trichloroethane	71-55-6	1.31	U	6.57	1.31	0.657
1,1,2-Trichloroethane	79-00-5	1.31	U	6.57	1.31	0.657
Trichloroethene	79-01-6	1.31	U	6.57	1.31	0.657
Trichlorofluoromethane	75-69-4	2.62	U	6.57	2.62	1.31
1,2,3-Trichloropropane	96-18-4	2.62	U	6.57	2.62	1.31

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Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.31	U	6.57	1.31	0.657
1,3,5-Trimethylbenzene	108-67-8	1.31	U	6.57	1.31	0.657
Vinyl chloride	75-01-4	2.62	U	6.57	2.62	1.31
o-Xylene	95-47-6	1.31	U	6.57	1.31	0.657
m-,p-Xylene	179601-23-1	1.31	U	6.57	1.31	0.657

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.4	80	120	
1,2-Dichloroethane-d4	88.1	80	120	
Toluene-d8	98.3	85	115	
4-Bromofluorobenzene	100	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT12(8.5-9)070316	**Prep Method:**	6850	**Prep Date:**	03/08/2016 13:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG560129	**Analyst:**	JWR	**Run Date:**	03/08/2016 20:03
Collect Date:	03/07/2016 14:40	**Dilution:**	1	**File ID:**	1LM.LM33797
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1.99	J	4.93	2.46	1.23

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT12(18-18.5)070316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/09/2016 10:08
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560255	**Analyst:**	TMB	**Run Date:**	03/09/2016 21:30
Collect Date:	03/07/2016 14:45	**Dilution:**	1	**File ID:**	6M137695
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.3	U	26.7	13.3	6.66
Benzene	71-43-2	1.33	U	6.66	1.33	0.666
Bromobenzene	108-86-1	1.33	U	6.66	1.33	0.666
Bromochloromethane	74-97-5	2.66	U	6.66	2.66	1.33
Bromodichloromethane	75-27-4	1.33	U	6.66	1.33	0.666
Bromoform	75-25-2	1.33	U	6.66	1.33	0.666
Bromomethane	74-83-9	2.66	U	6.66	2.66	1.33
2-Butanone	78-93-3	6.66	U	13.3	6.66	3.33
n-Butylbenzene	104-51-8	1.33	U	6.66	1.33	0.666
sec-Butylbenzene	135-98-8	1.33	U	6.66	1.33	0.666
tert-Butylbenzene	98-06-6	1.33	U	6.66	1.33	0.666
Carbon disulfide	75-15-0	1.33	U	6.66	1.33	0.666
Carbon tetrachloride	56-23-5	1.33	U	6.66	1.33	0.666
Chlorobenzene	108-90-7	1.33	U	6.66	1.33	0.666
Chlorodibromomethane	124-48-1	1.33	U	6.66	1.33	0.666
Chloroethane	75-00-3	2.66	U	6.66	2.66	1.33
Chloroform	67-66-3	1.33	U	6.66	1.33	0.666
Chloromethane	74-87-3	5.34	U	13.3	5.34	2.67
2-Chlorotoluene	95-49-8	1.33	U	6.66	1.33	0.666
4-Chlorotoluene	106-43-4	1.33	U	6.66	1.33	0.666
1,2-Dibromo-3-chloropropane	96-12-8	5.34	U	13.3	5.34	2.67
1,2-Dibromoethane	106-93-4	1.33	U	6.66	1.33	0.666
Dibromomethane	74-95-3	1.33	U	6.66	1.33	0.666
1,2-Dichlorobenzene	95-50-1	1.33	U	6.66	1.33	0.666
1,3-Dichlorobenzene	541-73-1	1.33	U	6.66	1.33	0.666
1,4-Dichlorobenzene	106-46-7	1.33	U	6.66	1.33	0.666
Dichlorodifluoromethane	75-71-8	2.66	U	6.66	2.66	1.33
1,1-Dichloroethane	75-34-3	2.66	U	6.66	2.66	1.33
1,2-Dichloroethane	107-06-2	1.33	U	6.66	1.33	0.666
1,1-Dichloroethene	75-35-4	1.33	U	6.66	1.33	0.666
cis-1,2-Dichloroethene	156-59-2	1.33	U	6.66	1.33	0.666

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Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.33	U	6.66	1.33	0.666
1,2-Dichloropropane	78-87-5	1.33	U	6.66	1.33	0.666
1,3-Dichloropropane	142-28-9	1.33	U	6.66	1.33	0.666
2,2-Dichloropropane	594-20-7	1.33	U	6.66	1.33	0.666
cis-1,3-Dichloropropene	10061-01-5	1.33	U	6.66	1.33	0.666
trans-1,3-Dichloropropene	10061-02-6	1.33	U	6.66	1.33	0.666
1,1-Dichloropropene	563-58-6	1.33	U	6.66	1.33	0.666
Ethylbenzene	100-41-4	1.33	U	6.66	1.33	0.666
2-Hexanone	591-78-6	6.66	U	13.3	6.66	3.33
Hexachlorobutadiene	87-68-3	1.33	U	6.66	1.33	0.666
Isopropylbenzene	98-82-8	1.33	U	6.66	1.33	0.666
p-Isopropyltoluene	99-87-6	1.33	U	6.66	1.33	0.666
4-Methyl-2-pentanone	108-10-1	6.66	U	13.3	6.66	3.33
Methylene chloride	75-09-2	2.66	U	6.66	2.66	1.33
Naphthalene	91-20-3	1.33	U	6.66	1.33	0.666
n-Propylbenzene	103-65-1	1.33	U	6.66	1.33	0.666
Styrene	100-42-5	1.33	U	6.66	1.33	0.666
1,1,1,2-Tetrachloroethane	630-20-6	1.33	U	6.66	1.33	0.666
1,1,2,2-Tetrachloroethane	79-34-5	1.33	U	6.66	1.33	0.666
Tetrachloroethene	127-18-4	1.33	U	6.66	1.33	0.666
Toluene	108-88-3	1.33	U	6.66	1.33	0.666
1,2,3-Trichlorobenzene	87-61-6	1.33	U	6.66	1.33	0.666
1,2,4-Trichlorobenzene	120-82-1	1.33	U	6.66	1.33	0.666
1,1,1-Trichloroethane	71-55-6	1.33	U	6.66	1.33	0.666
1,1,2-Trichloroethane	79-00-5	1.33	U	6.66	1.33	0.666
Trichloroethene	79-01-6	50.0		6.66	1.33	0.666
Trichlorofluoromethane	75-69-4	2.66	U	6.66	2.66	1.33
1,2,3-Trichloropropane	96-18-4	2.66	U	6.66	2.66	1.33
1,2,4-Trimethylbenzene	95-63-6	1.33	U	6.66	1.33	0.666
1,3,5-Trimethylbenzene	108-67-8	1.33	U	6.66	1.33	0.666
Vinyl chloride	75-01-4	2.66	U	6.66	2.66	1.33
o-Xylene	95-47-6	1.33	U	6.66	1.33	0.666
m-,p-Xylene	179601-23-1	1.33	U	6.66	1.33	0.666

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.5	80	120	
1,2-Dichloroethane-d4	89.7	80	120	
Toluene-d8	97.4	85	115	
4-Bromofluorobenzene	99.9	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT12(18-18.5)070316	**Prep Method:**	6850	**Prep Date:**	03/08/2016 13:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG560129	**Analyst:**	JWR	**Run Date:**	03/09/2016 12:45
Collect Date:	03/07/2016 14:45	**Dilution:**	500	**File ID:**	1LM.LM33813
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	81.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	15900		2430	1220	609

Certificate of Analysis

Sample #:	L16030366-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT12(12-12.5)070316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/09/2016 10:09
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560255	**Analyst:**	TMB	**Run Date:**	03/09/2016 20:57
Collect Date:	03/07/2016 15:00	**Dilution:**	1	**File ID:**	6M137694
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	77.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.5	U	27.0	13.5	6.75
Benzene	71-43-2	1.35	U	6.75	1.35	0.675
Bromobenzene	108-86-1	1.35	U	6.75	1.35	0.675
Bromochloromethane	74-97-5	2.70	U	6.75	2.70	1.35
Bromodichloromethane	75-27-4	1.35	U	6.75	1.35	0.675
Bromoform	75-25-2	1.35	U	6.75	1.35	0.675
Bromomethane	74-83-9	2.70	U	6.75	2.70	1.35
2-Butanone	78-93-3	6.76	U	13.5	6.76	3.38
n-Butylbenzene	104-51-8	1.35	U	6.75	1.35	0.675
sec-Butylbenzene	135-98-8	1.35	U	6.75	1.35	0.675
tert-Butylbenzene	98-06-6	1.35	U	6.75	1.35	0.675
Carbon disulfide	75-15-0	1.35	U	6.75	1.35	0.675
Carbon tetrachloride	56-23-5	1.35	U	6.75	1.35	0.675
Chlorobenzene	108-90-7	1.35	U	6.75	1.35	0.675
Chlorodibromomethane	124-48-1	1.35	U	6.75	1.35	0.675
Chloroethane	75-00-3	2.70	U	6.75	2.70	1.35
Chloroform	67-66-3	1.35	U	6.75	1.35	0.675
Chloromethane	74-87-3	5.40	U	13.5	5.40	2.70
2-Chlorotoluene	95-49-8	1.35	U	6.75	1.35	0.675
4-Chlorotoluene	106-43-4	1.35	U	6.75	1.35	0.675

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	5.40	U	13.5	5.40	2.70
1,2-Dibromoethane	106-93-4	1.35	U	6.75	1.35	0.675
Dibromomethane	74-95-3	1.35	U	6.75	1.35	0.675
1,2-Dichlorobenzene	95-50-1	1.35	U	6.75	1.35	0.675
1,3-Dichlorobenzene	541-73-1	1.35	U	6.75	1.35	0.675
1,4-Dichlorobenzene	106-46-7	1.35	U	6.75	1.35	0.675
Dichlorodifluoromethane	75-71-8	2.70	U	6.75	2.70	1.35
1,1-Dichloroethane	75-34-3	2.70	U	6.75	2.70	1.35
1,2-Dichloroethane	107-06-2	1.35	U	6.75	1.35	0.675
1,1-Dichloroethene	75-35-4	1.35	U	6.75	1.35	0.675
cis-1,2-Dichloroethene	156-59-2	1.35	U	6.75	1.35	0.675
trans-1,2-Dichloroethene	156-60-5	1.35	U	6.75	1.35	0.675
1,2-Dichloropropane	78-87-5	1.35	U	6.75	1.35	0.675
1,3-Dichloropropane	142-28-9	1.35	U	6.75	1.35	0.675
2,2-Dichloropropane	594-20-7	1.35	U	6.75	1.35	0.675
cis-1,3-Dichloropropene	10061-01-5	1.35	U	6.75	1.35	0.675
trans-1,3-Dichloropropene	10061-02-6	1.35	U	6.75	1.35	0.675
1,1-Dichloropropene	563-58-6	1.35	U	6.75	1.35	0.675
Ethylbenzene	100-41-4	1.35	U	6.75	1.35	0.675
2-Hexanone	591-78-6	6.76	U	13.5	6.76	3.38
Hexachlorobutadiene	87-68-3	1.35	U	6.75	1.35	0.675
Isopropylbenzene	98-82-8	1.35	U	6.75	1.35	0.675
p-Isopropyltoluene	99-87-6	1.35	U	6.75	1.35	0.675
4-Methyl-2-pentanone	108-10-1	6.76	U	13.5	6.76	3.38
Methylene chloride	75-09-2	2.70	U	6.75	2.70	1.35
Naphthalene	91-20-3	1.35	U	6.75	1.35	0.675
n-Propylbenzene	103-65-1	1.35	U	6.75	1.35	0.675
Styrene	100-42-5	1.35	U	6.75	1.35	0.675
1,1,1,2-Tetrachloroethane	630-20-6	1.35	U	6.75	1.35	0.675
1,1,2,2-Tetrachloroethane	79-34-5	1.35	U	6.75	1.35	0.675
Tetrachloroethene	127-18-4	1.35	U	6.75	1.35	0.675
Toluene	108-88-3	1.35	U	6.75	1.35	0.675
1,2,3-Trichlorobenzene	87-61-6	1.35	U	6.75	1.35	0.675
1,2,4-Trichlorobenzene	120-82-1	1.35	U	6.75	1.35	0.675
1,1,1-Trichloroethane	71-55-6	1.35	U	6.75	1.35	0.675
1,1,2-Trichloroethane	79-00-5	1.35	U	6.75	1.35	0.675
Trichloroethene	79-01-6	6.14	J	6.75	1.35	0.675
Trichlorofluoromethane	75-69-4	2.70	U	6.75	2.70	1.35
1,2,3-Trichloropropane	96-18-4	2.70	U	6.75	2.70	1.35

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.35	U	6.75	1.35	0.675
1,3,5-Trimethylbenzene	108-67-8	1.35	U	6.75	1.35	0.675
Vinyl chloride	75-01-4	2.70	U	6.75	2.70	1.35
o-Xylene	95-47-6	1.35	U	6.75	1.35	0.675
m-,p-Xylene	179601-23-1	1.35	U	6.75	1.35	0.675

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.4	80	120	
1,2-Dichloroethane-d4	94.3	80	120	
Toluene-d8	96.5	85	115	
4-Bromofluorobenzene	99.0	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-09	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT12(12-12.5)070316	**Prep Method:**	6850	**Prep Date:**	03/08/2016 13:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG560129	**Analyst:**	JWR	**Run Date:**	03/09/2016 13:04
Collect Date:	03/07/2016 15:00	**Dilution:**	100	**File ID:**	1LM.LM33814
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	77.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	7090		510	256	128

Certificate of Analysis

Sample #:	L16030366-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT13(5-5.5)070316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/09/2016 10:10
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560255	**Analyst:**	TMB	**Run Date:**	03/09/2016 19:18
Collect Date:	03/07/2016 16:00	**Dilution:**	1	**File ID:**	6M137691
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	25.0	12.5	6.24
Benzene	71-43-2	1.25	U	6.24	1.25	0.624
Bromobenzene	108-86-1	1.25	U	6.24	1.25	0.624
Bromochloromethane	74-97-5	2.50	U	6.24	2.50	1.25
Bromodichloromethane	75-27-4	1.25	U	6.24	1.25	0.624
Bromoform	75-25-2	1.25	U	6.24	1.25	0.624
Bromomethane	74-83-9	2.50	U	6.24	2.50	1.25
2-Butanone	78-93-3	6.24	U	12.5	6.24	3.12
n-Butylbenzene	104-51-8	1.25	U	6.24	1.25	0.624
sec-Butylbenzene	135-98-8	1.25	U	6.24	1.25	0.624
tert-Butylbenzene	98-06-6	1.25	U	6.24	1.25	0.624
Carbon disulfide	75-15-0	1.25	U	6.24	1.25	0.624
Carbon tetrachloride	56-23-5	1.25	U	6.24	1.25	0.624
Chlorobenzene	108-90-7	1.25	U	6.24	1.25	0.624
Chlorodibromomethane	124-48-1	1.25	U	6.24	1.25	0.624
Chloroethane	75-00-3	2.50	U	6.24	2.50	1.25
Chloroform	67-66-3	1.25	U	6.24	1.25	0.624
Chloromethane	74-87-3	5.00	U	12.5	5.00	2.50
2-Chlorotoluene	95-49-8	1.25	U	6.24	1.25	0.624
4-Chlorotoluene	106-43-4	1.25	U	6.24	1.25	0.624

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Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	5.00	U	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	6.24	1.25	0.624
Dibromomethane	74-95-3	1.25	U	6.24	1.25	0.624
1,2-Dichlorobenzene	95-50-1	1.25	U	6.24	1.25	0.624
1,3-Dichlorobenzene	541-73-1	1.25	U	6.24	1.25	0.624
1,4-Dichlorobenzene	106-46-7	1.25	U	6.24	1.25	0.624
Dichlorodifluoromethane	75-71-8	2.50	U	6.24	2.50	1.25
1,1-Dichloroethane	75-34-3	2.50	U	6.24	2.50	1.25
1,2-Dichloroethane	107-06-2	1.25	U	6.24	1.25	0.624
1,1-Dichloroethene	75-35-4	1.25	U	6.24	1.25	0.624
cis-1,2-Dichloroethene	156-59-2	1.25	U	6.24	1.25	0.624
trans-1,2-Dichloroethene	156-60-5	1.25	U	6.24	1.25	0.624
1,2-Dichloropropane	78-87-5	1.25	U	6.24	1.25	0.624
1,3-Dichloropropane	142-28-9	1.25	U	6.24	1.25	0.624
2,2-Dichloropropane	594-20-7	1.25	U	6.24	1.25	0.624
cis-1,3-Dichloropropene	10061-01-5	1.25	U	6.24	1.25	0.624
trans-1,3-Dichloropropene	10061-02-6	1.25	U	6.24	1.25	0.624
1,1-Dichloropropene	563-58-6	1.25	U	6.24	1.25	0.624
Ethylbenzene	100-41-4	1.25	U	6.24	1.25	0.624
2-Hexanone	591-78-6	6.24	U	12.5	6.24	3.12
Hexachlorobutadiene	87-68-3	1.25	U	6.24	1.25	0.624
Isopropylbenzene	98-82-8	1.25	U	6.24	1.25	0.624
p-Isopropyltoluene	99-87-6	1.25	U	6.24	1.25	0.624
4-Methyl-2-pentanone	108-10-1	6.24	U	12.5	6.24	3.12
Methylene chloride	75-09-2	2.50	U	6.24	2.50	1.25
Naphthalene	91-20-3	1.25	U	6.24	1.25	0.624
n-Propylbenzene	103-65-1	1.25	U	6.24	1.25	0.624
Styrene	100-42-5	1.25	U	6.24	1.25	0.624
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	6.24	1.25	0.624
1,1,2,2-Tetrachloroethane	79-34-5	1.25	U	6.24	1.25	0.624
Tetrachloroethene	127-18-4	1.25	U	6.24	1.25	0.624
Toluene	108-88-3	1.25	U	6.24	1.25	0.624
1,2,3-Trichlorobenzene	87-61-6	1.25	U	6.24	1.25	0.624
1,2,4-Trichlorobenzene	120-82-1	1.25	U	6.24	1.25	0.624
1,1,1-Trichloroethane	71-55-6	1.25	U	6.24	1.25	0.624
1,1,2-Trichloroethane	79-00-5	1.25	U	6.24	1.25	0.624
Trichloroethene	79-01-6	1.25	U	6.24	1.25	0.624
Trichlorofluoromethane	75-69-4	2.50	U	6.24	2.50	1.25
1,2,3-Trichloropropane	96-18-4	2.50	U	6.24	2.50	1.25

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Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.25	U	6.24	1.25	0.624
1,3,5-Trimethylbenzene	108-67-8	1.25	U	6.24	1.25	0.624
Vinyl chloride	75-01-4	2.50	U	6.24	2.50	1.25
o-Xylene	95-47-6	1.25	U	6.24	1.25	0.624
m-,p-Xylene	179601-23-1	1.25	U	6.24	1.25	0.624

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.5	80	120	
1,2-Dichloroethane-d4	86.9	80	120	
Toluene-d8	98.1	85	115	
4-Bromofluorobenzene	99.9	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-10	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT13(5-5.5)070316	**Prep Method:**	6850	**Prep Date:**	03/08/2016 13:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG560129	**Analyst:**	JWR	**Run Date:**	03/08/2016 21:00
Collect Date:	03/07/2016 16:00	**Dilution:**	1	**File ID:**	1LM.LM33800
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.30	U	4.62	2.30	1.15

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT13(12-12.5)070316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/09/2016 10:10
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560255	**Analyst:**	TMB	**Run Date:**	03/09/2016 19:51
Collect Date:	03/07/2016 16:05	**Dilution:**	1	**File ID:**	6M137692
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.3	U	22.6	11.3	5.64
Benzene	71-43-2	1.13	U	5.64	1.13	0.564
Bromobenzene	108-86-1	1.13	U	5.64	1.13	0.564
Bromochloromethane	74-97-5	2.26	U	5.64	2.26	1.13
Bromodichloromethane	75-27-4	1.13	U	5.64	1.13	0.564
Bromoform	75-25-2	1.13	U	5.64	1.13	0.564
Bromomethane	74-83-9	2.26	U	5.64	2.26	1.13
2-Butanone	78-93-3	5.64	U	11.3	5.64	2.82
n-Butylbenzene	104-51-8	1.13	U	5.64	1.13	0.564
sec-Butylbenzene	135-98-8	1.13	U	5.64	1.13	0.564
tert-Butylbenzene	98-06-6	1.13	U	5.64	1.13	0.564
Carbon disulfide	75-15-0	1.13	U	5.64	1.13	0.564
Carbon tetrachloride	56-23-5	1.13	U	5.64	1.13	0.564
Chlorobenzene	108-90-7	1.13	U	5.64	1.13	0.564
Chlorodibromomethane	124-48-1	1.13	U	5.64	1.13	0.564
Chloroethane	75-00-3	2.26	U	5.64	2.26	1.13
Chloroform	67-66-3	1.13	U	5.64	1.13	0.564
Chloromethane	74-87-3	4.52	U	11.3	4.52	2.26
2-Chlorotoluene	95-49-8	1.13	U	5.64	1.13	0.564
4-Chlorotoluene	106-43-4	1.13	U	5.64	1.13	0.564
1,2-Dibromo-3-chloropropane	96-12-8	4.52	U	11.3	4.52	2.26
1,2-Dibromoethane	106-93-4	1.13	U	5.64	1.13	0.564
Dibromomethane	74-95-3	1.13	U	5.64	1.13	0.564
1,2-Dichlorobenzene	95-50-1	1.13	U	5.64	1.13	0.564
1,3-Dichlorobenzene	541-73-1	1.13	U	5.64	1.13	0.564
1,4-Dichlorobenzene	106-46-7	1.13	U	5.64	1.13	0.564
Dichlorodifluoromethane	75-71-8	2.26	U	5.64	2.26	1.13
1,1-Dichloroethane	75-34-3	2.26	U	5.64	2.26	1.13
1,2-Dichloroethane	107-06-2	1.13	U	5.64	1.13	0.564
1,1-Dichloroethene	75-35-4	1.13	U	5.64	1.13	0.564
cis-1,2-Dichloroethene	156-59-2	1.13	U	5.64	1.13	0.564

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.13	U	5.64	1.13	0.564
1,2-Dichloropropane	78-87-5	1.13	U	5.64	1.13	0.564
1,3-Dichloropropane	142-28-9	1.13	U	5.64	1.13	0.564
2,2-Dichloropropane	594-20-7	1.13	U	5.64	1.13	0.564
cis-1,3-Dichloropropene	10061-01-5	1.13	U	5.64	1.13	0.564
trans-1,3-Dichloropropene	10061-02-6	1.13	U	5.64	1.13	0.564
1,1-Dichloropropene	563-58-6	1.13	U	5.64	1.13	0.564
Ethylbenzene	100-41-4	1.13	U	5.64	1.13	0.564
2-Hexanone	591-78-6	5.64	U	11.3	5.64	2.82
Hexachlorobutadiene	87-68-3	1.13	U	5.64	1.13	0.564
Isopropylbenzene	98-82-8	1.13	U	5.64	1.13	0.564
p-Isopropyltoluene	99-87-6	1.13	U	5.64	1.13	0.564
4-Methyl-2-pentanone	108-10-1	5.64	U	11.3	5.64	2.82
Methylene chloride	75-09-2	2.26	U	5.64	2.26	1.13
Naphthalene	91-20-3	1.13	U	5.64	1.13	0.564
n-Propylbenzene	103-65-1	1.13	U	5.64	1.13	0.564
Styrene	100-42-5	1.13	U	5.64	1.13	0.564
1,1,1,2-Tetrachloroethane	630-20-6	1.13	U	5.64	1.13	0.564
1,1,2,2-Tetrachloroethane	79-34-5	1.13	U	5.64	1.13	0.564
Tetrachloroethene	127-18-4	1.13	U	5.64	1.13	0.564
Toluene	108-88-3	1.13	U	5.64	1.13	0.564
1,2,3-Trichlorobenzene	87-61-6	1.13	U	5.64	1.13	0.564
1,2,4-Trichlorobenzene	120-82-1	1.13	U	5.64	1.13	0.564
1,1,1-Trichloroethane	71-55-6	1.13	U	5.64	1.13	0.564
1,1,2-Trichloroethane	79-00-5	1.13	U	5.64	1.13	0.564
Trichloroethene	79-01-6	1.13	U	5.64	1.13	0.564
Trichlorofluoromethane	75-69-4	2.26	U	5.64	2.26	1.13
1,2,3-Trichloropropane	96-18-4	2.26	U	5.64	2.26	1.13
1,2,4-Trimethylbenzene	95-63-6	1.13	U	5.64	1.13	0.564
1,3,5-Trimethylbenzene	108-67-8	1.13	U	5.64	1.13	0.564
Vinyl chloride	75-01-4	2.26	U	5.64	2.26	1.13
o-Xylene	95-47-6	1.13	U	5.64	1.13	0.564
m-,p-Xylene	179601-23-1	1.13	U	5.64	1.13	0.564

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	89.8	80	120	
1,2-Dichloroethane-d4	83.1	80	120	
Toluene-d8	98.5	85	115	
4-Bromofluorobenzene	100	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-11	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT13(12-12.5)070316	**Prep Method:**	6850	**Prep Date:**	03/08/2016 13:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG560129	**Analyst:**	JWR	**Run Date:**	03/08/2016 21:19
Collect Date:	03/07/2016 16:05	**Dilution:**	1	**File ID:**	1LM.LM33801
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.44	U	4.88	2.44	1.22

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT13(17-17.5)070316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/09/2016 10:12
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560255	**Analyst:**	TMB	**Run Date:**	03/09/2016 20:24
Collect Date:	03/07/2016 16:10	**Dilution:**	1	**File ID:**	6M137693
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	76.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	14.1	U	28.1	14.1	7.04
Benzene	71-43-2	1.41	U	7.04	1.41	0.704
Bromobenzene	108-86-1	1.41	U	7.04	1.41	0.704
Bromochloromethane	74-97-5	2.82	U	7.04	2.82	1.41
Bromodichloromethane	75-27-4	1.41	U	7.04	1.41	0.704
Bromoform	75-25-2	1.41	U	7.04	1.41	0.704
Bromomethane	74-83-9	2.82	U	7.04	2.82	1.41
2-Butanone	78-93-3	7.04	U	14.1	7.04	3.52
n-Butylbenzene	104-51-8	1.41	U	7.04	1.41	0.704
sec-Butylbenzene	135-98-8	1.41	U	7.04	1.41	0.704
tert-Butylbenzene	98-06-6	1.41	U	7.04	1.41	0.704
Carbon disulfide	75-15-0	1.41	U	7.04	1.41	0.704
Carbon tetrachloride	56-23-5	1.41	U	7.04	1.41	0.704
Chlorobenzene	108-90-7	1.41	U	7.04	1.41	0.704
Chlorodibromomethane	124-48-1	1.41	U	7.04	1.41	0.704
Chloroethane	75-00-3	2.82	U	7.04	2.82	1.41
Chloroform	67-66-3	1.41	U	7.04	1.41	0.704
Chloromethane	74-87-3	5.62	U	14.1	5.62	2.81
2-Chlorotoluene	95-49-8	1.41	U	7.04	1.41	0.704
4-Chlorotoluene	106-43-4	1.41	U	7.04	1.41	0.704
1,2-Dibromo-3-chloropropane	96-12-8	5.62	U	14.1	5.62	2.81
1,2-Dibromoethane	106-93-4	1.41	U	7.04	1.41	0.704
Dibromomethane	74-95-3	1.41	U	7.04	1.41	0.704
1,2-Dichlorobenzene	95-50-1	1.41	U	7.04	1.41	0.704
1,3-Dichlorobenzene	541-73-1	1.41	U	7.04	1.41	0.704
1,4-Dichlorobenzene	106-46-7	1.41	U	7.04	1.41	0.704
Dichlorodifluoromethane	75-71-8	2.82	U	7.04	2.82	1.41
1,1-Dichloroethane	75-34-3	2.82	U	7.04	2.82	1.41
1,2-Dichloroethane	107-06-2	1.41	U	7.04	1.41	0.704
1,1-Dichloroethene	75-35-4	1.41	U	7.04	1.41	0.704
cis-1,2-Dichloroethene	156-59-2	1.41	U	7.04	1.41	0.704

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.41	U	7.04	1.41	0.704
1,2-Dichloropropane	78-87-5	1.41	U	7.04	1.41	0.704
1,3-Dichloropropane	142-28-9	1.41	U	7.04	1.41	0.704
2,2-Dichloropropane	594-20-7	1.41	U	7.04	1.41	0.704
cis-1,3-Dichloropropene	10061-01-5	1.41	U	7.04	1.41	0.704
trans-1,3-Dichloropropene	10061-02-6	1.41	U	7.04	1.41	0.704
1,1-Dichloropropene	563-58-6	1.41	U	7.04	1.41	0.704
Ethylbenzene	100-41-4	1.41	U	7.04	1.41	0.704
2-Hexanone	591-78-6	7.04	U	14.1	7.04	3.52
Hexachlorobutadiene	87-68-3	1.41	U	7.04	1.41	0.704
Isopropylbenzene	98-82-8	1.41	U	7.04	1.41	0.704
p-Isopropyltoluene	99-87-6	1.41	U	7.04	1.41	0.704
4-Methyl-2-pentanone	108-10-1	7.04	U	14.1	7.04	3.52
Methylene chloride	75-09-2	2.82	U	7.04	2.82	1.41
Naphthalene	91-20-3	1.41	U	7.04	1.41	0.704
n-Propylbenzene	103-65-1	1.41	U	7.04	1.41	0.704
Styrene	100-42-5	1.41	U	7.04	1.41	0.704
1,1,1,2-Tetrachloroethane	630-20-6	1.41	U	7.04	1.41	0.704
1,1,2,2-Tetrachloroethane	79-34-5	1.41	U	7.04	1.41	0.704
Tetrachloroethene	127-18-4	1.41	U	7.04	1.41	0.704
Toluene	108-88-3	1.41	U	7.04	1.41	0.704
1,2,3-Trichlorobenzene	87-61-6	1.41	U	7.04	1.41	0.704
1,2,4-Trichlorobenzene	120-82-1	1.41	U	7.04	1.41	0.704
1,1,1-Trichloroethane	71-55-6	1.41	U	7.04	1.41	0.704
1,1,2-Trichloroethane	79-00-5	1.41	U	7.04	1.41	0.704
Trichloroethene	79-01-6	1.41	U	7.04	1.41	0.704
Trichlorofluoromethane	75-69-4	2.82	U	7.04	2.82	1.41
1,2,3-Trichloropropane	96-18-4	2.82	U	7.04	2.82	1.41
1,2,4-Trimethylbenzene	95-63-6	1.41	U	7.04	1.41	0.704
1,3,5-Trimethylbenzene	108-67-8	1.41	U	7.04	1.41	0.704
Vinyl chloride	75-01-4	2.82	U	7.04	2.82	1.41
o-Xylene	95-47-6	1.41	U	7.04	1.41	0.704
m-,p-Xylene	179601-23-1	1.41	U	7.04	1.41	0.704

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.2	80	120	
1,2-Dichloroethane-d4	87.1	80	120	
Toluene-d8	98.6	85	115	
4-Bromofluorobenzene	101	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-12	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT13(17-17.5)070316	**Prep Method:**	6850	**Prep Date:**	03/08/2016 13:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG560129	**Analyst:**	JWR	**Run Date:**	03/08/2016 21:38
Collect Date:	03/07/2016 16:10	**Dilution:**	1	**File ID:**	1LM.LM33802
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	76.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.56	U	5.14	2.56	1.28

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #: L16030366-01 **Client ID:** 18DPT11(5-5.5)040316 **Matrix:** Soil **Collect Date:** 03/04/2016 15:00

Analyte	Result	Units	Qualifier
Percent Solids	79.1	weight %	

Sample #: L16030366-02 **Client ID:** 18DPT11(15-15.5)040316 **Matrix:** Soil **Collect Date:** 03/04/2016 16:00

Analyte	Result	Units	Qualifier
Percent Solids	81.7	weight %	

Sample #: L16030366-03 **Client ID:** 18DPT11(20-20.5)070316 **Matrix:** Soil **Collect Date:** 03/07/2016 11:50

Analyte	Result	Units	Qualifier
Percent Solids	82.9	weight %	

Sample #: L16030366-04 **Client ID:** 18DPT11(29-29.5)070316 **Matrix:** Soil **Collect Date:** 03/07/2016 11:55

Analyte	Result	Units	Qualifier
Percent Solids	79.5	weight %	

Sample #: L16030366-05 **Client ID:** 18DPT11(25-25.5)070316 **Matrix:** Soil **Collect Date:** 03/07/2016 12:00

Analyte	Result	Units	Qualifier
Percent Solids	79.2	weight %	

Sample #: L16030366-06 **Client ID:** 18DPT12(5-5.5)070316 **Matrix:** Soil **Collect Date:** 03/07/2016 14:35

Analyte	Result	Units	Qualifier
Percent Solids	83.6	weight %	

Sample #: L16030366-07 **Client ID:** 18DPT12(8.5-9)070316 **Matrix:** Soil **Collect Date:** 03/07/2016 14:40

Analyte	Result	Units	Qualifier
Percent Solids	79.3	weight %	

Sample #: L16030366-08 **Client ID:** 18DPT12(18-18.5)070316 **Matrix:** Soil **Collect Date:** 03/07/2016 14:45

Analyte	Result	Units	Qualifier
Percent Solids	81.2	weight %	

Sample #: L16030366-09 **Client ID:** 18DPT12(12-12.5)070316 **Matrix:** Soil **Collect Date:** 03/07/2016 15:00

Analyte	Result	Units	Qualifier
Percent Solids	77.6	weight %	

Sample #: L16030366-10 **Client ID:** 18DPT13(5-5.5)070316 **Matrix:** Soil **Collect Date:** 03/07/2016 16:00

Analyte	Result	Units	Qualifier
Percent Solids	85.3	weight %	

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #: L16030366-11 **Client ID:** 18DPT13(12-12.5)070316 **Matrix:** Soil **Collect Date:** 03/07/2016 16:05

Analyte	Result	Units	Qualifier
Percent Solids	81.2	weight %	

Sample #: L16030366-12 **Client ID:** 18DPT13(17-17.5)070316 **Matrix:** Soil **Collect Date:** 03/07/2016 16:10

Analyte	Result	Units	Qualifier
Percent Solids	76.9	weight %	

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT11(5-5.5)040316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/09/2016 10:01
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560255	**Analyst:**	TMB	**Run Date:**	03/09/2016 15:23
Collect Date:	03/04/2016 15:00	**Dilution:**	1	**File ID:**	6M137684
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.7	U	25.4	12.7	6.36
Benzene	71-43-2	1.27	U	6.36	1.27	0.636
Bromobenzene	108-86-1	1.27	U	6.36	1.27	0.636
Bromochloromethane	74-97-5	2.54	U	6.36	2.54	1.27
Bromodichloromethane	75-27-4	1.27	U	6.36	1.27	0.636
Bromoform	75-25-2	1.27	U	6.36	1.27	0.636
Bromomethane	74-83-9	2.54	U	6.36	2.54	1.27
2-Butanone	78-93-3	6.36	U	12.7	6.36	3.18
n-Butylbenzene	104-51-8	1.27	U	6.36	1.27	0.636
sec-Butylbenzene	135-98-8	1.27	U	6.36	1.27	0.636
tert-Butylbenzene	98-06-6	1.27	U	6.36	1.27	0.636
Carbon disulfide	75-15-0	1.27	U	6.36	1.27	0.636
Carbon tetrachloride	56-23-5	1.27	U	6.36	1.27	0.636
Chlorobenzene	108-90-7	1.27	U	6.36	1.27	0.636
Chlorodibromomethane	124-48-1	1.27	U	6.36	1.27	0.636
Chloroethane	75-00-3	2.54	U	6.36	2.54	1.27
Chloroform	67-66-3	1.27	U	6.36	1.27	0.636
Chloromethane	74-87-3	5.08	U	12.7	5.08	2.54
2-Chlorotoluene	95-49-8	1.27	U	6.36	1.27	0.636
4-Chlorotoluene	106-43-4	1.27	U	6.36	1.27	0.636
1,2-Dibromo-3-chloropropane	96-12-8	5.08	U	12.7	5.08	2.54
1,2-Dibromoethane	106-93-4	1.27	U	6.36	1.27	0.636
Dibromomethane	74-95-3	1.27	U	6.36	1.27	0.636
1,2-Dichlorobenzene	95-50-1	1.27	U	6.36	1.27	0.636
1,3-Dichlorobenzene	541-73-1	1.27	U	6.36	1.27	0.636
1,4-Dichlorobenzene	106-46-7	1.27	U	6.36	1.27	0.636
Dichlorodifluoromethane	75-71-8	2.54	U	6.36	2.54	1.27
1,1-Dichloroethane	75-34-3	2.54	U	6.36	2.54	1.27
1,2-Dichloroethane	107-06-2	1.27	U	6.36	1.27	0.636
1,1-Dichloroethene	75-35-4	1.27	U	6.36	1.27	0.636
cis-1,2-Dichloroethene	156-59-2	1.27	U	6.36	1.27	0.636
trans-1,2-Dichloroethene	156-60-5	1.27	U	6.36	1.27	0.636

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.27	U	6.36	1.27	0.636
1,3-Dichloropropane	142-28-9	1.27	U	6.36	1.27	0.636
2,2-Dichloropropane	594-20-7	1.27	U	6.36	1.27	0.636
cis-1,3-Dichloropropene	10061-01-5	1.27	U	6.36	1.27	0.636
trans-1,3-Dichloropropene	10061-02-6	1.27	U	6.36	1.27	0.636
1,1-Dichloropropene	563-58-6	1.27	U	6.36	1.27	0.636
Ethylbenzene	100-41-4	1.27	U	6.36	1.27	0.636
2-Hexanone	591-78-6	6.36	U	12.7	6.36	3.18
Hexachlorobutadiene	87-68-3	1.27	U	6.36	1.27	0.636
Isopropylbenzene	98-82-8	1.27	U	6.36	1.27	0.636
p-Isopropyltoluene	99-87-6	1.27	U	6.36	1.27	0.636
4-Methyl-2-pentanone	108-10-1	6.36	U	12.7	6.36	3.18
Methylene chloride	75-09-2	2.54	U	6.36	2.54	1.27
Naphthalene	91-20-3	1.27	U	6.36	1.27	0.636
n-Propylbenzene	103-65-1	1.27	U	6.36	1.27	0.636
Styrene	100-42-5	1.27	U	6.36	1.27	0.636
1,1,1,2-Tetrachloroethane	630-20-6	1.27	U	6.36	1.27	0.636
1,1,2,2-Tetrachloroethane	79-34-5	1.27	U	6.36	1.27	0.636
Tetrachloroethene	127-18-4	1.27	U	6.36	1.27	0.636
Toluene	108-88-3	1.27	U	6.36	1.27	0.636
1,2,3-Trichlorobenzene	87-61-6	1.27	U	6.36	1.27	0.636
1,2,4-Trichlorobenzene	120-82-1	1.27	U	6.36	1.27	0.636
1,1,1-Trichloroethane	71-55-6	1.27	U	6.36	1.27	0.636
1,1,2-Trichloroethane	79-00-5	1.27	U	6.36	1.27	0.636
Trichloroethene	79-01-6	1.27	U	6.36	1.27	0.636
Trichlorofluoromethane	75-69-4	2.54	U	6.36	2.54	1.27
1,2,3-Trichloropropane	96-18-4	2.54	U	6.36	2.54	1.27
1,2,4-Trimethylbenzene	95-63-6	1.27	U	6.36	1.27	0.636
1,3,5-Trimethylbenzene	108-67-8	1.27	U	6.36	1.27	0.636
Vinyl chloride	75-01-4	2.54	U	6.36	2.54	1.27
o-Xylene	95-47-6	1.27	U	6.36	1.27	0.636
m-,p-Xylene	179601-23-1	1.27	U	6.36	1.27	0.636

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	90.3	80	120	
1,2-Dichloroethane-d4	84.9	80	120	
Toluene-d8	99.8	85	115	
4-Bromofluorobenzene	100	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT11(15-15.5)040316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/09/2016 10:02
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560255	**Analyst:**	TMB	**Run Date:**	03/09/2016 15:57
Collect Date:	03/04/2016 16:00	**Dilution:**	1	**File ID:**	6M137685
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.3	U	26.7	13.3	6.67
Benzene	71-43-2	1.33	U	6.67	1.33	0.667
Bromobenzene	108-86-1	1.33	U	6.67	1.33	0.667
Bromochloromethane	74-97-5	2.66	U	6.67	2.66	1.33
Bromodichloromethane	75-27-4	1.33	U	6.67	1.33	0.667
Bromoform	75-25-2	1.33	U	6.67	1.33	0.667
Bromomethane	74-83-9	2.66	U	6.67	2.66	1.33
2-Butanone	78-93-3	6.66	U	13.3	6.66	3.33
n-Butylbenzene	104-51-8	1.33	U	6.67	1.33	0.667
sec-Butylbenzene	135-98-8	1.33	U	6.67	1.33	0.667
tert-Butylbenzene	98-06-6	1.33	U	6.67	1.33	0.667
Carbon disulfide	75-15-0	1.33	U	6.67	1.33	0.667
Carbon tetrachloride	56-23-5	1.33	U	6.67	1.33	0.667
Chlorobenzene	108-90-7	1.33	U	6.67	1.33	0.667
Chlorodibromomethane	124-48-1	1.33	U	6.67	1.33	0.667
Chloroethane	75-00-3	2.66	U	6.67	2.66	1.33
Chloroform	67-66-3	1.33	U	6.67	1.33	0.667
Chloromethane	74-87-3	5.34	U	13.3	5.34	2.67
2-Chlorotoluene	95-49-8	1.33	U	6.67	1.33	0.667
4-Chlorotoluene	106-43-4	1.33	U	6.67	1.33	0.667
1,2-Dibromo-3-chloropropane	96-12-8	5.34	U	13.3	5.34	2.67
1,2-Dibromoethane	106-93-4	1.33	U	6.67	1.33	0.667
Dibromomethane	74-95-3	1.33	U	6.67	1.33	0.667
1,2-Dichlorobenzene	95-50-1	1.33	U	6.67	1.33	0.667
1,3-Dichlorobenzene	541-73-1	1.33	U	6.67	1.33	0.667
1,4-Dichlorobenzene	106-46-7	1.33	U	6.67	1.33	0.667
Dichlorodifluoromethane	75-71-8	2.66	U	6.67	2.66	1.33
1,1-Dichloroethane	75-34-3	2.66	U	6.67	2.66	1.33
1,2-Dichloroethane	107-06-2	1.33	U	6.67	1.33	0.667
1,1-Dichloroethene	75-35-4	1.33	U	6.67	1.33	0.667
cis-1,2-Dichloroethene	156-59-2	1.33	U	6.67	1.33	0.667

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Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.33	U	6.67	1.33	0.667
1,2-Dichloropropane	78-87-5	1.33	U	6.67	1.33	0.667
1,3-Dichloropropane	142-28-9	1.33	U	6.67	1.33	0.667
2,2-Dichloropropane	594-20-7	1.33	U	6.67	1.33	0.667
cis-1,3-Dichloropropene	10061-01-5	1.33	U	6.67	1.33	0.667
trans-1,3-Dichloropropene	10061-02-6	1.33	U	6.67	1.33	0.667
1,1-Dichloropropene	563-58-6	1.33	U	6.67	1.33	0.667
Ethylbenzene	100-41-4	1.33	U	6.67	1.33	0.667
2-Hexanone	591-78-6	6.66	U	13.3	6.66	3.33
Hexachlorobutadiene	87-68-3	1.33	U	6.67	1.33	0.667
Isopropylbenzene	98-82-8	1.33	U	6.67	1.33	0.667
p-Isopropyltoluene	99-87-6	1.33	U	6.67	1.33	0.667
4-Methyl-2-pentanone	108-10-1	6.66	U	13.3	6.66	3.33
Methylene chloride	75-09-2	2.66	U	6.67	2.66	1.33
Naphthalene	91-20-3	1.33	U	6.67	1.33	0.667
n-Propylbenzene	103-65-1	1.33	U	6.67	1.33	0.667
Styrene	100-42-5	1.33	U	6.67	1.33	0.667
1,1,1,2-Tetrachloroethane	630-20-6	1.33	U	6.67	1.33	0.667
1,1,2,2-Tetrachloroethane	79-34-5	1.33	U	6.67	1.33	0.667
Tetrachloroethene	127-18-4	1.33	U	6.67	1.33	0.667
Toluene	108-88-3	1.33	U	6.67	1.33	0.667
1,2,3-Trichlorobenzene	87-61-6	1.33	U	6.67	1.33	0.667
1,2,4-Trichlorobenzene	120-82-1	1.33	U	6.67	1.33	0.667
1,1,1-Trichloroethane	71-55-6	1.33	U	6.67	1.33	0.667
1,1,2-Trichloroethane	79-00-5	1.33	U	6.67	1.33	0.667
Trichloroethene	79-01-6	1.33	U	6.67	1.33	0.667
Trichlorofluoromethane	75-69-4	2.66	U	6.67	2.66	1.33
1,2,3-Trichloropropane	96-18-4	2.66	U	6.67	2.66	1.33
1,2,4-Trimethylbenzene	95-63-6	1.33	U	6.67	1.33	0.667
1,3,5-Trimethylbenzene	108-67-8	1.33	U	6.67	1.33	0.667
Vinyl chloride	75-01-4	2.66	U	6.67	2.66	1.33
o-Xylene	95-47-6	1.33	U	6.67	1.33	0.667
m-,p-Xylene	179601-23-1	1.33	U	6.67	1.33	0.667

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.2	80	120	
1,2-Dichloroethane-d4	86.7	80	120	
Toluene-d8	98.9	85	115	
4-Bromofluorobenzene	99.3	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT11(20-20.5)070316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/09/2016 10:03
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560255	**Analyst:**	TMB	**Run Date:**	03/09/2016 16:31
Collect Date:	03/07/2016 11:50	**Dilution:**	1	**File ID:**	6M137686
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	25.0	12.5	6.25
Benzene	71-43-2	1.25	U	6.25	1.25	0.625
Bromobenzene	108-86-1	1.25	U	6.25	1.25	0.625
Bromochloromethane	74-97-5	2.50	U	6.25	2.50	1.25
Bromodichloromethane	75-27-4	1.25	U	6.25	1.25	0.625
Bromoform	75-25-2	1.25	U	6.25	1.25	0.625
Bromomethane	74-83-9	2.50	U	6.25	2.50	1.25
2-Butanone	78-93-3	6.26	U	12.5	6.26	3.13
n-Butylbenzene	104-51-8	1.25	U	6.25	1.25	0.625
sec-Butylbenzene	135-98-8	1.25	U	6.25	1.25	0.625
tert-Butylbenzene	98-06-6	1.25	U	6.25	1.25	0.625
Carbon disulfide	75-15-0	1.25	U	6.25	1.25	0.625
Carbon tetrachloride	56-23-5	1.25	U	6.25	1.25	0.625
Chlorobenzene	108-90-7	1.25	U	6.25	1.25	0.625
Chlorodibromomethane	124-48-1	1.25	U	6.25	1.25	0.625
Chloroethane	75-00-3	2.50	U	6.25	2.50	1.25
Chloroform	67-66-3	1.25	U	6.25	1.25	0.625
Chloromethane	74-87-3	5.00	U	12.5	5.00	2.50
2-Chlorotoluene	95-49-8	1.25	U	6.25	1.25	0.625
4-Chlorotoluene	106-43-4	1.25	U	6.25	1.25	0.625
1,2-Dibromo-3-chloropropane	96-12-8	5.00	U	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	6.25	1.25	0.625
Dibromomethane	74-95-3	1.25	U	6.25	1.25	0.625
1,2-Dichlorobenzene	95-50-1	1.25	U	6.25	1.25	0.625
1,3-Dichlorobenzene	541-73-1	1.25	U	6.25	1.25	0.625
1,4-Dichlorobenzene	106-46-7	1.25	U	6.25	1.25	0.625
Dichlorodifluoromethane	75-71-8	2.50	U	6.25	2.50	1.25
1,1-Dichloroethane	75-34-3	2.50	U	6.25	2.50	1.25
1,2-Dichloroethane	107-06-2	1.25	U	6.25	1.25	0.625
1,1-Dichloroethene	75-35-4	1.25	U	6.25	1.25	0.625
cis-1,2-Dichloroethene	156-59-2	1.25	U	6.25	1.25	0.625

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.25	U	6.25	1.25	0.625
1,2-Dichloropropane	78-87-5	1.25	U	6.25	1.25	0.625
1,3-Dichloropropane	142-28-9	1.25	U	6.25	1.25	0.625
2,2-Dichloropropane	594-20-7	1.25	U	6.25	1.25	0.625
cis-1,3-Dichloropropene	10061-01-5	1.25	U	6.25	1.25	0.625
trans-1,3-Dichloropropene	10061-02-6	1.25	U	6.25	1.25	0.625
1,1-Dichloropropene	563-58-6	1.25	U	6.25	1.25	0.625
Ethylbenzene	100-41-4	1.25	U	6.25	1.25	0.625
2-Hexanone	591-78-6	6.26	U	12.5	6.26	3.13
Hexachlorobutadiene	87-68-3	1.25	U	6.25	1.25	0.625
Isopropylbenzene	98-82-8	1.25	U	6.25	1.25	0.625
p-Isopropyltoluene	99-87-6	1.25	U	6.25	1.25	0.625
4-Methyl-2-pentanone	108-10-1	6.26	U	12.5	6.26	3.13
Methylene chloride	75-09-2	2.50	U	6.25	2.50	1.25
Naphthalene	91-20-3	1.25	U	6.25	1.25	0.625
n-Propylbenzene	103-65-1	1.25	U	6.25	1.25	0.625
Styrene	100-42-5	1.25	U	6.25	1.25	0.625
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	6.25	1.25	0.625
1,1,2,2-Tetrachloroethane	79-34-5	1.25	U	6.25	1.25	0.625
Tetrachloroethene	127-18-4	1.25	U	6.25	1.25	0.625
Toluene	108-88-3	1.25	U	6.25	1.25	0.625
1,2,3-Trichlorobenzene	87-61-6	1.25	U	6.25	1.25	0.625
1,2,4-Trichlorobenzene	120-82-1	1.25	U	6.25	1.25	0.625
1,1,1-Trichloroethane	71-55-6	1.25	U	6.25	1.25	0.625
1,1,2-Trichloroethane	79-00-5	1.25	U	6.25	1.25	0.625
Trichloroethene	79-01-6	1.25	U	6.25	1.25	0.625
Trichlorofluoromethane	75-69-4	2.50	U	6.25	2.50	1.25
1,2,3-Trichloropropane	96-18-4	2.50	U	6.25	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	6.25	1.25	0.625
1,3,5-Trimethylbenzene	108-67-8	1.25	U	6.25	1.25	0.625
Vinyl chloride	75-01-4	2.50	U	6.25	2.50	1.25
o-Xylene	95-47-6	1.25	U	6.25	1.25	0.625
m-,p-Xylene	179601-23-1	1.25	U	6.25	1.25	0.625

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.4	80	120	
1,2-Dichloroethane-d4	87.7	80	120	
Toluene-d8	98.0	85	115	
4-Bromofluorobenzene	99.3	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT11(29-29.5)070316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/09/2016 10:03
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560255	**Analyst:**	TMB	**Run Date:**	03/09/2016 17:04
Collect Date:	03/07/2016 11:55	**Dilution:**	1	**File ID:**	6M137687
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.0	U	26.1	13.0	6.52
Benzene	71-43-2	1.30	U	6.52	1.30	0.652
Bromobenzene	108-86-1	1.30	U	6.52	1.30	0.652
Bromochloromethane	74-97-5	2.60	U	6.52	2.60	1.30
Bromodichloromethane	75-27-4	1.30	U	6.52	1.30	0.652
Bromoform	75-25-2	1.30	U	6.52	1.30	0.652
Bromomethane	74-83-9	2.60	U	6.52	2.60	1.30
2-Butanone	78-93-3	6.52	U	13.0	6.52	3.26
n-Butylbenzene	104-51-8	1.30	U	6.52	1.30	0.652
sec-Butylbenzene	135-98-8	1.30	U	6.52	1.30	0.652
tert-Butylbenzene	98-06-6	1.30	U	6.52	1.30	0.652
Carbon disulfide	75-15-0	1.30	U	6.52	1.30	0.652
Carbon tetrachloride	56-23-5	1.30	U	6.52	1.30	0.652
Chlorobenzene	108-90-7	1.30	U	6.52	1.30	0.652
Chlorodibromomethane	124-48-1	1.30	U	6.52	1.30	0.652
Chloroethane	75-00-3	2.60	U	6.52	2.60	1.30
Chloroform	67-66-3	1.30	U	6.52	1.30	0.652
Chloromethane	74-87-3	5.22	U	13.0	5.22	2.61
2-Chlorotoluene	95-49-8	1.30	U	6.52	1.30	0.652
4-Chlorotoluene	106-43-4	1.30	U	6.52	1.30	0.652
1,2-Dibromo-3-chloropropane	96-12-8	5.22	U	13.0	5.22	2.61
1,2-Dibromoethane	106-93-4	1.30	U	6.52	1.30	0.652
Dibromomethane	74-95-3	1.30	U	6.52	1.30	0.652
1,2-Dichlorobenzene	95-50-1	1.30	U	6.52	1.30	0.652
1,3-Dichlorobenzene	541-73-1	1.30	U	6.52	1.30	0.652
1,4-Dichlorobenzene	106-46-7	1.30	U	6.52	1.30	0.652
Dichlorodifluoromethane	75-71-8	2.60	U	6.52	2.60	1.30
1,1-Dichloroethane	75-34-3	2.60	U	6.52	2.60	1.30
1,2-Dichloroethane	107-06-2	1.30	U	6.52	1.30	0.652
1,1-Dichloroethene	75-35-4	1.30	U	6.52	1.30	0.652
cis-1,2-Dichloroethene	156-59-2	1.30	U	6.52	1.30	0.652

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Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.30	U	6.52	1.30	0.652
1,2-Dichloropropane	78-87-5	1.30	U	6.52	1.30	0.652
1,3-Dichloropropane	142-28-9	1.30	U	6.52	1.30	0.652
2,2-Dichloropropane	594-20-7	1.30	U	6.52	1.30	0.652
cis-1,3-Dichloropropene	10061-01-5	1.30	U	6.52	1.30	0.652
trans-1,3-Dichloropropene	10061-02-6	1.30	U	6.52	1.30	0.652
1,1-Dichloropropene	563-58-6	1.30	U	6.52	1.30	0.652
Ethylbenzene	100-41-4	1.30	U	6.52	1.30	0.652
2-Hexanone	591-78-6	6.52	U	13.0	6.52	3.26
Hexachlorobutadiene	87-68-3	1.30	U	6.52	1.30	0.652
Isopropylbenzene	98-82-8	1.30	U	6.52	1.30	0.652
p-Isopropyltoluene	99-87-6	1.30	U	6.52	1.30	0.652
4-Methyl-2-pentanone	108-10-1	6.52	U	13.0	6.52	3.26
Methylene chloride	75-09-2	2.60	U	6.52	2.60	1.30
Naphthalene	91-20-3	1.30	U	6.52	1.30	0.652
n-Propylbenzene	103-65-1	1.30	U	6.52	1.30	0.652
Styrene	100-42-5	1.30	U	6.52	1.30	0.652
1,1,1,2-Tetrachloroethane	630-20-6	1.30	U	6.52	1.30	0.652
1,1,2,2-Tetrachloroethane	79-34-5	1.30	U	6.52	1.30	0.652
Tetrachloroethene	127-18-4	1.30	U	6.52	1.30	0.652
Toluene	108-88-3	1.30	U	6.52	1.30	0.652
1,2,3-Trichlorobenzene	87-61-6	1.30	U	6.52	1.30	0.652
1,2,4-Trichlorobenzene	120-82-1	1.30	U	6.52	1.30	0.652
1,1,1-Trichloroethane	71-55-6	1.30	U	6.52	1.30	0.652
1,1,2-Trichloroethane	79-00-5	1.30	U	6.52	1.30	0.652
Trichloroethene	79-01-6	1.30	U	6.52	1.30	0.652
Trichlorofluoromethane	75-69-4	2.60	U	6.52	2.60	1.30
1,2,3-Trichloropropane	96-18-4	2.60	U	6.52	2.60	1.30
1,2,4-Trimethylbenzene	95-63-6	1.30	U	6.52	1.30	0.652
1,3,5-Trimethylbenzene	108-67-8	1.30	U	6.52	1.30	0.652
Vinyl chloride	75-01-4	2.60	U	6.52	2.60	1.30
o-Xylene	95-47-6	1.30	U	6.52	1.30	0.652
m-,p-Xylene	179601-23-1	1.30	U	6.52	1.30	0.652

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.6	80	120	
1,2-Dichloroethane-d4	89.6	80	120	
Toluene-d8	98.0	85	115	
4-Bromofluorobenzene	101	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT11(25-25.5)070316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/09/2016 10:04
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560255	**Analyst:**	TMB	**Run Date:**	03/09/2016 17:37
Collect Date:	03/07/2016 12:00	**Dilution:**	1	**File ID:**	6M137688
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.7	U	27.5	13.7	6.87
Benzene	71-43-2	1.37	U	6.87	1.37	0.687
Bromobenzene	108-86-1	1.37	U	6.87	1.37	0.687
Bromochloromethane	74-97-5	2.74	U	6.87	2.74	1.37
Bromodichloromethane	75-27-4	1.37	U	6.87	1.37	0.687
Bromoform	75-25-2	1.37	U	6.87	1.37	0.687
Bromomethane	74-83-9	2.74	U	6.87	2.74	1.37
2-Butanone	78-93-3	6.88	U	13.7	6.88	3.44
n-Butylbenzene	104-51-8	1.37	U	6.87	1.37	0.687
sec-Butylbenzene	135-98-8	1.37	U	6.87	1.37	0.687
tert-Butylbenzene	98-06-6	1.37	U	6.87	1.37	0.687
Carbon disulfide	75-15-0	1.37	U	6.87	1.37	0.687
Carbon tetrachloride	56-23-5	1.37	U	6.87	1.37	0.687
Chlorobenzene	108-90-7	1.37	U	6.87	1.37	0.687
Chlorodibromomethane	124-48-1	1.37	U	6.87	1.37	0.687
Chloroethane	75-00-3	2.74	U	6.87	2.74	1.37
Chloroform	67-66-3	1.37	U	6.87	1.37	0.687
Chloromethane	74-87-3	5.50	U	13.7	5.50	2.75
2-Chlorotoluene	95-49-8	1.37	U	6.87	1.37	0.687
4-Chlorotoluene	106-43-4	1.37	U	6.87	1.37	0.687
1,2-Dibromo-3-chloropropane	96-12-8	5.50	U	13.7	5.50	2.75
1,2-Dibromoethane	106-93-4	1.37	U	6.87	1.37	0.687
Dibromomethane	74-95-3	1.37	U	6.87	1.37	0.687
1,2-Dichlorobenzene	95-50-1	1.37	U	6.87	1.37	0.687
1,3-Dichlorobenzene	541-73-1	1.37	U	6.87	1.37	0.687
1,4-Dichlorobenzene	106-46-7	1.37	U	6.87	1.37	0.687
Dichlorodifluoromethane	75-71-8	2.74	U	6.87	2.74	1.37
1,1-Dichloroethane	75-34-3	2.74	U	6.87	2.74	1.37
1,2-Dichloroethane	107-06-2	1.37	U	6.87	1.37	0.687
1,1-Dichloroethene	75-35-4	1.37	U	6.87	1.37	0.687
cis-1,2-Dichloroethene	156-59-2	1.37	U	6.87	1.37	0.687

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.37	U	6.87	1.37	0.687
1,2-Dichloropropane	78-87-5	1.37	U	6.87	1.37	0.687
1,3-Dichloropropane	142-28-9	1.37	U	6.87	1.37	0.687
2,2-Dichloropropane	594-20-7	1.37	U	6.87	1.37	0.687
cis-1,3-Dichloropropene	10061-01-5	1.37	U	6.87	1.37	0.687
trans-1,3-Dichloropropene	10061-02-6	1.37	U	6.87	1.37	0.687
1,1-Dichloropropene	563-58-6	1.37	U	6.87	1.37	0.687
Ethylbenzene	100-41-4	1.37	U	6.87	1.37	0.687
2-Hexanone	591-78-6	6.88	U	13.7	6.88	3.44
Hexachlorobutadiene	87-68-3	1.37	U	6.87	1.37	0.687
Isopropylbenzene	98-82-8	1.37	U	6.87	1.37	0.687
p-Isopropyltoluene	99-87-6	1.37	U	6.87	1.37	0.687
4-Methyl-2-pentanone	108-10-1	6.88	U	13.7	6.88	3.44
Methylene chloride	75-09-2	2.74	U	6.87	2.74	1.37
Naphthalene	91-20-3	1.37	U	6.87	1.37	0.687
n-Propylbenzene	103-65-1	1.37	U	6.87	1.37	0.687
Styrene	100-42-5	1.37	U	6.87	1.37	0.687
1,1,1,2-Tetrachloroethane	630-20-6	1.37	U	6.87	1.37	0.687
1,1,2,2-Tetrachloroethane	79-34-5	1.37	U	6.87	1.37	0.687
Tetrachloroethene	127-18-4	1.37	U	6.87	1.37	0.687
Toluene	108-88-3	1.37	U	6.87	1.37	0.687
1,2,3-Trichlorobenzene	87-61-6	1.37	U	6.87	1.37	0.687
1,2,4-Trichlorobenzene	120-82-1	1.37	U	6.87	1.37	0.687
1,1,1-Trichloroethane	71-55-6	1.37	U	6.87	1.37	0.687
1,1,2-Trichloroethane	79-00-5	1.37	U	6.87	1.37	0.687
Trichloroethene	79-01-6	1.37	U	6.87	1.37	0.687
Trichlorofluoromethane	75-69-4	2.74	U	6.87	2.74	1.37
1,2,3-Trichloropropane	96-18-4	2.74	U	6.87	2.74	1.37
1,2,4-Trimethylbenzene	95-63-6	1.37	U	6.87	1.37	0.687
1,3,5-Trimethylbenzene	108-67-8	1.37	U	6.87	1.37	0.687
Vinyl chloride	75-01-4	2.74	U	6.87	2.74	1.37
o-Xylene	95-47-6	1.37	U	6.87	1.37	0.687
m-,p-Xylene	179601-23-1	1.37	U	6.87	1.37	0.687

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.9	80	120	
1,2-Dichloroethane-d4	89.1	80	120	
Toluene-d8	97.7	85	115	
4-Bromofluorobenzene	100	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT12(5-5.5)070316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/09/2016 10:05
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560255	**Analyst:**	TMB	**Run Date:**	03/09/2016 18:11
Collect Date:	03/07/2016 14:35	**Dilution:**	1	**File ID:**	6M137689
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.9	U	23.7	11.9	5.93
Benzene	71-43-2	1.19	U	5.93	1.19	0.593
Bromobenzene	108-86-1	1.19	U	5.93	1.19	0.593
Bromochloromethane	74-97-5	2.38	U	5.93	2.38	1.19
Bromodichloromethane	75-27-4	1.19	U	5.93	1.19	0.593
Bromoform	75-25-2	1.19	U	5.93	1.19	0.593
Bromomethane	74-83-9	2.38	U	5.93	2.38	1.19
2-Butanone	78-93-3	5.94	U	11.9	5.94	2.97
n-Butylbenzene	104-51-8	1.19	U	5.93	1.19	0.593
sec-Butylbenzene	135-98-8	1.19	U	5.93	1.19	0.593
tert-Butylbenzene	98-06-6	1.19	U	5.93	1.19	0.593
Carbon disulfide	75-15-0	1.19	U	5.93	1.19	0.593
Carbon tetrachloride	56-23-5	1.19	U	5.93	1.19	0.593
Chlorobenzene	108-90-7	1.19	U	5.93	1.19	0.593
Chlorodibromomethane	124-48-1	1.19	U	5.93	1.19	0.593
Chloroethane	75-00-3	2.38	U	5.93	2.38	1.19
Chloroform	67-66-3	1.19	U	5.93	1.19	0.593
Chloromethane	74-87-3	4.74	U	11.9	4.74	2.37
2-Chlorotoluene	95-49-8	1.19	U	5.93	1.19	0.593
4-Chlorotoluene	106-43-4	1.19	U	5.93	1.19	0.593
1,2-Dibromo-3-chloropropane	96-12-8	4.74	U	11.9	4.74	2.37
1,2-Dibromoethane	106-93-4	1.19	U	5.93	1.19	0.593
Dibromomethane	74-95-3	1.19	U	5.93	1.19	0.593
1,2-Dichlorobenzene	95-50-1	1.19	U	5.93	1.19	0.593
1,3-Dichlorobenzene	541-73-1	1.19	U	5.93	1.19	0.593
1,4-Dichlorobenzene	106-46-7	1.19	U	5.93	1.19	0.593
Dichlorodifluoromethane	75-71-8	2.38	U	5.93	2.38	1.19
1,1-Dichloroethane	75-34-3	2.38	U	5.93	2.38	1.19
1,2-Dichloroethane	107-06-2	1.19	U	5.93	1.19	0.593
1,1-Dichloroethene	75-35-4	1.19	U	5.93	1.19	0.593
cis-1,2-Dichloroethene	156-59-2	1.19	U	5.93	1.19	0.593

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Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.19	U	5.93	1.19	0.593
1,2-Dichloropropane	78-87-5	1.19	U	5.93	1.19	0.593
1,3-Dichloropropane	142-28-9	1.19	U	5.93	1.19	0.593
2,2-Dichloropropane	594-20-7	1.19	U	5.93	1.19	0.593
cis-1,3-Dichloropropene	10061-01-5	1.19	U	5.93	1.19	0.593
trans-1,3-Dichloropropene	10061-02-6	1.19	U	5.93	1.19	0.593
1,1-Dichloropropene	563-58-6	1.19	U	5.93	1.19	0.593
Ethylbenzene	100-41-4	1.19	U	5.93	1.19	0.593
2-Hexanone	591-78-6	5.94	U	11.9	5.94	2.97
Hexachlorobutadiene	87-68-3	1.19	U	5.93	1.19	0.593
Isopropylbenzene	98-82-8	1.19	U	5.93	1.19	0.593
p-Isopropyltoluene	99-87-6	1.19	U	5.93	1.19	0.593
4-Methyl-2-pentanone	108-10-1	5.94	U	11.9	5.94	2.97
Methylene chloride	75-09-2	2.38	U	5.93	2.38	1.19
Naphthalene	91-20-3	1.19	U	5.93	1.19	0.593
n-Propylbenzene	103-65-1	1.19	U	5.93	1.19	0.593
Styrene	100-42-5	1.19	U	5.93	1.19	0.593
1,1,1,2-Tetrachloroethane	630-20-6	1.19	U	5.93	1.19	0.593
1,1,2,2-Tetrachloroethane	79-34-5	1.19	U	5.93	1.19	0.593
Tetrachloroethene	127-18-4	1.19	U	5.93	1.19	0.593
Toluene	108-88-3	1.19	U	5.93	1.19	0.593
1,2,3-Trichlorobenzene	87-61-6	1.19	U	5.93	1.19	0.593
1,2,4-Trichlorobenzene	120-82-1	1.19	U	5.93	1.19	0.593
1,1,1-Trichloroethane	71-55-6	1.19	U	5.93	1.19	0.593
1,1,2-Trichloroethane	79-00-5	1.19	U	5.93	1.19	0.593
Trichloroethene	79-01-6	1.19	U	5.93	1.19	0.593
Trichlorofluoromethane	75-69-4	2.38	U	5.93	2.38	1.19
1,2,3-Trichloropropane	96-18-4	2.38	U	5.93	2.38	1.19
1,2,4-Trimethylbenzene	95-63-6	1.19	U	5.93	1.19	0.593
1,3,5-Trimethylbenzene	108-67-8	1.19	U	5.93	1.19	0.593
Vinyl chloride	75-01-4	2.38	U	5.93	2.38	1.19
o-Xylene	95-47-6	1.19	U	5.93	1.19	0.593
m-,p-Xylene	179601-23-1	1.19	U	5.93	1.19	0.593

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.3	80	120	
1,2-Dichloroethane-d4	92.1	80	120	
Toluene-d8	96.8	85	115	
4-Bromofluorobenzene	98.6	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT12(8.5-9)070316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/09/2016 10:06
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560255	**Analyst:**	TMB	**Run Date:**	03/09/2016 18:44
Collect Date:	03/07/2016 14:40	**Dilution:**	1	**File ID:**	6M137690
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.1	U	26.3	13.1	6.57
Benzene	71-43-2	1.31	U	6.57	1.31	0.657
Bromobenzene	108-86-1	1.31	U	6.57	1.31	0.657
Bromochloromethane	74-97-5	2.62	U	6.57	2.62	1.31
Bromodichloromethane	75-27-4	1.31	U	6.57	1.31	0.657
Bromoform	75-25-2	1.31	U	6.57	1.31	0.657
Bromomethane	74-83-9	2.62	U	6.57	2.62	1.31
2-Butanone	78-93-3	6.56	U	13.1	6.56	3.28
n-Butylbenzene	104-51-8	1.31	U	6.57	1.31	0.657
sec-Butylbenzene	135-98-8	1.31	U	6.57	1.31	0.657
tert-Butylbenzene	98-06-6	1.31	U	6.57	1.31	0.657
Carbon disulfide	75-15-0	1.31	U	6.57	1.31	0.657
Carbon tetrachloride	56-23-5	1.31	U	6.57	1.31	0.657
Chlorobenzene	108-90-7	1.31	U	6.57	1.31	0.657
Chlorodibromomethane	124-48-1	1.31	U	6.57	1.31	0.657
Chloroethane	75-00-3	2.62	U	6.57	2.62	1.31
Chloroform	67-66-3	1.31	U	6.57	1.31	0.657
Chloromethane	74-87-3	5.26	U	13.1	5.26	2.63
2-Chlorotoluene	95-49-8	1.31	U	6.57	1.31	0.657
4-Chlorotoluene	106-43-4	1.31	U	6.57	1.31	0.657
1,2-Dibromo-3-chloropropane	96-12-8	5.26	U	13.1	5.26	2.63
1,2-Dibromoethane	106-93-4	1.31	U	6.57	1.31	0.657
Dibromomethane	74-95-3	1.31	U	6.57	1.31	0.657
1,2-Dichlorobenzene	95-50-1	1.31	U	6.57	1.31	0.657
1,3-Dichlorobenzene	541-73-1	1.31	U	6.57	1.31	0.657
1,4-Dichlorobenzene	106-46-7	1.31	U	6.57	1.31	0.657
Dichlorodifluoromethane	75-71-8	2.62	U	6.57	2.62	1.31
1,1-Dichloroethane	75-34-3	2.62	U	6.57	2.62	1.31
1,2-Dichloroethane	107-06-2	1.31	U	6.57	1.31	0.657
1,1-Dichloroethene	75-35-4	1.31	U	6.57	1.31	0.657
cis-1,2-Dichloroethene	156-59-2	1.31	U	6.57	1.31	0.657

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Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.31	U	6.57	1.31	0.657
1,2-Dichloropropane	78-87-5	1.31	U	6.57	1.31	0.657
1,3-Dichloropropane	142-28-9	1.31	U	6.57	1.31	0.657
2,2-Dichloropropane	594-20-7	1.31	U	6.57	1.31	0.657
cis-1,3-Dichloropropene	10061-01-5	1.31	U	6.57	1.31	0.657
trans-1,3-Dichloropropene	10061-02-6	1.31	U	6.57	1.31	0.657
1,1-Dichloropropene	563-58-6	1.31	U	6.57	1.31	0.657
Ethylbenzene	100-41-4	1.31	U	6.57	1.31	0.657
2-Hexanone	591-78-6	6.56	U	13.1	6.56	3.28
Hexachlorobutadiene	87-68-3	1.31	U	6.57	1.31	0.657
Isopropylbenzene	98-82-8	1.31	U	6.57	1.31	0.657
p-Isopropyltoluene	99-87-6	1.31	U	6.57	1.31	0.657
4-Methyl-2-pentanone	108-10-1	6.56	U	13.1	6.56	3.28
Methylene chloride	75-09-2	2.62	U	6.57	2.62	1.31
Naphthalene	91-20-3	1.31	U	6.57	1.31	0.657
n-Propylbenzene	103-65-1	1.31	U	6.57	1.31	0.657
Styrene	100-42-5	1.31	U	6.57	1.31	0.657
1,1,1,2-Tetrachloroethane	630-20-6	1.31	U	6.57	1.31	0.657
1,1,2,2-Tetrachloroethane	79-34-5	1.31	U	6.57	1.31	0.657
Tetrachloroethene	127-18-4	1.31	U	6.57	1.31	0.657
Toluene	108-88-3	1.31	U	6.57	1.31	0.657
1,2,3-Trichlorobenzene	87-61-6	1.31	U	6.57	1.31	0.657
1,2,4-Trichlorobenzene	120-82-1	1.31	U	6.57	1.31	0.657
1,1,1-Trichloroethane	71-55-6	1.31	U	6.57	1.31	0.657
1,1,2-Trichloroethane	79-00-5	1.31	U	6.57	1.31	0.657
Trichloroethene	79-01-6	1.31	U	6.57	1.31	0.657
Trichlorofluoromethane	75-69-4	2.62	U	6.57	2.62	1.31
1,2,3-Trichloropropane	96-18-4	2.62	U	6.57	2.62	1.31
1,2,4-Trimethylbenzene	95-63-6	1.31	U	6.57	1.31	0.657
1,3,5-Trimethylbenzene	108-67-8	1.31	U	6.57	1.31	0.657
Vinyl chloride	75-01-4	2.62	U	6.57	2.62	1.31
o-Xylene	95-47-6	1.31	U	6.57	1.31	0.657
m-,p-Xylene	179601-23-1	1.31	U	6.57	1.31	0.657

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.4	80	120	
1,2-Dichloroethane-d4	88.1	80	120	
Toluene-d8	98.3	85	115	
4-Bromofluorobenzene	100	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT12(18-18.5)070316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/09/2016 10:08
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560255	**Analyst:**	TMB	**Run Date:**	03/09/2016 21:30
Collect Date:	03/07/2016 14:45	**Dilution:**	1	**File ID:**	6M137695
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.3	U	26.7	13.3	6.66
Benzene	71-43-2	1.33	U	6.66	1.33	0.666
Bromobenzene	108-86-1	1.33	U	6.66	1.33	0.666
Bromochloromethane	74-97-5	2.66	U	6.66	2.66	1.33
Bromodichloromethane	75-27-4	1.33	U	6.66	1.33	0.666
Bromoform	75-25-2	1.33	U	6.66	1.33	0.666
Bromomethane	74-83-9	2.66	U	6.66	2.66	1.33
2-Butanone	78-93-3	6.66	U	13.3	6.66	3.33
n-Butylbenzene	104-51-8	1.33	U	6.66	1.33	0.666
sec-Butylbenzene	135-98-8	1.33	U	6.66	1.33	0.666
tert-Butylbenzene	98-06-6	1.33	U	6.66	1.33	0.666
Carbon disulfide	75-15-0	1.33	U	6.66	1.33	0.666
Carbon tetrachloride	56-23-5	1.33	U	6.66	1.33	0.666
Chlorobenzene	108-90-7	1.33	U	6.66	1.33	0.666
Chlorodibromomethane	124-48-1	1.33	U	6.66	1.33	0.666
Chloroethane	75-00-3	2.66	U	6.66	2.66	1.33
Chloroform	67-66-3	1.33	U	6.66	1.33	0.666
Chloromethane	74-87-3	5.34	U	13.3	5.34	2.67
2-Chlorotoluene	95-49-8	1.33	U	6.66	1.33	0.666
4-Chlorotoluene	106-43-4	1.33	U	6.66	1.33	0.666
1,2-Dibromo-3-chloropropane	96-12-8	5.34	U	13.3	5.34	2.67
1,2-Dibromoethane	106-93-4	1.33	U	6.66	1.33	0.666
Dibromomethane	74-95-3	1.33	U	6.66	1.33	0.666
1,2-Dichlorobenzene	95-50-1	1.33	U	6.66	1.33	0.666
1,3-Dichlorobenzene	541-73-1	1.33	U	6.66	1.33	0.666
1,4-Dichlorobenzene	106-46-7	1.33	U	6.66	1.33	0.666
Dichlorodifluoromethane	75-71-8	2.66	U	6.66	2.66	1.33
1,1-Dichloroethane	75-34-3	2.66	U	6.66	2.66	1.33
1,2-Dichloroethane	107-06-2	1.33	U	6.66	1.33	0.666
1,1-Dichloroethene	75-35-4	1.33	U	6.66	1.33	0.666
cis-1,2-Dichloroethene	156-59-2	1.33	U	6.66	1.33	0.666

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.33	U	6.66	1.33	0.666
1,2-Dichloropropane	78-87-5	1.33	U	6.66	1.33	0.666
1,3-Dichloropropane	142-28-9	1.33	U	6.66	1.33	0.666
2,2-Dichloropropane	594-20-7	1.33	U	6.66	1.33	0.666
cis-1,3-Dichloropropene	10061-01-5	1.33	U	6.66	1.33	0.666
trans-1,3-Dichloropropene	10061-02-6	1.33	U	6.66	1.33	0.666
1,1-Dichloropropene	563-58-6	1.33	U	6.66	1.33	0.666
Ethylbenzene	100-41-4	1.33	U	6.66	1.33	0.666
2-Hexanone	591-78-6	6.66	U	13.3	6.66	3.33
Hexachlorobutadiene	87-68-3	1.33	U	6.66	1.33	0.666
Isopropylbenzene	98-82-8	1.33	U	6.66	1.33	0.666
p-Isopropyltoluene	99-87-6	1.33	U	6.66	1.33	0.666
4-Methyl-2-pentanone	108-10-1	6.66	U	13.3	6.66	3.33
Methylene chloride	75-09-2	2.66	U	6.66	2.66	1.33
Naphthalene	91-20-3	1.33	U	6.66	1.33	0.666
n-Propylbenzene	103-65-1	1.33	U	6.66	1.33	0.666
Styrene	100-42-5	1.33	U	6.66	1.33	0.666
1,1,1,2-Tetrachloroethane	630-20-6	1.33	U	6.66	1.33	0.666
1,1,2,2-Tetrachloroethane	79-34-5	1.33	U	6.66	1.33	0.666
Tetrachloroethene	127-18-4	1.33	U	6.66	1.33	0.666
Toluene	108-88-3	1.33	U	6.66	1.33	0.666
1,2,3-Trichlorobenzene	87-61-6	1.33	U	6.66	1.33	0.666
1,2,4-Trichlorobenzene	120-82-1	1.33	U	6.66	1.33	0.666
1,1,1-Trichloroethane	71-55-6	1.33	U	6.66	1.33	0.666
1,1,2-Trichloroethane	79-00-5	1.33	U	6.66	1.33	0.666
Trichloroethene	79-01-6	50.0		6.66	1.33	0.666
Trichlorofluoromethane	75-69-4	2.66	U	6.66	2.66	1.33
1,2,3-Trichloropropane	96-18-4	2.66	U	6.66	2.66	1.33
1,2,4-Trimethylbenzene	95-63-6	1.33	U	6.66	1.33	0.666
1,3,5-Trimethylbenzene	108-67-8	1.33	U	6.66	1.33	0.666
Vinyl chloride	75-01-4	2.66	U	6.66	2.66	1.33
o-Xylene	95-47-6	1.33	U	6.66	1.33	0.666
m-,p-Xylene	179601-23-1	1.33	U	6.66	1.33	0.666

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.5	80	120	
1,2-Dichloroethane-d4	89.7	80	120	
Toluene-d8	97.4	85	115	
4-Bromofluorobenzene	99.9	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT12(12-12.5)070316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/09/2016 10:09
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560255	**Analyst:**	TMB	**Run Date:**	03/09/2016 20:57
Collect Date:	03/07/2016 15:00	**Dilution:**	1	**File ID:**	6M137694
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	77.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.5	U	27.0	13.5	6.75
Benzene	71-43-2	1.35	U	6.75	1.35	0.675
Bromobenzene	108-86-1	1.35	U	6.75	1.35	0.675
Bromochloromethane	74-97-5	2.70	U	6.75	2.70	1.35
Bromodichloromethane	75-27-4	1.35	U	6.75	1.35	0.675
Bromoform	75-25-2	1.35	U	6.75	1.35	0.675
Bromomethane	74-83-9	2.70	U	6.75	2.70	1.35
2-Butanone	78-93-3	6.76	U	13.5	6.76	3.38
n-Butylbenzene	104-51-8	1.35	U	6.75	1.35	0.675
sec-Butylbenzene	135-98-8	1.35	U	6.75	1.35	0.675
tert-Butylbenzene	98-06-6	1.35	U	6.75	1.35	0.675
Carbon disulfide	75-15-0	1.35	U	6.75	1.35	0.675
Carbon tetrachloride	56-23-5	1.35	U	6.75	1.35	0.675
Chlorobenzene	108-90-7	1.35	U	6.75	1.35	0.675
Chlorodibromomethane	124-48-1	1.35	U	6.75	1.35	0.675
Chloroethane	75-00-3	2.70	U	6.75	2.70	1.35
Chloroform	67-66-3	1.35	U	6.75	1.35	0.675
Chloromethane	74-87-3	5.40	U	13.5	5.40	2.70
2-Chlorotoluene	95-49-8	1.35	U	6.75	1.35	0.675
4-Chlorotoluene	106-43-4	1.35	U	6.75	1.35	0.675
1,2-Dibromo-3-chloropropane	96-12-8	5.40	U	13.5	5.40	2.70
1,2-Dibromoethane	106-93-4	1.35	U	6.75	1.35	0.675
Dibromomethane	74-95-3	1.35	U	6.75	1.35	0.675
1,2-Dichlorobenzene	95-50-1	1.35	U	6.75	1.35	0.675
1,3-Dichlorobenzene	541-73-1	1.35	U	6.75	1.35	0.675
1,4-Dichlorobenzene	106-46-7	1.35	U	6.75	1.35	0.675
Dichlorodifluoromethane	75-71-8	2.70	U	6.75	2.70	1.35
1,1-Dichloroethane	75-34-3	2.70	U	6.75	2.70	1.35
1,2-Dichloroethane	107-06-2	1.35	U	6.75	1.35	0.675
1,1-Dichloroethene	75-35-4	1.35	U	6.75	1.35	0.675
cis-1,2-Dichloroethene	156-59-2	1.35	U	6.75	1.35	0.675

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.35	U	6.75	1.35	0.675
1,2-Dichloropropane	78-87-5	1.35	U	6.75	1.35	0.675
1,3-Dichloropropane	142-28-9	1.35	U	6.75	1.35	0.675
2,2-Dichloropropane	594-20-7	1.35	U	6.75	1.35	0.675
cis-1,3-Dichloropropene	10061-01-5	1.35	U	6.75	1.35	0.675
trans-1,3-Dichloropropene	10061-02-6	1.35	U	6.75	1.35	0.675
1,1-Dichloropropene	563-58-6	1.35	U	6.75	1.35	0.675
Ethylbenzene	100-41-4	1.35	U	6.75	1.35	0.675
2-Hexanone	591-78-6	6.76	U	13.5	6.76	3.38
Hexachlorobutadiene	87-68-3	1.35	U	6.75	1.35	0.675
Isopropylbenzene	98-82-8	1.35	U	6.75	1.35	0.675
p-Isopropyltoluene	99-87-6	1.35	U	6.75	1.35	0.675
4-Methyl-2-pentanone	108-10-1	6.76	U	13.5	6.76	3.38
Methylene chloride	75-09-2	2.70	U	6.75	2.70	1.35
Naphthalene	91-20-3	1.35	U	6.75	1.35	0.675
n-Propylbenzene	103-65-1	1.35	U	6.75	1.35	0.675
Styrene	100-42-5	1.35	U	6.75	1.35	0.675
1,1,1,2-Tetrachloroethane	630-20-6	1.35	U	6.75	1.35	0.675
1,1,2,2-Tetrachloroethane	79-34-5	1.35	U	6.75	1.35	0.675
Tetrachloroethene	127-18-4	1.35	U	6.75	1.35	0.675
Toluene	108-88-3	1.35	U	6.75	1.35	0.675
1,2,3-Trichlorobenzene	87-61-6	1.35	U	6.75	1.35	0.675
1,2,4-Trichlorobenzene	120-82-1	1.35	U	6.75	1.35	0.675
1,1,1-Trichloroethane	71-55-6	1.35	U	6.75	1.35	0.675
1,1,2-Trichloroethane	79-00-5	1.35	U	6.75	1.35	0.675
Trichloroethene	79-01-6	6.14	J	6.75	1.35	0.675
Trichlorofluoromethane	75-69-4	2.70	U	6.75	2.70	1.35
1,2,3-Trichloropropane	96-18-4	2.70	U	6.75	2.70	1.35
1,2,4-Trimethylbenzene	95-63-6	1.35	U	6.75	1.35	0.675
1,3,5-Trimethylbenzene	108-67-8	1.35	U	6.75	1.35	0.675
Vinyl chloride	75-01-4	2.70	U	6.75	2.70	1.35
o-Xylene	95-47-6	1.35	U	6.75	1.35	0.675
m-,p-Xylene	179601-23-1	1.35	U	6.75	1.35	0.675

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.4	80	120	
1,2-Dichloroethane-d4	94.3	80	120	
Toluene-d8	96.5	85	115	
4-Bromofluorobenzene	99.0	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT13(5-5.5)070316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/09/2016 10:10
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560255	**Analyst:**	TMB	**Run Date:**	03/09/2016 19:18
Collect Date:	03/07/2016 16:00	**Dilution:**	1	**File ID:**	6M137691
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	25.0	12.5	6.24
Benzene	71-43-2	1.25	U	6.24	1.25	0.624
Bromobenzene	108-86-1	1.25	U	6.24	1.25	0.624
Bromochloromethane	74-97-5	2.50	U	6.24	2.50	1.25
Bromodichloromethane	75-27-4	1.25	U	6.24	1.25	0.624
Bromoform	75-25-2	1.25	U	6.24	1.25	0.624
Bromomethane	74-83-9	2.50	U	6.24	2.50	1.25
2-Butanone	78-93-3	6.24	U	12.5	6.24	3.12
n-Butylbenzene	104-51-8	1.25	U	6.24	1.25	0.624
sec-Butylbenzene	135-98-8	1.25	U	6.24	1.25	0.624
tert-Butylbenzene	98-06-6	1.25	U	6.24	1.25	0.624
Carbon disulfide	75-15-0	1.25	U	6.24	1.25	0.624
Carbon tetrachloride	56-23-5	1.25	U	6.24	1.25	0.624
Chlorobenzene	108-90-7	1.25	U	6.24	1.25	0.624
Chlorodibromomethane	124-48-1	1.25	U	6.24	1.25	0.624
Chloroethane	75-00-3	2.50	U	6.24	2.50	1.25
Chloroform	67-66-3	1.25	U	6.24	1.25	0.624
Chloromethane	74-87-3	5.00	U	12.5	5.00	2.50
2-Chlorotoluene	95-49-8	1.25	U	6.24	1.25	0.624
4-Chlorotoluene	106-43-4	1.25	U	6.24	1.25	0.624
1,2-Dibromo-3-chloropropane	96-12-8	5.00	U	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	6.24	1.25	0.624
Dibromomethane	74-95-3	1.25	U	6.24	1.25	0.624
1,2-Dichlorobenzene	95-50-1	1.25	U	6.24	1.25	0.624
1,3-Dichlorobenzene	541-73-1	1.25	U	6.24	1.25	0.624
1,4-Dichlorobenzene	106-46-7	1.25	U	6.24	1.25	0.624
Dichlorodifluoromethane	75-71-8	2.50	U	6.24	2.50	1.25
1,1-Dichloroethane	75-34-3	2.50	U	6.24	2.50	1.25
1,2-Dichloroethane	107-06-2	1.25	U	6.24	1.25	0.624
1,1-Dichloroethene	75-35-4	1.25	U	6.24	1.25	0.624
cis-1,2-Dichloroethene	156-59-2	1.25	U	6.24	1.25	0.624

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.25	U	6.24	1.25	0.624
1,2-Dichloropropane	78-87-5	1.25	U	6.24	1.25	0.624
1,3-Dichloropropane	142-28-9	1.25	U	6.24	1.25	0.624
2,2-Dichloropropane	594-20-7	1.25	U	6.24	1.25	0.624
cis-1,3-Dichloropropene	10061-01-5	1.25	U	6.24	1.25	0.624
trans-1,3-Dichloropropene	10061-02-6	1.25	U	6.24	1.25	0.624
1,1-Dichloropropene	563-58-6	1.25	U	6.24	1.25	0.624
Ethylbenzene	100-41-4	1.25	U	6.24	1.25	0.624
2-Hexanone	591-78-6	6.24	U	12.5	6.24	3.12
Hexachlorobutadiene	87-68-3	1.25	U	6.24	1.25	0.624
Isopropylbenzene	98-82-8	1.25	U	6.24	1.25	0.624
p-Isopropyltoluene	99-87-6	1.25	U	6.24	1.25	0.624
4-Methyl-2-pentanone	108-10-1	6.24	U	12.5	6.24	3.12
Methylene chloride	75-09-2	2.50	U	6.24	2.50	1.25
Naphthalene	91-20-3	1.25	U	6.24	1.25	0.624
n-Propylbenzene	103-65-1	1.25	U	6.24	1.25	0.624
Styrene	100-42-5	1.25	U	6.24	1.25	0.624
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	6.24	1.25	0.624
1,1,2,2-Tetrachloroethane	79-34-5	1.25	U	6.24	1.25	0.624
Tetrachloroethene	127-18-4	1.25	U	6.24	1.25	0.624
Toluene	108-88-3	1.25	U	6.24	1.25	0.624
1,2,3-Trichlorobenzene	87-61-6	1.25	U	6.24	1.25	0.624
1,2,4-Trichlorobenzene	120-82-1	1.25	U	6.24	1.25	0.624
1,1,1-Trichloroethane	71-55-6	1.25	U	6.24	1.25	0.624
1,1,2-Trichloroethane	79-00-5	1.25	U	6.24	1.25	0.624
Trichloroethene	79-01-6	1.25	U	6.24	1.25	0.624
Trichlorofluoromethane	75-69-4	2.50	U	6.24	2.50	1.25
1,2,3-Trichloropropane	96-18-4	2.50	U	6.24	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	6.24	1.25	0.624
1,3,5-Trimethylbenzene	108-67-8	1.25	U	6.24	1.25	0.624
Vinyl chloride	75-01-4	2.50	U	6.24	2.50	1.25
o-Xylene	95-47-6	1.25	U	6.24	1.25	0.624
m-,p-Xylene	179601-23-1	1.25	U	6.24	1.25	0.624

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.5	80	120	
1,2-Dichloroethane-d4	86.9	80	120	
Toluene-d8	98.1	85	115	
4-Bromofluorobenzene	99.9	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT13(12-12.5)070316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/09/2016 10:10
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560255	**Analyst:**	TMB	**Run Date:**	03/09/2016 19:51
Collect Date:	03/07/2016 16:05	**Dilution:**	1	**File ID:**	6M137692
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.3	U	22.6	11.3	5.64
Benzene	71-43-2	1.13	U	5.64	1.13	0.564
Bromobenzene	108-86-1	1.13	U	5.64	1.13	0.564
Bromochloromethane	74-97-5	2.26	U	5.64	2.26	1.13
Bromodichloromethane	75-27-4	1.13	U	5.64	1.13	0.564
Bromoform	75-25-2	1.13	U	5.64	1.13	0.564
Bromomethane	74-83-9	2.26	U	5.64	2.26	1.13
2-Butanone	78-93-3	5.64	U	11.3	5.64	2.82
n-Butylbenzene	104-51-8	1.13	U	5.64	1.13	0.564
sec-Butylbenzene	135-98-8	1.13	U	5.64	1.13	0.564
tert-Butylbenzene	98-06-6	1.13	U	5.64	1.13	0.564
Carbon disulfide	75-15-0	1.13	U	5.64	1.13	0.564
Carbon tetrachloride	56-23-5	1.13	U	5.64	1.13	0.564
Chlorobenzene	108-90-7	1.13	U	5.64	1.13	0.564
Chlorodibromomethane	124-48-1	1.13	U	5.64	1.13	0.564
Chloroethane	75-00-3	2.26	U	5.64	2.26	1.13
Chloroform	67-66-3	1.13	U	5.64	1.13	0.564
Chloromethane	74-87-3	4.52	U	11.3	4.52	2.26
2-Chlorotoluene	95-49-8	1.13	U	5.64	1.13	0.564
4-Chlorotoluene	106-43-4	1.13	U	5.64	1.13	0.564
1,2-Dibromo-3-chloropropane	96-12-8	4.52	U	11.3	4.52	2.26
1,2-Dibromoethane	106-93-4	1.13	U	5.64	1.13	0.564
Dibromomethane	74-95-3	1.13	U	5.64	1.13	0.564
1,2-Dichlorobenzene	95-50-1	1.13	U	5.64	1.13	0.564
1,3-Dichlorobenzene	541-73-1	1.13	U	5.64	1.13	0.564
1,4-Dichlorobenzene	106-46-7	1.13	U	5.64	1.13	0.564
Dichlorodifluoromethane	75-71-8	2.26	U	5.64	2.26	1.13
1,1-Dichloroethane	75-34-3	2.26	U	5.64	2.26	1.13
1,2-Dichloroethane	107-06-2	1.13	U	5.64	1.13	0.564
1,1-Dichloroethene	75-35-4	1.13	U	5.64	1.13	0.564
cis-1,2-Dichloroethene	156-59-2	1.13	U	5.64	1.13	0.564

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Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.13	U	5.64	1.13	0.564
1,2-Dichloropropane	78-87-5	1.13	U	5.64	1.13	0.564
1,3-Dichloropropane	142-28-9	1.13	U	5.64	1.13	0.564
2,2-Dichloropropane	594-20-7	1.13	U	5.64	1.13	0.564
cis-1,3-Dichloropropene	10061-01-5	1.13	U	5.64	1.13	0.564
trans-1,3-Dichloropropene	10061-02-6	1.13	U	5.64	1.13	0.564
1,1-Dichloropropene	563-58-6	1.13	U	5.64	1.13	0.564
Ethylbenzene	100-41-4	1.13	U	5.64	1.13	0.564
2-Hexanone	591-78-6	5.64	U	11.3	5.64	2.82
Hexachlorobutadiene	87-68-3	1.13	U	5.64	1.13	0.564
Isopropylbenzene	98-82-8	1.13	U	5.64	1.13	0.564
p-Isopropyltoluene	99-87-6	1.13	U	5.64	1.13	0.564
4-Methyl-2-pentanone	108-10-1	5.64	U	11.3	5.64	2.82
Methylene chloride	75-09-2	2.26	U	5.64	2.26	1.13
Naphthalene	91-20-3	1.13	U	5.64	1.13	0.564
n-Propylbenzene	103-65-1	1.13	U	5.64	1.13	0.564
Styrene	100-42-5	1.13	U	5.64	1.13	0.564
1,1,1,2-Tetrachloroethane	630-20-6	1.13	U	5.64	1.13	0.564
1,1,2,2-Tetrachloroethane	79-34-5	1.13	U	5.64	1.13	0.564
Tetrachloroethene	127-18-4	1.13	U	5.64	1.13	0.564
Toluene	108-88-3	1.13	U	5.64	1.13	0.564
1,2,3-Trichlorobenzene	87-61-6	1.13	U	5.64	1.13	0.564
1,2,4-Trichlorobenzene	120-82-1	1.13	U	5.64	1.13	0.564
1,1,1-Trichloroethane	71-55-6	1.13	U	5.64	1.13	0.564
1,1,2-Trichloroethane	79-00-5	1.13	U	5.64	1.13	0.564
Trichloroethene	79-01-6	1.13	U	5.64	1.13	0.564
Trichlorofluoromethane	75-69-4	2.26	U	5.64	2.26	1.13
1,2,3-Trichloropropane	96-18-4	2.26	U	5.64	2.26	1.13
1,2,4-Trimethylbenzene	95-63-6	1.13	U	5.64	1.13	0.564
1,3,5-Trimethylbenzene	108-67-8	1.13	U	5.64	1.13	0.564
Vinyl chloride	75-01-4	2.26	U	5.64	2.26	1.13
o-Xylene	95-47-6	1.13	U	5.64	1.13	0.564
m-,p-Xylene	179601-23-1	1.13	U	5.64	1.13	0.564

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	89.8	80	120	
1,2-Dichloroethane-d4	83.1	80	120	
Toluene-d8	98.5	85	115	
4-Bromofluorobenzene	100	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT13(17-17.5)070316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/09/2016 10:12
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560255	**Analyst:**	TMB	**Run Date:**	03/09/2016 20:24
Collect Date:	03/07/2016 16:10	**Dilution:**	1	**File ID:**	6M137693
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	76.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	14.1	U	28.1	14.1	7.04
Benzene	71-43-2	1.41	U	7.04	1.41	0.704
Bromobenzene	108-86-1	1.41	U	7.04	1.41	0.704
Bromochloromethane	74-97-5	2.82	U	7.04	2.82	1.41
Bromodichloromethane	75-27-4	1.41	U	7.04	1.41	0.704
Bromoform	75-25-2	1.41	U	7.04	1.41	0.704
Bromomethane	74-83-9	2.82	U	7.04	2.82	1.41
2-Butanone	78-93-3	7.04	U	14.1	7.04	3.52
n-Butylbenzene	104-51-8	1.41	U	7.04	1.41	0.704
sec-Butylbenzene	135-98-8	1.41	U	7.04	1.41	0.704
tert-Butylbenzene	98-06-6	1.41	U	7.04	1.41	0.704
Carbon disulfide	75-15-0	1.41	U	7.04	1.41	0.704
Carbon tetrachloride	56-23-5	1.41	U	7.04	1.41	0.704
Chlorobenzene	108-90-7	1.41	U	7.04	1.41	0.704
Chlorodibromomethane	124-48-1	1.41	U	7.04	1.41	0.704
Chloroethane	75-00-3	2.82	U	7.04	2.82	1.41
Chloroform	67-66-3	1.41	U	7.04	1.41	0.704
Chloromethane	74-87-3	5.62	U	14.1	5.62	2.81
2-Chlorotoluene	95-49-8	1.41	U	7.04	1.41	0.704
4-Chlorotoluene	106-43-4	1.41	U	7.04	1.41	0.704
1,2-Dibromo-3-chloropropane	96-12-8	5.62	U	14.1	5.62	2.81
1,2-Dibromoethane	106-93-4	1.41	U	7.04	1.41	0.704
Dibromomethane	74-95-3	1.41	U	7.04	1.41	0.704
1,2-Dichlorobenzene	95-50-1	1.41	U	7.04	1.41	0.704
1,3-Dichlorobenzene	541-73-1	1.41	U	7.04	1.41	0.704
1,4-Dichlorobenzene	106-46-7	1.41	U	7.04	1.41	0.704
Dichlorodifluoromethane	75-71-8	2.82	U	7.04	2.82	1.41
1,1-Dichloroethane	75-34-3	2.82	U	7.04	2.82	1.41
1,2-Dichloroethane	107-06-2	1.41	U	7.04	1.41	0.704
1,1-Dichloroethene	75-35-4	1.41	U	7.04	1.41	0.704
cis-1,2-Dichloroethene	156-59-2	1.41	U	7.04	1.41	0.704

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.41	U	7.04	1.41	0.704
1,2-Dichloropropane	78-87-5	1.41	U	7.04	1.41	0.704
1,3-Dichloropropane	142-28-9	1.41	U	7.04	1.41	0.704
2,2-Dichloropropane	594-20-7	1.41	U	7.04	1.41	0.704
cis-1,3-Dichloropropene	10061-01-5	1.41	U	7.04	1.41	0.704
trans-1,3-Dichloropropene	10061-02-6	1.41	U	7.04	1.41	0.704
1,1-Dichloropropene	563-58-6	1.41	U	7.04	1.41	0.704
Ethylbenzene	100-41-4	1.41	U	7.04	1.41	0.704
2-Hexanone	591-78-6	7.04	U	14.1	7.04	3.52
Hexachlorobutadiene	87-68-3	1.41	U	7.04	1.41	0.704
Isopropylbenzene	98-82-8	1.41	U	7.04	1.41	0.704
p-Isopropyltoluene	99-87-6	1.41	U	7.04	1.41	0.704
4-Methyl-2-pentanone	108-10-1	7.04	U	14.1	7.04	3.52
Methylene chloride	75-09-2	2.82	U	7.04	2.82	1.41
Naphthalene	91-20-3	1.41	U	7.04	1.41	0.704
n-Propylbenzene	103-65-1	1.41	U	7.04	1.41	0.704
Styrene	100-42-5	1.41	U	7.04	1.41	0.704
1,1,1,2-Tetrachloroethane	630-20-6	1.41	U	7.04	1.41	0.704
1,1,2,2-Tetrachloroethane	79-34-5	1.41	U	7.04	1.41	0.704
Tetrachloroethene	127-18-4	1.41	U	7.04	1.41	0.704
Toluene	108-88-3	1.41	U	7.04	1.41	0.704
1,2,3-Trichlorobenzene	87-61-6	1.41	U	7.04	1.41	0.704
1,2,4-Trichlorobenzene	120-82-1	1.41	U	7.04	1.41	0.704
1,1,1-Trichloroethane	71-55-6	1.41	U	7.04	1.41	0.704
1,1,2-Trichloroethane	79-00-5	1.41	U	7.04	1.41	0.704
Trichloroethene	79-01-6	1.41	U	7.04	1.41	0.704
Trichlorofluoromethane	75-69-4	2.82	U	7.04	2.82	1.41
1,2,3-Trichloropropane	96-18-4	2.82	U	7.04	2.82	1.41
1,2,4-Trimethylbenzene	95-63-6	1.41	U	7.04	1.41	0.704
1,3,5-Trimethylbenzene	108-67-8	1.41	U	7.04	1.41	0.704
Vinyl chloride	75-01-4	2.82	U	7.04	2.82	1.41
o-Xylene	95-47-6	1.41	U	7.04	1.41	0.704
m-,p-Xylene	179601-23-1	1.41	U	7.04	1.41	0.704

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.2	80	120	
1,2-Dichloroethane-d4	87.1	80	120	
Toluene-d8	98.6	85	115	
4-Bromofluorobenzene	101	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.
VOA Preparation/Preservation/Extraction Log

Batch #: WG560249
Method: 5030B/5030C/5035
Product: 8260

Analyst: AWE
Run Date: 03/09/2016 10:01
Purge and trap methanol COA18540
Purified Lab Sand Lot # COA18552

SAMPLE #	Fraction	Collected	Preserved	PCT-S	Tare Wt	Total Wt	Sample Wt	Water	MeOH	Vt	Comments
L16030366-01	A	03/04/16 15:00	03/09/16 10:01	79.1			4.97	5		5	
L16030366-02	A	03/04/16 16:00	03/09/16 10:02	81.7			4.59	5		5	
L16030366-03	A	03/07/16 11:50	03/09/16 10:03	82.9			4.82	5		5	
L16030366-04	A	03/07/16 11:55	03/09/16 10:03	79.5			4.82	5		5	
L16030366-05	A	03/07/16 12:00	03/09/16 10:04	79.2			4.59	5		5	
L16030366-06	A	03/07/16 14:35	03/09/16 10:05	83.6			5.04	5		5	
L16030366-07	A	03/07/16 14:40	03/09/16 10:06	79.3			4.80	5		5	
L16030366-08	A	03/07/16 14:45	03/09/16 10:08	81.2			4.62	5		5	
L16030366-09	A	03/07/16 15:00	03/09/16 10:09	77.6			4.77	5		5	
L16030366-10	A	03/07/16 16:00	03/09/16 10:10	85.3			4.70	5		5	
L16030366-11	A	03/07/16 16:05	03/09/16 10:10	81.2			5.46	5		5	
L16030366-12	A	03/07/16 16:10	03/09/16 10:12	76.9			4.62	5		5	
WG560249-01	A		03/09/16 10:06	79.3			4.80	5		5	
WG560249-02	A		03/09/16 10:07	79.3			4.98	5		5	
WG560249-03	A		03/09/16 10:07	79.3			5.36	5		5	

Comments:
1 = improperly sealed cap
2 = preserved out of hold
3 = effervesced
4 = preserved with NaHSO4
5 = preserved by freezing
6 = preserved in field

Analyst: Andrew Casey

VOA_EXT - Modified 05/22/2008
PDF ID: 4662450
Report generated: 03/09/2016 10:12

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 022616
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Method: 8260C SOP: MSV01-C Rev: 2
Maintenance Log ID:

Internal Standard: STD74756 Surrogate Standard: STD74756
CCV: STD74897 LCS: STD74755 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG558920

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M137521	RINSE	NA	7	1		02/26/16 12:22
6M137522	WG558920-01 50ng BFB STD 8260	NA	7	1	STD74606	02/26/16 13:16
6M137523	WG558920-02 0.5ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 13:41
6M137524	WG558920-03 1ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 14:13
6M137525	WG558920-04 2ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 14:46
6M137526	WG558920-05 5ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 15:26
6M137527	WG558920-06 10ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 15:58
6M137528	WG558920-07 20ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 16:30
6M137529	WG558920-08 50ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 17:03
6M137530	WG558920-09 100ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 17:35
6M137531	WG558920-10 200ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 18:07
6M137532	WG558920-11 300ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 18:39
6M137533	RINSE	NA	7	1		02/26/16 19:11
6M137534	RINSE	NA	7	1		02/26/16 19:43
6M137535	WG558920-12 50ug/Kg ALT SRC STD 826	NA	7	1	STD74755	02/26/16 20:15
6M137536	RINSE	NA	7	1		02/26/16 20:48

Comments

Seq.	Rerun	Dil.	Reason	Analytes
15				
File ID: 6M137535				
Surrogates are spiked at 25 not 50.				

Approved: March 02, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 030916
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD74902 Surrogate Standard: STD74902
CCV: STD75017 LCS: STD74973 MS/MSD: STD74973

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG560255

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M137675	WG560254-01 50ng BFB STD 8260	NA	7	1	STD75004	03/09/16 10:29
6M137676	WG560254-02 50ug/Kg CCV STD 8260	NA	7	1	STD75017	03/09/16 10:55
6M137677	WG560254-02 50ug/Kg CCV STD 8260	NA	7	1	STD75017	03/09/16 11:29
6M137678	WG000000-01 100ug/Kg a9 CCV STD 826	NA	7	1	STD74831	03/09/16 12:02
6M137679	WG560255-01 VBLK0309 BLANK STD 826	NA	7	1		03/09/16 12:36
6M137680	WG560255-02 20ug/Kg LCS STD 8260	NA	7	1	STD74973	03/09/16 13:09
6M137681	WG560249-02 MS 366-07 8260 4.98g	NA	7	1	STD74973	03/09/16 13:43
6M137682	WG560249-03 MSD 366-07 8260 5.36g	NA	7	1	STD74973	03/09/16 14:17
6M137683	RINSE	NA	7	1		03/09/16 14:49
6M137684	L16030366-01 8260 4.97g	NA	7	1		03/09/16 15:23
6M137685	L16030366-02 8260 4.59g	NA	7	1		03/09/16 15:57
6M137686	L16030366-03 8260 4.82g	NA	7	1		03/09/16 16:31
6M137687	L16030366-04 8260 4.82g	NA	7	1		03/09/16 17:04
6M137688	L16030366-05 8260 4.59g	NA	7	1		03/09/16 17:37
6M137689	L16030366-06 8260 5.04g	NA	7	1		03/09/16 18:11
6M137690	WG560249-01 L16030366-07 8260 4.80g	NA	7	1		03/09/16 18:44
6M137691	L16030366-10 8260 4.70g	NA	7	1		03/09/16 19:18
6M137692	L16030366-11 8260 5.46g	NA	7	1		03/09/16 19:51
6M137693	L16030366-12 8260 4.62g	NA	7	1		03/09/16 20:24
6M137694	L16030366-09 8260 4.77g	NA	7	1		03/09/16 20:57
6M137695	L16030366-08 8260 4.62g	NA	7	1		03/09/16 21:30
6M137696	L16030470-01 C 100X 826-SPE	NA	7	50		03/09/16 22:03
6M137697	L16030470-02 C 100X 826-SPE	NA	7	50		03/09/16 22:36
6M137698	L16030471-01 C 100X 826-SPE	NA	7	50		03/09/16 23:09
6M137699	L16030471-02 C 100X 826-SPE	NA	7	50		03/09/16 23:42
6M137700	RINSE	NA	7	1		03/10/16 00:15
6M137701	RINSE	NA	7	1		03/10/16 00:47

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 6M137676				
Chloromethane was low, DNR.				

Approved: March 10, 2016

Sarah Vandenberg

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 030916
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD74902 Surrogate Standard: STD74902
CCV: STD75017 LCS: STD74973 MS/MSD: STD74973

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG560255

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
4				
File ID: 6M137678				
	Not needed, DNR.			

Approved: March 10, 2016

Sarah Vandenberg

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 26-FEB-2016
Analyst: TMB
Analyst: NA
Method: 8260B/C
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 73548
Analytical Workgroups: WG558920

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	NA
TCL Hits	NA
Spectra of TCL Hits	NA
Surrogates	NA
Internal Standards Criteria	NA
Library Searches	NA
Calculations & Correct Factors	NA
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
29-FEB-2016
Tiffany Bailey

Secondary Reviewer:
02-MAR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-02-2016 12:31:18

Microbac Laboratories Inc.

Data Checklist

Date: 09-MAR-2016
Analyst: TMB
Analyst: NA
Method: 8260B
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 73742
Analytical Workgroups: WG560255

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
10-MAR-2016
Tiffany Bailey

Secondary Reviewer:
10-MAR-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-10-2016 10:11:51

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG560255

Login Number: L16030366

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18DPT11(5-5.5)040316	01	03/04/16					03/09/2016	4.8	14		03/09/16	5	14	
18DPT11(15-15.5)040316	02	03/04/16					03/09/2016	4.8	14		03/09/16	5	14	
18DPT11(20-20.5)070316	03	03/07/16					03/09/2016	1.9	14		03/09/16	2.2	14	
18DPT11(29-29.5)070316	04	03/07/16					03/09/2016	1.9	14		03/09/16	2.2	14	
18DPT11(25-25.5)070316	05	03/07/16					03/09/2016	1.9	14		03/09/16	2.2	14	
18DPT12(5-5.5)070316	06	03/07/16					03/09/2016	1.8	14		03/09/16	2.2	14	
18DPT12(8.5-9)070316	07	03/07/16					03/09/2016	1.8	14		03/09/16	2.2	14	
18DPT12(18-18.5)070316	08	03/07/16					03/09/2016	1.8	14		03/09/16	2.3	14	
18DPT12(12-12.5)070316	09	03/07/16					03/09/2016	1.8	14		03/09/16	2.2	14	
18DPT13(5-5.5)070316	10	03/07/16					03/09/2016	1.8	14		03/09/16	2.1	14	
18DPT13(12-12.5)070316	11	03/07/16					03/09/2016	1.8	14		03/09/16	2.2	14	
18DPT13(17-17.5)070316	12	03/07/16					03/09/2016	1.8	14		03/09/16	2.2	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4664134
Report generated 03/10/2016 10:09

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16030366
Instrument Id: HPMS6
Workgroup (AAB#): WG560255

Method: 8260
CAL ID: HPMS6-26-FEB-16
Matrix: Soil

Sample Number	Dilution	Tag	1	2	3	4
L16030366-01	1.00	01	84.9	90.3	100	99.8
L16030366-02	1.00	01	86.7	92.2	99.3	98.9
L16030366-03	1.00	01	87.7	92.4	99.3	98.0
L16030366-04	1.00	01	89.6	92.6	101	98.0
L16030366-05	1.00	01	89.1	91.9	100	97.7
L16030366-06	1.00	01	92.1	93.3	98.6	96.8
L16030366-07	1.00	01	88.1	92.4	100	98.3
L16030366-08	1.00	01	89.7	91.5	99.9	97.4
L16030366-09	1.00	01	94.3	93.4	99.0	96.5
L16030366-10	1.00	01	86.9	92.5	99.9	98.1
L16030366-11	1.00	01	83.1	89.8	100	98.5
L16030366-12	1.00	01	87.1	91.2	101	98.6
WG560255-01	1.00	01	86.1	92.2	101	98.1
WG560255-02	1.00	01	85.2	91.2	101	98.2

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	80	-	120
2 - Dibromofluoromethane	80	-	120
3 - 4-Bromofluorobenzene	85	-	120
4 - Toluene-d8	85	-	115

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4664140
Report generated: 03/10/2016 10:09

METHOD BLANK SUMMARY

Login Number: L16030366
Blank File ID: 6M137679
Prep Date: 03/09/16 12:36
Analyzed Date: 03/09/16 12:36
Analyst: TMB

Work Group: WG560255
Blank Sample ID: WG560255-01
Instrument ID: HPMS6
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG560255-02	6M137680	03/09/16 13:09	01
18DPT11(5-5.5)040316	L16030366-01	6M137684	03/09/16 15:23	01
18DPT11(15-15.5)040316	L16030366-02	6M137685	03/09/16 15:57	01
18DPT11(20-20.5)070316	L16030366-03	6M137686	03/09/16 16:31	01
18DPT11(29-29.5)070316	L16030366-04	6M137687	03/09/16 17:04	01
18DPT11(25-25.5)070316	L16030366-05	6M137688	03/09/16 17:37	01
18DPT12(5-5.5)070316	L16030366-06	6M137689	03/09/16 18:11	01
18DPT12(8.5-9)070316	L16030366-07	6M137690	03/09/16 18:44	01
18DPT13(5-5.5)070316	L16030366-10	6M137691	03/09/16 19:18	01
18DPT13(12-12.5)070316	L16030366-11	6M137692	03/09/16 19:51	01
18DPT13(17-17.5)070316	L16030366-12	6M137693	03/09/16 20:24	01
18DPT12(12-12.5)070316	L16030366-09	6M137694	03/09/16 20:57	01
18DPT12(18-18.5)070316	L16030366-08	6M137695	03/09/16 21:30	01

Report Name: BLANK_SUMMARY
PDF File ID: 4664215
Report generated 03/10/2016 10:09

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16030366 Prep Date: 03/09/16 12:36 Sample ID: WG560255-01
Instrument ID: HPMS6 Run Date: 03/09/16 12:36 Prep Method: 5030B/5030C/503
File ID: 6M137679 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG560255 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS6-26-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	5.00	20.0	5.00	1	U
Benzene	0.500	5.00	0.500	1	U
Bromobenzene	0.500	5.00	0.500	1	U
Bromochloromethane	1.00	5.00	1.00	1	U
Bromodichloromethane	0.500	5.00	0.500	1	U
Bromoform	0.500	5.00	0.500	1	U
Bromomethane	1.00	5.00	1.00	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.500	5.00	0.500	1	U
sec-Butylbenzene	0.500	5.00	0.500	1	U
tert-Butylbenzene	0.500	5.00	0.500	1	U
Carbon disulfide	0.500	5.00	0.500	1	U
Carbon tetrachloride	0.500	5.00	0.500	1	U
Chlorobenzene	0.500	5.00	0.500	1	U
Chlorodibromomethane	0.500	5.00	0.500	1	U
Chloroethane	1.00	5.00	1.00	1	U
Chloroform	0.500	5.00	0.500	1	U
Chloromethane	2.00	10.0	2.00	1	U
2-Chlorotoluene	0.500	5.00	0.500	1	U
4-Chlorotoluene	0.500	5.00	0.500	1	U
1,2-Dibromo-3-chloropropane	2.00	10.0	2.00	1	U
1,2-Dibromoethane	0.500	5.00	0.500	1	U
Dibromomethane	0.500	5.00	0.500	1	U
1,2-Dichlorobenzene	0.500	5.00	0.500	1	U
1,3-Dichlorobenzene	0.500	5.00	0.500	1	U
1,4-Dichlorobenzene	0.500	5.00	0.500	1	U
Dichlorodifluoromethane	1.00	5.00	1.00	1	U
1,1-Dichloroethane	1.00	5.00	1.00	1	U
1,2-Dichloroethane	0.500	5.00	0.500	1	U
1,1-Dichloroethene	0.500	5.00	0.500	1	U
cis-1,2-Dichloroethene	0.500	5.00	0.500	1	U
trans-1,2-Dichloroethene	0.500	5.00	0.500	1	U
1,2-Dichloropropane	0.500	5.00	0.500	1	U
1,3-Dichloropropane	0.500	5.00	0.500	1	U
2,2-Dichloropropane	0.500	5.00	0.500	1	U
cis-1,3-Dichloropropene	0.500	5.00	0.500	1	U
trans-1,3-Dichloropropene	0.500	5.00	0.500	1	U
1,1-Dichloropropene	0.500	5.00	0.500	1	U
Ethylbenzene	0.500	5.00	0.500	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.500	5.00	0.500	1	U
Isopropylbenzene	0.500	5.00	0.500	1	U

Report Name:BLANK
PDF ID: 4664216
10-MAR-2016 10:09

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16030366 Prep Date: 03/09/16 12:36 Sample ID: WG560255-01
Instrument ID: HPMS6 Run Date: 03/09/16 12:36 Prep Method: 5030B/5030C/503
File ID: 6M137679 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG560255 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS6-26-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.500	5.00	0.500	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	1.00	5.00	1.00	1	U
Naphthalene	0.500	5.00	0.500	1	U
n-Propylbenzene	0.500	5.00	0.500	1	U
Styrene	0.500	5.00	0.500	1	U
1,1,1,2-Tetrachloroethane	0.500	5.00	0.500	1	U
1,1,2,2-Tetrachloroethane	0.500	5.00	0.500	1	U
Tetrachloroethene	0.500	5.00	0.500	1	U
Toluene	0.500	5.00	0.500	1	U
1,2,3-Trichlorobenzene	0.500	5.00	0.500	1	U
1,2,4-Trichlorobenzene	0.500	5.00	0.500	1	U
1,1,1-Trichloroethane	0.500	5.00	0.500	1	U
1,1,2-Trichloroethane	0.500	5.00	0.500	1	U
Trichloroethene	0.500	5.00	0.500	1	U
Trichlorofluoromethane	1.00	5.00	1.00	1	U
1,2,3-Trichloropropane	1.00	5.00	1.00	1	U
1,2,4-Trimethylbenzene	0.500	5.00	0.500	1	U
1,3,5-Trimethylbenzene	0.500	5.00	0.500	1	U
Vinyl chloride	1.00	5.00	1.00	1	U
o-Xylene	0.500	5.00	0.500	1	U
m-,p-Xylene	0.500	5.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	92.2	80 - 120	PASS
1,2-Dichloroethane-d4	86.1	80 - 120	PASS
Toluene-d8	98.1	85 - 115	PASS
4-Bromofluorobenzene	101	85 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4664216
10-MAR-2016 10:09

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030366 Run Date: 03/09/2016 Sample ID: WG560255-02
Instrument ID: HPMS6 Run Time: 13:09 Prep Method: 5030B/5030C/503
File ID: 6M137680 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG560255 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD74973 Cal ID: HPMS6-26-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	21.0	105	20 - 160	
Benzene	20.0	19.5	97.3	75 - 125	
Bromobenzene	20.0	19.7	98.3	65 - 120	
Bromochloromethane	20.0	19.6	97.9	70 - 125	
Bromodichloromethane	20.0	19.0	95.0	70 - 130	
Bromoform	20.0	17.3	86.4	55 - 135	
Bromomethane	20.0	20.1	100	30 - 160	
2-Butanone	20.0	21.8	109	30 - 160	
n-Butylbenzene	20.0	17.0	85.1	65 - 140	
sec-Butylbenzene	20.0	18.9	94.7	65 - 130	
tert-Butylbenzene	20.0	20.0	99.9	65 - 130	
Carbon disulfide	20.0	19.9	99.3	45 - 160	
Carbon tetrachloride	20.0	18.7	93.5	65 - 135	
Chlorobenzene	20.0	19.8	99.1	75 - 125	
Chlorodibromomethane	20.0	18.9	94.7	65 - 130	
Chloroethane	20.0	21.2	106	40 - 155	
Chloroform	20.0	19.0	94.9	70 - 125	
Chloromethane	20.0	15.5	77.5	50 - 130	
2-Chlorotoluene	20.0	19.7	98.7	70 - 130	
4-Chlorotoluene	20.0	19.9	99.6	75 - 125	
1,2-Dibromo-3-chloropropane	20.0	20.9	105	40 - 135	
1,2-Dibromoethane	20.0	19.9	99.5	70 - 125	
Dibromomethane	20.0	18.6	93.2	75 - 130	
1,2-Dichlorobenzene	20.0	19.9	99.3	75 - 120	
1,3-Dichlorobenzene	20.0	19.2	95.9	70 - 125	
1,4-Dichlorobenzene	20.0	19.2	96.0	70 - 125	
Dichlorodifluoromethane	20.0	17.8	89.1	35 - 135	
1,1-Dichloroethane	20.0	18.9	94.5	75 - 125	
1,2-Dichloroethane	20.0	19.1	95.3	70 - 135	
1,1-Dichloroethene	20.0	19.2	95.9	65 - 135	
cis-1,2-Dichloroethene	20.0	20.5	103	65 - 125	
trans-1,2-Dichloroethene	20.0	20.6	103	65 - 135	
1,2-Dichloropropane	20.0	20.7	104	70 - 120	
1,3-Dichloropropane	20.0	21.0	105	75 - 125	
2,2-Dichloropropane	20.0	19.7	98.6	65 - 135	
cis-1,3-Dichloropropene	20.0	21.4	107	70 - 125	
trans-1,3-Dichloropropene	20.0	19.3	96.6	65 - 125	
1,1-Dichloropropene	20.0	19.7	98.4	70 - 135	
Ethylbenzene	20.0	19.4	97.1	75 - 125	
2-Hexanone	20.0	22.0	110	45 - 145	
Hexachlorobutadiene	20.0	18.0	90.2	55 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4664135
Report generated: 03/10/2016 10:09

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030366 Run Date: 03/09/2016 Sample ID: WG560255-02
Instrument ID: HPMS6 Run Time: 13:09 Prep Method: 5030B/5030C/503
File ID: 6M137680 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG560255 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD74973 Cal ID: HPMS6-26-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	20.0	99.8	75 - 130	
p-Isopropyltoluene	20.0	18.8	93.8	75 - 135	
4-Methyl-2-pentanone	20.0	22.8	114	45 - 145	
Methylene chloride	20.0	20.1	100	55 - 140	
Naphthalene	20.0	19.9	99.3	40 - 125	
n-Propylbenzene	20.0	19.6	97.8	65 - 135	
Styrene	20.0	20.1	100	75 - 125	
1,1,1,2-Tetrachloroethane	20.0	19.1	95.7	75 - 125	
1,1,2,2-Tetrachloroethane	20.0	20.7	104	55 - 130	
Tetrachloroethene	20.0	19.0	94.8	65 - 140	
Toluene	20.0	19.5	97.4	70 - 125	
1,2,3-Trichlorobenzene	20.0	19.0	94.8	60 - 135	
1,2,4-Trichlorobenzene	20.0	18.9	94.7	65 - 130	
1,1,1-Trichloroethane	20.0	19.2	96.1	70 - 135	
1,1,2-Trichloroethane	20.0	20.0	100	60 - 125	
Trichloroethene	20.0	20.7	103	75 - 125	
Trichlorofluoromethane	20.0	17.5	87.5	25 - 185	
1,2,3-Trichloropropane	20.0	21.4	107	65 - 130	
1,2,4-Trimethylbenzene	20.0	18.8	93.9	65 - 135	
1,3,5-Trimethylbenzene	20.0	19.5	97.7	65 - 135	
Vinyl chloride	20.0	18.1	90.7	60 - 125	
o-Xylene	20.0	21.1	105	75 - 125	
m-,p-Xylene	40.0	39.2	98.0	80 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	91.2	80 - 120	PASS
1,2-Dichloroethane-d4	85.2	80 - 120	PASS
Toluene-d8	98.2	85 - 115	PASS
4-Bromofluorobenzene	101	85 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4664135
Report generated: 03/10/2016 10:09

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16030366 Cal ID: HPMS6 - Worknum: WG560255
Instrument ID: HPMS6 Contract #: Method: 8260B
Parent ID: WG560249-01 File ID: 6M137690 Dil: 1 Matrix: SOLID
Sample ID: WG560249-02 MS File ID: 6M137681 Dil: 1 Units: ug/kg
Sample ID: WG560249-03 MSD File ID: 6M137682 Dil: 1 Percent Solid: 79.3

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,1,1,2-Tetrachloroethane	ND	25.3	23.6	93.3	23.5	19.9	84.8	16.9	75 - 125	30	
1,1,1-Trichloroethane	ND	25.3	25.0	98.6	23.5	21.0	89.5	17.0	70 - 135	30	
1,1,2,2-Tetrachloroethane	ND	25.3	24.7	97.5	23.5	20.5	87.0	18.7	55 - 130	30	
1,1,2-Trichloroethane	ND	25.3	24.8	98.0	23.5	20.6	87.6	18.5	60 - 125	30	
1,1-Dichloroethane	ND	25.3	24.0	94.7	23.5	19.9	84.7	18.5	75 - 125	30	
1,1-Dichloroethene	ND	25.3	24.7	97.6	23.5	21.0	89.1	16.4	65 - 135	30	
1,1-Dichloropropene	ND	25.3	26.1	103	23.5	21.5	91.4	19.5	70 - 135	30	
1,2,3-Trichlorobenzene	ND	25.3	25.0	98.9	23.5	20.5	87.0	20.1	60 - 135	30	
1,2,3-Trichloropropane	ND	25.3	25.8	102	23.5	20.3	86.2	23.9	65 - 130	30	
1,2,4-Trichlorobenzene	ND	25.3	25.3	99.8	23.5	20.8	88.2	19.6	65 - 130	30	
1,2,4-Trimethylbenzene	ND	25.3	25.7	101	23.5	21.6	92.0	17.1	65 - 135	30	
1,2-Dibromo-3-chloropropane	ND	25.3	22.9	90.4	23.5	19.6	83.3	15.5	40 - 135	30	
1,2-Dibromoethane	ND	25.3	24.4	96.4	23.5	19.9	84.6	20.3	70 - 125	30	
1,2-Dichlorobenzene	ND	25.3	25.7	102	23.5	21.5	91.3	18.1	75 - 120	30	
1,2-Dichloroethane	ND	25.3	23.5	92.7	23.5	19.8	84.2	17.0	70 - 135	30	
1,2-Dichloropropane	ND	25.3	26.2	104	23.5	21.6	91.7	19.5	70 - 120	30	
1,3,5-Trimethylbenzene	ND	25.3	26.8	106	23.5	22.7	96.4	16.6	65 - 135	30	
1,3-Dichlorobenzene	ND	25.3	25.8	102	23.5	21.6	91.9	17.6	70 - 125	30	
1,3-Dichloropropane	ND	25.3	25.7	101	23.5	21.4	91.1	18.1	75 - 125	30	
1,4-Dichlorobenzene	ND	25.3	25.3	100	23.5	21.3	90.8	17.0	70 - 125	30	
2,2-Dichloropropane	ND	25.3	26.0	103	23.5	21.9	93.2	17.1	65 - 135	30	
2-Butanone	ND	25.3	25.7	101	23.5	21.1	89.8	19.5	30 - 160	30	
2-Chlorotoluene	ND	25.3	26.2	104	23.5	22.2	94.5	16.5	70 - 130	30	
2-Hexanone	ND	25.3	25.5	101	23.5	21.2	90.3	18.1	45 - 145	30	
4-Chlorotoluene	ND	25.3	26.8	106	23.5	22.5	95.7	17.5	75 - 125	30	
4-Methyl-2-pentanone	ND	25.3	27.4	108	23.5	22.8	97.0	18.1	45 - 145	30	
Acetone	ND	25.3	24.5	96.6	23.5	21.2	90.1	14.3	20 - 160	30	
Benzene	ND	25.3	24.5	96.9	23.5	20.9	88.9	15.9	75 - 125	30	
Bromobenzene	ND	25.3	25.0	98.6	23.5	21.4	91.1	15.3	65 - 120	30	
Bromochloromethane	ND	25.3	24.8	98.1	23.5	20.5	87.3	19.0	70 - 125	30	
Bromodichloromethane	ND	25.3	23.7	93.7	23.5	20.3	86.2	15.7	70 - 130	30	
Bromoform	ND	25.3	21.5	85.1	23.5	17.5	74.5	20.5	55 - 135	30	
Bromomethane	ND	25.3	25.0	98.6	23.5	20.1	85.3	21.7	30 - 160	30	
Carbon disulfide	ND	25.3	24.9	98.4	23.5	22.1	93.9	12.0	45 - 160	30	
Carbon tetrachloride	ND	25.3	25.0	98.8	23.5	20.9	88.7	18.1	65 - 135	30	
Chlorobenzene	ND	25.3	25.8	102	23.5	21.5	91.2	18.5	75 - 125	30	
Chlorodibromomethane	ND	25.3	23.2	91.8	23.5	19.8	84.0	16.3	65 - 130	30	
Chloroethane	ND	25.3	26.4	104	23.5	21.8	92.9	18.8	40 - 155	30	
Chloroform	ND	25.3	23.7	93.7	23.5	19.9	84.8	17.3	70 - 125	30	

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4664136
Report generated 03/10/2016 09:13

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16030366 Cal ID: HPMS6 Worknum: WG560255
Instrument ID: HPMS6 Contract #: Method: 8260B
Parent ID: WG560249-01 File ID: 6M137690 Dil: 1 Matrix: SOLID
Sample ID: WG560249-02 MS File ID: 6M137681 Dil: 1 Units: ug/kg
Sample ID: WG560249-03 MSD File ID: 6M137682 Dil: 1 Percent Solid: 79.3

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chloromethane	ND	25.3	19.3	76.1	23.5	15.6	66.4	21.0	50 - 130	30	
Dibromomethane	ND	25.3	23.2	91.5	23.5	19.3	81.9	18.4	75 - 130	30	
Dichlorodifluoromethane	ND	25.3	23.4	92.4	23.5	19.3	82.0	19.3	35 - 135	30	
Ethylbenzene	ND	25.3	26.1	103	23.5	21.7	92.3	18.3	75 - 125	30	
Hexachlorobutadiene	ND	25.3	27.7	110	23.5	23.5	100	16.4	55 - 140	30	
Isopropylbenzene	ND	25.3	27.0	107	23.5	23.2	98.6	15.3	75 - 130	30	
Methylene chloride	ND	25.3	25.7	101	23.5	21.1	89.6	19.7	55 - 140	30	
Naphthalene	ND	25.3	24.1	95.4	23.5	19.9	84.6	19.3	40 - 125	30	
Styrene	ND	25.3	26.1	103	23.5	22.2	94.6	16.0	75 - 125	30	
Tetrachloroethene	ND	25.3	26.0	103	23.5	22.0	93.6	16.4	65 - 140	30	
Toluene	ND	25.3	25.1	99.2	23.5	21.5	91.4	15.5	70 - 125	30	
Trichloroethene	ND	25.3	27.2	107	23.5	22.6	95.9	18.5	75 - 125	30	
Trichlorofluoromethane	ND	25.3	23.4	92.6	23.5	19.7	83.8	17.3	25 - 185	30	
Vinyl chloride	ND	25.3	24.2	95.5	23.5	20.4	86.8	16.9	60 - 125	30	
cis-1,2-Dichloroethene	ND	25.3	25.4	100	23.5	21.5	91.3	16.8	65 - 125	30	
cis-1,3-Dichloropropene	ND	25.3	27.1	107	23.5	22.8	97.1	17.2	70 - 125	30	
m-,p-Xylene	ND	50.6	52.5	104	47.0	44.0	93.4	17.6	80 - 125	30	
n-Butylbenzene	ND	25.3	26.2	103	23.5	21.9	93.2	17.7	65 - 140	30	
n-Propylbenzene	ND	25.3	27.6	109	23.5	23.3	98.9	16.9	65 - 135	30	
o-Xylene	ND	25.3	27.2	107	23.5	23.3	98.9	15.5	75 - 125	30	
p-Isopropyltoluene	ND	25.3	27.1	107	23.5	23.2	98.8	15.5	75 - 135	30	
sec-Butylbenzene	ND	25.3	27.7	109	23.5	23.7	101	15.6	65 - 130	30	
tert-Butylbenzene	ND	25.3	27.8	110	23.5	24.2	103	13.9	65 - 130	30	
trans-1,2-Dichloroethene	ND	25.3	26.5	105	23.5	22.0	93.4	18.8	65 - 135	30	
trans-1,3-Dichloropropene	ND	25.3	23.8	94.0	23.5	20.3	86.1	16.0	65 - 125	30	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4664136
Report generated 03/10/2016 09:13

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16030366
Instrument: HPMS6
Analyst: TMB
Workgroup: WG558920

Tune ID: WG558920-01
Run Date: 02/26/2016
Run Time: 13:16
File ID: 6M137522
Cal ID: HPMS6 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	25.4	9030	PASS
75.0	95.0	30.0	60.0	55.4	19666	PASS
95.0	95.0	100	100	100	35512	PASS
96.0	95.0	5.00	9.00	7.25	2576	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	73.2	26011	PASS
175	174	5.00	9.00	7.36	1914	PASS
176	174	95.0	101	96.1	24992	PASS
177	176	5.00	9.00	6.64	1660	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG558920-02	STD-S	01	02/26/2016 13:41	
WG558920-03	STD-S	01	02/26/2016 14:13	
WG558920-04	STD-S	01	02/26/2016 14:46	
WG558920-05	STD-S	01	02/26/2016 15:26	
WG558920-06	STD-S	01	02/26/2016 15:58	
WG558920-07	STD-S	01	02/26/2016 16:30	
WG558920-08	STD-CCV-S	01	02/26/2016 17:03	
WG558920-09	STD-S	01	02/26/2016 17:35	
WG558920-10	STD-S	01	02/26/2016 18:07	
WG558920-11	STD-S	01	02/26/2016 18:39	
WG558920-12	SSCV-S	01	02/26/2016 20:15	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4664138
Report generated 03/10/2016 10:09

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16030366
Instrument: HPMS6
Analyst: TMB
Workgroup: WG560254

Tune ID: WG560254-01
Run Date: 03/09/2016
Run Time: 10:29
File ID: 6M137675
Cal ID: HPMS6 - 26-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.0	8570	PASS
75.0	95.0	30.0	60.0	50.2	20514	PASS
95.0	95.0	100	100	100	40885	PASS
96.0	95.0	5.00	9.00	6.69	2737	PASS
173	174	0	2.00	0.398	124	PASS
174	95.0	50.0	100	76.2	31152	PASS
175	174	5.00	9.00	7.58	2362	PASS
176	174	95.0	101	100	31210	PASS
177	176	5.00	9.00	6.69	2088	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG560254-02	CCV-S	01	03/09/2016 11:29	
WG560255-01	BLANK	01	03/09/2016 12:36	
WG560255-02	LCS	01	03/09/2016 13:09	
WG560249-02	MS	01	03/09/2016 13:43	
WG560249-03	MSD	01	03/09/2016 14:17	
L16030366-01	18DPT11(5-5.5)040316	01	03/09/2016 15:23	
L16030366-02	18DPT11(15-15.5)040316	01	03/09/2016 15:57	
L16030366-03	18DPT11(20-20.5)070316	01	03/09/2016 16:31	
L16030366-04	18DPT11(29-29.5)070316	01	03/09/2016 17:04	
L16030366-05	18DPT11(25-25.5)070316	01	03/09/2016 17:37	
L16030366-06	18DPT12(5-5.5)070316	01	03/09/2016 18:11	
L16030366-07	18DPT12(8.5-9)070316	01	03/09/2016 18:44	
L16030366-10	18DPT13(5-5.5)070316	01	03/09/2016 19:18	
L16030366-11	18DPT13(12-12.5)070316	01	03/09/2016 19:51	
L16030366-12	18DPT13(17-17.5)070316	01	03/09/2016 20:24	
L16030366-09	18DPT12(12-12.5)070316	01	03/09/2016 20:57	
L16030366-08	18DPT12(18-18.5)070316	01	03/09/2016 21:30	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4664138
Report generated 03/10/2016 10:09

Calibration Table Report
Method: 826_SL.M
Title: 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Calibration: Mon Feb 29 15:59:52 2016
Curve: WG558920
Calibration Files

	Compound	0.5 6M137523.D	1 6M137524.D	2 6M137525.D	5 6M137526.D	10 6M137527.D	20 6M137528.D	50 6M137529.D	100 6M137530.D	200 6M137531.D	300 6M137532.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.386	0.437	0.426	0.515	0.537	0.438	0.464	0.471	0.459	10.647		
P	Chloromethane			0.578	0.509	0.480	0.500	0.503	0.398	0.425	0.436	0.479	11.984		
C	Vinyl Chloride			0.371	0.405	0.376	0.415	0.431	0.353	0.374	0.357	0.385	7.341		
T	1,3-Butadiene				0.369	0.322	0.361	0.344	0.289	0.282	0.277	0.320	11.982		
T	Bromomethane			0.192	0.207	0.206	0.215	0.213	0.184	0.207	0.218	0.205	5.643		
T	Chloroethane			0.199	0.219	0.208	0.232	0.244	0.202	0.219	0.224	0.218	6.941		
T	Trichlorofluoromethane			0.535	0.557	0.513	0.525	0.558	0.462	0.490	0.501	0.518	6.398		
T	Diethyl ether		0.243	0.231	0.234	0.251	0.241	0.233	0.233		0.238	0.238	2.758		
T	Isoprene				0.333	0.322	0.327	0.355	0.334	0.338	0.351	0.337	3.613		
T	Acrolein		0.044	0.045	0.044	0.050	0.045	0.042	0.045		0.047	0.045	5.301		
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.199	0.268	0.248	0.256	0.277	0.230	0.245	0.252	0.247	9.700		
T	Acetone					0.152	0.130	0.112	0.104	0.110	0.106	0.119	15.588	0.999	
C	1,1-Dichloroethene			0.380	0.462	0.424	0.453	0.487	0.410	0.439	0.447	0.438	7.530		
T	Tert-Butyl Alcohol		0.039	0.035	0.040	0.044	0.044	0.040	0.040		0.044	0.041	7.378		
T	Dimethyl Sulfide				0.204	0.210	0.197	0.223	0.210	0.218	0.224	0.212	4.669		
T	Iodomethane				0.056	0.082	0.123	0.197	0.197	0.211	0.207	0.153	42.723	0.998	
T	Methyl acetate				0.309	0.317	0.309	0.308	0.292	0.293	0.300	0.304	3.023		
T	Methylene Chloride			0.256	0.273	0.264	0.268	0.287	0.242	0.257	0.260	0.264	5.015		
T	Carbon Disulfide			0.821	0.880	0.808	0.840	0.872	0.808	0.825	0.844	0.837	3.273		
T	Acrylonitrile		0.108	0.114	0.119	0.133	0.128	0.130	0.129		0.140	0.125	8.391		
T	Methyl Tert Butyl Ether	0.732	0.693	0.663	0.725	0.773	0.787	0.833	0.734	0.785	0.799	0.753	6.930		
T	trans-1,2-Dichloroethene			0.227	0.244	0.240	0.247	0.265	0.226	0.240	0.244	0.242	5.097		
T	n-Hexane			0.407	0.452	0.430	0.435	0.466	0.433	0.438	0.452	0.439	4.050		
T	Diisopropyl ether		1.143	1.120	1.122	1.188	1.168	1.117	1.121		1.127	1.138	2.317		
T	Vinyl Acetate				0.493	0.583	0.630	0.596	0.570	0.626	0.621	0.588	8.090		
P	1,1-Dichloroethane			0.484	0.538	0.522	0.539	0.568	0.484	0.514	0.521	0.521	5.427		
T	Ethyl-Tert-Butyl ether		0.841	0.891	0.897	0.963	0.947	0.909	0.912		0.938	0.912	4.185		
T	2-Butanone				0.186	0.176	0.176	0.169	0.161	0.170	0.172	0.173	4.334		
T	Propionitrile		0.047	0.045	0.045	0.051	0.050	0.048	0.047		0.049	0.048	4.489		
T	2,2-Dichloropropane			0.413	0.427	0.425	0.415	0.454	0.383	0.410	0.420	0.418	4.750		
T	cis-1,2-Dichloroethene			0.265	0.274	0.263	0.275	0.290	0.250	0.269	0.273	0.270	4.259		
C	Chloroform			0.502	0.499	0.475	0.499	0.520	0.443	0.476	0.481	0.487	4.825		
T	1-Bromopropane				0.033	0.034	0.037	0.040	0.037	0.038	0.039	0.037	7.440		
T	Bromochloromethane			0.151	0.148	0.152	0.165	0.176	0.151	0.162	0.164	0.159	6.123		
T	Tetrahydrofuran		0.173	0.111	0.113	0.121	0.123	0.115	0.112		0.116	0.123	16.774	0.998	
S	Dibromofluoromethane			0.280	0.265	0.272	0.276	0.272	0.253	0.265	0.262	0.268	3.189		
T	1,1,1-Trichloroethane			0.412	0.417	0.434	0.435	0.474	0.398	0.430	0.438	0.430	5.218		
T	Cyclohexane			0.396	0.493	0.473	0.495	0.533	0.492	0.499	0.519	0.487	8.433		
T	1,1-Dichloropropene			0.306	0.372	0.338	0.347	0.383	0.324	0.345	0.355	0.346	7.125		
T	Tert-Amyl-Methyl ether		0.664	0.687	0.706	0.759	0.757	0.723	0.732		0.762	0.724	4.986		
T	Carbon Tetrachloride			0.351	0.409	0.4	0.412	0.445	0.378	0.403	0.416	0.4017	6.9015		
S	1,2-Dichloroethane-d4			0.36	0.365	0.337	0.366	0.353	0.329	0.34	0.336	0.3482	4.16		
T	Heptane											0	0		
T	1,2-Dichloroethane			0.387	0.414	0.422	0.43	0.449	0.388	0.415	0.419	0.4154	4.951		
T	Benzene	1.229	1.128	1.036	1.038	1.011	1.023	1.078	0.921	0.973	0.979	1.0416	8.3738		
T	Trichloroethene			0.223	0.257	0.243	0.254	0.268	0.229	0.245	0.249	0.2461	6.0218		
T	Methylcyclohexane			0.321	0.406	0.387	0.403	0.435	0.401	0.406	0.424	0.3978	8.6044		
C	1,2-Dichloropropane			0.249	0.279	0.277	0.29	0.305	0.266	0.286	0.29	0.2802	6.0373		
T	1,4-Dioxane			0.002	0.003	0.003	0.003	0.003	0.003		0.004	0.0031	18.585	0.996	
T	Bromodichloromethane			0.336	0.359	0.35	0.37	0.402	0.352	0.384	0.39	0.3678	6.1125		
T	Dibromomethane			0.145	0.152	0.16	0.169	0.185	0.158	0.171	0.173	0.1639	7.836		
T	2-Chloroethyl Vinyl Ether				0.126	0.141	0.155	0.164	0.161	0.178		0.1541	11.732		
T	4-Methyl-2-Pentanone				0.101	0.11	0.122	0.117	0.113	0.125	0.128	0.1167	8.1948		
T	cis-1,3-Dichloropropene			0.338	0.374	0.39	0.412	0.454	0.396	0.435	0.442	0.4052	9.5304		
T	Dimethyl Disulfide				0.171	0.174	0.192	0.225	0.22	0.245		0.2044	14.756		
I	Chlorobenzene-d5	ISTD													
S	Toluene-d8			1.274	1.278	1.167	1.22	1.21	1.113	1.144	1.105	1.1888	5.6789		
C	Toluene	1.627	1.459	1.33	1.431	1.418	1.424	1.504	1.27	1.35	1.331	1.4144	7.2521		
T	Ethyl Methacrylate			0.326	0.401	0.428	0.461	0.503	0.477	0.511	0.518	0.4532	14.498		
T	Paraldehyde											0	0		
T	trans-1,3-Dichloropropene			0.461	0.507	0.529	0.558	0.603	0.53	0.579	0.582	0.5439	8.4811		
T	1,1,2-Trichloroethane			0.265	0.288	0.302	0.309	0.319	0.28	0.302	0.299	0.2956	5.771		
T	2-Hexanone				0.298	0.324	0.345	0.341	0.328	0.359	0.366	0.3373	6.878		
T	1,3-Dichloropropane			0.488	0.541	0.538	0.558	0.579	0.503	0.54	0.54	0.5358	5.3786		
T	Tetrachloroethene			0.332	0.375	0.358	0.359	0.376	0.318	0.336	0.337	0.3489	6.0417		
T	Dibromochloromethane			0.318	0.369	0.378	0.394	0.425	0.373	0.407	0.41	0.3845	8.6342		
T	1,2-Dibromoethane			0.271	0.289	0.29	0.309	0.332	0.29	0.318	0.32	0.3023	6.7531		
T	1-Chlorohexane			0.358	0.417	0.417	0.441	0.485	0.451	0.47	0.474	0.4392	9.3805		
P	Chlorobenzene			0.915	0.966	0.916	0.927	0.958	0.821	0.89	0.88	0.909	5.1018		
T	1,1,1,2-Tetrachloroethane			0.348	0.343	0.362	0.374	0.393	0.344	0.376	0.38	0.365	5.0679		
C	Ethylbenzene	0.49	0.466	0.473	0.486	0.481	0.497	0.531	0.453	0.494	0.494	0.4864	4.3098		
T	m-,p-Xylene	0.674	0.598	0.537	0.6	0.59	0.605	0.637	0.546	0.585	0.58	0.5952	6.6768		
T	o-Xylene	0.574	0.512	0.494	0.539	0.544	0.588	0.634	0.54	0.59	0.591	0.5606	7.5243		
T	Styrene			0.772	0.876	0.918	0.982	1.071	0.935	1.037	1.041	0.9542	10.466		
P	Bromoform			0.222	0.256	0.259	0.275	0.298	0.261	0.293	0.307	0.2715	10.256		
T	Isopropylbenzene			1.284	1.474	1.498	1.583	1.683	1.433	1.559	1.542	1.507	7.8153		
I	1,4-Dichlorobenzene-d4	ISTD													
P	1,1,2,2-Tetrachloroethane			0.689	0.783	0.798	0.815	0.842	0.74	0.785	0.797	0.7811	6.0053		
S	p-Bromofluorobenzene			0.997	0.956	0.921	0.925	0.941	0.864	0.892	0.852	0.9184	5.2432		

T	1,2,3-Trichloropropane	0.202	0.247	0.251	0.244	0.258	0.225	0.243	0.244	0.2391	7.3405
T	trans-1,4-Dichloro-2-Butene	0.247	0.255	0.285	0.287	0.308	0.295	0.311	0.318	0.2883	8.9009
T	n-Propylbenzene	3.037	3.536	3.508	3.571	3.802	3.207	3.325	3.178	3.3956	7.429
T	Bromobenzene	0.67	0.762	0.744	0.775	0.808	0.694	0.733	0.719	0.7381	6.0417
T	1,3,5-Trimethylbenzene	2.096	2.503	2.443	2.485	2.702	2.295	2.435	2.377	2.417	7.2332
T	2-Chlorotoluene	1.974	2.457	2.366	2.375	2.437	2.106	2.239	2.178	2.2664	7.5835
T	4-Chlorotoluene	2.163	2.182	2.123	2.094	2.235	1.885	1.964	1.933	2.0723	6.208
T	a-Methylstyrene	0.921	1.071	1.127	1.156	1.295	1.234	1.294	1.291	1.1737	11.321
T	tert-Butylbenzene	0.437	0.508	0.504	0.521	0.567	0.48	0.511	0.502	0.5037	7.2697
T	1,2,4-Trimethylbenzene	2.274	2.614	2.634	2.636	2.804	2.386	2.535	2.452	2.5419	6.5668
T	sec-Butylbenzene	2.804	3.169	3.104	3.238	3.474	2.92	3.078	2.976	3.0953	6.6823
T	p-Isopropyltoluene	2.183	2.603	2.54	2.657	2.885	2.449	2.589	2.523	2.5537	7.7414
T	1,3-Dichlorobenzene	1.331	1.516	1.491	1.451	1.537	1.319	1.391	1.389	1.4282	5.8154
T	1,4-Dichlorobenzene	1.528	1.507	1.501	1.476	1.529	1.31	1.39	1.389	1.4537	5.5603
T	n-Butylbenzene	2.282	2.598	2.578	2.654	2.852	2.445	2.576	2.563	2.5684	6.3469
T	1,2-Dichlorobenzene	1.324	1.401	1.407	1.397	1.474	1.278	1.357	1.356	1.3743	4.3244
T	1,2-Dibromo-3-Chloropropane		0.159	0.163	0.176	0.183	0.167	0.179	0.182	0.1728	5.5543
T	1,2,4-Trichlorobenzene	0.968	0.981	1.002	1.008	1.105	0.936	0.963	0.985	0.9935	5.0666
T	Hexachlorobutadiene	0.528	0.583	0.572	0.579	0.635	0.532	0.546	0.571	0.5682	6.0591
T	Naphthalene	1.901	2.081	2.291	2.365	2.601	2.29	2.356	2.387	2.2839	9.2287
T	1,2,3-Trichlorobenzene	0.961	0.977	0.98	0.987	1.094	0.917	0.949	0.961	0.9783	5.2988

Mon Feb 29 16:03:43 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16030366 Run Date: 02/26/2016 Sample ID: WG558920-12
Instrument ID: HPMS6 Run Time: 20:15 Method: 8260B
File ID: 6M137535 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG558920 Cal ID: HPMS6 - 26-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.7	ug/kg	0.494	1.40	20	
1,1-Dichloroethene	CCC	50.0	51.6	ug/kg	0.452	3.30	20	
1,2-Dichloropropane	CCC	50.0	55.0	ug/kg	0.308	10.1	20	
Ethylbenzene	CCC	50.0	52.4	ug/kg	0.510	4.80	20	
Toluene	CCC	50.0	51.4	ug/kg	1.45	2.80	20	
Vinyl Chloride	CCC	50.0	43.3	ug/kg	0.334	13.3	20	
Bromoform	SPCC	50.0	49.2	ug/kg	0.267	1.50	20	
Chlorobenzene	SPCC	50.0	52.9	ug/kg	0.961	5.70	20	
Chloromethane	SPCC	50.0	50.9	ug/kg	0.487	1.80	20	
1,1-Dichloroethane	SPCC	50.0	50.3	ug/kg	0.525	0.700	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	52.1	ug/kg	0.815	4.30	20	
Acetone		50.0	48.7	ug/kg	0.111	2.70	20	
Benzene		50.0	50.4	ug/kg	1.05	0.900	20	
Bromobenzene		50.0	51.8	ug/kg	0.765	3.70	20	
Bromochloromethane		50.0	52.1	ug/kg	0.165	4.20	20	
Bromodichloromethane		50.0	51.6	ug/kg	0.380	3.30	20	
Bromomethane		50.0	58.6	ug/kg	0.240	17.1	20	
2-Butanone		50.0	49.2	ug/kg	0.170	1.50	20	
n-Butylbenzene		50.0	48.8	ug/kg	2.50	2.50	20	
sec-Butylbenzene		50.0	50.7	ug/kg	3.14	1.40	20	
tert-Butylbenzene		50.0	53.2	ug/kg	0.536	6.40	20	
Carbon Disulfide		50.0	44.4	ug/kg	0.743	11.2	20	
Carbon Tetrachloride		50.0	51.2	ug/kg	0.411	2.30	20	
Dibromochloromethane		50.0	51.8	ug/kg	0.399	3.70	20	
Chloroethane		50.0	56.6	ug/kg	0.247	13.2	20	
2-Chlorotoluene		50.0	52.1	ug/kg	2.36	4.20	20	
4-Chlorotoluene		50.0	52.1	ug/kg	2.16	4.10	20	
1,2-Dibromo-3-Chloropropane		50.0	52.1	ug/kg	0.180	4.30	20	
1,2-Dibromoethane		50.0	53.7	ug/kg	0.325	7.30	20	
Dibromomethane		50.0	50.4	ug/kg	0.165	0.800	20	
1,2-Dichlorobenzene		50.0	54.5	ug/kg	1.50	9.00	20	
1,3-Dichlorobenzene		50.0	52.0	ug/kg	1.49	4.00	20	
1,4-Dichlorobenzene		50.0	51.8	ug/kg	1.51	3.60	20	
Dichlorodifluoromethane		50.0	55.5	ug/kg	0.509	10.9	20	
1,2-Dichloroethane		50.0	51.3	ug/kg	0.426	2.50	20	
cis-1,2-Dichloroethene		50.0	54.1	ug/kg	0.292	8.30	20	
trans-1,2-Dichloroethene		50.0	53.7	ug/kg	0.260	7.50	20	
1,3-Dichloropropane		50.0	54.9	ug/kg	0.589	9.80	20	
2,2-Dichloropropane		50.0	53.1	ug/kg	0.444	6.20	20	
cis-1,3-Dichloropropene		50.0	58.8	ug/kg	0.476	17.5	20	
trans-1,3-Dichloropropene		50.0	52.9	ug/kg	0.575	5.70	20	
1,1-Dichloropropene		50.0	52.8	ug/kg	0.365	5.50	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4664137
Report generated 03/10/2016 10:09

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16030366 Run Date: 02/26/2016 Sample ID: WG558920-12
Instrument ID: HPMS6 Run Time: 20:15 Method: 8260B
File ID: 6M137535 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG558920 Cal ID: HPMS6 - 26-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	51.3	ug/kg	0.346	2.60	20	
Hexachlorobutadiene		50.0	47.6	ug/kg	0.541	4.80	20	
Isopropylbenzene		50.0	54.6	ug/kg	1.64	9.10	20	
p-Isopropyltoluene		50.0	50.9	ug/kg	2.60	1.80	20	
4-Methyl-2-Pentanone		50.0	51.3	ug/kg	0.120	2.50	20	
Methylene Chloride		50.0	53.4	ug/kg	0.281	6.80	20	
Naphthalene		50.0	49.8	ug/kg	2.28	0.300	20	
n-Propylbenzene		50.0	52.6	ug/kg	3.57	5.30	20	
Styrene		50.0	55.3	ug/kg	1.06	10.6	20	
1,1,1,2-Tetrachloroethane		50.0	51.8	ug/kg	0.379	3.70	20	
Tetrachloroethene		50.0	51.1	ug/kg	0.357	2.20	20	
1,2,3-Trichlorobenzene		50.0	51.0	ug/kg	0.997	2.00	20	
1,2,4-Trichlorobenzene		50.0	51.0	ug/kg	1.01	2.10	20	
1,1,1-Trichloroethane		50.0	52.0	ug/kg	0.447	4.00	20	
1,1,2-Trichloroethane		50.0	53.2	ug/kg	0.315	6.40	20	
Trichloroethene		50.0	54.7	ug/kg	0.269	9.40	20	
Trichlorofluoromethane		50.0	47.9	ug/kg	0.496	4.20	20	
1,2,3-Trichloropropane		50.0	53.2	ug/kg	0.254	6.30	20	
1,2,4-Trimethylbenzene		50.0	51.1	ug/kg	2.60	2.30	20	
1,3,5-Trimethylbenzene		50.0	52.7	ug/kg	2.55	5.30	20	
o-Xylene		50.0	56.9	ug/kg	0.638	13.8	20	
m-,p-Xylene		100	105	ug/kg	0.626	5.20	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4664137
Report generated 03/10/2016 10:09

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030366 Run Date: 03/09/2016 Sample ID: WG560254-02
Instrument ID: HPMS6 Run Time: 11:29 Method: 8260B
File ID: 6M137677 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG560255 Cal ID: HPMS6 - 26-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.4	ug/kg	0.491	0.857	20	
1,1-Dichloroethene	CCC	50.0	53.1	ug/kg	0.465	6.29	20	
1,2-Dichloropropane	CCC	50.0	52.2	ug/kg	0.293	4.42	20	
Ethylbenzene	CCC	50.0	54.2	ug/kg	0.527	8.37	20	
Toluene	CCC	50.0	52.6	ug/kg	1.49	5.27	20	
Vinyl Chloride	CCC	50.0	50.9	ug/kg	0.392	1.85	20	
Bromoform	SPCC	50.0	49.0	ug/kg	0.266	1.92	20	
Chlorobenzene	SPCC	50.0	51.9	ug/kg	0.943	3.72	20	
Chloromethane	SPCC	50.0	41.4	ug/kg	0.396	17.2	20	
1,1-Dichloroethane	SPCC	50.0	52.0	ug/kg	0.542	4.08	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	51.7	ug/kg	0.807	3.32	20	
Xylenes		150	162	ug/kg	0.629	8.19	40	
Acetone		50.0	46.9	ug/kg	0.107	6.21	20	
Benzene		50.0	51.0	ug/kg	1.06	1.97	20	
Bromobenzene		50.0	53.5	ug/kg	0.790	6.96	20	
Bromochloromethane		50.0	52.3	ug/kg	0.166	4.66	20	
Bromodichloromethane		50.0	50.8	ug/kg	0.374	1.56	20	
Bromomethane		50.0	50.6	ug/kg	0.208	1.26	20	
2-Butanone		50.0	44.4	ug/kg	0.153	11.2	20	
n-Butylbenzene		50.0	55.4	ug/kg	2.85	10.8	20	
sec-Butylbenzene		50.0	56.0	ug/kg	3.46	11.9	20	
tert-Butylbenzene		50.0	56.3	ug/kg	0.567	12.6	20	
Carbon Disulfide		50.0	51.7	ug/kg	0.866	3.39	20	
Carbon Tetrachloride		50.0	52.2	ug/kg	0.419	4.32	20	
Dibromochloromethane		50.0	50.4	ug/kg	0.388	0.815	20	
Chloroethane		50.0	53.5	ug/kg	0.234	6.98	20	
2-Chlorotoluene		50.0	55.2	ug/kg	2.50	10.4	20	
4-Chlorotoluene		50.0	52.3	ug/kg	2.17	4.56	20	
1,2-Dibromo-3-Chloropropane		50.0	49.4	ug/kg	0.171	1.11	20	
1,2-Dibromoethane		50.0	51.2	ug/kg	0.310	2.47	20	
Dibromomethane		50.0	50.2	ug/kg	0.165	0.431	20	
1,2-Dichlorobenzene		50.0	51.7	ug/kg	1.42	3.40	20	
1,3-Dichlorobenzene		50.0	53.0	ug/kg	1.51	6.03	20	
1,4-Dichlorobenzene		50.0	51.8	ug/kg	1.51	3.60	20	
Dichlorodifluoromethane		50.0	53.7	ug/kg	0.493	7.37	20	
1,2-Dichloroethane		50.0	48.5	ug/kg	0.403	3.04	20	
cis-1,2-Dichloroethene		50.0	52.9	ug/kg	0.285	5.73	20	
trans-1,2-Dichloroethene		50.0	54.3	ug/kg	0.263	8.58	20	
1,3-Dichloropropane		50.0	49.9	ug/kg	0.535	0.117	20	
2,2-Dichloropropane		50.0	53.5	ug/kg	0.447	6.93	20	
cis-1,3-Dichloropropene		50.0	53.8	ug/kg	0.436	7.63	20	
trans-1,3-Dichloropropene		50.0	52.2	ug/kg	0.568	4.46	20	

CCV - Modified 03/05/2008
PDF File ID: 4664139
Report generated 03/10/2016 10:09

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030366 Run Date: 03/09/2016 Sample ID: WG560254-02
Instrument ID: HPMS6 Run Time: 11:29 Method: 8260B
File ID: 6M137677 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG560255 Cal ID: HPMS6 - 26-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	55.7	ug/kg	0.386	11.4	20	
2-Hexanone		50.0	47.1	ug/kg	0.318	5.73	20	
Hexachlorobutadiene		50.0	54.0	ug/kg	0.613	7.96	20	
Isopropylbenzene		50.0	55.4	ug/kg	1.67	10.7	20	
p-Isopropyltoluene		50.0	56.7	ug/kg	2.90	13.4	20	
4-Methyl-2-Pentanone		50.0	49.0	ug/kg	0.114	2.01	20	
Methylene Chloride		50.0	51.0	ug/kg	0.269	1.96	20	
Naphthalene		50.0	53.6	ug/kg	2.45	7.20	20	
n-Propylbenzene		50.0	56.1	ug/kg	3.81	12.3	20	
Styrene		50.0	55.3	ug/kg	1.06	10.6	20	
1,1,1,2-Tetrachloroethane		50.0	50.4	ug/kg	0.368	0.829	20	
Tetrachloroethene		50.0	54.5	ug/kg	0.380	8.91	20	
1,2,3-Trichlorobenzene		50.0	50.8	ug/kg	0.993	1.54	20	
1,2,4-Trichlorobenzene		50.0	53.3	ug/kg	1.06	6.56	20	
1,1,1-Trichloroethane		50.0	52.2	ug/kg	0.449	4.46	20	
1,1,2-Trichloroethane		50.0	50.6	ug/kg	0.299	1.24	20	
Trichloroethene		50.0	54.4	ug/kg	0.268	8.88	20	
Trichlorofluoromethane		50.0	51.0	ug/kg	0.528	1.99	20	
1,2,3-Trichloropropane		50.0	51.4	ug/kg	0.246	2.90	20	
1,2,4-Trimethylbenzene		50.0	54.5	ug/kg	2.77	8.91	20	
1,3,5-Trimethylbenzene		50.0	56.0	ug/kg	2.71	12.0	20	
o-Xylene		50.0	55.5	ug/kg	0.622	10.9	20	
m-,p-Xylene		100	107	ug/kg	0.636	6.82	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4664139
Report generated 03/10/2016 10:09

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16030366
Instrument ID: HPMS6
Workgroup (AAB#): WG560255

ICAL CCV Number: WG558920-08
CAL ID: HPMS6-26-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558920-08	NA	NA	237573	439950	607631
Upper Limit	NA	NA	475146	879900	1215262
Lower Limit	NA	NA	118787	219975	303816
L16030366-01	1.00	01	213745	415241	575956
L16030366-02	1.00	01	233231	440539	607492
L16030366-03	1.00	01	232928	441592	604341
L16030366-04	1.00	01	226741	432130	587991
L16030366-05	1.00	01	216941	408503	555698
L16030366-06	1.00	01	239430	452055	607499
L16030366-07	1.00	01	225088	427575	586148
L16030366-08	1.00	01	221497	419729	568490
L16030366-09	1.00	01	228012	425629	570174
L16030366-10	1.00	01	216829	417763	572617
L16030366-11	1.00	01	208054	408843	564192
L16030366-12	1.00	01	199214	382901	527309
WG560255-01	1.00	01	231266	449245	612952
WG560255-02	1.00	01	240680	452269	618893

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4664217
Report generated 03/10/2016 10:09

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16030366
Instrument ID: HPMS6
Workgroup (AAB#): WG560255

ICAL CCV Number: WG558920-08
CAL ID: HPMS6-26-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558920-08	NA	NA	19.6	16.01	11.51
Upper Limit	NA	NA	20.1	16.51	12.01
Lower Limit	NA	NA	19.1	15.51	11.01
L16030366-01	1.00	01	19.59	16.01	11.51
L16030366-02	1.00	01	19.59	16.01	11.52
L16030366-03	1.00	01	19.6	16.01	11.52
L16030366-04	1.00	01	19.6	16.01	11.52
L16030366-05	1.00	01	19.6	16.01	11.52
L16030366-06	1.00	01	19.6	16.01	11.52
L16030366-07	1.00	01	19.6	16.01	11.52
L16030366-08	1.00	01	19.6	16.01	11.52
L16030366-09	1.00	01	19.59	16.01	11.51
L16030366-10	1.00	01	19.59	16.01	11.52
L16030366-11	1.00	01	19.59	16.01	11.51
L16030366-12	1.00	01	19.6	16.01	11.52
WG560255-01	1.00	01	19.6	16.01	11.52
WG560255-02	1.00	01	19.6	16.01	11.52

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4664218
Report generated: 03/10/2016 10:09

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137684.D Vial: 10
Acq On : 9 Mar 2016 15:23 Operator: TMB
Sample : L16030366-01 8260 4.97g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 08:54:55 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	575956	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	415241	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	213745	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	139538	45.1632 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 90.32%		
43) 1,2-Dichloroethane-d4	11.06	65	170338	42.4624 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 84.92%		
58) Toluene-d8	13.80	98	492463	49.8821 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.76%		
80) p-Bromofluorobenzene	17.79	95	196887	50.1489 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 100.30%		

Target Compounds

					Qvalue
13) Acetone	6.60	43	7506	1.8418 ug/L #	12
19) Methylene Chloride	7.67	84	810	0.2668 ug/L #	26
24) n-Hexane	8.24	57	1825	0.3609 ug/L	100
29) 2-Butanone	9.32	43	1157	0.5812 ug/L #	68
36) Tetrahydrofuran	10.31	42	2629	Below Cal #	56
60) Ethyl Methacrylate	13.81	69	1142	0.3034 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M137684.D 826_SL.M Thu Mar 10 08:54:55 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137684.D Vial: 10
Acq On : 9 Mar 2016 15:23 Operator: TMB
Sample : L16030366-01 8260 4.97g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 8:54 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

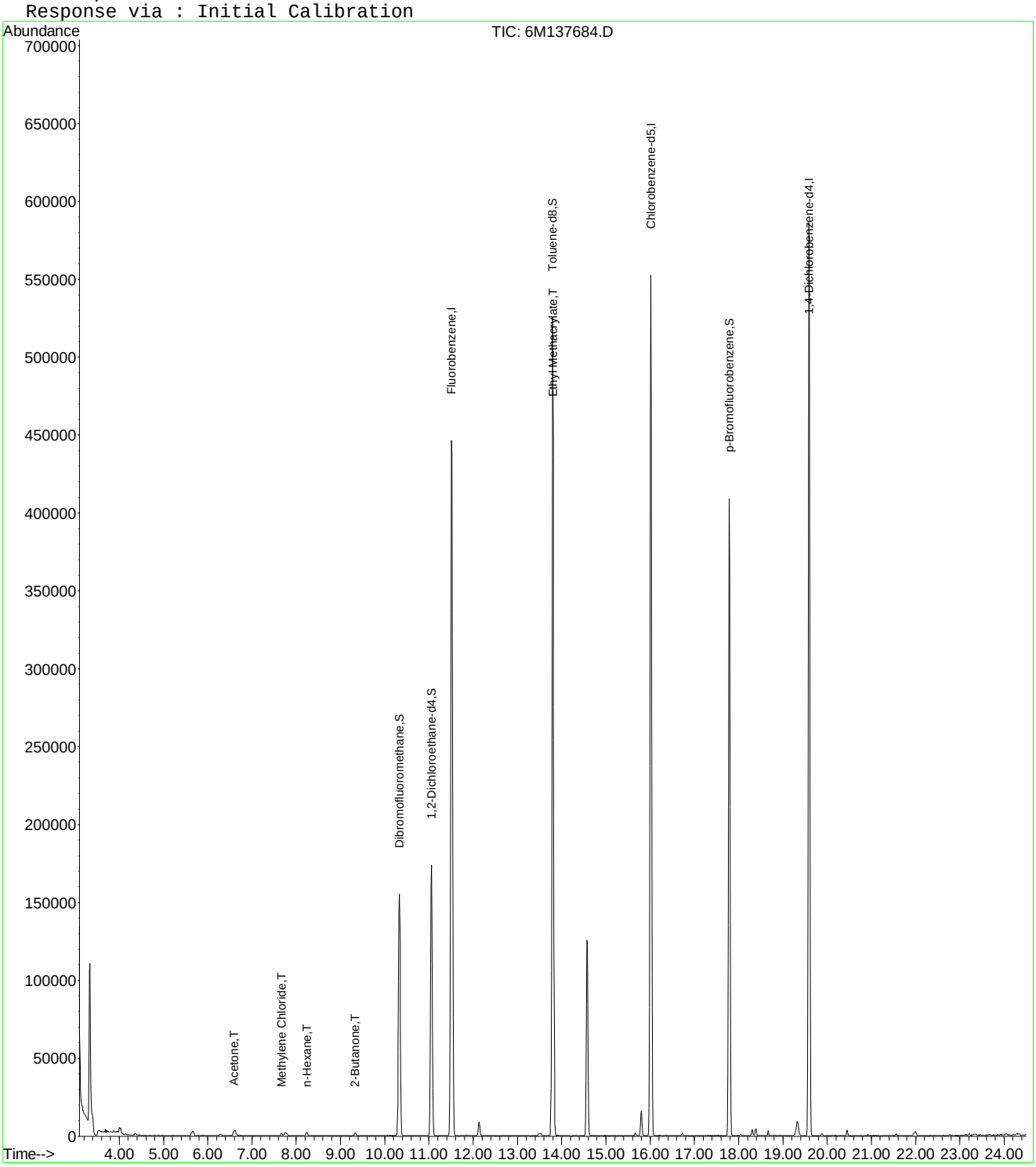

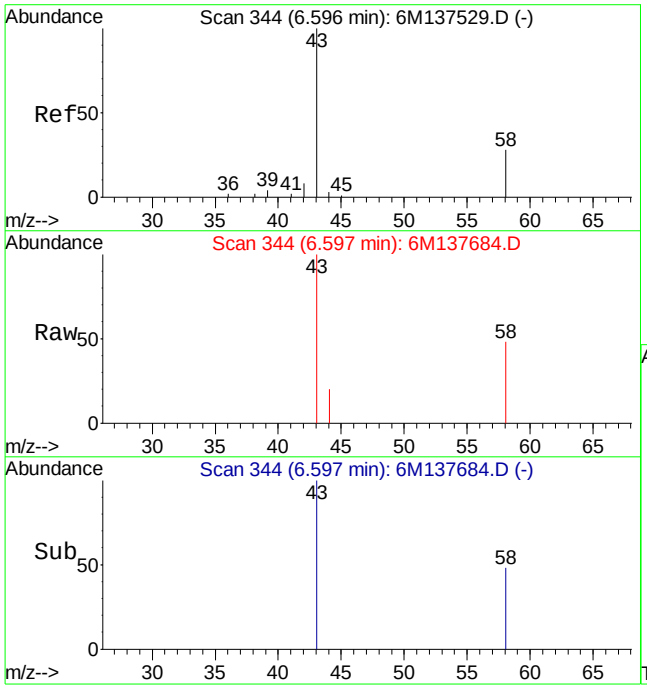

#13
Acetone
Concen: 1.84 ug/L
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137684.D
Acq: 9 Mar 2016 15:23

Tgt Ion: 43 Resp: 7506

Ion	Ratio	Lower	Upper
43	100		
58	72.3	16.1	37.7#

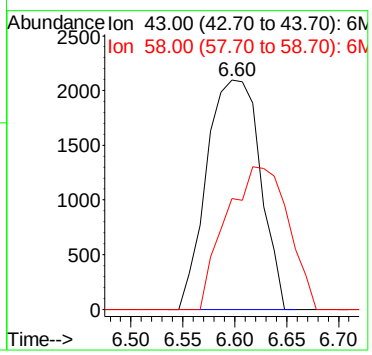

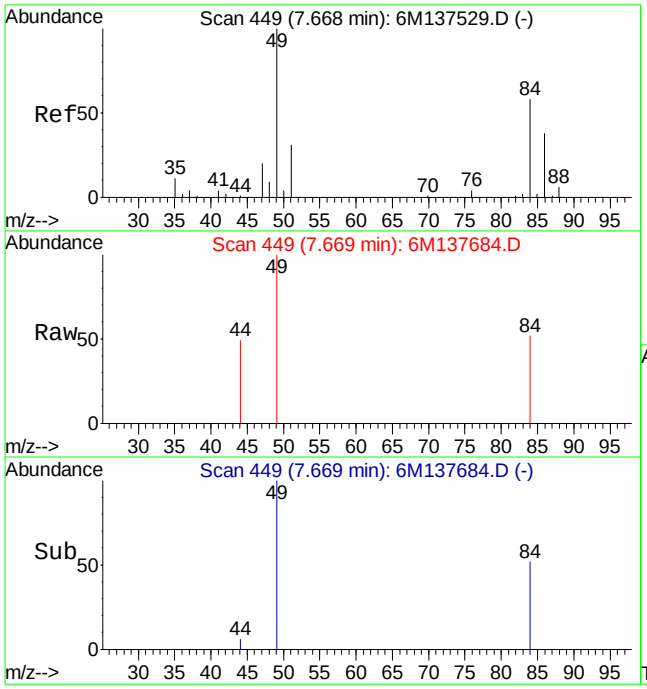

#19
Methylene Chloride
Concen: 0.27 ug/L
RT: 7.67 min Scan# 449
Delta R.T. 0.00 min
Lab File: 6M137684.D
Acq: 9 Mar 2016 15:23

Tgt Ion: 84 Resp: 810

Ion	Ratio	Lower	Upper
84	100		
49	238.6	87.9	205.1#

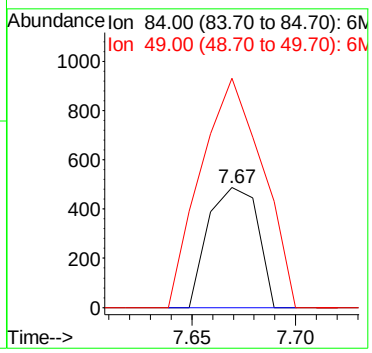

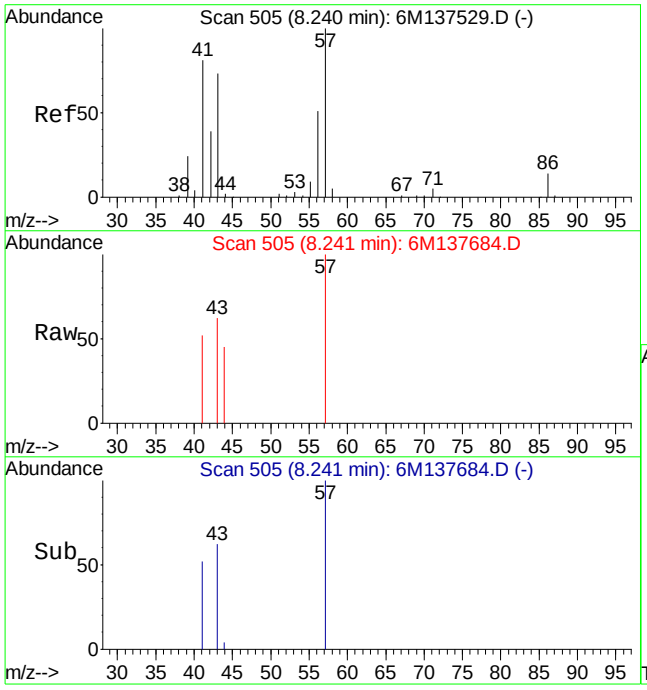

#24
n-Hexane
Concen: 0.36 ug/L
RT: 8.24 min Scan# 505
Delta R.T. 0.00 min
Lab File: 6M137684.D
Acq: 9 Mar 2016 15:23

Tgt Ion: 57 Resp: 1825

Ion	Ratio	Lower	Upper
57	100		
43	73.5	44.0	102.8

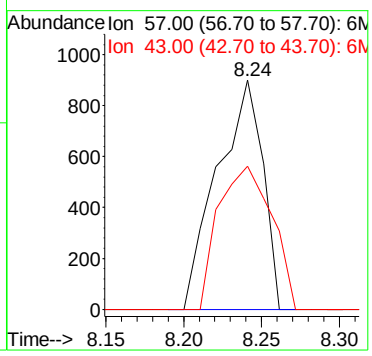

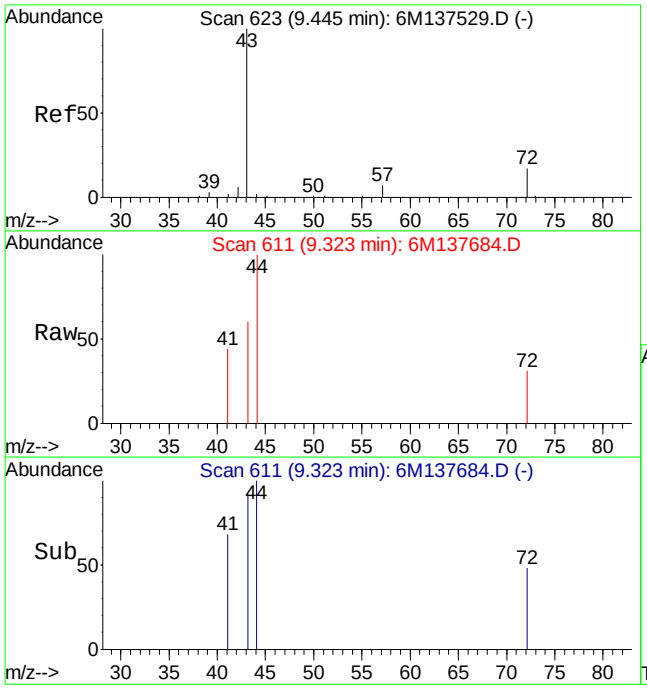

#29
2-Butanone
Concen: 0.58 ug/L
RT: 9.32 min Scan# 611
Delta R.T. -0.12 min
Lab File: 6M137684.D
Acq: 9 Mar 2016 15:23

Tgt Ion: 43 Resp: 1157

Ion	Ratio	Lower	Upper
43	100		
72	35.1	12.2	28.4#

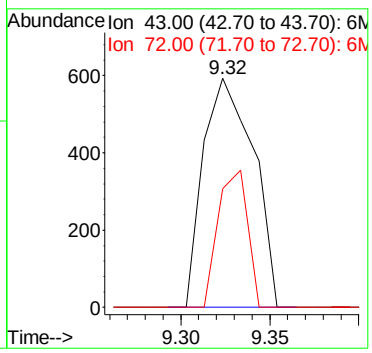

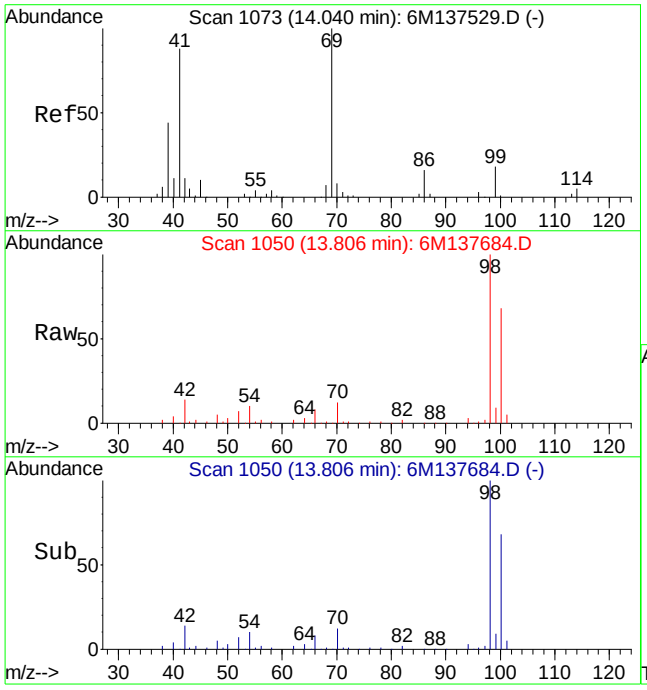

#60
Ethyl Methacrylate
Concen: 0.30 ug/L
RT: 13.81 min Scan# 1050
Delta R.T. -0.22 min
Lab File: 6M137684.D
Acq: 9 Mar 2016 15:23

Tgt Ion: 69 Resp: 1142

Ion	Ratio	Lower	Upper
69	100		
41	96.3	50.6	118.2

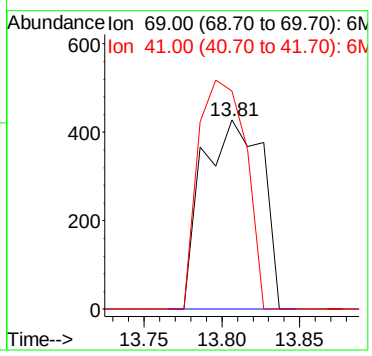

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137685.D Vial: 11
Acq On : 9 Mar 2016 15:57 Operator: TMB
Sample : L16030366-02 8260 4.59g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 08:54:56 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	607492	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	440539	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	233231	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	150240	46.1028 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 92.20%		
43) 1,2-Dichloroethane-d4	11.06	65	183510	43.3712 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 86.74%		
58) Toluene-d8	13.80	98	518063	49.4618 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.92%		
80) p-Bromofluorobenzene	17.79	95	212665	49.6421 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 99.28%		

Target Compounds

					Qvalue
13) Acetone	6.59	43	2971	Below Cal #	48
19) Methylene Chloride	7.68	84	954	0.2980 ug/L	69
24) n-Hexane	8.22	57	1435	0.2691 ug/L	87
36) Tetrahydrofuran	10.30	42	2370	Below Cal #	40
60) Ethyl Methacrylate	13.82	69	1262	0.3161 ug/L	69

(#) = qualifier out of range (m) = manual integration
6M137685.D 826_SL.M Thu Mar 10 08:54:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137685.D Vial: 11
Acq On : 9 Mar 2016 15:57 Operator: TMB
Sample : L16030366-02 8260 4.59g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 8:54 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

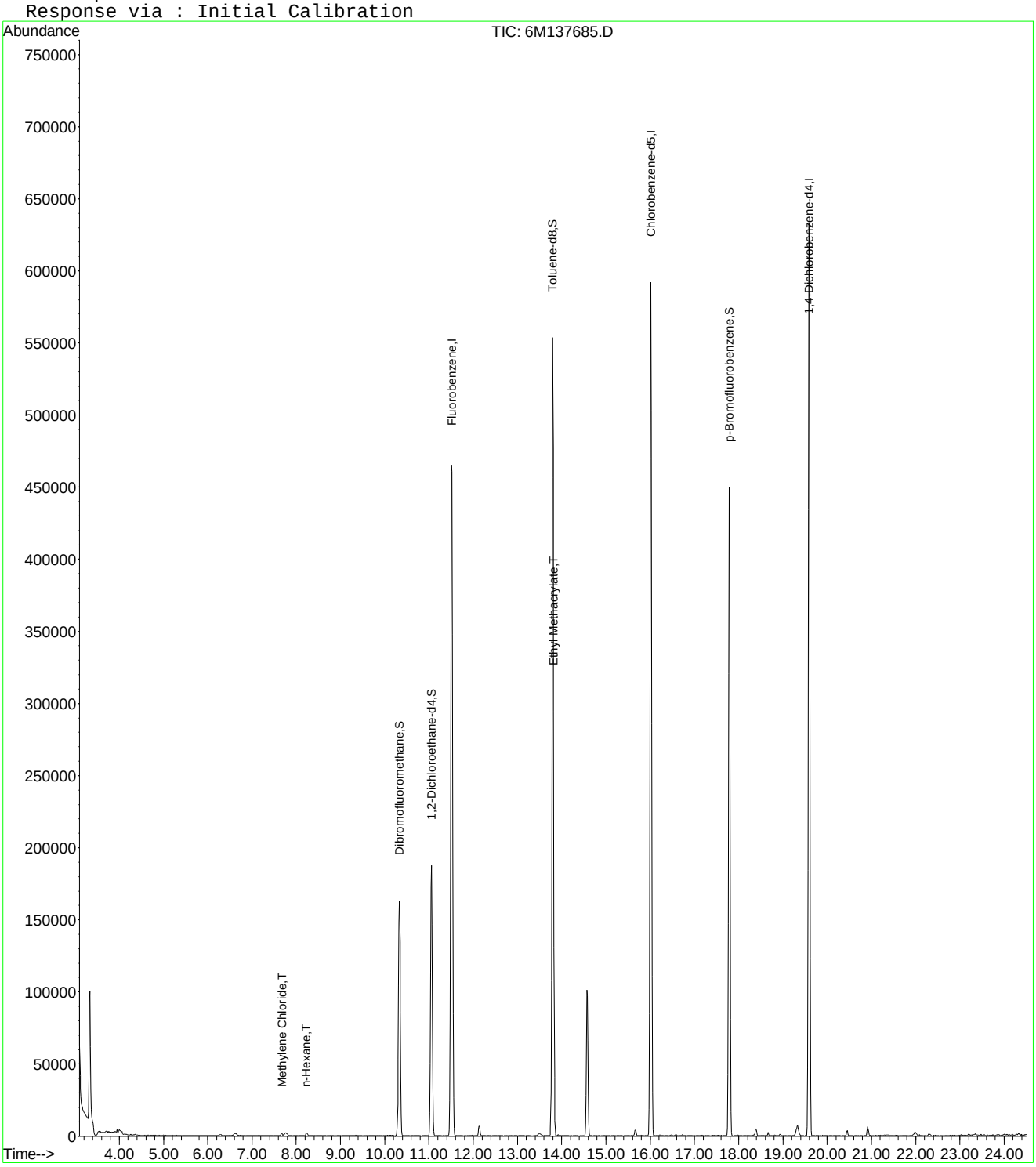

6M137685.D 826_SL.M Thu Mar 10 08:54:57 2016 Page 2

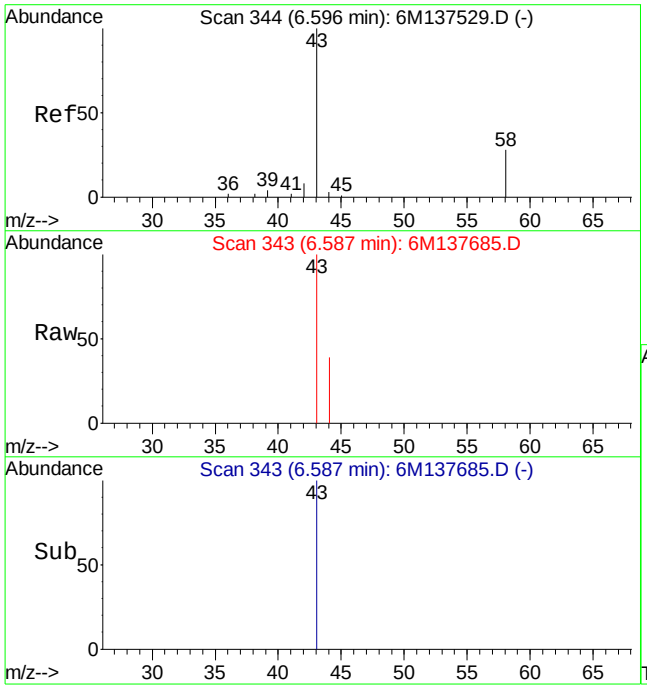

#13
Acetone
Concen: Below Cal
RT: 6.59 min Scan# 343
Delta R.T. 0.00 min
Lab File: 6M137685.D
Acq: 9 Mar 2016 15:57

Tgt Ion: 43 Resp: 2971

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.1	37.7#

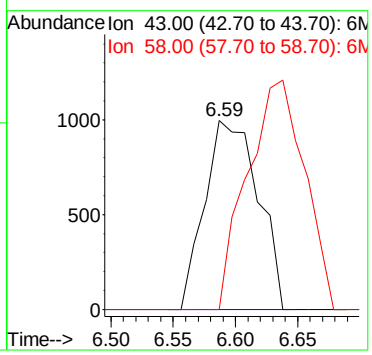

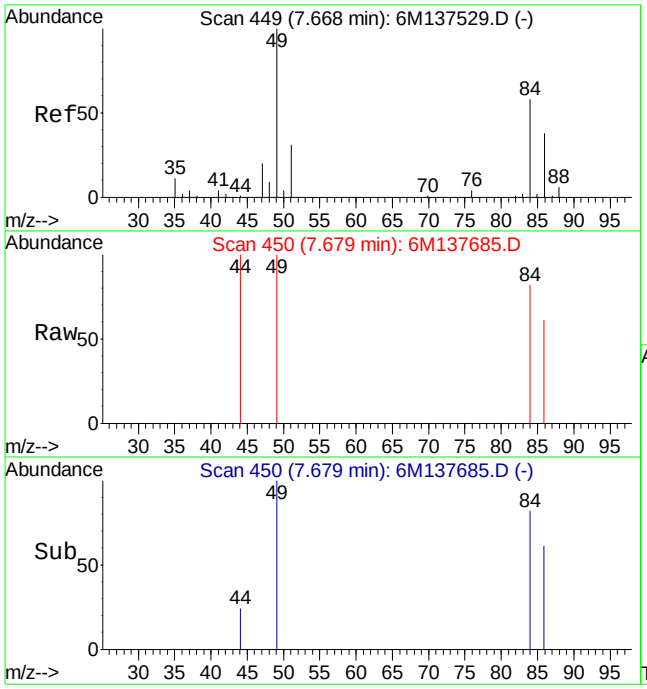

#19
Methylene Chloride
Concen: 0.30 ug/L
RT: 7.68 min Scan# 450
Delta R.T. 0.01 min
Lab File: 6M137685.D
Acq: 9 Mar 2016 15:57

Tgt Ion: 84 Resp: 954

Ion	Ratio	Lower	Upper
84	100		
49	184.7	87.9	205.1

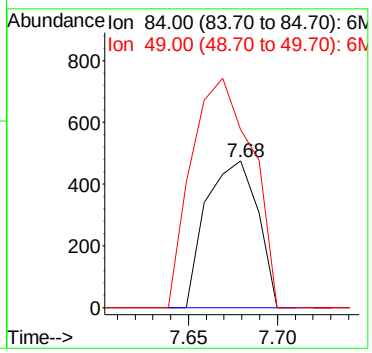

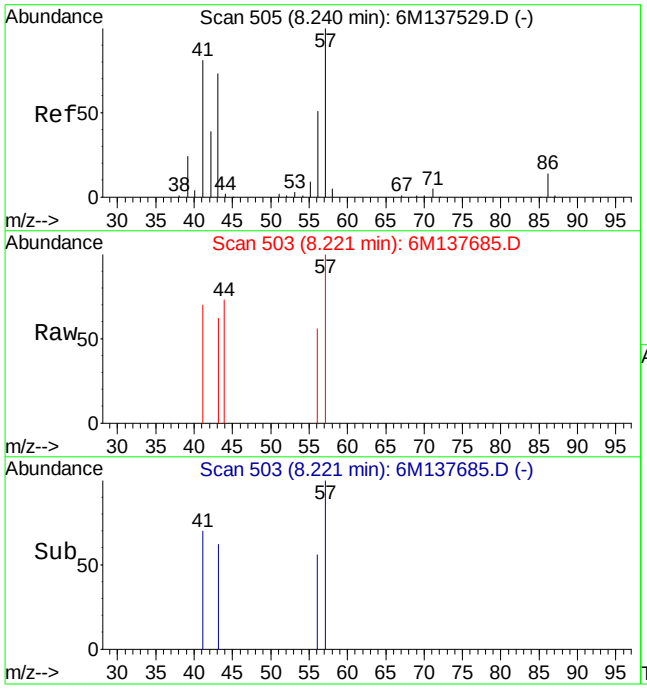

#24
n-Hexane
Concen: 0.27 ug/L
RT: 8.22 min Scan# 503
Delta R.T. -0.02 min
Lab File: 6M137685.D
Acq: 9 Mar 2016 15:57

Tgt Ion: 57 Resp: 1435

Ion	Ratio	Lower	Upper
57	100		
43	62.4	44.0	102.8

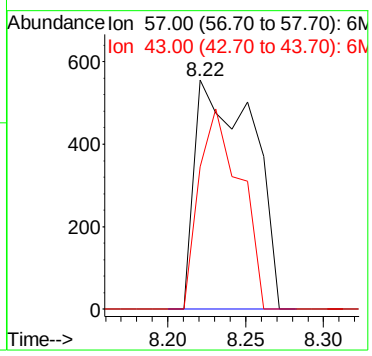

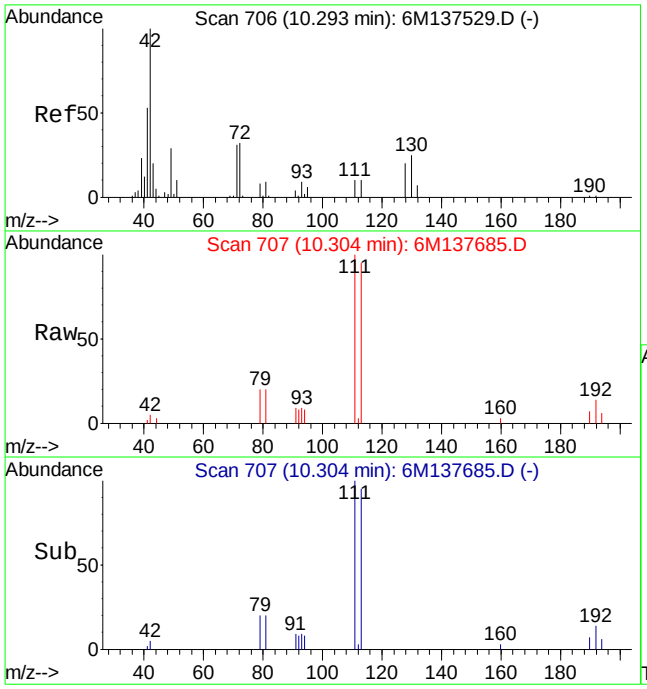

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.30 min Scan# 707
Delta R.T. 0.01 min
Lab File: 6M137685.D
Acq: 9 Mar 2016 15:57

Tgt Ion: 42 Resp: 2370

Ion	Ratio	Lower	Upper
42	100		
72	0.0	21.0	49.0#
71	0.0	20.6	48.2#

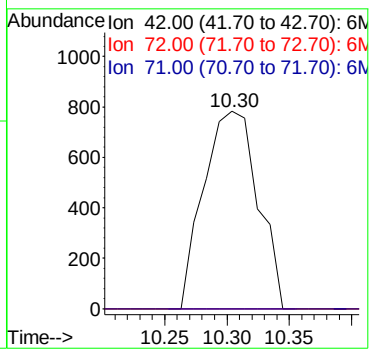

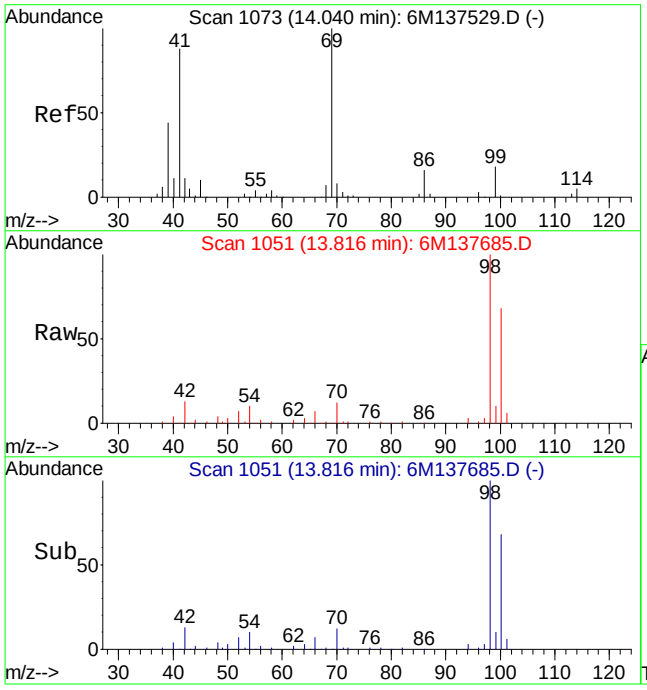

#60
Ethyl Methacrylate
Concen: 0.32 ug/L
RT: 13.82 min Scan# 1051
Delta R.T. -0.21 min
Lab File: 6M137685.D
Acq: 9 Mar 2016 15:57

Tgt Ion: 69 Resp: 1262

Ion	Ratio	Lower	Upper
69	100		
41	112.7	50.6	118.2

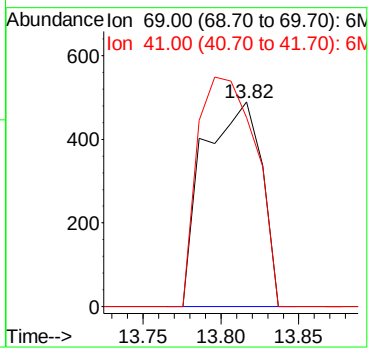

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137686.D Vial: 12
Acq On : 9 Mar 2016 16:31 Operator: TMB
Sample : L16030366-03 8260 4.82g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 08:54:57 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	604341	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	441592	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	232928	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	149739	46.1886 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 92.38%		
43) 1,2-Dichloroethane-d4	11.06	65	184615	43.8598 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 87.72%		
58) Toluene-d8	13.80	98	514591	49.0131 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.02%		
80) p-Bromofluorobenzene	17.79	95	212520	49.6728 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 99.34%		

Target Compounds

					Qvalue
13) Acetone	6.60	43	4092	Below Cal #	1
24) n-Hexane	8.25	57	1558	0.2937 ug/L	81
29) 2-Butanone	9.32	43	1182	0.5658 ug/L	91
36) Tetrahydrofuran	10.31	42	2443	Below Cal #	55

(#) = qualifier out of range (m) = manual integration
6M137686.D 826_SL.M Thu Mar 10 08:54:58 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137686.D Vial: 12
Acq On : 9 Mar 2016 16:31 Operator: TMB
Sample : L16030366-03 8260 4.82g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 8:54 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

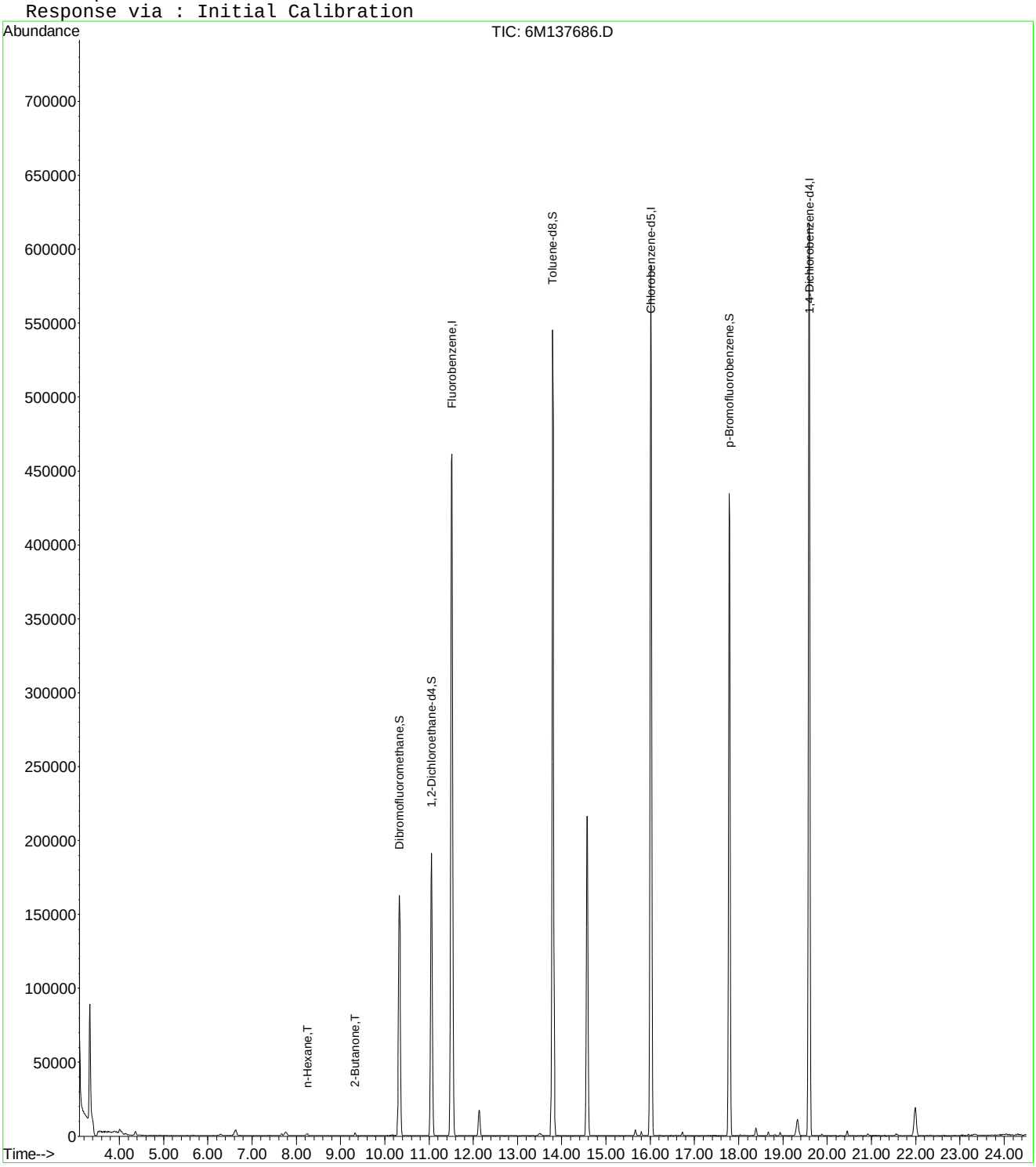

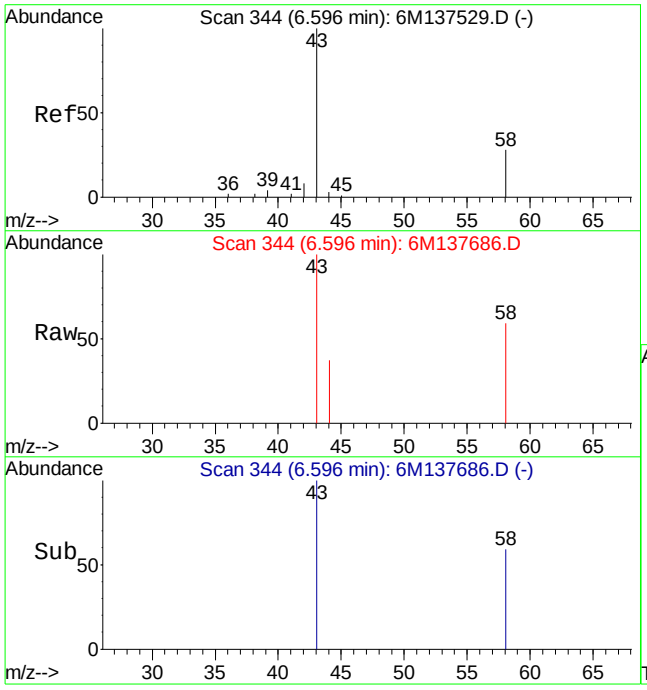

#13
Acetone
Concen: Below Cal
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137686.D
Acq: 9 Mar 2016 16:31

Tgt Ion: 43 Resp: 4092

Ion	Ratio	Lower	Upper
43	100		
58	203.1	16.1	37.7#

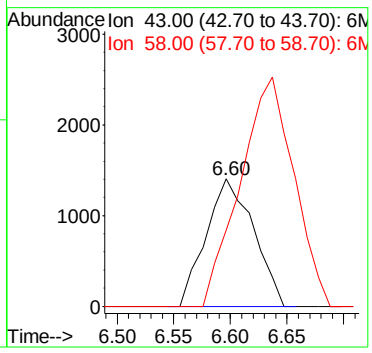

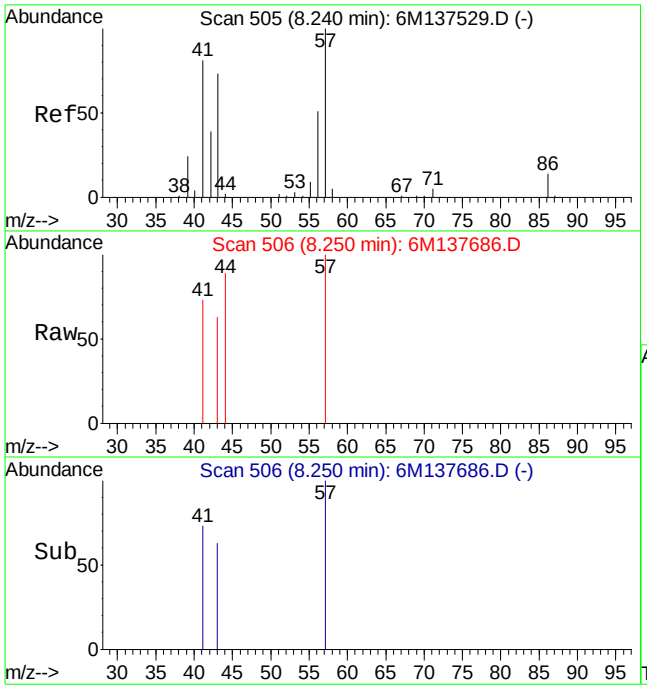

#24
n-Hexane
Concen: 0.29 ug/L
RT: 8.25 min Scan# 506
Delta R.T. 0.01 min
Lab File: 6M137686.D
Acq: 9 Mar 2016 16:31

Tgt Ion: 57 Resp: 1558

Ion	Ratio	Lower	Upper
57	100		
43	57.0	44.0	102.8

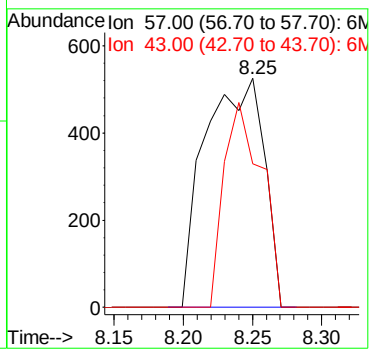

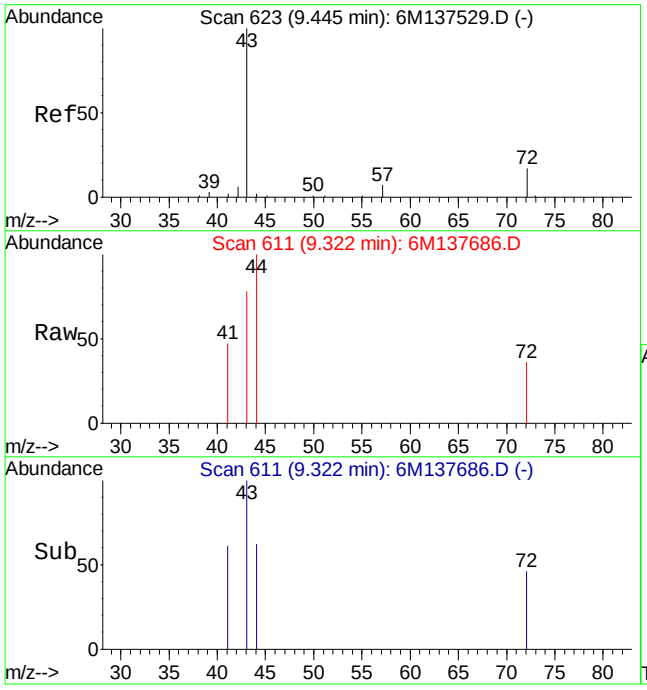

#29
2-Butanone
Concen: 0.57 ug/L
RT: 9.32 min Scan# 611
Delta R.T. -0.12 min
Lab File: 6M137686.D
Acq: 9 Mar 2016 16:31

Tgt Ion: 43 Resp: 1182

Ion	Ratio	Lower	Upper
43	100		
72	16.2	12.2	28.4

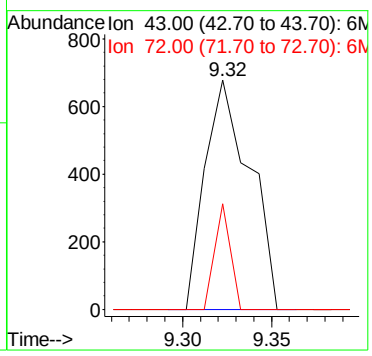

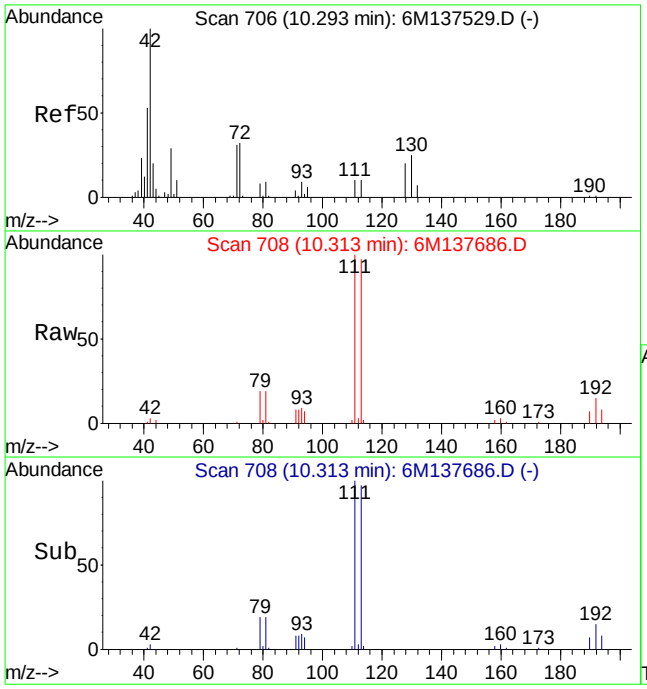

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.31 min Scan# 708
Delta R.T. 0.02 min
Lab File: 6M137686.D
Acq: 9 Mar 2016 16:31

Tgt Ion: 42 Resp: 2443

Ion	Ratio	Lower	Upper
42	100		
72	9.0	21.0	49.0#
71	8.0	20.6	48.2#

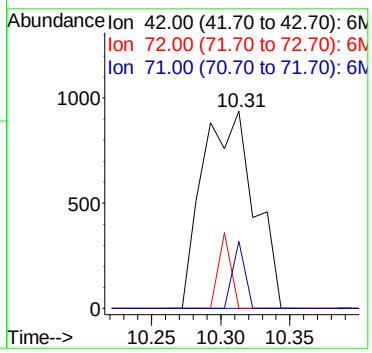

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137687.D Vial: 13
Acq On : 9 Mar 2016 17:04 Operator: TMB
Sample : L16030366-04 8260 4.82g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 08:54:58 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	587991	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	432130	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	226741	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	146014	46.2920 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 92.58%		
43) 1,2-Dichloroethane-d4	11.06	65	183511	44.8098 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 89.62%		
58) Toluene-d8	13.80	98	503289	48.9863 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 97.98%		
80) p-Bromofluorobenzene	17.79	95	209291	50.2529 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 100.50%		

Target Compounds					Qvalue
13) Acetone	6.60	43	3361	Below Cal #	1
24) n-Hexane	8.24	57	1605	0.3109 ug/L	68
36) Tetrahydrofuran	10.30	42	1955	Below Cal #	59

(#) = qualifier out of range (m) = manual integration
6M137687.D 826_SL.M Thu Mar 10 08:54:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137687.D Vial: 13
Acq On : 9 Mar 2016 17:04 Operator: TMB
Sample : L16030366-04 8260 4.82g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 8:54 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

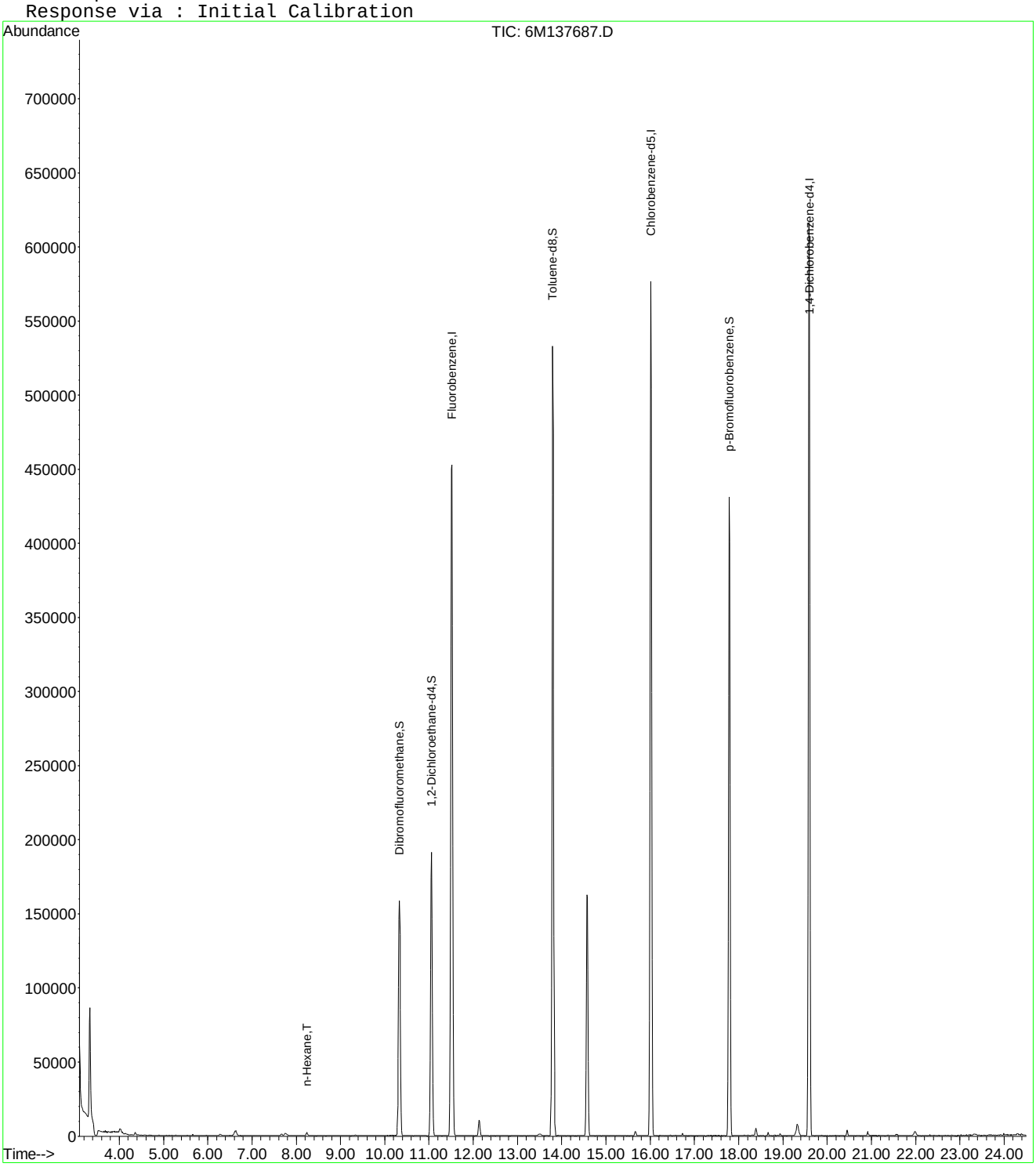

6M137687.D 826_SL.M Thu Mar 10 08:54:59 2016 Page 2

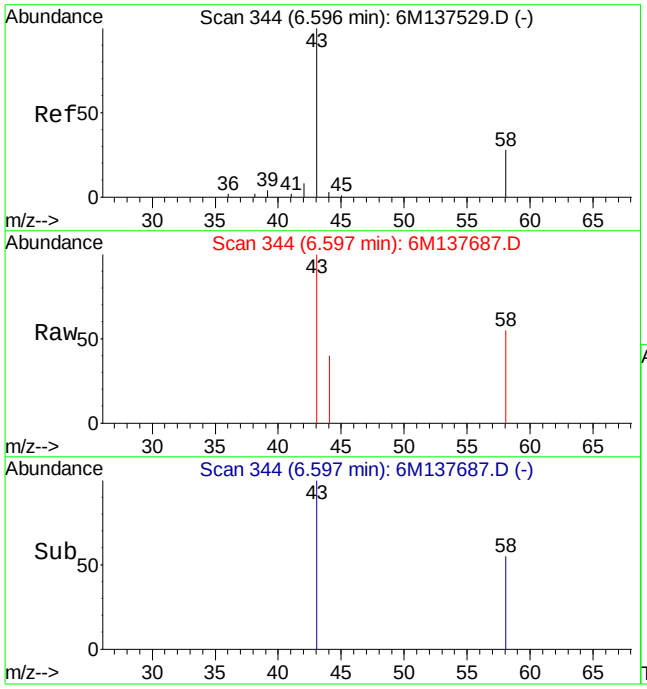

#13
Acetone
Concen: Below Cal
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137687.D
Acq: 9 Mar 2016 17:04

Tgt Ion: 43 Resp: 3361

Ion	Ratio	Lower	Upper
43	100		
58	219.5	16.1	37.7#

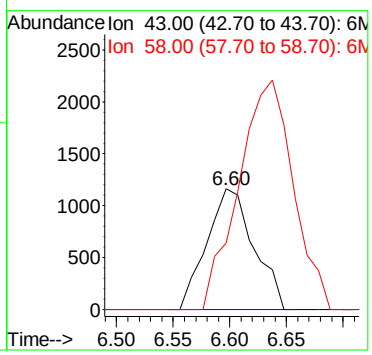

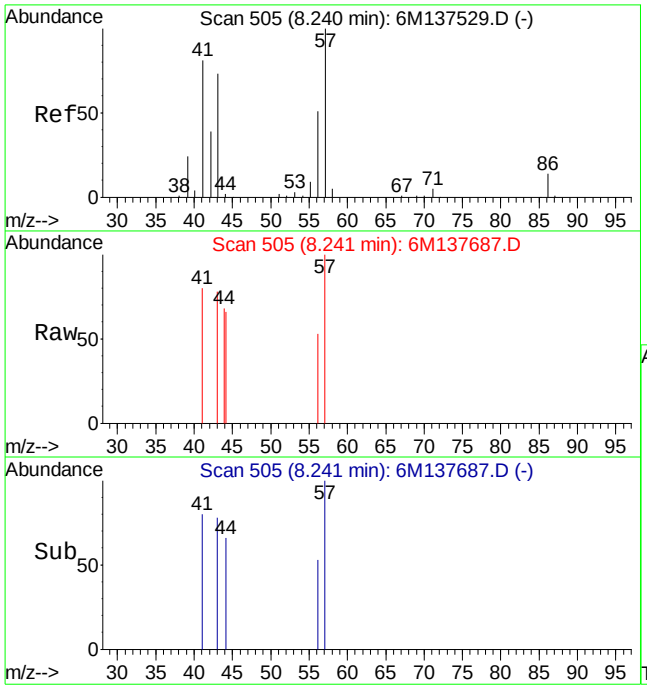

#24
n-Hexane
Concen: 0.31 ug/L
RT: 8.24 min Scan# 505
Delta R.T. -0.00 min
Lab File: 6M137687.D
Acq: 9 Mar 2016 17:04

Tgt Ion: 57 Resp: 1605

Ion	Ratio	Lower	Upper
57	100		
43	46.3	44.0	102.8

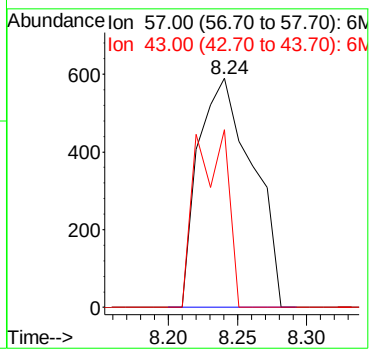

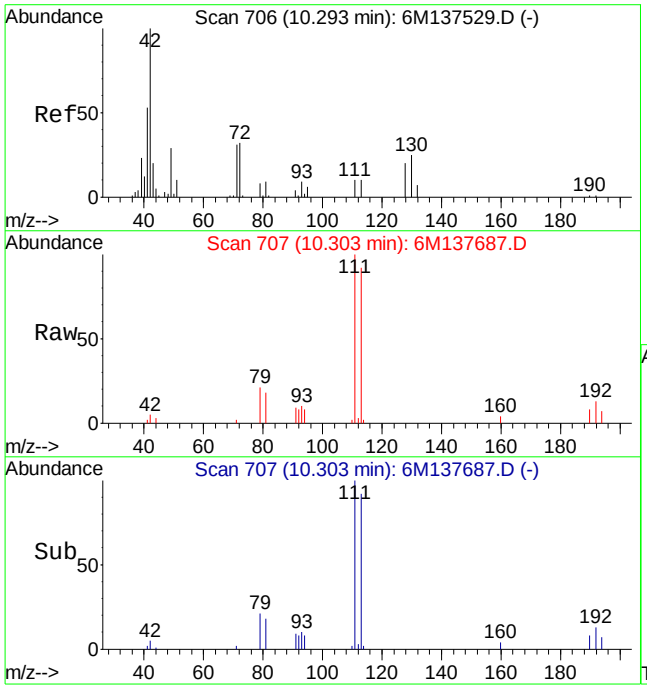

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.30 min Scan# 707
Delta R.T. 0.01 min
Lab File: 6M137687.D
Acq: 9 Mar 2016 17:04

Tgt Ion: 42 Resp: 1955

Ion	Ratio	Lower	Upper
42	100		
72	11.9	21.0	49.0#
71	10.1	20.6	48.2#

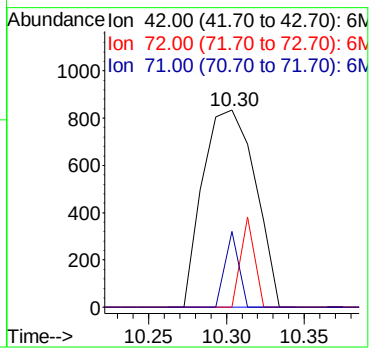

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137688.D Vial: 14
Acq On : 9 Mar 2016 17:37 Operator: TMB
Sample : L16030366-05 8260 4.59g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 08:54:59 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	555698	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	408503	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	216941	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	136987	45.9539 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 91.90%		
43) 1,2-Dichloroethane-d4	11.06	65	172482	44.5643 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 89.12%		
58) Toluene-d8	13.80	98	474325	48.8374 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 97.68%		
80) p-Bromofluorobenzene	17.79	95	199547	50.0777 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 100.16%		

Target Compounds					Qvalue
11) Acrolein	6.48	56	639	1.2716 ug/L #	49
13) Acetone	6.60	43	5864	0.6556 ug/L #	1
19) Methylene Chloride	7.68	84	979	0.3343 ug/L	73
24) n-Hexane	8.24	57	1987	0.4073 ug/L	80

(#) = qualifier out of range (m) = manual integration
6M137688.D 826_SL.M Thu Mar 10 08:54:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137688.D Vial: 14
Acq On : 9 Mar 2016 17:37 Operator: TMB
Sample : L16030366-05 8260 4.59g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 8:54 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

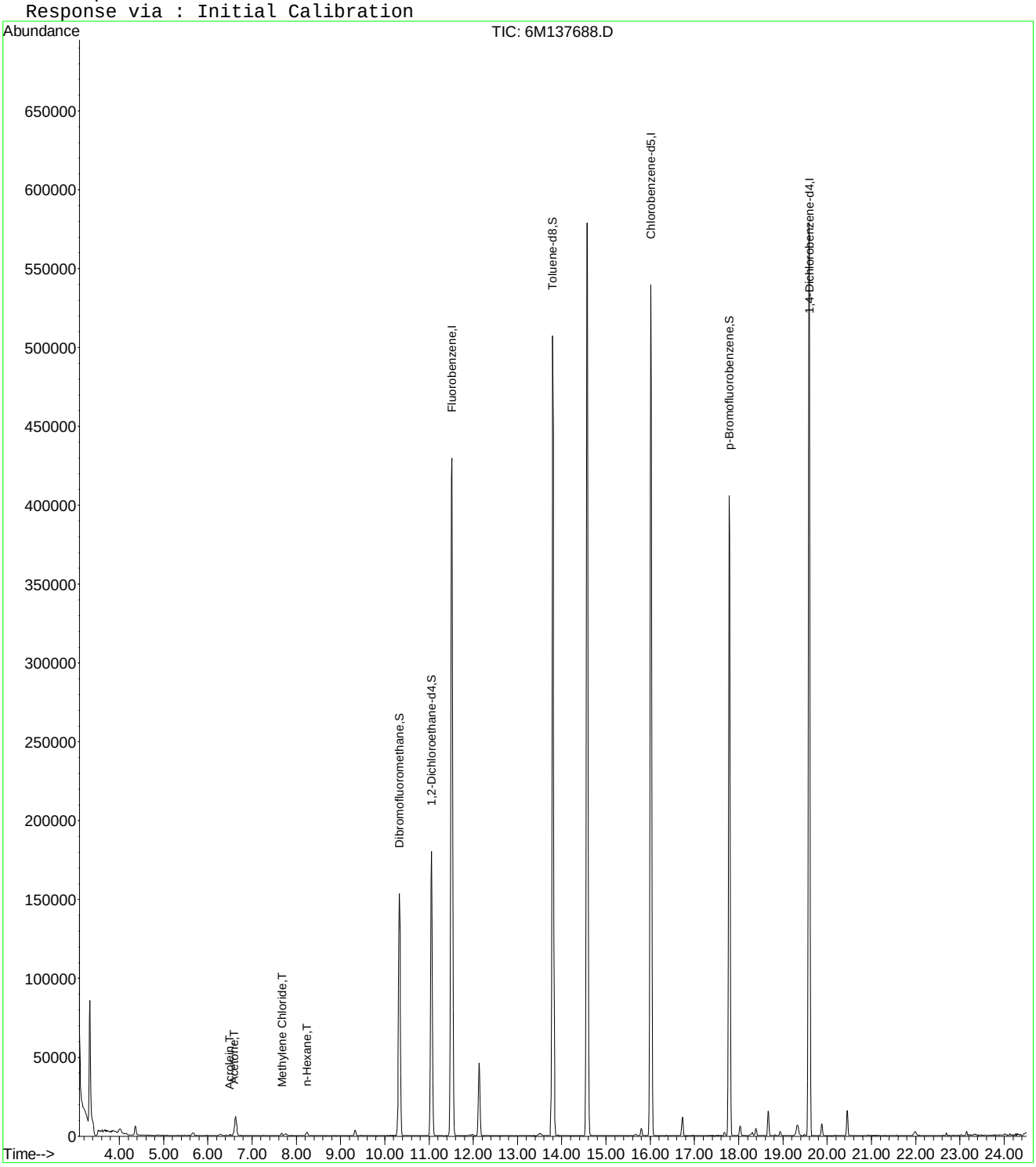

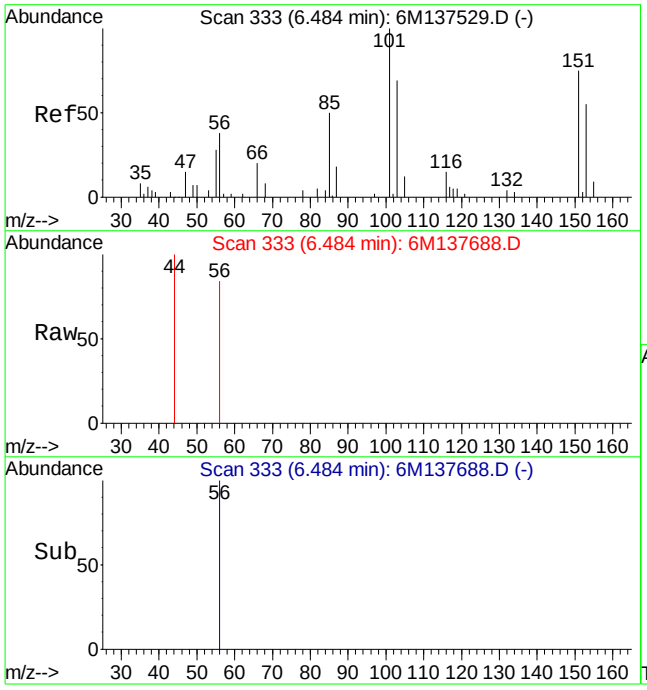

#11
Acrolein
Concen: 1.27 ug/L
RT: 6.48 min Scan# 333
Delta R.T. -0.00 min
Lab File: 6M137688.D
Acq: 9 Mar 2016 17:37

Tgt Ion: 56 Resp: 639

Ion	Ratio	Lower	Upper
56	100		
55	31.3	44.6	104.0#

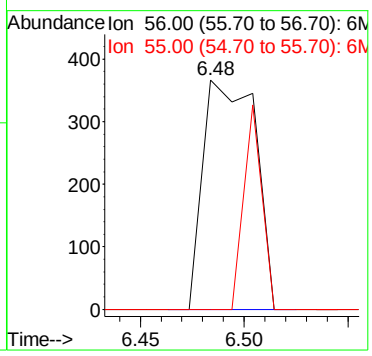

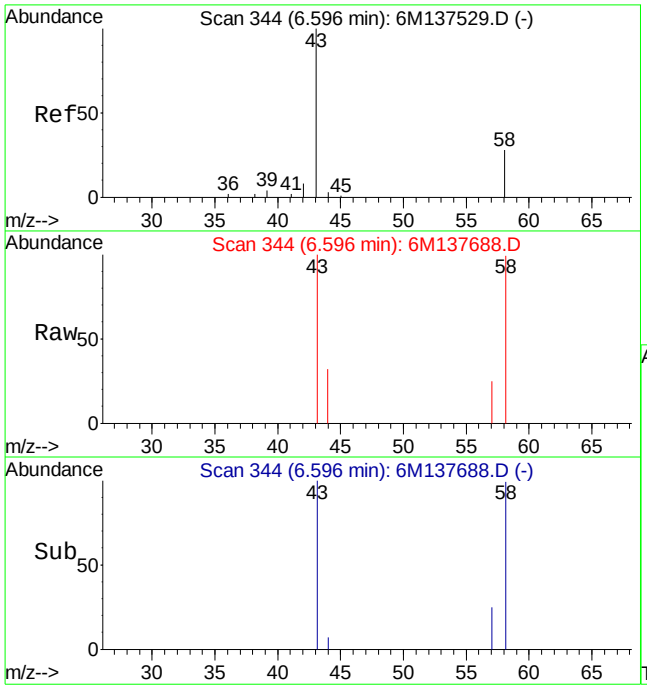

#13
Acetone
Concen: 0.66 ug/L
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137688.D
Acq: 9 Mar 2016 17:37

Tgt Ion: 43 Resp: 5864

Ion	Ratio	Lower	Upper
43	100		
58	401.3	16.1	37.7#

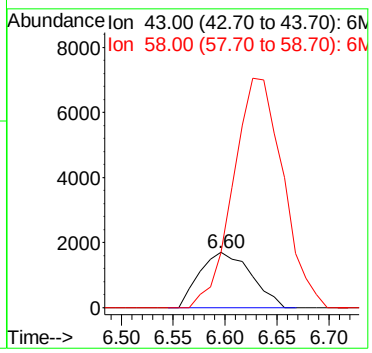

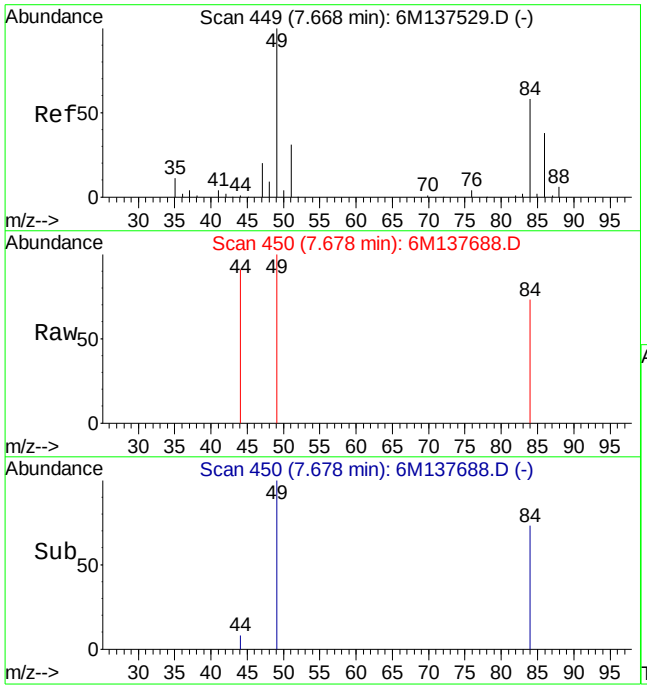

#19
Methylene Chloride
Concen: 0.33 ug/L
RT: 7.68 min Scan# 450
Delta R.T. 0.01 min
Lab File: 6M137688.D
Acq: 9 Mar 2016 17:37

Tgt Ion: 84 Resp: 979

Ion	Ratio	Lower	Upper
84	100		
49	180.8	87.9	205.1

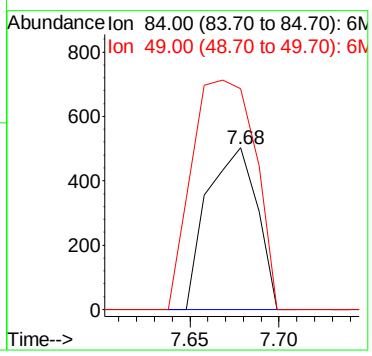

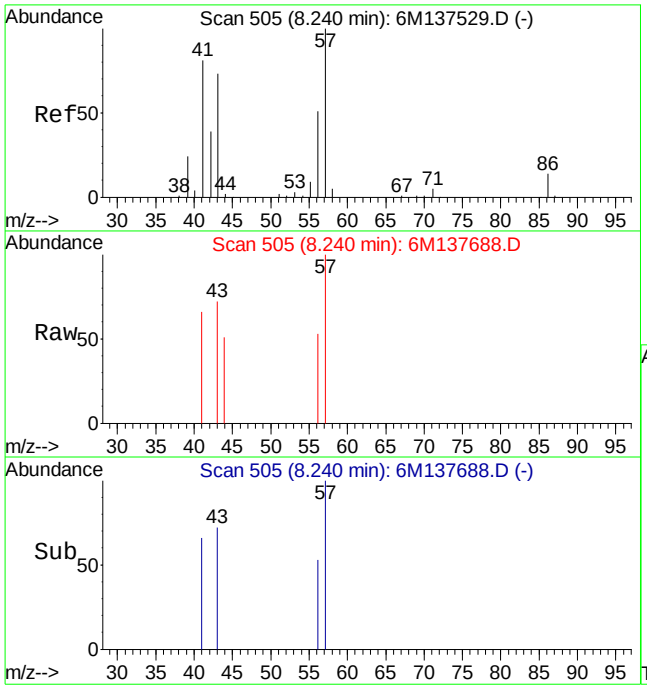

#24
n-Hexane
Concen: 0.41 ug/L
RT: 8.24 min Scan# 505
Delta R.T. -0.00 min
Lab File: 6M137688.D
Acq: 9 Mar 2016 17:37

Tgt Ion: 57 Resp: 1987

Ion	Ratio	Lower	Upper
57	100		
43	90.4	44.0	102.8

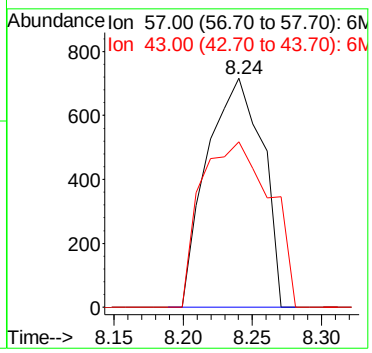

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137689.D Vial: 15
Acq On : 9 Mar 2016 18:11 Operator: TMB
Sample : L16030366-06 8260 5.04g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 08:55:00 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	607499	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	452055	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	239430	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	151955	46.6285 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.26%		
43) 1,2-Dichloroethane-d4	11.06	65	194807	46.0406 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 92.08%		
58) Toluene-d8	13.80	98	520237	48.4040 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 96.80%		
80) p-Bromofluorobenzene	17.79	95	216860	49.3107 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 98.62%		

Target Compounds					Qvalue
13) Acetone	6.61	43	4065	Below Cal #	67
19) Methylene Chloride	7.68	84	903	0.2820 ug/L	65
24) n-Hexane	8.24	57	1991	0.3733 ug/L	93
36) Tetrahydrofuran	10.29	42	2882	Below Cal #	58

(#) = qualifier out of range (m) = manual integration
6M137689.D 826_SL.M Thu Mar 10 08:55:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137689.D Vial: 15
Acq On : 9 Mar 2016 18:11 Operator: TMB
Sample : L16030366-06 8260 5.04g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 8:55 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

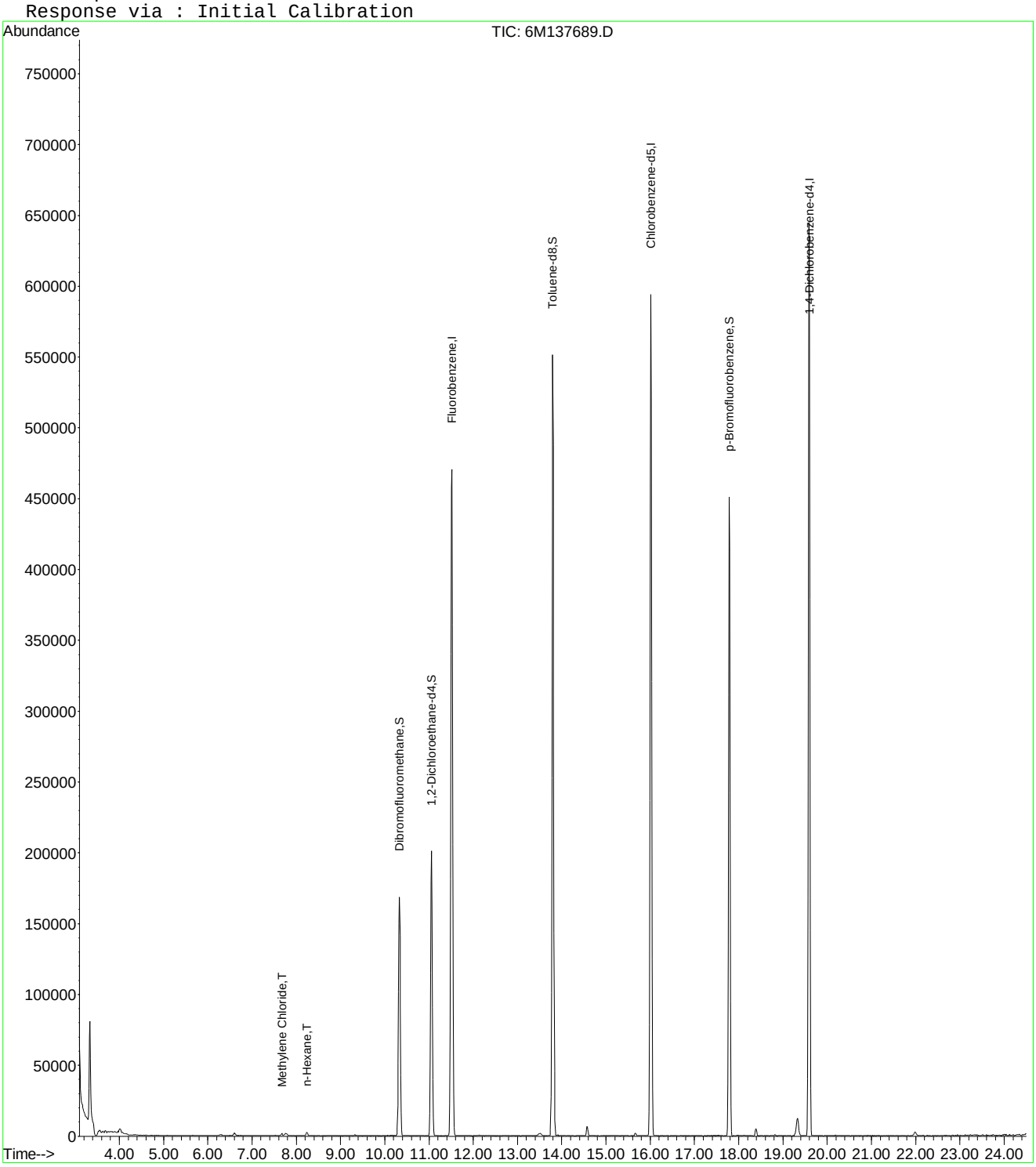

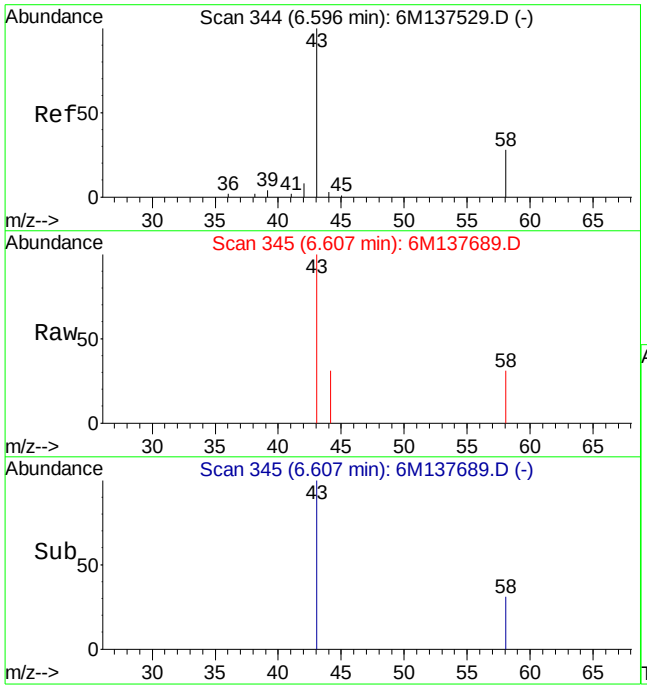

#13
Acetone
Concen: Below Cal
RT: 6.61 min Scan# 345
Delta R.T. 0.02 min
Lab File: 6M137689.D
Acq: 9 Mar 2016 18:11

Tgt Ion: 43 Resp: 4065

Ion	Ratio	Lower	Upper
43	100		
58	10.0	16.1	37.7#

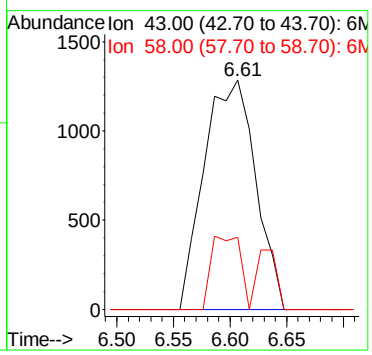

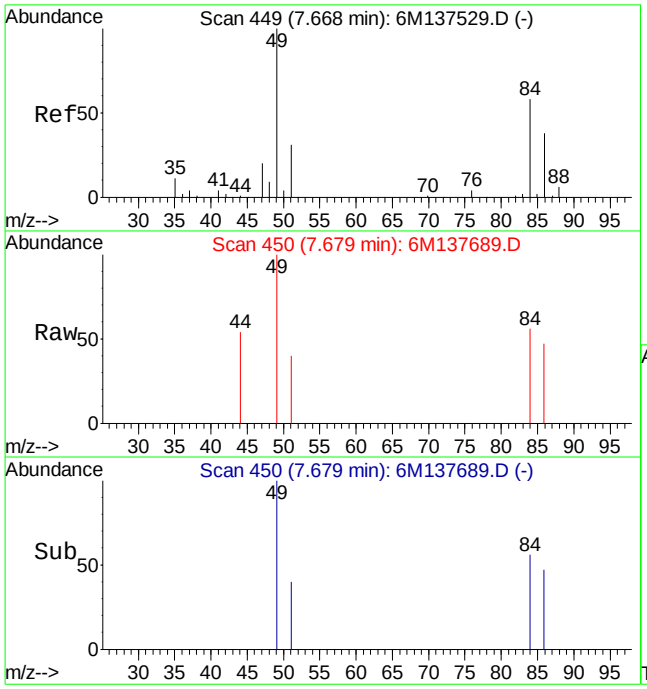

#19
Methylene Chloride
Concen: 0.28 ug/L
RT: 7.68 min Scan# 450
Delta R.T. 0.01 min
Lab File: 6M137689.D
Acq: 9 Mar 2016 18:11

Tgt Ion: 84 Resp: 903

Ion	Ratio	Lower	Upper
84	100		
49	190.7	87.9	205.1

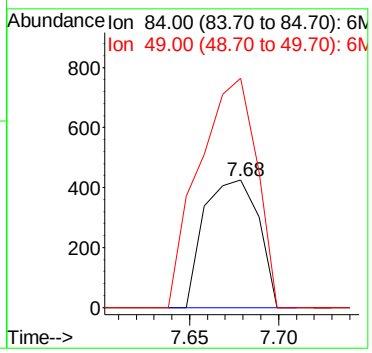

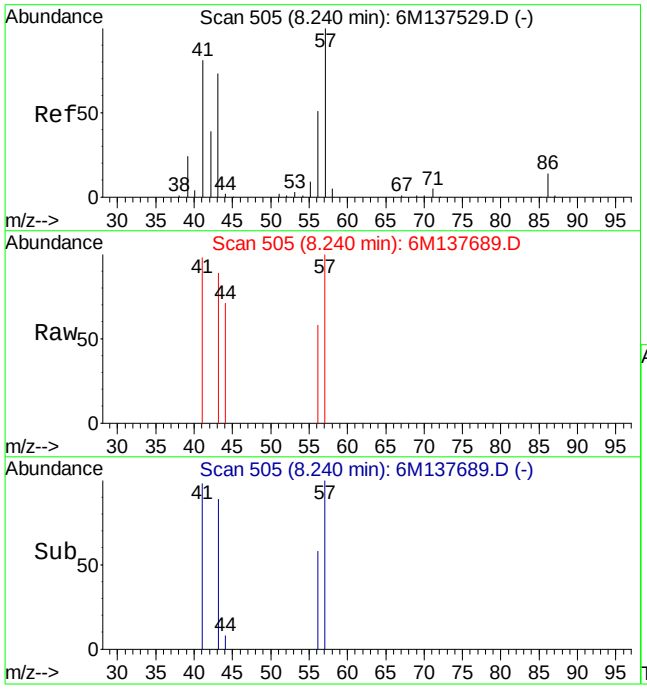

#24
n-Hexane
Concen: 0.37 ug/L
RT: 8.24 min Scan# 505
Delta R.T. -0.00 min
Lab File: 6M137689.D
Acq: 9 Mar 2016 18:11

Tgt Ion: 57 Resp: 1991

Ion	Ratio	Lower	Upper
57	100		
43	67.9	44.0	102.8

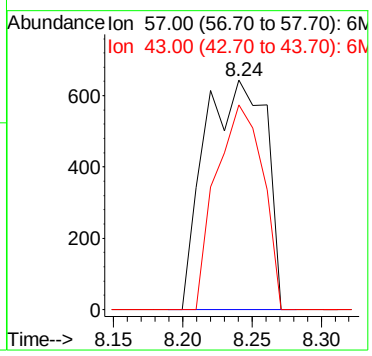

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137690.D Vial: 16
Acq On : 9 Mar 2016 18:44 Operator: TMB
Sample : WG560249-01 L16030366-07 8260 4.80g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 08:55:01 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	586148	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	427575	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	225088	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	145211	46.1821 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 92.36%		
43) 1,2-Dichloroethane-d4	11.06	65	179892	44.0643 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 88.12%		
58) Toluene-d8	13.80	98	499518	49.1372 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.28%		
80) p-Bromofluorobenzene	17.79	95	206872	50.0368 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 100.08%		

Target Compounds					Qvalue
13) Acetone	6.61	43	5747	0.2979 ug/L	90
19) Methylene Chloride	7.67	84	1226	0.3969 ug/L	75
24) n-Hexane	8.24	57	1715	0.3333 ug/L	80
36) Tetrahydrofuran	10.29	42	2124	Below Cal #	64
60) Ethyl Methacrylate	13.81	69	985	0.2542 ug/L	81
75) Styrene	16.93	104	2047	0.2509 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M137690.D 826_SL.M Thu Mar 10 08:55:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137690.D Vial: 16
Acq On : 9 Mar 2016 18:44 Operator: TMB
Sample : WG560249-01 L16030366-07 8260 4.80g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 8:55 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

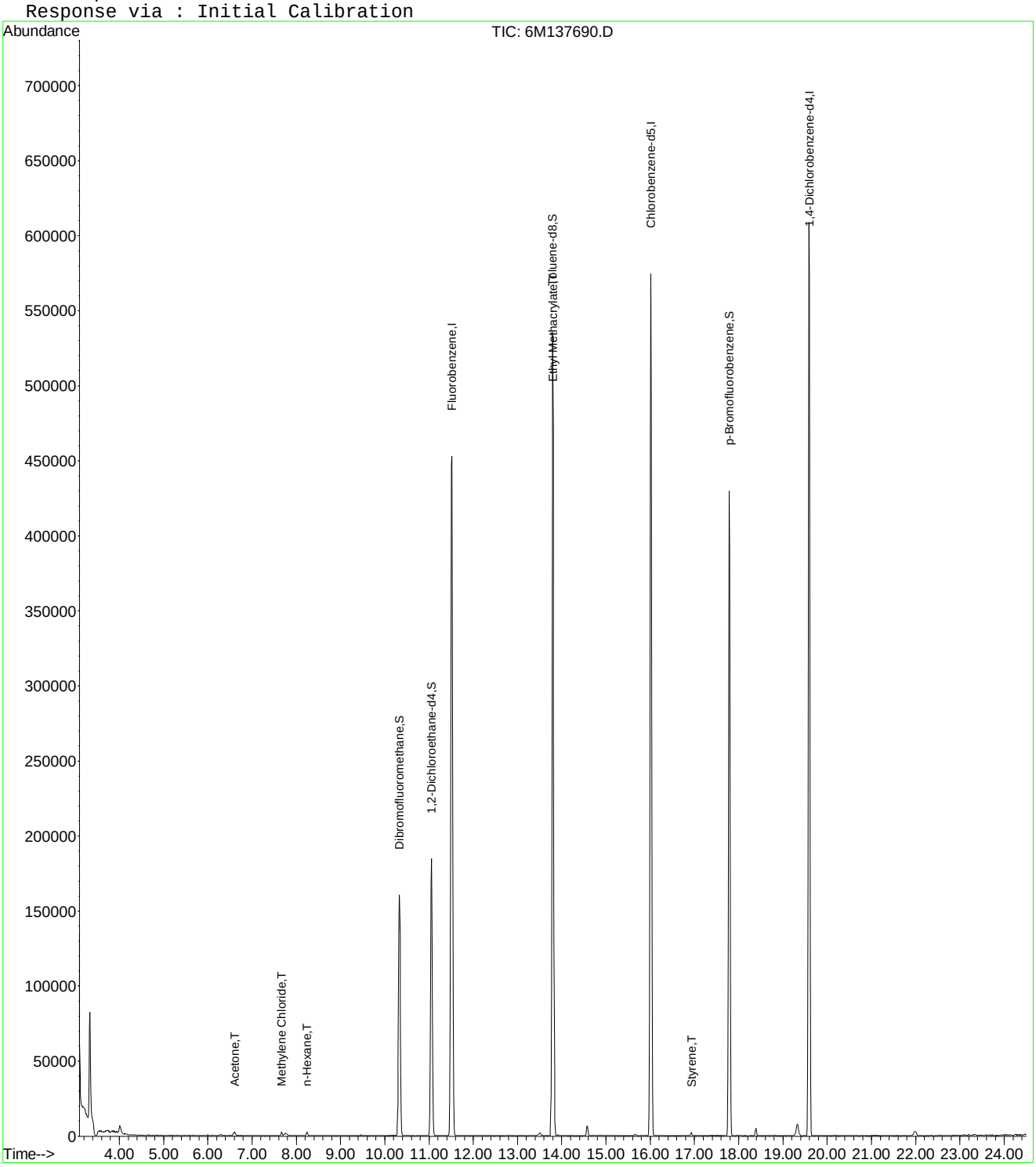

6M137690.D 826_SL.M Thu Mar 10 08:55:01 2016 Page 2

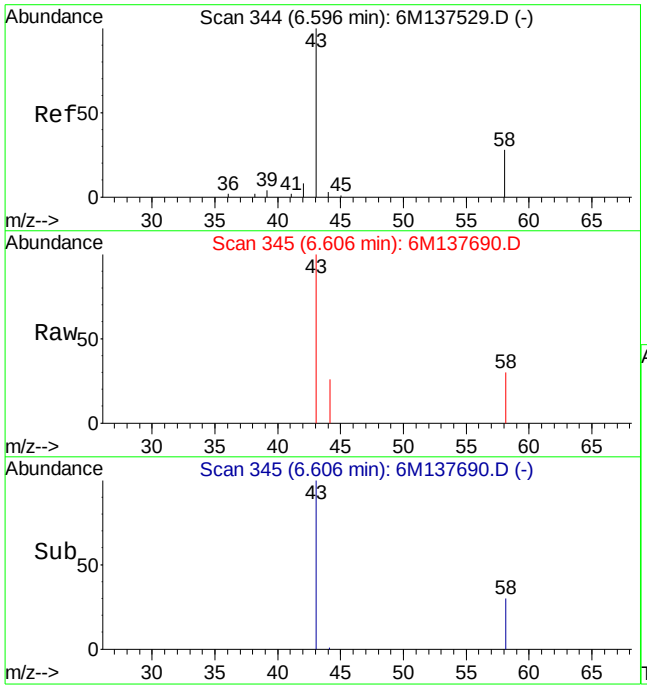

#13
Acetone
Concen: 0.30 ug/L
RT: 6.61 min Scan# 345
Delta R.T. 0.02 min
Lab File: 6M137690.D
Acq: 9 Mar 2016 18:44

Tgt Ion: 43 Resp: 5747

Ion	Ratio	Lower	Upper
43	100		
58	31.9	16.1	37.7

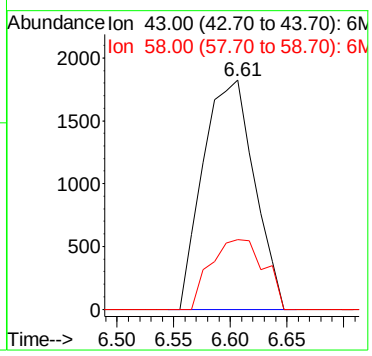

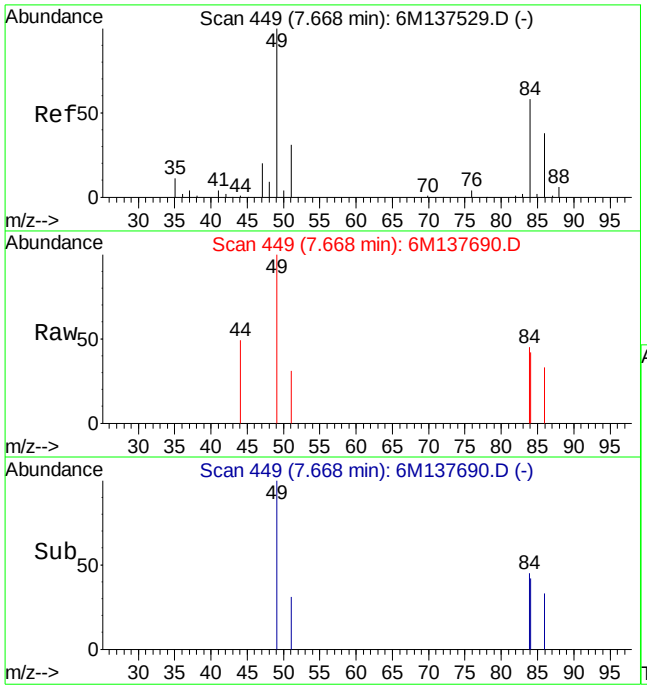

#19
Methylene Chloride
Concen: 0.40 ug/L
RT: 7.67 min Scan# 449
Delta R.T. -0.00 min
Lab File: 6M137690.D
Acq: 9 Mar 2016 18:44

Tgt Ion: 84 Resp: 1226

Ion	Ratio	Lower	Upper
84	100		
49	178.1	87.9	205.1

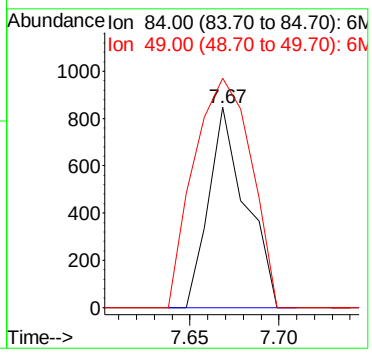

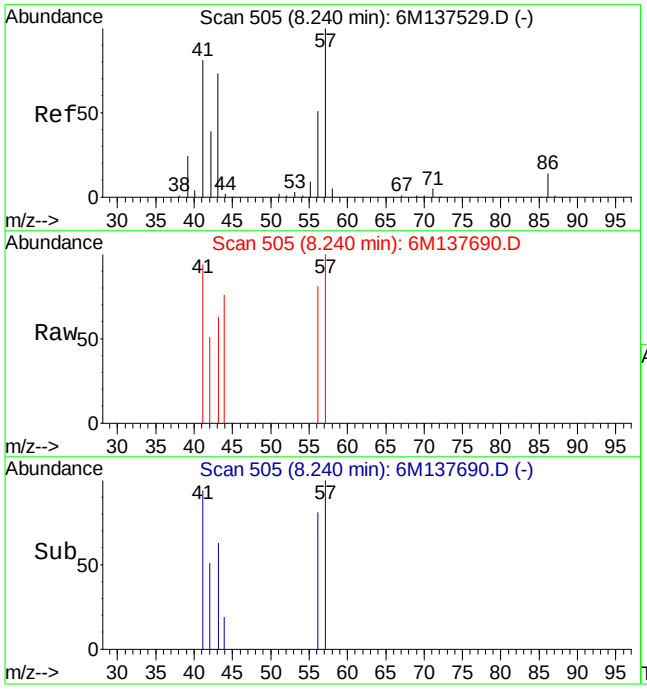

#24
n-Hexane
Concen: 0.33 ug/L
RT: 8.24 min Scan# 505
Delta R.T. -0.00 min
Lab File: 6M137690.D
Acq: 9 Mar 2016 18:44

Tgt Ion: 57 Resp: 1715

Ion	Ratio	Lower	Upper
57	100		
43	56.6	44.0	102.8

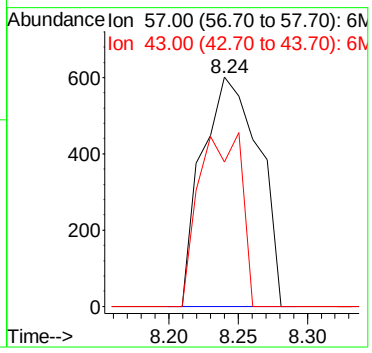

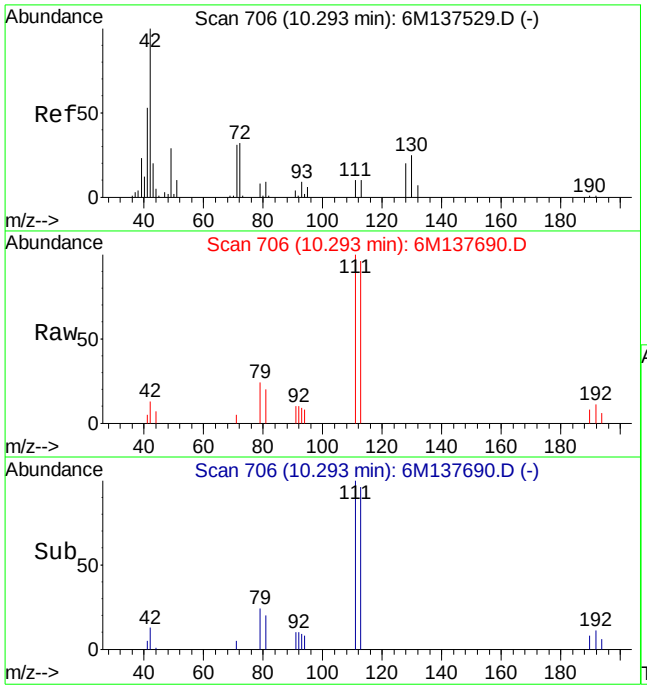

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.29 min Scan# 706
Delta R.T. -0.00 min
Lab File: 6M137690.D
Acq: 9 Mar 2016 18:44

Tgt Ion: 42 Resp: 2124

Ion	Ratio	Lower	Upper
42	100		
72	8.7	21.0	49.0#
71	19.6	20.6	48.2#

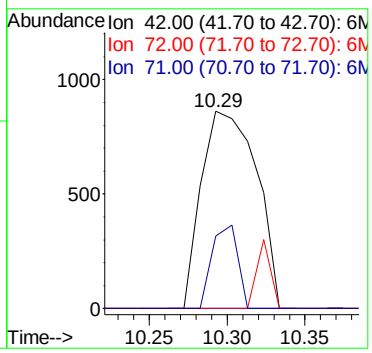

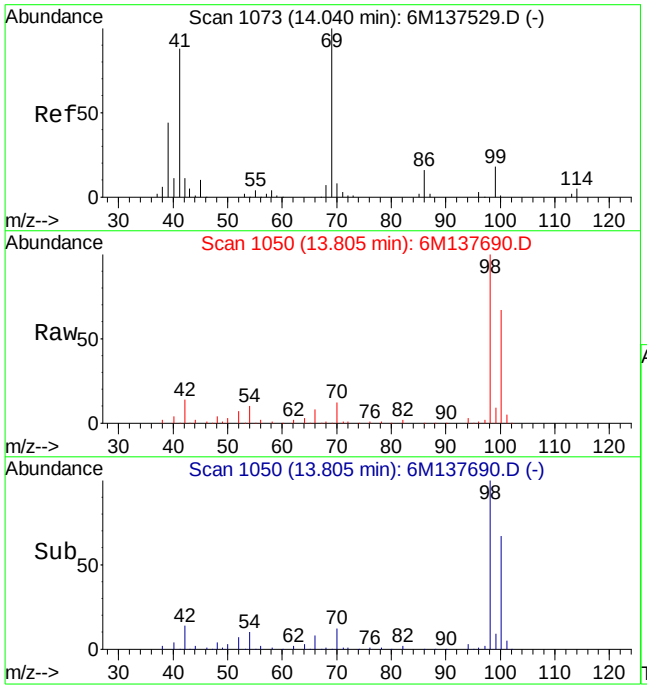

#60
Ethyl Methacrylate
Concen: 0.25 ug/L
RT: 13.81 min Scan# 1050
Delta R.T. -0.23 min
Lab File: 6M137690.D
Acq: 9 Mar 2016 18:44

Tgt Ion: 69 Resp: 985

Ion	Ratio	Lower	Upper
69	100		
41	101.3	50.6	118.2

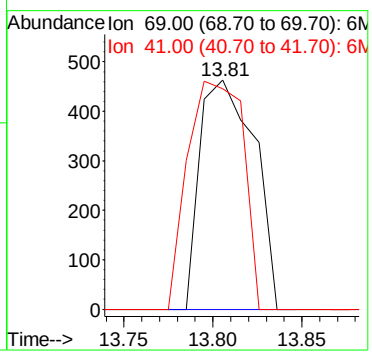

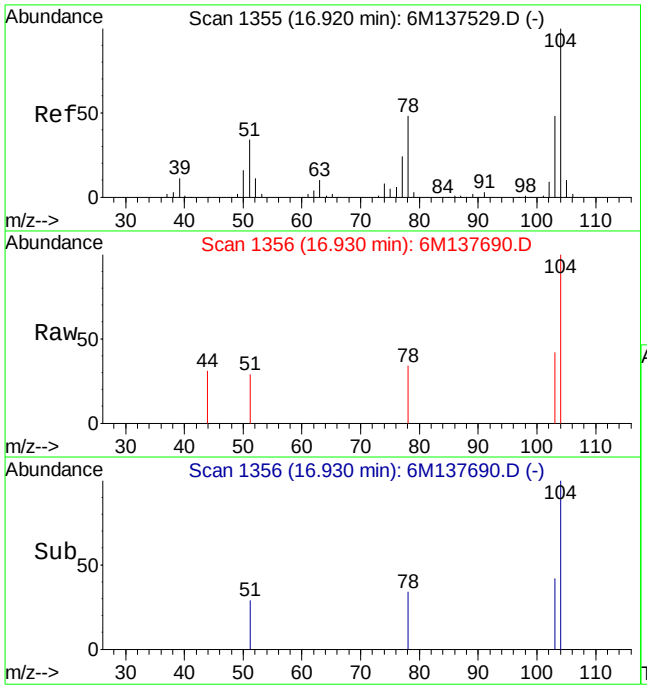

#75
Styrene
Concen: 0.25 ug/L
RT: 16.93 min Scan# 1356
Delta R.T. 0.01 min
Lab File: 6M137690.D
Acq: 9 Mar 2016 18:44

Tgt Ion:104 Resp: 2047

Ion	Ratio	Lower	Upper
104	100		
78	49.4	31.0	72.4

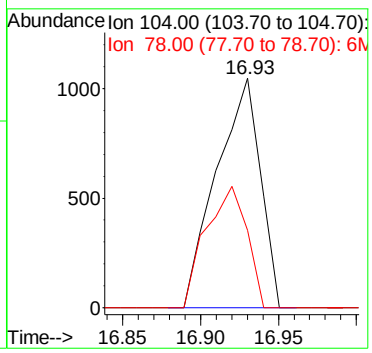

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137695.D Vial: 21
Acq On : 9 Mar 2016 21:30 Operator: TMB
Sample : L16030366-08 8260 4.62g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 08:55:06 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	568490	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	419729	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	221497	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	139581	45.7705 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 91.54%		
43) 1,2-Dichloroethane-d4	11.06	65	177672	44.8723 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 89.74%		
58) Toluene-d8	13.80	98	485828	48.6839 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 97.36%		
80) p-Bromofluorobenzene	17.79	95	203266	49.9617 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 99.92%		

Target Compounds

					Qvalue
11) Acrolein	6.50	56	1048	2.0386 ug/L #	42
13) Acetone	6.60	43	4882	Below Cal #	1
24) n-Hexane	8.24	57	2286	0.4581 ug/L	78
29) 2-Butanone	9.32	43	2810	1.4300 ug/L #	41
33) Chloroform	10.01	83	1699	0.3070 ug/L #	75
36) Tetrahydrofuran	10.30	42	2365	Below Cal #	47
45) 1,2-Dichloroethane	11.20	62	1588	0.3362 ug/L #	44
47) Trichloroethene	12.09	130	104899	37.4955 ug/L	97
48) Methylcyclohexane	12.09	83	1139	0.2518 ug/L #	1
60) Ethyl Methacrylate	13.81	69	1253	0.3294 ug/L	66

(#) = qualifier out of range (m) = manual integration
6M137695.D 826_SL.M Thu Mar 10 08:55:07 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137695.D Vial: 21
Acq On : 9 Mar 2016 21:30 Operator: TMB
Sample : L16030366-08 8260 4.62g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 8:55 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

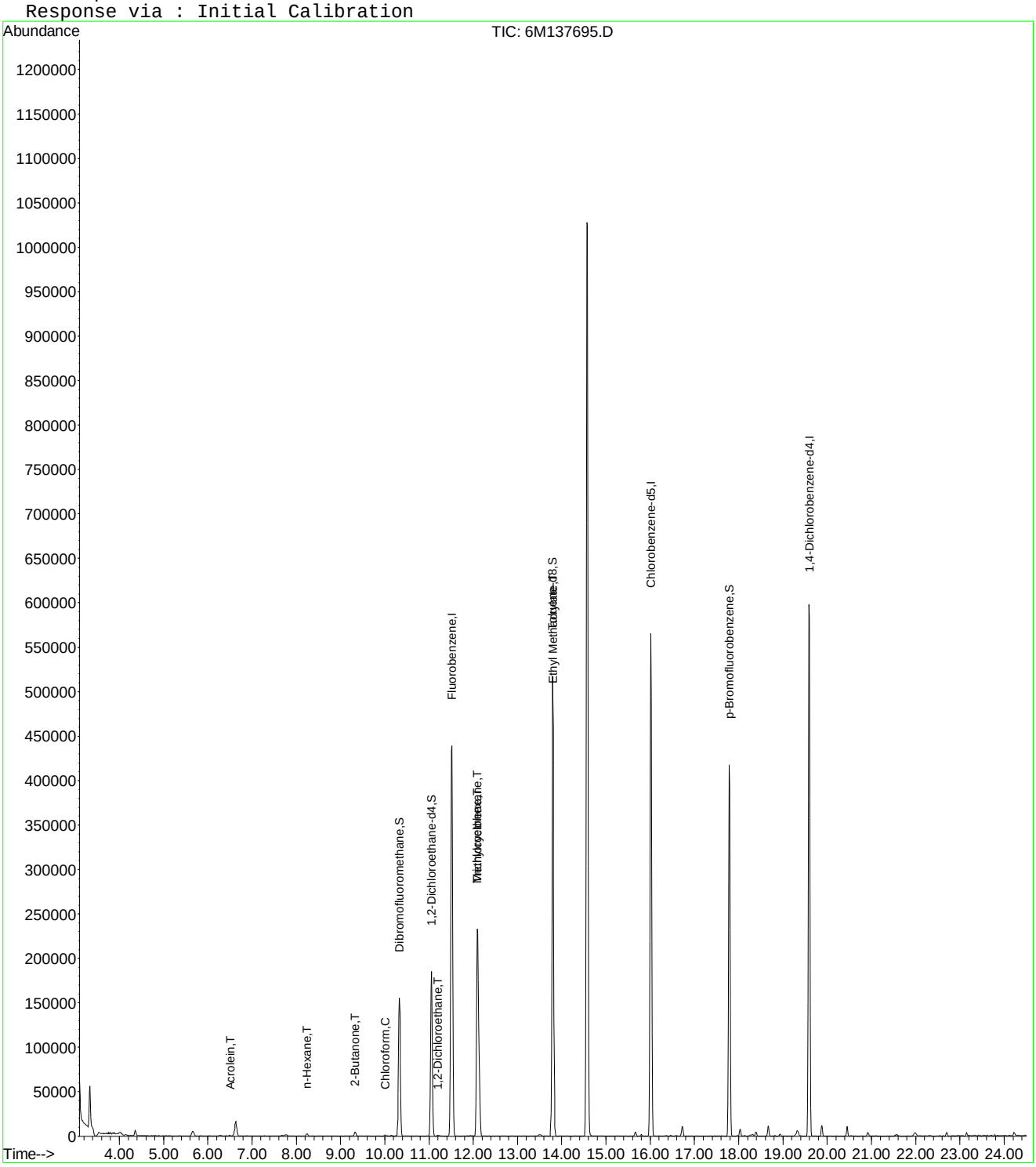

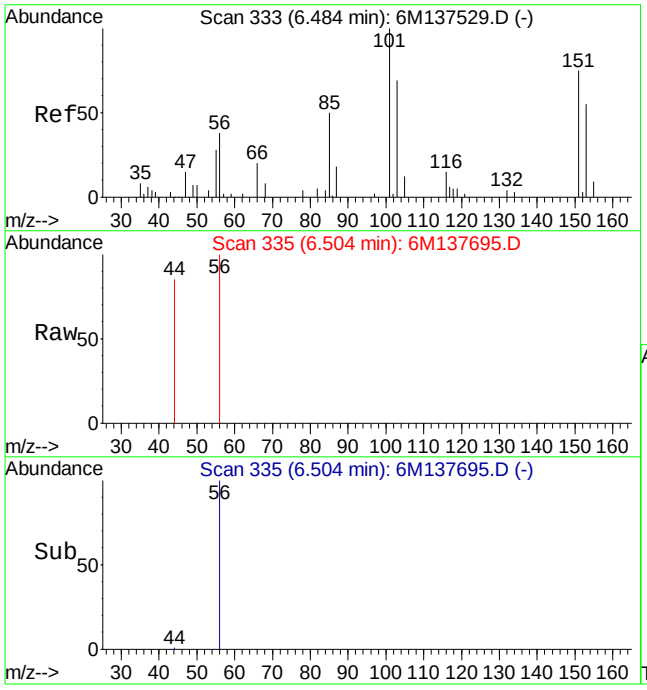

#11
Acrolein
Concen: 2.04 ug/L
RT: 6.50 min Scan# 335
Delta R.T. 0.02 min
Lab File: 6M137695.D
Acq: 9 Mar 2016 21:30

Tgt Ion: 56 Resp: 1048

Ion	Ratio	Lower	Upper
56	100		
55	24.8	44.6	104.0#

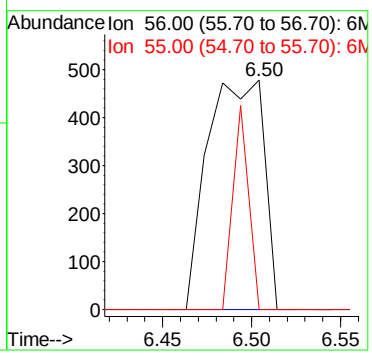

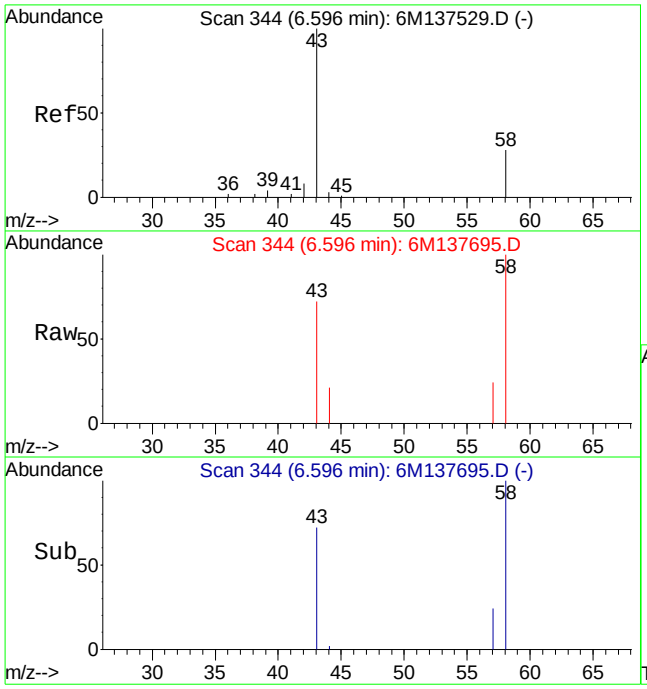

#13
Acetone
Concen: Below Cal
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137695.D
Acq: 9 Mar 2016 21:30

Tgt Ion: 43 Resp: 4882

Ion	Ratio	Lower	Upper
43	100		
58	660.1	16.1	37.7#

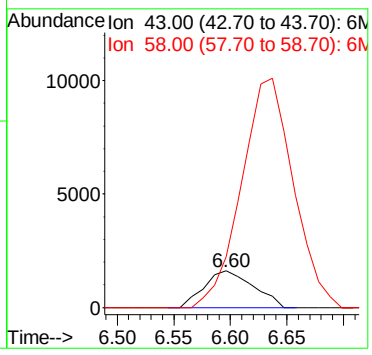

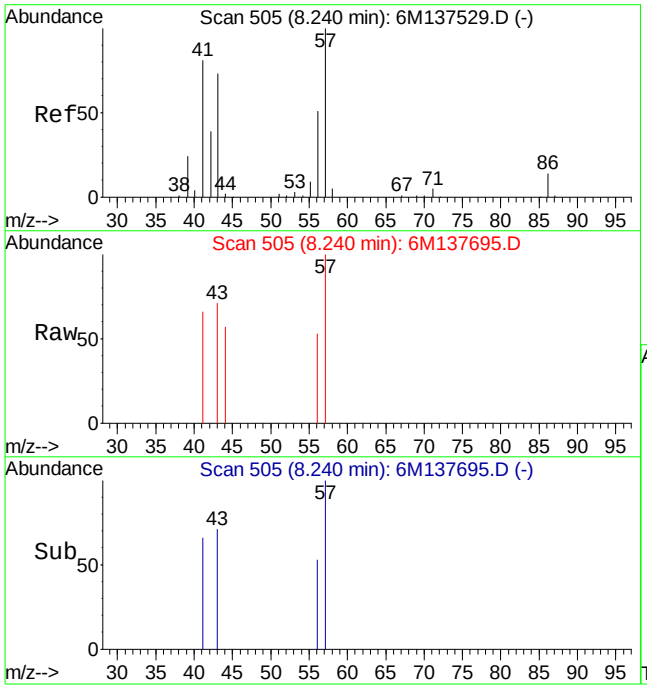

#24
n-Hexane
Concen: 0.46 ug/L
RT: 8.24 min Scan# 505
Delta R.T. -0.00 min
Lab File: 6M137695.D
Acq: 9 Mar 2016 21:30

Tgt Ion: 57 Resp: 2286

Ion	Ratio	Lower	Upper
57	100		
43	54.9	44.0	102.8

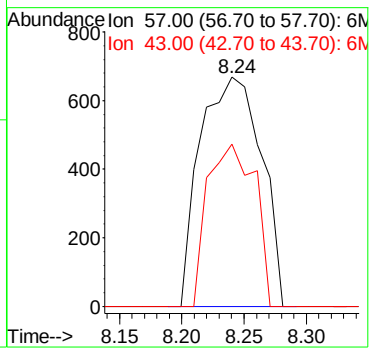

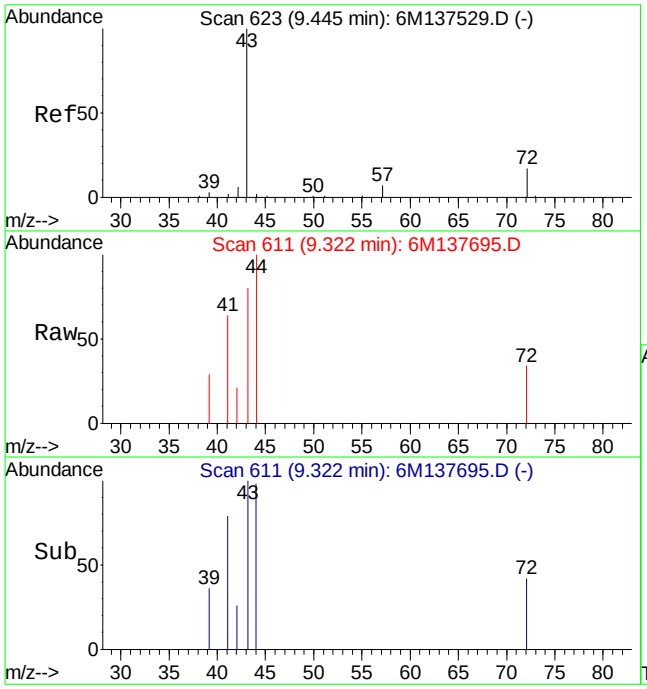

#29
2-Butanone
Concen: 1.43 ug/L
RT: 9.32 min Scan# 611
Delta R.T. -0.12 min
Lab File: 6M137695.D
Acq: 9 Mar 2016 21:30

Tgt Ion: 43 Resp: 2810

Ion	Ratio	Lower	Upper
43	100		
72	47.5	12.2	28.4#

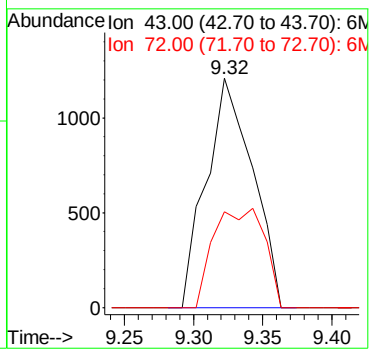

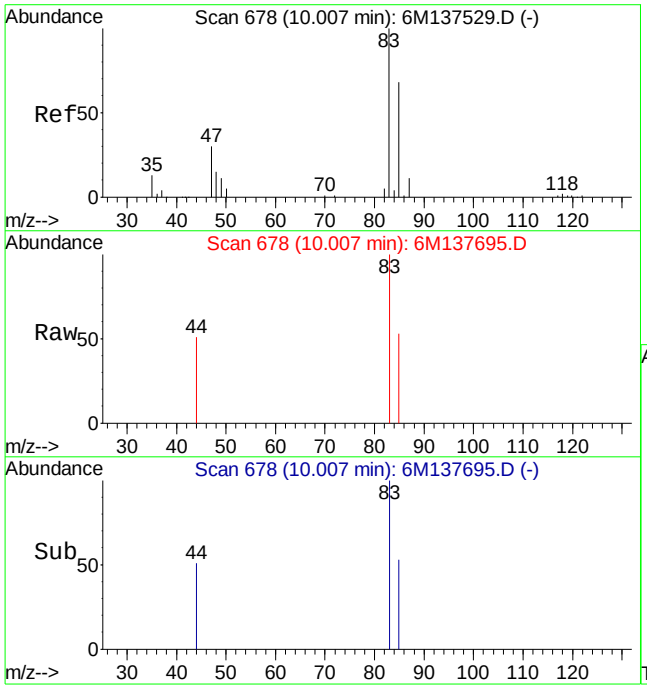

#33
Chloroform
Concen: 0.31 ug/L
RT: 10.01 min Scan# 678
Delta R.T. -0.00 min
Lab File: 6M137695.D
Acq: 9 Mar 2016 21:30

Tgt Ion: 83 Resp: 1699

Ion	Ratio	Lower	Upper
83	100		
85	54.4	38.4	89.6
47	0.0	16.9	39.5#

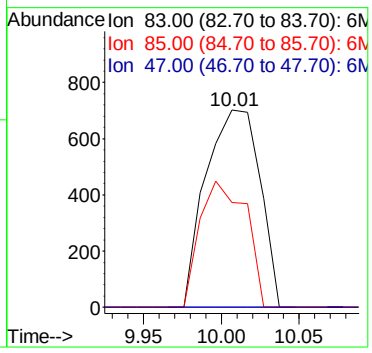

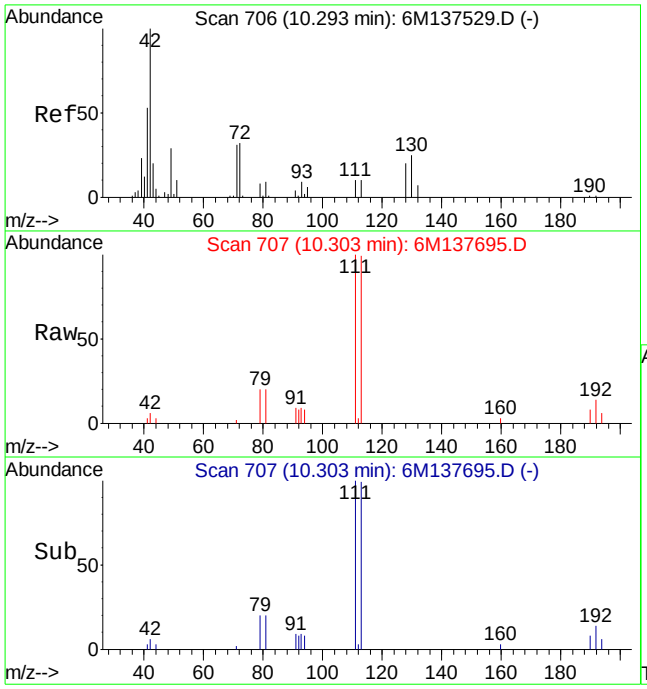

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.30 min Scan# 707
Delta R.T. 0.01 min
Lab File: 6M137695.D
Acq: 9 Mar 2016 21:30

Tgt Ion: 42 Resp: 2365

Ion	Ratio	Lower	Upper
42	100		
72	0.0	21.0	49.0#
71	8.5	20.6	48.2#

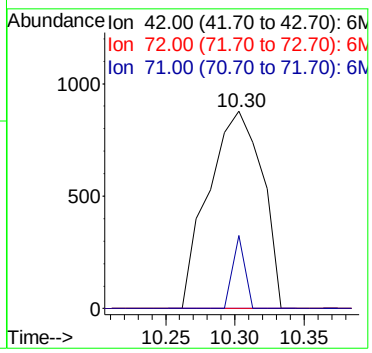

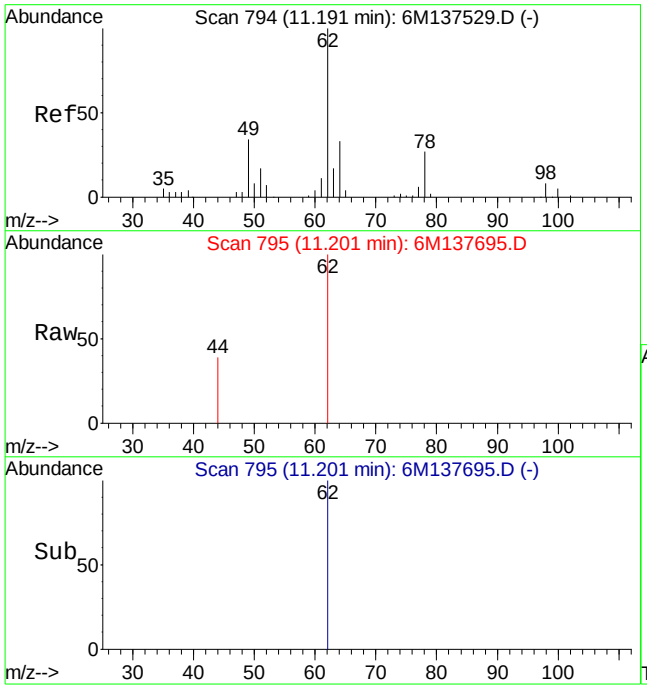

#45
1,2-Dichloroethane
Concen: 0.34 ug/L
RT: 11.20 min Scan# 795
Delta R.T. 0.01 min
Lab File: 6M137695.D
Acq: 9 Mar 2016 21:30

Tgt Ion: 62 Resp: 1588

Ion	Ratio	Lower	Upper
62	100		
49	0.0	22.9	53.3#
98	0.0	4.7	10.9#

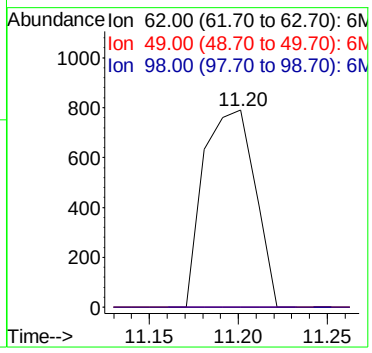

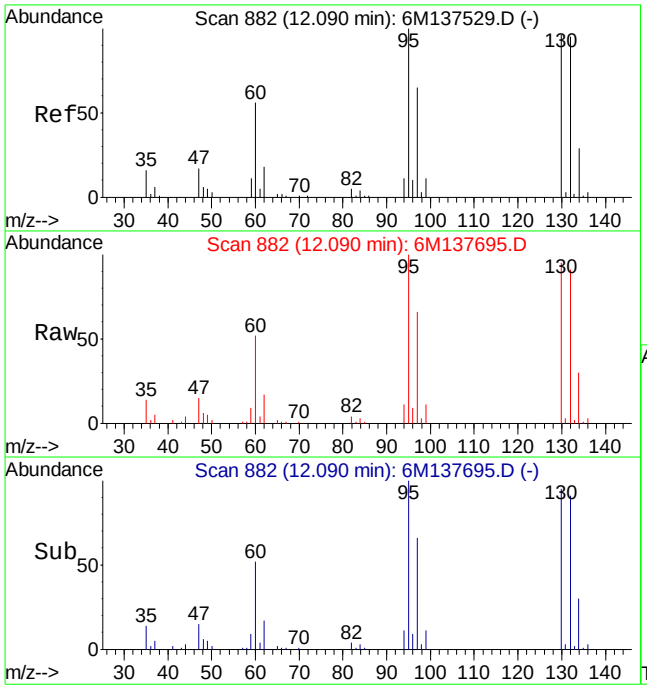

#47
Trichloroethene
Concen: 37.50 ug/L
RT: 12.09 min Scan# 882
Delta R.T. -0.00 min
Lab File: 6M137695.D
Acq: 9 Mar 2016 21:30

Tgt Ion:130 Resp: 104899

Ion	Ratio	Lower	Upper
130	100		
60	53.8	31.2	72.8

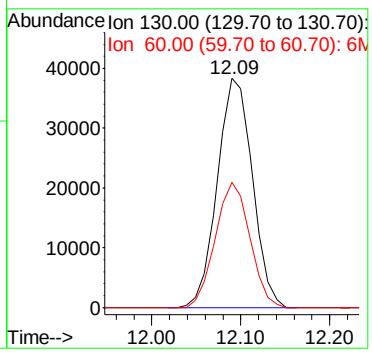

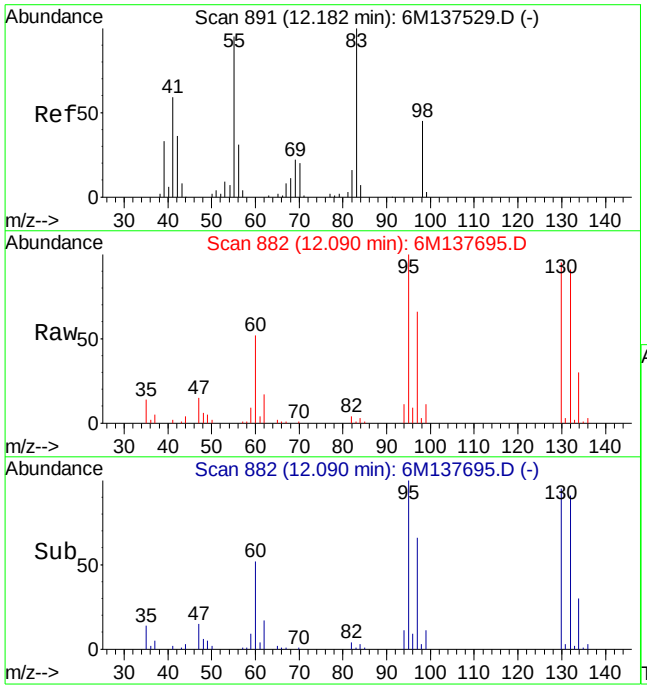

#48
Methylcyclohexane
Concen: 0.25 ug/L
RT: 12.09 min Scan# 882
Delta R.T. -0.09 min
Lab File: 6M137695.D
Acq: 9 Mar 2016 21:30

Tgt Ion: 83 Resp: 1139

Ion	Ratio	Lower	Upper
83	100		
55	330.9	48.3	112.7#
98	216.7	27.5	64.1#

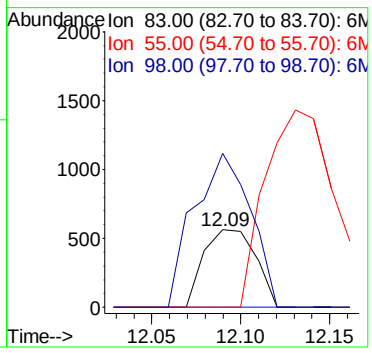

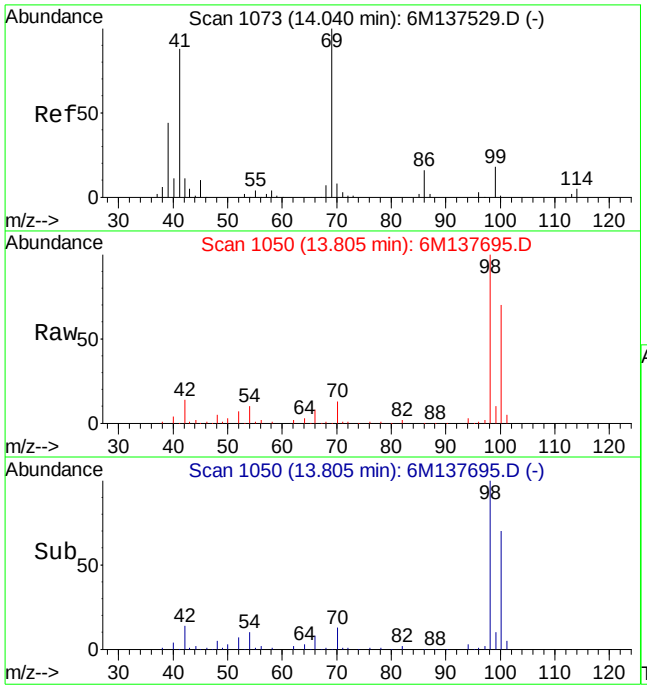

#60
Ethyl Methacrylate
Concen: 0.33 ug/L
RT: 13.81 min Scan# 1050
Delta R.T. -0.23 min
Lab File: 6M137695.D
Acq: 9 Mar 2016 21:30

Tgt Ion: 69 Resp: 1253

Ion	Ratio	Lower	Upper
69	100		
41	114.9	50.6	118.2

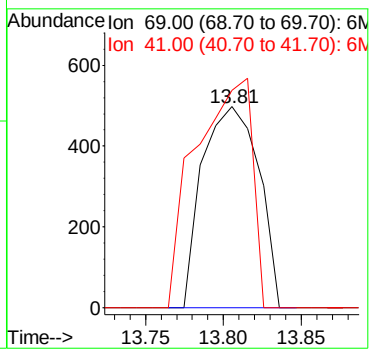

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137694.D Vial: 20
Acq On : 9 Mar 2016 20:57 Operator: TMB
Sample : L16030366-09 8260 4.77g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 08:55:05 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	570174	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	425629	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	228012	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.34	111	142805	46.6894 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.38%		
43) 1,2-Dichloroethane-d4	11.06	65	187233	47.1473 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.30%		
58) Toluene-d8	13.80	98	488442	48.2673 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 96.54%		
80) p-Bromofluorobenzene	17.79	95	207207	49.4752 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 98.96%		

Target Compounds

					Qvalue
13) Acetone	6.60	43	2528	Below Cal #	1
24) n-Hexane	8.24	57	1446	0.2889 ug/L	90
29) 2-Butanone	9.34	43	3779	1.9174 ug/L #	49
36) Tetrahydrofuran	10.31	42	2582	Below Cal #	68
47) Trichloroethene	12.09	130	12748	4.5432 ug/L	96
60) Ethyl Methacrylate	13.80	69	1037	0.2688 ug/L #	43

(#) = qualifier out of range (m) = manual integration
6M137694.D 826_SL.M Thu Mar 10 08:55:06 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137694.D Vial: 20
Acq On : 9 Mar 2016 20:57 Operator: TMB
Sample : L16030366-09 8260 4.77g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 8:55 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

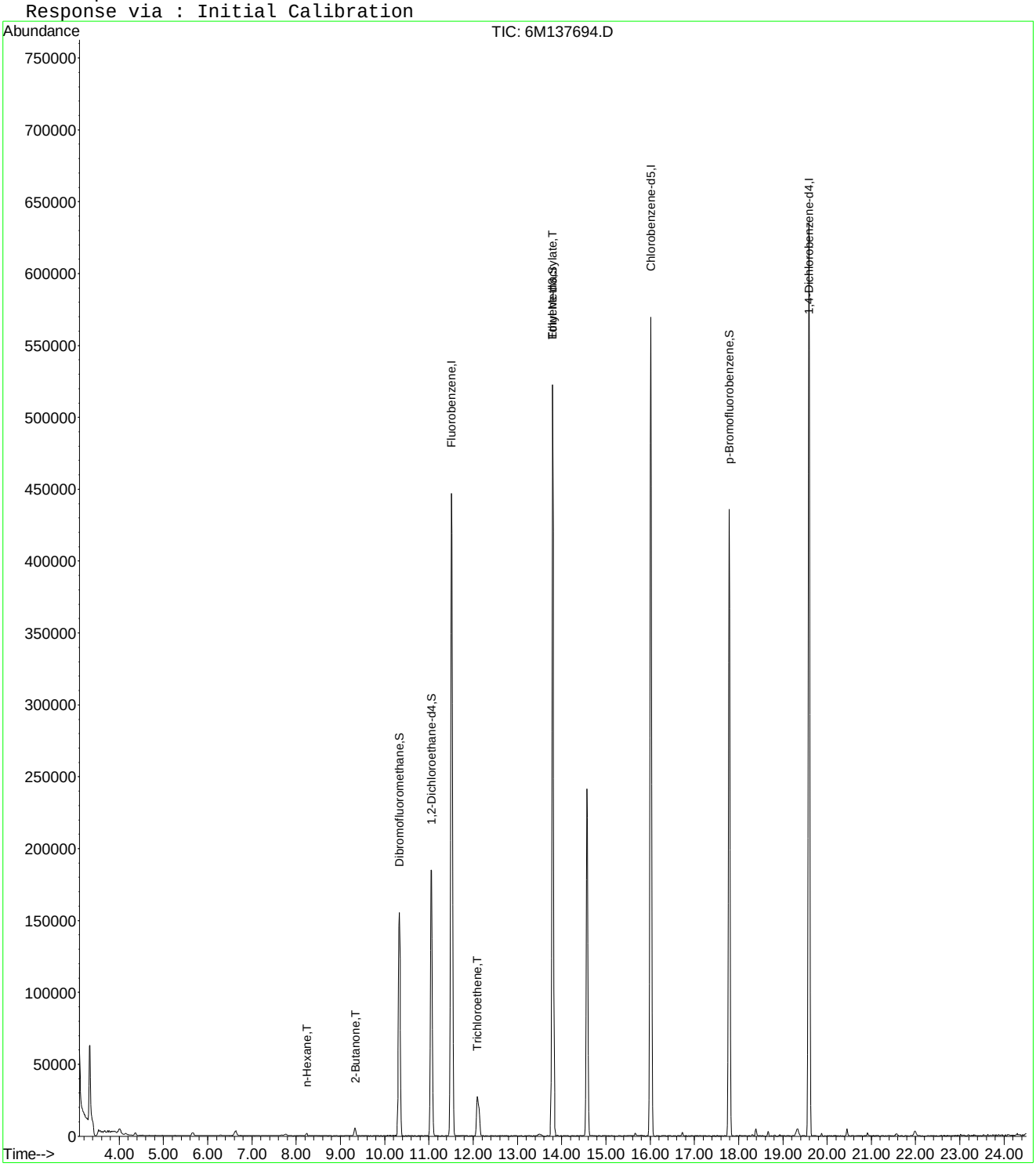

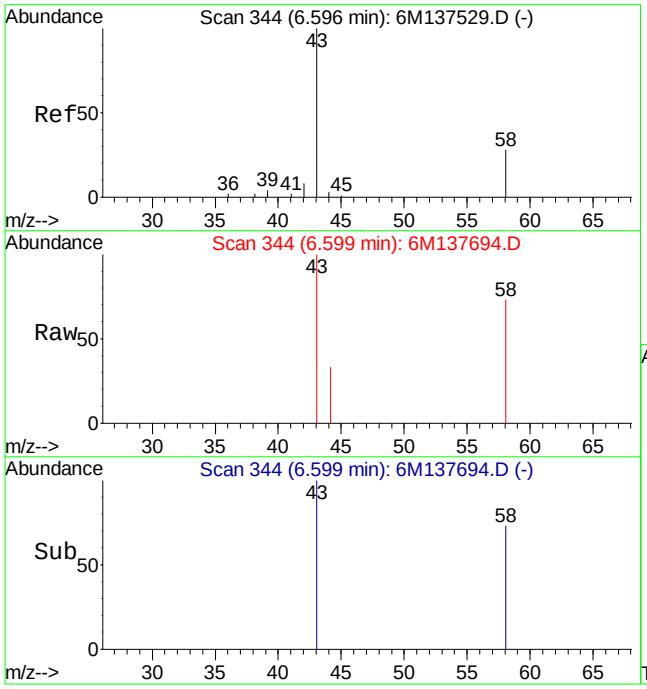

#13
Acetone
Concen: Below Cal
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137694.D
Acq: 9 Mar 2016 20:57

Tgt Ion: 43 Resp: 2528

Ion	Ratio	Lower	Upper
43	100		
58	311.0	16.1	37.7#

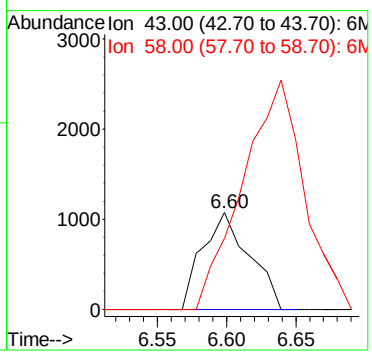

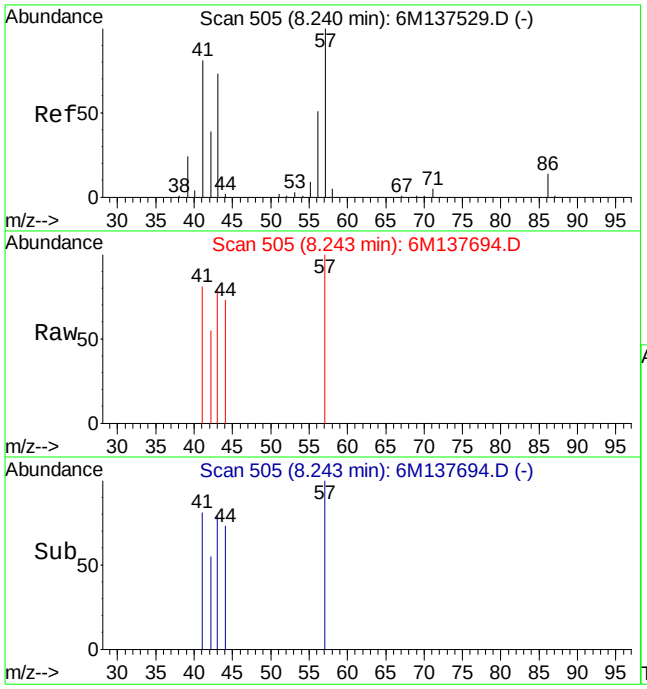

#24
n-Hexane
Concen: 0.29 ug/L
RT: 8.24 min Scan# 505
Delta R.T. 0.00 min
Lab File: 6M137694.D
Acq: 9 Mar 2016 20:57

Tgt Ion: 57 Resp: 1446

Ion	Ratio	Lower	Upper
57	100		
43	65.1	44.0	102.8

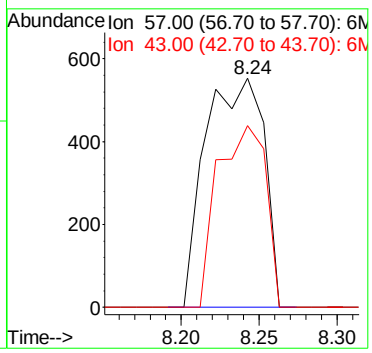

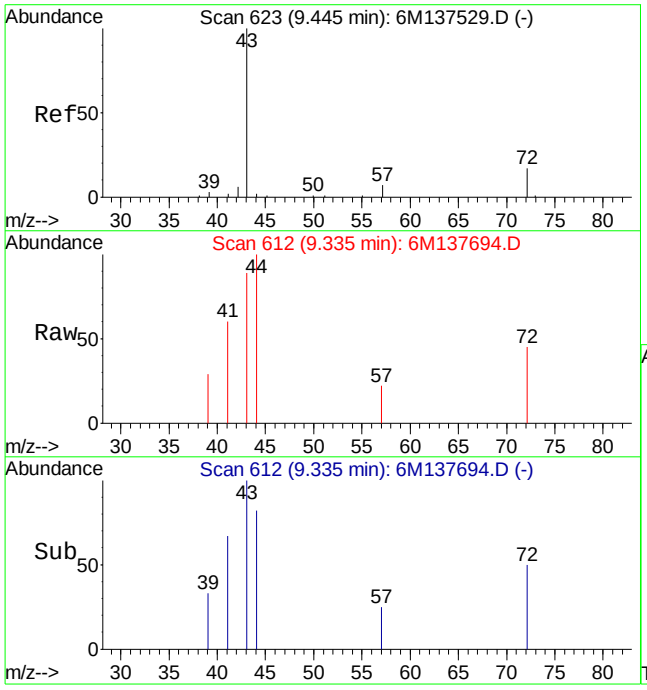

#29
2-Butanone
Concen: 1.92 ug/L
RT: 9.34 min Scan# 612
Delta R.T. -0.11 min
Lab File: 6M137694.D
Acq: 9 Mar 2016 20:57

Tgt Ion: 43 Resp: 3779

Ion	Ratio	Lower	Upper
43	100		
72	43.7	12.2	28.4#

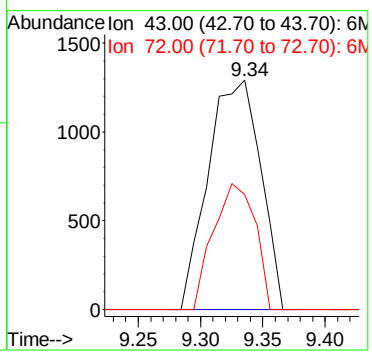

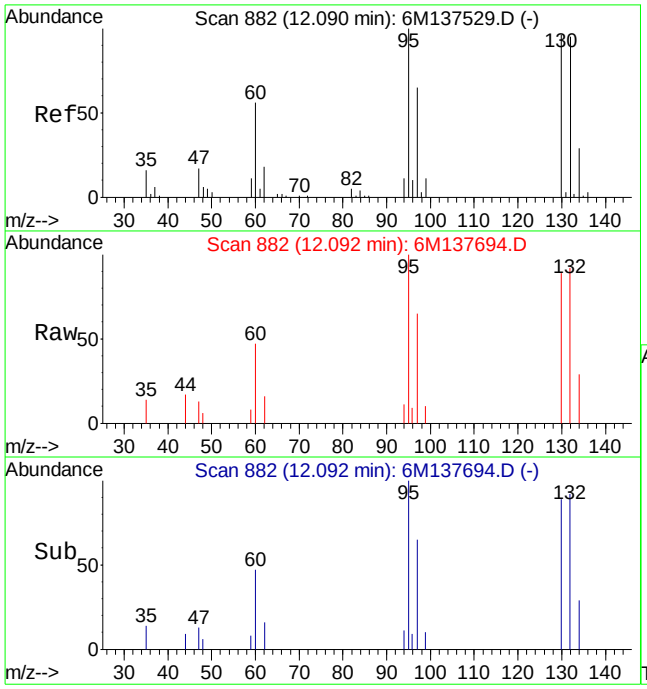

#47
Trichloroethene
Concen: 4.54 ug/L
RT: 12.09 min Scan# 882
Delta R.T. 0.00 min
Lab File: 6M137694.D
Acq: 9 Mar 2016 20:57

Tgt Ion:130 Resp: 12748

Ion	Ratio	Lower	Upper
130	100		
60	49.3	31.2	72.8

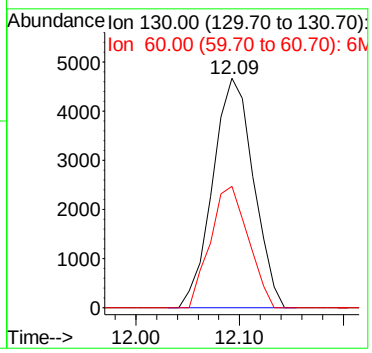

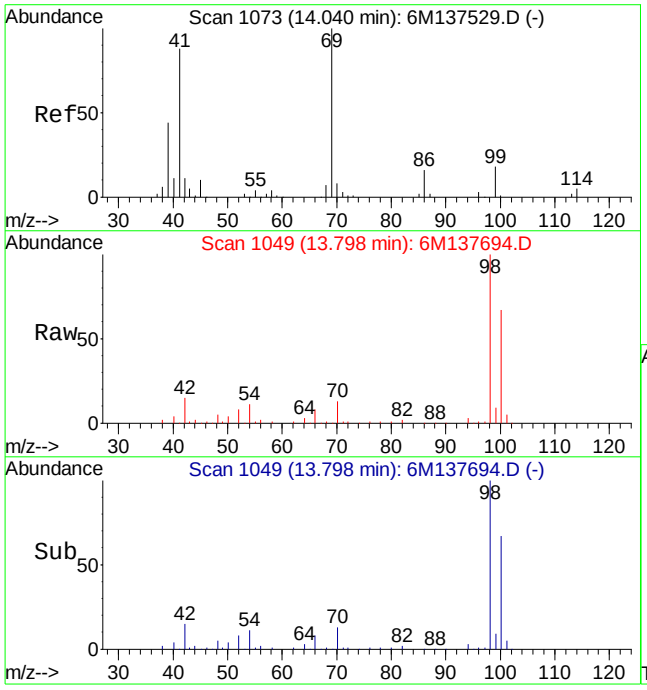

#60
Ethyl Methacrylate
Concen: 0.27 ug/L
RT: 13.80 min Scan# 1049
Delta R.T. -0.23 min
Lab File: 6M137694.D
Acq: 9 Mar 2016 20:57

Tgt Ion: 69 Resp: 1037

Ion	Ratio	Lower	Upper
69	100		
41	136.2	50.6	118.2#

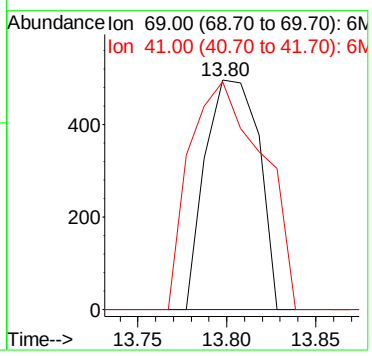

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137691.D Vial: 17
Acq On : 9 Mar 2016 19:18 Operator: TMB
Sample : L16030366-10 8260 4.70g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 08:55:02 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	572617	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	417763	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	216829	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	142089	46.2571 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 92.52%		
43) 1,2-Dichloroethane-d4	11.06	65	173358	43.4672 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 86.94%		
58) Toluene-d8	13.80	98	487227	49.0538 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.10%		
80) p-Bromofluorobenzene	17.79	95	198951	49.9539 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 99.90%		

Target Compounds					Qvalue
13) Acetone	6.60	43	10656	4.5096 ug/L #	26
19) Methylene Chloride	7.67	84	959	0.3178 ug/L	62
24) n-Hexane	8.24	57	2149	0.4275 ug/L	85
29) 2-Butanone	9.46	43	1983	1.0019 ug/L #	56
36) Tetrahydrofuran	10.30	42	2573	Below Cal #	47
86) 2-Chlorotoluene	18.35	91	2808	0.2857 ug/L #	49
87) 4-Chlorotoluene	18.35	91	2808	0.3125 ug/L #	47

(#) = qualifier out of range (m) = manual integration
6M137691.D 826_SL.M Thu Mar 10 08:55:02 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137691.D Vial: 17
Acq On : 9 Mar 2016 19:18 Operator: TMB
Sample : L16030366-10 8260 4.70g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 8:55 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

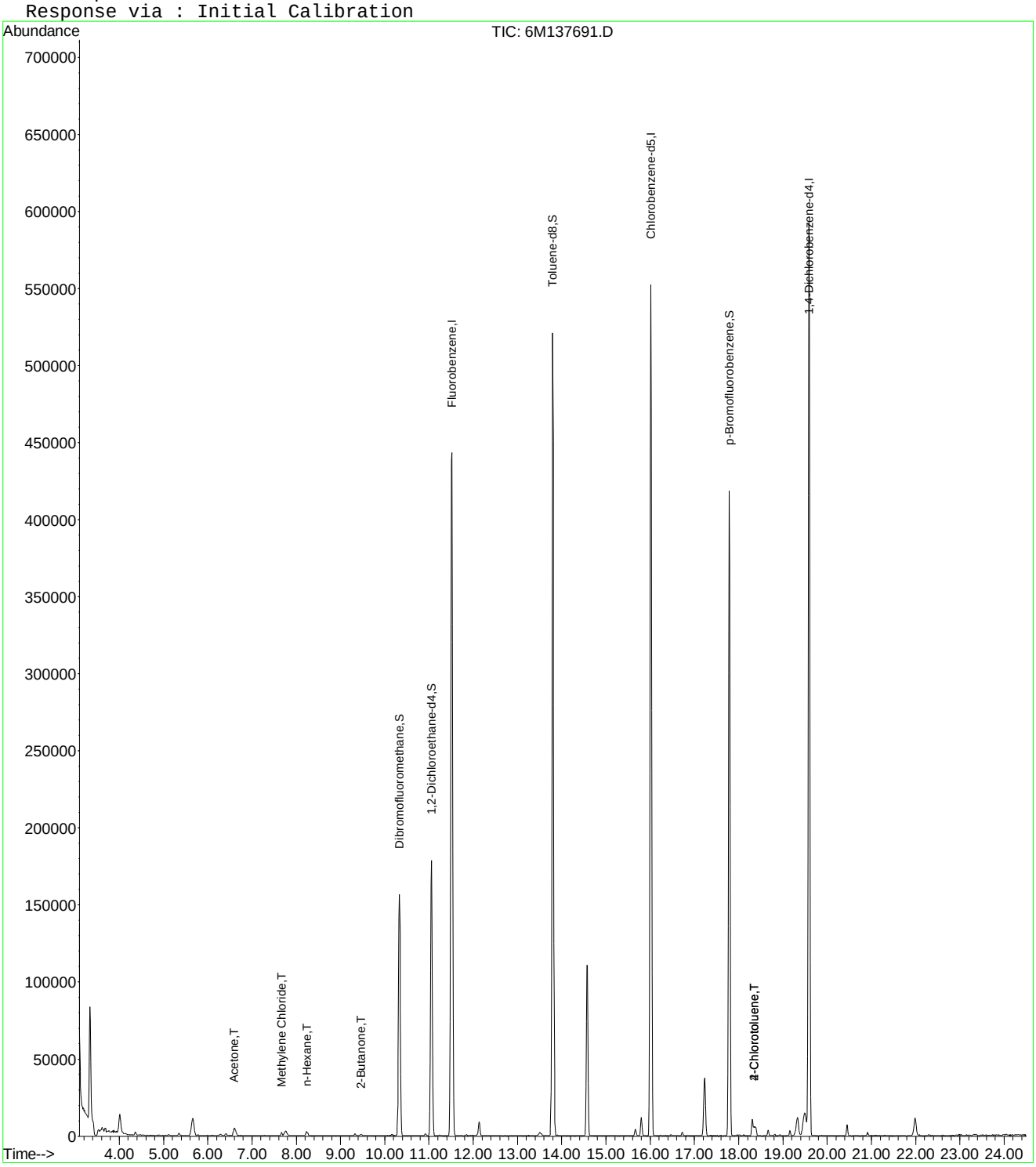

6M137691.D 826_SL.M Thu Mar 10 08:55:03 2016 Page 2

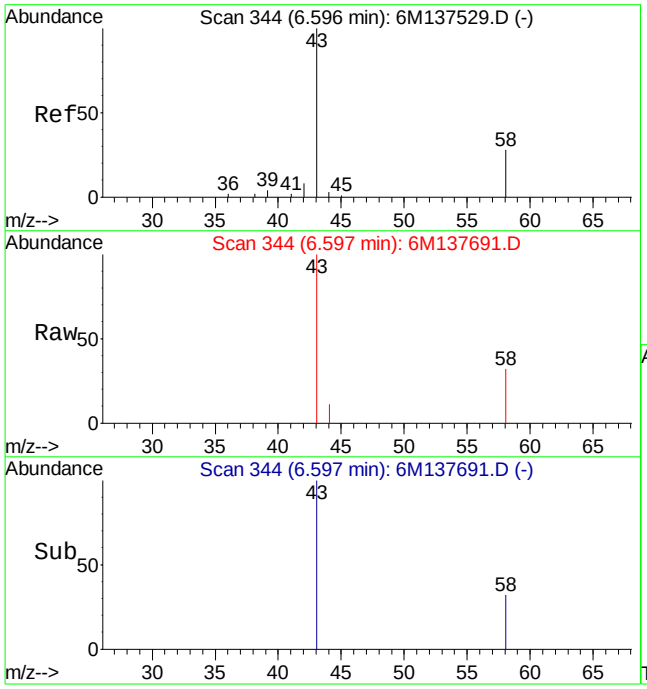

#13
Acetone
Concen: 4.51 ug/L
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137691.D
Acq: 9 Mar 2016 19:18

Tgt Ion: 43 Resp: 10656

Ion	Ratio	Lower	Upper
43	100		
58	64.9	16.1	37.7#

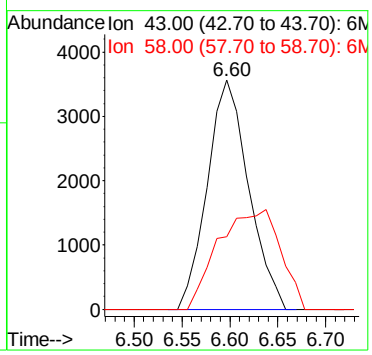

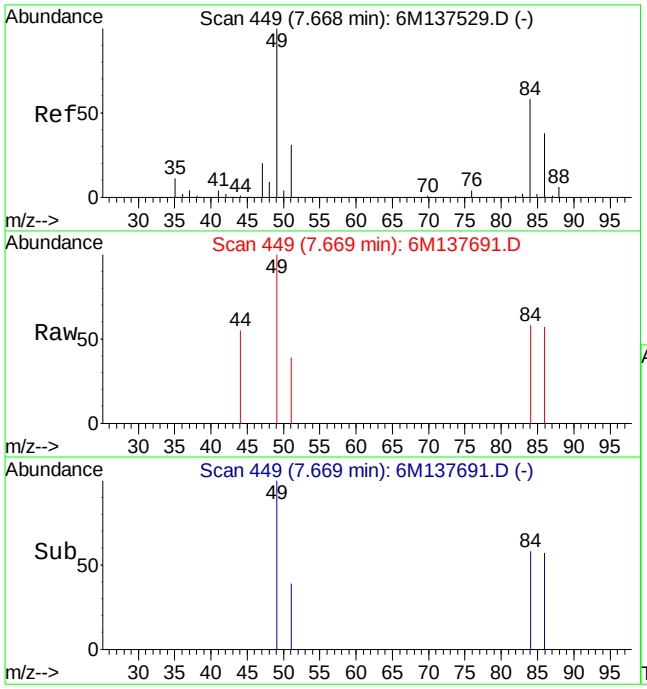

#19
Methylene Chloride
Concen: 0.32 ug/L
RT: 7.67 min Scan# 449
Delta R.T. -0.00 min
Lab File: 6M137691.D
Acq: 9 Mar 2016 19:18

Tgt Ion: 84 Resp: 959

Ion	Ratio	Lower	Upper
84	100		
49	193.6	87.9	205.1

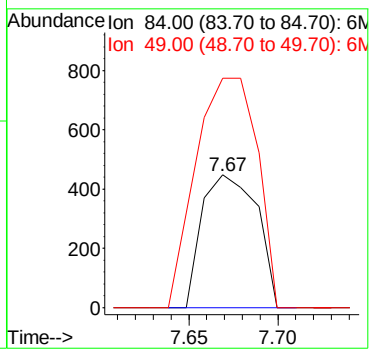

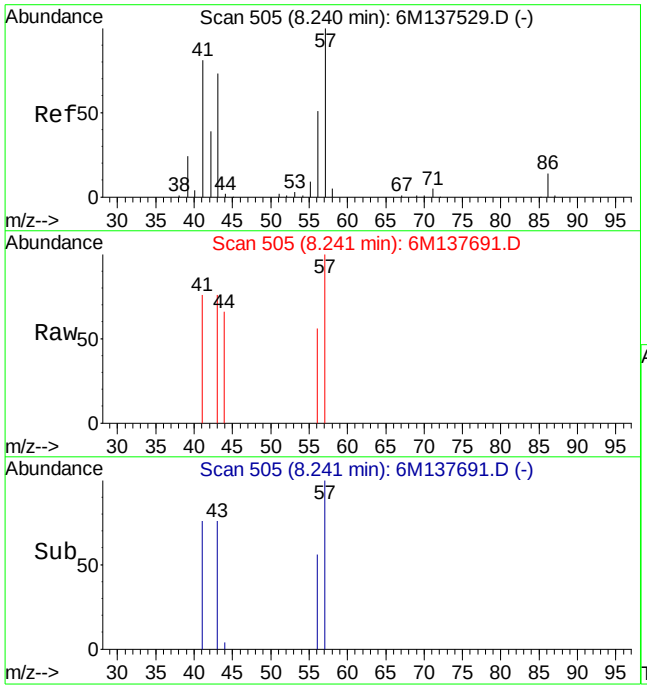

#24
n-Hexane
Concen: 0.43 ug/L
RT: 8.24 min Scan# 505
Delta R.T. -0.00 min
Lab File: 6M137691.D
Acq: 9 Mar 2016 19:18

Tgt Ion: 57 Resp: 2149

Ion	Ratio	Lower	Upper
57	100		
43	85.9	44.0	102.8

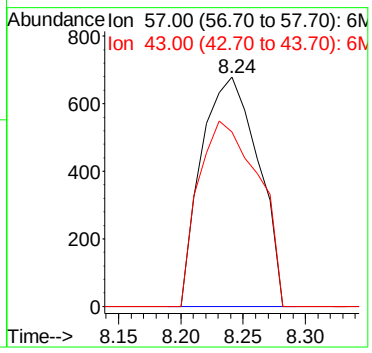

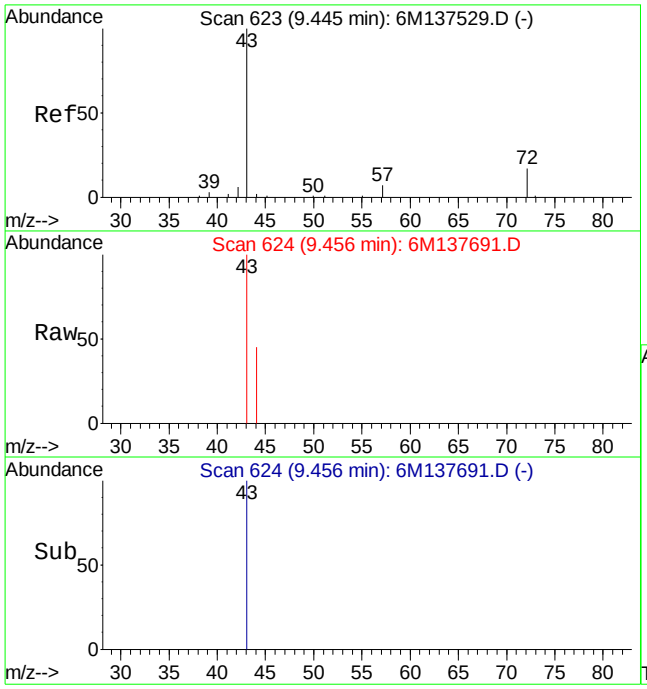

#29
2-Butanone
Concen: 1.00 ug/L
RT: 9.46 min Scan# 624
Delta R.T. 0.01 min
Lab File: 6M137691.D
Acq: 9 Mar 2016 19:18

Tgt Ion: 43 Resp: 1983

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.2	28.4#

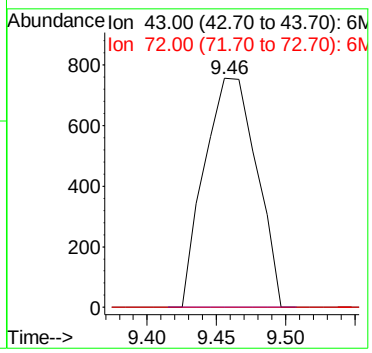

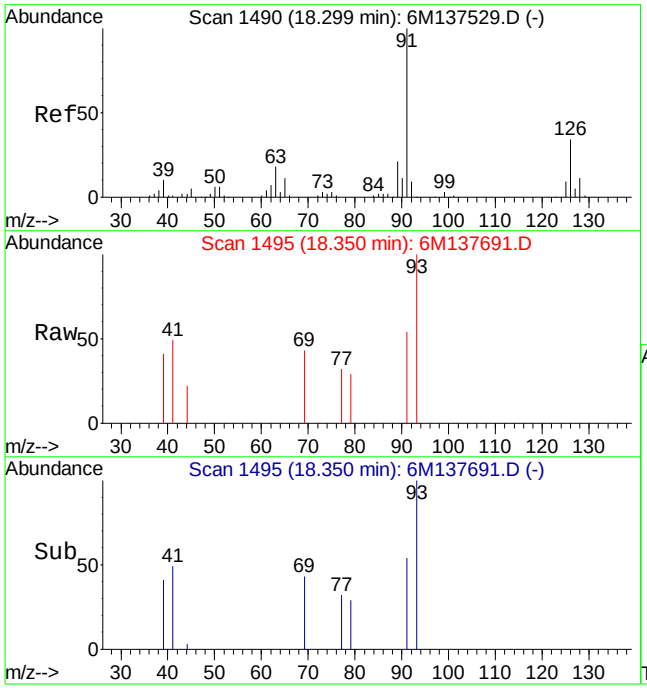

#86
2-Chlorotoluene
Concen: 0.29 ug/L
RT: 18.35 min Scan# 1495
Delta R.T. 0.05 min
Lab File: 6M137691.D
Acq: 9 Mar 2016 19:18

Tgt Ion: 91 Resp: 2808

Ion	Ratio	Lower	Upper
91	100		
126	0.0	18.5	43.3#
63	0.0	11.6	27.2#

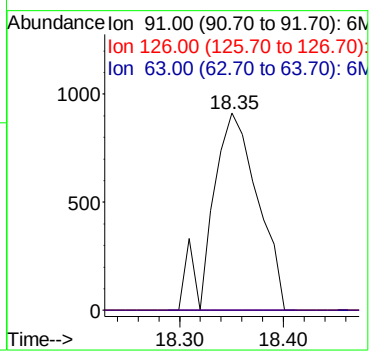

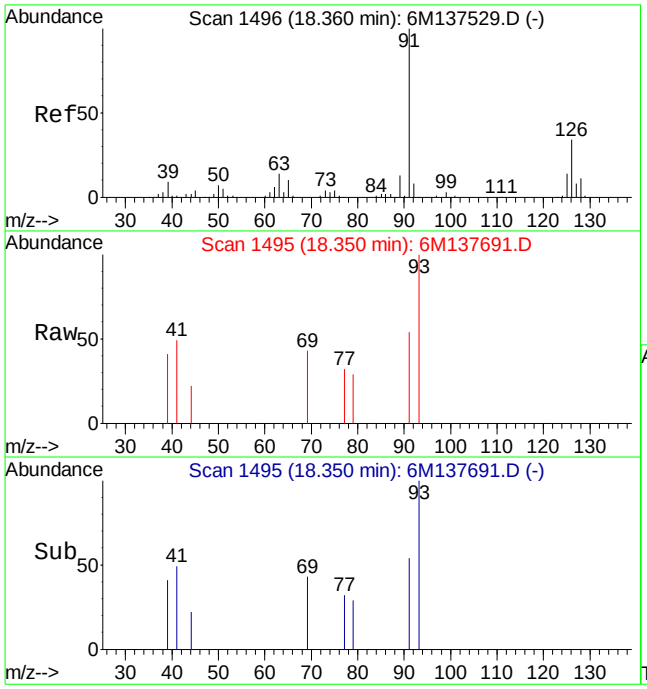

#87
4-Chlorotoluene
Concen: 0.31 ug/L
RT: 18.35 min Scan# 1495
Delta R.T. 0.00 min
Lab File: 6M137691.D
Acq: 9 Mar 2016 19:18

Tgt Ion: 91 Resp: 2808

Ion	Ratio	Lower	Upper
91	100		
126	0.0	21.0	49.0#
63	0.0	8.8	20.6#

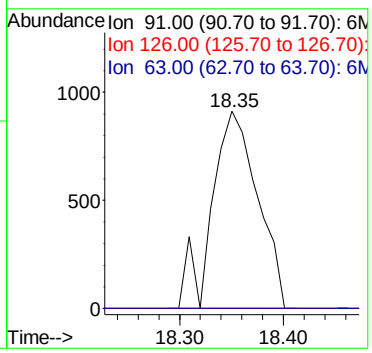

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137692.D Vial: 18
Acq On : 9 Mar 2016 19:51 Operator: TMB
Sample : L16030366-11 8260 5.46g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 08:55:03 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	564192	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	408843	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	208054	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	135857	44.8887 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 89.78%		
43) 1,2-Dichloroethane-d4	11.06	65	163317	41.5610 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 83.12%		
58) Toluene-d8	13.80	98	478612	49.2378 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.48%		
80) p-Bromofluorobenzene	17.79	95	191415	50.0888 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 100.18%		

Target Compounds

					Qvalue
13) Acetone	6.60	43	3983	Below Cal #	3
19) Methylene Chloride	7.66	84	901	0.3030 ug/L #	52
24) n-Hexane	8.24	57	1434	0.2895 ug/L	90
36) Tetrahydrofuran	10.30	42	1931	Below Cal #	51
60) Ethyl Methacrylate	13.80	69	1048	0.2828 ug/L	65

(#) = qualifier out of range (m) = manual integration
6M137692.D 826_SL.M Thu Mar 10 08:55:04 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137692.D Vial: 18
Acq On : 9 Mar 2016 19:51 Operator: TMB
Sample : L16030366-11 8260 5.46g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 8:55 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

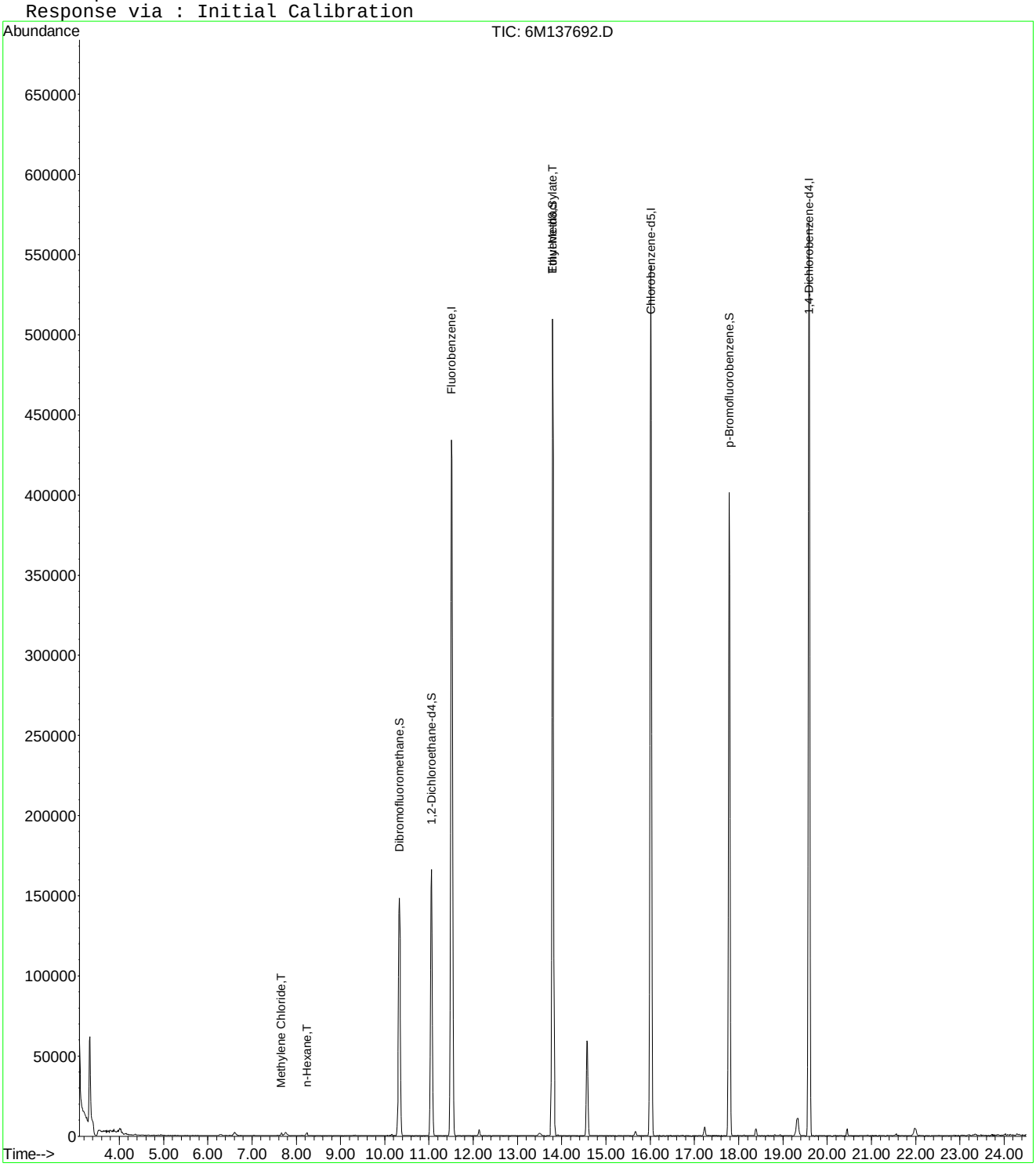

6M137692.D 826_SL.M Thu Mar 10 08:55:04 2016 Page 2

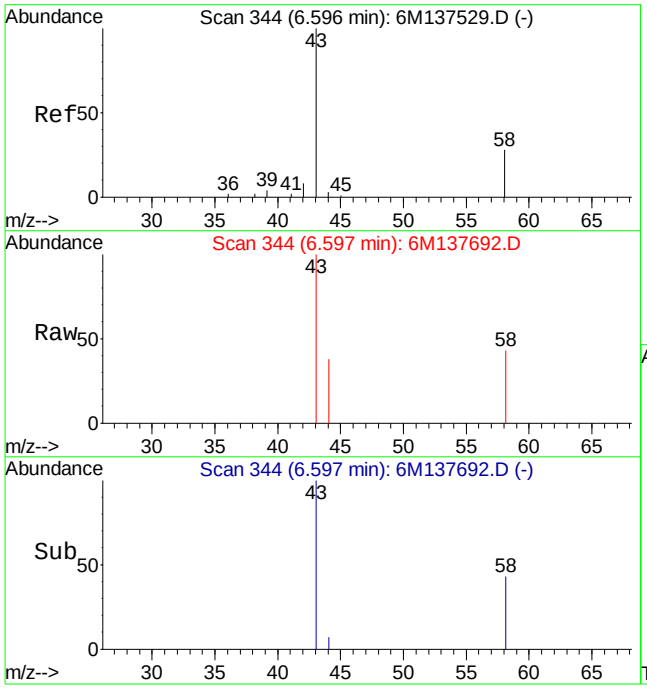

#13
Acetone
Concen: Below Cal
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137692.D
Acq: 9 Mar 2016 19:51

Tgt Ion: 43 Resp: 3983

Ion	Ratio	Lower	Upper
43	100		
58	77.2	16.1	37.7#

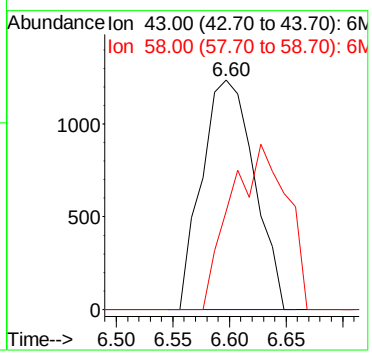

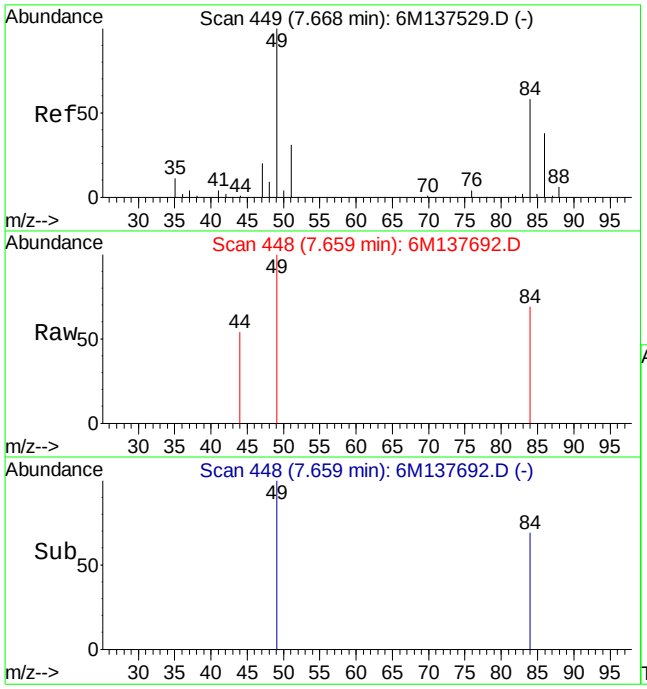

#19
Methylene Chloride
Concen: 0.30 ug/L
RT: 7.66 min Scan# 448
Delta R.T. -0.01 min
Lab File: 6M137692.D
Acq: 9 Mar 2016 19:51

Tgt Ion: 84 Resp: 901

Ion	Ratio	Lower	Upper
84	100		
49	206.3	87.9	205.1#

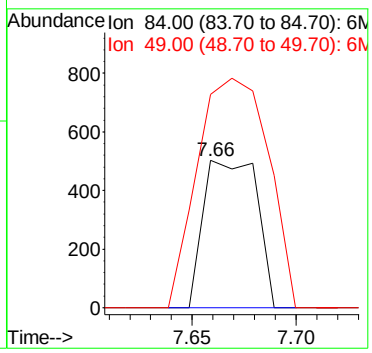

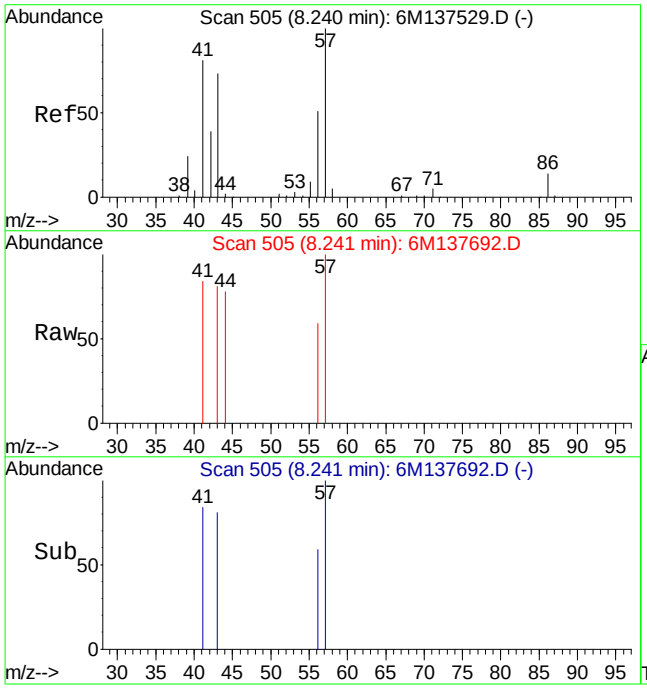

#24
n-Hexane
Concen: 0.29 ug/L
RT: 8.24 min Scan# 505
Delta R.T. -0.00 min
Lab File: 6M137692.D
Acq: 9 Mar 2016 19:51

Tgt Ion: 57 Resp: 1434

Ion	Ratio	Lower	Upper
57	100		
43	64.9	44.0	102.8

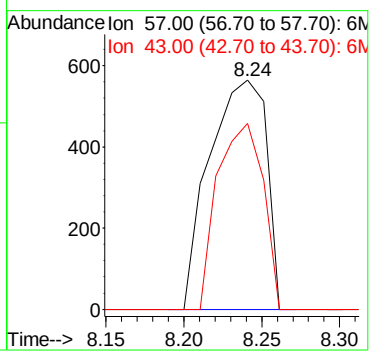

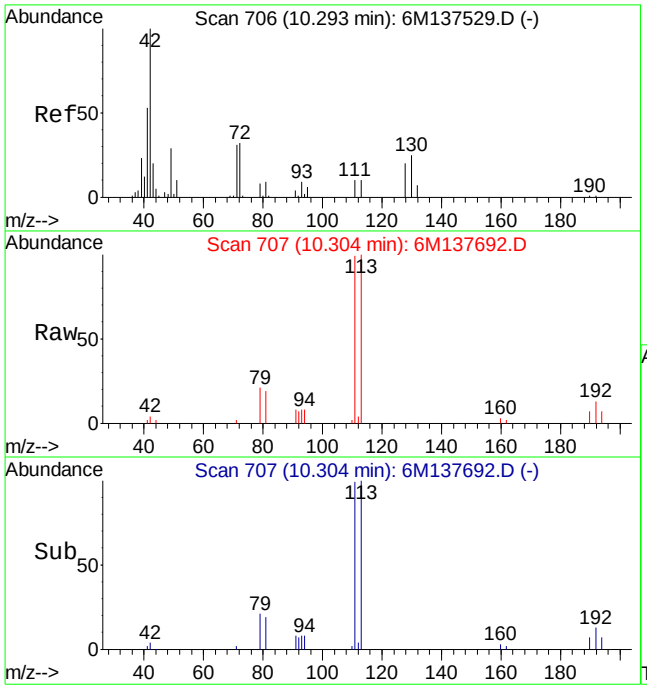

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.30 min Scan# 707
Delta R.T. 0.01 min
Lab File: 6M137692.D
Acq: 9 Mar 2016 19:51

Tgt Ion: 42 Resp: 1931

Ion	Ratio	Lower	Upper
42	100		
72	0.0	21.0	49.0#
71	12.6	20.6	48.2#

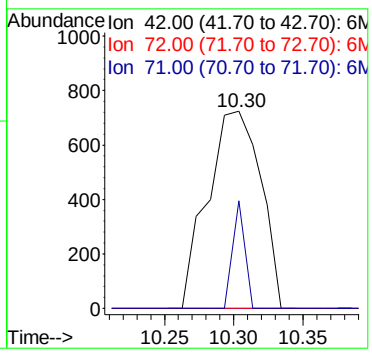

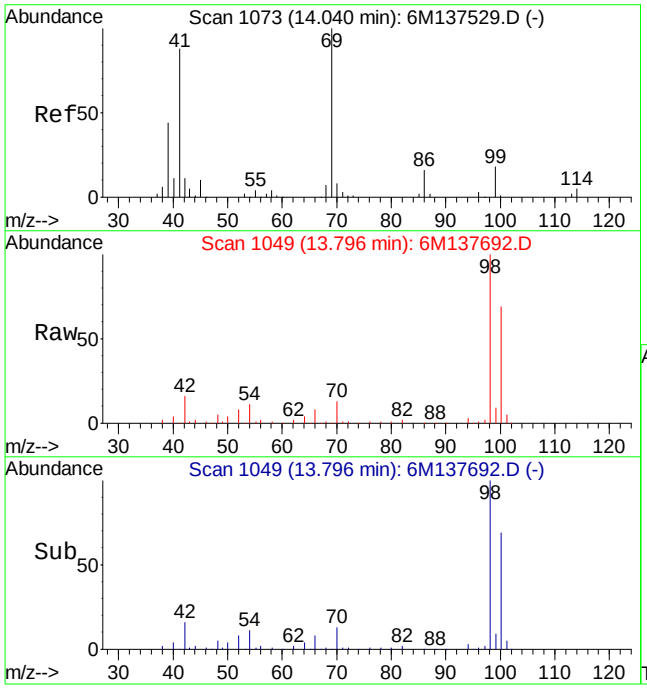

#60
Ethyl Methacrylate
Concen: 0.28 ug/L
RT: 13.80 min Scan# 1049
Delta R.T. -0.24 min
Lab File: 6M137692.D
Acq: 9 Mar 2016 19:51

Tgt Ion: 69 Resp: 1048

Ion	Ratio	Lower	Upper
69	100		
41	116.5	50.6	118.2

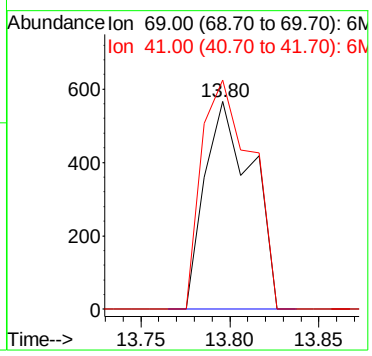

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137693.D Vial: 19
Acq On : 9 Mar 2016 20:24 Operator: TMB
Sample : L16030366-12 8260 4.62g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 08:55:04 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	527309	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	382901	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	199214	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	128942	45.5839 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 91.16%		
43) 1,2-Dichloroethane-d4	11.06	65	160015	43.5690 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 87.14%		
58) Toluene-d8	13.80	98	448664	49.2840 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.56%		
80) p-Bromofluorobenzene	17.79	95	183961	50.2743 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 100.54%		

Target Compounds

					Qvalue
11) Acrolein	6.49	56	1837	3.8525 ug/L	85
15) Tert-Butyl Alcohol	6.64	59	1096	2.5454 ug/L #	1
19) Methylene Chloride	7.67	84	741	0.2666 ug/L #	48
24) n-Hexane	8.24	57	1455	0.3143 ug/L	83
29) 2-Butanone	9.32	43	3039	1.6673 ug/L #	45
36) Tetrahydrofuran	10.30	42	2518	Below Cal #	75
60) Ethyl Methacrylate	13.80	69	1024	0.2951 ug/L #	38

(#) = qualifier out of range (m) = manual integration
6M137693.D 826_SL.M Thu Mar 10 08:55:05 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137693.D Vial: 19
Acq On : 9 Mar 2016 20:24 Operator: TMB
Sample : L16030366-12 8260 4.62g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 8:55 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

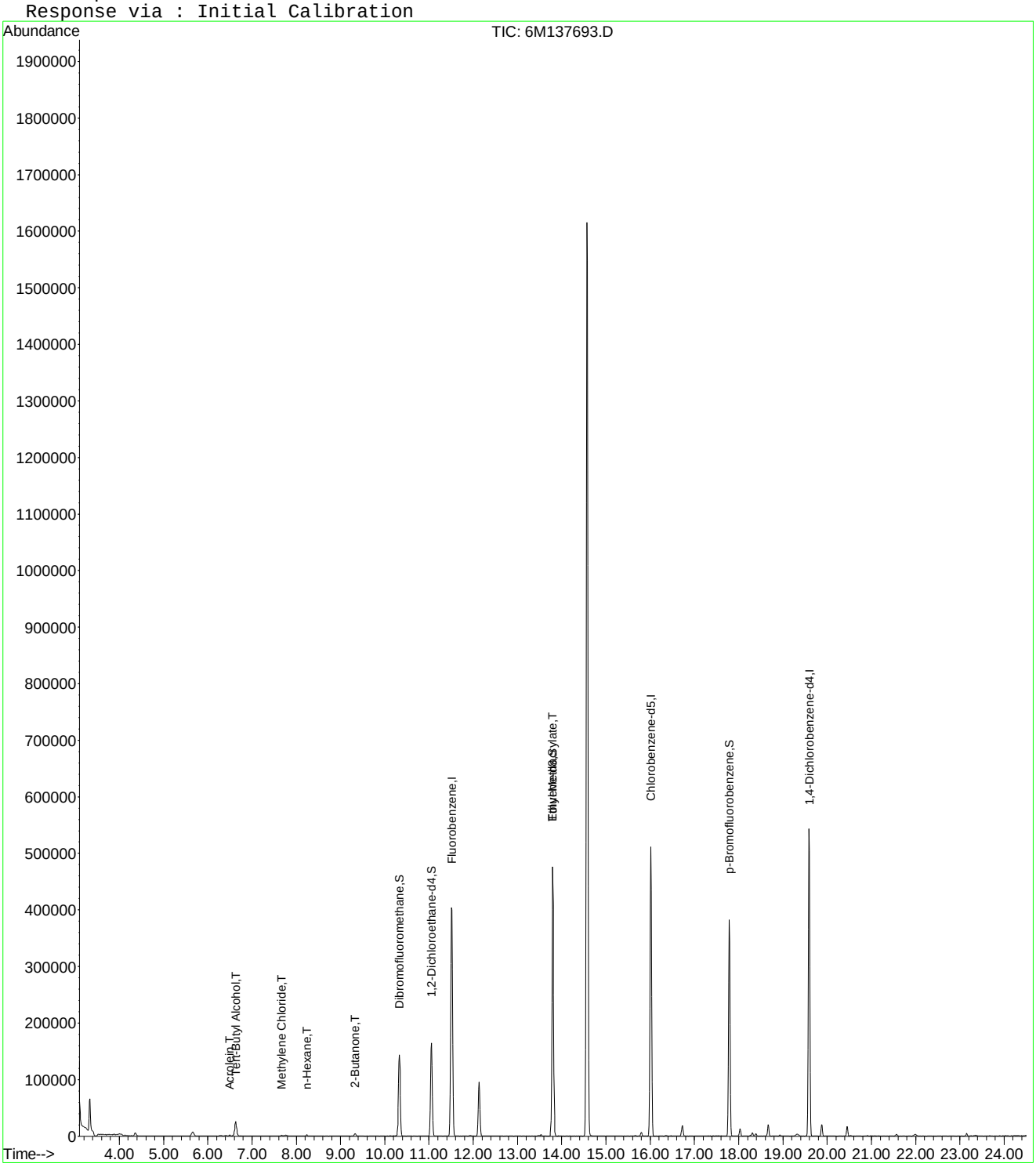

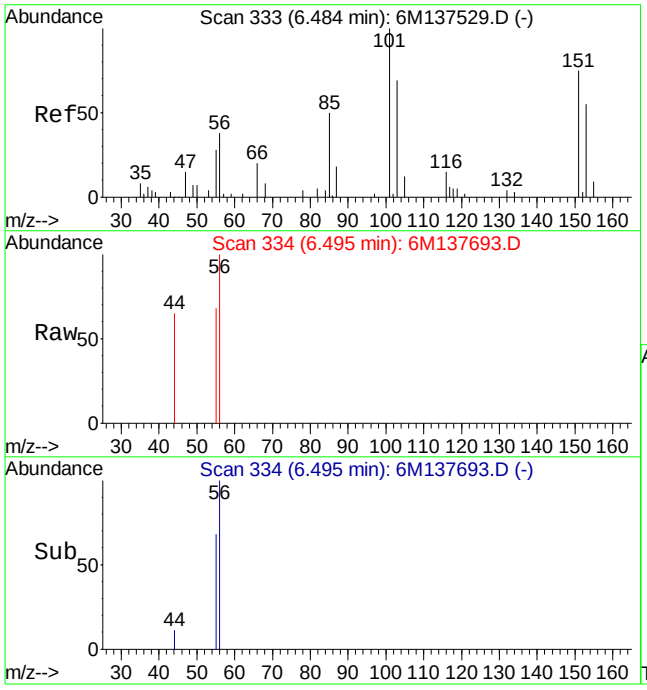

#11
Acrolein
Concen: 3.85 ug/L
RT: 6.49 min Scan# 334
Delta R.T. 0.01 min
Lab File: 6M137693.D
Acq: 9 Mar 2016 20:24

Tgt Ion: 56 Resp: 1837

Ion	Ratio	Lower	Upper
56	100		
55	61.7	44.6	104.0

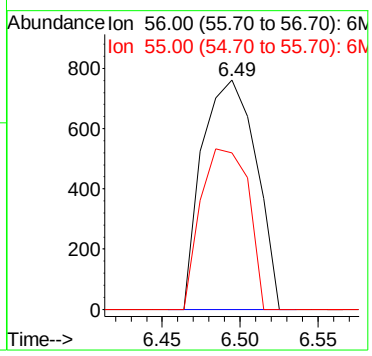

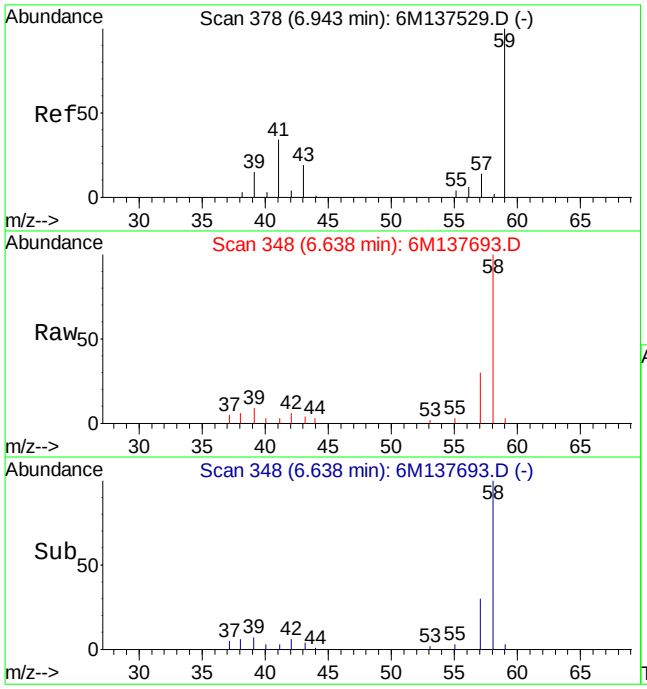

#15
Tert-Butyl Alcohol
Concen: 2.55 ug/L
RT: 6.64 min Scan# 348
Delta R.T. -0.30 min
Lab File: 6M137693.D
Acq: 9 Mar 2016 20:24

Tgt Ion: 59 Resp: 1096

Ion	Ratio	Lower	Upper
59	100		
41	68.3	15.0	35.0#
57	1210.6	5.9	13.9#

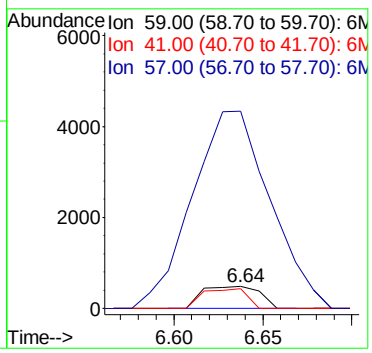

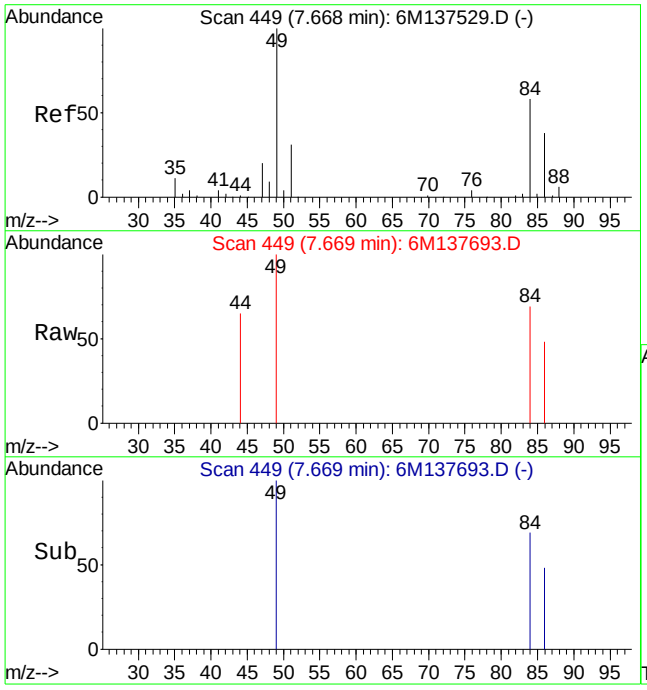

#19
Methylene Chloride
Concen: 0.27 ug/L
RT: 7.67 min Scan# 449
Delta R.T. -0.00 min
Lab File: 6M137693.D
Acq: 9 Mar 2016 20:24

Tgt Ion: 84 Resp: 741

Ion	Ratio	Lower	Upper
84	100		
49	211.9	87.9	205.1#

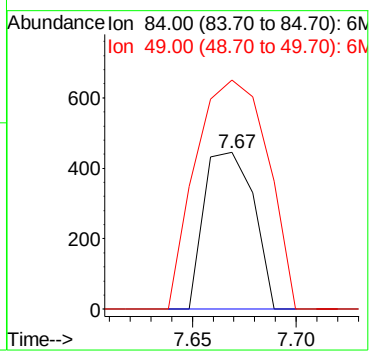

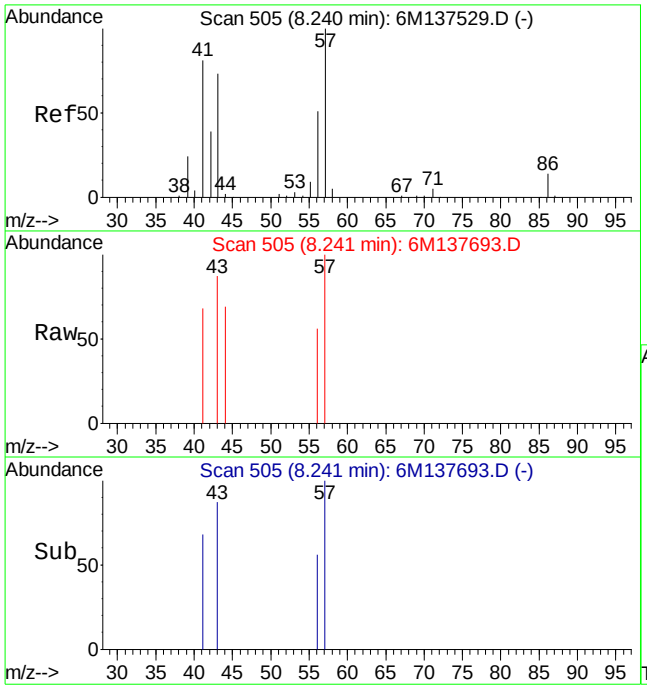

#24
n-Hexane
Concen: 0.31 ug/L
RT: 8.24 min Scan# 505
Delta R.T. -0.00 min
Lab File: 6M137693.D
Acq: 9 Mar 2016 20:24

Tgt Ion: 57 Resp: 1455

Ion	Ratio	Lower	Upper
57	100		
43	59.0	44.0	102.8

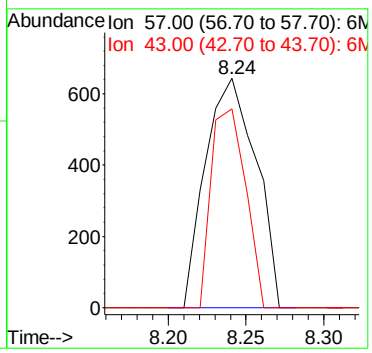

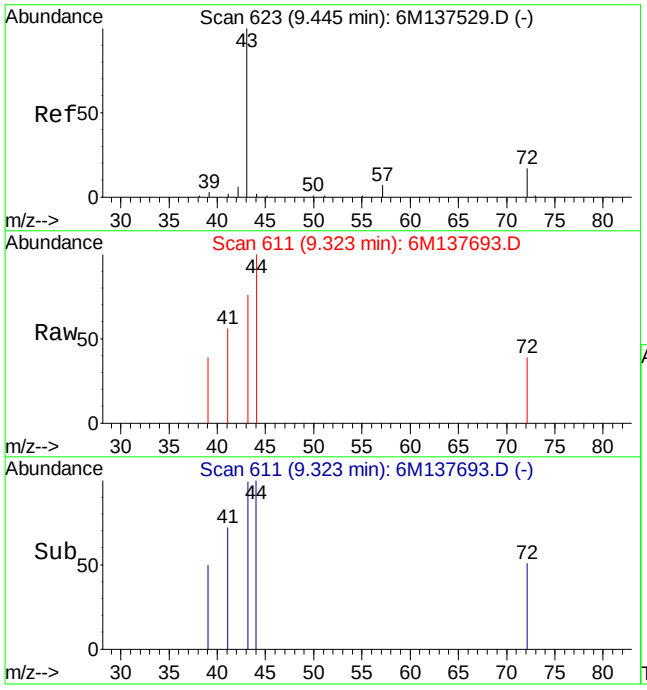

#29
2-Butanone
Concen: 1.67 ug/L
RT: 9.32 min Scan# 611
Delta R.T. -0.12 min
Lab File: 6M137693.D
Acq: 9 Mar 2016 20:24

Tgt Ion: 43 Resp: 3039

Ion	Ratio	Lower	Upper
43	100		
72	45.9	12.2	28.4#

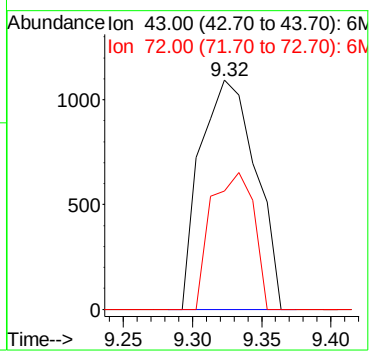

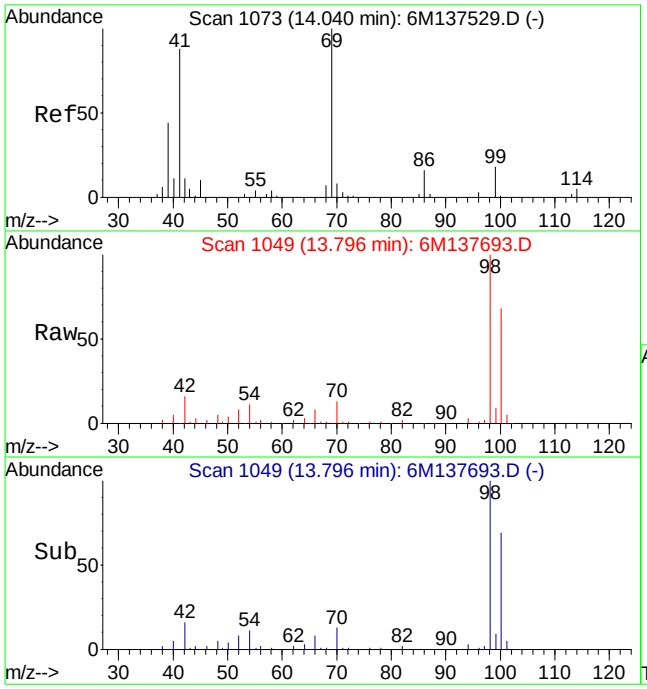

#60
Ethyl Methacrylate
Concen: 0.30 ug/L
RT: 13.80 min Scan# 1049
Delta R.T. -0.24 min
Lab File: 6M137693.D
Acq: 9 Mar 2016 20:24

Tgt Ion: 69 Resp: 1024

Ion	Ratio	Lower	Upper
69	100		
41	140.8	50.6	118.2#

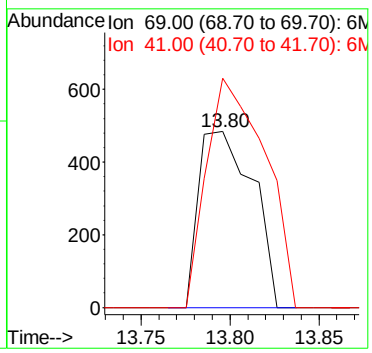

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:35 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:12:24 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	662608	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	467802	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	239669	50.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.32	111	1132	0.3185 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.64%#	
43) 1,2-Dichloroethane-d4	11.05	65	1872	0.4056 ug/L	-0.01
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.82%#	
58) Toluene-d8	13.80	98	5704	0.5128 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	1.02%#	
80) p-Bromofluorobenzene	17.79	95	2210	0.5020 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	1.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	3454	0.5676 ug/L #	66
3) Chloromethane	3.88	50	8579	1.3528 ug/L	90
4) Vinyl Chloride	4.12	62	3760	0.7367 ug/L #	74
5) 1,3-Butadiene	4.18	54	3027	0.7128 ug/L #	61
6) Bromomethane	5.03	94	1550	0.5697 ug/L	88
7) Chloroethane	5.19	64	1482	0.5121 ug/L #	45
8) Trichlorofluoromethane	5.69	101	6717	0.9794 ug/L #	89
10) Isoprene	6.27	67	1888	0.4226 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	1199	0.3663 ug/L #	55
13) Acetone	6.59	43	9375	2.3758 ug/L	94
14) 1,1-Dichloroethene	6.83	61	2956	0.5098 ug/L	84
15) Tert-Butyl Alcohol	6.94	59	200	0.3696 ug/L #	57
18) Methyl acetate	7.39	43	2867	0.7115 ug/L #	64
19) Methylene Chloride	7.67	84	2652	0.7594 ug/L	75
20) Carbon Disulfide	7.72	76	8199	0.7390 ug/L #	82
22) Methyl Tert Butyl Ether	7.88	73	4851	0.4864 ug/L #	63
23) trans-1,2-Dichloroethene	8.16	96	1352	0.4221 ug/L #	10
24) n-Hexane	8.23	57	3942	0.6777 ug/L	92
26) Vinyl Acetate	8.79	43	2062	0.2645 ug/L #	78
27) 1,1-Dichloroethane	8.82	63	3798	0.5499 ug/L #	68
29) 2-Butanone	9.46	43	1832	0.7999 ug/L #	56
31) 2,2-Dichloropropane	9.69	77	2885	0.5204 ug/L	96
32) cis-1,2-Dichloroethene	9.76	96	1812	0.5067 ug/L	93
33) Chloroform	10.01	83	3647	0.5654 ug/L	91
35) Bromochloromethane	10.26	130	694	0.3303 ug/L #	47
36) Tetrahydrofuran	10.29	42	9683	4.2648 ug/L	95
38) 1,1,1-Trichloroethane	10.59	97	2858	0.5017 ug/L	84
39) Cyclohexane	10.62	56	2886	0.4467 ug/L	94
40) 1,1-Dichloropropene	10.82	75	2042	0.4451 ug/L #	76
42) Carbon Tetrachloride	10.99	117	2712	0.5095 ug/L #	85
45) 1,2-Dichloroethane	11.19	62	3101	0.5633 ug/L #	75
46) Benzene	11.23	78	8142	0.5899 ug/L	89
47) Trichloroethene	12.09	130	1950	0.5980 ug/L	81
48) Methylcyclohexane	12.18	83	2990	0.5672 ug/L #	73
49) 1,2-Dichloropropane	12.34	63	1667	0.4489 ug/L #	69
51) Bromodichloromethane	12.68	83	2589	0.5312 ug/L	92
52) Dibromomethane	12.78	93	741	0.3411 ug/L	80
55) cis-1,3-Dichloropropene	13.42	75	2628	0.4894 ug/L #	74
56) Dimethyl Disulfide	13.71	79	853	0.3150 ug/L #	49
59) Toluene	13.92	91	7610	0.5751 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M137523.D 826_SL.M Mon Feb 29 16:01:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:35 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:12:24 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
60)	Ethyl Methacrylate	14.04	69	1764	0.4160 ug/L		85
62)	trans-1,3-Dichloropropene	14.12	75	2064	0.4056 ug/L	#	71
63)	1,1,2-Trichloroethane	14.37	97	1621	0.5861 ug/L	#	75
64)	2-Hexanone	14.32	43	1822	0.5773 ug/L	#	48
65)	1,3-Dichloropropane	14.75	76	2715	0.5416 ug/L		83
66)	Tetrachloroethene	14.86	166	1836	0.5624 ug/L		91
67)	Dibromochloromethane	15.18	129	1663	0.4623 ug/L		94
68)	1,2-Dibromoethane	15.48	107	1262	0.4462 ug/L		99
69)	1-Chlorohexane	15.59	91	2113	0.5142 ug/L		96
70)	Chlorobenzene	16.07	112	4991	0.5869 ug/L		75
71)	1,1,1,2-Tetrachloroethane	16.11	131	1409	0.4126 ug/L	#	79
72)	Ethylbenzene	16.11	106	2290	0.5032 ug/L		61
73)	m-,p-Xylene	16.22	106	6307	1.1326 ug/L		90
74)	o-Xylene	16.88	106	2685	0.5119 ug/L		71
75)	Styrene	16.92	104	4645	0.5203 ug/L		93
76)	Bromoform	17.49	173	756	0.2977 ug/L	#	62
77)	Isopropylbenzene	17.38	105	7047	0.4998 ug/L		82
79)	1,1,2,2-Tetrachloroethane	17.64	83	1948	0.5203 ug/L		84
83)	n-Propylbenzene	17.98	91	9243	0.5679 ug/L	#	92
84)	Bromobenzene	18.13	156	1885	0.5328 ug/L		100
85)	1,3,5-Trimethylbenzene	18.21	105	6007	0.5185 ug/L		90
86)	2-Chlorotoluene	18.29	91	5403	0.4973 ug/L		88
87)	4-Chlorotoluene	18.35	91	5598	0.5635 ug/L	#	83
88)	a-Methylstyrene	18.69	118	3780	0.6719 ug/L		93
89)	tert-Butylbenzene	18.76	134	1072	0.4440 ug/L		84
90)	1,2,4-Trimethylbenzene	18.82	105	7288	0.5982 ug/L		78
91)	sec-Butylbenzene	19.08	105	8207	0.5532 ug/L		85
92)	p-Isopropyltoluene	19.27	119	6156	0.5029 ug/L		99
93)	1,3-Dichlorobenzene	19.48	146	3876	0.5662 ug/L		99
94)	1,4-Dichlorobenzene	19.64	146	4389	0.6299 ug/L	#	36
95)	n-Butylbenzene	19.89	91	6993	0.5680 ug/L		91
96)	1,2-Dichlorobenzene	20.23	146	3739	0.5676 ug/L		89
98)	1,2,4-Trichlorobenzene	22.76	180	2881	0.6050 ug/L		89
99)	Hexachlorobutadiene	22.95	225	1268	0.4656 ug/L		81
100)	Naphthalene	23.20	128	5965	0.5449 ug/L		95
101)	1,2,3-Trichlorobenzene	23.58	180	2914	0.6214 ug/L	#	69

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

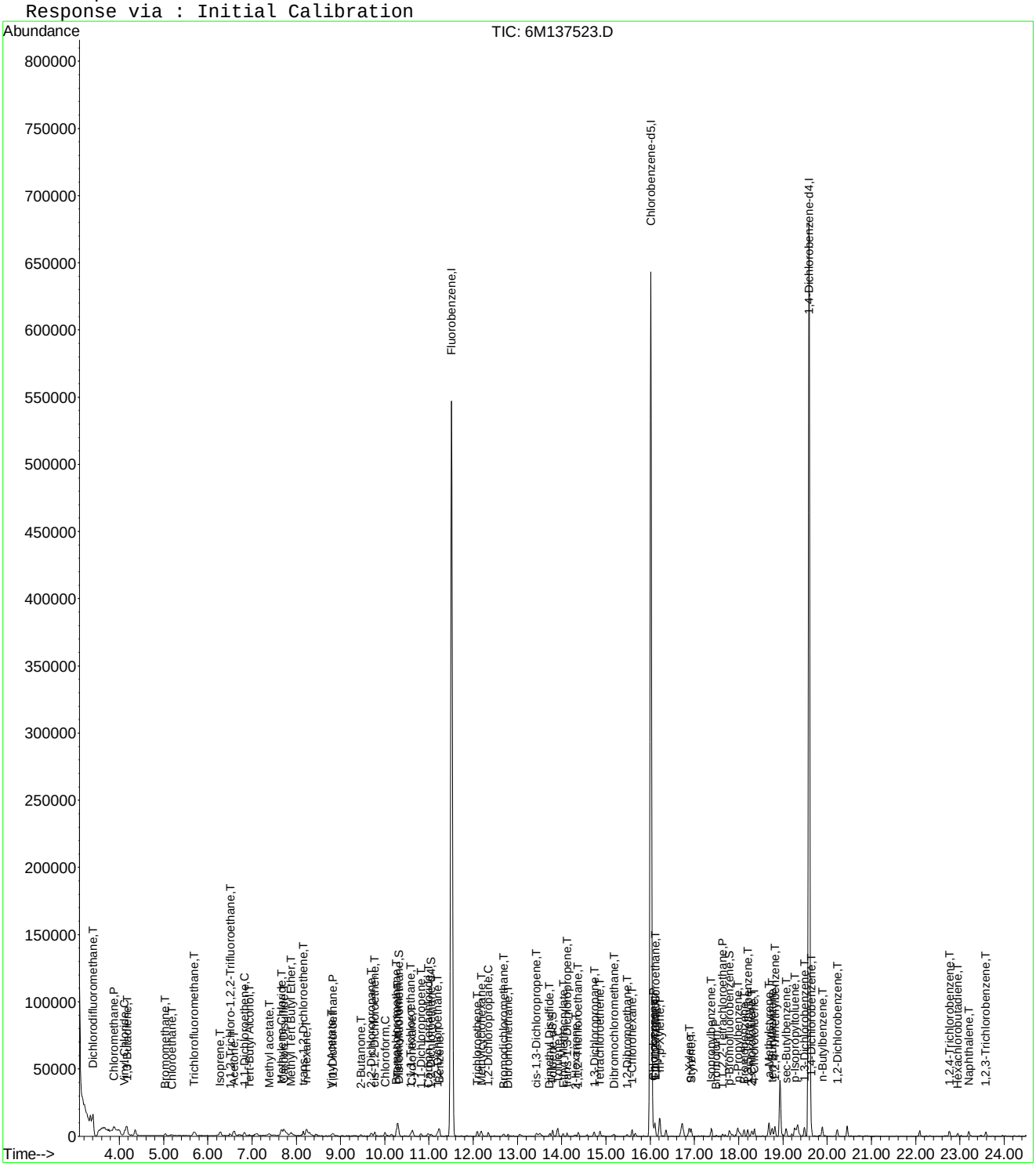

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.5676	0.0	0	0.00
3	P	Chloromethane	-1.0000	1.3528	0.0	0	0.00
4	C	Vinyl Chloride	-1.0000	0.7367	0.0	0	0.00
5	T	1,3-Butadiene	-1.0000	0.7128	0.0	0	0.01
6	T	Bromomethane	-1.0000	0.5697	0.0	0	0.00
7	T	Chloroethane	-1.0000	0.5121	0.0	0	0.00
8	T	Trichlorofluoromethane	-1.0000	0.9794	0.0	0	-0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.24#
10	T	Isoprene	-1.0000	0.4226	0.0	0	-0.01
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.48#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3663	0.0	0	0.00
13	T	Acetone	-1.0000	2.3758	0.0	0	0.00
14	C	1,1-Dichloroethene	-1.0000	0.5098	0.0	0	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.3696	0.0	0	0.00
16	T	Dimethyl Sulfide	-1.0000	0.2328	0.0	0	-0.02
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.38#
18	T	Methyl acetate	-1.0000	0.7115	0.0	0	0.00
19	T	Methylene Chloride	-1.0000	0.7594	0.0	0	0.00
20	T	Carbon Disulfide	-1.0000	0.7390	0.0	0	0.00
21	T	Acrylonitrile	-1.0000	0.1371	0.0	0	0.02
22	T	Methyl Tert Butyl Ether	0.5000	0.4864	2.7	100	-0.01
23	T	trans-1,2-Dichloroethene	-1.0000	0.4221	0.0	0	0.00
24	T	n-Hexane	-1.0000	0.6777	0.0	0	-0.01
25	T	Diisopropyl ether	-1.0000	0.1069	0.0	0	-0.16
26	T	Vinyl Acetate	-1.0000	0.2645	0.0	0	0.00
27	P	1,1-Dichloroethane	-1.0000	0.5499	0.0	0	-0.01
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-9.24#
29	T	2-Butanone	-1.0000	0.7999	0.0	0	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.58#
31	T	2,2-Dichloropropane	-1.0000	0.5204	0.0	0	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.5067	0.0	0	-0.01
33	C	Chloroform	-1.0000	0.5654	0.0	0	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-10.16#
35	T	Bromochloromethane	-1.0000	0.3303	0.0	0	0.00
36	T	Tetrahydrofuran	-1.0000	4.2648	0.0	0	0.00
37	S	Dibromofluoromethane	-1.0000	0.3185	0.0	0	0.00
38	T	1,1,1-Trichloroethane	-1.0000	0.5017	0.0	0	-0.01
39	T	Cyclohexane	-1.0000	0.4467	0.0	0	-0.02
40	T	1,1-Dichloropropene	-1.0000	0.4451	0.0	0	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.94#
42	T	Carbon Tetrachloride	-1.0000	0.5095	0.0	0	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.4056	0.0	0	-0.01
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	-1.0000	0.5633	0.0	0	0.00
46	T	Benzene	0.5000	0.5899	-18.0	100	0.00
47	T	Trichloroethene	-1.0000	0.5980	0.0	0	0.00
48	T	Methylcyclohexane	-1.0000	0.5672	0.0	0	0.00
49	C	1,2-Dichloropropane	-1.0000	0.4489	0.0	0	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-12.67#
51	T	Bromodichloromethane	-1.0000	0.5312	0.0	0	0.00
52	T	Dibromomethane	-1.0000	0.3411	0.0	0	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1346	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-13.07#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.4894	0.0	0	-0.01
56	T	Dimethyl Disulfide	-1.0000	0.3150	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.5128	0.0	0	0.00
59	C	Toluene	0.5000	0.5751	-15.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.4160	0.0	0	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	-1.0000	0.4056	0.0	0	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.5861	0.0	0	0.00
64	T	2-Hexanone	-1.0000	0.5773	0.0	0	0.00
65	T	1,3-Dichloropropane	-1.0000	0.5416	0.0	0	0.00
66	T	Tetrachloroethene	-1.0000	0.5624	0.0	0	-0.01
67	T	Dibromochloromethane	-1.0000	0.4623	0.0	0	0.00
68	T	1,2-Dibromoethane	-1.0000	0.4462	0.0	0	0.00
69	T	1-Chlorohexane	-1.0000	0.5142	0.0	0	0.00
70	P	Chlorobenzene	-1.0000	0.5869	0.0	0	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.4126	0.0	0	0.00
72	C	Ethylbenzene	0.5000	0.5032	-0.6	100	0.00
73	T	m-,p-Xylene	1.0000	1.1326	-13.3	100	0.00
74	T	o-Xylene	0.5000	0.5119	-2.4	100	0.00
75	T	Styrene	-1.0000	0.5203	0.0	0	0.00
76	P	Bromoform	-1.0000	0.2977	0.0	0	0.00
77	T	Isopropylbenzene	-1.0000	0.4998	0.0	0	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.5203	0.0	0	-0.01
80	S	p-Bromofluorobenzene	-1.0000	0.5020	0.0	0	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.1823	0.0	0	0.01
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.1476	0.0	0	0.00
83	T	n-Propylbenzene	-1.0000	0.5679	0.0	0	0.00
84	T	Bromobenzene	-1.0000	0.5328	0.0	0	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.5185	0.0	0	0.00
86	T	2-Chlorotoluene	-1.0000	0.4973	0.0	0	-0.01
87	T	4-Chlorotoluene	-1.0000	0.5635	0.0	0	0.00
88	T	a-Methylstyrene	-1.0000	0.6719	0.0	0	0.00
89	T	tert-Butylbenzene	-1.0000	0.4440	0.0	0	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.5982	0.0	0	0.00
91	T	sec-Butylbenzene	-1.0000	0.5532	0.0	0	0.00
92	T	p-Isopropyltoluene	-1.0000	0.5029	0.0	0	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.5662	0.0	0	0.00
94	T	1,4-Dichlorobenzene	-1.0000	0.6299	0.0	0	0.00
95	T	n-Butylbenzene	-1.0000	0.5680	0.0	0	0.00
96	T	1,2-Dichlorobenzene	-1.0000	0.5676	0.0	0	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-21.41#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.6050	0.0	0	0.00
99	T	Hexachlorobutadiene	-1.0000	0.4656	0.0	0	-0.01
100	T	Naphthalene	-1.0000	0.5449	0.0	0	0.00
101	T	1,2,3-Trichlorobenzene	-1.0000	0.6214	0.0	0	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:37 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	594307	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	418336	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	217318	50.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.34	111	2084	0.6537 ug/L	0.02
Spiked Amount 50.000	Range 80 - 120		Recovery =	1.30%#	
43) 1,2-Dichloroethane-d4	11.06	65	2834	0.6847 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	1.36%#	
58) Toluene-d8	13.80	98	7503	0.7544 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	1.50%#	
80) p-Bromofluorobenzene	17.79	95	3135	0.7854 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	1.58%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	6025	1.1039 ug/L	88
3) Chloromethane	3.88	50	8942	1.5721 ug/L	80
4) Vinyl Chloride	4.13	62	5159	1.1269 ug/L	96
5) 1,3-Butadiene	4.18	54	4578	1.2019 ug/L #	67
6) Bromomethane	5.03	94	2477	1.0150 ug/L	94
7) Chloroethane	5.20	64	2347	0.9041 ug/L #	77
8) Trichlorofluoromethane	5.70	101	7751	1.2600 ug/L #	92
9) Diethyl ether	6.23	59	14414	5.0935 ug/L	81
10) Isoprene	6.28	67	3598	0.8978 ug/L	94
11) Acrolein	6.48	56	1307	2.4320 ug/L #	51
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	3197	1.0888 ug/L	73
13) Acetone	6.60	43	5933	0.3832 ug/L	97
14) 1,1-Dichloroethene	6.84	61	5455	1.0489 ug/L	83
15) Tert-Butyl Alcohol	6.93	59	4660	9.6025 ug/L #	86
16) Dimethyl Sulfide	7.13	62	2208	0.8750 ug/L	94
18) Methyl acetate	7.40	43	3574	0.9889 ug/L #	64
19) Methylene Chloride	7.66	84	3682	1.1755 ug/L	75
20) Carbon Disulfide	7.72	76	11945	1.2004 ug/L	97
21) Acrylonitrile	7.86	53	3216	2.1651 ug/L	84
22) Methyl Tert Butyl Ether	7.90	73	8242	0.9214 ug/L	91
23) trans-1,2-Dichloroethene	8.17	96	2437	0.8482 ug/L	60
24) n-Hexane	8.23	57	4827	0.9252 ug/L	90
25) Diisopropyl ether	8.62	45	67920	5.0212 ug/L	97
26) Vinyl Acetate	8.80	43	6077	0.8691 ug/L #	78
27) 1,1-Dichloroethane	8.83	63	6295	1.0162 ug/L	88
28) Ethyl-Tert-Butyl ether	9.25	59	49996	4.6114 ug/L	96
29) 2-Butanone	9.47	43	2247	1.0938 ug/L #	56
30) Propionitrile	9.57	54	2816	4.9529 ug/L #	71
31) 2,2-Dichloropropane	9.70	77	5030	1.0116 ug/L	94
32) cis-1,2-Dichloroethene	9.77	96	2740	0.8542 ug/L	83
33) Chloroform	10.00	83	6439	1.1130 ug/L	98
35) Bromochloromethane	10.26	130	1361	0.7221 ug/L	97
36) Tetrahydrofuran	10.29	42	10271	5.4403 ug/L	94
38) 1,1,1-Trichloroethane	10.61	97	5241	1.0257 ug/L	95
39) Cyclohexane	10.63	56	5811	1.0029 ug/L	86
40) 1,1-Dichloropropene	10.82	75	4038	0.9813 ug/L #	89
41) Tert-Amyl-Methyl ether	10.95	73	39464	4.5884 ug/L #	83
42) Carbon Tetrachloride	11.00	117	4871	1.0202 ug/L #	88
45) 1,2-Dichloroethane	11.19	62	4707	0.9533 ug/L #	86
46) Benzene	11.23	78	13412	1.0834 ug/L	93

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:37 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
47)	Trichloroethene	12.09	130	2983	1.0199 ug/L		90
48)	Methylcyclohexane	12.19	83	4295	0.9084 ug/L		77
49)	1,2-Dichloropropane	12.35	63	3111	0.9339 ug/L	#	69
51)	Bromodichloromethane	12.68	83	4337	0.9921 ug/L		97
52)	Dibromomethane	12.77	93	1629	0.8361 ug/L		91
53)	2-Chloroethyl Vinyl Ether	13.04	63	1268	0.6921 ug/L	#	43
54)	4-Methyl-2-Pentanone	13.08	58	633	0.4563 ug/L	#	34
55)	cis-1,3-Dichloropropene	13.43	75	4040	0.8388 ug/L		98
56)	Dimethyl Disulfide	13.72	79	1323	0.5447 ug/L	#	49
59)	Toluene	13.91	91	12207	1.0316 ug/L		97
60)	Ethyl Methacrylate	14.03	69	2818	0.7432 ug/L		100
62)	trans-1,3-Dichloropropene	14.12	75	3878	0.8522 ug/L		100
63)	1,1,2-Trichloroethane	14.38	97	2441	0.9869 ug/L		93
64)	2-Hexanone	14.31	43	2064	0.7313 ug/L		93
65)	1,3-Dichloropropane	14.73	76	4145	0.9246 ug/L		83
66)	Tetrachloroethene	14.87	166	3009	1.0308 ug/L		96
67)	Dibromochloromethane	15.17	129	2840	0.8829 ug/L		96
68)	1,2-Dibromoethane	15.48	107	1912	0.7559 ug/L		85
69)	1-Chlorohexane	15.59	91	3045	0.8286 ug/L	#	59
70)	Chlorobenzene	16.06	112	8053	1.0589 ug/L	#	66
71)	1,1,1,2-Tetrachloroethane	16.11	131	2914	0.9542 ug/L		92
72)	Ethylbenzene	16.10	106	3899	0.9580 ug/L		89
73)	m-,p-Xylene	16.21	106	9999	2.0079 ug/L		90
74)	o-Xylene	16.88	106	4283	0.9131 ug/L		84
75)	Styrene	16.92	104	6414	0.8034 ug/L		92
76)	Bromoform	17.49	173	1706	0.7511 ug/L	#	70
77)	Isopropylbenzene	17.38	105	11886	0.9427 ug/L		95
79)	1,1,2,2-Tetrachloroethane	17.65	83	3500	1.0310 ug/L		95
81)	1,2,3-Trichloropropane	17.87	110	811	0.7802 ug/L	#	55
82)	trans-1,4-Dichloro-2-Buten	17.93	53	959	0.7652 ug/L		70
83)	n-Propylbenzene	17.98	91	14256	0.9660 ug/L	#	91
84)	Bromobenzene	18.13	156	3248	1.0125 ug/L		98
85)	1,3,5-Trimethylbenzene	18.21	105	9438	0.8984 ug/L		95
86)	2-Chlorotoluene	18.30	91	9880	1.0030 ug/L		97
87)	4-Chlorotoluene	18.35	91	8357	0.9278 ug/L		93
88)	a-Methylstyrene	18.68	118	4374	0.8574 ug/L		95
89)	tert-Butylbenzene	18.75	134	1999	0.9131 ug/L		84
90)	1,2,4-Trimethylbenzene	18.82	105	10630	0.9622 ug/L		79
91)	sec-Butylbenzene	19.07	105	13062	0.9709 ug/L		95
92)	p-Isopropyltoluene	19.27	119	10400	0.9370 ug/L		89
93)	1,3-Dichlorobenzene	19.48	146	6397	1.0306 ug/L		97
94)	1,4-Dichlorobenzene	19.64	146	7211	1.1413 ug/L		83
95)	n-Butylbenzene	19.88	91	10811	0.9684 ug/L		88
96)	1,2-Dichlorobenzene	20.22	146	5973	1.0000 ug/L		96
97)	1,2-Dibromo-3-Chloropropan	21.41	75	191	0.2543 ug/L	#	1
98)	1,2,4-Trichlorobenzene	22.76	180	4430	1.0259 ug/L		93
99)	Hexachlorobutadiene	22.94	225	2385	0.9658 ug/L		90
100)	Naphthalene	23.20	128	8770	0.8835 ug/L		92
101)	1,2,3-Trichlorobenzene	23.59	180	4309	1.0134 ug/L		95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

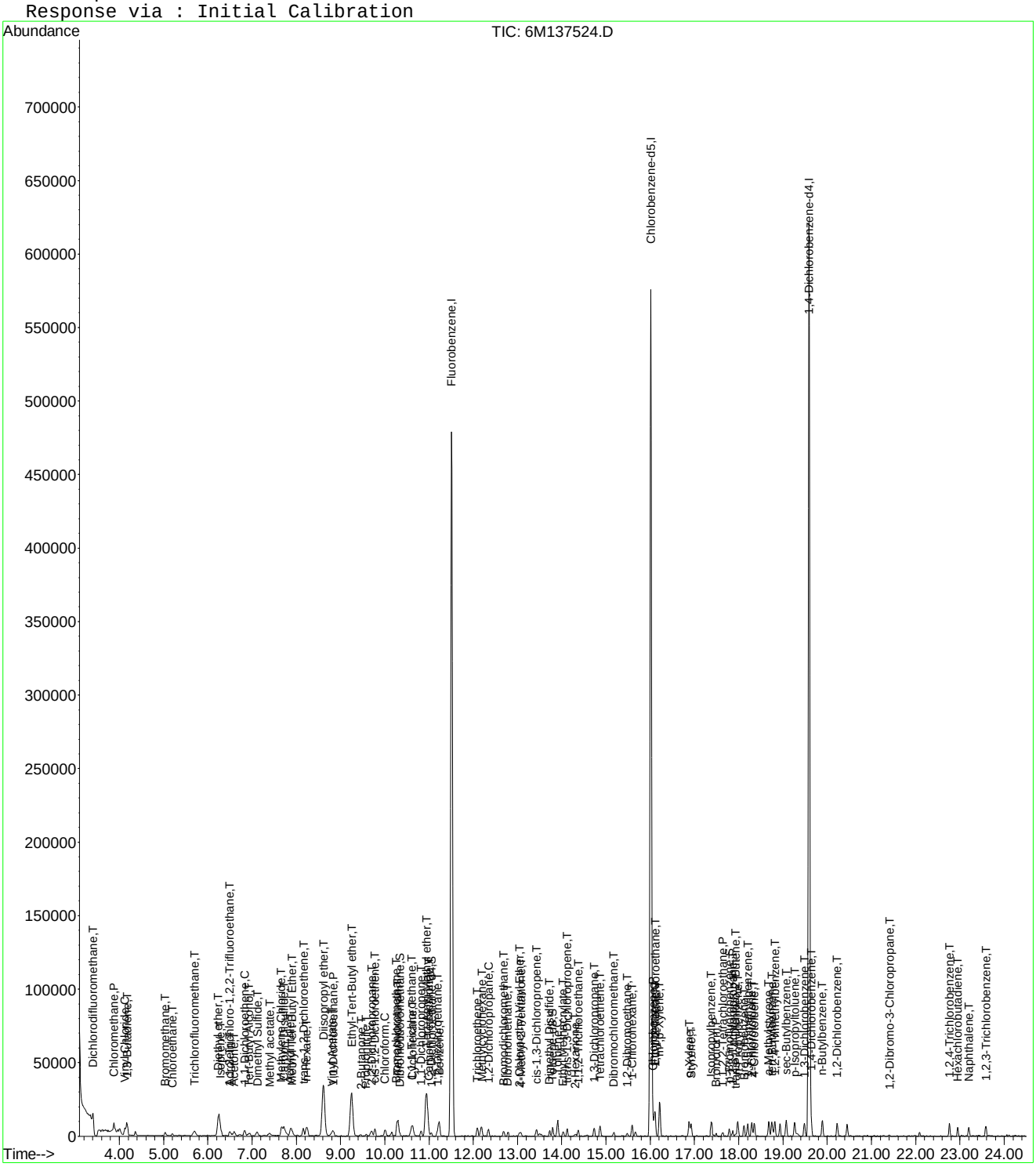

6M137524.D 826_SL.M Mon Feb 29 16:01:38 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	1.1039	0.0	0	0.00
3	P	Chloromethane	-1.0000	1.5721	0.0	0	0.00
4	C	Vinyl Chloride	-1.0000	1.1269	0.0	0	0.01
5	T	1,3-Butadiene	-1.0000	1.2019	0.0	0	0.01
6	T	Bromomethane	-1.0000	1.0150	0.0	0	0.00
7	T	Chloroethane	-1.0000	0.9041	0.0	0	0.00
8	T	Trichlorofluoromethane	-1.0000	1.2600	0.0	0	0.00
9	T	Diethyl ether	5.0000	5.0935	-1.9	100	-0.01
10	T	Isoprene	-1.0000	0.8978	0.0	0	0.00
11	T	Acrolein	2.5000	2.4320	2.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	1.0888	0.0	0	-0.01
13	T	Acetone	-1.0000	0.3832	0.0	0	0.01
14	C	1,1-Dichloroethene	-1.0000	1.0489	0.0	0	0.00
15	T	Tert-Butyl Alcohol	10.0000	9.6025	4.0	100	0.00
16	T	Dimethyl Sulfide	-1.0000	0.8750	0.0	0	0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.38#
18	T	Methyl acetate	-1.0000	0.9889	0.0	0	0.01
19	T	Methylene Chloride	-1.0000	1.1755	0.0	0	-0.01
20	T	Carbon Disulfide	-1.0000	1.2004	0.0	0	0.00
21	T	Acrylonitrile	2.5000	2.1651	13.4	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9214	7.9	100	0.00
23	T	trans-1,2-Dichloroethene	-1.0000	0.8482	0.0	0	0.00
24	T	n-Hexane	-1.0000	0.9252	0.0	0	-0.01
25	T	Diisopropyl ether	5.0000	5.0212	-0.4	100	0.01
26	T	Vinyl Acetate	-1.0000	0.8691	0.0	0	0.00
27	P	1,1-Dichloroethane	-1.0000	1.0162	0.0	0	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.6114	7.8	100	0.01
29	T	2-Butanone	-1.0000	1.0938	0.0	0	0.02
30	T	Propionitrile	5.0000	4.9529	0.9	100	-0.01
31	T	2,2-Dichloropropane	-1.0000	1.0116	0.0	0	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.8542	0.0	0	0.00
33	C	Chloroform	-1.0000	1.1130	0.0	0	-0.01
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-10.16#
35	T	Bromochloromethane	-1.0000	0.7221	0.0	0	0.00
36	T	Tetrahydrofuran	5.0000	5.4403	-8.8	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.6537	0.0	0	0.02
38	T	1,1,1-Trichloroethane	-1.0000	1.0257	0.0	0	0.00
39	T	Cyclohexane	-1.0000	1.0029	0.0	0	-0.01
40	T	1,1-Dichloropropene	-1.0000	0.9813	0.0	0	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	4.5884	8.2	100	0.00
42	T	Carbon Tetrachloride	-1.0000	1.0202	0.0	0	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.6847	0.0	0	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	-1.0000	0.9533	0.0	0	0.00
46	T	Benzene	1.0000	1.0834	-8.3	100	0.00
47	T	Trichloroethene	-1.0000	1.0199	0.0	0	0.00
48	T	Methylcyclohexane	-1.0000	0.9084	0.0	0	0.01
49	C	1,2-Dichloropropane	-1.0000	0.9339	0.0	0	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-12.67#
51	T	Bromodichloromethane	-1.0000	0.9921	0.0	0	0.00
52	T	Dibromomethane	-1.0000	0.8361	0.0	0	-0.01
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.6921	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.4563	0.0	0	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.8388	0.0	0	0.00
56	T	Dimethyl Disulfide	-1.0000	0.5447	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.7544	0.0	0	0.00
59	C	Toluene	1.0000	1.0316	-3.2	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.7432	0.0	0	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	-1.0000	0.8522	0.0	0	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.9869	0.0	0	0.00
64	T	2-Hexanone	-1.0000	0.7313	0.0	0	0.00
65	T	1,3-Dichloropropane	-1.0000	0.9246	0.0	0	0.00
66	T	Tetrachloroethene	-1.0000	1.0308	0.0	0	0.00
67	T	Dibromochloromethane	-1.0000	0.8829	0.0	0	0.00
68	T	1,2-Dibromoethane	-1.0000	0.7559	0.0	0	0.00
69	T	1-Chlorohexane	-1.0000	0.8286	0.0	0	0.00
70	P	Chlorobenzene	-1.0000	1.0589	0.0	0	-0.01
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.9542	0.0	0	0.00
72	C	Ethylbenzene	1.0000	0.9580	4.2	100	0.00
73	T	m-,p-Xylene	2.0000	2.0079	-0.4	100	-0.01
74	T	o-Xylene	1.0000	0.9132	8.7	100	0.00
75	T	Styrene	-1.0000	0.8034	0.0	0	0.00
76	P	Bromoform	-1.0000	0.7511	0.0	0	0.00
77	T	Isopropylbenzene	-1.0000	0.9427	0.0	0	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	1.0310	0.0	0	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.7854	0.0	0	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.7802	0.0	0	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.7652	0.0	0	0.00
83	T	n-Propylbenzene	-1.0000	0.9660	0.0	0	0.00
84	T	Bromobenzene	-1.0000	1.0125	0.0	0	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.8984	0.0	0	0.00
86	T	2-Chlorotoluene	-1.0000	1.0030	0.0	0	0.00
87	T	4-Chlorotoluene	-1.0000	0.9278	0.0	0	0.00
88	T	a-Methylstyrene	-1.0000	0.8574	0.0	0	-0.01
89	T	tert-Butylbenzene	-1.0000	0.9131	0.0	0	-0.01
90	T	1,2,4-Trimethylbenzene	-1.0000	0.9622	0.0	0	0.00
91	T	sec-Butylbenzene	-1.0000	0.9709	0.0	0	0.00
92	T	p-Isopropyltoluene	-1.0000	0.9370	0.0	0	0.00
93	T	1,3-Dichlorobenzene	-1.0000	1.0306	0.0	0	0.00
94	T	1,4-Dichlorobenzene	-1.0000	1.1413	0.0	0	0.00
95	T	n-Butylbenzene	-1.0000	0.9684	0.0	0	-0.01
96	T	1,2-Dichlorobenzene	-1.0000	1.0000	0.0	0	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.2543	0.0	0	0.00
98	T	1,2,4-Trichlorobenzene	-1.0000	1.0259	0.0	0	0.00
99	T	Hexachlorobutadiene	-1.0000	0.9658	0.0	0	-0.01
100	T	Naphthalene	-1.0000	0.8835	0.0	0	0.00
101	T	1,2,3-Trichlorobenzene	-1.0000	1.0134	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137524.D 826_SL.M Mon Feb 29 16:02:09 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:38 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	572212	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	404562	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	206668	50.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.32	111	3202	1.0431 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	2.08%#	
43) 1,2-Dichloroethane-d4	11.05	65	4123	1.0345 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	2.06%#	
58) Toluene-d8	13.80	98	10309	1.0718 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	2.14%#	
80) p-Bromofluorobenzene	17.79	95	4120	1.0853 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	2.18%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	8843	1.6827 ug/L	90
3) Chloromethane	3.88	50	13225	2.4149 ug/L	95
4) Vinyl Chloride	4.12	62	8482	1.9243 ug/L	95
5) 1,3-Butadiene	4.18	54	8044	2.1934 ug/L	77
6) Bromomethane	5.04	94	4396	1.8709 ug/L	94
7) Chloroethane	5.20	64	4555	1.8225 ug/L	99
8) Trichlorofluoromethane	5.70	101	12235	2.0657 ug/L #	96
9) Diethyl ether	6.24	59	66018	24.2296 ug/L	90
10) Isoprene	6.28	67	6318	1.6374 ug/L	84
11) Acrolein	6.49	56	6390	12.3492 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	4561	1.6133 ug/L	91
13) Acetone	6.60	43	7504	1.8809 ug/L	97
14) 1,1-Dichloroethene	6.83	61	8701	1.7376 ug/L	89
15) Tert-Butyl Alcohol	6.94	59	20238	43.3134 ug/L	94
16) Dimethyl Sulfide	7.11	62	4075	1.6773 ug/L	98
17) Iodomethane	7.39	142	581	5.2052 ug/L #	30
18) Methyl acetate	7.39	43	6390	1.8363 ug/L #	70
19) Methylene Chloride	7.67	84	5869	1.9461 ug/L	65
20) Carbon Disulfide	7.71	76	18795	1.9617 ug/L	99
21) Acrylonitrile	7.86	53	16272	11.3775 ug/L	99
22) Methyl Tert Butyl Ether	7.89	73	15172	1.7617 ug/L	96
23) trans-1,2-Dichloroethene	8.16	96	5205	1.8816 ug/L	79
24) n-Hexane	8.23	57	9310	1.8534 ug/L	99
25) Diisopropyl ether	8.61	45	320400	24.6012 ug/L	97
26) Vinyl Acetate	8.80	43	10816	1.6066 ug/L #	78
27) 1,1-Dichloroethane	8.83	63	11076	1.8571 ug/L	98
28) Ethyl-Tert-Butyl ether	9.25	59	254827	24.4116 ug/L	95
29) 2-Butanone	9.45	43	4021	2.0330 ug/L #	56
30) Propionitrile	9.58	54	12821	23.4210 ug/L	98
31) 2,2-Dichloropropane	9.69	77	9442	1.9723 ug/L	95
32) cis-1,2-Dichloroethene	9.77	96	6066	1.9642 ug/L	93
33) Chloroform	10.01	83	11484	2.0618 ug/L	99
34) 1-Bromopropane	10.16	122	398	0.9400 ug/L	97
35) Bromochloromethane	10.27	130	3448	1.9001 ug/L	92
36) Tetrahydrofuran	10.29	42	31678	22.2128 ug/L	93
38) 1,1,1-Trichloroethane	10.60	97	9432	1.9171 ug/L	98
39) Cyclohexane	10.63	56	9073	1.6263 ug/L	92
40) 1,1-Dichloropropene	10.82	75	7003	1.7675 ug/L	93
41) Tert-Amyl-Methyl ether	10.95	73	196452	23.7231 ug/L #	87
42) Carbon Tetrachloride	10.99	117	8034	1.7476 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:38 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45) 1,2-Dichloroethane	11.19	62	8853	1.8622 ug/L #	93
46) Benzene	11.23	78	23723	1.9902 ug/L	97
47) Trichloroethene	12.09	130	5099	1.8107 ug/L	92
48) Methylcyclohexane	12.17	83	7350	1.6146 ug/L	79
49) 1,2-Dichloropropane	12.34	63	5698	1.7766 ug/L	95
50) 1,4-Dioxane	12.67	88	1122	55.6272 ug/L	88
51) Bromodichloromethane	12.68	83	7699	1.8293 ug/L	96
52) Dibromomethane	12.79	93	3316	1.7677 ug/L	91
53) 2-Chloroethyl Vinyl Ether	13.04	63	2386	1.3526 ug/L #	61
54) 4-Methyl-2-Pentanone	13.06	58	1423	1.0653 ug/L #	60
55) cis-1,3-Dichloropropene	13.43	75	7739	1.6689 ug/L	96
56) Dimethyl Disulfide	13.72	79	3072	1.3135 ug/L #	66
59) Toluene	13.91	91	21516	1.8801 ug/L	99
60) Ethyl Methacrylate	14.03	69	5274	1.4383 ug/L	90
62) trans-1,3-Dichloropropene	14.12	75	7466	1.6966 ug/L	95
63) 1,1,2-Trichloroethane	14.37	97	4294	1.7952 ug/L	96
64) 2-Hexanone	14.32	43	4342	1.5908 ug/L	87
65) 1,3-Dichloropropane	14.74	76	7896	1.8213 ug/L	99
66) Tetrachloroethene	14.88	166	5376	1.9043 ug/L	96
67) Dibromochloromethane	15.17	129	5153	1.6564 ug/L	94
68) 1,2-Dibromoethane	15.47	107	4387	1.7934 ug/L	97
69) 1-Chlorohexane	15.58	91	5799	1.6318 ug/L	88
70) Chlorobenzene	16.07	112	14803	2.0127 ug/L	82
71) 1,1,1,2-Tetrachloroethane	16.11	131	5636	1.9085 ug/L	89
72) Ethylbenzene	16.10	106	7654	1.9447 ug/L	97
73) m-,p-Xylene	16.22	106	17383	3.6096 ug/L	95
74) o-Xylene	16.88	106	7997	1.7630 ug/L	95
75) Styrene	16.92	104	12496	1.6186 ug/L	87
76) Bromoform	17.49	173	3589	1.6340 ug/L	95
77) Isopropylbenzene	17.38	105	20776	1.7039 ug/L	96
79) 1,1,2,2-Tetrachloroethane	17.64	83	5699	1.7652 ug/L	97
81) 1,2,3-Trichloropropane	17.86	110	1672	1.6915 ug/L	85
82) trans-1,4-Dichloro-2-Buten	17.93	53	2042	1.7133 ug/L	78
83) n-Propylbenzene	17.98	91	25104	1.7886 ug/L #	95
84) Bromobenzene	18.13	156	5535	1.8143 ug/L	100
85) 1,3,5-Trimethylbenzene	18.21	105	17326	1.7343 ug/L	94
86) 2-Chlorotoluene	18.30	91	16320	1.7421 ug/L	90
87) 4-Chlorotoluene	18.35	91	17884	2.0879 ug/L	93
88) a-Methylstyrene	18.69	118	7613	1.5692 ug/L	95
89) tert-Butylbenzene	18.76	134	3612	1.7349 ug/L	82
90) 1,2,4-Trimethylbenzene	18.82	105	18800	1.7894 ug/L	86
91) sec-Butylbenzene	19.08	105	23176	1.8115 ug/L	95
92) p-Isopropyltoluene	19.26	119	18048	1.7099 ug/L	98
93) 1,3-Dichlorobenzene	19.48	146	10999	1.8633 ug/L	93
94) 1,4-Dichlorobenzene	19.64	146	12629	2.1018 ug/L	96
95) n-Butylbenzene	19.89	91	18864	1.7769 ug/L	98
96) 1,2-Dichlorobenzene	20.23	146	10946	1.9270 ug/L	93
97) 1,2-Dibromo-3-Chloropropan	21.40	75	890	1.2459 ug/L	91
98) 1,2,4-Trichlorobenzene	22.77	180	8004	1.9491 ug/L	94
99) Hexachlorobutadiene	22.95	225	4367	1.8595 ug/L	98
100) Naphthalene	23.20	128	15712	1.6644 ug/L	96
101) 1,2,3-Trichlorobenzene	23.59	180	7942	1.9641 ug/L	93

(#) = qualifier out of range (m) = manual integration
6M137525.D 826_SL.M Mon Feb 29 16:01:38 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

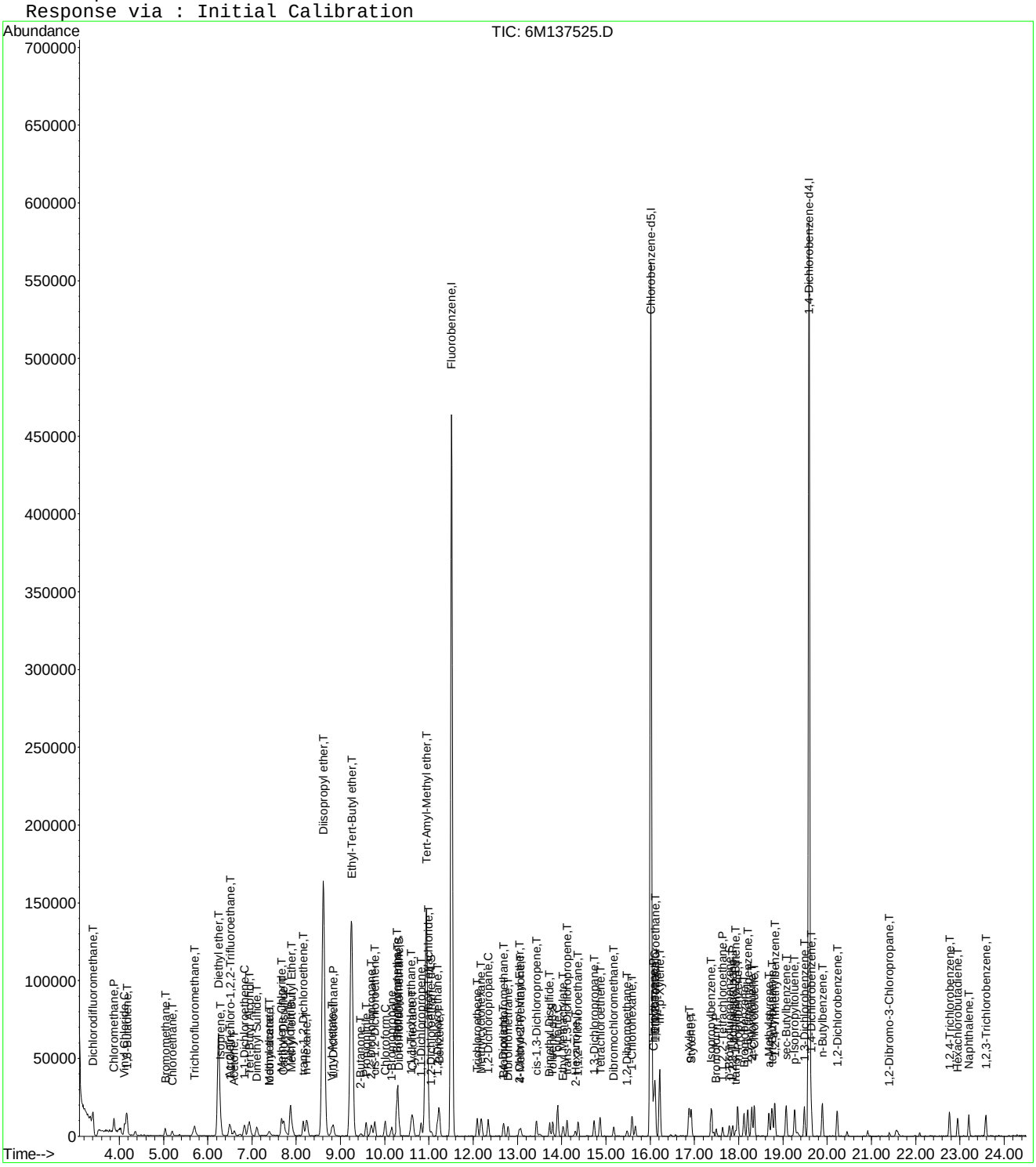

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.6827	15.9	100	0.00
3	P	Chloromethane	2.0000	2.4150	-20.7	100	0.00
4	C	Vinyl Chloride	2.0000	1.9243	3.8	100	0.00
5	T	1,3-Butadiene	-1.0000	2.1934	0.0	0	0.01
6	T	Bromomethane	2.0000	1.8709	6.5	100	0.01
7	T	Chloroethane	2.0000	1.8225	8.9	100	0.01
8	T	Trichlorofluoromethane	2.0000	2.0658	-3.3	100	0.00
9	T	Diethyl ether	25.0000	24.2296	3.1	100	0.00
10	T	Isoprene	-1.0000	1.6374	0.0	0	0.00
11	T	Acrolein	12.5000	12.3492	1.2	100	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.6134	19.3	100	0.00
13	T	Acetone	-1.0000	1.8809	0.0	0	0.01
14	C	1,1-Dichloroethene	2.0000	1.7376	13.1	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	43.3134	13.4	100	0.01
16	T	Dimethyl Sulfide	-1.0000	1.6773	0.0	0	0.00
17	T	Iodomethane	-1.0000	5.2052	0.0	0	0.01
18	T	Methyl acetate	-1.0000	1.8363	0.0	0	0.00
19	T	Methylene Chloride	2.0000	1.9461	2.7	100	0.00
20	T	Carbon Disulfide	2.0000	1.9617	1.9	100	0.00
21	T	Acrylonitrile	12.5000	11.3775	9.0	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.7617	11.9	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.8816	5.9	100	0.00
24	T	n-Hexane	2.0000	1.8534	7.3	100	-0.01
25	T	Diisopropyl ether	25.0000	24.6012	1.6	100	0.00
26	T	Vinyl Acetate	-1.0000	1.6066	0.0	0	0.00
27	P	1,1-Dichloroethane	2.0000	1.8571	7.1	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	24.4116	2.4	100	0.01
29	T	2-Butanone	-1.0000	2.0330	0.0	0	0.00
30	T	Propionitrile	25.0000	23.4210	6.3	100	0.00
31	T	2,2-Dichloropropane	2.0000	1.9723	1.4	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	1.9642	1.8	100	0.00
33	C	Chloroform	2.0000	2.0618	-3.1	100	0.00
34		1-Bromopropane	-1.0000	0.9400	0.0	0	0.00
35	T	Bromochloromethane	2.0000	1.9001	5.0	100	0.01
36	T	Tetrahydrofuran	25.0000	22.2128	11.1	100	0.00
37	S	Dibromofluoromethane	1.0000	1.0432	-4.3	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.9171	4.1	100	0.00
39	T	Cyclohexane	2.0000	1.6263	18.7	100	-0.01
40	T	1,1-Dichloropropene	2.0000	1.7675	11.6	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	23.7231	5.1	100	0.01
42	T	Carbon Tetrachloride	2.0000	1.7476	12.6	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0345	-3.5	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	2.0000	1.8622	6.9	100	0.00
46	T	Benzene	2.0000	1.9902	0.5	100	0.00
47	T	Trichloroethene	2.0000	1.8108	9.5	100	0.00
48	T	Methylcyclohexane	2.0000	1.6146	19.3	100	0.00
49	C	1,2-Dichloropropane	2.0000	1.7766	11.2	100	0.00
50	T	1,4-Dioxane	50.0000	55.6272	-11.3	100	0.00
51	T	Bromodichloromethane	2.0000	1.8293	8.5	100	0.00
52	T	Dibromomethane	2.0000	1.7677	11.6	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	1.3526	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.0653	0.0	0	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.6689	16.6	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.3135	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	1.0718	-7.2	100	0.00
59	C	Toluene	2.0000	1.8801	6.0	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.4383	28.1#	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	2.0000	1.6966	15.2	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.7952	10.2	100	0.00
64	T	2-Hexanone	-1.0000	1.5908	0.0	0	0.01
65	T	1,3-Dichloropropane	2.0000	1.8213	8.9	100	0.00
66	T	Tetrachloroethene	2.0000	1.9043	4.8	100	0.01
67	T	Dibromochloromethane	2.0000	1.6565	17.2	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.7934	10.3	100	-0.01
69	T	1-Chlorohexane	2.0000	1.6318	18.4	100	-0.01
70	P	Chlorobenzene	2.0000	2.0127	-0.6	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.9085	4.6	100	0.01
72	C	Ethylbenzene	2.0000	1.9447	2.8	100	0.00
73	T	m-,p-Xylene	4.0000	3.6096	9.8	100	0.00
74	T	o-Xylene	2.0000	1.7630	11.8	100	0.00
75	T	Styrene	2.0000	1.6186	19.1	100	0.00
76	P	Bromoform	2.0000	1.6340	18.3	100	0.00
77	T	Isopropylbenzene	2.0000	1.7039	14.8	100	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	1.7653	11.7	100	-0.01
80	S	p-Bromofluorobenzene	1.0000	1.0853	-8.5	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	1.6915	15.4	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	1.7133	14.3	100	0.00
83	T	n-Propylbenzene	2.0000	1.7886	10.6	100	0.00
84	T	Bromobenzene	2.0000	1.8143	9.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	1.7343	13.3	100	0.00
86	T	2-Chlorotoluene	2.0000	1.7421	12.9	100	0.00
87	T	4-Chlorotoluene	2.0000	2.0879	-4.4	100	0.00
88	T	a-Methylstyrene	2.0000	1.5692	21.5	100	0.00
89	T	tert-Butylbenzene	2.0000	1.7349	13.3	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	1.7894	10.5	100	0.00
91	T	sec-Butylbenzene	2.0000	1.8115	9.4	100	0.00
92	T	p-Isopropyltoluene	2.0000	1.7099	14.5	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	1.8633	6.8	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.1018	-5.1	100	0.00
95	T	n-Butylbenzene	2.0000	1.7769	11.2	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	1.9270	3.6	100	0.01
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.2459	0.0	0	-0.01
98	T	1,2,4-Trichlorobenzene	2.0000	1.9491	2.5	100	0.01
99	T	Hexachlorobutadiene	2.0000	1.8596	7.0	100	-0.01
100	T	Naphthalene	2.0000	1.6644	16.8	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9641	1.8	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137525.D 826_SL.M Mon Feb 29 16:02:19 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:39 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	643219	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	454348	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	233655	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.32	111	8526	2.4710 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	4.94%#	
43) 1,2-Dichloroethane-d4	11.06	65	11725	2.6172 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	5.24%#	
58) Toluene-d8	13.80	98	29032	2.6876 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	5.38%#	
80) p-Bromofluorobenzene	17.79	95	11167	2.6020 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	5.20%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	28102	4.7571 ug/L	100
3) Chloromethane	3.88	50	32755	5.3209 ug/L	91
4) Vinyl Chloride	4.12	62	26049	5.2573 ug/L	99
5) 1,3-Butadiene	4.17	54	23717	5.7531 ug/L	82
6) Bromomethane	5.03	94	13346	5.0529 ug/L	95
7) Chloroethane	5.19	64	14096	5.0173 ug/L	95
8) Trichlorofluoromethane	5.70	101	35831	5.3818 ug/L	98
9) Diethyl ether	6.24	59	150730	49.2132 ug/L	93
10) Isoprene	6.28	67	21438	4.9428 ug/L	81
11) Acrolein	6.48	56	14248	24.4956 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	17247	5.4273 ug/L	95
13) Acetone	6.59	43	13051	5.3136 ug/L	94
14) 1,1-Dichloroethene	6.83	61	29698	5.2760 ug/L	91
15) Tert-Butyl Alcohol	6.93	59	51304	97.6795 ug/L	93
16) Dimethyl Sulfide	7.12	62	13140	4.8115 ug/L	98
17) Iodomethane	7.38	142	3580	6.2818 ug/L	92
18) Methyl acetate	7.39	43	19888	5.0842 ug/L	93
19) Methylene Chloride	7.67	84	17567	5.1820 ug/L	73
20) Carbon Disulfide	7.72	76	56579	5.2535 ug/L	99
21) Acrylonitrile	7.86	53	38170	23.7426 ug/L	95
22) Methyl Tert Butyl Ether	7.89	73	46633	4.8170 ug/L	97
23) trans-1,2-Dichloroethene	8.16	96	15681	5.0428 ug/L	87
24) n-Hexane	8.24	57	29042	5.1432 ug/L	92
25) Diisopropyl ether	8.61	45	721466	49.2807 ug/L	97
26) Vinyl Acetate	8.80	43	31741	4.1943 ug/L	93
27) 1,1-Dichloroethane	8.83	63	34581	5.1581 ug/L	100
28) Ethyl-Tert-Butyl ether	9.24	59	576725	49.1494 ug/L	95
29) 2-Butanone	9.45	43	11939	5.3698 ug/L	87
30) Propionitrile	9.58	54	29074	47.2483 ug/L	96
31) 2,2-Dichloropropane	9.69	77	27493	5.1089 ug/L	98
32) cis-1,2-Dichloroethene	9.77	96	17624	5.0766 ug/L	93
33) Chloroform	10.01	83	32075	5.1228 ug/L	96
34) 1-Bromopropane	10.16	122	2123	4.4605 ug/L	82
35) Bromochloromethane	10.26	130	9542	4.6779 ug/L	100
36) Tetrahydrofuran	10.29	42	72518	47.4879 ug/L	94
38) 1,1,1-Trichloroethane	10.60	97	26846	4.8542 ug/L	94
39) Cyclohexane	10.64	56	31697	5.0544 ug/L	89
40) 1,1-Dichloropropene	10.82	75	23898	5.3658 ug/L	97
41) Tert-Amyl-Methyl ether	10.94	73	454105	48.7831 ug/L #	89
42) Carbon Tetrachloride	10.99	117	26296	5.0887 ug/L	96

(#) = qualifier out of range (m) = manual integration
6M137526.D 826_SL.M Mon Feb 29 16:01:39 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:39 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45) 1,2-Dichloroethane	11.19	62	26611	4.9796 ug/L	97
46) Benzene	11.23	78	66739	4.9809 ug/L	93
47) Trichloroethene	12.09	130	16560	5.2316 ug/L	93
48) Methylcyclohexane	12.18	83	26100	5.1005 ug/L	86
49) 1,2-Dichloropropane	12.34	63	17955	4.9803 ug/L	94
50) 1,4-Dioxane	12.67	88	3919	107.9166 ug/L	93
51) Bromodichloromethane	12.68	83	23069	4.8760 ug/L	92
52) Dibromomethane	12.79	93	9757	4.6271 ug/L	97
53) 2-Chloroethyl Vinyl Ether	13.04	63	8133	4.1014 ug/L	99
54) 4-Methyl-2-Pentanone	13.07	58	6484	4.3183 ug/L	81
55) cis-1,3-Dichloropropene	13.43	75	24075	4.6186 ug/L	98
56) Dimethyl Disulfide	13.72	79	10983	4.1777 ug/L	91
59) Toluene	13.91	91	65025	5.0594 ug/L	100
60) Ethyl Methacrylate	14.03	69	18200	4.4195 ug/L	95
62) trans-1,3-Dichloropropene	14.12	75	23055	4.6650 ug/L	96
63) 1,1,2-Trichloroethane	14.37	97	13105	4.8784 ug/L	97
64) 2-Hexanone	14.31	43	13531	4.4142 ug/L	93
65) 1,3-Dichloropropane	14.74	76	24567	5.0457 ug/L	96
66) Tetrachloroethene	14.87	166	17025	5.3699 ug/L	96
67) Dibromochloromethane	15.17	129	16779	4.8026 ug/L	98
68) 1,2-Dibromoethane	15.48	107	13121	4.7760 ug/L	98
69) 1-Chlorohexane	15.59	91	18960	4.7505 ug/L	75
70) Chlorobenzene	16.07	112	43871	5.3112 ug/L #	60
71) 1,1,1,2-Tetrachloroethane	16.10	131	15603	4.7045 ug/L	95
72) Ethylbenzene	16.10	106	22079	4.9950 ug/L	94
73) m-,p-Xylene	16.22	106	54549	10.0858 ug/L	96
74) o-Xylene	16.88	106	24478	4.8051 ug/L	92
75) Styrene	16.92	104	39808	4.5913 ug/L	95
76) Bromoform	17.49	173	11643	4.7199 ug/L	97
77) Isopropylbenzene	17.38	105	66989	4.8919 ug/L	99
79) 1,1,2,2-Tetrachloroethane	17.65	83	18286	5.0098 ug/L	96
81) 1,2,3-Trichloropropane	17.87	110	5764	5.1577 ug/L	93
82) trans-1,4-Dichloro-2-Buten	17.93	53	5968	4.4290 ug/L	92
83) n-Propylbenzene	17.98	91	82621	5.2068 ug/L	98
84) Bromobenzene	18.13	156	17797	5.1598 ug/L	96
85) 1,3,5-Trimethylbenzene	18.21	105	58488	5.1783 ug/L	94
86) 2-Chlorotoluene	18.30	91	57419	5.4213 ug/L	96
87) 4-Chlorotoluene	18.35	91	50976	5.2638 ug/L	97
88) a-Methylstyrene	18.69	118	25024	4.5623 ug/L	100
89) tert-Butylbenzene	18.76	134	11873	5.0441 ug/L	95
90) 1,2,4-Trimethylbenzene	18.82	105	61081	5.1422 ug/L	83
91) sec-Butylbenzene	19.08	105	74051	5.1195 ug/L	98
92) p-Isopropyltoluene	19.26	119	60824	5.0969 ug/L	97
93) 1,3-Dichlorobenzene	19.48	146	35412	5.3060 ug/L	98
94) 1,4-Dichlorobenzene	19.64	146	35211	5.1831 ug/L	83
95) n-Butylbenzene	19.89	91	60714	5.0584 ug/L	95
96) 1,2-Dichlorobenzene	20.22	146	32728	5.0962 ug/L	95
97) 1,2-Dibromo-3-Chloropropan	21.41	75	3714	4.5988 ug/L	88
98) 1,2,4-Trichlorobenzene	22.76	180	22925	4.9379 ug/L	93
99) Hexachlorobutadiene	22.96	225	13612	5.1268 ug/L	94
100) Naphthalene	23.20	128	48617	4.5551 ug/L	99
101) 1,2,3-Trichlorobenzene	23.59	180	22839	4.9959 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

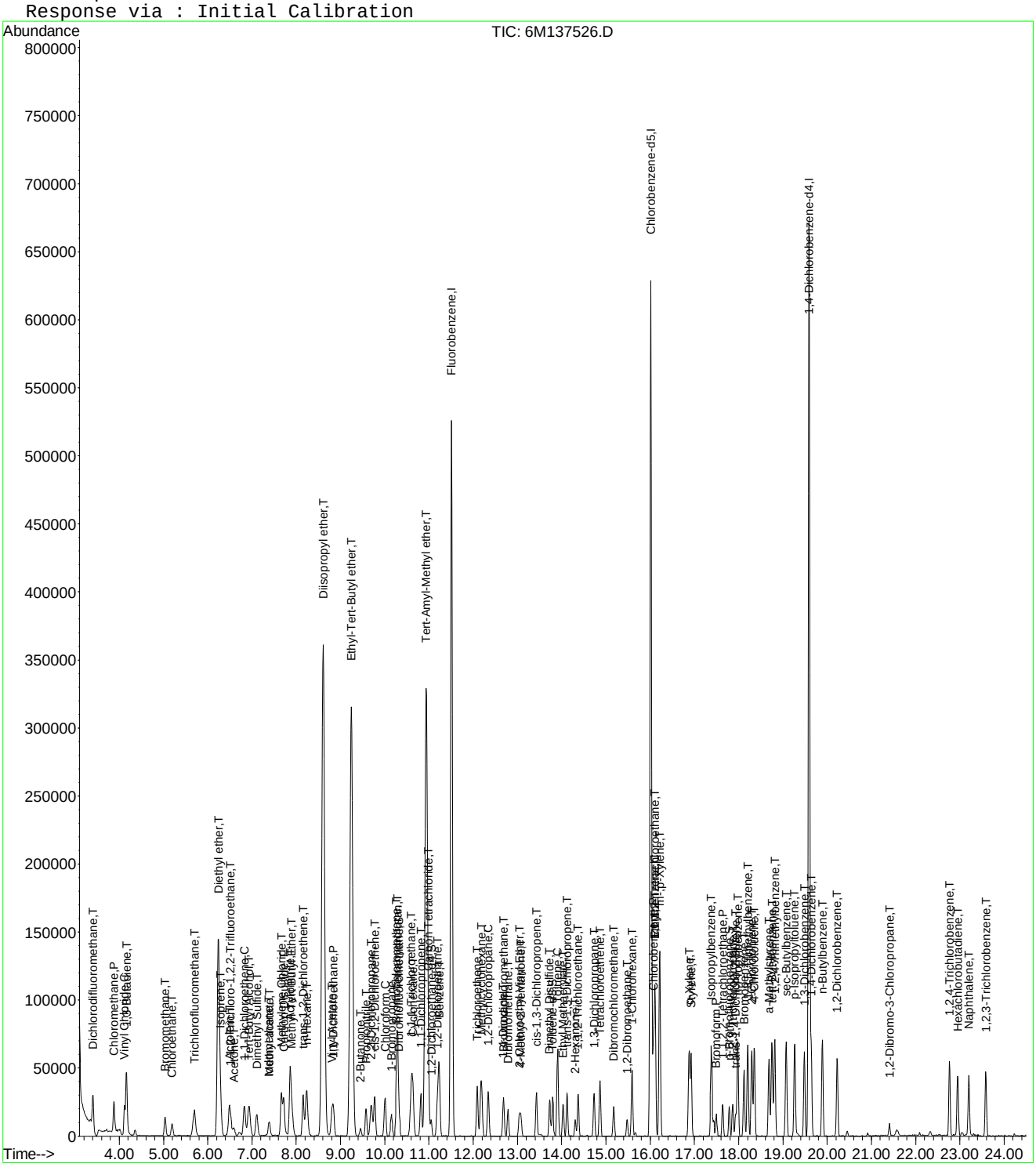

6M137526.D 826_SL.M Mon Feb 29 16:01:39 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.7571	4.9	100	0.00
3	P	Chloromethane	5.0000	5.3209	-6.4	100	0.00
4	C	Vinyl Chloride	5.0000	5.2573	-5.1	100	0.00
5	T	1,3-Butadiene	5.0000	5.7531	-15.1	100	0.00
6	T	Bromomethane	5.0000	5.0529	-1.1	100	0.00
7	T	Chloroethane	5.0000	5.0173	-0.3	100	0.00
8	T	Trichlorofluoromethane	5.0000	5.3818	-7.6	100	0.00
9	T	Diethyl ether	50.0000	49.2132	1.6	100	0.00
10	T	Isoprene	5.0000	4.9428	1.1	100	0.00
11	T	Acrolein	25.0000	24.4957	2.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	5.4272	-8.5	100	0.00
13	T	Acetone	-1.0000	5.3136	0.0	0	0.00
14	C	1,1-Dichloroethene	5.0000	5.2760	-5.5	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	97.6795	2.3	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.8115	3.8	100	0.00
17	T	Iodomethane	5.0000	6.2818	-25.6#	100	0.00
18	T	Methyl acetate	5.0000	5.0842	-1.7	100	0.00
19	T	Methylene Chloride	5.0000	5.1820	-3.6	100	0.00
20	T	Carbon Disulfide	5.0000	5.2535	-5.1	100	0.00
21	T	Acrylonitrile	25.0000	23.7426	5.0	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.8170	3.7	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	5.0428	-0.9	100	0.00
24	T	n-Hexane	5.0000	5.1432	-2.9	100	0.00
25	T	Diisopropyl ether	50.0000	49.2807	1.4	100	0.00
26	T	Vinyl Acetate	5.0000	4.1943	16.1	100	0.00
27	P	1,1-Dichloroethane	5.0000	5.1581	-3.2	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	49.1494	1.7	100	0.00
29	T	2-Butanone	5.0000	5.3698	-7.4	100	0.00
30	T	Propionitrile	50.0000	47.2483	5.5	100	0.00
31	T	2,2-Dichloropropane	5.0000	5.1089	-2.2	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	5.0766	-1.5	100	0.00
33	C	Chloroform	5.0000	5.1228	-2.5	100	0.00
34		1-Bromopropane	5.0000	4.4605	10.8	100	0.00
35	T	Bromochloromethane	5.0000	4.6779	6.4	100	0.00
36	T	Tetrahydrofuran	50.0000	47.4879	5.0	100	0.00
37	S	Dibromofluoromethane	2.5000	2.4710	1.2	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.8542	2.9	100	0.00
39	T	Cyclohexane	5.0000	5.0544	-1.1	100	0.00
40	T	1,1-Dichloropropene	5.0000	5.3658	-7.3	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	48.7831	2.4	100	0.00
42	T	Carbon Tetrachloride	5.0000	5.0887	-1.8	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.6172	-4.7	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	5.0000	4.9796	0.4	100	0.00
46	T	Benzene	5.0000	4.9809	0.4	100	0.00
47	T	Trichloroethene	5.0000	5.2316	-4.6	100	0.00
48	T	Methylcyclohexane	5.0000	5.1005	-2.0	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.9803	0.4	100	0.00
50	T	1,4-Dioxane	100.0000	107.9166	-7.9	100	0.00
51	T	Bromodichloromethane	5.0000	4.8760	2.5	100	0.00
52	T	Dibromomethane	5.0000	4.6271	7.5	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.1014	18.0	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.3183	13.6	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.6186	7.6	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.1777	16.4	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.6876	-7.5	100	0.00
59	C	Toluene	5.0000	5.0594	-1.2	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.4195	11.6	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	5.0000	4.6650	6.7	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.8784	2.4	100	0.00
64	T	2-Hexanone	5.0000	4.4142	11.7	100	0.00
65	T	1,3-Dichloropropane	5.0000	5.0457	-0.9	100	0.00
66	T	Tetrachloroethene	5.0000	5.3699	-7.4	100	0.00
67	T	Dibromochloromethane	5.0000	4.8026	3.9	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.7760	4.5	100	0.00
69	T	1-Chlorohexane	5.0000	4.7505	5.0	100	0.00
70	P	Chlorobenzene	5.0000	5.3112	-6.2	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.7045	5.9	100	0.00
72	C	Ethylbenzene	5.0000	4.9950	0.1	100	0.00
73	T	m-,p-Xylene	10.0000	10.0858	-0.9	100	0.00
74	T	o-Xylene	5.0000	4.8051	3.9	100	0.00
75	T	Styrene	5.0000	4.5913	8.2	100	0.00
76	P	Bromoform	5.0000	4.7199	5.6	100	0.00
77	T	Isopropylbenzene	5.0000	4.8919	2.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	5.0098	-0.2	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.6020	-4.1	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.1577	-3.2	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.4290	11.4	100	0.00
83	T	n-Propylbenzene	5.0000	5.2068	-4.1	100	0.00
84	T	Bromobenzene	5.0000	5.1597	-3.2	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	5.1783	-3.6	100	0.00
86	T	2-Chlorotoluene	5.0000	5.4214	-8.4	100	0.00
87	T	4-Chlorotoluene	5.0000	5.2638	-5.3	100	0.00
88	T	a-Methylstyrene	5.0000	4.5623	8.8	100	0.00
89	T	tert-Butylbenzene	5.0000	5.0441	-0.9	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.1422	-2.8	100	0.00
91	T	sec-Butylbenzene	5.0000	5.1195	-2.4	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.0969	-1.9	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	5.3060	-6.1	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	5.1831	-3.7	100	0.00
95	T	n-Butylbenzene	5.0000	5.0584	-1.2	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	5.0962	-1.9	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	4.5988	8.0	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.9379	1.2	100	0.00
99	T	Hexachlorobutadiene	5.0000	5.1268	-2.5	100	0.00
100	T	Naphthalene	5.0000	4.5552	8.9	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.9959	0.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137526.D 826_SL.M Mon Feb 29 16:02:29 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:40 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	607286	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	435504	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	227713	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	16492	5.0625 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 10.12%#		
43) 1,2-Dichloroethane-d4	11.06	65	20491	4.8445 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 9.68%#		
58) Toluene-d8	13.80	98	50808	4.9069 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 9.82%#		
80) p-Bromofluorobenzene	17.79	95	20967	5.0129 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 10.02%#		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.41	85	51684	9.2668 ug/L	100
3) Chloromethane	3.88	50	58275	10.0267 ug/L	97
4) Vinyl Chloride	4.12	62	45684	9.7657 ug/L	98
5) 1,3-Butadiene	4.16	54	39114	10.0495 ug/L	90
6) Bromomethane	5.03	94	25017	10.0321 ug/L	98
7) Chloroethane	5.20	64	25248	9.5185 ug/L	95
8) Trichlorofluoromethane	5.69	101	62268	9.9061 ug/L	98
9) Diethyl ether	6.24	59	197846	68.4186 ug/L	92
10) Isoprene	6.28	67	39072	9.5415 ug/L	91
11) Acrolein	6.48	56	19614	35.7163 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	30114	10.0369 ug/L	94
13) Acetone	6.60	43	18461	10.1493 ug/L	97
14) 1,1-Dichloroethene	6.83	61	51482	9.6871 ug/L	94
15) Tert-Butyl Alcohol	6.93	59	70054	141.2703 ug/L	95
16) Dimethyl Sulfide	7.12	62	25452	9.8712 ug/L	97
17) Iodomethane	7.38	142	9906	8.8243 ug/L	91
18) Methyl acetate	7.39	43	38451	10.4113 ug/L	93
19) Methylene Chloride	7.67	84	32006	10.0000 ug/L	78
20) Carbon Disulfide	7.72	76	98104	9.6481 ug/L	100
21) Acrylonitrile	7.86	53	52450	34.5555 ug/L	97
22) Methyl Tert Butyl Ether	7.89	73	93836	10.2663 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	29186	9.9411 ug/L	85
24) n-Hexane	8.24	57	52226	9.7962 ug/L	99
25) Diisopropyl ether	8.61	45	937664	67.8382 ug/L	97
26) Vinyl Acetate	8.80	43	70808	9.9102 ug/L	96
27) 1,1-Dichloroethane	8.83	63	63440	10.0226 ug/L	98
28) Ethyl-Tert-Butyl ether	9.24	59	760504	68.6462 ug/L	96
29) 2-Butanone	9.45	43	21373	10.1817 ug/L	94
30) Propionitrile	9.58	54	40026	68.8953 ug/L	100
31) 2,2-Dichloropropane	9.69	77	51602	10.1564 ug/L	98
32) cis-1,2-Dichloroethene	9.77	96	31900	9.7326 ug/L	99
33) Chloroform	10.01	83	57702	9.7611 ug/L	96
34) 1-Bromopropane	10.15	122	4101	9.1261 ug/L	96
35) Bromochloromethane	10.26	130	18414	9.5616 ug/L	96
36) Tetrahydrofuran	10.29	42	95905	67.3892 ug/L	94
38) 1,1,1-Trichloroethane	10.60	97	52695	10.0919 ug/L	100
39) Cyclohexane	10.63	56	57419	9.6977 ug/L	90
40) 1,1-Dichloropropene	10.82	75	41095	9.7729 ug/L	98
41) Tert-Amyl-Methyl ether	10.95	73	598972	68.1530 ug/L	90
42) Carbon Tetrachloride	10.99	117	48542	9.9495 ug/L	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:40 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	11.19	62	51284	10.1644 ug/L		99
46)	Benzene	11.23	78	122737	9.7022 ug/L		94
47)	Trichloroethene	12.09	130	29481	9.8646 ug/L		92
48)	Methylcyclohexane	12.18	83	46982	9.7245 ug/L		87
49)	1,2-Dichloropropane	12.34	63	33640	9.8830 ug/L		97
50)	1,4-Dioxane	12.68	88	4932	133.5880 ug/L		83
51)	Bromodichloromethane	12.68	83	42482	9.5106 ug/L		92
52)	Dibromomethane	12.78	93	19421	9.7551 ug/L		99
53)	2-Chloroethyl Vinyl Ether	13.04	63	17139	9.1546 ug/L		98
54)	4-Methyl-2-Pentanone	13.07	58	13343	9.4122 ug/L		90
55)	cis-1,3-Dichloropropene	13.43	75	47323	9.6158 ug/L		96
56)	Dimethyl Disulfide	13.72	79	21113	8.5060 ug/L		97
59)	Toluene	13.91	91	123480	10.0233 ug/L		99
60)	Ethyl Methacrylate	14.04	69	37321	9.4549 ug/L		94
62)	trans-1,3-Dichloropropene	14.12	75	46119	9.7357 ug/L		96
63)	1,1,2-Trichloroethane	14.38	97	26300	10.2139 ug/L		99
64)	2-Hexanone	14.31	43	28213	9.6021 ug/L		99
65)	1,3-Dichloropropane	14.73	76	46832	10.0347 ug/L		94
66)	Tetrachloroethene	14.87	166	31153	10.2512 ug/L		97
67)	Dibromochloromethane	15.18	129	32946	9.8381 ug/L		99
68)	1,2-Dibromoethane	15.48	107	25271	9.5966 ug/L		95
69)	1-Chlorohexane	15.59	91	36355	9.5030 ug/L		82
70)	Chlorobenzene	16.07	112	79785	10.0771 ug/L	#	63
71)	1,1,1,2-Tetrachloroethane	16.11	131	31524	9.9162 ug/L		97
72)	Ethylbenzene	16.10	106	41898	9.8889 ug/L		95
73)	m-,p-Xylene	16.22	106	102847	19.8387 ug/L		96
74)	o-Xylene	16.88	106	47393	9.7060 ug/L		93
75)	Styrene	16.92	104	79997	9.6257 ug/L		97
76)	Bromoform	17.49	173	22569	9.5450 ug/L		99
77)	Isopropylbenzene	17.38	105	130459	9.9391 ug/L		96
79)	1,1,2,2-Tetrachloroethane	17.65	83	36327	10.2123 ug/L		95
81)	1,2,3-Trichloropropane	17.87	110	11417	10.4826 ug/L		96
82)	trans-1,4-Dichloro-2-Buten	17.93	53	12994	9.8948 ug/L		85
83)	n-Propylbenzene	17.98	91	159783	10.3323 ug/L		98
84)	Bromobenzene	18.13	156	33893	10.0828 ug/L		95
85)	1,3,5-Trimethylbenzene	18.21	105	111252	10.1069 ug/L		94
86)	2-Chlorotoluene	18.30	91	107737	10.4377 ug/L		98
87)	4-Chlorotoluene	18.36	91	96695	10.2453 ug/L		95
88)	a-Methylstyrene	18.69	118	51340	9.6043 ug/L		97
89)	tert-Butylbenzene	18.76	134	22949	10.0040 ug/L		90
90)	1,2,4-Trimethylbenzene	18.82	105	119948	10.3616 ug/L		79
91)	sec-Butylbenzene	19.07	105	141383	10.0296 ug/L		97
92)	p-Isopropyltoluene	19.27	119	115695	9.9480 ug/L		99
93)	1,3-Dichlorobenzene	19.48	146	67906	10.4404 ug/L		100
94)	1,4-Dichlorobenzene	19.64	146	68350	10.3238 ug/L		93
95)	n-Butylbenzene	19.89	91	117398	10.0364 ug/L		96
96)	1,2-Dichlorobenzene	20.22	146	64067	10.2365 ug/L		98
97)	1,2-Dibromo-3-Chloropropan	21.40	75	7444	9.4579 ug/L		93
98)	1,2,4-Trichlorobenzene	22.76	180	45615	10.0816 ug/L		99
99)	Hexachlorobutadiene	22.94	225	26046	10.0659 ug/L		100
100)	Naphthalene	23.20	128	104354	10.0325 ug/L		99
101)	1,2,3-Trichlorobenzene	23.59	180	44630	10.0173 ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

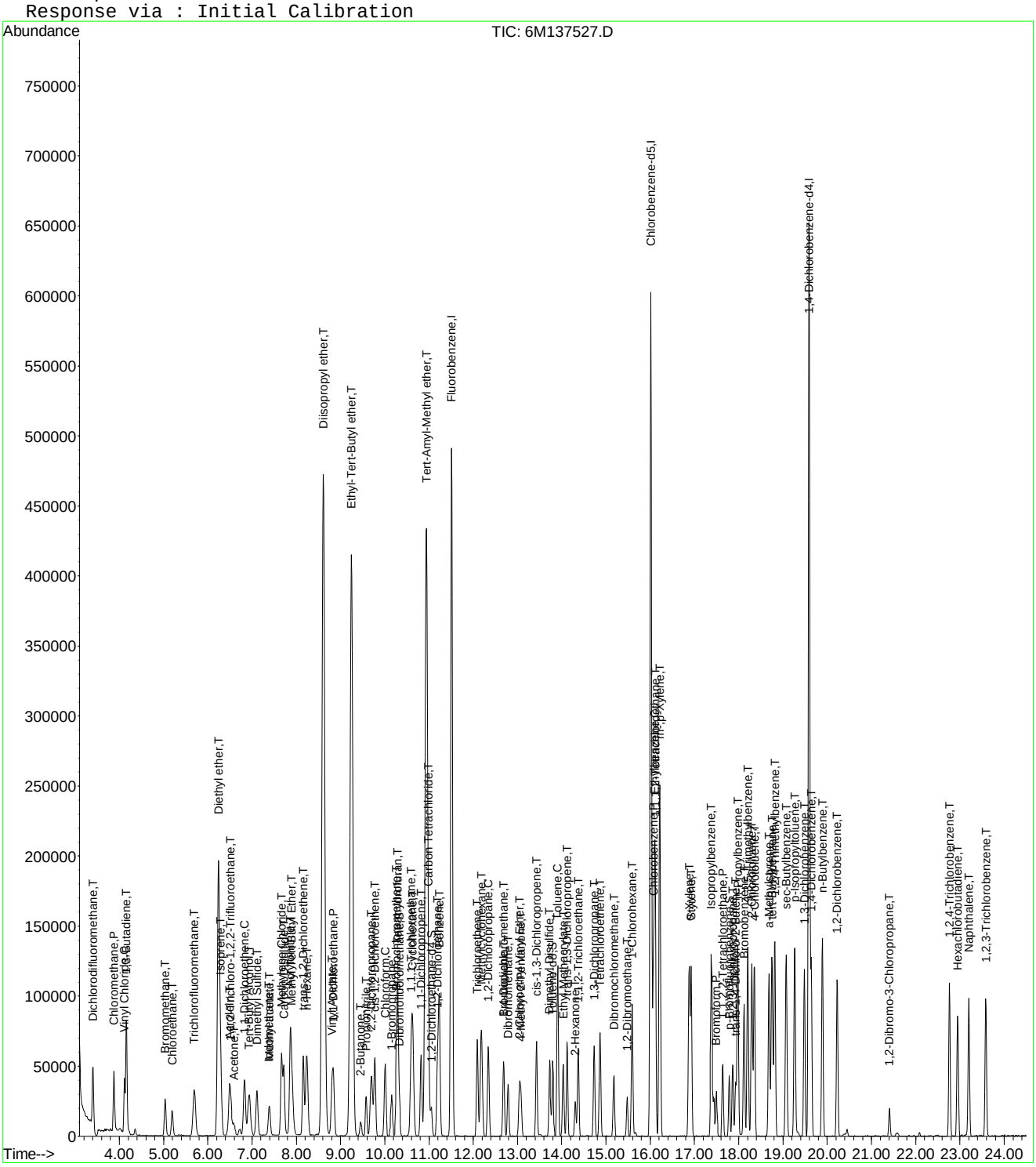

6M137527.D 826_SL.M Mon Feb 29 16:01:40 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	10.0000	9.2668	7.3	100	0.00
3	P	Chloromethane	10.0000	10.0267	-0.3	100	0.00
4	C	Vinyl Chloride	10.0000	9.7657	2.3	100	0.00
5	T	1,3-Butadiene	10.0000	10.0495	-0.5	100	-0.01
6	T	Bromomethane	10.0000	10.0321	-0.3	100	0.00
7	T	Chloroethane	10.0000	9.5185	4.8	100	0.00
8	T	Trichlorofluoromethane	10.0000	9.9061	0.9	100	-0.01
9	T	Diethyl ether	65.0000	68.4186	-5.3	100	0.00
10	T	Isoprene	10.0000	9.5415	4.6	100	0.00
11	T	Acrolein	32.5000	35.7163	-9.9	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	10.0000	10.0369	-0.4	100	0.00
13	T	Acetone	10.0000	10.1493	-1.5	100	0.01
14	C	1,1-Dichloroethene	10.0000	9.6871	3.1	100	0.00
15	T	Tert-Butyl Alcohol	130.0000	141.2703	-8.7	100	0.00
16	T	Dimethyl Sulfide	10.0000	9.8712	1.3	100	0.00
17	T	Iodomethane	10.0000	8.8243	11.8	100	0.00
18	T	Methyl acetate	10.0000	10.4113	-4.1	100	0.00
19	T	Methylene Chloride	10.0000	10.0000	0.0	100	0.00
20	T	Carbon Disulfide	10.0000	9.6481	3.5	100	0.00
21	T	Acrylonitrile	32.5000	34.5555	-6.3	100	0.00
22	T	Methyl Tert Butyl Ether	10.0000	10.2663	-2.7	100	0.00
23	T	trans-1,2-Dichloroethene	10.0000	9.9411	0.6	100	0.00
24	T	n-Hexane	10.0000	9.7962	2.0	100	0.00
25	T	Diisopropyl ether	65.0000	67.8382	-4.4	100	0.00
26	T	Vinyl Acetate	10.0000	9.9102	0.9	100	0.00
27	P	1,1-Dichloroethane	10.0000	10.0226	-0.2	100	0.00
28	T	Ethyl-Tert-Butyl ether	65.0000	68.6462	-5.6	100	0.00
29	T	2-Butanone	10.0000	10.1817	-1.8	100	0.00
30	T	Propionitrile	65.0000	68.8953	-6.0	100	0.00
31	T	2,2-Dichloropropane	10.0000	10.1564	-1.6	100	0.00
32	T	cis-1,2-Dichloroethene	10.0000	9.7326	2.7	100	0.00
33	C	Chloroform	10.0000	9.7611	2.4	100	0.00
34		1-Bromopropane	10.0000	9.1261	8.7	100	-0.01
35	T	Bromochloromethane	10.0000	9.5616	4.4	100	0.00
36	T	Tetrahydrofuran	65.0000	67.3892	-3.7	100	0.00
37	S	Dibromofluoromethane	5.0000	5.0625	-1.2	100	0.00
38	T	1,1,1-Trichloroethane	10.0000	10.0919	-0.9	100	0.00
39	T	Cyclohexane	10.0000	9.6977	3.0	100	-0.01
40	T	1,1-Dichloropropene	10.0000	9.7729	2.3	100	0.00
41	T	Tert-Amyl-Methyl ether	65.0000	68.1530	-4.9	100	0.00
42	T	Carbon Tetrachloride	10.0000	9.9495	0.5	100	0.00
43	S	1,2-Dichloroethane-d4	5.0000	4.8445	3.1	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	10.0000	10.1644	-1.6	100	0.00
46	T	Benzene	10.0000	9.7022	3.0	100	0.00
47	T	Trichloroethene	10.0000	9.8646	1.4	100	0.00
48	T	Methylcyclohexane	10.0000	9.7245	2.8	100	0.00
49	C	1,2-Dichloropropane	10.0000	9.8831	1.2	100	0.00
50	T	1,4-Dioxane	130.0000	133.5880	-2.8	100	0.00
51	T	Bromodichloromethane	10.0000	9.5106	4.9	100	0.00
52	T	Dibromomethane	10.0000	9.7551	2.4	100	0.00
53	T	2-Chloroethyl Vinyl Ether	10.0000	9.1546	8.5	100	0.00
54	T	4-Methyl-2-Pentanone	10.0000	9.4122	5.9	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	10.0000	9.6158	3.8	100	0.00
56	T	Dimethyl Disulfide	10.0000	8.5060	14.9	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	5.0000	4.9070	1.9	100	0.00
59	C	Toluene	10.0000	10.0233	-0.2	100	0.00
60	T	Ethyl Methacrylate	10.0000	9.4549	5.5	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	10.0000	9.7357	2.6	100	0.00
63	T	1,1,2-Trichloroethane	10.0000	10.2139	-2.1	100	0.00
64	T	2-Hexanone	10.0000	9.6021	4.0	100	0.00
65	T	1,3-Dichloropropane	10.0000	10.0347	-0.3	100	0.00
66	T	Tetrachloroethene	10.0000	10.2512	-2.5	100	0.00
67	T	Dibromochloromethane	10.0000	9.8381	1.6	100	0.00
68	T	1,2-Dibromoethane	10.0000	9.5966	4.0	100	0.00
69	T	1-Chlorohexane	10.0000	9.5030	5.0	100	0.00
70	P	Chlorobenzene	10.0000	10.0771	-0.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	10.0000	9.9162	0.8	100	0.00
72	C	Ethylbenzene	10.0000	9.8889	1.1	100	0.00
73	T	m-,p-Xylene	20.0000	19.8387	0.8	100	0.00
74	T	o-Xylene	10.0000	9.7060	2.9	100	0.00
75	T	Styrene	10.0000	9.6258	3.7	100	0.00
76	P	Bromoform	10.0000	9.5450	4.6	100	0.00
77	T	Isopropylbenzene	10.0000	9.9391	0.6	100	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	10.0000	10.2123	-2.1	100	0.00
80	S	p-Bromofluorobenzene	5.0000	5.0129	-0.3	100	0.00
81	T	1,2,3-Trichloropropane	10.0000	10.4826	-4.8	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	10.0000	9.8948	1.1	100	0.00
83	T	n-Propylbenzene	10.0000	10.3323	-3.3	100	0.00
84	T	Bromobenzene	10.0000	10.0828	-0.8	100	0.00
85	T	1,3,5-Trimethylbenzene	10.0000	10.1069	-1.1	100	0.00
86	T	2-Chlorotoluene	10.0000	10.4377	-4.4	100	0.00
87	T	4-Chlorotoluene	10.0000	10.2453	-2.5	100	0.00
88	T	a-Methylstyrene	10.0000	9.6043	4.0	100	0.00
89	T	tert-Butylbenzene	10.0000	10.0040	-0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	10.0000	10.3616	-3.6	100	0.00
91	T	sec-Butylbenzene	10.0000	10.0296	-0.3	100	0.00
92	T	p-Isopropyltoluene	10.0000	9.9480	0.5	100	0.00
93	T	1,3-Dichlorobenzene	10.0000	10.4404	-4.4	100	0.00
94	T	1,4-Dichlorobenzene	10.0000	10.3238	-3.2	100	0.00
95	T	n-Butylbenzene	10.0000	10.0364	-0.4	100	0.00
96	T	1,2-Dichlorobenzene	10.0000	10.2365	-2.4	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	10.0000	9.4579	5.4	100	-0.01
98	T	1,2,4-Trichlorobenzene	10.0000	10.0816	-0.8	100	0.00
99	T	Hexachlorobutadiene	10.0000	10.0659	-0.7	100	-0.01
100	T	Naphthalene	10.0000	10.0325	-0.3	100	0.00
101	T	1,2,3-Trichlorobenzene	10.0000	10.0173	-0.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137527.D 826_SL.M Mon Feb 29 16:02:41 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137528.D Vial: 7
Acq On : 26 Feb 2016 16:30 Operator: TMB
Sample : WG558920-07 20ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:40 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	604454	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	432511	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	231578	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	33417	10.3059 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 20.62%#		
43) 1,2-Dichloroethane-d4	11.05	65	44264	10.5140 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 21.02%#		
58) Toluene-d8	13.80	98	105494	10.2589 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 20.52%#		
80) p-Bromofluorobenzene	17.79	95	42856	10.0752 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 20.16%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	124530	22.4325 ug/L	99
3) Chloromethane	3.88	50	120837	20.8884 ug/L	97
4) Vinyl Chloride	4.12	62	100224	21.5249 ug/L	99
5) 1,3-Butadiene	4.17	54	87169	22.5011 ug/L	89
6) Bromomethane	5.03	94	52021	20.9587 ug/L	100
7) Chloroethane	5.20	64	56109	21.2522 ug/L	96
8) Trichlorofluoromethane	5.70	101	126994	20.2979 ug/L	100
9) Diethyl ether	6.24	59	233490	81.1233 ug/L	92
10) Isoprene	6.28	67	78978	19.3770 ug/L	88
11) Acrolein	6.48	56	21732	39.7585 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	61970	20.7512 ug/L	94
13) Acetone	6.60	43	31313	20.3882 ug/L	94
14) 1,1-Dichloroethene	6.83	61	109604	20.7203 ug/L	92
15) Tert-Butyl Alcohol	6.93	59	84577	171.3564 ug/L	95
16) Dimethyl Sulfide	7.12	62	47686	18.5811 ug/L	91
17) Iodomethane	7.38	142	29628	16.5619 ug/L	87
18) Methyl acetate	7.39	43	74780	20.3429 ug/L	95
19) Methylene Chloride	7.67	84	64851	20.3571 ug/L	76
20) Carbon Disulfide	7.72	76	202990	20.0567 ug/L	99
21) Acrylonitrile	7.86	53	61697	40.8381 ug/L	94
22) Methyl Tert Butyl Ether	7.89	73	190370	20.9254 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	59769	20.4535 ug/L	87
24) n-Hexane	8.24	57	105156	19.8169 ug/L	97
25) Diisopropyl ether	8.61	45	1129584	82.1061 ug/L	96
26) Vinyl Acetate	8.80	43	152272	21.4117 ug/L	97
27) 1,1-Dichloroethane	8.83	63	130302	20.6823 ug/L	99
28) Ethyl-Tert-Butyl ether	9.24	59	915394	83.0143 ug/L	96
29) 2-Butanone	9.46	43	42524	20.3527 ug/L	97
30) Propionitrile	9.58	54	48414	83.7237 ug/L	100
31) 2,2-Dichloropropane	9.69	77	100380	19.8495 ug/L	98
32) cis-1,2-Dichloroethene	9.77	96	66403	20.3543 ug/L	100
33) Chloroform	10.01	83	120566	20.4910 ug/L	97
34) 1-Bromopropane	10.15	122	8978	20.0727 ug/L	94
35) Bromochloromethane	10.26	130	39989	20.8618 ug/L	98
36) Tetrahydrofuran	10.29	42	119054	84.5841 ug/L	93
38) 1,1,1-Trichloroethane	10.60	97	105282	20.2577 ug/L	96
39) Cyclohexane	10.63	56	119680	20.3079 ug/L	89
40) 1,1-Dichloropropene	10.82	75	83869	20.0386 ug/L	96
41) Tert-Amyl-Methyl ether	10.94	73	732522	83.7393 ug/L	91
42) Carbon Tetrachloride	10.99	117	99704	20.5318 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137528.D Vial: 7
Acq On : 26 Feb 2016 16:30 Operator: TMB
Sample : WG558920-07 20ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:40 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	11.19	62	103881	20.6854	ug/L		99
46)	Benzene	11.23	78	247381	19.6467	ug/L		92
47)	Trichloroethene	12.09	130	61373	20.6321	ug/L		91
48)	Methylcyclohexane	12.18	83	97333	20.2407	ug/L		88
49)	1,2-Dichloropropane	12.34	63	69997	20.6607	ug/L		99
50)	1,4-Dioxane	12.68	88	6222	161.0769	ug/L		84
51)	Bromodichloromethane	12.68	83	89367	20.1007	ug/L		96
52)	Dibromomethane	12.79	93	40905	20.6426	ug/L		98
53)	2-Chloroethyl Vinyl Ether	13.04	63	37392	20.0660	ug/L		99
54)	4-Methyl-2-Pentanone	13.07	58	29543	20.9375	ug/L		90
55)	cis-1,3-Dichloropropene	13.43	75	99671	20.3475	ug/L		97
56)	Dimethyl Disulfide	13.72	79	46329	18.7525	ug/L		98
59)	Toluene	13.91	91	246419	20.1412	ug/L		99
60)	Ethyl Methacrylate	14.04	69	79829	20.3638	ug/L		96
62)	trans-1,3-Dichloropropene	14.12	75	96621	20.5377	ug/L		98
63)	1,1,2-Trichloroethane	14.38	97	53425	20.8919	ug/L		97
64)	2-Hexanone	14.31	43	59605	20.4265	ug/L		97
65)	1,3-Dichloropropane	14.74	76	96517	20.8239	ug/L		94
66)	Tetrachloroethene	14.87	166	62111	20.5796	ug/L		96
67)	Dibromochloromethane	15.17	129	68185	20.5019	ug/L		99
68)	1,2-Dibromoethane	15.48	107	53387	20.4138	ug/L		100
69)	1-Chlorohexane	15.59	91	76216	20.0602	ug/L		83
70)	Chlorobenzene	16.07	112	160312	20.3880	ug/L	#	66
71)	1,1,1,2-Tetrachloroethane	16.11	131	64649	20.4768	ug/L		97
72)	Ethylbenzene	16.10	106	86018	20.4427	ug/L		96
73)	m-,p-Xylene	16.22	106	209303	40.6530	ug/L		95
74)	o-Xylene	16.87	106	101781	20.9889	ug/L		94
75)	Styrene	16.92	104	169811	20.5741	ug/L		94
76)	Bromoform	17.49	173	47615	20.2769	ug/L		98
77)	Isopropylbenzene	17.38	105	273784	21.0027	ug/L		97
79)	1,1,2,2-Tetrachloroethane	17.65	83	75470	20.8621	ug/L		95
81)	1,2,3-Trichloropropane	17.87	110	22588	20.3932	ug/L		90
82)	trans-1,4-Dichloro-2-Buten	17.93	53	26581	19.9034	ug/L		88
83)	n-Propylbenzene	17.98	91	330830	21.0359	ug/L		97
84)	Bromobenzene	18.13	156	71833	21.0128	ug/L		95
85)	1,3,5-Trimethylbenzene	18.21	105	230218	20.5655	ug/L		96
86)	2-Chlorotoluene	18.30	91	219979	20.9561	ug/L		97
87)	4-Chlorotoluene	18.35	91	193947	20.2066	ug/L		97
88)	a-Methylstyrene	18.69	118	107098	19.7008	ug/L		96
89)	tert-Butylbenzene	18.75	134	48246	20.6806	ug/L		94
90)	1,2,4-Trimethylbenzene	18.82	105	244152	20.7388	ug/L		84
91)	sec-Butylbenzene	19.08	105	299927	20.9214	ug/L		98
92)	p-Isopropyltoluene	19.27	119	246088	20.8066	ug/L		100
93)	1,3-Dichlorobenzene	19.48	146	134407	20.3198	ug/L		98
94)	1,4-Dichlorobenzene	19.64	146	136759	20.3118	ug/L		97
95)	n-Butylbenzene	19.89	91	245859	20.6677	ug/L		97
96)	1,2-Dichlorobenzene	20.22	146	129420	20.3333	ug/L		96
97)	1,2-Dibromo-3-Chloropropan	21.41	75	16283	20.3429	ug/L		85
98)	1,2,4-Trichlorobenzene	22.76	180	93373	20.2924	ug/L		99
99)	Hexachlorobutadiene	22.95	225	53674	20.3969	ug/L		99
100)	Naphthalene	23.20	128	219058	20.7086	ug/L		99
101)	1,2,3-Trichlorobenzene	23.58	180	91461	20.1860	ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137528.D Vial: 7
Acq On : 26 Feb 2016 16:30 Operator: TMB
Sample : WG558920-07 20ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

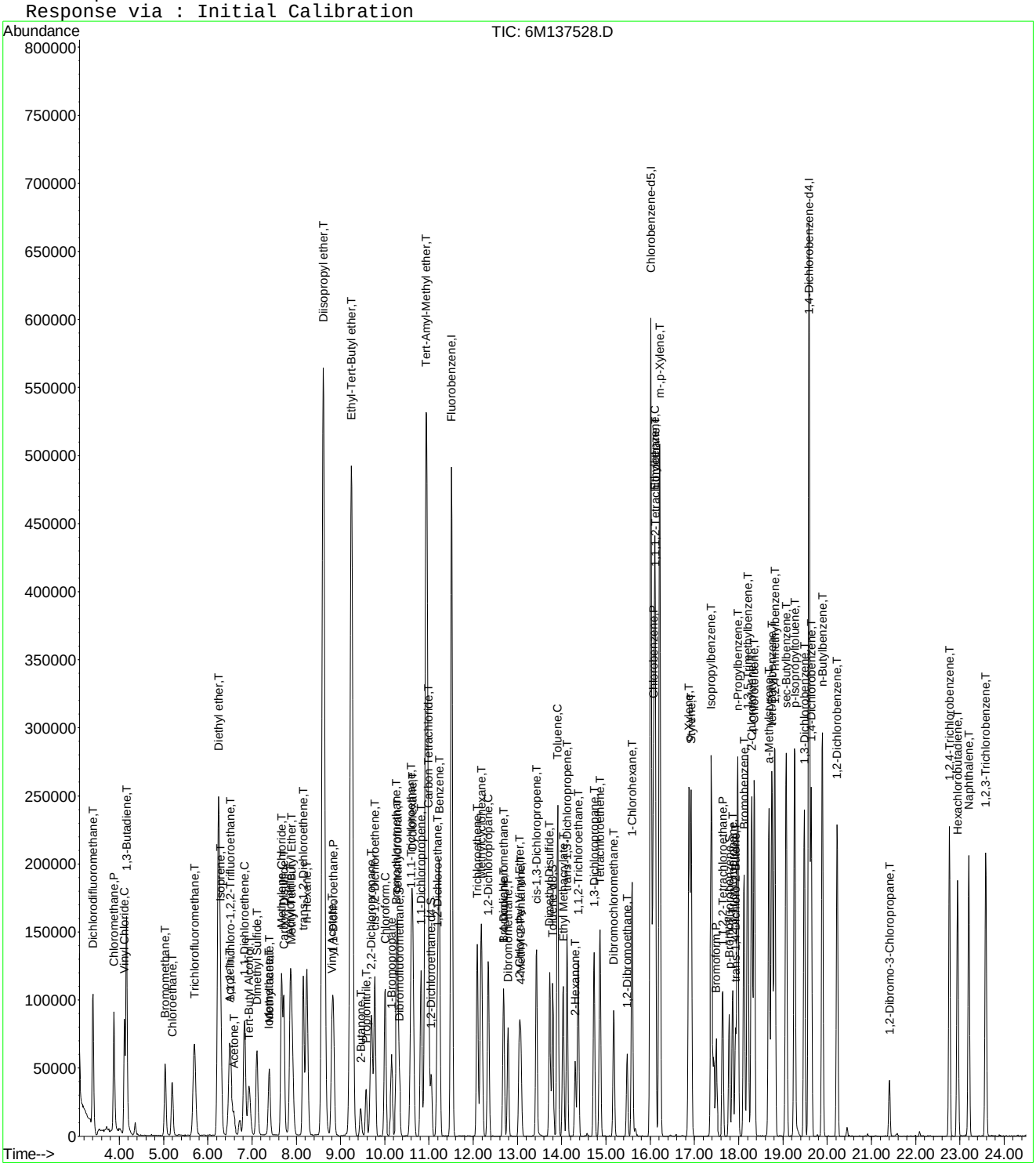

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137529.D Vial: 8
Acq On : 26 Feb 2016 17:03 Operator: TMB
Sample : WG558920-08 50ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:41 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	607631	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	439950	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	237573	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	82729	25.3805 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 50.76%#		
43) 1,2-Dichloroethane-d4	11.06	65	107163	25.3214 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 50.64%#		
58) Toluene-d8	13.80	98	266157	25.4452 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 50.90%#		
80) p-Bromofluorobenzene	17.79	95	111797	25.6197 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 51.24%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	326358	58.4819 ug/L	99
3) Chloromethane	3.88	50	305583	52.5483 ug/L	99
4) Vinyl Chloride	4.11	62	261948	55.9639 ug/L	98
5) 1,3-Butadiene	4.17	54	208973	53.6605 ug/L	91
6) Bromomethane	5.03	94	129157	51.7638 ug/L	100
7) Chloroethane	5.20	64	147959	55.7489 ug/L	95
8) Trichlorofluoromethane	5.70	101	339023	53.9039 ug/L	99
9) Diethyl ether	6.24	59	283385	97.9439 ug/L	93
10) Isoprene	6.28	67	215850	52.6813 ug/L	86
11) Acrolein	6.48	56	25264	45.9786 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	168394	56.0934 ug/L	94
13) Acetone	6.60	43	68176	49.2786 ug/L	100
14) 1,1-Dichloroethene	6.83	61	295734	55.6154 ug/L	92
15) Tert-Butyl Alcohol	6.94	59	97040	195.5789 ug/L	97
16) Dimethyl Sulfide	7.12	62	135657	52.5830 ug/L	94
17) Iodomethane	7.38	142	119726	51.5829 ug/L	91
18) Methyl acetate	7.39	43	187187	50.6554 ug/L	95
19) Methylene Chloride	7.67	84	174497	54.4892 ug/L	80
20) Carbon Disulfide	7.72	76	530150	52.1084 ug/L	98
21) Acrylonitrile	7.86	53	78970	51.9980 ug/L	98
22) Methyl Tert Butyl Ether	7.89	73	506330	55.3647 ug/L	93
23) trans-1,2-Dichloroethene	8.16	96	161116	54.8470 ug/L	86
24) n-Hexane	8.24	57	282956	53.0449 ug/L	98
25) Diisopropyl ether	8.61	45	1357488	98.1559 ug/L	97
26) Vinyl Acetate	8.80	43	361913	50.6243 ug/L	97
27) 1,1-Dichloroethane	8.84	63	345084	54.4873 ug/L	98
28) Ethyl-Tert-Butyl ether	9.24	59	1104598	99.6489 ug/L	96
29) 2-Butanone	9.45	43	102919	49.0011 ug/L	94
30) Propionitrile	9.58	54	57786	99.4084 ug/L	100
31) 2,2-Dichloropropane	9.70	77	275709	54.2347 ug/L	99
32) cis-1,2-Dichloroethene	9.77	96	176368	53.7788 ug/L	98
33) Chloroform	10.01	83	316097	53.4420 ug/L	96
34) 1-Bromopropane	10.16	122	24579	54.6655 ug/L	98
35) Bromochloromethane	10.26	130	106752	55.4000 ug/L	99
36) Tetrahydrofuran	10.29	42	139800	99.1693 ug/L	94
38) 1,1,1-Trichloroethane	10.60	97	287959	55.1175 ug/L	98
39) Cyclohexane	10.63	56	324068	54.7019 ug/L	90
40) 1,1-Dichloropropene	10.82	75	232925	55.3612 ug/L	98
41) Tert-Amyl-Methyl ether	10.95	73	878188	99.8664 ug/L	92
42) Carbon Tetrachloride	10.99	117	270388	55.3891 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137529.D Vial: 8
Acq On : 26 Feb 2016 17:03 Operator: TMB
Sample : WG558920-08 50ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:41 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	272804	54.0384 ug/L	98
46)	Benzene	11.23	78	654918	51.7410 ug/L	91
47)	Trichloroethene	12.09	130	163002	54.5109 ug/L	91
48)	Methylcyclohexane	12.18	83	264045	54.6220 ug/L	88
49)	1,2-Dichloropropane	12.34	63	185139	54.3608 ug/L	99
50)	1,4-Dioxane	12.67	88	7470	186.3872 ug/L	86
51)	Bromodichloromethane	12.68	83	244077	54.6116 ug/L	96
52)	Dibromomethane	12.78	93	112269	56.3600 ug/L	97
53)	2-Chloroethyl Vinyl Ether	13.04	63	99869	53.3134 ug/L	98
54)	4-Methyl-2-Pentanone	13.07	58	71173	50.1774 ug/L	95
55)	cis-1,3-Dichloropropene	13.43	75	275770	56.0032 ug/L	97
56)	Dimethyl Disulfide	13.72	79	136937	55.1380 ug/L	96
59)	Toluene	13.91	91	661797	53.1777 ug/L	100
60)	Ethyl Methacrylate	14.04	69	221335	55.5062 ug/L	94
62)	trans-1,3-Dichloropropene	14.12	75	265281	55.4346 ug/L	99
63)	1,1,2-Trichloroethane	14.38	97	140534	54.0266 ug/L	99
64)	2-Hexanone	14.31	43	150141	50.5831 ug/L	99
65)	1,3-Dichloropropane	14.73	76	254916	54.0691 ug/L	94
66)	Tetrachloroethene	14.87	166	165478	53.9016 ug/L	97
67)	Dibromochloromethane	15.17	129	187125	55.3134 ug/L	98
68)	1,2-Dibromoethane	15.48	107	145905	54.8470 ug/L	99
69)	1-Chlorohexane	15.59	91	213275	55.1854 ug/L	86
70)	Chlorobenzene	16.07	112	421684	52.7217 ug/L #	68
71)	1,1,1,2-Tetrachloroethane	16.11	131	172886	53.8335 ug/L	98
72)	Ethylbenzene	16.11	106	233514	54.5577 ug/L	98
73)	m-,p-Xylene	16.22	106	560207	106.9693 ug/L	96
74)	o-Xylene	16.88	106	278846	56.5302 ug/L	96
75)	Styrene	16.92	104	471370	56.1451 ug/L	94
76)	Bromoform	17.49	173	131127	54.8964 ug/L	99
77)	Isopropylbenzene	17.38	105	740395	55.8373 ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.65	83	199941	53.8747 ug/L	96
81)	1,2,3-Trichloropropane	17.87	110	61269	53.9200 ug/L	97
82)	trans-1,4-Dichloro-2-Buten	17.93	53	73183	53.4153 ug/L	91
83)	n-Propylbenzene	17.98	91	903295	55.9869 ug/L	98
84)	Bromobenzene	18.12	156	191943	54.7308 ug/L	98
85)	1,3,5-Trimethylbenzene	18.21	105	641908	55.8951 ug/L	95
86)	2-Chlorotoluene	18.30	91	578848	53.7519 ug/L	97
87)	4-Chlorotoluene	18.36	91	530900	53.9168 ug/L	97
88)	a-Methylstyrene	18.69	118	307671	55.1682 ug/L	99
89)	tert-Butylbenzene	18.76	134	134676	56.2719 ug/L	98
90)	1,2,4-Trimethylbenzene	18.82	105	666066	55.1494 ug/L	81
91)	sec-Butylbenzene	19.07	105	825213	56.1103 ug/L	99
92)	p-Isopropyltoluene	19.27	119	685445	56.4914 ug/L	100
93)	1,3-Dichlorobenzene	19.48	146	365219	53.8210 ug/L	96
94)	1,4-Dichlorobenzene	19.64	146	363309	52.5979 ug/L	98
95)	n-Butylbenzene	19.89	91	677494	55.5152 ug/L	98
96)	1,2-Dichlorobenzene	20.23	146	350298	53.6470 ug/L	96
97)	1,2-Dibromo-3-Chloropropan	21.41	75	43537	53.0196 ug/L	90
98)	1,2,4-Trichlorobenzene	22.76	180	262463	55.6006 ug/L	99
99)	Hexachlorobutadiene	22.95	225	150922	55.9053 ug/L	100
100)	Naphthalene	23.20	128	617866	56.9360 ug/L	100
101)	1,2,3-Trichlorobenzene	23.59	180	259953	55.9254 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137529.D Vial: 8
Acq On : 26 Feb 2016 17:03 Operator: TMB
Sample : WG558920-08 50ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

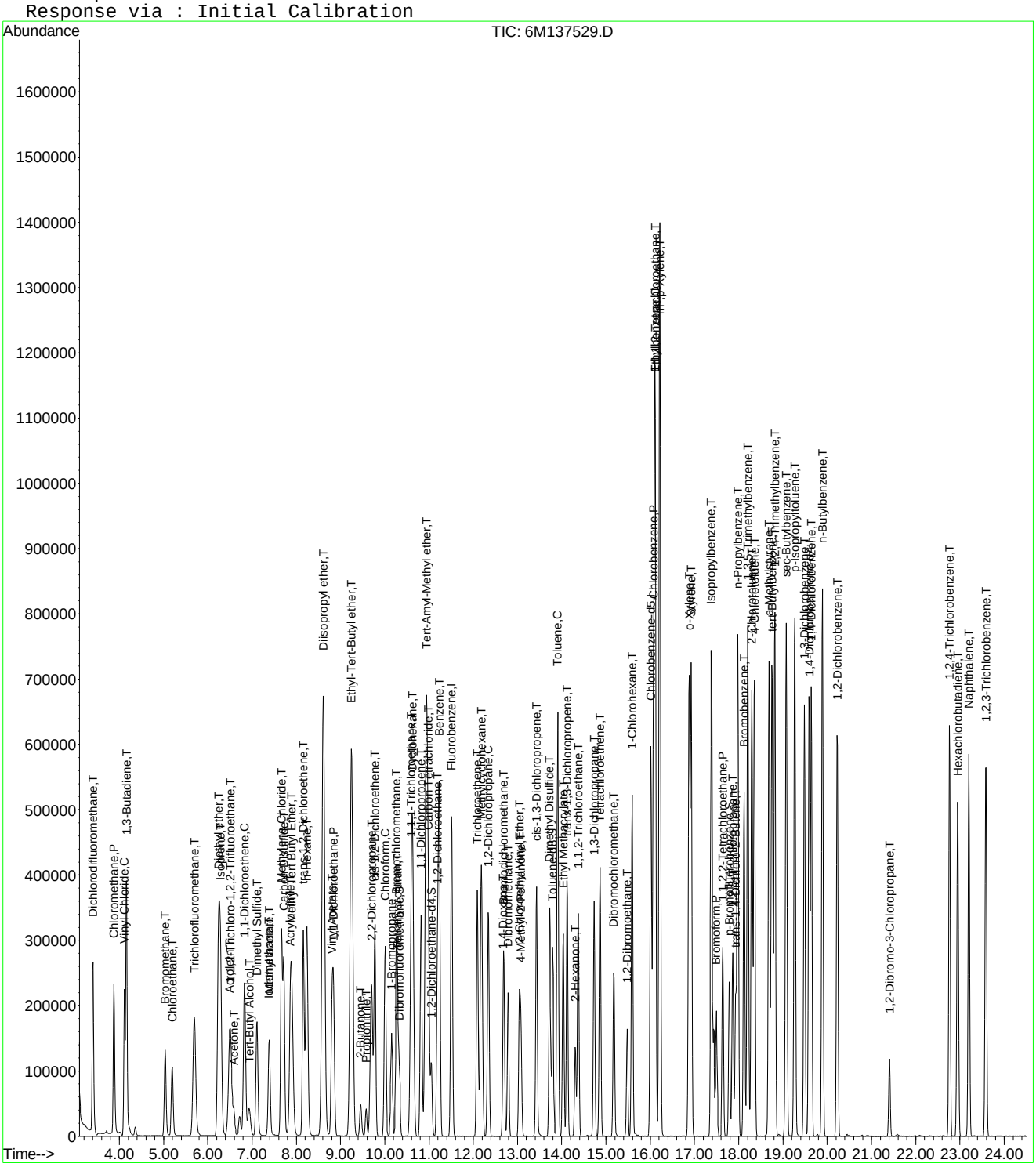

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137530.D Vial: 9
Acq On : 26 Feb 2016 17:35 Operator: TMB
Sample : WG558920-09 100ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:42 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	642087	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	466249	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	253947	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.32	111	162548	47.1921 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.38%		
43) 1,2-Dichloroethane-d4	11.06	65	210928	47.1653 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.34%		
58) Toluene-d8	13.80	98	518743	46.7957 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 93.60%		
80) p-Bromofluorobenzene	17.79	95	219336	47.0227 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 94.04%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	562397	95.3710 ug/L	99
3) Chloromethane	3.88	50	511342	83.2121 ug/L	98
4) Vinyl Chloride	4.12	62	453722	91.7337 ug/L	97
5) 1,3-Butadiene	4.16	54	371216	90.2064 ug/L	92
6) Bromomethane	5.03	94	236484	89.6925 ug/L	99
7) Chloroethane	5.19	64	259484	92.5233 ug/L	94
8) Trichlorofluoromethane	5.69	101	593589	89.3146 ug/L	99
9) Diethyl ether	6.23	59	599424	196.0563 ug/L	94
10) Isoprene	6.28	67	429478	99.1954 ug/L	86
11) Acrolein	6.48	56	58142	100.1359 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	295880	93.2711 ug/L	94
13) Acetone	6.59	43	134155	95.5525 ug/L	97
14) 1,1-Dichloroethene	6.83	61	525920	93.5964 ug/L	92
15) Tert-Butyl Alcohol	6.94	59	207755	396.2496 ug/L	97
16) Dimethyl Sulfide	7.11	62	269784	98.9613 ug/L	92
17) Iodomethane	7.38	142	252699	98.0787 ug/L	90
18) Methyl acetate	7.39	43	375036	96.0437 ug/L	97
19) Methylene Chloride	7.67	84	311212	91.9654 ug/L	80
20) Carbon Disulfide	7.72	76	1037082	96.4646 ug/L	99
21) Acrylonitrile	7.86	53	165829	103.3311 ug/L	99
22) Methyl Tert Butyl Ether	7.89	73	942489	97.5263 ug/L	93
23) trans-1,2-Dichloroethene	8.16	96	289637	93.3071 ug/L	87
24) n-Hexane	8.23	57	555752	98.5944 ug/L	98
25) Diisopropyl ether	8.61	45	2877959	196.9296 ug/L	96
26) Vinyl Acetate	8.80	43	731541	96.8365 ug/L	99
27) 1,1-Dichloroethane	8.83	63	621539	92.8721 ug/L	98
28) Ethyl-Tert-Butyl ether	9.24	59	2342177	199.9557 ug/L	96
29) 2-Butanone	9.45	43	207126	93.3235 ug/L	95
30) Propionitrile	9.57	54	121992	198.5994 ug/L	98
31) 2,2-Dichloropropane	9.69	77	491609	91.5150 ug/L	98
32) cis-1,2-Dichloroethene	9.77	96	321521	92.7784 ug/L	96
33) Chloroform	10.01	83	568519	90.9606 ug/L	95
34) 1-Bromopropane	10.16	122	47570	100.1217 ug/L	99
35) Bromochloromethane	10.26	130	193434	94.9975 ug/L	100
36) Tetrahydrofuran	10.29	42	287880	195.3143 ug/L	95
38) 1,1,1-Trichloroethane	10.60	97	511473	92.6461 ug/L	98
39) Cyclohexane	10.63	56	631373	100.8552 ug/L	90
40) 1,1-Dichloropropene	10.82	75	416243	93.6230 ug/L	97
41) Tert-Amyl-Methyl ether	10.94	73	1879478	202.2624 ug/L	92
42) Carbon Tetrachloride	10.99	117	485191	94.0581 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137530.D Vial: 9
Acq On : 26 Feb 2016 17:35 Operator: TMB
Sample : WG558920-09 100ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:42 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	498315	93.4118	ug/L	98
46)	Benzene	11.23	78	1182199	88.3862	ug/L	91
47)	Trichloroethene	12.09	130	294176	93.0987	ug/L	90
48)	Methylcyclohexane	12.18	83	515585	100.9337	ug/L	88
49)	1,2-Dichloropropane	12.34	63	342055	95.0452	ug/L	100
50)	1,4-Dioxane	12.67	88	17776	381.1583	ug/L	84
51)	Bromodichloromethane	12.68	83	452280	95.7660	ug/L	97
52)	Dibromomethane	12.79	93	202292	96.1028	ug/L	98
53)	2-Chloroethyl Vinyl Ether	13.04	63	206349	104.2447	ug/L	97
54)	4-Methyl-2-Pentanone	13.07	58	145646	97.1712	ug/L	93
55)	cis-1,3-Dichloropropene	13.43	75	509093	97.8384	ug/L	95
56)	Dimethyl Disulfide	13.72	79	282091	107.4894	ug/L	96
59)	Toluene	13.91	91	1184465	89.8074	ug/L	100
60)	Ethyl Methacrylate	14.04	69	445228	105.3560	ug/L	94
62)	trans-1,3-Dichloropropene	14.12	75	494673	97.5390	ug/L	99
63)	1,1,2-Trichloroethane	14.38	97	261258	94.7723	ug/L	99
64)	2-Hexanone	14.31	43	305856	97.2318	ug/L	100
65)	1,3-Dichloropropane	14.74	76	469121	93.8906	ug/L	93
66)	Tetrachloroethene	14.87	166	296672	91.1851	ug/L	98
67)	Dibromochloromethane	15.17	129	347661	96.9706	ug/L	98
68)	1,2-Dibromoethane	15.48	107	270599	95.9830	ug/L	97
69)	1-Chlorohexane	15.59	91	420885	102.7620	ug/L	86
70)	Chlorobenzene	16.07	112	765249	90.2797	ug/L	69
71)	1,1,1,2-Tetrachloroethane	16.11	131	320669	94.2184	ug/L	97
72)	Ethylbenzene	16.10	106	422350	93.1110	ug/L	97
73)	m-,p-Xylene	16.22	106	1018750	183.5539	ug/L	96
74)	o-Xylene	16.87	106	503867	96.3867	ug/L	94
75)	Styrene	16.92	104	871975	98.0029	ug/L	94
76)	Bromoform	17.49	173	243410	96.1558	ug/L	99
77)	Isopropylbenzene	17.38	105	1335991	95.0715	ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.65	83	376052	94.7950	ug/L	96
81)	1,2,3-Trichloropropane	17.87	110	114333	94.1314	ug/L	95
82)	trans-1,4-Dichloro-2-Buten	17.93	53	150048	102.4566	ug/L	89
83)	n-Propylbenzene	17.98	91	1628674	94.4377	ug/L	98
84)	Bromobenzene	18.13	156	352357	93.9933	ug/L	98
85)	1,3,5-Trimethylbenzene	18.21	105	1165530	94.9464	ug/L	95
86)	2-Chlorotoluene	18.30	91	1069398	92.9015	ug/L	97
87)	4-Chlorotoluene	18.35	91	957337	90.9557	ug/L	97
88)	a-Methylstyrene	18.69	118	626810	105.1459	ug/L	98
89)	tert-Butylbenzene	18.75	134	243763	95.2846	ug/L	87
90)	1,2,4-Trimethylbenzene	18.82	105	1211949	93.8776	ug/L	81
91)	sec-Butylbenzene	19.08	105	1482811	94.3227	ug/L	99
92)	p-Isopropyltoluene	19.27	119	1243718	95.8928	ug/L	100
93)	1,3-Dichlorobenzene	19.48	146	670076	92.3797	ug/L	97
94)	1,4-Dichlorobenzene	19.64	146	665185	90.0925	ug/L	97
95)	n-Butylbenzene	19.89	91	1241772	95.1924	ug/L	98
96)	1,2-Dichlorobenzene	20.22	146	649160	93.0065	ug/L	96
97)	1,2-Dibromo-3-Chloropropan	21.41	75	84975	96.8107	ug/L	89
98)	1,2,4-Trichlorobenzene	22.76	180	475402	94.2164	ug/L	99
99)	Hexachlorobutadiene	22.95	225	270006	93.5681	ug/L	100
100)	Naphthalene	23.20	128	1163220	100.2786	ug/L	100
101)	1,2,3-Trichlorobenzene	23.58	180	465522	93.6933	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137530.D Vial: 9
Acq On : 26 Feb 2016 17:35 Operator: TMB
Sample : WG558920-09 100ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

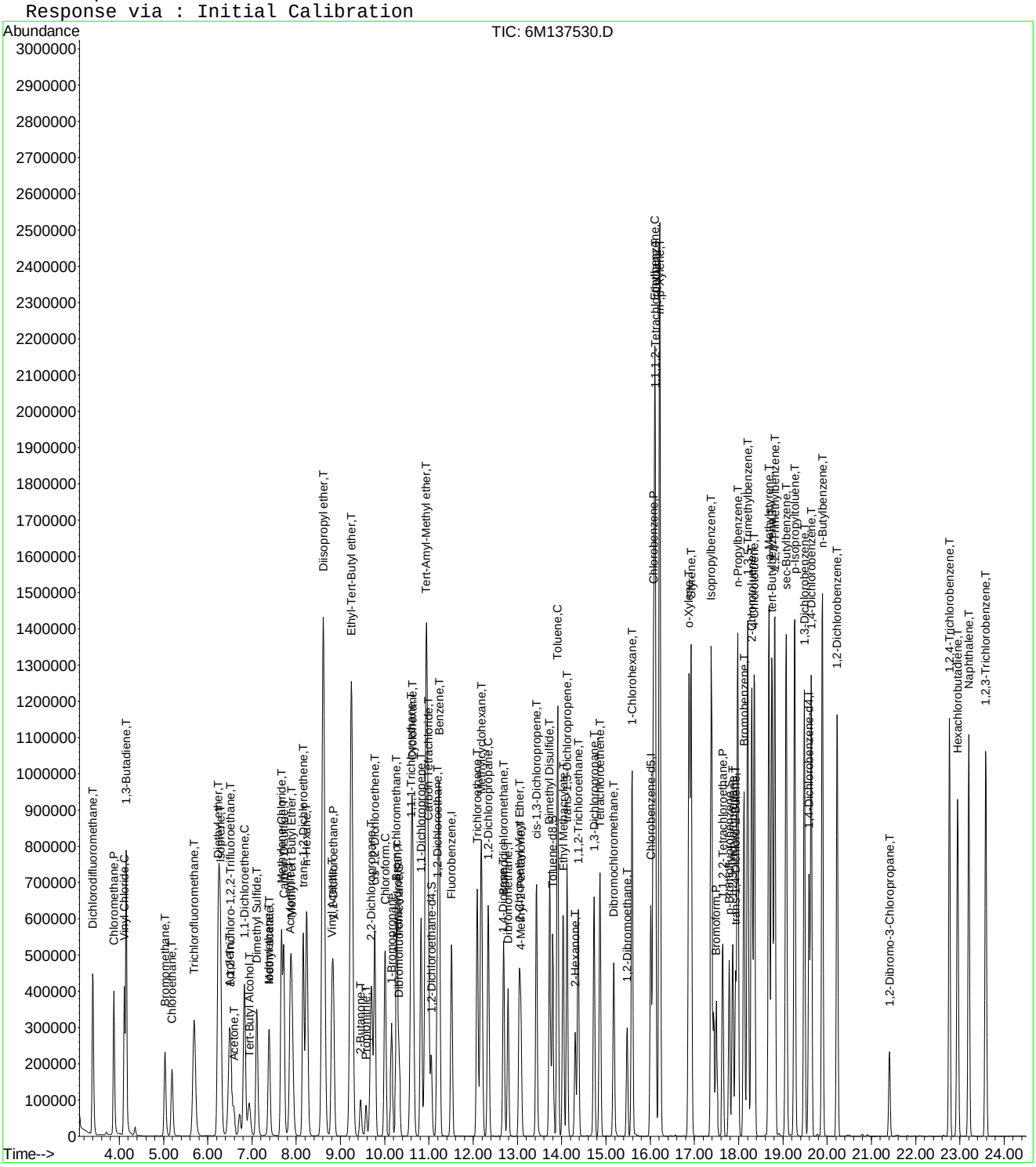

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137531.D Vial: 10
Acq On : 26 Feb 2016 18:07 Operator: TMB
Sample : WG558920-10 200ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:43 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	661999	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	479329	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	273657	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	351336	98.9344 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 197.86%#		
43) 1,2-Dichloroethane-d4	11.05	65	450300	97.6622 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 195.32%#		
58) Toluene-d8	13.80	98	1096959	96.2561 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 192.52%#		
80) p-Bromofluorobenzene	17.79	95	487968	97.0790 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 194.16%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	1228760	202.1049 ug/L	98
3) Chloromethane	3.88	50	1125279	177.6118 ug/L	98
4) Vinyl Chloride	4.12	62	989076	193.9570 ug/L	97
5) 1,3-Butadiene	4.16	54	745589	175.7303 ug/L	94
6) Bromomethane	5.03	94	548799	201.8852 ug/L	100
7) Chloroethane	5.19	64	579871	200.5435 ug/L	96
8) Trichlorofluoromethane	5.69	101	1297014	189.2858 ug/L	100
9) Diethyl ether	6.23	59	1563	0.4958 ug/L #	49
10) Isoprene	6.27	67	894422	200.3686 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	649915	198.7121 ug/L	93
13) Acetone	6.59	43	290441	205.4763 ug/L	99
14) 1,1-Dichloroethene	6.83	61	1161250	200.4481 ug/L	92
15) Tert-Butyl Alcohol	6.83	59	39858	73.7343 ug/L #	57
16) Dimethyl Sulfide	7.11	62	576142	204.9817 ug/L	92
17) Iodomethane	7.38	142	559892	205.0669 ug/L	91
18) Methyl acetate	7.39	43	775842	192.7107 ug/L	97
19) Methylene Chloride	7.67	84	681801	195.4170 ug/L	78
20) Carbon Disulfide	7.72	76	2184454	197.0763 ug/L	98
21) Acrylonitrile	7.90	53	25391	15.3457 ug/L #	34
22) Methyl Tert Butyl Ether	7.90	73	2079733	208.7322 ug/L	92
23) trans-1,2-Dichloroethene	8.16	96	635434	198.5489 ug/L	86
24) n-Hexane	8.23	57	1159756	199.5603 ug/L	99
25) Diisopropyl ether	8.63	45	8975	0.5957 ug/L #	37
26) Vinyl Acetate	8.80	43	1656751	212.7131 ug/L	98
27) 1,1-Dichloroethane	8.83	63	1360017	197.1051 ug/L	97
28) Ethyl-Tert-Butyl ether	9.23	59	4690	0.3884 ug/L #	76
29) 2-Butanone	9.45	43	450489	196.8688 ug/L	97
30) Propionitrile	9.59	54	193	0.3047 ug/L #	55
31) 2,2-Dichloropropane	9.69	77	1084788	195.8637 ug/L	97
32) cis-1,2-Dichloroethene	9.77	96	711282	199.0746 ug/L	99
33) Chloroform	10.00	83	1259701	195.4845 ug/L	96
34) 1-Bromopropane	10.16	122	101190	206.5710 ug/L	98
35) Bromochloromethane	10.26	130	430294	204.9658 ug/L	100
36) Tetrahydrofuran	10.31	42	4560	0.8620 ug/L #	82
38) 1,1,1-Trichloroethane	10.60	97	1139307	200.1621 ug/L	98
39) Cyclohexane	10.63	56	1322081	204.8363 ug/L	90
40) 1,1-Dichloropropene	10.83	75	913448	199.2765 ug/L	99
41) Tert-Amyl-Methyl ether	10.93	73	3689	0.3851 ug/L #	57
42) Carbon Tetrachloride	10.99	117	1067649	200.7466 ug/L	97
45) 1,2-Dichloroethane	11.19	62	1098127	199.6582 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M137531.D 826_SL.M Mon Feb 29 16:01:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137531.D Vial: 10
Acq On : 26 Feb 2016 18:07 Operator: TMB
Sample : WG558920-10 200ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:43 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	11.23	78	2576436	186.8313 ug/L		90
47)	Trichloroethene	12.09	130	648704	199.1220 ug/L		90
48)	Methylcyclohexane	12.18	83	1075003	204.1184 ug/L		87
49)	1,2-Dichloropropane	12.34	63	757110	204.0468 ug/L		100
50)	1,4-Dioxane	12.68	88	863	47.3107 ug/L	#	17
51)	Bromodichloromethane	12.68	83	1017483	208.9621 ug/L		97
52)	Dibromomethane	12.79	93	451601	208.0889 ug/L		97
53)	2-Chloroethyl Vinyl Ether	13.03	63	470311	230.4481 ug/L		98
54)	4-Methyl-2-Pentanone	13.07	58	332135	214.9265 ug/L		95
55)	cis-1,3-Dichloropropene	13.43	75	1150962	214.5407 ug/L		96
56)	Dimethyl Disulfide	13.73	79	648612	239.7166 ug/L		96
59)	Toluene	13.91	91	2588299	190.8923 ug/L		99
60)	Ethyl Methacrylate	14.03	69	978791	225.2947 ug/L		94
62)	trans-1,3-Dichloropropene	14.12	75	1110336	212.9604 ug/L		98
63)	1,1,2-Trichloroethane	14.38	97	578586	204.1568 ug/L		99
64)	2-Hexanone	14.31	43	689071	213.0784 ug/L		99
65)	1,3-Dichloropropane	14.74	76	1034423	201.3815 ug/L		93
66)	Tetrachloroethene	14.87	166	644718	192.7530 ug/L		97
67)	Dibromochloromethane	15.18	129	780769	211.8317 ug/L		100
68)	1,2-Dibromoethane	15.48	107	610277	210.5616 ug/L		98
69)	1-Chlorohexane	15.59	91	900931	213.9661 ug/L		86
70)	Chlorobenzene	16.07	112	1706160	195.7904 ug/L	#	68
71)	1,1,1,2-Tetrachloroethane	16.11	131	721225	206.1264 ug/L		97
72)	Ethylbenzene	16.11	106	946980	203.0736 ug/L		98
73)	m-,p-Xylene	16.22	106	2242794	393.0696 ug/L		97
74)	o-Xylene	16.87	106	1130903	210.4315 ug/L		95
75)	Styrene	16.92	104	1988734	217.4182 ug/L		93
76)	Bromoform	17.49	173	561872	215.9030 ug/L		99
77)	Isopropylbenzene	17.38	105	2989967	206.9652 ug/L		98
79)	1,1,2,2-Tetrachloroethane	17.64	83	859540	201.0666 ug/L		95
81)	1,2,3-Trichloropropane	17.87	110	265884	203.1382 ug/L		89
82)	trans-1,4-Dichloro-2-Buten	17.93	53	340440	215.7181 ug/L		90
83)	n-Propylbenzene	17.98	91	3639812	195.8513 ug/L		98
84)	Bromobenzene	18.13	156	802539	198.6628 ug/L		99
85)	1,3,5-Trimethylbenzene	18.21	105	2665531	201.5000 ug/L		96
86)	2-Chlorotoluene	18.30	91	2450953	197.5855 ug/L		97
87)	4-Chlorotoluene	18.35	91	2149568	189.5191 ug/L		97
88)	a-Methylstyrene	18.69	118	1416560	220.5099 ug/L		98
89)	tert-Butylbenzene	18.75	134	559469	202.9400 ug/L		85
90)	1,2,4-Trimethylbenzene	18.82	105	2775173	199.4822 ug/L		81
91)	sec-Butylbenzene	19.08	105	3369131	198.8771 ug/L		100
92)	p-Isopropyltoluene	19.26	119	2833911	202.7621 ug/L		99
93)	1,3-Dichlorobenzene	19.49	146	1523154	194.8646 ug/L		95
94)	1,4-Dichlorobenzene	19.64	146	1521474	191.2260 ug/L		97
95)	n-Butylbenzene	19.89	91	2819417	200.5655 ug/L		98
96)	1,2-Dichlorobenzene	20.22	146	1485290	197.4738 ug/L		95
97)	1,2-Dibromo-3-Chloropropan	21.41	75	195547	206.7378 ug/L		89
98)	1,2,4-Trichlorobenzene	22.76	180	1054519	193.9351 ug/L		98
99)	Hexachlorobutadiene	22.95	225	597195	192.0469 ug/L		99
100)	Naphthalene	23.20	128	2579088	206.3237 ug/L		99
101)	1,2,3-Trichlorobenzene	23.58	180	1038439	193.9482 ug/L		99

(#) = qualifier out of range (m) = manual integration
6M137531.D 826_SL.M Mon Feb 29 16:01:43 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137531.D Vial: 10
Acq On : 26 Feb 2016 18:07 Operator: TMB
Sample : WG558920-10 200ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

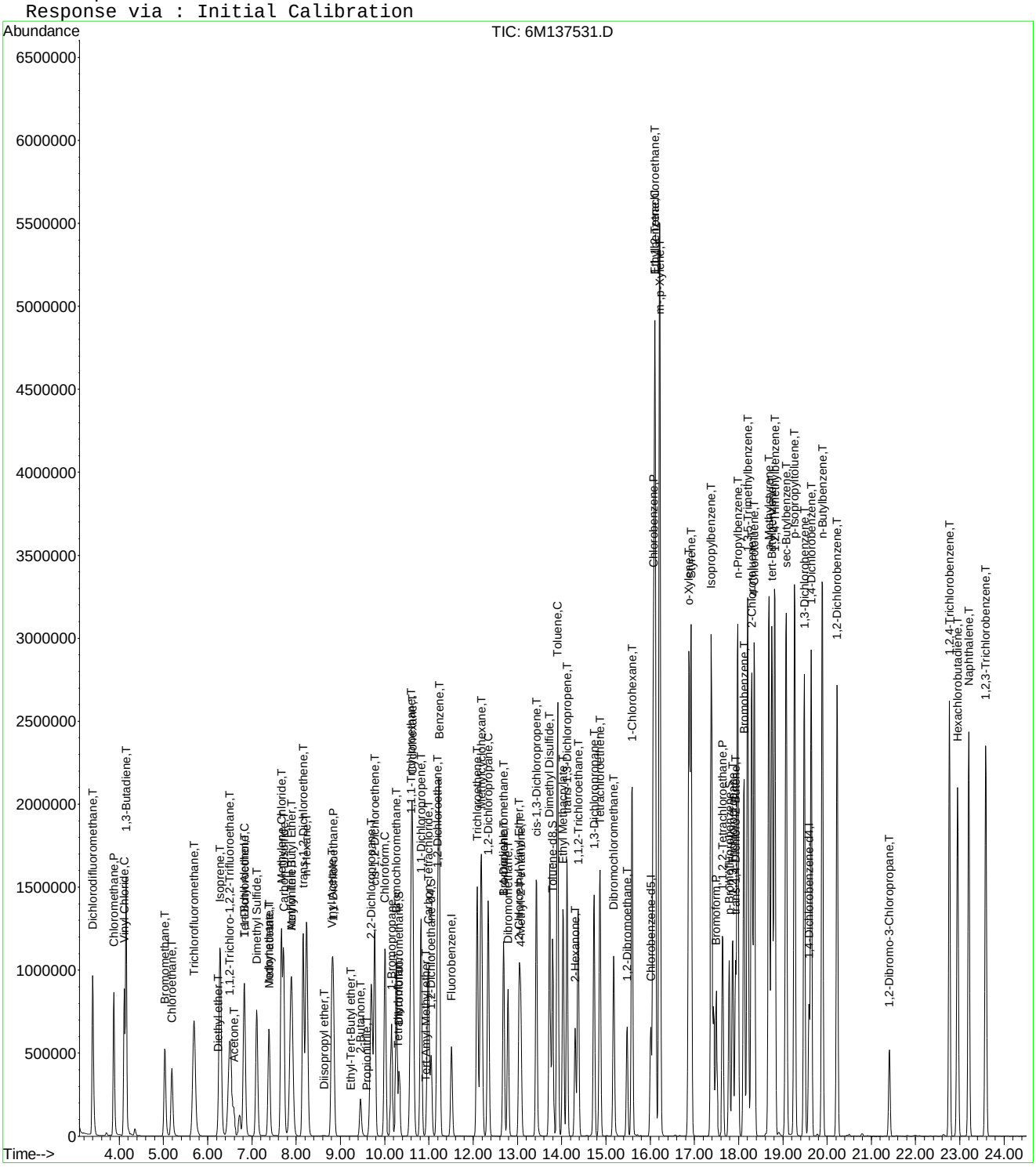

6M137531.D 826_SL.M Mon Feb 29 16:01:43 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137532.D Vial: 11
Acq On : 26 Feb 2016 18:39 Operator: TMB
Sample : WG558920-11 300ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:43 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	707233	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	525178	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	308135	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	555974	146.5460 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 293.10%#		
43) 1,2-Dichloroethane-d4	11.05	65	713394	144.8268 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 289.66%#		
58) Toluene-d8	13.80	98	1741152	139.4446 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 278.88%#		
80) p-Bromofluorobenzene	17.79	95	787625	139.1615 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 278.32%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	1997367	307.5122 ug/L	98
3) Chloromethane	3.88	50	1848014	273.0309 ug/L	98
4) Vinyl Chloride	4.11	62	1515327	278.1486 ug/L	97
5) 1,3-Butadiene	4.15	54	1176840	259.6328 ug/L	94
6) Bromomethane	5.03	94	924558	318.3612 ug/L	100
7) Chloroethane	5.18	64	952580	308.3709 ug/L	96
8) Trichlorofluoromethane	5.68	101	2124957	290.2808 ug/L	99
9) Diethyl ether	6.23	59	1011802	300.4509 ug/L	94
10) Isoprene	6.27	67	1489357	312.3064 ug/L	86
11) Acrolein	6.49	56	100305	156.8389 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	1067610	305.5451 ug/L	94
13) Acetone	6.59	43	448789	299.1551 ug/L	99
14) 1,1-Dichloroethene	6.82	61	1895304	306.2315 ug/L	92
15) Tert-Butyl Alcohol	6.95	59	370925	642.2954 ug/L	99
16) Dimethyl Sulfide	7.11	62	950681	316.6032 ug/L	94
17) Iodomethane	7.38	142	877751	298.6036 ug/L	91
18) Methyl acetate	7.40	43	1274555	296.3371 ug/L	98
19) Methylene Chloride	7.66	84	1102725	295.8467 ug/L	79
20) Carbon Disulfide	7.71	76	3583096	302.5832 ug/L	98
21) Acrylonitrile	7.86	53	296066	167.4906 ug/L	98
22) Methyl Tert Butyl Ether	7.90	73	3392519	318.7124 ug/L	92
23) trans-1,2-Dichloroethene	8.16	96	1037130	303.3368 ug/L	86
24) n-Hexane	8.23	57	1917686	308.8729 ug/L	99
25) Diisopropyl ether	8.61	45	4780310	296.9708 ug/L	96
26) Vinyl Acetate	8.80	43	2633859	316.5369 ug/L	99
27) 1,1-Dichloroethane	8.83	63	2210234	299.8379 ug/L	97
28) Ethyl-Tert-Butyl ether	9.24	59	3979837	308.4685 ug/L	96
29) 2-Butanone	9.45	43	727982	297.7887 ug/L	98
30) Propionitrile	9.58	54	209887	310.2156 ug/L	99
31) 2,2-Dichloropropane	9.69	77	1783568	301.4350 ug/L	96
32) cis-1,2-Dichloroethene	9.77	96	1159875	303.8646 ug/L	98
33) Chloroform	10.00	83	2040554	296.4065 ug/L	96
34) 1-Bromopropane	10.15	122	167090	319.2839 ug/L	98
35) Bromochloromethane	10.26	130	694571	309.6903 ug/L	99
36) Tetrahydrofuran	10.30	42	490636	303.4020 ug/L	96
38) 1,1,1-Trichloroethane	10.60	97	1858746	305.6722 ug/L	98
39) Cyclohexane	10.63	56	2201094	319.2142 ug/L	89
40) 1,1-Dichloropropene	10.83	75	1504422	307.2111 ug/L	99
41) Tert-Amyl-Methyl ether	10.94	73	3231746	315.7523 ug/L	93
42) Carbon Tetrachloride	10.99	117	1763858	310.4404 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M137532.D 826_SL.M Mon Feb 29 16:01:44 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137532.D Vial: 11
Acq On : 26 Feb 2016 18:39 Operator: TMB
Sample : WG558920-11 300ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:43 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45) 1,2-Dichloroethane	11.19	62	1778788	302.7287 ug/L	98
46) Benzene	11.23	78	4155462	282.0619 ug/L	90
47) Trichloroethene	12.09	130	1058154	304.0300 ug/L	90
48) Methylcyclohexane	12.18	83	1798917	319.7263 ug/L	88
49) 1,2-Dichloropropane	12.34	63	1232481	310.9180 ug/L	100
50) 1,4-Dioxane	12.67	88	32606	614.2458 ug/L	84
51) Bromodichloromethane	12.68	83	1653218	317.8084 ug/L	96
52) Dibromomethane	12.79	93	733410	316.3265 ug/L	98
53) 2-Chloroethyl Vinyl Ether	13.03	63	766489	351.5513 ug/L	97
54) 4-Methyl-2-Pentanone	13.07	58	543988	329.5031 ug/L	95
55) cis-1,3-Dichloropropene	13.42	75	1877090	327.5130 ug/L	95
56) Dimethyl Disulfide	13.73	79	1088350	376.5100 ug/L	96
59) Toluene	13.91	91	4193210	282.2590 ug/L	99
60) Ethyl Methacrylate	14.03	69	1632375	342.9321 ug/L	95
62) trans-1,3-Dichloropropene	14.12	75	1832609	320.8053 ug/L	98
63) 1,1,2-Trichloroethane	14.38	97	942438	303.5120 ug/L	98
64) 2-Hexanone	14.31	43	1154652	325.8770 ug/L	98
65) 1,3-Dichloropropane	14.74	76	1702509	302.5088 ug/L	94
66) Tetrachloroethene	14.87	166	1062175	289.8375 ug/L	97
67) Dibromochloromethane	15.18	129	1292929	320.1624 ug/L	100
68) 1,2-Dibromoethane	15.48	107	1008106	317.4575 ug/L	98
69) 1-Chlorohexane	15.59	91	1494127	323.8681 ug/L	86
70) Chlorobenzene	16.07	112	2773062	290.4413 ug/L #	66
71) 1,1,1,2-Tetrachloroethane	16.11	131	1196001	311.9762 ug/L	97
72) Ethylbenzene	16.11	106	1556732	304.6869 ug/L	100
73) m-,p-Xylene	16.22	106	3653753	584.4488 ug/L	99
74) o-Xylene	16.87	106	1861503	316.1378 ug/L	96
75) Styrene	16.92	104	3280614	327.3419 ug/L	91
76) Bromoform	17.49	173	968059	339.5083 ug/L	100
77) Isopropylbenzene	17.38	105	4859396	307.0014 ug/L	99
79) 1,1,2,2-Tetrachloroethane	17.64	83	1473362	306.0898 ug/L	95
81) 1,2,3-Trichloropropane	17.87	110	450710	305.8173 ug/L	97
82) trans-1,4-Dichloro-2-Buten	17.93	53	587175	330.4298 ug/L	92
83) n-Propylbenzene	17.98	91	5875551	280.7771 ug/L	99
84) Bromobenzene	18.13	156	1329308	292.2413 ug/L	98
85) 1,3,5-Trimethylbenzene	18.21	105	4394146	295.0064 ug/L	96
86) 2-Chlorotoluene	18.30	91	4027318	288.3378 ug/L	97
87) 4-Chlorotoluene	18.35	91	3574535	279.8896 ug/L	97
88) a-Methylstyrene	18.69	118	2387215	330.0275 ug/L	99
89) tert-Butylbenzene	18.75	134	927820	298.8965 ug/L	84
90) 1,2,4-Trimethylbenzene	18.82	105	4532965	289.3756 ug/L	82
91) sec-Butylbenzene	19.08	105	5502198	288.4488 ug/L	100
92) p-Isopropyltoluene	19.27	119	4664534	296.3974 ug/L	98
93) 1,3-Dichlorobenzene	19.49	146	2567994	291.7754 ug/L	95
94) 1,4-Dichlorobenzene	19.64	146	2568075	286.6525 ug/L	96
95) n-Butylbenzene	19.89	91	4738000	299.3349 ug/L	98
96) 1,2-Dichlorobenzene	20.22	146	2506554	295.9653 ug/L	94
97) 1,2-Dibromo-3-Chloropropan	21.41	75	337125	316.5375 ug/L	88
98) 1,2,4-Trichlorobenzene	22.76	180	1820641	297.3664 ug/L	98
99) Hexachlorobutadiene	22.95	225	1055064	301.3252 ug/L	99
100) Naphthalene	23.20	128	4412465	313.4943 ug/L	98
101) 1,2,3-Trichlorobenzene	23.58	180	1777074	294.7650 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137532.D Vial: 11
Acq On : 26 Feb 2016 18:39 Operator: TMB
Sample : WG558920-11 300ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

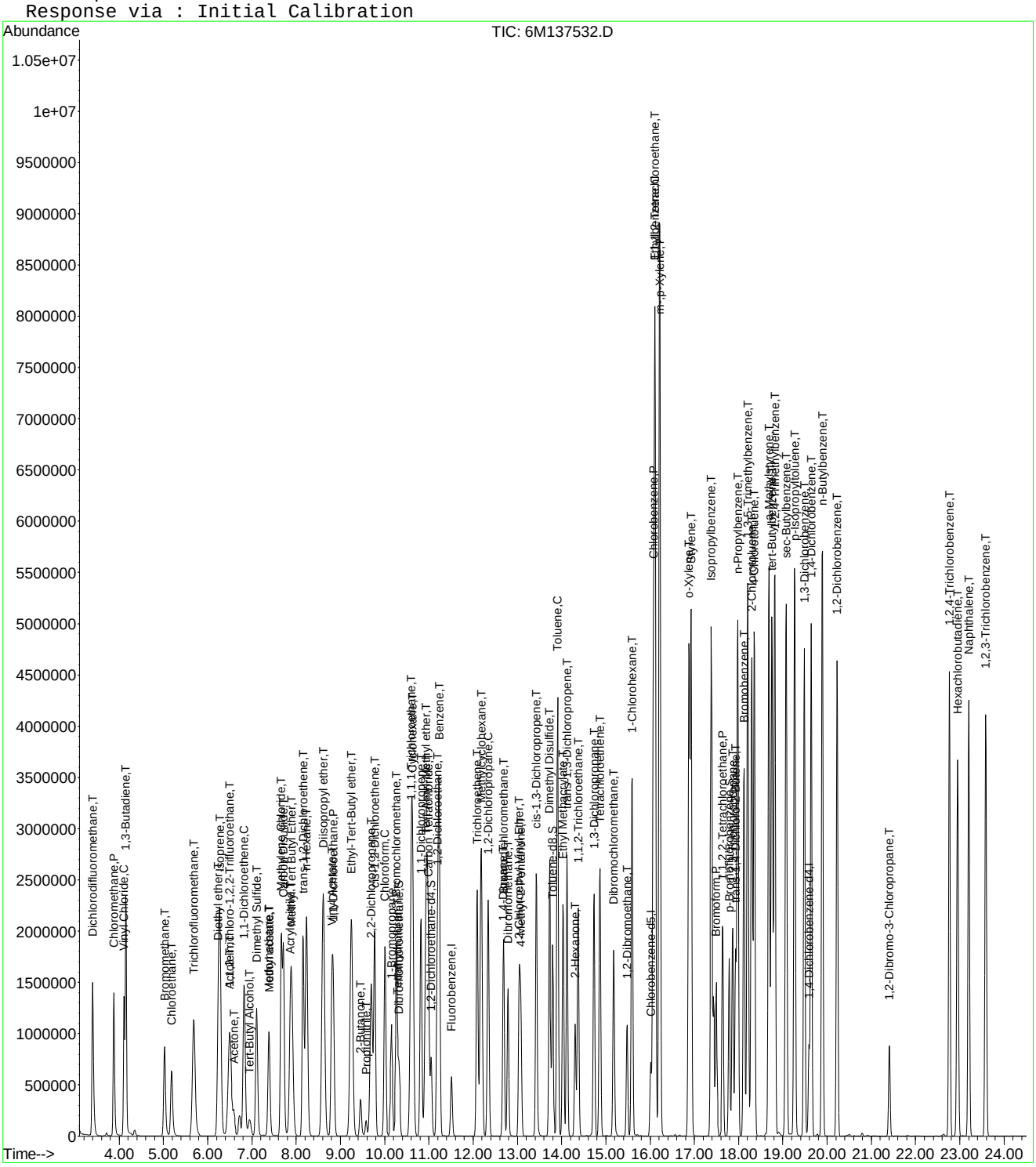

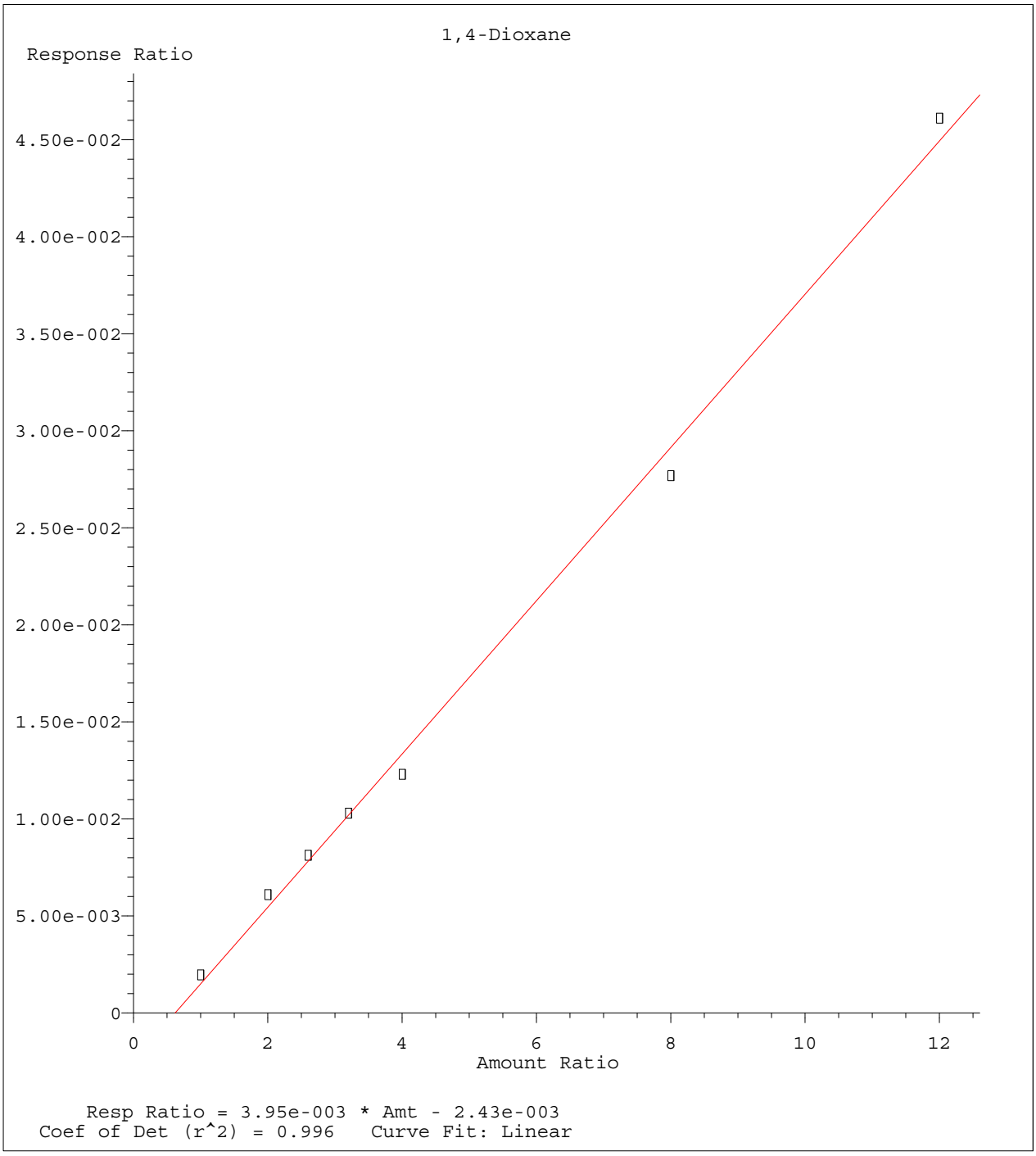

Method Name: C:\MSDCHEM\1\METHODS\826_SL.M
Calibration Table Last Updated: Mon Feb 29 08:51:12 2016

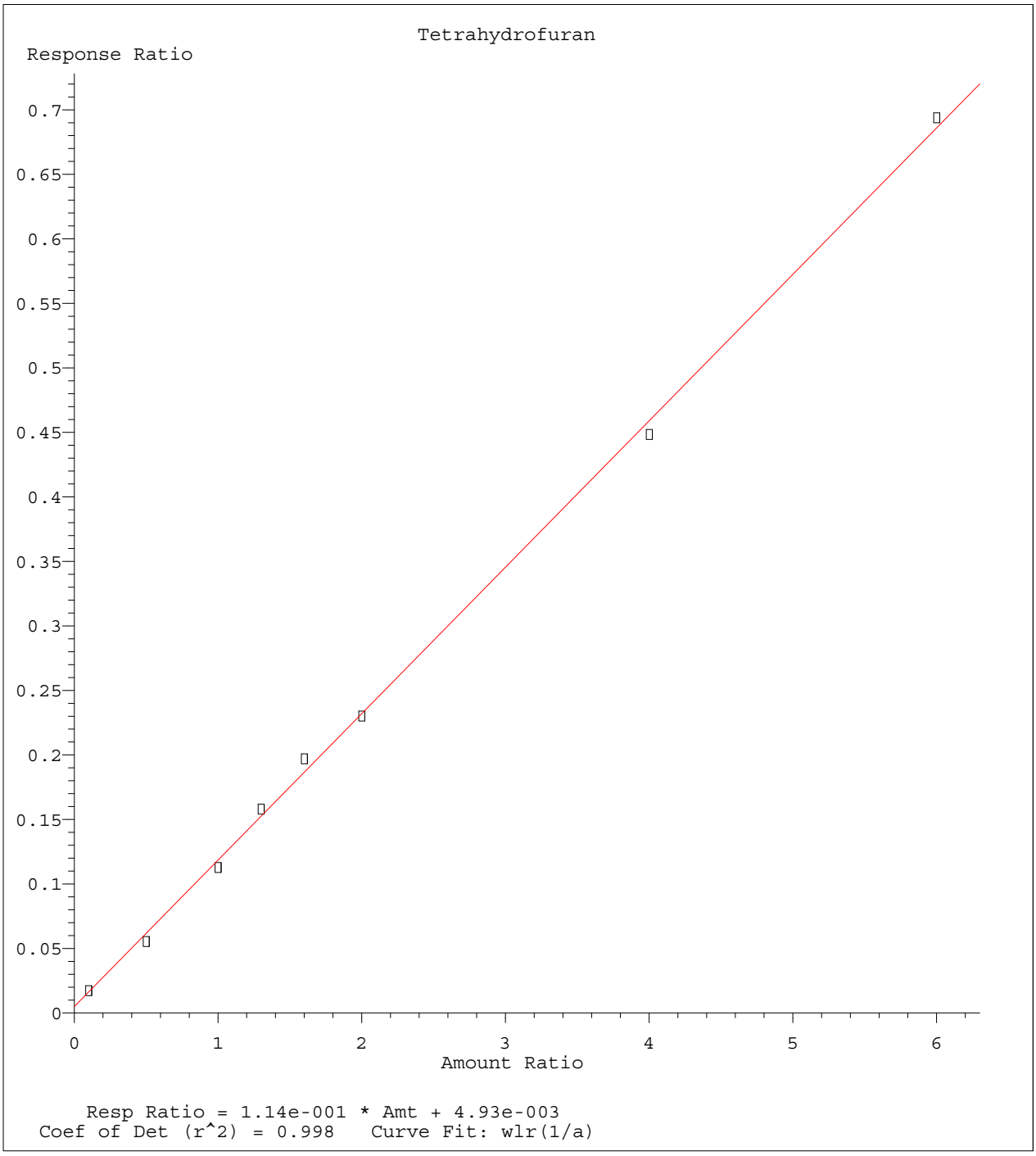

Method Name: C:\MSDCHEM\1\METHODS\826_SL.M
Calibration Table Last Updated: Mon Feb 29 08:51:12 2016

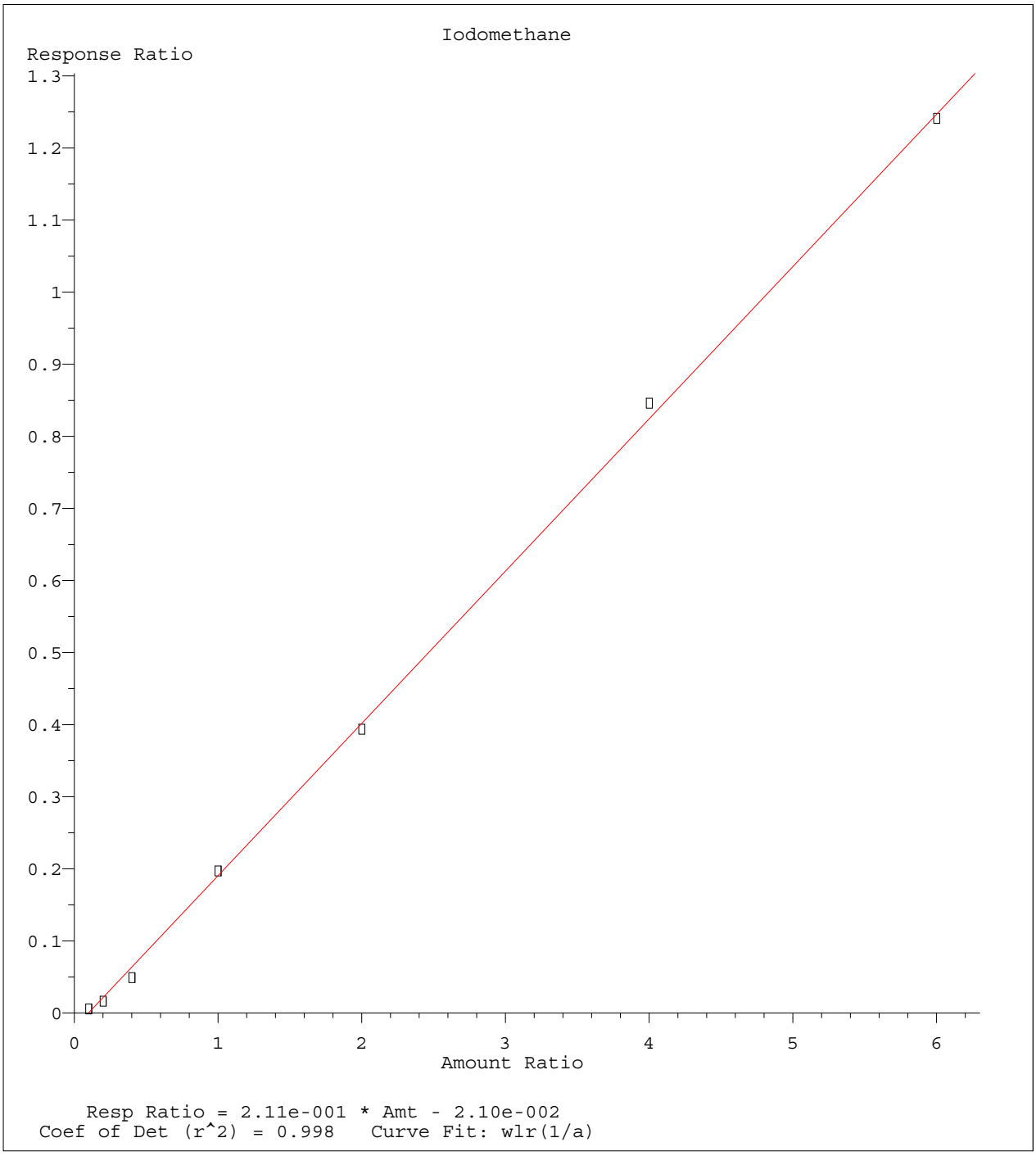

Method Name: C:\MSDCHEM\1\METHODS\826_SL.M
Calibration Table Last Updated: Mon Feb 29 08:51:12 2016

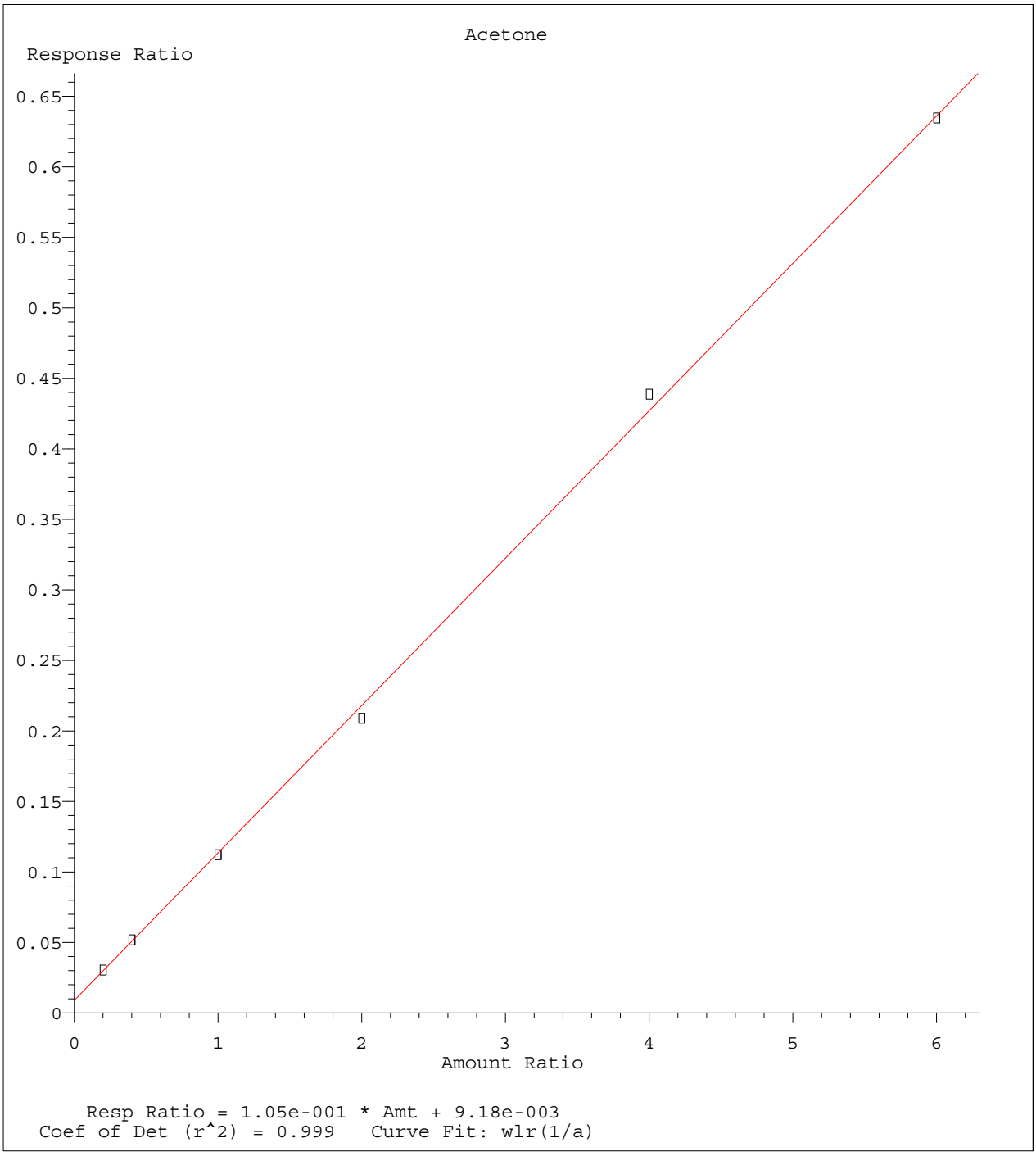

Method Name: C:\MSDCHEM\1\METHODS\826_SL.M
Calibration Table Last Updated: Mon Feb 29 08:51:12 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:44 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	697242	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	504277	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	281494	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.32	111	83790	22.4022 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 44.80%#		
43) 1,2-Dichloroethane-d4	11.05	65	107686	22.1747 ug/L	-0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 44.34%#		
58) Toluene-d8	13.80	98	259069	21.6082 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 43.22%#		
80) p-Bromofluorobenzene	17.79	95	108251	20.9365 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 41.88%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	355154	55.4626 ug/L	99
3) Chloromethane	3.88	50	339693	50.9064 ug/L	98
4) Vinyl Chloride	4.11	62	232790	43.3425 ug/L	98
5) 1,3-Butadiene	4.16	54	191696	42.8977 ug/L	93
6) Bromomethane	5.02	94	167650	58.5556 ug/L	99
7) Chloroethane	5.19	64	172370	56.5995 ug/L	98
8) Trichlorofluoromethane	5.68	101	345771	47.9110 ug/L	99
9) Diethyl ether	6.24	59	244439	73.6254 ug/L	93
10) Isoprene	6.27	67	268171	57.0391 ug/L	88
11) Acrolein	6.48	56	38698	61.3760 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	185858	53.9539 ug/L	94
13) Acetone	6.60	43	77335	48.6644 ug/L	96
14) 1,1-Dichloroethene	6.83	61	315114	51.6437 ug/L	92
15) Tert-Butyl Alcohol	6.95	59	120780	212.1401 ug/L	97
16) Dimethyl Sulfide	7.11	62	234426	79.1891 ug/L	96
17) Iodomethane	7.38	142	96886	37.8412 ug/L	92
18) Methyl acetate	7.39	43	223958	52.8169 ug/L	96
19) Methylene Chloride	7.67	84	196184	53.3878 ug/L	82
20) Carbon Disulfide	7.71	76	518243	44.3914 ug/L	99
21) Acrylonitrile	7.86	53	88595	50.8382 ug/L	99
22) Methyl Tert Butyl Ether	7.89	73	557115	53.0885 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	181115	53.7310 ug/L	84
24) n-Hexane	8.23	57	293885	48.0130 ug/L	99
25) Diisopropyl ether	8.61	45	1440779	90.7892 ug/L	96
26) Vinyl Acetate	8.80	43	309031	37.6715 ug/L	98
27) 1,1-Dichloroethane	8.83	63	365886	50.3469 ug/L	98
28) Ethyl-Tert-Butyl ether	9.25	59	1142199	89.7979 ug/L	96
29) 2-Butanone	9.46	43	118678	49.2421 ug/L	97
30) Propionitrile	9.58	54	62654	93.9303 ug/L	99
31) 2,2-Dichloropropane	9.69	77	309886	53.1233 ug/L	95
32) cis-1,2-Dichloroethene	9.77	96	203750	54.1434 ug/L	96
33) Chloroform	10.01	83	344145	50.7061 ug/L	96
34) 1-Bromopropane	10.15	122	45722	88.6198 ug/L	99
35) Bromochloromethane	10.26	130	115189	52.0956 ug/L	100
36) Tetrahydrofuran	10.29	42	140281	86.4486 ug/L	95
38) 1,1,1-Trichloroethane	10.60	97	311688	51.9918 ug/L	98
39) Cyclohexane	10.63	56	356880	52.4982 ug/L	88
40) 1,1-Dichloropropene	10.82	75	254739	52.7645 ug/L	97
41) Tert-Amyl-Methyl ether	10.95	73	1007162	99.8131 ug/L	93
42) Carbon Tetrachloride	10.99	117	286624	51.1689 ug/L	96

(#) = qualifier out of range (m) = manual integration
6M137535.D 826_SL.M Mon Feb 29 16:01:45 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:44 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	296979	51.2665 ug/L	98
46)	Benzene	11.23	78	732452	50.4293 ug/L	92
47)	Trichloroethene	12.09	130	187775	54.7248 ug/L	93
48)	Methylcyclohexane	12.18	83	293690	52.9463 ug/L	89
49)	1,2-Dichloropropane	12.33	63	215054	55.0291 ug/L	100
50)	1,4-Dioxane	12.67	88	9692	206.7214 ug/L	86
51)	Bromodichloromethane	12.68	83	264833	51.6400 ug/L	97
52)	Dibromomethane	12.78	93	115173	50.3870 ug/L	97
53)	2-Chloroethyl Vinyl Ether	13.04	63	118032	54.9113 ug/L	99
54)	4-Methyl-2-Pentanone	13.07	58	83435	51.2622 ug/L	92
55)	cis-1,3-Dichloropropene	13.43	75	332086	58.7723 ug/L	97
56)	Dimethyl Disulfide	13.72	79	160314	56.2546 ug/L	97
59)	Toluene	13.91	91	733544	51.4239 ug/L	99
60)	Ethyl Methacrylate	14.04	69	253929	55.5569 ug/L	99
62)	trans-1,3-Dichloropropene	14.12	75	289951	52.8608 ug/L	100
63)	1,1,2-Trichloroethane	14.38	97	158637	53.2065 ug/L	98
64)	2-Hexanone	14.31	43	174540	51.3021 ug/L	98
65)	1,3-Dichloropropane	14.73	76	296777	54.9182 ug/L	95
66)	Tetrachloroethene	14.87	166	179884	51.1197 ug/L	98
67)	Dibromochloromethane	15.17	129	201014	51.8393 ug/L	99
68)	1,2-Dibromoethane	15.48	107	163614	53.6583 ug/L	99
69)	1-Chlorohexane	15.59	91	237869	53.6977 ug/L	87
70)	Chlorobenzene	16.07	112	484642	52.8637 ug/L	70
71)	1,1,1,2-Tetrachloroethane	16.11	131	190856	51.8481 ug/L	98
72)	Ethylbenzene	16.10	106	257103	52.4064 ug/L	97
73)	m-,p-Xylene	16.22	106	631680	105.2305 ug/L	96
74)	o-Xylene	16.88	106	321591	56.8793 ug/L	96
75)	Styrene	16.92	104	532085	55.2923 ug/L	95
76)	Bromoform	17.49	173	134827	49.2451 ug/L	99
77)	Isopropylbenzene	17.38	105	829435	54.5730 ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.64	83	229283	52.1415 ug/L	96
81)	1,2,3-Trichloropropane	17.87	110	71564	53.1534 ug/L	99
82)	trans-1,4-Dichloro-2-Buten	17.93	53	68292	42.0681 ug/L	85
83)	n-Propylbenzene	17.98	91	1006100	52.6291 ug/L	98
84)	Bromobenzene	18.12	156	215387	51.8331 ug/L	99
85)	1,3,5-Trimethylbenzene	18.21	105	716527	52.6576 ug/L	95
86)	2-Chlorotoluene	18.30	91	664750	52.0974 ug/L	96
87)	4-Chlorotoluene	18.36	91	607350	52.0569 ug/L	97
88)	a-Methylstyrene	18.69	118	378204	57.2343 ug/L	98
89)	tert-Butylbenzene	18.76	134	150883	53.2071 ug/L	99
90)	1,2,4-Trimethylbenzene	18.82	105	731933	51.1473 ug/L	81
91)	sec-Butylbenzene	19.07	105	883157	50.6807 ug/L	100
92)	p-Isopropyltoluene	19.27	119	732050	50.9189 ug/L	99
93)	1,3-Dichlorobenzene	19.48	146	418127	52.0038 ug/L	96
94)	1,4-Dichlorobenzene	19.64	146	423834	51.7864 ug/L	98
95)	n-Butylbenzene	19.89	91	705101	48.7625 ug/L	98
96)	1,2-Dichlorobenzene	20.22	146	421505	54.4802 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	21.41	75	50722	52.1318 ug/L	89
98)	1,2,4-Trichlorobenzene	22.76	180	285471	51.0389 ug/L	97
99)	Hexachlorobutadiene	22.94	225	152283	47.6080 ug/L	99
100)	Naphthalene	23.20	128	640676	49.8263 ug/L	100
101)	1,2,3-Trichlorobenzene	23.59	180	280768	50.9788 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M137535.D 826_SL.M Mon Feb 29 16:01:45 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

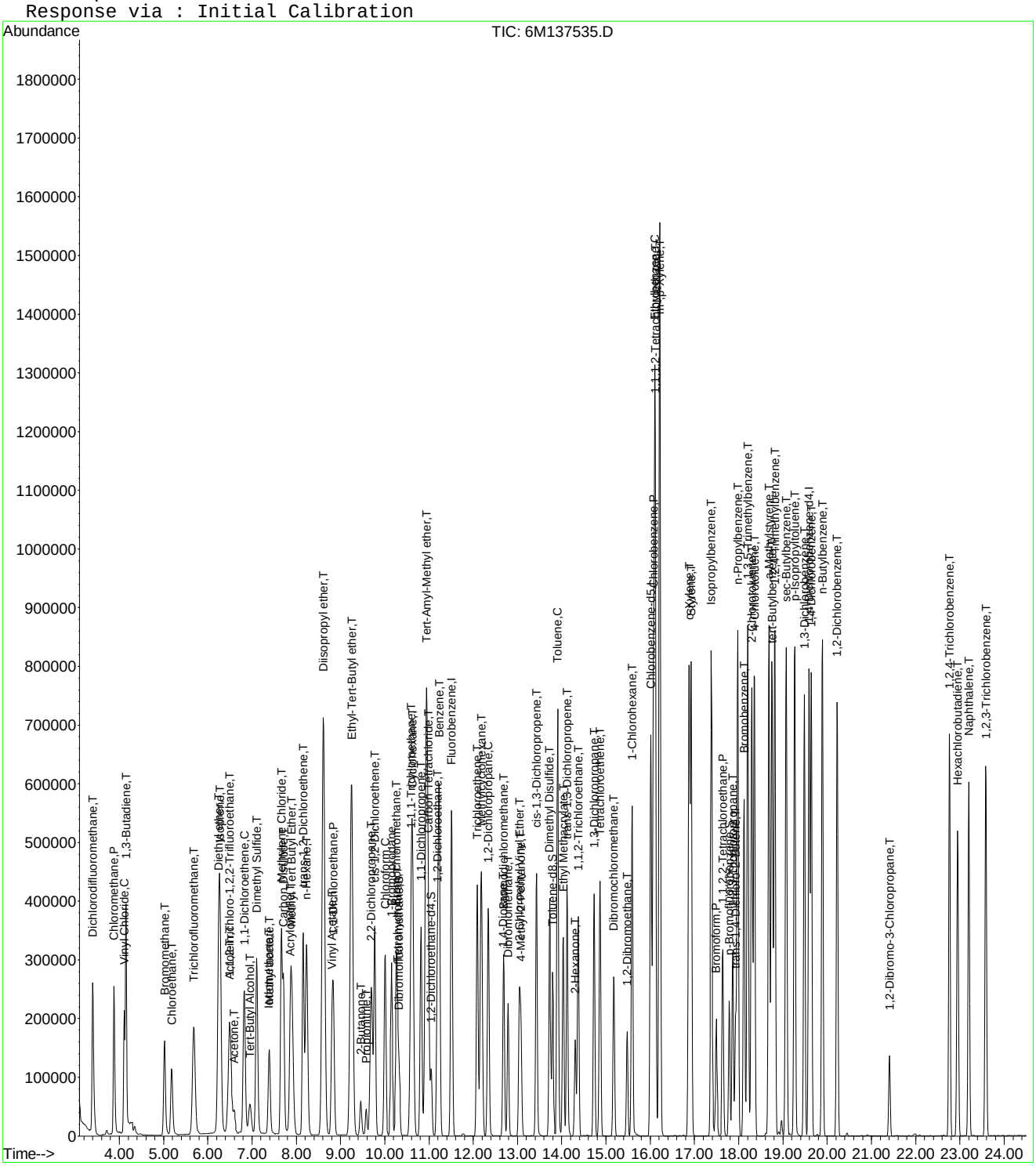

6M137535.D 826_SL.M Mon Feb 29 16:01:45 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	115	0.00
2	T	Dichlorodifluoromethane	50.0000	55.4626	-10.9	109	-0.01
3	P	Chloromethane	50.0000	50.9064	-1.8	111	0.00
4	C	Vinyl Chloride	50.0000	43.3425	13.3	89	0.00
5	T	1,3-Butadiene	50.0000	42.8977	14.2	92	-0.01
6	T	Bromomethane	50.0000	58.5556	-17.1	130	-0.01
7	T	Chloroethane	50.0000	56.5995	-13.2	116	0.00
8	T	Trichlorofluoromethane	50.0000	47.9111	4.2	102	-0.02
9	T	Diethyl ether	100.0000	73.6254	26.4#	86	0.00
10	T	Isoprene	50.0000	57.0391	-14.1	124	-0.01
11	T	Acrolein	50.0000	61.3760	-22.8	153	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	53.9539	-7.9	110	-0.01
13	T	Acetone	50.0000	48.6644	2.7	113	0.01
14	C	1,1-Dichloroethene	50.0000	51.6437	-3.3	107	0.00
15	T	Tert-Butyl Alcohol	200.0000	212.1401	-6.1	124	0.02
16	T	Dimethyl Sulfide	50.0000	79.1891	-58.4#	173	-0.01
17	T	Iodomethane	50.0000	37.8412	24.3	81	0.00
18	T	Methyl acetate	50.0000	52.8169	-5.6	120	0.00
19	T	Methylene Chloride	50.0000	53.3878	-6.8	112	0.00
20	T	Carbon Disulfide	50.0000	44.3914	11.2	98	-0.01
21	T	Acrylonitrile	50.0000	50.8382	-1.7	112	0.00
22	T	Methyl Tert Butyl Ether	50.0000	53.0885	-6.2	110	0.00
23	T	trans-1,2-Dichloroethene	50.0000	53.7311	-7.5	112	0.00
24	T	n-Hexane	50.0000	48.0130	4.0	104	-0.01
25	T	Diisopropyl ether	100.0000	90.7892	9.2	106	0.00
26	T	Vinyl Acetate	50.0000	37.6715	24.7	85	0.00
27	P	1,1-Dichloroethane	50.0000	50.3469	-0.7	106	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	89.7979	10.2	103	0.01
29	T	2-Butanone	50.0000	49.2421	1.5	115	0.00
30	T	Propionitrile	100.0000	93.9303	6.1	108	0.00
31	T	2,2-Dichloropropane	50.0000	53.1233	-6.2	112	0.00
32	T	cis-1,2-Dichloroethene	50.0000	54.1434	-8.3	116	0.00
33	C	Chloroform	50.0000	50.7061	-1.4	109	0.00
34		1-Bromopropane	50.0000	88.6198	-77.2#	186	-0.01
35	T	Bromochloromethane	50.0000	52.0956	-4.2	108	0.00
36	T	Tetrahydrofuran	100.0000	86.4486	13.6	100	0.00
37	S	Dibromofluoromethane	25.0000	22.4022	10.4	101	0.00
38	T	1,1,1-Trichloroethane	50.0000	51.9918	-4.0	108	0.00
39	T	Cyclohexane	50.0000	52.4982	-5.0	110	-0.01
40	T	1,1-Dichloropropene	50.0000	52.7645	-5.5	109	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	99.8131	0.2	115	0.00
42	T	Carbon Tetrachloride	50.0000	51.1689	-2.3	106	0.00
43	S	1,2-Dichloroethane-d4	25.0000	22.1747	11.3	100	-0.01
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	50.0000	51.2666	-2.5	109	0.00
46	T	Benzene	50.0000	50.4293	-0.9	112	0.00
47	T	Trichloroethene	50.0000	54.7248	-9.4	115	0.00
48	T	Methylcyclohexane	50.0000	52.9463	-5.9	111	0.00
49	C	1,2-Dichloropropane	50.0000	55.0291	-10.1	116	0.00
50	T	1,4-Dioxane	200.0000	206.7214	-3.4	130	0.00
51	T	Bromodichloromethane	50.0000	51.6400	-3.3	109	0.00
52	T	Dibromomethane	50.0000	50.3870	-0.8	103	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	54.9113	-9.8	118	0.00
54	T	4-Methyl-2-Pentanone	50.0000	51.2622	-2.5	117	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	58.7723	-17.5	120	0.00
56	T	Dimethyl Disulfide	50.0000	56.2546	-12.5	117	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	115	0.00
58	S	Toluene-d8	25.0000	21.6082	13.6	97	0.00
59	C	Toluene	50.0000	51.4239	-2.8	111	0.00
60	T	Ethyl Methacrylate	50.0000	55.5569	-11.1	115	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	50.0000	52.8608	-5.7	109	0.00
63	T	1,1,2-Trichloroethane	50.0000	53.2065	-6.4	113	0.00
64	T	2-Hexanone	50.0000	51.3021	-2.6	116	0.00
65	T	1,3-Dichloropropane	50.0000	54.9182	-9.8	116	0.00
66	T	Tetrachloroethene	50.0000	51.1197	-2.2	109	0.00
67	T	Dibromochloromethane	50.0000	51.8393	-3.7	107	0.00
68	T	1,2-Dibromoethane	50.0000	53.6583	-7.3	112	0.00
69	T	1-Chlorohexane	50.0000	53.6977	-7.4	112	0.00
70	P	Chlorobenzene	50.0000	52.8637	-5.7	115	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	51.8481	-3.7	110	0.00
72	C	Ethylbenzene	50.0000	52.4064	-4.8	110	0.00
73	T	m-,p-Xylene	100.0000	105.2305	-5.2	113	0.00
74	T	o-Xylene	50.0000	56.8792	-13.8	115	0.00
75	T	Styrene	50.0000	55.2923	-10.6	113	0.00
76	P	Bromoform	50.0000	49.2451	1.5	103	0.00
77	T	Isopropylbenzene	50.0000	54.5730	-9.1	112	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	118	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	52.1415	-4.3	115	0.00
80	S	p-Bromofluorobenzene	25.0000	20.9365	16.3	97	0.00
81	T	1,2,3-Trichloropropane	50.0000	53.1534	-6.3	117	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	42.0681	15.9	93	0.00
83	T	n-Propylbenzene	50.0000	52.6291	-5.3	111	0.00
84	T	Bromobenzene	50.0000	51.8331	-3.7	112	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	52.6576	-5.3	112	0.00
86	T	2-Chlorotoluene	50.0000	52.0974	-4.2	115	0.00
87	T	4-Chlorotoluene	50.0000	52.0569	-4.1	114	0.00
88	T	a-Methylstyrene	50.0000	57.2343	-14.5	123	0.00
89	T	tert-Butylbenzene	50.0000	53.2071	-6.4	112	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	51.1473	-2.3	110	0.00
91	T	sec-Butylbenzene	50.0000	50.6807	-1.4	107	0.00
92	T	p-Isopropyltoluene	50.0000	50.9189	-1.8	107	0.00
93	T	1,3-Dichlorobenzene	50.0000	52.0038	-4.0	114	0.00
94	T	1,4-Dichlorobenzene	50.0000	51.7864	-3.6	117	0.00
95	T	n-Butylbenzene	50.0000	48.7625	2.5	104	0.00
96	T	1,2-Dichlorobenzene	50.0000	54.4802	-9.0	120	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	52.1318	-4.3	117	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	51.0389	-2.1	109	0.00
99	T	Hexachlorobutadiene	50.0000	47.6080	4.8	101	-0.01
100	T	Naphthalene	50.0000	49.8263	0.3	104	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	50.9788	-2.0	108	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137535.D 826_SL.M Mon Feb 29 16:03:13 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030916\6M137677.D Vial: 3
Acq On : 9 Mar 2016 11:29 Operator: TMB
Sample : WG560254-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75017 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 09 11:53:36 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	694031	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	501733	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	264273	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	173374	46.5679 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.14%		
43) 1,2-Dichloroethane-d4	11.05	65	204847	42.3772 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 84.76%		
58) Toluene-d8	13.80	98	594654	49.8498 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.70%		
80) p-Bromofluorobenzene	17.79	95	245387	50.5521 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 101.10%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	342182	53.6841 ug/L	100
3) Chloromethane	3.88	50	274857	41.3806 ug/L	98
4) Vinyl Chloride	4.12	62	272246	50.9232 ug/L	97
5) 1,3-Butadiene	4.16	54	178783	40.1931 ug/L	94
6) Bromomethane	5.04	94	144296	50.6319 ug/L	100
7) Chloroethane	5.19	64	162150	53.4900 ug/L	98
8) Trichlorofluoromethane	5.69	101	366319	50.9931 ug/L	100
9) Diethyl ether	6.23	59	313789	94.9509 ug/L	96
10) Isoprene	6.27	67	247482	52.8822 ug/L	90
11) Acrolein	6.49	56	25607	40.8013 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	194355	56.6816 ug/L	94
13) Acetone	6.59	43	74415	46.8973 ug/L	98
14) 1,1-Dichloroethene	6.83	61	322768	53.1429 ug/L	96
15) Tert-Butyl Alcohol	6.94	59	115577	203.9406 ug/L	98
16) Dimethyl Sulfide	7.11	62	146549	49.7333 ug/L	96
17) Iodomethane	7.38	142	114499	43.9975 ug/L	96
18) Methyl acetate	7.40	43	210180	49.7969 ug/L	98
19) Methylene Chloride	7.67	84	186479	50.9816 ug/L	84
20) Carbon Disulfide	7.72	76	600717	51.6940 ug/L	99
21) Acrylonitrile	7.86	53	86169	49.6748 ug/L	99
22) Methyl Tert Butyl Ether	7.90	73	555296	53.1600 ug/L	93
23) trans-1,2-Dichloroethene	8.16	96	182157	54.2902 ug/L	89
24) n-Hexane	8.23	57	337897	55.4588 ug/L	98
25) Diisopropyl ether	8.61	45	1498935	94.8908 ug/L	95
26) Vinyl Acetate	8.80	43	374097	45.8142 ug/L	99
27) 1,1-Dichloroethane	8.83	63	376463	52.0420 ug/L	98
28) Ethyl-Tert-Butyl ether	9.24	59	1250235	98.7463 ug/L	96
29) 2-Butanone	9.45	43	106457	44.3757 ug/L	98
30) Propionitrile	9.57	54	63693	95.9298 ug/L	96
31) 2,2-Dichloropropane	9.69	77	310451	53.4664 ug/L	93
32) cis-1,2-Dichloroethene	9.77	96	198030	52.8669 ug/L	96
33) Chloroform	10.00	83	340684	50.4284 ug/L	98
34) 1-Bromopropane	10.16	122	28113	54.7416 ug/L	99
35) Bromochloromethane	10.26	130	115176	52.3307 ug/L	100
36) Tetrahydrofuran	10.30	42	152354	94.5208 ug/L	97
38) 1,1,1-Trichloroethane	10.60	97	311676	52.2304 ug/L	100
39) Cyclohexane	10.63	56	378150	55.8845 ug/L	88
40) 1,1-Dichloropropene	10.83	75	267728	55.7115 ug/L	97
41) Tert-Amyl-Methyl ether	10.94	73	1015082	101.0634 ug/L	94
42) Carbon Tetrachloride	10.99	117	290816	52.1575 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M137677.D 826_SL.M Wed Mar 09 11:53:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030916\6M137677.D Vial: 3
Acq On : 9 Mar 2016 11:29 Operator: TMB
Sample : WG560254-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75017 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 09 11:53:36 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	279550	48.4811 ug/L	98
46)	Benzene	11.23	78	737127	50.9860 ug/L	93
47)	Trichloroethene	12.09	130	185937	54.4399 ug/L	96
48)	Methylcyclohexane	12.18	83	317418	57.4887 ug/L	89
49)	1,2-Dichloropropane	12.34	63	203090	52.2081 ug/L	98
50)	1,4-Dioxane	12.67	88	9123	197.1603 ug/L	87
51)	Bromodichloromethane	12.68	83	259212	50.7778 ug/L	96
52)	Dibromomethane	12.79	93	114252	50.2153 ug/L	98
53)	2-Chloroethyl Vinyl Ether	13.04	63	112700	52.6733 ug/L	100
54)	4-Methyl-2-Pentanone	13.07	58	79378	48.9952 ug/L	96
55)	cis-1,3-Dichloropropene	13.43	75	302667	53.8136 ug/L	97
56)	Dimethyl Disulfide	13.73	79	155099	54.6765 ug/L	98
59)	Toluene	13.91	91	747019	52.6340 ug/L	99
60)	Ethyl Methacrylate	14.04	69	245489	53.9826 ug/L	99
62)	trans-1,3-Dichloropropene	14.12	75	285055	52.2317 ug/L	100
63)	1,1,2-Trichloroethane	14.38	97	150166	50.6207 ug/L	98
64)	2-Hexanone	14.31	43	159547	47.1330 ug/L	98
65)	1,3-Dichloropropane	14.74	76	268521	49.9414 ug/L	97
66)	Tetrachloroethene	14.87	166	190651	54.4542 ug/L	99
67)	Dibromochloromethane	15.18	129	194476	50.4075 ug/L	100
68)	1,2-Dibromoethane	15.48	107	155441	51.2364 ug/L	96
69)	1-Chlorohexane	15.59	91	261315	59.2896 ug/L	90
70)	Chlorobenzene	16.07	112	473020	51.8576 ug/L	70
71)	1,1,1,2-Tetrachloroethane	16.12	131	184643	50.4146 ug/L	99
72)	Ethylbenzene	16.11	106	264492	54.1859 ug/L	98
73)	m-,p-Xylene	16.22	106	637963	106.8161 ug/L	98
74)	o-Xylene	16.87	106	312062	55.4737 ug/L	96
75)	Styrene	16.92	104	529362	55.2883 ug/L	96
76)	Bromoform	17.49	173	133585	49.0388 ug/L	99
77)	Isopropylbenzene	17.38	105	837110	55.3572 ug/L	99
79)	1,1,2,2-Tetrachloroethane	17.65	83	213261	51.6582 ug/L	95
81)	1,2,3-Trichloropropane	17.87	110	65031	51.4486 ug/L	98
82)	trans-1,4-Dichloro-2-Buten	17.93	53	78166	51.2882 ug/L	94
83)	n-Propylbenzene	17.98	91	1007616	56.1431 ug/L	98
84)	Bromobenzene	18.13	156	208643	53.4820 ug/L	98
85)	1,3,5-Trimethylbenzene	18.21	105	715359	55.9976 ug/L	97
86)	2-Chlorotoluene	18.30	91	661179	55.1941 ug/L	95
87)	4-Chlorotoluene	18.35	91	572623	52.2786 ug/L	97
88)	a-Methylstyrene	18.69	118	357526	57.6308 ug/L	99
89)	tert-Butylbenzene	18.75	134	149870	56.2937 ug/L	85
90)	1,2,4-Trimethylbenzene	18.81	105	731563	54.4527 ug/L	84
91)	sec-Butylbenzene	19.08	105	915372	55.9523 ug/L	99
92)	p-Isopropyltoluene	19.26	119	765129	56.6877 ug/L	100
93)	1,3-Dichlorobenzene	19.49	146	400163	53.0127 ug/L	97
94)	1,4-Dichlorobenzene	19.64	146	398003	51.7991 ug/L	97
95)	n-Butylbenzene	19.89	91	752147	55.4056 ug/L	99
96)	1,2-Dichlorobenzene	20.22	146	375517	51.6989 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	21.42	75	45166	49.4463 ug/L	90
98)	1,2,4-Trichlorobenzene	22.76	180	279773	53.2797 ug/L	99
99)	Hexachlorobutadiene	22.95	225	162097	53.9784 ug/L	99
100)	Naphthalene	23.20	128	647055	53.6016 ug/L	99
101)	1,2,3-Trichlorobenzene	23.58	180	262508	50.7693 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M137677.D 826_SL.M Wed Mar 09 11:53:36 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030916\6M137677.D Vial: 3
Acq On : 9 Mar 2016 11:29 Operator: TMB
Sample : WG560254-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75017 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 11:53 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

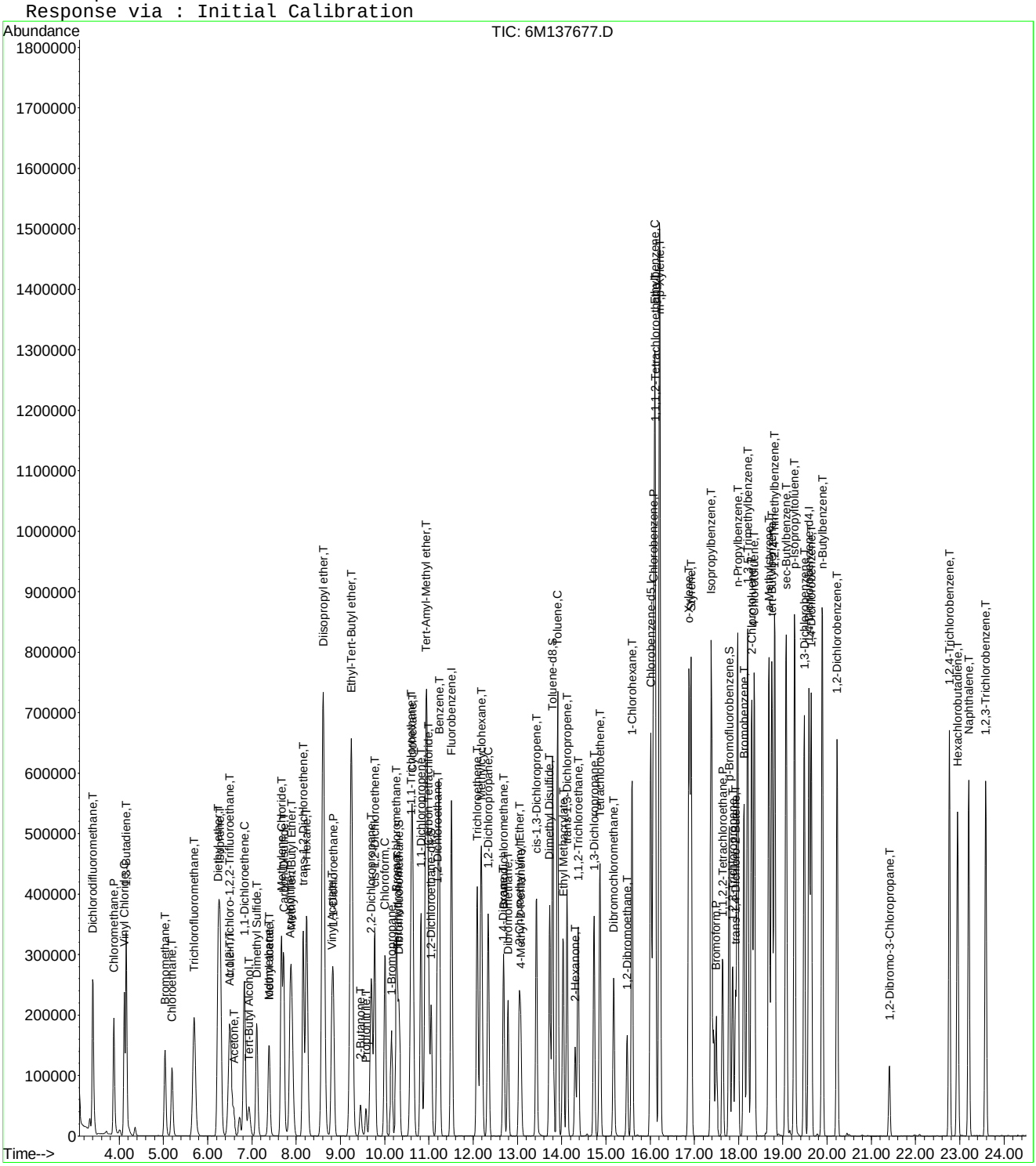

Continuing Calibration Area and RT check

Instrument: HPMS6
Initial cal date: 26 Feb 2016 17:03
CCV date: 9 Mar 2016 11:29
CCV Filename: 6M137677.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	607631	11.51	439950	16.01	237573	19.60
CCV	694031	11.51	501733	16.01	264273	19.59

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\030916\6M137677.D Vial: 3
Acq On : 9 Mar 2016 11:29 Operator: TMB
Sample : WG560254-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75017 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	114	0.00
2	T	Dichlorodifluoromethane	0.4592	0.4930	-7.4	105	0.00
3	P	Chloromethane	0.4785	0.3960	17.2	90	0.00
4	C	Vinyl Chloride	0.3852	0.3923	-1.8	104	0.00
5	T	1,3-Butadiene	0.3205	0.2576	19.6	86	0.00
6	T	Bromomethane	0.2053	0.2079	-1.3	112	0.00
7	T	Chloroethane	0.2184	0.2336	-7.0	110	0.00
8	T	Trichlorofluoromethane	0.5175	0.5278	-2.0	108	0.00
9	T	Diethyl ether	0.2381	0.2261	5.0	111	0.00
10	T	Isoprene	0.3372	0.3566	-5.8	115	0.00
11	T	Acrolein	0.0452	0.0369	18.4	101	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2470	0.2800	-13.4	115	0.00
13	T	Acetone	0.1189	0.1072	9.9	109	0.00
14	C	1,1-Dichloroethene	0.4376	0.4651	-6.3	109	0.00
15	T	Tert-Butyl Alcohol	0.0408	0.0416	-2.0	119	0.00
16	T	Dimethyl Sulfide	0.2123	0.2112	0.5	108	0.00
17	T	Iodomethane	0.1531	0.1650	-7.7	96	0.00
18	T	Methyl acetate	0.3041	0.3028	0.4	112	0.00
19	T	Methylene Chloride	0.2635	0.2687	-2.0	107	0.00
20	T	Carbon Disulfide	0.8372	0.8656	-3.4	113	0.00
21	T	Acrylonitrile	0.1250	0.1242	0.6	109	0.00
22	T	Methyl Tert Butyl Ether	0.7525	0.8001	-6.3	110	0.00
23	T	trans-1,2-Dichloroethene	0.2417	0.2625	-8.6	113	0.00
24	T	n-Hexane	0.4389	0.4869	-10.9	119	0.00
25	T	Diisopropyl ether	1.1380	1.0799	5.1	110	0.00
26	T	Vinyl Acetate	0.5883	0.5390	8.4	103	0.00
27	P	1,1-Dichloroethane	0.5212	0.5424	-4.1	109	0.00
28	T	Ethyl-Tert-Butyl ether	0.9121	0.9007	1.3	113	0.00
29	T	2-Butanone	0.1728	0.1534	11.2	103	0.00
30	T	Propionitrile	0.0478	0.0459	4.1	110	0.00
31	T	2,2-Dichloropropane	0.4183	0.4473	-6.9	113	0.00
32	T	cis-1,2-Dichloroethene	0.2699	0.2853	-5.7	112	0.00
33	C	Chloroform	0.4867	0.4909	-0.9	108	0.00
34		1-Bromopropane	0.0370	0.0405	-9.5	114	0.00
35	T	Bromochloromethane	0.1586	0.1659	-4.7	108	0.00
36	T	Tetrahydrofuran	0.1230	0.1098	10.7	109	0.00
37	S	Dibromofluoromethane	0.2682	0.4996	-86.3#	210#	0.00
38	T	1,1,1-Trichloroethane	0.4299	0.4491	-4.5	108	0.00
39	T	Cyclohexane	0.4875	0.5449	-11.8	117	0.00
40	T	1,1-Dichloropropene	0.3462	0.3858	-11.4	115	0.00
41	T	Tert-Amyl-Methyl ether	0.7236	0.7313	-1.1	116	0.00
42	T	Carbon Tetrachloride	0.4017	0.4190	-4.3	108	0.00
43	S	1,2-Dichloroethane-d4	0.3483	0.5903	-69.5#	191#	0.00
44		Heptane	0.0000	0.0000	0.0	0#	0.00
45	T	1,2-Dichloroethane	0.4154	0.4028	3.0	102	0.00
46	T	Benzene	1.0416	1.0621	-2.0	113	0.00
47	T	Trichloroethene	0.2461	0.2679	-8.9	114	0.00
48	T	Methylcyclohexane	0.3978	0.4573	-15.0	120	0.00
49	C	1,2-Dichloropropane	0.2803	0.2926	-4.4	110	0.00
50	T	1,4-Dioxane	0.0031	0.0033	-6.1	122	0.00
51	T	Bromodichloromethane	0.3678	0.3735	-1.6	106	0.00
52	T	Dibromomethane	0.1639	0.1646	-0.4	102	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1541	0.1624	-5.3	113	0.00
54	T	4-Methyl-2-Pentanone	0.1167	0.1144	2.0	112	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\030916\6M137677.D Vial: 3
Acq On : 9 Mar 2016 11:29 Operator: TMB
Sample : WG560254-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75017 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4052	0.4361	-7.6	110	0.00
56	T	Dimethyl Disulfide	0.2044	0.2235	-9.4	113	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	114	0.00
58	S	Toluene-d8	1.1888	2.3704	-99.4#	223#	0.00
59	C	Toluene	1.4144	1.4889	-5.3	113	0.00
60	T	Ethyl Methacrylate	0.4532	0.4893	-8.0	111	0.01
61		Paraldehyde	0.0000	0.0000	0.0	0#	-15.13#
62	T	trans-1,3-Dichloropropene	0.5439	0.5681	-4.5	107	0.00
63	T	1,1,2-Trichloroethane	0.2956	0.2993	-1.2	107	0.01
64	T	2-Hexanone	0.3373	0.3180	5.7	106	0.00
65	T	1,3-Dichloropropane	0.5358	0.5352	0.1	105	0.00
66	T	Tetrachloroethene	0.3489	0.3800	-8.9	115	0.00
67	T	Dibromochloromethane	0.3845	0.3876	-0.8	104	0.00
68	T	1,2-Dibromoethane	0.3023	0.3098	-2.5	107	0.00
69	T	1-Chlorohexane	0.4392	0.5208	-18.6	123	0.00
70	P	Chlorobenzene	0.9090	0.9428	-3.7	112	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3650	0.3680	-0.8	107	0.01
72	C	Ethylbenzene	0.4864	0.5272	-8.4	113	0.00
73	T	m-,p-Xylene	0.5952	0.6358	-6.8	114	0.00
74	T	o-Xylene	0.5606	0.6220	-10.9	112	0.00
75	T	Styrene	0.9542	1.0551	-10.6	112	0.00
76	P	Bromoform	0.2715	0.2662	1.9	102	0.00
77	T	Isopropylbenzene	1.5070	1.6684	-10.7	113	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	111	0.00
79	P	1,1,2,2-Tetrachloroethane	0.7811	0.8070	-3.3	107	0.00
80	S	p-Bromofluorobenzene	0.9184	1.8571	-102.2#	219#	0.00
81	T	1,2,3-Trichloropropane	0.2392	0.2461	-2.9	106	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.2884	0.2958	-2.6	107	0.00
83	T	n-Propylbenzene	3.3956	3.8128	-12.3	112	0.00
84	T	Bromobenzene	0.7381	0.7895	-7.0	109	0.00
85	T	1,3,5-Trimethylbenzene	2.4170	2.7069	-12.0	111	0.00
86	T	2-Chlorotoluene	2.2664	2.5019	-10.4	114	0.00
87	T	4-Chlorotoluene	2.0723	2.1668	-4.6	108	0.00
88	T	a-Methylstyrene	1.1737	1.3529	-15.3	116	0.00
89	T	tert-Butylbenzene	0.5037	0.5671	-12.6	111	0.00
90	T	1,2,4-Trimethylbenzene	2.5419	2.7682	-8.9	110	0.00
91	T	sec-Butylbenzene	3.0953	3.4637	-11.9	111	0.00
92	T	p-Isopropyltoluene	2.5537	2.8952	-13.4	112	0.00
93	T	1,3-Dichlorobenzene	1.4282	1.5142	-6.0	110	0.00
94	T	1,4-Dichlorobenzene	1.4537	1.5060	-3.6	110	0.00
95	T	n-Butylbenzene	2.5684	2.8461	-10.8	111	0.00
96	T	1,2-Dichlorobenzene	1.3743	1.4209	-3.4	107	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1728	0.1709	1.1	104	0.00
98	T	1,2,4-Trichlorobenzene	0.9935	1.0587	-6.6	107	0.00
99	T	Hexachlorobutadiene	0.5682	0.6134	-8.0	107	0.00
100	T	Naphthalene	2.2839	2.4484	-7.2	105	0.00
101	T	1,2,3-Trichlorobenzene	0.9783	0.9933	-1.5	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137677.D 826_SL.M Wed Mar 09 12:03:19 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\030916\6M137677.D Vial: 3
Acq On : 9 Mar 2016 11:29 Operator: TMB
Sample : WG560254-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75017 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	114	0.00
2	T	Dichlorodifluoromethane	50.0000	53.6840	-7.4	105	0.00
3	P	Chloromethane	50.0000	41.3806	17.2	90	0.00
4	C	Vinyl Chloride	50.0000	50.9232	-1.8	104	0.00
5	T	1,3-Butadiene	50.0000	40.1931	19.6	86	0.00
6	T	Bromomethane	50.0000	50.6319	-1.3	112	0.00
7	T	Chloroethane	50.0000	53.4900	-7.0	110	0.00
8	T	Trichlorofluoromethane	50.0000	50.9931	-2.0	108	0.00
9	T	Diethyl ether	100.0000	94.9510	5.0	111	0.00
10	T	Isoprene	50.0000	52.8822	-5.8	115	0.00
11	T	Acrolein	50.0000	40.8013	18.4	101	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	56.6816	-13.4	115	0.00
13	T	Acetone	50.0000	46.8973	6.2	109	0.00
14	C	1,1-Dichloroethene	50.0000	53.1429	-6.3	109	0.00
15	T	Tert-Butyl Alcohol	200.0000	203.9406	-2.0	119	0.00
16	T	Dimethyl Sulfide	50.0000	49.7333	0.5	108	0.00
17	T	Iodomethane	50.0000	43.9975	12.0	96	0.00
18	T	Methyl acetate	50.0000	49.7969	0.4	112	0.00
19	T	Methylene Chloride	50.0000	50.9816	-2.0	107	0.00
20	T	Carbon Disulfide	50.0000	51.6940	-3.4	113	0.00
21	T	Acrylonitrile	50.0000	49.6748	0.7	109	0.00
22	T	Methyl Tert Butyl Ether	50.0000	53.1600	-6.3	110	0.00
23	T	trans-1,2-Dichloroethene	50.0000	54.2902	-8.6	113	0.00
24	T	n-Hexane	50.0000	55.4588	-10.9	119	0.00
25	T	Diisopropyl ether	100.0000	94.8908	5.1	110	0.00
26	T	Vinyl Acetate	50.0000	45.8142	8.4	103	0.00
27	P	1,1-Dichloroethane	50.0000	52.0420	-4.1	109	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.7463	1.3	113	0.00
29	T	2-Butanone	50.0000	44.3757	11.2	103	0.00
30	T	Propionitrile	100.0000	95.9298	4.1	110	0.00
31	T	2,2-Dichloropropane	50.0000	53.4664	-6.9	113	0.00
32	T	cis-1,2-Dichloroethene	50.0000	52.8669	-5.7	112	0.00
33	C	Chloroform	50.0000	50.4284	-0.9	108	0.00
34		1-Bromopropane	50.0000	54.7416	-9.5	114	0.00
35	T	Bromochloromethane	50.0000	52.3307	-4.7	108	0.00
36	T	Tetrahydrofuran	100.0000	94.5208	5.5	109	0.00
37	S	Dibromofluoromethane	25.0000	46.5679	-86.3#	210	0.00
38	T	1,1,1-Trichloroethane	50.0000	52.2304	-4.5	108	0.00
39	T	Cyclohexane	50.0000	55.8845	-11.8	117	0.00
40	T	1,1-Dichloropropene	50.0000	55.7115	-11.4	115	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	101.0634	-1.1	116	0.00
42	T	Carbon Tetrachloride	50.0000	52.1575	-4.3	108	0.00
43	S	1,2-Dichloroethane-d4	25.0000	42.3772	-69.5#	191	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	50.0000	48.4811	3.0	102	0.00
46	T	Benzene	50.0000	50.9860	-2.0	113	0.00
47	T	Trichloroethene	50.0000	54.4399	-8.9	114	0.00
48	T	Methylcyclohexane	50.0000	57.4887	-15.0	120	0.00
49	C	1,2-Dichloropropane	50.0000	52.2081	-4.4	110	0.00
50	T	1,4-Dioxane	200.0000	197.1602	1.4	122	0.00
51	T	Bromodichloromethane	50.0000	50.7778	-1.6	106	0.00
52	T	Dibromomethane	50.0000	50.2153	-0.4	102	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	52.6733	-5.3	113	0.00
54	T	4-Methyl-2-Pentanone	50.0000	48.9952	2.0	112	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\030916\6M137677.D Vial: 3
Acq On : 9 Mar 2016 11:29 Operator: TMB
Sample : WG560254-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75017 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.8136	-7.6	110	0.00
56	T	Dimethyl Disulfide	50.0000	54.6765	-9.4	113	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	114	0.00
58	S	Toluene-d8	25.0000	49.8498	-99.4#	223	0.00
59	C	Toluene	50.0000	52.6340	-5.3	113	0.00
60	T	Ethyl Methacrylate	50.0000	53.9826	-8.0	111	0.01
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	50.0000	52.2317	-4.5	107	0.00
63	T	1,1,2-Trichloroethane	50.0000	50.6208	-1.2	107	0.01
64	T	2-Hexanone	50.0000	47.1330	5.7	106	0.00
65	T	1,3-Dichloropropane	50.0000	49.9414	0.1	105	0.00
66	T	Tetrachloroethene	50.0000	54.4542	-8.9	115	0.00
67	T	Dibromochloromethane	50.0000	50.4075	-0.8	104	0.00
68	T	1,2-Dibromoethane	50.0000	51.2364	-2.5	107	0.00
69	T	1-Chlorohexane	50.0000	59.2897	-18.6	123	0.00
70	P	Chlorobenzene	50.0000	51.8576	-3.7	112	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	50.4146	-0.8	107	0.01
72	C	Ethylbenzene	50.0000	54.1859	-8.4	113	0.00
73	T	m-,p-Xylene	100.0000	106.8161	-6.8	114	0.00
74	T	o-Xylene	50.0000	55.4737	-10.9	112	0.00
75	T	Styrene	50.0000	55.2883	-10.6	112	0.00
76	P	Bromoform	50.0000	49.0388	1.9	102	0.00
77	T	Isopropylbenzene	50.0000	55.3573	-10.7	113	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	111	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	51.6582	-3.3	107	0.00
80	S	p-Bromofluorobenzene	25.0000	50.5521	-102.2#	219	0.00
81	T	1,2,3-Trichloropropane	50.0000	51.4486	-2.9	106	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	51.2882	-2.6	107	0.00
83	T	n-Propylbenzene	50.0000	56.1431	-12.3	112	0.00
84	T	Bromobenzene	50.0000	53.4820	-7.0	109	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	55.9976	-12.0	111	0.00
86	T	2-Chlorotoluene	50.0000	55.1941	-10.4	114	0.00
87	T	4-Chlorotoluene	50.0000	52.2786	-4.6	108	0.00
88	T	a-Methylstyrene	50.0000	57.6308	-15.3	116	0.00
89	T	tert-Butylbenzene	50.0000	56.2937	-12.6	111	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	54.4527	-8.9	110	0.00
91	T	sec-Butylbenzene	50.0000	55.9524	-11.9	111	0.00
92	T	p-Isopropyltoluene	50.0000	56.6877	-13.4	112	0.00
93	T	1,3-Dichlorobenzene	50.0000	53.0127	-6.0	110	0.00
94	T	1,4-Dichlorobenzene	50.0000	51.7991	-3.6	110	0.00
95	T	n-Butylbenzene	50.0000	55.4055	-10.8	111	0.00
96	T	1,2-Dichlorobenzene	50.0000	51.6989	-3.4	107	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	49.4463	1.1	104	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	53.2797	-6.6	107	0.00
99	T	Hexachlorobutadiene	50.0000	53.9784	-8.0	107	0.00
100	T	Naphthalene	50.0000	53.6016	-7.2	105	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	50.7693	-1.5	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137677.D 826_SL.M Wed Mar 09 12:03:20 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\1\DATA\022616\6M137522.D          Vial: 1
Acq On    : 26 Feb 2016  13:16                       Operator: TMB
Sample    : WG558920-01 50ng BFB STD 8260            Inst    : HPMS6
Misc      : 7,1 STD74606                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP: OVL MSV01
```

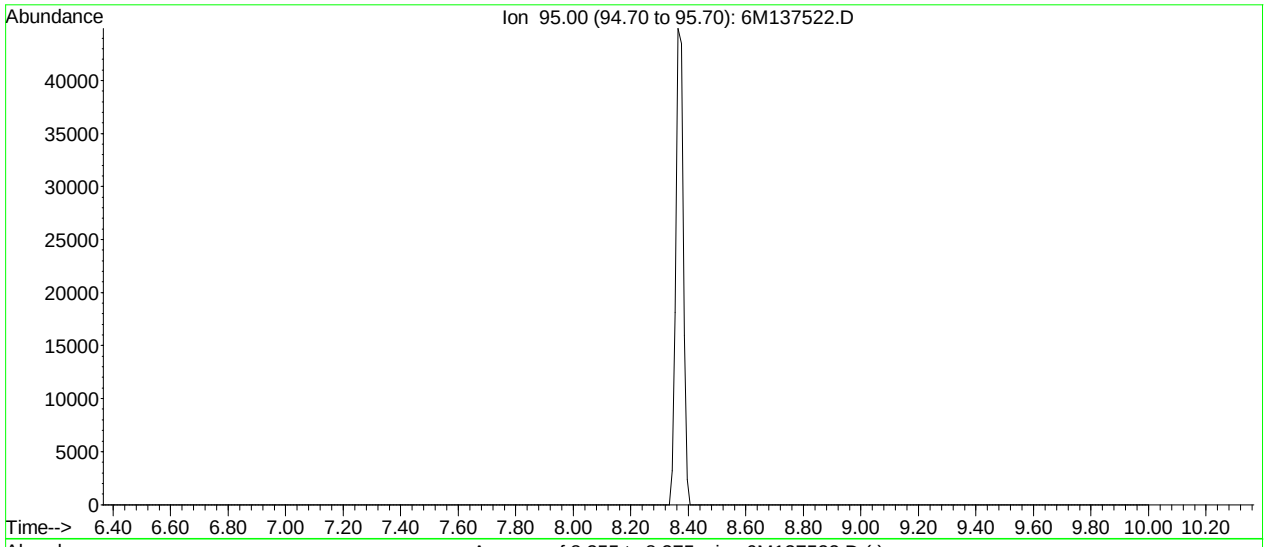

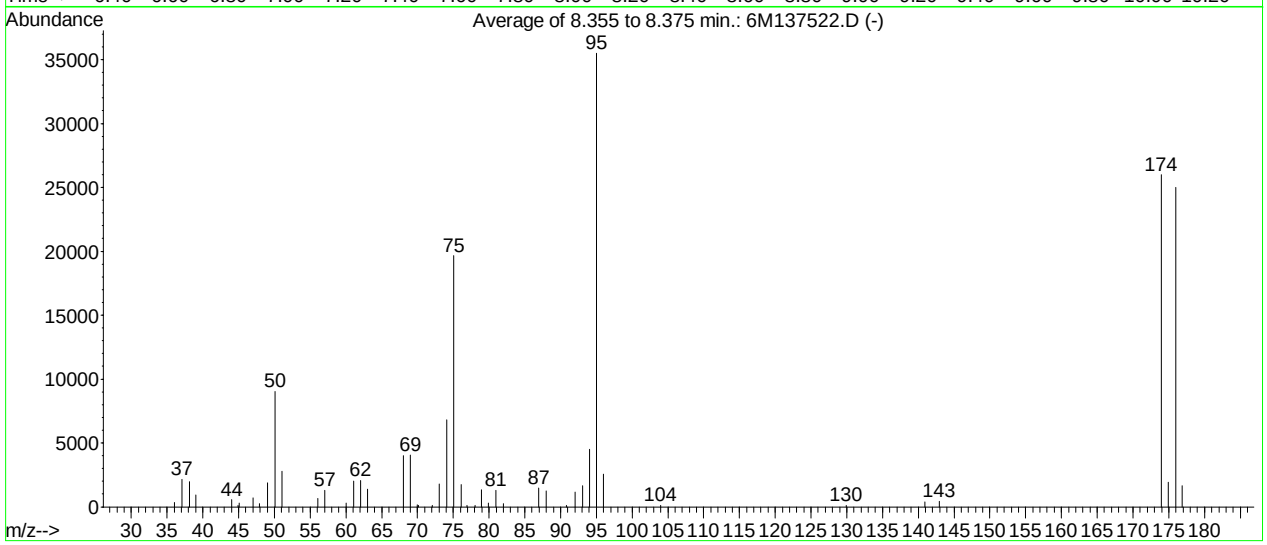

AutoFind: Scans 320, 321, 322; Background Corrected with Scan 316

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	25.4	9030	PASS
75	95	30	60	55.4	19666	PASS
95	95	100	100	100.0	35512	PASS
96	95	5	9	7.3	2576	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	73.2	26011	PASS
175	174	5	9	7.4	1914	PASS
176	174	95	101	96.1	24992	PASS
177	176	5	9	6.6	1660	PASS

6M137522.D BFB.M Fri Feb 26 13:26:46 2016

BFB

Data File : C:\MSDCHEM\1\DATA\030916\6M137675.D Vial: 1
Acq On : 9 Mar 2016 10:29 Operator: TMB
Sample : WG560254-01 50ng BFB STD 8260 Inst : HPMS6
Misc : 7,1 STD75004 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title : SOP: OVL MSV01

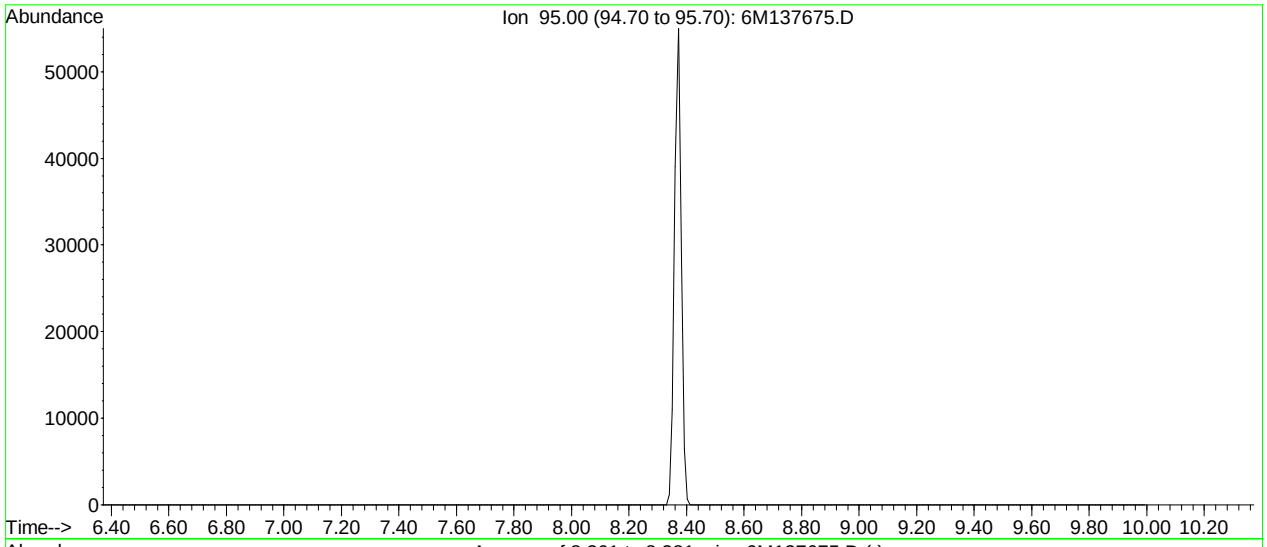

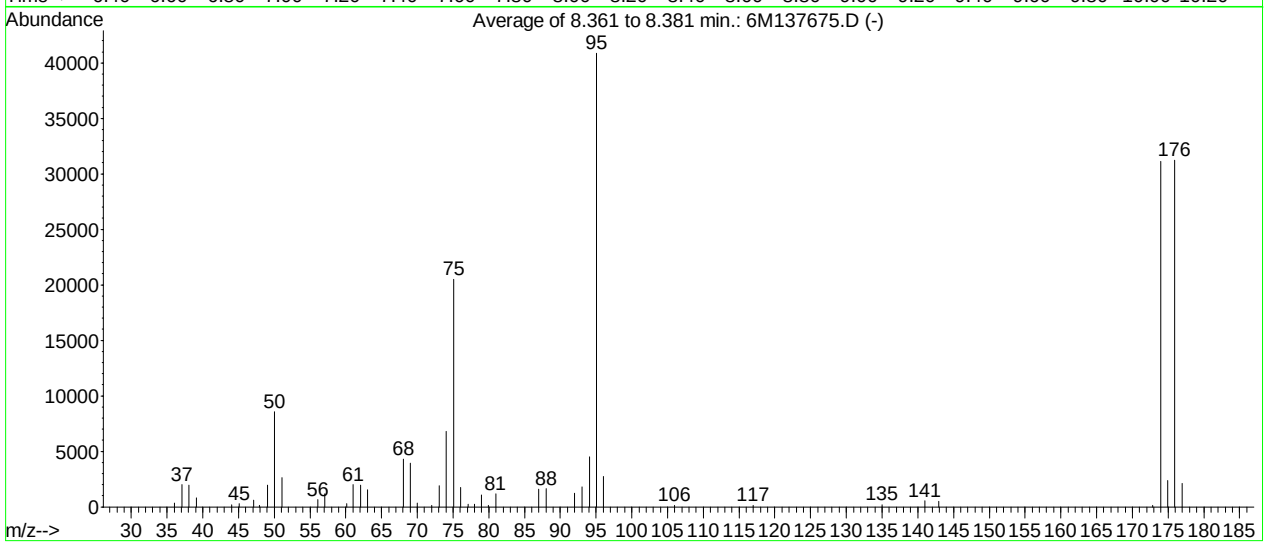

AutoFind: Scans 321, 322, 323; Background Corrected with Scan 316

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.0	8570	PASS
75	95	30	60	50.2	20514	PASS
95	95	100	100	100.0	40885	PASS
96	95	5	9	6.7	2737	PASS
173	174	0.00	2	0.4	124	PASS
174	95	50	100	76.2	31152	PASS
175	174	5	9	7.6	2362	PASS
176	174	95	101	100.2	31210	PASS
177	176	5	9	6.7	2088	PASS

6M137675.D BFB.M Wed Mar 09 10:40:24 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137679.D Vial: 5
Acq On : 9 Mar 2016 12:36 Operator: TMB
Sample : WG560255-01 VBLK0309 BLANK STD 8260 Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 08:54:53 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	612952	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	449245	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	231266	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	151533	46.0853 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 92.18%		
43) 1,2-Dichloroethane-d4	11.06	65	183728	43.0359 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 86.08%		
58) Toluene-d8	13.80	98	523959	49.0553 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.12%		
80) p-Bromofluorobenzene	17.79	95	214801	50.5667 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 101.14%		

Target Compounds

					Qvalue
13) Acetone	6.60	43	5437	Below Cal	95
36) Tetrahydrofuran	10.30	42	2747	Below Cal #	59
60) Ethyl Methacrylate	13.80	69	1050	0.2579 ug/L	81
100) Naphthalene	23.20	128	3105	0.2939 ug/L #	67

(#) = qualifier out of range (m) = manual integration
6M137679.D 826_SL.M Thu Mar 10 08:54:53 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137679.D Vial: 5
Acq On : 9 Mar 2016 12:36 Operator: TMB
Sample : WG560255-01 VBLK0309 BLANK STD 8260 Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 8:54 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

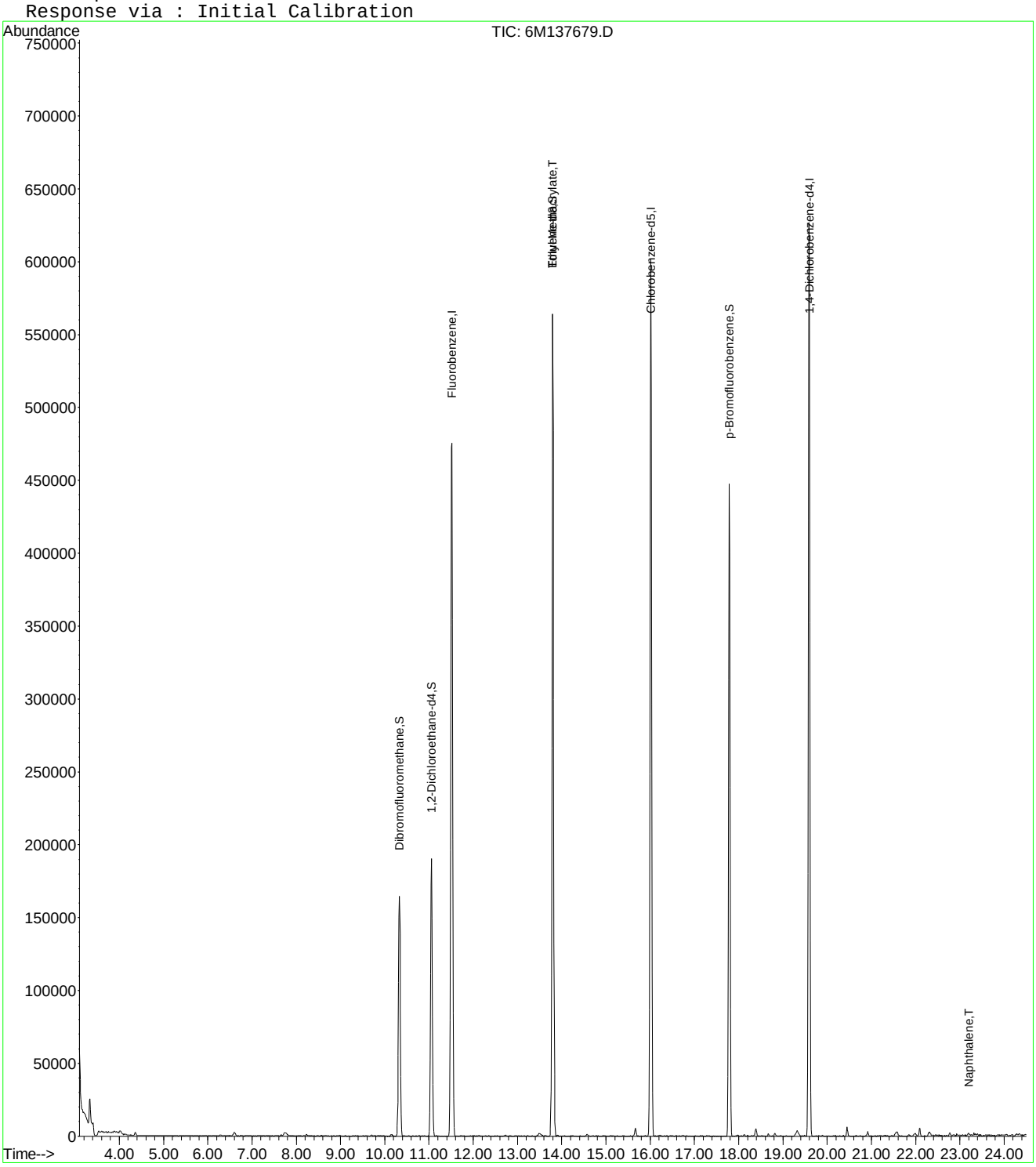

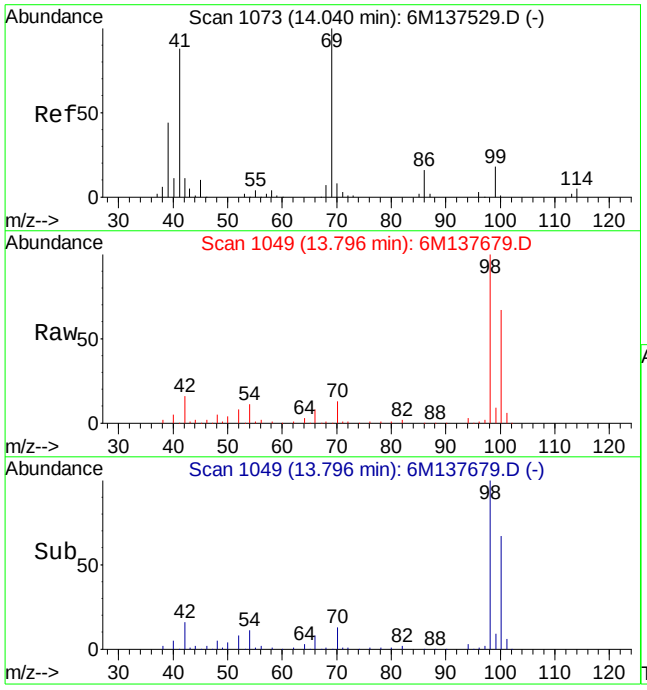

#60
Ethyl Methacrylate
Concen: 0.26 ug/L
RT: 13.80 min Scan# 1049
Delta R.T. -0.24 min
Lab File: 6M137679.D
Acq: 9 Mar 2016 12:36

Tgt Ion: 69 Resp: 1050

Ion	Ratio	Lower	Upper
69	100		
41	101.6	50.6	118.2

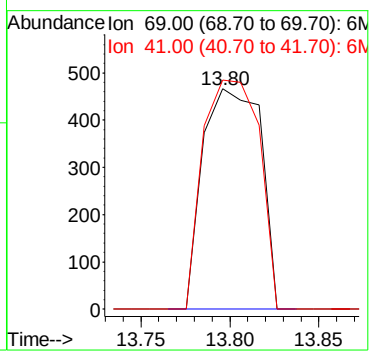

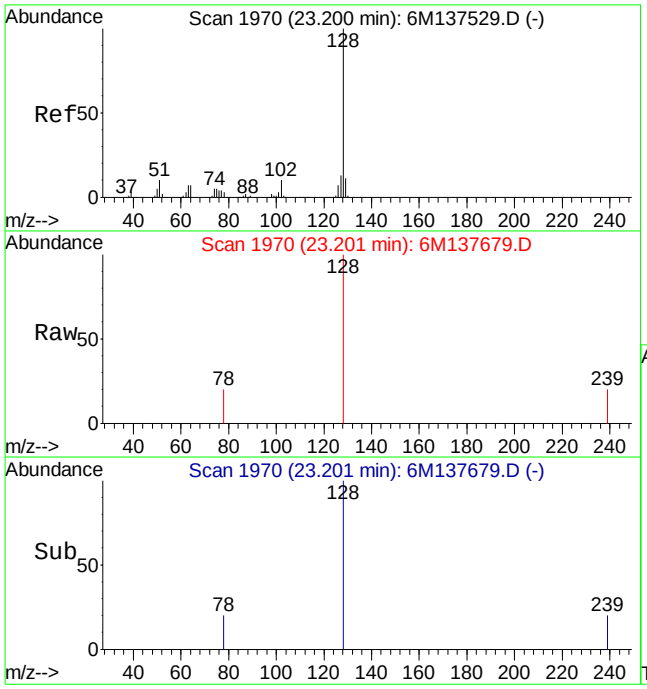

#100
Naphthalene
Concen: 0.29 ug/L
RT: 23.20 min Scan# 1970
Delta R.T. -0.00 min
Lab File: 6M137679.D
Acq: 9 Mar 2016 12:36

Tgt Ion:128 Resp: 3105

Ion	Ratio	Lower	Upper
128	100		
127	0.0	7.7	18.1#

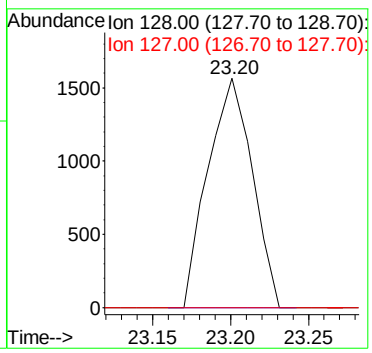

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137680.D Vial: 6
Acq On : 9 Mar 2016 13:09 Operator: TMB
Sample : WG560255-02 20ug/Kg LCS STD 8260 Inst : HPMS6
Misc : 7,1 STD74973 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 08:51:09 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	618893	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	452269	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	240680	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	151450	45.6179 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 91.24%		
43) 1,2-Dichloroethane-d4	11.06	65	183601	42.5933 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 85.18%		
58) Toluene-d8	13.80	98	528078	49.1103 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.22%		
80) p-Bromofluorobenzene	17.79	95	222813	50.4012 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 100.80%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	101272	17.8173 ug/L	99
3) Chloromethane	3.88	50	91766	15.4930 ug/L	96
4) Vinyl Chloride	4.12	62	86459	18.1354 ug/L	98
5) 1,3-Butadiene	4.16	54	60979	15.3734 ug/L	92
6) Bromomethane	5.02	94	51041	20.0841 ug/L	99
7) Chloroethane	5.19	64	57373	21.2240 ug/L	97
8) Trichlorofluoromethane	5.69	101	112054	17.4921 ug/L	99
9) Diethyl ether	6.24	59	298200	101.1888 ug/L	95
10) Isoprene	6.28	67	102296	24.5125 ug/L	92
11) Acrolein	6.48	56	51324	91.7062 ug/L	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	62290	20.3717 ug/L	96
13) Acetone	6.60	43	32789	20.9509 ug/L	96
14) 1,1-Dichloroethene	6.83	61	103831	19.1710 ug/L	94
15) Tert-Butyl Alcohol	6.94	59	111935	221.4938 ug/L	98
16) Dimethyl Sulfide	7.12	62	83978	31.9590 ug/L	98
17) Iodomethane	7.38	142	30836	16.7531 ug/L	95
18) Methyl acetate	7.39	43	78709	20.9122 ug/L	97
19) Methylene Chloride	7.67	84	65452	20.0664 ug/L	83
20) Carbon Disulfide	7.72	76	205902	19.8698 ug/L	99
21) Acrylonitrile	7.86	53	34473	22.2858 ug/L	98
22) Methyl Tert Butyl Ether	7.89	73	211126	22.6655 ug/L	93
23) trans-1,2-Dichloroethene	8.16	96	61555	20.5732 ug/L	89
24) n-Hexane	8.24	57	114512	21.0766 ug/L	99
25) Diisopropyl ether	8.61	45	1327031	94.2075 ug/L	95
26) Vinyl Acetate	8.80	43	140824	19.3400 ug/L	98
27) 1,1-Dichloroethane	8.83	63	121964	18.9072 ug/L	99
28) Ethyl-Tert-Butyl ether	9.24	59	1051261	93.1114 ug/L	96
29) 2-Butanone	9.46	43	46605	21.7855 ug/L	97
30) Propionitrile	9.58	54	56704	95.7720 ug/L	98
31) 2,2-Dichloropropane	9.69	77	102059	19.7107 ug/L	93
32) cis-1,2-Dichloroethene	9.77	96	68581	20.5315 ug/L	94
33) Chloroform	10.01	83	114306	18.9739 ug/L	97
34) 1-Bromopropane	10.16	122	15333	33.4812 ug/L	97
35) Bromochloromethane	10.26	130	38427	19.5792 ug/L	99
36) Tetrahydrofuran	10.29	42	137165	95.4498 ug/L	97
38) 1,1,1-Trichloroethane	10.60	97	102243	19.2139 ug/L	100
39) Cyclohexane	10.64	56	138903	23.0198 ug/L	88
40) 1,1-Dichloropropene	10.82	75	84311	19.6743 ug/L	97
41) Tert-Amyl-Methyl ether	10.95	73	901515	100.6536 ug/L	94
42) Carbon Tetrachloride	10.99	117	92936	18.6916 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M137680.D 826_SL.M Thu Mar 10 08:51:09 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137680.D Vial: 6
Acq On : 9 Mar 2016 13:09 Operator: TMB
Sample : WG560255-02 20ug/Kg LCS STD 8260 Inst : HPMS6
Misc : 7,1 STD74973 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 08:51:09 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	97958	19.0509	ug/L	100
46)	Benzene	11.23	78	250842	19.4568	ug/L	93
47)	Trichloroethene	12.09	130	63017	20.6906	ug/L	96
48)	Methylcyclohexane	12.18	83	114721	23.3001	ug/L	89
49)	1,2-Dichloropropane	12.34	63	71862	20.7163	ug/L	97
50)	1,4-Dioxane	12.68	88	8418	202.9404	ug/L	87
51)	Bromodichloromethane	12.68	83	86508	19.0037	ug/L	97
52)	Dibromomethane	12.79	93	37838	18.6494	ug/L	98
53)	2-Chloroethyl Vinyl Ether	13.04	63	43788	22.9501	ug/L	98
54)	4-Methyl-2-Pentanone	13.07	58	32957	22.8121	ug/L	95
55)	cis-1,3-Dichloropropene	13.43	75	107415	21.4168	ug/L	97
56)	Dimethyl Disulfide	13.72	79	55787	22.0540	ug/L	96
59)	Toluene	13.91	91	249185	19.4775	ug/L	99
60)	Ethyl Methacrylate	14.04	69	93750	22.8702	ug/L	99
62)	trans-1,3-Dichloropropene	14.12	75	95082	19.3277	ug/L	99
63)	1,1,2-Trichloroethane	14.38	97	53581	20.0375	ug/L	99
64)	2-Hexanone	14.32	43	66977	21.9502	ug/L	96
65)	1,3-Dichloropropane	14.74	76	101575	20.9578	ug/L	97
66)	Tetrachloroethene	14.87	166	59860	18.9673	ug/L	98
67)	Dibromochloromethane	15.18	129	65835	18.9305	ug/L	98
68)	1,2-Dibromoethane	15.48	107	54431	19.9038	ug/L	99
69)	1-Chlorohexane	15.59	91	90947	22.8917	ug/L	87
70)	Chlorobenzene	16.07	112	162912	19.8135	ug/L	69
71)	1,1,1,2-Tetrachloroethane	16.11	131	63185	19.1388	ug/L	96
72)	Ethylbenzene	16.10	106	85483	19.4281	ug/L	97
73)	m-,p-Xylene	16.22	106	211102	39.2111	ug/L	97
74)	o-Xylene	16.88	106	106863	21.0741	ug/L	97
75)	Styrene	16.92	104	173150	20.0622	ug/L	96
76)	Bromoform	17.49	173	42455	17.2897	ug/L	99
77)	Isopropylbenzene	17.38	105	271983	19.9531	ug/L	97
79)	1,1,2,2-Tetrachloroethane	17.65	83	77852	20.7067	ug/L	96
81)	1,2,3-Trichloropropane	17.87	110	24632	21.3976	ug/L	93
82)	trans-1,4-Dichloro-2-Buten	17.93	53	24056	17.3315	ug/L	86
83)	n-Propylbenzene	17.98	91	319613	19.5541	ug/L	98
84)	Bromobenzene	18.13	156	69857	19.6620	ug/L	97
85)	1,3,5-Trimethylbenzene	18.21	105	227369	19.5429	ug/L	97
86)	2-Chlorotoluene	18.30	91	215420	19.7457	ug/L	96
87)	4-Chlorotoluene	18.36	91	198622	19.9111	ug/L	96
88)	a-Methylstyrene	18.69	118	132723	23.4912	ug/L	98
89)	tert-Butylbenzene	18.76	134	48454	19.9842	ug/L	99
90)	1,2,4-Trimethylbenzene	18.82	105	229858	18.7863	ug/L	82
91)	sec-Butylbenzene	19.08	105	282106	18.9342	ug/L	97
92)	p-Isopropyltoluene	19.27	119	230487	18.7505	ug/L	100
93)	1,3-Dichlorobenzene	19.48	146	131862	19.1812	ug/L	98
94)	1,4-Dichlorobenzene	19.64	146	134349	19.1992	ug/L	96
95)	n-Butylbenzene	19.89	91	210382	17.0166	ug/L	98
96)	1,2-Dichlorobenzene	20.23	146	131360	19.8577	ug/L	97
97)	1,2-Dibromo-3-Chloropropan	21.41	75	17394	20.9091	ug/L	89
98)	1,2,4-Trichlorobenzene	22.76	180	90540	18.9326	ug/L	99
99)	Hexachlorobutadiene	22.96	225	49331	18.0375	ug/L	100
100)	Naphthalene	23.20	128	218389	19.8646	ug/L	99
101)	1,2,3-Trichlorobenzene	23.59	180	89287	18.9609	ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137680.D Vial: 6
Acq On : 9 Mar 2016 13:09 Operator: TMB
Sample : WG560255-02 20ug/Kg LCS STD 8260 Inst : HPMS6
Misc : 7,1 STD74973 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 8:51 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

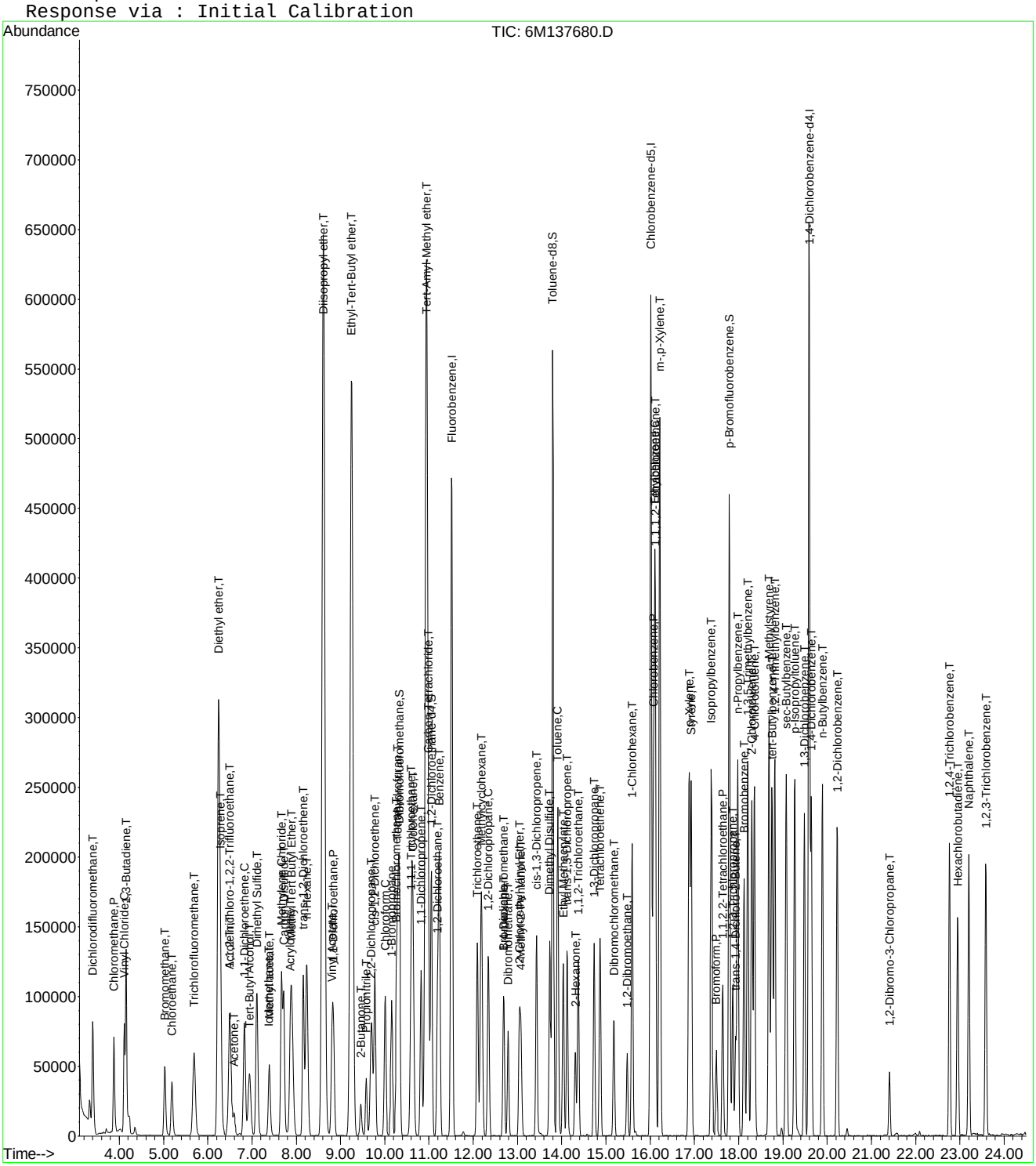

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030916\6M137681.D Vial: 7
Acq On : 9 Mar 2016 13:43 Operator: TMB
Sample : WG560249-02 MS 366-07 8260 4.98g Inst : HPMS6
Misc : 7,1 STD74973 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 09 14:08:15 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	603276	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	446649	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	239656	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	150263	46.4321 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 92.86%		
43) 1,2-Dichloroethane-d4	11.06	65	183653	43.7083 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 87.42%		
58) Toluene-d8	13.80	98	519375	48.9087 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 97.82%		
80) p-Bromofluorobenzene	17.79	95	219553	49.8760 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 99.76%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	102392	18.4806 ug/L	98
3) Chloromethane	3.88	50	87924	15.2286 ug/L	97
4) Vinyl Chloride	4.12	62	88769	19.1020 ug/L	97
5) 1,3-Butadiene	4.16	54	9970	2.5786 ug/L	85
6) Bromomethane	5.03	94	48845	19.7175 ug/L	97
7) Chloroethane	5.19	64	54890	20.8311 ug/L	100
8) Trichlorofluoromethane	5.69	101	115641	18.5194 ug/L	98
9) Diethyl ether	6.26	59	1685	0.5866 ug/L #	1
10) Isoprene	6.28	67	103122	25.3501 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	65237	21.8879 ug/L	94
13) Acetone	6.60	43	29915	19.3281 ug/L	90
14) 1,1-Dichloroethene	6.83	61	103026	19.5148 ug/L	95
15) Tert-Butyl Alcohol	6.83	59	4123	8.3697 ug/L #	57
16) Dimethyl Sulfide	7.12	62	79699	31.1157 ug/L	97
17) Iodomethane	7.39	142	38961	20.2448 ug/L	96
18) Methyl acetate	7.39	43	74942	20.4267 ug/L	98
19) Methylene Chloride	7.67	84	64502	20.2871 ug/L	86
20) Carbon Disulfide	7.72	76	198800	19.6811 ug/L	99
21) Acrylonitrile	7.86	53	32061	21.2630 ug/L	98
22) Methyl Tert Butyl Ether	7.89	73	200906	22.1267 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	61110	20.9532 ug/L	90
24) n-Hexane	8.24	57	124278	23.4662 ug/L	98
26) Vinyl Acetate	8.80	43	119975	16.9032 ug/L	98
27) 1,1-Dichloroethane	8.84	63	119152	18.9494 ug/L	99
29) 2-Butanone	9.46	43	42314	20.2917 ug/L	96
31) 2,2-Dichloropropane	9.70	77	103711	20.5483 ug/L	94
32) cis-1,2-Dichloroethene	9.77	96	65428	20.0946 ug/L	96
33) Chloroform	10.01	83	110075	18.7445 ug/L	96
34) 1-Bromopropane	10.16	122	15581	34.9034 ug/L	99
35) Bromochloromethane	10.27	130	37549	19.6271 ug/L	96
36) Tetrahydrofuran	10.29	42	2709	Below Cal #	60
38) 1,1,1-Trichloroethane	10.61	97	102278	19.7181 ug/L	100
39) Cyclohexane	10.64	56	140215	23.8388 ug/L	87
40) 1,1-Dichloropropene	10.82	75	86226	20.6420 ug/L	96
41) Tert-Amyl-Methyl ether	10.82	73	12549	1.4374 ug/L #	52
42) Carbon Tetrachloride	10.99	117	95775	19.7612 ug/L	96
45) 1,2-Dichloroethane	11.19	62	92929	18.5407 ug/L	99
46) Benzene	11.23	78	243484	19.3750 ug/L	93
47) Trichloroethene	12.09	130	63708	21.4589 ug/L	98
48) Methylcyclohexane	12.18	83	118793	24.7517 ug/L	89

(#) = qualifier out of range (m) = manual integration
6M137681.D 826_SL.M Wed Mar 09 14:08:15 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030916\6M137681.D Vial: 7
Acq On : 9 Mar 2016 13:43 Operator: TMB
Sample : WG560249-02 MS 366-07 8260 4.98g Inst : HPMS6
Misc : 7,1 STD74973 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 09 14:08:15 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
49)	1,2-Dichloropropane	12.35	63	70114	20.7356	ug/L	97
51)	Bromodichloromethane	12.68	83	83159	18.7409	ug/L	97
52)	Dibromomethane	12.78	93	36182	18.2948	ug/L	97
53)	2-Chloroethyl Vinyl Ether	13.04	63	40716	21.8925	ug/L	98
54)	4-Methyl-2-Pentanone	13.07	58	30435	21.6117	ug/L	94
55)	cis-1,3-Dichloropropene	13.43	75	104858	21.4482	ug/L	97
56)	Dimethyl Disulfide	13.73	79	54183	21.9744	ug/L	96
59)	Toluene	13.91	91	250598	19.8344	ug/L	99
60)	Ethyl Methacrylate	14.04	69	84486	20.8696	ug/L	100
62)	trans-1,3-Dichloropropene	14.12	75	91306	18.7937	ug/L	99
63)	1,1,2-Trichloroethane	14.38	97	51736	19.5910	ug/L	98
64)	2-Hexanone	14.31	43	60597	20.1092	ug/L	98
65)	1,3-Dichloropropane	14.74	76	97088	20.2840	ug/L	97
66)	Tetrachloroethene	14.87	166	63933	20.5127	ug/L	98
67)	Dibromochloromethane	15.18	129	63083	18.3674	ug/L	100
68)	1,2-Dibromoethane	15.48	107	52052	19.2733	ug/L	99
69)	1-Chlorohexane	15.59	91	95762	24.4070	ug/L	90
70)	Chlorobenzene	16.07	112	165743	20.4115	ug/L	70
71)	1,1,1,2-Tetrachloroethane	16.11	131	60863	18.6674	ug/L	98
72)	Ethylbenzene	16.10	106	89490	20.5947	ug/L	98
73)	m-,p-Xylene	16.22	106	220322	41.4386	ug/L	98
74)	o-Xylene	16.88	106	107433	21.4531	ug/L	94
75)	Styrene	16.92	104	175799	20.6254	ug/L	96
76)	Bromoform	17.50	173	41250	17.0103	ug/L	97
77)	Isopropylbenzene	17.38	105	287534	21.3593	ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.65	83	73029	19.5069	ug/L	95
81)	1,2,3-Trichloropropane	17.87	110	23337	20.3593	ug/L	96
82)	trans-1,4-Dichloro-2-Buten	17.93	53	22615	16.3629	ug/L	86
83)	n-Propylbenzene	17.98	91	354398	21.7749	ug/L	99
84)	Bromobenzene	18.13	156	69786	19.7259	ug/L	100
85)	1,3,5-Trimethylbenzene	18.21	105	244992	21.1476	ug/L	96
86)	2-Chlorotoluene	18.30	91	225005	20.7124	ug/L	97
87)	4-Chlorotoluene	18.36	91	210317	21.1736	ug/L	96
88)	a-Methylstyrene	18.69	118	134534	23.9135	ug/L	98
89)	tert-Butylbenzene	18.75	134	53078	21.9849	ug/L	85
90)	1,2,4-Trimethylbenzene	18.82	105	247284	20.2968	ug/L	82
91)	sec-Butylbenzene	19.08	105	324493	21.8721	ug/L	99
92)	p-Isopropyltoluene	19.27	119	262527	21.4483	ug/L	99
93)	1,3-Dichlorobenzene	19.48	146	139496	20.3784	ug/L	98
94)	1,4-Dichlorobenzene	19.64	146	139385	20.0040	ug/L	95
95)	n-Butylbenzene	19.89	91	254675	20.6872	ug/L	98
96)	1,2-Dichlorobenzene	20.23	146	133966	20.3381	ug/L	98
97)	1,2-Dibromo-3-Chloropropan	21.41	75	14978	18.0818	ug/L	94
98)	1,2,4-Trichlorobenzene	22.77	180	95059	19.9624	ug/L	99
99)	Hexachlorobutadiene	22.96	225	59658	21.9068	ug/L	98
100)	Naphthalene	23.20	128	208819	19.0753	ug/L	100
101)	1,2,3-Trichlorobenzene	23.59	180	92771	19.7850	ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030916\6M137681.D Vial: 7
Acq On : 9 Mar 2016 13:43 Operator: TMB
Sample : WG560249-02 MS 366-07 8260 4.98g Inst : HPMS6
Misc : 7,1 STD74973 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 14:08 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

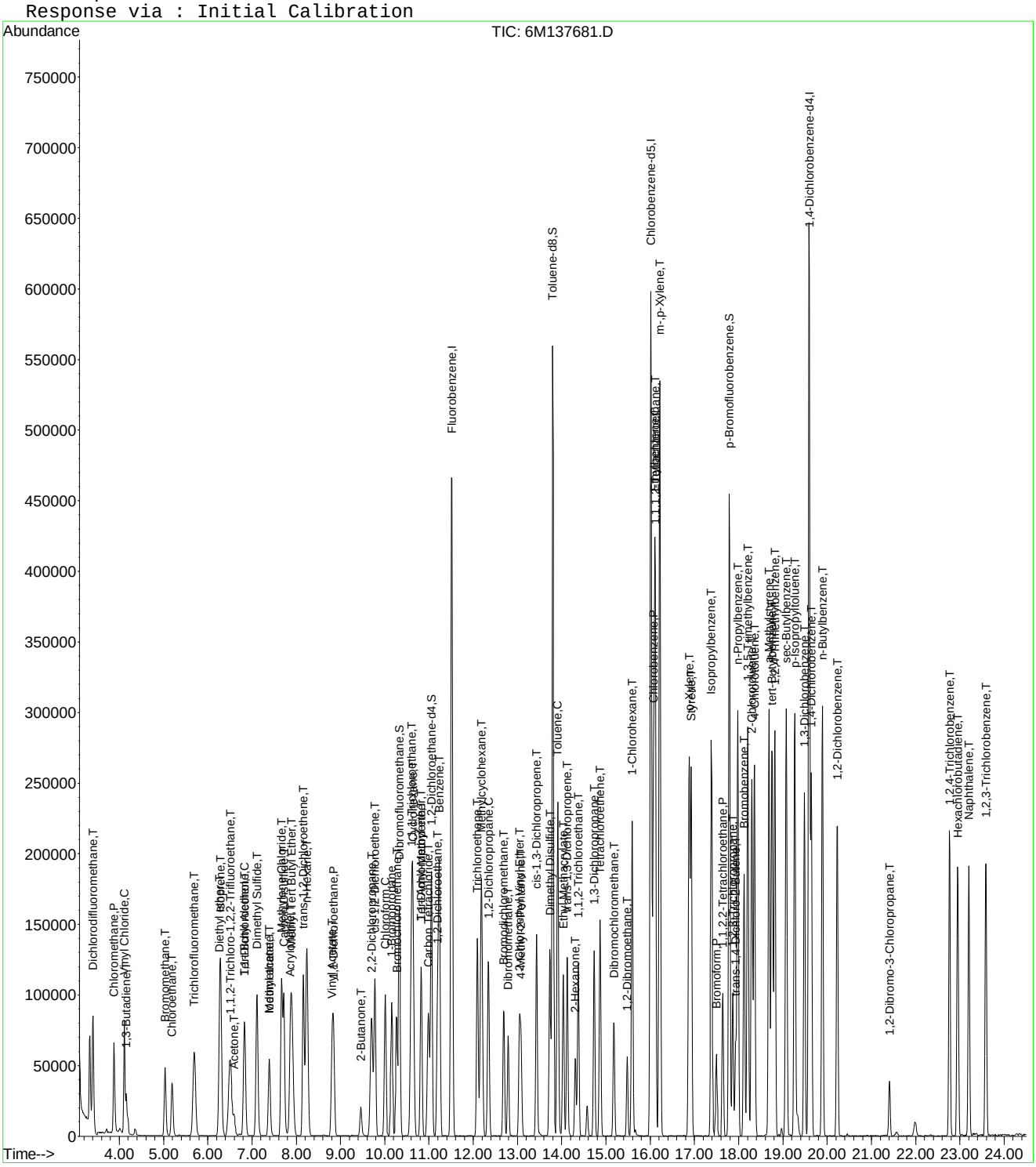

6M137681.D 826_SL.M Wed Mar 09 14:08:15 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030916\6M137682.D Vial: 8
Acq On : 9 Mar 2016 14:17 Operator: TMB
Sample : WG560249-03 MSD 366-07 8260 5.36g Inst : HPMS6
Misc : 7,1 STD74973 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 09 14:41:50 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	624478	50.00 ug/L	0.01
57) Chlorobenzene-d5	16.01	117	456215	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	244105	50.00 ug/L	0.01

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	152304	45.4649 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 90.92%		
43) 1,2-Dichloroethane-d4	11.06	65	184398	42.3956 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 84.80%		
58) Toluene-d8	13.80	98	539931	49.7783 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.56%		
80) p-Bromofluorobenzene	17.79	95	223838	49.9227 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 99.84%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	94046	16.3980 ug/L	97
3) Chloromethane	3.88	50	79314	13.2709 ug/L	96
4) Vinyl Chloride	4.12	62	83517	17.3616 ug/L	99
5) 1,3-Butadiene	4.16	54	9009	2.2509 ug/L	87
6) Bromomethane	5.03	94	43768	17.0682 ug/L	99
7) Chloroethane	5.19	64	50659	18.5727 ug/L	99
8) Trichlorofluoromethane	5.69	101	108311	16.7566 ug/L	99
9) Diethyl ether	6.24	59	1172	0.3941 ug/L #	19
10) Isoprene	6.28	67	100089	23.7692 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	60226	19.5206 ug/L	96
13) Acetone	6.60	43	29268	18.0271 ug/L	96
14) 1,1-Dichloroethene	6.83	61	97377	17.8186 ug/L	93
15) Tert-Butyl Alcohol	6.83	59	3465	6.7951 ug/L #	57
16) Dimethyl Sulfide	7.12	62	76611	28.8946 ug/L	96
17) Iodomethane	7.38	142	40440	20.2863 ug/L	97
18) Methyl acetate	7.39	43	75457	19.8688 ug/L	98
19) Methylene Chloride	7.67	84	58994	17.9247 ug/L	82
20) Carbon Disulfide	7.72	76	196342	18.7778 ug/L	99
21) Acrylonitrile	7.87	53	29102	18.6453 ug/L	98
22) Methyl Tert Butyl Ether	7.89	73	192455	20.4763 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	56386	18.6771 ug/L	88
24) n-Hexane	8.24	57	120618	22.0019 ug/L	98
26) Vinyl Acetate	8.80	43	92833	12.6351 ug/L	98
27) 1,1-Dichloroethane	8.84	63	110238	16.9365 ug/L	97
29) 2-Butanone	9.46	43	38770	17.9609 ug/L	97
31) 2,2-Dichloropropane	9.70	77	97353	18.6337 ug/L	93
32) cis-1,2-Dichloroethene	9.77	96	61577	18.2698 ug/L	99
33) Chloroform	10.01	83	103101	16.9609 ug/L	97
34) 1-Bromopropane	10.16	122	15020	32.5044 ug/L	100
35) Bromochloromethane	10.27	130	34575	17.4590 ug/L	98
36) Tetrahydrofuran	10.30	42	2270	Below Cal #	70
38) 1,1,1-Trichloroethane	10.60	97	96105	17.8989 ug/L	100
39) Cyclohexane	10.64	56	136674	22.4479 ug/L	88
40) 1,1-Dichloropropene	10.82	75	79019	18.2744 ug/L	97
41) Tert-Amyl-Methyl ether	10.82	73	11837	1.3098 ug/L #	52
42) Carbon Tetrachloride	10.99	117	88970	17.7339 ug/L	96
45) 1,2-Dichloroethane	11.19	62	87340	16.8340 ug/L	99
46) Benzene	11.23	78	231373	17.7862 ug/L	94
47) Trichloroethene	12.09	130	58954	19.1834 ug/L	96
48) Methylcyclohexane	12.18	83	115169	23.1819 ug/L	88

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030916\6M137682.D Vial: 8
Acq On : 9 Mar 2016 14:17 Operator: TMB
Sample : WG560249-03 MSD 366-07 8260 5.36g Inst : HPMS6
Misc : 7,1 STD74973 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 09 14:41:50 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
49)	1,2-Dichloropropane	12.34	63	64222	18.3483 ug/L	99
51)	Bromodichloromethane	12.68	83	79152	17.2323 ug/L	97
52)	Dibromomethane	12.79	93	33529	16.3778 ug/L	95
53)	2-Chloroethyl Vinyl Ether	13.04	63	37181	19.3130 ug/L	98
54)	4-Methyl-2-Pentanone	13.07	58	28288	19.4052 ug/L	91
55)	cis-1,3-Dichloropropene	13.43	75	98325	19.4291 ug/L	98
56)	Dimethyl Disulfide	13.72	79	52363	20.5153 ug/L	97
59)	Toluene	13.91	91	235812	18.2728 ug/L	100
60)	Ethyl Methacrylate	14.04	69	79982	19.3427 ug/L	98
62)	trans-1,3-Dichloropropene	14.12	75	85486	17.2268 ug/L	99
63)	1,1,2-Trichloroethane	14.38	97	47251	17.5175 ug/L	99
64)	2-Hexanone	14.31	43	55583	18.0585 ug/L	97
65)	1,3-Dichloropropane	14.74	76	89032	18.2109 ug/L	97
66)	Tetrachloroethene	14.87	166	59612	18.7253 ug/L	98
67)	Dibromochloromethane	15.18	129	58918	16.7950 ug/L	98
68)	1,2-Dibromoethane	15.48	107	46693	16.9265 ug/L	97
69)	1-Chlorohexane	15.59	91	93788	23.4026 ug/L	90
70)	Chlorobenzene	16.07	112	151332	18.2460 ug/L	69
71)	1,1,1,2-Tetrachloroethane	16.11	131	56458	16.9532 ug/L	98
72)	Ethylbenzene	16.11	106	81894	18.4514 ug/L	96
73)	m-,p-Xylene	16.22	106	202996	37.3793 ug/L	98
74)	o-Xylene	16.88	106	101130	19.7710 ug/L	98
75)	Styrene	16.92	104	164634	18.9105 ug/L	96
76)	Bromoform	17.50	173	36930	14.9096 ug/L	99
77)	Isopropylbenzene	17.38	105	271234	19.7260 ug/L	97
79)	1,1,2,2-Tetrachloroethane	17.65	83	66384	17.4087 ug/L	96
81)	1,2,3-Trichloropropane	17.87	110	20123	17.2354 ug/L	88
82)	trans-1,4-Dichloro-2-Buten	17.93	53	20986	14.9075 ug/L	84
83)	n-Propylbenzene	17.98	91	327852	19.7768 ug/L	98
84)	Bromobenzene	18.13	156	65646	18.2175 ug/L	100
85)	1,3,5-Trimethylbenzene	18.21	105	227465	19.2768 ug/L	95
86)	2-Chlorotoluene	18.30	91	209054	18.8933 ug/L	96
87)	4-Chlorotoluene	18.36	91	193554	19.1308 ug/L	96
88)	a-Methylstyrene	18.69	118	129414	22.5842 ug/L	98
89)	tert-Butylbenzene	18.76	134	50650	20.5969 ug/L	99
90)	1,2,4-Trimethylbenzene	18.82	105	228403	18.4054 ug/L	82
91)	sec-Butylbenzene	19.08	105	304223	20.1321 ug/L	99
92)	p-Isopropyltoluene	19.27	119	246280	19.7542 ug/L	100
93)	1,3-Dichlorobenzene	19.48	146	128214	18.3888 ug/L	98
94)	1,4-Dichlorobenzene	19.64	146	128843	18.1540 ug/L	95
95)	n-Butylbenzene	19.89	91	233813	18.6464 ug/L	98
96)	1,2-Dichlorobenzene	20.23	146	122515	18.2607 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	21.40	75	14059	16.6630 ug/L	88
98)	1,2,4-Trichlorobenzene	22.76	180	85582	17.6447 ug/L	98
99)	Hexachlorobutadiene	22.96	225	55515	20.0139 ug/L	99
100)	Naphthalene	23.20	128	188720	16.9251 ug/L	100
101)	1,2,3-Trichlorobenzene	23.59	180	83119	17.4034 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M137682.D 826_SL.M Wed Mar 09 14:41:50 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030916\6M137682.D Vial: 8
Acq On : 9 Mar 2016 14:17 Operator: TMB
Sample : WG560249-03 MSD 366-07 8260 5.36g Inst : HPMS6
Misc : 7,1 STD74973 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 14:41 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

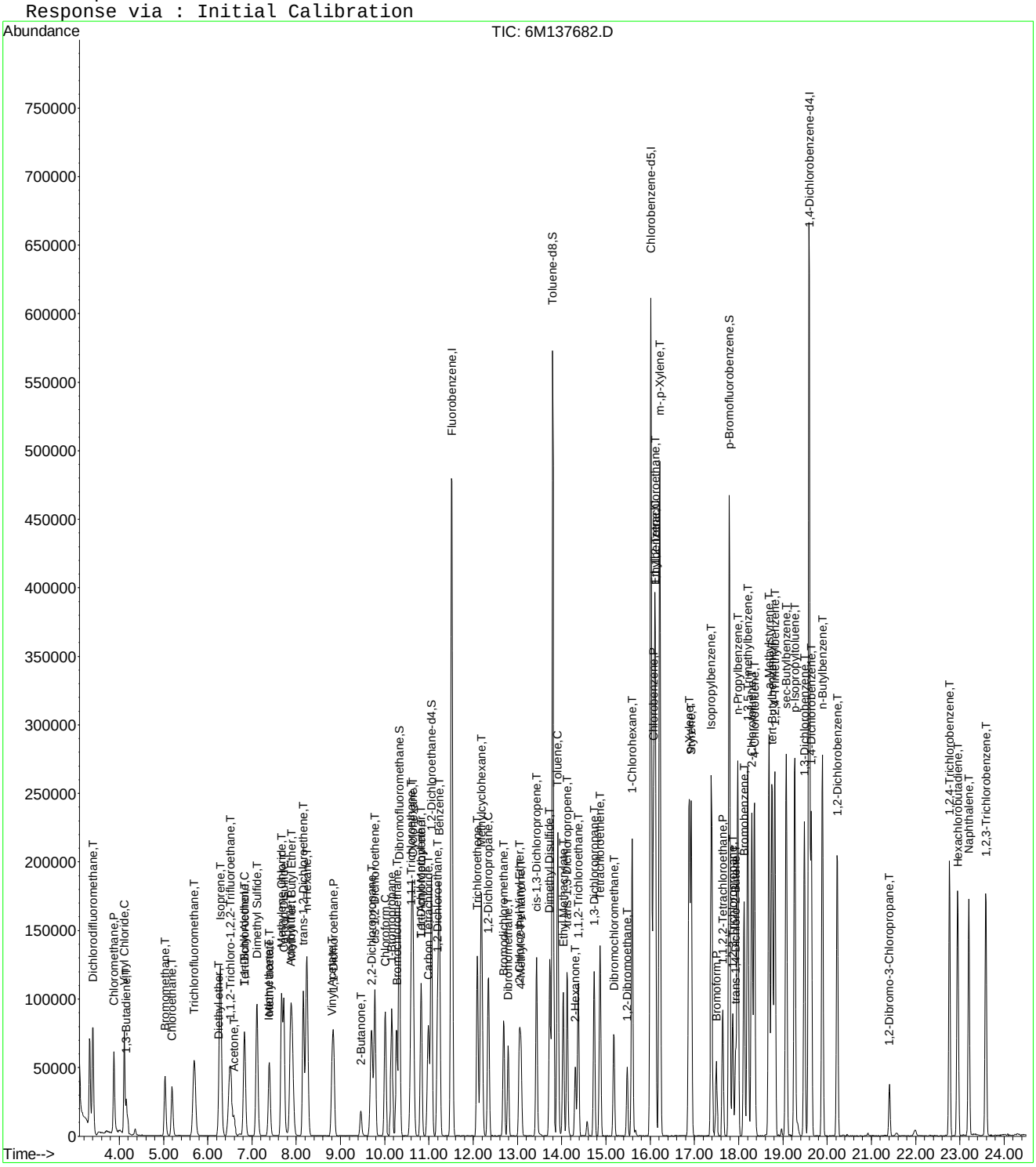

6M137682.D 826_SL.M Wed Mar 09 14:41:50 2016 Page 3

2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT11(5-5.5)040316	**Prep Method:**	6850	**Prep Date:**	03/08/2016 13:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG560129	**Analyst:**	JWR	**Run Date:**	03/08/2016 16:35
Collect Date:	03/04/2016 15:00	**Dilution:**	1	**File ID:**	1LM.LM33786
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.46	U	4.92	2.46	1.23

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT11(15-15.5)040316	**Prep Method:**	6850	**Prep Date:**	03/08/2016 13:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG560129	**Analyst:**	JWR	**Run Date:**	03/09/2016 11:29
Collect Date:	03/04/2016 16:00	**Dilution:**	10	**File ID:**	1LM.LM33809
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	81.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	379		48.4	24.2	12.1

Certificate of Analysis

Sample #:	L16030366-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT11(20-20.5)070316	**Prep Method:**	6850	**Prep Date:**	03/08/2016 13:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG560129	**Analyst:**	JWR	**Run Date:**	03/09/2016 11:48
Collect Date:	03/07/2016 11:50	**Dilution:**	100	**File ID:**	1LM.LM33810
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	82.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3940		472	236	118

Certificate of Analysis

Sample #:	L16030366-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT11(29-29.5)070316	**Prep Method:**	6850	**Prep Date:**	03/08/2016 13:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG560129	**Analyst:**	JWR	**Run Date:**	03/09/2016 12:07
Collect Date:	03/07/2016 11:55	**Dilution:**	100	**File ID:**	1LM.LM33811
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	79.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3370		496	248	124

Certificate of Analysis

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L16030366-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT11(25-25.5)070316	**Prep Method:**	6850	**Prep Date:**	03/08/2016 13:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG560129	**Analyst:**	JWR	**Run Date:**	03/09/2016 12:26
Collect Date:	03/07/2016 12:00	**Dilution:**	10	**File ID:**	1LM.LM33812
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	79.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	424		49.7	24.8	12.4

Certificate of Analysis

Sample #:	L16030366-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT12(5-5.5)070316	**Prep Method:**	6850	**Prep Date:**	03/08/2016 13:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG560129	**Analyst:**	JWR	**Run Date:**	03/08/2016 19:44
Collect Date:	03/07/2016 14:35	**Dilution:**	1	**File ID:**	1LM.LM33796
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	5.53		4.73	2.36	1.18

Certificate of Analysis

Sample #:	L16030366-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT12(8.5-9)070316	**Prep Method:**	6850	**Prep Date:**	03/08/2016 13:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG560129	**Analyst:**	JWR	**Run Date:**	03/08/2016 20:03
Collect Date:	03/07/2016 14:40	**Dilution:**	1	**File ID:**	1LM.LM33797
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1.99	J	4.93	2.46	1.23

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT12(18-18.5)070316	**Prep Method:**	6850	**Prep Date:**	03/08/2016 13:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG560129	**Analyst:**	JWR	**Run Date:**	03/09/2016 12:45
Collect Date:	03/07/2016 14:45	**Dilution:**	500	**File ID:**	1LM.LM33813
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	81.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	15900		2430	1220	609

Certificate of Analysis

Sample #:	L16030366-09	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT12(12-12.5)070316	**Prep Method:**	6850	**Prep Date:**	03/08/2016 13:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG560129	**Analyst:**	JWR	**Run Date:**	03/09/2016 13:04
Collect Date:	03/07/2016 15:00	**Dilution:**	100	**File ID:**	1LM.LM33814
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	77.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	7090		510	256	128

Certificate of Analysis

Sample #:	L16030366-10	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT13(5-5.5)070316	**Prep Method:**	6850	**Prep Date:**	03/08/2016 13:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG560129	**Analyst:**	JWR	**Run Date:**	03/08/2016 21:00
Collect Date:	03/07/2016 16:00	**Dilution:**	1	**File ID:**	1LM.LM33800
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.30	U	4.62	2.30	1.15

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-11	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT13(12-12.5)070316	**Prep Method:**	6850	**Prep Date:**	03/08/2016 13:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG560129	**Analyst:**	JWR	**Run Date:**	03/08/2016 21:19
Collect Date:	03/07/2016 16:05	**Dilution:**	1	**File ID:**	1LM.LM33801
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.44	U	4.88	2.44	1.22

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-12	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT13(17-17.5)070316	**Prep Method:**	6850	**Prep Date:**	03/08/2016 13:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG560129	**Analyst:**	JWR	**Run Date:**	03/08/2016 21:38
Collect Date:	03/07/2016 16:10	**Dilution:**	1	**File ID:**	1LM.LM33802
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	76.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.56	U	5.14	2.56	1.28

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

MICROBAC

Semivolatile Sample Extract Log

Document Control No.: 1753 Page: 18 of 100

Parameter: Perchlorate
SOP #: HPLC 06
Analyst: JWR
Spike/Surrogate analyst: JWR
Surrogate #: NA
Spike # A: STD72686
Ext Solvent: DI-H20
Ext Solvent: NA
Ext Disk: NA

Matrix: Soils
Rev #: 07
Date/Time Extracted: 03/08/16/1300
Witness: WD

Spike # B: NA
Lot #: NA
Lot #: NA
Lot #: NA

Extraction Work Group: WG560109
Analytical Work Group: WG560129
Run ID: R4489371

Pipetter(s): Eppendorf #403
Analytical Balance ID: BAL017
Reagent: Tubes Lot #: RGT 34011
Reagent: Sand Lot #: COA 16150
Other: IS Lot #: COA 18071

Color Code
T = Transparent
C = Colored
O = Opaque

	Sample ID	Test Code	pH	Initial Wt / Vol	JWR ~~Surrogate~~ Amount IS	Amount Spike	Final Volume	Extract Color	Comments
1	WG560109-01	6850		5.022g	0.250ml	1.0ml	50ml		MCT (2ug/kg)(10,000us)
2	WG560109-02			5.014g		NA			Blank
3	WG560109-03			5.012g		1.0ml			LCS (2ug/kg)
4	L16030366-01			5.134g		NA			WG560109-04 Ref
5	MS -01			5.165g		1.0ml			WG560109-05 MS (@2ug/kg)
6	MSD -01			5.138g		1.0ml			WG560109-06 MSD (@2ug/kg)
7	-02			5.059g		NA			
8	-03			5.112g		NA			
9	-04			5.071g		NA			
10	-05			5.074g		NA			
11	-06			5.059g		NA			
12	-07			5.110g		NA			
13	-08			5.058g		NA			
14	-09			5.049g		NA			
15	-10			5.078g		NA			
16	-11			5.043g		NA			
17	-12			5.060g		NA			
18									
19									
20									
21									
22									
23									
24									

JWR 03/08/16

Reviewed by: Wade T. Doll 3-9-16

Analytical WG560129 (soils)

Perchlorate Conductivity Check

(perchlorate1)

Conductivity Probe Calibration Check: 1414 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG560109-01 MCT	9,840.	
WG560109-02 Blank	1.08	
WG560109-03 LCS	1.01	
L16030366-01 Ref	5.68	
-01 MS	5.44	
-01 MSD	5.13	
-02	73.7	
-03	88.8	
-04	61.7	
-05	109.4	
-06	81.3	
-07	21.6	
-08	29.4	
-09	40.7	
-10	5.68	
-11	3.11	
-12	19.06	

Analyst: John Richards

Date/Time: 03/08/16 / 1600

DCN#117104

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030216_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015, WG559292

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 MS/MSD STD: STD72685

Comments: L16021262s and L16021255s diluted based on historical data.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM33567	WG559340-01 CCB	1	1		03/02/16 08:34
2	1LM.LM33568	WG559340-02 STD (0.1 ug/L)	1	1	STD72683	03/02/16 08:53
3	1LM.LM33569	WG559340-03 STD (0.2 ug/L)	1	1	STD72683	03/02/16 09:12
4	1LM.LM33570	WG559340-04 STD (0.5 ug/L)	1	1	STD72683	03/02/16 09:31
5	1LM.LM33571	WG559340-05 STD (1.0 ug/L)	1	1	STD72683	03/02/16 09:50
6	1LM.LM33572	WG559340-06 STD (2.0 ug/L)	1	1	STD72683	03/02/16 10:09
7	1LM.LM33573	WG559340-07 STD (5.0 ug/L)	1	1	STD72683	03/02/16 10:28
8	1LM.LM33574	WG559340-08 STD (10 ug/L)	1	1	STD72683	03/02/16 10:46
9	1LM.LM33575	WG559340-09 SSCV (1.0 ug/L)	1	1	STD72685	03/02/16 11:05
10	1LM.LM33576	WG559291-01 CCB	1	1		03/02/16 11:25
11	1LM.LM33577	WG559291-02 CCV (1.0ug/L)	1	1	STD72683	03/02/16 11:44
12	1LM.LM33578	WG559015-05 MRL (0.2ug/L)	1	1	STD72683	03/02/16 12:03
13	1LM.LM33579	WG559015-01 MCT (0.2ug/L)	1	1	STD72685	03/02/16 12:22
14	1LM.LM33580	WG559015-02 BLANK	1	1		03/02/16 12:41
15	1LM.LM33581	WG559015-05 MRL (0.2ug/L)	1	1	STD72683	03/02/16 13:01
16	1LM.LM33582	WG559015-03 LCS (0.2ug/L)	1	1	STD72685	03/02/16 13:20
17	1LM.LM33583	WG559015-04 LCS2 (0.2ug/L)	1	1	STD72685	03/02/16 13:39
18	1LM.LM33584	L16021060-01 ADC	1	1	STD72685	03/02/16 13:58
19	1LM.LM33585	L16021060-02 ADC	1	1	STD72685	03/02/16 14:17
20	1LM.LM33586	L16021060-03 ADC	1	1	STD72685	03/02/16 14:36
21	1LM.LM33587	L16021060-04 ADC	1	1	STD72685	03/02/16 14:55
22	1LM.LM33588	L16021262-01 (20x)	1	20		03/02/16 15:13
23	1LM.LM33589	L16021262-02 (5000x)	1	5000		03/02/16 15:32
24	1LM.LM33590	WG559291-03 CCV (1.0ug/L)	1	1	STD72683	03/02/16 15:51
25	1LM.LM33591	WG559015-06 MRL (0.2ug/L)	1	1	STD72683	03/02/16 16:10
26	1LM.LM33592	WG559291-04 CCB	1	1		03/02/16 16:29
27	1LM.LM33593	L16021262-03 (100X)	1	100		03/02/16 16:48
28	1LM.LM33594	L16021262-04 (2000X)	1	2000		03/02/16 17:07
29	1LM.LM33595	L16021262-05 (1000X)	1	1000		03/02/16 17:26
30	1LM.LM33596	L16021262-06 (10,000X)	1	10000		03/02/16 17:45
31	1LM.LM33597	L16021262-07 (10,000X)	1	10000		03/02/16 18:04
32	1LM.LM33598	L16021262-08 (5000X)	1	5000		03/02/16 18:23
33	1LM.LM33599	L16021262-09 (5000X)	1	5000		03/02/16 18:42

Page: 1 Approved: 04-MAR-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030216_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015, WG559292

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM33600	L16021262-10 (100,000X)	1	100000		03/02/16 19:01
35	1LM.LM33601	L16021262-11 (10,000X)	1	10000		03/02/16 19:20
36	1LM.LM33602	L16021262-12 (10,000X)	1	10000		03/02/16 19:39
37	1LM.LM33603	WG559291-05 CCV (1.0ug/L)	1	1	STD72683	03/02/16 19:58
38	1LM.LM33604	WG559015-07 MRL (0.2ug/L)	1	1	STD72683	03/02/16 20:17
39	1LM.LM33605	WG559291-06 CCB	1	1		03/02/16 20:35
40	1LM.LM33606	L16021262-13 (10,000X)	1	10000		03/02/16 20:54
41	1LM.LM33607	L16021262-14 (10,000X)	1	10000		03/02/16 21:13
42	1LM.LM33608	WG559291-07 CCV (1.0ug/L)	1	1	STD72683	03/02/16 21:32
43	1LM.LM33609	WG559015-08 MRL (0.2ug/L)	1	1	STD72683	03/02/16 21:51
44	1LM.LM33610	WG559291-08 CCB	1	1		03/02/16 22:10
45	1LM.LM33611	WG559292-07 MRL (0.2ug/L)	1	1	STD72685	03/02/16 22:29
46	1LM.LM33612	WG559292-01 MCT (0.2ug/L)	1	1	STD72685	03/02/16 22:48
47	1LM.LM33613	WG559292-02 BLANK	1	1		03/02/16 23:07
48	1LM.LM33614	WG559292-03 LCS (0.2ug/L)	1	1	STD72685	03/02/16 23:26
93	1LM.LM33615	L16021255-01 REF 100X	1	100		03/02/16 23:45
50	1LM.LM33616	L16021255-02 MS 100X	1	100	STD72685	03/03/16 00:04
51	1LM.LM33617	L16021255-03 MSD 100X	1	100	STD72685	03/03/16 00:23
94	1LM.LM33618	L16021255-04 20X	1	20		03/03/16 00:42
53	1LM.LM33619	L16021255-05 20X	1	20		03/03/16 01:01
54	1LM.LM33620	L16021255-06 200X	1	200		03/03/16 01:20
55	1LM.LM33621	L16021255-07 100X	1	100		03/03/16 01:39
56	1LM.LM33622	WG559291-09 CCV (1.0ug/L)	1	1	STD72685	03/03/16 01:57
57	1LM.LM33623	WG559292-08 MRL (0.2ug/L)	1	1	STD72685	03/03/16 02:16
58	1LM.LM33624	WG559291-10 CCB	1	1		03/03/16 02:35
59	1LM.LM33625	L16021255-08	1	1		03/03/16 02:54
60	1LM.LM33626	L16021255-09 500X	1	500		03/03/16 03:13
61	1LM.LM33627	L16021255-10 5000X	1	5000		03/03/16 03:32
62	1LM.LM33628	L16021255-11 5000X	1	5000		03/03/16 03:51
63	1LM.LM33629	L16021255-12 100X	1	100		03/03/16 04:10
64	1LM.LM33630	L16021255-13 10,000X	1	10000		03/03/16 04:29
65	1LM.LM33631	L16021255-14 10,000X	1	10000		03/03/16 04:48
66	1LM.LM33632	L16030008-01	1	1		03/03/16 05:07
67	1LM.LM33633	L16030008-01 10X	1	10		03/03/16 05:26
68	1LM.LM33634	L16021328-01	1	1		03/03/16 05:45
69	1LM.LM33635	WG559291-11 CCV (1.0ug/L)	1	1	STD72685	03/03/16 06:04

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030216_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015, WG559292

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
70	1LM.LM33636	WG559292-09 MRL (0.2ug/L)	1	1	STD72685	03/03/16 06:23
71	1LM.LM33637	WG559291-12 CCB	1	1		03/03/16 06:41
72	1LM.LM33638	L16021328-02	1	1		03/03/16 07:00
73	1LM.LM33639	L16021328-03	1	1		03/03/16 07:19
74	1LM.LM33640	L16021328-04	1	1		03/03/16 07:38
75	1LM.LM33641	L16021328-05	1	1		03/03/16 07:57
76	1LM.LM33642	WG559291-13 CCV (1.0ug/L)	1	1	STD72685	03/03/16 08:16
77	1LM.LM33643	WG559292-10 MRL (0.2ug/L)	1	1	STD72685	03/03/16 08:35
78	1LM.LM33644	WG559291-14 CCB	1	1		03/03/16 08:54
79	1LM.LM33645	L16021255-05 200X	1	200		03/03/16 09:13
80	1LM.LM33646	L16021255-06	1	1		03/03/16 09:32
81	1LM.LM33647	L16021255-12 1000X	1	1000		03/03/16 09:51
95	1LM.LM33648	L16021255-04	1	1		03/03/16 10:10
96	1LM.LM33649	L16021255-02 MS	1	1	STD72685	03/03/16 10:29
97	1LM.LM33650	L16021255-03 MSD	1	1	STD72685	03/03/16 10:48
85	1LM.LM33651	WG559291-15 CCV (1.0ug/L)	1	1	STD72685	03/03/16 11:07
86	1LM.LM33652	WG559292-11 MRL (0.2ug/L)	1	1	STD72685	03/03/16 11:25
87	1LM.LM33653	WG559291-16 CCB	1	1		03/03/16 11:44

Comments

Seq.	Rerun	Dil.	Reason	Analytes
12	X			
	WG559015-05 incorrect vial location.			
50				
	DNR. Incorrect information on the supplied Chain of Custody.			
51				
	DNR. Incorrect information on the supplied Chain of Custody.			
94	X	1	Analyzed too dilute	
	L16021255-04			
53	X	200	Over Calibration Range	Perchlorate
	L16021255-05			
54	X	1	Analyzed too dilute	
	L16021255-06			
63	X	1000	Over Calibration Range	
	L16021255-12 100X			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030816_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG560129 (waters)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD72683 (03/02/2016)

CCV STD: STD72683 LCS STD: STD72685 MS/MSD STD: STD72685

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM33780	WG560141-01 CCB	1	1		03/08/16 14:41
2	1LM.LM33781	WG560141-02 CCV (1.0ug/L)	1	1	STD72683	03/08/16 15:00
3	1LM.LM33782	WG560129-07 MRL (2.0ug/kg)	7	1	STD72683	03/08/16 15:19
4	1LM.LM33783	WG560129-01 MCT (2.0ug/kg)	7	1	STD72685	03/08/16 15:38
5	1LM.LM33784	WG560129-02 BLANK	7	1		03/08/16 15:57
6	1LM.LM33785	WG560129-03 LCS (2.0ug/kg)	7	1	STD72685	03/08/16 16:16
7	1LM.LM33786	L16030366-01 RS	7	1		03/08/16 16:35
8	1LM.LM33787	L16030366-01 MS	7	1	STD72685	03/08/16 16:54
9	1LM.LM33788	L16030366-01 MSD	7	1	STD72685	03/08/16 17:13
10	1LM.LM33789	L16030366-02 (NR)	7	1		03/08/16 17:32
11	1LM.LM33790	L16030366-03 (NR)	7	1		03/08/16 17:51
12	1LM.LM33791	L16030366-04 (NR)	7	1		03/08/16 18:10
13	1LM.LM33792	L16030366-05 (NR)	7	1		03/08/16 18:29
14	1LM.LM33793	WG560141-03 CCV (1.0ug/L)	1	1	STD72683	03/08/16 18:47
15	1LM.LM33794	WG560129-08 MRL (2.0ug/kg)	7	1	STD72683	03/08/16 19:06
16	1LM.LM33795	WG560141-04 CCB	1	1		03/08/16 19:25
17	1LM.LM33796	L16030366-06	7	1		03/08/16 19:44
18	1LM.LM33797	L16030366-07	7	1		03/08/16 20:03
19	1LM.LM33798	L16030366-08 (NR)	7	1		03/08/16 20:22
20	1LM.LM33799	L16030366-09 (NR)	7	1		03/08/16 20:41
21	1LM.LM33800	L16030366-10	7	1		03/08/16 21:00
22	1LM.LM33801	L16030366-11	7	1		03/08/16 21:19
23	1LM.LM33802	L16030366-12	7	1		03/08/16 21:38
24	1LM.LM33803	WG560141-05 CCV (1.0ug/L)	1	1	STD72683	03/08/16 21:57
25	1LM.LM33804	WG560129-09 MRL (2.0ug/kg)	7	1	STD72683	03/08/16 22:16
26	1LM.LM33805	WG560141-06 CCB	1	1		03/08/16 22:35
27	1LM.LM33806	WG560141-07 CCV (1.0ug/L)	1	1	STD72683	03/09/16 10:32
28	1LM.LM33807	WG560129-10 MRL (2.0ug/kg)	7	1	STD72683	03/09/16 10:51
29	1LM.LM33808	WG560141-08 CCB	1	1		03/09/16 11:10
30	1LM.LM33809	L16030366-02 (RR 10x)	7	10		03/09/16 11:29
31	1LM.LM33810	L16030366-03 (RR 100x)	7	100		03/09/16 11:48
32	1LM.LM33811	L16030366-04 (RR 100x)	7	100		03/09/16 12:07
33	1LM.LM33812	L16030366-05 (RR 10x)	7	10		03/09/16 12:26

Page: 1 Approved: 10-MAR-16

Wadei D

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030816_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG560129 (waters)

Internal STD: COA18071 Surrogate STD: NA STD72683 (03/02/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM33813	L16030366-08 (RR 500x)	7	500		03/09/16 12:45
35	1LM.LM33814	L16030366-09 (RR 100x)	7	100		03/09/16 13:04
36	1LM.LM33815	WG560141-09 CCV (1.0ug/L)	1	1	STD72683	03/09/16 13:23
37	1LM.LM33816	WG560129-11 MRL (2.0ug/kg)	7	1	STD72683	03/09/16 13:42
38	1LM.LM33817	WG560141-10 CCB	1	1		03/09/16 14:01

Comments

Seq.	Rerun	Dil.	Reason	Analytes
10	X	10	Over Calibration Range	
	L16030366-02 (NR) : This sample was reanalyzed at a 10x dilution on the end of this run.			
11	X	100	Over Calibration Range	
	L16030366-03 (NR) : This sample was reanalyzed at a 100x dilution on the end of this run.			
12	X	100	Over Calibration Range	
	L16030366-04 (NR) : This sample was reanalyzed at a 100x dilution on the end of this run.			
13	X	10	Over Calibration Range	
	L16030366-05 (NR) : This sample was reanalyzed at a 10x dilution on the end of this run.			
19	X	500	Over Calibration Range	
	L16030366-08 (NR) : This sample was reanalyzed at a 500x dilution on the end of this run.			
20	X	100	Over Calibration Range	
	L16030366-09 (NR) : This sample was reanalyzed at a 100x dilution on the end of this run.			

Page: 2 Approved: 10-MAR-16

Microbac Laboratories Inc.

Data Checklist

Date: 02-MAR-2016
Analyst: WTD
Analyst: ADC
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 73617
Analytical Workgroups: L16021255,L16021328,030008,021262,021060

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	WTD
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MES

Primary Reviewer: 03-MAR-2016

Secondary Reviewer: 04-MAR-2016

CHECKLIST1 - Modified 03/05/2008

Generated: MAR-04-2016 13:53:03

Microbac Laboratories Inc.

Data Checklist

Date: 08-MAR-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 73746
Analytical Workgroups: L16030366 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
10-MAR-2016
John Richards

Secondary Reviewer:
10-MAR-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-10-2016 11:53:34

Microbac Laboratories Inc.

00657973

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG560129

Login Number: L16030366

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18DPT11(5-5.5)040316	01	03/04/16					03/08/2016	3.9	28		03/08/16	.1	28	
18DPT11(15-15.5)040316	02	03/04/16					03/08/2016	3.9	28		03/09/16	.9	28	
18DPT11(20-20.5)070316	03	03/07/16					03/08/2016	1	28		03/09/16	1	28	
18DPT11(29-29.5)070316	04	03/07/16					03/08/2016	1	28		03/09/16	1	28	
18DPT11(25-25.5)070316	05	03/07/16					03/08/2016	1	28		03/09/16	1	28	
18DPT12(5-5.5)070316	06	03/07/16					03/08/2016	.9	28		03/08/16	.3	28	
18DPT12(8.5-9)070316	07	03/07/16					03/08/2016	.9	28		03/08/16	.3	28	
18DPT12(18-18.5)070316	08	03/07/16					03/08/2016	.9	28		03/09/16	1	28	
18DPT12(12-12.5)070316	09	03/07/16					03/08/2016	.9	28		03/09/16	1	28	
18DPT13(5-5.5)070316	10	03/07/16					03/08/2016	.9	28		03/08/16	.3	28	
18DPT13(12-12.5)070316	11	03/07/16					03/08/2016	.9	28		03/08/16	.3	28	
18DPT13(17-17.5)070316	12	03/07/16					03/08/2016	.9	28		03/08/16	.4	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4664374
Report generated 03/10/2016 13:32

METHOD BLANK SUMMARY

Login Number: L16030366
Blank File ID: 1LM.LM33784
Prep Date: 03/08/16 13:00
Analyzed Date: 03/08/16 15:57
Analyst: JWR

Work Group: WG560129
Blank Sample ID: WG560129-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG560129-07	1LM.LM33782	03/08/16 15:19	01
MCT	WG560129-01	1LM.LM33783	03/08/16 15:38	01
LCS	WG560129-03	1LM.LM33785	03/08/16 16:16	01
18DPT11(5-5.5)040316	L16030366-01	1LM.LM33786	03/08/16 16:35	01
QCMRL	WG560129-08	1LM.LM33794	03/08/16 19:06	01
18DPT12(5-5.5)070316	L16030366-06	1LM.LM33796	03/08/16 19:44	01
18DPT12(8.5-9)070316	L16030366-07	1LM.LM33797	03/08/16 20:03	01
18DPT13(5-5.5)070316	L16030366-10	1LM.LM33800	03/08/16 21:00	01
18DPT13(12-12.5)070316	L16030366-11	1LM.LM33801	03/08/16 21:19	01
18DPT13(17-17.5)070316	L16030366-12	1LM.LM33802	03/08/16 21:38	01
QCMRL	WG560129-09	1LM.LM33804	03/08/16 22:16	01
QCMRL	WG560129-10	1LM.LM33807	03/09/16 10:51	01
18DPT11(15-15.5)040316	L16030366-02	1LM.LM33809	03/09/16 11:29	DL01
18DPT11(20-20.5)070316	L16030366-03	1LM.LM33810	03/09/16 11:48	DL01
18DPT11(29-29.5)070316	L16030366-04	1LM.LM33811	03/09/16 12:07	DL01
18DPT11(25-25.5)070316	L16030366-05	1LM.LM33812	03/09/16 12:26	DL01
18DPT12(18-18.5)070316	L16030366-08	1LM.LM33813	03/09/16 12:45	DL01
18DPT12(12-12.5)070316	L16030366-09	1LM.LM33814	03/09/16 13:04	DL01
QCMRL	WG560129-11	1LM.LM33816	03/09/16 13:42	01

Report Name: BLANK_SUMMARY
PDF File ID: 4664375
Report generated 03/10/2016 13:32

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16030366 Prep Date: 03/08/16 13:00 Sample ID: WG560129-02
Instrument ID: LCMS1 Run Date: 03/08/16 15:57 Prep Method: 6850
File ID: 1LM.LM33784 Analyst: JWR Method: 6850
Workgroup (AAB#): WG560129 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.997	3.99	0.997	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4664376
10-MAR-2016 13:32

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030366 Run Date: 03/08/2016 Sample ID: WG560129-03
Instrument ID: LCMS1 Run Time: 16:16 Prep Method: 6850
File ID: 1LM.LM33785 Analyst: JWR Method: 6850
Workgroup (AAB#): WG560129 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD72685 Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	2.00	2.01	101	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4664377
Report generated: 03/10/2016 13:32

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16030366 Cal ID: LCMS1 - Worknum: WG560129
Instrument ID: LCMS1 Contract #: Method: 6850
Parent ID: WG560129-04 File ID: 1LM.LM33786 Dil: 1 Matrix: SOLID
Sample ID: WG560129-05 MS File ID: 1LM.LM33787 Dil: 1 Units: ug/kg
Sample ID: WG560129-06 MSD File ID: 1LM.LM33788 Dil: 1 Percent Solid: 79.1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Perchlorate	ND	2.45	2.48	102	2.46	2.45	99.5	1.47	80 - 120	15	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4664378
Report generated 03/10/2016 13:32

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16030366
Analytical Method: 6850
ICAL Workgroup: WG559340

Instrument ID: LCMS1
Initial Calibration Date: 02-MAR-16 10:46
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.808	3.97	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4664862
Report generated 03/10/2016 13:32

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16030366
Analytical Method: 6850

Instrument ID: LCMS1
Initial Calibration Date: 02-MAR-16 10:46
Column ID: F

Analyte	WG559340-02			WG559340-03			WG559340-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	18400.0000	1.879	0.200	37000.0000	1.850	0.500	89000.0000	1.810

INT_CAL - Modified 03/06/2008
PDF File ID: 4664862
Report generated 03/10/2016 13:32

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16030366

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 02-MAR-16 10:46

Column ID: F

Analyte	WG559340-05			WG559340-06			WG559340-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	183000.000	1.829	2.00	363000.000	1.777	5.00	871000.000	1.779

INT_CAL - Modified 03/06/2008
PDF File ID: 4664862
Report generated 03/10/2016 13:32

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16030366

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 02-MAR-16 10:46

Column ID: F

Analyte	WG559340-08		
	CONC	RESP	RF
Perchlorate	10.0	1650000.00	1.729

INT_CAL - Modified 03/06/2008

PDF File ID: 4664862

Report generated 03/10/2016 13:32

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16030366 Run Date: 03/02/2016 Sample ID: WG559340-09
Instrument ID: LCMS1 Run Time: 11:05 Method: 6850
File ID: 1LM.LM33575 Analyst: WTD QC Key: DOD4
ICal Workgroup: WG559340 Cal ID: LCMS1 - 02-MAR-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.83	3.00	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4664863
Report generated 03/10/2016 13:32

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030366
Run Date: 03/08/2016
Sample ID: WG560141-01
Instrument ID: LCMS1
Run Time: 14:41
Method: 6850
File ID: 1LM.LM33780
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG560129
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4664381
Report generated 03/10/2016 13:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030366
Run Date: 03/08/2016
Sample ID: WG560141-04
Instrument ID: LCMS1
Run Time: 19:25
Method: 6850
File ID: 1LM.LM33795
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG560129
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4664381
Report generated 03/10/2016 13:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030366
Run Date: 03/08/2016
Sample ID: WG560141-06
Instrument ID: LCMS1
Run Time: 22:35
Method: 6850
File ID: 1LM.LM33805
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG560129
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4664381
Report generated 03/10/2016 13:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030366
Run Date: 03/09/2016
Sample ID: WG560141-08
Instrument ID: LCMS1
Run Time: 11:10
Method: 6850
File ID: 1LM.LM33808
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG560129
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4664381
Report generated 03/10/2016 13:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030366
Run Date: 03/09/2016
Sample ID: WG560141-10
Instrument ID: LCMS1
Run Time: 14:01
Method: 6850
File ID: 1LM.LM33817
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG560129
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4664381
Report generated 03/10/2016 13:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030366
Run Date: 03/08/2016
Sample ID: WG560141-02
Instrument ID: LCMS1
Run Time: 15:00
Method: 6850
File ID: 1LM.LM33781
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG560129
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.988	ug/kg	1.75	1.20	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4664380
Report generated 03/10/2016 13:32

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030366
Run Date: 03/08/2016
Sample ID: WG560141-03
Instrument ID: LCMS1
Run Time: 18:47
Method: 6850
File ID: 1LM.LM33793
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG560129
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.974	ug/kg	1.73	2.60	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4664380
Report generated 03/10/2016 13:32

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030366
Run Date: 03/08/2016
Sample ID: WG560141-05
Instrument ID: LCMS1
Run Time: 21:57
Method: 6850
File ID: 1LM.LM33803
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG560129
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/kg	1.75	1.50	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4664380
Report generated 03/10/2016 13:32

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030366
Run Date: 03/09/2016
Sample ID: WG560141-07
Instrument ID: LCMS1
Run Time: 10:32
Method: 6850
File ID: 1LM.LM33806
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG560129
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.973	ug/kg	1.72	2.70	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4664380
Report generated 03/10/2016 13:32

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030366 Run Date: 03/09/2016 Sample ID: WG560141-09
Instrument ID: LCMS1 Run Time: 13:23 Method: 6850
File ID: 1LM.LM33815 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG560129 Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.993	ug/kg	1.76	0.700	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4664380
Report generated 03/10/2016 13:32

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030366 Run Date: 03/08/2016 Sample ID: WG560129-07

Instrument ID: LCMS1 Run Time: 15:19 Prep Method: 6850

File ID: 1LM.LM33782 Analyst: JWR Method: 6850

Workgroup (AAB#): WG560129 Matrix: Soil Units: ug/kg

Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.95	97.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4664379
Report generated 03/10/2016 13:32

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030366 Run Date: 03/08/2016 Sample ID: WG560129-08

Instrument ID: LCMS1 Run Time: 19:06 Prep Method: 6850

File ID: 1LM.LM33794 Analyst: JWR Method: 6850

Workgroup (AAB#): WG560129 Matrix: Soil Units: ug/kg

Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.85	92.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4664379
Report generated 03/10/2016 13:32

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030366 Run Date: 03/08/2016 Sample ID: WG560129-09

Instrument ID: LCMS1 Run Time: 22:16 Prep Method: 6850

File ID: 1LM.LM33804 Analyst: JWR Method: 6850

Workgroup (AAB#): WG560129 Matrix: Soil Units: ug/kg

Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.93	96.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4664379
Report generated 03/10/2016 13:32

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030366 Run Date: 03/09/2016 Sample ID: WG560129-10

Instrument ID: LCMS1 Run Time: 10:51 Prep Method: 6850

File ID: 1LM.LM33807 Analyst: JWR Method: 6850

Workgroup (AAB#): WG560129 Matrix: Soil Units: ug/kg

Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.90	95.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4664379
Report generated 03/10/2016 13:32

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030366 Run Date: 03/09/2016 Sample ID: WG560129-11

Instrument ID: LCMS1 Run Time: 13:42 Prep Method: 6850

File ID: 1LM.LM33816 Analyst: JWR Method: 6850

Workgroup (AAB#): WG560129 Matrix: Soil Units: ug/kg

Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.90	95.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4664379
Report generated 03/10/2016 13:32

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16030366
Instrument ID: LCMS1
Workgroup (AAB#): WG560129

ICAL CCV Number: WG559340-05
CAL ID: LCMS1-02-MAR-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1
WG559340	NA	NA	494000
Upper Limit	NA	NA	741000
Lower Limit	NA	NA	247000
L16030366-01	1.00	01	495000
L16030366-02	10.0	DL01	474000
L16030366-03	100	DL01	477000
L16030366-04	100	DL01	471000
L16030366-05	10.0	DL01	463000
L16030366-06	1.00	01	525000
L16030366-07	1.00	01	535000
L16030366-08	500	DL01	467000
L16030366-09	100	DL01	457000
L16030366-10	1.00	01	542000
L16030366-11	1.00	01	555000
L16030366-12	1.00	01	569000
WG560129-02	1.00	01	484000
WG560129-03	1.00	01	484000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4664386
Report generated 03/10/2016 13:33

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**	6850	**Samplenum:**	L16030366-01
Instrument:	LCMS1	**Prep Date:**	03/08/2016 13:00	**File ID:**	1LM.LM33786
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG560129	**Analysis Date:**	03/08/2016 16:35	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	325	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**	6850	**Samplenum:**	L16030366-02
Instrument:	LCMS1	**Prep Date:**	03/08/2016 13:00	**File ID:**	1LM.LM33809
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG560129	**Analysis Date:**	03/09/2016 11:29	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	522000	170000	3.07	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**	6850	**Samplenum:**	L16030366-03
Instrument:	LCMS1	**Prep Date:**	03/08/2016 13:00	**File ID:**	1LM.LM33810
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG560129	**Analysis Date:**	03/09/2016 11:48	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	559000	182000	3.07	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**	6850	**Samplenum:**	L16030366-04
Instrument:	LCMS1	**Prep Date:**	03/08/2016 13:00	**File ID:**	1LM.LM33811
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG560129	**Analysis Date:**	03/09/2016 12:07	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	450000	144000	3.13	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**	6850	**Samplenum:**	L16030366-05
Instrument:	LCMS1	**Prep Date:**	03/08/2016 13:00	**File ID:**	1LM.LM33812
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG560129	**Analysis Date:**	03/09/2016 12:26	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	554000	181000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**	6850	**Samplenum:**	L16030366-06
Instrument:	LCMS1	**Prep Date:**	03/08/2016 13:00	**File ID:**	1LM.LM33796
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG560129	**Analysis Date:**	03/08/2016 19:44	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	88200	29100	3.03	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**	6850	**Samplenum:**	L16030366-07
Instrument:	LCMS1	**Prep Date:**	03/08/2016 13:00	**File ID:**	1LM.LM33797
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG560129	**Analysis Date:**	03/08/2016 20:03	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32600	10700	3.05	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**	6850	**Samplenum:**	L16030366-08
Instrument:	LCMS1	**Prep Date:**	03/08/2016 13:00	**File ID:**	1LM.LM33813
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG560129	**Analysis Date:**	03/09/2016 12:45	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	429000	139000	3.09	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**	6850	**Samplenum:**	L16030366-09
Instrument:	LCMS1	**Prep Date:**	03/08/2016 13:00	**File ID:**	1LM.LM33814
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG560129	**Analysis Date:**	03/09/2016 13:04	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	892000	290000	3.08	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**	6850	**Samplenum:**	L16030366-10
Instrument:	LCMS1	**Prep Date:**	03/08/2016 13:00	**File ID:**	1LM.LM33800
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG560129	**Analysis Date:**	03/08/2016 21:00	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	4160	2440	1.70	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**	6850	**Samplenum:**	L16030366-11
Instrument:	LCMS1	**Prep Date:**	03/08/2016 13:00	**File ID:**	1LM.LM33801
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG560129	**Analysis Date:**	03/08/2016 21:19	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	5110	2120	2.41	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**	6850	**Samplenum:**	L16030366-12
Instrument:	LCMS1	**Prep Date:**	03/08/2016 13:00	**File ID:**	1LM.LM33802
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG560129	**Analysis Date:**	03/08/2016 21:38	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**		**Samplenum:**	WG559340-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33568
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG560129	**Analysis Date:**	03/02/2016 08:53	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	18400	5910	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**		**Samplenum:**	WG559340-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33569
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG560129	**Analysis Date:**	03/02/2016 09:12	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37000	11900	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**		**Samplenum:**	WG559340-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33570
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG560129	**Analysis Date:**	03/02/2016 09:31	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	89000	30400	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**		**Samplenum:**	WG559340-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33571
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG560129	**Analysis Date:**	03/02/2016 09:50	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	183000	56800	3.22	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**		**Samplenum:**	WG559340-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33572
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG560129	**Analysis Date:**	03/02/2016 10:09	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	363000	117000	3.10	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**		**Samplenum:**	WG559340-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33573
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG560129	**Analysis Date:**	03/02/2016 10:28	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	871000	282000	3.09	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**		**Samplenum:**	WG559340-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33574
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG560129	**Analysis Date:**	03/02/2016 10:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1650000	530000	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**		**Samplenum:**	WG559340-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33575
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG560129	**Analysis Date:**	03/02/2016 11:05	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	190000	62200	3.05	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**	6850	**Samplenum:**	WG560129-01
Instrument:	LCMS1	**Prep Date:**	03/08/2016 13:00	**File ID:**	1LM.LM33783
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG560129	**Analysis Date:**	03/08/2016 15:38	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35600	11300	3.15	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**	6850	**Samplenum:**	WG560129-02
Instrument:	LCMS1	**Prep Date:**	03/08/2016 13:00	**File ID:**	1LM.LM33784
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG560129	**Analysis Date:**	03/08/2016 15:57	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**	6850	**Samplenum:**	WG560129-03
Instrument:	LCMS1	**Prep Date:**	03/08/2016 13:00	**File ID:**	1LM.LM33785
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG560129	**Analysis Date:**	03/08/2016 16:16	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36200	11800	3.07	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**	6850	**Samplenum:**	WG560129-05
Instrument:	LCMS1	**Prep Date:**	03/08/2016 13:00	**File ID:**	1LM.LM33787
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG560129	**Analysis Date:**	03/08/2016 16:54	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37700	12800	2.95	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**	6850	**Samplenum:**	WG560129-06
Instrument:	LCMS1	**Prep Date:**	03/08/2016 13:00	**File ID:**	1LM.LM33788
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG560129	**Analysis Date:**	03/08/2016 17:13	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36900	12200	3.02	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**	6850	**Samplenum:**	WG560129-07
Instrument:	LCMS1	**Prep Date:**	03/08/2016 13:00	**File ID:**	1LM.LM33782
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG560129	**Analysis Date:**	03/08/2016 15:19	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36000	13200	2.73	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**	6850	**Samplenum:**	WG560129-08
Instrument:	LCMS1	**Prep Date:**	03/08/2016 13:00	**File ID:**	1LM.LM33794
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG560129	**Analysis Date:**	03/08/2016 19:06	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36800	12500	2.94	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**	6850	**Samplenum:**	WG560129-09
Instrument:	LCMS1	**Prep Date:**	03/08/2016 13:00	**File ID:**	1LM.LM33804
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG560129	**Analysis Date:**	03/08/2016 22:16	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	42700	13900	3.07	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**	6850	**Samplenum:**	WG560129-10
Instrument:	LCMS1	**Prep Date:**	03/08/2016 13:00	**File ID:**	1LM.LM33807
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG560129	**Analysis Date:**	03/09/2016 10:51	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36100	12000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**	6850	**Samplenum:**	WG560129-11
Instrument:	LCMS1	**Prep Date:**	03/08/2016 13:00	**File ID:**	1LM.LM33816
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG560129	**Analysis Date:**	03/09/2016 13:42	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35500	11200	3.17	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**		**Samplenum:**	WG560141-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33780
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG560129	**Analysis Date:**	03/08/2016 14:41	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	167	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**		**Samplenum:**	WG560141-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33781
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG560129	**Analysis Date:**	03/08/2016 15:00	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	55500	3.05	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**		**Samplenum:**	WG560141-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33793
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG560129	**Analysis Date:**	03/08/2016 18:47	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	177000	59700	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**		**Samplenum:**	WG560141-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33795
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG560129	**Analysis Date:**	03/08/2016 19:25	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1960	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**		**Samplenum:**	WG560141-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33803
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG560129	**Analysis Date:**	03/08/2016 21:57	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	204000	63100	3.23	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**		**Samplenum:**	WG560141-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33805
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG560129	**Analysis Date:**	03/08/2016 22:35	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	236	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**		**Samplenum:**	WG560141-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33806
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG560129	**Analysis Date:**	03/09/2016 10:32	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	175000	57700	3.03	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**		**Samplenum:**	WG560141-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33808
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG560129	**Analysis Date:**	03/09/2016 11:10	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**		**Samplenum:**	WG560141-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33815
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG560129	**Analysis Date:**	03/09/2016 13:23	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	172000	55800	3.08	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**		**Samplenum:**	WG560141-10
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33817
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG560129	**Analysis Date:**	03/09/2016 14:01	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

2.2.1.3 Sample Data

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Printed: 3/9/2016 2:45 PM

Data File	LM33786.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/8/2016 4:35:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030366-01 RS	**Injection Vial**	7.00
Data File	LM33786.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 4:35:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG560129-04	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	3.250e+02	9.97	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

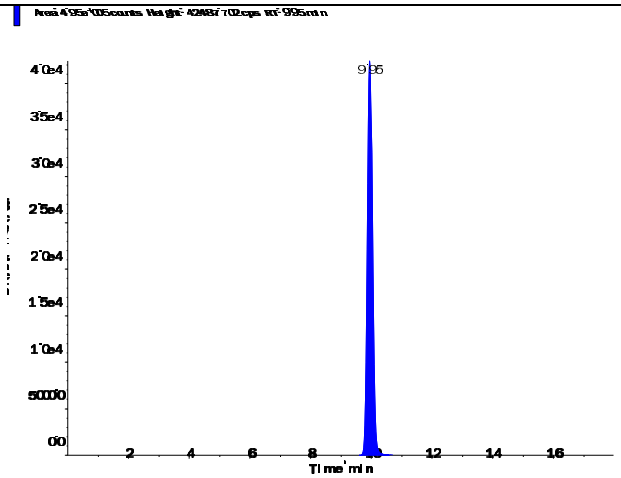

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

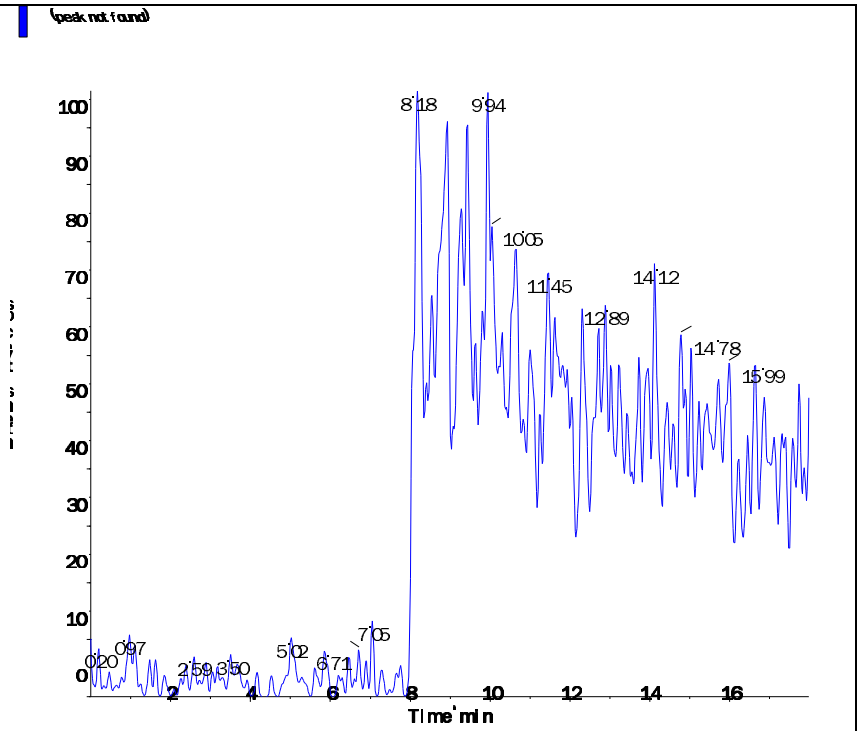

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.97 (9.92) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

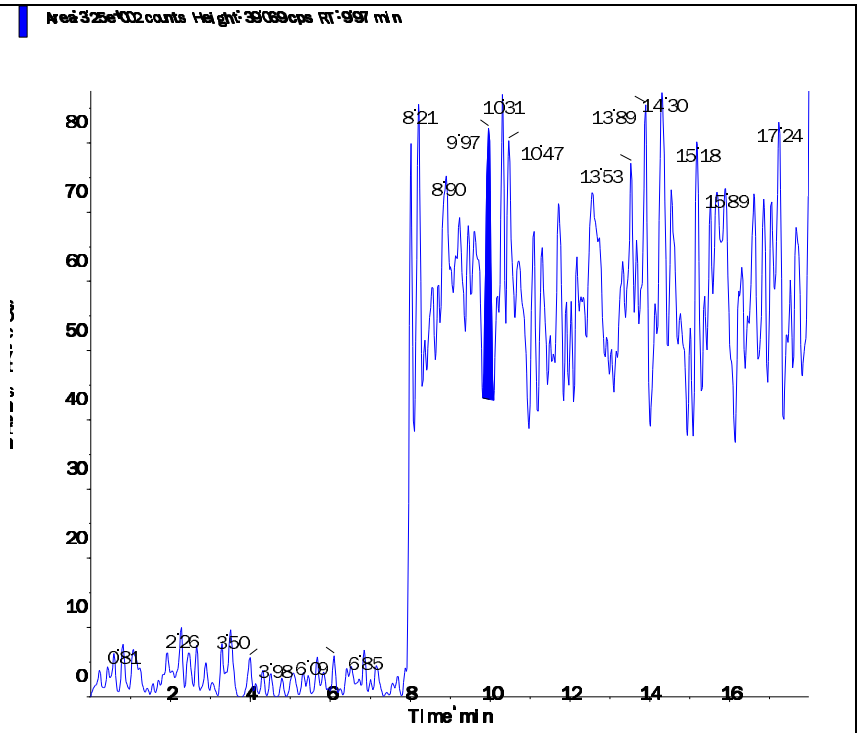

s.dataFile Page 2 of 2

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Created with Analyst Reporter
Printed: 3/9/2016 2:54 PM

Data File	LM33809.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/9/2016 11:29:43 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030366-02 (RR 10x)	**Injection Vial**	21.00
Data File	LM33809.wiff	**Injection Volume**	10.00
Acquisition Date	3/9/2016 11:29:43 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	L16030366-02	**Dilution Factor**	1.00
Sample Comment	710.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.740e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.220e+05	9.94	N/A	3.13
Perchlorate conf	1.700e+05	9.92	N/A	3.18

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

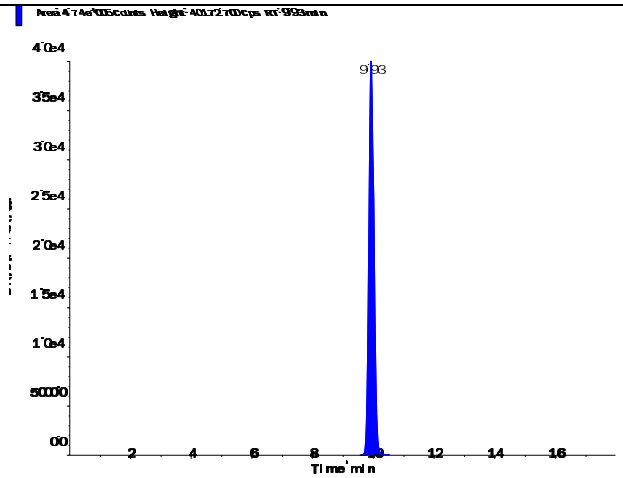

s.dataFile Page 1 of 2

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Created with Analyst Reporter
Printed: 3/9/2016 2:54 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.94 (9.94) min Calculated conc: 3.13 ng/ml Area Ratio: 1.101 Sample Type: (Unknown)	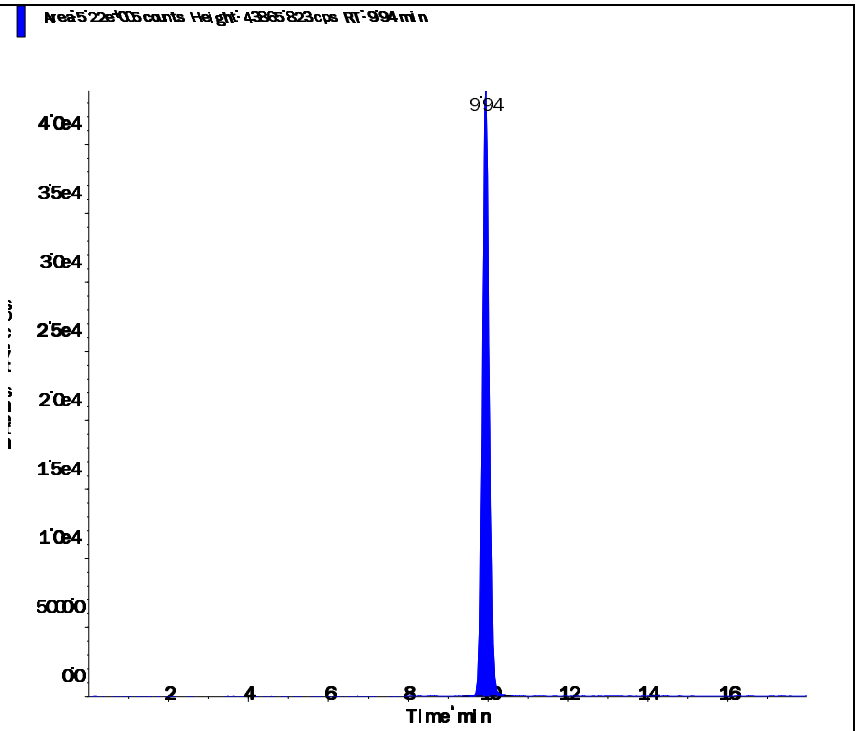
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.92 (9.92) min Calculated conc: 3.18 ng/ml Area Ratio: 0.359 Sample Type: (Unknown)	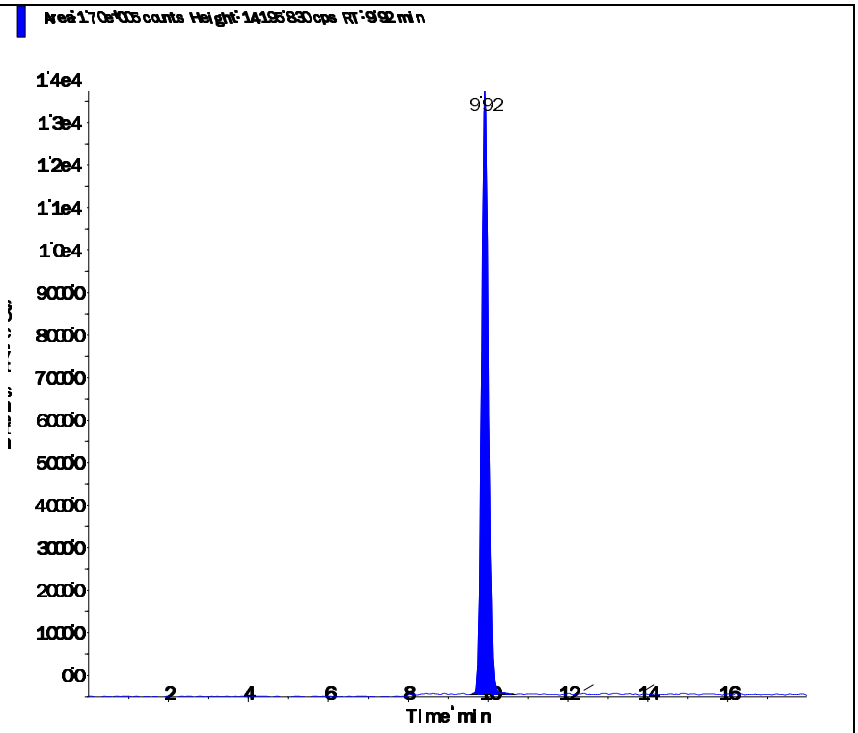

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Created with Analyst Reporter
Printed: 3/9/2016 2:54 PM

Data File	LM33810.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/9/2016 11:48:38 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030366-03 (RR 100x)	**Injection Vial**	22.00
Data File	LM33810.wiff	**Injection Volume**	10.00
Acquisition Date	3/9/2016 11:48:38 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	L16030366-03	**Dilution Factor**	1.00
Sample Comment	7,100.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.770e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.590e+05	9.95	N/A	3.34
Perchlorate conf	1.820e+05	9.93	N/A	3.38

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

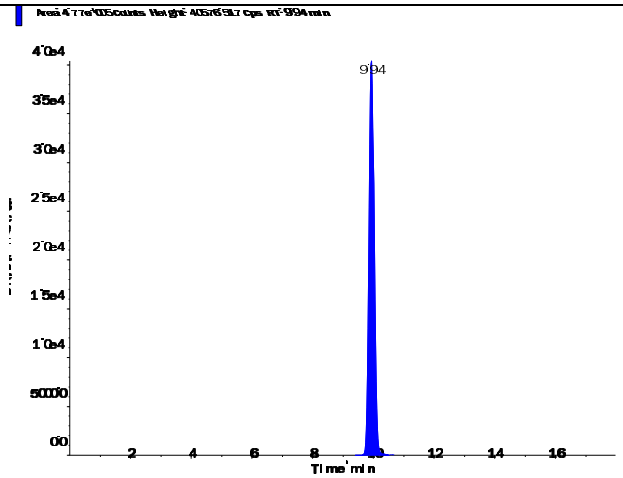

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	3.34 ng/ml
Area Ratio:	1.171
Sample Type:	(Unknown)

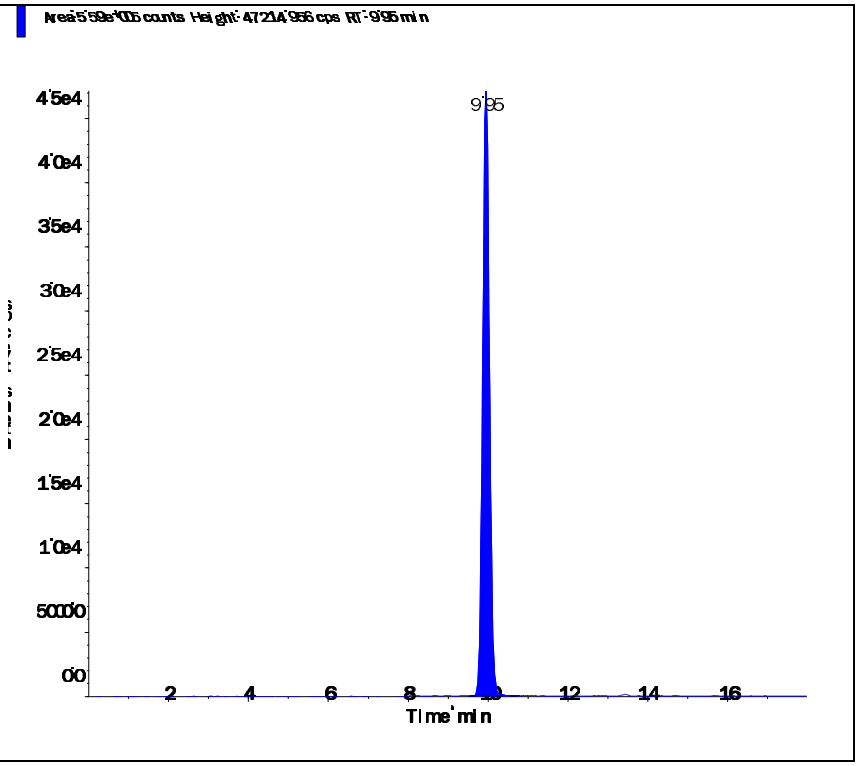

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	3.38 ng/ml
Area Ratio:	0.381
Sample Type:	(Unknown)

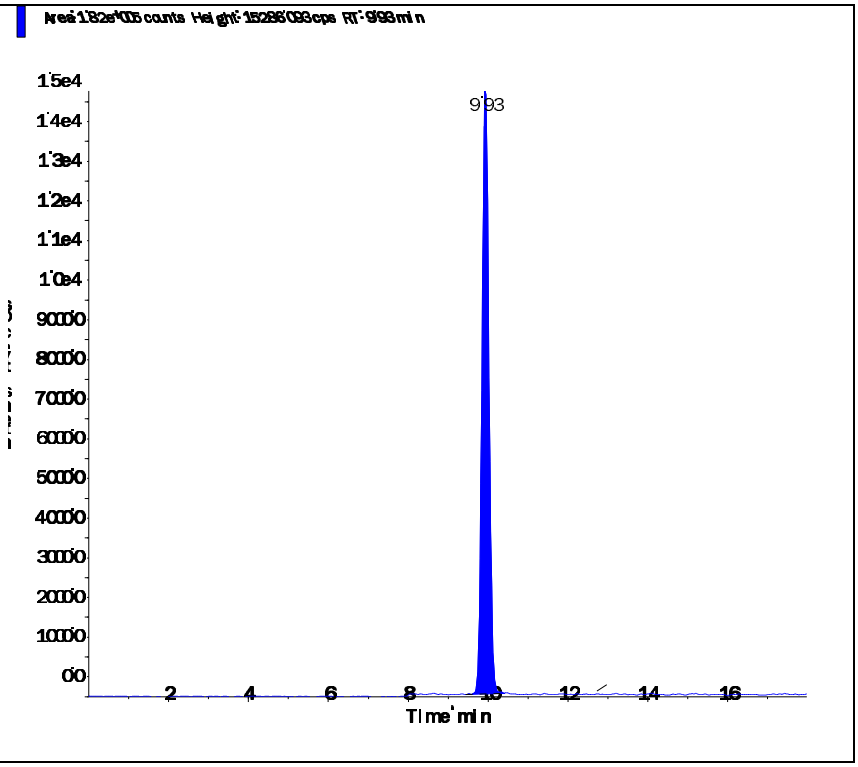

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Data File	LM33811.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/9/2016 12:07:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030366-04 (RR 100x)	**Injection Vial**	23.00
Data File	LM33811.wiff	**Injection Volume**	10.00
Acquisition Date	3/9/2016 12:07:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	L16030366-04	**Dilution Factor**	1.00
Sample Comment	7,100.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.710e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.500e+05	9.95	N/A	2.72
Perchlorate conf	1.440e+05	9.93	N/A	2.71

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

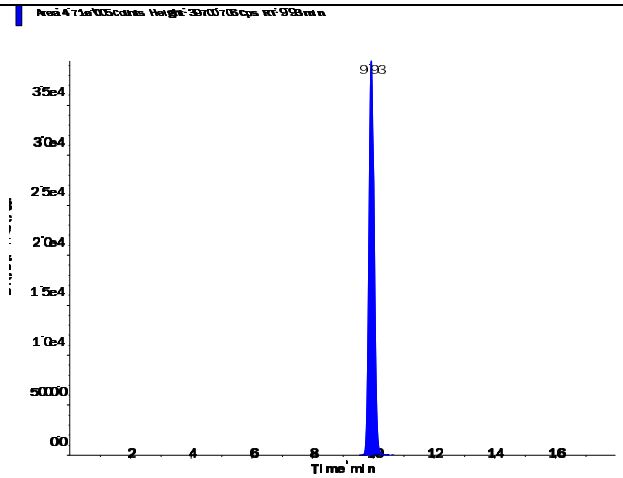

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.95 (9.94) min Calculated conc: 2.72 ng/ml Area Ratio: 0.956 Sample Type: (Unknown)	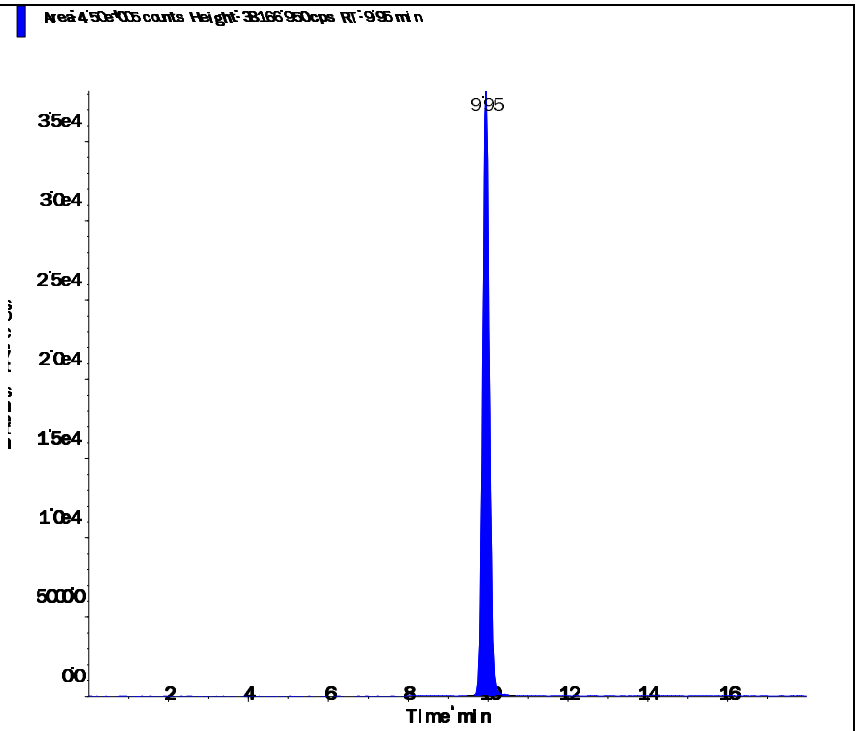
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.93 (9.92) min Calculated conc: 2.71 ng/ml Area Ratio: 0.306 Sample Type: (Unknown)	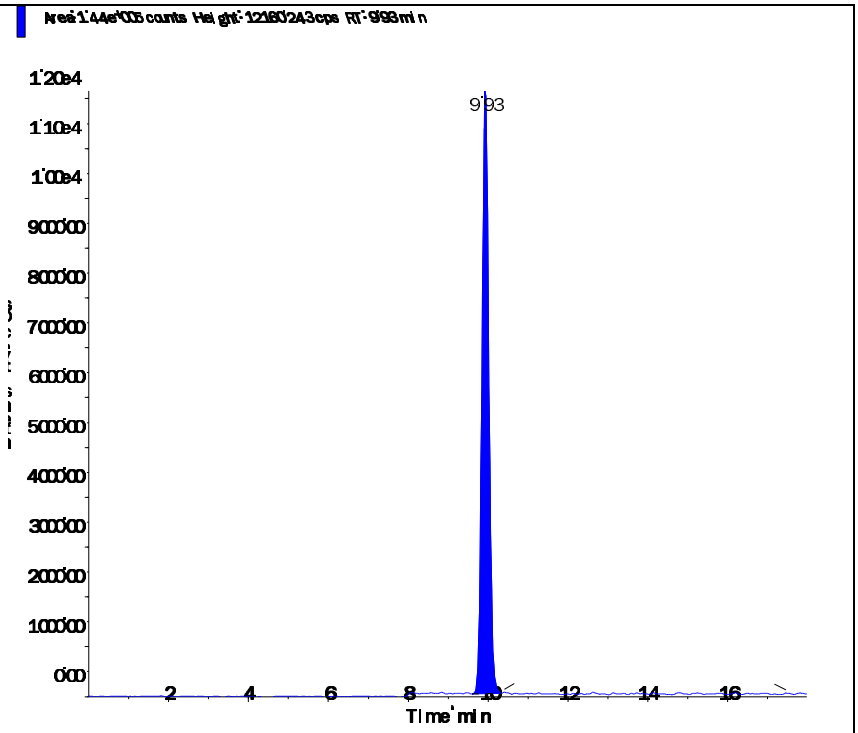

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Data File	LM33812.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/9/2016 12:26:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030366-05 (RR 10x)	**Injection Vial**	24.00
Data File	LM33812.wiff	**Injection Volume**	10.00
Acquisition Date	3/9/2016 12:26:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	L16030366-05	**Dilution Factor**	1.00
Sample Comment	710.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.630e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.540e+05	9.95	N/A	3.41
Perchlorate conf	1.810e+05	9.94	N/A	3.46

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

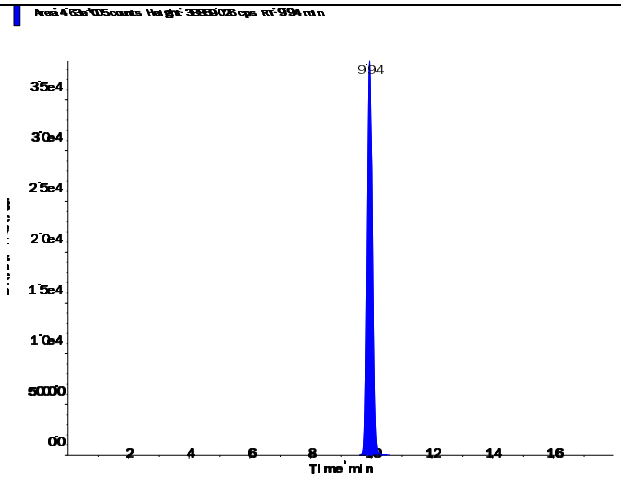

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	3.41 ng/ml
Area Ratio:	1.196
Sample Type:	(Unknown)

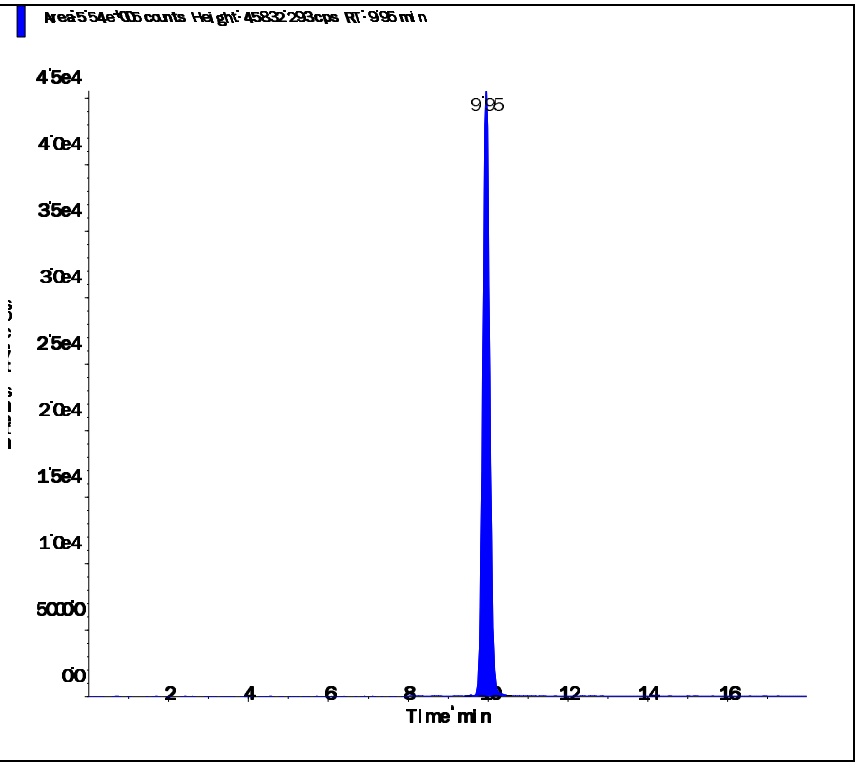

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	3.46 ng/ml
Area Ratio:	0.39
Sample Type:	(Unknown)

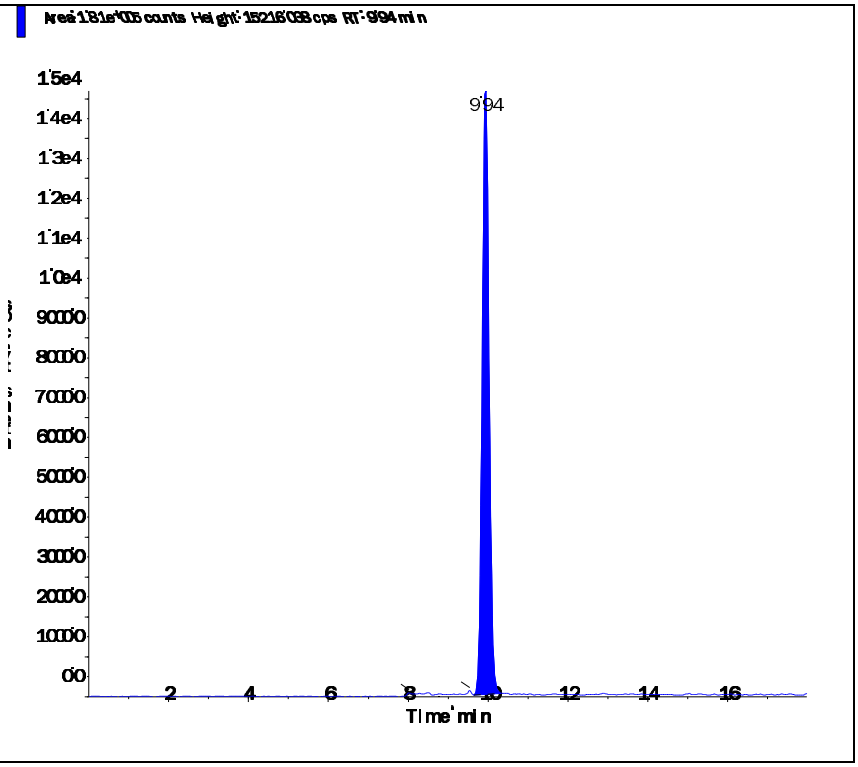

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Data File	LM33796.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/8/2016 7:44:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030366-06	**Injection Vial**	14.00
Data File	LM33796.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 7:44:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	L16030366-06	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.250e+05	9.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.820e+04	9.91	N/A	0.468
Perchlorate conf	2.910e+04	9.89	N/A	0.479

O18LP (Internal Standard)

RT (Exp. RT): 9.90(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

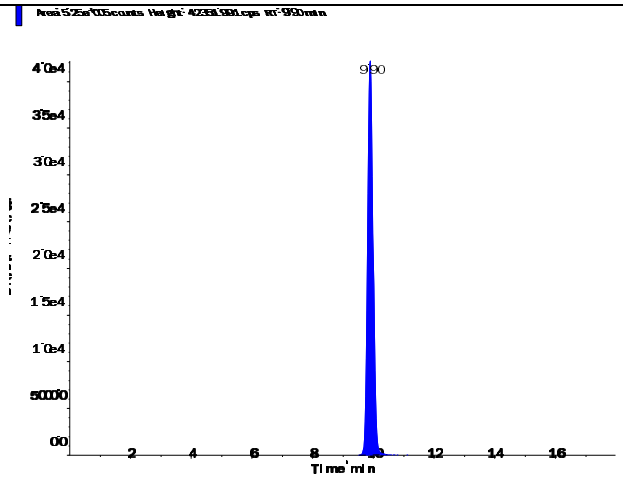

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.91 (9.94) min
Calculated conc:	0.468 ng/ml
Area Ratio:	0.168
Sample Type:	(Unknown)

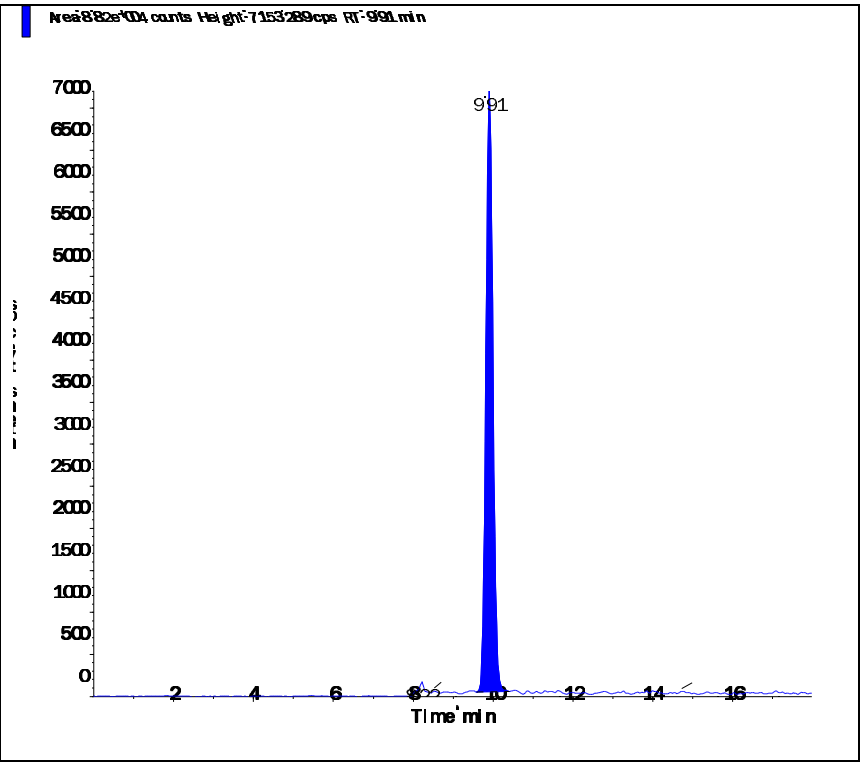

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.89 (9.92) min
Calculated conc:	0.479 ng/ml
Area Ratio:	0.055
Sample Type:	(Unknown)

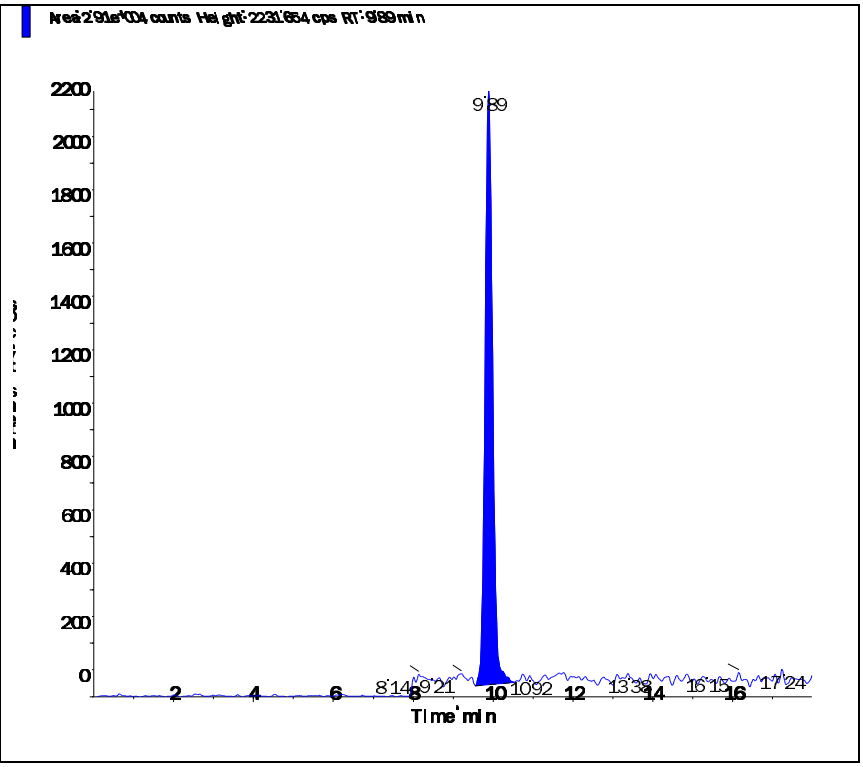

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Data File	LM33797.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/8/2016 8:03:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030366-07	**Injection Vial**	15.00
Data File	LM33797.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 8:03:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	L16030366-07	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.350e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.260e+04	9.95	N/A	0.161
Perchlorate conf	1.070e+04	9.92	N/A	0.164

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

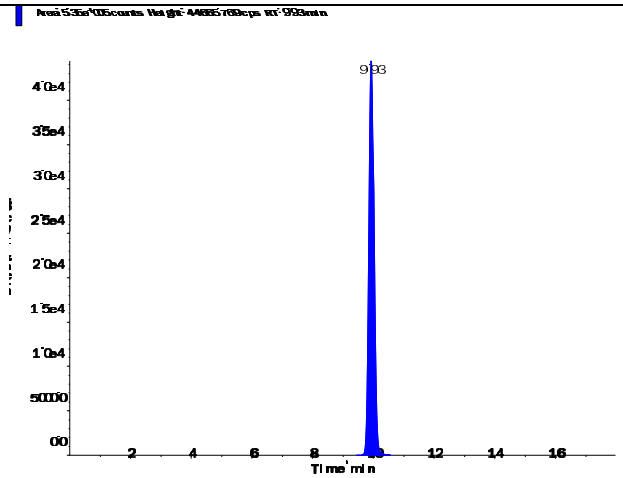

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	0.161 ng/ml
Area Ratio:	0.061
Sample Type:	(Unknown)

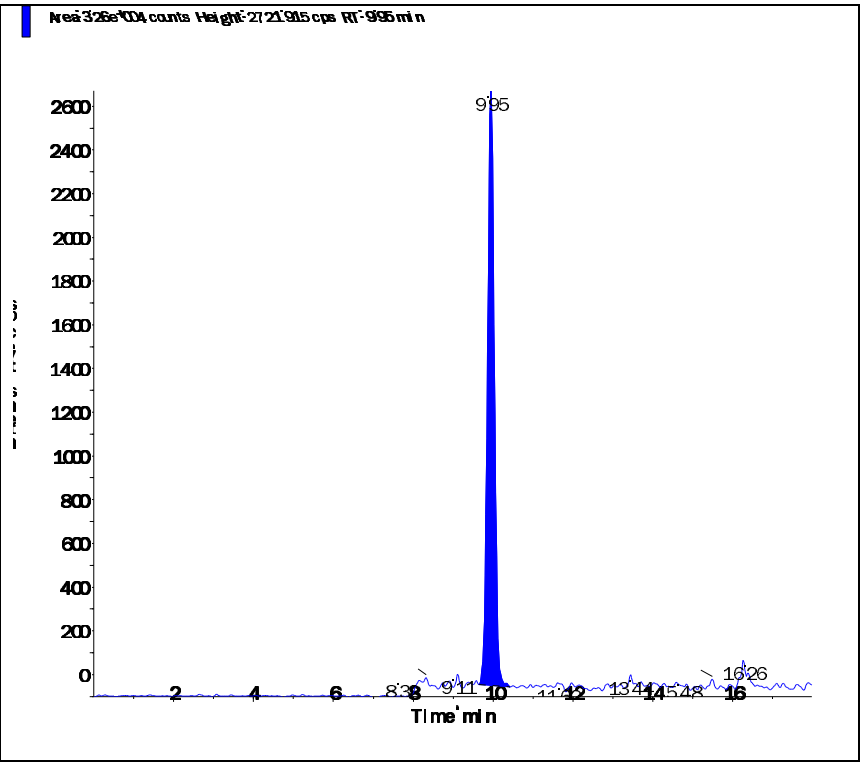

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	0.164 ng/ml
Area Ratio:	0.02
Sample Type:	(Unknown)

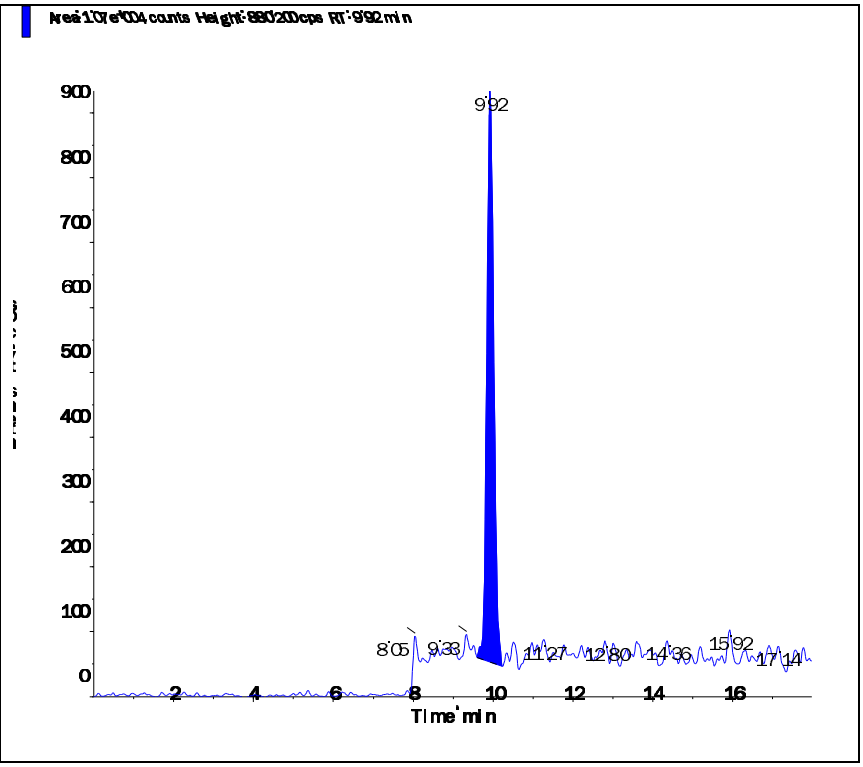

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Data File	LM33813.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/9/2016 12:45:26 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030366-08 (RR 500x)	**Injection Vial**	25.00
Data File	LM33813.wiff	**Injection Volume**	10.00
Acquisition Date	3/9/2016 12:45:26 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	L16030366-08	**Dilution Factor**	1.00
Sample Comment	7,500.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.670e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.290e+05	9.95	N/A	2.61
Perchlorate conf	1.390e+05	9.93	N/A	2.64

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

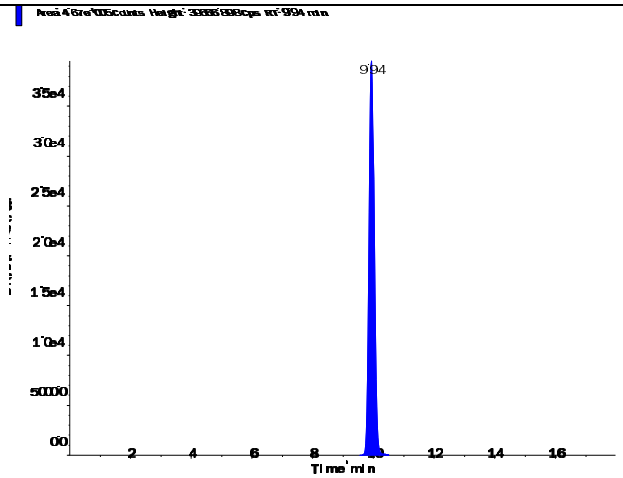

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	2.61 ng/ml
Area Ratio:	0.919
Sample Type:	(Unknown)

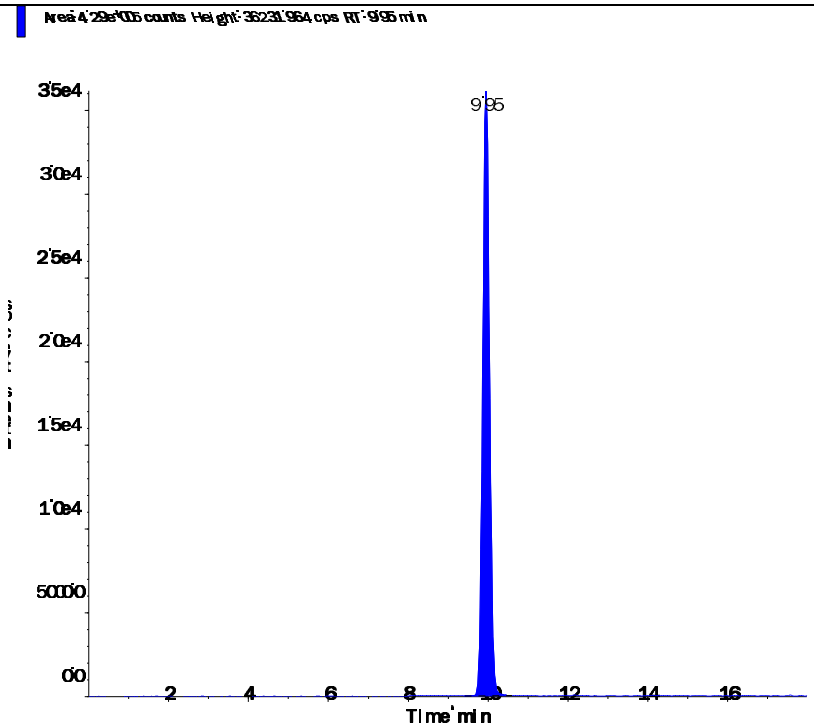

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	2.64 ng/ml
Area Ratio:	0.298
Sample Type:	(Unknown)

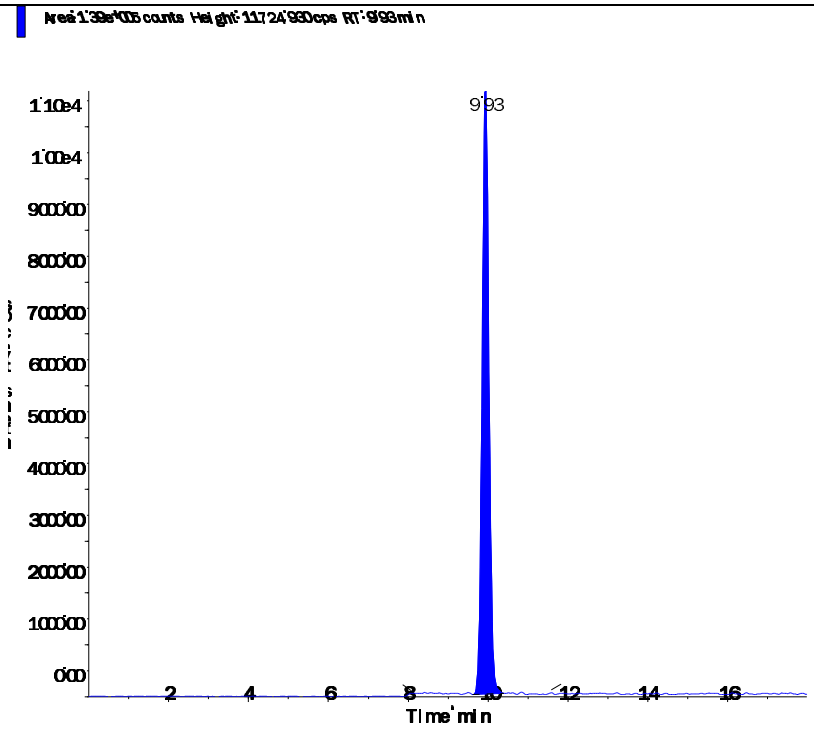

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Data File	LM33814.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/9/2016 1:04:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030366-09 (RR 100x)	**Injection Vial**	26.00
Data File	LM33814.wiff	**Injection Volume**	10.00
Acquisition Date	3/9/2016 1:04:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	L16030366-09	**Dilution Factor**	1.00
Sample Comment	7,100.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.570e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.920e+05	9.96	N/A	5.56
Perchlorate conf	2.900e+05	9.95	N/A	5.63

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

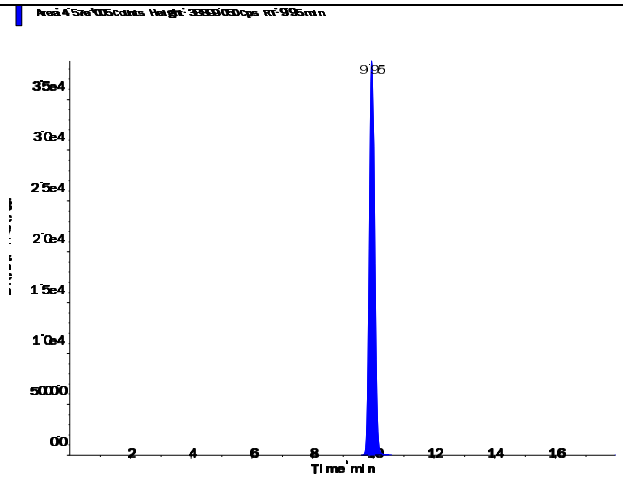

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	5.56 ng/ml
Area Ratio:	1.95
Sample Type:	(Unknown)

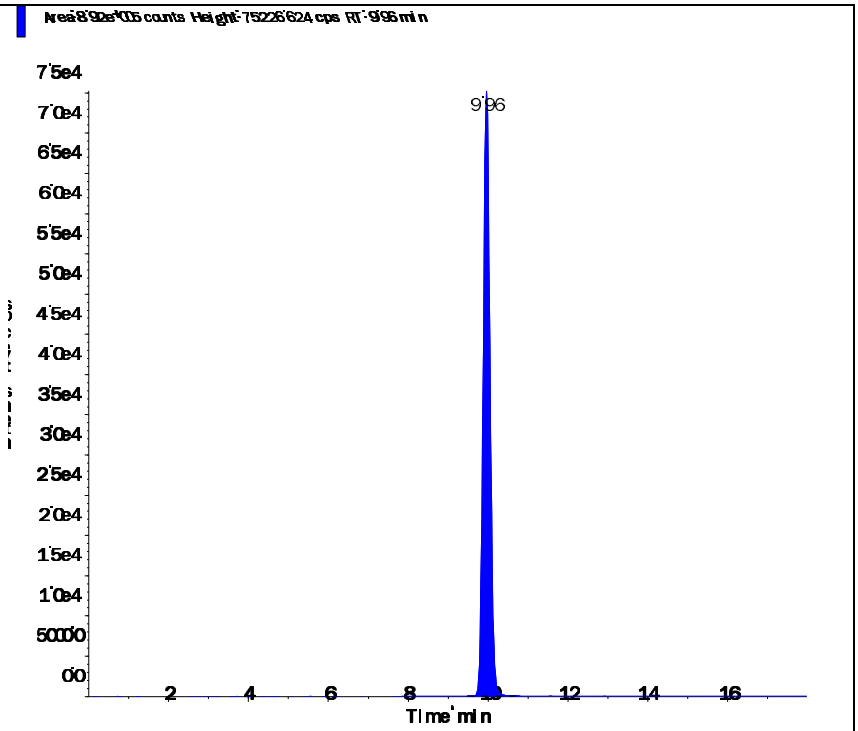

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.95 (9.92) min
Calculated conc:	5.63 ng/ml
Area Ratio:	0.634
Sample Type:	(Unknown)

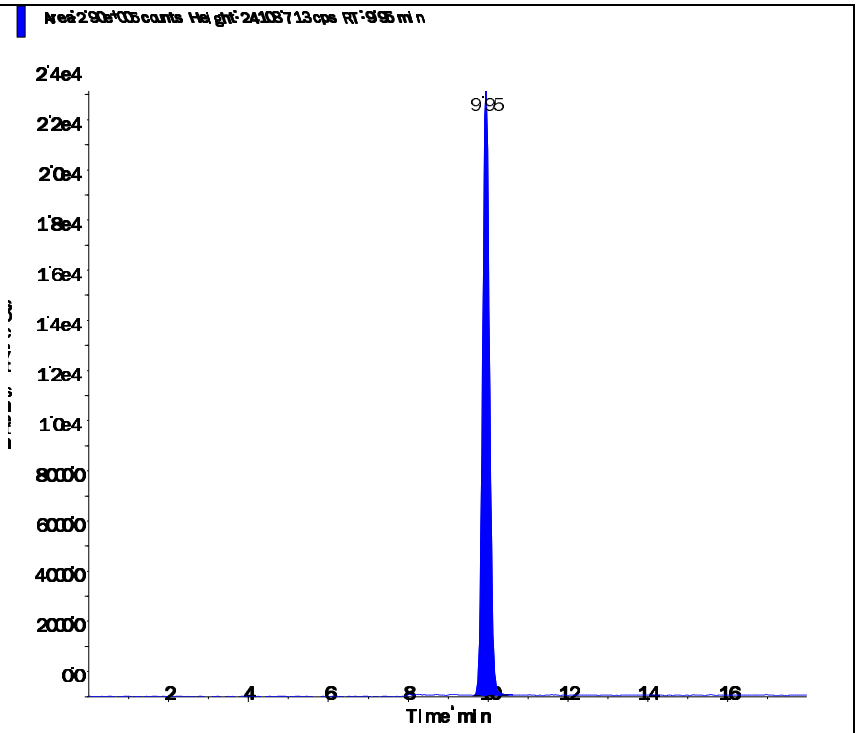

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Data File	LM33800.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/8/2016 9:00:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030366-10	**Injection Vial**	18.00
Data File	LM33800.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 9:00:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	L16030366-10	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.420e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.160e+03	9.97	N/A	0.0094
Perchlorate conf	2.440e+03	9.93	N/A	0.0259

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

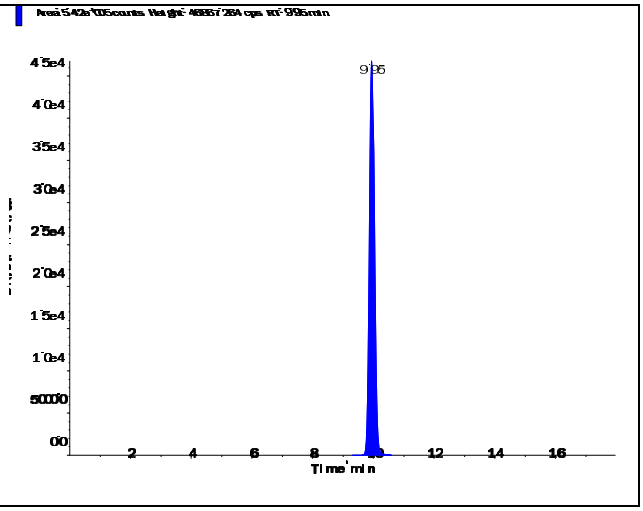

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.97 (9.94) min Calculated conc: 0.0094 ng/ml Area Ratio: 0.008 Sample Type: (Unknown)	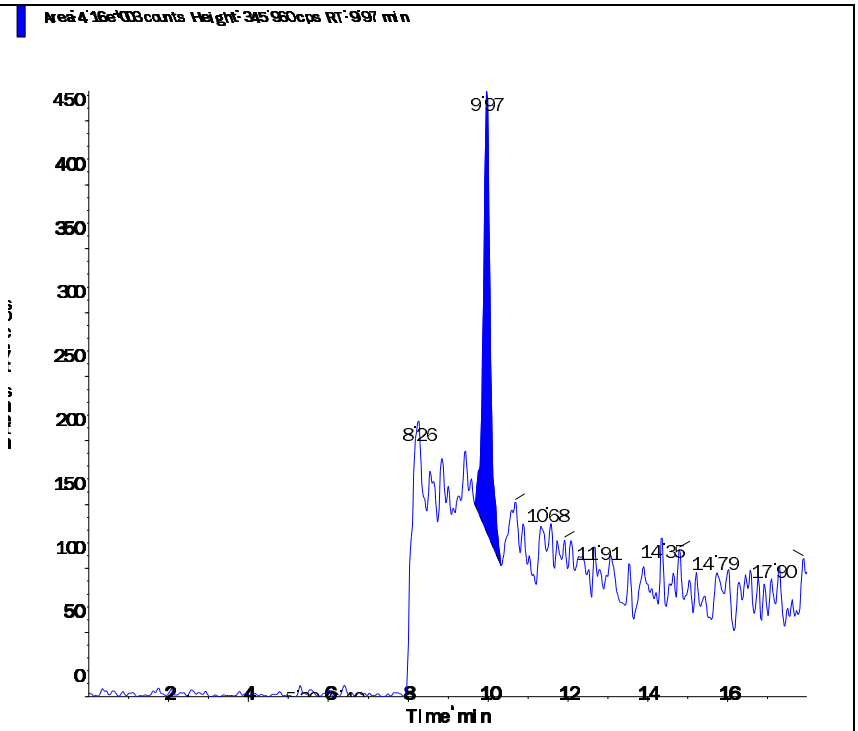
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.93 (9.92) min Calculated conc: 0.0259 ng/ml Area Ratio: 0.004 Sample Type: (Unknown)	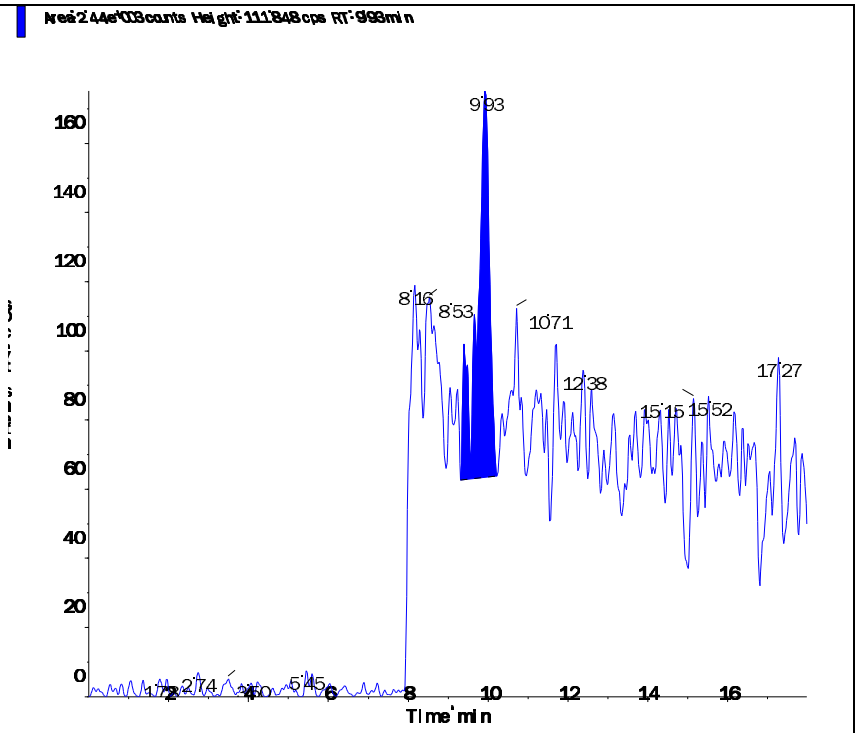

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Data File	LM33801.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/8/2016 9:19:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030366-11	**Injection Vial**	19.00
Data File	LM33801.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 9:19:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	L16030366-11	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.550e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.110e+03	9.94	N/A	0.0138
Perchlorate conf	2.120e+03	9.95	N/A	0.02

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

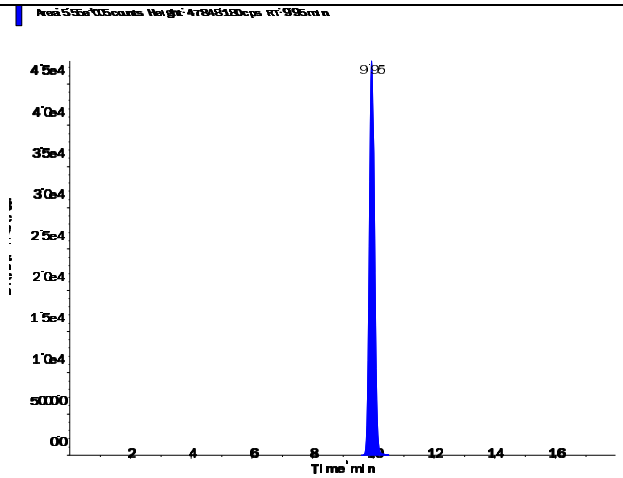

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.0138 ng/ml
Area Ratio:	0.009
Sample Type:	(Unknown)

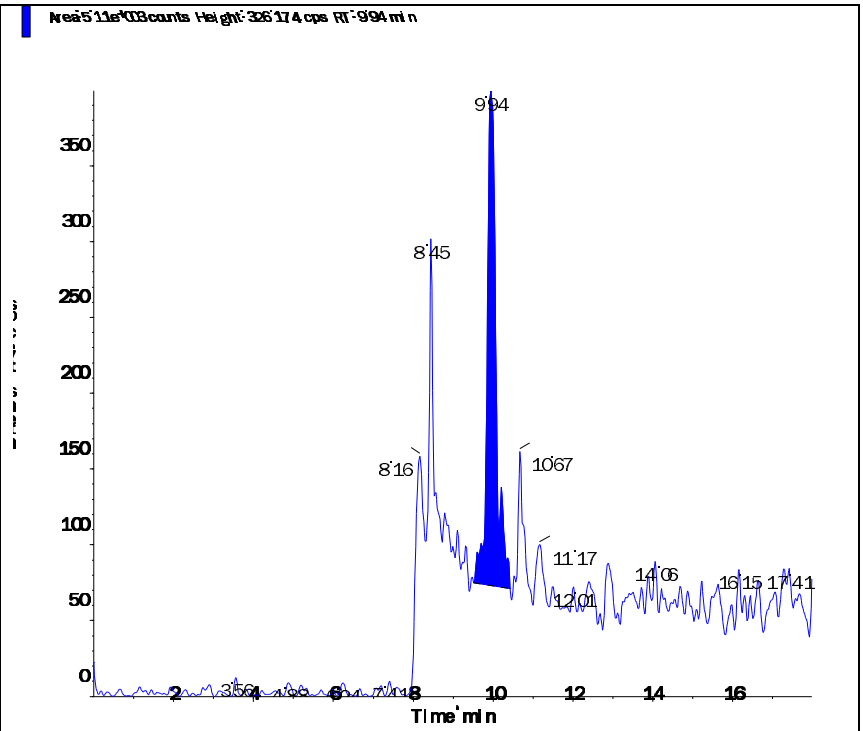

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.95 (9.92) min
Calculated conc:	0.02 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)

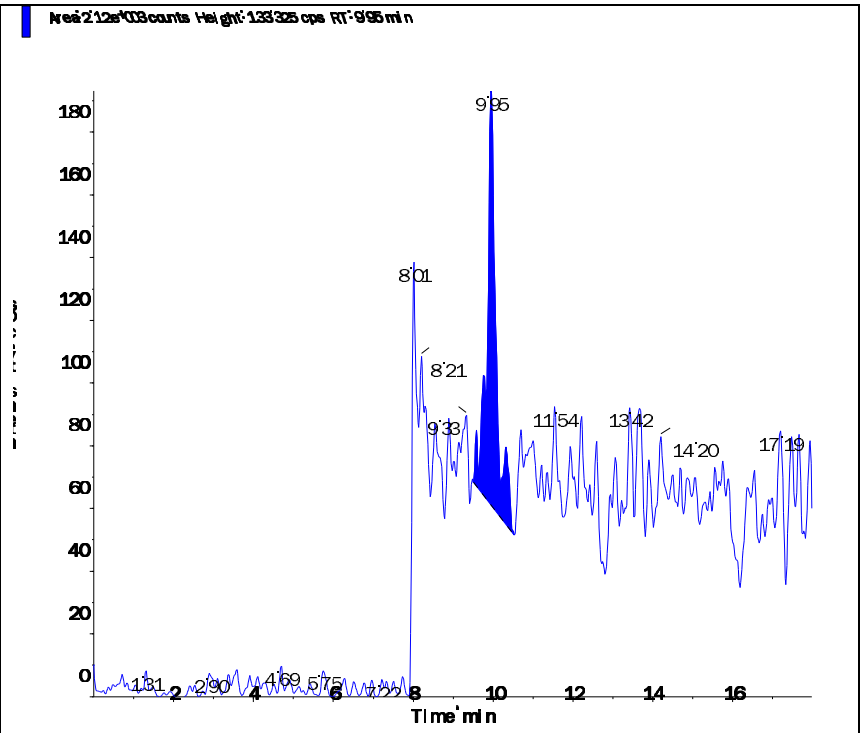

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Data File	LM33802.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/8/2016 9:38:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030366-12	**Injection Vial**	20.00
Data File	LM33802.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 9:38:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	L16030366-12	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.690e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

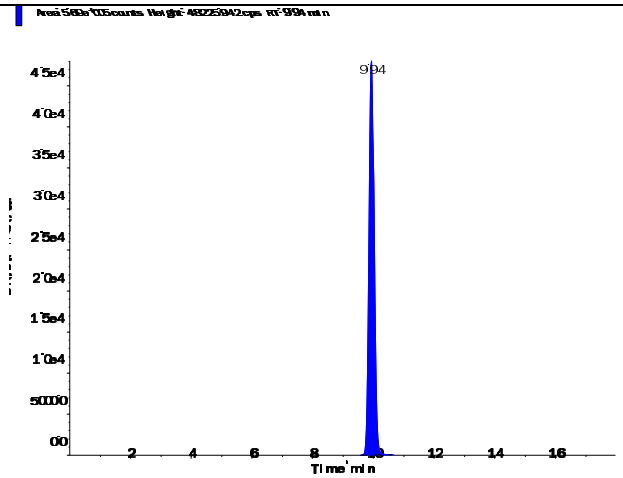

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

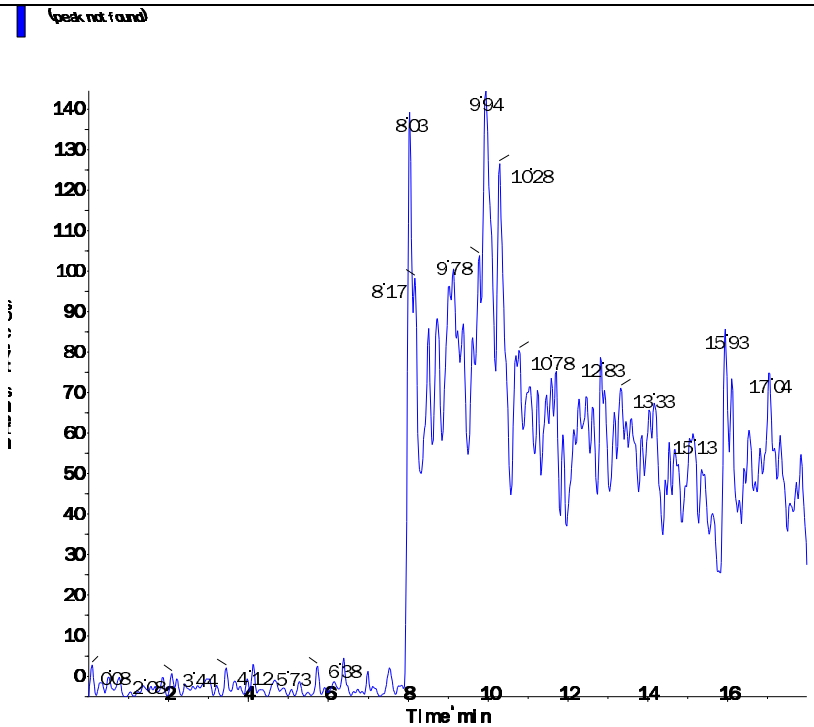

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

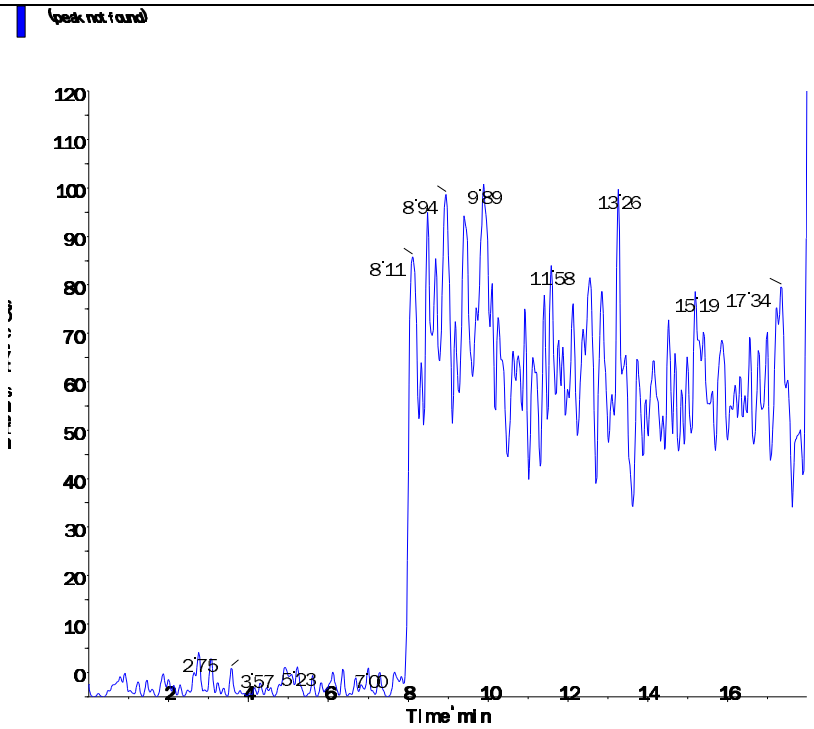

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2.2.1.4 Standards Data

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Data File	LM33567.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-01 CCB	**Injection Vial**	51.00
Data File	LM33567.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG559340-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.710e+05	9.99	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.99(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

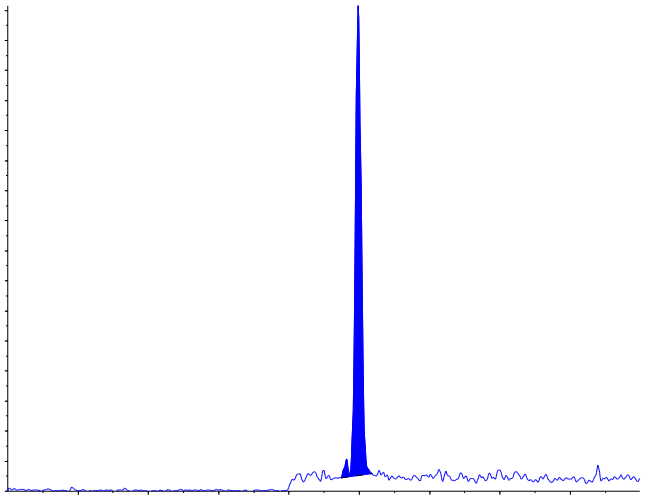

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.94) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	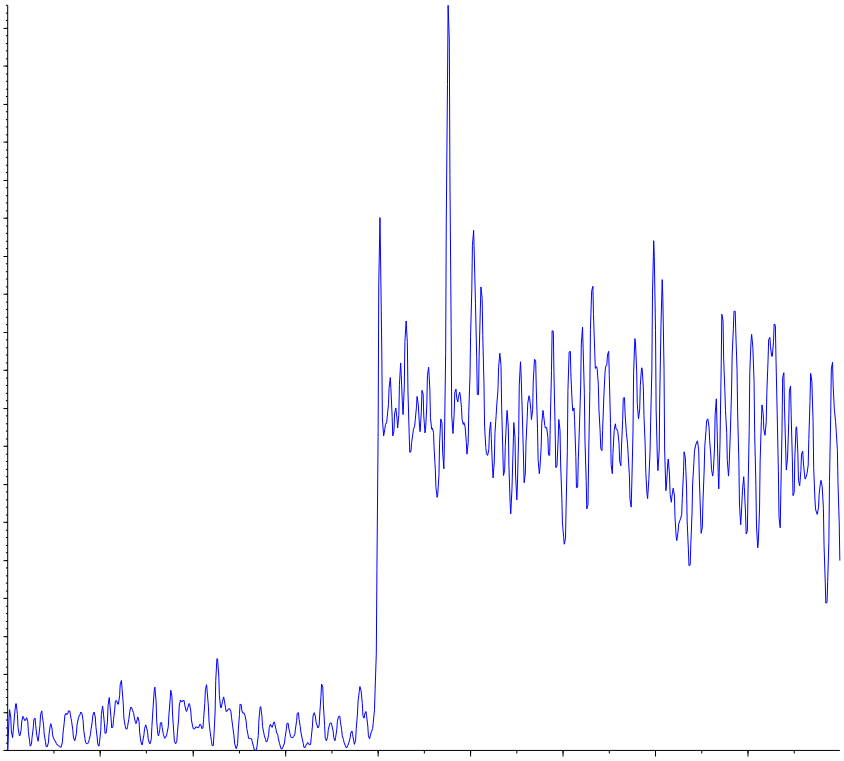
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.92) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	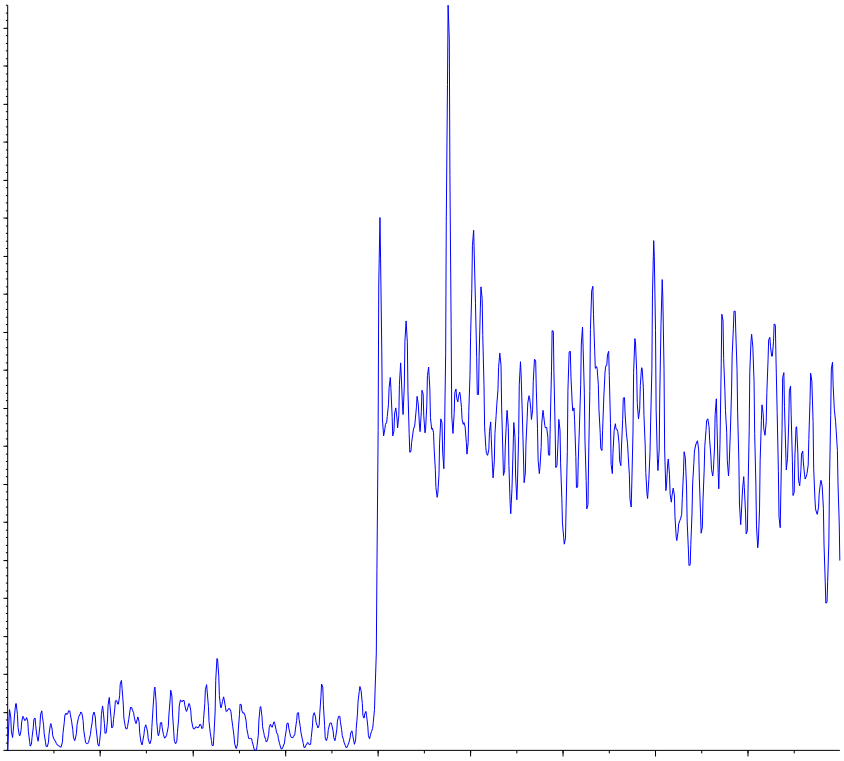

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Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM33567.wiff	**Result Table**	030216_WTD.rdb
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.75 x + 0.00437 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	95.0	N/A	N/A
0.20	1	0.20	99.5	N/A	N/A
0.50	1	0.50	101.0	N/A	N/A
1.00	1	1.03	103.4	N/A	N/A
2.00	1	2.02	101.0	N/A	N/A
5.00	1	5.07	101.5	N/A	N/A
10.00	1	9.87	98.7	N/A	N/A

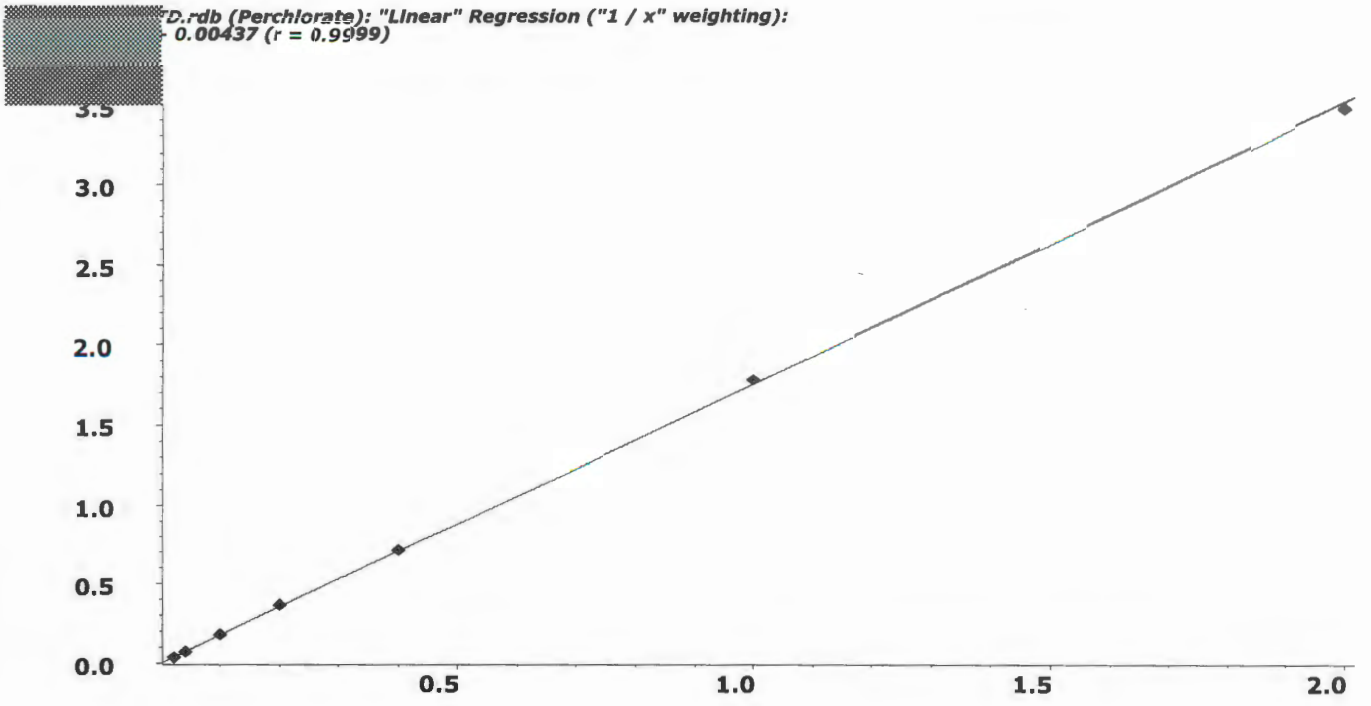

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Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM33567.wiff	**Result Table**	030216_WTD.rdb
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.562 x + 0.00157 (r = 0.9998)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	93.4	N/A	N/A
0.20	1	0.20	98.6	N/A	N/A
0.50	1	0.54	107.2	N/A	N/A
1.00	1	1.00	99.5	N/A	N/A
2.00	1	2.01	100.7	N/A	N/A
5.00	1	5.11	102.2	N/A	N/A
10.00	1	9.85	98.5	N/A	N/A

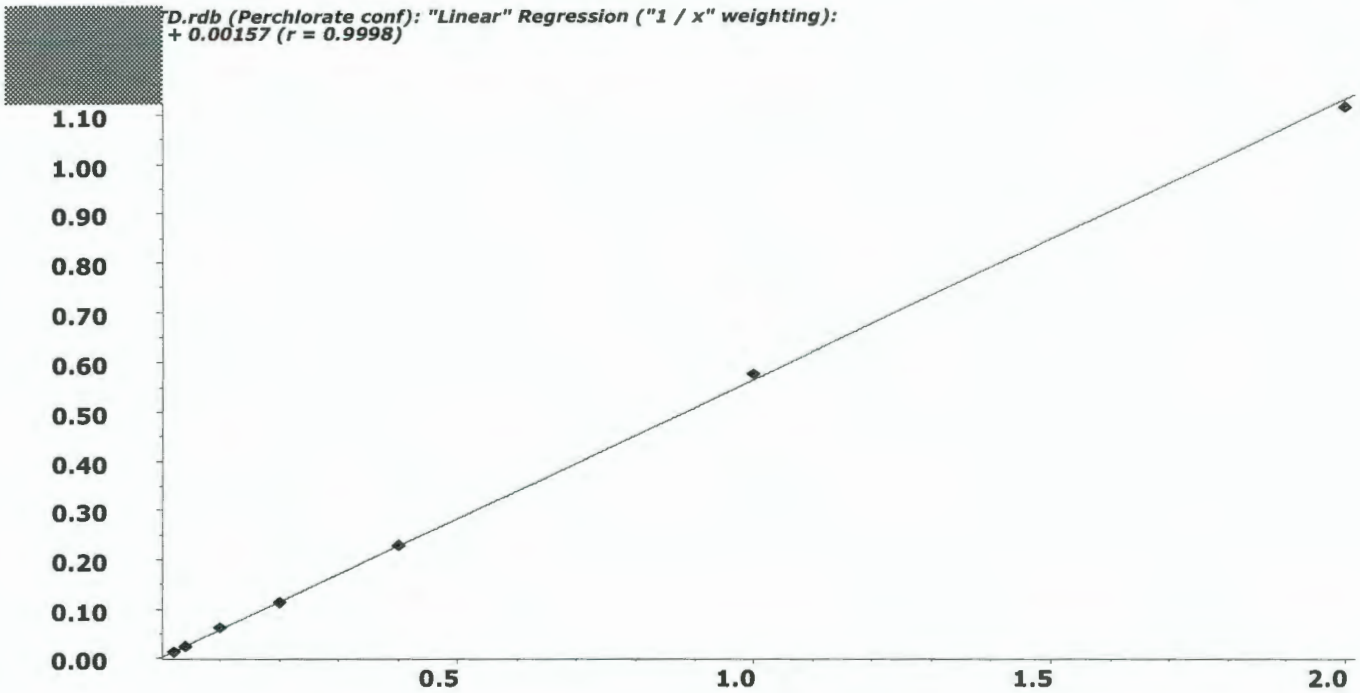

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Data File	LM33568.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/2/2016 8:53:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-02 STD (0.1 ug/L)	**Injection Vial**	52.00
Data File	LM33568.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 8:53:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG559340-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.900e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.840e+04	9.97	0.10	0.095
Perchlorate conf	5.910e+03	9.94	0.10	0.0934

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

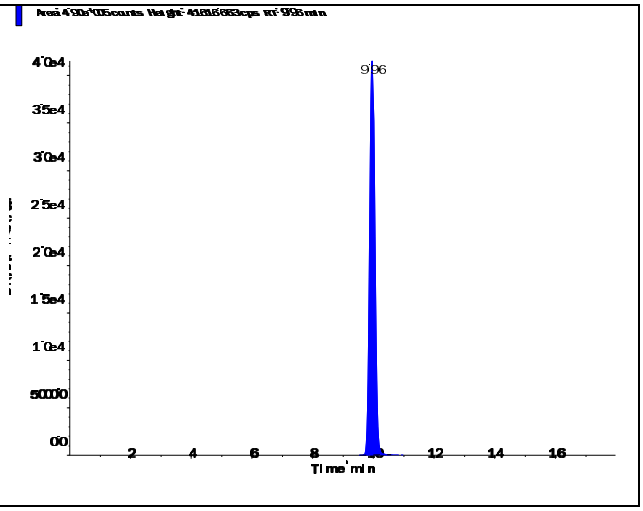

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.97 (9.94) min
Calculated conc:	0.095 ng/ml
Area Ratio:	0.038
Sample Type:	(Standard)

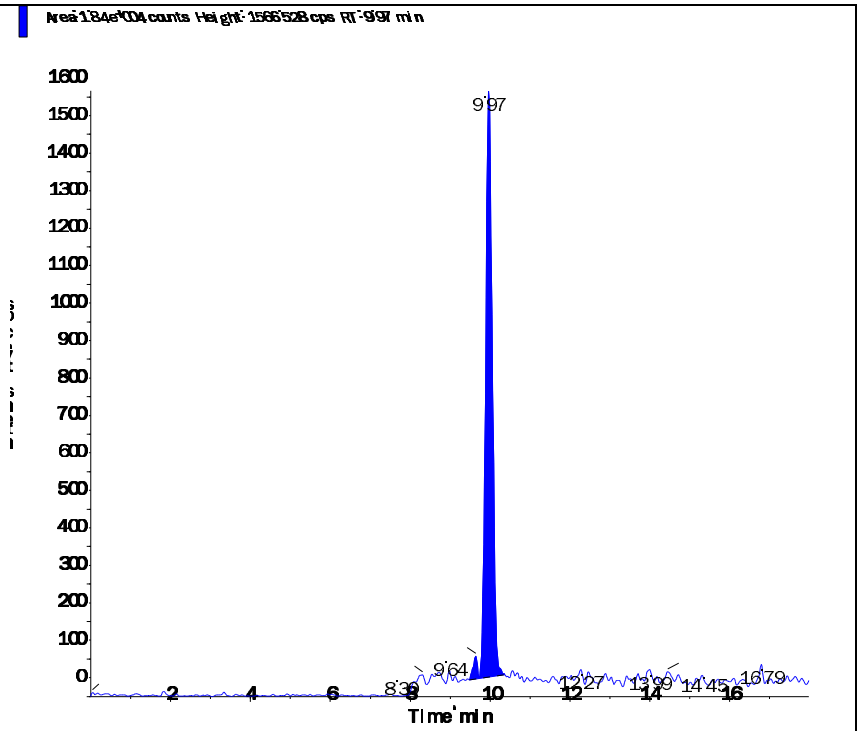

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.0934 ng/ml
Area Ratio:	0.012
Sample Type:	(Standard)

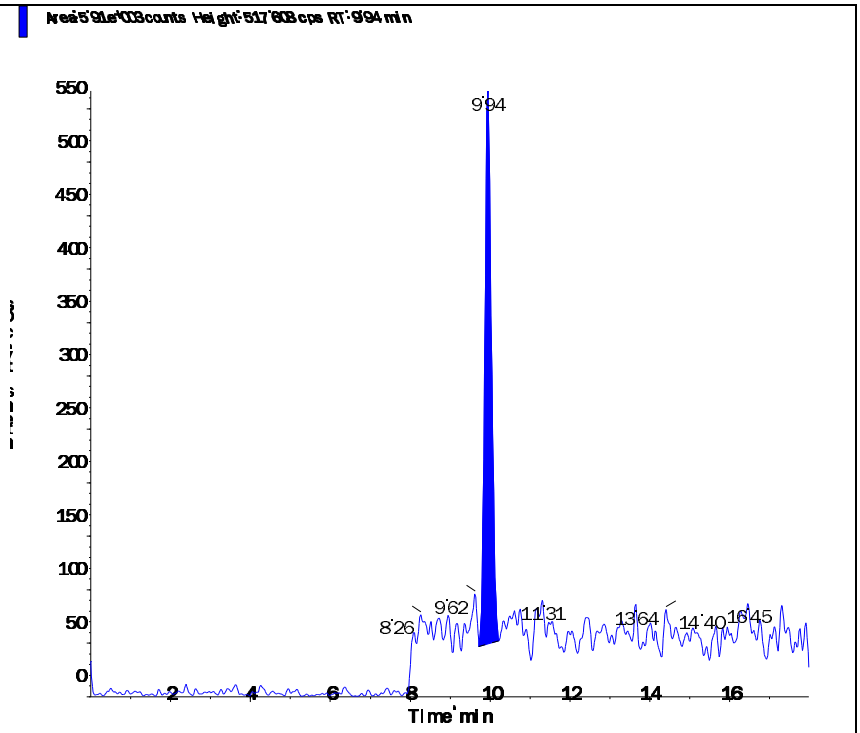

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Data File	LM33569.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/2/2016 9:12:17 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-03 STD (0.2 ug/L)	**Injection Vial**	53.00
Data File	LM33569.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 9:12:17 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG559340-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.990e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.700e+04	9.99	0.20	0.199
Perchlorate conf	1.190e+04	9.98	0.20	0.197

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

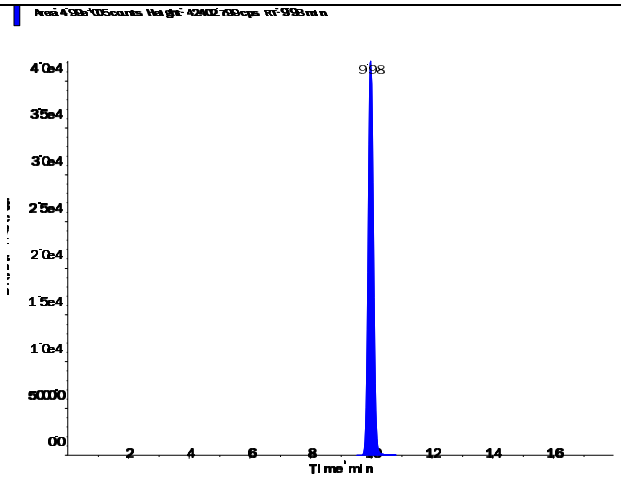

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.99 (9.94) min
Calculated conc:	0.199 ng/ml
Area Ratio:	0.074
Sample Type:	(Standard)

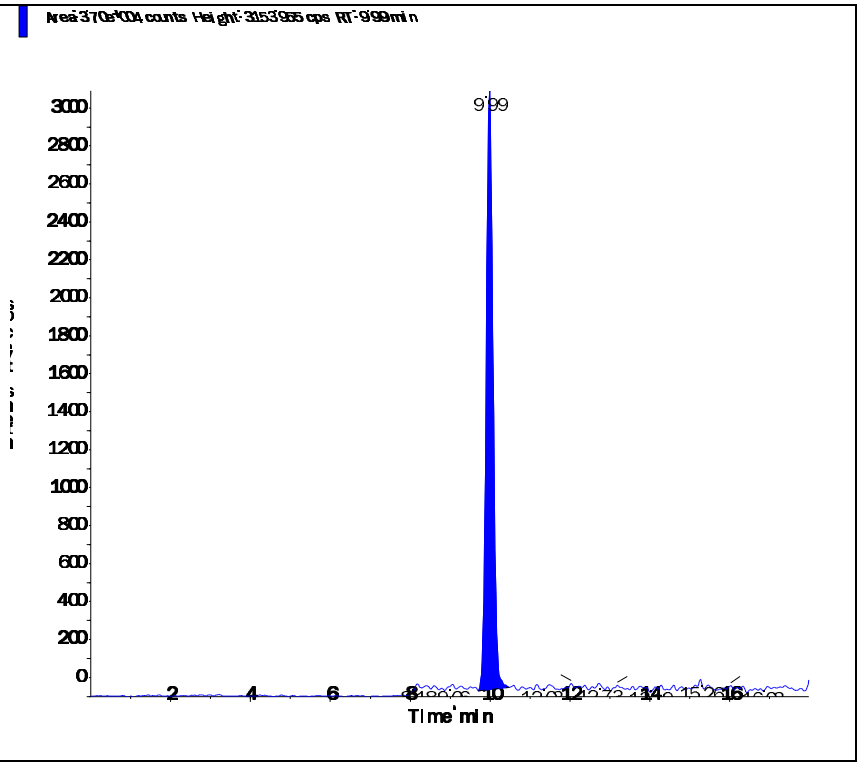

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.98 (9.92) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

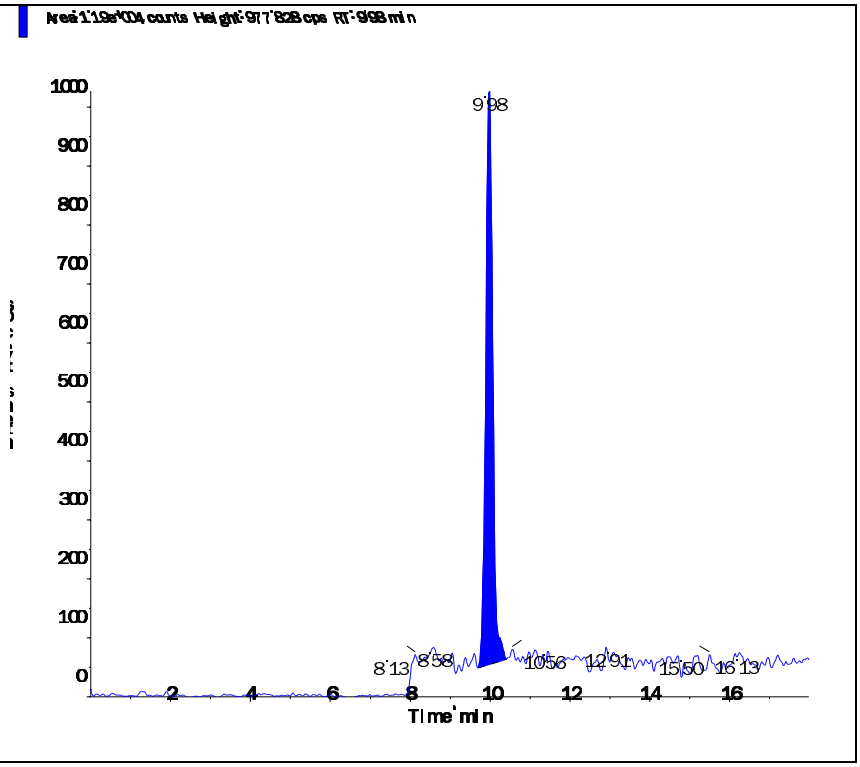

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Data File	LM33570.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/2/2016 9:31:14 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-04 STD (0.5 ug/L)	**Injection Vial**	54.00
Data File	LM33570.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 9:31:14 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG559340-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.920e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.900e+04	10.00	0.50	0.505
Perchlorate conf	3.040e+04	9.98	0.50	0.536

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

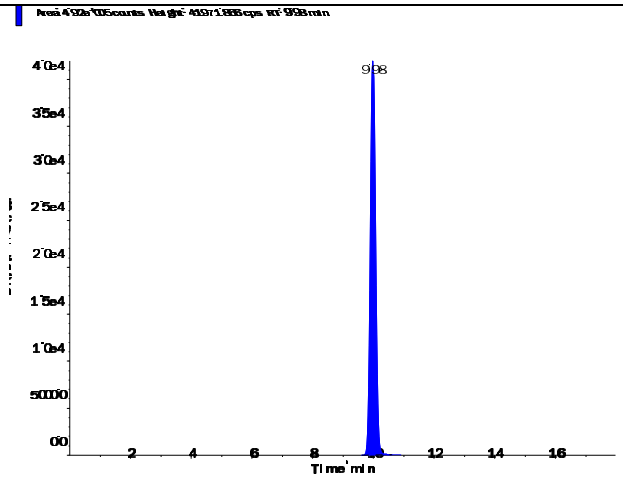

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.00 (9.94) min
Calculated conc:	0.505 ng/ml
Area Ratio:	0.181
Sample Type:	(Standard)

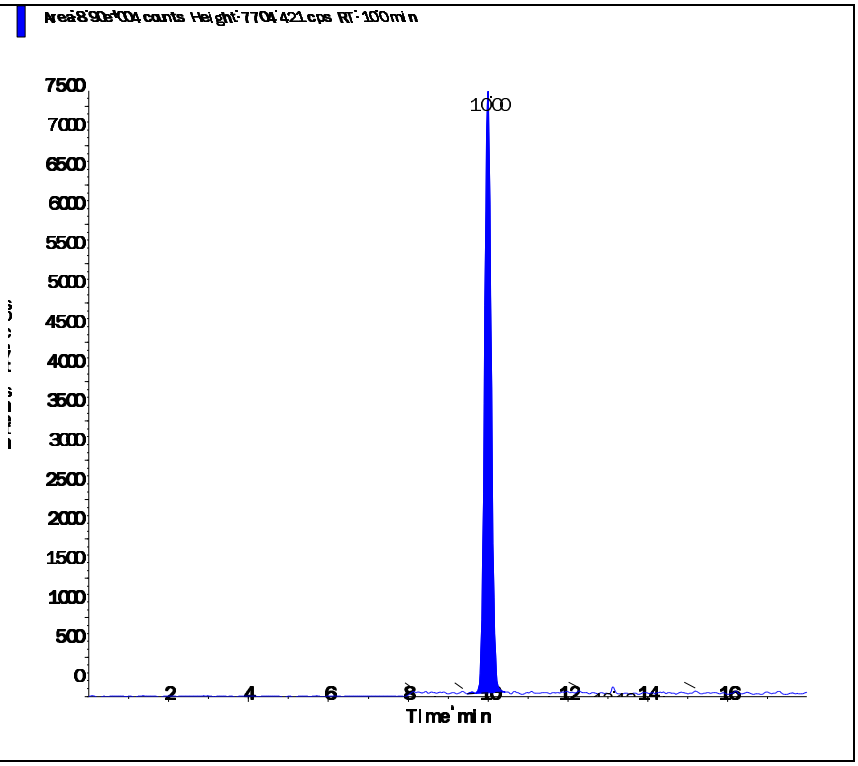

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.98 (9.92) min
Calculated conc:	0.536 ng/ml
Area Ratio:	0.062
Sample Type:	(Standard)

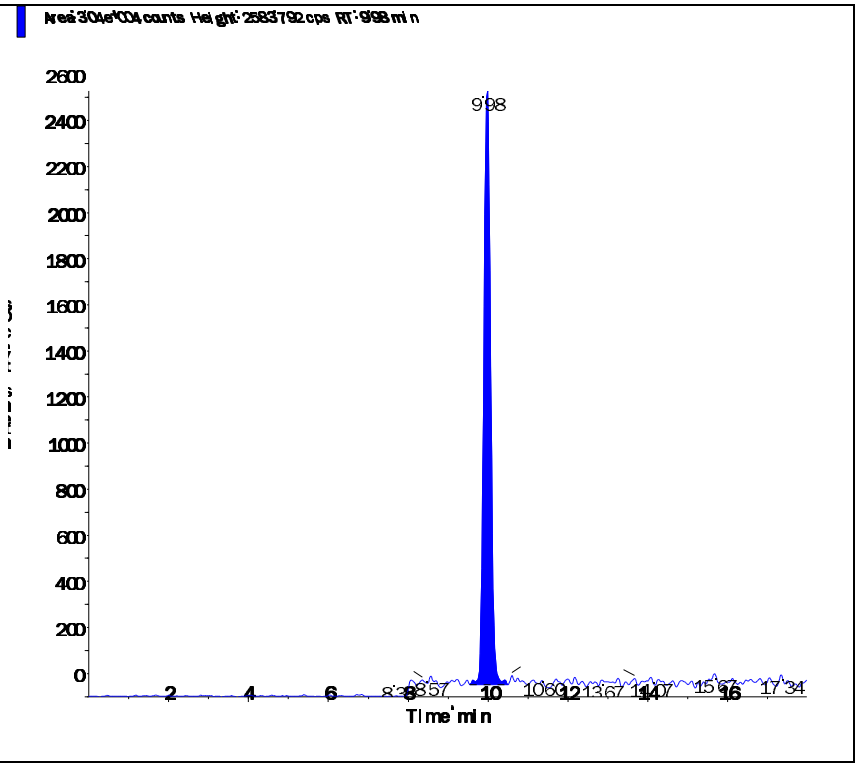

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Data File	LM33571.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/2/2016 9:50:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-05 STD (1.0 ug/L)	**Injection Vial**	55.00
Data File	LM33571.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 9:50:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG559340-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.010e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.830e+05	9.99	1.00	1.03
Perchlorate conf	5.680e+04	9.98	1.00	0.995

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

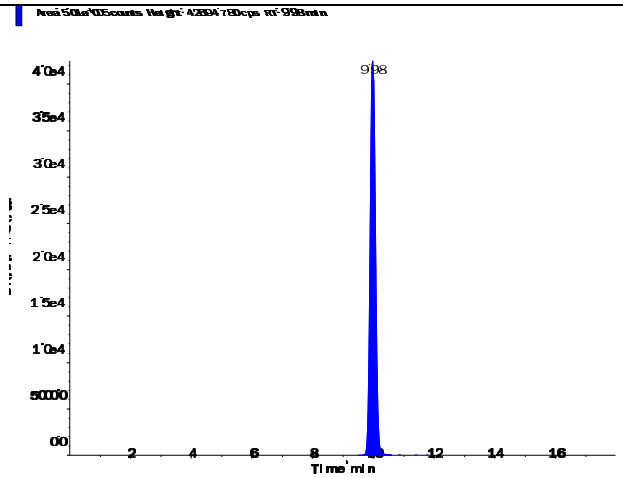

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.99 (9.94) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.366
Sample Type:	(Standard)

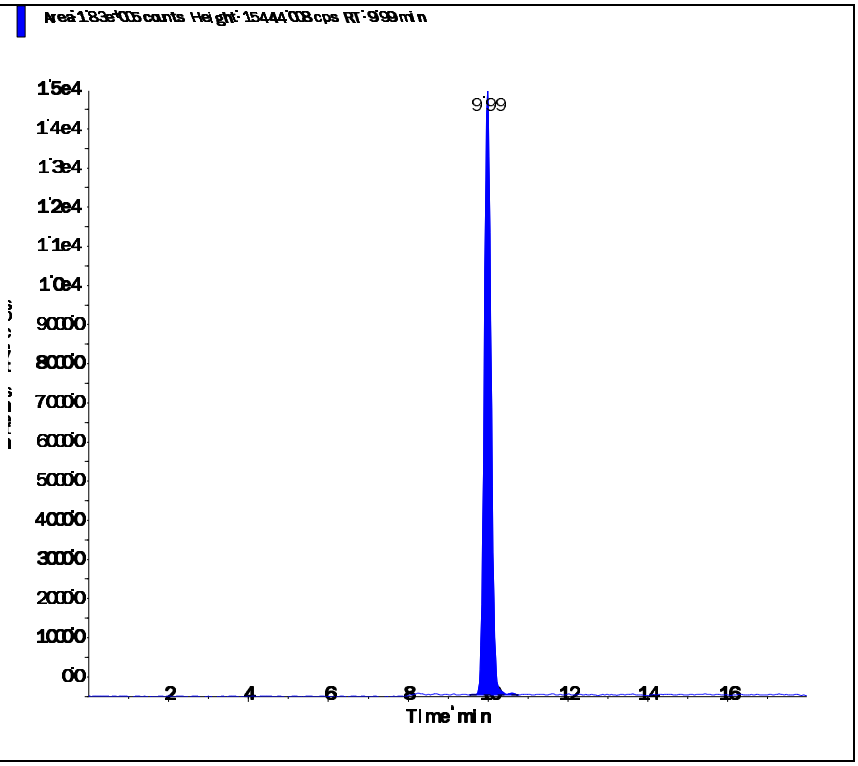

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.98 (9.92) min
Calculated conc:	0.995 ng/ml
Area Ratio:	0.113
Sample Type:	(Standard)

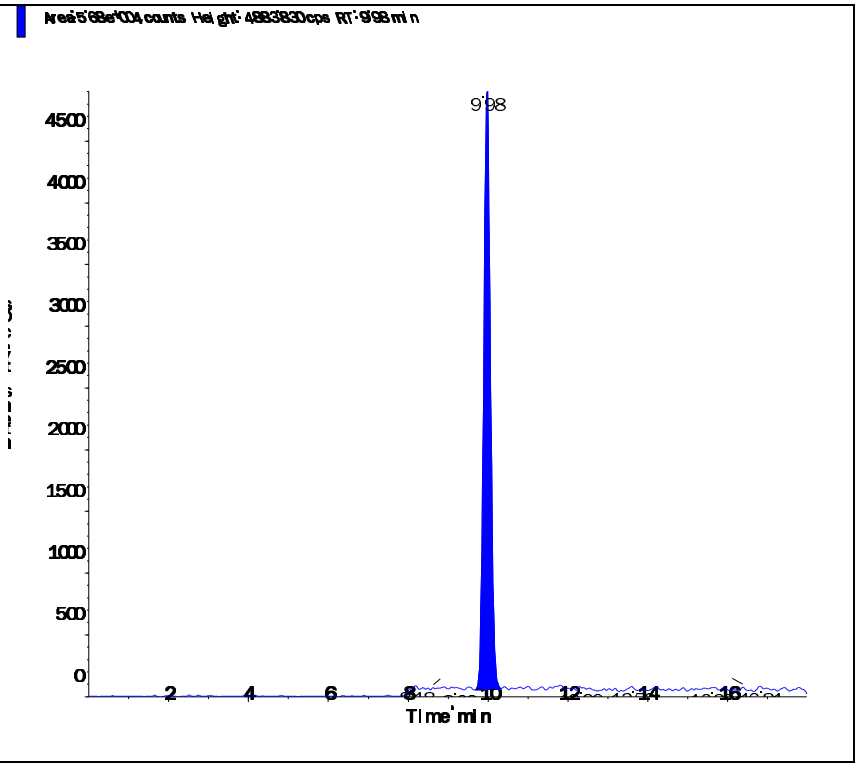

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Data File	LM33572.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/2/2016 10:09:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-06 STD (2.0 ug/L)	**Injection Vial**	56.00
Data File	LM33572.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 10:09:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG559340-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.99	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.630e+05	10.00	2.00	2.02
Perchlorate conf	1.170e+05	9.99	2.00	2.01

O18LP (Internal Standard)

RT (Exp. RT): 9.99(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

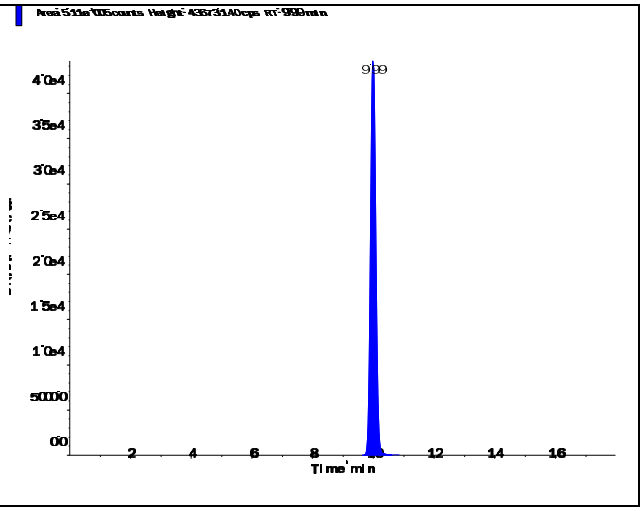

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.00 (9.94) min Calculated conc: 2.02 ng/ml Area Ratio: 0.711 Sample Type: (Standard)	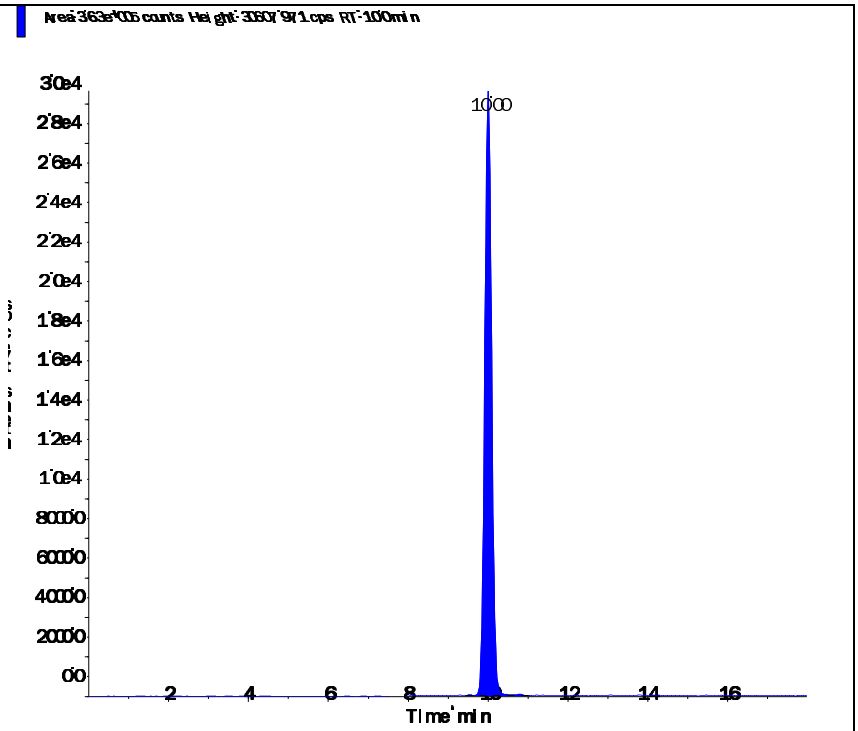
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.99 (9.92) min Calculated conc: 2.01 ng/ml Area Ratio: 0.228 Sample Type: (Standard)	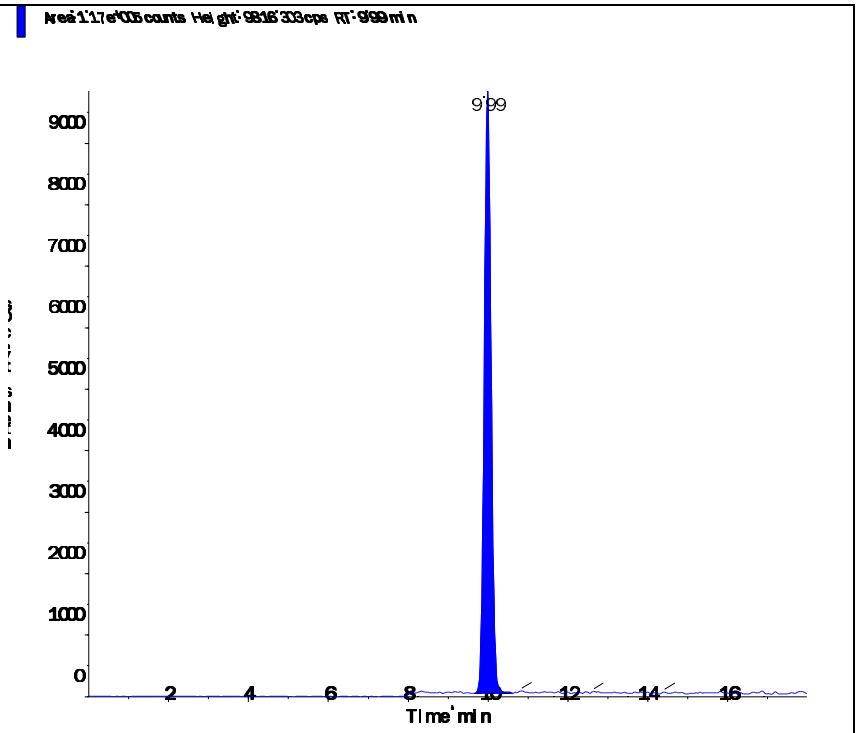

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Data File	LM33573.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/2/2016 10:28:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-07 STD (5.0 ug/L)	**Injection Vial**	57.00
Data File	LM33573.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 10:28:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG559340-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.900e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.710e+05	9.98	5.00	5.07
Perchlorate conf	2.820e+05	9.97	5.00	5.11

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

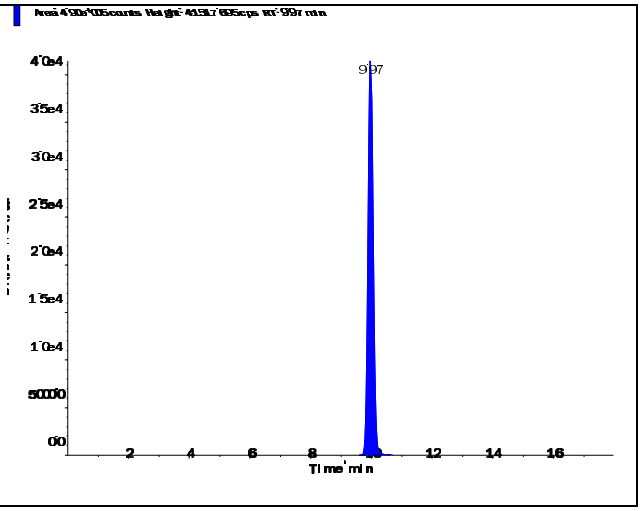

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.98 (9.94) min Calculated conc: 5.07 ng/ml Area Ratio: 1.779 Sample Type: (Standard)	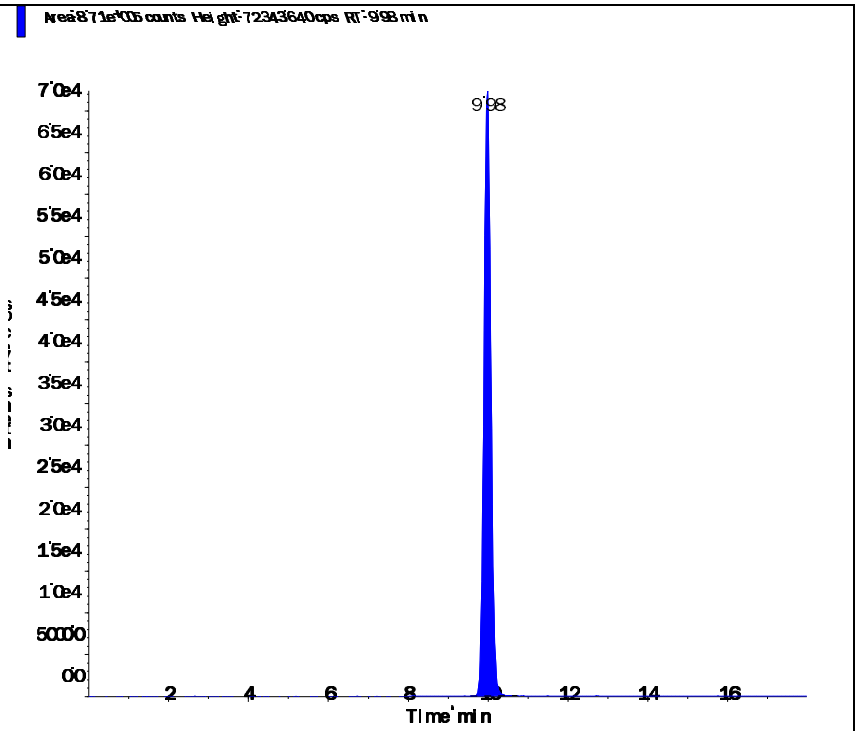
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.97 (9.92) min Calculated conc: 5.11 ng/ml Area Ratio: 0.576 Sample Type: (Standard)	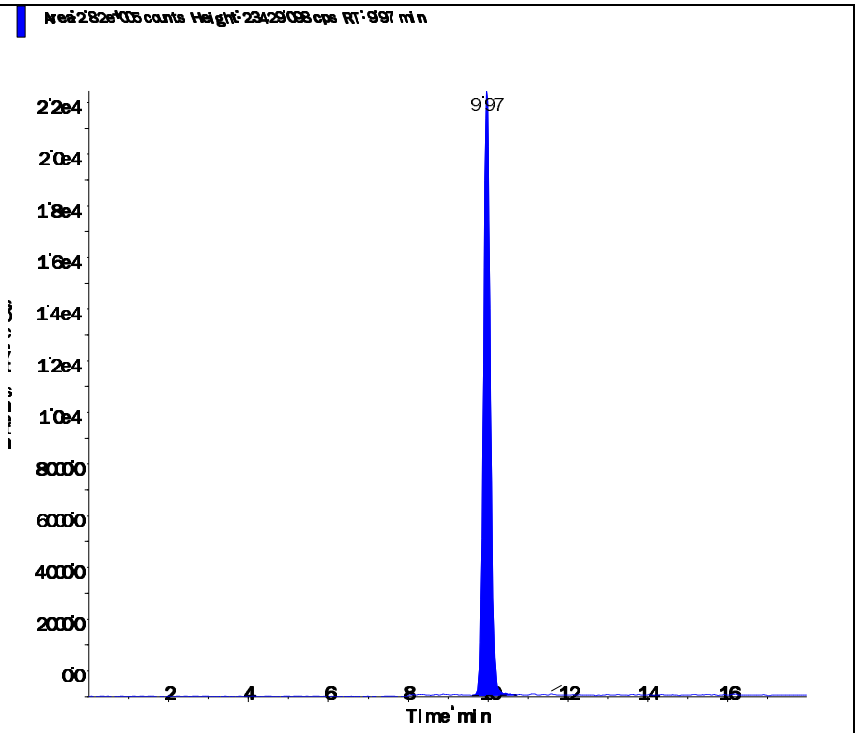

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Data File	LM33574.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/2/2016 10:46:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-08 STD (10 ug/L)	**Injection Vial**	58.00
Data File	LM33574.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 10:46:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG559340-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.650e+06	9.98	10.00	9.87
Perchlorate conf	5.300e+05	9.96	10.00	9.85

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

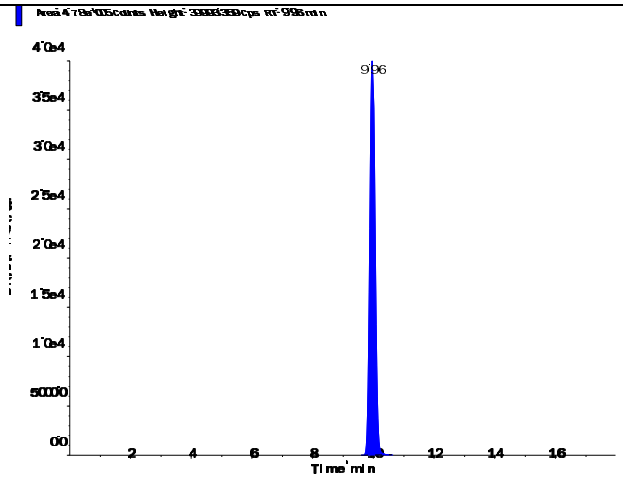

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.98 (9.94) min Calculated conc: 9.87 ng/ml Area Ratio: 3.458 Sample Type: (Standard)	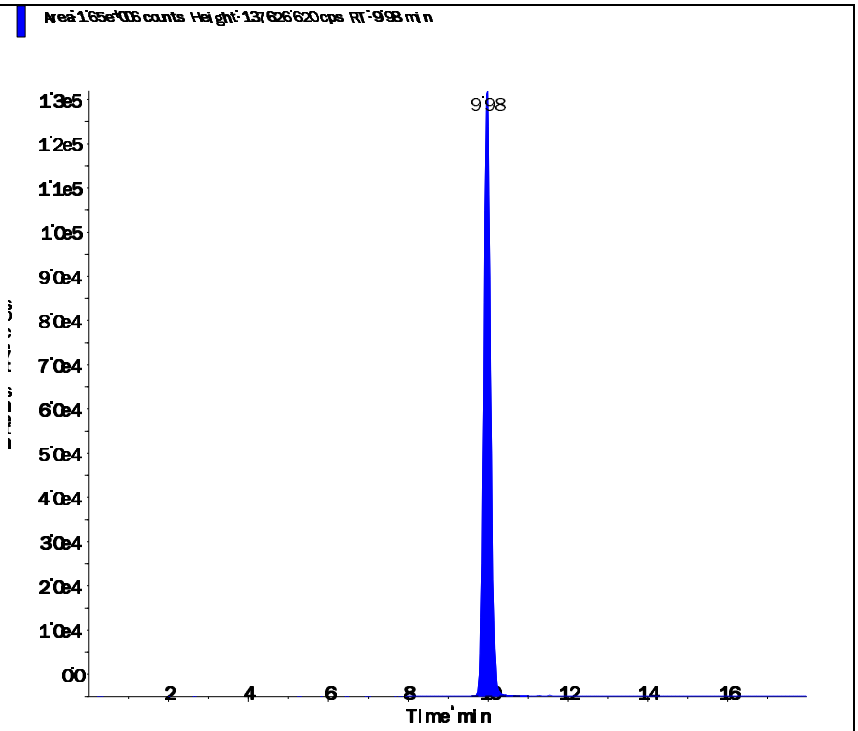
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.96 (9.92) min Calculated conc: 9.85 ng/ml Area Ratio: 1.11 Sample Type: (Standard)	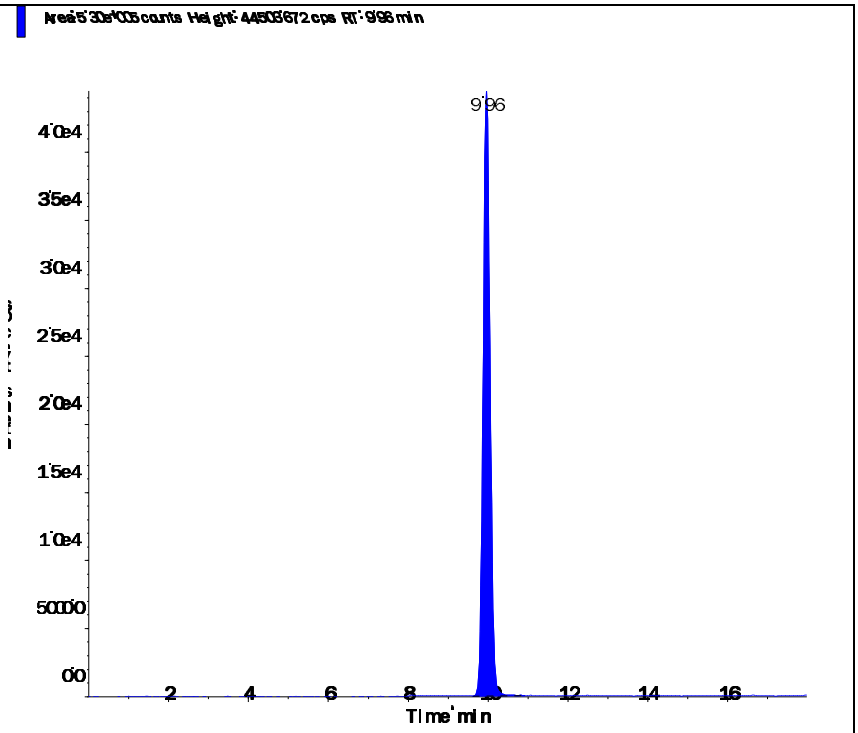

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Data File	LM33575.wiff	**Result Table**	030216_WTD.rdb
Acquisition Date	3/2/2016 11:05:52 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-09 SSCV (1.0 ug/L)	**Injection Vial**	59.00
Data File	LM33575.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 11:05:52 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030216_WTD.rdb
Sample ID	WG559340-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.200e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.900e+05	9.98	1.00	1.03
Perchlorate conf	6.220e+04	9.97	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

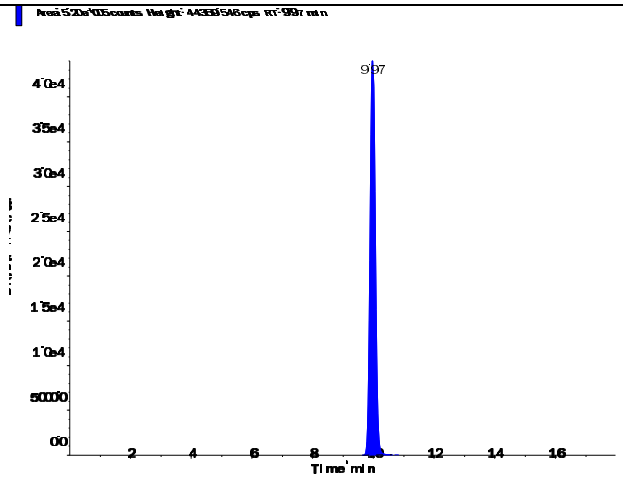

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.98 (9.94) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.366
Sample Type:	(Quality Control)

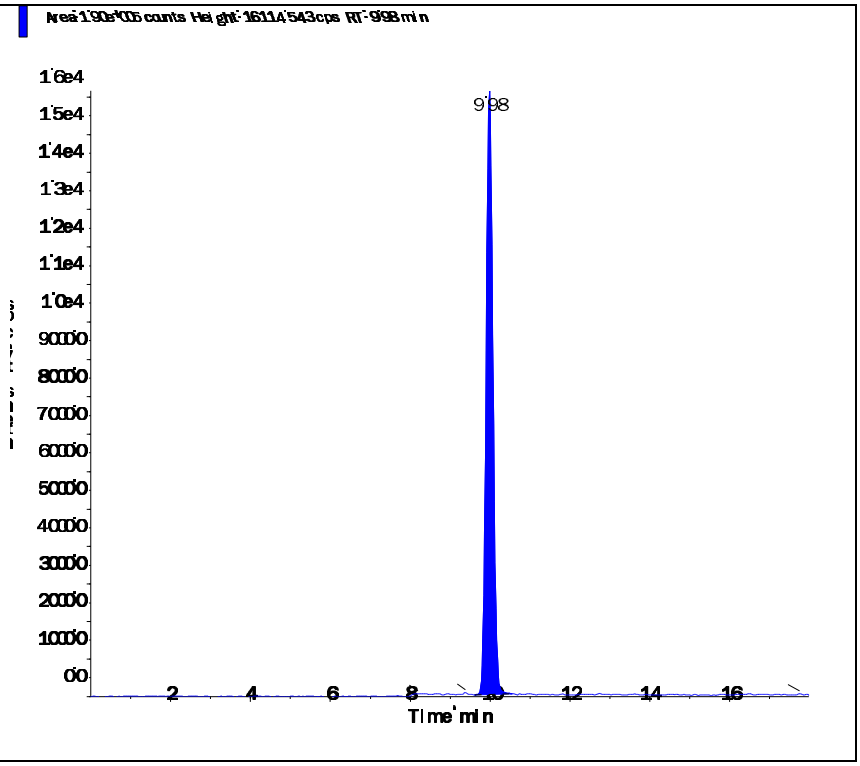

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.97 (9.92) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.12
Sample Type:	(Quality Control)

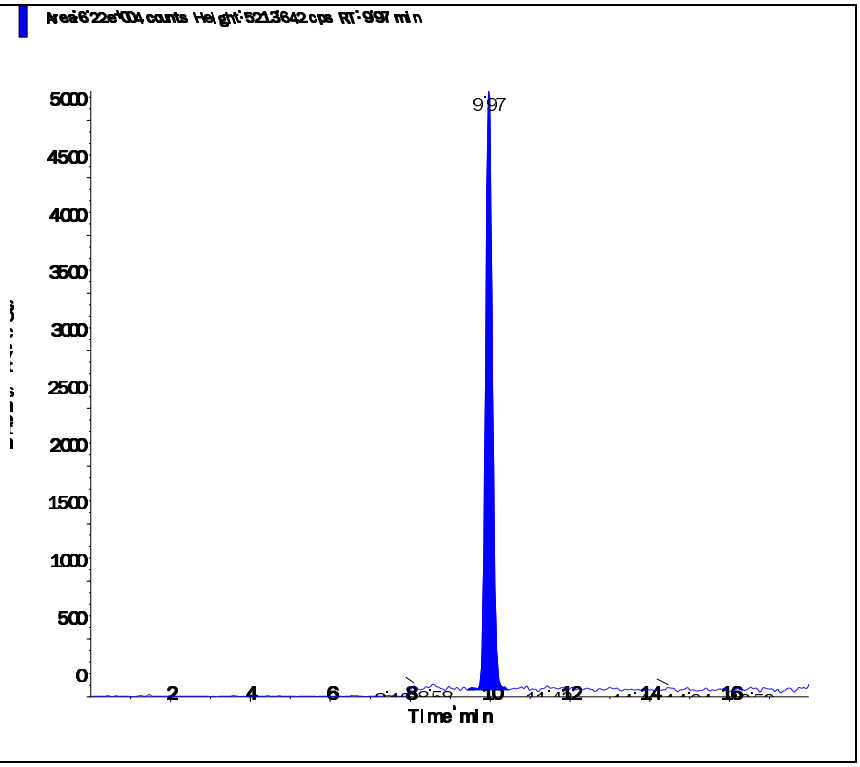

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Data File	LM33781.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/8/2016 3:00:41 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG560141-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33781.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 3:00:41 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG560141-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.830e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.95	1.00	0.988
Perchlorate conf	5.550e+04	9.94	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

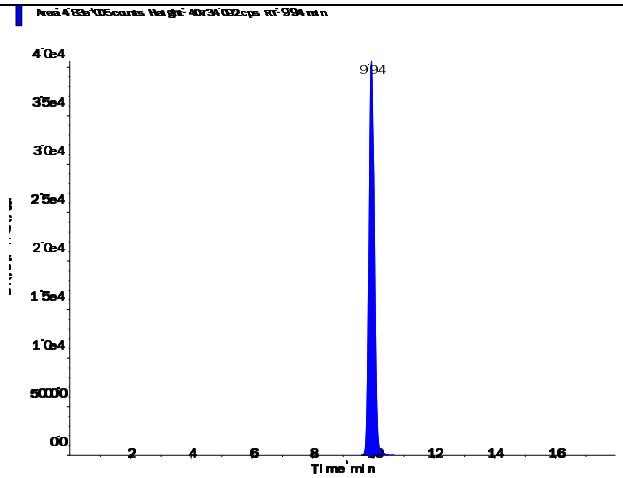

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	0.988 ng/ml
Area Ratio:	0.35
Sample Type:	(Quality Control)

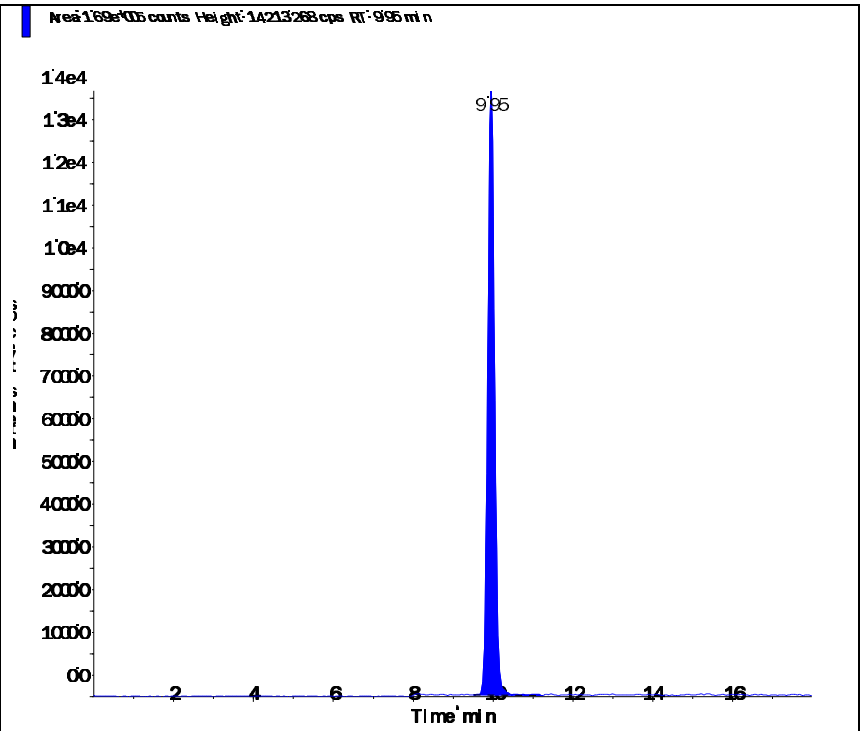

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.115
Sample Type:	(Quality Control)

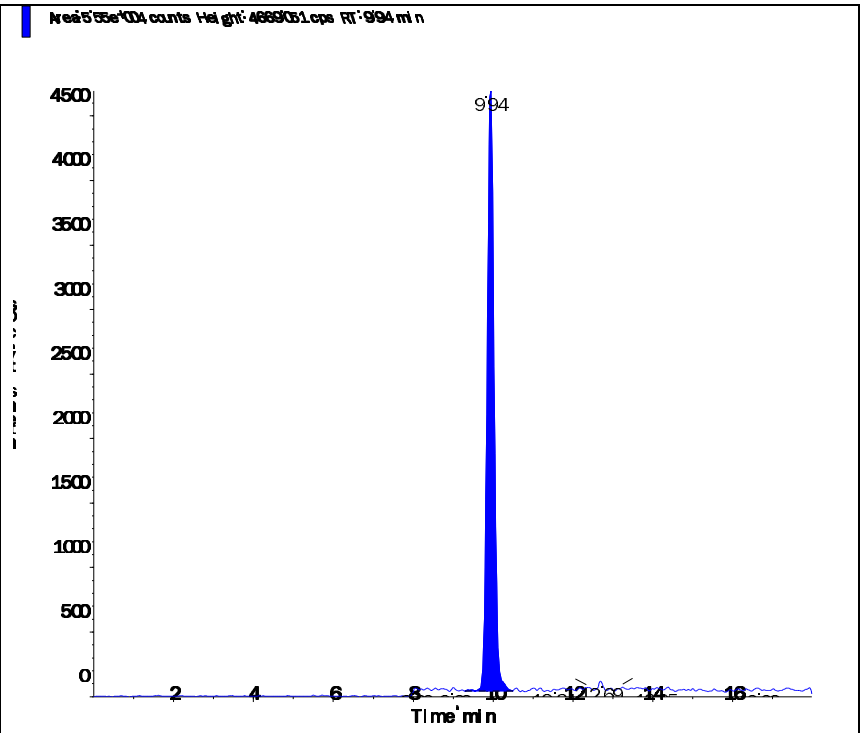

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Data File	LM33793.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/8/2016 6:47:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG560141-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33793.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 6:47:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG560141-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.130e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.770e+05	9.95	1.00	0.974
Perchlorate conf	5.970e+04	9.93	1.00	1.02

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

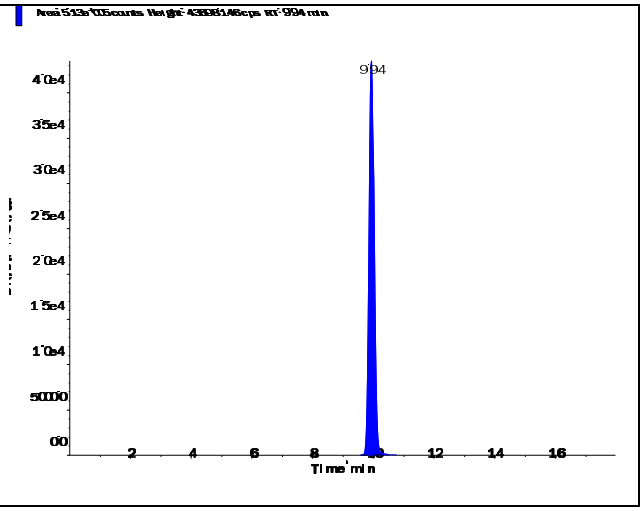

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	0.974 ng/ml
Area Ratio:	0.345
Sample Type:	(Quality Control)

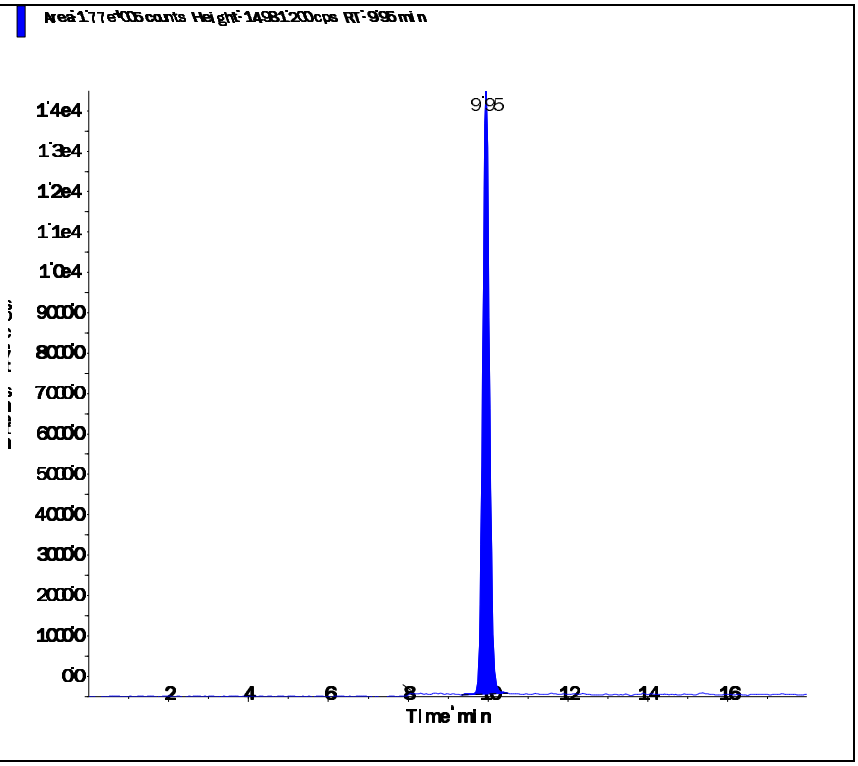

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.117
Sample Type:	(Quality Control)

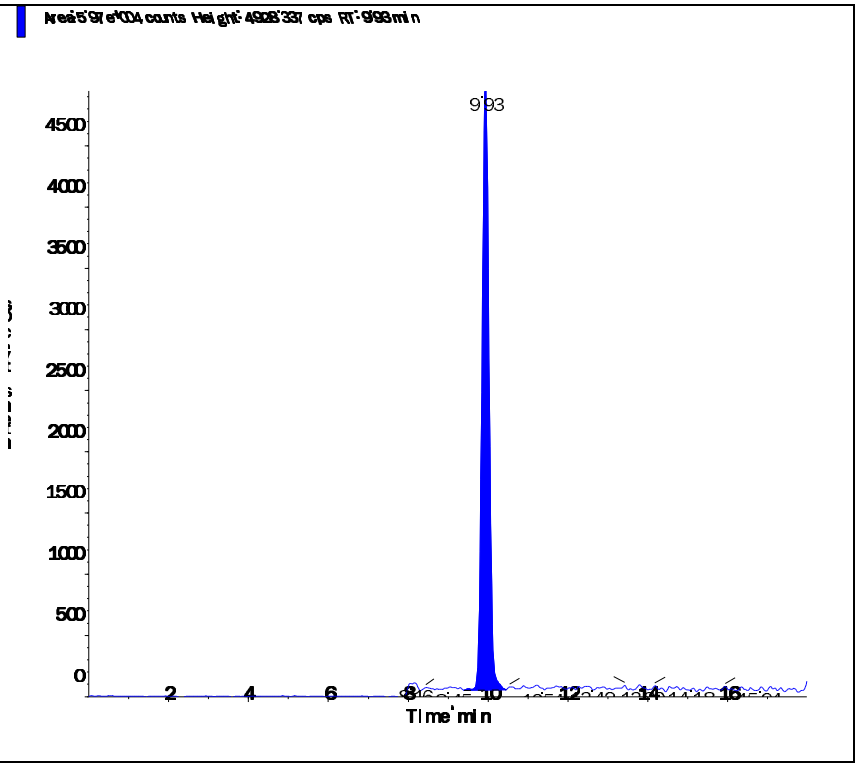

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Data File	LM33803.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/8/2016 9:57:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG560141-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33803.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 9:57:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG560141-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.860e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.040e+05	9.95	1.00	0.985
Perchlorate conf	6.310e+04	9.94	1.00	0.943

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

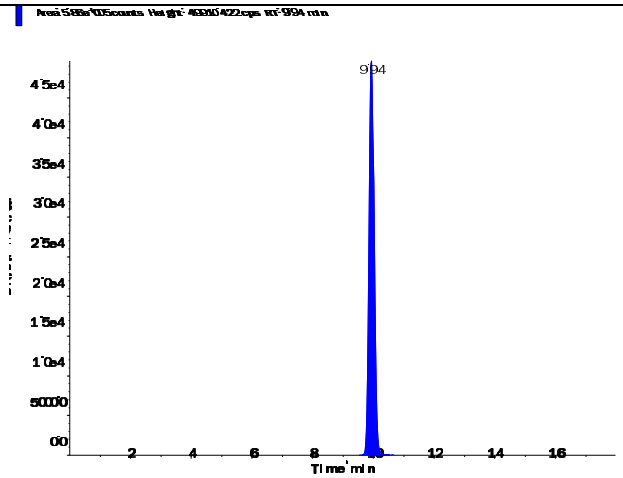

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.349
Sample Type:	(Quality Control)

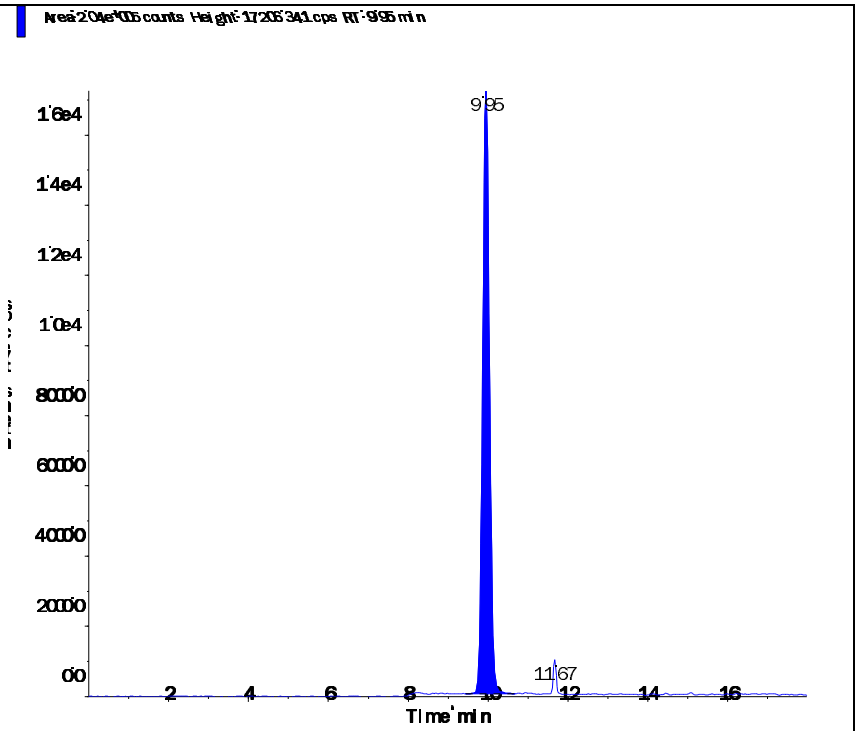

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.943 ng/ml
Area Ratio:	0.108
Sample Type:	(Quality Control)

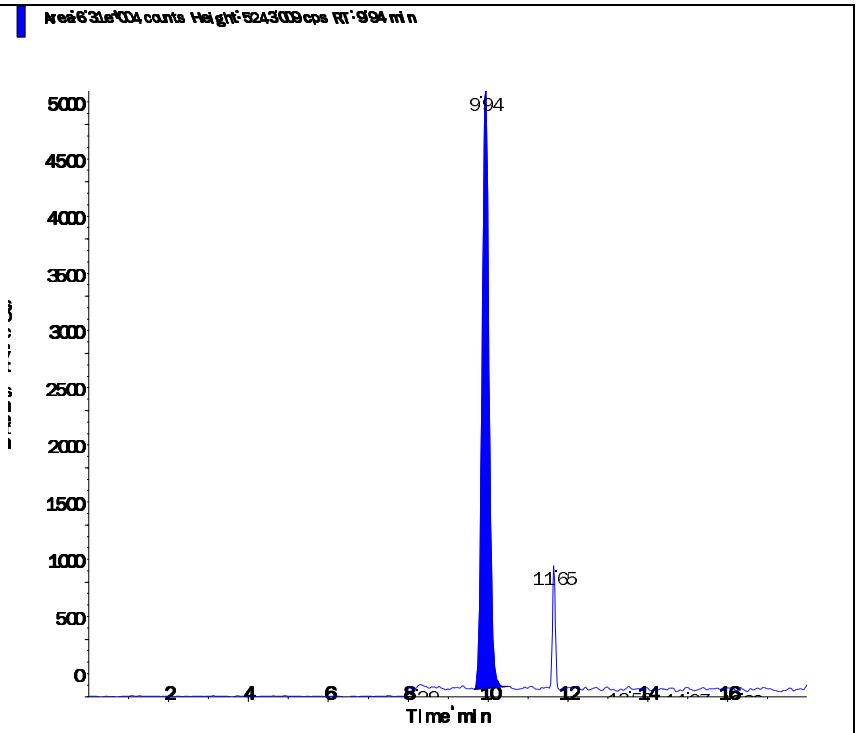

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Data File	LM33806.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/9/2016 10:32:58 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG560141-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33806.wiff	**Injection Volume**	10.00
Acquisition Date	3/9/2016 10:32:58 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG560141-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.070e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.750e+05	9.93	1.00	0.973
Perchlorate conf	5.770e+04	9.91	1.00	0.999

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

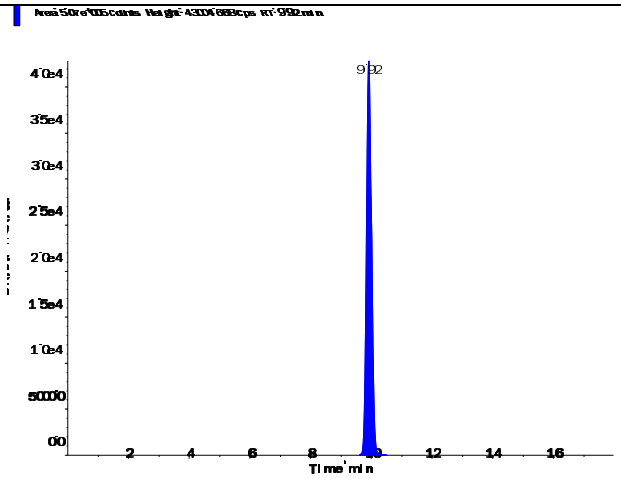

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.345
Sample Type:	(Quality Control)

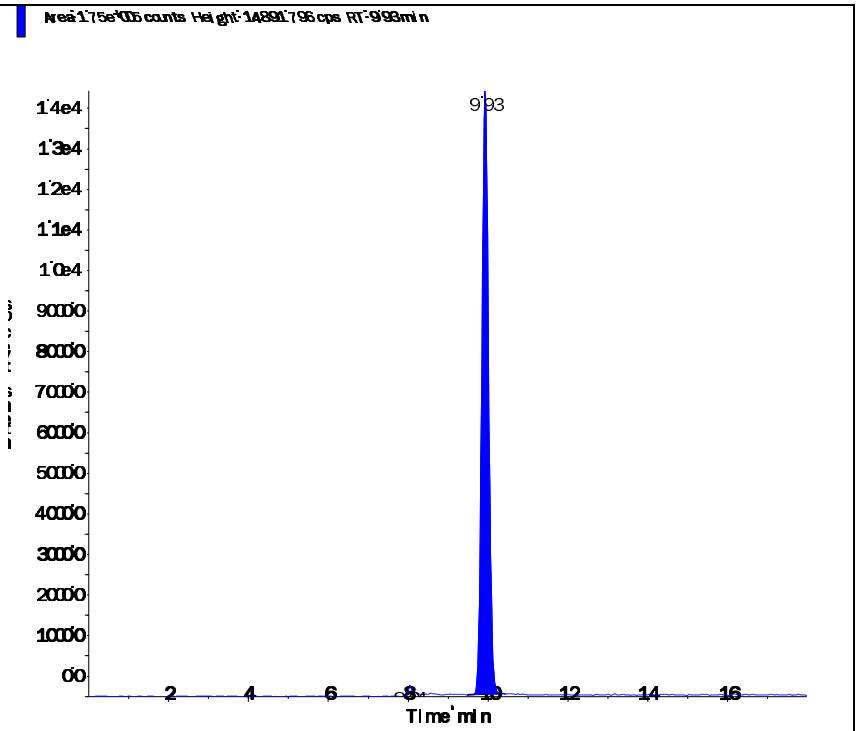

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.92) min
Calculated conc:	0.999 ng/ml
Area Ratio:	0.114
Sample Type:	(Quality Control)

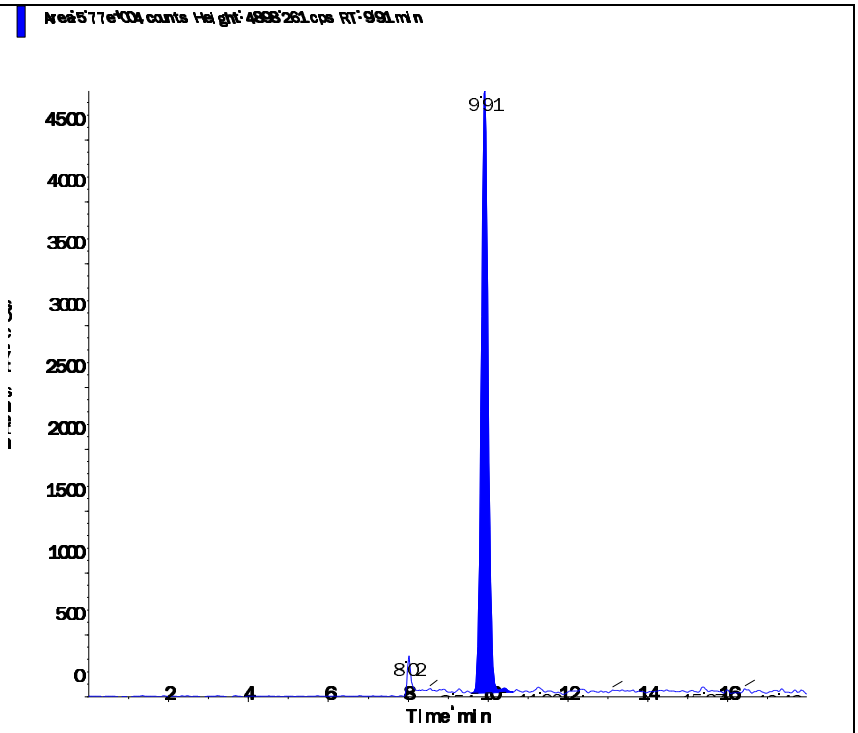

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Printed: 3/9/2016 2:56 PM

Data File	LM33815.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/9/2016 1:23:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG560141-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33815.wiff	**Injection Volume**	10.00
Acquisition Date	3/9/2016 1:23:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG560141-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.900e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.720e+05	9.95	1.00	0.993
Perchlorate conf	5.580e+04	9.94	1.00	0.998

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

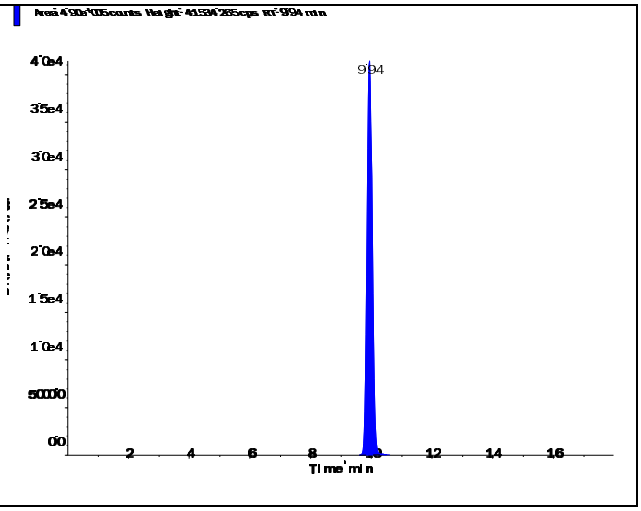

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	0.993 ng/ml
Area Ratio:	0.352
Sample Type:	(Quality Control)

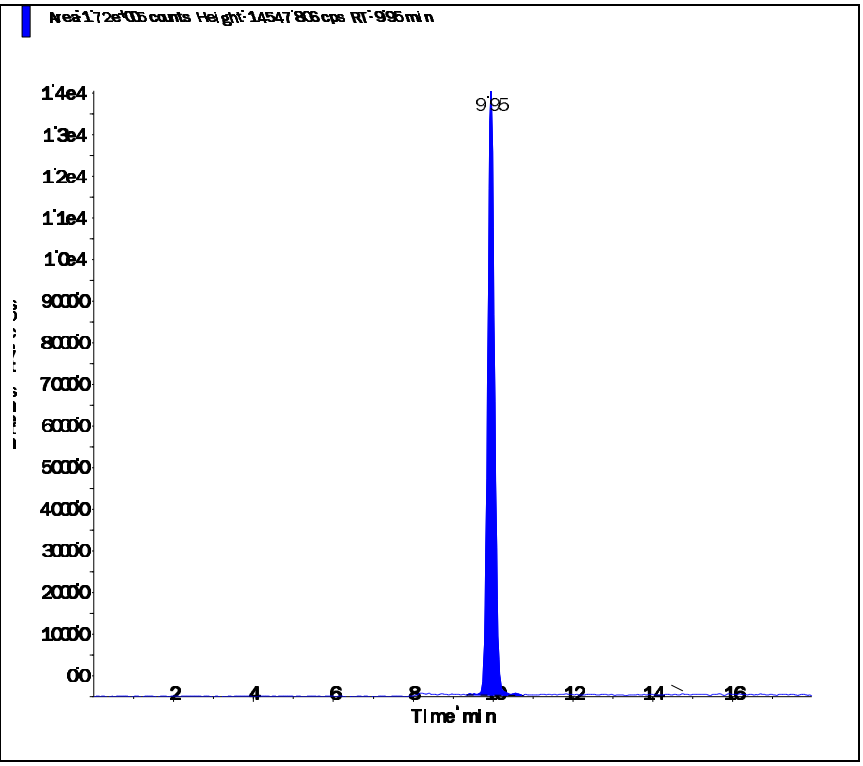

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.998 ng/ml
Area Ratio:	0.114
Sample Type:	(Quality Control)

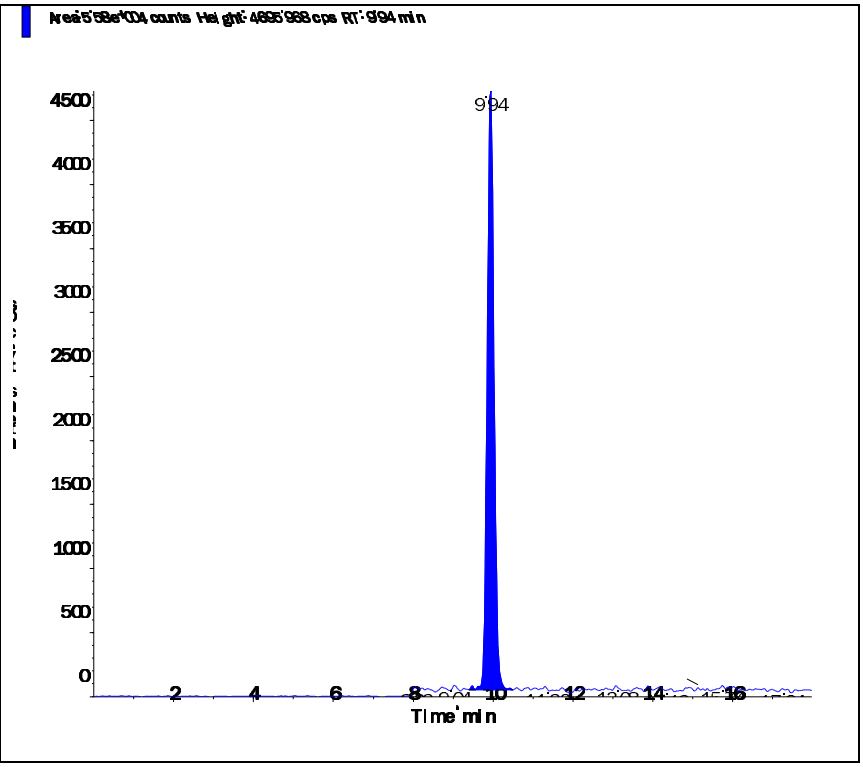

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Data File	LM33782.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/8/2016 3:19:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG560129-07 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33782.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 3:19:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG560129-07	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.600e+04	9.95	N/A	0.195
Perchlorate conf	1.320e+04	9.94	N/A	0.223

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

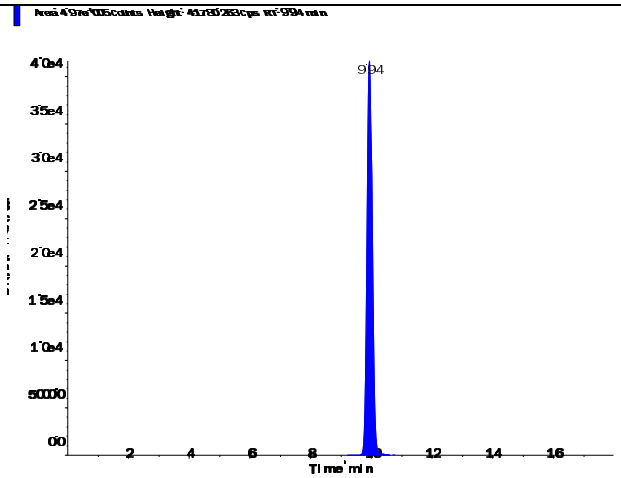

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	0.195 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

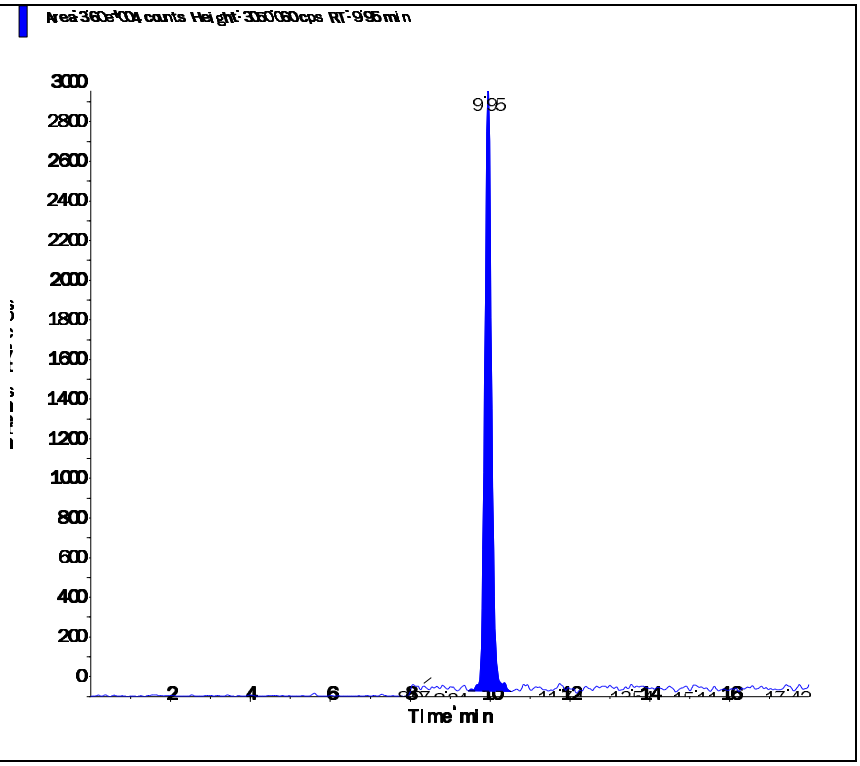

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.223 ng/ml
Area Ratio:	0.027
Sample Type:	(Unknown)

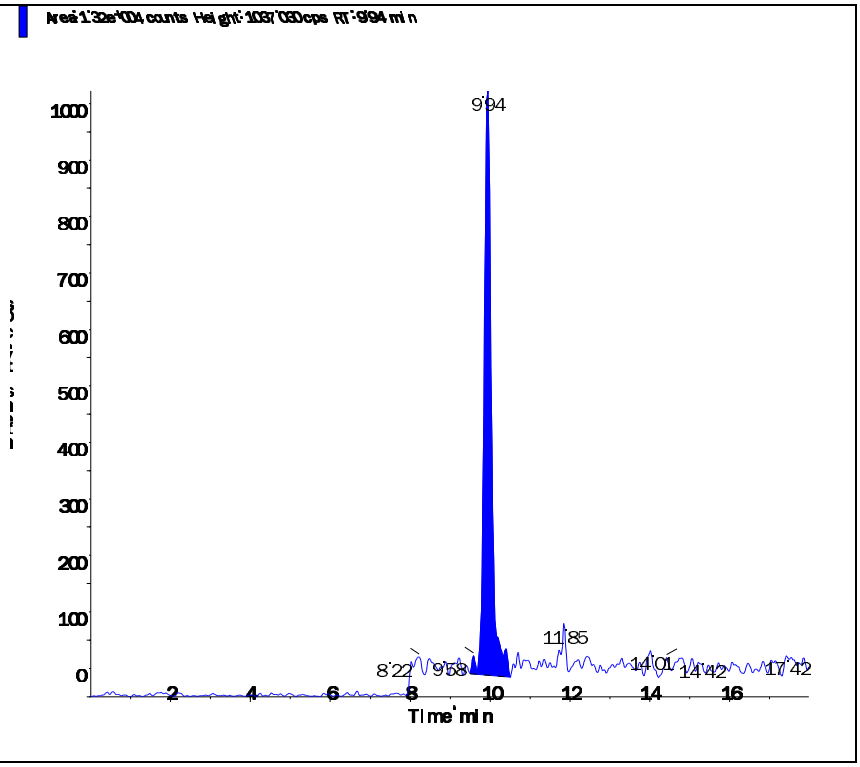

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Data File	LM33794.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/8/2016 7:06:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG560129-08 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33794.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 7:06:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG560129-08	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.310e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.680e+04	9.94	N/A	0.185
Perchlorate conf	1.250e+04	9.93	N/A	0.195

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

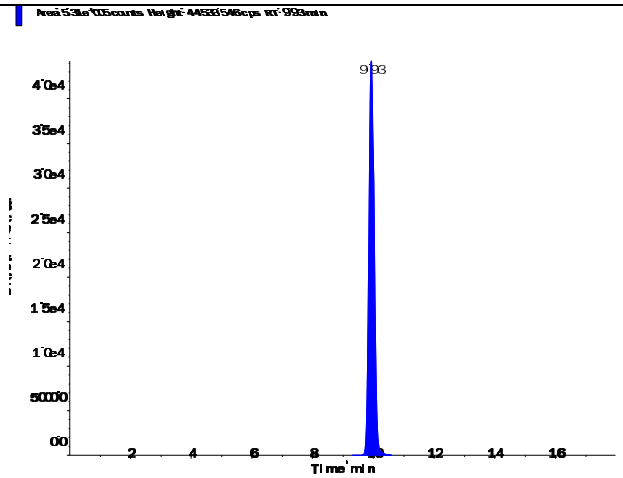

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.185 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

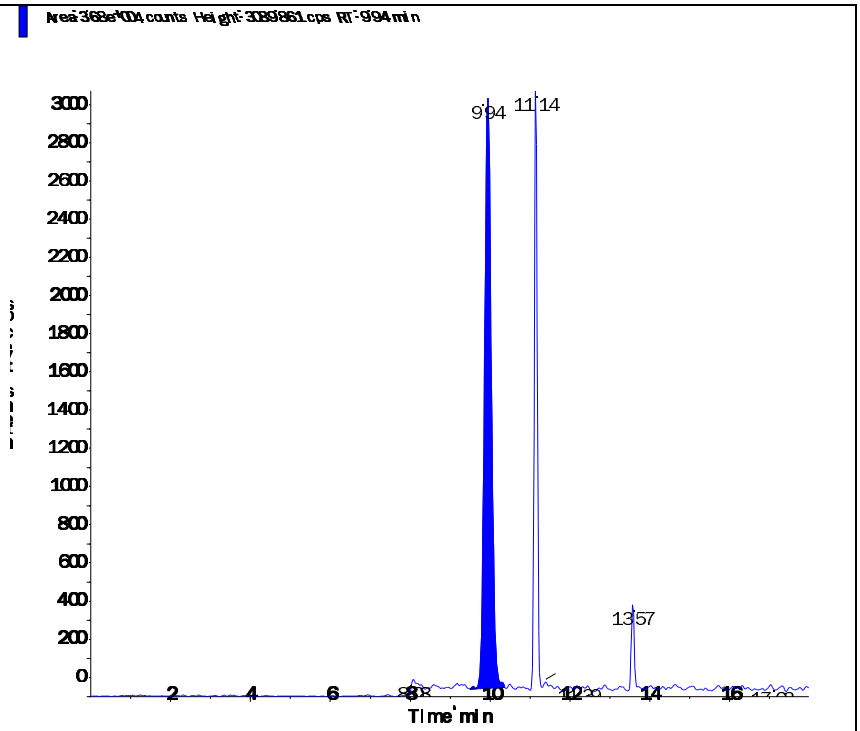

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	0.195 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

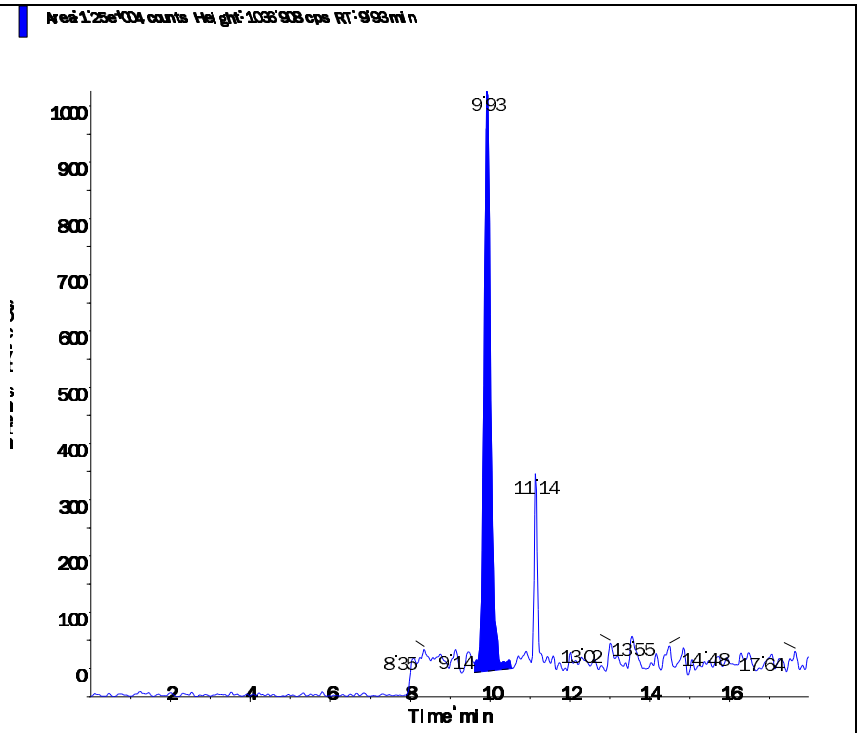

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Data File	LM33804.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/8/2016 10:16:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG560129-09 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33804.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 10:16:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG560129-09	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.940e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.270e+04	9.92	N/A	0.193
Perchlorate conf	1.390e+04	9.90	N/A	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

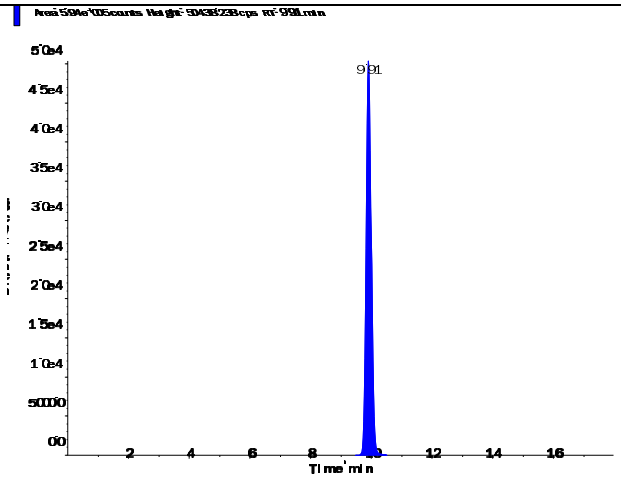

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.92 (9.94) min Calculated conc: 0.193 ng/ml Area Ratio: 0.072 Sample Type: (Unknown)	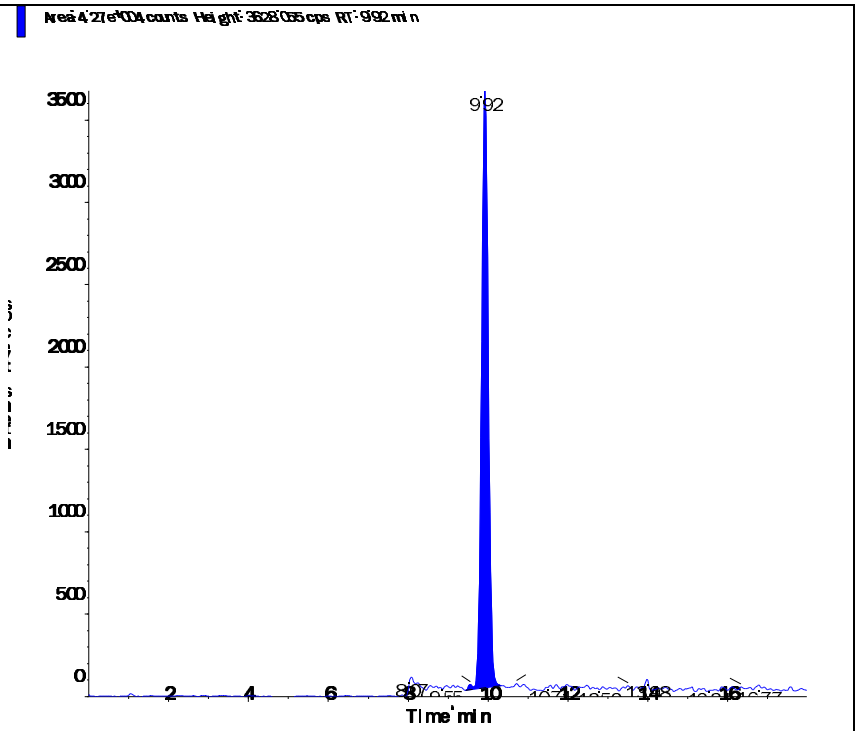
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.90 (9.92) min Calculated conc: 0.194 ng/ml Area Ratio: 0.023 Sample Type: (Unknown)	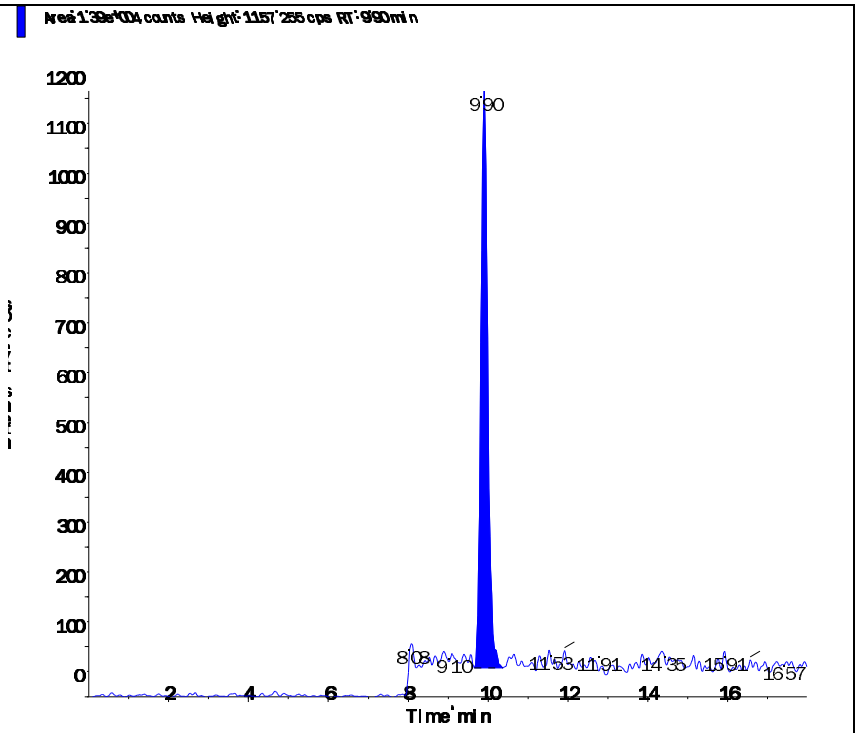

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Data File	LM33807.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/9/2016 10:51:50 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG560129-10 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33807.wiff	**Injection Volume**	10.00
Acquisition Date	3/9/2016 10:51:50 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG560129-10	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.100e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.610e+04	9.93	N/A	0.19
Perchlorate conf	1.200e+04	9.91	N/A	0.196

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

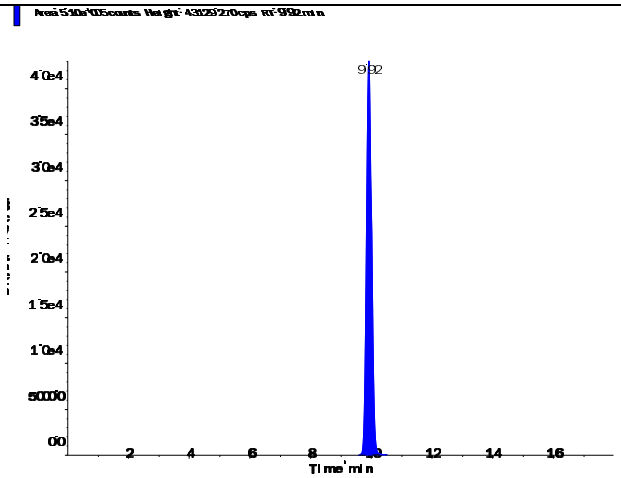

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	0.19 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

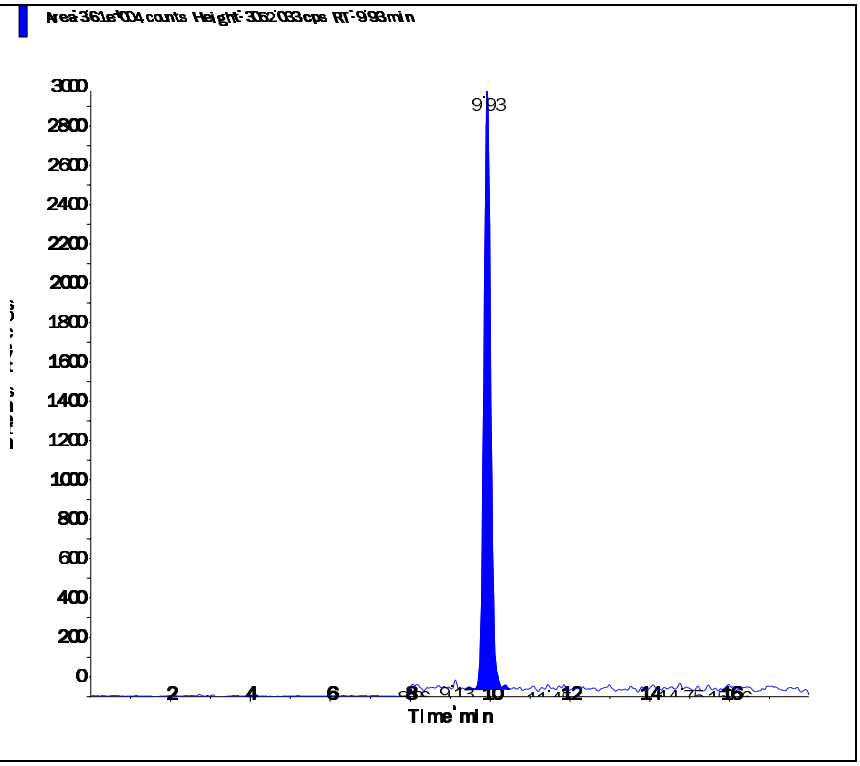

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.92) min
Calculated conc:	0.196 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

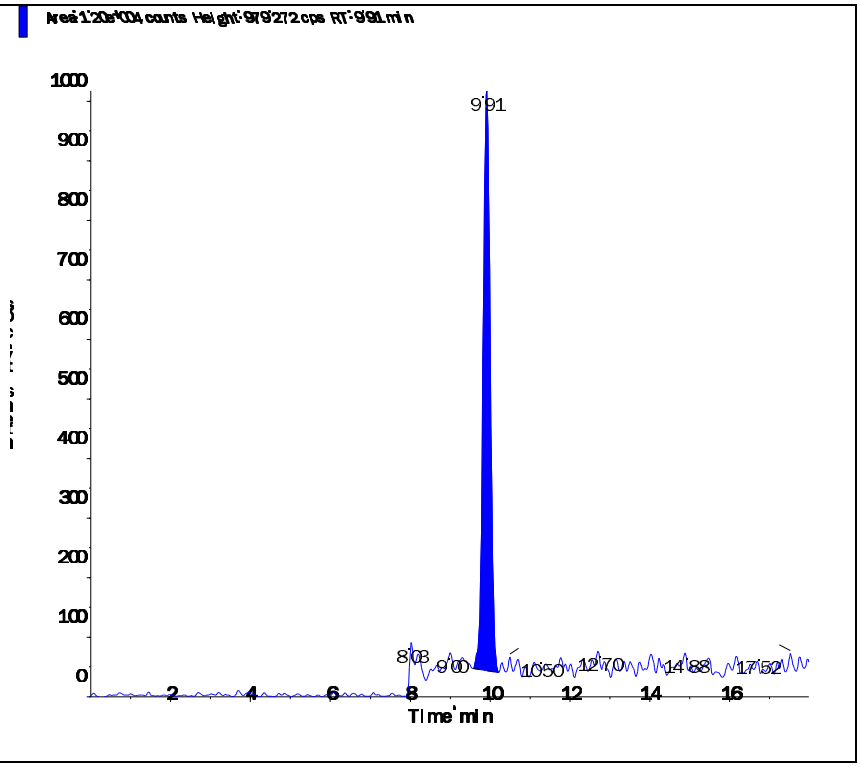

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Data File	LM33816.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/9/2016 1:42:11 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG560129-11 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33816.wiff	**Injection Volume**	10.00
Acquisition Date	3/9/2016 1:42:11 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG560129-11	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.550e+04	9.95	N/A	0.19
Perchlorate conf	1.120e+04	9.95	N/A	0.184

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

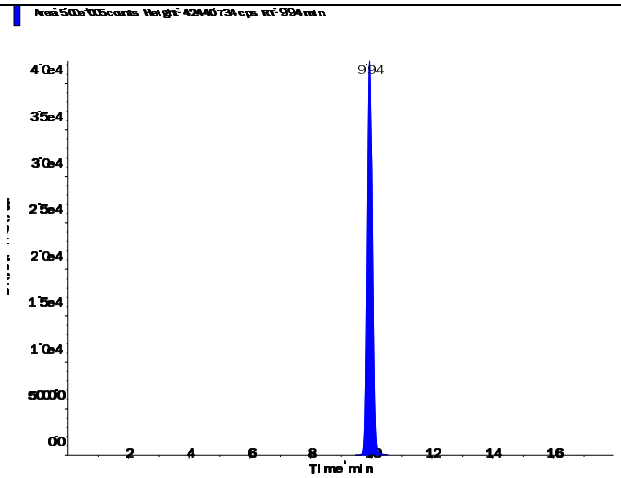

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.95 (9.94) min Calculated conc: 0.19 ng/ml Area Ratio: 0.071 Sample Type: (Unknown)	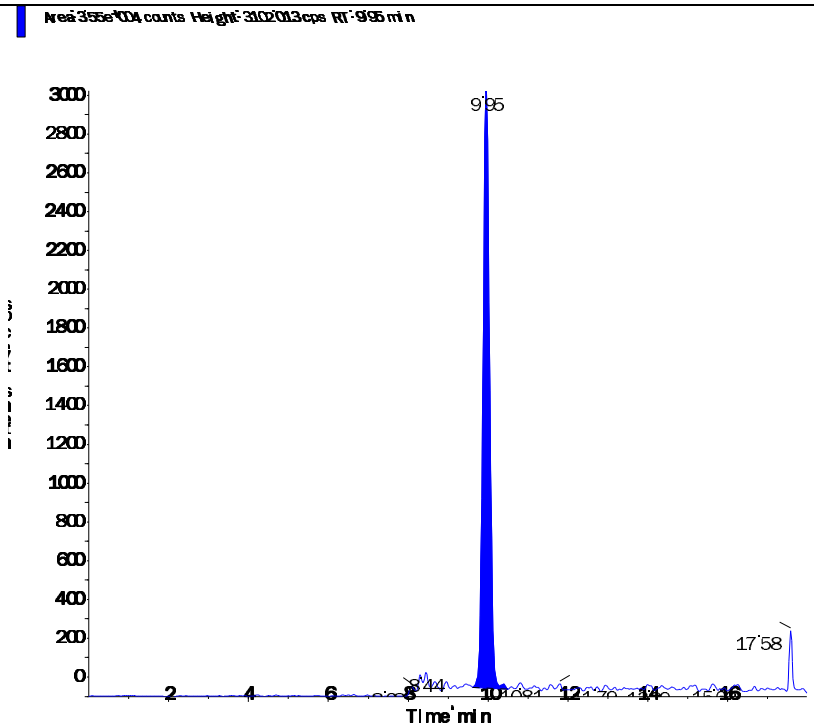
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.95 (9.92) min Calculated conc: 0.184 ng/ml Area Ratio: 0.022 Sample Type: (Unknown)	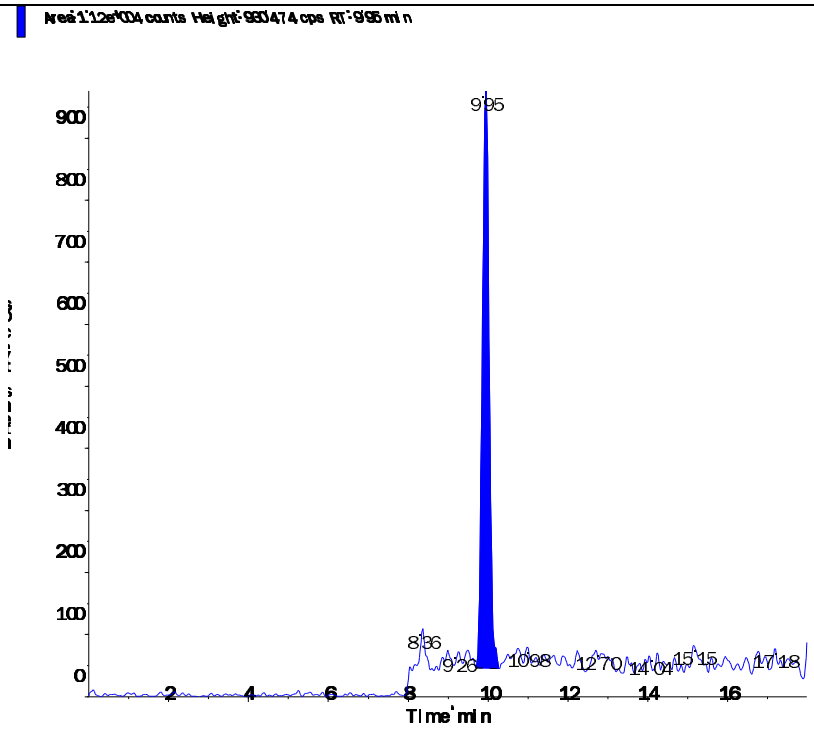

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Data File	LM33780.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/8/2016 2:41:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG560141-01 CCB	**Injection Vial**	1.00
Data File	LM33780.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 2:41:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG560141-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.590e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	1.670e+02	9.79	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

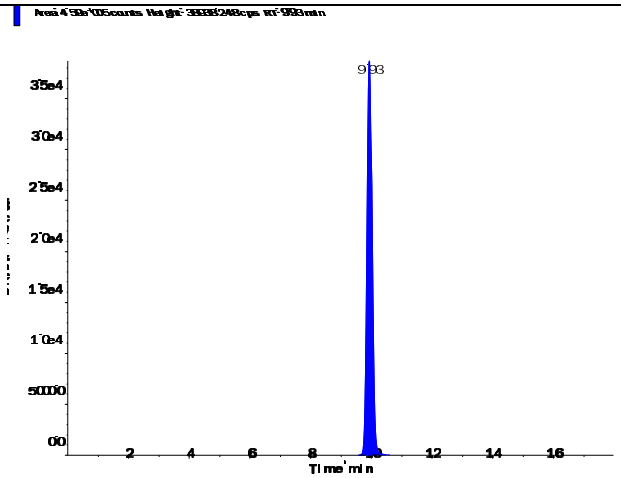

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.94) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	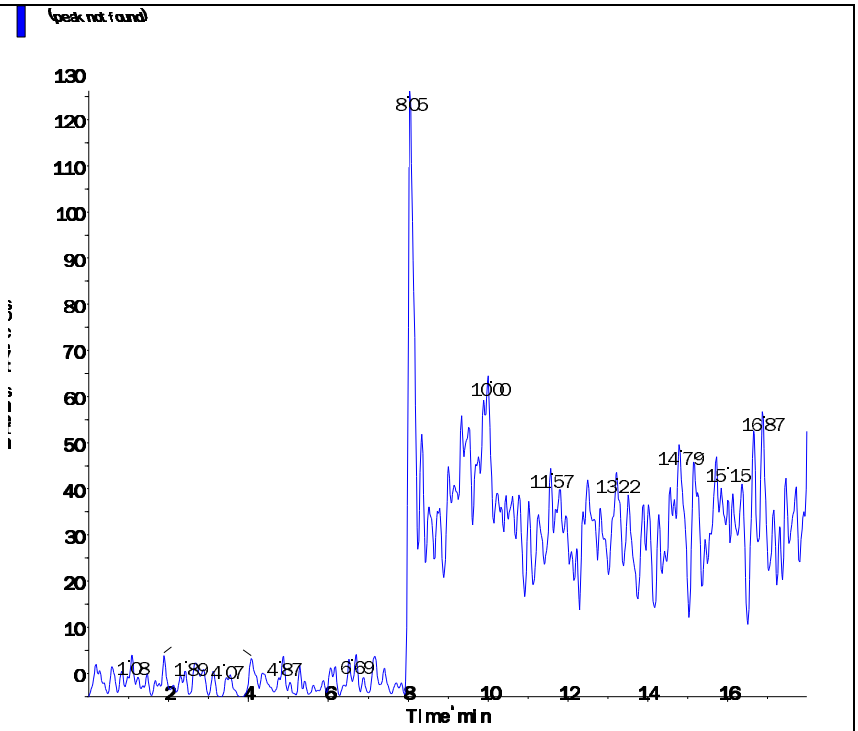
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.79 (9.92) min Calculated conc: < 0 ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	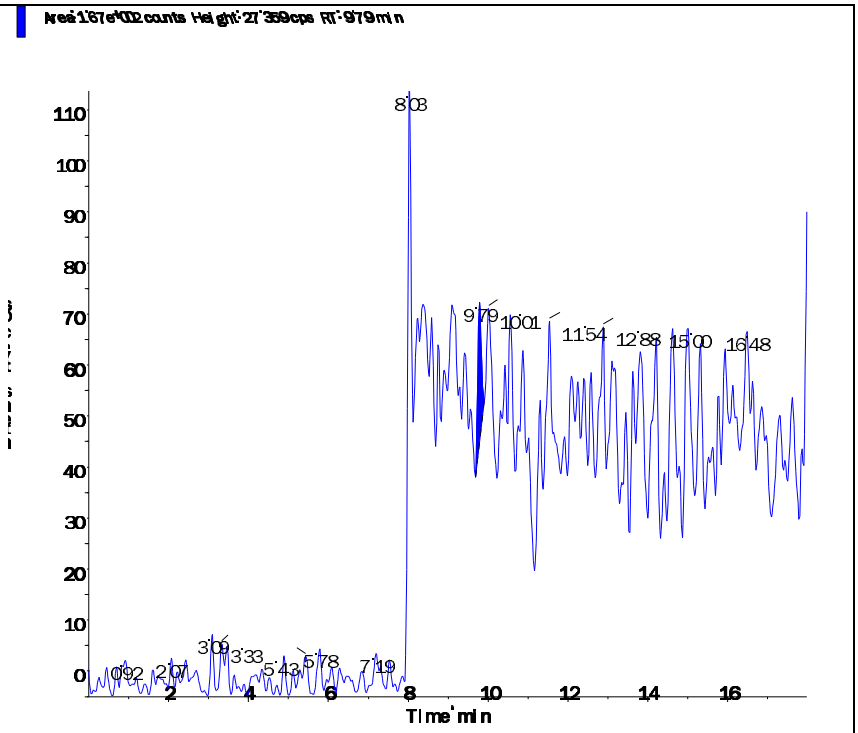

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Data File	LM33795.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/8/2016 7:25:47 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG560141-04 CCB	**Injection Vial**	1.00
Data File	LM33795.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 7:25:47 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG560141-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.230e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.960e+03	9.90	N/A	< 0
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

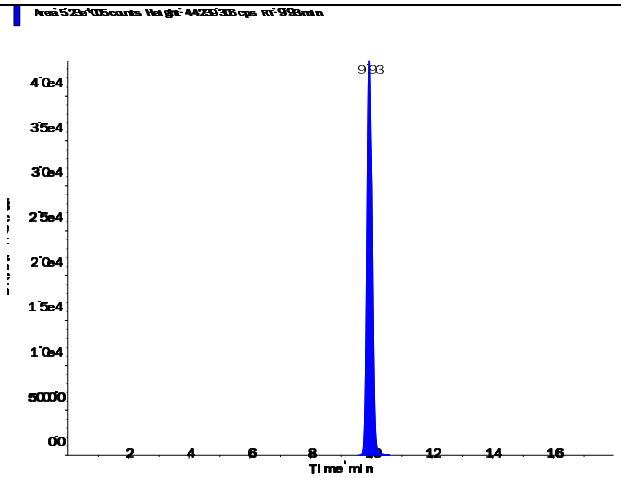

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.90 (9.94) min Calculated conc: < 0 ng/ml Area Ratio: 0.004 Sample Type: (Unknown)	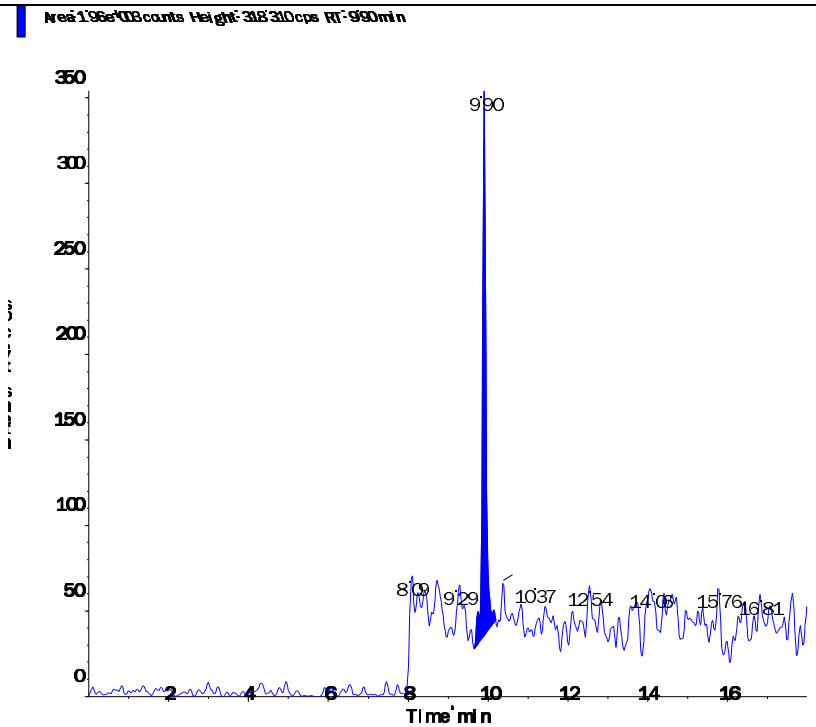
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.92) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	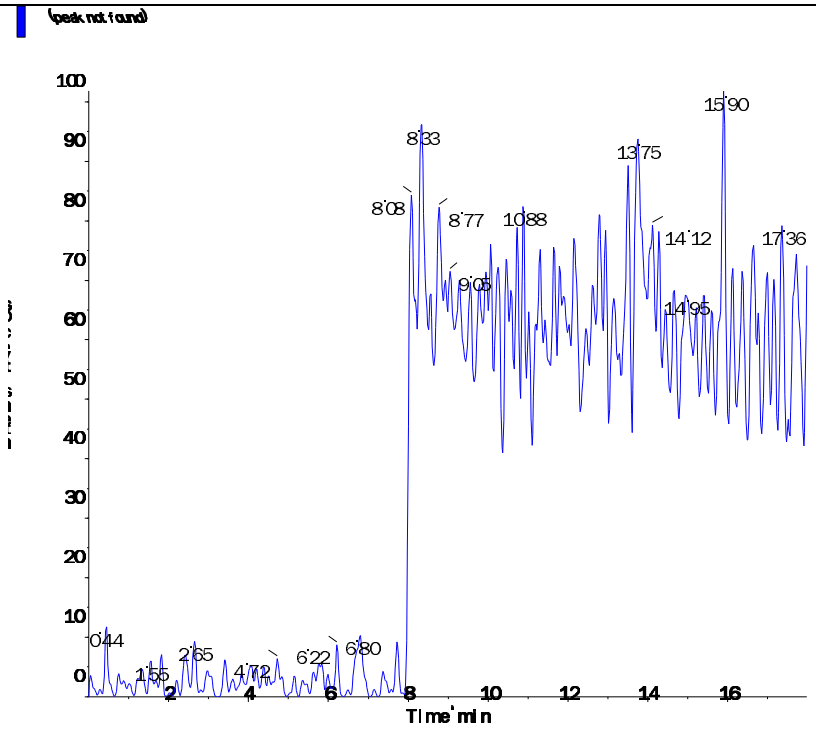

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Printed: 3/9/2016 2:52 PM

Data File	LM33805.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/8/2016 10:35:12 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG560141-06 CCB	**Injection Vial**	1.00
Data File	LM33805.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 10:35:12 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG560141-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.740e+05	9.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	2.360e+02	9.68	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.90(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

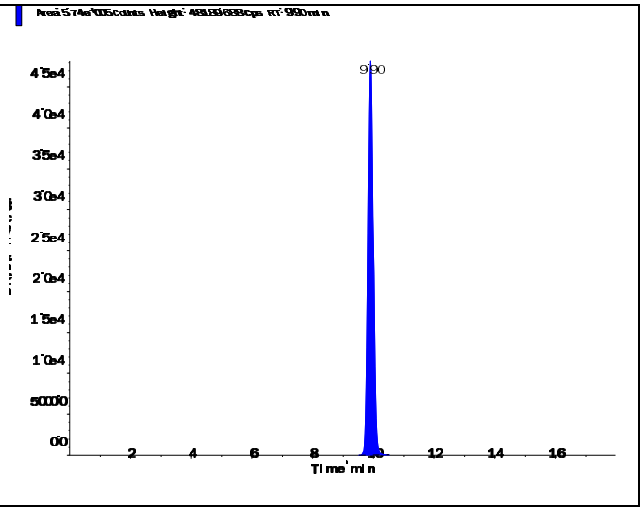

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.94) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	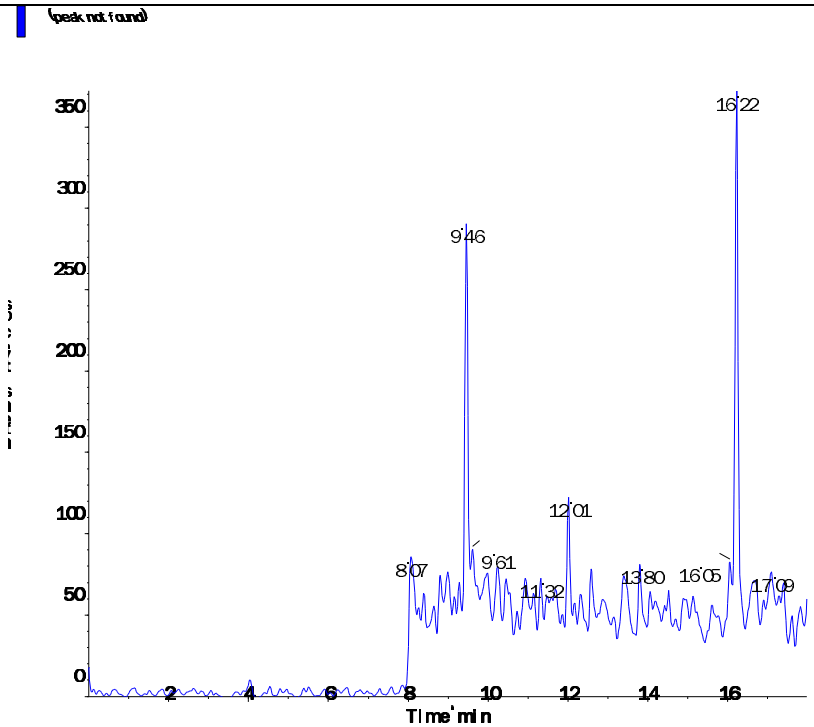
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.68 (9.92) min Calculated conc: < 0 ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	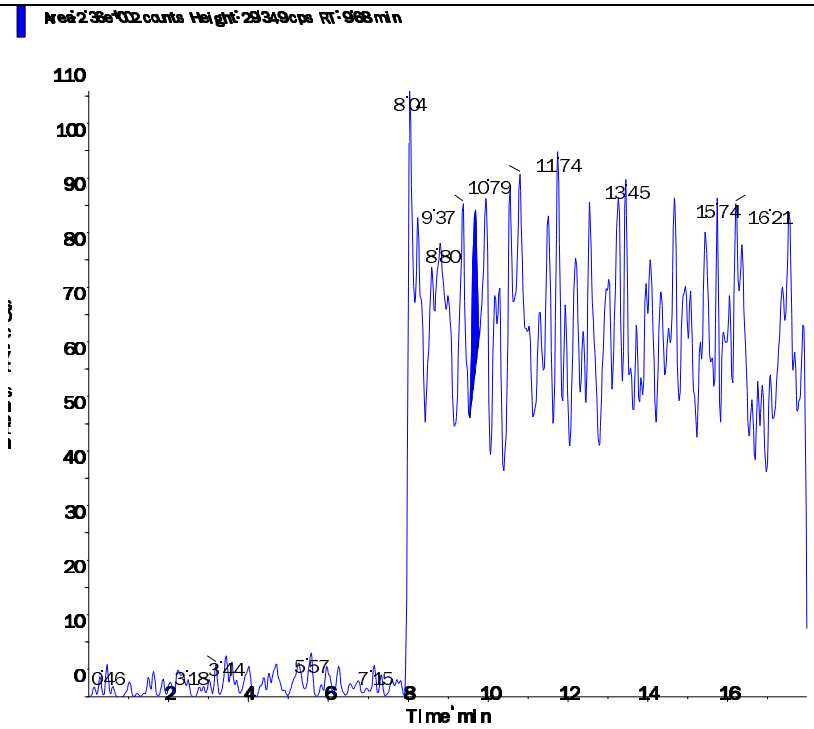

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Printed: 3/9/2016 2:53 PM

Data File	LM33808.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/9/2016 11:10:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG560141-08 CCB	**Injection Vial**	1.00
Data File	LM33808.wiff	**Injection Volume**	10.00
Acquisition Date	3/9/2016 11:10:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG560141-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.980e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

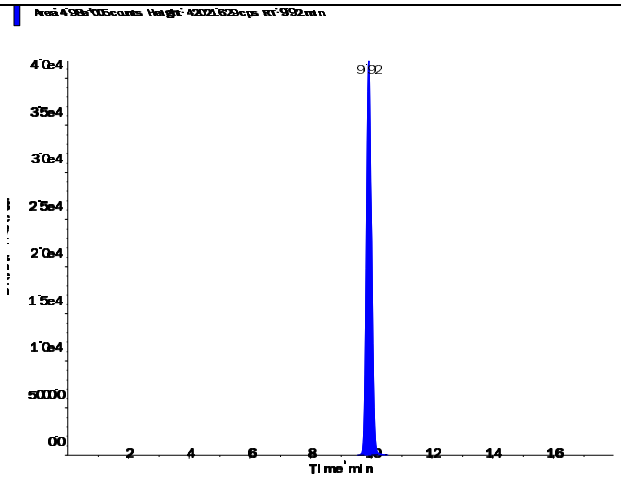

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

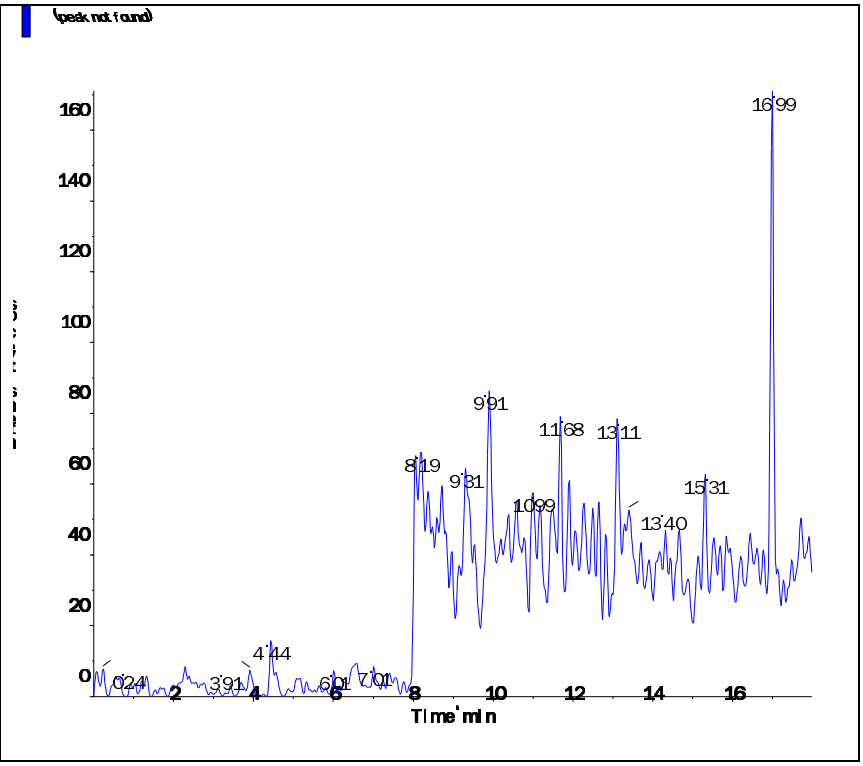

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

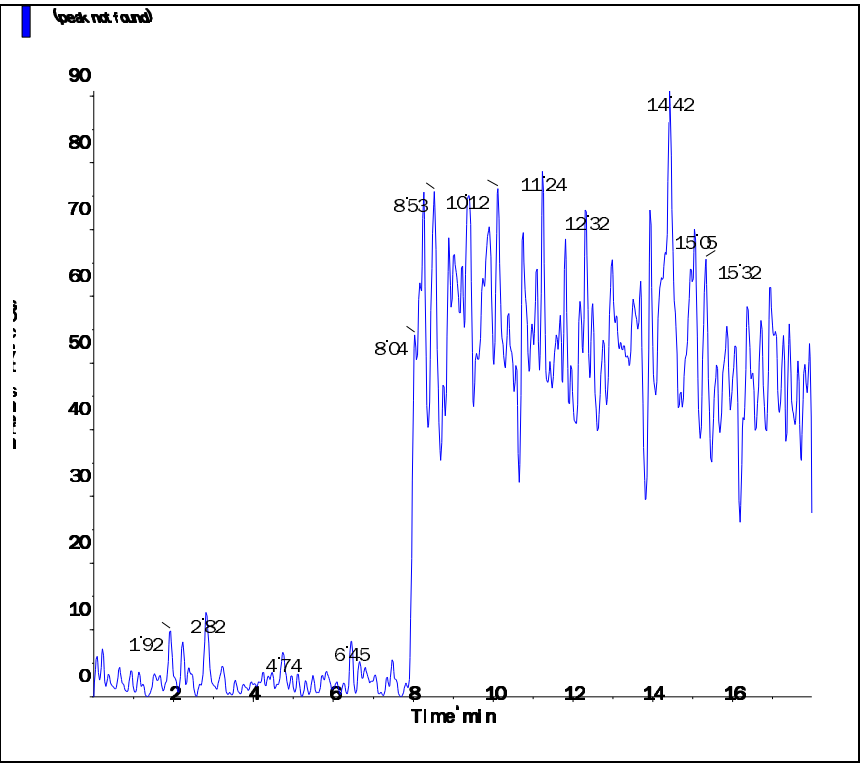

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Data File	LM33817.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/9/2016 2:01:07 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG560141-10 CCB	**Injection Vial**	1.00
Data File	LM33817.wiff	**Injection Volume**	10.00
Acquisition Date	3/9/2016 2:01:07 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG560141-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.880e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

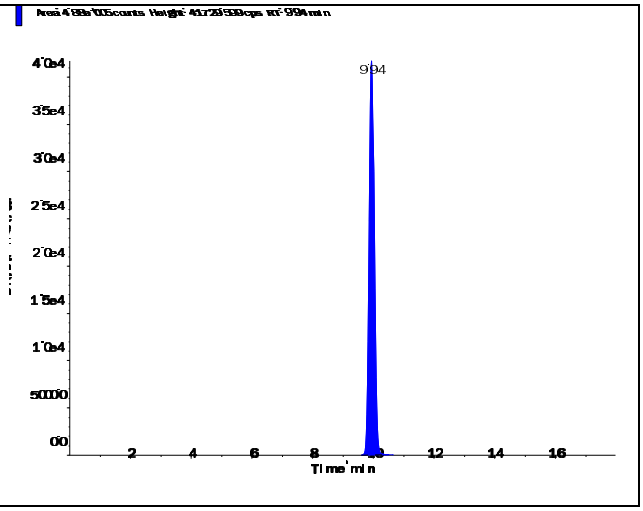

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

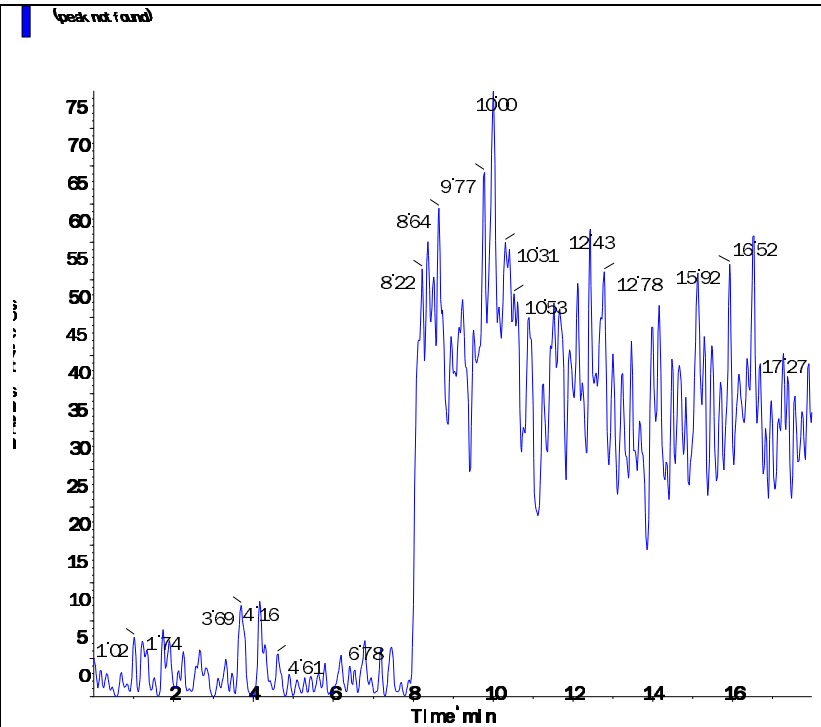

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

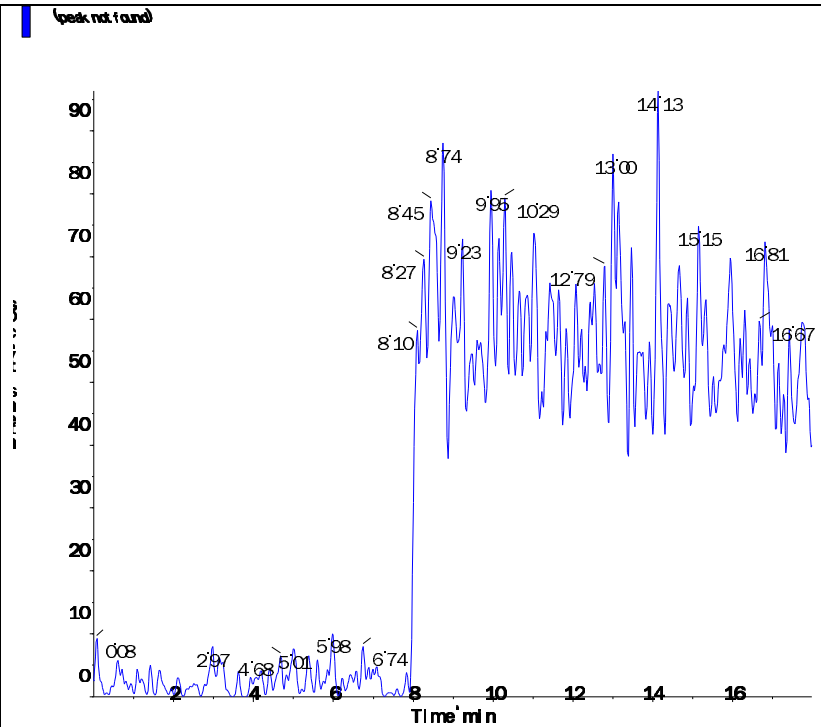

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Data File	LM33783.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/8/2016 3:38:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG560129-01 MCT (2.0ug/kg)	**Injection Vial**	4.00
Data File	LM33783.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 3:38:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG560129-01	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.48	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.560e+04	9.48	N/A	0.194
Perchlorate conf	1.130e+04	9.48	N/A	0.19

O18LP (Internal Standard)

RT (Exp. RT): 9.48(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

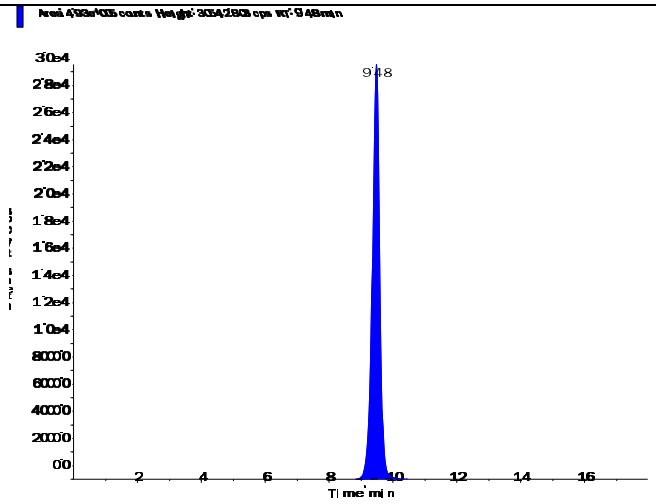

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.48 (9.94) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

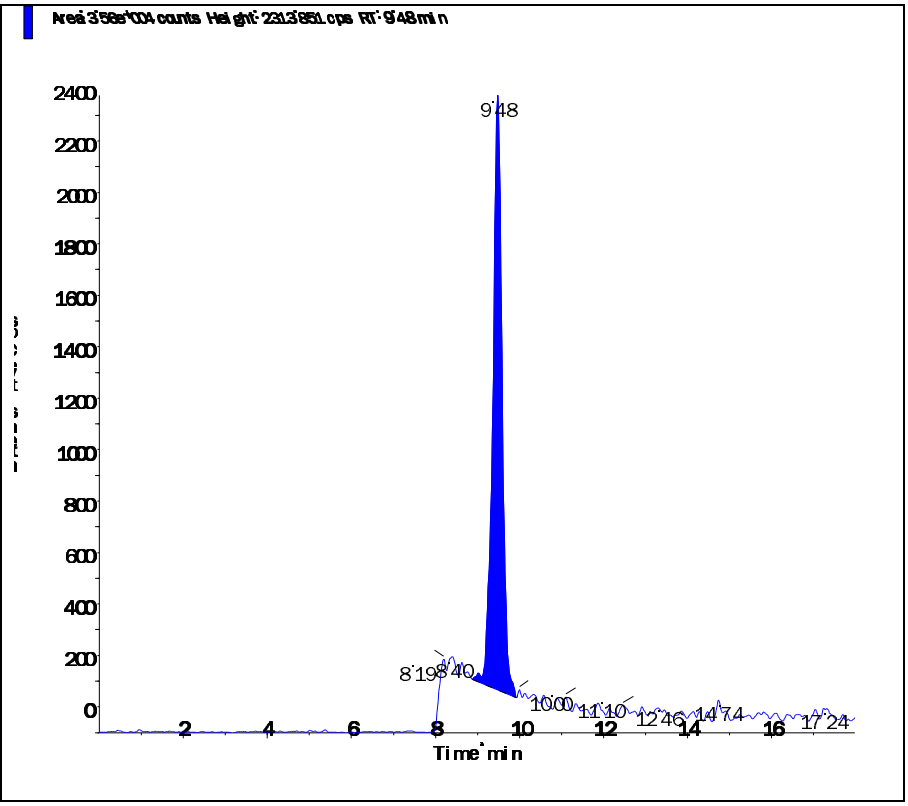

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.48 (9.92) min
Calculated conc:	0.19 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

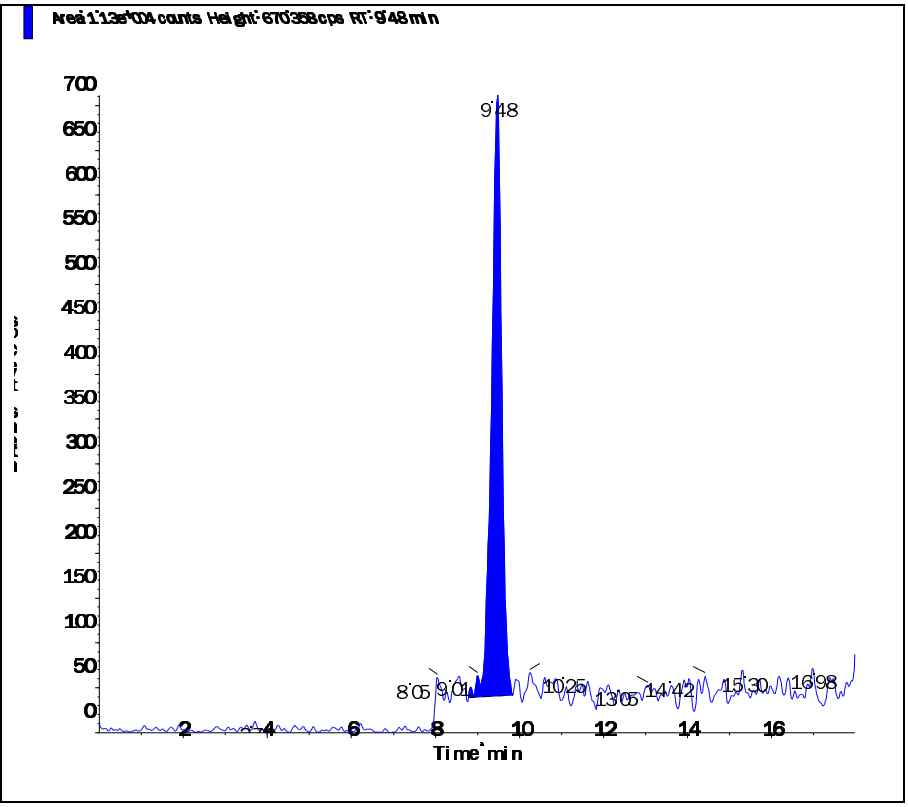

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2.2.1.5 Raw QC Data

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Data File	LM33784.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/8/2016 3:57:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG560129-02 BLANK	**Injection Vial**	5.00
Data File	LM33784.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 3:57:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG560129-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.840e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

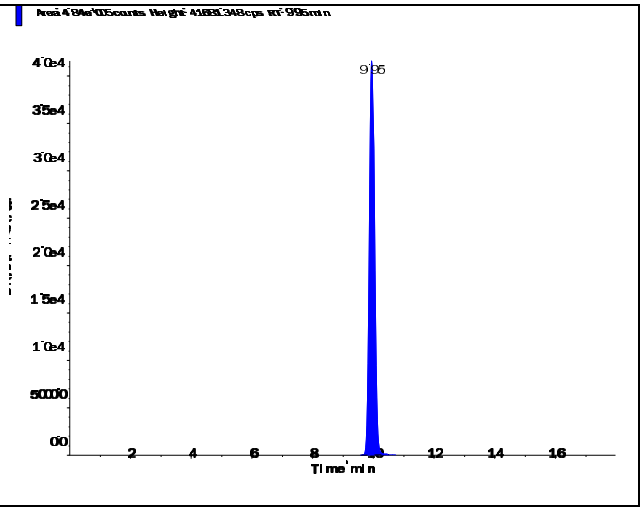

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

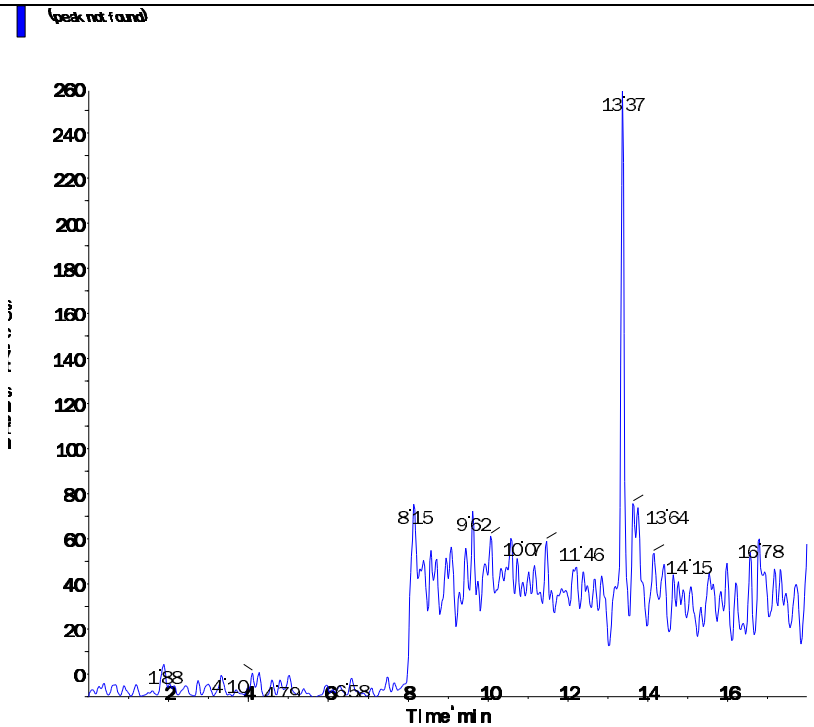

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

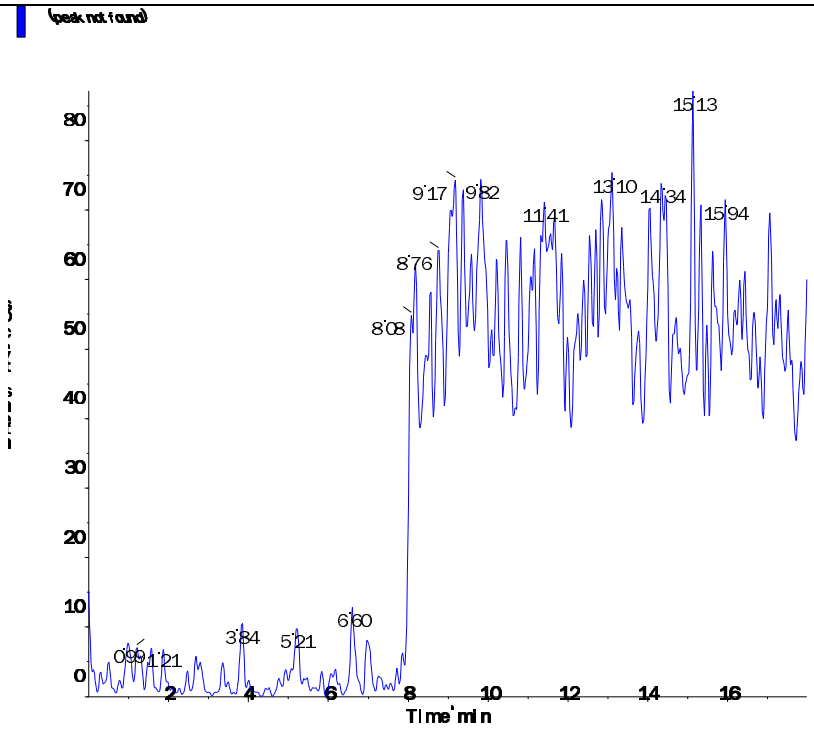

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Data File	LM33785.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/8/2016 4:16:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG560129-03 LCS (2.0ug/kg)	**Injection Vial**	6.00
Data File	LM33785.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 4:16:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG560129-03	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.840e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.620e+04	9.96	N/A	0.201
Perchlorate conf	1.180e+04	9.94	N/A	0.202

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

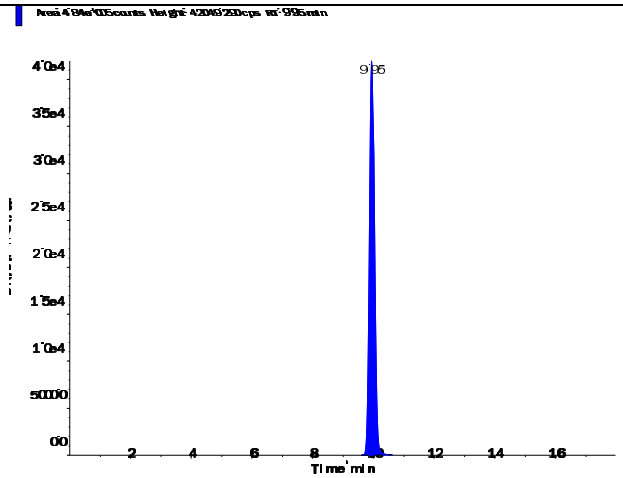

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.075
Sample Type:	(Unknown)

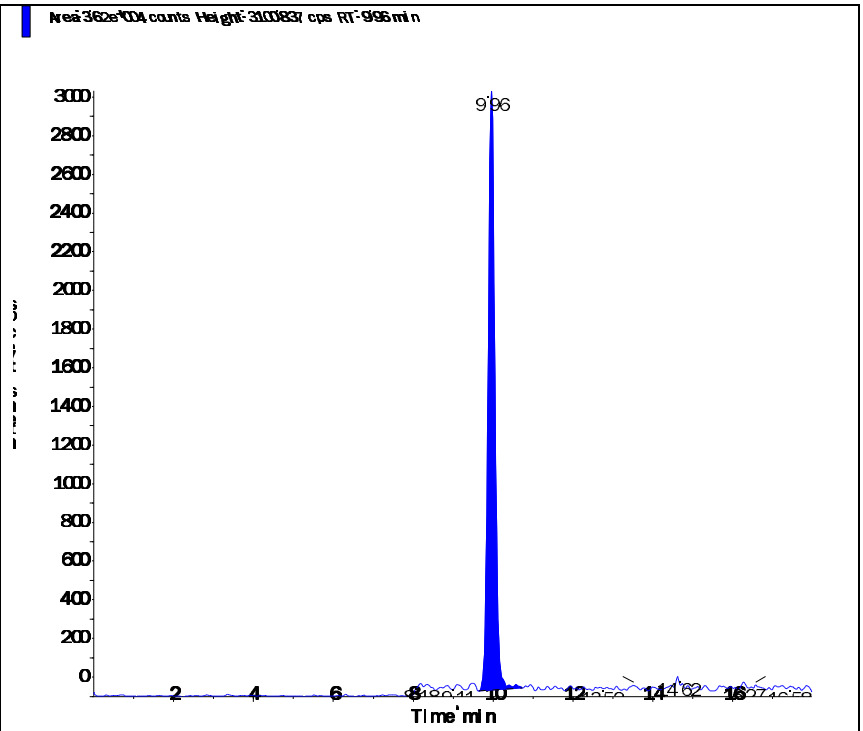

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.202 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

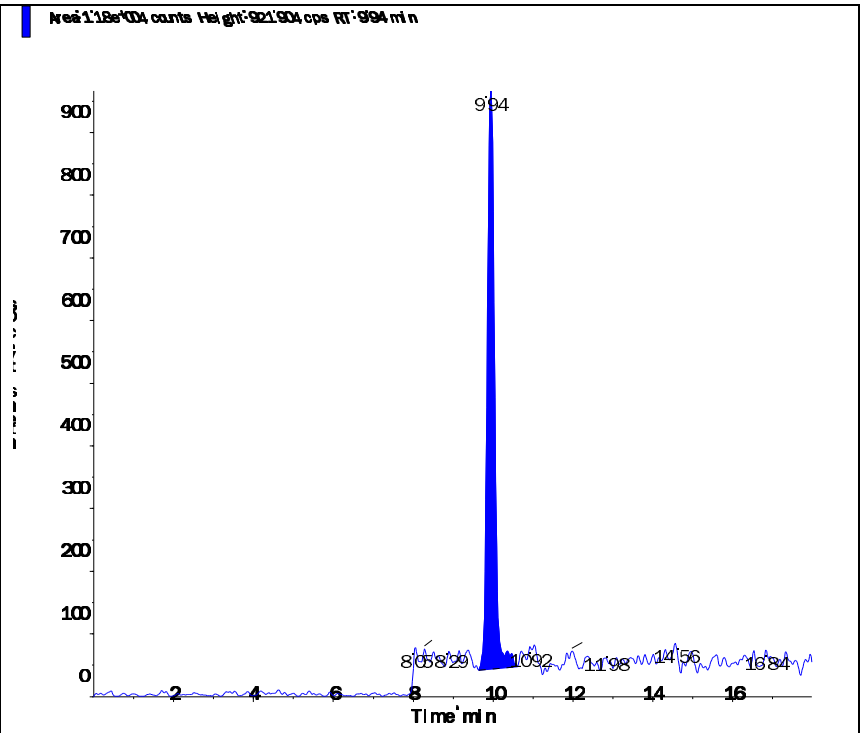

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Data File	LM33787.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/8/2016 4:54:19 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030366-01 MS	**Injection Vial**	8.00
Data File	LM33787.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 4:54:19 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG560129-05	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.010e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.770e+04	9.96	N/A	0.203
Perchlorate conf	1.280e+04	9.94	N/A	0.213

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

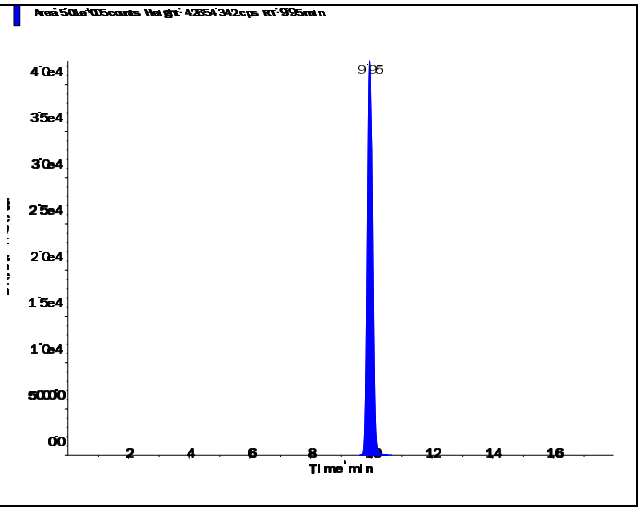

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	0.203 ng/ml
Area Ratio:	0.075
Sample Type:	(Unknown)

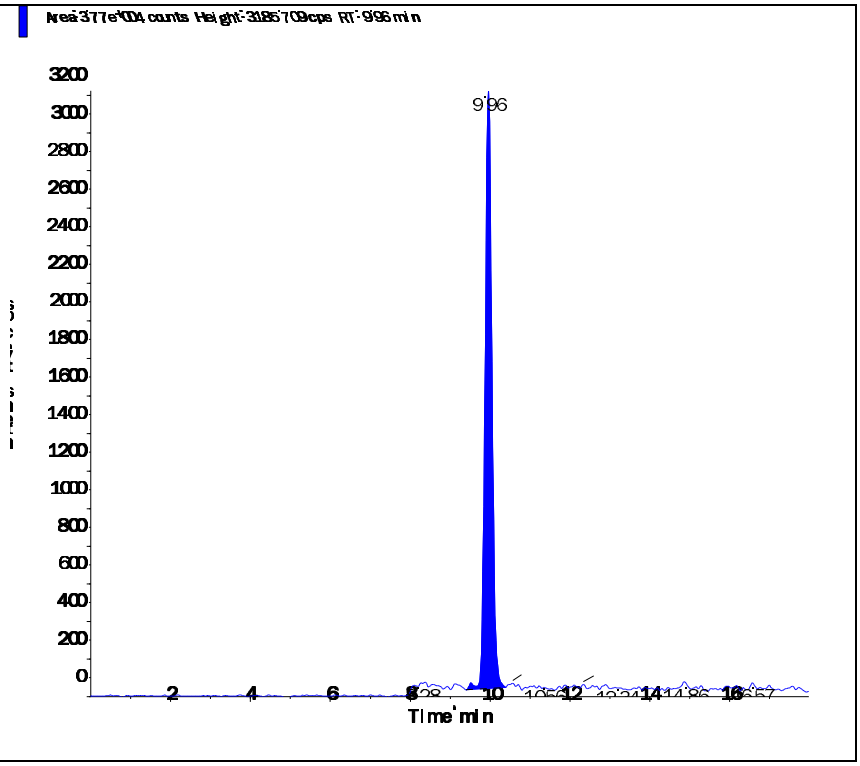

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.213 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

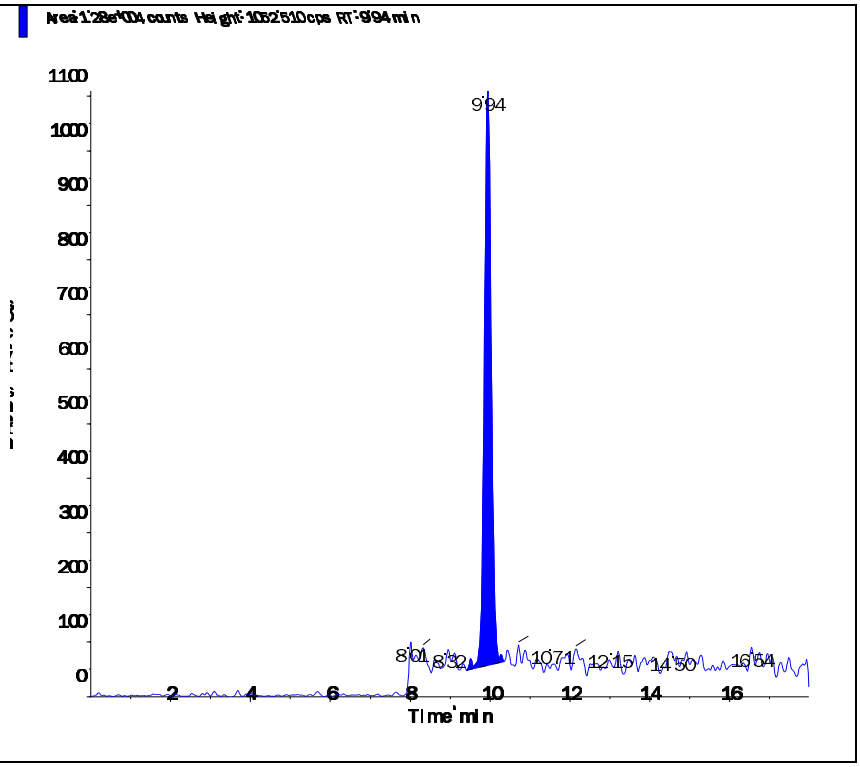

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 3/9/2016 2:46 PM

Data File	LM33788.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/8/2016 5:13:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030366-01 MSD	**Injection Vial**	9.00
Data File	LM33788.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 5:13:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG560129-06	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.690e+04	9.97	N/A	0.199
Perchlorate conf	1.220e+04	9.96	N/A	0.203

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

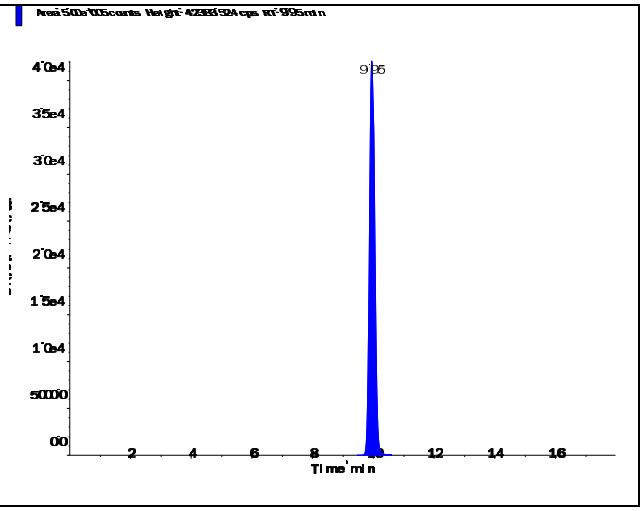

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.97 (9.94) min
Calculated conc:	0.199 ng/ml
Area Ratio:	0.074
Sample Type:	(Unknown)

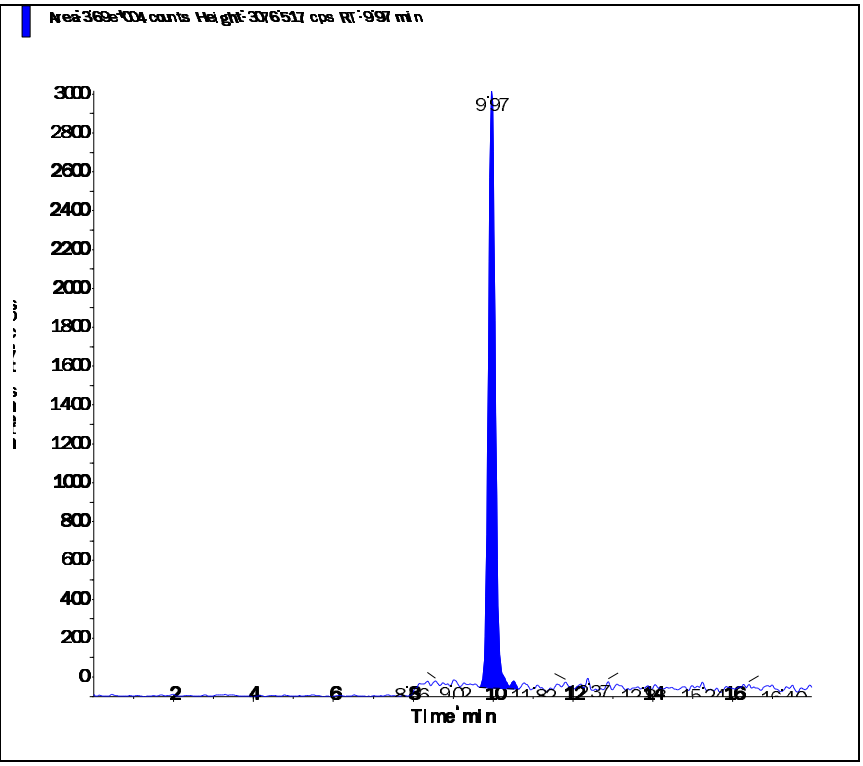

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.96 (9.92) min
Calculated conc:	0.203 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

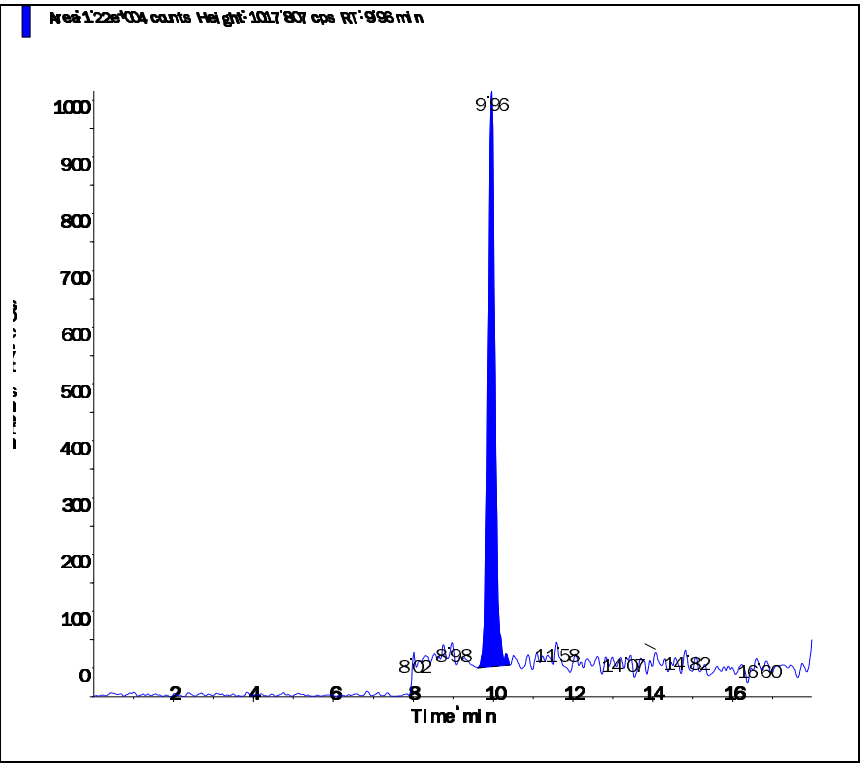

s.dataFile Page 2 of 2

2.3 General Chemistry Data

2.3.1 Percent Solids Data

2.3.1.1 Raw Data

Example Percent Solids Calculations

1.0 Calculating the percent solids of a sample.

$$\%Solids = \frac{WT3 - WT1}{WT2 - WT1} \times F$$

Where:	
WT1 = Weight, in grams, of the empty container	1.30 g
WT2 = Weight, in grams, of the container and wet sample	21.274 g
WT3 = Weight, in grams, of the container and dried sample	5.21 g
F = Factor to get units as percent weight	100
%Solids = Percent solids present in sample.	19.58%

2.0 Calculating the percent moisture of a sample.

% Moisture = 100 - % Solids from 1.0 calculation

Microbac Laboratories Inc.

PERCENT SOLIDS

Workgroup (AAB#): WG560135 Analyst: AC ADT(on): 03/08/2016 13:49
Method: D2216-90 Instrument: BAL021 ADT(off): 03/09/2016 08:19
SOP: K0003 Rev: 14

SAMPLE NUMBER	EMPTY PAN WT 1	WET WT 2	DRY WT 3A	DRY WT 3B	DRY WT 3C	PERCENT SOLID	PERCENT MOISTURE
L16030366-01	1.287	37.105	29.62			79.10	
L16030366-02	1.287	20.158	16.705			81.70	
L16030366-03	1.298	22.505	18.888			82.94	
L16030366-04	1.286	24.425	19.693			79.55	
L16030366-05	1.295	22.265	17.912			79.24	
L16030366-06	1.29	22.184	18.76			83.61	
L16030366-07	1.287	28.794	23.106			79.32	
L16030366-08	1.297	20.424	16.829			81.20	
L16030366-09	1.295	30.502	23.962			77.61	
L16030366-10	1.294	30.993	26.616			85.26	
L16030366-11	1.295	22.023	18.128			81.21	
L16030366-12	1.301	21.945	17.179			76.91	
WG560135-01	1.301	21.945	17.179			76.91	23.09
WG560135-02	1.295	20.159	15.829			77.05	22.95

Analyst: Andrew R Cochran

PERCENT_SOLIDS - Modified 04/24/2008
PDF ID: 4662085
Report generated: 03/09/2016 08:22

Microbac

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
March 11, 2016

001 - BIO-CHEM TESTING WVDEP 220	002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental	004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES	006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES	008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND	AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER	ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS	ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG	AZH - AFTER HOURS
BJO - BRIAN J. OGDEN	BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT	BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN	CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES	CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD	CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS	CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL	DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE	DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON	DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE	DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR	ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK	ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN	JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON	JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE	JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG	JLL - JOHN L. LENT
JMW - JEANA M. WHITE	JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS	JWS - JACK W. SHEAVES
JYH - JI Y. HU	KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER	KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES	KHR - KIM H. RHODES
KKB - KERRI K. BUCK	KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER	KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER	LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS	LSB - LESLIE S. BUCINA
MBK - MORGAN B. KNOWLTON	MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN	MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE	MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR	MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS	PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB	PSW - PEGGY S. WEBB
QX - QIN XU	RAH - ROY A. HALSTEAD
REK - BOB E. KYER	RLB - BOB BUCHANAN
RM - RAYMOND MALEKE	RNP - RICK N. PETTY
RST - ROBIN S. TURNER	SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN	SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG	SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE	TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY	TMM - TAMMY M. MORRIS
VC - VICKI COLLIER	WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS	WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT	

Microbac Laboratories Inc.
List of Valid Qualifiers
March 11, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
March 11, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Stephanie Mossburg	Project Manager: Debra Richmon	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): KAYLA PALLANES	San Antonio, TX 78205	
Phone: 1-800-373-4071	Signature: Kayla Pallanes	210-296-2000	
Client: AECOM		Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400	pH:	Program:	
San Antonio, TX 78205			
Turn Around Time: STANDARD			
Project Name/Location: Longhorn			
Project Number: 60274185 11DASOW16 DGI RPT OL			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp-	Grab	Matrix	Number of Containers	VOCs 8260	Perchlorate 6850	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
	18DPT11(5-5.5)040316			3/4/16	1500		X	S	2	X	X					
	18DPT11(15-15.5)040316			3/4/16	1600		X	S	2	X	X					
	18DPT11(20-20.5)070316			3/7/16	1150		X	S	2	X	X					
	18DPT11(29-29.5)070316			3/7/16	1155		X	S	2	X	X					
	18DPT11(25-25.5)070316			3/7/16	1200		X	S	2	X	X					
	18DPT12(5-5.5)070316			3/7/16	1435		X	S	2	X	X					
	18DPT12(8.5-9)070316			3/7/16	1440		X	S	2	X	X					
	18DPT12(18-18.5)070316			3/7/16	1445		X	S	2	X	X					
	18DPT12(12-12.5)070316			3/7/16	1500		X	S	2	X	X					
	18DPT13(5-5.5)070316			3/7/16	1600		X	S	2	X	X					
	18DPT13(12-12.5)070316			3/7/16	1605		X	S	2	X	X					
	18DPT13(17-17.5)070316			3/7/16	1610		X	S	2	X	X					

ERPIMS REQUIRED FIELDS

Comments: ~~STANDARD TAT~~ 48HR TAT

Microbac OVD
Received: 03/08/2016 09:50
By: BRENDA GREENWALT 221000082860
Brenda Greenwalt

Relinquished by: (Signature) Kayla Pallanes	Date 3/7/16	Time 1700	Received by: (Signature)	y: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	

•Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030366
Account: 2551
Project: 2551.096
Samples: 12
Due Date: 10-MAR-2016

Samplenum	Container ID	Products
L16030366-01	710889	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	08-MAR-2016 10:55	BRG		
2	ANALYZ	L1	ORG4	08-MAR-2016 11:13	TMB	BRG	

Samplenum	Container ID	Products
L16030366-01	710890	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	08-MAR-2016 10:55	BRG		
2	ANALYZ	L1	SEM	08-MAR-2016 11:07	JWR	BRG	
3	STORE	SEM	A1	09-MAR-2016 10:50	BRG	JWR	

Samplenum	Container ID	Products
L16030366-02	710891	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	08-MAR-2016 10:55	BRG		
2	ANALYZ	L1	ORG4	08-MAR-2016 11:13	TMB	BRG	

Samplenum	Container ID	Products
L16030366-02	710892	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	08-MAR-2016 10:55	BRG		
2	ANALYZ	L1	SEM	08-MAR-2016 11:07	JWR	BRG	
3	STORE	SEM	A1	09-MAR-2016 10:50	BRG	JWR	

Samplenum	Container ID	Products
L16030366-03	710893	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	08-MAR-2016 10:55	BRG		
2	ANALYZ	L1	ORG4	08-MAR-2016 11:13	TMB	BRG	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030366
Account: 2551
Project: 2551.096
Samples: 12
Due Date: 10-MAR-2016

Samplenum	Container ID	Products
L16030366-03	710894	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	08-MAR-2016 10:55	BRG		
2	ANALYZ	L1	SEM	08-MAR-2016 11:07	JWR	BRG	
3	STORE	SEM	A1	09-MAR-2016 10:50	BRG	JWR	

Samplenum	Container ID	Products
L16030366-04	710895	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	08-MAR-2016 10:55	BRG		
2	ANALYZ	L1	ORG4	08-MAR-2016 11:13	TMB	BRG	

Samplenum	Container ID	Products
L16030366-04	710896	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	08-MAR-2016 10:55	BRG		
2	ANALYZ	L1	SEM	08-MAR-2016 11:06	JWR	BRG	
3	STORE	SEM	A1	09-MAR-2016 10:50	BRG	JWR	

Samplenum	Container ID	Products
L16030366-05	710897	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	08-MAR-2016 10:55	BRG		
2	ANALYZ	L1	ORG4	08-MAR-2016 11:13	TMB	BRG	

Samplenum	Container ID	Products
L16030366-05	710898	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	08-MAR-2016 10:55	BRG		
2	ANALYZ	L1	SEM	08-MAR-2016 11:06	JWR	BRG	
3	STORE	SEM	A1	09-MAR-2016 10:50	BRG	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030366
Account: 2551
Project: 2551.096
Samples: 12
Due Date: 10-MAR-2016

Samplenum	Container ID	Products
L16030366-06	710899	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	08-MAR-2016 10:55	BRG		
2	ANALYZ	L1	ORG4	08-MAR-2016 11:13	TMB	BRG	

Samplenum	Container ID	Products
L16030366-06	710900	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	08-MAR-2016 10:55	BRG		
2	ANALYZ	L1	SEM	08-MAR-2016 11:06	JWR	BRG	
3	STORE	SEM	A1	09-MAR-2016 10:50	BRG	JWR	

Samplenum	Container ID	Products
L16030366-07	710901	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	08-MAR-2016 10:55	BRG		
2	ANALYZ	L1	ORG4	08-MAR-2016 11:13	TMB	BRG	

Samplenum	Container ID	Products
L16030366-07	710902	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	08-MAR-2016 10:55	BRG		
2	ANALYZ	L1	SEM	08-MAR-2016 11:06	JWR	BRG	
3	STORE	SEM	A1	09-MAR-2016 10:50	BRG	JWR	

Samplenum	Container ID	Products
L16030366-08	710903	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	08-MAR-2016 10:55	BRG		
2	ANALYZ	L1	ORG4	08-MAR-2016 11:13	TMB	BRG	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030366
Account: 2551
Project: 2551.096
Samples: 12
Due Date: 10-MAR-2016

Samplenum	Container ID	Products
L16030366-08	710904	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	08-MAR-2016 10:55	BRG		
2	ANALYZ	L1	SEM	08-MAR-2016 11:06	JWR	BRG	
3	STORE	SEM	A1	09-MAR-2016 10:50	BRG	JWR	

Samplenum	Container ID	Products
L16030366-09	710905	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	08-MAR-2016 10:55	BRG		
2	ANALYZ	L1	ORG4	08-MAR-2016 11:13	TMB	BRG	

Samplenum	Container ID	Products
L16030366-09	710906	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	08-MAR-2016 10:55	BRG		
2	ANALYZ	L1	SEM	08-MAR-2016 11:06	JWR	BRG	
3	STORE	SEM	A1	09-MAR-2016 10:50	BRG	JWR	

Samplenum	Container ID	Products
L16030366-10	710907	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	08-MAR-2016 10:55	BRG		
2	ANALYZ	L1	ORG4	08-MAR-2016 11:13	TMB	BRG	

Samplenum	Container ID	Products
L16030366-10	710908	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	08-MAR-2016 10:55	BRG		
2	ANALYZ	L1	SEM	08-MAR-2016 11:06	JWR	BRG	
3	STORE	SEM	A1	09-MAR-2016 10:50	BRG	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030366
Account: 2551
Project: 2551.096
Samples: 12
Due Date: 10-MAR-2016

Samplenum	Container ID	Products
L16030366-11	710909	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	08-MAR-2016 10:55	BRG		
2	ANALYZ	L1	ORG4	08-MAR-2016 11:13	TMB	BRG	

Samplenum	Container ID	Products
L16030366-11	710910	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	08-MAR-2016 10:55	BRG		
2	ANALYZ	L1	SEM	08-MAR-2016 11:06	JWR	BRG	
3	STORE	SEM	A1	09-MAR-2016 10:50	BRG	JWR	

Samplenum	Container ID	Products
L16030366-12	710911	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	08-MAR-2016 10:55	BRG		
2	ANALYZ	L1	ORG4	08-MAR-2016 11:13	TMB	BRG	

Samplenum	Container ID	Products
L16030366-12	710912	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	08-MAR-2016 10:55	BRG		
2	ANALYZ	L1	SEM	08-MAR-2016 11:06	JWR	BRG	
3	STORE	SEM	A1	09-MAR-2016 10:50	BRG	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16030861

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on March 25 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00112171	I	6.0		J2317165849	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	NA
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	NA

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18DPT14(5-5.5)140316	L16030861-01	03/14/2016 12:32	03/16/2016 10:03
18DPT14(10-10.5)140316	L16030861-02	03/14/2016 13:15	03/16/2016 10:03
18DPT14(10-10.5)140316FD	L16030861-03	03/14/2016 13:15	03/16/2016 10:03
18DPT14(17-17.5)140316	L16030861-04	03/14/2016 13:20	03/16/2016 10:03
18DPT14(23-23.5)140316	L16030861-05	03/14/2016 13:25	03/16/2016 10:03
18DPT15(5-5.5)140316	L16030861-06	03/14/2016 16:40	03/16/2016 10:03
18DPT15(12-12.5)140316	L16030861-07	03/14/2016 16:41	03/16/2016 10:03
18DPT15(21-21.5)140316	L16030861-08	03/14/2016 16:42	03/16/2016 10:03
18DPT15(23.5-24)140316	L16030861-09	03/14/2016 16:43	03/16/2016 10:03
18DPT15(26.5-27)140316	L16030861-10	03/14/2016 16:45	03/16/2016 10:03

Microbac REPORT L16030861
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.0 Summary Data

1.1 Narratives

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030861
Project Name:		**Method:**	8260
Prep Batch Number(s):	561881,562075	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-25 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2016-03-25 16:22:26

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030861
Project Name:		**Method:**	8260
Prep Batch Number(s):	561881,562075	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-25 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030861
Project Name:		**Method:**	8260
Prep Batch Number(s):	561881,562075	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-25 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030861
Project Name:		**Method:**	8260
Prep Batch Number(s):	561881,562075	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-25 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030861
Project Name:		**Method:**	8260
Prep Batch Number(s):	561881,562075	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-25 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030861
Project Name:		**Method:**	8260
Prep Batch Number(s):	561881,562075	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-25 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Chloromethane and 4-Methyl-2-Pentanone exceeded theUCL in the CCV analyzed 03/22/2016 on HPMS6.
Chloromethane and Naphthalene exceeded the UCL in the CCV analyzed 03/23/2106 on HPMS6.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030861
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG561316	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-22 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson	Eric C. Lawson	Chemist III	2016-03-22 15:08:17

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030861
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG561316	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-22 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030861
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG561316	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-22 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030861
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG561316	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-22 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030861
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG561316	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-22 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030861
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG561316	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-22 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030861
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG561146	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-18 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2016-03-18 15:41:22

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030861
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG561146	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-18 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?			X		
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?			X		
Were sample detection limits reported for all analytes not detected?			X		
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?			X		
Were blanks analyzed at the appropriate frequency?			X		
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?			X		
Were blank concentrations < MQL?			X		
Laboratory control samples (LCS):			X		
Were all COCs included in the LCS?			X		

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030861
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG561146	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-18 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?			X		
Were LCSs analyzed at the required frequency?			X		
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?			X		
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?			X		
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?			X		
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?			X		
Are unadjusted MQLs and DCSs included in the laboratory data package?			X		
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?			X		
Were percent RSDs or correlation coefficient criteria met?			X		

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030861
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG561146	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-18 00:00:00		

Was the number of standards recommended in the method used for all analytes?			X		
Were all points generated between the lowest and highest standard used to calculate the curve?			X		
Are ICAL data available for all instruments used?			X		
Has the initial calibration curve been verified using an appropriate second source standard?			X		
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030861
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG561146	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-18 00:00:00		

Was a MDL study performed for each reported analyte?			X		
Is the MDL either adjusted or supported by the analysis of DCSs?			X		
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?			X		
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030861
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG561146	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-18 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT14(5-5.5)140316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:07
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG561881	**Analyst:**	TMB	**Run Date:**	03/22/2016 20:49
Collect Date:	03/14/2016 12:32	**Dilution:**	1	**File ID:**	6M137955
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.8	U	25.7	12.8	6.42
Benzene	71-43-2	1.28	U	6.42	1.28	0.642
Bromobenzene	108-86-1	1.28	U	6.42	1.28	0.642
Bromochloromethane	74-97-5	2.56	U	6.42	2.56	1.28
Bromodichloromethane	75-27-4	1.28	U	6.42	1.28	0.642
Bromoform	75-25-2	1.28	U	6.42	1.28	0.642
Bromomethane	74-83-9	2.56	U	6.42	2.56	1.28
2-Butanone	78-93-3	6.42	U	12.8	6.42	3.21
n-Butylbenzene	104-51-8	1.28	U	6.42	1.28	0.642
sec-Butylbenzene	135-98-8	1.28	U	6.42	1.28	0.642
tert-Butylbenzene	98-06-6	1.28	U	6.42	1.28	0.642
Carbon disulfide	75-15-0	1.28	U	6.42	1.28	0.642
Carbon tetrachloride	56-23-5	1.28	U	6.42	1.28	0.642
Chlorobenzene	108-90-7	1.28	U	6.42	1.28	0.642
Chlorodibromomethane	124-48-1	1.28	U	6.42	1.28	0.642
Chloroethane	75-00-3	2.56	U	6.42	2.56	1.28
Chloroform	67-66-3	1.28	U	6.42	1.28	0.642
Chloromethane	74-87-3	5.14	Q	12.8	5.14	2.57
2-Chlorotoluene	95-49-8	1.28	U	6.42	1.28	0.642
4-Chlorotoluene	106-43-4	1.28	U	6.42	1.28	0.642
1,2-Dibromo-3-chloropropane	96-12-8	5.14	U	12.8	5.14	2.57
1,2-Dibromoethane	106-93-4	1.28	U	6.42	1.28	0.642
Dibromomethane	74-95-3	1.28	U	6.42	1.28	0.642
1,2-Dichlorobenzene	95-50-1	1.28	U	6.42	1.28	0.642
1,3-Dichlorobenzene	541-73-1	1.28	U	6.42	1.28	0.642
1,4-Dichlorobenzene	106-46-7	1.28	U	6.42	1.28	0.642
Dichlorodifluoromethane	75-71-8	2.56	U	6.42	2.56	1.28
1,1-Dichloroethane	75-34-3	2.56	U	6.42	2.56	1.28
1,2-Dichloroethane	107-06-2	1.28	U	6.42	1.28	0.642
1,1-Dichloroethene	75-35-4	1.28	U	6.42	1.28	0.642
cis-1,2-Dichloroethene	156-59-2	1.28	U	6.42	1.28	0.642
trans-1,2-Dichloroethene	156-60-5	1.28	U	6.42	1.28	0.642

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.28	U	6.42	1.28	0.642
1,3-Dichloropropane	142-28-9	1.28	U	6.42	1.28	0.642
2,2-Dichloropropane	594-20-7	1.28	U	6.42	1.28	0.642
cis-1,3-Dichloropropene	10061-01-5	1.28	U	6.42	1.28	0.642
trans-1,3-Dichloropropene	10061-02-6	1.28	U	6.42	1.28	0.642
1,1-Dichloropropene	563-58-6	1.28	U	6.42	1.28	0.642
Ethylbenzene	100-41-4	1.28	U	6.42	1.28	0.642
2-Hexanone	591-78-6	6.42	U	12.8	6.42	3.21
Hexachlorobutadiene	87-68-3	1.28	U	6.42	1.28	0.642
Isopropylbenzene	98-82-8	1.28	U	6.42	1.28	0.642
p-Isopropyltoluene	99-87-6	1.28	U	6.42	1.28	0.642
4-Methyl-2-pentanone	108-10-1	6.42	Q	12.8	6.42	3.21
Methylene chloride	75-09-2	2.56	U	6.42	2.56	1.28
Naphthalene	91-20-3	1.28	U	6.42	1.28	0.642
n-Propylbenzene	103-65-1	1.28	U	6.42	1.28	0.642
Styrene	100-42-5	1.28	U	6.42	1.28	0.642
1,1,1,2-Tetrachloroethane	630-20-6	1.28	U	6.42	1.28	0.642
1,1,2,2-Tetrachloroethane	79-34-5	1.28	U	6.42	1.28	0.642
Tetrachloroethene	127-18-4	1.28	U	6.42	1.28	0.642
Toluene	108-88-3	1.28	U	6.42	1.28	0.642
1,2,3-Trichlorobenzene	87-61-6	1.28	U	6.42	1.28	0.642
1,2,4-Trichlorobenzene	120-82-1	1.28	U	6.42	1.28	0.642
1,1,1-Trichloroethane	71-55-6	1.28	U	6.42	1.28	0.642
1,1,2-Trichloroethane	79-00-5	1.28	U	6.42	1.28	0.642
Trichloroethene	79-01-6	1.28	U	6.42	1.28	0.642
Trichlorofluoromethane	75-69-4	2.56	U	6.42	2.56	1.28
1,2,3-Trichloropropane	96-18-4	2.56	U	6.42	2.56	1.28
1,2,4-Trimethylbenzene	95-63-6	1.28	U	6.42	1.28	0.642
1,3,5-Trimethylbenzene	108-67-8	1.28	U	6.42	1.28	0.642
Vinyl chloride	75-01-4	2.56	U	6.42	2.56	1.28
o-Xylene	95-47-6	1.28	U	6.42	1.28	0.642
m-,p-Xylene	179601-23-1	1.28	U	6.42	1.28	0.642

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.7	80	120	
1,2-Dichloroethane-d4	89.8	80	120	
Toluene-d8	101	85	115	
4-Bromofluorobenzene	101	85	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT14(5-5.5)140316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561316	**Analyst:**	JWR	**Run Date:**	03/17/2016 16:54
Collect Date:	03/14/2016 12:32	**Dilution:**	1	**File ID:**	1LM.LM33887
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.38	U	4.77	2.38	1.19

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT14(10-10.5)140316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:09
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG561881	**Analyst:**	TMB	**Run Date:**	03/22/2016 20:16
Collect Date:	03/14/2016 13:15	**Dilution:**	1	**File ID:**	6M137954
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	89.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.6	U	23.3	11.6	5.82
Benzene	71-43-2	1.16	U	5.82	1.16	0.582
Bromobenzene	108-86-1	1.16	U	5.82	1.16	0.582
Bromochloromethane	74-97-5	2.32	U	5.82	2.32	1.16
Bromodichloromethane	75-27-4	1.16	U	5.82	1.16	0.582
Bromoform	75-25-2	1.16	U	5.82	1.16	0.582
Bromomethane	74-83-9	2.32	U	5.82	2.32	1.16
2-Butanone	78-93-3	5.82	U	11.6	5.82	2.91
n-Butylbenzene	104-51-8	1.16	U	5.82	1.16	0.582
sec-Butylbenzene	135-98-8	1.16	U	5.82	1.16	0.582
tert-Butylbenzene	98-06-6	1.16	U	5.82	1.16	0.582
Carbon disulfide	75-15-0	1.16	U	5.82	1.16	0.582
Carbon tetrachloride	56-23-5	1.16	U	5.82	1.16	0.582
Chlorobenzene	108-90-7	1.16	U	5.82	1.16	0.582
Chlorodibromomethane	124-48-1	1.16	U	5.82	1.16	0.582
Chloroethane	75-00-3	2.32	U	5.82	2.32	1.16
Chloroform	67-66-3	1.16	U	5.82	1.16	0.582
Chloromethane	74-87-3	4.66	Q	11.6	4.66	2.33
2-Chlorotoluene	95-49-8	1.16	U	5.82	1.16	0.582
4-Chlorotoluene	106-43-4	1.16	U	5.82	1.16	0.582
1,2-Dibromo-3-chloropropane	96-12-8	4.66	U	11.6	4.66	2.33
1,2-Dibromoethane	106-93-4	1.16	U	5.82	1.16	0.582
Dibromomethane	74-95-3	1.16	U	5.82	1.16	0.582
1,2-Dichlorobenzene	95-50-1	1.16	U	5.82	1.16	0.582
1,3-Dichlorobenzene	541-73-1	1.16	U	5.82	1.16	0.582
1,4-Dichlorobenzene	106-46-7	1.16	U	5.82	1.16	0.582
Dichlorodifluoromethane	75-71-8	2.32	U	5.82	2.32	1.16
1,1-Dichloroethane	75-34-3	2.32	U	5.82	2.32	1.16
1,2-Dichloroethane	107-06-2	1.16	U	5.82	1.16	0.582
1,1-Dichloroethene	75-35-4	1.16	U	5.82	1.16	0.582
cis-1,2-Dichloroethene	156-59-2	1.16	U	5.82	1.16	0.582

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.16	U	5.82	1.16	0.582
1,2-Dichloropropane	78-87-5	1.16	U	5.82	1.16	0.582
1,3-Dichloropropane	142-28-9	1.16	U	5.82	1.16	0.582
2,2-Dichloropropane	594-20-7	1.16	U	5.82	1.16	0.582
cis-1,3-Dichloropropene	10061-01-5	1.16	U	5.82	1.16	0.582
trans-1,3-Dichloropropene	10061-02-6	1.16	U	5.82	1.16	0.582
1,1-Dichloropropene	563-58-6	1.16	U	5.82	1.16	0.582
Ethylbenzene	100-41-4	1.16	U	5.82	1.16	0.582
2-Hexanone	591-78-6	5.82	U	11.6	5.82	2.91
Hexachlorobutadiene	87-68-3	1.16	U	5.82	1.16	0.582
Isopropylbenzene	98-82-8	1.16	U	5.82	1.16	0.582
p-Isopropyltoluene	99-87-6	1.16	U	5.82	1.16	0.582
4-Methyl-2-pentanone	108-10-1	5.82	Q	11.6	5.82	2.91
Methylene chloride	75-09-2	2.32	U	5.82	2.32	1.16
Naphthalene	91-20-3	1.16	U	5.82	1.16	0.582
n-Propylbenzene	103-65-1	1.16	U	5.82	1.16	0.582
Styrene	100-42-5	1.16	U	5.82	1.16	0.582
1,1,1,2-Tetrachloroethane	630-20-6	1.16	U	5.82	1.16	0.582
1,1,2,2-Tetrachloroethane	79-34-5	1.16	U	5.82	1.16	0.582
Tetrachloroethene	127-18-4	1.16	U	5.82	1.16	0.582
Toluene	108-88-3	1.16	U	5.82	1.16	0.582
1,2,3-Trichlorobenzene	87-61-6	1.16	U	5.82	1.16	0.582
1,2,4-Trichlorobenzene	120-82-1	1.16	U	5.82	1.16	0.582
1,1,1-Trichloroethane	71-55-6	1.16	U	5.82	1.16	0.582
1,1,2-Trichloroethane	79-00-5	1.16	U	5.82	1.16	0.582
Trichloroethene	79-01-6	1.16	U	5.82	1.16	0.582
Trichlorofluoromethane	75-69-4	2.32	U	5.82	2.32	1.16
1,2,3-Trichloropropane	96-18-4	2.32	U	5.82	2.32	1.16
1,2,4-Trimethylbenzene	95-63-6	1.16	U	5.82	1.16	0.582
1,3,5-Trimethylbenzene	108-67-8	1.16	U	5.82	1.16	0.582
Vinyl chloride	75-01-4	2.32	U	5.82	2.32	1.16
o-Xylene	95-47-6	1.16	U	5.82	1.16	0.582
m-,p-Xylene	179601-23-1	1.16	U	5.82	1.16	0.582

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.8	80	120	
1,2-Dichloroethane-d4	85.7	80	120	
Toluene-d8	103	85	115	
4-Bromofluorobenzene	103	85	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT14(10-10.5)140316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561316	**Analyst:**	JWR	**Run Date:**	03/17/2016 17:51
Collect Date:	03/14/2016 13:15	**Dilution:**	1	**File ID:**	1LM.LM33890
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	89.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.16	U	4.32	2.16	1.08

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT14(10-10.5)140316FD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/23/2016 16:52
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 17:43
Collect Date:	03/14/2016 13:15	**Dilution:**	1	**File ID:**	6M137974
Sample Tag:	02	**Units:**	ug/kg	**Percent Solid:**	90.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.0	U	21.9	11.0	5.49
Benzene	71-43-2	1.10	U	5.49	1.10	0.549
Bromobenzene	108-86-1	1.10	U	5.49	1.10	0.549
Bromochloromethane	74-97-5	2.20	U	5.49	2.20	1.10
Bromodichloromethane	75-27-4	1.10	U	5.49	1.10	0.549
Bromoform	75-25-2	1.10	U	5.49	1.10	0.549
Bromomethane	74-83-9	2.20	U	5.49	2.20	1.10
2-Butanone	78-93-3	5.48	U	11.0	5.48	2.74
n-Butylbenzene	104-51-8	1.10	U	5.49	1.10	0.549
sec-Butylbenzene	135-98-8	1.10	U	5.49	1.10	0.549
tert-Butylbenzene	98-06-6	1.10	U	5.49	1.10	0.549
Carbon disulfide	75-15-0	1.10	U	5.49	1.10	0.549
Carbon tetrachloride	56-23-5	1.10	U	5.49	1.10	0.549
Chlorobenzene	108-90-7	1.10	U	5.49	1.10	0.549
Chlorodibromomethane	124-48-1	1.10	U	5.49	1.10	0.549
Chloroethane	75-00-3	2.20	U	5.49	2.20	1.10
Chloroform	67-66-3	1.10	U	5.49	1.10	0.549
Chloromethane	74-87-3	4.38	Q	11.0	4.38	2.19
2-Chlorotoluene	95-49-8	1.10	U	5.49	1.10	0.549
4-Chlorotoluene	106-43-4	1.10	U	5.49	1.10	0.549
1,2-Dibromo-3-chloropropane	96-12-8	4.38	U	11.0	4.38	2.19
1,2-Dibromoethane	106-93-4	1.10	U	5.49	1.10	0.549
Dibromomethane	74-95-3	1.10	U	5.49	1.10	0.549
1,2-Dichlorobenzene	95-50-1	1.10	U	5.49	1.10	0.549
1,3-Dichlorobenzene	541-73-1	1.10	U	5.49	1.10	0.549
1,4-Dichlorobenzene	106-46-7	1.10	U	5.49	1.10	0.549
Dichlorodifluoromethane	75-71-8	2.20	U	5.49	2.20	1.10
1,1-Dichloroethane	75-34-3	2.20	U	5.49	2.20	1.10
1,2-Dichloroethane	107-06-2	1.10	U	5.49	1.10	0.549
1,1-Dichloroethene	75-35-4	1.10	U	5.49	1.10	0.549
cis-1,2-Dichloroethene	156-59-2	1.10	U	5.49	1.10	0.549

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.10	U	5.49	1.10	0.549
1,2-Dichloropropane	78-87-5	1.10	U	5.49	1.10	0.549
1,3-Dichloropropane	142-28-9	1.10	U	5.49	1.10	0.549
2,2-Dichloropropane	594-20-7	1.10	U	5.49	1.10	0.549
cis-1,3-Dichloropropene	10061-01-5	1.10	U	5.49	1.10	0.549
trans-1,3-Dichloropropene	10061-02-6	1.10	U	5.49	1.10	0.549
1,1-Dichloropropene	563-58-6	1.10	U	5.49	1.10	0.549
Ethylbenzene	100-41-4	1.10	U	5.49	1.10	0.549
2-Hexanone	591-78-6	5.48	U	11.0	5.48	2.74
Hexachlorobutadiene	87-68-3	1.10	U	5.49	1.10	0.549
Isopropylbenzene	98-82-8	1.10	U	5.49	1.10	0.549
p-Isopropyltoluene	99-87-6	1.10	U	5.49	1.10	0.549
4-Methyl-2-pentanone	108-10-1	5.48	U	11.0	5.48	2.74
Methylene chloride	75-09-2	2.20	U	5.49	2.20	1.10
Naphthalene	91-20-3	1.10	Q	5.49	1.10	0.549
n-Propylbenzene	103-65-1	1.10	U	5.49	1.10	0.549
Styrene	100-42-5	1.10	U	5.49	1.10	0.549
1,1,1,2-Tetrachloroethane	630-20-6	1.10	U	5.49	1.10	0.549
1,1,2,2-Tetrachloroethane	79-34-5	1.10	U	5.49	1.10	0.549
Tetrachloroethene	127-18-4	1.10	U	5.49	1.10	0.549
Toluene	108-88-3	1.10	U	5.49	1.10	0.549
1,2,3-Trichlorobenzene	87-61-6	1.10	U	5.49	1.10	0.549
1,2,4-Trichlorobenzene	120-82-1	1.10	U	5.49	1.10	0.549
1,1,1-Trichloroethane	71-55-6	1.10	U	5.49	1.10	0.549
1,1,2-Trichloroethane	79-00-5	1.10	U	5.49	1.10	0.549
Trichloroethene	79-01-6	1.10	U	5.49	1.10	0.549
Trichlorofluoromethane	75-69-4	2.20	U	5.49	2.20	1.10
1,2,3-Trichloropropane	96-18-4	2.20	U	5.49	2.20	1.10
1,2,4-Trimethylbenzene	95-63-6	1.10	U	5.49	1.10	0.549
1,3,5-Trimethylbenzene	108-67-8	1.10	U	5.49	1.10	0.549
Vinyl chloride	75-01-4	2.20	U	5.49	2.20	1.10
o-Xylene	95-47-6	1.10	U	5.49	1.10	0.549
m-,p-Xylene	179601-23-1	1.10	U	5.49	1.10	0.549

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.6	80	120	
1,2-Dichloroethane-d4	90.3	80	120	
Toluene-d8	101	85	115	
4-Bromofluorobenzene	102	85	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT14(10-10.5)140316FD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:09
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG561881	**Analyst:**	TMB	**Run Date:**	03/22/2016 19:43
Collect Date:	03/14/2016 13:15	**Dilution:**	1	**File ID:**	6M137953
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	90.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	9.15	J	23.5	11.8	5.88
Benzene	71-43-2	1.18	U	5.88	1.18	0.588
Bromobenzene	108-86-1	1.18	U	5.88	1.18	0.588
Bromochloromethane	74-97-5	2.36	U	5.88	2.36	1.18
Bromodichloromethane	75-27-4	1.18	U	5.88	1.18	0.588
Bromoform	75-25-2	1.18	U	5.88	1.18	0.588
Bromomethane	74-83-9	2.36	U	5.88	2.36	1.18
2-Butanone	78-93-3	5.88	U	11.8	5.88	2.94
n-Butylbenzene	104-51-8	1.18	U	5.88	1.18	0.588
sec-Butylbenzene	135-98-8	1.18	U	5.88	1.18	0.588
tert-Butylbenzene	98-06-6	1.18	U	5.88	1.18	0.588
Carbon disulfide	75-15-0	1.18	U	5.88	1.18	0.588
Carbon tetrachloride	56-23-5	1.18	U	5.88	1.18	0.588
Chlorobenzene	108-90-7	1.18	U	5.88	1.18	0.588
Chlorodibromomethane	124-48-1	1.18	U	5.88	1.18	0.588
Chloroethane	75-00-3	2.36	U	5.88	2.36	1.18
Chloroform	67-66-3	1.18	U	5.88	1.18	0.588
Chloromethane	74-87-3	4.70	Q	11.8	4.70	2.35
2-Chlorotoluene	95-49-8	1.18	U	5.88	1.18	0.588
4-Chlorotoluene	106-43-4	1.18	U	5.88	1.18	0.588
1,2-Dibromo-3-chloropropane	96-12-8	4.70	U	11.8	4.70	2.35
1,2-Dibromoethane	106-93-4	1.18	U	5.88	1.18	0.588
Dibromomethane	74-95-3	1.18	U	5.88	1.18	0.588
1,2-Dichlorobenzene	95-50-1	1.18	U	5.88	1.18	0.588
1,3-Dichlorobenzene	541-73-1	1.18	U	5.88	1.18	0.588
1,4-Dichlorobenzene	106-46-7	1.18	U	5.88	1.18	0.588
Dichlorodifluoromethane	75-71-8	2.36	U	5.88	2.36	1.18
1,1-Dichloroethane	75-34-3	2.36	U	5.88	2.36	1.18
1,2-Dichloroethane	107-06-2	1.18	U	5.88	1.18	0.588
1,1-Dichloroethene	75-35-4	1.18	U	5.88	1.18	0.588
cis-1,2-Dichloroethene	156-59-2	1.18	U	5.88	1.18	0.588

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.18	U	5.88	1.18	0.588
1,2-Dichloropropane	78-87-5	1.18	U	5.88	1.18	0.588
1,3-Dichloropropane	142-28-9	1.18	U	5.88	1.18	0.588
2,2-Dichloropropane	594-20-7	1.18	U	5.88	1.18	0.588
cis-1,3-Dichloropropene	10061-01-5	1.18	U	5.88	1.18	0.588
trans-1,3-Dichloropropene	10061-02-6	1.18	U	5.88	1.18	0.588
1,1-Dichloropropene	563-58-6	1.18	U	5.88	1.18	0.588
Ethylbenzene	100-41-4	1.18	U	5.88	1.18	0.588
2-Hexanone	591-78-6	5.88	U	11.8	5.88	2.94
Hexachlorobutadiene	87-68-3	1.18	U	5.88	1.18	0.588
Isopropylbenzene	98-82-8	1.18	U	5.88	1.18	0.588
p-Isopropyltoluene	99-87-6	1.18	U	5.88	1.18	0.588
4-Methyl-2-pentanone	108-10-1	5.88	Q	11.8	5.88	2.94
Methylene chloride	75-09-2	2.36	U	5.88	2.36	1.18
Naphthalene	91-20-3	1.18	U	5.88	1.18	0.588
n-Propylbenzene	103-65-1	1.18	U	5.88	1.18	0.588
Styrene	100-42-5	1.18	U	5.88	1.18	0.588
1,1,1,2-Tetrachloroethane	630-20-6	1.18	U	5.88	1.18	0.588
1,1,2,2-Tetrachloroethane	79-34-5	1.18	U	5.88	1.18	0.588
Tetrachloroethene	127-18-4	1.18	U	5.88	1.18	0.588
Toluene	108-88-3	1.18	U	5.88	1.18	0.588
1,2,3-Trichlorobenzene	87-61-6	1.18	U	5.88	1.18	0.588
1,2,4-Trichlorobenzene	120-82-1	1.18	U	5.88	1.18	0.588
1,1,1-Trichloroethane	71-55-6	1.18	U	5.88	1.18	0.588
1,1,2-Trichloroethane	79-00-5	1.18	U	5.88	1.18	0.588
Trichloroethene	79-01-6	1.18	U	5.88	1.18	0.588
Trichlorofluoromethane	75-69-4	2.36	U	5.88	2.36	1.18
1,2,3-Trichloropropane	96-18-4	2.36	U	5.88	2.36	1.18
1,2,4-Trimethylbenzene	95-63-6	0.941	J	5.88	1.18	0.588
1,3,5-Trimethylbenzene	108-67-8	1.18	U	5.88	1.18	0.588
Vinyl chloride	75-01-4	2.36	U	5.88	2.36	1.18
o-Xylene	95-47-6	1.18	U	5.88	1.18	0.588
m-,p-Xylene	179601-23-1	1.18	U	5.88	1.18	0.588

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.2	80	120	
1,2-Dichloroethane-d4	85.8	80	120	
Toluene-d8	103	85	115	
4-Bromofluorobenzene	105	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT14(10-10.5)140316FD	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561316	**Analyst:**	JWR	**Run Date:**	03/17/2016 18:10
Collect Date:	03/14/2016 13:15	**Dilution:**	1	**File ID:**	1LM.LM33891
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	90.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.20	U	4.40	2.20	1.10

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT14(17-17.5)140316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:10
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG561881	**Analyst:**	TMB	**Run Date:**	03/22/2016 19:09
Collect Date:	03/14/2016 13:20	**Dilution:**	1	**File ID:**	6M137952
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	91.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.95	J	21.6	10.8	5.39
Benzene	71-43-2	1.08	U	5.39	1.08	0.539
Bromobenzene	108-86-1	1.08	U	5.39	1.08	0.539
Bromochloromethane	74-97-5	2.16	U	5.39	2.16	1.08
Bromodichloromethane	75-27-4	1.08	U	5.39	1.08	0.539
Bromoform	75-25-2	1.08	U	5.39	1.08	0.539
Bromomethane	74-83-9	2.16	U	5.39	2.16	1.08
2-Butanone	78-93-3	5.38	U	10.8	5.38	2.69
n-Butylbenzene	104-51-8	1.08	U	5.39	1.08	0.539
sec-Butylbenzene	135-98-8	1.08	U	5.39	1.08	0.539
tert-Butylbenzene	98-06-6	1.08	U	5.39	1.08	0.539
Carbon disulfide	75-15-0	1.08	U	5.39	1.08	0.539
Carbon tetrachloride	56-23-5	1.08	U	5.39	1.08	0.539
Chlorobenzene	108-90-7	1.08	U	5.39	1.08	0.539
Chlorodibromomethane	124-48-1	1.08	U	5.39	1.08	0.539
Chloroethane	75-00-3	2.16	U	5.39	2.16	1.08
Chloroform	67-66-3	1.08	U	5.39	1.08	0.539
Chloromethane	74-87-3	4.32	Q	10.8	4.32	2.16
2-Chlorotoluene	95-49-8	1.08	U	5.39	1.08	0.539
4-Chlorotoluene	106-43-4	1.08	U	5.39	1.08	0.539
1,2-Dibromo-3-chloropropane	96-12-8	4.32	U	10.8	4.32	2.16
1,2-Dibromoethane	106-93-4	1.08	U	5.39	1.08	0.539
Dibromomethane	74-95-3	1.08	U	5.39	1.08	0.539
1,2-Dichlorobenzene	95-50-1	1.08	U	5.39	1.08	0.539
1,3-Dichlorobenzene	541-73-1	1.08	U	5.39	1.08	0.539
1,4-Dichlorobenzene	106-46-7	1.08	U	5.39	1.08	0.539
Dichlorodifluoromethane	75-71-8	2.16	U	5.39	2.16	1.08
1,1-Dichloroethane	75-34-3	2.16	U	5.39	2.16	1.08
1,2-Dichloroethane	107-06-2	1.08	U	5.39	1.08	0.539
1,1-Dichloroethene	75-35-4	1.08	U	5.39	1.08	0.539
cis-1,2-Dichloroethene	156-59-2	1.08	U	5.39	1.08	0.539

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.08	U	5.39	1.08	0.539
1,2-Dichloropropane	78-87-5	1.08	U	5.39	1.08	0.539
1,3-Dichloropropane	142-28-9	1.08	U	5.39	1.08	0.539
2,2-Dichloropropane	594-20-7	1.08	U	5.39	1.08	0.539
cis-1,3-Dichloropropene	10061-01-5	1.08	U	5.39	1.08	0.539
trans-1,3-Dichloropropene	10061-02-6	1.08	U	5.39	1.08	0.539
1,1-Dichloropropene	563-58-6	1.08	U	5.39	1.08	0.539
Ethylbenzene	100-41-4	1.08	U	5.39	1.08	0.539
2-Hexanone	591-78-6	5.38	U	10.8	5.38	2.69
Hexachlorobutadiene	87-68-3	1.08	U	5.39	1.08	0.539
Isopropylbenzene	98-82-8	1.08	U	5.39	1.08	0.539
p-Isopropyltoluene	99-87-6	1.08	U	5.39	1.08	0.539
4-Methyl-2-pentanone	108-10-1	5.38	Q	10.8	5.38	2.69
Methylene chloride	75-09-2	2.16	U	5.39	2.16	1.08
Naphthalene	91-20-3	1.08	U	5.39	1.08	0.539
n-Propylbenzene	103-65-1	1.08	U	5.39	1.08	0.539
Styrene	100-42-5	1.08	U	5.39	1.08	0.539
1,1,1,2-Tetrachloroethane	630-20-6	1.08	U	5.39	1.08	0.539
1,1,2,2-Tetrachloroethane	79-34-5	1.08	U	5.39	1.08	0.539
Tetrachloroethene	127-18-4	1.08	U	5.39	1.08	0.539
Toluene	108-88-3	1.08	U	5.39	1.08	0.539
1,2,3-Trichlorobenzene	87-61-6	1.08	U	5.39	1.08	0.539
1,2,4-Trichlorobenzene	120-82-1	1.08	U	5.39	1.08	0.539
1,1,1-Trichloroethane	71-55-6	1.08	U	5.39	1.08	0.539
1,1,2-Trichloroethane	79-00-5	1.08	U	5.39	1.08	0.539
Trichloroethene	79-01-6	1.08	U	5.39	1.08	0.539
Trichlorofluoromethane	75-69-4	2.16	U	5.39	2.16	1.08
1,2,3-Trichloropropane	96-18-4	2.16	U	5.39	2.16	1.08
1,2,4-Trimethylbenzene	95-63-6	1.08	U	5.39	1.08	0.539
1,3,5-Trimethylbenzene	108-67-8	1.08	U	5.39	1.08	0.539
Vinyl chloride	75-01-4	2.16	U	5.39	2.16	1.08
o-Xylene	95-47-6	1.08	U	5.39	1.08	0.539
m-,p-Xylene	179601-23-1	1.08	U	5.39	1.08	0.539

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.1	80	120	
1,2-Dichloroethane-d4	87.5	80	120	
Toluene-d8	102	85	115	
4-Bromofluorobenzene	105	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT14(17-17.5)140316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561316	**Analyst:**	JWR	**Run Date:**	03/17/2016 18:29
Collect Date:	03/14/2016 13:20	**Dilution:**	1	**File ID:**	1LM.LM33892
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	91.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.10	U	4.21	2.10	1.05

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT14(23-23.5)140316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/23/2016 09:01
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 18:15
Collect Date:	03/14/2016 13:25	**Dilution:**	1	**File ID:**	6M137975
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.9	J	25.4	12.7	6.35
Benzene	71-43-2	1.27	U	6.35	1.27	0.635
Bromobenzene	108-86-1	1.27	U	6.35	1.27	0.635
Bromochloromethane	74-97-5	2.54	U	6.35	2.54	1.27
Bromodichloromethane	75-27-4	1.27	U	6.35	1.27	0.635
Bromoform	75-25-2	1.27	U	6.35	1.27	0.635
Bromomethane	74-83-9	2.54	U	6.35	2.54	1.27
2-Butanone	78-93-3	6.34	U	12.7	6.34	3.17
n-Butylbenzene	104-51-8	1.27	U	6.35	1.27	0.635
sec-Butylbenzene	135-98-8	1.27	U	6.35	1.27	0.635
tert-Butylbenzene	98-06-6	1.27	U	6.35	1.27	0.635
Carbon disulfide	75-15-0	1.27	U	6.35	1.27	0.635
Carbon tetrachloride	56-23-5	1.27	U	6.35	1.27	0.635
Chlorobenzene	108-90-7	1.27	U	6.35	1.27	0.635
Chlorodibromomethane	124-48-1	1.27	U	6.35	1.27	0.635
Chloroethane	75-00-3	2.54	U	6.35	2.54	1.27
Chloroform	67-66-3	1.27	U	6.35	1.27	0.635
Chloromethane	74-87-3	5.08	Q	12.7	5.08	2.54
2-Chlorotoluene	95-49-8	1.27	U	6.35	1.27	0.635
4-Chlorotoluene	106-43-4	1.27	U	6.35	1.27	0.635
1,2-Dibromo-3-chloropropane	96-12-8	5.08	U	12.7	5.08	2.54
1,2-Dibromoethane	106-93-4	1.27	U	6.35	1.27	0.635
Dibromomethane	74-95-3	1.27	U	6.35	1.27	0.635
1,2-Dichlorobenzene	95-50-1	1.27	U	6.35	1.27	0.635
1,3-Dichlorobenzene	541-73-1	1.27	U	6.35	1.27	0.635
1,4-Dichlorobenzene	106-46-7	1.27	U	6.35	1.27	0.635
Dichlorodifluoromethane	75-71-8	2.54	U	6.35	2.54	1.27
1,1-Dichloroethane	75-34-3	2.54	U	6.35	2.54	1.27
1,2-Dichloroethane	107-06-2	1.27	U	6.35	1.27	0.635
1,1-Dichloroethene	75-35-4	1.27	U	6.35	1.27	0.635
cis-1,2-Dichloroethene	156-59-2	1.27	U	6.35	1.27	0.635

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.27	U	6.35	1.27	0.635
1,2-Dichloropropane	78-87-5	1.27	U	6.35	1.27	0.635
1,3-Dichloropropane	142-28-9	1.27	U	6.35	1.27	0.635
2,2-Dichloropropane	594-20-7	1.27	U	6.35	1.27	0.635
cis-1,3-Dichloropropene	10061-01-5	1.27	U	6.35	1.27	0.635
trans-1,3-Dichloropropene	10061-02-6	1.27	U	6.35	1.27	0.635
1,1-Dichloropropene	563-58-6	1.27	U	6.35	1.27	0.635
Ethylbenzene	100-41-4	1.27	U	6.35	1.27	0.635
2-Hexanone	591-78-6	6.34	U	12.7	6.34	3.17
Hexachlorobutadiene	87-68-3	1.27	U	6.35	1.27	0.635
Isopropylbenzene	98-82-8	1.27	U	6.35	1.27	0.635
p-Isopropyltoluene	99-87-6	1.27	U	6.35	1.27	0.635
4-Methyl-2-pentanone	108-10-1	6.34	U	12.7	6.34	3.17
Methylene chloride	75-09-2	2.54	U	6.35	2.54	1.27
Naphthalene	91-20-3	1.27	Q	6.35	1.27	0.635
n-Propylbenzene	103-65-1	1.27	U	6.35	1.27	0.635
Styrene	100-42-5	1.27	U	6.35	1.27	0.635
1,1,1,2-Tetrachloroethane	630-20-6	1.27	U	6.35	1.27	0.635
1,1,2,2-Tetrachloroethane	79-34-5	1.27	U	6.35	1.27	0.635
Tetrachloroethene	127-18-4	1.27	U	6.35	1.27	0.635
Toluene	108-88-3	1.27	U	6.35	1.27	0.635
1,2,3-Trichlorobenzene	87-61-6	1.27	U	6.35	1.27	0.635
1,2,4-Trichlorobenzene	120-82-1	1.27	U	6.35	1.27	0.635
1,1,1-Trichloroethane	71-55-6	1.27	U	6.35	1.27	0.635
1,1,2-Trichloroethane	79-00-5	1.27	U	6.35	1.27	0.635
Trichloroethene	79-01-6	1.27	U	6.35	1.27	0.635
Trichlorofluoromethane	75-69-4	2.54	U	6.35	2.54	1.27
1,2,3-Trichloropropane	96-18-4	2.54	U	6.35	2.54	1.27
1,2,4-Trimethylbenzene	95-63-6	0.752	J	6.35	1.27	0.635
1,3,5-Trimethylbenzene	108-67-8	1.27	U	6.35	1.27	0.635
Vinyl chloride	75-01-4	2.54	U	6.35	2.54	1.27
o-Xylene	95-47-6	1.27	U	6.35	1.27	0.635
m-,p-Xylene	179601-23-1	1.27	U	6.35	1.27	0.635

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.7	80	120	
1,2-Dichloroethane-d4	84.7	80	120	
Toluene-d8	104	85	115	
4-Bromofluorobenzene	112	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT14(23-23.5)140316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561316	**Analyst:**	JWR	**Run Date:**	03/17/2016 18:48
Collect Date:	03/14/2016 13:25	**Dilution:**	1	**File ID:**	1LM.LM33893
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.40	U	4.80	2.40	1.20

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT15(5-5.5)140316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:12
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 18:48
Collect Date:	03/14/2016 16:40	**Dilution:**	1	**File ID:**	6M137976
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.1	U	22.3	11.1	5.57
Benzene	71-43-2	1.11	U	5.57	1.11	0.557
Bromobenzene	108-86-1	1.11	U	5.57	1.11	0.557
Bromochloromethane	74-97-5	2.22	U	5.57	2.22	1.11
Bromodichloromethane	75-27-4	1.11	U	5.57	1.11	0.557
Bromoform	75-25-2	1.11	U	5.57	1.11	0.557
Bromomethane	74-83-9	2.22	U	5.57	2.22	1.11
2-Butanone	78-93-3	5.58	U	11.1	5.58	2.79
n-Butylbenzene	104-51-8	1.11	U	5.57	1.11	0.557
sec-Butylbenzene	135-98-8	1.11	U	5.57	1.11	0.557
tert-Butylbenzene	98-06-6	1.11	U	5.57	1.11	0.557
Carbon disulfide	75-15-0	1.11	U	5.57	1.11	0.557
Carbon tetrachloride	56-23-5	1.11	U	5.57	1.11	0.557
Chlorobenzene	108-90-7	1.11	U	5.57	1.11	0.557
Chlorodibromomethane	124-48-1	1.11	U	5.57	1.11	0.557
Chloroethane	75-00-3	2.22	U	5.57	2.22	1.11
Chloroform	67-66-3	1.11	U	5.57	1.11	0.557
Chloromethane	74-87-3	4.46	Q	11.1	4.46	2.23
2-Chlorotoluene	95-49-8	1.11	U	5.57	1.11	0.557
4-Chlorotoluene	106-43-4	1.11	U	5.57	1.11	0.557
1,2-Dibromo-3-chloropropane	96-12-8	4.46	U	11.1	4.46	2.23
1,2-Dibromoethane	106-93-4	1.11	U	5.57	1.11	0.557
Dibromomethane	74-95-3	1.11	U	5.57	1.11	0.557
1,2-Dichlorobenzene	95-50-1	1.11	U	5.57	1.11	0.557
1,3-Dichlorobenzene	541-73-1	1.11	U	5.57	1.11	0.557
1,4-Dichlorobenzene	106-46-7	1.11	U	5.57	1.11	0.557
Dichlorodifluoromethane	75-71-8	2.22	U	5.57	2.22	1.11
1,1-Dichloroethane	75-34-3	2.22	U	5.57	2.22	1.11
1,2-Dichloroethane	107-06-2	1.11	U	5.57	1.11	0.557
1,1-Dichloroethene	75-35-4	1.11	U	5.57	1.11	0.557
cis-1,2-Dichloroethene	156-59-2	1.11	U	5.57	1.11	0.557

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.11	U	5.57	1.11	0.557
1,2-Dichloropropane	78-87-5	1.11	U	5.57	1.11	0.557
1,3-Dichloropropane	142-28-9	1.11	U	5.57	1.11	0.557
2,2-Dichloropropane	594-20-7	1.11	U	5.57	1.11	0.557
cis-1,3-Dichloropropene	10061-01-5	1.11	U	5.57	1.11	0.557
trans-1,3-Dichloropropene	10061-02-6	1.11	U	5.57	1.11	0.557
1,1-Dichloropropene	563-58-6	1.11	U	5.57	1.11	0.557
Ethylbenzene	100-41-4	1.11	U	5.57	1.11	0.557
2-Hexanone	591-78-6	5.58	U	11.1	5.58	2.79
Hexachlorobutadiene	87-68-3	1.11	U	5.57	1.11	0.557
Isopropylbenzene	98-82-8	1.11	U	5.57	1.11	0.557
p-Isopropyltoluene	99-87-6	1.11	U	5.57	1.11	0.557
4-Methyl-2-pentanone	108-10-1	5.58	U	11.1	5.58	2.79
Methylene chloride	75-09-2	2.22	U	5.57	2.22	1.11
Naphthalene	91-20-3	1.11	Q	5.57	1.11	0.557
n-Propylbenzene	103-65-1	1.11	U	5.57	1.11	0.557
Styrene	100-42-5	1.11	U	5.57	1.11	0.557
1,1,1,2-Tetrachloroethane	630-20-6	1.11	U	5.57	1.11	0.557
1,1,2,2-Tetrachloroethane	79-34-5	1.11	U	5.57	1.11	0.557
Tetrachloroethene	127-18-4	1.11	U	5.57	1.11	0.557
Toluene	108-88-3	1.11	U	5.57	1.11	0.557
1,2,3-Trichlorobenzene	87-61-6	1.11	U	5.57	1.11	0.557
1,2,4-Trichlorobenzene	120-82-1	1.11	U	5.57	1.11	0.557
1,1,1-Trichloroethane	71-55-6	1.11	U	5.57	1.11	0.557
1,1,2-Trichloroethane	79-00-5	1.11	U	5.57	1.11	0.557
Trichloroethene	79-01-6	1.11	U	5.57	1.11	0.557
Trichlorofluoromethane	75-69-4	2.22	U	5.57	2.22	1.11
1,2,3-Trichloropropane	96-18-4	2.22	U	5.57	2.22	1.11
1,2,4-Trimethylbenzene	95-63-6	1.11	U	5.57	1.11	0.557
1,3,5-Trimethylbenzene	108-67-8	1.11	U	5.57	1.11	0.557
Vinyl chloride	75-01-4	2.22	U	5.57	2.22	1.11
o-Xylene	95-47-6	1.11	U	5.57	1.11	0.557
m-,p-Xylene	179601-23-1	1.11	U	5.57	1.11	0.557

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.6	80	120	
1,2-Dichloroethane-d4	87.3	80	120	
Toluene-d8	102	85	115	
4-Bromofluorobenzene	104	85	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT15(5-5.5)140316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561316	**Analyst:**	JWR	**Run Date:**	03/17/2016 20:03
Collect Date:	03/14/2016 16:40	**Dilution:**	1	**File ID:**	1LM.LM33897
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.34	U	4.70	2.34	1.17

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT15(12-12.5)140316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:13
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 19:21
Collect Date:	03/14/2016 16:41	**Dilution:**	1	**File ID:**	6M137977
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.4	U	24.9	12.4	6.22
Benzene	71-43-2	1.24	U	6.22	1.24	0.622
Bromobenzene	108-86-1	1.24	U	6.22	1.24	0.622
Bromochloromethane	74-97-5	2.48	U	6.22	2.48	1.24
Bromodichloromethane	75-27-4	1.24	U	6.22	1.24	0.622
Bromoform	75-25-2	1.24	U	6.22	1.24	0.622
Bromomethane	74-83-9	2.48	U	6.22	2.48	1.24
2-Butanone	78-93-3	6.22	U	12.4	6.22	3.11
n-Butylbenzene	104-51-8	1.24	U	6.22	1.24	0.622
sec-Butylbenzene	135-98-8	1.24	U	6.22	1.24	0.622
tert-Butylbenzene	98-06-6	1.24	U	6.22	1.24	0.622
Carbon disulfide	75-15-0	1.24	U	6.22	1.24	0.622
Carbon tetrachloride	56-23-5	1.24	U	6.22	1.24	0.622
Chlorobenzene	108-90-7	1.24	U	6.22	1.24	0.622
Chlorodibromomethane	124-48-1	1.24	U	6.22	1.24	0.622
Chloroethane	75-00-3	2.48	U	6.22	2.48	1.24
Chloroform	67-66-3	1.24	U	6.22	1.24	0.622
Chloromethane	74-87-3	4.98	Q	12.4	4.98	2.49
2-Chlorotoluene	95-49-8	1.24	U	6.22	1.24	0.622
4-Chlorotoluene	106-43-4	1.24	U	6.22	1.24	0.622
1,2-Dibromo-3-chloropropane	96-12-8	4.98	U	12.4	4.98	2.49
1,2-Dibromoethane	106-93-4	1.24	U	6.22	1.24	0.622
Dibromomethane	74-95-3	1.24	U	6.22	1.24	0.622
1,2-Dichlorobenzene	95-50-1	1.24	U	6.22	1.24	0.622
1,3-Dichlorobenzene	541-73-1	1.24	U	6.22	1.24	0.622
1,4-Dichlorobenzene	106-46-7	1.24	U	6.22	1.24	0.622
Dichlorodifluoromethane	75-71-8	2.48	U	6.22	2.48	1.24
1,1-Dichloroethane	75-34-3	2.48	U	6.22	2.48	1.24
1,2-Dichloroethane	107-06-2	1.24	U	6.22	1.24	0.622
1,1-Dichloroethene	75-35-4	1.24	U	6.22	1.24	0.622
cis-1,2-Dichloroethene	156-59-2	1.24	U	6.22	1.24	0.622

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Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.24	U	6.22	1.24	0.622
1,2-Dichloropropane	78-87-5	1.24	U	6.22	1.24	0.622
1,3-Dichloropropane	142-28-9	1.24	U	6.22	1.24	0.622
2,2-Dichloropropane	594-20-7	1.24	U	6.22	1.24	0.622
cis-1,3-Dichloropropene	10061-01-5	1.24	U	6.22	1.24	0.622
trans-1,3-Dichloropropene	10061-02-6	1.24	U	6.22	1.24	0.622
1,1-Dichloropropene	563-58-6	1.24	U	6.22	1.24	0.622
Ethylbenzene	100-41-4	1.24	U	6.22	1.24	0.622
2-Hexanone	591-78-6	6.22	U	12.4	6.22	3.11
Hexachlorobutadiene	87-68-3	1.24	U	6.22	1.24	0.622
Isopropylbenzene	98-82-8	1.24	U	6.22	1.24	0.622
p-Isopropyltoluene	99-87-6	1.24	U	6.22	1.24	0.622
4-Methyl-2-pentanone	108-10-1	6.22	U	12.4	6.22	3.11
Methylene chloride	75-09-2	2.48	U	6.22	2.48	1.24
Naphthalene	91-20-3	1.24	Q	6.22	1.24	0.622
n-Propylbenzene	103-65-1	1.24	U	6.22	1.24	0.622
Styrene	100-42-5	1.24	U	6.22	1.24	0.622
1,1,1,2-Tetrachloroethane	630-20-6	1.24	U	6.22	1.24	0.622
1,1,2,2-Tetrachloroethane	79-34-5	1.24	U	6.22	1.24	0.622
Tetrachloroethene	127-18-4	1.24	U	6.22	1.24	0.622
Toluene	108-88-3	1.24	U	6.22	1.24	0.622
1,2,3-Trichlorobenzene	87-61-6	1.24	U	6.22	1.24	0.622
1,2,4-Trichlorobenzene	120-82-1	1.24	U	6.22	1.24	0.622
1,1,1-Trichloroethane	71-55-6	1.24	U	6.22	1.24	0.622
1,1,2-Trichloroethane	79-00-5	1.24	U	6.22	1.24	0.622
Trichloroethene	79-01-6	1.24	U	6.22	1.24	0.622
Trichlorofluoromethane	75-69-4	2.48	U	6.22	2.48	1.24
1,2,3-Trichloropropane	96-18-4	2.48	U	6.22	2.48	1.24
1,2,4-Trimethylbenzene	95-63-6	1.24	U	6.22	1.24	0.622
1,3,5-Trimethylbenzene	108-67-8	1.24	U	6.22	1.24	0.622
Vinyl chloride	75-01-4	2.48	U	6.22	2.48	1.24
o-Xylene	95-47-6	1.24	U	6.22	1.24	0.622
m-,p-Xylene	179601-23-1	1.24	U	6.22	1.24	0.622

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.6	80	120	
1,2-Dichloroethane-d4	83.2	80	120	
Toluene-d8	102	85	115	
4-Bromofluorobenzene	102	85	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT15(12-12.5)140316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561316	**Analyst:**	JWR	**Run Date:**	03/17/2016 20:22
Collect Date:	03/14/2016 16:41	**Dilution:**	1	**File ID:**	1LM.LM33898
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	44.1		4.64	2.32	1.16

Certificate of Analysis

Sample #:	L16030861-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT15(21-21.5)140316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:14
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 19:54
Collect Date:	03/14/2016 16:42	**Dilution:**	1	**File ID:**	6M137978
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.9	U	23.8	11.9	5.95
Benzene	71-43-2	1.19	U	5.95	1.19	0.595
Bromobenzene	108-86-1	1.19	U	5.95	1.19	0.595
Bromochloromethane	74-97-5	2.38	U	5.95	2.38	1.19
Bromodichloromethane	75-27-4	1.19	U	5.95	1.19	0.595
Bromoform	75-25-2	1.19	U	5.95	1.19	0.595
Bromomethane	74-83-9	2.38	U	5.95	2.38	1.19
2-Butanone	78-93-3	5.94	U	11.9	5.94	2.97
n-Butylbenzene	104-51-8	1.19	U	5.95	1.19	0.595
sec-Butylbenzene	135-98-8	1.19	U	5.95	1.19	0.595
tert-Butylbenzene	98-06-6	1.19	U	5.95	1.19	0.595
Carbon disulfide	75-15-0	1.19	U	5.95	1.19	0.595
Carbon tetrachloride	56-23-5	1.19	U	5.95	1.19	0.595
Chlorobenzene	108-90-7	1.19	U	5.95	1.19	0.595
Chlorodibromomethane	124-48-1	1.19	U	5.95	1.19	0.595
Chloroethane	75-00-3	2.38	U	5.95	2.38	1.19
Chloroform	67-66-3	1.19	U	5.95	1.19	0.595
Chloromethane	74-87-3	4.76	Q	11.9	4.76	2.38
2-Chlorotoluene	95-49-8	1.19	U	5.95	1.19	0.595
4-Chlorotoluene	106-43-4	1.19	U	5.95	1.19	0.595

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Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	4.76	U	11.9	4.76	2.38
1,2-Dibromoethane	106-93-4	1.19	U	5.95	1.19	0.595
Dibromomethane	74-95-3	1.19	U	5.95	1.19	0.595
1,2-Dichlorobenzene	95-50-1	1.19	U	5.95	1.19	0.595
1,3-Dichlorobenzene	541-73-1	1.19	U	5.95	1.19	0.595
1,4-Dichlorobenzene	106-46-7	1.19	U	5.95	1.19	0.595
Dichlorodifluoromethane	75-71-8	2.38	U	5.95	2.38	1.19
1,1-Dichloroethane	75-34-3	2.38	U	5.95	2.38	1.19
1,2-Dichloroethane	107-06-2	1.19	U	5.95	1.19	0.595
1,1-Dichloroethene	75-35-4	1.19	U	5.95	1.19	0.595
cis-1,2-Dichloroethene	156-59-2	1.19	U	5.95	1.19	0.595
trans-1,2-Dichloroethene	156-60-5	1.19	U	5.95	1.19	0.595
1,2-Dichloropropane	78-87-5	1.19	U	5.95	1.19	0.595
1,3-Dichloropropane	142-28-9	1.19	U	5.95	1.19	0.595
2,2-Dichloropropane	594-20-7	1.19	U	5.95	1.19	0.595
cis-1,3-Dichloropropene	10061-01-5	1.19	U	5.95	1.19	0.595
trans-1,3-Dichloropropene	10061-02-6	1.19	U	5.95	1.19	0.595
1,1-Dichloropropene	563-58-6	1.19	U	5.95	1.19	0.595
Ethylbenzene	100-41-4	1.19	U	5.95	1.19	0.595
2-Hexanone	591-78-6	5.94	U	11.9	5.94	2.97
Hexachlorobutadiene	87-68-3	1.19	U	5.95	1.19	0.595
Isopropylbenzene	98-82-8	1.19	U	5.95	1.19	0.595
p-Isopropyltoluene	99-87-6	1.19	U	5.95	1.19	0.595
4-Methyl-2-pentanone	108-10-1	5.94	U	11.9	5.94	2.97
Methylene chloride	75-09-2	2.38	U	5.95	2.38	1.19
Naphthalene	91-20-3	1.19	Q	5.95	1.19	0.595
n-Propylbenzene	103-65-1	1.19	U	5.95	1.19	0.595
Styrene	100-42-5	1.19	U	5.95	1.19	0.595
1,1,1,2-Tetrachloroethane	630-20-6	1.19	U	5.95	1.19	0.595
1,1,2,2-Tetrachloroethane	79-34-5	1.19	U	5.95	1.19	0.595
Tetrachloroethene	127-18-4	1.19	U	5.95	1.19	0.595
Toluene	108-88-3	1.19	U	5.95	1.19	0.595
1,2,3-Trichlorobenzene	87-61-6	1.19	U	5.95	1.19	0.595
1,2,4-Trichlorobenzene	120-82-1	1.19	U	5.95	1.19	0.595
1,1,1-Trichloroethane	71-55-6	1.19	U	5.95	1.19	0.595
1,1,2-Trichloroethane	79-00-5	1.19	U	5.95	1.19	0.595
Trichloroethene	79-01-6	1.19	U	5.95	1.19	0.595
Trichlorofluoromethane	75-69-4	2.38	U	5.95	2.38	1.19
1,2,3-Trichloropropane	96-18-4	2.38	U	5.95	2.38	1.19

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Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.19	U	5.95	1.19	0.595
1,3,5-Trimethylbenzene	108-67-8	1.19	U	5.95	1.19	0.595
Vinyl chloride	75-01-4	2.38	U	5.95	2.38	1.19
o-Xylene	95-47-6	1.19	U	5.95	1.19	0.595
m-,p-Xylene	179601-23-1	1.19	U	5.95	1.19	0.595

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.1	80	120	
1,2-Dichloroethane-d4	86.0	80	120	
Toluene-d8	101	85	115	
4-Bromofluorobenzene	103	85	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT15(21-21.5)140316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561316	**Analyst:**	JWR	**Run Date:**	03/18/2016 13:31
Collect Date:	03/14/2016 16:42	**Dilution:**	100	**File ID:**	1LM.LM33933
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	82.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3440		476	238	119

Certificate of Analysis

Sample #:	L16030861-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT15(23.5-24)140316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:14
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 20:27
Collect Date:	03/14/2016 16:43	**Dilution:**	1	**File ID:**	6M137979
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.8	U	23.5	11.8	5.88
Benzene	71-43-2	1.18	U	5.88	1.18	0.588
Bromobenzene	108-86-1	1.18	U	5.88	1.18	0.588
Bromochloromethane	74-97-5	2.36	U	5.88	2.36	1.18
Bromodichloromethane	75-27-4	1.18	U	5.88	1.18	0.588
Bromoform	75-25-2	1.18	U	5.88	1.18	0.588
Bromomethane	74-83-9	2.36	U	5.88	2.36	1.18
2-Butanone	78-93-3	5.88	U	11.8	5.88	2.94
n-Butylbenzene	104-51-8	1.18	U	5.88	1.18	0.588
sec-Butylbenzene	135-98-8	1.18	U	5.88	1.18	0.588
tert-Butylbenzene	98-06-6	1.18	U	5.88	1.18	0.588
Carbon disulfide	75-15-0	1.18	U	5.88	1.18	0.588
Carbon tetrachloride	56-23-5	1.18	U	5.88	1.18	0.588
Chlorobenzene	108-90-7	1.18	U	5.88	1.18	0.588
Chlorodibromomethane	124-48-1	1.18	U	5.88	1.18	0.588
Chloroethane	75-00-3	2.36	U	5.88	2.36	1.18
Chloroform	67-66-3	0.714	J	5.88	1.18	0.588
Chloromethane	74-87-3	4.70	Q	11.8	4.70	2.35
2-Chlorotoluene	95-49-8	1.18	U	5.88	1.18	0.588
4-Chlorotoluene	106-43-4	1.18	U	5.88	1.18	0.588

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Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	4.70	U	11.8	4.70	2.35
1,2-Dibromoethane	106-93-4	1.18	U	5.88	1.18	0.588
Dibromomethane	74-95-3	1.18	U	5.88	1.18	0.588
1,2-Dichlorobenzene	95-50-1	1.18	U	5.88	1.18	0.588
1,3-Dichlorobenzene	541-73-1	1.18	U	5.88	1.18	0.588
1,4-Dichlorobenzene	106-46-7	1.18	U	5.88	1.18	0.588
Dichlorodifluoromethane	75-71-8	2.36	U	5.88	2.36	1.18
1,1-Dichloroethane	75-34-3	2.36	U	5.88	2.36	1.18
1,2-Dichloroethane	107-06-2	3.58	J	5.88	1.18	0.588
1,1-Dichloroethene	75-35-4	1.18	U	5.88	1.18	0.588
cis-1,2-Dichloroethene	156-59-2	1.18	U	5.88	1.18	0.588
trans-1,2-Dichloroethene	156-60-5	1.18	U	5.88	1.18	0.588
1,2-Dichloropropane	78-87-5	1.18	U	5.88	1.18	0.588
1,3-Dichloropropane	142-28-9	1.18	U	5.88	1.18	0.588
2,2-Dichloropropane	594-20-7	1.18	U	5.88	1.18	0.588
cis-1,3-Dichloropropene	10061-01-5	1.18	U	5.88	1.18	0.588
trans-1,3-Dichloropropene	10061-02-6	1.18	U	5.88	1.18	0.588
1,1-Dichloropropene	563-58-6	1.18	U	5.88	1.18	0.588
Ethylbenzene	100-41-4	1.18	U	5.88	1.18	0.588
2-Hexanone	591-78-6	5.88	U	11.8	5.88	2.94
Hexachlorobutadiene	87-68-3	1.18	U	5.88	1.18	0.588
Isopropylbenzene	98-82-8	1.18	U	5.88	1.18	0.588
p-Isopropyltoluene	99-87-6	1.18	U	5.88	1.18	0.588
4-Methyl-2-pentanone	108-10-1	5.88	U	11.8	5.88	2.94
Methylene chloride	75-09-2	2.36	U	5.88	2.36	1.18
Naphthalene	91-20-3	1.18	Q	5.88	1.18	0.588
n-Propylbenzene	103-65-1	1.18	U	5.88	1.18	0.588
Styrene	100-42-5	1.18	U	5.88	1.18	0.588
1,1,1,2-Tetrachloroethane	630-20-6	1.18	U	5.88	1.18	0.588
1,1,2,2-Tetrachloroethane	79-34-5	1.18	U	5.88	1.18	0.588
Tetrachloroethene	127-18-4	1.18	U	5.88	1.18	0.588
Toluene	108-88-3	1.18	U	5.88	1.18	0.588
1,2,3-Trichlorobenzene	87-61-6	1.18	U	5.88	1.18	0.588
1,2,4-Trichlorobenzene	120-82-1	1.18	U	5.88	1.18	0.588
1,1,1-Trichloroethane	71-55-6	1.18	U	5.88	1.18	0.588
1,1,2-Trichloroethane	79-00-5	1.18	U	5.88	1.18	0.588
Trichloroethene	79-01-6	58.8		5.88	1.18	0.588
Trichlorofluoromethane	75-69-4	2.36	U	5.88	2.36	1.18
1,2,3-Trichloropropane	96-18-4	2.36	U	5.88	2.36	1.18

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.18	U	5.88	1.18	0.588
1,3,5-Trimethylbenzene	108-67-8	1.18	U	5.88	1.18	0.588
Vinyl chloride	75-01-4	2.36	U	5.88	2.36	1.18
o-Xylene	95-47-6	1.18	U	5.88	1.18	0.588
m-,p-Xylene	179601-23-1	1.18	U	5.88	1.18	0.588

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.4	80	120	
1,2-Dichloroethane-d4	93.1	80	120	
Toluene-d8	99.6	85	115	
4-Bromofluorobenzene	103	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-09	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT15(23.5-24)140316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561316	**Analyst:**	JWR	**Run Date:**	03/18/2016 13:50
Collect Date:	03/14/2016 16:43	**Dilution:**	100	**File ID:**	1LM.LM33934
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	81.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	6010		485	242	121

Certificate of Analysis

Sample #:	L16030861-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT15(26.5-27)140316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:15
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 21:00
Collect Date:	03/14/2016 16:45	**Dilution:**	1	**File ID:**	6M137980
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.8	U	25.6	12.8	6.39
Benzene	71-43-2	1.28	U	6.39	1.28	0.639
Bromobenzene	108-86-1	1.28	U	6.39	1.28	0.639
Bromochloromethane	74-97-5	2.56	U	6.39	2.56	1.28
Bromodichloromethane	75-27-4	1.28	U	6.39	1.28	0.639
Bromoform	75-25-2	1.28	U	6.39	1.28	0.639
Bromomethane	74-83-9	2.56	U	6.39	2.56	1.28
2-Butanone	78-93-3	6.38	U	12.8	6.38	3.19
n-Butylbenzene	104-51-8	1.28	U	6.39	1.28	0.639
sec-Butylbenzene	135-98-8	1.28	U	6.39	1.28	0.639
tert-Butylbenzene	98-06-6	1.28	U	6.39	1.28	0.639
Carbon disulfide	75-15-0	1.28	U	6.39	1.28	0.639
Carbon tetrachloride	56-23-5	1.28	U	6.39	1.28	0.639
Chlorobenzene	108-90-7	1.28	U	6.39	1.28	0.639
Chlorodibromomethane	124-48-1	1.28	U	6.39	1.28	0.639
Chloroethane	75-00-3	2.56	U	6.39	2.56	1.28
Chloroform	67-66-3	1.28	U	6.39	1.28	0.639
Chloromethane	74-87-3	5.12	Q	12.8	5.12	2.56
2-Chlorotoluene	95-49-8	1.28	U	6.39	1.28	0.639
4-Chlorotoluene	106-43-4	1.28	U	6.39	1.28	0.639

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	5.12	U	12.8	5.12	2.56
1,2-Dibromoethane	106-93-4	1.28	U	6.39	1.28	0.639
Dibromomethane	74-95-3	1.28	U	6.39	1.28	0.639
1,2-Dichlorobenzene	95-50-1	1.28	U	6.39	1.28	0.639
1,3-Dichlorobenzene	541-73-1	1.28	U	6.39	1.28	0.639
1,4-Dichlorobenzene	106-46-7	1.28	U	6.39	1.28	0.639
Dichlorodifluoromethane	75-71-8	2.56	U	6.39	2.56	1.28
1,1-Dichloroethane	75-34-3	2.56	U	6.39	2.56	1.28
1,2-Dichloroethane	107-06-2	1.11	J	6.39	1.28	0.639
1,1-Dichloroethene	75-35-4	1.28	U	6.39	1.28	0.639
cis-1,2-Dichloroethene	156-59-2	1.28	U	6.39	1.28	0.639
trans-1,2-Dichloroethene	156-60-5	1.28	U	6.39	1.28	0.639
1,2-Dichloropropane	78-87-5	1.28	U	6.39	1.28	0.639
1,3-Dichloropropane	142-28-9	1.28	U	6.39	1.28	0.639
2,2-Dichloropropane	594-20-7	1.28	U	6.39	1.28	0.639
cis-1,3-Dichloropropene	10061-01-5	1.28	U	6.39	1.28	0.639
trans-1,3-Dichloropropene	10061-02-6	1.28	U	6.39	1.28	0.639
1,1-Dichloropropene	563-58-6	1.28	U	6.39	1.28	0.639
Ethylbenzene	100-41-4	1.28	U	6.39	1.28	0.639
2-Hexanone	591-78-6	6.38	U	12.8	6.38	3.19
Hexachlorobutadiene	87-68-3	1.28	U	6.39	1.28	0.639
Isopropylbenzene	98-82-8	1.28	U	6.39	1.28	0.639
p-Isopropyltoluene	99-87-6	1.28	U	6.39	1.28	0.639
4-Methyl-2-pentanone	108-10-1	6.38	U	12.8	6.38	3.19
Methylene chloride	75-09-2	2.56	U	6.39	2.56	1.28
Naphthalene	91-20-3	1.28	Q	6.39	1.28	0.639
n-Propylbenzene	103-65-1	1.28	U	6.39	1.28	0.639
Styrene	100-42-5	1.28	U	6.39	1.28	0.639
1,1,1,2-Tetrachloroethane	630-20-6	1.28	U	6.39	1.28	0.639
1,1,2,2-Tetrachloroethane	79-34-5	1.28	U	6.39	1.28	0.639
Tetrachloroethene	127-18-4	1.28	U	6.39	1.28	0.639
Toluene	108-88-3	1.28	U	6.39	1.28	0.639
1,2,3-Trichlorobenzene	87-61-6	1.28	U	6.39	1.28	0.639
1,2,4-Trichlorobenzene	120-82-1	1.28	U	6.39	1.28	0.639
1,1,1-Trichloroethane	71-55-6	1.28	U	6.39	1.28	0.639
1,1,2-Trichloroethane	79-00-5	1.28	U	6.39	1.28	0.639
Trichloroethene	79-01-6	18.9		6.39	1.28	0.639
Trichlorofluoromethane	75-69-4	2.56	U	6.39	2.56	1.28
1,2,3-Trichloropropane	96-18-4	2.56	U	6.39	2.56	1.28

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Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.28	U	6.39	1.28	0.639
1,3,5-Trimethylbenzene	108-67-8	1.28	U	6.39	1.28	0.639
Vinyl chloride	75-01-4	2.56	U	6.39	2.56	1.28
o-Xylene	95-47-6	1.28	U	6.39	1.28	0.639
m-,p-Xylene	179601-23-1	1.28	U	6.39	1.28	0.639

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.8	80	120	
1,2-Dichloroethane-d4	96.1	80	120	
Toluene-d8	99.5	85	115	
4-Bromofluorobenzene	102	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-10	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT15(26.5-27)140316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561316	**Analyst:**	JWR	**Run Date:**	03/18/2016 14:09
Collect Date:	03/14/2016 16:45	**Dilution:**	100	**File ID:**	1LM.LM33935
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	79.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	6530		505	252	126

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #: L16030861-01 **Client ID:** 18DPT14(5-5.5)140316 **Matrix:** Soil **Collect Date:** 03/14/2016 12:32

Analyte	Result	Units	Qualifier
Percent Solids	82.5	weight %	

Sample #: L16030861-02 **Client ID:** 18DPT14(10-10.5)140316 **Matrix:** Soil **Collect Date:** 03/14/2016 13:15

Analyte	Result	Units	Qualifier
Percent Solids	89.3	weight %	

Sample #: L16030861-03 **Client ID:** 18DPT14(10-10.5)140316FD **Matrix:** Soil **Collect Date:** 03/14/2016 13:15

Analyte	Result	Units	Qualifier
Percent Solids	90.4	weight %	

Sample #: L16030861-04 **Client ID:** 18DPT14(17-17.5)140316 **Matrix:** Soil **Collect Date:** 03/14/2016 13:20

Analyte	Result	Units	Qualifier
Percent Solids	91.0	weight %	

Sample #: L16030861-05 **Client ID:** 18DPT14(23-23.5)140316 **Matrix:** Soil **Collect Date:** 03/14/2016 13:25

Analyte	Result	Units	Qualifier
Percent Solids	79.9	weight %	

Sample #: L16030861-06 **Client ID:** 18DPT15(5-5.5)140316 **Matrix:** Soil **Collect Date:** 03/14/2016 16:40

Analyte	Result	Units	Qualifier
Percent Solids	82.5	weight %	

Sample #: L16030861-07 **Client ID:** 18DPT15(12-12.5)140316 **Matrix:** Soil **Collect Date:** 03/14/2016 16:41

Analyte	Result	Units	Qualifier
Percent Solids	85.0	weight %	

Sample #: L16030861-08 **Client ID:** 18DPT15(21-21.5)140316 **Matrix:** Soil **Collect Date:** 03/14/2016 16:42

Analyte	Result	Units	Qualifier
Percent Solids	82.9	weight %	

Sample #: L16030861-09 **Client ID:** 18DPT15(23.5-24)140316 **Matrix:** Soil **Collect Date:** 03/14/2016 16:43

Analyte	Result	Units	Qualifier
Percent Solids	81.2	weight %	

Sample #: L16030861-10 **Client ID:** 18DPT15(26.5-27)140316 **Matrix:** Soil **Collect Date:** 03/14/2016 16:45

Analyte	Result	Units	Qualifier
Percent Solids	79.1	weight %	

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT14(5-5.5)140316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:07
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG561881	**Analyst:**	TMB	**Run Date:**	03/22/2016 20:49
Collect Date:	03/14/2016 12:32	**Dilution:**	1	**File ID:**	6M137955
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.8	U	25.7	12.8	6.42
Benzene	71-43-2	1.28	U	6.42	1.28	0.642
Bromobenzene	108-86-1	1.28	U	6.42	1.28	0.642
Bromochloromethane	74-97-5	2.56	U	6.42	2.56	1.28
Bromodichloromethane	75-27-4	1.28	U	6.42	1.28	0.642
Bromoform	75-25-2	1.28	U	6.42	1.28	0.642
Bromomethane	74-83-9	2.56	U	6.42	2.56	1.28
2-Butanone	78-93-3	6.42	U	12.8	6.42	3.21
n-Butylbenzene	104-51-8	1.28	U	6.42	1.28	0.642
sec-Butylbenzene	135-98-8	1.28	U	6.42	1.28	0.642
tert-Butylbenzene	98-06-6	1.28	U	6.42	1.28	0.642
Carbon disulfide	75-15-0	1.28	U	6.42	1.28	0.642
Carbon tetrachloride	56-23-5	1.28	U	6.42	1.28	0.642
Chlorobenzene	108-90-7	1.28	U	6.42	1.28	0.642
Chlorodibromomethane	124-48-1	1.28	U	6.42	1.28	0.642
Chloroethane	75-00-3	2.56	U	6.42	2.56	1.28
Chloroform	67-66-3	1.28	U	6.42	1.28	0.642
Chloromethane	74-87-3	5.14	Q	12.8	5.14	2.57
2-Chlorotoluene	95-49-8	1.28	U	6.42	1.28	0.642
4-Chlorotoluene	106-43-4	1.28	U	6.42	1.28	0.642
1,2-Dibromo-3-chloropropane	96-12-8	5.14	U	12.8	5.14	2.57
1,2-Dibromoethane	106-93-4	1.28	U	6.42	1.28	0.642
Dibromomethane	74-95-3	1.28	U	6.42	1.28	0.642
1,2-Dichlorobenzene	95-50-1	1.28	U	6.42	1.28	0.642
1,3-Dichlorobenzene	541-73-1	1.28	U	6.42	1.28	0.642
1,4-Dichlorobenzene	106-46-7	1.28	U	6.42	1.28	0.642
Dichlorodifluoromethane	75-71-8	2.56	U	6.42	2.56	1.28
1,1-Dichloroethane	75-34-3	2.56	U	6.42	2.56	1.28
1,2-Dichloroethane	107-06-2	1.28	U	6.42	1.28	0.642
1,1-Dichloroethene	75-35-4	1.28	U	6.42	1.28	0.642
cis-1,2-Dichloroethene	156-59-2	1.28	U	6.42	1.28	0.642
trans-1,2-Dichloroethene	156-60-5	1.28	U	6.42	1.28	0.642

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.28	U	6.42	1.28	0.642
1,3-Dichloropropane	142-28-9	1.28	U	6.42	1.28	0.642
2,2-Dichloropropane	594-20-7	1.28	U	6.42	1.28	0.642
cis-1,3-Dichloropropene	10061-01-5	1.28	U	6.42	1.28	0.642
trans-1,3-Dichloropropene	10061-02-6	1.28	U	6.42	1.28	0.642
1,1-Dichloropropene	563-58-6	1.28	U	6.42	1.28	0.642
Ethylbenzene	100-41-4	1.28	U	6.42	1.28	0.642
2-Hexanone	591-78-6	6.42	U	12.8	6.42	3.21
Hexachlorobutadiene	87-68-3	1.28	U	6.42	1.28	0.642
Isopropylbenzene	98-82-8	1.28	U	6.42	1.28	0.642
p-Isopropyltoluene	99-87-6	1.28	U	6.42	1.28	0.642
4-Methyl-2-pentanone	108-10-1	6.42	Q	12.8	6.42	3.21
Methylene chloride	75-09-2	2.56	U	6.42	2.56	1.28
Naphthalene	91-20-3	1.28	U	6.42	1.28	0.642
n-Propylbenzene	103-65-1	1.28	U	6.42	1.28	0.642
Styrene	100-42-5	1.28	U	6.42	1.28	0.642
1,1,1,2-Tetrachloroethane	630-20-6	1.28	U	6.42	1.28	0.642
1,1,2,2-Tetrachloroethane	79-34-5	1.28	U	6.42	1.28	0.642
Tetrachloroethene	127-18-4	1.28	U	6.42	1.28	0.642
Toluene	108-88-3	1.28	U	6.42	1.28	0.642
1,2,3-Trichlorobenzene	87-61-6	1.28	U	6.42	1.28	0.642
1,2,4-Trichlorobenzene	120-82-1	1.28	U	6.42	1.28	0.642
1,1,1-Trichloroethane	71-55-6	1.28	U	6.42	1.28	0.642
1,1,2-Trichloroethane	79-00-5	1.28	U	6.42	1.28	0.642
Trichloroethene	79-01-6	1.28	U	6.42	1.28	0.642
Trichlorofluoromethane	75-69-4	2.56	U	6.42	2.56	1.28
1,2,3-Trichloropropane	96-18-4	2.56	U	6.42	2.56	1.28
1,2,4-Trimethylbenzene	95-63-6	1.28	U	6.42	1.28	0.642
1,3,5-Trimethylbenzene	108-67-8	1.28	U	6.42	1.28	0.642
Vinyl chloride	75-01-4	2.56	U	6.42	2.56	1.28
o-Xylene	95-47-6	1.28	U	6.42	1.28	0.642
m-,p-Xylene	179601-23-1	1.28	U	6.42	1.28	0.642

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.7	80	120	
1,2-Dichloroethane-d4	89.8	80	120	
Toluene-d8	101	85	115	
4-Bromofluorobenzene	101	85	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT14(10-10.5)140316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:09
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG561881	**Analyst:**	TMB	**Run Date:**	03/22/2016 20:16
Collect Date:	03/14/2016 13:15	**Dilution:**	1	**File ID:**	6M137954
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	89.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.6	U	23.3	11.6	5.82
Benzene	71-43-2	1.16	U	5.82	1.16	0.582
Bromobenzene	108-86-1	1.16	U	5.82	1.16	0.582
Bromochloromethane	74-97-5	2.32	U	5.82	2.32	1.16
Bromodichloromethane	75-27-4	1.16	U	5.82	1.16	0.582
Bromoform	75-25-2	1.16	U	5.82	1.16	0.582
Bromomethane	74-83-9	2.32	U	5.82	2.32	1.16
2-Butanone	78-93-3	5.82	U	11.6	5.82	2.91
n-Butylbenzene	104-51-8	1.16	U	5.82	1.16	0.582
sec-Butylbenzene	135-98-8	1.16	U	5.82	1.16	0.582
tert-Butylbenzene	98-06-6	1.16	U	5.82	1.16	0.582
Carbon disulfide	75-15-0	1.16	U	5.82	1.16	0.582
Carbon tetrachloride	56-23-5	1.16	U	5.82	1.16	0.582
Chlorobenzene	108-90-7	1.16	U	5.82	1.16	0.582
Chlorodibromomethane	124-48-1	1.16	U	5.82	1.16	0.582
Chloroethane	75-00-3	2.32	U	5.82	2.32	1.16
Chloroform	67-66-3	1.16	U	5.82	1.16	0.582
Chloromethane	74-87-3	4.66	Q	11.6	4.66	2.33
2-Chlorotoluene	95-49-8	1.16	U	5.82	1.16	0.582
4-Chlorotoluene	106-43-4	1.16	U	5.82	1.16	0.582
1,2-Dibromo-3-chloropropane	96-12-8	4.66	U	11.6	4.66	2.33
1,2-Dibromoethane	106-93-4	1.16	U	5.82	1.16	0.582
Dibromomethane	74-95-3	1.16	U	5.82	1.16	0.582
1,2-Dichlorobenzene	95-50-1	1.16	U	5.82	1.16	0.582
1,3-Dichlorobenzene	541-73-1	1.16	U	5.82	1.16	0.582
1,4-Dichlorobenzene	106-46-7	1.16	U	5.82	1.16	0.582
Dichlorodifluoromethane	75-71-8	2.32	U	5.82	2.32	1.16
1,1-Dichloroethane	75-34-3	2.32	U	5.82	2.32	1.16
1,2-Dichloroethane	107-06-2	1.16	U	5.82	1.16	0.582
1,1-Dichloroethene	75-35-4	1.16	U	5.82	1.16	0.582
cis-1,2-Dichloroethene	156-59-2	1.16	U	5.82	1.16	0.582

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.16	U	5.82	1.16	0.582
1,2-Dichloropropane	78-87-5	1.16	U	5.82	1.16	0.582
1,3-Dichloropropane	142-28-9	1.16	U	5.82	1.16	0.582
2,2-Dichloropropane	594-20-7	1.16	U	5.82	1.16	0.582
cis-1,3-Dichloropropene	10061-01-5	1.16	U	5.82	1.16	0.582
trans-1,3-Dichloropropene	10061-02-6	1.16	U	5.82	1.16	0.582
1,1-Dichloropropene	563-58-6	1.16	U	5.82	1.16	0.582
Ethylbenzene	100-41-4	1.16	U	5.82	1.16	0.582
2-Hexanone	591-78-6	5.82	U	11.6	5.82	2.91
Hexachlorobutadiene	87-68-3	1.16	U	5.82	1.16	0.582
Isopropylbenzene	98-82-8	1.16	U	5.82	1.16	0.582
p-Isopropyltoluene	99-87-6	1.16	U	5.82	1.16	0.582
4-Methyl-2-pentanone	108-10-1	5.82	Q	11.6	5.82	2.91
Methylene chloride	75-09-2	2.32	U	5.82	2.32	1.16
Naphthalene	91-20-3	1.16	U	5.82	1.16	0.582
n-Propylbenzene	103-65-1	1.16	U	5.82	1.16	0.582
Styrene	100-42-5	1.16	U	5.82	1.16	0.582
1,1,1,2-Tetrachloroethane	630-20-6	1.16	U	5.82	1.16	0.582
1,1,2,2-Tetrachloroethane	79-34-5	1.16	U	5.82	1.16	0.582
Tetrachloroethene	127-18-4	1.16	U	5.82	1.16	0.582
Toluene	108-88-3	1.16	U	5.82	1.16	0.582
1,2,3-Trichlorobenzene	87-61-6	1.16	U	5.82	1.16	0.582
1,2,4-Trichlorobenzene	120-82-1	1.16	U	5.82	1.16	0.582
1,1,1-Trichloroethane	71-55-6	1.16	U	5.82	1.16	0.582
1,1,2-Trichloroethane	79-00-5	1.16	U	5.82	1.16	0.582
Trichloroethene	79-01-6	1.16	U	5.82	1.16	0.582
Trichlorofluoromethane	75-69-4	2.32	U	5.82	2.32	1.16
1,2,3-Trichloropropane	96-18-4	2.32	U	5.82	2.32	1.16
1,2,4-Trimethylbenzene	95-63-6	1.16	U	5.82	1.16	0.582
1,3,5-Trimethylbenzene	108-67-8	1.16	U	5.82	1.16	0.582
Vinyl chloride	75-01-4	2.32	U	5.82	2.32	1.16
o-Xylene	95-47-6	1.16	U	5.82	1.16	0.582
m-,p-Xylene	179601-23-1	1.16	U	5.82	1.16	0.582

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.8	80	120	
1,2-Dichloroethane-d4	85.7	80	120	
Toluene-d8	103	85	115	
4-Bromofluorobenzene	103	85	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT14(10-10.5)140316FD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:09
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG561881	**Analyst:**	TMB	**Run Date:**	03/22/2016 19:43
Collect Date:	03/14/2016 13:15	**Dilution:**	1	**File ID:**	6M137953
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	90.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	9.15	J	23.5	11.8	5.88
Benzene	71-43-2	1.18	U	5.88	1.18	0.588
Bromobenzene	108-86-1	1.18	U	5.88	1.18	0.588
Bromochloromethane	74-97-5	2.36	U	5.88	2.36	1.18
Bromodichloromethane	75-27-4	1.18	U	5.88	1.18	0.588
Bromoform	75-25-2	1.18	U	5.88	1.18	0.588
Bromomethane	74-83-9	2.36	U	5.88	2.36	1.18
2-Butanone	78-93-3	5.88	U	11.8	5.88	2.94
n-Butylbenzene	104-51-8	1.18	U	5.88	1.18	0.588
sec-Butylbenzene	135-98-8	1.18	U	5.88	1.18	0.588
tert-Butylbenzene	98-06-6	1.18	U	5.88	1.18	0.588
Carbon disulfide	75-15-0	1.18	U	5.88	1.18	0.588
Carbon tetrachloride	56-23-5	1.18	U	5.88	1.18	0.588
Chlorobenzene	108-90-7	1.18	U	5.88	1.18	0.588
Chlorodibromomethane	124-48-1	1.18	U	5.88	1.18	0.588
Chloroethane	75-00-3	2.36	U	5.88	2.36	1.18
Chloroform	67-66-3	1.18	U	5.88	1.18	0.588
Chloromethane	74-87-3	4.70	Q	11.8	4.70	2.35
2-Chlorotoluene	95-49-8	1.18	U	5.88	1.18	0.588
4-Chlorotoluene	106-43-4	1.18	U	5.88	1.18	0.588
1,2-Dibromo-3-chloropropane	96-12-8	4.70	U	11.8	4.70	2.35
1,2-Dibromoethane	106-93-4	1.18	U	5.88	1.18	0.588
Dibromomethane	74-95-3	1.18	U	5.88	1.18	0.588
1,2-Dichlorobenzene	95-50-1	1.18	U	5.88	1.18	0.588
1,3-Dichlorobenzene	541-73-1	1.18	U	5.88	1.18	0.588
1,4-Dichlorobenzene	106-46-7	1.18	U	5.88	1.18	0.588
Dichlorodifluoromethane	75-71-8	2.36	U	5.88	2.36	1.18
1,1-Dichloroethane	75-34-3	2.36	U	5.88	2.36	1.18
1,2-Dichloroethane	107-06-2	1.18	U	5.88	1.18	0.588
1,1-Dichloroethene	75-35-4	1.18	U	5.88	1.18	0.588
cis-1,2-Dichloroethene	156-59-2	1.18	U	5.88	1.18	0.588

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.18	U	5.88	1.18	0.588
1,2-Dichloropropane	78-87-5	1.18	U	5.88	1.18	0.588
1,3-Dichloropropane	142-28-9	1.18	U	5.88	1.18	0.588
2,2-Dichloropropane	594-20-7	1.18	U	5.88	1.18	0.588
cis-1,3-Dichloropropene	10061-01-5	1.18	U	5.88	1.18	0.588
trans-1,3-Dichloropropene	10061-02-6	1.18	U	5.88	1.18	0.588
1,1-Dichloropropene	563-58-6	1.18	U	5.88	1.18	0.588
Ethylbenzene	100-41-4	1.18	U	5.88	1.18	0.588
2-Hexanone	591-78-6	5.88	U	11.8	5.88	2.94
Hexachlorobutadiene	87-68-3	1.18	U	5.88	1.18	0.588
Isopropylbenzene	98-82-8	1.18	U	5.88	1.18	0.588
p-Isopropyltoluene	99-87-6	1.18	U	5.88	1.18	0.588
4-Methyl-2-pentanone	108-10-1	5.88	Q	11.8	5.88	2.94
Methylene chloride	75-09-2	2.36	U	5.88	2.36	1.18
Naphthalene	91-20-3	1.18	U	5.88	1.18	0.588
n-Propylbenzene	103-65-1	1.18	U	5.88	1.18	0.588
Styrene	100-42-5	1.18	U	5.88	1.18	0.588
1,1,1,2-Tetrachloroethane	630-20-6	1.18	U	5.88	1.18	0.588
1,1,2,2-Tetrachloroethane	79-34-5	1.18	U	5.88	1.18	0.588
Tetrachloroethene	127-18-4	1.18	U	5.88	1.18	0.588
Toluene	108-88-3	1.18	U	5.88	1.18	0.588
1,2,3-Trichlorobenzene	87-61-6	1.18	U	5.88	1.18	0.588
1,2,4-Trichlorobenzene	120-82-1	1.18	U	5.88	1.18	0.588
1,1,1-Trichloroethane	71-55-6	1.18	U	5.88	1.18	0.588
1,1,2-Trichloroethane	79-00-5	1.18	U	5.88	1.18	0.588
Trichloroethene	79-01-6	1.18	U	5.88	1.18	0.588
Trichlorofluoromethane	75-69-4	2.36	U	5.88	2.36	1.18
1,2,3-Trichloropropane	96-18-4	2.36	U	5.88	2.36	1.18
1,2,4-Trimethylbenzene	95-63-6	0.941	J	5.88	1.18	0.588
1,3,5-Trimethylbenzene	108-67-8	1.18	U	5.88	1.18	0.588
Vinyl chloride	75-01-4	2.36	U	5.88	2.36	1.18
o-Xylene	95-47-6	1.18	U	5.88	1.18	0.588
m-,p-Xylene	179601-23-1	1.18	U	5.88	1.18	0.588

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.2	80	120	
1,2-Dichloroethane-d4	85.8	80	120	
Toluene-d8	103	85	115	
4-Bromofluorobenzene	105	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT14(10-10.5)140316FD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/23/2016 16:52
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 17:43
Collect Date:	03/14/2016 13:15	**Dilution:**	1	**File ID:**	6M137974
Sample Tag:	02	**Units:**	ug/kg	**Percent Solid:**	90.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.0	U	21.9	11.0	5.49
Benzene	71-43-2	1.10	U	5.49	1.10	0.549
Bromobenzene	108-86-1	1.10	U	5.49	1.10	0.549
Bromochloromethane	74-97-5	2.20	U	5.49	2.20	1.10
Bromodichloromethane	75-27-4	1.10	U	5.49	1.10	0.549
Bromoform	75-25-2	1.10	U	5.49	1.10	0.549
Bromomethane	74-83-9	2.20	U	5.49	2.20	1.10
2-Butanone	78-93-3	5.48	U	11.0	5.48	2.74
n-Butylbenzene	104-51-8	1.10	U	5.49	1.10	0.549
sec-Butylbenzene	135-98-8	1.10	U	5.49	1.10	0.549
tert-Butylbenzene	98-06-6	1.10	U	5.49	1.10	0.549
Carbon disulfide	75-15-0	1.10	U	5.49	1.10	0.549
Carbon tetrachloride	56-23-5	1.10	U	5.49	1.10	0.549
Chlorobenzene	108-90-7	1.10	U	5.49	1.10	0.549
Chlorodibromomethane	124-48-1	1.10	U	5.49	1.10	0.549
Chloroethane	75-00-3	2.20	U	5.49	2.20	1.10
Chloroform	67-66-3	1.10	U	5.49	1.10	0.549
Chloromethane	74-87-3	4.38	Q	11.0	4.38	2.19
2-Chlorotoluene	95-49-8	1.10	U	5.49	1.10	0.549
4-Chlorotoluene	106-43-4	1.10	U	5.49	1.10	0.549
1,2-Dibromo-3-chloropropane	96-12-8	4.38	U	11.0	4.38	2.19
1,2-Dibromoethane	106-93-4	1.10	U	5.49	1.10	0.549
Dibromomethane	74-95-3	1.10	U	5.49	1.10	0.549
1,2-Dichlorobenzene	95-50-1	1.10	U	5.49	1.10	0.549
1,3-Dichlorobenzene	541-73-1	1.10	U	5.49	1.10	0.549
1,4-Dichlorobenzene	106-46-7	1.10	U	5.49	1.10	0.549
Dichlorodifluoromethane	75-71-8	2.20	U	5.49	2.20	1.10
1,1-Dichloroethane	75-34-3	2.20	U	5.49	2.20	1.10
1,2-Dichloroethane	107-06-2	1.10	U	5.49	1.10	0.549
1,1-Dichloroethene	75-35-4	1.10	U	5.49	1.10	0.549
cis-1,2-Dichloroethene	156-59-2	1.10	U	5.49	1.10	0.549

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.10	U	5.49	1.10	0.549
1,2-Dichloropropane	78-87-5	1.10	U	5.49	1.10	0.549
1,3-Dichloropropane	142-28-9	1.10	U	5.49	1.10	0.549
2,2-Dichloropropane	594-20-7	1.10	U	5.49	1.10	0.549
cis-1,3-Dichloropropene	10061-01-5	1.10	U	5.49	1.10	0.549
trans-1,3-Dichloropropene	10061-02-6	1.10	U	5.49	1.10	0.549
1,1-Dichloropropene	563-58-6	1.10	U	5.49	1.10	0.549
Ethylbenzene	100-41-4	1.10	U	5.49	1.10	0.549
2-Hexanone	591-78-6	5.48	U	11.0	5.48	2.74
Hexachlorobutadiene	87-68-3	1.10	U	5.49	1.10	0.549
Isopropylbenzene	98-82-8	1.10	U	5.49	1.10	0.549
p-Isopropyltoluene	99-87-6	1.10	U	5.49	1.10	0.549
4-Methyl-2-pentanone	108-10-1	5.48	U	11.0	5.48	2.74
Methylene chloride	75-09-2	2.20	U	5.49	2.20	1.10
Naphthalene	91-20-3	1.10	Q	5.49	1.10	0.549
n-Propylbenzene	103-65-1	1.10	U	5.49	1.10	0.549
Styrene	100-42-5	1.10	U	5.49	1.10	0.549
1,1,1,2-Tetrachloroethane	630-20-6	1.10	U	5.49	1.10	0.549
1,1,2,2-Tetrachloroethane	79-34-5	1.10	U	5.49	1.10	0.549
Tetrachloroethene	127-18-4	1.10	U	5.49	1.10	0.549
Toluene	108-88-3	1.10	U	5.49	1.10	0.549
1,2,3-Trichlorobenzene	87-61-6	1.10	U	5.49	1.10	0.549
1,2,4-Trichlorobenzene	120-82-1	1.10	U	5.49	1.10	0.549
1,1,1-Trichloroethane	71-55-6	1.10	U	5.49	1.10	0.549
1,1,2-Trichloroethane	79-00-5	1.10	U	5.49	1.10	0.549
Trichloroethene	79-01-6	1.10	U	5.49	1.10	0.549
Trichlorofluoromethane	75-69-4	2.20	U	5.49	2.20	1.10
1,2,3-Trichloropropane	96-18-4	2.20	U	5.49	2.20	1.10
1,2,4-Trimethylbenzene	95-63-6	1.10	U	5.49	1.10	0.549
1,3,5-Trimethylbenzene	108-67-8	1.10	U	5.49	1.10	0.549
Vinyl chloride	75-01-4	2.20	U	5.49	2.20	1.10
o-Xylene	95-47-6	1.10	U	5.49	1.10	0.549
m-,p-Xylene	179601-23-1	1.10	U	5.49	1.10	0.549

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.6	80	120	
1,2-Dichloroethane-d4	90.3	80	120	
Toluene-d8	101	85	115	
4-Bromofluorobenzene	102	85	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT14(17-17.5)140316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:10
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG561881	**Analyst:**	TMB	**Run Date:**	03/22/2016 19:09
Collect Date:	03/14/2016 13:20	**Dilution:**	1	**File ID:**	6M137952
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	91.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.95	J	21.6	10.8	5.39
Benzene	71-43-2	1.08	U	5.39	1.08	0.539
Bromobenzene	108-86-1	1.08	U	5.39	1.08	0.539
Bromochloromethane	74-97-5	2.16	U	5.39	2.16	1.08
Bromodichloromethane	75-27-4	1.08	U	5.39	1.08	0.539
Bromoform	75-25-2	1.08	U	5.39	1.08	0.539
Bromomethane	74-83-9	2.16	U	5.39	2.16	1.08
2-Butanone	78-93-3	5.38	U	10.8	5.38	2.69
n-Butylbenzene	104-51-8	1.08	U	5.39	1.08	0.539
sec-Butylbenzene	135-98-8	1.08	U	5.39	1.08	0.539
tert-Butylbenzene	98-06-6	1.08	U	5.39	1.08	0.539
Carbon disulfide	75-15-0	1.08	U	5.39	1.08	0.539
Carbon tetrachloride	56-23-5	1.08	U	5.39	1.08	0.539
Chlorobenzene	108-90-7	1.08	U	5.39	1.08	0.539
Chlorodibromomethane	124-48-1	1.08	U	5.39	1.08	0.539
Chloroethane	75-00-3	2.16	U	5.39	2.16	1.08
Chloroform	67-66-3	1.08	U	5.39	1.08	0.539
Chloromethane	74-87-3	4.32	Q	10.8	4.32	2.16
2-Chlorotoluene	95-49-8	1.08	U	5.39	1.08	0.539
4-Chlorotoluene	106-43-4	1.08	U	5.39	1.08	0.539
1,2-Dibromo-3-chloropropane	96-12-8	4.32	U	10.8	4.32	2.16
1,2-Dibromoethane	106-93-4	1.08	U	5.39	1.08	0.539
Dibromomethane	74-95-3	1.08	U	5.39	1.08	0.539
1,2-Dichlorobenzene	95-50-1	1.08	U	5.39	1.08	0.539
1,3-Dichlorobenzene	541-73-1	1.08	U	5.39	1.08	0.539
1,4-Dichlorobenzene	106-46-7	1.08	U	5.39	1.08	0.539
Dichlorodifluoromethane	75-71-8	2.16	U	5.39	2.16	1.08
1,1-Dichloroethane	75-34-3	2.16	U	5.39	2.16	1.08
1,2-Dichloroethane	107-06-2	1.08	U	5.39	1.08	0.539
1,1-Dichloroethene	75-35-4	1.08	U	5.39	1.08	0.539
cis-1,2-Dichloroethene	156-59-2	1.08	U	5.39	1.08	0.539

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.08	U	5.39	1.08	0.539
1,2-Dichloropropane	78-87-5	1.08	U	5.39	1.08	0.539
1,3-Dichloropropane	142-28-9	1.08	U	5.39	1.08	0.539
2,2-Dichloropropane	594-20-7	1.08	U	5.39	1.08	0.539
cis-1,3-Dichloropropene	10061-01-5	1.08	U	5.39	1.08	0.539
trans-1,3-Dichloropropene	10061-02-6	1.08	U	5.39	1.08	0.539
1,1-Dichloropropene	563-58-6	1.08	U	5.39	1.08	0.539
Ethylbenzene	100-41-4	1.08	U	5.39	1.08	0.539
2-Hexanone	591-78-6	5.38	U	10.8	5.38	2.69
Hexachlorobutadiene	87-68-3	1.08	U	5.39	1.08	0.539
Isopropylbenzene	98-82-8	1.08	U	5.39	1.08	0.539
p-Isopropyltoluene	99-87-6	1.08	U	5.39	1.08	0.539
4-Methyl-2-pentanone	108-10-1	5.38	Q	10.8	5.38	2.69
Methylene chloride	75-09-2	2.16	U	5.39	2.16	1.08
Naphthalene	91-20-3	1.08	U	5.39	1.08	0.539
n-Propylbenzene	103-65-1	1.08	U	5.39	1.08	0.539
Styrene	100-42-5	1.08	U	5.39	1.08	0.539
1,1,1,2-Tetrachloroethane	630-20-6	1.08	U	5.39	1.08	0.539
1,1,2,2-Tetrachloroethane	79-34-5	1.08	U	5.39	1.08	0.539
Tetrachloroethene	127-18-4	1.08	U	5.39	1.08	0.539
Toluene	108-88-3	1.08	U	5.39	1.08	0.539
1,2,3-Trichlorobenzene	87-61-6	1.08	U	5.39	1.08	0.539
1,2,4-Trichlorobenzene	120-82-1	1.08	U	5.39	1.08	0.539
1,1,1-Trichloroethane	71-55-6	1.08	U	5.39	1.08	0.539
1,1,2-Trichloroethane	79-00-5	1.08	U	5.39	1.08	0.539
Trichloroethene	79-01-6	1.08	U	5.39	1.08	0.539
Trichlorofluoromethane	75-69-4	2.16	U	5.39	2.16	1.08
1,2,3-Trichloropropane	96-18-4	2.16	U	5.39	2.16	1.08
1,2,4-Trimethylbenzene	95-63-6	1.08	U	5.39	1.08	0.539
1,3,5-Trimethylbenzene	108-67-8	1.08	U	5.39	1.08	0.539
Vinyl chloride	75-01-4	2.16	U	5.39	2.16	1.08
o-Xylene	95-47-6	1.08	U	5.39	1.08	0.539
m-,p-Xylene	179601-23-1	1.08	U	5.39	1.08	0.539

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.1	80	120	
1,2-Dichloroethane-d4	87.5	80	120	
Toluene-d8	102	85	115	
4-Bromofluorobenzene	105	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT14(23-23.5)140316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/23/2016 09:01
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 18:15
Collect Date:	03/14/2016 13:25	**Dilution:**	1	**File ID:**	6M137975
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.9	J	25.4	12.7	6.35
Benzene	71-43-2	1.27	U	6.35	1.27	0.635
Bromobenzene	108-86-1	1.27	U	6.35	1.27	0.635
Bromochloromethane	74-97-5	2.54	U	6.35	2.54	1.27
Bromodichloromethane	75-27-4	1.27	U	6.35	1.27	0.635
Bromoform	75-25-2	1.27	U	6.35	1.27	0.635
Bromomethane	74-83-9	2.54	U	6.35	2.54	1.27
2-Butanone	78-93-3	6.34	U	12.7	6.34	3.17
n-Butylbenzene	104-51-8	1.27	U	6.35	1.27	0.635
sec-Butylbenzene	135-98-8	1.27	U	6.35	1.27	0.635
tert-Butylbenzene	98-06-6	1.27	U	6.35	1.27	0.635
Carbon disulfide	75-15-0	1.27	U	6.35	1.27	0.635
Carbon tetrachloride	56-23-5	1.27	U	6.35	1.27	0.635
Chlorobenzene	108-90-7	1.27	U	6.35	1.27	0.635
Chlorodibromomethane	124-48-1	1.27	U	6.35	1.27	0.635
Chloroethane	75-00-3	2.54	U	6.35	2.54	1.27
Chloroform	67-66-3	1.27	U	6.35	1.27	0.635
Chloromethane	74-87-3	5.08	Q	12.7	5.08	2.54
2-Chlorotoluene	95-49-8	1.27	U	6.35	1.27	0.635
4-Chlorotoluene	106-43-4	1.27	U	6.35	1.27	0.635
1,2-Dibromo-3-chloropropane	96-12-8	5.08	U	12.7	5.08	2.54
1,2-Dibromoethane	106-93-4	1.27	U	6.35	1.27	0.635
Dibromomethane	74-95-3	1.27	U	6.35	1.27	0.635
1,2-Dichlorobenzene	95-50-1	1.27	U	6.35	1.27	0.635
1,3-Dichlorobenzene	541-73-1	1.27	U	6.35	1.27	0.635
1,4-Dichlorobenzene	106-46-7	1.27	U	6.35	1.27	0.635
Dichlorodifluoromethane	75-71-8	2.54	U	6.35	2.54	1.27
1,1-Dichloroethane	75-34-3	2.54	U	6.35	2.54	1.27
1,2-Dichloroethane	107-06-2	1.27	U	6.35	1.27	0.635
1,1-Dichloroethene	75-35-4	1.27	U	6.35	1.27	0.635
cis-1,2-Dichloroethene	156-59-2	1.27	U	6.35	1.27	0.635

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.27	U	6.35	1.27	0.635
1,2-Dichloropropane	78-87-5	1.27	U	6.35	1.27	0.635
1,3-Dichloropropane	142-28-9	1.27	U	6.35	1.27	0.635
2,2-Dichloropropane	594-20-7	1.27	U	6.35	1.27	0.635
cis-1,3-Dichloropropene	10061-01-5	1.27	U	6.35	1.27	0.635
trans-1,3-Dichloropropene	10061-02-6	1.27	U	6.35	1.27	0.635
1,1-Dichloropropene	563-58-6	1.27	U	6.35	1.27	0.635
Ethylbenzene	100-41-4	1.27	U	6.35	1.27	0.635
2-Hexanone	591-78-6	6.34	U	12.7	6.34	3.17
Hexachlorobutadiene	87-68-3	1.27	U	6.35	1.27	0.635
Isopropylbenzene	98-82-8	1.27	U	6.35	1.27	0.635
p-Isopropyltoluene	99-87-6	1.27	U	6.35	1.27	0.635
4-Methyl-2-pentanone	108-10-1	6.34	U	12.7	6.34	3.17
Methylene chloride	75-09-2	2.54	U	6.35	2.54	1.27
Naphthalene	91-20-3	1.27	Q	6.35	1.27	0.635
n-Propylbenzene	103-65-1	1.27	U	6.35	1.27	0.635
Styrene	100-42-5	1.27	U	6.35	1.27	0.635
1,1,1,2-Tetrachloroethane	630-20-6	1.27	U	6.35	1.27	0.635
1,1,2,2-Tetrachloroethane	79-34-5	1.27	U	6.35	1.27	0.635
Tetrachloroethene	127-18-4	1.27	U	6.35	1.27	0.635
Toluene	108-88-3	1.27	U	6.35	1.27	0.635
1,2,3-Trichlorobenzene	87-61-6	1.27	U	6.35	1.27	0.635
1,2,4-Trichlorobenzene	120-82-1	1.27	U	6.35	1.27	0.635
1,1,1-Trichloroethane	71-55-6	1.27	U	6.35	1.27	0.635
1,1,2-Trichloroethane	79-00-5	1.27	U	6.35	1.27	0.635
Trichloroethene	79-01-6	1.27	U	6.35	1.27	0.635
Trichlorofluoromethane	75-69-4	2.54	U	6.35	2.54	1.27
1,2,3-Trichloropropane	96-18-4	2.54	U	6.35	2.54	1.27
1,2,4-Trimethylbenzene	95-63-6	0.752	J	6.35	1.27	0.635
1,3,5-Trimethylbenzene	108-67-8	1.27	U	6.35	1.27	0.635
Vinyl chloride	75-01-4	2.54	U	6.35	2.54	1.27
o-Xylene	95-47-6	1.27	U	6.35	1.27	0.635
m-,p-Xylene	179601-23-1	1.27	U	6.35	1.27	0.635

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.7	80	120	
1,2-Dichloroethane-d4	84.7	80	120	
Toluene-d8	104	85	115	
4-Bromofluorobenzene	112	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT15(5-5.5)140316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:12
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 18:48
Collect Date:	03/14/2016 16:40	**Dilution:**	1	**File ID:**	6M137976
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.1	U	22.3	11.1	5.57
Benzene	71-43-2	1.11	U	5.57	1.11	0.557
Bromobenzene	108-86-1	1.11	U	5.57	1.11	0.557
Bromochloromethane	74-97-5	2.22	U	5.57	2.22	1.11
Bromodichloromethane	75-27-4	1.11	U	5.57	1.11	0.557
Bromoform	75-25-2	1.11	U	5.57	1.11	0.557
Bromomethane	74-83-9	2.22	U	5.57	2.22	1.11
2-Butanone	78-93-3	5.58	U	11.1	5.58	2.79
n-Butylbenzene	104-51-8	1.11	U	5.57	1.11	0.557
sec-Butylbenzene	135-98-8	1.11	U	5.57	1.11	0.557
tert-Butylbenzene	98-06-6	1.11	U	5.57	1.11	0.557
Carbon disulfide	75-15-0	1.11	U	5.57	1.11	0.557
Carbon tetrachloride	56-23-5	1.11	U	5.57	1.11	0.557
Chlorobenzene	108-90-7	1.11	U	5.57	1.11	0.557
Chlorodibromomethane	124-48-1	1.11	U	5.57	1.11	0.557
Chloroethane	75-00-3	2.22	U	5.57	2.22	1.11
Chloroform	67-66-3	1.11	U	5.57	1.11	0.557
Chloromethane	74-87-3	4.46	Q	11.1	4.46	2.23
2-Chlorotoluene	95-49-8	1.11	U	5.57	1.11	0.557
4-Chlorotoluene	106-43-4	1.11	U	5.57	1.11	0.557
1,2-Dibromo-3-chloropropane	96-12-8	4.46	U	11.1	4.46	2.23
1,2-Dibromoethane	106-93-4	1.11	U	5.57	1.11	0.557
Dibromomethane	74-95-3	1.11	U	5.57	1.11	0.557
1,2-Dichlorobenzene	95-50-1	1.11	U	5.57	1.11	0.557
1,3-Dichlorobenzene	541-73-1	1.11	U	5.57	1.11	0.557
1,4-Dichlorobenzene	106-46-7	1.11	U	5.57	1.11	0.557
Dichlorodifluoromethane	75-71-8	2.22	U	5.57	2.22	1.11
1,1-Dichloroethane	75-34-3	2.22	U	5.57	2.22	1.11
1,2-Dichloroethane	107-06-2	1.11	U	5.57	1.11	0.557
1,1-Dichloroethene	75-35-4	1.11	U	5.57	1.11	0.557
cis-1,2-Dichloroethene	156-59-2	1.11	U	5.57	1.11	0.557

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.11	U	5.57	1.11	0.557
1,2-Dichloropropane	78-87-5	1.11	U	5.57	1.11	0.557
1,3-Dichloropropane	142-28-9	1.11	U	5.57	1.11	0.557
2,2-Dichloropropane	594-20-7	1.11	U	5.57	1.11	0.557
cis-1,3-Dichloropropene	10061-01-5	1.11	U	5.57	1.11	0.557
trans-1,3-Dichloropropene	10061-02-6	1.11	U	5.57	1.11	0.557
1,1-Dichloropropene	563-58-6	1.11	U	5.57	1.11	0.557
Ethylbenzene	100-41-4	1.11	U	5.57	1.11	0.557
2-Hexanone	591-78-6	5.58	U	11.1	5.58	2.79
Hexachlorobutadiene	87-68-3	1.11	U	5.57	1.11	0.557
Isopropylbenzene	98-82-8	1.11	U	5.57	1.11	0.557
p-Isopropyltoluene	99-87-6	1.11	U	5.57	1.11	0.557
4-Methyl-2-pentanone	108-10-1	5.58	U	11.1	5.58	2.79
Methylene chloride	75-09-2	2.22	U	5.57	2.22	1.11
Naphthalene	91-20-3	1.11	Q	5.57	1.11	0.557
n-Propylbenzene	103-65-1	1.11	U	5.57	1.11	0.557
Styrene	100-42-5	1.11	U	5.57	1.11	0.557
1,1,1,2-Tetrachloroethane	630-20-6	1.11	U	5.57	1.11	0.557
1,1,2,2-Tetrachloroethane	79-34-5	1.11	U	5.57	1.11	0.557
Tetrachloroethene	127-18-4	1.11	U	5.57	1.11	0.557
Toluene	108-88-3	1.11	U	5.57	1.11	0.557
1,2,3-Trichlorobenzene	87-61-6	1.11	U	5.57	1.11	0.557
1,2,4-Trichlorobenzene	120-82-1	1.11	U	5.57	1.11	0.557
1,1,1-Trichloroethane	71-55-6	1.11	U	5.57	1.11	0.557
1,1,2-Trichloroethane	79-00-5	1.11	U	5.57	1.11	0.557
Trichloroethene	79-01-6	1.11	U	5.57	1.11	0.557
Trichlorofluoromethane	75-69-4	2.22	U	5.57	2.22	1.11
1,2,3-Trichloropropane	96-18-4	2.22	U	5.57	2.22	1.11
1,2,4-Trimethylbenzene	95-63-6	1.11	U	5.57	1.11	0.557
1,3,5-Trimethylbenzene	108-67-8	1.11	U	5.57	1.11	0.557
Vinyl chloride	75-01-4	2.22	U	5.57	2.22	1.11
o-Xylene	95-47-6	1.11	U	5.57	1.11	0.557
m-,p-Xylene	179601-23-1	1.11	U	5.57	1.11	0.557

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.6	80	120	
1,2-Dichloroethane-d4	87.3	80	120	
Toluene-d8	102	85	115	
4-Bromofluorobenzene	104	85	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT15(12-12.5)140316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:13
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 19:21
Collect Date:	03/14/2016 16:41	**Dilution:**	1	**File ID:**	6M137977
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.4	U	24.9	12.4	6.22
Benzene	71-43-2	1.24	U	6.22	1.24	0.622
Bromobenzene	108-86-1	1.24	U	6.22	1.24	0.622
Bromochloromethane	74-97-5	2.48	U	6.22	2.48	1.24
Bromodichloromethane	75-27-4	1.24	U	6.22	1.24	0.622
Bromoform	75-25-2	1.24	U	6.22	1.24	0.622
Bromomethane	74-83-9	2.48	U	6.22	2.48	1.24
2-Butanone	78-93-3	6.22	U	12.4	6.22	3.11
n-Butylbenzene	104-51-8	1.24	U	6.22	1.24	0.622
sec-Butylbenzene	135-98-8	1.24	U	6.22	1.24	0.622
tert-Butylbenzene	98-06-6	1.24	U	6.22	1.24	0.622
Carbon disulfide	75-15-0	1.24	U	6.22	1.24	0.622
Carbon tetrachloride	56-23-5	1.24	U	6.22	1.24	0.622
Chlorobenzene	108-90-7	1.24	U	6.22	1.24	0.622
Chlorodibromomethane	124-48-1	1.24	U	6.22	1.24	0.622
Chloroethane	75-00-3	2.48	U	6.22	2.48	1.24
Chloroform	67-66-3	1.24	U	6.22	1.24	0.622
Chloromethane	74-87-3	4.98	Q	12.4	4.98	2.49
2-Chlorotoluene	95-49-8	1.24	U	6.22	1.24	0.622
4-Chlorotoluene	106-43-4	1.24	U	6.22	1.24	0.622
1,2-Dibromo-3-chloropropane	96-12-8	4.98	U	12.4	4.98	2.49
1,2-Dibromoethane	106-93-4	1.24	U	6.22	1.24	0.622
Dibromomethane	74-95-3	1.24	U	6.22	1.24	0.622
1,2-Dichlorobenzene	95-50-1	1.24	U	6.22	1.24	0.622
1,3-Dichlorobenzene	541-73-1	1.24	U	6.22	1.24	0.622
1,4-Dichlorobenzene	106-46-7	1.24	U	6.22	1.24	0.622
Dichlorodifluoromethane	75-71-8	2.48	U	6.22	2.48	1.24
1,1-Dichloroethane	75-34-3	2.48	U	6.22	2.48	1.24
1,2-Dichloroethane	107-06-2	1.24	U	6.22	1.24	0.622
1,1-Dichloroethene	75-35-4	1.24	U	6.22	1.24	0.622
cis-1,2-Dichloroethene	156-59-2	1.24	U	6.22	1.24	0.622

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.24	U	6.22	1.24	0.622
1,2-Dichloropropane	78-87-5	1.24	U	6.22	1.24	0.622
1,3-Dichloropropane	142-28-9	1.24	U	6.22	1.24	0.622
2,2-Dichloropropane	594-20-7	1.24	U	6.22	1.24	0.622
cis-1,3-Dichloropropene	10061-01-5	1.24	U	6.22	1.24	0.622
trans-1,3-Dichloropropene	10061-02-6	1.24	U	6.22	1.24	0.622
1,1-Dichloropropene	563-58-6	1.24	U	6.22	1.24	0.622
Ethylbenzene	100-41-4	1.24	U	6.22	1.24	0.622
2-Hexanone	591-78-6	6.22	U	12.4	6.22	3.11
Hexachlorobutadiene	87-68-3	1.24	U	6.22	1.24	0.622
Isopropylbenzene	98-82-8	1.24	U	6.22	1.24	0.622
p-Isopropyltoluene	99-87-6	1.24	U	6.22	1.24	0.622
4-Methyl-2-pentanone	108-10-1	6.22	U	12.4	6.22	3.11
Methylene chloride	75-09-2	2.48	U	6.22	2.48	1.24
Naphthalene	91-20-3	1.24	Q	6.22	1.24	0.622
n-Propylbenzene	103-65-1	1.24	U	6.22	1.24	0.622
Styrene	100-42-5	1.24	U	6.22	1.24	0.622
1,1,1,2-Tetrachloroethane	630-20-6	1.24	U	6.22	1.24	0.622
1,1,2,2-Tetrachloroethane	79-34-5	1.24	U	6.22	1.24	0.622
Tetrachloroethene	127-18-4	1.24	U	6.22	1.24	0.622
Toluene	108-88-3	1.24	U	6.22	1.24	0.622
1,2,3-Trichlorobenzene	87-61-6	1.24	U	6.22	1.24	0.622
1,2,4-Trichlorobenzene	120-82-1	1.24	U	6.22	1.24	0.622
1,1,1-Trichloroethane	71-55-6	1.24	U	6.22	1.24	0.622
1,1,2-Trichloroethane	79-00-5	1.24	U	6.22	1.24	0.622
Trichloroethene	79-01-6	1.24	U	6.22	1.24	0.622
Trichlorofluoromethane	75-69-4	2.48	U	6.22	2.48	1.24
1,2,3-Trichloropropane	96-18-4	2.48	U	6.22	2.48	1.24
1,2,4-Trimethylbenzene	95-63-6	1.24	U	6.22	1.24	0.622
1,3,5-Trimethylbenzene	108-67-8	1.24	U	6.22	1.24	0.622
Vinyl chloride	75-01-4	2.48	U	6.22	2.48	1.24
o-Xylene	95-47-6	1.24	U	6.22	1.24	0.622
m-,p-Xylene	179601-23-1	1.24	U	6.22	1.24	0.622

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.6	80	120	
1,2-Dichloroethane-d4	83.2	80	120	
Toluene-d8	102	85	115	
4-Bromofluorobenzene	102	85	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT15(21-21.5)140316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:14
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 19:54
Collect Date:	03/14/2016 16:42	**Dilution:**	1	**File ID:**	6M137978
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.9	U	23.8	11.9	5.95
Benzene	71-43-2	1.19	U	5.95	1.19	0.595
Bromobenzene	108-86-1	1.19	U	5.95	1.19	0.595
Bromochloromethane	74-97-5	2.38	U	5.95	2.38	1.19
Bromodichloromethane	75-27-4	1.19	U	5.95	1.19	0.595
Bromoform	75-25-2	1.19	U	5.95	1.19	0.595
Bromomethane	74-83-9	2.38	U	5.95	2.38	1.19
2-Butanone	78-93-3	5.94	U	11.9	5.94	2.97
n-Butylbenzene	104-51-8	1.19	U	5.95	1.19	0.595
sec-Butylbenzene	135-98-8	1.19	U	5.95	1.19	0.595
tert-Butylbenzene	98-06-6	1.19	U	5.95	1.19	0.595
Carbon disulfide	75-15-0	1.19	U	5.95	1.19	0.595
Carbon tetrachloride	56-23-5	1.19	U	5.95	1.19	0.595
Chlorobenzene	108-90-7	1.19	U	5.95	1.19	0.595
Chlorodibromomethane	124-48-1	1.19	U	5.95	1.19	0.595
Chloroethane	75-00-3	2.38	U	5.95	2.38	1.19
Chloroform	67-66-3	1.19	U	5.95	1.19	0.595
Chloromethane	74-87-3	4.76	Q	11.9	4.76	2.38
2-Chlorotoluene	95-49-8	1.19	U	5.95	1.19	0.595
4-Chlorotoluene	106-43-4	1.19	U	5.95	1.19	0.595
1,2-Dibromo-3-chloropropane	96-12-8	4.76	U	11.9	4.76	2.38
1,2-Dibromoethane	106-93-4	1.19	U	5.95	1.19	0.595
Dibromomethane	74-95-3	1.19	U	5.95	1.19	0.595
1,2-Dichlorobenzene	95-50-1	1.19	U	5.95	1.19	0.595
1,3-Dichlorobenzene	541-73-1	1.19	U	5.95	1.19	0.595
1,4-Dichlorobenzene	106-46-7	1.19	U	5.95	1.19	0.595
Dichlorodifluoromethane	75-71-8	2.38	U	5.95	2.38	1.19
1,1-Dichloroethane	75-34-3	2.38	U	5.95	2.38	1.19
1,2-Dichloroethane	107-06-2	1.19	U	5.95	1.19	0.595
1,1-Dichloroethene	75-35-4	1.19	U	5.95	1.19	0.595
cis-1,2-Dichloroethene	156-59-2	1.19	U	5.95	1.19	0.595

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.19	U	5.95	1.19	0.595
1,2-Dichloropropane	78-87-5	1.19	U	5.95	1.19	0.595
1,3-Dichloropropane	142-28-9	1.19	U	5.95	1.19	0.595
2,2-Dichloropropane	594-20-7	1.19	U	5.95	1.19	0.595
cis-1,3-Dichloropropene	10061-01-5	1.19	U	5.95	1.19	0.595
trans-1,3-Dichloropropene	10061-02-6	1.19	U	5.95	1.19	0.595
1,1-Dichloropropene	563-58-6	1.19	U	5.95	1.19	0.595
Ethylbenzene	100-41-4	1.19	U	5.95	1.19	0.595
2-Hexanone	591-78-6	5.94	U	11.9	5.94	2.97
Hexachlorobutadiene	87-68-3	1.19	U	5.95	1.19	0.595
Isopropylbenzene	98-82-8	1.19	U	5.95	1.19	0.595
p-Isopropyltoluene	99-87-6	1.19	U	5.95	1.19	0.595
4-Methyl-2-pentanone	108-10-1	5.94	U	11.9	5.94	2.97
Methylene chloride	75-09-2	2.38	U	5.95	2.38	1.19
Naphthalene	91-20-3	1.19	Q	5.95	1.19	0.595
n-Propylbenzene	103-65-1	1.19	U	5.95	1.19	0.595
Styrene	100-42-5	1.19	U	5.95	1.19	0.595
1,1,1,2-Tetrachloroethane	630-20-6	1.19	U	5.95	1.19	0.595
1,1,2,2-Tetrachloroethane	79-34-5	1.19	U	5.95	1.19	0.595
Tetrachloroethene	127-18-4	1.19	U	5.95	1.19	0.595
Toluene	108-88-3	1.19	U	5.95	1.19	0.595
1,2,3-Trichlorobenzene	87-61-6	1.19	U	5.95	1.19	0.595
1,2,4-Trichlorobenzene	120-82-1	1.19	U	5.95	1.19	0.595
1,1,1-Trichloroethane	71-55-6	1.19	U	5.95	1.19	0.595
1,1,2-Trichloroethane	79-00-5	1.19	U	5.95	1.19	0.595
Trichloroethene	79-01-6	1.19	U	5.95	1.19	0.595
Trichlorofluoromethane	75-69-4	2.38	U	5.95	2.38	1.19
1,2,3-Trichloropropane	96-18-4	2.38	U	5.95	2.38	1.19
1,2,4-Trimethylbenzene	95-63-6	1.19	U	5.95	1.19	0.595
1,3,5-Trimethylbenzene	108-67-8	1.19	U	5.95	1.19	0.595
Vinyl chloride	75-01-4	2.38	U	5.95	2.38	1.19
o-Xylene	95-47-6	1.19	U	5.95	1.19	0.595
m-,p-Xylene	179601-23-1	1.19	U	5.95	1.19	0.595

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.1	80	120	
1,2-Dichloroethane-d4	86.0	80	120	
Toluene-d8	101	85	115	
4-Bromofluorobenzene	103	85	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT15(23.5-24)140316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:14
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 20:27
Collect Date:	03/14/2016 16:43	**Dilution:**	1	**File ID:**	6M137979
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.8	U	23.5	11.8	5.88
Benzene	71-43-2	1.18	U	5.88	1.18	0.588
Bromobenzene	108-86-1	1.18	U	5.88	1.18	0.588
Bromochloromethane	74-97-5	2.36	U	5.88	2.36	1.18
Bromodichloromethane	75-27-4	1.18	U	5.88	1.18	0.588
Bromoform	75-25-2	1.18	U	5.88	1.18	0.588
Bromomethane	74-83-9	2.36	U	5.88	2.36	1.18
2-Butanone	78-93-3	5.88	U	11.8	5.88	2.94
n-Butylbenzene	104-51-8	1.18	U	5.88	1.18	0.588
sec-Butylbenzene	135-98-8	1.18	U	5.88	1.18	0.588
tert-Butylbenzene	98-06-6	1.18	U	5.88	1.18	0.588
Carbon disulfide	75-15-0	1.18	U	5.88	1.18	0.588
Carbon tetrachloride	56-23-5	1.18	U	5.88	1.18	0.588
Chlorobenzene	108-90-7	1.18	U	5.88	1.18	0.588
Chlorodibromomethane	124-48-1	1.18	U	5.88	1.18	0.588
Chloroethane	75-00-3	2.36	U	5.88	2.36	1.18
Chloroform	67-66-3	0.714	J	5.88	1.18	0.588
Chloromethane	74-87-3	4.70	Q	11.8	4.70	2.35
2-Chlorotoluene	95-49-8	1.18	U	5.88	1.18	0.588
4-Chlorotoluene	106-43-4	1.18	U	5.88	1.18	0.588
1,2-Dibromo-3-chloropropane	96-12-8	4.70	U	11.8	4.70	2.35
1,2-Dibromoethane	106-93-4	1.18	U	5.88	1.18	0.588
Dibromomethane	74-95-3	1.18	U	5.88	1.18	0.588
1,2-Dichlorobenzene	95-50-1	1.18	U	5.88	1.18	0.588
1,3-Dichlorobenzene	541-73-1	1.18	U	5.88	1.18	0.588
1,4-Dichlorobenzene	106-46-7	1.18	U	5.88	1.18	0.588
Dichlorodifluoromethane	75-71-8	2.36	U	5.88	2.36	1.18
1,1-Dichloroethane	75-34-3	2.36	U	5.88	2.36	1.18
1,2-Dichloroethane	107-06-2	3.58	J	5.88	1.18	0.588
1,1-Dichloroethene	75-35-4	1.18	U	5.88	1.18	0.588
cis-1,2-Dichloroethene	156-59-2	1.18	U	5.88	1.18	0.588

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.18	U	5.88	1.18	0.588
1,2-Dichloropropane	78-87-5	1.18	U	5.88	1.18	0.588
1,3-Dichloropropane	142-28-9	1.18	U	5.88	1.18	0.588
2,2-Dichloropropane	594-20-7	1.18	U	5.88	1.18	0.588
cis-1,3-Dichloropropene	10061-01-5	1.18	U	5.88	1.18	0.588
trans-1,3-Dichloropropene	10061-02-6	1.18	U	5.88	1.18	0.588
1,1-Dichloropropene	563-58-6	1.18	U	5.88	1.18	0.588
Ethylbenzene	100-41-4	1.18	U	5.88	1.18	0.588
2-Hexanone	591-78-6	5.88	U	11.8	5.88	2.94
Hexachlorobutadiene	87-68-3	1.18	U	5.88	1.18	0.588
Isopropylbenzene	98-82-8	1.18	U	5.88	1.18	0.588
p-Isopropyltoluene	99-87-6	1.18	U	5.88	1.18	0.588
4-Methyl-2-pentanone	108-10-1	5.88	U	11.8	5.88	2.94
Methylene chloride	75-09-2	2.36	U	5.88	2.36	1.18
Naphthalene	91-20-3	1.18	Q	5.88	1.18	0.588
n-Propylbenzene	103-65-1	1.18	U	5.88	1.18	0.588
Styrene	100-42-5	1.18	U	5.88	1.18	0.588
1,1,1,2-Tetrachloroethane	630-20-6	1.18	U	5.88	1.18	0.588
1,1,2,2-Tetrachloroethane	79-34-5	1.18	U	5.88	1.18	0.588
Tetrachloroethene	127-18-4	1.18	U	5.88	1.18	0.588
Toluene	108-88-3	1.18	U	5.88	1.18	0.588
1,2,3-Trichlorobenzene	87-61-6	1.18	U	5.88	1.18	0.588
1,2,4-Trichlorobenzene	120-82-1	1.18	U	5.88	1.18	0.588
1,1,1-Trichloroethane	71-55-6	1.18	U	5.88	1.18	0.588
1,1,2-Trichloroethane	79-00-5	1.18	U	5.88	1.18	0.588
Trichloroethene	79-01-6	58.8		5.88	1.18	0.588
Trichlorofluoromethane	75-69-4	2.36	U	5.88	2.36	1.18
1,2,3-Trichloropropane	96-18-4	2.36	U	5.88	2.36	1.18
1,2,4-Trimethylbenzene	95-63-6	1.18	U	5.88	1.18	0.588
1,3,5-Trimethylbenzene	108-67-8	1.18	U	5.88	1.18	0.588
Vinyl chloride	75-01-4	2.36	U	5.88	2.36	1.18
o-Xylene	95-47-6	1.18	U	5.88	1.18	0.588
m-,p-Xylene	179601-23-1	1.18	U	5.88	1.18	0.588

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.4	80	120	
1,2-Dichloroethane-d4	93.1	80	120	
Toluene-d8	99.6	85	115	
4-Bromofluorobenzene	103	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT15(26.5-27)140316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:15
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 21:00
Collect Date:	03/14/2016 16:45	**Dilution:**	1	**File ID:**	6M137980
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.8	U	25.6	12.8	6.39
Benzene	71-43-2	1.28	U	6.39	1.28	0.639
Bromobenzene	108-86-1	1.28	U	6.39	1.28	0.639
Bromochloromethane	74-97-5	2.56	U	6.39	2.56	1.28
Bromodichloromethane	75-27-4	1.28	U	6.39	1.28	0.639
Bromoform	75-25-2	1.28	U	6.39	1.28	0.639
Bromomethane	74-83-9	2.56	U	6.39	2.56	1.28
2-Butanone	78-93-3	6.38	U	12.8	6.38	3.19
n-Butylbenzene	104-51-8	1.28	U	6.39	1.28	0.639
sec-Butylbenzene	135-98-8	1.28	U	6.39	1.28	0.639
tert-Butylbenzene	98-06-6	1.28	U	6.39	1.28	0.639
Carbon disulfide	75-15-0	1.28	U	6.39	1.28	0.639
Carbon tetrachloride	56-23-5	1.28	U	6.39	1.28	0.639
Chlorobenzene	108-90-7	1.28	U	6.39	1.28	0.639
Chlorodibromomethane	124-48-1	1.28	U	6.39	1.28	0.639
Chloroethane	75-00-3	2.56	U	6.39	2.56	1.28
Chloroform	67-66-3	1.28	U	6.39	1.28	0.639
Chloromethane	74-87-3	5.12	Q	12.8	5.12	2.56
2-Chlorotoluene	95-49-8	1.28	U	6.39	1.28	0.639
4-Chlorotoluene	106-43-4	1.28	U	6.39	1.28	0.639
1,2-Dibromo-3-chloropropane	96-12-8	5.12	U	12.8	5.12	2.56
1,2-Dibromoethane	106-93-4	1.28	U	6.39	1.28	0.639
Dibromomethane	74-95-3	1.28	U	6.39	1.28	0.639
1,2-Dichlorobenzene	95-50-1	1.28	U	6.39	1.28	0.639
1,3-Dichlorobenzene	541-73-1	1.28	U	6.39	1.28	0.639
1,4-Dichlorobenzene	106-46-7	1.28	U	6.39	1.28	0.639
Dichlorodifluoromethane	75-71-8	2.56	U	6.39	2.56	1.28
1,1-Dichloroethane	75-34-3	2.56	U	6.39	2.56	1.28
1,2-Dichloroethane	107-06-2	1.11	J	6.39	1.28	0.639
1,1-Dichloroethene	75-35-4	1.28	U	6.39	1.28	0.639
cis-1,2-Dichloroethene	156-59-2	1.28	U	6.39	1.28	0.639

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.28	U	6.39	1.28	0.639
1,2-Dichloropropane	78-87-5	1.28	U	6.39	1.28	0.639
1,3-Dichloropropane	142-28-9	1.28	U	6.39	1.28	0.639
2,2-Dichloropropane	594-20-7	1.28	U	6.39	1.28	0.639
cis-1,3-Dichloropropene	10061-01-5	1.28	U	6.39	1.28	0.639
trans-1,3-Dichloropropene	10061-02-6	1.28	U	6.39	1.28	0.639
1,1-Dichloropropene	563-58-6	1.28	U	6.39	1.28	0.639
Ethylbenzene	100-41-4	1.28	U	6.39	1.28	0.639
2-Hexanone	591-78-6	6.38	U	12.8	6.38	3.19
Hexachlorobutadiene	87-68-3	1.28	U	6.39	1.28	0.639
Isopropylbenzene	98-82-8	1.28	U	6.39	1.28	0.639
p-Isopropyltoluene	99-87-6	1.28	U	6.39	1.28	0.639
4-Methyl-2-pentanone	108-10-1	6.38	U	12.8	6.38	3.19
Methylene chloride	75-09-2	2.56	U	6.39	2.56	1.28
Naphthalene	91-20-3	1.28	Q	6.39	1.28	0.639
n-Propylbenzene	103-65-1	1.28	U	6.39	1.28	0.639
Styrene	100-42-5	1.28	U	6.39	1.28	0.639
1,1,1,2-Tetrachloroethane	630-20-6	1.28	U	6.39	1.28	0.639
1,1,2,2-Tetrachloroethane	79-34-5	1.28	U	6.39	1.28	0.639
Tetrachloroethene	127-18-4	1.28	U	6.39	1.28	0.639
Toluene	108-88-3	1.28	U	6.39	1.28	0.639
1,2,3-Trichlorobenzene	87-61-6	1.28	U	6.39	1.28	0.639
1,2,4-Trichlorobenzene	120-82-1	1.28	U	6.39	1.28	0.639
1,1,1-Trichloroethane	71-55-6	1.28	U	6.39	1.28	0.639
1,1,2-Trichloroethane	79-00-5	1.28	U	6.39	1.28	0.639
Trichloroethene	79-01-6	18.9		6.39	1.28	0.639
Trichlorofluoromethane	75-69-4	2.56	U	6.39	2.56	1.28
1,2,3-Trichloropropane	96-18-4	2.56	U	6.39	2.56	1.28
1,2,4-Trimethylbenzene	95-63-6	1.28	U	6.39	1.28	0.639
1,3,5-Trimethylbenzene	108-67-8	1.28	U	6.39	1.28	0.639
Vinyl chloride	75-01-4	2.56	U	6.39	2.56	1.28
o-Xylene	95-47-6	1.28	U	6.39	1.28	0.639
m-,p-Xylene	179601-23-1	1.28	U	6.39	1.28	0.639

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.8	80	120	
1,2-Dichloroethane-d4	96.1	80	120	
Toluene-d8	99.5	85	115	
4-Bromofluorobenzene	102	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.
VOA Preparation/Preservation/Extraction Log

Batch #: WG561608
Analyst: AWE
Method: 5030B/5030C/5035
Run Date: 03/21/2016 08:07
Product: 8260
Purge and trap methanol COA18540
Purified Lab Sand Lot # COA18552

SAMPLE #	Fraction	Collected	Preserved	PCT-S	Tare Wt	Total Wt	Sample Wt	Water	MeOH	Vt	Comments
L16030861-01	A	03/14/16 12:32	03/21/16 08:07	82.5			4.72	5		5	
L16030861-02	A	03/14/16 13:15	03/21/16 08:09	89.3			4.81	5		5	
L16030861-03	A	03/14/16 13:15	03/21/16 08:09	90.4			4.70	5		5	
L16030861-04	A	03/14/16 13:20	03/21/16 08:10	91.0			5.10	5		5	
L16030861-05	A	03/14/16 13:25	03/21/16 08:11	79.9			4.52	5		5	
L16030861-06	A	03/14/16 16:40	03/21/16 08:12	82.5			5.44	5		5	
L16030861-07	A	03/14/16 16:41	03/21/16 08:13	85.0			4.73	5		5	
L16030861-08	A	03/14/16 16:42	03/21/16 08:14	82.9			5.07	5		5	
L16030861-09	A	03/14/16 16:43	03/21/16 08:14	81.2			5.24	5		5	
L16030861-10	A	03/14/16 16:45	03/21/16 08:15	79.1			4.95	5		5	
L16030863-01	A	03/15/16 09:20	03/21/16 08:17	79.3			4.96	5		5	
L16030863-02	A	03/15/16 09:20	03/21/16 08:17	79.3			5.34	5		5	
L16030863-03	A	03/15/16 09:20	03/21/16 08:18	79.3			4.54	5		5	
L16030863-04	A	03/15/16 09:25	03/21/16 08:19	86.1			4.97	5		5	
L16030863-05	A	03/15/16 10:35	03/21/16 08:19	81.2			4.68	5		5	
L16030863-06	A	03/15/16 10:40	03/21/16 08:20	79.6			5.07	5		5	
L16030863-07	A	03/15/16 10:45	03/21/16 08:20	77.7			4.79	5		5	
L16030863-08	A	03/15/16 11:50	03/21/16 08:21	84.2			5.41	5		5	
L16030863-09	A	03/15/16 11:50	03/21/16 08:22	83.5			5.14	5		5	
L16030863-10	A	03/15/16 11:55	03/21/16 08:23	78.8			4.83	5		5	
L16030863-11	A	03/15/16 12:00	03/21/16 08:23	80.4			5.03	5		5	
L16030863-12	A	03/15/16 12:30	03/21/16 08:25	83.0			5.05	5		5	
L16030863-13	A	03/15/16 12:45	03/21/16 08:25	78.8			5.10	5		5	
L16030863-14	A	03/15/16 13:00	03/21/16 08:26	82.4			5.30	5		5	
WG561608-01	A		03/21/16 08:07	82.5			4.72	5		5	
WG561608-02	A		03/21/16 08:07	82.5			5.02	5		5	
WG561608-03	A		03/21/16 08:08	82.5			5.24	5		5	

Comments:
1 = improperly sealed cap
2 = preserved out of hold
3 = effervesced
4 = preserved with NaHSO4
5 = preserved by freezing
6 = preserved in field

Analyst: Andrew Craig

VOA_EXT - Modified 05/22/2008
PDF ID: 4679635
Report generated: 03/24/2016 12:47

Microbac

Microbac Laboratories Inc.
VOA Preparation/Preservation/Extraction Log

Batch #: WG562018
Analyst: AWE
Method: 5030B/5030C/5035
Run Date: 03/23/2016 09:01
Product: 826-VAP2
Purge and trap methanol COA18540
Purified Lab Sand Lot # COA18552

SAMPLE #	Fraction	Collected	Preserved	PCT-S	Tare Wt	Total Wt	Sample Wt	Water	MeOH	Vt	Comments
L16030861-05	A	03/14/16 13:25	03/23/16 09:01	79.9			4.93	5		5	
L16031066-09	A	03/17/16 00:00	03/23/16 09:02	80.1			5.30	5		5	
L16031066-10	A	03/17/16 00:00	03/23/16 09:03	90.8			4.89	5		5	

Comments:
1 = improperly sealed cap
2 = preserved out of hold
3 = effervesced
4 = preserved with NaHSO4
5 = preserved by freezing
6 = preserved in field

Analyst: Andrew Gaig

VOA_EXT - Modified 05/22/2008
PDF ID: 4684031
Report generated: 03/23/2016 09:03

Microbac Laboratories Inc.
VOA Preparation/Preservation/Extraction Log

Batch #: WG562140
Analyst: AWE
Method: 5030B/5030C/5035
Run Date: 03/23/2016 16:52
Product: 826-SPE
Purge and trap methanol COA18540
Purified Lab Sand Lot # COA18552

SAMPLE #	Fraction	Collected	Preserved	PCT-S	Tare Wt	Total Wt	Sample Wt	Water	MeOH	Vt	Comments
L16030861-03	A	03/14/16 13:15	03/23/16 16:52	90.4			5.04	5		5	
L16030965-02	A	03/16/16 06:00	03/23/16 15:09	76.8			5.02	5		5	
L16030974-01	A	03/16/16 10:35	03/23/16 15:04	84.0	34.71	39.05	4.34	5		5	
L16030974-02	A	03/16/16 10:40	03/23/16 15:04	87.2	36.45	42.08	5.63	5		5	
L16030974-03	A	03/16/16 10:45	03/23/16 15:05	87.6	35.76	41.36	5.60	5		5	
L16030974-04	A	03/16/16 10:50	03/23/16 15:05	87.2	35.93	40.00	4.07	5		5	
L16030974-05	A	03/16/16 10:55	03/23/16 15:06	87.3	34.66	40.16	5.50	5		5	
L16030974-06	A	03/16/16 11:00	03/23/16 15:06	89.3	34.85	39.41	4.56	5		5	
L16030974-07	A	03/16/16 11:05	03/23/16 15:06	86.9	35.87	39.56	3.69	5		5	
L16030974-08	A	03/16/16 11:10	03/23/16 15:07	87.0	35.71	41.05	5.34	5		5	

Comments:
1 = improperly sealed cap
2 = preserved out of hold
3 = effervesced
4 = preserved with NaHSO4
5 = preserved by freezing
6 = preserved in field

Analyst: Andrew Baeg

VOA_EXT - Modified 05/22/2008
PDF ID: 4686102
Report generated: 03/23/2016 16:54

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 022616
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Method: 8260C SOP: MSV01-C Rev: 2
Maintenance Log ID:

Internal Standard: STD74756 Surrogate Standard: STD74756
CCV: STD74897 LCS: STD74755 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG558920

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M137521	RINSE	NA	7	1		02/26/16 12:22
6M137522	WG558920-01 50ng BFB STD 8260	NA	7	1	STD74606	02/26/16 13:16
6M137523	WG558920-02 0.5ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 13:41
6M137524	WG558920-03 1ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 14:13
6M137525	WG558920-04 2ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 14:46
6M137526	WG558920-05 5ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 15:26
6M137527	WG558920-06 10ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 15:58
6M137528	WG558920-07 20ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 16:30
6M137529	WG558920-08 50ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 17:03
6M137530	WG558920-09 100ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 17:35
6M137531	WG558920-10 200ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 18:07
6M137532	WG558920-11 300ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 18:39
6M137533	RINSE	NA	7	1		02/26/16 19:11
6M137534	RINSE	NA	7	1		02/26/16 19:43
6M137535	WG558920-12 50ug/Kg ALT SRC STD 826	NA	7	1	STD74755	02/26/16 20:15
6M137536	RINSE	NA	7	1		02/26/16 20:48

Comments

Seq.	Rerun	Dil.	Reason	Analytes
15				
File ID: 6M137535				
Surrogates are spiked at 25 not 50.				

Approved: March 02, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 032216
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75149 Surrogate Standard: STD75149
CCV: STD75238 LCS: STD75209 MS/MSD: STD75209

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG561881

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M137936	RINSE	NA	7	1		03/22/16 10:09
6M137937	RINSE	NA	7	1		03/22/16 10:52
6M137938	WG561879-01 50ng BFB STD 8260	NA	7	1	STD75004	03/22/16 11:26
6M137939	WG561879-02 50ug/Kg CCV STD 8260	NA	7	1	STD75238	03/22/16 11:51
6M137940	WG000000-01 100ug/Kg A9 CCV STD 826	NA	7	1	STD74831	03/22/16 12:35
6M137941	WG561881-01 VBLK0322 BLANK STD 826	NA	7	1		03/22/16 13:08
6M137942	L16030196-09 A 826-REF-BLK	NA	7	1		03/22/16 13:40
6M137943	L16030196-08 A 826-REF-BLK	NA	7	1		03/22/16 14:12
6M137944	L16030196-07 B 826-REF-BLK A1	NA	7	1		03/22/16 14:45
6M137945	L16030196-06 B 826-REF-BLK A1	NA	7	1		03/22/16 15:19
6M137946	WG561881-02 20ug/Kg LCS STD 8260	NA	7	1	STD75209	03/22/16 15:52
6M137947	WG561608-02 MS 861-01 8260 5.02g	NA	7	1	STD75209	03/22/16 16:24
6M137948	WG561608-03 MSD 861-01 8260 5.24g	NA	7	1	STD75209	03/22/16 16:57
6M137949	L16030813-10 B 826-BETX 6.29g	NA	7	1		03/22/16 17:30
6M137950	L16030813-12 B 826-BETX 6.30g	NA	7	1		03/22/16 18:03
6M137951	L16030861-05 8260 4.52g	NA	7	1		03/22/16 18:37
6M137952	L16030861-04 8260 5.10g	NA	7	1		03/22/16 19:09
6M137953	L16030861-03 8260 4.70g	NA	7	1		03/22/16 19:43
6M137954	L16030861-02 8260 4.81g	NA	7	1		03/22/16 20:16
6M137955	L16030861-01 8260 4.72g	NA	7	1		03/22/16 20:49
6M137956	L16031066-09 826-VAP2 5.04g P1	NA	7	1		03/22/16 21:22
6M137957	L16031066-06 826-VAP2 4.66g	NA	7	1		03/22/16 21:55
6M137958	L16031066-08 826-VAP2 4.70g	NA	7	1		03/22/16 22:27
6M137959	L16031066-01 826-VAP2 4.76g	NA	7	1		03/22/16 23:00
6M137960	L16031066-10 5X 826-VAP2 1.05g P1	NA	7	1		03/22/16 23:33
6M137961	RINSE	NA	7	1		03/23/16 00:06
6M137962	RINSE	NA	7	1		03/23/16 00:38

Comments

Seq.	Rerun	Dil.	Reason	Analytes
5				
File ID: 6M137940				
Not needed, DNR.				

Approved: March 24, 2016
Sarah Vandenberg

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS6	Dataset:	032216		
Analyst1:	TMB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	23
Method:	OVAP	SOP:	MSV01/PAT01	Rev:	0
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:					

Internal Standard: STD75149 Surrogate Standard: STD75149

CCV: STD75238 LCS: STD75209 MS/MSD: STD75209

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG561881

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
14	X	100	Surrogate standard failure	
File ID: 6M137949				
Changed the lid because it had sample in it.				
15	X	100	Internal standard and surrogate standard failure	
File ID: 6M137950				
Benzene wa also over the ical.				
16	X	1	Carry-over contamination	
File ID: 6M137951				
Possible 124-tmb carry over, DNR.				
21	X	1	Internal standard failure	
File ID: 6M137956				
Vial leaked?				
25	X	1	Missed Tune	
File ID: 6M137960				
Use for prelims.				

Approved: March 24, 2016

Sarah Vandenberg

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 032316
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75149 Surrogate Standard: STD75149
CCV: STD75238 LCS: STD75209 MS/MSD: STD75209

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG562075

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M137963	WG562074-01 50ng BFB STD 8260	NA	7	1	STD75004	03/23/16 11:50
6M137964	WG562074-02 50ug/Kg CCV STD 8260	NA	7	1	STD75238	03/23/16 12:15
6M137965	WG562074-02 50ug/Kg CCV STD 8260	NA	7	1	STD75238	03/23/16 12:47
6M137966	WG000000-01 100ug/Kg a9 CCV STD 826	NA	7	1	STD74843	03/23/16 13:20
6M137967	WG562075-01 VBLK0323 BLANK STD 826	NA	7	1		03/23/16 13:53
6M137968	WG562075-02 20ug/Kg LCS STD 8260	NA	7	1	STD75209	03/23/16 14:26
6M137969	L16030863-02 MS 8260 5.34g	NA	7	1	STD75209	03/23/16 14:59
6M137970	L16030863-03 MSD 8260 4.54g	NA	7	1	STD75209	03/23/16 15:32
6M137971	RINSE	NA	7	1		03/23/16 16:04
6M137972	L16031066-09 826-VAP2 5.30g	NA	7	1		03/23/16 16:37
6M137973	L16030863-01 REF 8260 4.96g	NA	7	1		03/23/16 17:10
6M137974	L16030861-03 8260 5.04g	NA	7	1		03/23/16 17:43
6M137975	L16030861-05 8260 4.93g	NA	7	1		03/23/16 18:15
6M137976	L16030861-06 8260 5.44g	NA	7	1		03/23/16 18:48
6M137977	L16030861-07 8260 4.73g	NA	7	1		03/23/16 19:21
6M137978	L16030861-08 8260 5.07g	NA	7	1		03/23/16 19:54
6M137979	L16030861-09 8260 5.24g	NA	7	1		03/23/16 20:27
6M137980	L16030861-10 8260 4.95g	NA	7	1		03/23/16 21:00
6M137981	L16030863-04 8260 4.97g	NA	7	1		03/23/16 21:32
6M137982	L16030863-05 8260 4.68g	NA	7	1		03/23/16 22:05
6M137983	L16030863-06 8260 5.07g	NA	7	1		03/23/16 22:38
6M137984	L16030863-07 8260 4.79g	NA	7	1		03/23/16 23:10
6M137985	L16031066-10 826-VAP2 4.89g	NA	7	1		03/23/16 23:43
6M137986	RINSE	NA	7	1		03/24/16 00:16
6M137987	RINSE	NA	7	1		03/24/16 00:48

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 6M137964				
	Acetone was high. DNR.			
4				
File ID: 6M137966				

Approved: March 24, 2016

Sarah Vandenberg

Microbac

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 032316
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75149 Surrogate Standard: STD75149
CCV: STD75238 LCS: STD75209 MS/MSD: STD75209

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG562075

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			Not needed. DNR.	
15	X	1	Carry-over contamination	
File ID: 6M137975				
	Possible carry over of 124-tmb.			

Approved: March 24, 2016

Sarah Vandenberg

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 26-FEB-2016
Analyst: TMB
Analyst: NA
Method: 8260B/C
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 73548
Analytical Workgroups: WG558920

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	NA
TCL Hits	NA
Spectra of TCL Hits	NA
Surrogates	NA
Internal Standards Criteria	NA
Library Searches	NA
Calculations & Correct Factors	NA
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
29-FEB-2016
Tiffany Bailey

Secondary Reviewer:
02-MAR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-02-2016 12:31:18

Microbac Laboratories Inc.

Data Checklist

Date: 22-MAR-2016
Analyst: TMB
Analyst: NA
Method: 8260B/OVAP
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 74011
Analytical Workgroups: WG561881

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
23-MAR-2016
Tiffany Bailey

Secondary Reviewer:
24-MAR-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-24-2016 11:26:52

Microbac Laboratories Inc.

Data Checklist

Date: 23-MAR-2016
Analyst: TMB
Analyst: NA
Method: 8260B/OVAP
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 74013
Analytical Workgroups: WG562075

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
24-MAR-2016
Tiffany Bailey

Secondary Reviewer:
24-MAR-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-24-2016 13:48:21

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG561881

Login Number: L16030861

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18DPT14(5-5.5)140316	01	03/14/16					03/21/2016	6.8	14		03/22/16	8.3	14	
18DPT14(10-10.5)140316	02	03/14/16					03/21/2016	6.8	14		03/22/16	8.3	14	
18DPT14(10-10.5)140316FD	03	03/14/16					03/21/2016	6.8	14		03/22/16	8.3	14	
18DPT14(17-17.5)140316	04	03/14/16					03/21/2016	6.8	14		03/22/16	8.2	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4686001
Report generated 03/25/2016 12:16

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG562075

Login Number: L16030861

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18DPT14(10-10.5)140316FD	03	03/14/16					03/23/2016	9.2	14		03/23/16	9.2	14	
18DPT14(23-23.5)140316	05	03/14/16					03/23/2016	8.8	14		03/23/16	9.2	14	
18DPT15(5-5.5)140316	06	03/14/16					03/21/2016	6.6	14		03/23/16	9.1	14	
18DPT15(12-12.5)140316	07	03/14/16					03/21/2016	6.6	14		03/23/16	9.1	14	
18DPT15(21-21.5)140316	08	03/14/16					03/21/2016	6.6	14		03/23/16	9.1	14	
18DPT15(23.5-24)140316	09	03/14/16					03/21/2016	6.6	14		03/23/16	9.2	14	
18DPT15(26.5-27)140316	10	03/14/16					03/21/2016	6.6	14		03/23/16	9.2	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4686001
Report generated 03/25/2016 12:16

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16030861
Instrument Id: HPMS6
Workgroup (AAB#): WG561881

Method: 8260
CAL ID: HPMS6-26-FEB-16
Matrix: Soil

Sample Number	Dilution	Tag	1	2	3	4
L16030861-01	1.00	01	89.8	93.7	101	101
L16030861-02	1.00	01	85.7	91.8	103	103
L16030861-03	1.00	01	85.8	92.2	105	103
L16030861-04	1.00	01	87.5	93.1	105	102
WG561881-01	1.00	01	88.3	94.3	102	101
WG561881-02	1.00	01	88.0	96.1	101	102

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	80	-	120
2 - Dibromofluoromethane	80	-	120
3 - 4-Bromofluorobenzene	85	-	120
4 - Toluene-d8	85	-	115

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4686012
Report generated: 03/25/2016 12:16

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16030861
Instrument Id: HPMS6
Workgroup (AAB#): WG562075

Method: 8260
CAL ID: HPMS6-26-FEB-16
Matrix: Soil

Sample Number	Dilution	Tag	1	2	3	4
L16030861-03	1.00	02	90.3	95.6	102	101
L16030861-05	1.00	01	84.7	92.7	112	104
L16030861-06	1.00	01	87.3	94.6	104	102
L16030861-07	1.00	01	83.2	91.6	102	102
L16030861-08	1.00	01	86.0	94.1	103	101
L16030861-09	1.00	01	93.1	95.4	103	99.6
L16030861-10	1.00	01	96.1	96.8	102	99.5
WG562075-01	1.00	01	90.5	94.6	103	101
WG562075-02	1.00	01	87.3	95.2	100	101

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	80	-	120
2 - Dibromofluoromethane	80	-	120
3 - 4-Bromofluorobenzene	85	-	120
4 - Toluene-d8	85	-	115

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4686012
Report generated: 03/25/2016 12:16

METHOD BLANK SUMMARY

Login Number: L16030861
Blank File ID: 6M137941
Prep Date: 03/22/16 13:08
Analyzed Date: 03/22/16 13:08
Analyst: TMB

Work Group: WG561881
Blank Sample ID: WG561881-01
Instrument ID: HPMS6
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG561881-02	6M137946	03/22/16 15:52	01
18DPT14(17-17.5)140316	L16030861-04	6M137952	03/22/16 19:09	01
18DPT14(10-10.5)140316FD	L16030861-03	6M137953	03/22/16 19:43	01
18DPT14(10-10.5)140316	L16030861-02	6M137954	03/22/16 20:16	01
18DPT14(5-5.5)140316	L16030861-01	6M137955	03/22/16 20:49	01

Report Name: BLANK_SUMMARY
PDF File ID: 4689205
Report generated 03/25/2016 12:16

METHOD BLANK SUMMARY

Login Number: L16030861
Blank File ID: 6M137967
Prep Date: 03/23/16 13:53
Analyzed Date: 03/23/16 13:53
Analyst: TMB

Work Group: WG562075
Blank Sample ID: WG562075-01
Instrument ID: HPMS6
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG562075-02	6M137968	03/23/16 14:26	01
18DPT14(10-10.5)140316FD	L16030861-03	6M137974	03/23/16 17:43	02
18DPT14(23-23.5)140316	L16030861-05	6M137975	03/23/16 18:15	01
18DPT15(5-5.5)140316	L16030861-06	6M137976	03/23/16 18:48	01
18DPT15(12-12.5)140316	L16030861-07	6M137977	03/23/16 19:21	01
18DPT15(21-21.5)140316	L16030861-08	6M137978	03/23/16 19:54	01
18DPT15(23.5-24)140316	L16030861-09	6M137979	03/23/16 20:27	01
18DPT15(26.5-27)140316	L16030861-10	6M137980	03/23/16 21:00	01

Report Name: BLANK_SUMMARY
PDF File ID: 4689205
Report generated 03/25/2016 12:16

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16030861 Prep Date: 03/22/16 13:08 Sample ID: WG561881-01
Instrument ID: HPMS6 Run Date: 03/22/16 13:08 Prep Method: 5030B/5030C/503
File ID: 6M137941 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG561881 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS6-26-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	5.00	20.0	5.00	1	U
Benzene	0.500	5.00	0.500	1	U
Bromobenzene	0.500	5.00	0.500	1	U
Bromochloromethane	1.00	5.00	1.00	1	U
Bromodichloromethane	0.500	5.00	0.500	1	U
Bromoform	0.500	5.00	0.500	1	U
Bromomethane	1.00	5.00	1.00	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.500	5.00	0.500	1	U
sec-Butylbenzene	0.500	5.00	0.500	1	U
tert-Butylbenzene	0.500	5.00	0.500	1	U
Carbon disulfide	0.500	5.00	0.500	1	U
Carbon tetrachloride	0.500	5.00	0.500	1	U
Chlorobenzene	0.500	5.00	0.500	1	U
Chlorodibromomethane	0.500	5.00	0.500	1	U
Chloroethane	1.00	5.00	1.00	1	U
Chloroform	0.500	5.00	0.500	1	U
Chloromethane	2.00	10.0	2.00	1	U
2-Chlorotoluene	0.500	5.00	0.500	1	U
4-Chlorotoluene	0.500	5.00	0.500	1	U
1,2-Dibromo-3-chloropropane	2.00	10.0	2.00	1	U
1,2-Dibromoethane	0.500	5.00	0.500	1	U
Dibromomethane	0.500	5.00	0.500	1	U
1,2-Dichlorobenzene	0.500	5.00	0.500	1	U
1,3-Dichlorobenzene	0.500	5.00	0.500	1	U
1,4-Dichlorobenzene	0.500	5.00	0.500	1	U
Dichlorodifluoromethane	1.00	5.00	1.00	1	U
1,1-Dichloroethane	1.00	5.00	1.00	1	U
1,2-Dichloroethane	0.500	5.00	0.500	1	U
1,1-Dichloroethene	0.500	5.00	0.500	1	U
cis-1,2-Dichloroethene	0.500	5.00	0.500	1	U
trans-1,2-Dichloroethene	0.500	5.00	0.500	1	U
1,2-Dichloropropane	0.500	5.00	0.500	1	U
1,3-Dichloropropane	0.500	5.00	0.500	1	U
2,2-Dichloropropane	0.500	5.00	0.500	1	U
cis-1,3-Dichloropropene	0.500	5.00	0.500	1	U
trans-1,3-Dichloropropene	0.500	5.00	0.500	1	U
1,1-Dichloropropene	0.500	5.00	0.500	1	U
Ethylbenzene	0.500	5.00	0.500	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.500	5.00	0.500	1	U
Isopropylbenzene	0.500	5.00	0.500	1	U

Report Name:BLANK
PDF ID: 4689206
25-MAR-2016 12:16

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16030861 Prep Date: 03/22/16 13:08 Sample ID: WG561881-01
Instrument ID: HPMS6 Run Date: 03/22/16 13:08 Prep Method: 5030B/5030C/503
File ID: 6M137941 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG561881 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS6-26-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.500	5.00	0.500	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	1.00	5.00	1.00	1	U
Naphthalene	0.500	5.00	0.500	1	U
n-Propylbenzene	0.500	5.00	0.500	1	U
Styrene	0.500	5.00	0.500	1	U
1,1,1,2-Tetrachloroethane	0.500	5.00	0.500	1	U
1,1,2,2-Tetrachloroethane	0.500	5.00	0.500	1	U
Tetrachloroethene	0.500	5.00	0.500	1	U
Toluene	0.500	5.00	0.500	1	U
1,2,3-Trichlorobenzene	0.500	5.00	0.500	1	U
1,2,4-Trichlorobenzene	0.500	5.00	0.500	1	U
1,1,1-Trichloroethane	0.500	5.00	0.500	1	U
1,1,2-Trichloroethane	0.500	5.00	0.500	1	U
Trichloroethene	0.500	5.00	0.500	1	U
Trichlorofluoromethane	1.00	5.00	1.00	1	U
1,2,3-Trichloropropane	1.00	5.00	1.00	1	U
1,2,4-Trimethylbenzene	0.500	5.00	0.586	1	J
1,3,5-Trimethylbenzene	0.500	5.00	0.500	1	U
Vinyl chloride	1.00	5.00	1.00	1	U
o-Xylene	0.500	5.00	0.500	1	U
m-,p-Xylene	0.500	5.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	94.3	80 - 120	PASS
1,2-Dichloroethane-d4	88.3	80 - 120	PASS
Toluene-d8	101	85 - 115	PASS
4-Bromofluorobenzene	102	85 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4689206
25-MAR-2016 12:16

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16030861 Prep Date: 03/23/16 13:53 Sample ID: WG562075-01
Instrument ID: HPMS6 Run Date: 03/23/16 13:53 Prep Method: 5030B/5030C/503
File ID: 6M137967 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG562075 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS6-26-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	5.00	20.0	5.00	1	U
Benzene	0.500	5.00	0.500	1	U
Bromobenzene	0.500	5.00	0.500	1	U
Bromochloromethane	1.00	5.00	1.00	1	U
Bromodichloromethane	0.500	5.00	0.500	1	U
Bromoform	0.500	5.00	0.500	1	U
Bromomethane	1.00	5.00	1.00	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.500	5.00	0.500	1	U
sec-Butylbenzene	0.500	5.00	0.500	1	U
tert-Butylbenzene	0.500	5.00	0.500	1	U
Carbon disulfide	0.500	5.00	0.500	1	U
Carbon tetrachloride	0.500	5.00	0.500	1	U
Chlorobenzene	0.500	5.00	0.500	1	U
Chlorodibromomethane	0.500	5.00	0.500	1	U
Chloroethane	1.00	5.00	1.00	1	U
Chloroform	0.500	5.00	0.500	1	U
Chloromethane	2.00	10.0	2.00	1	U
2-Chlorotoluene	0.500	5.00	0.500	1	U
4-Chlorotoluene	0.500	5.00	0.500	1	U
1,2-Dibromo-3-chloropropane	2.00	10.0	2.00	1	U
1,2-Dibromoethane	0.500	5.00	0.500	1	U
Dibromomethane	0.500	5.00	0.500	1	U
1,2-Dichlorobenzene	0.500	5.00	0.500	1	U
1,3-Dichlorobenzene	0.500	5.00	0.500	1	U
1,4-Dichlorobenzene	0.500	5.00	0.500	1	U
Dichlorodifluoromethane	1.00	5.00	1.00	1	U
1,1-Dichloroethane	1.00	5.00	1.00	1	U
1,2-Dichloroethane	0.500	5.00	0.500	1	U
1,1-Dichloroethene	0.500	5.00	0.500	1	U
cis-1,2-Dichloroethene	0.500	5.00	0.500	1	U
trans-1,2-Dichloroethene	0.500	5.00	0.500	1	U
1,2-Dichloropropane	0.500	5.00	0.500	1	U
1,3-Dichloropropane	0.500	5.00	0.500	1	U
2,2-Dichloropropane	0.500	5.00	0.500	1	U
cis-1,3-Dichloropropene	0.500	5.00	0.500	1	U
trans-1,3-Dichloropropene	0.500	5.00	0.500	1	U
1,1-Dichloropropene	0.500	5.00	0.500	1	U
Ethylbenzene	0.500	5.00	0.500	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.500	5.00	0.500	1	U
Isopropylbenzene	0.500	5.00	0.500	1	U

Report Name:BLANK
PDF ID: 4689206
25-MAR-2016 12:16

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16030861 Prep Date: 03/23/16 13:53 Sample ID: WG562075-01
Instrument ID: HPMS6 Run Date: 03/23/16 13:53 Prep Method: 5030B/5030C/503
File ID: 6M137967 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG562075 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS6-26-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.500	5.00	0.500	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	1.00	5.00	1.00	1	U
Naphthalene	0.500	5.00	0.500	1	U
n-Propylbenzene	0.500	5.00	0.500	1	U
Styrene	0.500	5.00	0.500	1	U
1,1,1,2-Tetrachloroethane	0.500	5.00	0.500	1	U
1,1,2,2-Tetrachloroethane	0.500	5.00	0.500	1	U
Tetrachloroethene	0.500	5.00	0.500	1	U
Toluene	0.500	5.00	0.500	1	U
1,2,3-Trichlorobenzene	0.500	5.00	0.500	1	U
1,2,4-Trichlorobenzene	0.500	5.00	0.500	1	U
1,1,1-Trichloroethane	0.500	5.00	0.500	1	U
1,1,2-Trichloroethane	0.500	5.00	0.500	1	U
Trichloroethene	0.500	5.00	0.500	1	U
Trichlorofluoromethane	1.00	5.00	1.00	1	U
1,2,3-Trichloropropane	1.00	5.00	1.00	1	U
1,2,4-Trimethylbenzene	0.500	5.00	0.568	1	J
1,3,5-Trimethylbenzene	0.500	5.00	0.500	1	U
Vinyl chloride	1.00	5.00	1.00	1	U
o-Xylene	0.500	5.00	0.500	1	U
m-,p-Xylene	0.500	5.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	94.6	80 - 120	PASS
1,2-Dichloroethane-d4	90.5	80 - 120	PASS
Toluene-d8	101	85 - 115	PASS
4-Bromofluorobenzene	103	85 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4689206
25-MAR-2016 12:16

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030861 Run Date: 03/22/2016 Sample ID: WG561881-02
Instrument ID: HPMS6 Run Time: 15:52 Prep Method: 5030B/5030C/503
File ID: 6M137946 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG561881 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD75209 Cal ID: HPMS6-26-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	18.8	94.0	20 - 160	
Benzene	20.0	21.2	106	75 - 125	
Bromobenzene	20.0	21.6	108	65 - 120	
Bromochloromethane	20.0	21.6	108	70 - 125	
Bromodichloromethane	20.0	20.5	102	70 - 130	
Bromoform	20.0	19.0	95.0	55 - 135	
Bromomethane	20.0	21.6	108	30 - 160	
2-Butanone	20.0	20.5	102	30 - 160	
n-Butylbenzene	20.0	18.5	92.5	65 - 140	
sec-Butylbenzene	20.0	21.1	106	65 - 130	
tert-Butylbenzene	20.0	22.0	110	65 - 130	
Carbon disulfide	20.0	19.5	97.4	45 - 160	
Carbon tetrachloride	20.0	20.1	100	65 - 135	
Chlorobenzene	20.0	21.6	108	75 - 125	
Chlorodibromomethane	20.0	20.8	104	65 - 130	
Chloroethane	20.0	23.2	116	40 - 155	
Chloroform	20.0	20.5	102	70 - 125	
Chloromethane	20.0	16.9	84.3	50 - 130	
2-Chlorotoluene	20.0	21.1	106	70 - 130	
4-Chlorotoluene	20.0	21.8	109	75 - 125	
1,2-Dibromo-3-chloropropane	20.0	20.9	104	40 - 135	
1,2-Dibromoethane	20.0	21.5	107	70 - 125	
Dibromomethane	20.0	20.4	102	75 - 130	
1,2-Dichlorobenzene	20.0	21.6	108	75 - 120	
1,3-Dichlorobenzene	20.0	21.1	105	70 - 125	
1,4-Dichlorobenzene	20.0	21.0	105	70 - 125	
Dichlorodifluoromethane	20.0	21.2	106	35 - 135	
1,1-Dichloroethane	20.0	20.5	103	75 - 125	
1,2-Dichloroethane	20.0	20.4	102	70 - 135	
1,1-Dichloroethene	20.0	20.3	101	65 - 135	
cis-1,2-Dichloroethene	20.0	21.9	110	65 - 125	
trans-1,2-Dichloroethene	20.0	22.2	111	65 - 135	
1,2-Dichloropropane	20.0	22.3	112	70 - 120	
1,3-Dichloropropane	20.0	22.4	112	75 - 125	
2,2-Dichloropropane	20.0	20.7	104	65 - 135	
cis-1,3-Dichloropropene	20.0	23.3	116	70 - 125	
trans-1,3-Dichloropropene	20.0	20.6	103	65 - 125	
1,1-Dichloropropene	20.0	20.7	104	70 - 135	
Ethylbenzene	20.0	21.2	106	75 - 125	
2-Hexanone	20.0	20.0	100	45 - 145	
Hexachlorobutadiene	20.0	18.9	94.7	55 - 140	

LCS - Modified 03/06/2008
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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030861 Run Date: 03/22/2016 Sample ID: WG561881-02
Instrument ID: HPMS6 Run Time: 15:52 Prep Method: 5030B/5030C/503
File ID: 6M137946 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG561881 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD75209 Cal ID: HPMS6-26-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	21.9	109	75 - 130	
p-Isopropyltoluene	20.0	20.8	104	75 - 135	
4-Methyl-2-pentanone	20.0	21.5	108	45 - 145	
Methylene chloride	20.0	22.0	110	55 - 140	
Naphthalene	20.0	19.9	99.5	40 - 125	
n-Propylbenzene	20.0	21.5	107	65 - 135	
Styrene	20.0	21.7	109	75 - 125	
1,1,1,2-Tetrachloroethane	20.0	20.7	103	75 - 125	
1,1,2,2-Tetrachloroethane	20.0	20.8	104	55 - 130	
Tetrachloroethene	20.0	21.3	106	65 - 140	
Toluene	20.0	21.4	107	70 - 125	
1,2,3-Trichlorobenzene	20.0	19.8	98.9	60 - 135	
1,2,4-Trichlorobenzene	20.0	19.5	97.5	65 - 130	
1,1,1-Trichloroethane	20.0	21.1	105	70 - 135	
1,1,2-Trichloroethane	20.0	21.4	107	60 - 125	
Trichloroethene	20.0	22.6	113	75 - 125	
Trichlorofluoromethane	20.0	19.4	96.8	25 - 185	
1,2,3-Trichloropropane	20.0	22.6	113	65 - 130	
1,2,4-Trimethylbenzene	20.0	20.7	103	65 - 135	
1,3,5-Trimethylbenzene	20.0	21.8	109	65 - 135	
Vinyl chloride	20.0	20.6	103	60 - 125	
o-Xylene	20.0	23.2	116	75 - 125	
m-,p-Xylene	40.0	43.2	108	80 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	96.1	80 - 120	PASS
1,2-Dichloroethane-d4	88.0	80 - 120	PASS
Toluene-d8	102	85 - 115	PASS
4-Bromofluorobenzene	101	85 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4686002
Report generated: 03/25/2016 12:16

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030861 Run Date: 03/23/2016 Sample ID: WG562075-02
Instrument ID: HPMS6 Run Time: 14:26 Prep Method: 5030B/5030C/503
File ID: 6M137968 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG562075 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD75209 Cal ID: HPMS6-26-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	21.8	109	20 - 160	
Benzene	20.0	21.6	108	75 - 125	
Bromobenzene	20.0	22.1	110	65 - 120	
Bromochloromethane	20.0	21.7	108	70 - 125	
Bromodichloromethane	20.0	21.0	105	70 - 130	
Bromoform	20.0	18.7	93.4	55 - 135	
Bromomethane	20.0	22.0	110	30 - 160	
2-Butanone	20.0	20.1	100	30 - 160	
n-Butylbenzene	20.0	21.3	107	65 - 140	
sec-Butylbenzene	20.0	22.9	114	65 - 130	
tert-Butylbenzene	20.0	23.2	116	65 - 130	
Carbon disulfide	20.0	20.0	100	45 - 160	
Carbon tetrachloride	20.0	21.2	106	65 - 135	
Chlorobenzene	20.0	22.0	110	75 - 125	
Chlorodibromomethane	20.0	20.0	100	65 - 130	
Chloroethane	20.0	23.8	119	40 - 155	
Chloroform	20.0	20.7	103	70 - 125	
Chloromethane	20.0	17.5	87.3	50 - 130	
2-Chlorotoluene	20.0	22.6	113	70 - 130	
4-Chlorotoluene	20.0	22.6	113	75 - 125	
1,2-Dibromo-3-chloropropane	20.0	20.0	99.9	40 - 135	
1,2-Dibromoethane	20.0	21.1	106	70 - 125	
Dibromomethane	20.0	20.0	100	75 - 130	
1,2-Dichlorobenzene	20.0	22.5	112	75 - 120	
1,3-Dichlorobenzene	20.0	22.1	111	70 - 125	
1,4-Dichlorobenzene	20.0	21.7	109	70 - 125	
Dichlorodifluoromethane	20.0	21.7	108	35 - 135	
1,1-Dichloroethane	20.0	20.9	105	75 - 125	
1,2-Dichloroethane	20.0	20.9	104	70 - 135	
1,1-Dichloroethene	20.0	21.3	107	65 - 135	
cis-1,2-Dichloroethene	20.0	22.5	113	65 - 125	
trans-1,2-Dichloroethene	20.0	22.5	113	65 - 135	
1,2-Dichloropropane	20.0	22.7	113	70 - 120	
1,3-Dichloropropane	20.0	22.2	111	75 - 125	
2,2-Dichloropropane	20.0	21.8	109	65 - 135	
cis-1,3-Dichloropropene	20.0	23.9	120	70 - 125	
trans-1,3-Dichloropropene	20.0	20.9	104	65 - 125	
1,1-Dichloropropene	20.0	21.9	110	70 - 135	
Ethylbenzene	20.0	22.5	113	75 - 125	
2-Hexanone	20.0	19.5	97.4	45 - 145	
Hexachlorobutadiene	20.0	22.5	112	55 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4686002
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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030861 Run Date: 03/23/2016 Sample ID: WG562075-02
Instrument ID: HPMS6 Run Time: 14:26 Prep Method: 5030B/5030C/503
File ID: 6M137968 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG562075 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD75209 Cal ID: HPMS6-26-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	23.1	116	75 - 130	
p-Isopropyltoluene	20.0	22.7	113	75 - 135	
4-Methyl-2-pentanone	20.0	21.5	107	45 - 145	
Methylene chloride	20.0	21.7	109	55 - 140	
Naphthalene	20.0	20.6	103	40 - 125	
n-Propylbenzene	20.0	23.0	115	65 - 135	
Styrene	20.0	22.1	111	75 - 125	
1,1,1,2-Tetrachloroethane	20.0	20.9	104	75 - 125	
1,1,2,2-Tetrachloroethane	20.0	20.9	104	55 - 130	
Tetrachloroethene	20.0	21.7	108	65 - 140	
Toluene	20.0	21.8	109	70 - 125	
1,2,3-Trichlorobenzene	20.0	21.3	107	60 - 135	
1,2,4-Trichlorobenzene	20.0	21.5	108	65 - 130	
1,1,1-Trichloroethane	20.0	21.7	108	70 - 135	
1,1,2-Trichloroethane	20.0	21.2	106	60 - 125	
Trichloroethene	20.0	23.5	117	75 - 125	
Trichlorofluoromethane	20.0	20.3	102	25 - 185	
1,2,3-Trichloropropane	20.0	21.4	107	65 - 130	
1,2,4-Trimethylbenzene	20.0	22.4	112	65 - 135	
1,3,5-Trimethylbenzene	20.0	23.3	116	65 - 135	
Vinyl chloride	20.0	20.3	101	60 - 125	
o-Xylene	20.0	23.6	118	75 - 125	
m-,p-Xylene	40.0	44.4	111	80 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	95.2	80 - 120	PASS
1,2-Dichloroethane-d4	87.3	80 - 120	PASS
Toluene-d8	101	85 - 115	PASS
4-Bromofluorobenzene	100	85 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4686002
Report generated: 03/25/2016 12:16

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16030861 Cal ID: HPMS6 - Worknum: WG561881
Instrument ID: HPMS6 Contract #: Method: 8260B
Parent ID: WG561608-01 File ID: 6M137955 Dil: 1 Matrix: SOLID
Sample ID: WG561608-02 MS File ID: 6M137947 Dil: 1 Units: ug/kg
Sample ID: WG561608-03 MSD File ID: 6M137948 Dil: 1 Percent Solid: 82.5

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,1,1,2-Tetrachloroethane	ND	24.1	23.2	96.0	23.1	22.5	97.1	3.14	75 - 125	30	
1,1,1-Trichloroethane	ND	24.1	24.7	102	23.1	24.9	108	0.573	70 - 135	30	
1,1,2,2-Tetrachloroethane	ND	24.1	23.3	96.5	23.1	23.2	100	0.335	55 - 130	30	
1,1,2-Trichloroethane	ND	24.1	24.0	99.5	23.1	23.6	102	1.78	60 - 125	30	
1,1-Dichloroethane	ND	24.1	23.4	96.9	23.1	23.4	101	0.0175	75 - 125	30	
1,1-Dichloroethene	ND	24.1	24.2	100	23.1	24.2	104	0.172	65 - 135	30	
1,1-Dichloropropene	ND	24.1	25.0	104	23.1	25.4	110	1.69	70 - 135	30	
1,2,3-Trichlorobenzene	ND	24.1	22.1	91.6	23.1	21.9	94.9	0.812	60 - 135	30	
1,2,3-Trichloropropane	ND	24.1	24.0	99.4	23.1	23.9	103	0.618	65 - 130	30	
1,2,4-Trichlorobenzene	ND	24.1	22.4	92.8	23.1	22.2	96.1	0.763	65 - 130	30	
1,2,4-Trimethylbenzene	ND	24.1	24.1	99.9	23.1	23.7	102	1.74	65 - 135	30	
1,2-Dibromo-3-chloropropane	ND	24.1	22.3	92.3	23.1	22.6	97.6	1.30	40 - 135	30	
1,2-Dibromoethane	ND	24.1	23.4	96.9	23.1	23.3	101	0.473	70 - 125	30	
1,2-Dichlorobenzene	ND	24.1	24.0	99.4	23.1	23.7	102	1.45	75 - 120	30	
1,2-Dichloroethane	ND	24.1	22.7	94.1	23.1	22.3	96.4	1.94	70 - 135	30	
1,2-Dichloropropane	ND	24.1	25.3	105	23.1	24.8	107	1.79	70 - 120	30	
1,3,5-Trimethylbenzene	ND	24.1	25.7	106	23.1	24.8	107	3.43	65 - 135	30	
1,3-Dichlorobenzene	ND	24.1	23.9	98.9	23.1	23.1	100	3.19	70 - 125	30	
1,3-Dichloropropane	ND	24.1	24.9	103	23.1	24.3	105	2.12	75 - 125	30	
1,4-Dichlorobenzene	ND	24.1	23.4	97.1	23.1	22.9	98.9	2.44	70 - 125	30	
2,2-Dichloropropane	ND	24.1	25.0	104	23.1	24.9	108	0.435	65 - 135	30	
2-Butanone	ND	24.1	20.6	85.2	23.1	22.6	97.7	9.38	30 - 160	30	
2-Chlorotoluene	ND	24.1	22.5	93.4	23.1	24.3	105	7.32	70 - 130	30	
2-Hexanone	ND	24.1	19.7	81.6	23.1	21.5	93.2	8.91	45 - 145	30	
4-Chlorotoluene	ND	24.1	26.4	109	23.1	23.9	103	10.1	75 - 125	30	
4-Methyl-2-pentanone	ND	24.1	22.3	92.3	23.1	23.5	102	5.34	45 - 145	30	
Acetone	ND	24.1	18.8	77.8	23.1	21.0	90.9	11.3	20 - 160	30	
Benzene	ND	24.1	24.3	101	23.1	23.7	103	2.37	75 - 125	30	
Bromobenzene	ND	24.1	23.7	98.0	23.1	23.7	103	0.213	65 - 120	30	
Bromochloromethane	ND	24.1	23.8	98.7	23.1	23.6	102	1.03	70 - 125	30	
Bromodichloromethane	ND	24.1	23.2	96.0	23.1	22.9	98.9	1.38	70 - 130	30	
Bromoform	ND	24.1	20.8	86.1	23.1	20.5	88.4	1.62	55 - 135	30	
Bromomethane	ND	24.1	24.5	101	23.1	24.1	104	1.57	30 - 160	30	
Carbon disulfide	ND	24.1	22.1	91.7	23.1	23.0	99.4	3.68	45 - 160	30	
Carbon tetrachloride	ND	24.1	24.8	103	23.1	24.9	108	0.281	65 - 135	30	
Chlorobenzene	ND	24.1	24.8	103	23.1	23.7	102	4.68	75 - 125	30	
Chlorodibromomethane	ND	24.1	22.7	93.9	23.1	22.0	95.3	2.86	65 - 130	30	
Chloroethane	ND	24.1	27.1	112	23.1	26.8	116	1.02	40 - 155	30	
Chloroform	ND	24.1	23.1	95.7	23.1	23.0	99.3	0.602	70 - 125	30	

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4686003
Report generated 03/23/2016 16:27

Loginnum: L16030861 Cal ID: HPMS6 Worknum: WG561881
Instrument ID: HPMS6 Contract #: Method: 8260B
Parent ID: WG561608-01 File ID: 6M137955 Dil: 1 Matrix: SOLID
Sample ID: WG561608-02 MS File ID: 6M137947 Dil: 1 Units: ug/kg
Sample ID: WG561608-03 MSD File ID: 6M137948 Dil: 1 Percent Solid: 82.5

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chloromethane	ND	24.1	21.6	89.4	23.1	21.4	92.5	0.866	50 - 130	30	
Dibromomethane	ND	24.1	22.5	93.1	23.1	22.1	95.7	1.62	75 - 130	30	
Dichlorodifluoromethane	ND	24.1	26.9	111	23.1	26.7	116	0.512	35 - 135	30	
Ethylbenzene	ND	24.1	25.0	103	23.1	24.0	104	3.84	75 - 125	30	
Hexachlorobutadiene	ND	24.1	25.2	104	23.1	25.2	109	0.0212	55 - 140	30	
Isopropylbenzene	ND	24.1	26.4	109	23.1	25.5	110	3.50	75 - 130	30	
Methylene chloride	ND	24.1	24.4	101	23.1	24.1	104	1.05	55 - 140	30	
Naphthalene	ND	24.1	21.9	90.6	23.1	21.9	94.5	0.0493	40 - 125	30	
Styrene	ND	24.1	22.9	94.8	23.1	22.6	97.6	1.36	75 - 125	30	
Tetrachloroethene	ND	24.1	25.4	105	23.1	24.7	107	3.15	65 - 140	30	
Toluene	ND	24.1	24.7	102	23.1	23.9	103	3.07	70 - 125	30	
Trichloroethene	ND	24.1	26.1	108	23.1	26.1	113	0.0933	75 - 125	30	
Trichlorofluoromethane	ND	24.1	23.7	98.1	23.1	24.1	104	1.64	25 - 185	30	
Vinyl chloride	ND	24.1	19.4	80.2	23.1	19.4	84.0	0.409	60 - 125	30	
cis-1,2-Dichloroethene	ND	24.1	24.9	103	23.1	24.9	107	0.201	65 - 125	30	
cis-1,3-Dichloropropene	ND	24.1	25.7	106	23.1	25.4	110	1.11	70 - 125	30	
m-,p-Xylene	ND	48.3	50.5	105	46.3	49.2	106	2.49	80 - 125	30	
n-Butylbenzene	ND	24.1	23.5	97.4	23.1	23.2	100	1.51	65 - 140	30	
n-Propylbenzene	ND	24.1	25.7	106	23.1	25.2	109	1.88	65 - 135	30	
o-Xylene	ND	24.1	26.4	109	23.1	25.2	109	4.61	75 - 125	30	
p-Isopropyltoluene	ND	24.1	25.2	104	23.1	24.5	106	2.87	75 - 135	30	
sec-Butylbenzene	ND	24.1	26.1	108	23.1	25.6	111	2.08	65 - 130	30	
tert-Butylbenzene	ND	24.1	26.2	108	23.1	25.7	111	1.85	65 - 130	30	
trans-1,2-Dichloroethene	ND	24.1	25.8	107	23.1	25.8	111	0.0201	65 - 135	30	
trans-1,3-Dichloropropene	ND	24.1	22.5	93.4	23.1	22.1	95.7	1.84	65 - 125	30	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4686003
Report generated 03/23/2016 16:27

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16030861
Instrument: HPMS6
Analyst: TMB
Workgroup: WG558920

Tune ID: WG558920-01
Run Date: 02/26/2016
Run Time: 13:16
File ID: 6M137522
Cal ID: HPMS6 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	25.4	9030	PASS
75.0	95.0	30.0	60.0	55.4	19666	PASS
95.0	95.0	100	100	100	35512	PASS
96.0	95.0	5.00	9.00	7.25	2576	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	73.2	26011	PASS
175	174	5.00	9.00	7.36	1914	PASS
176	174	95.0	101	96.1	24992	PASS
177	176	5.00	9.00	6.64	1660	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG558920-02	STD-S	01	02/26/2016 13:41	
WG558920-03	STD-S	01	02/26/2016 14:13	
WG558920-04	STD-S	01	02/26/2016 14:46	
WG558920-05	STD-S	01	02/26/2016 15:26	
WG558920-06	STD-S	01	02/26/2016 15:58	
WG558920-07	STD-S	01	02/26/2016 16:30	
WG558920-08	STD-CCV-S	01	02/26/2016 17:03	
WG558920-09	STD-S	01	02/26/2016 17:35	
WG558920-10	STD-S	01	02/26/2016 18:07	
WG558920-11	STD-S	01	02/26/2016 18:39	
WG558920-12	SSCV-S	01	02/26/2016 20:15	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4686009
Report generated 03/25/2016 12:16

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16030861
Instrument: HPMS6
Analyst: TMB
Workgroup: WG561879

Tune ID: WG561879-01
Run Date: 03/22/2016
Run Time: 11:26
File ID: 6M137938
Cal ID: HPMS6 - 26-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.8	6808	PASS
75.0	95.0	30.0	60.0	49.6	15508	PASS
95.0	95.0	100	100	100	31245	PASS
96.0	95.0	5.00	9.00	7.25	2265	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	70.0	21873	PASS
175	174	5.00	9.00	7.27	1591	PASS
176	174	95.0	101	99.0	21662	PASS
177	176	5.00	9.00	7.15	1548	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG561879-02	CCV-S	01	03/22/2016 11:51	
WG561881-01	BLANK	01	03/22/2016 13:08	
WG561881-02	LCS	01	03/22/2016 15:52	
WG561608-02	MS	01	03/22/2016 16:24	
WG561608-03	MSD	01	03/22/2016 16:57	
L16030861-04	18DPT14(17-17.5)140316	01	03/22/2016 19:09	
L16030861-03	18DPT14(10-10.5)140316FD	01	03/22/2016 19:43	
L16030861-02	18DPT14(10-10.5)140316	01	03/22/2016 20:16	
L16030861-01	18DPT14(5-5.5)140316	01	03/22/2016 20:49	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4686009
Report generated 03/25/2016 12:16

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16030861
Instrument: HPMS6
Analyst: TMB
Workgroup: WG562074

Tune ID: WG562074-01
Run Date: 03/23/2016
Run Time: 11:50
File ID: 6M137963
Cal ID: HPMS6 - 26-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.2	6567	PASS
75.0	95.0	30.0	60.0	49.2	15945	PASS
95.0	95.0	100	100	100	32432	PASS
96.0	95.0	5.00	9.00	6.96	2256	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	80.4	26074	PASS
175	174	5.00	9.00	7.57	1973	PASS
176	174	95.0	101	99.3	25896	PASS
177	176	5.00	9.00	6.56	1699	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG562074-02	CCV-S	01	03/23/2016 12:47	
WG562075-01	BLANK	01	03/23/2016 13:53	
WG562075-02	LCS	01	03/23/2016 14:26	
L16030861-03	18DPT14(10-10.5)140316FD	02	03/23/2016 17:43	
L16030861-05	18DPT14(23-23.5)140316	01	03/23/2016 18:15	
L16030861-06	18DPT15(5-5.5)140316	01	03/23/2016 18:48	
L16030861-07	18DPT15(12-12.5)140316	01	03/23/2016 19:21	
L16030861-08	18DPT15(21-21.5)140316	01	03/23/2016 19:54	
L16030861-09	18DPT15(23.5-24)140316	01	03/23/2016 20:27	
L16030861-10	18DPT15(26.5-27)140316	01	03/23/2016 21:00	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4686009
Report generated 03/25/2016 12:16

Calibration Table Report
Method: 826_SL.M
Title: 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Calibration: Mon Feb 29 15:59:52 2016
Curve: WG558920
Calibration Files

	Compound	0.5 6M137523.D	1 6M137524.D	2 6M137525.D	5 6M137526.D	10 6M137527.D	20 6M137528.D	50 6M137529.D	100 6M137530.D	200 6M137531.D	300 6M137532.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.386	0.437	0.426	0.515	0.537	0.438	0.464	0.471	0.459	10.647		
P	Chloromethane			0.578	0.509	0.480	0.500	0.503	0.398	0.425	0.436	0.479	11.984		
C	Vinyl Chloride			0.371	0.405	0.376	0.415	0.431	0.353	0.374	0.357	0.385	7.341		
T	1,3-Butadiene				0.369	0.322	0.361	0.344	0.289	0.282	0.277	0.320	11.982		
T	Bromomethane			0.192	0.207	0.206	0.215	0.213	0.184	0.207	0.218	0.205	5.643		
T	Chloroethane			0.199	0.219	0.208	0.232	0.244	0.202	0.219	0.224	0.218	6.941		
T	Trichlorofluoromethane			0.535	0.557	0.513	0.525	0.558	0.462	0.490	0.501	0.518	6.398		
T	Diethyl ether		0.243	0.231	0.234	0.251	0.241	0.233	0.233		0.238	0.238	2.758		
T	Isoprene				0.333	0.322	0.327	0.355	0.334	0.338	0.351	0.337	3.613		
T	Acrolein		0.044	0.045	0.044	0.050	0.045	0.042	0.045		0.047	0.045	5.301		
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.199	0.268	0.248	0.256	0.277	0.230	0.245	0.252	0.247	9.700		
T	Acetone					0.152	0.130	0.112	0.104	0.110	0.106	0.119	15.588	0.999	
C	1,1-Dichloroethene			0.380	0.462	0.424	0.453	0.487	0.410	0.439	0.447	0.438	7.530		
T	Tert-Butyl Alcohol		0.039	0.035	0.040	0.044	0.044	0.040	0.040		0.044	0.041	7.378		
T	Dimethyl Sulfide				0.204	0.210	0.197	0.223	0.210	0.218	0.224	0.212	4.669		
T	Iodomethane				0.056	0.082	0.123	0.197	0.197	0.211	0.207	0.153	42.723	0.998	
T	Methyl acetate				0.309	0.317	0.309	0.308	0.292	0.293	0.300	0.304	3.023		
T	Methylene Chloride			0.256	0.273	0.264	0.268	0.287	0.242	0.257	0.260	0.264	5.015		
T	Carbon Disulfide			0.821	0.880	0.808	0.840	0.872	0.808	0.825	0.844	0.837	3.273		
T	Acrylonitrile		0.108	0.114	0.119	0.133	0.128	0.130	0.129		0.140	0.125	8.391		
T	Methyl Tert Butyl Ether	0.732	0.693	0.663	0.725	0.773	0.787	0.833	0.734	0.785	0.799	0.753	6.930		
T	trans-1,2-Dichloroethene			0.227	0.244	0.240	0.247	0.265	0.226	0.240	0.244	0.242	5.097		
T	n-Hexane			0.407	0.452	0.430	0.435	0.466	0.433	0.438	0.452	0.439	4.050		
T	Diisopropyl ether		1.143	1.120	1.122	1.188	1.168	1.117	1.121		1.127	1.138	2.317		
T	Vinyl Acetate				0.493	0.583	0.630	0.596	0.570	0.626	0.621	0.588	8.090		
P	1,1-Dichloroethane			0.484	0.538	0.522	0.539	0.568	0.484	0.514	0.521	0.521	5.427		
T	Ethyl-Tert-Butyl ether		0.841	0.891	0.897	0.963	0.947	0.909	0.912		0.938	0.912	4.185		
T	2-Butanone				0.186	0.176	0.176	0.169	0.161	0.170	0.172	0.173	4.334		
T	Propionitrile		0.047	0.045	0.045	0.051	0.050	0.048	0.047		0.049	0.048	4.489		
T	2,2-Dichloropropane			0.413	0.427	0.425	0.415	0.454	0.383	0.410	0.420	0.418	4.750		
T	cis-1,2-Dichloroethene			0.265	0.274	0.263	0.275	0.290	0.250	0.269	0.273	0.270	4.259		
C	Chloroform			0.502	0.499	0.475	0.499	0.520	0.443	0.476	0.481	0.487	4.825		
T	1-Bromopropane				0.033	0.034	0.037	0.040	0.037	0.038	0.039	0.037	7.440		
T	Bromochloromethane			0.151	0.148	0.152	0.165	0.176	0.151	0.162	0.164	0.159	6.123		
T	Tetrahydrofuran		0.173	0.111	0.113	0.121	0.123	0.115	0.112		0.116	0.123	16.774	0.998	
S	Dibromofluoromethane			0.280	0.265	0.272	0.276	0.272	0.253	0.265	0.262	0.268	3.189		
T	1,1,1-Trichloroethane			0.412	0.417	0.434	0.435	0.474	0.398	0.430	0.438	0.430	5.218		
T	Cyclohexane			0.396	0.493	0.473	0.495	0.533	0.492	0.499	0.519	0.487	8.433		
T	1,1-Dichloropropene			0.306	0.372	0.338	0.347	0.383	0.324	0.345	0.355	0.346	7.125		
T	Tert-Amyl-Methyl ether		0.664	0.687	0.706	0.759	0.757	0.723	0.732		0.762	0.724	4.986		
T	Carbon Tetrachloride			0.351	0.409	0.4	0.412	0.445	0.378	0.403	0.416	0.4017	6.9015		
S	1,2-Dichloroethane-d4			0.36	0.365	0.337	0.366	0.353	0.329	0.34	0.336	0.3482	4.16		
T	Heptane											0	0		
T	1,2-Dichloroethane			0.387	0.414	0.422	0.43	0.449	0.388	0.415	0.419	0.4154	4.951		
T	Benzene	1.229	1.128	1.036	1.038	1.011	1.023	1.078	0.921	0.973	0.979	1.0416	8.3738		
T	Trichloroethene			0.223	0.257	0.243	0.254	0.268	0.229	0.245	0.249	0.2461	6.0218		
T	Methylcyclohexane			0.321	0.406	0.387	0.403	0.435	0.401	0.406	0.424	0.3978	8.6044		
C	1,2-Dichloropropane			0.249	0.279	0.277	0.29	0.305	0.266	0.286	0.29	0.2802	6.0373		
T	1,4-Dioxane			0.002	0.003	0.003	0.003	0.003	0.003		0.004	0.0031	18.585	0.996	
T	Bromodichloromethane			0.336	0.359	0.35	0.37	0.402	0.352	0.384	0.39	0.3678	6.1125		
T	Dibromomethane			0.145	0.152	0.16	0.169	0.185	0.158	0.171	0.173	0.1639	7.836		
T	2-Chloroethyl Vinyl Ether				0.126	0.141	0.155	0.164	0.161	0.178		0.1541	11.732		
T	4-Methyl-2-Pentanone				0.101	0.11	0.122	0.117	0.113	0.125	0.128	0.1167	8.1948		
T	cis-1,3-Dichloropropene			0.338	0.374	0.39	0.412	0.454	0.396	0.435	0.442	0.4052	9.5304		
T	Dimethyl Disulfide				0.171	0.174	0.192	0.225	0.22	0.245		0.2044	14.756		
I	Chlorobenzene-d5	ISTD													
S	Toluene-d8			1.274	1.278	1.167	1.22	1.21	1.113	1.144	1.105	1.1888	5.6789		
C	Toluene	1.627	1.459	1.33	1.431	1.418	1.424	1.504	1.27	1.35	1.331	1.4144	7.2521		
T	Ethyl Methacrylate			0.326	0.401	0.428	0.461	0.503	0.477	0.511	0.518	0.4532	14.498		
T	Paraldehyde											0	0		
T	trans-1,3-Dichloropropene			0.461	0.507	0.529	0.558	0.603	0.53	0.579	0.582	0.5439	8.4811		
T	1,1,2-Trichloroethane			0.265	0.288	0.302	0.309	0.319	0.28	0.302	0.299	0.2956	5.771		
T	2-Hexanone				0.298	0.324	0.345	0.341	0.328	0.359	0.366	0.3373	6.878		
T	1,3-Dichloropropane			0.488	0.541	0.538	0.558	0.579	0.503	0.54	0.54	0.5358	5.3786		
T	Tetrachloroethene			0.332	0.375	0.358	0.359	0.376	0.318	0.336	0.337	0.3489	6.0417		
T	Dibromochloromethane			0.318	0.369	0.378	0.394	0.425	0.373	0.407	0.41	0.3845	8.6342		
T	1,2-Dibromoethane			0.271	0.289	0.29	0.309	0.332	0.29	0.318	0.32	0.3023	6.7531		
T	1-Chlorohexane			0.358	0.417	0.417	0.441	0.485	0.451	0.47	0.474	0.4392	9.3805		
P	Chlorobenzene			0.915	0.966	0.916	0.927	0.958	0.821	0.89	0.88	0.909	5.1018		
T	1,1,1,2-Tetrachloroethane			0.348	0.343	0.362	0.374	0.393	0.344	0.376	0.38	0.365	5.0679		
C	Ethylbenzene	0.49	0.466	0.473	0.486	0.481	0.497	0.531	0.453	0.494	0.494	0.4864	4.3098		
T	m-,p-Xylene	0.674	0.598	0.537	0.6	0.59	0.605	0.637	0.546	0.585	0.58	0.5952	6.6768		
T	o-Xylene	0.574	0.512	0.494	0.539	0.544	0.588	0.634	0.54	0.59	0.591	0.5606	7.5243		
T	Styrene			0.772	0.876	0.918	0.982	1.071	0.935	1.037	1.041	0.9542	10.466		
P	Bromoform			0.222	0.256	0.259	0.275	0.298	0.261	0.293	0.307	0.2715	10.256		
T	Isopropylbenzene			1.284	1.474	1.498	1.583	1.683	1.433	1.559	1.542	1.507	7.8153		
I	1,4-Dichlorobenzene-d4	ISTD													
P	1,1,2,2-Tetrachloroethane			0.689	0.783	0.798	0.815	0.842	0.74	0.785	0.797	0.7811	6.0053		
S	p-Bromofluorobenzene			0.997	0.956	0.921	0.925	0.941	0.864	0.892	0.852	0.9184	5.2432		

T	1,2,3-Trichloropropane	0.202	0.247	0.251	0.244	0.258	0.225	0.243	0.244	0.2391	7.3405
T	trans-1,4-Dichloro-2-Butene	0.247	0.255	0.285	0.287	0.308	0.295	0.311	0.318	0.2883	8.9009
T	n-Propylbenzene	3.037	3.536	3.508	3.571	3.802	3.207	3.325	3.178	3.3956	7.429
T	Bromobenzene	0.67	0.762	0.744	0.775	0.808	0.694	0.733	0.719	0.7381	6.0417
T	1,3,5-Trimethylbenzene	2.096	2.503	2.443	2.485	2.702	2.295	2.435	2.377	2.417	7.2332
T	2-Chlorotoluene	1.974	2.457	2.366	2.375	2.437	2.106	2.239	2.178	2.2664	7.5835
T	4-Chlorotoluene	2.163	2.182	2.123	2.094	2.235	1.885	1.964	1.933	2.0723	6.208
T	a-Methylstyrene	0.921	1.071	1.127	1.156	1.295	1.234	1.294	1.291	1.1737	11.321
T	tert-Butylbenzene	0.437	0.508	0.504	0.521	0.567	0.48	0.511	0.502	0.5037	7.2697
T	1,2,4-Trimethylbenzene	2.274	2.614	2.634	2.636	2.804	2.386	2.535	2.452	2.5419	6.5668
T	sec-Butylbenzene	2.804	3.169	3.104	3.238	3.474	2.92	3.078	2.976	3.0953	6.6823
T	p-Isopropyltoluene	2.183	2.603	2.54	2.657	2.885	2.449	2.589	2.523	2.5537	7.7414
T	1,3-Dichlorobenzene	1.331	1.516	1.491	1.451	1.537	1.319	1.391	1.389	1.4282	5.8154
T	1,4-Dichlorobenzene	1.528	1.507	1.501	1.476	1.529	1.31	1.39	1.389	1.4537	5.5603
T	n-Butylbenzene	2.282	2.598	2.578	2.654	2.852	2.445	2.576	2.563	2.5684	6.3469
T	1,2-Dichlorobenzene	1.324	1.401	1.407	1.397	1.474	1.278	1.357	1.356	1.3743	4.3244
T	1,2-Dibromo-3-Chloropropane		0.159	0.163	0.176	0.183	0.167	0.179	0.182	0.1728	5.5543
T	1,2,4-Trichlorobenzene	0.968	0.981	1.002	1.008	1.105	0.936	0.963	0.985	0.9935	5.0666
T	Hexachlorobutadiene	0.528	0.583	0.572	0.579	0.635	0.532	0.546	0.571	0.5682	6.0591
T	Naphthalene	1.901	2.081	2.291	2.365	2.601	2.29	2.356	2.387	2.2839	9.2287
T	1,2,3-Trichlorobenzene	0.961	0.977	0.98	0.987	1.094	0.917	0.949	0.961	0.9783	5.2988

Mon Feb 29 16:03:43 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16030861 Run Date: 02/26/2016 Sample ID: WG558920-12
Instrument ID: HPMS6 Run Time: 20:15 Method: 8260B
File ID: 6M137535 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG558920 Cal ID: HPMS6 - 26-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.7	ug/kg	0.494	1.40	20	
1,1-Dichloroethene	CCC	50.0	51.6	ug/kg	0.452	3.30	20	
1,2-Dichloropropane	CCC	50.0	55.0	ug/kg	0.308	10.1	20	
Ethylbenzene	CCC	50.0	52.4	ug/kg	0.510	4.80	20	
Toluene	CCC	50.0	51.4	ug/kg	1.45	2.80	20	
Vinyl Chloride	CCC	50.0	43.3	ug/kg	0.334	13.3	20	
Bromoform	SPCC	50.0	49.2	ug/kg	0.267	1.50	20	
Chlorobenzene	SPCC	50.0	52.9	ug/kg	0.961	5.70	20	
Chloromethane	SPCC	50.0	50.9	ug/kg	0.487	1.80	20	
1,1-Dichloroethane	SPCC	50.0	50.3	ug/kg	0.525	0.700	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	52.1	ug/kg	0.815	4.30	20	
Acetone		50.0	48.7	ug/kg	0.111	2.70	20	
Benzene		50.0	50.4	ug/kg	1.05	0.900	20	
Bromobenzene		50.0	51.8	ug/kg	0.765	3.70	20	
Bromochloromethane		50.0	52.1	ug/kg	0.165	4.20	20	
Bromodichloromethane		50.0	51.6	ug/kg	0.380	3.30	20	
Bromomethane		50.0	58.6	ug/kg	0.240	17.1	20	
2-Butanone		50.0	49.2	ug/kg	0.170	1.50	20	
n-Butylbenzene		50.0	48.8	ug/kg	2.50	2.50	20	
sec-Butylbenzene		50.0	50.7	ug/kg	3.14	1.40	20	
tert-Butylbenzene		50.0	53.2	ug/kg	0.536	6.40	20	
Carbon Disulfide		50.0	44.4	ug/kg	0.743	11.2	20	
Carbon Tetrachloride		50.0	51.2	ug/kg	0.411	2.30	20	
Dibromochloromethane		50.0	51.8	ug/kg	0.399	3.70	20	
Chloroethane		50.0	56.6	ug/kg	0.247	13.2	20	
2-Chlorotoluene		50.0	52.1	ug/kg	2.36	4.20	20	
4-Chlorotoluene		50.0	52.1	ug/kg	2.16	4.10	20	
1,2-Dibromo-3-Chloropropane		50.0	52.1	ug/kg	0.180	4.30	20	
1,2-Dibromoethane		50.0	53.7	ug/kg	0.325	7.30	20	
Dibromomethane		50.0	50.4	ug/kg	0.165	0.800	20	
1,2-Dichlorobenzene		50.0	54.5	ug/kg	1.50	9.00	20	
1,3-Dichlorobenzene		50.0	52.0	ug/kg	1.49	4.00	20	
1,4-Dichlorobenzene		50.0	51.8	ug/kg	1.51	3.60	20	
Dichlorodifluoromethane		50.0	55.5	ug/kg	0.509	10.9	20	
1,2-Dichloroethane		50.0	51.3	ug/kg	0.426	2.50	20	
cis-1,2-Dichloroethene		50.0	54.1	ug/kg	0.292	8.30	20	
trans-1,2-Dichloroethene		50.0	53.7	ug/kg	0.260	7.50	20	
1,3-Dichloropropane		50.0	54.9	ug/kg	0.589	9.80	20	
2,2-Dichloropropane		50.0	53.1	ug/kg	0.444	6.20	20	
cis-1,3-Dichloropropene		50.0	58.8	ug/kg	0.476	17.5	20	
trans-1,3-Dichloropropene		50.0	52.9	ug/kg	0.575	5.70	20	
1,1-Dichloropropene		50.0	52.8	ug/kg	0.365	5.50	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4686004
Report generated 03/25/2016 12:16

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16030861 Run Date: 02/26/2016 Sample ID: WG558920-12
Instrument ID: HPMS6 Run Time: 20:15 Method: 8260B
File ID: 6M137535 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG558920 Cal ID: HPMS6 - 26-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	51.3	ug/kg	0.346	2.60	20	
Hexachlorobutadiene		50.0	47.6	ug/kg	0.541	4.80	20	
Isopropylbenzene		50.0	54.6	ug/kg	1.64	9.10	20	
p-Isopropyltoluene		50.0	50.9	ug/kg	2.60	1.80	20	
4-Methyl-2-Pentanone		50.0	51.3	ug/kg	0.120	2.50	20	
Methylene Chloride		50.0	53.4	ug/kg	0.281	6.80	20	
Naphthalene		50.0	49.8	ug/kg	2.28	0.300	20	
n-Propylbenzene		50.0	52.6	ug/kg	3.57	5.30	20	
Styrene		50.0	55.3	ug/kg	1.06	10.6	20	
1,1,1,2-Tetrachloroethane		50.0	51.8	ug/kg	0.379	3.70	20	
Tetrachloroethene		50.0	51.1	ug/kg	0.357	2.20	20	
1,2,3-Trichlorobenzene		50.0	51.0	ug/kg	0.997	2.00	20	
1,2,4-Trichlorobenzene		50.0	51.0	ug/kg	1.01	2.10	20	
1,1,1-Trichloroethane		50.0	52.0	ug/kg	0.447	4.00	20	
1,1,2-Trichloroethane		50.0	53.2	ug/kg	0.315	6.40	20	
Trichloroethene		50.0	54.7	ug/kg	0.269	9.40	20	
Trichlorofluoromethane		50.0	47.9	ug/kg	0.496	4.20	20	
1,2,3-Trichloropropane		50.0	53.2	ug/kg	0.254	6.30	20	
1,2,4-Trimethylbenzene		50.0	51.1	ug/kg	2.60	2.30	20	
1,3,5-Trimethylbenzene		50.0	52.7	ug/kg	2.55	5.30	20	
o-Xylene		50.0	56.9	ug/kg	0.638	13.8	20	
m-,p-Xylene		100	105	ug/kg	0.626	5.20	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4686004
Report generated 03/25/2016 12:16

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030861 Run Date: 03/22/2016 Sample ID: WG561879-02
Instrument ID: HPMS6 Run Time: 11:51 Method: 8260B
File ID: 6M137939 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG561881 Cal ID: HPMS6 - 26-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.2	ug/kg	0.489	0.420	20	
1,1-Dichloroethene	CCC	50.0	51.9	ug/kg	0.454	3.75	20	
1,2-Dichloropropane	CCC	50.0	52.5	ug/kg	0.294	5.01	20	
Ethylbenzene	CCC	50.0	53.1	ug/kg	0.517	6.22	20	
Toluene	CCC	50.0	51.6	ug/kg	1.46	3.14	20	
Vinyl Chloride	CCC	50.0	47.7	ug/kg	0.368	4.50	20	
Bromoform	SPCC	50.0	53.2	ug/kg	0.289	6.35	20	
Chlorobenzene	SPCC	50.0	51.4	ug/kg	0.934	2.73	20	
Chloromethane	SPCC	50.0	38.2	ug/kg	0.366	23.5	20	*
1,1-Dichloroethane	SPCC	50.0	51.4	ug/kg	0.536	2.83	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	55.5	ug/kg	0.868	11.1	20	
Xylenes		150	160	ug/kg	0.621	6.92	40	
Acetone		50.0	56.1	ug/kg	0.126	12.2	20	
Benzene		50.0	50.6	ug/kg	1.05	1.19	20	
Bromobenzene		50.0	53.3	ug/kg	0.787	6.58	20	
Bromochloromethane		50.0	54.7	ug/kg	0.173	9.30	20	
Bromodichloromethane		50.0	51.1	ug/kg	0.376	2.23	20	
Bromomethane		50.0	54.1	ug/kg	0.222	8.22	20	
2-Butanone		50.0	57.2	ug/kg	0.198	14.3	20	
n-Butylbenzene		50.0	53.1	ug/kg	2.73	6.27	20	
sec-Butylbenzene		50.0	54.1	ug/kg	3.35	8.20	20	
tert-Butylbenzene		50.0	54.9	ug/kg	0.553	9.84	20	
Carbon Disulfide		50.0	53.1	ug/kg	0.889	6.23	20	
Carbon Tetrachloride		50.0	51.0	ug/kg	0.410	2.05	20	
Dibromochloromethane		50.0	52.0	ug/kg	0.400	3.93	20	
Chloroethane		50.0	52.9	ug/kg	0.231	5.81	20	
2-Chlorotoluene		50.0	53.1	ug/kg	2.41	6.16	20	
4-Chlorotoluene		50.0	52.3	ug/kg	2.17	4.66	20	
1,2-Dibromo-3-Chloropropane		50.0	54.8	ug/kg	0.190	9.65	20	
1,2-Dibromoethane		50.0	54.0	ug/kg	0.327	8.06	20	
Dibromomethane		50.0	52.8	ug/kg	0.173	5.68	20	
1,2-Dichlorobenzene		50.0	51.8	ug/kg	1.42	3.51	20	
1,3-Dichlorobenzene		50.0	52.5	ug/kg	1.50	5.06	20	
1,4-Dichlorobenzene		50.0	51.4	ug/kg	1.49	2.79	20	
Dichlorodifluoromethane		50.0	49.1	ug/kg	0.451	1.74	20	
1,2-Dichloroethane		50.0	49.6	ug/kg	0.412	0.778	20	
cis-1,2-Dichloroethene		50.0	53.2	ug/kg	0.287	6.39	20	
trans-1,2-Dichloroethene		50.0	54.1	ug/kg	0.262	8.28	20	
1,3-Dichloropropane		50.0	51.9	ug/kg	0.556	3.76	20	
2,2-Dichloropropane		50.0	52.8	ug/kg	0.442	5.65	20	
cis-1,3-Dichloropropene		50.0	54.1	ug/kg	0.439	8.23	20	
trans-1,3-Dichloropropene		50.0	53.6	ug/kg	0.583	7.19	20	

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030861 Run Date: 03/22/2016 Sample ID: WG561879-02
Instrument ID: HPMS6 Run Time: 11:51 Method: 8260B
File ID: 6M137939 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG561881 Cal ID: HPMS6 - 26-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	53.8	ug/kg	0.373	7.67	20	
2-Hexanone		50.0	57.8	ug/kg	0.390	15.5	20	
Hexachlorobutadiene		50.0	52.9	ug/kg	0.601	5.84	20	
Isopropylbenzene		50.0	54.6	ug/kg	1.65	9.29	20	
p-Isopropyltoluene		50.0	55.2	ug/kg	2.82	10.4	20	
4-Methyl-2-Pentanone		50.0	61.9	ug/kg	0.145	23.8	20	*
Methylene Chloride		50.0	51.8	ug/kg	0.273	3.58	20	
Naphthalene		50.0	56.1	ug/kg	2.56	12.2	20	
n-Propylbenzene		50.0	54.3	ug/kg	3.69	8.62	20	
Styrene		50.0	55.1	ug/kg	1.05	10.2	20	
1,1,1,2-Tetrachloroethane		50.0	51.0	ug/kg	0.373	2.08	20	
Tetrachloroethene		50.0	54.3	ug/kg	0.379	8.50	20	
1,2,3-Trichlorobenzene		50.0	51.4	ug/kg	1.00	2.71	20	
1,2,4-Trichlorobenzene		50.0	52.4	ug/kg	1.04	4.90	20	
1,1,1-Trichloroethane		50.0	51.3	ug/kg	0.441	2.60	20	
1,1,2-Trichloroethane		50.0	53.4	ug/kg	0.316	6.73	20	
Trichloroethene		50.0	54.4	ug/kg	0.268	8.81	20	
Trichlorofluoromethane		50.0	49.2	ug/kg	0.510	1.50	20	
1,2,3-Trichloropropane		50.0	55.1	ug/kg	0.264	10.2	20	
1,2,4-Trimethylbenzene		50.0	52.9	ug/kg	2.69	5.70	20	
1,3,5-Trimethylbenzene		50.0	54.3	ug/kg	2.63	8.61	20	
o-Xylene		50.0	54.7	ug/kg	0.613	9.38	20	
m-,p-Xylene		100	106	ug/kg	0.629	5.69	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030861 Run Date: 03/23/2016 Sample ID: WG562074-02
Instrument ID: HPMS6 Run Time: 12:47 Method: 8260B
File ID: 6M137965 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG562075 Cal ID: HPMS6 - 26-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	49.2	ug/kg	0.479	1.50	20	
1,1-Dichloroethene	CCC	50.0	51.3	ug/kg	0.449	2.59	20	
1,2-Dichloropropane	CCC	50.0	52.5	ug/kg	0.294	4.98	20	
Ethylbenzene	CCC	50.0	53.5	ug/kg	0.520	6.93	20	
Toluene	CCC	50.0	51.2	ug/kg	1.45	2.46	20	
Vinyl Chloride	CCC	50.0	45.8	ug/kg	0.353	8.35	20	
Bromoform	SPCC	50.0	52.3	ug/kg	0.284	4.69	20	
Chlorobenzene	SPCC	50.0	51.4	ug/kg	0.934	2.77	20	
Chloromethane	SPCC	50.0	38.7	ug/kg	0.370	22.7	20	*
1,1-Dichloroethane	SPCC	50.0	50.5	ug/kg	0.526	0.916	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	55.7	ug/kg	0.870	11.3	20	
Xylenes		150	160	ug/kg	0.623	7.00	40	
Acetone		50.0	56.3	ug/kg	0.127	12.6	20	
Benzene		50.0	49.6	ug/kg	1.03	0.769	20	
Bromobenzene		50.0	53.5	ug/kg	0.790	6.97	20	
Bromochloromethane		50.0	53.5	ug/kg	0.170	7.03	20	
Bromodichloromethane		50.0	51.0	ug/kg	0.375	1.91	20	
Bromomethane		50.0	52.2	ug/kg	0.215	4.49	20	
2-Butanone		50.0	54.8	ug/kg	0.189	9.53	20	
n-Butylbenzene		50.0	54.3	ug/kg	2.79	8.52	20	
sec-Butylbenzene		50.0	54.9	ug/kg	3.40	9.80	20	
tert-Butylbenzene		50.0	54.6	ug/kg	0.550	9.26	20	
Carbon Disulfide		50.0	53.1	ug/kg	0.888	6.11	20	
Carbon Tetrachloride		50.0	50.8	ug/kg	0.408	1.51	20	
Dibromochloromethane		50.0	52.2	ug/kg	0.402	4.44	20	
Chloroethane		50.0	51.4	ug/kg	0.225	2.87	20	
2-Chlorotoluene		50.0	52.7	ug/kg	2.39	5.45	20	
4-Chlorotoluene		50.0	53.1	ug/kg	2.20	6.17	20	
1,2-Dibromo-3-Chloropropane		50.0	57.6	ug/kg	0.199	15.1	20	
1,2-Dibromoethane		50.0	54.3	ug/kg	0.329	8.68	20	
Dibromomethane		50.0	51.8	ug/kg	0.170	3.63	20	
1,2-Dichlorobenzene		50.0	52.8	ug/kg	1.45	5.70	20	
1,3-Dichlorobenzene		50.0	53.2	ug/kg	1.52	6.44	20	
1,4-Dichlorobenzene		50.0	52.2	ug/kg	1.52	4.44	20	
Dichlorodifluoromethane		50.0	47.7	ug/kg	0.438	4.70	20	
1,2-Dichloroethane		50.0	48.8	ug/kg	0.405	2.45	20	
cis-1,2-Dichloroethene		50.0	52.6	ug/kg	0.284	5.30	20	
trans-1,2-Dichloroethene		50.0	52.7	ug/kg	0.255	5.49	20	
1,3-Dichloropropane		50.0	51.9	ug/kg	0.556	3.71	20	
2,2-Dichloropropane		50.0	52.4	ug/kg	0.438	4.70	20	
cis-1,3-Dichloropropene		50.0	54.2	ug/kg	0.439	8.33	20	
trans-1,3-Dichloropropene		50.0	53.0	ug/kg	0.577	6.03	20	

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030861 Run Date: 03/23/2016 Sample ID: WG562074-02
Instrument ID: HPMS6 Run Time: 12:47 Method: 8260B
File ID: 6M137965 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG562075 Cal ID: HPMS6 - 26-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	52.8	ug/kg	0.366	5.69	20	
2-Hexanone		50.0	56.5	ug/kg	0.381	13.0	20	
Hexachlorobutadiene		50.0	54.8	ug/kg	0.623	9.63	20	
Isopropylbenzene		50.0	54.5	ug/kg	1.64	9.09	20	
p-Isopropyltoluene		50.0	56.2	ug/kg	2.87	12.3	20	
4-Methyl-2-Pentanone		50.0	59.4	ug/kg	0.139	18.8	20	
Methylene Chloride		50.0	50.7	ug/kg	0.267	1.30	20	
Naphthalene		50.0	60.3	ug/kg	2.76	20.7	20	*
n-Propylbenzene		50.0	54.4	ug/kg	3.69	8.80	20	
Styrene		50.0	55.3	ug/kg	1.06	10.6	20	
1,1,1,2-Tetrachloroethane		50.0	50.8	ug/kg	0.371	1.70	20	
Tetrachloroethene		50.0	54.1	ug/kg	0.377	8.17	20	
1,2,3-Trichlorobenzene		50.0	54.9	ug/kg	1.07	9.73	20	
1,2,4-Trichlorobenzene		50.0	55.6	ug/kg	1.11	11.2	20	
1,1,1-Trichloroethane		50.0	50.8	ug/kg	0.437	1.53	20	
1,1,2-Trichloroethane		50.0	52.6	ug/kg	0.311	5.26	20	
Trichloroethene		50.0	53.2	ug/kg	0.262	6.45	20	
Trichlorofluoromethane		50.0	48.3	ug/kg	0.500	3.42	20	
1,2,3-Trichloropropane		50.0	56.1	ug/kg	0.268	12.2	20	
1,2,4-Trimethylbenzene		50.0	54.3	ug/kg	2.76	8.69	20	
1,3,5-Trimethylbenzene		50.0	55.1	ug/kg	2.66	10.2	20	
o-Xylene		50.0	55.4	ug/kg	0.621	10.7	20	
m-,p-Xylene		100	105	ug/kg	0.626	5.14	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
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Report generated 03/25/2016 12:16

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16030861
Instrument ID: HPMS6
Workgroup (AAB#): WG561881

ICAL CCV Number: WG558920-08
CAL ID: HPMS6-26-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558920-08	NA	NA	237573	439950	607631
Upper Limit	NA	NA	475146	879900	1215262
Lower Limit	NA	NA	118787	219975	303816
L16030861-01	1.00	01	221948	414840	566348
L16030861-02	1.00	01	194004	376397	522721
L16030861-03	1.00	01	205242	401983	555754
L16030861-04	1.00	01	210645	415043	570669
WG561881-01	1.00	01	218601	414845	568180
WG561881-02	1.00	01	221382	411330	563138

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4689207
Report generated 03/25/2016 12:16

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16030861
Instrument ID: HPMS6
Workgroup (AAB#): WG562075

ICAL CCV Number: WG558920-08
CAL ID: HPMS6-26-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558920-08	NA	NA	237573	439950	607631
Upper Limit	NA	NA	475146	879900	1215262
Lower Limit	NA	NA	118787	219975	303816
L16030861-03	1.00	02	208071	399628	543112
L16030861-05	1.00	01	169378	370792	530731
L16030861-06	1.00	01	199403	391274	538576
L16030861-07	1.00	01	202516	391017	542135
L16030861-08	1.00	01	215736	415316	568224
L16030861-09	1.00	01	215078	409079	548404
L16030861-10	1.00	01	223093	414551	553814
WG562075-01	1.00	01	220763	420780	568472
WG562075-02	1.00	01	231205	431283	579730

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4689207
Report generated 03/25/2016 12:16

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16030861
Instrument ID: HPMS6
Workgroup (AAB#): WG561881

ICAL CCV Number: WG558920-08
CAL ID: HPMS6-26-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558920-08	NA	NA	19.6	16.01	11.51
Upper Limit	NA	NA	20.1	16.51	12.01
Lower Limit	NA	NA	19.1	15.51	11.01
L16030861-01	1.00	01	19.6	16.01	11.51
L16030861-02	1.00	01	19.59	16.01	11.51
L16030861-03	1.00	01	19.6	16.01	11.51
L16030861-04	1.00	01	19.59	16.01	11.51
WG561881-01	1.00	01	19.6	16.01	11.52
WG561881-02	1.00	01	19.6	16.01	11.51

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4689208
Report generated: 03/25/2016 12:16

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16030861
Instrument ID: HPMS6
Workgroup (AAB#): WG562075

ICAL CCV Number: WG558920-08
CAL ID: HPMS6-26-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558920-08	NA	NA	19.6	16.01	11.51
Upper Limit	NA	NA	20.1	16.51	12.01
Lower Limit	NA	NA	19.1	15.51	11.01
L16030861-03	1.00	02	19.59	16.01	11.51
L16030861-05	1.00	01	19.6	16.01	11.52
L16030861-06	1.00	01	19.59	16.01	11.51
L16030861-07	1.00	01	19.59	16.02	11.51
L16030861-08	1.00	01	19.59	16.01	11.51
L16030861-09	1.00	01	19.6	16.01	11.52
L16030861-10	1.00	01	19.59	16.01	11.51
WG562075-01	1.00	01	19.59	16.01	11.51
WG562075-02	1.00	01	19.59	16.01	11.51

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4689208
Report generated: 03/25/2016 12:16

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032216\6M137955.D Vial: 18
Acq On : 22 Mar 2016 20:49 Operator: TMB
Sample : L16030861-01 8260 4.72g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 08:53:25 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	566348	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	414840	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	221948	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	142374	46.8629 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.72%		
43) 1,2-Dichloroethane-d4	11.06	65	177109	44.8993 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 89.80%		
58) Toluene-d8	13.80	98	499617	50.6557 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.32%		
80) p-Bromofluorobenzene	17.79	95	204911	50.2637 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 100.52%		

Target Compounds

					Qvalue
13) Acetone	6.61	43	2295	Below Cal #	48
15) Tert-Butyl Alcohol	6.95	59	211	0.4563 ug/L #	57
36) Tetrahydrofuran	10.30	42	2322	Below Cal #	55
60) Ethyl Methacrylate	13.80	69	1016	0.2702 ug/L	67

(#) = qualifier out of range (m) = manual integration
6M137955.D 826_SL.M Wed Mar 23 08:53:26 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032216\6M137955.D Vial: 18
Acq On : 22 Mar 2016 20:49 Operator: TMB
Sample : L16030861-01 8260 4.72g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 8:53 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

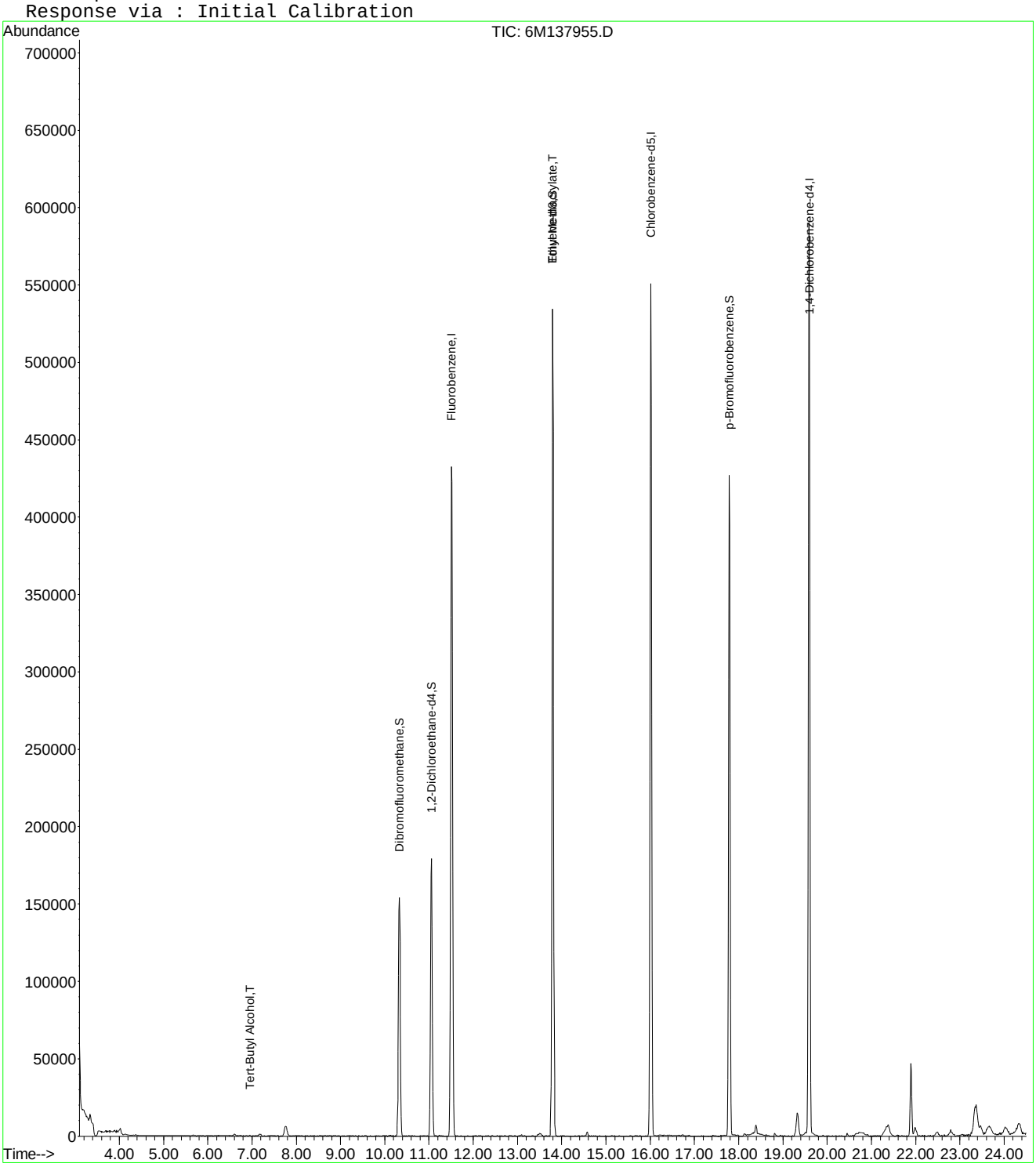

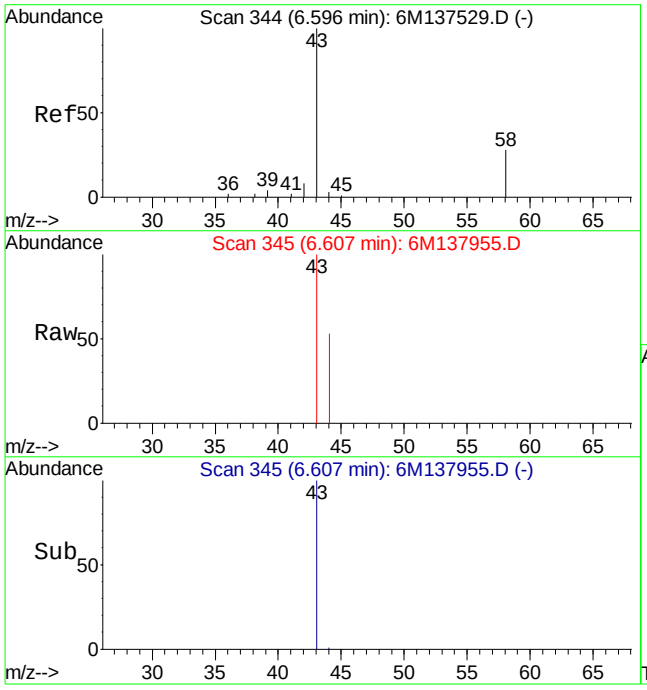

#13
Acetone
Concen: Below Cal
RT: 6.61 min Scan# 345
Delta R.T. 0.02 min
Lab File: 6M137955.D
Acq: 22 Mar 2016 20:49

Tgt Ion: 43 Resp: 2295

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.1	37.7#

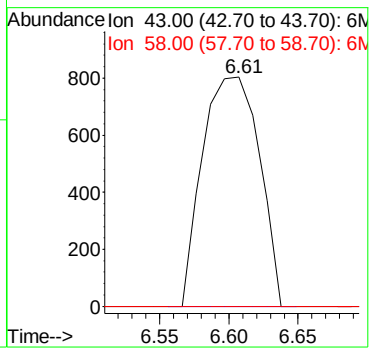

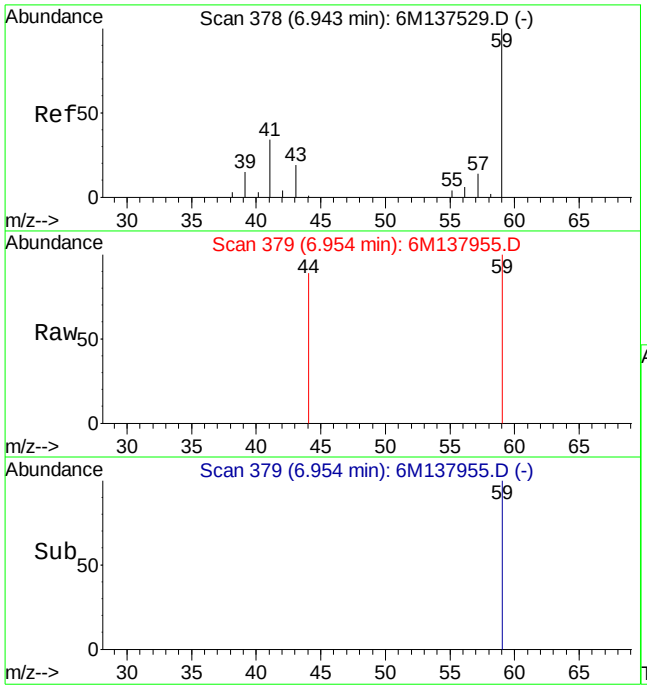

#15
Tert-Butyl Alcohol
Concen: 0.46 ug/L
RT: 6.95 min Scan# 379
Delta R.T. 0.02 min
Lab File: 6M137955.D
Acq: 22 Mar 2016 20:49

Tgt Ion: 59 Resp: 211

Ion	Ratio	Lower	Upper
59	100		
41	0.0	15.0	35.0#
57	0.0	5.9	13.9#

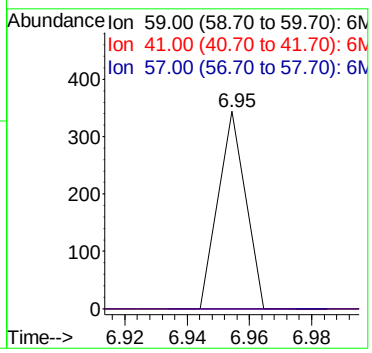

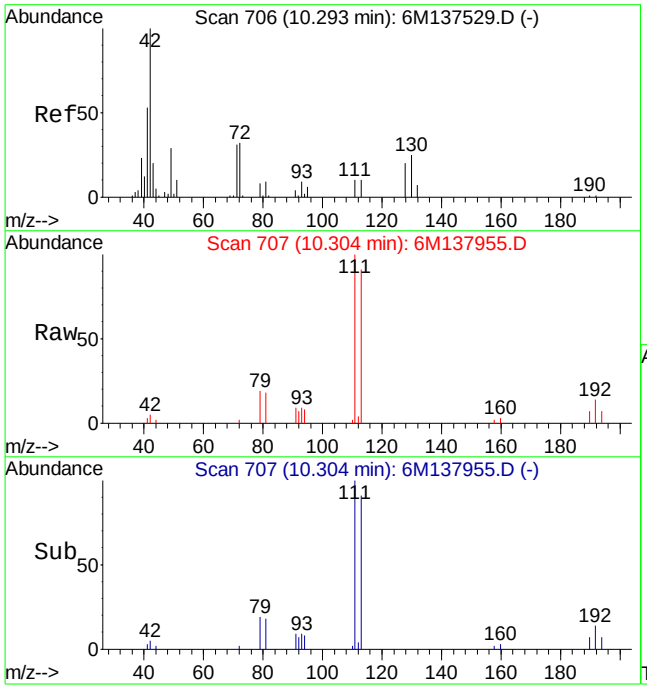

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.30 min Scan# 707
Delta R.T. 0.01 min
Lab File: 6M137955.D
Acq: 22 Mar 2016 20:49

Tgt Ion: 42 Resp: 2322

Ion	Ratio	Lower	Upper
42	100		
72	17.3	21.0	49.0#
71	0.0	20.6	48.2#

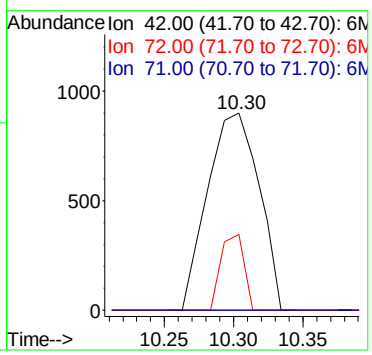

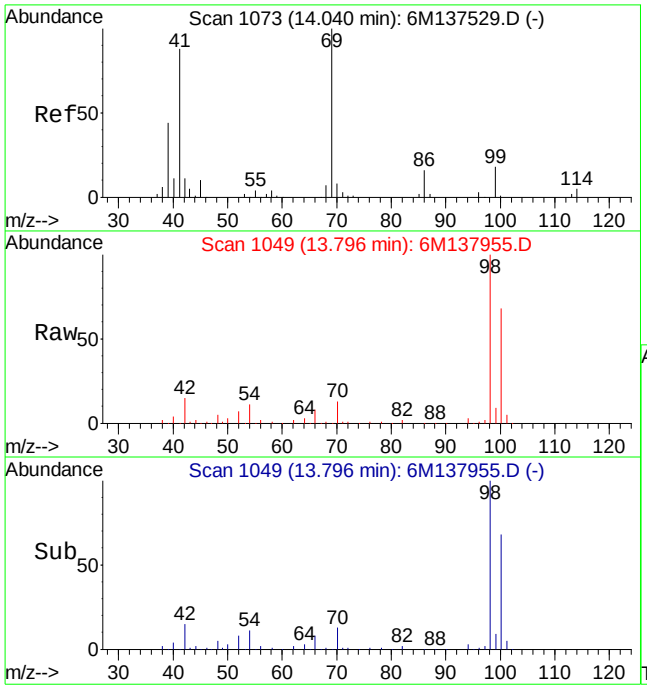

#60
Ethyl Methacrylate
Concen: 0.27 ug/L
RT: 13.80 min Scan# 1049
Delta R.T. -0.24 min
Lab File: 6M137955.D
Acq: 22 Mar 2016 20:49

Tgt Ion: 69 Resp: 1016

Ion	Ratio	Lower	Upper
69	100		
41	114.0	50.6	118.2

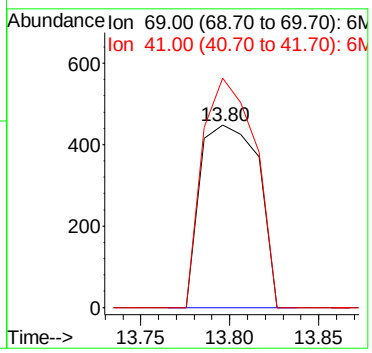

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032216\6M137954.D Vial: 17
Acq On : 22 Mar 2016 20:16 Operator: TMB
Sample : L16030861-02 8260 4.81g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 08:53:24 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	522721	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	376397	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	194004	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.34	111	128732	45.9091 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 91.82%		
43) 1,2-Dichloroethane-d4	11.05	65	156020	42.8541 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 85.70%		
58) Toluene-d8	13.80	98	461594	51.5805 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 103.16%		
80) p-Bromofluorobenzene	17.79	95	184147	51.6767 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 103.36%		

Target Compounds					Qvalue
13) Acetone	6.59	43	9188	4.0159 ug/L #	1
29) 2-Butanone	9.45	43	457	0.2529 ug/L #	56
36) Tetrahydrofuran	10.30	42	2961	0.3230 ug/L #	67
86) 2-Chlorotoluene	18.30	91	20881	2.3745 ug/L #	49
87) 4-Chlorotoluene	18.30	91	20881	2.5969 ug/L #	47
90) 1,2,4-Trimethylbenzene	18.82	105	3077	0.3120 ug/L	77

(#) = qualifier out of range (m) = manual integration
6M137954.D 826_SL.M Wed Mar 23 08:53:25 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032216\6M137954.D Vial: 17
Acq On : 22 Mar 2016 20:16 Operator: TMB
Sample : L16030861-02 8260 4.81g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 8:53 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

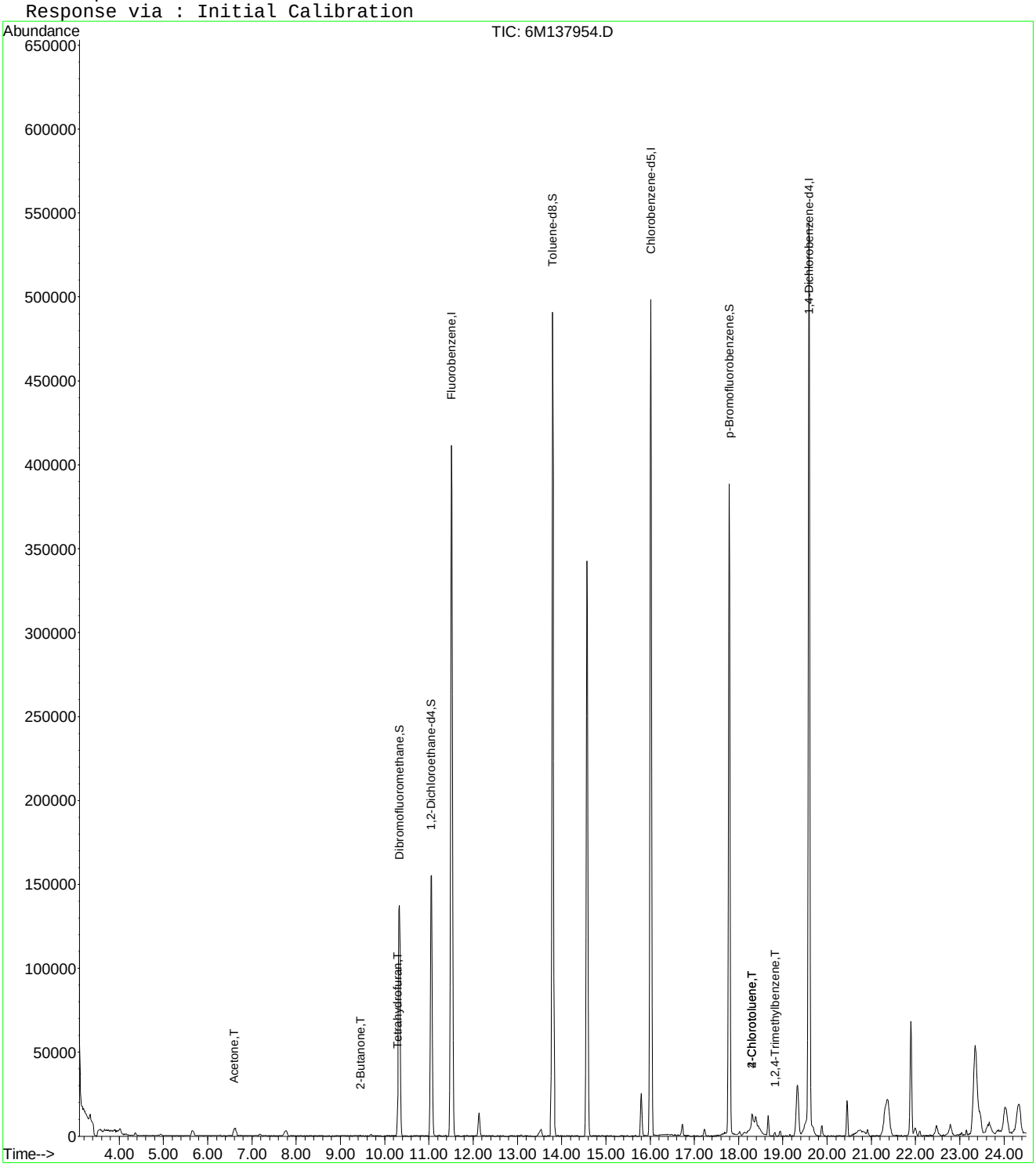

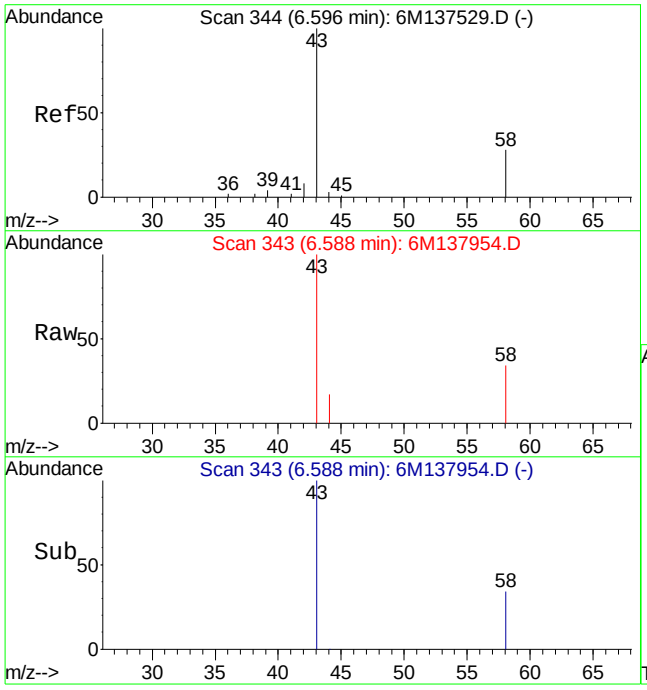

#13
Acetone
Concen: 4.02 ug/L
RT: 6.59 min Scan# 343
Delta R.T. 0.00 min
Lab File: 6M137954.D
Acq: 22 Mar 2016 20:16

Tgt Ion: 43 Resp: 9188

Ion	Ratio	Lower	Upper
43	100		
58	93.6	16.1	37.7#

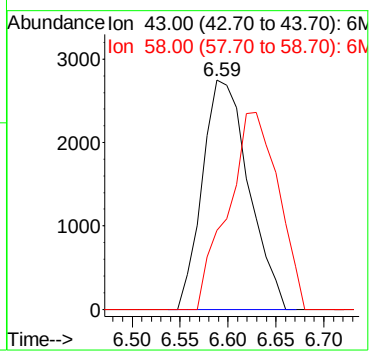

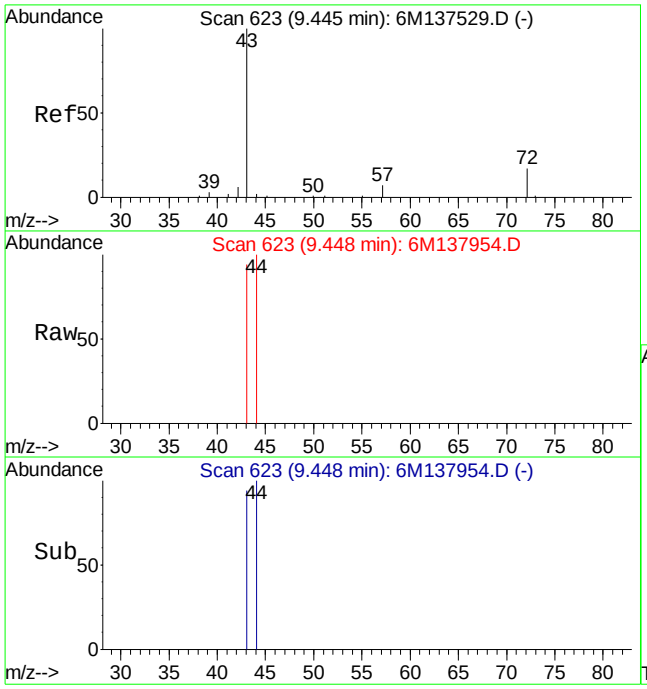

#29
2-Butanone
Concen: 0.25 ug/L
RT: 9.45 min Scan# 623
Delta R.T. 0.00 min
Lab File: 6M137954.D
Acq: 22 Mar 2016 20:16

Tgt Ion: 43 Resp: 457

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.2	28.4#

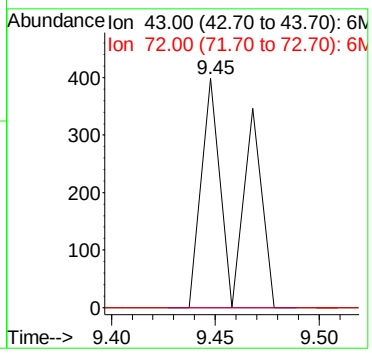

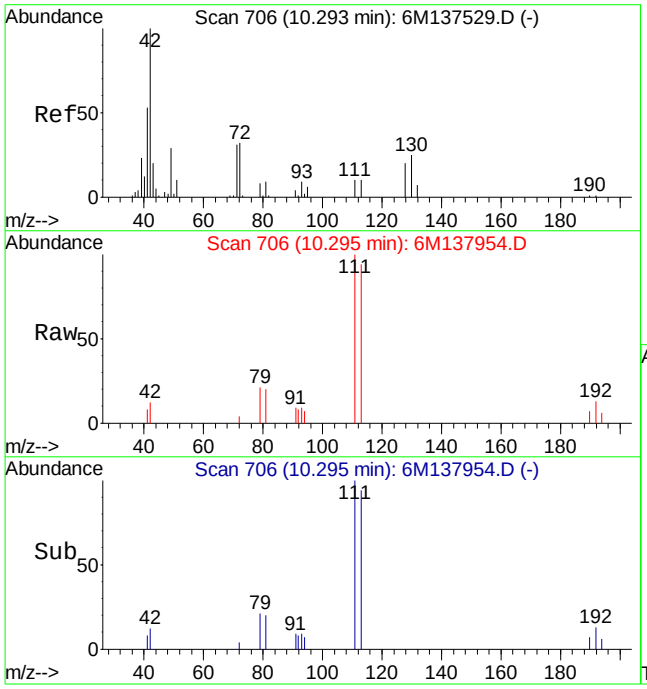

#36
Tetrahydrofuran
Concen: 0.32 ug/L
RT: 10.30 min Scan# 706
Delta R.T. 0.00 min
Lab File: 6M137954.D
Acq: 22 Mar 2016 20:16

Tgt Ion: 42 Resp: 2961

Ion	Ratio	Lower	Upper
42	100		
72	14.4	21.0	49.0#
71	16.3	20.6	48.2#

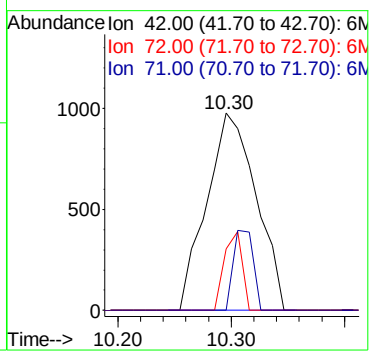

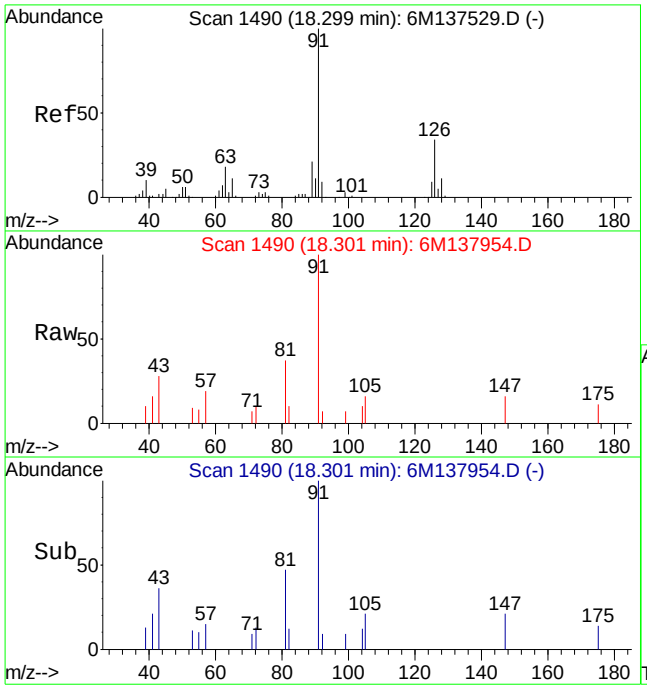

#86
2-Chlorotoluene
Concen: 2.37 ug/L
RT: 18.30 min Scan# 1490
Delta R.T. 0.00 min
Lab File: 6M137954.D
Acq: 22 Mar 2016 20:16

Tgt Ion: 91 Resp: 20881

Ion	Ratio	Lower	Upper
91	100		
126	0.0	18.5	43.3#
63	0.0	11.6	27.2#

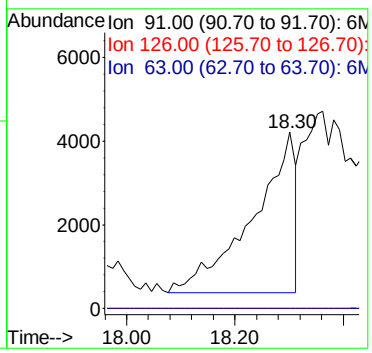

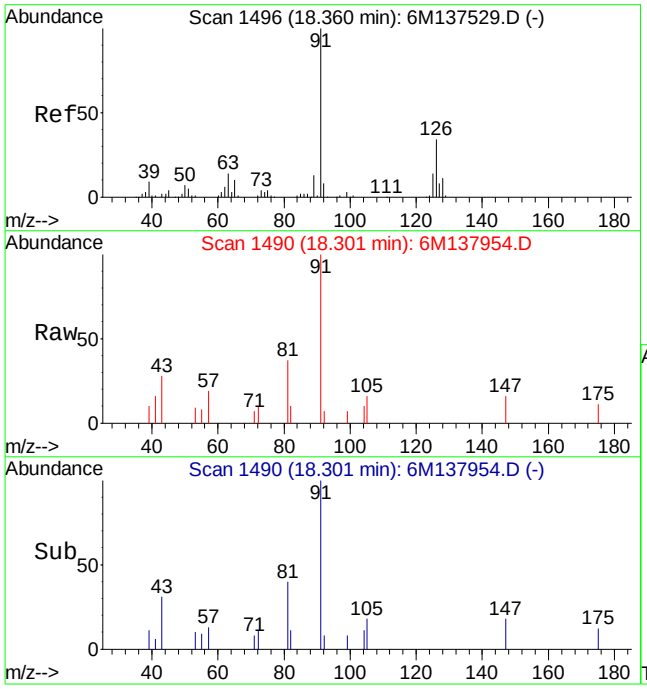

#87
4-Chlorotoluene
Concen: 2.60 ug/L
RT: 18.30 min Scan# 1490
Delta R.T. -0.05 min
Lab File: 6M137954.D
Acq: 22 Mar 2016 20:16

Tgt Ion: 91 Resp: 20881

Ion	Ratio	Lower	Upper
91	100		
126	0.0	21.0	49.0#
63	0.0	8.8	20.6#

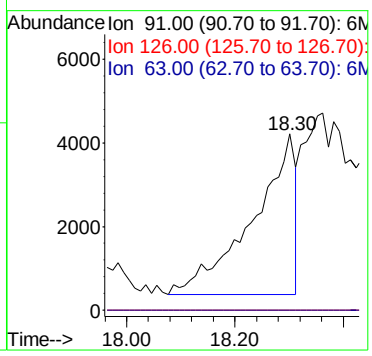

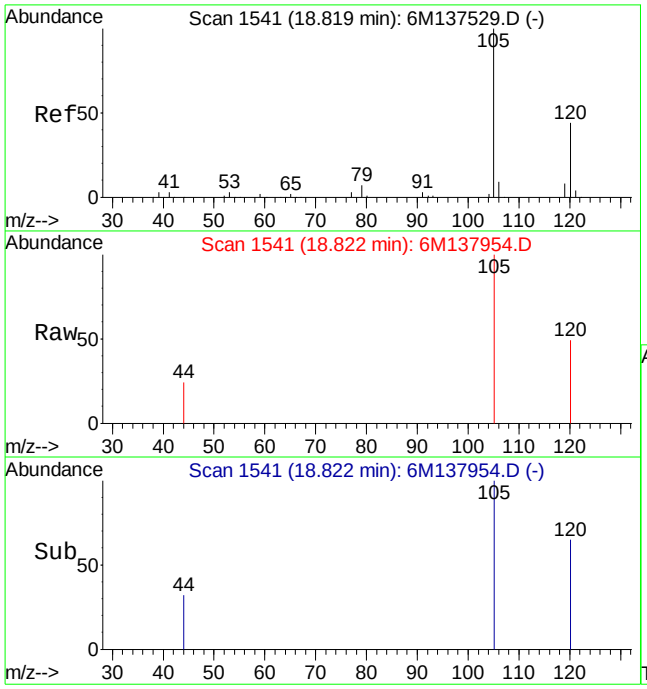

#90
1,2,4-Trimethylbenzene
Concen: 0.31 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. 0.00 min
Lab File: 6M137954.D
Acq: 22 Mar 2016 20:16

Tgt Ion:105 Resp: 3077

Ion	Ratio	Lower	Upper
105	100		
120	40.4	34.3	79.9

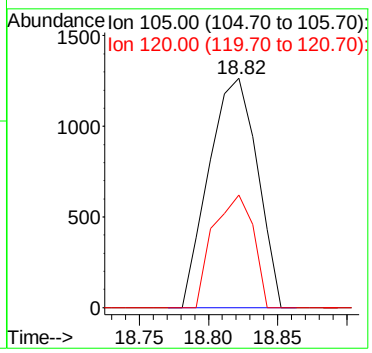

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032216\6M137953.D Vial: 16
Acq On : 22 Mar 2016 19:43 Operator: TMB
Sample : L16030861-03 8260 4.70g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 08:53:23 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	555754	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	401983	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	205242	50.00 ug/L	0.01

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	137493	46.1190 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 92.24%		
43) 1,2-Dichloroethane-d4	11.06	65	166011	42.8880 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 85.78%		
58) Toluene-d8	13.80	98	490202	51.2907 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 102.58%		
80) p-Bromofluorobenzene	17.79	95	198462	52.6443 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 105.28%		

Target Compounds

					Qvalue
13) Acetone	6.60	43	14141	7.7793 ug/L #	71
15) Tert-Butyl Alcohol	6.96	59	888	1.9568 ug/L #	57
29) 2-Butanone	9.45	43	1492	0.7767 ug/L #	56
36) Tetrahydrofuran	10.29	42	3739	0.7913 ug/L #	76
60) Ethyl Methacrylate	13.80	69	996	0.2734 ug/L #	56
83) n-Propylbenzene	17.82	91	28811	2.0670 ug/L #	58
86) 2-Chlorotoluene	18.37	91	223783	24.0540 ug/L #	49
87) 4-Chlorotoluene	18.37	91	224946	26.4436 ug/L #	47
90) 1,2,4-Trimethylbenzene	18.82	105	8340	0.7993 ug/L	74

(#) = qualifier out of range (m) = manual integration
6M137953.D 826_SL.M Wed Mar 23 08:53:23 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032216\6M137953.D Vial: 16
Acq On : 22 Mar 2016 19:43 Operator: TMB
Sample : L16030861-03 8260 4.70g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 8:53 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

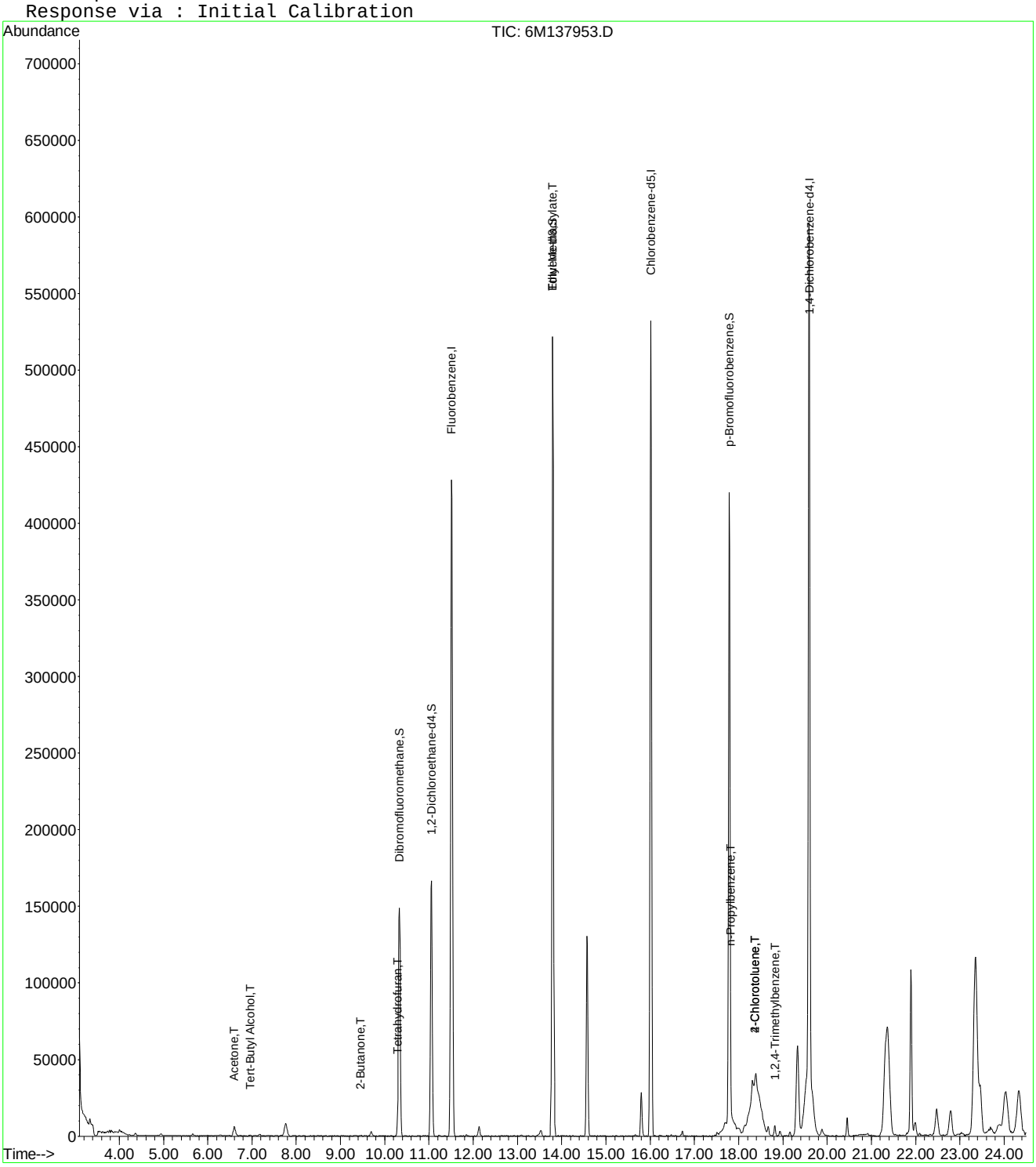

6M137953.D 826_SL.M Wed Mar 23 08:53:23 2016 Page 2

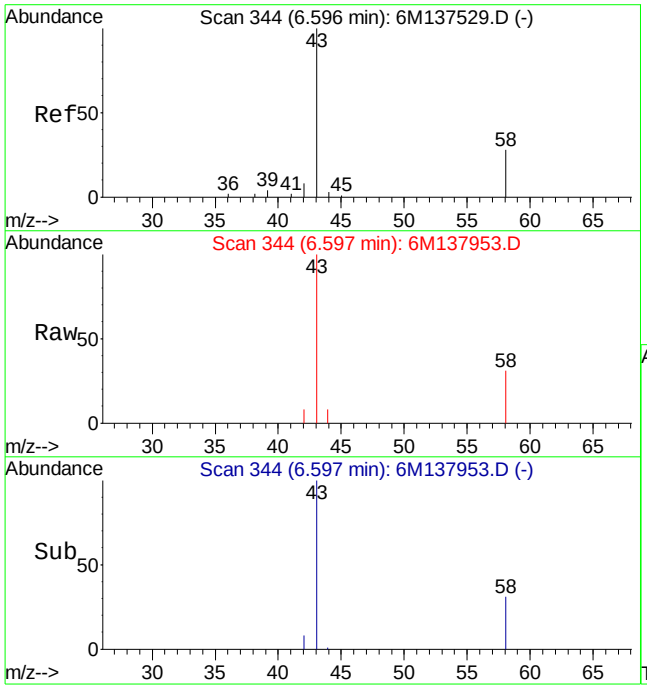

#13
Acetone
Concen: 7.78 ug/L
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137953.D
Acq: 22 Mar 2016 19:43

Tgt Ion: 43 Resp: 14141

Ion	Ratio	Lower	Upper
43	100		
58	41.8	16.1	37.7#

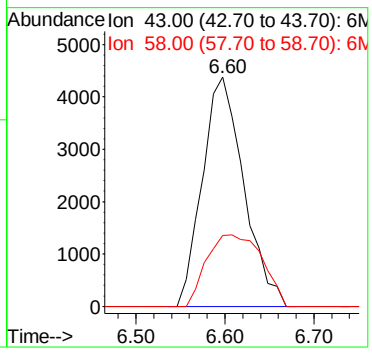

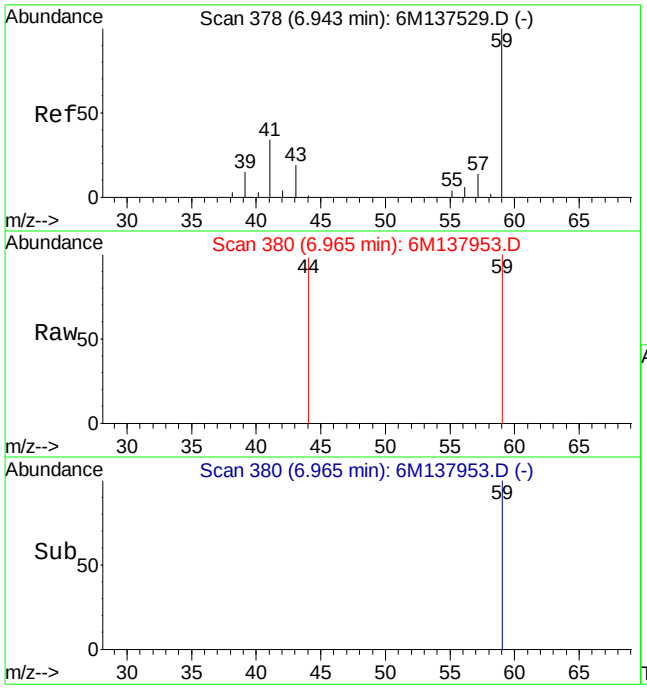

#15
Tert-Butyl Alcohol
Concen: 1.96 ug/L
RT: 6.96 min Scan# 380
Delta R.T. 0.03 min
Lab File: 6M137953.D
Acq: 22 Mar 2016 19:43

Tgt Ion: 59 Resp: 888

Ion	Ratio	Lower	Upper
59	100		
41	0.0	15.0	35.0#
57	0.0	5.9	13.9#

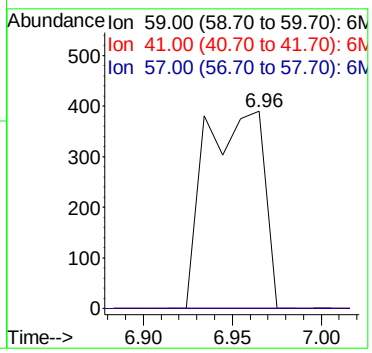

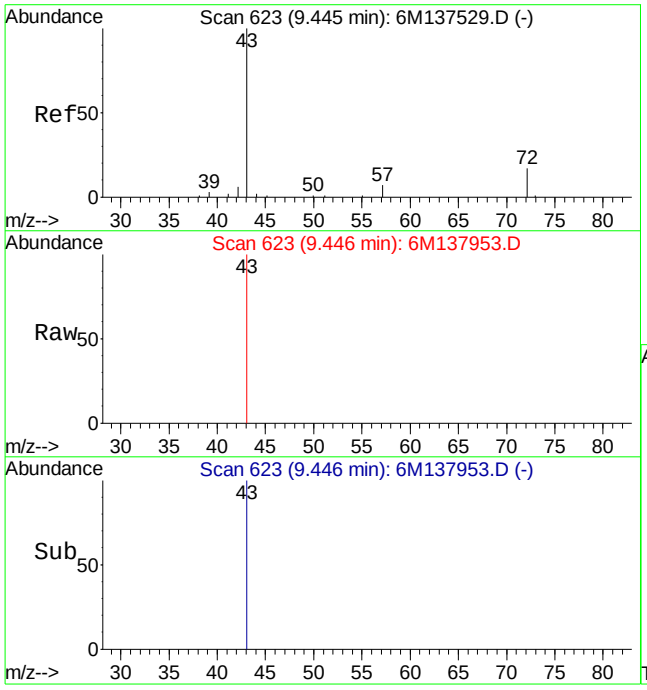

#29
2-Butanone
Concen: 0.78 ug/L
RT: 9.45 min Scan# 623
Delta R.T. 0.00 min
Lab File: 6M137953.D
Acq: 22 Mar 2016 19:43

Tgt Ion: 43 Resp: 1492

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.2	28.4#

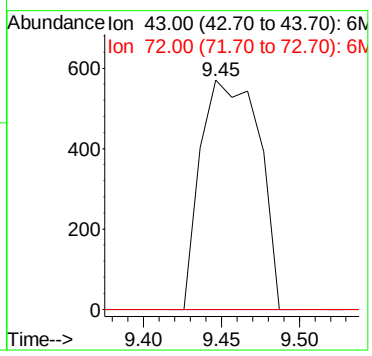

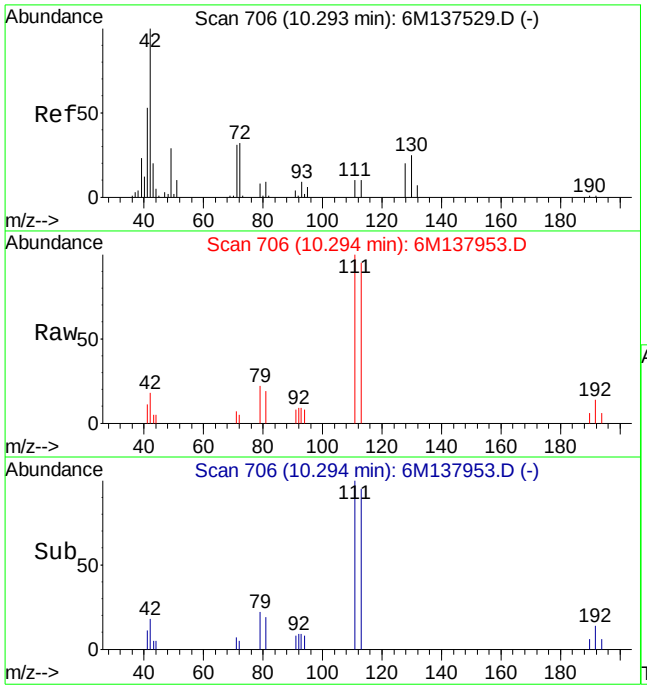

#36
Tetrahydrofuran
Concen: 0.79 ug/L
RT: 10.29 min Scan# 706
Delta R.T. 0.00 min
Lab File: 6M137953.D
Acq: 22 Mar 2016 19:43

Tgt Ion: 42 Resp: 3739

Ion	Ratio	Lower	Upper
42	100		
72	14.2	21.0	49.0#
71	27.5	20.6	48.2

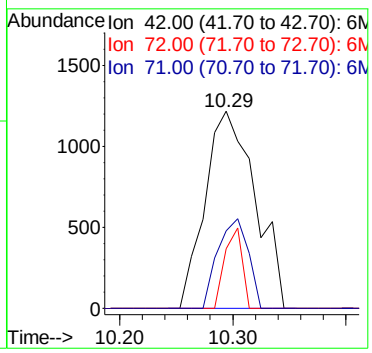

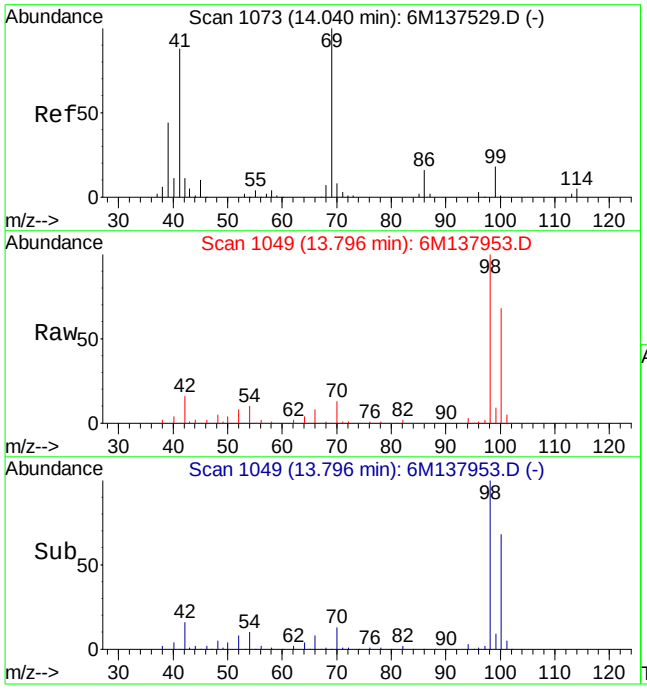

#60
Ethyl Methacrylate
Concen: 0.27 ug/L
RT: 13.80 min Scan# 1049
Delta R.T. -0.23 min
Lab File: 6M137953.D
Acq: 22 Mar 2016 19:43

Tgt Ion: 69 Resp: 996

Ion	Ratio	Lower	Upper
69	100		
41	124.0	50.6	118.2#

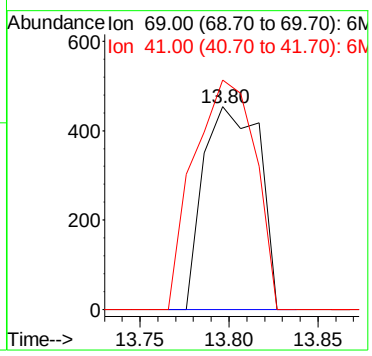

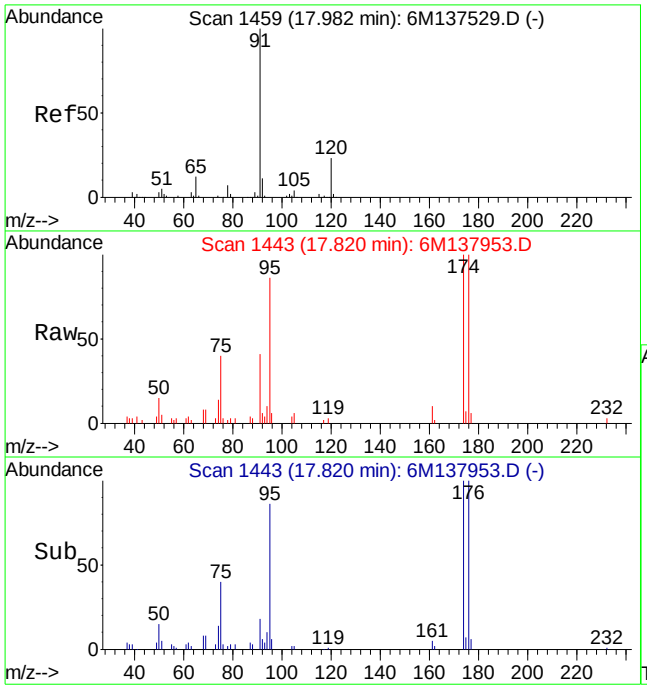

#83
n-Propylbenzene
Concen: 2.07 ug/L
RT: 17.82 min Scan# 1443
Delta R.T. -0.16 min
Lab File: 6M137953.D
Acq: 22 Mar 2016 19:43

Tgt Ion: 91 Resp: 28811

Ion	Ratio	Lower	Upper
91	100		
120	0.0	13.8	32.2#
105	4.6	2.1	4.9

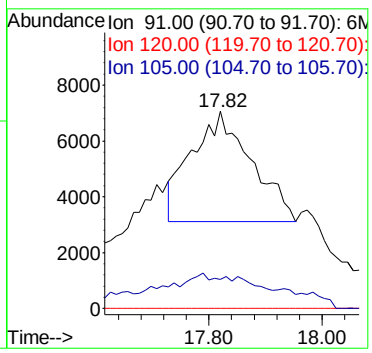

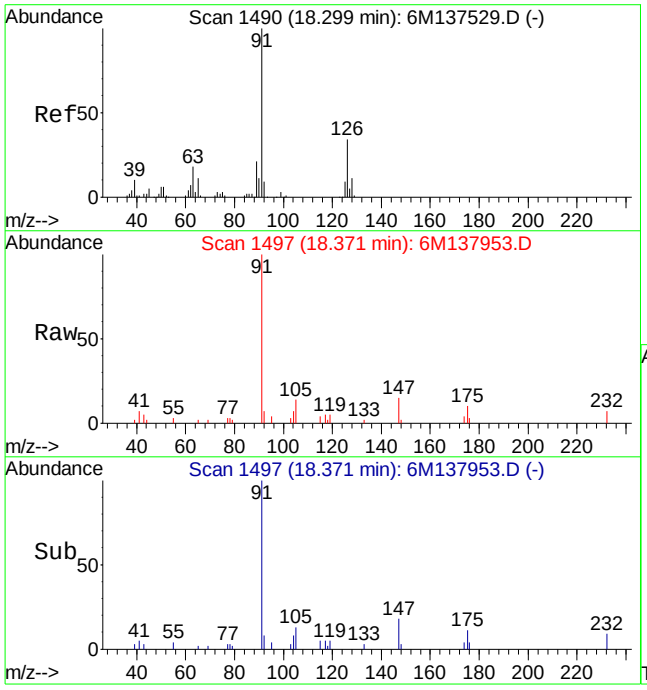

#86
2-Chlorotoluene
Concen: 24.05 ug/L
RT: 18.37 min Scan# 1497
Delta R.T. 0.07 min
Lab File: 6M137953.D
Acq: 22 Mar 2016 19:43

Tgt Ion: 91 Resp: 223783

Ion	Ratio	Lower	Upper
91	100		
126	0.0	18.5	43.3#
63	0.0	11.6	27.2#

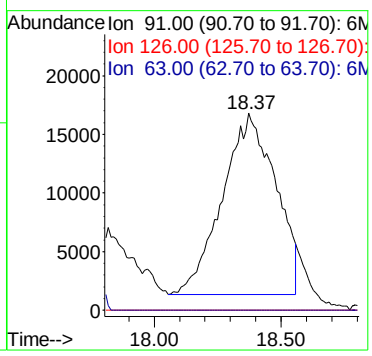

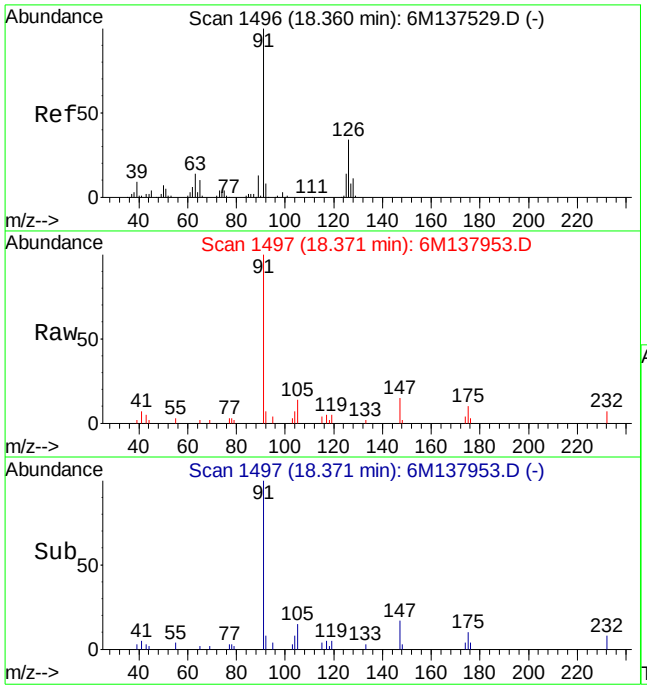

#87
4-Chlorotoluene
Concen: 26.44 ug/L
RT: 18.37 min Scan# 1497
Delta R.T. 0.02 min
Lab File: 6M137953.D
Acq: 22 Mar 2016 19:43

Tgt Ion: 91 Resp: 224946

Ion	Ratio	Lower	Upper
91	100		
126	0.0	21.0	49.0#
63	0.0	8.8	20.6#

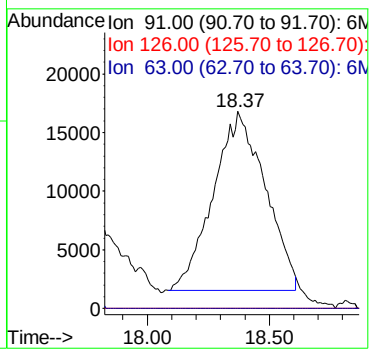

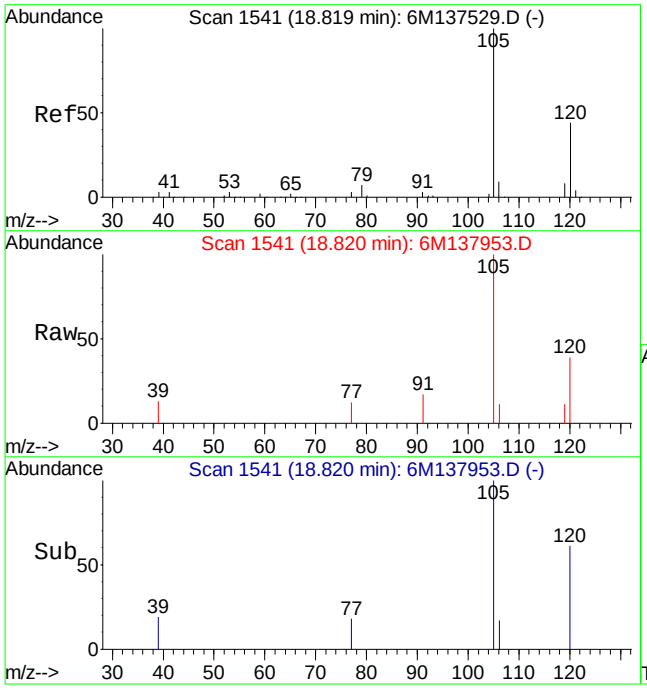

#90
1,2,4-Trimethylbenzene
Concen: 0.80 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. 0.00 min
Lab File: 6M137953.D
Acq: 22 Mar 2016 19:43

Tgt Ion:105 Resp: 8340

Ion	Ratio	Lower	Upper
105	100		
120	38.1	34.3	79.9

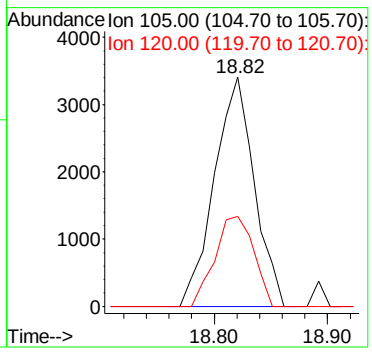

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137974.D Vial: 12
Acq On : 23 Mar 2016 17:43 Operator: TMB
Sample : L16030861-03 8260 5.04g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 08:29:35 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	543112	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	399628	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	208071	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.34	111	139279	47.8055 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.62%		
43) 1,2-Dichloroethane-d4	11.05	65	170752	45.1397 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 90.28%		
58) Toluene-d8	13.80	98	480831	50.6067 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.22%		
80) p-Bromofluorobenzene	17.79	95	195703	51.2067 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.42%		

Target Compounds

					Qvalue
13) Acetone	6.60	43	10656	4.9932 ug/L #	79
15) Tert-Butyl Alcohol	6.95	59	2148	4.8435 ug/L #	57
29) 2-Butanone	9.68	43	672	0.3580 ug/L #	56
60) Ethyl Methacrylate	13.81	69	970	0.2678 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M137974.D 826_SL.M Thu Mar 24 08:29:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137974.D Vial: 12
Acq On : 23 Mar 2016 17:43 Operator: TMB
Sample : L16030861-03 8260 5.04g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 8:29 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

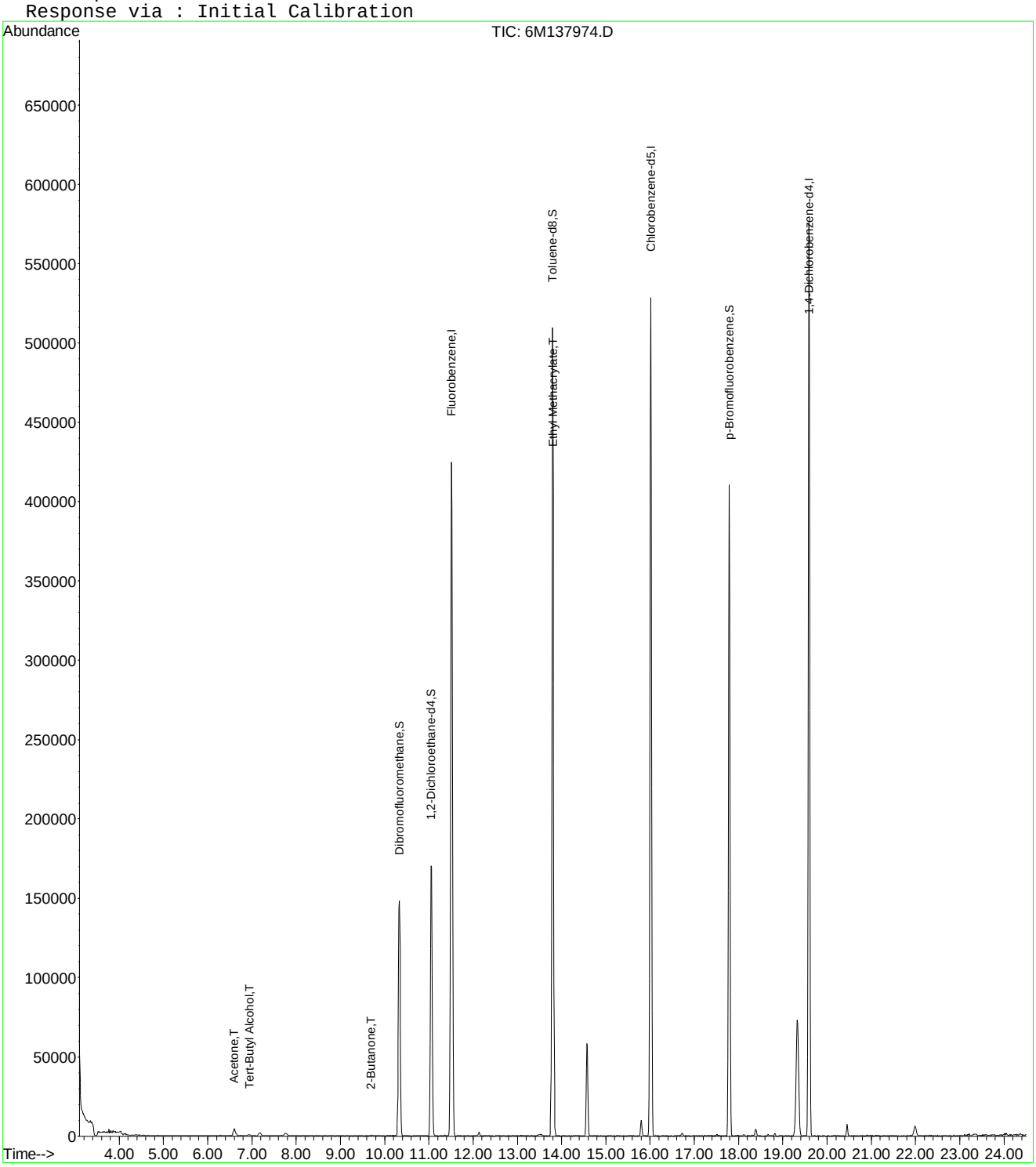

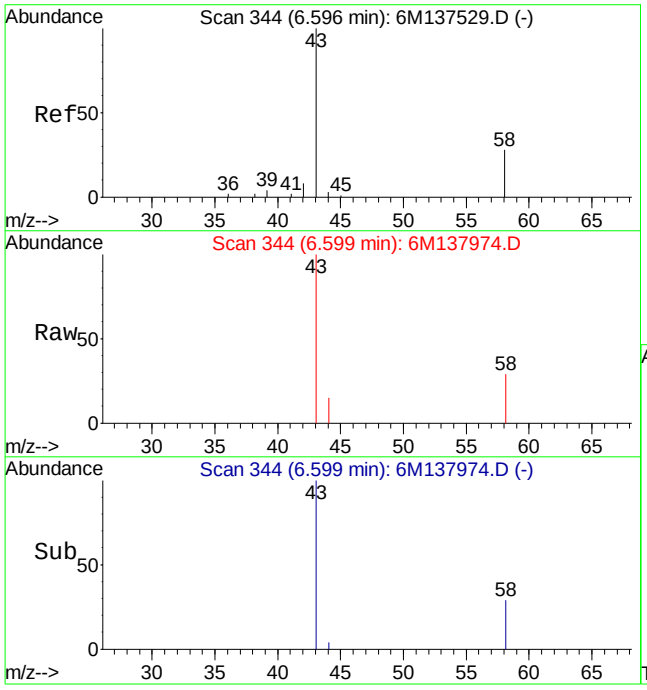

#13
Acetone
Concen: 4.99 ug/L
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137974.D
Acq: 23 Mar 2016 17:43

Tgt Ion: 43 Resp: 10656

Ion	Ratio	Lower	Upper
43	100		
58	38.0	16.1	37.7#

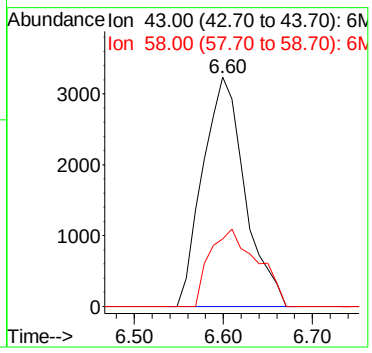

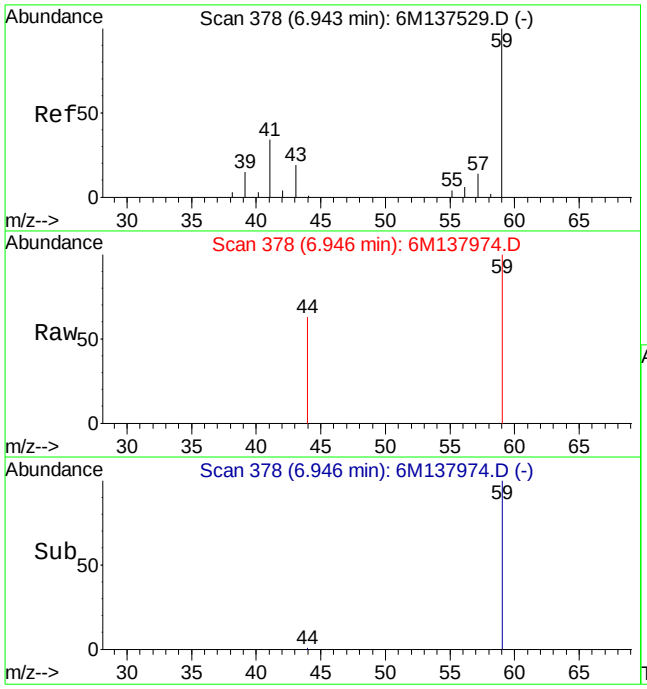

#15
Tert-Butyl Alcohol
Concen: 4.84 ug/L
RT: 6.95 min Scan# 378
Delta R.T. 0.01 min
Lab File: 6M137974.D
Acq: 23 Mar 2016 17:43

Tgt Ion: 59 Resp: 2148

Ion	Ratio	Lower	Upper
59	100		
41	0.0	15.0	35.0#
57	0.0	5.9	13.9#

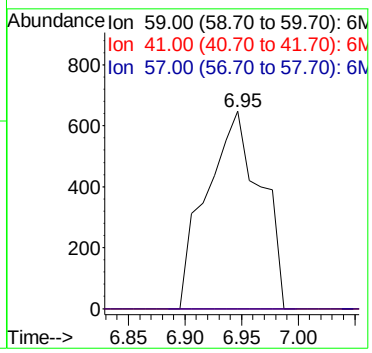

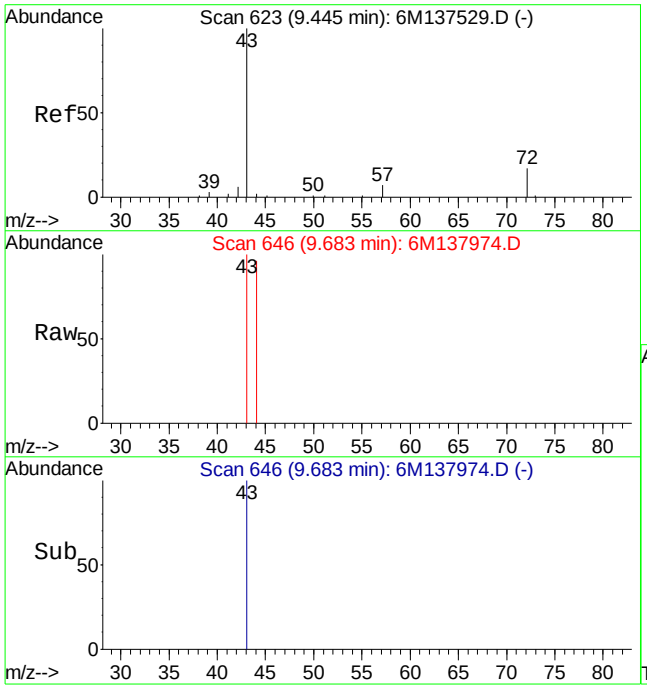

#29
2-Butanone
Concen: 0.36 ug/L
RT: 9.68 min Scan# 646
Delta R.T. 0.24 min
Lab File: 6M137974.D
Acq: 23 Mar 2016 17:43

Tgt Ion: 43 Resp: 672

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.2	28.4#

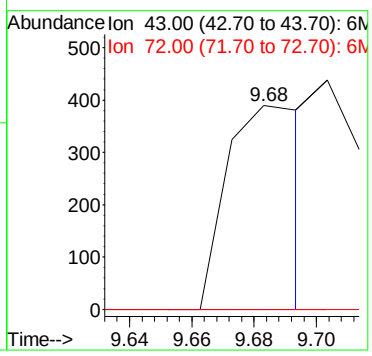

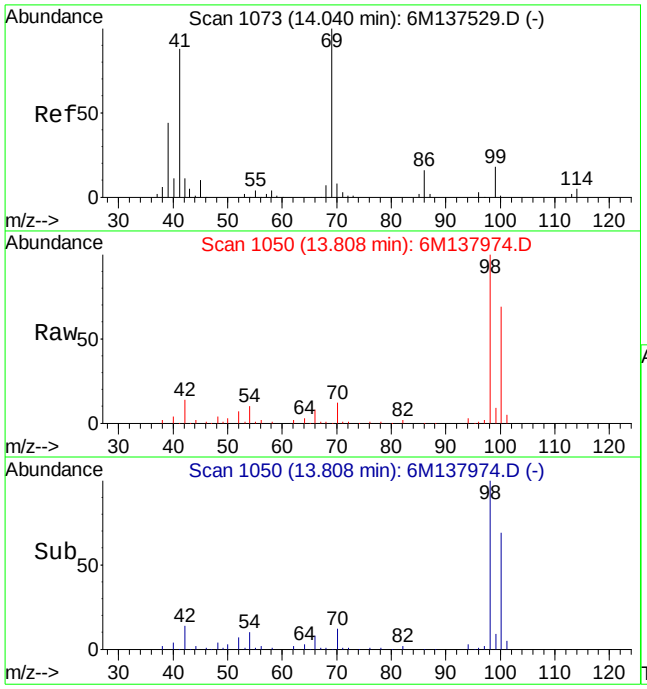

#60
Ethyl Methacrylate
Concen: 0.27 ug/L
RT: 13.81 min Scan# 1050
Delta R.T. -0.22 min
Lab File: 6M137974.D
Acq: 23 Mar 2016 17:43

Tgt Ion: 69 Resp: 970

Ion	Ratio	Lower	Upper
69	100		
41	81.2	50.6	118.2

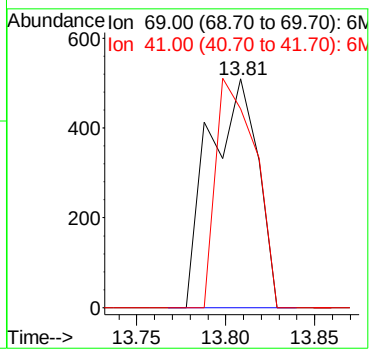

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032216\6M137952.D Vial: 15
Acq On : 22 Mar 2016 19:09 Operator: TMB
Sample : L16030861-04 8260 5.10g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 08:53:22 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	570669	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	415043	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	210645	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	142533	46.5600 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.12%		
43) 1,2-Dichloroethane-d4	11.06	65	173846	43.7384 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 87.48%		
58) Toluene-d8	13.80	98	504346	51.1101 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 102.22%		
80) p-Bromofluorobenzene	17.79	95	203984	52.7212 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 105.44%		

Target Compounds

					Qvalue
13) Acetone	6.59	43	11829	5.5232 ug/L #	1
15) Tert-Butyl Alcohol	6.94	59	203	0.4356 ug/L #	57
29) 2-Butanone	9.46	43	1020	0.5171 ug/L #	56
36) Tetrahydrofuran	10.30	42	4271	1.1245 ug/L #	79
60) Ethyl Methacrylate	13.81	69	1066	0.2834 ug/L #	23
82) trans-1,4-Dichloro-2-Buten	18.02	53	422	0.3474 ug/L #	1
83) n-Propylbenzene	17.80	91	44794	3.1313 ug/L #	58
86) 2-Chlorotoluene	18.39	91	134424	14.0784 ug/L #	49
87) 4-Chlorotoluene	18.39	91	138556	15.8702 ug/L #	47
90) 1,2,4-Trimethylbenzene	18.81	105	5024	0.4692 ug/L	74

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032216\6M137952.D Vial: 15
Acq On : 22 Mar 2016 19:09 Operator: TMB
Sample : L16030861-04 8260 5.10g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 8:53 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

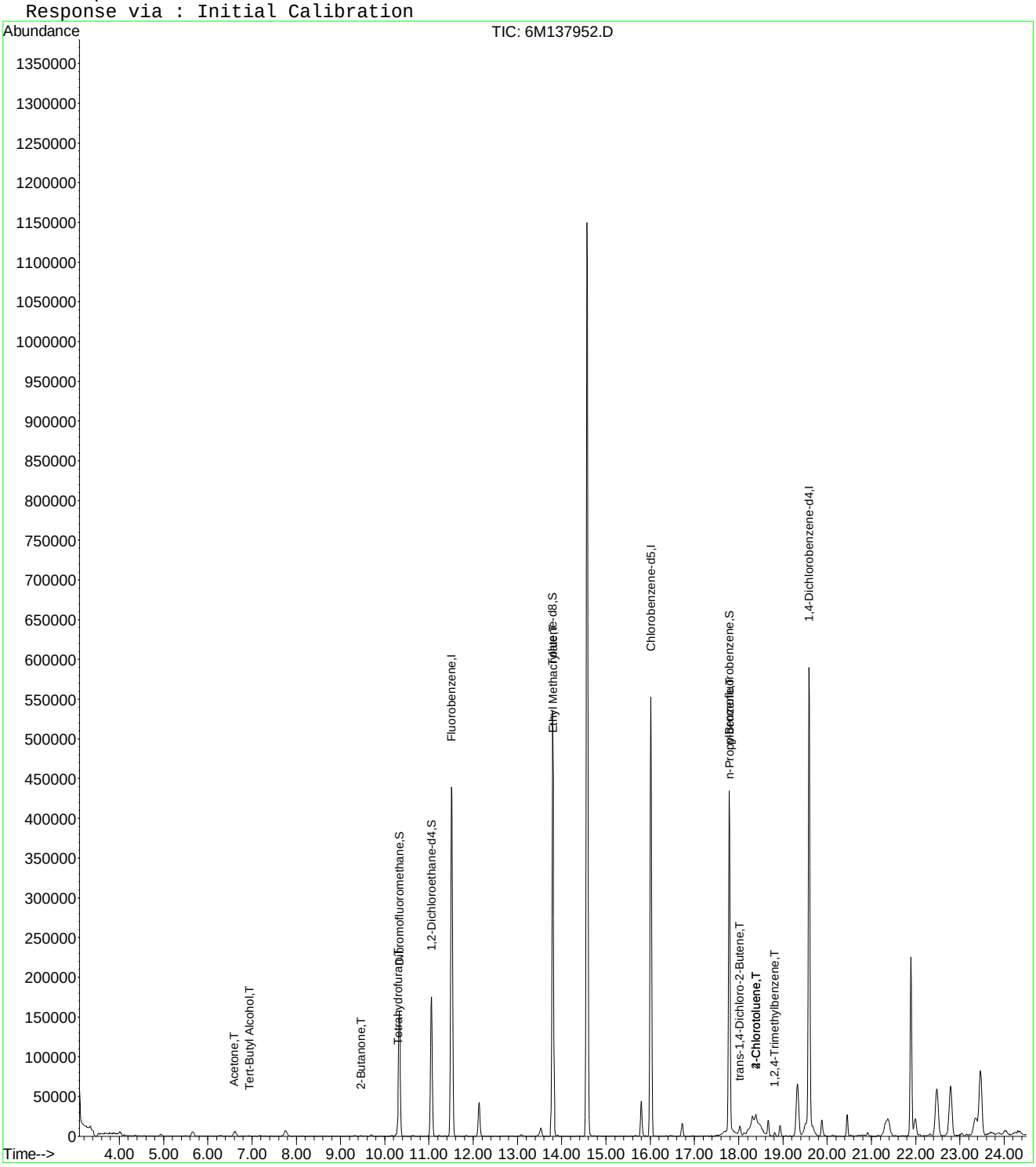

6M137952.D 826_SL.M Wed Mar 23 08:53:22 2016 Page 2

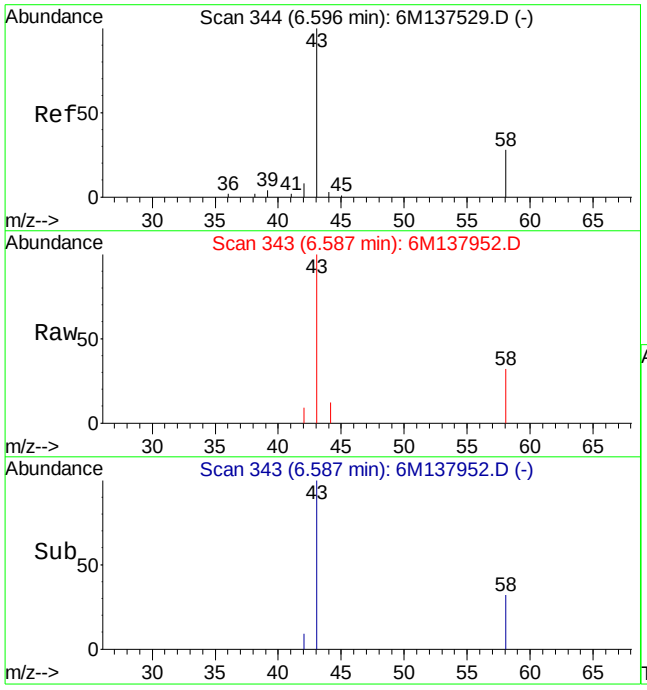

#13
Acetone
Concen: 5.52 ug/L
RT: 6.59 min Scan# 343
Delta R.T. 0.00 min
Lab File: 6M137952.D
Acq: 22 Mar 2016 19:09

Tgt Ion: 43 Resp: 11829

Ion	Ratio	Lower	Upper
43	100		
58	78.1	16.1	37.7#

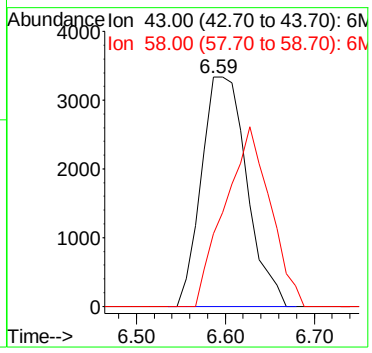

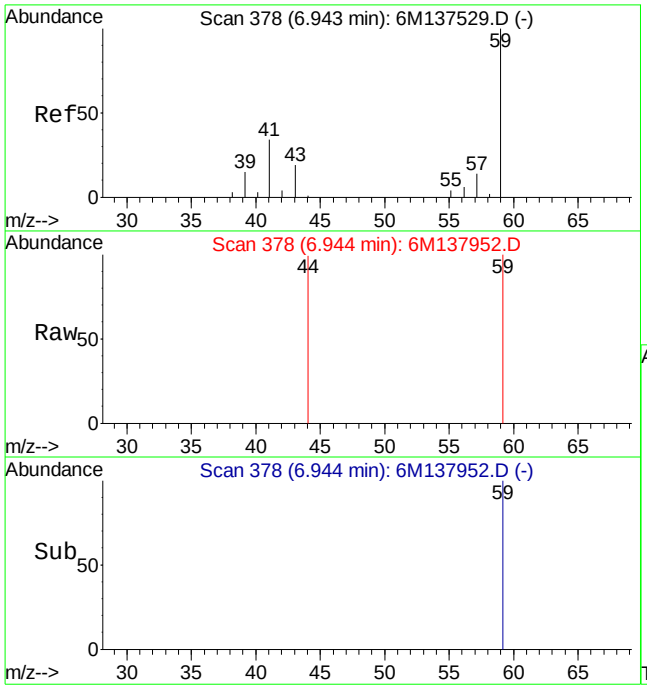

#15
Tert-Butyl Alcohol
Concen: 0.44 ug/L
RT: 6.94 min Scan# 378
Delta R.T. 0.01 min
Lab File: 6M137952.D
Acq: 22 Mar 2016 19:09

Tgt Ion: 59 Resp: 203

Ion	Ratio	Lower	Upper
59	100		
41	0.0	15.0	35.0#
57	0.0	5.9	13.9#

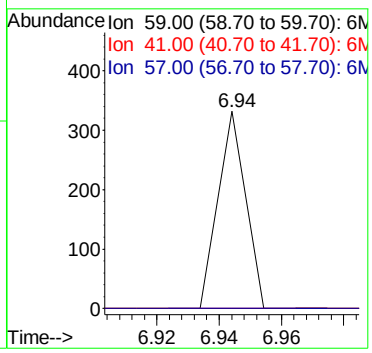

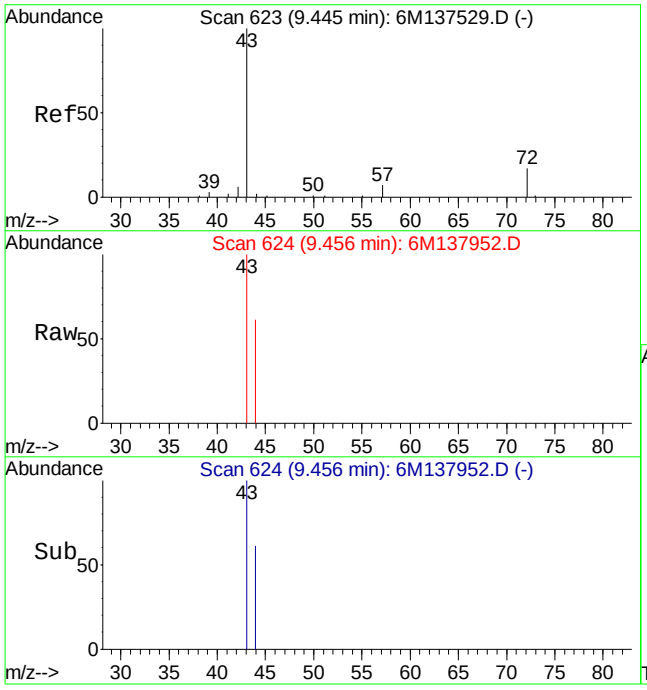

#29
2-Butanone
Concen: 0.52 ug/L
RT: 9.46 min Scan# 624
Delta R.T. 0.01 min
Lab File: 6M137952.D
Acq: 22 Mar 2016 19:09

Tgt Ion: 43 Resp: 1020

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.2	28.4#

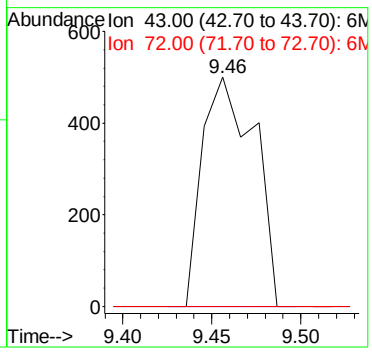

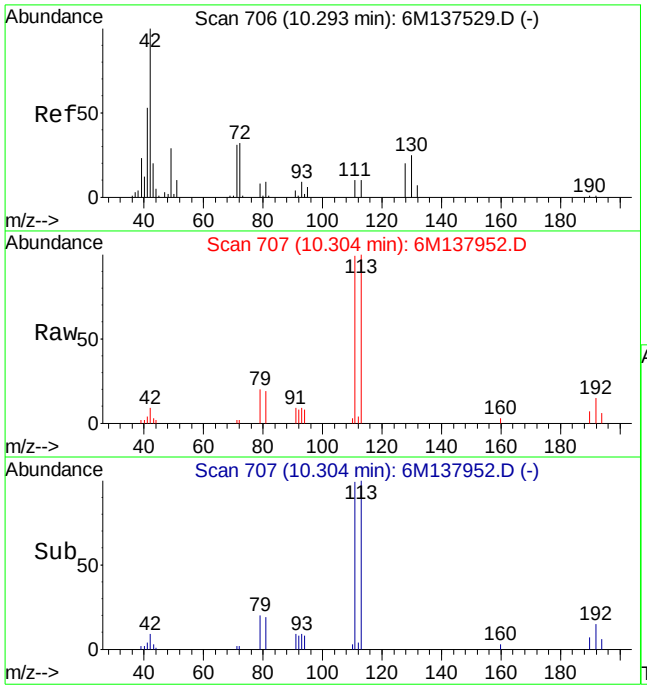

#36
Tetrahydrofuran
Concen: 1.12 ug/L
RT: 10.30 min Scan# 707
Delta R.T. 0.01 min
Lab File: 6M137952.D
Acq: 22 Mar 2016 19:09

Tgt Ion: 42 Resp: 4271

Ion	Ratio	Lower	Upper
42	100		
72	18.8	21.0	49.0#
71	26.3	20.6	48.2

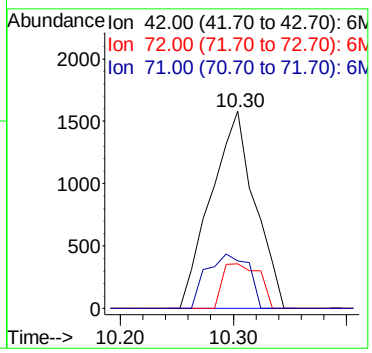

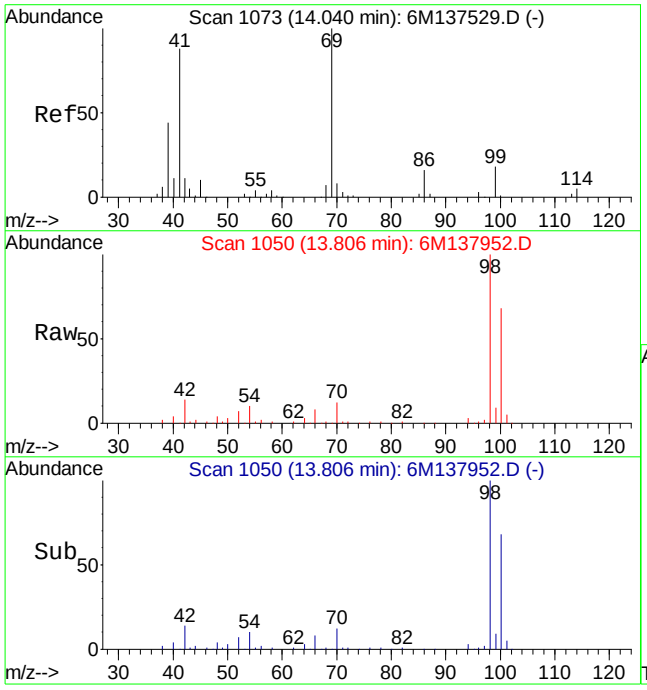

#60
Ethyl Methacrylate
Concen: 0.28 ug/L
RT: 13.81 min Scan# 1050
Delta R.T. -0.22 min
Lab File: 6M137952.D
Acq: 22 Mar 2016 19:09

Tgt Ion: 69 Resp: 1066

Ion	Ratio	Lower	Upper
69	100		
41	154.2	50.6	118.2#

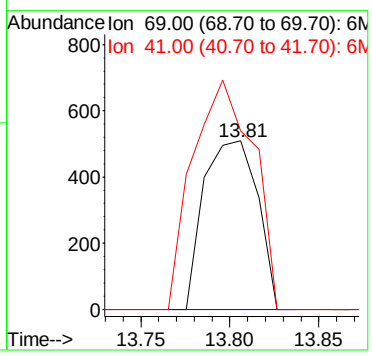

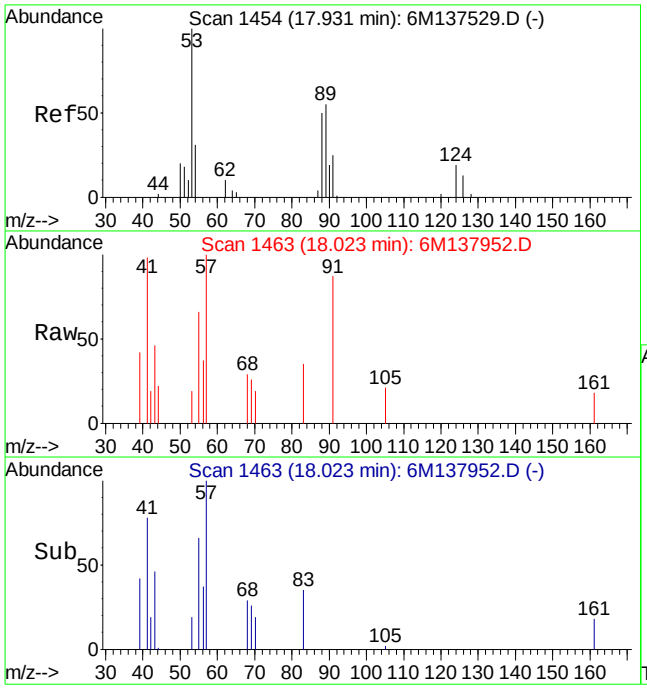

#82
trans-1,4-Dichloro-2-Butene
Concen: 0.35 ug/L
RT: 18.02 min Scan# 1463
Delta R.T. 0.09 min
Lab File: 6M137952.D
Acq: 22 Mar 2016 19:09

Tgt Ion: 53 Resp: 422

Ion	Ratio	Lower	Upper
53	100		
75	0.0	69.2	161.6#

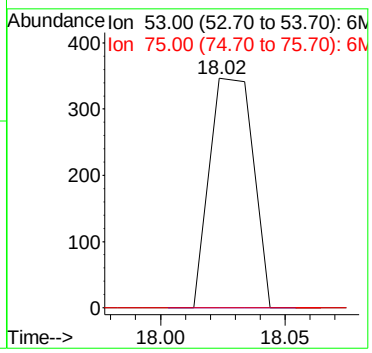

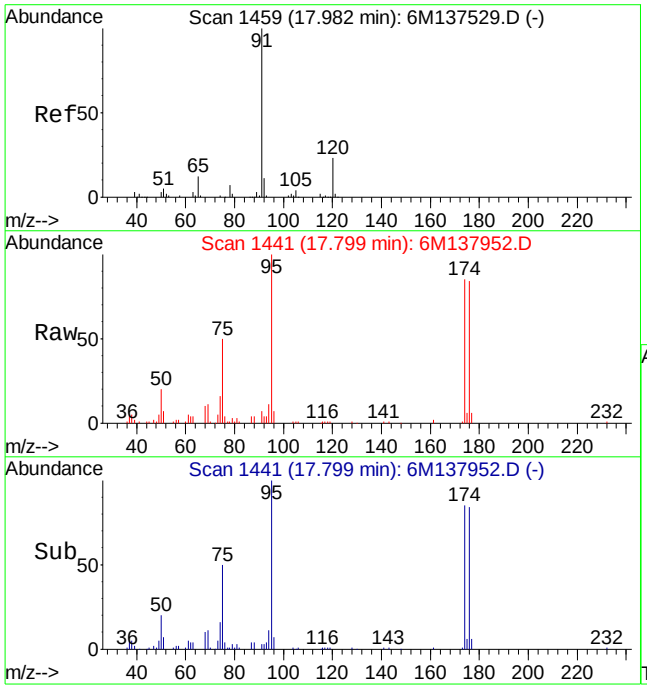

#83
n-Propylbenzene
Concen: 3.13 ug/L
RT: 17.80 min Scan# 1441
Delta R.T. -0.18 min
Lab File: 6M137952.D
Acq: 22 Mar 2016 19:09

Tgt Ion: 91 Resp: 44794

Ion	Ratio	Lower	Upper
91	100		
120	0.0	13.8	32.2#
105	1.7	2.1	4.9#

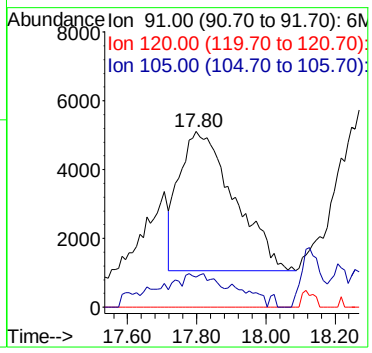

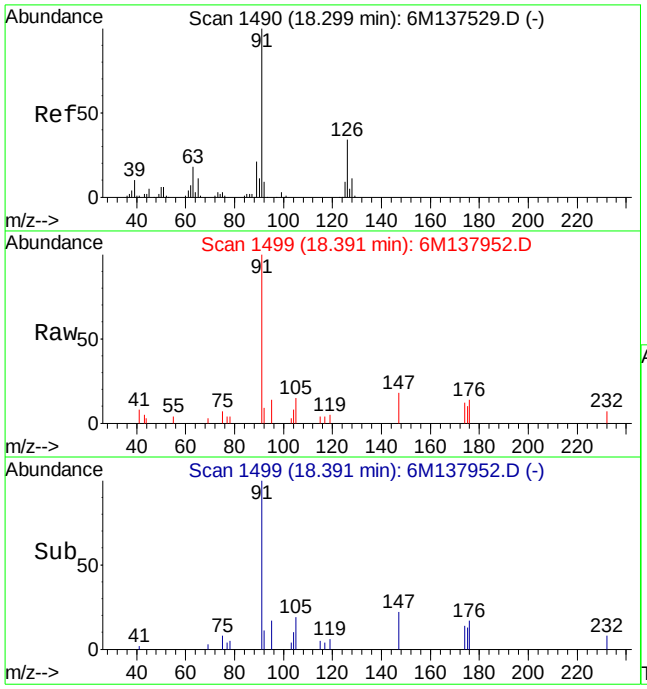

#86
2-Chlorotoluene
Concen: 14.08 ug/L
RT: 18.39 min Scan# 1499
Delta R.T. 0.09 min
Lab File: 6M137952.D
Acq: 22 Mar 2016 19:09

Tgt Ion: 91 Resp: 134424

Ion	Ratio	Lower	Upper
91	100		
126	0.0	18.5	43.3#
63	0.0	11.6	27.2#

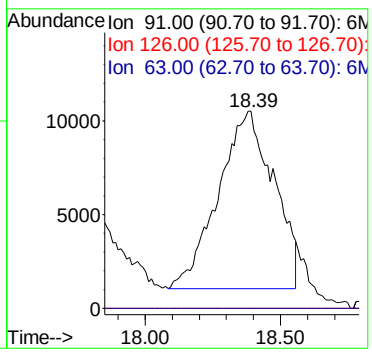

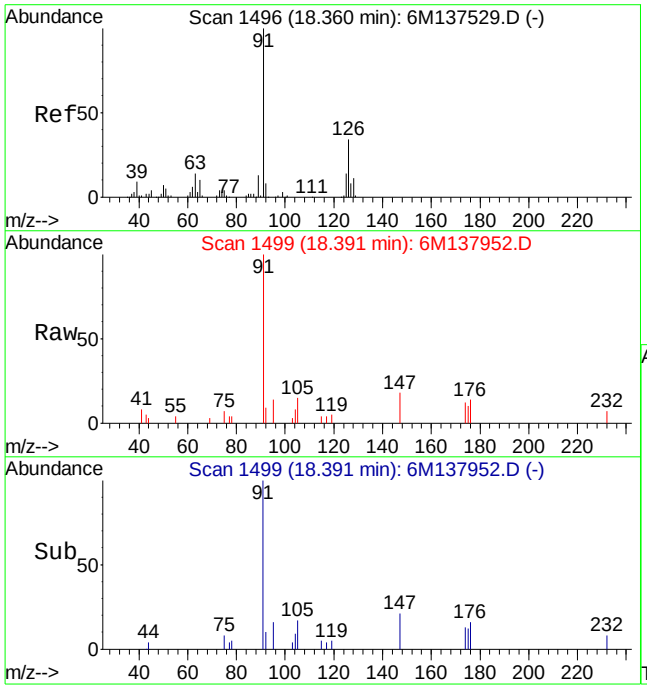

#87
4-Chlorotoluene
Concen: 15.87 ug/L
RT: 18.39 min Scan# 1499
Delta R.T. 0.04 min
Lab File: 6M137952.D
Acq: 22 Mar 2016 19:09

Tgt Ion: 91 Resp: 138556

Ion	Ratio	Lower	Upper
91	100		
126	0.0	21.0	49.0#
63	0.0	8.8	20.6#

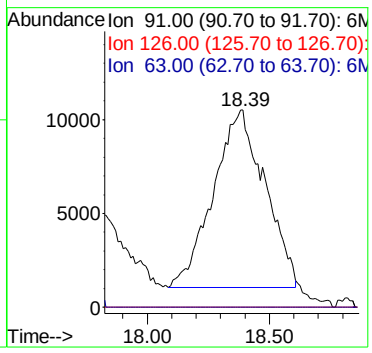

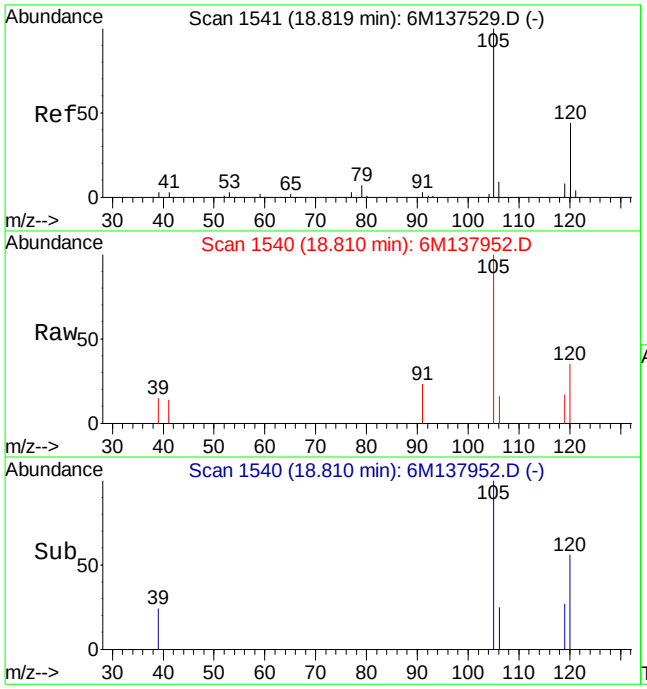

#90
1,2,4-Trimethylbenzene
Concen: 0.47 ug/L
RT: 18.81 min Scan# 1540
Delta R.T. -0.01 min
Lab File: 6M137952.D
Acq: 22 Mar 2016 19:09

Tgt Ion:105 Resp: 5024

Ion	Ratio	Lower	Upper
105	100		
120	38.1	34.3	79.9

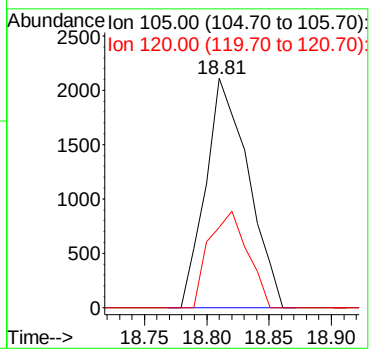

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137975.D Vial: 13
Acq On : 23 Mar 2016 18:15 Operator: TMB
Sample : L16030861-05 8260 4.93g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 08:29:36 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	530731	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	370792	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	169378	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	131956	46.3486 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 92.70%		
43) 1,2-Dichloroethane-d4	11.06	65	156612	42.3675 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 84.74%		
58) Toluene-d8	13.80	98	460559	52.2428 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 104.48%		
80) p-Bromofluorobenzene	17.79	95	174759	56.1724 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 112.34%		

Target Compounds

					Qvalue
11) Acrolein	6.49	56	4100	8.5429 ug/L	94
13) Acetone	6.60	43	16110	10.1278 ug/L #	1
15) Tert-Butyl Alcohol	6.63	59	4293	9.9060 ug/L #	1
24) n-Hexane	8.24	57	4061	0.8716 ug/L	71
29) 2-Butanone	9.47	43	1903	1.0373 ug/L #	56
36) Tetrahydrofuran	10.30	42	1979	Below Cal # 40	
60) Ethyl Methacrylate	13.80	69	1056	0.3142 ug/L #	1
79) 1,1,2,2-Tetrachloroethane	17.79	83	2131	0.8054 ug/L #	19
82) trans-1,4-Dichloro-2-Buten	18.04	53	5094	5.2150 ug/L #	1
90) 1,2,4-Trimethylbenzene	18.82	105	5103	0.5926 ug/L	74
91) sec-Butylbenzene	18.82	105	4135	0.3944 ug/L #	56
92) p-Isopropyltoluene	19.26	119	2213	0.2558 ug/L #	67

(#) = qualifier out of range (m) = manual integration
6M137975.D 826_SL.M Thu Mar 24 08:29:37 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137975.D Vial: 13
Acq On : 23 Mar 2016 18:15 Operator: TMB
Sample : L16030861-05 8260 4.93g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 8:29 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

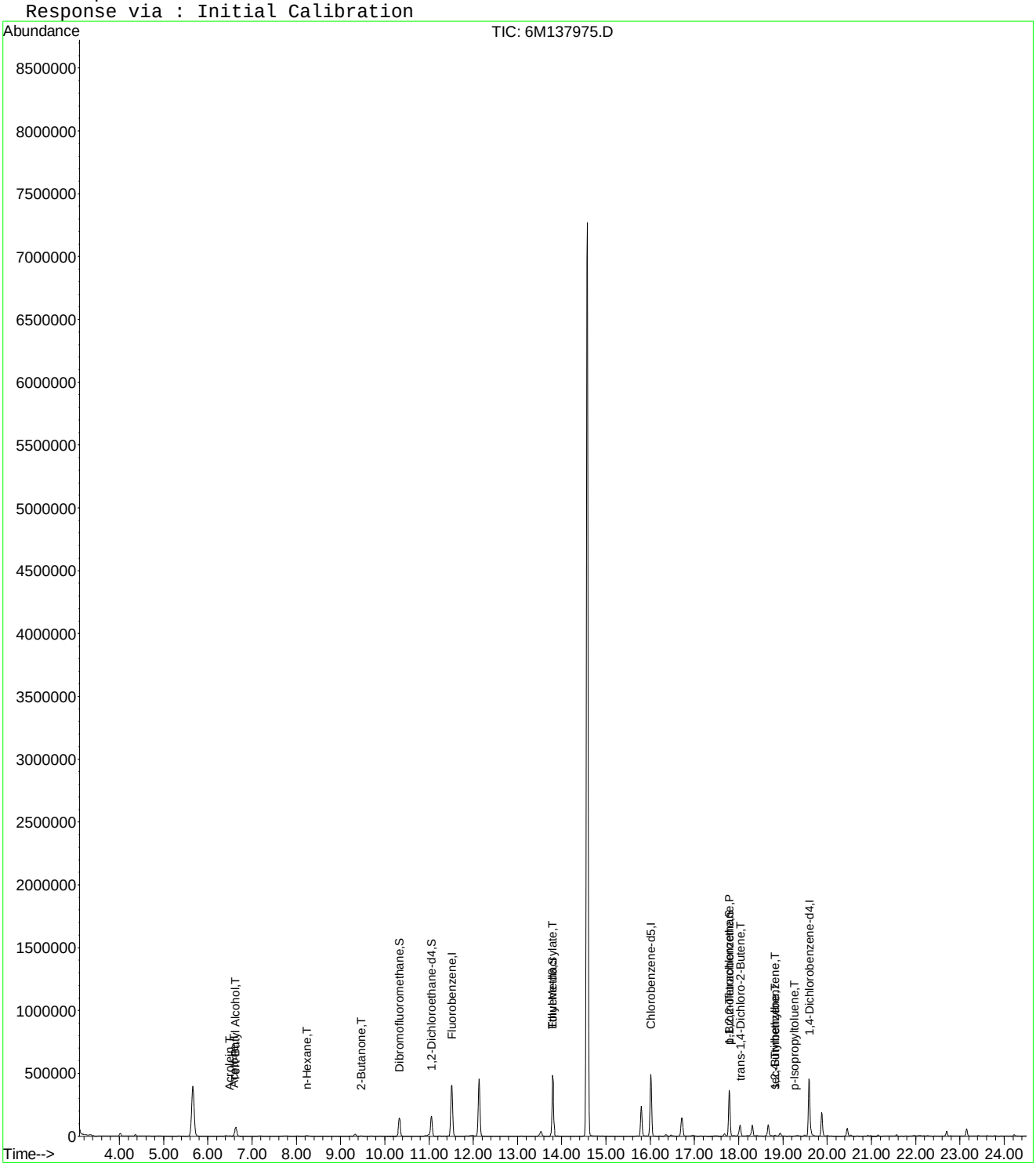

6M137975.D 826_SL.M Thu Mar 24 08:29:37 2016 Page 2

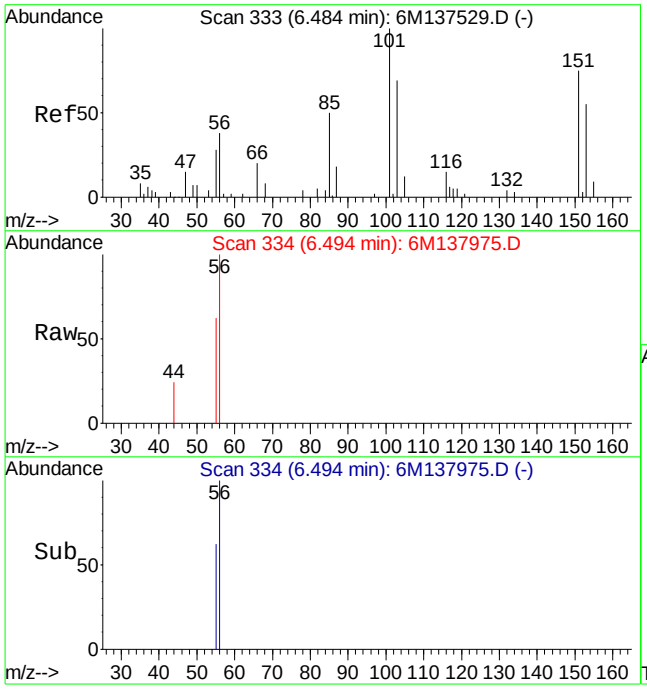

#11
Acrolein
Concen: 8.54 ug/L
RT: 6.49 min Scan# 334
Delta R.T. 0.01 min
Lab File: 6M137975.D
Acq: 23 Mar 2016 18:15

Tgt Ion: 56 Resp: 4100

Ion	Ratio	Lower	Upper
56	100		
55	69.3	44.6	104.0

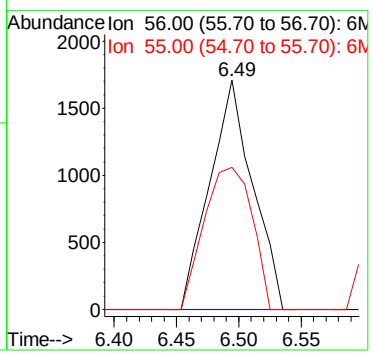

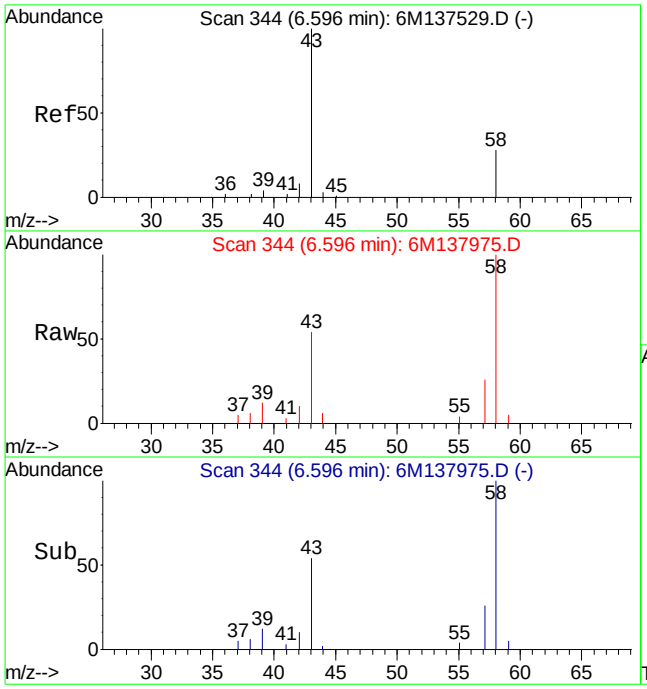

#13
Acetone
Concen: 10.13 ug/L
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137975.D
Acq: 23 Mar 2016 18:15

Tgt Ion: 43 Resp: 16110

Ion	Ratio	Lower	Upper
43	100		
58	835.1	16.1	37.7#

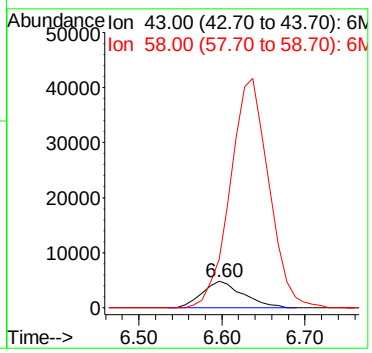

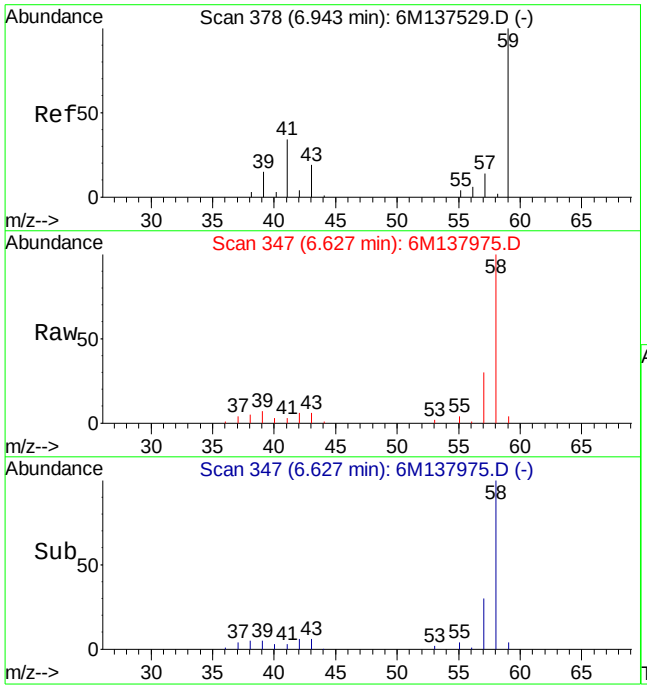

#15
Tert-Butyl Alcohol
Concen: 9.91 ug/L
RT: 6.63 min Scan# 347
Delta R.T. -0.31 min
Lab File: 6M137975.D
Acq: 23 Mar 2016 18:15

Tgt Ion: 59 Resp: 4293

Ion	Ratio	Lower	Upper
59	100		
41	81.4	15.0	35.0#
57	877.1	5.9	13.9#

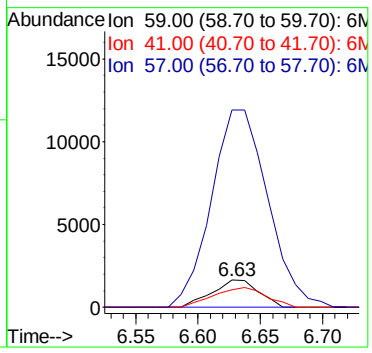

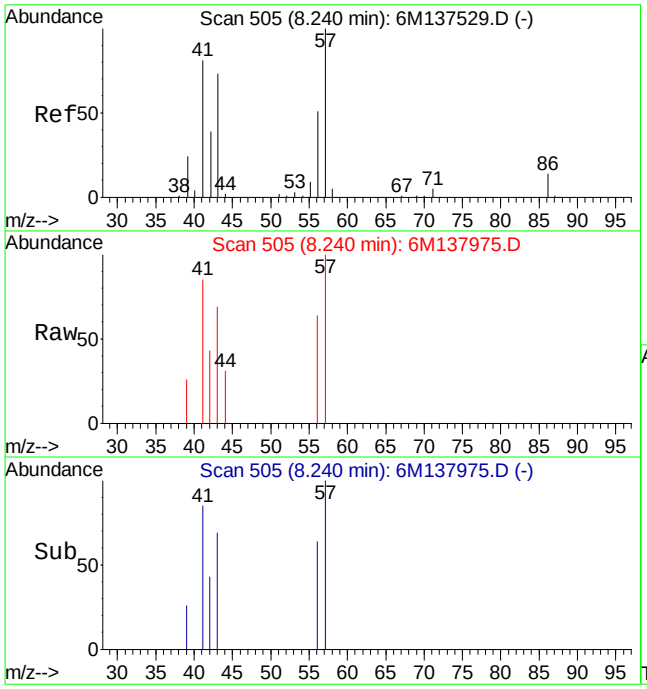

#24
n-Hexane
Concen: 0.87 ug/L
RT: 8.24 min Scan# 505
Delta R.T. -0.00 min
Lab File: 6M137975.D
Acq: 23 Mar 2016 18:15

Tgt Ion: 57 Resp: 4061

Ion	Ratio	Lower	Upper
57	100		
43	98.0	44.0	102.8

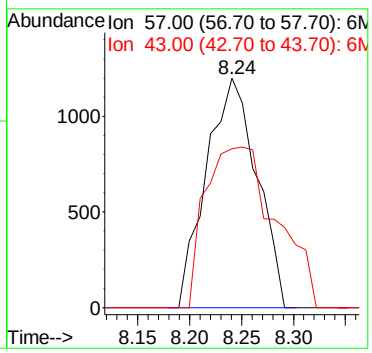

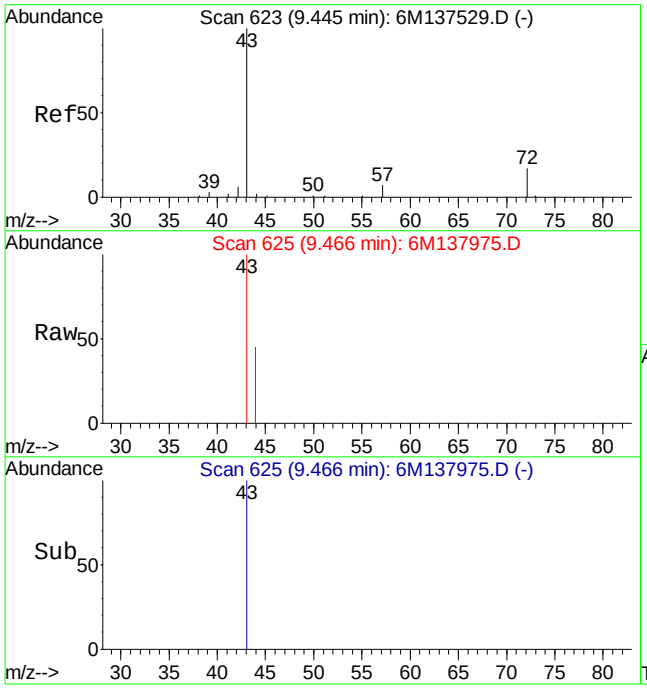

#29
2-Butanone
Concen: 1.04 ug/L
RT: 9.47 min Scan# 625
Delta R.T. 0.02 min
Lab File: 6M137975.D
Acq: 23 Mar 2016 18:15

Tgt Ion: 43 Resp: 1903

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.2	28.4#

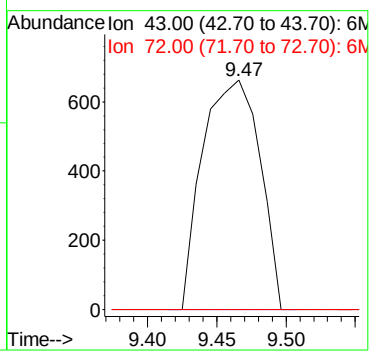

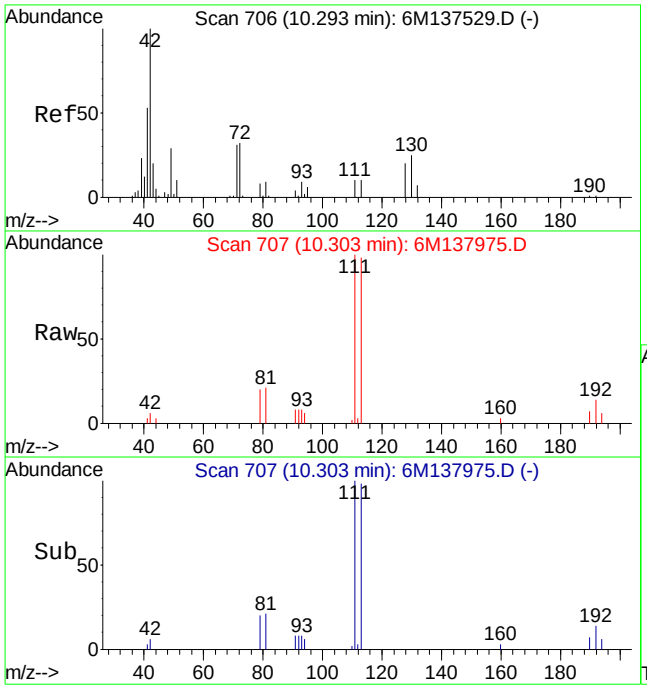

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.30 min Scan# 707
Delta R.T. 0.01 min
Lab File: 6M137975.D
Acq: 23 Mar 2016 18:15

Tgt Ion: 42 Resp: 1979

Ion	Ratio	Lower	Upper
42	100		
72	0.0	21.0	49.0#
71	0.0	20.6	48.2#

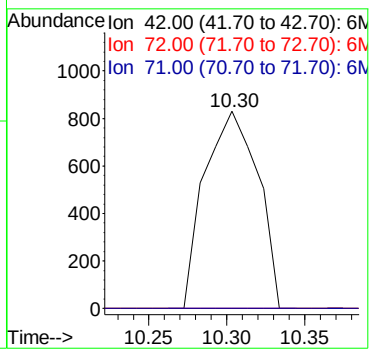

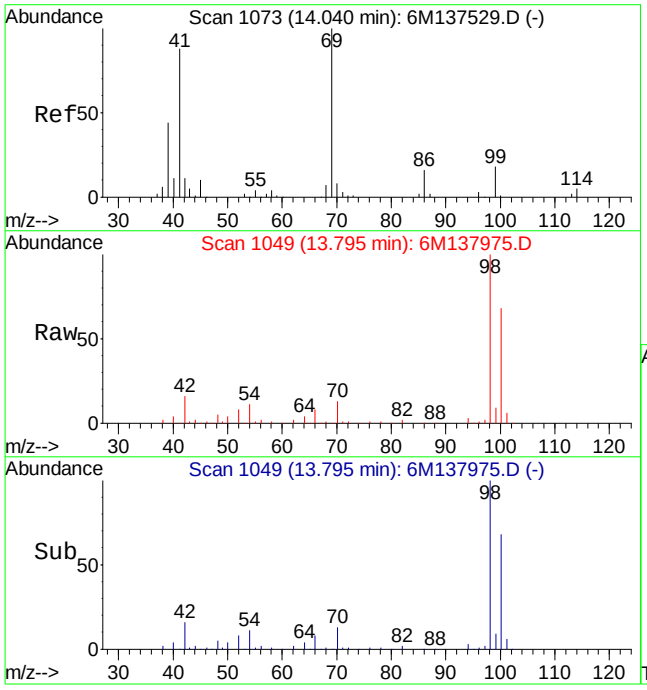

#60
Ethyl Methacrylate
Concen: 0.31 ug/L
RT: 13.80 min Scan# 1049
Delta R.T. -0.24 min
Lab File: 6M137975.D
Acq: 23 Mar 2016 18:15

Tgt Ion: 69 Resp: 1056

Ion	Ratio	Lower	Upper
69	100		
41	247.0	50.6	118.2#

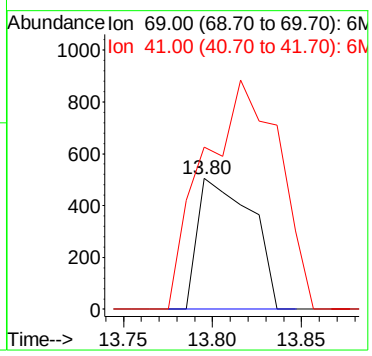

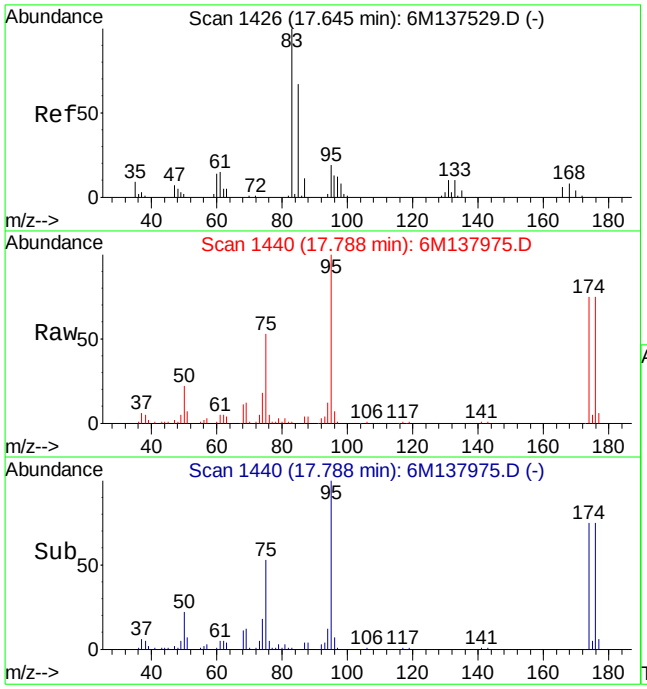

#79
1,1,2,2-Tetrachloroethane
Concen: 0.81 ug/L
RT: 17.79 min Scan# 1440
Delta R.T. 0.14 min
Lab File: 6M137975.D
Acq: 23 Mar 2016 18:15

Tgt Ion: 83 Resp: 2131

Ion	Ratio	Lower	Upper
83	100		
85	0.0	37.7	88.1#

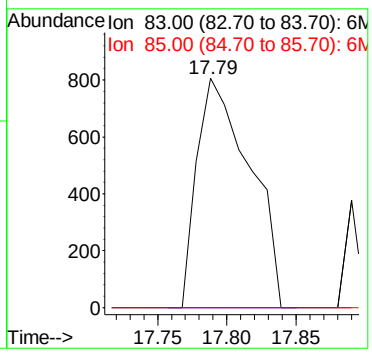

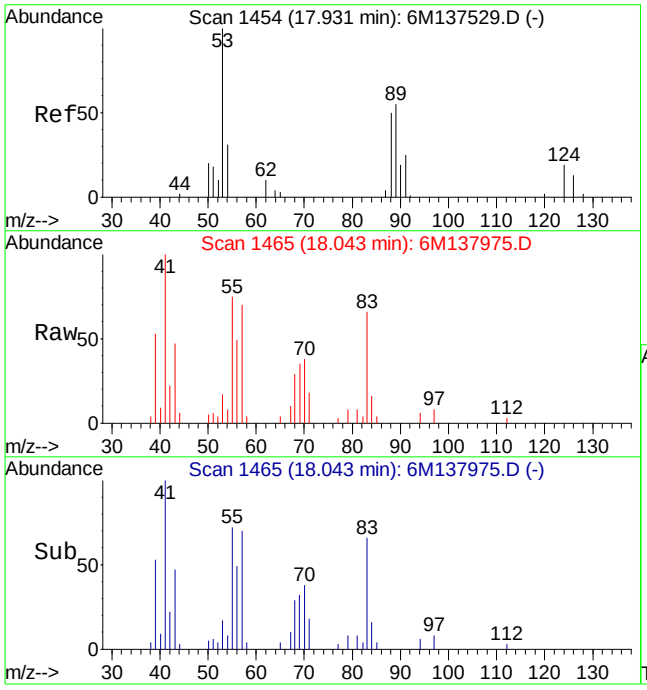

#82
trans-1,4-Dichloro-2-Butene
Concen: 5.22 ug/L
RT: 18.04 min Scan# 1465
Delta R.T. 0.11 min
Lab File: 6M137975.D
Acq: 23 Mar 2016 18:15

Tgt Ion: 53 Resp: 5094

Ion	Ratio	Lower	Upper
53	100		
75	0.0	69.2	161.6#

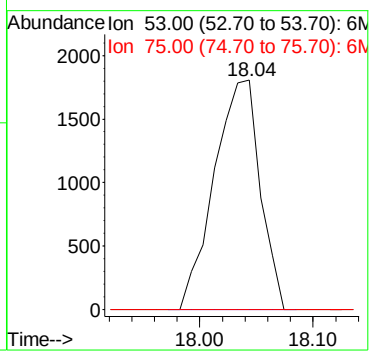

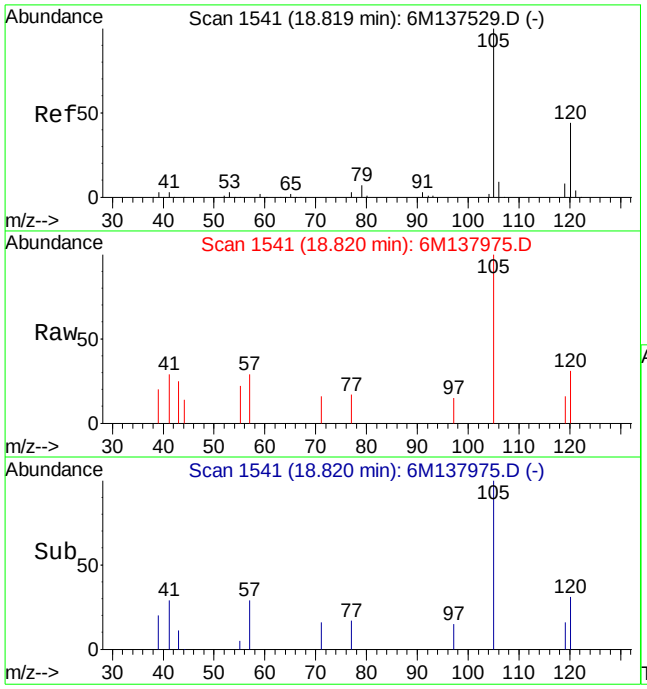

#90
1,2,4-Trimethylbenzene
Concen: 0.59 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. -0.00 min
Lab File: 6M137975.D
Acq: 23 Mar 2016 18:15

Tgt Ion:105 Resp: 5103

Ion	Ratio	Lower	Upper
105	100		
120	37.9	34.3	79.9

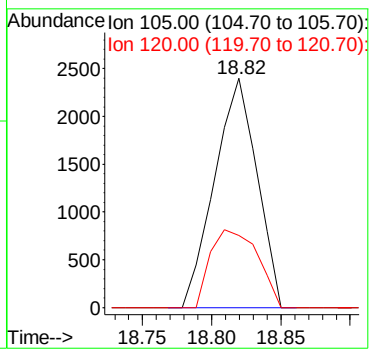

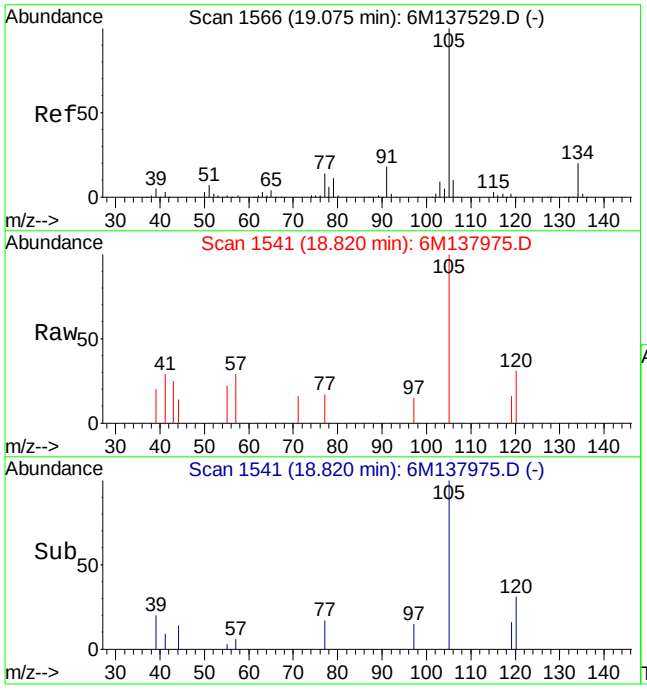

#91
sec-Butylbenzene
Concen: 0.39 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. -0.26 min
Lab File: 6M137975.D
Acq: 23 Mar 2016 18:15

Tgt Ion:105 Resp: 4135

Ion	Ratio	Lower	Upper
105	100		
134	0.0	12.2	28.6#

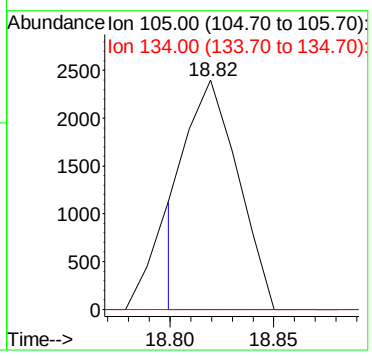

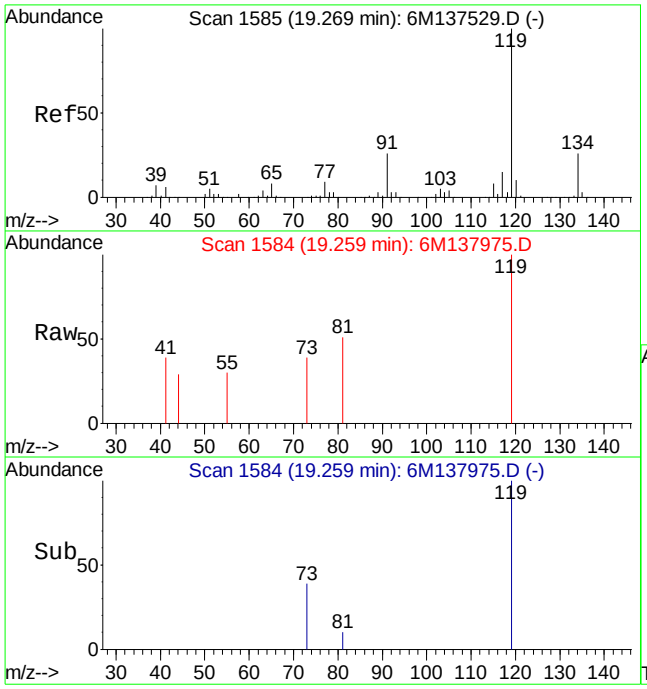

#92
p-Isopropyltoluene
Concen: 0.26 ug/L
RT: 19.26 min Scan# 1584
Delta R.T. -0.00 min
Lab File: 6M137975.D
Acq: 23 Mar 2016 18:15

Tgt Ion:119 Resp: 2213

Ion	Ratio	Lower	Upper
119	100		
134	9.4	15.6	36.4#

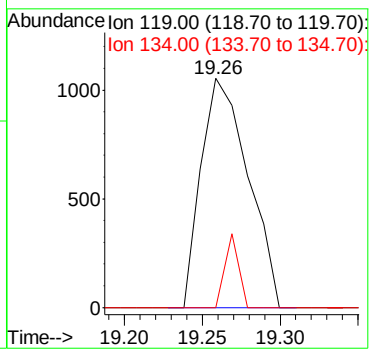

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137976.D Vial: 14
Acq On : 23 Mar 2016 18:48 Operator: TMB
Sample : L16030861-06 8260 5.44g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 08:29:38 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	538576	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	391274	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	199403	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.34	111	136606	47.2830 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.56%		
43) 1,2-Dichloroethane-d4	11.06	65	163737	43.6498 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 87.30%		
58) Toluene-d8	13.80	98	474438	51.0000 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 102.00%		
80) p-Bromofluorobenzene	17.79	95	191164	52.1933 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 104.38%		

Target Compounds					Qvalue
13) Acetone	6.60	43	1488	Below Cal #	73
36) Tetrahydrofuran	10.30	42	2479	Below Cal #	55
60) Ethyl Methacrylate	13.80	69	983	0.2772 ug/L	89

(#) = qualifier out of range (m) = manual integration
6M137976.D 826_SL.M Thu Mar 24 08:29:39 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137976.D Vial: 14
Acq On : 23 Mar 2016 18:48 Operator: TMB
Sample : L16030861-06 8260 5.44g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 8:29 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

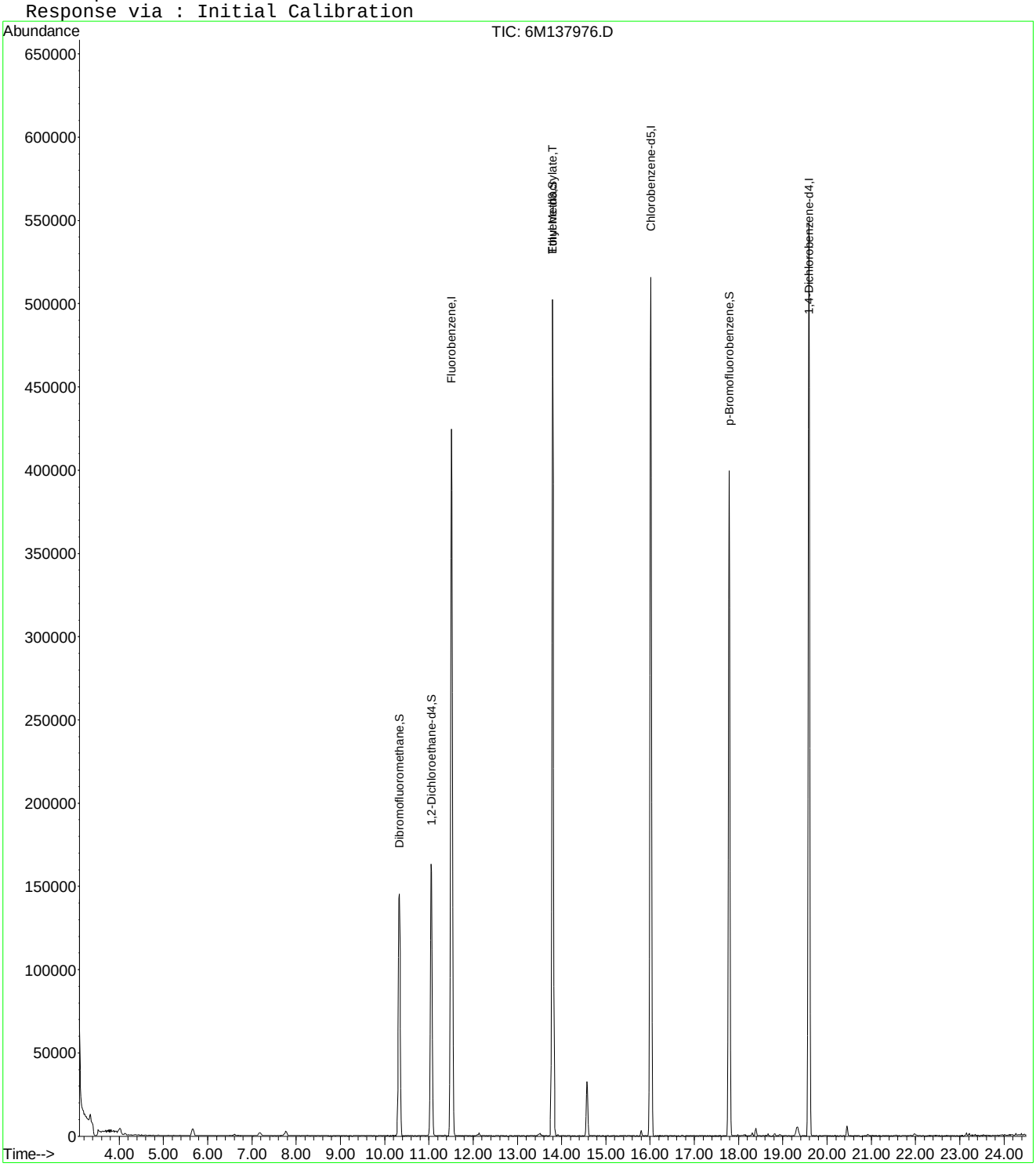

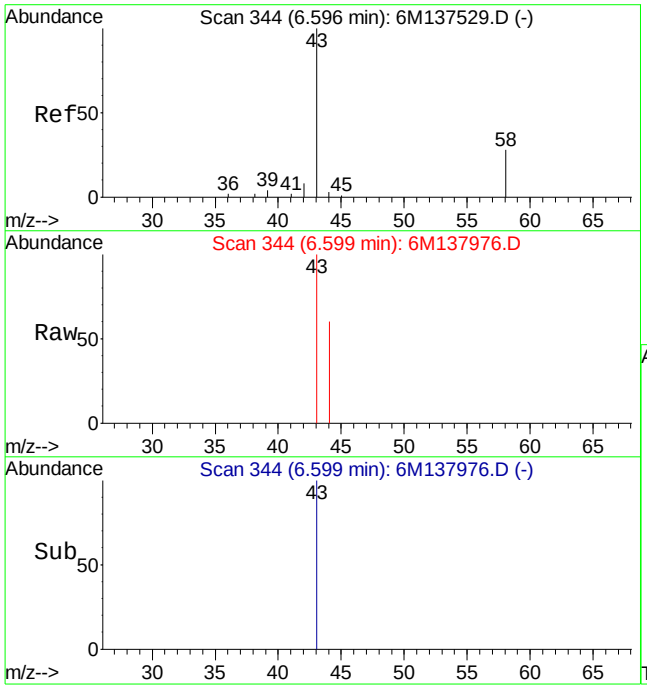

#13
Acetone
Concen: Below Cal
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137976.D
Acq: 23 Mar 2016 18:48

Tgt Ion: 43 Resp: 1488

Ion	Ratio	Lower	Upper
43	100		
58	12.7	16.1	37.7#

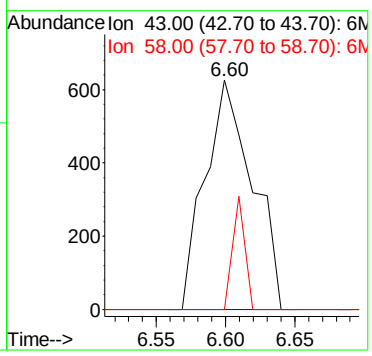

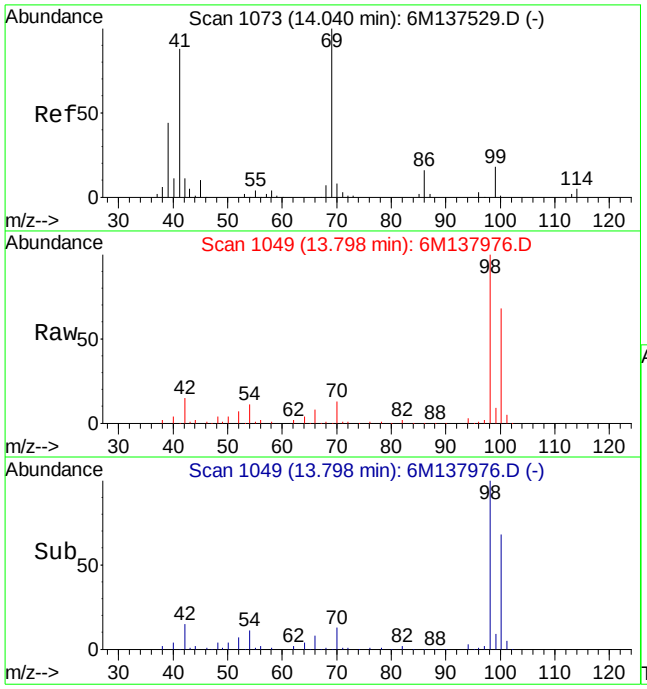

#60
Ethyl Methacrylate
Concen: 0.28 ug/L
RT: 13.80 min Scan# 1049
Delta R.T. -0.23 min
Lab File: 6M137976.D
Acq: 23 Mar 2016 18:48

Tgt Ion: 69 Resp: 983

Ion	Ratio	Lower	Upper
69	100		
41	74.3	50.6	118.2

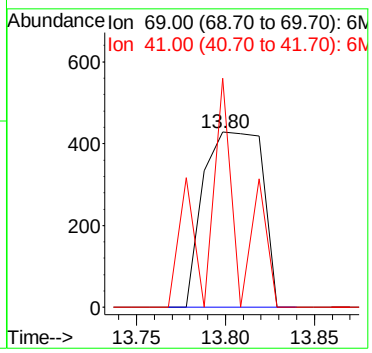

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137977.D Vial: 15
Acq On : 23 Mar 2016 19:21 Operator: TMB
Sample : L16030861-07 8260 4.73g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 08:29:39 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	542135	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.02	117	391017	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	202516	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.34	111	133221	45.8086 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 91.62%		
43) 1,2-Dichloroethane-d4	11.05	65	157058	41.5944 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 83.18%		
58) Toluene-d8	13.80	98	473629	50.9465 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.90%		
80) p-Bromofluorobenzene	17.79	95	189024	50.8157 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 101.64%		

Target Compounds					Qvalue
11) Acrolein	6.49	56	780	1.5910 ug/L #	46
13) Acetone	6.60	43	8244	2.8819 ug/L #	1
15) Tert-Butyl Alcohol	6.64	59	812	1.8343 ug/L #	1
29) 2-Butanone	9.34	43	3663	1.9547 ug/L #	40
36) Tetrahydrofuran	10.30	42	2282	Below Cal #	71
90) 1,2,4-Trimethylbenzene	18.82	105	3553	0.3451 ug/L #	67
91) sec-Butylbenzene	18.82	105	3233	0.2579 ug/L #	56

(#) = qualifier out of range (m) = manual integration
6M137977.D 826_SL.M Thu Mar 24 08:29:40 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137977.D Vial: 15
Acq On : 23 Mar 2016 19:21 Operator: TMB
Sample : L16030861-07 8260 4.73g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 8:29 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

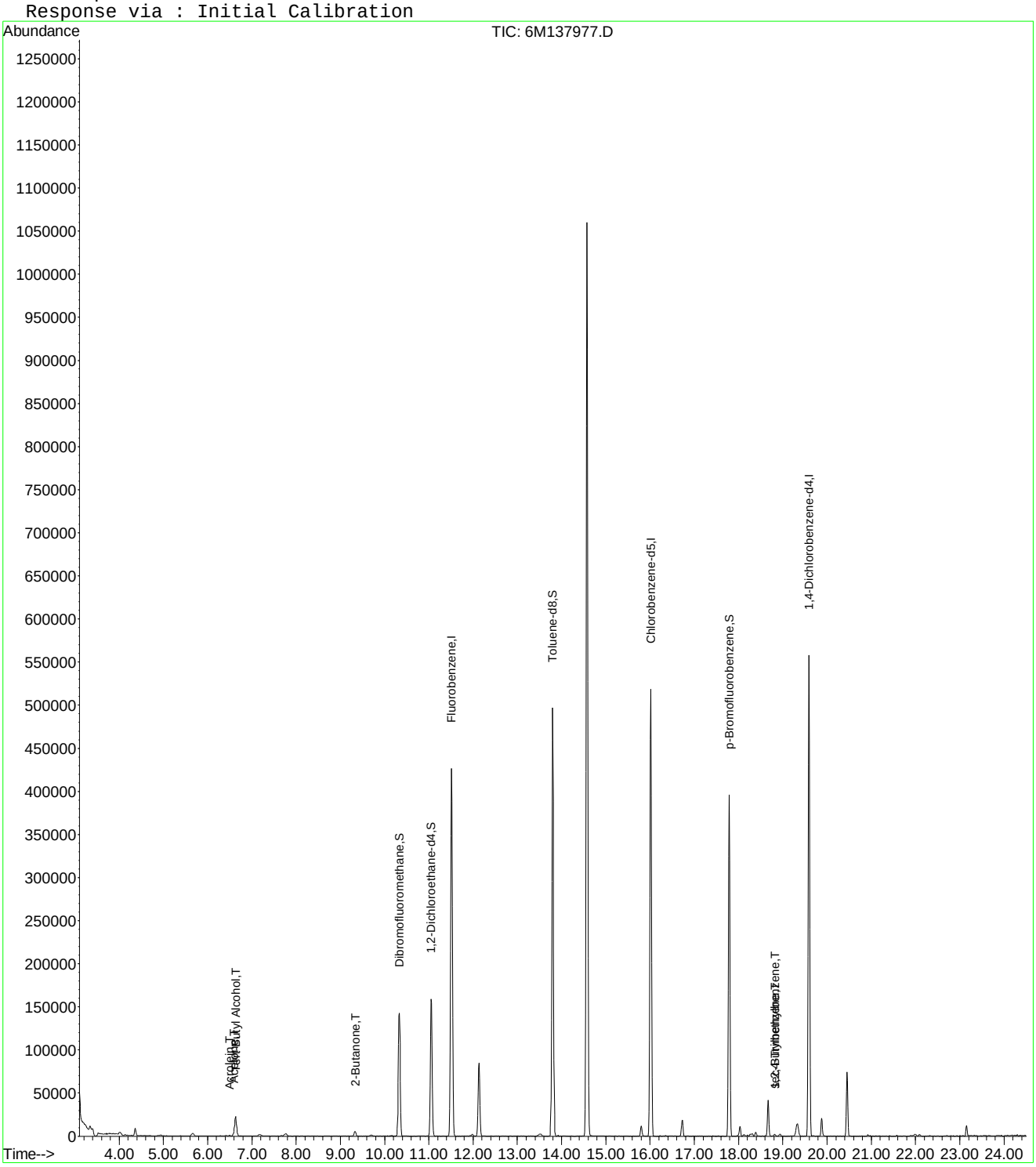

6M137977.D 826_SL.M Thu Mar 24 08:29:40 2016 Page 2

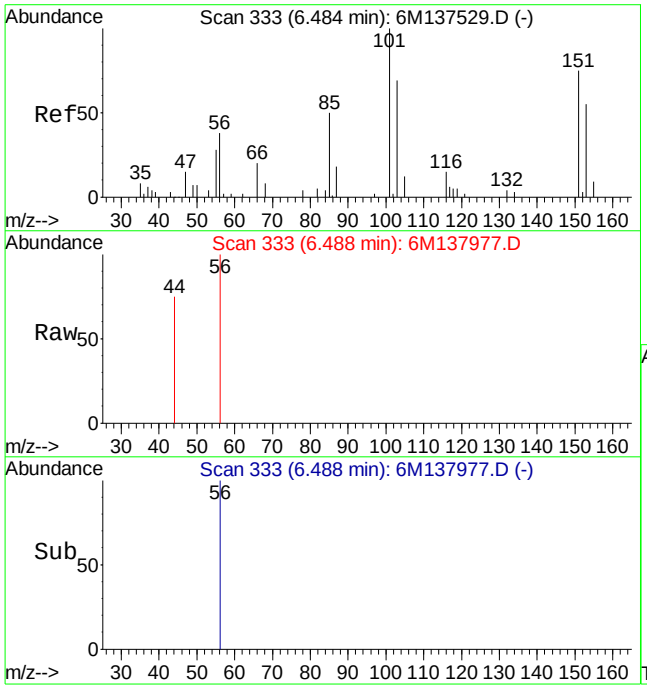

#11
Acrolein
Concen: 1.59 ug/L
RT: 6.49 min Scan# 333
Delta R.T. 0.00 min
Lab File: 6M137977.D
Acq: 23 Mar 2016 19:21

Tgt Ion: 56 Resp: 780

Ion	Ratio	Lower	Upper
56	100		
55	28.3	44.6	104.0#

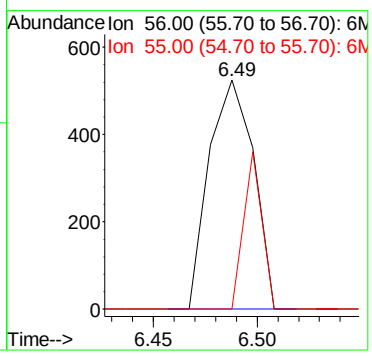

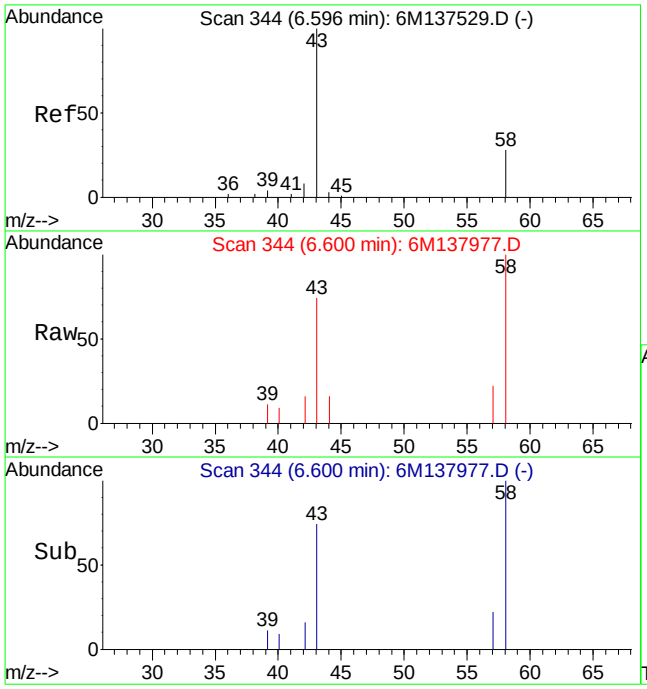

#13
Acetone
Concen: 2.88 ug/L
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137977.D
Acq: 23 Mar 2016 19:21

Tgt Ion: 43 Resp: 8244

Ion	Ratio	Lower	Upper
43	100		
58	513.6	16.1	37.7#

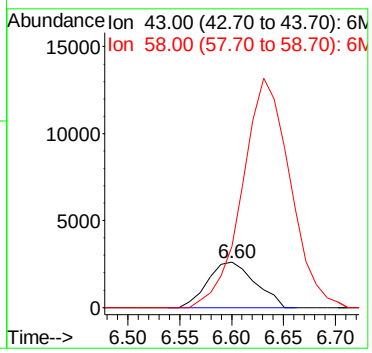

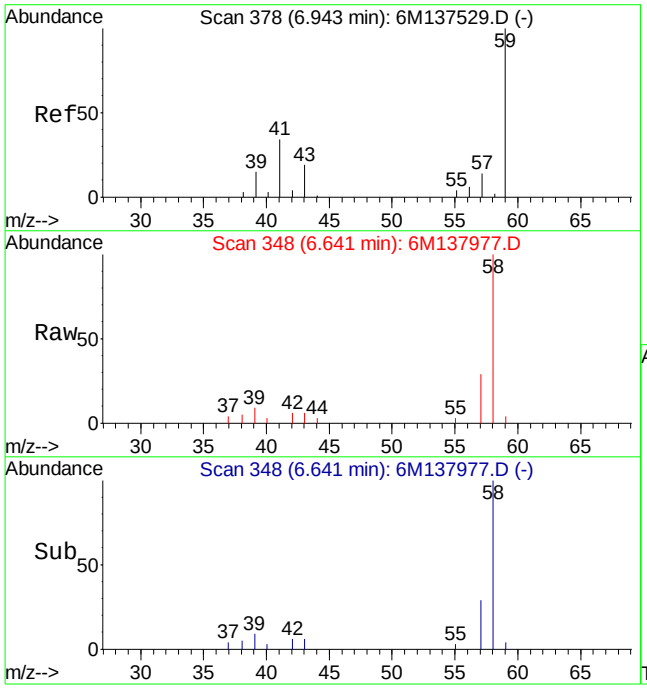

#15
Tert-Butyl Alcohol
Concen: 1.83 ug/L
RT: 6.64 min Scan# 348
Delta R.T. -0.29 min
Lab File: 6M137977.D
Acq: 23 Mar 2016 19:21

Tgt Ion: 59 Resp: 812

Ion	Ratio	Lower	Upper
59	100		
41	51.0	15.0	35.0#
57	1376.0	5.9	13.9#

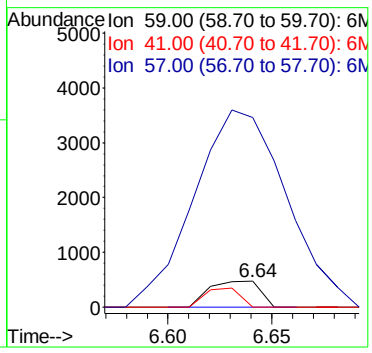

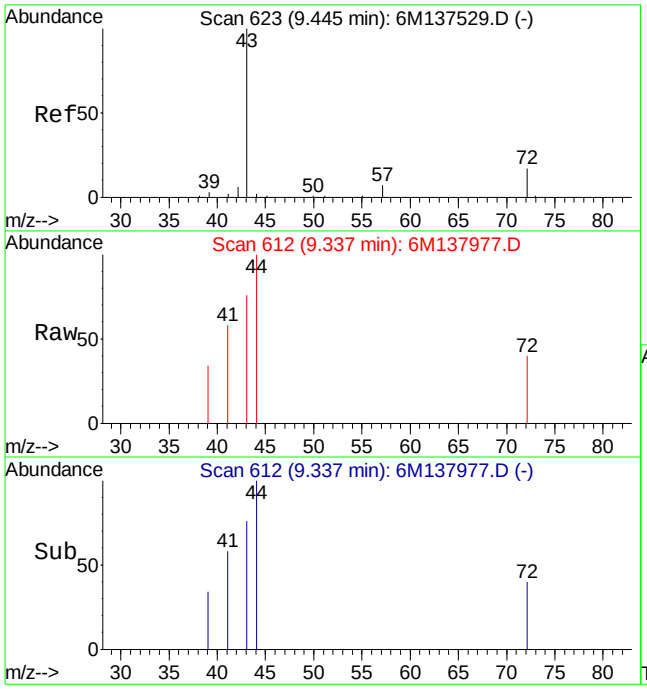

#29
2-Butanone
Concen: 1.95 ug/L
RT: 9.34 min Scan# 612
Delta R.T. -0.11 min
Lab File: 6M137977.D
Acq: 23 Mar 2016 19:21

Tgt Ion: 43 Resp: 3663

Ion	Ratio	Lower	Upper
43	100		
72	48.1	12.2	28.4#

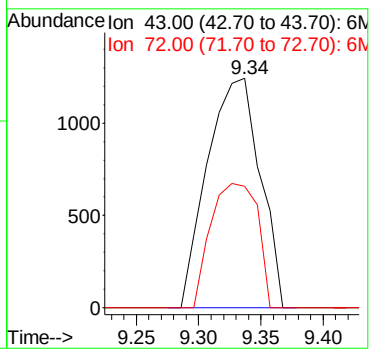

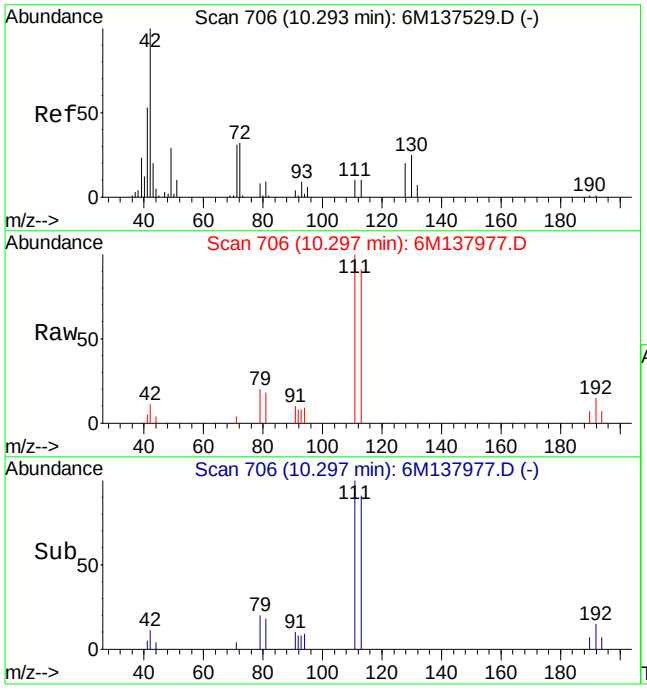

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.30 min Scan# 706
Delta R.T. 0.00 min
Lab File: 6M137977.D
Acq: 23 Mar 2016 19:21

Tgt Ion: 42 Resp: 2282

Ion	Ratio	Lower	Upper
42	100		
72	17.8	21.0	49.0#
71	18.5	20.6	48.2#

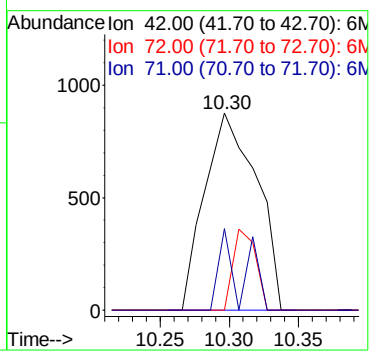

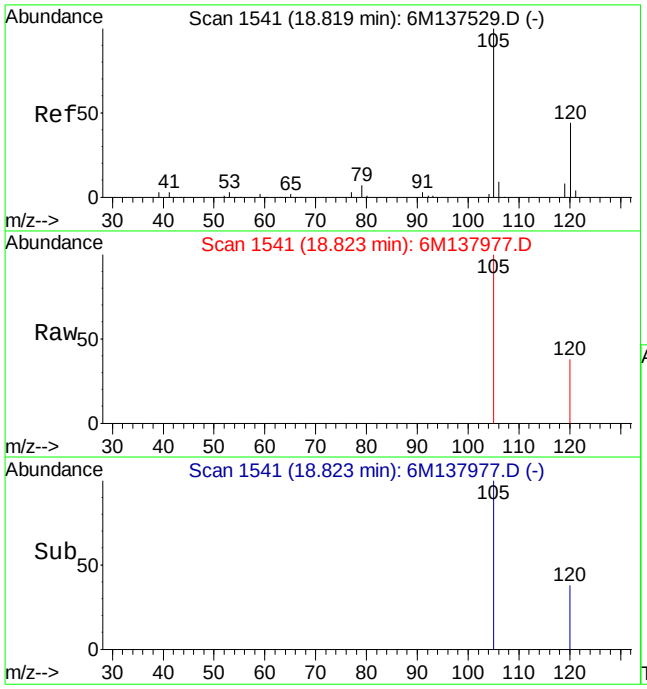

#90
1,2,4-Trimethylbenzene
Concen: 0.35 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. 0.00 min
Lab File: 6M137977.D
Acq: 23 Mar 2016 19:21

Tgt Ion:105 Resp: 3553

Ion	Ratio	Lower	Upper
105	100		
120	32.6	34.3	79.9#

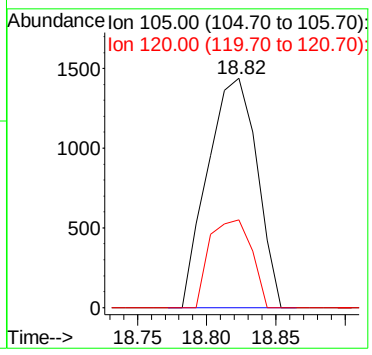

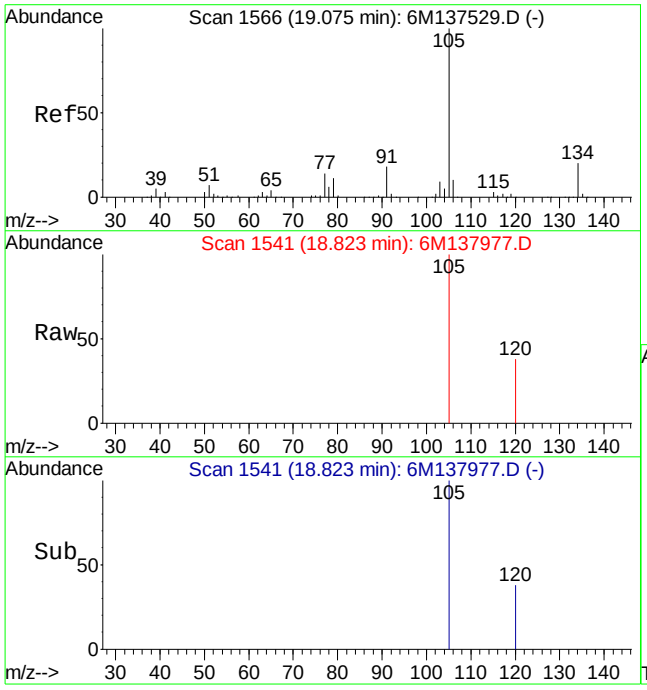

#91
sec-Butylbenzene
Concen: 0.26 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. -0.25 min
Lab File: 6M137977.D
Acq: 23 Mar 2016 19:21

Tgt Ion:105 Resp: 3233

Ion	Ratio	Lower	Upper
105	100		
134	0.0	12.2	28.6#

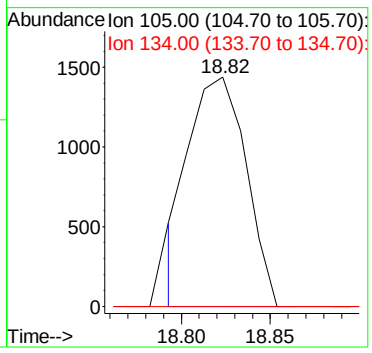

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137978.D Vial: 16
Acq On : 23 Mar 2016 19:54 Operator: TMB
Sample : L16030861-08 8260 5.07g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 08:29:40 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	568224	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	415316	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	215736	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.34	111	143454	47.0625 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.12%		
43) 1,2-Dichloroethane-d4	11.05	65	170141	42.9904 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 85.98%		
58) Toluene-d8	13.80	98	498595	50.4941 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 100.98%		
80) p-Bromofluorobenzene	17.79	95	204963	51.7241 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 103.44%		

Target Compounds					Qvalue
13) Acetone	6.60	43	8454	2.7247 ug/L	89
36) Tetrahydrofuran	10.30	42	2802	Below Cal #	59
47) Trichloroethene	12.09	130	1227	0.4388 ug/L #	54
60) Ethyl Methacrylate	13.81	69	995	0.2643 ug/L #	46
90) 1,2,4-Trimethylbenzene	18.82	105	4356	0.3972 ug/L	76
91) sec-Butylbenzene	18.82	105	4001	0.2996 ug/L #	56

(#) = qualifier out of range (m) = manual integration
6M137978.D 826_SL.M Thu Mar 24 08:29:41 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137978.D Vial: 16
Acq On : 23 Mar 2016 19:54 Operator: TMB
Sample : L16030861-08 8260 5.07g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 8:29 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

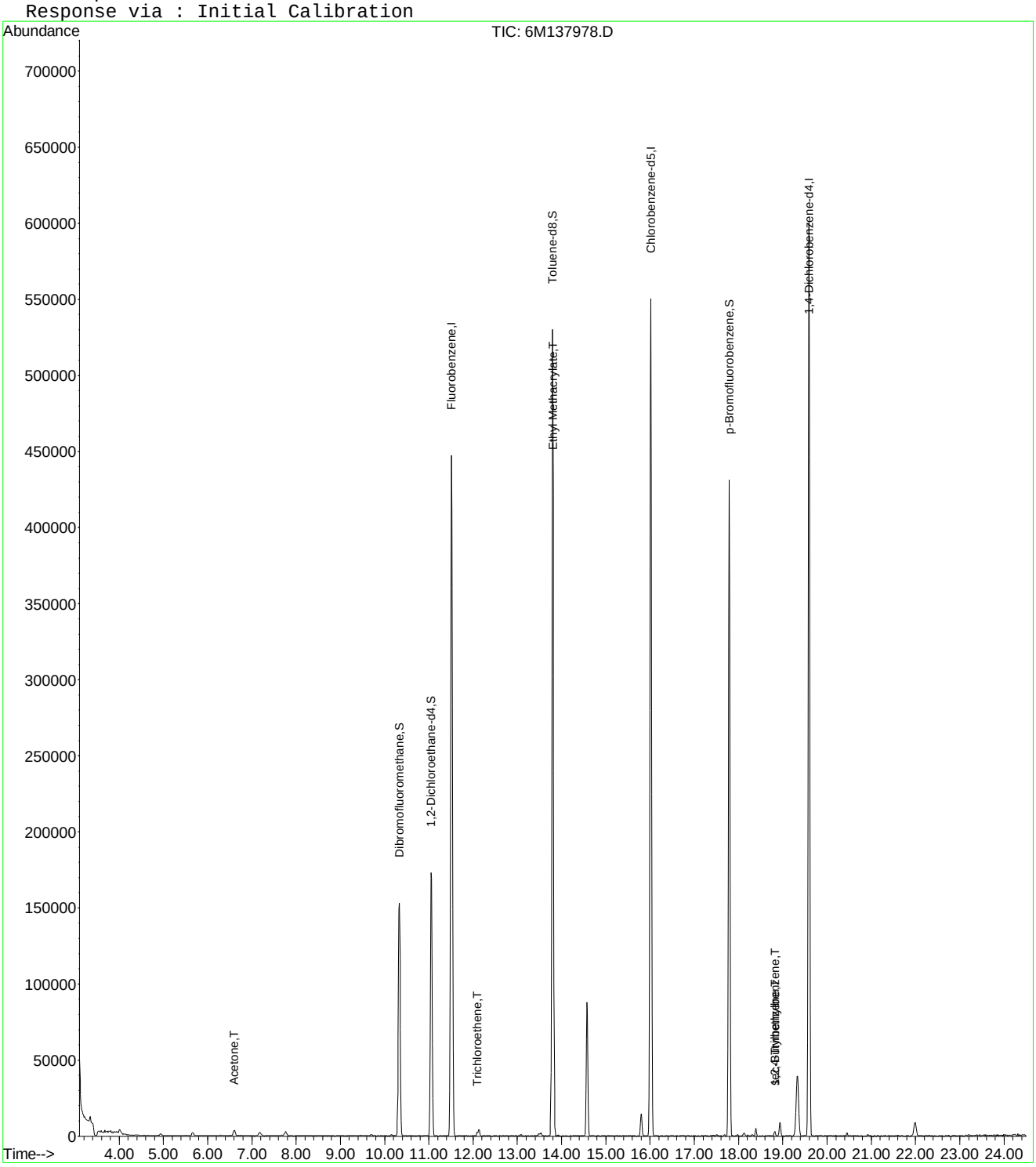

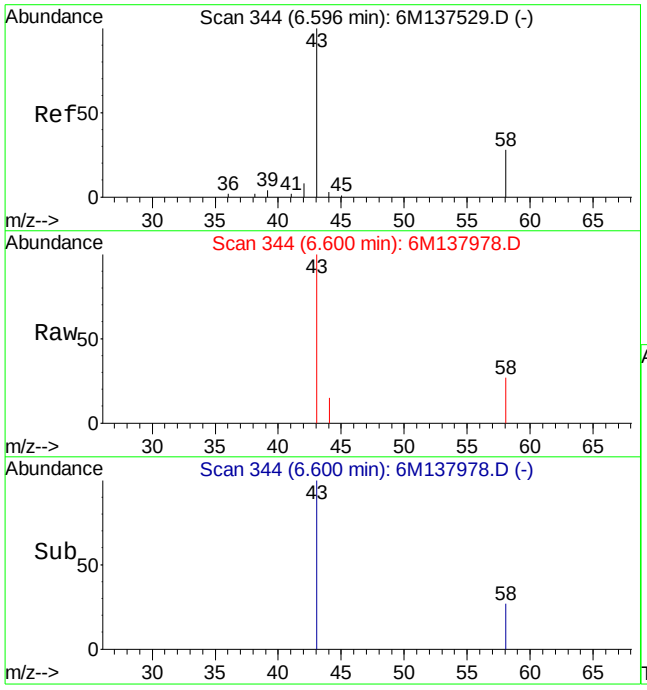

#13
Acetone
Concen: 2.72 ug/L
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137978.D
Acq: 23 Mar 2016 19:54

Tgt Ion: 43 Resp: 8454

Ion	Ratio	Lower	Upper
43	100		
58	32.6	16.1	37.7

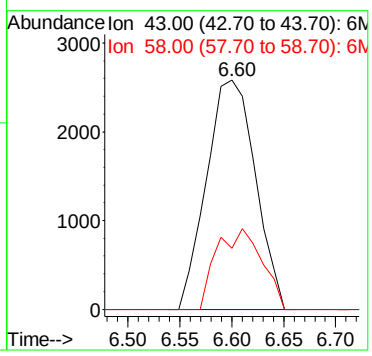

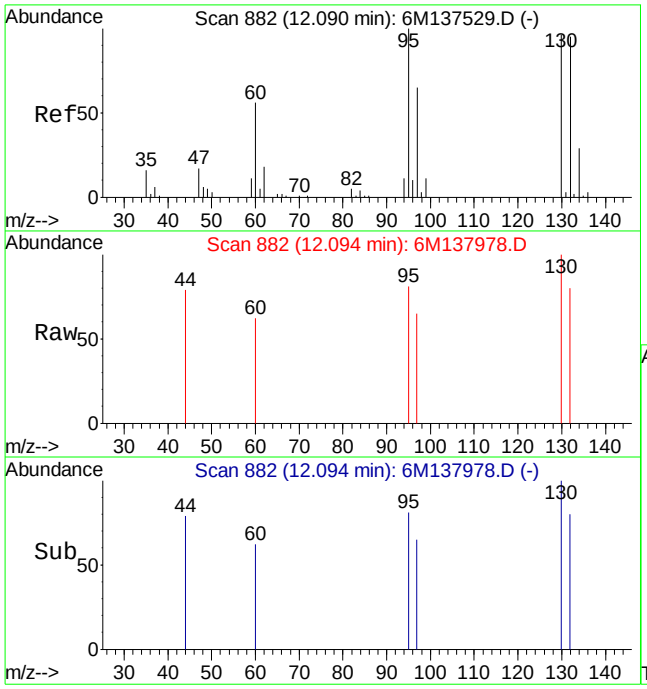

#47
Trichloroethene
Concen: 0.44 ug/L
RT: 12.09 min Scan# 882
Delta R.T. 0.00 min
Lab File: 6M137978.D
Acq: 23 Mar 2016 19:54

Tgt Ion:130 Resp: 1227

Ion	Ratio	Lower	Upper
130	100		
60	19.6	31.2	72.8#

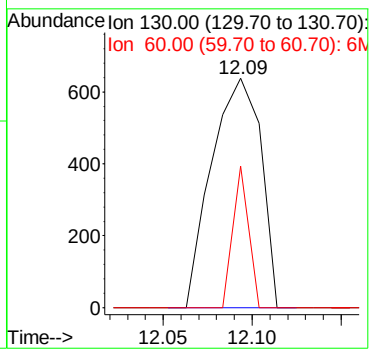

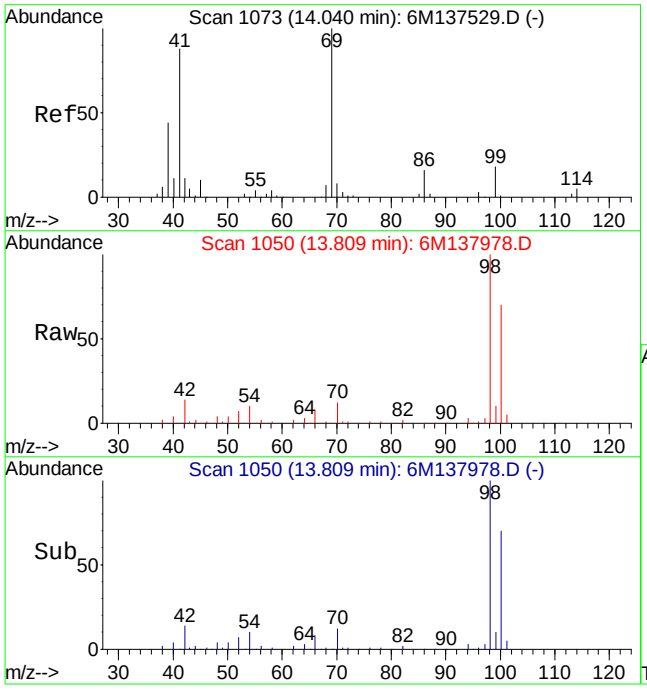

#60
Ethyl Methacrylate
Concen: 0.26 ug/L
RT: 13.81 min Scan# 1050
Delta R.T. -0.22 min
Lab File: 6M137978.D
Acq: 23 Mar 2016 19:54

Tgt Ion: 69 Resp: 995

Ion	Ratio	Lower	Upper
69	100		
41	133.9	50.6	118.2#

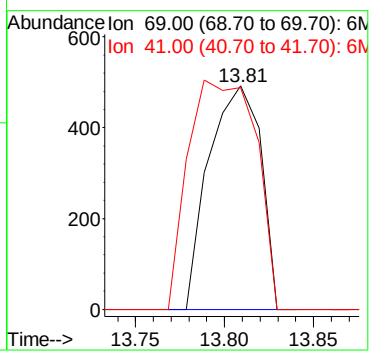

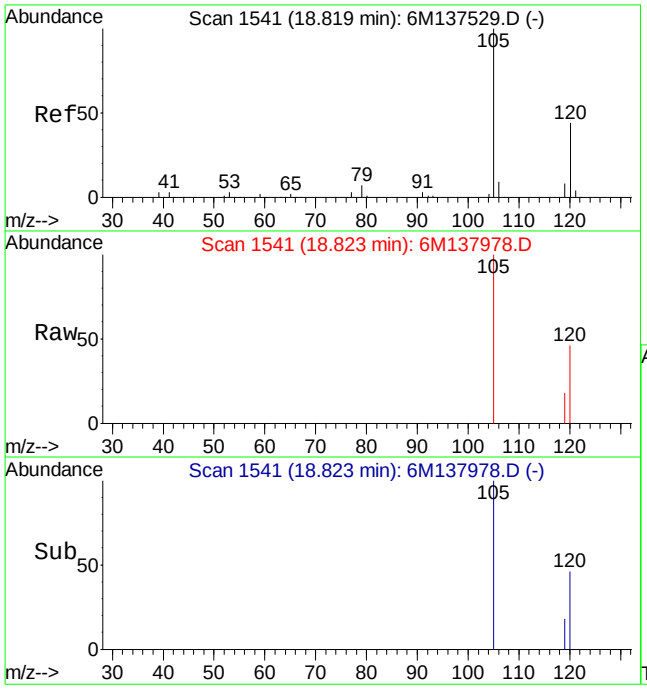

#90
1,2,4-Trimethylbenzene
Concen: 0.40 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. 0.00 min
Lab File: 6M137978.D
Acq: 23 Mar 2016 19:54

Tgt Ion:105 Resp: 4356

Ion	Ratio	Lower	Upper
105	100		
120	39.5	34.3	79.9

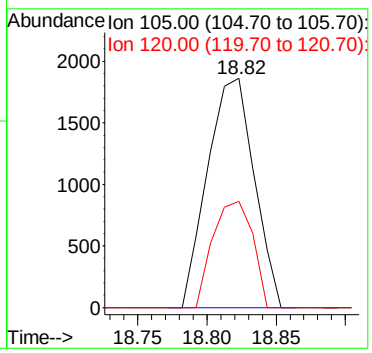

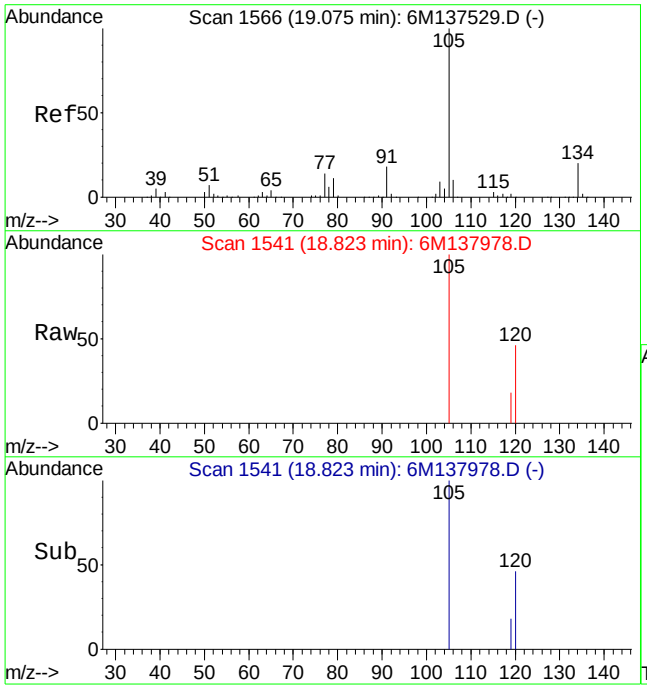

#91
sec-Butylbenzene
Concen: 0.30 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. -0.25 min
Lab File: 6M137978.D
Acq: 23 Mar 2016 19:54

Tgt Ion:105 Resp: 4001

Ion	Ratio	Lower	Upper
105	100		
134	0.0	12.2	28.6#

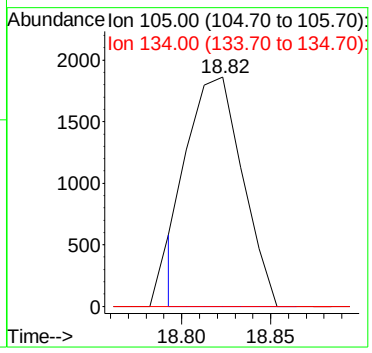

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137979.D Vial: 17
Acq On : 23 Mar 2016 20:27 Operator: TMB
Sample : L16030861-09 8260 5.24g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 08:29:42 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	548404	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	409079	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	215078	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	140342	47.7056 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.42%		
43) 1,2-Dichloroethane-d4	11.06	65	177777	46.5433 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.08%		
58) Toluene-d8	13.80	98	484191	49.7830 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.56%		
80) p-Bromofluorobenzene	17.79	95	203095	51.4095 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.82%		

Target Compounds					Qvalue
29) 2-Butanone	9.33	43	931	0.4911 ug/L	98
33) Chloroform	10.01	83	3245	0.6079 ug/L #	82
36) Tetrahydrofuran	10.31	42	2247	Below Cal #	56
45) 1,2-Dichloroethane	11.19	62	13867	3.0435 ug/L	89
47) Trichloroethene	12.09	130	135069	50.0478 ug/L	97
48) Methylcyclohexane	12.10	83	1745	0.4000 ug/L #	1

(#) = qualifier out of range (m) = manual integration
6M137979.D 826_SL.M Thu Mar 24 08:29:42 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137979.D Vial: 17
Acq On : 23 Mar 2016 20:27 Operator: TMB
Sample : L16030861-09 8260 5.24g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 8:29 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

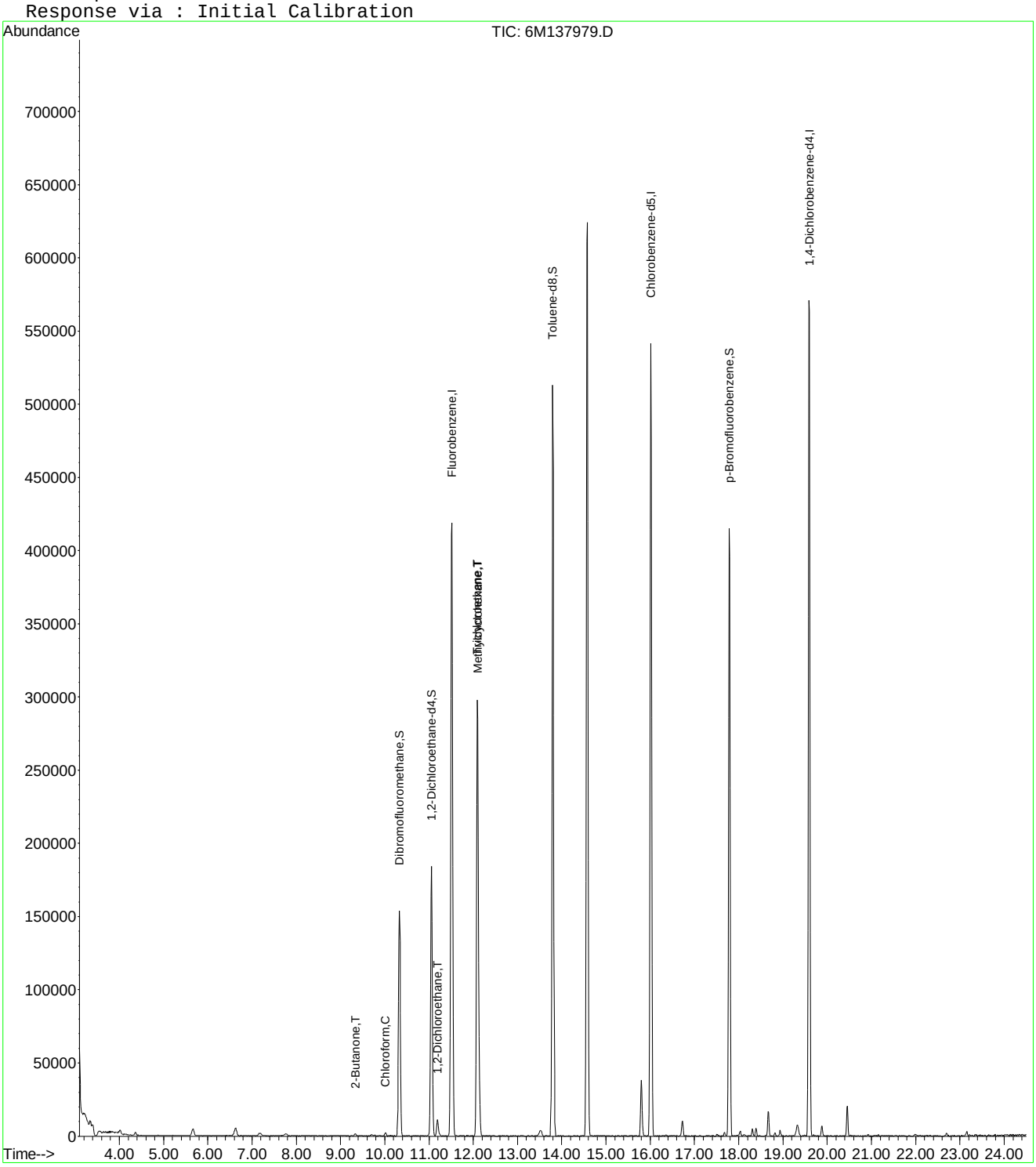

6M137979.D 826_SL.M Thu Mar 24 08:29:42 2016 Page 2

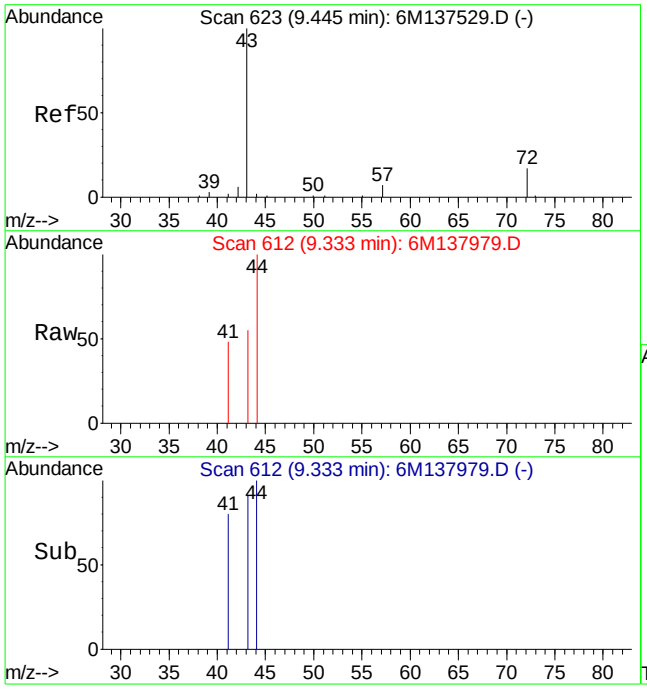

#29
2-Butanone
Concen: 0.49 ug/L
RT: 9.33 min Scan# 612
Delta R.T. -0.11 min
Lab File: 6M137979.D
Acq: 23 Mar 2016 20:27

Tgt Ion: 43 Resp: 931

Ion	Ratio	Lower	Upper
43	100		
72	21.2	12.2	28.4

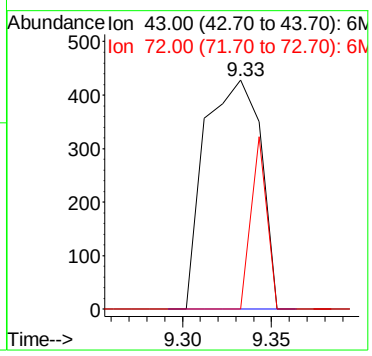

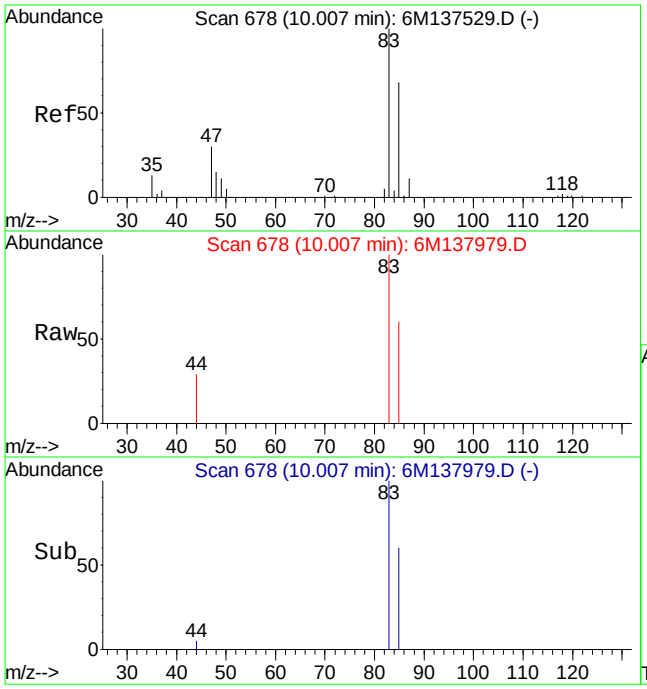

#33
Chloroform
Concen: 0.61 ug/L
RT: 10.01 min Scan# 678
Delta R.T. -0.00 min
Lab File: 6M137979.D
Acq: 23 Mar 2016 20:27

Tgt Ion: 83 Resp: 3245

Ion	Ratio	Lower	Upper
83	100		
85	66.3	38.4	89.6
47	0.0	16.9	39.5#

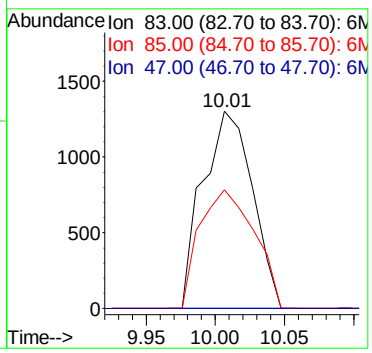

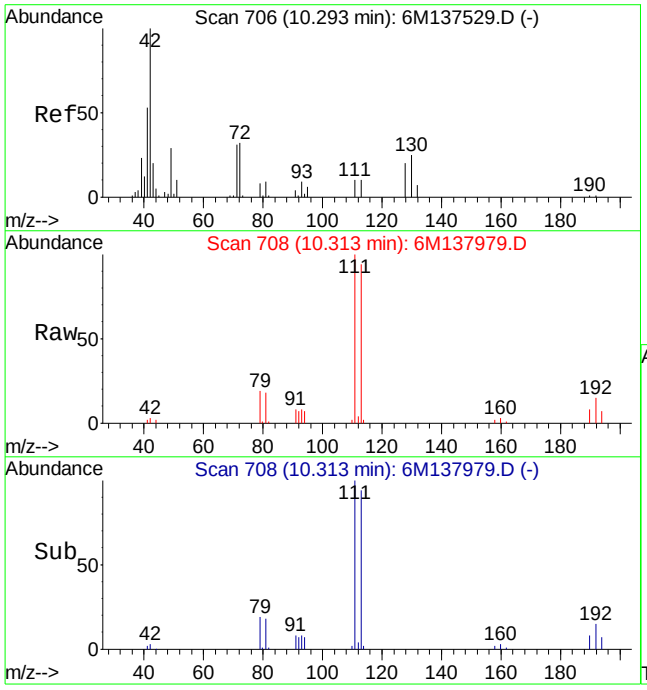

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.31 min Scan# 708
Delta R.T. 0.02 min
Lab File: 6M137979.D
Acq: 23 Mar 2016 20:27

Tgt Ion: 42 Resp: 2247

Ion	Ratio	Lower	Upper
42	100		
72	8.7	21.0	49.0#
71	9.7	20.6	48.2#

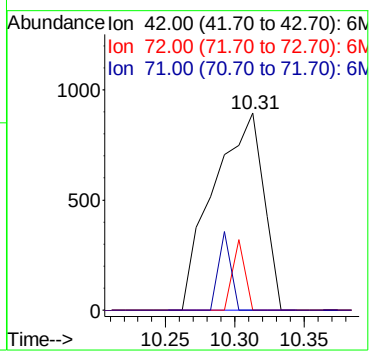

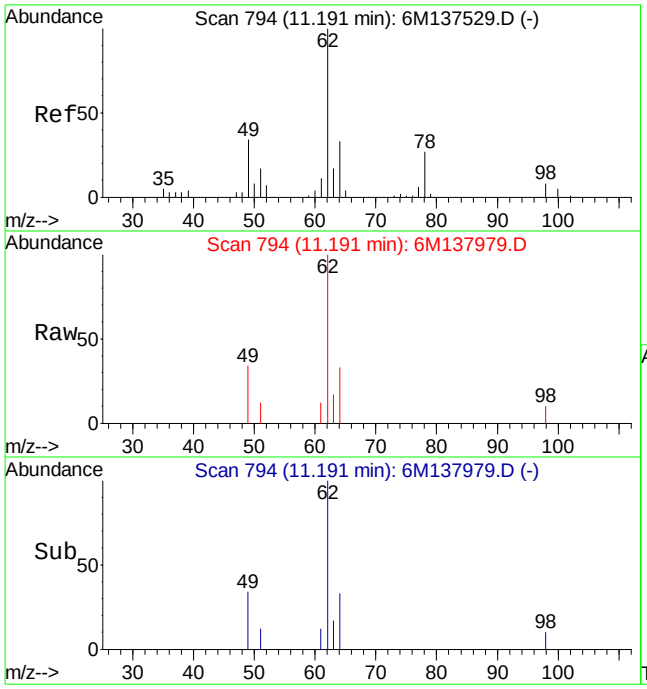

#45
1,2-Dichloroethane
Concen: 3.04 ug/L
RT: 11.19 min Scan# 794
Delta R.T. -0.00 min
Lab File: 6M137979.D
Acq: 23 Mar 2016 20:27

Tgt Ion: 62 Resp: 13867

Ion	Ratio	Lower	Upper
62	100		
49	31.1	22.9	53.3
98	5.3	4.7	10.9

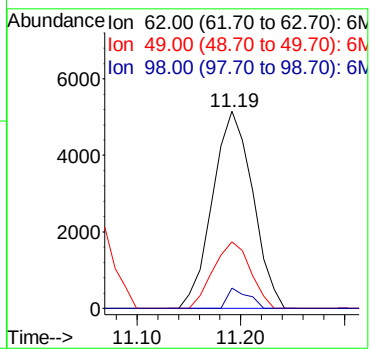

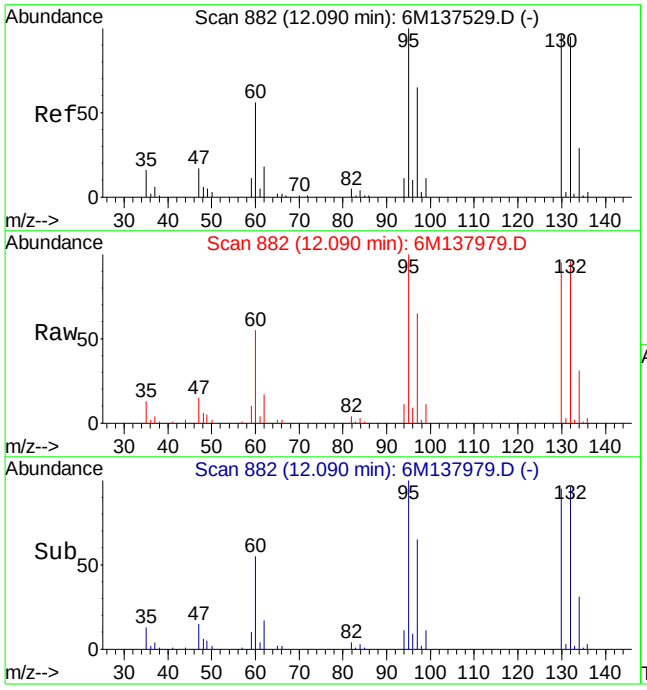

#47
Trichloroethene
Concen: 50.05 ug/L
RT: 12.09 min Scan# 882
Delta R.T. -0.00 min
Lab File: 6M137979.D
Acq: 23 Mar 2016 20:27

Tgt Ion:130 Resp: 135069

Ion	Ratio	Lower	Upper
130	100		
60	54.4	31.2	72.8

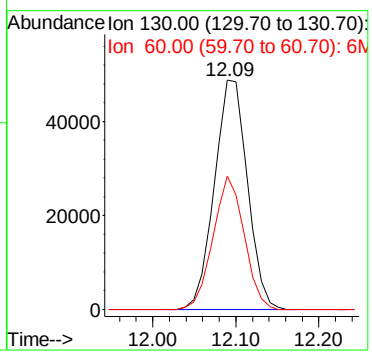

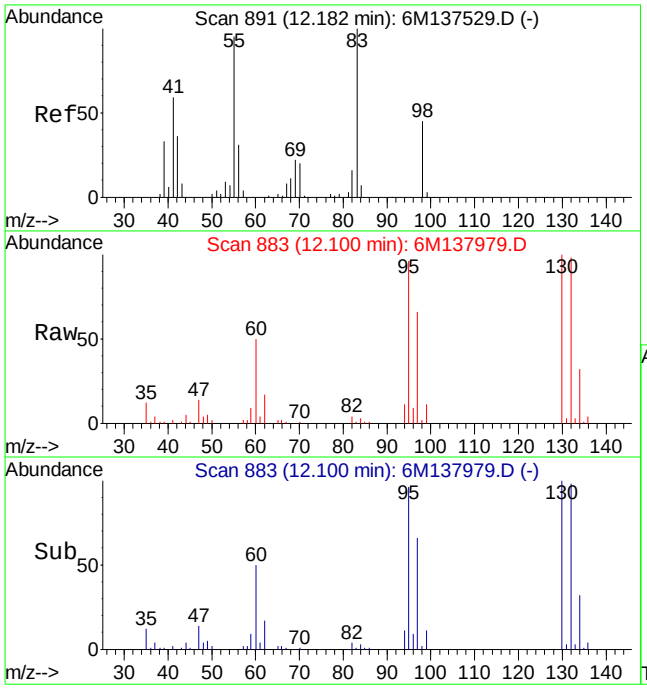

#48
Methylcyclohexane
Concen: 0.40 ug/L
RT: 12.10 min Scan# 883
Delta R.T. -0.08 min
Lab File: 6M137979.D
Acq: 23 Mar 2016 20:27

Tgt Ion: 83 Resp: 1745

Ion	Ratio	Lower	Upper
83	100		
55	0.0	48.3	112.7#
98	195.6	27.5	64.1#

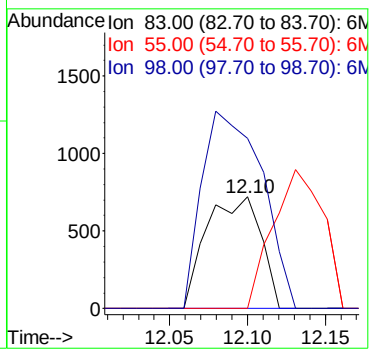

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137980.D Vial: 18
Acq On : 23 Mar 2016 21:00 Operator: TMB
Sample : L16030861-10 8260 4.95g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 08:29:43 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	553814	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	414551	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	223093	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.34	111	143853	48.4213 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.84%		
43) 1,2-Dichloroethane-d4	11.05	65	185337	48.0485 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.10%		
58) Toluene-d8	13.80	98	490272	49.7429 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.48%		
80) p-Bromofluorobenzene	17.79	95	209287	51.0736 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.14%		

Target Compounds

					Qvalue
13) Acetone	6.59	43	3739	Below Cal	# 1
36) Tetrahydrofuran	10.31	42	2433	Below Cal	# 47
45) 1,2-Dichloroethane	11.20	62	4007	0.8709 ug/L	# 77
47) Trichloroethene	12.09	130	40268	14.7750 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M137980.D 826_SL.M Thu Mar 24 08:29:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137980.D Vial: 18
Acq On : 23 Mar 2016 21:00 Operator: TMB
Sample : L16030861-10 8260 4.95g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 8:29 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

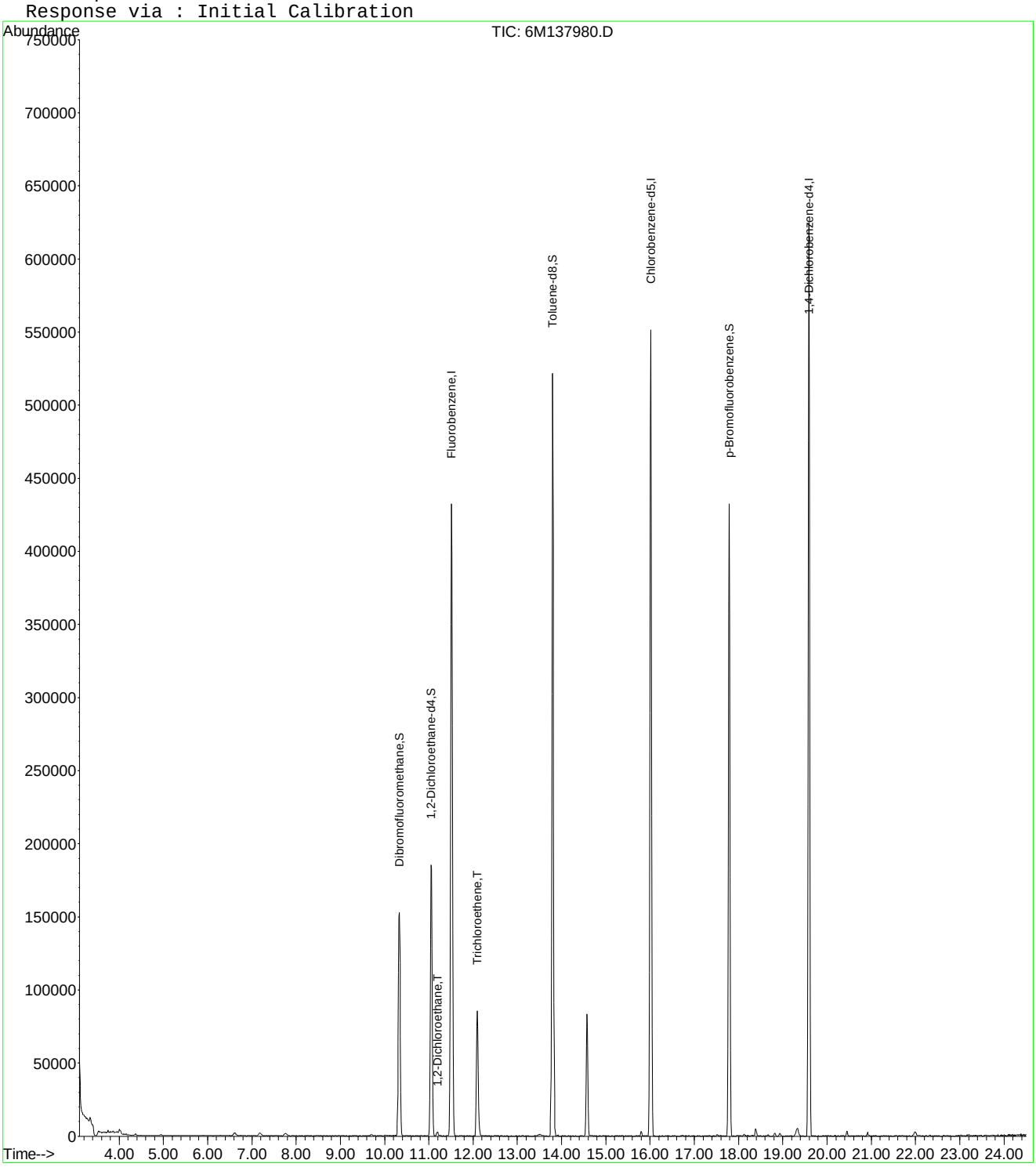

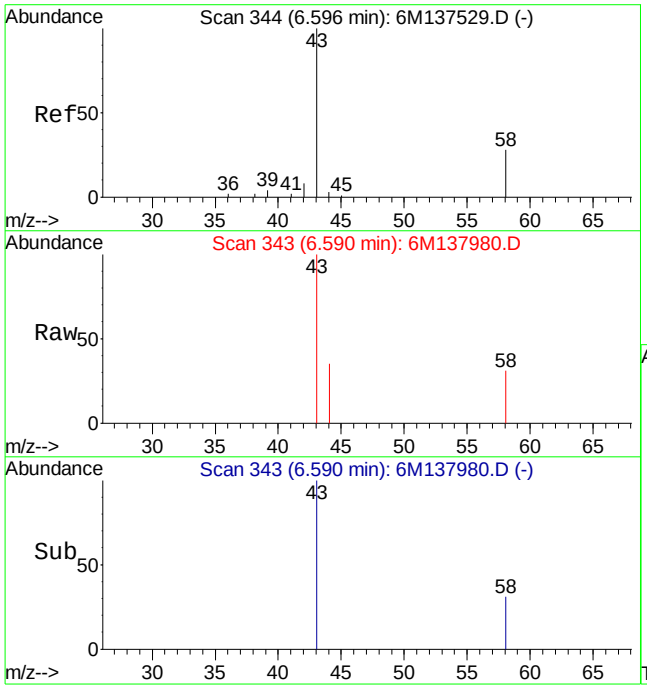

#13
Acetone
Concen: Below Cal
RT: 6.59 min Scan# 343
Delta R.T. 0.00 min
Lab File: 6M137980.D
Acq: 23 Mar 2016 21:00

Tgt Ion: 43 Resp: 3739

Ion	Ratio	Lower	Upper
43	100		
58	92.6	16.1	37.7#

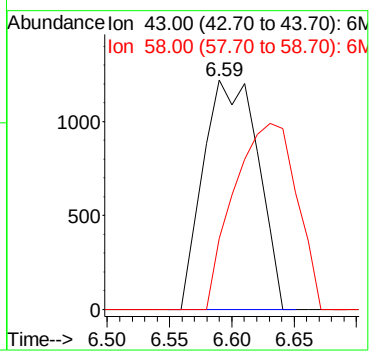

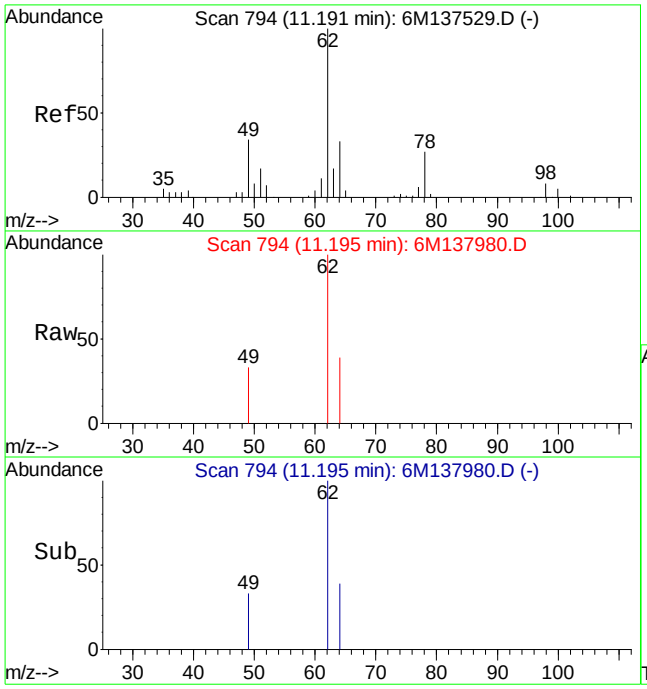

#45
1,2-Dichloroethane
Concen: 0.87 ug/L
RT: 11.20 min Scan# 794
Delta R.T. 0.00 min
Lab File: 6M137980.D
Acq: 23 Mar 2016 21:00

Tgt Ion: 62 Resp: 4007

Ion	Ratio	Lower	Upper
62	100		
49	23.8	22.9	53.3
98	0.0	4.7	10.9#

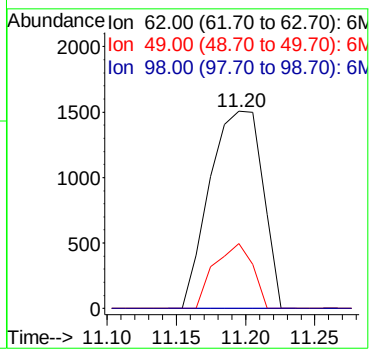

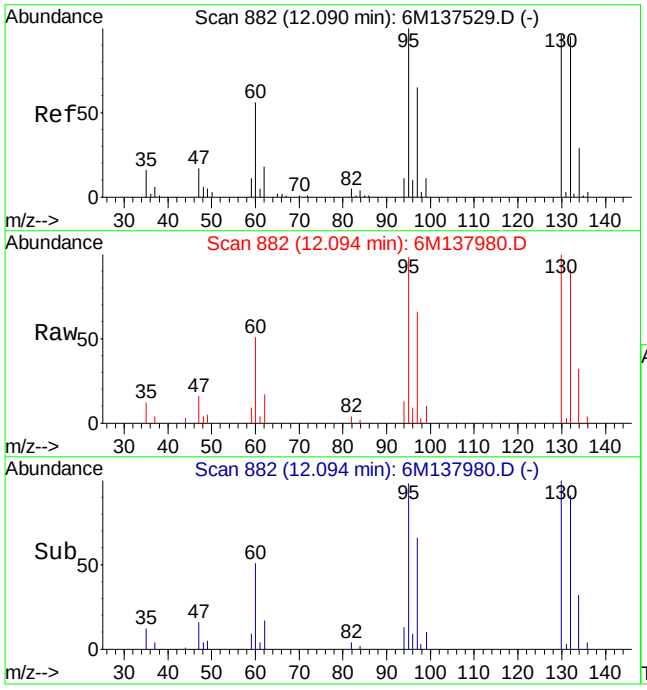

#47
Trichloroethene
Concen: 14.77 ug/L
RT: 12.09 min Scan# 882
Delta R.T. 0.00 min
Lab File: 6M137980.D
Acq: 23 Mar 2016 21:00

Tgt Ion:130 Resp: 40268

Ion	Ratio	Lower	Upper
130	100		
60	52.2	31.2	72.8

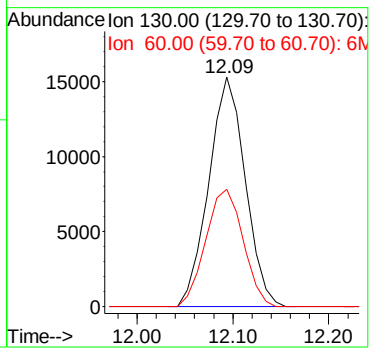

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:35 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:12:24 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	662608	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	467802	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	239669	50.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.32	111	1132	0.3185 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.64%#	
43) 1,2-Dichloroethane-d4	11.05	65	1872	0.4056 ug/L	-0.01
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.82%#	
58) Toluene-d8	13.80	98	5704	0.5128 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	1.02%#	
80) p-Bromofluorobenzene	17.79	95	2210	0.5020 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	1.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	3454	0.5676 ug/L #	66
3) Chloromethane	3.88	50	8579	1.3528 ug/L	90
4) Vinyl Chloride	4.12	62	3760	0.7367 ug/L #	74
5) 1,3-Butadiene	4.18	54	3027	0.7128 ug/L #	61
6) Bromomethane	5.03	94	1550	0.5697 ug/L	88
7) Chloroethane	5.19	64	1482	0.5121 ug/L #	45
8) Trichlorofluoromethane	5.69	101	6717	0.9794 ug/L #	89
10) Isoprene	6.27	67	1888	0.4226 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	1199	0.3663 ug/L #	55
13) Acetone	6.59	43	9375	2.3758 ug/L	94
14) 1,1-Dichloroethene	6.83	61	2956	0.5098 ug/L	84
15) Tert-Butyl Alcohol	6.94	59	200	0.3696 ug/L #	57
18) Methyl acetate	7.39	43	2867	0.7115 ug/L #	64
19) Methylene Chloride	7.67	84	2652	0.7594 ug/L	75
20) Carbon Disulfide	7.72	76	8199	0.7390 ug/L #	82
22) Methyl Tert Butyl Ether	7.88	73	4851	0.4864 ug/L #	63
23) trans-1,2-Dichloroethene	8.16	96	1352	0.4221 ug/L #	10
24) n-Hexane	8.23	57	3942	0.6777 ug/L	92
26) Vinyl Acetate	8.79	43	2062	0.2645 ug/L #	78
27) 1,1-Dichloroethane	8.82	63	3798	0.5499 ug/L #	68
29) 2-Butanone	9.46	43	1832	0.7999 ug/L #	56
31) 2,2-Dichloropropane	9.69	77	2885	0.5204 ug/L	96
32) cis-1,2-Dichloroethene	9.76	96	1812	0.5067 ug/L	93
33) Chloroform	10.01	83	3647	0.5654 ug/L	91
35) Bromochloromethane	10.26	130	694	0.3303 ug/L #	47
36) Tetrahydrofuran	10.29	42	9683	4.2648 ug/L	95
38) 1,1,1-Trichloroethane	10.59	97	2858	0.5017 ug/L	84
39) Cyclohexane	10.62	56	2886	0.4467 ug/L	94
40) 1,1-Dichloropropene	10.82	75	2042	0.4451 ug/L #	76
42) Carbon Tetrachloride	10.99	117	2712	0.5095 ug/L #	85
45) 1,2-Dichloroethane	11.19	62	3101	0.5633 ug/L #	75
46) Benzene	11.23	78	8142	0.5899 ug/L	89
47) Trichloroethene	12.09	130	1950	0.5980 ug/L	81
48) Methylcyclohexane	12.18	83	2990	0.5672 ug/L #	73
49) 1,2-Dichloropropane	12.34	63	1667	0.4489 ug/L #	69
51) Bromodichloromethane	12.68	83	2589	0.5312 ug/L	92
52) Dibromomethane	12.78	93	741	0.3411 ug/L	80
55) cis-1,3-Dichloropropene	13.42	75	2628	0.4894 ug/L #	74
56) Dimethyl Disulfide	13.71	79	853	0.3150 ug/L #	49
59) Toluene	13.92	91	7610	0.5751 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:35 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:12:24 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
60)	Ethyl Methacrylate	14.04	69	1764	0.4160 ug/L		85
62)	trans-1,3-Dichloropropene	14.12	75	2064	0.4056 ug/L	#	71
63)	1,1,2-Trichloroethane	14.37	97	1621	0.5861 ug/L	#	75
64)	2-Hexanone	14.32	43	1822	0.5773 ug/L	#	48
65)	1,3-Dichloropropane	14.75	76	2715	0.5416 ug/L		83
66)	Tetrachloroethene	14.86	166	1836	0.5624 ug/L		91
67)	Dibromochloromethane	15.18	129	1663	0.4623 ug/L		94
68)	1,2-Dibromoethane	15.48	107	1262	0.4462 ug/L		99
69)	1-Chlorohexane	15.59	91	2113	0.5142 ug/L		96
70)	Chlorobenzene	16.07	112	4991	0.5869 ug/L		75
71)	1,1,1,2-Tetrachloroethane	16.11	131	1409	0.4126 ug/L	#	79
72)	Ethylbenzene	16.11	106	2290	0.5032 ug/L		61
73)	m-,p-Xylene	16.22	106	6307	1.1326 ug/L		90
74)	o-Xylene	16.88	106	2685	0.5119 ug/L		71
75)	Styrene	16.92	104	4645	0.5203 ug/L		93
76)	Bromoform	17.49	173	756	0.2977 ug/L	#	62
77)	Isopropylbenzene	17.38	105	7047	0.4998 ug/L		82
79)	1,1,2,2-Tetrachloroethane	17.64	83	1948	0.5203 ug/L		84
83)	n-Propylbenzene	17.98	91	9243	0.5679 ug/L	#	92
84)	Bromobenzene	18.13	156	1885	0.5328 ug/L		100
85)	1,3,5-Trimethylbenzene	18.21	105	6007	0.5185 ug/L		90
86)	2-Chlorotoluene	18.29	91	5403	0.4973 ug/L		88
87)	4-Chlorotoluene	18.35	91	5598	0.5635 ug/L	#	83
88)	a-Methylstyrene	18.69	118	3780	0.6719 ug/L		93
89)	tert-Butylbenzene	18.76	134	1072	0.4440 ug/L		84
90)	1,2,4-Trimethylbenzene	18.82	105	7288	0.5982 ug/L		78
91)	sec-Butylbenzene	19.08	105	8207	0.5532 ug/L		85
92)	p-Isopropyltoluene	19.27	119	6156	0.5029 ug/L		99
93)	1,3-Dichlorobenzene	19.48	146	3876	0.5662 ug/L		99
94)	1,4-Dichlorobenzene	19.64	146	4389	0.6299 ug/L	#	36
95)	n-Butylbenzene	19.89	91	6993	0.5680 ug/L		91
96)	1,2-Dichlorobenzene	20.23	146	3739	0.5676 ug/L		89
98)	1,2,4-Trichlorobenzene	22.76	180	2881	0.6050 ug/L		89
99)	Hexachlorobutadiene	22.95	225	1268	0.4656 ug/L		81
100)	Naphthalene	23.20	128	5965	0.5449 ug/L		95
101)	1,2,3-Trichlorobenzene	23.58	180	2914	0.6214 ug/L	#	69

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

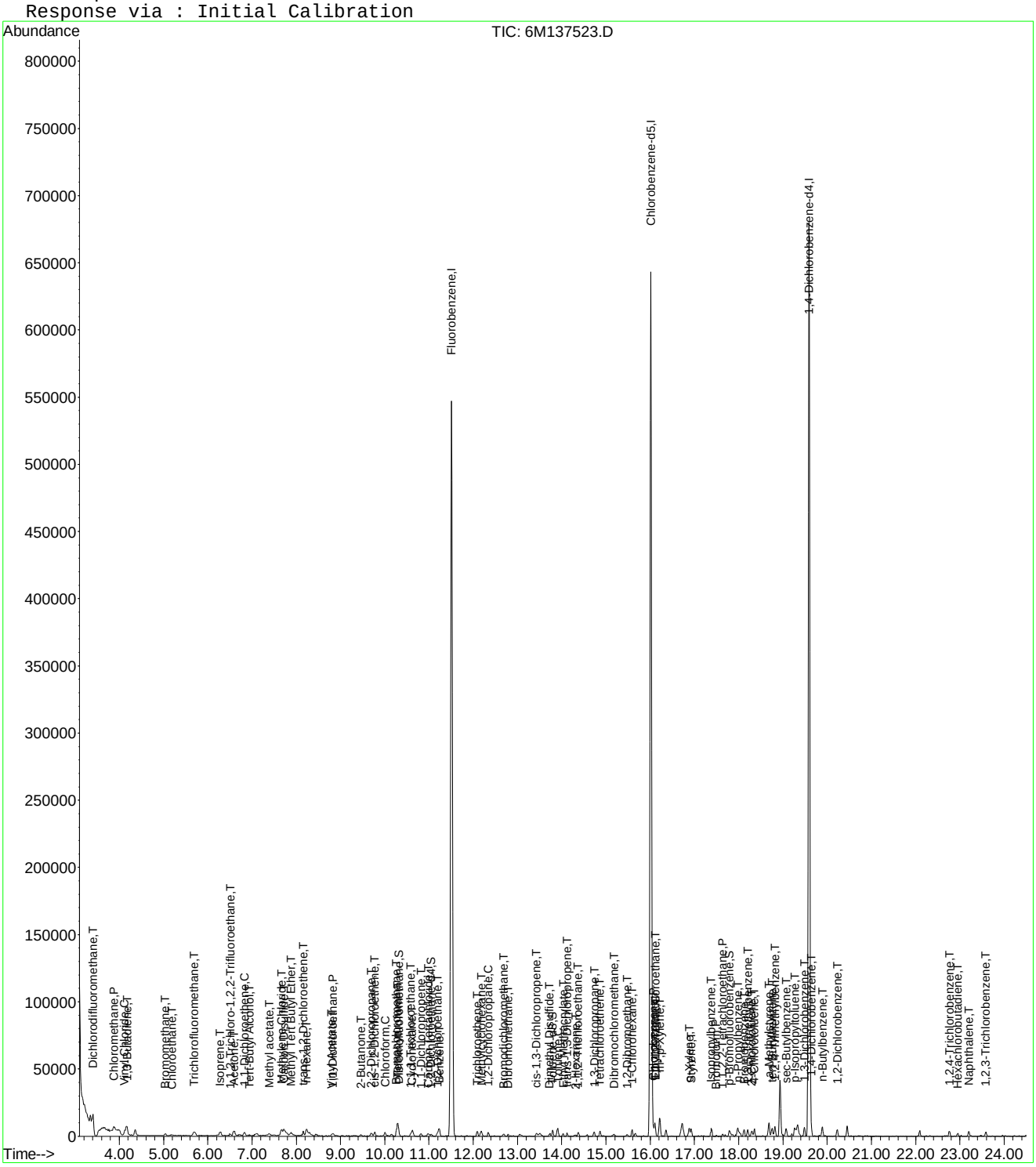

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.5676	0.0	0	0.00
3	P	Chloromethane	-1.0000	1.3528	0.0	0	0.00
4	C	Vinyl Chloride	-1.0000	0.7367	0.0	0	0.00
5	T	1,3-Butadiene	-1.0000	0.7128	0.0	0	0.01
6	T	Bromomethane	-1.0000	0.5697	0.0	0	0.00
7	T	Chloroethane	-1.0000	0.5121	0.0	0	0.00
8	T	Trichlorofluoromethane	-1.0000	0.9794	0.0	0	-0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.24#
10	T	Isoprene	-1.0000	0.4226	0.0	0	-0.01
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.48#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3663	0.0	0	0.00
13	T	Acetone	-1.0000	2.3758	0.0	0	0.00
14	C	1,1-Dichloroethene	-1.0000	0.5098	0.0	0	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.3696	0.0	0	0.00
16	T	Dimethyl Sulfide	-1.0000	0.2328	0.0	0	-0.02
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.38#
18	T	Methyl acetate	-1.0000	0.7115	0.0	0	0.00
19	T	Methylene Chloride	-1.0000	0.7594	0.0	0	0.00
20	T	Carbon Disulfide	-1.0000	0.7390	0.0	0	0.00
21	T	Acrylonitrile	-1.0000	0.1371	0.0	0	0.02
22	T	Methyl Tert Butyl Ether	0.5000	0.4864	2.7	100	-0.01
23	T	trans-1,2-Dichloroethene	-1.0000	0.4221	0.0	0	0.00
24	T	n-Hexane	-1.0000	0.6777	0.0	0	-0.01
25	T	Diisopropyl ether	-1.0000	0.1069	0.0	0	-0.16
26	T	Vinyl Acetate	-1.0000	0.2645	0.0	0	0.00
27	P	1,1-Dichloroethane	-1.0000	0.5499	0.0	0	-0.01
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-9.24#
29	T	2-Butanone	-1.0000	0.7999	0.0	0	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.58#
31	T	2,2-Dichloropropane	-1.0000	0.5204	0.0	0	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.5067	0.0	0	-0.01
33	C	Chloroform	-1.0000	0.5654	0.0	0	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-10.16#
35	T	Bromochloromethane	-1.0000	0.3303	0.0	0	0.00
36	T	Tetrahydrofuran	-1.0000	4.2648	0.0	0	0.00
37	S	Dibromofluoromethane	-1.0000	0.3185	0.0	0	0.00
38	T	1,1,1-Trichloroethane	-1.0000	0.5017	0.0	0	-0.01
39	T	Cyclohexane	-1.0000	0.4467	0.0	0	-0.02
40	T	1,1-Dichloropropene	-1.0000	0.4451	0.0	0	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.94#
42	T	Carbon Tetrachloride	-1.0000	0.5095	0.0	0	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.4056	0.0	0	-0.01
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	-1.0000	0.5633	0.0	0	0.00
46	T	Benzene	0.5000	0.5899	-18.0	100	0.00
47	T	Trichloroethene	-1.0000	0.5980	0.0	0	0.00
48	T	Methylcyclohexane	-1.0000	0.5672	0.0	0	0.00
49	C	1,2-Dichloropropane	-1.0000	0.4489	0.0	0	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-12.67#
51	T	Bromodichloromethane	-1.0000	0.5312	0.0	0	0.00
52	T	Dibromomethane	-1.0000	0.3411	0.0	0	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1346	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-13.07#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.4894	0.0	0	-0.01
56	T	Dimethyl Disulfide	-1.0000	0.3150	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.5128	0.0	0	0.00
59	C	Toluene	0.5000	0.5751	-15.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.4160	0.0	0	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	-1.0000	0.4056	0.0	0	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.5861	0.0	0	0.00
64	T	2-Hexanone	-1.0000	0.5773	0.0	0	0.00
65	T	1,3-Dichloropropane	-1.0000	0.5416	0.0	0	0.00
66	T	Tetrachloroethene	-1.0000	0.5624	0.0	0	-0.01
67	T	Dibromochloromethane	-1.0000	0.4623	0.0	0	0.00
68	T	1,2-Dibromoethane	-1.0000	0.4462	0.0	0	0.00
69	T	1-Chlorohexane	-1.0000	0.5142	0.0	0	0.00
70	P	Chlorobenzene	-1.0000	0.5869	0.0	0	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.4126	0.0	0	0.00
72	C	Ethylbenzene	0.5000	0.5032	-0.6	100	0.00
73	T	m-,p-Xylene	1.0000	1.1326	-13.3	100	0.00
74	T	o-Xylene	0.5000	0.5119	-2.4	100	0.00
75	T	Styrene	-1.0000	0.5203	0.0	0	0.00
76	P	Bromoform	-1.0000	0.2977	0.0	0	0.00
77	T	Isopropylbenzene	-1.0000	0.4998	0.0	0	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.5203	0.0	0	-0.01
80	S	p-Bromofluorobenzene	-1.0000	0.5020	0.0	0	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.1823	0.0	0	0.01
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.1476	0.0	0	0.00
83	T	n-Propylbenzene	-1.0000	0.5679	0.0	0	0.00
84	T	Bromobenzene	-1.0000	0.5328	0.0	0	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.5185	0.0	0	0.00
86	T	2-Chlorotoluene	-1.0000	0.4973	0.0	0	-0.01
87	T	4-Chlorotoluene	-1.0000	0.5635	0.0	0	0.00
88	T	a-Methylstyrene	-1.0000	0.6719	0.0	0	0.00
89	T	tert-Butylbenzene	-1.0000	0.4440	0.0	0	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.5982	0.0	0	0.00
91	T	sec-Butylbenzene	-1.0000	0.5532	0.0	0	0.00
92	T	p-Isopropyltoluene	-1.0000	0.5029	0.0	0	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.5662	0.0	0	0.00
94	T	1,4-Dichlorobenzene	-1.0000	0.6299	0.0	0	0.00
95	T	n-Butylbenzene	-1.0000	0.5680	0.0	0	0.00
96	T	1,2-Dichlorobenzene	-1.0000	0.5676	0.0	0	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-21.41#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.6050	0.0	0	0.00
99	T	Hexachlorobutadiene	-1.0000	0.4656	0.0	0	-0.01
100	T	Naphthalene	-1.0000	0.5449	0.0	0	0.00
101	T	1,2,3-Trichlorobenzene	-1.0000	0.6214	0.0	0	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:37 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	594307	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	418336	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	217318	50.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.34	111	2084	0.6537 ug/L	0.02
Spiked Amount 50.000	Range 80 - 120		Recovery =	1.30%#	
43) 1,2-Dichloroethane-d4	11.06	65	2834	0.6847 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	1.36%#	
58) Toluene-d8	13.80	98	7503	0.7544 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	1.50%#	
80) p-Bromofluorobenzene	17.79	95	3135	0.7854 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	1.58%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	6025	1.1039 ug/L	88
3) Chloromethane	3.88	50	8942	1.5721 ug/L	80
4) Vinyl Chloride	4.13	62	5159	1.1269 ug/L	96
5) 1,3-Butadiene	4.18	54	4578	1.2019 ug/L #	67
6) Bromomethane	5.03	94	2477	1.0150 ug/L	94
7) Chloroethane	5.20	64	2347	0.9041 ug/L #	77
8) Trichlorofluoromethane	5.70	101	7751	1.2600 ug/L #	92
9) Diethyl ether	6.23	59	14414	5.0935 ug/L	81
10) Isoprene	6.28	67	3598	0.8978 ug/L	94
11) Acrolein	6.48	56	1307	2.4320 ug/L #	51
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	3197	1.0888 ug/L	73
13) Acetone	6.60	43	5933	0.3832 ug/L	97
14) 1,1-Dichloroethene	6.84	61	5455	1.0489 ug/L	83
15) Tert-Butyl Alcohol	6.93	59	4660	9.6025 ug/L #	86
16) Dimethyl Sulfide	7.13	62	2208	0.8750 ug/L	94
18) Methyl acetate	7.40	43	3574	0.9889 ug/L #	64
19) Methylene Chloride	7.66	84	3682	1.1755 ug/L	75
20) Carbon Disulfide	7.72	76	11945	1.2004 ug/L	97
21) Acrylonitrile	7.86	53	3216	2.1651 ug/L	84
22) Methyl Tert Butyl Ether	7.90	73	8242	0.9214 ug/L	91
23) trans-1,2-Dichloroethene	8.17	96	2437	0.8482 ug/L	60
24) n-Hexane	8.23	57	4827	0.9252 ug/L	90
25) Diisopropyl ether	8.62	45	67920	5.0212 ug/L	97
26) Vinyl Acetate	8.80	43	6077	0.8691 ug/L #	78
27) 1,1-Dichloroethane	8.83	63	6295	1.0162 ug/L	88
28) Ethyl-Tert-Butyl ether	9.25	59	49996	4.6114 ug/L	96
29) 2-Butanone	9.47	43	2247	1.0938 ug/L #	56
30) Propionitrile	9.57	54	2816	4.9529 ug/L #	71
31) 2,2-Dichloropropane	9.70	77	5030	1.0116 ug/L	94
32) cis-1,2-Dichloroethene	9.77	96	2740	0.8542 ug/L	83
33) Chloroform	10.00	83	6439	1.1130 ug/L	98
35) Bromochloromethane	10.26	130	1361	0.7221 ug/L	97
36) Tetrahydrofuran	10.29	42	10271	5.4403 ug/L	94
38) 1,1,1-Trichloroethane	10.61	97	5241	1.0257 ug/L	95
39) Cyclohexane	10.63	56	5811	1.0029 ug/L	86
40) 1,1-Dichloropropene	10.82	75	4038	0.9813 ug/L #	89
41) Tert-Amyl-Methyl ether	10.95	73	39464	4.5884 ug/L #	83
42) Carbon Tetrachloride	11.00	117	4871	1.0202 ug/L #	88
45) 1,2-Dichloroethane	11.19	62	4707	0.9533 ug/L #	86
46) Benzene	11.23	78	13412	1.0834 ug/L	93

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:37 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
47)	Trichloroethene	12.09	130	2983	1.0199 ug/L		90
48)	Methylcyclohexane	12.19	83	4295	0.9084 ug/L		77
49)	1,2-Dichloropropane	12.35	63	3111	0.9339 ug/L	#	69
51)	Bromodichloromethane	12.68	83	4337	0.9921 ug/L		97
52)	Dibromomethane	12.77	93	1629	0.8361 ug/L		91
53)	2-Chloroethyl Vinyl Ether	13.04	63	1268	0.6921 ug/L	#	43
54)	4-Methyl-2-Pentanone	13.08	58	633	0.4563 ug/L	#	34
55)	cis-1,3-Dichloropropene	13.43	75	4040	0.8388 ug/L		98
56)	Dimethyl Disulfide	13.72	79	1323	0.5447 ug/L	#	49
59)	Toluene	13.91	91	12207	1.0316 ug/L		97
60)	Ethyl Methacrylate	14.03	69	2818	0.7432 ug/L		100
62)	trans-1,3-Dichloropropene	14.12	75	3878	0.8522 ug/L		100
63)	1,1,2-Trichloroethane	14.38	97	2441	0.9869 ug/L		93
64)	2-Hexanone	14.31	43	2064	0.7313 ug/L		93
65)	1,3-Dichloropropane	14.73	76	4145	0.9246 ug/L		83
66)	Tetrachloroethene	14.87	166	3009	1.0308 ug/L		96
67)	Dibromochloromethane	15.17	129	2840	0.8829 ug/L		96
68)	1,2-Dibromoethane	15.48	107	1912	0.7559 ug/L		85
69)	1-Chlorohexane	15.59	91	3045	0.8286 ug/L	#	59
70)	Chlorobenzene	16.06	112	8053	1.0589 ug/L	#	66
71)	1,1,1,2-Tetrachloroethane	16.11	131	2914	0.9542 ug/L		92
72)	Ethylbenzene	16.10	106	3899	0.9580 ug/L		89
73)	m-,p-Xylene	16.21	106	9999	2.0079 ug/L		90
74)	o-Xylene	16.88	106	4283	0.9131 ug/L		84
75)	Styrene	16.92	104	6414	0.8034 ug/L		92
76)	Bromoform	17.49	173	1706	0.7511 ug/L	#	70
77)	Isopropylbenzene	17.38	105	11886	0.9427 ug/L		95
79)	1,1,2,2-Tetrachloroethane	17.65	83	3500	1.0310 ug/L		95
81)	1,2,3-Trichloropropane	17.87	110	811	0.7802 ug/L	#	55
82)	trans-1,4-Dichloro-2-Buten	17.93	53	959	0.7652 ug/L		70
83)	n-Propylbenzene	17.98	91	14256	0.9660 ug/L	#	91
84)	Bromobenzene	18.13	156	3248	1.0125 ug/L		98
85)	1,3,5-Trimethylbenzene	18.21	105	9438	0.8984 ug/L		95
86)	2-Chlorotoluene	18.30	91	9880	1.0030 ug/L		97
87)	4-Chlorotoluene	18.35	91	8357	0.9278 ug/L		93
88)	a-Methylstyrene	18.68	118	4374	0.8574 ug/L		95
89)	tert-Butylbenzene	18.75	134	1999	0.9131 ug/L		84
90)	1,2,4-Trimethylbenzene	18.82	105	10630	0.9622 ug/L		79
91)	sec-Butylbenzene	19.07	105	13062	0.9709 ug/L		95
92)	p-Isopropyltoluene	19.27	119	10400	0.9370 ug/L		89
93)	1,3-Dichlorobenzene	19.48	146	6397	1.0306 ug/L		97
94)	1,4-Dichlorobenzene	19.64	146	7211	1.1413 ug/L		83
95)	n-Butylbenzene	19.88	91	10811	0.9684 ug/L		88
96)	1,2-Dichlorobenzene	20.22	146	5973	1.0000 ug/L		96
97)	1,2-Dibromo-3-Chloropropan	21.41	75	191	0.2543 ug/L	#	1
98)	1,2,4-Trichlorobenzene	22.76	180	4430	1.0259 ug/L		93
99)	Hexachlorobutadiene	22.94	225	2385	0.9658 ug/L		90
100)	Naphthalene	23.20	128	8770	0.8835 ug/L		92
101)	1,2,3-Trichlorobenzene	23.59	180	4309	1.0134 ug/L		95

(#) = qualifier out of range (m) = manual integration
6M137524.D 826_SL.M Mon Feb 29 16:01:38 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

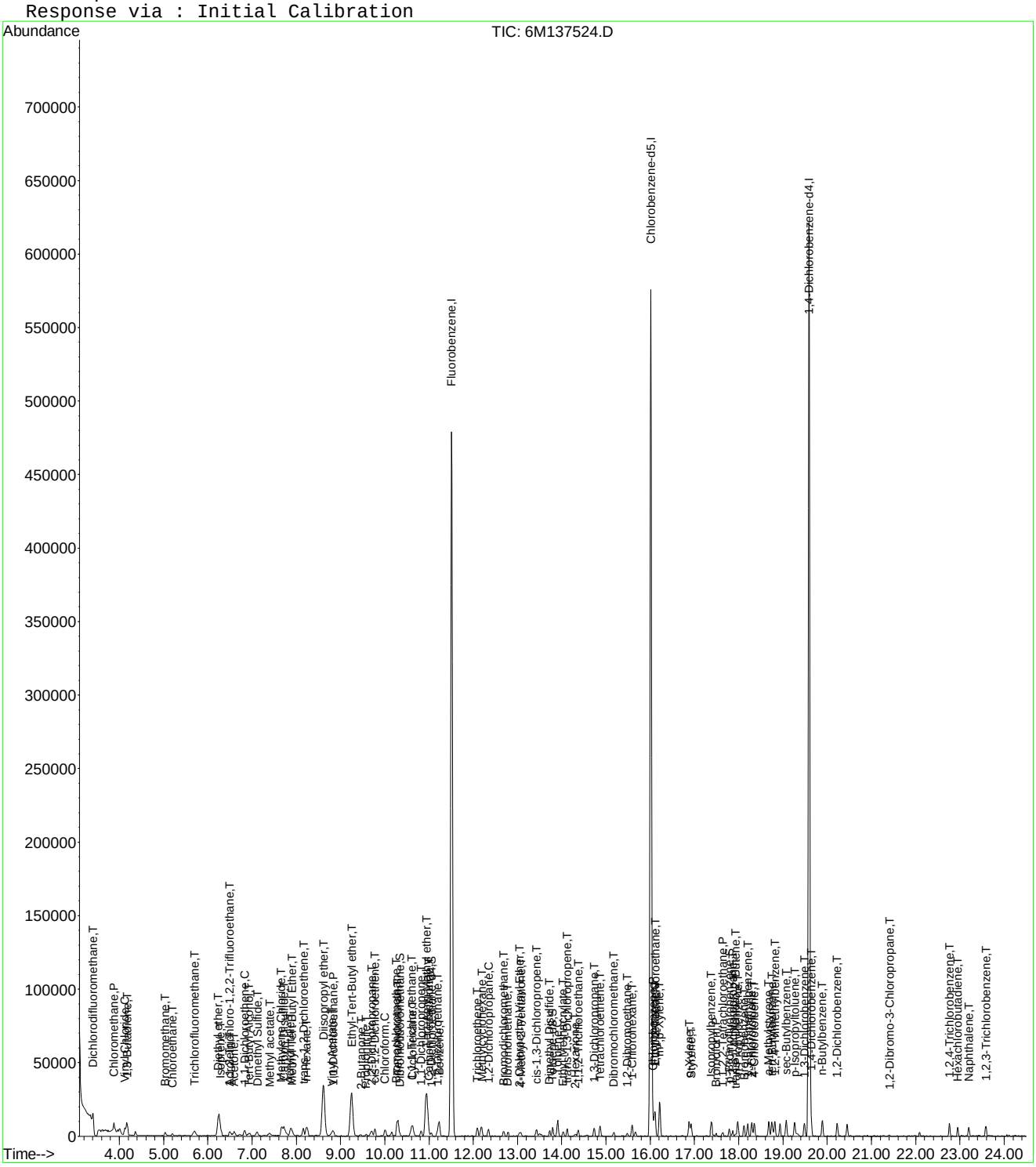

6M137524.D 826_SL.M Mon Feb 29 16:01:38 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	1.1039	0.0	0	0.00
3	P	Chloromethane	-1.0000	1.5721	0.0	0	0.00
4	C	Vinyl Chloride	-1.0000	1.1269	0.0	0	0.01
5	T	1,3-Butadiene	-1.0000	1.2019	0.0	0	0.01
6	T	Bromomethane	-1.0000	1.0150	0.0	0	0.00
7	T	Chloroethane	-1.0000	0.9041	0.0	0	0.00
8	T	Trichlorofluoromethane	-1.0000	1.2600	0.0	0	0.00
9	T	Diethyl ether	5.0000	5.0935	-1.9	100	-0.01
10	T	Isoprene	-1.0000	0.8978	0.0	0	0.00
11	T	Acrolein	2.5000	2.4320	2.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	1.0888	0.0	0	-0.01
13	T	Acetone	-1.0000	0.3832	0.0	0	0.01
14	C	1,1-Dichloroethene	-1.0000	1.0489	0.0	0	0.00
15	T	Tert-Butyl Alcohol	10.0000	9.6025	4.0	100	0.00
16	T	Dimethyl Sulfide	-1.0000	0.8750	0.0	0	0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.38#
18	T	Methyl acetate	-1.0000	0.9889	0.0	0	0.01
19	T	Methylene Chloride	-1.0000	1.1755	0.0	0	-0.01
20	T	Carbon Disulfide	-1.0000	1.2004	0.0	0	0.00
21	T	Acrylonitrile	2.5000	2.1651	13.4	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9214	7.9	100	0.00
23	T	trans-1,2-Dichloroethene	-1.0000	0.8482	0.0	0	0.00
24	T	n-Hexane	-1.0000	0.9252	0.0	0	-0.01
25	T	Diisopropyl ether	5.0000	5.0212	-0.4	100	0.01
26	T	Vinyl Acetate	-1.0000	0.8691	0.0	0	0.00
27	P	1,1-Dichloroethane	-1.0000	1.0162	0.0	0	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.6114	7.8	100	0.01
29	T	2-Butanone	-1.0000	1.0938	0.0	0	0.02
30	T	Propionitrile	5.0000	4.9529	0.9	100	-0.01
31	T	2,2-Dichloropropane	-1.0000	1.0116	0.0	0	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.8542	0.0	0	0.00
33	C	Chloroform	-1.0000	1.1130	0.0	0	-0.01
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-10.16#
35	T	Bromochloromethane	-1.0000	0.7221	0.0	0	0.00
36	T	Tetrahydrofuran	5.0000	5.4403	-8.8	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.6537	0.0	0	0.02
38	T	1,1,1-Trichloroethane	-1.0000	1.0257	0.0	0	0.00
39	T	Cyclohexane	-1.0000	1.0029	0.0	0	-0.01
40	T	1,1-Dichloropropene	-1.0000	0.9813	0.0	0	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	4.5884	8.2	100	0.00
42	T	Carbon Tetrachloride	-1.0000	1.0202	0.0	0	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.6847	0.0	0	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	-1.0000	0.9533	0.0	0	0.00
46	T	Benzene	1.0000	1.0834	-8.3	100	0.00
47	T	Trichloroethene	-1.0000	1.0199	0.0	0	0.00
48	T	Methylcyclohexane	-1.0000	0.9084	0.0	0	0.01
49	C	1,2-Dichloropropane	-1.0000	0.9339	0.0	0	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-12.67#
51	T	Bromodichloromethane	-1.0000	0.9921	0.0	0	0.00
52	T	Dibromomethane	-1.0000	0.8361	0.0	0	-0.01
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.6921	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.4563	0.0	0	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.8388	0.0	0	0.00
56	T	Dimethyl Disulfide	-1.0000	0.5447	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.7544	0.0	0	0.00
59	C	Toluene	1.0000	1.0316	-3.2	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.7432	0.0	0	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	-1.0000	0.8522	0.0	0	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.9869	0.0	0	0.00
64	T	2-Hexanone	-1.0000	0.7313	0.0	0	0.00
65	T	1,3-Dichloropropane	-1.0000	0.9246	0.0	0	0.00
66	T	Tetrachloroethene	-1.0000	1.0308	0.0	0	0.00
67	T	Dibromochloromethane	-1.0000	0.8829	0.0	0	0.00
68	T	1,2-Dibromoethane	-1.0000	0.7559	0.0	0	0.00
69	T	1-Chlorohexane	-1.0000	0.8286	0.0	0	0.00
70	P	Chlorobenzene	-1.0000	1.0589	0.0	0	-0.01
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.9542	0.0	0	0.00
72	C	Ethylbenzene	1.0000	0.9580	4.2	100	0.00
73	T	m-,p-Xylene	2.0000	2.0079	-0.4	100	-0.01
74	T	o-Xylene	1.0000	0.9132	8.7	100	0.00
75	T	Styrene	-1.0000	0.8034	0.0	0	0.00
76	P	Bromoform	-1.0000	0.7511	0.0	0	0.00
77	T	Isopropylbenzene	-1.0000	0.9427	0.0	0	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	1.0310	0.0	0	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.7854	0.0	0	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.7802	0.0	0	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.7652	0.0	0	0.00
83	T	n-Propylbenzene	-1.0000	0.9660	0.0	0	0.00
84	T	Bromobenzene	-1.0000	1.0125	0.0	0	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.8984	0.0	0	0.00
86	T	2-Chlorotoluene	-1.0000	1.0030	0.0	0	0.00
87	T	4-Chlorotoluene	-1.0000	0.9278	0.0	0	0.00
88	T	a-Methylstyrene	-1.0000	0.8574	0.0	0	-0.01
89	T	tert-Butylbenzene	-1.0000	0.9131	0.0	0	-0.01
90	T	1,2,4-Trimethylbenzene	-1.0000	0.9622	0.0	0	0.00
91	T	sec-Butylbenzene	-1.0000	0.9709	0.0	0	0.00
92	T	p-Isopropyltoluene	-1.0000	0.9370	0.0	0	0.00
93	T	1,3-Dichlorobenzene	-1.0000	1.0306	0.0	0	0.00
94	T	1,4-Dichlorobenzene	-1.0000	1.1413	0.0	0	0.00
95	T	n-Butylbenzene	-1.0000	0.9684	0.0	0	-0.01
96	T	1,2-Dichlorobenzene	-1.0000	1.0000	0.0	0	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.2543	0.0	0	0.00
98	T	1,2,4-Trichlorobenzene	-1.0000	1.0259	0.0	0	0.00
99	T	Hexachlorobutadiene	-1.0000	0.9658	0.0	0	-0.01
100	T	Naphthalene	-1.0000	0.8835	0.0	0	0.00
101	T	1,2,3-Trichlorobenzene	-1.0000	1.0134	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137524.D 826_SL.M Mon Feb 29 16:02:09 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:38 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	572212	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	404562	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	206668	50.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.32	111	3202	1.0431 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	2.08%#	
43) 1,2-Dichloroethane-d4	11.05	65	4123	1.0345 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	2.06%#	
58) Toluene-d8	13.80	98	10309	1.0718 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	2.14%#	
80) p-Bromofluorobenzene	17.79	95	4120	1.0853 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	2.18%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	8843	1.6827 ug/L	90
3) Chloromethane	3.88	50	13225	2.4149 ug/L	95
4) Vinyl Chloride	4.12	62	8482	1.9243 ug/L	95
5) 1,3-Butadiene	4.18	54	8044	2.1934 ug/L	77
6) Bromomethane	5.04	94	4396	1.8709 ug/L	94
7) Chloroethane	5.20	64	4555	1.8225 ug/L	99
8) Trichlorofluoromethane	5.70	101	12235	2.0657 ug/L #	96
9) Diethyl ether	6.24	59	66018	24.2296 ug/L	90
10) Isoprene	6.28	67	6318	1.6374 ug/L	84
11) Acrolein	6.49	56	6390	12.3492 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	4561	1.6133 ug/L	91
13) Acetone	6.60	43	7504	1.8809 ug/L	97
14) 1,1-Dichloroethene	6.83	61	8701	1.7376 ug/L	89
15) Tert-Butyl Alcohol	6.94	59	20238	43.3134 ug/L	94
16) Dimethyl Sulfide	7.11	62	4075	1.6773 ug/L	98
17) Iodomethane	7.39	142	581	5.2052 ug/L #	30
18) Methyl acetate	7.39	43	6390	1.8363 ug/L #	70
19) Methylene Chloride	7.67	84	5869	1.9461 ug/L	65
20) Carbon Disulfide	7.71	76	18795	1.9617 ug/L	99
21) Acrylonitrile	7.86	53	16272	11.3775 ug/L	99
22) Methyl Tert Butyl Ether	7.89	73	15172	1.7617 ug/L	96
23) trans-1,2-Dichloroethene	8.16	96	5205	1.8816 ug/L	79
24) n-Hexane	8.23	57	9310	1.8534 ug/L	99
25) Diisopropyl ether	8.61	45	320400	24.6012 ug/L	97
26) Vinyl Acetate	8.80	43	10816	1.6066 ug/L #	78
27) 1,1-Dichloroethane	8.83	63	11076	1.8571 ug/L	98
28) Ethyl-Tert-Butyl ether	9.25	59	254827	24.4116 ug/L	95
29) 2-Butanone	9.45	43	4021	2.0330 ug/L #	56
30) Propionitrile	9.58	54	12821	23.4210 ug/L	98
31) 2,2-Dichloropropane	9.69	77	9442	1.9723 ug/L	95
32) cis-1,2-Dichloroethene	9.77	96	6066	1.9642 ug/L	93
33) Chloroform	10.01	83	11484	2.0618 ug/L	99
34) 1-Bromopropane	10.16	122	398	0.9400 ug/L	97
35) Bromochloromethane	10.27	130	3448	1.9001 ug/L	92
36) Tetrahydrofuran	10.29	42	31678	22.2128 ug/L	93
38) 1,1,1-Trichloroethane	10.60	97	9432	1.9171 ug/L	98
39) Cyclohexane	10.63	56	9073	1.6263 ug/L	92
40) 1,1-Dichloropropene	10.82	75	7003	1.7675 ug/L	93
41) Tert-Amyl-Methyl ether	10.95	73	196452	23.7231 ug/L #	87
42) Carbon Tetrachloride	10.99	117	8034	1.7476 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:38 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	8853	1.8622 ug/L #	93
46)	Benzene	11.23	78	23723	1.9902 ug/L	97
47)	Trichloroethene	12.09	130	5099	1.8107 ug/L	92
48)	Methylcyclohexane	12.17	83	7350	1.6146 ug/L	79
49)	1,2-Dichloropropane	12.34	63	5698	1.7766 ug/L	95
50)	1,4-Dioxane	12.67	88	1122	55.6272 ug/L	88
51)	Bromodichloromethane	12.68	83	7699	1.8293 ug/L	96
52)	Dibromomethane	12.79	93	3316	1.7677 ug/L	91
53)	2-Chloroethyl Vinyl Ether	13.04	63	2386	1.3526 ug/L #	61
54)	4-Methyl-2-Pentanone	13.06	58	1423	1.0653 ug/L #	60
55)	cis-1,3-Dichloropropene	13.43	75	7739	1.6689 ug/L	96
56)	Dimethyl Disulfide	13.72	79	3072	1.3135 ug/L #	66
59)	Toluene	13.91	91	21516	1.8801 ug/L	99
60)	Ethyl Methacrylate	14.03	69	5274	1.4383 ug/L	90
62)	trans-1,3-Dichloropropene	14.12	75	7466	1.6966 ug/L	95
63)	1,1,2-Trichloroethane	14.37	97	4294	1.7952 ug/L	96
64)	2-Hexanone	14.32	43	4342	1.5908 ug/L	87
65)	1,3-Dichloropropane	14.74	76	7896	1.8213 ug/L	99
66)	Tetrachloroethene	14.88	166	5376	1.9043 ug/L	96
67)	Dibromochloromethane	15.17	129	5153	1.6564 ug/L	94
68)	1,2-Dibromoethane	15.47	107	4387	1.7934 ug/L	97
69)	1-Chlorohexane	15.58	91	5799	1.6318 ug/L	88
70)	Chlorobenzene	16.07	112	14803	2.0127 ug/L	82
71)	1,1,1,2-Tetrachloroethane	16.11	131	5636	1.9085 ug/L	89
72)	Ethylbenzene	16.10	106	7654	1.9447 ug/L	97
73)	m-,p-Xylene	16.22	106	17383	3.6096 ug/L	95
74)	o-Xylene	16.88	106	7997	1.7630 ug/L	95
75)	Styrene	16.92	104	12496	1.6186 ug/L	87
76)	Bromoform	17.49	173	3589	1.6340 ug/L	95
77)	Isopropylbenzene	17.38	105	20776	1.7039 ug/L	96
79)	1,1,2,2-Tetrachloroethane	17.64	83	5699	1.7652 ug/L	97
81)	1,2,3-Trichloropropane	17.86	110	1672	1.6915 ug/L	85
82)	trans-1,4-Dichloro-2-Buten	17.93	53	2042	1.7133 ug/L	78
83)	n-Propylbenzene	17.98	91	25104	1.7886 ug/L #	95
84)	Bromobenzene	18.13	156	5535	1.8143 ug/L	100
85)	1,3,5-Trimethylbenzene	18.21	105	17326	1.7343 ug/L	94
86)	2-Chlorotoluene	18.30	91	16320	1.7421 ug/L	90
87)	4-Chlorotoluene	18.35	91	17884	2.0879 ug/L	93
88)	a-Methylstyrene	18.69	118	7613	1.5692 ug/L	95
89)	tert-Butylbenzene	18.76	134	3612	1.7349 ug/L	82
90)	1,2,4-Trimethylbenzene	18.82	105	18800	1.7894 ug/L	86
91)	sec-Butylbenzene	19.08	105	23176	1.8115 ug/L	95
92)	p-Isopropyltoluene	19.26	119	18048	1.7099 ug/L	98
93)	1,3-Dichlorobenzene	19.48	146	10999	1.8633 ug/L	93
94)	1,4-Dichlorobenzene	19.64	146	12629	2.1018 ug/L	96
95)	n-Butylbenzene	19.89	91	18864	1.7769 ug/L	98
96)	1,2-Dichlorobenzene	20.23	146	10946	1.9270 ug/L	93
97)	1,2-Dibromo-3-Chloropropan	21.40	75	890	1.2459 ug/L	91
98)	1,2,4-Trichlorobenzene	22.77	180	8004	1.9491 ug/L	94
99)	Hexachlorobutadiene	22.95	225	4367	1.8595 ug/L	98
100)	Naphthalene	23.20	128	15712	1.6644 ug/L	96
101)	1,2,3-Trichlorobenzene	23.59	180	7942	1.9641 ug/L	93

(#) = qualifier out of range (m) = manual integration
6M137525.D 826_SL.M Mon Feb 29 16:01:38 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

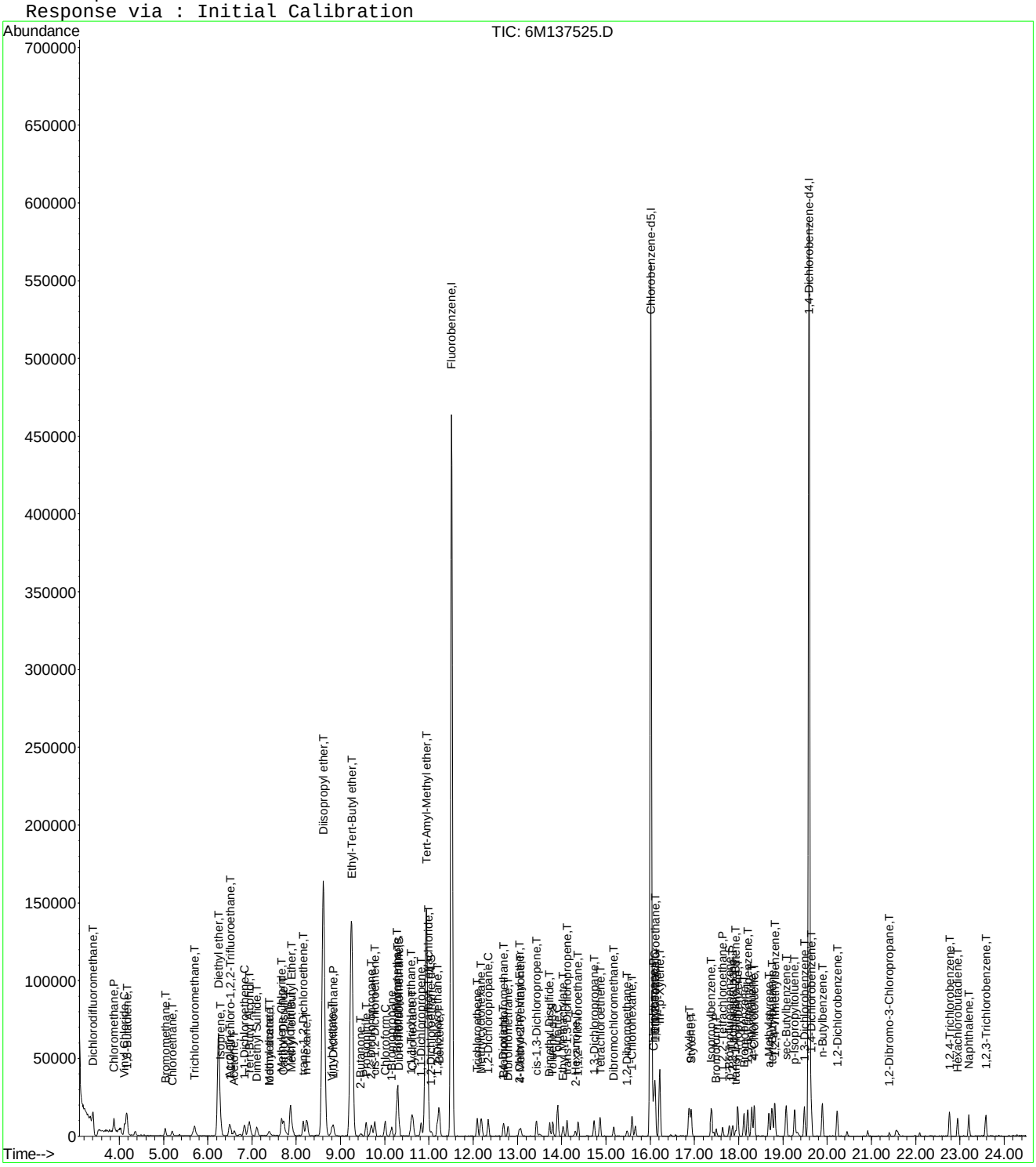

6M137525.D 826_SL.M Mon Feb 29 16:01:39 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.6827	15.9	100	0.00
3	P	Chloromethane	2.0000	2.4150	-20.7	100	0.00
4	C	Vinyl Chloride	2.0000	1.9243	3.8	100	0.00
5	T	1,3-Butadiene	-1.0000	2.1934	0.0	0	0.01
6	T	Bromomethane	2.0000	1.8709	6.5	100	0.01
7	T	Chloroethane	2.0000	1.8225	8.9	100	0.01
8	T	Trichlorofluoromethane	2.0000	2.0658	-3.3	100	0.00
9	T	Diethyl ether	25.0000	24.2296	3.1	100	0.00
10	T	Isoprene	-1.0000	1.6374	0.0	0	0.00
11	T	Acrolein	12.5000	12.3492	1.2	100	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.6134	19.3	100	0.00
13	T	Acetone	-1.0000	1.8809	0.0	0	0.01
14	C	1,1-Dichloroethene	2.0000	1.7376	13.1	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	43.3134	13.4	100	0.01
16	T	Dimethyl Sulfide	-1.0000	1.6773	0.0	0	0.00
17	T	Iodomethane	-1.0000	5.2052	0.0	0	0.01
18	T	Methyl acetate	-1.0000	1.8363	0.0	0	0.00
19	T	Methylene Chloride	2.0000	1.9461	2.7	100	0.00
20	T	Carbon Disulfide	2.0000	1.9617	1.9	100	0.00
21	T	Acrylonitrile	12.5000	11.3775	9.0	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.7617	11.9	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.8816	5.9	100	0.00
24	T	n-Hexane	2.0000	1.8534	7.3	100	-0.01
25	T	Diisopropyl ether	25.0000	24.6012	1.6	100	0.00
26	T	Vinyl Acetate	-1.0000	1.6066	0.0	0	0.00
27	P	1,1-Dichloroethane	2.0000	1.8571	7.1	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	24.4116	2.4	100	0.01
29	T	2-Butanone	-1.0000	2.0330	0.0	0	0.00
30	T	Propionitrile	25.0000	23.4210	6.3	100	0.00
31	T	2,2-Dichloropropane	2.0000	1.9723	1.4	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	1.9642	1.8	100	0.00
33	C	Chloroform	2.0000	2.0618	-3.1	100	0.00
34		1-Bromopropane	-1.0000	0.9400	0.0	0	0.00
35	T	Bromochloromethane	2.0000	1.9001	5.0	100	0.01
36	T	Tetrahydrofuran	25.0000	22.2128	11.1	100	0.00
37	S	Dibromofluoromethane	1.0000	1.0432	-4.3	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.9171	4.1	100	0.00
39	T	Cyclohexane	2.0000	1.6263	18.7	100	-0.01
40	T	1,1-Dichloropropene	2.0000	1.7675	11.6	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	23.7231	5.1	100	0.01
42	T	Carbon Tetrachloride	2.0000	1.7476	12.6	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0345	-3.5	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	2.0000	1.8622	6.9	100	0.00
46	T	Benzene	2.0000	1.9902	0.5	100	0.00
47	T	Trichloroethene	2.0000	1.8108	9.5	100	0.00
48	T	Methylcyclohexane	2.0000	1.6146	19.3	100	0.00
49	C	1,2-Dichloropropane	2.0000	1.7766	11.2	100	0.00
50	T	1,4-Dioxane	50.0000	55.6272	-11.3	100	0.00
51	T	Bromodichloromethane	2.0000	1.8293	8.5	100	0.00
52	T	Dibromomethane	2.0000	1.7677	11.6	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	1.3526	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.0653	0.0	0	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.6689	16.6	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.3135	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	1.0718	-7.2	100	0.00
59	C	Toluene	2.0000	1.8801	6.0	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.4383	28.1#	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	2.0000	1.6966	15.2	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.7952	10.2	100	0.00
64	T	2-Hexanone	-1.0000	1.5908	0.0	0	0.01
65	T	1,3-Dichloropropane	2.0000	1.8213	8.9	100	0.00
66	T	Tetrachloroethene	2.0000	1.9043	4.8	100	0.01
67	T	Dibromochloromethane	2.0000	1.6565	17.2	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.7934	10.3	100	-0.01
69	T	1-Chlorohexane	2.0000	1.6318	18.4	100	-0.01
70	P	Chlorobenzene	2.0000	2.0127	-0.6	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.9085	4.6	100	0.01
72	C	Ethylbenzene	2.0000	1.9447	2.8	100	0.00
73	T	m-,p-Xylene	4.0000	3.6096	9.8	100	0.00
74	T	o-Xylene	2.0000	1.7630	11.8	100	0.00
75	T	Styrene	2.0000	1.6186	19.1	100	0.00
76	P	Bromoform	2.0000	1.6340	18.3	100	0.00
77	T	Isopropylbenzene	2.0000	1.7039	14.8	100	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	1.7653	11.7	100	-0.01
80	S	p-Bromofluorobenzene	1.0000	1.0853	-8.5	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	1.6915	15.4	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	1.7133	14.3	100	0.00
83	T	n-Propylbenzene	2.0000	1.7886	10.6	100	0.00
84	T	Bromobenzene	2.0000	1.8143	9.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	1.7343	13.3	100	0.00
86	T	2-Chlorotoluene	2.0000	1.7421	12.9	100	0.00
87	T	4-Chlorotoluene	2.0000	2.0879	-4.4	100	0.00
88	T	a-Methylstyrene	2.0000	1.5692	21.5	100	0.00
89	T	tert-Butylbenzene	2.0000	1.7349	13.3	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	1.7894	10.5	100	0.00
91	T	sec-Butylbenzene	2.0000	1.8115	9.4	100	0.00
92	T	p-Isopropyltoluene	2.0000	1.7099	14.5	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	1.8633	6.8	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.1018	-5.1	100	0.00
95	T	n-Butylbenzene	2.0000	1.7769	11.2	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	1.9270	3.6	100	0.01
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.2459	0.0	0	-0.01
98	T	1,2,4-Trichlorobenzene	2.0000	1.9491	2.5	100	0.01
99	T	Hexachlorobutadiene	2.0000	1.8596	7.0	100	-0.01
100	T	Naphthalene	2.0000	1.6644	16.8	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9641	1.8	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137525.D 826_SL.M Mon Feb 29 16:02:19 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:39 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	643219	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	454348	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	233655	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.32	111	8526	2.4710 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	4.94%#	
43) 1,2-Dichloroethane-d4	11.06	65	11725	2.6172 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	5.24%#	
58) Toluene-d8	13.80	98	29032	2.6876 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	5.38%#	
80) p-Bromofluorobenzene	17.79	95	11167	2.6020 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	5.20%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	28102	4.7571 ug/L	100
3) Chloromethane	3.88	50	32755	5.3209 ug/L	91
4) Vinyl Chloride	4.12	62	26049	5.2573 ug/L	99
5) 1,3-Butadiene	4.17	54	23717	5.7531 ug/L	82
6) Bromomethane	5.03	94	13346	5.0529 ug/L	95
7) Chloroethane	5.19	64	14096	5.0173 ug/L	95
8) Trichlorofluoromethane	5.70	101	35831	5.3818 ug/L	98
9) Diethyl ether	6.24	59	150730	49.2132 ug/L	93
10) Isoprene	6.28	67	21438	4.9428 ug/L	81
11) Acrolein	6.48	56	14248	24.4956 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	17247	5.4273 ug/L	95
13) Acetone	6.59	43	13051	5.3136 ug/L	94
14) 1,1-Dichloroethene	6.83	61	29698	5.2760 ug/L	91
15) Tert-Butyl Alcohol	6.93	59	51304	97.6795 ug/L	93
16) Dimethyl Sulfide	7.12	62	13140	4.8115 ug/L	98
17) Iodomethane	7.38	142	3580	6.2818 ug/L	92
18) Methyl acetate	7.39	43	19888	5.0842 ug/L	93
19) Methylene Chloride	7.67	84	17567	5.1820 ug/L	73
20) Carbon Disulfide	7.72	76	56579	5.2535 ug/L	99
21) Acrylonitrile	7.86	53	38170	23.7426 ug/L	95
22) Methyl Tert Butyl Ether	7.89	73	46633	4.8170 ug/L	97
23) trans-1,2-Dichloroethene	8.16	96	15681	5.0428 ug/L	87
24) n-Hexane	8.24	57	29042	5.1432 ug/L	92
25) Diisopropyl ether	8.61	45	721466	49.2807 ug/L	97
26) Vinyl Acetate	8.80	43	31741	4.1943 ug/L	93
27) 1,1-Dichloroethane	8.83	63	34581	5.1581 ug/L	100
28) Ethyl-Tert-Butyl ether	9.24	59	576725	49.1494 ug/L	95
29) 2-Butanone	9.45	43	11939	5.3698 ug/L	87
30) Propionitrile	9.58	54	29074	47.2483 ug/L	96
31) 2,2-Dichloropropane	9.69	77	27493	5.1089 ug/L	98
32) cis-1,2-Dichloroethene	9.77	96	17624	5.0766 ug/L	93
33) Chloroform	10.01	83	32075	5.1228 ug/L	96
34) 1-Bromopropane	10.16	122	2123	4.4605 ug/L	82
35) Bromochloromethane	10.26	130	9542	4.6779 ug/L	100
36) Tetrahydrofuran	10.29	42	72518	47.4879 ug/L	94
38) 1,1,1-Trichloroethane	10.60	97	26846	4.8542 ug/L	94
39) Cyclohexane	10.64	56	31697	5.0544 ug/L	89
40) 1,1-Dichloropropene	10.82	75	23898	5.3658 ug/L	97
41) Tert-Amyl-Methyl ether	10.94	73	454105	48.7831 ug/L #	89
42) Carbon Tetrachloride	10.99	117	26296	5.0887 ug/L	96

(#) = qualifier out of range (m) = manual integration
6M137526.D 826_SL.M Mon Feb 29 16:01:39 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:39 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45) 1,2-Dichloroethane	11.19	62	26611	4.9796 ug/L	97
46) Benzene	11.23	78	66739	4.9809 ug/L	93
47) Trichloroethene	12.09	130	16560	5.2316 ug/L	93
48) Methylcyclohexane	12.18	83	26100	5.1005 ug/L	86
49) 1,2-Dichloropropane	12.34	63	17955	4.9803 ug/L	94
50) 1,4-Dioxane	12.67	88	3919	107.9166 ug/L	93
51) Bromodichloromethane	12.68	83	23069	4.8760 ug/L	92
52) Dibromomethane	12.79	93	9757	4.6271 ug/L	97
53) 2-Chloroethyl Vinyl Ether	13.04	63	8133	4.1014 ug/L	99
54) 4-Methyl-2-Pentanone	13.07	58	6484	4.3183 ug/L	81
55) cis-1,3-Dichloropropene	13.43	75	24075	4.6186 ug/L	98
56) Dimethyl Disulfide	13.72	79	10983	4.1777 ug/L	91
59) Toluene	13.91	91	65025	5.0594 ug/L	100
60) Ethyl Methacrylate	14.03	69	18200	4.4195 ug/L	95
62) trans-1,3-Dichloropropene	14.12	75	23055	4.6650 ug/L	96
63) 1,1,2-Trichloroethane	14.37	97	13105	4.8784 ug/L	97
64) 2-Hexanone	14.31	43	13531	4.4142 ug/L	93
65) 1,3-Dichloropropane	14.74	76	24567	5.0457 ug/L	96
66) Tetrachloroethene	14.87	166	17025	5.3699 ug/L	96
67) Dibromochloromethane	15.17	129	16779	4.8026 ug/L	98
68) 1,2-Dibromoethane	15.48	107	13121	4.7760 ug/L	98
69) 1-Chlorohexane	15.59	91	18960	4.7505 ug/L	75
70) Chlorobenzene	16.07	112	43871	5.3112 ug/L #	60
71) 1,1,1,2-Tetrachloroethane	16.10	131	15603	4.7045 ug/L	95
72) Ethylbenzene	16.10	106	22079	4.9950 ug/L	94
73) m-,p-Xylene	16.22	106	54549	10.0858 ug/L	96
74) o-Xylene	16.88	106	24478	4.8051 ug/L	92
75) Styrene	16.92	104	39808	4.5913 ug/L	95
76) Bromoform	17.49	173	11643	4.7199 ug/L	97
77) Isopropylbenzene	17.38	105	66989	4.8919 ug/L	99
79) 1,1,2,2-Tetrachloroethane	17.65	83	18286	5.0098 ug/L	96
81) 1,2,3-Trichloropropane	17.87	110	5764	5.1577 ug/L	93
82) trans-1,4-Dichloro-2-Buten	17.93	53	5968	4.4290 ug/L	92
83) n-Propylbenzene	17.98	91	82621	5.2068 ug/L	98
84) Bromobenzene	18.13	156	17797	5.1598 ug/L	96
85) 1,3,5-Trimethylbenzene	18.21	105	58488	5.1783 ug/L	94
86) 2-Chlorotoluene	18.30	91	57419	5.4213 ug/L	96
87) 4-Chlorotoluene	18.35	91	50976	5.2638 ug/L	97
88) a-Methylstyrene	18.69	118	25024	4.5623 ug/L	100
89) tert-Butylbenzene	18.76	134	11873	5.0441 ug/L	95
90) 1,2,4-Trimethylbenzene	18.82	105	61081	5.1422 ug/L	83
91) sec-Butylbenzene	19.08	105	74051	5.1195 ug/L	98
92) p-Isopropyltoluene	19.26	119	60824	5.0969 ug/L	97
93) 1,3-Dichlorobenzene	19.48	146	35412	5.3060 ug/L	98
94) 1,4-Dichlorobenzene	19.64	146	35211	5.1831 ug/L	83
95) n-Butylbenzene	19.89	91	60714	5.0584 ug/L	95
96) 1,2-Dichlorobenzene	20.22	146	32728	5.0962 ug/L	95
97) 1,2-Dibromo-3-Chloropropan	21.41	75	3714	4.5988 ug/L	88
98) 1,2,4-Trichlorobenzene	22.76	180	22925	4.9379 ug/L	93
99) Hexachlorobutadiene	22.96	225	13612	5.1268 ug/L	94
100) Naphthalene	23.20	128	48617	4.5551 ug/L	99
101) 1,2,3-Trichlorobenzene	23.59	180	22839	4.9959 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

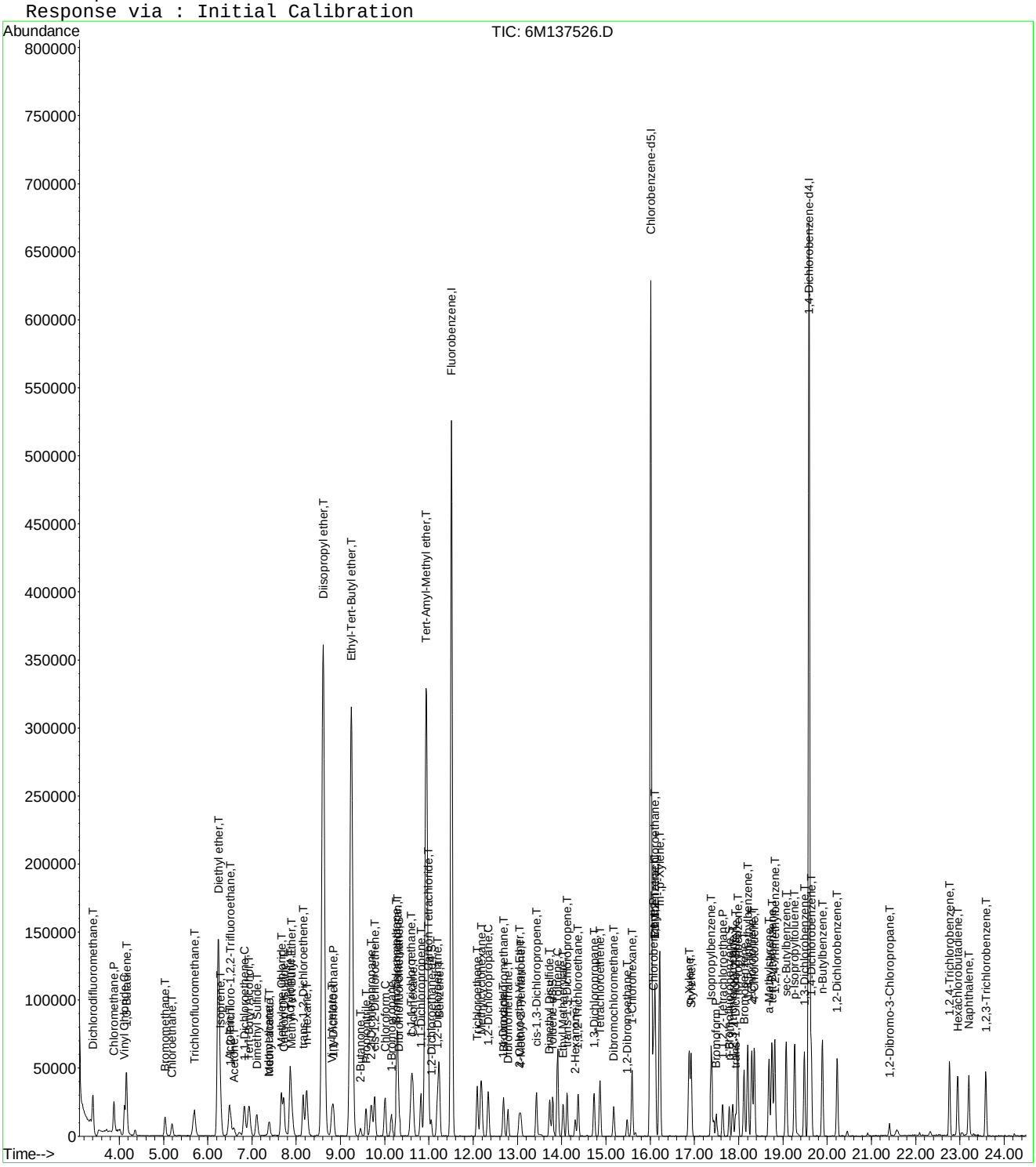

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.7571	4.9	100	0.00
3	P	Chloromethane	5.0000	5.3209	-6.4	100	0.00
4	C	Vinyl Chloride	5.0000	5.2573	-5.1	100	0.00
5	T	1,3-Butadiene	5.0000	5.7531	-15.1	100	0.00
6	T	Bromomethane	5.0000	5.0529	-1.1	100	0.00
7	T	Chloroethane	5.0000	5.0173	-0.3	100	0.00
8	T	Trichlorofluoromethane	5.0000	5.3818	-7.6	100	0.00
9	T	Diethyl ether	50.0000	49.2132	1.6	100	0.00
10	T	Isoprene	5.0000	4.9428	1.1	100	0.00
11	T	Acrolein	25.0000	24.4957	2.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	5.4272	-8.5	100	0.00
13	T	Acetone	-1.0000	5.3136	0.0	0	0.00
14	C	1,1-Dichloroethene	5.0000	5.2760	-5.5	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	97.6795	2.3	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.8115	3.8	100	0.00
17	T	Iodomethane	5.0000	6.2818	-25.6#	100	0.00
18	T	Methyl acetate	5.0000	5.0842	-1.7	100	0.00
19	T	Methylene Chloride	5.0000	5.1820	-3.6	100	0.00
20	T	Carbon Disulfide	5.0000	5.2535	-5.1	100	0.00
21	T	Acrylonitrile	25.0000	23.7426	5.0	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.8170	3.7	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	5.0428	-0.9	100	0.00
24	T	n-Hexane	5.0000	5.1432	-2.9	100	0.00
25	T	Diisopropyl ether	50.0000	49.2807	1.4	100	0.00
26	T	Vinyl Acetate	5.0000	4.1943	16.1	100	0.00
27	P	1,1-Dichloroethane	5.0000	5.1581	-3.2	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	49.1494	1.7	100	0.00
29	T	2-Butanone	5.0000	5.3698	-7.4	100	0.00
30	T	Propionitrile	50.0000	47.2483	5.5	100	0.00
31	T	2,2-Dichloropropane	5.0000	5.1089	-2.2	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	5.0766	-1.5	100	0.00
33	C	Chloroform	5.0000	5.1228	-2.5	100	0.00
34		1-Bromopropane	5.0000	4.4605	10.8	100	0.00
35	T	Bromochloromethane	5.0000	4.6779	6.4	100	0.00
36	T	Tetrahydrofuran	50.0000	47.4879	5.0	100	0.00
37	S	Dibromofluoromethane	2.5000	2.4710	1.2	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.8542	2.9	100	0.00
39	T	Cyclohexane	5.0000	5.0544	-1.1	100	0.00
40	T	1,1-Dichloropropene	5.0000	5.3658	-7.3	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	48.7831	2.4	100	0.00
42	T	Carbon Tetrachloride	5.0000	5.0887	-1.8	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.6172	-4.7	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	5.0000	4.9796	0.4	100	0.00
46	T	Benzene	5.0000	4.9809	0.4	100	0.00
47	T	Trichloroethene	5.0000	5.2316	-4.6	100	0.00
48	T	Methylcyclohexane	5.0000	5.1005	-2.0	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.9803	0.4	100	0.00
50	T	1,4-Dioxane	100.0000	107.9166	-7.9	100	0.00
51	T	Bromodichloromethane	5.0000	4.8760	2.5	100	0.00
52	T	Dibromomethane	5.0000	4.6271	7.5	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.1014	18.0	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.3183	13.6	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.6186	7.6	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.1777	16.4	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.6876	-7.5	100	0.00
59	C	Toluene	5.0000	5.0594	-1.2	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.4195	11.6	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	5.0000	4.6650	6.7	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.8784	2.4	100	0.00
64	T	2-Hexanone	5.0000	4.4142	11.7	100	0.00
65	T	1,3-Dichloropropane	5.0000	5.0457	-0.9	100	0.00
66	T	Tetrachloroethene	5.0000	5.3699	-7.4	100	0.00
67	T	Dibromochloromethane	5.0000	4.8026	3.9	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.7760	4.5	100	0.00
69	T	1-Chlorohexane	5.0000	4.7505	5.0	100	0.00
70	P	Chlorobenzene	5.0000	5.3112	-6.2	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.7045	5.9	100	0.00
72	C	Ethylbenzene	5.0000	4.9950	0.1	100	0.00
73	T	m-,p-Xylene	10.0000	10.0858	-0.9	100	0.00
74	T	o-Xylene	5.0000	4.8051	3.9	100	0.00
75	T	Styrene	5.0000	4.5913	8.2	100	0.00
76	P	Bromoform	5.0000	4.7199	5.6	100	0.00
77	T	Isopropylbenzene	5.0000	4.8919	2.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	5.0098	-0.2	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.6020	-4.1	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.1577	-3.2	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.4290	11.4	100	0.00
83	T	n-Propylbenzene	5.0000	5.2068	-4.1	100	0.00
84	T	Bromobenzene	5.0000	5.1597	-3.2	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	5.1783	-3.6	100	0.00
86	T	2-Chlorotoluene	5.0000	5.4214	-8.4	100	0.00
87	T	4-Chlorotoluene	5.0000	5.2638	-5.3	100	0.00
88	T	a-Methylstyrene	5.0000	4.5623	8.8	100	0.00
89	T	tert-Butylbenzene	5.0000	5.0441	-0.9	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.1422	-2.8	100	0.00
91	T	sec-Butylbenzene	5.0000	5.1195	-2.4	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.0969	-1.9	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	5.3060	-6.1	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	5.1831	-3.7	100	0.00
95	T	n-Butylbenzene	5.0000	5.0584	-1.2	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	5.0962	-1.9	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	4.5988	8.0	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.9379	1.2	100	0.00
99	T	Hexachlorobutadiene	5.0000	5.1268	-2.5	100	0.00
100	T	Naphthalene	5.0000	4.5552	8.9	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.9959	0.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137526.D 826_SL.M Mon Feb 29 16:02:29 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:40 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	607286	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	435504	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	227713	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	16492	5.0625 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 10.12%#		
43) 1,2-Dichloroethane-d4	11.06	65	20491	4.8445 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 9.68%#		
58) Toluene-d8	13.80	98	50808	4.9069 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 9.82%#		
80) p-Bromofluorobenzene	17.79	95	20967	5.0129 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 10.02%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	51684	9.2668 ug/L	100
3) Chloromethane	3.88	50	58275	10.0267 ug/L	97
4) Vinyl Chloride	4.12	62	45684	9.7657 ug/L	98
5) 1,3-Butadiene	4.16	54	39114	10.0495 ug/L	90
6) Bromomethane	5.03	94	25017	10.0321 ug/L	98
7) Chloroethane	5.20	64	25248	9.5185 ug/L	95
8) Trichlorofluoromethane	5.69	101	62268	9.9061 ug/L	98
9) Diethyl ether	6.24	59	197846	68.4186 ug/L	92
10) Isoprene	6.28	67	39072	9.5415 ug/L	91
11) Acrolein	6.48	56	19614	35.7163 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	30114	10.0369 ug/L	94
13) Acetone	6.60	43	18461	10.1493 ug/L	97
14) 1,1-Dichloroethene	6.83	61	51482	9.6871 ug/L	94
15) Tert-Butyl Alcohol	6.93	59	70054	141.2703 ug/L	95
16) Dimethyl Sulfide	7.12	62	25452	9.8712 ug/L	97
17) Iodomethane	7.38	142	9906	8.8243 ug/L	91
18) Methyl acetate	7.39	43	38451	10.4113 ug/L	93
19) Methylene Chloride	7.67	84	32006	10.0000 ug/L	78
20) Carbon Disulfide	7.72	76	98104	9.6481 ug/L	100
21) Acrylonitrile	7.86	53	52450	34.5555 ug/L	97
22) Methyl Tert Butyl Ether	7.89	73	93836	10.2663 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	29186	9.9411 ug/L	85
24) n-Hexane	8.24	57	52226	9.7962 ug/L	99
25) Diisopropyl ether	8.61	45	937664	67.8382 ug/L	97
26) Vinyl Acetate	8.80	43	70808	9.9102 ug/L	96
27) 1,1-Dichloroethane	8.83	63	63440	10.0226 ug/L	98
28) Ethyl-Tert-Butyl ether	9.24	59	760504	68.6462 ug/L	96
29) 2-Butanone	9.45	43	21373	10.1817 ug/L	94
30) Propionitrile	9.58	54	40026	68.8953 ug/L	100
31) 2,2-Dichloropropane	9.69	77	51602	10.1564 ug/L	98
32) cis-1,2-Dichloroethene	9.77	96	31900	9.7326 ug/L	99
33) Chloroform	10.01	83	57702	9.7611 ug/L	96
34) 1-Bromopropane	10.15	122	4101	9.1261 ug/L	96
35) Bromochloromethane	10.26	130	18414	9.5616 ug/L	96
36) Tetrahydrofuran	10.29	42	95905	67.3892 ug/L	94
38) 1,1,1-Trichloroethane	10.60	97	52695	10.0919 ug/L	100
39) Cyclohexane	10.63	56	57419	9.6977 ug/L	90
40) 1,1-Dichloropropene	10.82	75	41095	9.7729 ug/L	98
41) Tert-Amyl-Methyl ether	10.95	73	598972	68.1530 ug/L	90
42) Carbon Tetrachloride	10.99	117	48542	9.9495 ug/L	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:40 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	11.19	62	51284	10.1644	ug/L		99
46)	Benzene	11.23	78	122737	9.7022	ug/L		94
47)	Trichloroethene	12.09	130	29481	9.8646	ug/L		92
48)	Methylcyclohexane	12.18	83	46982	9.7245	ug/L		87
49)	1,2-Dichloropropane	12.34	63	33640	9.8830	ug/L		97
50)	1,4-Dioxane	12.68	88	4932	133.5880	ug/L		83
51)	Bromodichloromethane	12.68	83	42482	9.5106	ug/L		92
52)	Dibromomethane	12.78	93	19421	9.7551	ug/L		99
53)	2-Chloroethyl Vinyl Ether	13.04	63	17139	9.1546	ug/L		98
54)	4-Methyl-2-Pentanone	13.07	58	13343	9.4122	ug/L		90
55)	cis-1,3-Dichloropropene	13.43	75	47323	9.6158	ug/L		96
56)	Dimethyl Disulfide	13.72	79	21113	8.5060	ug/L		97
59)	Toluene	13.91	91	123480	10.0233	ug/L		99
60)	Ethyl Methacrylate	14.04	69	37321	9.4549	ug/L		94
62)	trans-1,3-Dichloropropene	14.12	75	46119	9.7357	ug/L		96
63)	1,1,2-Trichloroethane	14.38	97	26300	10.2139	ug/L		99
64)	2-Hexanone	14.31	43	28213	9.6021	ug/L		99
65)	1,3-Dichloropropane	14.73	76	46832	10.0347	ug/L		94
66)	Tetrachloroethene	14.87	166	31153	10.2512	ug/L		97
67)	Dibromochloromethane	15.18	129	32946	9.8381	ug/L		99
68)	1,2-Dibromoethane	15.48	107	25271	9.5966	ug/L		95
69)	1-Chlorohexane	15.59	91	36355	9.5030	ug/L		82
70)	Chlorobenzene	16.07	112	79785	10.0771	ug/L	#	63
71)	1,1,1,2-Tetrachloroethane	16.11	131	31524	9.9162	ug/L		97
72)	Ethylbenzene	16.10	106	41898	9.8889	ug/L		95
73)	m-,p-Xylene	16.22	106	102847	19.8387	ug/L		96
74)	o-Xylene	16.88	106	47393	9.7060	ug/L		93
75)	Styrene	16.92	104	79997	9.6257	ug/L		97
76)	Bromoform	17.49	173	22569	9.5450	ug/L		99
77)	Isopropylbenzene	17.38	105	130459	9.9391	ug/L		96
79)	1,1,2,2-Tetrachloroethane	17.65	83	36327	10.2123	ug/L		95
81)	1,2,3-Trichloropropane	17.87	110	11417	10.4826	ug/L		96
82)	trans-1,4-Dichloro-2-Buten	17.93	53	12994	9.8948	ug/L		85
83)	n-Propylbenzene	17.98	91	159783	10.3323	ug/L		98
84)	Bromobenzene	18.13	156	33893	10.0828	ug/L		95
85)	1,3,5-Trimethylbenzene	18.21	105	111252	10.1069	ug/L		94
86)	2-Chlorotoluene	18.30	91	107737	10.4377	ug/L		98
87)	4-Chlorotoluene	18.36	91	96695	10.2453	ug/L		95
88)	a-Methylstyrene	18.69	118	51340	9.6043	ug/L		97
89)	tert-Butylbenzene	18.76	134	22949	10.0040	ug/L		90
90)	1,2,4-Trimethylbenzene	18.82	105	119948	10.3616	ug/L		79
91)	sec-Butylbenzene	19.07	105	141383	10.0296	ug/L		97
92)	p-Isopropyltoluene	19.27	119	115695	9.9480	ug/L		99
93)	1,3-Dichlorobenzene	19.48	146	67906	10.4404	ug/L		100
94)	1,4-Dichlorobenzene	19.64	146	68350	10.3238	ug/L		93
95)	n-Butylbenzene	19.89	91	117398	10.0364	ug/L		96
96)	1,2-Dichlorobenzene	20.22	146	64067	10.2365	ug/L		98
97)	1,2-Dibromo-3-Chloropropan	21.40	75	7444	9.4579	ug/L		93
98)	1,2,4-Trichlorobenzene	22.76	180	45615	10.0816	ug/L		99
99)	Hexachlorobutadiene	22.94	225	26046	10.0659	ug/L		100
100)	Naphthalene	23.20	128	104354	10.0325	ug/L		99
101)	1,2,3-Trichlorobenzene	23.59	180	44630	10.0173	ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

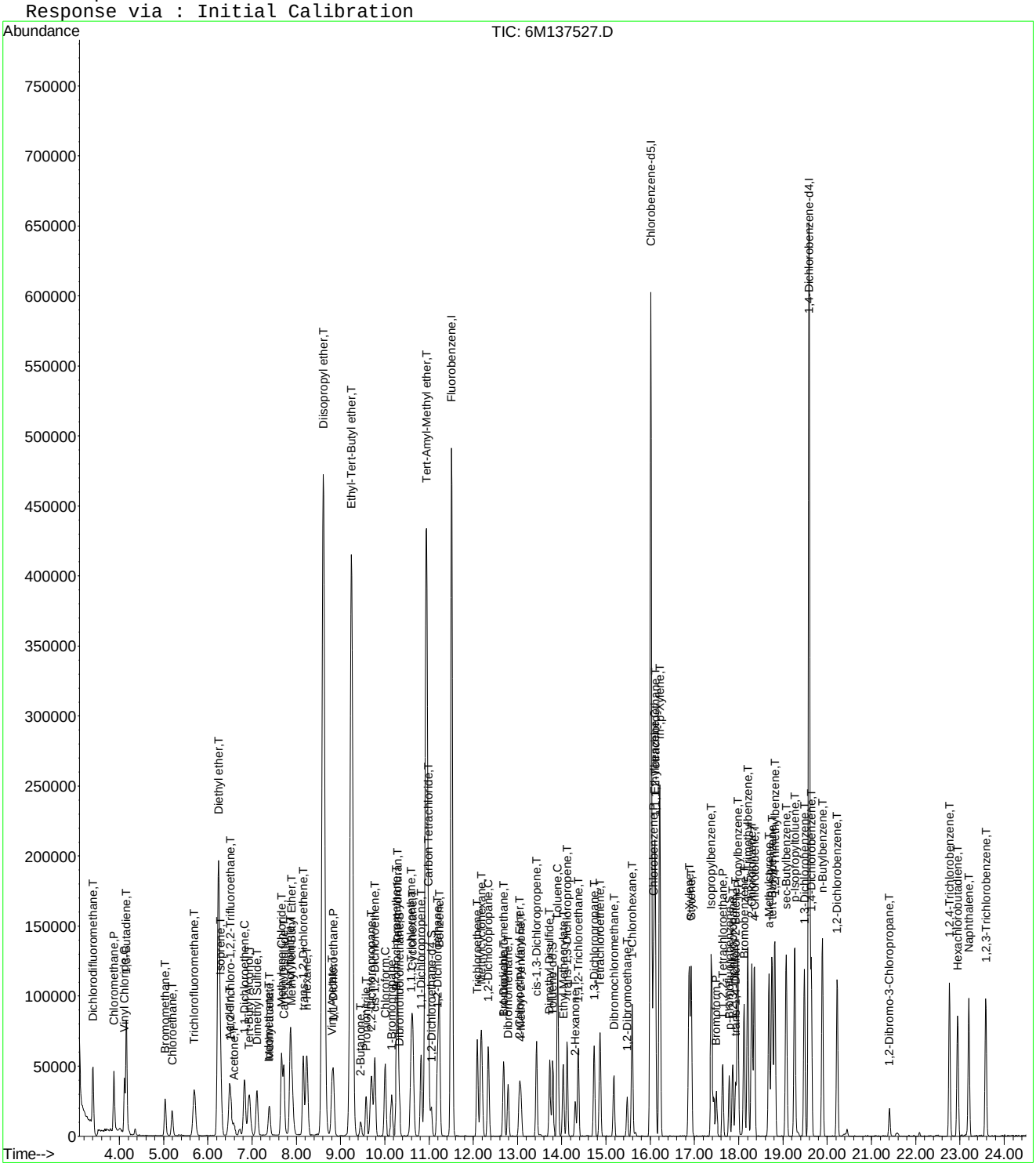

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	10.0000	9.2668	7.3	100	0.00
3	P	Chloromethane	10.0000	10.0267	-0.3	100	0.00
4	C	Vinyl Chloride	10.0000	9.7657	2.3	100	0.00
5	T	1,3-Butadiene	10.0000	10.0495	-0.5	100	-0.01
6	T	Bromomethane	10.0000	10.0321	-0.3	100	0.00
7	T	Chloroethane	10.0000	9.5185	4.8	100	0.00
8	T	Trichlorofluoromethane	10.0000	9.9061	0.9	100	-0.01
9	T	Diethyl ether	65.0000	68.4186	-5.3	100	0.00
10	T	Isoprene	10.0000	9.5415	4.6	100	0.00
11	T	Acrolein	32.5000	35.7163	-9.9	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	10.0000	10.0369	-0.4	100	0.00
13	T	Acetone	10.0000	10.1493	-1.5	100	0.01
14	C	1,1-Dichloroethene	10.0000	9.6871	3.1	100	0.00
15	T	Tert-Butyl Alcohol	130.0000	141.2703	-8.7	100	0.00
16	T	Dimethyl Sulfide	10.0000	9.8712	1.3	100	0.00
17	T	Iodomethane	10.0000	8.8243	11.8	100	0.00
18	T	Methyl acetate	10.0000	10.4113	-4.1	100	0.00
19	T	Methylene Chloride	10.0000	10.0000	0.0	100	0.00
20	T	Carbon Disulfide	10.0000	9.6481	3.5	100	0.00
21	T	Acrylonitrile	32.5000	34.5555	-6.3	100	0.00
22	T	Methyl Tert Butyl Ether	10.0000	10.2663	-2.7	100	0.00
23	T	trans-1,2-Dichloroethene	10.0000	9.9411	0.6	100	0.00
24	T	n-Hexane	10.0000	9.7962	2.0	100	0.00
25	T	Diisopropyl ether	65.0000	67.8382	-4.4	100	0.00
26	T	Vinyl Acetate	10.0000	9.9102	0.9	100	0.00
27	P	1,1-Dichloroethane	10.0000	10.0226	-0.2	100	0.00
28	T	Ethyl-Tert-Butyl ether	65.0000	68.6462	-5.6	100	0.00
29	T	2-Butanone	10.0000	10.1817	-1.8	100	0.00
30	T	Propionitrile	65.0000	68.8953	-6.0	100	0.00
31	T	2,2-Dichloropropane	10.0000	10.1564	-1.6	100	0.00
32	T	cis-1,2-Dichloroethene	10.0000	9.7326	2.7	100	0.00
33	C	Chloroform	10.0000	9.7611	2.4	100	0.00
34		1-Bromopropane	10.0000	9.1261	8.7	100	-0.01
35	T	Bromochloromethane	10.0000	9.5616	4.4	100	0.00
36	T	Tetrahydrofuran	65.0000	67.3892	-3.7	100	0.00
37	S	Dibromofluoromethane	5.0000	5.0625	-1.2	100	0.00
38	T	1,1,1-Trichloroethane	10.0000	10.0919	-0.9	100	0.00
39	T	Cyclohexane	10.0000	9.6977	3.0	100	-0.01
40	T	1,1-Dichloropropene	10.0000	9.7729	2.3	100	0.00
41	T	Tert-Amyl-Methyl ether	65.0000	68.1530	-4.9	100	0.00
42	T	Carbon Tetrachloride	10.0000	9.9495	0.5	100	0.00
43	S	1,2-Dichloroethane-d4	5.0000	4.8445	3.1	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	10.0000	10.1644	-1.6	100	0.00
46	T	Benzene	10.0000	9.7022	3.0	100	0.00
47	T	Trichloroethene	10.0000	9.8646	1.4	100	0.00
48	T	Methylcyclohexane	10.0000	9.7245	2.8	100	0.00
49	C	1,2-Dichloropropane	10.0000	9.8831	1.2	100	0.00
50	T	1,4-Dioxane	130.0000	133.5880	-2.8	100	0.00
51	T	Bromodichloromethane	10.0000	9.5106	4.9	100	0.00
52	T	Dibromomethane	10.0000	9.7551	2.4	100	0.00
53	T	2-Chloroethyl Vinyl Ether	10.0000	9.1546	8.5	100	0.00
54	T	4-Methyl-2-Pentanone	10.0000	9.4122	5.9	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	10.0000	9.6158	3.8	100	0.00
56	T	Dimethyl Disulfide	10.0000	8.5060	14.9	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	5.0000	4.9070	1.9	100	0.00
59	C	Toluene	10.0000	10.0233	-0.2	100	0.00
60	T	Ethyl Methacrylate	10.0000	9.4549	5.5	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	10.0000	9.7357	2.6	100	0.00
63	T	1,1,2-Trichloroethane	10.0000	10.2139	-2.1	100	0.00
64	T	2-Hexanone	10.0000	9.6021	4.0	100	0.00
65	T	1,3-Dichloropropane	10.0000	10.0347	-0.3	100	0.00
66	T	Tetrachloroethene	10.0000	10.2512	-2.5	100	0.00
67	T	Dibromochloromethane	10.0000	9.8381	1.6	100	0.00
68	T	1,2-Dibromoethane	10.0000	9.5966	4.0	100	0.00
69	T	1-Chlorohexane	10.0000	9.5030	5.0	100	0.00
70	P	Chlorobenzene	10.0000	10.0771	-0.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	10.0000	9.9162	0.8	100	0.00
72	C	Ethylbenzene	10.0000	9.8889	1.1	100	0.00
73	T	m-,p-Xylene	20.0000	19.8387	0.8	100	0.00
74	T	o-Xylene	10.0000	9.7060	2.9	100	0.00
75	T	Styrene	10.0000	9.6258	3.7	100	0.00
76	P	Bromoform	10.0000	9.5450	4.6	100	0.00
77	T	Isopropylbenzene	10.0000	9.9391	0.6	100	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	10.0000	10.2123	-2.1	100	0.00
80	S	p-Bromofluorobenzene	5.0000	5.0129	-0.3	100	0.00
81	T	1,2,3-Trichloropropane	10.0000	10.4826	-4.8	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	10.0000	9.8948	1.1	100	0.00
83	T	n-Propylbenzene	10.0000	10.3323	-3.3	100	0.00
84	T	Bromobenzene	10.0000	10.0828	-0.8	100	0.00
85	T	1,3,5-Trimethylbenzene	10.0000	10.1069	-1.1	100	0.00
86	T	2-Chlorotoluene	10.0000	10.4377	-4.4	100	0.00
87	T	4-Chlorotoluene	10.0000	10.2453	-2.5	100	0.00
88	T	a-Methylstyrene	10.0000	9.6043	4.0	100	0.00
89	T	tert-Butylbenzene	10.0000	10.0040	-0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	10.0000	10.3616	-3.6	100	0.00
91	T	sec-Butylbenzene	10.0000	10.0296	-0.3	100	0.00
92	T	p-Isopropyltoluene	10.0000	9.9480	0.5	100	0.00
93	T	1,3-Dichlorobenzene	10.0000	10.4404	-4.4	100	0.00
94	T	1,4-Dichlorobenzene	10.0000	10.3238	-3.2	100	0.00
95	T	n-Butylbenzene	10.0000	10.0364	-0.4	100	0.00
96	T	1,2-Dichlorobenzene	10.0000	10.2365	-2.4	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	10.0000	9.4579	5.4	100	-0.01
98	T	1,2,4-Trichlorobenzene	10.0000	10.0816	-0.8	100	0.00
99	T	Hexachlorobutadiene	10.0000	10.0659	-0.7	100	-0.01
100	T	Naphthalene	10.0000	10.0325	-0.3	100	0.00
101	T	1,2,3-Trichlorobenzene	10.0000	10.0173	-0.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137527.D 826_SL.M Mon Feb 29 16:02:41 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137528.D Vial: 7
Acq On : 26 Feb 2016 16:30 Operator: TMB
Sample : WG558920-07 20ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:40 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	604454	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	432511	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	231578	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	33417	10.3059 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 20.62%#		
43) 1,2-Dichloroethane-d4	11.05	65	44264	10.5140 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 21.02%#		
58) Toluene-d8	13.80	98	105494	10.2589 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 20.52%#		
80) p-Bromofluorobenzene	17.79	95	42856	10.0752 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 20.16%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	124530	22.4325 ug/L	99
3) Chloromethane	3.88	50	120837	20.8884 ug/L	97
4) Vinyl Chloride	4.12	62	100224	21.5249 ug/L	99
5) 1,3-Butadiene	4.17	54	87169	22.5011 ug/L	89
6) Bromomethane	5.03	94	52021	20.9587 ug/L	100
7) Chloroethane	5.20	64	56109	21.2522 ug/L	96
8) Trichlorofluoromethane	5.70	101	126994	20.2979 ug/L	100
9) Diethyl ether	6.24	59	233490	81.1233 ug/L	92
10) Isoprene	6.28	67	78978	19.3770 ug/L	88
11) Acrolein	6.48	56	21732	39.7585 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	61970	20.7512 ug/L	94
13) Acetone	6.60	43	31313	20.3882 ug/L	94
14) 1,1-Dichloroethene	6.83	61	109604	20.7203 ug/L	92
15) Tert-Butyl Alcohol	6.93	59	84577	171.3564 ug/L	95
16) Dimethyl Sulfide	7.12	62	47686	18.5811 ug/L	91
17) Iodomethane	7.38	142	29628	16.5619 ug/L	87
18) Methyl acetate	7.39	43	74780	20.3429 ug/L	95
19) Methylene Chloride	7.67	84	64851	20.3571 ug/L	76
20) Carbon Disulfide	7.72	76	202990	20.0567 ug/L	99
21) Acrylonitrile	7.86	53	61697	40.8381 ug/L	94
22) Methyl Tert Butyl Ether	7.89	73	190370	20.9254 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	59769	20.4535 ug/L	87
24) n-Hexane	8.24	57	105156	19.8169 ug/L	97
25) Diisopropyl ether	8.61	45	1129584	82.1061 ug/L	96
26) Vinyl Acetate	8.80	43	152272	21.4117 ug/L	97
27) 1,1-Dichloroethane	8.83	63	130302	20.6823 ug/L	99
28) Ethyl-Tert-Butyl ether	9.24	59	915394	83.0143 ug/L	96
29) 2-Butanone	9.46	43	42524	20.3527 ug/L	97
30) Propionitrile	9.58	54	48414	83.7237 ug/L	100
31) 2,2-Dichloropropane	9.69	77	100380	19.8495 ug/L	98
32) cis-1,2-Dichloroethene	9.77	96	66403	20.3543 ug/L	100
33) Chloroform	10.01	83	120566	20.4910 ug/L	97
34) 1-Bromopropane	10.15	122	8978	20.0727 ug/L	94
35) Bromochloromethane	10.26	130	39989	20.8618 ug/L	98
36) Tetrahydrofuran	10.29	42	119054	84.5841 ug/L	93
38) 1,1,1-Trichloroethane	10.60	97	105282	20.2577 ug/L	96
39) Cyclohexane	10.63	56	119680	20.3079 ug/L	89
40) 1,1-Dichloropropene	10.82	75	83869	20.0386 ug/L	96
41) Tert-Amyl-Methyl ether	10.94	73	732522	83.7393 ug/L	91
42) Carbon Tetrachloride	10.99	117	99704	20.5318 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M137528.D 826_SL.M Mon Feb 29 16:01:41 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137528.D Vial: 7
Acq On : 26 Feb 2016 16:30 Operator: TMB
Sample : WG558920-07 20ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:40 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45) 1,2-Dichloroethane	11.19	62	103881	20.6854 ug/L	99
46) Benzene	11.23	78	247381	19.6467 ug/L	92
47) Trichloroethene	12.09	130	61373	20.6321 ug/L	91
48) Methylcyclohexane	12.18	83	97333	20.2407 ug/L	88
49) 1,2-Dichloropropane	12.34	63	69997	20.6607 ug/L	99
50) 1,4-Dioxane	12.68	88	6222	161.0769 ug/L	84
51) Bromodichloromethane	12.68	83	89367	20.1007 ug/L	96
52) Dibromomethane	12.79	93	40905	20.6426 ug/L	98
53) 2-Chloroethyl Vinyl Ether	13.04	63	37392	20.0660 ug/L	99
54) 4-Methyl-2-Pentanone	13.07	58	29543	20.9375 ug/L	90
55) cis-1,3-Dichloropropene	13.43	75	99671	20.3475 ug/L	97
56) Dimethyl Disulfide	13.72	79	46329	18.7525 ug/L	98
59) Toluene	13.91	91	246419	20.1412 ug/L	99
60) Ethyl Methacrylate	14.04	69	79829	20.3638 ug/L	96
62) trans-1,3-Dichloropropene	14.12	75	96621	20.5377 ug/L	98
63) 1,1,2-Trichloroethane	14.38	97	53425	20.8919 ug/L	97
64) 2-Hexanone	14.31	43	59605	20.4265 ug/L	97
65) 1,3-Dichloropropane	14.74	76	96517	20.8239 ug/L	94
66) Tetrachloroethene	14.87	166	62111	20.5796 ug/L	96
67) Dibromochloromethane	15.17	129	68185	20.5019 ug/L	99
68) 1,2-Dibromoethane	15.48	107	53387	20.4138 ug/L	100
69) 1-Chlorohexane	15.59	91	76216	20.0602 ug/L	83
70) Chlorobenzene	16.07	112	160312	20.3880 ug/L #	66
71) 1,1,1,2-Tetrachloroethane	16.11	131	64649	20.4768 ug/L	97
72) Ethylbenzene	16.10	106	86018	20.4427 ug/L	96
73) m-,p-Xylene	16.22	106	209303	40.6530 ug/L	95
74) o-Xylene	16.87	106	101781	20.9889 ug/L	94
75) Styrene	16.92	104	169811	20.5741 ug/L	94
76) Bromoform	17.49	173	47615	20.2769 ug/L	98
77) Isopropylbenzene	17.38	105	273784	21.0027 ug/L	97
79) 1,1,2,2-Tetrachloroethane	17.65	83	75470	20.8621 ug/L	95
81) 1,2,3-Trichloropropane	17.87	110	22588	20.3932 ug/L	90
82) trans-1,4-Dichloro-2-Buten	17.93	53	26581	19.9034 ug/L	88
83) n-Propylbenzene	17.98	91	330830	21.0359 ug/L	97
84) Bromobenzene	18.13	156	71833	21.0128 ug/L	95
85) 1,3,5-Trimethylbenzene	18.21	105	230218	20.5655 ug/L	96
86) 2-Chlorotoluene	18.30	91	219979	20.9561 ug/L	97
87) 4-Chlorotoluene	18.35	91	193947	20.2066 ug/L	97
88) a-Methylstyrene	18.69	118	107098	19.7008 ug/L	96
89) tert-Butylbenzene	18.75	134	48246	20.6806 ug/L	94
90) 1,2,4-Trimethylbenzene	18.82	105	244152	20.7388 ug/L	84
91) sec-Butylbenzene	19.08	105	299927	20.9214 ug/L	98
92) p-Isopropyltoluene	19.27	119	246088	20.8066 ug/L	100
93) 1,3-Dichlorobenzene	19.48	146	134407	20.3198 ug/L	98
94) 1,4-Dichlorobenzene	19.64	146	136759	20.3118 ug/L	97
95) n-Butylbenzene	19.89	91	245859	20.6677 ug/L	97
96) 1,2-Dichlorobenzene	20.22	146	129420	20.3333 ug/L	96
97) 1,2-Dibromo-3-Chloropropan	21.41	75	16283	20.3429 ug/L	85
98) 1,2,4-Trichlorobenzene	22.76	180	93373	20.2924 ug/L	99
99) Hexachlorobutadiene	22.95	225	53674	20.3969 ug/L	99
100) Naphthalene	23.20	128	219058	20.7086 ug/L	99
101) 1,2,3-Trichlorobenzene	23.58	180	91461	20.1860 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M137528.D 826_SL.M Mon Feb 29 16:01:41 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137528.D Vial: 7
Acq On : 26 Feb 2016 16:30 Operator: TMB
Sample : WG558920-07 20ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

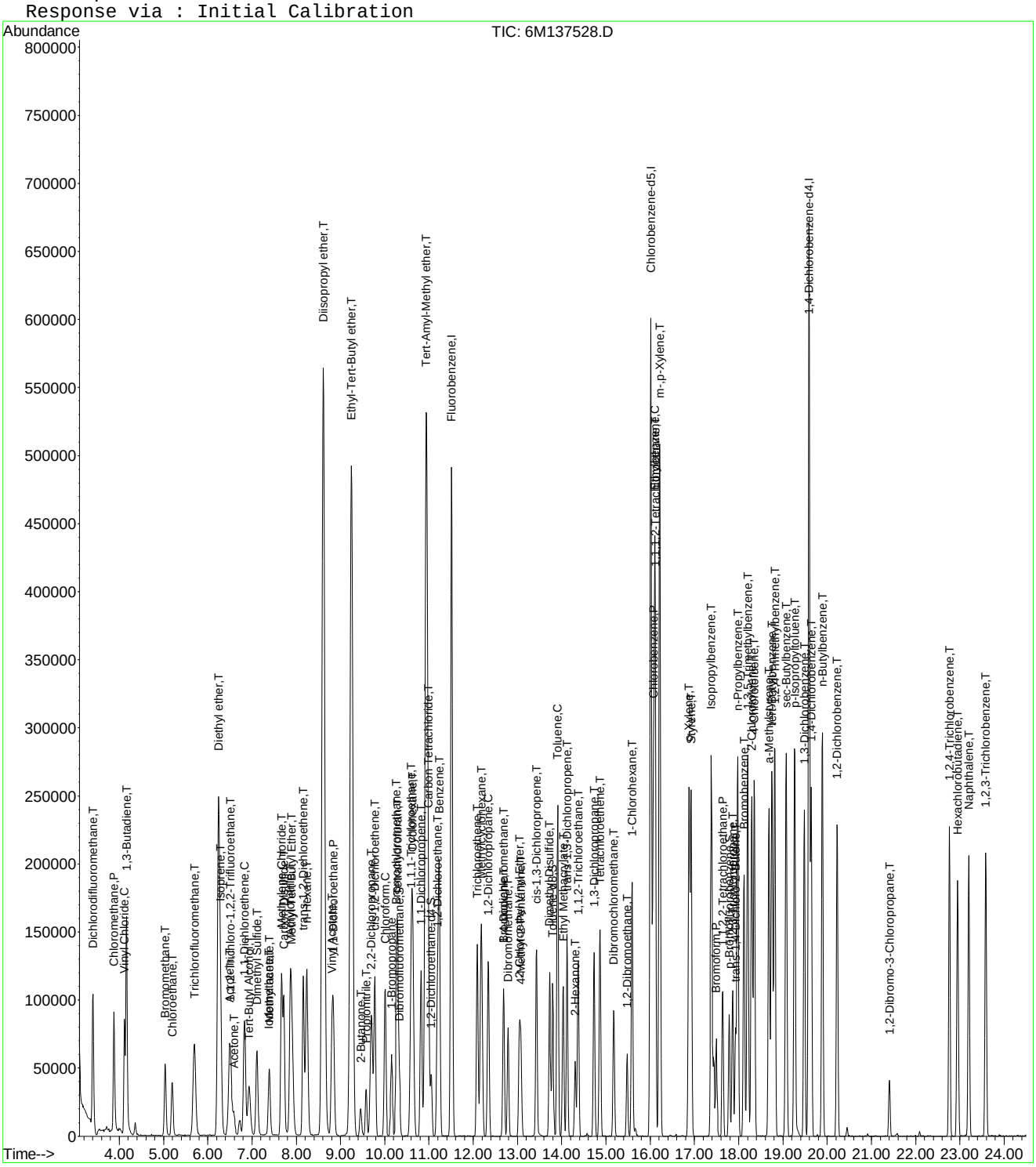

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137529.D Vial: 8
Acq On : 26 Feb 2016 17:03 Operator: TMB
Sample : WG558920-08 50ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:41 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	607631	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	439950	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	237573	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	82729	25.3805 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 50.76%#		
43) 1,2-Dichloroethane-d4	11.06	65	107163	25.3214 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 50.64%#		
58) Toluene-d8	13.80	98	266157	25.4452 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 50.90%#		
80) p-Bromofluorobenzene	17.79	95	111797	25.6197 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 51.24%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	326358	58.4819 ug/L	99
3) Chloromethane	3.88	50	305583	52.5483 ug/L	99
4) Vinyl Chloride	4.11	62	261948	55.9639 ug/L	98
5) 1,3-Butadiene	4.17	54	208973	53.6605 ug/L	91
6) Bromomethane	5.03	94	129157	51.7638 ug/L	100
7) Chloroethane	5.20	64	147959	55.7489 ug/L	95
8) Trichlorofluoromethane	5.70	101	339023	53.9039 ug/L	99
9) Diethyl ether	6.24	59	283385	97.9439 ug/L	93
10) Isoprene	6.28	67	215850	52.6813 ug/L	86
11) Acrolein	6.48	56	25264	45.9786 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	168394	56.0934 ug/L	94
13) Acetone	6.60	43	68176	49.2786 ug/L	100
14) 1,1-Dichloroethene	6.83	61	295734	55.6154 ug/L	92
15) Tert-Butyl Alcohol	6.94	59	97040	195.5789 ug/L	97
16) Dimethyl Sulfide	7.12	62	135657	52.5830 ug/L	94
17) Iodomethane	7.38	142	119726	51.5829 ug/L	91
18) Methyl acetate	7.39	43	187187	50.6554 ug/L	95
19) Methylene Chloride	7.67	84	174497	54.4892 ug/L	80
20) Carbon Disulfide	7.72	76	530150	52.1084 ug/L	98
21) Acrylonitrile	7.86	53	78970	51.9980 ug/L	98
22) Methyl Tert Butyl Ether	7.89	73	506330	55.3647 ug/L	93
23) trans-1,2-Dichloroethene	8.16	96	161116	54.8470 ug/L	86
24) n-Hexane	8.24	57	282956	53.0449 ug/L	98
25) Diisopropyl ether	8.61	45	1357488	98.1559 ug/L	97
26) Vinyl Acetate	8.80	43	361913	50.6243 ug/L	97
27) 1,1-Dichloroethane	8.84	63	345084	54.4873 ug/L	98
28) Ethyl-Tert-Butyl ether	9.24	59	1104598	99.6489 ug/L	96
29) 2-Butanone	9.45	43	102919	49.0011 ug/L	94
30) Propionitrile	9.58	54	57786	99.4084 ug/L	100
31) 2,2-Dichloropropane	9.70	77	275709	54.2347 ug/L	99
32) cis-1,2-Dichloroethene	9.77	96	176368	53.7788 ug/L	98
33) Chloroform	10.01	83	316097	53.4420 ug/L	96
34) 1-Bromopropane	10.16	122	24579	54.6655 ug/L	98
35) Bromochloromethane	10.26	130	106752	55.4000 ug/L	99
36) Tetrahydrofuran	10.29	42	139800	99.1693 ug/L	94
38) 1,1,1-Trichloroethane	10.60	97	287959	55.1175 ug/L	98
39) Cyclohexane	10.63	56	324068	54.7019 ug/L	90
40) 1,1-Dichloropropene	10.82	75	232925	55.3612 ug/L	98
41) Tert-Amyl-Methyl ether	10.95	73	878188	99.8664 ug/L	92
42) Carbon Tetrachloride	10.99	117	270388	55.3891 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137529.D Vial: 8
Acq On : 26 Feb 2016 17:03 Operator: TMB
Sample : WG558920-08 50ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:41 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	272804	54.0384 ug/L	98
46)	Benzene	11.23	78	654918	51.7410 ug/L	91
47)	Trichloroethene	12.09	130	163002	54.5109 ug/L	91
48)	Methylcyclohexane	12.18	83	264045	54.6220 ug/L	88
49)	1,2-Dichloropropane	12.34	63	185139	54.3608 ug/L	99
50)	1,4-Dioxane	12.67	88	7470	186.3872 ug/L	86
51)	Bromodichloromethane	12.68	83	244077	54.6116 ug/L	96
52)	Dibromomethane	12.78	93	112269	56.3600 ug/L	97
53)	2-Chloroethyl Vinyl Ether	13.04	63	99869	53.3134 ug/L	98
54)	4-Methyl-2-Pentanone	13.07	58	71173	50.1774 ug/L	95
55)	cis-1,3-Dichloropropene	13.43	75	275770	56.0032 ug/L	97
56)	Dimethyl Disulfide	13.72	79	136937	55.1380 ug/L	96
59)	Toluene	13.91	91	661797	53.1777 ug/L	100
60)	Ethyl Methacrylate	14.04	69	221335	55.5062 ug/L	94
62)	trans-1,3-Dichloropropene	14.12	75	265281	55.4346 ug/L	99
63)	1,1,2-Trichloroethane	14.38	97	140534	54.0266 ug/L	99
64)	2-Hexanone	14.31	43	150141	50.5831 ug/L	99
65)	1,3-Dichloropropane	14.73	76	254916	54.0691 ug/L	94
66)	Tetrachloroethene	14.87	166	165478	53.9016 ug/L	97
67)	Dibromochloromethane	15.17	129	187125	55.3134 ug/L	98
68)	1,2-Dibromoethane	15.48	107	145905	54.8470 ug/L	99
69)	1-Chlorohexane	15.59	91	213275	55.1854 ug/L	86
70)	Chlorobenzene	16.07	112	421684	52.7217 ug/L #	68
71)	1,1,1,2-Tetrachloroethane	16.11	131	172886	53.8335 ug/L	98
72)	Ethylbenzene	16.11	106	233514	54.5577 ug/L	98
73)	m-,p-Xylene	16.22	106	560207	106.9693 ug/L	96
74)	o-Xylene	16.88	106	278846	56.5302 ug/L	96
75)	Styrene	16.92	104	471370	56.1451 ug/L	94
76)	Bromoform	17.49	173	131127	54.8964 ug/L	99
77)	Isopropylbenzene	17.38	105	740395	55.8373 ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.65	83	199941	53.8747 ug/L	96
81)	1,2,3-Trichloropropane	17.87	110	61269	53.9200 ug/L	97
82)	trans-1,4-Dichloro-2-Buten	17.93	53	73183	53.4153 ug/L	91
83)	n-Propylbenzene	17.98	91	903295	55.9869 ug/L	98
84)	Bromobenzene	18.12	156	191943	54.7308 ug/L	98
85)	1,3,5-Trimethylbenzene	18.21	105	641908	55.8951 ug/L	95
86)	2-Chlorotoluene	18.30	91	578848	53.7519 ug/L	97
87)	4-Chlorotoluene	18.36	91	530900	53.9168 ug/L	97
88)	a-Methylstyrene	18.69	118	307671	55.1682 ug/L	99
89)	tert-Butylbenzene	18.76	134	134676	56.2719 ug/L	98
90)	1,2,4-Trimethylbenzene	18.82	105	666066	55.1494 ug/L	81
91)	sec-Butylbenzene	19.07	105	825213	56.1103 ug/L	99
92)	p-Isopropyltoluene	19.27	119	685445	56.4914 ug/L	100
93)	1,3-Dichlorobenzene	19.48	146	365219	53.8210 ug/L	96
94)	1,4-Dichlorobenzene	19.64	146	363309	52.5979 ug/L	98
95)	n-Butylbenzene	19.89	91	677494	55.5152 ug/L	98
96)	1,2-Dichlorobenzene	20.23	146	350298	53.6470 ug/L	96
97)	1,2-Dibromo-3-Chloropropan	21.41	75	43537	53.0196 ug/L	90
98)	1,2,4-Trichlorobenzene	22.76	180	262463	55.6006 ug/L	99
99)	Hexachlorobutadiene	22.95	225	150922	55.9053 ug/L	100
100)	Naphthalene	23.20	128	617866	56.9360 ug/L	100
101)	1,2,3-Trichlorobenzene	23.59	180	259953	55.9254 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137529.D Vial: 8
Acq On : 26 Feb 2016 17:03 Operator: TMB
Sample : WG558920-08 50ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

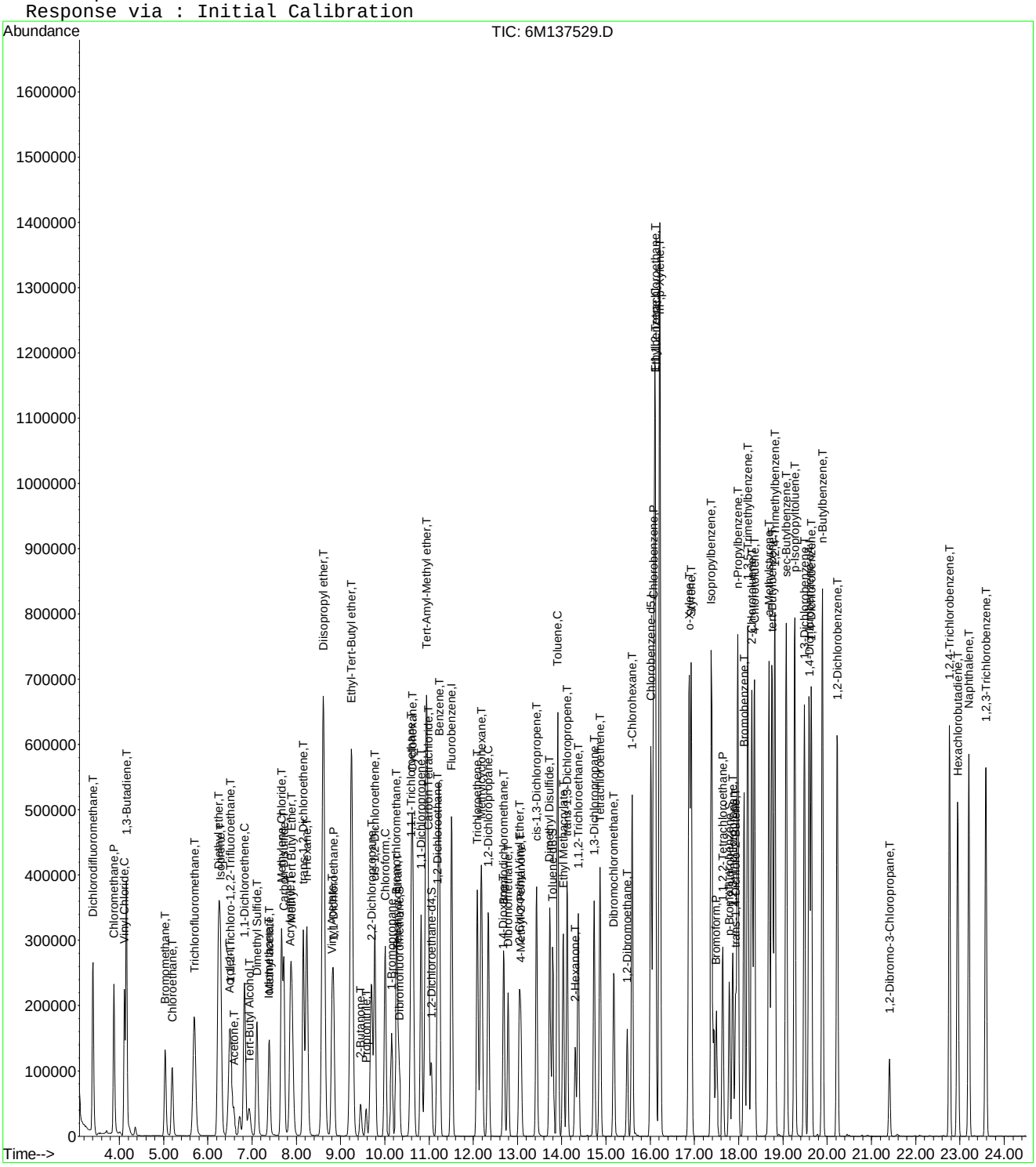

6M137529.D 826_SL.M Mon Feb 29 16:01:42 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137530.D Vial: 9
Acq On : 26 Feb 2016 17:35 Operator: TMB
Sample : WG558920-09 100ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:42 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	642087	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	466249	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	253947	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.32	111	162548	47.1921 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.38%		
43) 1,2-Dichloroethane-d4	11.06	65	210928	47.1653 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.34%		
58) Toluene-d8	13.80	98	518743	46.7957 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 93.60%		
80) p-Bromofluorobenzene	17.79	95	219336	47.0227 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 94.04%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	562397	95.3710 ug/L	99
3) Chloromethane	3.88	50	511342	83.2121 ug/L	98
4) Vinyl Chloride	4.12	62	453722	91.7337 ug/L	97
5) 1,3-Butadiene	4.16	54	371216	90.2064 ug/L	92
6) Bromomethane	5.03	94	236484	89.6925 ug/L	99
7) Chloroethane	5.19	64	259484	92.5233 ug/L	94
8) Trichlorofluoromethane	5.69	101	593589	89.3146 ug/L	99
9) Diethyl ether	6.23	59	599424	196.0563 ug/L	94
10) Isoprene	6.28	67	429478	99.1954 ug/L	86
11) Acrolein	6.48	56	58142	100.1359 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	295880	93.2711 ug/L	94
13) Acetone	6.59	43	134155	95.5525 ug/L	97
14) 1,1-Dichloroethene	6.83	61	525920	93.5964 ug/L	92
15) Tert-Butyl Alcohol	6.94	59	207755	396.2496 ug/L	97
16) Dimethyl Sulfide	7.11	62	269784	98.9613 ug/L	92
17) Iodomethane	7.38	142	252699	98.0787 ug/L	90
18) Methyl acetate	7.39	43	375036	96.0437 ug/L	97
19) Methylene Chloride	7.67	84	311212	91.9654 ug/L	80
20) Carbon Disulfide	7.72	76	1037082	96.4646 ug/L	99
21) Acrylonitrile	7.86	53	165829	103.3311 ug/L	99
22) Methyl Tert Butyl Ether	7.89	73	942489	97.5263 ug/L	93
23) trans-1,2-Dichloroethene	8.16	96	289637	93.3071 ug/L	87
24) n-Hexane	8.23	57	555752	98.5944 ug/L	98
25) Diisopropyl ether	8.61	45	2877959	196.9296 ug/L	96
26) Vinyl Acetate	8.80	43	731541	96.8365 ug/L	99
27) 1,1-Dichloroethane	8.83	63	621539	92.8721 ug/L	98
28) Ethyl-Tert-Butyl ether	9.24	59	2342177	199.9557 ug/L	96
29) 2-Butanone	9.45	43	207126	93.3235 ug/L	95
30) Propionitrile	9.57	54	121992	198.5994 ug/L	98
31) 2,2-Dichloropropane	9.69	77	491609	91.5150 ug/L	98
32) cis-1,2-Dichloroethene	9.77	96	321521	92.7784 ug/L	96
33) Chloroform	10.01	83	568519	90.9606 ug/L	95
34) 1-Bromopropane	10.16	122	47570	100.1217 ug/L	99
35) Bromochloromethane	10.26	130	193434	94.9975 ug/L	100
36) Tetrahydrofuran	10.29	42	287880	195.3143 ug/L	95
38) 1,1,1-Trichloroethane	10.60	97	511473	92.6461 ug/L	98
39) Cyclohexane	10.63	56	631373	100.8552 ug/L	90
40) 1,1-Dichloropropene	10.82	75	416243	93.6230 ug/L	97
41) Tert-Amyl-Methyl ether	10.94	73	1879478	202.2624 ug/L	92
42) Carbon Tetrachloride	10.99	117	485191	94.0581 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137530.D Vial: 9
Acq On : 26 Feb 2016 17:35 Operator: TMB
Sample : WG558920-09 100ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:42 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	498315	93.4118	ug/L	98
46)	Benzene	11.23	78	1182199	88.3862	ug/L	91
47)	Trichloroethene	12.09	130	294176	93.0987	ug/L	90
48)	Methylcyclohexane	12.18	83	515585	100.9337	ug/L	88
49)	1,2-Dichloropropane	12.34	63	342055	95.0452	ug/L	100
50)	1,4-Dioxane	12.67	88	17776	381.1583	ug/L	84
51)	Bromodichloromethane	12.68	83	452280	95.7660	ug/L	97
52)	Dibromomethane	12.79	93	202292	96.1028	ug/L	98
53)	2-Chloroethyl Vinyl Ether	13.04	63	206349	104.2447	ug/L	97
54)	4-Methyl-2-Pentanone	13.07	58	145646	97.1712	ug/L	93
55)	cis-1,3-Dichloropropene	13.43	75	509093	97.8384	ug/L	95
56)	Dimethyl Disulfide	13.72	79	282091	107.4894	ug/L	96
59)	Toluene	13.91	91	1184465	89.8074	ug/L	100
60)	Ethyl Methacrylate	14.04	69	445228	105.3560	ug/L	94
62)	trans-1,3-Dichloropropene	14.12	75	494673	97.5390	ug/L	99
63)	1,1,2-Trichloroethane	14.38	97	261258	94.7723	ug/L	99
64)	2-Hexanone	14.31	43	305856	97.2318	ug/L	100
65)	1,3-Dichloropropane	14.74	76	469121	93.8906	ug/L	93
66)	Tetrachloroethene	14.87	166	296672	91.1851	ug/L	98
67)	Dibromochloromethane	15.17	129	347661	96.9706	ug/L	98
68)	1,2-Dibromoethane	15.48	107	270599	95.9830	ug/L	97
69)	1-Chlorohexane	15.59	91	420885	102.7620	ug/L	86
70)	Chlorobenzene	16.07	112	765249	90.2797	ug/L	69
71)	1,1,1,2-Tetrachloroethane	16.11	131	320669	94.2184	ug/L	97
72)	Ethylbenzene	16.10	106	422350	93.1110	ug/L	97
73)	m-,p-Xylene	16.22	106	1018750	183.5539	ug/L	96
74)	o-Xylene	16.87	106	503867	96.3867	ug/L	94
75)	Styrene	16.92	104	871975	98.0029	ug/L	94
76)	Bromoform	17.49	173	243410	96.1558	ug/L	99
77)	Isopropylbenzene	17.38	105	1335991	95.0715	ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.65	83	376052	94.7950	ug/L	96
81)	1,2,3-Trichloropropane	17.87	110	114333	94.1314	ug/L	95
82)	trans-1,4-Dichloro-2-Buten	17.93	53	150048	102.4566	ug/L	89
83)	n-Propylbenzene	17.98	91	1628674	94.4377	ug/L	98
84)	Bromobenzene	18.13	156	352357	93.9933	ug/L	98
85)	1,3,5-Trimethylbenzene	18.21	105	1165530	94.9464	ug/L	95
86)	2-Chlorotoluene	18.30	91	1069398	92.9015	ug/L	97
87)	4-Chlorotoluene	18.35	91	957337	90.9557	ug/L	97
88)	a-Methylstyrene	18.69	118	626810	105.1459	ug/L	98
89)	tert-Butylbenzene	18.75	134	243763	95.2846	ug/L	87
90)	1,2,4-Trimethylbenzene	18.82	105	1211949	93.8776	ug/L	81
91)	sec-Butylbenzene	19.08	105	1482811	94.3227	ug/L	99
92)	p-Isopropyltoluene	19.27	119	1243718	95.8928	ug/L	100
93)	1,3-Dichlorobenzene	19.48	146	670076	92.3797	ug/L	97
94)	1,4-Dichlorobenzene	19.64	146	665185	90.0925	ug/L	97
95)	n-Butylbenzene	19.89	91	1241772	95.1924	ug/L	98
96)	1,2-Dichlorobenzene	20.22	146	649160	93.0065	ug/L	96
97)	1,2-Dibromo-3-Chloropropan	21.41	75	84975	96.8107	ug/L	89
98)	1,2,4-Trichlorobenzene	22.76	180	475402	94.2164	ug/L	99
99)	Hexachlorobutadiene	22.95	225	270006	93.5681	ug/L	100
100)	Naphthalene	23.20	128	1163220	100.2786	ug/L	100
101)	1,2,3-Trichlorobenzene	23.58	180	465522	93.6933	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137530.D Vial: 9
Acq On : 26 Feb 2016 17:35 Operator: TMB
Sample : WG558920-09 100ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

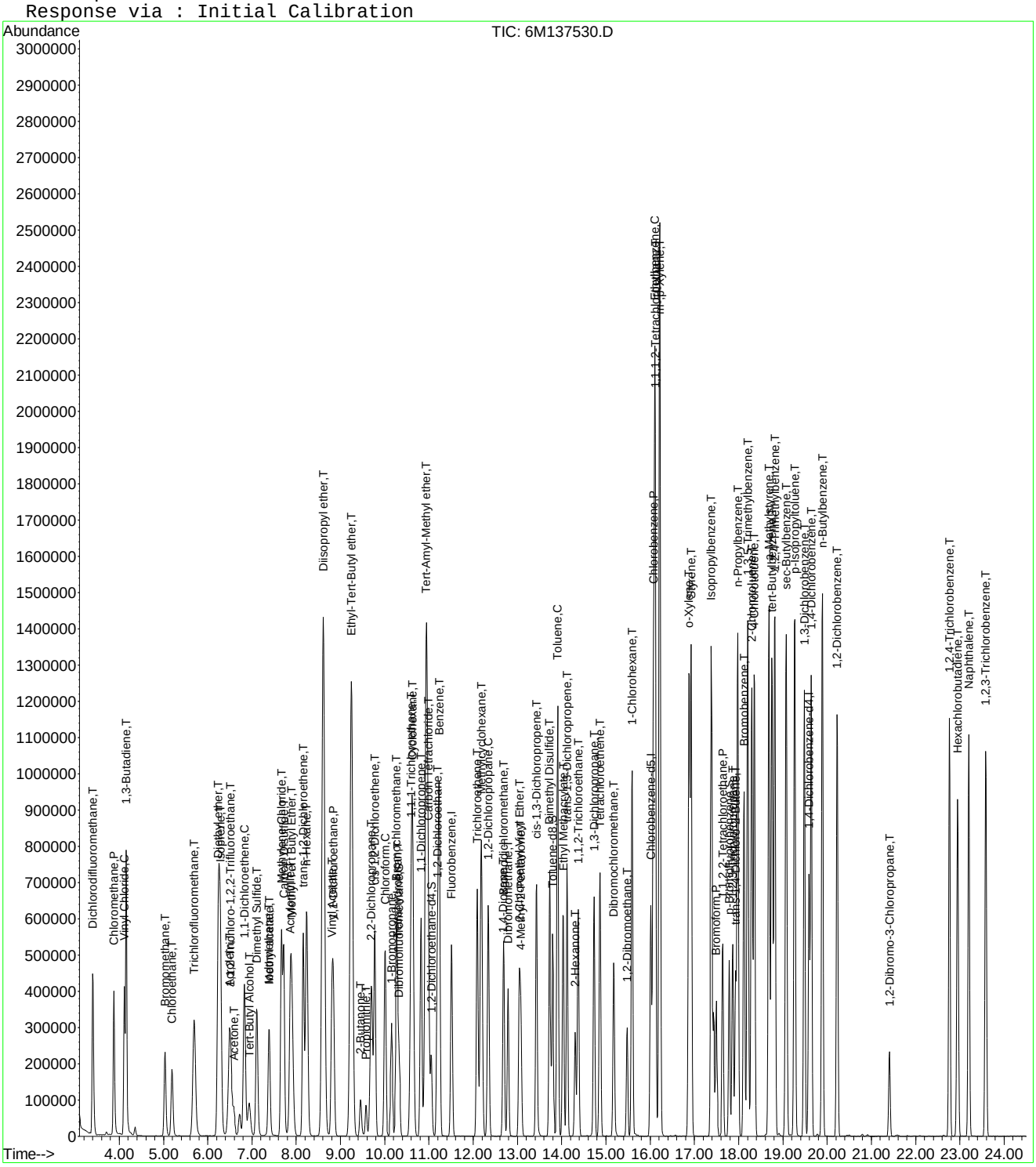

6M137530.D 826_SL.M Mon Feb 29 16:01:43 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137531.D Vial: 10
Acq On : 26 Feb 2016 18:07 Operator: TMB
Sample : WG558920-10 200ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:43 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	661999	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	479329	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	273657	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	351336	98.9344 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 197.86%#		
43) 1,2-Dichloroethane-d4	11.05	65	450300	97.6622 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 195.32%#		
58) Toluene-d8	13.80	98	1096959	96.2561 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 192.52%#		
80) p-Bromofluorobenzene	17.79	95	487968	97.0790 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 194.16%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	1228760	202.1049 ug/L	98
3) Chloromethane	3.88	50	1125279	177.6118 ug/L	98
4) Vinyl Chloride	4.12	62	989076	193.9570 ug/L	97
5) 1,3-Butadiene	4.16	54	745589	175.7303 ug/L	94
6) Bromomethane	5.03	94	548799	201.8852 ug/L	100
7) Chloroethane	5.19	64	579871	200.5435 ug/L	96
8) Trichlorofluoromethane	5.69	101	1297014	189.2858 ug/L	100
9) Diethyl ether	6.23	59	1563	0.4958 ug/L #	49
10) Isoprene	6.27	67	894422	200.3686 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	649915	198.7121 ug/L	93
13) Acetone	6.59	43	290441	205.4763 ug/L	99
14) 1,1-Dichloroethene	6.83	61	1161250	200.4481 ug/L	92
15) Tert-Butyl Alcohol	6.83	59	39858	73.7343 ug/L #	57
16) Dimethyl Sulfide	7.11	62	576142	204.9817 ug/L	92
17) Iodomethane	7.38	142	559892	205.0669 ug/L	91
18) Methyl acetate	7.39	43	775842	192.7107 ug/L	97
19) Methylene Chloride	7.67	84	681801	195.4170 ug/L	78
20) Carbon Disulfide	7.72	76	2184454	197.0763 ug/L	98
21) Acrylonitrile	7.90	53	25391	15.3457 ug/L #	34
22) Methyl Tert Butyl Ether	7.90	73	2079733	208.7322 ug/L	92
23) trans-1,2-Dichloroethene	8.16	96	635434	198.5489 ug/L	86
24) n-Hexane	8.23	57	1159756	199.5603 ug/L	99
25) Diisopropyl ether	8.63	45	8975	0.5957 ug/L #	37
26) Vinyl Acetate	8.80	43	1656751	212.7131 ug/L	98
27) 1,1-Dichloroethane	8.83	63	1360017	197.1051 ug/L	97
28) Ethyl-Tert-Butyl ether	9.23	59	4690	0.3884 ug/L #	76
29) 2-Butanone	9.45	43	450489	196.8688 ug/L	97
30) Propionitrile	9.59	54	193	0.3047 ug/L #	55
31) 2,2-Dichloropropane	9.69	77	1084788	195.8637 ug/L	97
32) cis-1,2-Dichloroethene	9.77	96	711282	199.0746 ug/L	99
33) Chloroform	10.00	83	1259701	195.4845 ug/L	96
34) 1-Bromopropane	10.16	122	101190	206.5710 ug/L	98
35) Bromochloromethane	10.26	130	430294	204.9658 ug/L	100
36) Tetrahydrofuran	10.31	42	4560	0.8620 ug/L #	82
38) 1,1,1-Trichloroethane	10.60	97	1139307	200.1621 ug/L	98
39) Cyclohexane	10.63	56	1322081	204.8363 ug/L	90
40) 1,1-Dichloropropene	10.83	75	913448	199.2765 ug/L	99
41) Tert-Amyl-Methyl ether	10.93	73	3689	0.3851 ug/L #	57
42) Carbon Tetrachloride	10.99	117	1067649	200.7466 ug/L	97
45) 1,2-Dichloroethane	11.19	62	1098127	199.6582 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M137531.D 826_SL.M Mon Feb 29 16:01:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137531.D Vial: 10
Acq On : 26 Feb 2016 18:07 Operator: TMB
Sample : WG558920-10 200ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:43 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	11.23	78	2576436	186.8313 ug/L		90
47)	Trichloroethene	12.09	130	648704	199.1220 ug/L		90
48)	Methylcyclohexane	12.18	83	1075003	204.1184 ug/L		87
49)	1,2-Dichloropropane	12.34	63	757110	204.0468 ug/L		100
50)	1,4-Dioxane	12.68	88	863	47.3107 ug/L	#	17
51)	Bromodichloromethane	12.68	83	1017483	208.9621 ug/L		97
52)	Dibromomethane	12.79	93	451601	208.0889 ug/L		97
53)	2-Chloroethyl Vinyl Ether	13.03	63	470311	230.4481 ug/L		98
54)	4-Methyl-2-Pentanone	13.07	58	332135	214.9265 ug/L		95
55)	cis-1,3-Dichloropropene	13.43	75	1150962	214.5407 ug/L		96
56)	Dimethyl Disulfide	13.73	79	648612	239.7166 ug/L		96
59)	Toluene	13.91	91	2588299	190.8923 ug/L		99
60)	Ethyl Methacrylate	14.03	69	978791	225.2947 ug/L		94
62)	trans-1,3-Dichloropropene	14.12	75	1110336	212.9604 ug/L		98
63)	1,1,2-Trichloroethane	14.38	97	578586	204.1568 ug/L		99
64)	2-Hexanone	14.31	43	689071	213.0784 ug/L		99
65)	1,3-Dichloropropane	14.74	76	1034423	201.3815 ug/L		93
66)	Tetrachloroethene	14.87	166	644718	192.7530 ug/L		97
67)	Dibromochloromethane	15.18	129	780769	211.8317 ug/L		100
68)	1,2-Dibromoethane	15.48	107	610277	210.5616 ug/L		98
69)	1-Chlorohexane	15.59	91	900931	213.9661 ug/L		86
70)	Chlorobenzene	16.07	112	1706160	195.7904 ug/L	#	68
71)	1,1,1,2-Tetrachloroethane	16.11	131	721225	206.1264 ug/L		97
72)	Ethylbenzene	16.11	106	946980	203.0736 ug/L		98
73)	m-,p-Xylene	16.22	106	2242794	393.0696 ug/L		97
74)	o-Xylene	16.87	106	1130903	210.4315 ug/L		95
75)	Styrene	16.92	104	1988734	217.4182 ug/L		93
76)	Bromoform	17.49	173	561872	215.9030 ug/L		99
77)	Isopropylbenzene	17.38	105	2989967	206.9652 ug/L		98
79)	1,1,2,2-Tetrachloroethane	17.64	83	859540	201.0666 ug/L		95
81)	1,2,3-Trichloropropane	17.87	110	265884	203.1382 ug/L		89
82)	trans-1,4-Dichloro-2-Buten	17.93	53	340440	215.7181 ug/L		90
83)	n-Propylbenzene	17.98	91	3639812	195.8513 ug/L		98
84)	Bromobenzene	18.13	156	802539	198.6628 ug/L		99
85)	1,3,5-Trimethylbenzene	18.21	105	2665531	201.5000 ug/L		96
86)	2-Chlorotoluene	18.30	91	2450953	197.5855 ug/L		97
87)	4-Chlorotoluene	18.35	91	2149568	189.5191 ug/L		97
88)	a-Methylstyrene	18.69	118	1416560	220.5099 ug/L		98
89)	tert-Butylbenzene	18.75	134	559469	202.9400 ug/L		85
90)	1,2,4-Trimethylbenzene	18.82	105	2775173	199.4822 ug/L		81
91)	sec-Butylbenzene	19.08	105	3369131	198.8771 ug/L		100
92)	p-Isopropyltoluene	19.26	119	2833911	202.7621 ug/L		99
93)	1,3-Dichlorobenzene	19.49	146	1523154	194.8646 ug/L		95
94)	1,4-Dichlorobenzene	19.64	146	1521474	191.2260 ug/L		97
95)	n-Butylbenzene	19.89	91	2819417	200.5655 ug/L		98
96)	1,2-Dichlorobenzene	20.22	146	1485290	197.4738 ug/L		95
97)	1,2-Dibromo-3-Chloropropan	21.41	75	195547	206.7378 ug/L		89
98)	1,2,4-Trichlorobenzene	22.76	180	1054519	193.9351 ug/L		98
99)	Hexachlorobutadiene	22.95	225	597195	192.0469 ug/L		99
100)	Naphthalene	23.20	128	2579088	206.3237 ug/L		99
101)	1,2,3-Trichlorobenzene	23.58	180	1038439	193.9482 ug/L		99

(#) = qualifier out of range (m) = manual integration
6M137531.D 826_SL.M Mon Feb 29 16:01:43 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137531.D Vial: 10
Acq On : 26 Feb 2016 18:07 Operator: TMB
Sample : WG558920-10 200ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

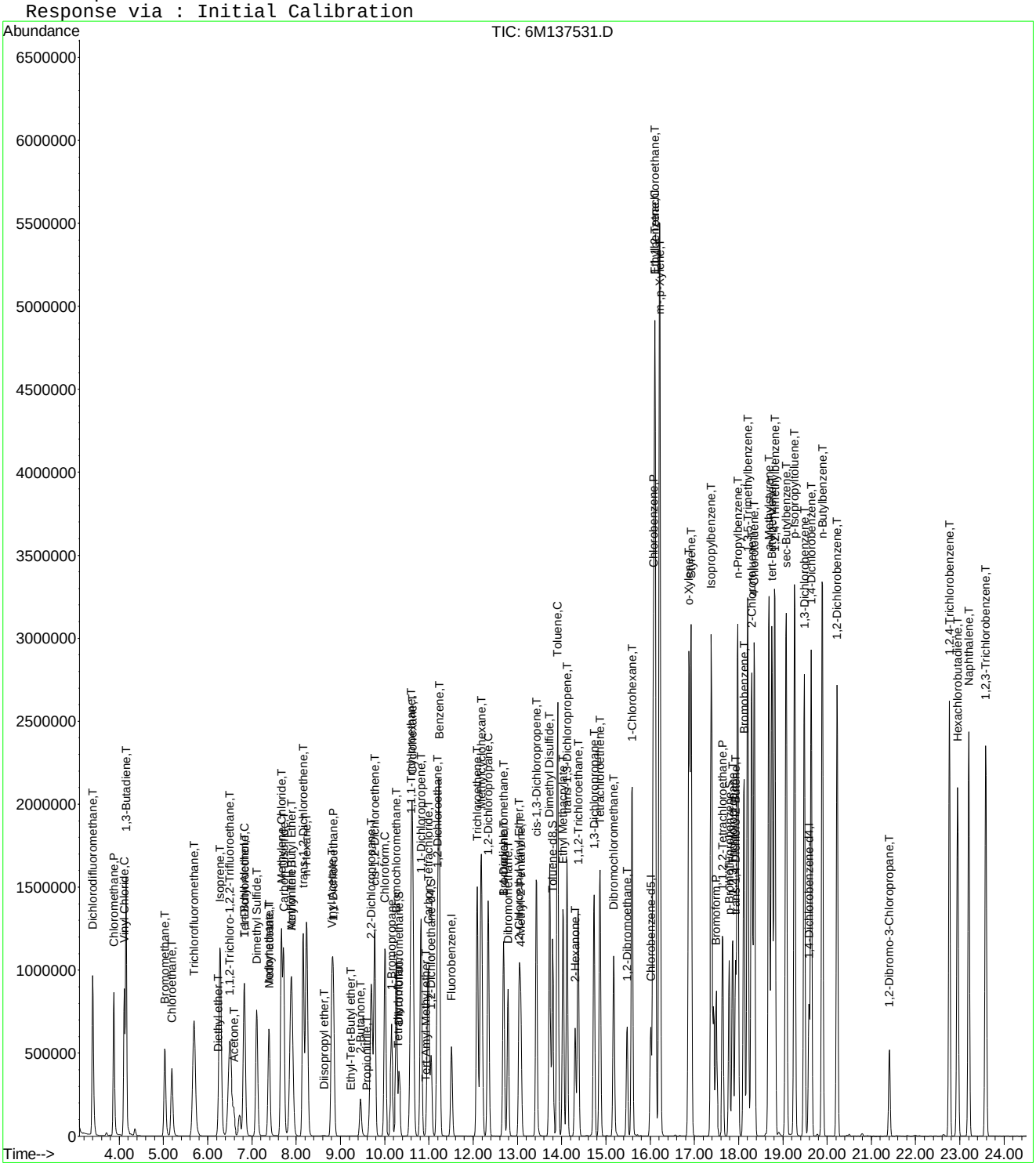

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137532.D Vial: 11
Acq On : 26 Feb 2016 18:39 Operator: TMB
Sample : WG558920-11 300ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:43 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	707233	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	525178	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	308135	50.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.33	111	555974	146.5460 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 293.10%#		
43) 1,2-Dichloroethane-d4	11.05	65	713394	144.8268 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 289.66%#		
58) Toluene-d8	13.80	98	1741152	139.4446 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 278.88%#		
80) p-Bromofluorobenzene	17.79	95	787625	139.1615 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 278.32%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	1997367	307.5122 ug/L	98
3) Chloromethane	3.88	50	1848014	273.0309 ug/L	98
4) Vinyl Chloride	4.11	62	1515327	278.1486 ug/L	97
5) 1,3-Butadiene	4.15	54	1176840	259.6328 ug/L	94
6) Bromomethane	5.03	94	924558	318.3612 ug/L	100
7) Chloroethane	5.18	64	952580	308.3709 ug/L	96
8) Trichlorofluoromethane	5.68	101	2124957	290.2808 ug/L	99
9) Diethyl ether	6.23	59	1011802	300.4509 ug/L	94
10) Isoprene	6.27	67	1489357	312.3064 ug/L	86
11) Acrolein	6.49	56	100305	156.8389 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	1067610	305.5451 ug/L	94
13) Acetone	6.59	43	448789	299.1551 ug/L	99
14) 1,1-Dichloroethene	6.82	61	1895304	306.2315 ug/L	92
15) Tert-Butyl Alcohol	6.95	59	370925	642.2954 ug/L	99
16) Dimethyl Sulfide	7.11	62	950681	316.6032 ug/L	94
17) Iodomethane	7.38	142	877751	298.6036 ug/L	91
18) Methyl acetate	7.40	43	1274555	296.3371 ug/L	98
19) Methylene Chloride	7.66	84	1102725	295.8467 ug/L	79
20) Carbon Disulfide	7.71	76	3583096	302.5832 ug/L	98
21) Acrylonitrile	7.86	53	296066	167.4906 ug/L	98
22) Methyl Tert Butyl Ether	7.90	73	3392519	318.7124 ug/L	92
23) trans-1,2-Dichloroethene	8.16	96	1037130	303.3368 ug/L	86
24) n-Hexane	8.23	57	1917686	308.8729 ug/L	99
25) Diisopropyl ether	8.61	45	4780310	296.9708 ug/L	96
26) Vinyl Acetate	8.80	43	2633859	316.5369 ug/L	99
27) 1,1-Dichloroethane	8.83	63	2210234	299.8379 ug/L	97
28) Ethyl-Tert-Butyl ether	9.24	59	3979837	308.4685 ug/L	96
29) 2-Butanone	9.45	43	727982	297.7887 ug/L	98
30) Propionitrile	9.58	54	209887	310.2156 ug/L	99
31) 2,2-Dichloropropane	9.69	77	1783568	301.4350 ug/L	96
32) cis-1,2-Dichloroethene	9.77	96	1159875	303.8646 ug/L	98
33) Chloroform	10.00	83	2040554	296.4065 ug/L	96
34) 1-Bromopropane	10.15	122	167090	319.2839 ug/L	98
35) Bromochloromethane	10.26	130	694571	309.6903 ug/L	99
36) Tetrahydrofuran	10.30	42	490636	303.4020 ug/L	96
38) 1,1,1-Trichloroethane	10.60	97	1858746	305.6722 ug/L	98
39) Cyclohexane	10.63	56	2201094	319.2142 ug/L	89
40) 1,1-Dichloropropene	10.83	75	1504422	307.2111 ug/L	99
41) Tert-Amyl-Methyl ether	10.94	73	3231746	315.7523 ug/L	93
42) Carbon Tetrachloride	10.99	117	1763858	310.4404 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M137532.D 826_SL.M Mon Feb 29 16:01:44 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137532.D Vial: 11
Acq On : 26 Feb 2016 18:39 Operator: TMB
Sample : WG558920-11 300ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:43 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45) 1,2-Dichloroethane	11.19	62	1778788	302.7287 ug/L	98
46) Benzene	11.23	78	4155462	282.0619 ug/L	90
47) Trichloroethene	12.09	130	1058154	304.0300 ug/L	90
48) Methylcyclohexane	12.18	83	1798917	319.7263 ug/L	88
49) 1,2-Dichloropropane	12.34	63	1232481	310.9180 ug/L	100
50) 1,4-Dioxane	12.67	88	32606	614.2458 ug/L	84
51) Bromodichloromethane	12.68	83	1653218	317.8084 ug/L	96
52) Dibromomethane	12.79	93	733410	316.3265 ug/L	98
53) 2-Chloroethyl Vinyl Ether	13.03	63	766489	351.5513 ug/L	97
54) 4-Methyl-2-Pentanone	13.07	58	543988	329.5031 ug/L	95
55) cis-1,3-Dichloropropene	13.42	75	1877090	327.5130 ug/L	95
56) Dimethyl Disulfide	13.73	79	1088350	376.5100 ug/L	96
59) Toluene	13.91	91	4193210	282.2590 ug/L	99
60) Ethyl Methacrylate	14.03	69	1632375	342.9321 ug/L	95
62) trans-1,3-Dichloropropene	14.12	75	1832609	320.8053 ug/L	98
63) 1,1,2-Trichloroethane	14.38	97	942438	303.5120 ug/L	98
64) 2-Hexanone	14.31	43	1154652	325.8770 ug/L	98
65) 1,3-Dichloropropane	14.74	76	1702509	302.5088 ug/L	94
66) Tetrachloroethene	14.87	166	1062175	289.8375 ug/L	97
67) Dibromochloromethane	15.18	129	1292929	320.1624 ug/L	100
68) 1,2-Dibromoethane	15.48	107	1008106	317.4575 ug/L	98
69) 1-Chlorohexane	15.59	91	1494127	323.8681 ug/L	86
70) Chlorobenzene	16.07	112	2773062	290.4413 ug/L #	66
71) 1,1,1,2-Tetrachloroethane	16.11	131	1196001	311.9762 ug/L	97
72) Ethylbenzene	16.11	106	1556732	304.6869 ug/L	100
73) m-,p-Xylene	16.22	106	3653753	584.4488 ug/L	99
74) o-Xylene	16.87	106	1861503	316.1378 ug/L	96
75) Styrene	16.92	104	3280614	327.3419 ug/L	91
76) Bromoform	17.49	173	968059	339.5083 ug/L	100
77) Isopropylbenzene	17.38	105	4859396	307.0014 ug/L	99
79) 1,1,2,2-Tetrachloroethane	17.64	83	1473362	306.0898 ug/L	95
81) 1,2,3-Trichloropropane	17.87	110	450710	305.8173 ug/L	97
82) trans-1,4-Dichloro-2-Buten	17.93	53	587175	330.4298 ug/L	92
83) n-Propylbenzene	17.98	91	5875551	280.7771 ug/L	99
84) Bromobenzene	18.13	156	1329308	292.2413 ug/L	98
85) 1,3,5-Trimethylbenzene	18.21	105	4394146	295.0064 ug/L	96
86) 2-Chlorotoluene	18.30	91	4027318	288.3378 ug/L	97
87) 4-Chlorotoluene	18.35	91	3574535	279.8896 ug/L	97
88) a-Methylstyrene	18.69	118	2387215	330.0275 ug/L	99
89) tert-Butylbenzene	18.75	134	927820	298.8965 ug/L	84
90) 1,2,4-Trimethylbenzene	18.82	105	4532965	289.3756 ug/L	82
91) sec-Butylbenzene	19.08	105	5502198	288.4488 ug/L	100
92) p-Isopropyltoluene	19.27	119	4664534	296.3974 ug/L	98
93) 1,3-Dichlorobenzene	19.49	146	2567994	291.7754 ug/L	95
94) 1,4-Dichlorobenzene	19.64	146	2568075	286.6525 ug/L	96
95) n-Butylbenzene	19.89	91	4738000	299.3349 ug/L	98
96) 1,2-Dichlorobenzene	20.22	146	2506554	295.9653 ug/L	94
97) 1,2-Dibromo-3-Chloropropan	21.41	75	337125	316.5375 ug/L	88
98) 1,2,4-Trichlorobenzene	22.76	180	1820641	297.3664 ug/L	98
99) Hexachlorobutadiene	22.95	225	1055064	301.3252 ug/L	99
100) Naphthalene	23.20	128	4412465	313.4943 ug/L	98
101) 1,2,3-Trichlorobenzene	23.58	180	1777074	294.7650 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137532.D Vial: 11
Acq On : 26 Feb 2016 18:39 Operator: TMB
Sample : WG558920-11 300ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

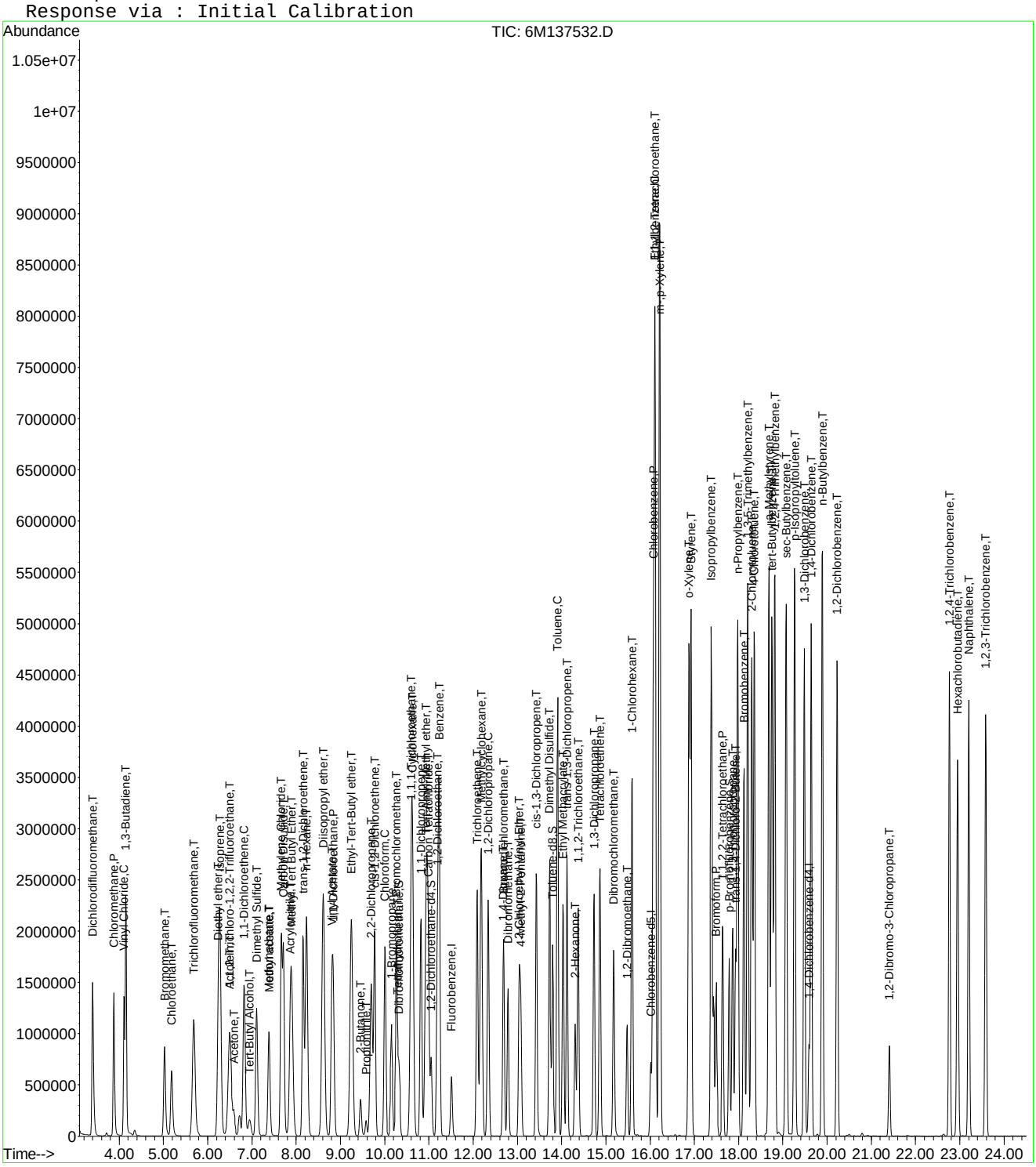

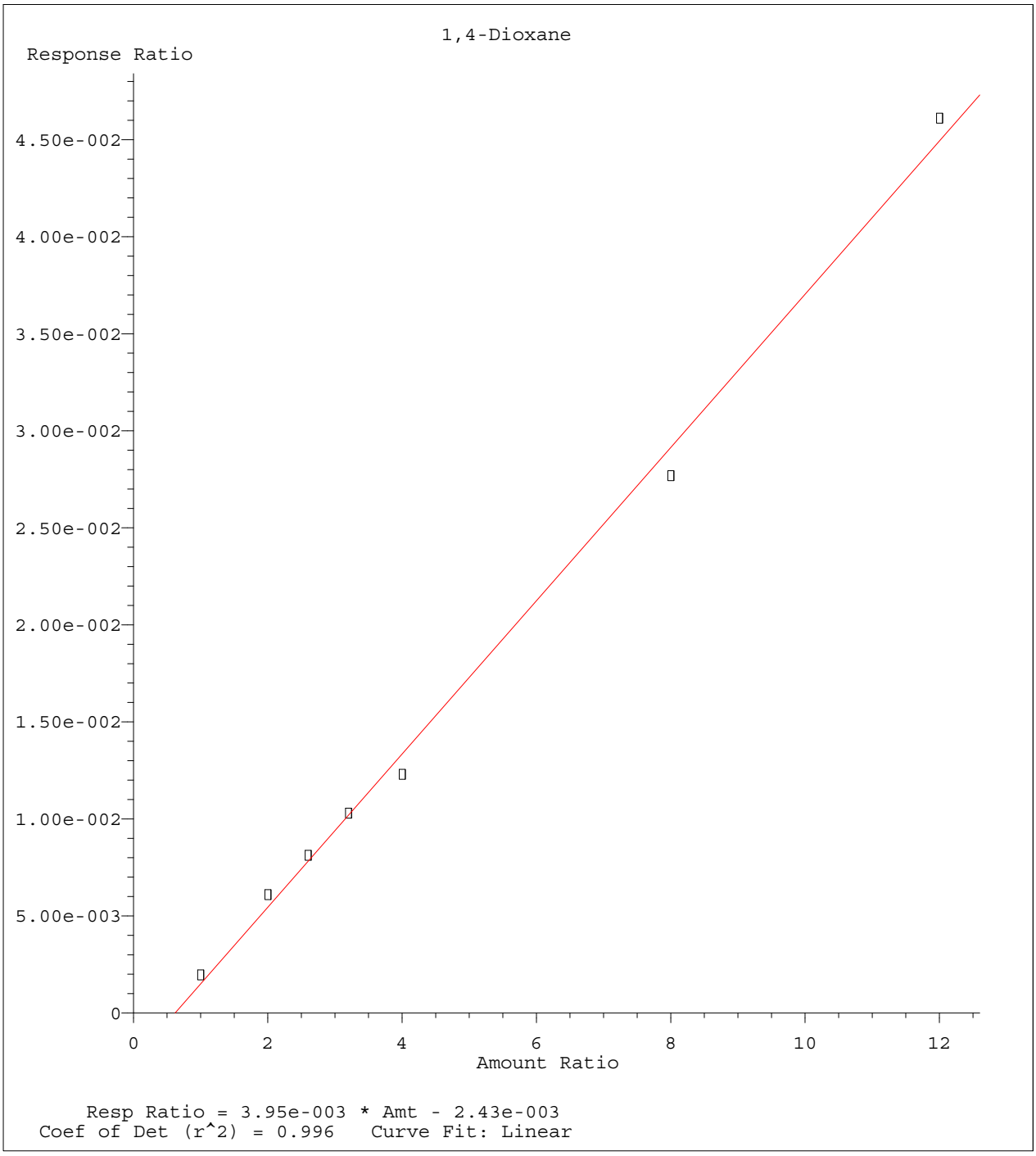

Method Name: C:\MSDCHEM\1\METHODS\826_SL.M
Calibration Table Last Updated: Mon Feb 29 08:51:12 2016

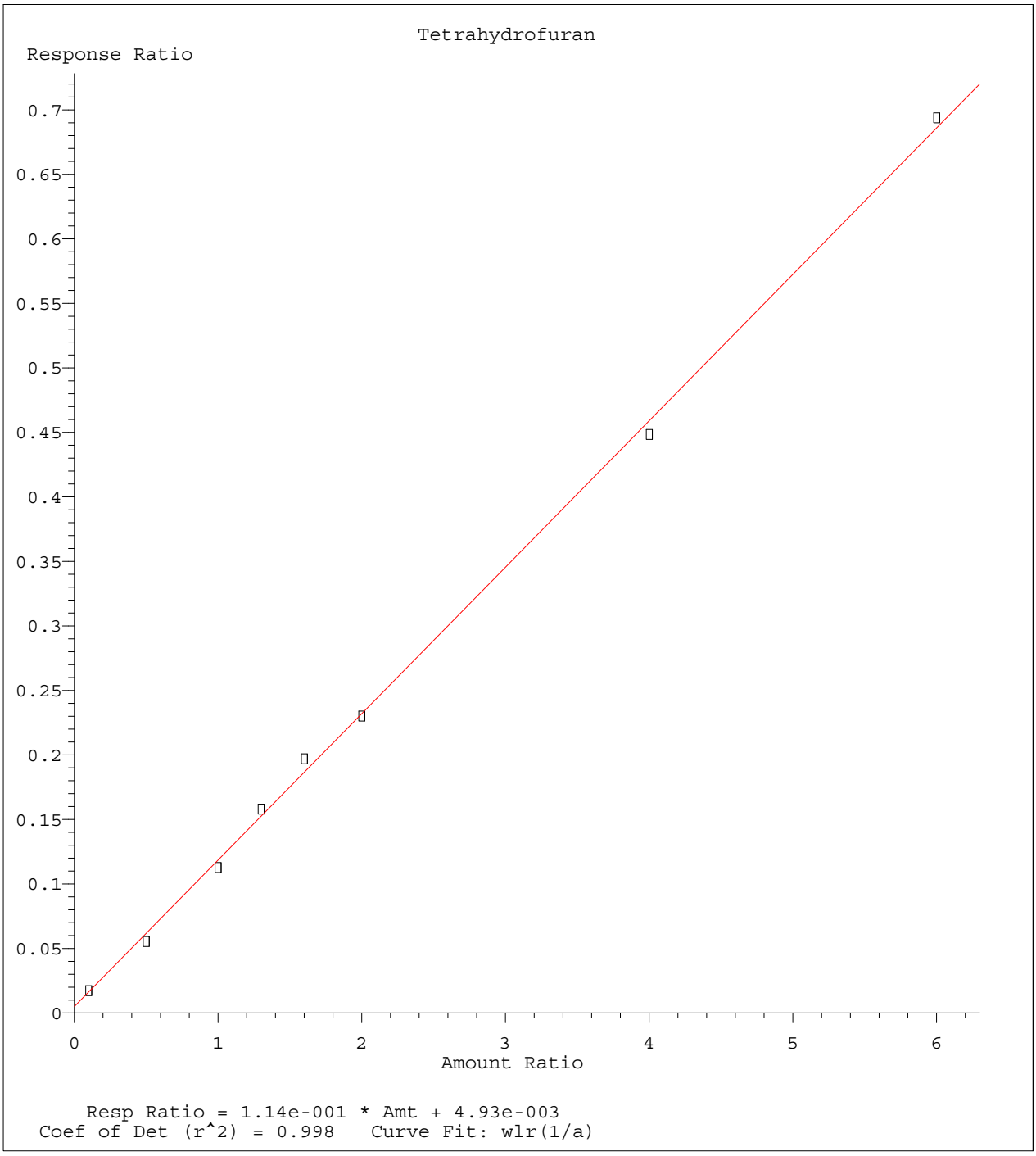

Method Name: C:\MSDCHEM\1\METHODS\826_SL.M
Calibration Table Last Updated: Mon Feb 29 08:51:12 2016

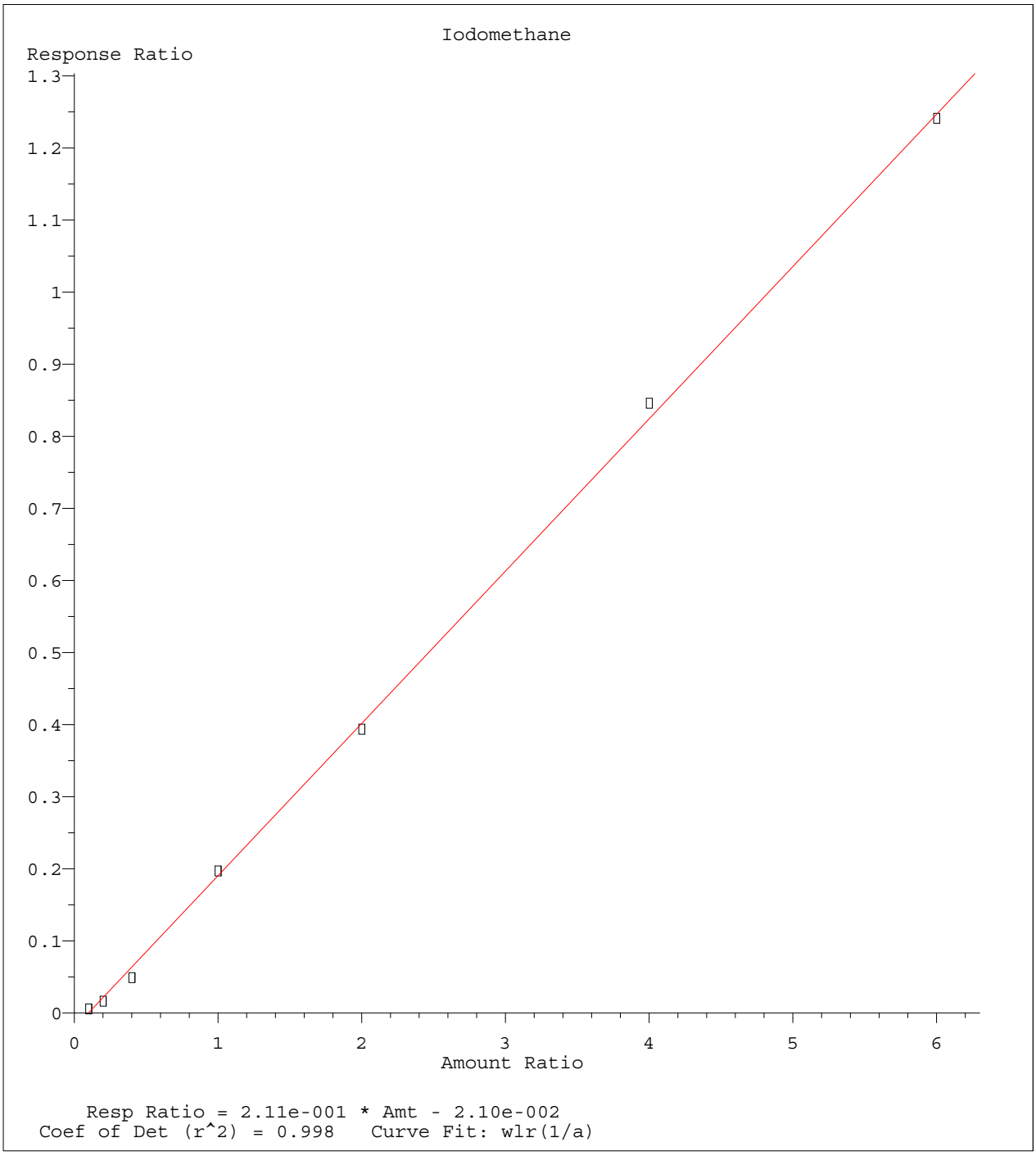

Method Name: C:\MSDCHEM\1\METHODS\826_SL.M
Calibration Table Last Updated: Mon Feb 29 08:51:12 2016

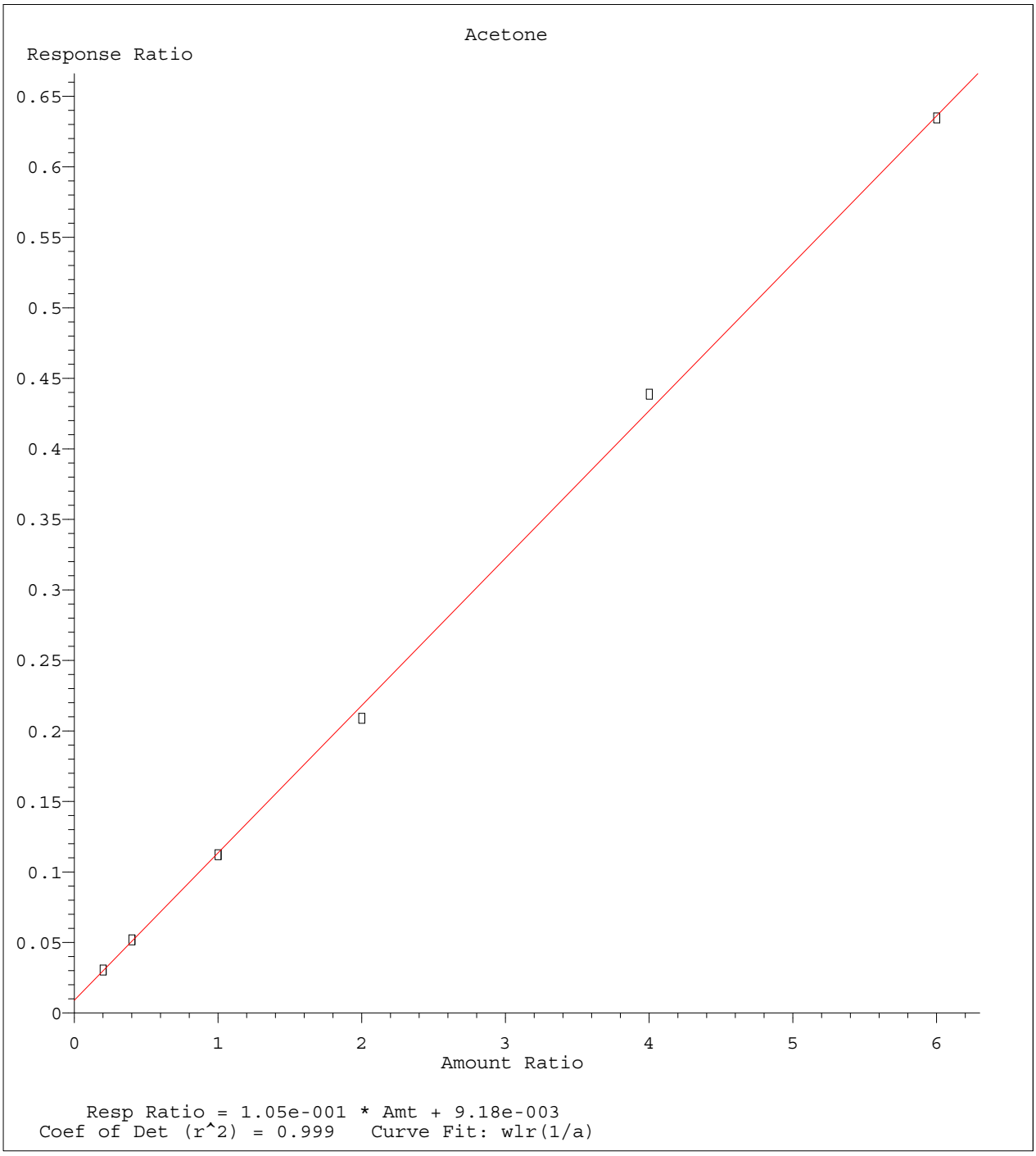

Method Name: C:\MSDCHEM\1\METHODS\826_SL.M
Calibration Table Last Updated: Mon Feb 29 08:51:12 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:44 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	697242	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	504277	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	281494	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.32	111	83790	22.4022 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 44.80%#		
43) 1,2-Dichloroethane-d4	11.05	65	107686	22.1747 ug/L	-0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 44.34%#		
58) Toluene-d8	13.80	98	259069	21.6082 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 43.22%#		
80) p-Bromofluorobenzene	17.79	95	108251	20.9365 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 41.88%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	355154	55.4626 ug/L	99
3) Chloromethane	3.88	50	339693	50.9064 ug/L	98
4) Vinyl Chloride	4.11	62	232790	43.3425 ug/L	98
5) 1,3-Butadiene	4.16	54	191696	42.8977 ug/L	93
6) Bromomethane	5.02	94	167650	58.5556 ug/L	99
7) Chloroethane	5.19	64	172370	56.5995 ug/L	98
8) Trichlorofluoromethane	5.68	101	345771	47.9110 ug/L	99
9) Diethyl ether	6.24	59	244439	73.6254 ug/L	93
10) Isoprene	6.27	67	268171	57.0391 ug/L	88
11) Acrolein	6.48	56	38698	61.3760 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	185858	53.9539 ug/L	94
13) Acetone	6.60	43	77335	48.6644 ug/L	96
14) 1,1-Dichloroethene	6.83	61	315114	51.6437 ug/L	92
15) Tert-Butyl Alcohol	6.95	59	120780	212.1401 ug/L	97
16) Dimethyl Sulfide	7.11	62	234426	79.1891 ug/L	96
17) Iodomethane	7.38	142	96886	37.8412 ug/L	92
18) Methyl acetate	7.39	43	223958	52.8169 ug/L	96
19) Methylene Chloride	7.67	84	196184	53.3878 ug/L	82
20) Carbon Disulfide	7.71	76	518243	44.3914 ug/L	99
21) Acrylonitrile	7.86	53	88595	50.8382 ug/L	99
22) Methyl Tert Butyl Ether	7.89	73	557115	53.0885 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	181115	53.7310 ug/L	84
24) n-Hexane	8.23	57	293885	48.0130 ug/L	99
25) Diisopropyl ether	8.61	45	1440779	90.7892 ug/L	96
26) Vinyl Acetate	8.80	43	309031	37.6715 ug/L	98
27) 1,1-Dichloroethane	8.83	63	365886	50.3469 ug/L	98
28) Ethyl-Tert-Butyl ether	9.25	59	1142199	89.7979 ug/L	96
29) 2-Butanone	9.46	43	118678	49.2421 ug/L	97
30) Propionitrile	9.58	54	62654	93.9303 ug/L	99
31) 2,2-Dichloropropane	9.69	77	309886	53.1233 ug/L	95
32) cis-1,2-Dichloroethene	9.77	96	203750	54.1434 ug/L	96
33) Chloroform	10.01	83	344145	50.7061 ug/L	96
34) 1-Bromopropane	10.15	122	45722	88.6198 ug/L	99
35) Bromochloromethane	10.26	130	115189	52.0956 ug/L	100
36) Tetrahydrofuran	10.29	42	140281	86.4486 ug/L	95
38) 1,1,1-Trichloroethane	10.60	97	311688	51.9918 ug/L	98
39) Cyclohexane	10.63	56	356880	52.4982 ug/L	88
40) 1,1-Dichloropropene	10.82	75	254739	52.7645 ug/L	97
41) Tert-Amyl-Methyl ether	10.95	73	1007162	99.8131 ug/L	93
42) Carbon Tetrachloride	10.99	117	286624	51.1689 ug/L	96

(#) = qualifier out of range (m) = manual integration
6M137535.D 826_SL.M Mon Feb 29 16:01:45 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:44 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	296979	51.2665 ug/L	98
46)	Benzene	11.23	78	732452	50.4293 ug/L	92
47)	Trichloroethene	12.09	130	187775	54.7248 ug/L	93
48)	Methylcyclohexane	12.18	83	293690	52.9463 ug/L	89
49)	1,2-Dichloropropane	12.33	63	215054	55.0291 ug/L	100
50)	1,4-Dioxane	12.67	88	9692	206.7214 ug/L	86
51)	Bromodichloromethane	12.68	83	264833	51.6400 ug/L	97
52)	Dibromomethane	12.78	93	115173	50.3870 ug/L	97
53)	2-Chloroethyl Vinyl Ether	13.04	63	118032	54.9113 ug/L	99
54)	4-Methyl-2-Pentanone	13.07	58	83435	51.2622 ug/L	92
55)	cis-1,3-Dichloropropene	13.43	75	332086	58.7723 ug/L	97
56)	Dimethyl Disulfide	13.72	79	160314	56.2546 ug/L	97
59)	Toluene	13.91	91	733544	51.4239 ug/L	99
60)	Ethyl Methacrylate	14.04	69	253929	55.5569 ug/L	99
62)	trans-1,3-Dichloropropene	14.12	75	289951	52.8608 ug/L	100
63)	1,1,2-Trichloroethane	14.38	97	158637	53.2065 ug/L	98
64)	2-Hexanone	14.31	43	174540	51.3021 ug/L	98
65)	1,3-Dichloropropane	14.73	76	296777	54.9182 ug/L	95
66)	Tetrachloroethene	14.87	166	179884	51.1197 ug/L	98
67)	Dibromochloromethane	15.17	129	201014	51.8393 ug/L	99
68)	1,2-Dibromoethane	15.48	107	163614	53.6583 ug/L	99
69)	1-Chlorohexane	15.59	91	237869	53.6977 ug/L	87
70)	Chlorobenzene	16.07	112	484642	52.8637 ug/L	70
71)	1,1,1,2-Tetrachloroethane	16.11	131	190856	51.8481 ug/L	98
72)	Ethylbenzene	16.10	106	257103	52.4064 ug/L	97
73)	m-,p-Xylene	16.22	106	631680	105.2305 ug/L	96
74)	o-Xylene	16.88	106	321591	56.8793 ug/L	96
75)	Styrene	16.92	104	532085	55.2923 ug/L	95
76)	Bromoform	17.49	173	134827	49.2451 ug/L	99
77)	Isopropylbenzene	17.38	105	829435	54.5730 ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.64	83	229283	52.1415 ug/L	96
81)	1,2,3-Trichloropropane	17.87	110	71564	53.1534 ug/L	99
82)	trans-1,4-Dichloro-2-Buten	17.93	53	68292	42.0681 ug/L	85
83)	n-Propylbenzene	17.98	91	1006100	52.6291 ug/L	98
84)	Bromobenzene	18.12	156	215387	51.8331 ug/L	99
85)	1,3,5-Trimethylbenzene	18.21	105	716527	52.6576 ug/L	95
86)	2-Chlorotoluene	18.30	91	664750	52.0974 ug/L	96
87)	4-Chlorotoluene	18.36	91	607350	52.0569 ug/L	97
88)	a-Methylstyrene	18.69	118	378204	57.2343 ug/L	98
89)	tert-Butylbenzene	18.76	134	150883	53.2071 ug/L	99
90)	1,2,4-Trimethylbenzene	18.82	105	731933	51.1473 ug/L	81
91)	sec-Butylbenzene	19.07	105	883157	50.6807 ug/L	100
92)	p-Isopropyltoluene	19.27	119	732050	50.9189 ug/L	99
93)	1,3-Dichlorobenzene	19.48	146	418127	52.0038 ug/L	96
94)	1,4-Dichlorobenzene	19.64	146	423834	51.7864 ug/L	98
95)	n-Butylbenzene	19.89	91	705101	48.7625 ug/L	98
96)	1,2-Dichlorobenzene	20.22	146	421505	54.4802 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	21.41	75	50722	52.1318 ug/L	89
98)	1,2,4-Trichlorobenzene	22.76	180	285471	51.0389 ug/L	97
99)	Hexachlorobutadiene	22.94	225	152283	47.6080 ug/L	99
100)	Naphthalene	23.20	128	640676	49.8263 ug/L	100
101)	1,2,3-Trichlorobenzene	23.59	180	280768	50.9788 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

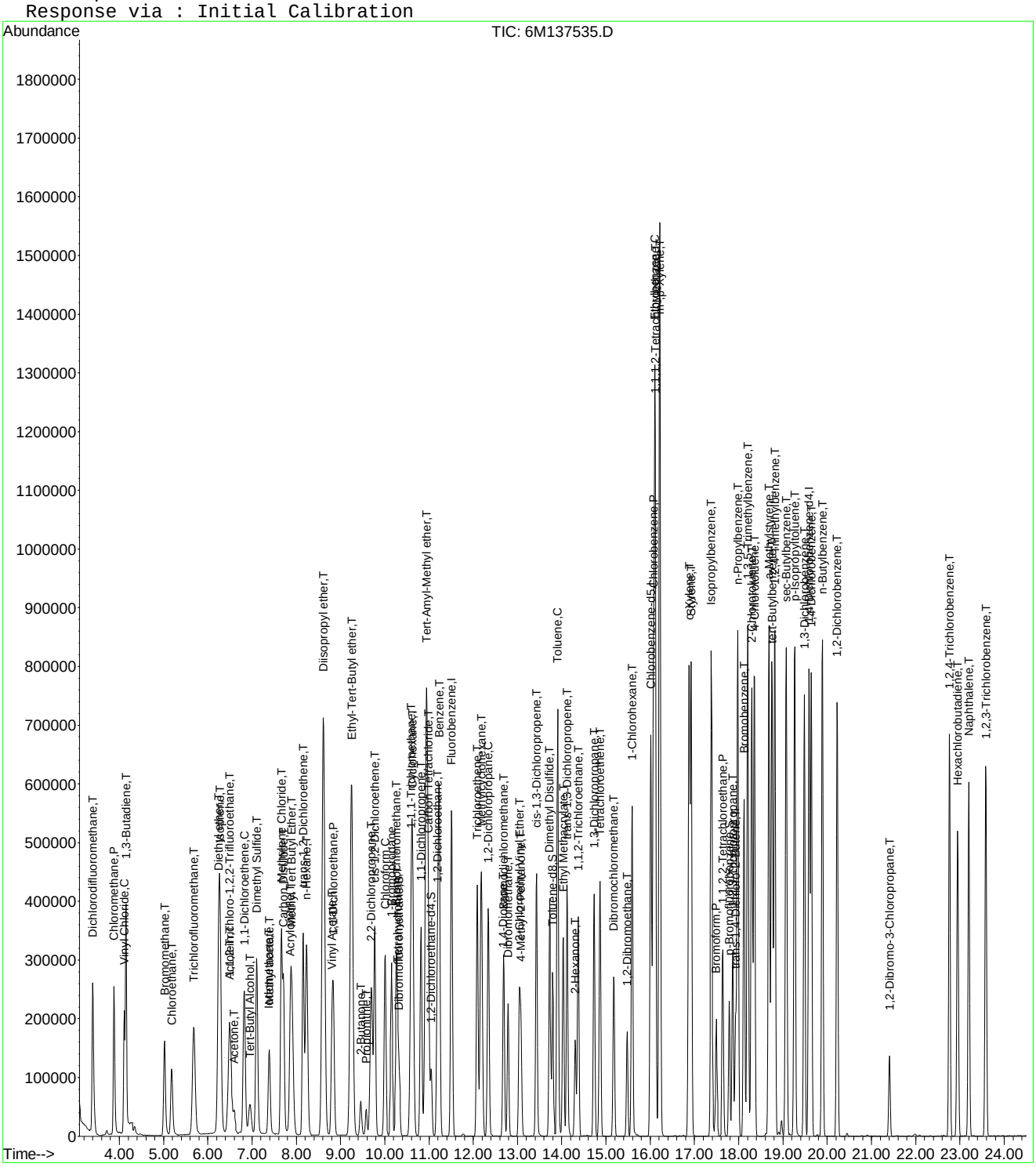

6M137535.D 826_SL.M Mon Feb 29 16:01:45 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	115	0.00
2	T	Dichlorodifluoromethane	50.0000	55.4626	-10.9	109	-0.01
3	P	Chloromethane	50.0000	50.9064	-1.8	111	0.00
4	C	Vinyl Chloride	50.0000	43.3425	13.3	89	0.00
5	T	1,3-Butadiene	50.0000	42.8977	14.2	92	-0.01
6	T	Bromomethane	50.0000	58.5556	-17.1	130	-0.01
7	T	Chloroethane	50.0000	56.5995	-13.2	116	0.00
8	T	Trichlorofluoromethane	50.0000	47.9111	4.2	102	-0.02
9	T	Diethyl ether	100.0000	73.6254	26.4#	86	0.00
10	T	Isoprene	50.0000	57.0391	-14.1	124	-0.01
11	T	Acrolein	50.0000	61.3760	-22.8	153	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	53.9539	-7.9	110	-0.01
13	T	Acetone	50.0000	48.6644	2.7	113	0.01
14	C	1,1-Dichloroethene	50.0000	51.6437	-3.3	107	0.00
15	T	Tert-Butyl Alcohol	200.0000	212.1401	-6.1	124	0.02
16	T	Dimethyl Sulfide	50.0000	79.1891	-58.4#	173	-0.01
17	T	Iodomethane	50.0000	37.8412	24.3	81	0.00
18	T	Methyl acetate	50.0000	52.8169	-5.6	120	0.00
19	T	Methylene Chloride	50.0000	53.3878	-6.8	112	0.00
20	T	Carbon Disulfide	50.0000	44.3914	11.2	98	-0.01
21	T	Acrylonitrile	50.0000	50.8382	-1.7	112	0.00
22	T	Methyl Tert Butyl Ether	50.0000	53.0885	-6.2	110	0.00
23	T	trans-1,2-Dichloroethene	50.0000	53.7311	-7.5	112	0.00
24	T	n-Hexane	50.0000	48.0130	4.0	104	-0.01
25	T	Diisopropyl ether	100.0000	90.7892	9.2	106	0.00
26	T	Vinyl Acetate	50.0000	37.6715	24.7	85	0.00
27	P	1,1-Dichloroethane	50.0000	50.3469	-0.7	106	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	89.7979	10.2	103	0.01
29	T	2-Butanone	50.0000	49.2421	1.5	115	0.00
30	T	Propionitrile	100.0000	93.9303	6.1	108	0.00
31	T	2,2-Dichloropropane	50.0000	53.1233	-6.2	112	0.00
32	T	cis-1,2-Dichloroethene	50.0000	54.1434	-8.3	116	0.00
33	C	Chloroform	50.0000	50.7061	-1.4	109	0.00
34		1-Bromopropane	50.0000	88.6198	-77.2#	186	-0.01
35	T	Bromochloromethane	50.0000	52.0956	-4.2	108	0.00
36	T	Tetrahydrofuran	100.0000	86.4486	13.6	100	0.00
37	S	Dibromofluoromethane	25.0000	22.4022	10.4	101	0.00
38	T	1,1,1-Trichloroethane	50.0000	51.9918	-4.0	108	0.00
39	T	Cyclohexane	50.0000	52.4982	-5.0	110	-0.01
40	T	1,1-Dichloropropene	50.0000	52.7645	-5.5	109	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	99.8131	0.2	115	0.00
42	T	Carbon Tetrachloride	50.0000	51.1689	-2.3	106	0.00
43	S	1,2-Dichloroethane-d4	25.0000	22.1747	11.3	100	-0.01
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	50.0000	51.2666	-2.5	109	0.00
46	T	Benzene	50.0000	50.4293	-0.9	112	0.00
47	T	Trichloroethene	50.0000	54.7248	-9.4	115	0.00
48	T	Methylcyclohexane	50.0000	52.9463	-5.9	111	0.00
49	C	1,2-Dichloropropane	50.0000	55.0291	-10.1	116	0.00
50	T	1,4-Dioxane	200.0000	206.7214	-3.4	130	0.00
51	T	Bromodichloromethane	50.0000	51.6400	-3.3	109	0.00
52	T	Dibromomethane	50.0000	50.3870	-0.8	103	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	54.9113	-9.8	118	0.00
54	T	4-Methyl-2-Pentanone	50.0000	51.2622	-2.5	117	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	58.7723	-17.5	120	0.00
56	T	Dimethyl Disulfide	50.0000	56.2546	-12.5	117	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	115	0.00
58	S	Toluene-d8	25.0000	21.6082	13.6	97	0.00
59	C	Toluene	50.0000	51.4239	-2.8	111	0.00
60	T	Ethyl Methacrylate	50.0000	55.5569	-11.1	115	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	50.0000	52.8608	-5.7	109	0.00
63	T	1,1,2-Trichloroethane	50.0000	53.2065	-6.4	113	0.00
64	T	2-Hexanone	50.0000	51.3021	-2.6	116	0.00
65	T	1,3-Dichloropropane	50.0000	54.9182	-9.8	116	0.00
66	T	Tetrachloroethene	50.0000	51.1197	-2.2	109	0.00
67	T	Dibromochloromethane	50.0000	51.8393	-3.7	107	0.00
68	T	1,2-Dibromoethane	50.0000	53.6583	-7.3	112	0.00
69	T	1-Chlorohexane	50.0000	53.6977	-7.4	112	0.00
70	P	Chlorobenzene	50.0000	52.8637	-5.7	115	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	51.8481	-3.7	110	0.00
72	C	Ethylbenzene	50.0000	52.4064	-4.8	110	0.00
73	T	m-,p-Xylene	100.0000	105.2305	-5.2	113	0.00
74	T	o-Xylene	50.0000	56.8792	-13.8	115	0.00
75	T	Styrene	50.0000	55.2923	-10.6	113	0.00
76	P	Bromoform	50.0000	49.2451	1.5	103	0.00
77	T	Isopropylbenzene	50.0000	54.5730	-9.1	112	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	118	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	52.1415	-4.3	115	0.00
80	S	p-Bromofluorobenzene	25.0000	20.9365	16.3	97	0.00
81	T	1,2,3-Trichloropropane	50.0000	53.1534	-6.3	117	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	42.0681	15.9	93	0.00
83	T	n-Propylbenzene	50.0000	52.6291	-5.3	111	0.00
84	T	Bromobenzene	50.0000	51.8331	-3.7	112	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	52.6576	-5.3	112	0.00
86	T	2-Chlorotoluene	50.0000	52.0974	-4.2	115	0.00
87	T	4-Chlorotoluene	50.0000	52.0569	-4.1	114	0.00
88	T	a-Methylstyrene	50.0000	57.2343	-14.5	123	0.00
89	T	tert-Butylbenzene	50.0000	53.2071	-6.4	112	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	51.1473	-2.3	110	0.00
91	T	sec-Butylbenzene	50.0000	50.6807	-1.4	107	0.00
92	T	p-Isopropyltoluene	50.0000	50.9189	-1.8	107	0.00
93	T	1,3-Dichlorobenzene	50.0000	52.0038	-4.0	114	0.00
94	T	1,4-Dichlorobenzene	50.0000	51.7864	-3.6	117	0.00
95	T	n-Butylbenzene	50.0000	48.7625	2.5	104	0.00
96	T	1,2-Dichlorobenzene	50.0000	54.4802	-9.0	120	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	52.1318	-4.3	117	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	51.0389	-2.1	109	0.00
99	T	Hexachlorobutadiene	50.0000	47.6080	4.8	101	-0.01
100	T	Naphthalene	50.0000	49.8263	0.3	104	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	50.9788	-2.0	108	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137535.D 826_SL.M Mon Feb 29 16:03:13 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032216\6M137939.D Vial: 2
Acq On : 22 Mar 2016 11:51 Operator: TMB
Sample : WG561879-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 22 12:15:59 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	655388	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	480340	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	256895	50.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.32	111	168709	47.9868 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.98%		
43) 1,2-Dichloroethane-d4	11.05	65	205170	44.9467 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 89.90%		
58) Toluene-d8	13.80	98	578904	50.6908 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.38%		
80) p-Bromofluorobenzene	17.79	95	240767	51.0249 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.04%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	295732	49.1323 ug/L	99
3) Chloromethane	3.88	50	239812	38.2333 ug/L	97
4) Vinyl Chloride	4.12	62	241061	47.7487 ug/L	98
5) 1,3-Butadiene	4.16	54	163925	39.0258 ug/L	94
6) Bromomethane	5.03	94	145617	54.1081 ug/L	100
7) Chloroethane	5.19	64	151443	52.9036 ug/L	99
8) Trichlorofluoromethane	5.69	101	334092	49.2491 ug/L	99
9) Diethyl ether	6.23	59	335685	107.5657 ug/L	96
10) Isoprene	6.28	67	246844	55.8558 ug/L	91
11) Acrolein	6.48	56	36449	61.5008 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	180312	55.6867 ug/L	95
13) Acetone	6.59	43	82853	56.0801 ug/L	95
14) 1,1-Dichloroethene	6.83	61	297516	51.8735 ug/L	97
15) Tert-Butyl Alcohol	6.93	59	135980	254.0901 ug/L	99
16) Dimethyl Sulfide	7.11	62	149099	53.5820 ug/L	98
17) Iodomethane	7.38	142	137030	54.4326 ug/L	97
18) Methyl acetate	7.39	43	227271	57.0211 ug/L	98
19) Methylene Chloride	7.67	84	178880	51.7876 ug/L	86
20) Carbon Disulfide	7.72	76	582851	53.1139 ug/L	99
21) Acrylonitrile	7.86	53	96087	58.6584 ug/L	99
22) Methyl Tert Butyl Ether	7.89	73	548274	55.5825 ug/L	93
23) trans-1,2-Dichloroethene	8.16	96	171538	54.1398 ug/L	91
24) n-Hexane	8.23	57	318910	55.4287 ug/L	97
25) Diisopropyl ether	8.61	45	1500768	100.6086 ug/L	95
26) Vinyl Acetate	8.80	43	429419	55.6900 ug/L	100
27) 1,1-Dichloroethane	8.83	63	351229	51.4165 ug/L	98
28) Ethyl-Tert-Butyl ether	9.24	59	1275177	106.6547 ug/L	96
29) 2-Butanone	9.45	43	129512	57.1691 ug/L	97
30) Propionitrile	9.57	54	72916	116.2960 ug/L	98
31) 2,2-Dichloropropane	9.69	77	289653	52.8258 ug/L	92
32) cis-1,2-Dichloroethene	9.77	96	188162	53.1943 ug/L	94
33) Chloroform	10.01	83	320323	50.2102 ug/L	97
34) 1-Bromopropane	10.15	122	32389	66.7864 ug/L	98
35) Bromochloromethane	10.26	130	113584	54.6502 ug/L	100
36) Tetrahydrofuran	10.29	42	176637	116.5422 ug/L	97
38) 1,1,1-Trichloroethane	10.60	97	289080	51.3001 ug/L	99
39) Cyclohexane	10.63	56	358263	56.0673 ug/L	88
40) 1,1-Dichloropropene	10.82	75	244301	53.8340 ug/L	97
41) Tert-Amyl-Methyl ether	10.94	73	1036997	109.3329 ug/L	94
42) Carbon Tetrachloride	10.99	117	268652	51.0233 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M137939.D 826_SL.M Tue Mar 22 12:16:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032216\6M137939.D Vial: 2
Acq On : 22 Mar 2016 11:51 Operator: TMB
Sample : WG561879-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 22 12:15:59 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	270138	49.6111	ug/L	100
46)	Benzene	11.23	78	690769	50.5967	ug/L	93
47)	Trichloroethene	12.09	130	175465	54.4029	ug/L	99
48)	Methylcyclohexane	12.18	83	301275	57.7822	ug/L	89
49)	1,2-Dichloropropane	12.34	63	192871	52.5045	ug/L	98
50)	1,4-Dioxane	12.67	88	10443	232.4561	ug/L	92
51)	Bromodichloromethane	12.68	83	246411	51.1163	ug/L	96
52)	Dibromomethane	12.79	93	113530	52.8401	ug/L	97
53)	2-Chloroethyl Vinyl Ether	13.04	63	124000	61.3718	ug/L	98
54)	4-Methyl-2-Pentanone	13.07	58	94691	61.8932	ug/L	95
55)	cis-1,3-Dichloropropene	13.43	75	287415	54.1149	ug/L	97
56)	Dimethyl Disulfide	13.72	79	151523	56.5654	ug/L	97
59)	Toluene	13.91	91	700700	51.5693	ug/L	98
60)	Ethyl Methacrylate	14.04	69	253431	58.2111	ug/L	99
62)	trans-1,3-Dichloropropene	14.12	75	280016	53.5935	ug/L	99
63)	1,1,2-Trichloroethane	14.38	97	151552	53.3633	ug/L	99
64)	2-Hexanone	14.31	43	187160	57.7528	ug/L	96
65)	1,3-Dichloropropane	14.74	76	267045	51.8789	ug/L	99
66)	Tetrachloroethene	14.87	166	181841	54.2510	ug/L	99
67)	Dibromochloromethane	15.17	129	191936	51.9649	ug/L	99
68)	1,2-Dibromoethane	15.48	107	156923	54.0286	ug/L	97
69)	1-Chlorohexane	15.59	91	243934	57.8110	ug/L	90
70)	Chlorobenzene	16.07	112	448548	51.3648	ug/L	70
71)	1,1,1,2-Tetrachloroethane	16.11	131	178963	51.0400	ug/L	98
72)	Ethylbenzene	16.10	106	248178	53.1081	ug/L	98
73)	m-,p-Xylene	16.22	106	604321	105.6897	ug/L	98
74)	o-Xylene	16.88	106	294526	54.6883	ug/L	96
75)	Styrene	16.92	104	505182	55.1128	ug/L	97
76)	Bromoform	17.49	173	138670	53.1727	ug/L	99
77)	Isopropylbenzene	17.38	105	791104	54.6449	ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.65	83	222869	55.5360	ug/L	96
81)	1,2,3-Trichloropropane	17.87	110	67731	55.1236	ug/L	98
82)	trans-1,4-Dichloro-2-Buten	17.93	53	80608	54.4096	ug/L	97
83)	n-Propylbenzene	17.98	91	947531	54.3115	ug/L	99
84)	Bromobenzene	18.13	156	202087	53.2893	ug/L	99
85)	1,3,5-Trimethylbenzene	18.21	105	674347	54.3032	ug/L	97
86)	2-Chlorotoluene	18.30	91	618081	53.0782	ug/L	96
87)	4-Chlorotoluene	18.36	91	557203	52.3318	ug/L	97
88)	a-Methylstyrene	18.69	118	344009	57.0445	ug/L	98
89)	tert-Butylbenzene	18.75	134	142131	54.9201	ug/L	84
90)	1,2,4-Trimethylbenzene	18.82	105	690224	52.8512	ug/L	82
91)	sec-Butylbenzene	19.08	105	860391	54.1020	ug/L	100
92)	p-Isopropyltoluene	19.27	119	724331	55.2063	ug/L	99
93)	1,3-Dichlorobenzene	19.48	146	385449	52.5300	ug/L	98
94)	1,4-Dichlorobenzene	19.64	146	383876	51.3954	ug/L	98
95)	n-Butylbenzene	19.89	91	701171	53.1339	ug/L	100
96)	1,2-Dichlorobenzene	20.23	146	365417	51.7533	ug/L	97
97)	1,2-Dibromo-3-Chloropropan	21.41	75	48679	54.8228	ug/L	94
98)	1,2,4-Trichlorobenzene	22.76	180	267720	52.4486	ug/L	97
99)	Hexachlorobutadiene	22.96	225	154485	52.9210	ug/L	99
100)	Naphthalene	23.20	128	658066	56.0794	ug/L	99
101)	1,2,3-Trichlorobenzene	23.59	180	258135	51.3574	ug/L	99

(#) = qualifier out of range (m) = manual integration
6M137939.D 826_SL.M Tue Mar 22 12:16:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032216\6M137939.D Vial: 2
Acq On : 22 Mar 2016 11:51 Operator: TMB
Sample : WG561879-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 22 12:16 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

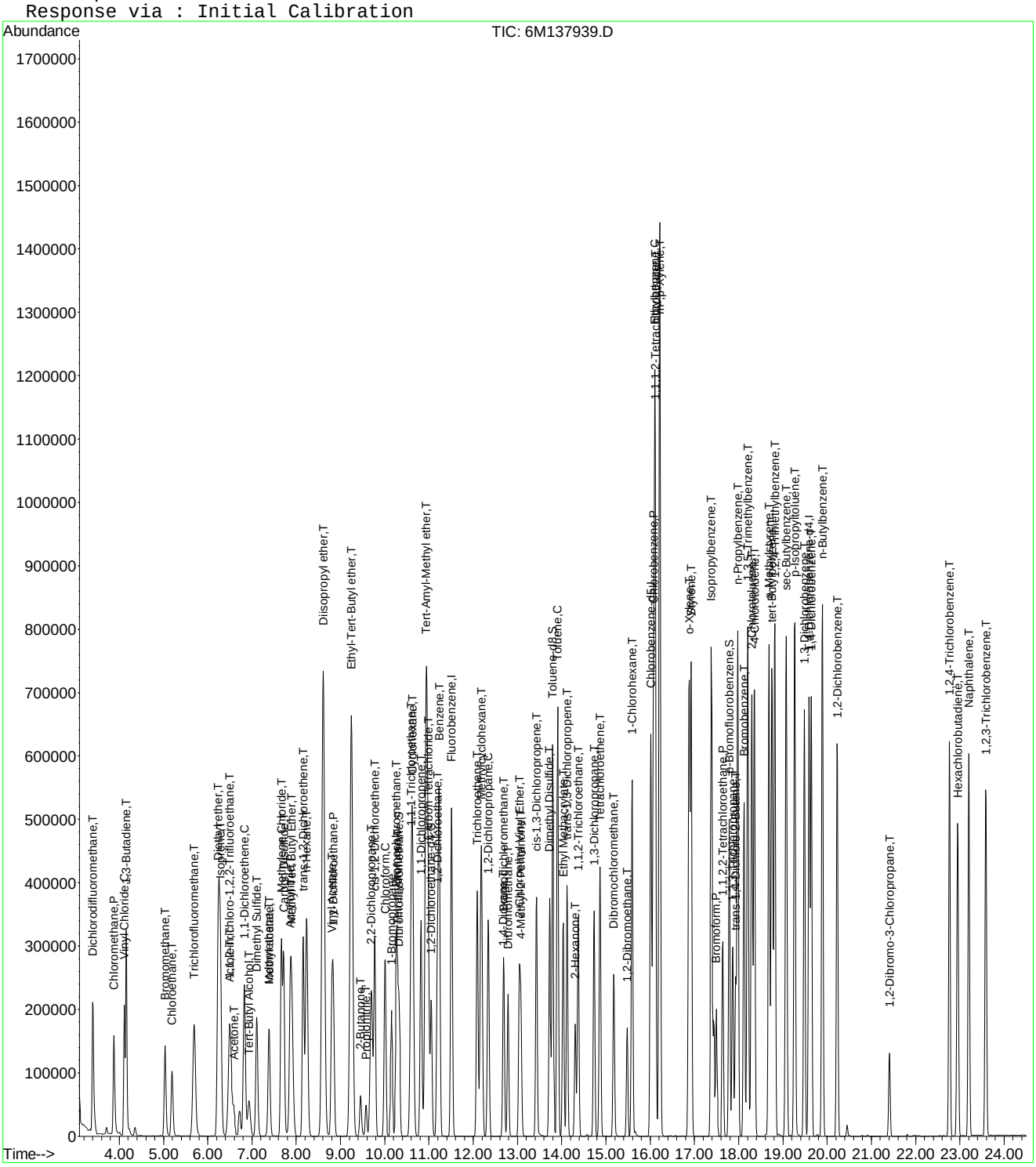

6M137939.D 826_SL.M Tue Mar 22 12:16:00 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\032216\6M137939.D Vial: 2
Acq On : 22 Mar 2016 11:51 Operator: TMB
Sample : WG561879-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	108	0.00
2	T	Dichlorodifluoromethane	0.4592	0.4512	1.7	91	-0.01
3	P	Chloromethane	0.4785	0.3659	23.5	78	0.00
4	C	Vinyl Chloride	0.3852	0.3678	4.5	92	0.00
5	T	1,3-Butadiene	0.3205	0.2501	21.9	78	0.00
6	T	Bromomethane	0.2053	0.2222	-8.2	113	0.00
7	T	Chloroethane	0.2184	0.2311	-5.8	102	0.00
8	T	Trichlorofluoromethane	0.5175	0.5098	1.5	99	0.00
9	T	Diethyl ether	0.2381	0.2561	-7.6	118	0.00
10	T	Isoprene	0.3372	0.3766	-11.7	114	0.00
11	T	Acrolein	0.0452	0.0556	-23.0	144	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2470	0.2751	-11.4	107	0.00
13	T	Acetone	0.1189	0.1264	-6.3	122	0.00
14	C	1,1-Dichloroethene	0.4376	0.4540	-3.7	101	0.00
15	T	Tert-Butyl Alcohol	0.0408	0.0519	-27.0#	140	0.00
16	T	Dimethyl Sulfide	0.2123	0.2275	-7.2	110	0.00
17	T	Iodomethane	0.1531	0.2091	-36.5#	114	0.00
18	T	Methyl acetate	0.3041	0.3468	-14.0	121	0.00
19	T	Methylene Chloride	0.2635	0.2729	-3.6	103	0.00
20	T	Carbon Disulfide	0.8372	0.8893	-6.2	110	0.00
21	T	Acrylonitrile	0.1250	0.1466	-17.3	122	0.00
22	T	Methyl Tert Butyl Ether	0.7525	0.8366	-11.2	108	0.00
23	T	trans-1,2-Dichloroethene	0.2417	0.2617	-8.3	106	0.00
24	T	n-Hexane	0.4389	0.4866	-10.9	113	0.00
25	T	Diisopropyl ether	1.1380	1.1449	-0.6	111	0.00
26	T	Vinyl Acetate	0.5883	0.6552	-11.4	119	0.00
27	P	1,1-Dichloroethane	0.5212	0.5359	-2.8	102	0.00
28	T	Ethyl-Tert-Butyl ether	0.9121	0.9728	-6.7	115	0.00
29	T	2-Butanone	0.1728	0.1976	-14.3	126	0.00
30	T	Propionitrile	0.0478	0.0556	-16.3	126	0.00
31	T	2,2-Dichloropropane	0.4183	0.4420	-5.7	105	0.00
32	T	cis-1,2-Dichloroethene	0.2699	0.2871	-6.4	107	0.00
33	C	Chloroform	0.4867	0.4888	-0.4	101	0.00
34		1-Bromopropane	0.0370	0.0494	-33.6#	132	0.00
35	T	Bromochloromethane	0.1586	0.1733	-9.3	106	0.00
36	T	Tetrahydrofuran	0.1230	0.1348	-9.6	126	0.00
37	S	Dibromofluoromethane	0.2682	0.5148	-91.9#	204#	0.00
38	T	1,1,1-Trichloroethane	0.4299	0.4411	-2.6	100	0.00
39	T	Cyclohexane	0.4875	0.5466	-12.1	111	-0.01
40	T	1,1-Dichloropropene	0.3462	0.3728	-7.7	105	0.00
41	T	Tert-Amyl-Methyl ether	0.7236	0.7911	-9.3	118	0.00
42	T	Carbon Tetrachloride	0.4017	0.4099	-2.0	99	0.00
43	S	1,2-Dichloroethane-d4	0.3483	0.6261	-79.8#	191#	0.00
44		Heptane	0.0000	0.0000	0.0	0#	0.00
45	T	1,2-Dichloroethane	0.4154	0.4122	0.8	99	0.00
46	T	Benzene	1.0416	1.0540	-1.2	105	0.00
47	T	Trichloroethene	0.2461	0.2677	-8.8	108	0.00
48	T	Methylcyclohexane	0.3978	0.4597	-15.6	114	0.00
49	C	1,2-Dichloropropane	0.2803	0.2943	-5.0	104	0.00
50	T	1,4-Dioxane	0.0031	0.0040	-28.4#	140	0.00
51	T	Bromodichloromethane	0.3678	0.3760	-2.2	101	0.00
52	T	Dibromomethane	0.1639	0.1732	-5.7	101	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1541	0.1892	-22.7	124	0.00
54	T	4-Methyl-2-Pentanone	0.1167	0.1445	-23.8	133	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\032216\6M137939.D Vial: 2
Acq On : 22 Mar 2016 11:51 Operator: TMB
Sample : WG561879-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4052	0.4385	-8.2	104	0.00
56	T	Dimethyl Disulfide	0.2044	0.2312	-13.1	111	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	109	0.00
58	S	Toluene-d8	1.1888	2.4104	-102.8#	218#	0.00
59	C	Toluene	1.4144	1.4588	-3.1	106	0.00
60	T	Ethyl Methacrylate	0.4532	0.5276	-16.4	115	0.01
61		Paraldehyde	0.0000	0.0000	0.0	0#	-15.13#
62	T	trans-1,3-Dichloropropene	0.5439	0.5829	-7.2	106	0.00
63	T	1,1,2-Trichloroethane	0.2956	0.3155	-6.7	108	0.01
64	T	2-Hexanone	0.3373	0.3896	-15.5	125	0.00
65	T	1,3-Dichloropropane	0.5358	0.5560	-3.8	105	0.00
66	T	Tetrachloroethene	0.3489	0.3786	-8.5	110	0.00
67	T	Dibromochloromethane	0.3845	0.3996	-3.9	103	0.00
68	T	1,2-Dibromoethane	0.3023	0.3267	-8.1	108	0.00
69	T	1-Chlorohexane	0.4392	0.5078	-15.6	114	0.00
70	P	Chlorobenzene	0.9090	0.9338	-2.7	106	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3650	0.3726	-2.1	104	0.01
72	C	Ethylbenzene	0.4864	0.5167	-6.2	106	0.00
73	T	m-,p-Xylene	0.5952	0.6291	-5.7	108	0.00
74	T	o-Xylene	0.5606	0.6132	-9.4	106	0.00
75	T	Styrene	0.9542	1.0517	-10.2	107	0.00
76	P	Bromoform	0.2715	0.2887	-6.3	106	0.00
77	T	Isopropylbenzene	1.5070	1.6470	-9.3	107	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	108	0.00
79	P	1,1,2,2-Tetrachloroethane	0.7811	0.8676	-11.1	111	0.00
80	S	p-Bromofluorobenzene	0.9184	1.8744	-104.1#	215#	0.00
81	T	1,2,3-Trichloropropane	0.2392	0.2637	-10.2	111	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.2884	0.3138	-8.8	110	0.00
83	T	n-Propylbenzene	3.3956	3.6884	-8.6	105	0.00
84	T	Bromobenzene	0.7381	0.7866	-6.6	105	0.00
85	T	1,3,5-Trimethylbenzene	2.4170	2.6250	-8.6	105	0.00
86	T	2-Chlorotoluene	2.2664	2.4060	-6.2	107	0.00
87	T	4-Chlorotoluene	2.0723	2.1690	-4.7	105	0.01
88	T	a-Methylstyrene	1.1737	1.3391	-14.1	112	0.00
89	T	tert-Butylbenzene	0.5037	0.5533	-9.8	106	-0.01
90	T	1,2,4-Trimethylbenzene	2.5419	2.6868	-5.7	104	0.00
91	T	sec-Butylbenzene	3.0953	3.3492	-8.2	104	0.00
92	T	p-Isopropyltoluene	2.5537	2.8196	-10.4	106	0.01
93	T	1,3-Dichlorobenzene	1.4282	1.5004	-5.1	106	0.00
94	T	1,4-Dichlorobenzene	1.4537	1.4943	-2.8	106	0.00
95	T	n-Butylbenzene	2.5684	2.7294	-6.3	103	0.00
96	T	1,2-Dichlorobenzene	1.3743	1.4224	-3.5	104	0.01
97	T	1,2-Dibromo-3-Chloropropane	0.1728	0.1895	-9.6	112	0.00
98	T	1,2,4-Trichlorobenzene	0.9935	1.0421	-4.9	102	0.00
99	T	Hexachlorobutadiene	0.5682	0.6014	-5.8	102	0.00
100	T	Naphthalene	2.2839	2.5616	-12.2	107	0.00
101	T	1,2,3-Trichlorobenzene	0.9783	1.0048	-2.7	99	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137939.D 826_SL.M Tue Mar 22 12:17:27 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\032216\6M137939.D Vial: 2
Acq On : 22 Mar 2016 11:51 Operator: TMB
Sample : WG561879-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	108	0.00
2	T	Dichlorodifluoromethane	50.0000	49.1323	1.7	91	-0.01
3	P	Chloromethane	50.0000	38.2333	23.5	78	0.00
4	C	Vinyl Chloride	50.0000	47.7487	4.5	92	0.00
5	T	1,3-Butadiene	50.0000	39.0258	21.9	78	0.00
6	T	Bromomethane	50.0000	54.1081	-8.2	113	0.00
7	T	Chloroethane	50.0000	52.9036	-5.8	102	0.00
8	T	Trichlorofluoromethane	50.0000	49.2491	1.5	99	0.00
9	T	Diethyl ether	100.0000	107.5657	-7.6	118	0.00
10	T	Isoprene	50.0000	55.8558	-11.7	114	0.00
11	T	Acrolein	50.0000	61.5008	-23.0	144	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	55.6867	-11.4	107	0.00
13	T	Acetone	50.0000	56.0801	-12.2	122	0.00
14	C	1,1-Dichloroethene	50.0000	51.8735	-3.7	101	0.00
15	T	Tert-Butyl Alcohol	200.0000	254.0901	-27.0#	140	0.00
16	T	Dimethyl Sulfide	50.0000	53.5820	-7.2	110	0.00
17	T	Iodomethane	50.0000	54.4326	-8.9	114	0.00
18	T	Methyl acetate	50.0000	57.0211	-14.0	121	0.00
19	T	Methylene Chloride	50.0000	51.7876	-3.6	103	0.00
20	T	Carbon Disulfide	50.0000	53.1139	-6.2	110	0.00
21	T	Acrylonitrile	50.0000	58.6584	-17.3	122	0.00
22	T	Methyl Tert Butyl Ether	50.0000	55.5825	-11.2	108	0.00
23	T	trans-1,2-Dichloroethene	50.0000	54.1397	-8.3	106	0.00
24	T	n-Hexane	50.0000	55.4287	-10.9	113	0.00
25	T	Diisopropyl ether	100.0000	100.6086	-0.6	111	0.00
26	T	Vinyl Acetate	50.0000	55.6900	-11.4	119	0.00
27	P	1,1-Dichloroethane	50.0000	51.4165	-2.8	102	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	106.6547	-6.7	115	0.00
29	T	2-Butanone	50.0000	57.1691	-14.3	126	0.00
30	T	Propionitrile	100.0000	116.2960	-16.3	126	0.00
31	T	2,2-Dichloropropane	50.0000	52.8258	-5.7	105	0.00
32	T	cis-1,2-Dichloroethene	50.0000	53.1943	-6.4	107	0.00
33	C	Chloroform	50.0000	50.2102	-0.4	101	0.00
34		1-Bromopropane	50.0000	66.7864	-33.6#	132	0.00
35	T	Bromochloromethane	50.0000	54.6503	-9.3	106	0.00
36	T	Tetrahydrofuran	100.0000	116.5422	-16.5	126	0.00
37	S	Dibromofluoromethane	25.0000	47.9868	-91.9#	204	0.00
38	T	1,1,1-Trichloroethane	50.0000	51.3001	-2.6	100	0.00
39	T	Cyclohexane	50.0000	56.0673	-12.1	111	-0.01
40	T	1,1-Dichloropropene	50.0000	53.8340	-7.7	105	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	109.3329	-9.3	118	0.00
42	T	Carbon Tetrachloride	50.0000	51.0233	-2.0	99	0.00
43	S	1,2-Dichloroethane-d4	25.0000	44.9466	-79.8#	191	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	50.0000	49.6111	0.8	99	0.00
46	T	Benzene	50.0000	50.5967	-1.2	105	0.00
47	T	Trichloroethene	50.0000	54.4029	-8.8	108	0.00
48	T	Methylcyclohexane	50.0000	57.7822	-15.6	114	0.00
49	C	1,2-Dichloropropane	50.0000	52.5045	-5.0	104	0.00
50	T	1,4-Dioxane	200.0000	232.4561	-16.2	140	0.00
51	T	Bromodichloromethane	50.0000	51.1163	-2.2	101	0.00
52	T	Dibromomethane	50.0000	52.8401	-5.7	101	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	61.3717	-22.7	124	0.00
54	T	4-Methyl-2-Pentanone	50.0000	61.8932	-23.8	133	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\032216\6M137939.D Vial: 2
Acq On : 22 Mar 2016 11:51 Operator: TMB
Sample : WG561879-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	54.1149	-8.2	104	0.00
56	T	Dimethyl Disulfide	50.0000	56.5654	-13.1	111	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	109	0.00
58	S	Toluene-d8	25.0000	50.6908	-102.8#	218	0.00
59	C	Toluene	50.0000	51.5693	-3.1	106	0.00
60	T	Ethyl Methacrylate	50.0000	58.2111	-16.4	115	0.01
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	50.0000	53.5935	-7.2	106	0.00
63	T	1,1,2-Trichloroethane	50.0000	53.3633	-6.7	108	0.01
64	T	2-Hexanone	50.0000	57.7528	-15.5	125	0.00
65	T	1,3-Dichloropropane	50.0000	51.8789	-3.8	105	0.00
66	T	Tetrachloroethene	50.0000	54.2510	-8.5	110	0.00
67	T	Dibromochloromethane	50.0000	51.9649	-3.9	103	0.00
68	T	1,2-Dibromoethane	50.0000	54.0286	-8.1	108	0.00
69	T	1-Chlorohexane	50.0000	57.8110	-15.6	114	0.00
70	P	Chlorobenzene	50.0000	51.3648	-2.7	106	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	51.0400	-2.1	104	0.01
72	C	Ethylbenzene	50.0000	53.1081	-6.2	106	0.00
73	T	m-,p-Xylene	100.0000	105.6897	-5.7	108	0.00
74	T	o-Xylene	50.0000	54.6882	-9.4	106	0.00
75	T	Styrene	50.0000	55.1127	-10.2	107	0.00
76	P	Bromoform	50.0000	53.1727	-6.3	106	0.00
77	T	Isopropylbenzene	50.0000	54.6449	-9.3	107	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	108	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	55.5360	-11.1	111	0.00
80	S	p-Bromofluorobenzene	25.0000	51.0249	-104.1#	215	0.00
81	T	1,2,3-Trichloropropane	50.0000	55.1236	-10.2	111	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	54.4096	-8.8	110	0.00
83	T	n-Propylbenzene	50.0000	54.3115	-8.6	105	0.00
84	T	Bromobenzene	50.0000	53.2893	-6.6	105	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	54.3032	-8.6	105	0.00
86	T	2-Chlorotoluene	50.0000	53.0782	-6.2	107	0.00
87	T	4-Chlorotoluene	50.0000	52.3319	-4.7	105	0.01
88	T	a-Methylstyrene	50.0000	57.0445	-14.1	112	0.00
89	T	tert-Butylbenzene	50.0000	54.9201	-9.8	106	-0.01
90	T	1,2,4-Trimethylbenzene	50.0000	52.8512	-5.7	104	0.00
91	T	sec-Butylbenzene	50.0000	54.1020	-8.2	104	0.00
92	T	p-Isopropyltoluene	50.0000	55.2063	-10.4	106	0.01
93	T	1,3-Dichlorobenzene	50.0000	52.5300	-5.1	106	0.00
94	T	1,4-Dichlorobenzene	50.0000	51.3954	-2.8	106	0.00
95	T	n-Butylbenzene	50.0000	53.1339	-6.3	103	0.00
96	T	1,2-Dichlorobenzene	50.0000	51.7533	-3.5	104	0.01
97	T	1,2-Dibromo-3-Chloropropane	50.0000	54.8228	-9.6	112	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	52.4486	-4.9	102	0.00
99	T	Hexachlorobutadiene	50.0000	52.9210	-5.8	102	0.00
100	T	Naphthalene	50.0000	56.0794	-12.2	107	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	51.3573	-2.7	99	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137939.D 826_SL.M Tue Mar 22 12:17:29 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032316\6M137965.D Vial: 3
Acq On : 23 Mar 2016 12:47 Operator: TMB
Sample : WG562074-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 13:12:21 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	604908	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	444556	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	238804	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	155374	47.8818 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.76%		
43) 1,2-Dichloroethane-d4	11.06	65	187452	44.4921 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 88.98%		
58) Toluene-d8	13.80	98	531186	50.2564 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 100.52%		
80) p-Bromofluorobenzene	17.79	95	226957	51.7419 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 103.48%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	264728	47.6516 ug/L	98
3) Chloromethane	3.88	50	223801	38.6582 ug/L	98
4) Vinyl Chloride	4.12	62	213539	45.8270 ug/L	97
5) 1,3-Butadiene	4.17	54	149974	38.6840 ug/L	94
6) Bromomethane	5.03	94	129774	52.2453 ug/L	99
7) Chloroethane	5.20	64	135902	51.4365 ug/L	100
8) Trichlorofluoromethane	5.70	101	302350	48.2893 ug/L	99
9) Diethyl ether	6.24	59	297388	103.2463 ug/L	95
10) Isoprene	6.28	67	224828	55.1195 ug/L	92
11) Acrolein	6.48	56	32711	59.7996 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	161466	54.0278 ug/L	96
13) Acetone	6.60	43	76723	56.2790 ug/L	97
14) 1,1-Dichloroethene	6.84	61	271533	51.2940 ug/L	94
15) Tert-Butyl Alcohol	6.94	59	122688	248.3842 ug/L	97
16) Dimethyl Sulfide	7.12	62	138871	54.0711 ug/L	99
17) Iodomethane	7.38	142	129251	55.5182 ug/L	97
18) Methyl acetate	7.39	43	211719	57.5520 ug/L	97
19) Methylene Chloride	7.67	84	161480	50.6514 ug/L	86
20) Carbon Disulfide	7.72	76	537374	53.0562 ug/L	98
21) Acrylonitrile	7.87	53	86624	57.2945 ug/L	98
22) Methyl Tert Butyl Ether	7.89	73	501919	55.1294 ug/L	93
23) trans-1,2-Dichloroethene	8.16	96	154240	52.7427 ug/L	90
24) n-Hexane	8.24	57	295089	55.5685 ug/L	98
25) Diisopropyl ether	8.61	45	1324423	96.1961 ug/L	95
26) Vinyl Acetate	8.80	43	381473	53.6005 ug/L	99
27) 1,1-Dichloroethane	8.84	63	318133	50.4580 ug/L	98
28) Ethyl-Tert-Butyl ether	9.25	59	1137230	103.0545 ug/L	97
29) 2-Butanone	9.46	43	114514	54.7671 ug/L	98
30) Propionitrile	9.58	54	66145	114.3005 ug/L	98
31) 2,2-Dichloropropane	9.69	77	264942	52.3514 ug/L	92
32) cis-1,2-Dichloroethene	9.77	96	171887	52.6484 ug/L	93
33) Chloroform	10.01	83	289995	49.2497 ug/L	98
34) 1-Bromopropane	10.16	122	29541	65.9971 ug/L	96
35) Bromochloromethane	10.27	130	102654	53.5131 ug/L	99
36) Tetrahydrofuran	10.29	42	158553	113.2808 ug/L	98
38) 1,1,1-Trichloroethane	10.60	97	264018	50.7625 ug/L	98
39) Cyclohexane	10.64	56	335587	56.9013 ug/L	88
40) 1,1-Dichloropropene	10.82	75	221339	52.8443 ug/L	97
41) Tert-Amyl-Methyl ether	10.95	73	937278	107.0658 ug/L	94
42) Carbon Tetrachloride	10.99	117	246653	50.7545 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M137965.D 826_SL.M Wed Mar 23 13:12:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032316\6M137965.D Vial: 3
Acq On : 23 Mar 2016 12:47 Operator: TMB
Sample : WG562074-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 13:12:21 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	245138	48.7768	ug/L	99
46)	Benzene	11.23	78	625201	49.6156	ug/L	93
47)	Trichloroethene	12.09	130	158447	53.2261	ug/L	98
48)	Methylcyclohexane	12.18	83	281797	58.5567	ug/L	90
49)	1,2-Dichloropropane	12.34	63	177972	52.4917	ug/L	98
50)	1,4-Dioxane	12.68	88	8976	218.5934	ug/L	87
51)	Bromodichloromethane	12.68	83	226703	50.9525	ug/L	96
52)	Dibromomethane	12.79	93	102748	51.8126	ug/L	99
53)	2-Chloroethyl Vinyl Ether	13.04	63	109067	58.4857	ug/L	99
54)	4-Methyl-2-Pentanone	13.07	58	83870	59.3950	ug/L	95
55)	cis-1,3-Dichloropropene	13.43	75	265529	54.1662	ug/L	98
56)	Dimethyl Disulfide	13.72	79	144370	58.3926	ug/L	97
59)	Toluene	13.91	91	644211	51.2282	ug/L	99
60)	Ethyl Methacrylate	14.04	69	242866	60.2747	ug/L	98
62)	trans-1,3-Dichloropropene	14.12	75	256369	53.0173	ug/L	100
63)	1,1,2-Trichloroethane	14.38	97	138333	52.6295	ug/L	99
64)	2-Hexanone	14.31	43	169409	56.4832	ug/L	96
65)	1,3-Dichloropropane	14.74	76	247046	51.8569	ug/L	99
66)	Tetrachloroethene	14.87	166	167778	54.0846	ug/L	97
67)	Dibromochloromethane	15.17	129	178502	52.2178	ug/L	99
68)	1,2-Dibromoethane	15.48	107	146067	54.3390	ug/L	98
69)	1-Chlorohexane	15.59	91	230162	58.9379	ug/L	90
70)	Chlorobenzene	16.07	112	415312	51.3870	ug/L	72
71)	1,1,1,2-Tetrachloroethane	16.11	131	165013	50.8497	ug/L	98
72)	Ethylbenzene	16.10	106	231239	53.4664	ug/L	100
73)	m-,p-Xylene	16.22	106	556389	105.1395	ug/L	97
74)	o-Xylene	16.88	106	275903	55.3540	ug/L	97
75)	Styrene	16.92	104	469288	55.3179	ug/L	97
76)	Bromoform	17.49	173	126342	52.3451	ug/L	99
77)	Isopropylbenzene	17.38	105	730839	54.5456	ug/L	99
79)	1,1,2,2-Tetrachloroethane	17.65	83	207652	55.6641	ug/L	95
81)	1,2,3-Trichloropropane	17.87	110	64069	56.0935	ug/L	98
82)	trans-1,4-Dichloro-2-Buten	17.93	53	78029	56.6588	ug/L	98
83)	n-Propylbenzene	17.98	91	882270	54.4019	ug/L	99
84)	Bromobenzene	18.13	156	188552	53.4868	ug/L	99
85)	1,3,5-Trimethylbenzene	18.21	105	636299	55.1211	ug/L	97
86)	2-Chlorotoluene	18.30	91	570720	52.7240	ug/L	96
87)	4-Chlorotoluene	18.36	91	525422	53.0854	ug/L	97
88)	a-Methylstyrene	18.69	118	331132	59.0689	ug/L	98
89)	tert-Butylbenzene	18.76	134	131427	54.6313	ug/L	86
90)	1,2,4-Trimethylbenzene	18.82	105	659733	54.3435	ug/L	82
91)	sec-Butylbenzene	19.08	105	811614	54.9011	ug/L	99
92)	p-Isopropyltoluene	19.27	119	684922	56.1574	ug/L	99
93)	1,3-Dichlorobenzene	19.48	146	362995	53.2175	ug/L	97
94)	1,4-Dichlorobenzene	19.64	146	362568	52.2200	ug/L	98
95)	n-Butylbenzene	19.89	91	665585	54.2582	ug/L	99
96)	1,2-Dichlorobenzene	20.23	146	346877	52.8492	ug/L	97
97)	1,2-Dibromo-3-Chloropropan	21.41	75	47504	57.5525	ug/L	90
98)	1,2,4-Trichlorobenzene	22.76	180	263930	55.6232	ug/L	98
99)	Hexachlorobutadiene	22.96	225	148742	54.8138	ug/L	100
100)	Naphthalene	23.20	128	658289	60.3482	ug/L	100
101)	1,2,3-Trichlorobenzene	23.59	180	256338	54.8634	ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032316\6M137965.D Vial: 3
Acq On : 23 Mar 2016 12:47 Operator: TMB
Sample : WG562074-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 13:12 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

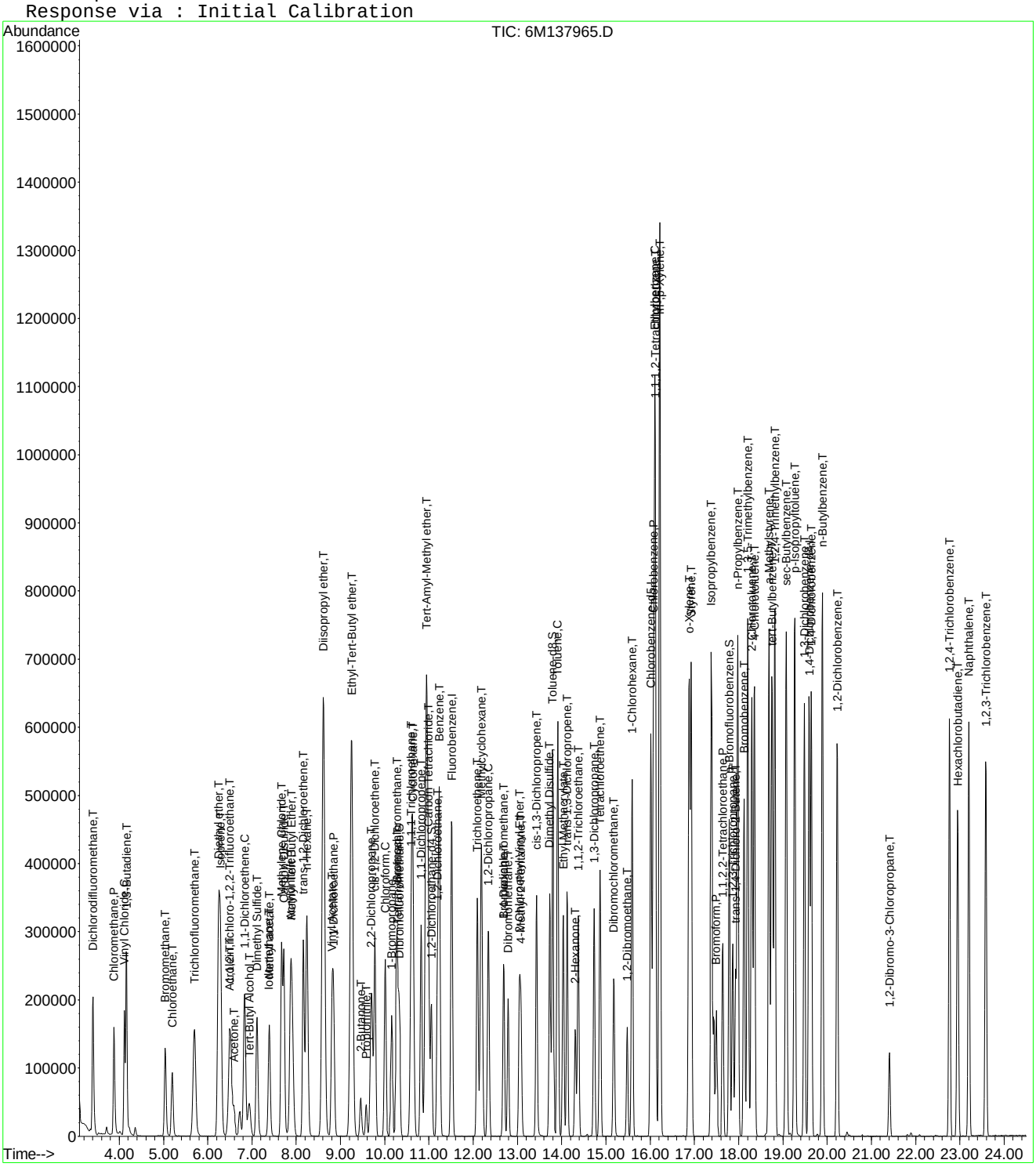

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\032316\6M137965.D Vial: 3
Acq On : 23 Mar 2016 12:47 Operator: TMB
Sample : WG562074-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	0.4592	0.4376	4.7	81	0.00
3	P	Chloromethane	0.4785	0.3700	22.7	73	0.00
4	C	Vinyl Chloride	0.3852	0.3530	8.3	82	0.00
5	T	1,3-Butadiene	0.3205	0.2479	22.6	72	0.00
6	T	Bromomethane	0.2053	0.2145	-4.5	100	0.00
7	T	Chloroethane	0.2184	0.2247	-2.9	92	0.00
8	T	Trichlorofluoromethane	0.5175	0.4998	3.4	89	0.00
9	T	Diethyl ether	0.2381	0.2458	-3.2	105	0.00
10	T	Isoprene	0.3372	0.3717	-10.2	104	0.00
11	T	Acrolein	0.0452	0.0541	-19.6	129	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2470	0.2669	-8.1	96	-0.01
13	T	Acetone	0.1189	0.1268	-6.6	113	0.01
14	C	1,1-Dichloroethene	0.4376	0.4489	-2.6	92	0.00
15	T	Tert-Butyl Alcohol	0.0408	0.0507	-24.2	126	0.01
16	T	Dimethyl Sulfide	0.2123	0.2296	-8.1	102	0.00
17	T	Iodomethane	0.1531	0.2137	-39.5#	108	0.00
18	T	Methyl acetate	0.3041	0.3500	-15.1	113	0.00
19	T	Methylene Chloride	0.2635	0.2670	-1.3	93	0.00
20	T	Carbon Disulfide	0.8372	0.8884	-6.1	101	0.00
21	T	Acrylonitrile	0.1250	0.1432	-14.6	110	0.01
22	T	Methyl Tert Butyl Ether	0.7525	0.8297	-10.3	99	0.00
23	T	trans-1,2-Dichloroethene	0.2417	0.2550	-5.5	96	0.00
24	T	n-Hexane	0.4389	0.4878	-11.1	104	0.00
25	T	Diisopropyl ether	1.1380	1.0947	3.8	98	0.00
26	T	Vinyl Acetate	0.5883	0.6306	-7.2	105	0.00
27	P	1,1-Dichloroethane	0.5212	0.5259	-0.9	92	0.00
28	T	Ethyl-Tert-Butyl ether	0.9121	0.9400	-3.1	103	0.01
29	T	2-Butanone	0.1728	0.1893	-9.5	111	0.01
30	T	Propionitrile	0.0478	0.0547	-14.3	114	0.00
31	T	2,2-Dichloropropane	0.4183	0.4380	-4.7	96	0.00
32	T	cis-1,2-Dichloroethene	0.2699	0.2842	-5.3	97	0.00
33	C	Chloroform	0.4867	0.4794	1.5	92	0.00
34		1-Bromopropane	0.0370	0.0488	-32.0#	120	0.00
35	T	Bromochloromethane	0.1586	0.1697	-7.0	96	0.01
36	T	Tetrahydrofuran	0.1230	0.1311	-6.6	113	0.00
37	S	Dibromofluoromethane	0.2682	0.5137	-91.5#	188#	0.01
38	T	1,1,1-Trichloroethane	0.4299	0.4365	-1.5	92	0.00
39	T	Cyclohexane	0.4875	0.5548	-13.8	104	0.00
40	T	1,1-Dichloropropene	0.3462	0.3659	-5.7	95	0.00
41	T	Tert-Amyl-Methyl ether	0.7236	0.7747	-7.1	107	0.01
42	T	Carbon Tetrachloride	0.4017	0.4078	-1.5	91	0.00
43	S	1,2-Dichloroethane-d4	0.3483	0.6198	-78.0#	175#	0.00
44		Heptane	0.0000	0.0000	0.0	0#	0.00
45	T	1,2-Dichloroethane	0.4154	0.4053	2.4	90	0.00
46	T	Benzene	1.0416	1.0336	0.8	95	0.00
47	T	Trichloroethene	0.2461	0.2619	-6.5	97	0.00
48	T	Methylcyclohexane	0.3978	0.4658	-17.1	107	0.00
49	C	1,2-Dichloropropane	0.2803	0.2942	-5.0	96	0.00
50	T	1,4-Dioxane	0.0031	0.0037	-19.7	120	0.00
51	T	Bromodichloromethane	0.3678	0.3748	-1.9	93	0.00
52	T	Dibromomethane	0.1639	0.1699	-3.6	92	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1541	0.1803	-17.0	109	0.00
54	T	4-Methyl-2-Pentanone	0.1167	0.1387	-18.8	118	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\032316\6M137965.D Vial: 3
Acq On : 23 Mar 2016 12:47 Operator: TMB
Sample : WG562074-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4052	0.4390	-8.3	96	0.00
56	T	Dimethyl Disulfide	0.2044	0.2387	-16.8	105	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	101	0.00
58	S	Toluene-d8	1.1888	2.3897	-101.0#	200#	0.00
59	C	Toluene	1.4144	1.4491	-2.5	97	0.00
60	T	Ethyl Methacrylate	0.4532	0.5463	-20.6	110	0.01
61		Paraldehyde	0.0000	0.0000	0.0	0#	-15.13#
62	T	trans-1,3-Dichloropropene	0.5439	0.5767	-6.0	97	0.00
63	T	1,1,2-Trichloroethane	0.2956	0.3112	-5.3	98	0.00
64	T	2-Hexanone	0.3373	0.3811	-13.0	113	0.00
65	T	1,3-Dichloropropane	0.5358	0.5557	-3.7	97	0.00
66	T	Tetrachloroethene	0.3489	0.3774	-8.2	101	0.00
67	T	Dibromochloromethane	0.3845	0.4015	-4.4	95	0.00
68	T	1,2-Dibromoethane	0.3023	0.3286	-8.7	100	0.00
69	T	1-Chlorohexane	0.4392	0.5177	-17.9	108	0.00
70	P	Chlorobenzene	0.9090	0.9342	-2.8	98	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3650	0.3712	-1.7	95	0.00
72	C	Ethylbenzene	0.4864	0.5202	-6.9	99	0.00
73	T	m-,p-Xylene	0.5952	0.6258	-5.1	99	0.00
74	T	o-Xylene	0.5606	0.6206	-10.7	99	0.00
75	T	Styrene	0.9542	1.0556	-10.6	100	0.00
76	P	Bromoform	0.2715	0.2842	-4.7	96	0.00
77	T	Isopropylbenzene	1.5070	1.6440	-9.1	99	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	101	0.00
79	P	1,1,2,2-Tetrachloroethane	0.7811	0.8696	-11.3	104	0.00
80	S	p-Bromofluorobenzene	0.9184	1.9008	-107.0#	203#	0.00
81	T	1,2,3-Trichloropropane	0.2392	0.2683	-12.2	105	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.2884	0.3267	-13.3	107	0.00
83	T	n-Propylbenzene	3.3956	3.6945	-8.8	98	0.00
84	T	Bromobenzene	0.7381	0.7896	-7.0	98	0.00
85	T	1,3,5-Trimethylbenzene	2.4170	2.6645	-10.2	99	0.00
86	T	2-Chlorotoluene	2.2664	2.3899	-5.4	99	0.00
87	T	4-Chlorotoluene	2.0723	2.2002	-6.2	99	0.01
88	T	a-Methylstyrene	1.1737	1.3866	-18.1	108	0.00
89	T	tert-Butylbenzene	0.5037	0.5504	-9.3	98	0.00
90	T	1,2,4-Trimethylbenzene	2.5419	2.7626	-8.7	99	0.00
91	T	sec-Butylbenzene	3.0953	3.3987	-9.8	98	0.00
92	T	p-Isopropyltoluene	2.5537	2.8681	-12.3	100	0.01
93	T	1,3-Dichlorobenzene	1.4282	1.5200	-6.4	99	0.00
94	T	1,4-Dichlorobenzene	1.4537	1.5183	-4.4	100	0.00
95	T	n-Butylbenzene	2.5684	2.7872	-8.5	98	0.00
96	T	1,2-Dichlorobenzene	1.3743	1.4526	-5.7	99	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1728	0.1989	-15.1	109	0.00
98	T	1,2,4-Trichlorobenzene	0.9935	1.1052	-11.2	101	0.00
99	T	Hexachlorobutadiene	0.5682	0.6229	-9.6	99	0.00
100	T	Naphthalene	2.2839	2.7566	-20.7	107	0.00
101	T	1,2,3-Trichlorobenzene	0.9783	1.0734	-9.7	99	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137965.D 826_SL.M Wed Mar 23 13:13:07 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\032316\6M137965.D Vial: 3
Acq On : 23 Mar 2016 12:47 Operator: TMB
Sample : WG562074-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	50.0000	47.6516	4.7	81	0.00
3	P	Chloromethane	50.0000	38.6582	22.7	73	0.00
4	C	Vinyl Chloride	50.0000	45.8269	8.3	82	0.00
5	T	1,3-Butadiene	50.0000	38.6840	22.6	72	0.00
6	T	Bromomethane	50.0000	52.2452	-4.5	100	0.00
7	T	Chloroethane	50.0000	51.4365	-2.9	92	0.00
8	T	Trichlorofluoromethane	50.0000	48.2893	3.4	89	0.00
9	T	Diethyl ether	100.0000	103.2463	-3.2	105	0.00
10	T	Isoprene	50.0000	55.1195	-10.2	104	0.00
11	T	Acrolein	50.0000	59.7996	-19.6	129	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	54.0278	-8.1	96	-0.01
13	T	Acetone	50.0000	56.2790	-12.6	113	0.01
14	C	1,1-Dichloroethene	50.0000	51.2940	-2.6	92	0.00
15	T	Tert-Butyl Alcohol	200.0000	248.3842	-24.2	126	0.01
16	T	Dimethyl Sulfide	50.0000	54.0711	-8.1	102	0.00
17	T	Iodomethane	50.0000	55.5182	-11.0	108	0.00
18	T	Methyl acetate	50.0000	57.5520	-15.1	113	0.00
19	T	Methylene Chloride	50.0000	50.6514	-1.3	93	0.00
20	T	Carbon Disulfide	50.0000	53.0562	-6.1	101	0.00
21	T	Acrylonitrile	50.0000	57.2946	-14.6	110	0.01
22	T	Methyl Tert Butyl Ether	50.0000	55.1294	-10.3	99	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.7427	-5.5	96	0.00
24	T	n-Hexane	50.0000	55.5685	-11.1	104	0.00
25	T	Diisopropyl ether	100.0000	96.1961	3.8	98	0.00
26	T	Vinyl Acetate	50.0000	53.6005	-7.2	105	0.00
27	P	1,1-Dichloroethane	50.0000	50.4580	-0.9	92	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	103.0545	-3.1	103	0.01
29	T	2-Butanone	50.0000	54.7671	-9.5	111	0.01
30	T	Propionitrile	100.0000	114.3005	-14.3	114	0.00
31	T	2,2-Dichloropropane	50.0000	52.3514	-4.7	96	0.00
32	T	cis-1,2-Dichloroethene	50.0000	52.6484	-5.3	97	0.00
33	C	Chloroform	50.0000	49.2497	1.5	92	0.00
34		1-Bromopropane	50.0000	65.9971	-32.0#	120	0.00
35	T	Bromochloromethane	50.0000	53.5131	-7.0	96	0.01
36	T	Tetrahydrofuran	100.0000	113.2808	-13.3	113	0.00
37	S	Dibromofluoromethane	25.0000	47.8819	-91.5#	188	0.01
38	T	1,1,1-Trichloroethane	50.0000	50.7625	-1.5	92	0.00
39	T	Cyclohexane	50.0000	56.9013	-13.8	104	0.00
40	T	1,1-Dichloropropene	50.0000	52.8443	-5.7	95	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	107.0658	-7.1	107	0.01
42	T	Carbon Tetrachloride	50.0000	50.7545	-1.5	91	0.00
43	S	1,2-Dichloroethane-d4	25.0000	44.4921	-78.0#	175	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	50.0000	48.7768	2.4	90	0.00
46	T	Benzene	50.0000	49.6156	0.8	95	0.00
47	T	Trichloroethene	50.0000	53.2261	-6.5	97	0.00
48	T	Methylcyclohexane	50.0000	58.5567	-17.1	107	0.00
49	C	1,2-Dichloropropane	50.0000	52.4917	-5.0	96	0.00
50	T	1,4-Dioxane	200.0000	218.5934	-9.3	120	0.00
51	T	Bromodichloromethane	50.0000	50.9525	-1.9	93	0.00
52	T	Dibromomethane	50.0000	51.8126	-3.6	92	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	58.4857	-17.0	109	0.00
54	T	4-Methyl-2-Pentanone	50.0000	59.3950	-18.8	118	0.00

(#) = Out of Range

Data File : C:\MSDCHEM\1\DATA\032316\6M137965.D Vial: 3
Acq On : 23 Mar 2016 12:47 Operator: TMB
Sample : WG562074-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	54.1662	-8.3	96	0.00
56	T	Dimethyl Disulfide	50.0000	58.3926	-16.8	105	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	101	0.00
58	S	Toluene-d8	25.0000	50.2564	-101.0#	200	0.00
59	C	Toluene	50.0000	51.2282	-2.5	97	0.00
60	T	Ethyl Methacrylate	50.0000	60.2747	-20.5	110	0.01
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	50.0000	53.0173	-6.0	97	0.00
63	T	1,1,2-Trichloroethane	50.0000	52.6295	-5.3	98	0.00
64	T	2-Hexanone	50.0000	56.4832	-13.0	113	0.00
65	T	1,3-Dichloropropane	50.0000	51.8569	-3.7	97	0.00
66	T	Tetrachloroethene	50.0000	54.0846	-8.2	101	0.00
67	T	Dibromochloromethane	50.0000	52.2178	-4.4	95	0.00
68	T	1,2-Dibromoethane	50.0000	54.3390	-8.7	100	0.00
69	T	1-Chlorohexane	50.0000	58.9379	-17.9	108	0.00
70	P	Chlorobenzene	50.0000	51.3870	-2.8	98	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	50.8497	-1.7	95	0.00
72	C	Ethylbenzene	50.0000	53.4664	-6.9	99	0.00
73	T	m-,p-Xylene	100.0000	105.1395	-5.1	99	0.00
74	T	o-Xylene	50.0000	55.3540	-10.7	99	0.00
75	T	Styrene	50.0000	55.3179	-10.6	100	0.00
76	P	Bromoform	50.0000	52.3451	-4.7	96	0.00
77	T	Isopropylbenzene	50.0000	54.5456	-9.1	99	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	101	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	55.6641	-11.3	104	0.00
80	S	p-Bromofluorobenzene	25.0000	51.7419	-107.0#	203	0.00
81	T	1,2,3-Trichloropropane	50.0000	56.0935	-12.2	105	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	56.6588	-13.3	107	0.00
83	T	n-Propylbenzene	50.0000	54.4019	-8.8	98	0.00
84	T	Bromobenzene	50.0000	53.4868	-7.0	98	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	55.1211	-10.2	99	0.00
86	T	2-Chlorotoluene	50.0000	52.7240	-5.4	99	0.00
87	T	4-Chlorotoluene	50.0000	53.0854	-6.2	99	0.01
88	T	a-Methylstyrene	50.0000	59.0689	-18.1	108	0.00
89	T	tert-Butylbenzene	50.0000	54.6313	-9.3	98	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	54.3435	-8.7	99	0.00
91	T	sec-Butylbenzene	50.0000	54.9012	-9.8	98	0.00
92	T	p-Isopropyltoluene	50.0000	56.1574	-12.3	100	0.01
93	T	1,3-Dichlorobenzene	50.0000	53.2175	-6.4	99	0.00
94	T	1,4-Dichlorobenzene	50.0000	52.2200	-4.4	100	0.00
95	T	n-Butylbenzene	50.0000	54.2582	-8.5	98	0.00
96	T	1,2-Dichlorobenzene	50.0000	52.8492	-5.7	99	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	57.5525	-15.1	109	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	55.6232	-11.2	101	0.00
99	T	Hexachlorobutadiene	50.0000	54.8138	-9.6	99	0.00
100	T	Naphthalene	50.0000	60.3482	-20.7	107	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	54.8634	-9.7	99	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\1\DATA\022616\6M137522.D          Vial: 1
Acq On    : 26 Feb 2016  13:16                       Operator: TMB
Sample    : WG558920-01 50ng BFB STD 8260            Inst    : HPMS6
Misc      : 7,1 STD74606                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP: OVL MSV01
```

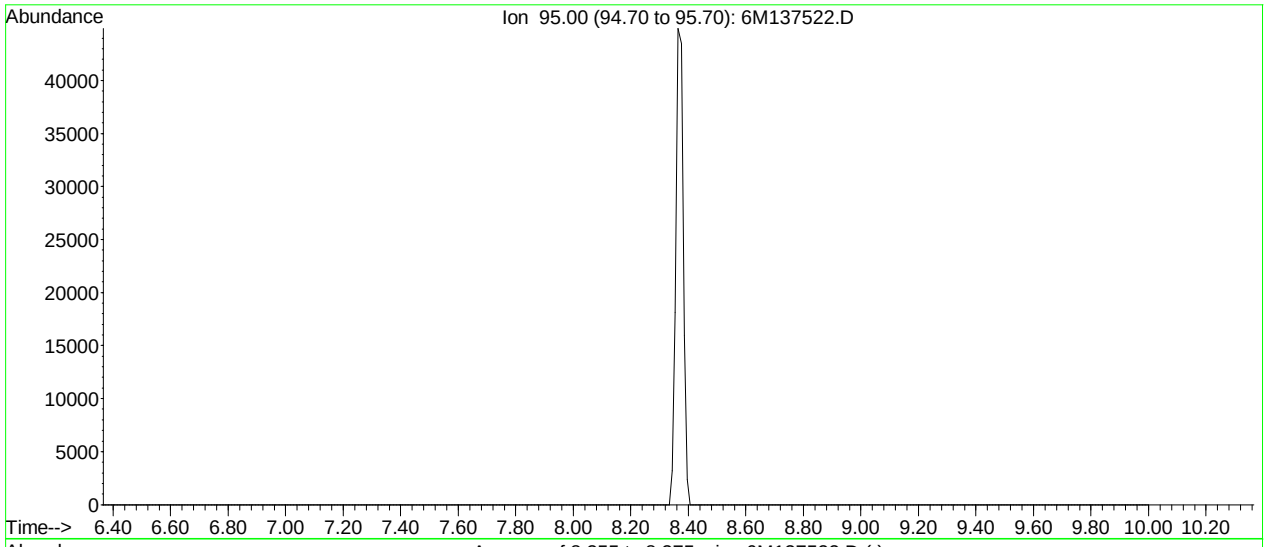

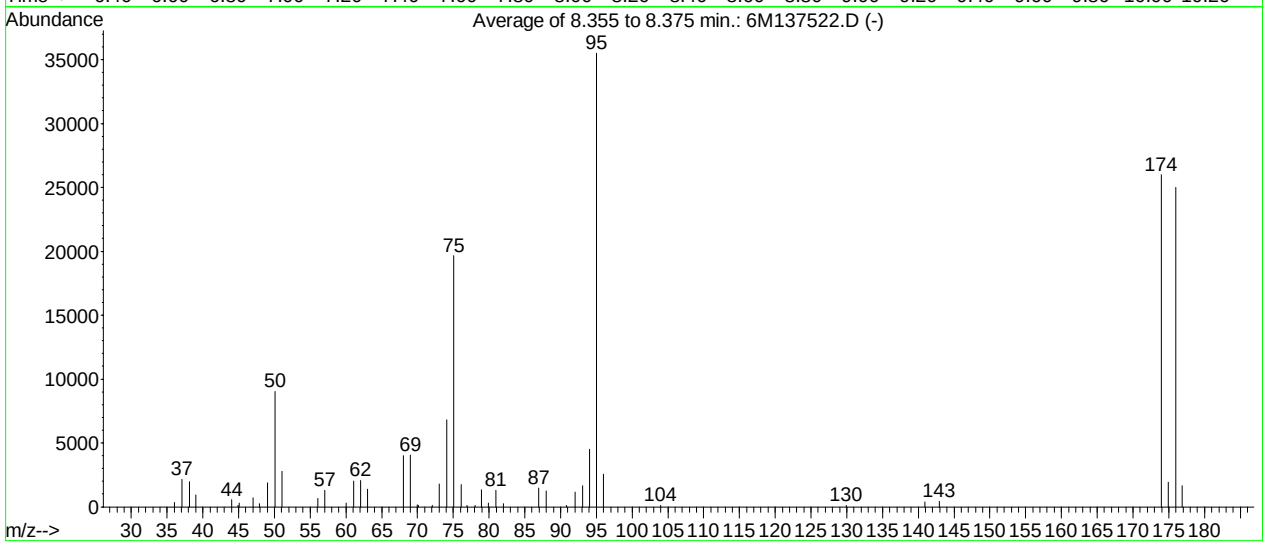

AutoFind: Scans 320, 321, 322; Background Corrected with Scan 316

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	25.4	9030	PASS
75	95	30	60	55.4	19666	PASS
95	95	100	100	100.0	35512	PASS
96	95	5	9	7.3	2576	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	73.2	26011	PASS
175	174	5	9	7.4	1914	PASS
176	174	95	101	96.1	24992	PASS
177	176	5	9	6.6	1660	PASS

6M137522.D BFB.M Fri Feb 26 13:26:46 2016

BFB

Data File : C:\MSDCHEM\1\DATA\032216\6M137938.D Vial: 1
Acq On : 22 Mar 2016 11:26 Operator: TMB
Sample : WG561879-01 50ng BFB STD 8260 Inst : HPMS6
Misc : 7,1 STD75004 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title : SOP: OVL MSV01

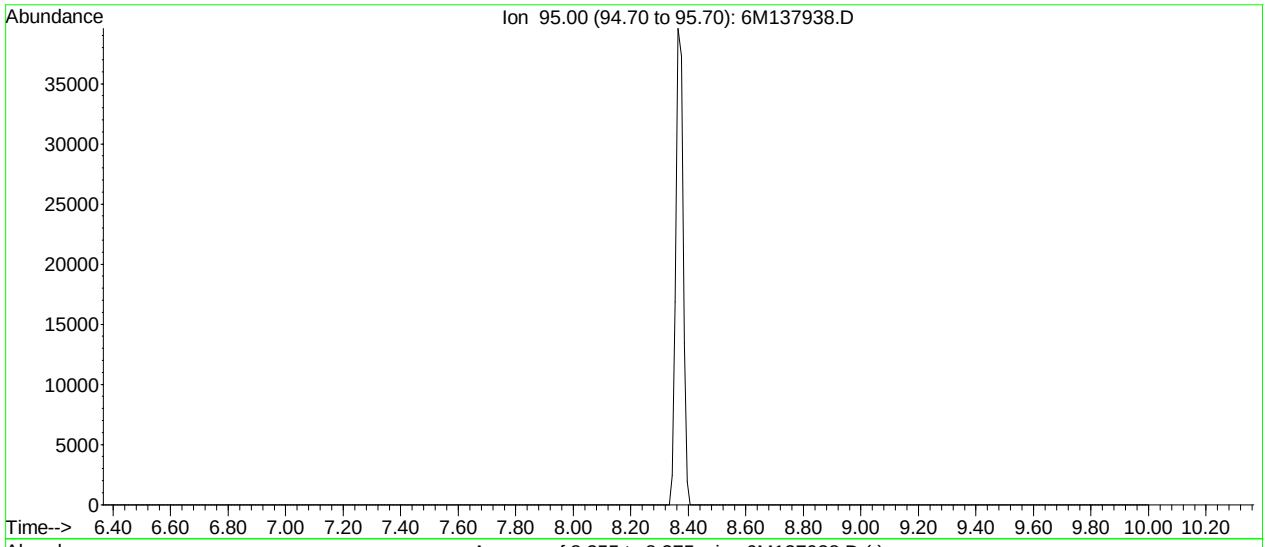

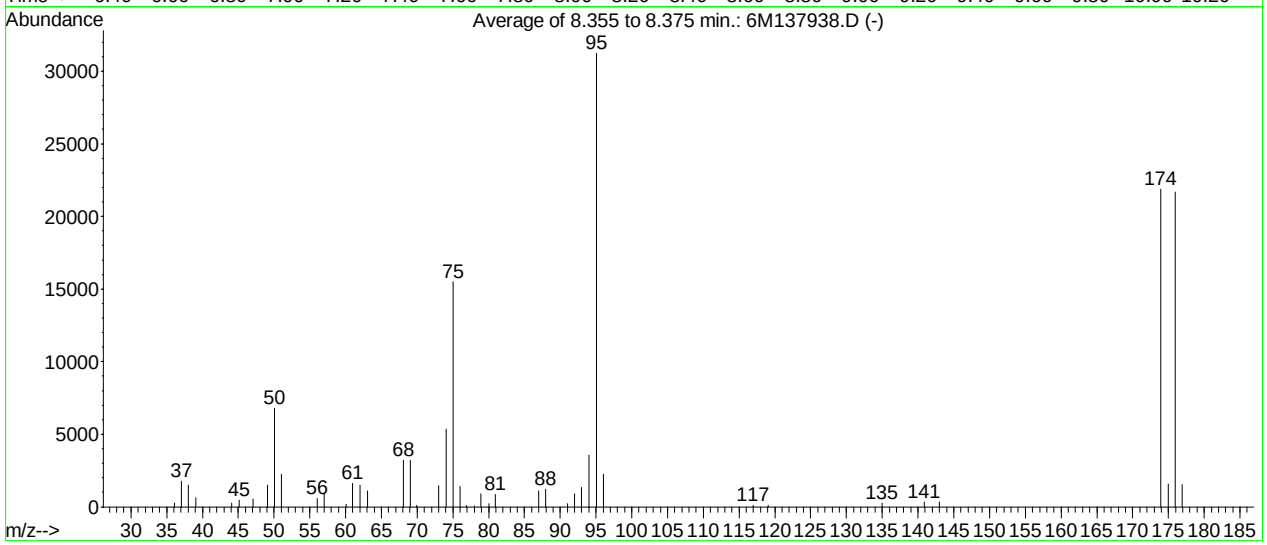

AutoFind: Scans 320, 321, 322; Background Corrected with Scan 316

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.8	6808	PASS
75	95	30	60	49.6	15508	PASS
95	95	100	100	100.0	31245	PASS
96	95	5	9	7.2	2265	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	70.0	21873	PASS
175	174	5	9	7.3	1591	PASS
176	174	95	101	99.0	21662	PASS
177	176	5	9	7.1	1548	PASS

6M137938.D BFB.M Tue Mar 22 11:50:13 2016

BFB

Data File : C:\MSDCHEM\1\DATA\032316\6M137963.D Vial: 1
Acq On : 23 Mar 2016 11:50 Operator: TMB
Sample : WG562074-01 50ng BFB STD 8260 Inst : HPMS6
Misc : 7,1 STD75004 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title : SOP: OVL MSV01

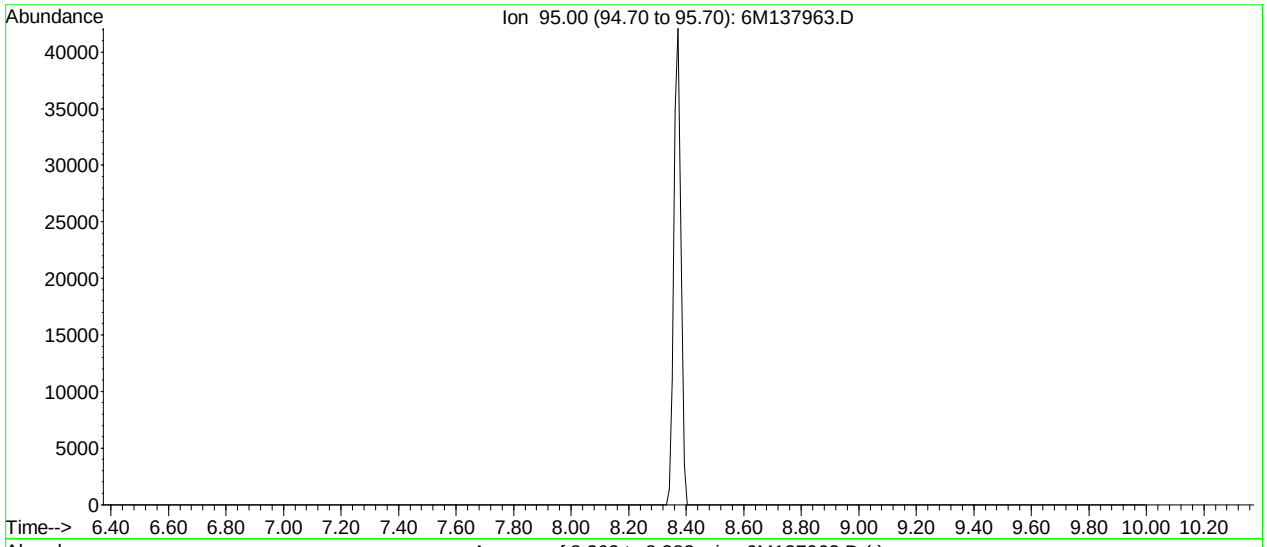

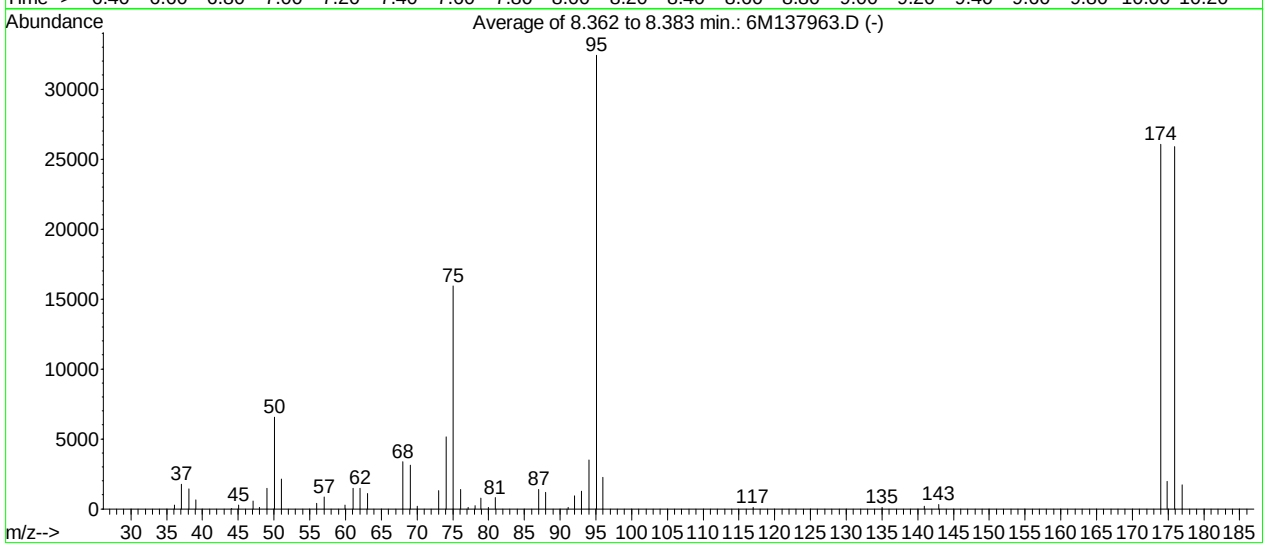

AutoFind: Scans 321, 322, 323; Background Corrected with Scan 316

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.2	6567	PASS
75	95	30	60	49.2	15945	PASS
95	95	100	100	100.0	32432	PASS
96	95	5	9	7.0	2256	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	80.4	26074	PASS
175	174	5	9	7.6	1973	PASS
176	174	95	101	99.3	25896	PASS
177	176	5	9	6.6	1699	PASS

6M137963.D BFB.M Wed Mar 23 12:13:51 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032216\6M137941.D Vial: 4
Acq On : 22 Mar 2016 13:08 Operator: TMB
Sample : WG561881-01 VBLK0322 BLANK STD 8260 Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 08:53:06 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	568180	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	414845	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	218601	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	143661	47.1341 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.26%		
43) 1,2-Dichloroethane-d4	11.06	65	174702	44.1463 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 88.30%		
58) Toluene-d8	13.80	98	498531	50.5450 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.08%		
80) p-Bromofluorobenzene	17.79	95	203826	50.7631 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 101.52%		

Target Compounds

					Qvalue
13) Acetone	6.60	43	9004	3.1883 ug/L	96
29) 2-Butanone	9.69	43	8998	4.5815 ug/L #	56
36) Tetrahydrofuran	10.30	42	2220	Below Cal #	65
60) Ethyl Methacrylate	13.81	69	967	0.2572 ug/L #	59
90) 1,2,4-Trimethylbenzene	18.82	105	6510	0.5858 ug/L	77
91) sec-Butylbenzene	18.82	105	5188	0.3834 ug/L #	56

(#) = qualifier out of range (m) = manual integration
6M137941.D 826_SL.M Wed Mar 23 08:53:06 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032216\6M137941.D Vial: 4
Acq On : 22 Mar 2016 13:08 Operator: TMB
Sample : WG561881-01 VBLK0322 BLANK STD 8260 Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 8:53 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

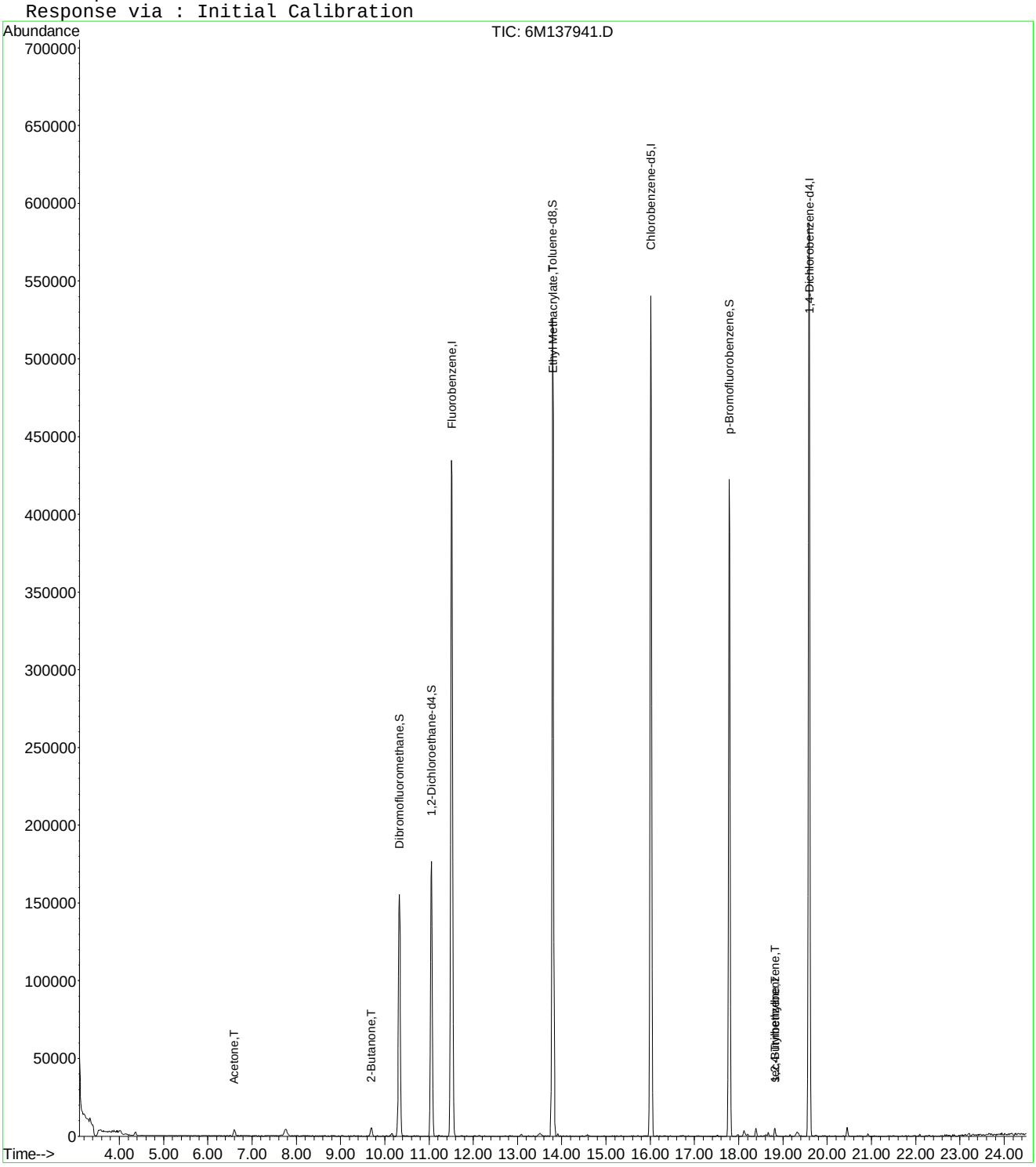

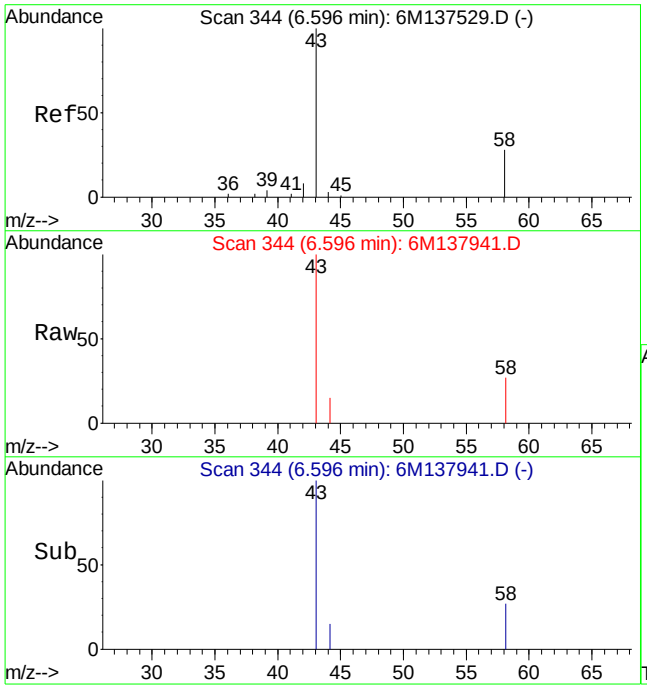

#13
Acetone
Concen: 3.19 ug/L
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137941.D
Acq: 22 Mar 2016 13:08

Tgt Ion: 43 Resp: 9004

Ion	Ratio	Lower	Upper
43	100		
58	25.1	16.1	37.7

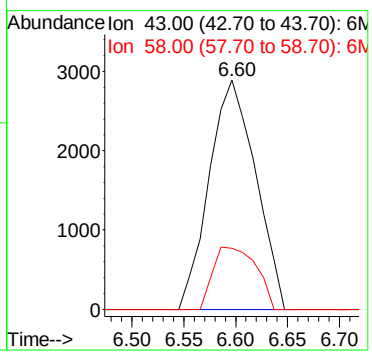

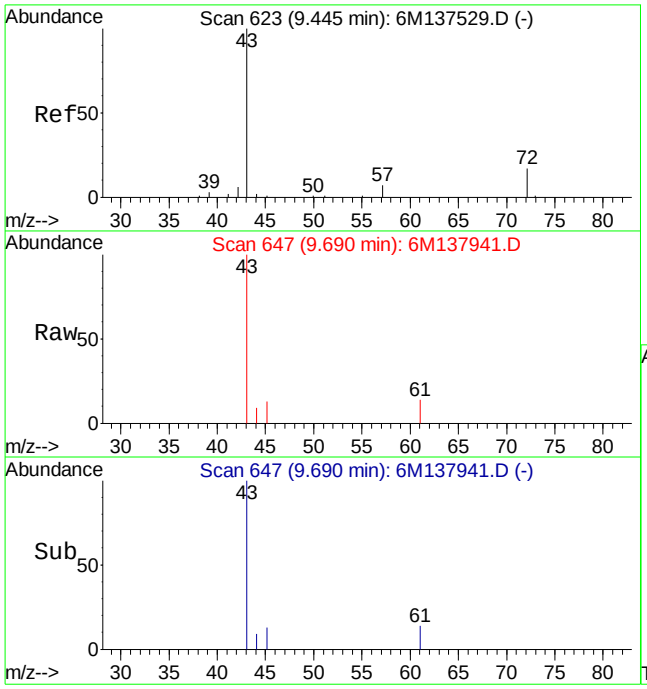

#29
2-Butanone
Concen: 4.58 ug/L
RT: 9.69 min Scan# 647
Delta R.T. 0.24 min
Lab File: 6M137941.D
Acq: 22 Mar 2016 13:08

Tgt Ion: 43 Resp: 8998

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.2	28.4#

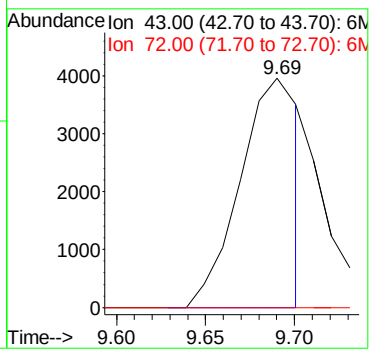

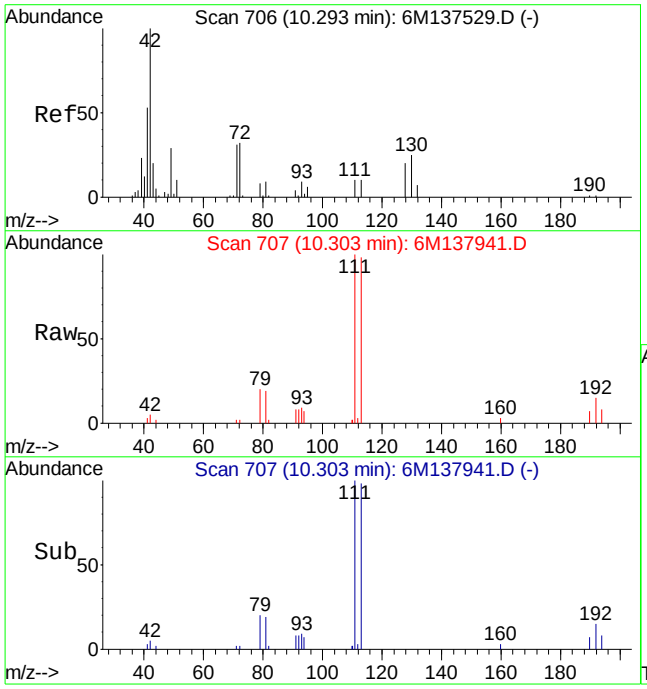

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.30 min Scan# 707
Delta R.T. 0.01 min
Lab File: 6M137941.D
Acq: 22 Mar 2016 13:08

Tgt Ion: 42 Resp: 2220

Ion	Ratio	Lower	Upper
42	100		
72	19.7	21.0	49.0#
71	8.9	20.6	48.2#

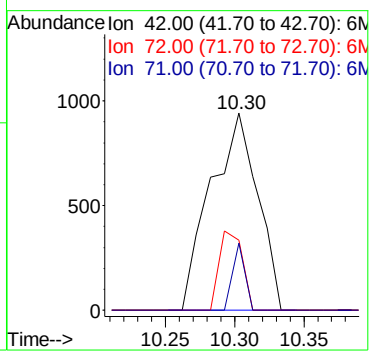

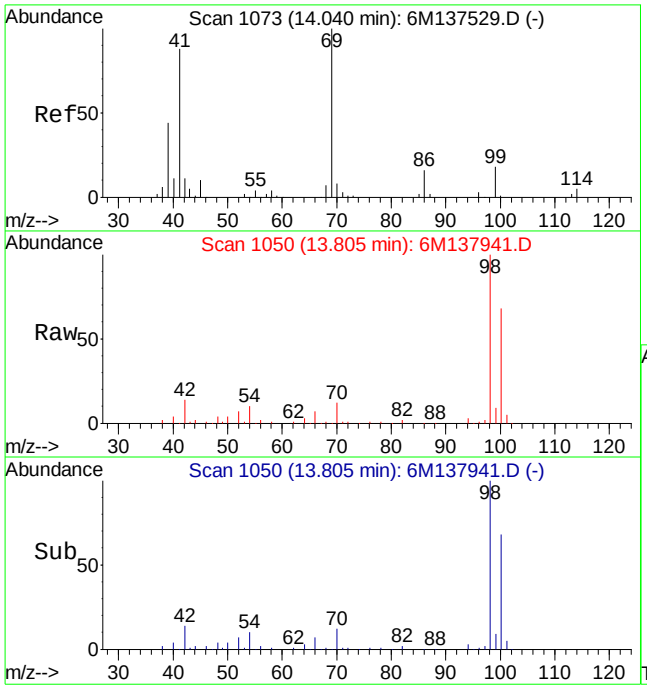

#60
Ethyl Methacrylate
Concen: 0.26 ug/L
RT: 13.81 min Scan# 1050
Delta R.T. -0.23 min
Lab File: 6M137941.D
Acq: 22 Mar 2016 13:08

Tgt Ion: 69 Resp: 967

Ion	Ratio	Lower	Upper
69	100		
41	121.5	50.6	118.2#

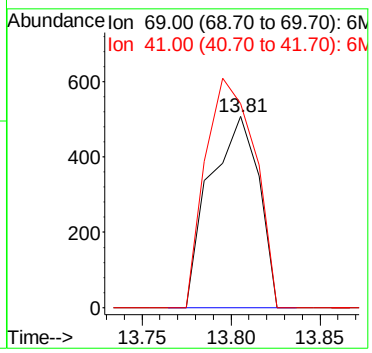

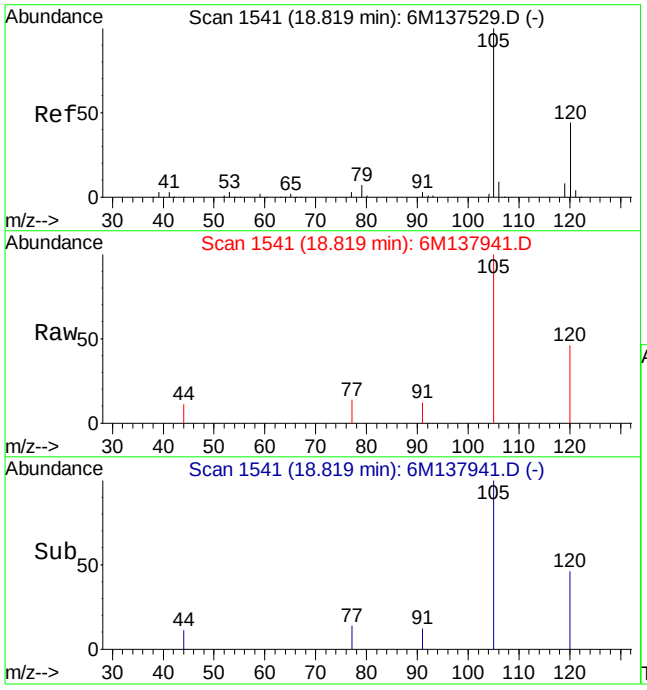

#90
1,2,4-Trimethylbenzene
Concen: 0.59 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. -0.00 min
Lab File: 6M137941.D
Acq: 22 Mar 2016 13:08

Tgt Ion:105 Resp: 6510

Ion	Ratio	Lower	Upper
105	100		
120	39.9	34.3	79.9

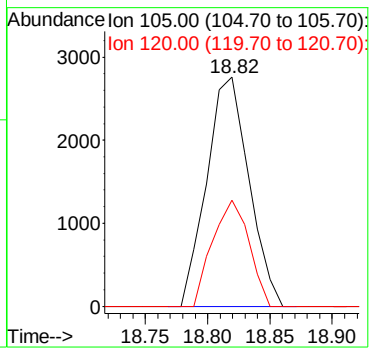

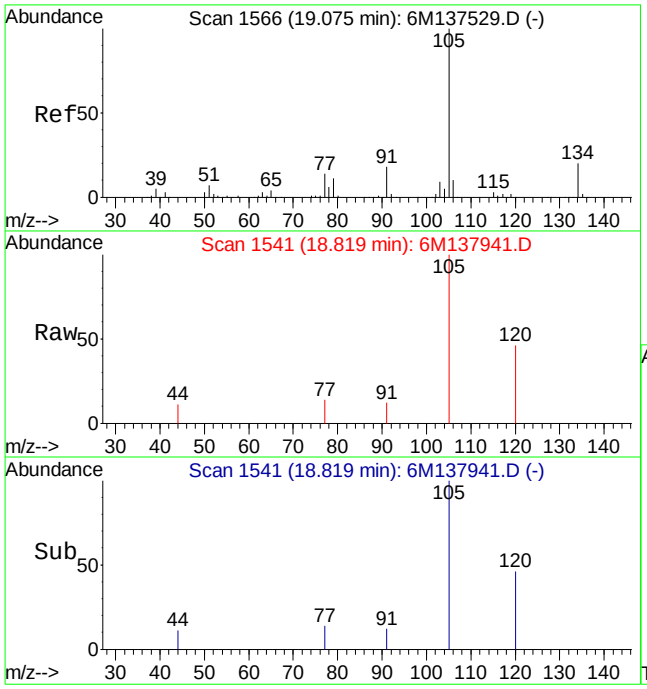

#91
sec-Butylbenzene
Concen: 0.38 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. -0.26 min
Lab File: 6M137941.D
Acq: 22 Mar 2016 13:08

Tgt Ion:105 Resp: 5188

Ion	Ratio	Lower	Upper
105	100		
134	0.0	12.2	28.6#

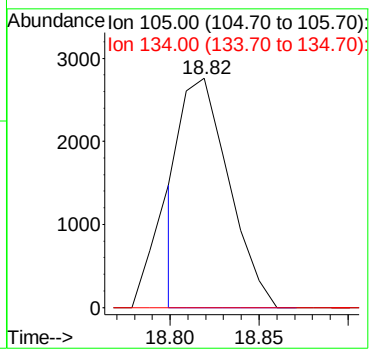

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137967.D Vial: 5
Acq On : 23 Mar 2016 13:53 Operator: TMB
Sample : WG562075-01 VBLK0323 BLANK STD 8260 Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 17:03:56 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	568472	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	420780	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	220763	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	144183	47.2810 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.56%		
43) 1,2-Dichloroethane-d4	11.06	65	179216	45.2637 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 90.52%		
58) Toluene-d8	13.80	98	504541	50.4328 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 100.86%		
80) p-Bromofluorobenzene	17.79	95	208247	51.3562 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.72%		

Target Compounds					Qvalue
13) Acetone	6.60	43	7695	2.0829 ug/L	99
29) 2-Butanone	9.69	43	2551	1.2982 ug/L #	56
36) Tetrahydrofuran	10.29	42	2714	Below Cal #	74
60) Ethyl Methacrylate	13.80	69	961	0.2520 ug/L #	47
90) 1,2,4-Trimethylbenzene	18.81	105	6379	0.5684 ug/L	93
100) Naphthalene	23.20	128	2997	0.2972 ug/L #	67

(#) = qualifier out of range (m) = manual integration
6M137967.D 826_SL.M Wed Mar 23 17:03:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137967.D Vial: 5
Acq On : 23 Mar 2016 13:53 Operator: TMB
Sample : WG562075-01 VBLK0323 BLANK STD 8260 Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 17:03 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

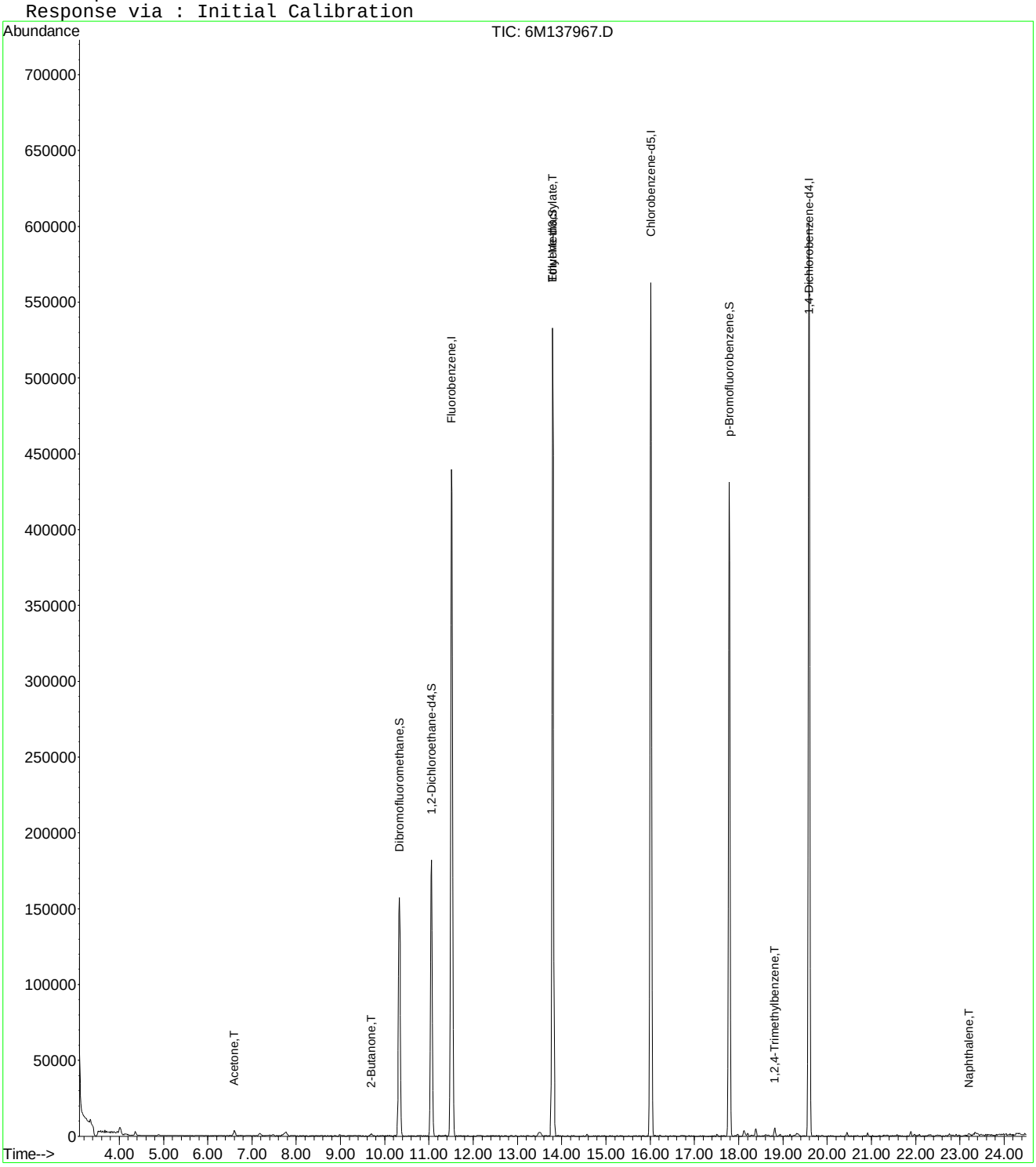

6M137967.D 826_SL.M Wed Mar 23 17:03:57 2016 Page 2

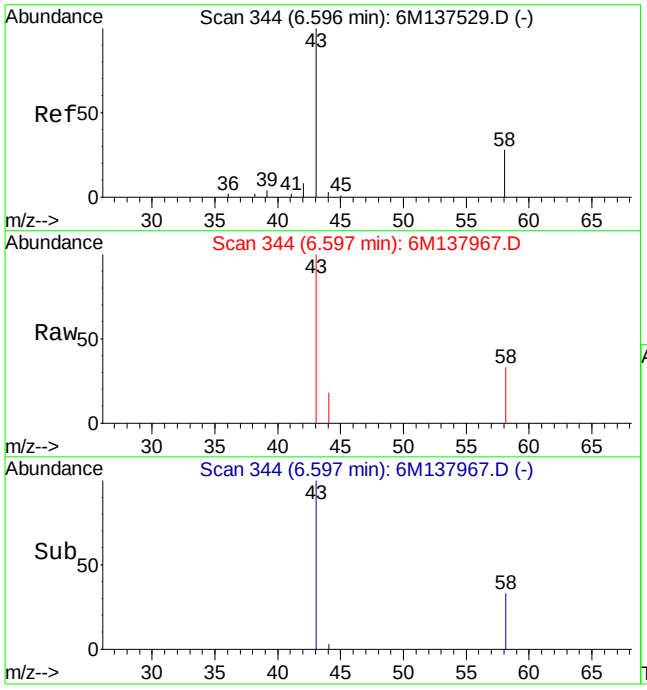

#13
Acetone
Concen: 2.08 ug/L
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137967.D
Acq: 23 Mar 2016 13:53

Tgt Ion: 43 Resp: 7695

Ion	Ratio	Lower	Upper
43	100		
58	27.5	16.1	37.7

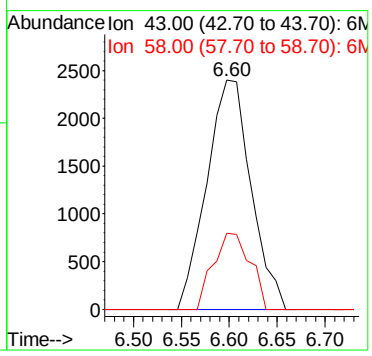

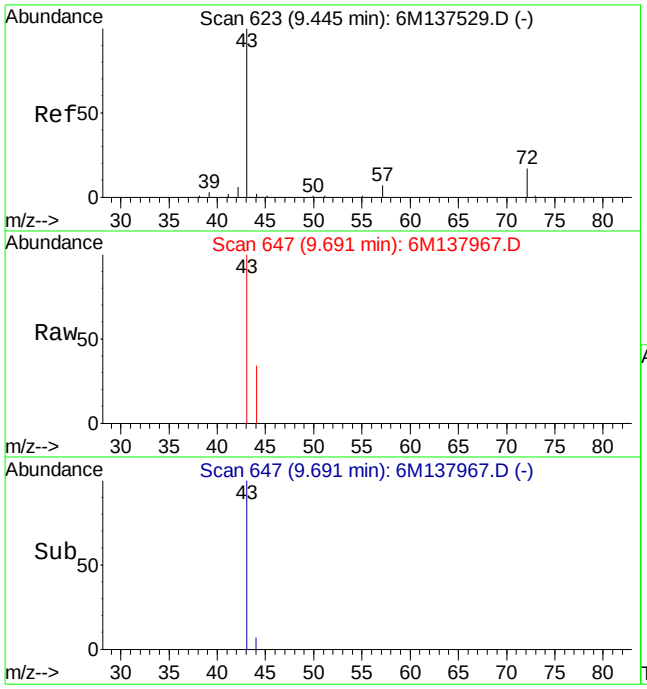

#29
2-Butanone
Concen: 1.30 ug/L
RT: 9.69 min Scan# 647
Delta R.T. 0.25 min
Lab File: 6M137967.D
Acq: 23 Mar 2016 13:53

Tgt Ion: 43 Resp: 2551

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.2	28.4#

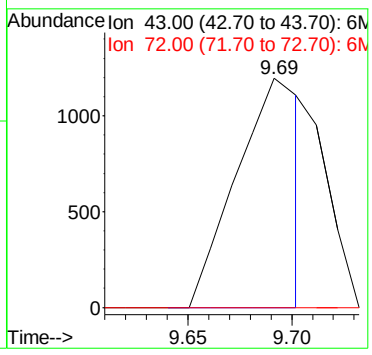

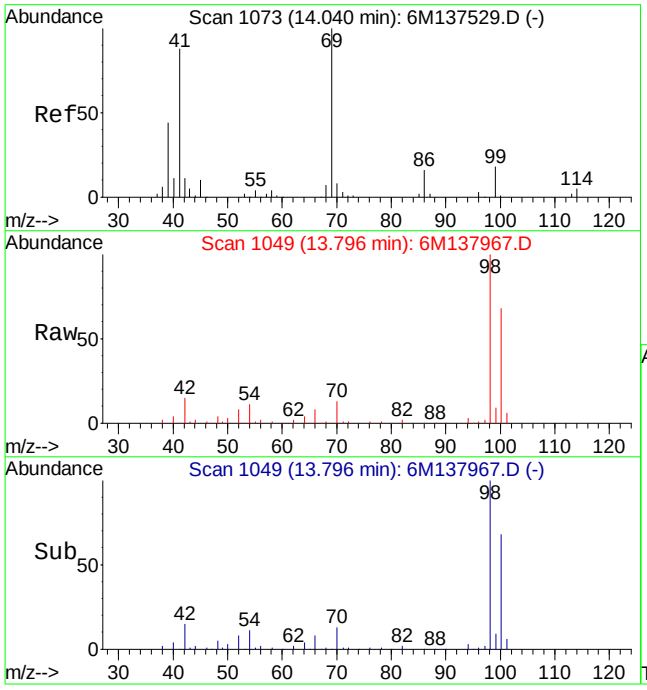

#60
Ethyl Methacrylate
Concen: 0.25 ug/L
RT: 13.80 min Scan# 1049
Delta R.T. -0.23 min
Lab File: 6M137967.D
Acq: 23 Mar 2016 13:53

Tgt Ion: 69 Resp: 961

Ion	Ratio	Lower	Upper
69	100		
41	132.2	50.6	118.2#

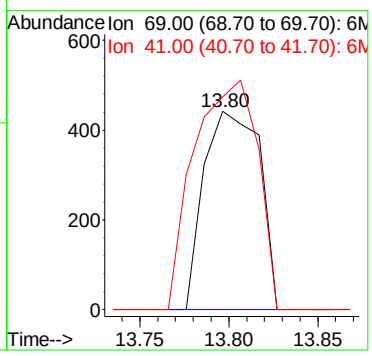

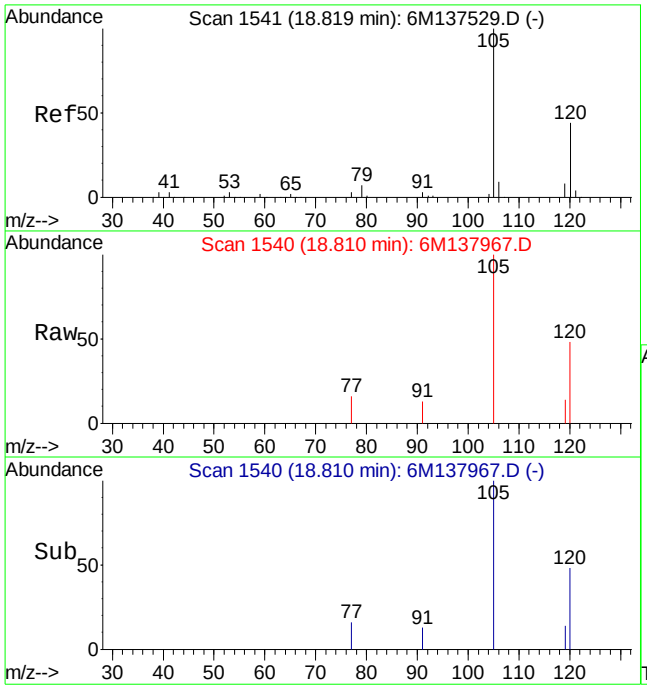

#90
1,2,4-Trimethylbenzene
Concen: 0.57 ug/L
RT: 18.81 min Scan# 1540
Delta R.T. -0.01 min
Lab File: 6M137967.D
Acq: 23 Mar 2016 13:53

Tgt Ion:105 Resp: 6379

Ion	Ratio	Lower	Upper
105	100		
120	51.7	34.3	79.9

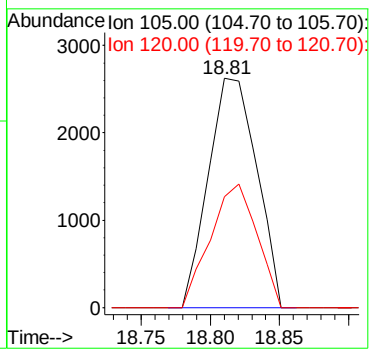

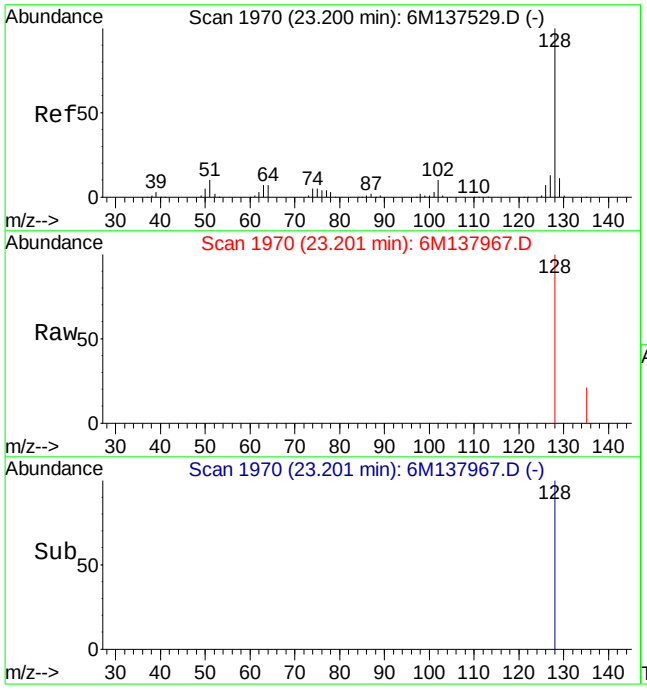

#100
Naphthalene
Concen: 0.30 ug/L
RT: 23.20 min Scan# 1970
Delta R.T. 0.00 min
Lab File: 6M137967.D
Acq: 23 Mar 2016 13:53

Tgt Ion:128 Resp: 2997

Ion	Ratio	Lower	Upper
128	100		
127	0.0	7.7	18.1#

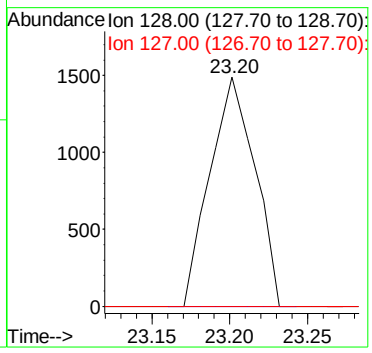

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032216\6M137946.D Vial: 9
Acq On : 22 Mar 2016 15:52 Operator: TMB
Sample : WG561881-02 20ug/Kg LCS STD 8260 Inst : HPMS6
Misc : 7,1 STD75209 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 22 16:16:56 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	563138	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	411330	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	221382	50.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.33	111	145201	48.0659 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.14%		
43) 1,2-Dichloroethane-d4	11.06	65	172522	43.9857 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 87.98%		
58) Toluene-d8	13.79	98	501178	51.2476 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 102.50%		
80) p-Bromofluorobenzene	17.79	95	205095	50.4375 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 100.88%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	109390	21.1509 ug/L	97
3) Chloromethane	3.88	50	90910	16.8681 ug/L	97
4) Vinyl Chloride	4.11	62	89514	20.6352 ug/L	99
5) 1,3-Butadiene	4.16	54	41462	11.4879 ug/L	93
6) Bromomethane	5.03	94	50000	21.6224 ug/L	100
7) Chloroethane	5.19	64	57144	23.2322 ug/L	99
8) Trichlorofluoromethane	5.69	101	112879	19.3655 ug/L	99
9) Diethyl ether	6.24	59	283351	105.6697 ug/L	96
10) Isoprene	6.28	67	90580	23.8540 ug/L	90
11) Acrolein	6.49	56	37561	73.7592 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	61351	22.0512 ug/L	94
13) Acetone	6.60	43	27306	18.8026 ug/L	92
14) 1,1-Dichloroethene	6.83	61	99804	20.2519 ug/L	96
15) Tert-Butyl Alcohol	6.94	59	89439	194.5017 ug/L	99
16) Dimethyl Sulfide	7.12	62	72817	30.4552 ug/L	94
17) Iodomethane	7.38	142	45023	23.8807 ug/L	95
18) Methyl acetate	7.39	43	66295	19.3578 ug/L	98
19) Methylene Chloride	7.67	84	65246	21.9837 ug/L	85
20) Carbon Disulfide	7.72	76	183605	19.4724 ug/L	99
21) Acrylonitrile	7.86	53	30328	21.5473 ug/L	100
22) Methyl Tert Butyl Ether	7.89	73	192093	22.6640 ug/L	95
23) trans-1,2-Dichloroethene	8.16	96	60517	22.2288 ug/L	91
24) n-Hexane	8.24	57	102153	20.6634 ug/L	98
25) Diisopropyl ether	8.61	45	1215402	94.8255 ug/L	95
26) Vinyl Acetate	8.80	43	147194	22.2162 ug/L	98
27) 1,1-Dichloroethane	8.83	63	120350	20.5042 ug/L	100
28) Ethyl-Tert-Butyl ether	9.25	59	979883	95.3822 ug/L	97
29) 2-Butanone	9.46	43	39835	20.4645 ug/L	97
30) Propionitrile	9.58	54	51161	94.9653 ug/L	96
31) 2,2-Dichloropropane	9.70	77	97664	20.7294 ug/L	92
32) cis-1,2-Dichloroethene	9.77	96	66690	21.9421 ug/L	94
33) Chloroform	10.01	83	112354	20.4963 ug/L	97
34) 1-Bromopropane	10.16	122	14535	34.8810 ug/L	94
35) Bromochloromethane	10.26	130	38542	21.5821 ug/L	99
36) Tetrahydrofuran	10.29	42	120668	92.2116 ug/L	97
38) 1,1,1-Trichloroethane	10.60	97	102030	21.0723 ug/L	99
39) Cyclohexane	10.64	56	123088	22.4185 ug/L	87
40) 1,1-Dichloropropene	10.82	75	80843	20.7328 ug/L	97
41) Tert-Amyl-Methyl ether	10.95	73	846523	103.8713 ug/L	94
42) Carbon Tetrachloride	10.99	117	90749	20.0588 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M137946.D 826_SL.M Tue Mar 22 16:16:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032216\6M137946.D Vial: 9
Acq On : 22 Mar 2016 15:52 Operator: TMB
Sample : WG561881-02 20ug/Kg LCS STD 8260 Inst : HPMS6
Misc : 7,1 STD75209 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 22 16:16:56 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	95455	20.4021 ug/L	100
46)	Benzene	11.23	78	248129	21.1519 ug/L	93
47)	Trichloroethene	12.09	130	62588	22.5843 ug/L	100
48)	Methylcyclohexane	12.18	83	102224	22.8175 ug/L	90
49)	1,2-Dichloropropane	12.34	63	70533	22.3463 ug/L	98
50)	1,4-Dioxane	12.67	88	6973	187.5104 ug/L	89
51)	Bromodichloromethane	12.68	83	84771	20.4659 ug/L	96
52)	Dibromomethane	12.78	93	37639	20.3880 ug/L	98
53)	2-Chloroethyl Vinyl Ether	13.04	63	38767	22.3302 ug/L	100
54)	4-Methyl-2-Pentanone	13.07	58	28325	21.5470 ug/L	98
55)	cis-1,3-Dichloropropene	13.43	75	106157	23.2616 ug/L	98
56)	Dimethyl Disulfide	13.72	79	50343	21.8723 ug/L	96
59)	Toluene	13.92	91	249200	21.4173 ug/L	100
60)	Ethyl Methacrylate	14.04	69	82616	22.1599 ug/L	96
62)	trans-1,3-Dichloropropene	14.12	75	92106	20.5862 ug/L	99
63)	1,1,2-Trichloroethane	14.38	97	51997	21.3805 ug/L	99
64)	2-Hexanone	14.31	43	55559	20.0204 ug/L	96
65)	1,3-Dichloropropane	14.73	76	98765	22.4062 ug/L	99
66)	Tetrachloroethene	14.87	166	61045	21.2679 ug/L	97
67)	Dibromochloromethane	15.18	129	65851	20.8197 ug/L	97
68)	1,2-Dibromoethane	15.48	107	53418	21.4775 ug/L	97
69)	1-Chlorohexane	15.59	91	79936	22.1228 ug/L	89
70)	Chlorobenzene	16.07	112	161359	21.5778 ug/L	71
71)	1,1,1,2-Tetrachloroethane	16.11	131	62015	20.6539 ug/L	99
72)	Ethylbenzene	16.10	106	84875	21.2098 ug/L	95
73)	m-,p-Xylene	16.22	106	211374	43.1693 ug/L	98
74)	o-Xylene	16.88	106	106932	23.1866 ug/L	98
75)	Styrene	16.92	104	170406	21.7094 ug/L	97
76)	Bromoform	17.50	173	42433	19.0006 ug/L	98
77)	Isopropylbenzene	17.38	105	271443	21.8954 ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.64	83	72068	20.8392 ug/L	95
81)	1,2,3-Trichloropropane	17.87	110	23983	22.6499 ug/L	97
82)	trans-1,4-Dichloro-2-Buten	17.93	53	19869	15.5628 ug/L	86
83)	n-Propylbenzene	17.98	91	322859	21.4746 ug/L	99
84)	Bromobenzene	18.12	156	70716	21.6388 ug/L	98
85)	1,3,5-Trimethylbenzene	18.21	105	233440	21.8138 ug/L	96
86)	2-Chlorotoluene	18.30	91	211947	21.1209 ug/L	94
87)	4-Chlorotoluene	18.36	91	199682	21.7623 ug/L	96
88)	a-Methylstyrene	18.69	118	118988	22.8960 ug/L	97
89)	tert-Butylbenzene	18.76	134	49003	21.9725 ug/L	95
90)	1,2,4-Trimethylbenzene	18.82	105	232508	20.6593 ug/L	82
91)	sec-Butylbenzene	19.07	105	289851	21.1498 ug/L	99
92)	p-Isopropyltoluene	19.27	119	235016	20.7856 ug/L	100
93)	1,3-Dichlorobenzene	19.48	146	133387	21.0944 ug/L	99
94)	1,4-Dichlorobenzene	19.65	146	135254	21.0134 ug/L	97
95)	n-Butylbenzene	19.89	91	210323	18.4947 ug/L	99
96)	1,2-Dichlorobenzene	20.23	146	131592	21.6268 ug/L	96
97)	1,2-Dibromo-3-Chloropropan	21.41	75	15971	20.8720 ug/L	89
98)	1,2,4-Trichlorobenzene	22.77	180	85774	19.4994 ug/L	99
99)	Hexachlorobutadiene	22.95	225	47628	18.9329 ug/L	100
100)	Naphthalene	23.20	128	201155	19.8920 ug/L	99
101)	1,2,3-Trichlorobenzene	23.59	180	85657	19.7757 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M137946.D 826_SL.M Tue Mar 22 16:16:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032216\6M137946.D Vial: 9
Acq On : 22 Mar 2016 15:52 Operator: TMB
Sample : WG561881-02 20ug/Kg LCS STD 8260 Inst : HPMS6
Misc : 7,1 STD75209 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 22 16:16 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

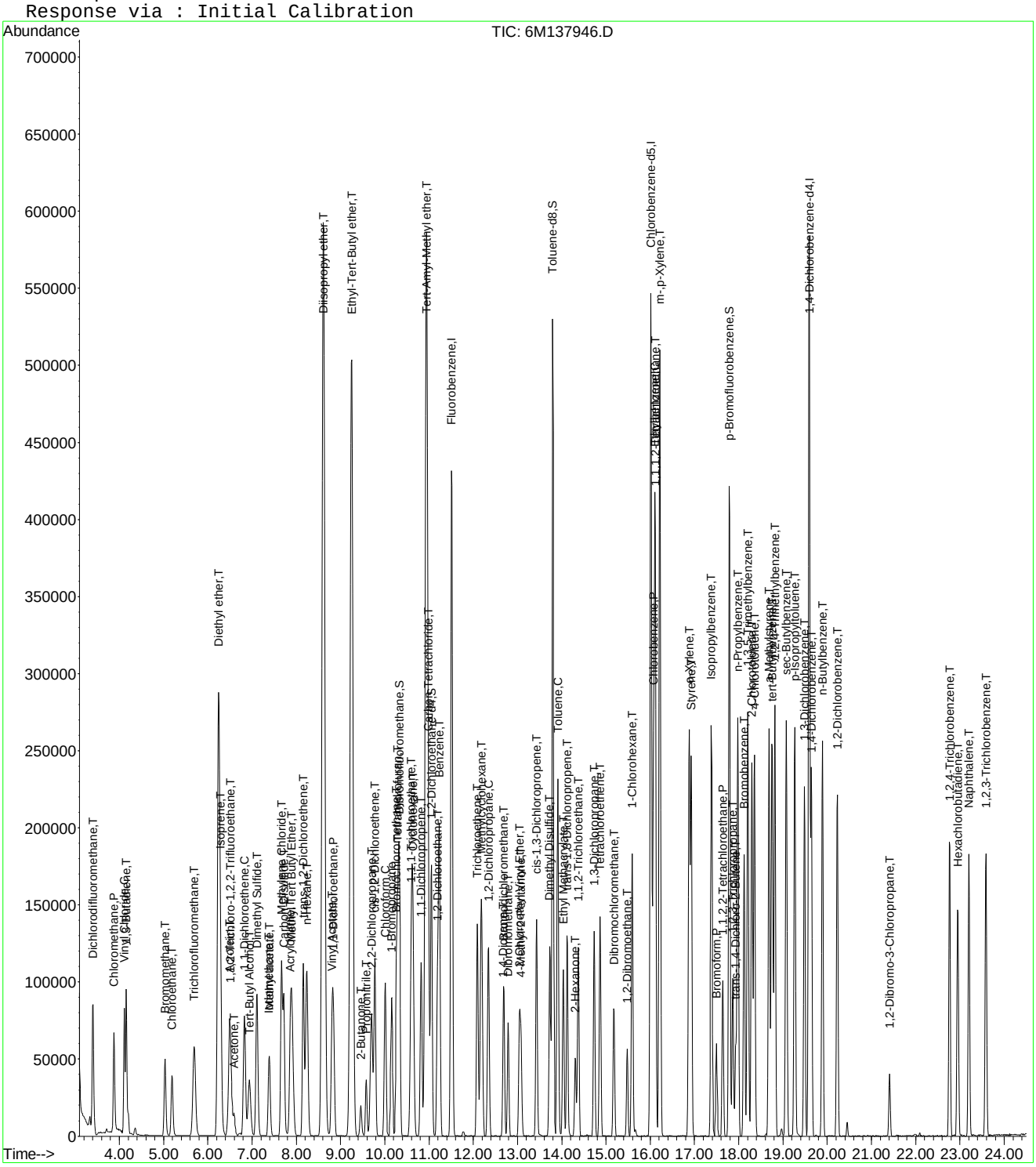

6M137946.D 826_SL.M Tue Mar 22 16:16:56 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032316\6M137968.D Vial: 6
Acq On : 23 Mar 2016 14:26 Operator: TMB
Sample : WG562075-02 20ug/Kg LCS STD 8260 Inst : HPMS6
Misc : 7,1 STD75209 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 14:51:25 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	579730	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	431283	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	231205	50.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.33	111	147978	47.5832 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.16%		
43) 1,2-Dichloroethane-d4	11.06	65	176231	43.6454 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 87.30%		
58) Toluene-d8	13.80	98	518030	50.5201 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.04%		
80) p-Bromofluorobenzene	17.79	95	212255	49.9806 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 99.96%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	115533	21.6994 ug/L	99
3) Chloromethane	3.88	50	96875	17.4604 ug/L	97
4) Vinyl Chloride	4.12	62	90596	20.2869 ug/L	99
5) 1,3-Butadiene	4.16	54	41605	11.1976 ug/L	93
6) Bromomethane	5.03	94	52485	22.0474 ug/L	100
7) Chloroethane	5.19	64	60320	23.8216 ug/L	99
8) Trichlorofluoromethane	5.69	101	122043	20.3384 ug/L	100
9) Diethyl ether	6.24	59	292890	106.1009 ug/L	96
10) Isoprene	6.28	67	95722	24.4867 ug/L	89
11) Acrolein	6.48	56	34941	66.6505 ug/L	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	67320	23.5041 ug/L	95
13) Acetone	6.60	43	31704	21.7676 ug/L	93
14) 1,1-Dichloroethene	6.83	61	108067	21.3010 ug/L	94
15) Tert-Butyl Alcohol	6.94	59	94488	199.6007 ug/L	99
16) Dimethyl Sulfide	7.12	62	74623	30.3173 ug/L	96
17) Iodomethane	7.38	142	44576	23.1569 ug/L	98
18) Methyl acetate	7.39	43	65972	18.7122 ug/L	98
19) Methylene Chloride	7.67	84	66371	21.7227 ug/L	85
20) Carbon Disulfide	7.72	76	194167	20.0032 ug/L	99
21) Acrylonitrile	7.87	53	29870	20.6145 ug/L	98
22) Methyl Tert Butyl Ether	7.89	73	195115	22.3617 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	63179	22.5425 ug/L	88
24) n-Hexane	8.24	57	109762	21.5671 ug/L	97
25) Diisopropyl ether	8.61	45	1303599	98.7958 ug/L	95
26) Vinyl Acetate	8.80	43	149448	21.9108 ug/L	98
27) 1,1-Dichloroethane	8.84	63	126368	20.9133 ug/L	99
28) Ethyl-Tert-Butyl ether	9.24	59	1042923	98.6131 ug/L	96
29) 2-Butanone	9.46	43	40223	20.0724 ug/L	98
30) Propionitrile	9.58	54	53739	96.8957 ug/L	99
31) 2,2-Dichloropropane	9.69	77	105935	21.8414 ug/L	92
32) cis-1,2-Dichloroethene	9.77	96	70451	22.5161 ug/L	96
33) Chloroform	10.01	83	116681	20.6765 ug/L	96
34) 1-Bromopropane	10.16	122	15946	37.1719 ug/L	98
35) Bromochloromethane	10.27	130	39818	21.6584 ug/L	100
36) Tetrahydrofuran	10.29	42	126176	93.6952 ug/L	97
38) 1,1,1-Trichloroethane	10.60	97	107996	21.6661 ug/L	100
39) Cyclohexane	10.63	56	130073	23.0127 ug/L	88
40) 1,1-Dichloropropene	10.82	75	87999	21.9221 ug/L	96
41) Tert-Amyl-Methyl ether	10.95	73	898862	107.1369 ug/L	94
42) Carbon Tetrachloride	10.99	117	98570	21.1639 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M137968.D 826_SL.M Wed Mar 23 14:51:26 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032316\6M137968.D Vial: 6
Acq On : 23 Mar 2016 14:26 Operator: TMB
Sample : WG562075-02 20ug/Kg LCS STD 8260 Inst : HPMS6
Misc : 7,1 STD75209 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 14:51:25 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	100537	20.8733	ug/L	99
46)	Benzene	11.23	78	261214	21.6301	ug/L	93
47)	Trichloroethene	12.09	130	66918	23.4556	ug/L	99
48)	Methylcyclohexane	12.18	83	108751	23.5796	ug/L	89
49)	1,2-Dichloropropane	12.34	63	73675	22.6737	ug/L	99
50)	1,4-Dioxane	12.67	88	7263	189.3560	ug/L	83
51)	Bromodichloromethane	12.68	83	89533	20.9969	ug/L	97
52)	Dibromomethane	12.79	93	38004	19.9965	ug/L	98
53)	2-Chloroethyl Vinyl Ether	13.04	63	39396	22.0430	ug/L	97
54)	4-Methyl-2-Pentanone	13.07	58	29050	21.4661	ug/L	92
55)	cis-1,3-Dichloropropene	13.43	75	112363	23.9168	ug/L	98
56)	Dimethyl Disulfide	13.72	79	53153	22.4322	ug/L	96
59)	Toluene	13.92	91	265823	21.7890	ug/L	99
60)	Ethyl Methacrylate	14.04	69	85396	21.8459	ug/L	98
62)	trans-1,3-Dichloropropene	14.12	75	97830	20.8539	ug/L	100
63)	1,1,2-Trichloroethane	14.38	97	54038	21.1917	ug/L	99
64)	2-Hexanone	14.31	43	56682	19.4801	ug/L	98
65)	1,3-Dichloropropane	14.74	76	102465	22.1701	ug/L	99
66)	Tetrachloroethene	14.87	166	65164	21.6526	ug/L	99
67)	Dibromochloromethane	15.17	129	66417	20.0271	ug/L	100
68)	1,2-Dibromoethane	15.48	107	55063	21.1146	ug/L	97
69)	1-Chlorohexane	15.59	91	86267	22.7703	ug/L	88
70)	Chlorobenzene	16.07	112	172795	22.0381	ug/L	71
71)	1,1,1,2-Tetrachloroethane	16.11	131	65682	20.8632	ug/L	95
72)	Ethylbenzene	16.10	106	94609	22.5484	ug/L	99
73)	m-,p-Xylene	16.22	106	227852	44.3817	ug/L	96
74)	o-Xylene	16.88	106	114068	23.5896	ug/L	95
75)	Styrene	16.92	104	182254	22.1446	ug/L	95
76)	Bromoform	17.49	173	43746	18.6823	ug/L	98
77)	Isopropylbenzene	17.38	105	300373	23.1080	ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.65	83	75366	20.8669	ug/L	95
81)	1,2,3-Trichloropropane	17.87	110	23710	21.4408	ug/L	90
82)	trans-1,4-Dichloro-2-Buten	17.93	53	20263	15.1970	ug/L	91
83)	n-Propylbenzene	17.98	91	361052	22.9946	ug/L	99
84)	Bromobenzene	18.13	156	75422	22.0982	ug/L	98
85)	1,3,5-Trimethylbenzene	18.21	105	260340	23.2939	ug/L	97
86)	2-Chlorotoluene	18.30	91	237249	22.6378	ug/L	96
87)	4-Chlorotoluene	18.36	91	216226	22.5642	ug/L	97
88)	a-Methylstyrene	18.69	118	126927	23.3860	ug/L	99
89)	tert-Butylbenzene	18.75	134	53940	23.1586	ug/L	94
90)	1,2,4-Trimethylbenzene	18.82	105	263268	22.3986	ug/L	83
91)	sec-Butylbenzene	19.08	105	327661	22.8929	ug/L	99
92)	p-Isopropyltoluene	19.27	119	267924	22.6893	ug/L	99
93)	1,3-Dichlorobenzene	19.48	146	146035	22.1134	ug/L	98
94)	1,4-Dichlorobenzene	19.64	146	145979	21.7161	ug/L	97
95)	n-Butylbenzene	19.89	91	253278	21.3257	ug/L	98
96)	1,2-Dichlorobenzene	20.23	146	142712	22.4578	ug/L	97
97)	1,2-Dibromo-3-Chloropropan	21.41	75	15967	19.9803	ug/L	98
98)	1,2,4-Trichlorobenzene	22.76	180	98796	21.5056	ug/L	99
99)	Hexachlorobutadiene	22.96	225	59057	22.4787	ug/L	99
100)	Naphthalene	23.20	128	217178	20.5640	ug/L	100
101)	1,2,3-Trichlorobenzene	23.59	180	96490	21.3303	ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032316\6M137968.D Vial: 6
Acq On : 23 Mar 2016 14:26 Operator: TMB
Sample : WG562075-02 20ug/Kg LCS STD 8260 Inst : HPMS6
Misc : 7,1 STD75209 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 14:51 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

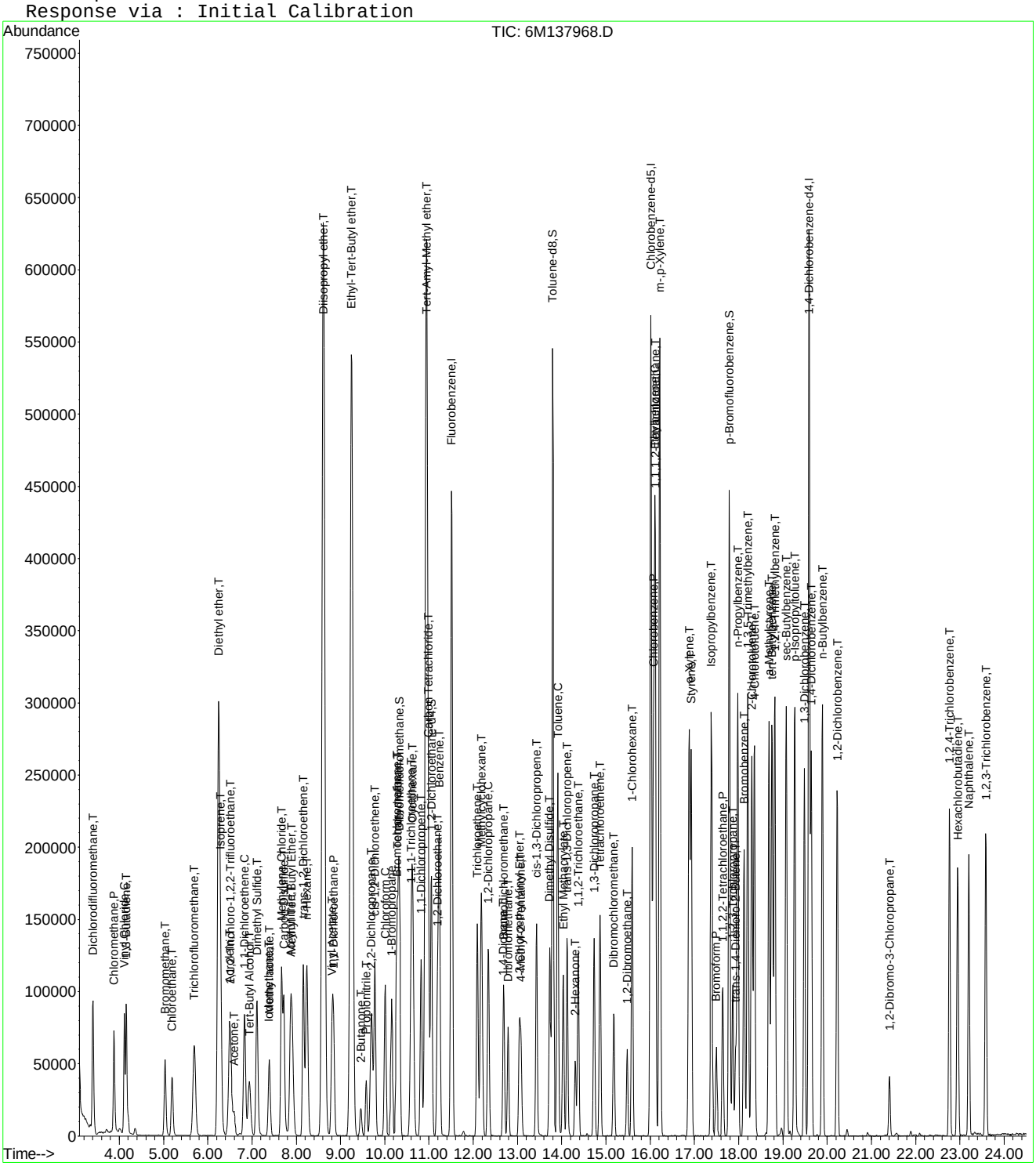

6M137968.D 826_SL.M Wed Mar 23 14:51:27 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032216\6M137947.D Vial: 10
Acq On : 22 Mar 2016 16:24 Operator: TMB
Sample : WG561608-02 MS 861-01 8260 5.02g Inst : HPMS6
Misc : 7,1 STD75209 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 22 16:49:31 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	543230	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	401013	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	217199	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	139525	47.8796 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.76%		
43) 1,2-Dichloroethane-d4	11.05	65	168855	44.6285 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 89.26%		
58) Toluene-d8	13.80	98	483597	50.7220 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.44%		
80) p-Bromofluorobenzene	17.79	95	202239	50.6930 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 101.38%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	111006	22.2500 ug/L	97
3) Chloromethane	3.88	50	92953	17.8792 ug/L	100
4) Vinyl Chloride	4.12	62	67103	16.0358 ug/L	98
5) 1,3-Butadiene	4.16	54	37250	10.6991 ug/L	93
6) Bromomethane	5.04	94	45206	20.2657 ug/L	100
7) Chloroethane	5.19	64	53256	22.4450 ug/L	100
8) Trichlorofluoromethane	5.69	101	110371	19.6292 ug/L	98
9) Diethyl ether	6.24	59	1079	0.4171 ug/L #	23
10) Isoprene	6.28	67	84708	23.1252 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	63091	23.5076 ug/L	95
13) Acetone	6.60	43	22649	15.5518 ug/L	95
14) 1,1-Dichloroethene	6.83	61	95319	20.0507 ug/L	95
15) Tert-Butyl Alcohol	6.96	59	197	0.4441 ug/L #	57
16) Dimethyl Sulfide	7.11	62	61128	26.5033 ug/L	97
17) Iodomethane	7.38	142	41933	23.2281 ug/L	99
18) Methyl acetate	7.39	43	74101	22.4301 ug/L	97
19) Methylene Chloride	7.67	84	57794	20.1865 ug/L	83
20) Carbon Disulfide	7.72	76	166893	18.3486 ug/L	99
21) Acrylonitrile	7.86	53	25146	18.5204 ug/L	99
22) Methyl Tert Butyl Ether	7.90	73	161978	19.8112 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	56090	21.3578 ug/L	90
24) n-Hexane	8.24	57	102485	21.4902 ug/L	97
26) Vinyl Acetate	8.80	43	47147	7.3767 ug/L	98
27) 1,1-Dichloroethane	8.83	63	109730	19.3799 ug/L	98
28) Ethyl-Tert-Butyl ether	9.23	59	3104	0.3132 ug/L #	61
29) 2-Butanone	9.45	43	32009	17.0466 ug/L	95
31) 2,2-Dichloropropane	9.70	77	94106	20.7062 ug/L	93
32) cis-1,2-Dichloroethene	9.77	96	60487	20.6305 ug/L	95
33) Chloroform	10.00	83	101203	19.1387 ug/L	96
34) 1-Bromopropane	10.15	122	13218	32.8830 ug/L	98
35) Bromochloromethane	10.26	130	34003	19.7382 ug/L	99
36) Tetrahydrofuran	10.31	42	2634	Below Cal #	69
38) 1,1,1-Trichloroethane	10.60	97	95733	20.4963 ug/L	99
39) Cyclohexane	10.63	56	113063	21.3473 ug/L	89
40) 1,1-Dichloropropene	10.83	75	77967	20.7280 ug/L	96
42) Carbon Tetrachloride	10.99	117	89767	20.5689 ug/L	96
45) 1,2-Dichloroethane	11.19	62	84957	18.8238 ug/L	100
46) Benzene	11.23	78	227932	20.1423 ug/L	93
47) Trichloroethene	12.09	130	57709	21.5869 ug/L	98
48) Methylcyclohexane	12.18	83	96387	22.3031 ug/L	90

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032216\6M137947.D Vial: 10
Acq On : 22 Mar 2016 16:24 Operator: TMB
Sample : WG561608-02 MS 861-01 8260 5.02g Inst : HPMS6
Misc : 7,1 STD75209 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 22 16:49:31 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
49)	1,2-Dichloropropane	12.34	63	63780	20.9473 ug/L	98
51)	Bromodichloromethane	12.68	83	76755	19.2097 ug/L	97
52)	Dibromomethane	12.79	93	33174	18.6280 ug/L	98
53)	2-Chloroethyl Vinyl Ether	13.04	63	28081	16.7677 ug/L	98
54)	4-Methyl-2-Pentanone	13.07	58	23412	18.4624 ug/L	93
55)	cis-1,3-Dichloropropene	13.43	75	93581	21.2574 ug/L	98
56)	Dimethyl Disulfide	13.73	79	43469	19.5779 ug/L	99
59)	Toluene	13.91	91	231973	20.4497 ug/L	99
60)	Ethyl Methacrylate	14.03	69	49804	13.7025 ug/L	100
62)	trans-1,3-Dichloropropene	14.12	75	81456	18.6742 ug/L	99
63)	1,1,2-Trichloroethane	14.38	97	47198	19.9065 ug/L	99
64)	2-Hexanone	14.31	43	44172	16.3267 ug/L	96
65)	1,3-Dichloropropane	14.74	76	88492	20.5921 ug/L	100
66)	Tetrachloroethene	14.87	166	58977	21.0761 ug/L	99
67)	Dibromochloromethane	15.18	129	57912	18.7807 ug/L	99
68)	1,2-Dibromoethane	15.48	107	47010	19.3873 ug/L	98
69)	1-Chlorohexane	15.59	91	75104	21.3202 ug/L	89
70)	Chlorobenzene	16.07	112	149703	20.5342 ug/L	70
71)	1,1,1,2-Tetrachloroethane	16.11	131	56183	19.1930 ug/L	98
72)	Ethylbenzene	16.11	106	80650	20.6725 ug/L	98
73)	m-,p-Xylene	16.22	106	199554	41.8038 ug/L	98
74)	o-Xylene	16.87	106	98443	21.8950 ug/L	97
75)	Styrene	16.92	104	145133	18.9653 ug/L	94
76)	Bromoform	17.49	173	37486	17.2173 ug/L	98
77)	Isopropylbenzene	17.38	105	264000	21.8429 ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.64	83	65461	19.2932 ug/L	96
81)	1,2,3-Trichloropropane	17.87	110	20656	19.8836 ug/L	97
82)	trans-1,4-Dichloro-2-Buten	17.93	53	16082	12.8391 ug/L	82
83)	n-Propylbenzene	17.98	91	313440	21.2496 ug/L	99
84)	Bromobenzene	18.13	156	62872	19.6090 ug/L	97
85)	1,3,5-Trimethylbenzene	18.21	105	223508	21.2879 ug/L	96
86)	2-Chlorotoluene	18.30	91	183913	18.6802 ug/L	93
87)	4-Chlorotoluene	18.35	91	197129	21.8978 ug/L	92
88)	a-Methylstyrene	18.69	118	99682	19.5505 ug/L	99
89)	tert-Butylbenzene	18.75	134	47410	21.6676 ug/L	89
90)	1,2,4-Trimethylbenzene	18.81	105	220600	19.9788 ug/L	83
91)	sec-Butylbenzene	19.08	105	290831	21.6300 ug/L	98
92)	p-Isopropyltoluene	19.26	119	231356	20.8560 ug/L	100
93)	1,3-Dichlorobenzene	19.49	146	122701	19.7782 ug/L	98
94)	1,4-Dichlorobenzene	19.64	146	122625	19.4183 ug/L	95
95)	n-Butylbenzene	19.89	91	217398	19.4850 ug/L	100
96)	1,2-Dichlorobenzene	20.22	146	118672	19.8790 ug/L	99
97)	1,2-Dibromo-3-Chloropropan	21.41	75	13859	18.4607 ug/L	93
98)	1,2,4-Trichlorobenzene	22.76	180	80064	18.5519 ug/L	99
99)	Hexachlorobutadiene	22.95	225	51502	20.8672 ug/L	99
100)	Naphthalene	23.20	128	179804	18.1230 ug/L	99
101)	1,2,3-Trichlorobenzene	23.59	180	77873	18.3249 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M137947.D 826_SL.M Tue Mar 22 16:49:31 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032216\6M137947.D Vial: 10
Acq On : 22 Mar 2016 16:24 Operator: TMB
Sample : WG561608-02 MS 861-01 8260 5.02g Inst : HPMS6
Misc : 7,1 STD75209 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 22 16:49 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

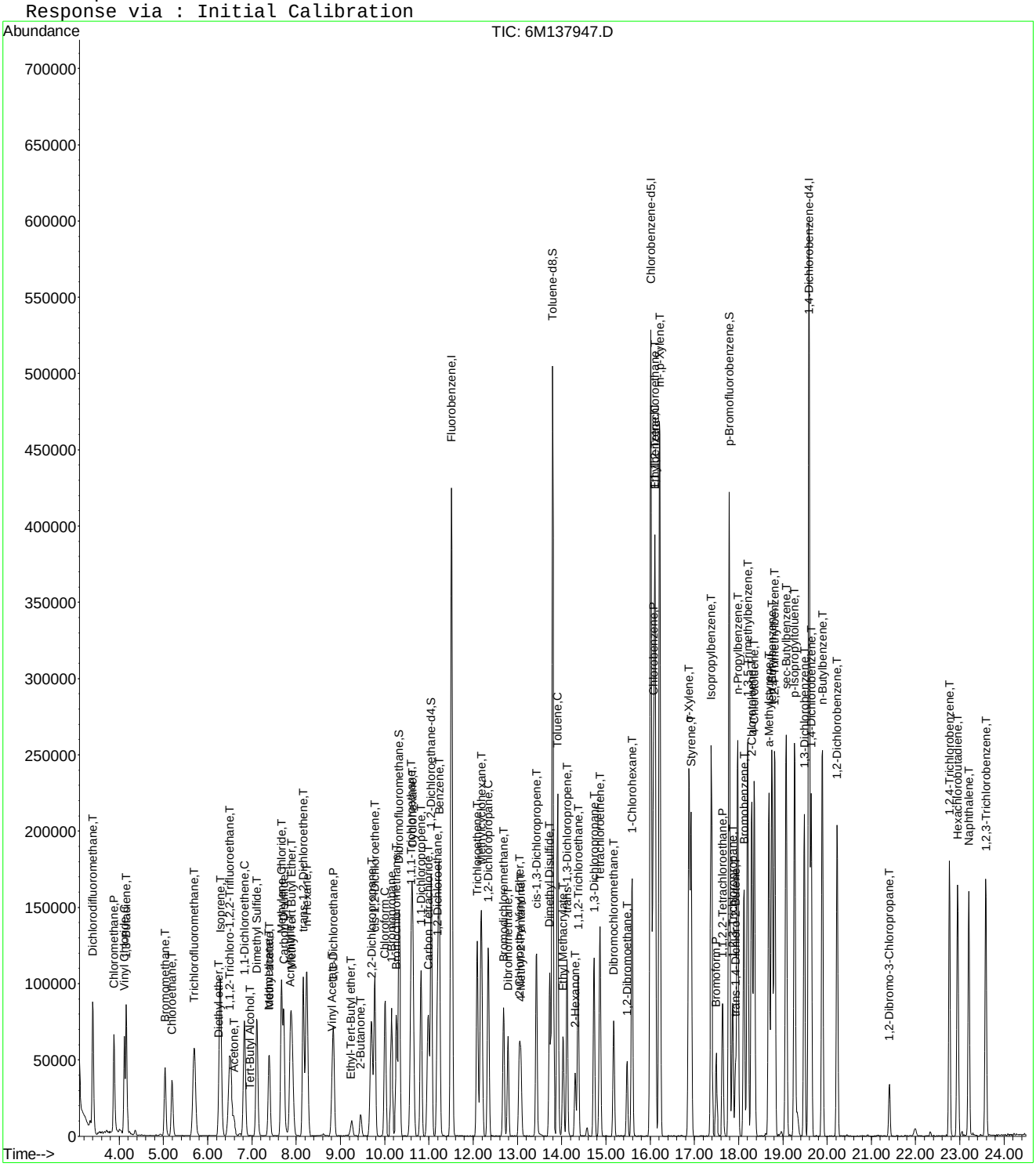

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032216\6M137948.D Vial: 11
Acq On : 22 Mar 2016 16:57 Operator: TMB
Sample : WG561608-03 MSD 861-01 8260 5.24g Inst : HPMS6
Misc : 7,1 STD75209 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 22 17:22:13 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	527136	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	390753	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	211458	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	136408	48.2391 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.48%		
43) 1,2-Dichloroethane-d4	11.06	65	168031	45.7666 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 91.54%		
58) Toluene-d8	13.79	98	468853	50.4668 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 100.94%		
80) p-Bromofluorobenzene	17.79	95	196319	50.5451 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 101.10%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	111864	23.1065 ug/L	99
3) Chloromethane	3.89	50	93340	18.5018 ug/L	96
4) Vinyl Chloride	4.11	62	68247	16.8071 ug/L	99
5) 1,3-Butadiene	4.16	54	31932	9.4517 ug/L	93
6) Bromomethane	5.03	94	45078	20.8253 ug/L	98
7) Chloroethane	5.20	64	53396	23.1911 ug/L	98
8) Trichlorofluoromethane	5.69	101	113648	20.8291 ug/L	99
9) Diethyl ether	6.24	59	798	0.3179 ug/L #	1
10) Isoprene	6.28	67	88326	24.8491 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	63413	24.3490 ug/L	95
13) Acetone	6.60	43	24879	18.1843 ug/L	95
14) 1,1-Dichloroethene	6.83	61	96383	20.8935 ug/L	96
15) Tert-Butyl Alcohol	6.84	59	3141	7.2972 ug/L #	57
16) Dimethyl Sulfide	7.12	62	65299	29.1761 ug/L	96
17) Iodomethane	7.38	142	45075	25.1960 ug/L	96
18) Methyl acetate	7.39	43	73793	23.0188 ug/L	99
19) Methylene Chloride	7.67	84	57928	20.8511 ug/L	86
20) Carbon Disulfide	7.72	76	175384	19.8708 ug/L	98
21) Acrylonitrile	7.87	53	26004	19.7370 ug/L	96
22) Methyl Tert Butyl Ether	7.89	73	172832	21.7842 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	56825	22.2983 ug/L	90
24) n-Hexane	8.24	57	104006	22.4750 ug/L	100
26) Vinyl Acetate	8.81	43	52045	8.3917 ug/L	99
27) 1,1-Dichloroethane	8.84	63	111165	20.2328 ug/L	100
29) 2-Butanone	9.45	43	35613	19.5450 ug/L	93
31) 2,2-Dichloropropane	9.70	77	94906	21.5198 ug/L	93
32) cis-1,2-Dichloroethene	9.77	96	61144	21.4913 ug/L	94
33) Chloroform	10.01	83	101893	19.8575 ug/L	97
34) 1-Bromopropane	10.16	122	13808	35.3995 ug/L	96
35) Bromochloromethane	10.26	130	34090	20.3928 ug/L	99
36) Tetrahydrofuran	10.30	42	2038	Below Cal #	48
38) 1,1,1-Trichloroethane	10.60	97	97525	21.5175 ug/L	97
39) Cyclohexane	10.63	56	120379	23.4225 ug/L	88
40) 1,1-Dichloropropene	10.82	75	80315	22.0041 ug/L	95
41) Tert-Amyl-Methyl ether	10.82	73	11506	1.5083 ug/L #	52
42) Carbon Tetrachloride	10.99	117	91181	21.5307 ug/L	95
45) 1,2-Dichloroethane	11.19	62	84402	19.2718 ug/L	98
46) Benzene	11.23	78	225455	20.5317 ug/L	94
47) Trichloroethene	12.09	130	58508	22.5540 ug/L	98
48) Methylcyclohexane	12.18	83	102100	24.3463 ug/L	90

(#) = qualifier out of range (m) = manual integration
6M137948.D 826_SL.M Tue Mar 22 17:22:14 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032216\6M137948.D Vial: 11
Acq On : 22 Mar 2016 16:57 Operator: TMB
Sample : WG561608-03 MSD 861-01 8260 5.24g Inst : HPMS6
Misc : 7,1 STD75209 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 22 17:22:13 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
49)	1,2-Dichloropropane	12.33	63	63459	21.4782	ug/L		98
51)	Bromodichloromethane	12.68	83	76680	19.7769	ug/L		96
52)	Dibromomethane	12.78	93	33063	19.1325	ug/L		97
53)	2-Chloroethyl Vinyl Ether	13.04	63	28490	17.5313	ug/L		100
54)	4-Methyl-2-Pentanone	13.07	58	25016	20.3296	ug/L		96
55)	cis-1,3-Dichloropropene	13.43	75	93741	21.9439	ug/L		98
56)	Dimethyl Disulfide	13.72	79	46097	21.3954	ug/L		100
59)	Toluene	13.91	91	228802	20.6998	ug/L		99
60)	Ethyl Methacrylate	14.04	69	57545	16.2480	ug/L		98
62)	trans-1,3-Dichloropropene	14.13	75	81336	19.1363	ug/L		100
63)	1,1,2-Trichloroethane	14.38	97	47158	20.4119	ug/L		99
64)	2-Hexanone	14.31	43	49118	18.6315	ug/L		96
65)	1,3-Dichloropropane	14.73	76	88119	21.0437	ug/L		99
66)	Tetrachloroethene	14.87	166	58127	21.3177	ug/L		98
67)	Dibromochloromethane	15.18	129	57243	19.0512	ug/L		100
68)	1,2-Dibromoethane	15.48	107	47589	20.1414	ug/L		99
69)	1-Chlorohexane	15.59	91	76540	22.2984	ug/L		88
70)	Chlorobenzene	16.07	112	145305	20.4543	ug/L	#	68
71)	1,1,1,2-Tetrachloroethane	16.11	131	55377	19.4144	ug/L		98
72)	Ethylbenzene	16.10	106	78941	20.7657	ug/L		97
73)	m-,p-Xylene	16.21	106	197971	42.5611	ug/L		99
74)	o-Xylene	16.88	106	95621	21.8258	ug/L		96
75)	Styrene	16.92	104	145622	19.5289	ug/L		95
76)	Bromoform	17.49	173	37516	17.6835	ug/L		99
77)	Isopropylbenzene	17.38	105	259287	22.0162	ug/L		99
79)	1,1,2,2-Tetrachloroethane	17.64	83	66301	20.0713	ug/L		96
81)	1,2,3-Trichloropropane	17.87	110	20862	20.6271	ug/L		93
82)	trans-1,4-Dichloro-2-Buten	17.93	53	18036	14.7900	ug/L		82
83)	n-Propylbenzene	17.98	91	312610	21.7687	ug/L		99
84)	Bromobenzene	18.12	156	64029	20.5121	ug/L		99
85)	1,3,5-Trimethylbenzene	18.21	105	219471	21.4709	ug/L		97
86)	2-Chlorotoluene	18.30	91	201094	20.9798	ug/L		96
87)	4-Chlorotoluene	18.36	91	181145	20.6686	ug/L		97
88)	a-Methylstyrene	18.69	118	107690	21.6946	ug/L		97
89)	tert-Butylbenzene	18.76	134	47296	22.2023	ug/L		96
90)	1,2,4-Trimethylbenzene	18.82	105	220318	20.4949	ug/L		83
91)	sec-Butylbenzene	19.07	105	289465	22.1129	ug/L		98
92)	p-Isopropyltoluene	19.27	119	228464	21.1544	ug/L		100
93)	1,3-Dichlorobenzene	19.48	146	120777	19.9966	ug/L		96
94)	1,4-Dichlorobenzene	19.64	146	121612	19.7807	ug/L		96
95)	n-Butylbenzene	19.89	91	217613	20.0338	ug/L		98
96)	1,2-Dichlorobenzene	20.23	146	118857	20.4506	ug/L		99
97)	1,2-Dibromo-3-Chloropropan	21.41	75	14268	19.5215	ug/L		95
98)	1,2,4-Trichlorobenzene	22.77	180	80745	19.2176	ug/L		98
99)	Hexachlorobutadiene	22.95	225	52327	21.7771	ug/L		99
100)	Naphthalene	23.20	128	182633	18.9080	ug/L		99
101)	1,2,3-Trichlorobenzene	23.59	180	78497	18.9732	ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032216\6M137948.D Vial: 11
Acq On : 22 Mar 2016 16:57 Operator: TMB
Sample : WG561608-03 MSD 861-01 8260 5.24g Inst : HPMS6
Misc : 7,1 STD75209 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 22 17:22 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

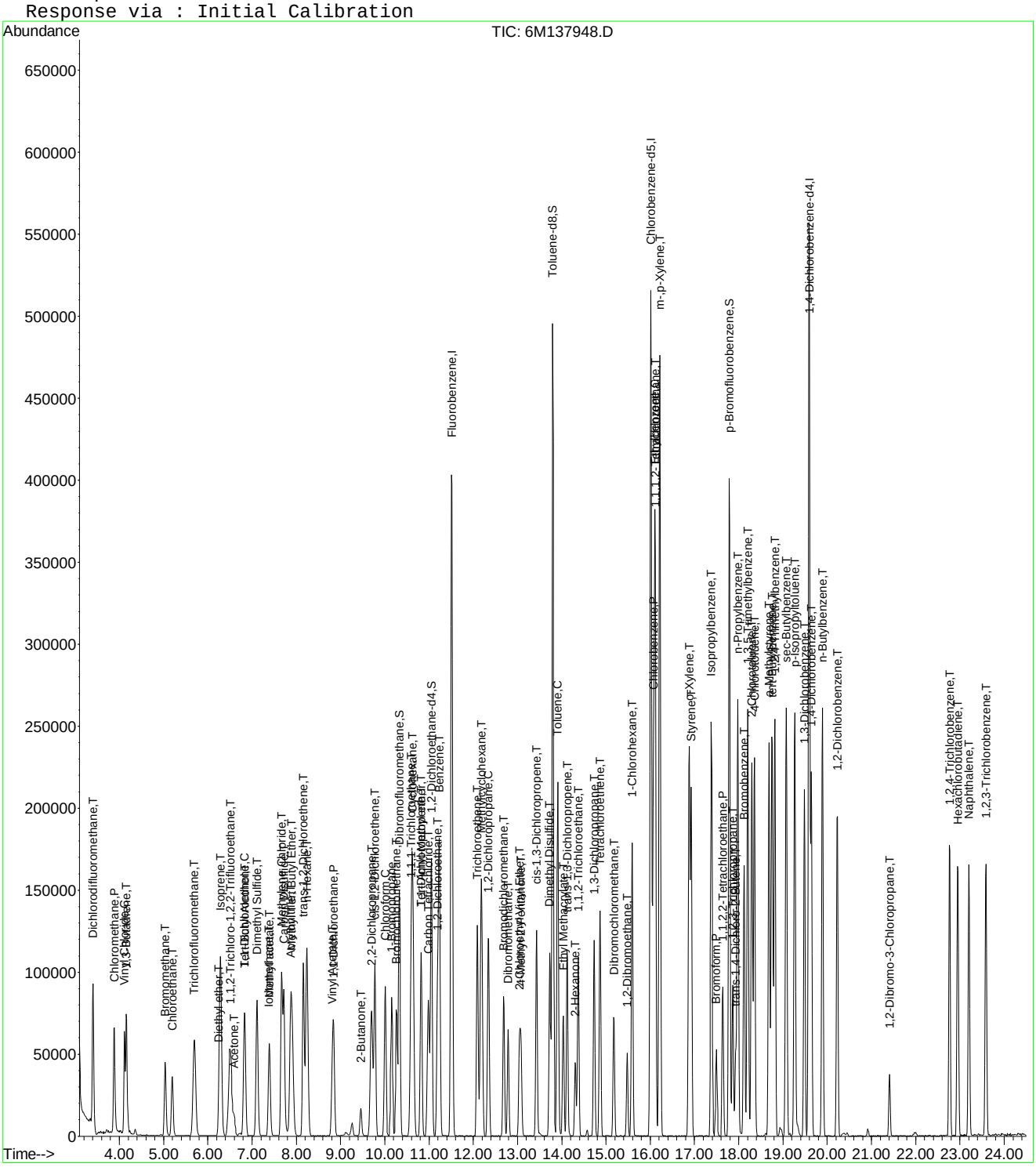

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2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT14(5-5.5)140316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561316	**Analyst:**	JWR	**Run Date:**	03/17/2016 16:54
Collect Date:	03/14/2016 12:32	**Dilution:**	1	**File ID:**	1LM.LM33887
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.38	U	4.77	2.38	1.19

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT14(10-10.5)140316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561316	**Analyst:**	JWR	**Run Date:**	03/17/2016 17:51
Collect Date:	03/14/2016 13:15	**Dilution:**	1	**File ID:**	1LM.LM33890
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	89.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.16	U	4.32	2.16	1.08

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT14(10-10.5)140316FD	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561316	**Analyst:**	JWR	**Run Date:**	03/17/2016 18:10
Collect Date:	03/14/2016 13:15	**Dilution:**	1	**File ID:**	1LM.LM33891
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	90.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.20	U	4.40	2.20	1.10

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT14(17-17.5)140316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561316	**Analyst:**	JWR	**Run Date:**	03/17/2016 18:29
Collect Date:	03/14/2016 13:20	**Dilution:**	1	**File ID:**	1LM.LM33892
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	91.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.10	U	4.21	2.10	1.05

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT14(23-23.5)140316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561316	**Analyst:**	JWR	**Run Date:**	03/17/2016 18:48
Collect Date:	03/14/2016 13:25	**Dilution:**	1	**File ID:**	1LM.LM33893
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.40	U	4.80	2.40	1.20

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT15(5-5.5)140316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561316	**Analyst:**	JWR	**Run Date:**	03/17/2016 20:03
Collect Date:	03/14/2016 16:40	**Dilution:**	1	**File ID:**	1LM.LM33897
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.34	U	4.70	2.34	1.17

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT15(12-12.5)140316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561316	**Analyst:**	JWR	**Run Date:**	03/17/2016 20:22
Collect Date:	03/14/2016 16:41	**Dilution:**	1	**File ID:**	1LM.LM33898
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	44.1		4.64	2.32	1.16

Certificate of Analysis

Sample #:	L16030861-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT15(21-21.5)140316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561316	**Analyst:**	JWR	**Run Date:**	03/18/2016 13:31
Collect Date:	03/14/2016 16:42	**Dilution:**	100	**File ID:**	1LM.LM33933
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	82.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3440		476	238	119

Certificate of Analysis

Sample #:	L16030861-09	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT15(23.5-24)140316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561316	**Analyst:**	JWR	**Run Date:**	03/18/2016 13:50
Collect Date:	03/14/2016 16:43	**Dilution:**	100	**File ID:**	1LM.LM33934
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	81.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	6010		485	242	121

Certificate of Analysis

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L16030861-10	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT15(26.5-27)140316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561316	**Analyst:**	JWR	**Run Date:**	03/18/2016 14:09
Collect Date:	03/14/2016 16:45	**Dilution:**	100	**File ID:**	1LM.LM33935
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	79.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	6530		505	252	126

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

MICROBAC

Semivolatile Sample Extract Log

Parameter: Perchlorate
SOP #: HPLC 06
Analyst: JWR
Spike/Surrogate analyst: JWR
Surrogate #: NA
Spike # A: STD72686
Ext Solvent: DI-H2O
Ext Solvent: NA
Ext Disk: NA

Matrix: Soils
Rev #: 07
Date/Time Extracted: 03/17/16/1200
Witness: WT
Spike # B: NA
Lot #: NA
Lot #: NA
Lot #: NA

Extraction Work Group: WG561289
Analytical Work Group: WG561316
Run ID: R4502800
Pipetter(s): Eppendorf #403
Analytical Balance ID: BAL014
Reagent: Tubes Lot #: RGT34011
Reagent: Sand Lot #: COA16150
Other: IS Lot #: COA18071

Color Code
T = Transparent
C = Colored
O = Opaque

	Sample ID	Test Code	pH	Initial Wt / Vol	JWR ~~Surrogate~~ Amount IS	Amount Spike	Final Volume	Extract Color	Comments
1	WG561289-01	6850		5.009g	0.250ml	1.0ml	50ml		MCT (2ug/kg)(10,000 us)
2	WG561289-02			5.008g		NA			Blank
3	WG561289-03			5.003g		1.0ml			LCS (2ug/kg)
4	L16030861-01Ref			5.082g		NA			WG561289-04 Ref
5	-01MS			5.084g		1.0ml			WG561289-05 MS (@2ug/kg)
6	-01MSD			5.087g		1.0ml			WG561289-06 MSD (@2ug/kg)
7	-02			5.182g		NA			
8	-03			5.033g		NA			
9	-04			5.220g		NA			
10	-05			5.216g		NA			
11	-06			5.164g		NA			
12	-07			5.071g		NA			
13	-08			5.071g		NA			
14	-09			5.075g		NA			
15	-10			5.005g		NA			
16									
17									
18									
19									
20									
21									
22									
23									
24									

JWR 03/17/16

Reviewed by: Wade T. [illegible] 3-17-16

Analytical WG561316 (soils)

Perchlorate Conductivity Check

(perchlorate1)

Conductivity Probe Calibration Check: 1403 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG561289-01 MCT	9,880.	
WG561289-02 Blank	1.76	
WG561289-LCS	2.05	
L16030861-01 Ref	4.96	
-01 MS	5.02	
-01 MSD	4.99	
-02	5.47	
-03	5.39	
-04	65.5	
-05	77.0	
-06	33.6	
-07	17.77	
-08	13.98	
-09	25.3	
-10	34.6	

Analyst: John Richards

Date/Time: 03/18/16 / 1300

DCN#117300

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030216_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015, WG559292

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 MS/MSD STD: STD72685

Comments: L16021262s and L16021255s diluted based on historical data.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM33567	WG559340-01 CCB	1	1		03/02/16 08:34
2	1LM.LM33568	WG559340-02 STD (0.1 ug/L)	1	1	STD72683	03/02/16 08:53
3	1LM.LM33569	WG559340-03 STD (0.2 ug/L)	1	1	STD72683	03/02/16 09:12
4	1LM.LM33570	WG559340-04 STD (0.5 ug/L)	1	1	STD72683	03/02/16 09:31
5	1LM.LM33571	WG559340-05 STD (1.0 ug/L)	1	1	STD72683	03/02/16 09:50
6	1LM.LM33572	WG559340-06 STD (2.0 ug/L)	1	1	STD72683	03/02/16 10:09
7	1LM.LM33573	WG559340-07 STD (5.0 ug/L)	1	1	STD72683	03/02/16 10:28
8	1LM.LM33574	WG559340-08 STD (10 ug/L)	1	1	STD72683	03/02/16 10:46
9	1LM.LM33575	WG559340-09 SSCV (1.0 ug/L)	1	1	STD72685	03/02/16 11:05
10	1LM.LM33576	WG559291-01 CCB	1	1		03/02/16 11:25
11	1LM.LM33577	WG559291-02 CCV (1.0ug/L)	1	1	STD72683	03/02/16 11:44
12	1LM.LM33578	WG559015-05 MRL (0.2ug/L)	1	1	STD72683	03/02/16 12:03
13	1LM.LM33579	WG559015-01 MCT (0.2ug/L)	1	1	STD72685	03/02/16 12:22
14	1LM.LM33580	WG559015-02 BLANK	1	1		03/02/16 12:41
15	1LM.LM33581	WG559015-05 MRL (0.2ug/L)	1	1	STD72683	03/02/16 13:01
16	1LM.LM33582	WG559015-03 LCS (0.2ug/L)	1	1	STD72685	03/02/16 13:20
17	1LM.LM33583	WG559015-04 LCS2 (0.2ug/L)	1	1	STD72685	03/02/16 13:39
18	1LM.LM33584	L16021060-01 ADC	1	1	STD72685	03/02/16 13:58
19	1LM.LM33585	L16021060-02 ADC	1	1	STD72685	03/02/16 14:17
20	1LM.LM33586	L16021060-03 ADC	1	1	STD72685	03/02/16 14:36
21	1LM.LM33587	L16021060-04 ADC	1	1	STD72685	03/02/16 14:55
22	1LM.LM33588	L16021262-01 (20x)	1	20		03/02/16 15:13
23	1LM.LM33589	L16021262-02 (5000x)	1	5000		03/02/16 15:32
24	1LM.LM33590	WG559291-03 CCV (1.0ug/L)	1	1	STD72683	03/02/16 15:51
25	1LM.LM33591	WG559015-06 MRL (0.2ug/L)	1	1	STD72683	03/02/16 16:10
26	1LM.LM33592	WG559291-04 CCB	1	1		03/02/16 16:29
27	1LM.LM33593	L16021262-03 (100X)	1	100		03/02/16 16:48
28	1LM.LM33594	L16021262-04 (2000X)	1	2000		03/02/16 17:07
29	1LM.LM33595	L16021262-05 (1000X)	1	1000		03/02/16 17:26
30	1LM.LM33596	L16021262-06 (10,000X)	1	10000		03/02/16 17:45
31	1LM.LM33597	L16021262-07 (10,000X)	1	10000		03/02/16 18:04
32	1LM.LM33598	L16021262-08 (5000X)	1	5000		03/02/16 18:23
33	1LM.LM33599	L16021262-09 (5000X)	1	5000		03/02/16 18:42

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030216_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015, WG559292

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM33600	L16021262-10 (100,000X)	1	100000		03/02/16 19:01
35	1LM.LM33601	L16021262-11 (10,000X)	1	10000		03/02/16 19:20
36	1LM.LM33602	L16021262-12 (10,000X)	1	10000		03/02/16 19:39
37	1LM.LM33603	WG559291-05 CCV (1.0ug/L)	1	1	STD72683	03/02/16 19:58
38	1LM.LM33604	WG559015-07 MRL (0.2ug/L)	1	1	STD72683	03/02/16 20:17
39	1LM.LM33605	WG559291-06 CCB	1	1		03/02/16 20:35
40	1LM.LM33606	L16021262-13 (10,000X)	1	10000		03/02/16 20:54
41	1LM.LM33607	L16021262-14 (10,000X)	1	10000		03/02/16 21:13
42	1LM.LM33608	WG559291-07 CCV (1.0ug/L)	1	1	STD72683	03/02/16 21:32
43	1LM.LM33609	WG559015-08 MRL (0.2ug/L)	1	1	STD72683	03/02/16 21:51
44	1LM.LM33610	WG559291-08 CCB	1	1		03/02/16 22:10
45	1LM.LM33611	WG559292-07 MRL (0.2ug/L)	1	1	STD72685	03/02/16 22:29
46	1LM.LM33612	WG559292-01 MCT (0.2ug/L)	1	1	STD72685	03/02/16 22:48
47	1LM.LM33613	WG559292-02 BLANK	1	1		03/02/16 23:07
48	1LM.LM33614	WG559292-03 LCS (0.2ug/L)	1	1	STD72685	03/02/16 23:26
93	1LM.LM33615	L16021255-01 REF 100X	1	100		03/02/16 23:45
50	1LM.LM33616	L16021255-02 MS 100X	1	100	STD72685	03/03/16 00:04
51	1LM.LM33617	L16021255-03 MSD 100X	1	100	STD72685	03/03/16 00:23
94	1LM.LM33618	L16021255-04 20X	1	20		03/03/16 00:42
53	1LM.LM33619	L16021255-05 20X	1	20		03/03/16 01:01
54	1LM.LM33620	L16021255-06 200X	1	200		03/03/16 01:20
55	1LM.LM33621	L16021255-07 100X	1	100		03/03/16 01:39
56	1LM.LM33622	WG559291-09 CCV (1.0ug/L)	1	1	STD72685	03/03/16 01:57
57	1LM.LM33623	WG559292-08 MRL (0.2ug/L)	1	1	STD72685	03/03/16 02:16
58	1LM.LM33624	WG559291-10 CCB	1	1		03/03/16 02:35
59	1LM.LM33625	L16021255-08	1	1		03/03/16 02:54
60	1LM.LM33626	L16021255-09 500X	1	500		03/03/16 03:13
61	1LM.LM33627	L16021255-10 5000X	1	5000		03/03/16 03:32
62	1LM.LM33628	L16021255-11 5000X	1	5000		03/03/16 03:51
63	1LM.LM33629	L16021255-12 100X	1	100		03/03/16 04:10
64	1LM.LM33630	L16021255-13 10,000X	1	10000		03/03/16 04:29
65	1LM.LM33631	L16021255-14 10,000X	1	10000		03/03/16 04:48
66	1LM.LM33632	L16030008-01	1	1		03/03/16 05:07
67	1LM.LM33633	L16030008-01 10X	1	10		03/03/16 05:26
68	1LM.LM33634	L16021328-01	1	1		03/03/16 05:45
69	1LM.LM33635	WG559291-11 CCV (1.0ug/L)	1	1	STD72685	03/03/16 06:04

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030216_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015, WG559292

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
70	1LM.LM33636	WG559292-09 MRL (0.2ug/L)	1	1	STD72685	03/03/16 06:23
71	1LM.LM33637	WG559291-12 CCB	1	1		03/03/16 06:41
72	1LM.LM33638	L16021328-02	1	1		03/03/16 07:00
73	1LM.LM33639	L16021328-03	1	1		03/03/16 07:19
74	1LM.LM33640	L16021328-04	1	1		03/03/16 07:38
75	1LM.LM33641	L16021328-05	1	1		03/03/16 07:57
76	1LM.LM33642	WG559291-13 CCV (1.0ug/L)	1	1	STD72685	03/03/16 08:16
77	1LM.LM33643	WG559292-10 MRL (0.2ug/L)	1	1	STD72685	03/03/16 08:35
78	1LM.LM33644	WG559291-14 CCB	1	1		03/03/16 08:54
79	1LM.LM33645	L16021255-05 200X	1	200		03/03/16 09:13
80	1LM.LM33646	L16021255-06	1	1		03/03/16 09:32
81	1LM.LM33647	L16021255-12 1000X	1	1000		03/03/16 09:51
95	1LM.LM33648	L16021255-04	1	1		03/03/16 10:10
96	1LM.LM33649	L16021255-02 MS	1	1	STD72685	03/03/16 10:29
97	1LM.LM33650	L16021255-03 MSD	1	1	STD72685	03/03/16 10:48
85	1LM.LM33651	WG559291-15 CCV (1.0ug/L)	1	1	STD72685	03/03/16 11:07
86	1LM.LM33652	WG559292-11 MRL (0.2ug/L)	1	1	STD72685	03/03/16 11:25
87	1LM.LM33653	WG559291-16 CCB	1	1		03/03/16 11:44

Comments

Seq.	Rerun	Dil.	Reason	Analytes
12	X			
	WG559015-05 incorrect vial location.			
50				
	DNR. Incorrect information on the supplied Chain of Custody.			
51				
	DNR. Incorrect information on the supplied Chain of Custody.			
94	X	1	Analyzed too dilute	
	L16021255-04			
53	X	200	Over Calibration Range	Perchlorate
	L16021255-05			
54	X	1	Analyzed too dilute	
	L16021255-06			
63	X	1000	Over Calibration Range	
	L16021255-12 100X			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 031716_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG561316 (soils) Analytical WG561318 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD72683 (03/02/2016)

CCV STD: STD72683 LCS STD: STD72685 MS/MSD STD: STD72685

Comments: Samples tagged with (NR) had "On Column" results over the calibration range when analyzed neat. These samples were reanalyzed at dilutions on the end of the run.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM33881	WG561324-01 CCB	1	1		03/17/16 15:00
2	1LM.LM33882	WG561324-02 CCV (1.0ug/L)	1	1	STD72683	03/17/16 15:19
3	1LM.LM33883	WG561316-07 MRL (2.0ug/kg)	7	1	STD72683	03/17/16 15:38
4	1LM.LM33884	WG561316-01 MCT (2.0ug/kg)	7	1	STD72685	03/17/16 15:57
5	1LM.LM33885	WG561316-02 BLANK	7	1		03/17/16 16:16
6	1LM.LM33886	WG561316-03 LCS (2.0ug/kg)	7	1	STD72685	03/17/16 16:35
7	1LM.LM33887	L16030861-01 REF	7	1		03/17/16 16:54
8	1LM.LM33888	L16030861-01 MS	7	1	STD72685	03/17/16 17:13
9	1LM.LM33889	L16030861-01 MSD	7	1	STD72685	03/17/16 17:32
10	1LM.LM33890	L16030861-02	7	1		03/17/16 17:51
11	1LM.LM33891	L16030861-03	7	1		03/17/16 18:10
12	1LM.LM33892	L16030861-04	7	1		03/17/16 18:29
13	1LM.LM33893	L16030861-05	7	1		03/17/16 18:48
14	1LM.LM33894	WG561324-03 CCV (1.0ug/L)	1	1	STD72683	03/17/16 19:07
15	1LM.LM33895	WG561316-08 MRL (2.0ug/kg)	7	1	STD72683	03/17/16 19:25
16	1LM.LM33896	WG561324-04 CCB	1	1		03/17/16 19:44
17	1LM.LM33897	L16030861-06	7	1		03/17/16 20:03
18	1LM.LM33898	L16030861-07	7	1		03/17/16 20:22
19	1LM.LM33899	L16030861-08 (NR)	7	1		03/17/16 20:41
20	1LM.LM33900	L16030861-09 (NR)	7	1		03/17/16 21:00
21	1LM.LM33901	L16030861-10 (NR)	7	1		03/17/16 21:19
22	1LM.LM33902	WG561324-05 CCV (1.0ug/L)	1	1	STD72683	03/17/16 21:38
23	1LM.LM33903	WG561316-09 MRL (2.0ug/kg)	7	1	STD72683	03/17/16 21:57
24	1LM.LM33904	WG561318-07 MRL (2.0ug/kg)	7	1	STD72683	03/17/16 22:16
25	1LM.LM33905	WG561324-06 CCB	1	1		03/17/16 22:35
26	1LM.LM33906	WG561318-01 MCT (2.0ug/kg)	7	1	STD72685	03/17/16 22:54
27	1LM.LM33907	WG561318-02 BLANK	7	1		03/17/16 23:13
28	1LM.LM33908	WG561318-03 LCS (2.0ug/kg)	7	1	STD72685	03/17/16 23:32
29	1LM.LM33909	L16030863-01 RS	7	1		03/17/16 23:51
30	1LM.LM33910	L16030863-02 MS	7	1	STD72685	03/18/16 00:09
31	1LM.LM33911	L16030863-03 MSD	7	1	STD72685	03/18/16 00:28
32	1LM.LM33912	L16030863-04	7	1		03/18/16 00:47
33	1LM.LM33913	L16030863-05 (NR)	7	1		03/18/16 01:06

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 031716_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG561316 (soils) Analytical WG561318 (soils)

Internal STD: COA18071 Surrogate STD: NA STD72683 (03/02/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM33914	L16030863-06 (NR)	7	1		03/18/16 01:25
35	1LM.LM33915	L16030863-07 (NR)	7	1		03/18/16 01:44
36	1LM.LM33916	WG561324-07 CCV (1.0ug/L)	1	1	STD72683	03/18/16 02:03
37	1LM.LM33917	WG561318-08 MRL (2.0ug/kg)	7	1	STD72683	03/18/16 02:22
38	1LM.LM33918	WG561324-08 CCB	1	1		03/18/16 02:41
39	1LM.LM33919	L16030863-08	7	1		03/18/16 03:00
40	1LM.LM33920	L16030863-09	7	1		03/18/16 03:19
41	1LM.LM33921	L16030863-10	7	1		03/18/16 03:38
42	1LM.LM33922	L16030863-11	7	1		03/18/16 03:57
43	1LM.LM33923	L16030863-12 (NR)	7	1		03/18/16 04:16
44	1LM.LM33924	L16030863-13 (NR)	7	1		03/18/16 04:35
45	1LM.LM33925	L16030863-14 (NR)	7	1		03/18/16 04:54
46	1LM.LM33926	WG561324-09 CCV (1.0ug/L)	1	1	STD72683	03/18/16 05:12
47	1LM.LM33927	WG561318-09 MRL (2.0ug/kg)	7	1	STD72683	03/18/16 05:31
48	1LM.LM33928	WG561324-10 CCB	1	1		03/18/16 05:50
49	1LM.LM33929	WG561324-11 CCV (1.0ug/L)	1	1	STD72683	03/18/16 12:15
50	1LM.LM33930	WG561316-10 MRL (2.0ug/kg)	7	1	STD72683	03/18/16 12:34
51	1LM.LM33931	WG561318-10 MRL (2.0ug/kg)	7	1	STD72683	03/18/16 12:53
52	1LM.LM33932	WG561324-12 CCB	1	1		03/18/16 13:12
53	1LM.LM33933	L16030861-08 (RR 100x)	7	100		03/18/16 13:31
54	1LM.LM33934	L16030861-09 (RR 100x)	7	100		03/18/16 13:50
55	1LM.LM33935	L16030861-10 (RR 100x)	7	100		03/18/16 14:09
56	1LM.LM33936	L16030863-05 (RR 10x)	7	10		03/18/16 14:28
57	1LM.LM33937	L16030863-06 (RR 50x)	7	50		03/18/16 14:46
58	1LM.LM33938	L16030863-07 (RR 100x)	7	100		03/18/16 15:05
59	1LM.LM33939	L16030863-12 (RR 10x)	7	10		03/18/16 15:24
60	1LM.LM33940	L16030863-13 (RR 100x)	7	100		03/18/16 15:43
61	1LM.LM33941	L16030863-14 (RR 50x)	7	50		03/18/16 16:02
62	1LM.LM33942	WG561324-13 CCV (1.0ug/L)	1	1	STD72683	03/18/16 16:21
63	1LM.LM33943	WG561316-11 MRL (2.0ug/kg)	7	1	STD72683	03/18/16 16:40
64	1LM.LM33944	WG561318-11 MRL (2.0ug/kg)	7	1	STD72683	03/18/16 16:59
65	1LM.LM33945	WG561324-14 CCB	1	1		03/18/16 17:18

Comments

Seq.	Rerun	Dil.	Reason	Analytes
30				

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 031716_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG561316 (soils) Analytical WG561318 (soils)

Internal STD: COA18071 Surrogate STD: NA STD72683 (03/02/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Comments

Seq.	Rerun	Dil.	Reason	Analytes
	L16030863-02 MS : The MS %Rec is below the advisory limit. The parent sample to this MS had a result 17 times greater than that of the spiked amount. This sample's matrix is a non-homogeneous mixture of brown, red and white colored "clay-like" soils.			
31				
	L16030863-03 MSD : The MSD %Rec is above the advisory limit. The parent sample to this MSD had a result 17 times greater than that of the spiked amount. This sample's matrix is a non-homogeneous mixture of brown, red and white colored "clay-like" soils.			

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Microbac Laboratories Inc.

Data Checklist

Date: 02-MAR-2016
Analyst: WTD
Analyst: ADC
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 73617
Analytical Workgroups: L16021255,L16021328,030008,021262,021060

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	WTD
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MES

Primary Reviewer: 03-MAR-2016

Secondary Reviewer: 04-MAR-2016

CHECKLIST1 - Modified 03/05/2008

Generated: MAR-04-2016 13:53:03

Microbac Laboratories Inc.

Data Checklist

Date: 17-MAR-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 73926
Analytical Workgroups: L16030861, 0863 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
18-MAR-2016
John Richards

Secondary Reviewer:
21-MAR-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-21-2016 10:23:48

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG561316

Login Number: L16030861

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18DPT14(5-5.5)140316	01	03/14/16					03/17/2016	3	28		03/17/16	.2	28	
18DPT14(10-10.5)140316	02	03/14/16					03/17/2016	2.9	28		03/17/16	.2	28	
18DPT14(10-10.5)140316FD	03	03/14/16					03/17/2016	2.9	28		03/17/16	.3	28	
18DPT14(17-17.5)140316	04	03/14/16					03/17/2016	2.9	28		03/17/16	.3	28	
18DPT14(23-23.5)140316	05	03/14/16					03/17/2016	2.9	28		03/17/16	.3	28	
18DPT15(5-5.5)140316	06	03/14/16					03/17/2016	2.8	28		03/17/16	.3	28	
18DPT15(12-12.5)140316	07	03/14/16					03/17/2016	2.8	28		03/17/16	.3	28	
18DPT15(21-21.5)140316	08	03/14/16					03/17/2016	2.8	28		03/18/16	1.1	28	
18DPT15(23.5-24)140316	09	03/14/16					03/17/2016	2.8	28		03/18/16	1.1	28	
18DPT15(26.5-27)140316	10	03/14/16					03/17/2016	2.8	28		03/18/16	1.1	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4679306
Report generated 03/22/2016 09:53

METHOD BLANK SUMMARY

Login Number: L16030861
Blank File ID: 1LM.LM33885
Prep Date: 03/17/16 12:00
Analyzed Date: 03/17/16 16:16
Analyst: JWR

Work Group: WG561316
Blank Sample ID: WG561316-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG561316-07	1LM.LM33883	03/17/16 15:38	01
MCT	WG561316-01	1LM.LM33884	03/17/16 15:57	01
LCS	WG561316-03	1LM.LM33886	03/17/16 16:35	01
18DPT14(5-5.5)140316	L16030861-01	1LM.LM33887	03/17/16 16:54	01
18DPT14(10-10.5)140316	L16030861-02	1LM.LM33890	03/17/16 17:51	01
18DPT14(10-10.5)140316FD	L16030861-03	1LM.LM33891	03/17/16 18:10	01
18DPT14(17-17.5)140316	L16030861-04	1LM.LM33892	03/17/16 18:29	01
18DPT14(23-23.5)140316	L16030861-05	1LM.LM33893	03/17/16 18:48	01
QCMRL	WG561316-08	1LM.LM33895	03/17/16 19:25	01
18DPT15(5-5.5)140316	L16030861-06	1LM.LM33897	03/17/16 20:03	01
18DPT15(12-12.5)140316	L16030861-07	1LM.LM33898	03/17/16 20:22	01
QCMRL	WG561316-09	1LM.LM33903	03/17/16 21:57	01
QCMRL	WG561316-10	1LM.LM33930	03/18/16 12:34	01
18DPT15(21-21.5)140316	L16030861-08	1LM.LM33933	03/18/16 13:31	DL01
18DPT15(23.5-24)140316	L16030861-09	1LM.LM33934	03/18/16 13:50	DL01
18DPT15(26.5-27)140316	L16030861-10	1LM.LM33935	03/18/16 14:09	DL01
QCMRL	WG561316-11	1LM.LM33943	03/18/16 16:40	01

Report Name: BLANK_SUMMARY
PDF File ID: 4679307
Report generated 03/22/2016 09:54

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16030861 Prep Date: 03/17/16 12:00 Sample ID: WG561316-02
Instrument ID: LCMS1 Run Date: 03/17/16 16:16 Prep Method: 6850
File ID: 1LM.LM33885 Analyst: JWR Method: 6850
Workgroup (AAB#): WG561316 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.998	3.99	0.998	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4679308
22-MAR-2016 09:54

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030861 Run Date: 03/17/2016 Sample ID: WG561316-03
Instrument ID: LCMS1 Run Time: 16:35 Prep Method: 6850
File ID: 1LM.LM33886 Analyst: JWR Method: 6850
Workgroup (AAB#): WG561316 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD72685 Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	2.00	2.03	102	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4679309
Report generated: 03/22/2016 09:54

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16030861 Cal ID: LCMS1 - Worknum: WG561316
Instrument ID: LCMS1 Contract #: Method: 6850
Parent ID: WG561316-04 File ID: 1LM.LM33887 Dil: 1 Matrix: SOLID
Sample ID: WG561316-05 MS File ID: 1LM.LM33888 Dil: 1 Units: ug/kg
Sample ID: WG561316-06 MSD File ID: 1LM.LM33889 Dil: 1 Percent Solid: 82.5

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Perchlorate	ND	2.38	2.42	102	2.38	2.37	99.5	2.05	80 - 120	15	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4679310
Report generated 03/22/2016 09:54

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16030861
Analytical Method: 6850
ICAL Workgroup: WG559340

Instrument ID: LCMS1
Initial Calibration Date: 02-MAR-16 10:46
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.808	3.97	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4680047
Report generated 03/22/2016 09:54

Login Number: L16030861
Analytical Method: 6850
Instrument ID: LCMS1
Initial Calibration Date: 02-MAR-16 10:46
Column ID: F

Analyte	WG559340-02			WG559340-03			WG559340-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	18400.0000	1.879	0.200	37000.0000	1.850	0.500	89000.0000	1.810

INT_CAL - Modified 03/06/2008
PDF File ID: 4680047
Report generated 03/22/2016 09:54

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16030861
Analytical Method: 6850

Instrument ID: LCMS1
Initial Calibration Date: 02-MAR-16 10:46
Column ID: F

Analyte	WG559340-05			WG559340-06			WG559340-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	183000.000	1.829	2.00	363000.000	1.777	5.00	871000.000	1.779

INT_CAL - Modified 03/06/2008
PDF File ID: 4680047
Report generated 03/22/2016 09:54

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16030861
Analytical Method: 6850

Instrument ID: LCMS1
Initial Calibration Date: 02-MAR-16 10:46
Column ID: F

Analyte	WG559340-08		
	CONC	RESP	RF
Perchlorate	10.0	1650000.00	1.729

INT_CAL - Modified 03/06/2008
PDF File ID: 4680047
Report generated 03/22/2016 09:54

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16030861 Run Date: 03/02/2016 Sample ID: WG559340-09
Instrument ID: LCMS1 Run Time: 11:05 Method: 6850
File ID: 1LM.LM33575 Analyst: WTD QC Key: DOD4
ICal Workgroup: WG559340 Cal ID: LCMS1 - 02-MAR-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.83	3.00	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4680048
Report generated 03/22/2016 09:54

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030861
Run Date: 03/17/2016
Sample ID: WG561324-01
Instrument ID: LCMS1
Run Time: 15:00
Method: 6850
File ID: 1LM.LM33881
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG561316
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4679313
Report generated 03/22/2016 09:54

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030861
Run Date: 03/17/2016
Sample ID: WG561324-04
Instrument ID: LCMS1
Run Time: 19:44
Method: 6850
File ID: 1LM.LM33896
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG561316
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4679313
Report generated 03/22/2016 09:54

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030861
Run Date: 03/17/2016
Sample ID: WG561324-06
Instrument ID: LCMS1
Run Time: 22:35
Method: 6850
File ID: 1LM.LM33905
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG561316
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4679313
Report generated 03/22/2016 09:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030861
Run Date: 03/18/2016
Sample ID: WG561324-10
Instrument ID: LCMS1
Run Time: 05:50
Method: 6850
File ID: 1LM.LM33928
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG561316
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4679313
Report generated 03/22/2016 09:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030861
Run Date: 03/18/2016
Sample ID: WG561324-12
Instrument ID: LCMS1
Run Time: 13:12
Method: 6850
File ID: 1LM.LM33932
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG561316
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4679313
Report generated 03/22/2016 09:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030861
Run Date: 03/18/2016
Sample ID: WG561324-14
Instrument ID: LCMS1
Run Time: 17:18
Method: 6850
File ID: 1LM.LM33945
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG561316
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4679313
Report generated 03/22/2016 09:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030861 Run Date: 03/17/2016 Sample ID: WG561324-02
Instrument ID: LCMS1 Run Time: 15:19 Method: 6850
File ID: 1LM.LM33882 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG561316 Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.975	ug/kg	1.73	2.50	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4679312
Report generated 03/22/2016 09:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030861 Run Date: 03/17/2016 Sample ID: WG561324-03
Instrument ID: LCMS1 Run Time: 19:07 Method: 6850
File ID: 1LM.LM33894 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG561316 Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/kg	1.74	1.50	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4679312
Report generated 03/22/2016 09:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030861 Run Date: 03/17/2016 Sample ID: WG561324-05
Instrument ID: LCMS1 Run Time: 21:38 Method: 6850
File ID: 1LM.LM33902 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG561316 Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.993	ug/kg	1.76	0.700	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4679312
Report generated 03/22/2016 09:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030861 Run Date: 03/18/2016 Sample ID: WG561324-07
Instrument ID: LCMS1 Run Time: 02:03 Method: 6850
File ID: 1LM.LM33916 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG561316 Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.993	ug/kg	1.76	0.700	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4679312
Report generated 03/22/2016 09:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030861 Run Date: 03/18/2016 Sample ID: WG561324-11
Instrument ID: LCMS1 Run Time: 12:15 Method: 6850
File ID: 1LM.LM33929 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG561316 Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.976	ug/kg	1.73	2.40	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4679312
Report generated 03/22/2016 09:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030861
Run Date: 03/18/2016
Sample ID: WG561324-13
Instrument ID: LCMS1
Run Time: 16:21
Method: 6850
File ID: 1LM.LM33942
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG561316
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.978	ug/kg	1.73	2.20	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4679312
Report generated 03/22/2016 09:54

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030861 Run Date: 03/17/2016 Sample ID: WG561316-07
Instrument ID: LCMS1 Run Time: 15:38 Prep Method: 6850
File ID: 1LM.LM33883 Analyst: JWR Method: 6850
Workgroup (AAB#): WG561316 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.88	94.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4679311
Report generated 03/22/2016 09:54

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030861 Run Date: 03/17/2016 Sample ID: WG561316-08

Instrument ID: LCMS1 Run Time: 19:25 Prep Method: 6850

File ID: 1LM.LM33895 Analyst: JWR Method: 6850

Workgroup (AAB#): WG561316 Matrix: Soil Units: ug/kg

Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.89	94.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4679311
Report generated 03/22/2016 09:54

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030861 Run Date: 03/17/2016 Sample ID: WG561316-09

Instrument ID: LCMS1 Run Time: 21:57 Prep Method: 6850

File ID: 1LM.LM33903 Analyst: JWR Method: 6850

Workgroup (AAB#): WG561316 Matrix: Soil Units: ug/kg

Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.94	97.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4679311
Report generated 03/22/2016 09:54

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030861 Run Date: 03/18/2016 Sample ID: WG561316-10

Instrument ID: LCMS1 Run Time: 12:34 Prep Method: 6850

File ID: 1LM.LM33930 Analyst: JWR Method: 6850

Workgroup (AAB#): WG561316 Matrix: Soil Units: ug/kg

Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.93	96.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4679311
Report generated 03/22/2016 09:54

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030861 Run Date: 03/18/2016 Sample ID: WG561316-11

Instrument ID: LCMS1 Run Time: 16:40 Prep Method: 6850

File ID: 1LM.LM33943 Analyst: JWR Method: 6850

Workgroup (AAB#): WG561316 Matrix: Soil Units: ug/kg

Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.95	97.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4679311
Report generated 03/22/2016 09:54

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16030861
Instrument ID: LCMS1
Workgroup (AAB#): WG561316

ICAL CCV Number: WG559340-05
CAL ID: LCMS1-02-MAR-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1
WG559340	NA	NA	494000
Upper Limit	NA	NA	741000
Lower Limit	NA	NA	247000
L16030861-01	1.00	01	479000
L16030861-02	1.00	01	491000
L16030861-03	1.00	01	518000
L16030861-04	1.00	01	505000
L16030861-05	1.00	01	533000
L16030861-06	1.00	01	538000
L16030861-07	1.00	01	520000
L16030861-08	100	DL01	457000
L16030861-09	100	DL01	452000
L16030861-10	100	DL01	451000
WG561316-02	1.00	01	483000
WG561316-03	1.00	01	460000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4679314
Report generated 03/22/2016 09:54

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**	6850	**Samplenum:**	L16030861-01
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:00	**File ID:**	1LM.LM33887
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561316	**Analysis Date:**	03/17/2016 16:54	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1600	884	1.81	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**	6850	**Samplenum:**	L16030861-02
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:00	**File ID:**	1LM.LM33890
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561316	**Analysis Date:**	03/17/2016 17:51	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1270	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**	6850	**Samplenum:**	L16030861-03
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:00	**File ID:**	1LM.LM33891
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561316	**Analysis Date:**	03/17/2016 18:10	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1510	1050	1.44	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**	6850	**Samplenum:**	L16030861-04
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:00	**File ID:**	1LM.LM33892
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561316	**Analysis Date:**	03/17/2016 18:29	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	810	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**	6850	**Samplenum:**	L16030861-05
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:00	**File ID:**	1LM.LM33893
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561316	**Analysis Date:**	03/17/2016 18:48	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1460	603	2.42	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**	6850	**Samplenum:**	L16030861-06
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:00	**File ID:**	1LM.LM33897
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561316	**Analysis Date:**	03/17/2016 20:03	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1850	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**	6850	**Samplenum:**	L16030861-07
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:00	**File ID:**	1LM.LM33898
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561316	**Analysis Date:**	03/17/2016 20:22	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	693000	225000	3.08	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**	6850	**Samplenum:**	L16030861-08
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:00	**File ID:**	1LM.LM33933
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561316	**Analysis Date:**	03/18/2016 13:31	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	464000	154000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**	6850	**Samplenum:**	L16030861-09
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:00	**File ID:**	1LM.LM33934
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561316	**Analysis Date:**	03/18/2016 13:50	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	786000	252000	3.12	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**	6850	**Samplenum:**	L16030861-10
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:00	**File ID:**	1LM.LM33935
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561316	**Analysis Date:**	03/18/2016 14:09	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	819000	265000	3.09	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**		**Samplenum:**	WG559340-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33568
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561316	**Analysis Date:**	03/02/2016 08:53	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	18400	5910	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**		**Samplenum:**	WG559340-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33569
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561316	**Analysis Date:**	03/02/2016 09:12	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37000	11900	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**		**Samplenum:**	WG559340-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33570
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561316	**Analysis Date:**	03/02/2016 09:31	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	89000	30400	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**		**Samplenum:**	WG559340-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33571
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561316	**Analysis Date:**	03/02/2016 09:50	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	183000	56800	3.22	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**		**Samplenum:**	WG559340-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33572
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561316	**Analysis Date:**	03/02/2016 10:09	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	363000	117000	3.10	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**		**Samplenum:**	WG559340-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33573
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561316	**Analysis Date:**	03/02/2016 10:28	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	871000	282000	3.09	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**		**Samplenum:**	WG559340-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33574
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561316	**Analysis Date:**	03/02/2016 10:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1650000	530000	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**		**Samplenum:**	WG559340-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33575
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561316	**Analysis Date:**	03/02/2016 11:05	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	190000	62200	3.05	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**	6850	**Samplenum:**	WG561316-01
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:00	**File ID:**	1LM.LM33884
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561316	**Analysis Date:**	03/17/2016 15:57	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	33100	11000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**	6850	**Samplenum:**	WG561316-02
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:00	**File ID:**	1LM.LM33885
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561316	**Analysis Date:**	03/17/2016 16:16	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**	6850	**Samplenum:**	WG561316-03
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:00	**File ID:**	1LM.LM33886
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561316	**Analysis Date:**	03/17/2016 16:35	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34700	11800	2.94	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**	6850	**Samplenum:**	WG561316-05
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:00	**File ID:**	1LM.LM33888
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561316	**Analysis Date:**	03/17/2016 17:13	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36400	12300	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**	6850	**Samplenum:**	WG561316-06
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:00	**File ID:**	1LM.LM33889
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561316	**Analysis Date:**	03/17/2016 17:32	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36100	13200	2.73	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**	6850	**Samplenum:**	WG561316-07
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:00	**File ID:**	1LM.LM33883
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561316	**Analysis Date:**	03/17/2016 15:38	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32500	11300	2.88	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**	6850	**Samplenum:**	WG561316-08
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:00	**File ID:**	1LM.LM33895
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561316	**Analysis Date:**	03/17/2016 19:25	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	39000	13200	2.95	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**	6850	**Samplenum:**	WG561316-09
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:00	**File ID:**	1LM.LM33903
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561316	**Analysis Date:**	03/17/2016 21:57	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	39900	13100	3.05	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**	6850	**Samplenum:**	WG561316-10
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:00	**File ID:**	1LM.LM33930
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561316	**Analysis Date:**	03/18/2016 12:34	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35400	11200	3.16	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**	6850	**Samplenum:**	WG561316-11
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:00	**File ID:**	1LM.LM33943
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561316	**Analysis Date:**	03/18/2016 16:40	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37700	12900	2.92	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**		**Samplenum:**	WG561324-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33881
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561316	**Analysis Date:**	03/17/2016 15:00	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**		**Samplenum:**	WG561324-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33882
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561316	**Analysis Date:**	03/17/2016 15:19	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	154000	51700	2.98	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**		**Samplenum:**	WG561324-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33894
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561316	**Analysis Date:**	03/17/2016 19:07	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	185000	61800	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**		**Samplenum:**	WG561324-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33896
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561316	**Analysis Date:**	03/17/2016 19:44	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	268	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**		**Samplenum:**	WG561324-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33902
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561316	**Analysis Date:**	03/17/2016 21:38	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	185000	61400	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**		**Samplenum:**	WG561324-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33905
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561316	**Analysis Date:**	03/17/2016 22:35	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**		**Samplenum:**	WG561324-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33916
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561316	**Analysis Date:**	03/18/2016 02:03	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	187000	61300	3.05	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**		**Samplenum:**	WG561324-10
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33928
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561316	**Analysis Date:**	03/18/2016 05:50	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**		**Samplenum:**	WG561324-11
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33929
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561316	**Analysis Date:**	03/18/2016 12:15	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	162000	54600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**		**Samplenum:**	WG561324-12
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33932
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561316	**Analysis Date:**	03/18/2016 13:12	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	389	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**		**Samplenum:**	WG561324-13
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33942
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561316	**Analysis Date:**	03/18/2016 16:21	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	174000	56500	3.08	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**		**Samplenum:**	WG561324-14
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33945
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561316	**Analysis Date:**	03/18/2016 17:18	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	548	0.000	2.3	3.8	*

2.2.1.3 Sample Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 3/18/2016 6:13 PM

Data File	LM33887.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 4:54:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030861-01 REF	**Injection Vial**	7.00
Data File	LM33887.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 4:54:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561316-04	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.790e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.600e+03	9.95	N/A	< 0
Perchlorate conf	8.840e+02	9.92	N/A	0.0025

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

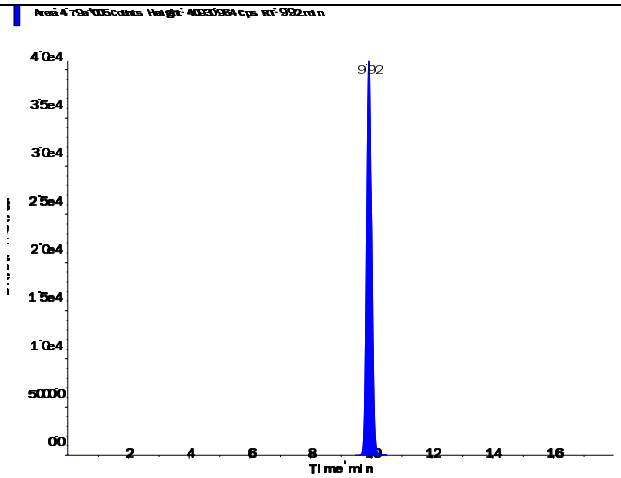

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.003
Sample Type:	(Unknown)

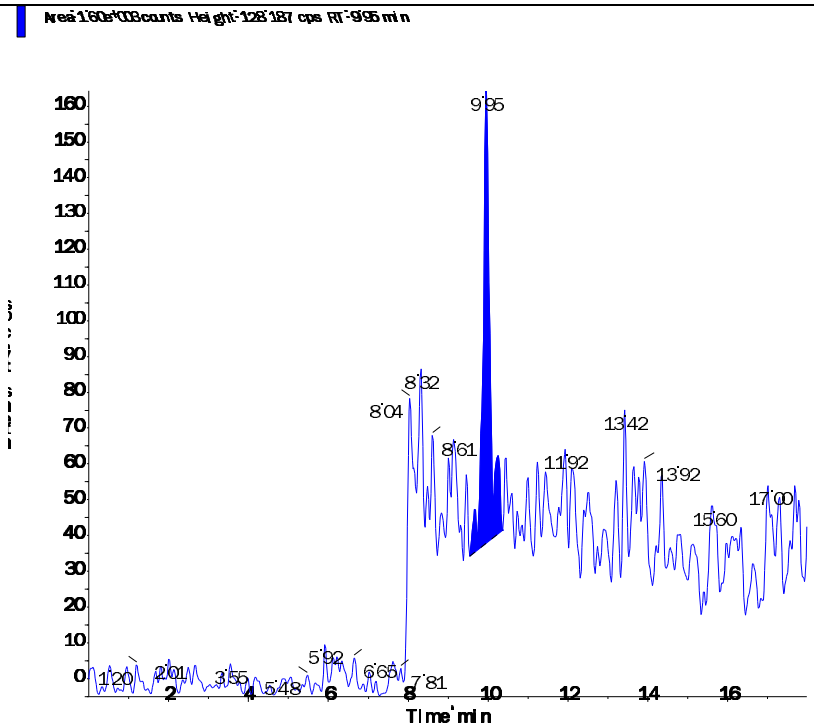

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	0.0025 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

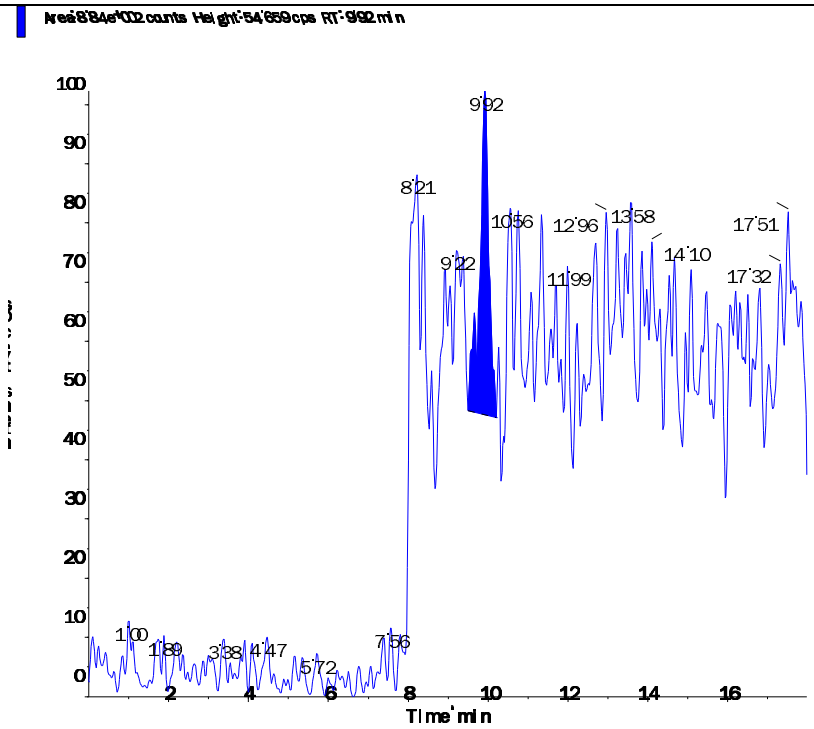

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Printed: 3/18/2016 6:14 PM

Data File	LM33890.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 5:51:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030861-02	**Injection Vial**	10.00
Data File	LM33890.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 5:51:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	L16030861-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.910e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.270e+03	9.93	N/A	< 0
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

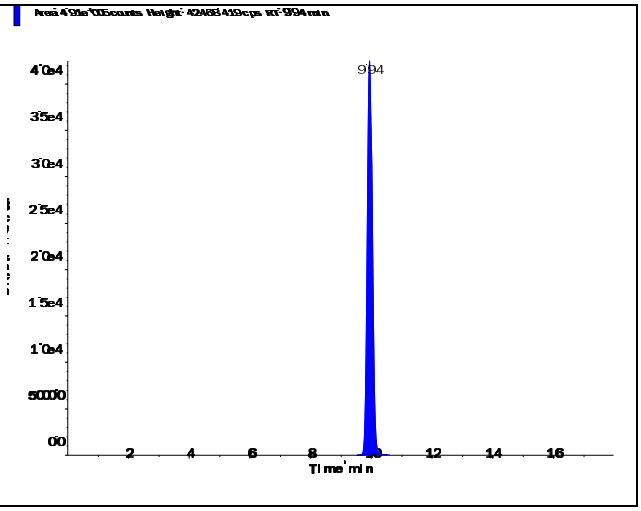

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.003
Sample Type:	(Unknown)

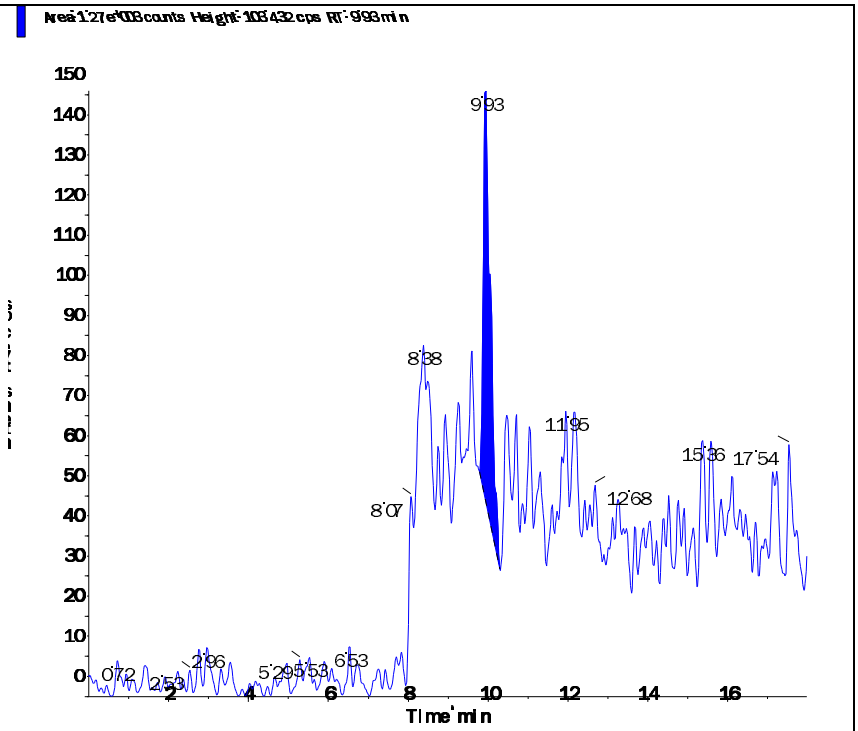

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

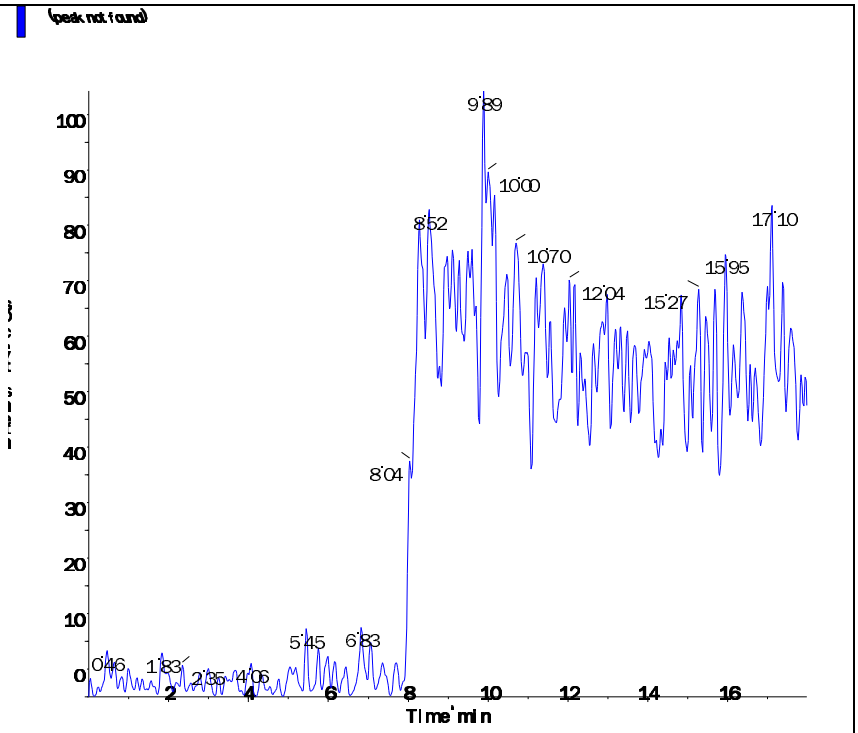

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Data File	LM33891.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 6:10:12 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030861-03	**Injection Vial**	11.00
Data File	LM33891.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 6:10:12 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	L16030861-03	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.180e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.510e+03	9.90	N/A	< 0
Perchlorate conf	1.050e+03	9.91	N/A	0.0041

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

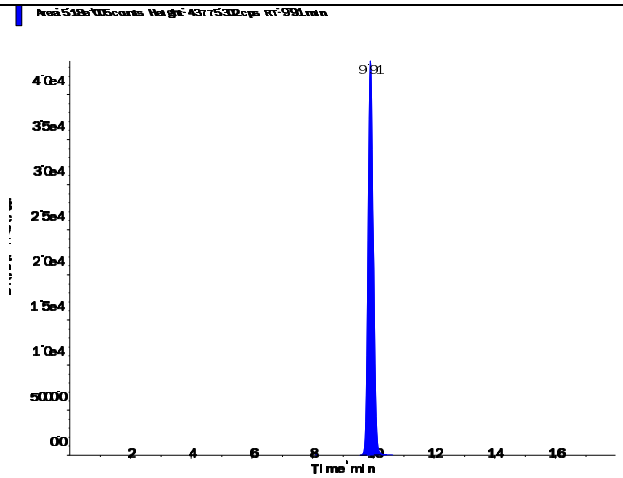

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.90 (9.94) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.003
Sample Type:	(Unknown)

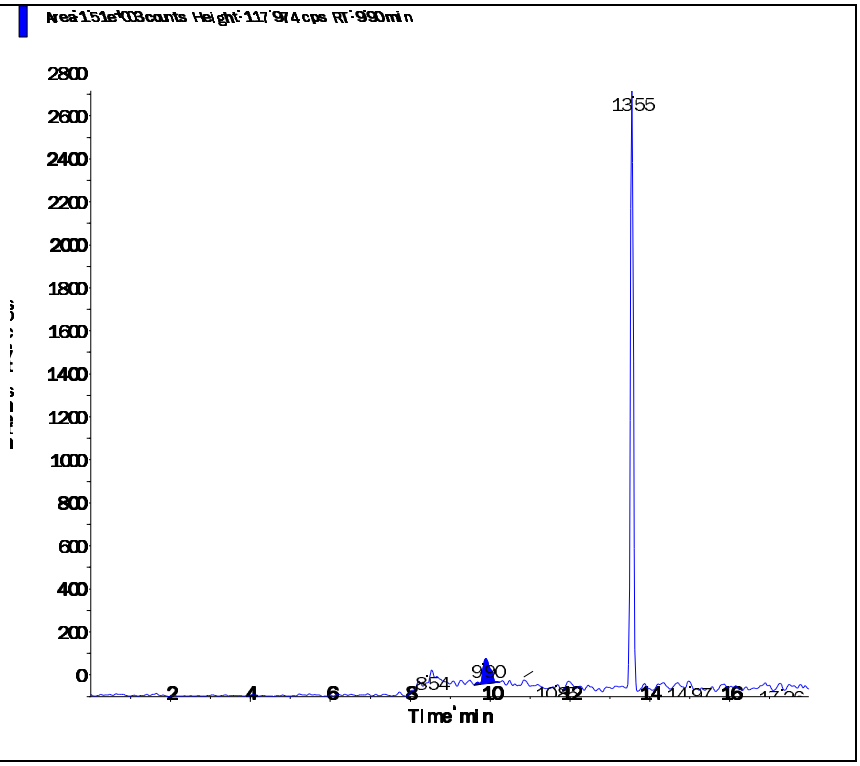

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.92) min
Calculated conc:	0.0041 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

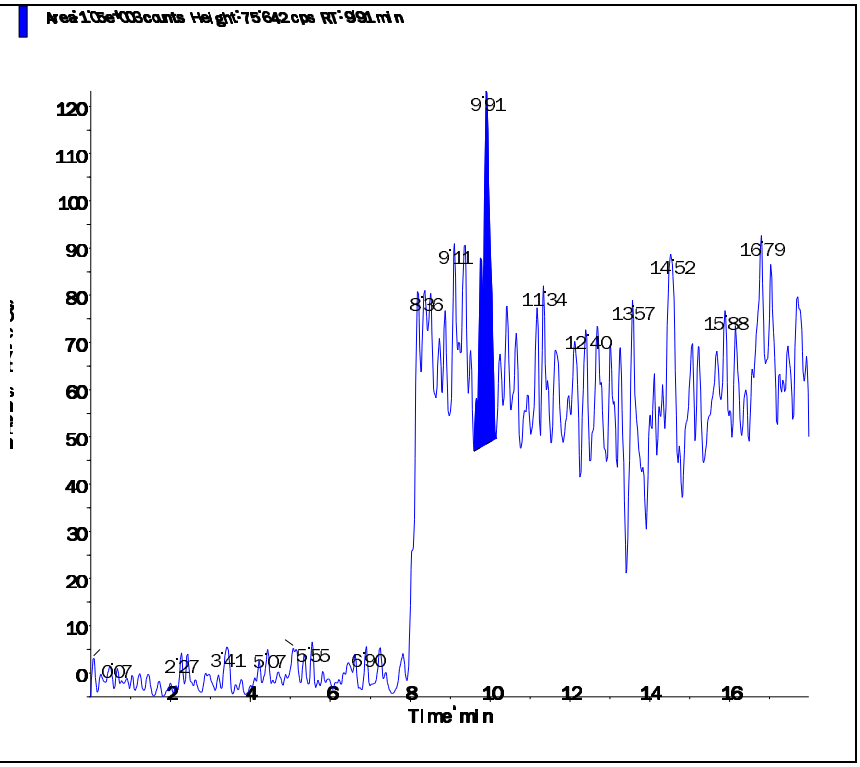

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Data File	LM33892.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 6:29:08 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030861-04	**Injection Vial**	12.00
Data File	LM33892.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 6:29:08 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	L16030861-04	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.050e+05	9.89	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	8.100e+02	9.90	N/A	0.0003

O18LP (Internal Standard)

RT (Exp. RT): 9.89(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

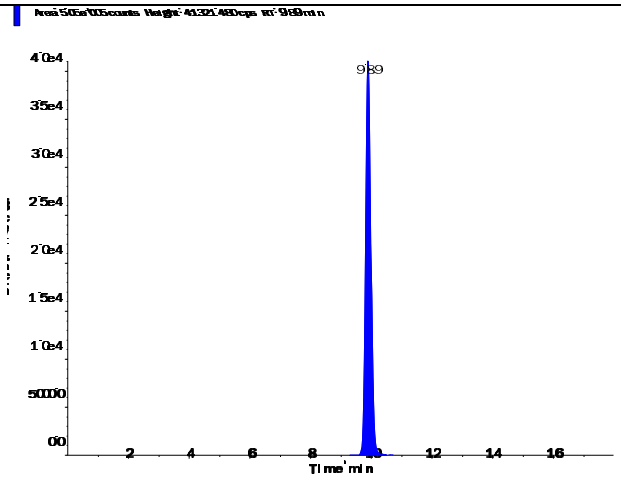

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

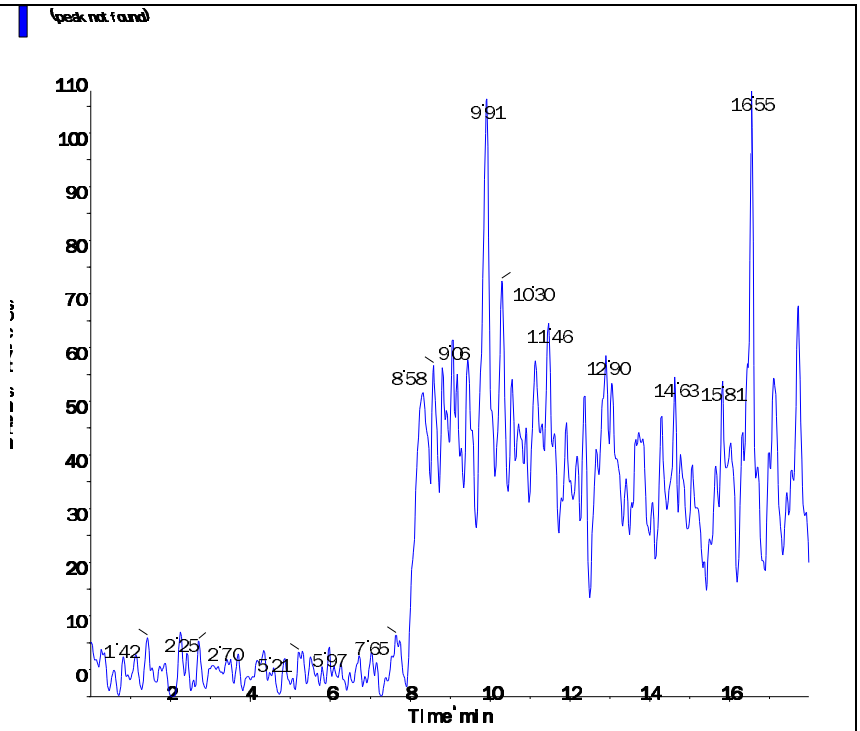

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.90 (9.92) min
Calculated conc:	0.0003 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

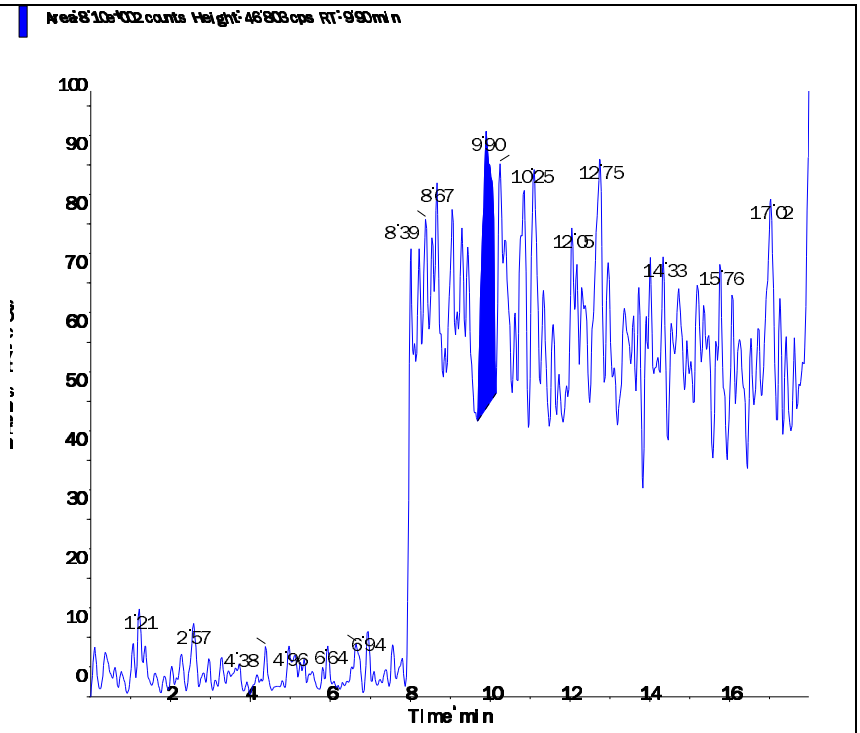

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Data File	LM33893.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 6:48:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030861-05	**Injection Vial**	13.00
Data File	LM33893.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 6:48:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	L16030861-05	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.330e+05	9.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.460e+03	9.91	N/A	< 0
Perchlorate conf	6.030e+02	9.91	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.90(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

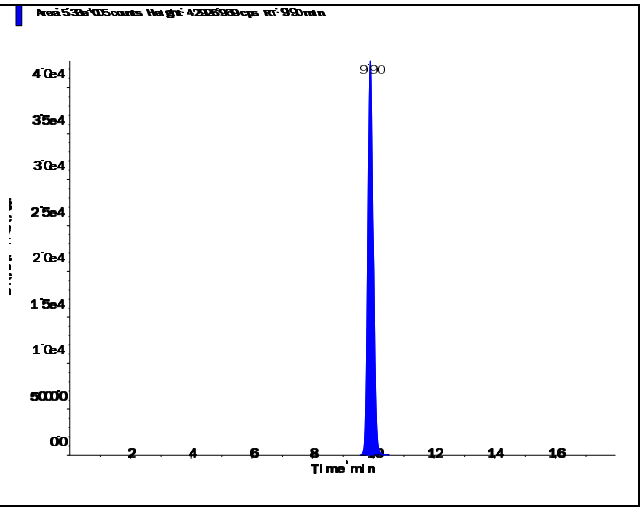

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.91 (9.94) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.003
Sample Type:	(Unknown)

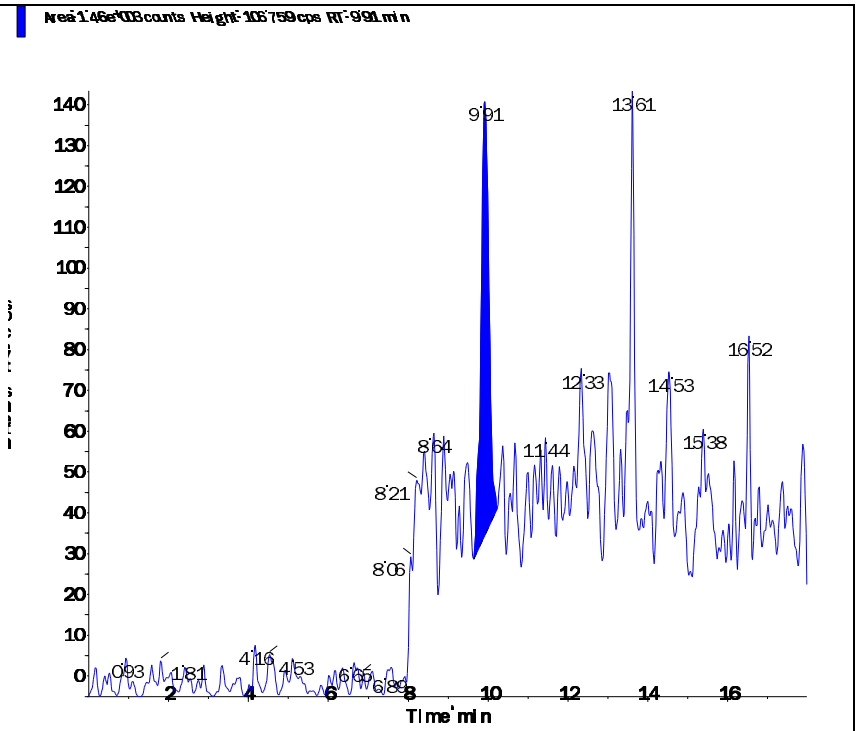

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.92) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

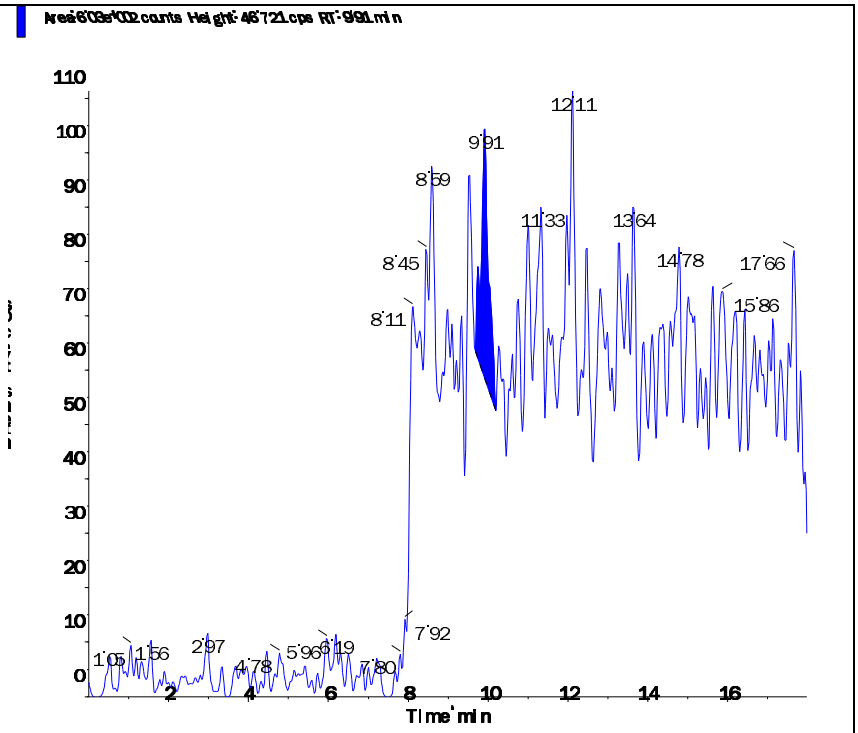

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Data File	LM33897.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 8:03:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030861-06	**Injection Vial**	14.00
Data File	LM33897.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 8:03:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	L16030861-06	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.380e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.850e+03	9.97	N/A	< 0
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

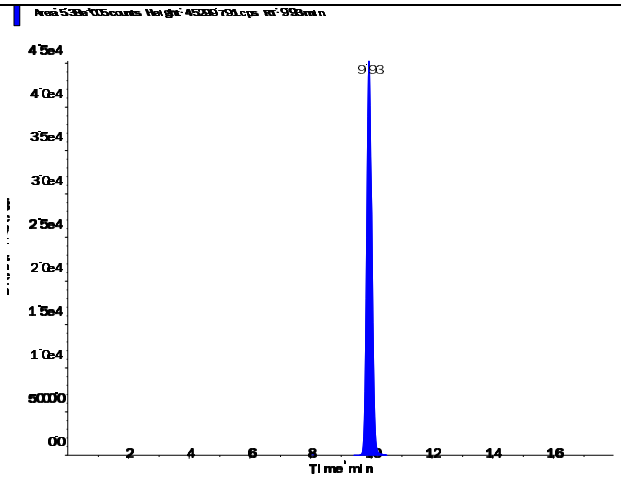

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.97 (9.94) min Calculated conc: < 0 ng/ml Area Ratio: 0.003 Sample Type: (Unknown)	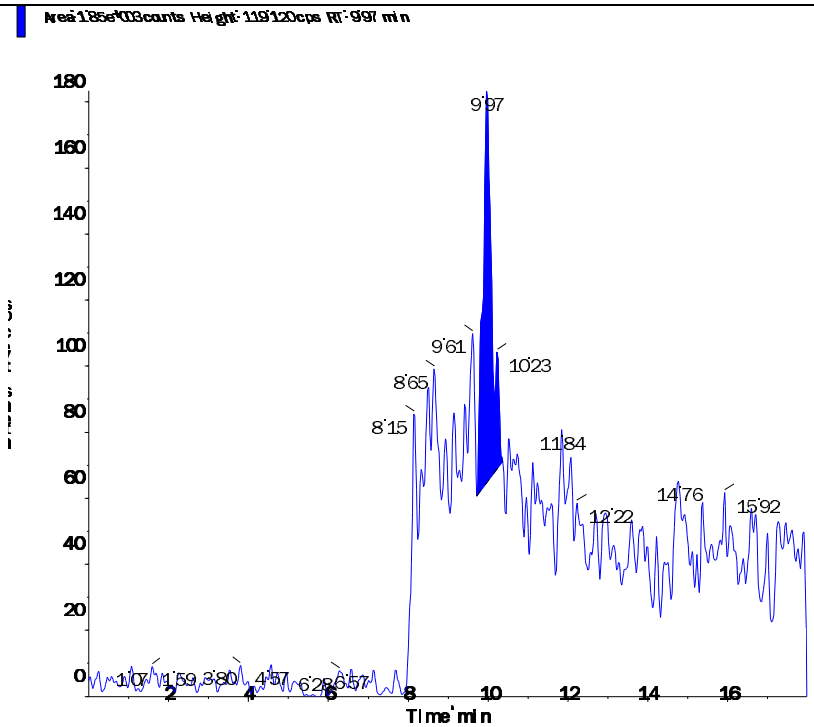
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.92) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	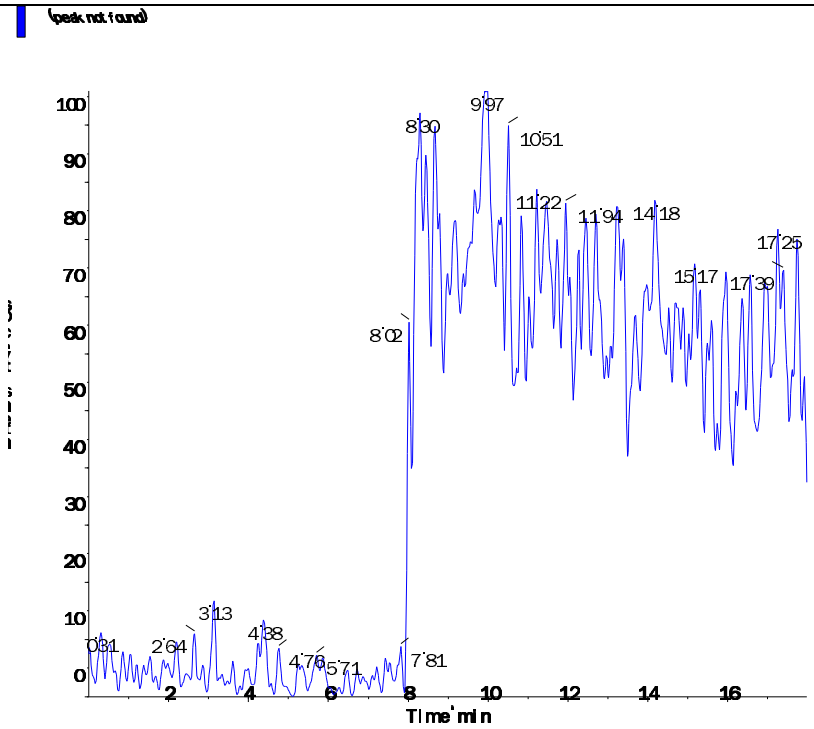

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Data File	LM33898.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 8:22:44 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030861-07	**Injection Vial**	15.00
Data File	LM33898.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 8:22:44 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	L16030861-07	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.200e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	6.930e+05	9.94	N/A	3.80
Perchlorate conf	2.250e+05	9.93	N/A	3.83

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

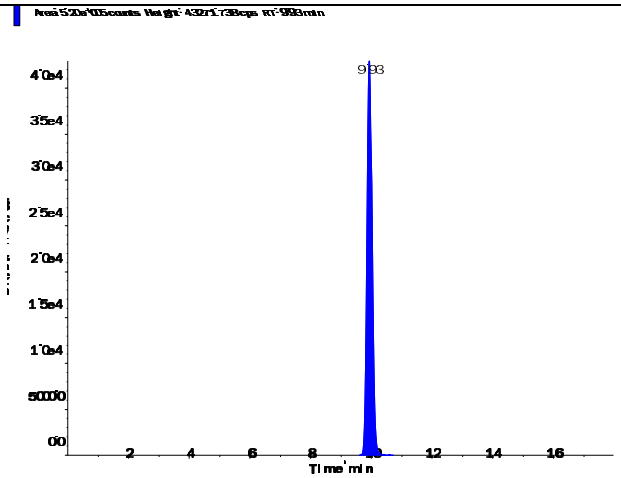

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.94 (9.94) min Calculated conc: 3.80 ng/ml Area Ratio: 1.334 Sample Type: (Unknown)	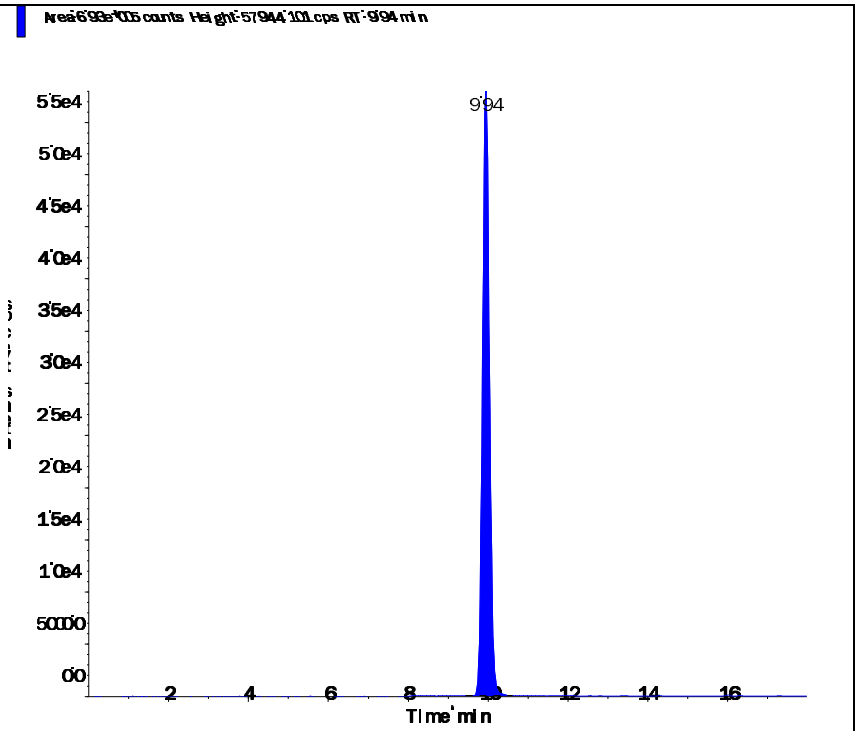
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.93 (9.92) min Calculated conc: 3.83 ng/ml Area Ratio: 0.433 Sample Type: (Unknown)	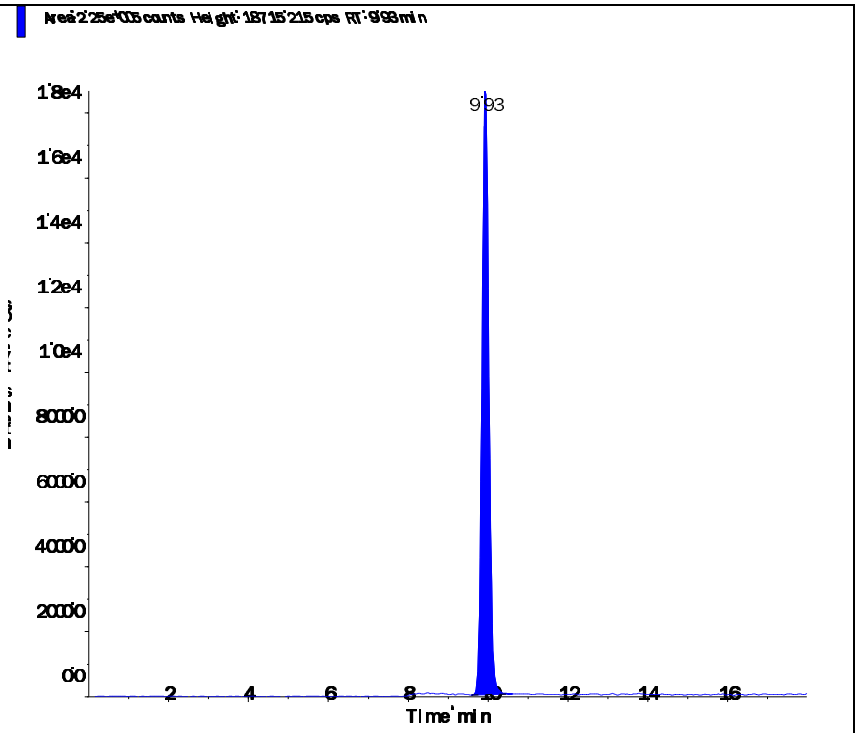

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Data File	LM33933.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 1:31:10 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030861-08 (RR 100x)	**Injection Vial**	36.00
Data File	LM33933.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 1:31:10 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	L16030861-08	**Dilution Factor**	1.00
Sample Comment	7,100.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.570e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.640e+05	9.98	N/A	2.89
Perchlorate conf	1.540e+05	9.97	N/A	2.97

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

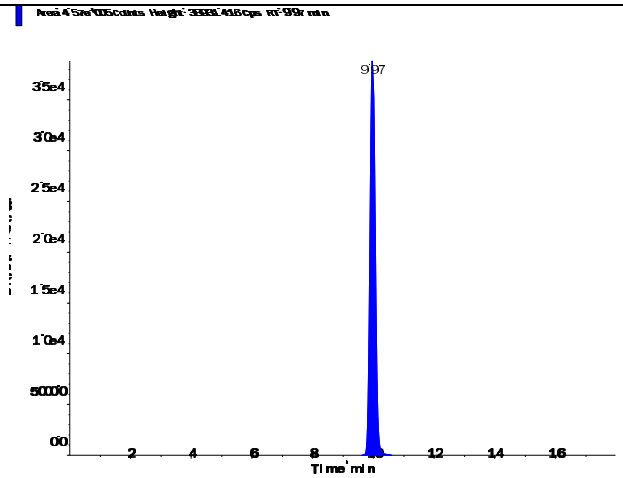

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.98 (9.94) min Calculated conc: 2.89 ng/ml Area Ratio: 1.014 Sample Type: (Unknown)	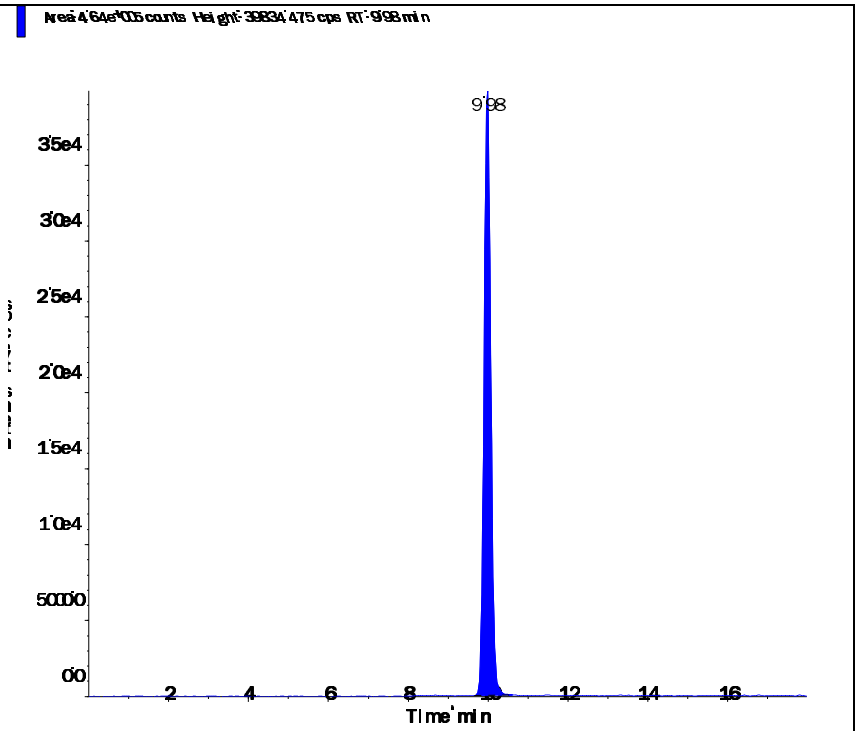
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.97 (9.92) min Calculated conc: 2.97 ng/ml Area Ratio: 0.336 Sample Type: (Unknown)	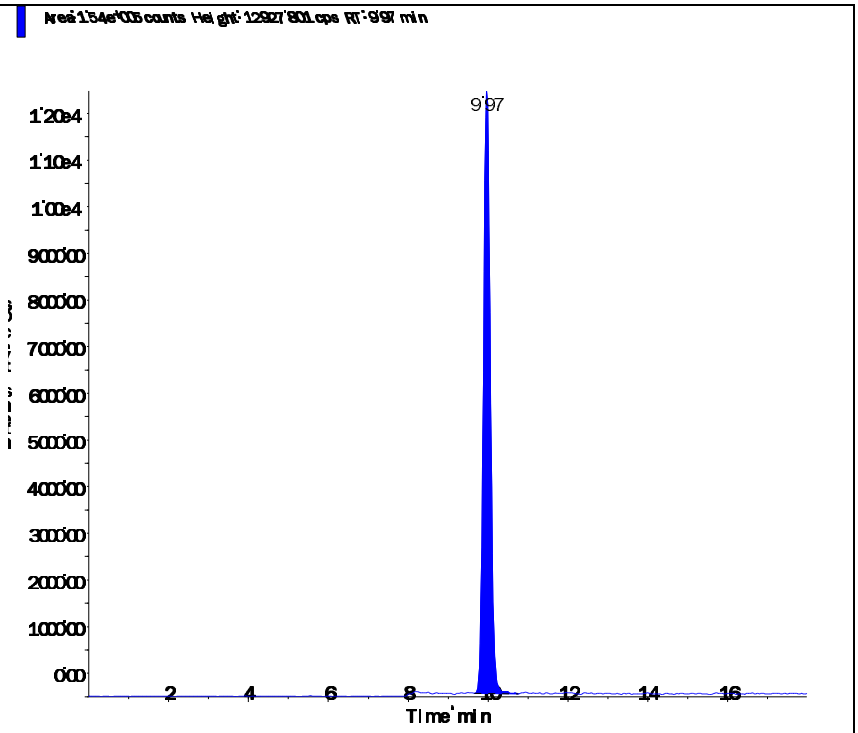

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Data File	LM33934.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 1:50:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030861-09 (RR 100x)	**Injection Vial**	37.00
Data File	LM33934.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 1:50:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	L16030861-09	**Dilution Factor**	1.00
Sample Comment	7,100.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.520e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.860e+05	9.98	N/A	4.95
Perchlorate conf	2.520e+05	9.96	N/A	4.95

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

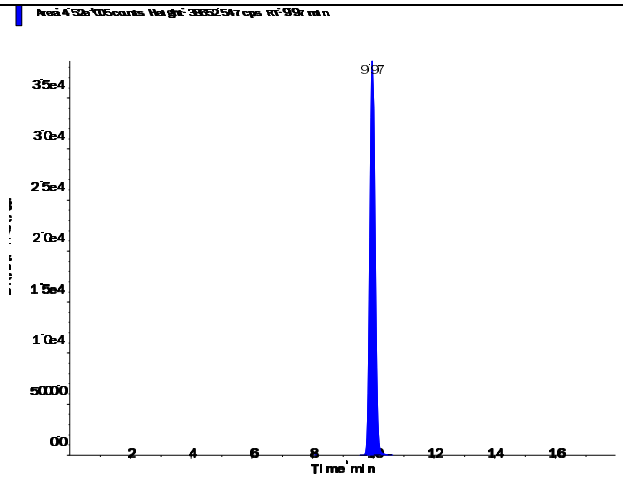

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.98 (9.94) min
Calculated conc:	4.95 ng/ml
Area Ratio:	1.737
Sample Type:	(Unknown)

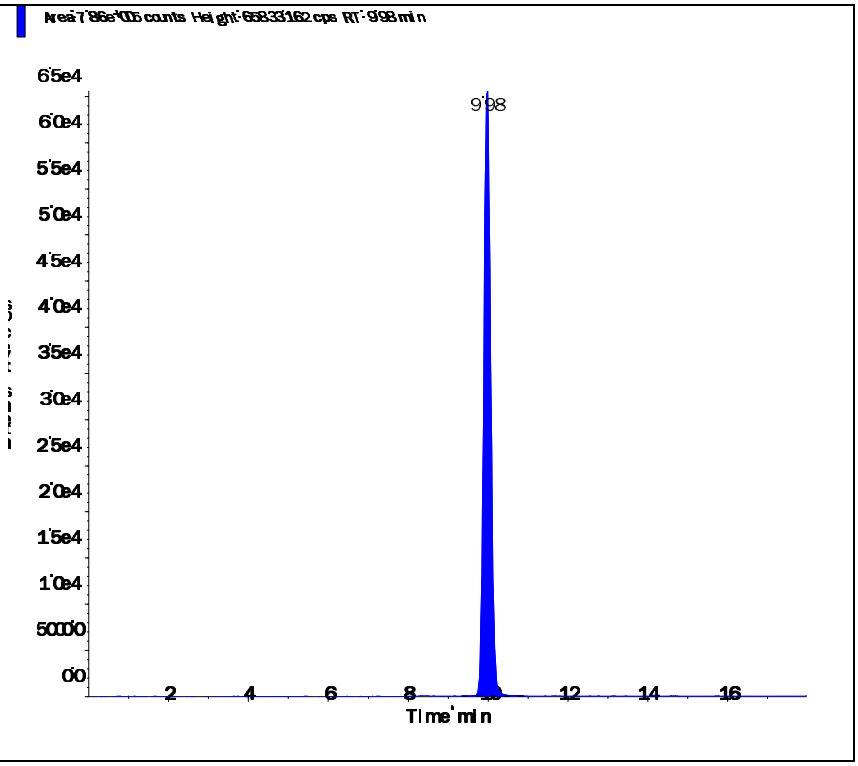

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.96 (9.92) min
Calculated conc:	4.95 ng/ml
Area Ratio:	0.558
Sample Type:	(Unknown)

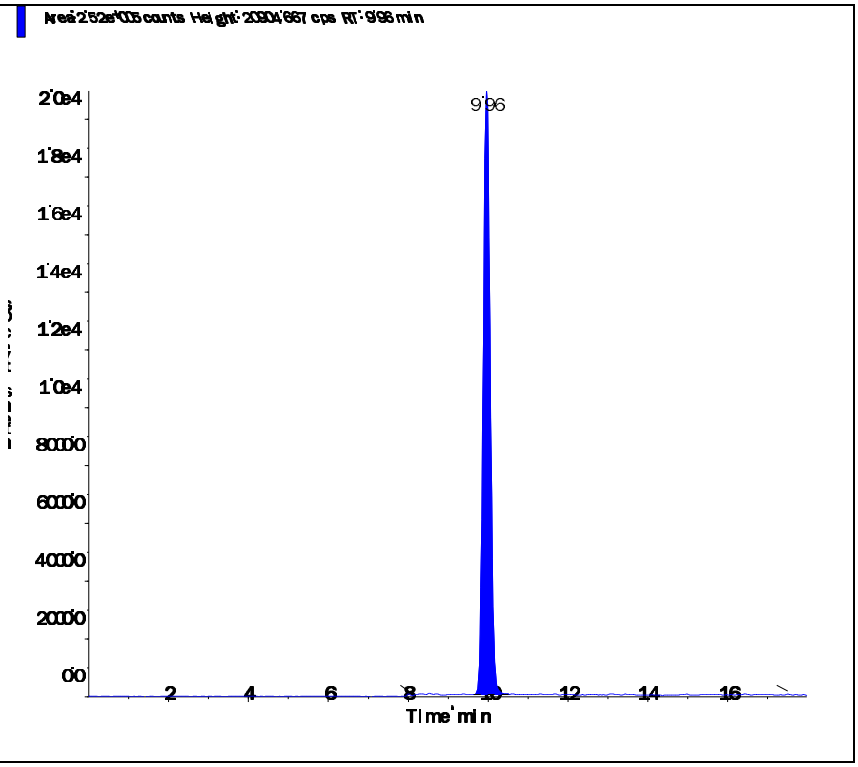

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Data File	LM33935.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 2:09:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030861-10 (RR 100x)	**Injection Vial**	38.00
Data File	LM33935.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 2:09:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	L16030861-10	**Dilution Factor**	1.00
Sample Comment	7,100.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.510e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.190e+05	9.98	N/A	5.17
Perchlorate conf	2.650e+05	9.97	N/A	5.21

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

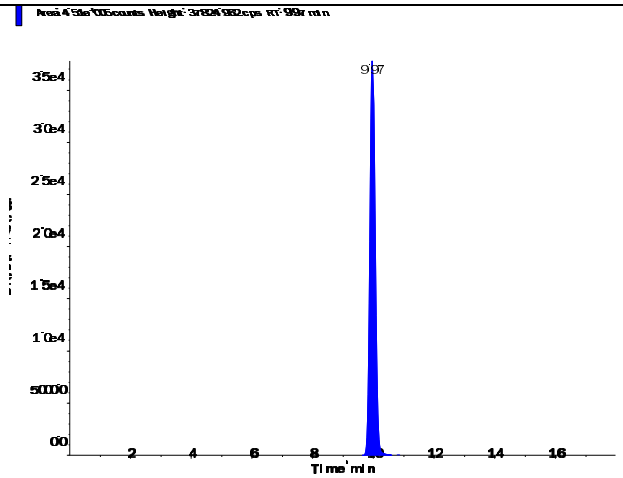

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.98 (9.94) min
Calculated conc:	5.17 ng/ml
Area Ratio:	1.814
Sample Type:	(Unknown)

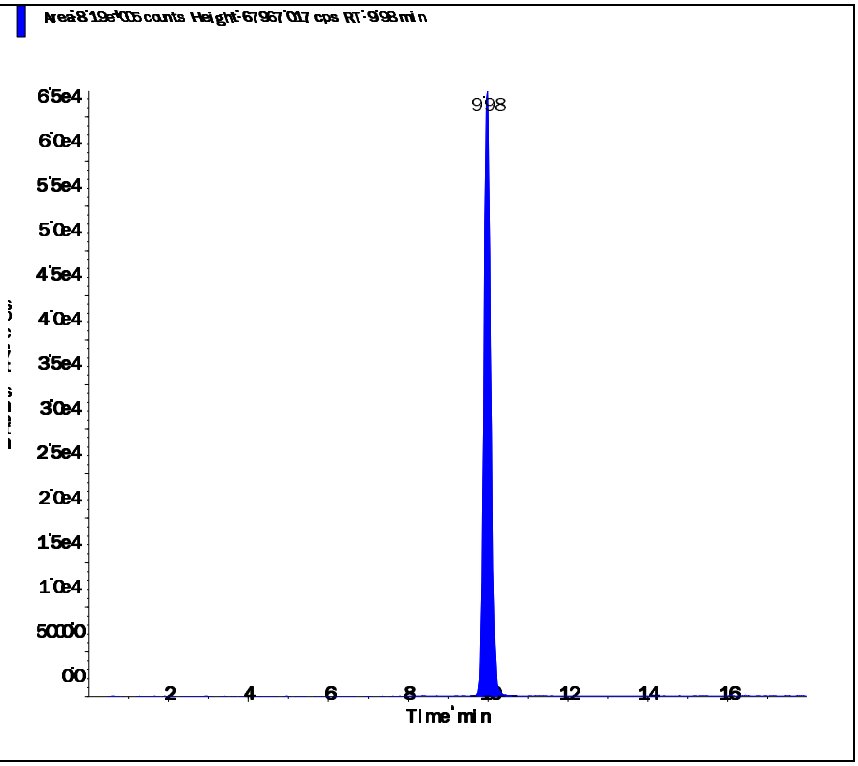

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.97 (9.92) min
Calculated conc:	5.21 ng/ml
Area Ratio:	0.588
Sample Type:	(Unknown)

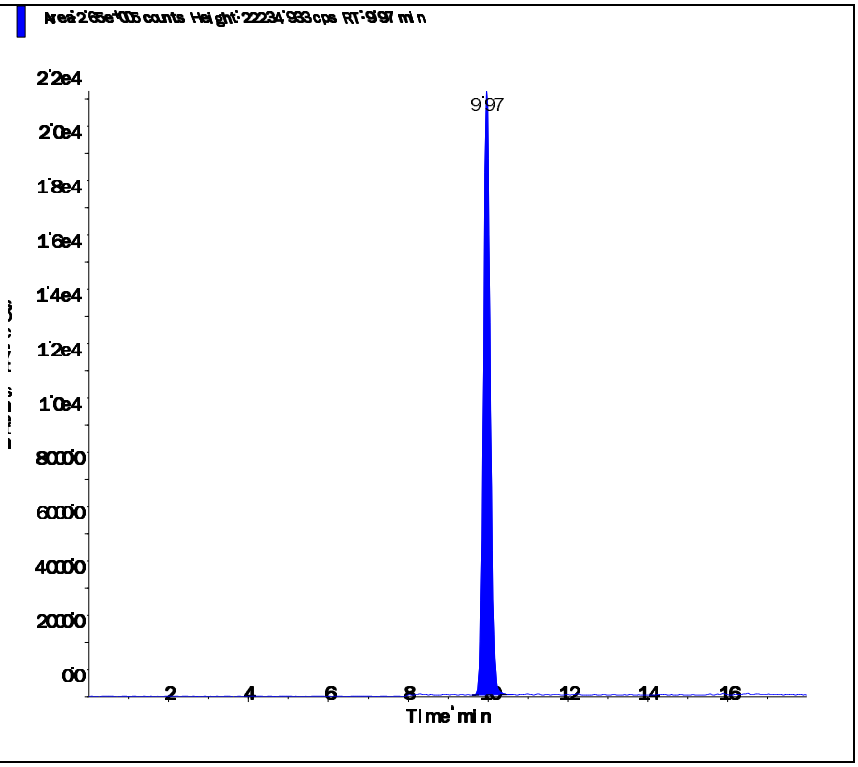

2.2.1.4 Standards Data

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Data File	LM33567.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-01 CCB	**Injection Vial**	51.00
Data File	LM33567.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG559340-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.710e+05	9.99	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.99(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

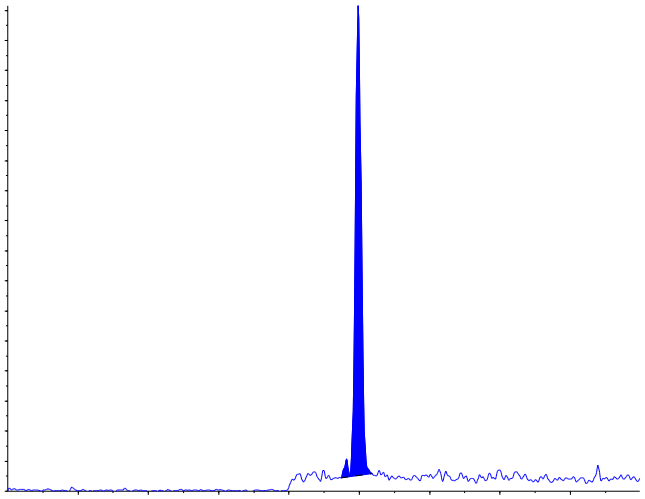

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

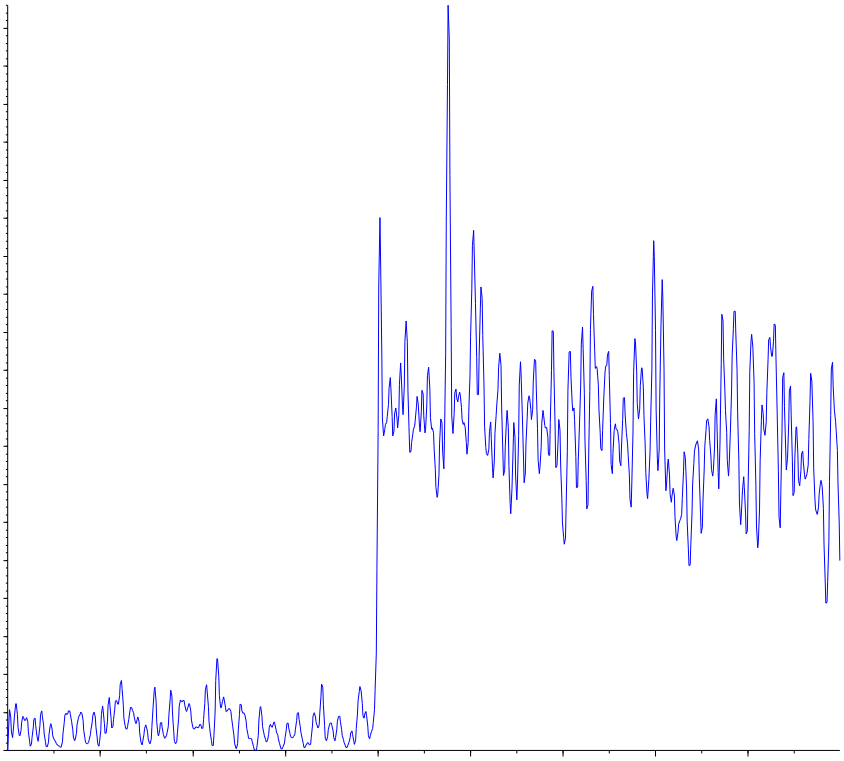

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

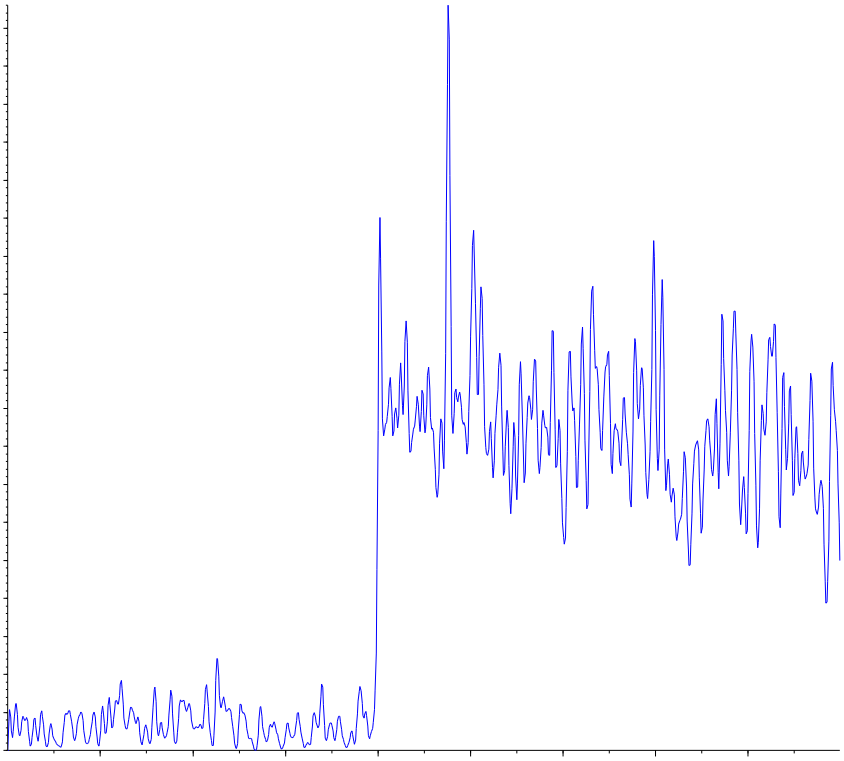

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Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM33567.wiff	**Result Table**	030216_WTD.rdb
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.75 x + 0.00437 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	95.0	N/A	N/A
0.20	1	0.20	99.5	N/A	N/A
0.50	1	0.50	101.0	N/A	N/A
1.00	1	1.03	103.4	N/A	N/A
2.00	1	2.02	101.0	N/A	N/A
5.00	1	5.07	101.5	N/A	N/A
10.00	1	9.87	98.7	N/A	N/A

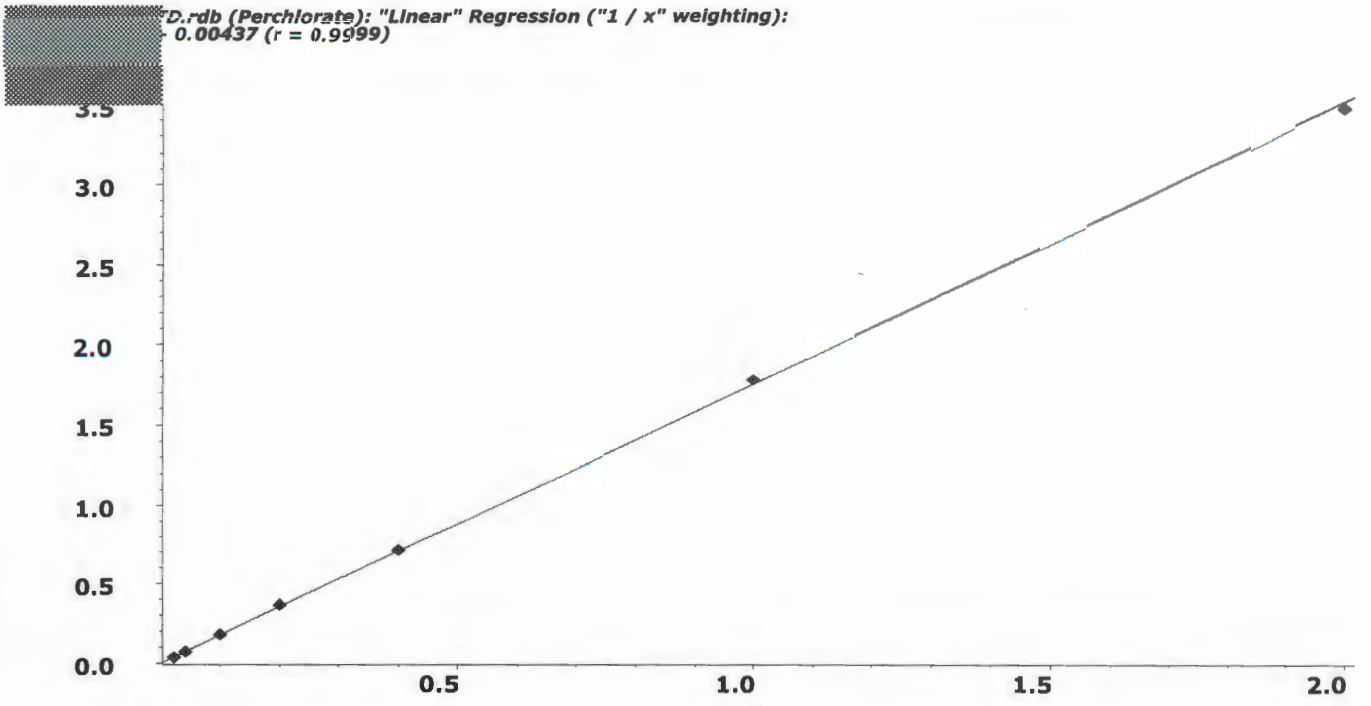

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Created with Analyst Reporter
Printed: 3/3/2016 1:59 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM33567.wiff	**Result Table**	030216_WTD.rdb
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.562 x + 0.00157 (r = 0.9998)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	93.4	N/A	N/A
0.20	1	0.20	98.6	N/A	N/A
0.50	1	0.54	107.2	N/A	N/A
1.00	1	1.00	99.5	N/A	N/A
2.00	1	2.01	100.7	N/A	N/A
5.00	1	5.11	102.2	N/A	N/A
10.00	1	9.85	98.5	N/A	N/A

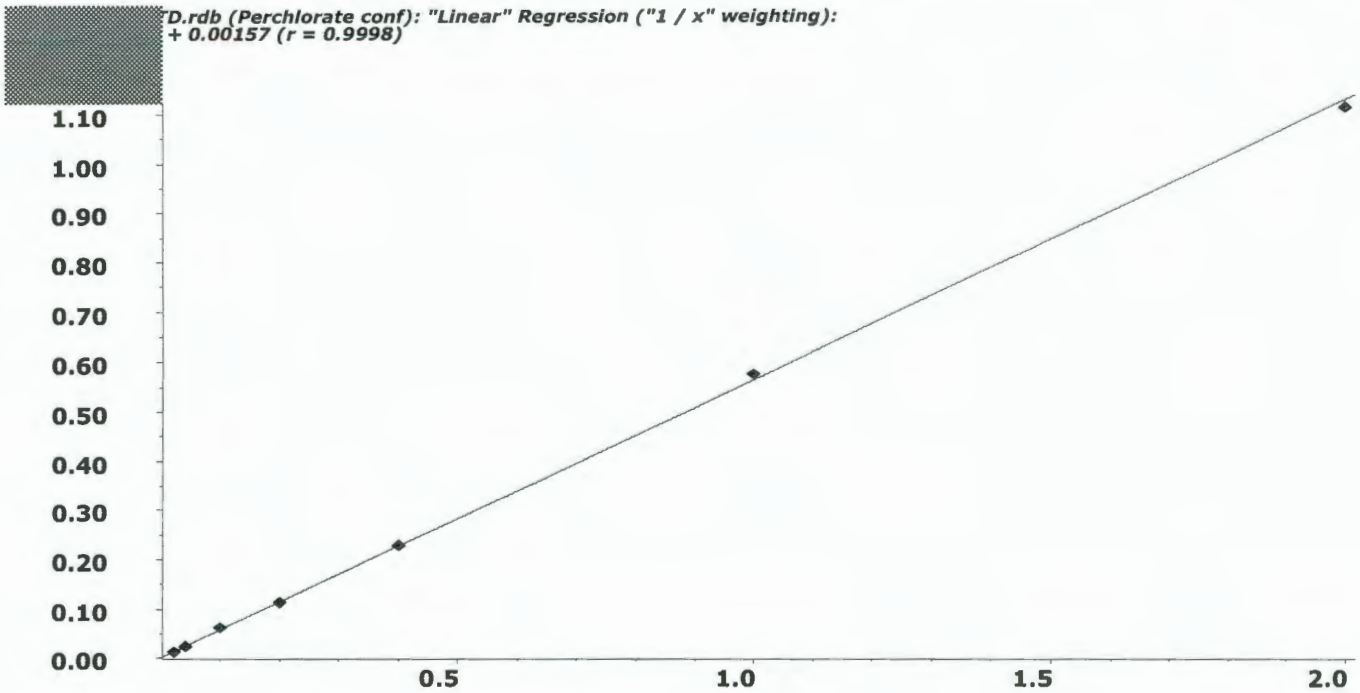

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Data File	LM33568.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/2/2016 8:53:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-02 STD (0.1 ug/L)	**Injection Vial**	52.00
Data File	LM33568.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 8:53:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG559340-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.900e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.840e+04	9.97	0.10	0.095
Perchlorate conf	5.910e+03	9.94	0.10	0.0934

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

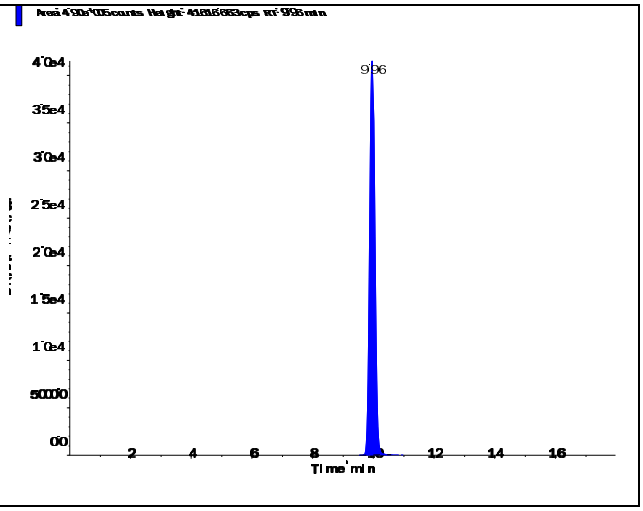

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.97 (9.94) min
Calculated conc:	0.095 ng/ml
Area Ratio:	0.038
Sample Type:	(Standard)

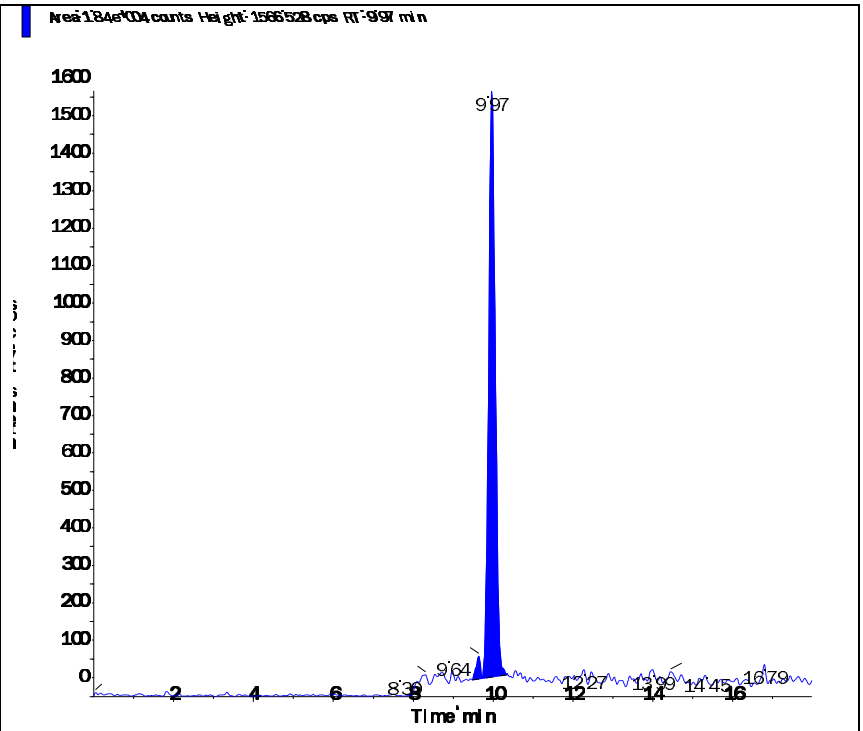

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.0934 ng/ml
Area Ratio:	0.012
Sample Type:	(Standard)

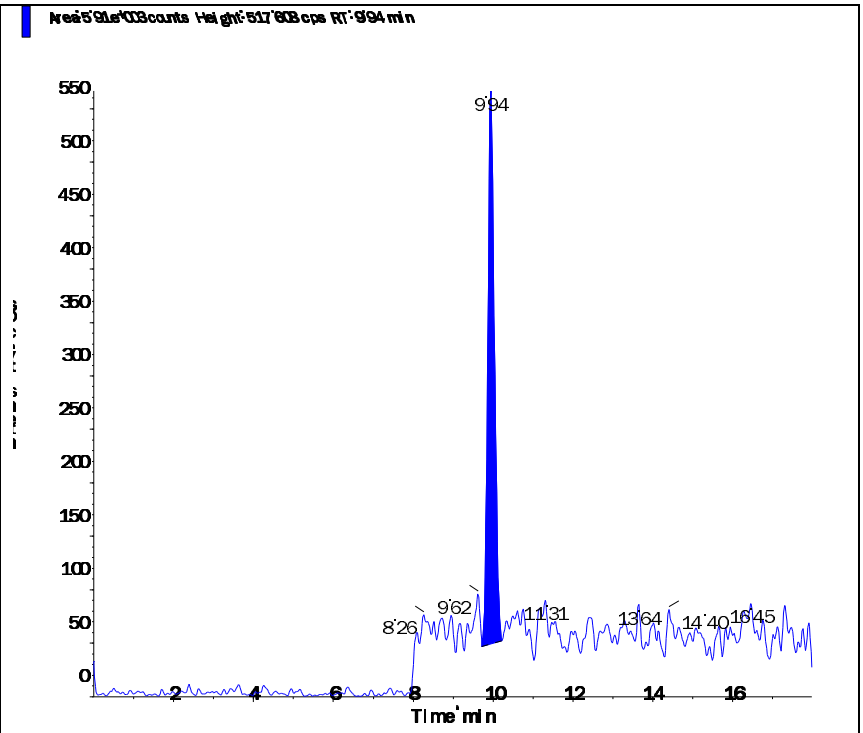

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Data File	LM33569.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/2/2016 9:12:17 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-03 STD (0.2 ug/L)	**Injection Vial**	53.00
Data File	LM33569.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 9:12:17 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG559340-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.990e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.700e+04	9.99	0.20	0.199
Perchlorate conf	1.190e+04	9.98	0.20	0.197

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

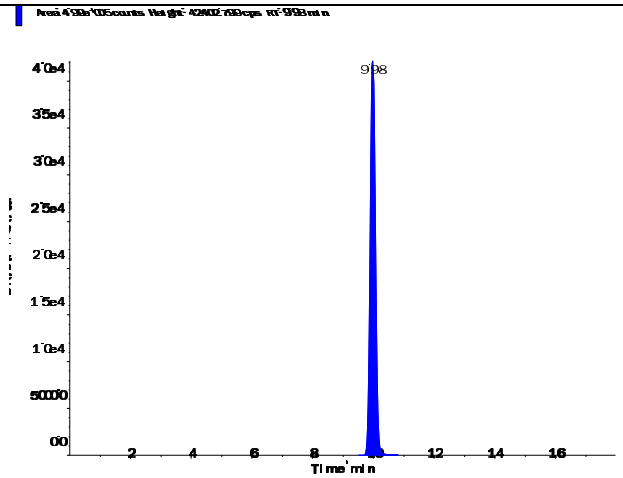

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.99 (9.94) min
Calculated conc:	0.199 ng/ml
Area Ratio:	0.074
Sample Type:	(Standard)

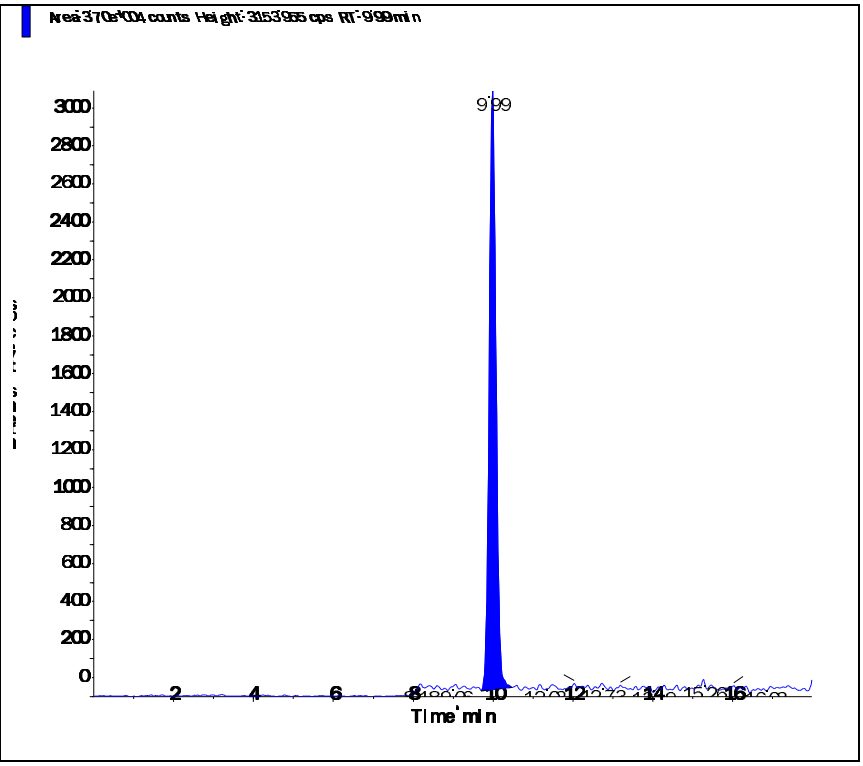

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.98 (9.92) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

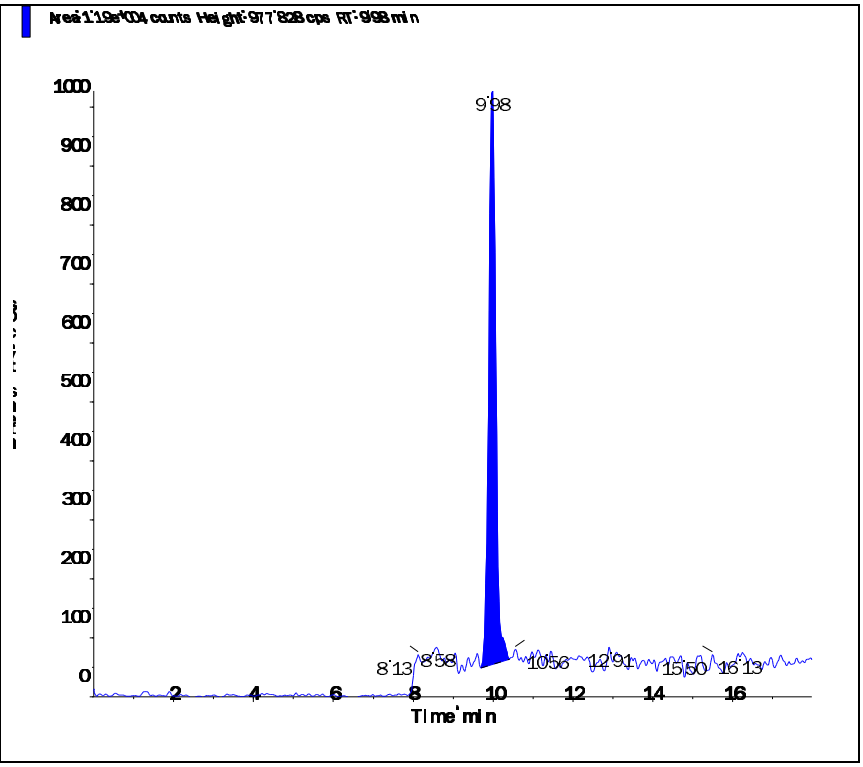

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Data File	LM33570.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/2/2016 9:31:14 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-04 STD (0.5 ug/L)	**Injection Vial**	54.00
Data File	LM33570.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 9:31:14 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG559340-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.920e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.900e+04	10.00	0.50	0.505
Perchlorate conf	3.040e+04	9.98	0.50	0.536

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

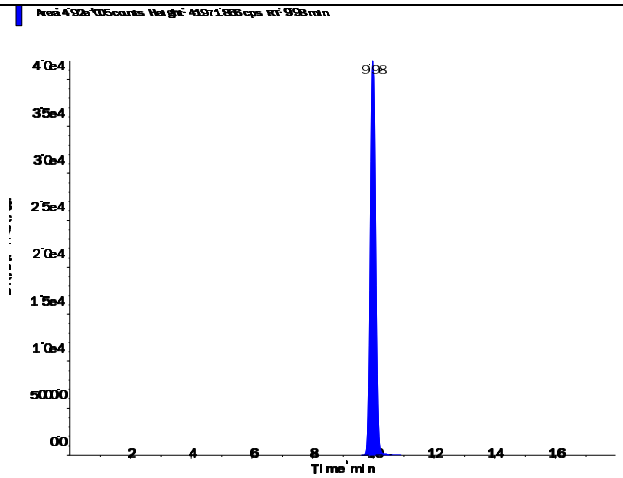

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.00 (9.94) min
Calculated conc:	0.505 ng/ml
Area Ratio:	0.181
Sample Type:	(Standard)

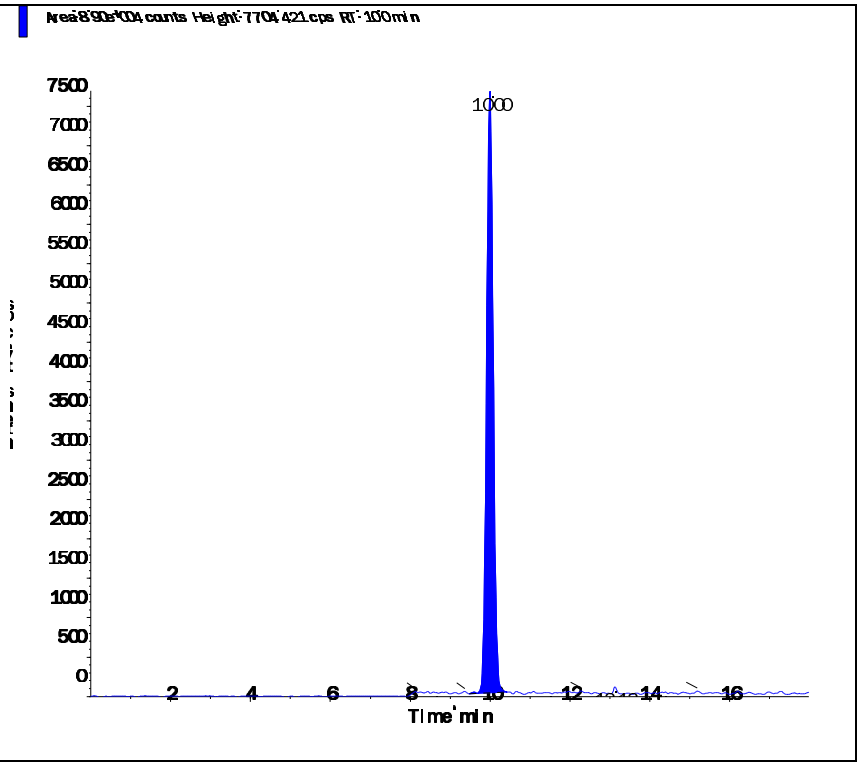

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.98 (9.92) min
Calculated conc:	0.536 ng/ml
Area Ratio:	0.062
Sample Type:	(Standard)

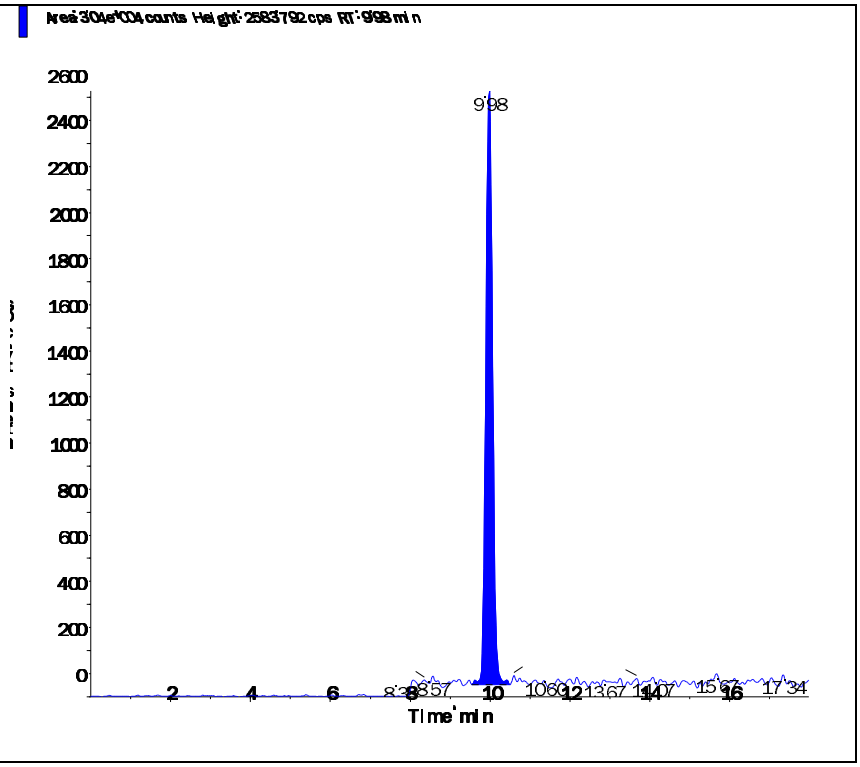

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Data File	LM33571.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/2/2016 9:50:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-05 STD (1.0 ug/L)	**Injection Vial**	55.00
Data File	LM33571.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 9:50:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG559340-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.010e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.830e+05	9.99	1.00	1.03
Perchlorate conf	5.680e+04	9.98	1.00	0.995

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

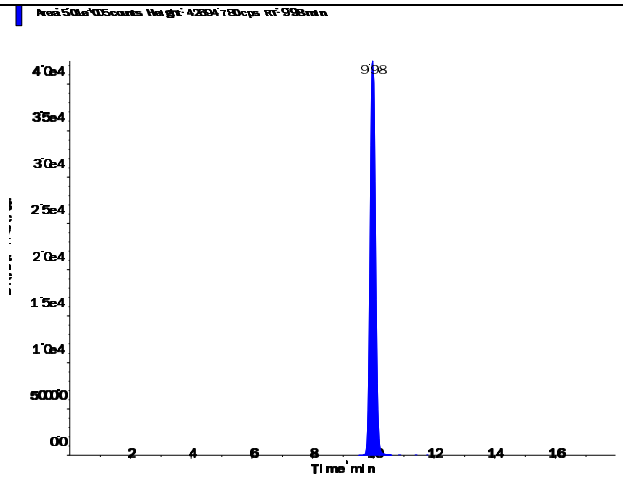

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.99 (9.94) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.366
Sample Type:	(Standard)

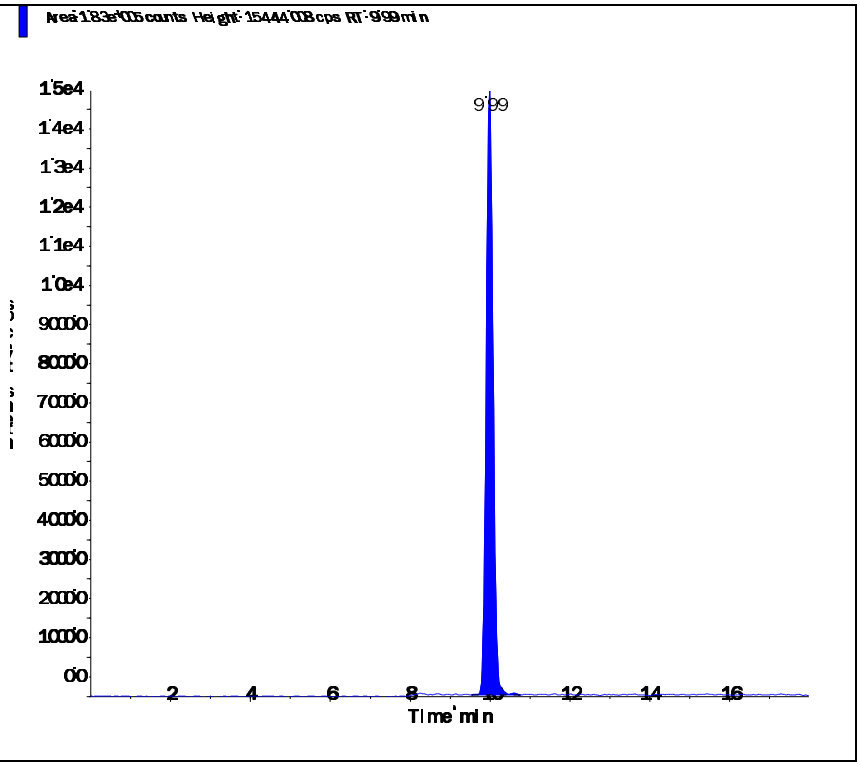

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.98 (9.92) min
Calculated conc:	0.995 ng/ml
Area Ratio:	0.113
Sample Type:	(Standard)

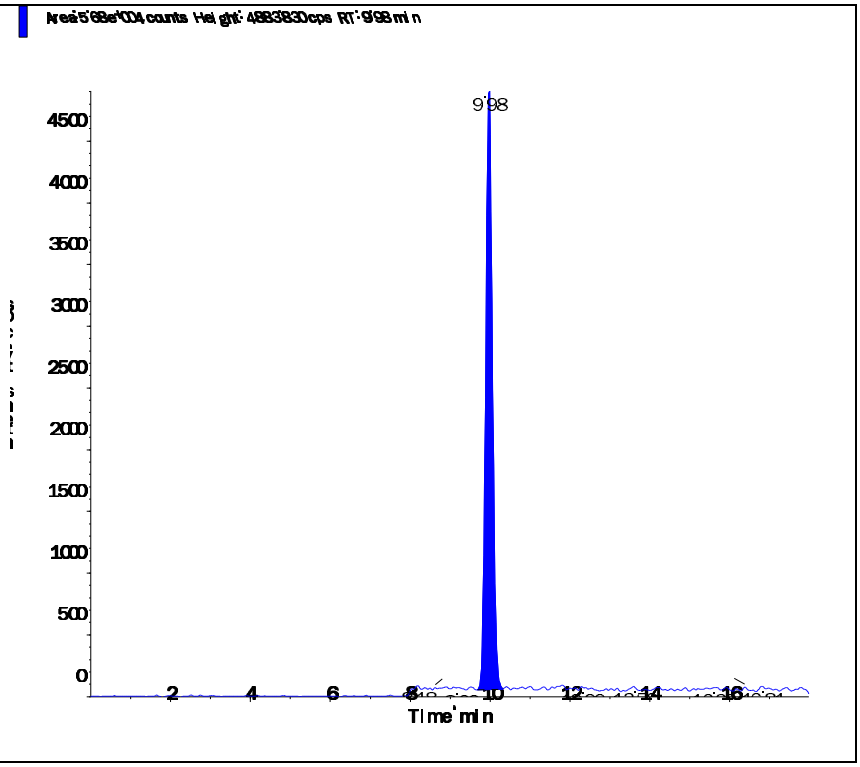

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Data File	LM33572.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/2/2016 10:09:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-06 STD (2.0 ug/L)	**Injection Vial**	56.00
Data File	LM33572.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 10:09:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG559340-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.99	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.630e+05	10.00	2.00	2.02
Perchlorate conf	1.170e+05	9.99	2.00	2.01

O18LP (Internal Standard)

RT (Exp. RT): 9.99(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

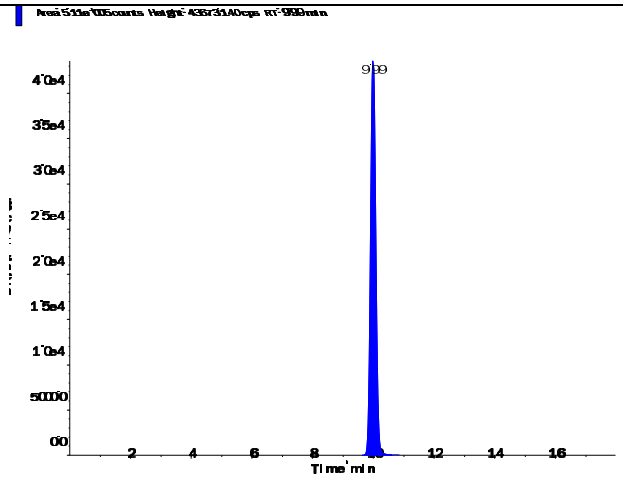

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.00 (9.94) min
Calculated conc:	2.02 ng/ml
Area Ratio:	0.711
Sample Type:	(Standard)

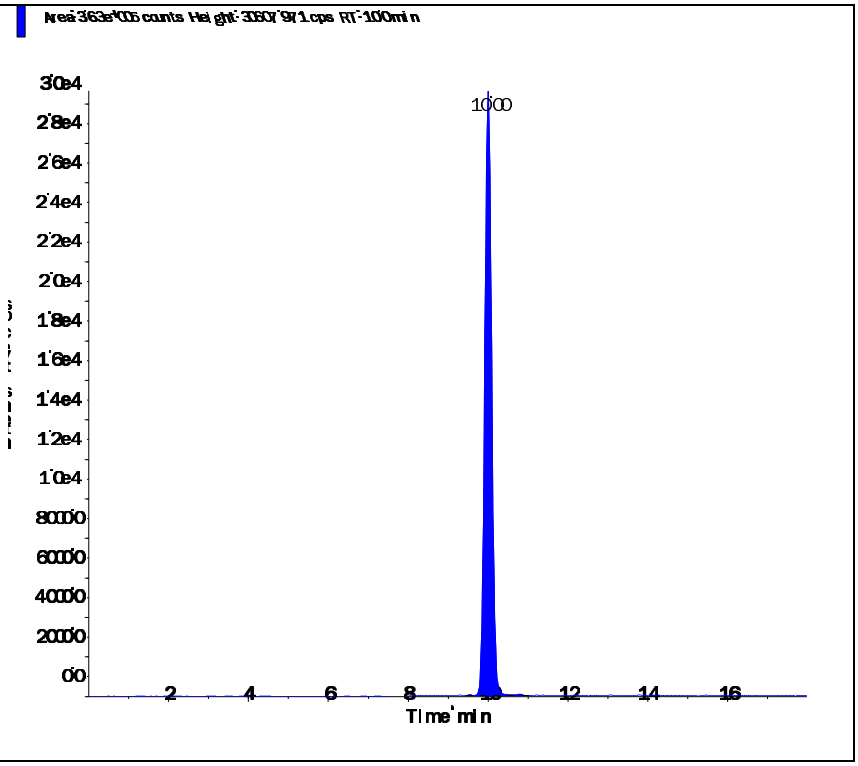

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.99 (9.92) min
Calculated conc:	2.01 ng/ml
Area Ratio:	0.228
Sample Type:	(Standard)

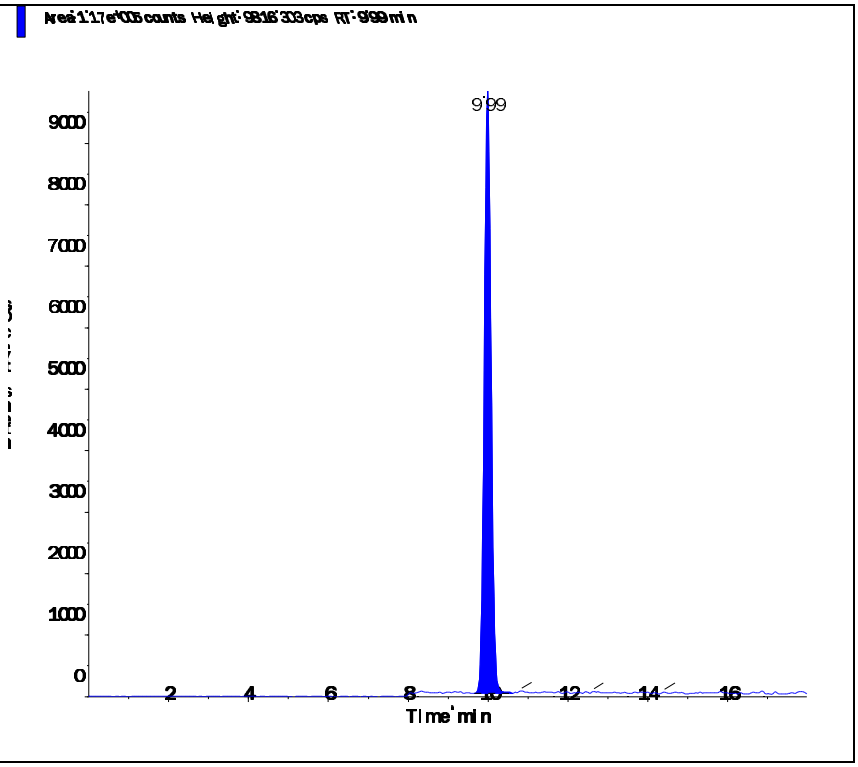

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Printed: 3/18/2016 6:11 PM

Data File	LM33573.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/2/2016 10:28:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-07 STD (5.0 ug/L)	**Injection Vial**	57.00
Data File	LM33573.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 10:28:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG559340-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.900e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.710e+05	9.98	5.00	5.07
Perchlorate conf	2.820e+05	9.97	5.00	5.11

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

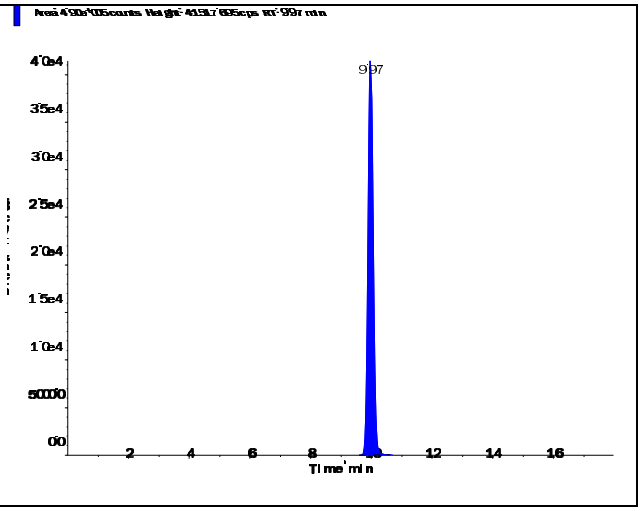

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.98 (9.94) min
Calculated conc:	5.07 ng/ml
Area Ratio:	1.779
Sample Type:	(Standard)

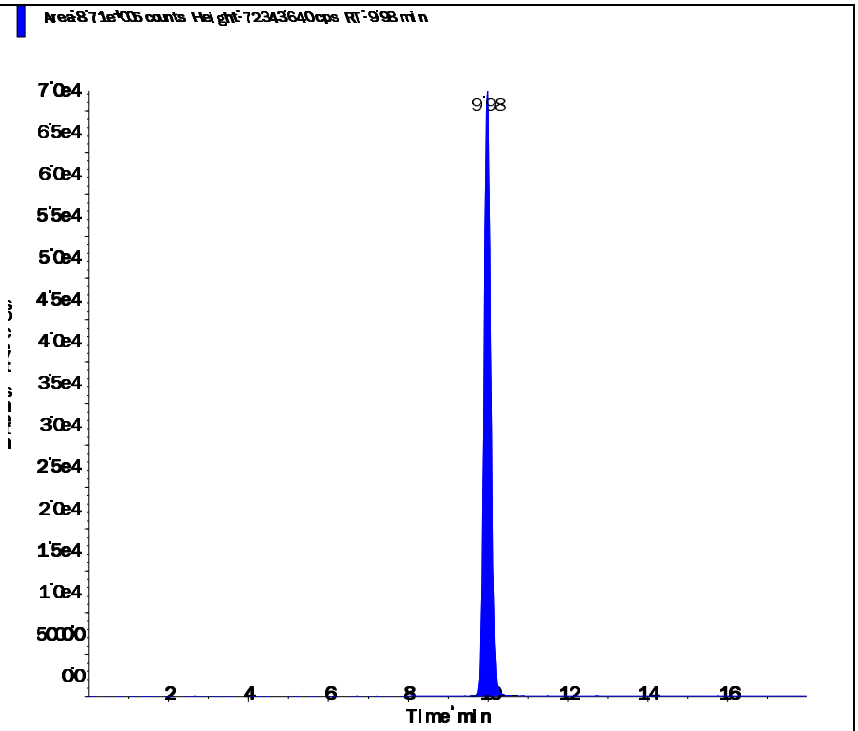

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.97 (9.92) min
Calculated conc:	5.11 ng/ml
Area Ratio:	0.576
Sample Type:	(Standard)

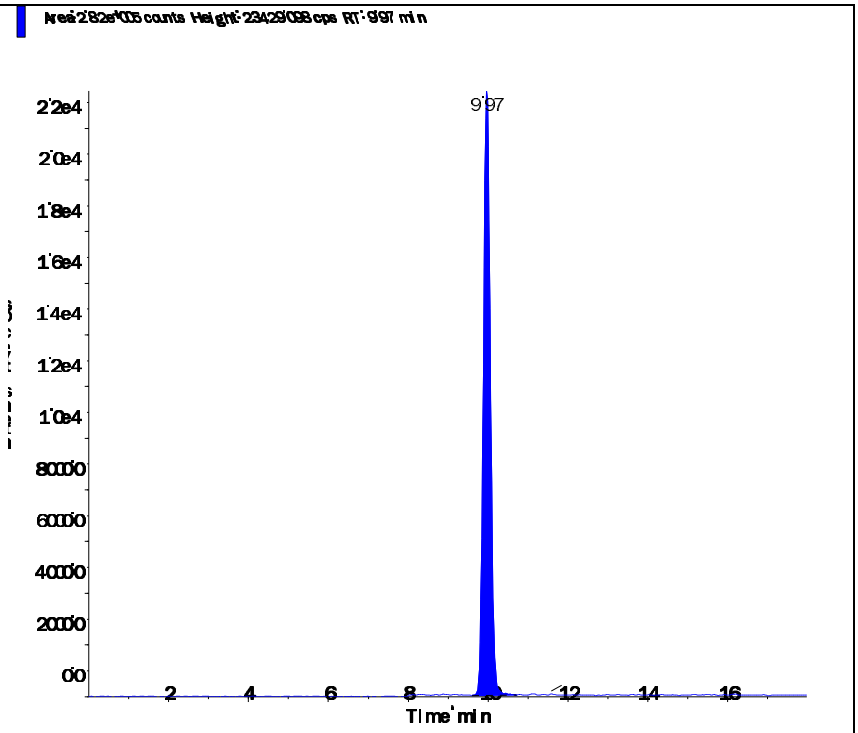

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Data File	LM33574.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/2/2016 10:46:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-08 STD (10 ug/L)	**Injection Vial**	58.00
Data File	LM33574.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 10:46:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG559340-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.650e+06	9.98	10.00	9.87
Perchlorate conf	5.300e+05	9.96	10.00	9.85

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

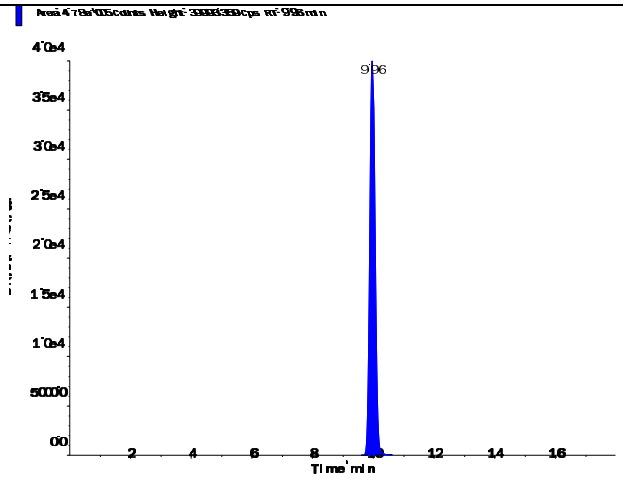

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.98 (9.94) min
Calculated conc:	9.87 ng/ml
Area Ratio:	3.458
Sample Type:	(Standard)

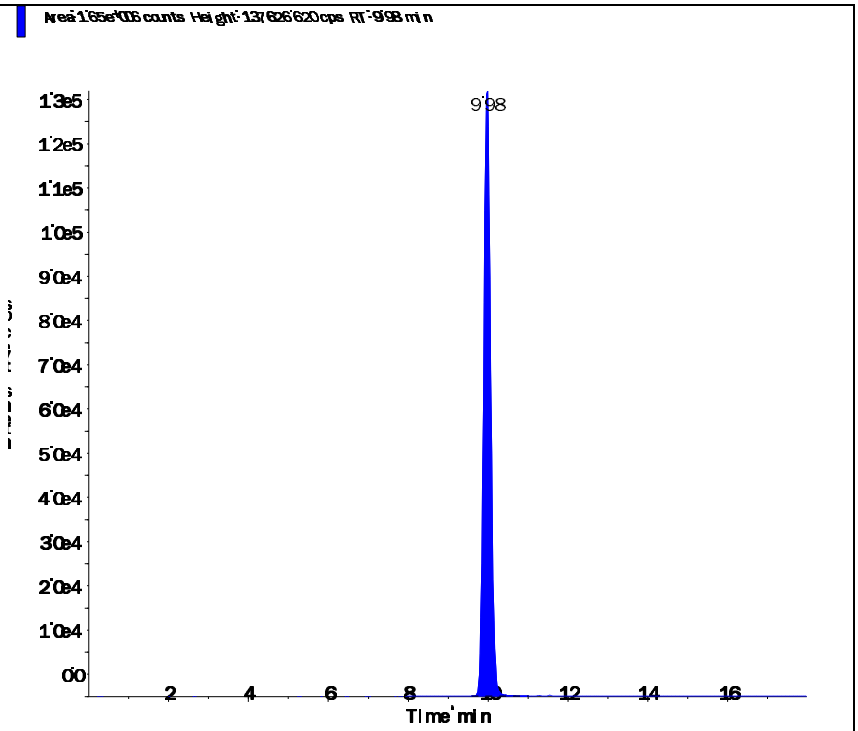

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.96 (9.92) min
Calculated conc:	9.85 ng/ml
Area Ratio:	1.11
Sample Type:	(Standard)

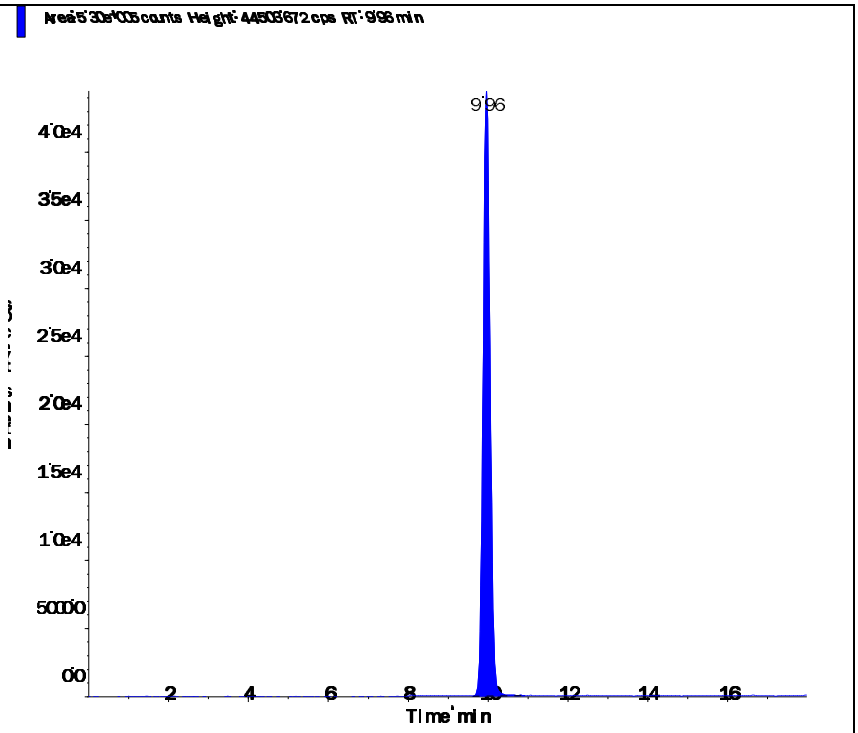

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Data File	LM33575.wiff	**Result Table**	030216_WTD.rdb
Acquisition Date	3/2/2016 11:05:52 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-09 SSCV (1.0 ug/L)	**Injection Vial**	59.00
Data File	LM33575.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 11:05:52 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030216_WTD.rdb
Sample ID	WG559340-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.200e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.900e+05	9.98	1.00	1.03
Perchlorate conf	6.220e+04	9.97	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

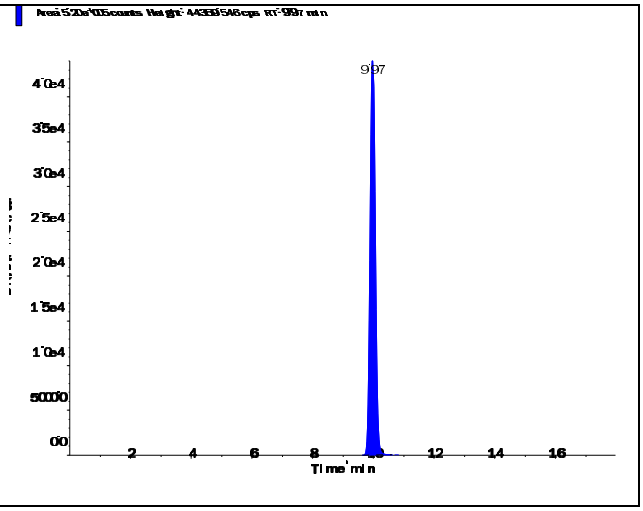

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.98 (9.94) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.366
Sample Type:	(Quality Control)

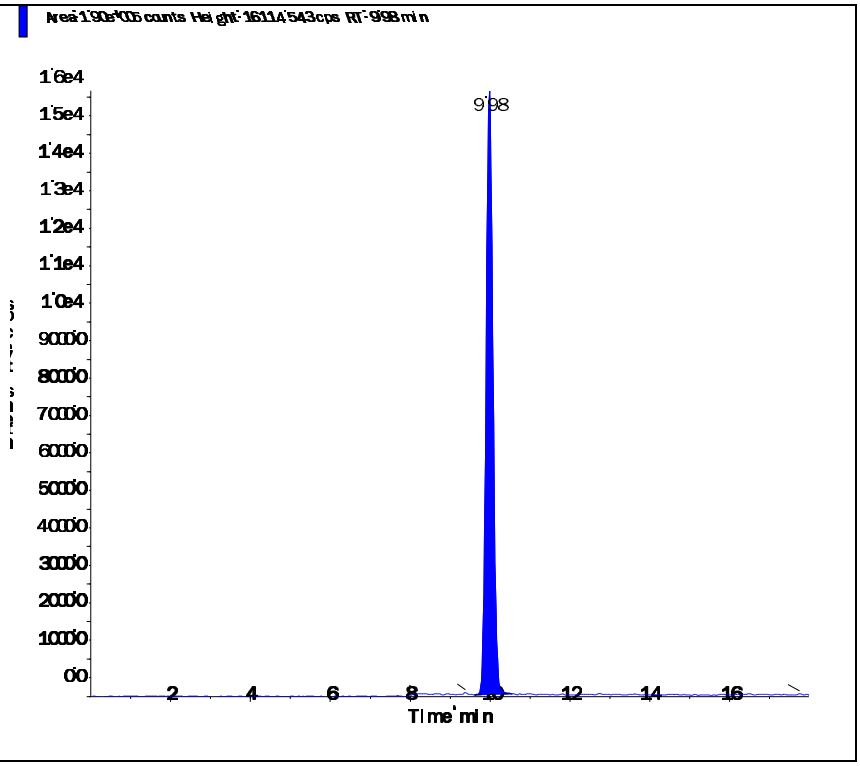

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.97 (9.92) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.12
Sample Type:	(Quality Control)

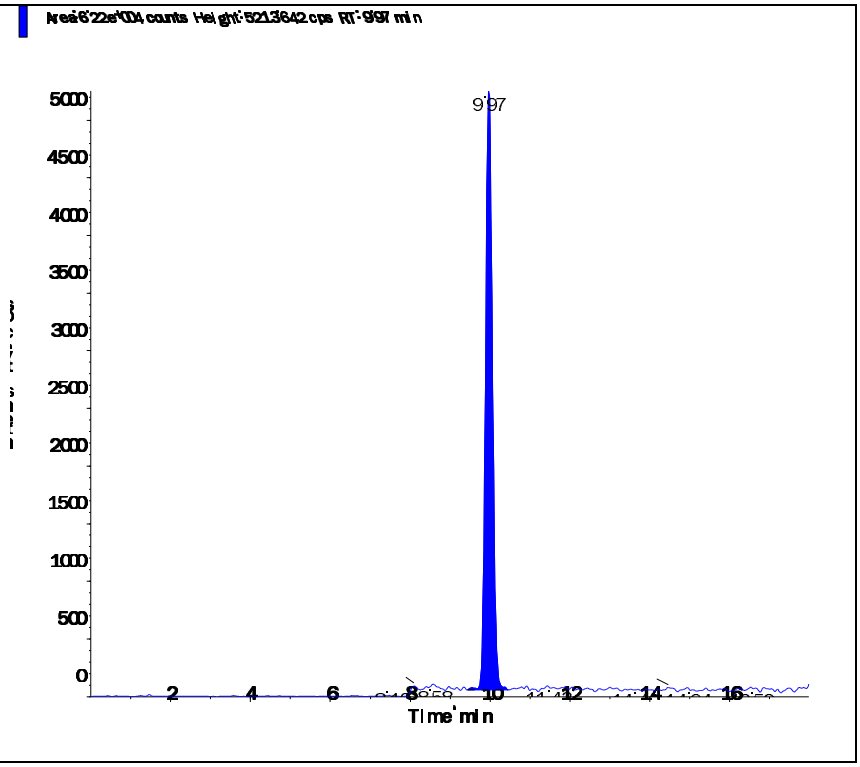

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Data File	LM33882.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 3:19:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561324-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33882.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 3:19:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561324-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.460e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.540e+05	9.94	1.00	0.975
Perchlorate conf	5.170e+04	9.93	1.00	1.02

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

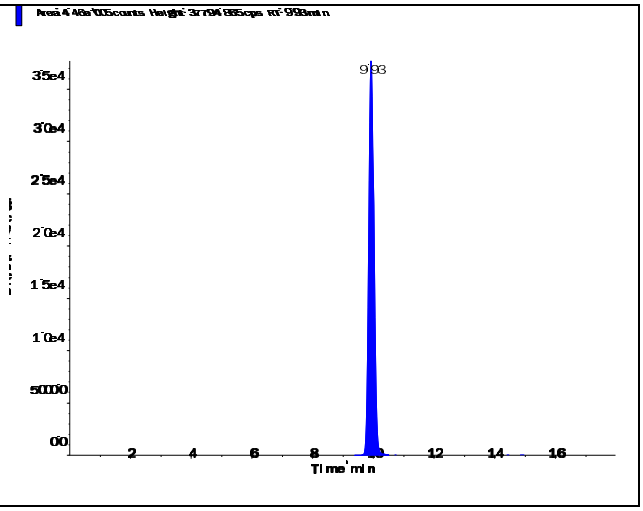

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.94 (9.94) min Calculated conc: 0.975 ng/ml Area Ratio: 0.345 Sample Type: (Quality Control)	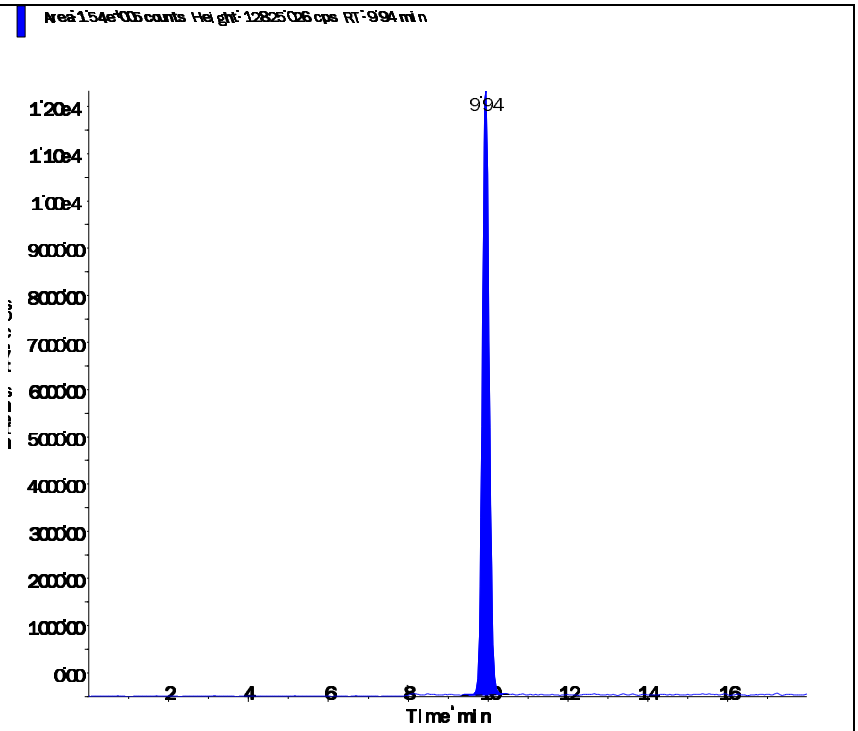
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.93 (9.92) min Calculated conc: 1.02 ng/ml Area Ratio: 0.116 Sample Type: (Quality Control)	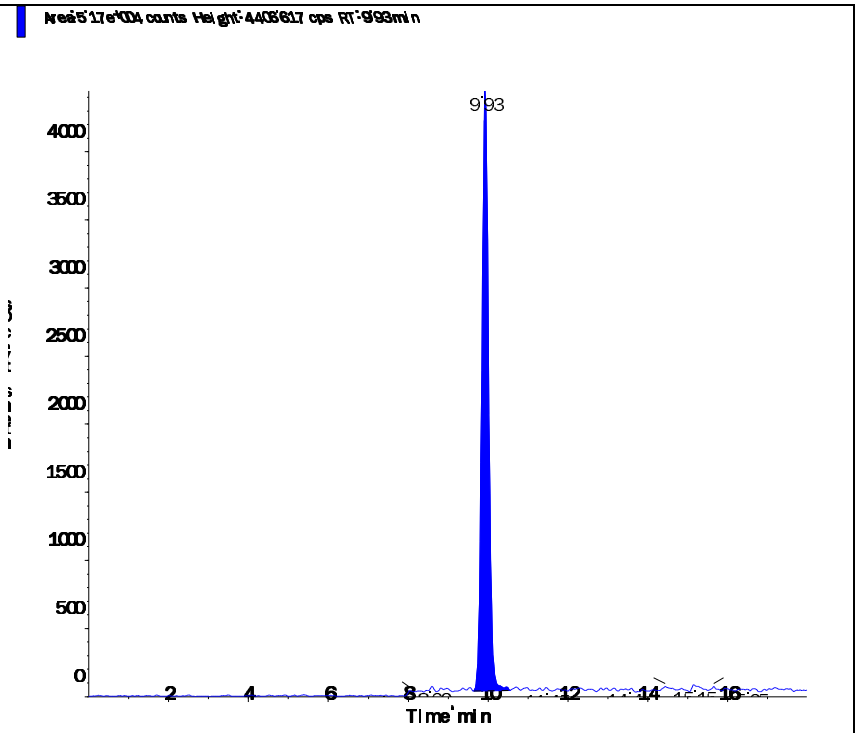

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Data File	LM33894.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 7:07:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561324-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33894.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 7:07:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561324-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.300e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.850e+05	9.94	1.00	0.985
Perchlorate conf	6.180e+04	9.92	1.00	1.02

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

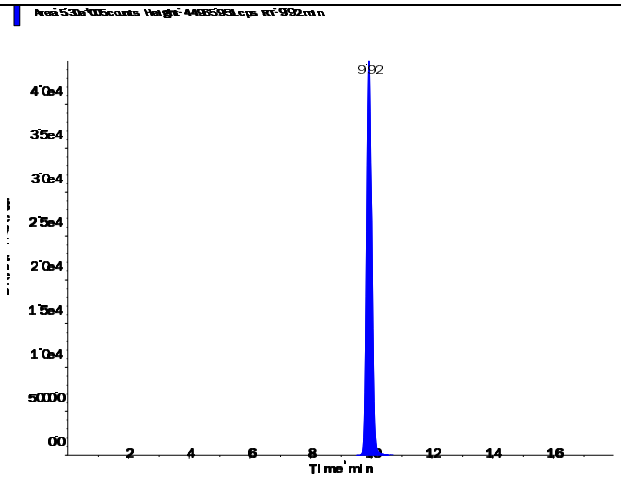

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.349
Sample Type:	(Quality Control)

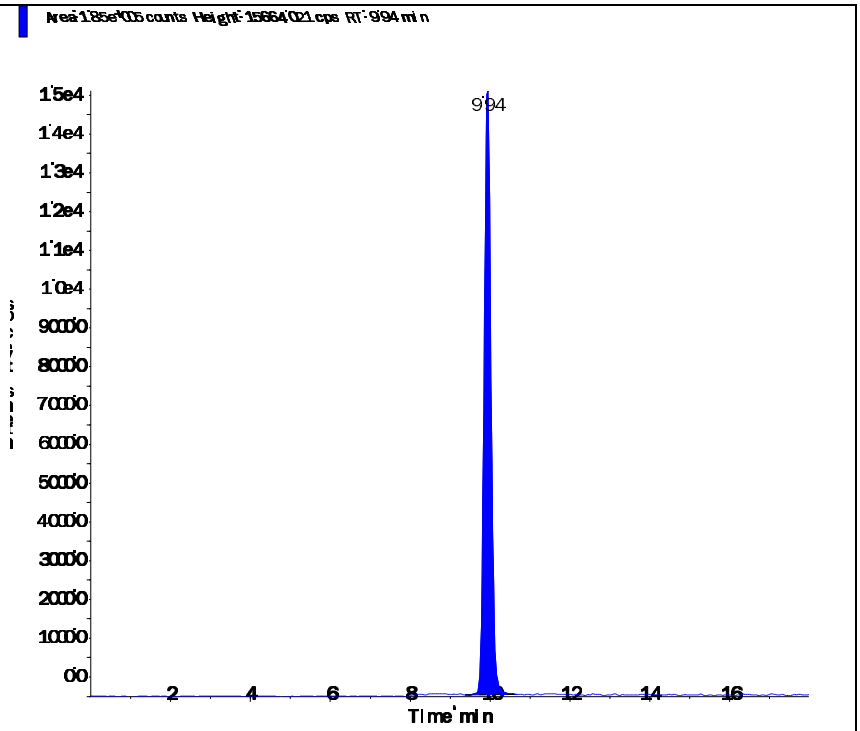

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.117
Sample Type:	(Quality Control)

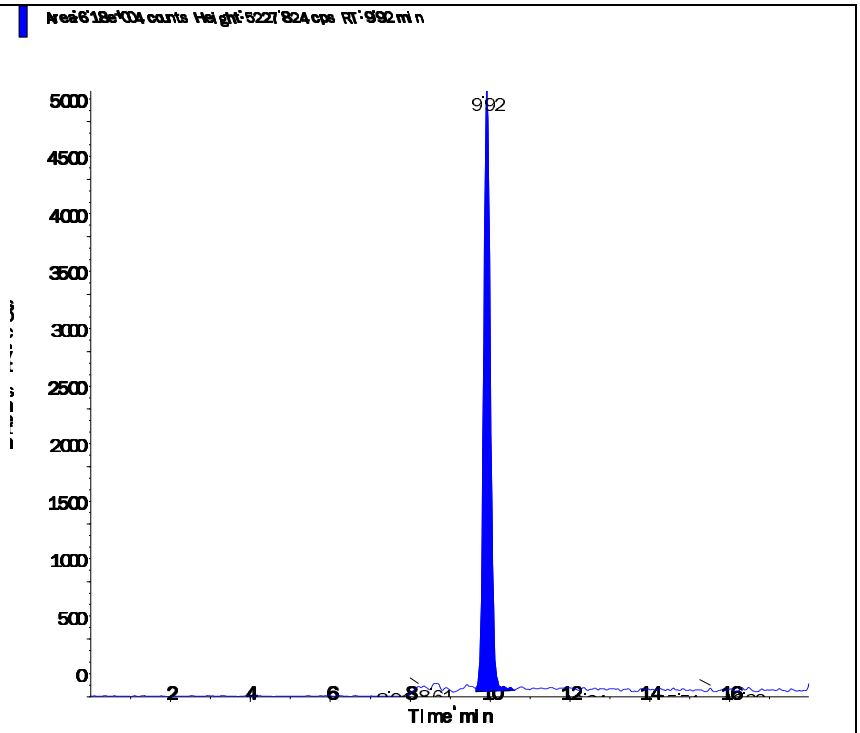

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Data File	LM33902.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 9:38:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561324-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33902.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 9:38:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561324-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.260e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.850e+05	9.93	1.00	0.993
Perchlorate conf	6.140e+04	9.91	1.00	1.02

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

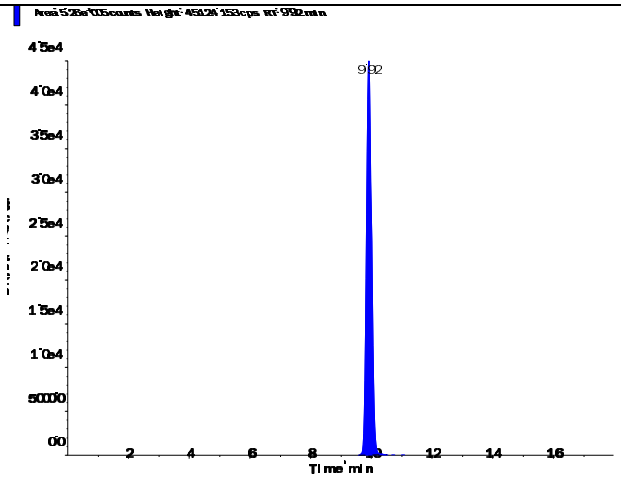

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	0.993 ng/ml
Area Ratio:	0.352
Sample Type:	(Quality Control)

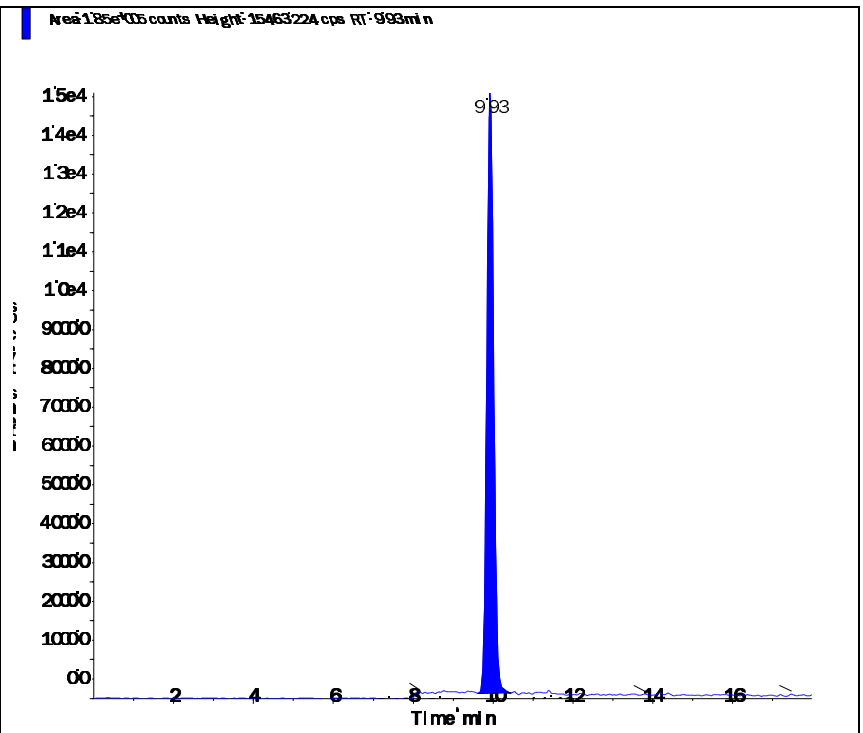

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.92) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.117
Sample Type:	(Quality Control)

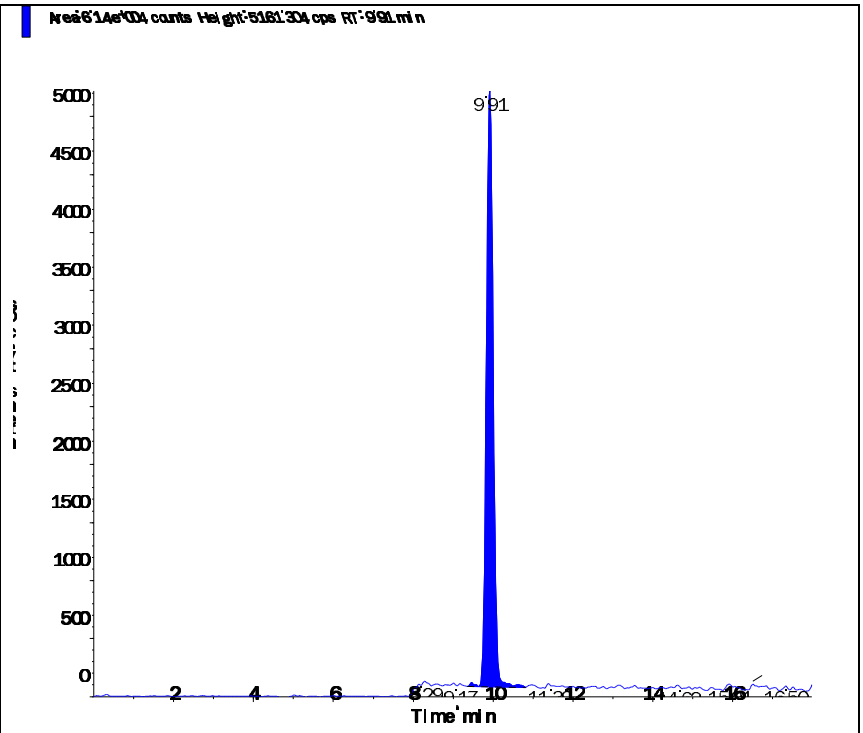

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Data File	LM33916.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 2:03:35 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561324-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33916.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 2:03:35 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561324-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.320e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.870e+05	9.93	1.00	0.993
Perchlorate conf	6.130e+04	9.91	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

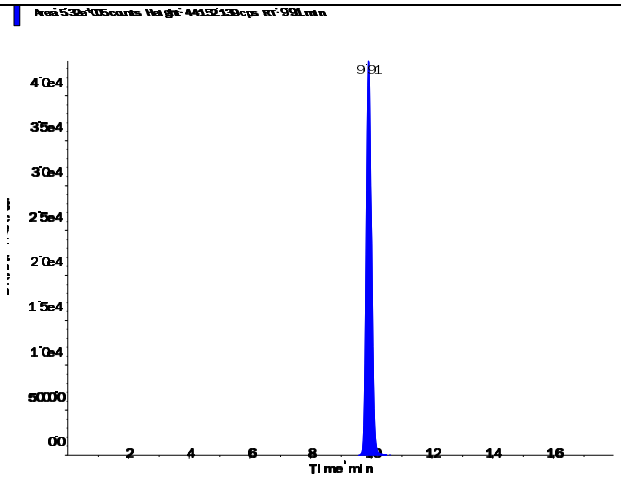

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	0.993 ng/ml
Area Ratio:	0.352
Sample Type:	(Quality Control)

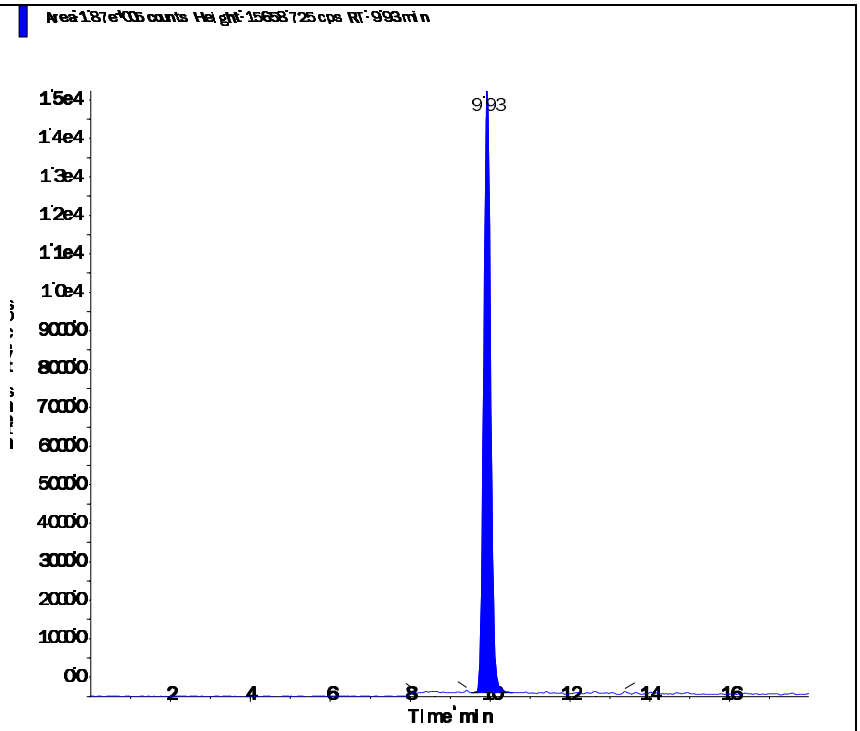

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.92) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.115
Sample Type:	(Quality Control)

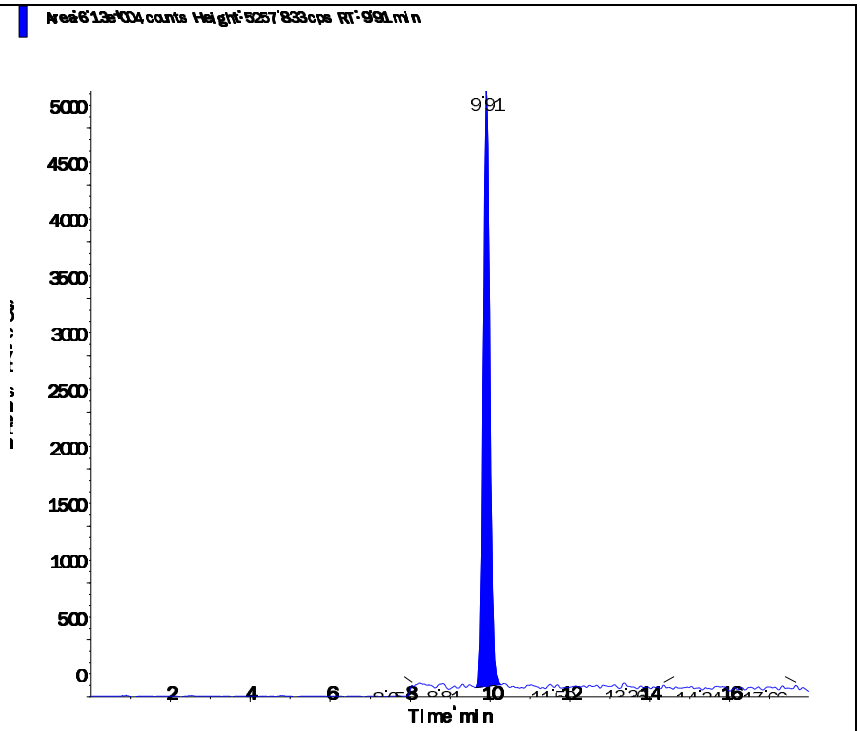

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Data File	LM33929.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 12:15:27 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561324-11 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33929.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 12:15:27 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561324-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.700e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.620e+05	9.95	1.00	0.976
Perchlorate conf	5.460e+04	9.93	1.00	1.02

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

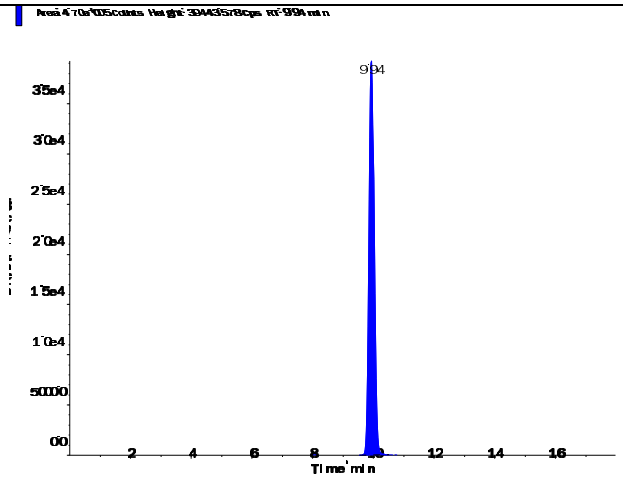

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	0.976 ng/ml
Area Ratio:	0.346
Sample Type:	(Quality Control)

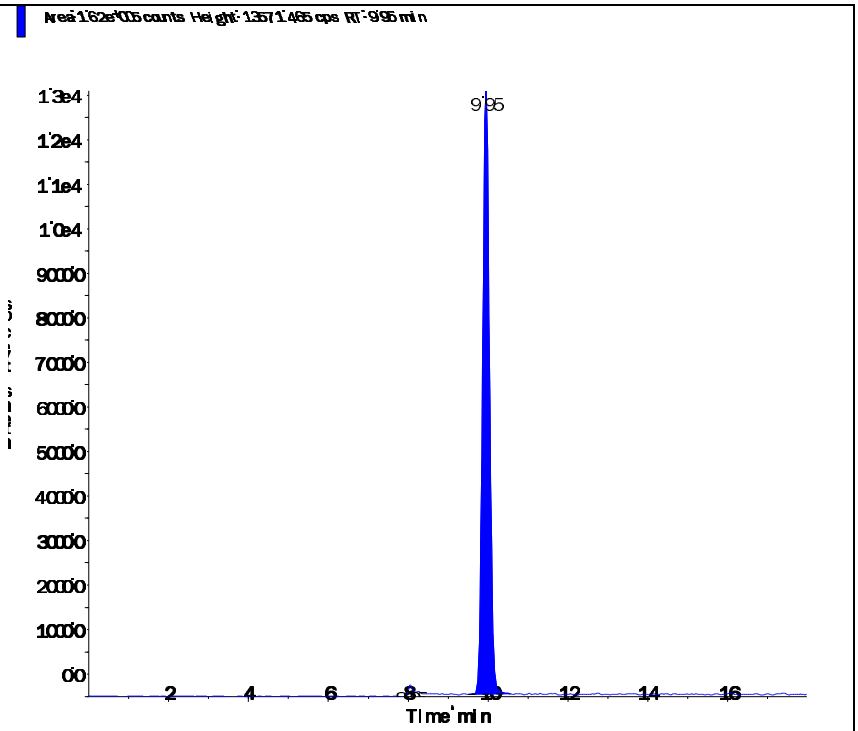

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.116
Sample Type:	(Quality Control)

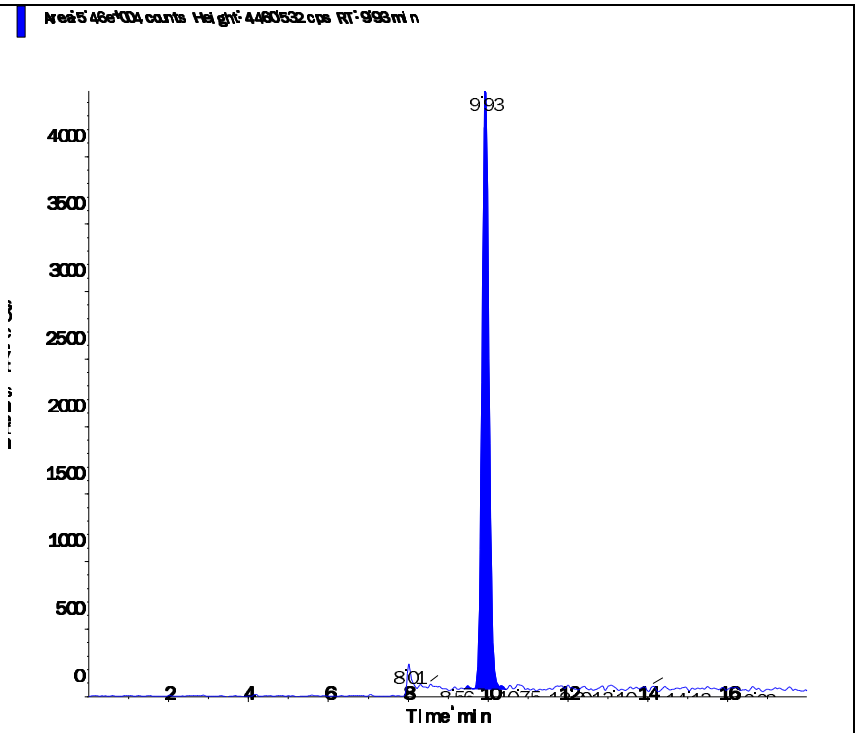

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Data File	LM33942.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 4:21:36 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561324-13 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33942.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 4:21:36 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561324-13	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.040e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.740e+05	9.96	1.00	0.978
Perchlorate conf	5.650e+04	9.94	1.00	0.984

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

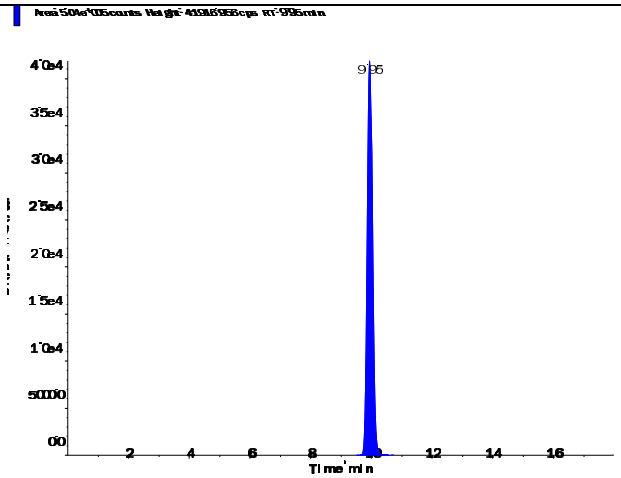

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	0.978 ng/ml
Area Ratio:	0.347
Sample Type:	(Quality Control)

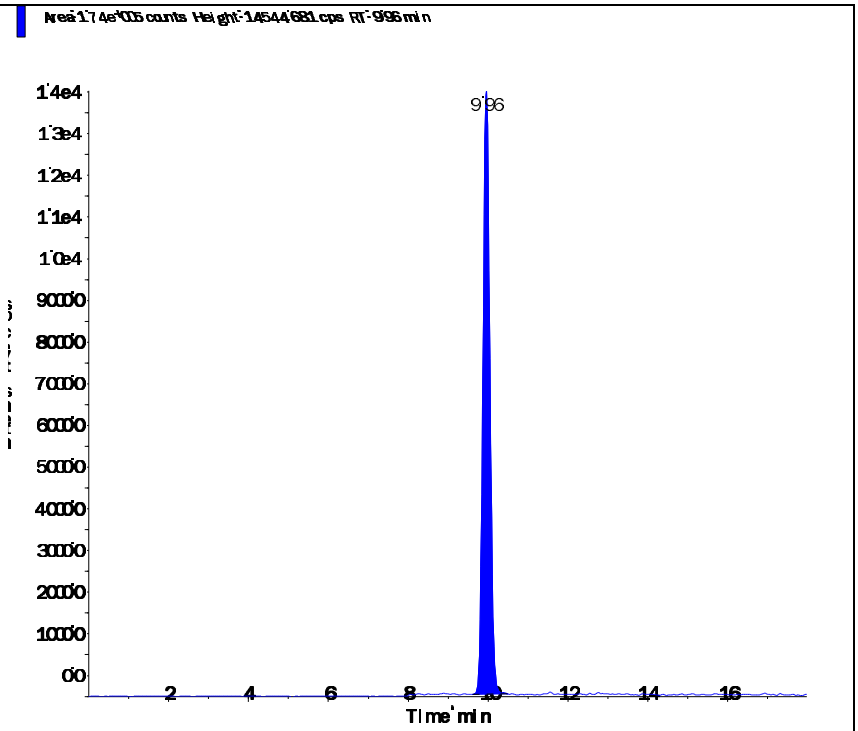

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.984 ng/ml
Area Ratio:	0.112
Sample Type:	(Quality Control)

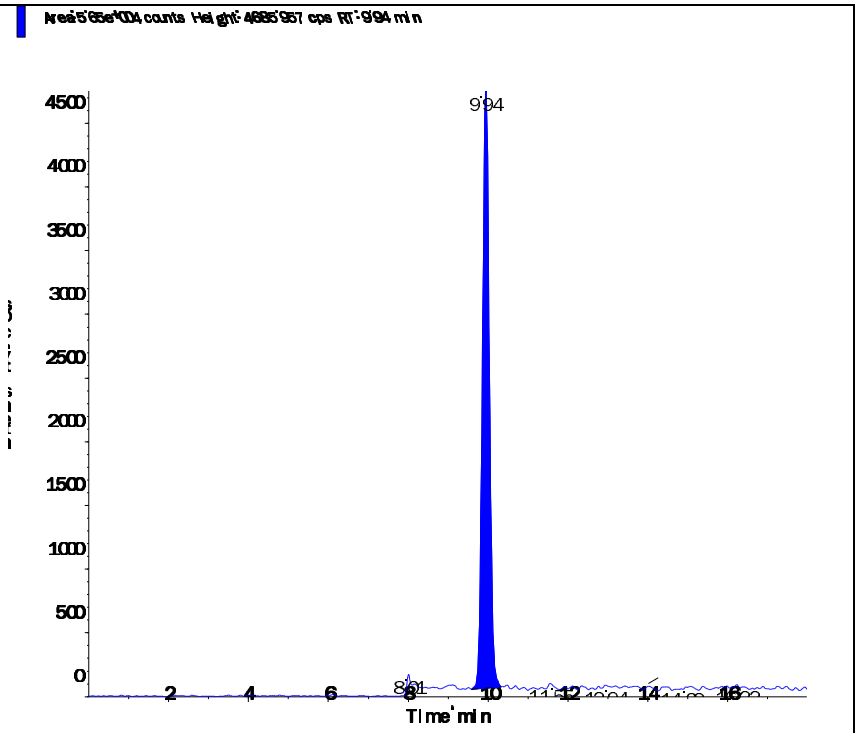

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Data File	LM33883.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 3:38:41 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561316-07 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33883.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 3:38:41 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561316-07	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.650e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.250e+04	9.94	N/A	0.188
Perchlorate conf	1.130e+04	9.92	N/A	0.201

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

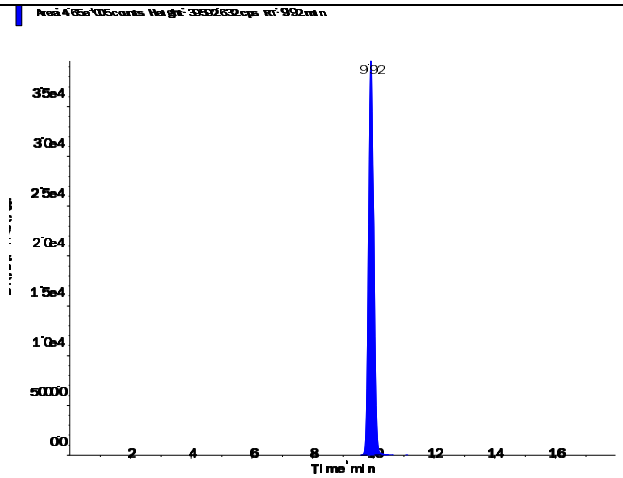

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.94 (9.94) min Calculated conc: 0.188 ng/ml Area Ratio: 0.07 Sample Type: (Unknown)	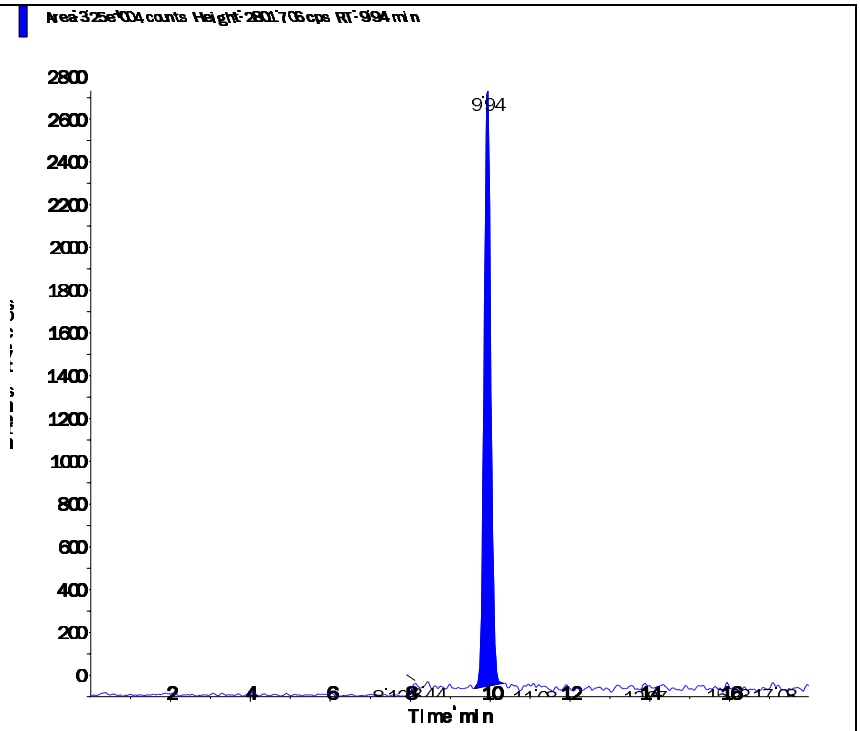
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.92 (9.92) min Calculated conc: 0.201 ng/ml Area Ratio: 0.024 Sample Type: (Unknown)	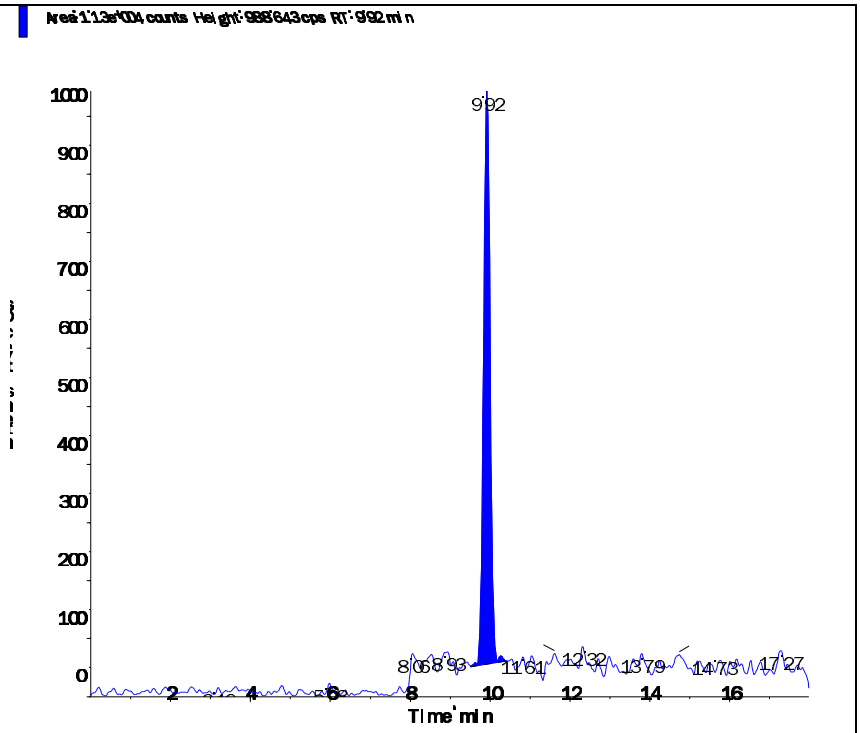

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Data File	LM33895.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 7:25:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561316-08 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33895.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 7:25:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561316-08	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.530e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.900e+04	9.95	N/A	0.189
Perchlorate conf	1.320e+04	9.94	N/A	0.198

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

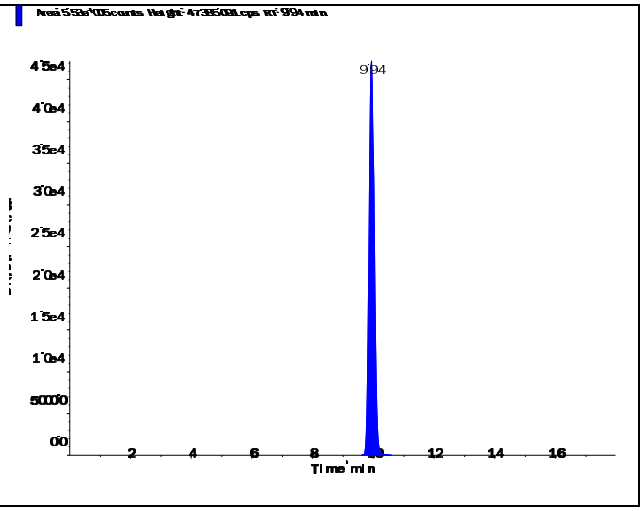

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	0.189 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

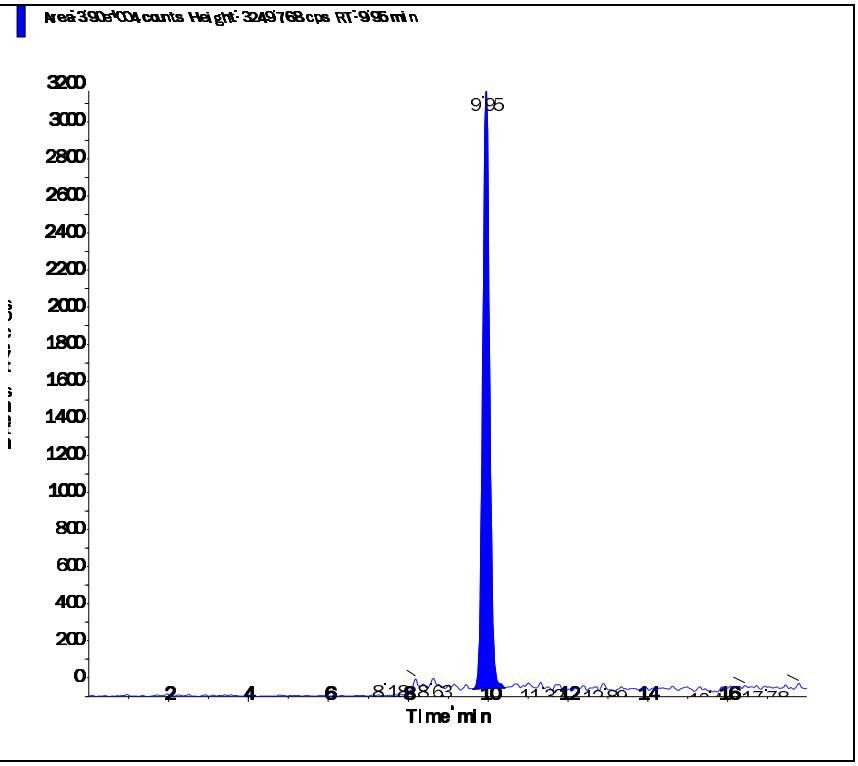

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.198 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

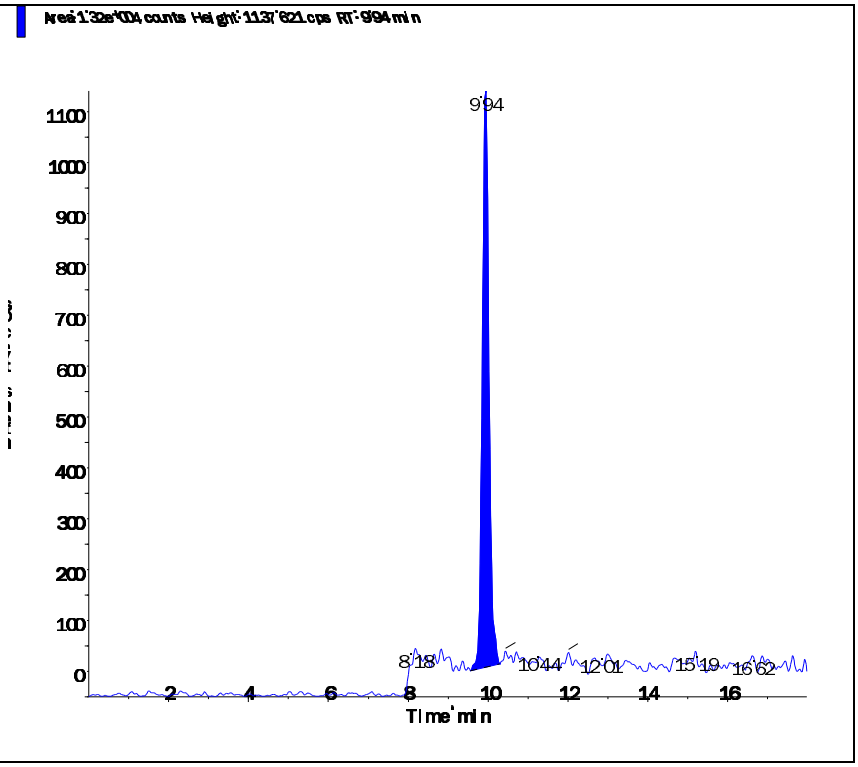

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Data File	LM33903.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 9:57:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561316-09 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33903.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 9:57:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561316-09	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.520e+05	9.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.990e+04	9.92	N/A	0.194
Perchlorate conf	1.310e+04	9.90	N/A	0.198

O18LP (Internal Standard)

RT (Exp. RT): 9.90(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

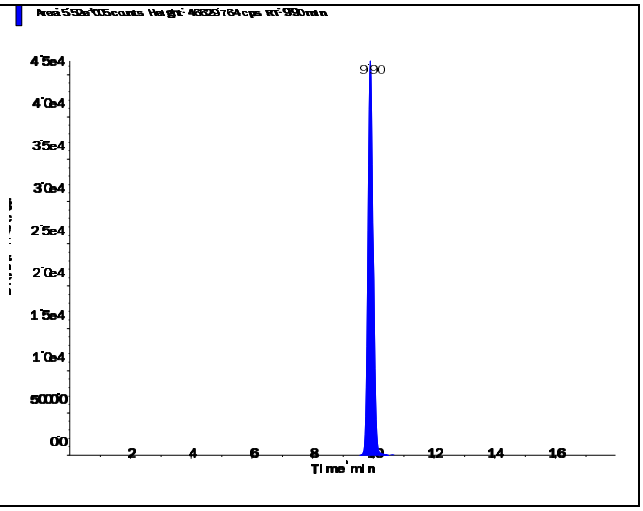

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.92 (9.94) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

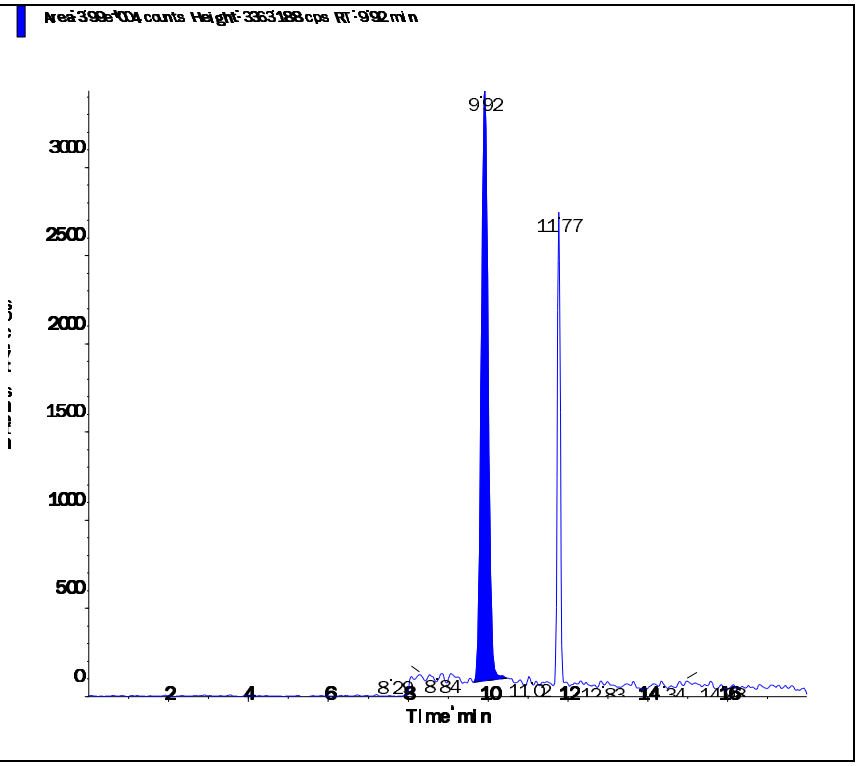

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.90 (9.92) min
Calculated conc:	0.198 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

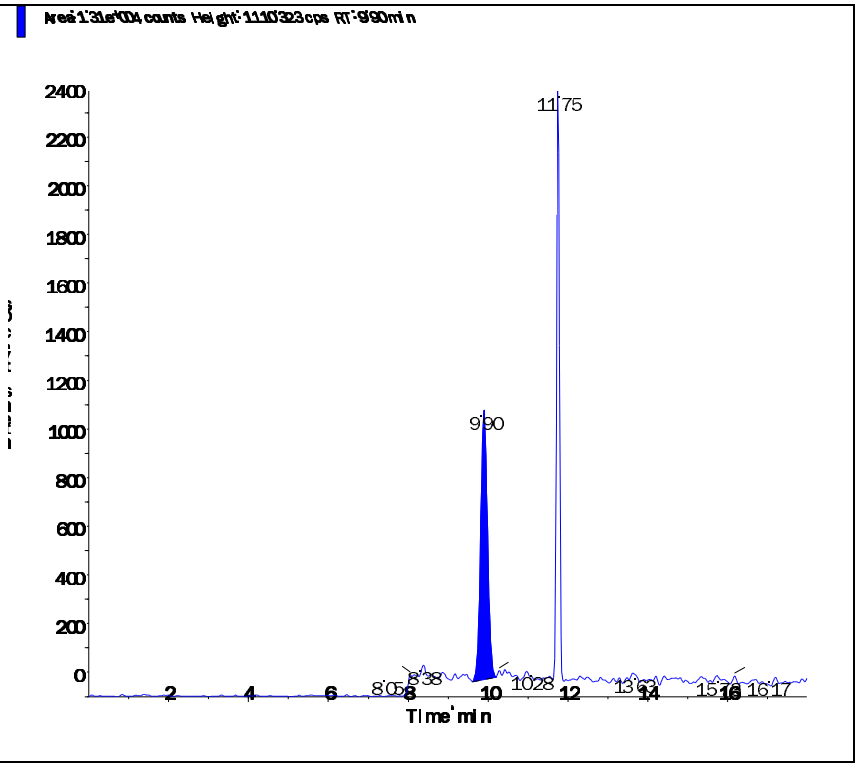

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Data File	LM33930.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 12:34:23 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561316-10 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33930.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 12:34:23 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561316-10	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.910e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.540e+04	9.96	N/A	0.193
Perchlorate conf	1.120e+04	9.94	N/A	0.189

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

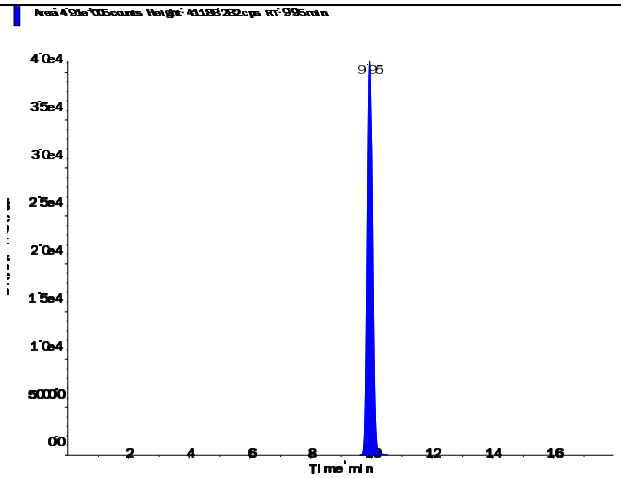

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	0.193 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

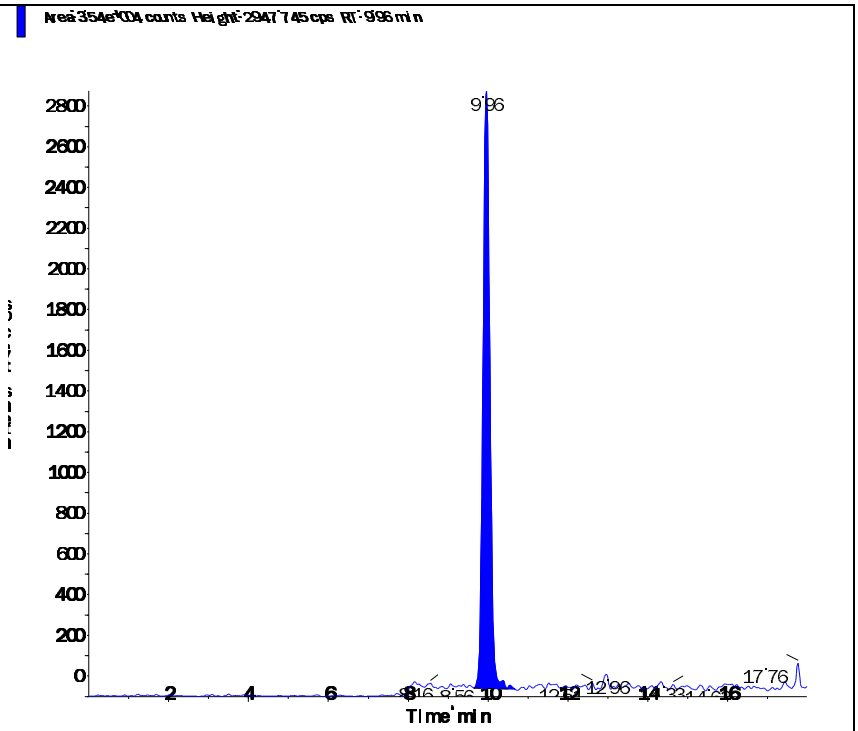

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.189 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

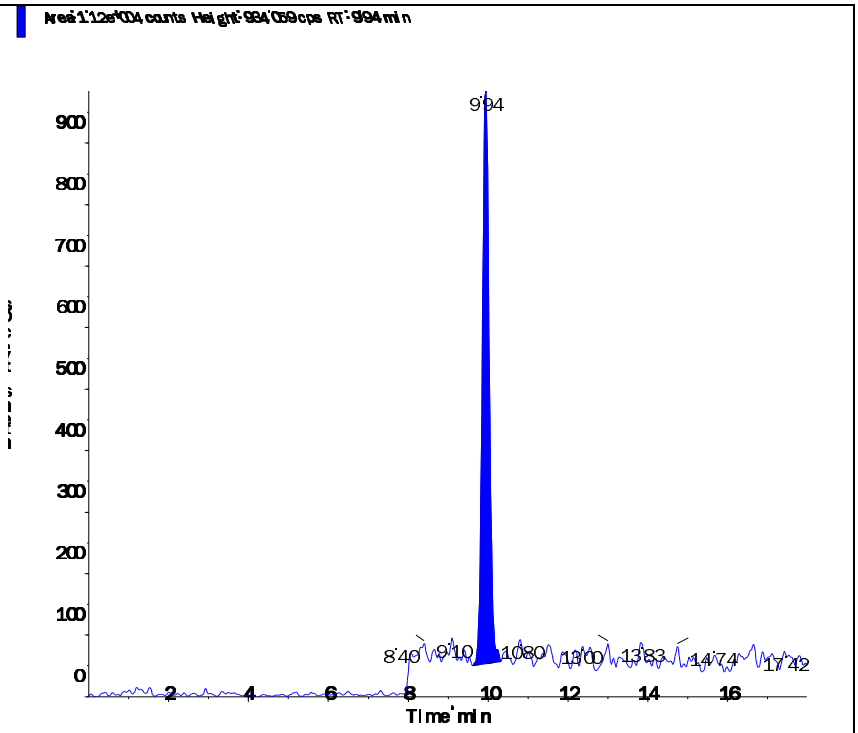

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Data File	LM33943.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 4:40:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561316-11 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33943.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 4:40:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561316-11	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.200e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.770e+04	9.95	N/A	0.195
Perchlorate conf	1.290e+04	9.94	N/A	0.208

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

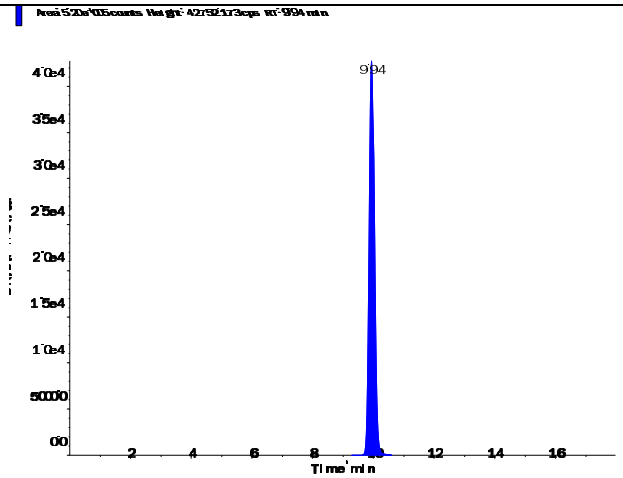

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	0.195 ng/ml
Area Ratio:	0.073
Sample Type:	(Unknown)

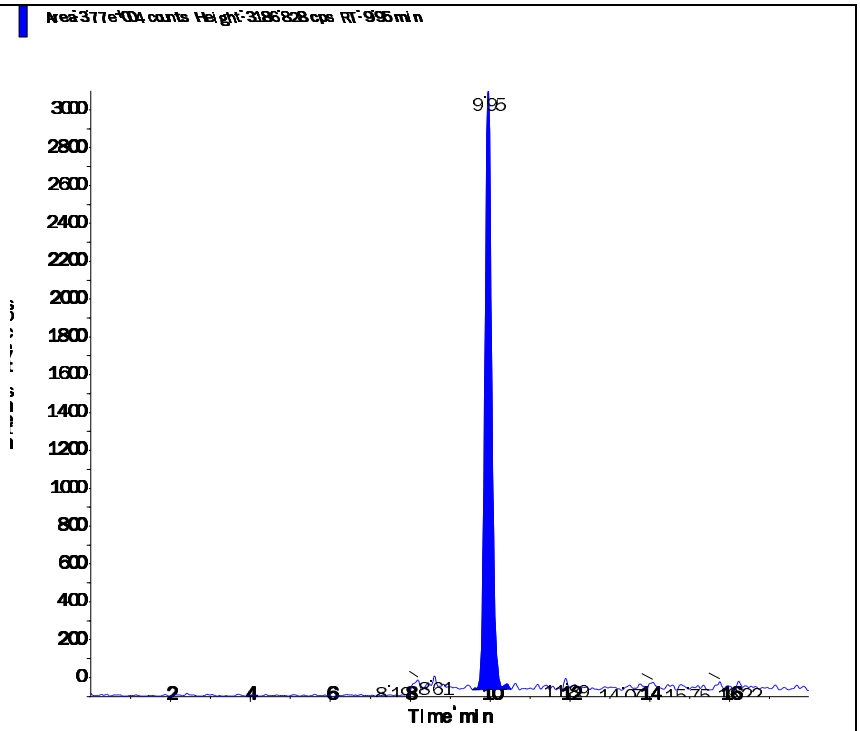

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.208 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

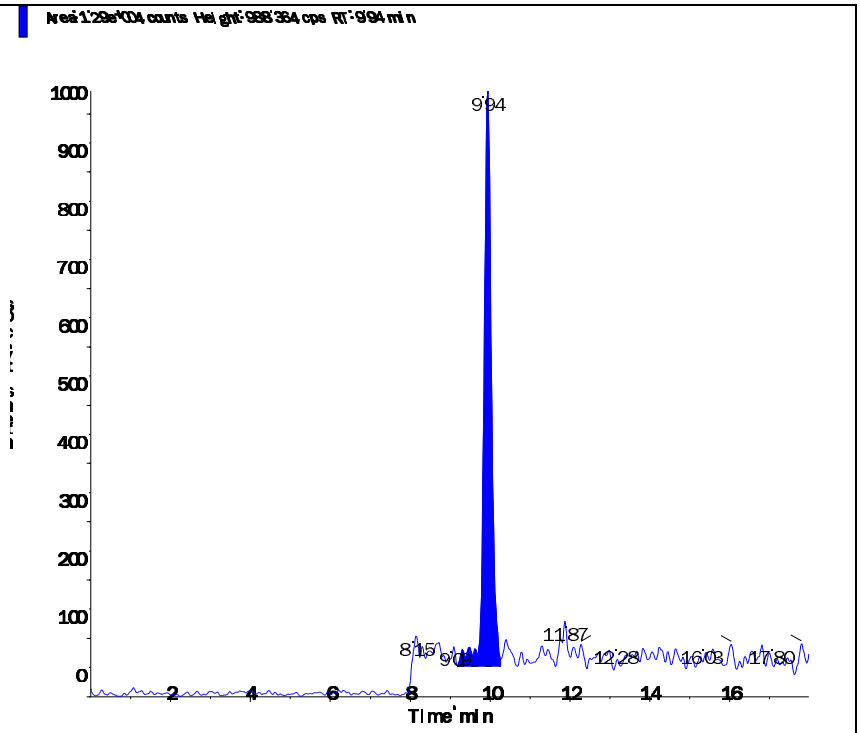

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Data File	LM33881.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 3:00:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561324-01 CCB	**Injection Vial**	1.00
Data File	LM33881.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 3:00:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561324-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.460e+05	9.89	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.89(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

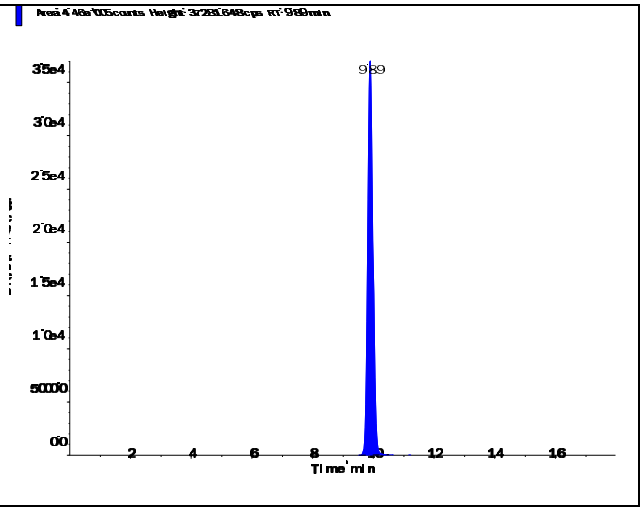

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

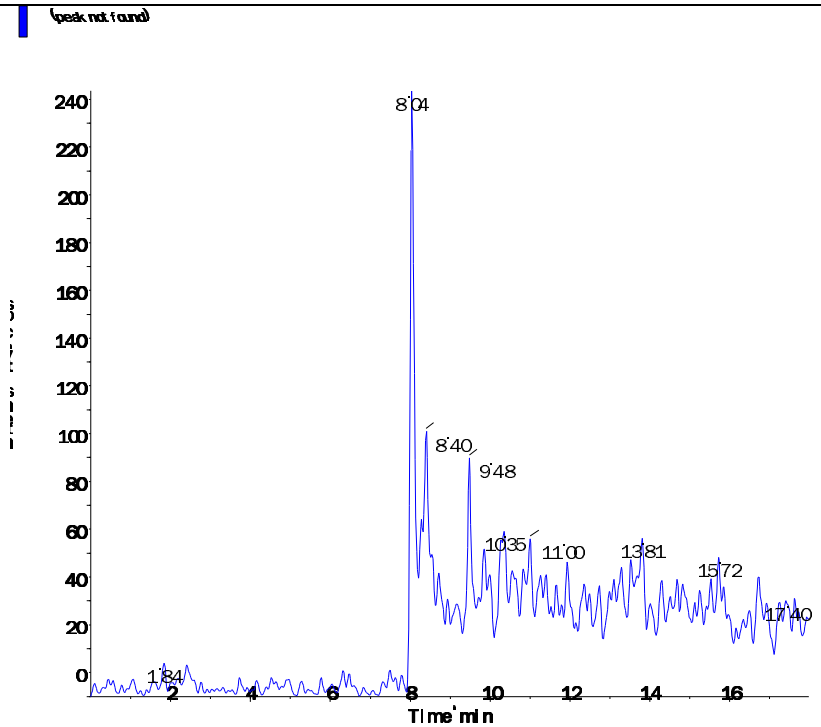

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

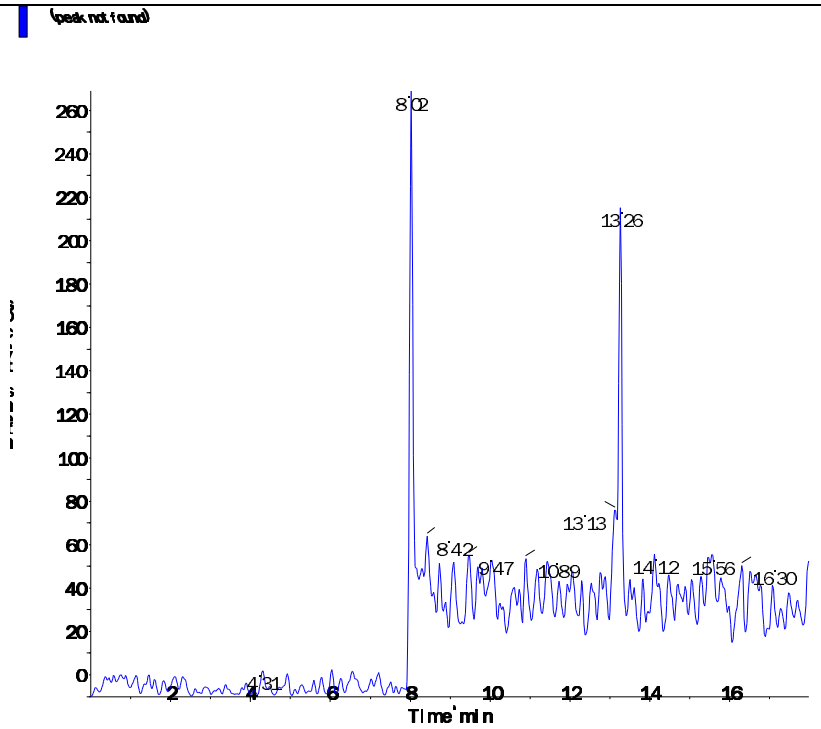

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Created with Analyst Reporter
Printed: 3/18/2016 6:16 PM

Data File	LM33896.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 7:44:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561324-04 CCB	**Injection Vial**	1.00
Data File	LM33896.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 7:44:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561324-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.360e+05	9.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	2.680e+02	9.76	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.90(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

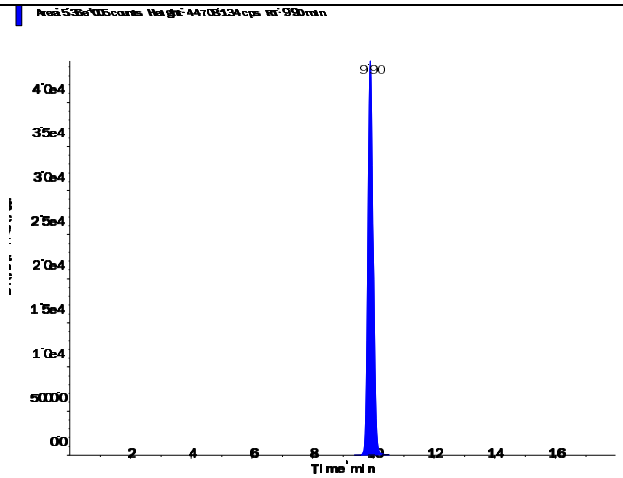

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

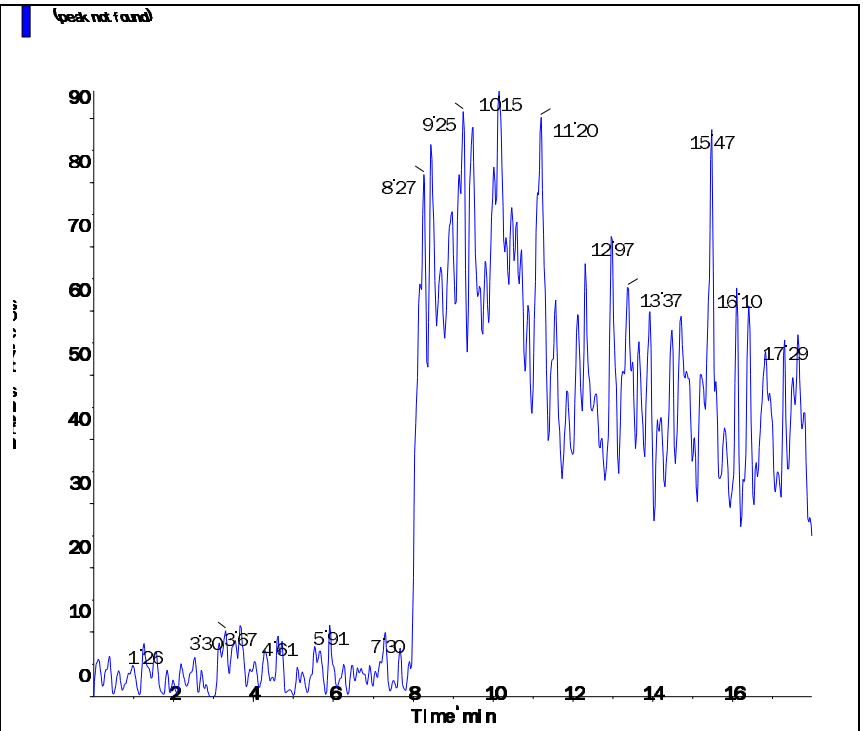

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.76 (9.92) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

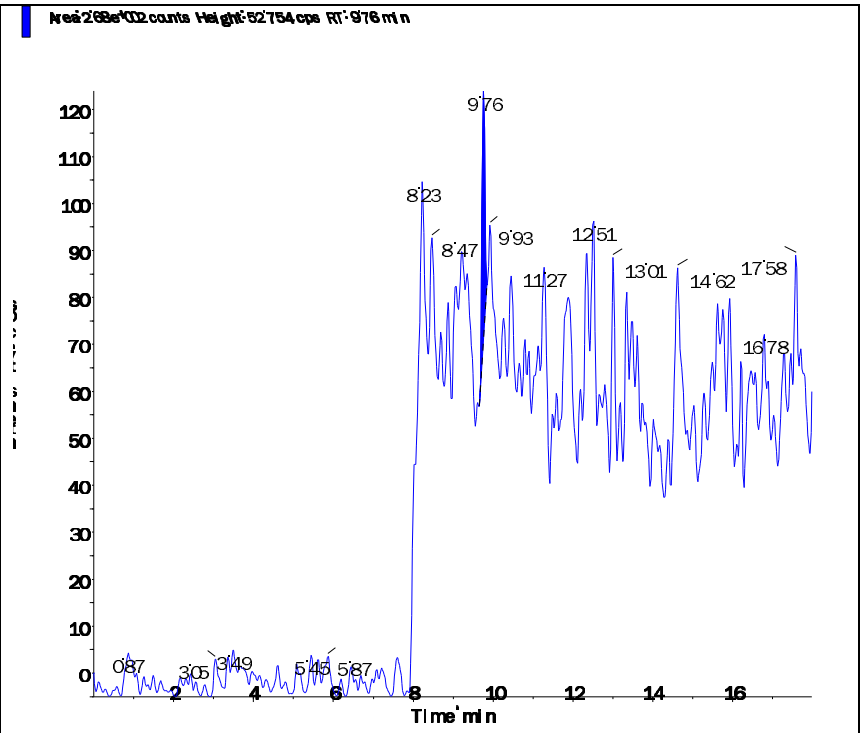

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Created with Analyst Reporter
Printed: 3/18/2016 6:19 PM

Data File	LM33905.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 10:35:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561324-06 CCB	**Injection Vial**	1.00
Data File	LM33905.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 10:35:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561324-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.450e+05	9.85	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.85(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

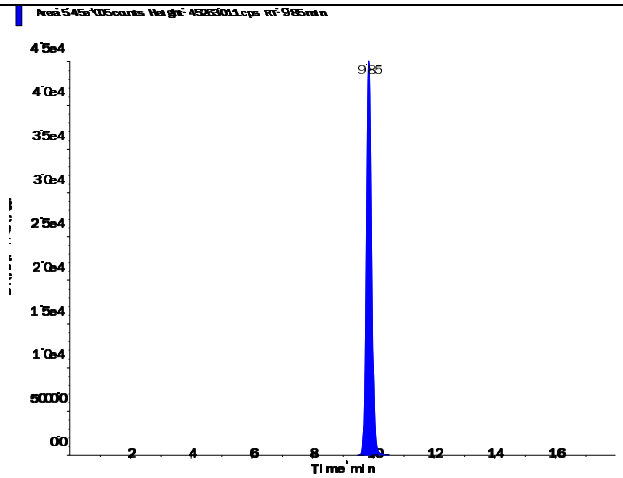

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

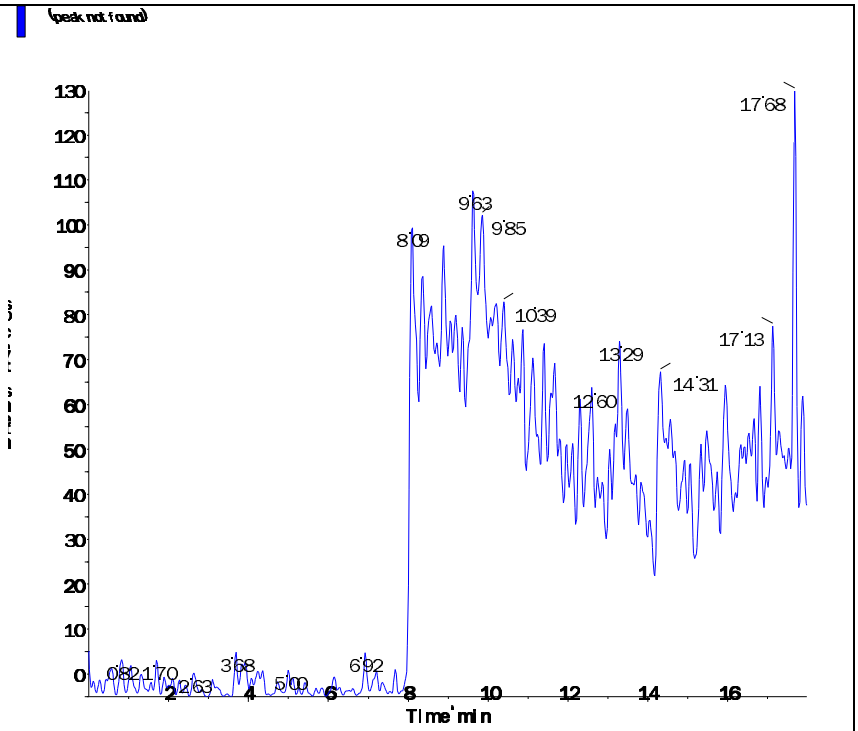

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

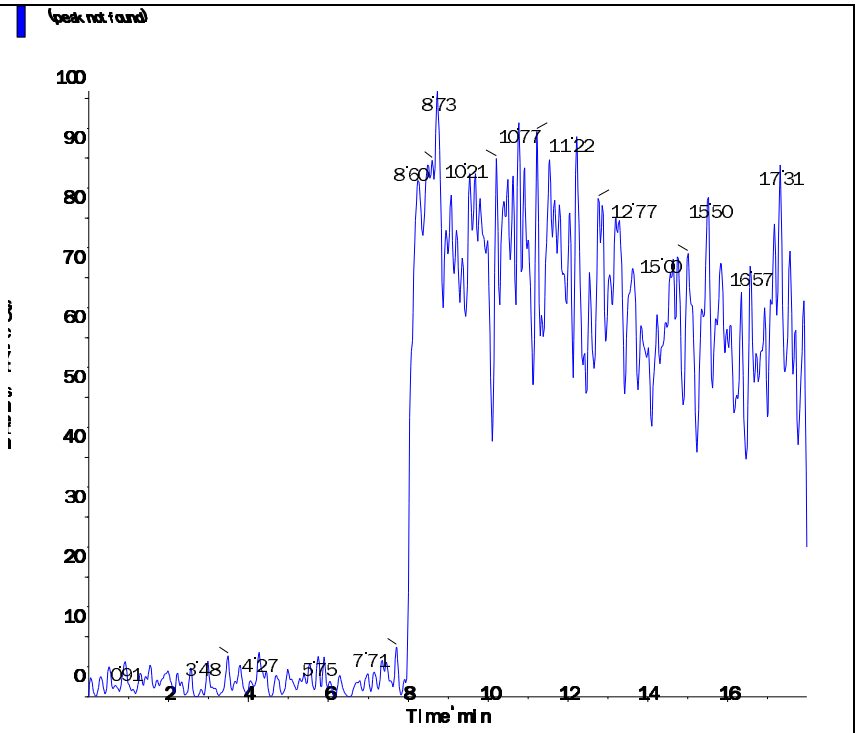

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Created with Analyst Reporter
Printed: 3/18/2016 6:27 PM

Data File	LM33928.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 5:50:47 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561324-10 CCB	**Injection Vial**	1.00
Data File	LM33928.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 5:50:47 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561324-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.450e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

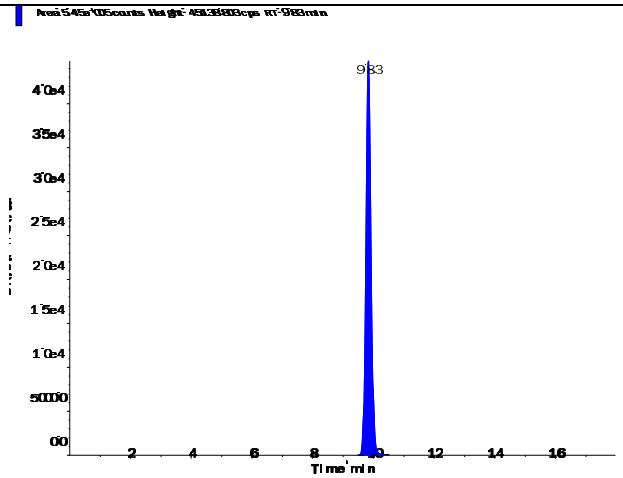

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

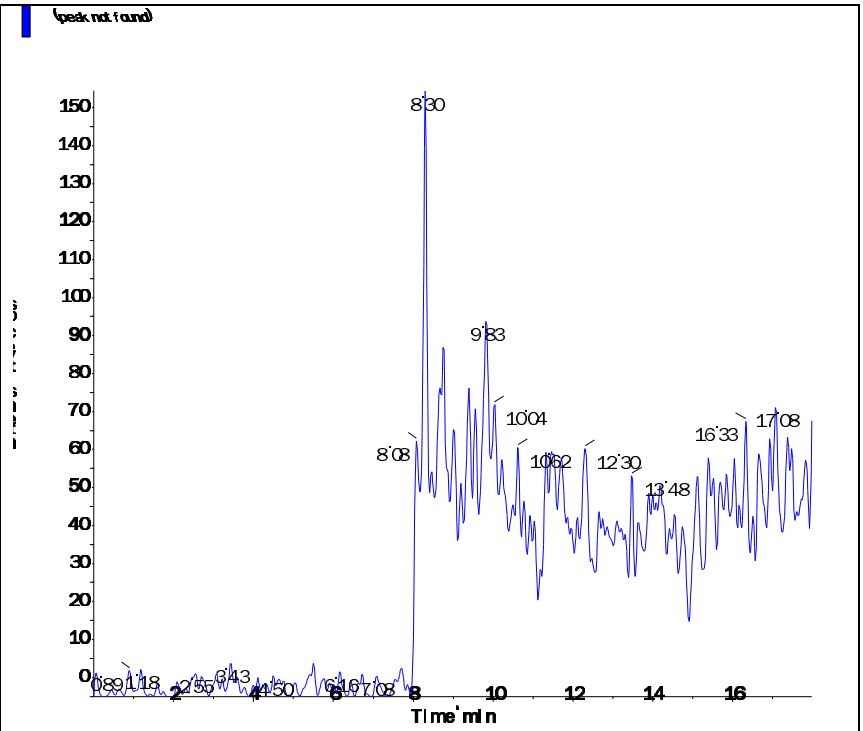

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

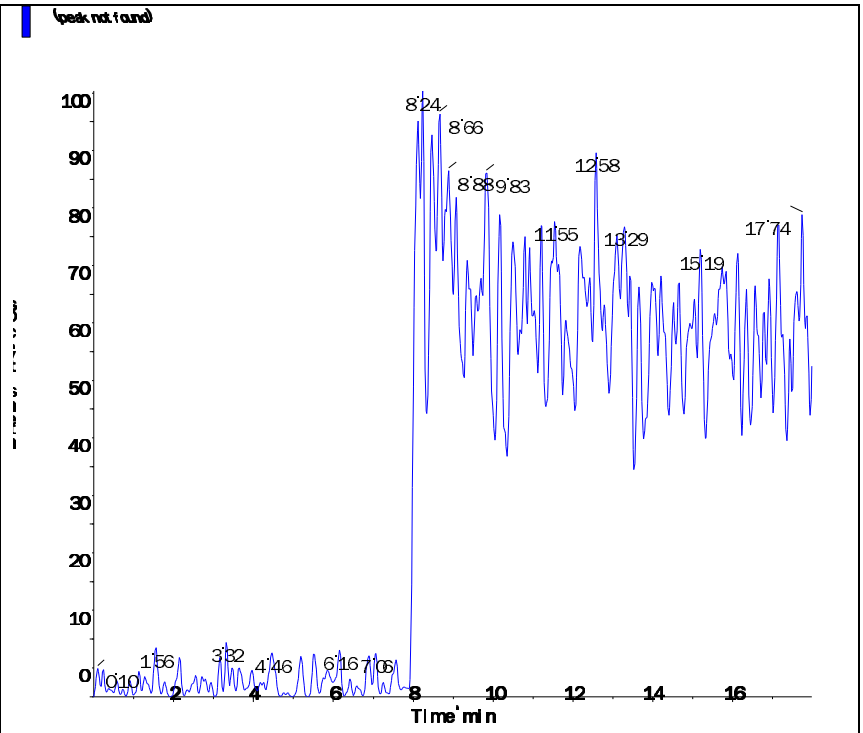

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Data File	LM33932.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 1:12:15 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561324-12 CCB	**Injection Vial**	1.00
Data File	LM33932.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 1:12:15 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561324-12	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.89	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	3.890e+02	9.97	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.89(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

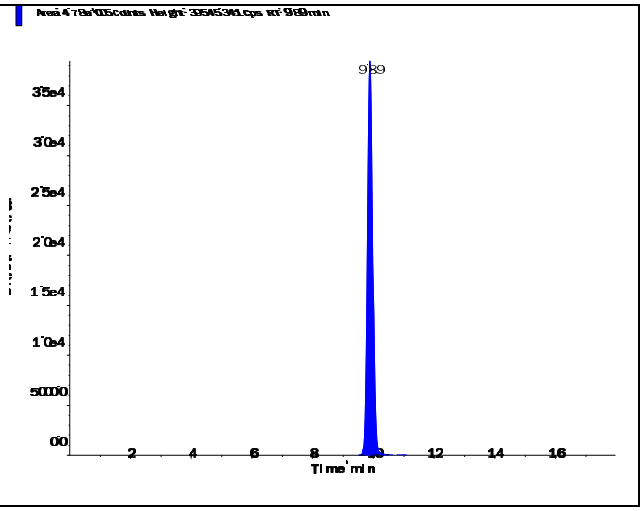

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

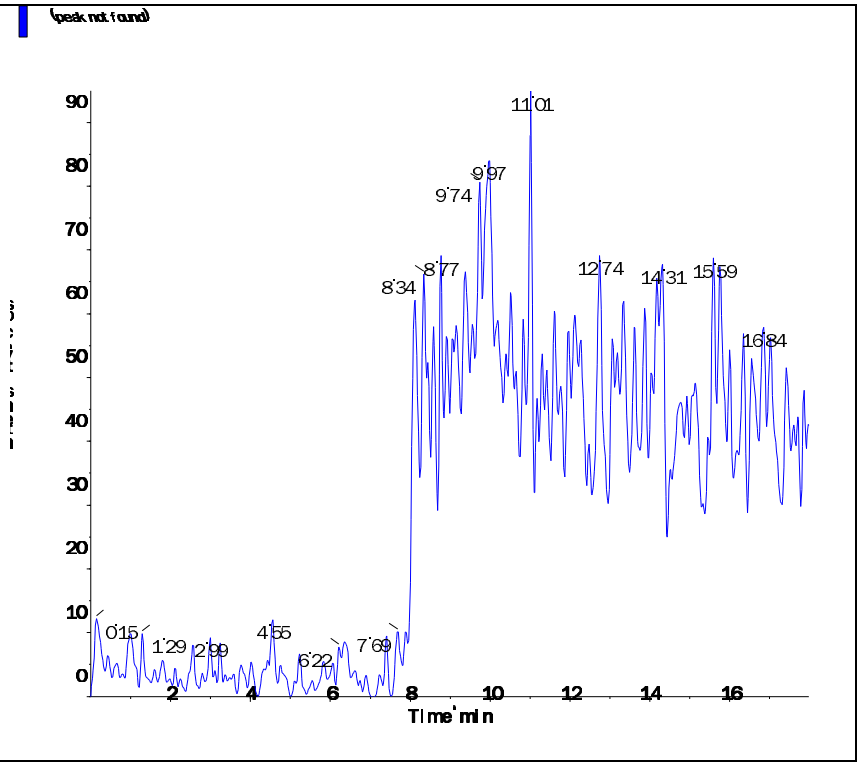

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.97 (9.92) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

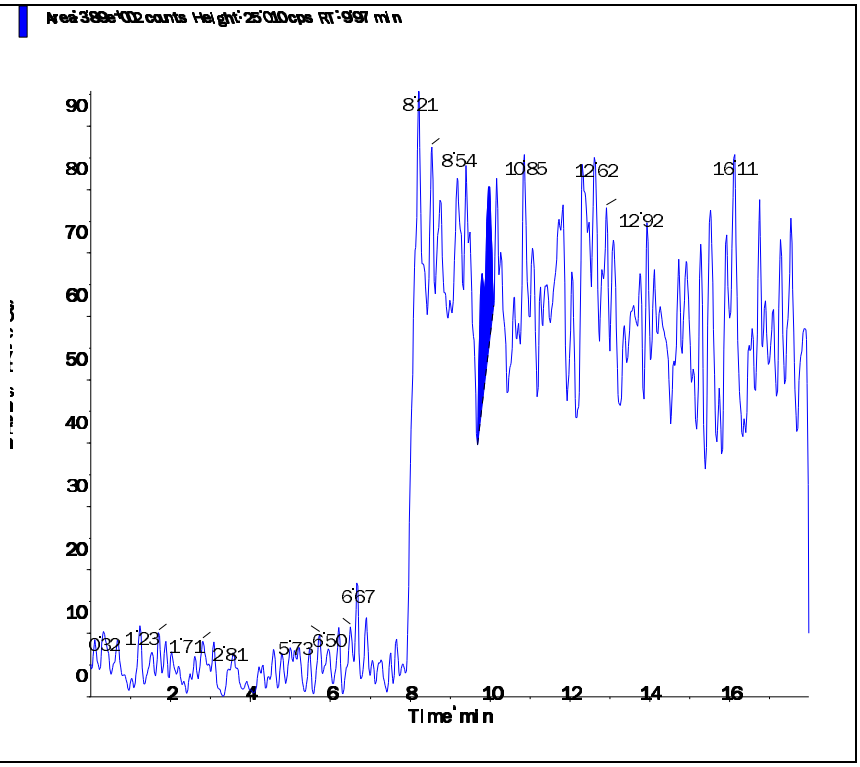

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Created with Analyst Reporter
Printed: 3/18/2016 6:34 PM

Data File	LM33945.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 5:18:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561324-14 CCB	**Injection Vial**	1.00
Data File	LM33945.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 5:18:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561324-14	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.86	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	5.480e+02	9.82	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.86(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

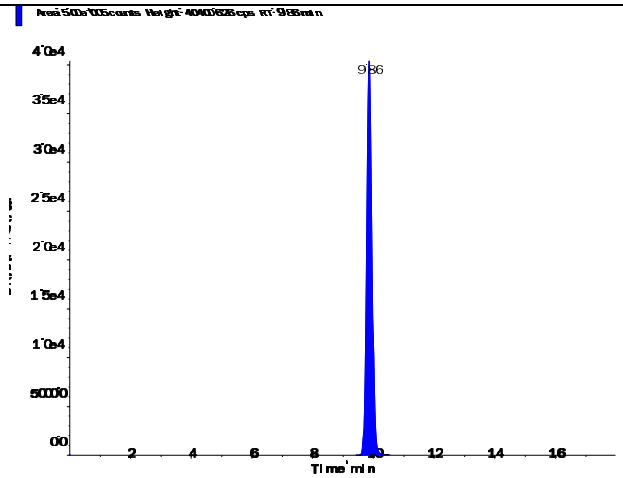

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

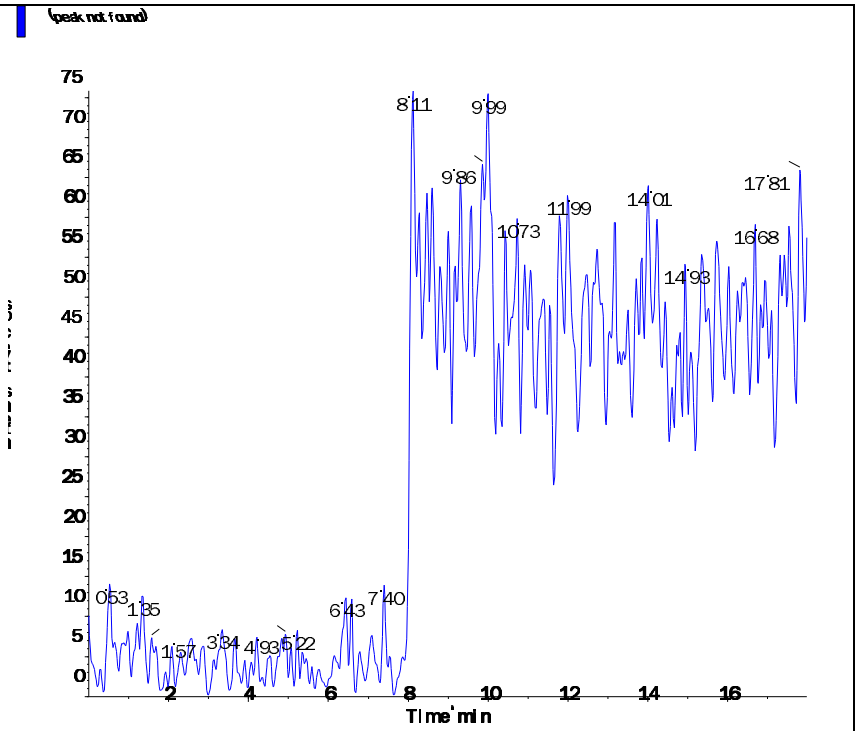

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.82 (9.92) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

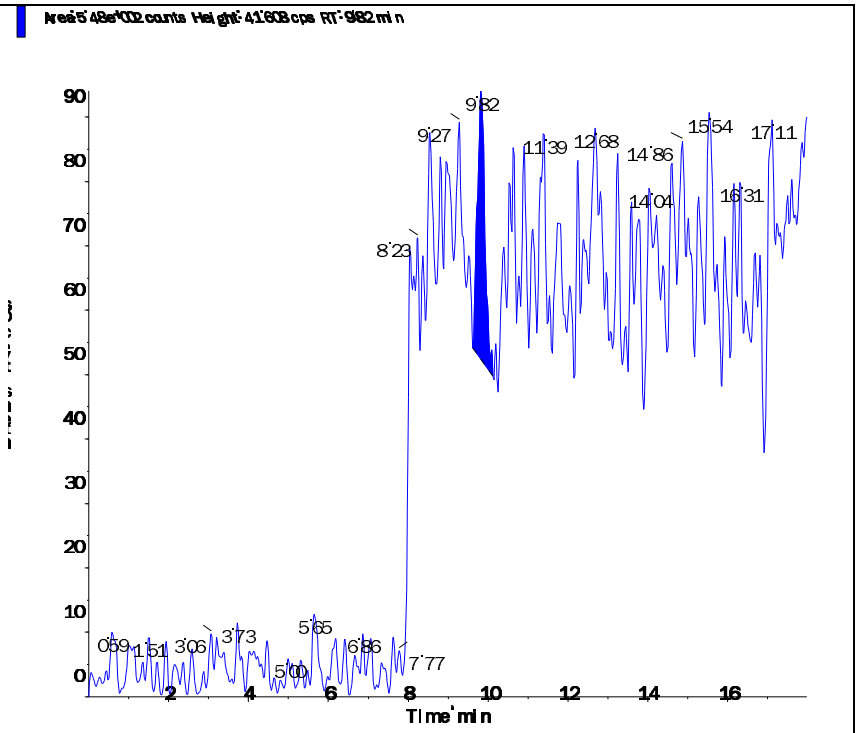

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Created with Analyst Reporter
Printed: 3/18/2016 6:12 PM

Data File	LM33884.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 3:57:36 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561316-01 MCT (2.0ug/kg)	**Injection Vial**	4.00
Data File	LM33884.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 3:57:36 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561316-01	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.580e+05	9.49	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.310e+04	9.50	N/A	0.194
Perchlorate conf	1.100e+04	9.48	N/A	0.20

O18LP (Internal Standard)

RT (Exp. RT): 9.49(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

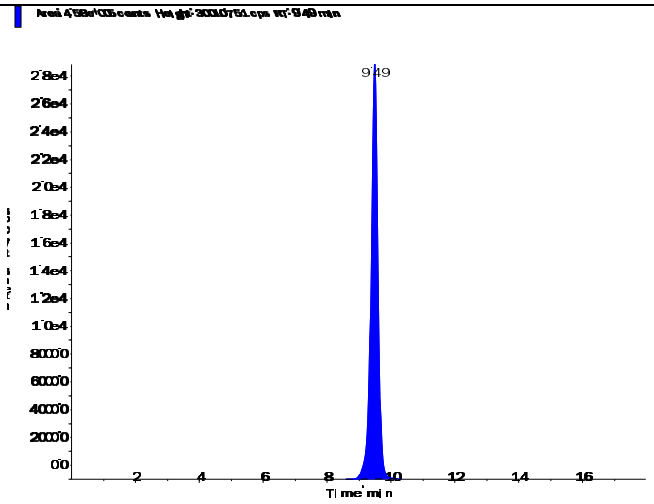

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Created with Analyst Reporter
Printed: 3/18/2016 6:12 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.50 (9.94) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

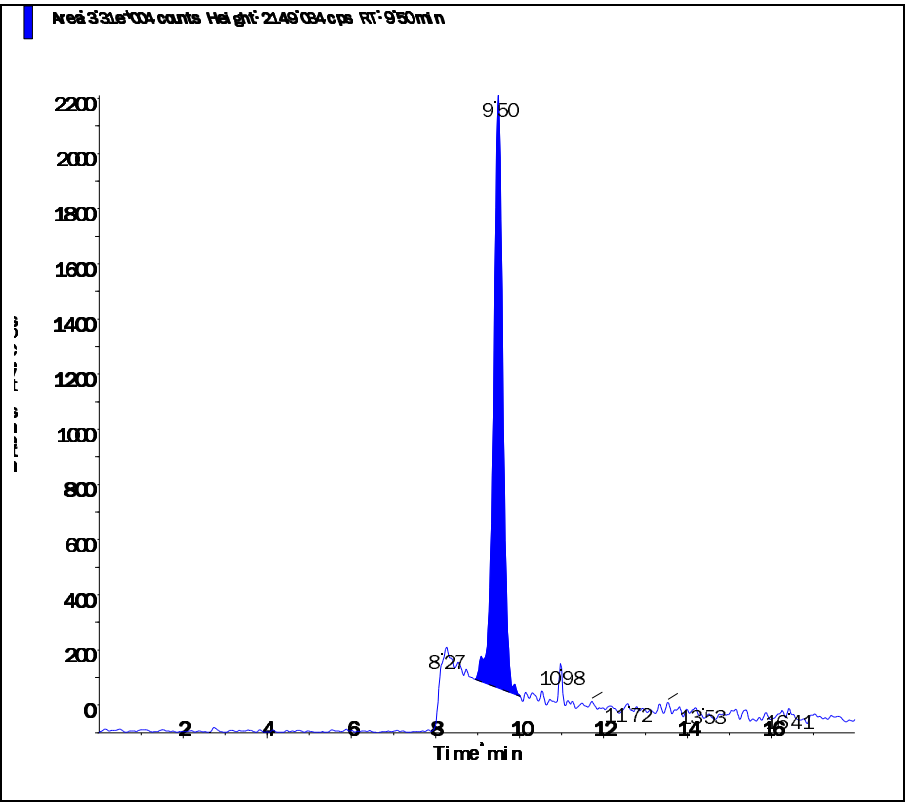

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.48 (9.92) min
Calculated conc:	0.20 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

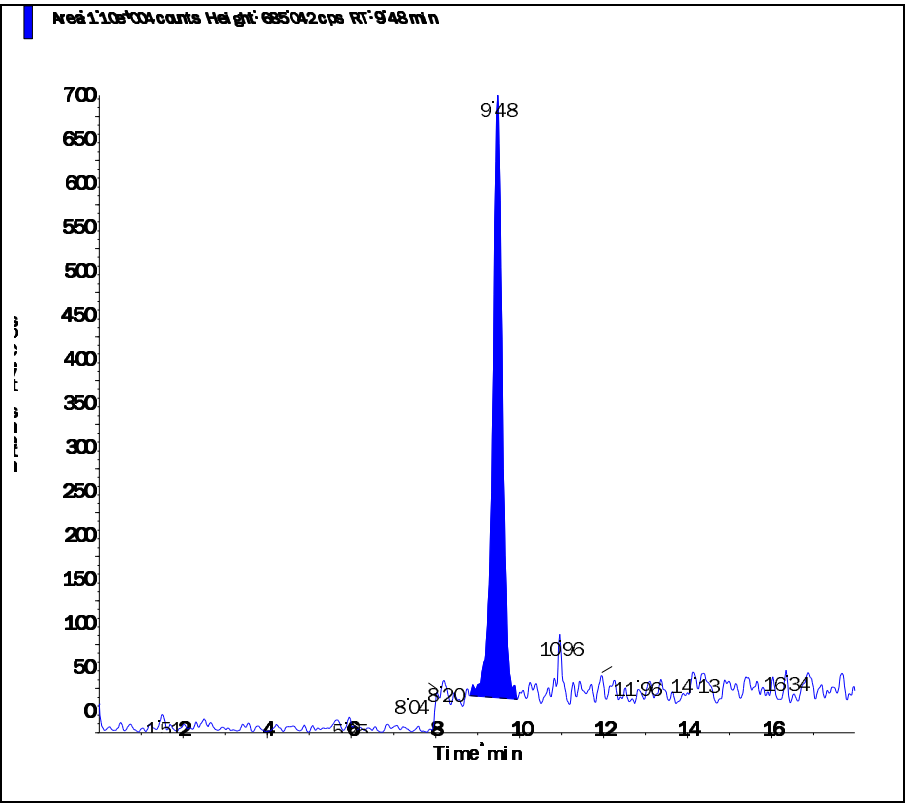

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Printing Time: 4:38:06 PM
Printing Date: Thursday, March 17, 2016

Sample Name: "WG561316-01 MCT (2.0ug/kg)" Sample ID: "WG561316-01" File: "LM33884.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "7,1 STD72685" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.213 ug/L
Acq. Date:	3/17/2016
Acq. Time:	3:57:36 PM
Modified:	No
Proc. Algorithm:	Analyst Classic
Bunching Factor:	3
Noise Threshold:	18.48 cps
Area Threshold:	82.40 cps
Num. Smooths:	5
Sep. Width:	0.20
Sep. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Valley
Retention Time:	9.50 min
Area:	3.62e+004 counts
Height:	2194.740 cps
Start Time:	8.951 min
End Time:	9.943 min

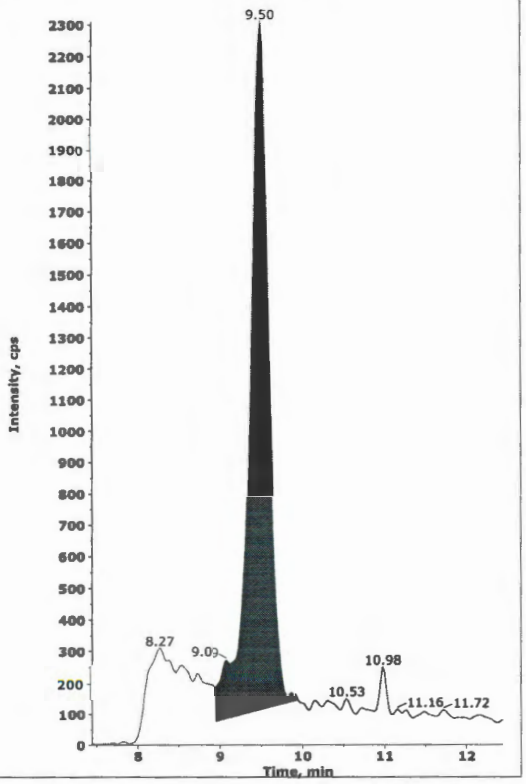

Collected by: N/A
Electronic Signature: no
Operator: lcms1

Printing Time: 4:39:16 PM
Printing Date: Thursday, March 17, 2016

Sample Name: "WG561316-01 MCT (2.0ug/kg)" Sample ID: "WG561316-01" File: "LM33884.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "7,1 STD72685" Annotation: ""

Sample Index:	1	
Sample Type:	Unknown	
Concentration:	N/A	
Calculated Conc:	0.194	ug/L
Acq. Date:	3/17/2016	
Acq. Time:	3:57:36 PM	
Modified:	Yes	
Proc. Algorithm:	Analyst Classic	
Smoothing Factor:	2	
Noise Threshold:	18.48	cps
Area Threshold:	92.40	cps
Num. Smooths:	5	
Exp. Width:	0.20	
Exp. Height:	0.01	
Exp. Peak Ratio:	5.00	
Exp. Adj. Ratio:	4.00	
Exp. Val. Ratio:	3.00	
RT Window:	30.000	sec
Expected RT:	9.94	min
Use Relative RT:	Yes	
Int. Type:	Base To Base	
Retention Time:	9.50	min
Area:	3.31e+004	counts
Height:	2149.034	cps
Start Time:	8.951	min
End Time:	10.024	min

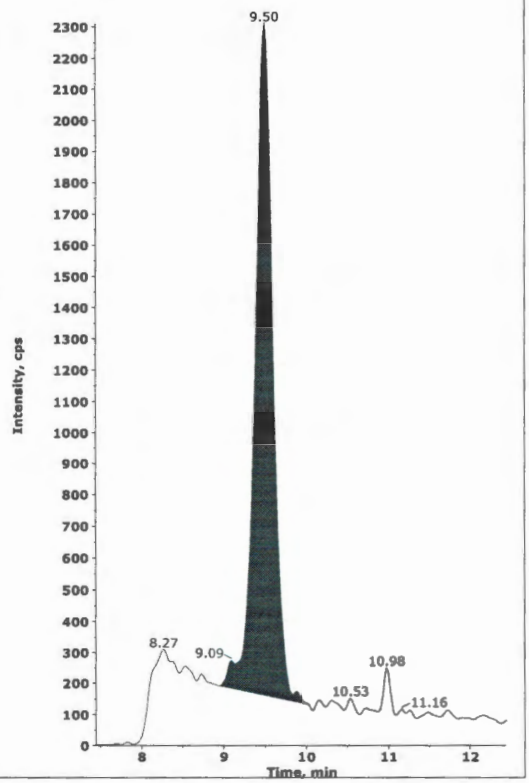

#4
JWR/03/17/16

3-21-16

Collected by: N/A
Electronic Signature: no
Operator: 1cms1

2.2.1.5 Raw QC Data

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Printed: 3/18/2016 6:13 PM

Data File	LM33885.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 4:16:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561316-02 BLANK	**Injection Vial**	5.00
Data File	LM33885.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 4:16:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561316-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.830e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

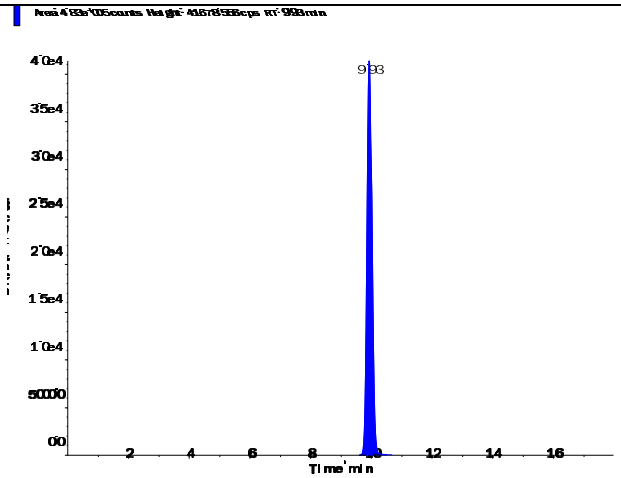

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

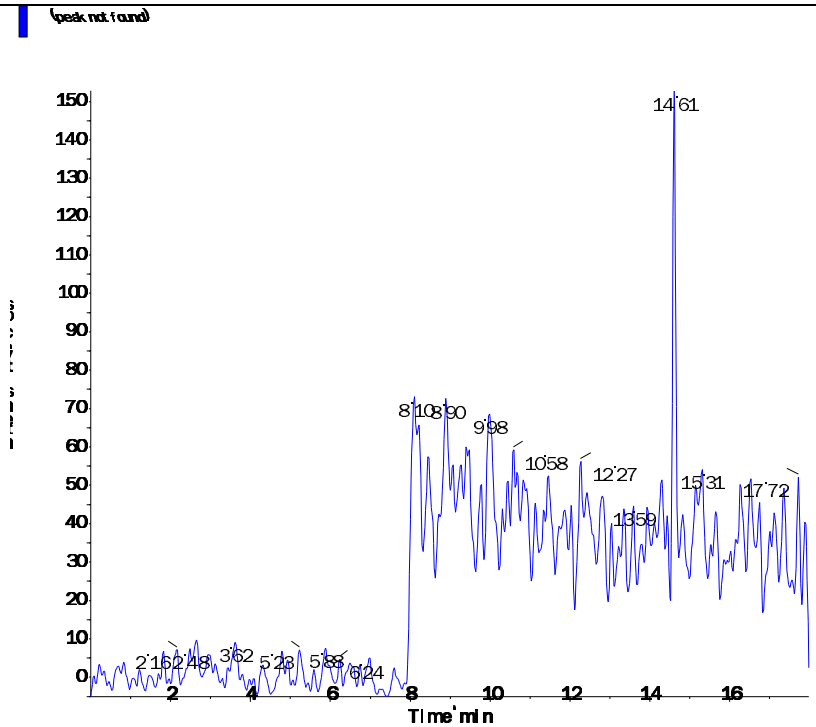

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

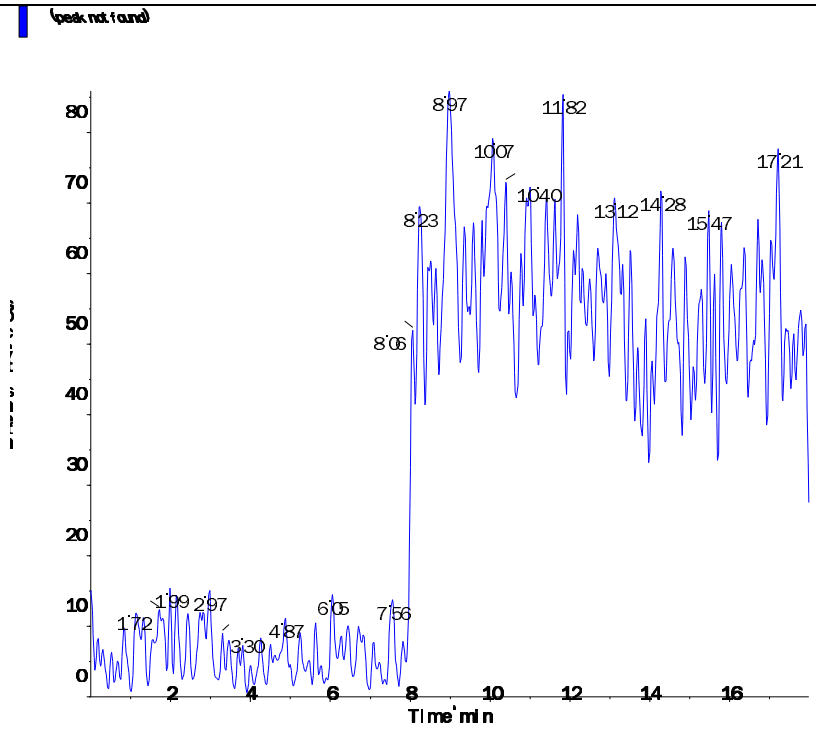

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 3/18/2016 6:13 PM

Data File	LM33886.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 4:35:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561316-03 LCS (2.0ug/kg)	**Injection Vial**	6.00
Data File	LM33886.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 4:35:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561316-03	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.600e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.470e+04	9.93	N/A	0.203
Perchlorate conf	1.180e+04	9.92	N/A	0.214

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

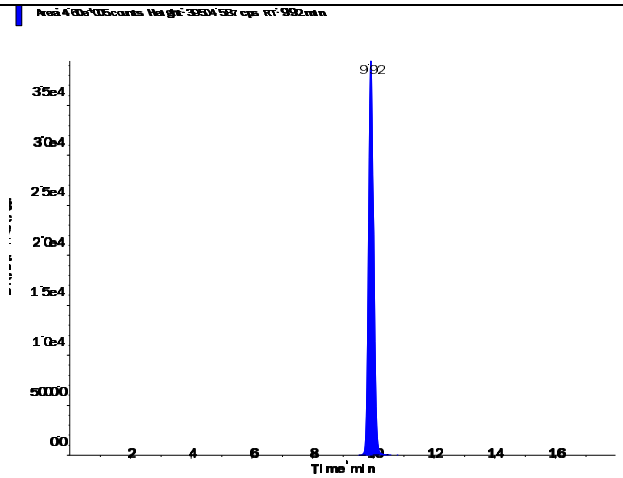

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	0.203 ng/ml
Area Ratio:	0.075
Sample Type:	(Unknown)

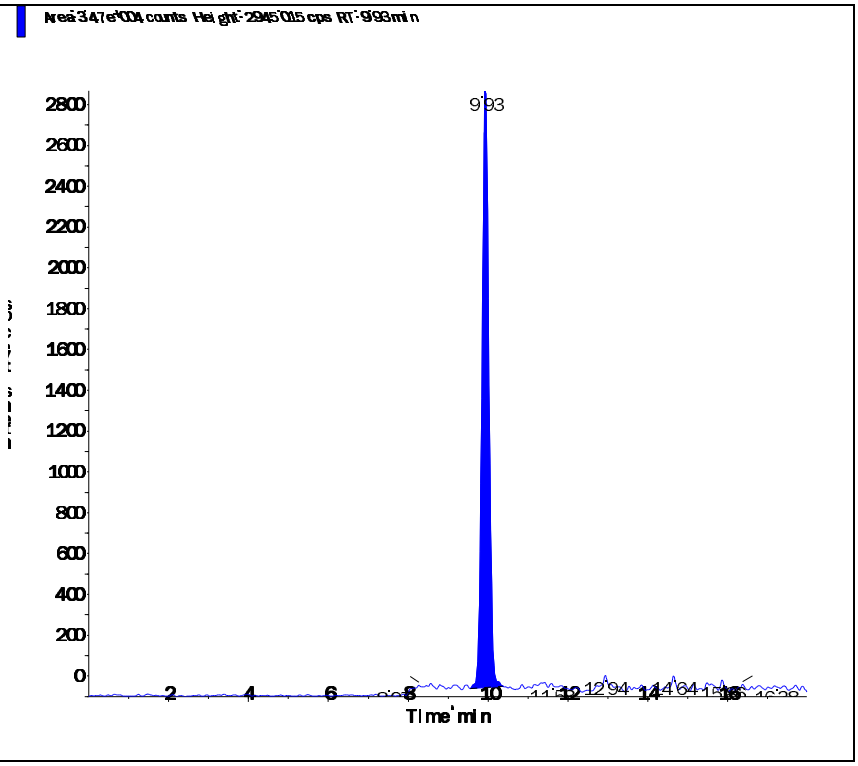

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	0.214 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

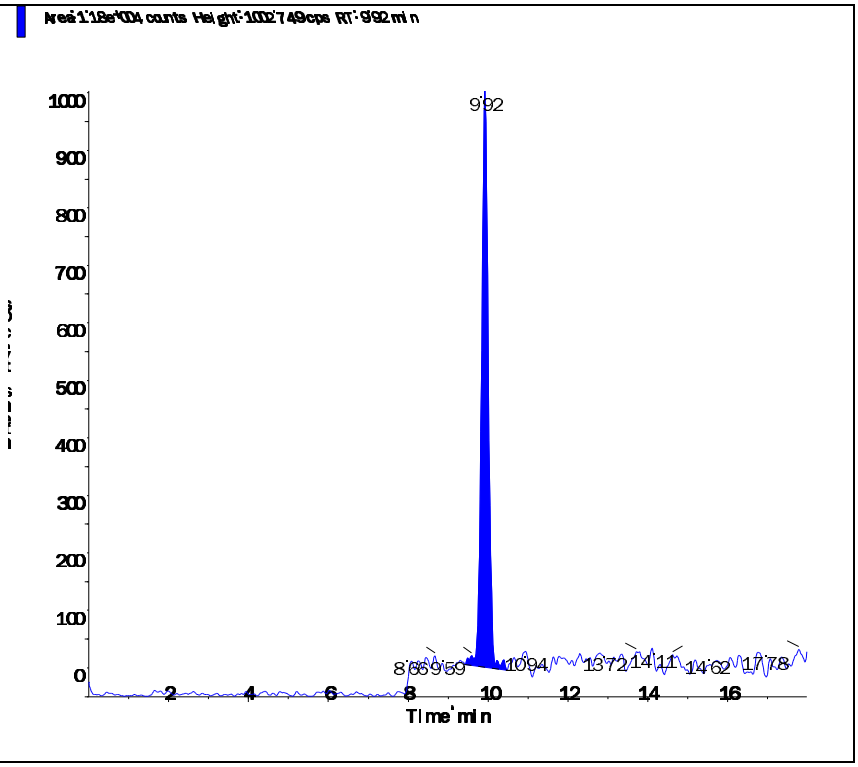

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Created with Analyst Reporter
Printed: 3/18/2016 6:14 PM

Data File	LM33888.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 5:13:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030861-01 MS	**Injection Vial**	8.00
Data File	LM33888.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 5:13:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561316-05	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.840e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.640e+04	9.96	N/A	0.203
Perchlorate conf	1.230e+04	9.94	N/A	0.213

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

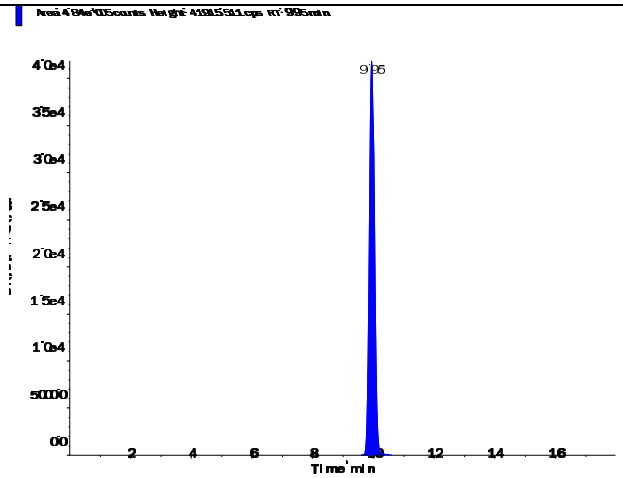

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	0.203 ng/ml
Area Ratio:	0.075
Sample Type:	(Unknown)

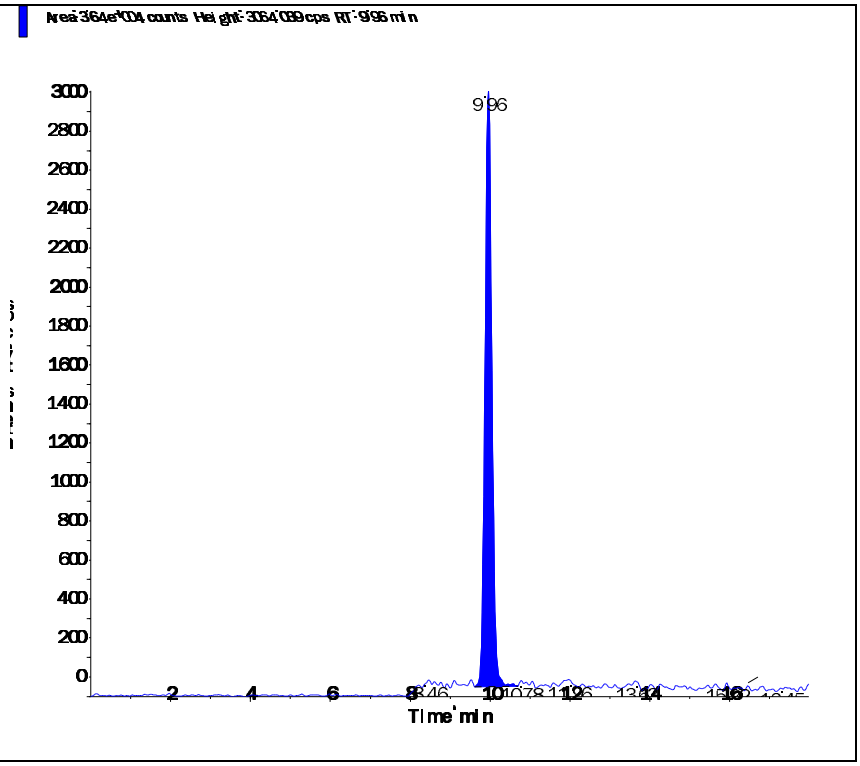

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.213 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

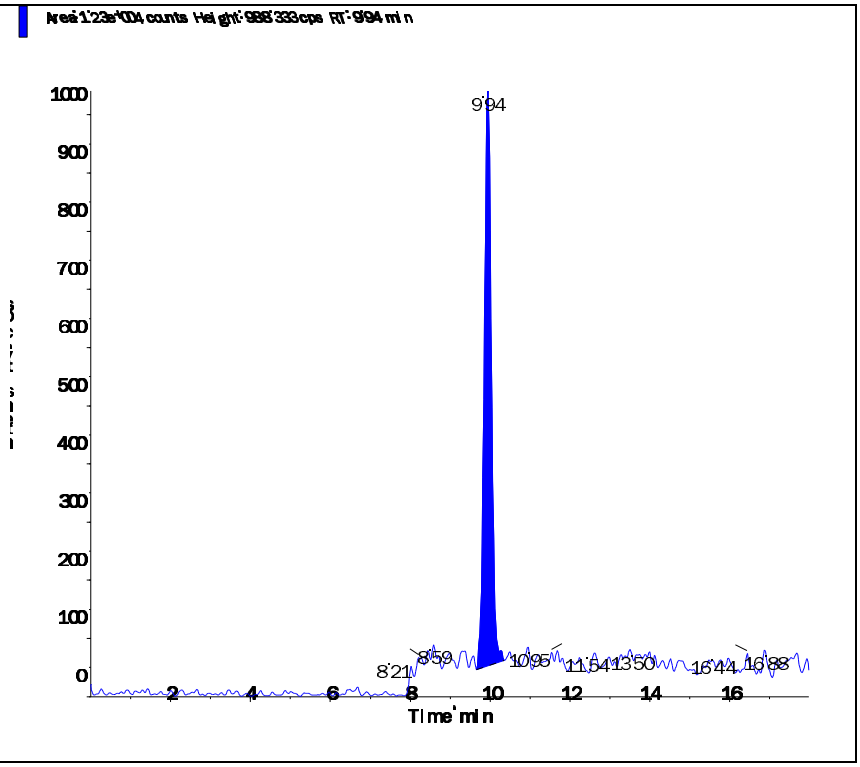

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 3/18/2016 6:14 PM

Data File	LM33889.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 5:32:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030861-01 MSD	**Injection Vial**	9.00
Data File	LM33889.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 5:32:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561316-06	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.890e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.610e+04	9.96	N/A	0.199
Perchlorate conf	1.320e+04	9.95	N/A	0.226

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

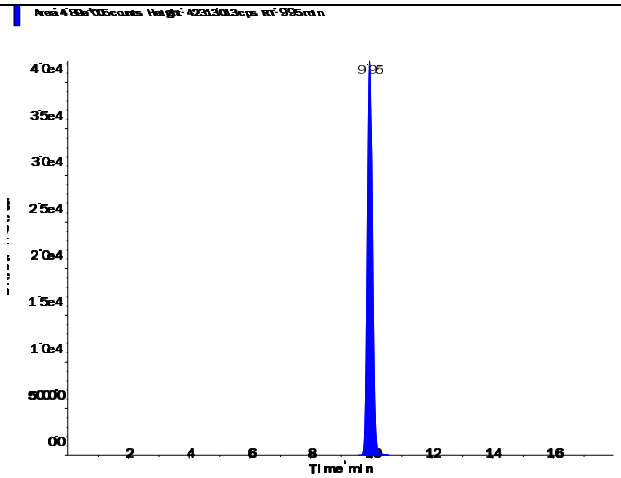

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

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Printed: 3/18/2016 6:14 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	0.199 ng/ml
Area Ratio:	0.074
Sample Type:	(Unknown)

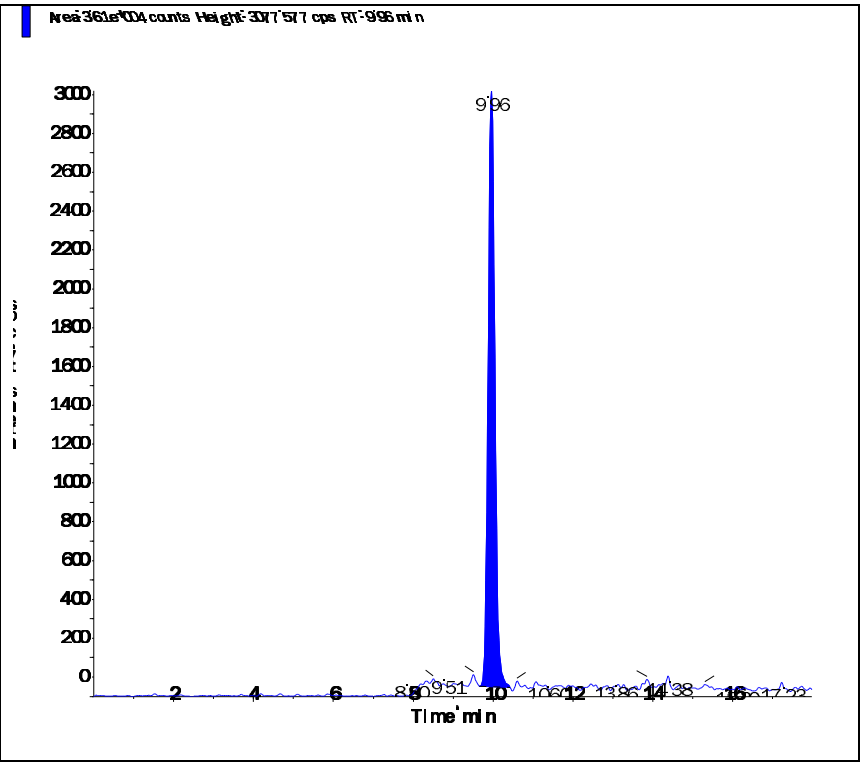

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.95 (9.92) min
Calculated conc:	0.226 ng/ml
Area Ratio:	0.027
Sample Type:	(Unknown)

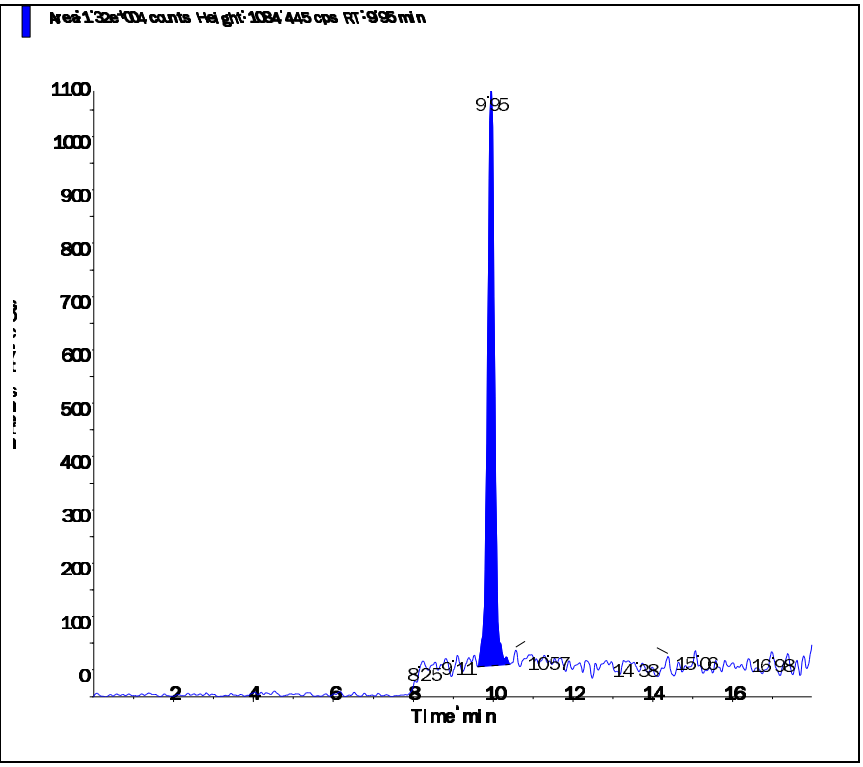

s.dataFile Page 2 of 2

2.3 General Chemistry Data

2.3.1 Percent Solids Data

2.3.1.1 Raw Data

Example Percent Solids Calculations

1.0 Calculating the percent solids of a sample.

$$\%Solids = \frac{WT3 - WT1}{WT2 - WT1} \times F$$

Where:	
WT1 = Weight, in grams, of the empty container	1.30 g
WT2 = Weight, in grams, of the container and wet sample	21.274 g
WT3 = Weight, in grams, of the container and dried sample	5.21 g
F = Factor to get units as percent weight	100
%Solids = Percent solids present in sample.	19.58%

2.0 Calculating the percent moisture of a sample.

% Moisture = 100 - % Solids from 1.0 calculation

Microbac Laboratories Inc.

PERCENT SOLIDS

Workgroup (AAB#): WG561146 Analyst: AC ADT(on): 03/16/2016 13:49
Method: D2216-90 Instrument: BAL021 ADT(off): 03/17/2016 07:16
SOP: K0003 Rev: 14

SAMPLE NUMBER	EMPTY PAN WT 1	WET WT 2	DRY WT 3A	DRY WT 3B	DRY WT 3C	PERCENT SOLID	PERCENT MOISTURE
L16030809-01	1.279	21.726	18.572			84.57	
L16030809-02	1.279	15.733	13.1			81.78	
L16030809-03	1.283	21.267	17.938			83.34	
L16030809-04	1.29	21.251	17.636			81.89	
L16030809-05	1.29	19.062	15.225			78.41	
L16030809-06	1.277	24.425	19.943			80.64	
L16030809-07	1.28	27.597	22.244			79.66	
L16030809-09	1.276	22.278	19.054			84.65	
L16030809-10	1.257	20.809	17.351			82.31	
L16030809-11	1.274	21.716	18.39			83.73	
L16030809-12	1.276	21.924	18.465			83.25	
L16030809-13	1.281	23.244	18.895			80.20	
L16030809-14	1.284	21.898	17.465			78.50	
L16030809-15	1.286	26.585	21.553			80.11	
L16030813-01	1.286	24.949	21.026			83.42	
L16030813-03	1.284	22.517	18.411			80.66	
L16030813-04	1.282	20.187	16.745			81.79	
L16030813-05	1.278	20.583	16.912			80.98	
L16030813-06	1.281	22.146	18.141			80.81	
L16030813-07	1.287	23.088	18.61			79.46	
L16030813-08	1.283	25.335	20.277			78.97	
L16030813-10	1.284	20.021	16.832			82.98	
L16030813-11	1.277	27.265	22.379			81.20	
L16030813-12	1.286	20.892	17.25			81.42	
L16030813-13	1.283	25.078	20.941			82.61	
L16030813-14	1.292	20.894	16.603			78.11	
L16030813-15	1.292	25.359	20.495			79.79	
L16030813-16	1.297	27.687	22.199			79.20	
L16030861-01	1.288	20.745	17.342			82.51	
L16030861-02	1.291	34.105	30.606			89.34	
L16030861-03	1.282	23.778	21.621			90.41	
L16030861-04	1.279	24.359	22.271			90.95	
L16030861-05	1.277	37.668	30.344			79.87	
L16030861-06	1.276	32.396	26.94			82.47	
L16030861-07	1.277	22.539	19.341			84.96	
L16030861-08	1.273	27.281	22.834			82.90	
L16030861-09	1.286	22.206	18.269			81.18	
L16030861-10	1.278	15.708	12.687			79.06	
WG561146-01	1.284	20.021	16.832			82.98	17.02
WG561146-02	1.286	22.206	18.269			81.18	18.82
WG561146-03	1.291	20.708	17.41			83.01	16.99
WG561146-04	1.289	21.788	18.004			81.54	18.46

PERCENT_SOLIDS - Modified 04/24/2008
PDF ID: 4674323
Report generated: 03/17/2016 07:23

Microbac Laboratories Inc.

PERCENT SOLIDS

Workgroup (AAB#): WG561146 Analyst: AC ADT(on): 03/16/2016 13:49
Method: D2216-90 Instrument: BAL021 ADT(off): 03/17/2016 07:16
SOP: K0003 Rev: 14

SAMPLE NUMBER	EMPTY PAN WT 1	WET WT 2	DRY WT 3A	DRY WT 3B	DRY WT 3C	PERCENT SOLID	PERCENT MOISTURE

Analyst: [illegible]

PERCENT_SOLIDS - Modified 04/24/2008
PDF ID: 4674323
Report generated: 03/17/2016 07:23

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
March 25, 2016

001 - BIO-CHEM TESTING WVDEP 220	002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental	004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES	006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES	008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND	AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER	ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS	ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG	AZH - AFTER HOURS
BJO - BRIAN J. OGDEN	BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT	BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN	CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES	CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD	CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS	CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL	DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE	DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON	DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE	DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR	ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK	ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN	JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON	JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE	JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG	JLL - JOHN L. LENT
JMW - JEANA M. WHITE	JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS	JWS - JACK W. SHEAVES
JYH - JI Y. HU	KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER	KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES	KHR - KIM H. RHODES
KKB - KERRI K. BUCK	KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER	KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER	LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS	LSB - LESLIE S. BUCINA
MAP - MARLA A. PORTER	MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON	MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING	MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY	MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON	PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE	PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB	QX - QIN XU
RAH - ROY A. HALSTEAD	REK - BOB E. KYER
RLB - BOB BUCHANAN	RM - RAYMOND MALEKE
RNP - RICK N. PETTY	RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG	SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY	SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF	TB - TODD BOYLE
TGF - TIM G. FELTON	TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS	VC - VICKI COLLIER
WJB - WILL J. BEASLEY	WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG	XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
March 25, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
March 25, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

23-27412

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Stephanie Mossburg	Project Manager: Debra Richmon	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): Kayla Pallanes	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Kayla Pallanes	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205	pH:	Program:	
Turn Around Time:			
Project Name/Location: Longhorn			
Project Number: 60274185			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOCs 8260	Perchlorate	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
	18DPT14 (5-5.5) 140316			3/14/16	1232		X	S	2	X	X					
	18DPT14 (10-10.5) 140316			3/14/16	1315		X	S	2	X	X					
	18DPT14 (10-10.5) 140316 FD			3/14/16	1315		X	S	2	X	X					
	18DPT14 (17-17.5) 140316			3/14/16	1325		X	S	2	X	X					
	18DPT14 (23-23.5) 140316			3/14/16	1325		X	S	2	X	X					
	18DPT15 (5-5.5) 140316			3/14/16	1640		X	S	2	X	X					
	18DPT15 (12-12.5) 140316			3/14/16	1641		X	S	2	X	X					
	18DPT15 (21-21.5) 140316			3/14/16	1642		X	S	2	X	X					
	18DPT15 (23.5-24) 140316			3/14/16	1643		X	S	2	X	X					
	18DPT15 (26.5-27) 140316			3/14/16	1645		X	S	2	X	X					

ERPIMS REQUIRED FIELDS

Comments: ~~48 HR TAT~~ STANDARD TAT

Relinquished by: (Signature)	Date	Time	Received by: (Signature)
Kayla Pallanes	3/14/16	1700	
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)

Microbac OVD
Received: 03/16/2016 10:03
By: CARA STRICKLER 221000083276
Cara Strickler

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030861
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 25-MAR-2016

Samplenum	Container ID	Products
L16030861-01	715070	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-MAR-2016 12:52	CLS		
2	ANALYZ	V1	ORG4	16-MAR-2016 15:34	AWE	CLS	

Samplenum	Container ID	Products
L16030861-01	715071	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-MAR-2016 12:52	CLS		
2	PREP	W1	DIG	16-MAR-2016 15:44	AC	BRG	
3	STORE	DIG	W1	16-MAR-2016 16:52	BRG	AC	
4	ANALYZ	W1	SEM	17-MAR-2016 10:26	JWR	BRG	
5	STORE	SEM	A1	18-MAR-2016 18:18	AZH	JWR	
6	ANALYZ*	DIG	SEMI	18-MAR-2016 19:19	JWR	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16030861-02	715072	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-MAR-2016 12:52	CLS		

Samplenum	Container ID	Products
L16030861-02	715073	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-MAR-2016 12:52	CLS		
2	PREP	W1	DIG	16-MAR-2016 15:44	AC	BRG	
3	STORE	DIG	W1	16-MAR-2016 16:52	BRG	AC	
4	ANALYZ	W1	SEM	17-MAR-2016 10:26	JWR	BRG	
5	STORE	SEM	A1	18-MAR-2016 18:18	AZH	JWR	
6	ANALYZ*	DIG	SEMI	18-MAR-2016 19:19	JWR	AC	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030861
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 25-MAR-2016

Samplenum	Container ID	Products
L16030861-03	715074	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-MAR-2016 12:52	CLS		
2	ANALYZ	V1	ORG4	16-MAR-2016 15:35	AWE	CLS	

Samplenum	Container ID	Products
L16030861-03	715075	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-MAR-2016 12:52	CLS		
2	PREP	W1	DIG	16-MAR-2016 15:44	AC	BRG	
3	STORE	DIG	W1	16-MAR-2016 16:52	BRG	AC	
4	ANALYZ	W1	SEM	17-MAR-2016 10:26	JWR	BRG	
5	STORE	SEM	A1	18-MAR-2016 18:18	AZH	JWR	
6	ANALYZ*	DIG	SEMI	18-MAR-2016 19:19	JWR	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16030861-04	715076	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-MAR-2016 12:52	CLS		

Samplenum	Container ID	Products
L16030861-04	715077	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-MAR-2016 12:52	CLS		
2	PREP	W1	DIG	16-MAR-2016 15:44	AC	BRG	
3	STORE	DIG	W1	16-MAR-2016 16:52	BRG	AC	
4	ANALYZ	W1	SEM	17-MAR-2016 10:26	JWR	BRG	
5	STORE	SEM	A1	18-MAR-2016 18:18	AZH	JWR	
6	ANALYZ*	DIG	SEMI	18-MAR-2016 19:19	JWR	AC	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030861
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 25-MAR-2016

Samplenum	Container ID	Products
L16030861-05	715078	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-MAR-2016 12:52	CLS		
2	ANALYZ	V1	ORG4	16-MAR-2016 15:34	AWE	CLS	

Samplenum	Container ID	Products
L16030861-05	715079	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-MAR-2016 12:52	CLS		
2	PREP	W1	DIG	16-MAR-2016 15:44	AC	BRG	
3	STORE	DIG	W1	16-MAR-2016 16:52	BRG	AC	
4	ANALYZ	W1	SEM	17-MAR-2016 10:26	JWR	BRG	
5	STORE	SEM	A1	18-MAR-2016 18:18	AZH	JWR	
6	ANALYZ*	DIG	SEMI	18-MAR-2016 19:19	JWR	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16030861-06	715080	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-MAR-2016 12:52	CLS		
2	ANALYZ	V1	ORG4	16-MAR-2016 15:34	AWE	CLS	

Samplenum	Container ID	Products
L16030861-06	715081	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-MAR-2016 12:52	CLS		
2	PREP	W1	DIG	16-MAR-2016 15:44	AC	BRG	
3	STORE	DIG	W1	16-MAR-2016 16:52	BRG	AC	
4	ANALYZ	W1	SEM	17-MAR-2016 10:26	JWR	BRG	
5	STORE	SEM	A1	18-MAR-2016 18:18	AZH	JWR	
6	ANALYZ*	DIG	SEMI	18-MAR-2016 19:19	JWR	AC	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030861
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 25-MAR-2016

Samplenum	Container ID	Products
L16030861-07	715082	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-MAR-2016 12:52	CLS		
2	ANALYZ	V1	ORG4	16-MAR-2016 15:34	AWE	CLS	

Samplenum	Container ID	Products
L16030861-07	715083	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-MAR-2016 12:52	CLS		
2	PREP	W1	DIG	16-MAR-2016 15:44	AC	BRG	
3	STORE	DIG	W1	16-MAR-2016 16:52	BRG	AC	
4	ANALYZ	W1	SEM	17-MAR-2016 10:26	JWR	BRG	
5	STORE	SEM	A1	18-MAR-2016 18:18	AZH	JWR	
6	ANALYZ*	DIG	SEMI	18-MAR-2016 19:19	JWR	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16030861-08	715084	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-MAR-2016 12:52	CLS		
2	ANALYZ	V1	ORG4	16-MAR-2016 15:34	AWE	CLS	

Samplenum	Container ID	Products
L16030861-08	715085	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-MAR-2016 12:52	CLS		
2	PREP	W1	DIG	16-MAR-2016 15:44	AC	BRG	
3	STORE	DIG	W1	16-MAR-2016 16:52	BRG	AC	
4	ANALYZ	W1	SEM	17-MAR-2016 10:26	JWR	BRG	
5	STORE	SEM	A1	18-MAR-2016 18:18	AZH	JWR	
6	ANALYZ*	DIG	SEMI	18-MAR-2016 19:19	JWR	AC	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030861
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 25-MAR-2016

Samplenum	Container ID	Products
L16030861-09	715086	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-MAR-2016 12:52	CLS		
2	ANALYZ	V1	ORG4	16-MAR-2016 15:34	AWE	CLS	

Samplenum	Container ID	Products
L16030861-09	715087	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-MAR-2016 12:52	CLS		
2	PREP	W1	DIG	16-MAR-2016 15:44	AC	BRG	
3	STORE	DIG	W1	16-MAR-2016 16:52	BRG	AC	
4	ANALYZ	W1	SEM	17-MAR-2016 10:26	JWR	BRG	
5	STORE	SEM	A1	18-MAR-2016 18:18	AZH	JWR	
6	ANALYZ*	DIG	SEMI	18-MAR-2016 19:19	JWR	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16030861-10	715088	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-MAR-2016 12:52	CLS		
2	ANALYZ	V1	ORG4	16-MAR-2016 15:34	AWE	CLS	

Samplenum	Container ID	Products
L16030861-10	715089	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-MAR-2016 12:52	CLS		
2	PREP	W1	DIG	16-MAR-2016 15:44	AC	BRG	
3	STORE	DIG	W1	16-MAR-2016 16:52	BRG	AC	
4	ANALYZ	W1	SEM	17-MAR-2016 10:26	JWR	BRG	
5	STORE	SEM	A1	18-MAR-2016 18:18	AZH	JWR	
6	ANALYZ*	DIG	SEMI	18-MAR-2016 19:19	JWR	AC	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16030863

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on March 25 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

The following discrepancies were noted:

Discrepancy	Resolution
18DPT16(5-5.5)150316 / MS / MSD: the label says "5-6" and the chain says "5-5.5". We will log using the chain of custody. CLS	Please log per the COC. SLM

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00112171	I	6.0		J2317165849	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	No
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	NA
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	NA

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18DPT16(5-5.5)150316	L16030863-01	03/15/2016 09:20	03/16/2016 10:03
18DPT16(5-5.5)150316MS	L16030863-02	03/15/2016 09:20	03/16/2016 10:03
18DPT16(5-5.5)150316MSD	L16030863-03	03/15/2016 09:20	03/16/2016 10:03
18DPT16(15-15.5)150316	L16030863-04	03/15/2016 09:25	03/16/2016 10:03
18DPT16(25-25.5)150316	L16030863-05	03/15/2016 10:35	03/16/2016 10:03
18CPT16(30-30.5)150316	L16030863-06	03/15/2016 10:40	03/16/2016 10:03
18DPT16(33-33.5)150316	L16030863-07	03/15/2016 10:45	03/16/2016 10:03
18DPT17(2.5-3)150316	L16030863-08	03/15/2016 11:50	03/16/2016 10:03
18DPT17(2.5-3)150316FD	L16030863-09	03/15/2016 11:50	03/16/2016 10:03
18DPT17(5-5.5)150316	L16030863-10	03/15/2016 11:55	03/16/2016 10:03
18DPT17(10-10.5)150316	L16030863-11	03/15/2016 12:00	03/16/2016 10:03
18DPT17(18-18.5)150316	L16030863-12	03/15/2016 12:30	03/16/2016 10:03
18DPT17(27-27.5)150316	L16030863-13	03/15/2016 12:45	03/16/2016 10:03
18DPT17(21.5-22)150316	L16030863-14	03/15/2016 13:00	03/16/2016 10:03

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16030863
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030863
Project Name:		**Method:**	8260
Prep Batch Number(s):	562075,562236	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-25 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2016-03-25 16:30:47

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030863
Project Name:		**Method:**	8260
Prep Batch Number(s):	562075,562236	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-25 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030863
Project Name:		**Method:**	8260
Prep Batch Number(s):	562075,562236	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-25 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030863
Project Name:		**Method:**	8260
Prep Batch Number(s):	562075,562236	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-25 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030863
Project Name:		**Method:**	8260
Prep Batch Number(s):	562075,562236	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-25 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030863
Project Name:		**Method:**	8260
Prep Batch Number(s):	562075,562236	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-25 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1)Chloromethane and Naphthalene exceeded theUCL in the CCV analyzed 03/23/2016 on HPMS6. Chloromethane exceeded the UCL in the CCV analyzed 03/24/2016 on HPMS6.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030863
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG561318	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-22 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-03-22 15:02:52

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030863
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG561318	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-22 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030863
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG561318	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-22 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			1
Were MS/MSD RPDs within laboratory QC limits?		X			1
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030863
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG561318	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-22 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030863
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG561318	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-22 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030863
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG561318	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-22 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. Perchlorate failed low in the MS and high in the MSD, and the RPD was beyond acceptance limits. This was due to the presence of a large amount of perchlorate in the reference sample.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030863
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG561160	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-18 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2016-03-18 15:42:04

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030863
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG561160	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-18 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?			X		
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?			X		
Were sample detection limits reported for all analytes not detected?			X		
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?			X		
Were blanks analyzed at the appropriate frequency?			X		
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?			X		
Were blank concentrations < MQL?			X		
Laboratory control samples (LCS):			X		
Were all COCs included in the LCS?			X		

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030863
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG561160	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-18 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?			X		
Were LCSs analyzed at the required frequency?			X		
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?			X		
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?			X		
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?			X		
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?			X		
Are unadjusted MQLs and DCSs included in the laboratory data package?			X		
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?			X		
Were percent RSDs or correlation coefficient criteria met?			X		

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030863
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG561160	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-18 00:00:00		

Was the number of standards recommended in the method used for all analytes?			X		
Were all points generated between the lowest and highest standard used to calculate the curve?			X		
Are ICAL data available for all instruments used?			X		
Has the initial calibration curve been verified using an appropriate second source standard?			X		
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030863
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG561160	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-18 00:00:00		

Was a MDL study performed for each reported analyte?			X		
Is the MDL either adjusted or supported by the analysis of DCSs?			X		
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?			X		
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030863
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG561160	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-18 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT16(5-5.5)150316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:17
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 17:10
Collect Date:	03/15/2016 09:20	**Dilution:**	1	**File ID:**	6M137973
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.7	U	25.4	12.7	6.35
Benzene	71-43-2	1.27	U	6.35	1.27	0.635
Bromobenzene	108-86-1	1.27	U	6.35	1.27	0.635
Bromochloromethane	74-97-5	2.54	U	6.35	2.54	1.27
Bromodichloromethane	75-27-4	1.27	U	6.35	1.27	0.635
Bromoform	75-25-2	1.27	U	6.35	1.27	0.635
Bromomethane	74-83-9	2.54	U	6.35	2.54	1.27
2-Butanone	78-93-3	6.36	U	12.7	6.36	3.18
n-Butylbenzene	104-51-8	1.27	U	6.35	1.27	0.635
sec-Butylbenzene	135-98-8	1.27	U	6.35	1.27	0.635
tert-Butylbenzene	98-06-6	1.27	U	6.35	1.27	0.635
Carbon disulfide	75-15-0	1.27	U	6.35	1.27	0.635
Carbon tetrachloride	56-23-5	1.27	U	6.35	1.27	0.635
Chlorobenzene	108-90-7	1.27	U	6.35	1.27	0.635
Chlorodibromomethane	124-48-1	1.27	U	6.35	1.27	0.635
Chloroethane	75-00-3	2.54	U	6.35	2.54	1.27
Chloroform	67-66-3	1.27	U	6.35	1.27	0.635
Chloromethane	74-87-3	5.08	Q	12.7	5.08	2.54
2-Chlorotoluene	95-49-8	1.27	U	6.35	1.27	0.635
4-Chlorotoluene	106-43-4	1.27	U	6.35	1.27	0.635
1,2-Dibromo-3-chloropropane	96-12-8	5.08	U	12.7	5.08	2.54
1,2-Dibromoethane	106-93-4	1.27	U	6.35	1.27	0.635
Dibromomethane	74-95-3	1.27	U	6.35	1.27	0.635
1,2-Dichlorobenzene	95-50-1	1.27	U	6.35	1.27	0.635
1,3-Dichlorobenzene	541-73-1	1.27	U	6.35	1.27	0.635
1,4-Dichlorobenzene	106-46-7	1.27	U	6.35	1.27	0.635
Dichlorodifluoromethane	75-71-8	2.54	U	6.35	2.54	1.27
1,1-Dichloroethane	75-34-3	2.54	U	6.35	2.54	1.27
1,2-Dichloroethane	107-06-2	1.27	U	6.35	1.27	0.635
1,1-Dichloroethene	75-35-4	1.27	U	6.35	1.27	0.635
cis-1,2-Dichloroethene	156-59-2	1.27	U	6.35	1.27	0.635
trans-1,2-Dichloroethene	156-60-5	1.27	U	6.35	1.27	0.635

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.27	U	6.35	1.27	0.635
1,3-Dichloropropane	142-28-9	1.27	U	6.35	1.27	0.635
2,2-Dichloropropane	594-20-7	1.27	U	6.35	1.27	0.635
cis-1,3-Dichloropropene	10061-01-5	1.27	U	6.35	1.27	0.635
trans-1,3-Dichloropropene	10061-02-6	1.27	U	6.35	1.27	0.635
1,1-Dichloropropene	563-58-6	1.27	U	6.35	1.27	0.635
Ethylbenzene	100-41-4	1.27	U	6.35	1.27	0.635
2-Hexanone	591-78-6	6.36	U	12.7	6.36	3.18
Hexachlorobutadiene	87-68-3	1.27	U	6.35	1.27	0.635
Isopropylbenzene	98-82-8	1.27	U	6.35	1.27	0.635
p-Isopropyltoluene	99-87-6	1.27	U	6.35	1.27	0.635
4-Methyl-2-pentanone	108-10-1	6.36	U	12.7	6.36	3.18
Methylene chloride	75-09-2	2.54	U	6.35	2.54	1.27
Naphthalene	91-20-3	1.27	Q	6.35	1.27	0.635
n-Propylbenzene	103-65-1	1.27	U	6.35	1.27	0.635
Styrene	100-42-5	1.27	U	6.35	1.27	0.635
1,1,1,2-Tetrachloroethane	630-20-6	1.27	U	6.35	1.27	0.635
1,1,2,2-Tetrachloroethane	79-34-5	1.27	U	6.35	1.27	0.635
Tetrachloroethene	127-18-4	1.27	U	6.35	1.27	0.635
Toluene	108-88-3	1.27	U	6.35	1.27	0.635
1,2,3-Trichlorobenzene	87-61-6	1.27	U	6.35	1.27	0.635
1,2,4-Trichlorobenzene	120-82-1	1.27	U	6.35	1.27	0.635
1,1,1-Trichloroethane	71-55-6	1.27	U	6.35	1.27	0.635
1,1,2-Trichloroethane	79-00-5	1.27	U	6.35	1.27	0.635
Trichloroethene	79-01-6	1.27	U	6.35	1.27	0.635
Trichlorofluoromethane	75-69-4	2.54	U	6.35	2.54	1.27
1,2,3-Trichloropropane	96-18-4	2.54	U	6.35	2.54	1.27
1,2,4-Trimethylbenzene	95-63-6	1.27	U	6.35	1.27	0.635
1,3,5-Trimethylbenzene	108-67-8	1.27	U	6.35	1.27	0.635
Vinyl chloride	75-01-4	2.54	U	6.35	2.54	1.27
o-Xylene	95-47-6	1.27	U	6.35	1.27	0.635
m-,p-Xylene	179601-23-1	1.27	U	6.35	1.27	0.635

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.8	80	120	
1,2-Dichloroethane-d4	87.9	80	120	
Toluene-d8	101	85	115	
4-Bromofluorobenzene	103	85	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT16(5-5.5)150316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/17/2016 23:51
Collect Date:	03/15/2016 09:20	**Dilution:**	1	**File ID:**	1LM.LM33909
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	41.8		4.92	2.46	1.23

Certificate of Analysis

Sample #:	L16030863-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT16(5-5.5)150316MS	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:17
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 14:59
Collect Date:	03/15/2016 09:20	**Dilution:**	1	**File ID:**	6M137969
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	20.1	J	23.6	11.8	5.90
Benzene	71-43-2	25.7		5.90	1.18	0.590
Bromobenzene	108-86-1	26.5		5.90	1.18	0.590
Bromochloromethane	74-97-5	26.0		5.90	2.36	1.18
Bromodichloromethane	75-27-4	24.9		5.90	1.18	0.590
Bromoform	75-25-2	22.1		5.90	1.18	0.590
Bromomethane	74-83-9	25.6		5.90	2.36	1.18
2-Butanone	78-93-3	24.2		11.8	5.90	2.95
n-Butylbenzene	104-51-8	27.0		5.90	1.18	0.590
sec-Butylbenzene	135-98-8	28.5		5.90	1.18	0.590
tert-Butylbenzene	98-06-6	28.5		5.90	1.18	0.590
Carbon disulfide	75-15-0	24.5		5.90	1.18	0.590
Carbon tetrachloride	56-23-5	25.1		5.90	1.18	0.590
Chlorobenzene	108-90-7	26.6		5.90	1.18	0.590
Chlorodibromomethane	124-48-1	24.3		5.90	1.18	0.590
Chloroethane	75-00-3	28.1		5.90	2.36	1.18
Chloroform	67-66-3	24.9		5.90	1.18	0.590
Chloromethane	74-87-3	19.3	Q	11.8	4.72	2.36
2-Chlorotoluene	95-49-8	27.6		5.90	1.18	0.590
4-Chlorotoluene	106-43-4	27.9		5.90	1.18	0.590

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	24.3		11.8	4.72	2.36
1,2-Dibromoethane	106-93-4	25.4		5.90	1.18	0.590
Dibromomethane	74-95-3	24.4		5.90	1.18	0.590
1,2-Dichlorobenzene	95-50-1	27.2		5.90	1.18	0.590
1,3-Dichlorobenzene	541-73-1	27.3		5.90	1.18	0.590
1,4-Dichlorobenzene	106-46-7	27.0		5.90	1.18	0.590
Dichlorodifluoromethane	75-71-8	27.1		5.90	2.36	1.18
1,1-Dichloroethane	75-34-3	24.5		5.90	2.36	1.18
1,2-Dichloroethane	107-06-2	24.6		5.90	1.18	0.590
1,1-Dichloroethene	75-35-4	25.2		5.90	1.18	0.590
cis-1,2-Dichloroethene	156-59-2	26.7		5.90	1.18	0.590
trans-1,2-Dichloroethene	156-60-5	27.0		5.90	1.18	0.590
1,2-Dichloropropane	78-87-5	26.9		5.90	1.18	0.590
1,3-Dichloropropane	142-28-9	26.6		5.90	1.18	0.590
2,2-Dichloropropane	594-20-7	26.9		5.90	1.18	0.590
cis-1,3-Dichloropropene	10061-01-5	29.1		5.90	1.18	0.590
trans-1,3-Dichloropropene	10061-02-6	25.4		5.90	1.18	0.590
1,1-Dichloropropene	563-58-6	26.8		5.90	1.18	0.590
Ethylbenzene	100-41-4	26.3		5.90	1.18	0.590
2-Hexanone	591-78-6	24.0		11.8	5.90	2.95
Hexachlorobutadiene	87-68-3	28.5		5.90	1.18	0.590
Isopropylbenzene	98-82-8	27.9		5.90	1.18	0.590
p-Isopropyltoluene	99-87-6	28.4		5.90	1.18	0.590
4-Methyl-2-pentanone	108-10-1	26.1		11.8	5.90	2.95
Methylene chloride	75-09-2	26.3		5.90	2.36	1.18
Naphthalene	91-20-3	24.5	Q	5.90	1.18	0.590
n-Propylbenzene	103-65-1	28.7		5.90	1.18	0.590
Styrene	100-42-5	26.7		5.90	1.18	0.590
1,1,1,2-Tetrachloroethane	630-20-6	24.6		5.90	1.18	0.590
1,1,2,2-Tetrachloroethane	79-34-5	25.6		5.90	1.18	0.590
Tetrachloroethene	127-18-4	26.8		5.90	1.18	0.590
Toluene	108-88-3	25.8		5.90	1.18	0.590
1,2,3-Trichlorobenzene	87-61-6	26.2		5.90	1.18	0.590
1,2,4-Trichlorobenzene	120-82-1	27.0		5.90	1.18	0.590
1,1,1-Trichloroethane	71-55-6	25.4		5.90	1.18	0.590
1,1,2-Trichloroethane	79-00-5	25.9		5.90	1.18	0.590
Trichloroethene	79-01-6	27.8		5.90	1.18	0.590
Trichlorofluoromethane	75-69-4	24.2		5.90	2.36	1.18
1,2,3-Trichloropropane	96-18-4	26.4		5.90	2.36	1.18

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Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	27.4		5.90	1.18	0.590
1,3,5-Trimethylbenzene	108-67-8	28.6		5.90	1.18	0.590
Vinyl chloride	75-01-4	25.7		5.90	2.36	1.18
o-Xylene	95-47-6	28.2		5.90	1.18	0.590
m-,p-Xylene	179601-23-1	53.7		5.90	1.18	0.590

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.7	80	120	
1,2-Dichloroethane-d4	88.1	80	120	
Toluene-d8	101	85	115	
4-Bromofluorobenzene	103	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT16(5-5.5)150316MS	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 00:09
Collect Date:	03/15/2016 09:20	**Dilution:**	1	**File ID:**	1LM.LM33910
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	41.4		4.92	2.46	1.23

Certificate of Analysis

Sample #:	L16030863-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT16(5-5.5)150316MSD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:18
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 15:32
Collect Date:	03/15/2016 09:20	**Dilution:**	1	**File ID:**	6M137970
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	24.1	J	27.8	13.9	6.94
Benzene	71-43-2	29.7		6.94	1.39	0.694
Bromobenzene	108-86-1	30.1		6.94	1.39	0.694
Bromochloromethane	74-97-5	29.6		6.94	2.78	1.39
Bromodichloromethane	75-27-4	28.4		6.94	1.39	0.694
Bromoform	75-25-2	26.0		6.94	1.39	0.694
Bromomethane	74-83-9	30.1		6.94	2.78	1.39
2-Butanone	78-93-3	28.5		13.9	6.94	3.47
n-Butylbenzene	104-51-8	30.3		6.94	1.39	0.694
sec-Butylbenzene	135-98-8	32.3		6.94	1.39	0.694
tert-Butylbenzene	98-06-6	32.9		6.94	1.39	0.694
Carbon disulfide	75-15-0	27.8		6.94	1.39	0.694
Carbon tetrachloride	56-23-5	29.8		6.94	1.39	0.694
Chlorobenzene	108-90-7	30.4		6.94	1.39	0.694
Chlorodibromomethane	124-48-1	28.0		6.94	1.39	0.694
Chloroethane	75-00-3	32.9		6.94	2.78	1.39
Chloroform	67-66-3	28.7		6.94	1.39	0.694
Chloromethane	74-87-3	23.4	Q	13.9	5.56	2.78
2-Chlorotoluene	95-49-8	31.4		6.94	1.39	0.694
4-Chlorotoluene	106-43-4	31.1		6.94	1.39	0.694

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	29.9		13.9	5.56	2.78
1,2-Dibromoethane	106-93-4	29.1		6.94	1.39	0.694
Dibromomethane	74-95-3	27.8		6.94	1.39	0.694
1,2-Dichlorobenzene	95-50-1	30.8		6.94	1.39	0.694
1,3-Dichlorobenzene	541-73-1	30.7		6.94	1.39	0.694
1,4-Dichlorobenzene	106-46-7	30.7		6.94	1.39	0.694
Dichlorodifluoromethane	75-71-8	31.4		6.94	2.78	1.39
1,1-Dichloroethane	75-34-3	28.5		6.94	2.78	1.39
1,2-Dichloroethane	107-06-2	28.4		6.94	1.39	0.694
1,1-Dichloroethene	75-35-4	29.5		6.94	1.39	0.694
cis-1,2-Dichloroethene	156-59-2	30.8		6.94	1.39	0.694
trans-1,2-Dichloroethene	156-60-5	31.8		6.94	1.39	0.694
1,2-Dichloropropane	78-87-5	31.6		6.94	1.39	0.694
1,3-Dichloropropane	142-28-9	30.4		6.94	1.39	0.694
2,2-Dichloropropane	594-20-7	31.1		6.94	1.39	0.694
cis-1,3-Dichloropropene	10061-01-5	32.4		6.94	1.39	0.694
trans-1,3-Dichloropropene	10061-02-6	28.3		6.94	1.39	0.694
1,1-Dichloropropene	563-58-6	30.6		6.94	1.39	0.694
Ethylbenzene	100-41-4	30.7		6.94	1.39	0.694
2-Hexanone	591-78-6	28.0		13.9	6.94	3.47
Hexachlorobutadiene	87-68-3	32.1		6.94	1.39	0.694
Isopropylbenzene	98-82-8	32.1		6.94	1.39	0.694
p-Isopropyltoluene	99-87-6	31.9		6.94	1.39	0.694
4-Methyl-2-pentanone	108-10-1	31.0		13.9	6.94	3.47
Methylene chloride	75-09-2	29.9		6.94	2.78	1.39
Naphthalene	91-20-3	29.4	Q	6.94	1.39	0.694
n-Propylbenzene	103-65-1	32.2		6.94	1.39	0.694
Styrene	100-42-5	30.8		6.94	1.39	0.694
1,1,1,2-Tetrachloroethane	630-20-6	28.4		6.94	1.39	0.694
1,1,2,2-Tetrachloroethane	79-34-5	30.0		6.94	1.39	0.694
Tetrachloroethene	127-18-4	30.5		6.94	1.39	0.694
Toluene	108-88-3	30.1		6.94	1.39	0.694
1,2,3-Trichlorobenzene	87-61-6	30.1		6.94	1.39	0.694
1,2,4-Trichlorobenzene	120-82-1	30.2		6.94	1.39	0.694
1,1,1-Trichloroethane	71-55-6	29.4		6.94	1.39	0.694
1,1,2-Trichloroethane	79-00-5	29.2		6.94	1.39	0.694
Trichloroethene	79-01-6	32.2		6.94	1.39	0.694
Trichlorofluoromethane	75-69-4	28.5		6.94	2.78	1.39
1,2,3-Trichloropropane	96-18-4	31.0		6.94	2.78	1.39

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	30.9		6.94	1.39	0.694
1,3,5-Trimethylbenzene	108-67-8	32.3		6.94	1.39	0.694
Vinyl chloride	75-01-4	29.3		6.94	2.78	1.39
o-Xylene	95-47-6	32.3		6.94	1.39	0.694
m-,p-Xylene	179601-23-1	62.5		6.94	1.39	0.694

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.8	80	120	
1,2-Dichloroethane-d4	85.8	80	120	
Toluene-d8	101	85	115	
4-Bromofluorobenzene	101	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT16(5-5.5)150316MSD	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 00:28
Collect Date:	03/15/2016 09:20	**Dilution:**	1	**File ID:**	1LM.LM33911
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	51.0		4.91	2.46	1.23

Certificate of Analysis

Sample #:	L16030863-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT16(15-15.5)150316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:19
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 21:32
Collect Date:	03/15/2016 09:25	**Dilution:**	1	**File ID:**	6M137981
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	86.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	6.34	J	23.4	11.7	5.84
Benzene	71-43-2	1.17	U	5.84	1.17	0.584
Bromobenzene	108-86-1	1.17	U	5.84	1.17	0.584
Bromochloromethane	74-97-5	2.34	U	5.84	2.34	1.17
Bromodichloromethane	75-27-4	1.17	U	5.84	1.17	0.584
Bromoform	75-25-2	1.17	U	5.84	1.17	0.584
Bromomethane	74-83-9	2.34	U	5.84	2.34	1.17
2-Butanone	78-93-3	5.84	U	11.7	5.84	2.92
n-Butylbenzene	104-51-8	1.17	U	5.84	1.17	0.584
sec-Butylbenzene	135-98-8	1.17	U	5.84	1.17	0.584
tert-Butylbenzene	98-06-6	1.17	U	5.84	1.17	0.584
Carbon disulfide	75-15-0	1.17	U	5.84	1.17	0.584
Carbon tetrachloride	56-23-5	1.17	U	5.84	1.17	0.584
Chlorobenzene	108-90-7	1.17	U	5.84	1.17	0.584
Chlorodibromomethane	124-48-1	1.17	U	5.84	1.17	0.584
Chloroethane	75-00-3	2.34	U	5.84	2.34	1.17
Chloroform	67-66-3	1.17	U	5.84	1.17	0.584
Chloromethane	74-87-3	4.68	Q	11.7	4.68	2.34
2-Chlorotoluene	95-49-8	1.17	U	5.84	1.17	0.584
4-Chlorotoluene	106-43-4	1.17	U	5.84	1.17	0.584

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	4.68	U	11.7	4.68	2.34
1,2-Dibromoethane	106-93-4	1.17	U	5.84	1.17	0.584
Dibromomethane	74-95-3	1.17	U	5.84	1.17	0.584
1,2-Dichlorobenzene	95-50-1	1.17	U	5.84	1.17	0.584
1,3-Dichlorobenzene	541-73-1	1.17	U	5.84	1.17	0.584
1,4-Dichlorobenzene	106-46-7	1.17	U	5.84	1.17	0.584
Dichlorodifluoromethane	75-71-8	2.34	U	5.84	2.34	1.17
1,1-Dichloroethane	75-34-3	2.34	U	5.84	2.34	1.17
1,2-Dichloroethane	107-06-2	1.17	U	5.84	1.17	0.584
1,1-Dichloroethene	75-35-4	1.17	U	5.84	1.17	0.584
cis-1,2-Dichloroethene	156-59-2	1.17	U	5.84	1.17	0.584
trans-1,2-Dichloroethene	156-60-5	1.17	U	5.84	1.17	0.584
1,2-Dichloropropane	78-87-5	1.17	U	5.84	1.17	0.584
1,3-Dichloropropane	142-28-9	1.17	U	5.84	1.17	0.584
2,2-Dichloropropane	594-20-7	1.17	U	5.84	1.17	0.584
cis-1,3-Dichloropropene	10061-01-5	1.17	U	5.84	1.17	0.584
trans-1,3-Dichloropropene	10061-02-6	1.17	U	5.84	1.17	0.584
1,1-Dichloropropene	563-58-6	1.17	U	5.84	1.17	0.584
Ethylbenzene	100-41-4	1.17	U	5.84	1.17	0.584
2-Hexanone	591-78-6	5.84	U	11.7	5.84	2.92
Hexachlorobutadiene	87-68-3	1.17	U	5.84	1.17	0.584
Isopropylbenzene	98-82-8	1.17	U	5.84	1.17	0.584
p-Isopropyltoluene	99-87-6	1.17	U	5.84	1.17	0.584
4-Methyl-2-pentanone	108-10-1	5.84	U	11.7	5.84	2.92
Methylene chloride	75-09-2	2.34	U	5.84	2.34	1.17
Naphthalene	91-20-3	1.17	Q	5.84	1.17	0.584
n-Propylbenzene	103-65-1	1.17	U	5.84	1.17	0.584
Styrene	100-42-5	1.17	U	5.84	1.17	0.584
1,1,1,2-Tetrachloroethane	630-20-6	1.17	U	5.84	1.17	0.584
1,1,2,2-Tetrachloroethane	79-34-5	1.17	U	5.84	1.17	0.584
Tetrachloroethene	127-18-4	1.17	U	5.84	1.17	0.584
Toluene	108-88-3	1.17	U	5.84	1.17	0.584
1,2,3-Trichlorobenzene	87-61-6	1.17	U	5.84	1.17	0.584
1,2,4-Trichlorobenzene	120-82-1	1.17	U	5.84	1.17	0.584
1,1,1-Trichloroethane	71-55-6	1.17	U	5.84	1.17	0.584
1,1,2-Trichloroethane	79-00-5	1.17	U	5.84	1.17	0.584
Trichloroethene	79-01-6	1.17	U	5.84	1.17	0.584
Trichlorofluoromethane	75-69-4	2.34	U	5.84	2.34	1.17
1,2,3-Trichloropropane	96-18-4	2.34	U	5.84	2.34	1.17

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Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.17	U	5.84	1.17	0.584
1,3,5-Trimethylbenzene	108-67-8	1.17	U	5.84	1.17	0.584
Vinyl chloride	75-01-4	2.34	U	5.84	2.34	1.17
o-Xylene	95-47-6	1.17	U	5.84	1.17	0.584
m-,p-Xylene	179601-23-1	1.17	U	5.84	1.17	0.584

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.2	80	120	
1,2-Dichloroethane-d4	86.0	80	120	
Toluene-d8	103	85	115	
4-Bromofluorobenzene	103	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT16(15-15.5)150316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 00:47
Collect Date:	03/15/2016 09:25	**Dilution:**	1	**File ID:**	1LM.LM33912
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	86.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	11.3		4.60	2.30	1.15

Certificate of Analysis

Sample #:	L16030863-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT16(25-25.5)150316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:19
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 22:05
Collect Date:	03/15/2016 10:35	**Dilution:**	1	**File ID:**	6M137982
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.2	U	26.3	13.2	6.58
Benzene	71-43-2	1.32	U	6.58	1.32	0.658
Bromobenzene	108-86-1	1.32	U	6.58	1.32	0.658
Bromochloromethane	74-97-5	2.64	U	6.58	2.64	1.32
Bromodichloromethane	75-27-4	1.32	U	6.58	1.32	0.658
Bromoform	75-25-2	1.32	U	6.58	1.32	0.658
Bromomethane	74-83-9	2.64	U	6.58	2.64	1.32
2-Butanone	78-93-3	6.58	U	13.2	6.58	3.29
n-Butylbenzene	104-51-8	1.32	U	6.58	1.32	0.658
sec-Butylbenzene	135-98-8	1.32	U	6.58	1.32	0.658
tert-Butylbenzene	98-06-6	1.32	U	6.58	1.32	0.658
Carbon disulfide	75-15-0	1.32	U	6.58	1.32	0.658
Carbon tetrachloride	56-23-5	1.32	U	6.58	1.32	0.658
Chlorobenzene	108-90-7	1.32	U	6.58	1.32	0.658
Chlorodibromomethane	124-48-1	1.32	U	6.58	1.32	0.658
Chloroethane	75-00-3	2.64	U	6.58	2.64	1.32
Chloroform	67-66-3	1.32	U	6.58	1.32	0.658
Chloromethane	74-87-3	5.26	Q	13.2	5.26	2.63
2-Chlorotoluene	95-49-8	1.32	U	6.58	1.32	0.658
4-Chlorotoluene	106-43-4	1.32	U	6.58	1.32	0.658

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Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	5.26	U	13.2	5.26	2.63
1,2-Dibromoethane	106-93-4	1.32	U	6.58	1.32	0.658
Dibromomethane	74-95-3	1.32	U	6.58	1.32	0.658
1,2-Dichlorobenzene	95-50-1	1.32	U	6.58	1.32	0.658
1,3-Dichlorobenzene	541-73-1	1.32	U	6.58	1.32	0.658
1,4-Dichlorobenzene	106-46-7	1.32	U	6.58	1.32	0.658
Dichlorodifluoromethane	75-71-8	2.64	U	6.58	2.64	1.32
1,1-Dichloroethane	75-34-3	2.64	U	6.58	2.64	1.32
1,2-Dichloroethane	107-06-2	1.32	U	6.58	1.32	0.658
1,1-Dichloroethene	75-35-4	1.32	U	6.58	1.32	0.658
cis-1,2-Dichloroethene	156-59-2	1.32	U	6.58	1.32	0.658
trans-1,2-Dichloroethene	156-60-5	1.32	U	6.58	1.32	0.658
1,2-Dichloropropane	78-87-5	1.32	U	6.58	1.32	0.658
1,3-Dichloropropane	142-28-9	1.32	U	6.58	1.32	0.658
2,2-Dichloropropane	594-20-7	1.32	U	6.58	1.32	0.658
cis-1,3-Dichloropropene	10061-01-5	1.32	U	6.58	1.32	0.658
trans-1,3-Dichloropropene	10061-02-6	1.32	U	6.58	1.32	0.658
1,1-Dichloropropene	563-58-6	1.32	U	6.58	1.32	0.658
Ethylbenzene	100-41-4	1.32	U	6.58	1.32	0.658
2-Hexanone	591-78-6	6.58	U	13.2	6.58	3.29
Hexachlorobutadiene	87-68-3	1.32	U	6.58	1.32	0.658
Isopropylbenzene	98-82-8	1.32	U	6.58	1.32	0.658
p-Isopropyltoluene	99-87-6	1.32	U	6.58	1.32	0.658
4-Methyl-2-pentanone	108-10-1	6.58	U	13.2	6.58	3.29
Methylene chloride	75-09-2	2.64	U	6.58	2.64	1.32
Naphthalene	91-20-3	1.32	Q	6.58	1.32	0.658
n-Propylbenzene	103-65-1	1.32	U	6.58	1.32	0.658
Styrene	100-42-5	1.32	U	6.58	1.32	0.658
1,1,1,2-Tetrachloroethane	630-20-6	1.32	U	6.58	1.32	0.658
1,1,2,2-Tetrachloroethane	79-34-5	1.32	U	6.58	1.32	0.658
Tetrachloroethene	127-18-4	1.32	U	6.58	1.32	0.658
Toluene	108-88-3	1.32	U	6.58	1.32	0.658
1,2,3-Trichlorobenzene	87-61-6	1.32	U	6.58	1.32	0.658
1,2,4-Trichlorobenzene	120-82-1	1.32	U	6.58	1.32	0.658
1,1,1-Trichloroethane	71-55-6	1.32	U	6.58	1.32	0.658
1,1,2-Trichloroethane	79-00-5	1.32	U	6.58	1.32	0.658
Trichloroethene	79-01-6	1.32	U	6.58	1.32	0.658
Trichlorofluoromethane	75-69-4	2.64	U	6.58	2.64	1.32
1,2,3-Trichloropropane	96-18-4	2.64	U	6.58	2.64	1.32

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Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.32	U	6.58	1.32	0.658
1,3,5-Trimethylbenzene	108-67-8	1.32	U	6.58	1.32	0.658
Vinyl chloride	75-01-4	2.64	U	6.58	2.64	1.32
o-Xylene	95-47-6	1.32	U	6.58	1.32	0.658
m-,p-Xylene	179601-23-1	1.32	U	6.58	1.32	0.658

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.5	80	120	
1,2-Dichloroethane-d4	87.5	80	120	
Toluene-d8	102	85	115	
4-Bromofluorobenzene	104	85	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT16(25-25.5)150316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 14:28
Collect Date:	03/15/2016 10:35	**Dilution:**	10	**File ID:**	1LM.LM33936
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	81.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	434		48.0	24.0	12.0

Certificate of Analysis

Sample #:	L16030863-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPT16(30-30.5)150316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:20
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 22:38
Collect Date:	03/15/2016 10:40	**Dilution:**	1	**File ID:**	6M137983
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.4	U	24.8	12.4	6.20
Benzene	71-43-2	1.24	U	6.20	1.24	0.620
Bromobenzene	108-86-1	1.24	U	6.20	1.24	0.620
Bromochloromethane	74-97-5	2.48	U	6.20	2.48	1.24
Bromodichloromethane	75-27-4	1.24	U	6.20	1.24	0.620
Bromoform	75-25-2	1.24	U	6.20	1.24	0.620
Bromomethane	74-83-9	2.48	U	6.20	2.48	1.24
2-Butanone	78-93-3	6.20	U	12.4	6.20	3.10
n-Butylbenzene	104-51-8	1.24	U	6.20	1.24	0.620
sec-Butylbenzene	135-98-8	1.24	U	6.20	1.24	0.620
tert-Butylbenzene	98-06-6	1.24	U	6.20	1.24	0.620
Carbon disulfide	75-15-0	1.24	U	6.20	1.24	0.620
Carbon tetrachloride	56-23-5	1.24	U	6.20	1.24	0.620
Chlorobenzene	108-90-7	1.24	U	6.20	1.24	0.620
Chlorodibromomethane	124-48-1	1.24	U	6.20	1.24	0.620
Chloroethane	75-00-3	2.48	U	6.20	2.48	1.24
Chloroform	67-66-3	1.24	U	6.20	1.24	0.620
Chloromethane	74-87-3	4.96	Q	12.4	4.96	2.48
2-Chlorotoluene	95-49-8	1.24	U	6.20	1.24	0.620
4-Chlorotoluene	106-43-4	1.24	U	6.20	1.24	0.620

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Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	4.96	U	12.4	4.96	2.48
1,2-Dibromoethane	106-93-4	1.24	U	6.20	1.24	0.620
Dibromomethane	74-95-3	1.24	U	6.20	1.24	0.620
1,2-Dichlorobenzene	95-50-1	1.24	U	6.20	1.24	0.620
1,3-Dichlorobenzene	541-73-1	1.24	U	6.20	1.24	0.620
1,4-Dichlorobenzene	106-46-7	1.24	U	6.20	1.24	0.620
Dichlorodifluoromethane	75-71-8	2.48	U	6.20	2.48	1.24
1,1-Dichloroethane	75-34-3	2.48	U	6.20	2.48	1.24
1,2-Dichloroethane	107-06-2	1.24	U	6.20	1.24	0.620
1,1-Dichloroethene	75-35-4	1.24	U	6.20	1.24	0.620
cis-1,2-Dichloroethene	156-59-2	1.24	U	6.20	1.24	0.620
trans-1,2-Dichloroethene	156-60-5	1.24	U	6.20	1.24	0.620
1,2-Dichloropropane	78-87-5	1.24	U	6.20	1.24	0.620
1,3-Dichloropropane	142-28-9	1.24	U	6.20	1.24	0.620
2,2-Dichloropropane	594-20-7	1.24	U	6.20	1.24	0.620
cis-1,3-Dichloropropene	10061-01-5	1.24	U	6.20	1.24	0.620
trans-1,3-Dichloropropene	10061-02-6	1.24	U	6.20	1.24	0.620
1,1-Dichloropropene	563-58-6	1.24	U	6.20	1.24	0.620
Ethylbenzene	100-41-4	1.24	U	6.20	1.24	0.620
2-Hexanone	591-78-6	6.20	U	12.4	6.20	3.10
Hexachlorobutadiene	87-68-3	1.24	U	6.20	1.24	0.620
Isopropylbenzene	98-82-8	1.24	U	6.20	1.24	0.620
p-Isopropyltoluene	99-87-6	1.24	U	6.20	1.24	0.620
4-Methyl-2-pentanone	108-10-1	6.20	U	12.4	6.20	3.10
Methylene chloride	75-09-2	2.48	U	6.20	2.48	1.24
Naphthalene	91-20-3	1.24	Q	6.20	1.24	0.620
n-Propylbenzene	103-65-1	1.24	U	6.20	1.24	0.620
Styrene	100-42-5	1.24	U	6.20	1.24	0.620
1,1,1,2-Tetrachloroethane	630-20-6	1.24	U	6.20	1.24	0.620
1,1,2,2-Tetrachloroethane	79-34-5	1.24	U	6.20	1.24	0.620
Tetrachloroethene	127-18-4	1.24	U	6.20	1.24	0.620
Toluene	108-88-3	1.24	U	6.20	1.24	0.620
1,2,3-Trichlorobenzene	87-61-6	1.24	U	6.20	1.24	0.620
1,2,4-Trichlorobenzene	120-82-1	1.24	U	6.20	1.24	0.620
1,1,1-Trichloroethane	71-55-6	1.24	U	6.20	1.24	0.620
1,1,2-Trichloroethane	79-00-5	1.24	U	6.20	1.24	0.620
Trichloroethene	79-01-6	2.94	J	6.20	1.24	0.620
Trichlorofluoromethane	75-69-4	2.48	U	6.20	2.48	1.24
1,2,3-Trichloropropane	96-18-4	2.48	U	6.20	2.48	1.24

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.24	U	6.20	1.24	0.620
1,3,5-Trimethylbenzene	108-67-8	1.24	U	6.20	1.24	0.620
Vinyl chloride	75-01-4	2.48	U	6.20	2.48	1.24
o-Xylene	95-47-6	1.24	U	6.20	1.24	0.620
m-,p-Xylene	179601-23-1	1.24	U	6.20	1.24	0.620

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.6	80	120	
1,2-Dichloroethane-d4	87.9	80	120	
Toluene-d8	102	85	115	
4-Bromofluorobenzene	102	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPT16(30-30.5)150316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 14:46
Collect Date:	03/15/2016 10:40	**Dilution:**	50	**File ID:**	1LM.LM33937
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	79.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1230		237	119	59.3

Certificate of Analysis

Sample #:	L16030863-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT16(33-33.5)150316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:20
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 23:10
Collect Date:	03/15/2016 10:45	**Dilution:**	1	**File ID:**	6M137984
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	77.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.4	U	26.9	13.4	6.72
Benzene	71-43-2	1.34	U	6.72	1.34	0.672
Bromobenzene	108-86-1	1.34	U	6.72	1.34	0.672
Bromochloromethane	74-97-5	2.68	U	6.72	2.68	1.34
Bromodichloromethane	75-27-4	1.34	U	6.72	1.34	0.672
Bromoform	75-25-2	1.34	U	6.72	1.34	0.672
Bromomethane	74-83-9	2.68	U	6.72	2.68	1.34
2-Butanone	78-93-3	6.72	U	13.4	6.72	3.36
n-Butylbenzene	104-51-8	1.34	U	6.72	1.34	0.672
sec-Butylbenzene	135-98-8	1.34	U	6.72	1.34	0.672
tert-Butylbenzene	98-06-6	1.34	U	6.72	1.34	0.672
Carbon disulfide	75-15-0	1.34	U	6.72	1.34	0.672
Carbon tetrachloride	56-23-5	1.34	U	6.72	1.34	0.672
Chlorobenzene	108-90-7	1.34	U	6.72	1.34	0.672
Chlorodibromomethane	124-48-1	1.34	U	6.72	1.34	0.672
Chloroethane	75-00-3	2.68	U	6.72	2.68	1.34
Chloroform	67-66-3	1.34	U	6.72	1.34	0.672
Chloromethane	74-87-3	5.38	Q	13.4	5.38	2.69
2-Chlorotoluene	95-49-8	1.34	U	6.72	1.34	0.672
4-Chlorotoluene	106-43-4	1.34	U	6.72	1.34	0.672

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Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	5.38	U	13.4	5.38	2.69
1,2-Dibromoethane	106-93-4	1.34	U	6.72	1.34	0.672
Dibromomethane	74-95-3	1.34	U	6.72	1.34	0.672
1,2-Dichlorobenzene	95-50-1	1.34	U	6.72	1.34	0.672
1,3-Dichlorobenzene	541-73-1	1.34	U	6.72	1.34	0.672
1,4-Dichlorobenzene	106-46-7	1.34	U	6.72	1.34	0.672
Dichlorodifluoromethane	75-71-8	2.68	U	6.72	2.68	1.34
1,1-Dichloroethane	75-34-3	2.68	U	6.72	2.68	1.34
1,2-Dichloroethane	107-06-2	1.34	U	6.72	1.34	0.672
1,1-Dichloroethene	75-35-4	1.34	U	6.72	1.34	0.672
cis-1,2-Dichloroethene	156-59-2	1.34	U	6.72	1.34	0.672
trans-1,2-Dichloroethene	156-60-5	1.34	U	6.72	1.34	0.672
1,2-Dichloropropane	78-87-5	1.34	U	6.72	1.34	0.672
1,3-Dichloropropane	142-28-9	1.34	U	6.72	1.34	0.672
2,2-Dichloropropane	594-20-7	1.34	U	6.72	1.34	0.672
cis-1,3-Dichloropropene	10061-01-5	1.34	U	6.72	1.34	0.672
trans-1,3-Dichloropropene	10061-02-6	1.34	U	6.72	1.34	0.672
1,1-Dichloropropene	563-58-6	1.34	U	6.72	1.34	0.672
Ethylbenzene	100-41-4	1.34	U	6.72	1.34	0.672
2-Hexanone	591-78-6	6.72	U	13.4	6.72	3.36
Hexachlorobutadiene	87-68-3	1.34	U	6.72	1.34	0.672
Isopropylbenzene	98-82-8	1.34	U	6.72	1.34	0.672
p-Isopropyltoluene	99-87-6	1.34	U	6.72	1.34	0.672
4-Methyl-2-pentanone	108-10-1	6.72	U	13.4	6.72	3.36
Methylene chloride	75-09-2	2.68	U	6.72	2.68	1.34
Naphthalene	91-20-3	1.34	Q	6.72	1.34	0.672
n-Propylbenzene	103-65-1	1.34	U	6.72	1.34	0.672
Styrene	100-42-5	1.34	U	6.72	1.34	0.672
1,1,1,2-Tetrachloroethane	630-20-6	1.34	U	6.72	1.34	0.672
1,1,2,2-Tetrachloroethane	79-34-5	1.34	U	6.72	1.34	0.672
Tetrachloroethene	127-18-4	1.34	U	6.72	1.34	0.672
Toluene	108-88-3	1.34	U	6.72	1.34	0.672
1,2,3-Trichlorobenzene	87-61-6	1.34	U	6.72	1.34	0.672
1,2,4-Trichlorobenzene	120-82-1	1.34	U	6.72	1.34	0.672
1,1,1-Trichloroethane	71-55-6	1.34	U	6.72	1.34	0.672
1,1,2-Trichloroethane	79-00-5	1.34	U	6.72	1.34	0.672
Trichloroethene	79-01-6	5.26	J	6.72	1.34	0.672
Trichlorofluoromethane	75-69-4	2.68	U	6.72	2.68	1.34
1,2,3-Trichloropropane	96-18-4	2.68	U	6.72	2.68	1.34

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Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.34	U	6.72	1.34	0.672
1,3,5-Trimethylbenzene	108-67-8	1.34	U	6.72	1.34	0.672
Vinyl chloride	75-01-4	2.68	U	6.72	2.68	1.34
o-Xylene	95-47-6	1.34	U	6.72	1.34	0.672
m-,p-Xylene	179601-23-1	1.34	U	6.72	1.34	0.672

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.8	80	120	
1,2-Dichloroethane-d4	94.6	80	120	
Toluene-d8	99.2	85	115	
4-Bromofluorobenzene	103	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT16(33-33.5)150316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 15:05
Collect Date:	03/15/2016 10:45	**Dilution:**	100	**File ID:**	1LM.LM33938
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	77.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3090		507	254	127

Certificate of Analysis

Sample #:	L16030863-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT17(2.5-3)150316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:21
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562236	**Analyst:**	TMB	**Run Date:**	03/24/2016 17:52
Collect Date:	03/15/2016 11:50	**Dilution:**	1	**File ID:**	6M138000
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.0	U	22.0	11.0	5.49
Benzene	71-43-2	1.10	U	5.49	1.10	0.549
Bromobenzene	108-86-1	1.10	U	5.49	1.10	0.549
Bromochloromethane	74-97-5	2.20	U	5.49	2.20	1.10
Bromodichloromethane	75-27-4	1.10	U	5.49	1.10	0.549
Bromoform	75-25-2	1.10	U	5.49	1.10	0.549
Bromomethane	74-83-9	2.20	U	5.49	2.20	1.10
2-Butanone	78-93-3	5.50	U	11.0	5.50	2.75
n-Butylbenzene	104-51-8	1.10	U	5.49	1.10	0.549
sec-Butylbenzene	135-98-8	1.10	U	5.49	1.10	0.549
tert-Butylbenzene	98-06-6	1.10	U	5.49	1.10	0.549
Carbon disulfide	75-15-0	1.10	U	5.49	1.10	0.549
Carbon tetrachloride	56-23-5	1.10	U	5.49	1.10	0.549
Chlorobenzene	108-90-7	1.10	U	5.49	1.10	0.549
Chlorodibromomethane	124-48-1	1.10	U	5.49	1.10	0.549
Chloroethane	75-00-3	2.20	U	5.49	2.20	1.10
Chloroform	67-66-3	1.10	U	5.49	1.10	0.549
Chloromethane	74-87-3	4.40	Q	11.0	4.40	2.20
2-Chlorotoluene	95-49-8	1.10	U	5.49	1.10	0.549
4-Chlorotoluene	106-43-4	1.10	U	5.49	1.10	0.549

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Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	4.40	U	11.0	4.40	2.20
1,2-Dibromoethane	106-93-4	1.10	U	5.49	1.10	0.549
Dibromomethane	74-95-3	1.10	U	5.49	1.10	0.549
1,2-Dichlorobenzene	95-50-1	1.10	U	5.49	1.10	0.549
1,3-Dichlorobenzene	541-73-1	1.10	U	5.49	1.10	0.549
1,4-Dichlorobenzene	106-46-7	1.10	U	5.49	1.10	0.549
Dichlorodifluoromethane	75-71-8	2.20	U	5.49	2.20	1.10
1,1-Dichloroethane	75-34-3	2.20	U	5.49	2.20	1.10
1,2-Dichloroethane	107-06-2	1.10	U	5.49	1.10	0.549
1,1-Dichloroethene	75-35-4	1.10	U	5.49	1.10	0.549
cis-1,2-Dichloroethene	156-59-2	1.10	U	5.49	1.10	0.549
trans-1,2-Dichloroethene	156-60-5	1.10	U	5.49	1.10	0.549
1,2-Dichloropropane	78-87-5	1.10	U	5.49	1.10	0.549
1,3-Dichloropropane	142-28-9	1.10	U	5.49	1.10	0.549
2,2-Dichloropropane	594-20-7	1.10	U	5.49	1.10	0.549
cis-1,3-Dichloropropene	10061-01-5	1.10	U	5.49	1.10	0.549
trans-1,3-Dichloropropene	10061-02-6	1.10	U	5.49	1.10	0.549
1,1-Dichloropropene	563-58-6	1.10	U	5.49	1.10	0.549
Ethylbenzene	100-41-4	1.10	U	5.49	1.10	0.549
2-Hexanone	591-78-6	5.50	U	11.0	5.50	2.75
Hexachlorobutadiene	87-68-3	1.10	U	5.49	1.10	0.549
Isopropylbenzene	98-82-8	1.10	U	5.49	1.10	0.549
p-Isopropyltoluene	99-87-6	1.10	U	5.49	1.10	0.549
4-Methyl-2-pentanone	108-10-1	5.50	U	11.0	5.50	2.75
Methylene chloride	75-09-2	2.20	U	5.49	2.20	1.10
Naphthalene	91-20-3	1.10	U	5.49	1.10	0.549
n-Propylbenzene	103-65-1	1.10	U	5.49	1.10	0.549
Styrene	100-42-5	1.10	U	5.49	1.10	0.549
1,1,1,2-Tetrachloroethane	630-20-6	1.10	U	5.49	1.10	0.549
1,1,2,2-Tetrachloroethane	79-34-5	1.10	U	5.49	1.10	0.549
Tetrachloroethene	127-18-4	1.10	U	5.49	1.10	0.549
Toluene	108-88-3	1.10	U	5.49	1.10	0.549
1,2,3-Trichlorobenzene	87-61-6	1.10	U	5.49	1.10	0.549
1,2,4-Trichlorobenzene	120-82-1	1.10	U	5.49	1.10	0.549
1,1,1-Trichloroethane	71-55-6	1.10	U	5.49	1.10	0.549
1,1,2-Trichloroethane	79-00-5	1.10	U	5.49	1.10	0.549
Trichloroethene	79-01-6	1.10	U	5.49	1.10	0.549
Trichlorofluoromethane	75-69-4	2.20	U	5.49	2.20	1.10
1,2,3-Trichloropropane	96-18-4	2.20	U	5.49	2.20	1.10

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Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.10	U	5.49	1.10	0.549
1,3,5-Trimethylbenzene	108-67-8	1.10	U	5.49	1.10	0.549
Vinyl chloride	75-01-4	2.20	U	5.49	2.20	1.10
o-Xylene	95-47-6	1.10	U	5.49	1.10	0.549
m-,p-Xylene	179601-23-1	1.10	U	5.49	1.10	0.549

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.5	80	120	
1,2-Dichloroethane-d4	85.7	80	120	
Toluene-d8	103	85	115	
4-Bromofluorobenzene	108	85	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT17(2.5-3)150316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 03:00
Collect Date:	03/15/2016 11:50	**Dilution:**	1	**File ID:**	1LM.LM33919
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.36	U	4.72	2.36	1.18

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT17(2.5-3)150316FD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:22
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562236	**Analyst:**	TMB	**Run Date:**	03/24/2016 18:26
Collect Date:	03/15/2016 11:50	**Dilution:**	1	**File ID:**	6M138001
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.7	U	23.3	11.7	5.83
Benzene	71-43-2	1.17	U	5.83	1.17	0.583
Bromobenzene	108-86-1	1.17	U	5.83	1.17	0.583
Bromochloromethane	74-97-5	2.34	U	5.83	2.34	1.17
Bromodichloromethane	75-27-4	1.17	U	5.83	1.17	0.583
Bromoform	75-25-2	1.17	U	5.83	1.17	0.583
Bromomethane	74-83-9	2.34	U	5.83	2.34	1.17
2-Butanone	78-93-3	5.82	U	11.7	5.82	2.91
n-Butylbenzene	104-51-8	1.17	U	5.83	1.17	0.583
sec-Butylbenzene	135-98-8	1.17	U	5.83	1.17	0.583
tert-Butylbenzene	98-06-6	1.17	U	5.83	1.17	0.583
Carbon disulfide	75-15-0	1.17	U	5.83	1.17	0.583
Carbon tetrachloride	56-23-5	1.17	U	5.83	1.17	0.583
Chlorobenzene	108-90-7	1.17	U	5.83	1.17	0.583
Chlorodibromomethane	124-48-1	1.17	U	5.83	1.17	0.583
Chloroethane	75-00-3	2.34	U	5.83	2.34	1.17
Chloroform	67-66-3	1.17	U	5.83	1.17	0.583
Chloromethane	74-87-3	4.66	Q	11.7	4.66	2.33
2-Chlorotoluene	95-49-8	1.17	U	5.83	1.17	0.583
4-Chlorotoluene	106-43-4	1.17	U	5.83	1.17	0.583
1,2-Dibromo-3-chloropropane	96-12-8	4.66	U	11.7	4.66	2.33
1,2-Dibromoethane	106-93-4	1.17	U	5.83	1.17	0.583
Dibromomethane	74-95-3	1.17	U	5.83	1.17	0.583
1,2-Dichlorobenzene	95-50-1	1.17	U	5.83	1.17	0.583
1,3-Dichlorobenzene	541-73-1	1.17	U	5.83	1.17	0.583
1,4-Dichlorobenzene	106-46-7	1.17	U	5.83	1.17	0.583
Dichlorodifluoromethane	75-71-8	2.34	U	5.83	2.34	1.17
1,1-Dichloroethane	75-34-3	2.34	U	5.83	2.34	1.17
1,2-Dichloroethane	107-06-2	1.17	U	5.83	1.17	0.583
1,1-Dichloroethene	75-35-4	1.17	U	5.83	1.17	0.583
cis-1,2-Dichloroethene	156-59-2	1.17	U	5.83	1.17	0.583

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.17	U	5.83	1.17	0.583
1,2-Dichloropropane	78-87-5	1.17	U	5.83	1.17	0.583
1,3-Dichloropropane	142-28-9	1.17	U	5.83	1.17	0.583
2,2-Dichloropropane	594-20-7	1.17	U	5.83	1.17	0.583
cis-1,3-Dichloropropene	10061-01-5	1.17	U	5.83	1.17	0.583
trans-1,3-Dichloropropene	10061-02-6	1.17	U	5.83	1.17	0.583
1,1-Dichloropropene	563-58-6	1.17	U	5.83	1.17	0.583
Ethylbenzene	100-41-4	1.17	U	5.83	1.17	0.583
2-Hexanone	591-78-6	5.82	U	11.7	5.82	2.91
Hexachlorobutadiene	87-68-3	1.17	U	5.83	1.17	0.583
Isopropylbenzene	98-82-8	1.17	U	5.83	1.17	0.583
p-Isopropyltoluene	99-87-6	1.17	U	5.83	1.17	0.583
4-Methyl-2-pentanone	108-10-1	5.82	U	11.7	5.82	2.91
Methylene chloride	75-09-2	2.34	U	5.83	2.34	1.17
Naphthalene	91-20-3	1.17	U	5.83	1.17	0.583
n-Propylbenzene	103-65-1	1.17	U	5.83	1.17	0.583
Styrene	100-42-5	1.17	U	5.83	1.17	0.583
1,1,1,2-Tetrachloroethane	630-20-6	1.17	U	5.83	1.17	0.583
1,1,2,2-Tetrachloroethane	79-34-5	1.17	U	5.83	1.17	0.583
Tetrachloroethene	127-18-4	1.17	U	5.83	1.17	0.583
Toluene	108-88-3	1.17	U	5.83	1.17	0.583
1,2,3-Trichlorobenzene	87-61-6	1.17	U	5.83	1.17	0.583
1,2,4-Trichlorobenzene	120-82-1	1.17	U	5.83	1.17	0.583
1,1,1-Trichloroethane	71-55-6	1.17	U	5.83	1.17	0.583
1,1,2-Trichloroethane	79-00-5	1.17	U	5.83	1.17	0.583
Trichloroethene	79-01-6	1.17	U	5.83	1.17	0.583
Trichlorofluoromethane	75-69-4	2.34	U	5.83	2.34	1.17
1,2,3-Trichloropropane	96-18-4	2.34	U	5.83	2.34	1.17
1,2,4-Trimethylbenzene	95-63-6	1.17	U	5.83	1.17	0.583
1,3,5-Trimethylbenzene	108-67-8	1.17	U	5.83	1.17	0.583
Vinyl chloride	75-01-4	2.34	U	5.83	2.34	1.17
o-Xylene	95-47-6	1.17	U	5.83	1.17	0.583
m-,p-Xylene	179601-23-1	1.17	U	5.83	1.17	0.583

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.5	80	120	
1,2-Dichloroethane-d4	85.3	80	120	
Toluene-d8	102	85	115	
4-Bromofluorobenzene	105	85	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-09	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT17(2.5-3)150316FD	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 03:19
Collect Date:	03/15/2016 11:50	**Dilution:**	1	**File ID:**	1LM.LM33920
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.32	U	4.63	2.32	1.16

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT17(5-5.5)150316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:23
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562236	**Analyst:**	TMB	**Run Date:**	03/24/2016 18:59
Collect Date:	03/15/2016 11:55	**Dilution:**	1	**File ID:**	6M138002
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	78.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.1	U	26.3	13.1	6.57
Benzene	71-43-2	1.31	U	6.57	1.31	0.657
Bromobenzene	108-86-1	1.31	U	6.57	1.31	0.657
Bromochloromethane	74-97-5	2.62	U	6.57	2.62	1.31
Bromodichloromethane	75-27-4	1.31	U	6.57	1.31	0.657
Bromoform	75-25-2	1.31	U	6.57	1.31	0.657
Bromomethane	74-83-9	2.62	U	6.57	2.62	1.31
2-Butanone	78-93-3	6.56	U	13.1	6.56	3.28
n-Butylbenzene	104-51-8	1.31	U	6.57	1.31	0.657
sec-Butylbenzene	135-98-8	1.31	U	6.57	1.31	0.657
tert-Butylbenzene	98-06-6	1.31	U	6.57	1.31	0.657
Carbon disulfide	75-15-0	1.31	U	6.57	1.31	0.657
Carbon tetrachloride	56-23-5	1.31	U	6.57	1.31	0.657
Chlorobenzene	108-90-7	1.31	U	6.57	1.31	0.657
Chlorodibromomethane	124-48-1	1.31	U	6.57	1.31	0.657
Chloroethane	75-00-3	2.62	U	6.57	2.62	1.31
Chloroform	67-66-3	1.31	U	6.57	1.31	0.657
Chloromethane	74-87-3	5.26	Q	13.1	5.26	2.63
2-Chlorotoluene	95-49-8	1.31	U	6.57	1.31	0.657
4-Chlorotoluene	106-43-4	1.31	U	6.57	1.31	0.657
1,2-Dibromo-3-chloropropane	96-12-8	5.26	U	13.1	5.26	2.63
1,2-Dibromoethane	106-93-4	1.31	U	6.57	1.31	0.657
Dibromomethane	74-95-3	1.31	U	6.57	1.31	0.657
1,2-Dichlorobenzene	95-50-1	1.31	U	6.57	1.31	0.657
1,3-Dichlorobenzene	541-73-1	1.31	U	6.57	1.31	0.657
1,4-Dichlorobenzene	106-46-7	1.31	U	6.57	1.31	0.657
Dichlorodifluoromethane	75-71-8	2.62	U	6.57	2.62	1.31
1,1-Dichloroethane	75-34-3	2.62	U	6.57	2.62	1.31
1,2-Dichloroethane	107-06-2	1.31	U	6.57	1.31	0.657
1,1-Dichloroethene	75-35-4	1.31	U	6.57	1.31	0.657
cis-1,2-Dichloroethene	156-59-2	1.31	U	6.57	1.31	0.657

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.31	U	6.57	1.31	0.657
1,2-Dichloropropane	78-87-5	1.31	U	6.57	1.31	0.657
1,3-Dichloropropane	142-28-9	1.31	U	6.57	1.31	0.657
2,2-Dichloropropane	594-20-7	1.31	U	6.57	1.31	0.657
cis-1,3-Dichloropropene	10061-01-5	1.31	U	6.57	1.31	0.657
trans-1,3-Dichloropropene	10061-02-6	1.31	U	6.57	1.31	0.657
1,1-Dichloropropene	563-58-6	1.31	U	6.57	1.31	0.657
Ethylbenzene	100-41-4	1.31	U	6.57	1.31	0.657
2-Hexanone	591-78-6	6.56	U	13.1	6.56	3.28
Hexachlorobutadiene	87-68-3	1.31	U	6.57	1.31	0.657
Isopropylbenzene	98-82-8	1.31	U	6.57	1.31	0.657
p-Isopropyltoluene	99-87-6	1.31	U	6.57	1.31	0.657
4-Methyl-2-pentanone	108-10-1	6.56	U	13.1	6.56	3.28
Methylene chloride	75-09-2	2.62	U	6.57	2.62	1.31
Naphthalene	91-20-3	1.31	U	6.57	1.31	0.657
n-Propylbenzene	103-65-1	1.31	U	6.57	1.31	0.657
Styrene	100-42-5	1.31	U	6.57	1.31	0.657
1,1,1,2-Tetrachloroethane	630-20-6	1.31	U	6.57	1.31	0.657
1,1,2,2-Tetrachloroethane	79-34-5	1.31	U	6.57	1.31	0.657
Tetrachloroethene	127-18-4	1.31	U	6.57	1.31	0.657
Toluene	108-88-3	1.31	U	6.57	1.31	0.657
1,2,3-Trichlorobenzene	87-61-6	1.31	U	6.57	1.31	0.657
1,2,4-Trichlorobenzene	120-82-1	1.31	U	6.57	1.31	0.657
1,1,1-Trichloroethane	71-55-6	1.31	U	6.57	1.31	0.657
1,1,2-Trichloroethane	79-00-5	1.31	U	6.57	1.31	0.657
Trichloroethene	79-01-6	1.31	U	6.57	1.31	0.657
Trichlorofluoromethane	75-69-4	2.62	U	6.57	2.62	1.31
1,2,3-Trichloropropane	96-18-4	2.62	U	6.57	2.62	1.31
1,2,4-Trimethylbenzene	95-63-6	1.31	U	6.57	1.31	0.657
1,3,5-Trimethylbenzene	108-67-8	1.31	U	6.57	1.31	0.657
Vinyl chloride	75-01-4	2.62	U	6.57	2.62	1.31
o-Xylene	95-47-6	1.31	U	6.57	1.31	0.657
m-,p-Xylene	179601-23-1	1.31	U	6.57	1.31	0.657

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.5	80	120	
1,2-Dichloroethane-d4	87.6	80	120	
Toluene-d8	101	85	115	
4-Bromofluorobenzene	104	85	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-10	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT17(5-5.5)150316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 03:38
Collect Date:	03/15/2016 11:55	**Dilution:**	1	**File ID:**	1LM.LM33921
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	78.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.54	U	5.06	2.54	1.27

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT17(10-10.5)150316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:23
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562236	**Analyst:**	TMB	**Run Date:**	03/24/2016 19:33
Collect Date:	03/15/2016 12:00	**Dilution:**	1	**File ID:**	6M138003
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.8	J	24.7	12.4	6.18
Benzene	71-43-2	1.24	U	6.18	1.24	0.618
Bromobenzene	108-86-1	1.24	U	6.18	1.24	0.618
Bromochloromethane	74-97-5	2.48	U	6.18	2.48	1.24
Bromodichloromethane	75-27-4	1.24	U	6.18	1.24	0.618
Bromoform	75-25-2	1.24	U	6.18	1.24	0.618
Bromomethane	74-83-9	2.48	U	6.18	2.48	1.24
2-Butanone	78-93-3	6.18	U	12.4	6.18	3.09
n-Butylbenzene	104-51-8	1.24	U	6.18	1.24	0.618
sec-Butylbenzene	135-98-8	1.24	U	6.18	1.24	0.618
tert-Butylbenzene	98-06-6	1.24	U	6.18	1.24	0.618
Carbon disulfide	75-15-0	1.24	U	6.18	1.24	0.618
Carbon tetrachloride	56-23-5	1.24	U	6.18	1.24	0.618
Chlorobenzene	108-90-7	1.24	U	6.18	1.24	0.618
Chlorodibromomethane	124-48-1	1.24	U	6.18	1.24	0.618
Chloroethane	75-00-3	2.48	U	6.18	2.48	1.24
Chloroform	67-66-3	1.24	U	6.18	1.24	0.618
Chloromethane	74-87-3	4.94	Q	12.4	4.94	2.47
2-Chlorotoluene	95-49-8	1.24	U	6.18	1.24	0.618
4-Chlorotoluene	106-43-4	1.24	U	6.18	1.24	0.618
1,2-Dibromo-3-chloropropane	96-12-8	4.94	U	12.4	4.94	2.47
1,2-Dibromoethane	106-93-4	1.24	U	6.18	1.24	0.618
Dibromomethane	74-95-3	1.24	U	6.18	1.24	0.618
1,2-Dichlorobenzene	95-50-1	1.24	U	6.18	1.24	0.618
1,3-Dichlorobenzene	541-73-1	1.24	U	6.18	1.24	0.618
1,4-Dichlorobenzene	106-46-7	1.24	U	6.18	1.24	0.618
Dichlorodifluoromethane	75-71-8	2.48	U	6.18	2.48	1.24
1,1-Dichloroethane	75-34-3	2.48	U	6.18	2.48	1.24
1,2-Dichloroethane	107-06-2	1.24	U	6.18	1.24	0.618
1,1-Dichloroethene	75-35-4	1.24	U	6.18	1.24	0.618
cis-1,2-Dichloroethene	156-59-2	1.24	U	6.18	1.24	0.618

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.24	U	6.18	1.24	0.618
1,2-Dichloropropane	78-87-5	1.24	U	6.18	1.24	0.618
1,3-Dichloropropane	142-28-9	1.24	U	6.18	1.24	0.618
2,2-Dichloropropane	594-20-7	1.24	U	6.18	1.24	0.618
cis-1,3-Dichloropropene	10061-01-5	1.24	U	6.18	1.24	0.618
trans-1,3-Dichloropropene	10061-02-6	1.24	U	6.18	1.24	0.618
1,1-Dichloropropene	563-58-6	1.24	U	6.18	1.24	0.618
Ethylbenzene	100-41-4	1.24	U	6.18	1.24	0.618
2-Hexanone	591-78-6	6.18	U	12.4	6.18	3.09
Hexachlorobutadiene	87-68-3	1.24	U	6.18	1.24	0.618
Isopropylbenzene	98-82-8	1.24	U	6.18	1.24	0.618
p-Isopropyltoluene	99-87-6	1.24	U	6.18	1.24	0.618
4-Methyl-2-pentanone	108-10-1	6.18	U	12.4	6.18	3.09
Methylene chloride	75-09-2	2.48	U	6.18	2.48	1.24
Naphthalene	91-20-3	1.24	U	6.18	1.24	0.618
n-Propylbenzene	103-65-1	1.24	U	6.18	1.24	0.618
Styrene	100-42-5	1.24	U	6.18	1.24	0.618
1,1,1,2-Tetrachloroethane	630-20-6	1.24	U	6.18	1.24	0.618
1,1,2,2-Tetrachloroethane	79-34-5	1.24	U	6.18	1.24	0.618
Tetrachloroethene	127-18-4	1.24	U	6.18	1.24	0.618
Toluene	108-88-3	1.24	U	6.18	1.24	0.618
1,2,3-Trichlorobenzene	87-61-6	1.24	U	6.18	1.24	0.618
1,2,4-Trichlorobenzene	120-82-1	1.24	U	6.18	1.24	0.618
1,1,1-Trichloroethane	71-55-6	1.24	U	6.18	1.24	0.618
1,1,2-Trichloroethane	79-00-5	1.24	U	6.18	1.24	0.618
Trichloroethene	79-01-6	1.24	U	6.18	1.24	0.618
Trichlorofluoromethane	75-69-4	2.48	U	6.18	2.48	1.24
1,2,3-Trichloropropane	96-18-4	2.48	U	6.18	2.48	1.24
1,2,4-Trimethylbenzene	95-63-6	1.24	U	6.18	1.24	0.618
1,3,5-Trimethylbenzene	108-67-8	1.24	U	6.18	1.24	0.618
Vinyl chloride	75-01-4	2.48	U	6.18	2.48	1.24
o-Xylene	95-47-6	1.24	U	6.18	1.24	0.618
m-,p-Xylene	179601-23-1	1.24	U	6.18	1.24	0.618

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.0	80	120	
1,2-Dichloroethane-d4	92.4	80	120	
Toluene-d8	99.1	85	115	
4-Bromofluorobenzene	104	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-11	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT17(10-10.5)150316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 03:57
Collect Date:	03/15/2016 12:00	**Dilution:**	1	**File ID:**	1LM.LM33922
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.48	U	4.95	2.48	1.24

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT17(18-18.5)150316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:25
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562236	**Analyst:**	TMB	**Run Date:**	03/24/2016 21:12
Collect Date:	03/15/2016 12:30	**Dilution:**	1	**File ID:**	6M138006
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.4	J	23.9	11.9	5.97
Benzene	71-43-2	1.19	U	5.97	1.19	0.597
Bromobenzene	108-86-1	1.19	U	5.97	1.19	0.597
Bromochloromethane	74-97-5	2.38	U	5.97	2.38	1.19
Bromodichloromethane	75-27-4	1.19	U	5.97	1.19	0.597
Bromoform	75-25-2	1.19	U	5.97	1.19	0.597
Bromomethane	74-83-9	2.38	U	5.97	2.38	1.19
2-Butanone	78-93-3	5.96	U	11.9	5.96	2.98
n-Butylbenzene	104-51-8	1.19	U	5.97	1.19	0.597
sec-Butylbenzene	135-98-8	1.19	U	5.97	1.19	0.597
tert-Butylbenzene	98-06-6	1.19	U	5.97	1.19	0.597
Carbon disulfide	75-15-0	1.19	U	5.97	1.19	0.597
Carbon tetrachloride	56-23-5	1.19	U	5.97	1.19	0.597
Chlorobenzene	108-90-7	1.19	U	5.97	1.19	0.597
Chlorodibromomethane	124-48-1	1.19	U	5.97	1.19	0.597
Chloroethane	75-00-3	2.38	U	5.97	2.38	1.19
Chloroform	67-66-3	1.19	U	5.97	1.19	0.597
Chloromethane	74-87-3	4.78	Q	11.9	4.78	2.39
2-Chlorotoluene	95-49-8	1.19	U	5.97	1.19	0.597
4-Chlorotoluene	106-43-4	1.19	U	5.97	1.19	0.597
1,2-Dibromo-3-chloropropane	96-12-8	4.78	U	11.9	4.78	2.39
1,2-Dibromoethane	106-93-4	1.19	U	5.97	1.19	0.597
Dibromomethane	74-95-3	1.19	U	5.97	1.19	0.597
1,2-Dichlorobenzene	95-50-1	1.19	U	5.97	1.19	0.597
1,3-Dichlorobenzene	541-73-1	1.19	U	5.97	1.19	0.597
1,4-Dichlorobenzene	106-46-7	1.19	U	5.97	1.19	0.597
Dichlorodifluoromethane	75-71-8	2.38	U	5.97	2.38	1.19
1,1-Dichloroethane	75-34-3	2.38	U	5.97	2.38	1.19
1,2-Dichloroethane	107-06-2	1.19	U	5.97	1.19	0.597
1,1-Dichloroethene	75-35-4	1.19	U	5.97	1.19	0.597
cis-1,2-Dichloroethene	156-59-2	1.19	U	5.97	1.19	0.597

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Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.19	U	5.97	1.19	0.597
1,2-Dichloropropane	78-87-5	1.19	U	5.97	1.19	0.597
1,3-Dichloropropane	142-28-9	1.19	U	5.97	1.19	0.597
2,2-Dichloropropane	594-20-7	1.19	U	5.97	1.19	0.597
cis-1,3-Dichloropropene	10061-01-5	1.19	U	5.97	1.19	0.597
trans-1,3-Dichloropropene	10061-02-6	1.19	U	5.97	1.19	0.597
1,1-Dichloropropene	563-58-6	1.19	U	5.97	1.19	0.597
Ethylbenzene	100-41-4	1.19	U	5.97	1.19	0.597
2-Hexanone	591-78-6	5.96	U	11.9	5.96	2.98
Hexachlorobutadiene	87-68-3	1.19	U	5.97	1.19	0.597
Isopropylbenzene	98-82-8	1.19	U	5.97	1.19	0.597
p-Isopropyltoluene	99-87-6	1.19	U	5.97	1.19	0.597
4-Methyl-2-pentanone	108-10-1	5.96	U	11.9	5.96	2.98
Methylene chloride	75-09-2	2.38	U	5.97	2.38	1.19
Naphthalene	91-20-3	1.19	U	5.97	1.19	0.597
n-Propylbenzene	103-65-1	1.19	U	5.97	1.19	0.597
Styrene	100-42-5	1.19	U	5.97	1.19	0.597
1,1,1,2-Tetrachloroethane	630-20-6	1.19	U	5.97	1.19	0.597
1,1,2,2-Tetrachloroethane	79-34-5	1.19	U	5.97	1.19	0.597
Tetrachloroethene	127-18-4	1.19	U	5.97	1.19	0.597
Toluene	108-88-3	1.19	U	5.97	1.19	0.597
1,2,3-Trichlorobenzene	87-61-6	1.19	U	5.97	1.19	0.597
1,2,4-Trichlorobenzene	120-82-1	1.19	U	5.97	1.19	0.597
1,1,1-Trichloroethane	71-55-6	1.19	U	5.97	1.19	0.597
1,1,2-Trichloroethane	79-00-5	1.19	U	5.97	1.19	0.597
Trichloroethene	79-01-6	0.855	J	5.97	1.19	0.597
Trichlorofluoromethane	75-69-4	2.38	U	5.97	2.38	1.19
1,2,3-Trichloropropane	96-18-4	2.38	U	5.97	2.38	1.19
1,2,4-Trimethylbenzene	95-63-6	1.19	U	5.97	1.19	0.597
1,3,5-Trimethylbenzene	108-67-8	1.19	U	5.97	1.19	0.597
Vinyl chloride	75-01-4	2.38	U	5.97	2.38	1.19
o-Xylene	95-47-6	1.19	U	5.97	1.19	0.597
m-,p-Xylene	179601-23-1	1.19	U	5.97	1.19	0.597

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.9	80	120	
1,2-Dichloroethane-d4	90.0	80	120	
Toluene-d8	101	85	115	
4-Bromofluorobenzene	104	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-12	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT17(18-18.5)150316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 15:24
Collect Date:	03/15/2016 12:30	**Dilution:**	10	**File ID:**	1LM.LM33939
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	83.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	172		48.1	24.0	12.0

Certificate of Analysis

Sample #:	L16030863-13	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT17(27-27.5)150316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:25
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562236	**Analyst:**	TMB	**Run Date:**	03/24/2016 20:06
Collect Date:	03/15/2016 12:45	**Dilution:**	1	**File ID:**	6M138004
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	78.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	6.75	J	24.9	12.4	6.22
Benzene	71-43-2	1.24	U	6.22	1.24	0.622
Bromobenzene	108-86-1	1.24	U	6.22	1.24	0.622
Bromochloromethane	74-97-5	2.48	U	6.22	2.48	1.24
Bromodichloromethane	75-27-4	1.24	U	6.22	1.24	0.622
Bromoform	75-25-2	1.24	U	6.22	1.24	0.622
Bromomethane	74-83-9	2.48	U	6.22	2.48	1.24
2-Butanone	78-93-3	6.22	U	12.4	6.22	3.11
n-Butylbenzene	104-51-8	1.24	U	6.22	1.24	0.622
sec-Butylbenzene	135-98-8	1.24	U	6.22	1.24	0.622
tert-Butylbenzene	98-06-6	1.24	U	6.22	1.24	0.622
Carbon disulfide	75-15-0	1.24	U	6.22	1.24	0.622
Carbon tetrachloride	56-23-5	1.24	U	6.22	1.24	0.622
Chlorobenzene	108-90-7	1.24	U	6.22	1.24	0.622
Chlorodibromomethane	124-48-1	1.24	U	6.22	1.24	0.622
Chloroethane	75-00-3	2.48	U	6.22	2.48	1.24
Chloroform	67-66-3	1.24	U	6.22	1.24	0.622
Chloromethane	74-87-3	4.98	Q	12.4	4.98	2.49
2-Chlorotoluene	95-49-8	1.24	U	6.22	1.24	0.622
4-Chlorotoluene	106-43-4	1.24	U	6.22	1.24	0.622

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	4.98	U	12.4	4.98	2.49
1,2-Dibromoethane	106-93-4	1.24	U	6.22	1.24	0.622
Dibromomethane	74-95-3	1.24	U	6.22	1.24	0.622
1,2-Dichlorobenzene	95-50-1	1.24	U	6.22	1.24	0.622
1,3-Dichlorobenzene	541-73-1	1.24	U	6.22	1.24	0.622
1,4-Dichlorobenzene	106-46-7	1.24	U	6.22	1.24	0.622
Dichlorodifluoromethane	75-71-8	2.48	U	6.22	2.48	1.24
1,1-Dichloroethane	75-34-3	2.48	U	6.22	2.48	1.24
1,2-Dichloroethane	107-06-2	1.24	U	6.22	1.24	0.622
1,1-Dichloroethene	75-35-4	1.24	U	6.22	1.24	0.622
cis-1,2-Dichloroethene	156-59-2	1.24	U	6.22	1.24	0.622
trans-1,2-Dichloroethene	156-60-5	1.24	U	6.22	1.24	0.622
1,2-Dichloropropane	78-87-5	1.24	U	6.22	1.24	0.622
1,3-Dichloropropane	142-28-9	1.24	U	6.22	1.24	0.622
2,2-Dichloropropane	594-20-7	1.24	U	6.22	1.24	0.622
cis-1,3-Dichloropropene	10061-01-5	1.24	U	6.22	1.24	0.622
trans-1,3-Dichloropropene	10061-02-6	1.24	U	6.22	1.24	0.622
1,1-Dichloropropene	563-58-6	1.24	U	6.22	1.24	0.622
Ethylbenzene	100-41-4	1.24	U	6.22	1.24	0.622
2-Hexanone	591-78-6	6.22	U	12.4	6.22	3.11
Hexachlorobutadiene	87-68-3	1.24	U	6.22	1.24	0.622
Isopropylbenzene	98-82-8	1.24	U	6.22	1.24	0.622
p-Isopropyltoluene	99-87-6	1.24	U	6.22	1.24	0.622
4-Methyl-2-pentanone	108-10-1	6.22	U	12.4	6.22	3.11
Methylene chloride	75-09-2	2.48	U	6.22	2.48	1.24
Naphthalene	91-20-3	1.24	U	6.22	1.24	0.622
n-Propylbenzene	103-65-1	1.24	U	6.22	1.24	0.622
Styrene	100-42-5	1.24	U	6.22	1.24	0.622
1,1,1,2-Tetrachloroethane	630-20-6	1.24	U	6.22	1.24	0.622
1,1,2,2-Tetrachloroethane	79-34-5	1.24	U	6.22	1.24	0.622
Tetrachloroethene	127-18-4	1.24	U	6.22	1.24	0.622
Toluene	108-88-3	1.24	U	6.22	1.24	0.622
1,2,3-Trichlorobenzene	87-61-6	1.24	U	6.22	1.24	0.622
1,2,4-Trichlorobenzene	120-82-1	1.24	U	6.22	1.24	0.622
1,1,1-Trichloroethane	71-55-6	1.24	U	6.22	1.24	0.622
1,1,2-Trichloroethane	79-00-5	1.24	U	6.22	1.24	0.622
Trichloroethene	79-01-6	8.36		6.22	1.24	0.622
Trichlorofluoromethane	75-69-4	2.48	U	6.22	2.48	1.24
1,2,3-Trichloropropane	96-18-4	2.48	U	6.22	2.48	1.24

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Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.24	U	6.22	1.24	0.622
1,3,5-Trimethylbenzene	108-67-8	1.24	U	6.22	1.24	0.622
Vinyl chloride	75-01-4	2.48	U	6.22	2.48	1.24
o-Xylene	95-47-6	1.24	U	6.22	1.24	0.622
m-,p-Xylene	179601-23-1	1.24	U	6.22	1.24	0.622

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.2	80	120	
1,2-Dichloroethane-d4	83.7	80	120	
Toluene-d8	101	85	115	
4-Bromofluorobenzene	103	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-13	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT17(27-27.5)150316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 15:43
Collect Date:	03/15/2016 12:45	**Dilution:**	100	**File ID:**	1LM.LM33940
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	78.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2170		498	248	124

Certificate of Analysis

Sample #:	L16030863-14	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT17(21.5-22)150316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:26
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562236	**Analyst:**	TMB	**Run Date:**	03/24/2016 20:39
Collect Date:	03/15/2016 13:00	**Dilution:**	1	**File ID:**	6M138005
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.5	U	22.9	11.5	5.73
Benzene	71-43-2	1.15	U	5.73	1.15	0.573
Bromobenzene	108-86-1	1.15	U	5.73	1.15	0.573
Bromochloromethane	74-97-5	2.30	U	5.73	2.30	1.15
Bromodichloromethane	75-27-4	1.15	U	5.73	1.15	0.573
Bromoform	75-25-2	1.15	U	5.73	1.15	0.573
Bromomethane	74-83-9	2.30	U	5.73	2.30	1.15
2-Butanone	78-93-3	5.72	U	11.5	5.72	2.86
n-Butylbenzene	104-51-8	1.15	U	5.73	1.15	0.573
sec-Butylbenzene	135-98-8	1.15	U	5.73	1.15	0.573
tert-Butylbenzene	98-06-6	1.15	U	5.73	1.15	0.573
Carbon disulfide	75-15-0	1.15	U	5.73	1.15	0.573
Carbon tetrachloride	56-23-5	1.15	U	5.73	1.15	0.573
Chlorobenzene	108-90-7	1.15	U	5.73	1.15	0.573
Chlorodibromomethane	124-48-1	1.15	U	5.73	1.15	0.573
Chloroethane	75-00-3	2.30	U	5.73	2.30	1.15
Chloroform	67-66-3	1.15	U	5.73	1.15	0.573
Chloromethane	74-87-3	4.58	Q	11.5	4.58	2.29
2-Chlorotoluene	95-49-8	1.15	U	5.73	1.15	0.573
4-Chlorotoluene	106-43-4	1.15	U	5.73	1.15	0.573

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Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	4.58	U	11.5	4.58	2.29
1,2-Dibromoethane	106-93-4	1.15	U	5.73	1.15	0.573
Dibromomethane	74-95-3	1.15	U	5.73	1.15	0.573
1,2-Dichlorobenzene	95-50-1	1.15	U	5.73	1.15	0.573
1,3-Dichlorobenzene	541-73-1	1.15	U	5.73	1.15	0.573
1,4-Dichlorobenzene	106-46-7	1.15	U	5.73	1.15	0.573
Dichlorodifluoromethane	75-71-8	2.30	U	5.73	2.30	1.15
1,1-Dichloroethane	75-34-3	2.30	U	5.73	2.30	1.15
1,2-Dichloroethane	107-06-2	1.15	U	5.73	1.15	0.573
1,1-Dichloroethene	75-35-4	1.15	U	5.73	1.15	0.573
cis-1,2-Dichloroethene	156-59-2	1.15	U	5.73	1.15	0.573
trans-1,2-Dichloroethene	156-60-5	1.15	U	5.73	1.15	0.573
1,2-Dichloropropane	78-87-5	1.15	U	5.73	1.15	0.573
1,3-Dichloropropane	142-28-9	1.15	U	5.73	1.15	0.573
2,2-Dichloropropane	594-20-7	1.15	U	5.73	1.15	0.573
cis-1,3-Dichloropropene	10061-01-5	1.15	U	5.73	1.15	0.573
trans-1,3-Dichloropropene	10061-02-6	1.15	U	5.73	1.15	0.573
1,1-Dichloropropene	563-58-6	1.15	U	5.73	1.15	0.573
Ethylbenzene	100-41-4	1.15	U	5.73	1.15	0.573
2-Hexanone	591-78-6	5.72	U	11.5	5.72	2.86
Hexachlorobutadiene	87-68-3	1.15	U	5.73	1.15	0.573
Isopropylbenzene	98-82-8	1.15	U	5.73	1.15	0.573
p-Isopropyltoluene	99-87-6	1.15	U	5.73	1.15	0.573
4-Methyl-2-pentanone	108-10-1	5.72	U	11.5	5.72	2.86
Methylene chloride	75-09-2	2.30	U	5.73	2.30	1.15
Naphthalene	91-20-3	1.15	U	5.73	1.15	0.573
n-Propylbenzene	103-65-1	1.15	U	5.73	1.15	0.573
Styrene	100-42-5	1.15	U	5.73	1.15	0.573
1,1,1,2-Tetrachloroethane	630-20-6	1.15	U	5.73	1.15	0.573
1,1,2,2-Tetrachloroethane	79-34-5	1.15	U	5.73	1.15	0.573
Tetrachloroethene	127-18-4	1.15	U	5.73	1.15	0.573
Toluene	108-88-3	1.15	U	5.73	1.15	0.573
1,2,3-Trichlorobenzene	87-61-6	1.15	U	5.73	1.15	0.573
1,2,4-Trichlorobenzene	120-82-1	1.15	U	5.73	1.15	0.573
1,1,1-Trichloroethane	71-55-6	1.15	U	5.73	1.15	0.573
1,1,2-Trichloroethane	79-00-5	1.15	U	5.73	1.15	0.573
Trichloroethene	79-01-6	0.995	J	5.73	1.15	0.573
Trichlorofluoromethane	75-69-4	2.30	U	5.73	2.30	1.15
1,2,3-Trichloropropane	96-18-4	2.30	U	5.73	2.30	1.15

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Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.15	U	5.73	1.15	0.573
1,3,5-Trimethylbenzene	108-67-8	1.15	U	5.73	1.15	0.573
Vinyl chloride	75-01-4	2.30	U	5.73	2.30	1.15
o-Xylene	95-47-6	1.15	U	5.73	1.15	0.573
m-,p-Xylene	179601-23-1	1.15	U	5.73	1.15	0.573

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.5	80	120	
1,2-Dichloroethane-d4	84.3	80	120	
Toluene-d8	102	85	115	
4-Bromofluorobenzene	104	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-14	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT17(21.5-22)150316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 16:02
Collect Date:	03/15/2016 13:00	**Dilution:**	50	**File ID:**	1LM.LM33941
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	82.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1500		240	120	60.1

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Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #: L16030863-01 **Client ID:** 18DPT16(5-5.5)150316 **Matrix:** Soil **Collect Date:** 03/15/2016 09:20

Analyte	Result	Units	Qualifier
Percent Solids	79.3	weight %	

Sample #: L16030863-02 **Client ID:** 18DPT16(5-5.5)150316MS **Matrix:** Soil **Collect Date:** 03/15/2016 09:20

Analyte	Result	Units	Qualifier
Percent Solids	79.3	weight %	

Sample #: L16030863-03 **Client ID:** 18DPT16(5-5.5)150316MSD **Matrix:** Soil **Collect Date:** 03/15/2016 09:20

Analyte	Result	Units	Qualifier
Percent Solids	79.3	weight %	

Sample #: L16030863-04 **Client ID:** 18DPT16(15-15.5)150316 **Matrix:** Soil **Collect Date:** 03/15/2016 09:25

Analyte	Result	Units	Qualifier
Percent Solids	86.1	weight %	

Sample #: L16030863-05 **Client ID:** 18DPT16(25-25.5)150316 **Matrix:** Soil **Collect Date:** 03/15/2016 10:35

Analyte	Result	Units	Qualifier
Percent Solids	81.2	weight %	

Sample #: L16030863-06 **Client ID:** 18CPT16(30-30.5)150316 **Matrix:** Soil **Collect Date:** 03/15/2016 10:40

Analyte	Result	Units	Qualifier
Percent Solids	79.6	weight %	

Sample #: L16030863-07 **Client ID:** 18DPT16(33-33.5)150316 **Matrix:** Soil **Collect Date:** 03/15/2016 10:45

Analyte	Result	Units	Qualifier
Percent Solids	77.7	weight %	

Sample #: L16030863-08 **Client ID:** 18DPT17(2.5-3)150316 **Matrix:** Soil **Collect Date:** 03/15/2016 11:50

Analyte	Result	Units	Qualifier
Percent Solids	84.2	weight %	

Sample #: L16030863-09 **Client ID:** 18DPT17(2.5-3)150316FD **Matrix:** Soil **Collect Date:** 03/15/2016 11:50

Analyte	Result	Units	Qualifier
Percent Solids	83.5	weight %	

Sample #: L16030863-10 **Client ID:** 18DPT17(5-5.5)150316 **Matrix:** Soil **Collect Date:** 03/15/2016 11:55

Analyte	Result	Units	Qualifier
Percent Solids	78.8	weight %	

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #: L16030863-11 **Client ID:** 18DPT17(10-10.5)150316 **Matrix:** Soil **Collect Date:** 03/15/2016 12:00

Analyte	Result	Units	Qualifier
Percent Solids	80.4	weight %	

Sample #: L16030863-12 **Client ID:** 18DPT17(18-18.5)150316 **Matrix:** Soil **Collect Date:** 03/15/2016 12:30

Analyte	Result	Units	Qualifier
Percent Solids	83.0	weight %	

Sample #: L16030863-13 **Client ID:** 18DPT17(27-27.5)150316 **Matrix:** Soil **Collect Date:** 03/15/2016 12:45

Analyte	Result	Units	Qualifier
Percent Solids	78.8	weight %	

Sample #: L16030863-14 **Client ID:** 18DPT17(21.5-22)150316 **Matrix:** Soil **Collect Date:** 03/15/2016 13:00

Analyte	Result	Units	Qualifier
Percent Solids	82.4	weight %	

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT16(5-5.5)150316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:17
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 17:10
Collect Date:	03/15/2016 09:20	**Dilution:**	1	**File ID:**	6M137973
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.7	U	25.4	12.7	6.35
Benzene	71-43-2	1.27	U	6.35	1.27	0.635
Bromobenzene	108-86-1	1.27	U	6.35	1.27	0.635
Bromochloromethane	74-97-5	2.54	U	6.35	2.54	1.27
Bromodichloromethane	75-27-4	1.27	U	6.35	1.27	0.635
Bromoform	75-25-2	1.27	U	6.35	1.27	0.635
Bromomethane	74-83-9	2.54	U	6.35	2.54	1.27
2-Butanone	78-93-3	6.36	U	12.7	6.36	3.18
n-Butylbenzene	104-51-8	1.27	U	6.35	1.27	0.635
sec-Butylbenzene	135-98-8	1.27	U	6.35	1.27	0.635
tert-Butylbenzene	98-06-6	1.27	U	6.35	1.27	0.635
Carbon disulfide	75-15-0	1.27	U	6.35	1.27	0.635
Carbon tetrachloride	56-23-5	1.27	U	6.35	1.27	0.635
Chlorobenzene	108-90-7	1.27	U	6.35	1.27	0.635
Chlorodibromomethane	124-48-1	1.27	U	6.35	1.27	0.635
Chloroethane	75-00-3	2.54	U	6.35	2.54	1.27
Chloroform	67-66-3	1.27	U	6.35	1.27	0.635
Chloromethane	74-87-3	5.08	Q	12.7	5.08	2.54
2-Chlorotoluene	95-49-8	1.27	U	6.35	1.27	0.635
4-Chlorotoluene	106-43-4	1.27	U	6.35	1.27	0.635
1,2-Dibromo-3-chloropropane	96-12-8	5.08	U	12.7	5.08	2.54
1,2-Dibromoethane	106-93-4	1.27	U	6.35	1.27	0.635
Dibromomethane	74-95-3	1.27	U	6.35	1.27	0.635
1,2-Dichlorobenzene	95-50-1	1.27	U	6.35	1.27	0.635
1,3-Dichlorobenzene	541-73-1	1.27	U	6.35	1.27	0.635
1,4-Dichlorobenzene	106-46-7	1.27	U	6.35	1.27	0.635
Dichlorodifluoromethane	75-71-8	2.54	U	6.35	2.54	1.27
1,1-Dichloroethane	75-34-3	2.54	U	6.35	2.54	1.27
1,2-Dichloroethane	107-06-2	1.27	U	6.35	1.27	0.635
1,1-Dichloroethene	75-35-4	1.27	U	6.35	1.27	0.635
cis-1,2-Dichloroethene	156-59-2	1.27	U	6.35	1.27	0.635
trans-1,2-Dichloroethene	156-60-5	1.27	U	6.35	1.27	0.635

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Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.27	U	6.35	1.27	0.635
1,3-Dichloropropane	142-28-9	1.27	U	6.35	1.27	0.635
2,2-Dichloropropane	594-20-7	1.27	U	6.35	1.27	0.635
cis-1,3-Dichloropropene	10061-01-5	1.27	U	6.35	1.27	0.635
trans-1,3-Dichloropropene	10061-02-6	1.27	U	6.35	1.27	0.635
1,1-Dichloropropene	563-58-6	1.27	U	6.35	1.27	0.635
Ethylbenzene	100-41-4	1.27	U	6.35	1.27	0.635
2-Hexanone	591-78-6	6.36	U	12.7	6.36	3.18
Hexachlorobutadiene	87-68-3	1.27	U	6.35	1.27	0.635
Isopropylbenzene	98-82-8	1.27	U	6.35	1.27	0.635
p-Isopropyltoluene	99-87-6	1.27	U	6.35	1.27	0.635
4-Methyl-2-pentanone	108-10-1	6.36	U	12.7	6.36	3.18
Methylene chloride	75-09-2	2.54	U	6.35	2.54	1.27
Naphthalene	91-20-3	1.27	Q	6.35	1.27	0.635
n-Propylbenzene	103-65-1	1.27	U	6.35	1.27	0.635
Styrene	100-42-5	1.27	U	6.35	1.27	0.635
1,1,1,2-Tetrachloroethane	630-20-6	1.27	U	6.35	1.27	0.635
1,1,2,2-Tetrachloroethane	79-34-5	1.27	U	6.35	1.27	0.635
Tetrachloroethene	127-18-4	1.27	U	6.35	1.27	0.635
Toluene	108-88-3	1.27	U	6.35	1.27	0.635
1,2,3-Trichlorobenzene	87-61-6	1.27	U	6.35	1.27	0.635
1,2,4-Trichlorobenzene	120-82-1	1.27	U	6.35	1.27	0.635
1,1,1-Trichloroethane	71-55-6	1.27	U	6.35	1.27	0.635
1,1,2-Trichloroethane	79-00-5	1.27	U	6.35	1.27	0.635
Trichloroethene	79-01-6	1.27	U	6.35	1.27	0.635
Trichlorofluoromethane	75-69-4	2.54	U	6.35	2.54	1.27
1,2,3-Trichloropropane	96-18-4	2.54	U	6.35	2.54	1.27
1,2,4-Trimethylbenzene	95-63-6	1.27	U	6.35	1.27	0.635
1,3,5-Trimethylbenzene	108-67-8	1.27	U	6.35	1.27	0.635
Vinyl chloride	75-01-4	2.54	U	6.35	2.54	1.27
o-Xylene	95-47-6	1.27	U	6.35	1.27	0.635
m-,p-Xylene	179601-23-1	1.27	U	6.35	1.27	0.635

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.8	80	120	
1,2-Dichloroethane-d4	87.9	80	120	
Toluene-d8	101	85	115	
4-Bromofluorobenzene	103	85	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT16(5-5.5)150316MS	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:17
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 14:59
Collect Date:	03/15/2016 09:20	**Dilution:**	1	**File ID:**	6M137969
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	20.1	J	23.6	11.8	5.90
Benzene	71-43-2	25.7		5.90	1.18	0.590
Bromobenzene	108-86-1	26.5		5.90	1.18	0.590
Bromochloromethane	74-97-5	26.0		5.90	2.36	1.18
Bromodichloromethane	75-27-4	24.9		5.90	1.18	0.590
Bromoform	75-25-2	22.1		5.90	1.18	0.590
Bromomethane	74-83-9	25.6		5.90	2.36	1.18
2-Butanone	78-93-3	24.2		11.8	5.90	2.95
n-Butylbenzene	104-51-8	27.0		5.90	1.18	0.590
sec-Butylbenzene	135-98-8	28.5		5.90	1.18	0.590
tert-Butylbenzene	98-06-6	28.5		5.90	1.18	0.590
Carbon disulfide	75-15-0	24.5		5.90	1.18	0.590
Carbon tetrachloride	56-23-5	25.1		5.90	1.18	0.590
Chlorobenzene	108-90-7	26.6		5.90	1.18	0.590
Chlorodibromomethane	124-48-1	24.3		5.90	1.18	0.590
Chloroethane	75-00-3	28.1		5.90	2.36	1.18
Chloroform	67-66-3	24.9		5.90	1.18	0.590
Chloromethane	74-87-3	19.3	Q	11.8	4.72	2.36
2-Chlorotoluene	95-49-8	27.6		5.90	1.18	0.590
4-Chlorotoluene	106-43-4	27.9		5.90	1.18	0.590
1,2-Dibromo-3-chloropropane	96-12-8	24.3		11.8	4.72	2.36
1,2-Dibromoethane	106-93-4	25.4		5.90	1.18	0.590
Dibromomethane	74-95-3	24.4		5.90	1.18	0.590
1,2-Dichlorobenzene	95-50-1	27.2		5.90	1.18	0.590
1,3-Dichlorobenzene	541-73-1	27.3		5.90	1.18	0.590
1,4-Dichlorobenzene	106-46-7	27.0		5.90	1.18	0.590
Dichlorodifluoromethane	75-71-8	27.1		5.90	2.36	1.18
1,1-Dichloroethane	75-34-3	24.5		5.90	2.36	1.18
1,2-Dichloroethane	107-06-2	24.6		5.90	1.18	0.590
1,1-Dichloroethene	75-35-4	25.2		5.90	1.18	0.590
cis-1,2-Dichloroethene	156-59-2	26.7		5.90	1.18	0.590

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Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	27.0		5.90	1.18	0.590
1,2-Dichloropropane	78-87-5	26.9		5.90	1.18	0.590
1,3-Dichloropropane	142-28-9	26.6		5.90	1.18	0.590
2,2-Dichloropropane	594-20-7	26.9		5.90	1.18	0.590
cis-1,3-Dichloropropene	10061-01-5	29.1		5.90	1.18	0.590
trans-1,3-Dichloropropene	10061-02-6	25.4		5.90	1.18	0.590
1,1-Dichloropropene	563-58-6	26.8		5.90	1.18	0.590
Ethylbenzene	100-41-4	26.3		5.90	1.18	0.590
2-Hexanone	591-78-6	24.0		11.8	5.90	2.95
Hexachlorobutadiene	87-68-3	28.5		5.90	1.18	0.590
Isopropylbenzene	98-82-8	27.9		5.90	1.18	0.590
p-Isopropyltoluene	99-87-6	28.4		5.90	1.18	0.590
4-Methyl-2-pentanone	108-10-1	26.1		11.8	5.90	2.95
Methylene chloride	75-09-2	26.3		5.90	2.36	1.18
Naphthalene	91-20-3	24.5	Q	5.90	1.18	0.590
n-Propylbenzene	103-65-1	28.7		5.90	1.18	0.590
Styrene	100-42-5	26.7		5.90	1.18	0.590
1,1,1,2-Tetrachloroethane	630-20-6	24.6		5.90	1.18	0.590
1,1,2,2-Tetrachloroethane	79-34-5	25.6		5.90	1.18	0.590
Tetrachloroethene	127-18-4	26.8		5.90	1.18	0.590
Toluene	108-88-3	25.8		5.90	1.18	0.590
1,2,3-Trichlorobenzene	87-61-6	26.2		5.90	1.18	0.590
1,2,4-Trichlorobenzene	120-82-1	27.0		5.90	1.18	0.590
1,1,1-Trichloroethane	71-55-6	25.4		5.90	1.18	0.590
1,1,2-Trichloroethane	79-00-5	25.9		5.90	1.18	0.590
Trichloroethene	79-01-6	27.8		5.90	1.18	0.590
Trichlorofluoromethane	75-69-4	24.2		5.90	2.36	1.18
1,2,3-Trichloropropane	96-18-4	26.4		5.90	2.36	1.18
1,2,4-Trimethylbenzene	95-63-6	27.4		5.90	1.18	0.590
1,3,5-Trimethylbenzene	108-67-8	28.6		5.90	1.18	0.590
Vinyl chloride	75-01-4	25.7		5.90	2.36	1.18
o-Xylene	95-47-6	28.2		5.90	1.18	0.590
m-,p-Xylene	179601-23-1	53.7		5.90	1.18	0.590

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.7	80	120	
1,2-Dichloroethane-d4	88.1	80	120	
Toluene-d8	101	85	115	
4-Bromofluorobenzene	103	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

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Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.

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Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT16(5-5.5)150316MSD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:18
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 15:32
Collect Date:	03/15/2016 09:20	**Dilution:**	1	**File ID:**	6M137970
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	24.1	J	27.8	13.9	6.94
Benzene	71-43-2	29.7		6.94	1.39	0.694
Bromobenzene	108-86-1	30.1		6.94	1.39	0.694
Bromochloromethane	74-97-5	29.6		6.94	2.78	1.39
Bromodichloromethane	75-27-4	28.4		6.94	1.39	0.694
Bromoform	75-25-2	26.0		6.94	1.39	0.694
Bromomethane	74-83-9	30.1		6.94	2.78	1.39
2-Butanone	78-93-3	28.5		13.9	6.94	3.47
n-Butylbenzene	104-51-8	30.3		6.94	1.39	0.694
sec-Butylbenzene	135-98-8	32.3		6.94	1.39	0.694
tert-Butylbenzene	98-06-6	32.9		6.94	1.39	0.694
Carbon disulfide	75-15-0	27.8		6.94	1.39	0.694
Carbon tetrachloride	56-23-5	29.8		6.94	1.39	0.694
Chlorobenzene	108-90-7	30.4		6.94	1.39	0.694
Chlorodibromomethane	124-48-1	28.0		6.94	1.39	0.694
Chloroethane	75-00-3	32.9		6.94	2.78	1.39
Chloroform	67-66-3	28.7		6.94	1.39	0.694
Chloromethane	74-87-3	23.4	Q	13.9	5.56	2.78
2-Chlorotoluene	95-49-8	31.4		6.94	1.39	0.694
4-Chlorotoluene	106-43-4	31.1		6.94	1.39	0.694
1,2-Dibromo-3-chloropropane	96-12-8	29.9		13.9	5.56	2.78
1,2-Dibromoethane	106-93-4	29.1		6.94	1.39	0.694
Dibromomethane	74-95-3	27.8		6.94	1.39	0.694
1,2-Dichlorobenzene	95-50-1	30.8		6.94	1.39	0.694
1,3-Dichlorobenzene	541-73-1	30.7		6.94	1.39	0.694
1,4-Dichlorobenzene	106-46-7	30.7		6.94	1.39	0.694
Dichlorodifluoromethane	75-71-8	31.4		6.94	2.78	1.39
1,1-Dichloroethane	75-34-3	28.5		6.94	2.78	1.39
1,2-Dichloroethane	107-06-2	28.4		6.94	1.39	0.694
1,1-Dichloroethene	75-35-4	29.5		6.94	1.39	0.694
cis-1,2-Dichloroethene	156-59-2	30.8		6.94	1.39	0.694

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Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	31.8		6.94	1.39	0.694
1,2-Dichloropropane	78-87-5	31.6		6.94	1.39	0.694
1,3-Dichloropropane	142-28-9	30.4		6.94	1.39	0.694
2,2-Dichloropropane	594-20-7	31.1		6.94	1.39	0.694
cis-1,3-Dichloropropene	10061-01-5	32.4		6.94	1.39	0.694
trans-1,3-Dichloropropene	10061-02-6	28.3		6.94	1.39	0.694
1,1-Dichloropropene	563-58-6	30.6		6.94	1.39	0.694
Ethylbenzene	100-41-4	30.7		6.94	1.39	0.694
2-Hexanone	591-78-6	28.0		13.9	6.94	3.47
Hexachlorobutadiene	87-68-3	32.1		6.94	1.39	0.694
Isopropylbenzene	98-82-8	32.1		6.94	1.39	0.694
p-Isopropyltoluene	99-87-6	31.9		6.94	1.39	0.694
4-Methyl-2-pentanone	108-10-1	31.0		13.9	6.94	3.47
Methylene chloride	75-09-2	29.9		6.94	2.78	1.39
Naphthalene	91-20-3	29.4	Q	6.94	1.39	0.694
n-Propylbenzene	103-65-1	32.2		6.94	1.39	0.694
Styrene	100-42-5	30.8		6.94	1.39	0.694
1,1,1,2-Tetrachloroethane	630-20-6	28.4		6.94	1.39	0.694
1,1,2,2-Tetrachloroethane	79-34-5	30.0		6.94	1.39	0.694
Tetrachloroethene	127-18-4	30.5		6.94	1.39	0.694
Toluene	108-88-3	30.1		6.94	1.39	0.694
1,2,3-Trichlorobenzene	87-61-6	30.1		6.94	1.39	0.694
1,2,4-Trichlorobenzene	120-82-1	30.2		6.94	1.39	0.694
1,1,1-Trichloroethane	71-55-6	29.4		6.94	1.39	0.694
1,1,2-Trichloroethane	79-00-5	29.2		6.94	1.39	0.694
Trichloroethene	79-01-6	32.2		6.94	1.39	0.694
Trichlorofluoromethane	75-69-4	28.5		6.94	2.78	1.39
1,2,3-Trichloropropane	96-18-4	31.0		6.94	2.78	1.39
1,2,4-Trimethylbenzene	95-63-6	30.9		6.94	1.39	0.694
1,3,5-Trimethylbenzene	108-67-8	32.3		6.94	1.39	0.694
Vinyl chloride	75-01-4	29.3		6.94	2.78	1.39
o-Xylene	95-47-6	32.3		6.94	1.39	0.694
m-,p-Xylene	179601-23-1	62.5		6.94	1.39	0.694

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.8	80	120	
1,2-Dichloroethane-d4	85.8	80	120	
Toluene-d8	101	85	115	
4-Bromofluorobenzene	101	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT16(15-15.5)150316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:19
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 21:32
Collect Date:	03/15/2016 09:25	**Dilution:**	1	**File ID:**	6M137981
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	86.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	6.34	J	23.4	11.7	5.84
Benzene	71-43-2	1.17	U	5.84	1.17	0.584
Bromobenzene	108-86-1	1.17	U	5.84	1.17	0.584
Bromochloromethane	74-97-5	2.34	U	5.84	2.34	1.17
Bromodichloromethane	75-27-4	1.17	U	5.84	1.17	0.584
Bromoform	75-25-2	1.17	U	5.84	1.17	0.584
Bromomethane	74-83-9	2.34	U	5.84	2.34	1.17
2-Butanone	78-93-3	5.84	U	11.7	5.84	2.92
n-Butylbenzene	104-51-8	1.17	U	5.84	1.17	0.584
sec-Butylbenzene	135-98-8	1.17	U	5.84	1.17	0.584
tert-Butylbenzene	98-06-6	1.17	U	5.84	1.17	0.584
Carbon disulfide	75-15-0	1.17	U	5.84	1.17	0.584
Carbon tetrachloride	56-23-5	1.17	U	5.84	1.17	0.584
Chlorobenzene	108-90-7	1.17	U	5.84	1.17	0.584
Chlorodibromomethane	124-48-1	1.17	U	5.84	1.17	0.584
Chloroethane	75-00-3	2.34	U	5.84	2.34	1.17
Chloroform	67-66-3	1.17	U	5.84	1.17	0.584
Chloromethane	74-87-3	4.68	Q	11.7	4.68	2.34
2-Chlorotoluene	95-49-8	1.17	U	5.84	1.17	0.584
4-Chlorotoluene	106-43-4	1.17	U	5.84	1.17	0.584
1,2-Dibromo-3-chloropropane	96-12-8	4.68	U	11.7	4.68	2.34
1,2-Dibromoethane	106-93-4	1.17	U	5.84	1.17	0.584
Dibromomethane	74-95-3	1.17	U	5.84	1.17	0.584
1,2-Dichlorobenzene	95-50-1	1.17	U	5.84	1.17	0.584
1,3-Dichlorobenzene	541-73-1	1.17	U	5.84	1.17	0.584
1,4-Dichlorobenzene	106-46-7	1.17	U	5.84	1.17	0.584
Dichlorodifluoromethane	75-71-8	2.34	U	5.84	2.34	1.17
1,1-Dichloroethane	75-34-3	2.34	U	5.84	2.34	1.17
1,2-Dichloroethane	107-06-2	1.17	U	5.84	1.17	0.584
1,1-Dichloroethene	75-35-4	1.17	U	5.84	1.17	0.584
cis-1,2-Dichloroethene	156-59-2	1.17	U	5.84	1.17	0.584

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.17	U	5.84	1.17	0.584
1,2-Dichloropropane	78-87-5	1.17	U	5.84	1.17	0.584
1,3-Dichloropropane	142-28-9	1.17	U	5.84	1.17	0.584
2,2-Dichloropropane	594-20-7	1.17	U	5.84	1.17	0.584
cis-1,3-Dichloropropene	10061-01-5	1.17	U	5.84	1.17	0.584
trans-1,3-Dichloropropene	10061-02-6	1.17	U	5.84	1.17	0.584
1,1-Dichloropropene	563-58-6	1.17	U	5.84	1.17	0.584
Ethylbenzene	100-41-4	1.17	U	5.84	1.17	0.584
2-Hexanone	591-78-6	5.84	U	11.7	5.84	2.92
Hexachlorobutadiene	87-68-3	1.17	U	5.84	1.17	0.584
Isopropylbenzene	98-82-8	1.17	U	5.84	1.17	0.584
p-Isopropyltoluene	99-87-6	1.17	U	5.84	1.17	0.584
4-Methyl-2-pentanone	108-10-1	5.84	U	11.7	5.84	2.92
Methylene chloride	75-09-2	2.34	U	5.84	2.34	1.17
Naphthalene	91-20-3	1.17	Q	5.84	1.17	0.584
n-Propylbenzene	103-65-1	1.17	U	5.84	1.17	0.584
Styrene	100-42-5	1.17	U	5.84	1.17	0.584
1,1,1,2-Tetrachloroethane	630-20-6	1.17	U	5.84	1.17	0.584
1,1,2,2-Tetrachloroethane	79-34-5	1.17	U	5.84	1.17	0.584
Tetrachloroethene	127-18-4	1.17	U	5.84	1.17	0.584
Toluene	108-88-3	1.17	U	5.84	1.17	0.584
1,2,3-Trichlorobenzene	87-61-6	1.17	U	5.84	1.17	0.584
1,2,4-Trichlorobenzene	120-82-1	1.17	U	5.84	1.17	0.584
1,1,1-Trichloroethane	71-55-6	1.17	U	5.84	1.17	0.584
1,1,2-Trichloroethane	79-00-5	1.17	U	5.84	1.17	0.584
Trichloroethene	79-01-6	1.17	U	5.84	1.17	0.584
Trichlorofluoromethane	75-69-4	2.34	U	5.84	2.34	1.17
1,2,3-Trichloropropane	96-18-4	2.34	U	5.84	2.34	1.17
1,2,4-Trimethylbenzene	95-63-6	1.17	U	5.84	1.17	0.584
1,3,5-Trimethylbenzene	108-67-8	1.17	U	5.84	1.17	0.584
Vinyl chloride	75-01-4	2.34	U	5.84	2.34	1.17
o-Xylene	95-47-6	1.17	U	5.84	1.17	0.584
m-,p-Xylene	179601-23-1	1.17	U	5.84	1.17	0.584

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.2	80	120	
1,2-Dichloroethane-d4	86.0	80	120	
Toluene-d8	103	85	115	
4-Bromofluorobenzene	103	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT16(25-25.5)150316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:19
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 22:05
Collect Date:	03/15/2016 10:35	**Dilution:**	1	**File ID:**	6M137982
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.2	U	26.3	13.2	6.58
Benzene	71-43-2	1.32	U	6.58	1.32	0.658
Bromobenzene	108-86-1	1.32	U	6.58	1.32	0.658
Bromochloromethane	74-97-5	2.64	U	6.58	2.64	1.32
Bromodichloromethane	75-27-4	1.32	U	6.58	1.32	0.658
Bromoform	75-25-2	1.32	U	6.58	1.32	0.658
Bromomethane	74-83-9	2.64	U	6.58	2.64	1.32
2-Butanone	78-93-3	6.58	U	13.2	6.58	3.29
n-Butylbenzene	104-51-8	1.32	U	6.58	1.32	0.658
sec-Butylbenzene	135-98-8	1.32	U	6.58	1.32	0.658
tert-Butylbenzene	98-06-6	1.32	U	6.58	1.32	0.658
Carbon disulfide	75-15-0	1.32	U	6.58	1.32	0.658
Carbon tetrachloride	56-23-5	1.32	U	6.58	1.32	0.658
Chlorobenzene	108-90-7	1.32	U	6.58	1.32	0.658
Chlorodibromomethane	124-48-1	1.32	U	6.58	1.32	0.658
Chloroethane	75-00-3	2.64	U	6.58	2.64	1.32
Chloroform	67-66-3	1.32	U	6.58	1.32	0.658
Chloromethane	74-87-3	5.26	Q	13.2	5.26	2.63
2-Chlorotoluene	95-49-8	1.32	U	6.58	1.32	0.658
4-Chlorotoluene	106-43-4	1.32	U	6.58	1.32	0.658
1,2-Dibromo-3-chloropropane	96-12-8	5.26	U	13.2	5.26	2.63
1,2-Dibromoethane	106-93-4	1.32	U	6.58	1.32	0.658
Dibromomethane	74-95-3	1.32	U	6.58	1.32	0.658
1,2-Dichlorobenzene	95-50-1	1.32	U	6.58	1.32	0.658
1,3-Dichlorobenzene	541-73-1	1.32	U	6.58	1.32	0.658
1,4-Dichlorobenzene	106-46-7	1.32	U	6.58	1.32	0.658
Dichlorodifluoromethane	75-71-8	2.64	U	6.58	2.64	1.32
1,1-Dichloroethane	75-34-3	2.64	U	6.58	2.64	1.32
1,2-Dichloroethane	107-06-2	1.32	U	6.58	1.32	0.658
1,1-Dichloroethene	75-35-4	1.32	U	6.58	1.32	0.658
cis-1,2-Dichloroethene	156-59-2	1.32	U	6.58	1.32	0.658

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.32	U	6.58	1.32	0.658
1,2-Dichloropropane	78-87-5	1.32	U	6.58	1.32	0.658
1,3-Dichloropropane	142-28-9	1.32	U	6.58	1.32	0.658
2,2-Dichloropropane	594-20-7	1.32	U	6.58	1.32	0.658
cis-1,3-Dichloropropene	10061-01-5	1.32	U	6.58	1.32	0.658
trans-1,3-Dichloropropene	10061-02-6	1.32	U	6.58	1.32	0.658
1,1-Dichloropropene	563-58-6	1.32	U	6.58	1.32	0.658
Ethylbenzene	100-41-4	1.32	U	6.58	1.32	0.658
2-Hexanone	591-78-6	6.58	U	13.2	6.58	3.29
Hexachlorobutadiene	87-68-3	1.32	U	6.58	1.32	0.658
Isopropylbenzene	98-82-8	1.32	U	6.58	1.32	0.658
p-Isopropyltoluene	99-87-6	1.32	U	6.58	1.32	0.658
4-Methyl-2-pentanone	108-10-1	6.58	U	13.2	6.58	3.29
Methylene chloride	75-09-2	2.64	U	6.58	2.64	1.32
Naphthalene	91-20-3	1.32	Q	6.58	1.32	0.658
n-Propylbenzene	103-65-1	1.32	U	6.58	1.32	0.658
Styrene	100-42-5	1.32	U	6.58	1.32	0.658
1,1,1,2-Tetrachloroethane	630-20-6	1.32	U	6.58	1.32	0.658
1,1,2,2-Tetrachloroethane	79-34-5	1.32	U	6.58	1.32	0.658
Tetrachloroethene	127-18-4	1.32	U	6.58	1.32	0.658
Toluene	108-88-3	1.32	U	6.58	1.32	0.658
1,2,3-Trichlorobenzene	87-61-6	1.32	U	6.58	1.32	0.658
1,2,4-Trichlorobenzene	120-82-1	1.32	U	6.58	1.32	0.658
1,1,1-Trichloroethane	71-55-6	1.32	U	6.58	1.32	0.658
1,1,2-Trichloroethane	79-00-5	1.32	U	6.58	1.32	0.658
Trichloroethene	79-01-6	1.32	U	6.58	1.32	0.658
Trichlorofluoromethane	75-69-4	2.64	U	6.58	2.64	1.32
1,2,3-Trichloropropane	96-18-4	2.64	U	6.58	2.64	1.32
1,2,4-Trimethylbenzene	95-63-6	1.32	U	6.58	1.32	0.658
1,3,5-Trimethylbenzene	108-67-8	1.32	U	6.58	1.32	0.658
Vinyl chloride	75-01-4	2.64	U	6.58	2.64	1.32
o-Xylene	95-47-6	1.32	U	6.58	1.32	0.658
m-,p-Xylene	179601-23-1	1.32	U	6.58	1.32	0.658

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.5	80	120	
1,2-Dichloroethane-d4	87.5	80	120	
Toluene-d8	102	85	115	
4-Bromofluorobenzene	104	85	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPT16(30-30.5)150316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:20
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 22:38
Collect Date:	03/15/2016 10:40	**Dilution:**	1	**File ID:**	6M137983
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.4	U	24.8	12.4	6.20
Benzene	71-43-2	1.24	U	6.20	1.24	0.620
Bromobenzene	108-86-1	1.24	U	6.20	1.24	0.620
Bromochloromethane	74-97-5	2.48	U	6.20	2.48	1.24
Bromodichloromethane	75-27-4	1.24	U	6.20	1.24	0.620
Bromoform	75-25-2	1.24	U	6.20	1.24	0.620
Bromomethane	74-83-9	2.48	U	6.20	2.48	1.24
2-Butanone	78-93-3	6.20	U	12.4	6.20	3.10
n-Butylbenzene	104-51-8	1.24	U	6.20	1.24	0.620
sec-Butylbenzene	135-98-8	1.24	U	6.20	1.24	0.620
tert-Butylbenzene	98-06-6	1.24	U	6.20	1.24	0.620
Carbon disulfide	75-15-0	1.24	U	6.20	1.24	0.620
Carbon tetrachloride	56-23-5	1.24	U	6.20	1.24	0.620
Chlorobenzene	108-90-7	1.24	U	6.20	1.24	0.620
Chlorodibromomethane	124-48-1	1.24	U	6.20	1.24	0.620
Chloroethane	75-00-3	2.48	U	6.20	2.48	1.24
Chloroform	67-66-3	1.24	U	6.20	1.24	0.620
Chloromethane	74-87-3	4.96	Q	12.4	4.96	2.48
2-Chlorotoluene	95-49-8	1.24	U	6.20	1.24	0.620
4-Chlorotoluene	106-43-4	1.24	U	6.20	1.24	0.620
1,2-Dibromo-3-chloropropane	96-12-8	4.96	U	12.4	4.96	2.48
1,2-Dibromoethane	106-93-4	1.24	U	6.20	1.24	0.620
Dibromomethane	74-95-3	1.24	U	6.20	1.24	0.620
1,2-Dichlorobenzene	95-50-1	1.24	U	6.20	1.24	0.620
1,3-Dichlorobenzene	541-73-1	1.24	U	6.20	1.24	0.620
1,4-Dichlorobenzene	106-46-7	1.24	U	6.20	1.24	0.620
Dichlorodifluoromethane	75-71-8	2.48	U	6.20	2.48	1.24
1,1-Dichloroethane	75-34-3	2.48	U	6.20	2.48	1.24
1,2-Dichloroethane	107-06-2	1.24	U	6.20	1.24	0.620
1,1-Dichloroethene	75-35-4	1.24	U	6.20	1.24	0.620
cis-1,2-Dichloroethene	156-59-2	1.24	U	6.20	1.24	0.620

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.24	U	6.20	1.24	0.620
1,2-Dichloropropane	78-87-5	1.24	U	6.20	1.24	0.620
1,3-Dichloropropane	142-28-9	1.24	U	6.20	1.24	0.620
2,2-Dichloropropane	594-20-7	1.24	U	6.20	1.24	0.620
cis-1,3-Dichloropropene	10061-01-5	1.24	U	6.20	1.24	0.620
trans-1,3-Dichloropropene	10061-02-6	1.24	U	6.20	1.24	0.620
1,1-Dichloropropene	563-58-6	1.24	U	6.20	1.24	0.620
Ethylbenzene	100-41-4	1.24	U	6.20	1.24	0.620
2-Hexanone	591-78-6	6.20	U	12.4	6.20	3.10
Hexachlorobutadiene	87-68-3	1.24	U	6.20	1.24	0.620
Isopropylbenzene	98-82-8	1.24	U	6.20	1.24	0.620
p-Isopropyltoluene	99-87-6	1.24	U	6.20	1.24	0.620
4-Methyl-2-pentanone	108-10-1	6.20	U	12.4	6.20	3.10
Methylene chloride	75-09-2	2.48	U	6.20	2.48	1.24
Naphthalene	91-20-3	1.24	Q	6.20	1.24	0.620
n-Propylbenzene	103-65-1	1.24	U	6.20	1.24	0.620
Styrene	100-42-5	1.24	U	6.20	1.24	0.620
1,1,1,2-Tetrachloroethane	630-20-6	1.24	U	6.20	1.24	0.620
1,1,2,2-Tetrachloroethane	79-34-5	1.24	U	6.20	1.24	0.620
Tetrachloroethene	127-18-4	1.24	U	6.20	1.24	0.620
Toluene	108-88-3	1.24	U	6.20	1.24	0.620
1,2,3-Trichlorobenzene	87-61-6	1.24	U	6.20	1.24	0.620
1,2,4-Trichlorobenzene	120-82-1	1.24	U	6.20	1.24	0.620
1,1,1-Trichloroethane	71-55-6	1.24	U	6.20	1.24	0.620
1,1,2-Trichloroethane	79-00-5	1.24	U	6.20	1.24	0.620
Trichloroethene	79-01-6	2.94	J	6.20	1.24	0.620
Trichlorofluoromethane	75-69-4	2.48	U	6.20	2.48	1.24
1,2,3-Trichloropropane	96-18-4	2.48	U	6.20	2.48	1.24
1,2,4-Trimethylbenzene	95-63-6	1.24	U	6.20	1.24	0.620
1,3,5-Trimethylbenzene	108-67-8	1.24	U	6.20	1.24	0.620
Vinyl chloride	75-01-4	2.48	U	6.20	2.48	1.24
o-Xylene	95-47-6	1.24	U	6.20	1.24	0.620
m-,p-Xylene	179601-23-1	1.24	U	6.20	1.24	0.620

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.6	80	120	
1,2-Dichloroethane-d4	87.9	80	120	
Toluene-d8	102	85	115	
4-Bromofluorobenzene	102	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT16(33-33.5)150316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:20
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 23:10
Collect Date:	03/15/2016 10:45	**Dilution:**	1	**File ID:**	6M137984
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	77.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.4	U	26.9	13.4	6.72
Benzene	71-43-2	1.34	U	6.72	1.34	0.672
Bromobenzene	108-86-1	1.34	U	6.72	1.34	0.672
Bromochloromethane	74-97-5	2.68	U	6.72	2.68	1.34
Bromodichloromethane	75-27-4	1.34	U	6.72	1.34	0.672
Bromoform	75-25-2	1.34	U	6.72	1.34	0.672
Bromomethane	74-83-9	2.68	U	6.72	2.68	1.34
2-Butanone	78-93-3	6.72	U	13.4	6.72	3.36
n-Butylbenzene	104-51-8	1.34	U	6.72	1.34	0.672
sec-Butylbenzene	135-98-8	1.34	U	6.72	1.34	0.672
tert-Butylbenzene	98-06-6	1.34	U	6.72	1.34	0.672
Carbon disulfide	75-15-0	1.34	U	6.72	1.34	0.672
Carbon tetrachloride	56-23-5	1.34	U	6.72	1.34	0.672
Chlorobenzene	108-90-7	1.34	U	6.72	1.34	0.672
Chlorodibromomethane	124-48-1	1.34	U	6.72	1.34	0.672
Chloroethane	75-00-3	2.68	U	6.72	2.68	1.34
Chloroform	67-66-3	1.34	U	6.72	1.34	0.672
Chloromethane	74-87-3	5.38	Q	13.4	5.38	2.69
2-Chlorotoluene	95-49-8	1.34	U	6.72	1.34	0.672
4-Chlorotoluene	106-43-4	1.34	U	6.72	1.34	0.672
1,2-Dibromo-3-chloropropane	96-12-8	5.38	U	13.4	5.38	2.69
1,2-Dibromoethane	106-93-4	1.34	U	6.72	1.34	0.672
Dibromomethane	74-95-3	1.34	U	6.72	1.34	0.672
1,2-Dichlorobenzene	95-50-1	1.34	U	6.72	1.34	0.672
1,3-Dichlorobenzene	541-73-1	1.34	U	6.72	1.34	0.672
1,4-Dichlorobenzene	106-46-7	1.34	U	6.72	1.34	0.672
Dichlorodifluoromethane	75-71-8	2.68	U	6.72	2.68	1.34
1,1-Dichloroethane	75-34-3	2.68	U	6.72	2.68	1.34
1,2-Dichloroethane	107-06-2	1.34	U	6.72	1.34	0.672
1,1-Dichloroethene	75-35-4	1.34	U	6.72	1.34	0.672
cis-1,2-Dichloroethene	156-59-2	1.34	U	6.72	1.34	0.672

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.34	U	6.72	1.34	0.672
1,2-Dichloropropane	78-87-5	1.34	U	6.72	1.34	0.672
1,3-Dichloropropane	142-28-9	1.34	U	6.72	1.34	0.672
2,2-Dichloropropane	594-20-7	1.34	U	6.72	1.34	0.672
cis-1,3-Dichloropropene	10061-01-5	1.34	U	6.72	1.34	0.672
trans-1,3-Dichloropropene	10061-02-6	1.34	U	6.72	1.34	0.672
1,1-Dichloropropene	563-58-6	1.34	U	6.72	1.34	0.672
Ethylbenzene	100-41-4	1.34	U	6.72	1.34	0.672
2-Hexanone	591-78-6	6.72	U	13.4	6.72	3.36
Hexachlorobutadiene	87-68-3	1.34	U	6.72	1.34	0.672
Isopropylbenzene	98-82-8	1.34	U	6.72	1.34	0.672
p-Isopropyltoluene	99-87-6	1.34	U	6.72	1.34	0.672
4-Methyl-2-pentanone	108-10-1	6.72	U	13.4	6.72	3.36
Methylene chloride	75-09-2	2.68	U	6.72	2.68	1.34
Naphthalene	91-20-3	1.34	Q	6.72	1.34	0.672
n-Propylbenzene	103-65-1	1.34	U	6.72	1.34	0.672
Styrene	100-42-5	1.34	U	6.72	1.34	0.672
1,1,1,2-Tetrachloroethane	630-20-6	1.34	U	6.72	1.34	0.672
1,1,2,2-Tetrachloroethane	79-34-5	1.34	U	6.72	1.34	0.672
Tetrachloroethene	127-18-4	1.34	U	6.72	1.34	0.672
Toluene	108-88-3	1.34	U	6.72	1.34	0.672
1,2,3-Trichlorobenzene	87-61-6	1.34	U	6.72	1.34	0.672
1,2,4-Trichlorobenzene	120-82-1	1.34	U	6.72	1.34	0.672
1,1,1-Trichloroethane	71-55-6	1.34	U	6.72	1.34	0.672
1,1,2-Trichloroethane	79-00-5	1.34	U	6.72	1.34	0.672
Trichloroethene	79-01-6	5.26	J	6.72	1.34	0.672
Trichlorofluoromethane	75-69-4	2.68	U	6.72	2.68	1.34
1,2,3-Trichloropropane	96-18-4	2.68	U	6.72	2.68	1.34
1,2,4-Trimethylbenzene	95-63-6	1.34	U	6.72	1.34	0.672
1,3,5-Trimethylbenzene	108-67-8	1.34	U	6.72	1.34	0.672
Vinyl chloride	75-01-4	2.68	U	6.72	2.68	1.34
o-Xylene	95-47-6	1.34	U	6.72	1.34	0.672
m-,p-Xylene	179601-23-1	1.34	U	6.72	1.34	0.672

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.8	80	120	
1,2-Dichloroethane-d4	94.6	80	120	
Toluene-d8	99.2	85	115	
4-Bromofluorobenzene	103	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT17(2.5-3)150316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:21
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562236	**Analyst:**	TMB	**Run Date:**	03/24/2016 17:52
Collect Date:	03/15/2016 11:50	**Dilution:**	1	**File ID:**	6M138000
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.0	U	22.0	11.0	5.49
Benzene	71-43-2	1.10	U	5.49	1.10	0.549
Bromobenzene	108-86-1	1.10	U	5.49	1.10	0.549
Bromochloromethane	74-97-5	2.20	U	5.49	2.20	1.10
Bromodichloromethane	75-27-4	1.10	U	5.49	1.10	0.549
Bromoform	75-25-2	1.10	U	5.49	1.10	0.549
Bromomethane	74-83-9	2.20	U	5.49	2.20	1.10
2-Butanone	78-93-3	5.50	U	11.0	5.50	2.75
n-Butylbenzene	104-51-8	1.10	U	5.49	1.10	0.549
sec-Butylbenzene	135-98-8	1.10	U	5.49	1.10	0.549
tert-Butylbenzene	98-06-6	1.10	U	5.49	1.10	0.549
Carbon disulfide	75-15-0	1.10	U	5.49	1.10	0.549
Carbon tetrachloride	56-23-5	1.10	U	5.49	1.10	0.549
Chlorobenzene	108-90-7	1.10	U	5.49	1.10	0.549
Chlorodibromomethane	124-48-1	1.10	U	5.49	1.10	0.549
Chloroethane	75-00-3	2.20	U	5.49	2.20	1.10
Chloroform	67-66-3	1.10	U	5.49	1.10	0.549
Chloromethane	74-87-3	4.40	Q	11.0	4.40	2.20
2-Chlorotoluene	95-49-8	1.10	U	5.49	1.10	0.549
4-Chlorotoluene	106-43-4	1.10	U	5.49	1.10	0.549
1,2-Dibromo-3-chloropropane	96-12-8	4.40	U	11.0	4.40	2.20
1,2-Dibromoethane	106-93-4	1.10	U	5.49	1.10	0.549
Dibromomethane	74-95-3	1.10	U	5.49	1.10	0.549
1,2-Dichlorobenzene	95-50-1	1.10	U	5.49	1.10	0.549
1,3-Dichlorobenzene	541-73-1	1.10	U	5.49	1.10	0.549
1,4-Dichlorobenzene	106-46-7	1.10	U	5.49	1.10	0.549
Dichlorodifluoromethane	75-71-8	2.20	U	5.49	2.20	1.10
1,1-Dichloroethane	75-34-3	2.20	U	5.49	2.20	1.10
1,2-Dichloroethane	107-06-2	1.10	U	5.49	1.10	0.549
1,1-Dichloroethene	75-35-4	1.10	U	5.49	1.10	0.549
cis-1,2-Dichloroethene	156-59-2	1.10	U	5.49	1.10	0.549

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.10	U	5.49	1.10	0.549
1,2-Dichloropropane	78-87-5	1.10	U	5.49	1.10	0.549
1,3-Dichloropropane	142-28-9	1.10	U	5.49	1.10	0.549
2,2-Dichloropropane	594-20-7	1.10	U	5.49	1.10	0.549
cis-1,3-Dichloropropene	10061-01-5	1.10	U	5.49	1.10	0.549
trans-1,3-Dichloropropene	10061-02-6	1.10	U	5.49	1.10	0.549
1,1-Dichloropropene	563-58-6	1.10	U	5.49	1.10	0.549
Ethylbenzene	100-41-4	1.10	U	5.49	1.10	0.549
2-Hexanone	591-78-6	5.50	U	11.0	5.50	2.75
Hexachlorobutadiene	87-68-3	1.10	U	5.49	1.10	0.549
Isopropylbenzene	98-82-8	1.10	U	5.49	1.10	0.549
p-Isopropyltoluene	99-87-6	1.10	U	5.49	1.10	0.549
4-Methyl-2-pentanone	108-10-1	5.50	U	11.0	5.50	2.75
Methylene chloride	75-09-2	2.20	U	5.49	2.20	1.10
Naphthalene	91-20-3	1.10	U	5.49	1.10	0.549
n-Propylbenzene	103-65-1	1.10	U	5.49	1.10	0.549
Styrene	100-42-5	1.10	U	5.49	1.10	0.549
1,1,1,2-Tetrachloroethane	630-20-6	1.10	U	5.49	1.10	0.549
1,1,2,2-Tetrachloroethane	79-34-5	1.10	U	5.49	1.10	0.549
Tetrachloroethene	127-18-4	1.10	U	5.49	1.10	0.549
Toluene	108-88-3	1.10	U	5.49	1.10	0.549
1,2,3-Trichlorobenzene	87-61-6	1.10	U	5.49	1.10	0.549
1,2,4-Trichlorobenzene	120-82-1	1.10	U	5.49	1.10	0.549
1,1,1-Trichloroethane	71-55-6	1.10	U	5.49	1.10	0.549
1,1,2-Trichloroethane	79-00-5	1.10	U	5.49	1.10	0.549
Trichloroethene	79-01-6	1.10	U	5.49	1.10	0.549
Trichlorofluoromethane	75-69-4	2.20	U	5.49	2.20	1.10
1,2,3-Trichloropropane	96-18-4	2.20	U	5.49	2.20	1.10
1,2,4-Trimethylbenzene	95-63-6	1.10	U	5.49	1.10	0.549
1,3,5-Trimethylbenzene	108-67-8	1.10	U	5.49	1.10	0.549
Vinyl chloride	75-01-4	2.20	U	5.49	2.20	1.10
o-Xylene	95-47-6	1.10	U	5.49	1.10	0.549
m-,p-Xylene	179601-23-1	1.10	U	5.49	1.10	0.549

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.5	80	120	
1,2-Dichloroethane-d4	85.7	80	120	
Toluene-d8	103	85	115	
4-Bromofluorobenzene	108	85	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT17(2.5-3)150316FD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:22
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562236	**Analyst:**	TMB	**Run Date:**	03/24/2016 18:26
Collect Date:	03/15/2016 11:50	**Dilution:**	1	**File ID:**	6M138001
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.7	U	23.3	11.7	5.83
Benzene	71-43-2	1.17	U	5.83	1.17	0.583
Bromobenzene	108-86-1	1.17	U	5.83	1.17	0.583
Bromochloromethane	74-97-5	2.34	U	5.83	2.34	1.17
Bromodichloromethane	75-27-4	1.17	U	5.83	1.17	0.583
Bromoform	75-25-2	1.17	U	5.83	1.17	0.583
Bromomethane	74-83-9	2.34	U	5.83	2.34	1.17
2-Butanone	78-93-3	5.82	U	11.7	5.82	2.91
n-Butylbenzene	104-51-8	1.17	U	5.83	1.17	0.583
sec-Butylbenzene	135-98-8	1.17	U	5.83	1.17	0.583
tert-Butylbenzene	98-06-6	1.17	U	5.83	1.17	0.583
Carbon disulfide	75-15-0	1.17	U	5.83	1.17	0.583
Carbon tetrachloride	56-23-5	1.17	U	5.83	1.17	0.583
Chlorobenzene	108-90-7	1.17	U	5.83	1.17	0.583
Chlorodibromomethane	124-48-1	1.17	U	5.83	1.17	0.583
Chloroethane	75-00-3	2.34	U	5.83	2.34	1.17
Chloroform	67-66-3	1.17	U	5.83	1.17	0.583
Chloromethane	74-87-3	4.66	Q	11.7	4.66	2.33
2-Chlorotoluene	95-49-8	1.17	U	5.83	1.17	0.583
4-Chlorotoluene	106-43-4	1.17	U	5.83	1.17	0.583
1,2-Dibromo-3-chloropropane	96-12-8	4.66	U	11.7	4.66	2.33
1,2-Dibromoethane	106-93-4	1.17	U	5.83	1.17	0.583
Dibromomethane	74-95-3	1.17	U	5.83	1.17	0.583
1,2-Dichlorobenzene	95-50-1	1.17	U	5.83	1.17	0.583
1,3-Dichlorobenzene	541-73-1	1.17	U	5.83	1.17	0.583
1,4-Dichlorobenzene	106-46-7	1.17	U	5.83	1.17	0.583
Dichlorodifluoromethane	75-71-8	2.34	U	5.83	2.34	1.17
1,1-Dichloroethane	75-34-3	2.34	U	5.83	2.34	1.17
1,2-Dichloroethane	107-06-2	1.17	U	5.83	1.17	0.583
1,1-Dichloroethene	75-35-4	1.17	U	5.83	1.17	0.583
cis-1,2-Dichloroethene	156-59-2	1.17	U	5.83	1.17	0.583

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.17	U	5.83	1.17	0.583
1,2-Dichloropropane	78-87-5	1.17	U	5.83	1.17	0.583
1,3-Dichloropropane	142-28-9	1.17	U	5.83	1.17	0.583
2,2-Dichloropropane	594-20-7	1.17	U	5.83	1.17	0.583
cis-1,3-Dichloropropene	10061-01-5	1.17	U	5.83	1.17	0.583
trans-1,3-Dichloropropene	10061-02-6	1.17	U	5.83	1.17	0.583
1,1-Dichloropropene	563-58-6	1.17	U	5.83	1.17	0.583
Ethylbenzene	100-41-4	1.17	U	5.83	1.17	0.583
2-Hexanone	591-78-6	5.82	U	11.7	5.82	2.91
Hexachlorobutadiene	87-68-3	1.17	U	5.83	1.17	0.583
Isopropylbenzene	98-82-8	1.17	U	5.83	1.17	0.583
p-Isopropyltoluene	99-87-6	1.17	U	5.83	1.17	0.583
4-Methyl-2-pentanone	108-10-1	5.82	U	11.7	5.82	2.91
Methylene chloride	75-09-2	2.34	U	5.83	2.34	1.17
Naphthalene	91-20-3	1.17	U	5.83	1.17	0.583
n-Propylbenzene	103-65-1	1.17	U	5.83	1.17	0.583
Styrene	100-42-5	1.17	U	5.83	1.17	0.583
1,1,1,2-Tetrachloroethane	630-20-6	1.17	U	5.83	1.17	0.583
1,1,2,2-Tetrachloroethane	79-34-5	1.17	U	5.83	1.17	0.583
Tetrachloroethene	127-18-4	1.17	U	5.83	1.17	0.583
Toluene	108-88-3	1.17	U	5.83	1.17	0.583
1,2,3-Trichlorobenzene	87-61-6	1.17	U	5.83	1.17	0.583
1,2,4-Trichlorobenzene	120-82-1	1.17	U	5.83	1.17	0.583
1,1,1-Trichloroethane	71-55-6	1.17	U	5.83	1.17	0.583
1,1,2-Trichloroethane	79-00-5	1.17	U	5.83	1.17	0.583
Trichloroethene	79-01-6	1.17	U	5.83	1.17	0.583
Trichlorofluoromethane	75-69-4	2.34	U	5.83	2.34	1.17
1,2,3-Trichloropropane	96-18-4	2.34	U	5.83	2.34	1.17
1,2,4-Trimethylbenzene	95-63-6	1.17	U	5.83	1.17	0.583
1,3,5-Trimethylbenzene	108-67-8	1.17	U	5.83	1.17	0.583
Vinyl chloride	75-01-4	2.34	U	5.83	2.34	1.17
o-Xylene	95-47-6	1.17	U	5.83	1.17	0.583
m-,p-Xylene	179601-23-1	1.17	U	5.83	1.17	0.583

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.5	80	120	
1,2-Dichloroethane-d4	85.3	80	120	
Toluene-d8	102	85	115	
4-Bromofluorobenzene	105	85	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT17(5-5.5)150316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:23
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562236	**Analyst:**	TMB	**Run Date:**	03/24/2016 18:59
Collect Date:	03/15/2016 11:55	**Dilution:**	1	**File ID:**	6M138002
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	78.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.1	U	26.3	13.1	6.57
Benzene	71-43-2	1.31	U	6.57	1.31	0.657
Bromobenzene	108-86-1	1.31	U	6.57	1.31	0.657
Bromochloromethane	74-97-5	2.62	U	6.57	2.62	1.31
Bromodichloromethane	75-27-4	1.31	U	6.57	1.31	0.657
Bromoform	75-25-2	1.31	U	6.57	1.31	0.657
Bromomethane	74-83-9	2.62	U	6.57	2.62	1.31
2-Butanone	78-93-3	6.56	U	13.1	6.56	3.28
n-Butylbenzene	104-51-8	1.31	U	6.57	1.31	0.657
sec-Butylbenzene	135-98-8	1.31	U	6.57	1.31	0.657
tert-Butylbenzene	98-06-6	1.31	U	6.57	1.31	0.657
Carbon disulfide	75-15-0	1.31	U	6.57	1.31	0.657
Carbon tetrachloride	56-23-5	1.31	U	6.57	1.31	0.657
Chlorobenzene	108-90-7	1.31	U	6.57	1.31	0.657
Chlorodibromomethane	124-48-1	1.31	U	6.57	1.31	0.657
Chloroethane	75-00-3	2.62	U	6.57	2.62	1.31
Chloroform	67-66-3	1.31	U	6.57	1.31	0.657
Chloromethane	74-87-3	5.26	Q	13.1	5.26	2.63
2-Chlorotoluene	95-49-8	1.31	U	6.57	1.31	0.657
4-Chlorotoluene	106-43-4	1.31	U	6.57	1.31	0.657
1,2-Dibromo-3-chloropropane	96-12-8	5.26	U	13.1	5.26	2.63
1,2-Dibromoethane	106-93-4	1.31	U	6.57	1.31	0.657
Dibromomethane	74-95-3	1.31	U	6.57	1.31	0.657
1,2-Dichlorobenzene	95-50-1	1.31	U	6.57	1.31	0.657
1,3-Dichlorobenzene	541-73-1	1.31	U	6.57	1.31	0.657
1,4-Dichlorobenzene	106-46-7	1.31	U	6.57	1.31	0.657
Dichlorodifluoromethane	75-71-8	2.62	U	6.57	2.62	1.31
1,1-Dichloroethane	75-34-3	2.62	U	6.57	2.62	1.31
1,2-Dichloroethane	107-06-2	1.31	U	6.57	1.31	0.657
1,1-Dichloroethene	75-35-4	1.31	U	6.57	1.31	0.657
cis-1,2-Dichloroethene	156-59-2	1.31	U	6.57	1.31	0.657

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.31	U	6.57	1.31	0.657
1,2-Dichloropropane	78-87-5	1.31	U	6.57	1.31	0.657
1,3-Dichloropropane	142-28-9	1.31	U	6.57	1.31	0.657
2,2-Dichloropropane	594-20-7	1.31	U	6.57	1.31	0.657
cis-1,3-Dichloropropene	10061-01-5	1.31	U	6.57	1.31	0.657
trans-1,3-Dichloropropene	10061-02-6	1.31	U	6.57	1.31	0.657
1,1-Dichloropropene	563-58-6	1.31	U	6.57	1.31	0.657
Ethylbenzene	100-41-4	1.31	U	6.57	1.31	0.657
2-Hexanone	591-78-6	6.56	U	13.1	6.56	3.28
Hexachlorobutadiene	87-68-3	1.31	U	6.57	1.31	0.657
Isopropylbenzene	98-82-8	1.31	U	6.57	1.31	0.657
p-Isopropyltoluene	99-87-6	1.31	U	6.57	1.31	0.657
4-Methyl-2-pentanone	108-10-1	6.56	U	13.1	6.56	3.28
Methylene chloride	75-09-2	2.62	U	6.57	2.62	1.31
Naphthalene	91-20-3	1.31	U	6.57	1.31	0.657
n-Propylbenzene	103-65-1	1.31	U	6.57	1.31	0.657
Styrene	100-42-5	1.31	U	6.57	1.31	0.657
1,1,1,2-Tetrachloroethane	630-20-6	1.31	U	6.57	1.31	0.657
1,1,2,2-Tetrachloroethane	79-34-5	1.31	U	6.57	1.31	0.657
Tetrachloroethene	127-18-4	1.31	U	6.57	1.31	0.657
Toluene	108-88-3	1.31	U	6.57	1.31	0.657
1,2,3-Trichlorobenzene	87-61-6	1.31	U	6.57	1.31	0.657
1,2,4-Trichlorobenzene	120-82-1	1.31	U	6.57	1.31	0.657
1,1,1-Trichloroethane	71-55-6	1.31	U	6.57	1.31	0.657
1,1,2-Trichloroethane	79-00-5	1.31	U	6.57	1.31	0.657
Trichloroethene	79-01-6	1.31	U	6.57	1.31	0.657
Trichlorofluoromethane	75-69-4	2.62	U	6.57	2.62	1.31
1,2,3-Trichloropropane	96-18-4	2.62	U	6.57	2.62	1.31
1,2,4-Trimethylbenzene	95-63-6	1.31	U	6.57	1.31	0.657
1,3,5-Trimethylbenzene	108-67-8	1.31	U	6.57	1.31	0.657
Vinyl chloride	75-01-4	2.62	U	6.57	2.62	1.31
o-Xylene	95-47-6	1.31	U	6.57	1.31	0.657
m-,p-Xylene	179601-23-1	1.31	U	6.57	1.31	0.657

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.5	80	120	
1,2-Dichloroethane-d4	87.6	80	120	
Toluene-d8	101	85	115	
4-Bromofluorobenzene	104	85	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT17(10-10.5)150316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:23
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562236	**Analyst:**	TMB	**Run Date:**	03/24/2016 19:33
Collect Date:	03/15/2016 12:00	**Dilution:**	1	**File ID:**	6M138003
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.8	J	24.7	12.4	6.18
Benzene	71-43-2	1.24	U	6.18	1.24	0.618
Bromobenzene	108-86-1	1.24	U	6.18	1.24	0.618
Bromochloromethane	74-97-5	2.48	U	6.18	2.48	1.24
Bromodichloromethane	75-27-4	1.24	U	6.18	1.24	0.618
Bromoform	75-25-2	1.24	U	6.18	1.24	0.618
Bromomethane	74-83-9	2.48	U	6.18	2.48	1.24
2-Butanone	78-93-3	6.18	U	12.4	6.18	3.09
n-Butylbenzene	104-51-8	1.24	U	6.18	1.24	0.618
sec-Butylbenzene	135-98-8	1.24	U	6.18	1.24	0.618
tert-Butylbenzene	98-06-6	1.24	U	6.18	1.24	0.618
Carbon disulfide	75-15-0	1.24	U	6.18	1.24	0.618
Carbon tetrachloride	56-23-5	1.24	U	6.18	1.24	0.618
Chlorobenzene	108-90-7	1.24	U	6.18	1.24	0.618
Chlorodibromomethane	124-48-1	1.24	U	6.18	1.24	0.618
Chloroethane	75-00-3	2.48	U	6.18	2.48	1.24
Chloroform	67-66-3	1.24	U	6.18	1.24	0.618
Chloromethane	74-87-3	4.94	Q	12.4	4.94	2.47
2-Chlorotoluene	95-49-8	1.24	U	6.18	1.24	0.618
4-Chlorotoluene	106-43-4	1.24	U	6.18	1.24	0.618
1,2-Dibromo-3-chloropropane	96-12-8	4.94	U	12.4	4.94	2.47
1,2-Dibromoethane	106-93-4	1.24	U	6.18	1.24	0.618
Dibromomethane	74-95-3	1.24	U	6.18	1.24	0.618
1,2-Dichlorobenzene	95-50-1	1.24	U	6.18	1.24	0.618
1,3-Dichlorobenzene	541-73-1	1.24	U	6.18	1.24	0.618
1,4-Dichlorobenzene	106-46-7	1.24	U	6.18	1.24	0.618
Dichlorodifluoromethane	75-71-8	2.48	U	6.18	2.48	1.24
1,1-Dichloroethane	75-34-3	2.48	U	6.18	2.48	1.24
1,2-Dichloroethane	107-06-2	1.24	U	6.18	1.24	0.618
1,1-Dichloroethene	75-35-4	1.24	U	6.18	1.24	0.618
cis-1,2-Dichloroethene	156-59-2	1.24	U	6.18	1.24	0.618

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.24	U	6.18	1.24	0.618
1,2-Dichloropropane	78-87-5	1.24	U	6.18	1.24	0.618
1,3-Dichloropropane	142-28-9	1.24	U	6.18	1.24	0.618
2,2-Dichloropropane	594-20-7	1.24	U	6.18	1.24	0.618
cis-1,3-Dichloropropene	10061-01-5	1.24	U	6.18	1.24	0.618
trans-1,3-Dichloropropene	10061-02-6	1.24	U	6.18	1.24	0.618
1,1-Dichloropropene	563-58-6	1.24	U	6.18	1.24	0.618
Ethylbenzene	100-41-4	1.24	U	6.18	1.24	0.618
2-Hexanone	591-78-6	6.18	U	12.4	6.18	3.09
Hexachlorobutadiene	87-68-3	1.24	U	6.18	1.24	0.618
Isopropylbenzene	98-82-8	1.24	U	6.18	1.24	0.618
p-Isopropyltoluene	99-87-6	1.24	U	6.18	1.24	0.618
4-Methyl-2-pentanone	108-10-1	6.18	U	12.4	6.18	3.09
Methylene chloride	75-09-2	2.48	U	6.18	2.48	1.24
Naphthalene	91-20-3	1.24	U	6.18	1.24	0.618
n-Propylbenzene	103-65-1	1.24	U	6.18	1.24	0.618
Styrene	100-42-5	1.24	U	6.18	1.24	0.618
1,1,1,2-Tetrachloroethane	630-20-6	1.24	U	6.18	1.24	0.618
1,1,2,2-Tetrachloroethane	79-34-5	1.24	U	6.18	1.24	0.618
Tetrachloroethene	127-18-4	1.24	U	6.18	1.24	0.618
Toluene	108-88-3	1.24	U	6.18	1.24	0.618
1,2,3-Trichlorobenzene	87-61-6	1.24	U	6.18	1.24	0.618
1,2,4-Trichlorobenzene	120-82-1	1.24	U	6.18	1.24	0.618
1,1,1-Trichloroethane	71-55-6	1.24	U	6.18	1.24	0.618
1,1,2-Trichloroethane	79-00-5	1.24	U	6.18	1.24	0.618
Trichloroethene	79-01-6	1.24	U	6.18	1.24	0.618
Trichlorofluoromethane	75-69-4	2.48	U	6.18	2.48	1.24
1,2,3-Trichloropropane	96-18-4	2.48	U	6.18	2.48	1.24
1,2,4-Trimethylbenzene	95-63-6	1.24	U	6.18	1.24	0.618
1,3,5-Trimethylbenzene	108-67-8	1.24	U	6.18	1.24	0.618
Vinyl chloride	75-01-4	2.48	U	6.18	2.48	1.24
o-Xylene	95-47-6	1.24	U	6.18	1.24	0.618
m-,p-Xylene	179601-23-1	1.24	U	6.18	1.24	0.618

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.0	80	120	
1,2-Dichloroethane-d4	92.4	80	120	
Toluene-d8	99.1	85	115	
4-Bromofluorobenzene	104	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT17(18-18.5)150316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:25
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562236	**Analyst:**	TMB	**Run Date:**	03/24/2016 21:12
Collect Date:	03/15/2016 12:30	**Dilution:**	1	**File ID:**	6M138006
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.4	J	23.9	11.9	5.97
Benzene	71-43-2	1.19	U	5.97	1.19	0.597
Bromobenzene	108-86-1	1.19	U	5.97	1.19	0.597
Bromochloromethane	74-97-5	2.38	U	5.97	2.38	1.19
Bromodichloromethane	75-27-4	1.19	U	5.97	1.19	0.597
Bromoform	75-25-2	1.19	U	5.97	1.19	0.597
Bromomethane	74-83-9	2.38	U	5.97	2.38	1.19
2-Butanone	78-93-3	5.96	U	11.9	5.96	2.98
n-Butylbenzene	104-51-8	1.19	U	5.97	1.19	0.597
sec-Butylbenzene	135-98-8	1.19	U	5.97	1.19	0.597
tert-Butylbenzene	98-06-6	1.19	U	5.97	1.19	0.597
Carbon disulfide	75-15-0	1.19	U	5.97	1.19	0.597
Carbon tetrachloride	56-23-5	1.19	U	5.97	1.19	0.597
Chlorobenzene	108-90-7	1.19	U	5.97	1.19	0.597
Chlorodibromomethane	124-48-1	1.19	U	5.97	1.19	0.597
Chloroethane	75-00-3	2.38	U	5.97	2.38	1.19
Chloroform	67-66-3	1.19	U	5.97	1.19	0.597
Chloromethane	74-87-3	4.78	Q	11.9	4.78	2.39
2-Chlorotoluene	95-49-8	1.19	U	5.97	1.19	0.597
4-Chlorotoluene	106-43-4	1.19	U	5.97	1.19	0.597
1,2-Dibromo-3-chloropropane	96-12-8	4.78	U	11.9	4.78	2.39
1,2-Dibromoethane	106-93-4	1.19	U	5.97	1.19	0.597
Dibromomethane	74-95-3	1.19	U	5.97	1.19	0.597
1,2-Dichlorobenzene	95-50-1	1.19	U	5.97	1.19	0.597
1,3-Dichlorobenzene	541-73-1	1.19	U	5.97	1.19	0.597
1,4-Dichlorobenzene	106-46-7	1.19	U	5.97	1.19	0.597
Dichlorodifluoromethane	75-71-8	2.38	U	5.97	2.38	1.19
1,1-Dichloroethane	75-34-3	2.38	U	5.97	2.38	1.19
1,2-Dichloroethane	107-06-2	1.19	U	5.97	1.19	0.597
1,1-Dichloroethene	75-35-4	1.19	U	5.97	1.19	0.597
cis-1,2-Dichloroethene	156-59-2	1.19	U	5.97	1.19	0.597

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.19	U	5.97	1.19	0.597
1,2-Dichloropropane	78-87-5	1.19	U	5.97	1.19	0.597
1,3-Dichloropropane	142-28-9	1.19	U	5.97	1.19	0.597
2,2-Dichloropropane	594-20-7	1.19	U	5.97	1.19	0.597
cis-1,3-Dichloropropene	10061-01-5	1.19	U	5.97	1.19	0.597
trans-1,3-Dichloropropene	10061-02-6	1.19	U	5.97	1.19	0.597
1,1-Dichloropropene	563-58-6	1.19	U	5.97	1.19	0.597
Ethylbenzene	100-41-4	1.19	U	5.97	1.19	0.597
2-Hexanone	591-78-6	5.96	U	11.9	5.96	2.98
Hexachlorobutadiene	87-68-3	1.19	U	5.97	1.19	0.597
Isopropylbenzene	98-82-8	1.19	U	5.97	1.19	0.597
p-Isopropyltoluene	99-87-6	1.19	U	5.97	1.19	0.597
4-Methyl-2-pentanone	108-10-1	5.96	U	11.9	5.96	2.98
Methylene chloride	75-09-2	2.38	U	5.97	2.38	1.19
Naphthalene	91-20-3	1.19	U	5.97	1.19	0.597
n-Propylbenzene	103-65-1	1.19	U	5.97	1.19	0.597
Styrene	100-42-5	1.19	U	5.97	1.19	0.597
1,1,1,2-Tetrachloroethane	630-20-6	1.19	U	5.97	1.19	0.597
1,1,2,2-Tetrachloroethane	79-34-5	1.19	U	5.97	1.19	0.597
Tetrachloroethene	127-18-4	1.19	U	5.97	1.19	0.597
Toluene	108-88-3	1.19	U	5.97	1.19	0.597
1,2,3-Trichlorobenzene	87-61-6	1.19	U	5.97	1.19	0.597
1,2,4-Trichlorobenzene	120-82-1	1.19	U	5.97	1.19	0.597
1,1,1-Trichloroethane	71-55-6	1.19	U	5.97	1.19	0.597
1,1,2-Trichloroethane	79-00-5	1.19	U	5.97	1.19	0.597
Trichloroethene	79-01-6	0.855	J	5.97	1.19	0.597
Trichlorofluoromethane	75-69-4	2.38	U	5.97	2.38	1.19
1,2,3-Trichloropropane	96-18-4	2.38	U	5.97	2.38	1.19
1,2,4-Trimethylbenzene	95-63-6	1.19	U	5.97	1.19	0.597
1,3,5-Trimethylbenzene	108-67-8	1.19	U	5.97	1.19	0.597
Vinyl chloride	75-01-4	2.38	U	5.97	2.38	1.19
o-Xylene	95-47-6	1.19	U	5.97	1.19	0.597
m-,p-Xylene	179601-23-1	1.19	U	5.97	1.19	0.597

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.9	80	120	
1,2-Dichloroethane-d4	90.0	80	120	
Toluene-d8	101	85	115	
4-Bromofluorobenzene	104	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-13	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT17(27-27.5)150316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:25
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562236	**Analyst:**	TMB	**Run Date:**	03/24/2016 20:06
Collect Date:	03/15/2016 12:45	**Dilution:**	1	**File ID:**	6M138004
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	78.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	6.75	J	24.9	12.4	6.22
Benzene	71-43-2	1.24	U	6.22	1.24	0.622
Bromobenzene	108-86-1	1.24	U	6.22	1.24	0.622
Bromochloromethane	74-97-5	2.48	U	6.22	2.48	1.24
Bromodichloromethane	75-27-4	1.24	U	6.22	1.24	0.622
Bromoform	75-25-2	1.24	U	6.22	1.24	0.622
Bromomethane	74-83-9	2.48	U	6.22	2.48	1.24
2-Butanone	78-93-3	6.22	U	12.4	6.22	3.11
n-Butylbenzene	104-51-8	1.24	U	6.22	1.24	0.622
sec-Butylbenzene	135-98-8	1.24	U	6.22	1.24	0.622
tert-Butylbenzene	98-06-6	1.24	U	6.22	1.24	0.622
Carbon disulfide	75-15-0	1.24	U	6.22	1.24	0.622
Carbon tetrachloride	56-23-5	1.24	U	6.22	1.24	0.622
Chlorobenzene	108-90-7	1.24	U	6.22	1.24	0.622
Chlorodibromomethane	124-48-1	1.24	U	6.22	1.24	0.622
Chloroethane	75-00-3	2.48	U	6.22	2.48	1.24
Chloroform	67-66-3	1.24	U	6.22	1.24	0.622
Chloromethane	74-87-3	4.98	Q	12.4	4.98	2.49
2-Chlorotoluene	95-49-8	1.24	U	6.22	1.24	0.622
4-Chlorotoluene	106-43-4	1.24	U	6.22	1.24	0.622
1,2-Dibromo-3-chloropropane	96-12-8	4.98	U	12.4	4.98	2.49
1,2-Dibromoethane	106-93-4	1.24	U	6.22	1.24	0.622
Dibromomethane	74-95-3	1.24	U	6.22	1.24	0.622
1,2-Dichlorobenzene	95-50-1	1.24	U	6.22	1.24	0.622
1,3-Dichlorobenzene	541-73-1	1.24	U	6.22	1.24	0.622
1,4-Dichlorobenzene	106-46-7	1.24	U	6.22	1.24	0.622
Dichlorodifluoromethane	75-71-8	2.48	U	6.22	2.48	1.24
1,1-Dichloroethane	75-34-3	2.48	U	6.22	2.48	1.24
1,2-Dichloroethane	107-06-2	1.24	U	6.22	1.24	0.622
1,1-Dichloroethene	75-35-4	1.24	U	6.22	1.24	0.622
cis-1,2-Dichloroethene	156-59-2	1.24	U	6.22	1.24	0.622

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.24	U	6.22	1.24	0.622
1,2-Dichloropropane	78-87-5	1.24	U	6.22	1.24	0.622
1,3-Dichloropropane	142-28-9	1.24	U	6.22	1.24	0.622
2,2-Dichloropropane	594-20-7	1.24	U	6.22	1.24	0.622
cis-1,3-Dichloropropene	10061-01-5	1.24	U	6.22	1.24	0.622
trans-1,3-Dichloropropene	10061-02-6	1.24	U	6.22	1.24	0.622
1,1-Dichloropropene	563-58-6	1.24	U	6.22	1.24	0.622
Ethylbenzene	100-41-4	1.24	U	6.22	1.24	0.622
2-Hexanone	591-78-6	6.22	U	12.4	6.22	3.11
Hexachlorobutadiene	87-68-3	1.24	U	6.22	1.24	0.622
Isopropylbenzene	98-82-8	1.24	U	6.22	1.24	0.622
p-Isopropyltoluene	99-87-6	1.24	U	6.22	1.24	0.622
4-Methyl-2-pentanone	108-10-1	6.22	U	12.4	6.22	3.11
Methylene chloride	75-09-2	2.48	U	6.22	2.48	1.24
Naphthalene	91-20-3	1.24	U	6.22	1.24	0.622
n-Propylbenzene	103-65-1	1.24	U	6.22	1.24	0.622
Styrene	100-42-5	1.24	U	6.22	1.24	0.622
1,1,1,2-Tetrachloroethane	630-20-6	1.24	U	6.22	1.24	0.622
1,1,2,2-Tetrachloroethane	79-34-5	1.24	U	6.22	1.24	0.622
Tetrachloroethene	127-18-4	1.24	U	6.22	1.24	0.622
Toluene	108-88-3	1.24	U	6.22	1.24	0.622
1,2,3-Trichlorobenzene	87-61-6	1.24	U	6.22	1.24	0.622
1,2,4-Trichlorobenzene	120-82-1	1.24	U	6.22	1.24	0.622
1,1,1-Trichloroethane	71-55-6	1.24	U	6.22	1.24	0.622
1,1,2-Trichloroethane	79-00-5	1.24	U	6.22	1.24	0.622
Trichloroethene	79-01-6	8.36		6.22	1.24	0.622
Trichlorofluoromethane	75-69-4	2.48	U	6.22	2.48	1.24
1,2,3-Trichloropropane	96-18-4	2.48	U	6.22	2.48	1.24
1,2,4-Trimethylbenzene	95-63-6	1.24	U	6.22	1.24	0.622
1,3,5-Trimethylbenzene	108-67-8	1.24	U	6.22	1.24	0.622
Vinyl chloride	75-01-4	2.48	U	6.22	2.48	1.24
o-Xylene	95-47-6	1.24	U	6.22	1.24	0.622
m-,p-Xylene	179601-23-1	1.24	U	6.22	1.24	0.622

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.2	80	120	
1,2-Dichloroethane-d4	83.7	80	120	
Toluene-d8	101	85	115	
4-Bromofluorobenzene	103	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-14	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT17(21.5-22)150316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:26
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562236	**Analyst:**	TMB	**Run Date:**	03/24/2016 20:39
Collect Date:	03/15/2016 13:00	**Dilution:**	1	**File ID:**	6M138005
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.5	U	22.9	11.5	5.73
Benzene	71-43-2	1.15	U	5.73	1.15	0.573
Bromobenzene	108-86-1	1.15	U	5.73	1.15	0.573
Bromochloromethane	74-97-5	2.30	U	5.73	2.30	1.15
Bromodichloromethane	75-27-4	1.15	U	5.73	1.15	0.573
Bromoform	75-25-2	1.15	U	5.73	1.15	0.573
Bromomethane	74-83-9	2.30	U	5.73	2.30	1.15
2-Butanone	78-93-3	5.72	U	11.5	5.72	2.86
n-Butylbenzene	104-51-8	1.15	U	5.73	1.15	0.573
sec-Butylbenzene	135-98-8	1.15	U	5.73	1.15	0.573
tert-Butylbenzene	98-06-6	1.15	U	5.73	1.15	0.573
Carbon disulfide	75-15-0	1.15	U	5.73	1.15	0.573
Carbon tetrachloride	56-23-5	1.15	U	5.73	1.15	0.573
Chlorobenzene	108-90-7	1.15	U	5.73	1.15	0.573
Chlorodibromomethane	124-48-1	1.15	U	5.73	1.15	0.573
Chloroethane	75-00-3	2.30	U	5.73	2.30	1.15
Chloroform	67-66-3	1.15	U	5.73	1.15	0.573
Chloromethane	74-87-3	4.58	Q	11.5	4.58	2.29
2-Chlorotoluene	95-49-8	1.15	U	5.73	1.15	0.573
4-Chlorotoluene	106-43-4	1.15	U	5.73	1.15	0.573
1,2-Dibromo-3-chloropropane	96-12-8	4.58	U	11.5	4.58	2.29
1,2-Dibromoethane	106-93-4	1.15	U	5.73	1.15	0.573
Dibromomethane	74-95-3	1.15	U	5.73	1.15	0.573
1,2-Dichlorobenzene	95-50-1	1.15	U	5.73	1.15	0.573
1,3-Dichlorobenzene	541-73-1	1.15	U	5.73	1.15	0.573
1,4-Dichlorobenzene	106-46-7	1.15	U	5.73	1.15	0.573
Dichlorodifluoromethane	75-71-8	2.30	U	5.73	2.30	1.15
1,1-Dichloroethane	75-34-3	2.30	U	5.73	2.30	1.15
1,2-Dichloroethane	107-06-2	1.15	U	5.73	1.15	0.573
1,1-Dichloroethene	75-35-4	1.15	U	5.73	1.15	0.573
cis-1,2-Dichloroethene	156-59-2	1.15	U	5.73	1.15	0.573

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.15	U	5.73	1.15	0.573
1,2-Dichloropropane	78-87-5	1.15	U	5.73	1.15	0.573
1,3-Dichloropropane	142-28-9	1.15	U	5.73	1.15	0.573
2,2-Dichloropropane	594-20-7	1.15	U	5.73	1.15	0.573
cis-1,3-Dichloropropene	10061-01-5	1.15	U	5.73	1.15	0.573
trans-1,3-Dichloropropene	10061-02-6	1.15	U	5.73	1.15	0.573
1,1-Dichloropropene	563-58-6	1.15	U	5.73	1.15	0.573
Ethylbenzene	100-41-4	1.15	U	5.73	1.15	0.573
2-Hexanone	591-78-6	5.72	U	11.5	5.72	2.86
Hexachlorobutadiene	87-68-3	1.15	U	5.73	1.15	0.573
Isopropylbenzene	98-82-8	1.15	U	5.73	1.15	0.573
p-Isopropyltoluene	99-87-6	1.15	U	5.73	1.15	0.573
4-Methyl-2-pentanone	108-10-1	5.72	U	11.5	5.72	2.86
Methylene chloride	75-09-2	2.30	U	5.73	2.30	1.15
Naphthalene	91-20-3	1.15	U	5.73	1.15	0.573
n-Propylbenzene	103-65-1	1.15	U	5.73	1.15	0.573
Styrene	100-42-5	1.15	U	5.73	1.15	0.573
1,1,1,2-Tetrachloroethane	630-20-6	1.15	U	5.73	1.15	0.573
1,1,2,2-Tetrachloroethane	79-34-5	1.15	U	5.73	1.15	0.573
Tetrachloroethene	127-18-4	1.15	U	5.73	1.15	0.573
Toluene	108-88-3	1.15	U	5.73	1.15	0.573
1,2,3-Trichlorobenzene	87-61-6	1.15	U	5.73	1.15	0.573
1,2,4-Trichlorobenzene	120-82-1	1.15	U	5.73	1.15	0.573
1,1,1-Trichloroethane	71-55-6	1.15	U	5.73	1.15	0.573
1,1,2-Trichloroethane	79-00-5	1.15	U	5.73	1.15	0.573
Trichloroethene	79-01-6	0.995	J	5.73	1.15	0.573
Trichlorofluoromethane	75-69-4	2.30	U	5.73	2.30	1.15
1,2,3-Trichloropropane	96-18-4	2.30	U	5.73	2.30	1.15
1,2,4-Trimethylbenzene	95-63-6	1.15	U	5.73	1.15	0.573
1,3,5-Trimethylbenzene	108-67-8	1.15	U	5.73	1.15	0.573
Vinyl chloride	75-01-4	2.30	U	5.73	2.30	1.15
o-Xylene	95-47-6	1.15	U	5.73	1.15	0.573
m-,p-Xylene	179601-23-1	1.15	U	5.73	1.15	0.573

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.5	80	120	
1,2-Dichloroethane-d4	84.3	80	120	
Toluene-d8	102	85	115	
4-Bromofluorobenzene	104	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.
VOA Preparation/Preservation/Extraction Log

Batch #: WG561608
Analyst: AWE
Method: 5030B/5030C/5035
Run Date: 03/21/2016 08:07
Product: 8260
Purge and trap methanol COA18540
Purified Lab Sand Lot # COA18552

SAMPLE #	Fraction	Collected	Preserved	PCT-S	Tare Wt	Total Wt	Sample Wt	Water	MeOH	Vt	Comments
L16030861-01	A	03/14/16 12:32	03/21/16 08:07	82.5			4.72	5		5	
L16030861-02	A	03/14/16 13:15	03/21/16 08:09	89.3			4.81	5		5	
L16030861-03	A	03/14/16 13:15	03/21/16 08:09	90.4			4.70	5		5	
L16030861-04	A	03/14/16 13:20	03/21/16 08:10	91.0			5.10	5		5	
L16030861-05	A	03/14/16 13:25	03/21/16 08:11	79.9			4.52	5		5	
L16030861-06	A	03/14/16 16:40	03/21/16 08:12	82.5			5.44	5		5	
L16030861-07	A	03/14/16 16:41	03/21/16 08:13	85.0			4.73	5		5	
L16030861-08	A	03/14/16 16:42	03/21/16 08:14	82.9			5.07	5		5	
L16030861-09	A	03/14/16 16:43	03/21/16 08:14	81.2			5.24	5		5	
L16030861-10	A	03/14/16 16:45	03/21/16 08:15	79.1			4.95	5		5	
L16030863-01	A	03/15/16 09:20	03/21/16 08:17	79.3			4.96	5		5	
L16030863-02	A	03/15/16 09:20	03/21/16 08:17	79.3			5.34	5		5	
L16030863-03	A	03/15/16 09:20	03/21/16 08:18	79.3			4.54	5		5	
L16030863-04	A	03/15/16 09:25	03/21/16 08:19	86.1			4.97	5		5	
L16030863-05	A	03/15/16 10:35	03/21/16 08:19	81.2			4.68	5		5	
L16030863-06	A	03/15/16 10:40	03/21/16 08:20	79.6			5.07	5		5	
L16030863-07	A	03/15/16 10:45	03/21/16 08:20	77.7			4.79	5		5	
L16030863-08	A	03/15/16 11:50	03/21/16 08:21	84.2			5.41	5		5	
L16030863-09	A	03/15/16 11:50	03/21/16 08:22	83.5			5.14	5		5	
L16030863-10	A	03/15/16 11:55	03/21/16 08:23	78.8			4.83	5		5	
L16030863-11	A	03/15/16 12:00	03/21/16 08:23	80.4			5.03	5		5	
L16030863-12	A	03/15/16 12:30	03/21/16 08:25	83.0			5.05	5		5	
L16030863-13	A	03/15/16 12:45	03/21/16 08:25	78.8			5.10	5		5	
L16030863-14	A	03/15/16 13:00	03/21/16 08:26	82.4			5.30	5		5	
WG561608-01	A		03/21/16 08:07	82.5			4.72	5		5	
WG561608-02	A		03/21/16 08:07	82.5			5.02	5		5	
WG561608-03	A		03/21/16 08:08	82.5			5.24	5		5	

Comments:
1 = improperly sealed cap
2 = preserved out of hold
3 = effervesced
4 = preserved with NaHSO4
5 = preserved by freezing
6 = preserved in field

Analyst: Andrew Craig

VOA_EXT - Modified 05/22/2008
PDF ID: 4679636
Report generated: 03/24/2016 12:47

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 022616
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Method: 8260C SOP: MSV01-C Rev: 2
Maintenance Log ID:

Internal Standard: STD74756 Surrogate Standard: STD74756
CCV: STD74897 LCS: STD74755 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG558920

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M137521	RINSE	NA	7	1		02/26/16 12:22
6M137522	WG558920-01 50ng BFB STD 8260	NA	7	1	STD74606	02/26/16 13:16
6M137523	WG558920-02 0.5ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 13:41
6M137524	WG558920-03 1ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 14:13
6M137525	WG558920-04 2ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 14:46
6M137526	WG558920-05 5ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 15:26
6M137527	WG558920-06 10ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 15:58
6M137528	WG558920-07 20ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 16:30
6M137529	WG558920-08 50ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 17:03
6M137530	WG558920-09 100ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 17:35
6M137531	WG558920-10 200ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 18:07
6M137532	WG558920-11 300ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 18:39
6M137533	RINSE	NA	7	1		02/26/16 19:11
6M137534	RINSE	NA	7	1		02/26/16 19:43
6M137535	WG558920-12 50ug/Kg ALT SRC STD 826	NA	7	1	STD74755	02/26/16 20:15
6M137536	RINSE	NA	7	1		02/26/16 20:48

Comments

Seq.	Rerun	Dil.	Reason	Analytes
15				
File ID: 6M137535				
Surrogates are spiked at 25 not 50.				

Approved: March 02, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 032316
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75149 Surrogate Standard: STD75149
CCV: STD75238 LCS: STD75209 MS/MSD: STD75209

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG562075

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M137963	WG562074-01 50ng BFB STD 8260	NA	7	1	STD75004	03/23/16 11:50
6M137964	WG562074-02 50ug/Kg CCV STD 8260	NA	7	1	STD75238	03/23/16 12:15
6M137965	WG562074-02 50ug/Kg CCV STD 8260	NA	7	1	STD75238	03/23/16 12:47
6M137966	WG000000-01 100ug/Kg a9 CCV STD 826	NA	7	1	STD74843	03/23/16 13:20
6M137967	WG562075-01 VBLK0323 BLANK STD 826	NA	7	1		03/23/16 13:53
6M137968	WG562075-02 20ug/Kg LCS STD 8260	NA	7	1	STD75209	03/23/16 14:26
6M137969	L16030863-02 MS 8260 5.34g	NA	7	1	STD75209	03/23/16 14:59
6M137970	L16030863-03 MSD 8260 4.54g	NA	7	1	STD75209	03/23/16 15:32
6M137971	RINSE	NA	7	1		03/23/16 16:04
6M137972	L16031066-09 826-VAP2 5.30g	NA	7	1		03/23/16 16:37
6M137973	L16030863-01 REF 8260 4.96g	NA	7	1		03/23/16 17:10
6M137974	L16030861-03 8260 5.04g	NA	7	1		03/23/16 17:43
6M137975	L16030861-05 8260 4.93g	NA	7	1		03/23/16 18:15
6M137976	L16030861-06 8260 5.44g	NA	7	1		03/23/16 18:48
6M137977	L16030861-07 8260 4.73g	NA	7	1		03/23/16 19:21
6M137978	L16030861-08 8260 5.07g	NA	7	1		03/23/16 19:54
6M137979	L16030861-09 8260 5.24g	NA	7	1		03/23/16 20:27
6M137980	L16030861-10 8260 4.95g	NA	7	1		03/23/16 21:00
6M137981	L16030863-04 8260 4.97g	NA	7	1		03/23/16 21:32
6M137982	L16030863-05 8260 4.68g	NA	7	1		03/23/16 22:05
6M137983	L16030863-06 8260 5.07g	NA	7	1		03/23/16 22:38
6M137984	L16030863-07 8260 4.79g	NA	7	1		03/23/16 23:10
6M137985	L16031066-10 826-VAP2 4.89g	NA	7	1		03/23/16 23:43
6M137986	RINSE	NA	7	1		03/24/16 00:16
6M137987	RINSE	NA	7	1		03/24/16 00:48

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 6M137964				
	Acetone was high. DNR.			
4				
File ID: 6M137966				

Approved: March 24, 2016

Sarah Vandenberg

Microbac

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Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS6	Dataset:	032316		
Analyst1:	TMB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	23
Method:	OVAP	SOP:	MSV01/PAT01	Rev:	0
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:					

Internal Standard: STD75149 Surrogate Standard: STD75149

CCV: STD75238 LCS: STD75209 MS/MSD: STD75209

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG562075

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			Not needed. DNR.	
15	X	1	Carry-over contamination	
File ID: 6M137975				
	Possible carry over of 124-tmb.			

Approved: March 24, 2016

Sarah Vandenberg

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 032416
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD75149 Surrogate Standard: STD75149
CCV: STD75238 LCS: STD75209 MS/MSD: STD75209

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG562236

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M137988	WG562235-01 50ng BFB STD 8260	NA	7	1	STD75004	03/24/16 11:14
6M137989	WG562235-02 50u/Kg CCV STD 8260	NA	7	1	STD75238	03/24/16 11:38
6M137990	WG000000-01 100u/Kg A9 CCV STD 8260	NA	7	1	STD75328	03/24/16 12:20
6M137991	WG562236-01 VBLK0324 BLANK STD 826	NA	7	1		03/24/16 12:53
6M137992	L16030965-02 5X 8260 0.91g	NA	7	1		03/24/16 13:27
6M137993	RINSE	NA	7	1		03/24/16 14:00
6M137994	WG562236-02 20ug/Kg LCS STD 8260	NA	7	1	STD75209	03/24/16 14:32
6M137995	WG562193-02 MS 8260 5.15g	NA	7	1	STD75209	03/24/16 15:05
6M137996	WG562193-03 MSD 8260 5.06g	NA	7	1	STD75209	03/24/16 15:38
6M137997	RINSE	NA	7	1	STD75209	03/24/16 16:11
6M137998	RINSE	NA	7	1	STD75209	03/24/16 16:45
6M137999	WG562193-01 L16030861-05 8260 5.19g	NA	7	1		03/24/16 17:19
6M138000	L16030863-08 8260 5.41g	NA	7	1		03/24/16 17:52
6M138001	L16030863-09 8260 5.14g	NA	7	1		03/24/16 18:26
6M138002	L16030863-10 8260 4.83g	NA	7	1		03/24/16 18:59
6M138003	L16030863-11 8260 5.03g	NA	7	1		03/24/16 19:33
6M138004	L16030863-13 8260 5.10g	NA	7	1		03/24/16 20:06
6M138005	L16030863-14 8260 5.30g	NA	7	1		03/24/16 20:39
6M138006	L16030863-12 8260 5.05g	NA	7	1		03/24/16 21:12
6M138007	L16030863-12 8260 5.30g	NA	7	1		03/24/16 21:45
6M138008	RINSE	NA	7	1		03/24/16 22:18
6M138009	RINSE	NA	7	1		03/24/16 22:51

Comments

Seq.	Rerun	Dil.	Reason	Analytes
3				
File ID: 6M137990				
			Not needed. DNR.	
12				
File ID: 6M137999				
			QC only. Confirms 124-tmb.	
20				
File ID: 6M138007				
			Not needed, DNR.	

Approved: March 25, 2016

Sarah Vandenberg

Page: 1

Microbac Laboratories Inc.

Data Checklist

Date: 26-FEB-2016
Analyst: TMB
Analyst: NA
Method: 8260B/C
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 73548
Analytical Workgroups: WG558920

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	NA
TCL Hits	NA
Spectra of TCL Hits	NA
Surrogates	NA
Internal Standards Criteria	NA
Library Searches	NA
Calculations & Correct Factors	NA
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
29-FEB-2016
Tiffany Bailey

Secondary Reviewer:
02-MAR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-02-2016 12:31:18

Microbac Laboratories Inc.

Data Checklist

Date: 23-MAR-2016
Analyst: TMB
Analyst: NA
Method: 8260B/OVAP
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 74013
Analytical Workgroups: WG562075

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
24-MAR-2016
Tiffany Bailey

Secondary Reviewer:
24-MAR-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-24-2016 13:48:21

Microbac Laboratories Inc.

Data Checklist

Date: 24-MAR-2016
Analyst: TMB
Analyst: NA
Method: 8260B
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 74044
Analytical Workgroups: WG562236

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
24-MAR-2016
Tiffany Bailey

Secondary Reviewer:
25-MAR-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-25-2016 10:32:43

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG562075

Login Number: L16030863

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18DPT16(5-5.5)150316	01	03/15/16					03/21/2016	6	14		03/23/16	8.3	14	
18DPT16(5-5.5)150316MS	02	03/15/16					03/21/2016	6	14		03/23/16	8.2	14	
18DPT16(5-5.5)150316MSD	03	03/15/16					03/21/2016	6	14		03/23/16	8.3	14	
18DPT16(15-15.5)150316	04	03/15/16					03/21/2016	6	14		03/23/16	8.5	14	
18DPT16(25-25.5)150316	05	03/15/16					03/21/2016	5.9	14		03/23/16	8.5	14	
18CPT16(30-30.5)150316	06	03/15/16					03/21/2016	5.9	14		03/23/16	8.5	14	
18DPT16(33-33.5)150316	07	03/15/16					03/21/2016	5.9	14		03/23/16	8.5	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4686936
Report generated 03/25/2016 10:31

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG562236

Login Number: L16030863

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18DPT17(2.5-3)150316	08	03/15/16					03/21/2016	5.9	14		03/24/16	9.3	14	
18DPT17(2.5-3)150316FD	09	03/15/16					03/21/2016	5.9	14		03/24/16	9.3	14	
18DPT17(5-5.5)150316	10	03/15/16					03/21/2016	5.9	14		03/24/16	9.3	14	
18DPT17(10-10.5)150316	11	03/15/16					03/21/2016	5.8	14		03/24/16	9.3	14	
18DPT17(18-18.5)150316	12	03/15/16					03/21/2016	5.8	14		03/24/16	9.4	14	
18DPT17(27-27.5)150316	13	03/15/16					03/21/2016	5.8	14		03/24/16	9.3	14	
18DPT17(21.5-22)150316	14	03/15/16					03/21/2016	5.8	14		03/24/16	9.3	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4686936
Report generated 03/25/2016 10:31

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16030863
Instrument Id: HPMS6
Workgroup (AAB#): WG562236

Method: 8260
CAL ID: HPMS6-26-FEB-16
Matrix: Soil

Sample Number	Dilution	Tag	1	2	3	4
L16030863-08	1.00	01	85.7	93.5	108	103
L16030863-09	1.00	01	85.3	92.5	105	102
L16030863-10	1.00	01	87.6	93.5	104	101
L16030863-11	1.00	01	92.4	94.0	104	99.1
L16030863-12	1.00	01	90.0	92.9	104	101
L16030863-13	1.00	01	83.7	92.2	103	101
L16030863-14	1.00	01	84.3	91.5	104	102
WG562236-01	1.00	01	91.7	96.2	101	100
WG562236-02	1.00	01	88.8	95.7	103	100

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	80	-	120
2 - Dibromofluoromethane	80	-	120
3 - 4-Bromofluorobenzene	85	-	120
4 - Toluene-d8	85	-	115

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4686945
Report generated: 03/25/2016 10:31

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16030863
Instrument Id: HPMS6
Workgroup (AAB#): WG562075

Method: 8260
CAL ID: HPMS6-26-FEB-16
Matrix: Soil

Sample Number	Dilution	Tag	1	2	3	4
L16030863-01	1.00	01	87.9	93.8	103	101
L16030863-02	1.00	01	88.1	95.7	103	101
L16030863-03	1.00	01	85.8	93.8	101	101
L16030863-04	1.00	01	86.0	94.2	103	103
L16030863-05	1.00	01	87.5	94.5	104	102
L16030863-06	1.00	01	87.9	93.6	102	102
L16030863-07	1.00	01	94.6	95.8	103	99.2
WG562075-01	1.00	01	90.5	94.6	103	101
WG562075-02	1.00	01	87.3	95.2	100	101

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	80	-	120
2 - Dibromofluoromethane	80	-	120
3 - 4-Bromofluorobenzene	85	-	120
4 - Toluene-d8	85	-	115

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4686945
Report generated: 03/25/2016 10:31

METHOD BLANK SUMMARY

Login Number: L16030863
Blank File ID: 6M137967
Prep Date: 03/23/16 13:53
Analyzed Date: 03/23/16 13:53
Analyst: TMB

Work Group: WG562075
Blank Sample ID: WG562075-01
Instrument ID: HPMS6
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG562075-02	6M137968	03/23/16 14:26	01
18DPT16(5-5.5)150316MS	L16030863-02	6M137969	03/23/16 14:59	01
18DPT16(5-5.5)150316MSD	L16030863-03	6M137970	03/23/16 15:32	01
18DPT16(5-5.5)150316	L16030863-01	6M137973	03/23/16 17:10	01
18DPT16(15-15.5)150316	L16030863-04	6M137981	03/23/16 21:32	01
18DPT16(25-25.5)150316	L16030863-05	6M137982	03/23/16 22:05	01
18CPT16(30-30.5)150316	L16030863-06	6M137983	03/23/16 22:38	01
18DPT16(33-33.5)150316	L16030863-07	6M137984	03/23/16 23:10	01

Report Name: BLANK_SUMMARY
PDF File ID: 4687206
Report generated 03/25/2016 10:31

METHOD BLANK SUMMARY

Login Number: L16030863
Blank File ID: 6M137991
Prep Date: 03/24/16 12:53
Analyzed Date: 03/24/16 12:53
Analyst: TMB

Work Group: WG562236
Blank Sample ID: WG562236-01
Instrument ID: HPMS6
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG562236-02	6M137994	03/24/16 14:32	01
18DPT17(2.5-3)150316	L16030863-08	6M138000	03/24/16 17:52	01
18DPT17(2.5-3)150316FD	L16030863-09	6M138001	03/24/16 18:26	01
18DPT17(5-5.5)150316	L16030863-10	6M138002	03/24/16 18:59	01
18DPT17(10-10.5)150316	L16030863-11	6M138003	03/24/16 19:33	01
18DPT17(27-27.5)150316	L16030863-13	6M138004	03/24/16 20:06	01
18DPT17(21.5-22)150316	L16030863-14	6M138005	03/24/16 20:39	01
18DPT17(18-18.5)150316	L16030863-12	6M138006	03/24/16 21:12	01

Report Name: BLANK_SUMMARY
PDF File ID: 4687206
Report generated 03/25/2016 10:31

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16030863 Prep Date: 03/23/16 13:53 Sample ID: WG562075-01
Instrument ID: HPMS6 Run Date: 03/23/16 13:53 Prep Method: 5030B/5030C/503
File ID: 6M137967 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG562075 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS6-26-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	5.00	20.0	5.00	1	U
Benzene	0.500	5.00	0.500	1	U
Bromobenzene	0.500	5.00	0.500	1	U
Bromochloromethane	1.00	5.00	1.00	1	U
Bromodichloromethane	0.500	5.00	0.500	1	U
Bromoform	0.500	5.00	0.500	1	U
Bromomethane	1.00	5.00	1.00	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.500	5.00	0.500	1	U
sec-Butylbenzene	0.500	5.00	0.500	1	U
tert-Butylbenzene	0.500	5.00	0.500	1	U
Carbon disulfide	0.500	5.00	0.500	1	U
Carbon tetrachloride	0.500	5.00	0.500	1	U
Chlorobenzene	0.500	5.00	0.500	1	U
Chlorodibromomethane	0.500	5.00	0.500	1	U
Chloroethane	1.00	5.00	1.00	1	U
Chloroform	0.500	5.00	0.500	1	U
Chloromethane	2.00	10.0	2.00	1	U
2-Chlorotoluene	0.500	5.00	0.500	1	U
4-Chlorotoluene	0.500	5.00	0.500	1	U
1,2-Dibromo-3-chloropropane	2.00	10.0	2.00	1	U
1,2-Dibromoethane	0.500	5.00	0.500	1	U
Dibromomethane	0.500	5.00	0.500	1	U
1,2-Dichlorobenzene	0.500	5.00	0.500	1	U
1,3-Dichlorobenzene	0.500	5.00	0.500	1	U
1,4-Dichlorobenzene	0.500	5.00	0.500	1	U
Dichlorodifluoromethane	1.00	5.00	1.00	1	U
1,1-Dichloroethane	1.00	5.00	1.00	1	U
1,2-Dichloroethane	0.500	5.00	0.500	1	U
1,1-Dichloroethene	0.500	5.00	0.500	1	U
cis-1,2-Dichloroethene	0.500	5.00	0.500	1	U
trans-1,2-Dichloroethene	0.500	5.00	0.500	1	U
1,2-Dichloropropane	0.500	5.00	0.500	1	U
1,3-Dichloropropane	0.500	5.00	0.500	1	U
2,2-Dichloropropane	0.500	5.00	0.500	1	U
cis-1,3-Dichloropropene	0.500	5.00	0.500	1	U
trans-1,3-Dichloropropene	0.500	5.00	0.500	1	U
1,1-Dichloropropene	0.500	5.00	0.500	1	U
Ethylbenzene	0.500	5.00	0.500	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.500	5.00	0.500	1	U
Isopropylbenzene	0.500	5.00	0.500	1	U

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Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16030863 Prep Date: 03/23/16 13:53 Sample ID: WG562075-01
Instrument ID: HPMS6 Run Date: 03/23/16 13:53 Prep Method: 5030B/5030C/503
File ID: 6M137967 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG562075 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS6-26-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.500	5.00	0.500	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	1.00	5.00	1.00	1	U
Naphthalene	0.500	5.00	0.500	1	U
n-Propylbenzene	0.500	5.00	0.500	1	U
Styrene	0.500	5.00	0.500	1	U
1,1,1,2-Tetrachloroethane	0.500	5.00	0.500	1	U
1,1,2,2-Tetrachloroethane	0.500	5.00	0.500	1	U
Tetrachloroethene	0.500	5.00	0.500	1	U
Toluene	0.500	5.00	0.500	1	U
1,2,3-Trichlorobenzene	0.500	5.00	0.500	1	U
1,2,4-Trichlorobenzene	0.500	5.00	0.500	1	U
1,1,1-Trichloroethane	0.500	5.00	0.500	1	U
1,1,2-Trichloroethane	0.500	5.00	0.500	1	U
Trichloroethene	0.500	5.00	0.500	1	U
Trichlorofluoromethane	1.00	5.00	1.00	1	U
1,2,3-Trichloropropane	1.00	5.00	1.00	1	U
1,2,4-Trimethylbenzene	0.500	5.00	0.568	1	J
1,3,5-Trimethylbenzene	0.500	5.00	0.500	1	U
Vinyl chloride	1.00	5.00	1.00	1	U
o-Xylene	0.500	5.00	0.500	1	U
m-,p-Xylene	0.500	5.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	94.6	80 - 120	PASS
1,2-Dichloroethane-d4	90.5	80 - 120	PASS
Toluene-d8	101	85 - 115	PASS
4-Bromofluorobenzene	103	85 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

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Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16030863 Prep Date: 03/24/16 12:53 Sample ID: WG562236-01
Instrument ID: HPMS6 Run Date: 03/24/16 12:53 Prep Method: 5030B/5030C/503
File ID: 6M137991 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG562236 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS6-26-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	5.00	20.0	5.00	1	U
Benzene	0.500	5.00	0.500	1	U
Bromobenzene	0.500	5.00	0.500	1	U
Bromochloromethane	1.00	5.00	1.00	1	U
Bromodichloromethane	0.500	5.00	0.500	1	U
Bromoform	0.500	5.00	0.500	1	U
Bromomethane	1.00	5.00	1.00	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.500	5.00	0.500	1	U
sec-Butylbenzene	0.500	5.00	0.500	1	U
tert-Butylbenzene	0.500	5.00	0.500	1	U
Carbon disulfide	0.500	5.00	0.500	1	U
Carbon tetrachloride	0.500	5.00	0.500	1	U
Chlorobenzene	0.500	5.00	0.500	1	U
Chlorodibromomethane	0.500	5.00	0.500	1	U
Chloroethane	1.00	5.00	1.00	1	U
Chloroform	0.500	5.00	0.500	1	U
Chloromethane	2.00	10.0	2.00	1	U
2-Chlorotoluene	0.500	5.00	0.500	1	U
4-Chlorotoluene	0.500	5.00	0.500	1	U
1,2-Dibromo-3-chloropropane	2.00	10.0	2.00	1	U
1,2-Dibromoethane	0.500	5.00	0.500	1	U
Dibromomethane	0.500	5.00	0.500	1	U
1,2-Dichlorobenzene	0.500	5.00	0.500	1	U
1,3-Dichlorobenzene	0.500	5.00	0.500	1	U
1,4-Dichlorobenzene	0.500	5.00	0.500	1	U
Dichlorodifluoromethane	1.00	5.00	1.00	1	U
1,1-Dichloroethane	1.00	5.00	1.00	1	U
1,2-Dichloroethane	0.500	5.00	0.500	1	U
1,1-Dichloroethene	0.500	5.00	0.500	1	U
cis-1,2-Dichloroethene	0.500	5.00	0.500	1	U
trans-1,2-Dichloroethene	0.500	5.00	0.500	1	U
1,2-Dichloropropane	0.500	5.00	0.500	1	U
1,3-Dichloropropane	0.500	5.00	0.500	1	U
2,2-Dichloropropane	0.500	5.00	0.500	1	U
cis-1,3-Dichloropropene	0.500	5.00	0.500	1	U
trans-1,3-Dichloropropene	0.500	5.00	0.500	1	U
1,1-Dichloropropene	0.500	5.00	0.500	1	U
Ethylbenzene	0.500	5.00	0.500	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.500	5.00	0.500	1	U
Isopropylbenzene	0.500	5.00	0.500	1	U

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Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16030863 Prep Date: 03/24/16 12:53 Sample ID: WG562236-01
Instrument ID: HPMS6 Run Date: 03/24/16 12:53 Prep Method: 5030B/5030C/503
File ID: 6M137991 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG562236 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS6-26-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.500	5.00	0.500	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	1.00	5.00	1.00	1	U
Naphthalene	0.500	5.00	0.500	1	U
n-Propylbenzene	0.500	5.00	0.500	1	U
Styrene	0.500	5.00	0.500	1	U
1,1,1,2-Tetrachloroethane	0.500	5.00	0.500	1	U
1,1,2,2-Tetrachloroethane	0.500	5.00	0.500	1	U
Tetrachloroethene	0.500	5.00	0.500	1	U
Toluene	0.500	5.00	0.500	1	U
1,2,3-Trichlorobenzene	0.500	5.00	0.500	1	U
1,2,4-Trichlorobenzene	0.500	5.00	0.500	1	U
1,1,1-Trichloroethane	0.500	5.00	0.500	1	U
1,1,2-Trichloroethane	0.500	5.00	0.500	1	U
Trichloroethene	0.500	5.00	0.500	1	U
Trichlorofluoromethane	1.00	5.00	1.00	1	U
1,2,3-Trichloropropane	1.00	5.00	1.00	1	U
1,2,4-Trimethylbenzene	0.500	5.00	0.500	1	U
1,3,5-Trimethylbenzene	0.500	5.00	0.500	1	U
Vinyl chloride	1.00	5.00	1.00	1	U
o-Xylene	0.500	5.00	0.500	1	U
m-,p-Xylene	0.500	5.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	96.2	80 - 120	PASS
1,2-Dichloroethane-d4	91.7	80 - 120	PASS
Toluene-d8	100	85 - 115	PASS
4-Bromofluorobenzene	101	85 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030863 Run Date: 03/23/2016 Sample ID: WG562075-02
Instrument ID: HPMS6 Run Time: 14:26 Prep Method: 5030B/5030C/503
File ID: 6M137968 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG562075 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD75209 Cal ID: HPMS6-26-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	21.8	109	20 - 160	
Benzene	20.0	21.6	108	75 - 125	
Bromobenzene	20.0	22.1	110	65 - 120	
Bromochloromethane	20.0	21.7	108	70 - 125	
Bromodichloromethane	20.0	21.0	105	70 - 130	
Bromoform	20.0	18.7	93.4	55 - 135	
Bromomethane	20.0	22.0	110	30 - 160	
2-Butanone	20.0	20.1	100	30 - 160	
n-Butylbenzene	20.0	21.3	107	65 - 140	
sec-Butylbenzene	20.0	22.9	114	65 - 130	
tert-Butylbenzene	20.0	23.2	116	65 - 130	
Carbon disulfide	20.0	20.0	100	45 - 160	
Carbon tetrachloride	20.0	21.2	106	65 - 135	
Chlorobenzene	20.0	22.0	110	75 - 125	
Chlorodibromomethane	20.0	20.0	100	65 - 130	
Chloroethane	20.0	23.8	119	40 - 155	
Chloroform	20.0	20.7	103	70 - 125	
Chloromethane	20.0	17.5	87.3	50 - 130	
2-Chlorotoluene	20.0	22.6	113	70 - 130	
4-Chlorotoluene	20.0	22.6	113	75 - 125	
1,2-Dibromo-3-chloropropane	20.0	20.0	99.9	40 - 135	
1,2-Dibromoethane	20.0	21.1	106	70 - 125	
Dibromomethane	20.0	20.0	100	75 - 130	
1,2-Dichlorobenzene	20.0	22.5	112	75 - 120	
1,3-Dichlorobenzene	20.0	22.1	111	70 - 125	
1,4-Dichlorobenzene	20.0	21.7	109	70 - 125	
Dichlorodifluoromethane	20.0	21.7	108	35 - 135	
1,1-Dichloroethane	20.0	20.9	105	75 - 125	
1,2-Dichloroethane	20.0	20.9	104	70 - 135	
1,1-Dichloroethene	20.0	21.3	107	65 - 135	
cis-1,2-Dichloroethene	20.0	22.5	113	65 - 125	
trans-1,2-Dichloroethene	20.0	22.5	113	65 - 135	
1,2-Dichloropropane	20.0	22.7	113	70 - 120	
1,3-Dichloropropane	20.0	22.2	111	75 - 125	
2,2-Dichloropropane	20.0	21.8	109	65 - 135	
cis-1,3-Dichloropropene	20.0	23.9	120	70 - 125	
trans-1,3-Dichloropropene	20.0	20.9	104	65 - 125	
1,1-Dichloropropene	20.0	21.9	110	70 - 135	
Ethylbenzene	20.0	22.5	113	75 - 125	
2-Hexanone	20.0	19.5	97.4	45 - 145	
Hexachlorobutadiene	20.0	22.5	112	55 - 140	

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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030863 Run Date: 03/23/2016 Sample ID: WG562075-02
Instrument ID: HPMS6 Run Time: 14:26 Prep Method: 5030B/5030C/503
File ID: 6M137968 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG562075 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD75209 Cal ID: HPMS6-26-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	23.1	116	75 - 130	
p-Isopropyltoluene	20.0	22.7	113	75 - 135	
4-Methyl-2-pentanone	20.0	21.5	107	45 - 145	
Methylene chloride	20.0	21.7	109	55 - 140	
Naphthalene	20.0	20.6	103	40 - 125	
n-Propylbenzene	20.0	23.0	115	65 - 135	
Styrene	20.0	22.1	111	75 - 125	
1,1,1,2-Tetrachloroethane	20.0	20.9	104	75 - 125	
1,1,2,2-Tetrachloroethane	20.0	20.9	104	55 - 130	
Tetrachloroethene	20.0	21.7	108	65 - 140	
Toluene	20.0	21.8	109	70 - 125	
1,2,3-Trichlorobenzene	20.0	21.3	107	60 - 135	
1,2,4-Trichlorobenzene	20.0	21.5	108	65 - 130	
1,1,1-Trichloroethane	20.0	21.7	108	70 - 135	
1,1,2-Trichloroethane	20.0	21.2	106	60 - 125	
Trichloroethene	20.0	23.5	117	75 - 125	
Trichlorofluoromethane	20.0	20.3	102	25 - 185	
1,2,3-Trichloropropane	20.0	21.4	107	65 - 130	
1,2,4-Trimethylbenzene	20.0	22.4	112	65 - 135	
1,3,5-Trimethylbenzene	20.0	23.3	116	65 - 135	
Vinyl chloride	20.0	20.3	101	60 - 125	
o-Xylene	20.0	23.6	118	75 - 125	
m-,p-Xylene	40.0	44.4	111	80 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	95.2	80 - 120	PASS
1,2-Dichloroethane-d4	87.3	80 - 120	PASS
Toluene-d8	101	85 - 115	PASS
4-Bromofluorobenzene	100	85 - 120	PASS

* EXCEEDS %REC LIMIT

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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030863 Run Date: 03/24/2016 Sample ID: WG562236-02
Instrument ID: HPMS6 Run Time: 14:32 Prep Method: 5030B/5030C/503
File ID: 6M137994 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG562236 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD75209 Cal ID: HPMS6-26-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	22.6	113	20 - 160	
Benzene	20.0	22.4	112	75 - 125	
Bromobenzene	20.0	22.5	112	65 - 120	
Bromochloromethane	20.0	22.8	114	70 - 125	
Bromodichloromethane	20.0	21.6	108	70 - 130	
Bromoform	20.0	19.7	98.6	55 - 135	
Bromomethane	20.0	21.6	108	30 - 160	
2-Butanone	20.0	21.8	109	30 - 160	
n-Butylbenzene	20.0	21.8	109	65 - 140	
sec-Butylbenzene	20.0	23.3	117	65 - 130	
tert-Butylbenzene	20.0	23.9	119	65 - 130	
Carbon disulfide	20.0	20.0	100	45 - 160	
Carbon tetrachloride	20.0	22.1	110	65 - 135	
Chlorobenzene	20.0	22.4	112	75 - 125	
Chlorodibromomethane	20.0	20.9	104	65 - 130	
Chloroethane	20.0	23.8	119	40 - 155	
Chloroform	20.0	21.5	108	70 - 125	
Chloromethane	20.0	19.6	97.9	50 - 130	
2-Chlorotoluene	20.0	22.6	113	70 - 130	
4-Chlorotoluene	20.0	23.1	115	75 - 125	
1,2-Dibromo-3-chloropropane	20.0	23.0	115	40 - 135	
1,2-Dibromoethane	20.0	22.3	111	70 - 125	
Dibromomethane	20.0	21.0	105	75 - 130	
1,2-Dichlorobenzene	20.0	23.2	116	75 - 120	
1,3-Dichlorobenzene	20.0	22.8	114	70 - 125	
1,4-Dichlorobenzene	20.0	22.3	112	70 - 125	
Dichlorodifluoromethane	20.0	21.8	109	35 - 135	
1,1-Dichloroethane	20.0	21.7	108	75 - 125	
1,2-Dichloroethane	20.0	21.4	107	70 - 135	
1,1-Dichloroethene	20.0	21.8	109	65 - 135	
cis-1,2-Dichloroethene	20.0	23.0	115	65 - 125	
trans-1,2-Dichloroethene	20.0	23.3	116	65 - 135	
1,2-Dichloropropane	20.0	23.6	118	70 - 120	
1,3-Dichloropropane	20.0	23.1	116	75 - 125	
2,2-Dichloropropane	20.0	23.0	115	65 - 135	
cis-1,3-Dichloropropene	20.0	24.9	124	70 - 125	
trans-1,3-Dichloropropene	20.0	21.6	108	65 - 125	
1,1-Dichloropropene	20.0	22.7	113	70 - 135	
Ethylbenzene	20.0	22.6	113	75 - 125	
2-Hexanone	20.0	21.4	107	45 - 145	
Hexachlorobutadiene	20.0	23.0	115	55 - 140	

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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030863 Run Date: 03/24/2016 Sample ID: WG562236-02
Instrument ID: HPMS6 Run Time: 14:32 Prep Method: 5030B/5030C/503
File ID: 6M137994 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG562236 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD75209 Cal ID: HPMS6-26-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	23.9	119	75 - 130	
p-Isopropyltoluene	20.0	23.5	117	75 - 135	
4-Methyl-2-pentanone	20.0	23.2	116	45 - 145	
Methylene chloride	20.0	22.5	112	55 - 140	
Naphthalene	20.0	22.3	112	40 - 125	
n-Propylbenzene	20.0	23.6	118	65 - 135	
Styrene	20.0	22.9	115	75 - 125	
1,1,1,2-Tetrachloroethane	20.0	21.8	109	75 - 125	
1,1,2,2-Tetrachloroethane	20.0	22.7	114	55 - 130	
Tetrachloroethene	20.0	22.1	111	65 - 140	
Toluene	20.0	22.4	112	70 - 125	
1,2,3-Trichlorobenzene	20.0	21.9	109	60 - 135	
1,2,4-Trichlorobenzene	20.0	22.7	113	65 - 130	
1,1,1-Trichloroethane	20.0	22.4	112	70 - 135	
1,1,2-Trichloroethane	20.0	22.0	110	60 - 125	
Trichloroethene	20.0	24.0	120	75 - 125	
Trichlorofluoromethane	20.0	20.5	103	25 - 185	
1,2,3-Trichloropropane	20.0	23.0	115	65 - 130	
1,2,4-Trimethylbenzene	20.0	22.8	114	65 - 135	
1,3,5-Trimethylbenzene	20.0	23.9	120	65 - 135	
Vinyl chloride	20.0	16.7	83.4	60 - 125	
o-Xylene	20.0	24.3	121	75 - 125	
m-,p-Xylene	40.0	45.9	115	80 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	95.7	80 - 120	PASS
1,2-Dichloroethane-d4	88.8	80 - 120	PASS
Toluene-d8	100	85 - 115	PASS
4-Bromofluorobenzene	103	85 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4686937
Report generated: 03/25/2016 10:31

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16030863 Cal ID: HPMS6- 26-FEB-16 Worknum: WG562075

Instrument ID: HPMS6 Contract #: Prep Method: 5030B/5030C/

Parent ID: L16030863-01 File ID: 6M137973 Dil: 1 Method: 5035A

Sample ID: L16030863-02 MS File ID: 6M137969 Dil: 1 Matrix: 8260B

Sample ID: L16030863-03 MSD File ID: 6M137970 Dil: 1 Units: Soil

Percent Solid: ug/kg 79.3

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,1,1,2-Tetrachloroethane	U	23.6	24.6	104	27.8	28.4	102	14.1	75 - 125	30	
1,1,1-Trichloroethane	U	23.6	25.4	108	27.8	29.4	106	14.6	70 - 135	30	
1,1,2,2-Tetrachloroethane	U	23.6	25.6	108	27.8	30.0	108	15.9	55 - 130	30	
1,1,2-Trichloroethane	U	23.6	25.9	110	27.8	29.2	105	12.1	60 - 125	30	
1,1-Dichloroethane	U	23.6	24.5	104	27.8	28.5	103	15.0	75 - 125	30	
1,1-Dichloroethene	U	23.6	25.2	107	27.8	29.5	106	15.7	65 - 135	30	
1,1-Dichloropropene	U	23.6	26.8	113	27.8	30.6	110	13.4	70 - 135	30	
1,2,3-Trichlorobenzene	U	23.6	26.2	111	27.8	30.1	108	13.9	60 - 135	30	
1,2,3-Trichloropropane	U	23.6	26.4	112	27.8	31.0	112	16.2	65 - 130	30	
1,2,4-Trichlorobenzene	U	23.6	27.0	114	27.8	30.2	109	11.3	65 - 130	30	
1,2,4-Trimethylbenzene	U	23.6	27.4	116	27.8	30.9	111	12.3	65 - 135	30	
1,2-Dibromo-3-chloropropane	U	23.6	24.3	103	27.8	29.9	108	21.0	40 - 135	30	
1,2-Dibromoethane	U	23.6	25.4	108	27.8	29.1	105	13.6	70 - 125	30	
1,2-Dichlorobenzene	U	23.6	27.2	115	27.8	30.8	111	12.4	75 - 120	30	
1,2-Dichloroethane	U	23.6	24.6	104	27.8	28.4	102	14.5	70 - 135	30	
1,2-Dichloropropane	U	23.6	26.9	114	27.8	31.6	114	16.0	70 - 120	30	
1,3,5-Trimethylbenzene	U	23.6	28.6	121	27.8	32.3	116	12.1	65 - 135	30	
1,3-Dichlorobenzene	U	23.6	27.3	116	27.8	30.7	110	11.6	70 - 125	30	
1,3-Dichloropropane	U	23.6	26.6	113	27.8	30.4	110	13.5	75 - 125	30	
1,4-Dichlorobenzene	U	23.6	27.0	115	27.8	30.7	110	12.6	70 - 125	30	
2,2-Dichloropropane	U	23.6	26.9	114	27.8	31.1	112	14.4	65 - 135	30	
2-Butanone	U	23.6	24.2	103	27.8	28.5	103	16.2	30 - 160	30	
2-Chlorotoluene	U	23.6	27.6	117	27.8	31.4	113	12.9	70 - 130	30	
2-Hexanone	U	23.6	24.0	102	27.8	28.0	101	15.3	45 - 145	30	
4-Chlorotoluene	U	23.6	27.9	118	27.8	31.1	112	10.8	75 - 125	30	
4-Methyl-2-pentanone	U	23.6	26.1	111	27.8	31.0	112	17.0	45 - 145	30	
Acetone	U	23.6	20.1	85.3	27.8	24.1	86.8	17.9	20 - 160	30	
Benzene	U	23.6	25.7	109	27.8	29.7	107	14.5	75 - 125	30	
Bromobenzene	U	23.6	26.5	112	27.8	30.1	109	12.8	65 - 120	30	
Bromochloromethane	U	23.6	26.0	110	27.8	29.6	107	13.0	70 - 125	30	
Bromodichloromethane	U	23.6	24.9	106	27.8	28.4	102	13.2	70 - 130	30	
Bromoform	U	23.6	22.1	93.8	27.8	26.0	93.7	16.1	55 - 135	30	
Bromomethane	U	23.6	25.6	109	27.8	30.1	109	16.1	30 - 160	30	
Carbon disulfide	U	23.6	24.5	104	27.8	27.8	100	12.5	45 - 160	30	
Carbon tetrachloride	U	23.6	25.1	107	27.8	29.8	107	17.1	65 - 135	30	
Chlorobenzene	U	23.6	26.6	112	27.8	30.4	110	13.6	75 - 125	30	
Chloroethane	U	23.6	28.1	119	27.8	32.9	119	16.0	40 - 155	30	
Chloroform	U	23.6	24.9	105	27.8	28.7	103	14.4	70 - 125	30	
Chloromethane	U	23.6	19.3	81.6	27.8	23.4	84.1	19.3	50 - 130	30	
cis-1,2-Dichloroethene	U	23.6	26.7	113	27.8	30.8	111	14.5	65 - 125	30	
cis-1,3-Dichloropropene	U	23.6	29.1	123	27.8	32.4	117	11.0	70 - 125	30	

MS_MSD - Modified 03/06/2008
PDF File ID: 4686938
Report generated 03/25/2016 10:31

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16030863 Cal ID: HPMS6 26-FEB-16 Worknum: WG562075

Instrument ID: HPMS6 Contract #: Prep Method: 5030B/5030C/

Parent ID: L16030863-01 File ID: 6M137973 Dil: 1 Method: 5035A

Sample ID: L16030863-02 MS File ID: 6M137969 Dil: 1 Matrix: 8260B

Sample ID: L16030863-03 MSD File ID: 6M137970 Dil: 1 Units: Soil

ug/kg

Percent Solid: 79.3

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chlorodibromomethane	U	23.6	24.3	103	27.8	28.0	101	14.0	65 - 130	30	
Dibromomethane	U	23.6	24.4	104	27.8	27.8	100	12.8	75 - 130	30	
Dichlorodifluoromethane	U	23.6	27.1	115	27.8	31.4	113	14.9	35 - 135	30	
Ethylbenzene	U	23.6	26.3	111	27.8	30.7	111	15.5	75 - 125	30	
Hexachlorobutadiene	U	23.6	28.5	121	27.8	32.1	116	12.2	55 - 140	30	
Isopropylbenzene	U	23.6	27.9	118	27.8	32.1	116	14.1	75 - 130	30	
m-,p-Xylene	U	47.2	53.7	114	55.5	62.5	113	15.2	80 - 125	30	
Methylene chloride	U	23.6	26.3	111	27.8	29.9	108	13.1	55 - 140	30	
n-Butylbenzene	U	23.6	27.0	114	27.8	30.3	109	11.5	65 - 140	30	
n-Propylbenzene	U	23.6	28.7	122	27.8	32.2	116	11.5	65 - 135	30	
Naphthalene	U	23.6	24.5	104	27.8	29.4	106	18.2	40 - 125	30	
o-Xylene	U	23.6	28.2	119	27.8	32.3	116	13.5	75 - 125	30	
p-Isopropyltoluene	U	23.6	28.4	120	27.8	31.9	115	11.6	75 - 135	30	
sec-Butylbenzene	U	23.6	28.5	121	27.8	32.3	116	12.5	65 - 130	30	
Styrene	U	23.6	26.7	113	27.8	30.8	111	14.0	75 - 125	30	
tert-Butylbenzene	U	23.6	28.5	121	27.8	32.9	119	14.3	65 - 130	30	
Tetrachloroethene	U	23.6	26.8	113	27.8	30.5	110	12.9	65 - 140	30	
Toluene	U	23.6	25.8	109	27.8	30.1	109	15.6	70 - 125	30	
trans-1,2-Dichloroethene	U	23.6	27.0	114	27.8	31.8	115	16.3	65 - 135	30	
trans-1,3-Dichloropropene	U	23.6	25.4	107	27.8	28.3	102	11.0	65 - 125	30	
Trichloroethene	U	23.6	27.8	118	27.8	32.2	116	14.7	75 - 125	30	
Trichlorofluoromethane	U	23.6	24.2	102	27.8	28.5	103	16.4	25 - 185	30	
Vinyl chloride	U	23.6	25.7	109	27.8	29.3	106	13.3	60 - 125	30	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4686938
Report generated 03/25/2016 10:31

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16030863
Instrument: HPMS6
Analyst: TMB
Workgroup: WG558920

Tune ID: WG558920-01
Run Date: 02/26/2016
Run Time: 13:16
File ID: 6M137522
Cal ID: HPMS6 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	25.4	9030	PASS
75.0	95.0	30.0	60.0	55.4	19666	PASS
95.0	95.0	100	100	100	35512	PASS
96.0	95.0	5.00	9.00	7.25	2576	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	73.2	26011	PASS
175	174	5.00	9.00	7.36	1914	PASS
176	174	95.0	101	96.1	24992	PASS
177	176	5.00	9.00	6.64	1660	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG558920-02	STD-S	01	02/26/2016 13:41	
WG558920-03	STD-S	01	02/26/2016 14:13	
WG558920-04	STD-S	01	02/26/2016 14:46	
WG558920-05	STD-S	01	02/26/2016 15:26	
WG558920-06	STD-S	01	02/26/2016 15:58	
WG558920-07	STD-S	01	02/26/2016 16:30	
WG558920-08	STD-CCV-S	01	02/26/2016 17:03	
WG558920-09	STD-S	01	02/26/2016 17:35	
WG558920-10	STD-S	01	02/26/2016 18:07	
WG558920-11	STD-S	01	02/26/2016 18:39	
WG558920-12	SSCV-S	01	02/26/2016 20:15	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4686940
Report generated 03/25/2016 10:31

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16030863
Instrument: HPMS6
Analyst: TMB
Workgroup: WG562074

Tune ID: WG562074-01
Run Date: 03/23/2016
Run Time: 11:50
File ID: 6M137963
Cal ID: HPMS6 - 26-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.2	6567	PASS
75.0	95.0	30.0	60.0	49.2	15945	PASS
95.0	95.0	100	100	100	32432	PASS
96.0	95.0	5.00	9.00	6.96	2256	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	80.4	26074	PASS
175	174	5.00	9.00	7.57	1973	PASS
176	174	95.0	101	99.3	25896	PASS
177	176	5.00	9.00	6.56	1699	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG562074-02	CCV-S	01	03/23/2016 12:47	
WG562075-01	BLANK	01	03/23/2016 13:53	
WG562075-02	LCS	01	03/23/2016 14:26	
L16030863-02	18DPT16(5-5.5)150316MS	01	03/23/2016 14:59	
L16030863-03	18DPT16(5-5.5)150316MSD	01	03/23/2016 15:32	
L16030863-01	18DPT16(5-5.5)150316	01	03/23/2016 17:10	
L16030863-04	18DPT16(15-15.5)150316	01	03/23/2016 21:32	
L16030863-05	18DPT16(25-25.5)150316	01	03/23/2016 22:05	
L16030863-06	18CPT16(30-30.5)150316	01	03/23/2016 22:38	
L16030863-07	18DPT16(33-33.5)150316	01	03/23/2016 23:10	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4686940
Report generated 03/25/2016 10:31

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16030863
Instrument: HPMS6
Analyst: TMB
Workgroup: WG562235

Tune ID: WG562235-01
Run Date: 03/24/2016
Run Time: 11:14
File ID: 6M137988
Cal ID: HPMS6 - 26-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.7	6323	PASS
75.0	95.0	30.0	60.0	52.2	14507	PASS
95.0	95.0	100	100	100	27812	PASS
96.0	95.0	5.00	9.00	6.86	1908	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	70.4	19568	PASS
175	174	5.00	9.00	7.63	1494	PASS
176	174	95.0	101	96.3	18848	PASS
177	176	5.00	9.00	7.09	1337	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG562235-02	CCV-S	01	03/24/2016 11:38	
WG562236-01	BLANK	01	03/24/2016 12:53	
WG562236-02	LCS	01	03/24/2016 14:32	
L16030863-08	18DPT17(2.5-3)150316	01	03/24/2016 17:52	
L16030863-09	18DPT17(2.5-3)150316FD	01	03/24/2016 18:26	
L16030863-10	18DPT17(5-5.5)150316	01	03/24/2016 18:59	
L16030863-11	18DPT17(10-10.5)150316	01	03/24/2016 19:33	
L16030863-13	18DPT17(27-27.5)150316	01	03/24/2016 20:06	
L16030863-14	18DPT17(21.5-22)150316	01	03/24/2016 20:39	
L16030863-12	18DPT17(18-18.5)150316	01	03/24/2016 21:12	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4686940
Report generated 03/25/2016 10:31

Calibration Table Report
Method: 826_SL.M
Title: 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Calibration: Mon Feb 29 15:59:52 2016
Curve: WG558920
Calibration Files

	Compound	0.5 6M137523.D	1 6M137524.D	2 6M137525.D	5 6M137526.D	10 6M137527.D	20 6M137528.D	50 6M137529.D	100 6M137530.D	200 6M137531.D	300 6M137532.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.386	0.437	0.426	0.515	0.537	0.438	0.464	0.471	0.459	10.647		
P	Chloromethane			0.578	0.509	0.480	0.500	0.503	0.398	0.425	0.436	0.479	11.984		
C	Vinyl Chloride			0.371	0.405	0.376	0.415	0.431	0.353	0.374	0.357	0.385	7.341		
T	1,3-Butadiene				0.369	0.322	0.361	0.344	0.289	0.282	0.277	0.320	11.982		
T	Bromomethane			0.192	0.207	0.206	0.215	0.213	0.184	0.207	0.218	0.205	5.643		
T	Chloroethane			0.199	0.219	0.208	0.232	0.244	0.202	0.219	0.224	0.218	6.941		
T	Trichlorofluoromethane			0.535	0.557	0.513	0.525	0.558	0.462	0.490	0.501	0.518	6.398		
T	Diethyl ether		0.243	0.231	0.234	0.251	0.241	0.233	0.233		0.238	0.238	2.758		
T	Isoprene				0.333	0.322	0.327	0.355	0.334	0.338	0.351	0.337	3.613		
T	Acrolein		0.044	0.045	0.044	0.050	0.045	0.042	0.045		0.047	0.045	5.301		
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.199	0.268	0.248	0.256	0.277	0.230	0.245	0.252	0.247	9.700		
T	Acetone					0.152	0.130	0.112	0.104	0.110	0.106	0.119	15.588	0.999	
C	1,1-Dichloroethene			0.380	0.462	0.424	0.453	0.487	0.410	0.439	0.447	0.438	7.530		
T	Tert-Butyl Alcohol		0.039	0.035	0.040	0.044	0.044	0.040	0.040		0.044	0.041	7.378		
T	Dimethyl Sulfide				0.204	0.210	0.197	0.223	0.210	0.218	0.224	0.212	4.669		
T	Iodomethane				0.056	0.082	0.123	0.197	0.197	0.211	0.207	0.153	42.723	0.998	
T	Methyl acetate				0.309	0.317	0.309	0.308	0.292	0.293	0.300	0.304	3.023		
T	Methylene Chloride			0.256	0.273	0.264	0.268	0.287	0.242	0.257	0.260	0.264	5.015		
T	Carbon Disulfide			0.821	0.880	0.808	0.840	0.872	0.808	0.825	0.844	0.837	3.273		
T	Acrylonitrile		0.108	0.114	0.119	0.133	0.128	0.130	0.129		0.140	0.125	8.391		
T	Methyl Tert Butyl Ether	0.732	0.693	0.663	0.725	0.773	0.787	0.833	0.734	0.785	0.799	0.753	6.930		
T	trans-1,2-Dichloroethene			0.227	0.244	0.240	0.247	0.265	0.226	0.240	0.244	0.242	5.097		
T	n-Hexane			0.407	0.452	0.430	0.435	0.466	0.433	0.438	0.452	0.439	4.050		
T	Diisopropyl ether		1.143	1.120	1.122	1.188	1.168	1.117	1.121		1.127	1.138	2.317		
T	Vinyl Acetate				0.493	0.583	0.630	0.596	0.570	0.626	0.621	0.588	8.090		
P	1,1-Dichloroethane			0.484	0.538	0.522	0.539	0.568	0.484	0.514	0.521	0.521	5.427		
T	Ethyl-Tert-Butyl ether		0.841	0.891	0.897	0.963	0.947	0.909	0.912		0.938	0.912	4.185		
T	2-Butanone				0.186	0.176	0.176	0.169	0.161	0.170	0.172	0.173	4.334		
T	Propionitrile		0.047	0.045	0.045	0.051	0.050	0.048	0.047		0.049	0.048	4.489		
T	2,2-Dichloropropane			0.413	0.427	0.425	0.415	0.454	0.383	0.410	0.420	0.418	4.750		
T	cis-1,2-Dichloroethene			0.265	0.274	0.263	0.275	0.290	0.250	0.269	0.273	0.270	4.259		
C	Chloroform			0.502	0.499	0.475	0.499	0.520	0.443	0.476	0.481	0.487	4.825		
T	1-Bromopropane				0.033	0.034	0.037	0.040	0.037	0.038	0.039	0.037	7.440		
T	Bromochloromethane			0.151	0.148	0.152	0.165	0.176	0.151	0.162	0.164	0.159	6.123		
T	Tetrahydrofuran		0.173	0.111	0.113	0.121	0.123	0.115	0.112		0.116	0.123	16.774	0.998	
S	Dibromofluoromethane			0.280	0.265	0.272	0.276	0.272	0.253	0.265	0.262	0.268	3.189		
T	1,1,1-Trichloroethane			0.412	0.417	0.434	0.435	0.474	0.398	0.430	0.438	0.430	5.218		
T	Cyclohexane			0.396	0.493	0.473	0.495	0.533	0.492	0.499	0.519	0.487	8.433		
T	1,1-Dichloropropene			0.306	0.372	0.338	0.347	0.383	0.324	0.345	0.355	0.346	7.125		
T	Tert-Amyl-Methyl ether		0.664	0.687	0.706	0.759	0.757	0.723	0.732		0.762	0.724	4.986		
T	Carbon Tetrachloride			0.351	0.409	0.4	0.412	0.445	0.378	0.403	0.416	0.4017	6.9015		
S	1,2-Dichloroethane-d4			0.36	0.365	0.337	0.366	0.353	0.329	0.34	0.336	0.3482	4.16		
T	Heptane											0	0		
T	1,2-Dichloroethane			0.387	0.414	0.422	0.43	0.449	0.388	0.415	0.419	0.4154	4.951		
T	Benzene	1.229	1.128	1.036	1.038	1.011	1.023	1.078	0.921	0.973	0.979	1.0416	8.3738		
T	Trichloroethene			0.223	0.257	0.243	0.254	0.268	0.229	0.245	0.249	0.2461	6.0218		
T	Methylcyclohexane			0.321	0.406	0.387	0.403	0.435	0.401	0.406	0.424	0.3978	8.6044		
C	1,2-Dichloropropane			0.249	0.279	0.277	0.29	0.305	0.266	0.286	0.29	0.2802	6.0373		
T	1,4-Dioxane			0.002	0.003	0.003	0.003	0.003	0.003		0.004	0.0031	18.585	0.996	
T	Bromodichloromethane			0.336	0.359	0.35	0.37	0.402	0.352	0.384	0.39	0.3678	6.1125		
T	Dibromomethane			0.145	0.152	0.16	0.169	0.185	0.158	0.171	0.173	0.1639	7.836		
T	2-Chloroethyl Vinyl Ether				0.126	0.141	0.155	0.164	0.161	0.178		0.1541	11.732		
T	4-Methyl-2-Pentanone				0.101	0.11	0.122	0.117	0.113	0.125	0.128	0.1167	8.1948		
T	cis-1,3-Dichloropropene			0.338	0.374	0.39	0.412	0.454	0.396	0.435	0.442	0.4052	9.5304		
T	Dimethyl Disulfide				0.171	0.174	0.192	0.225	0.22	0.245		0.2044	14.756		
I	Chlorobenzene-d5	ISTD													
S	Toluene-d8			1.274	1.278	1.167	1.22	1.21	1.113	1.144	1.105	1.1888	5.6789		
C	Toluene	1.627	1.459	1.33	1.431	1.418	1.424	1.504	1.27	1.35	1.331	1.4144	7.2521		
T	Ethyl Methacrylate			0.326	0.401	0.428	0.461	0.503	0.477	0.511	0.518	0.4532	14.498		
T	Paraldehyde											0	0		
T	trans-1,3-Dichloropropene			0.461	0.507	0.529	0.558	0.603	0.53	0.579	0.582	0.5439	8.4811		
T	1,1,2-Trichloroethane			0.265	0.288	0.302	0.309	0.319	0.28	0.302	0.299	0.2956	5.771		
T	2-Hexanone				0.298	0.324	0.345	0.341	0.328	0.359	0.366	0.3373	6.878		
T	1,3-Dichloropropane			0.488	0.541	0.538	0.558	0.579	0.503	0.54	0.54	0.5358	5.3786		
T	Tetrachloroethene			0.332	0.375	0.358	0.359	0.376	0.318	0.336	0.337	0.3489	6.0417		
T	Dibromochloromethane			0.318	0.369	0.378	0.394	0.425	0.373	0.407	0.41	0.3845	8.6342		
T	1,2-Dibromoethane			0.271	0.289	0.29	0.309	0.332	0.29	0.318	0.32	0.3023	6.7531		
T	1-Chlorohexane			0.358	0.417	0.417	0.441	0.485	0.451	0.47	0.474	0.4392	9.3805		
P	Chlorobenzene			0.915	0.966	0.916	0.927	0.958	0.821	0.89	0.88	0.909	5.1018		
T	1,1,1,2-Tetrachloroethane			0.348	0.343	0.362	0.374	0.393	0.344	0.376	0.38	0.365	5.0679		
C	Ethylbenzene	0.49	0.466	0.473	0.486	0.481	0.497	0.531	0.453	0.494	0.494	0.4864	4.3098		
T	m-,p-Xylene	0.674	0.598	0.537	0.6	0.59	0.605	0.637	0.546	0.585	0.58	0.5952	6.6768		
T	o-Xylene	0.574	0.512	0.494	0.539	0.544	0.588	0.634	0.54	0.59	0.591	0.5606	7.5243		
T	Styrene			0.772	0.876	0.918	0.982	1.071	0.935	1.037	1.041	0.9542	10.466		
P	Bromoform			0.222	0.256	0.259	0.275	0.298	0.261	0.293	0.307	0.2715	10.256		
T	Isopropylbenzene			1.284	1.474	1.498	1.583	1.683	1.433	1.559	1.542	1.507	7.8153		
I	1,4-Dichlorobenzene-d4	ISTD													
P	1,1,2,2-Tetrachloroethane			0.689	0.783	0.798	0.815	0.842	0.74	0.785	0.797	0.7811	6.0053		
S	p-Bromofluorobenzene			0.997	0.956	0.921	0.925	0.941	0.864	0.892	0.852	0.9184	5.2432		

T	1,2,3-Trichloropropane	0.202	0.247	0.251	0.244	0.258	0.225	0.243	0.244	0.2391	7.3405
T	trans-1,4-Dichloro-2-Butene	0.247	0.255	0.285	0.287	0.308	0.295	0.311	0.318	0.2883	8.9009
T	n-Propylbenzene	3.037	3.536	3.508	3.571	3.802	3.207	3.325	3.178	3.3956	7.429
T	Bromobenzene	0.67	0.762	0.744	0.775	0.808	0.694	0.733	0.719	0.7381	6.0417
T	1,3,5-Trimethylbenzene	2.096	2.503	2.443	2.485	2.702	2.295	2.435	2.377	2.417	7.2332
T	2-Chlorotoluene	1.974	2.457	2.366	2.375	2.437	2.106	2.239	2.178	2.2664	7.5835
T	4-Chlorotoluene	2.163	2.182	2.123	2.094	2.235	1.885	1.964	1.933	2.0723	6.208
T	a-Methylstyrene	0.921	1.071	1.127	1.156	1.295	1.234	1.294	1.291	1.1737	11.321
T	tert-Butylbenzene	0.437	0.508	0.504	0.521	0.567	0.48	0.511	0.502	0.5037	7.2697
T	1,2,4-Trimethylbenzene	2.274	2.614	2.634	2.636	2.804	2.386	2.535	2.452	2.5419	6.5668
T	sec-Butylbenzene	2.804	3.169	3.104	3.238	3.474	2.92	3.078	2.976	3.0953	6.6823
T	p-Isopropyltoluene	2.183	2.603	2.54	2.657	2.885	2.449	2.589	2.523	2.5537	7.7414
T	1,3-Dichlorobenzene	1.331	1.516	1.491	1.451	1.537	1.319	1.391	1.389	1.4282	5.8154
T	1,4-Dichlorobenzene	1.528	1.507	1.501	1.476	1.529	1.31	1.39	1.389	1.4537	5.5603
T	n-Butylbenzene	2.282	2.598	2.578	2.654	2.852	2.445	2.576	2.563	2.5684	6.3469
T	1,2-Dichlorobenzene	1.324	1.401	1.407	1.397	1.474	1.278	1.357	1.356	1.3743	4.3244
T	1,2-Dibromo-3-Chloropropane		0.159	0.163	0.176	0.183	0.167	0.179	0.182	0.1728	5.5543
T	1,2,4-Trichlorobenzene	0.968	0.981	1.002	1.008	1.105	0.936	0.963	0.985	0.9935	5.0666
T	Hexachlorobutadiene	0.528	0.583	0.572	0.579	0.635	0.532	0.546	0.571	0.5682	6.0591
T	Naphthalene	1.901	2.081	2.291	2.365	2.601	2.29	2.356	2.387	2.2839	9.2287
T	1,2,3-Trichlorobenzene	0.961	0.977	0.98	0.987	1.094	0.917	0.949	0.961	0.9783	5.2988

Mon Feb 29 16:03:43 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16030863 Run Date: 02/26/2016 Sample ID: WG558920-12
Instrument ID: HPMS6 Run Time: 20:15 Method: 8260B
File ID: 6M137535 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG558920 Cal ID: HPMS6 - 26-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.7	ug/kg	0.494	1.40	20	
1,1-Dichloroethene	CCC	50.0	51.6	ug/kg	0.452	3.30	20	
1,2-Dichloropropane	CCC	50.0	55.0	ug/kg	0.308	10.1	20	
Ethylbenzene	CCC	50.0	52.4	ug/kg	0.510	4.80	20	
Toluene	CCC	50.0	51.4	ug/kg	1.45	2.80	20	
Vinyl Chloride	CCC	50.0	43.3	ug/kg	0.334	13.3	20	
Bromoform	SPCC	50.0	49.2	ug/kg	0.267	1.50	20	
Chlorobenzene	SPCC	50.0	52.9	ug/kg	0.961	5.70	20	
Chloromethane	SPCC	50.0	50.9	ug/kg	0.487	1.80	20	
1,1-Dichloroethane	SPCC	50.0	50.3	ug/kg	0.525	0.700	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	52.1	ug/kg	0.815	4.30	20	
Acetone		50.0	48.7	ug/kg	0.111	2.70	20	
Benzene		50.0	50.4	ug/kg	1.05	0.900	20	
Bromobenzene		50.0	51.8	ug/kg	0.765	3.70	20	
Bromochloromethane		50.0	52.1	ug/kg	0.165	4.20	20	
Bromodichloromethane		50.0	51.6	ug/kg	0.380	3.30	20	
Bromomethane		50.0	58.6	ug/kg	0.240	17.1	20	
2-Butanone		50.0	49.2	ug/kg	0.170	1.50	20	
n-Butylbenzene		50.0	48.8	ug/kg	2.50	2.50	20	
sec-Butylbenzene		50.0	50.7	ug/kg	3.14	1.40	20	
tert-Butylbenzene		50.0	53.2	ug/kg	0.536	6.40	20	
Carbon Disulfide		50.0	44.4	ug/kg	0.743	11.2	20	
Carbon Tetrachloride		50.0	51.2	ug/kg	0.411	2.30	20	
Dibromochloromethane		50.0	51.8	ug/kg	0.399	3.70	20	
Chloroethane		50.0	56.6	ug/kg	0.247	13.2	20	
2-Chlorotoluene		50.0	52.1	ug/kg	2.36	4.20	20	
4-Chlorotoluene		50.0	52.1	ug/kg	2.16	4.10	20	
1,2-Dibromo-3-Chloropropane		50.0	52.1	ug/kg	0.180	4.30	20	
1,2-Dibromoethane		50.0	53.7	ug/kg	0.325	7.30	20	
Dibromomethane		50.0	50.4	ug/kg	0.165	0.800	20	
1,2-Dichlorobenzene		50.0	54.5	ug/kg	1.50	9.00	20	
1,3-Dichlorobenzene		50.0	52.0	ug/kg	1.49	4.00	20	
1,4-Dichlorobenzene		50.0	51.8	ug/kg	1.51	3.60	20	
Dichlorodifluoromethane		50.0	55.5	ug/kg	0.509	10.9	20	
1,2-Dichloroethane		50.0	51.3	ug/kg	0.426	2.50	20	
cis-1,2-Dichloroethene		50.0	54.1	ug/kg	0.292	8.30	20	
trans-1,2-Dichloroethene		50.0	53.7	ug/kg	0.260	7.50	20	
1,3-Dichloropropane		50.0	54.9	ug/kg	0.589	9.80	20	
2,2-Dichloropropane		50.0	53.1	ug/kg	0.444	6.20	20	
cis-1,3-Dichloropropene		50.0	58.8	ug/kg	0.476	17.5	20	
trans-1,3-Dichloropropene		50.0	52.9	ug/kg	0.575	5.70	20	
1,1-Dichloropropene		50.0	52.8	ug/kg	0.365	5.50	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4686939
Report generated 03/25/2016 10:31

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16030863 Run Date: 02/26/2016 Sample ID: WG558920-12
Instrument ID: HPMS6 Run Time: 20:15 Method: 8260B
File ID: 6M137535 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG558920 Cal ID: HPMS6 - 26-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	51.3	ug/kg	0.346	2.60	20	
Hexachlorobutadiene		50.0	47.6	ug/kg	0.541	4.80	20	
Isopropylbenzene		50.0	54.6	ug/kg	1.64	9.10	20	
p-Isopropyltoluene		50.0	50.9	ug/kg	2.60	1.80	20	
4-Methyl-2-Pentanone		50.0	51.3	ug/kg	0.120	2.50	20	
Methylene Chloride		50.0	53.4	ug/kg	0.281	6.80	20	
Naphthalene		50.0	49.8	ug/kg	2.28	0.300	20	
n-Propylbenzene		50.0	52.6	ug/kg	3.57	5.30	20	
Styrene		50.0	55.3	ug/kg	1.06	10.6	20	
1,1,1,2-Tetrachloroethane		50.0	51.8	ug/kg	0.379	3.70	20	
Tetrachloroethene		50.0	51.1	ug/kg	0.357	2.20	20	
1,2,3-Trichlorobenzene		50.0	51.0	ug/kg	0.997	2.00	20	
1,2,4-Trichlorobenzene		50.0	51.0	ug/kg	1.01	2.10	20	
1,1,1-Trichloroethane		50.0	52.0	ug/kg	0.447	4.00	20	
1,1,2-Trichloroethane		50.0	53.2	ug/kg	0.315	6.40	20	
Trichloroethene		50.0	54.7	ug/kg	0.269	9.40	20	
Trichlorofluoromethane		50.0	47.9	ug/kg	0.496	4.20	20	
1,2,3-Trichloropropane		50.0	53.2	ug/kg	0.254	6.30	20	
1,2,4-Trimethylbenzene		50.0	51.1	ug/kg	2.60	2.30	20	
1,3,5-Trimethylbenzene		50.0	52.7	ug/kg	2.55	5.30	20	
o-Xylene		50.0	56.9	ug/kg	0.638	13.8	20	
m-,p-Xylene		100	105	ug/kg	0.626	5.20	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4686939
Report generated 03/25/2016 10:31

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030863 Run Date: 03/23/2016 Sample ID: WG562074-02
Instrument ID: HPMS6 Run Time: 12:47 Method: 8260B
File ID: 6M137965 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG562075 Cal ID: HPMS6 - 26-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	49.2	ug/kg	0.479	1.50	20	
1,1-Dichloroethene	CCC	50.0	51.3	ug/kg	0.449	2.59	20	
1,2-Dichloropropane	CCC	50.0	52.5	ug/kg	0.294	4.98	20	
Ethylbenzene	CCC	50.0	53.5	ug/kg	0.520	6.93	20	
Toluene	CCC	50.0	51.2	ug/kg	1.45	2.46	20	
Vinyl Chloride	CCC	50.0	45.8	ug/kg	0.353	8.35	20	
Bromoform	SPCC	50.0	52.3	ug/kg	0.284	4.69	20	
Chlorobenzene	SPCC	50.0	51.4	ug/kg	0.934	2.77	20	
Chloromethane	SPCC	50.0	38.7	ug/kg	0.370	22.7	20	*
1,1-Dichloroethane	SPCC	50.0	50.5	ug/kg	0.526	0.916	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	55.7	ug/kg	0.870	11.3	20	
Xylenes		150	160	ug/kg	0.623	7.00	40	
Acetone		50.0	56.3	ug/kg	0.127	12.6	20	
Benzene		50.0	49.6	ug/kg	1.03	0.769	20	
Bromobenzene		50.0	53.5	ug/kg	0.790	6.97	20	
Bromochloromethane		50.0	53.5	ug/kg	0.170	7.03	20	
Bromodichloromethane		50.0	51.0	ug/kg	0.375	1.91	20	
Bromomethane		50.0	52.2	ug/kg	0.215	4.49	20	
2-Butanone		50.0	54.8	ug/kg	0.189	9.53	20	
n-Butylbenzene		50.0	54.3	ug/kg	2.79	8.52	20	
sec-Butylbenzene		50.0	54.9	ug/kg	3.40	9.80	20	
tert-Butylbenzene		50.0	54.6	ug/kg	0.550	9.26	20	
Carbon Disulfide		50.0	53.1	ug/kg	0.888	6.11	20	
Carbon Tetrachloride		50.0	50.8	ug/kg	0.408	1.51	20	
Dibromochloromethane		50.0	52.2	ug/kg	0.402	4.44	20	
Chloroethane		50.0	51.4	ug/kg	0.225	2.87	20	
2-Chlorotoluene		50.0	52.7	ug/kg	2.39	5.45	20	
4-Chlorotoluene		50.0	53.1	ug/kg	2.20	6.17	20	
1,2-Dibromo-3-Chloropropane		50.0	57.6	ug/kg	0.199	15.1	20	
1,2-Dibromoethane		50.0	54.3	ug/kg	0.329	8.68	20	
Dibromomethane		50.0	51.8	ug/kg	0.170	3.63	20	
1,2-Dichlorobenzene		50.0	52.8	ug/kg	1.45	5.70	20	
1,3-Dichlorobenzene		50.0	53.2	ug/kg	1.52	6.44	20	
1,4-Dichlorobenzene		50.0	52.2	ug/kg	1.52	4.44	20	
Dichlorodifluoromethane		50.0	47.7	ug/kg	0.438	4.70	20	
1,2-Dichloroethane		50.0	48.8	ug/kg	0.405	2.45	20	
cis-1,2-Dichloroethene		50.0	52.6	ug/kg	0.284	5.30	20	
trans-1,2-Dichloroethene		50.0	52.7	ug/kg	0.255	5.49	20	
1,3-Dichloropropane		50.0	51.9	ug/kg	0.556	3.71	20	
2,2-Dichloropropane		50.0	52.4	ug/kg	0.438	4.70	20	
cis-1,3-Dichloropropene		50.0	54.2	ug/kg	0.439	8.33	20	
trans-1,3-Dichloropropene		50.0	53.0	ug/kg	0.577	6.03	20	

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030863 Run Date: 03/23/2016 Sample ID: WG562074-02
Instrument ID: HPMS6 Run Time: 12:47 Method: 8260B
File ID: 6M137965 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG562075 Cal ID: HPMS6 - 26-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	52.8	ug/kg	0.366	5.69	20	
2-Hexanone		50.0	56.5	ug/kg	0.381	13.0	20	
Hexachlorobutadiene		50.0	54.8	ug/kg	0.623	9.63	20	
Isopropylbenzene		50.0	54.5	ug/kg	1.64	9.09	20	
p-Isopropyltoluene		50.0	56.2	ug/kg	2.87	12.3	20	
4-Methyl-2-Pentanone		50.0	59.4	ug/kg	0.139	18.8	20	
Methylene Chloride		50.0	50.7	ug/kg	0.267	1.30	20	
Naphthalene		50.0	60.3	ug/kg	2.76	20.7	20	*
n-Propylbenzene		50.0	54.4	ug/kg	3.69	8.80	20	
Styrene		50.0	55.3	ug/kg	1.06	10.6	20	
1,1,1,2-Tetrachloroethane		50.0	50.8	ug/kg	0.371	1.70	20	
Tetrachloroethene		50.0	54.1	ug/kg	0.377	8.17	20	
1,2,3-Trichlorobenzene		50.0	54.9	ug/kg	1.07	9.73	20	
1,2,4-Trichlorobenzene		50.0	55.6	ug/kg	1.11	11.2	20	
1,1,1-Trichloroethane		50.0	50.8	ug/kg	0.437	1.53	20	
1,1,2-Trichloroethane		50.0	52.6	ug/kg	0.311	5.26	20	
Trichloroethene		50.0	53.2	ug/kg	0.262	6.45	20	
Trichlorofluoromethane		50.0	48.3	ug/kg	0.500	3.42	20	
1,2,3-Trichloropropane		50.0	56.1	ug/kg	0.268	12.2	20	
1,2,4-Trimethylbenzene		50.0	54.3	ug/kg	2.76	8.69	20	
1,3,5-Trimethylbenzene		50.0	55.1	ug/kg	2.66	10.2	20	
o-Xylene		50.0	55.4	ug/kg	0.621	10.7	20	
m-,p-Xylene		100	105	ug/kg	0.626	5.14	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4686941
Report generated 03/25/2016 10:31

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030863 Run Date: 03/24/2016 Sample ID: WG562235-02
Instrument ID: HPMS6 Run Time: 11:38 Method: 8260B
File ID: 6M137989 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG562236 Cal ID: HPMS6 - 26-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	51.3	ug/kg	0.499	2.55	20	
1,1-Dichloroethene	CCC	50.0	53.1	ug/kg	0.465	6.23	20	
1,2-Dichloropropane	CCC	50.0	54.1	ug/kg	0.303	8.25	20	
Ethylbenzene	CCC	50.0	54.4	ug/kg	0.529	8.84	20	
Toluene	CCC	50.0	52.7	ug/kg	1.49	5.48	20	
Vinyl Chloride	CCC	50.0	45.4	ug/kg	0.350	9.13	20	
Bromoform	SPCC	50.0	52.4	ug/kg	0.285	4.81	20	
Chlorobenzene	SPCC	50.0	52.4	ug/kg	0.954	4.89	20	
Chloromethane	SPCC	50.0	38.2	ug/kg	0.366	23.5	20	*
1,1-Dichloroethane	SPCC	50.0	52.5	ug/kg	0.548	5.06	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	54.4	ug/kg	0.850	8.84	20	
Xylenes		150	164	ug/kg	0.636	9.30	40	
Acetone		50.0	58.7	ug/kg	0.132	17.3	20	
Benzene		50.0	51.9	ug/kg	1.08	3.80	20	
Bromobenzene		50.0	54.5	ug/kg	0.805	9.08	20	
Bromochloromethane		50.0	56.2	ug/kg	0.178	12.4	20	
Bromodichloromethane		50.0	52.4	ug/kg	0.386	4.89	20	
Bromomethane		50.0	51.8	ug/kg	0.213	3.56	20	
2-Butanone		50.0	54.2	ug/kg	0.188	8.50	20	
n-Butylbenzene		50.0	53.9	ug/kg	2.77	7.76	20	
sec-Butylbenzene		50.0	55.1	ug/kg	3.41	10.1	20	
tert-Butylbenzene		50.0	54.9	ug/kg	0.553	9.85	20	
Carbon Disulfide		50.0	54.6	ug/kg	0.915	9.25	20	
Carbon Tetrachloride		50.0	52.9	ug/kg	0.425	5.78	20	
Dibromochloromethane		50.0	53.0	ug/kg	0.407	5.95	20	
Chloroethane		50.0	53.3	ug/kg	0.233	6.56	20	
2-Chlorotoluene		50.0	54.3	ug/kg	2.46	8.52	20	
4-Chlorotoluene		50.0	52.0	ug/kg	2.16	4.09	20	
1,2-Dibromo-3-Chloropropane		50.0	53.6	ug/kg	0.185	7.24	20	
1,2-Dibromoethane		50.0	54.0	ug/kg	0.326	7.94	20	
Dibromomethane		50.0	52.9	ug/kg	0.174	5.88	20	
1,2-Dichlorobenzene		50.0	52.1	ug/kg	1.43	4.24	20	
1,3-Dichlorobenzene		50.0	53.3	ug/kg	1.52	6.55	20	
1,4-Dichlorobenzene		50.0	51.8	ug/kg	1.51	3.61	20	
Dichlorodifluoromethane		50.0	48.5	ug/kg	0.445	3.04	20	
1,2-Dichloroethane		50.0	50.1	ug/kg	0.416	0.113	20	
cis-1,2-Dichloroethene		50.0	55.0	ug/kg	0.297	9.92	20	
trans-1,2-Dichloroethene		50.0	55.7	ug/kg	0.269	11.4	20	
1,3-Dichloropropane		50.0	52.0	ug/kg	0.558	4.07	20	
2,2-Dichloropropane		50.0	53.6	ug/kg	0.449	7.22	20	
cis-1,3-Dichloropropene		50.0	55.9	ug/kg	0.453	11.9	20	
trans-1,3-Dichloropropene		50.0	53.1	ug/kg	0.578	6.26	20	

CCV - Modified 03/05/2008
PDF File ID: 4686941
Report generated 03/25/2016 10:31

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030863 Run Date: 03/24/2016 Sample ID: WG562235-02
Instrument ID: HPMS6 Run Time: 11:38 Method: 8260B
File ID: 6M137989 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG562236 Cal ID: HPMS6 - 26-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	55.2	ug/kg	0.382	10.5	20	
2-Hexanone		50.0	54.7	ug/kg	0.369	9.45	20	
Hexachlorobutadiene		50.0	53.2	ug/kg	0.605	6.43	20	
Isopropylbenzene		50.0	55.5	ug/kg	1.67	11.0	20	
p-Isopropyltoluene		50.0	56.0	ug/kg	2.86	12.0	20	
4-Methyl-2-Pentanone		50.0	59.2	ug/kg	0.138	18.4	20	
Methylene Chloride		50.0	53.5	ug/kg	0.282	7.04	20	
Naphthalene		50.0	56.2	ug/kg	2.57	12.4	20	
n-Propylbenzene		50.0	55.0	ug/kg	3.73	9.95	20	
Styrene		50.0	56.0	ug/kg	1.07	12.0	20	
1,1,1,2-Tetrachloroethane		50.0	51.6	ug/kg	0.377	3.26	20	
Tetrachloroethene		50.0	54.7	ug/kg	0.382	9.41	20	
1,2,3-Trichlorobenzene		50.0	52.1	ug/kg	1.02	4.25	20	
1,2,4-Trichlorobenzene		50.0	53.5	ug/kg	1.06	6.90	20	
1,1,1-Trichloroethane		50.0	52.9	ug/kg	0.455	5.72	20	
1,1,2-Trichloroethane		50.0	53.3	ug/kg	0.315	6.65	20	
Trichloroethene		50.0	55.7	ug/kg	0.274	11.4	20	
Trichlorofluoromethane		50.0	51.2	ug/kg	0.530	2.30	20	
1,2,3-Trichloropropane		50.0	54.5	ug/kg	0.261	9.08	20	
1,2,4-Trimethylbenzene		50.0	54.2	ug/kg	2.75	8.34	20	
1,3,5-Trimethylbenzene		50.0	55.3	ug/kg	2.68	10.7	20	
o-Xylene		50.0	56.3	ug/kg	0.631	12.6	20	
m-,p-Xylene		100	108	ug/kg	0.641	7.65	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4686941
Report generated 03/25/2016 10:31

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16030863
Instrument ID: HPMS6
Workgroup (AAB#): WG562075

ICAL CCV Number: WG558920-08
CAL ID: HPMS6-26-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558920-08	NA	NA	237573	439950	607631
Upper Limit	NA	NA	475146	879900	1215262
Lower Limit	NA	NA	118787	219975	303816
L16030863-01	1.00	01	213419	410845	560258
L16030863-02	1.00	01	220797	419602	562982
L16030863-03	1.00	01	221130	412191	555350
L16030863-04	1.00	01	213820	407934	558551
L16030863-05	1.00	01	200556	393377	536787
L16030863-06	1.00	01	215852	409329	558510
L16030863-07	1.00	01	220608	416422	552300
WG562075-01	1.00	01	220763	420780	568472
WG562075-02	1.00	01	231205	431283	579730

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4687208
Report generated 03/25/2016 10:31

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16030863
Instrument ID: HPMS6
Workgroup (AAB#): WG562236

ICAL CCV Number: WG558920-08
CAL ID: HPMS6-26-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558920-08	NA	NA	237573	439950	607631
Upper Limit	NA	NA	475146	879900	1215262
Lower Limit	NA	NA	118787	219975	303816
L16030863-08	1.00	01	202530	416564	582040
L16030863-09	1.00	01	199512	398818	554838
L16030863-10	1.00	01	228996	434397	587000
L16030863-11	1.00	01	224623	427761	568271
L16030863-12	1.00	01	205737	394609	540095
L16030863-13	1.00	01	222418	427612	582773
L16030863-14	1.00	01	207682	404209	554060
WG562236-01	1.00	01	220949	414863	556296
WG562236-02	1.00	01	234089	434319	574597

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4687208
Report generated 03/25/2016 10:31

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16030863
Instrument ID: HPMS6
Workgroup (AAB#): WG562075

ICAL CCV Number: WG558920-08
CAL ID: HPMS6-26-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558920-08	NA	NA	19.6	16.01	11.51
Upper Limit	NA	NA	20.1	16.51	12.01
Lower Limit	NA	NA	19.1	15.51	11.01
L16030863-01	1.00	01	19.6	16.01	11.52
L16030863-02	1.00	01	19.6	16.01	11.52
L16030863-03	1.00	01	19.59	16.01	11.51
L16030863-04	1.00	01	19.6	16.01	11.52
L16030863-05	1.00	01	19.59	16.01	11.51
L16030863-06	1.00	01	19.6	16.01	11.52
L16030863-07	1.00	01	19.6	16.01	11.52
WG562075-01	1.00	01	19.59	16.01	11.51
WG562075-02	1.00	01	19.59	16.01	11.51

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4687209
Report generated: 03/25/2016 10:31

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16030863
Instrument ID: HPMS6
Workgroup (AAB#): WG562236

ICAL CCV Number: WG558920-08
CAL ID: HPMS6-26-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558920-08	NA	NA	19.6	16.01	11.51
Upper Limit	NA	NA	20.1	16.51	12.01
Lower Limit	NA	NA	19.1	15.51	11.01
L16030863-08	1.00	01	19.6	16.01	11.52
L16030863-09	1.00	01	19.59	16.01	11.51
L16030863-10	1.00	01	19.6	16.01	11.52
L16030863-11	1.00	01	19.6	16.01	11.52
L16030863-12	1.00	01	19.59	16.01	11.51
L16030863-13	1.00	01	19.59	16.01	11.51
L16030863-14	1.00	01	19.59	16.01	11.52
WG562236-01	1.00	01	19.59	16.01	11.51
WG562236-02	1.00	01	19.6	16.01	11.52

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4687209
Report generated: 03/25/2016 10:31

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137973.D Vial: 11
Acq On : 23 Mar 2016 17:10 Operator: TMB
Sample : L16030863-01 REF 8260 4.96g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 08:29:33 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	560258	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	410845	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	213419	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	141005	46.9168 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.84%		
43) 1,2-Dichloroethane-d4	11.06	65	171500	43.9499 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 87.90%		
58) Toluene-d8	13.80	98	493916	50.5646 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.12%		
80) p-Bromofluorobenzene	17.79	95	202708	51.7105 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 103.42%		

Target Compounds					Qvalue
13) Acetone	6.60	43	1395	Below Cal	# 48
36) Tetrahydrofuran	10.30	42	2307	Below Cal	# 56
90) 1,2,4-Trimethylbenzene	18.81	105	3503	0.3229 ug/L	76

(#) = qualifier out of range (m) = manual integration
6M137973.D 826_SL.M Thu Mar 24 08:29:34 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137973.D Vial: 11
Acq On : 23 Mar 2016 17:10 Operator: TMB
Sample : L16030863-01 REF 8260 4.96g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 8:29 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

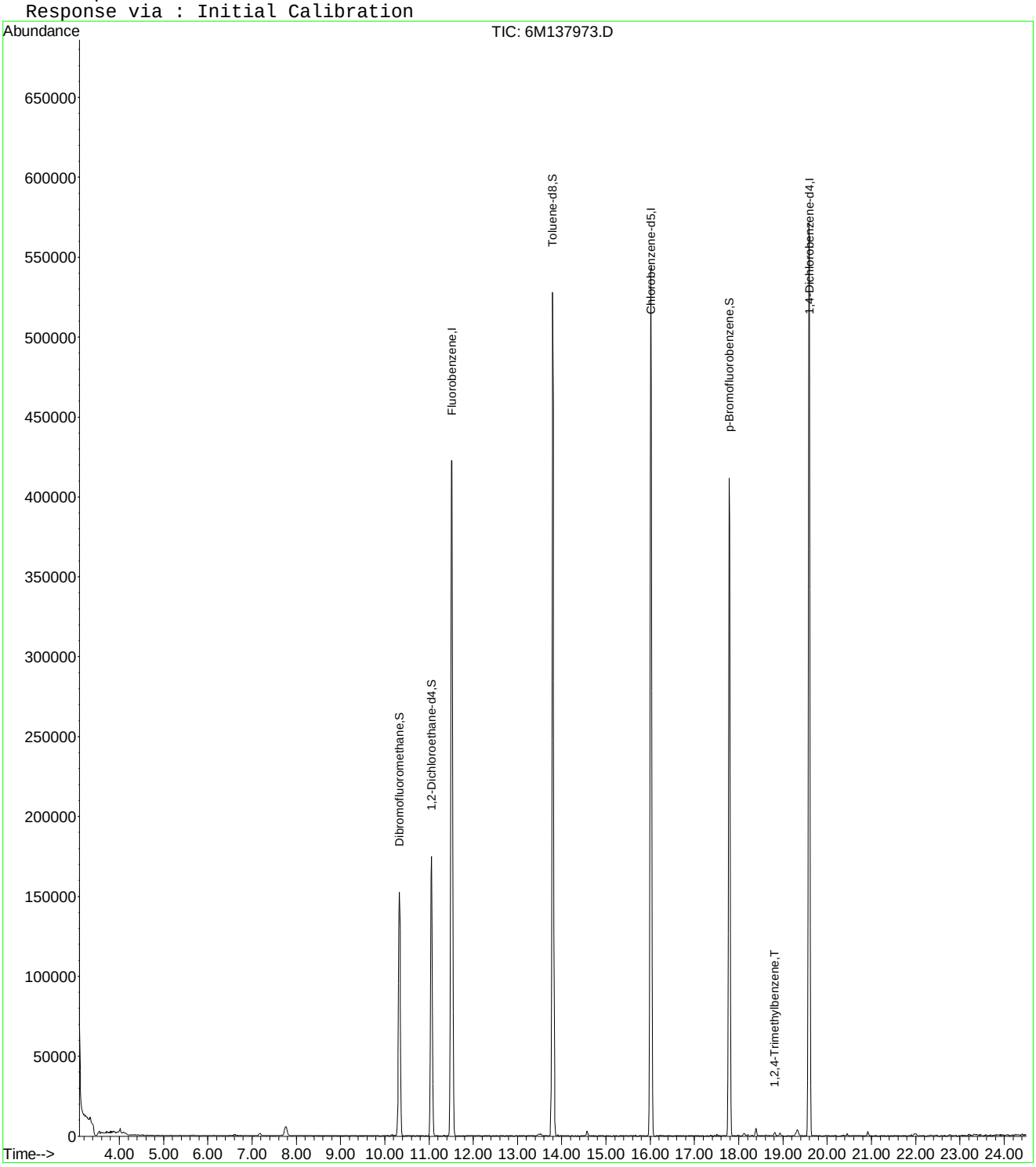

6M137973.D 826_SL.M Thu Mar 24 08:29:34 2016 Page 2

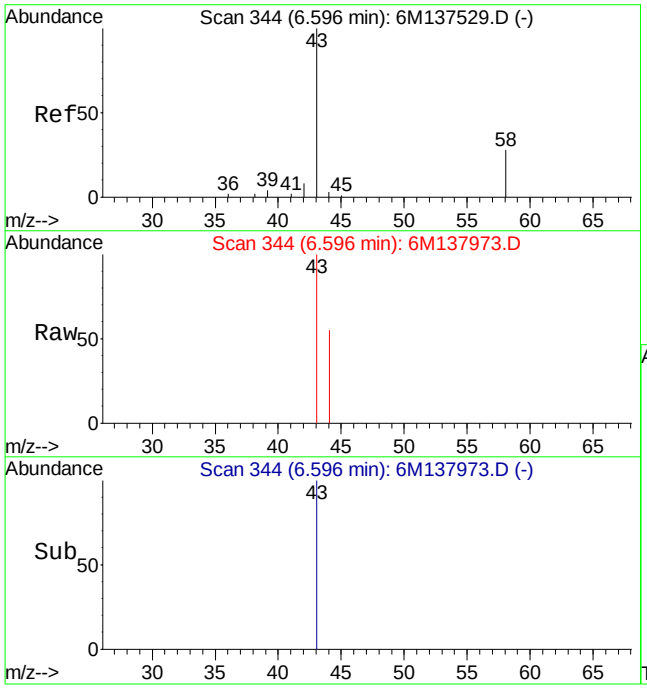

#13
Acetone
Concen: Below Cal
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137973.D
Acq: 23 Mar 2016 17:10

Tgt Ion: 43 Resp: 1395

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.1	37.7#

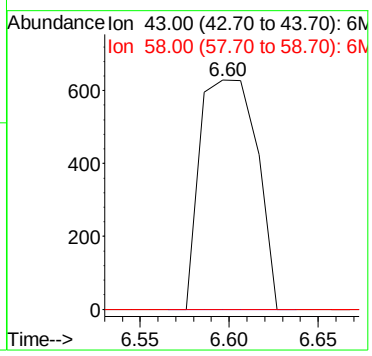

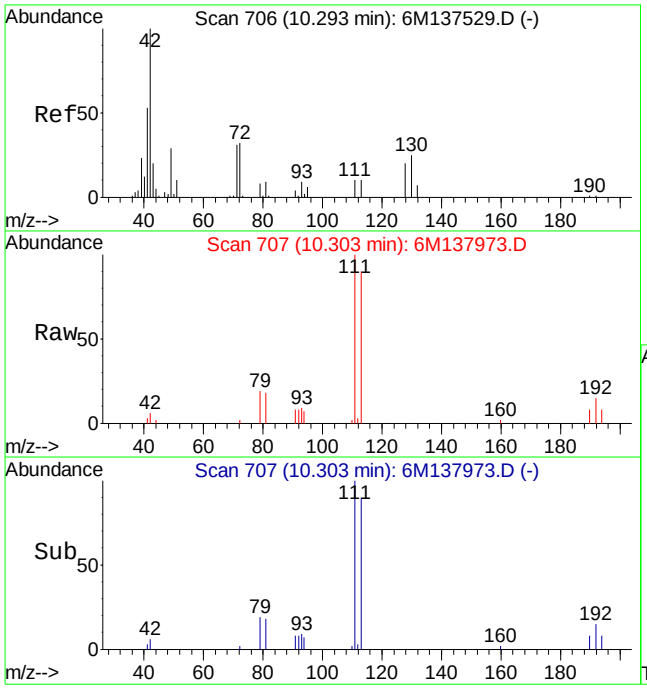

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.30 min Scan# 707
Delta R.T. 0.01 min
Lab File: 6M137973.D
Acq: 23 Mar 2016 17:10

Tgt Ion: 42 Resp: 2307

Ion	Ratio	Lower	Upper
42	100		
72	9.6	21.0	49.0#
71	9.0	20.6	48.2#

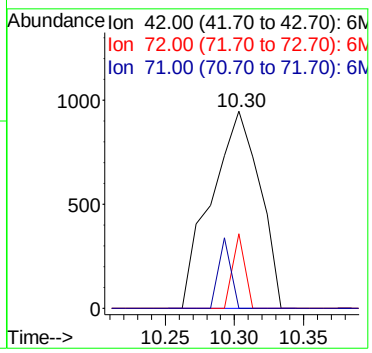

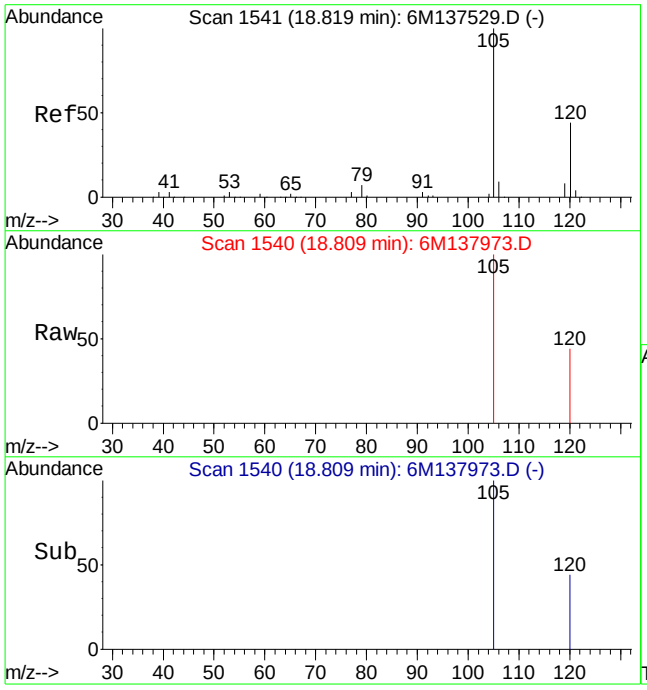

#90
1,2,4-Trimethylbenzene
Concen: 0.32 ug/L
RT: 18.81 min Scan# 1540
Delta R.T. -0.01 min
Lab File: 6M137973.D
Acq: 23 Mar 2016 17:10

Tgt Ion:105 Resp: 3503

Ion	Ratio	Lower	Upper
105	100		
120	39.5	34.3	79.9

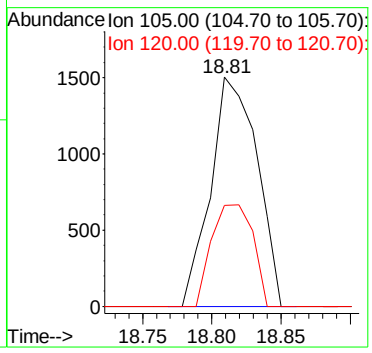

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032316\6M137969.D Vial: 7
Acq On : 23 Mar 2016 14:59 Operator: TMB
Sample : L16030863-02 MS 8260 5.34g Inst : HPMS6
Misc : 7,1 STD75209 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 15:24:08 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	562982	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	419602	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	220797	50.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.33	111	144445	47.8288 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.66%		
43) 1,2-Dichloroethane-d4	11.06	65	172815	44.0726 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 88.14%		
58) Toluene-d8	13.80	98	504530	50.5733 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.14%		
80) p-Bromofluorobenzene	17.79	95	209273	51.6013 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 103.20%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	118578	22.9338 ug/L	97
3) Chloromethane	3.88	50	87883	16.3110 ug/L	95
4) Vinyl Chloride	4.12	62	94290	21.7422 ug/L	98
5) 1,3-Butadiene	4.16	54	43028	11.9251 ug/L	93
6) Bromomethane	5.03	94	50201	21.7153 ug/L	98
7) Chloroethane	5.20	64	58472	23.7787 ug/L	98
8) Trichlorofluoromethane	5.70	101	119305	20.4736 ug/L	99
9) Diethyl ether	6.25	59	1701	0.6345 ug/L	84
10) Isoprene	6.28	67	98795	26.0247 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	68807	24.7379 ug/L	94
13) Acetone	6.60	43	25247	17.0595 ug/L	94
14) 1,1-Dichloroethene	6.83	61	105328	21.3788 ug/L	94
15) Tert-Butyl Alcohol	6.84	59	3686	8.0181 ug/L #	57
16) Dimethyl Sulfide	7.12	62	76677	32.0785 ug/L	96
17) Iodomethane	7.38	142	48312	25.2682 ug/L	97
18) Methyl acetate	7.39	43	69979	20.4392 ug/L	97
19) Methylene Chloride	7.67	84	66015	22.2490 ug/L	86
20) Carbon Disulfide	7.72	76	195902	20.7823 ug/L	98
21) Acrylonitrile	7.87	53	30190	21.4552 ug/L	98
22) Methyl Tert Butyl Ether	7.89	73	197943	23.3606 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	62302	22.8908 ug/L	88
24) n-Hexane	8.24	57	116070	23.4850 ug/L	99
26) Vinyl Acetate	8.80	43	135343	20.4332 ug/L	99
27) 1,1-Dichloroethane	8.84	63	121765	20.7510 ug/L	97
29) 2-Butanone	9.46	43	39934	20.5210 ug/L	97
31) 2,2-Dichloropropane	9.69	77	107291	22.7790 ug/L	93
32) cis-1,2-Dichloroethene	9.77	96	68657	22.5955 ug/L	96
33) Chloroform	10.01	83	115468	21.0702 ug/L	97
34) 1-Bromopropane	10.16	122	15624	37.5048 ug/L	99
35) Bromochloromethane	10.27	130	39295	22.0098 ug/L	100
36) Tetrahydrofuran	10.29	42	2252	Below Cal #	57
38) 1,1,1-Trichloroethane	10.60	97	104274	21.5417 ug/L	99
39) Cyclohexane	10.63	56	134528	24.5089 ug/L	87
40) 1,1-Dichloropropene	10.82	75	88414	22.6807 ug/L	95
42) Carbon Tetrachloride	10.99	117	96341	21.3007 ug/L	97
45) 1,2-Dichloroethane	11.19	62	97293	20.8007 ug/L	99
46) Benzene	11.23	78	254990	21.7428 ug/L	93
47) Trichloroethene	12.09	130	65218	23.5398 ug/L	98
48) Methylcyclohexane	12.18	83	113778	25.4035 ug/L	90
49) 1,2-Dichloropropane	12.34	63	71880	22.7794 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M137969.D 826_SL.M Wed Mar 23 15:24:08 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032316\6M137969.D Vial: 7
Acq On : 23 Mar 2016 14:59 Operator: TMB
Sample : L16030863-02 MS 8260 5.34g Inst : HPMS6
Misc : 7,1 STD75209 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 15:24:08 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
51)	Bromodichloromethane	12.68	83	87445	21.1173 ug/L	96
52)	Dibromomethane	12.78	93	38212	20.7041 ug/L	98
53)	2-Chloroethyl Vinyl Ether	13.04	63	39956	23.0215 ug/L	98
54)	4-Methyl-2-Pentanone	13.07	58	29085	22.1313 ug/L	96
55)	cis-1,3-Dichloropropene	13.43	75	112316	24.6180 ug/L	98
56)	Dimethyl Disulfide	13.72	79	55377	24.0661 ug/L	98
59)	Toluene	13.91	91	259164	21.8346 ug/L	98
60)	Ethyl Methacrylate	14.04	69	85127	22.3833 ug/L	97
62)	trans-1,3-Dichloropropene	14.12	75	98078	21.4888 ug/L	99
63)	1,1,2-Trichloroethane	14.38	97	54373	21.9167 ug/L	98
64)	2-Hexanone	14.31	43	57550	20.3290 ug/L	97
65)	1,3-Dichloropropane	14.73	76	101312	22.5309 ug/L	99
66)	Tetrachloroethene	14.87	166	66363	22.6649 ug/L	98
67)	Dibromochloromethane	15.18	129	66442	20.5924 ug/L	100
68)	1,2-Dibromoethane	15.48	107	54675	21.5495 ug/L	99
69)	1-Chlorohexane	15.59	91	89419	24.2594 ug/L	88
70)	Chlorobenzene	16.07	112	171622	22.4978 ug/L	70
71)	1,1,1,2-Tetrachloroethane	16.11	131	63896	20.8609 ug/L	97
72)	Ethylbenzene	16.10	106	90834	22.2514 ug/L	95
73)	m-,p-Xylene	16.22	106	227060	45.4587 ug/L	97
74)	o-Xylene	16.88	106	112387	23.8890 ug/L	96
75)	Styrene	16.92	104	181320	22.6444 ug/L	96
76)	Bromoform	17.49	173	42716	18.7503 ug/L	99
77)	Isopropylbenzene	17.38	105	298915	23.6360 ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.65	83	74715	21.6618 ug/L	95
81)	1,2,3-Trichloropropane	17.87	110	23610	22.3568 ug/L	94
82)	trans-1,4-Dichloro-2-Buten	17.93	53	21547	16.9218 ug/L	86
83)	n-Propylbenzene	17.98	91	364556	24.3123 ug/L	99
84)	Bromobenzene	18.13	156	73166	22.4478 ug/L	98
85)	1,3,5-Trimethylbenzene	18.21	105	258915	24.2584 ug/L	97
86)	2-Chlorotoluene	18.30	91	233883	23.3686 ug/L	96
87)	4-Chlorotoluene	18.36	91	216614	23.6702 ug/L	96
88)	a-Methylstyrene	18.69	118	128370	24.7668 ug/L	99
89)	tert-Butylbenzene	18.76	134	53756	24.1675 ug/L	96
90)	1,2,4-Trimethylbenzene	18.82	105	260068	23.1694 ug/L	82
91)	sec-Butylbenzene	19.07	105	329879	24.1343 ug/L	99
92)	p-Isopropyltoluene	19.27	119	271065	24.0374 ug/L	100
93)	1,3-Dichlorobenzene	19.48	146	145818	23.1214 ug/L	98
94)	1,4-Dichlorobenzene	19.64	146	147018	22.9016 ug/L	97
95)	n-Butylbenzene	19.89	91	259673	22.8948 ug/L	98
96)	1,2-Dichlorobenzene	20.23	146	139848	23.0445 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	21.41	75	15683	20.5500 ug/L	92
98)	1,2,4-Trichlorobenzene	22.76	180	100299	22.8619 ug/L	98
99)	Hexachlorobutadiene	22.96	225	60481	24.1059 ug/L	99
100)	Naphthalene	23.20	128	209308	20.7531 ug/L	99
101)	1,2,3-Trichlorobenzene	23.59	180	95851	22.1878 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M137969.D 826_SL.M Wed Mar 23 15:24:09 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032316\6M137969.D Vial: 7
Acq On : 23 Mar 2016 14:59 Operator: TMB
Sample : L16030863-02 MS 8260 5.34g Inst : HPMS6
Misc : 7,1 STD75209 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 15:24 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

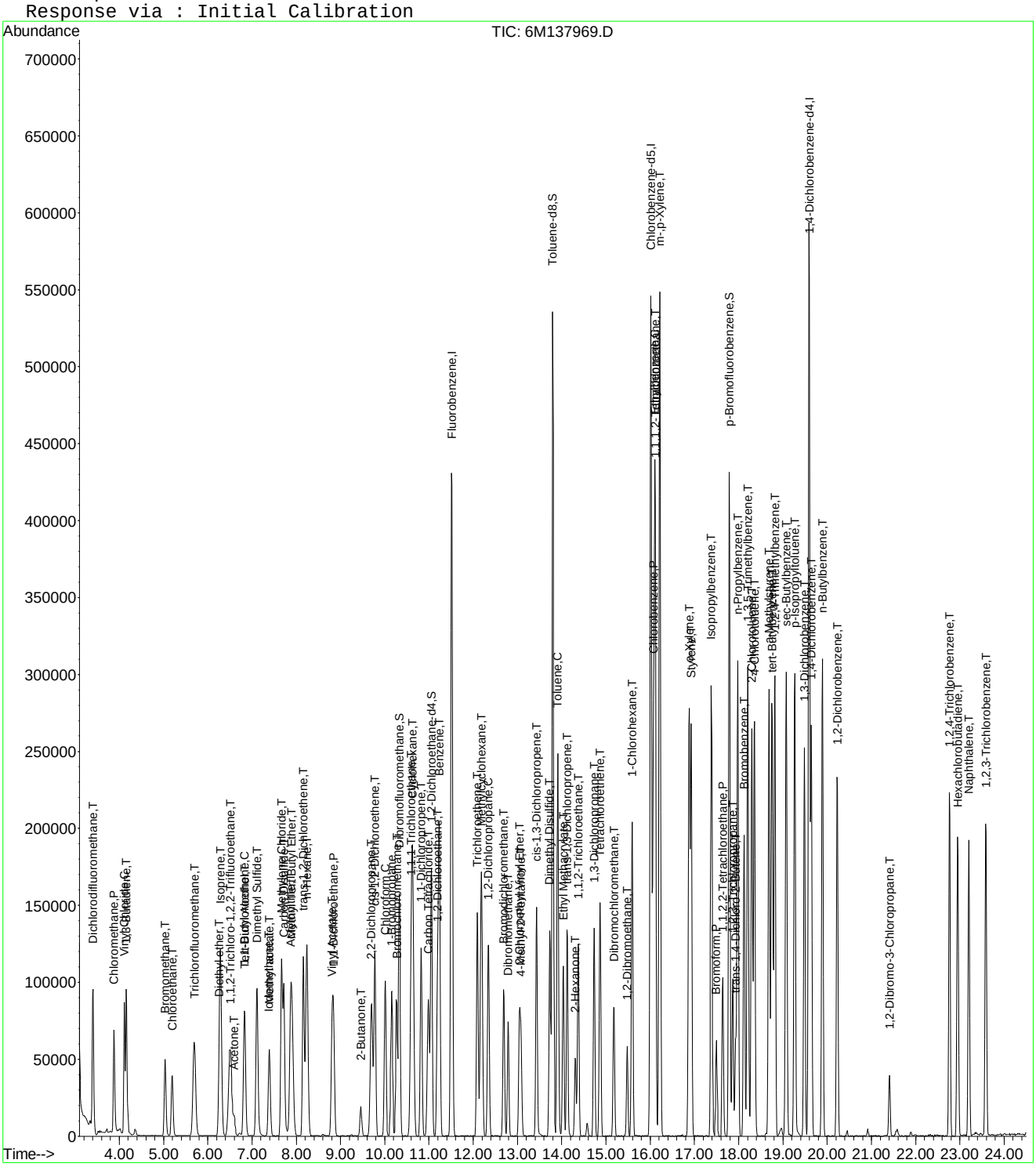

6M137969.D 826_SL.M Wed Mar 23 15:24:09 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032316\6M137970.D Vial: 8
Acq On : 23 Mar 2016 15:32 Operator: TMB
Sample : L16030863-03 MSD 8260 4.54g Inst : HPMS6
Misc : 7,1 STD75209 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 15:56:51 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	555350	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	412191	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	221130	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	139718	46.8994 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.80%		
43) 1,2-Dichloroethane-d4	11.06	65	165925	42.8970 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 85.80%		
58) Toluene-d8	13.80	98	495316	50.5424 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.08%		
80) p-Bromofluorobenzene	17.79	95	205069	50.4885 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 100.98%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	115420	22.6298 ug/L	98
3) Chloromethane	3.88	50	89443	16.8286 ug/L	97
4) Vinyl Chloride	4.12	62	90373	21.1254 ug/L	99
5) 1,3-Butadiene	4.16	54	44025	12.3691 ug/L	95
6) Bromomethane	5.04	94	49488	21.7011 ug/L	100
7) Chloroethane	5.19	64	57542	23.7221 ug/L	99
8) Trichlorofluoromethane	5.70	101	117918	20.5137 ug/L	99
9) Diethyl ether	6.24	59	1322	0.4999 ug/L #	78
10) Isoprene	6.28	67	94819	25.3205 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	64925	23.6630 ug/L	95
13) Acetone	6.60	43	25250	17.3569 ug/L	95
14) 1,1-Dichloroethene	6.83	61	103424	21.2808 ug/L	95
15) Tert-Butyl Alcohol	6.93	59	186	0.4102 ug/L #	57
16) Dimethyl Sulfide	7.12	62	72288	30.6579 ug/L	97
17) Iodomethane	7.38	142	46132	24.6184 ug/L	95
18) Methyl acetate	7.39	43	76016	22.5075 ug/L	97
19) Methylene Chloride	7.67	84	63128	21.5684 ug/L	84
20) Carbon Disulfide	7.72	76	186287	20.0339 ug/L	100
21) Acrylonitrile	7.86	53	29489	21.2450 ug/L	98
22) Methyl Tert Butyl Ether	7.89	73	185401	22.1812 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	61499	22.9063 ug/L	91
24) n-Hexane	8.24	57	110501	22.6654 ug/L	98
26) Vinyl Acetate	8.80	43	107446	16.4444 ug/L	98
27) 1,1-Dichloroethane	8.83	63	118714	20.5091 ug/L	99
29) 2-Butanone	9.46	43	39394	20.5217 ug/L	99
31) 2,2-Dichloropropane	9.70	77	103974	22.3782 ug/L	93
32) cis-1,2-Dichloroethene	9.77	96	66577	22.2121 ug/L	96
33) Chloroform	10.01	83	111891	20.6981 ug/L	97
34) 1-Bromopropane	10.16	122	15262	37.1393 ug/L	100
35) Bromochloromethane	10.26	130	37545	21.3186 ug/L	98
36) Tetrahydrofuran	10.29	42	3088	0.2772 ug/L #	66
38) 1,1,1-Trichloroethane	10.60	97	101181	21.1900 ug/L	99
39) Cyclohexane	10.64	56	127756	23.5950 ug/L	87
40) 1,1-Dichloropropene	10.83	75	84774	22.0458 ug/L	96
41) Tert-Amyl-Methyl ether	10.83	73	12142	1.5108 ug/L #	53
42) Carbon Tetrachloride	10.99	117	95879	21.4899 ug/L	95
45) 1,2-Dichloroethane	11.19	62	94351	20.4490 ug/L	99
46) Benzene	11.23	78	247181	21.3666 ug/L	94
47) Trichloroethene	12.09	130	63404	23.1996 ug/L	96
48) Methylcyclohexane	12.18	83	106473	24.0992 ug/L	89

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032316\6M137970.D Vial: 8
Acq On : 23 Mar 2016 15:32 Operator: TMB
Sample : L16030863-03 MSD 8260 4.54g Inst : HPMS6
Misc : 7,1 STD75209 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 15:56:51 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
49)	1,2-Dichloropropane	12.34	63	70757	22.7316	ug/L	98
51)	Bromodichloromethane	12.68	83	83669	20.4831	ug/L	95
52)	Dibromomethane	12.79	93	36443	20.0170	ug/L	97
53)	2-Chloroethyl Vinyl Ether	13.04	63	35438	20.6989	ug/L	99
54)	4-Methyl-2-Pentanone	13.07	58	28935	22.3198	ug/L	95
55)	cis-1,3-Dichloropropene	13.43	75	105177	23.3701	ug/L	97
56)	Dimethyl Disulfide	13.73	79	49868	21.9698	ug/L	96
59)	Toluene	13.91	91	253133	21.7099	ug/L	99
60)	Ethyl Methacrylate	14.04	69	73735	19.7365	ug/L	98
62)	trans-1,3-Dichloropropene	14.12	75	91409	20.3877	ug/L	99
63)	1,1,2-Trichloroethane	14.38	97	51274	21.0392	ug/L	98
64)	2-Hexanone	14.31	43	56003	20.1383	ug/L	95
65)	1,3-Dichloropropane	14.74	76	96856	21.9272	ug/L	98
66)	Tetrachloroethene	14.87	166	63093	21.9355	ug/L	99
67)	Dibromochloromethane	15.18	129	63825	20.1370	ug/L	99
68)	1,2-Dibromoethane	15.48	107	52312	20.9889	ug/L	98
69)	1-Chlorohexane	15.59	91	85038	23.4856	ug/L	90
70)	Chlorobenzene	16.07	112	164228	21.9156	ug/L	70
71)	1,1,1,2-Tetrachloroethane	16.11	131	61475	20.4313	ug/L	97
72)	Ethylbenzene	16.10	106	88632	22.1024	ug/L	97
73)	m-,p-Xylene	16.22	106	220850	45.0104	ug/L	98
74)	o-Xylene	16.88	106	107415	23.2426	ug/L	94
75)	Styrene	16.92	104	174280	22.1565	ug/L	96
76)	Bromoform	17.49	173	41938	18.7398	ug/L	98
77)	Isopropylbenzene	17.38	105	287541	23.1455	ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.64	83	74582	21.5907	ug/L	97
81)	1,2,3-Trichloropropane	17.87	110	23646	22.3571	ug/L	98
82)	trans-1,4-Dichloro-2-Buten	17.93	53	20539	16.1059	ug/L	84
83)	n-Propylbenzene	17.98	91	348311	23.1939	ug/L	98
84)	Bromobenzene	18.13	156	70850	21.7045	ug/L	100
85)	1,3,5-Trimethylbenzene	18.21	105	248935	23.2882	ug/L	96
86)	2-Chlorotoluene	18.30	91	226595	22.6063	ug/L	96
87)	4-Chlorotoluene	18.35	91	205424	22.4136	ug/L	96
88)	a-Methylstyrene	18.69	118	122170	23.5351	ug/L	98
89)	tert-Butylbenzene	18.76	134	52840	23.7199	ug/L	85
90)	1,2,4-Trimethylbenzene	18.82	105	250443	22.2783	ug/L	81
91)	sec-Butylbenzene	19.08	105	318468	23.2644	ug/L	98
92)	p-Isopropyltoluene	19.27	119	259249	22.9550	ug/L	100
93)	1,3-Dichlorobenzene	19.48	146	139482	22.0834	ug/L	97
94)	1,4-Dichlorobenzene	19.64	146	142064	22.0966	ug/L	98
95)	n-Butylbenzene	19.89	91	248002	21.8329	ug/L	98
96)	1,2-Dichlorobenzene	20.23	146	134764	22.1733	ug/L	97
97)	1,2-Dibromo-3-Chloropropan	21.41	75	16485	21.5683	ug/L	90
98)	1,2,4-Trichlorobenzene	22.76	180	95607	21.7596	ug/L	98
99)	Hexachlorobutadiene	22.96	225	58173	23.1511	ug/L	98
100)	Naphthalene	23.20	128	213934	21.1798	ug/L	99
101)	1,2,3-Trichlorobenzene	23.59	180	93853	21.6926	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032316\6M137970.D Vial: 8
Acq On : 23 Mar 2016 15:32 Operator: TMB
Sample : L16030863-03 MSD 8260 4.54g Inst : HPMS6
Misc : 7,1 STD75209 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 15:56 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

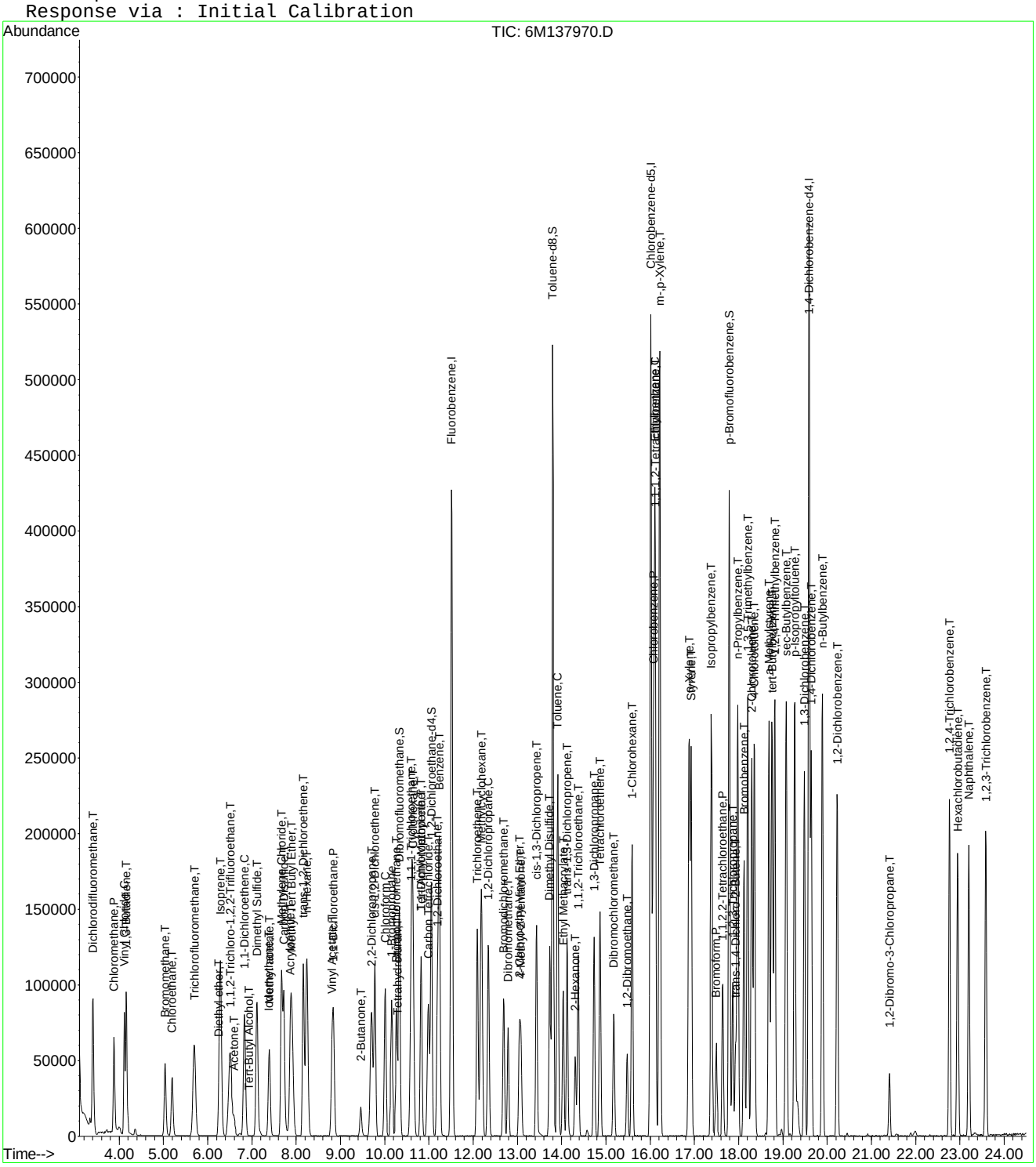

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137981.D Vial: 19
Acq On : 23 Mar 2016 21:32 Operator: TMB
Sample : L16030863-04 8260 4.97g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 08:29:44 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	558551	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	407934	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	213820	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	141077	47.0842 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.16%		
43) 1,2-Dichloroethane-d4	11.06	65	167351	43.0177 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 86.04%		
58) Toluene-d8	13.80	98	497566	51.3018 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 102.60%		
80) p-Bromofluorobenzene	17.79	95	201820	51.3874 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.78%		

Target Compounds

					Qvalue
11) Acrolein	6.50	56	1173	2.3224 ug/L	84
13) Acetone	6.60	43	11465	5.4266 ug/L #	1
15) Tert-Butyl Alcohol	6.64	59	1092	2.3943 ug/L #	1
20) Carbon Disulfide	7.73	76	3027	0.3237 ug/L #	75
29) 2-Butanone	9.46	43	909	0.4708 ug/L #	56
36) Tetrahydrofuran	10.30	42	2553	Below Cal #	53
82) trans-1,4-Dichloro-2-Buten	18.03	53	649	0.5263 ug/L #	1
90) 1,2,4-Trimethylbenzene	18.81	105	5268	0.4846 ug/L	80
91) sec-Butylbenzene	18.81	105	4330	0.3271 ug/L #	56

(#) = qualifier out of range (m) = manual integration
6M137981.D 826_SL.M Thu Mar 24 08:29:44 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137981.D Vial: 19
Acq On : 23 Mar 2016 21:32 Operator: TMB
Sample : L16030863-04 8260 4.97g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 8:29 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

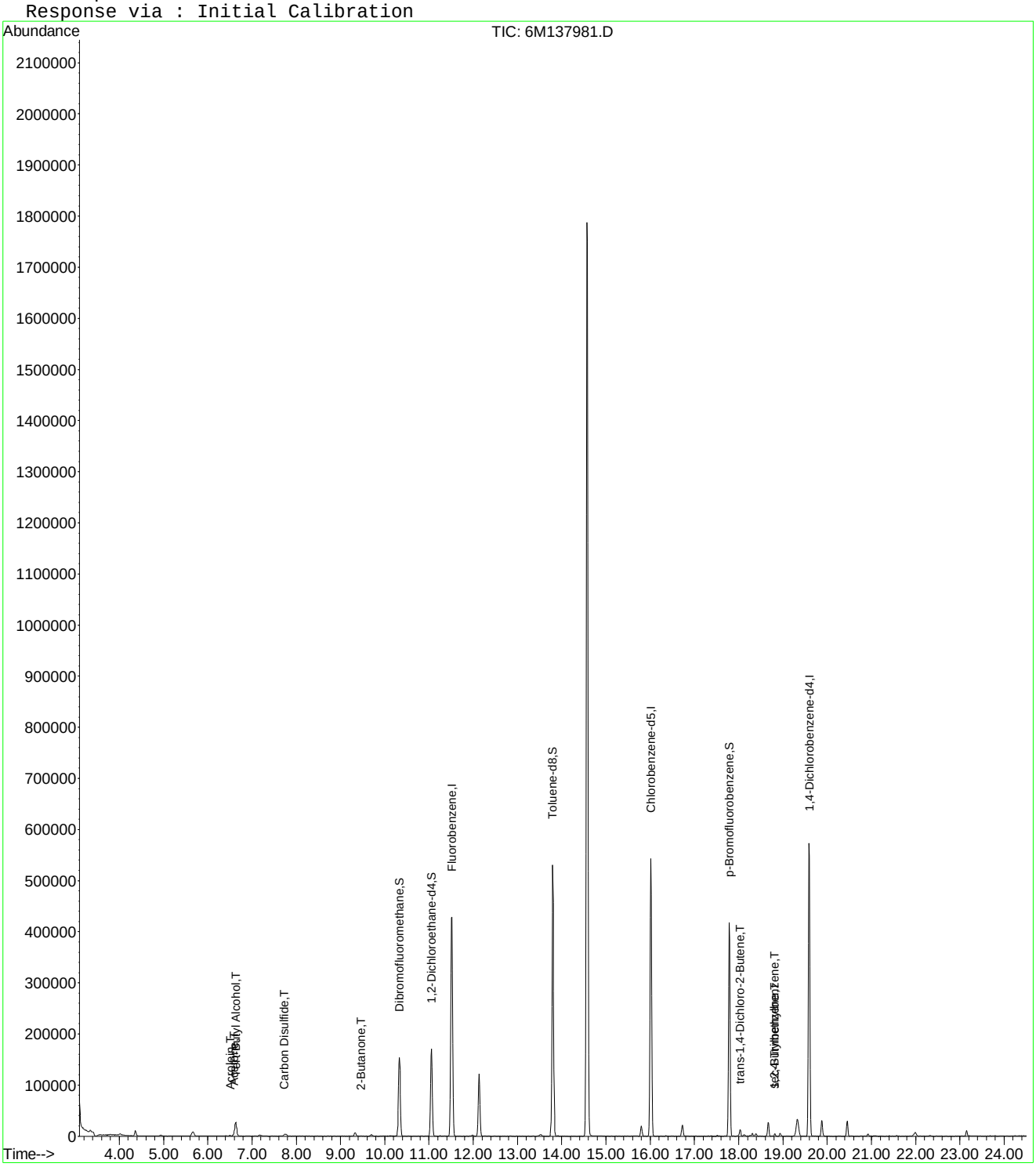

6M137981.D 826_SL.M Thu Mar 24 08:29:44 2016 Page 2

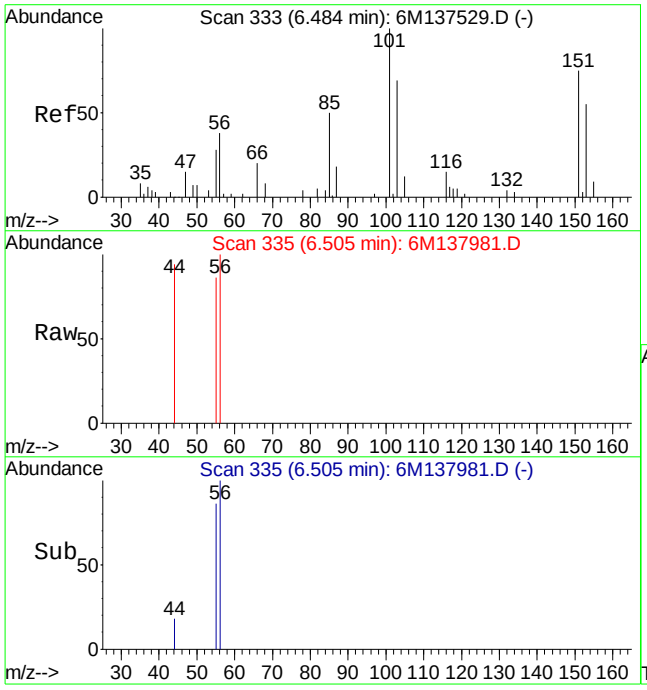

#11
Acrolein
Concen: 2.32 ug/L
RT: 6.50 min Scan# 335
Delta R.T. 0.02 min
Lab File: 6M137981.D
Acq: 23 Mar 2016 21:32

Tgt Ion: 56 Resp: 1173

Ion	Ratio	Lower	Upper
56	100		
55	61.0	44.6	104.0

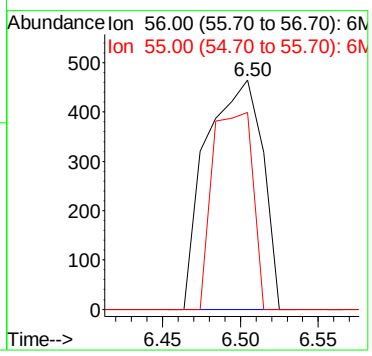

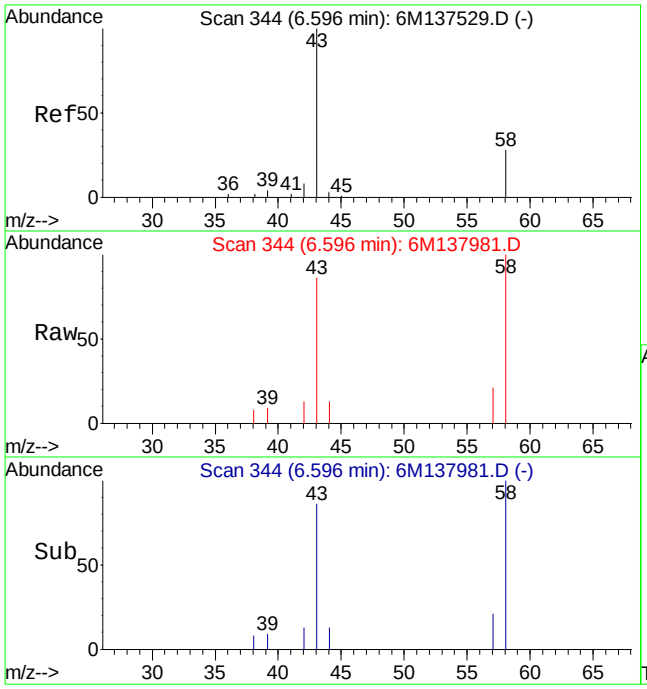

#13
Acetone
Concen: 5.43 ug/L
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137981.D
Acq: 23 Mar 2016 21:32

Tgt Ion: 43 Resp: 11465

Ion	Ratio	Lower	Upper
43	100		
58	445.6	16.1	37.7#

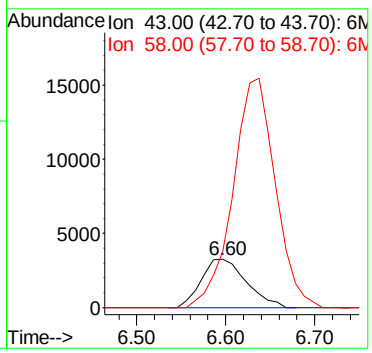

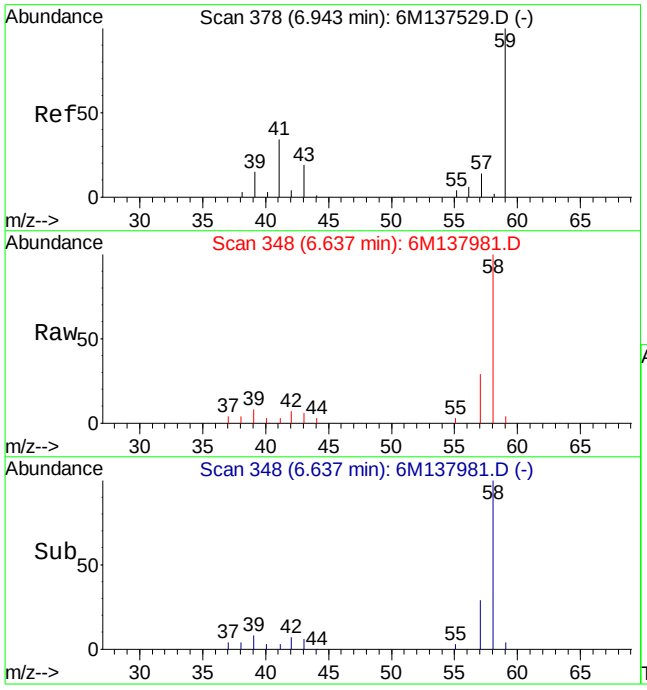

#15
Tert-Butyl Alcohol
Concen: 2.39 ug/L
RT: 6.64 min Scan# 348
Delta R.T. -0.30 min
Lab File: 6M137981.D
Acq: 23 Mar 2016 21:32

Tgt Ion: 59 Resp: 1092

Ion	Ratio	Lower	Upper
59	100		
41	70.3	15.0	35.0#
57	1280.4	5.9	13.9#

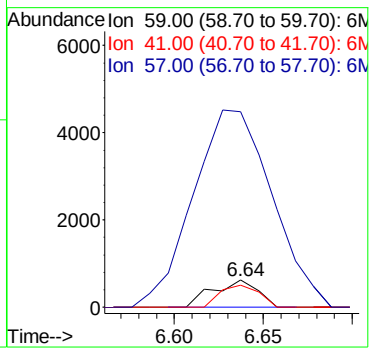

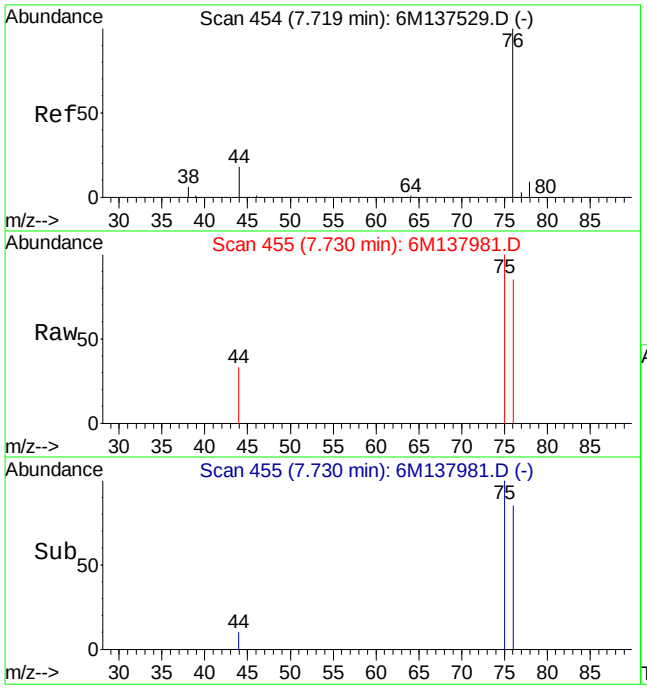

#20
Carbon Disulfide
Concen: 0.32 ug/L
RT: 7.73 min Scan# 455
Delta R.T. 0.01 min
Lab File: 6M137981.D
Acq: 23 Mar 2016 21:32

Tgt Ion: 76 Resp: 3027

Ion	Ratio	Lower	Upper
76	100		
78	0.0	5.3	12.5#

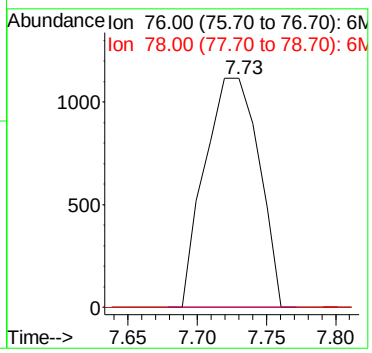

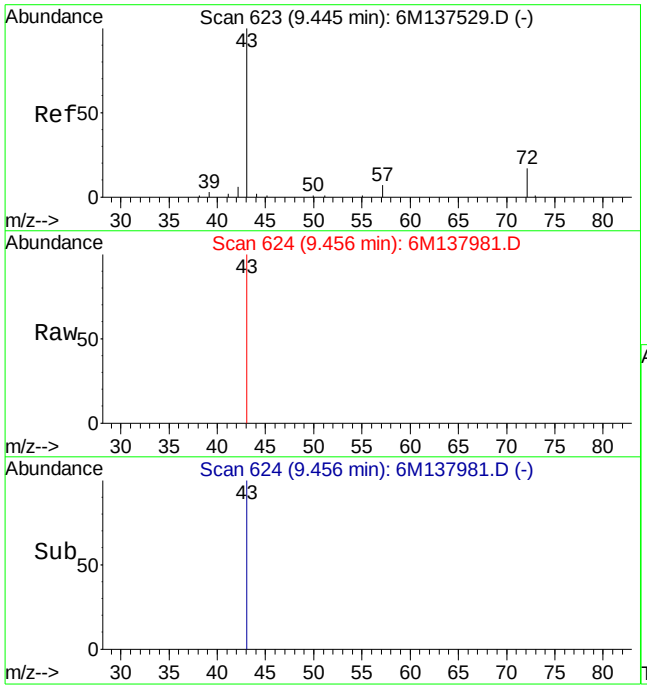

#29
2-Butanone
Concen: 0.47 ug/L
RT: 9.46 min Scan# 624
Delta R.T. 0.01 min
Lab File: 6M137981.D
Acq: 23 Mar 2016 21:32

Tgt Ion: 43 Resp: 909

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.2	28.4#

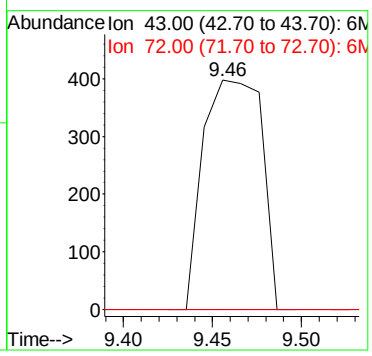

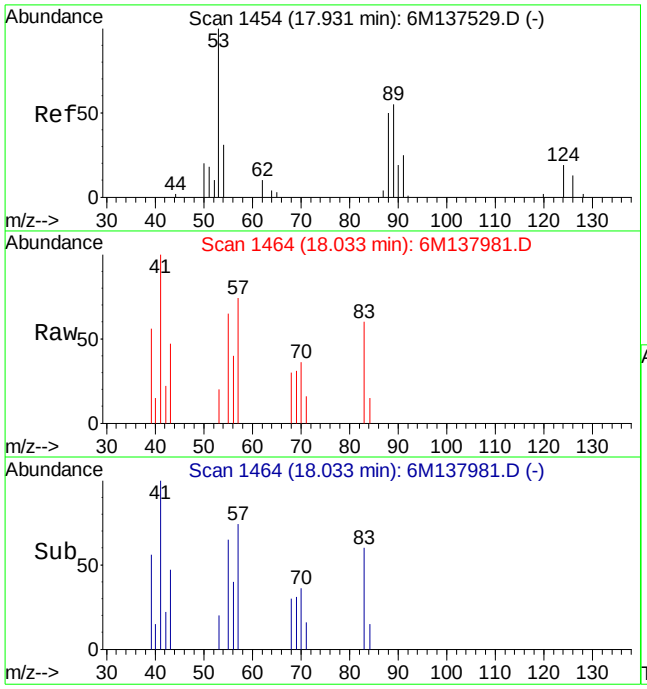

#82
trans-1,4-Dichloro-2-Butene
Concen: 0.53 ug/L
RT: 18.03 min Scan# 1464
Delta R.T. 0.10 min
Lab File: 6M137981.D
Acq: 23 Mar 2016 21:32

Tgt Ion: 53 Resp: 649

Ion	Ratio	Lower	Upper
53	100		
75	0.0	69.2	161.6#

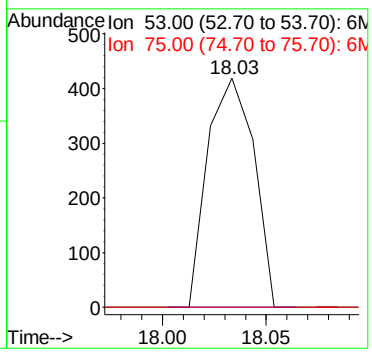

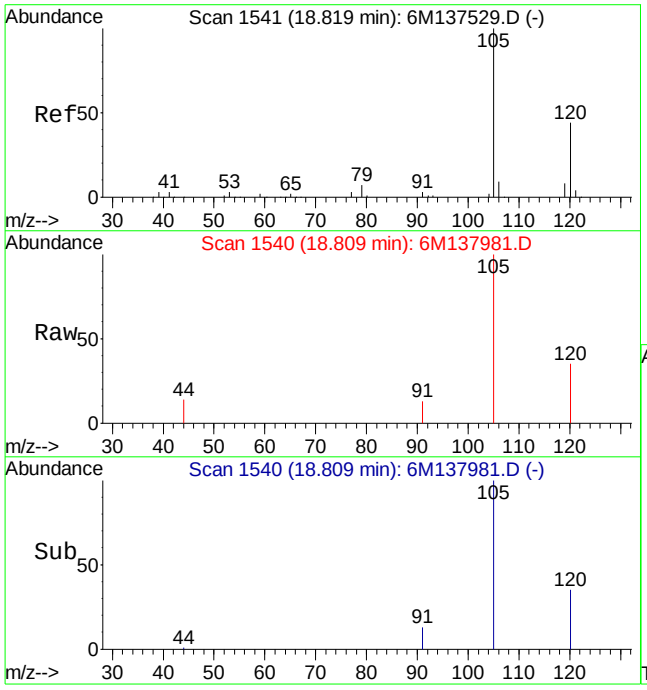

#90
1,2,4-Trimethylbenzene
Concen: 0.48 ug/L
RT: 18.81 min Scan# 1540
Delta R.T. -0.01 min
Lab File: 6M137981.D
Acq: 23 Mar 2016 21:32

Tgt Ion:105 Resp: 5268

Ion	Ratio	Lower	Upper
105	100		
120	42.2	34.3	79.9

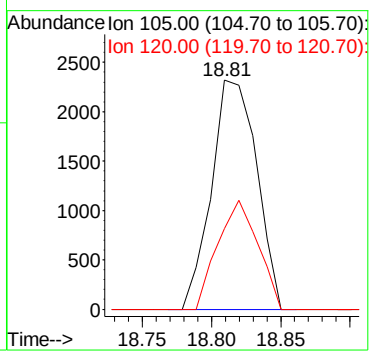

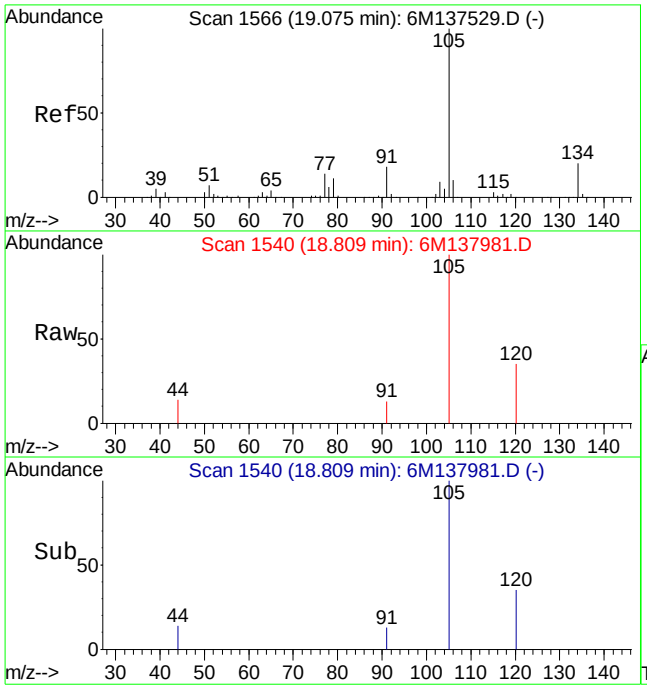

#91
sec-Butylbenzene
Concen: 0.33 ug/L
RT: 18.81 min Scan# 1540
Delta R.T. -0.27 min
Lab File: 6M137981.D
Acq: 23 Mar 2016 21:32

Tgt Ion:105 Resp: 4330

Ion	Ratio	Lower	Upper
105	100		
134	0.0	12.2	28.6#

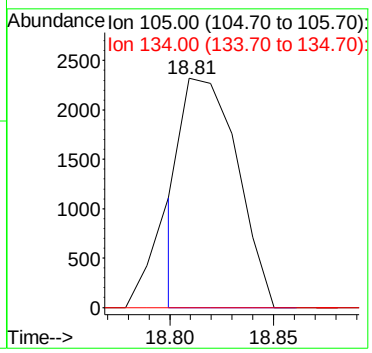

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137982.D Vial: 20
Acq On : 23 Mar 2016 22:05 Operator: TMB
Sample : L16030863-05 8260 4.68g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 08:29:45 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	536787	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	393377	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	200556	50.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.33	111	136071	47.2547 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.50%		
43) 1,2-Dichloroethane-d4	11.06	65	163649	43.7717 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 87.54%		
58) Toluene-d8	13.80	98	476294	50.9258 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.86%		
80) p-Bromofluorobenzene	17.79	95	191413	51.9609 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 103.92%		
Target Compounds					Qvalue
13) Acetone	6.60	43	10264	4.7544 ug/L #	1
36) Tetrahydrofuran	10.30	42	2309	Below Cal #	48
90) 1,2,4-Trimethylbenzene	18.82	105	4445	0.4360 ug/L	72
91) sec-Butylbenzene	18.82	105	3459	0.2786 ug/L #	56

(#) = qualifier out of range (m) = manual integration
6M137982.D 826_SL.M Thu Mar 24 08:29:45 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137982.D Vial: 20
Acq On : 23 Mar 2016 22:05 Operator: TMB
Sample : L16030863-05 8260 4.68g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 8:29 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

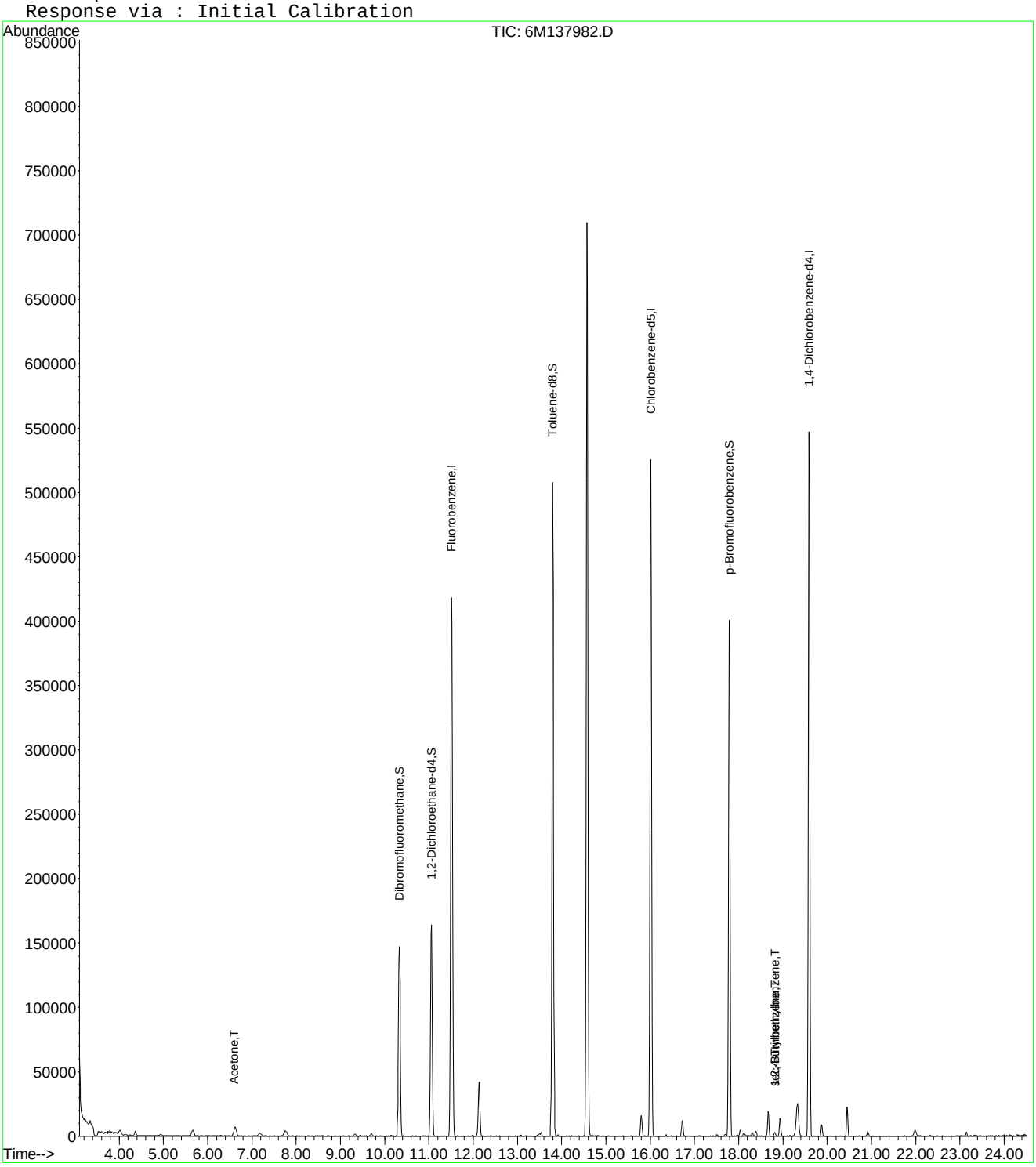

6M137982.D 826_SL.M Thu Mar 24 08:29:45 2016 Page 2

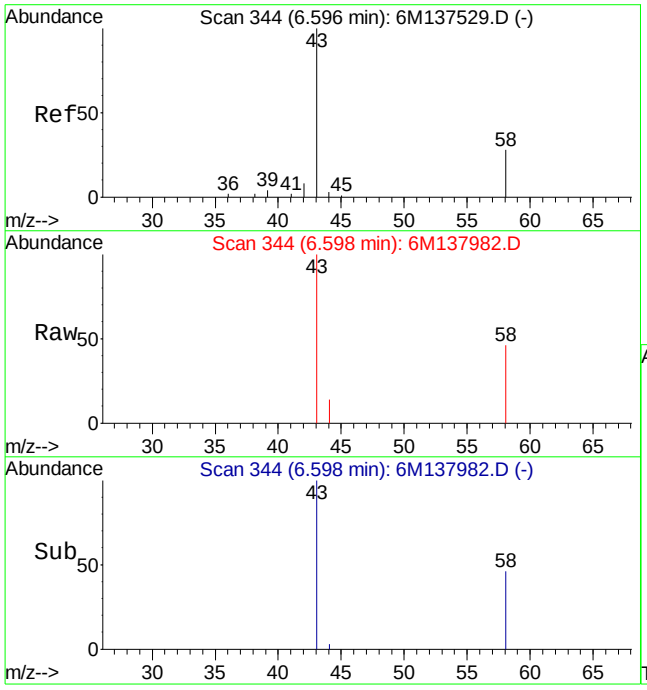

#13
Acetone
Concen: 4.75 ug/L
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137982.D
Acq: 23 Mar 2016 22:05

Tgt Ion: 43 Resp: 10264

Ion	Ratio	Lower	Upper
43	100		
58	127.1	16.1	37.7#

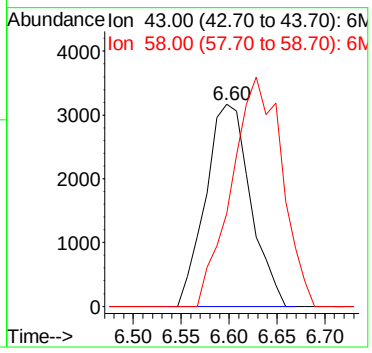

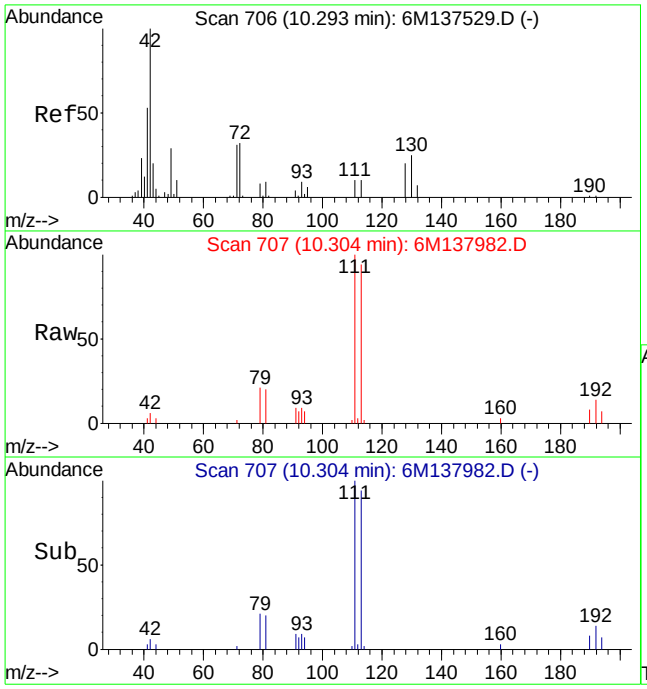

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.30 min Scan# 707
Delta R.T. 0.01 min
Lab File: 6M137982.D
Acq: 23 Mar 2016 22:05

Tgt Ion: 42 Resp: 2309

Ion	Ratio	Lower	Upper
42	100		
72	0.0	21.0	49.0#
71	9.0	20.6	48.2#

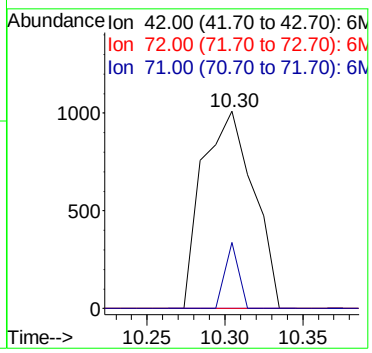

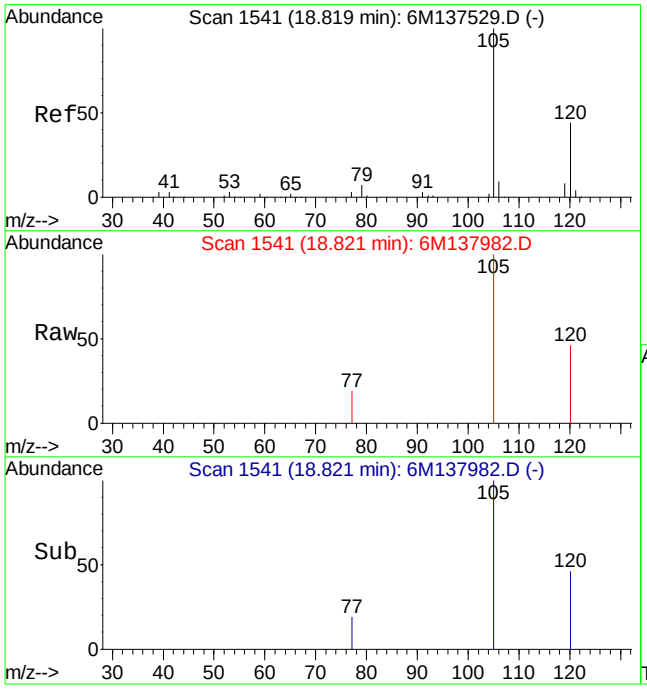

#90
1,2,4-Trimethylbenzene
Concen: 0.44 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. 0.00 min
Lab File: 6M137982.D
Acq: 23 Mar 2016 22:05

Tgt Ion:105 Resp: 4445

Ion	Ratio	Lower	Upper
105	100		
120	36.2	34.3	79.9

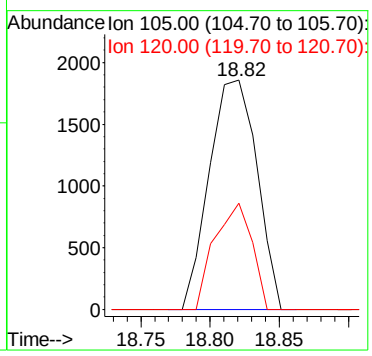

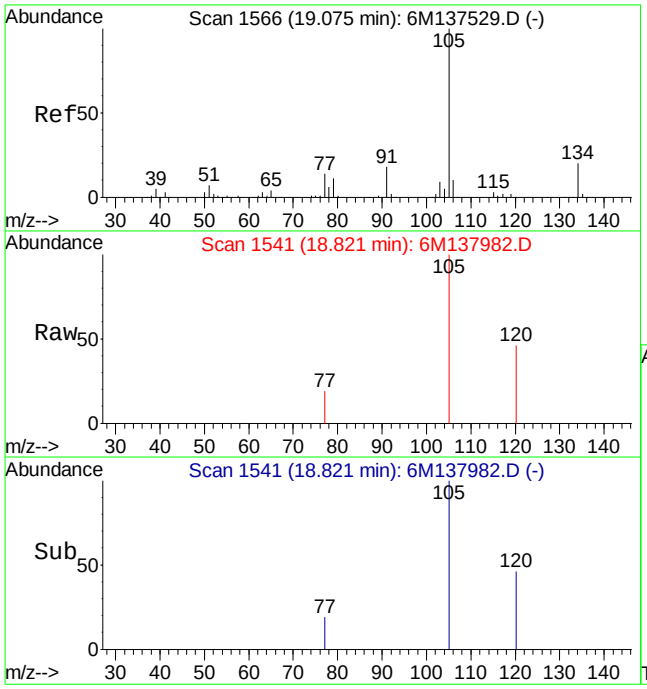

#91
sec-Butylbenzene
Concen: 0.28 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. -0.25 min
Lab File: 6M137982.D
Acq: 23 Mar 2016 22:05

Tgt Ion:105 Resp: 3459

Ion	Ratio	Lower	Upper
105	100		
134	0.0	12.2	28.6#

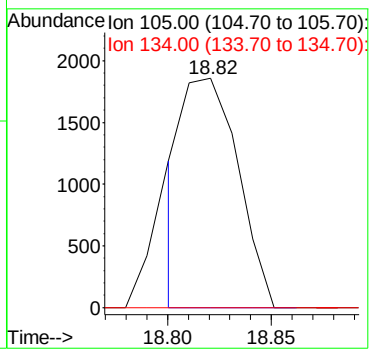

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137983.D Vial: 21
Acq On : 23 Mar 2016 22:38 Operator: TMB
Sample : L16030863-06 8260 5.07g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 08:29:46 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	558510	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	409329	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	215852	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	140281	46.8220 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.64%		
43) 1,2-Dichloroethane-d4	11.06	65	171035	43.9679 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 87.94%		
58) Toluene-d8	13.80	98	495304	50.8945 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.78%		
80) p-Bromofluorobenzene	17.79	95	202968	51.1932 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.38%		

Target Compounds					Qvalue
13) Acetone	6.60	43	9662	3.8831 ug/L #	1
29) 2-Butanone	9.47	43	1604	0.8309 ug/L #	56
36) Tetrahydrofuran	10.30	42	2260	Below Cal #	47
47) Trichloroethene	12.10	130	6514	2.3700 ug/L	99
60) Ethyl Methacrylate	13.81	69	933	0.2515 ug/L	66
90) 1,2,4-Trimethylbenzene	18.82	105	4409	0.4018 ug/L	78
91) sec-Butylbenzene	18.82	105	3486	0.2609 ug/L #	56

(#) = qualifier out of range (m) = manual integration
6M137983.D 826_SL.M Thu Mar 24 08:29:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137983.D Vial: 21
Acq On : 23 Mar 2016 22:38 Operator: TMB
Sample : L16030863-06 8260 5.07g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 8:29 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

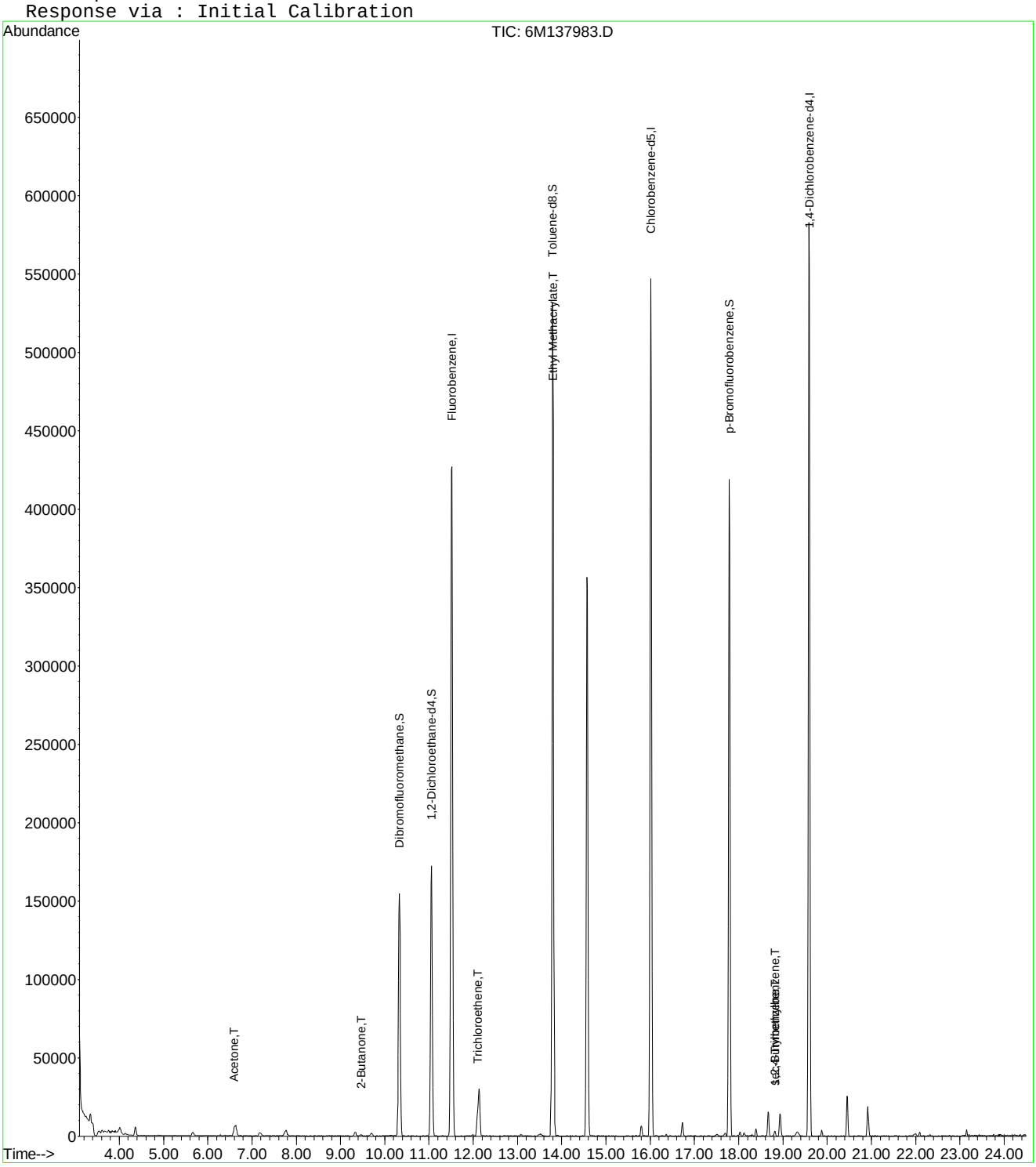

6M137983.D 826_SL.M Thu Mar 24 08:29:46 2016 Page 2

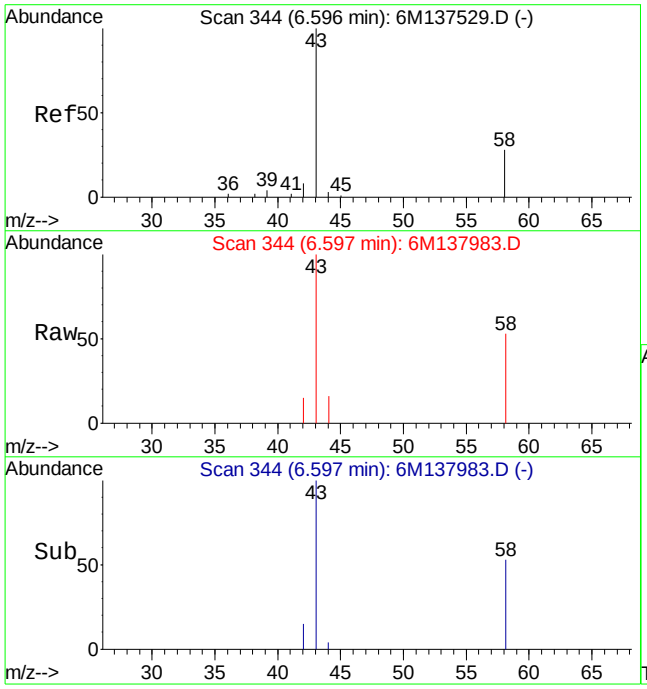

#13
Acetone
Concen: 3.88 ug/L
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137983.D
Acq: 23 Mar 2016 22:38

Tgt Ion: 43 Resp: 9662

Ion	Ratio	Lower	Upper
43	100		
58	143.0	16.1	37.7#

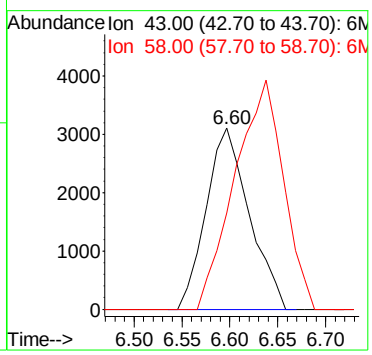

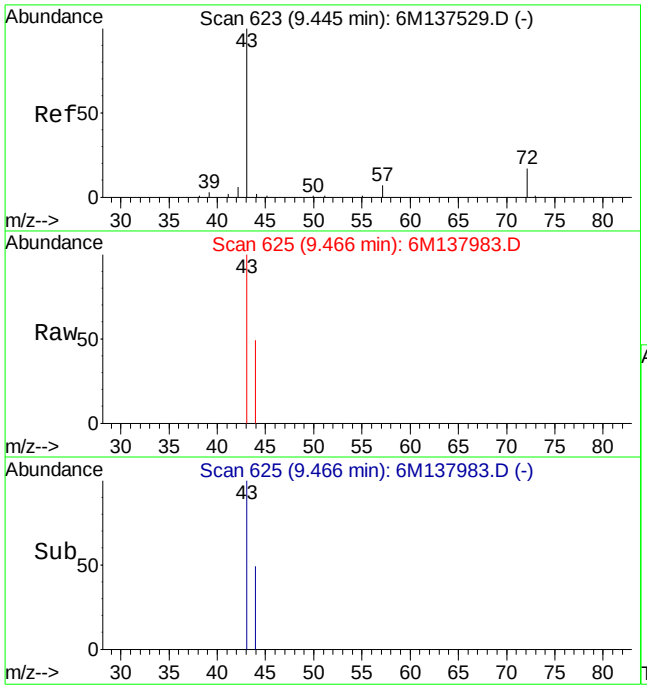

#29
2-Butanone
Concen: 0.83 ug/L
RT: 9.47 min Scan# 625
Delta R.T. 0.02 min
Lab File: 6M137983.D
Acq: 23 Mar 2016 22:38

Tgt Ion: 43 Resp: 1604

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.2	28.4#

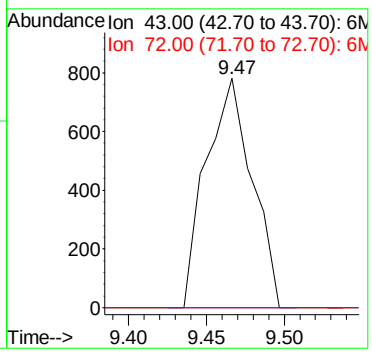

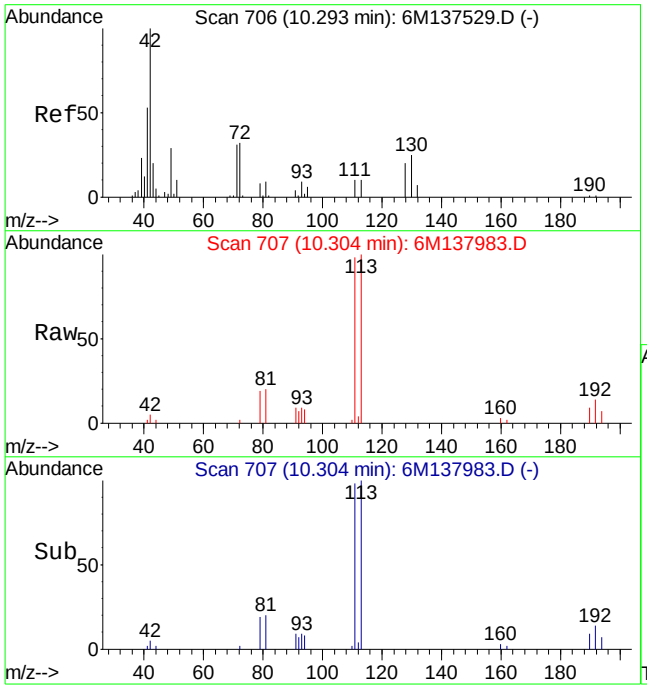

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.30 min Scan# 707
Delta R.T. 0.01 min
Lab File: 6M137983.D
Acq: 23 Mar 2016 22:38

Tgt Ion: 42 Resp: 2260

Ion	Ratio	Lower	Upper
42	100		
72	8.6	21.0	49.0#
71	0.0	20.6	48.2#

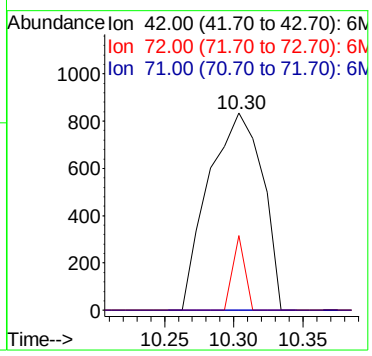

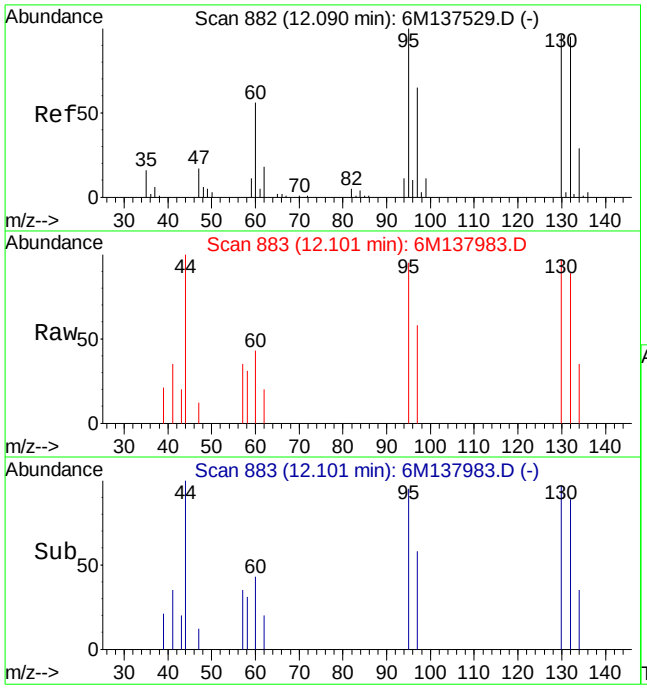

#47
Trichloroethene
Concen: 2.37 ug/L
RT: 12.10 min Scan# 883
Delta R.T. 0.01 min
Lab File: 6M137983.D
Acq: 23 Mar 2016 22:38

Tgt Ion:130 Resp: 6514

Ion	Ratio	Lower	Upper
130	100		
60	52.4	31.2	72.8

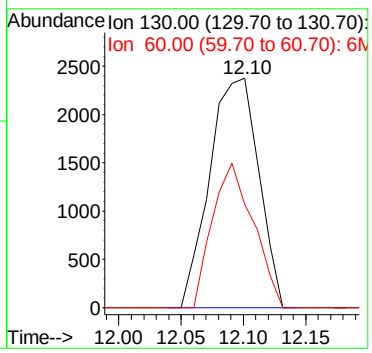

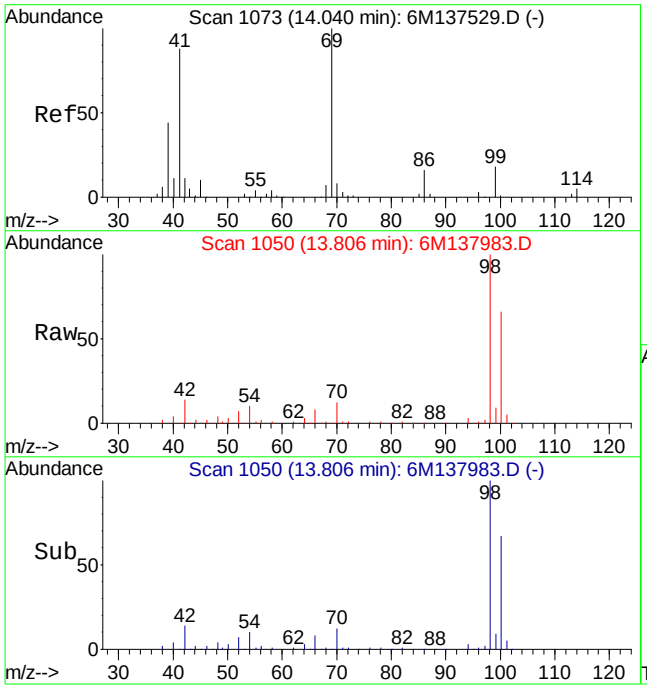

#60
Ethyl Methacrylate
Concen: 0.25 ug/L
RT: 13.81 min Scan# 1050
Delta R.T. -0.22 min
Lab File: 6M137983.D
Acq: 23 Mar 2016 22:38

Tgt Ion: 69 Resp: 933

Ion	Ratio	Lower	Upper
69	100		
41	115.0	50.6	118.2

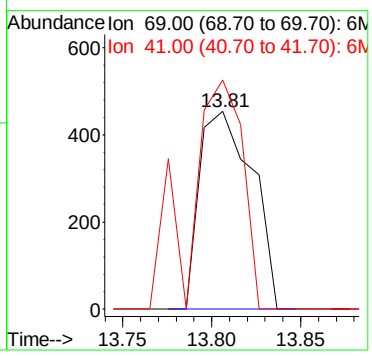

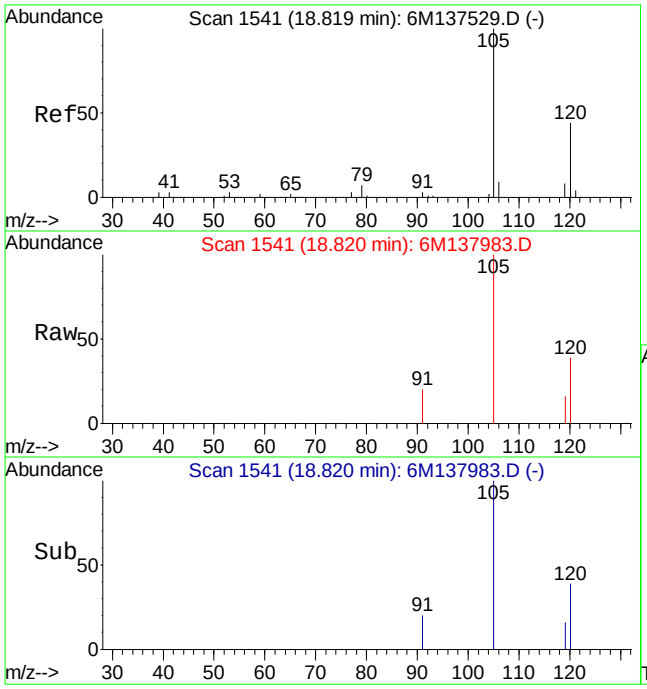

#90
1,2,4-Trimethylbenzene
Concen: 0.40 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. -0.00 min
Lab File: 6M137983.D
Acq: 23 Mar 2016 22:38

Tgt Ion:105 Resp: 4409

Ion	Ratio	Lower	Upper
105	100		
120	40.9	34.3	79.9

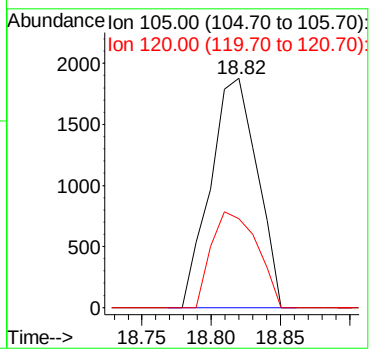

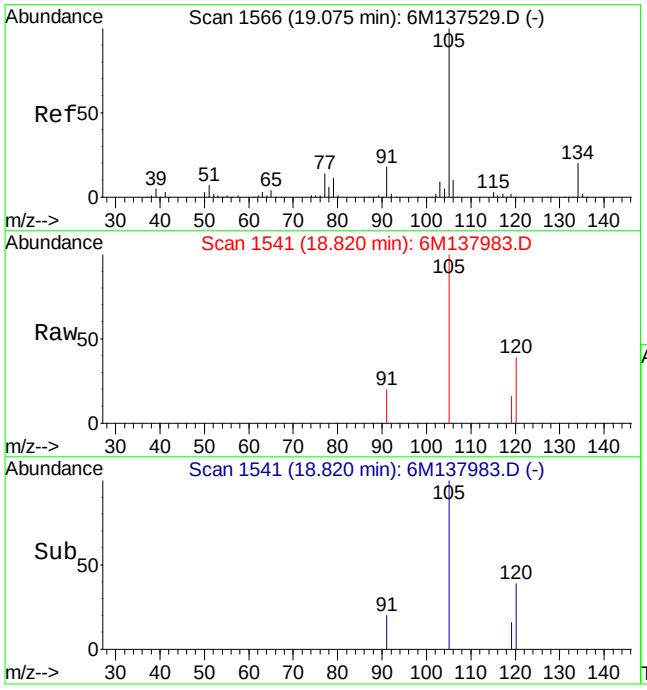

#91
sec-Butylbenzene
Concen: 0.26 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. -0.26 min
Lab File: 6M137983.D
Acq: 23 Mar 2016 22:38

Tgt Ion:105 Resp: 3486

Ion	Ratio	Lower	Upper
105	100		
134	0.0	12.2	28.6#

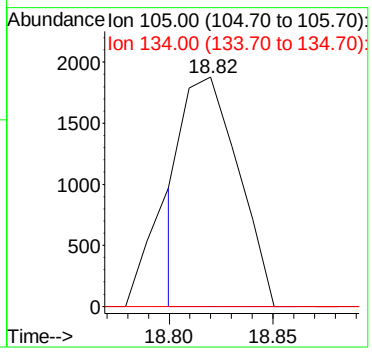

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137984.D Vial: 22
Acq On : 23 Mar 2016 23:10 Operator: TMB
Sample : L16030863-07 8260 4.79g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 08:29:47 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	552300	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	416422	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	220608	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	141889	47.8912 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.78%		
43) 1,2-Dichloroethane-d4	11.06	65	181884	47.2826 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.56%		
58) Toluene-d8	13.80	98	491204	49.6135 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.22%		
80) p-Bromofluorobenzene	17.79	95	208439	51.4397 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.88%		

Target Compounds					Qvalue
36) Tetrahydrofuran	10.29	42	1889	Below Cal #	40
47) Trichloroethene	12.09	130	10630	3.9110 ug/L	99
60) Ethyl Methacrylate	13.81	69	1041	0.2758 ug/L	66
90) 1,2,4-Trimethylbenzene	18.82	105	4179	0.3726 ug/L	79

(#) = qualifier out of range (m) = manual integration
6M137984.D 826_SL.M Thu Mar 24 08:29:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137984.D Vial: 22
Acq On : 23 Mar 2016 23:10 Operator: TMB
Sample : L16030863-07 8260 4.79g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 8:29 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

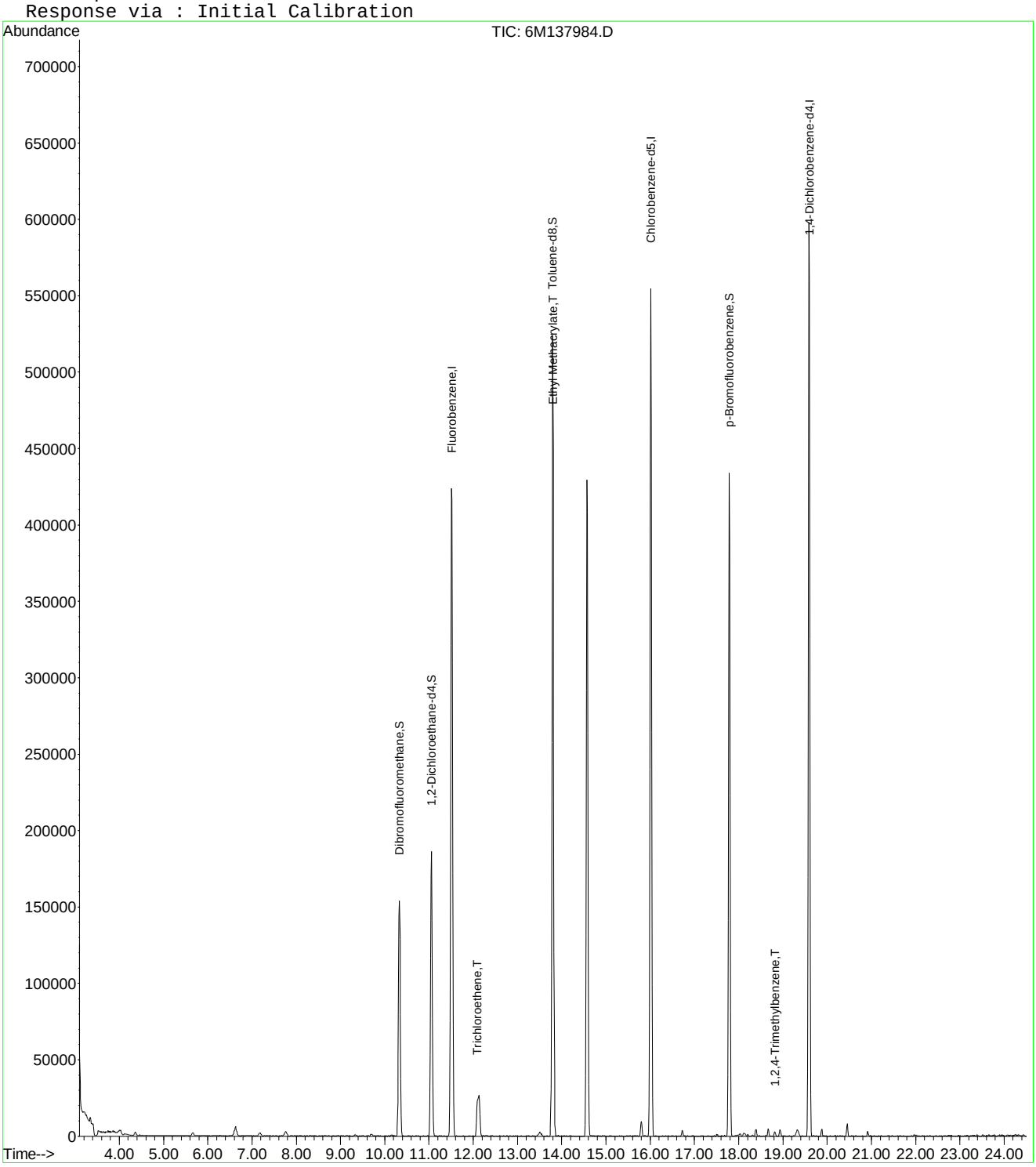

6M137984.D 826_SL.M Thu Mar 24 08:29:48 2016 Page 2

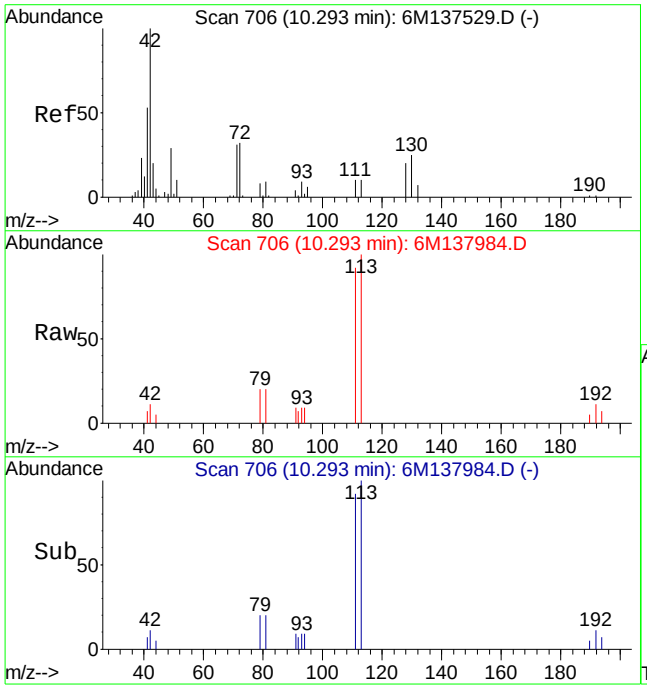

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.29 min Scan# 706
Delta R.T. 0.00 min
Lab File: 6M137984.D
Acq: 23 Mar 2016 23:10

Tgt Ion: 42 Resp: 1889

Ion	Ratio	Lower	Upper
42	100		
72	0.0	21.0	49.0#
71	0.0	20.6	48.2#

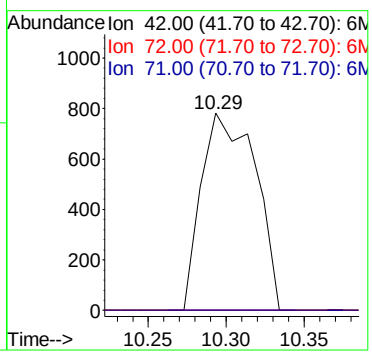

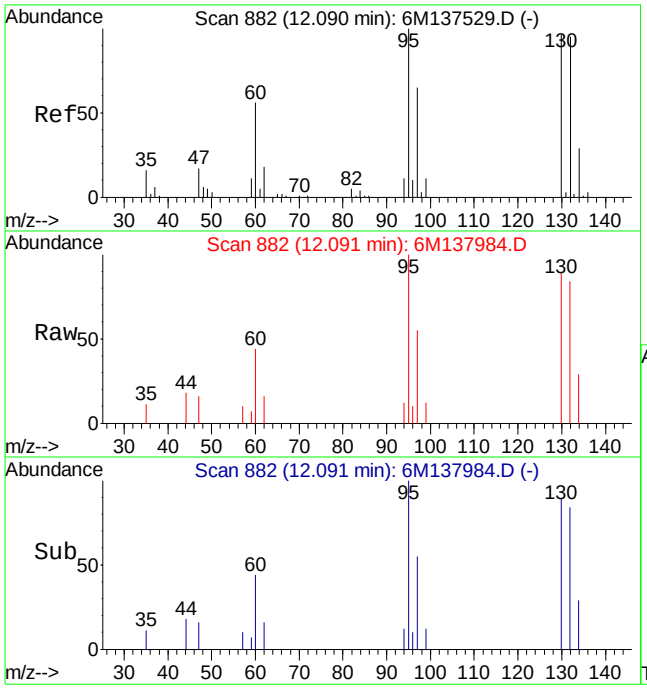

#47
Trichloroethene
Concen: 3.91 ug/L
RT: 12.09 min Scan# 882
Delta R.T. -0.00 min
Lab File: 6M137984.D
Acq: 23 Mar 2016 23:10

Tgt Ion:130 Resp: 10630

Ion	Ratio	Lower	Upper
130	100		
60	51.4	31.2	72.8

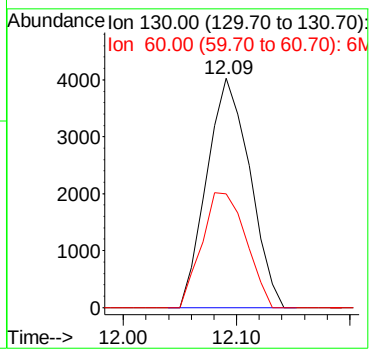

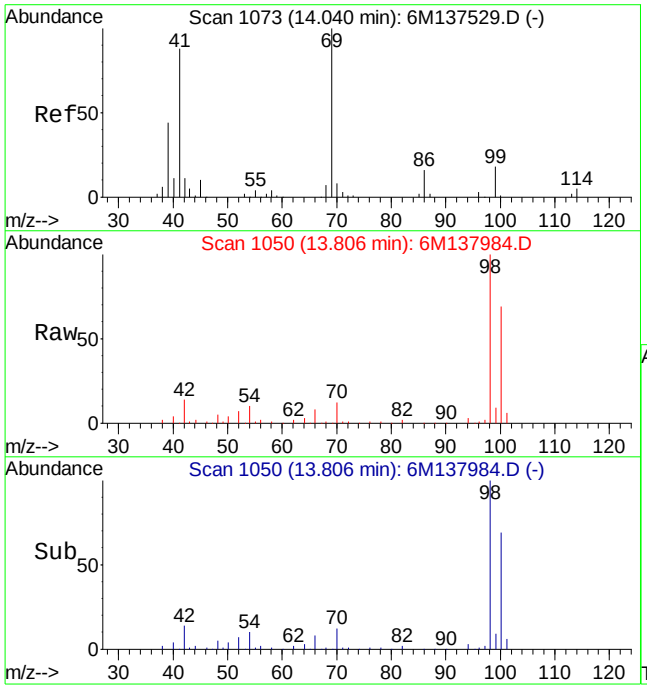

#60
Ethyl Methacrylate
Concen: 0.28 ug/L
RT: 13.81 min Scan# 1050
Delta R.T. -0.22 min
Lab File: 6M137984.D
Acq: 23 Mar 2016 23:10

Tgt Ion: 69 Resp: 1041

Ion	Ratio	Lower	Upper
69	100		
41	115.3	50.6	118.2

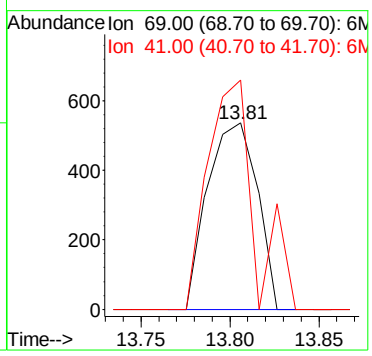

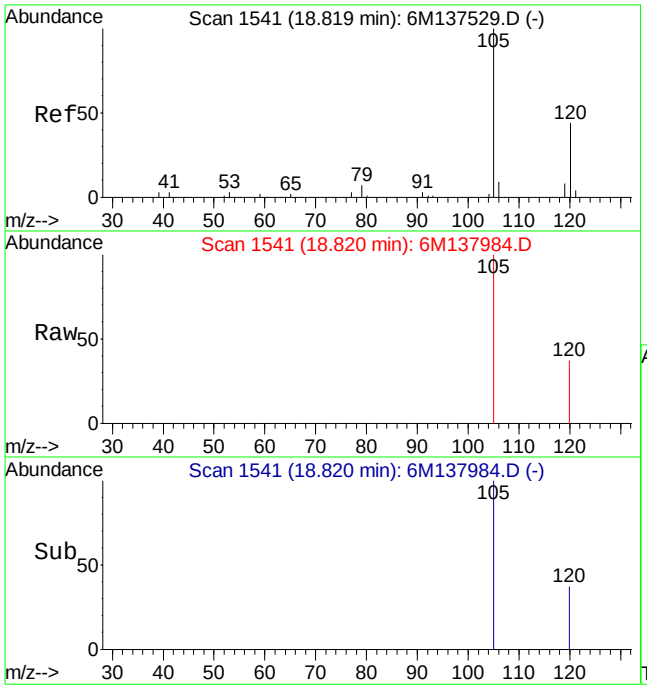

#90
1,2,4-Trimethylbenzene
Concen: 0.37 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. -0.00 min
Lab File: 6M137984.D
Acq: 23 Mar 2016 23:10

Tgt Ion:105 Resp: 4179

Ion	Ratio	Lower	Upper
105	100		
120	41.8	34.3	79.9

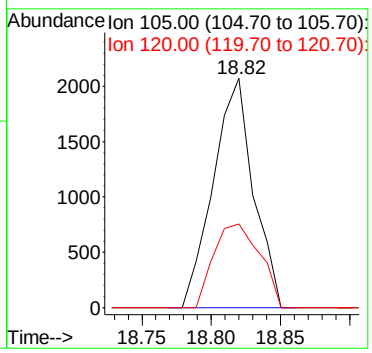

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032416\6M138000.D Vial: 13
Acq On : 24 Mar 2016 17:52 Operator: TMB
Sample : L16030863-08 8260 5.41g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 25 08:37:52 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	582040	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	416564	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	202530	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	145984	46.7557 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.52%		
43) 1,2-Dichloroethane-d4	11.06	65	173809	42.8747 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 85.74%		
58) Toluene-d8	13.80	98	510770	51.5722 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 103.14%		
80) p-Bromofluorobenzene	17.79	95	201088	54.0552 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 108.12%		

Target Compounds					Qvalue
13) Acetone	6.60	43	6555	0.9950 ug/L	85
36) Tetrahydrofuran	10.31	42	2799	Below Cal #	66
46) Benzene	11.23	78	4089	0.3372 ug/L #	60
60) Ethyl Methacrylate	13.80	69	993	0.2630 ug/L	69
90) 1,2,4-Trimethylbenzene	18.82	105	4668	0.4534 ug/L	75
91) sec-Butylbenzene	18.82	105	3843	0.3065 ug/L #	56

(#) = qualifier out of range (m) = manual integration
6M138000.D 826_SL.M Fri Mar 25 08:37:52 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032416\6M138000.D Vial: 13
Acq On : 24 Mar 2016 17:52 Operator: TMB
Sample : L16030863-08 8260 5.41g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 25 8:37 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

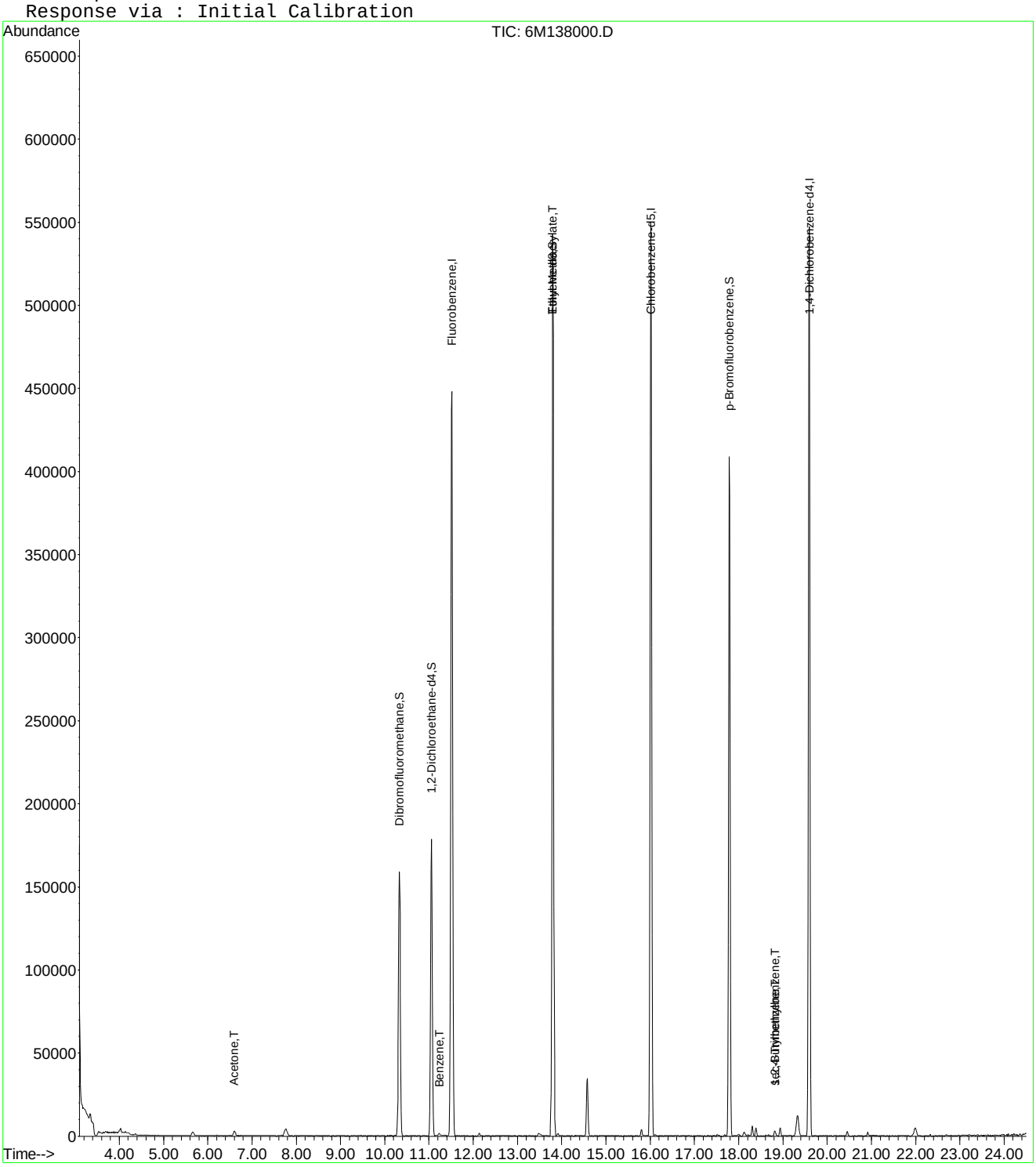

6M138000.D 826_SL.M Fri Mar 25 08:37:52 2016 Page 2

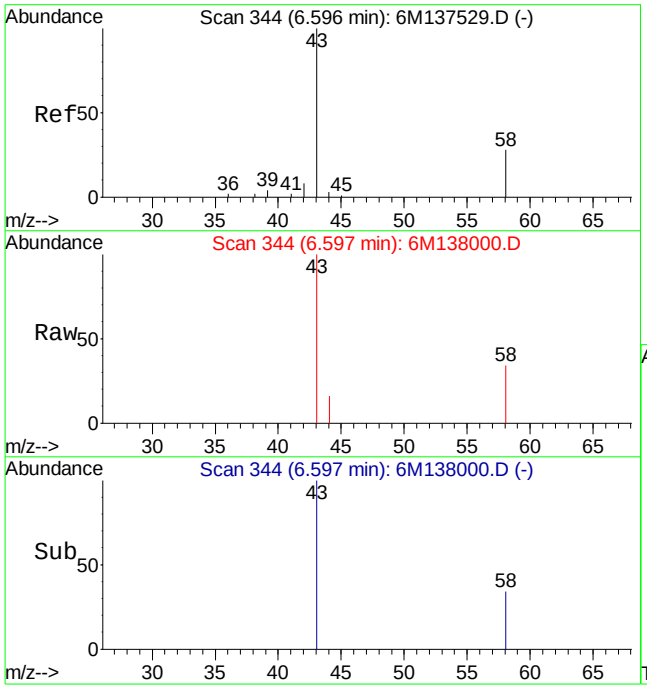

#13
Acetone
Concen: 1.00 ug/L
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M138000.D
Acq: 24 Mar 2016 17:52

Tgt Ion: 43 Resp: 6555

Ion	Ratio	Lower	Upper
43	100		
58	34.5	16.1	37.7

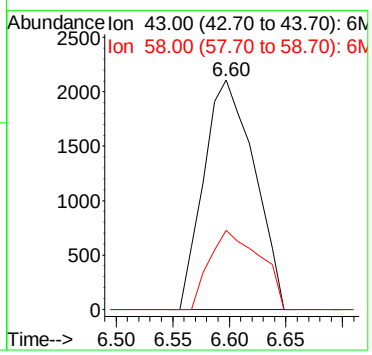

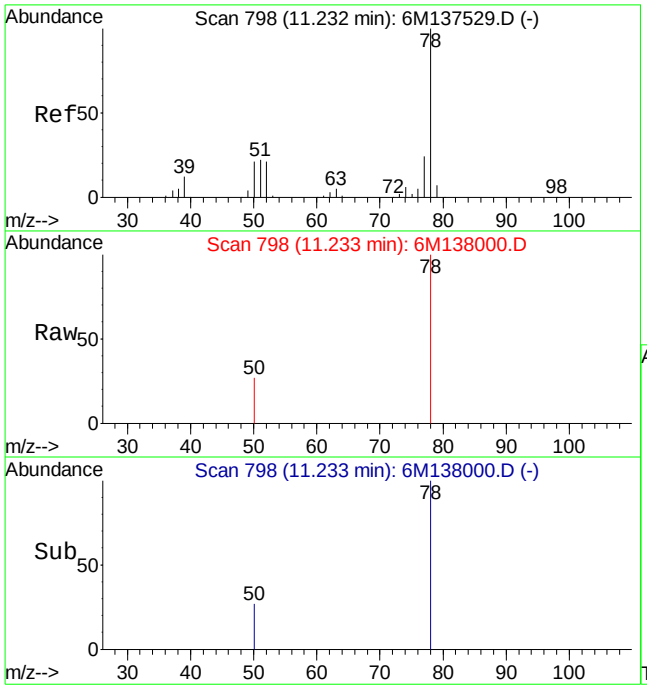

#46
Benzene
Concen: 0.34 ug/L
RT: 11.23 min Scan# 798
Delta R.T. -0.00 min
Lab File: 6M138000.D
Acq: 24 Mar 2016 17:52

Tgt Ion: 78 Resp: 4089

Ion	Ratio	Lower	Upper
78	100		
52	0.0	10.4	24.4#

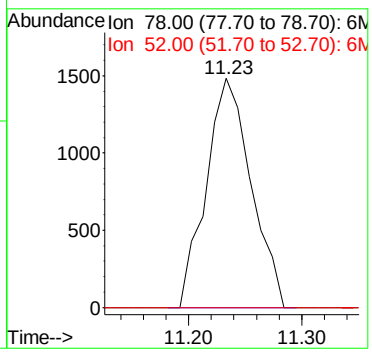

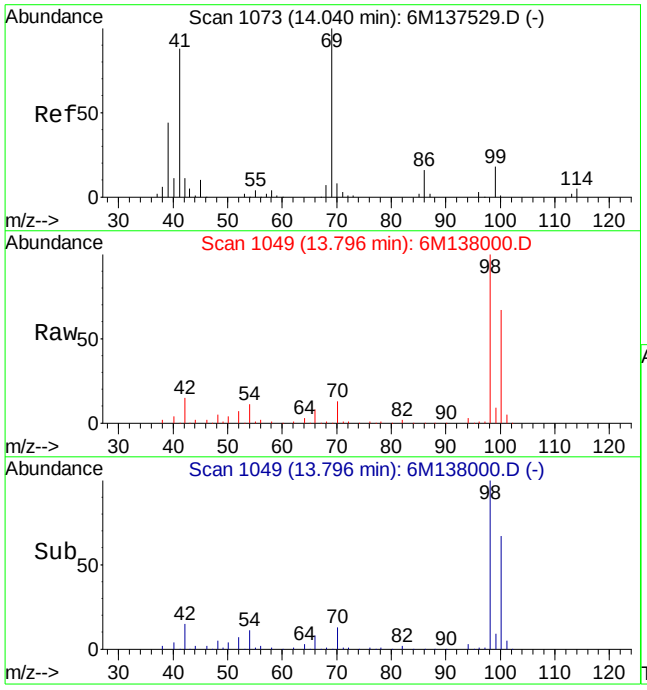

#60
Ethyl Methacrylate
Concen: 0.26 ug/L
RT: 13.80 min Scan# 1049
Delta R.T. -0.23 min
Lab File: 6M138000.D
Acq: 24 Mar 2016 17:52

Tgt Ion: 69 Resp: 993

Ion	Ratio	Lower	Upper
69	100		
41	112.6	50.6	118.2

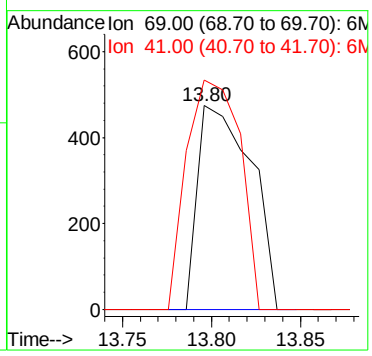

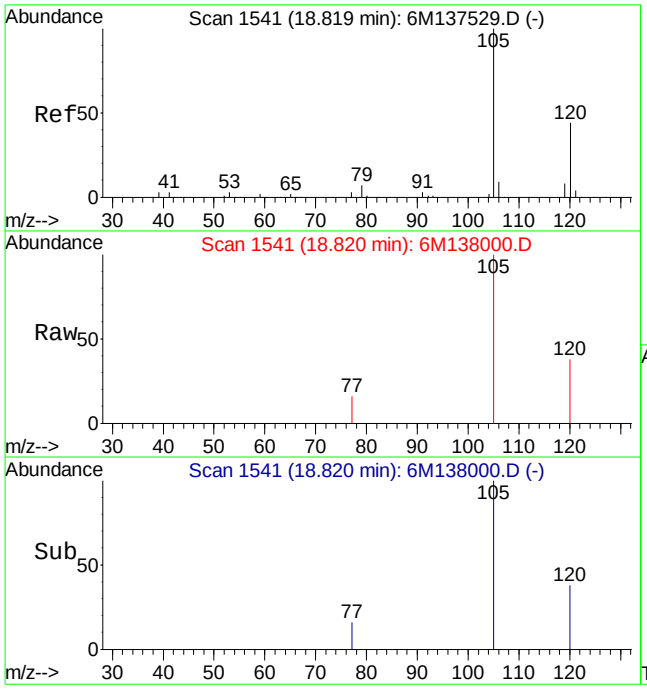

#90
1,2,4-Trimethylbenzene
Concen: 0.45 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. -0.00 min
Lab File: 6M138000.D
Acq: 24 Mar 2016 17:52

Tgt Ion:105 Resp: 4668

Ion	Ratio	Lower	Upper
105	100		
120	38.9	34.3	79.9

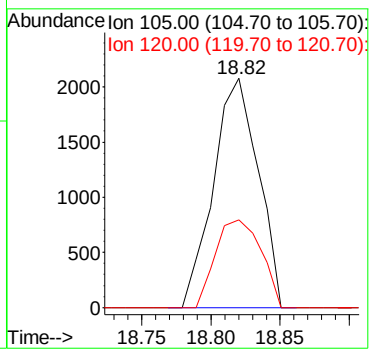

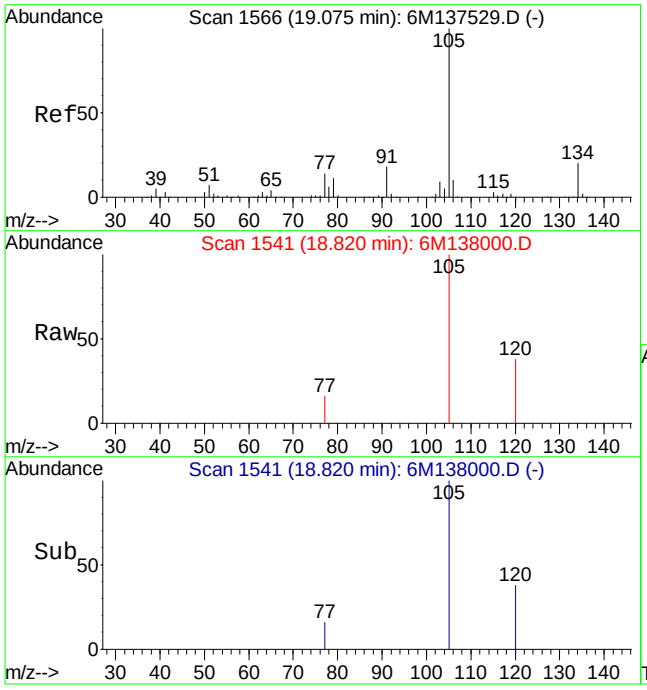

#91
sec-Butylbenzene
Concen: 0.31 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. -0.26 min
Lab File: 6M138000.D
Acq: 24 Mar 2016 17:52

Tgt Ion:105 Resp: 3843

Ion	Ratio	Lower	Upper
105	100		
134	0.0	12.2	28.6#

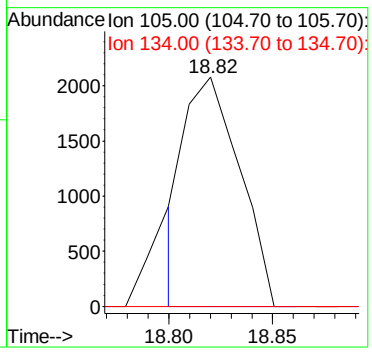

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032416\6M138001.D Vial: 14
Acq On : 24 Mar 2016 18:26 Operator: TMB
Sample : L16030863-09 8260 5.14g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 25 08:37:53 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	554838	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	398818	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	199512	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.34	111	137634	46.2425 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 92.48%		
43) 1,2-Dichloroethane-d4	11.05	65	164823	42.6514 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 85.30%		
58) Toluene-d8	13.80	98	484184	51.0631 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 102.12%		
80) p-Bromofluorobenzene	17.79	95	191792	52.3362 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 104.68%		

Target Compounds					Qvalue
13) Acetone	6.59	43	4165	Below Cal	# 73
36) Tetrahydrofuran	10.32	42	1861	Below Cal	# 68
46) Benzene	11.24	78	4111	0.3557 ug/L	# 83
60) Ethyl Methacrylate	13.81	69	967	0.2675 ug/L	# 36
90) 1,2,4-Trimethylbenzene	18.81	105	3382	0.3334 ug/L	74
91) sec-Butylbenzene	18.81	105	3161	0.2559 ug/L	# 56

(#) = qualifier out of range (m) = manual integration
6M138001.D 826_SL.M Fri Mar 25 08:37:53 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032416\6M138001.D Vial: 14
Acq On : 24 Mar 2016 18:26 Operator: TMB
Sample : L16030863-09 8260 5.14g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 25 8:37 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

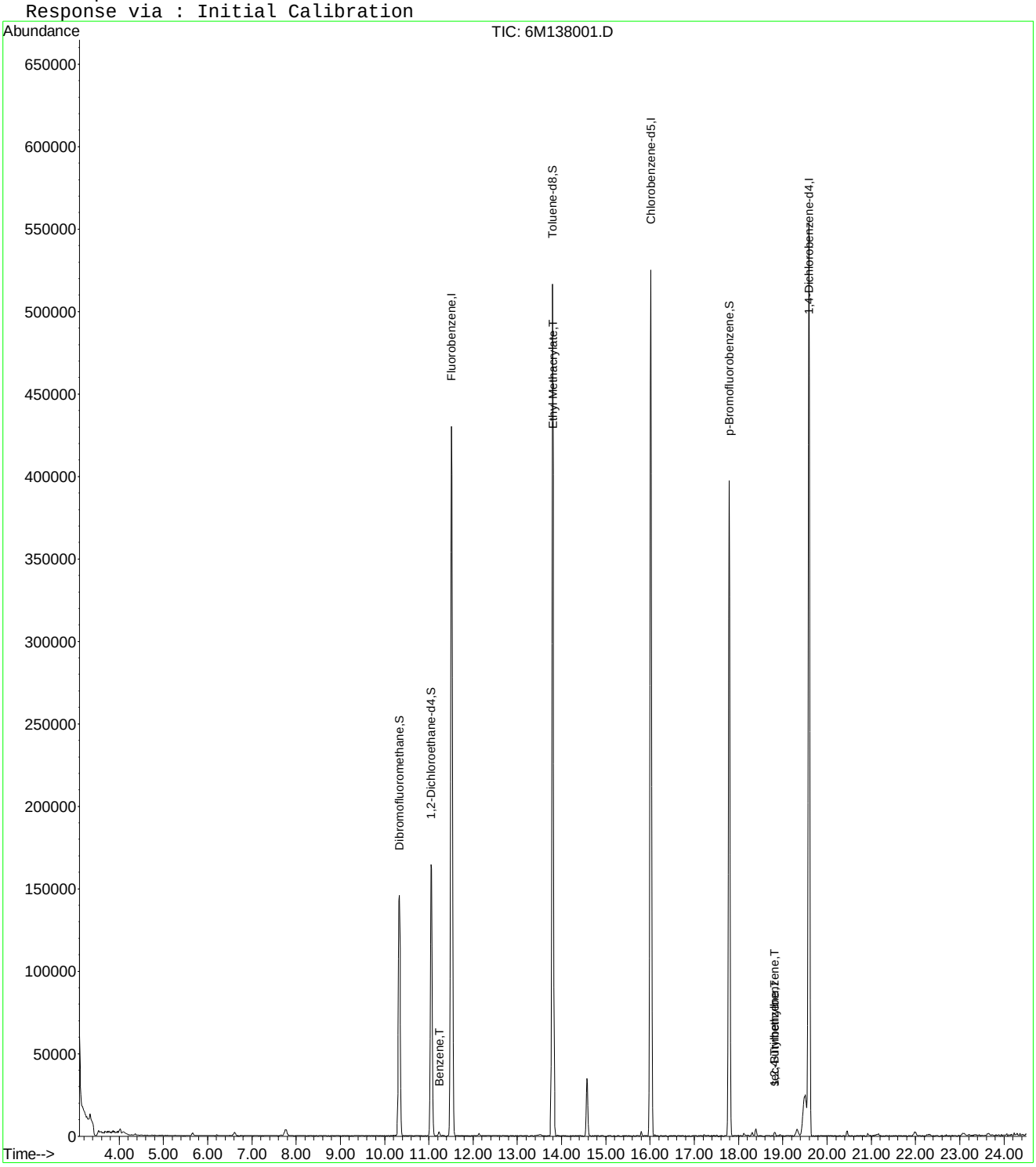

6M138001.D 826_SL.M Fri Mar 25 08:37:53 2016 Page 2

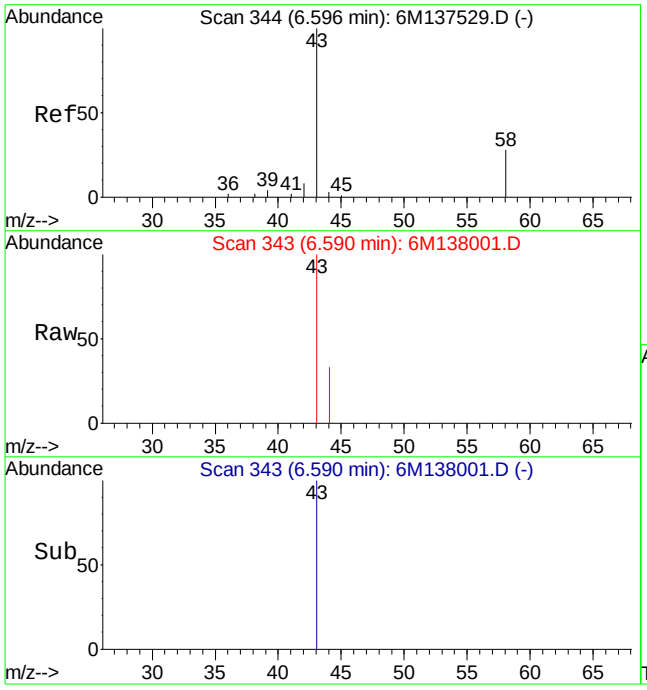

#13
Acetone
Concen: Below Cal
RT: 6.59 min Scan# 343
Delta R.T. 0.00 min
Lab File: 6M138001.D
Acq: 24 Mar 2016 18:26

Tgt Ion: 43 Resp: 4165

Ion	Ratio	Lower	Upper
43	100		
58	41.1	16.1	37.7#

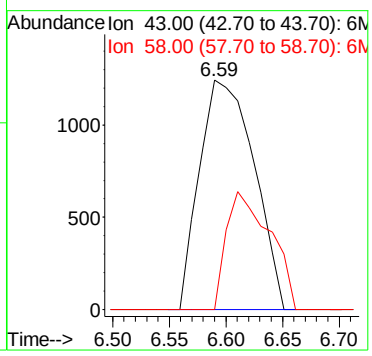

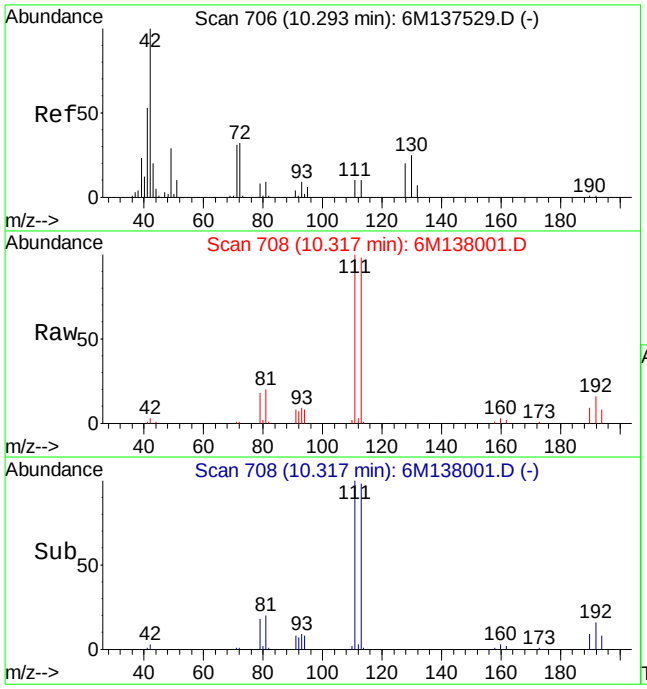

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.32 min Scan# 708
Delta R.T. 0.02 min
Lab File: 6M138001.D
Acq: 24 Mar 2016 18:26

Tgt Ion: 42 Resp: 1861

Ion	Ratio	Lower	Upper
42	100		
72	21.4	21.0	49.0
71	11.4	20.6	48.2#

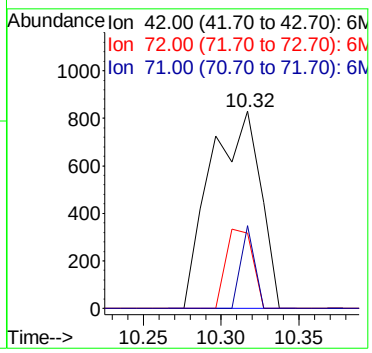

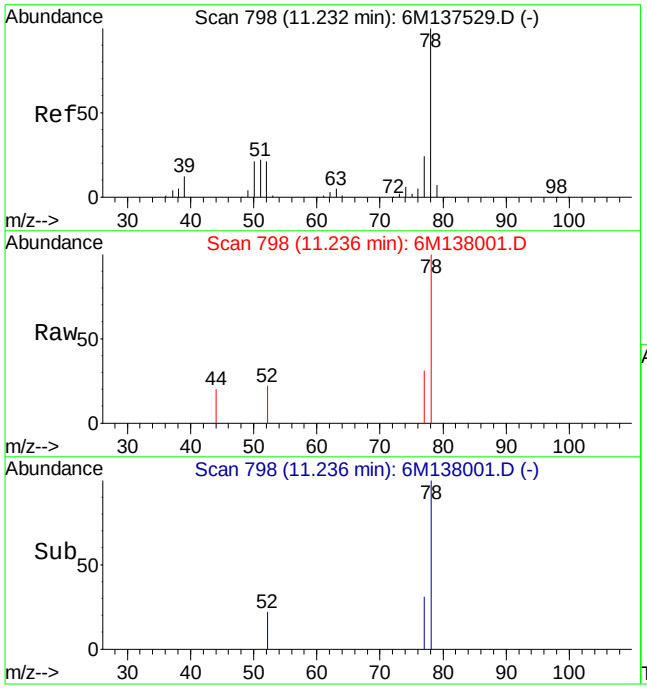

#46
Benzene
Concen: 0.36 ug/L
RT: 11.24 min Scan# 798
Delta R.T. 0.00 min
Lab File: 6M138001.D
Acq: 24 Mar 2016 18:26

Tgt Ion: 78 Resp: 4111

Ion	Ratio	Lower	Upper
78	100		
52	10.2	10.4	24.4#

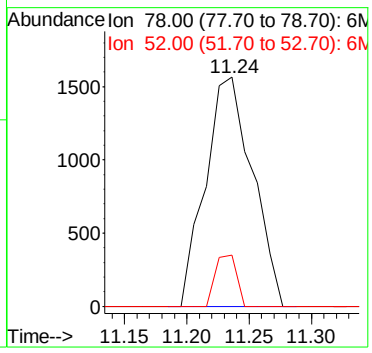

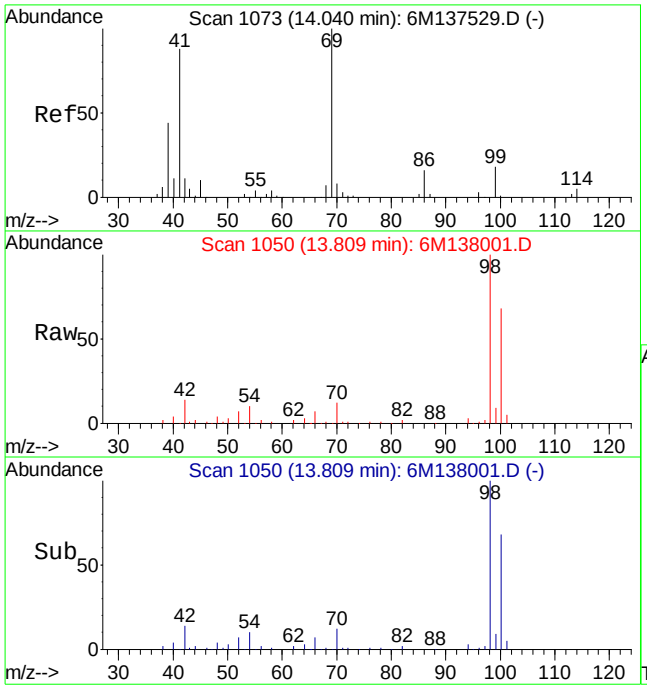

#60
Ethyl Methacrylate
Concen: 0.27 ug/L
RT: 13.81 min Scan# 1050
Delta R.T. -0.22 min
Lab File: 6M138001.D
Acq: 24 Mar 2016 18:26

Tgt Ion: 69 Resp: 967

Ion	Ratio	Lower	Upper
69	100		
41	142.3	50.6	118.2#

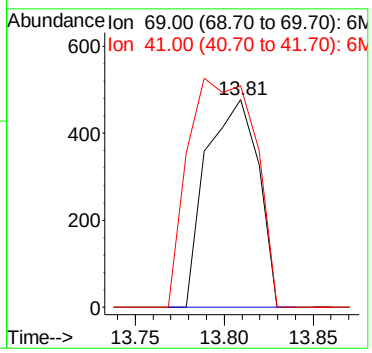

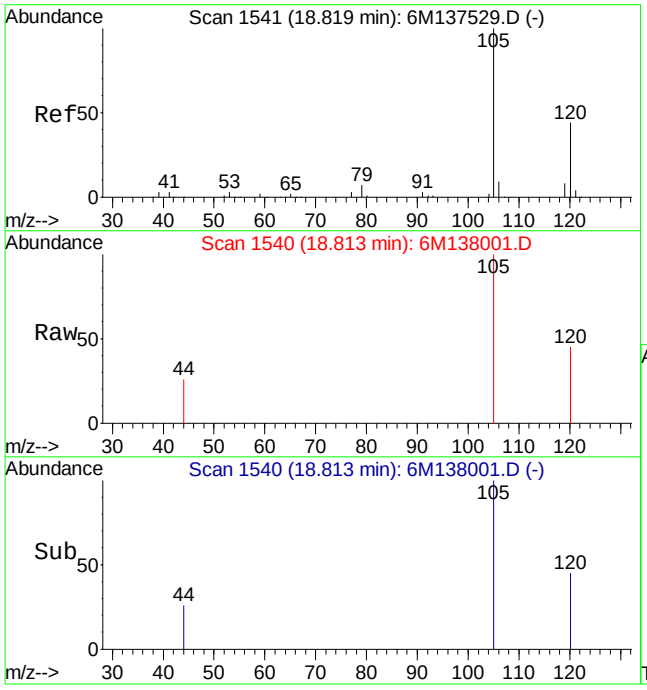

#90
1,2,4-Trimethylbenzene
Concen: 0.33 ug/L
RT: 18.81 min Scan# 1540
Delta R.T. -0.01 min
Lab File: 6M138001.D
Acq: 24 Mar 2016 18:26

Tgt Ion:105 Resp: 3382

Ion	Ratio	Lower	Upper
105	100		
120	37.6	34.3	79.9

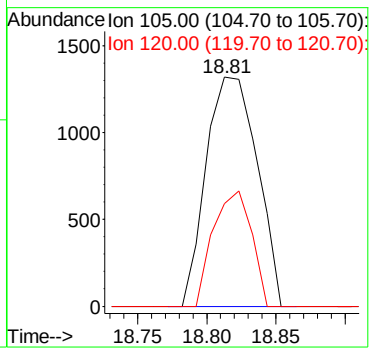

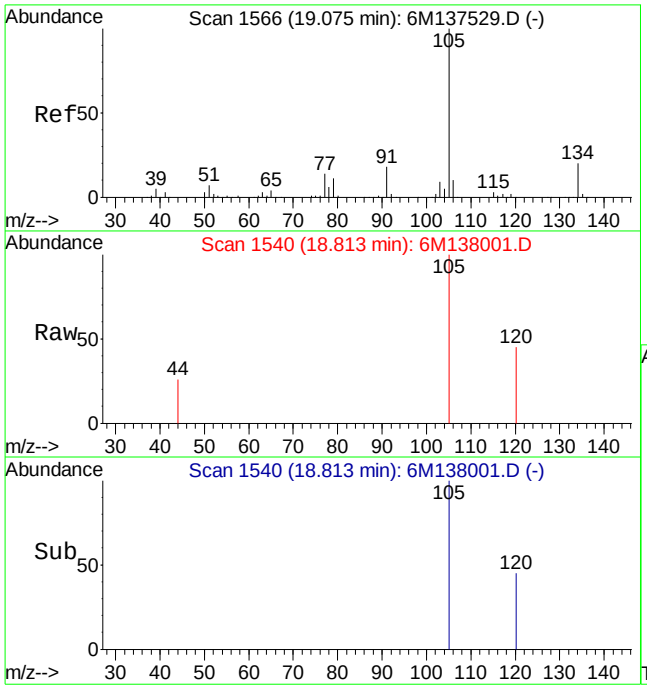

#91
sec-Butylbenzene
Concen: 0.26 ug/L
RT: 18.81 min Scan# 1540
Delta R.T. -0.26 min
Lab File: 6M138001.D
Acq: 24 Mar 2016 18:26

Tgt Ion:105 Resp: 3161

Ion	Ratio	Lower	Upper
105	100		
134	0.0	12.2	28.6#

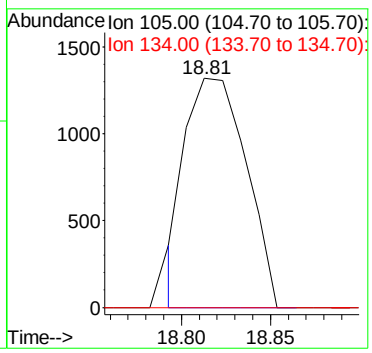

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032416\6M138002.D Vial: 15
Acq On : 24 Mar 2016 18:59 Operator: TMB
Sample : L16030863-10 8260 4.83g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 25 08:37:54 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	587000	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	434397	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	228996	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	147217	46.7522 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.50%		
43) 1,2-Dichloroethane-d4	11.06	65	179138	43.8159 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 87.64%		
58) Toluene-d8	13.80	98	520049	50.3534 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 100.70%		
80) p-Bromofluorobenzene	17.79	95	217698	51.7568 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 103.52%		

Target Compounds					Qvalue
13) Acetone	6.60	43	1830	Below Cal	# 1
36) Tetrahydrofuran	10.30	42	2260	Below Cal	# 57
46) Benzene	11.23	78	4878	0.3989 ug/L	# 80
60) Ethyl Methacrylate	13.81	69	1047	0.2659 ug/L	63
90) 1,2,4-Trimethylbenzene	18.82	105	4596	0.3948 ug/L	76
93) 1,3-Dichlorobenzene	19.47	146	2477	0.3787 ug/L	# 1
94) 1,4-Dichlorobenzene	19.47	146	2477	0.3720 ug/L	# 1

(#) = qualifier out of range (m) = manual integration
6M138002.D 826_SL.M Fri Mar 25 08:37:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032416\6M138002.D Vial: 15
Acq On : 24 Mar 2016 18:59 Operator: TMB
Sample : L16030863-10 8260 4.83g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 25 8:37 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

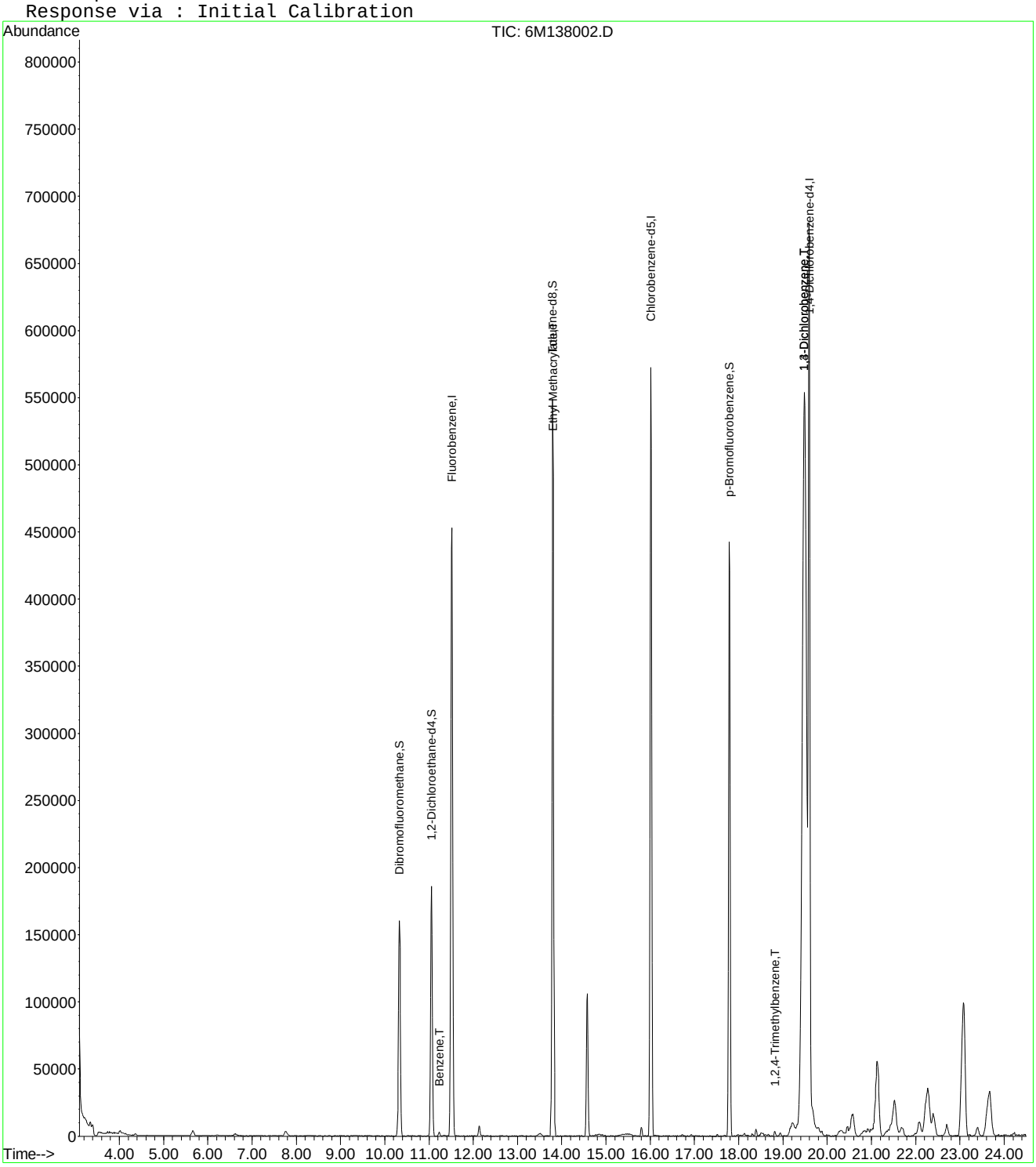

6M138002.D 826_SL.M Fri Mar 25 08:37:54 2016 Page 2

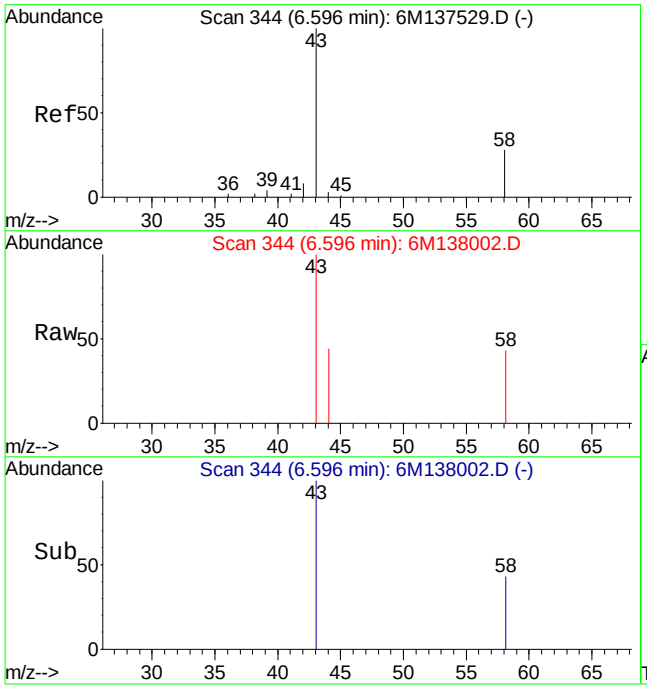

#13
Acetone
Concen: Below Cal
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M138002.D
Acq: 24 Mar 2016 18:59

Tgt Ion: 43 Resp: 1830

Ion	Ratio	Lower	Upper
43	100		
58	175.4	16.1	37.7#

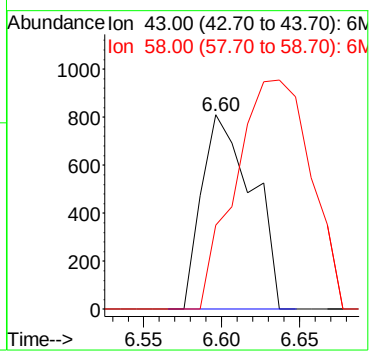

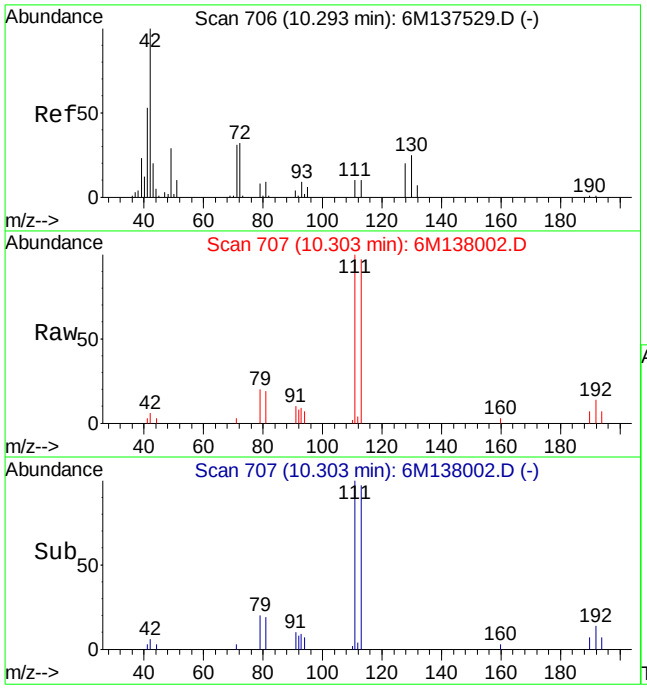

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.30 min Scan# 707
Delta R.T. 0.01 min
Lab File: 6M138002.D
Acq: 24 Mar 2016 18:59

Tgt Ion: 42 Resp: 2260

Ion	Ratio	Lower	Upper
42	100		
72	0.0	21.0	49.0#
71	19.8	20.6	48.2#

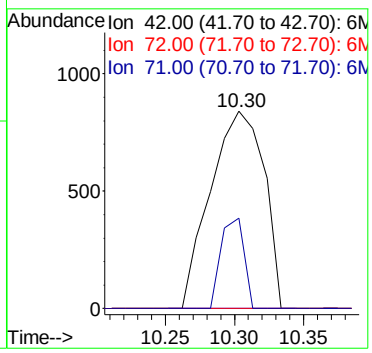

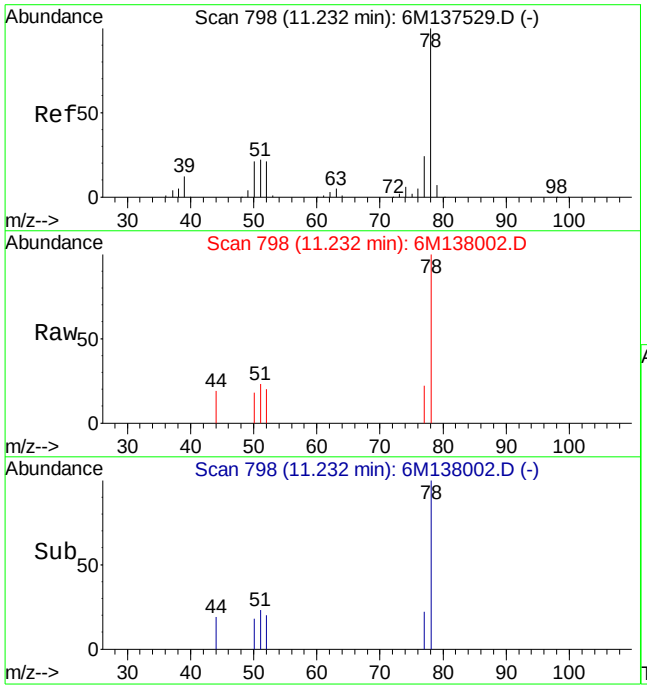

#46
Benzene
Concen: 0.40 ug/L
RT: 11.23 min Scan# 798
Delta R.T. -0.00 min
Lab File: 6M138002.D
Acq: 24 Mar 2016 18:59

Tgt Ion: 78 Resp: 4878

Ion	Ratio	Lower	Upper
78	100		
52	8.7	10.4	24.4#

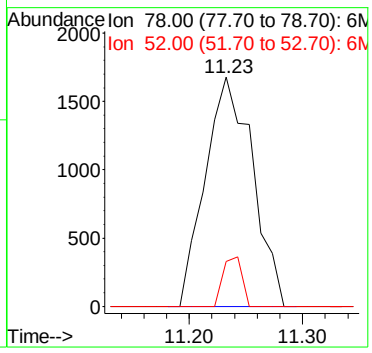

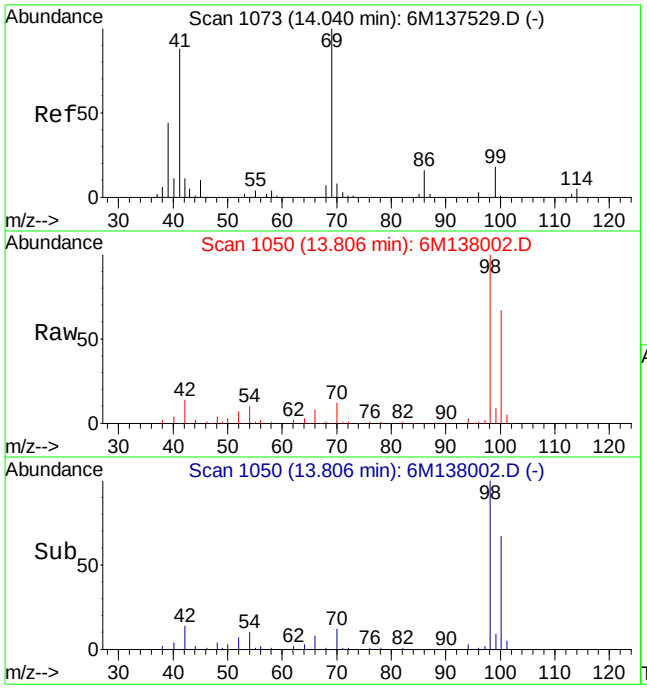

#60
Ethyl Methacrylate
Concen: 0.27 ug/L
RT: 13.81 min Scan# 1050
Delta R.T. -0.23 min
Lab File: 6M138002.D
Acq: 24 Mar 2016 18:59

Tgt Ion: 69 Resp: 1047

Ion	Ratio	Lower	Upper
69	100		
41	118.1	50.6	118.2

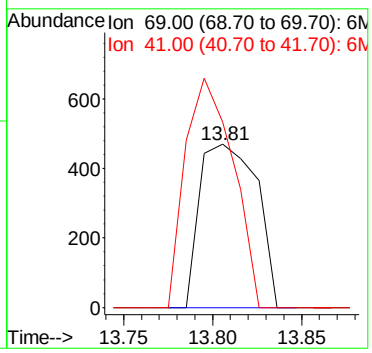

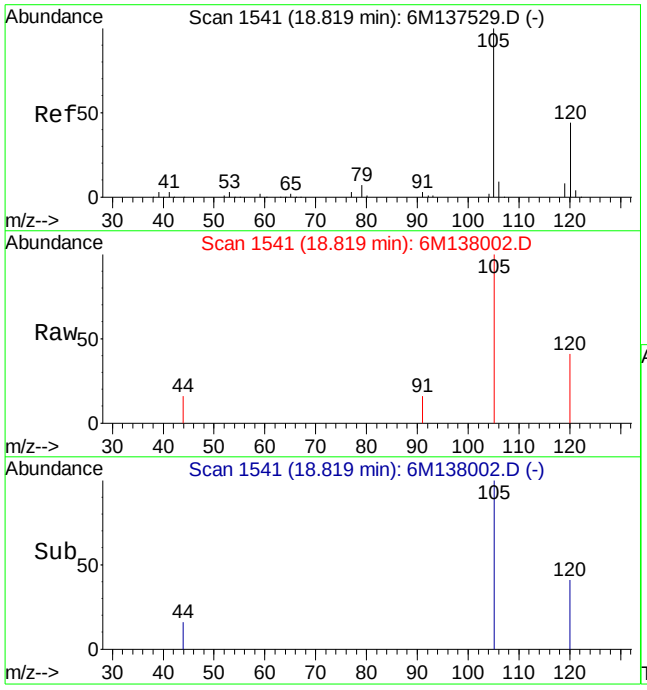

#90
1,2,4-Trimethylbenzene
Concen: 0.39 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. -0.00 min
Lab File: 6M138002.D
Acq: 24 Mar 2016 18:59

Tgt Ion:105 Resp: 4596

Ion	Ratio	Lower	Upper
105	100		
120	39.3	34.3	79.9

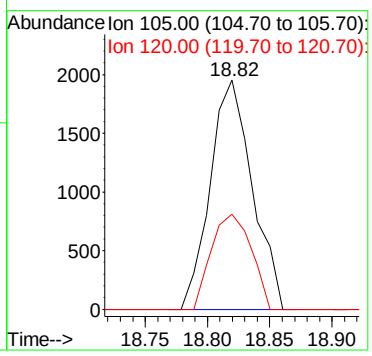

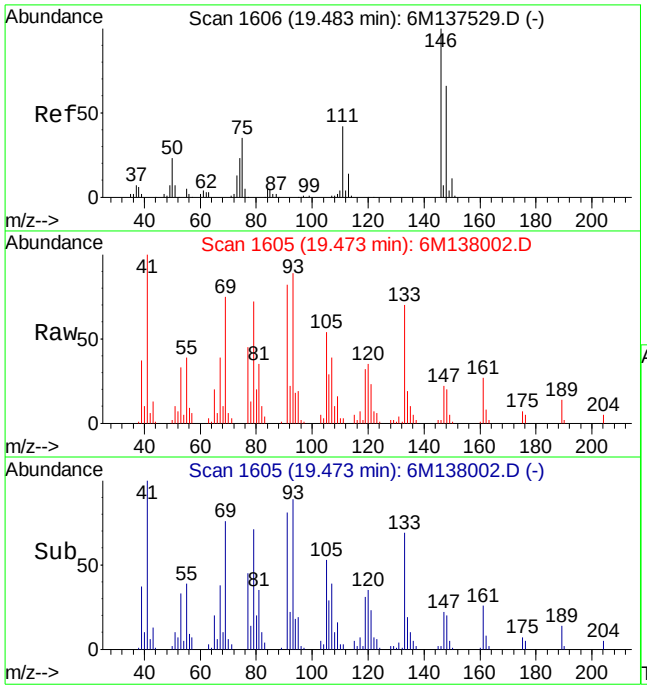

#93
1,3-Dichlorobenzene
Concen: 0.38 ug/L
RT: 19.47 min Scan# 1605
Delta R.T. -0.01 min
Lab File: 6M138002.D
Acq: 24 Mar 2016 18:59

Tgt Ion:146 Resp: 2477

Ion	Ratio	Lower	Upper
146	100		
111	258.0	23.6	55.0#

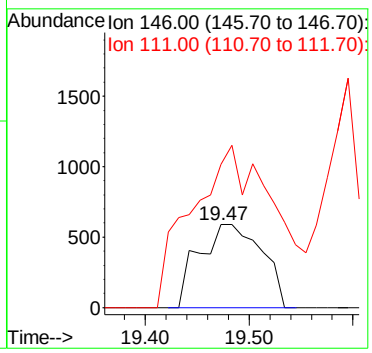

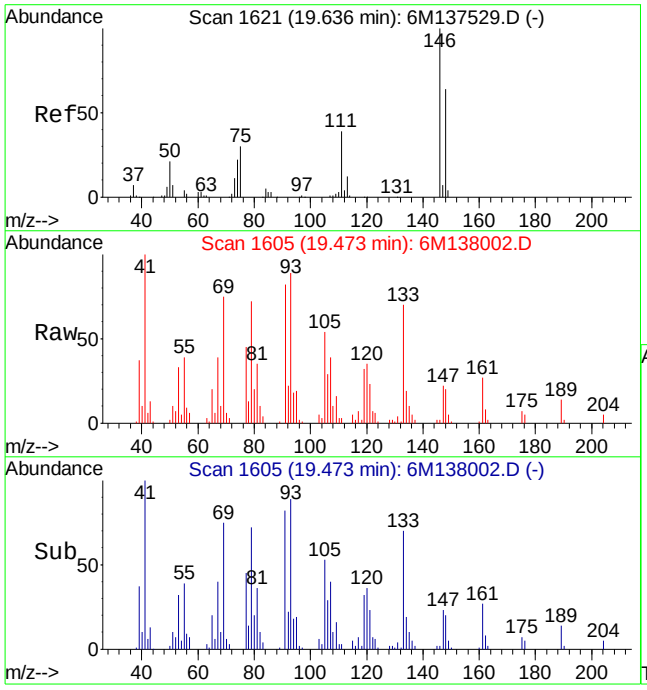

#94
1,4-Dichlorobenzene
Concen: 0.37 ug/L
RT: 19.47 min Scan# 1605
Delta R.T. -0.16 min
Lab File: 6M138002.D
Acq: 24 Mar 2016 18:59

Tgt Ion:146 Resp: 2477

Ion	Ratio	Lower	Upper
146	100		
111	258.0	23.5	54.9#

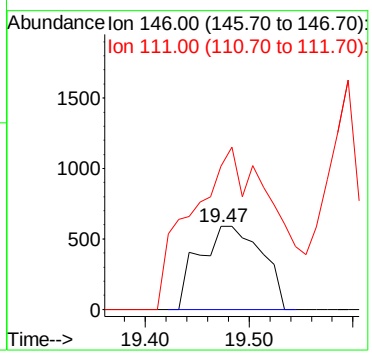

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032416\6M138003.D Vial: 16
Acq On : 24 Mar 2016 19:33 Operator: TMB
Sample : L16030863-11 8260 5.03g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 25 08:37:55 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	568271	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	427761	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	224623	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	143237	46.9874 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.98%		
43) 1,2-Dichloroethane-d4	11.06	65	182875	46.2041 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 92.40%		
58) Toluene-d8	13.80	98	503934	49.5500 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.10%		
80) p-Bromofluorobenzene	17.79	95	214782	52.0576 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 104.12%		

Target Compounds

					Qvalue
13) Acetone	6.60	43	16561	9.5483 ug/L #	1
29) 2-Butanone	9.47	43	1979	1.0075 ug/L #	56
36) Tetrahydrofuran	10.31	42	3170	0.2850 ug/L #	69
46) Benzene	11.23	78	3353	0.2832 ug/L #	60
90) 1,2,4-Trimethylbenzene	18.82	105	4801	0.4204 ug/L #	69

(#) = qualifier out of range (m) = manual integration
6M138003.D 826_SL.M Fri Mar 25 08:37:55 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032416\6M138003.D Vial: 16
Acq On : 24 Mar 2016 19:33 Operator: TMB
Sample : L16030863-11 8260 5.03g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 25 8:37 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

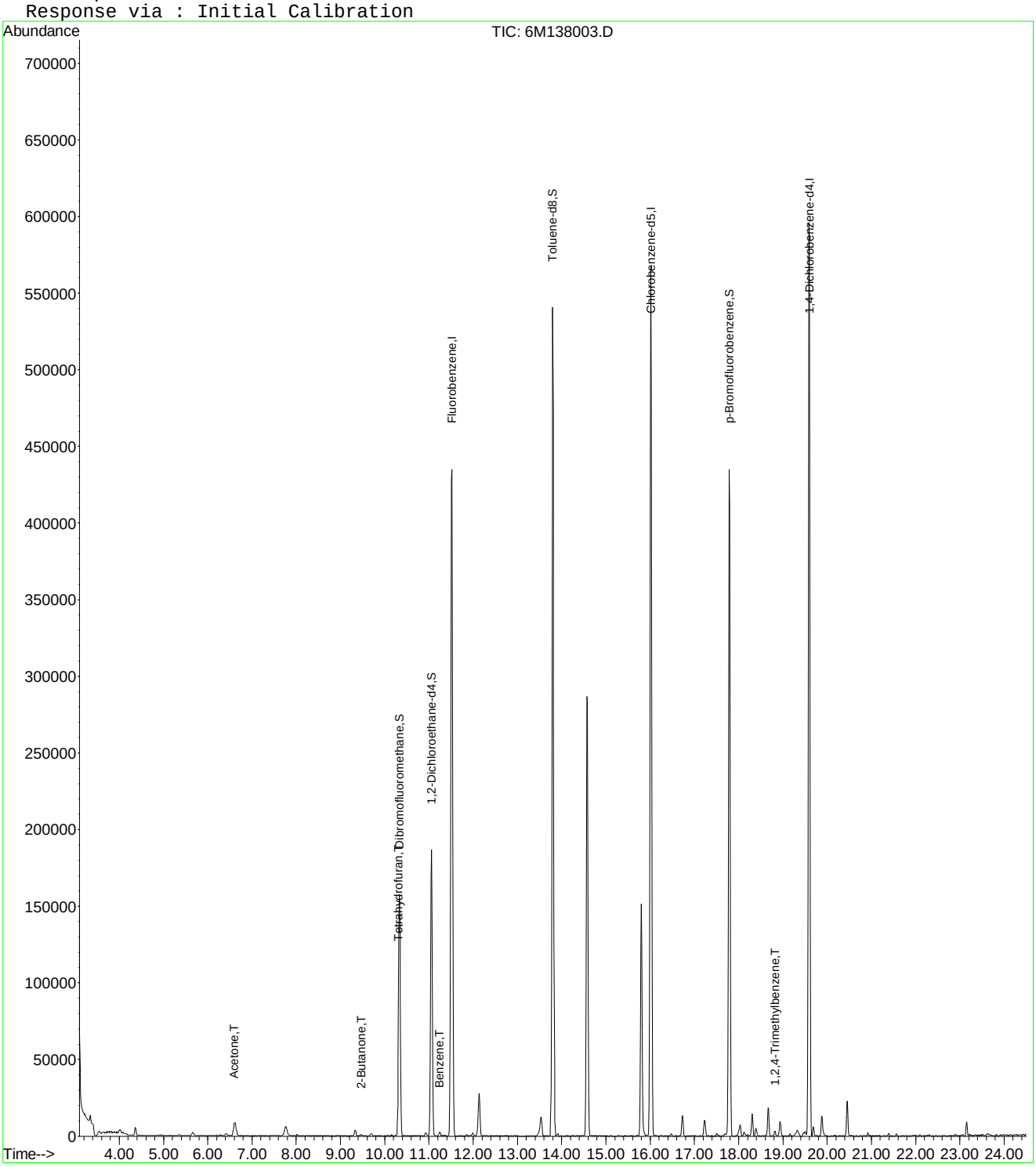

6M138003.D 826_SL.M Fri Mar 25 08:37:56 2016 Page 2

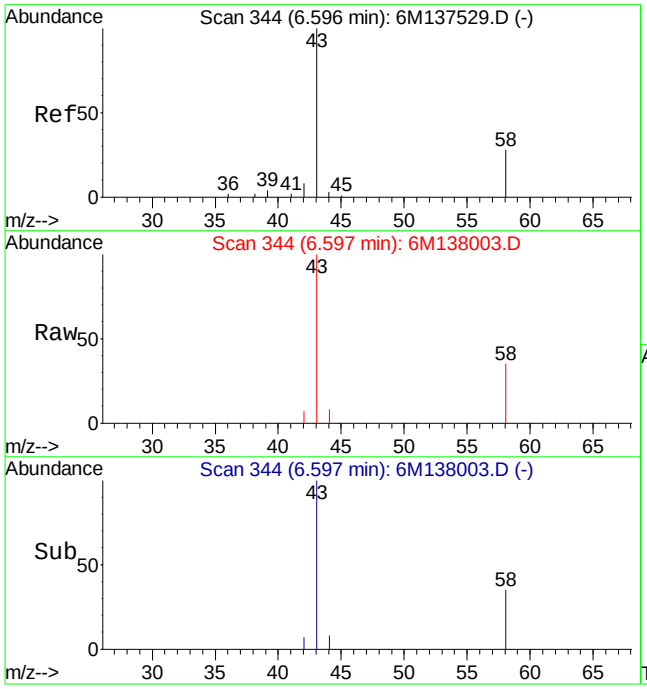

#13
Acetone
Concen: 9.55 ug/L
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M138003.D
Acq: 24 Mar 2016 19:33

Tgt Ion: 43 Resp: 16561

Ion	Ratio	Lower	Upper
43	100		
58	84.4	16.1	37.7#

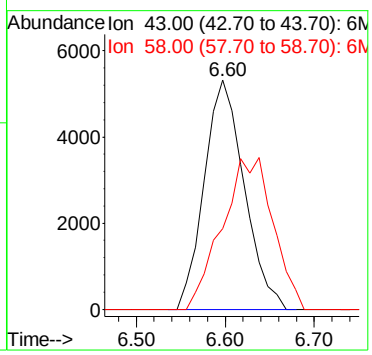

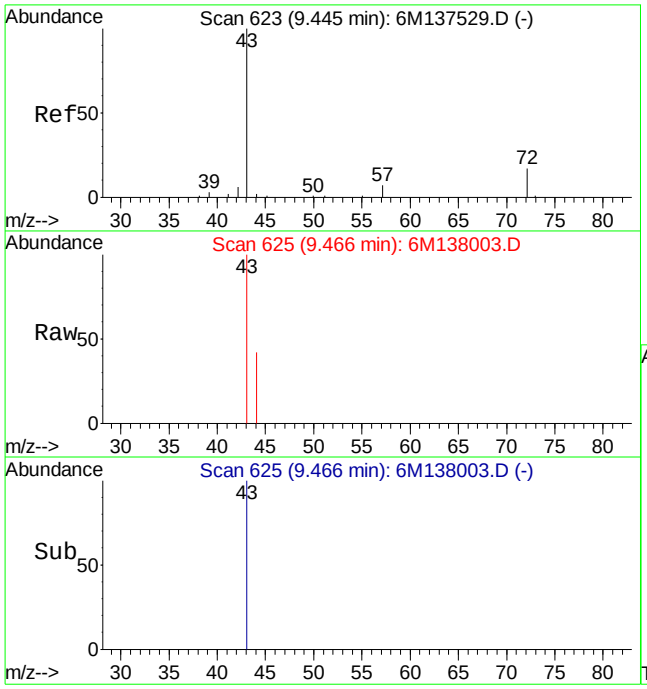

#29
2-Butanone
Concen: 1.01 ug/L
RT: 9.47 min Scan# 625
Delta R.T. 0.02 min
Lab File: 6M138003.D
Acq: 24 Mar 2016 19:33

Tgt Ion: 43 Resp: 1979

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.2	28.4#

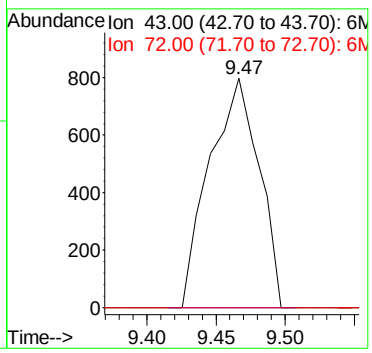

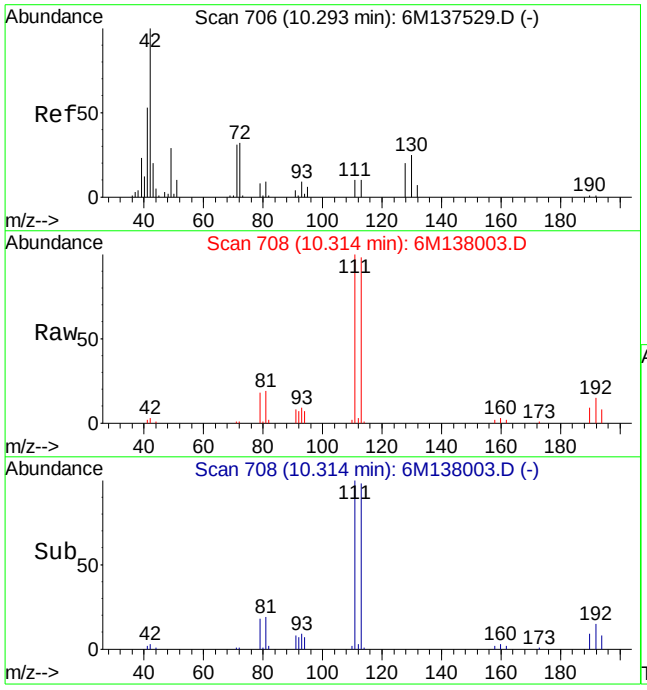

#36
Tetrahydrofuran
Concen: 0.29 ug/L
RT: 10.31 min Scan# 708
Delta R.T. 0.02 min
Lab File: 6M138003.D
Acq: 24 Mar 2016 19:33

Tgt Ion: 42 Resp: 3170

Ion	Ratio	Lower	Upper
42	100		
72	19.5	21.0	49.0#
71	13.9	20.6	48.2#

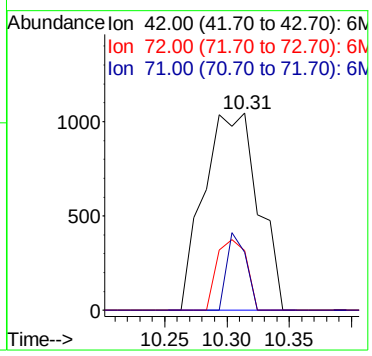

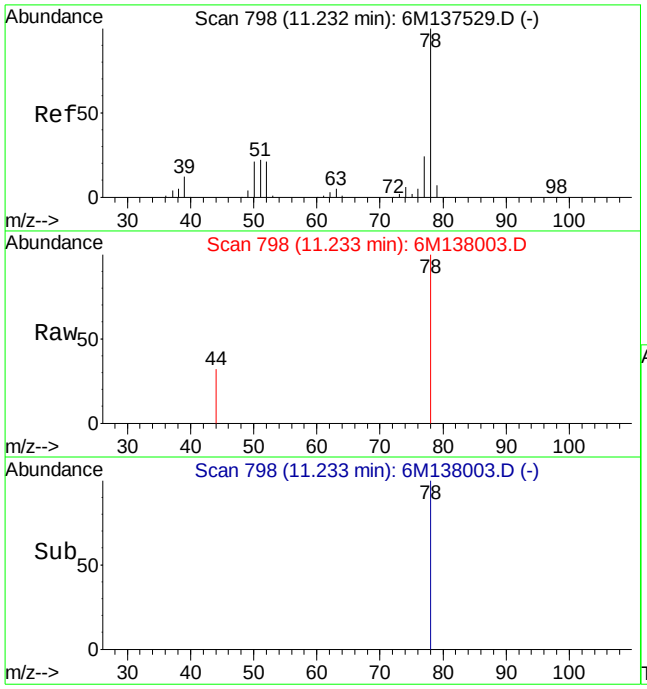

#46
Benzene
Concen: 0.28 ug/L
RT: 11.23 min Scan# 798
Delta R.T. -0.00 min
Lab File: 6M138003.D
Acq: 24 Mar 2016 19:33

Tgt Ion: 78 Resp: 3353

Ion	Ratio	Lower	Upper
78	100		
52	0.0	10.4	24.4#

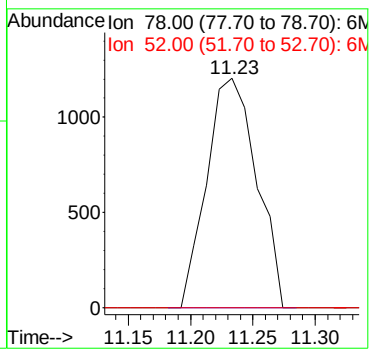

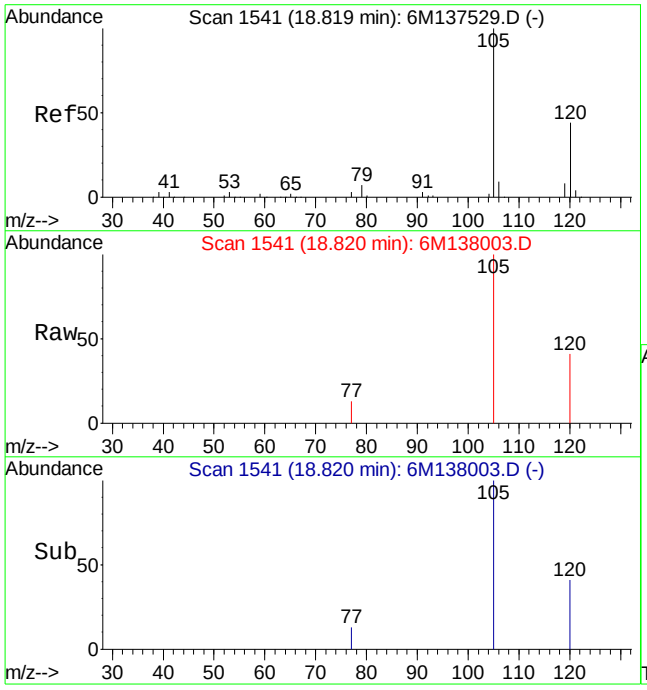

#90
1,2,4-Trimethylbenzene
Concen: 0.42 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. -0.00 min
Lab File: 6M138003.D
Acq: 24 Mar 2016 19:33

Tgt Ion:105 Resp: 4801

Ion	Ratio	Lower	Upper
105	100		
120	34.0	34.3	79.9#

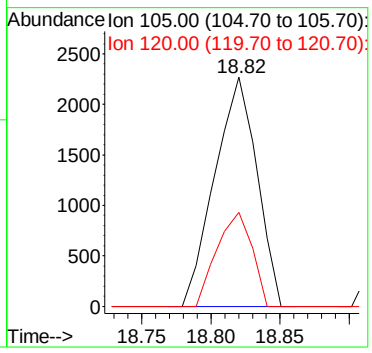

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032416\6M138006.D Vial: 19
Acq On : 24 Mar 2016 21:12 Operator: TMB
Sample : L16030863-12 8260 5.05g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 25 08:37:58 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	540095	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	394609	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	205737	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.34	111	134649	46.4745 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 92.94%		
43) 1,2-Dichloroethane-d4	11.06	65	169370	45.0244 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 90.04%		
58) Toluene-d8	13.80	98	476047	50.7405 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.48%		
80) p-Bromofluorobenzene	17.79	95	197261	52.1999 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 104.40%		

Target Compounds

					Qvalue
11) Acrolein	6.50	56	8276	16.9451 ug/L	89
13) Acetone	6.60	43	15717	9.5280 ug/L #	1
15) Tert-Butyl Alcohol	6.63	59	7159	16.2328 ug/L #	1
24) n-Hexane	8.25	57	1747	0.3685 ug/L #	1
29) 2-Butanone	9.46	43	1368	0.7328 ug/L #	56
36) Tetrahydrofuran	10.31	42	2587	Below Cal #	60
46) Benzene	11.23	78	3222	0.2864 ug/L #	60
47) Trichloroethene	12.09	130	1905	0.7167 ug/L #	39
60) Ethyl Methacrylate	13.81	69	1388	0.3881 ug/L #	1
79) 1,1,2,2-Tetrachloroethane	17.79	83	1235	0.3843 ug/L #	19
82) trans-1,4-Dichloro-2-Buten	18.04	53	4439	3.7413 ug/L #	1
90) 1,2,4-Trimethylbenzene	18.82	105	4358	0.4167 ug/L	80
91) sec-Butylbenzene	18.82	105	4033	0.3167 ug/L #	56

(#) = qualifier out of range (m) = manual integration
6M138006.D 826_SL.M Fri Mar 25 08:37:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032416\6M138006.D Vial: 19
Acq On : 24 Mar 2016 21:12 Operator: TMB
Sample : L16030863-12 8260 5.05g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 25 8:37 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

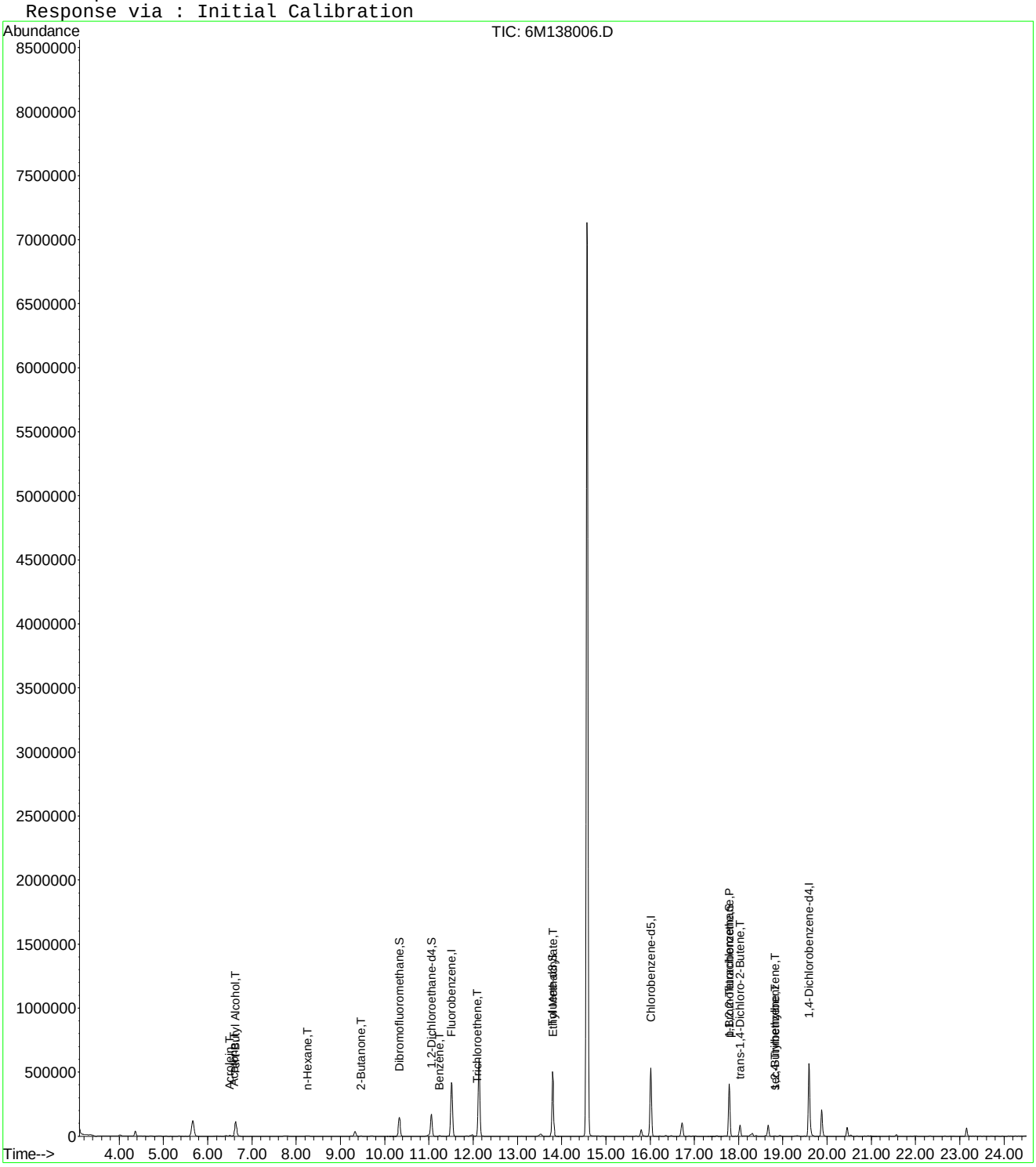

6M138006.D 826_SL.M Fri Mar 25 08:37:59 2016 Page 2

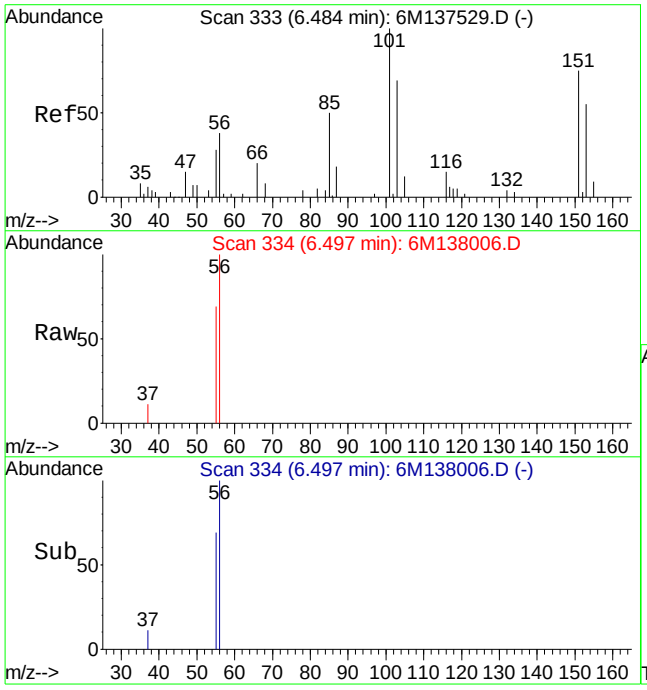

#11
Acrolein
Concen: 16.95 ug/L
RT: 6.50 min Scan# 334
Delta R.T. 0.01 min
Lab File: 6M138006.D
Acq: 24 Mar 2016 21:12

Tgt Ion: 56 Resp: 8276

Ion	Ratio	Lower	Upper
56	100		
55	65.2	44.6	104.0

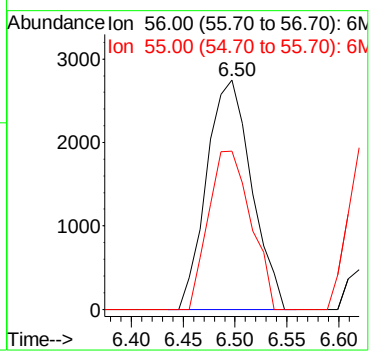

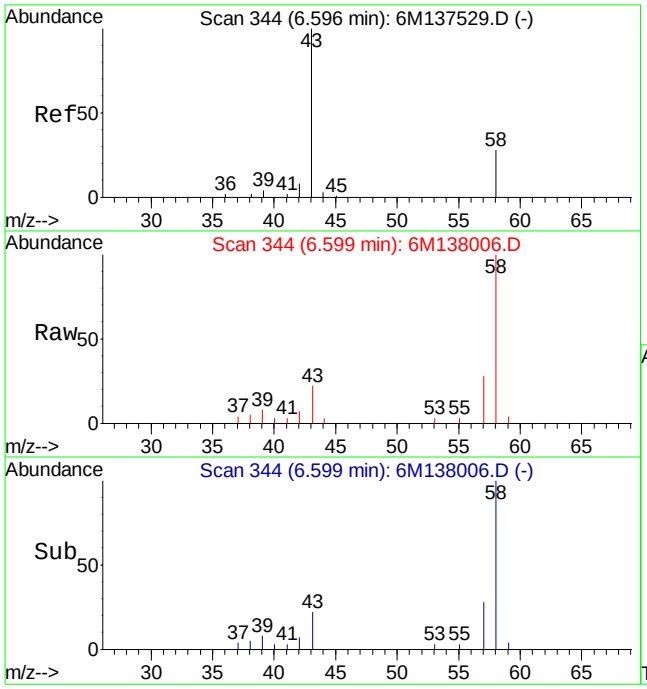

#13
Acetone
Concen: 9.53 ug/L
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M138006.D
Acq: 24 Mar 2016 21:12

Tgt Ion: 43 Resp: 15717

Ion	Ratio	Lower	Upper
43	100		
58	1375.4	16.1	37.7#

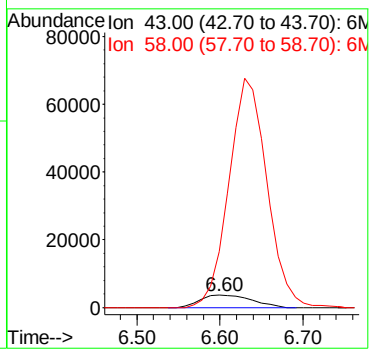

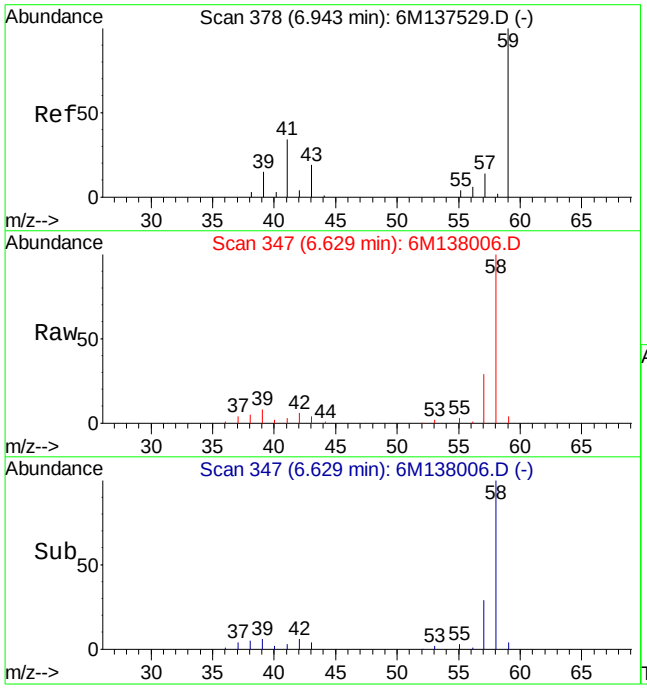

#15
Tert-Butyl Alcohol
Concen: 16.23 ug/L
RT: 6.63 min Scan# 347
Delta R.T. -0.30 min
Lab File: 6M138006.D
Acq: 24 Mar 2016 21:12

Tgt Ion: 59 Resp: 7159

Ion	Ratio	Lower	Upper
59	100		
41	75.1	15.0	35.0#
57	853.0	5.9	13.9#

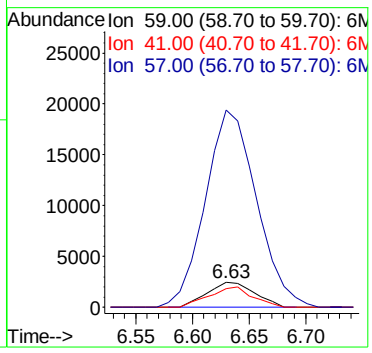

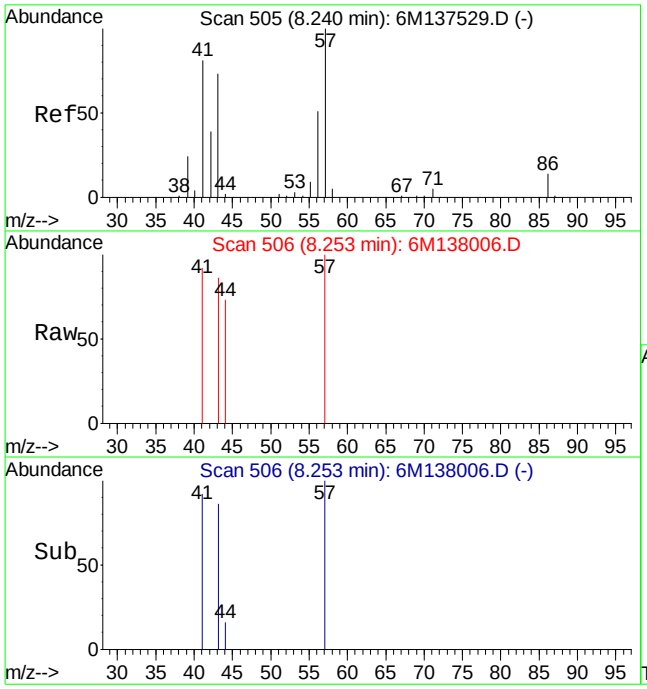

#24
n-Hexane
Concen: 0.37 ug/L
RT: 8.25 min Scan# 506
Delta R.T. 0.01 min
Lab File: 6M138006.D
Acq: 24 Mar 2016 21:12

Tgt Ion: 57 Resp: 1747

Ion	Ratio	Lower	Upper
57	100		
43	157.1	44.0	102.8#

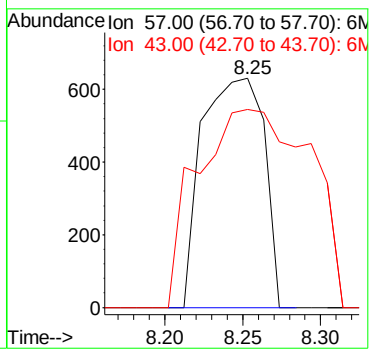

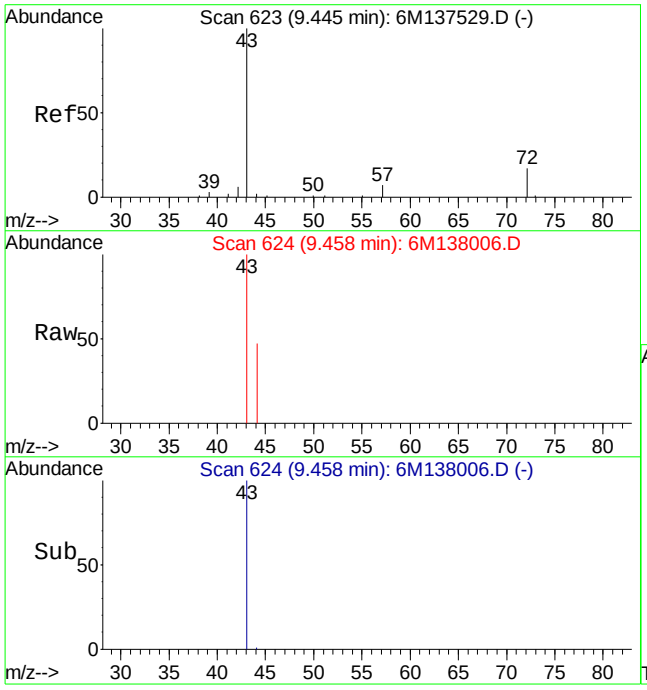

#29
2-Butanone
Concen: 0.73 ug/L
RT: 9.46 min Scan# 624
Delta R.T. 0.01 min
Lab File: 6M138006.D
Acq: 24 Mar 2016 21:12

Tgt Ion: 43 Resp: 1368

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.2	28.4#

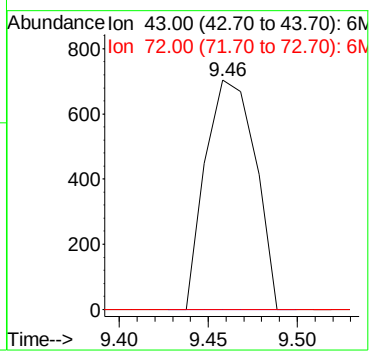

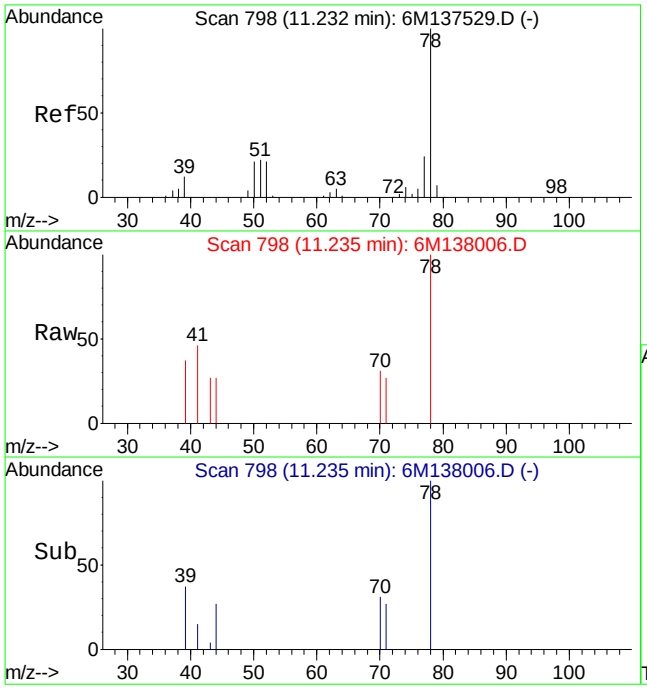

#46
Benzene
Concen: 0.29 ug/L
RT: 11.23 min Scan# 798
Delta R.T. 0.00 min
Lab File: 6M138006.D
Acq: 24 Mar 2016 21:12

Tgt Ion: 78 Resp: 3222

Ion	Ratio	Lower	Upper
78	100		
52	0.0	10.4	24.4#

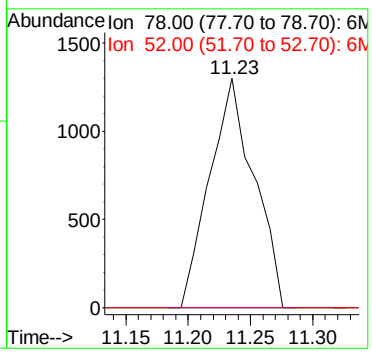

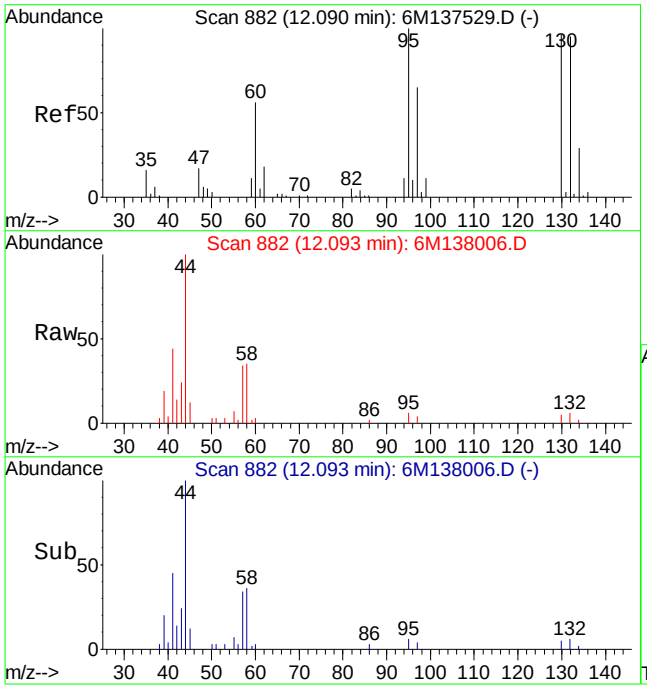

#47
Trichloroethene
Concen: 0.72 ug/L
RT: 12.09 min Scan# 882
Delta R.T. 0.00 min
Lab File: 6M138006.D
Acq: 24 Mar 2016 21:12

Tgt Ion:130 Resp: 1905

Ion	Ratio	Lower	Upper
130	100		
60	95.2	31.2	72.8#

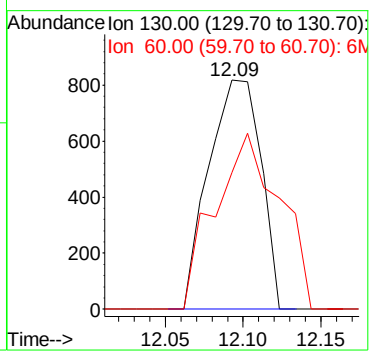

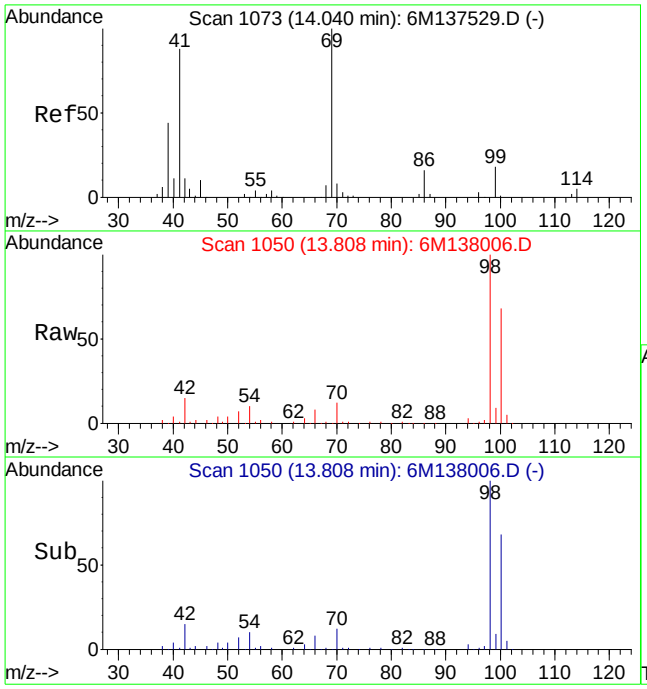

#60
Ethyl Methacrylate
Concen: 0.39 ug/L
RT: 13.81 min Scan# 1050
Delta R.T. -0.22 min
Lab File: 6M138006.D
Acq: 24 Mar 2016 21:12

Tgt Ion: 69 Resp: 1388

Ion	Ratio	Lower	Upper
69	100		
41	223.0	50.6	118.2#

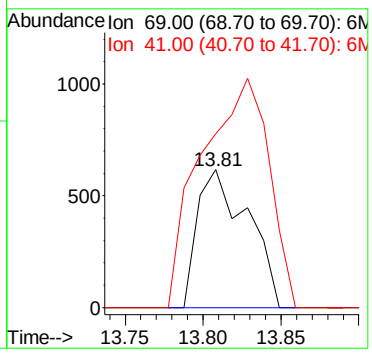

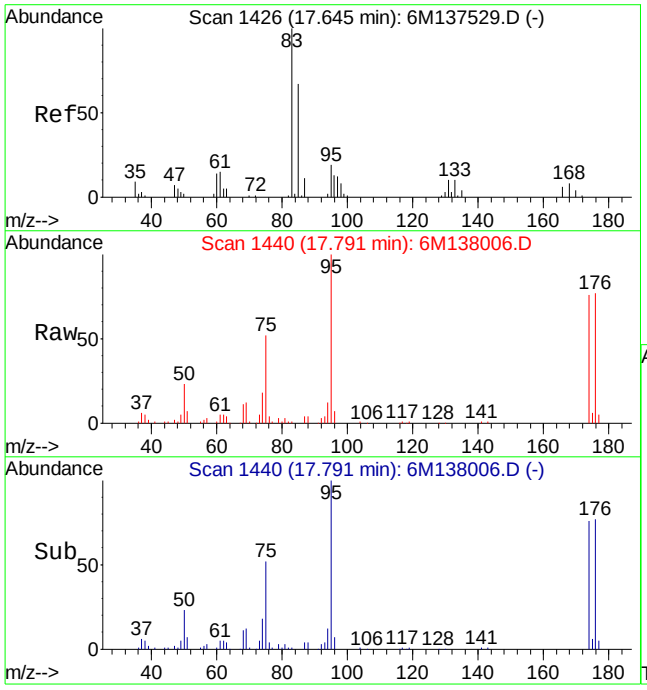

#79
1,1,2,2-Tetrachloroethane
Concen: 0.38 ug/L
RT: 17.79 min Scan# 1440
Delta R.T. 0.14 min
Lab File: 6M138006.D
Acq: 24 Mar 2016 21:12

Tgt Ion: 83 Resp: 1235

Ion	Ratio	Lower	Upper
83	100		
85	0.0	37.7	88.1#

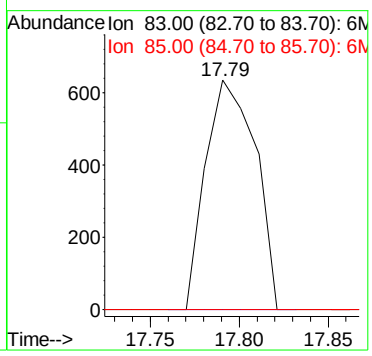

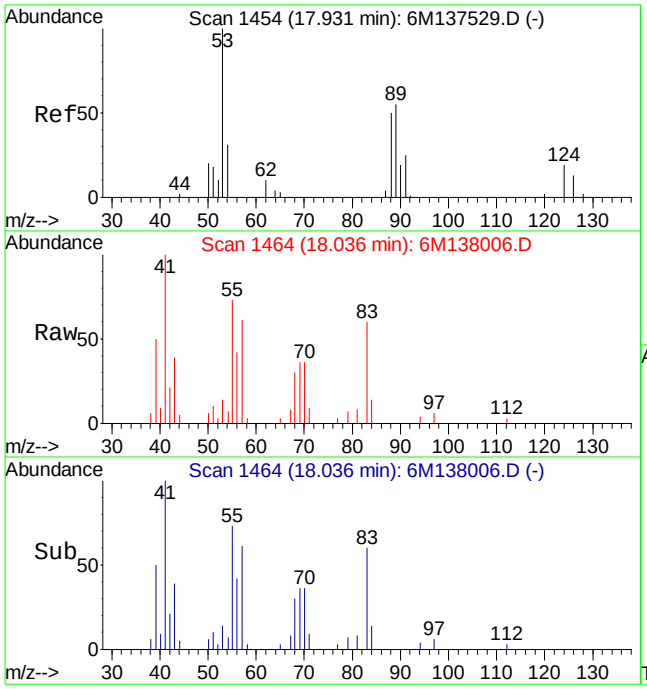

#82
trans-1,4-Dichloro-2-Butene
Concen: 3.74 ug/L
RT: 18.04 min Scan# 1464
Delta R.T. 0.10 min
Lab File: 6M138006.D
Acq: 24 Mar 2016 21:12

Tgt Ion: 53 Resp: 4439

Ion	Ratio	Lower	Upper
53	100		
75	0.0	69.2	161.6#

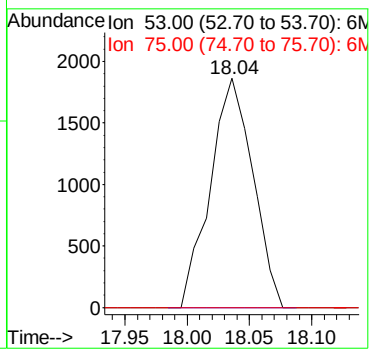

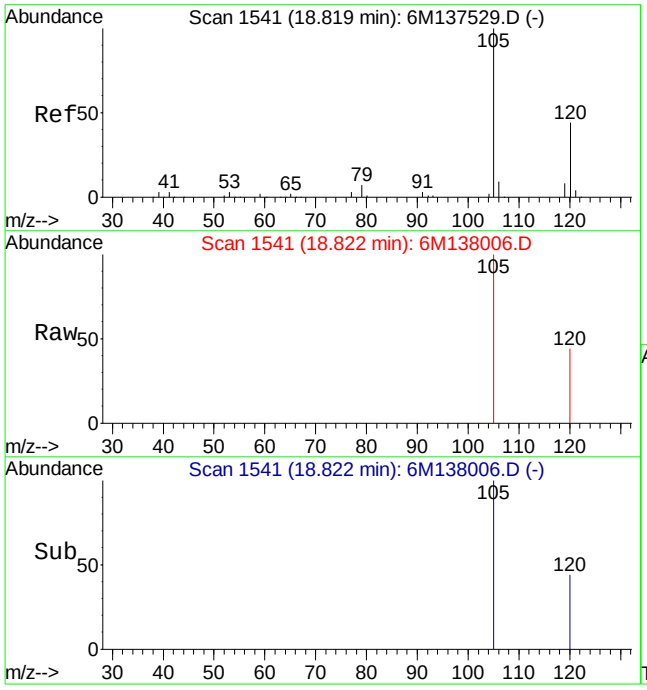

#90
1,2,4-Trimethylbenzene
Concen: 0.42 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. 0.00 min
Lab File: 6M138006.D
Acq: 24 Mar 2016 21:12

Tgt Ion:105 Resp: 4358

Ion	Ratio	Lower	Upper
105	100		
120	42.4	34.3	79.9

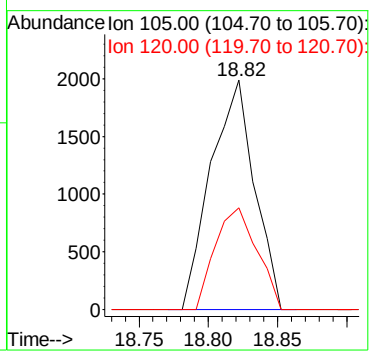

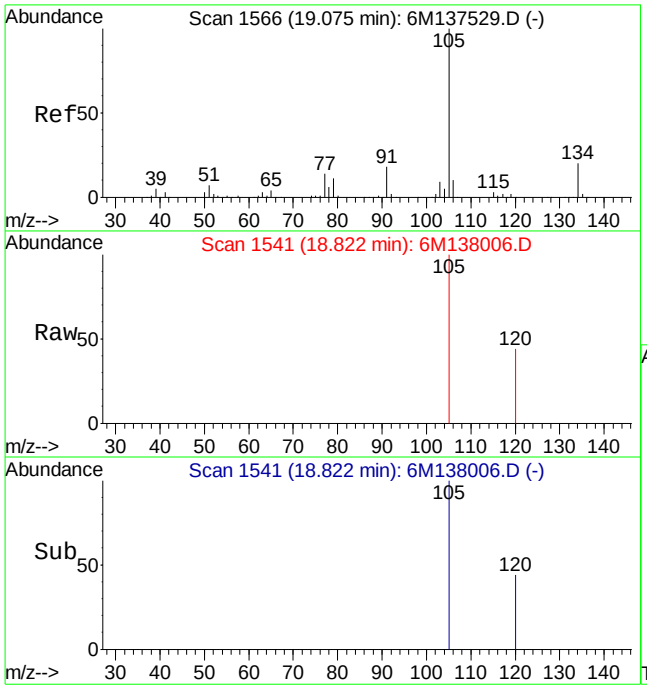

#91
sec-Butylbenzene
Concen: 0.32 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. -0.25 min
Lab File: 6M138006.D
Acq: 24 Mar 2016 21:12

Tgt Ion:105 Resp: 4033

Ion	Ratio	Lower	Upper
105	100		
134	0.0	12.2	28.6#

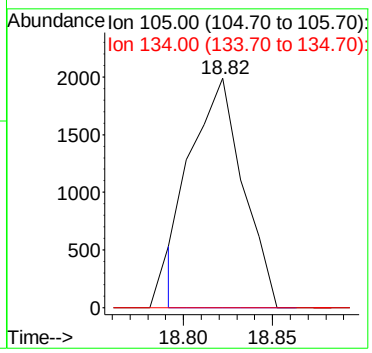

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032416\6M138004.D Vial: 17
Acq On : 24 Mar 2016 20:06 Operator: TMB
Sample : L16030863-13 8260 5.10g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 25 08:37:56 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	582773	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	427612	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	222418	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	144170	46.1166 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 92.24%		
43) 1,2-Dichloroethane-d4	11.05	65	169802	41.8336 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 83.66%		
58) Toluene-d8	13.80	98	515110	50.6666 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.34%		
80) p-Bromofluorobenzene	17.79	95	210276	51.4707 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.94%		

Target Compounds

					Qvalue
13) Acetone	6.60	43	11958	5.4231 ug/L #	74
15) Tert-Butyl Alcohol	6.94	59	1077	2.2632 ug/L #	57
29) 2-Butanone	9.69	43	3800	1.8864 ug/L #	56
36) Tetrahydrofuran	10.31	42	2511	Below Cal #	54
47) Trichloroethene	12.09	130	19263	6.7167 ug/L	96
90) 1,2,4-Trimethylbenzene	18.81	105	5274	0.4664 ug/L	83
91) sec-Butylbenzene	18.81	105	4869	0.3536 ug/L #	56
92) p-Isopropyltoluene	19.49	119	3937	0.3466 ug/L #	35

(#) = qualifier out of range (m) = manual integration
6M138004.D 826_SL.M Fri Mar 25 08:37:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032416\6M138004.D Vial: 17
Acq On : 24 Mar 2016 20:06 Operator: TMB
Sample : L16030863-13 8260 5.10g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 25 8:37 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

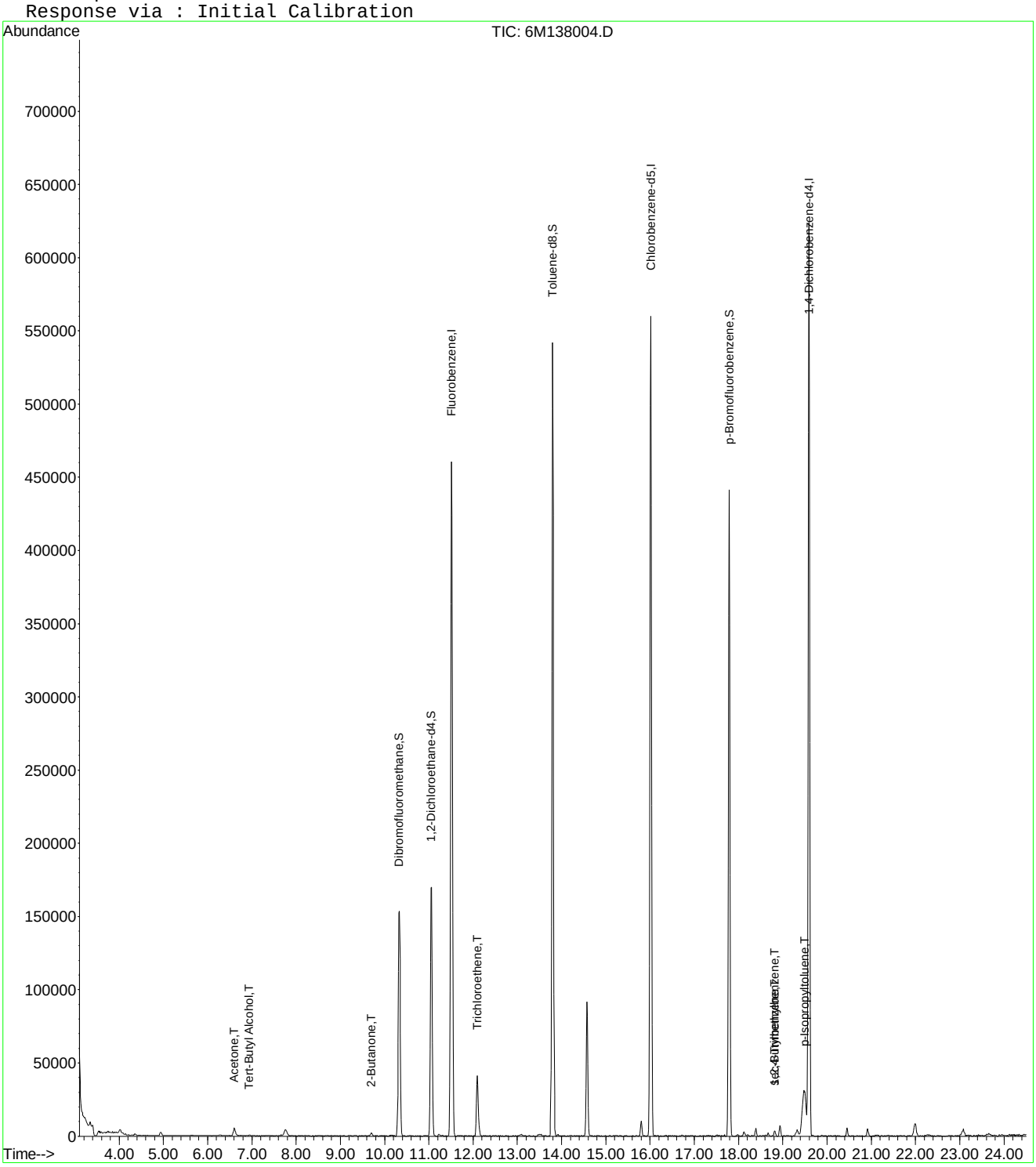

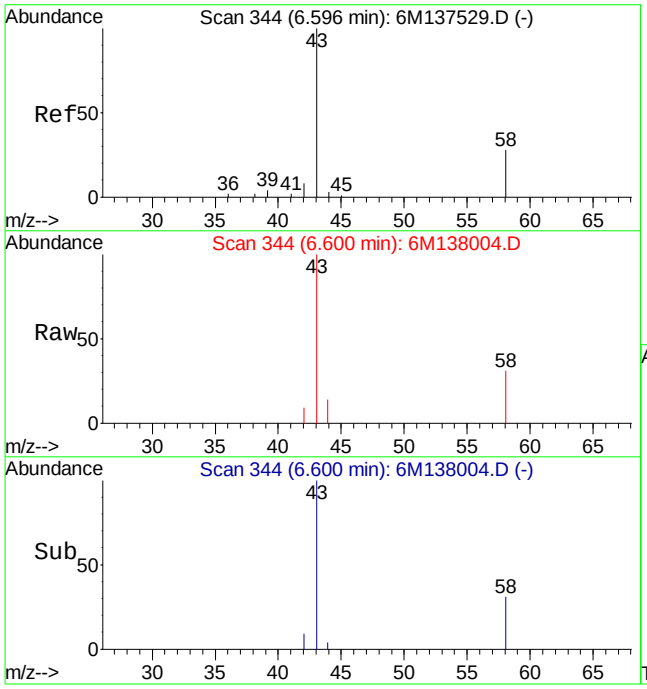

#13
Acetone
Concen: 5.42 ug/L
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M138004.D
Acq: 24 Mar 2016 20:06

Tgt Ion: 43 Resp: 11958

Ion	Ratio	Lower	Upper
43	100		
58	40.1	16.1	37.7#

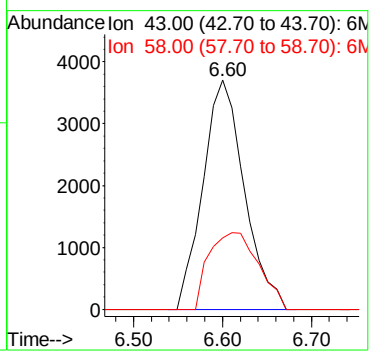

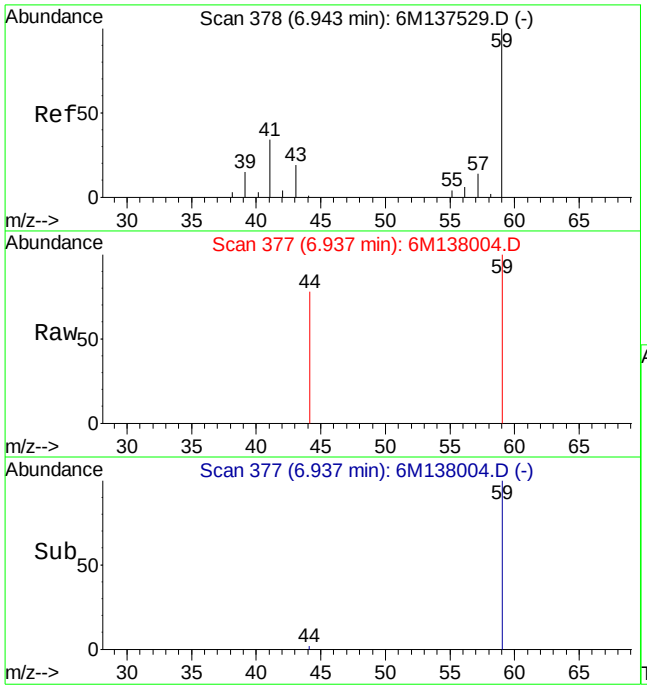

#15
Tert-Butyl Alcohol
Concen: 2.26 ug/L
RT: 6.94 min Scan# 377
Delta R.T. 0.00 min
Lab File: 6M138004.D
Acq: 24 Mar 2016 20:06

Tgt Ion: 59 Resp: 1077

Ion	Ratio	Lower	Upper
59	100		
41	0.0	15.0	35.0#
57	0.0	5.9	13.9#

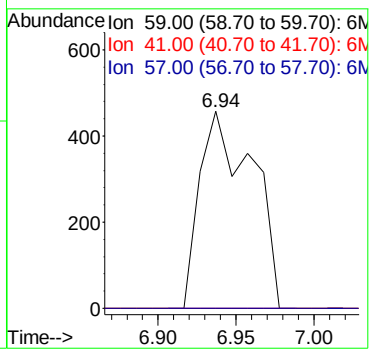

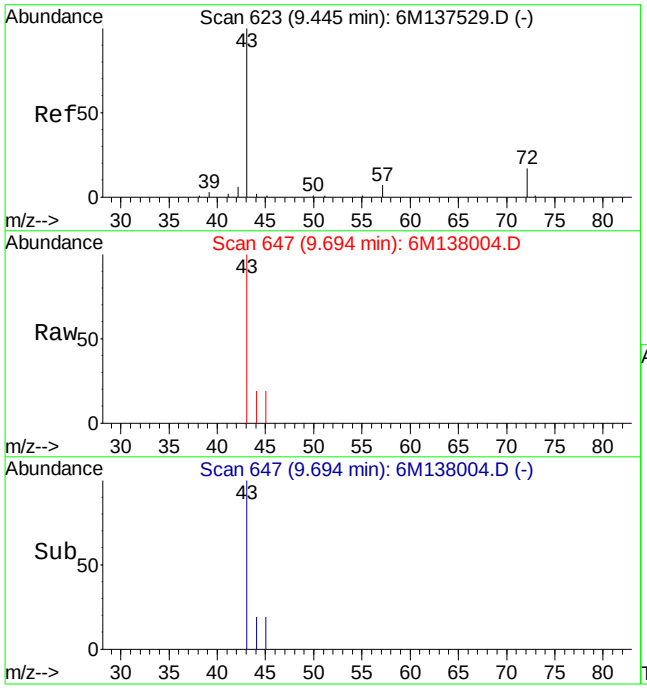

#29
2-Butanone
Concen: 1.89 ug/L
RT: 9.69 min Scan# 647
Delta R.T. 0.25 min
Lab File: 6M138004.D
Acq: 24 Mar 2016 20:06

Tgt Ion: 43 Resp: 3800

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.2	28.4#

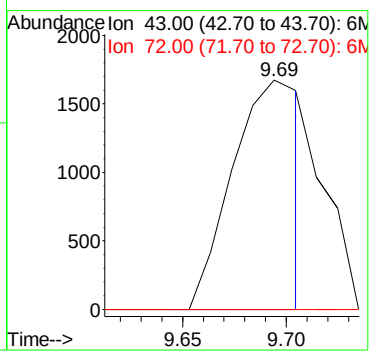

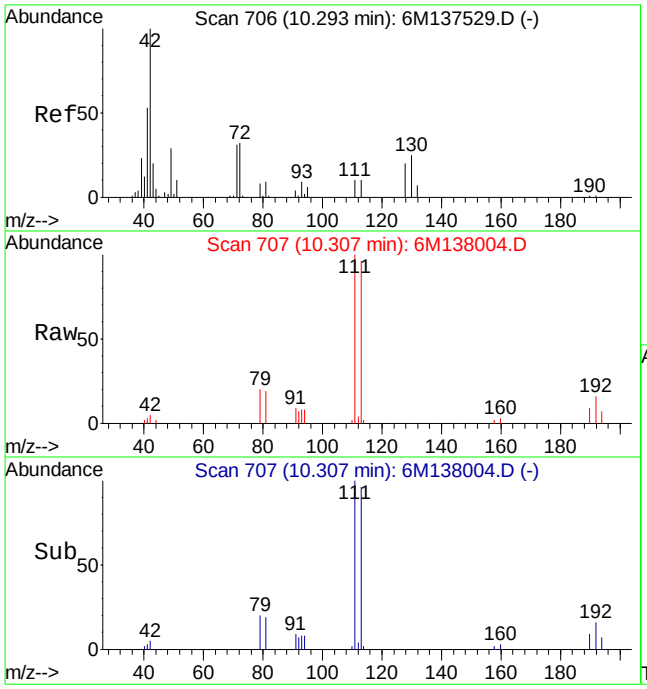

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.31 min Scan# 707
Delta R.T. 0.01 min
Lab File: 6M138004.D
Acq: 24 Mar 2016 20:06

Tgt Ion: 42 Resp: 2511

Ion	Ratio	Lower	Upper
42	100		
72	8.3	21.0	49.0#
71	7.4	20.6	48.2#

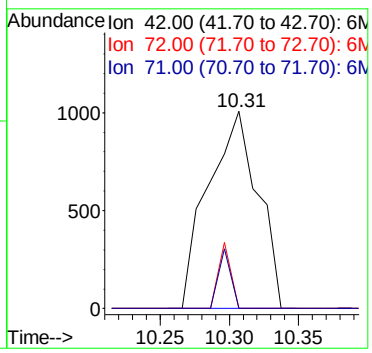

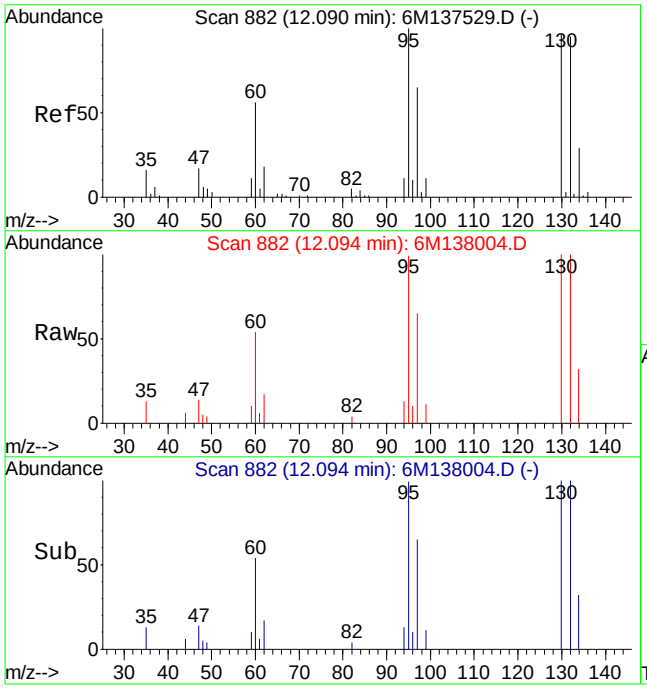

#47
Trichloroethene
Concen: 6.72 ug/L
RT: 12.09 min Scan# 882
Delta R.T. 0.00 min
Lab File: 6M138004.D
Acq: 24 Mar 2016 20:06

Tgt Ion:130 Resp: 19263

Ion	Ratio	Lower	Upper
130	100		
60	54.5	31.2	72.8

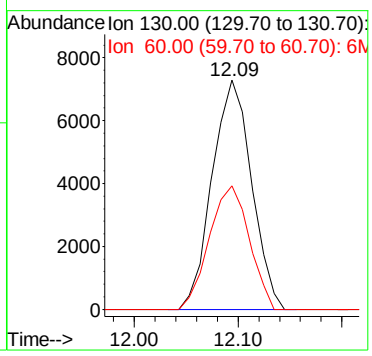

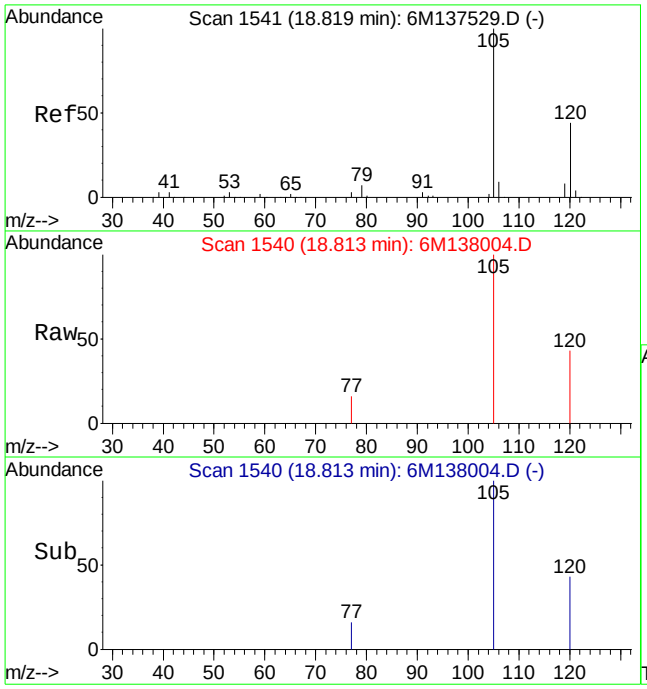

#90
1,2,4-Trimethylbenzene
Concen: 0.47 ug/L
RT: 18.81 min Scan# 1540
Delta R.T. -0.01 min
Lab File: 6M138004.D
Acq: 24 Mar 2016 20:06

Tgt Ion:105 Resp: 5274

Ion	Ratio	Lower	Upper
105	100		
120	44.4	34.3	79.9

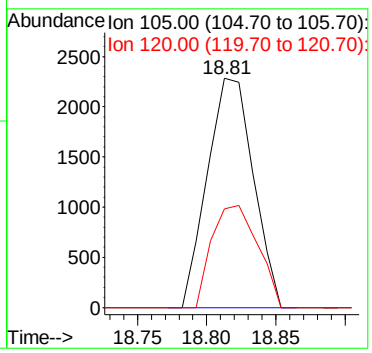

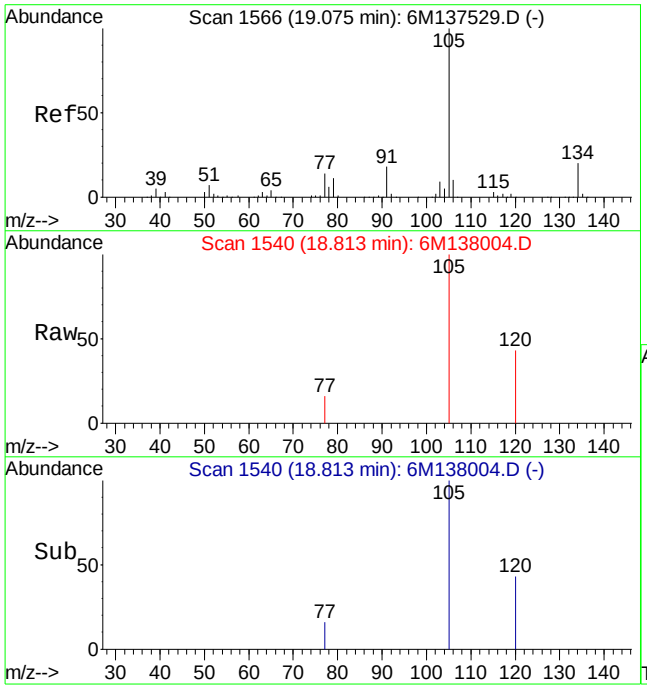

#91
sec-Butylbenzene
Concen: 0.35 ug/L
RT: 18.81 min Scan# 1540
Delta R.T. -0.26 min
Lab File: 6M138004.D
Acq: 24 Mar 2016 20:06

Tgt Ion:105 Resp: 4869

Ion	Ratio	Lower	Upper
105	100		
134	0.0	12.2	28.6#

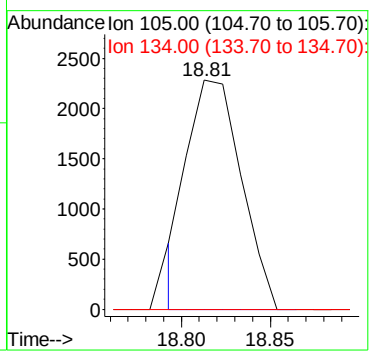

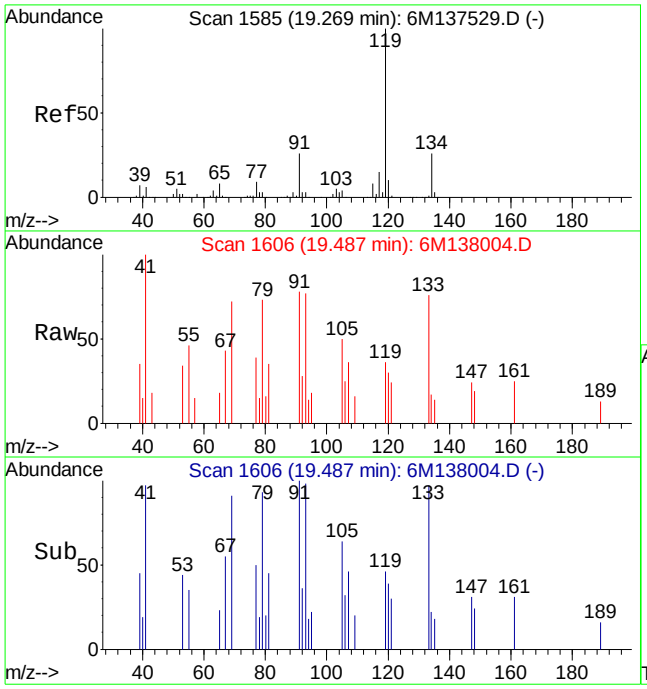

#92
p-Isopropyltoluene
Concen: 0.35 ug/L
RT: 19.49 min Scan# 1606
Delta R.T. 0.23 min
Lab File: 6M138004.D
Acq: 24 Mar 2016 20:06

Tgt Ion:119 Resp: 3937

Ion	Ratio	Lower	Upper
119	100		
134	59.0	15.6	36.4#

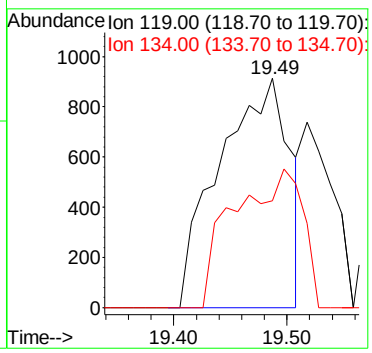

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032416\6M138005.D Vial: 18
Acq On : 24 Mar 2016 20:39 Operator: TMB
Sample : L16030863-14 8260 5.30g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 25 08:37:57 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	554060	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	404209	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	207682	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	135917	45.7298 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 91.46%		
43) 1,2-Dichloroethane-d4	11.06	65	162648	42.1477 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 84.30%		
58) Toluene-d8	13.80	98	492385	51.2354 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 102.48%		
80) p-Bromofluorobenzene	17.79	95	197784	51.8481 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 103.70%		

Target Compounds

					Qvalue
13) Acetone	6.59	43	7691	2.2479 ug/L #	48
46) Benzene	11.23	78	3635	0.3149 ug/L #	72
47) Trichloroethene	12.09	130	2368	0.8685 ug/L	75
60) Ethyl Methacrylate	13.81	69	999	0.2727 ug/L	72
90) 1,2,4-Trimethylbenzene	18.82	105	4608	0.4364 ug/L	84
91) sec-Butylbenzene	18.82	105	3808	0.2962 ug/L #	56

(#) = qualifier out of range (m) = manual integration
6M138005.D 826_SL.M Fri Mar 25 08:37:58 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032416\6M138005.D Vial: 18
Acq On : 24 Mar 2016 20:39 Operator: TMB
Sample : L16030863-14 8260 5.30g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 25 8:37 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

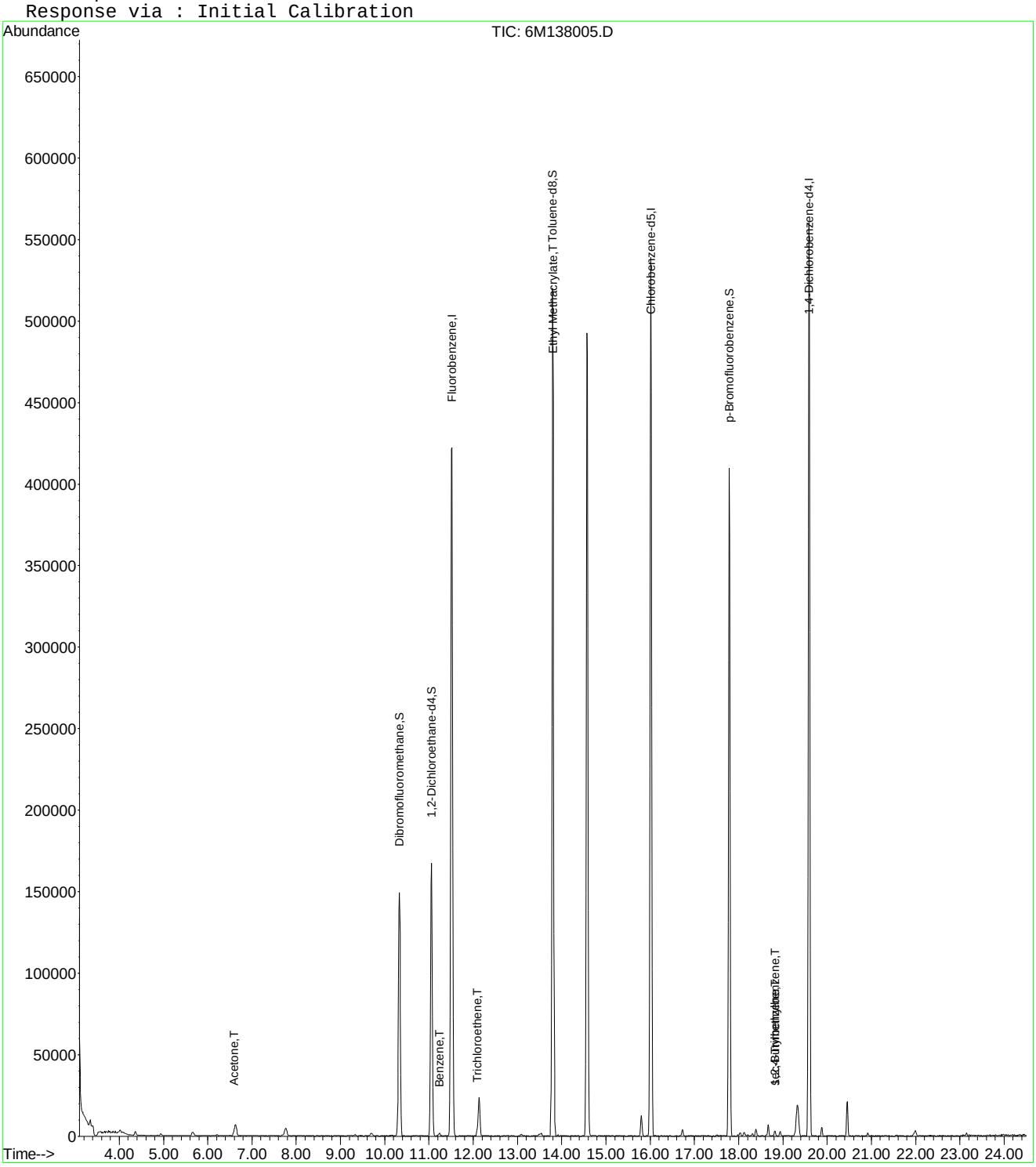

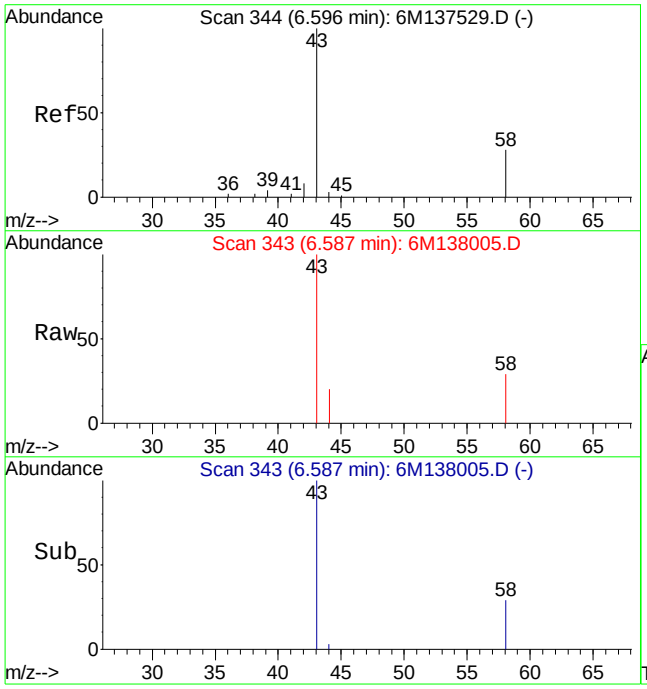

#13
Acetone
Concen: 2.25 ug/L
RT: 6.59 min Scan# 343
Delta R.T. 0.00 min
Lab File: 6M138005.D
Acq: 24 Mar 2016 20:39

Tgt Ion: 43 Resp: 7691

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.1	37.7#

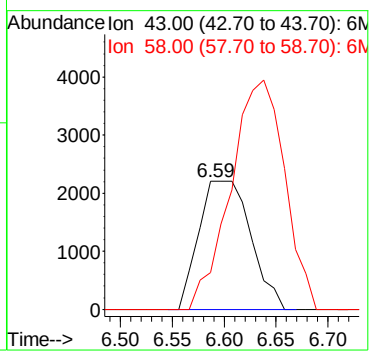

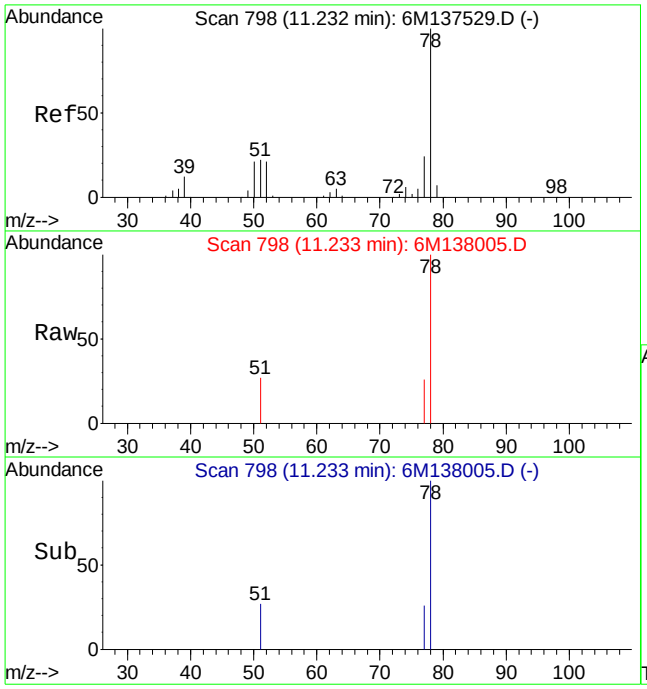

#46
Benzene
Concen: 0.31 ug/L
RT: 11.23 min Scan# 798
Delta R.T. -0.00 min
Lab File: 6M138005.D
Acq: 24 Mar 2016 20:39

Tgt Ion: 78 Resp: 3635

Ion	Ratio	Lower	Upper
78	100		
52	5.3	10.4	24.4#

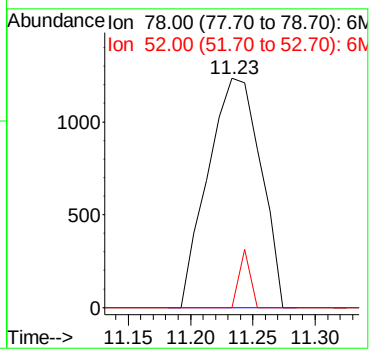

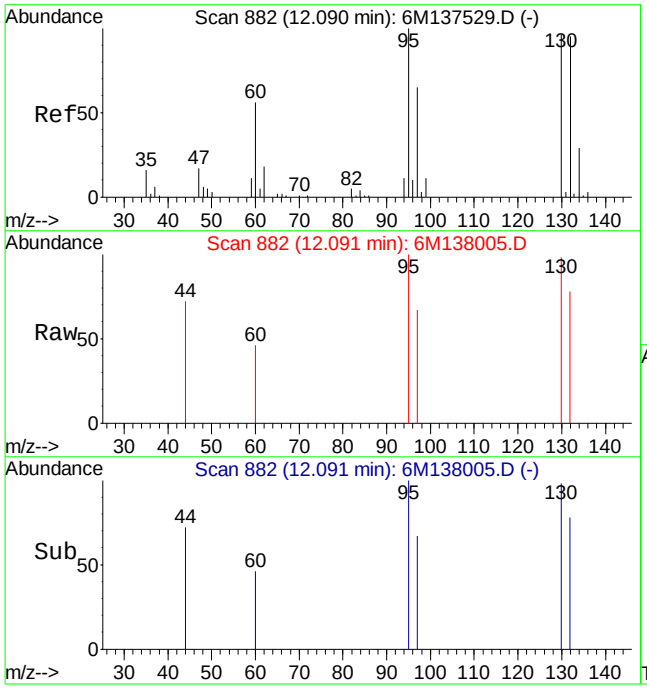

#47
Trichloroethene
Concen: 0.87 ug/L
RT: 12.09 min Scan# 882
Delta R.T. -0.00 min
Lab File: 6M138005.D
Acq: 24 Mar 2016 20:39

Tgt Ion:130 Resp: 2368

Ion	Ratio	Lower	Upper
130	100		
60	34.6	31.2	72.8

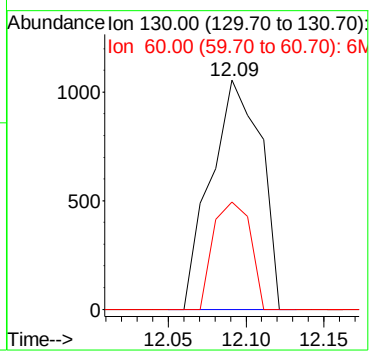

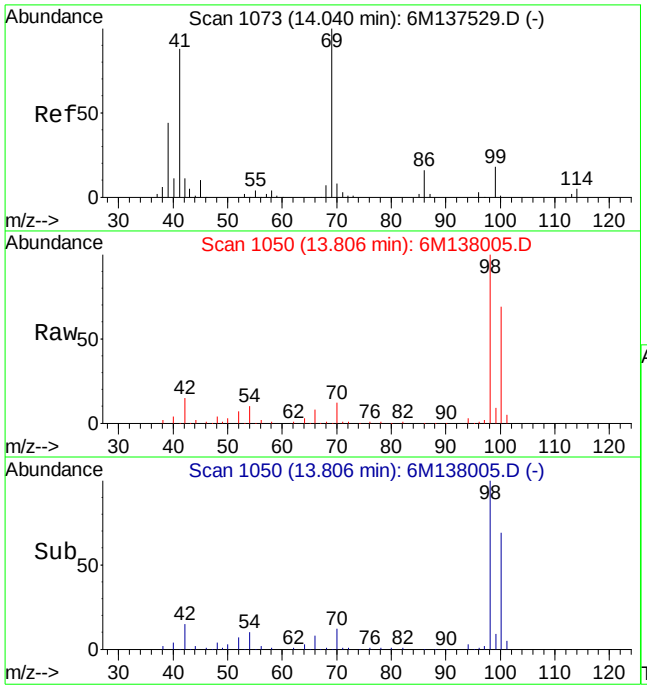

#60
Ethyl Methacrylate
Concen: 0.27 ug/L
RT: 13.81 min Scan# 1050
Delta R.T. -0.22 min
Lab File: 6M138005.D
Acq: 24 Mar 2016 20:39

Tgt Ion: 69 Resp: 999

Ion	Ratio	Lower	Upper
69	100		
41	110.1	50.6	118.2

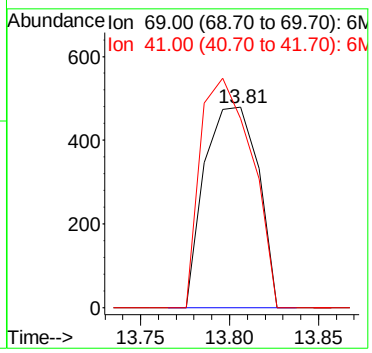

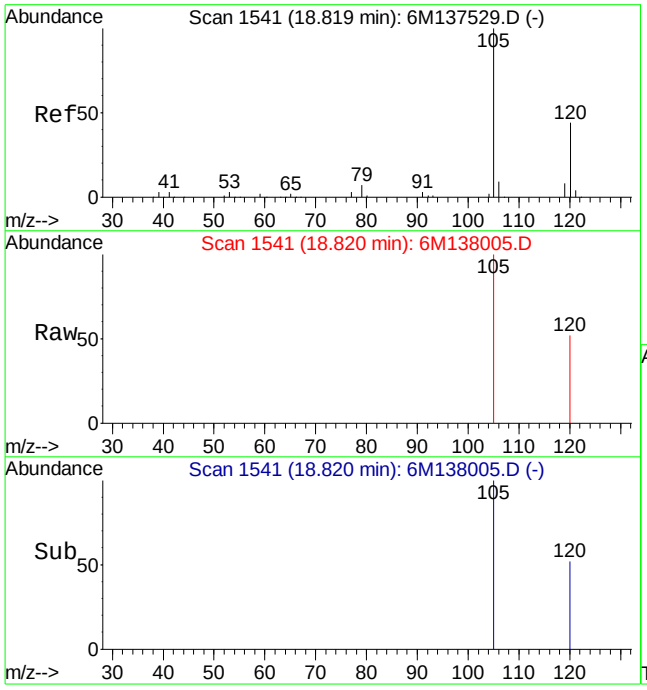

#90
1,2,4-Trimethylbenzene
Concen: 0.44 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. -0.00 min
Lab File: 6M138005.D
Acq: 24 Mar 2016 20:39

Tgt Ion:105 Resp: 4608

Ion	Ratio	Lower	Upper
105	100		
120	45.5	34.3	79.9

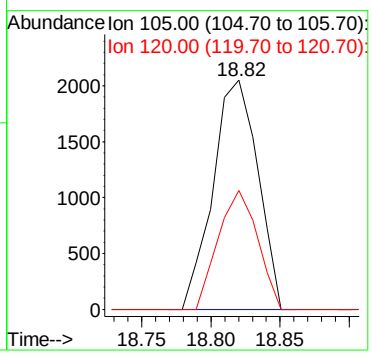

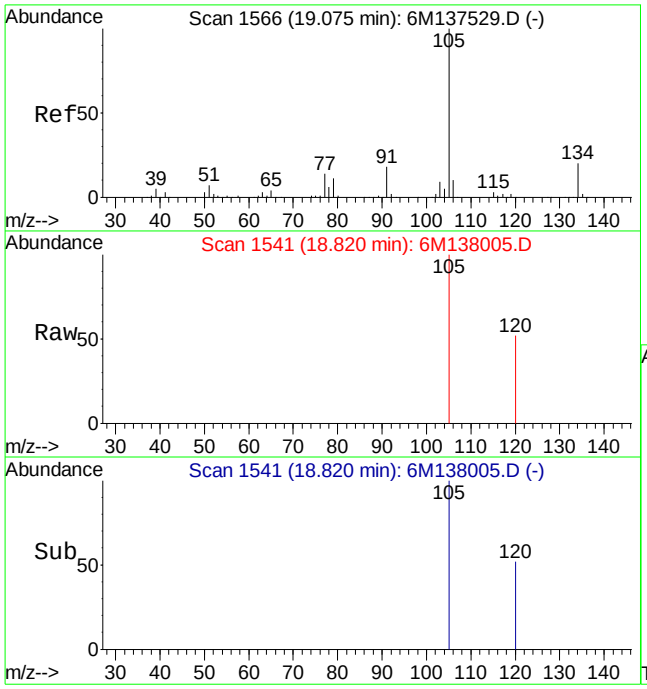

#91
sec-Butylbenzene
Concen: 0.30 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. -0.26 min
Lab File: 6M138005.D
Acq: 24 Mar 2016 20:39

Tgt Ion:105 Resp: 3808

Ion	Ratio	Lower	Upper
105	100		
134	0.0	12.2	28.6#

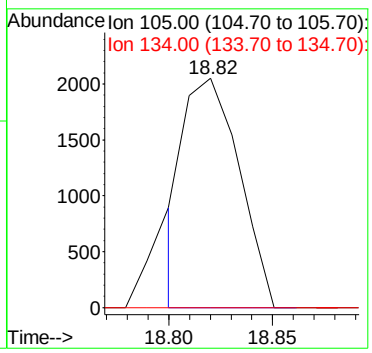

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:35 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:12:24 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	662608	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	467802	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	239669	50.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.32	111	1132	0.3185 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.64%#	
43) 1,2-Dichloroethane-d4	11.05	65	1872	0.4056 ug/L	-0.01
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.82%#	
58) Toluene-d8	13.80	98	5704	0.5128 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	1.02%#	
80) p-Bromofluorobenzene	17.79	95	2210	0.5020 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	1.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	3454	0.5676 ug/L #	66
3) Chloromethane	3.88	50	8579	1.3528 ug/L	90
4) Vinyl Chloride	4.12	62	3760	0.7367 ug/L #	74
5) 1,3-Butadiene	4.18	54	3027	0.7128 ug/L #	61
6) Bromomethane	5.03	94	1550	0.5697 ug/L	88
7) Chloroethane	5.19	64	1482	0.5121 ug/L #	45
8) Trichlorofluoromethane	5.69	101	6717	0.9794 ug/L #	89
10) Isoprene	6.27	67	1888	0.4226 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	1199	0.3663 ug/L #	55
13) Acetone	6.59	43	9375	2.3758 ug/L	94
14) 1,1-Dichloroethene	6.83	61	2956	0.5098 ug/L	84
15) Tert-Butyl Alcohol	6.94	59	200	0.3696 ug/L #	57
18) Methyl acetate	7.39	43	2867	0.7115 ug/L #	64
19) Methylene Chloride	7.67	84	2652	0.7594 ug/L	75
20) Carbon Disulfide	7.72	76	8199	0.7390 ug/L #	82
22) Methyl Tert Butyl Ether	7.88	73	4851	0.4864 ug/L #	63
23) trans-1,2-Dichloroethene	8.16	96	1352	0.4221 ug/L #	10
24) n-Hexane	8.23	57	3942	0.6777 ug/L	92
26) Vinyl Acetate	8.79	43	2062	0.2645 ug/L #	78
27) 1,1-Dichloroethane	8.82	63	3798	0.5499 ug/L #	68
29) 2-Butanone	9.46	43	1832	0.7999 ug/L #	56
31) 2,2-Dichloropropane	9.69	77	2885	0.5204 ug/L	96
32) cis-1,2-Dichloroethene	9.76	96	1812	0.5067 ug/L	93
33) Chloroform	10.01	83	3647	0.5654 ug/L	91
35) Bromochloromethane	10.26	130	694	0.3303 ug/L #	47
36) Tetrahydrofuran	10.29	42	9683	4.2648 ug/L	95
38) 1,1,1-Trichloroethane	10.59	97	2858	0.5017 ug/L	84
39) Cyclohexane	10.62	56	2886	0.4467 ug/L	94
40) 1,1-Dichloropropene	10.82	75	2042	0.4451 ug/L #	76
42) Carbon Tetrachloride	10.99	117	2712	0.5095 ug/L #	85
45) 1,2-Dichloroethane	11.19	62	3101	0.5633 ug/L #	75
46) Benzene	11.23	78	8142	0.5899 ug/L	89
47) Trichloroethene	12.09	130	1950	0.5980 ug/L	81
48) Methylcyclohexane	12.18	83	2990	0.5672 ug/L #	73
49) 1,2-Dichloropropane	12.34	63	1667	0.4489 ug/L #	69
51) Bromodichloromethane	12.68	83	2589	0.5312 ug/L	92
52) Dibromomethane	12.78	93	741	0.3411 ug/L	80
55) cis-1,3-Dichloropropene	13.42	75	2628	0.4894 ug/L #	74
56) Dimethyl Disulfide	13.71	79	853	0.3150 ug/L #	49
59) Toluene	13.92	91	7610	0.5751 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:35 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:12:24 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
60)	Ethyl Methacrylate	14.04	69	1764	0.4160 ug/L		85
62)	trans-1,3-Dichloropropene	14.12	75	2064	0.4056 ug/L	#	71
63)	1,1,2-Trichloroethane	14.37	97	1621	0.5861 ug/L	#	75
64)	2-Hexanone	14.32	43	1822	0.5773 ug/L	#	48
65)	1,3-Dichloropropane	14.75	76	2715	0.5416 ug/L		83
66)	Tetrachloroethene	14.86	166	1836	0.5624 ug/L		91
67)	Dibromochloromethane	15.18	129	1663	0.4623 ug/L		94
68)	1,2-Dibromoethane	15.48	107	1262	0.4462 ug/L		99
69)	1-Chlorohexane	15.59	91	2113	0.5142 ug/L		96
70)	Chlorobenzene	16.07	112	4991	0.5869 ug/L		75
71)	1,1,1,2-Tetrachloroethane	16.11	131	1409	0.4126 ug/L	#	79
72)	Ethylbenzene	16.11	106	2290	0.5032 ug/L		61
73)	m-,p-Xylene	16.22	106	6307	1.1326 ug/L		90
74)	o-Xylene	16.88	106	2685	0.5119 ug/L		71
75)	Styrene	16.92	104	4645	0.5203 ug/L		93
76)	Bromoform	17.49	173	756	0.2977 ug/L	#	62
77)	Isopropylbenzene	17.38	105	7047	0.4998 ug/L		82
79)	1,1,2,2-Tetrachloroethane	17.64	83	1948	0.5203 ug/L		84
83)	n-Propylbenzene	17.98	91	9243	0.5679 ug/L	#	92
84)	Bromobenzene	18.13	156	1885	0.5328 ug/L		100
85)	1,3,5-Trimethylbenzene	18.21	105	6007	0.5185 ug/L		90
86)	2-Chlorotoluene	18.29	91	5403	0.4973 ug/L		88
87)	4-Chlorotoluene	18.35	91	5598	0.5635 ug/L	#	83
88)	a-Methylstyrene	18.69	118	3780	0.6719 ug/L		93
89)	tert-Butylbenzene	18.76	134	1072	0.4440 ug/L		84
90)	1,2,4-Trimethylbenzene	18.82	105	7288	0.5982 ug/L		78
91)	sec-Butylbenzene	19.08	105	8207	0.5532 ug/L		85
92)	p-Isopropyltoluene	19.27	119	6156	0.5029 ug/L		99
93)	1,3-Dichlorobenzene	19.48	146	3876	0.5662 ug/L		99
94)	1,4-Dichlorobenzene	19.64	146	4389	0.6299 ug/L	#	36
95)	n-Butylbenzene	19.89	91	6993	0.5680 ug/L		91
96)	1,2-Dichlorobenzene	20.23	146	3739	0.5676 ug/L		89
98)	1,2,4-Trichlorobenzene	22.76	180	2881	0.6050 ug/L		89
99)	Hexachlorobutadiene	22.95	225	1268	0.4656 ug/L		81
100)	Naphthalene	23.20	128	5965	0.5449 ug/L		95
101)	1,2,3-Trichlorobenzene	23.58	180	2914	0.6214 ug/L	#	69

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

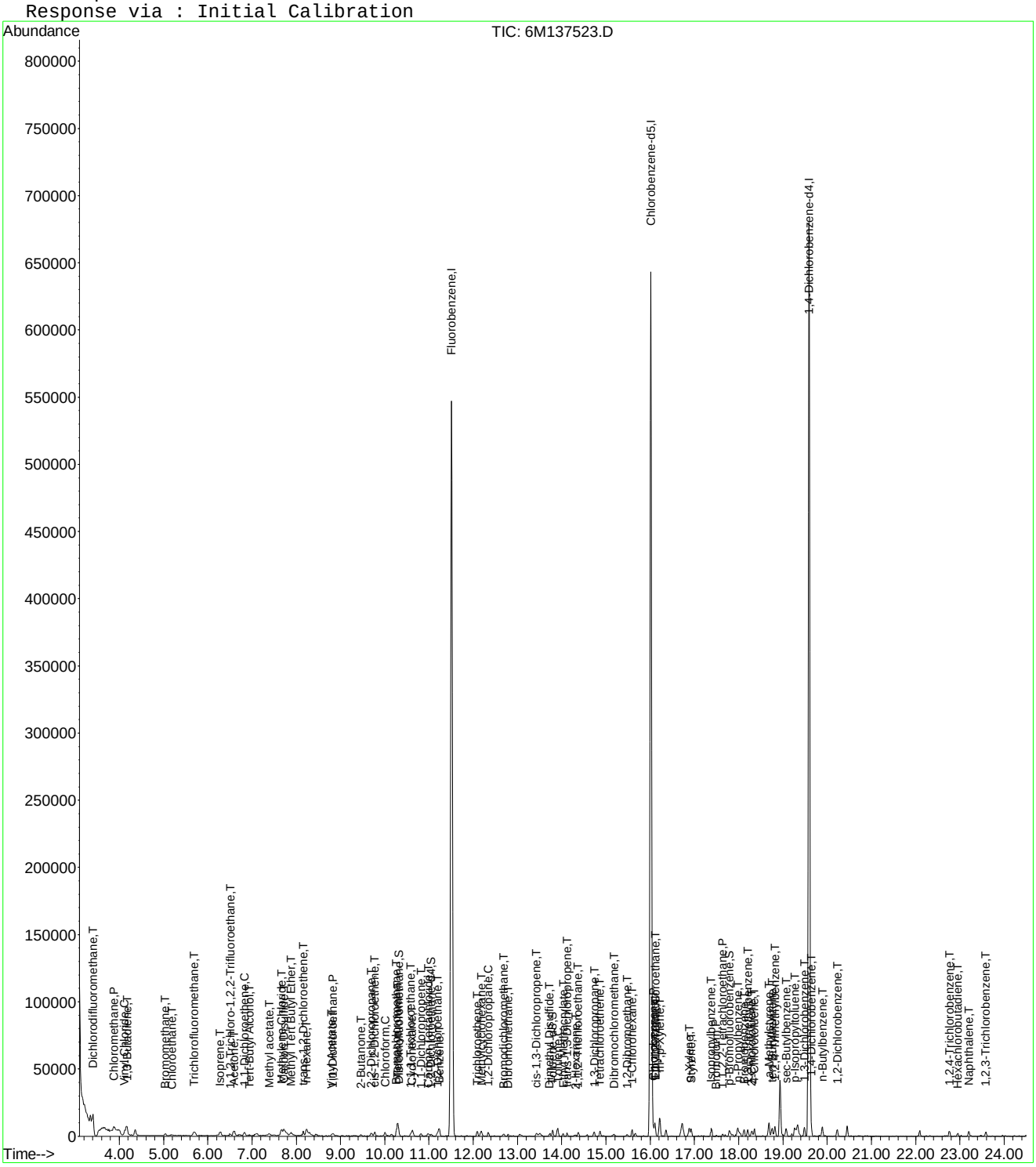

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.5676	0.0	0	0.00
3	P	Chloromethane	-1.0000	1.3528	0.0	0	0.00
4	C	Vinyl Chloride	-1.0000	0.7367	0.0	0	0.00
5	T	1,3-Butadiene	-1.0000	0.7128	0.0	0	0.01
6	T	Bromomethane	-1.0000	0.5697	0.0	0	0.00
7	T	Chloroethane	-1.0000	0.5121	0.0	0	0.00
8	T	Trichlorofluoromethane	-1.0000	0.9794	0.0	0	-0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.24#
10	T	Isoprene	-1.0000	0.4226	0.0	0	-0.01
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.48#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3663	0.0	0	0.00
13	T	Acetone	-1.0000	2.3758	0.0	0	0.00
14	C	1,1-Dichloroethene	-1.0000	0.5098	0.0	0	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.3696	0.0	0	0.00
16	T	Dimethyl Sulfide	-1.0000	0.2328	0.0	0	-0.02
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.38#
18	T	Methyl acetate	-1.0000	0.7115	0.0	0	0.00
19	T	Methylene Chloride	-1.0000	0.7594	0.0	0	0.00
20	T	Carbon Disulfide	-1.0000	0.7390	0.0	0	0.00
21	T	Acrylonitrile	-1.0000	0.1371	0.0	0	0.02
22	T	Methyl Tert Butyl Ether	0.5000	0.4864	2.7	100	-0.01
23	T	trans-1,2-Dichloroethene	-1.0000	0.4221	0.0	0	0.00
24	T	n-Hexane	-1.0000	0.6777	0.0	0	-0.01
25	T	Diisopropyl ether	-1.0000	0.1069	0.0	0	-0.16
26	T	Vinyl Acetate	-1.0000	0.2645	0.0	0	0.00
27	P	1,1-Dichloroethane	-1.0000	0.5499	0.0	0	-0.01
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-9.24#
29	T	2-Butanone	-1.0000	0.7999	0.0	0	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.58#
31	T	2,2-Dichloropropane	-1.0000	0.5204	0.0	0	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.5067	0.0	0	-0.01
33	C	Chloroform	-1.0000	0.5654	0.0	0	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-10.16#
35	T	Bromochloromethane	-1.0000	0.3303	0.0	0	0.00
36	T	Tetrahydrofuran	-1.0000	4.2648	0.0	0	0.00
37	S	Dibromofluoromethane	-1.0000	0.3185	0.0	0	0.00
38	T	1,1,1-Trichloroethane	-1.0000	0.5017	0.0	0	-0.01
39	T	Cyclohexane	-1.0000	0.4467	0.0	0	-0.02
40	T	1,1-Dichloropropene	-1.0000	0.4451	0.0	0	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.94#
42	T	Carbon Tetrachloride	-1.0000	0.5095	0.0	0	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.4056	0.0	0	-0.01
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	-1.0000	0.5633	0.0	0	0.00
46	T	Benzene	0.5000	0.5899	-18.0	100	0.00
47	T	Trichloroethene	-1.0000	0.5980	0.0	0	0.00
48	T	Methylcyclohexane	-1.0000	0.5672	0.0	0	0.00
49	C	1,2-Dichloropropane	-1.0000	0.4489	0.0	0	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-12.67#
51	T	Bromodichloromethane	-1.0000	0.5312	0.0	0	0.00
52	T	Dibromomethane	-1.0000	0.3411	0.0	0	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1346	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-13.07#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.4894	0.0	0	-0.01
56	T	Dimethyl Disulfide	-1.0000	0.3150	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.5128	0.0	0	0.00
59	C	Toluene	0.5000	0.5751	-15.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.4160	0.0	0	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	-1.0000	0.4056	0.0	0	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.5861	0.0	0	0.00
64	T	2-Hexanone	-1.0000	0.5773	0.0	0	0.00
65	T	1,3-Dichloropropane	-1.0000	0.5416	0.0	0	0.00
66	T	Tetrachloroethene	-1.0000	0.5624	0.0	0	-0.01
67	T	Dibromochloromethane	-1.0000	0.4623	0.0	0	0.00
68	T	1,2-Dibromoethane	-1.0000	0.4462	0.0	0	0.00
69	T	1-Chlorohexane	-1.0000	0.5142	0.0	0	0.00
70	P	Chlorobenzene	-1.0000	0.5869	0.0	0	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.4126	0.0	0	0.00
72	C	Ethylbenzene	0.5000	0.5032	-0.6	100	0.00
73	T	m-,p-Xylene	1.0000	1.1326	-13.3	100	0.00
74	T	o-Xylene	0.5000	0.5119	-2.4	100	0.00
75	T	Styrene	-1.0000	0.5203	0.0	0	0.00
76	P	Bromoform	-1.0000	0.2977	0.0	0	0.00
77	T	Isopropylbenzene	-1.0000	0.4998	0.0	0	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.5203	0.0	0	-0.01
80	S	p-Bromofluorobenzene	-1.0000	0.5020	0.0	0	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.1823	0.0	0	0.01
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.1476	0.0	0	0.00
83	T	n-Propylbenzene	-1.0000	0.5679	0.0	0	0.00
84	T	Bromobenzene	-1.0000	0.5328	0.0	0	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.5185	0.0	0	0.00
86	T	2-Chlorotoluene	-1.0000	0.4973	0.0	0	-0.01
87	T	4-Chlorotoluene	-1.0000	0.5635	0.0	0	0.00
88	T	a-Methylstyrene	-1.0000	0.6719	0.0	0	0.00
89	T	tert-Butylbenzene	-1.0000	0.4440	0.0	0	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.5982	0.0	0	0.00
91	T	sec-Butylbenzene	-1.0000	0.5532	0.0	0	0.00
92	T	p-Isopropyltoluene	-1.0000	0.5029	0.0	0	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.5662	0.0	0	0.00
94	T	1,4-Dichlorobenzene	-1.0000	0.6299	0.0	0	0.00
95	T	n-Butylbenzene	-1.0000	0.5680	0.0	0	0.00
96	T	1,2-Dichlorobenzene	-1.0000	0.5676	0.0	0	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-21.41#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.6050	0.0	0	0.00
99	T	Hexachlorobutadiene	-1.0000	0.4656	0.0	0	-0.01
100	T	Naphthalene	-1.0000	0.5449	0.0	0	0.00
101	T	1,2,3-Trichlorobenzene	-1.0000	0.6214	0.0	0	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137523.D 826_SL.M Mon Feb 29 16:01:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:37 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	594307	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	418336	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	217318	50.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.34	111	2084	0.6537 ug/L	0.02
Spiked Amount 50.000	Range 80 - 120		Recovery =	1.30%#	
43) 1,2-Dichloroethane-d4	11.06	65	2834	0.6847 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	1.36%#	
58) Toluene-d8	13.80	98	7503	0.7544 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	1.50%#	
80) p-Bromofluorobenzene	17.79	95	3135	0.7854 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	1.58%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	6025	1.1039 ug/L	88
3) Chloromethane	3.88	50	8942	1.5721 ug/L	80
4) Vinyl Chloride	4.13	62	5159	1.1269 ug/L	96
5) 1,3-Butadiene	4.18	54	4578	1.2019 ug/L #	67
6) Bromomethane	5.03	94	2477	1.0150 ug/L	94
7) Chloroethane	5.20	64	2347	0.9041 ug/L #	77
8) Trichlorofluoromethane	5.70	101	7751	1.2600 ug/L #	92
9) Diethyl ether	6.23	59	14414	5.0935 ug/L	81
10) Isoprene	6.28	67	3598	0.8978 ug/L	94
11) Acrolein	6.48	56	1307	2.4320 ug/L #	51
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	3197	1.0888 ug/L	73
13) Acetone	6.60	43	5933	0.3832 ug/L	97
14) 1,1-Dichloroethene	6.84	61	5455	1.0489 ug/L	83
15) Tert-Butyl Alcohol	6.93	59	4660	9.6025 ug/L #	86
16) Dimethyl Sulfide	7.13	62	2208	0.8750 ug/L	94
18) Methyl acetate	7.40	43	3574	0.9889 ug/L #	64
19) Methylene Chloride	7.66	84	3682	1.1755 ug/L	75
20) Carbon Disulfide	7.72	76	11945	1.2004 ug/L	97
21) Acrylonitrile	7.86	53	3216	2.1651 ug/L	84
22) Methyl Tert Butyl Ether	7.90	73	8242	0.9214 ug/L	91
23) trans-1,2-Dichloroethene	8.17	96	2437	0.8482 ug/L	60
24) n-Hexane	8.23	57	4827	0.9252 ug/L	90
25) Diisopropyl ether	8.62	45	67920	5.0212 ug/L	97
26) Vinyl Acetate	8.80	43	6077	0.8691 ug/L #	78
27) 1,1-Dichloroethane	8.83	63	6295	1.0162 ug/L	88
28) Ethyl-Tert-Butyl ether	9.25	59	49996	4.6114 ug/L	96
29) 2-Butanone	9.47	43	2247	1.0938 ug/L #	56
30) Propionitrile	9.57	54	2816	4.9529 ug/L #	71
31) 2,2-Dichloropropane	9.70	77	5030	1.0116 ug/L	94
32) cis-1,2-Dichloroethene	9.77	96	2740	0.8542 ug/L	83
33) Chloroform	10.00	83	6439	1.1130 ug/L	98
35) Bromochloromethane	10.26	130	1361	0.7221 ug/L	97
36) Tetrahydrofuran	10.29	42	10271	5.4403 ug/L	94
38) 1,1,1-Trichloroethane	10.61	97	5241	1.0257 ug/L	95
39) Cyclohexane	10.63	56	5811	1.0029 ug/L	86
40) 1,1-Dichloropropene	10.82	75	4038	0.9813 ug/L #	89
41) Tert-Amyl-Methyl ether	10.95	73	39464	4.5884 ug/L #	83
42) Carbon Tetrachloride	11.00	117	4871	1.0202 ug/L #	88
45) 1,2-Dichloroethane	11.19	62	4707	0.9533 ug/L #	86
46) Benzene	11.23	78	13412	1.0834 ug/L	93

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:37 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
47)	Trichloroethene	12.09	130	2983	1.0199 ug/L		90
48)	Methylcyclohexane	12.19	83	4295	0.9084 ug/L		77
49)	1,2-Dichloropropane	12.35	63	3111	0.9339 ug/L	#	69
51)	Bromodichloromethane	12.68	83	4337	0.9921 ug/L		97
52)	Dibromomethane	12.77	93	1629	0.8361 ug/L		91
53)	2-Chloroethyl Vinyl Ether	13.04	63	1268	0.6921 ug/L	#	43
54)	4-Methyl-2-Pentanone	13.08	58	633	0.4563 ug/L	#	34
55)	cis-1,3-Dichloropropene	13.43	75	4040	0.8388 ug/L		98
56)	Dimethyl Disulfide	13.72	79	1323	0.5447 ug/L	#	49
59)	Toluene	13.91	91	12207	1.0316 ug/L		97
60)	Ethyl Methacrylate	14.03	69	2818	0.7432 ug/L		100
62)	trans-1,3-Dichloropropene	14.12	75	3878	0.8522 ug/L		100
63)	1,1,2-Trichloroethane	14.38	97	2441	0.9869 ug/L		93
64)	2-Hexanone	14.31	43	2064	0.7313 ug/L		93
65)	1,3-Dichloropropane	14.73	76	4145	0.9246 ug/L		83
66)	Tetrachloroethene	14.87	166	3009	1.0308 ug/L		96
67)	Dibromochloromethane	15.17	129	2840	0.8829 ug/L		96
68)	1,2-Dibromoethane	15.48	107	1912	0.7559 ug/L		85
69)	1-Chlorohexane	15.59	91	3045	0.8286 ug/L	#	59
70)	Chlorobenzene	16.06	112	8053	1.0589 ug/L	#	66
71)	1,1,1,2-Tetrachloroethane	16.11	131	2914	0.9542 ug/L		92
72)	Ethylbenzene	16.10	106	3899	0.9580 ug/L		89
73)	m-,p-Xylene	16.21	106	9999	2.0079 ug/L		90
74)	o-Xylene	16.88	106	4283	0.9131 ug/L		84
75)	Styrene	16.92	104	6414	0.8034 ug/L		92
76)	Bromoform	17.49	173	1706	0.7511 ug/L	#	70
77)	Isopropylbenzene	17.38	105	11886	0.9427 ug/L		95
79)	1,1,2,2-Tetrachloroethane	17.65	83	3500	1.0310 ug/L		95
81)	1,2,3-Trichloropropane	17.87	110	811	0.7802 ug/L	#	55
82)	trans-1,4-Dichloro-2-Buten	17.93	53	959	0.7652 ug/L		70
83)	n-Propylbenzene	17.98	91	14256	0.9660 ug/L	#	91
84)	Bromobenzene	18.13	156	3248	1.0125 ug/L		98
85)	1,3,5-Trimethylbenzene	18.21	105	9438	0.8984 ug/L		95
86)	2-Chlorotoluene	18.30	91	9880	1.0030 ug/L		97
87)	4-Chlorotoluene	18.35	91	8357	0.9278 ug/L		93
88)	a-Methylstyrene	18.68	118	4374	0.8574 ug/L		95
89)	tert-Butylbenzene	18.75	134	1999	0.9131 ug/L		84
90)	1,2,4-Trimethylbenzene	18.82	105	10630	0.9622 ug/L		79
91)	sec-Butylbenzene	19.07	105	13062	0.9709 ug/L		95
92)	p-Isopropyltoluene	19.27	119	10400	0.9370 ug/L		89
93)	1,3-Dichlorobenzene	19.48	146	6397	1.0306 ug/L		97
94)	1,4-Dichlorobenzene	19.64	146	7211	1.1413 ug/L		83
95)	n-Butylbenzene	19.88	91	10811	0.9684 ug/L		88
96)	1,2-Dichlorobenzene	20.22	146	5973	1.0000 ug/L		96
97)	1,2-Dibromo-3-Chloropropan	21.41	75	191	0.2543 ug/L	#	1
98)	1,2,4-Trichlorobenzene	22.76	180	4430	1.0259 ug/L		93
99)	Hexachlorobutadiene	22.94	225	2385	0.9658 ug/L		90
100)	Naphthalene	23.20	128	8770	0.8835 ug/L		92
101)	1,2,3-Trichlorobenzene	23.59	180	4309	1.0134 ug/L		95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

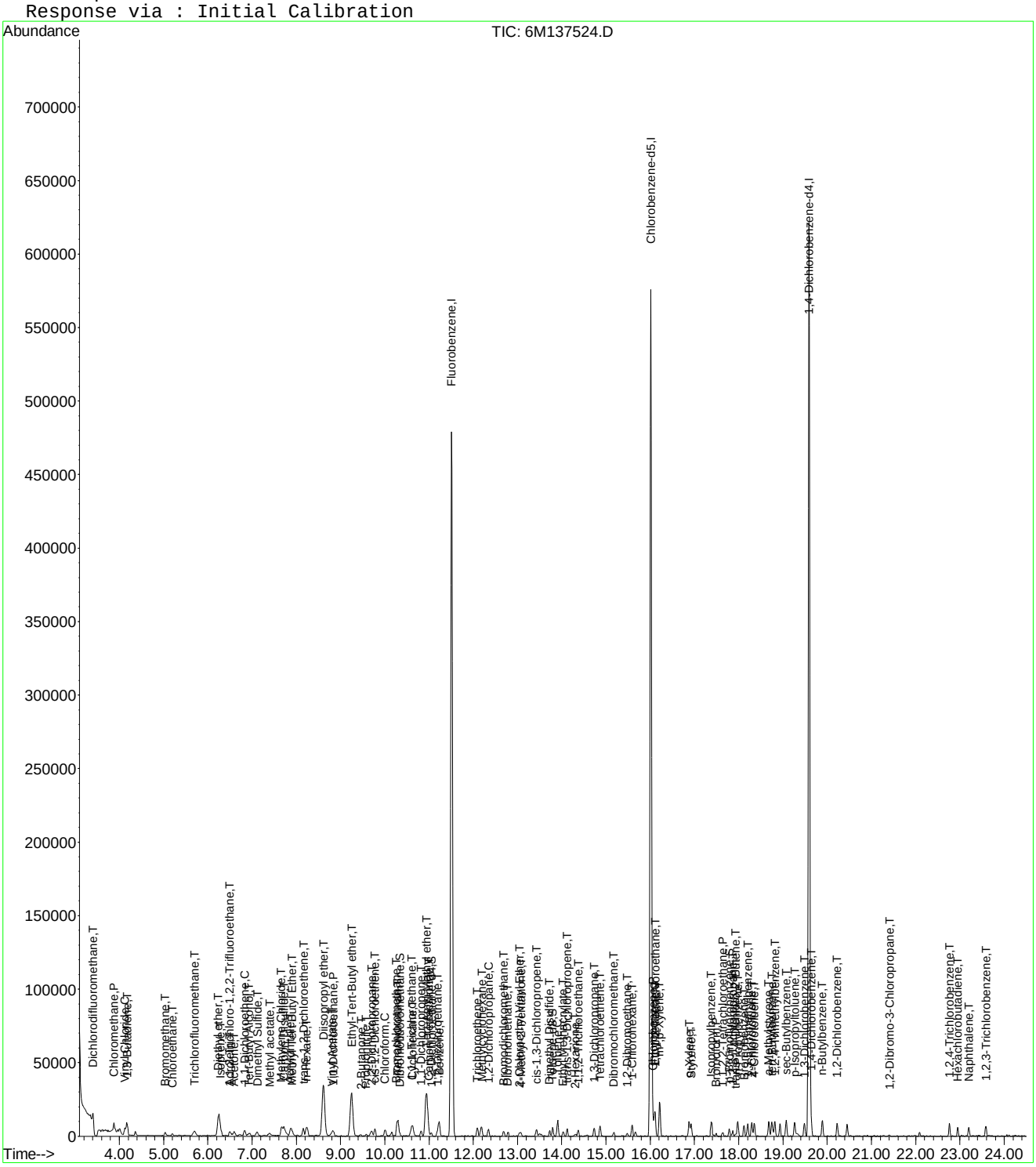

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	1.1039	0.0	0	0.00
3	P	Chloromethane	-1.0000	1.5721	0.0	0	0.00
4	C	Vinyl Chloride	-1.0000	1.1269	0.0	0	0.01
5	T	1,3-Butadiene	-1.0000	1.2019	0.0	0	0.01
6	T	Bromomethane	-1.0000	1.0150	0.0	0	0.00
7	T	Chloroethane	-1.0000	0.9041	0.0	0	0.00
8	T	Trichlorofluoromethane	-1.0000	1.2600	0.0	0	0.00
9	T	Diethyl ether	5.0000	5.0935	-1.9	100	-0.01
10	T	Isoprene	-1.0000	0.8978	0.0	0	0.00
11	T	Acrolein	2.5000	2.4320	2.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	1.0888	0.0	0	-0.01
13	T	Acetone	-1.0000	0.3832	0.0	0	0.01
14	C	1,1-Dichloroethene	-1.0000	1.0489	0.0	0	0.00
15	T	Tert-Butyl Alcohol	10.0000	9.6025	4.0	100	0.00
16	T	Dimethyl Sulfide	-1.0000	0.8750	0.0	0	0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.38#
18	T	Methyl acetate	-1.0000	0.9889	0.0	0	0.01
19	T	Methylene Chloride	-1.0000	1.1755	0.0	0	-0.01
20	T	Carbon Disulfide	-1.0000	1.2004	0.0	0	0.00
21	T	Acrylonitrile	2.5000	2.1651	13.4	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9214	7.9	100	0.00
23	T	trans-1,2-Dichloroethene	-1.0000	0.8482	0.0	0	0.00
24	T	n-Hexane	-1.0000	0.9252	0.0	0	-0.01
25	T	Diisopropyl ether	5.0000	5.0212	-0.4	100	0.01
26	T	Vinyl Acetate	-1.0000	0.8691	0.0	0	0.00
27	P	1,1-Dichloroethane	-1.0000	1.0162	0.0	0	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.6114	7.8	100	0.01
29	T	2-Butanone	-1.0000	1.0938	0.0	0	0.02
30	T	Propionitrile	5.0000	4.9529	0.9	100	-0.01
31	T	2,2-Dichloropropane	-1.0000	1.0116	0.0	0	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.8542	0.0	0	0.00
33	C	Chloroform	-1.0000	1.1130	0.0	0	-0.01
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-10.16#
35	T	Bromochloromethane	-1.0000	0.7221	0.0	0	0.00
36	T	Tetrahydrofuran	5.0000	5.4403	-8.8	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.6537	0.0	0	0.02
38	T	1,1,1-Trichloroethane	-1.0000	1.0257	0.0	0	0.00
39	T	Cyclohexane	-1.0000	1.0029	0.0	0	-0.01
40	T	1,1-Dichloropropene	-1.0000	0.9813	0.0	0	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	4.5884	8.2	100	0.00
42	T	Carbon Tetrachloride	-1.0000	1.0202	0.0	0	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.6847	0.0	0	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	-1.0000	0.9533	0.0	0	0.00
46	T	Benzene	1.0000	1.0834	-8.3	100	0.00
47	T	Trichloroethene	-1.0000	1.0199	0.0	0	0.00
48	T	Methylcyclohexane	-1.0000	0.9084	0.0	0	0.01
49	C	1,2-Dichloropropane	-1.0000	0.9339	0.0	0	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-12.67#
51	T	Bromodichloromethane	-1.0000	0.9921	0.0	0	0.00
52	T	Dibromomethane	-1.0000	0.8361	0.0	0	-0.01
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.6921	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.4563	0.0	0	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.8388	0.0	0	0.00
56	T	Dimethyl Disulfide	-1.0000	0.5447	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.7544	0.0	0	0.00
59	C	Toluene	1.0000	1.0316	-3.2	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.7432	0.0	0	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	-1.0000	0.8522	0.0	0	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.9869	0.0	0	0.00
64	T	2-Hexanone	-1.0000	0.7313	0.0	0	0.00
65	T	1,3-Dichloropropane	-1.0000	0.9246	0.0	0	0.00
66	T	Tetrachloroethene	-1.0000	1.0308	0.0	0	0.00
67	T	Dibromochloromethane	-1.0000	0.8829	0.0	0	0.00
68	T	1,2-Dibromoethane	-1.0000	0.7559	0.0	0	0.00
69	T	1-Chlorohexane	-1.0000	0.8286	0.0	0	0.00
70	P	Chlorobenzene	-1.0000	1.0589	0.0	0	-0.01
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.9542	0.0	0	0.00
72	C	Ethylbenzene	1.0000	0.9580	4.2	100	0.00
73	T	m-,p-Xylene	2.0000	2.0079	-0.4	100	-0.01
74	T	o-Xylene	1.0000	0.9132	8.7	100	0.00
75	T	Styrene	-1.0000	0.8034	0.0	0	0.00
76	P	Bromoform	-1.0000	0.7511	0.0	0	0.00
77	T	Isopropylbenzene	-1.0000	0.9427	0.0	0	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	1.0310	0.0	0	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.7854	0.0	0	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.7802	0.0	0	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.7652	0.0	0	0.00
83	T	n-Propylbenzene	-1.0000	0.9660	0.0	0	0.00
84	T	Bromobenzene	-1.0000	1.0125	0.0	0	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.8984	0.0	0	0.00
86	T	2-Chlorotoluene	-1.0000	1.0030	0.0	0	0.00
87	T	4-Chlorotoluene	-1.0000	0.9278	0.0	0	0.00
88	T	a-Methylstyrene	-1.0000	0.8574	0.0	0	-0.01
89	T	tert-Butylbenzene	-1.0000	0.9131	0.0	0	-0.01
90	T	1,2,4-Trimethylbenzene	-1.0000	0.9622	0.0	0	0.00
91	T	sec-Butylbenzene	-1.0000	0.9709	0.0	0	0.00
92	T	p-Isopropyltoluene	-1.0000	0.9370	0.0	0	0.00
93	T	1,3-Dichlorobenzene	-1.0000	1.0306	0.0	0	0.00
94	T	1,4-Dichlorobenzene	-1.0000	1.1413	0.0	0	0.00
95	T	n-Butylbenzene	-1.0000	0.9684	0.0	0	-0.01
96	T	1,2-Dichlorobenzene	-1.0000	1.0000	0.0	0	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.2543	0.0	0	0.00
98	T	1,2,4-Trichlorobenzene	-1.0000	1.0259	0.0	0	0.00
99	T	Hexachlorobutadiene	-1.0000	0.9658	0.0	0	-0.01
100	T	Naphthalene	-1.0000	0.8835	0.0	0	0.00
101	T	1,2,3-Trichlorobenzene	-1.0000	1.0134	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137524.D 826_SL.M Mon Feb 29 16:02:09 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:38 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	572212	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	404562	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	206668	50.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.32	111	3202	1.0431 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	2.08%#	
43) 1,2-Dichloroethane-d4	11.05	65	4123	1.0345 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	2.06%#	
58) Toluene-d8	13.80	98	10309	1.0718 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	2.14%#	
80) p-Bromofluorobenzene	17.79	95	4120	1.0853 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	2.18%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	8843	1.6827 ug/L	90
3) Chloromethane	3.88	50	13225	2.4149 ug/L	95
4) Vinyl Chloride	4.12	62	8482	1.9243 ug/L	95
5) 1,3-Butadiene	4.18	54	8044	2.1934 ug/L	77
6) Bromomethane	5.04	94	4396	1.8709 ug/L	94
7) Chloroethane	5.20	64	4555	1.8225 ug/L	99
8) Trichlorofluoromethane	5.70	101	12235	2.0657 ug/L #	96
9) Diethyl ether	6.24	59	66018	24.2296 ug/L	90
10) Isoprene	6.28	67	6318	1.6374 ug/L	84
11) Acrolein	6.49	56	6390	12.3492 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	4561	1.6133 ug/L	91
13) Acetone	6.60	43	7504	1.8809 ug/L	97
14) 1,1-Dichloroethene	6.83	61	8701	1.7376 ug/L	89
15) Tert-Butyl Alcohol	6.94	59	20238	43.3134 ug/L	94
16) Dimethyl Sulfide	7.11	62	4075	1.6773 ug/L	98
17) Iodomethane	7.39	142	581	5.2052 ug/L #	30
18) Methyl acetate	7.39	43	6390	1.8363 ug/L #	70
19) Methylene Chloride	7.67	84	5869	1.9461 ug/L	65
20) Carbon Disulfide	7.71	76	18795	1.9617 ug/L	99
21) Acrylonitrile	7.86	53	16272	11.3775 ug/L	99
22) Methyl Tert Butyl Ether	7.89	73	15172	1.7617 ug/L	96
23) trans-1,2-Dichloroethene	8.16	96	5205	1.8816 ug/L	79
24) n-Hexane	8.23	57	9310	1.8534 ug/L	99
25) Diisopropyl ether	8.61	45	320400	24.6012 ug/L	97
26) Vinyl Acetate	8.80	43	10816	1.6066 ug/L #	78
27) 1,1-Dichloroethane	8.83	63	11076	1.8571 ug/L	98
28) Ethyl-Tert-Butyl ether	9.25	59	254827	24.4116 ug/L	95
29) 2-Butanone	9.45	43	4021	2.0330 ug/L #	56
30) Propionitrile	9.58	54	12821	23.4210 ug/L	98
31) 2,2-Dichloropropane	9.69	77	9442	1.9723 ug/L	95
32) cis-1,2-Dichloroethene	9.77	96	6066	1.9642 ug/L	93
33) Chloroform	10.01	83	11484	2.0618 ug/L	99
34) 1-Bromopropane	10.16	122	398	0.9400 ug/L	97
35) Bromochloromethane	10.27	130	3448	1.9001 ug/L	92
36) Tetrahydrofuran	10.29	42	31678	22.2128 ug/L	93
38) 1,1,1-Trichloroethane	10.60	97	9432	1.9171 ug/L	98
39) Cyclohexane	10.63	56	9073	1.6263 ug/L	92
40) 1,1-Dichloropropene	10.82	75	7003	1.7675 ug/L	93
41) Tert-Amyl-Methyl ether	10.95	73	196452	23.7231 ug/L #	87
42) Carbon Tetrachloride	10.99	117	8034	1.7476 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:38 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	8853	1.8622 ug/L #	93
46)	Benzene	11.23	78	23723	1.9902 ug/L	97
47)	Trichloroethene	12.09	130	5099	1.8107 ug/L	92
48)	Methylcyclohexane	12.17	83	7350	1.6146 ug/L	79
49)	1,2-Dichloropropane	12.34	63	5698	1.7766 ug/L	95
50)	1,4-Dioxane	12.67	88	1122	55.6272 ug/L	88
51)	Bromodichloromethane	12.68	83	7699	1.8293 ug/L	96
52)	Dibromomethane	12.79	93	3316	1.7677 ug/L	91
53)	2-Chloroethyl Vinyl Ether	13.04	63	2386	1.3526 ug/L #	61
54)	4-Methyl-2-Pentanone	13.06	58	1423	1.0653 ug/L #	60
55)	cis-1,3-Dichloropropene	13.43	75	7739	1.6689 ug/L	96
56)	Dimethyl Disulfide	13.72	79	3072	1.3135 ug/L #	66
59)	Toluene	13.91	91	21516	1.8801 ug/L	99
60)	Ethyl Methacrylate	14.03	69	5274	1.4383 ug/L	90
62)	trans-1,3-Dichloropropene	14.12	75	7466	1.6966 ug/L	95
63)	1,1,2-Trichloroethane	14.37	97	4294	1.7952 ug/L	96
64)	2-Hexanone	14.32	43	4342	1.5908 ug/L	87
65)	1,3-Dichloropropane	14.74	76	7896	1.8213 ug/L	99
66)	Tetrachloroethene	14.88	166	5376	1.9043 ug/L	96
67)	Dibromochloromethane	15.17	129	5153	1.6564 ug/L	94
68)	1,2-Dibromoethane	15.47	107	4387	1.7934 ug/L	97
69)	1-Chlorohexane	15.58	91	5799	1.6318 ug/L	88
70)	Chlorobenzene	16.07	112	14803	2.0127 ug/L	82
71)	1,1,1,2-Tetrachloroethane	16.11	131	5636	1.9085 ug/L	89
72)	Ethylbenzene	16.10	106	7654	1.9447 ug/L	97
73)	m-,p-Xylene	16.22	106	17383	3.6096 ug/L	95
74)	o-Xylene	16.88	106	7997	1.7630 ug/L	95
75)	Styrene	16.92	104	12496	1.6186 ug/L	87
76)	Bromoform	17.49	173	3589	1.6340 ug/L	95
77)	Isopropylbenzene	17.38	105	20776	1.7039 ug/L	96
79)	1,1,2,2-Tetrachloroethane	17.64	83	5699	1.7652 ug/L	97
81)	1,2,3-Trichloropropane	17.86	110	1672	1.6915 ug/L	85
82)	trans-1,4-Dichloro-2-Buten	17.93	53	2042	1.7133 ug/L	78
83)	n-Propylbenzene	17.98	91	25104	1.7886 ug/L #	95
84)	Bromobenzene	18.13	156	5535	1.8143 ug/L	100
85)	1,3,5-Trimethylbenzene	18.21	105	17326	1.7343 ug/L	94
86)	2-Chlorotoluene	18.30	91	16320	1.7421 ug/L	90
87)	4-Chlorotoluene	18.35	91	17884	2.0879 ug/L	93
88)	a-Methylstyrene	18.69	118	7613	1.5692 ug/L	95
89)	tert-Butylbenzene	18.76	134	3612	1.7349 ug/L	82
90)	1,2,4-Trimethylbenzene	18.82	105	18800	1.7894 ug/L	86
91)	sec-Butylbenzene	19.08	105	23176	1.8115 ug/L	95
92)	p-Isopropyltoluene	19.26	119	18048	1.7099 ug/L	98
93)	1,3-Dichlorobenzene	19.48	146	10999	1.8633 ug/L	93
94)	1,4-Dichlorobenzene	19.64	146	12629	2.1018 ug/L	96
95)	n-Butylbenzene	19.89	91	18864	1.7769 ug/L	98
96)	1,2-Dichlorobenzene	20.23	146	10946	1.9270 ug/L	93
97)	1,2-Dibromo-3-Chloropropan	21.40	75	890	1.2459 ug/L	91
98)	1,2,4-Trichlorobenzene	22.77	180	8004	1.9491 ug/L	94
99)	Hexachlorobutadiene	22.95	225	4367	1.8595 ug/L	98
100)	Naphthalene	23.20	128	15712	1.6644 ug/L	96
101)	1,2,3-Trichlorobenzene	23.59	180	7942	1.9641 ug/L	93

(#) = qualifier out of range (m) = manual integration
6M137525.D 826_SL.M Mon Feb 29 16:01:38 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

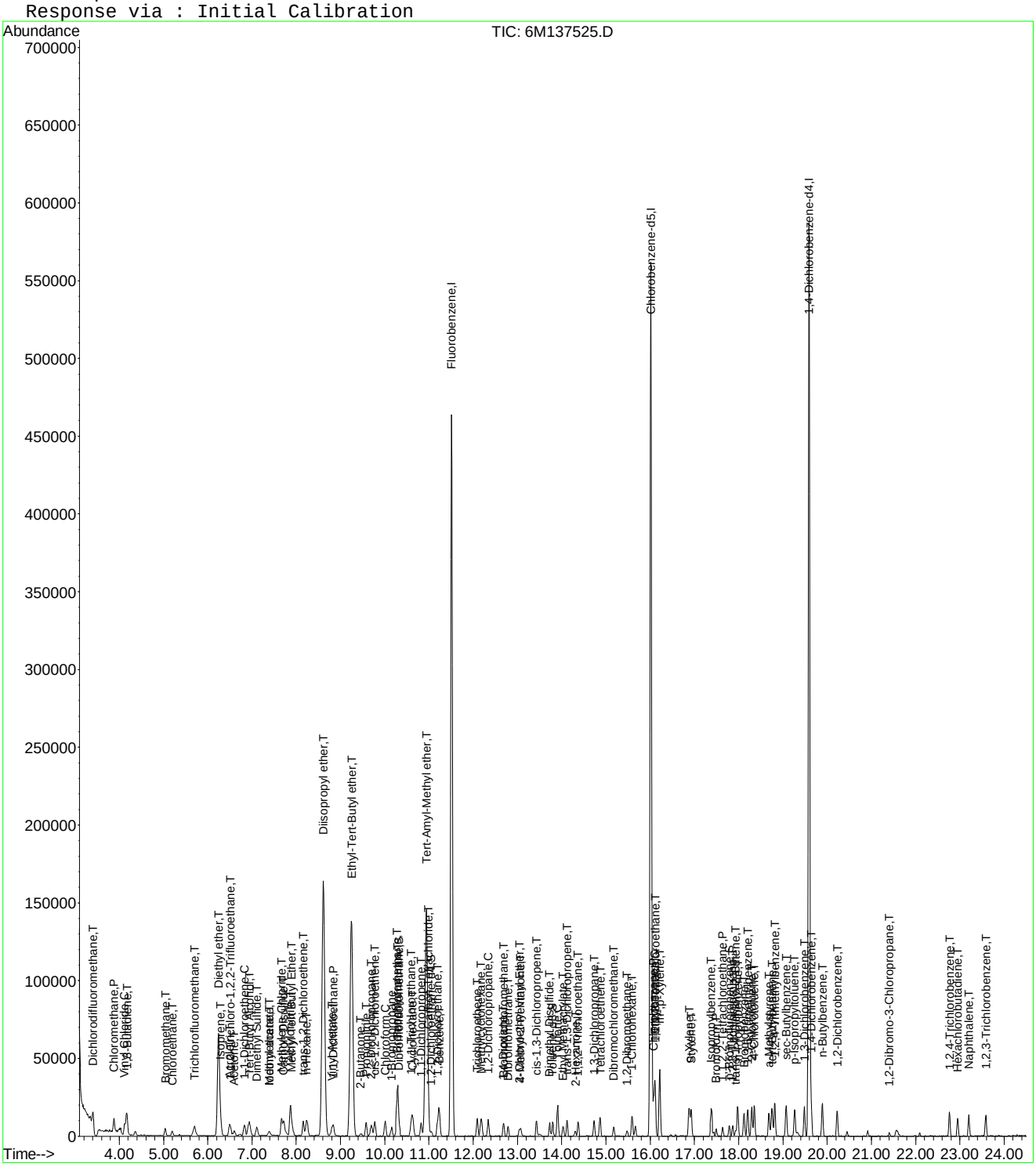

6M137525.D 826_SL.M Mon Feb 29 16:01:39 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.6827	15.9	100	0.00
3	P	Chloromethane	2.0000	2.4150	-20.7	100	0.00
4	C	Vinyl Chloride	2.0000	1.9243	3.8	100	0.00
5	T	1,3-Butadiene	-1.0000	2.1934	0.0	0	0.01
6	T	Bromomethane	2.0000	1.8709	6.5	100	0.01
7	T	Chloroethane	2.0000	1.8225	8.9	100	0.01
8	T	Trichlorofluoromethane	2.0000	2.0658	-3.3	100	0.00
9	T	Diethyl ether	25.0000	24.2296	3.1	100	0.00
10	T	Isoprene	-1.0000	1.6374	0.0	0	0.00
11	T	Acrolein	12.5000	12.3492	1.2	100	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.6134	19.3	100	0.00
13	T	Acetone	-1.0000	1.8809	0.0	0	0.01
14	C	1,1-Dichloroethene	2.0000	1.7376	13.1	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	43.3134	13.4	100	0.01
16	T	Dimethyl Sulfide	-1.0000	1.6773	0.0	0	0.00
17	T	Iodomethane	-1.0000	5.2052	0.0	0	0.01
18	T	Methyl acetate	-1.0000	1.8363	0.0	0	0.00
19	T	Methylene Chloride	2.0000	1.9461	2.7	100	0.00
20	T	Carbon Disulfide	2.0000	1.9617	1.9	100	0.00
21	T	Acrylonitrile	12.5000	11.3775	9.0	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.7617	11.9	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.8816	5.9	100	0.00
24	T	n-Hexane	2.0000	1.8534	7.3	100	-0.01
25	T	Diisopropyl ether	25.0000	24.6012	1.6	100	0.00
26	T	Vinyl Acetate	-1.0000	1.6066	0.0	0	0.00
27	P	1,1-Dichloroethane	2.0000	1.8571	7.1	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	24.4116	2.4	100	0.01
29	T	2-Butanone	-1.0000	2.0330	0.0	0	0.00
30	T	Propionitrile	25.0000	23.4210	6.3	100	0.00
31	T	2,2-Dichloropropane	2.0000	1.9723	1.4	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	1.9642	1.8	100	0.00
33	C	Chloroform	2.0000	2.0618	-3.1	100	0.00
34		1-Bromopropane	-1.0000	0.9400	0.0	0	0.00
35	T	Bromochloromethane	2.0000	1.9001	5.0	100	0.01
36	T	Tetrahydrofuran	25.0000	22.2128	11.1	100	0.00
37	S	Dibromofluoromethane	1.0000	1.0432	-4.3	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.9171	4.1	100	0.00
39	T	Cyclohexane	2.0000	1.6263	18.7	100	-0.01
40	T	1,1-Dichloropropene	2.0000	1.7675	11.6	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	23.7231	5.1	100	0.01
42	T	Carbon Tetrachloride	2.0000	1.7476	12.6	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0345	-3.5	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	2.0000	1.8622	6.9	100	0.00
46	T	Benzene	2.0000	1.9902	0.5	100	0.00
47	T	Trichloroethene	2.0000	1.8108	9.5	100	0.00
48	T	Methylcyclohexane	2.0000	1.6146	19.3	100	0.00
49	C	1,2-Dichloropropane	2.0000	1.7766	11.2	100	0.00
50	T	1,4-Dioxane	50.0000	55.6272	-11.3	100	0.00
51	T	Bromodichloromethane	2.0000	1.8293	8.5	100	0.00
52	T	Dibromomethane	2.0000	1.7677	11.6	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	1.3526	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.0653	0.0	0	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.6689	16.6	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.3135	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	1.0718	-7.2	100	0.00
59	C	Toluene	2.0000	1.8801	6.0	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.4383	28.1#	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	2.0000	1.6966	15.2	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.7952	10.2	100	0.00
64	T	2-Hexanone	-1.0000	1.5908	0.0	0	0.01
65	T	1,3-Dichloropropane	2.0000	1.8213	8.9	100	0.00
66	T	Tetrachloroethene	2.0000	1.9043	4.8	100	0.01
67	T	Dibromochloromethane	2.0000	1.6565	17.2	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.7934	10.3	100	-0.01
69	T	1-Chlorohexane	2.0000	1.6318	18.4	100	-0.01
70	P	Chlorobenzene	2.0000	2.0127	-0.6	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.9085	4.6	100	0.01
72	C	Ethylbenzene	2.0000	1.9447	2.8	100	0.00
73	T	m-,p-Xylene	4.0000	3.6096	9.8	100	0.00
74	T	o-Xylene	2.0000	1.7630	11.8	100	0.00
75	T	Styrene	2.0000	1.6186	19.1	100	0.00
76	P	Bromoform	2.0000	1.6340	18.3	100	0.00
77	T	Isopropylbenzene	2.0000	1.7039	14.8	100	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	1.7653	11.7	100	-0.01
80	S	p-Bromofluorobenzene	1.0000	1.0853	-8.5	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	1.6915	15.4	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	1.7133	14.3	100	0.00
83	T	n-Propylbenzene	2.0000	1.7886	10.6	100	0.00
84	T	Bromobenzene	2.0000	1.8143	9.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	1.7343	13.3	100	0.00
86	T	2-Chlorotoluene	2.0000	1.7421	12.9	100	0.00
87	T	4-Chlorotoluene	2.0000	2.0879	-4.4	100	0.00
88	T	a-Methylstyrene	2.0000	1.5692	21.5	100	0.00
89	T	tert-Butylbenzene	2.0000	1.7349	13.3	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	1.7894	10.5	100	0.00
91	T	sec-Butylbenzene	2.0000	1.8115	9.4	100	0.00
92	T	p-Isopropyltoluene	2.0000	1.7099	14.5	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	1.8633	6.8	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.1018	-5.1	100	0.00
95	T	n-Butylbenzene	2.0000	1.7769	11.2	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	1.9270	3.6	100	0.01
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.2459	0.0	0	-0.01
98	T	1,2,4-Trichlorobenzene	2.0000	1.9491	2.5	100	0.01
99	T	Hexachlorobutadiene	2.0000	1.8596	7.0	100	-0.01
100	T	Naphthalene	2.0000	1.6644	16.8	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9641	1.8	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137525.D 826_SL.M Mon Feb 29 16:02:19 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:39 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	643219	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	454348	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	233655	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.32	111	8526	2.4710 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	4.94%#	
43) 1,2-Dichloroethane-d4	11.06	65	11725	2.6172 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	5.24%#	
58) Toluene-d8	13.80	98	29032	2.6876 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	5.38%#	
80) p-Bromofluorobenzene	17.79	95	11167	2.6020 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	5.20%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	28102	4.7571 ug/L	100
3) Chloromethane	3.88	50	32755	5.3209 ug/L	91
4) Vinyl Chloride	4.12	62	26049	5.2573 ug/L	99
5) 1,3-Butadiene	4.17	54	23717	5.7531 ug/L	82
6) Bromomethane	5.03	94	13346	5.0529 ug/L	95
7) Chloroethane	5.19	64	14096	5.0173 ug/L	95
8) Trichlorofluoromethane	5.70	101	35831	5.3818 ug/L	98
9) Diethyl ether	6.24	59	150730	49.2132 ug/L	93
10) Isoprene	6.28	67	21438	4.9428 ug/L	81
11) Acrolein	6.48	56	14248	24.4956 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	17247	5.4273 ug/L	95
13) Acetone	6.59	43	13051	5.3136 ug/L	94
14) 1,1-Dichloroethene	6.83	61	29698	5.2760 ug/L	91
15) Tert-Butyl Alcohol	6.93	59	51304	97.6795 ug/L	93
16) Dimethyl Sulfide	7.12	62	13140	4.8115 ug/L	98
17) Iodomethane	7.38	142	3580	6.2818 ug/L	92
18) Methyl acetate	7.39	43	19888	5.0842 ug/L	93
19) Methylene Chloride	7.67	84	17567	5.1820 ug/L	73
20) Carbon Disulfide	7.72	76	56579	5.2535 ug/L	99
21) Acrylonitrile	7.86	53	38170	23.7426 ug/L	95
22) Methyl Tert Butyl Ether	7.89	73	46633	4.8170 ug/L	97
23) trans-1,2-Dichloroethene	8.16	96	15681	5.0428 ug/L	87
24) n-Hexane	8.24	57	29042	5.1432 ug/L	92
25) Diisopropyl ether	8.61	45	721466	49.2807 ug/L	97
26) Vinyl Acetate	8.80	43	31741	4.1943 ug/L	93
27) 1,1-Dichloroethane	8.83	63	34581	5.1581 ug/L	100
28) Ethyl-Tert-Butyl ether	9.24	59	576725	49.1494 ug/L	95
29) 2-Butanone	9.45	43	11939	5.3698 ug/L	87
30) Propionitrile	9.58	54	29074	47.2483 ug/L	96
31) 2,2-Dichloropropane	9.69	77	27493	5.1089 ug/L	98
32) cis-1,2-Dichloroethene	9.77	96	17624	5.0766 ug/L	93
33) Chloroform	10.01	83	32075	5.1228 ug/L	96
34) 1-Bromopropane	10.16	122	2123	4.4605 ug/L	82
35) Bromochloromethane	10.26	130	9542	4.6779 ug/L	100
36) Tetrahydrofuran	10.29	42	72518	47.4879 ug/L	94
38) 1,1,1-Trichloroethane	10.60	97	26846	4.8542 ug/L	94
39) Cyclohexane	10.64	56	31697	5.0544 ug/L	89
40) 1,1-Dichloropropene	10.82	75	23898	5.3658 ug/L	97
41) Tert-Amyl-Methyl ether	10.94	73	454105	48.7831 ug/L #	89
42) Carbon Tetrachloride	10.99	117	26296	5.0887 ug/L	96

(#) = qualifier out of range (m) = manual integration
6M137526.D 826_SL.M Mon Feb 29 16:01:39 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:39 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	11.19	62	26611	4.9796	ug/L		97
46)	Benzene	11.23	78	66739	4.9809	ug/L		93
47)	Trichloroethene	12.09	130	16560	5.2316	ug/L		93
48)	Methylcyclohexane	12.18	83	26100	5.1005	ug/L		86
49)	1,2-Dichloropropane	12.34	63	17955	4.9803	ug/L		94
50)	1,4-Dioxane	12.67	88	3919	107.9166	ug/L		93
51)	Bromodichloromethane	12.68	83	23069	4.8760	ug/L		92
52)	Dibromomethane	12.79	93	9757	4.6271	ug/L		97
53)	2-Chloroethyl Vinyl Ether	13.04	63	8133	4.1014	ug/L		99
54)	4-Methyl-2-Pentanone	13.07	58	6484	4.3183	ug/L		81
55)	cis-1,3-Dichloropropene	13.43	75	24075	4.6186	ug/L		98
56)	Dimethyl Disulfide	13.72	79	10983	4.1777	ug/L		91
59)	Toluene	13.91	91	65025	5.0594	ug/L		100
60)	Ethyl Methacrylate	14.03	69	18200	4.4195	ug/L		95
62)	trans-1,3-Dichloropropene	14.12	75	23055	4.6650	ug/L		96
63)	1,1,2-Trichloroethane	14.37	97	13105	4.8784	ug/L		97
64)	2-Hexanone	14.31	43	13531	4.4142	ug/L		93
65)	1,3-Dichloropropane	14.74	76	24567	5.0457	ug/L		96
66)	Tetrachloroethene	14.87	166	17025	5.3699	ug/L		96
67)	Dibromochloromethane	15.17	129	16779	4.8026	ug/L		98
68)	1,2-Dibromoethane	15.48	107	13121	4.7760	ug/L		98
69)	1-Chlorohexane	15.59	91	18960	4.7505	ug/L		75
70)	Chlorobenzene	16.07	112	43871	5.3112	ug/L	#	60
71)	1,1,1,2-Tetrachloroethane	16.10	131	15603	4.7045	ug/L		95
72)	Ethylbenzene	16.10	106	22079	4.9950	ug/L		94
73)	m-,p-Xylene	16.22	106	54549	10.0858	ug/L		96
74)	o-Xylene	16.88	106	24478	4.8051	ug/L		92
75)	Styrene	16.92	104	39808	4.5913	ug/L		95
76)	Bromoform	17.49	173	11643	4.7199	ug/L		97
77)	Isopropylbenzene	17.38	105	66989	4.8919	ug/L		99
79)	1,1,2,2-Tetrachloroethane	17.65	83	18286	5.0098	ug/L		96
81)	1,2,3-Trichloropropane	17.87	110	5764	5.1577	ug/L		93
82)	trans-1,4-Dichloro-2-Buten	17.93	53	5968	4.4290	ug/L		92
83)	n-Propylbenzene	17.98	91	82621	5.2068	ug/L		98
84)	Bromobenzene	18.13	156	17797	5.1598	ug/L		96
85)	1,3,5-Trimethylbenzene	18.21	105	58488	5.1783	ug/L		94
86)	2-Chlorotoluene	18.30	91	57419	5.4213	ug/L		96
87)	4-Chlorotoluene	18.35	91	50976	5.2638	ug/L		97
88)	a-Methylstyrene	18.69	118	25024	4.5623	ug/L		100
89)	tert-Butylbenzene	18.76	134	11873	5.0441	ug/L		95
90)	1,2,4-Trimethylbenzene	18.82	105	61081	5.1422	ug/L		83
91)	sec-Butylbenzene	19.08	105	74051	5.1195	ug/L		98
92)	p-Isopropyltoluene	19.26	119	60824	5.0969	ug/L		97
93)	1,3-Dichlorobenzene	19.48	146	35412	5.3060	ug/L		98
94)	1,4-Dichlorobenzene	19.64	146	35211	5.1831	ug/L		83
95)	n-Butylbenzene	19.89	91	60714	5.0584	ug/L		95
96)	1,2-Dichlorobenzene	20.22	146	32728	5.0962	ug/L		95
97)	1,2-Dibromo-3-Chloropropan	21.41	75	3714	4.5988	ug/L		88
98)	1,2,4-Trichlorobenzene	22.76	180	22925	4.9379	ug/L		93
99)	Hexachlorobutadiene	22.96	225	13612	5.1268	ug/L		94
100)	Naphthalene	23.20	128	48617	4.5551	ug/L		99
101)	1,2,3-Trichlorobenzene	23.59	180	22839	4.9959	ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

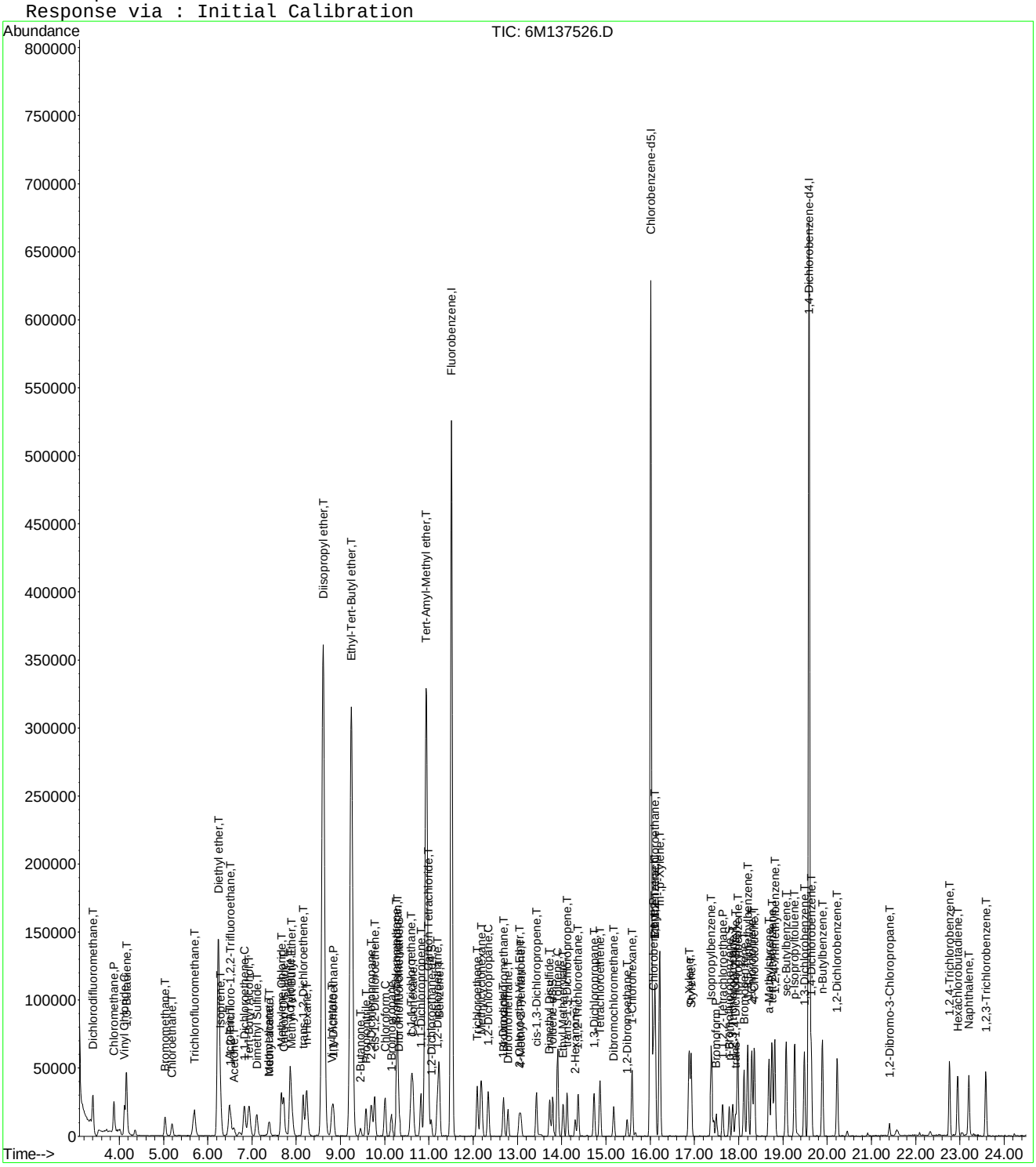

6M137526.D 826_SL.M Mon Feb 29 16:01:39 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.7571	4.9	100	0.00
3	P	Chloromethane	5.0000	5.3209	-6.4	100	0.00
4	C	Vinyl Chloride	5.0000	5.2573	-5.1	100	0.00
5	T	1,3-Butadiene	5.0000	5.7531	-15.1	100	0.00
6	T	Bromomethane	5.0000	5.0529	-1.1	100	0.00
7	T	Chloroethane	5.0000	5.0173	-0.3	100	0.00
8	T	Trichlorofluoromethane	5.0000	5.3818	-7.6	100	0.00
9	T	Diethyl ether	50.0000	49.2132	1.6	100	0.00
10	T	Isoprene	5.0000	4.9428	1.1	100	0.00
11	T	Acrolein	25.0000	24.4957	2.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	5.4272	-8.5	100	0.00
13	T	Acetone	-1.0000	5.3136	0.0	0	0.00
14	C	1,1-Dichloroethene	5.0000	5.2760	-5.5	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	97.6795	2.3	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.8115	3.8	100	0.00
17	T	Iodomethane	5.0000	6.2818	-25.6#	100	0.00
18	T	Methyl acetate	5.0000	5.0842	-1.7	100	0.00
19	T	Methylene Chloride	5.0000	5.1820	-3.6	100	0.00
20	T	Carbon Disulfide	5.0000	5.2535	-5.1	100	0.00
21	T	Acrylonitrile	25.0000	23.7426	5.0	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.8170	3.7	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	5.0428	-0.9	100	0.00
24	T	n-Hexane	5.0000	5.1432	-2.9	100	0.00
25	T	Diisopropyl ether	50.0000	49.2807	1.4	100	0.00
26	T	Vinyl Acetate	5.0000	4.1943	16.1	100	0.00
27	P	1,1-Dichloroethane	5.0000	5.1581	-3.2	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	49.1494	1.7	100	0.00
29	T	2-Butanone	5.0000	5.3698	-7.4	100	0.00
30	T	Propionitrile	50.0000	47.2483	5.5	100	0.00
31	T	2,2-Dichloropropane	5.0000	5.1089	-2.2	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	5.0766	-1.5	100	0.00
33	C	Chloroform	5.0000	5.1228	-2.5	100	0.00
34		1-Bromopropane	5.0000	4.4605	10.8	100	0.00
35	T	Bromochloromethane	5.0000	4.6779	6.4	100	0.00
36	T	Tetrahydrofuran	50.0000	47.4879	5.0	100	0.00
37	S	Dibromofluoromethane	2.5000	2.4710	1.2	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.8542	2.9	100	0.00
39	T	Cyclohexane	5.0000	5.0544	-1.1	100	0.00
40	T	1,1-Dichloropropene	5.0000	5.3658	-7.3	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	48.7831	2.4	100	0.00
42	T	Carbon Tetrachloride	5.0000	5.0887	-1.8	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.6172	-4.7	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	5.0000	4.9796	0.4	100	0.00
46	T	Benzene	5.0000	4.9809	0.4	100	0.00
47	T	Trichloroethene	5.0000	5.2316	-4.6	100	0.00
48	T	Methylcyclohexane	5.0000	5.1005	-2.0	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.9803	0.4	100	0.00
50	T	1,4-Dioxane	100.0000	107.9166	-7.9	100	0.00
51	T	Bromodichloromethane	5.0000	4.8760	2.5	100	0.00
52	T	Dibromomethane	5.0000	4.6271	7.5	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.1014	18.0	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.3183	13.6	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.6186	7.6	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.1777	16.4	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.6876	-7.5	100	0.00
59	C	Toluene	5.0000	5.0594	-1.2	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.4195	11.6	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	5.0000	4.6650	6.7	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.8784	2.4	100	0.00
64	T	2-Hexanone	5.0000	4.4142	11.7	100	0.00
65	T	1,3-Dichloropropane	5.0000	5.0457	-0.9	100	0.00
66	T	Tetrachloroethene	5.0000	5.3699	-7.4	100	0.00
67	T	Dibromochloromethane	5.0000	4.8026	3.9	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.7760	4.5	100	0.00
69	T	1-Chlorohexane	5.0000	4.7505	5.0	100	0.00
70	P	Chlorobenzene	5.0000	5.3112	-6.2	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.7045	5.9	100	0.00
72	C	Ethylbenzene	5.0000	4.9950	0.1	100	0.00
73	T	m-,p-Xylene	10.0000	10.0858	-0.9	100	0.00
74	T	o-Xylene	5.0000	4.8051	3.9	100	0.00
75	T	Styrene	5.0000	4.5913	8.2	100	0.00
76	P	Bromoform	5.0000	4.7199	5.6	100	0.00
77	T	Isopropylbenzene	5.0000	4.8919	2.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	5.0098	-0.2	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.6020	-4.1	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.1577	-3.2	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.4290	11.4	100	0.00
83	T	n-Propylbenzene	5.0000	5.2068	-4.1	100	0.00
84	T	Bromobenzene	5.0000	5.1597	-3.2	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	5.1783	-3.6	100	0.00
86	T	2-Chlorotoluene	5.0000	5.4214	-8.4	100	0.00
87	T	4-Chlorotoluene	5.0000	5.2638	-5.3	100	0.00
88	T	a-Methylstyrene	5.0000	4.5623	8.8	100	0.00
89	T	tert-Butylbenzene	5.0000	5.0441	-0.9	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.1422	-2.8	100	0.00
91	T	sec-Butylbenzene	5.0000	5.1195	-2.4	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.0969	-1.9	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	5.3060	-6.1	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	5.1831	-3.7	100	0.00
95	T	n-Butylbenzene	5.0000	5.0584	-1.2	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	5.0962	-1.9	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	4.5988	8.0	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.9379	1.2	100	0.00
99	T	Hexachlorobutadiene	5.0000	5.1268	-2.5	100	0.00
100	T	Naphthalene	5.0000	4.5552	8.9	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.9959	0.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137526.D 826_SL.M Mon Feb 29 16:02:29 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:40 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	607286	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	435504	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	227713	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	16492	5.0625 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 10.12%#		
43) 1,2-Dichloroethane-d4	11.06	65	20491	4.8445 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 9.68%#		
58) Toluene-d8	13.80	98	50808	4.9069 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 9.82%#		
80) p-Bromofluorobenzene	17.79	95	20967	5.0129 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 10.02%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	51684	9.2668 ug/L	100
3) Chloromethane	3.88	50	58275	10.0267 ug/L	97
4) Vinyl Chloride	4.12	62	45684	9.7657 ug/L	98
5) 1,3-Butadiene	4.16	54	39114	10.0495 ug/L	90
6) Bromomethane	5.03	94	25017	10.0321 ug/L	98
7) Chloroethane	5.20	64	25248	9.5185 ug/L	95
8) Trichlorofluoromethane	5.69	101	62268	9.9061 ug/L	98
9) Diethyl ether	6.24	59	197846	68.4186 ug/L	92
10) Isoprene	6.28	67	39072	9.5415 ug/L	91
11) Acrolein	6.48	56	19614	35.7163 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	30114	10.0369 ug/L	94
13) Acetone	6.60	43	18461	10.1493 ug/L	97
14) 1,1-Dichloroethene	6.83	61	51482	9.6871 ug/L	94
15) Tert-Butyl Alcohol	6.93	59	70054	141.2703 ug/L	95
16) Dimethyl Sulfide	7.12	62	25452	9.8712 ug/L	97
17) Iodomethane	7.38	142	9906	8.8243 ug/L	91
18) Methyl acetate	7.39	43	38451	10.4113 ug/L	93
19) Methylene Chloride	7.67	84	32006	10.0000 ug/L	78
20) Carbon Disulfide	7.72	76	98104	9.6481 ug/L	100
21) Acrylonitrile	7.86	53	52450	34.5555 ug/L	97
22) Methyl Tert Butyl Ether	7.89	73	93836	10.2663 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	29186	9.9411 ug/L	85
24) n-Hexane	8.24	57	52226	9.7962 ug/L	99
25) Diisopropyl ether	8.61	45	937664	67.8382 ug/L	97
26) Vinyl Acetate	8.80	43	70808	9.9102 ug/L	96
27) 1,1-Dichloroethane	8.83	63	63440	10.0226 ug/L	98
28) Ethyl-Tert-Butyl ether	9.24	59	760504	68.6462 ug/L	96
29) 2-Butanone	9.45	43	21373	10.1817 ug/L	94
30) Propionitrile	9.58	54	40026	68.8953 ug/L	100
31) 2,2-Dichloropropane	9.69	77	51602	10.1564 ug/L	98
32) cis-1,2-Dichloroethene	9.77	96	31900	9.7326 ug/L	99
33) Chloroform	10.01	83	57702	9.7611 ug/L	96
34) 1-Bromopropane	10.15	122	4101	9.1261 ug/L	96
35) Bromochloromethane	10.26	130	18414	9.5616 ug/L	96
36) Tetrahydrofuran	10.29	42	95905	67.3892 ug/L	94
38) 1,1,1-Trichloroethane	10.60	97	52695	10.0919 ug/L	100
39) Cyclohexane	10.63	56	57419	9.6977 ug/L	90
40) 1,1-Dichloropropene	10.82	75	41095	9.7729 ug/L	98
41) Tert-Amyl-Methyl ether	10.95	73	598972	68.1530 ug/L	90
42) Carbon Tetrachloride	10.99	117	48542	9.9495 ug/L	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:40 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	11.19	62	51284	10.1644	ug/L		99
46)	Benzene	11.23	78	122737	9.7022	ug/L		94
47)	Trichloroethene	12.09	130	29481	9.8646	ug/L		92
48)	Methylcyclohexane	12.18	83	46982	9.7245	ug/L		87
49)	1,2-Dichloropropane	12.34	63	33640	9.8830	ug/L		97
50)	1,4-Dioxane	12.68	88	4932	133.5880	ug/L		83
51)	Bromodichloromethane	12.68	83	42482	9.5106	ug/L		92
52)	Dibromomethane	12.78	93	19421	9.7551	ug/L		99
53)	2-Chloroethyl Vinyl Ether	13.04	63	17139	9.1546	ug/L		98
54)	4-Methyl-2-Pentanone	13.07	58	13343	9.4122	ug/L		90
55)	cis-1,3-Dichloropropene	13.43	75	47323	9.6158	ug/L		96
56)	Dimethyl Disulfide	13.72	79	21113	8.5060	ug/L		97
59)	Toluene	13.91	91	123480	10.0233	ug/L		99
60)	Ethyl Methacrylate	14.04	69	37321	9.4549	ug/L		94
62)	trans-1,3-Dichloropropene	14.12	75	46119	9.7357	ug/L		96
63)	1,1,2-Trichloroethane	14.38	97	26300	10.2139	ug/L		99
64)	2-Hexanone	14.31	43	28213	9.6021	ug/L		99
65)	1,3-Dichloropropane	14.73	76	46832	10.0347	ug/L		94
66)	Tetrachloroethene	14.87	166	31153	10.2512	ug/L		97
67)	Dibromochloromethane	15.18	129	32946	9.8381	ug/L		99
68)	1,2-Dibromoethane	15.48	107	25271	9.5966	ug/L		95
69)	1-Chlorohexane	15.59	91	36355	9.5030	ug/L		82
70)	Chlorobenzene	16.07	112	79785	10.0771	ug/L	#	63
71)	1,1,1,2-Tetrachloroethane	16.11	131	31524	9.9162	ug/L		97
72)	Ethylbenzene	16.10	106	41898	9.8889	ug/L		95
73)	m-,p-Xylene	16.22	106	102847	19.8387	ug/L		96
74)	o-Xylene	16.88	106	47393	9.7060	ug/L		93
75)	Styrene	16.92	104	79997	9.6257	ug/L		97
76)	Bromoform	17.49	173	22569	9.5450	ug/L		99
77)	Isopropylbenzene	17.38	105	130459	9.9391	ug/L		96
79)	1,1,2,2-Tetrachloroethane	17.65	83	36327	10.2123	ug/L		95
81)	1,2,3-Trichloropropane	17.87	110	11417	10.4826	ug/L		96
82)	trans-1,4-Dichloro-2-Buten	17.93	53	12994	9.8948	ug/L		85
83)	n-Propylbenzene	17.98	91	159783	10.3323	ug/L		98
84)	Bromobenzene	18.13	156	33893	10.0828	ug/L		95
85)	1,3,5-Trimethylbenzene	18.21	105	111252	10.1069	ug/L		94
86)	2-Chlorotoluene	18.30	91	107737	10.4377	ug/L		98
87)	4-Chlorotoluene	18.36	91	96695	10.2453	ug/L		95
88)	a-Methylstyrene	18.69	118	51340	9.6043	ug/L		97
89)	tert-Butylbenzene	18.76	134	22949	10.0040	ug/L		90
90)	1,2,4-Trimethylbenzene	18.82	105	119948	10.3616	ug/L		79
91)	sec-Butylbenzene	19.07	105	141383	10.0296	ug/L		97
92)	p-Isopropyltoluene	19.27	119	115695	9.9480	ug/L		99
93)	1,3-Dichlorobenzene	19.48	146	67906	10.4404	ug/L		100
94)	1,4-Dichlorobenzene	19.64	146	68350	10.3238	ug/L		93
95)	n-Butylbenzene	19.89	91	117398	10.0364	ug/L		96
96)	1,2-Dichlorobenzene	20.22	146	64067	10.2365	ug/L		98
97)	1,2-Dibromo-3-Chloropropan	21.40	75	7444	9.4579	ug/L		93
98)	1,2,4-Trichlorobenzene	22.76	180	45615	10.0816	ug/L		99
99)	Hexachlorobutadiene	22.94	225	26046	10.0659	ug/L		100
100)	Naphthalene	23.20	128	104354	10.0325	ug/L		99
101)	1,2,3-Trichlorobenzene	23.59	180	44630	10.0173	ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

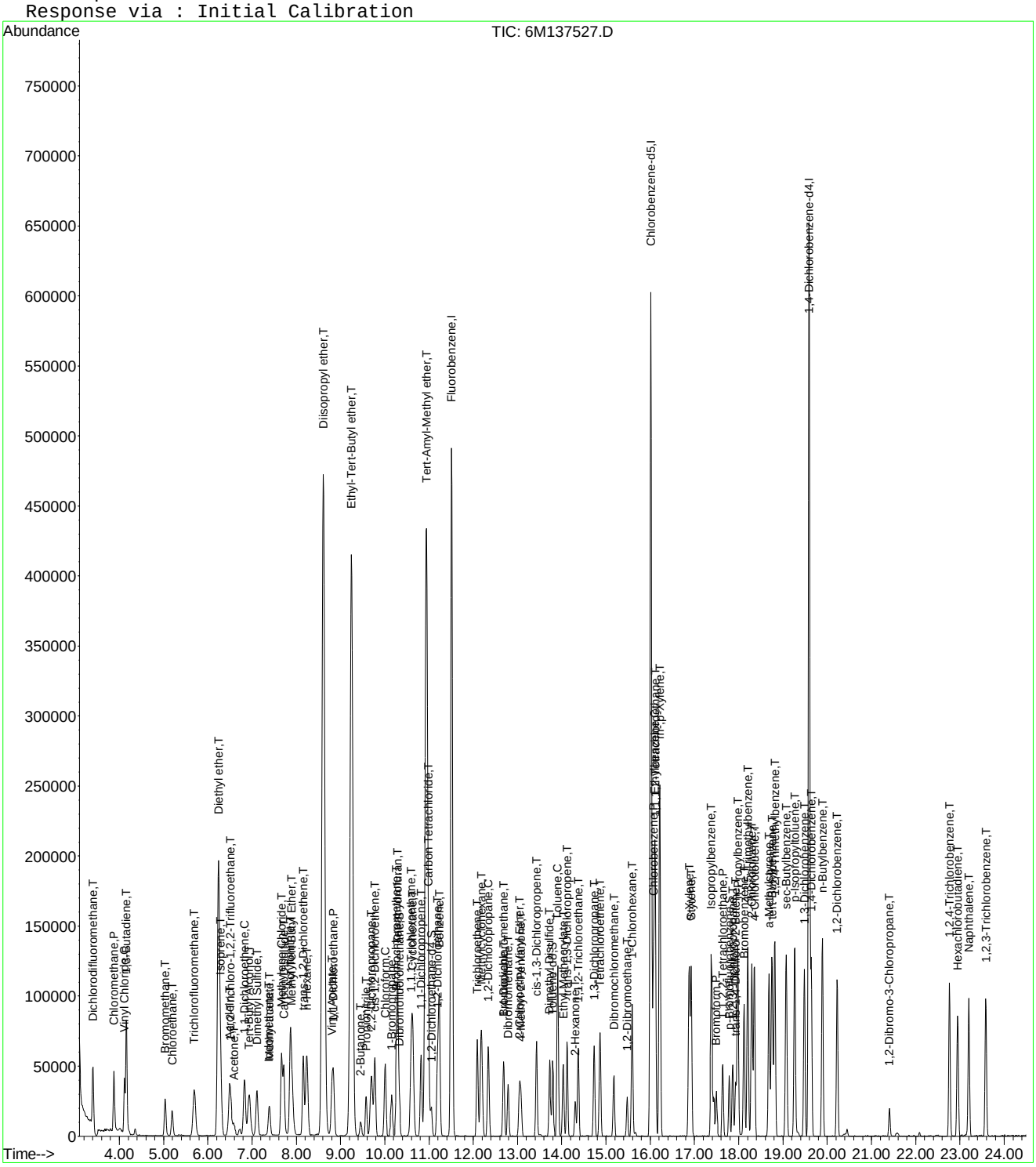

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	10.0000	9.2668	7.3	100	0.00
3	P	Chloromethane	10.0000	10.0267	-0.3	100	0.00
4	C	Vinyl Chloride	10.0000	9.7657	2.3	100	0.00
5	T	1,3-Butadiene	10.0000	10.0495	-0.5	100	-0.01
6	T	Bromomethane	10.0000	10.0321	-0.3	100	0.00
7	T	Chloroethane	10.0000	9.5185	4.8	100	0.00
8	T	Trichlorofluoromethane	10.0000	9.9061	0.9	100	-0.01
9	T	Diethyl ether	65.0000	68.4186	-5.3	100	0.00
10	T	Isoprene	10.0000	9.5415	4.6	100	0.00
11	T	Acrolein	32.5000	35.7163	-9.9	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	10.0000	10.0369	-0.4	100	0.00
13	T	Acetone	10.0000	10.1493	-1.5	100	0.01
14	C	1,1-Dichloroethene	10.0000	9.6871	3.1	100	0.00
15	T	Tert-Butyl Alcohol	130.0000	141.2703	-8.7	100	0.00
16	T	Dimethyl Sulfide	10.0000	9.8712	1.3	100	0.00
17	T	Iodomethane	10.0000	8.8243	11.8	100	0.00
18	T	Methyl acetate	10.0000	10.4113	-4.1	100	0.00
19	T	Methylene Chloride	10.0000	10.0000	0.0	100	0.00
20	T	Carbon Disulfide	10.0000	9.6481	3.5	100	0.00
21	T	Acrylonitrile	32.5000	34.5555	-6.3	100	0.00
22	T	Methyl Tert Butyl Ether	10.0000	10.2663	-2.7	100	0.00
23	T	trans-1,2-Dichloroethene	10.0000	9.9411	0.6	100	0.00
24	T	n-Hexane	10.0000	9.7962	2.0	100	0.00
25	T	Diisopropyl ether	65.0000	67.8382	-4.4	100	0.00
26	T	Vinyl Acetate	10.0000	9.9102	0.9	100	0.00
27	P	1,1-Dichloroethane	10.0000	10.0226	-0.2	100	0.00
28	T	Ethyl-Tert-Butyl ether	65.0000	68.6462	-5.6	100	0.00
29	T	2-Butanone	10.0000	10.1817	-1.8	100	0.00
30	T	Propionitrile	65.0000	68.8953	-6.0	100	0.00
31	T	2,2-Dichloropropane	10.0000	10.1564	-1.6	100	0.00
32	T	cis-1,2-Dichloroethene	10.0000	9.7326	2.7	100	0.00
33	C	Chloroform	10.0000	9.7611	2.4	100	0.00
34		1-Bromopropane	10.0000	9.1261	8.7	100	-0.01
35	T	Bromochloromethane	10.0000	9.5616	4.4	100	0.00
36	T	Tetrahydrofuran	65.0000	67.3892	-3.7	100	0.00
37	S	Dibromofluoromethane	5.0000	5.0625	-1.2	100	0.00
38	T	1,1,1-Trichloroethane	10.0000	10.0919	-0.9	100	0.00
39	T	Cyclohexane	10.0000	9.6977	3.0	100	-0.01
40	T	1,1-Dichloropropene	10.0000	9.7729	2.3	100	0.00
41	T	Tert-Amyl-Methyl ether	65.0000	68.1530	-4.9	100	0.00
42	T	Carbon Tetrachloride	10.0000	9.9495	0.5	100	0.00
43	S	1,2-Dichloroethane-d4	5.0000	4.8445	3.1	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	10.0000	10.1644	-1.6	100	0.00
46	T	Benzene	10.0000	9.7022	3.0	100	0.00
47	T	Trichloroethene	10.0000	9.8646	1.4	100	0.00
48	T	Methylcyclohexane	10.0000	9.7245	2.8	100	0.00
49	C	1,2-Dichloropropane	10.0000	9.8831	1.2	100	0.00
50	T	1,4-Dioxane	130.0000	133.5880	-2.8	100	0.00
51	T	Bromodichloromethane	10.0000	9.5106	4.9	100	0.00
52	T	Dibromomethane	10.0000	9.7551	2.4	100	0.00
53	T	2-Chloroethyl Vinyl Ether	10.0000	9.1546	8.5	100	0.00
54	T	4-Methyl-2-Pentanone	10.0000	9.4122	5.9	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	10.0000	9.6158	3.8	100	0.00
56	T	Dimethyl Disulfide	10.0000	8.5060	14.9	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	5.0000	4.9070	1.9	100	0.00
59	C	Toluene	10.0000	10.0233	-0.2	100	0.00
60	T	Ethyl Methacrylate	10.0000	9.4549	5.5	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	10.0000	9.7357	2.6	100	0.00
63	T	1,1,2-Trichloroethane	10.0000	10.2139	-2.1	100	0.00
64	T	2-Hexanone	10.0000	9.6021	4.0	100	0.00
65	T	1,3-Dichloropropane	10.0000	10.0347	-0.3	100	0.00
66	T	Tetrachloroethene	10.0000	10.2512	-2.5	100	0.00
67	T	Dibromochloromethane	10.0000	9.8381	1.6	100	0.00
68	T	1,2-Dibromoethane	10.0000	9.5966	4.0	100	0.00
69	T	1-Chlorohexane	10.0000	9.5030	5.0	100	0.00
70	P	Chlorobenzene	10.0000	10.0771	-0.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	10.0000	9.9162	0.8	100	0.00
72	C	Ethylbenzene	10.0000	9.8889	1.1	100	0.00
73	T	m-,p-Xylene	20.0000	19.8387	0.8	100	0.00
74	T	o-Xylene	10.0000	9.7060	2.9	100	0.00
75	T	Styrene	10.0000	9.6258	3.7	100	0.00
76	P	Bromoform	10.0000	9.5450	4.6	100	0.00
77	T	Isopropylbenzene	10.0000	9.9391	0.6	100	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	10.0000	10.2123	-2.1	100	0.00
80	S	p-Bromofluorobenzene	5.0000	5.0129	-0.3	100	0.00
81	T	1,2,3-Trichloropropane	10.0000	10.4826	-4.8	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	10.0000	9.8948	1.1	100	0.00
83	T	n-Propylbenzene	10.0000	10.3323	-3.3	100	0.00
84	T	Bromobenzene	10.0000	10.0828	-0.8	100	0.00
85	T	1,3,5-Trimethylbenzene	10.0000	10.1069	-1.1	100	0.00
86	T	2-Chlorotoluene	10.0000	10.4377	-4.4	100	0.00
87	T	4-Chlorotoluene	10.0000	10.2453	-2.5	100	0.00
88	T	a-Methylstyrene	10.0000	9.6043	4.0	100	0.00
89	T	tert-Butylbenzene	10.0000	10.0040	-0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	10.0000	10.3616	-3.6	100	0.00
91	T	sec-Butylbenzene	10.0000	10.0296	-0.3	100	0.00
92	T	p-Isopropyltoluene	10.0000	9.9480	0.5	100	0.00
93	T	1,3-Dichlorobenzene	10.0000	10.4404	-4.4	100	0.00
94	T	1,4-Dichlorobenzene	10.0000	10.3238	-3.2	100	0.00
95	T	n-Butylbenzene	10.0000	10.0364	-0.4	100	0.00
96	T	1,2-Dichlorobenzene	10.0000	10.2365	-2.4	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	10.0000	9.4579	5.4	100	-0.01
98	T	1,2,4-Trichlorobenzene	10.0000	10.0816	-0.8	100	0.00
99	T	Hexachlorobutadiene	10.0000	10.0659	-0.7	100	-0.01
100	T	Naphthalene	10.0000	10.0325	-0.3	100	0.00
101	T	1,2,3-Trichlorobenzene	10.0000	10.0173	-0.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137527.D 826_SL.M Mon Feb 29 16:02:41 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137528.D Vial: 7
Acq On : 26 Feb 2016 16:30 Operator: TMB
Sample : WG558920-07 20ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:40 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	604454	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	432511	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	231578	50.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.33	111	33417	10.3059 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 20.62%#		
43) 1,2-Dichloroethane-d4	11.05	65	44264	10.5140 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 21.02%#		
58) Toluene-d8	13.80	98	105494	10.2589 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 20.52%#		
80) p-Bromofluorobenzene	17.79	95	42856	10.0752 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 20.16%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	124530	22.4325 ug/L	99
3) Chloromethane	3.88	50	120837	20.8884 ug/L	97
4) Vinyl Chloride	4.12	62	100224	21.5249 ug/L	99
5) 1,3-Butadiene	4.17	54	87169	22.5011 ug/L	89
6) Bromomethane	5.03	94	52021	20.9587 ug/L	100
7) Chloroethane	5.20	64	56109	21.2522 ug/L	96
8) Trichlorofluoromethane	5.70	101	126994	20.2979 ug/L	100
9) Diethyl ether	6.24	59	233490	81.1233 ug/L	92
10) Isoprene	6.28	67	78978	19.3770 ug/L	88
11) Acrolein	6.48	56	21732	39.7585 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	61970	20.7512 ug/L	94
13) Acetone	6.60	43	31313	20.3882 ug/L	94
14) 1,1-Dichloroethene	6.83	61	109604	20.7203 ug/L	92
15) Tert-Butyl Alcohol	6.93	59	84577	171.3564 ug/L	95
16) Dimethyl Sulfide	7.12	62	47686	18.5811 ug/L	91
17) Iodomethane	7.38	142	29628	16.5619 ug/L	87
18) Methyl acetate	7.39	43	74780	20.3429 ug/L	95
19) Methylene Chloride	7.67	84	64851	20.3571 ug/L	76
20) Carbon Disulfide	7.72	76	202990	20.0567 ug/L	99
21) Acrylonitrile	7.86	53	61697	40.8381 ug/L	94
22) Methyl Tert Butyl Ether	7.89	73	190370	20.9254 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	59769	20.4535 ug/L	87
24) n-Hexane	8.24	57	105156	19.8169 ug/L	97
25) Diisopropyl ether	8.61	45	1129584	82.1061 ug/L	96
26) Vinyl Acetate	8.80	43	152272	21.4117 ug/L	97
27) 1,1-Dichloroethane	8.83	63	130302	20.6823 ug/L	99
28) Ethyl-Tert-Butyl ether	9.24	59	915394	83.0143 ug/L	96
29) 2-Butanone	9.46	43	42524	20.3527 ug/L	97
30) Propionitrile	9.58	54	48414	83.7237 ug/L	100
31) 2,2-Dichloropropane	9.69	77	100380	19.8495 ug/L	98
32) cis-1,2-Dichloroethene	9.77	96	66403	20.3543 ug/L	100
33) Chloroform	10.01	83	120566	20.4910 ug/L	97
34) 1-Bromopropane	10.15	122	8978	20.0727 ug/L	94
35) Bromochloromethane	10.26	130	39989	20.8618 ug/L	98
36) Tetrahydrofuran	10.29	42	119054	84.5841 ug/L	93
38) 1,1,1-Trichloroethane	10.60	97	105282	20.2577 ug/L	96
39) Cyclohexane	10.63	56	119680	20.3079 ug/L	89
40) 1,1-Dichloropropene	10.82	75	83869	20.0386 ug/L	96
41) Tert-Amyl-Methyl ether	10.94	73	732522	83.7393 ug/L	91
42) Carbon Tetrachloride	10.99	117	99704	20.5318 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M137528.D 826_SL.M Mon Feb 29 16:01:41 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137528.D Vial: 7
Acq On : 26 Feb 2016 16:30 Operator: TMB
Sample : WG558920-07 20ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:40 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	11.19	62	103881	20.6854 ug/L		99
46)	Benzene	11.23	78	247381	19.6467 ug/L		92
47)	Trichloroethene	12.09	130	61373	20.6321 ug/L		91
48)	Methylcyclohexane	12.18	83	97333	20.2407 ug/L		88
49)	1,2-Dichloropropane	12.34	63	69997	20.6607 ug/L		99
50)	1,4-Dioxane	12.68	88	6222	161.0769 ug/L		84
51)	Bromodichloromethane	12.68	83	89367	20.1007 ug/L		96
52)	Dibromomethane	12.79	93	40905	20.6426 ug/L		98
53)	2-Chloroethyl Vinyl Ether	13.04	63	37392	20.0660 ug/L		99
54)	4-Methyl-2-Pentanone	13.07	58	29543	20.9375 ug/L		90
55)	cis-1,3-Dichloropropene	13.43	75	99671	20.3475 ug/L		97
56)	Dimethyl Disulfide	13.72	79	46329	18.7525 ug/L		98
59)	Toluene	13.91	91	246419	20.1412 ug/L		99
60)	Ethyl Methacrylate	14.04	69	79829	20.3638 ug/L		96
62)	trans-1,3-Dichloropropene	14.12	75	96621	20.5377 ug/L		98
63)	1,1,2-Trichloroethane	14.38	97	53425	20.8919 ug/L		97
64)	2-Hexanone	14.31	43	59605	20.4265 ug/L		97
65)	1,3-Dichloropropane	14.74	76	96517	20.8239 ug/L		94
66)	Tetrachloroethene	14.87	166	62111	20.5796 ug/L		96
67)	Dibromochloromethane	15.17	129	68185	20.5019 ug/L		99
68)	1,2-Dibromoethane	15.48	107	53387	20.4138 ug/L		100
69)	1-Chlorohexane	15.59	91	76216	20.0602 ug/L		83
70)	Chlorobenzene	16.07	112	160312	20.3880 ug/L	#	66
71)	1,1,1,2-Tetrachloroethane	16.11	131	64649	20.4768 ug/L		97
72)	Ethylbenzene	16.10	106	86018	20.4427 ug/L		96
73)	m-,p-Xylene	16.22	106	209303	40.6530 ug/L		95
74)	o-Xylene	16.87	106	101781	20.9889 ug/L		94
75)	Styrene	16.92	104	169811	20.5741 ug/L		94
76)	Bromoform	17.49	173	47615	20.2769 ug/L		98
77)	Isopropylbenzene	17.38	105	273784	21.0027 ug/L		97
79)	1,1,2,2-Tetrachloroethane	17.65	83	75470	20.8621 ug/L		95
81)	1,2,3-Trichloropropane	17.87	110	22588	20.3932 ug/L		90
82)	trans-1,4-Dichloro-2-Buten	17.93	53	26581	19.9034 ug/L		88
83)	n-Propylbenzene	17.98	91	330830	21.0359 ug/L		97
84)	Bromobenzene	18.13	156	71833	21.0128 ug/L		95
85)	1,3,5-Trimethylbenzene	18.21	105	230218	20.5655 ug/L		96
86)	2-Chlorotoluene	18.30	91	219979	20.9561 ug/L		97
87)	4-Chlorotoluene	18.35	91	193947	20.2066 ug/L		97
88)	a-Methylstyrene	18.69	118	107098	19.7008 ug/L		96
89)	tert-Butylbenzene	18.75	134	48246	20.6806 ug/L		94
90)	1,2,4-Trimethylbenzene	18.82	105	244152	20.7388 ug/L		84
91)	sec-Butylbenzene	19.08	105	299927	20.9214 ug/L		98
92)	p-Isopropyltoluene	19.27	119	246088	20.8066 ug/L		100
93)	1,3-Dichlorobenzene	19.48	146	134407	20.3198 ug/L		98
94)	1,4-Dichlorobenzene	19.64	146	136759	20.3118 ug/L		97
95)	n-Butylbenzene	19.89	91	245859	20.6677 ug/L		97
96)	1,2-Dichlorobenzene	20.22	146	129420	20.3333 ug/L		96
97)	1,2-Dibromo-3-Chloropropan	21.41	75	16283	20.3429 ug/L		85
98)	1,2,4-Trichlorobenzene	22.76	180	93373	20.2924 ug/L		99
99)	Hexachlorobutadiene	22.95	225	53674	20.3969 ug/L		99
100)	Naphthalene	23.20	128	219058	20.7086 ug/L		99
101)	1,2,3-Trichlorobenzene	23.58	180	91461	20.1860 ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137528.D Vial: 7
Acq On : 26 Feb 2016 16:30 Operator: TMB
Sample : WG558920-07 20ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

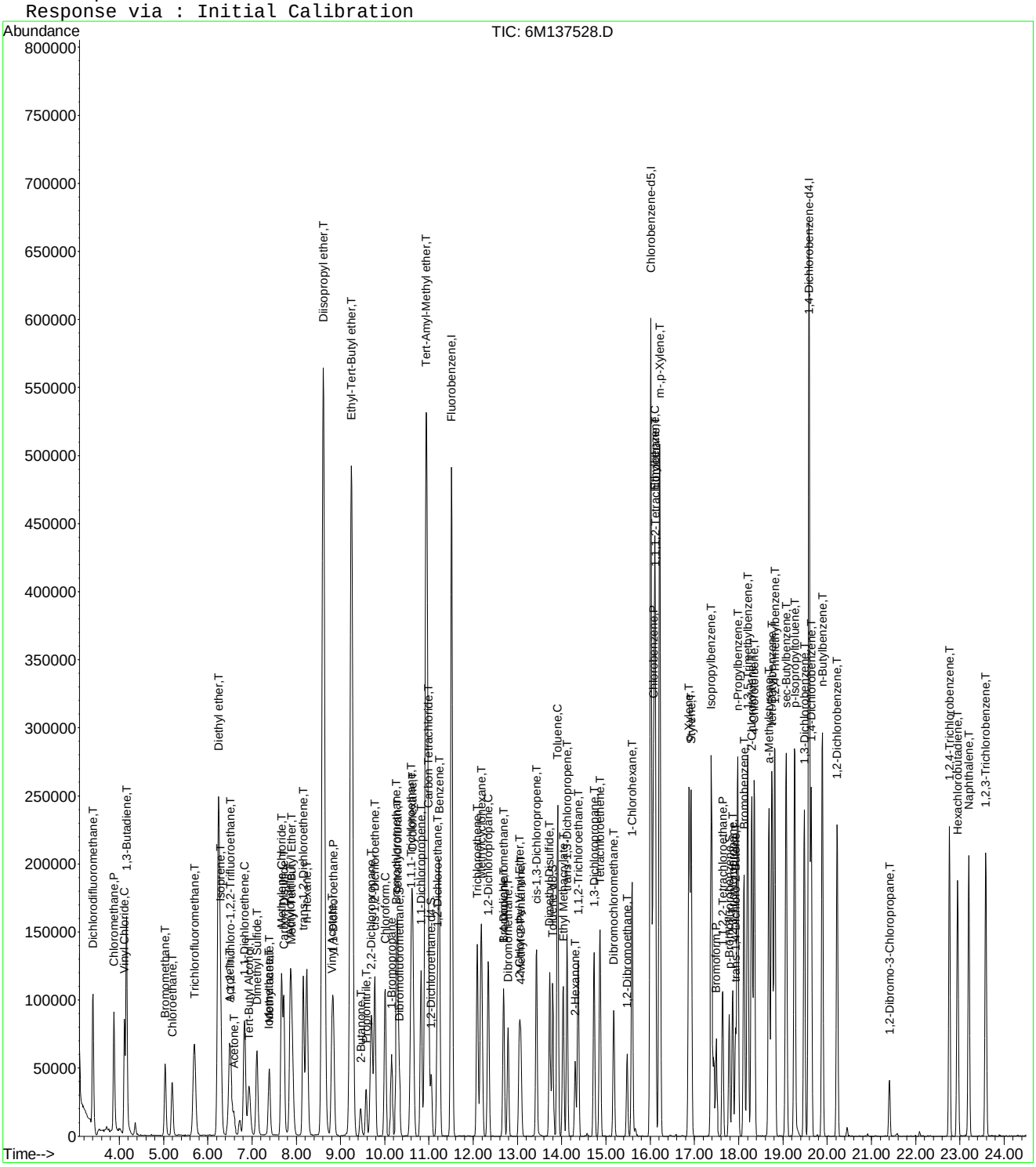

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137529.D Vial: 8
Acq On : 26 Feb 2016 17:03 Operator: TMB
Sample : WG558920-08 50ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:41 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	607631	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	439950	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	237573	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	82729	25.3805 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 50.76%#		
43) 1,2-Dichloroethane-d4	11.06	65	107163	25.3214 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 50.64%#		
58) Toluene-d8	13.80	98	266157	25.4452 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 50.90%#		
80) p-Bromofluorobenzene	17.79	95	111797	25.6197 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 51.24%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	326358	58.4819 ug/L	99
3) Chloromethane	3.88	50	305583	52.5483 ug/L	99
4) Vinyl Chloride	4.11	62	261948	55.9639 ug/L	98
5) 1,3-Butadiene	4.17	54	208973	53.6605 ug/L	91
6) Bromomethane	5.03	94	129157	51.7638 ug/L	100
7) Chloroethane	5.20	64	147959	55.7489 ug/L	95
8) Trichlorofluoromethane	5.70	101	339023	53.9039 ug/L	99
9) Diethyl ether	6.24	59	283385	97.9439 ug/L	93
10) Isoprene	6.28	67	215850	52.6813 ug/L	86
11) Acrolein	6.48	56	25264	45.9786 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	168394	56.0934 ug/L	94
13) Acetone	6.60	43	68176	49.2786 ug/L	100
14) 1,1-Dichloroethene	6.83	61	295734	55.6154 ug/L	92
15) Tert-Butyl Alcohol	6.94	59	97040	195.5789 ug/L	97
16) Dimethyl Sulfide	7.12	62	135657	52.5830 ug/L	94
17) Iodomethane	7.38	142	119726	51.5829 ug/L	91
18) Methyl acetate	7.39	43	187187	50.6554 ug/L	95
19) Methylene Chloride	7.67	84	174497	54.4892 ug/L	80
20) Carbon Disulfide	7.72	76	530150	52.1084 ug/L	98
21) Acrylonitrile	7.86	53	78970	51.9980 ug/L	98
22) Methyl Tert Butyl Ether	7.89	73	506330	55.3647 ug/L	93
23) trans-1,2-Dichloroethene	8.16	96	161116	54.8470 ug/L	86
24) n-Hexane	8.24	57	282956	53.0449 ug/L	98
25) Diisopropyl ether	8.61	45	1357488	98.1559 ug/L	97
26) Vinyl Acetate	8.80	43	361913	50.6243 ug/L	97
27) 1,1-Dichloroethane	8.84	63	345084	54.4873 ug/L	98
28) Ethyl-Tert-Butyl ether	9.24	59	1104598	99.6489 ug/L	96
29) 2-Butanone	9.45	43	102919	49.0011 ug/L	94
30) Propionitrile	9.58	54	57786	99.4084 ug/L	100
31) 2,2-Dichloropropane	9.70	77	275709	54.2347 ug/L	99
32) cis-1,2-Dichloroethene	9.77	96	176368	53.7788 ug/L	98
33) Chloroform	10.01	83	316097	53.4420 ug/L	96
34) 1-Bromopropane	10.16	122	24579	54.6655 ug/L	98
35) Bromochloromethane	10.26	130	106752	55.4000 ug/L	99
36) Tetrahydrofuran	10.29	42	139800	99.1693 ug/L	94
38) 1,1,1-Trichloroethane	10.60	97	287959	55.1175 ug/L	98
39) Cyclohexane	10.63	56	324068	54.7019 ug/L	90
40) 1,1-Dichloropropene	10.82	75	232925	55.3612 ug/L	98
41) Tert-Amyl-Methyl ether	10.95	73	878188	99.8664 ug/L	92
42) Carbon Tetrachloride	10.99	117	270388	55.3891 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137529.D Vial: 8
Acq On : 26 Feb 2016 17:03 Operator: TMB
Sample : WG558920-08 50ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:41 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	272804	54.0384 ug/L	98
46)	Benzene	11.23	78	654918	51.7410 ug/L	91
47)	Trichloroethene	12.09	130	163002	54.5109 ug/L	91
48)	Methylcyclohexane	12.18	83	264045	54.6220 ug/L	88
49)	1,2-Dichloropropane	12.34	63	185139	54.3608 ug/L	99
50)	1,4-Dioxane	12.67	88	7470	186.3872 ug/L	86
51)	Bromodichloromethane	12.68	83	244077	54.6116 ug/L	96
52)	Dibromomethane	12.78	93	112269	56.3600 ug/L	97
53)	2-Chloroethyl Vinyl Ether	13.04	63	99869	53.3134 ug/L	98
54)	4-Methyl-2-Pentanone	13.07	58	71173	50.1774 ug/L	95
55)	cis-1,3-Dichloropropene	13.43	75	275770	56.0032 ug/L	97
56)	Dimethyl Disulfide	13.72	79	136937	55.1380 ug/L	96
59)	Toluene	13.91	91	661797	53.1777 ug/L	100
60)	Ethyl Methacrylate	14.04	69	221335	55.5062 ug/L	94
62)	trans-1,3-Dichloropropene	14.12	75	265281	55.4346 ug/L	99
63)	1,1,2-Trichloroethane	14.38	97	140534	54.0266 ug/L	99
64)	2-Hexanone	14.31	43	150141	50.5831 ug/L	99
65)	1,3-Dichloropropane	14.73	76	254916	54.0691 ug/L	94
66)	Tetrachloroethene	14.87	166	165478	53.9016 ug/L	97
67)	Dibromochloromethane	15.17	129	187125	55.3134 ug/L	98
68)	1,2-Dibromoethane	15.48	107	145905	54.8470 ug/L	99
69)	1-Chlorohexane	15.59	91	213275	55.1854 ug/L	86
70)	Chlorobenzene	16.07	112	421684	52.7217 ug/L #	68
71)	1,1,1,2-Tetrachloroethane	16.11	131	172886	53.8335 ug/L	98
72)	Ethylbenzene	16.11	106	233514	54.5577 ug/L	98
73)	m-,p-Xylene	16.22	106	560207	106.9693 ug/L	96
74)	o-Xylene	16.88	106	278846	56.5302 ug/L	96
75)	Styrene	16.92	104	471370	56.1451 ug/L	94
76)	Bromoform	17.49	173	131127	54.8964 ug/L	99
77)	Isopropylbenzene	17.38	105	740395	55.8373 ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.65	83	199941	53.8747 ug/L	96
81)	1,2,3-Trichloropropane	17.87	110	61269	53.9200 ug/L	97
82)	trans-1,4-Dichloro-2-Buten	17.93	53	73183	53.4153 ug/L	91
83)	n-Propylbenzene	17.98	91	903295	55.9869 ug/L	98
84)	Bromobenzene	18.12	156	191943	54.7308 ug/L	98
85)	1,3,5-Trimethylbenzene	18.21	105	641908	55.8951 ug/L	95
86)	2-Chlorotoluene	18.30	91	578848	53.7519 ug/L	97
87)	4-Chlorotoluene	18.36	91	530900	53.9168 ug/L	97
88)	a-Methylstyrene	18.69	118	307671	55.1682 ug/L	99
89)	tert-Butylbenzene	18.76	134	134676	56.2719 ug/L	98
90)	1,2,4-Trimethylbenzene	18.82	105	666066	55.1494 ug/L	81
91)	sec-Butylbenzene	19.07	105	825213	56.1103 ug/L	99
92)	p-Isopropyltoluene	19.27	119	685445	56.4914 ug/L	100
93)	1,3-Dichlorobenzene	19.48	146	365219	53.8210 ug/L	96
94)	1,4-Dichlorobenzene	19.64	146	363309	52.5979 ug/L	98
95)	n-Butylbenzene	19.89	91	677494	55.5152 ug/L	98
96)	1,2-Dichlorobenzene	20.23	146	350298	53.6470 ug/L	96
97)	1,2-Dibromo-3-Chloropropan	21.41	75	43537	53.0196 ug/L	90
98)	1,2,4-Trichlorobenzene	22.76	180	262463	55.6006 ug/L	99
99)	Hexachlorobutadiene	22.95	225	150922	55.9053 ug/L	100
100)	Naphthalene	23.20	128	617866	56.9360 ug/L	100
101)	1,2,3-Trichlorobenzene	23.59	180	259953	55.9254 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137529.D Vial: 8
Acq On : 26 Feb 2016 17:03 Operator: TMB
Sample : WG558920-08 50ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

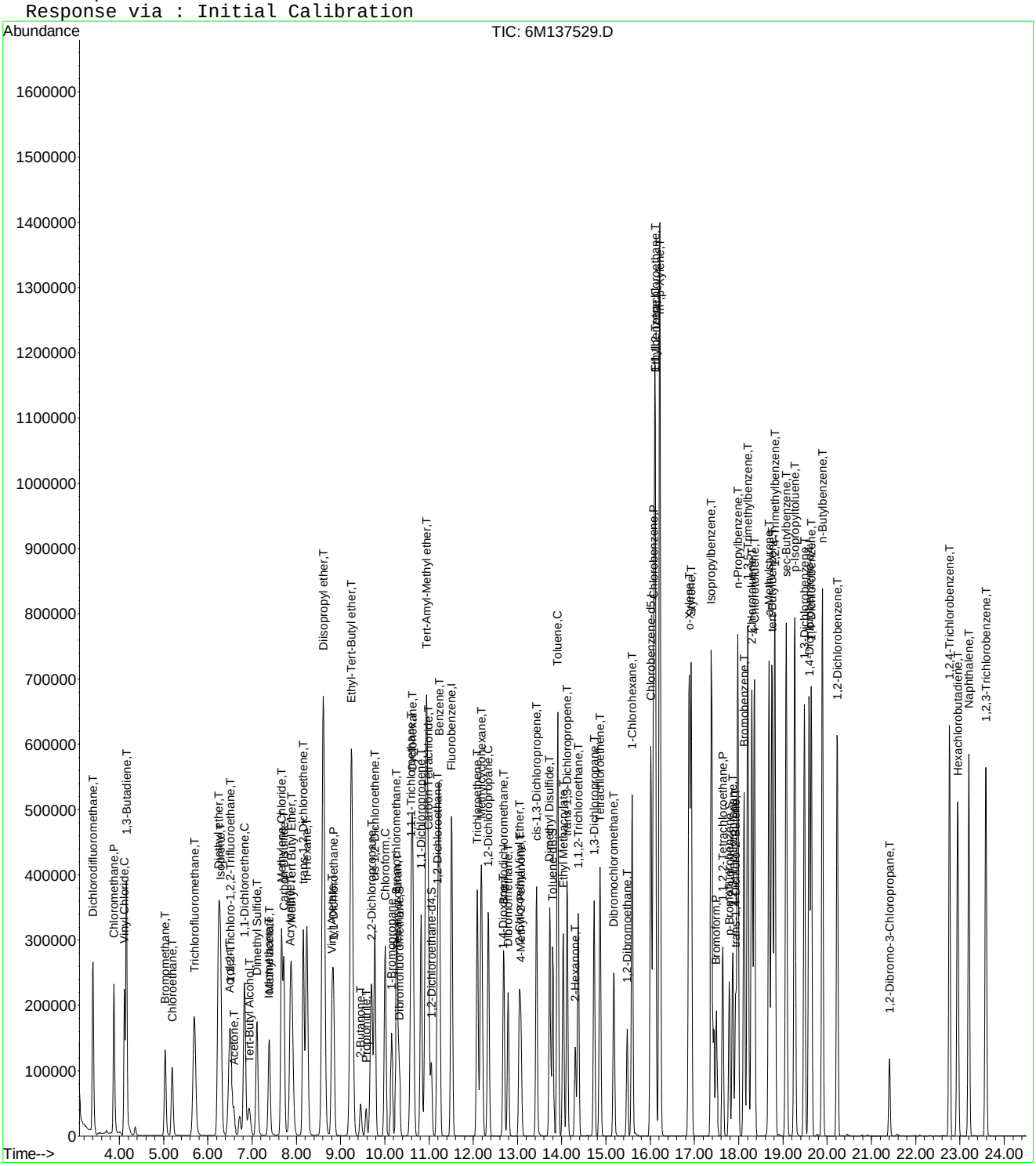

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137530.D Vial: 9
Acq On : 26 Feb 2016 17:35 Operator: TMB
Sample : WG558920-09 100ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:42 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	642087	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	466249	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	253947	50.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.32	111	162548	47.1921 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.38%		
43) 1,2-Dichloroethane-d4	11.06	65	210928	47.1653 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.34%		
58) Toluene-d8	13.80	98	518743	46.7957 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 93.60%		
80) p-Bromofluorobenzene	17.79	95	219336	47.0227 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 94.04%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	562397	95.3710 ug/L	99
3) Chloromethane	3.88	50	511342	83.2121 ug/L	98
4) Vinyl Chloride	4.12	62	453722	91.7337 ug/L	97
5) 1,3-Butadiene	4.16	54	371216	90.2064 ug/L	92
6) Bromomethane	5.03	94	236484	89.6925 ug/L	99
7) Chloroethane	5.19	64	259484	92.5233 ug/L	94
8) Trichlorofluoromethane	5.69	101	593589	89.3146 ug/L	99
9) Diethyl ether	6.23	59	599424	196.0563 ug/L	94
10) Isoprene	6.28	67	429478	99.1954 ug/L	86
11) Acrolein	6.48	56	58142	100.1359 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	295880	93.2711 ug/L	94
13) Acetone	6.59	43	134155	95.5525 ug/L	97
14) 1,1-Dichloroethene	6.83	61	525920	93.5964 ug/L	92
15) Tert-Butyl Alcohol	6.94	59	207755	396.2496 ug/L	97
16) Dimethyl Sulfide	7.11	62	269784	98.9613 ug/L	92
17) Iodomethane	7.38	142	252699	98.0787 ug/L	90
18) Methyl acetate	7.39	43	375036	96.0437 ug/L	97
19) Methylene Chloride	7.67	84	311212	91.9654 ug/L	80
20) Carbon Disulfide	7.72	76	1037082	96.4646 ug/L	99
21) Acrylonitrile	7.86	53	165829	103.3311 ug/L	99
22) Methyl Tert Butyl Ether	7.89	73	942489	97.5263 ug/L	93
23) trans-1,2-Dichloroethene	8.16	96	289637	93.3071 ug/L	87
24) n-Hexane	8.23	57	555752	98.5944 ug/L	98
25) Diisopropyl ether	8.61	45	2877959	196.9296 ug/L	96
26) Vinyl Acetate	8.80	43	731541	96.8365 ug/L	99
27) 1,1-Dichloroethane	8.83	63	621539	92.8721 ug/L	98
28) Ethyl-Tert-Butyl ether	9.24	59	2342177	199.9557 ug/L	96
29) 2-Butanone	9.45	43	207126	93.3235 ug/L	95
30) Propionitrile	9.57	54	121992	198.5994 ug/L	98
31) 2,2-Dichloropropane	9.69	77	491609	91.5150 ug/L	98
32) cis-1,2-Dichloroethene	9.77	96	321521	92.7784 ug/L	96
33) Chloroform	10.01	83	568519	90.9606 ug/L	95
34) 1-Bromopropane	10.16	122	47570	100.1217 ug/L	99
35) Bromochloromethane	10.26	130	193434	94.9975 ug/L	100
36) Tetrahydrofuran	10.29	42	287880	195.3143 ug/L	95
38) 1,1,1-Trichloroethane	10.60	97	511473	92.6461 ug/L	98
39) Cyclohexane	10.63	56	631373	100.8552 ug/L	90
40) 1,1-Dichloropropene	10.82	75	416243	93.6230 ug/L	97
41) Tert-Amyl-Methyl ether	10.94	73	1879478	202.2624 ug/L	92
42) Carbon Tetrachloride	10.99	117	485191	94.0581 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137530.D Vial: 9
Acq On : 26 Feb 2016 17:35 Operator: TMB
Sample : WG558920-09 100ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:42 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	498315	93.4118	ug/L	98
46)	Benzene	11.23	78	1182199	88.3862	ug/L	91
47)	Trichloroethene	12.09	130	294176	93.0987	ug/L	90
48)	Methylcyclohexane	12.18	83	515585	100.9337	ug/L	88
49)	1,2-Dichloropropane	12.34	63	342055	95.0452	ug/L	100
50)	1,4-Dioxane	12.67	88	17776	381.1583	ug/L	84
51)	Bromodichloromethane	12.68	83	452280	95.7660	ug/L	97
52)	Dibromomethane	12.79	93	202292	96.1028	ug/L	98
53)	2-Chloroethyl Vinyl Ether	13.04	63	206349	104.2447	ug/L	97
54)	4-Methyl-2-Pentanone	13.07	58	145646	97.1712	ug/L	93
55)	cis-1,3-Dichloropropene	13.43	75	509093	97.8384	ug/L	95
56)	Dimethyl Disulfide	13.72	79	282091	107.4894	ug/L	96
59)	Toluene	13.91	91	1184465	89.8074	ug/L	100
60)	Ethyl Methacrylate	14.04	69	445228	105.3560	ug/L	94
62)	trans-1,3-Dichloropropene	14.12	75	494673	97.5390	ug/L	99
63)	1,1,2-Trichloroethane	14.38	97	261258	94.7723	ug/L	99
64)	2-Hexanone	14.31	43	305856	97.2318	ug/L	100
65)	1,3-Dichloropropane	14.74	76	469121	93.8906	ug/L	93
66)	Tetrachloroethene	14.87	166	296672	91.1851	ug/L	98
67)	Dibromochloromethane	15.17	129	347661	96.9706	ug/L	98
68)	1,2-Dibromoethane	15.48	107	270599	95.9830	ug/L	97
69)	1-Chlorohexane	15.59	91	420885	102.7620	ug/L	86
70)	Chlorobenzene	16.07	112	765249	90.2797	ug/L	69
71)	1,1,1,2-Tetrachloroethane	16.11	131	320669	94.2184	ug/L	97
72)	Ethylbenzene	16.10	106	422350	93.1110	ug/L	97
73)	m-,p-Xylene	16.22	106	1018750	183.5539	ug/L	96
74)	o-Xylene	16.87	106	503867	96.3867	ug/L	94
75)	Styrene	16.92	104	871975	98.0029	ug/L	94
76)	Bromoform	17.49	173	243410	96.1558	ug/L	99
77)	Isopropylbenzene	17.38	105	1335991	95.0715	ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.65	83	376052	94.7950	ug/L	96
81)	1,2,3-Trichloropropane	17.87	110	114333	94.1314	ug/L	95
82)	trans-1,4-Dichloro-2-Buten	17.93	53	150048	102.4566	ug/L	89
83)	n-Propylbenzene	17.98	91	1628674	94.4377	ug/L	98
84)	Bromobenzene	18.13	156	352357	93.9933	ug/L	98
85)	1,3,5-Trimethylbenzene	18.21	105	1165530	94.9464	ug/L	95
86)	2-Chlorotoluene	18.30	91	1069398	92.9015	ug/L	97
87)	4-Chlorotoluene	18.35	91	957337	90.9557	ug/L	97
88)	a-Methylstyrene	18.69	118	626810	105.1459	ug/L	98
89)	tert-Butylbenzene	18.75	134	243763	95.2846	ug/L	87
90)	1,2,4-Trimethylbenzene	18.82	105	1211949	93.8776	ug/L	81
91)	sec-Butylbenzene	19.08	105	1482811	94.3227	ug/L	99
92)	p-Isopropyltoluene	19.27	119	1243718	95.8928	ug/L	100
93)	1,3-Dichlorobenzene	19.48	146	670076	92.3797	ug/L	97
94)	1,4-Dichlorobenzene	19.64	146	665185	90.0925	ug/L	97
95)	n-Butylbenzene	19.89	91	1241772	95.1924	ug/L	98
96)	1,2-Dichlorobenzene	20.22	146	649160	93.0065	ug/L	96
97)	1,2-Dibromo-3-Chloropropan	21.41	75	84975	96.8107	ug/L	89
98)	1,2,4-Trichlorobenzene	22.76	180	475402	94.2164	ug/L	99
99)	Hexachlorobutadiene	22.95	225	270006	93.5681	ug/L	100
100)	Naphthalene	23.20	128	1163220	100.2786	ug/L	100
101)	1,2,3-Trichlorobenzene	23.58	180	465522	93.6933	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137530.D Vial: 9
Acq On : 26 Feb 2016 17:35 Operator: TMB
Sample : WG558920-09 100ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

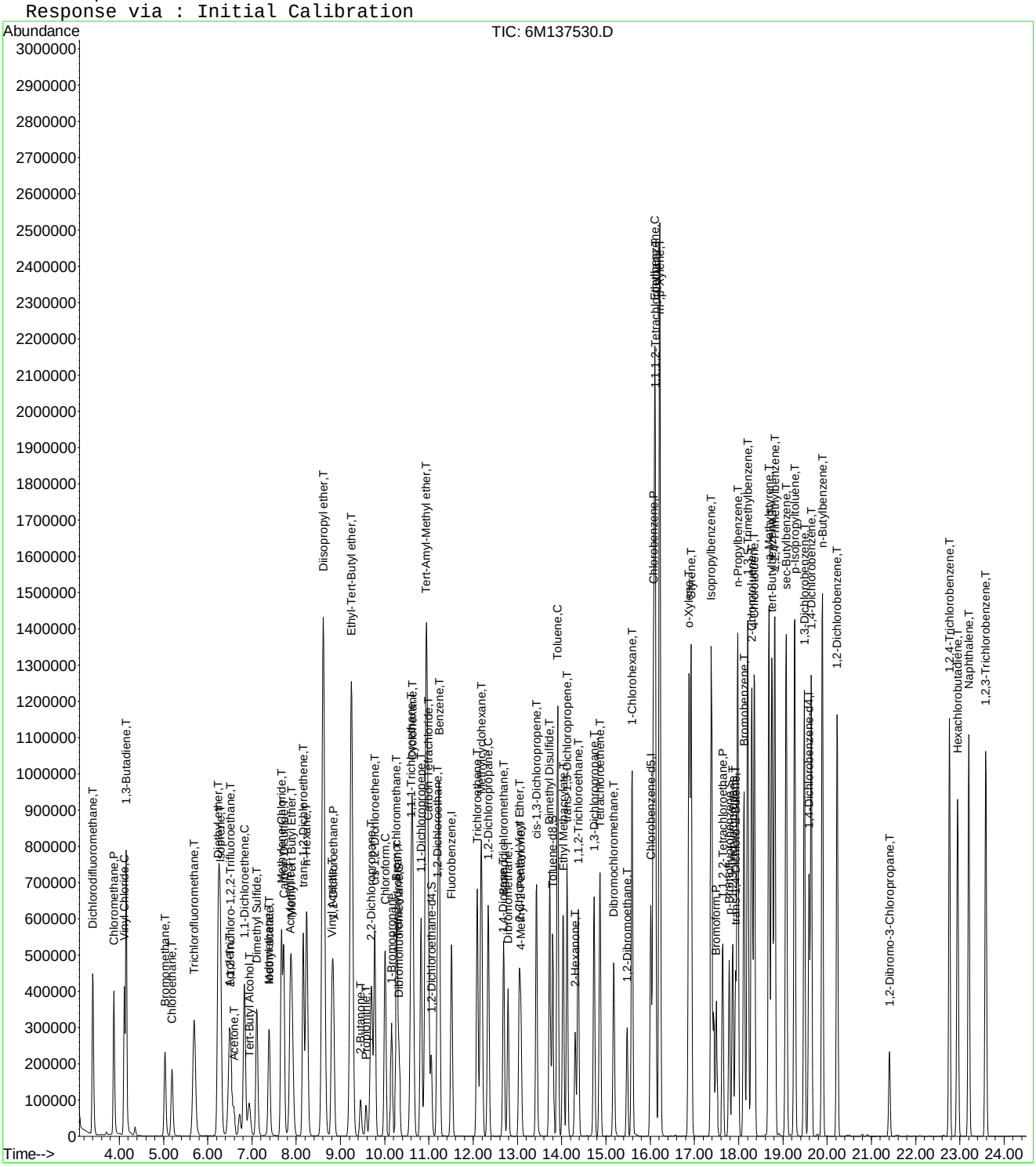

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137531.D Vial: 10
Acq On : 26 Feb 2016 18:07 Operator: TMB
Sample : WG558920-10 200ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:43 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	661999	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	479329	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	273657	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	351336	98.9344 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 197.86%#		
43) 1,2-Dichloroethane-d4	11.05	65	450300	97.6622 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 195.32%#		
58) Toluene-d8	13.80	98	1096959	96.2561 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 192.52%#		
80) p-Bromofluorobenzene	17.79	95	487968	97.0790 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 194.16%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	1228760	202.1049 ug/L	98
3) Chloromethane	3.88	50	1125279	177.6118 ug/L	98
4) Vinyl Chloride	4.12	62	989076	193.9570 ug/L	97
5) 1,3-Butadiene	4.16	54	745589	175.7303 ug/L	94
6) Bromomethane	5.03	94	548799	201.8852 ug/L	100
7) Chloroethane	5.19	64	579871	200.5435 ug/L	96
8) Trichlorofluoromethane	5.69	101	1297014	189.2858 ug/L	100
9) Diethyl ether	6.23	59	1563	0.4958 ug/L #	49
10) Isoprene	6.27	67	894422	200.3686 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	649915	198.7121 ug/L	93
13) Acetone	6.59	43	290441	205.4763 ug/L	99
14) 1,1-Dichloroethene	6.83	61	1161250	200.4481 ug/L	92
15) Tert-Butyl Alcohol	6.83	59	39858	73.7343 ug/L #	57
16) Dimethyl Sulfide	7.11	62	576142	204.9817 ug/L	92
17) Iodomethane	7.38	142	559892	205.0669 ug/L	91
18) Methyl acetate	7.39	43	775842	192.7107 ug/L	97
19) Methylene Chloride	7.67	84	681801	195.4170 ug/L	78
20) Carbon Disulfide	7.72	76	2184454	197.0763 ug/L	98
21) Acrylonitrile	7.90	53	25391	15.3457 ug/L #	34
22) Methyl Tert Butyl Ether	7.90	73	2079733	208.7322 ug/L	92
23) trans-1,2-Dichloroethene	8.16	96	635434	198.5489 ug/L	86
24) n-Hexane	8.23	57	1159756	199.5603 ug/L	99
25) Diisopropyl ether	8.63	45	8975	0.5957 ug/L #	37
26) Vinyl Acetate	8.80	43	1656751	212.7131 ug/L	98
27) 1,1-Dichloroethane	8.83	63	1360017	197.1051 ug/L	97
28) Ethyl-Tert-Butyl ether	9.23	59	4690	0.3884 ug/L #	76
29) 2-Butanone	9.45	43	450489	196.8688 ug/L	97
30) Propionitrile	9.59	54	193	0.3047 ug/L #	55
31) 2,2-Dichloropropane	9.69	77	1084788	195.8637 ug/L	97
32) cis-1,2-Dichloroethene	9.77	96	711282	199.0746 ug/L	99
33) Chloroform	10.00	83	1259701	195.4845 ug/L	96
34) 1-Bromopropane	10.16	122	101190	206.5710 ug/L	98
35) Bromochloromethane	10.26	130	430294	204.9658 ug/L	100
36) Tetrahydrofuran	10.31	42	4560	0.8620 ug/L #	82
38) 1,1,1-Trichloroethane	10.60	97	1139307	200.1621 ug/L	98
39) Cyclohexane	10.63	56	1322081	204.8363 ug/L	90
40) 1,1-Dichloropropene	10.83	75	913448	199.2765 ug/L	99
41) Tert-Amyl-Methyl ether	10.93	73	3689	0.3851 ug/L #	57
42) Carbon Tetrachloride	10.99	117	1067649	200.7466 ug/L	97
45) 1,2-Dichloroethane	11.19	62	1098127	199.6582 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M137531.D 826_SL.M Mon Feb 29 16:01:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137531.D Vial: 10
Acq On : 26 Feb 2016 18:07 Operator: TMB
Sample : WG558920-10 200ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:43 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	11.23	78	2576436	186.8313 ug/L		90
47)	Trichloroethene	12.09	130	648704	199.1220 ug/L		90
48)	Methylcyclohexane	12.18	83	1075003	204.1184 ug/L		87
49)	1,2-Dichloropropane	12.34	63	757110	204.0468 ug/L		100
50)	1,4-Dioxane	12.68	88	863	47.3107 ug/L	#	17
51)	Bromodichloromethane	12.68	83	1017483	208.9621 ug/L		97
52)	Dibromomethane	12.79	93	451601	208.0889 ug/L		97
53)	2-Chloroethyl Vinyl Ether	13.03	63	470311	230.4481 ug/L		98
54)	4-Methyl-2-Pentanone	13.07	58	332135	214.9265 ug/L		95
55)	cis-1,3-Dichloropropene	13.43	75	1150962	214.5407 ug/L		96
56)	Dimethyl Disulfide	13.73	79	648612	239.7166 ug/L		96
59)	Toluene	13.91	91	2588299	190.8923 ug/L		99
60)	Ethyl Methacrylate	14.03	69	978791	225.2947 ug/L		94
62)	trans-1,3-Dichloropropene	14.12	75	1110336	212.9604 ug/L		98
63)	1,1,2-Trichloroethane	14.38	97	578586	204.1568 ug/L		99
64)	2-Hexanone	14.31	43	689071	213.0784 ug/L		99
65)	1,3-Dichloropropane	14.74	76	1034423	201.3815 ug/L		93
66)	Tetrachloroethene	14.87	166	644718	192.7530 ug/L		97
67)	Dibromochloromethane	15.18	129	780769	211.8317 ug/L		100
68)	1,2-Dibromoethane	15.48	107	610277	210.5616 ug/L		98
69)	1-Chlorohexane	15.59	91	900931	213.9661 ug/L		86
70)	Chlorobenzene	16.07	112	1706160	195.7904 ug/L	#	68
71)	1,1,1,2-Tetrachloroethane	16.11	131	721225	206.1264 ug/L		97
72)	Ethylbenzene	16.11	106	946980	203.0736 ug/L		98
73)	m-,p-Xylene	16.22	106	2242794	393.0696 ug/L		97
74)	o-Xylene	16.87	106	1130903	210.4315 ug/L		95
75)	Styrene	16.92	104	1988734	217.4182 ug/L		93
76)	Bromoform	17.49	173	561872	215.9030 ug/L		99
77)	Isopropylbenzene	17.38	105	2989967	206.9652 ug/L		98
79)	1,1,2,2-Tetrachloroethane	17.64	83	859540	201.0666 ug/L		95
81)	1,2,3-Trichloropropane	17.87	110	265884	203.1382 ug/L		89
82)	trans-1,4-Dichloro-2-Buten	17.93	53	340440	215.7181 ug/L		90
83)	n-Propylbenzene	17.98	91	3639812	195.8513 ug/L		98
84)	Bromobenzene	18.13	156	802539	198.6628 ug/L		99
85)	1,3,5-Trimethylbenzene	18.21	105	2665531	201.5000 ug/L		96
86)	2-Chlorotoluene	18.30	91	2450953	197.5855 ug/L		97
87)	4-Chlorotoluene	18.35	91	2149568	189.5191 ug/L		97
88)	a-Methylstyrene	18.69	118	1416560	220.5099 ug/L		98
89)	tert-Butylbenzene	18.75	134	559469	202.9400 ug/L		85
90)	1,2,4-Trimethylbenzene	18.82	105	2775173	199.4822 ug/L		81
91)	sec-Butylbenzene	19.08	105	3369131	198.8771 ug/L		100
92)	p-Isopropyltoluene	19.26	119	2833911	202.7621 ug/L		99
93)	1,3-Dichlorobenzene	19.49	146	1523154	194.8646 ug/L		95
94)	1,4-Dichlorobenzene	19.64	146	1521474	191.2260 ug/L		97
95)	n-Butylbenzene	19.89	91	2819417	200.5655 ug/L		98
96)	1,2-Dichlorobenzene	20.22	146	1485290	197.4738 ug/L		95
97)	1,2-Dibromo-3-Chloropropan	21.41	75	195547	206.7378 ug/L		89
98)	1,2,4-Trichlorobenzene	22.76	180	1054519	193.9351 ug/L		98
99)	Hexachlorobutadiene	22.95	225	597195	192.0469 ug/L		99
100)	Naphthalene	23.20	128	2579088	206.3237 ug/L		99
101)	1,2,3-Trichlorobenzene	23.58	180	1038439	193.9482 ug/L		99

(#) = qualifier out of range (m) = manual integration
6M137531.D 826_SL.M Mon Feb 29 16:01:43 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137531.D Vial: 10
Acq On : 26 Feb 2016 18:07 Operator: TMB
Sample : WG558920-10 200ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

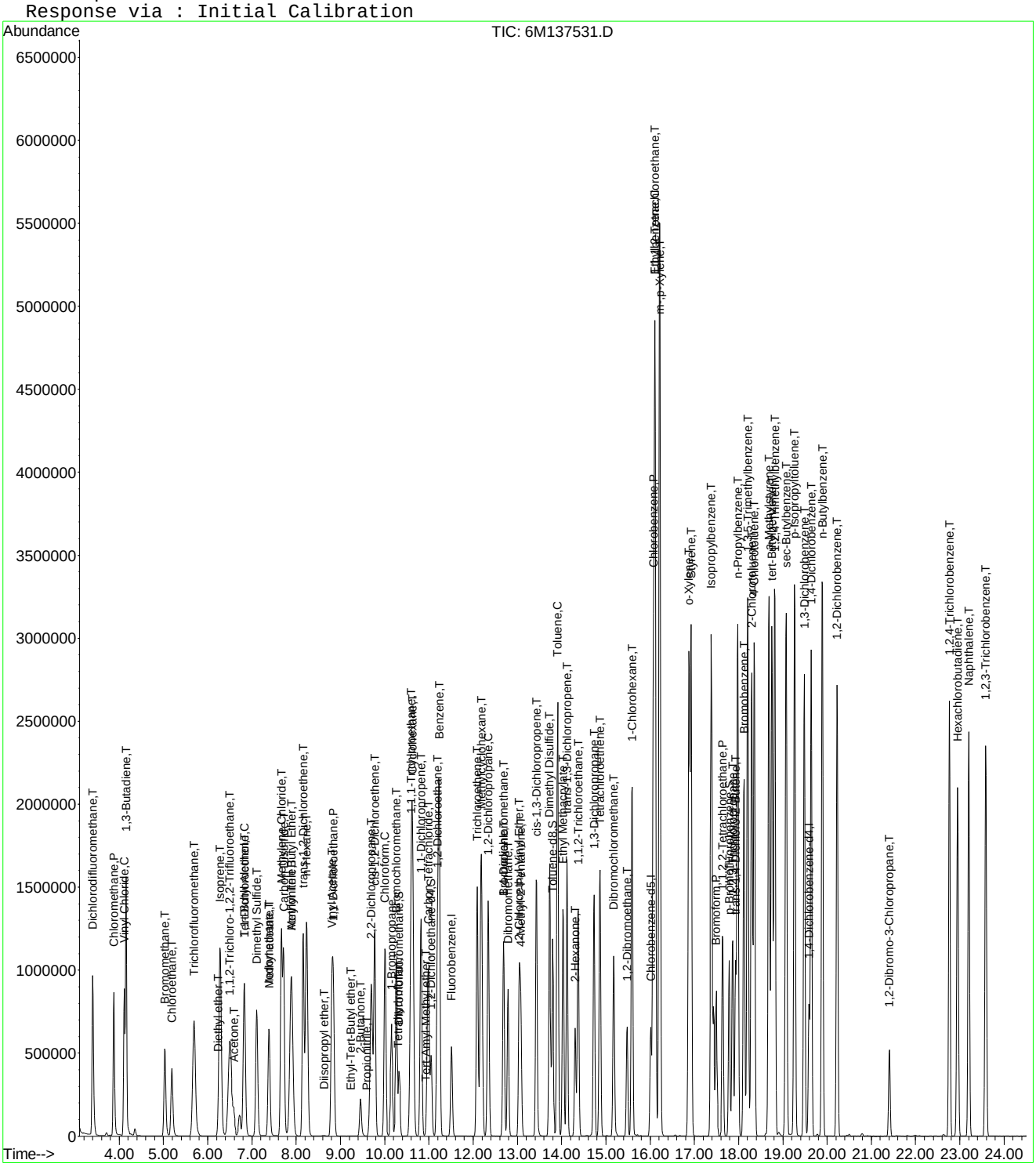

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137532.D Vial: 11
Acq On : 26 Feb 2016 18:39 Operator: TMB
Sample : WG558920-11 300ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:43 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	707233	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	525178	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	308135	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	555974	146.5460 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 293.10%#		
43) 1,2-Dichloroethane-d4	11.05	65	713394	144.8268 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 289.66%#		
58) Toluene-d8	13.80	98	1741152	139.4446 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 278.88%#		
80) p-Bromofluorobenzene	17.79	95	787625	139.1615 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 278.32%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	1997367	307.5122 ug/L	98
3) Chloromethane	3.88	50	1848014	273.0309 ug/L	98
4) Vinyl Chloride	4.11	62	1515327	278.1486 ug/L	97
5) 1,3-Butadiene	4.15	54	1176840	259.6328 ug/L	94
6) Bromomethane	5.03	94	924558	318.3612 ug/L	100
7) Chloroethane	5.18	64	952580	308.3709 ug/L	96
8) Trichlorofluoromethane	5.68	101	2124957	290.2808 ug/L	99
9) Diethyl ether	6.23	59	1011802	300.4509 ug/L	94
10) Isoprene	6.27	67	1489357	312.3064 ug/L	86
11) Acrolein	6.49	56	100305	156.8389 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	1067610	305.5451 ug/L	94
13) Acetone	6.59	43	448789	299.1551 ug/L	99
14) 1,1-Dichloroethene	6.82	61	1895304	306.2315 ug/L	92
15) Tert-Butyl Alcohol	6.95	59	370925	642.2954 ug/L	99
16) Dimethyl Sulfide	7.11	62	950681	316.6032 ug/L	94
17) Iodomethane	7.38	142	877751	298.6036 ug/L	91
18) Methyl acetate	7.40	43	1274555	296.3371 ug/L	98
19) Methylene Chloride	7.66	84	1102725	295.8467 ug/L	79
20) Carbon Disulfide	7.71	76	3583096	302.5832 ug/L	98
21) Acrylonitrile	7.86	53	296066	167.4906 ug/L	98
22) Methyl Tert Butyl Ether	7.90	73	3392519	318.7124 ug/L	92
23) trans-1,2-Dichloroethene	8.16	96	1037130	303.3368 ug/L	86
24) n-Hexane	8.23	57	1917686	308.8729 ug/L	99
25) Diisopropyl ether	8.61	45	4780310	296.9708 ug/L	96
26) Vinyl Acetate	8.80	43	2633859	316.5369 ug/L	99
27) 1,1-Dichloroethane	8.83	63	2210234	299.8379 ug/L	97
28) Ethyl-Tert-Butyl ether	9.24	59	3979837	308.4685 ug/L	96
29) 2-Butanone	9.45	43	727982	297.7887 ug/L	98
30) Propionitrile	9.58	54	209887	310.2156 ug/L	99
31) 2,2-Dichloropropane	9.69	77	1783568	301.4350 ug/L	96
32) cis-1,2-Dichloroethene	9.77	96	1159875	303.8646 ug/L	98
33) Chloroform	10.00	83	2040554	296.4065 ug/L	96
34) 1-Bromopropane	10.15	122	167090	319.2839 ug/L	98
35) Bromochloromethane	10.26	130	694571	309.6903 ug/L	99
36) Tetrahydrofuran	10.30	42	490636	303.4020 ug/L	96
38) 1,1,1-Trichloroethane	10.60	97	1858746	305.6722 ug/L	98
39) Cyclohexane	10.63	56	2201094	319.2142 ug/L	89
40) 1,1-Dichloropropene	10.83	75	1504422	307.2111 ug/L	99
41) Tert-Amyl-Methyl ether	10.94	73	3231746	315.7523 ug/L	93
42) Carbon Tetrachloride	10.99	117	1763858	310.4404 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M137532.D 826_SL.M Mon Feb 29 16:01:44 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137532.D Vial: 11
Acq On : 26 Feb 2016 18:39 Operator: TMB
Sample : WG558920-11 300ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:43 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45) 1,2-Dichloroethane	11.19	62	1778788	302.7287 ug/L	98
46) Benzene	11.23	78	4155462	282.0619 ug/L	90
47) Trichloroethene	12.09	130	1058154	304.0300 ug/L	90
48) Methylcyclohexane	12.18	83	1798917	319.7263 ug/L	88
49) 1,2-Dichloropropane	12.34	63	1232481	310.9180 ug/L	100
50) 1,4-Dioxane	12.67	88	32606	614.2458 ug/L	84
51) Bromodichloromethane	12.68	83	1653218	317.8084 ug/L	96
52) Dibromomethane	12.79	93	733410	316.3265 ug/L	98
53) 2-Chloroethyl Vinyl Ether	13.03	63	766489	351.5513 ug/L	97
54) 4-Methyl-2-Pentanone	13.07	58	543988	329.5031 ug/L	95
55) cis-1,3-Dichloropropene	13.42	75	1877090	327.5130 ug/L	95
56) Dimethyl Disulfide	13.73	79	1088350	376.5100 ug/L	96
59) Toluene	13.91	91	4193210	282.2590 ug/L	99
60) Ethyl Methacrylate	14.03	69	1632375	342.9321 ug/L	95
62) trans-1,3-Dichloropropene	14.12	75	1832609	320.8053 ug/L	98
63) 1,1,2-Trichloroethane	14.38	97	942438	303.5120 ug/L	98
64) 2-Hexanone	14.31	43	1154652	325.8770 ug/L	98
65) 1,3-Dichloropropane	14.74	76	1702509	302.5088 ug/L	94
66) Tetrachloroethene	14.87	166	1062175	289.8375 ug/L	97
67) Dibromochloromethane	15.18	129	1292929	320.1624 ug/L	100
68) 1,2-Dibromoethane	15.48	107	1008106	317.4575 ug/L	98
69) 1-Chlorohexane	15.59	91	1494127	323.8681 ug/L	86
70) Chlorobenzene	16.07	112	2773062	290.4413 ug/L #	66
71) 1,1,1,2-Tetrachloroethane	16.11	131	1196001	311.9762 ug/L	97
72) Ethylbenzene	16.11	106	1556732	304.6869 ug/L	100
73) m-,p-Xylene	16.22	106	3653753	584.4488 ug/L	99
74) o-Xylene	16.87	106	1861503	316.1378 ug/L	96
75) Styrene	16.92	104	3280614	327.3419 ug/L	91
76) Bromoform	17.49	173	968059	339.5083 ug/L	100
77) Isopropylbenzene	17.38	105	4859396	307.0014 ug/L	99
79) 1,1,2,2-Tetrachloroethane	17.64	83	1473362	306.0898 ug/L	95
81) 1,2,3-Trichloropropane	17.87	110	450710	305.8173 ug/L	97
82) trans-1,4-Dichloro-2-Buten	17.93	53	587175	330.4298 ug/L	92
83) n-Propylbenzene	17.98	91	5875551	280.7771 ug/L	99
84) Bromobenzene	18.13	156	1329308	292.2413 ug/L	98
85) 1,3,5-Trimethylbenzene	18.21	105	4394146	295.0064 ug/L	96
86) 2-Chlorotoluene	18.30	91	4027318	288.3378 ug/L	97
87) 4-Chlorotoluene	18.35	91	3574535	279.8896 ug/L	97
88) a-Methylstyrene	18.69	118	2387215	330.0275 ug/L	99
89) tert-Butylbenzene	18.75	134	927820	298.8965 ug/L	84
90) 1,2,4-Trimethylbenzene	18.82	105	4532965	289.3756 ug/L	82
91) sec-Butylbenzene	19.08	105	5502198	288.4488 ug/L	100
92) p-Isopropyltoluene	19.27	119	4664534	296.3974 ug/L	98
93) 1,3-Dichlorobenzene	19.49	146	2567994	291.7754 ug/L	95
94) 1,4-Dichlorobenzene	19.64	146	2568075	286.6525 ug/L	96
95) n-Butylbenzene	19.89	91	4738000	299.3349 ug/L	98
96) 1,2-Dichlorobenzene	20.22	146	2506554	295.9653 ug/L	94
97) 1,2-Dibromo-3-Chloropropan	21.41	75	337125	316.5375 ug/L	88
98) 1,2,4-Trichlorobenzene	22.76	180	1820641	297.3664 ug/L	98
99) Hexachlorobutadiene	22.95	225	1055064	301.3252 ug/L	99
100) Naphthalene	23.20	128	4412465	313.4943 ug/L	98
101) 1,2,3-Trichlorobenzene	23.58	180	1777074	294.7650 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137532.D Vial: 11
Acq On : 26 Feb 2016 18:39 Operator: TMB
Sample : WG558920-11 300ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

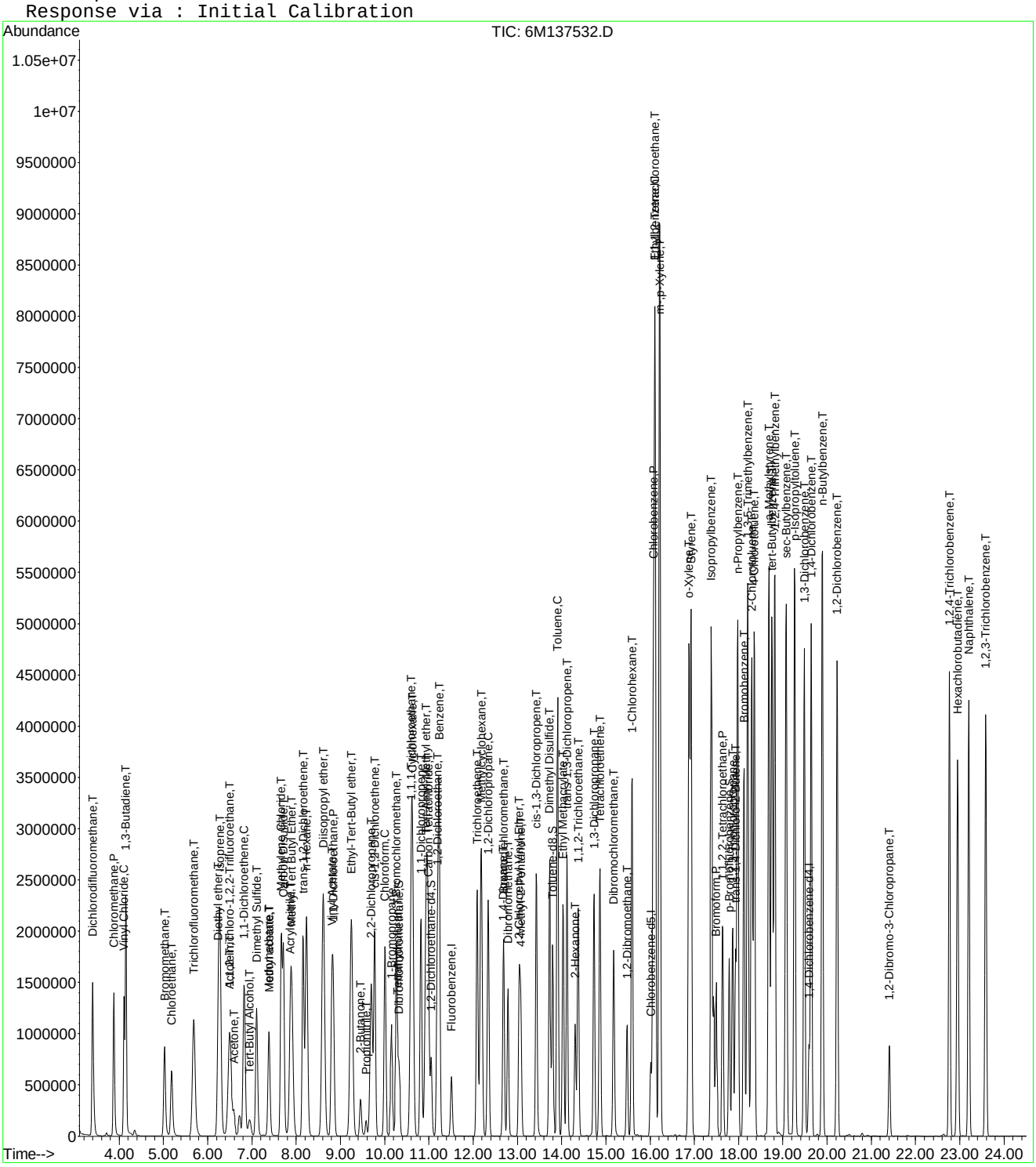

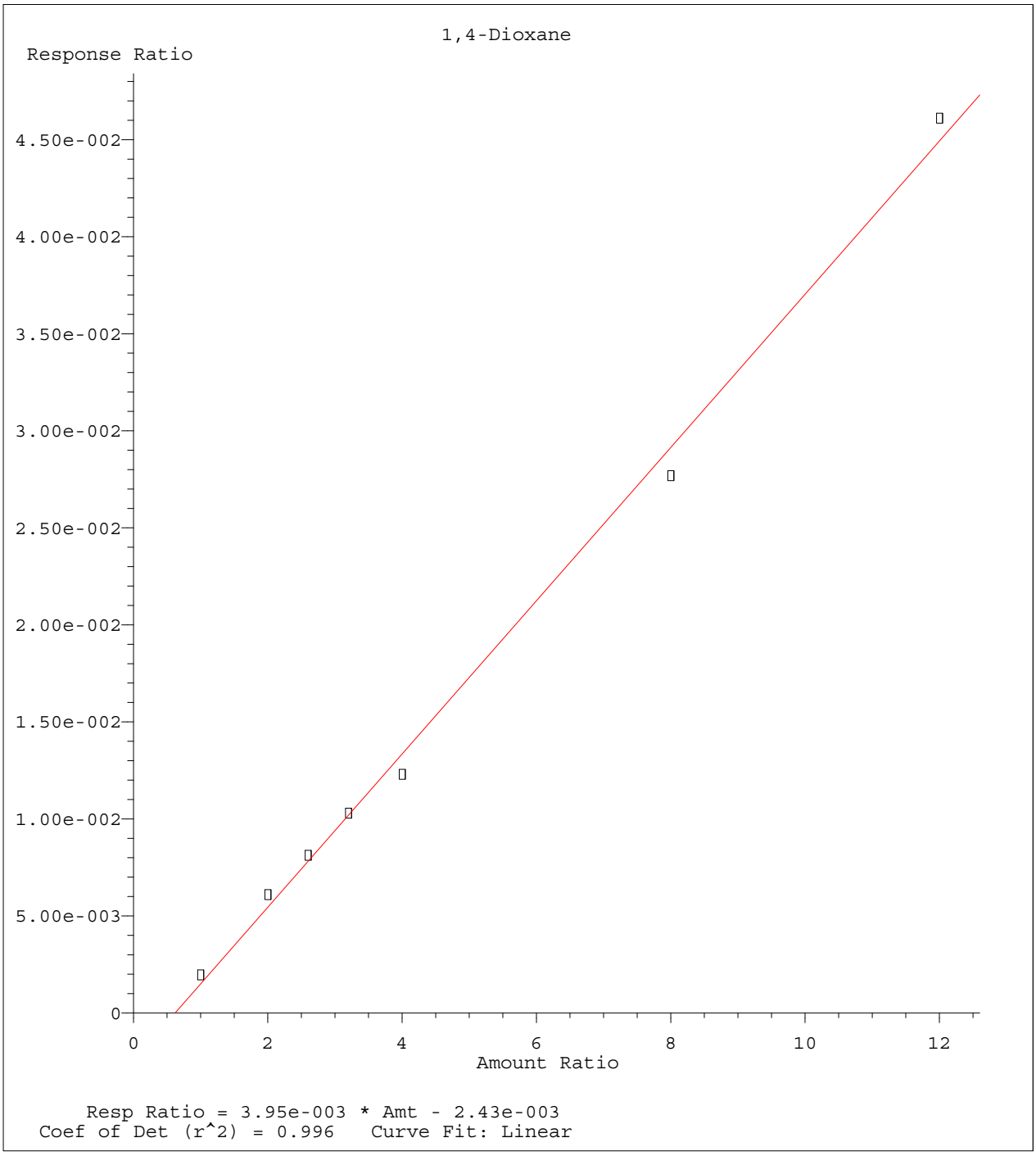

Method Name: C:\MSDCHEM\1\METHODS\826_SL.M
Calibration Table Last Updated: Mon Feb 29 08:51:12 2016

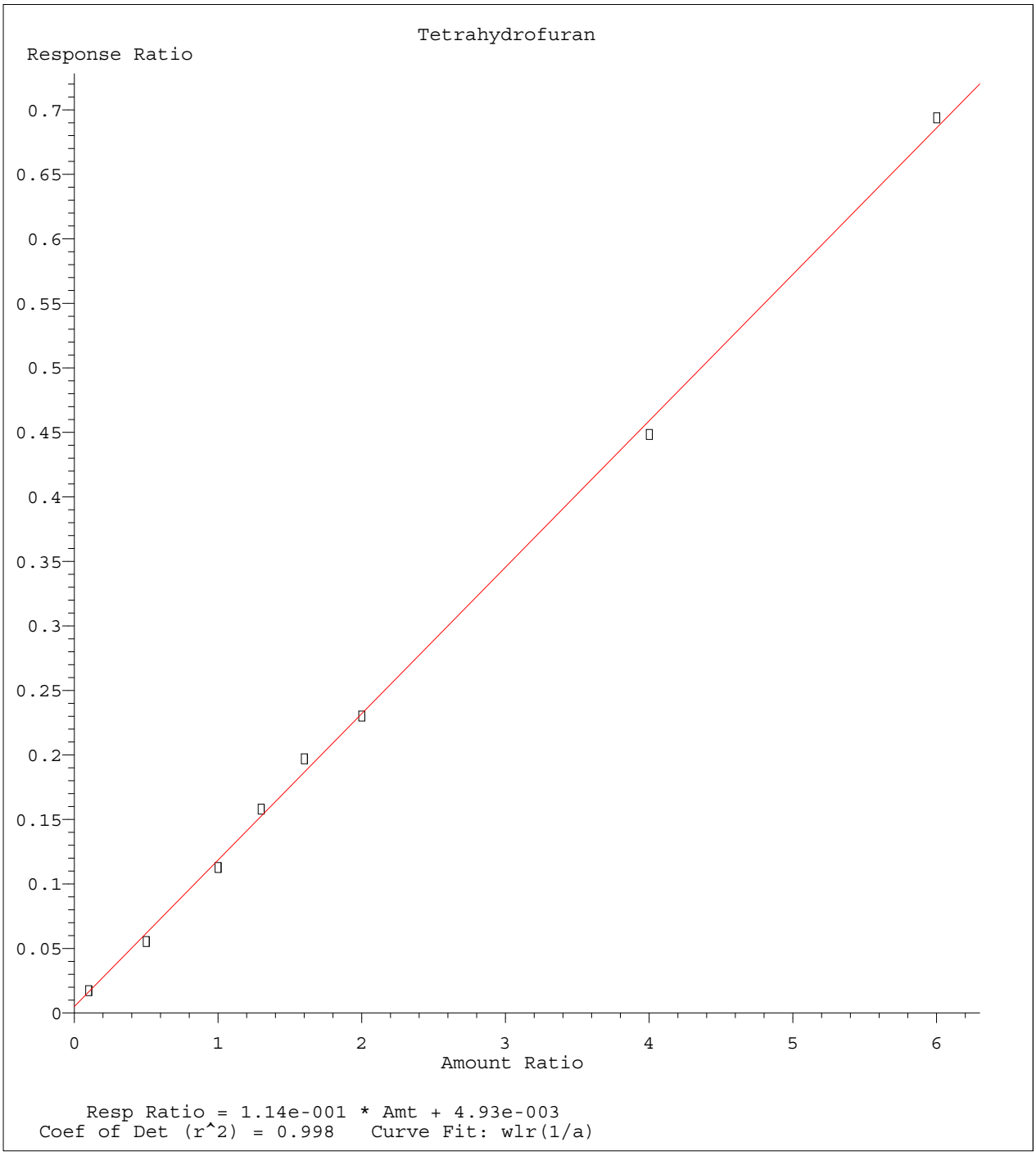

Method Name: C:\MSDCHEM\1\METHODS\826_SL.M
Calibration Table Last Updated: Mon Feb 29 08:51:12 2016

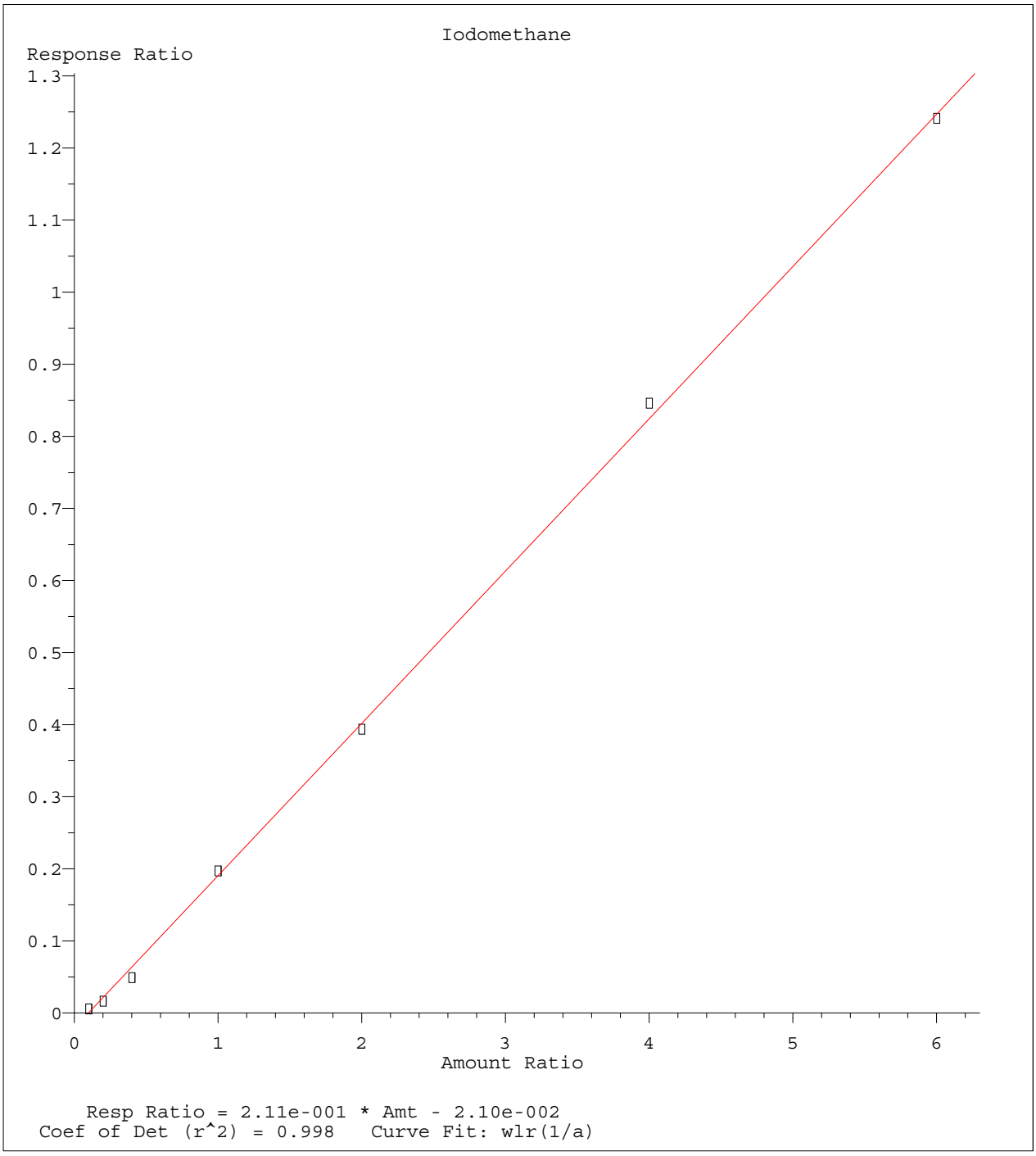

Method Name: C:\MSDCHEM\1\METHODS\826_SL.M
Calibration Table Last Updated: Mon Feb 29 08:51:12 2016

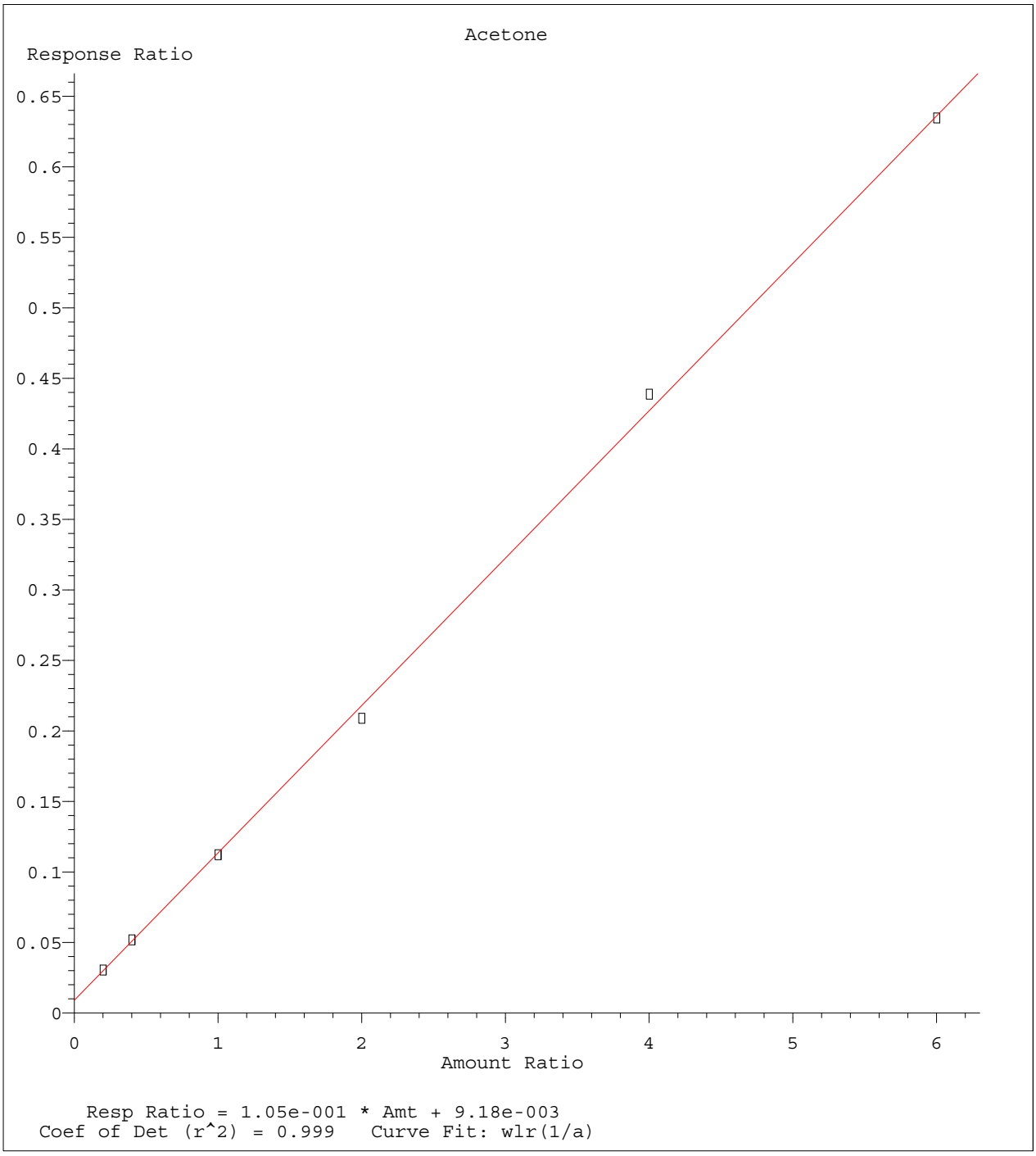

Method Name: C:\MSDCHEM\1\METHODS\826_SL.M
Calibration Table Last Updated: Mon Feb 29 08:51:12 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:44 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	697242	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	504277	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	281494	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.32	111	83790	22.4022 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 44.80%#		
43) 1,2-Dichloroethane-d4	11.05	65	107686	22.1747 ug/L	-0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 44.34%#		
58) Toluene-d8	13.80	98	259069	21.6082 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 43.22%#		
80) p-Bromofluorobenzene	17.79	95	108251	20.9365 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 41.88%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	355154	55.4626 ug/L	99
3) Chloromethane	3.88	50	339693	50.9064 ug/L	98
4) Vinyl Chloride	4.11	62	232790	43.3425 ug/L	98
5) 1,3-Butadiene	4.16	54	191696	42.8977 ug/L	93
6) Bromomethane	5.02	94	167650	58.5556 ug/L	99
7) Chloroethane	5.19	64	172370	56.5995 ug/L	98
8) Trichlorofluoromethane	5.68	101	345771	47.9110 ug/L	99
9) Diethyl ether	6.24	59	244439	73.6254 ug/L	93
10) Isoprene	6.27	67	268171	57.0391 ug/L	88
11) Acrolein	6.48	56	38698	61.3760 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	185858	53.9539 ug/L	94
13) Acetone	6.60	43	77335	48.6644 ug/L	96
14) 1,1-Dichloroethene	6.83	61	315114	51.6437 ug/L	92
15) Tert-Butyl Alcohol	6.95	59	120780	212.1401 ug/L	97
16) Dimethyl Sulfide	7.11	62	234426	79.1891 ug/L	96
17) Iodomethane	7.38	142	96886	37.8412 ug/L	92
18) Methyl acetate	7.39	43	223958	52.8169 ug/L	96
19) Methylene Chloride	7.67	84	196184	53.3878 ug/L	82
20) Carbon Disulfide	7.71	76	518243	44.3914 ug/L	99
21) Acrylonitrile	7.86	53	88595	50.8382 ug/L	99
22) Methyl Tert Butyl Ether	7.89	73	557115	53.0885 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	181115	53.7310 ug/L	84
24) n-Hexane	8.23	57	293885	48.0130 ug/L	99
25) Diisopropyl ether	8.61	45	1440779	90.7892 ug/L	96
26) Vinyl Acetate	8.80	43	309031	37.6715 ug/L	98
27) 1,1-Dichloroethane	8.83	63	365886	50.3469 ug/L	98
28) Ethyl-Tert-Butyl ether	9.25	59	1142199	89.7979 ug/L	96
29) 2-Butanone	9.46	43	118678	49.2421 ug/L	97
30) Propionitrile	9.58	54	62654	93.9303 ug/L	99
31) 2,2-Dichloropropane	9.69	77	309886	53.1233 ug/L	95
32) cis-1,2-Dichloroethene	9.77	96	203750	54.1434 ug/L	96
33) Chloroform	10.01	83	344145	50.7061 ug/L	96
34) 1-Bromopropane	10.15	122	45722	88.6198 ug/L	99
35) Bromochloromethane	10.26	130	115189	52.0956 ug/L	100
36) Tetrahydrofuran	10.29	42	140281	86.4486 ug/L	95
38) 1,1,1-Trichloroethane	10.60	97	311688	51.9918 ug/L	98
39) Cyclohexane	10.63	56	356880	52.4982 ug/L	88
40) 1,1-Dichloropropene	10.82	75	254739	52.7645 ug/L	97
41) Tert-Amyl-Methyl ether	10.95	73	1007162	99.8131 ug/L	93
42) Carbon Tetrachloride	10.99	117	286624	51.1689 ug/L	96

(#) = qualifier out of range (m) = manual integration
6M137535.D 826_SL.M Mon Feb 29 16:01:45 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:44 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	296979	51.2665 ug/L	98
46)	Benzene	11.23	78	732452	50.4293 ug/L	92
47)	Trichloroethene	12.09	130	187775	54.7248 ug/L	93
48)	Methylcyclohexane	12.18	83	293690	52.9463 ug/L	89
49)	1,2-Dichloropropane	12.33	63	215054	55.0291 ug/L	100
50)	1,4-Dioxane	12.67	88	9692	206.7214 ug/L	86
51)	Bromodichloromethane	12.68	83	264833	51.6400 ug/L	97
52)	Dibromomethane	12.78	93	115173	50.3870 ug/L	97
53)	2-Chloroethyl Vinyl Ether	13.04	63	118032	54.9113 ug/L	99
54)	4-Methyl-2-Pentanone	13.07	58	83435	51.2622 ug/L	92
55)	cis-1,3-Dichloropropene	13.43	75	332086	58.7723 ug/L	97
56)	Dimethyl Disulfide	13.72	79	160314	56.2546 ug/L	97
59)	Toluene	13.91	91	733544	51.4239 ug/L	99
60)	Ethyl Methacrylate	14.04	69	253929	55.5569 ug/L	99
62)	trans-1,3-Dichloropropene	14.12	75	289951	52.8608 ug/L	100
63)	1,1,2-Trichloroethane	14.38	97	158637	53.2065 ug/L	98
64)	2-Hexanone	14.31	43	174540	51.3021 ug/L	98
65)	1,3-Dichloropropane	14.73	76	296777	54.9182 ug/L	95
66)	Tetrachloroethene	14.87	166	179884	51.1197 ug/L	98
67)	Dibromochloromethane	15.17	129	201014	51.8393 ug/L	99
68)	1,2-Dibromoethane	15.48	107	163614	53.6583 ug/L	99
69)	1-Chlorohexane	15.59	91	237869	53.6977 ug/L	87
70)	Chlorobenzene	16.07	112	484642	52.8637 ug/L	70
71)	1,1,1,2-Tetrachloroethane	16.11	131	190856	51.8481 ug/L	98
72)	Ethylbenzene	16.10	106	257103	52.4064 ug/L	97
73)	m-,p-Xylene	16.22	106	631680	105.2305 ug/L	96
74)	o-Xylene	16.88	106	321591	56.8793 ug/L	96
75)	Styrene	16.92	104	532085	55.2923 ug/L	95
76)	Bromoform	17.49	173	134827	49.2451 ug/L	99
77)	Isopropylbenzene	17.38	105	829435	54.5730 ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.64	83	229283	52.1415 ug/L	96
81)	1,2,3-Trichloropropane	17.87	110	71564	53.1534 ug/L	99
82)	trans-1,4-Dichloro-2-Buten	17.93	53	68292	42.0681 ug/L	85
83)	n-Propylbenzene	17.98	91	1006100	52.6291 ug/L	98
84)	Bromobenzene	18.12	156	215387	51.8331 ug/L	99
85)	1,3,5-Trimethylbenzene	18.21	105	716527	52.6576 ug/L	95
86)	2-Chlorotoluene	18.30	91	664750	52.0974 ug/L	96
87)	4-Chlorotoluene	18.36	91	607350	52.0569 ug/L	97
88)	a-Methylstyrene	18.69	118	378204	57.2343 ug/L	98
89)	tert-Butylbenzene	18.76	134	150883	53.2071 ug/L	99
90)	1,2,4-Trimethylbenzene	18.82	105	731933	51.1473 ug/L	81
91)	sec-Butylbenzene	19.07	105	883157	50.6807 ug/L	100
92)	p-Isopropyltoluene	19.27	119	732050	50.9189 ug/L	99
93)	1,3-Dichlorobenzene	19.48	146	418127	52.0038 ug/L	96
94)	1,4-Dichlorobenzene	19.64	146	423834	51.7864 ug/L	98
95)	n-Butylbenzene	19.89	91	705101	48.7625 ug/L	98
96)	1,2-Dichlorobenzene	20.22	146	421505	54.4802 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	21.41	75	50722	52.1318 ug/L	89
98)	1,2,4-Trichlorobenzene	22.76	180	285471	51.0389 ug/L	97
99)	Hexachlorobutadiene	22.94	225	152283	47.6080 ug/L	99
100)	Naphthalene	23.20	128	640676	49.8263 ug/L	100
101)	1,2,3-Trichlorobenzene	23.59	180	280768	50.9788 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M137535.D 826_SL.M Mon Feb 29 16:01:45 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

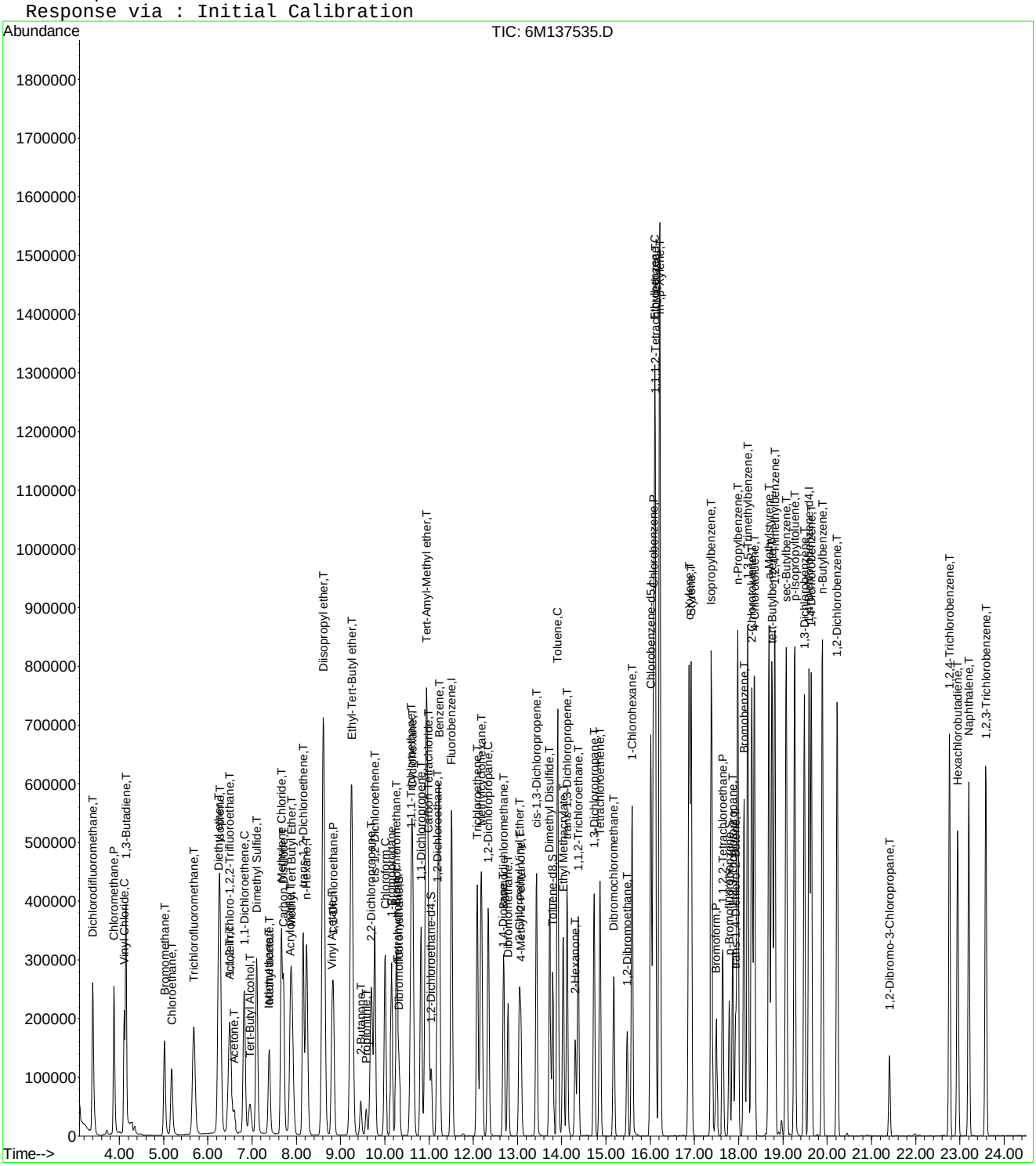

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	115	0.00
2	T	Dichlorodifluoromethane	50.0000	55.4626	-10.9	109	-0.01
3	P	Chloromethane	50.0000	50.9064	-1.8	111	0.00
4	C	Vinyl Chloride	50.0000	43.3425	13.3	89	0.00
5	T	1,3-Butadiene	50.0000	42.8977	14.2	92	-0.01
6	T	Bromomethane	50.0000	58.5556	-17.1	130	-0.01
7	T	Chloroethane	50.0000	56.5995	-13.2	116	0.00
8	T	Trichlorofluoromethane	50.0000	47.9111	4.2	102	-0.02
9	T	Diethyl ether	100.0000	73.6254	26.4#	86	0.00
10	T	Isoprene	50.0000	57.0391	-14.1	124	-0.01
11	T	Acrolein	50.0000	61.3760	-22.8	153	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	53.9539	-7.9	110	-0.01
13	T	Acetone	50.0000	48.6644	2.7	113	0.01
14	C	1,1-Dichloroethene	50.0000	51.6437	-3.3	107	0.00
15	T	Tert-Butyl Alcohol	200.0000	212.1401	-6.1	124	0.02
16	T	Dimethyl Sulfide	50.0000	79.1891	-58.4#	173	-0.01
17	T	Iodomethane	50.0000	37.8412	24.3	81	0.00
18	T	Methyl acetate	50.0000	52.8169	-5.6	120	0.00
19	T	Methylene Chloride	50.0000	53.3878	-6.8	112	0.00
20	T	Carbon Disulfide	50.0000	44.3914	11.2	98	-0.01
21	T	Acrylonitrile	50.0000	50.8382	-1.7	112	0.00
22	T	Methyl Tert Butyl Ether	50.0000	53.0885	-6.2	110	0.00
23	T	trans-1,2-Dichloroethene	50.0000	53.7311	-7.5	112	0.00
24	T	n-Hexane	50.0000	48.0130	4.0	104	-0.01
25	T	Diisopropyl ether	100.0000	90.7892	9.2	106	0.00
26	T	Vinyl Acetate	50.0000	37.6715	24.7	85	0.00
27	P	1,1-Dichloroethane	50.0000	50.3469	-0.7	106	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	89.7979	10.2	103	0.01
29	T	2-Butanone	50.0000	49.2421	1.5	115	0.00
30	T	Propionitrile	100.0000	93.9303	6.1	108	0.00
31	T	2,2-Dichloropropane	50.0000	53.1233	-6.2	112	0.00
32	T	cis-1,2-Dichloroethene	50.0000	54.1434	-8.3	116	0.00
33	C	Chloroform	50.0000	50.7061	-1.4	109	0.00
34		1-Bromopropane	50.0000	88.6198	-77.2#	186	-0.01
35	T	Bromochloromethane	50.0000	52.0956	-4.2	108	0.00
36	T	Tetrahydrofuran	100.0000	86.4486	13.6	100	0.00
37	S	Dibromofluoromethane	25.0000	22.4022	10.4	101	0.00
38	T	1,1,1-Trichloroethane	50.0000	51.9918	-4.0	108	0.00
39	T	Cyclohexane	50.0000	52.4982	-5.0	110	-0.01
40	T	1,1-Dichloropropene	50.0000	52.7645	-5.5	109	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	99.8131	0.2	115	0.00
42	T	Carbon Tetrachloride	50.0000	51.1689	-2.3	106	0.00
43	S	1,2-Dichloroethane-d4	25.0000	22.1747	11.3	100	-0.01
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	50.0000	51.2666	-2.5	109	0.00
46	T	Benzene	50.0000	50.4293	-0.9	112	0.00
47	T	Trichloroethene	50.0000	54.7248	-9.4	115	0.00
48	T	Methylcyclohexane	50.0000	52.9463	-5.9	111	0.00
49	C	1,2-Dichloropropane	50.0000	55.0291	-10.1	116	0.00
50	T	1,4-Dioxane	200.0000	206.7214	-3.4	130	0.00
51	T	Bromodichloromethane	50.0000	51.6400	-3.3	109	0.00
52	T	Dibromomethane	50.0000	50.3870	-0.8	103	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	54.9113	-9.8	118	0.00
54	T	4-Methyl-2-Pentanone	50.0000	51.2622	-2.5	117	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	58.7723	-17.5	120	0.00
56	T	Dimethyl Disulfide	50.0000	56.2546	-12.5	117	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	115	0.00
58	S	Toluene-d8	25.0000	21.6082	13.6	97	0.00
59	C	Toluene	50.0000	51.4239	-2.8	111	0.00
60	T	Ethyl Methacrylate	50.0000	55.5569	-11.1	115	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	50.0000	52.8608	-5.7	109	0.00
63	T	1,1,2-Trichloroethane	50.0000	53.2065	-6.4	113	0.00
64	T	2-Hexanone	50.0000	51.3021	-2.6	116	0.00
65	T	1,3-Dichloropropane	50.0000	54.9182	-9.8	116	0.00
66	T	Tetrachloroethene	50.0000	51.1197	-2.2	109	0.00
67	T	Dibromochloromethane	50.0000	51.8393	-3.7	107	0.00
68	T	1,2-Dibromoethane	50.0000	53.6583	-7.3	112	0.00
69	T	1-Chlorohexane	50.0000	53.6977	-7.4	112	0.00
70	P	Chlorobenzene	50.0000	52.8637	-5.7	115	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	51.8481	-3.7	110	0.00
72	C	Ethylbenzene	50.0000	52.4064	-4.8	110	0.00
73	T	m-,p-Xylene	100.0000	105.2305	-5.2	113	0.00
74	T	o-Xylene	50.0000	56.8792	-13.8	115	0.00
75	T	Styrene	50.0000	55.2923	-10.6	113	0.00
76	P	Bromoform	50.0000	49.2451	1.5	103	0.00
77	T	Isopropylbenzene	50.0000	54.5730	-9.1	112	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	118	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	52.1415	-4.3	115	0.00
80	S	p-Bromofluorobenzene	25.0000	20.9365	16.3	97	0.00
81	T	1,2,3-Trichloropropane	50.0000	53.1534	-6.3	117	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	42.0681	15.9	93	0.00
83	T	n-Propylbenzene	50.0000	52.6291	-5.3	111	0.00
84	T	Bromobenzene	50.0000	51.8331	-3.7	112	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	52.6576	-5.3	112	0.00
86	T	2-Chlorotoluene	50.0000	52.0974	-4.2	115	0.00
87	T	4-Chlorotoluene	50.0000	52.0569	-4.1	114	0.00
88	T	a-Methylstyrene	50.0000	57.2343	-14.5	123	0.00
89	T	tert-Butylbenzene	50.0000	53.2071	-6.4	112	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	51.1473	-2.3	110	0.00
91	T	sec-Butylbenzene	50.0000	50.6807	-1.4	107	0.00
92	T	p-Isopropyltoluene	50.0000	50.9189	-1.8	107	0.00
93	T	1,3-Dichlorobenzene	50.0000	52.0038	-4.0	114	0.00
94	T	1,4-Dichlorobenzene	50.0000	51.7864	-3.6	117	0.00
95	T	n-Butylbenzene	50.0000	48.7625	2.5	104	0.00
96	T	1,2-Dichlorobenzene	50.0000	54.4802	-9.0	120	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	52.1318	-4.3	117	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	51.0389	-2.1	109	0.00
99	T	Hexachlorobutadiene	50.0000	47.6080	4.8	101	-0.01
100	T	Naphthalene	50.0000	49.8263	0.3	104	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	50.9788	-2.0	108	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137535.D 826_SL.M Mon Feb 29 16:03:13 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032316\6M137965.D Vial: 3
Acq On : 23 Mar 2016 12:47 Operator: TMB
Sample : WG562074-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 13:12:21 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	604908	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	444556	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	238804	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	155374	47.8818 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.76%		
43) 1,2-Dichloroethane-d4	11.06	65	187452	44.4921 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 88.98%		
58) Toluene-d8	13.80	98	531186	50.2564 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 100.52%		
80) p-Bromofluorobenzene	17.79	95	226957	51.7419 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 103.48%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	264728	47.6516 ug/L	98
3) Chloromethane	3.88	50	223801	38.6582 ug/L	98
4) Vinyl Chloride	4.12	62	213539	45.8270 ug/L	97
5) 1,3-Butadiene	4.17	54	149974	38.6840 ug/L	94
6) Bromomethane	5.03	94	129774	52.2453 ug/L	99
7) Chloroethane	5.20	64	135902	51.4365 ug/L	100
8) Trichlorofluoromethane	5.70	101	302350	48.2893 ug/L	99
9) Diethyl ether	6.24	59	297388	103.2463 ug/L	95
10) Isoprene	6.28	67	224828	55.1195 ug/L	92
11) Acrolein	6.48	56	32711	59.7996 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	161466	54.0278 ug/L	96
13) Acetone	6.60	43	76723	56.2790 ug/L	97
14) 1,1-Dichloroethene	6.84	61	271533	51.2940 ug/L	94
15) Tert-Butyl Alcohol	6.94	59	122688	248.3842 ug/L	97
16) Dimethyl Sulfide	7.12	62	138871	54.0711 ug/L	99
17) Iodomethane	7.38	142	129251	55.5182 ug/L	97
18) Methyl acetate	7.39	43	211719	57.5520 ug/L	97
19) Methylene Chloride	7.67	84	161480	50.6514 ug/L	86
20) Carbon Disulfide	7.72	76	537374	53.0562 ug/L	98
21) Acrylonitrile	7.87	53	86624	57.2945 ug/L	98
22) Methyl Tert Butyl Ether	7.89	73	501919	55.1294 ug/L	93
23) trans-1,2-Dichloroethene	8.16	96	154240	52.7427 ug/L	90
24) n-Hexane	8.24	57	295089	55.5685 ug/L	98
25) Diisopropyl ether	8.61	45	1324423	96.1961 ug/L	95
26) Vinyl Acetate	8.80	43	381473	53.6005 ug/L	99
27) 1,1-Dichloroethane	8.84	63	318133	50.4580 ug/L	98
28) Ethyl-Tert-Butyl ether	9.25	59	1137230	103.0545 ug/L	97
29) 2-Butanone	9.46	43	114514	54.7671 ug/L	98
30) Propionitrile	9.58	54	66145	114.3005 ug/L	98
31) 2,2-Dichloropropane	9.69	77	264942	52.3514 ug/L	92
32) cis-1,2-Dichloroethene	9.77	96	171887	52.6484 ug/L	93
33) Chloroform	10.01	83	289995	49.2497 ug/L	98
34) 1-Bromopropane	10.16	122	29541	65.9971 ug/L	96
35) Bromochloromethane	10.27	130	102654	53.5131 ug/L	99
36) Tetrahydrofuran	10.29	42	158553	113.2808 ug/L	98
38) 1,1,1-Trichloroethane	10.60	97	264018	50.7625 ug/L	98
39) Cyclohexane	10.64	56	335587	56.9013 ug/L	88
40) 1,1-Dichloropropene	10.82	75	221339	52.8443 ug/L	97
41) Tert-Amyl-Methyl ether	10.95	73	937278	107.0658 ug/L	94
42) Carbon Tetrachloride	10.99	117	246653	50.7545 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M137965.D 826_SL.M Wed Mar 23 13:12:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032316\6M137965.D Vial: 3
Acq On : 23 Mar 2016 12:47 Operator: TMB
Sample : WG562074-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 13:12:21 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	245138	48.7768	ug/L	99
46)	Benzene	11.23	78	625201	49.6156	ug/L	93
47)	Trichloroethene	12.09	130	158447	53.2261	ug/L	98
48)	Methylcyclohexane	12.18	83	281797	58.5567	ug/L	90
49)	1,2-Dichloropropane	12.34	63	177972	52.4917	ug/L	98
50)	1,4-Dioxane	12.68	88	8976	218.5934	ug/L	87
51)	Bromodichloromethane	12.68	83	226703	50.9525	ug/L	96
52)	Dibromomethane	12.79	93	102748	51.8126	ug/L	99
53)	2-Chloroethyl Vinyl Ether	13.04	63	109067	58.4857	ug/L	99
54)	4-Methyl-2-Pentanone	13.07	58	83870	59.3950	ug/L	95
55)	cis-1,3-Dichloropropene	13.43	75	265529	54.1662	ug/L	98
56)	Dimethyl Disulfide	13.72	79	144370	58.3926	ug/L	97
59)	Toluene	13.91	91	644211	51.2282	ug/L	99
60)	Ethyl Methacrylate	14.04	69	242866	60.2747	ug/L	98
62)	trans-1,3-Dichloropropene	14.12	75	256369	53.0173	ug/L	100
63)	1,1,2-Trichloroethane	14.38	97	138333	52.6295	ug/L	99
64)	2-Hexanone	14.31	43	169409	56.4832	ug/L	96
65)	1,3-Dichloropropane	14.74	76	247046	51.8569	ug/L	99
66)	Tetrachloroethene	14.87	166	167778	54.0846	ug/L	97
67)	Dibromochloromethane	15.17	129	178502	52.2178	ug/L	99
68)	1,2-Dibromoethane	15.48	107	146067	54.3390	ug/L	98
69)	1-Chlorohexane	15.59	91	230162	58.9379	ug/L	90
70)	Chlorobenzene	16.07	112	415312	51.3870	ug/L	72
71)	1,1,1,2-Tetrachloroethane	16.11	131	165013	50.8497	ug/L	98
72)	Ethylbenzene	16.10	106	231239	53.4664	ug/L	100
73)	m-,p-Xylene	16.22	106	556389	105.1395	ug/L	97
74)	o-Xylene	16.88	106	275903	55.3540	ug/L	97
75)	Styrene	16.92	104	469288	55.3179	ug/L	97
76)	Bromoform	17.49	173	126342	52.3451	ug/L	99
77)	Isopropylbenzene	17.38	105	730839	54.5456	ug/L	99
79)	1,1,2,2-Tetrachloroethane	17.65	83	207652	55.6641	ug/L	95
81)	1,2,3-Trichloropropane	17.87	110	64069	56.0935	ug/L	98
82)	trans-1,4-Dichloro-2-Buten	17.93	53	78029	56.6588	ug/L	98
83)	n-Propylbenzene	17.98	91	882270	54.4019	ug/L	99
84)	Bromobenzene	18.13	156	188552	53.4868	ug/L	99
85)	1,3,5-Trimethylbenzene	18.21	105	636299	55.1211	ug/L	97
86)	2-Chlorotoluene	18.30	91	570720	52.7240	ug/L	96
87)	4-Chlorotoluene	18.36	91	525422	53.0854	ug/L	97
88)	a-Methylstyrene	18.69	118	331132	59.0689	ug/L	98
89)	tert-Butylbenzene	18.76	134	131427	54.6313	ug/L	86
90)	1,2,4-Trimethylbenzene	18.82	105	659733	54.3435	ug/L	82
91)	sec-Butylbenzene	19.08	105	811614	54.9011	ug/L	99
92)	p-Isopropyltoluene	19.27	119	684922	56.1574	ug/L	99
93)	1,3-Dichlorobenzene	19.48	146	362995	53.2175	ug/L	97
94)	1,4-Dichlorobenzene	19.64	146	362568	52.2200	ug/L	98
95)	n-Butylbenzene	19.89	91	665585	54.2582	ug/L	99
96)	1,2-Dichlorobenzene	20.23	146	346877	52.8492	ug/L	97
97)	1,2-Dibromo-3-Chloropropan	21.41	75	47504	57.5525	ug/L	90
98)	1,2,4-Trichlorobenzene	22.76	180	263930	55.6232	ug/L	98
99)	Hexachlorobutadiene	22.96	225	148742	54.8138	ug/L	100
100)	Naphthalene	23.20	128	658289	60.3482	ug/L	100
101)	1,2,3-Trichlorobenzene	23.59	180	256338	54.8634	ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032316\6M137965.D Vial: 3
Acq On : 23 Mar 2016 12:47 Operator: TMB
Sample : WG562074-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 13:12 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

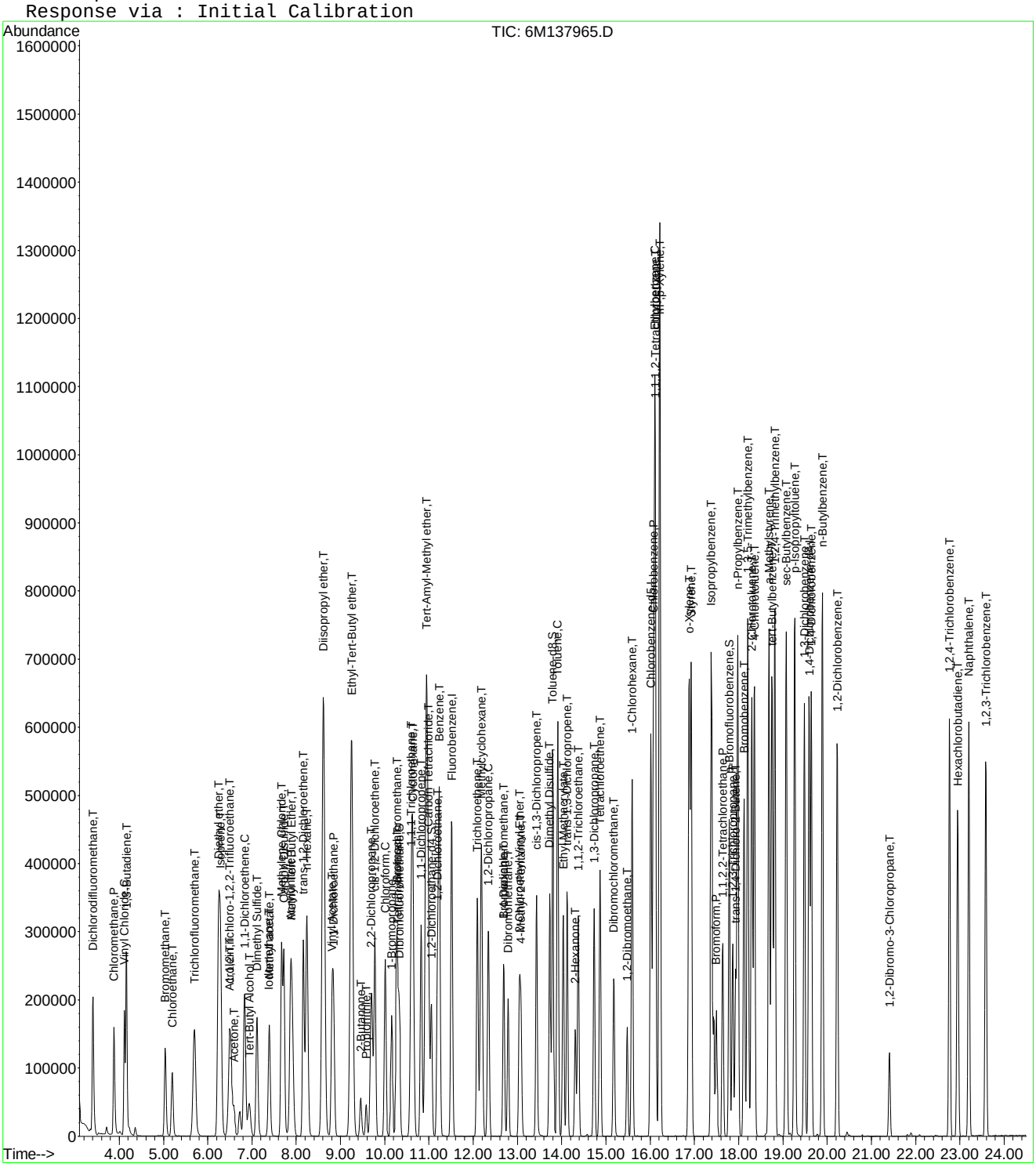

6M137965.D 826_SL.M Wed Mar 23 13:12:22 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\032316\6M137965.D Vial: 3
Acq On : 23 Mar 2016 12:47 Operator: TMB
Sample : WG562074-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	0.4592	0.4376	4.7	81	0.00
3	P	Chloromethane	0.4785	0.3700	22.7	73	0.00
4	C	Vinyl Chloride	0.3852	0.3530	8.3	82	0.00
5	T	1,3-Butadiene	0.3205	0.2479	22.6	72	0.00
6	T	Bromomethane	0.2053	0.2145	-4.5	100	0.00
7	T	Chloroethane	0.2184	0.2247	-2.9	92	0.00
8	T	Trichlorofluoromethane	0.5175	0.4998	3.4	89	0.00
9	T	Diethyl ether	0.2381	0.2458	-3.2	105	0.00
10	T	Isoprene	0.3372	0.3717	-10.2	104	0.00
11	T	Acrolein	0.0452	0.0541	-19.6	129	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2470	0.2669	-8.1	96	-0.01
13	T	Acetone	0.1189	0.1268	-6.6	113	0.01
14	C	1,1-Dichloroethene	0.4376	0.4489	-2.6	92	0.00
15	T	Tert-Butyl Alcohol	0.0408	0.0507	-24.2	126	0.01
16	T	Dimethyl Sulfide	0.2123	0.2296	-8.1	102	0.00
17	T	Iodomethane	0.1531	0.2137	-39.5#	108	0.00
18	T	Methyl acetate	0.3041	0.3500	-15.1	113	0.00
19	T	Methylene Chloride	0.2635	0.2670	-1.3	93	0.00
20	T	Carbon Disulfide	0.8372	0.8884	-6.1	101	0.00
21	T	Acrylonitrile	0.1250	0.1432	-14.6	110	0.01
22	T	Methyl Tert Butyl Ether	0.7525	0.8297	-10.3	99	0.00
23	T	trans-1,2-Dichloroethene	0.2417	0.2550	-5.5	96	0.00
24	T	n-Hexane	0.4389	0.4878	-11.1	104	0.00
25	T	Diisopropyl ether	1.1380	1.0947	3.8	98	0.00
26	T	Vinyl Acetate	0.5883	0.6306	-7.2	105	0.00
27	P	1,1-Dichloroethane	0.5212	0.5259	-0.9	92	0.00
28	T	Ethyl-Tert-Butyl ether	0.9121	0.9400	-3.1	103	0.01
29	T	2-Butanone	0.1728	0.1893	-9.5	111	0.01
30	T	Propionitrile	0.0478	0.0547	-14.3	114	0.00
31	T	2,2-Dichloropropane	0.4183	0.4380	-4.7	96	0.00
32	T	cis-1,2-Dichloroethene	0.2699	0.2842	-5.3	97	0.00
33	C	Chloroform	0.4867	0.4794	1.5	92	0.00
34		1-Bromopropane	0.0370	0.0488	-32.0#	120	0.00
35	T	Bromochloromethane	0.1586	0.1697	-7.0	96	0.01
36	T	Tetrahydrofuran	0.1230	0.1311	-6.6	113	0.00
37	S	Dibromofluoromethane	0.2682	0.5137	-91.5#	188#	0.01
38	T	1,1,1-Trichloroethane	0.4299	0.4365	-1.5	92	0.00
39	T	Cyclohexane	0.4875	0.5548	-13.8	104	0.00
40	T	1,1-Dichloropropene	0.3462	0.3659	-5.7	95	0.00
41	T	Tert-Amyl-Methyl ether	0.7236	0.7747	-7.1	107	0.01
42	T	Carbon Tetrachloride	0.4017	0.4078	-1.5	91	0.00
43	S	1,2-Dichloroethane-d4	0.3483	0.6198	-78.0#	175#	0.00
44		Heptane	0.0000	0.0000	0.0	0#	0.00
45	T	1,2-Dichloroethane	0.4154	0.4053	2.4	90	0.00
46	T	Benzene	1.0416	1.0336	0.8	95	0.00
47	T	Trichloroethene	0.2461	0.2619	-6.5	97	0.00
48	T	Methylcyclohexane	0.3978	0.4658	-17.1	107	0.00
49	C	1,2-Dichloropropane	0.2803	0.2942	-5.0	96	0.00
50	T	1,4-Dioxane	0.0031	0.0037	-19.7	120	0.00
51	T	Bromodichloromethane	0.3678	0.3748	-1.9	93	0.00
52	T	Dibromomethane	0.1639	0.1699	-3.6	92	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1541	0.1803	-17.0	109	0.00
54	T	4-Methyl-2-Pentanone	0.1167	0.1387	-18.8	118	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\032316\6M137965.D Vial: 3
Acq On : 23 Mar 2016 12:47 Operator: TMB
Sample : WG562074-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4052	0.4390	-8.3	96	0.00
56	T	Dimethyl Disulfide	0.2044	0.2387	-16.8	105	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	101	0.00
58	S	Toluene-d8	1.1888	2.3897	-101.0#	200#	0.00
59	C	Toluene	1.4144	1.4491	-2.5	97	0.00
60	T	Ethyl Methacrylate	0.4532	0.5463	-20.6	110	0.01
61		Paraldehyde	0.0000	0.0000	0.0	0#	-15.13#
62	T	trans-1,3-Dichloropropene	0.5439	0.5767	-6.0	97	0.00
63	T	1,1,2-Trichloroethane	0.2956	0.3112	-5.3	98	0.00
64	T	2-Hexanone	0.3373	0.3811	-13.0	113	0.00
65	T	1,3-Dichloropropane	0.5358	0.5557	-3.7	97	0.00
66	T	Tetrachloroethene	0.3489	0.3774	-8.2	101	0.00
67	T	Dibromochloromethane	0.3845	0.4015	-4.4	95	0.00
68	T	1,2-Dibromoethane	0.3023	0.3286	-8.7	100	0.00
69	T	1-Chlorohexane	0.4392	0.5177	-17.9	108	0.00
70	P	Chlorobenzene	0.9090	0.9342	-2.8	98	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3650	0.3712	-1.7	95	0.00
72	C	Ethylbenzene	0.4864	0.5202	-6.9	99	0.00
73	T	m-,p-Xylene	0.5952	0.6258	-5.1	99	0.00
74	T	o-Xylene	0.5606	0.6206	-10.7	99	0.00
75	T	Styrene	0.9542	1.0556	-10.6	100	0.00
76	P	Bromoform	0.2715	0.2842	-4.7	96	0.00
77	T	Isopropylbenzene	1.5070	1.6440	-9.1	99	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	101	0.00
79	P	1,1,2,2-Tetrachloroethane	0.7811	0.8696	-11.3	104	0.00
80	S	p-Bromofluorobenzene	0.9184	1.9008	-107.0#	203#	0.00
81	T	1,2,3-Trichloropropane	0.2392	0.2683	-12.2	105	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.2884	0.3267	-13.3	107	0.00
83	T	n-Propylbenzene	3.3956	3.6945	-8.8	98	0.00
84	T	Bromobenzene	0.7381	0.7896	-7.0	98	0.00
85	T	1,3,5-Trimethylbenzene	2.4170	2.6645	-10.2	99	0.00
86	T	2-Chlorotoluene	2.2664	2.3899	-5.4	99	0.00
87	T	4-Chlorotoluene	2.0723	2.2002	-6.2	99	0.01
88	T	a-Methylstyrene	1.1737	1.3866	-18.1	108	0.00
89	T	tert-Butylbenzene	0.5037	0.5504	-9.3	98	0.00
90	T	1,2,4-Trimethylbenzene	2.5419	2.7626	-8.7	99	0.00
91	T	sec-Butylbenzene	3.0953	3.3987	-9.8	98	0.00
92	T	p-Isopropyltoluene	2.5537	2.8681	-12.3	100	0.01
93	T	1,3-Dichlorobenzene	1.4282	1.5200	-6.4	99	0.00
94	T	1,4-Dichlorobenzene	1.4537	1.5183	-4.4	100	0.00
95	T	n-Butylbenzene	2.5684	2.7872	-8.5	98	0.00
96	T	1,2-Dichlorobenzene	1.3743	1.4526	-5.7	99	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1728	0.1989	-15.1	109	0.00
98	T	1,2,4-Trichlorobenzene	0.9935	1.1052	-11.2	101	0.00
99	T	Hexachlorobutadiene	0.5682	0.6229	-9.6	99	0.00
100	T	Naphthalene	2.2839	2.7566	-20.7	107	0.00
101	T	1,2,3-Trichlorobenzene	0.9783	1.0734	-9.7	99	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137965.D 826_SL.M Wed Mar 23 13:13:07 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\032316\6M137965.D Vial: 3
Acq On : 23 Mar 2016 12:47 Operator: TMB
Sample : WG562074-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	50.0000	47.6516	4.7	81	0.00
3	P	Chloromethane	50.0000	38.6582	22.7	73	0.00
4	C	Vinyl Chloride	50.0000	45.8269	8.3	82	0.00
5	T	1,3-Butadiene	50.0000	38.6840	22.6	72	0.00
6	T	Bromomethane	50.0000	52.2452	-4.5	100	0.00
7	T	Chloroethane	50.0000	51.4365	-2.9	92	0.00
8	T	Trichlorofluoromethane	50.0000	48.2893	3.4	89	0.00
9	T	Diethyl ether	100.0000	103.2463	-3.2	105	0.00
10	T	Isoprene	50.0000	55.1195	-10.2	104	0.00
11	T	Acrolein	50.0000	59.7996	-19.6	129	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	54.0278	-8.1	96	-0.01
13	T	Acetone	50.0000	56.2790	-12.6	113	0.01
14	C	1,1-Dichloroethene	50.0000	51.2940	-2.6	92	0.00
15	T	Tert-Butyl Alcohol	200.0000	248.3842	-24.2	126	0.01
16	T	Dimethyl Sulfide	50.0000	54.0711	-8.1	102	0.00
17	T	Iodomethane	50.0000	55.5182	-11.0	108	0.00
18	T	Methyl acetate	50.0000	57.5520	-15.1	113	0.00
19	T	Methylene Chloride	50.0000	50.6514	-1.3	93	0.00
20	T	Carbon Disulfide	50.0000	53.0562	-6.1	101	0.00
21	T	Acrylonitrile	50.0000	57.2946	-14.6	110	0.01
22	T	Methyl Tert Butyl Ether	50.0000	55.1294	-10.3	99	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.7427	-5.5	96	0.00
24	T	n-Hexane	50.0000	55.5685	-11.1	104	0.00
25	T	Diisopropyl ether	100.0000	96.1961	3.8	98	0.00
26	T	Vinyl Acetate	50.0000	53.6005	-7.2	105	0.00
27	P	1,1-Dichloroethane	50.0000	50.4580	-0.9	92	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	103.0545	-3.1	103	0.01
29	T	2-Butanone	50.0000	54.7671	-9.5	111	0.01
30	T	Propionitrile	100.0000	114.3005	-14.3	114	0.00
31	T	2,2-Dichloropropane	50.0000	52.3514	-4.7	96	0.00
32	T	cis-1,2-Dichloroethene	50.0000	52.6484	-5.3	97	0.00
33	C	Chloroform	50.0000	49.2497	1.5	92	0.00
34		1-Bromopropane	50.0000	65.9971	-32.0#	120	0.00
35	T	Bromochloromethane	50.0000	53.5131	-7.0	96	0.01
36	T	Tetrahydrofuran	100.0000	113.2808	-13.3	113	0.00
37	S	Dibromofluoromethane	25.0000	47.8819	-91.5#	188	0.01
38	T	1,1,1-Trichloroethane	50.0000	50.7625	-1.5	92	0.00
39	T	Cyclohexane	50.0000	56.9013	-13.8	104	0.00
40	T	1,1-Dichloropropene	50.0000	52.8443	-5.7	95	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	107.0658	-7.1	107	0.01
42	T	Carbon Tetrachloride	50.0000	50.7545	-1.5	91	0.00
43	S	1,2-Dichloroethane-d4	25.0000	44.4921	-78.0#	175	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	50.0000	48.7768	2.4	90	0.00
46	T	Benzene	50.0000	49.6156	0.8	95	0.00
47	T	Trichloroethene	50.0000	53.2261	-6.5	97	0.00
48	T	Methylcyclohexane	50.0000	58.5567	-17.1	107	0.00
49	C	1,2-Dichloropropane	50.0000	52.4917	-5.0	96	0.00
50	T	1,4-Dioxane	200.0000	218.5934	-9.3	120	0.00
51	T	Bromodichloromethane	50.0000	50.9525	-1.9	93	0.00
52	T	Dibromomethane	50.0000	51.8126	-3.6	92	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	58.4857	-17.0	109	0.00
54	T	4-Methyl-2-Pentanone	50.0000	59.3950	-18.8	118	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\032316\6M137965.D Vial: 3
Acq On : 23 Mar 2016 12:47 Operator: TMB
Sample : WG562074-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	54.1662	-8.3	96	0.00
56	T	Dimethyl Disulfide	50.0000	58.3926	-16.8	105	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	101	0.00
58	S	Toluene-d8	25.0000	50.2564	-101.0#	200	0.00
59	C	Toluene	50.0000	51.2282	-2.5	97	0.00
60	T	Ethyl Methacrylate	50.0000	60.2747	-20.5	110	0.01
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	50.0000	53.0173	-6.0	97	0.00
63	T	1,1,2-Trichloroethane	50.0000	52.6295	-5.3	98	0.00
64	T	2-Hexanone	50.0000	56.4832	-13.0	113	0.00
65	T	1,3-Dichloropropane	50.0000	51.8569	-3.7	97	0.00
66	T	Tetrachloroethene	50.0000	54.0846	-8.2	101	0.00
67	T	Dibromochloromethane	50.0000	52.2178	-4.4	95	0.00
68	T	1,2-Dibromoethane	50.0000	54.3390	-8.7	100	0.00
69	T	1-Chlorohexane	50.0000	58.9379	-17.9	108	0.00
70	P	Chlorobenzene	50.0000	51.3870	-2.8	98	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	50.8497	-1.7	95	0.00
72	C	Ethylbenzene	50.0000	53.4664	-6.9	99	0.00
73	T	m-,p-Xylene	100.0000	105.1395	-5.1	99	0.00
74	T	o-Xylene	50.0000	55.3540	-10.7	99	0.00
75	T	Styrene	50.0000	55.3179	-10.6	100	0.00
76	P	Bromoform	50.0000	52.3451	-4.7	96	0.00
77	T	Isopropylbenzene	50.0000	54.5456	-9.1	99	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	101	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	55.6641	-11.3	104	0.00
80	S	p-Bromofluorobenzene	25.0000	51.7419	-107.0#	203	0.00
81	T	1,2,3-Trichloropropane	50.0000	56.0935	-12.2	105	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	56.6588	-13.3	107	0.00
83	T	n-Propylbenzene	50.0000	54.4019	-8.8	98	0.00
84	T	Bromobenzene	50.0000	53.4868	-7.0	98	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	55.1211	-10.2	99	0.00
86	T	2-Chlorotoluene	50.0000	52.7240	-5.4	99	0.00
87	T	4-Chlorotoluene	50.0000	53.0854	-6.2	99	0.01
88	T	a-Methylstyrene	50.0000	59.0689	-18.1	108	0.00
89	T	tert-Butylbenzene	50.0000	54.6313	-9.3	98	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	54.3435	-8.7	99	0.00
91	T	sec-Butylbenzene	50.0000	54.9012	-9.8	98	0.00
92	T	p-Isopropyltoluene	50.0000	56.1574	-12.3	100	0.01
93	T	1,3-Dichlorobenzene	50.0000	53.2175	-6.4	99	0.00
94	T	1,4-Dichlorobenzene	50.0000	52.2200	-4.4	100	0.00
95	T	n-Butylbenzene	50.0000	54.2582	-8.5	98	0.00
96	T	1,2-Dichlorobenzene	50.0000	52.8492	-5.7	99	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	57.5525	-15.1	109	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	55.6232	-11.2	101	0.00
99	T	Hexachlorobutadiene	50.0000	54.8138	-9.6	99	0.00
100	T	Naphthalene	50.0000	60.3482	-20.7	107	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	54.8634	-9.7	99	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137965.D 826_SL.M Wed Mar 23 13:13:08 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032416\6M137989.D Vial: 2
Acq On : 24 Mar 2016 11:38 Operator: TMB
Sample : WG562235-02 50u/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 12:03:30 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	646309	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	477381	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	256809	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	168366	48.5619 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.12%		
43) 1,2-Dichloroethane-d4	11.05	65	204653	45.4632 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 90.92%		
58) Toluene-d8	13.80	98	575039	50.6645 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.32%		
80) p-Bromofluorobenzene	17.79	95	239818	50.8408 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 101.68%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	287764	48.4801 ug/L	99
3) Chloromethane	3.88	50	236494	38.2339 ug/L	96
4) Vinyl Chloride	4.12	62	226209	45.4363 ug/L	96
5) 1,3-Butadiene	4.16	54	162660	39.2686 ug/L	93
6) Bromomethane	5.04	94	137425	51.7814 ug/L	99
7) Chloroethane	5.19	64	150414	53.2823 ug/L	100
8) Trichlorofluoromethane	5.69	101	342190	51.1514 ug/L	100
9) Diethyl ether	6.23	59	325306	105.7042 ug/L	96
10) Isoprene	6.28	67	244529	56.1093 ug/L	90
11) Acrolein	6.49	56	32822	56.1589 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	182078	57.0220 ug/L	96
13) Acetone	6.59	43	85196	58.6637 ug/L	97
14) 1,1-Dichloroethene	6.83	61	300410	53.1138 ug/L	96
15) Tert-Butyl Alcohol	6.94	59	113900	215.8215 ug/L	98
16) Dimethyl Sulfide	7.11	62	150974	55.0180 ug/L	98
17) Iodomethane	7.39	142	142646	57.1834 ug/L	97
18) Methyl acetate	7.40	43	217611	55.3644 ug/L	99
19) Methylene Chloride	7.67	84	182304	53.5202 ug/L	87
20) Carbon Disulfide	7.72	76	591144	54.6263 ug/L	99
21) Acrylonitrile	7.87	53	90090	55.7700 ug/L	98
22) Methyl Tert Butyl Ether	7.90	73	548346	56.3707 ug/L	93
23) trans-1,2-Dichloroethene	8.16	96	174090	55.7170 ug/L	91
24) n-Hexane	8.23	57	326120	57.4781 ug/L	98
25) Diisopropyl ether	8.61	45	1465737	99.6405 ug/L	95
26) Vinyl Acetate	8.80	43	370881	48.7740 ug/L	100
27) 1,1-Dichloroethane	8.84	63	353879	52.5322 ug/L	98
28) Ethyl-Tert-Butyl ether	9.24	59	1239538	105.1302 ug/L	97
29) 2-Butanone	9.45	43	121194	54.2489 ug/L	98
30) Propionitrile	9.57	54	65628	106.1426 ug/L	98
31) 2,2-Dichloropropane	9.69	77	289889	53.6115 ug/L	93
32) cis-1,2-Dichloroethene	9.77	96	191708	54.9581 ug/L	94
33) Chloroform	10.00	83	322571	51.2728 ug/L	97
34) 1-Bromopropane	10.15	122	33183	69.3848 ug/L	99
35) Bromochloromethane	10.26	130	115165	56.1893 ug/L	99
36) Tetrahydrofuran	10.30	42	159608	106.6042 ug/L	98
38) 1,1,1-Trichloroethane	10.60	97	293733	52.8580 ug/L	99
39) Cyclohexane	10.63	56	365276	57.9678 ug/L	88
40) 1,1-Dichloropropene	10.83	75	247174	55.2322 ug/L	97
41) Tert-Amyl-Methyl ether	10.94	73	1008600	107.8327 ug/L	93
42) Carbon Tetrachloride	10.99	117	274622	52.8898 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M137989.D 826_SL.M Thu Mar 24 12:03:30 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032416\6M137989.D Vial: 2
Acq On : 24 Mar 2016 11:38 Operator: TMB
Sample : WG562235-02 50u/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 12:03:30 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	268787	50.0564 ug/L	99
46)	Benzene	11.24	78	698777	51.9022 ug/L	92
47)	Trichloroethene	12.09	130	177180	55.7063 ug/L	99
48)	Methylcyclohexane	12.18	83	308776	60.0528 ug/L	90
49)	1,2-Dichloropropane	12.34	63	196071	54.1254 ug/L	97
50)	1,4-Dioxane	12.67	88	8671	200.5927 ug/L	83
51)	Bromodichloromethane	12.69	83	249319	52.4461 ug/L	96
52)	Dibromomethane	12.79	93	112169	52.9400 ug/L	99
53)	2-Chloroethyl Vinyl Ether	13.04	63	117644	59.0439 ug/L	99
54)	4-Methyl-2-Pentanone	13.07	58	89327	59.2073 ug/L	95
55)	cis-1,3-Dichloropropene	13.43	75	293010	55.9433 ug/L	98
56)	Dimethyl Disulfide	13.73	79	155458	58.8496 ug/L	97
59)	Toluene	13.91	91	712194	52.7401 ug/L	99
60)	Ethyl Methacrylate	14.04	69	250956	57.9999 ug/L	99
62)	trans-1,3-Dichloropropene	14.12	75	275891	53.1313 ug/L	100
63)	1,1,2-Trichloroethane	14.38	97	150511	53.3252 ug/L	99
64)	2-Hexanone	14.31	43	176259	54.7262 ug/L	96
65)	1,3-Dichloropropane	14.74	76	266210	52.0373 ug/L	98
66)	Tetrachloroethene	14.87	166	182240	54.7071 ug/L	98
67)	Dibromochloromethane	15.18	129	194463	52.9754 ug/L	98
68)	1,2-Dibromoethane	15.48	107	155786	53.9696 ug/L	97
69)	1-Chlorohexane	15.60	91	248685	59.3023 ug/L	90
70)	Chlorobenzene	16.08	112	455160	52.4450 ug/L	71
71)	1,1,1,2-Tetrachloroethane	16.12	131	179922	51.6316 ug/L	98
72)	Ethylbenzene	16.11	106	252740	54.4196 ug/L	100
73)	m-,p-Xylene	16.22	106	611729	107.6484 ug/L	98
74)	o-Xylene	16.88	106	301345	56.3012 ug/L	98
75)	Styrene	16.92	104	510353	56.0220 ug/L	96
76)	Bromoform	17.49	173	135821	52.4031 ug/L	99
77)	Isopropylbenzene	17.38	105	798329	55.4857 ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.64	83	218319	54.4204 ug/L	95
81)	1,2,3-Trichloropropane	17.87	110	66991	54.5396 ug/L	89
82)	trans-1,4-Dichloro-2-Buten	17.93	53	77949	52.6324 ug/L	96
83)	n-Propylbenzene	17.98	91	958791	54.9753 ug/L	99
84)	Bromobenzene	18.13	156	206769	54.5421 ug/L	99
85)	1,3,5-Trimethylbenzene	18.21	105	687049	55.3446 ug/L	97
86)	2-Chlorotoluene	18.30	91	631652	54.2618 ug/L	95
87)	4-Chlorotoluene	18.35	91	553986	52.0471 ug/L	97
88)	a-Methylstyrene	18.69	118	347750	57.6841 ug/L	98
89)	tert-Butylbenzene	18.76	134	142101	54.9269 ug/L	88
90)	1,2,4-Trimethylbenzene	18.82	105	707200	54.1692 ug/L	84
91)	sec-Butylbenzene	19.08	105	875524	55.0721 ug/L	100
92)	p-Isopropyltoluene	19.27	119	734509	56.0008 ug/L	100
93)	1,3-Dichlorobenzene	19.49	146	390779	53.2742 ug/L	97
94)	1,4-Dichlorobenzene	19.64	146	386817	51.8065 ug/L	98
95)	n-Butylbenzene	19.89	91	710790	53.8809 ug/L	98
96)	1,2-Dichlorobenzene	20.22	146	367894	52.1215 ug/L	96
97)	1,2-Dibromo-3-Chloropropan	21.42	75	47593	53.6177 ug/L	91
98)	1,2,4-Trichlorobenzene	22.76	180	272748	53.4515 ug/L	98
99)	Hexachlorobutadiene	22.95	225	155298	53.2173 ug/L	98
100)	Naphthalene	23.20	128	658978	56.1759 ug/L	100
101)	1,2,3-Trichlorobenzene	23.58	180	261914	52.1267 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M137989.D 826_SL.M Thu Mar 24 12:03:31 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032416\6M137989.D Vial: 2
Acq On : 24 Mar 2016 11:38 Operator: TMB
Sample : WG562235-02 50u/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 12:03 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

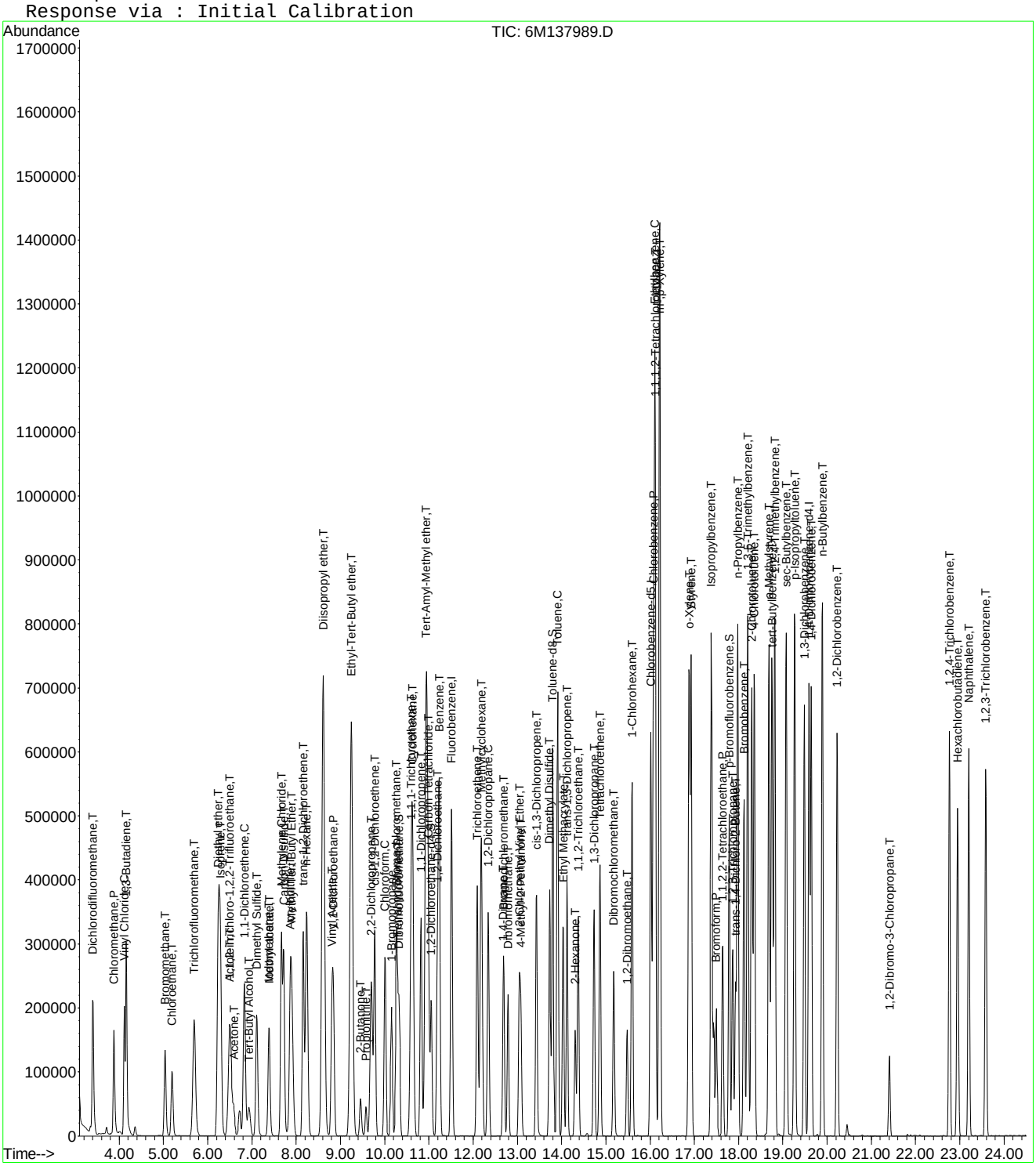

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\032416\6M137989.D Vial: 2
Acq On : 24 Mar 2016 11:38 Operator: TMB
Sample : WG562235-02 50u/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	106	0.00
2	T	Dichlorodifluoromethane	0.4592	0.4452	3.0	88	0.00
3	P	Chloromethane	0.4785	0.3659	23.5	77	0.00
4	C	Vinyl Chloride	0.3852	0.3500	9.1	86	0.00
5	T	1,3-Butadiene	0.3205	0.2517	21.5	78	0.00
6	T	Bromomethane	0.2053	0.2126	-3.6	106	0.00
7	T	Chloroethane	0.2184	0.2327	-6.6	102	0.00
8	T	Trichlorofluoromethane	0.5175	0.5294	-2.3	101	0.00
9	T	Diethyl ether	0.2381	0.2517	-5.7	115	0.00
10	T	Isoprene	0.3372	0.3784	-12.2	113	0.00
11	T	Acrolein	0.0452	0.0508	-12.3	130	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2470	0.2817	-14.0	108	0.00
13	T	Acetone	0.1189	0.1318	-10.8	125	0.00
14	C	1,1-Dichloroethene	0.4376	0.4648	-6.2	102	0.00
15	T	Tert-Butyl Alcohol	0.0408	0.0441	-7.9	117	0.00
16	T	Dimethyl Sulfide	0.2123	0.2336	-10.0	111	0.00
17	T	Iodomethane	0.1531	0.2207	-44.1#	119	0.00
18	T	Methyl acetate	0.3041	0.3367	-10.7	116	0.00
19	T	Methylene Chloride	0.2635	0.2821	-7.0	104	0.00
20	T	Carbon Disulfide	0.8372	0.9146	-9.3	112	0.00
21	T	Acrylonitrile	0.1250	0.1394	-11.5	114	0.00
22	T	Methyl Tert Butyl Ether	0.7525	0.8484	-12.7	108	0.00
23	T	trans-1,2-Dichloroethene	0.2417	0.2694	-11.4	108	0.00
24	T	n-Hexane	0.4389	0.5046	-15.0	115	0.00
25	T	Diisopropyl ether	1.1380	1.1339	0.4	108	0.00
26	T	Vinyl Acetate	0.5883	0.5738	2.5	102	0.00
27	P	1,1-Dichloroethane	0.5212	0.5475	-5.1	103	0.00
28	T	Ethyl-Tert-Butyl ether	0.9121	0.9589	-5.1	112	0.00
29	T	2-Butanone	0.1728	0.1875	-8.5	118	0.00
30	T	Propionitrile	0.0478	0.0508	-6.1	114	0.00
31	T	2,2-Dichloropropane	0.4183	0.4485	-7.2	105	0.00
32	T	cis-1,2-Dichloroethene	0.2699	0.2966	-9.9	109	0.00
33	C	Chloroform	0.4867	0.4991	-2.5	102	0.00
34		1-Bromopropane	0.0370	0.0513	-38.8#	135	0.00
35	T	Bromochloromethane	0.1586	0.1782	-12.4	108	0.00
36	T	Tetrahydrofuran	0.1230	0.1235	-0.4	114	0.00
37	S	Dibromofluoromethane	0.2682	0.5210	-94.2#	204#	0.00
38	T	1,1,1-Trichloroethane	0.4299	0.4545	-5.7	102	0.00
39	T	Cyclohexane	0.4875	0.5652	-15.9	113	0.00
40	T	1,1-Dichloropropene	0.3462	0.3824	-10.5	106	0.00
41	T	Tert-Amyl-Methyl ether	0.7236	0.7803	-7.8	115	0.00
42	T	Carbon Tetrachloride	0.4017	0.4249	-5.8	102	0.00
43	S	1,2-Dichloroethane-d4	0.3483	0.6333	-81.9#	191#	0.00
44		Heptane	0.0000	0.0000	0.0	0#	0.00
45	T	1,2-Dichloroethane	0.4154	0.4159	-0.1	99	0.00
46	T	Benzene	1.0416	1.0812	-3.8	107	0.00
47	T	Trichloroethene	0.2461	0.2741	-11.4	109	0.00
48	T	Methylcyclohexane	0.3978	0.4778	-20.1	117	0.00
49	C	1,2-Dichloropropane	0.2803	0.3034	-8.2	106	0.00
50	T	1,4-Dioxane	0.0031	0.0034	-8.1	116	0.00
51	T	Bromodichloromethane	0.3678	0.3858	-4.9	102	0.00
52	T	Dibromomethane	0.1639	0.1736	-5.9	100	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1541	0.1820	-18.1	118	0.00
54	T	4-Methyl-2-Pentanone	0.1167	0.1382	-18.4	126	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\032416\6M137989.D Vial: 2
Acq On : 24 Mar 2016 11:38 Operator: TMB
Sample : WG562235-02 50u/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4052	0.4534	-11.9	106	0.00
56	T	Dimethyl Disulfide	0.2044	0.2405	-17.7	114	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	109	0.00
58	S	Toluene-d8	1.1888	2.4091	-102.7#	216#	0.00
59	C	Toluene	1.4144	1.4919	-5.5	108	0.00
60	T	Ethyl Methacrylate	0.4532	0.5257	-16.0	113	0.01
61		Paraldehyde	0.0000	0.0000	0.0	0#	-15.13#
62	T	trans-1,3-Dichloropropene	0.5439	0.5779	-6.3	104	0.00
63	T	1,1,2-Trichloroethane	0.2956	0.3153	-6.7	107	0.01
64	T	2-Hexanone	0.3373	0.3692	-9.5	117	0.00
65	T	1,3-Dichloropropane	0.5358	0.5576	-4.1	104	0.00
66	T	Tetrachloroethene	0.3489	0.3817	-9.4	110	0.00
67	T	Dibromochloromethane	0.3845	0.4073	-6.0	104	0.00
68	T	1,2-Dibromoethane	0.3023	0.3263	-7.9	107	0.00
69	T	1-Chlorohexane	0.4392	0.5209	-18.6	117	0.00
70	P	Chlorobenzene	0.9090	0.9535	-4.9	108	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3650	0.3769	-3.3	104	0.01
72	C	Ethylbenzene	0.4864	0.5294	-8.8	108	0.00
73	T	m-,p-Xylene	0.5952	0.6407	-7.6	109	0.00
74	T	o-Xylene	0.5606	0.6312	-12.6	108	0.00
75	T	Styrene	0.9542	1.0691	-12.0	108	0.00
76	P	Bromoform	0.2715	0.2845	-4.8	104	0.00
77	T	Isopropylbenzene	1.5070	1.6723	-11.0	108	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	108	0.00
79	P	1,1,2,2-Tetrachloroethane	0.7811	0.8501	-8.8	109	0.00
80	S	p-Bromofluorobenzene	0.9184	1.8677	-103.4#	215#	0.00
81	T	1,2,3-Trichloropropane	0.2392	0.2609	-9.1	109	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.2884	0.3035	-5.3	107	0.00
83	T	n-Propylbenzene	3.3956	3.7335	-10.0	106	0.00
84	T	Bromobenzene	0.7381	0.8052	-9.1	108	0.00
85	T	1,3,5-Trimethylbenzene	2.4170	2.6753	-10.7	107	0.00
86	T	2-Chlorotoluene	2.2664	2.4596	-8.5	109	0.00
87	T	4-Chlorotoluene	2.0723	2.1572	-4.1	104	0.00
88	T	a-Methylstyrene	1.1737	1.3541	-15.4	113	0.00
89	T	tert-Butylbenzene	0.5037	0.5533	-9.9	106	0.00
90	T	1,2,4-Trimethylbenzene	2.5419	2.7538	-8.3	106	0.00
91	T	sec-Butylbenzene	3.0953	3.4092	-10.1	106	0.00
92	T	p-Isopropyltoluene	2.5537	2.8601	-12.0	107	0.01
93	T	1,3-Dichlorobenzene	1.4282	1.5217	-6.5	107	0.00
94	T	1,4-Dichlorobenzene	1.4537	1.5062	-3.6	106	0.00
95	T	n-Butylbenzene	2.5684	2.7678	-7.8	105	0.00
96	T	1,2-Dichlorobenzene	1.3743	1.4326	-4.2	105	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1728	0.1853	-7.2	109	0.00
98	T	1,2,4-Trichlorobenzene	0.9935	1.0621	-6.9	104	0.00
99	T	Hexachlorobutadiene	0.5682	0.6047	-6.4	103	0.00
100	T	Naphthalene	2.2839	2.5660	-12.4	107	0.00
101	T	1,2,3-Trichlorobenzene	0.9783	1.0199	-4.3	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137989.D 826_SL.M Thu Mar 24 12:08:41 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\032416\6M137989.D Vial: 2
Acq On : 24 Mar 2016 11:38 Operator: TMB
Sample : WG562235-02 50u/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	106	0.00
2	T	Dichlorodifluoromethane	50.0000	48.4801	3.0	88	0.00
3	P	Chloromethane	50.0000	38.2339	23.5	77	0.00
4	C	Vinyl Chloride	50.0000	45.4363	9.1	86	0.00
5	T	1,3-Butadiene	50.0000	39.2686	21.5	78	0.00
6	T	Bromomethane	50.0000	51.7814	-3.6	106	0.00
7	T	Chloroethane	50.0000	53.2822	-6.6	102	0.00
8	T	Trichlorofluoromethane	50.0000	51.1514	-2.3	101	0.00
9	T	Diethyl ether	100.0000	105.7042	-5.7	115	0.00
10	T	Isoprene	50.0000	56.1093	-12.2	113	0.00
11	T	Acrolein	50.0000	56.1589	-12.3	130	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	57.0220	-14.0	108	0.00
13	T	Acetone	50.0000	58.6637	-17.3	125	0.00
14	C	1,1-Dichloroethene	50.0000	53.1138	-6.2	102	0.00
15	T	Tert-Butyl Alcohol	200.0000	215.8215	-7.9	117	0.00
16	T	Dimethyl Sulfide	50.0000	55.0180	-10.0	111	0.00
17	T	Iodomethane	50.0000	57.1834	-14.4	119	0.00
18	T	Methyl acetate	50.0000	55.3644	-10.7	116	0.00
19	T	Methylene Chloride	50.0000	53.5202	-7.0	104	0.00
20	T	Carbon Disulfide	50.0000	54.6263	-9.3	112	0.00
21	T	Acrylonitrile	50.0000	55.7700	-11.5	114	0.00
22	T	Methyl Tert Butyl Ether	50.0000	56.3707	-12.7	108	0.00
23	T	trans-1,2-Dichloroethene	50.0000	55.7170	-11.4	108	0.00
24	T	n-Hexane	50.0000	57.4781	-15.0	115	0.00
25	T	Diisopropyl ether	100.0000	99.6405	0.4	108	0.00
26	T	Vinyl Acetate	50.0000	48.7740	2.5	102	0.00
27	P	1,1-Dichloroethane	50.0000	52.5322	-5.1	103	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	105.1302	-5.1	112	0.00
29	T	2-Butanone	50.0000	54.2489	-8.5	118	0.00
30	T	Propionitrile	100.0000	106.1426	-6.1	114	0.00
31	T	2,2-Dichloropropane	50.0000	53.6115	-7.2	105	0.00
32	T	cis-1,2-Dichloroethene	50.0000	54.9581	-9.9	109	0.00
33	C	Chloroform	50.0000	51.2728	-2.5	102	0.00
34		1-Bromopropane	50.0000	69.3848	-38.8#	135	0.00
35	T	Bromochloromethane	50.0000	56.1893	-12.4	108	0.00
36	T	Tetrahydrofuran	100.0000	106.6042	-6.6	114	0.00
37	S	Dibromofluoromethane	25.0000	48.5619	-94.2#	204	0.00
38	T	1,1,1-Trichloroethane	50.0000	52.8580	-5.7	102	0.00
39	T	Cyclohexane	50.0000	57.9678	-15.9	113	0.00
40	T	1,1-Dichloropropene	50.0000	55.2322	-10.5	106	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	107.8327	-7.8	115	0.00
42	T	Carbon Tetrachloride	50.0000	52.8898	-5.8	102	0.00
43	S	1,2-Dichloroethane-d4	25.0000	45.4632	-81.9#	191	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	50.0000	50.0564	-0.1	99	0.00
46	T	Benzene	50.0000	51.9022	-3.8	107	0.00
47	T	Trichloroethene	50.0000	55.7063	-11.4	109	0.00
48	T	Methylcyclohexane	50.0000	60.0528	-20.1	117	0.00
49	C	1,2-Dichloropropane	50.0000	54.1254	-8.3	106	0.00
50	T	1,4-Dioxane	200.0000	200.5927	-0.3	116	0.00
51	T	Bromodichloromethane	50.0000	52.4461	-4.9	102	0.00
52	T	Dibromomethane	50.0000	52.9400	-5.9	100	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	59.0439	-18.1	118	0.00
54	T	4-Methyl-2-Pentanone	50.0000	59.2073	-18.4	126	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\032416\6M137989.D Vial: 2
Acq On : 24 Mar 2016 11:38 Operator: TMB
Sample : WG562235-02 50u/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	55.9433	-11.9	106	0.00
56	T	Dimethyl Disulfide	50.0000	58.8496	-17.7	114	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	109	0.00
58	S	Toluene-d8	25.0000	50.6645	-102.7#	216	0.00
59	C	Toluene	50.0000	52.7401	-5.5	108	0.00
60	T	Ethyl Methacrylate	50.0000	57.9999	-16.0	113	0.01
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	50.0000	53.1313	-6.3	104	0.00
63	T	1,1,2-Trichloroethane	50.0000	53.3252	-6.7	107	0.01
64	T	2-Hexanone	50.0000	54.7262	-9.5	117	0.00
65	T	1,3-Dichloropropane	50.0000	52.0373	-4.1	104	0.00
66	T	Tetrachloroethene	50.0000	54.7071	-9.4	110	0.00
67	T	Dibromochloromethane	50.0000	52.9754	-6.0	104	0.00
68	T	1,2-Dibromoethane	50.0000	53.9696	-7.9	107	0.00
69	T	1-Chlorohexane	50.0000	59.3023	-18.6	117	0.00
70	P	Chlorobenzene	50.0000	52.4450	-4.9	108	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	51.6316	-3.3	104	0.01
72	C	Ethylbenzene	50.0000	54.4196	-8.8	108	0.00
73	T	m-,p-Xylene	100.0000	107.6484	-7.6	109	0.00
74	T	o-Xylene	50.0000	56.3013	-12.6	108	0.00
75	T	Styrene	50.0000	56.0220	-12.0	108	0.00
76	P	Bromoform	50.0000	52.4031	-4.8	104	0.00
77	T	Isopropylbenzene	50.0000	55.4857	-11.0	108	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	108	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	54.4204	-8.8	109	0.00
80	S	p-Bromofluorobenzene	25.0000	50.8408	-103.4#	215	0.00
81	T	1,2,3-Trichloropropane	50.0000	54.5396	-9.1	109	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	52.6324	-5.3	107	0.00
83	T	n-Propylbenzene	50.0000	54.9753	-10.0	106	0.00
84	T	Bromobenzene	50.0000	54.5421	-9.1	108	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	55.3446	-10.7	107	0.00
86	T	2-Chlorotoluene	50.0000	54.2618	-8.5	109	0.00
87	T	4-Chlorotoluene	50.0000	52.0471	-4.1	104	0.00
88	T	a-Methylstyrene	50.0000	57.6842	-15.4	113	0.00
89	T	tert-Butylbenzene	50.0000	54.9269	-9.9	106	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	54.1692	-8.3	106	0.00
91	T	sec-Butylbenzene	50.0000	55.0721	-10.1	106	0.00
92	T	p-Isopropyltoluene	50.0000	56.0008	-12.0	107	0.01
93	T	1,3-Dichlorobenzene	50.0000	53.2742	-6.5	107	0.00
94	T	1,4-Dichlorobenzene	50.0000	51.8065	-3.6	106	0.00
95	T	n-Butylbenzene	50.0000	53.8809	-7.8	105	0.00
96	T	1,2-Dichlorobenzene	50.0000	52.1215	-4.2	105	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	53.6177	-7.2	109	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	53.4515	-6.9	104	0.00
99	T	Hexachlorobutadiene	50.0000	53.2174	-6.4	103	0.00
100	T	Naphthalene	50.0000	56.1759	-12.4	107	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	52.1266	-4.3	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137989.D 826_SL.M Thu Mar 24 12:08:42 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\1\DATA\022616\6M137522.D          Vial: 1
Acq On    : 26 Feb 2016  13:16                       Operator: TMB
Sample    : WG558920-01 50ng BFB STD 8260            Inst    : HPMS6
Misc      : 7,1 STD74606                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP: OVL MSV01
```

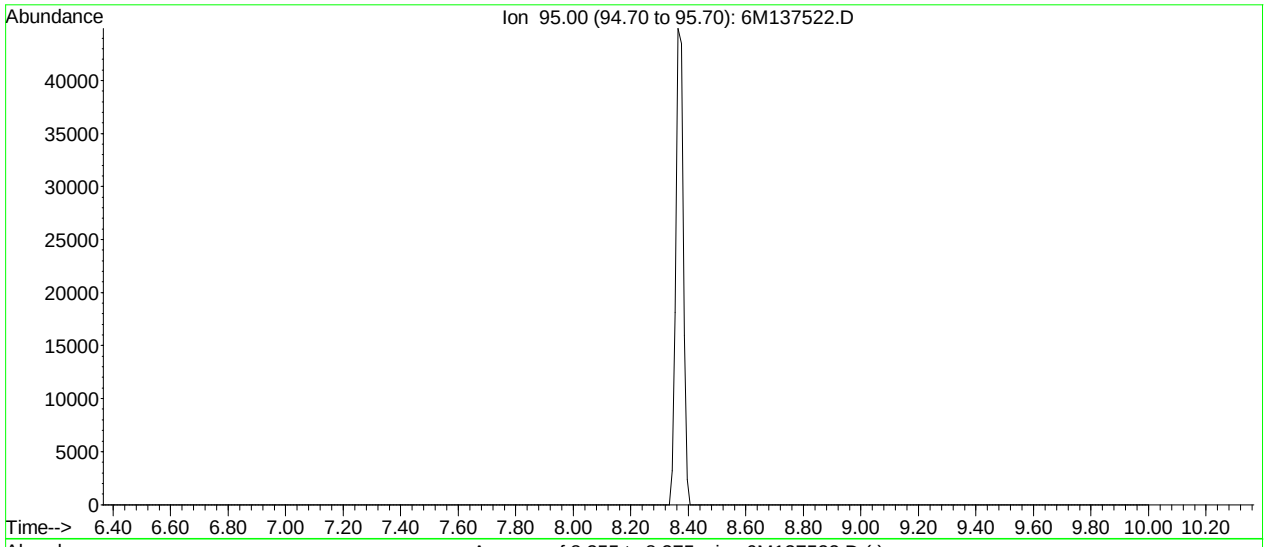

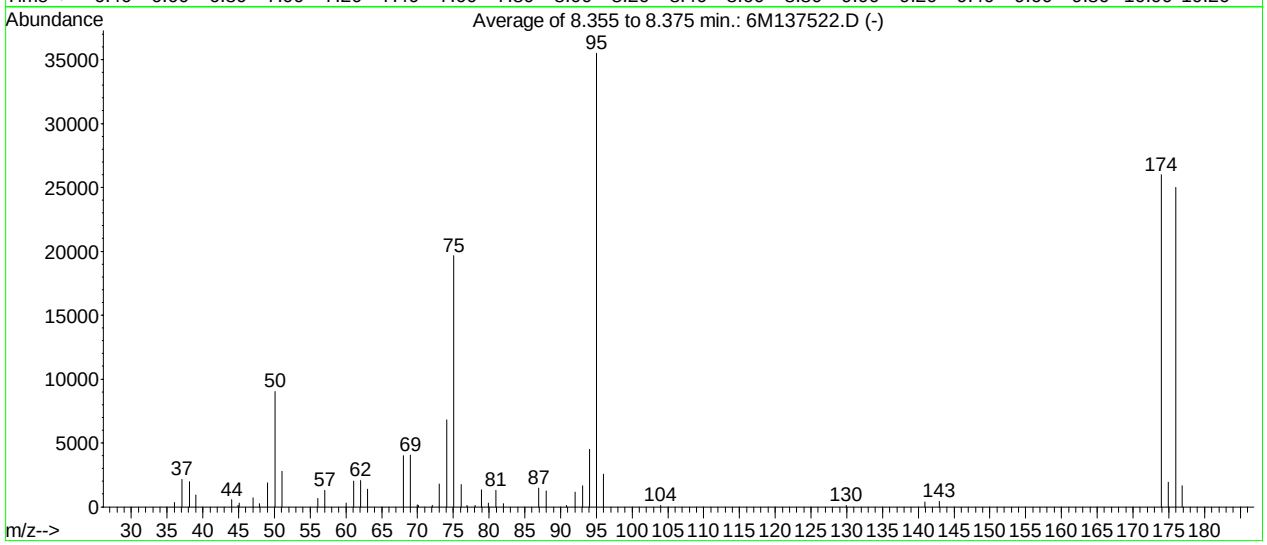

AutoFind: Scans 320, 321, 322; Background Corrected with Scan 316

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	25.4	9030	PASS
75	95	30	60	55.4	19666	PASS
95	95	100	100	100.0	35512	PASS
96	95	5	9	7.3	2576	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	73.2	26011	PASS
175	174	5	9	7.4	1914	PASS
176	174	95	101	96.1	24992	PASS
177	176	5	9	6.6	1660	PASS

6M137522.D BFB.M Fri Feb 26 13:26:46 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\032316\6M137963.D          Vial: 1
Acq On    : 23 Mar 2016  11:50                       Operator: TMB
Sample    : WG562074-01 50ng BFB STD 8260            Inst    : HPMS6
Misc      : 7,1 STD75004                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP: OVL MSV01
```

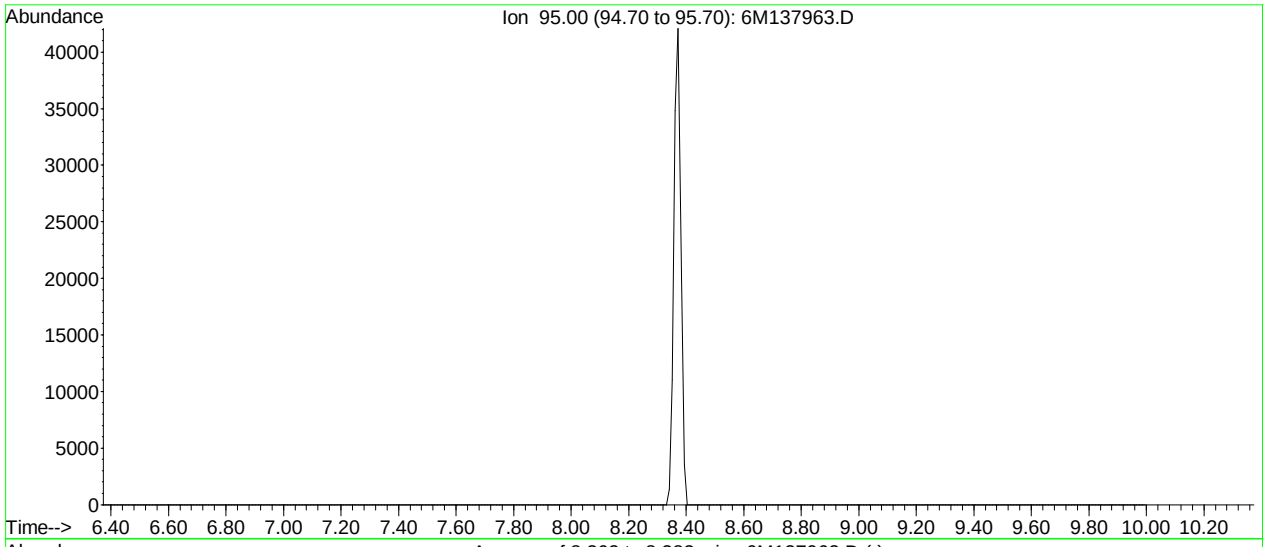

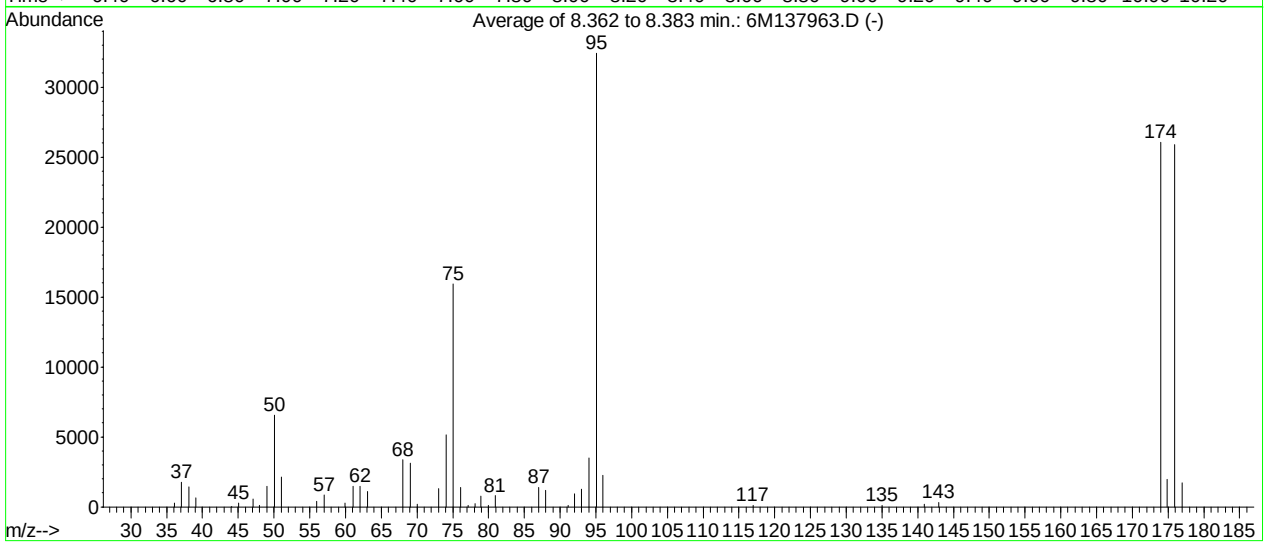

AutoFind: Scans 321, 322, 323; Background Corrected with Scan 316

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.2	6567	PASS
75	95	30	60	49.2	15945	PASS
95	95	100	100	100.0	32432	PASS
96	95	5	9	7.0	2256	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	80.4	26074	PASS
175	174	5	9	7.6	1973	PASS
176	174	95	101	99.3	25896	PASS
177	176	5	9	6.6	1699	PASS

6M137963.D BFB.M Wed Mar 23 12:13:51 2016

BFB

Data File : C:\MSDCHEM\1\DATA\032416\6M137988.D Vial: 1
Acq On : 24 Mar 2016 11:14 Operator: TMB
Sample : WG562235-01 50ng BFB STD 8260 Inst : HPMS6
Misc : 7,1 STD75004 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title : SOP: OVL MSV01

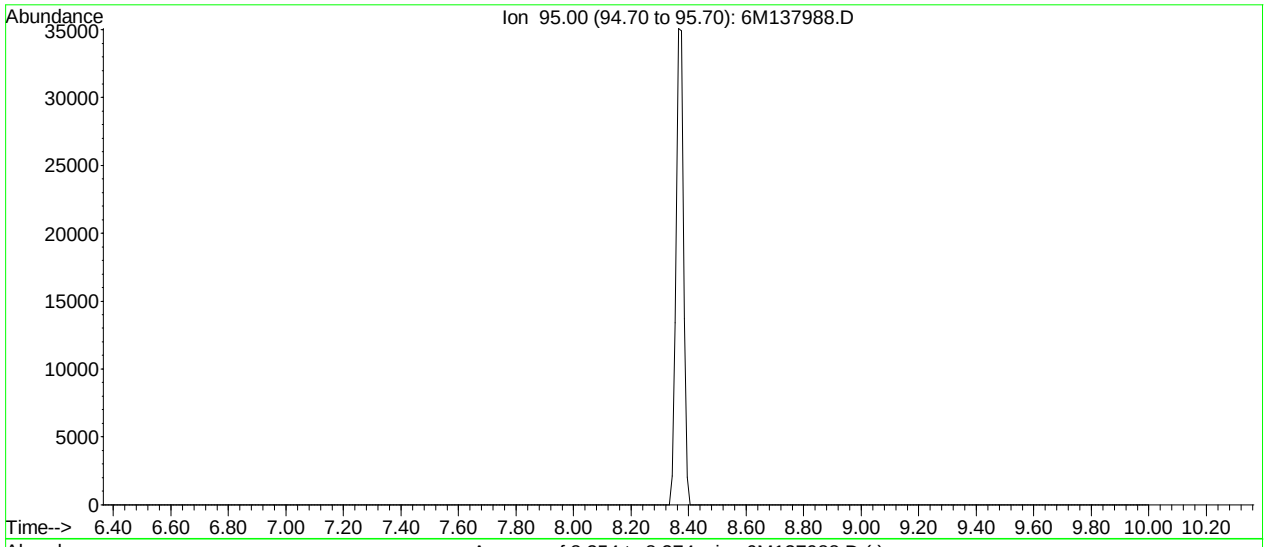

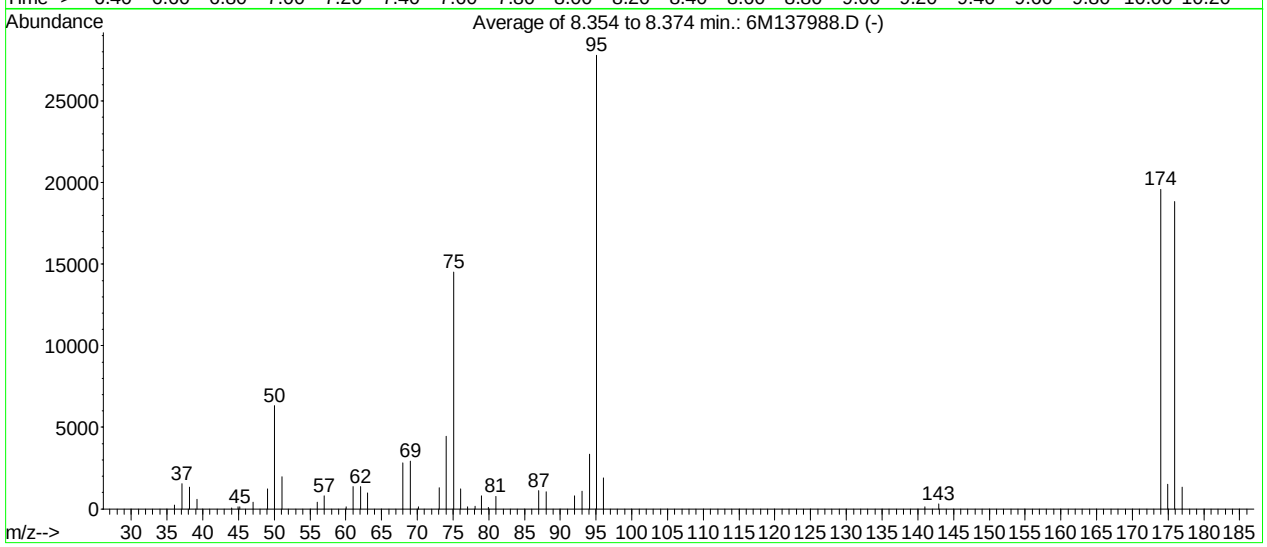

AutoFind: Scans 320, 321, 322; Background Corrected with Scan 316

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.7	6323	PASS
75	95	30	60	52.2	14507	PASS
95	95	100	100	100.0	27812	PASS
96	95	5	9	6.9	1908	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	70.4	19568	PASS
175	174	5	9	7.6	1494	PASS
176	174	95	101	96.3	18848	PASS
177	176	5	9	7.1	1337	PASS

6M137988.D BFB.M Thu Mar 24 11:25:17 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137967.D Vial: 5
Acq On : 23 Mar 2016 13:53 Operator: TMB
Sample : WG562075-01 VBLK0323 BLANK STD 8260 Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 17:03:56 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	568472	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	420780	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	220763	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	144183	47.2810 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.56%		
43) 1,2-Dichloroethane-d4	11.06	65	179216	45.2637 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 90.52%		
58) Toluene-d8	13.80	98	504541	50.4328 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 100.86%		
80) p-Bromofluorobenzene	17.79	95	208247	51.3562 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.72%		

Target Compounds					Qvalue
13) Acetone	6.60	43	7695	2.0829 ug/L	99
29) 2-Butanone	9.69	43	2551	1.2982 ug/L #	56
36) Tetrahydrofuran	10.29	42	2714	Below Cal #	74
60) Ethyl Methacrylate	13.80	69	961	0.2520 ug/L #	47
90) 1,2,4-Trimethylbenzene	18.81	105	6379	0.5684 ug/L	93
100) Naphthalene	23.20	128	2997	0.2972 ug/L #	67

(#) = qualifier out of range (m) = manual integration
6M137967.D 826_SL.M Wed Mar 23 17:03:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137967.D Vial: 5
Acq On : 23 Mar 2016 13:53 Operator: TMB
Sample : WG562075-01 VBLK0323 BLANK STD 8260 Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 17:03 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

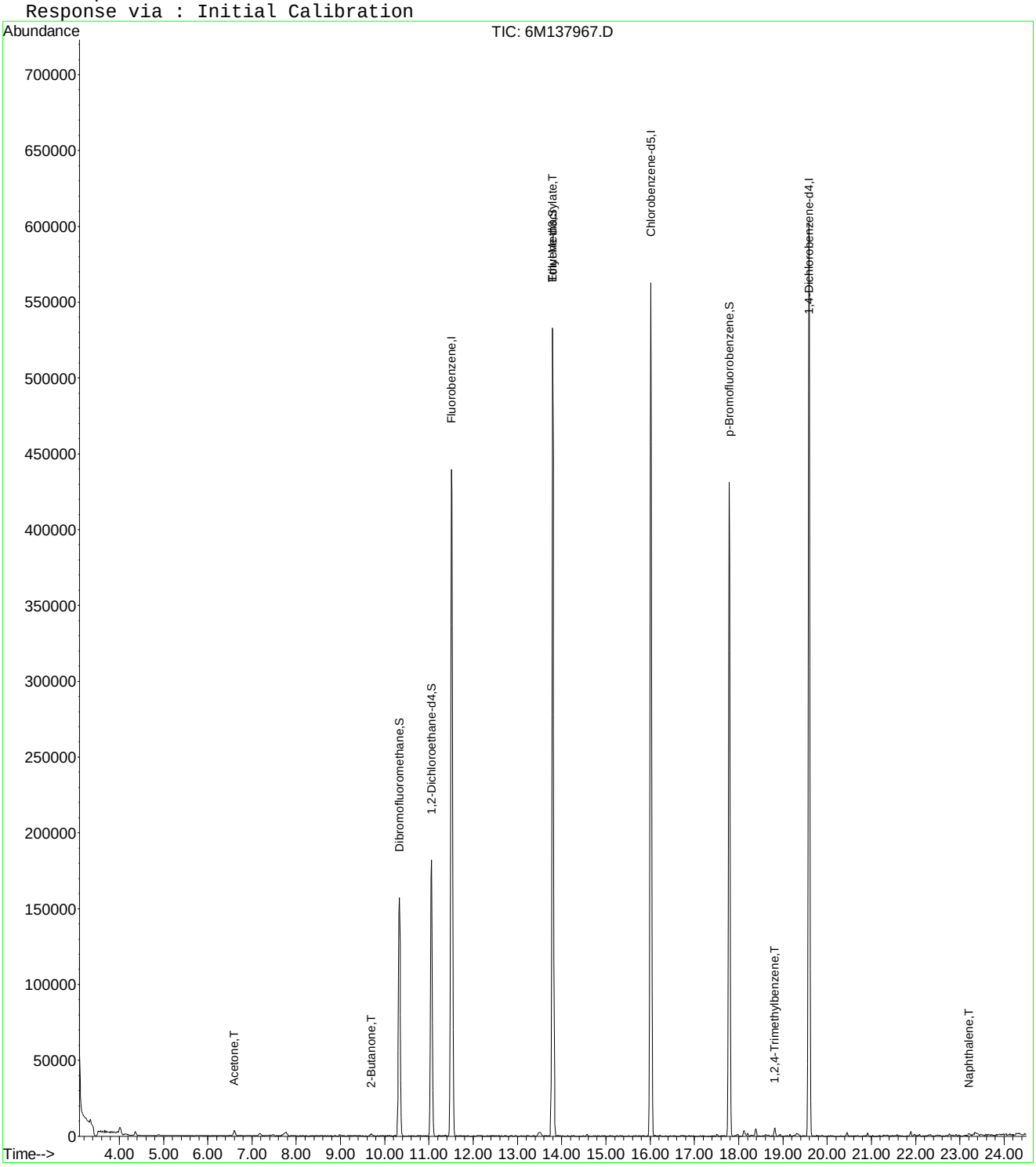

6M137967.D 826_SL.M Wed Mar 23 17:03:57 2016 Page 2

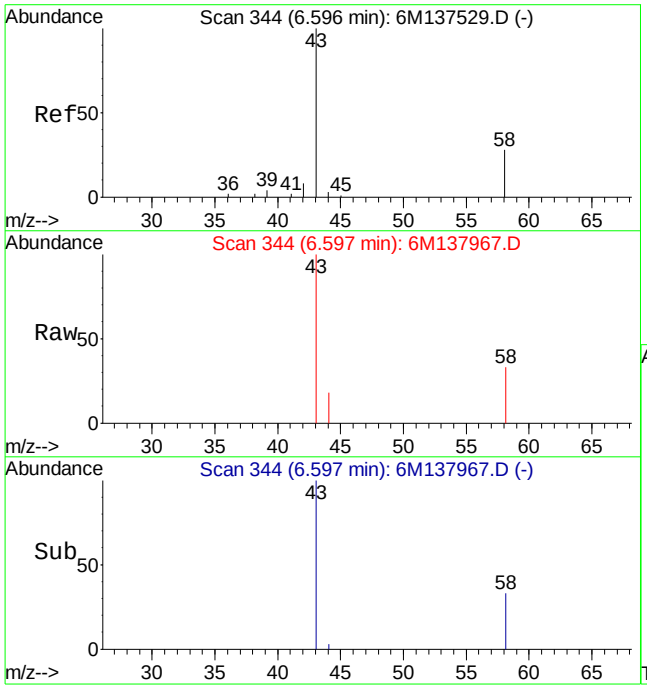

#13
Acetone
Concen: 2.08 ug/L
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137967.D
Acq: 23 Mar 2016 13:53

Tgt Ion: 43 Resp: 7695

Ion	Ratio	Lower	Upper
43	100		
58	27.5	16.1	37.7

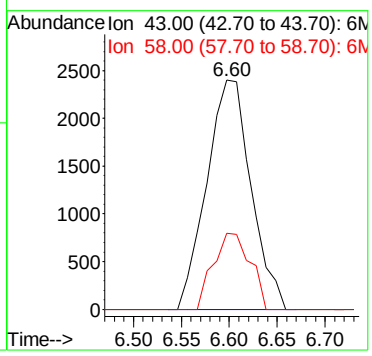

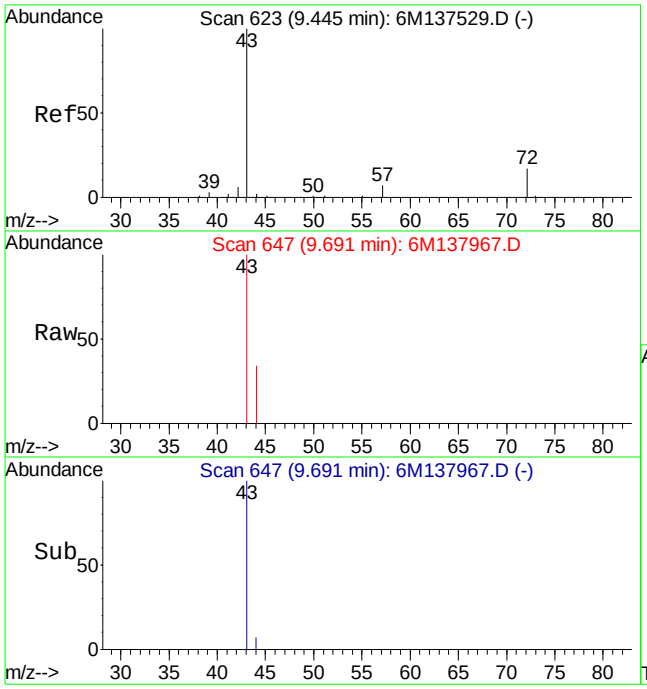

#29
2-Butanone
Concen: 1.30 ug/L
RT: 9.69 min Scan# 647
Delta R.T. 0.25 min
Lab File: 6M137967.D
Acq: 23 Mar 2016 13:53

Tgt Ion: 43 Resp: 2551

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.2	28.4#

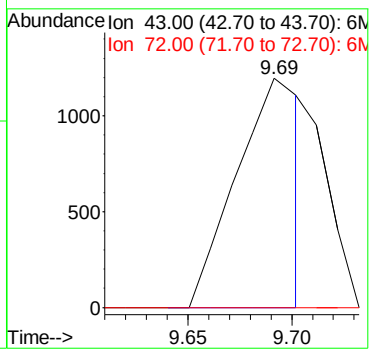

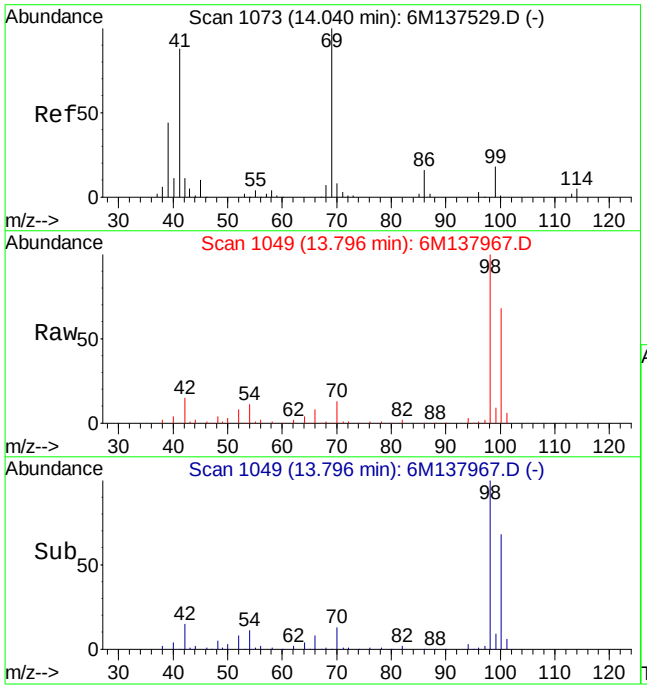

#60
Ethyl Methacrylate
Concen: 0.25 ug/L
RT: 13.80 min Scan# 1049
Delta R.T. -0.23 min
Lab File: 6M137967.D
Acq: 23 Mar 2016 13:53

Tgt Ion: 69 Resp: 961

Ion	Ratio	Lower	Upper
69	100		
41	132.2	50.6	118.2#

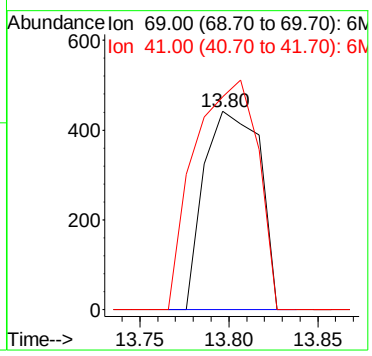

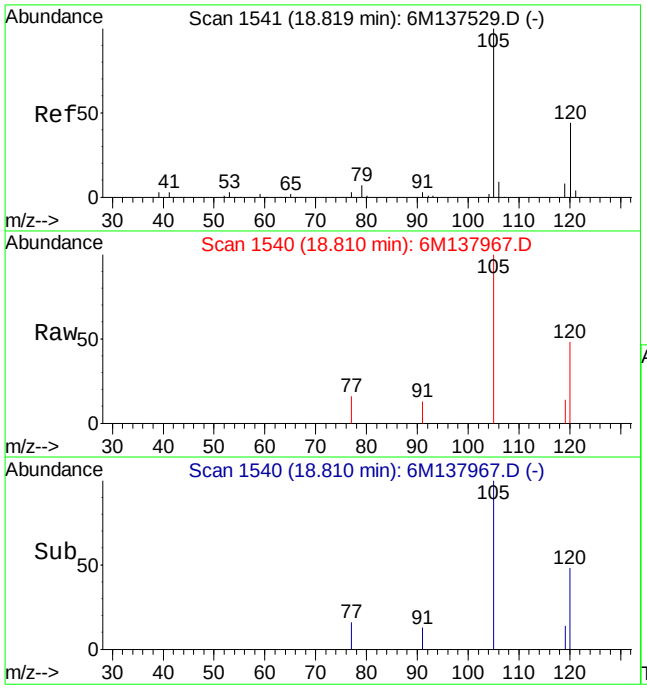

#90
1,2,4-Trimethylbenzene
Concen: 0.57 ug/L
RT: 18.81 min Scan# 1540
Delta R.T. -0.01 min
Lab File: 6M137967.D
Acq: 23 Mar 2016 13:53

Tgt Ion:105 Resp: 6379

Ion	Ratio	Lower	Upper
105	100		
120	51.7	34.3	79.9

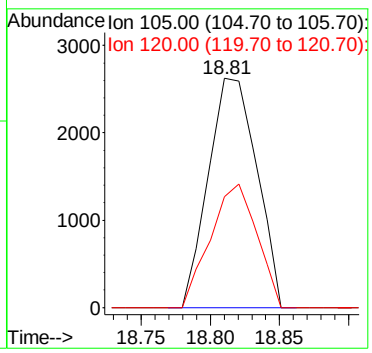

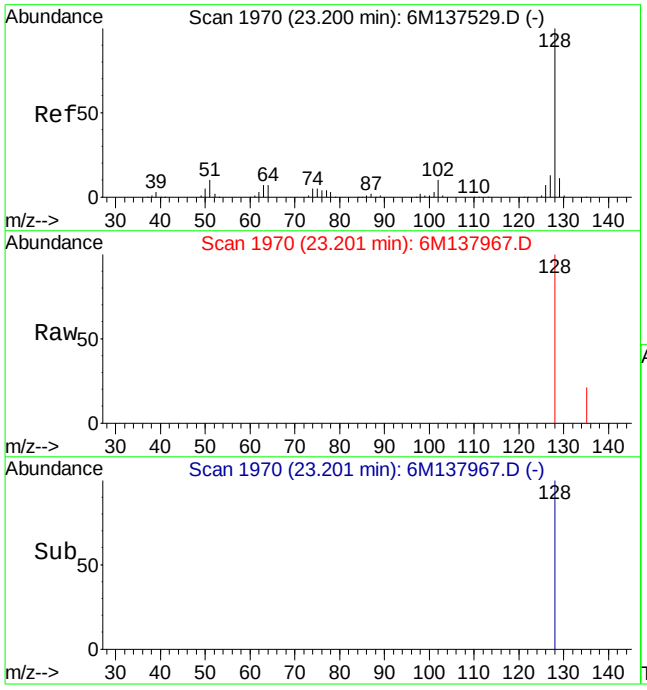

#100
Naphthalene
Concen: 0.30 ug/L
RT: 23.20 min Scan# 1970
Delta R.T. 0.00 min
Lab File: 6M137967.D
Acq: 23 Mar 2016 13:53

Tgt Ion:128 Resp: 2997

Ion	Ratio	Lower	Upper
128	100		
127	0.0	7.7	18.1#

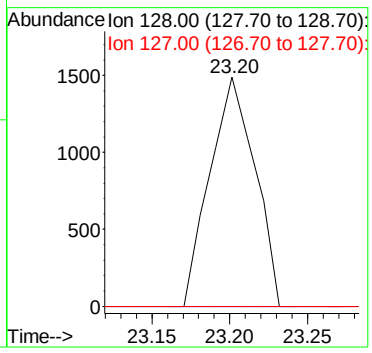

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032416\6M137991.D Vial: 4
Acq On : 24 Mar 2016 12:53 Operator: TMB
Sample : WG562236-01 VBLK0324 BLANK STD 8260 Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 14:22:29 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	556296	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	414863	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	220949	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.34	111	143518	48.0930 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.18%		
43) 1,2-Dichloroethane-d4	11.05	65	177637	45.8468 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 91.70%		
58) Toluene-d8	13.80	98	493353	50.0178 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 100.04%		
80) p-Bromofluorobenzene	17.79	95	204837	50.4727 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 100.94%		

Target Compounds

					Qvalue
13) Acetone	6.60	43	4981	Below Cal	80
29) 2-Butanone	9.69	43	2712	1.4104 ug/L #	56
36) Tetrahydrofuran	10.31	42	2422	Below Cal #	63
90) 1,2,4-Trimethylbenzene	18.82	105	4230	0.3766 ug/L	79
91) sec-Butylbenzene	18.82	105	3804	0.2781 ug/L #	56

(#) = qualifier out of range (m) = manual integration
6M137991.D 826_SL.M Thu Mar 24 14:22:30 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032416\6M137991.D Vial: 4
Acq On : 24 Mar 2016 12:53 Operator: TMB
Sample : WG562236-01 VBLK0324 BLANK STD 8260 Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 14:22 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

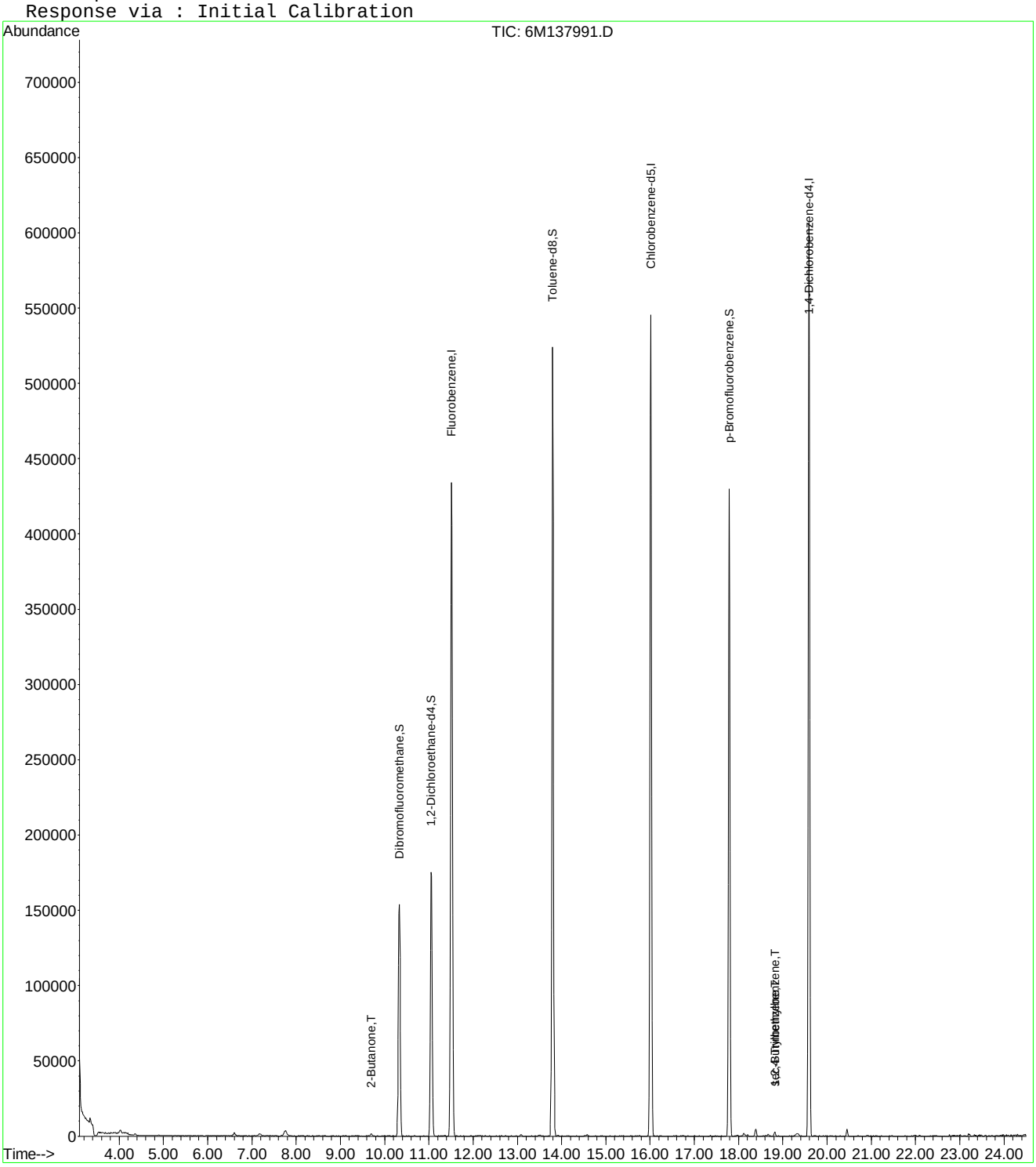

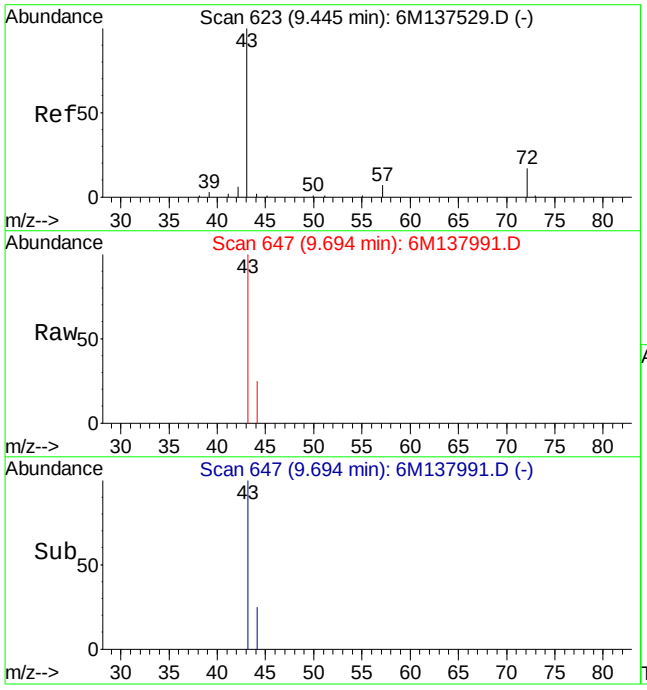

#29
2-Butanone
Concen: 1.41 ug/L
RT: 9.69 min Scan# 647
Delta R.T. 0.25 min
Lab File: 6M137991.D
Acq: 24 Mar 2016 12:53

Tgt Ion: 43 Resp: 2712

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.2	28.4#

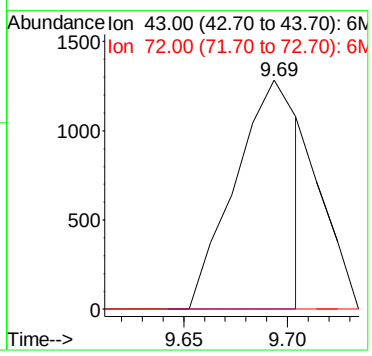

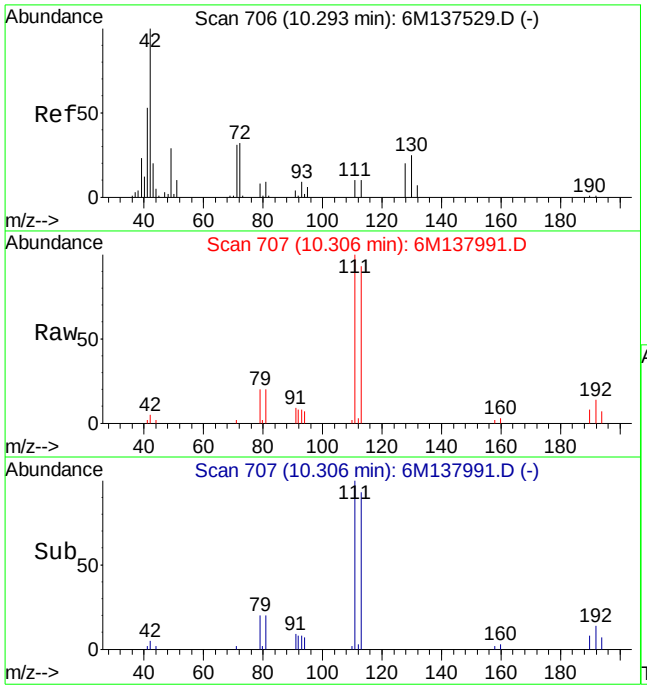

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.31 min Scan# 707
Delta R.T. 0.01 min
Lab File: 6M137991.D
Acq: 24 Mar 2016 12:53

Tgt Ion: 42 Resp: 2422

Ion	Ratio	Lower	Upper
42	100		
72	8.1	21.0	49.0#
71	18.8	20.6	48.2#

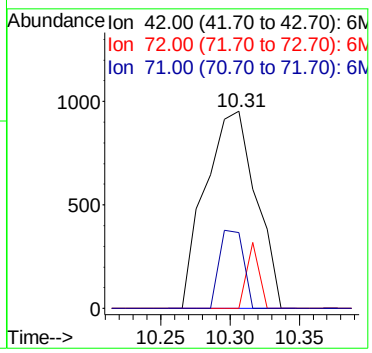

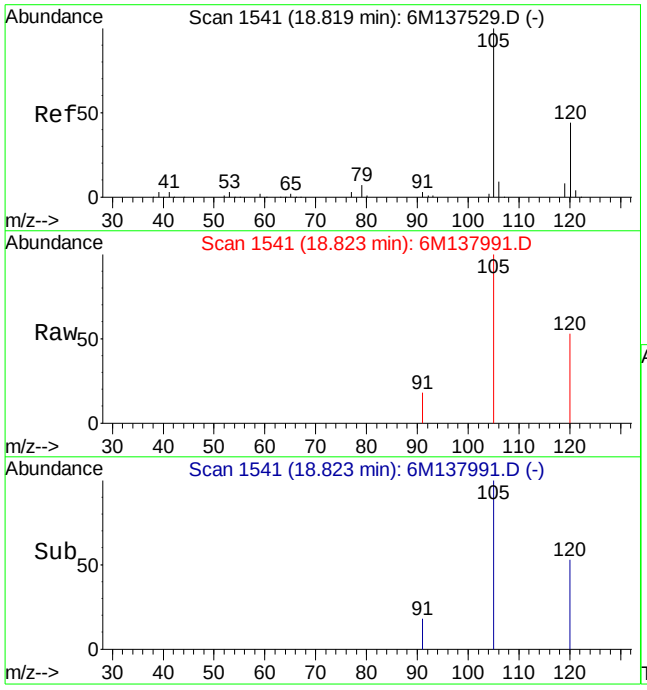

#90
1,2,4-Trimethylbenzene
Concen: 0.38 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. 0.00 min
Lab File: 6M137991.D
Acq: 24 Mar 2016 12:53

Tgt Ion:105 Resp: 4230

Ion	Ratio	Lower	Upper
105	100		
120	41.3	34.3	79.9

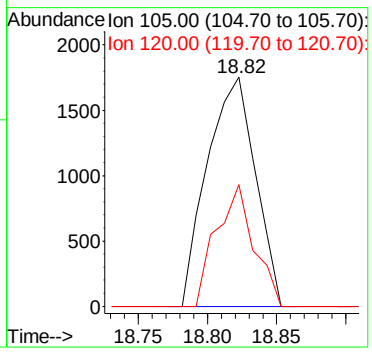

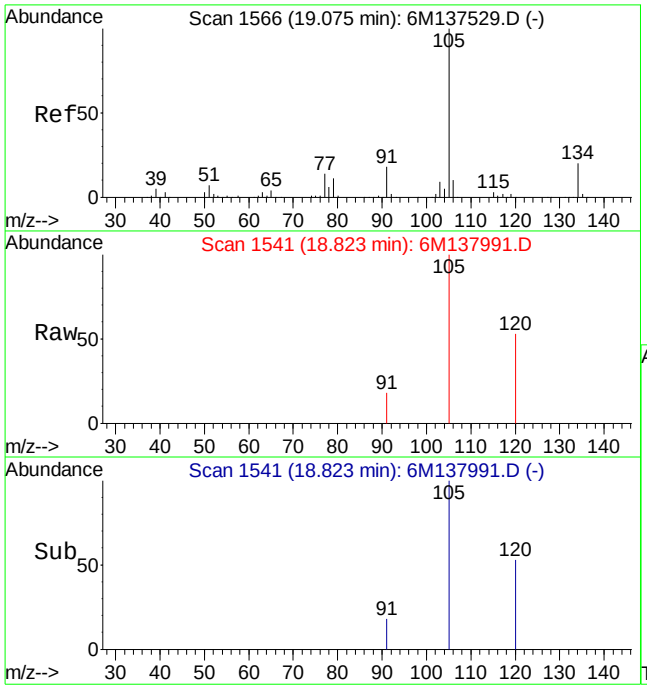

#91
sec-Butylbenzene
Concen: 0.28 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. -0.25 min
Lab File: 6M137991.D
Acq: 24 Mar 2016 12:53

Tgt Ion:105 Resp: 3804

Ion	Ratio	Lower	Upper
105	100		
134	0.0	12.2	28.6#

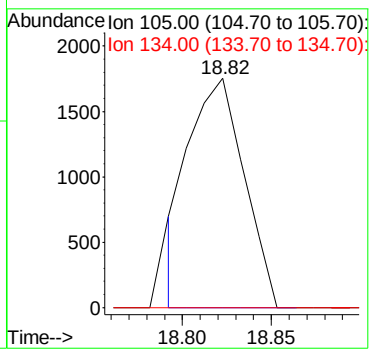

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032316\6M137968.D Vial: 6
Acq On : 23 Mar 2016 14:26 Operator: TMB
Sample : WG562075-02 20ug/Kg LCS STD 8260 Inst : HPMS6
Misc : 7,1 STD75209 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 14:51:25 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	579730	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	431283	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	231205	50.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.33	111	147978	47.5832 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.16%		
43) 1,2-Dichloroethane-d4	11.06	65	176231	43.6454 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 87.30%		
58) Toluene-d8	13.80	98	518030	50.5201 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.04%		
80) p-Bromofluorobenzene	17.79	95	212255	49.9806 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 99.96%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	115533	21.6994 ug/L	99
3) Chloromethane	3.88	50	96875	17.4604 ug/L	97
4) Vinyl Chloride	4.12	62	90596	20.2869 ug/L	99
5) 1,3-Butadiene	4.16	54	41605	11.1976 ug/L	93
6) Bromomethane	5.03	94	52485	22.0474 ug/L	100
7) Chloroethane	5.19	64	60320	23.8216 ug/L	99
8) Trichlorofluoromethane	5.69	101	122043	20.3384 ug/L	100
9) Diethyl ether	6.24	59	292890	106.1009 ug/L	96
10) Isoprene	6.28	67	95722	24.4867 ug/L	89
11) Acrolein	6.48	56	34941	66.6505 ug/L	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	67320	23.5041 ug/L	95
13) Acetone	6.60	43	31704	21.7676 ug/L	93
14) 1,1-Dichloroethene	6.83	61	108067	21.3010 ug/L	94
15) Tert-Butyl Alcohol	6.94	59	94488	199.6007 ug/L	99
16) Dimethyl Sulfide	7.12	62	74623	30.3173 ug/L	96
17) Iodomethane	7.38	142	44576	23.1569 ug/L	98
18) Methyl acetate	7.39	43	65972	18.7122 ug/L	98
19) Methylene Chloride	7.67	84	66371	21.7227 ug/L	85
20) Carbon Disulfide	7.72	76	194167	20.0032 ug/L	99
21) Acrylonitrile	7.87	53	29870	20.6145 ug/L	98
22) Methyl Tert Butyl Ether	7.89	73	195115	22.3617 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	63179	22.5425 ug/L	88
24) n-Hexane	8.24	57	109762	21.5671 ug/L	97
25) Diisopropyl ether	8.61	45	1303599	98.7958 ug/L	95
26) Vinyl Acetate	8.80	43	149448	21.9108 ug/L	98
27) 1,1-Dichloroethane	8.84	63	126368	20.9133 ug/L	99
28) Ethyl-Tert-Butyl ether	9.24	59	1042923	98.6131 ug/L	96
29) 2-Butanone	9.46	43	40223	20.0724 ug/L	98
30) Propionitrile	9.58	54	53739	96.8957 ug/L	99
31) 2,2-Dichloropropane	9.69	77	105935	21.8414 ug/L	92
32) cis-1,2-Dichloroethene	9.77	96	70451	22.5161 ug/L	96
33) Chloroform	10.01	83	116681	20.6765 ug/L	96
34) 1-Bromopropane	10.16	122	15946	37.1719 ug/L	98
35) Bromochloromethane	10.27	130	39818	21.6584 ug/L	100
36) Tetrahydrofuran	10.29	42	126176	93.6952 ug/L	97
38) 1,1,1-Trichloroethane	10.60	97	107996	21.6661 ug/L	100
39) Cyclohexane	10.63	56	130073	23.0127 ug/L	88
40) 1,1-Dichloropropene	10.82	75	87999	21.9221 ug/L	96
41) Tert-Amyl-Methyl ether	10.95	73	898862	107.1369 ug/L	94
42) Carbon Tetrachloride	10.99	117	98570	21.1639 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M137968.D 826_SL.M Wed Mar 23 14:51:26 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032316\6M137968.D Vial: 6
Acq On : 23 Mar 2016 14:26 Operator: TMB
Sample : WG562075-02 20ug/Kg LCS STD 8260 Inst : HPMS6
Misc : 7,1 STD75209 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 14:51:25 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	100537	20.8733	ug/L	99
46)	Benzene	11.23	78	261214	21.6301	ug/L	93
47)	Trichloroethene	12.09	130	66918	23.4556	ug/L	99
48)	Methylcyclohexane	12.18	83	108751	23.5796	ug/L	89
49)	1,2-Dichloropropane	12.34	63	73675	22.6737	ug/L	99
50)	1,4-Dioxane	12.67	88	7263	189.3560	ug/L	83
51)	Bromodichloromethane	12.68	83	89533	20.9969	ug/L	97
52)	Dibromomethane	12.79	93	38004	19.9965	ug/L	98
53)	2-Chloroethyl Vinyl Ether	13.04	63	39396	22.0430	ug/L	97
54)	4-Methyl-2-Pentanone	13.07	58	29050	21.4661	ug/L	92
55)	cis-1,3-Dichloropropene	13.43	75	112363	23.9168	ug/L	98
56)	Dimethyl Disulfide	13.72	79	53153	22.4322	ug/L	96
59)	Toluene	13.92	91	265823	21.7890	ug/L	99
60)	Ethyl Methacrylate	14.04	69	85396	21.8459	ug/L	98
62)	trans-1,3-Dichloropropene	14.12	75	97830	20.8539	ug/L	100
63)	1,1,2-Trichloroethane	14.38	97	54038	21.1917	ug/L	99
64)	2-Hexanone	14.31	43	56682	19.4801	ug/L	98
65)	1,3-Dichloropropane	14.74	76	102465	22.1701	ug/L	99
66)	Tetrachloroethene	14.87	166	65164	21.6526	ug/L	99
67)	Dibromochloromethane	15.17	129	66417	20.0271	ug/L	100
68)	1,2-Dibromoethane	15.48	107	55063	21.1146	ug/L	97
69)	1-Chlorohexane	15.59	91	86267	22.7703	ug/L	88
70)	Chlorobenzene	16.07	112	172795	22.0381	ug/L	71
71)	1,1,1,2-Tetrachloroethane	16.11	131	65682	20.8632	ug/L	95
72)	Ethylbenzene	16.10	106	94609	22.5484	ug/L	99
73)	m-,p-Xylene	16.22	106	227852	44.3817	ug/L	96
74)	o-Xylene	16.88	106	114068	23.5896	ug/L	95
75)	Styrene	16.92	104	182254	22.1446	ug/L	95
76)	Bromoform	17.49	173	43746	18.6823	ug/L	98
77)	Isopropylbenzene	17.38	105	300373	23.1080	ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.65	83	75366	20.8669	ug/L	95
81)	1,2,3-Trichloropropane	17.87	110	23710	21.4408	ug/L	90
82)	trans-1,4-Dichloro-2-Buten	17.93	53	20263	15.1970	ug/L	91
83)	n-Propylbenzene	17.98	91	361052	22.9946	ug/L	99
84)	Bromobenzene	18.13	156	75422	22.0982	ug/L	98
85)	1,3,5-Trimethylbenzene	18.21	105	260340	23.2939	ug/L	97
86)	2-Chlorotoluene	18.30	91	237249	22.6378	ug/L	96
87)	4-Chlorotoluene	18.36	91	216226	22.5642	ug/L	97
88)	a-Methylstyrene	18.69	118	126927	23.3860	ug/L	99
89)	tert-Butylbenzene	18.75	134	53940	23.1586	ug/L	94
90)	1,2,4-Trimethylbenzene	18.82	105	263268	22.3986	ug/L	83
91)	sec-Butylbenzene	19.08	105	327661	22.8929	ug/L	99
92)	p-Isopropyltoluene	19.27	119	267924	22.6893	ug/L	99
93)	1,3-Dichlorobenzene	19.48	146	146035	22.1134	ug/L	98
94)	1,4-Dichlorobenzene	19.64	146	145979	21.7161	ug/L	97
95)	n-Butylbenzene	19.89	91	253278	21.3257	ug/L	98
96)	1,2-Dichlorobenzene	20.23	146	142712	22.4578	ug/L	97
97)	1,2-Dibromo-3-Chloropropan	21.41	75	15967	19.9803	ug/L	98
98)	1,2,4-Trichlorobenzene	22.76	180	98796	21.5056	ug/L	99
99)	Hexachlorobutadiene	22.96	225	59057	22.4787	ug/L	99
100)	Naphthalene	23.20	128	217178	20.5640	ug/L	100
101)	1,2,3-Trichlorobenzene	23.59	180	96490	21.3303	ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032316\6M137968.D Vial: 6
Acq On : 23 Mar 2016 14:26 Operator: TMB
Sample : WG562075-02 20ug/Kg LCS STD 8260 Inst : HPMS6
Misc : 7,1 STD75209 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 14:51 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

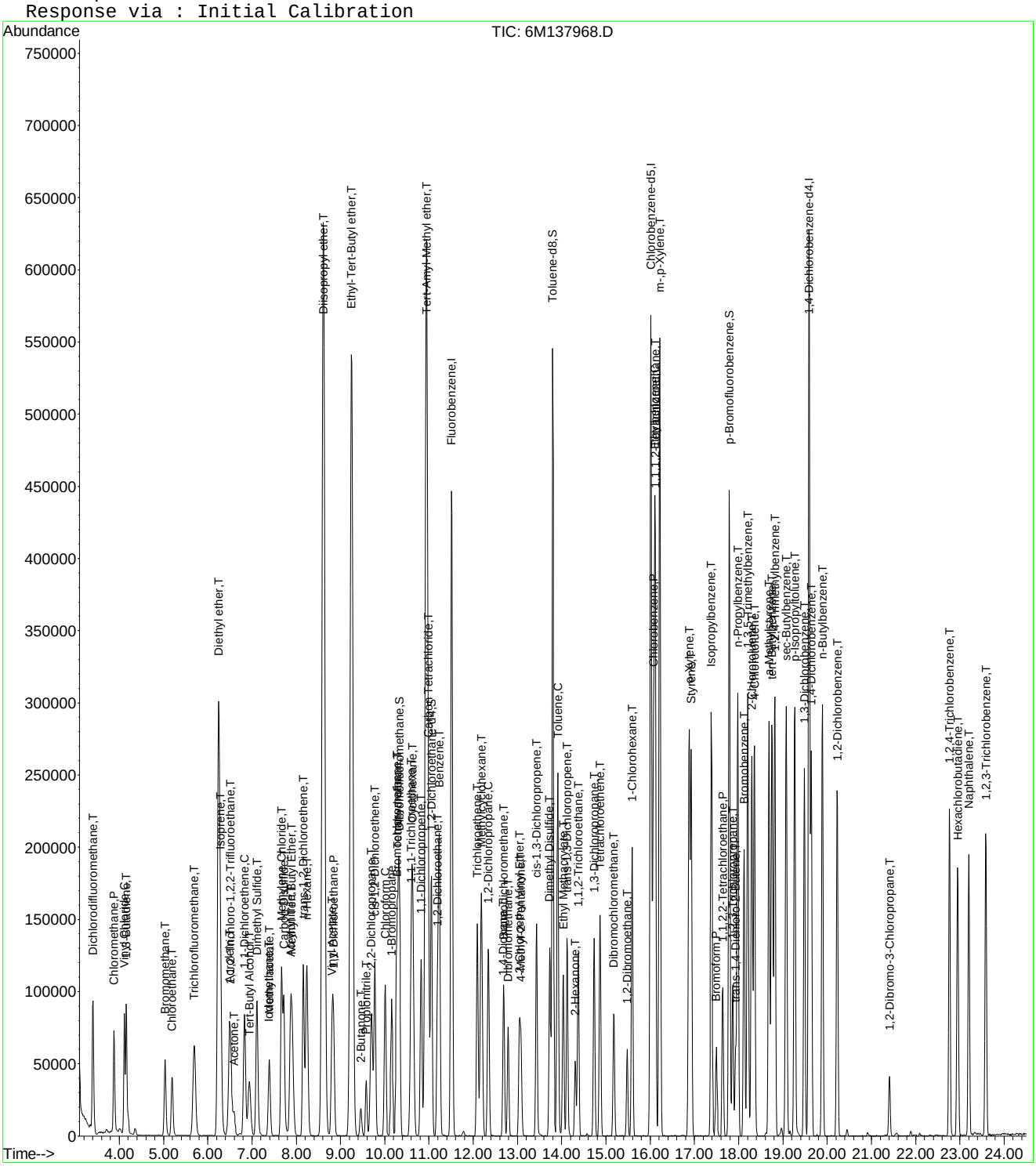

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032416\6M137994.D Vial: 7
Acq On : 24 Mar 2016 14:32 Operator: TMB
Sample : WG562236-02 20ug/Kg LCS STD 8260 Inst : HPMS6
Misc : 7,1 STD75209 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 14:56:29 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	574597	50.00 ug/L	0.01
57) Chlorobenzene-d5	16.01	117	434319	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	234089	50.00 ug/L	0.01

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	147486	47.8486 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.70%		
43) 1,2-Dichloroethane-d4	11.06	65	177687	44.3991 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 88.80%		
58) Toluene-d8	13.80	98	516894	50.0569 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 100.12%		
80) p-Bromofluorobenzene	17.79	95	221024	51.4042 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.80%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	115216	21.8332 ug/L	98
3) Chloromethane	3.89	50	107708	19.5864 ug/L	99
4) Vinyl Chloride	4.12	62	73795	16.6723 ug/L	97
5) 1,3-Butadiene	4.16	54	31981	8.6843 ug/L	94
6) Bromomethane	5.03	94	51064	21.6421 ug/L	99
7) Chloroethane	5.20	64	59626	23.7578 ug/L	98
8) Trichlorofluoromethane	5.69	101	122119	20.5329 ug/L	99
9) Diethyl ether	6.24	59	288904	105.5919 ug/L	95
10) Isoprene	6.28	67	96089	24.8002 ug/L	90
11) Acrolein	6.50	56	37541	72.2497 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	68594	24.1628 ug/L	94
13) Acetone	6.60	43	32376	22.5608 ug/L	99
14) 1,1-Dichloroethene	6.83	61	109854	21.8467 ug/L	93
15) Tert-Butyl Alcohol	6.94	59	108329	230.8833 ug/L	97
16) Dimethyl Sulfide	7.12	62	76540	31.3739 ug/L	97
17) Iodomethane	7.38	142	45451	23.6797 ug/L	94
18) Methyl acetate	7.39	43	71285	20.3997 ug/L	95
19) Methylene Chloride	7.67	84	68073	22.4788 ug/L	87
20) Carbon Disulfide	7.72	76	192354	19.9934 ug/L	99
21) Acrylonitrile	7.87	53	31745	22.1043 ug/L	99
22) Methyl Tert Butyl Ether	7.90	73	201298	23.2764 ug/L	93
23) trans-1,2-Dichloroethene	8.16	96	64607	23.2579 ug/L	88
24) n-Hexane	8.24	57	106871	21.1866 ug/L	97
25) Diisopropyl ether	8.61	45	1292602	98.8375 ug/L	95
26) Vinyl Acetate	8.80	43	150695	22.2910 ug/L	98
27) 1,1-Dichloroethane	8.84	63	129795	21.6723 ug/L	99
28) Ethyl-Tert-Butyl ether	9.24	59	1048017	99.9800 ug/L	97
29) 2-Butanone	9.46	43	43331	21.8165 ug/L	99
30) Propionitrile	9.58	54	56460	102.7113 ug/L	99
31) 2,2-Dichloropropane	9.70	77	110332	22.9512 ug/L	92
32) cis-1,2-Dichloroethene	9.77	96	71458	23.0419 ug/L	96
33) Chloroform	10.01	83	120355	21.5181 ug/L	97
34) 1-Bromopropane	10.16	122	15565	36.6079 ug/L	98
35) Bromochloromethane	10.27	130	41560	22.8079 ug/L	99
36) Tetrahydrofuran	10.29	42	131874	98.9196 ug/L	98
38) 1,1,1-Trichloroethane	10.60	97	110512	22.3689 ug/L	99
39) Cyclohexane	10.64	56	128739	22.9802 ug/L	87
40) 1,1-Dichloropropene	10.82	75	90263	22.6869 ug/L	97
41) Tert-Amyl-Methyl ether	10.95	73	906124	108.9673 ug/L	95
42) Carbon Tetrachloride	10.99	117	101820	22.0570 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M137994.D 826_SL.M Thu Mar 24 14:56:30 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032416\6M137994.D Vial: 7
Acq On : 24 Mar 2016 14:32 Operator: TMB
Sample : WG562236-02 20ug/Kg LCS STD 8260 Inst : HPMS6
Misc : 7,1 STD75209 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 14:56:29 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45) 1,2-Dichloroethane	11.19	62	102033	21.3732 ug/L	100
46) Benzene	11.23	78	267794	22.3730 ug/L	94
47) Trichloroethene	12.09	130	67998	24.0471 ug/L	98
48) Methylcyclohexane	12.18	83	106476	23.2926 ug/L	89
49) 1,2-Dichloropropane	12.35	63	76058	23.6162 ug/L	98
50) 1,4-Dioxane	12.68	88	8524	218.5443 ug/L	86
51) Bromodichloromethane	12.69	83	91217	21.5829 ug/L	97
52) Dibromomethane	12.79	93	39508	20.9736 ug/L	99
53) 2-Chloroethyl Vinyl Ether	13.04	63	43746	24.6956 ug/L	99
54) 4-Methyl-2-Pentanone	13.07	58	31185	23.2496 ug/L	93
55) cis-1,3-Dichloropropene	13.43	75	115946	24.8999 ug/L	97
56) Dimethyl Disulfide	13.72	79	54397	23.1623 ug/L	97
59) Toluene	13.91	91	274606	22.3516 ug/L	99
60) Ethyl Methacrylate	14.04	69	89291	22.6826 ug/L	99
62) trans-1,3-Dichloropropene	14.12	75	102264	21.6467 ug/L	100
63) 1,1,2-Trichloroethane	14.38	97	56589	22.0370 ug/L	98
64) 2-Hexanone	14.31	43	62653	21.3817 ug/L	97
65) 1,3-Dichloropropane	14.74	76	107578	23.1137 ug/L	98
66) Tetrachloroethene	14.87	166	67049	22.1232 ug/L	99
67) Dibromochloromethane	15.17	129	69679	20.8639 ug/L	99
68) 1,2-Dibromoethane	15.48	107	58482	22.2689 ug/L	98
69) 1-Chlorohexane	15.59	91	86879	22.7716 ug/L	90
70) Chlorobenzene	16.07	112	176541	22.3585 ug/L #	68
71) 1,1,1,2-Tetrachloroethane	16.11	131	69153	21.8122 ug/L	97
72) Ethylbenzene	16.10	106	95436	22.5865 ug/L	97
73) m-,p-Xylene	16.22	106	237457	45.9293 ug/L	98
74) o-Xylene	16.88	106	118239	24.2813 ug/L	94
75) Styrene	16.92	104	189823	22.9030 ug/L	96
76) Bromoform	17.50	173	46487	19.7141 ug/L	98
77) Isopropylbenzene	17.38	105	312465	23.8703 ug/L	97
79) 1,1,2,2-Tetrachloroethane	17.65	83	83080	22.7194 ug/L	95
81) 1,2,3-Trichloropropane	17.87	110	25730	22.9808 ug/L	93
82) trans-1,4-Dichloro-2-Buten	17.93	53	22504	16.6698 ug/L	88
83) n-Propylbenzene	17.98	91	375556	23.6237 ug/L	98
84) Bromobenzene	18.13	156	77717	22.4901 ug/L	98
85) 1,3,5-Trimethylbenzene	18.21	105	270551	23.9093 ug/L	96
86) 2-Chlorotoluene	18.30	91	240188	22.6359 ug/L	96
87) 4-Chlorotoluene	18.36	91	223807	23.0675 ug/L	96
88) a-Methylstyrene	18.69	118	132580	24.1266 ug/L	98
89) tert-Butylbenzene	18.76	134	56248	23.8520 ug/L	97
90) 1,2,4-Trimethylbenzene	18.82	105	270874	22.7618 ug/L	82
91) sec-Butylbenzene	19.08	105	337781	23.3092 ug/L	99
92) p-Isopropyltoluene	19.27	119	280505	23.4621 ug/L	99
93) 1,3-Dichlorobenzene	19.48	146	152247	22.7700 ug/L	97
94) 1,4-Dichlorobenzene	19.65	146	152007	22.3343 ug/L	96
95) n-Butylbenzene	19.89	91	262378	21.8198 ug/L	99
96) 1,2-Dichlorobenzene	20.23	146	149257	23.1984 ug/L	96
97) 1,2-Dibromo-3-Chloropropan	21.41	75	18642	23.0402 ug/L	99
98) 1,2,4-Trichlorobenzene	22.77	180	105427	22.6662 ug/L	98
99) Hexachlorobutadiene	22.96	225	61298	23.0443 ug/L	98
100) Naphthalene	23.20	128	238815	22.3342 ug/L	100
101) 1,2,3-Trichlorobenzene	23.59	180	100207	21.8790 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M137994.D 826_SL.M Thu Mar 24 14:56:30 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032416\6M137994.D Vial: 7
Acq On : 24 Mar 2016 14:32 Operator: TMB
Sample : WG562236-02 20ug/Kg LCS STD 8260 Inst : HPMS6
Misc : 7,1 STD75209 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 14:56 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

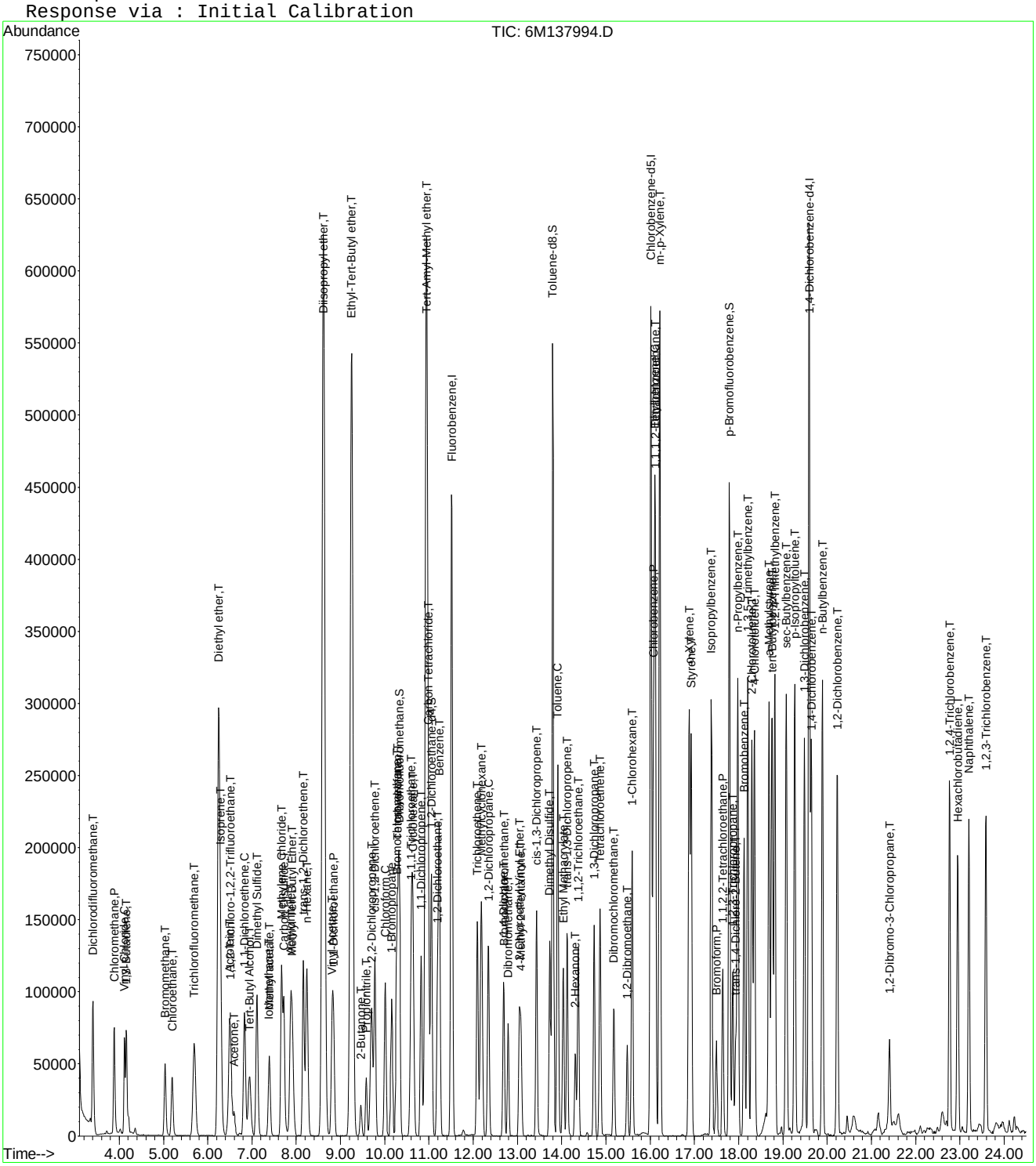

2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT16(5-5.5)150316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/17/2016 23:51
Collect Date:	03/15/2016 09:20	**Dilution:**	1	**File ID:**	1LM.LM33909
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	41.8		4.92	2.46	1.23

Certificate of Analysis

Sample #:	L16030863-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT16(5-5.5)150316MS	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 00:09
Collect Date:	03/15/2016 09:20	**Dilution:**	1	**File ID:**	1LM.LM33910
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	41.4		4.92	2.46	1.23

Certificate of Analysis

Sample #:	L16030863-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT16(5-5.5)150316MSD	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 00:28
Collect Date:	03/15/2016 09:20	**Dilution:**	1	**File ID:**	1LM.LM33911
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	51.0		4.91	2.46	1.23

Certificate of Analysis

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L16030863-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT16(15-15.5)150316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 00:47
Collect Date:	03/15/2016 09:25	**Dilution:**	1	**File ID:**	1LM.LM33912
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	86.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	11.3		4.60	2.30	1.15

Certificate of Analysis

Sample #:	L16030863-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT16(25-25.5)150316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 14:28
Collect Date:	03/15/2016 10:35	**Dilution:**	10	**File ID:**	1LM.LM33936
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	81.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	434		48.0	24.0	12.0

Certificate of Analysis

Sample #:	L16030863-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPT16(30-30.5)150316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 14:46
Collect Date:	03/15/2016 10:40	**Dilution:**	50	**File ID:**	1LM.LM33937
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	79.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1230		237	119	59.3

Certificate of Analysis

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L16030863-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT16(33-33.5)150316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 15:05
Collect Date:	03/15/2016 10:45	**Dilution:**	100	**File ID:**	1LM.LM33938
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	77.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3090		507	254	127

Certificate of Analysis

Sample #:	L16030863-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT17(2.5-3)150316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 03:00
Collect Date:	03/15/2016 11:50	**Dilution:**	1	**File ID:**	1LM.LM33919
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.36	U	4.72	2.36	1.18

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-09	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT17(2.5-3)150316FD	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 03:19
Collect Date:	03/15/2016 11:50	**Dilution:**	1	**File ID:**	1LM.LM33920
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.32	U	4.63	2.32	1.16

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-10	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT17(5-5.5)150316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 03:38
Collect Date:	03/15/2016 11:55	**Dilution:**	1	**File ID:**	1LM.LM33921
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	78.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.54	U	5.06	2.54	1.27

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-11	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT17(10-10.5)150316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 03:57
Collect Date:	03/15/2016 12:00	**Dilution:**	1	**File ID:**	1LM.LM33922
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.48	U	4.95	2.48	1.24

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-12	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT17(18-18.5)150316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 15:24
Collect Date:	03/15/2016 12:30	**Dilution:**	10	**File ID:**	1LM.LM33939
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	83.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	172		48.1	24.0	12.0

Certificate of Analysis

Sample #:	L16030863-13	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT17(27-27.5)150316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 15:43
Collect Date:	03/15/2016 12:45	**Dilution:**	100	**File ID:**	1LM.LM33940
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	78.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2170		498	248	124

Certificate of Analysis

Sample #:	L16030863-14	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT17(21.5-22)150316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 16:02
Collect Date:	03/15/2016 13:00	**Dilution:**	50	**File ID:**	1LM.LM33941
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	82.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1500		240	120	60.1

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

MICROBAC

Semivolatile Sample Extract Log

Document Control No.: 1753 Page: 20 of 100

Parameter: Perchlorate
SOP #: HPLC 06
Analyst: JWR
Spike/Surrogate analyst: JWR
Surrogate #: NA
Spike # A: STD72686
Ext Solvent: DI-H2O
Ext Solvent: NA
Ext Disk: NA

Matrix: Soils
Rev #: 07
Date/Time Extracted: 03/17/16/1230
Witness: WD

Spike # B: NA
Lot #: NA
Lot #: NA
Lot #: NA

Extraction Work Group: WG561293
Analytical Work Group: WG561318
Run ID: R4502817

Pipetter(s): Eppendorf #403
Analytical Balance ID: BAL014
Reagent: Tubes Lot #: RGT34011
Reagent: Sand Lot #: COA16150
Other: IS Lot #: COA18071

Color Code
T = Transparent
C = Colored
O = Opaque

	Sample ID	Test Code	pH	Initial Wt / Vol	JWR ~~Surrogate~~ Amount IS	Amount Spike	Final Volume	Extract Color	Comments
1	WG561293-01	6850		5.015g	0.250 ml	1.0 ml	50ml		MCT (2ug/kg) (10,000 us)
2	WG561293-02			5.019g		NA			Blank
3	WG561293-03			5.006g		1.0ml			LCS (2ug/kg)
4	L16030863-01RS			5.126g		NA			WG561293-04 Ref
5	-02 MS			5.128g		1.0ml			WG561293-05 MS (@2ug/kg)
6	-03 MSD			5.138g		1.0ml			WG561293-06 MSD (@2ug/kg)
7	-04			5.044g		NA			
8	-05			5.128g		NA			
9	-06			5.298g		NA			
10	-07			5.083g		NA			
11	-08			5.036g		NA			
12	-09			5.174g		NA			
13	-10			5.011g		NA			
14	-11			5.024g		NA			
15	-12			5.008g		NA			
16	-13			5.098g		NA			
17	-14			5.055g		NA			
18									
19									
20									
21									
22									
23									
24									

JWR 03/17/16

Reviewed by: Walter. Dey 3-17-16

Analytical WG561318 (soils)

Perchlorate Conductivity Check

(perchlorate1)

Conductivity Probe Calibration Check: 1405 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG561293-01 MCT	9900.	
WG561293-02 Blank	1.82	
WG561293-03 LCS	2.01	
L16030863-01 RS	8.67	
-02 MS	8.88	
-03 MSD	9.85	
-04	5.07	
-05	7.75	
-06	6.30	
-07	9.21	
-08	2.27	
-09	3.02	
-10	4.16	
-11	5.27	
-12	11.39	
-13	18.05	
-14	8.70	

Analyst: John Richards

Date/Time: 03/18/16 / 1330

DCN#117301

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030216_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015, WG559292

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 MS/MSD STD: STD72685

Comments: L16021262s and L16021255s diluted based on historical data.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM33567	WG559340-01 CCB	1	1		03/02/16 08:34
2	1LM.LM33568	WG559340-02 STD (0.1 ug/L)	1	1	STD72683	03/02/16 08:53
3	1LM.LM33569	WG559340-03 STD (0.2 ug/L)	1	1	STD72683	03/02/16 09:12
4	1LM.LM33570	WG559340-04 STD (0.5 ug/L)	1	1	STD72683	03/02/16 09:31
5	1LM.LM33571	WG559340-05 STD (1.0 ug/L)	1	1	STD72683	03/02/16 09:50
6	1LM.LM33572	WG559340-06 STD (2.0 ug/L)	1	1	STD72683	03/02/16 10:09
7	1LM.LM33573	WG559340-07 STD (5.0 ug/L)	1	1	STD72683	03/02/16 10:28
8	1LM.LM33574	WG559340-08 STD (10 ug/L)	1	1	STD72683	03/02/16 10:46
9	1LM.LM33575	WG559340-09 SSCV (1.0 ug/L)	1	1	STD72685	03/02/16 11:05
10	1LM.LM33576	WG559291-01 CCB	1	1		03/02/16 11:25
11	1LM.LM33577	WG559291-02 CCV (1.0ug/L)	1	1	STD72683	03/02/16 11:44
12	1LM.LM33578	WG559015-05 MRL (0.2ug/L)	1	1	STD72683	03/02/16 12:03
13	1LM.LM33579	WG559015-01 MCT (0.2ug/L)	1	1	STD72685	03/02/16 12:22
14	1LM.LM33580	WG559015-02 BLANK	1	1		03/02/16 12:41
15	1LM.LM33581	WG559015-05 MRL (0.2ug/L)	1	1	STD72683	03/02/16 13:01
16	1LM.LM33582	WG559015-03 LCS (0.2ug/L)	1	1	STD72685	03/02/16 13:20
17	1LM.LM33583	WG559015-04 LCS2 (0.2ug/L)	1	1	STD72685	03/02/16 13:39
18	1LM.LM33584	L16021060-01 ADC	1	1	STD72685	03/02/16 13:58
19	1LM.LM33585	L16021060-02 ADC	1	1	STD72685	03/02/16 14:17
20	1LM.LM33586	L16021060-03 ADC	1	1	STD72685	03/02/16 14:36
21	1LM.LM33587	L16021060-04 ADC	1	1	STD72685	03/02/16 14:55
22	1LM.LM33588	L16021262-01 (20x)	1	20		03/02/16 15:13
23	1LM.LM33589	L16021262-02 (5000x)	1	5000		03/02/16 15:32
24	1LM.LM33590	WG559291-03 CCV (1.0ug/L)	1	1	STD72683	03/02/16 15:51
25	1LM.LM33591	WG559015-06 MRL (0.2ug/L)	1	1	STD72683	03/02/16 16:10
26	1LM.LM33592	WG559291-04 CCB	1	1		03/02/16 16:29
27	1LM.LM33593	L16021262-03 (100X)	1	100		03/02/16 16:48
28	1LM.LM33594	L16021262-04 (2000X)	1	2000		03/02/16 17:07
29	1LM.LM33595	L16021262-05 (1000X)	1	1000		03/02/16 17:26
30	1LM.LM33596	L16021262-06 (10,000X)	1	10000		03/02/16 17:45
31	1LM.LM33597	L16021262-07 (10,000X)	1	10000		03/02/16 18:04
32	1LM.LM33598	L16021262-08 (5000X)	1	5000		03/02/16 18:23
33	1LM.LM33599	L16021262-09 (5000X)	1	5000		03/02/16 18:42

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030216_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015, WG559292

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM33600	L16021262-10 (100,000X)	1	100000		03/02/16 19:01
35	1LM.LM33601	L16021262-11 (10,000X)	1	10000		03/02/16 19:20
36	1LM.LM33602	L16021262-12 (10,000X)	1	10000		03/02/16 19:39
37	1LM.LM33603	WG559291-05 CCV (1.0ug/L)	1	1	STD72683	03/02/16 19:58
38	1LM.LM33604	WG559015-07 MRL (0.2ug/L)	1	1	STD72683	03/02/16 20:17
39	1LM.LM33605	WG559291-06 CCB	1	1		03/02/16 20:35
40	1LM.LM33606	L16021262-13 (10,000X)	1	10000		03/02/16 20:54
41	1LM.LM33607	L16021262-14 (10,000X)	1	10000		03/02/16 21:13
42	1LM.LM33608	WG559291-07 CCV (1.0ug/L)	1	1	STD72683	03/02/16 21:32
43	1LM.LM33609	WG559015-08 MRL (0.2ug/L)	1	1	STD72683	03/02/16 21:51
44	1LM.LM33610	WG559291-08 CCB	1	1		03/02/16 22:10
45	1LM.LM33611	WG559292-07 MRL (0.2ug/L)	1	1	STD72685	03/02/16 22:29
46	1LM.LM33612	WG559292-01 MCT (0.2ug/L)	1	1	STD72685	03/02/16 22:48
47	1LM.LM33613	WG559292-02 BLANK	1	1		03/02/16 23:07
48	1LM.LM33614	WG559292-03 LCS (0.2ug/L)	1	1	STD72685	03/02/16 23:26
93	1LM.LM33615	L16021255-01 REF 100X	1	100		03/02/16 23:45
50	1LM.LM33616	L16021255-02 MS 100X	1	100	STD72685	03/03/16 00:04
51	1LM.LM33617	L16021255-03 MSD 100X	1	100	STD72685	03/03/16 00:23
94	1LM.LM33618	L16021255-04 20X	1	20		03/03/16 00:42
53	1LM.LM33619	L16021255-05 20X	1	20		03/03/16 01:01
54	1LM.LM33620	L16021255-06 200X	1	200		03/03/16 01:20
55	1LM.LM33621	L16021255-07 100X	1	100		03/03/16 01:39
56	1LM.LM33622	WG559291-09 CCV (1.0ug/L)	1	1	STD72685	03/03/16 01:57
57	1LM.LM33623	WG559292-08 MRL (0.2ug/L)	1	1	STD72685	03/03/16 02:16
58	1LM.LM33624	WG559291-10 CCB	1	1		03/03/16 02:35
59	1LM.LM33625	L16021255-08	1	1		03/03/16 02:54
60	1LM.LM33626	L16021255-09 500X	1	500		03/03/16 03:13
61	1LM.LM33627	L16021255-10 5000X	1	5000		03/03/16 03:32
62	1LM.LM33628	L16021255-11 5000X	1	5000		03/03/16 03:51
63	1LM.LM33629	L16021255-12 100X	1	100		03/03/16 04:10
64	1LM.LM33630	L16021255-13 10,000X	1	10000		03/03/16 04:29
65	1LM.LM33631	L16021255-14 10,000X	1	10000		03/03/16 04:48
66	1LM.LM33632	L16030008-01	1	1		03/03/16 05:07
67	1LM.LM33633	L16030008-01 10X	1	10		03/03/16 05:26
68	1LM.LM33634	L16021328-01	1	1		03/03/16 05:45
69	1LM.LM33635	WG559291-11 CCV (1.0ug/L)	1	1	STD72685	03/03/16 06:04

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030216_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015, WG559292

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
70	1LM.LM33636	WG559292-09 MRL (0.2ug/L)	1	1	STD72685	03/03/16 06:23
71	1LM.LM33637	WG559291-12 CCB	1	1		03/03/16 06:41
72	1LM.LM33638	L16021328-02	1	1		03/03/16 07:00
73	1LM.LM33639	L16021328-03	1	1		03/03/16 07:19
74	1LM.LM33640	L16021328-04	1	1		03/03/16 07:38
75	1LM.LM33641	L16021328-05	1	1		03/03/16 07:57
76	1LM.LM33642	WG559291-13 CCV (1.0ug/L)	1	1	STD72685	03/03/16 08:16
77	1LM.LM33643	WG559292-10 MRL (0.2ug/L)	1	1	STD72685	03/03/16 08:35
78	1LM.LM33644	WG559291-14 CCB	1	1		03/03/16 08:54
79	1LM.LM33645	L16021255-05 200X	1	200		03/03/16 09:13
80	1LM.LM33646	L16021255-06	1	1		03/03/16 09:32
81	1LM.LM33647	L16021255-12 1000X	1	1000		03/03/16 09:51
95	1LM.LM33648	L16021255-04	1	1		03/03/16 10:10
96	1LM.LM33649	L16021255-02 MS	1	1	STD72685	03/03/16 10:29
97	1LM.LM33650	L16021255-03 MSD	1	1	STD72685	03/03/16 10:48
85	1LM.LM33651	WG559291-15 CCV (1.0ug/L)	1	1	STD72685	03/03/16 11:07
86	1LM.LM33652	WG559292-11 MRL (0.2ug/L)	1	1	STD72685	03/03/16 11:25
87	1LM.LM33653	WG559291-16 CCB	1	1		03/03/16 11:44

Comments

Seq.	Rerun	Dil.	Reason	Analytes
12	X			
	WG559015-05 incorrect vial location.			
50				
	DNR. Incorrect information on the supplied Chain of Custody.			
51				
	DNR. Incorrect information on the supplied Chain of Custody.			
94	X	1	Analyzed too dilute	
	L16021255-04			
53	X	200	Over Calibration Range	Perchlorate
	L16021255-05			
54	X	1	Analyzed too dilute	
	L16021255-06			
63	X	1000	Over Calibration Range	
	L16021255-12 100X			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 031716_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG561316 (soils) Analytical WG561318 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD72683 (03/02/2016)

CCV STD: STD72683 LCS STD: STD72685 MS/MSD STD: STD72685

Comments: Samples tagged with (NR) had "On Column" results over the calibration range when analyzed neat. These samples were reanalyzed at dilutions on the end of the run.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM33881	WG561324-01 CCB	1	1		03/17/16 15:00
2	1LM.LM33882	WG561324-02 CCV (1.0ug/L)	1	1	STD72683	03/17/16 15:19
3	1LM.LM33883	WG561316-07 MRL (2.0ug/kg)	7	1	STD72683	03/17/16 15:38
4	1LM.LM33884	WG561316-01 MCT (2.0ug/kg)	7	1	STD72685	03/17/16 15:57
5	1LM.LM33885	WG561316-02 BLANK	7	1		03/17/16 16:16
6	1LM.LM33886	WG561316-03 LCS (2.0ug/kg)	7	1	STD72685	03/17/16 16:35
7	1LM.LM33887	L16030861-01 REF	7	1		03/17/16 16:54
8	1LM.LM33888	L16030861-01 MS	7	1	STD72685	03/17/16 17:13
9	1LM.LM33889	L16030861-01 MSD	7	1	STD72685	03/17/16 17:32
10	1LM.LM33890	L16030861-02	7	1		03/17/16 17:51
11	1LM.LM33891	L16030861-03	7	1		03/17/16 18:10
12	1LM.LM33892	L16030861-04	7	1		03/17/16 18:29
13	1LM.LM33893	L16030861-05	7	1		03/17/16 18:48
14	1LM.LM33894	WG561324-03 CCV (1.0ug/L)	1	1	STD72683	03/17/16 19:07
15	1LM.LM33895	WG561316-08 MRL (2.0ug/kg)	7	1	STD72683	03/17/16 19:25
16	1LM.LM33896	WG561324-04 CCB	1	1		03/17/16 19:44
17	1LM.LM33897	L16030861-06	7	1		03/17/16 20:03
18	1LM.LM33898	L16030861-07	7	1		03/17/16 20:22
19	1LM.LM33899	L16030861-08 (NR)	7	1		03/17/16 20:41
20	1LM.LM33900	L16030861-09 (NR)	7	1		03/17/16 21:00
21	1LM.LM33901	L16030861-10 (NR)	7	1		03/17/16 21:19
22	1LM.LM33902	WG561324-05 CCV (1.0ug/L)	1	1	STD72683	03/17/16 21:38
23	1LM.LM33903	WG561316-09 MRL (2.0ug/kg)	7	1	STD72683	03/17/16 21:57
24	1LM.LM33904	WG561318-07 MRL (2.0ug/kg)	7	1	STD72683	03/17/16 22:16
25	1LM.LM33905	WG561324-06 CCB	1	1		03/17/16 22:35
26	1LM.LM33906	WG561318-01 MCT (2.0ug/kg)	7	1	STD72685	03/17/16 22:54
27	1LM.LM33907	WG561318-02 BLANK	7	1		03/17/16 23:13
28	1LM.LM33908	WG561318-03 LCS (2.0ug/kg)	7	1	STD72685	03/17/16 23:32
29	1LM.LM33909	L16030863-01 RS	7	1		03/17/16 23:51
30	1LM.LM33910	L16030863-02 MS	7	1	STD72685	03/18/16 00:09
31	1LM.LM33911	L16030863-03 MSD	7	1	STD72685	03/18/16 00:28
32	1LM.LM33912	L16030863-04	7	1		03/18/16 00:47
33	1LM.LM33913	L16030863-05 (NR)	7	1		03/18/16 01:06

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 031716_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG561316 (soils) Analytical WG561318 (soils)

Internal STD: COA18071 Surrogate STD: NA STD72683 (03/02/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM33914	L16030863-06 (NR)	7	1		03/18/16 01:25
35	1LM.LM33915	L16030863-07 (NR)	7	1		03/18/16 01:44
36	1LM.LM33916	WG561324-07 CCV (1.0ug/L)	1	1	STD72683	03/18/16 02:03
37	1LM.LM33917	WG561318-08 MRL (2.0ug/kg)	7	1	STD72683	03/18/16 02:22
38	1LM.LM33918	WG561324-08 CCB	1	1		03/18/16 02:41
39	1LM.LM33919	L16030863-08	7	1		03/18/16 03:00
40	1LM.LM33920	L16030863-09	7	1		03/18/16 03:19
41	1LM.LM33921	L16030863-10	7	1		03/18/16 03:38
42	1LM.LM33922	L16030863-11	7	1		03/18/16 03:57
43	1LM.LM33923	L16030863-12 (NR)	7	1		03/18/16 04:16
44	1LM.LM33924	L16030863-13 (NR)	7	1		03/18/16 04:35
45	1LM.LM33925	L16030863-14 (NR)	7	1		03/18/16 04:54
46	1LM.LM33926	WG561324-09 CCV (1.0ug/L)	1	1	STD72683	03/18/16 05:12
47	1LM.LM33927	WG561318-09 MRL (2.0ug/kg)	7	1	STD72683	03/18/16 05:31
48	1LM.LM33928	WG561324-10 CCB	1	1		03/18/16 05:50
49	1LM.LM33929	WG561324-11 CCV (1.0ug/L)	1	1	STD72683	03/18/16 12:15
50	1LM.LM33930	WG561316-10 MRL (2.0ug/kg)	7	1	STD72683	03/18/16 12:34
51	1LM.LM33931	WG561318-10 MRL (2.0ug/kg)	7	1	STD72683	03/18/16 12:53
52	1LM.LM33932	WG561324-12 CCB	1	1		03/18/16 13:12
53	1LM.LM33933	L16030861-08 (RR 100x)	7	100		03/18/16 13:31
54	1LM.LM33934	L16030861-09 (RR 100x)	7	100		03/18/16 13:50
55	1LM.LM33935	L16030861-10 (RR 100x)	7	100		03/18/16 14:09
56	1LM.LM33936	L16030863-05 (RR 10x)	7	10		03/18/16 14:28
57	1LM.LM33937	L16030863-06 (RR 50x)	7	50		03/18/16 14:46
58	1LM.LM33938	L16030863-07 (RR 100x)	7	100		03/18/16 15:05
59	1LM.LM33939	L16030863-12 (RR 10x)	7	10		03/18/16 15:24
60	1LM.LM33940	L16030863-13 (RR 100x)	7	100		03/18/16 15:43
61	1LM.LM33941	L16030863-14 (RR 50x)	7	50		03/18/16 16:02
62	1LM.LM33942	WG561324-13 CCV (1.0ug/L)	1	1	STD72683	03/18/16 16:21
63	1LM.LM33943	WG561316-11 MRL (2.0ug/kg)	7	1	STD72683	03/18/16 16:40
64	1LM.LM33944	WG561318-11 MRL (2.0ug/kg)	7	1	STD72683	03/18/16 16:59
65	1LM.LM33945	WG561324-14 CCB	1	1		03/18/16 17:18

Comments

Seq.	Rerun	Dil.	Reason	Analytes
30				

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 031716_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG561316 (soils) Analytical WG561318 (soils)

Internal STD: COA18071 Surrogate STD: NA STD72683 (03/02/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Comments

Seq.	Rerun	Dil.	Reason	Analytes
31			L16030863-02 MS : The MS %Rec is below the advisory limit. The parent sample to this MS had a result 17 times greater than that of the spiked amount. This sample's matrix is a non-homogeneous mixture of brown, red and white colored "clay-like" soils.	
			L16030863-03 MSD : The MSD %Rec is above the advisory limit. The parent sample to this MSD had a result 17 times greater than that of the spiked amount. This sample's matrix is a non-homogeneous mixture of brown, red and white colored "clay-like" soils.	

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Microbac Laboratories Inc.

Data Checklist

Date: 02-MAR-2016
Analyst: WTD
Analyst: ADC
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 73617
Analytical Workgroups: L16021255,L16021328,030008,021262,021060

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	WTD
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MES

Primary Reviewer: 03-MAR-2016

Secondary Reviewer: 04-MAR-2016

CHECKLIST1 - Modified 03/05/2008

Generated: MAR-04-2016 13:53:03

Microbac Laboratories Inc.

Data Checklist

Date: 17-MAR-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 73926
Analytical Workgroups: L16030861, 0863 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
18-MAR-2016
John Richards

Secondary Reviewer:
21-MAR-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-21-2016 10:23:48

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG561318

Login Number: L16030863

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18DPT16(5-5.5)150316	01	03/15/16					03/17/2016	2.1	28		03/17/16	.5	28	
18DPT16(5-5.5)150316MS	02	03/15/16					03/17/2016	2.1	28		03/18/16	.5	28	
18DPT16(5-5.5)150316MSD	03	03/15/16					03/17/2016	2.1	28		03/18/16	.5	28	
18DPT16(15-15.5)150316	04	03/15/16					03/17/2016	2.1	28		03/18/16	.5	28	
18DPT16(25-25.5)150316	05	03/15/16					03/17/2016	2.1	28		03/18/16	1.1	28	
18CPT16(30-30.5)150316	06	03/15/16					03/17/2016	2.1	28		03/18/16	1.1	28	
18DPT16(33-33.5)150316	07	03/15/16					03/17/2016	2.1	28		03/18/16	1.1	28	
18DPT17(2.5-3)150316	08	03/15/16					03/17/2016	2	28		03/18/16	.6	28	
18DPT17(2.5-3)150316FD	09	03/15/16					03/17/2016	2	28		03/18/16	.6	28	
18DPT17(5-5.5)150316	10	03/15/16					03/17/2016	2	28		03/18/16	.6	28	
18DPT17(10-10.5)150316	11	03/15/16					03/17/2016	2	28		03/18/16	.6	28	
18DPT17(18-18.5)150316	12	03/15/16					03/17/2016	2	28		03/18/16	1.1	28	
18DPT17(27-27.5)150316	13	03/15/16					03/17/2016	2	28		03/18/16	1.1	28	
18DPT17(21.5-22)150316	14	03/15/16					03/17/2016	2	28		03/18/16	1.1	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4679315
Report generated 03/22/2016 09:52

METHOD BLANK SUMMARY

Login Number: L16030863
Blank File ID: 1LM.LM33907
Prep Date: 03/17/16 12:30
Analyzed Date: 03/17/16 23:13
Analyst: JWR

Work Group: WG561318
Blank Sample ID: WG561318-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG561318-07	1LM.LM33904	03/17/16 22:16	01
MCT	WG561318-01	1LM.LM33906	03/17/16 22:54	01
LCS	WG561318-03	1LM.LM33908	03/17/16 23:32	01
18DPT16(5-5.5)150316	L16030863-01	1LM.LM33909	03/17/16 23:51	01
18DPT16(5-5.5)150316MS	L16030863-02	1LM.LM33910	03/18/16 00:09	01
18DPT16(5-5.5)150316MSD	L16030863-03	1LM.LM33911	03/18/16 00:28	01
18DPT16(15-15.5)150316	L16030863-04	1LM.LM33912	03/18/16 00:47	01
QCMRL	WG561318-08	1LM.LM33917	03/18/16 02:22	01
18DPT17(2.5-3)150316	L16030863-08	1LM.LM33919	03/18/16 03:00	01
18DPT17(2.5-3)150316FD	L16030863-09	1LM.LM33920	03/18/16 03:19	01
18DPT17(5-5.5)150316	L16030863-10	1LM.LM33921	03/18/16 03:38	01
18DPT17(10-10.5)150316	L16030863-11	1LM.LM33922	03/18/16 03:57	01
QCMRL	WG561318-09	1LM.LM33927	03/18/16 05:31	01
QCMRL	WG561318-10	1LM.LM33931	03/18/16 12:53	01
18DPT16(25-25.5)150316	L16030863-05	1LM.LM33936	03/18/16 14:28	DL01
18CPT16(30-30.5)150316	L16030863-06	1LM.LM33937	03/18/16 14:46	DL01
18DPT16(33-33.5)150316	L16030863-07	1LM.LM33938	03/18/16 15:05	DL01
18DPT17(18-18.5)150316	L16030863-12	1LM.LM33939	03/18/16 15:24	DL01
18DPT17(27-27.5)150316	L16030863-13	1LM.LM33940	03/18/16 15:43	DL01
18DPT17(21.5-22)150316	L16030863-14	1LM.LM33941	03/18/16 16:02	DL01
QCMRL	WG561318-11	1LM.LM33944	03/18/16 16:59	01

Report Name: BLANK_SUMMARY
PDF File ID: 4679316
Report generated 03/22/2016 09:52

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16030863 Prep Date: 03/17/16 12:30 Sample ID: WG561318-02
Instrument ID: LCMS1 Run Date: 03/17/16 23:13 Prep Method: 6850
File ID: 1LM.LM33907 Analyst: JWR Method: 6850
Workgroup (AAB#): WG561318 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.996	3.98	0.996	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4679317
22-MAR-2016 09:52

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030863 Run Date: 03/17/2016 Sample ID: WG561318-03
Instrument ID: LCMS1 Run Time: 23:32 Prep Method: 6850
File ID: 1LM.LM33908 Analyst: JWR Method: 6850
Workgroup (AAB#): WG561318 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD72685 Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	2.00	1.98	99.0	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4679318
Report generated: 03/22/2016 09:52

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16030863 Cal ID: LCMS1- 02-MAR-16 Worknum: WG561318
Instrument ID: LCMS1 Contract #: Prep Method: 6850
Parent ID: L16030863-01 File ID: 1LM.LM33909 Dil: 1 Method: 6850
Sample ID: L16030863-02 MS File ID: 1LM.LM33910 Dil: 1 Matrix: Soil
Sample ID: L16030863-03 MSD File ID: 1LM.LM33911 Dil: 1 Units: ug/kg
Percent Solid: 79.3

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Perchlorate	41.8	2.46	41.4	-15.7	2.45	51.0	376	20.8	80 - 120	15	*#

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4679319
Report generated 03/22/2016 09:52

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16030863
Analytical Method: 6850
ICAL Workgroup: WG559340

Instrument ID: LCMS1
Initial Calibration Date: 02-MAR-16 10:46
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.808	3.97	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4680049
Report generated 03/22/2016 09:52

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16030863
Analytical Method: 6850

Instrument ID: LCMS1
Initial Calibration Date: 02-MAR-16 10:46
Column ID: F

Analyte	WG559340-02			WG559340-03			WG559340-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	18400.0000	1.879	0.200	37000.0000	1.850	0.500	89000.0000	1.810

INT_CAL - Modified 03/06/2008
PDF File ID: 4680049
Report generated 03/22/2016 09:52

Login Number: L16030863
Analytical Method: 6850
Instrument ID: LCMS1
Initial Calibration Date: 02-MAR-16 10:46
Column ID: F

Analyte	WG559340-05			WG559340-06			WG559340-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	183000.000	1.829	2.00	363000.000	1.777	5.00	871000.000	1.779

INT_CAL - Modified 03/06/2008
PDF File ID: 4680049
Report generated 03/22/2016 09:52

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16030863
Analytical Method: 6850

Instrument ID: LCMS1
Initial Calibration Date: 02-MAR-16 10:46
Column ID: F

Analyte	WG559340-08		
	CONC	RESP	RF
Perchlorate	10.0	1650000.00	1.729

INT_CAL - Modified 03/06/2008
PDF File ID: 4680049
Report generated 03/22/2016 09:52

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16030863 Run Date: 03/02/2016 Sample ID: WG559340-09
Instrument ID: LCMS1 Run Time: 11:05 Method: 6850
File ID: 1LM.LM33575 Analyst: WTD QC Key: DOD4
ICal Workgroup: WG559340 Cal ID: LCMS1 - 02-MAR-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.83	3.00	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4680050
Report generated 03/22/2016 09:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030863
Run Date: 03/17/2016
Sample ID: WG561324-04
Instrument ID: LCMS1
Run Time: 19:44
Method: 6850
File ID: 1LM.LM33896
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG561318
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4679322
Report generated 03/22/2016 09:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030863
Run Date: 03/17/2016
Sample ID: WG561324-06
Instrument ID: LCMS1
Run Time: 22:35
Method: 6850
File ID: 1LM.LM33905
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG561318
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4679322
Report generated 03/22/2016 09:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030863
Run Date: 03/18/2016
Sample ID: WG561324-08
Instrument ID: LCMS1
Run Time: 02:41
Method: 6850
File ID: 1LM.LM33918
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG561318
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4679322
Report generated 03/22/2016 09:53

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030863
Run Date: 03/18/2016
Sample ID: WG561324-10
Instrument ID: LCMS1
Run Time: 05:50
Method: 6850
File ID: 1LM.LM33928
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG561318
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4679322
Report generated 03/22/2016 09:53

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030863
Run Date: 03/18/2016
Sample ID: WG561324-12
Instrument ID: LCMS1
Run Time: 13:12
Method: 6850
File ID: 1LM.LM33932
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG561318
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4679322
Report generated 03/22/2016 09:53

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030863
Run Date: 03/18/2016
Sample ID: WG561324-14
Instrument ID: LCMS1
Run Time: 17:18
Method: 6850
File ID: 1LM.LM33945
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG561318
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4679322
Report generated 03/22/2016 09:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030863 Run Date: 03/17/2016 Sample ID: WG561324-05
Instrument ID: LCMS1 Run Time: 21:38 Method: 6850
File ID: 1LM.LM33902 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG561318 Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.993	ug/kg	1.76	0.700	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4679321
Report generated 03/22/2016 09:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030863 Run Date: 03/18/2016 Sample ID: WG561324-07
Instrument ID: LCMS1 Run Time: 02:03 Method: 6850
File ID: 1LM.LM33916 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG561318 Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.993	ug/kg	1.76	0.700	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4679321
Report generated 03/22/2016 09:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030863
Run Date: 03/18/2016
Sample ID: WG561324-09
Instrument ID: LCMS1
Run Time: 05:12
Method: 6850
File ID: 1LM.LM33926
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG561318
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/kg	1.78	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4679321
Report generated 03/22/2016 09:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030863 Run Date: 03/18/2016 Sample ID: WG561324-11
Instrument ID: LCMS1 Run Time: 12:15 Method: 6850
File ID: 1LM.LM33929 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG561318 Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.976	ug/kg	1.73	2.40	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4679321
Report generated 03/22/2016 09:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030863
Run Date: 03/18/2016
Sample ID: WG561324-13
Instrument ID: LCMS1
Run Time: 16:21
Method: 6850
File ID: 1LM.LM33942
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG561318
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.978	ug/kg	1.73	2.20	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4679321
Report generated 03/22/2016 09:53

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030863 Run Date: 03/17/2016 Sample ID: WG561318-07

Instrument ID: LCMS1 Run Time: 22:16 Prep Method: 6850

File ID: 1LM.LM33904 Analyst: JWR Method: 6850

Workgroup (AAB#): WG561318 Matrix: Soil Units: ug/kg

Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.88	94.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4679320
Report generated 03/22/2016 09:52

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030863 Run Date: 03/18/2016 Sample ID: WG561318-08
Instrument ID: LCMS1 Run Time: 02:22 Prep Method: 6850
File ID: 1LM.LM33917 Analyst: JWR Method: 6850
Workgroup (AAB#): WG561318 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.03	102	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4679320
Report generated 03/22/2016 09:52

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030863 Run Date: 03/18/2016 Sample ID: WG561318-09
Instrument ID: LCMS1 Run Time: 05:31 Prep Method: 6850
File ID: 1LM.LM33927 Analyst: JWR Method: 6850
Workgroup (AAB#): WG561318 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.91	95.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4679320
Report generated 03/22/2016 09:52

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030863 Run Date: 03/18/2016 Sample ID: WG561318-10

Instrument ID: LCMS1 Run Time: 12:53 Prep Method: 6850

File ID: 1LM.LM33931 Analyst: JWR Method: 6850

Workgroup (AAB#): WG561318 Matrix: Soil Units: ug/kg

Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.93	96.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4679320
Report generated 03/22/2016 09:52

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030863 Run Date: 03/18/2016 Sample ID: WG561318-11

Instrument ID: LCMS1 Run Time: 16:59 Prep Method: 6850

File ID: 1LM.LM33944 Analyst: JWR Method: 6850

Workgroup (AAB#): WG561318 Matrix: Soil Units: ug/kg

Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.00	100	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4679320
Report generated 03/22/2016 09:52

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16030863
Instrument ID: LCMS1
Workgroup (AAB#): WG561318

ICAL CCV Number: WG559340-05
CAL ID: LCMS1-02-MAR-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1
WG559340	NA	NA	494000
Upper Limit	NA	NA	741000
Lower Limit	NA	NA	247000
L16030863-01	1.00	01	500000
L16030863-02	1.00	01	500000
L16030863-03	1.00	01	500000
L16030863-04	1.00	01	513000
L16030863-05	10.0	DL01	458000
L16030863-06	50.0	DL01	459000
L16030863-07	100	DL01	459000
L16030863-08	1.00	01	535000
L16030863-09	1.00	01	525000
L16030863-10	1.00	01	527000
L16030863-11	1.00	01	553000
L16030863-12	10.0	DL01	473000
L16030863-13	100	DL01	459000
L16030863-14	50.0	DL01	459000
WG561318-02	1.00	01	548000
WG561318-03	1.00	01	508000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4679323
Report generated 03/22/2016 09:53

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**	6850	**Samplenum:**	L16030863-01
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:30	**File ID:**	1LM.LM33909
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561318	**Analysis Date:**	03/17/2016 23:51	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	597000	190000	3.14	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**	6850	**Samplenum:**	L16030863-02
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:30	**File ID:**	1LM.LM33910
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561318	**Analysis Date:**	03/18/2016 00:09	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	591000	192000	3.08	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**	6850	**Samplenum:**	L16030863-03
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:30	**File ID:**	1LM.LM33911
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561318	**Analysis Date:**	03/18/2016 00:28	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	729000	238000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**	6850	**Samplenum:**	L16030863-04
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:30	**File ID:**	1LM.LM33912
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561318	**Analysis Date:**	03/18/2016 00:47	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	177000	58300	3.04	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**	6850	**Samplenum:**	L16030863-05
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:30	**File ID:**	1LM.LM33936
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561318	**Analysis Date:**	03/18/2016 14:28	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	580000	186000	3.12	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**	6850	**Samplenum:**	L16030863-06
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:30	**File ID:**	1LM.LM33937
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561318	**Analysis Date:**	03/18/2016 14:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	336000	108000	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**	6850	**Samplenum:**	L16030863-07
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:30	**File ID:**	1LM.LM33938
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561318	**Analysis Date:**	03/18/2016 15:05	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	393000	126000	3.12	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**	6850	**Samplenum:**	L16030863-08
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:30	**File ID:**	1LM.LM33919
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561318	**Analysis Date:**	03/18/2016 03:00	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	8330	2480	3.36	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**	6850	**Samplenum:**	L16030863-09
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:30	**File ID:**	1LM.LM33920
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561318	**Analysis Date:**	03/18/2016 03:19	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	5170	2180	2.37	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**	6850	**Samplenum:**	L16030863-10
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:30	**File ID:**	1LM.LM33921
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561318	**Analysis Date:**	03/18/2016 03:38	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	2520	1440	1.75	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**	6850	**Samplenum:**	L16030863-11
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:30	**File ID:**	1LM.LM33922
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561318	**Analysis Date:**	03/18/2016 03:57	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1960	1280	1.53	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**	6850	**Samplenum:**	L16030863-12
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:30	**File ID:**	1LM.LM33939
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561318	**Analysis Date:**	03/18/2016 15:24	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	238000	77800	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**	6850	**Samplenum:**	L16030863-13
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:30	**File ID:**	1LM.LM33940
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561318	**Analysis Date:**	03/18/2016 15:43	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	282000	91200	3.09	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**	6850	**Samplenum:**	L16030863-14
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:30	**File ID:**	1LM.LM33941
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561318	**Analysis Date:**	03/18/2016 16:02	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	401000	130000	3.08	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**		**Samplenum:**	WG559340-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33568
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561318	**Analysis Date:**	03/02/2016 08:53	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	18400	5910	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**		**Samplenum:**	WG559340-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33569
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561318	**Analysis Date:**	03/02/2016 09:12	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37000	11900	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**		**Samplenum:**	WG559340-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33570
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561318	**Analysis Date:**	03/02/2016 09:31	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	89000	30400	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**		**Samplenum:**	WG559340-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33571
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561318	**Analysis Date:**	03/02/2016 09:50	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	183000	56800	3.22	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**		**Samplenum:**	WG559340-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33572
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561318	**Analysis Date:**	03/02/2016 10:09	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	363000	117000	3.10	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**		**Samplenum:**	WG559340-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33573
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561318	**Analysis Date:**	03/02/2016 10:28	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	871000	282000	3.09	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**		**Samplenum:**	WG559340-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33574
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561318	**Analysis Date:**	03/02/2016 10:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1650000	530000	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**		**Samplenum:**	WG559340-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33575
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561318	**Analysis Date:**	03/02/2016 11:05	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	190000	62200	3.05	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**	6850	**Samplenum:**	WG561318-01
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:30	**File ID:**	1LM.LM33906
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561318	**Analysis Date:**	03/17/2016 22:54	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37800	13200	2.86	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**	6850	**Samplenum:**	WG561318-02
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:30	**File ID:**	1LM.LM33907
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561318	**Analysis Date:**	03/17/2016 23:13	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	434	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**	6850	**Samplenum:**	WG561318-03
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:30	**File ID:**	1LM.LM33908
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561318	**Analysis Date:**	03/17/2016 23:32	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37500	12000	3.13	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**	6850	**Samplenum:**	WG561318-07
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:30	**File ID:**	1LM.LM33904
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561318	**Analysis Date:**	03/17/2016 22:16	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	39100	13700	2.85	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**	6850	**Samplenum:**	WG561318-08
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:30	**File ID:**	1LM.LM33917
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561318	**Analysis Date:**	03/18/2016 02:22	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	40800	12300	3.32	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**	6850	**Samplenum:**	WG561318-09
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:30	**File ID:**	1LM.LM33927
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561318	**Analysis Date:**	03/18/2016 05:31	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	40700	13900	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**	6850	**Samplenum:**	WG561318-10
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:30	**File ID:**	1LM.LM33931
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561318	**Analysis Date:**	03/18/2016 12:53	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35300	11500	3.07	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**	6850	**Samplenum:**	WG561318-11
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:30	**File ID:**	1LM.LM33944
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561318	**Analysis Date:**	03/18/2016 16:59	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38800	12700	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**		**Samplenum:**	WG561324-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33896
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561318	**Analysis Date:**	03/17/2016 19:44	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	268	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**		**Samplenum:**	WG561324-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33902
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561318	**Analysis Date:**	03/17/2016 21:38	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	185000	61400	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**		**Samplenum:**	WG561324-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33905
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561318	**Analysis Date:**	03/17/2016 22:35	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**		**Samplenum:**	WG561324-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33916
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561318	**Analysis Date:**	03/18/2016 02:03	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	187000	61300	3.05	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**		**Samplenum:**	WG561324-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33918
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561318	**Analysis Date:**	03/18/2016 02:41	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	892	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**		**Samplenum:**	WG561324-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33926
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561318	**Analysis Date:**	03/18/2016 05:12	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	194000	63300	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**		**Samplenum:**	WG561324-10
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33928
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561318	**Analysis Date:**	03/18/2016 05:50	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**		**Samplenum:**	WG561324-11
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33929
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561318	**Analysis Date:**	03/18/2016 12:15	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	162000	54600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**		**Samplenum:**	WG561324-12
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33932
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561318	**Analysis Date:**	03/18/2016 13:12	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	389	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**		**Samplenum:**	WG561324-13
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33942
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561318	**Analysis Date:**	03/18/2016 16:21	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	174000	56500	3.08	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**		**Samplenum:**	WG561324-14
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33945
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561318	**Analysis Date:**	03/18/2016 17:18	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	548	0.000	2.3	3.8	*

2.2.1.3 Sample Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 3/18/2016 6:21 PM

Data File	LM33909.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 11:51:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030863-01 RS	**Injection Vial**	22.00
Data File	LM33909.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 11:51:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561318-04	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.970e+05	9.92	N/A	3.40
Perchlorate conf	1.900e+05	9.91	N/A	3.36

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

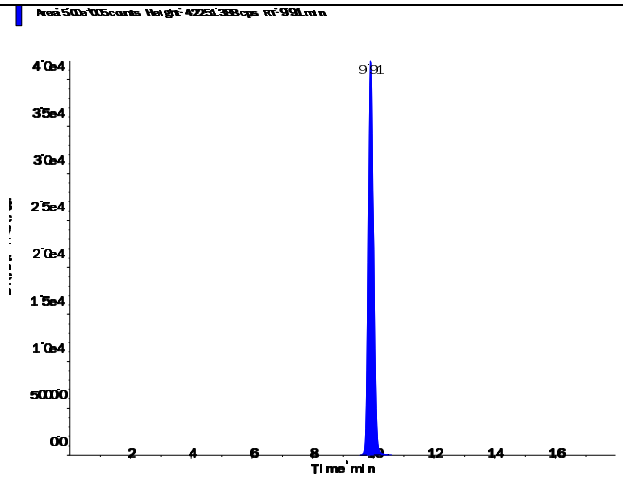

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.92 (9.94) min
Calculated conc:	3.40 ng/ml
Area Ratio:	1.194
Sample Type:	(Unknown)

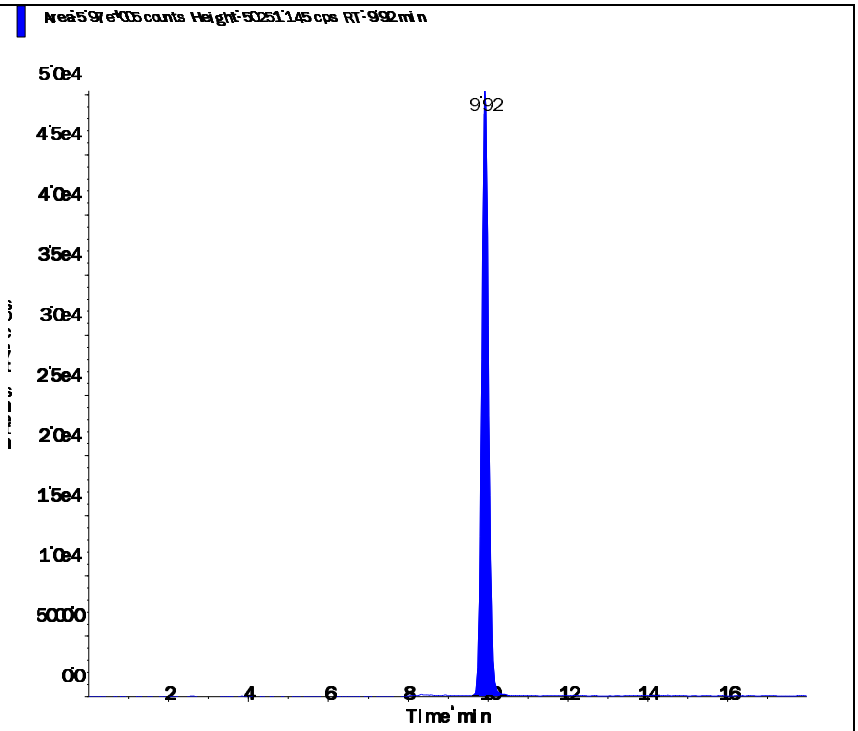

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.92) min
Calculated conc:	3.36 ng/ml
Area Ratio:	0.38
Sample Type:	(Unknown)

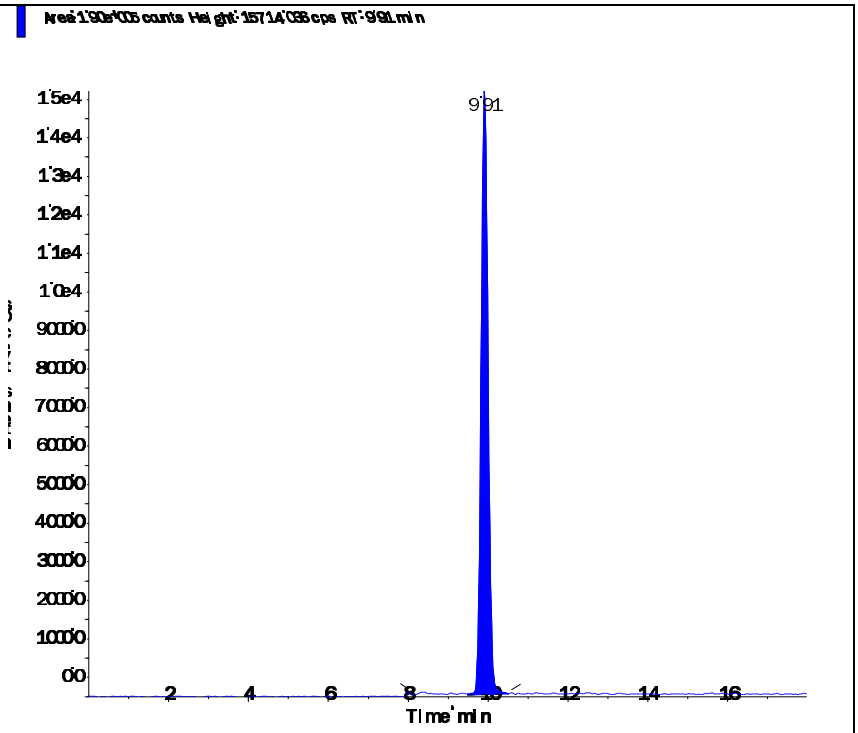

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Data File	LM33910.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 12:09:59 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030863-02 MS	**Injection Vial**	23.00
Data File	LM33910.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 12:09:59 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561318-05	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.910e+05	9.93	N/A	3.37
Perchlorate conf	1.920e+05	9.92	N/A	3.41

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

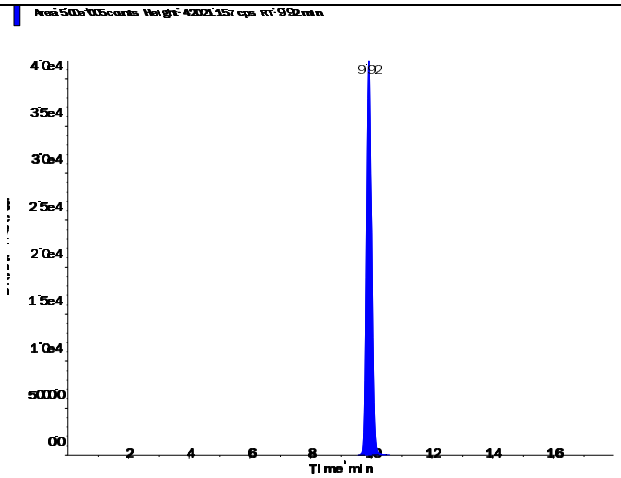

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.93 (9.94) min Calculated conc: 3.37 ng/ml Area Ratio: 1.182 Sample Type: (Unknown)	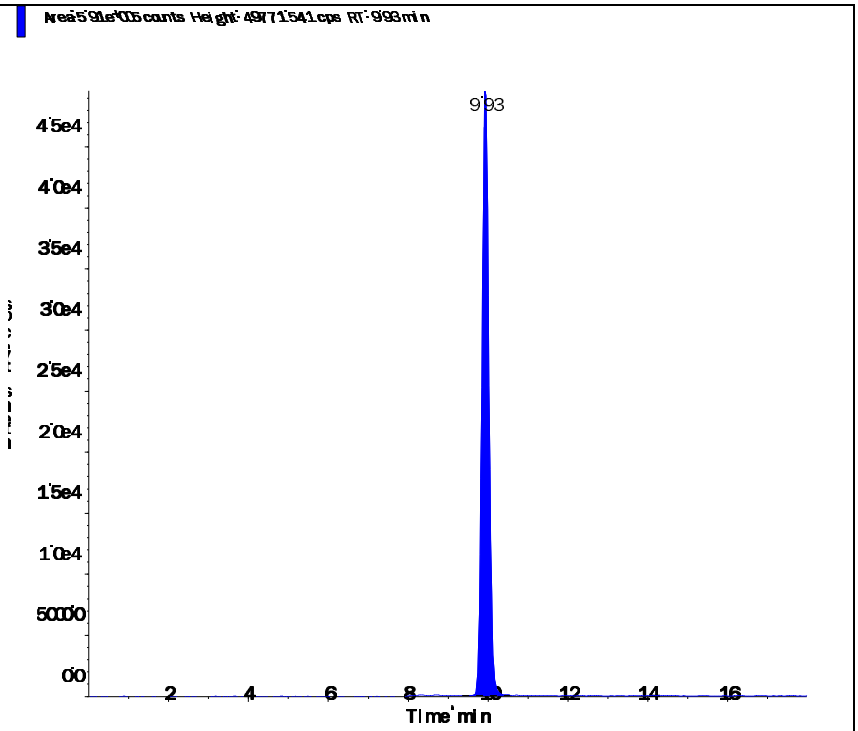
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.92 (9.92) min Calculated conc: 3.41 ng/ml Area Ratio: 0.385 Sample Type: (Unknown)	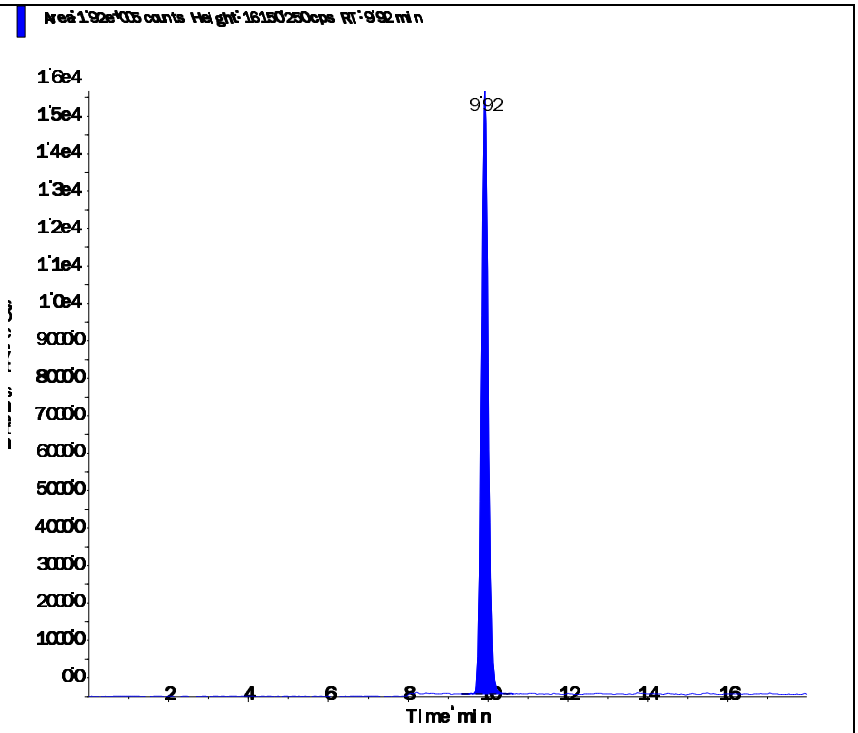

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Data File	LM33911.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 12:28:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030863-03 MSD	**Injection Vial**	24.00
Data File	LM33911.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 12:28:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561318-06	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.290e+05	9.93	N/A	4.16
Perchlorate conf	2.380e+05	9.92	N/A	4.23

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

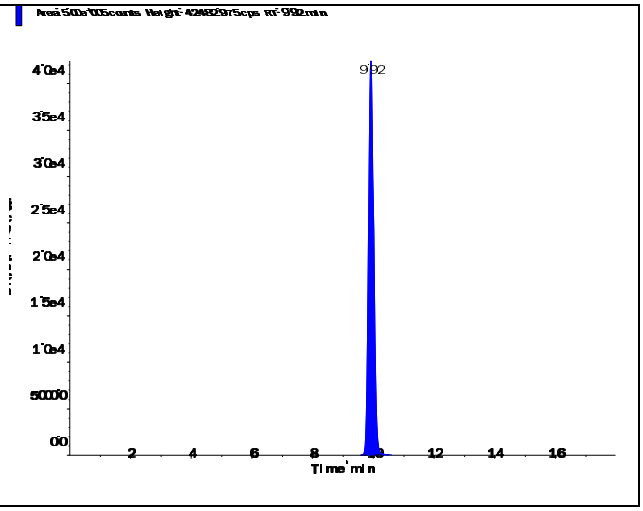

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	4.16 ng/ml
Area Ratio:	1.458
Sample Type:	(Unknown)

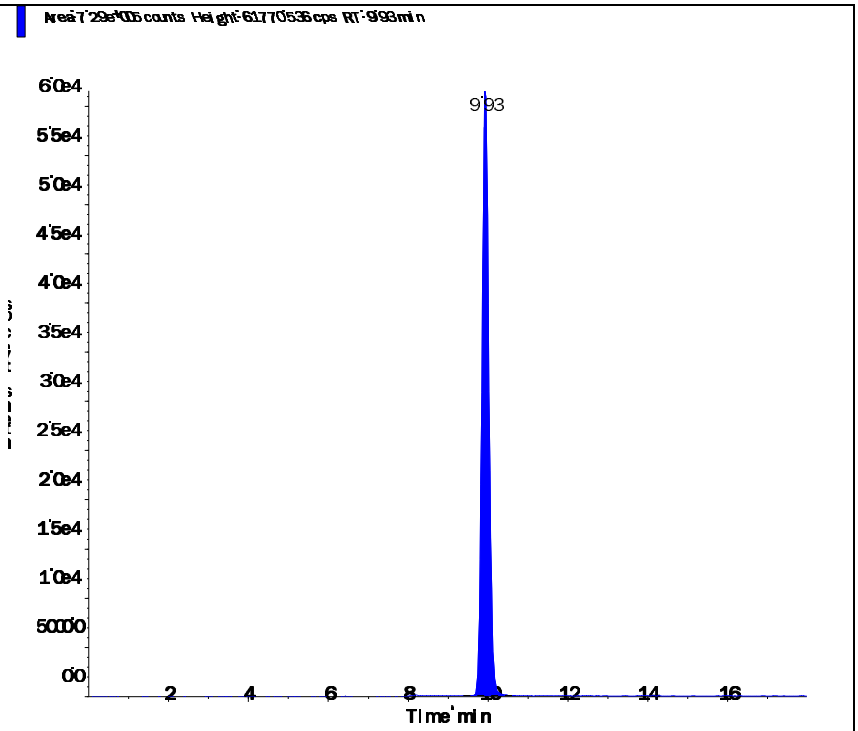

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	4.23 ng/ml
Area Ratio:	0.477
Sample Type:	(Unknown)

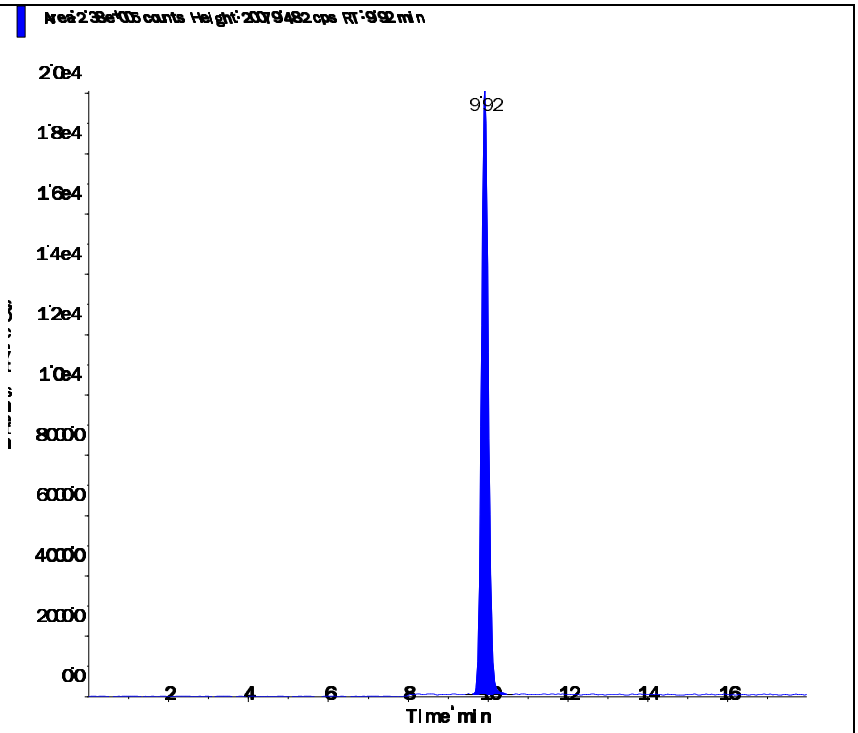

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Data File	LM33912.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 12:47:52 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030863-04	**Injection Vial**	25.00
Data File	LM33912.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 12:47:52 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	L16030863-04	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.130e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.770e+05	9.93	N/A	0.978
Perchlorate conf	5.830e+04	9.92	N/A	0.998

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

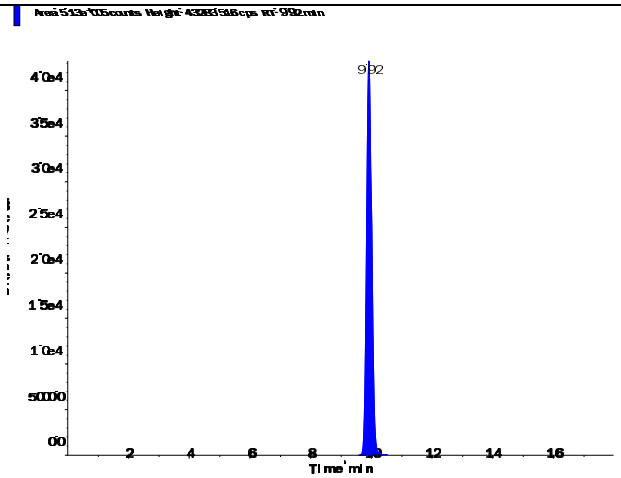

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	0.978 ng/ml
Area Ratio:	0.346
Sample Type:	(Unknown)

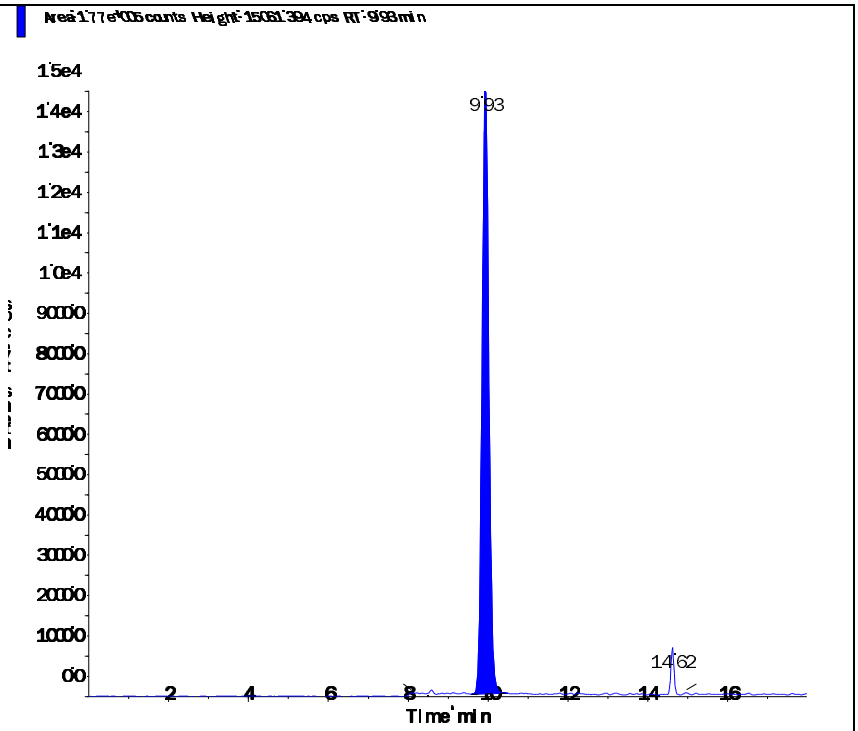

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	0.998 ng/ml
Area Ratio:	0.114
Sample Type:	(Unknown)

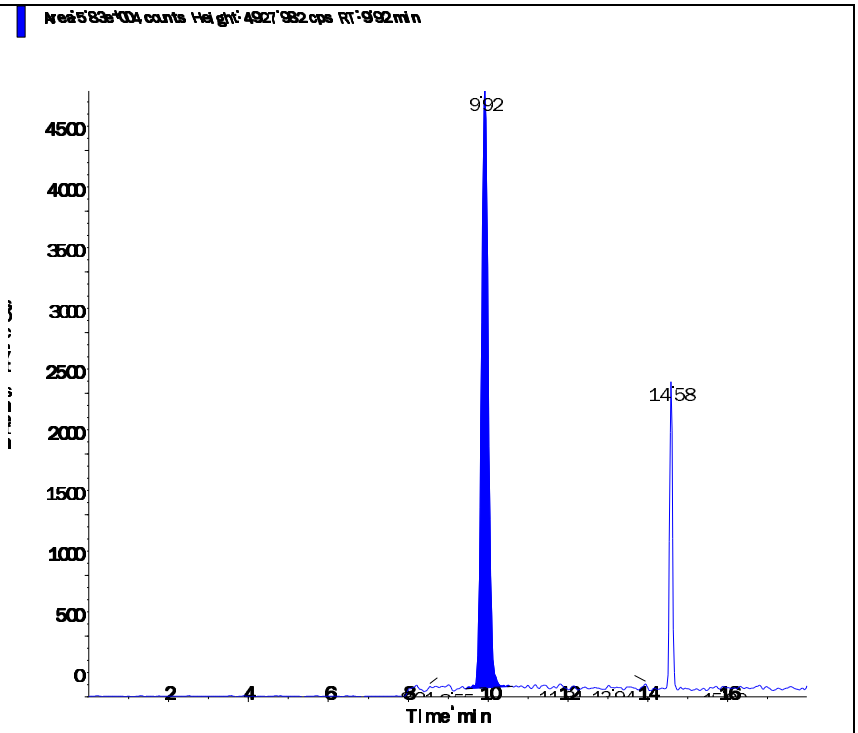

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Data File	LM33936.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 2:28:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030863-05 (RR 10x)	**Injection Vial**	39.00
Data File	LM33936.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 2:28:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	L16030863-05	**Dilution Factor**	1.00
Sample Comment	710.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.580e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.800e+05	9.97	N/A	3.61
Perchlorate conf	1.860e+05	9.96	N/A	3.59

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

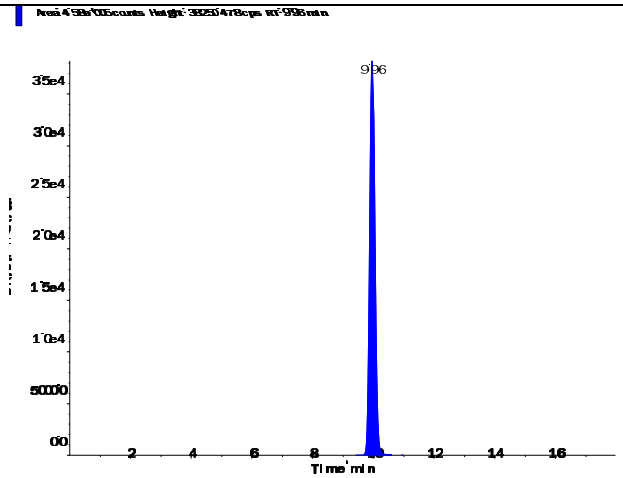

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.97 (9.94) min
Calculated conc:	3.61 ng/ml
Area Ratio:	1.266
Sample Type:	(Unknown)

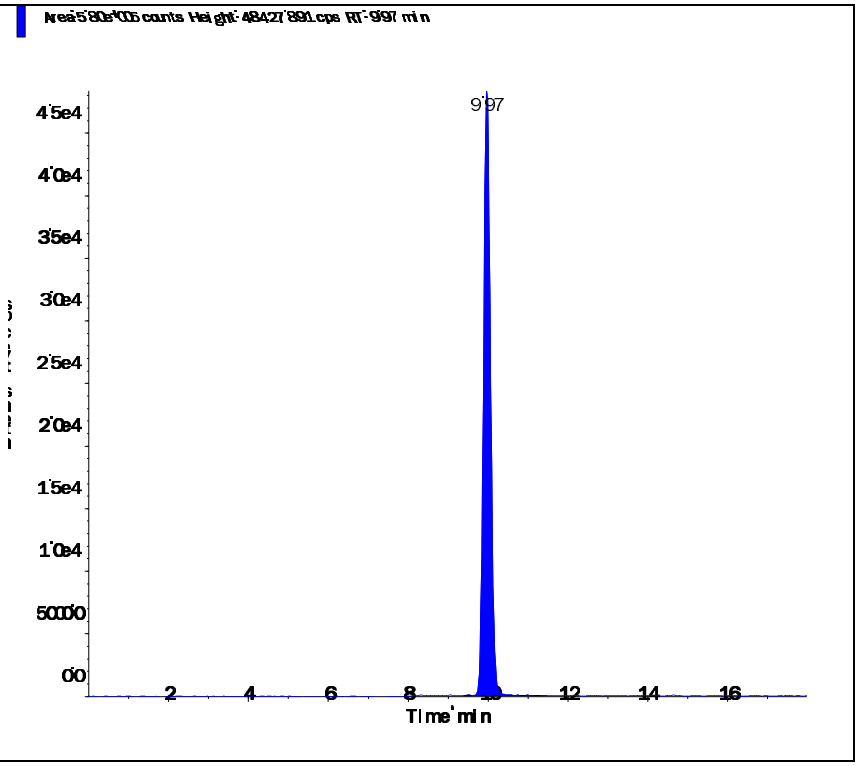

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.96 (9.92) min
Calculated conc:	3.59 ng/ml
Area Ratio:	0.405
Sample Type:	(Unknown)

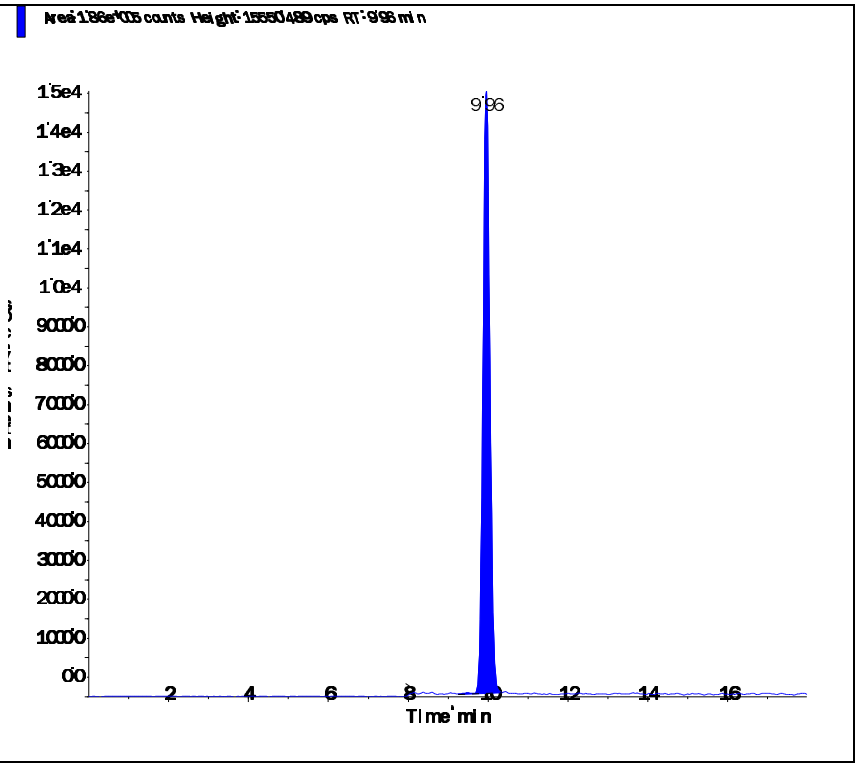

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Data File	LM33937.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 2:46:55 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030863-06 (RR 50x)	**Injection Vial**	40.00
Data File	LM33937.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 2:46:55 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	L16030863-06	**Dilution Factor**	1.00
Sample Comment	750.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.590e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.360e+05	9.98	N/A	2.08
Perchlorate conf	1.080e+05	9.96	N/A	2.08

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

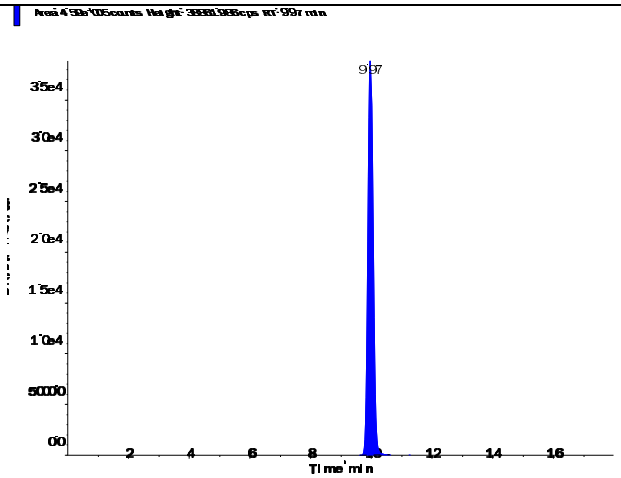

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.98 (9.94) min
Calculated conc:	2.08 ng/ml
Area Ratio:	0.732
Sample Type:	(Unknown)

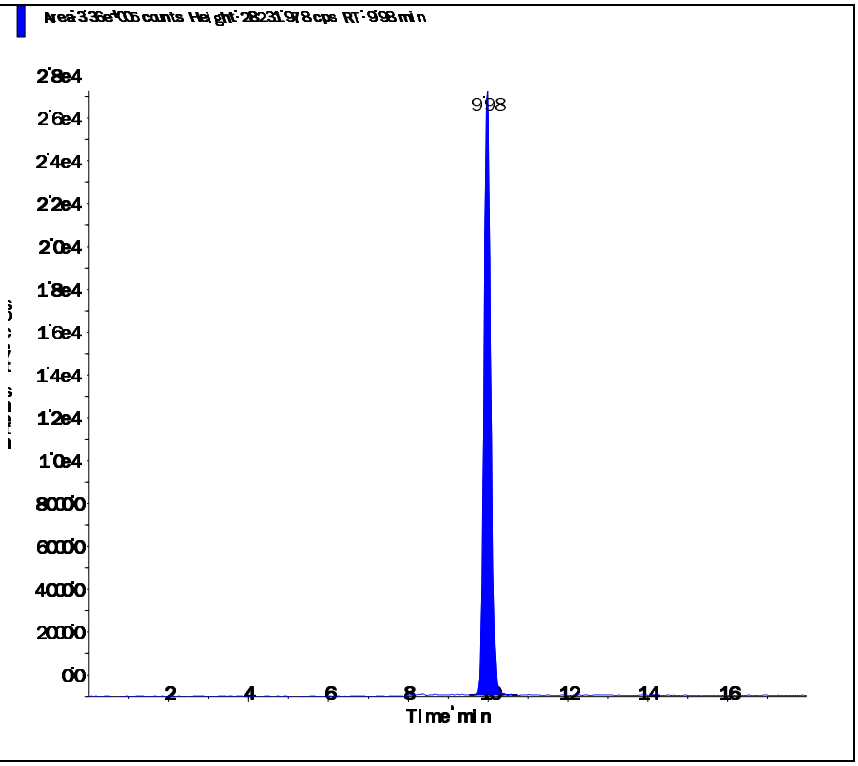

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.96 (9.92) min
Calculated conc:	2.08 ng/ml
Area Ratio:	0.235
Sample Type:	(Unknown)

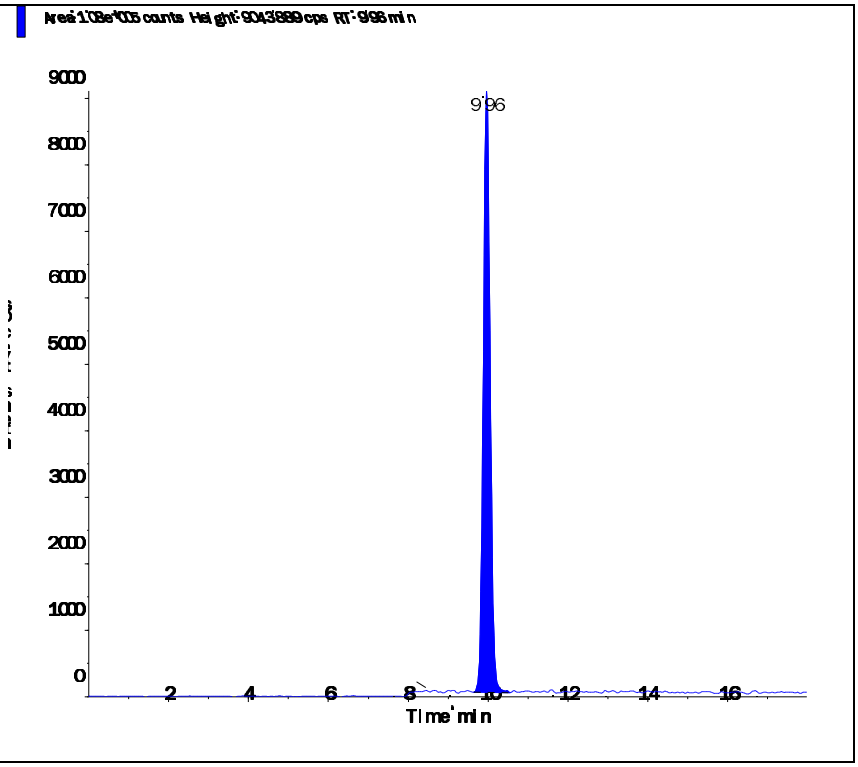

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Data File	LM33938.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 3:05:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030863-07 (RR 100x)	**Injection Vial**	41.00
Data File	LM33938.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 3:05:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	L16030863-07	**Dilution Factor**	1.00
Sample Comment	7,100.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.590e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.930e+05	9.96	N/A	2.44
Perchlorate conf	1.260e+05	9.95	N/A	2.43

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

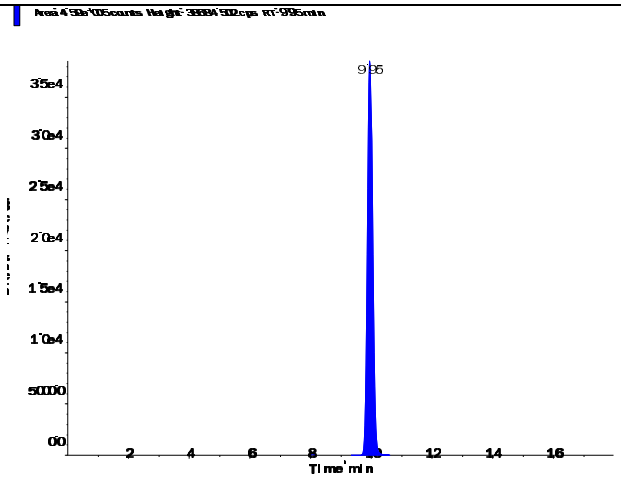

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.96 (9.94) min Calculated conc: 2.44 ng/ml Area Ratio: 0.857 Sample Type: (Unknown)	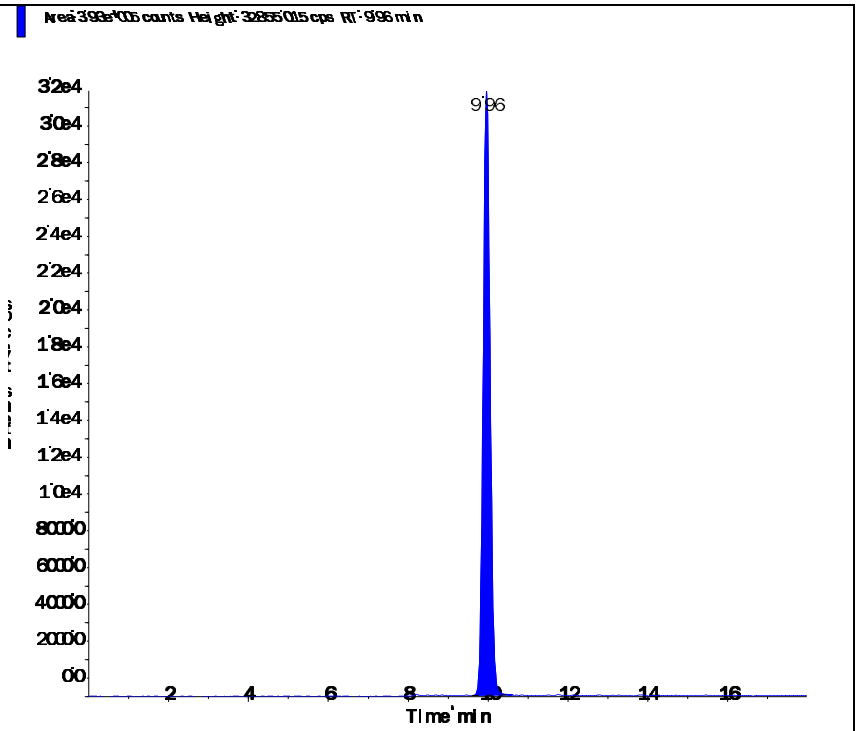
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.95 (9.92) min Calculated conc: 2.43 ng/ml Area Ratio: 0.274 Sample Type: (Unknown)	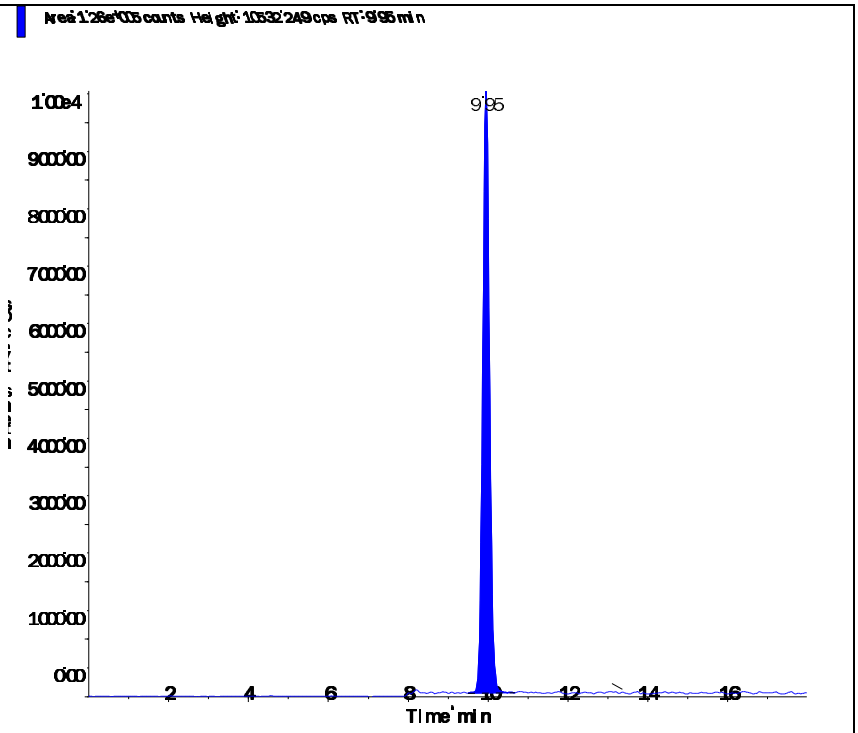

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Data File	LM33919.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 3:00:23 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030863-08	**Injection Vial**	29.00
Data File	LM33919.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 3:00:23 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	L16030863-08	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.350e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.330e+03	9.94	N/A	0.032
Perchlorate conf	2.480e+03	9.94	N/A	0.0272

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

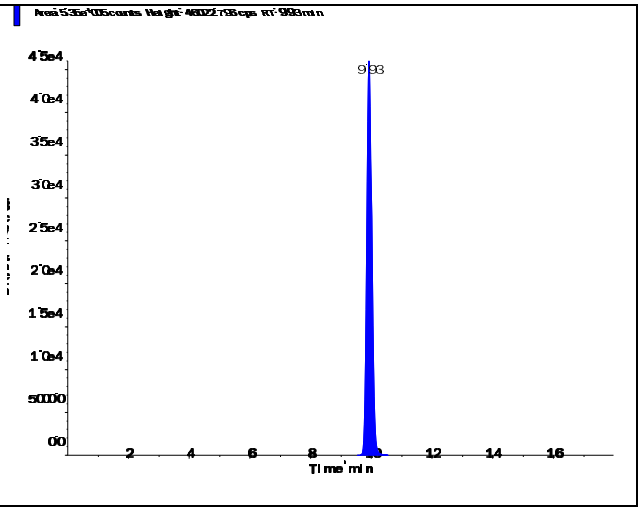

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.032 ng/ml
Area Ratio:	0.016
Sample Type:	(Unknown)

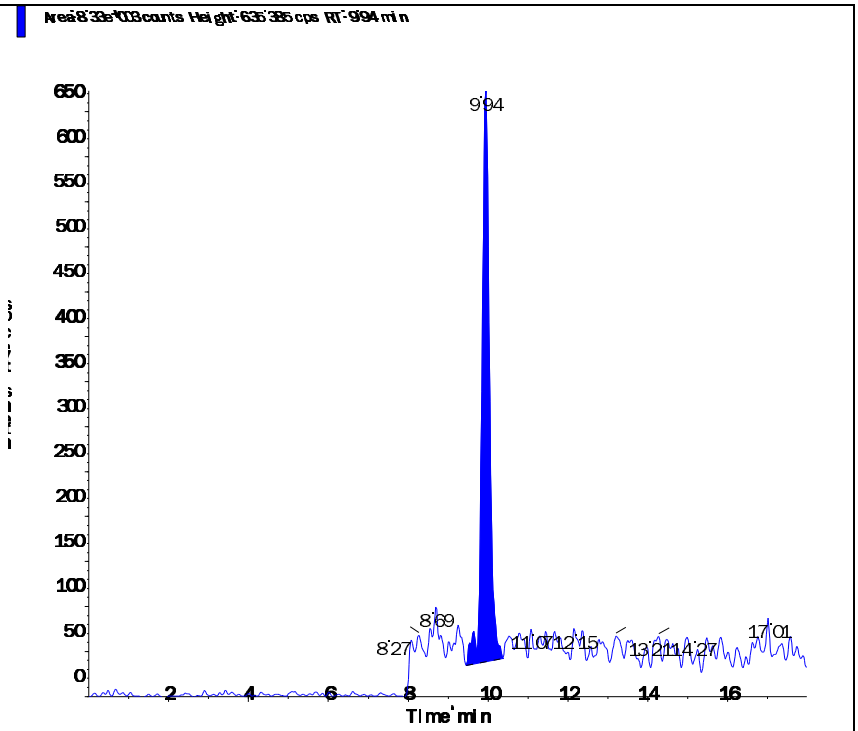

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.0272 ng/ml
Area Ratio:	0.005
Sample Type:	(Unknown)

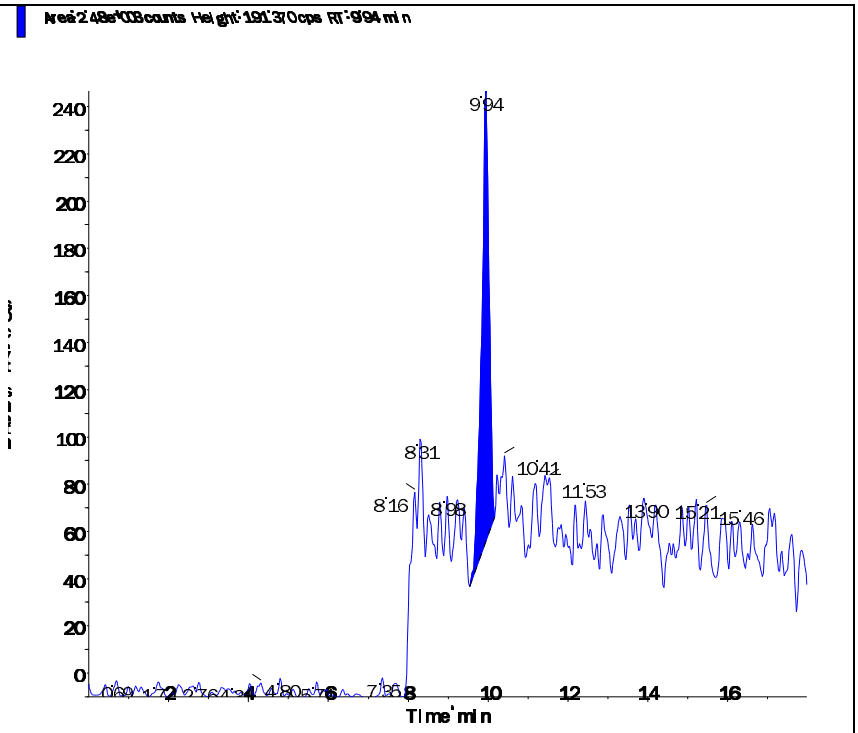

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Data File	LM33920.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 3:19:19 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030863-09	**Injection Vial**	30.00
Data File	LM33920.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 3:19:19 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	L16030863-09	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.250e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.170e+03	9.93	N/A	0.0157
Perchlorate conf	2.180e+03	9.92	N/A	0.023

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

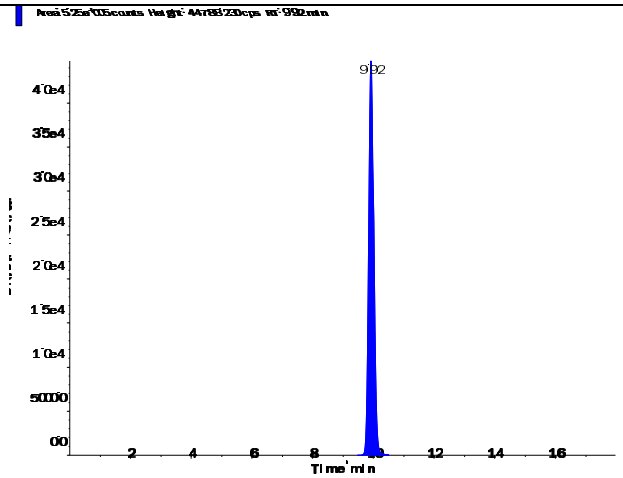

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	0.0157 ng/ml
Area Ratio:	0.01
Sample Type:	(Unknown)

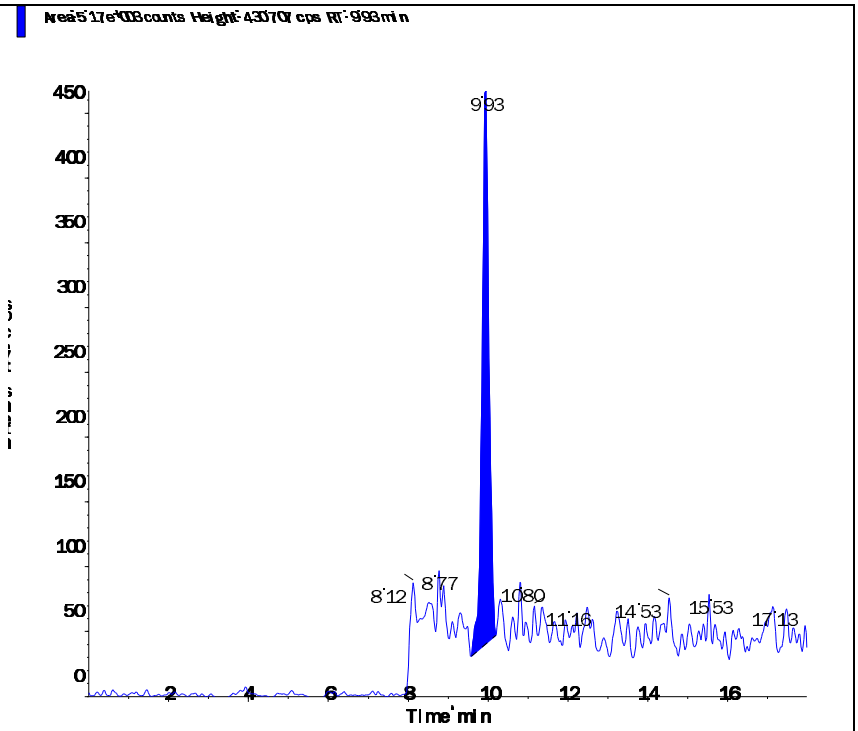

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	0.023 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)

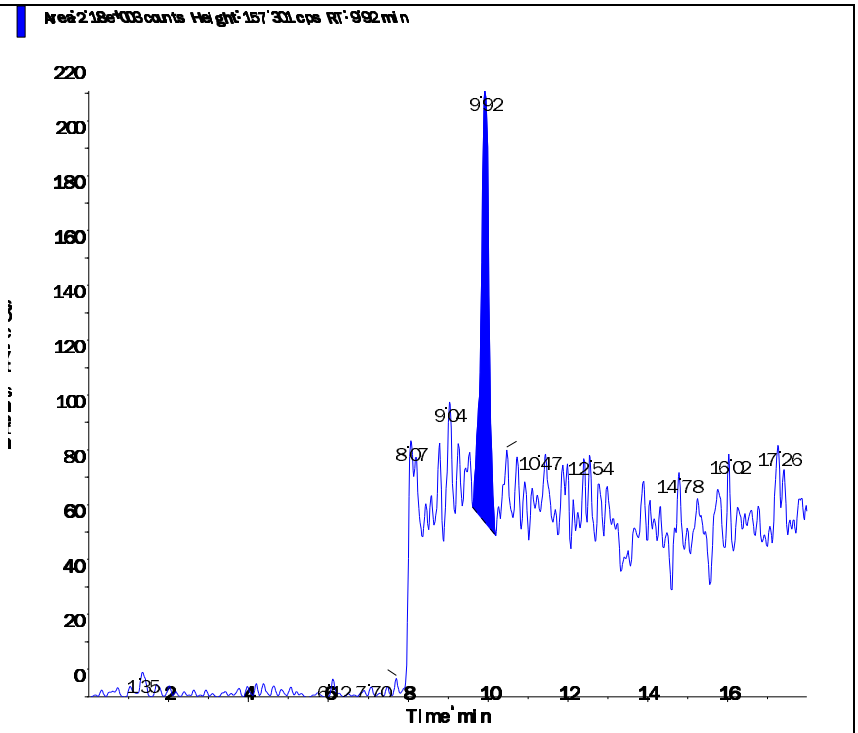

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Data File	LM33921.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 3:38:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030863-10	**Injection Vial**	31.00
Data File	LM33921.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 3:38:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	L16030863-10	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.270e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.520e+03	9.91	N/A	0.0012
Perchlorate conf	1.440e+03	9.91	N/A	0.0104

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

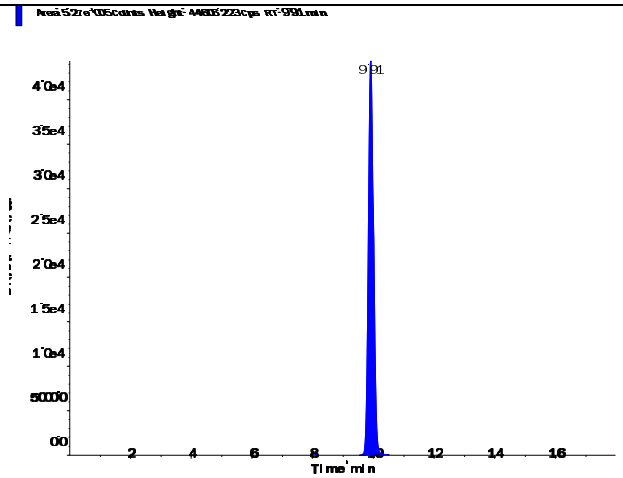

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.91 (9.94) min
Calculated conc:	0.0012 ng/ml
Area Ratio:	0.005
Sample Type:	(Unknown)

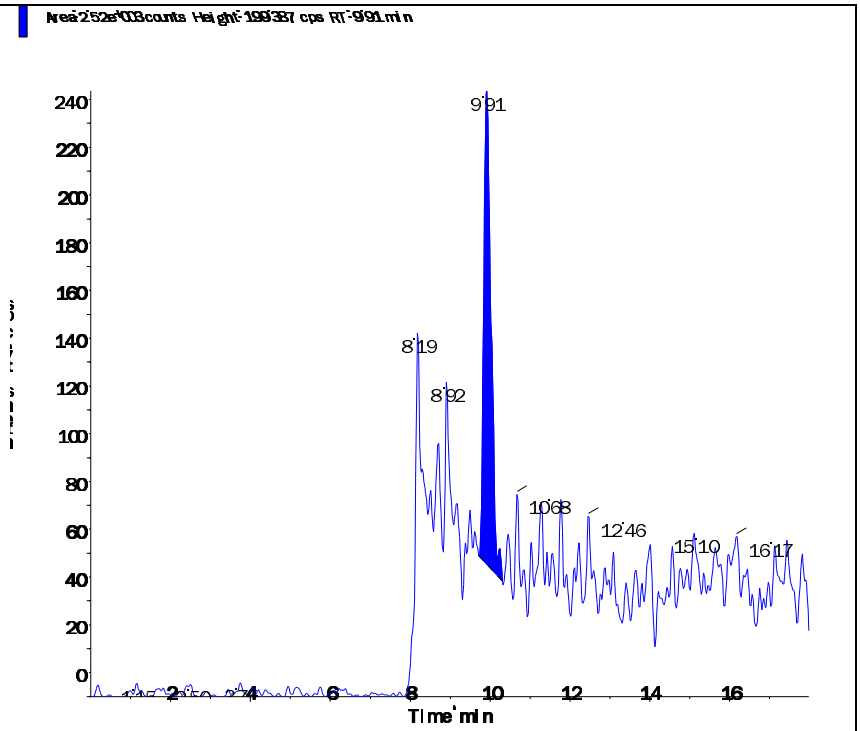

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.92) min
Calculated conc:	0.0104 ng/ml
Area Ratio:	0.003
Sample Type:	(Unknown)

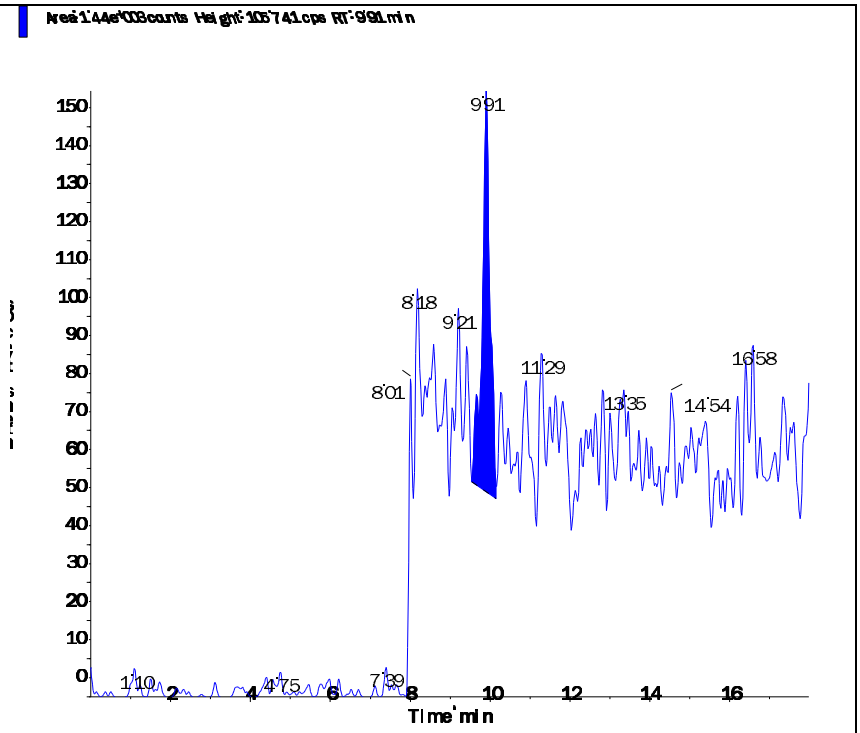

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Data File	LM33922.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 3:57:12 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030863-11	**Injection Vial**	32.00
Data File	LM33922.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 3:57:12 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	L16030863-11	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.530e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.960e+03	9.95	N/A	< 0
Perchlorate conf	1.280e+03	9.88	N/A	0.0065

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

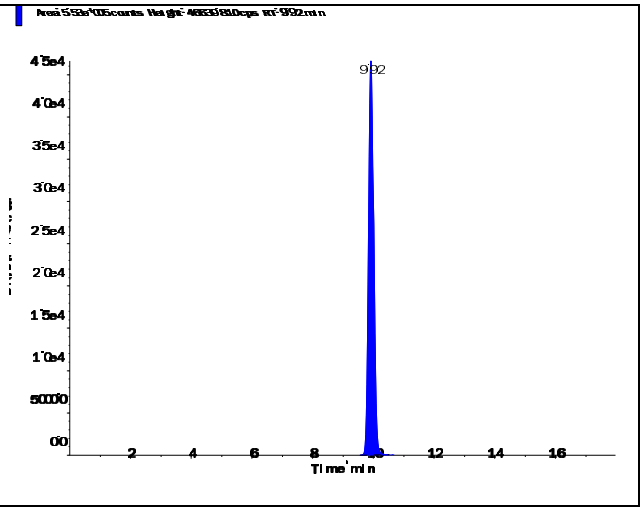

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)

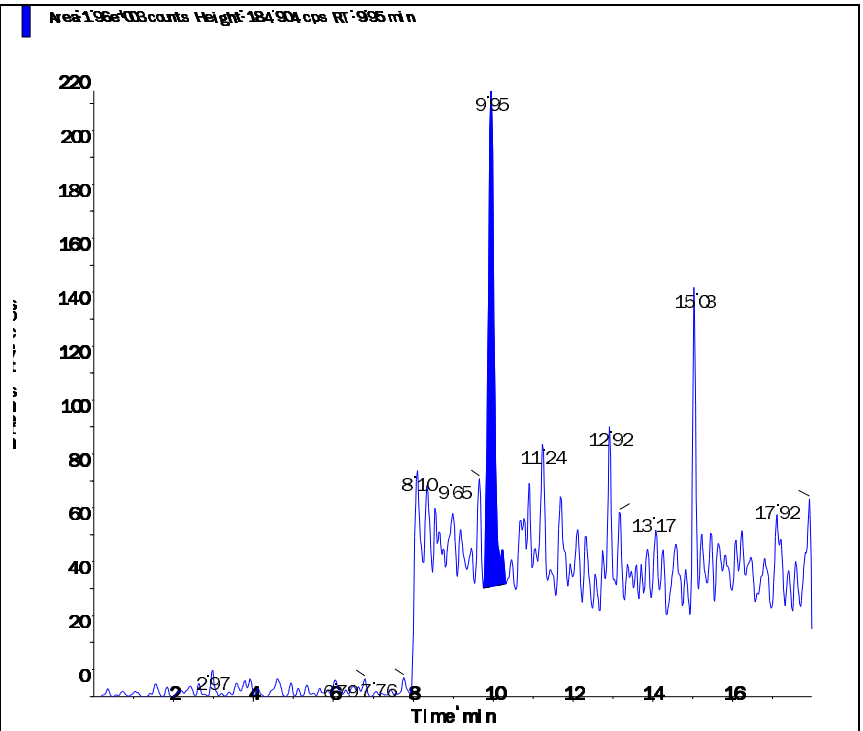

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.88 (9.92) min
Calculated conc:	0.0065 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

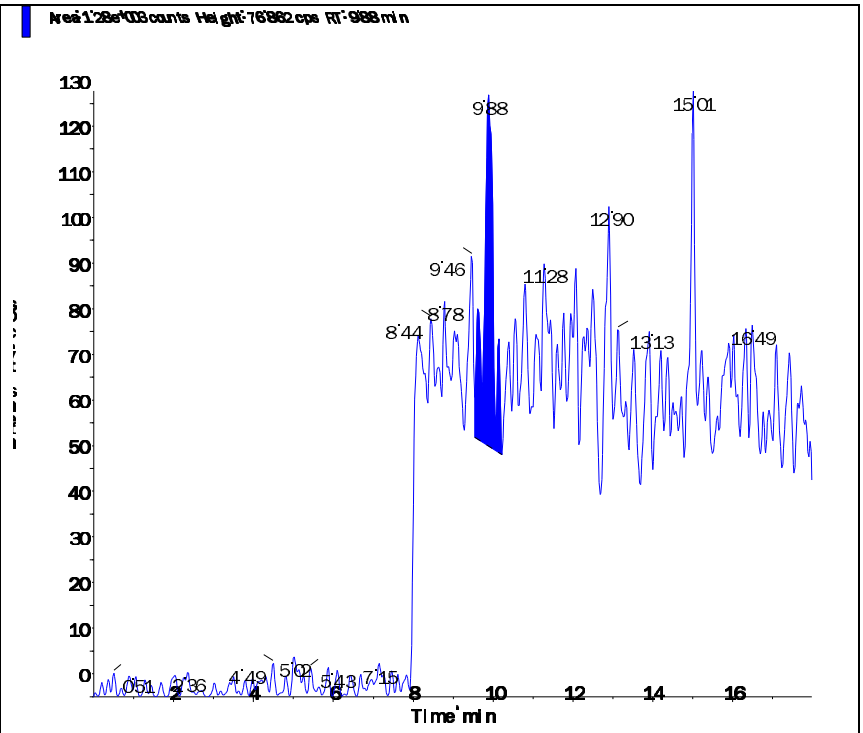

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Data File	LM33939.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 3:24:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030863-12 (RR 10x)	**Injection Vial**	42.00
Data File	LM33939.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 3:24:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	L16030863-12	**Dilution Factor**	1.00
Sample Comment	710.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.730e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.380e+05	9.96	N/A	1.43
Perchlorate conf	7.780e+04	9.95	N/A	1.45

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

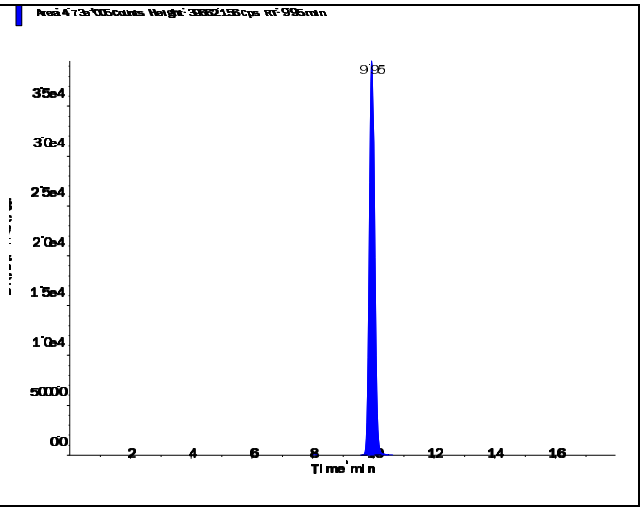

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	1.43 ng/ml
Area Ratio:	0.503
Sample Type:	(Unknown)

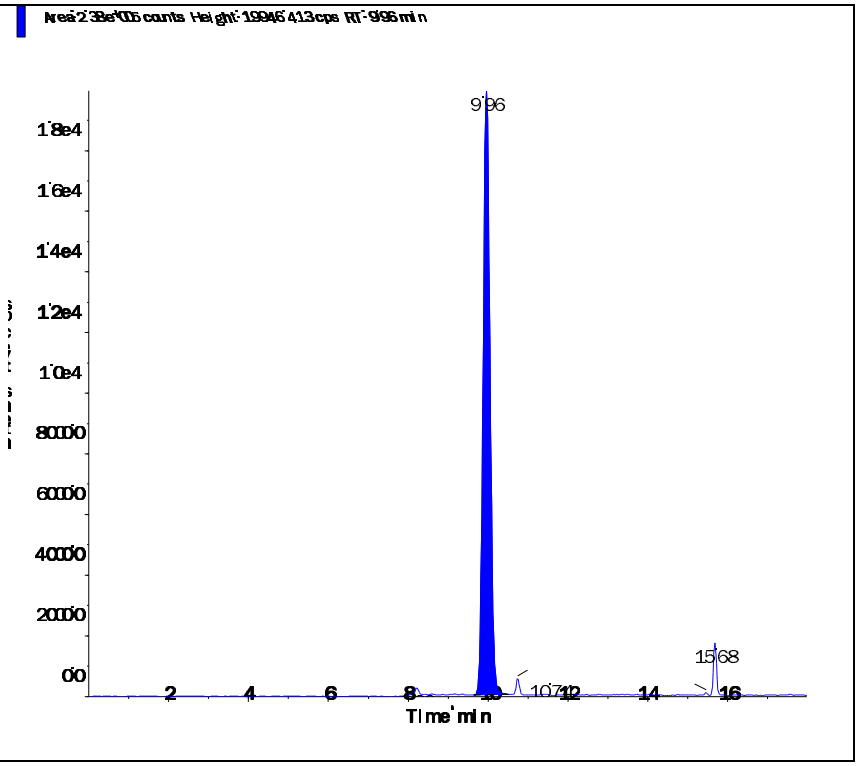

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.95 (9.92) min
Calculated conc:	1.45 ng/ml
Area Ratio:	0.164
Sample Type:	(Unknown)

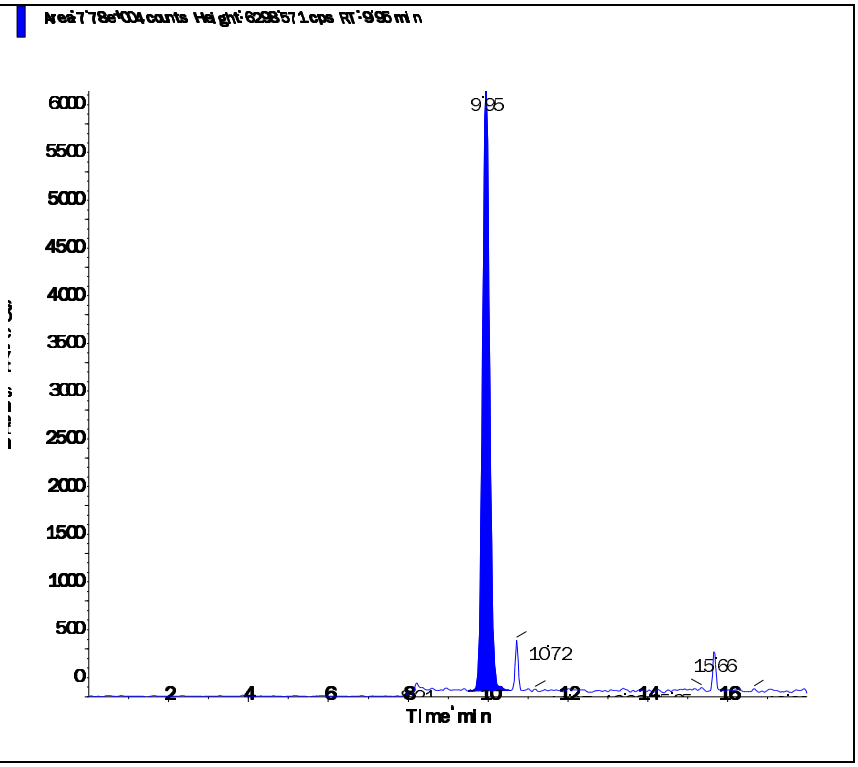

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Data File	LM33940.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 3:43:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030863-13 (RR 100x)	**Injection Vial**	43.00
Data File	LM33940.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 3:43:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	L16030863-13	**Dilution Factor**	1.00
Sample Comment	7,100.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.590e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.820e+05	9.97	N/A	1.74
Perchlorate conf	9.120e+04	9.95	N/A	1.75

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

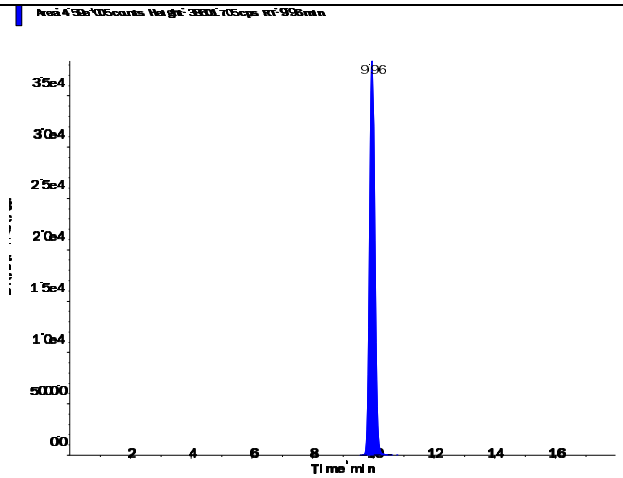

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.97 (9.94) min
Calculated conc:	1.74 ng/ml
Area Ratio:	0.614
Sample Type:	(Unknown)

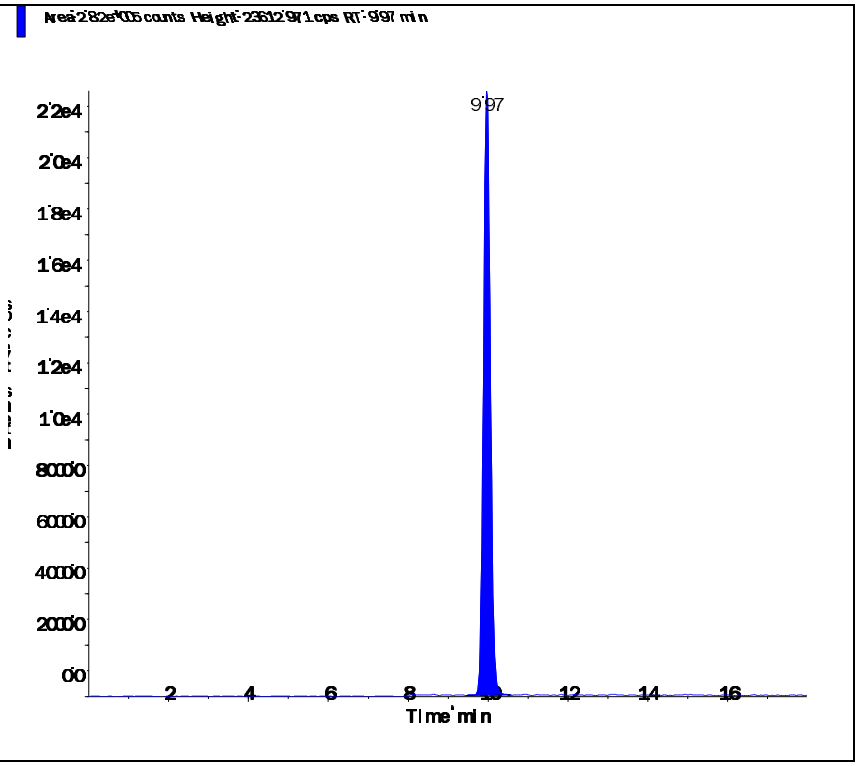

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.95 (9.92) min
Calculated conc:	1.75 ng/ml
Area Ratio:	0.199
Sample Type:	(Unknown)

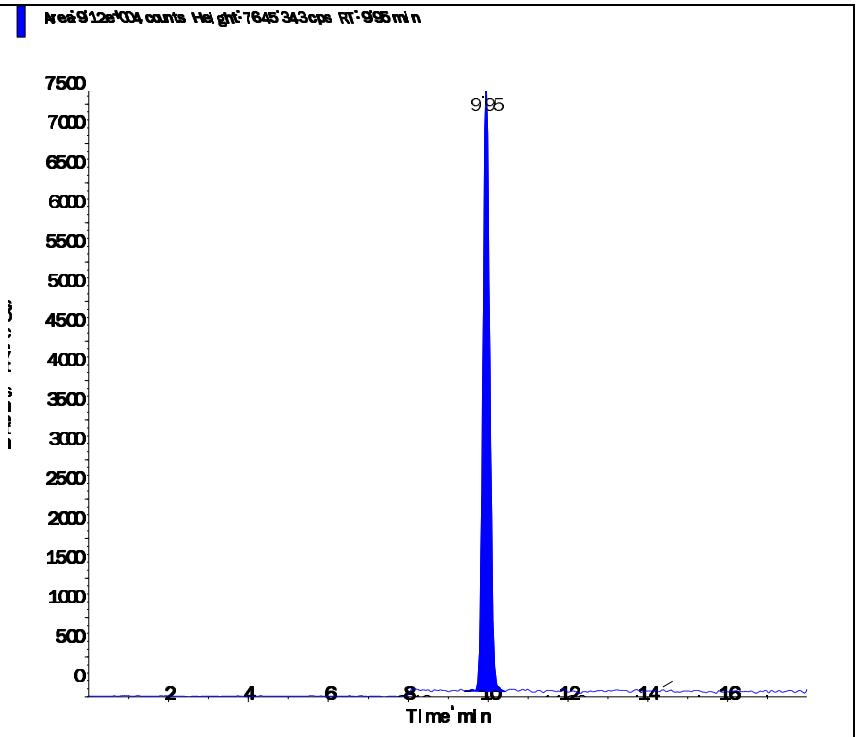

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Data File	LM33941.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 4:02:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030863-14 (RR 50x)	**Injection Vial**	44.00
Data File	LM33941.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 4:02:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	L16030863-14	**Dilution Factor**	1.00
Sample Comment	750.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.590e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.010e+05	9.96	N/A	2.49
Perchlorate conf	1.300e+05	9.95	N/A	2.51

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

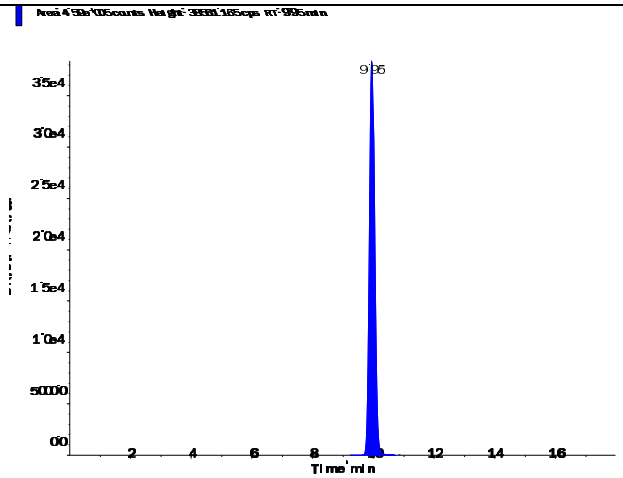

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.96 (9.94) min Calculated conc: 2.49 ng/ml Area Ratio: 0.874 Sample Type: (Unknown)	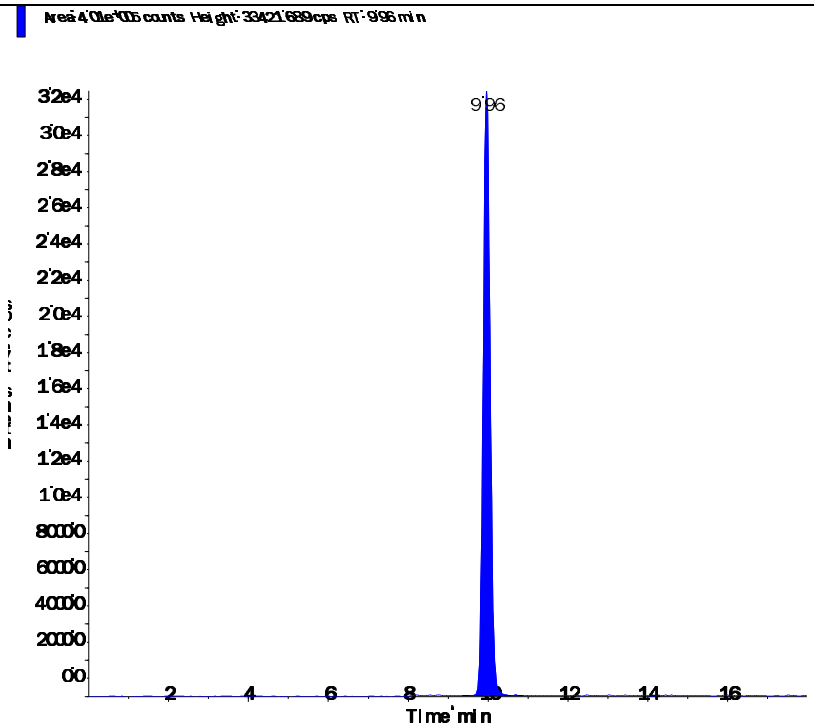
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.95 (9.92) min Calculated conc: 2.51 ng/ml Area Ratio: 0.284 Sample Type: (Unknown)	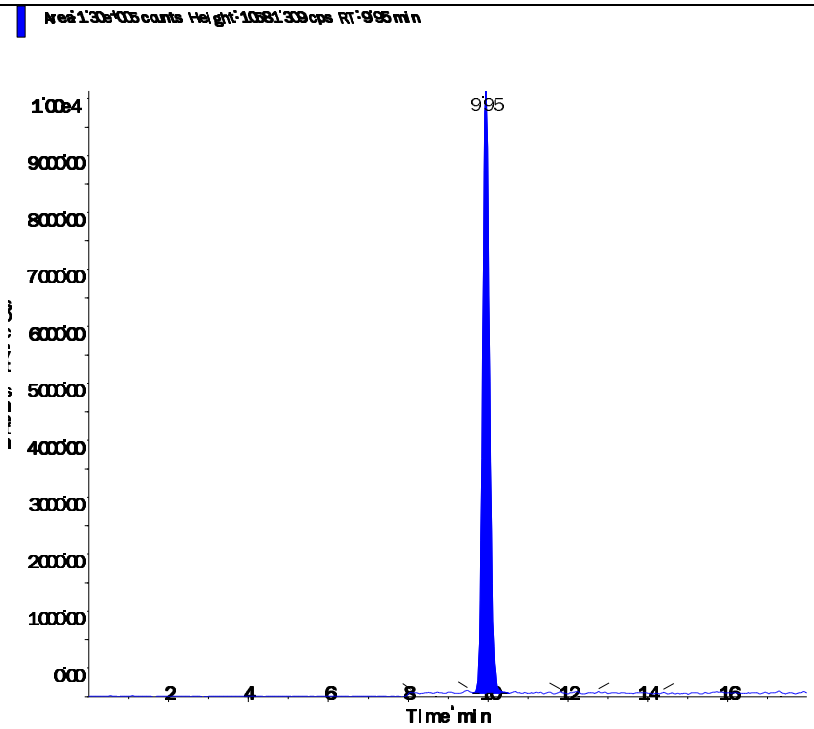

2.2.1.4 Standards Data

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Data File	LM33567.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-01 CCB	**Injection Vial**	51.00
Data File	LM33567.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG559340-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.710e+05	9.99	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.99(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

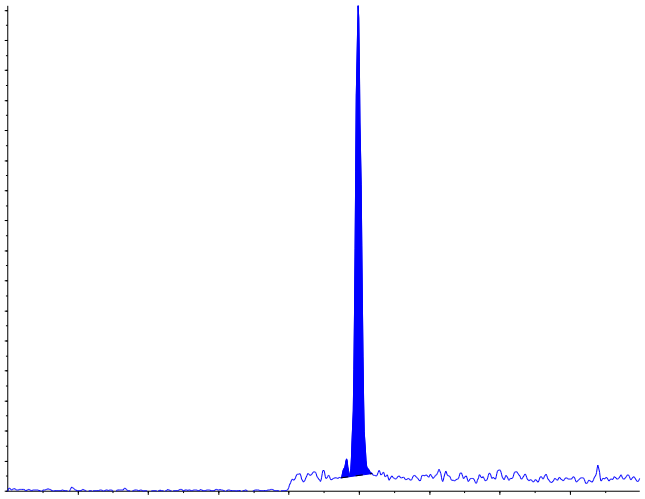

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

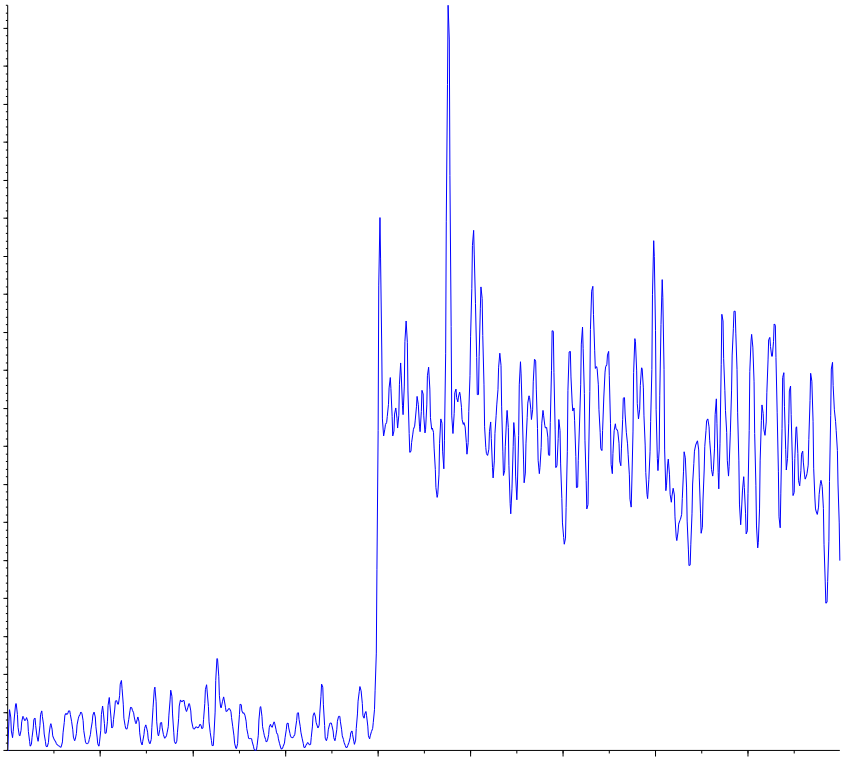

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

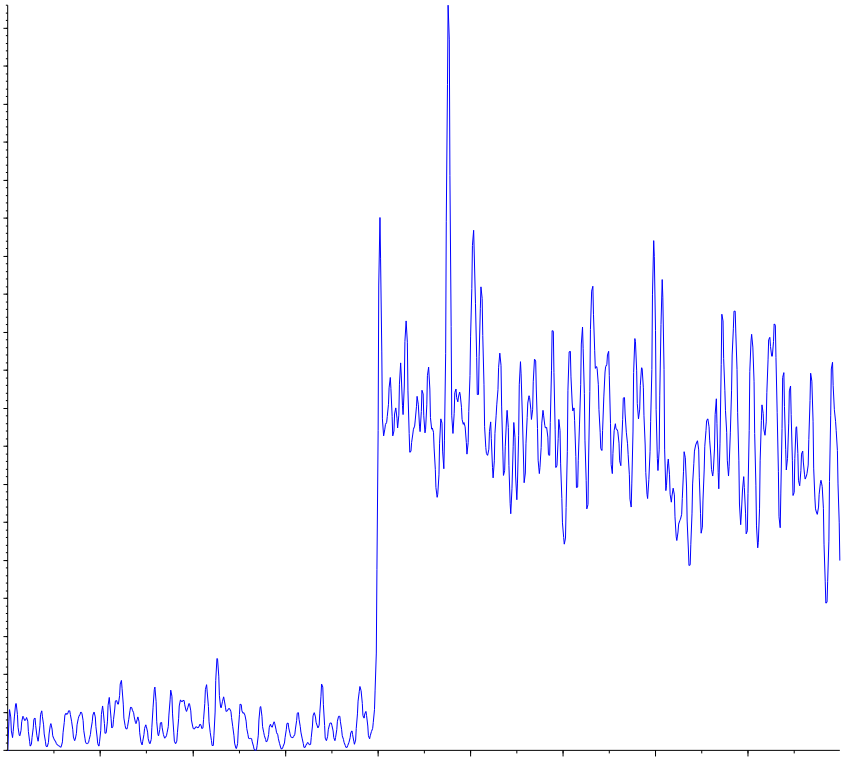

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Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM33567.wiff	**Result Table**	030216_WTD.rdb
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.75 x + 0.00437 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	95.0	N/A	N/A
0.20	1	0.20	99.5	N/A	N/A
0.50	1	0.50	101.0	N/A	N/A
1.00	1	1.03	103.4	N/A	N/A
2.00	1	2.02	101.0	N/A	N/A
5.00	1	5.07	101.5	N/A	N/A
10.00	1	9.87	98.7	N/A	N/A

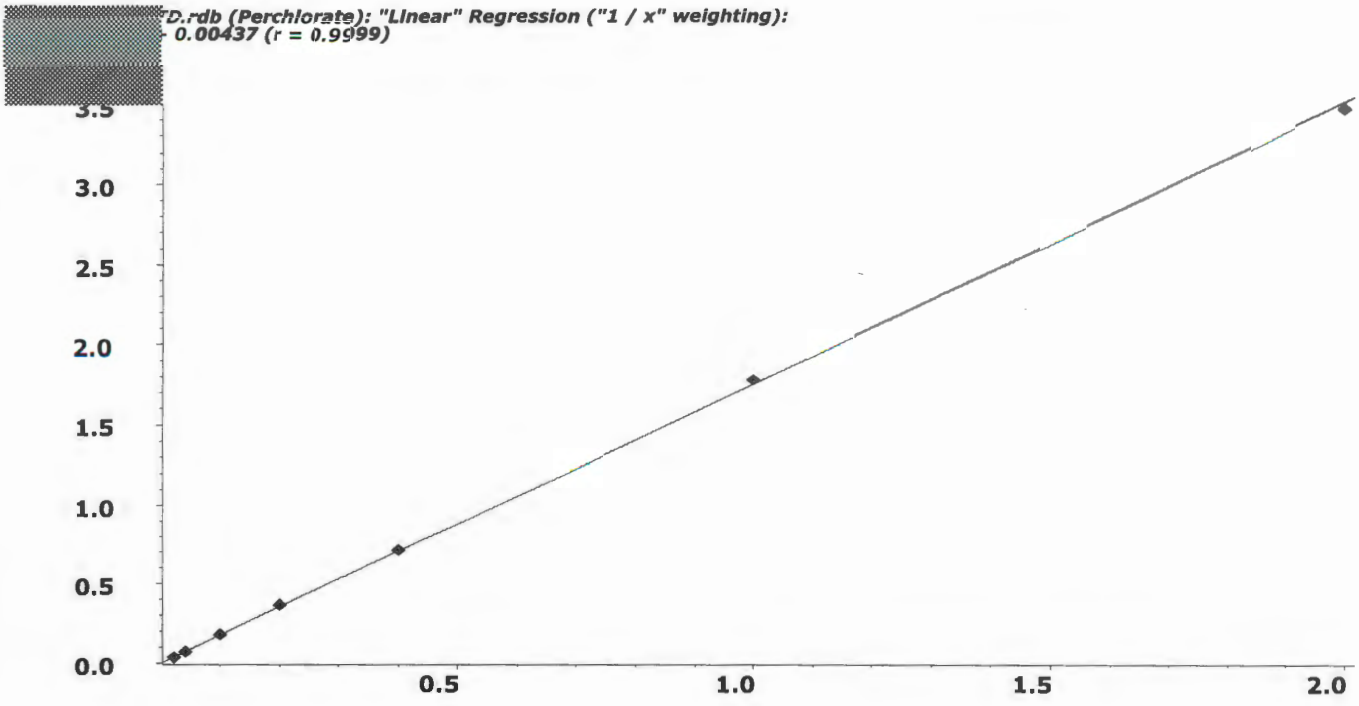

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Printed: 3/3/2016 1:59 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM33567.wiff	**Result Table**	030216_WTD.rdb
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.562 x + 0.00157 (r = 0.9998)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	93.4	N/A	N/A
0.20	1	0.20	98.6	N/A	N/A
0.50	1	0.54	107.2	N/A	N/A
1.00	1	1.00	99.5	N/A	N/A
2.00	1	2.01	100.7	N/A	N/A
5.00	1	5.11	102.2	N/A	N/A
10.00	1	9.85	98.5	N/A	N/A

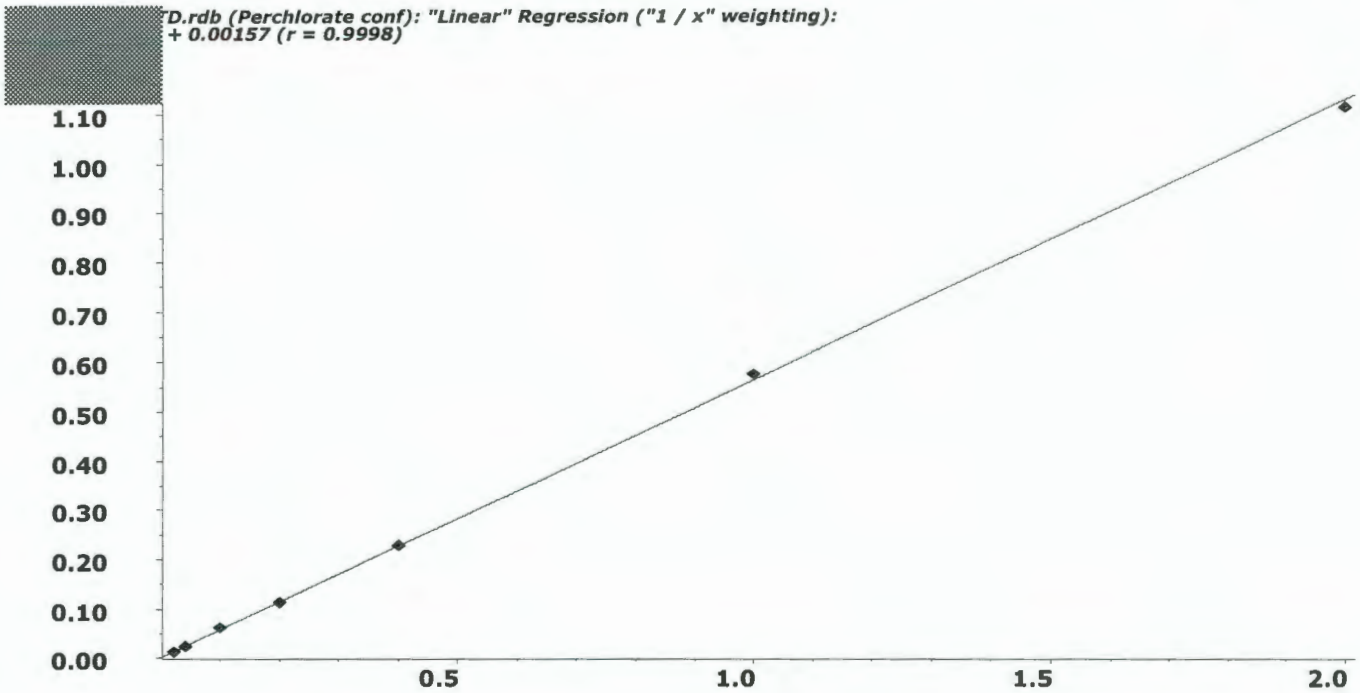

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Printed: 3/18/2016 6:09 PM

Data File	LM33568.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/2/2016 8:53:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-02 STD (0.1 ug/L)	**Injection Vial**	52.00
Data File	LM33568.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 8:53:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG559340-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.900e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.840e+04	9.97	0.10	0.095
Perchlorate conf	5.910e+03	9.94	0.10	0.0934

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

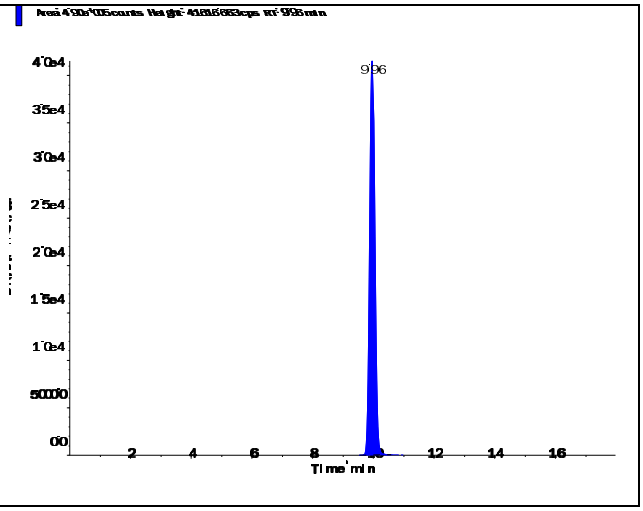

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.97 (9.94) min
Calculated conc:	0.095 ng/ml
Area Ratio:	0.038
Sample Type:	(Standard)

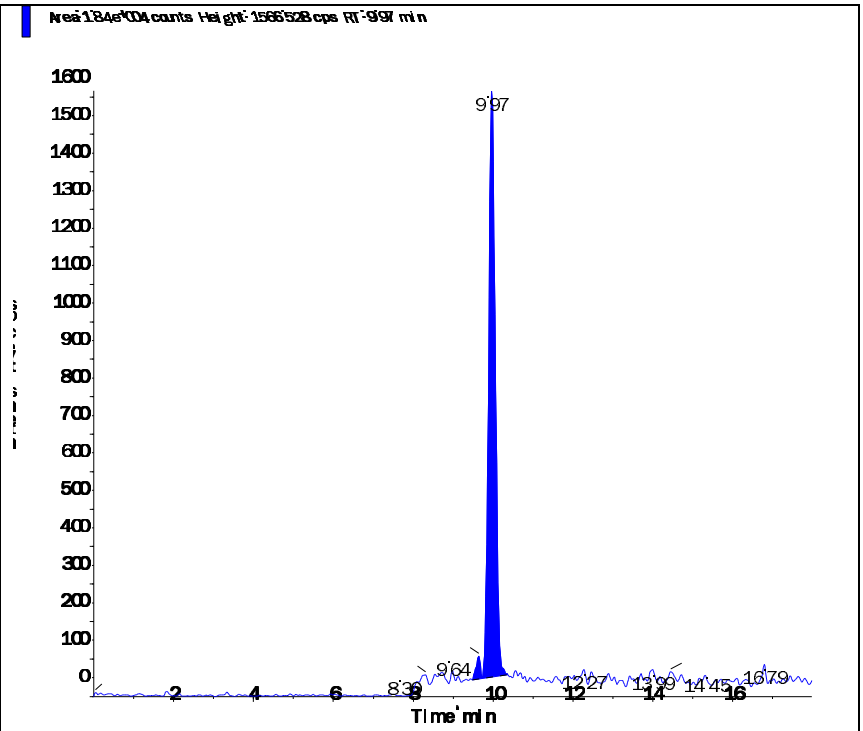

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.0934 ng/ml
Area Ratio:	0.012
Sample Type:	(Standard)

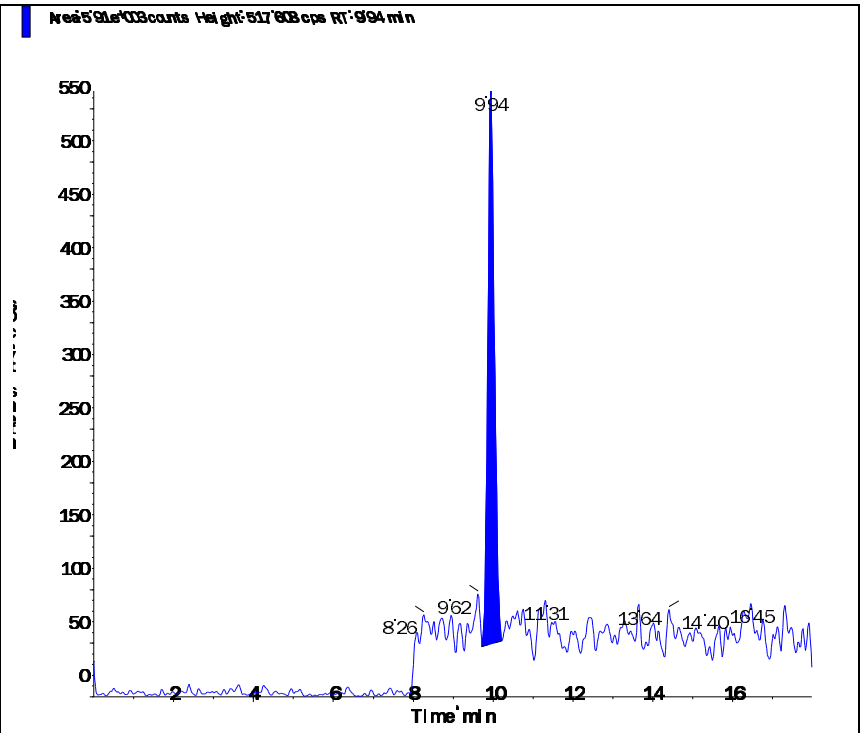

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Data File	LM33569.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/2/2016 9:12:17 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-03 STD (0.2 ug/L)	**Injection Vial**	53.00
Data File	LM33569.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 9:12:17 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG559340-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.990e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.700e+04	9.99	0.20	0.199
Perchlorate conf	1.190e+04	9.98	0.20	0.197

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

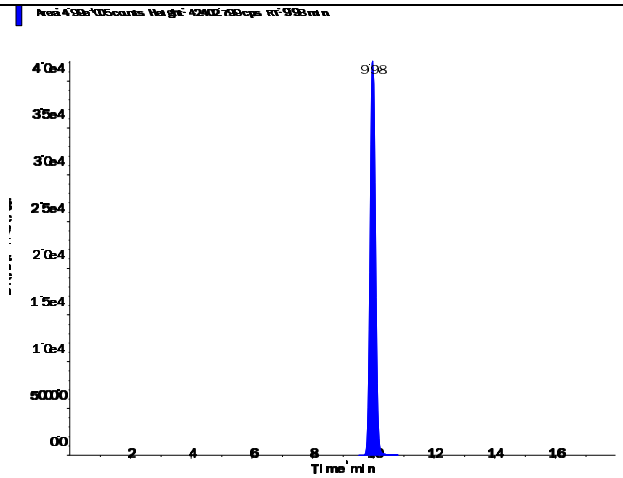

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.99 (9.94) min
Calculated conc:	0.199 ng/ml
Area Ratio:	0.074
Sample Type:	(Standard)

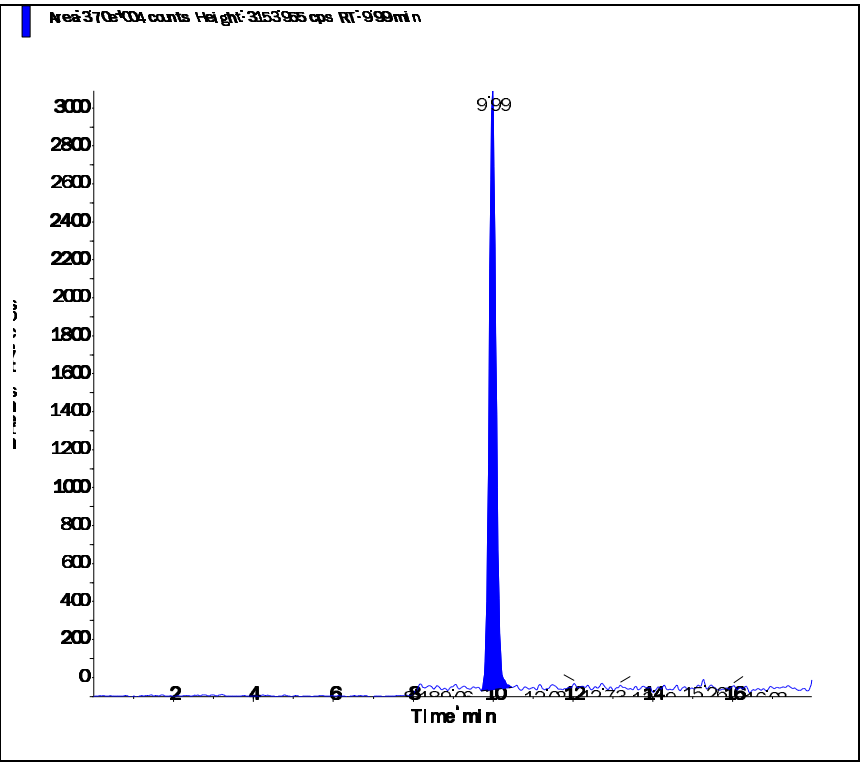

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.98 (9.92) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

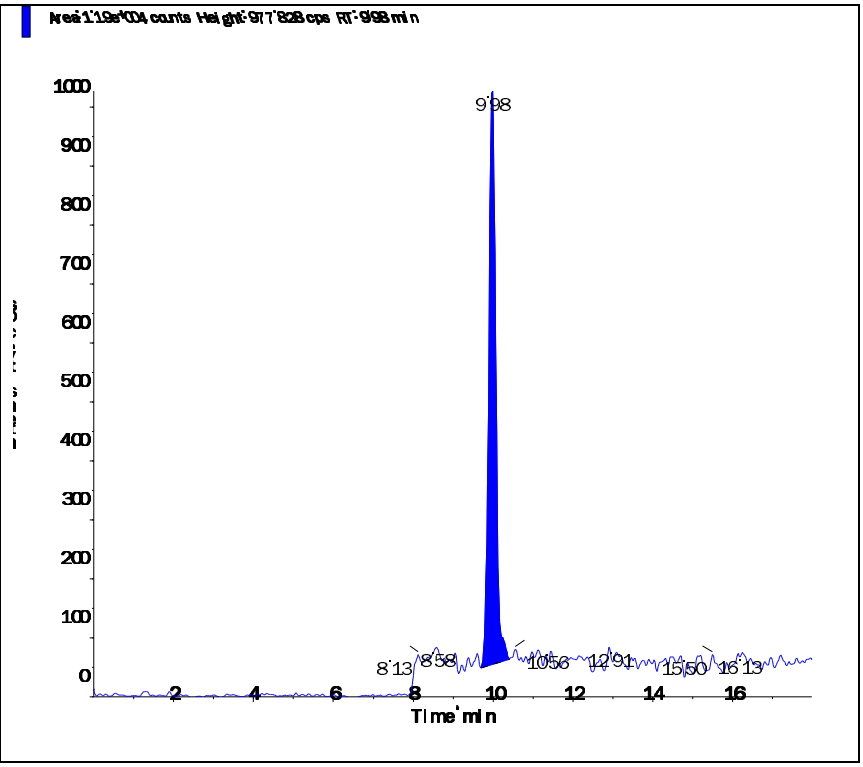

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Data File	LM33570.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/2/2016 9:31:14 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-04 STD (0.5 ug/L)	**Injection Vial**	54.00
Data File	LM33570.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 9:31:14 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG559340-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.920e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.900e+04	10.00	0.50	0.505
Perchlorate conf	3.040e+04	9.98	0.50	0.536

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

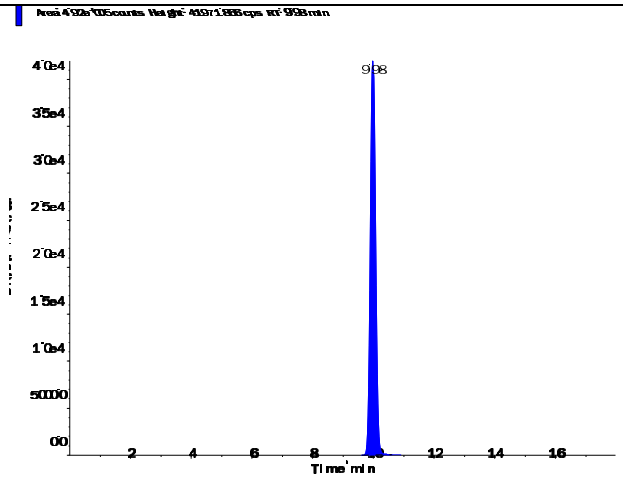

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.00 (9.94) min
Calculated conc:	0.505 ng/ml
Area Ratio:	0.181
Sample Type:	(Standard)

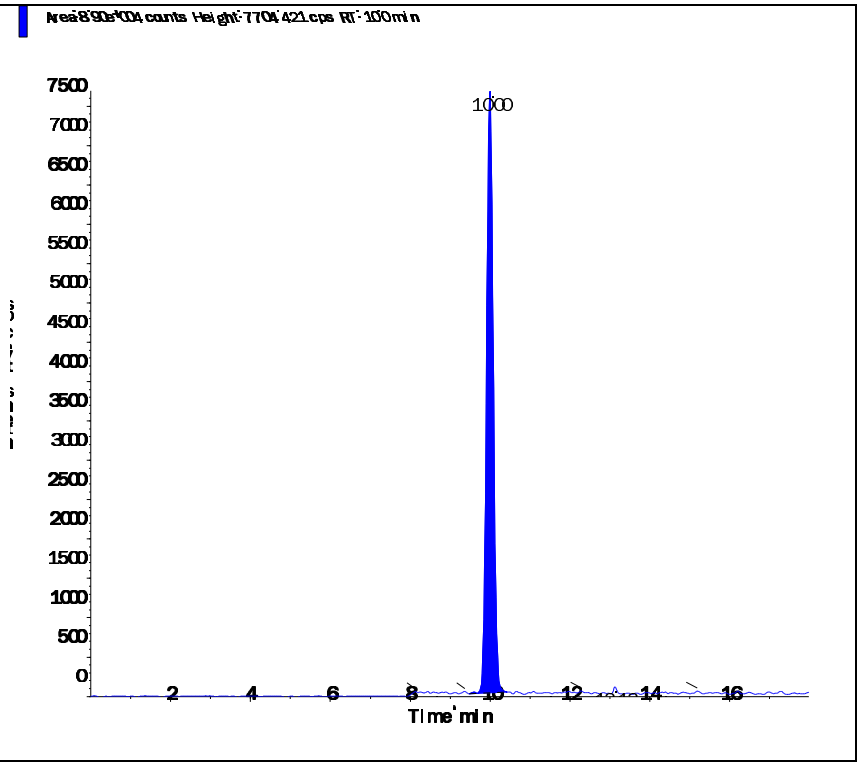

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.98 (9.92) min
Calculated conc:	0.536 ng/ml
Area Ratio:	0.062
Sample Type:	(Standard)

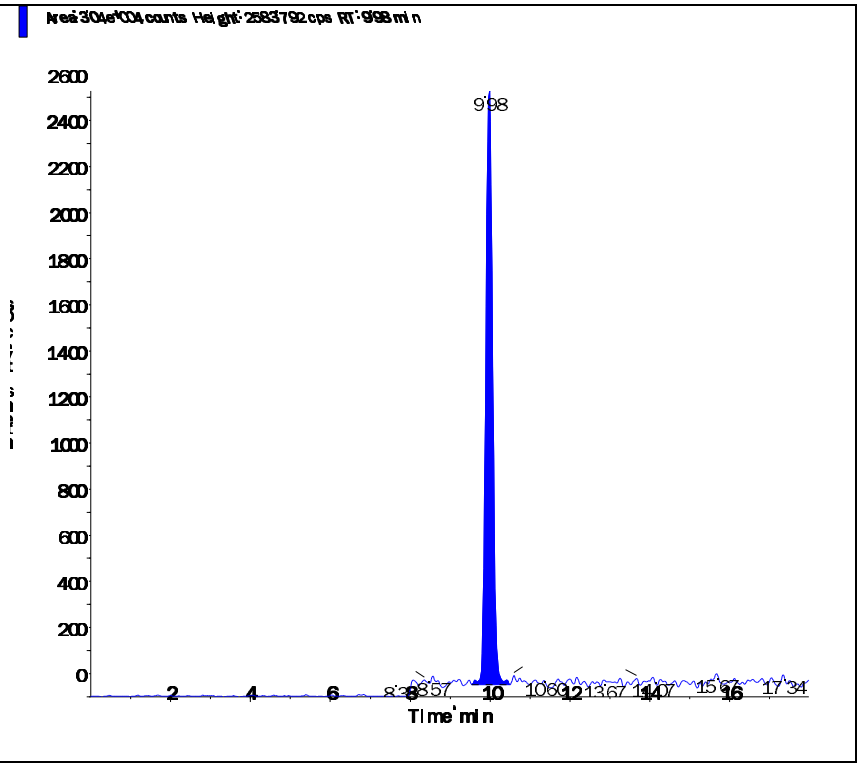

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Data File	LM33571.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/2/2016 9:50:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-05 STD (1.0 ug/L)	**Injection Vial**	55.00
Data File	LM33571.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 9:50:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG559340-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.010e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.830e+05	9.99	1.00	1.03
Perchlorate conf	5.680e+04	9.98	1.00	0.995

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

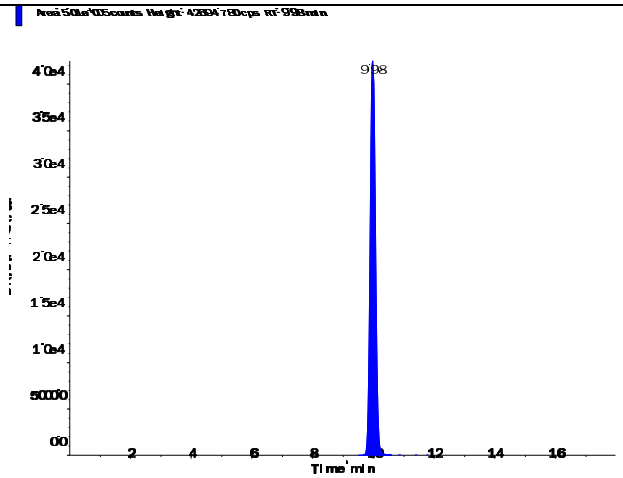

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.99 (9.94) min Calculated conc: 1.03 ng/ml Area Ratio: 0.366 Sample Type: (Standard)	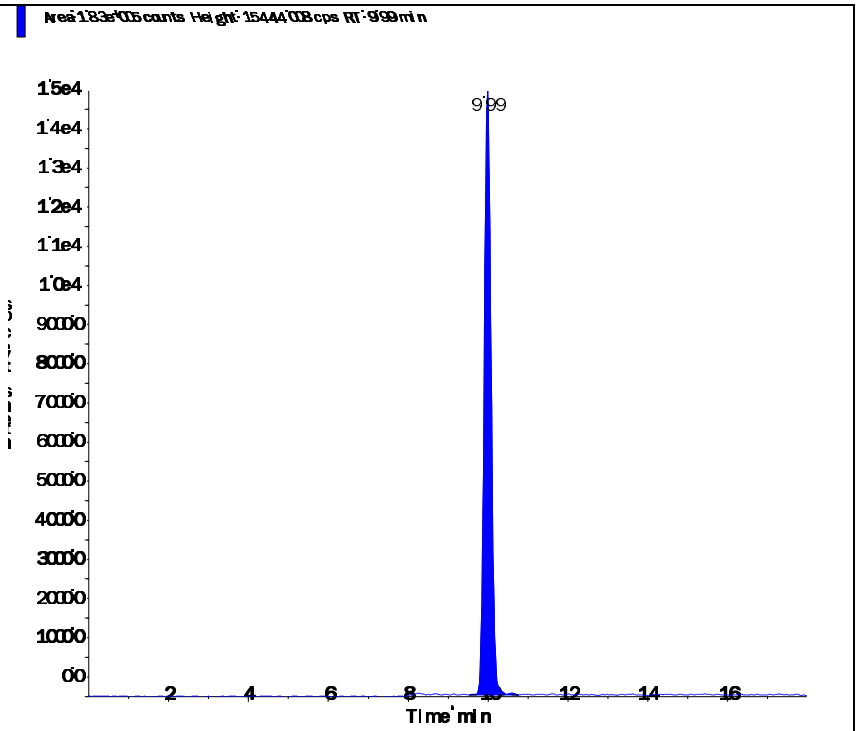
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.98 (9.92) min Calculated conc: 0.995 ng/ml Area Ratio: 0.113 Sample Type: (Standard)	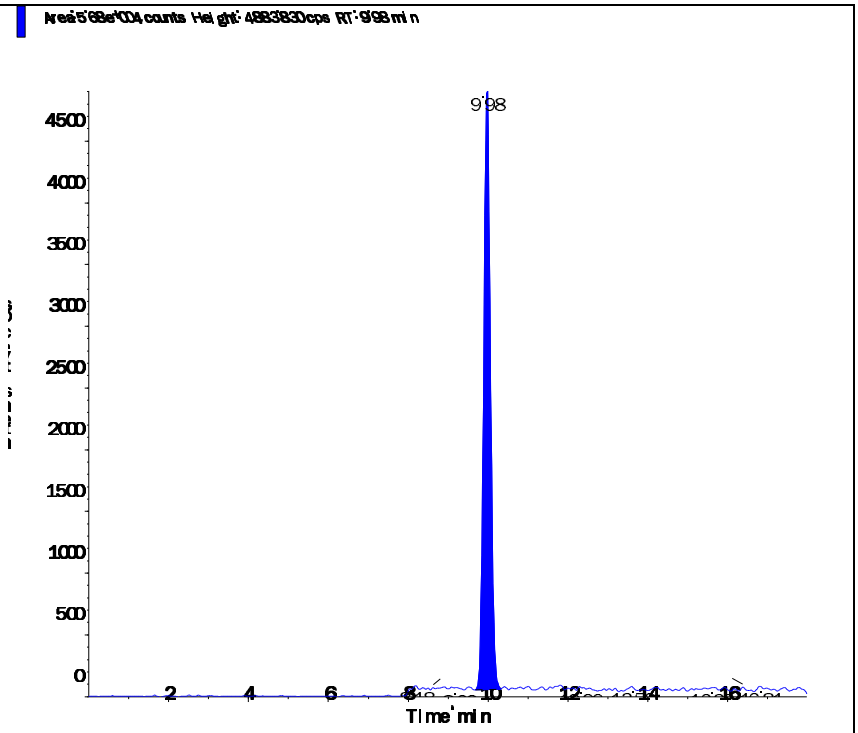

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Data File	LM33572.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/2/2016 10:09:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-06 STD (2.0 ug/L)	**Injection Vial**	56.00
Data File	LM33572.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 10:09:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG559340-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.99	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.630e+05	10.00	2.00	2.02
Perchlorate conf	1.170e+05	9.99	2.00	2.01

O18LP (Internal Standard)

RT (Exp. RT): 9.99(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

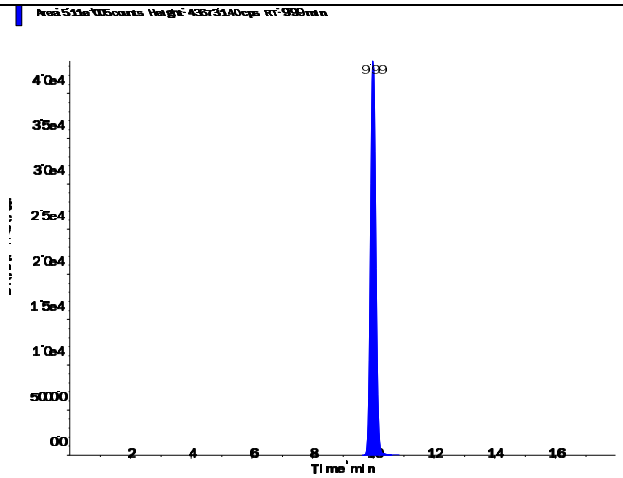

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.00 (9.94) min
Calculated conc:	2.02 ng/ml
Area Ratio:	0.711
Sample Type:	(Standard)

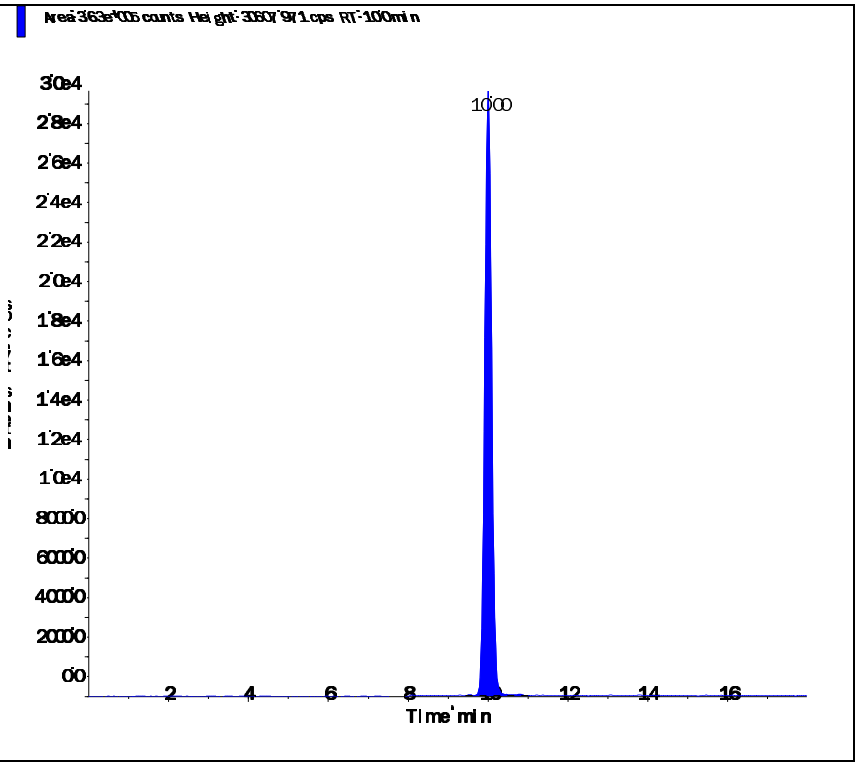

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.99 (9.92) min
Calculated conc:	2.01 ng/ml
Area Ratio:	0.228
Sample Type:	(Standard)

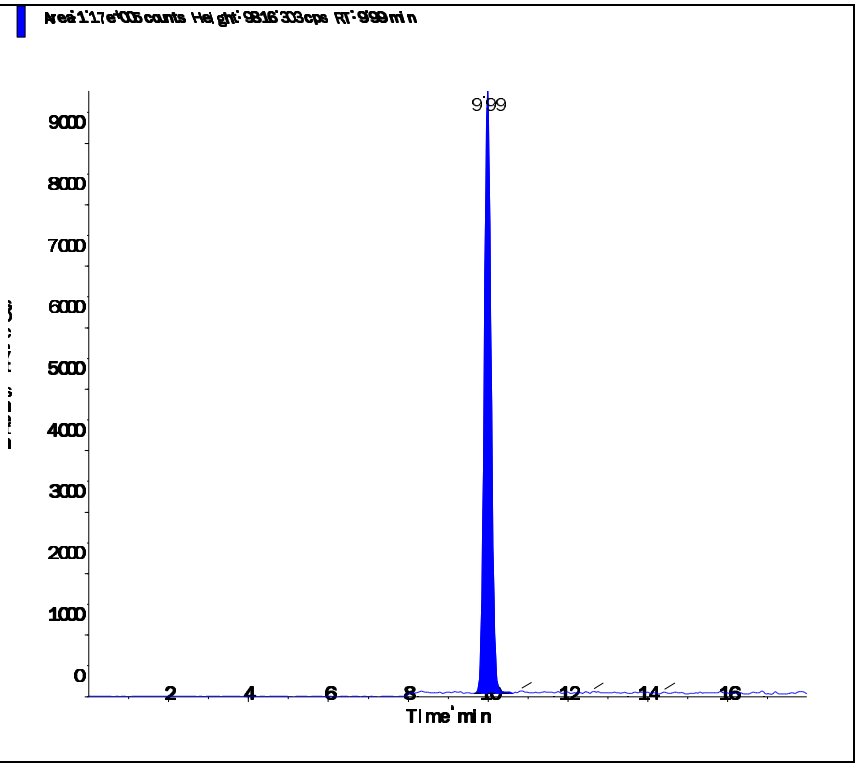

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Data File	LM33573.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/2/2016 10:28:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-07 STD (5.0 ug/L)	**Injection Vial**	57.00
Data File	LM33573.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 10:28:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG559340-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.900e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.710e+05	9.98	5.00	5.07
Perchlorate conf	2.820e+05	9.97	5.00	5.11

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

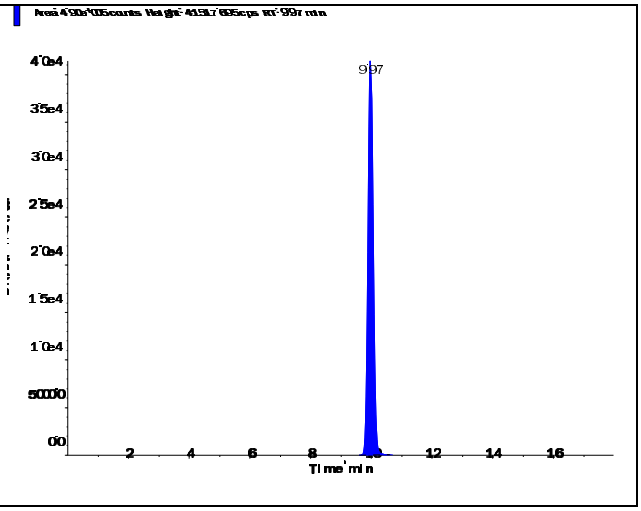

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.98 (9.94) min
Calculated conc:	5.07 ng/ml
Area Ratio:	1.779
Sample Type:	(Standard)

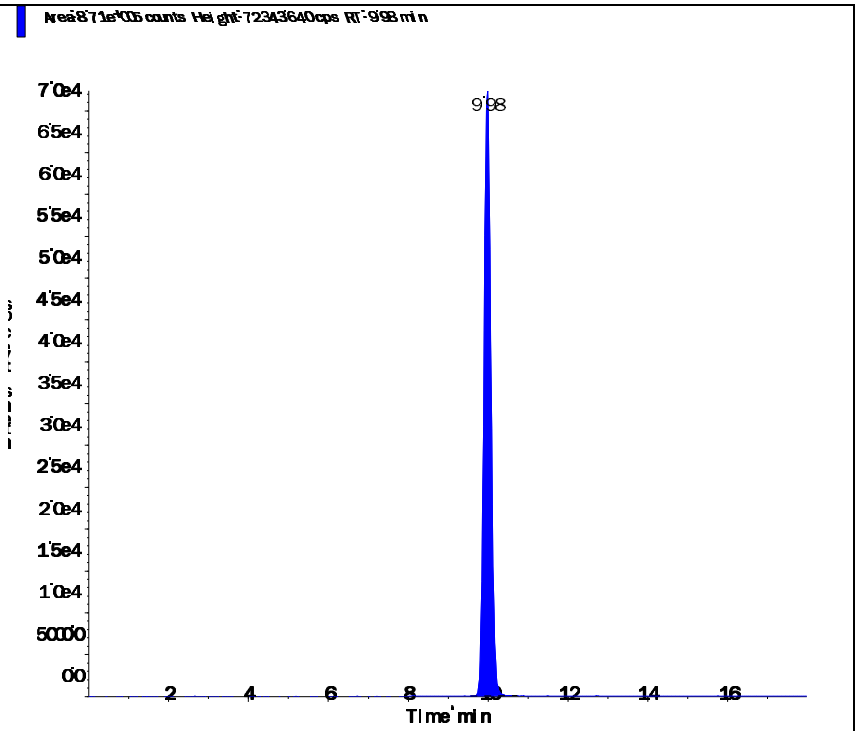

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.97 (9.92) min
Calculated conc:	5.11 ng/ml
Area Ratio:	0.576
Sample Type:	(Standard)

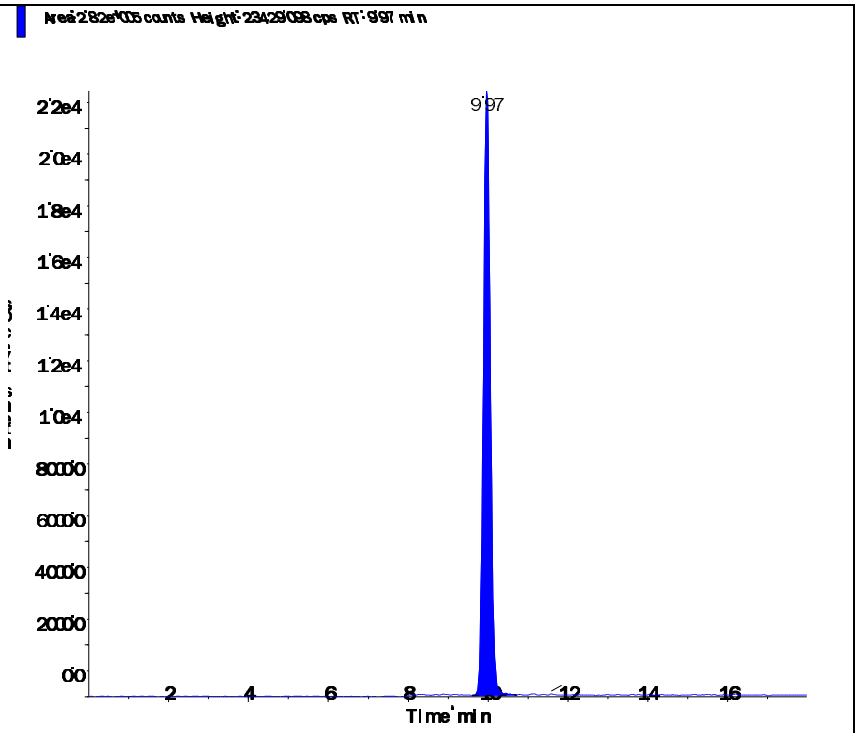

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Data File	LM33574.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/2/2016 10:46:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-08 STD (10 ug/L)	**Injection Vial**	58.00
Data File	LM33574.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 10:46:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG559340-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.650e+06	9.98	10.00	9.87
Perchlorate conf	5.300e+05	9.96	10.00	9.85

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

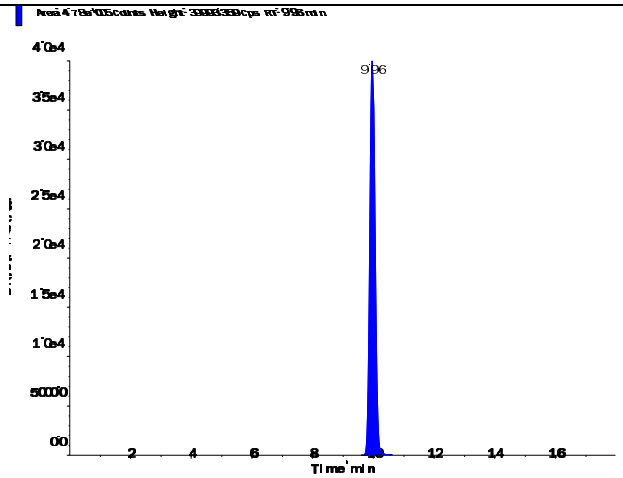

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.98 (9.94) min
Calculated conc:	9.87 ng/ml
Area Ratio:	3.458
Sample Type:	(Standard)

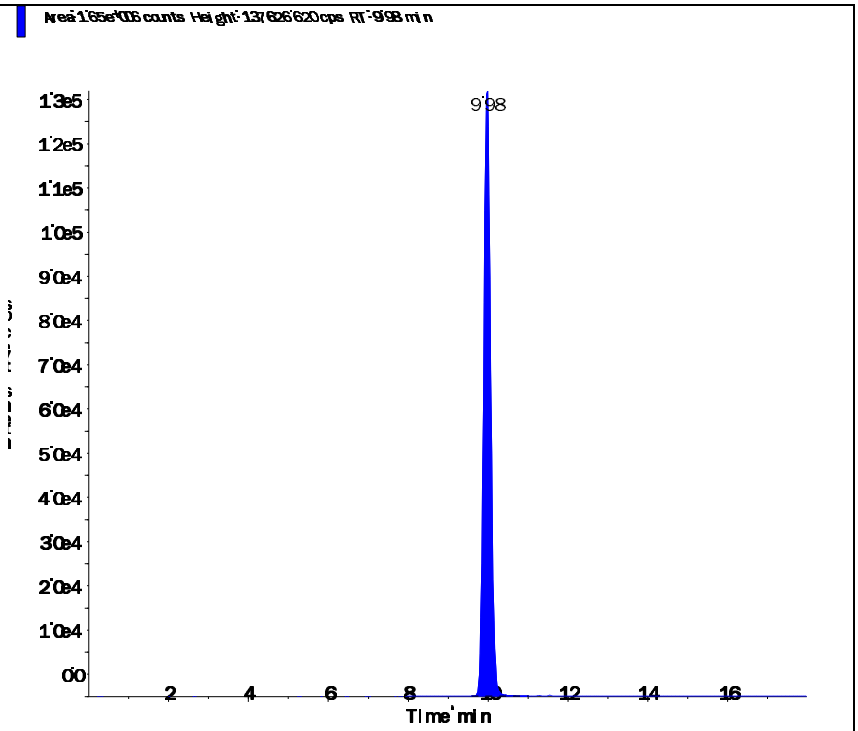

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.96 (9.92) min
Calculated conc:	9.85 ng/ml
Area Ratio:	1.11
Sample Type:	(Standard)

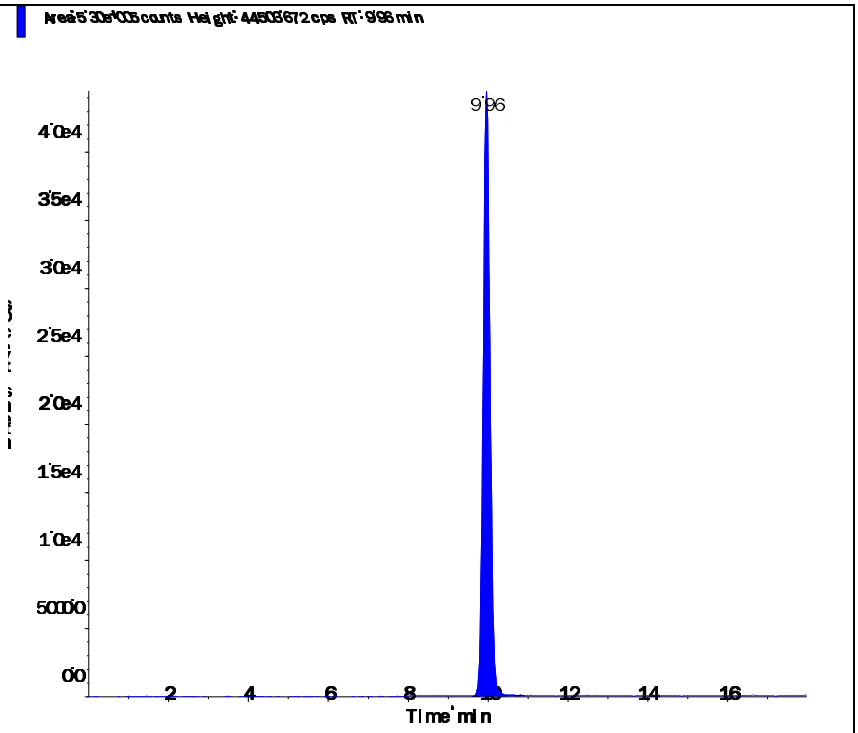

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Data File	LM33575.wiff	**Result Table**	030216_WTD.rdb
Acquisition Date	3/2/2016 11:05:52 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-09 SSCV (1.0 ug/L)	**Injection Vial**	59.00
Data File	LM33575.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 11:05:52 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030216_WTD.rdb
Sample ID	WG559340-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.200e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.900e+05	9.98	1.00	1.03
Perchlorate conf	6.220e+04	9.97	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

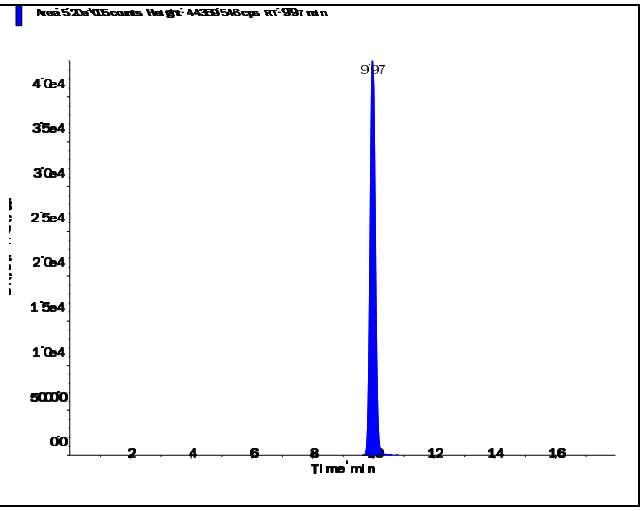

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.98 (9.94) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.366
Sample Type:	(Quality Control)

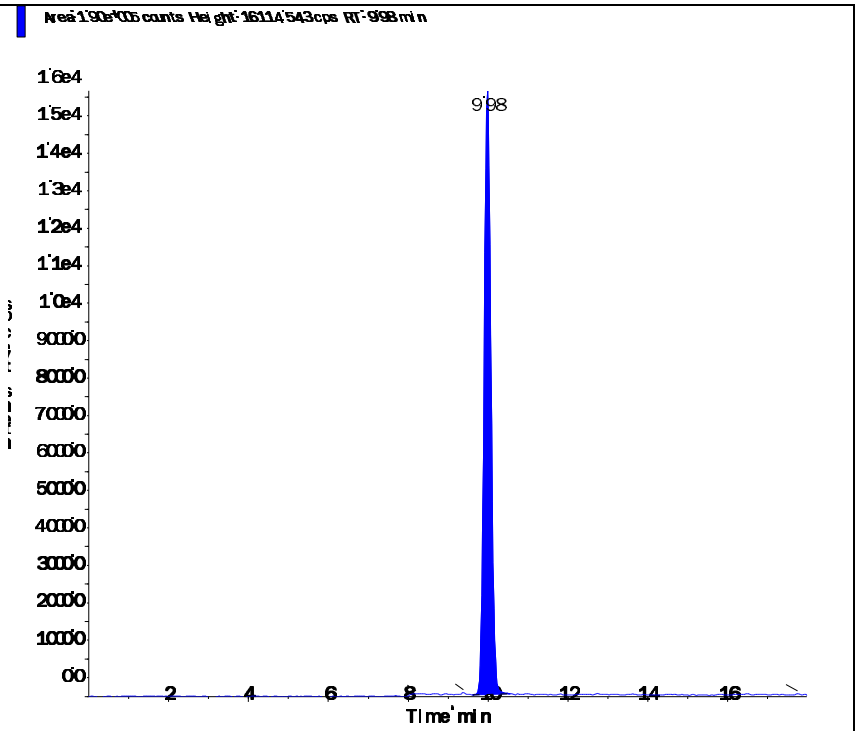

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.97 (9.92) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.12
Sample Type:	(Quality Control)

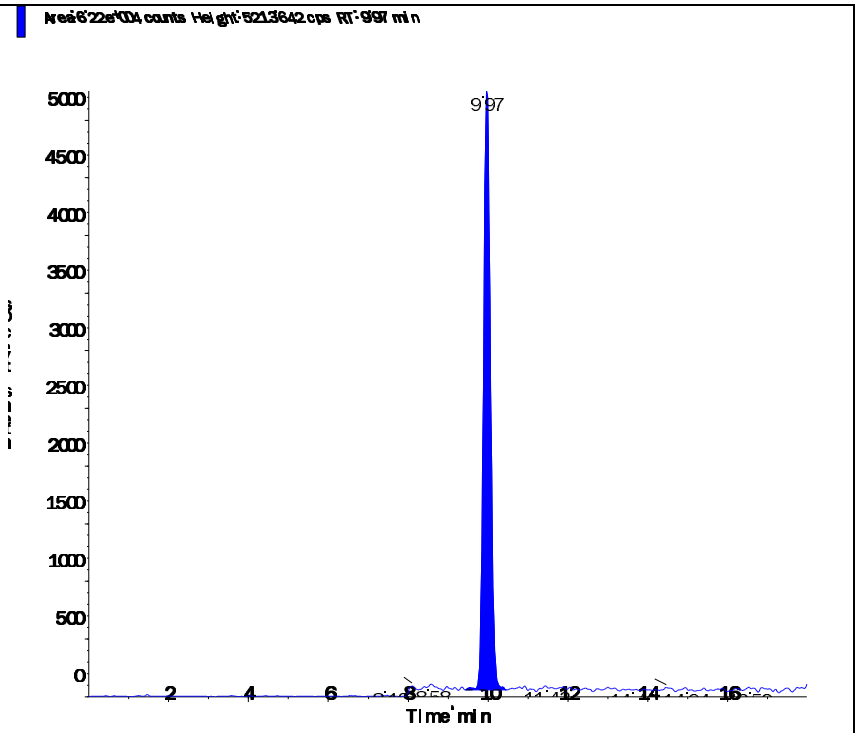

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Data File	LM33902.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 9:38:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561324-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33902.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 9:38:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561324-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.260e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.850e+05	9.93	1.00	0.993
Perchlorate conf	6.140e+04	9.91	1.00	1.02

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

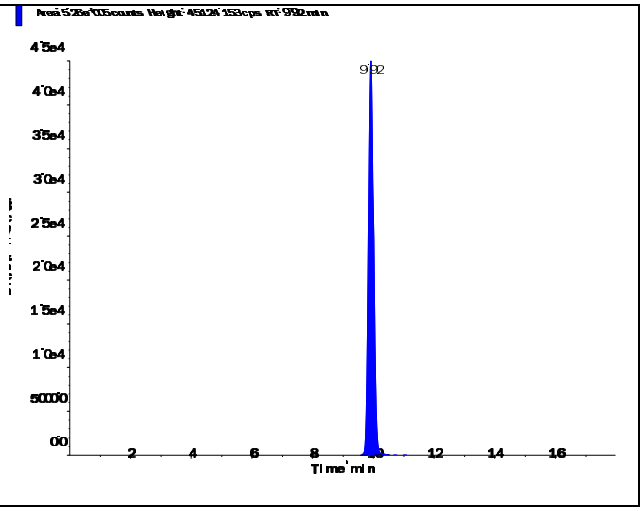

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.93 (9.94) min Calculated conc: 0.993 ng/ml Area Ratio: 0.352 Sample Type: (Quality Control)	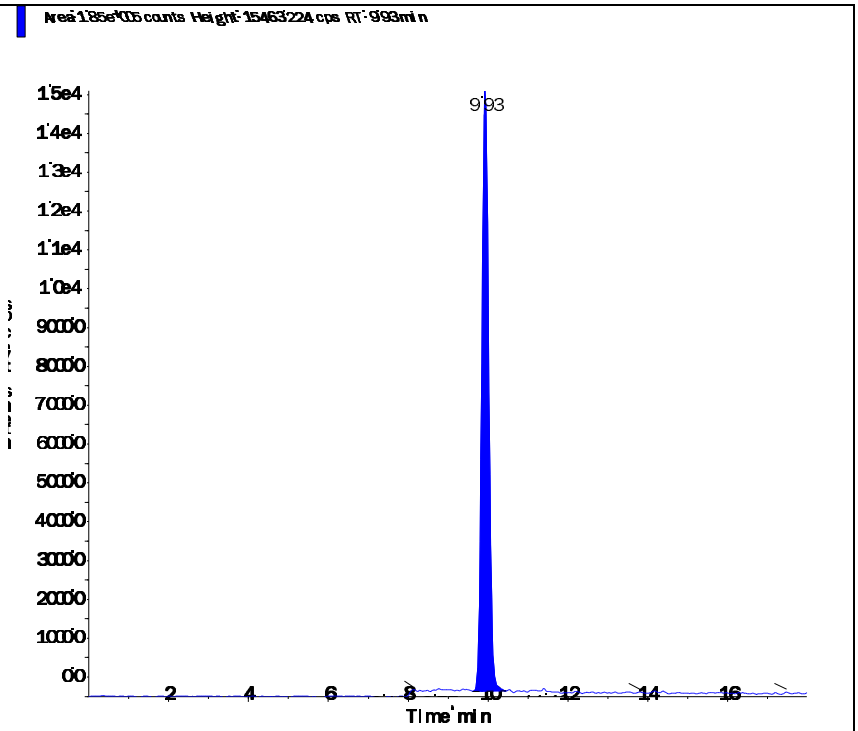
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.91 (9.92) min Calculated conc: 1.02 ng/ml Area Ratio: 0.117 Sample Type: (Quality Control)	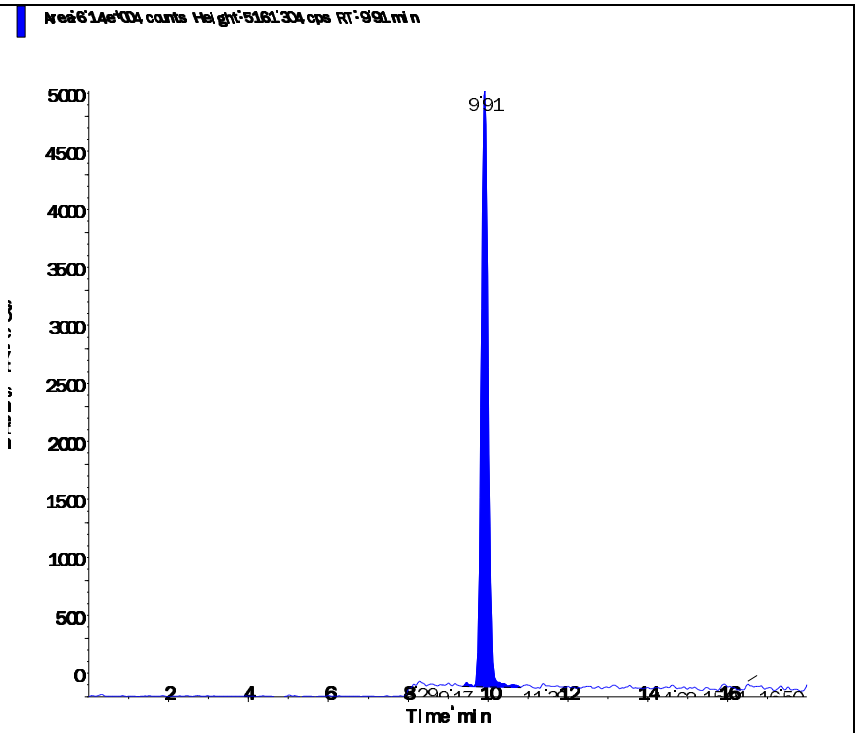

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Data File	LM33916.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 2:03:35 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561324-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33916.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 2:03:35 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561324-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.320e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.870e+05	9.93	1.00	0.993
Perchlorate conf	6.130e+04	9.91	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

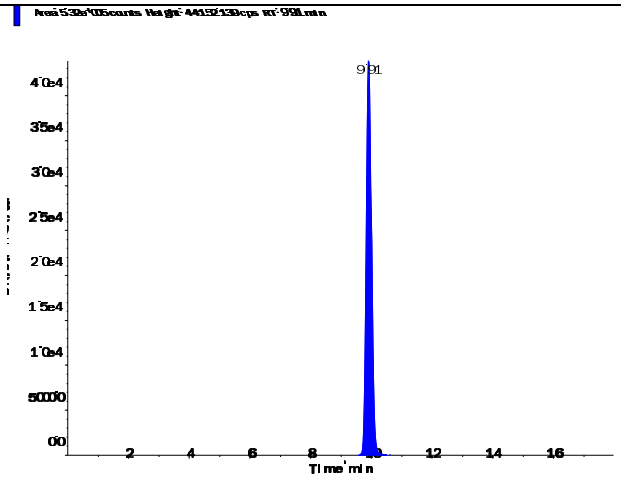

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	0.993 ng/ml
Area Ratio:	0.352
Sample Type:	(Quality Control)

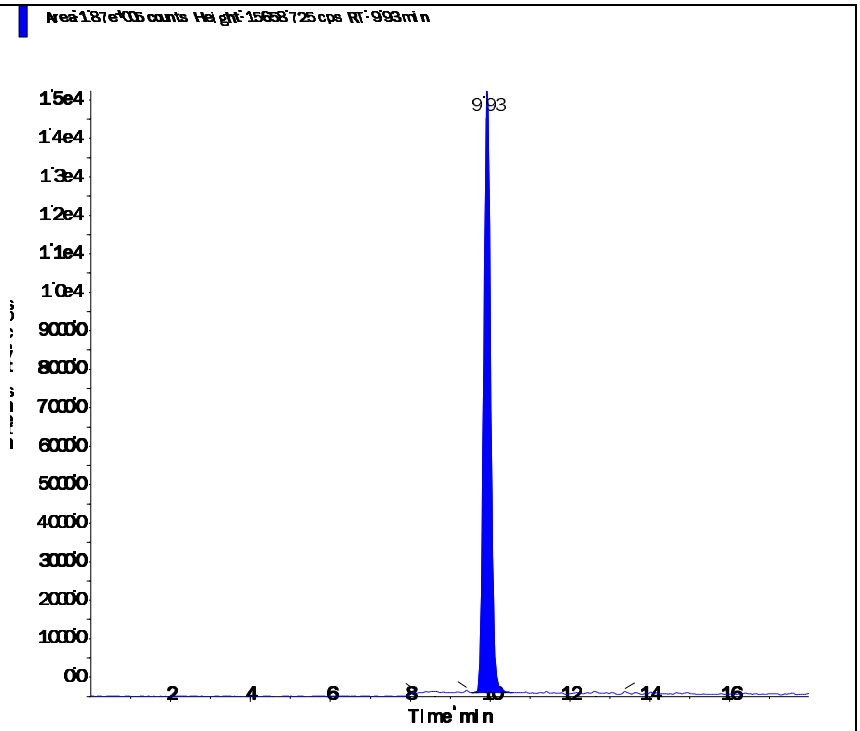

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.92) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.115
Sample Type:	(Quality Control)

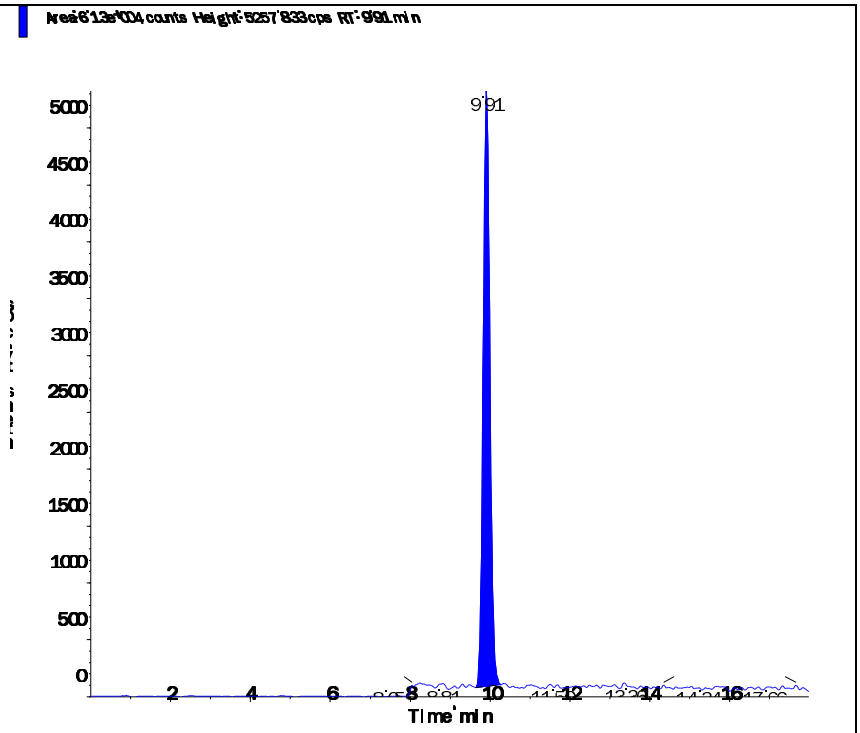

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Data File	LM33926.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 5:12:58 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561324-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33926.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 5:12:58 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561324-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.450e+05	9.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.940e+05	9.92	1.00	1.01
Perchlorate conf	6.330e+04	9.91	1.00	1.02

O18LP (Internal Standard)

RT (Exp. RT): 9.90(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

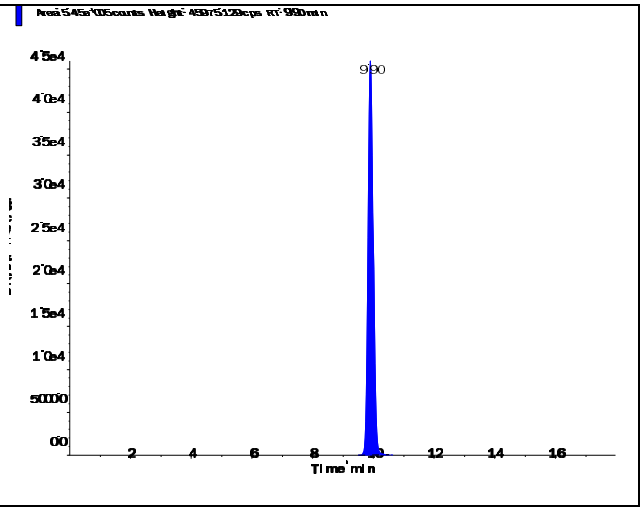

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.92 (9.94) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.356
Sample Type:	(Quality Control)

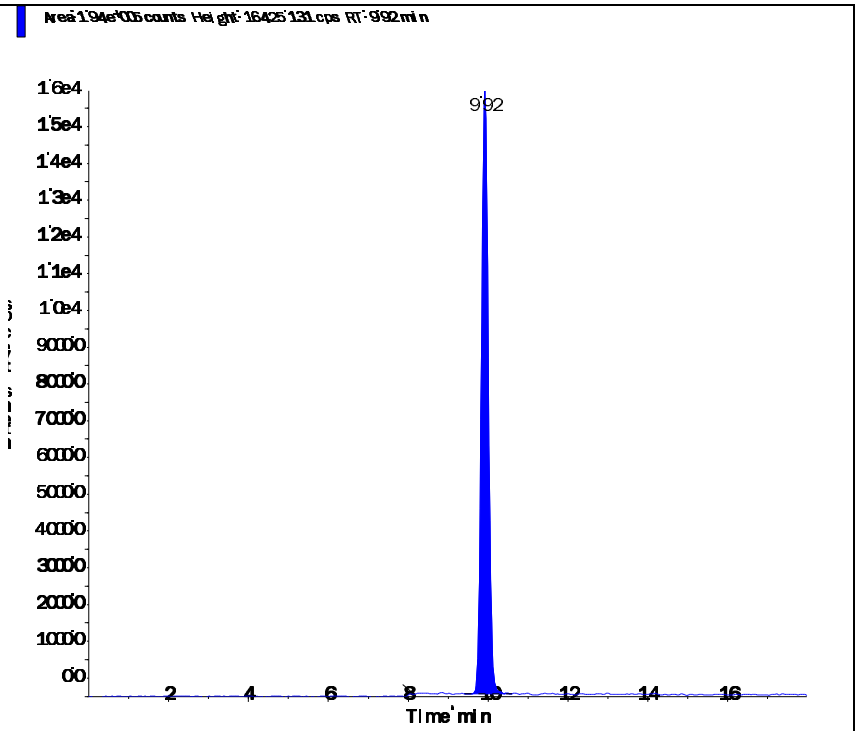

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.92) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.116
Sample Type:	(Quality Control)

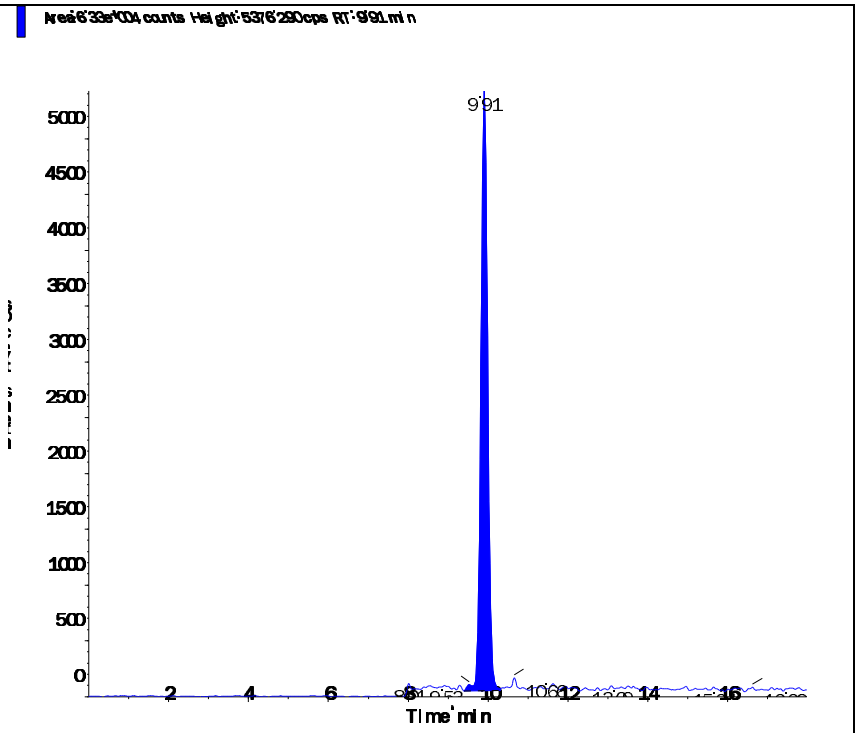

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Data File	LM33929.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 12:15:27 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561324-11 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33929.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 12:15:27 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561324-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.700e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.620e+05	9.95	1.00	0.976
Perchlorate conf	5.460e+04	9.93	1.00	1.02

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

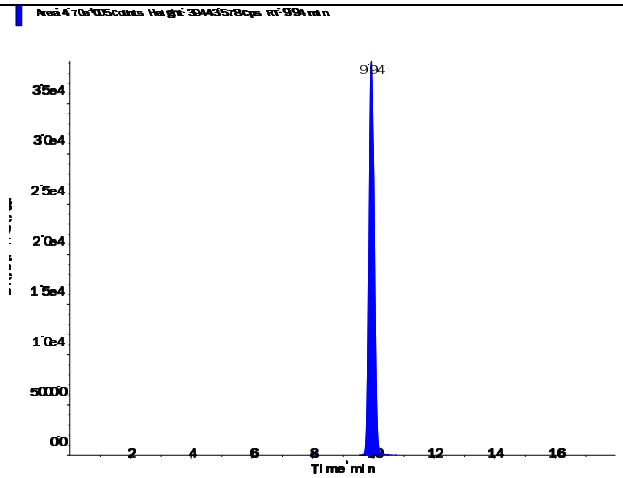

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	0.976 ng/ml
Area Ratio:	0.346
Sample Type:	(Quality Control)

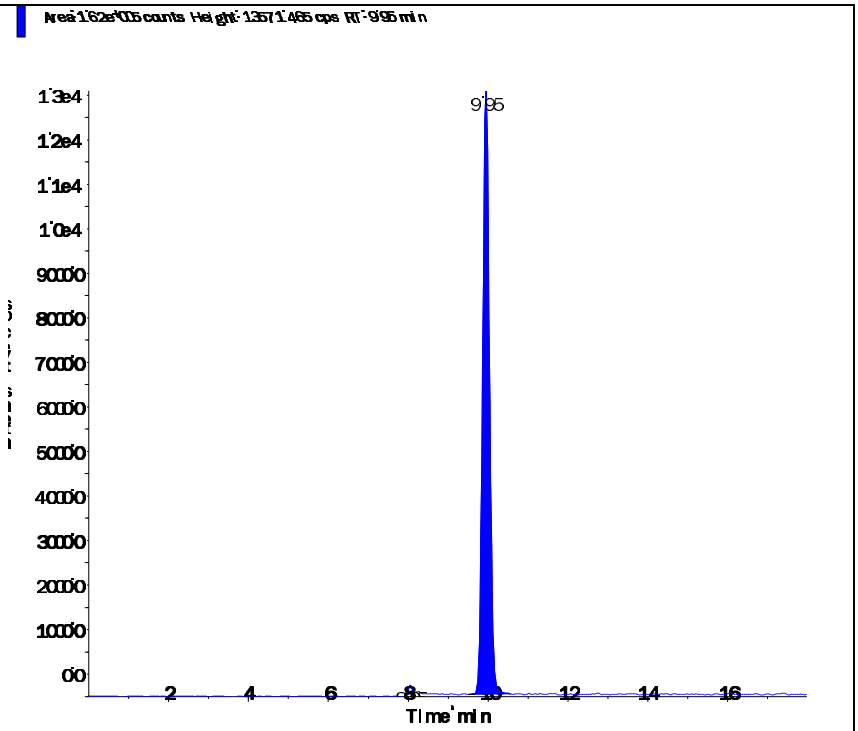

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.116
Sample Type:	(Quality Control)

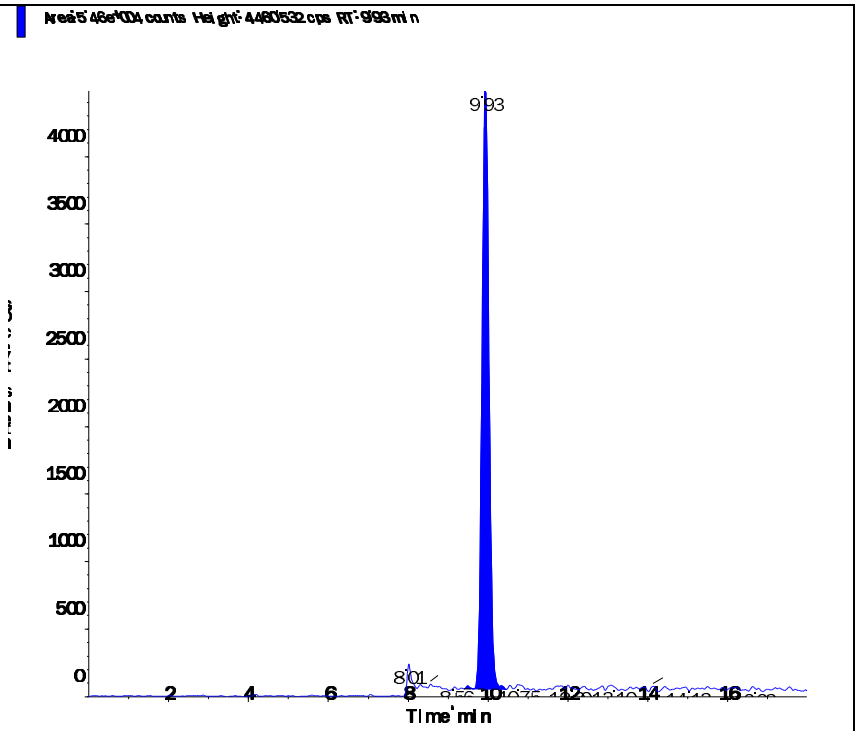

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Data File	LM33942.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 4:21:36 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561324-13 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33942.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 4:21:36 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561324-13	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.040e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.740e+05	9.96	1.00	0.978
Perchlorate conf	5.650e+04	9.94	1.00	0.984

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

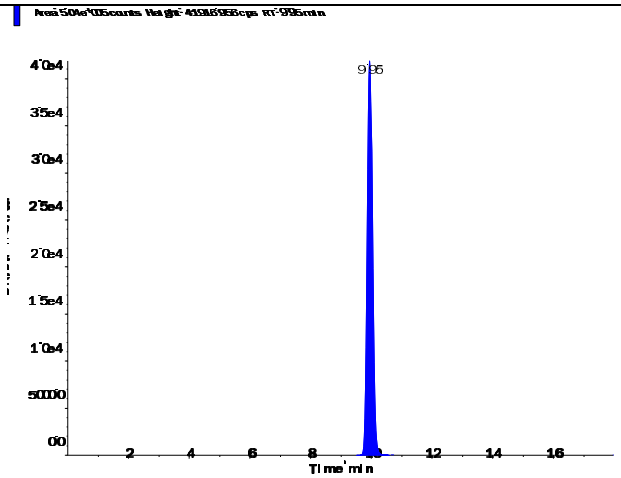

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	0.978 ng/ml
Area Ratio:	0.347
Sample Type:	(Quality Control)

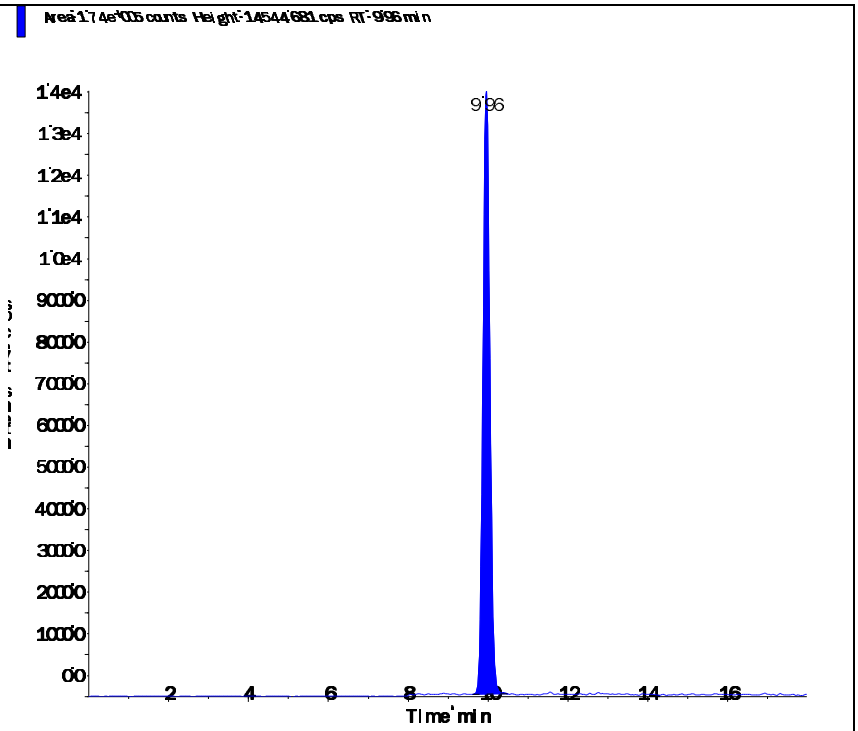

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.984 ng/ml
Area Ratio:	0.112
Sample Type:	(Quality Control)

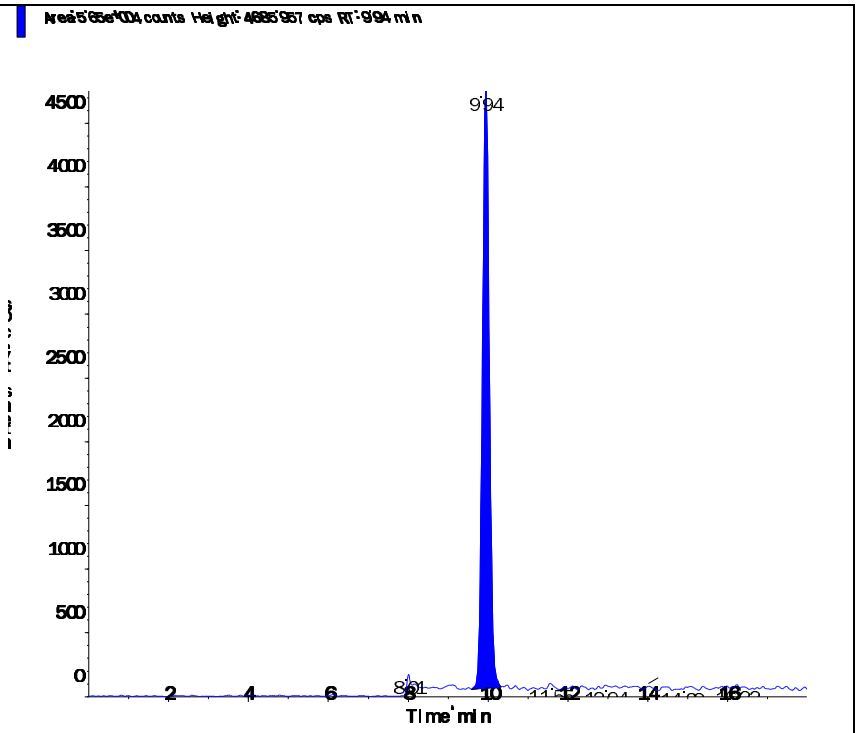

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Data File	LM33904.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 10:16:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561318-07 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33904.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 10:16:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561318-07	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.580e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.910e+04	9.93	N/A	0.188
Perchlorate conf	1.370e+04	9.91	N/A	0.205

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

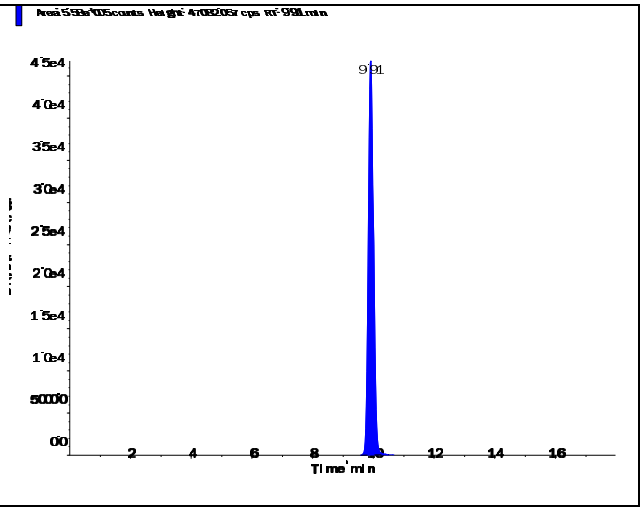

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	0.188 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

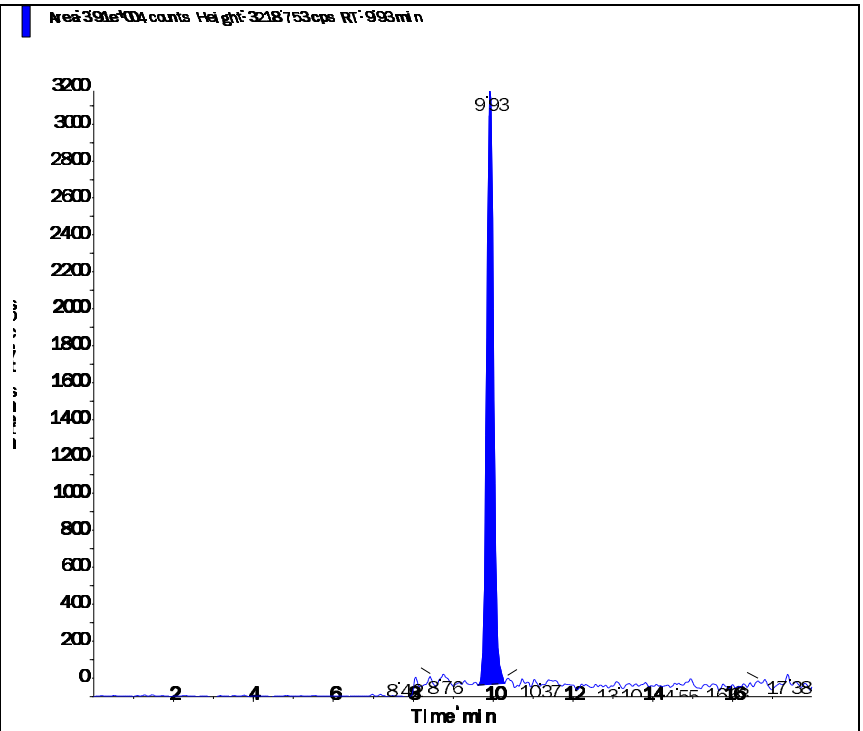

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.92) min
Calculated conc:	0.205 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

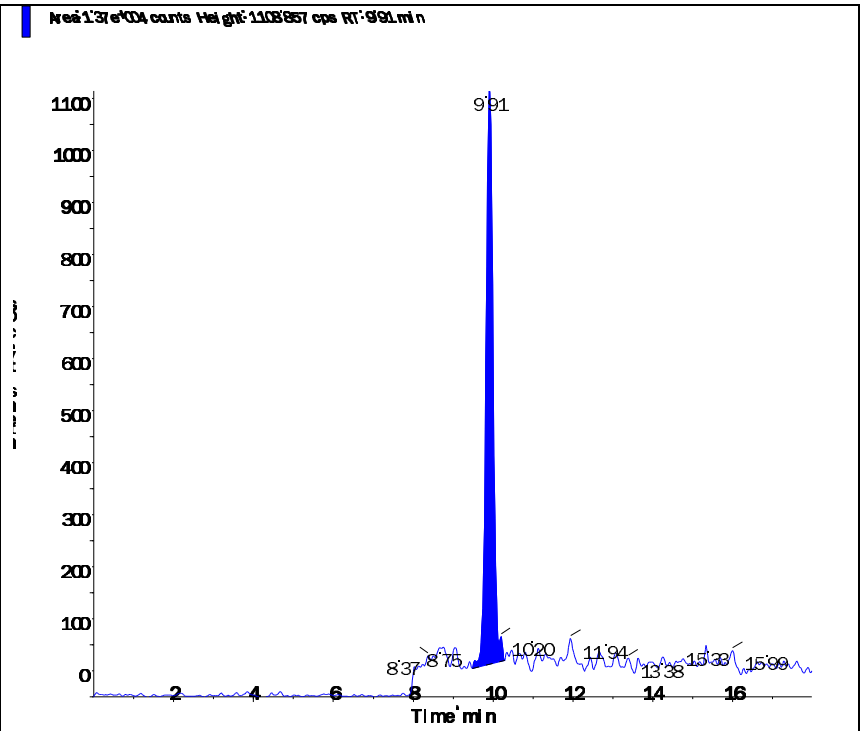

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Data File	LM33917.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 2:22:31 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561318-08 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33917.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 2:22:31 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561318-08	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.420e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.080e+04	9.92	N/A	0.203
Perchlorate conf	1.230e+04	9.91	N/A	0.189

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

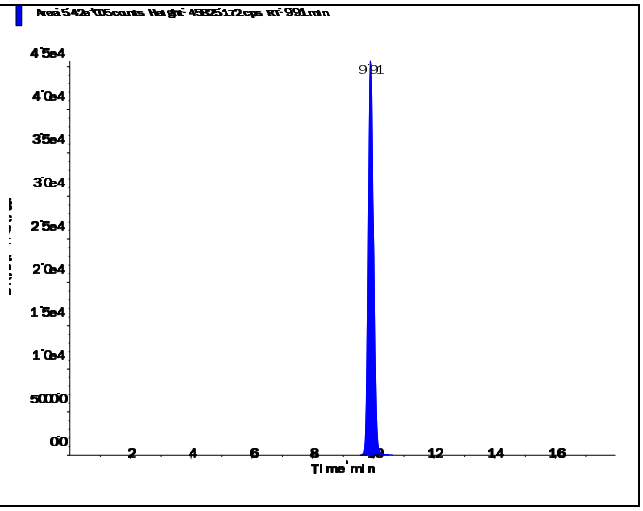

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.92 (9.94) min Calculated conc: 0.203 ng/ml Area Ratio: 0.075 Sample Type: (Unknown)	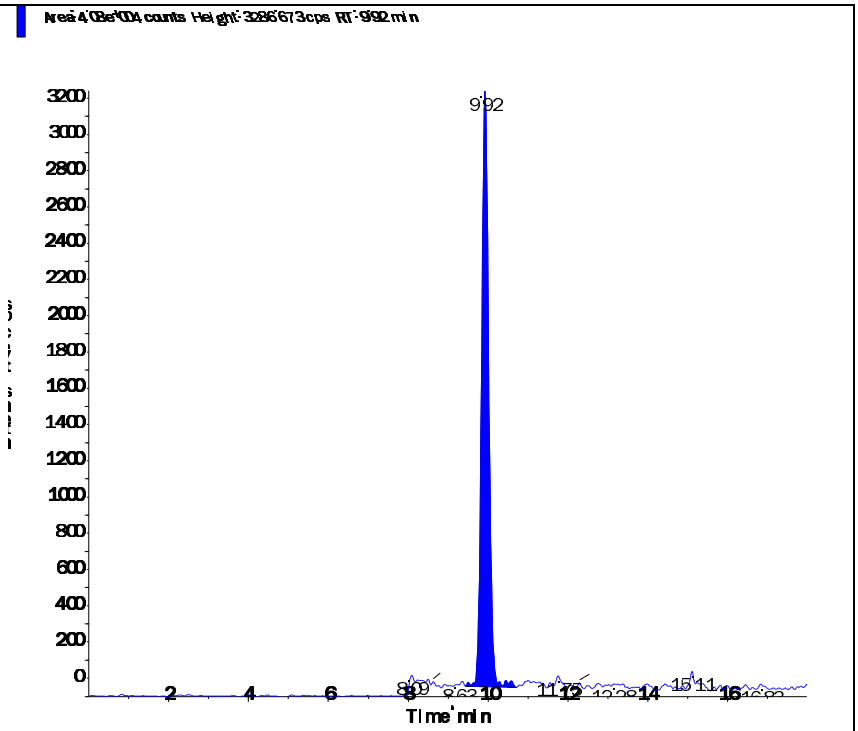
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.91 (9.92) min Calculated conc: 0.189 ng/ml Area Ratio: 0.023 Sample Type: (Unknown)	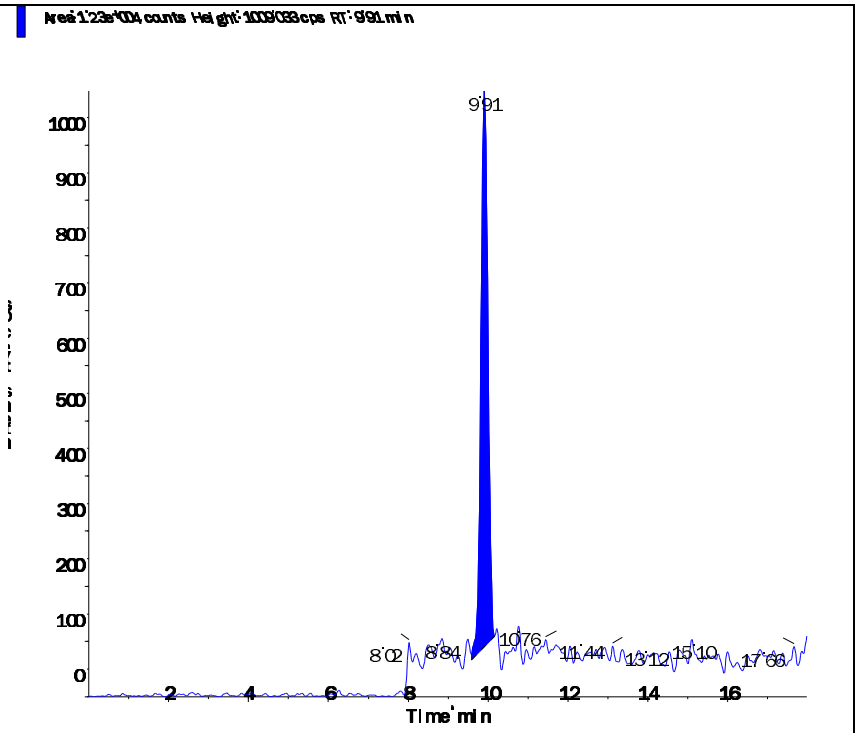

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Data File	LM33927.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 5:31:52 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561318-09 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33927.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 5:31:52 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561318-09	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.730e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.070e+04	9.92	N/A	0.191
Perchlorate conf	1.390e+04	9.90	N/A	0.202

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

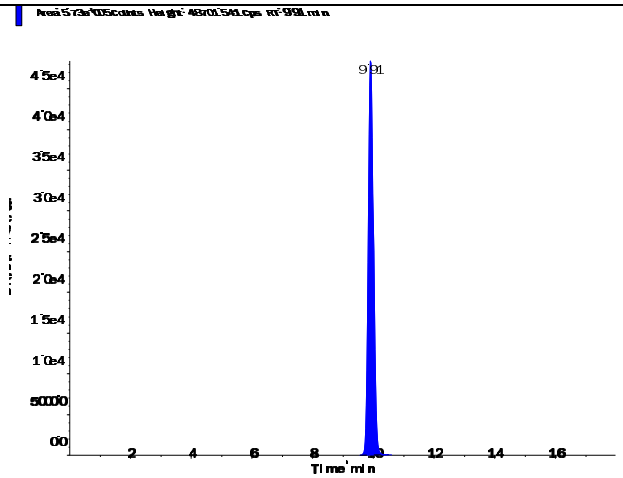

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.92 (9.94) min
Calculated conc:	0.191 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

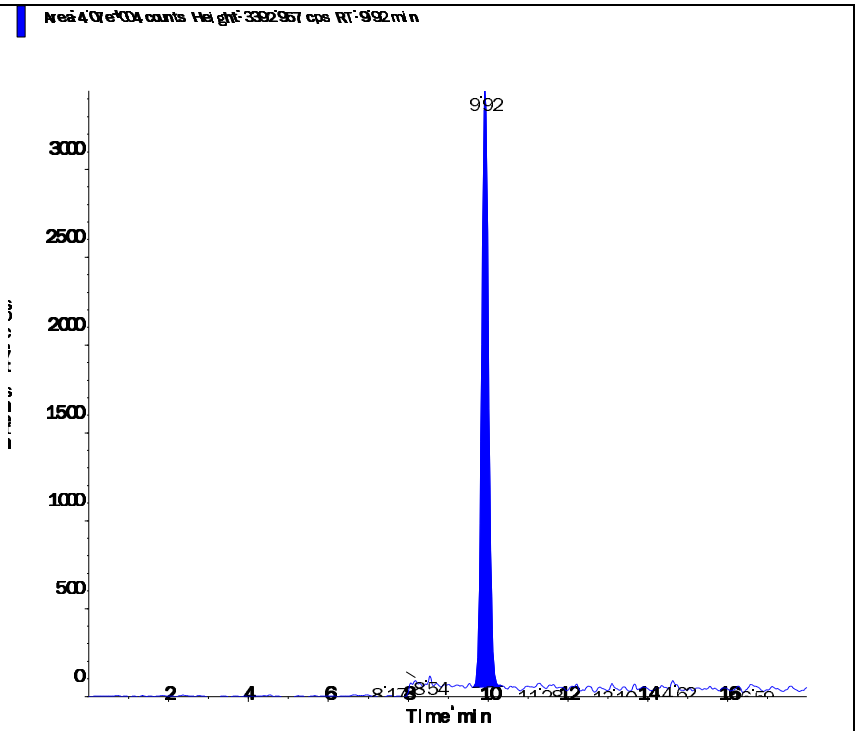

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.90 (9.92) min
Calculated conc:	0.202 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

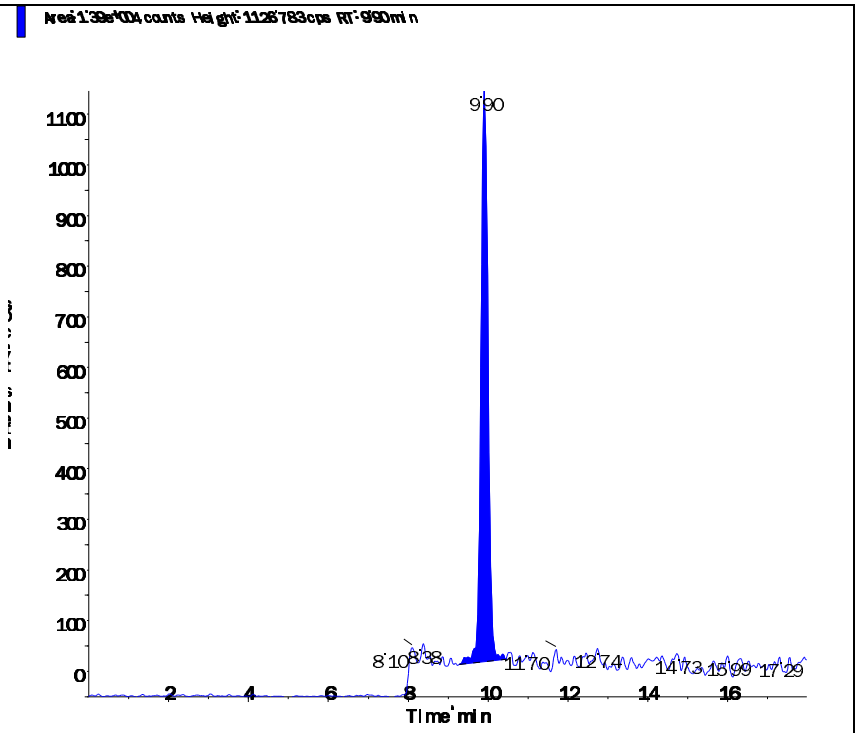

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Printed: 3/18/2016 6:28 PM

Data File	LM33931.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 12:53:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561318-10 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33931.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 12:53:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561318-10	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.910e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.530e+04	9.98	N/A	0.193
Perchlorate conf	1.150e+04	9.96	N/A	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

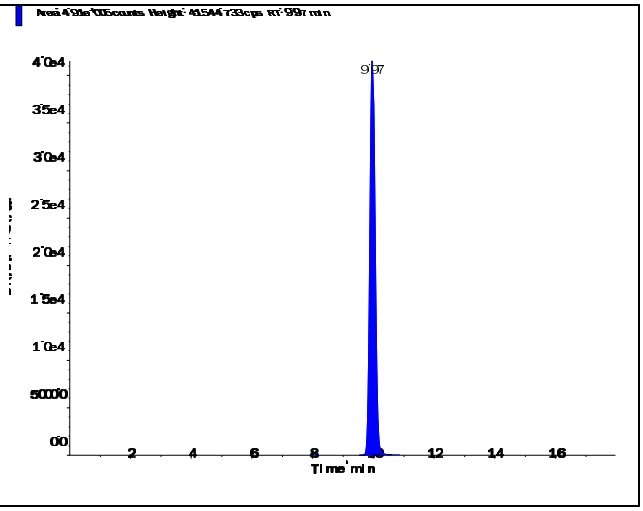

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.98 (9.94) min
Calculated conc:	0.193 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

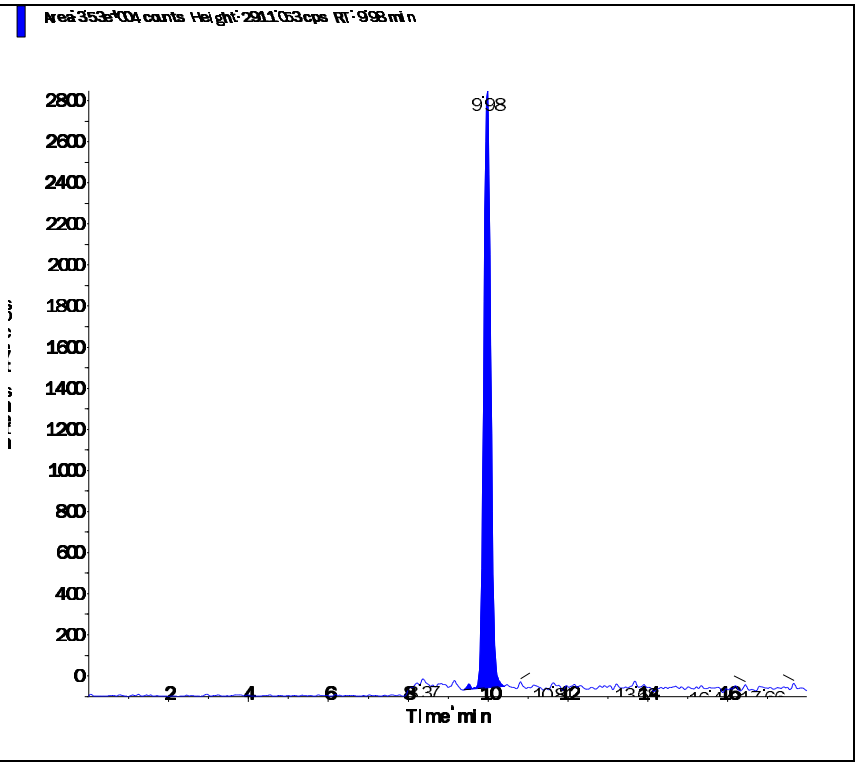

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.96 (9.92) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

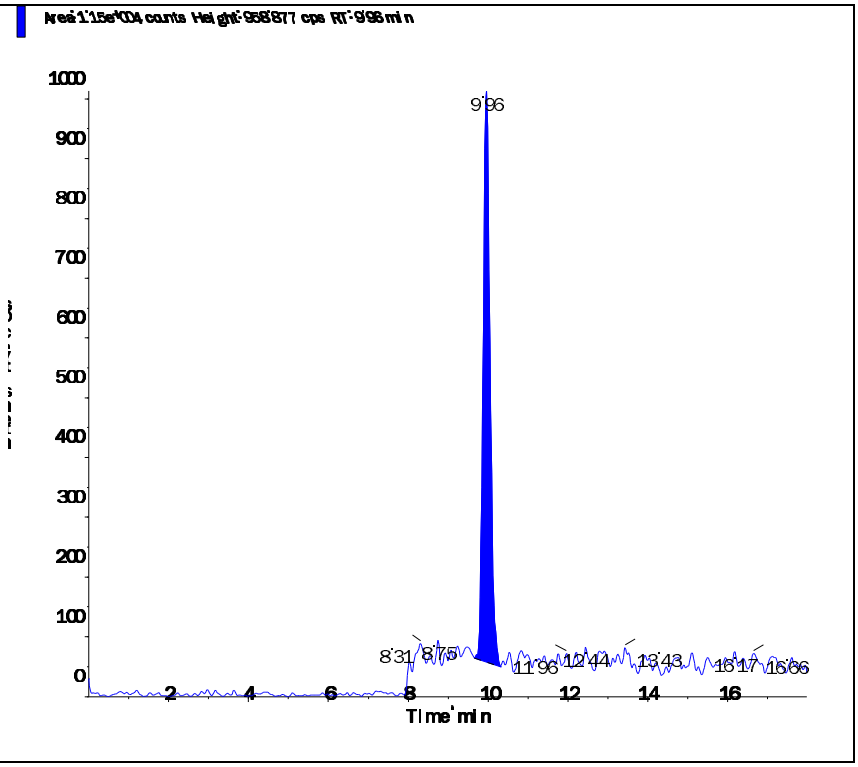

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Printed: 3/18/2016 6:33 PM

Data File	LM33944.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 4:59:27 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561318-11 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33944.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 4:59:27 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561318-11	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.220e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.880e+04	9.96	N/A	0.20
Perchlorate conf	1.270e+04	9.95	N/A	0.202

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

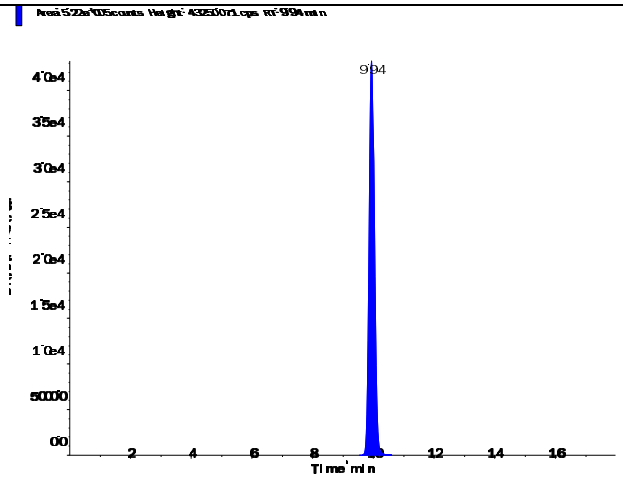

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.96 (9.94) min Calculated conc: 0.20 ng/ml Area Ratio: 0.074 Sample Type: (Unknown)	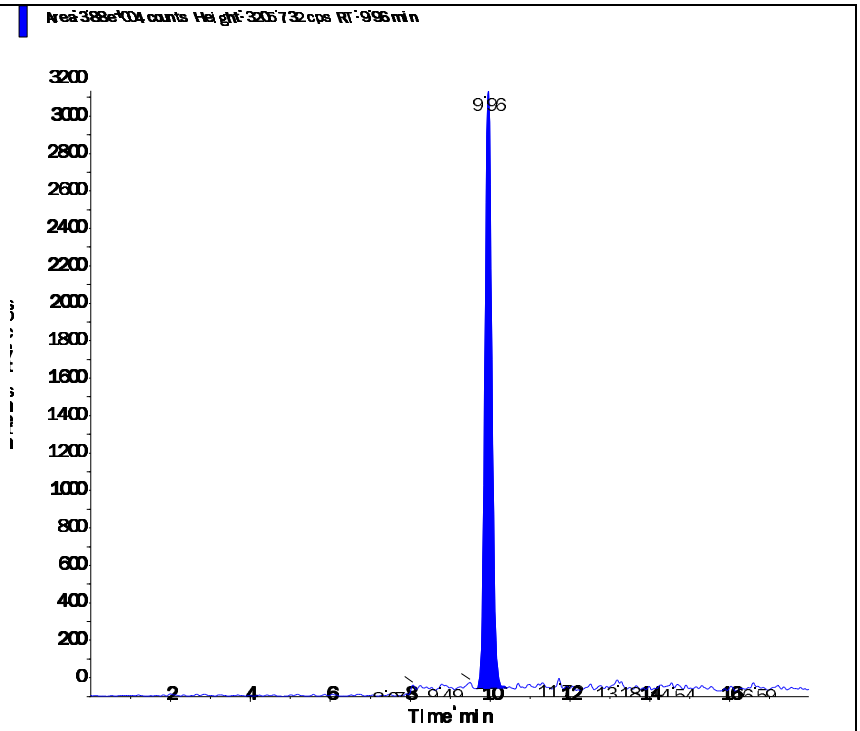
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.95 (9.92) min Calculated conc: 0.202 ng/ml Area Ratio: 0.024 Sample Type: (Unknown)	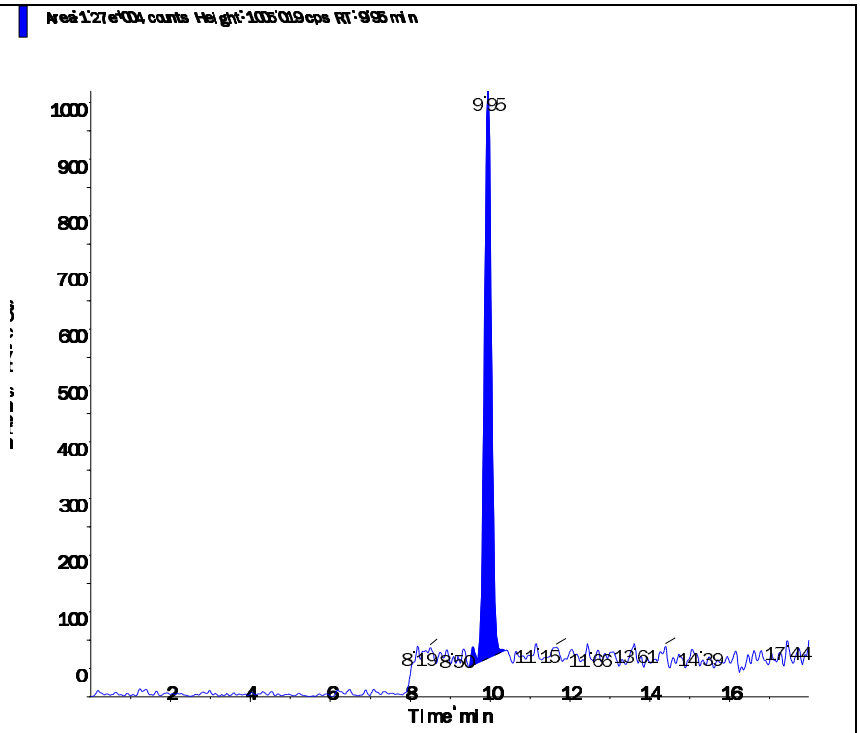

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Data File	LM33896.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 7:44:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561324-04 CCB	**Injection Vial**	1.00
Data File	LM33896.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 7:44:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561324-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.360e+05	9.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	2.680e+02	9.76	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.90(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

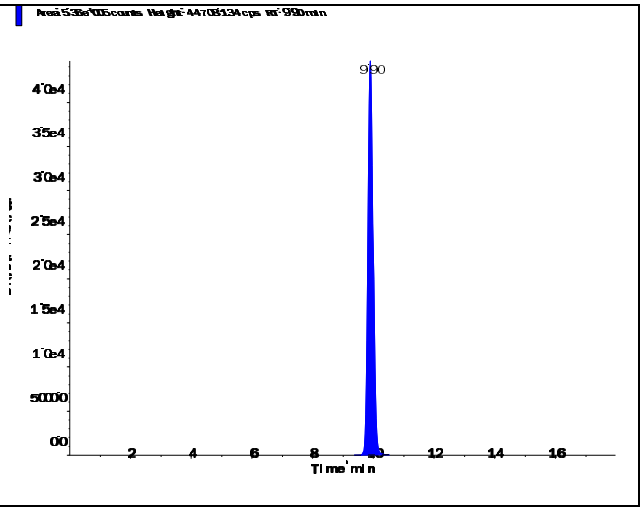

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.94) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	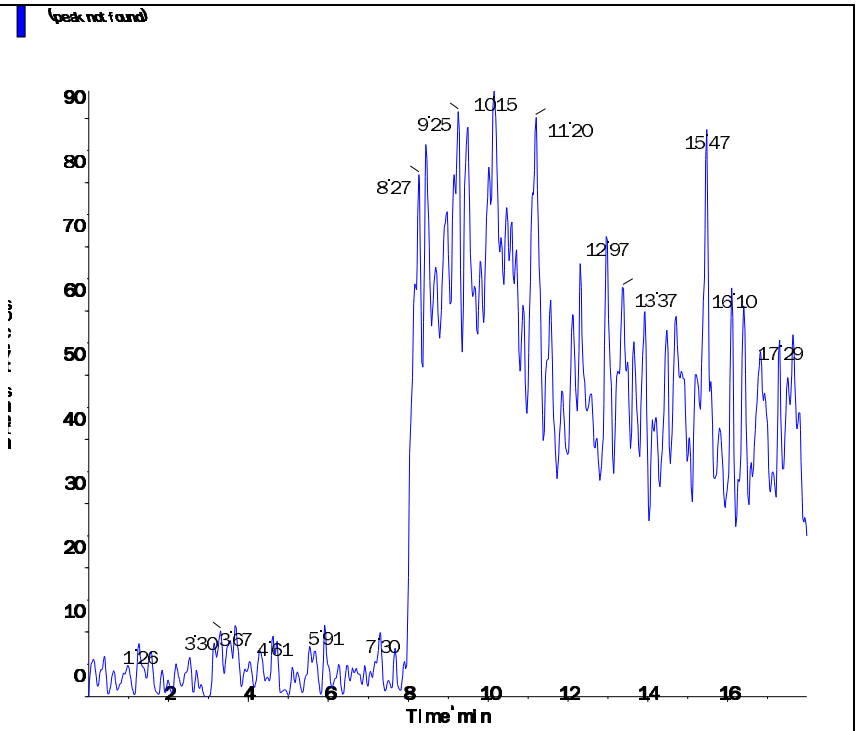
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.76 (9.92) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	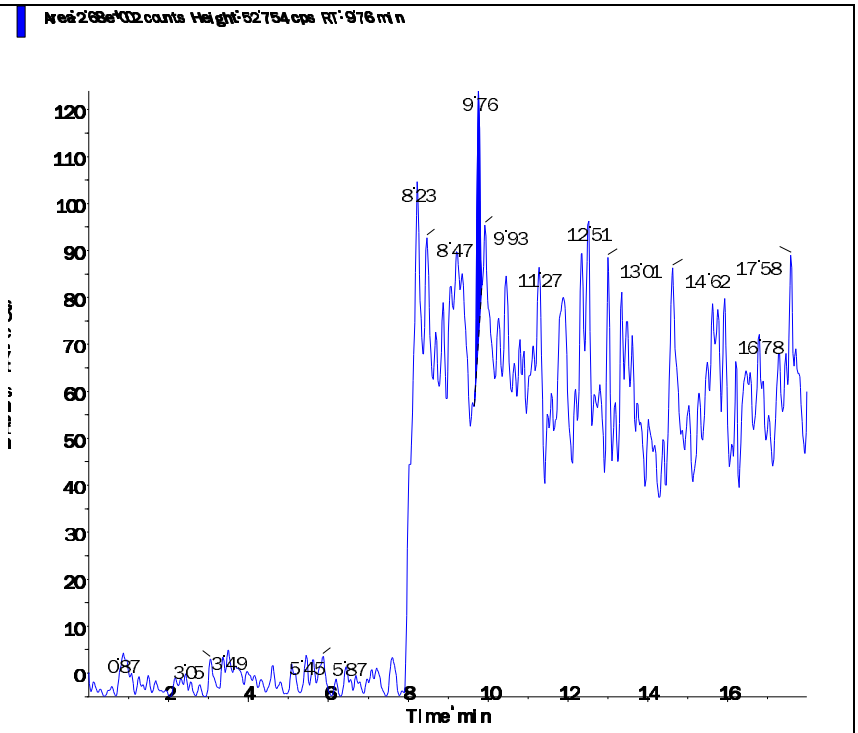

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Data File	LM33905.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 10:35:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561324-06 CCB	**Injection Vial**	1.00
Data File	LM33905.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 10:35:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561324-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.450e+05	9.85	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.85(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

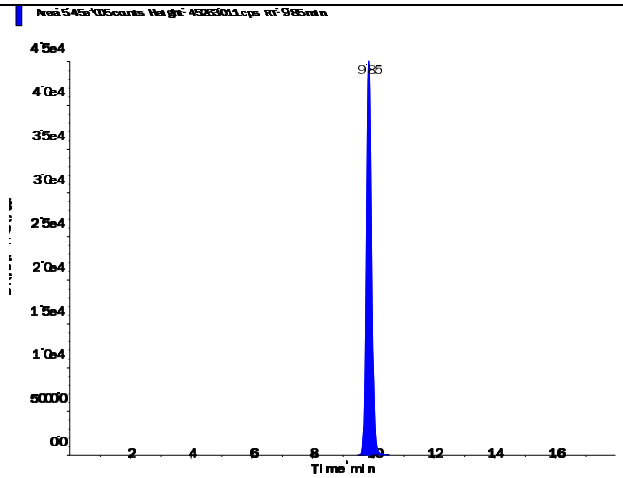

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

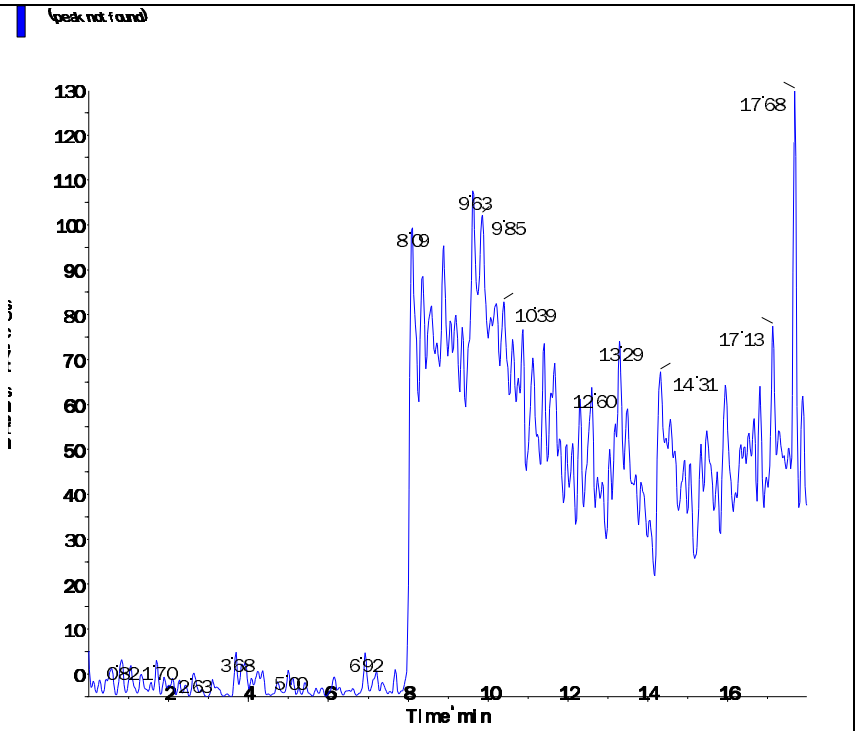

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

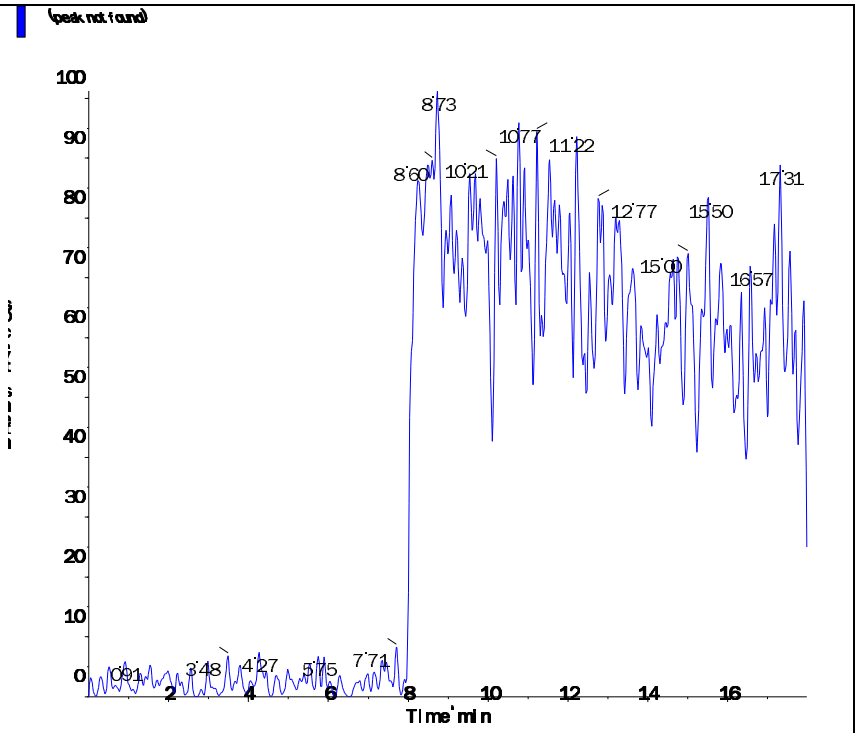

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Data File	LM33918.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 2:41:28 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561324-08 CCB	**Injection Vial**	1.00
Data File	LM33918.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 2:41:28 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561324-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.230e+05	9.86	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	8.920e+02	9.87	N/A	0.0012

O18LP (Internal Standard)

RT (Exp. RT): 9.86(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

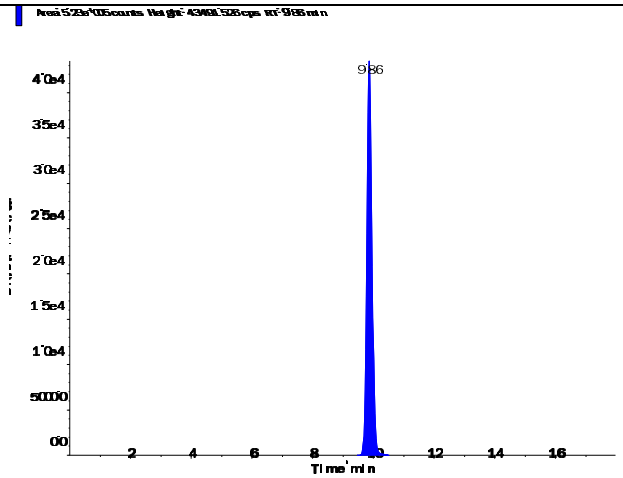

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Printed: 3/18/2016 6:24 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.94) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	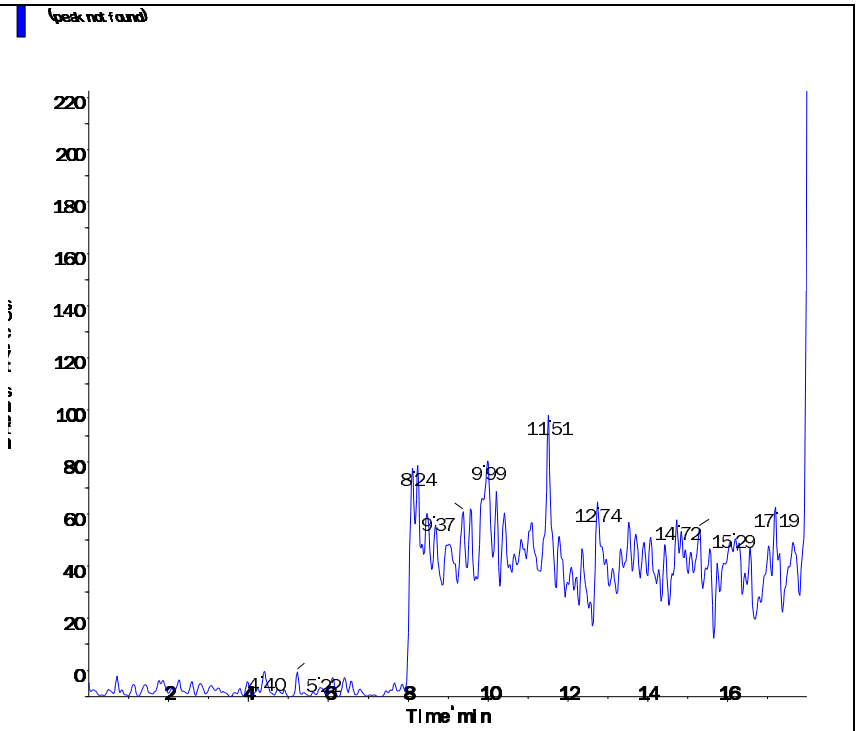
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.87 (9.92) min Calculated conc: 0.0012 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	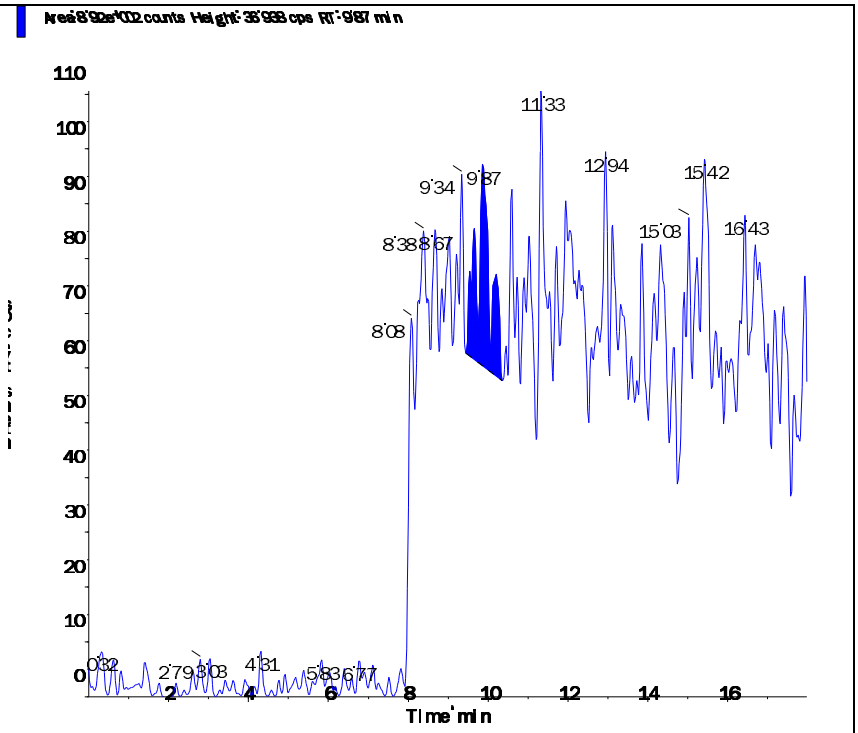

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Created with Analyst Reporter
Printed: 3/18/2016 6:27 PM

Data File	LM33928.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 5:50:47 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561324-10 CCB	**Injection Vial**	1.00
Data File	LM33928.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 5:50:47 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561324-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.450e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

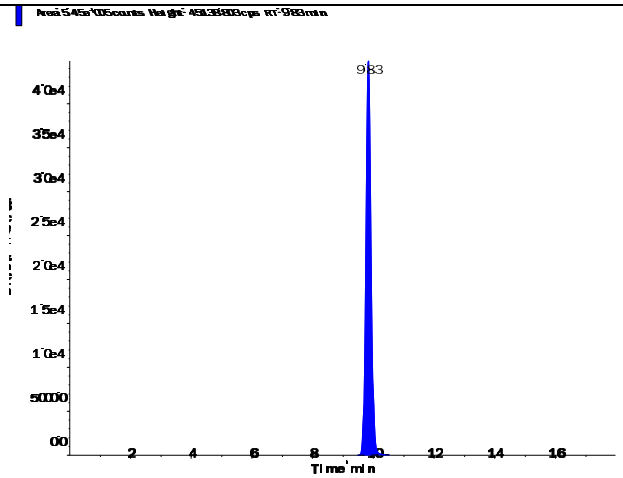

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

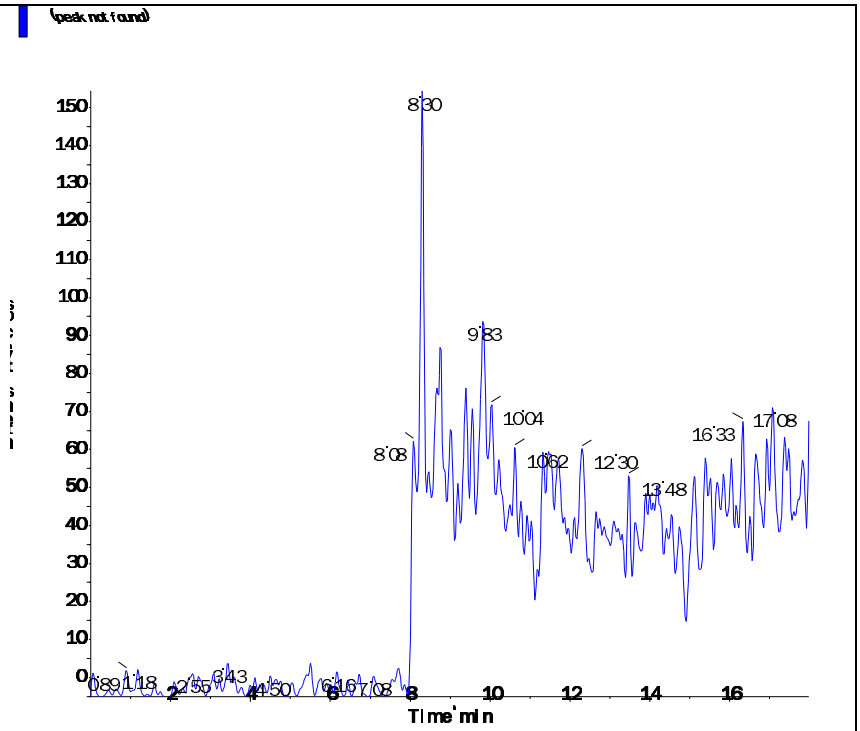

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

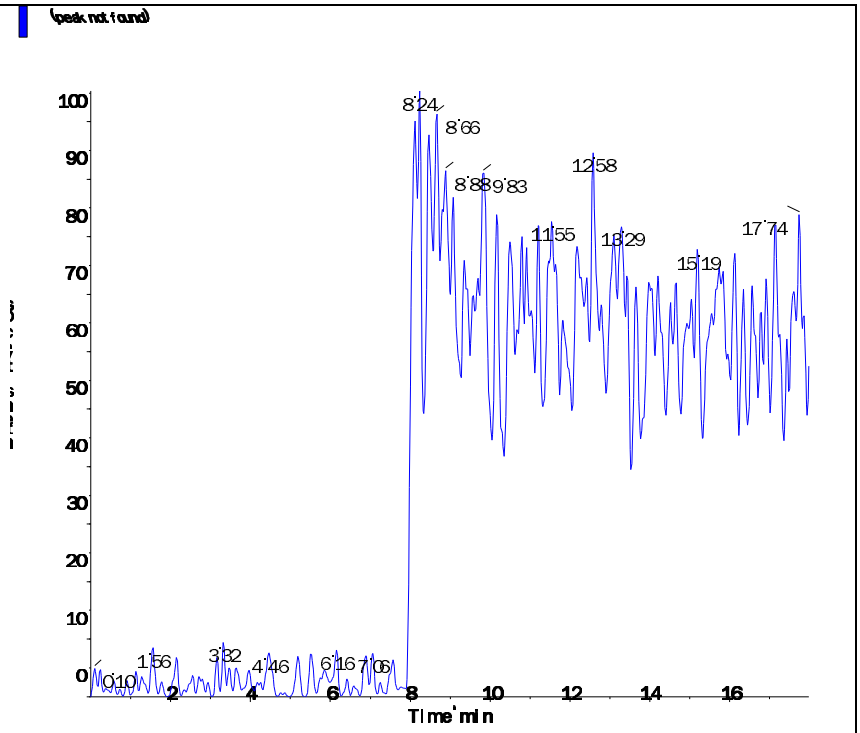

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Data File	LM33932.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 1:12:15 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561324-12 CCB	**Injection Vial**	1.00
Data File	LM33932.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 1:12:15 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561324-12	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.89	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	3.890e+02	9.97	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.89(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

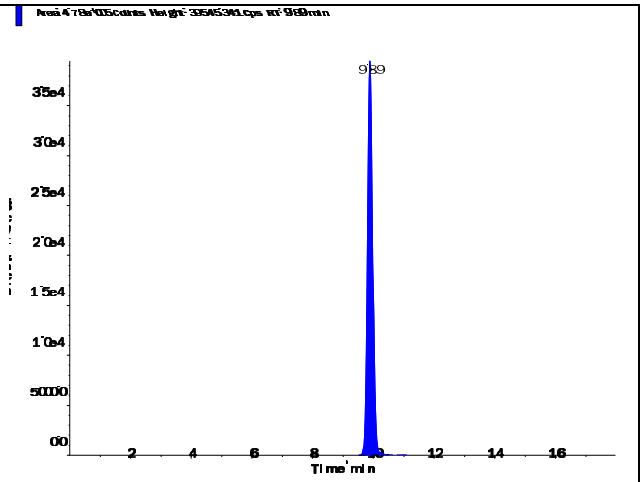

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

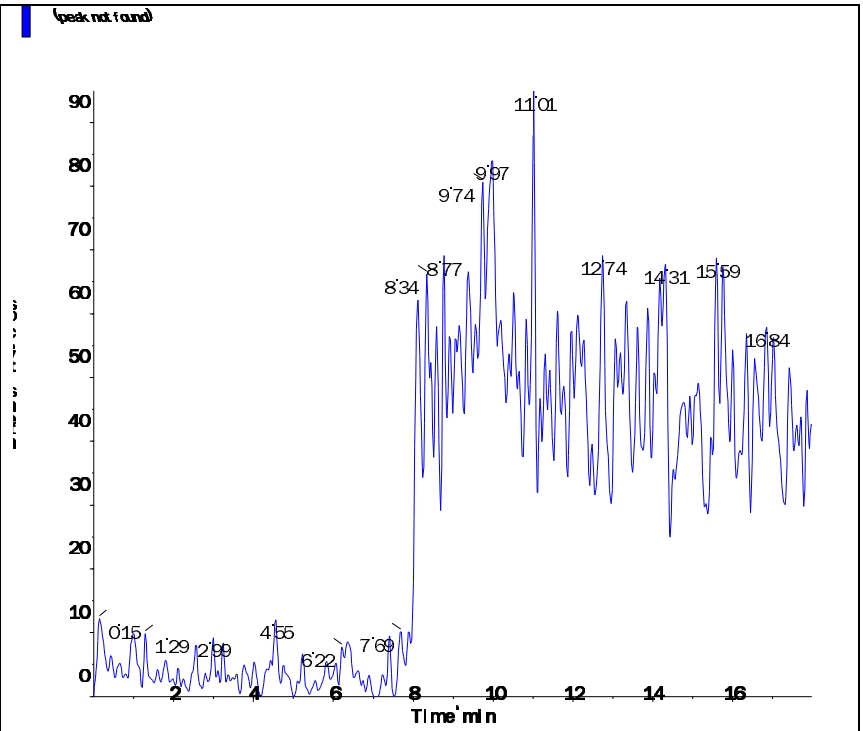

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.97 (9.92) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

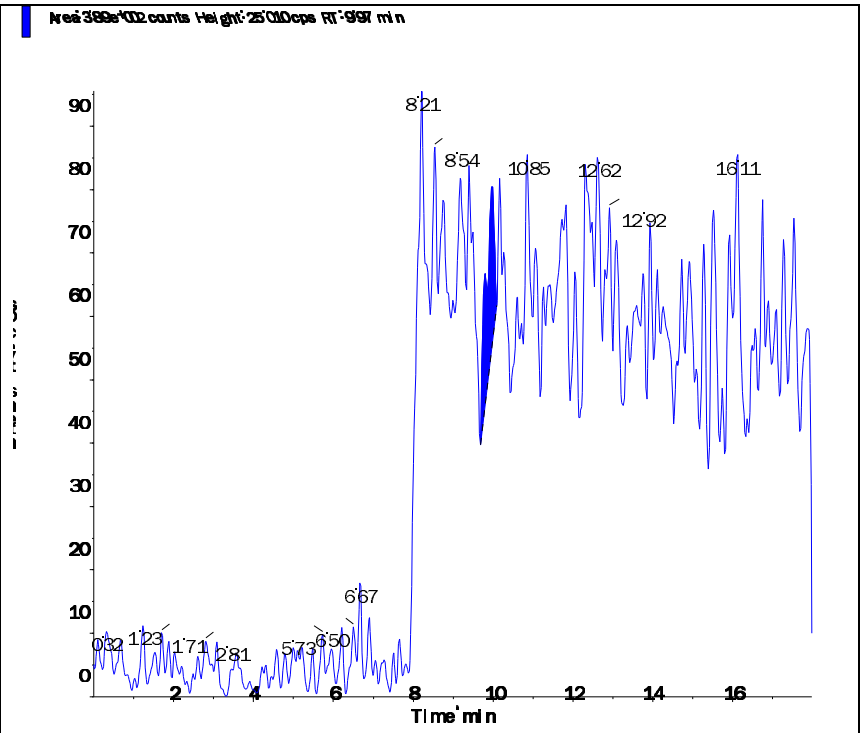

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Printed: 3/18/2016 6:34 PM

Data File	LM33945.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 5:18:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561324-14 CCB	**Injection Vial**	1.00
Data File	LM33945.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 5:18:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561324-14	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.86	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	5.480e+02	9.82	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.86(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

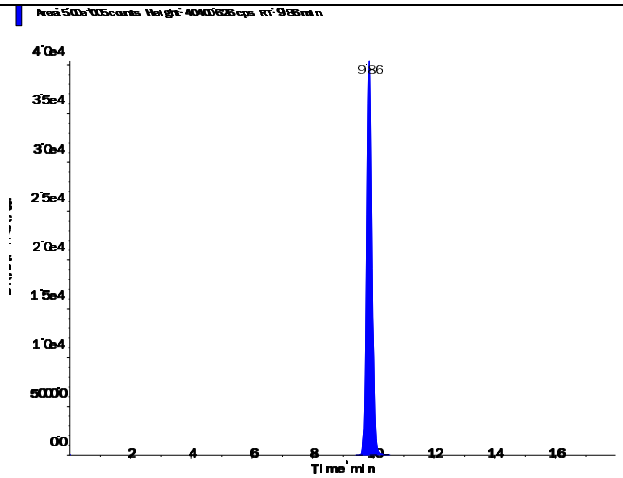

s.dataFile Page 1 of 2

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Created with Analyst Reporter
Printed: 3/18/2016 6:34 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.94) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	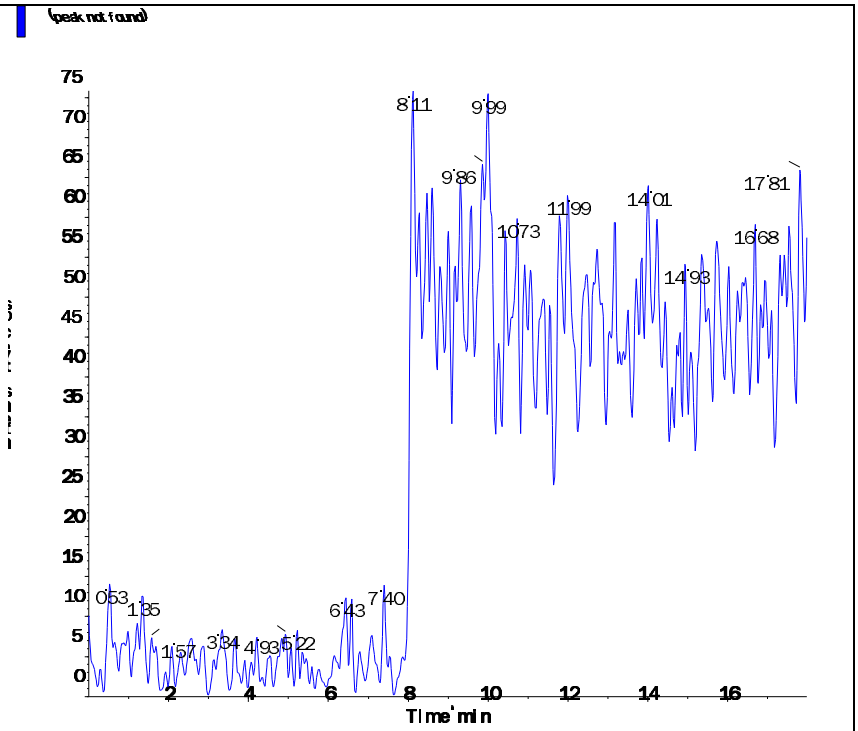
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.82 (9.92) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	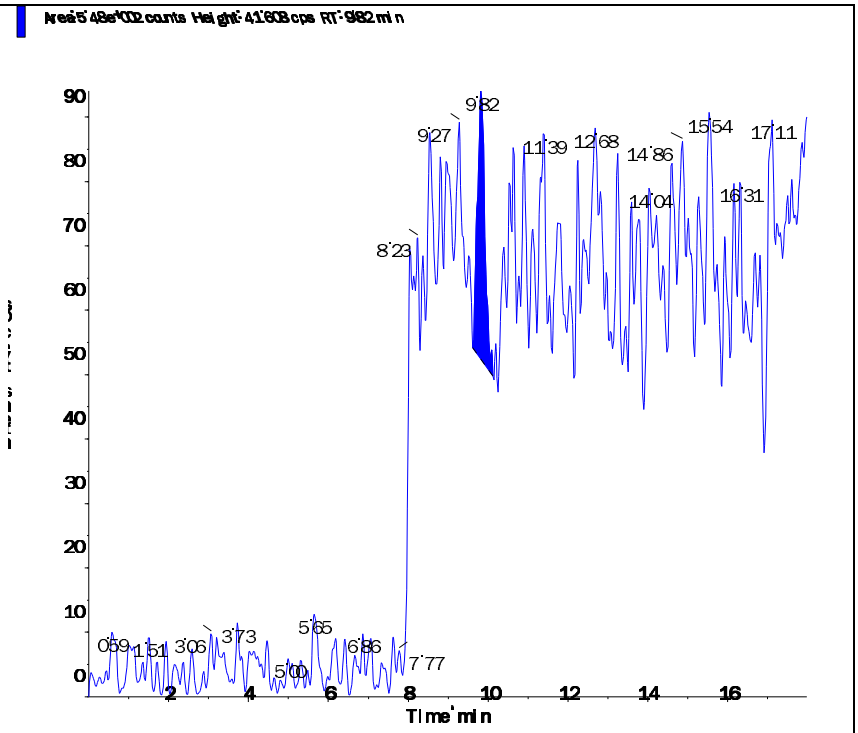

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 3/18/2016 6:20 PM

Data File	LM33906.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 10:54:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561318-01 MCT (2.0ug/kg)	**Injection Vial**	19.00
Data File	LM33906.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 10:54:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561318-01	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.320e+05	9.45	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.780e+04	9.46	N/A	0.191
Perchlorate conf	1.320e+04	9.43	N/A	0.207

O18LP (Internal Standard)

RT (Exp. RT): 9.45(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

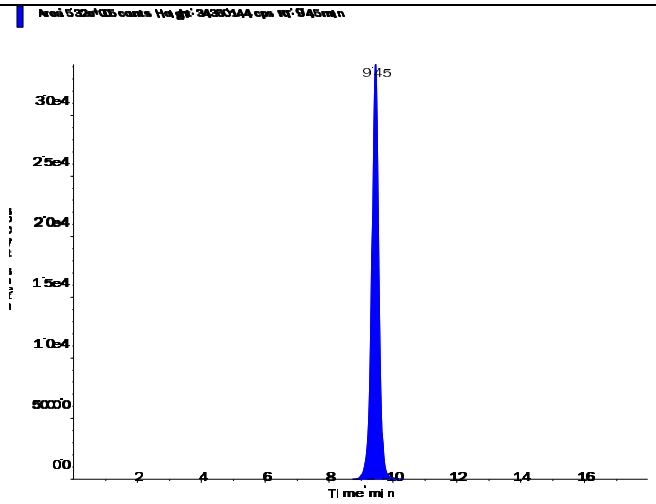

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 3/18/2016 6:20 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.46 (9.94) min
Calculated conc:	0.191 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

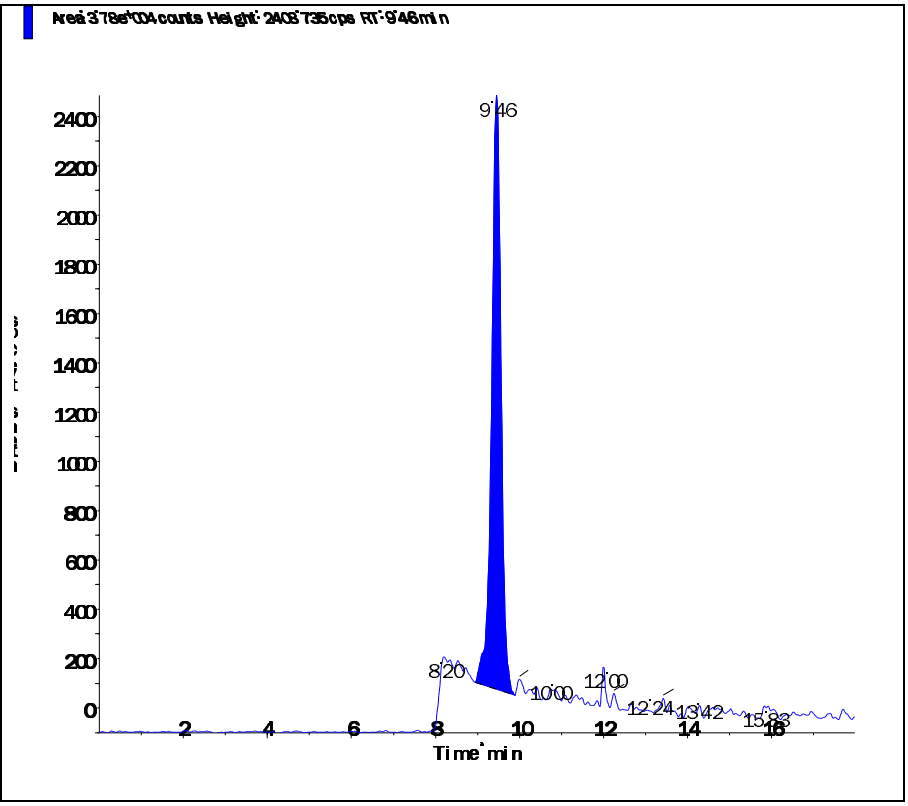

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.43 (9.92) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

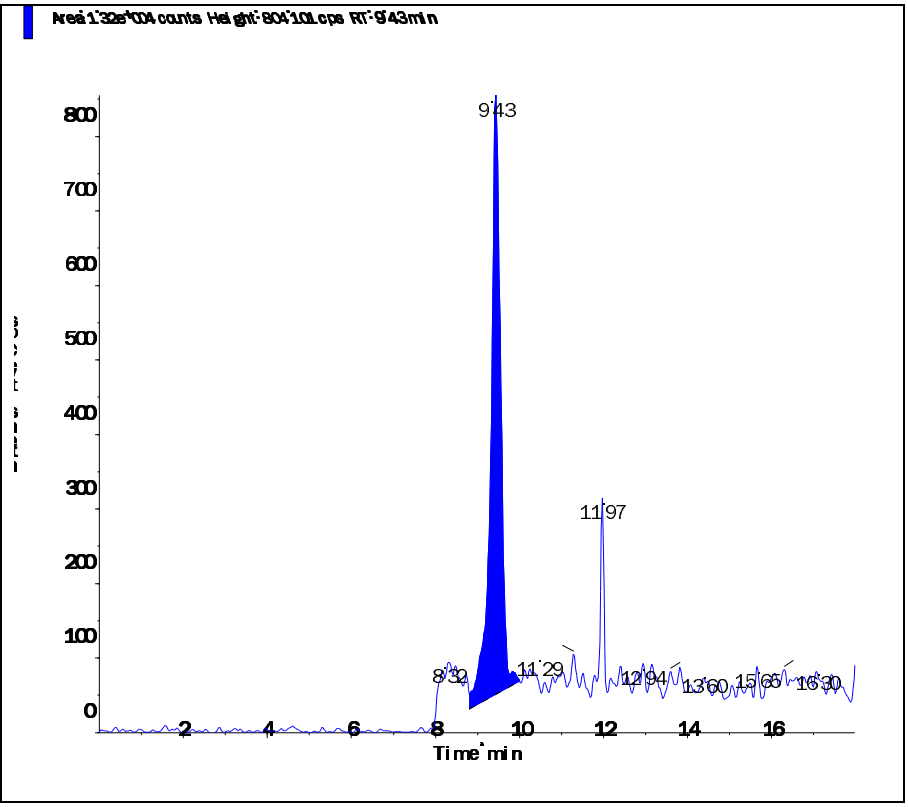

s.dataFile Page 2 of 2

2.2.1.5 Raw QC Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 3/18/2016 6:20 PM

Data File	LM33907.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 11:13:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561318-02 BLANK	**Injection Vial**	20.00
Data File	LM33907.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 11:13:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561318-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.480e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	4.340e+02	9.98	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

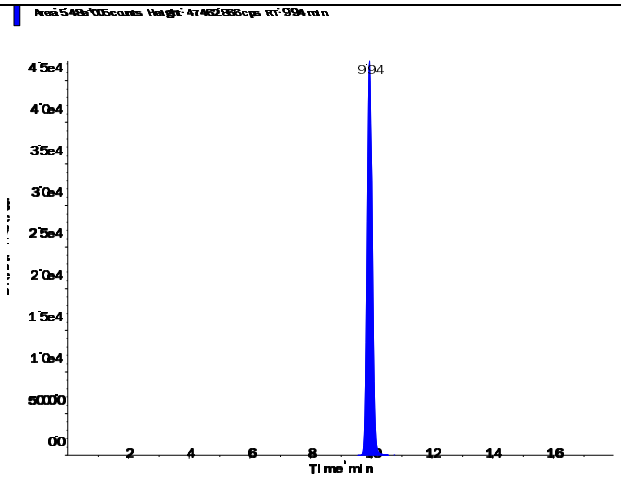

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

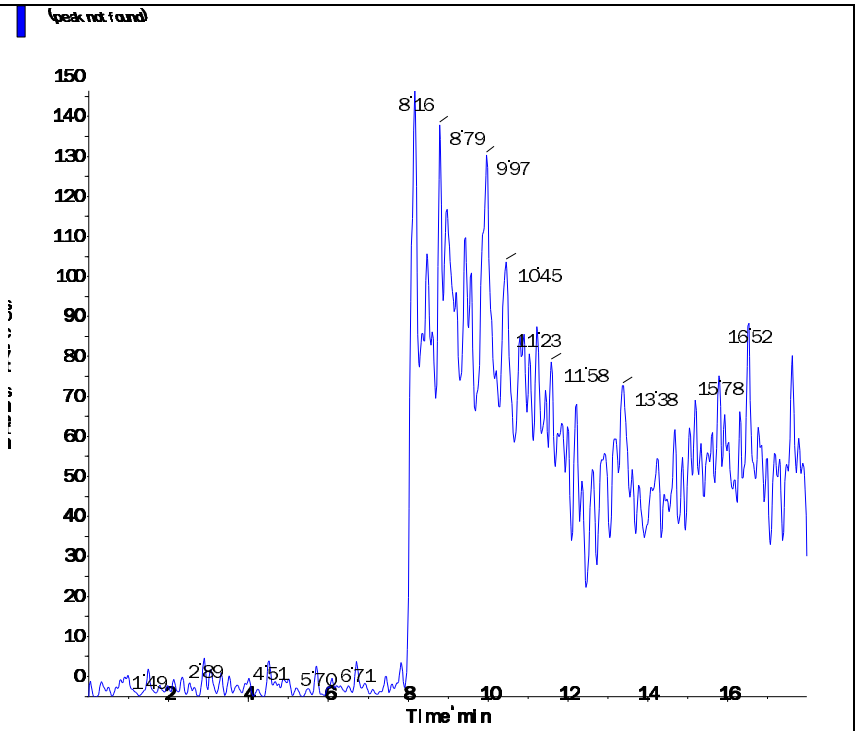

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.98 (9.92) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

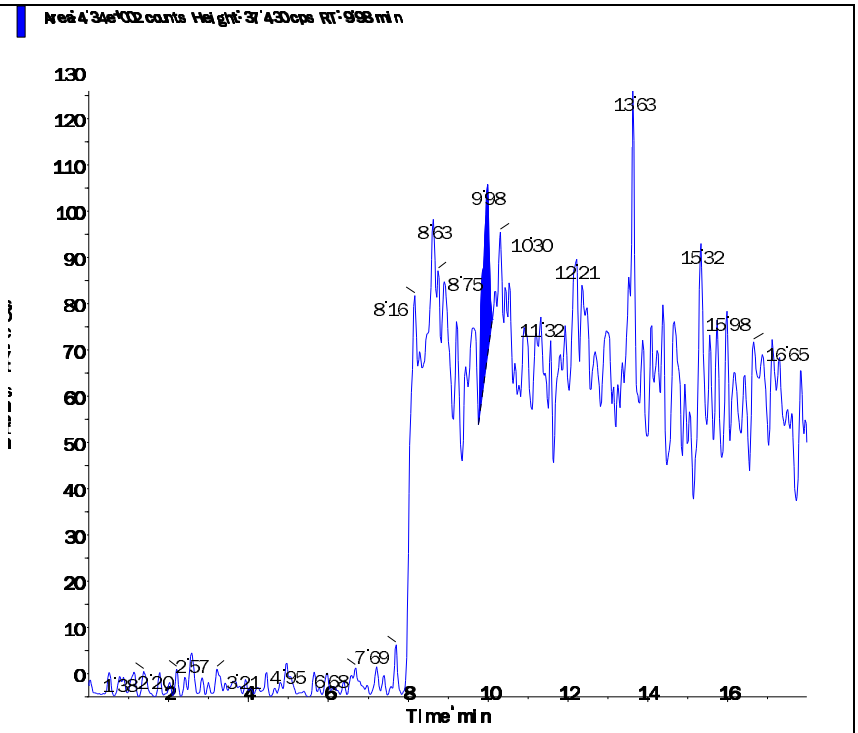

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Created with Analyst Reporter
Printed: 3/18/2016 6:20 PM

Data File	LM33908.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 11:32:08 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561318-03 LCS (2.0ug/kg)	**Injection Vial**	21.00
Data File	LM33908.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 11:32:08 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561318-03	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.750e+04	9.92	N/A	0.198
Perchlorate conf	1.200e+04	9.91	N/A	0.197

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

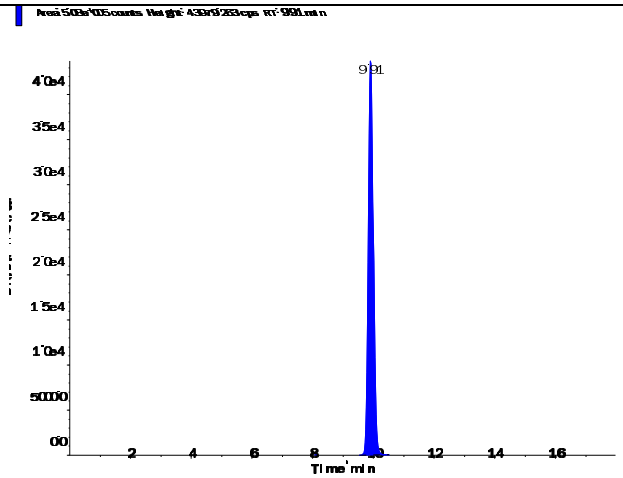

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.92 (9.94) min
Calculated conc:	0.198 ng/ml
Area Ratio:	0.074
Sample Type:	(Unknown)

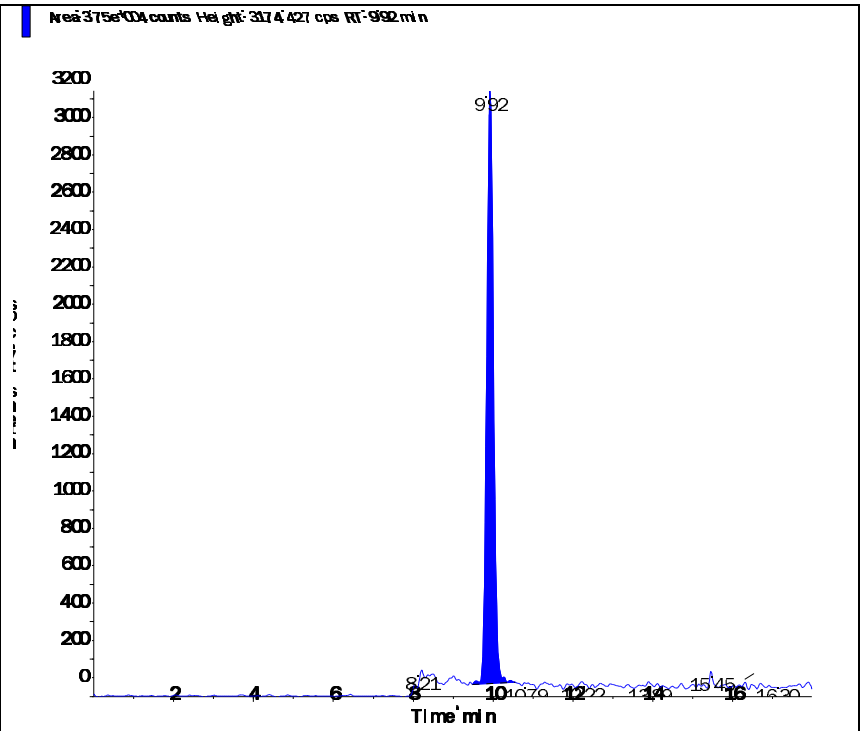

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.92) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

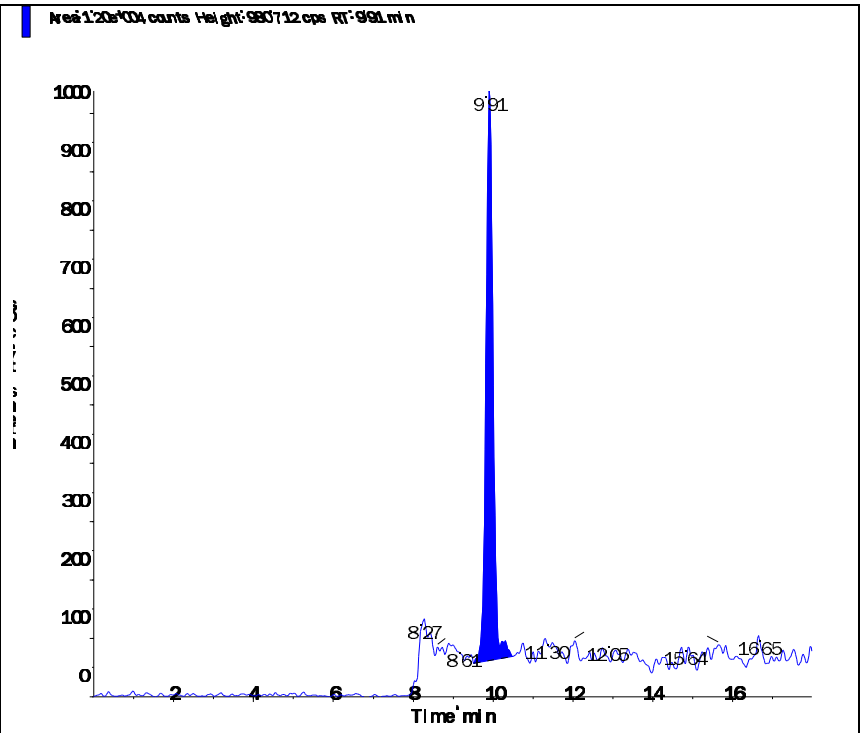

2.3 General Chemistry Data

2.3.1 Percent Solids Data

2.3.1.1 Raw Data

Example Percent Solids Calculations

1.0 Calculating the percent solids of a sample.

$$\%Solids = \frac{WT3 - WT1}{WT2 - WT1} \times F$$

Where:	
WT1 = Weight, in grams, of the empty container	1.30 g
WT2 = Weight, in grams, of the container and wet sample	21.274 g
WT3 = Weight, in grams, of the container and dried sample	5.21 g
F = Factor to get units as percent weight	100
%Solids = Percent solids present in sample.	19.58%

2.0 Calculating the percent moisture of a sample.

% Moisture = 100 - % Solids from 1.0 calculation

Microbac Laboratories Inc.

PERCENT SOLIDS

Workgroup (AAB#): WG561160 Analyst: AC ADT(on): 03/16/2016 16:34
Method: 160.3 Instrument: BAL021 ADT(off): 03/17/2016 07:24
SOP: K0003 Rev: 14

SAMPLE NUMBER	EMPTY PAN WT 1	WET WT 2	DRY WT 3A	DRY WT 3B	DRY WT 3C	PERCENT SOLID	PERCENT MOISTURE
L16030862-06	1.288	16.555	2.099			5.312	
L16030862-08	1.284	16.088	1.825			3.654	
WG561160-01	1.276	21.85	18.219			82.35	17.65
WG561160-02	1.282	25.85	21.637			82.85	17.15
L16030862-06	1.288	16.555	2.099			5.312	
L16030862-08	1.284	16.088	1.825			3.654	
L16030863-01	1.28	21.763	17.527			79.32	
L16030863-02	1.28	21.763	17.527			79.32	
L16030863-03	1.28	21.763	17.527			79.32	
L16030863-04	1.278	33.922	29.395			86.13	
L16030863-05	1.276	27.997	22.971			81.19	
L16030863-06	1.278	29.26	23.538			79.55	
L16030863-07	1.279	23.075	18.205			77.66	
L16030863-08	1.281	23.552	20.023			84.15	
L16030863-09	1.285	27.885	23.492			83.48	
L16030863-10	1.283	21.969	17.588			78.82	
L16030863-11	1.278	26.855	21.85			80.43	
L16030863-12	1.286	21.335	17.917			82.95	
L16030863-13	1.275	31.759	25.293			78.79	
L16030863-14	1.276	21.85	18.219			82.35	
WG561160-01	1.276	21.85	18.219			82.35	17.65
WG561160-02	1.282	25.85	21.637			82.85	17.15

Analyst: Andrea R Cochran

PERCENT_SOLIDS - Modified 04/24/2008
PDF ID: 4674324
Report generated: 03/17/2016 07:28

Microbac

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
March 25, 2016

001 - BIO-CHEM TESTING WVDEP 220	002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental	004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES	006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES	008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND	AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER	ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS	ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG	AZH - AFTER HOURS
BJO - BRIAN J. OGDEN	BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT	BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN	CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES	CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD	CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS	CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL	DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE	DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON	DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE	DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR	ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK	ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN	JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON	JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE	JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG	JLL - JOHN L. LENT
JMW - JEANA M. WHITE	JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS	JWS - JACK W. SHEAVES
JYH - JI Y. HU	KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER	KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES	KHR - KIM H. RHODES
KKB - KERRI K. BUCK	KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER	KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER	LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS	LSB - LESLIE S. BUCINA
MAP - MARLA A. PORTER	MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON	MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING	MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY	MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON	PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE	PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB	QX - QIN XU
RAH - ROY A. HALSTEAD	REK - BOB E. KYER
RLB - BOB BUCHANAN	RM - RAYMOND MALEKE
RNP - RICK N. PETTY	RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG	SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY	SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF	TB - TODD BOYLE
TGF - TIM G. FELTON	TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS	VC - VICKI COLLIER
WJB - WILL J. BEASLEY	WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG	XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
March 25, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
March 25, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Debra Richmon
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:		pH:	
Project Name/Location:	Longhorn		
Project Number:			

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOCs 8260	Perchlorate 6850	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
	18DPT16(5-5.5)150316			3/15/16	0920		X	S	2	X	X					
	18DPT16(5-5.5)150316MS			3/15/16	0920		X	S	2	X	X					
	18DPT16(5-5.5)150316MSD			3/15/16	0920		X	S	2	X	X					
	18DPT16(15-15.5)150316			3/15/16	0935		X	S	2	X	X					
	18DPT16(25-25.5)150316			3/15/16	1035		X	S	2	X	X					
	18DPT16(30-30.5)150316			3/15/16	1040		X	S	2	X	X					
	18DPT16(33-33.5)150316			3/15/16	1045		X	S	2	X	X					
	18DPT17(2.5-3)150316			3/15/16	1150		X	S	2	X	X					
	18DPT17(2.5-3)150316FD			3/15/16	1150		X	S	2	X	X					
	18DPT17(5-5.5)150316			3/15/16	1155		X	S	2	X	X					
	18DPT17(10-10.5)150316			3/15/16	1200		X	S	2	X	X					
	18DPT17(18-18.5)150316			3/15/16	1230		X	S	2	X	X					
	18DPT17(27-27.5)150316			3/15/16	1245		X	S	2	X	X					
	18DPT17(21.5-22)150316			3/15/16	1300		X	S	2	X	X					

Comments: STANDARD TAT

	Date	Time	
Relinquished by: (Signature)			Received by: (Signature)
Relinquished by: (Signature)			Received for Laboratory by: (Signature)

Microbac OVD
Received: 03/16/2016 10:03
By: CARA STRICKLER 221000083275
Cara Strickler

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030863
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 25-MAR-2016

Samplenum	Container ID	Products
L16030863-01	715098	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-MAR-2016 12:58	CLS		
2	ANALYZ	V1	ORG4	16-MAR-2016 15:34	AWE	CLS	

Samplenum	Container ID	Products
L16030863-01	715099	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-MAR-2016 12:58	CLS		
2	PREP	W1	DIG	16-MAR-2016 15:44	AC	BRG	
3	STORE	DIG	W1	16-MAR-2016 16:53	BRG	AC	
4	ANALYZ	W1	SEM	17-MAR-2016 10:27	JWR	BRG	
5	ANALYZ*	DIG	SEMI	17-MAR-2016 14:16	JWR	AC	
6	STORE	SEM	A1	18-MAR-2016 18:19	AZH	JWR	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16030863-02	715100	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-MAR-2016 12:58	CLS		
2	ANALYZ	V1	ORG4	16-MAR-2016 15:34	AWE	CLS	

Samplenum	Container ID	Products
L16030863-02	715101	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-MAR-2016 12:58	CLS		
2	PREP	W1	DIG	16-MAR-2016 15:44	AC	BRG	
3	STORE	DIG	W1	16-MAR-2016 16:53	BRG	AC	
4	ANALYZ	W1	SEM	17-MAR-2016 10:27	JWR	BRG	
5	ANALYZ*	DIG	SEMI	17-MAR-2016 14:16	JWR	AC	
6	STORE	SEM	A1	18-MAR-2016 18:19	AZH	JWR	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030863
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 25-MAR-2016

Samplenum	Container ID	Products
L16030863-03	715102	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-MAR-2016 12:58	CLS		
2	ANALYZ	V1	ORG4	16-MAR-2016 15:34	AWE	CLS	

Samplenum	Container ID	Products
L16030863-03	715103	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-MAR-2016 12:58	CLS		
2	PREP	W1	DIG	16-MAR-2016 15:44	AC	BRG	
3	STORE	DIG	W1	16-MAR-2016 16:53	BRG	AC	
4	ANALYZ	W1	SEM	17-MAR-2016 10:27	JWR	BRG	
5	ANALYZ*	DIG	SEMI	17-MAR-2016 14:16	JWR	AC	
6	STORE	SEM	A1	18-MAR-2016 18:19	AZH	JWR	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16030863-04	715104	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-MAR-2016 12:58	CLS		
2	ANALYZ	V1	ORG4	16-MAR-2016 15:34	AWE	CLS	

Samplenum	Container ID	Products
L16030863-04	715105	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-MAR-2016 12:58	CLS		
2	PREP	W1	DIG	16-MAR-2016 15:44	AC	BRG	
3	STORE	DIG	W1	16-MAR-2016 16:53	BRG	AC	
4	ANALYZ	W1	SEM	17-MAR-2016 10:27	JWR	BRG	
5	ANALYZ*	DIG	SEMI	17-MAR-2016 14:16	JWR	AC	
6	STORE	SEM	A1	18-MAR-2016 18:19	AZH	JWR	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030863
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 25-MAR-2016

Samplenum	Container ID	Products
L16030863-05	715106	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-MAR-2016 12:58	CLS		
2	ANALYZ	V1	ORG4	16-MAR-2016 15:34	AWE	CLS	

Samplenum	Container ID	Products
L16030863-05	715107	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-MAR-2016 12:58	CLS		
2	PREP	W1	DIG	16-MAR-2016 15:44	AC	BRG	
3	STORE	DIG	W1	16-MAR-2016 16:53	BRG	AC	
4	ANALYZ	W1	SEM	17-MAR-2016 10:27	JWR	BRG	
5	ANALYZ*	DIG	SEMI	17-MAR-2016 14:16	JWR	AC	
6	STORE	SEM	A1	18-MAR-2016 18:19	AZH	JWR	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16030863-06	715108	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-MAR-2016 12:58	CLS		
2	ANALYZ	V1	ORG4	16-MAR-2016 15:34	AWE	CLS	

Samplenum	Container ID	Products
L16030863-06	715109	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-MAR-2016 12:58	CLS		
2	PREP	W1	DIG	16-MAR-2016 15:44	AC	BRG	
3	STORE	DIG	W1	16-MAR-2016 16:53	BRG	AC	
4	ANALYZ	W1	SEM	17-MAR-2016 10:27	JWR	BRG	
5	ANALYZ*	DIG	SEMI	17-MAR-2016 14:16	JWR	AC	
6	STORE	SEM	A1	18-MAR-2016 18:19	AZH	JWR	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030863
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 25-MAR-2016

Samplenum	Container ID	Products
L16030863-07	715110	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-MAR-2016 12:58	CLS		
2	ANALYZ	V1	ORG4	16-MAR-2016 15:34	AWE	CLS	

Samplenum	Container ID	Products
L16030863-07	715111	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-MAR-2016 12:58	CLS		
2	PREP	W1	DIG	16-MAR-2016 15:44	AC	BRG	
3	STORE	DIG	W1	16-MAR-2016 16:53	BRG	AC	
4	ANALYZ	W1	SEM	17-MAR-2016 10:27	JWR	BRG	
5	ANALYZ*	DIG	SEMI	17-MAR-2016 14:16	JWR	AC	
6	STORE	SEM	A1	18-MAR-2016 18:19	AZH	JWR	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16030863-08	715112	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-MAR-2016 12:58	CLS		
2	ANALYZ	V1	ORG4	16-MAR-2016 15:34	AWE	CLS	

Samplenum	Container ID	Products
L16030863-08	715113	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-MAR-2016 12:58	CLS		
2	PREP	W1	DIG	16-MAR-2016 15:44	AC	BRG	
3	STORE	DIG	W1	16-MAR-2016 16:53	BRG	AC	
4	ANALYZ	W1	SEM	17-MAR-2016 10:27	JWR	BRG	
5	ANALYZ*	DIG	SEMI	17-MAR-2016 14:16	JWR	AC	
6	STORE	SEM	A1	18-MAR-2016 18:19	AZH	JWR	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030863
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 25-MAR-2016

Samplenum	Container ID	Products
L16030863-09	715114	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-MAR-2016 12:58	CLS		
2	ANALYZ	V1	ORG4	16-MAR-2016 15:34	AWE	CLS	

Samplenum	Container ID	Products
L16030863-09	715115	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-MAR-2016 12:58	CLS		
2	PREP	W1	DIG	16-MAR-2016 15:44	AC	BRG	
3	STORE	DIG	W1	16-MAR-2016 16:52	BRG	AC	
4	ANALYZ	W1	SEM	17-MAR-2016 10:27	JWR	BRG	
5	ANALYZ*	DIG	SEMI	17-MAR-2016 14:16	JWR	AC	
6	STORE	SEM	A1	18-MAR-2016 18:19	AZH	JWR	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16030863-10	715116	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-MAR-2016 12:58	CLS		
2	ANALYZ	V1	ORG4	16-MAR-2016 15:34	AWE	CLS	

Samplenum	Container ID	Products
L16030863-10	715117	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-MAR-2016 12:58	CLS		
2	PREP	W1	DIG	16-MAR-2016 15:44	AC	BRG	
3	STORE	DIG	W1	16-MAR-2016 16:53	BRG	AC	
4	ANALYZ	W1	SEM	17-MAR-2016 10:27	JWR	BRG	
5	ANALYZ*	DIG	SEMI	17-MAR-2016 14:16	JWR	AC	
6	STORE	SEM	A1	18-MAR-2016 18:19	AZH	JWR	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030863
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 25-MAR-2016

Samplenum	Container ID	Products
L16030863-11	715118	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-MAR-2016 12:58	CLS		
2	ANALYZ	V1	ORG4	16-MAR-2016 15:34	AWE	CLS	

Samplenum	Container ID	Products
L16030863-11	715119	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-MAR-2016 12:58	CLS		
2	PREP	W1	DIG	16-MAR-2016 15:44	AC	BRG	
3	STORE	DIG	W1	16-MAR-2016 16:53	BRG	AC	
4	ANALYZ	W1	SEM	17-MAR-2016 10:27	JWR	BRG	
5	ANALYZ*	DIG	SEMI	17-MAR-2016 14:16	JWR	AC	
6	STORE	SEM	A1	18-MAR-2016 18:19	AZH	JWR	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16030863-12	715120	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-MAR-2016 12:58	CLS		
2	ANALYZ	V1	ORG4	16-MAR-2016 15:34	AWE	CLS	

Samplenum	Container ID	Products
L16030863-12	715121	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-MAR-2016 12:58	CLS		
2	PREP	W1	DIG	16-MAR-2016 15:44	AC	BRG	
3	STORE	DIG	W1	16-MAR-2016 16:53	BRG	AC	
4	ANALYZ	W1	SEM	17-MAR-2016 10:27	JWR	BRG	
5	ANALYZ*	DIG	SEMI	17-MAR-2016 14:16	JWR	AC	
6	STORE	SEM	A1	18-MAR-2016 18:19	AZH	JWR	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030863
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 25-MAR-2016

Samplenum	Container ID	Products
L16030863-13	715122	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-MAR-2016 12:58	CLS		
2	ANALYZ	V1	ORG4	16-MAR-2016 15:35	AWE	CLS	

Samplenum	Container ID	Products
L16030863-13	715123	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-MAR-2016 12:58	CLS		
2	PREP	W1	DIG	16-MAR-2016 15:44	AC	BRG	
3	STORE	DIG	W1	16-MAR-2016 16:52	BRG	AC	
4	ANALYZ	W1	SEM	17-MAR-2016 10:27	JWR	BRG	
5	ANALYZ*	DIG	SEMI	17-MAR-2016 14:16	JWR	AC	
6	STORE	SEM	A1	18-MAR-2016 18:19	AZH	JWR	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16030863-14	715124	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-MAR-2016 12:58	CLS		
2	ANALYZ	V1	ORG4	16-MAR-2016 15:34	AWE	CLS	

Samplenum	Container ID	Products
L16030863-14	715125	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-MAR-2016 12:58	CLS		
2	PREP	W1	DIG	16-MAR-2016 15:44	AC	BRG	
3	STORE	DIG	W1	16-MAR-2016 16:52	BRG	AC	
4	ANALYZ	W1	SEM	17-MAR-2016 10:27	JWR	BRG	
5	ANALYZ*	DIG	SEMI	17-MAR-2016 14:16	JWR	AC	
6	STORE	SEM	A1	18-MAR-2016 18:19	AZH	JWR	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16041344

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on May 10 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00113753	I	1.0		J2317165296	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	NA
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	NA

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18CPTMW22R(5-5.5)230416	L16041344-01	04/23/2016 09:35	04/26/2016 10:51
18CPTMW22R(10-10.5)230416	L16041344-02	04/23/2016 10:05	04/26/2016 10:51
18CPTMW22R(15-15.5)230416	L16041344-03	04/23/2016 10:10	04/26/2016 10:51
18CPTMW26(5-5.5)230416	L16041344-04	04/23/2016 13:30	04/26/2016 10:51
18CPTMW26(5-5.5)230416DUP	L16041344-05	04/23/2016 13:30	04/26/2016 10:51
18CPTMW26(10-10.5)230416	L16041344-06	04/23/2016 14:00	04/26/2016 10:51
18CPTMW26(14.5-15)230416	L16041344-07	04/23/2016 14:05	04/26/2016 10:51
18CPTMW26SW(5-5.5)250416	L16041344-08	04/25/2016 09:35	04/26/2016 10:51
18CPTMW26SW(10-10.5)250416	L16041344-09	04/25/2016 09:50	04/26/2016 10:51
18CPTMW26SW(15-15.5)250416	L16041344-10	04/25/2016 10:45	04/26/2016 10:51
18CPTMW26SW(20-20.5)250416	L16041344-11	04/25/2016 11:45	04/26/2016 10:51
18CPTMW26SW(30-30.5)250416	L16041344-12	04/25/2016 12:05	04/26/2016 10:51
18CPTMW26SW(40-40.5)250416	L16041344-13	04/25/2016 12:10	04/26/2016 10:51
18CPTMW26SW(49.5-50)250416	L16041344-14	04/25/2016 12:30	04/26/2016 10:51

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16041344
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041344
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG566765, WG567003	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-05-10 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden	Franci Bolden	Analyst I	2016-05-10 17:42:43

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041344
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG566765, WG567003	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-05-10 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?		X			1
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041344
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG566765, WG567003	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-05-10 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041344
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG566765, WG567003	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-05-10 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			3
Was the ICAL curve verified for each analyte?		X			2
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041344
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG566765, WG567003	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-05-10 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041344
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG566765, WG567003	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-05-10 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) Surrogate recoveries marginally exceeded the upper limit for 1,2-Dichloroethane-d4 and 4-Bromofluorobenzene in multiple samples, blank and LCSs. No detections above the reporting limit in affected samples. No reanalysis performed.

2) Dichlorodifluoromethane exceeded the upper limit in the ICV.

3) 2-Chlorotoluene, Naphthalene, 1,2,3-Trichloropropane, 1,2,4-Trimethylbenzene exceeded the upper control limit in the CCV analyzed 4/28/16. 2-Chlorotoluene exceeded the upper control limit in the CCV analyzed 4/30/16.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041344
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG567011	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-05-05 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-05-05 20:22:37

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041344
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG567011	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-05-05 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041344
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG567011	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-05-05 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041344
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG567011	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-05-05 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041344
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG567011	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-05-05 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041344
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG567011	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-05-05 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041344
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG566651	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-04-28 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2016-04-28 14:16:22

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041344
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG566651	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-04-28 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?			X		
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?			X		
Were sample detection limits reported for all analytes not detected?			X		
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?			X		
Were blanks analyzed at the appropriate frequency?			X		
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?			X		
Were blank concentrations < MQL?			X		
Laboratory control samples (LCS):			X		
Were all COCs included in the LCS?			X		

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041344
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG566651	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-04-28 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?			X		
Were LCSs analyzed at the required frequency?			X		
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?			X		
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?			X		
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?			X		
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?			X		
Are unadjusted MQLs and DCSs included in the laboratory data package?			X		
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?			X		
Were percent RSDs or correlation coefficient criteria met?			X		

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041344
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG566651	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-04-28 00:00:00		

Was the number of standards recommended in the method used for all analytes?			X		
Were all points generated between the lowest and highest standard used to calculate the curve?			X		
Are ICAL data available for all instruments used?			X		
Has the initial calibration curve been verified using an appropriate second source standard?			X		
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041344
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG566651	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-04-28 00:00:00		

Was a MDL study performed for each reported analyte?			X		
Is the MDL either adjusted or supported by the analysis of DCSs?			X		
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?			X		
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041344
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG566651	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-04-28 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22R(5-5.5)230416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/29/2016 10:11
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG567003	**Analyst:**	ADC	**Run Date:**	04/30/2016 18:18
Collect Date:	04/23/2016 09:35	**Dilution:**	1	**File ID:**	9M974076
Sample Tag:	02	**Units:**	ug/kg	**Percent Solid:**	84.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.2	U	24.3	12.2	6.08
Benzene	71-43-2	1.22	U	6.08	1.22	0.608
Bromobenzene	108-86-1	1.22	U	6.08	1.22	0.608
Bromochloromethane	74-97-5	2.44	U	6.08	2.44	1.22
Bromodichloromethane	75-27-4	1.22	U	6.08	1.22	0.608
Bromoform	75-25-2	1.22	U	6.08	1.22	0.608
Bromomethane	74-83-9	2.44	U	6.08	2.44	1.22
2-Butanone	78-93-3	6.08	U	12.2	6.08	3.04
n-Butylbenzene	104-51-8	1.22	U	6.08	1.22	0.608
sec-Butylbenzene	135-98-8	1.22	U	6.08	1.22	0.608
tert-Butylbenzene	98-06-6	1.22	U	6.08	1.22	0.608
Carbon disulfide	75-15-0	1.22	U	6.08	1.22	0.608
Carbon tetrachloride	56-23-5	1.22	U	6.08	1.22	0.608
Chlorobenzene	108-90-7	1.22	U	6.08	1.22	0.608
Chlorodibromomethane	124-48-1	1.22	U	6.08	1.22	0.608
Chloroethane	75-00-3	2.44	U	6.08	2.44	1.22
Chloroform	67-66-3	1.22	U	6.08	1.22	0.608
Chloromethane	74-87-3	4.86	U	12.2	4.86	2.43
2-Chlorotoluene	95-49-8	1.22	Q	6.08	1.22	0.608
4-Chlorotoluene	106-43-4	1.22	U	6.08	1.22	0.608
1,2-Dibromo-3-chloropropane	96-12-8	4.86	U	12.2	4.86	2.43
1,2-Dibromoethane	106-93-4	1.22	U	6.08	1.22	0.608
Dibromomethane	74-95-3	1.22	U	6.08	1.22	0.608
1,2-Dichlorobenzene	95-50-1	1.22	U	6.08	1.22	0.608
1,3-Dichlorobenzene	541-73-1	1.22	U	6.08	1.22	0.608
1,4-Dichlorobenzene	106-46-7	1.22	U	6.08	1.22	0.608
Dichlorodifluoromethane	75-71-8	2.44	U	6.08	2.44	1.22
1,1-Dichloroethane	75-34-3	2.44	U	6.08	2.44	1.22
1,2-Dichloroethane	107-06-2	1.22	U	6.08	1.22	0.608
1,1-Dichloroethene	75-35-4	1.22	U	6.08	1.22	0.608
cis-1,2-Dichloroethene	156-59-2	1.22	U	6.08	1.22	0.608
trans-1,2-Dichloroethene	156-60-5	1.22	U	6.08	1.22	0.608

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.22	U	6.08	1.22	0.608
1,3-Dichloropropane	142-28-9	1.22	U	6.08	1.22	0.608
2,2-Dichloropropane	594-20-7	1.22	U	6.08	1.22	0.608
cis-1,3-Dichloropropene	10061-01-5	1.22	U	6.08	1.22	0.608
trans-1,3-Dichloropropene	10061-02-6	1.22	U	6.08	1.22	0.608
1,1-Dichloropropene	563-58-6	1.22	U	6.08	1.22	0.608
Ethylbenzene	100-41-4	1.22	U	6.08	1.22	0.608
2-Hexanone	591-78-6	6.08	U	12.2	6.08	3.04
Hexachlorobutadiene	87-68-3	1.22	U	6.08	1.22	0.608
Isopropylbenzene	98-82-8	1.22	U	6.08	1.22	0.608
p-Isopropyltoluene	99-87-6	1.22	U	6.08	1.22	0.608
4-Methyl-2-pentanone	108-10-1	6.08	U	12.2	6.08	3.04
Methylene chloride	75-09-2	2.44	U	6.08	2.44	1.22
Naphthalene	91-20-3	1.22	U	6.08	1.22	0.608
n-Propylbenzene	103-65-1	1.22	U	6.08	1.22	0.608
Styrene	100-42-5	1.22	U	6.08	1.22	0.608
1,1,1,2-Tetrachloroethane	630-20-6	1.22	U	6.08	1.22	0.608
1,1,2,2-Tetrachloroethane	79-34-5	1.22	U	6.08	1.22	0.608
Tetrachloroethene	127-18-4	1.22	U	6.08	1.22	0.608
Toluene	108-88-3	1.22	U	6.08	1.22	0.608
1,2,3-Trichlorobenzene	87-61-6	1.22	U	6.08	1.22	0.608
1,2,4-Trichlorobenzene	120-82-1	1.22	U	6.08	1.22	0.608
1,1,1-Trichloroethane	71-55-6	1.22	U	6.08	1.22	0.608
1,1,2-Trichloroethane	79-00-5	1.22	U	6.08	1.22	0.608
Trichloroethene	79-01-6	1.22	U	6.08	1.22	0.608
Trichlorofluoromethane	75-69-4	2.44	U	6.08	2.44	1.22
1,2,3-Trichloropropane	96-18-4	2.44	U	6.08	2.44	1.22
1,2,4-Trimethylbenzene	95-63-6	1.22	U	6.08	1.22	0.608
1,3,5-Trimethylbenzene	108-67-8	1.22	U	6.08	1.22	0.608
Vinyl chloride	75-01-4	2.44	U	6.08	2.44	1.22
o-Xylene	95-47-6	1.22	U	6.08	1.22	0.608
m-,p-Xylene	179601-23-1	1.22	U	6.08	1.22	0.608

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	80	120	
1,2-Dichloroethane-d4	110	80	120	
Toluene-d8	112	85	115	
4-Bromofluorobenzene	123	85	120	*

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22R(5-5.5)230416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 14:07
Collect Date:	04/23/2016 09:35	**Dilution:**	1	**File ID:**	1LM.LM34635
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.28	U	4.56	2.28	1.14

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22R(10-10.5)230416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:20
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 15:46
Collect Date:	04/23/2016 10:05	**Dilution:**	1	**File ID:**	9M974034
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.1	U	26.2	13.1	6.55
Benzene	71-43-2	1.31	U	6.55	1.31	0.655
Bromobenzene	108-86-1	1.31	U	6.55	1.31	0.655
Bromochloromethane	74-97-5	2.62	U	6.55	2.62	1.31
Bromodichloromethane	75-27-4	1.31	U	6.55	1.31	0.655
Bromoform	75-25-2	1.31	U	6.55	1.31	0.655
Bromomethane	74-83-9	2.62	U	6.55	2.62	1.31
2-Butanone	78-93-3	6.56	U	13.1	6.56	3.28
n-Butylbenzene	104-51-8	1.31	U	6.55	1.31	0.655
sec-Butylbenzene	135-98-8	1.31	U	6.55	1.31	0.655
tert-Butylbenzene	98-06-6	1.31	U	6.55	1.31	0.655
Carbon disulfide	75-15-0	1.31	U	6.55	1.31	0.655
Carbon tetrachloride	56-23-5	1.31	U	6.55	1.31	0.655
Chlorobenzene	108-90-7	1.31	U	6.55	1.31	0.655
Chlorodibromomethane	124-48-1	1.31	U	6.55	1.31	0.655
Chloroethane	75-00-3	2.62	U	6.55	2.62	1.31
Chloroform	67-66-3	1.31	U	6.55	1.31	0.655
Chloromethane	74-87-3	5.24	U	13.1	5.24	2.62
2-Chlorotoluene	95-49-8	1.31	Q	6.55	1.31	0.655
4-Chlorotoluene	106-43-4	1.31	U	6.55	1.31	0.655
1,2-Dibromo-3-chloropropane	96-12-8	5.24	U	13.1	5.24	2.62
1,2-Dibromoethane	106-93-4	1.31	U	6.55	1.31	0.655
Dibromomethane	74-95-3	1.31	U	6.55	1.31	0.655
1,2-Dichlorobenzene	95-50-1	1.31	U	6.55	1.31	0.655
1,3-Dichlorobenzene	541-73-1	1.31	U	6.55	1.31	0.655
1,4-Dichlorobenzene	106-46-7	1.31	U	6.55	1.31	0.655
Dichlorodifluoromethane	75-71-8	2.62	U	6.55	2.62	1.31
1,1-Dichloroethane	75-34-3	2.62	U	6.55	2.62	1.31
1,2-Dichloroethane	107-06-2	1.31	U	6.55	1.31	0.655
1,1-Dichloroethene	75-35-4	1.31	U	6.55	1.31	0.655

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.31	U	6.55	1.31	0.655
trans-1,2-Dichloroethene	156-60-5	1.31	U	6.55	1.31	0.655
1,2-Dichloropropane	78-87-5	1.31	U	6.55	1.31	0.655
1,3-Dichloropropane	142-28-9	1.31	U	6.55	1.31	0.655
2,2-Dichloropropane	594-20-7	1.31	U	6.55	1.31	0.655
cis-1,3-Dichloropropene	10061-01-5	1.31	U	6.55	1.31	0.655
trans-1,3-Dichloropropene	10061-02-6	1.31	U	6.55	1.31	0.655
1,1-Dichloropropene	563-58-6	1.31	U	6.55	1.31	0.655
Ethylbenzene	100-41-4	1.31	U	6.55	1.31	0.655
2-Hexanone	591-78-6	6.56	U	13.1	6.56	3.28
Hexachlorobutadiene	87-68-3	1.31	U	6.55	1.31	0.655
Isopropylbenzene	98-82-8	1.31	U	6.55	1.31	0.655
p-Isopropyltoluene	99-87-6	1.31	U	6.55	1.31	0.655
4-Methyl-2-pentanone	108-10-1	6.56	U	13.1	6.56	3.28
Methylene chloride	75-09-2	2.62	U	6.55	2.62	1.31
Naphthalene	91-20-3	1.31	Q	6.55	1.31	0.655
n-Propylbenzene	103-65-1	1.31	U	6.55	1.31	0.655
Styrene	100-42-5	1.31	U	6.55	1.31	0.655
1,1,1,2-Tetrachloroethane	630-20-6	1.31	U	6.55	1.31	0.655
1,1,2,2-Tetrachloroethane	79-34-5	1.31	U	6.55	1.31	0.655
Tetrachloroethene	127-18-4	1.31	U	6.55	1.31	0.655
Toluene	108-88-3	1.31	U	6.55	1.31	0.655
1,2,3-Trichlorobenzene	87-61-6	1.31	U	6.55	1.31	0.655
1,2,4-Trichlorobenzene	120-82-1	1.31	U	6.55	1.31	0.655
1,1,1-Trichloroethane	71-55-6	1.31	U	6.55	1.31	0.655
1,1,2-Trichloroethane	79-00-5	1.31	U	6.55	1.31	0.655
Trichloroethene	79-01-6	1.31	U	6.55	1.31	0.655
Trichlorofluoromethane	75-69-4	2.62	U	6.55	2.62	1.31
1,2,3-Trichloropropane	96-18-4	2.62	Q	6.55	2.62	1.31
1,2,4-Trimethylbenzene	95-63-6	1.31	Q	6.55	1.31	0.655
1,3,5-Trimethylbenzene	108-67-8	1.31	U	6.55	1.31	0.655
Vinyl chloride	75-01-4	2.62	U	6.55	2.62	1.31
o-Xylene	95-47-6	1.31	U	6.55	1.31	0.655
m-,p-Xylene	179601-23-1	1.31	U	6.55	1.31	0.655

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	80	120	
1,2-Dichloroethane-d4	109	80	120	
Toluene-d8	111	85	115	
4-Bromofluorobenzene	119	85	120	

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22R(10-10.5)230416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 15:03
Collect Date:	04/23/2016 10:05	**Dilution:**	1	**File ID:**	1LM.LM34638
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.44	U	4.87	2.44	1.22

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22R(15-15.5)230416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:21
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 16:16
Collect Date:	04/23/2016 10:10	**Dilution:**	1	**File ID:**	9M974035
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	77.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.3	U	26.5	13.3	6.63
Benzene	71-43-2	1.33	U	6.63	1.33	0.663
Bromobenzene	108-86-1	1.33	U	6.63	1.33	0.663
Bromochloromethane	74-97-5	2.66	U	6.63	2.66	1.33
Bromodichloromethane	75-27-4	1.33	U	6.63	1.33	0.663
Bromoform	75-25-2	1.33	U	6.63	1.33	0.663
Bromomethane	74-83-9	2.66	U	6.63	2.66	1.33
2-Butanone	78-93-3	6.64	U	13.3	6.64	3.32
n-Butylbenzene	104-51-8	1.33	U	6.63	1.33	0.663
sec-Butylbenzene	135-98-8	1.33	U	6.63	1.33	0.663
tert-Butylbenzene	98-06-6	1.33	U	6.63	1.33	0.663
Carbon disulfide	75-15-0	1.33	U	6.63	1.33	0.663
Carbon tetrachloride	56-23-5	1.33	U	6.63	1.33	0.663
Chlorobenzene	108-90-7	1.33	U	6.63	1.33	0.663
Chlorodibromomethane	124-48-1	1.33	U	6.63	1.33	0.663
Chloroethane	75-00-3	2.66	U	6.63	2.66	1.33
Chloroform	67-66-3	1.33	U	6.63	1.33	0.663
Chloromethane	74-87-3	5.30	U	13.3	5.30	2.65
2-Chlorotoluene	95-49-8	1.33	Q	6.63	1.33	0.663
4-Chlorotoluene	106-43-4	1.33	U	6.63	1.33	0.663
1,2-Dibromo-3-chloropropane	96-12-8	5.30	U	13.3	5.30	2.65
1,2-Dibromoethane	106-93-4	1.33	U	6.63	1.33	0.663
Dibromomethane	74-95-3	1.33	U	6.63	1.33	0.663
1,2-Dichlorobenzene	95-50-1	1.33	U	6.63	1.33	0.663
1,3-Dichlorobenzene	541-73-1	1.33	U	6.63	1.33	0.663
1,4-Dichlorobenzene	106-46-7	1.33	U	6.63	1.33	0.663
Dichlorodifluoromethane	75-71-8	2.66	U	6.63	2.66	1.33
1,1-Dichloroethane	75-34-3	2.66	U	6.63	2.66	1.33
1,2-Dichloroethane	107-06-2	1.33	U	6.63	1.33	0.663
1,1-Dichloroethene	75-35-4	1.33	U	6.63	1.33	0.663

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.33	U	6.63	1.33	0.663
trans-1,2-Dichloroethene	156-60-5	1.33	U	6.63	1.33	0.663
1,2-Dichloropropane	78-87-5	1.33	U	6.63	1.33	0.663
1,3-Dichloropropane	142-28-9	1.33	U	6.63	1.33	0.663
2,2-Dichloropropane	594-20-7	1.33	U	6.63	1.33	0.663
cis-1,3-Dichloropropene	10061-01-5	1.33	U	6.63	1.33	0.663
trans-1,3-Dichloropropene	10061-02-6	1.33	U	6.63	1.33	0.663
1,1-Dichloropropene	563-58-6	1.33	U	6.63	1.33	0.663
Ethylbenzene	100-41-4	1.33	U	6.63	1.33	0.663
2-Hexanone	591-78-6	6.64	U	13.3	6.64	3.32
Hexachlorobutadiene	87-68-3	1.33	U	6.63	1.33	0.663
Isopropylbenzene	98-82-8	1.33	U	6.63	1.33	0.663
p-Isopropyltoluene	99-87-6	1.33	U	6.63	1.33	0.663
4-Methyl-2-pentanone	108-10-1	6.64	U	13.3	6.64	3.32
Methylene chloride	75-09-2	2.66	U	6.63	2.66	1.33
Naphthalene	91-20-3	1.33	Q	6.63	1.33	0.663
n-Propylbenzene	103-65-1	1.33	U	6.63	1.33	0.663
Styrene	100-42-5	1.33	U	6.63	1.33	0.663
1,1,1,2-Tetrachloroethane	630-20-6	1.33	U	6.63	1.33	0.663
1,1,2,2-Tetrachloroethane	79-34-5	1.33	U	6.63	1.33	0.663
Tetrachloroethene	127-18-4	1.33	U	6.63	1.33	0.663
Toluene	108-88-3	1.33	U	6.63	1.33	0.663
1,2,3-Trichlorobenzene	87-61-6	1.33	U	6.63	1.33	0.663
1,2,4-Trichlorobenzene	120-82-1	1.33	U	6.63	1.33	0.663
1,1,1-Trichloroethane	71-55-6	1.33	U	6.63	1.33	0.663
1,1,2-Trichloroethane	79-00-5	1.33	U	6.63	1.33	0.663
Trichloroethene	79-01-6	1.33	U	6.63	1.33	0.663
Trichlorofluoromethane	75-69-4	2.66	U	6.63	2.66	1.33
1,2,3-Trichloropropane	96-18-4	2.66	Q	6.63	2.66	1.33
1,2,4-Trimethylbenzene	95-63-6	1.33	Q	6.63	1.33	0.663
1,3,5-Trimethylbenzene	108-67-8	1.33	U	6.63	1.33	0.663
Vinyl chloride	75-01-4	2.66	U	6.63	2.66	1.33
o-Xylene	95-47-6	1.33	U	6.63	1.33	0.663
m-,p-Xylene	179601-23-1	1.33	U	6.63	1.33	0.663

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	80	120	
1,2-Dichloroethane-d4	108	80	120	
Toluene-d8	110	85	115	
4-Bromofluorobenzene	118	85	120	

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22R(15-15.5)230416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 15:22
Collect Date:	04/23/2016 10:10	**Dilution:**	1	**File ID:**	1LM.LM34639
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	77.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.48	U	4.96	2.48	1.24

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW26(5-5.5)230416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:21
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 16:47
Collect Date:	04/23/2016 13:30	**Dilution:**	1	**File ID:**	9M974036
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.1	U	26.2	13.1	6.55
Benzene	71-43-2	1.31	U	6.55	1.31	0.655
Bromobenzene	108-86-1	1.31	U	6.55	1.31	0.655
Bromochloromethane	74-97-5	2.62	U	6.55	2.62	1.31
Bromodichloromethane	75-27-4	1.31	U	6.55	1.31	0.655
Bromoform	75-25-2	1.31	U	6.55	1.31	0.655
Bromomethane	74-83-9	2.62	U	6.55	2.62	1.31
2-Butanone	78-93-3	6.56	U	13.1	6.56	3.28
n-Butylbenzene	104-51-8	1.31	U	6.55	1.31	0.655
sec-Butylbenzene	135-98-8	1.31	U	6.55	1.31	0.655
tert-Butylbenzene	98-06-6	1.31	U	6.55	1.31	0.655
Carbon disulfide	75-15-0	1.31	U	6.55	1.31	0.655
Carbon tetrachloride	56-23-5	1.31	U	6.55	1.31	0.655
Chlorobenzene	108-90-7	1.31	U	6.55	1.31	0.655
Chlorodibromomethane	124-48-1	1.31	U	6.55	1.31	0.655
Chloroethane	75-00-3	2.62	U	6.55	2.62	1.31
Chloroform	67-66-3	1.31	U	6.55	1.31	0.655
Chloromethane	74-87-3	5.24	U	13.1	5.24	2.62
2-Chlorotoluene	95-49-8	1.31	Q	6.55	1.31	0.655
4-Chlorotoluene	106-43-4	1.31	U	6.55	1.31	0.655
1,2-Dibromo-3-chloropropane	96-12-8	5.24	U	13.1	5.24	2.62
1,2-Dibromoethane	106-93-4	1.31	U	6.55	1.31	0.655
Dibromomethane	74-95-3	1.31	U	6.55	1.31	0.655
1,2-Dichlorobenzene	95-50-1	1.31	U	6.55	1.31	0.655
1,3-Dichlorobenzene	541-73-1	1.31	U	6.55	1.31	0.655
1,4-Dichlorobenzene	106-46-7	1.31	U	6.55	1.31	0.655
Dichlorodifluoromethane	75-71-8	2.62	U	6.55	2.62	1.31
1,1-Dichloroethane	75-34-3	2.62	U	6.55	2.62	1.31
1,2-Dichloroethane	107-06-2	1.31	U	6.55	1.31	0.655
1,1-Dichloroethene	75-35-4	1.31	U	6.55	1.31	0.655
cis-1,2-Dichloroethene	156-59-2	1.31	U	6.55	1.31	0.655

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.31	U	6.55	1.31	0.655
1,2-Dichloropropane	78-87-5	1.31	U	6.55	1.31	0.655
1,3-Dichloropropane	142-28-9	1.31	U	6.55	1.31	0.655
2,2-Dichloropropane	594-20-7	1.31	U	6.55	1.31	0.655
cis-1,3-Dichloropropene	10061-01-5	1.31	U	6.55	1.31	0.655
trans-1,3-Dichloropropene	10061-02-6	1.31	U	6.55	1.31	0.655
1,1-Dichloropropene	563-58-6	1.31	U	6.55	1.31	0.655
Ethylbenzene	100-41-4	1.31	U	6.55	1.31	0.655
2-Hexanone	591-78-6	6.56	U	13.1	6.56	3.28
Hexachlorobutadiene	87-68-3	1.31	U	6.55	1.31	0.655
Isopropylbenzene	98-82-8	1.31	U	6.55	1.31	0.655
p-Isopropyltoluene	99-87-6	1.31	U	6.55	1.31	0.655
4-Methyl-2-pentanone	108-10-1	6.56	U	13.1	6.56	3.28
Methylene chloride	75-09-2	2.62	U	6.55	2.62	1.31
Naphthalene	91-20-3	1.31	Q	6.55	1.31	0.655
n-Propylbenzene	103-65-1	1.31	U	6.55	1.31	0.655
Styrene	100-42-5	1.31	U	6.55	1.31	0.655
1,1,1,2-Tetrachloroethane	630-20-6	1.31	U	6.55	1.31	0.655
1,1,2,2-Tetrachloroethane	79-34-5	1.31	U	6.55	1.31	0.655
Tetrachloroethene	127-18-4	1.31	U	6.55	1.31	0.655
Toluene	108-88-3	1.31	U	6.55	1.31	0.655
1,2,3-Trichlorobenzene	87-61-6	1.31	U	6.55	1.31	0.655
1,2,4-Trichlorobenzene	120-82-1	1.31	U	6.55	1.31	0.655
1,1,1-Trichloroethane	71-55-6	1.31	U	6.55	1.31	0.655
1,1,2-Trichloroethane	79-00-5	1.31	U	6.55	1.31	0.655
Trichloroethene	79-01-6	1.31	U	6.55	1.31	0.655
Trichlorofluoromethane	75-69-4	2.62	U	6.55	2.62	1.31
1,2,3-Trichloropropane	96-18-4	2.62	Q	6.55	2.62	1.31
1,2,4-Trimethylbenzene	95-63-6	1.31	Q	6.55	1.31	0.655
1,3,5-Trimethylbenzene	108-67-8	1.31	U	6.55	1.31	0.655
Vinyl chloride	75-01-4	2.62	U	6.55	2.62	1.31
o-Xylene	95-47-6	1.31	U	6.55	1.31	0.655
m-,p-Xylene	179601-23-1	1.31	U	6.55	1.31	0.655

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	80	120	
1,2-Dichloroethane-d4	117	80	120	
Toluene-d8	110	85	115	
4-Bromofluorobenzene	121	85	120	*

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW26(5-5.5)230416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 15:41
Collect Date:	04/23/2016 13:30	**Dilution:**	1	**File ID:**	1LM.LM34640
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.30	U	4.60	2.30	1.15

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW26(5-5.5)230416DUP	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:22
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 17:17
Collect Date:	04/23/2016 13:30	**Dilution:**	1	**File ID:**	9M974037
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	24.9	12.5	6.23
Benzene	71-43-2	1.25	U	6.23	1.25	0.623
Bromobenzene	108-86-1	1.25	U	6.23	1.25	0.623
Bromochloromethane	74-97-5	2.50	U	6.23	2.50	1.25
Bromodichloromethane	75-27-4	1.25	U	6.23	1.25	0.623
Bromoform	75-25-2	1.25	U	6.23	1.25	0.623
Bromomethane	74-83-9	2.50	U	6.23	2.50	1.25
2-Butanone	78-93-3	6.24	U	12.5	6.24	3.12
n-Butylbenzene	104-51-8	1.25	U	6.23	1.25	0.623
sec-Butylbenzene	135-98-8	1.25	U	6.23	1.25	0.623
tert-Butylbenzene	98-06-6	1.25	U	6.23	1.25	0.623
Carbon disulfide	75-15-0	1.25	U	6.23	1.25	0.623
Carbon tetrachloride	56-23-5	1.25	U	6.23	1.25	0.623
Chlorobenzene	108-90-7	1.25	U	6.23	1.25	0.623
Chlorodibromomethane	124-48-1	1.25	U	6.23	1.25	0.623
Chloroethane	75-00-3	2.50	U	6.23	2.50	1.25
Chloroform	67-66-3	1.25	U	6.23	1.25	0.623
Chloromethane	74-87-3	4.98	U	12.5	4.98	2.49
2-Chlorotoluene	95-49-8	1.25	Q	6.23	1.25	0.623
4-Chlorotoluene	106-43-4	1.25	U	6.23	1.25	0.623
1,2-Dibromo-3-chloropropane	96-12-8	4.98	U	12.5	4.98	2.49
1,2-Dibromoethane	106-93-4	1.25	U	6.23	1.25	0.623
Dibromomethane	74-95-3	1.25	U	6.23	1.25	0.623
1,2-Dichlorobenzene	95-50-1	1.25	U	6.23	1.25	0.623
1,3-Dichlorobenzene	541-73-1	1.25	U	6.23	1.25	0.623
1,4-Dichlorobenzene	106-46-7	1.25	U	6.23	1.25	0.623
Dichlorodifluoromethane	75-71-8	2.50	U	6.23	2.50	1.25
1,1-Dichloroethane	75-34-3	2.50	U	6.23	2.50	1.25
1,2-Dichloroethane	107-06-2	1.25	U	6.23	1.25	0.623
1,1-Dichloroethene	75-35-4	1.25	U	6.23	1.25	0.623

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.25	U	6.23	1.25	0.623
trans-1,2-Dichloroethene	156-60-5	1.25	U	6.23	1.25	0.623
1,2-Dichloropropane	78-87-5	1.25	U	6.23	1.25	0.623
1,3-Dichloropropane	142-28-9	1.25	U	6.23	1.25	0.623
2,2-Dichloropropane	594-20-7	1.25	U	6.23	1.25	0.623
cis-1,3-Dichloropropene	10061-01-5	1.25	U	6.23	1.25	0.623
trans-1,3-Dichloropropene	10061-02-6	1.25	U	6.23	1.25	0.623
1,1-Dichloropropene	563-58-6	1.25	U	6.23	1.25	0.623
Ethylbenzene	100-41-4	1.25	U	6.23	1.25	0.623
2-Hexanone	591-78-6	6.24	U	12.5	6.24	3.12
Hexachlorobutadiene	87-68-3	1.25	U	6.23	1.25	0.623
Isopropylbenzene	98-82-8	1.25	U	6.23	1.25	0.623
p-Isopropyltoluene	99-87-6	1.25	U	6.23	1.25	0.623
4-Methyl-2-pentanone	108-10-1	6.24	U	12.5	6.24	3.12
Methylene chloride	75-09-2	2.50	U	6.23	2.50	1.25
Naphthalene	91-20-3	1.25	Q	6.23	1.25	0.623
n-Propylbenzene	103-65-1	1.25	U	6.23	1.25	0.623
Styrene	100-42-5	1.25	U	6.23	1.25	0.623
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	6.23	1.25	0.623
1,1,2,2-Tetrachloroethane	79-34-5	1.25	U	6.23	1.25	0.623
Tetrachloroethene	127-18-4	1.25	U	6.23	1.25	0.623
Toluene	108-88-3	1.25	U	6.23	1.25	0.623
1,2,3-Trichlorobenzene	87-61-6	1.25	U	6.23	1.25	0.623
1,2,4-Trichlorobenzene	120-82-1	1.25	U	6.23	1.25	0.623
1,1,1-Trichloroethane	71-55-6	1.25	U	6.23	1.25	0.623
1,1,2-Trichloroethane	79-00-5	1.25	U	6.23	1.25	0.623
Trichloroethene	79-01-6	1.25	U	6.23	1.25	0.623
Trichlorofluoromethane	75-69-4	2.50	U	6.23	2.50	1.25
1,2,3-Trichloropropane	96-18-4	2.50	Q	6.23	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	Q	6.23	1.25	0.623
1,3,5-Trimethylbenzene	108-67-8	1.25	U	6.23	1.25	0.623
Vinyl chloride	75-01-4	2.50	U	6.23	2.50	1.25
o-Xylene	95-47-6	1.25	U	6.23	1.25	0.623
m-,p-Xylene	179601-23-1	1.25	U	6.23	1.25	0.623

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	80	120	
1,2-Dichloroethane-d4	119	80	120	
Toluene-d8	111	85	115	
4-Bromofluorobenzene	121	85	120	*

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW26(5-5.5)230416DUP	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 16:00
Collect Date:	04/23/2016 13:30	**Dilution:**	1	**File ID:**	1LM.LM34641
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.30	U	4.58	2.30	1.15

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW26(10-10.5)230416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:23
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 17:47
Collect Date:	04/23/2016 14:00	**Dilution:**	1	**File ID:**	9M974038
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.8	U	25.5	12.8	6.38
Benzene	71-43-2	1.28	U	6.38	1.28	0.638
Bromobenzene	108-86-1	1.28	U	6.38	1.28	0.638
Bromochloromethane	74-97-5	2.56	U	6.38	2.56	1.28
Bromodichloromethane	75-27-4	1.28	U	6.38	1.28	0.638
Bromoform	75-25-2	1.28	U	6.38	1.28	0.638
Bromomethane	74-83-9	2.56	U	6.38	2.56	1.28
2-Butanone	78-93-3	6.38	U	12.8	6.38	3.19
n-Butylbenzene	104-51-8	1.28	U	6.38	1.28	0.638
sec-Butylbenzene	135-98-8	1.28	U	6.38	1.28	0.638
tert-Butylbenzene	98-06-6	1.28	U	6.38	1.28	0.638
Carbon disulfide	75-15-0	1.28	U	6.38	1.28	0.638
Carbon tetrachloride	56-23-5	1.28	U	6.38	1.28	0.638
Chlorobenzene	108-90-7	1.28	U	6.38	1.28	0.638
Chlorodibromomethane	124-48-1	1.28	U	6.38	1.28	0.638
Chloroethane	75-00-3	2.56	U	6.38	2.56	1.28
Chloroform	67-66-3	1.28	U	6.38	1.28	0.638
Chloromethane	74-87-3	5.10	U	12.8	5.10	2.55
2-Chlorotoluene	95-49-8	1.28	Q	6.38	1.28	0.638
4-Chlorotoluene	106-43-4	1.28	U	6.38	1.28	0.638
1,2-Dibromo-3-chloropropane	96-12-8	5.10	U	12.8	5.10	2.55
1,2-Dibromoethane	106-93-4	1.28	U	6.38	1.28	0.638
Dibromomethane	74-95-3	1.28	U	6.38	1.28	0.638
1,2-Dichlorobenzene	95-50-1	1.28	U	6.38	1.28	0.638
1,3-Dichlorobenzene	541-73-1	1.28	U	6.38	1.28	0.638
1,4-Dichlorobenzene	106-46-7	1.28	U	6.38	1.28	0.638
Dichlorodifluoromethane	75-71-8	2.56	U	6.38	2.56	1.28
1,1-Dichloroethane	75-34-3	2.56	U	6.38	2.56	1.28
1,2-Dichloroethane	107-06-2	1.28	U	6.38	1.28	0.638
1,1-Dichloroethene	75-35-4	1.28	U	6.38	1.28	0.638

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.28	U	6.38	1.28	0.638
trans-1,2-Dichloroethene	156-60-5	1.28	U	6.38	1.28	0.638
1,2-Dichloropropane	78-87-5	1.28	U	6.38	1.28	0.638
1,3-Dichloropropane	142-28-9	1.28	U	6.38	1.28	0.638
2,2-Dichloropropane	594-20-7	1.28	U	6.38	1.28	0.638
cis-1,3-Dichloropropene	10061-01-5	1.28	U	6.38	1.28	0.638
trans-1,3-Dichloropropene	10061-02-6	1.28	U	6.38	1.28	0.638
1,1-Dichloropropene	563-58-6	1.28	U	6.38	1.28	0.638
Ethylbenzene	100-41-4	1.28	U	6.38	1.28	0.638
2-Hexanone	591-78-6	6.38	U	12.8	6.38	3.19
Hexachlorobutadiene	87-68-3	1.28	U	6.38	1.28	0.638
Isopropylbenzene	98-82-8	1.28	U	6.38	1.28	0.638
p-Isopropyltoluene	99-87-6	1.28	U	6.38	1.28	0.638
4-Methyl-2-pentanone	108-10-1	6.38	U	12.8	6.38	3.19
Methylene chloride	75-09-2	2.56	U	6.38	2.56	1.28
Naphthalene	91-20-3	1.28	Q	6.38	1.28	0.638
n-Propylbenzene	103-65-1	1.28	U	6.38	1.28	0.638
Styrene	100-42-5	1.28	U	6.38	1.28	0.638
1,1,1,2-Tetrachloroethane	630-20-6	1.28	U	6.38	1.28	0.638
1,1,2,2-Tetrachloroethane	79-34-5	1.28	U	6.38	1.28	0.638
Tetrachloroethene	127-18-4	1.28	U	6.38	1.28	0.638
Toluene	108-88-3	1.28	U	6.38	1.28	0.638
1,2,3-Trichlorobenzene	87-61-6	1.28	U	6.38	1.28	0.638
1,2,4-Trichlorobenzene	120-82-1	1.28	U	6.38	1.28	0.638
1,1,1-Trichloroethane	71-55-6	1.28	U	6.38	1.28	0.638
1,1,2-Trichloroethane	79-00-5	1.28	U	6.38	1.28	0.638
Trichloroethene	79-01-6	1.28	U	6.38	1.28	0.638
Trichlorofluoromethane	75-69-4	2.56	U	6.38	2.56	1.28
1,2,3-Trichloropropane	96-18-4	2.56	Q	6.38	2.56	1.28
1,2,4-Trimethylbenzene	95-63-6	1.28	Q	6.38	1.28	0.638
1,3,5-Trimethylbenzene	108-67-8	1.28	U	6.38	1.28	0.638
Vinyl chloride	75-01-4	2.56	U	6.38	2.56	1.28
o-Xylene	95-47-6	1.28	U	6.38	1.28	0.638
m-,p-Xylene	179601-23-1	1.28	U	6.38	1.28	0.638

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	80	120	
1,2-Dichloroethane-d4	119	80	120	
Toluene-d8	110	85	115	
4-Bromofluorobenzene	120	85	120	

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW26(10-10.5)230416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 17:16
Collect Date:	04/23/2016 14:00	**Dilution:**	1	**File ID:**	1LM.LM34645
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.32	U	4.66	2.32	1.16

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW26(14.5-15)230416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:25
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 18:17
Collect Date:	04/23/2016 14:05	**Dilution:**	1	**File ID:**	9M974039
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	77.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.1	U	24.2	12.1	6.04
Benzene	71-43-2	1.21	U	6.04	1.21	0.604
Bromobenzene	108-86-1	1.21	U	6.04	1.21	0.604
Bromochloromethane	74-97-5	2.42	U	6.04	2.42	1.21
Bromodichloromethane	75-27-4	1.21	U	6.04	1.21	0.604
Bromoform	75-25-2	1.21	U	6.04	1.21	0.604
Bromomethane	74-83-9	2.42	U	6.04	2.42	1.21
2-Butanone	78-93-3	6.04	U	12.1	6.04	3.02
n-Butylbenzene	104-51-8	1.21	U	6.04	1.21	0.604
sec-Butylbenzene	135-98-8	1.21	U	6.04	1.21	0.604
tert-Butylbenzene	98-06-6	1.21	U	6.04	1.21	0.604
Carbon disulfide	75-15-0	1.21	U	6.04	1.21	0.604
Carbon tetrachloride	56-23-5	1.21	U	6.04	1.21	0.604
Chlorobenzene	108-90-7	1.21	U	6.04	1.21	0.604
Chlorodibromomethane	124-48-1	1.21	U	6.04	1.21	0.604
Chloroethane	75-00-3	2.42	U	6.04	2.42	1.21
Chloroform	67-66-3	1.21	U	6.04	1.21	0.604
Chloromethane	74-87-3	4.84	U	12.1	4.84	2.42
2-Chlorotoluene	95-49-8	1.21	Q	6.04	1.21	0.604
4-Chlorotoluene	106-43-4	1.21	U	6.04	1.21	0.604
1,2-Dibromo-3-chloropropane	96-12-8	4.84	U	12.1	4.84	2.42
1,2-Dibromoethane	106-93-4	1.21	U	6.04	1.21	0.604
Dibromomethane	74-95-3	1.21	U	6.04	1.21	0.604
1,2-Dichlorobenzene	95-50-1	1.21	U	6.04	1.21	0.604
1,3-Dichlorobenzene	541-73-1	1.21	U	6.04	1.21	0.604
1,4-Dichlorobenzene	106-46-7	1.21	U	6.04	1.21	0.604
Dichlorodifluoromethane	75-71-8	2.42	U	6.04	2.42	1.21
1,1-Dichloroethane	75-34-3	2.42	U	6.04	2.42	1.21
1,2-Dichloroethane	107-06-2	1.21	U	6.04	1.21	0.604
1,1-Dichloroethene	75-35-4	1.21	U	6.04	1.21	0.604

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.21	U	6.04	1.21	0.604
trans-1,2-Dichloroethene	156-60-5	1.21	U	6.04	1.21	0.604
1,2-Dichloropropane	78-87-5	1.21	U	6.04	1.21	0.604
1,3-Dichloropropane	142-28-9	1.21	U	6.04	1.21	0.604
2,2-Dichloropropane	594-20-7	1.21	U	6.04	1.21	0.604
cis-1,3-Dichloropropene	10061-01-5	1.21	U	6.04	1.21	0.604
trans-1,3-Dichloropropene	10061-02-6	1.21	U	6.04	1.21	0.604
1,1-Dichloropropene	563-58-6	1.21	U	6.04	1.21	0.604
Ethylbenzene	100-41-4	1.21	U	6.04	1.21	0.604
2-Hexanone	591-78-6	6.04	U	12.1	6.04	3.02
Hexachlorobutadiene	87-68-3	1.21	U	6.04	1.21	0.604
Isopropylbenzene	98-82-8	1.21	U	6.04	1.21	0.604
p-Isopropyltoluene	99-87-6	1.21	U	6.04	1.21	0.604
4-Methyl-2-pentanone	108-10-1	6.04	U	12.1	6.04	3.02
Methylene chloride	75-09-2	2.42	U	6.04	2.42	1.21
Naphthalene	91-20-3	1.21	Q	6.04	1.21	0.604
n-Propylbenzene	103-65-1	1.21	U	6.04	1.21	0.604
Styrene	100-42-5	1.21	U	6.04	1.21	0.604
1,1,1,2-Tetrachloroethane	630-20-6	1.21	U	6.04	1.21	0.604
1,1,2,2-Tetrachloroethane	79-34-5	1.21	U	6.04	1.21	0.604
Tetrachloroethene	127-18-4	1.21	U	6.04	1.21	0.604
Toluene	108-88-3	1.21	U	6.04	1.21	0.604
1,2,3-Trichlorobenzene	87-61-6	1.21	U	6.04	1.21	0.604
1,2,4-Trichlorobenzene	120-82-1	1.21	U	6.04	1.21	0.604
1,1,1-Trichloroethane	71-55-6	1.21	U	6.04	1.21	0.604
1,1,2-Trichloroethane	79-00-5	1.21	U	6.04	1.21	0.604
Trichloroethene	79-01-6	1.21	U	6.04	1.21	0.604
Trichlorofluoromethane	75-69-4	2.42	U	6.04	2.42	1.21
1,2,3-Trichloropropane	96-18-4	2.42	Q	6.04	2.42	1.21
1,2,4-Trimethylbenzene	95-63-6	1.21	Q	6.04	1.21	0.604
1,3,5-Trimethylbenzene	108-67-8	1.21	U	6.04	1.21	0.604
Vinyl chloride	75-01-4	2.42	U	6.04	2.42	1.21
o-Xylene	95-47-6	1.21	U	6.04	1.21	0.604
m-,p-Xylene	179601-23-1	1.21	U	6.04	1.21	0.604

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	80	120	
1,2-Dichloroethane-d4	117	80	120	
Toluene-d8	108	85	115	
4-Bromofluorobenzene	119	85	120	

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW26(14.5-15)230416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 17:35
Collect Date:	04/23/2016 14:05	**Dilution:**	1	**File ID:**	1LM.LM34646
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	77.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.46	U	4.94	2.46	1.23

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW26SW(5-5.5)250416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:26
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 18:47
Collect Date:	04/25/2016 09:35	**Dilution:**	1	**File ID:**	9M974040
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.0	U	24.0	12.0	6.01
Benzene	71-43-2	1.20	U	6.01	1.20	0.601
Bromobenzene	108-86-1	1.20	U	6.01	1.20	0.601
Bromochloromethane	74-97-5	2.40	U	6.01	2.40	1.20
Bromodichloromethane	75-27-4	1.20	U	6.01	1.20	0.601
Bromoform	75-25-2	1.20	U	6.01	1.20	0.601
Bromomethane	74-83-9	2.40	U	6.01	2.40	1.20
2-Butanone	78-93-3	6.00	U	12.0	6.00	3.00
n-Butylbenzene	104-51-8	1.20	U	6.01	1.20	0.601
sec-Butylbenzene	135-98-8	1.20	U	6.01	1.20	0.601
tert-Butylbenzene	98-06-6	1.20	U	6.01	1.20	0.601
Carbon disulfide	75-15-0	1.20	U	6.01	1.20	0.601
Carbon tetrachloride	56-23-5	1.20	U	6.01	1.20	0.601
Chlorobenzene	108-90-7	1.20	U	6.01	1.20	0.601
Chlorodibromomethane	124-48-1	1.20	U	6.01	1.20	0.601
Chloroethane	75-00-3	2.40	U	6.01	2.40	1.20
Chloroform	67-66-3	1.20	U	6.01	1.20	0.601
Chloromethane	74-87-3	4.80	U	12.0	4.80	2.40
2-Chlorotoluene	95-49-8	1.20	Q	6.01	1.20	0.601
4-Chlorotoluene	106-43-4	1.20	U	6.01	1.20	0.601
1,2-Dibromo-3-chloropropane	96-12-8	4.80	U	12.0	4.80	2.40
1,2-Dibromoethane	106-93-4	1.20	U	6.01	1.20	0.601
Dibromomethane	74-95-3	1.20	U	6.01	1.20	0.601
1,2-Dichlorobenzene	95-50-1	1.20	U	6.01	1.20	0.601
1,3-Dichlorobenzene	541-73-1	1.20	U	6.01	1.20	0.601
1,4-Dichlorobenzene	106-46-7	1.20	U	6.01	1.20	0.601
Dichlorodifluoromethane	75-71-8	2.40	U	6.01	2.40	1.20
1,1-Dichloroethane	75-34-3	2.40	U	6.01	2.40	1.20
1,2-Dichloroethane	107-06-2	1.20	U	6.01	1.20	0.601
1,1-Dichloroethene	75-35-4	1.20	U	6.01	1.20	0.601

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.20	U	6.01	1.20	0.601
trans-1,2-Dichloroethene	156-60-5	1.20	U	6.01	1.20	0.601
1,2-Dichloropropane	78-87-5	1.20	U	6.01	1.20	0.601
1,3-Dichloropropane	142-28-9	1.20	U	6.01	1.20	0.601
2,2-Dichloropropane	594-20-7	1.20	U	6.01	1.20	0.601
cis-1,3-Dichloropropene	10061-01-5	1.20	U	6.01	1.20	0.601
trans-1,3-Dichloropropene	10061-02-6	1.20	U	6.01	1.20	0.601
1,1-Dichloropropene	563-58-6	1.20	U	6.01	1.20	0.601
Ethylbenzene	100-41-4	1.20	U	6.01	1.20	0.601
2-Hexanone	591-78-6	6.00	U	12.0	6.00	3.00
Hexachlorobutadiene	87-68-3	1.20	U	6.01	1.20	0.601
Isopropylbenzene	98-82-8	1.20	U	6.01	1.20	0.601
p-Isopropyltoluene	99-87-6	1.20	U	6.01	1.20	0.601
4-Methyl-2-pentanone	108-10-1	6.00	U	12.0	6.00	3.00
Methylene chloride	75-09-2	2.40	U	6.01	2.40	1.20
Naphthalene	91-20-3	1.20	Q	6.01	1.20	0.601
n-Propylbenzene	103-65-1	1.20	U	6.01	1.20	0.601
Styrene	100-42-5	1.20	U	6.01	1.20	0.601
1,1,1,2-Tetrachloroethane	630-20-6	1.20	U	6.01	1.20	0.601
1,1,2,2-Tetrachloroethane	79-34-5	1.20	U	6.01	1.20	0.601
Tetrachloroethene	127-18-4	1.20	U	6.01	1.20	0.601
Toluene	108-88-3	1.20	U	6.01	1.20	0.601
1,2,3-Trichlorobenzene	87-61-6	1.20	U	6.01	1.20	0.601
1,2,4-Trichlorobenzene	120-82-1	1.20	U	6.01	1.20	0.601
1,1,1-Trichloroethane	71-55-6	1.20	U	6.01	1.20	0.601
1,1,2-Trichloroethane	79-00-5	1.20	U	6.01	1.20	0.601
Trichloroethene	79-01-6	1.20	U	6.01	1.20	0.601
Trichlorofluoromethane	75-69-4	2.40	U	6.01	2.40	1.20
1,2,3-Trichloropropane	96-18-4	2.40	Q	6.01	2.40	1.20
1,2,4-Trimethylbenzene	95-63-6	1.20	Q	6.01	1.20	0.601
1,3,5-Trimethylbenzene	108-67-8	1.20	U	6.01	1.20	0.601
Vinyl chloride	75-01-4	2.40	U	6.01	2.40	1.20
o-Xylene	95-47-6	1.20	U	6.01	1.20	0.601
m-,p-Xylene	179601-23-1	1.20	U	6.01	1.20	0.601

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	80	120	
1,2-Dichloroethane-d4	116	80	120	
Toluene-d8	109	85	115	
4-Bromofluorobenzene	119	85	120	

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW26SW(5-5.5)250416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 17:54
Collect Date:	04/25/2016 09:35	**Dilution:**	1	**File ID:**	1LM.LM34647
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.32	U	4.62	2.32	1.16

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW26SW(10-10.5)250416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:27
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 19:18
Collect Date:	04/25/2016 09:50	**Dilution:**	1	**File ID:**	9M974041
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	78.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.9	U	27.7	13.9	6.93
Benzene	71-43-2	1.39	U	6.93	1.39	0.693
Bromobenzene	108-86-1	1.39	U	6.93	1.39	0.693
Bromochloromethane	74-97-5	2.78	U	6.93	2.78	1.39
Bromodichloromethane	75-27-4	1.39	U	6.93	1.39	0.693
Bromoform	75-25-2	1.39	U	6.93	1.39	0.693
Bromomethane	74-83-9	2.78	U	6.93	2.78	1.39
2-Butanone	78-93-3	6.92	U	13.9	6.92	3.46
n-Butylbenzene	104-51-8	1.39	U	6.93	1.39	0.693
sec-Butylbenzene	135-98-8	1.39	U	6.93	1.39	0.693
tert-Butylbenzene	98-06-6	1.39	U	6.93	1.39	0.693
Carbon disulfide	75-15-0	1.39	U	6.93	1.39	0.693
Carbon tetrachloride	56-23-5	1.39	U	6.93	1.39	0.693
Chlorobenzene	108-90-7	1.39	U	6.93	1.39	0.693
Chlorodibromomethane	124-48-1	1.39	U	6.93	1.39	0.693
Chloroethane	75-00-3	2.78	U	6.93	2.78	1.39
Chloroform	67-66-3	1.39	U	6.93	1.39	0.693
Chloromethane	74-87-3	5.54	U	13.9	5.54	2.77
2-Chlorotoluene	95-49-8	1.39	Q	6.93	1.39	0.693
4-Chlorotoluene	106-43-4	1.39	U	6.93	1.39	0.693
1,2-Dibromo-3-chloropropane	96-12-8	5.54	U	13.9	5.54	2.77
1,2-Dibromoethane	106-93-4	1.39	U	6.93	1.39	0.693
Dibromomethane	74-95-3	1.39	U	6.93	1.39	0.693
1,2-Dichlorobenzene	95-50-1	1.39	U	6.93	1.39	0.693
1,3-Dichlorobenzene	541-73-1	1.39	U	6.93	1.39	0.693
1,4-Dichlorobenzene	106-46-7	1.39	U	6.93	1.39	0.693
Dichlorodifluoromethane	75-71-8	2.78	U	6.93	2.78	1.39
1,1-Dichloroethane	75-34-3	2.78	U	6.93	2.78	1.39
1,2-Dichloroethane	107-06-2	1.39	U	6.93	1.39	0.693
1,1-Dichloroethene	75-35-4	1.39	U	6.93	1.39	0.693

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.39	U	6.93	1.39	0.693
trans-1,2-Dichloroethene	156-60-5	1.39	U	6.93	1.39	0.693
1,2-Dichloropropane	78-87-5	1.39	U	6.93	1.39	0.693
1,3-Dichloropropane	142-28-9	1.39	U	6.93	1.39	0.693
2,2-Dichloropropane	594-20-7	1.39	U	6.93	1.39	0.693
cis-1,3-Dichloropropene	10061-01-5	1.39	U	6.93	1.39	0.693
trans-1,3-Dichloropropene	10061-02-6	1.39	U	6.93	1.39	0.693
1,1-Dichloropropene	563-58-6	1.39	U	6.93	1.39	0.693
Ethylbenzene	100-41-4	1.39	U	6.93	1.39	0.693
2-Hexanone	591-78-6	6.92	U	13.9	6.92	3.46
Hexachlorobutadiene	87-68-3	1.39	U	6.93	1.39	0.693
Isopropylbenzene	98-82-8	1.39	U	6.93	1.39	0.693
p-Isopropyltoluene	99-87-6	1.39	U	6.93	1.39	0.693
4-Methyl-2-pentanone	108-10-1	6.92	U	13.9	6.92	3.46
Methylene chloride	75-09-2	2.78	U	6.93	2.78	1.39
Naphthalene	91-20-3	1.39	Q	6.93	1.39	0.693
n-Propylbenzene	103-65-1	1.39	U	6.93	1.39	0.693
Styrene	100-42-5	1.39	U	6.93	1.39	0.693
1,1,1,2-Tetrachloroethane	630-20-6	1.39	U	6.93	1.39	0.693
1,1,2,2-Tetrachloroethane	79-34-5	1.39	U	6.93	1.39	0.693
Tetrachloroethene	127-18-4	1.39	U	6.93	1.39	0.693
Toluene	108-88-3	1.39	U	6.93	1.39	0.693
1,2,3-Trichlorobenzene	87-61-6	1.39	U	6.93	1.39	0.693
1,2,4-Trichlorobenzene	120-82-1	1.39	U	6.93	1.39	0.693
1,1,1-Trichloroethane	71-55-6	1.39	U	6.93	1.39	0.693
1,1,2-Trichloroethane	79-00-5	1.39	U	6.93	1.39	0.693
Trichloroethene	79-01-6	1.39	U	6.93	1.39	0.693
Trichlorofluoromethane	75-69-4	2.78	U	6.93	2.78	1.39
1,2,3-Trichloropropane	96-18-4	2.78	Q	6.93	2.78	1.39
1,2,4-Trimethylbenzene	95-63-6	1.39	Q	6.93	1.39	0.693
1,3,5-Trimethylbenzene	108-67-8	1.39	Q	6.93	1.39	0.693
Vinyl chloride	75-01-4	2.78	U	6.93	2.78	1.39
o-Xylene	95-47-6	1.39	U	6.93	1.39	0.693
m-,p-Xylene	179601-23-1	1.39	U	6.93	1.39	0.693

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	80	120	
1,2-Dichloroethane-d4	121	80	120	*
Toluene-d8	110	85	115	
4-Bromofluorobenzene	121	85	120	*

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-09	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW26SW(10-10.5)250416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 18:13
Collect Date:	04/25/2016 09:50	**Dilution:**	1	**File ID:**	1LM.LM34648
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	78.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.50	U	5.00	2.50	1.25

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW26SW(15-15.5)250416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:28
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 19:48
Collect Date:	04/25/2016 10:45	**Dilution:**	1	**File ID:**	9M974042
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	78.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.9	U	23.8	11.9	5.95
Benzene	71-43-2	1.19	U	5.95	1.19	0.595
Bromobenzene	108-86-1	1.19	U	5.95	1.19	0.595
Bromochloromethane	74-97-5	2.38	U	5.95	2.38	1.19
Bromodichloromethane	75-27-4	1.19	U	5.95	1.19	0.595
Bromoform	75-25-2	1.19	U	5.95	1.19	0.595
Bromomethane	74-83-9	2.38	U	5.95	2.38	1.19
2-Butanone	78-93-3	5.94	U	11.9	5.94	2.97
n-Butylbenzene	104-51-8	1.19	U	5.95	1.19	0.595
sec-Butylbenzene	135-98-8	1.19	U	5.95	1.19	0.595
tert-Butylbenzene	98-06-6	1.19	U	5.95	1.19	0.595
Carbon disulfide	75-15-0	1.19	U	5.95	1.19	0.595
Carbon tetrachloride	56-23-5	1.19	U	5.95	1.19	0.595
Chlorobenzene	108-90-7	1.19	U	5.95	1.19	0.595
Chlorodibromomethane	124-48-1	1.19	U	5.95	1.19	0.595
Chloroethane	75-00-3	2.38	U	5.95	2.38	1.19
Chloroform	67-66-3	1.19	U	5.95	1.19	0.595
Chloromethane	74-87-3	4.76	U	11.9	4.76	2.38
2-Chlorotoluene	95-49-8	1.19	Q	5.95	1.19	0.595
4-Chlorotoluene	106-43-4	1.19	U	5.95	1.19	0.595
1,2-Dibromo-3-chloropropane	96-12-8	4.76	U	11.9	4.76	2.38
1,2-Dibromoethane	106-93-4	1.19	U	5.95	1.19	0.595
Dibromomethane	74-95-3	1.19	U	5.95	1.19	0.595
1,2-Dichlorobenzene	95-50-1	1.19	U	5.95	1.19	0.595
1,3-Dichlorobenzene	541-73-1	1.19	U	5.95	1.19	0.595
1,4-Dichlorobenzene	106-46-7	1.19	U	5.95	1.19	0.595
Dichlorodifluoromethane	75-71-8	2.38	U	5.95	2.38	1.19
1,1-Dichloroethane	75-34-3	2.38	U	5.95	2.38	1.19
1,2-Dichloroethane	107-06-2	1.19	U	5.95	1.19	0.595
1,1-Dichloroethene	75-35-4	1.19	U	5.95	1.19	0.595

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.19	U	5.95	1.19	0.595
trans-1,2-Dichloroethene	156-60-5	1.19	U	5.95	1.19	0.595
1,2-Dichloropropane	78-87-5	1.19	U	5.95	1.19	0.595
1,3-Dichloropropane	142-28-9	1.19	U	5.95	1.19	0.595
2,2-Dichloropropane	594-20-7	1.19	U	5.95	1.19	0.595
cis-1,3-Dichloropropene	10061-01-5	1.19	U	5.95	1.19	0.595
trans-1,3-Dichloropropene	10061-02-6	1.19	U	5.95	1.19	0.595
1,1-Dichloropropene	563-58-6	1.19	U	5.95	1.19	0.595
Ethylbenzene	100-41-4	1.19	U	5.95	1.19	0.595
2-Hexanone	591-78-6	5.94	U	11.9	5.94	2.97
Hexachlorobutadiene	87-68-3	1.19	U	5.95	1.19	0.595
Isopropylbenzene	98-82-8	1.19	U	5.95	1.19	0.595
p-Isopropyltoluene	99-87-6	1.19	U	5.95	1.19	0.595
4-Methyl-2-pentanone	108-10-1	5.94	U	11.9	5.94	2.97
Methylene chloride	75-09-2	2.38	U	5.95	2.38	1.19
Naphthalene	91-20-3	1.19	Q	5.95	1.19	0.595
n-Propylbenzene	103-65-1	1.19	U	5.95	1.19	0.595
Styrene	100-42-5	1.19	U	5.95	1.19	0.595
1,1,1,2-Tetrachloroethane	630-20-6	1.19	U	5.95	1.19	0.595
1,1,2,2-Tetrachloroethane	79-34-5	1.19	U	5.95	1.19	0.595
Tetrachloroethene	127-18-4	1.19	U	5.95	1.19	0.595
Toluene	108-88-3	1.19	U	5.95	1.19	0.595
1,2,3-Trichlorobenzene	87-61-6	1.19	U	5.95	1.19	0.595
1,2,4-Trichlorobenzene	120-82-1	1.19	U	5.95	1.19	0.595
1,1,1-Trichloroethane	71-55-6	1.19	U	5.95	1.19	0.595
1,1,2-Trichloroethane	79-00-5	1.19	U	5.95	1.19	0.595
Trichloroethene	79-01-6	1.19	U	5.95	1.19	0.595
Trichlorofluoromethane	75-69-4	2.38	U	5.95	2.38	1.19
1,2,3-Trichloropropane	96-18-4	2.38	Q	5.95	2.38	1.19
1,2,4-Trimethylbenzene	95-63-6	1.19	Q	5.95	1.19	0.595
1,3,5-Trimethylbenzene	108-67-8	1.19	U	5.95	1.19	0.595
Vinyl chloride	75-01-4	2.38	U	5.95	2.38	1.19
o-Xylene	95-47-6	1.19	U	5.95	1.19	0.595
m-,p-Xylene	179601-23-1	1.19	U	5.95	1.19	0.595

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	80	120	
1,2-Dichloroethane-d4	106	80	120	
Toluene-d8	112	85	115	
4-Bromofluorobenzene	122	85	120	*

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-10	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW26SW(15-15.5)250416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 18:32
Collect Date:	04/25/2016 10:45	**Dilution:**	1	**File ID:**	1LM.LM34649
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	78.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1.58	J	4.99	2.50	1.25

J	Estimated value ; the analyte concentration was less than the LOQ.

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW26SW(20-20.5)250416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:28
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 20:18
Collect Date:	04/25/2016 11:45	**Dilution:**	1	**File ID:**	9M974043
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.9	U	25.9	12.9	6.47
Benzene	71-43-2	1.29	U	6.47	1.29	0.647
Bromobenzene	108-86-1	1.29	U	6.47	1.29	0.647
Bromochloromethane	74-97-5	2.58	U	6.47	2.58	1.29
Bromodichloromethane	75-27-4	1.29	U	6.47	1.29	0.647
Bromoform	75-25-2	1.29	U	6.47	1.29	0.647
Bromomethane	74-83-9	2.58	U	6.47	2.58	1.29
2-Butanone	78-93-3	6.46	U	12.9	6.46	3.23
n-Butylbenzene	104-51-8	1.29	U	6.47	1.29	0.647
sec-Butylbenzene	135-98-8	1.29	U	6.47	1.29	0.647
tert-Butylbenzene	98-06-6	1.29	U	6.47	1.29	0.647
Carbon disulfide	75-15-0	1.29	U	6.47	1.29	0.647
Carbon tetrachloride	56-23-5	1.29	U	6.47	1.29	0.647
Chlorobenzene	108-90-7	1.29	U	6.47	1.29	0.647
Chlorodibromomethane	124-48-1	1.29	U	6.47	1.29	0.647
Chloroethane	75-00-3	2.58	U	6.47	2.58	1.29
Chloroform	67-66-3	1.29	U	6.47	1.29	0.647
Chloromethane	74-87-3	5.18	U	12.9	5.18	2.59
2-Chlorotoluene	95-49-8	1.29	Q	6.47	1.29	0.647
4-Chlorotoluene	106-43-4	1.29	U	6.47	1.29	0.647
1,2-Dibromo-3-chloropropane	96-12-8	5.18	U	12.9	5.18	2.59
1,2-Dibromoethane	106-93-4	1.29	U	6.47	1.29	0.647
Dibromomethane	74-95-3	1.29	U	6.47	1.29	0.647
1,2-Dichlorobenzene	95-50-1	1.29	U	6.47	1.29	0.647
1,3-Dichlorobenzene	541-73-1	1.29	U	6.47	1.29	0.647
1,4-Dichlorobenzene	106-46-7	1.29	U	6.47	1.29	0.647
Dichlorodifluoromethane	75-71-8	2.58	U	6.47	2.58	1.29
1,1-Dichloroethane	75-34-3	2.58	U	6.47	2.58	1.29
1,2-Dichloroethane	107-06-2	1.29	U	6.47	1.29	0.647
1,1-Dichloroethene	75-35-4	1.29	U	6.47	1.29	0.647

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.29	U	6.47	1.29	0.647
trans-1,2-Dichloroethene	156-60-5	1.29	U	6.47	1.29	0.647
1,2-Dichloropropane	78-87-5	1.29	U	6.47	1.29	0.647
1,3-Dichloropropane	142-28-9	1.29	U	6.47	1.29	0.647
2,2-Dichloropropane	594-20-7	1.29	U	6.47	1.29	0.647
cis-1,3-Dichloropropene	10061-01-5	1.29	U	6.47	1.29	0.647
trans-1,3-Dichloropropene	10061-02-6	1.29	U	6.47	1.29	0.647
1,1-Dichloropropene	563-58-6	1.29	U	6.47	1.29	0.647
Ethylbenzene	100-41-4	1.29	U	6.47	1.29	0.647
2-Hexanone	591-78-6	6.46	U	12.9	6.46	3.23
Hexachlorobutadiene	87-68-3	1.29	U	6.47	1.29	0.647
Isopropylbenzene	98-82-8	1.29	U	6.47	1.29	0.647
p-Isopropyltoluene	99-87-6	1.29	U	6.47	1.29	0.647
4-Methyl-2-pentanone	108-10-1	6.46	U	12.9	6.46	3.23
Methylene chloride	75-09-2	2.58	U	6.47	2.58	1.29
Naphthalene	91-20-3	1.29	Q	6.47	1.29	0.647
n-Propylbenzene	103-65-1	1.29	U	6.47	1.29	0.647
Styrene	100-42-5	1.29	U	6.47	1.29	0.647
1,1,1,2-Tetrachloroethane	630-20-6	1.29	U	6.47	1.29	0.647
1,1,2,2-Tetrachloroethane	79-34-5	1.29	U	6.47	1.29	0.647
Tetrachloroethene	127-18-4	1.29	U	6.47	1.29	0.647
Toluene	108-88-3	1.29	U	6.47	1.29	0.647
1,2,3-Trichlorobenzene	87-61-6	1.29	U	6.47	1.29	0.647
1,2,4-Trichlorobenzene	120-82-1	1.29	U	6.47	1.29	0.647
1,1,1-Trichloroethane	71-55-6	1.29	U	6.47	1.29	0.647
1,1,2-Trichloroethane	79-00-5	1.29	U	6.47	1.29	0.647
Trichloroethene	79-01-6	1.29	U	6.47	1.29	0.647
Trichlorofluoromethane	75-69-4	2.58	U	6.47	2.58	1.29
1,2,3-Trichloropropane	96-18-4	2.58	Q	6.47	2.58	1.29
1,2,4-Trimethylbenzene	95-63-6	1.29	Q	6.47	1.29	0.647
1,3,5-Trimethylbenzene	108-67-8	1.29	U	6.47	1.29	0.647
Vinyl chloride	75-01-4	2.58	U	6.47	2.58	1.29
o-Xylene	95-47-6	1.29	U	6.47	1.29	0.647
m-,p-Xylene	179601-23-1	1.29	U	6.47	1.29	0.647

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	80	120	
1,2-Dichloroethane-d4	105	80	120	
Toluene-d8	113	85	115	
4-Bromofluorobenzene	125	85	120	*

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-11	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW26SW(20-20.5)250416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 18:51
Collect Date:	04/25/2016 11:45	**Dilution:**	1	**File ID:**	1LM.LM34650
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	4.60	J	4.86	2.42	1.21

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW26SW(30-30.5)250416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:29
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 20:48
Collect Date:	04/25/2016 12:05	**Dilution:**	1	**File ID:**	9M974044
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	77.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.2	U	24.4	12.2	6.11
Benzene	71-43-2	1.22	U	6.11	1.22	0.611
Bromobenzene	108-86-1	1.22	U	6.11	1.22	0.611
Bromochloromethane	74-97-5	2.44	U	6.11	2.44	1.22
Bromodichloromethane	75-27-4	1.22	U	6.11	1.22	0.611
Bromoform	75-25-2	1.22	U	6.11	1.22	0.611
Bromomethane	74-83-9	2.44	U	6.11	2.44	1.22
2-Butanone	78-93-3	6.12	U	12.2	6.12	3.06
n-Butylbenzene	104-51-8	1.22	U	6.11	1.22	0.611
sec-Butylbenzene	135-98-8	1.22	U	6.11	1.22	0.611
tert-Butylbenzene	98-06-6	1.22	U	6.11	1.22	0.611
Carbon disulfide	75-15-0	1.22	U	6.11	1.22	0.611
Carbon tetrachloride	56-23-5	1.22	U	6.11	1.22	0.611
Chlorobenzene	108-90-7	1.22	U	6.11	1.22	0.611
Chlorodibromomethane	124-48-1	1.22	U	6.11	1.22	0.611
Chloroethane	75-00-3	2.44	U	6.11	2.44	1.22
Chloroform	67-66-3	1.22	U	6.11	1.22	0.611
Chloromethane	74-87-3	4.88	U	12.2	4.88	2.44
2-Chlorotoluene	95-49-8	1.22	Q	6.11	1.22	0.611
4-Chlorotoluene	106-43-4	1.22	U	6.11	1.22	0.611
1,2-Dibromo-3-chloropropane	96-12-8	4.88	U	12.2	4.88	2.44
1,2-Dibromoethane	106-93-4	1.22	U	6.11	1.22	0.611
Dibromomethane	74-95-3	1.22	U	6.11	1.22	0.611
1,2-Dichlorobenzene	95-50-1	1.22	U	6.11	1.22	0.611
1,3-Dichlorobenzene	541-73-1	1.22	U	6.11	1.22	0.611
1,4-Dichlorobenzene	106-46-7	1.22	U	6.11	1.22	0.611
Dichlorodifluoromethane	75-71-8	2.44	U	6.11	2.44	1.22
1,1-Dichloroethane	75-34-3	2.44	U	6.11	2.44	1.22
1,2-Dichloroethane	107-06-2	1.22	U	6.11	1.22	0.611
1,1-Dichloroethene	75-35-4	1.22	U	6.11	1.22	0.611

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.22	U	6.11	1.22	0.611
trans-1,2-Dichloroethene	156-60-5	1.22	U	6.11	1.22	0.611
1,2-Dichloropropane	78-87-5	1.22	U	6.11	1.22	0.611
1,3-Dichloropropane	142-28-9	1.22	U	6.11	1.22	0.611
2,2-Dichloropropane	594-20-7	1.22	U	6.11	1.22	0.611
cis-1,3-Dichloropropene	10061-01-5	1.22	U	6.11	1.22	0.611
trans-1,3-Dichloropropene	10061-02-6	1.22	U	6.11	1.22	0.611
1,1-Dichloropropene	563-58-6	1.22	U	6.11	1.22	0.611
Ethylbenzene	100-41-4	1.22	U	6.11	1.22	0.611
2-Hexanone	591-78-6	6.12	U	12.2	6.12	3.06
Hexachlorobutadiene	87-68-3	1.22	U	6.11	1.22	0.611
Isopropylbenzene	98-82-8	1.22	U	6.11	1.22	0.611
p-Isopropyltoluene	99-87-6	1.22	U	6.11	1.22	0.611
4-Methyl-2-pentanone	108-10-1	6.12	U	12.2	6.12	3.06
Methylene chloride	75-09-2	2.44	U	6.11	2.44	1.22
Naphthalene	91-20-3	1.22	Q	6.11	1.22	0.611
n-Propylbenzene	103-65-1	1.22	U	6.11	1.22	0.611
Styrene	100-42-5	1.22	U	6.11	1.22	0.611
1,1,1,2-Tetrachloroethane	630-20-6	1.22	U	6.11	1.22	0.611
1,1,2,2-Tetrachloroethane	79-34-5	1.22	U	6.11	1.22	0.611
Tetrachloroethene	127-18-4	1.22	U	6.11	1.22	0.611
Toluene	108-88-3	1.22	U	6.11	1.22	0.611
1,2,3-Trichlorobenzene	87-61-6	1.22	U	6.11	1.22	0.611
1,2,4-Trichlorobenzene	120-82-1	1.22	U	6.11	1.22	0.611
1,1,1-Trichloroethane	71-55-6	1.22	U	6.11	1.22	0.611
1,1,2-Trichloroethane	79-00-5	1.22	U	6.11	1.22	0.611
Trichloroethene	79-01-6	1.22	U	6.11	1.22	0.611
Trichlorofluoromethane	75-69-4	2.44	U	6.11	2.44	1.22
1,2,3-Trichloropropane	96-18-4	2.44	Q	6.11	2.44	1.22
1,2,4-Trimethylbenzene	95-63-6	1.22	Q	6.11	1.22	0.611
1,3,5-Trimethylbenzene	108-67-8	1.22	U	6.11	1.22	0.611
Vinyl chloride	75-01-4	2.44	U	6.11	2.44	1.22
o-Xylene	95-47-6	1.22	U	6.11	1.22	0.611
m-,p-Xylene	179601-23-1	1.22	U	6.11	1.22	0.611

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	80	120	
1,2-Dichloroethane-d4	109	80	120	
Toluene-d8	112	85	115	
4-Bromofluorobenzene	120	85	120	

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-12	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW26SW(30-30.5)250416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 19:10
Collect Date:	04/25/2016 12:05	**Dilution:**	1	**File ID:**	1LM.LM34651
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	77.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.52	U	5.03	2.52	1.26

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-13	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW26SW(40-40.5)250416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:29
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 21:19
Collect Date:	04/25/2016 12:10	**Dilution:**	1	**File ID:**	9M974045
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	71.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	14.8	U	29.7	14.8	7.42
Benzene	71-43-2	1.48	U	7.42	1.48	0.742
Bromobenzene	108-86-1	1.48	U	7.42	1.48	0.742
Bromochloromethane	74-97-5	2.96	U	7.42	2.96	1.48
Bromodichloromethane	75-27-4	1.48	U	7.42	1.48	0.742
Bromoform	75-25-2	1.48	U	7.42	1.48	0.742
Bromomethane	74-83-9	2.96	U	7.42	2.96	1.48
2-Butanone	78-93-3	7.42	U	14.8	7.42	3.71
n-Butylbenzene	104-51-8	1.48	U	7.42	1.48	0.742
sec-Butylbenzene	135-98-8	1.48	U	7.42	1.48	0.742
tert-Butylbenzene	98-06-6	1.48	U	7.42	1.48	0.742
Carbon disulfide	75-15-0	1.48	U	7.42	1.48	0.742
Carbon tetrachloride	56-23-5	1.48	U	7.42	1.48	0.742
Chlorobenzene	108-90-7	1.48	U	7.42	1.48	0.742
Chlorodibromomethane	124-48-1	1.48	U	7.42	1.48	0.742
Chloroethane	75-00-3	2.96	U	7.42	2.96	1.48
Chloroform	67-66-3	1.48	U	7.42	1.48	0.742
Chloromethane	74-87-3	5.94	U	14.8	5.94	2.97
2-Chlorotoluene	95-49-8	1.48	Q	7.42	1.48	0.742
4-Chlorotoluene	106-43-4	1.48	U	7.42	1.48	0.742
1,2-Dibromo-3-chloropropane	96-12-8	5.94	U	14.8	5.94	2.97
1,2-Dibromoethane	106-93-4	1.48	U	7.42	1.48	0.742
Dibromomethane	74-95-3	1.48	U	7.42	1.48	0.742
1,2-Dichlorobenzene	95-50-1	1.48	U	7.42	1.48	0.742
1,3-Dichlorobenzene	541-73-1	1.48	U	7.42	1.48	0.742
1,4-Dichlorobenzene	106-46-7	1.48	U	7.42	1.48	0.742
Dichlorodifluoromethane	75-71-8	2.96	U	7.42	2.96	1.48
1,1-Dichloroethane	75-34-3	2.96	U	7.42	2.96	1.48
1,2-Dichloroethane	107-06-2	1.48	U	7.42	1.48	0.742
1,1-Dichloroethene	75-35-4	1.48	U	7.42	1.48	0.742

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.48	U	7.42	1.48	0.742
trans-1,2-Dichloroethene	156-60-5	1.48	U	7.42	1.48	0.742
1,2-Dichloropropane	78-87-5	1.48	U	7.42	1.48	0.742
1,3-Dichloropropane	142-28-9	1.48	U	7.42	1.48	0.742
2,2-Dichloropropane	594-20-7	1.48	U	7.42	1.48	0.742
cis-1,3-Dichloropropene	10061-01-5	1.48	U	7.42	1.48	0.742
trans-1,3-Dichloropropene	10061-02-6	1.48	U	7.42	1.48	0.742
1,1-Dichloropropene	563-58-6	1.48	U	7.42	1.48	0.742
Ethylbenzene	100-41-4	1.48	U	7.42	1.48	0.742
2-Hexanone	591-78-6	7.42	U	14.8	7.42	3.71
Hexachlorobutadiene	87-68-3	1.48	U	7.42	1.48	0.742
Isopropylbenzene	98-82-8	1.48	U	7.42	1.48	0.742
p-Isopropyltoluene	99-87-6	1.48	U	7.42	1.48	0.742
4-Methyl-2-pentanone	108-10-1	7.42	U	14.8	7.42	3.71
Methylene chloride	75-09-2	2.96	U	7.42	2.96	1.48
Naphthalene	91-20-3	1.48	Q	7.42	1.48	0.742
n-Propylbenzene	103-65-1	1.48	U	7.42	1.48	0.742
Styrene	100-42-5	1.48	U	7.42	1.48	0.742
1,1,1,2-Tetrachloroethane	630-20-6	1.48	U	7.42	1.48	0.742
1,1,2,2-Tetrachloroethane	79-34-5	1.48	U	7.42	1.48	0.742
Tetrachloroethene	127-18-4	1.48	U	7.42	1.48	0.742
Toluene	108-88-3	1.48	U	7.42	1.48	0.742
1,2,3-Trichlorobenzene	87-61-6	1.48	U	7.42	1.48	0.742
1,2,4-Trichlorobenzene	120-82-1	1.48	U	7.42	1.48	0.742
1,1,1-Trichloroethane	71-55-6	1.48	U	7.42	1.48	0.742
1,1,2-Trichloroethane	79-00-5	1.48	U	7.42	1.48	0.742
Trichloroethene	79-01-6	1.48	U	7.42	1.48	0.742
Trichlorofluoromethane	75-69-4	2.96	U	7.42	2.96	1.48
1,2,3-Trichloropropane	96-18-4	2.96	Q	7.42	2.96	1.48
1,2,4-Trimethylbenzene	95-63-6	1.48	Q	7.42	1.48	0.742
1,3,5-Trimethylbenzene	108-67-8	1.48	U	7.42	1.48	0.742
Vinyl chloride	75-01-4	2.96	U	7.42	2.96	1.48
o-Xylene	95-47-6	1.48	U	7.42	1.48	0.742
m-,p-Xylene	179601-23-1	1.48	U	7.42	1.48	0.742

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	80	120	
1,2-Dichloroethane-d4	106	80	120	
Toluene-d8	115	85	115	
4-Bromofluorobenzene	126	85	120	*

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-13	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW26SW(40-40.5)250416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 19:29
Collect Date:	04/25/2016 12:10	**Dilution:**	1	**File ID:**	1LM.LM34652
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	71.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.68	U	5.34	2.68	1.34

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-14	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW26SW(49.5-50)250416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:30
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 21:49
Collect Date:	04/25/2016 12:30	**Dilution:**	1	**File ID:**	9M974046
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	76.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.3	U	26.6	13.3	6.65
Benzene	71-43-2	1.33	U	6.65	1.33	0.665
Bromobenzene	108-86-1	1.33	U	6.65	1.33	0.665
Bromochloromethane	74-97-5	2.66	U	6.65	2.66	1.33
Bromodichloromethane	75-27-4	1.33	U	6.65	1.33	0.665
Bromoform	75-25-2	1.33	U	6.65	1.33	0.665
Bromomethane	74-83-9	2.66	U	6.65	2.66	1.33
2-Butanone	78-93-3	6.64	U	13.3	6.64	3.32
n-Butylbenzene	104-51-8	1.33	U	6.65	1.33	0.665
sec-Butylbenzene	135-98-8	1.33	U	6.65	1.33	0.665
tert-Butylbenzene	98-06-6	1.33	U	6.65	1.33	0.665
Carbon disulfide	75-15-0	1.33	U	6.65	1.33	0.665
Carbon tetrachloride	56-23-5	1.33	U	6.65	1.33	0.665
Chlorobenzene	108-90-7	1.33	U	6.65	1.33	0.665
Chlorodibromomethane	124-48-1	1.33	U	6.65	1.33	0.665
Chloroethane	75-00-3	2.66	U	6.65	2.66	1.33
Chloroform	67-66-3	1.33	U	6.65	1.33	0.665
Chloromethane	74-87-3	5.32	U	13.3	5.32	2.66
2-Chlorotoluene	95-49-8	1.33	Q	6.65	1.33	0.665
4-Chlorotoluene	106-43-4	1.33	U	6.65	1.33	0.665
1,2-Dibromo-3-chloropropane	96-12-8	5.32	U	13.3	5.32	2.66
1,2-Dibromoethane	106-93-4	1.33	U	6.65	1.33	0.665
Dibromomethane	74-95-3	1.33	U	6.65	1.33	0.665
1,2-Dichlorobenzene	95-50-1	1.33	U	6.65	1.33	0.665
1,3-Dichlorobenzene	541-73-1	1.33	U	6.65	1.33	0.665
1,4-Dichlorobenzene	106-46-7	1.33	U	6.65	1.33	0.665
Dichlorodifluoromethane	75-71-8	2.66	U	6.65	2.66	1.33
1,1-Dichloroethane	75-34-3	2.66	U	6.65	2.66	1.33
1,2-Dichloroethane	107-06-2	1.33	U	6.65	1.33	0.665
1,1-Dichloroethene	75-35-4	1.33	U	6.65	1.33	0.665

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.33	U	6.65	1.33	0.665
trans-1,2-Dichloroethene	156-60-5	1.33	U	6.65	1.33	0.665
1,2-Dichloropropane	78-87-5	1.33	U	6.65	1.33	0.665
1,3-Dichloropropane	142-28-9	1.33	U	6.65	1.33	0.665
2,2-Dichloropropane	594-20-7	1.33	U	6.65	1.33	0.665
cis-1,3-Dichloropropene	10061-01-5	1.33	U	6.65	1.33	0.665
trans-1,3-Dichloropropene	10061-02-6	1.33	U	6.65	1.33	0.665
1,1-Dichloropropene	563-58-6	1.33	U	6.65	1.33	0.665
Ethylbenzene	100-41-4	1.33	U	6.65	1.33	0.665
2-Hexanone	591-78-6	6.64	U	13.3	6.64	3.32
Hexachlorobutadiene	87-68-3	1.33	U	6.65	1.33	0.665
Isopropylbenzene	98-82-8	1.33	U	6.65	1.33	0.665
p-Isopropyltoluene	99-87-6	1.33	U	6.65	1.33	0.665
4-Methyl-2-pentanone	108-10-1	6.64	U	13.3	6.64	3.32
Methylene chloride	75-09-2	2.66	U	6.65	2.66	1.33
Naphthalene	91-20-3	1.33	Q	6.65	1.33	0.665
n-Propylbenzene	103-65-1	1.33	U	6.65	1.33	0.665
Styrene	100-42-5	1.33	U	6.65	1.33	0.665
1,1,1,2-Tetrachloroethane	630-20-6	1.33	U	6.65	1.33	0.665
1,1,2,2-Tetrachloroethane	79-34-5	1.33	U	6.65	1.33	0.665
Tetrachloroethene	127-18-4	1.33	U	6.65	1.33	0.665
Toluene	108-88-3	1.33	U	6.65	1.33	0.665
1,2,3-Trichlorobenzene	87-61-6	1.33	U	6.65	1.33	0.665
1,2,4-Trichlorobenzene	120-82-1	1.33	U	6.65	1.33	0.665
1,1,1-Trichloroethane	71-55-6	1.33	U	6.65	1.33	0.665
1,1,2-Trichloroethane	79-00-5	1.33	U	6.65	1.33	0.665
Trichloroethene	79-01-6	1.33	U	6.65	1.33	0.665
Trichlorofluoromethane	75-69-4	2.66	U	6.65	2.66	1.33
1,2,3-Trichloropropane	96-18-4	2.66	Q	6.65	2.66	1.33
1,2,4-Trimethylbenzene	95-63-6	1.33	Q	6.65	1.33	0.665
1,3,5-Trimethylbenzene	108-67-8	1.33	U	6.65	1.33	0.665
Vinyl chloride	75-01-4	2.66	U	6.65	2.66	1.33
o-Xylene	95-47-6	1.33	U	6.65	1.33	0.665
m-,p-Xylene	179601-23-1	1.33	U	6.65	1.33	0.665

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	80	120	
1,2-Dichloroethane-d4	106	80	120	
Toluene-d8	113	85	115	
4-Bromofluorobenzene	125	85	120	*

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-14	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW26SW(49.5-50)250416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 19:47
Collect Date:	04/25/2016 12:30	**Dilution:**	1	**File ID:**	1LM.LM34653
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	76.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.48	U	4.97	2.48	1.24

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #: L16041344-01 **Client ID:** 18CPTMW22R(5-5.5)230416 **Matrix:** Soil **Collect Date:** 04/23/2016 09:35

Analyte	Result	Units	Qualifier
Percent Solids	84.4	weight %	

Sample #: L16041344-02 **Client ID:** 18CPTMW22R(10-10.5)230416 **Matrix:** Soil **Collect Date:** 04/23/2016 10:05

Analyte	Result	Units	Qualifier
Percent Solids	81.9	weight %	

Sample #: L16041344-03 **Client ID:** 18CPTMW22R(15-15.5)230416 **Matrix:** Soil **Collect Date:** 04/23/2016 10:10

Analyte	Result	Units	Qualifier
Percent Solids	77.7	weight %	

Sample #: L16041344-04 **Client ID:** 18CPTMW26(5-5.5)230416 **Matrix:** Soil **Collect Date:** 04/23/2016 13:30

Analyte	Result	Units	Qualifier
Percent Solids	84.0	weight %	

Sample #: L16041344-05 **Client ID:** 18CPTMW26(5-5.5)230416DUP **Matrix:** Soil **Collect Date:** 04/23/2016 13:30

Analyte	Result	Units	Qualifier
Percent Solids	85.1	weight %	

Sample #: L16041344-06 **Client ID:** 18CPTMW26(10-10.5)230416 **Matrix:** Soil **Collect Date:** 04/23/2016 14:00

Analyte	Result	Units	Qualifier
Percent Solids	82.3	weight %	

Sample #: L16041344-07 **Client ID:** 18CPTMW26(14.5-15)230416 **Matrix:** Soil **Collect Date:** 04/23/2016 14:05

Analyte	Result	Units	Qualifier
Percent Solids	77.2	weight %	

Sample #: L16041344-08 **Client ID:** 18CPTMW26SW(5-5.5)250416 **Matrix:** Soil **Collect Date:** 04/25/2016 09:35

Analyte	Result	Units	Qualifier
Percent Solids	84.1	weight %	

Sample #: L16041344-09 **Client ID:** 18CPTMW26SW(10-10.5)250416 **Matrix:** Soil **Collect Date:** 04/25/2016 09:50

Analyte	Result	Units	Qualifier
Percent Solids	78.8	weight %	

Sample #: L16041344-10 **Client ID:** 18CPTMW26SW(15-15.5)250416 **Matrix:** Soil **Collect Date:** 04/25/2016 10:45

Analyte	Result	Units	Qualifier
Percent Solids	78.9	weight %	

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #: L16041344-11 **Client ID:** 18CPTMW26SW(20-20.5)250416 **Matrix:** Soil **Collect Date:** 04/25/2016 11:45

Analyte	Result	Units	Qualifier
Percent Solids	80.9	weight %	

Sample #: L16041344-12 **Client ID:** 18CPTMW26SW(30-30.5)250416 **Matrix:** Soil **Collect Date:** 04/25/2016 12:05

Analyte	Result	Units	Qualifier
Percent Solids	77.9	weight %	

Sample #: L16041344-13 **Client ID:** 18CPTMW26SW(40-40.5)250416 **Matrix:** Soil **Collect Date:** 04/25/2016 12:10

Analyte	Result	Units	Qualifier
Percent Solids	71.8	weight %	

Sample #: L16041344-14 **Client ID:** 18CPTMW26SW(49.5-50)250416 **Matrix:** Soil **Collect Date:** 04/25/2016 12:30

Analyte	Result	Units	Qualifier
Percent Solids	76.0	weight %	

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22R(5-5.5)230416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/29/2016 10:11
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG567003	**Analyst:**	ADC	**Run Date:**	04/30/2016 18:18
Collect Date:	04/23/2016 09:35	**Dilution:**	1	**File ID:**	9M974076
Sample Tag:	02	**Units:**	ug/kg	**Percent Solid:**	84.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.2	U	24.3	12.2	6.08
Benzene	71-43-2	1.22	U	6.08	1.22	0.608
Bromobenzene	108-86-1	1.22	U	6.08	1.22	0.608
Bromochloromethane	74-97-5	2.44	U	6.08	2.44	1.22
Bromodichloromethane	75-27-4	1.22	U	6.08	1.22	0.608
Bromoform	75-25-2	1.22	U	6.08	1.22	0.608
Bromomethane	74-83-9	2.44	U	6.08	2.44	1.22
2-Butanone	78-93-3	6.08	U	12.2	6.08	3.04
n-Butylbenzene	104-51-8	1.22	U	6.08	1.22	0.608
sec-Butylbenzene	135-98-8	1.22	U	6.08	1.22	0.608
tert-Butylbenzene	98-06-6	1.22	U	6.08	1.22	0.608
Carbon disulfide	75-15-0	1.22	U	6.08	1.22	0.608
Carbon tetrachloride	56-23-5	1.22	U	6.08	1.22	0.608
Chlorobenzene	108-90-7	1.22	U	6.08	1.22	0.608
Chlorodibromomethane	124-48-1	1.22	U	6.08	1.22	0.608
Chloroethane	75-00-3	2.44	U	6.08	2.44	1.22
Chloroform	67-66-3	1.22	U	6.08	1.22	0.608
Chloromethane	74-87-3	4.86	U	12.2	4.86	2.43
2-Chlorotoluene	95-49-8	1.22	Q	6.08	1.22	0.608
4-Chlorotoluene	106-43-4	1.22	U	6.08	1.22	0.608
1,2-Dibromo-3-chloropropane	96-12-8	4.86	U	12.2	4.86	2.43
1,2-Dibromoethane	106-93-4	1.22	U	6.08	1.22	0.608
Dibromomethane	74-95-3	1.22	U	6.08	1.22	0.608
1,2-Dichlorobenzene	95-50-1	1.22	U	6.08	1.22	0.608
1,3-Dichlorobenzene	541-73-1	1.22	U	6.08	1.22	0.608
1,4-Dichlorobenzene	106-46-7	1.22	U	6.08	1.22	0.608
Dichlorodifluoromethane	75-71-8	2.44	U	6.08	2.44	1.22
1,1-Dichloroethane	75-34-3	2.44	U	6.08	2.44	1.22
1,2-Dichloroethane	107-06-2	1.22	U	6.08	1.22	0.608
1,1-Dichloroethene	75-35-4	1.22	U	6.08	1.22	0.608
cis-1,2-Dichloroethene	156-59-2	1.22	U	6.08	1.22	0.608
trans-1,2-Dichloroethene	156-60-5	1.22	U	6.08	1.22	0.608

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.22	U	6.08	1.22	0.608
1,3-Dichloropropane	142-28-9	1.22	U	6.08	1.22	0.608
2,2-Dichloropropane	594-20-7	1.22	U	6.08	1.22	0.608
cis-1,3-Dichloropropene	10061-01-5	1.22	U	6.08	1.22	0.608
trans-1,3-Dichloropropene	10061-02-6	1.22	U	6.08	1.22	0.608
1,1-Dichloropropene	563-58-6	1.22	U	6.08	1.22	0.608
Ethylbenzene	100-41-4	1.22	U	6.08	1.22	0.608
2-Hexanone	591-78-6	6.08	U	12.2	6.08	3.04
Hexachlorobutadiene	87-68-3	1.22	U	6.08	1.22	0.608
Isopropylbenzene	98-82-8	1.22	U	6.08	1.22	0.608
p-Isopropyltoluene	99-87-6	1.22	U	6.08	1.22	0.608
4-Methyl-2-pentanone	108-10-1	6.08	U	12.2	6.08	3.04
Methylene chloride	75-09-2	2.44	U	6.08	2.44	1.22
Naphthalene	91-20-3	1.22	U	6.08	1.22	0.608
n-Propylbenzene	103-65-1	1.22	U	6.08	1.22	0.608
Styrene	100-42-5	1.22	U	6.08	1.22	0.608
1,1,1,2-Tetrachloroethane	630-20-6	1.22	U	6.08	1.22	0.608
1,1,2,2-Tetrachloroethane	79-34-5	1.22	U	6.08	1.22	0.608
Tetrachloroethene	127-18-4	1.22	U	6.08	1.22	0.608
Toluene	108-88-3	1.22	U	6.08	1.22	0.608
1,2,3-Trichlorobenzene	87-61-6	1.22	U	6.08	1.22	0.608
1,2,4-Trichlorobenzene	120-82-1	1.22	U	6.08	1.22	0.608
1,1,1-Trichloroethane	71-55-6	1.22	U	6.08	1.22	0.608
1,1,2-Trichloroethane	79-00-5	1.22	U	6.08	1.22	0.608
Trichloroethene	79-01-6	1.22	U	6.08	1.22	0.608
Trichlorofluoromethane	75-69-4	2.44	U	6.08	2.44	1.22
1,2,3-Trichloropropane	96-18-4	2.44	U	6.08	2.44	1.22
1,2,4-Trimethylbenzene	95-63-6	1.22	U	6.08	1.22	0.608
1,3,5-Trimethylbenzene	108-67-8	1.22	U	6.08	1.22	0.608
Vinyl chloride	75-01-4	2.44	U	6.08	2.44	1.22
o-Xylene	95-47-6	1.22	U	6.08	1.22	0.608
m-,p-Xylene	179601-23-1	1.22	U	6.08	1.22	0.608

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	80	120	
1,2-Dichloroethane-d4	110	80	120	
Toluene-d8	112	85	115	
4-Bromofluorobenzene	123	85	120	*

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22R(10-10.5)230416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:20
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 15:46
Collect Date:	04/23/2016 10:05	**Dilution:**	1	**File ID:**	9M974034
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.1	U	26.2	13.1	6.55
Benzene	71-43-2	1.31	U	6.55	1.31	0.655
Bromobenzene	108-86-1	1.31	U	6.55	1.31	0.655
Bromochloromethane	74-97-5	2.62	U	6.55	2.62	1.31
Bromodichloromethane	75-27-4	1.31	U	6.55	1.31	0.655
Bromoform	75-25-2	1.31	U	6.55	1.31	0.655
Bromomethane	74-83-9	2.62	U	6.55	2.62	1.31
2-Butanone	78-93-3	6.56	U	13.1	6.56	3.28
n-Butylbenzene	104-51-8	1.31	U	6.55	1.31	0.655
sec-Butylbenzene	135-98-8	1.31	U	6.55	1.31	0.655
tert-Butylbenzene	98-06-6	1.31	U	6.55	1.31	0.655
Carbon disulfide	75-15-0	1.31	U	6.55	1.31	0.655
Carbon tetrachloride	56-23-5	1.31	U	6.55	1.31	0.655
Chlorobenzene	108-90-7	1.31	U	6.55	1.31	0.655
Chlorodibromomethane	124-48-1	1.31	U	6.55	1.31	0.655
Chloroethane	75-00-3	2.62	U	6.55	2.62	1.31
Chloroform	67-66-3	1.31	U	6.55	1.31	0.655
Chloromethane	74-87-3	5.24	U	13.1	5.24	2.62
2-Chlorotoluene	95-49-8	1.31	Q	6.55	1.31	0.655
4-Chlorotoluene	106-43-4	1.31	U	6.55	1.31	0.655
1,2-Dibromo-3-chloropropane	96-12-8	5.24	U	13.1	5.24	2.62
1,2-Dibromoethane	106-93-4	1.31	U	6.55	1.31	0.655
Dibromomethane	74-95-3	1.31	U	6.55	1.31	0.655
1,2-Dichlorobenzene	95-50-1	1.31	U	6.55	1.31	0.655
1,3-Dichlorobenzene	541-73-1	1.31	U	6.55	1.31	0.655
1,4-Dichlorobenzene	106-46-7	1.31	U	6.55	1.31	0.655
Dichlorodifluoromethane	75-71-8	2.62	U	6.55	2.62	1.31
1,1-Dichloroethane	75-34-3	2.62	U	6.55	2.62	1.31
1,2-Dichloroethane	107-06-2	1.31	U	6.55	1.31	0.655
1,1-Dichloroethene	75-35-4	1.31	U	6.55	1.31	0.655

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.31	U	6.55	1.31	0.655
trans-1,2-Dichloroethene	156-60-5	1.31	U	6.55	1.31	0.655
1,2-Dichloropropane	78-87-5	1.31	U	6.55	1.31	0.655
1,3-Dichloropropane	142-28-9	1.31	U	6.55	1.31	0.655
2,2-Dichloropropane	594-20-7	1.31	U	6.55	1.31	0.655
cis-1,3-Dichloropropene	10061-01-5	1.31	U	6.55	1.31	0.655
trans-1,3-Dichloropropene	10061-02-6	1.31	U	6.55	1.31	0.655
1,1-Dichloropropene	563-58-6	1.31	U	6.55	1.31	0.655
Ethylbenzene	100-41-4	1.31	U	6.55	1.31	0.655
2-Hexanone	591-78-6	6.56	U	13.1	6.56	3.28
Hexachlorobutadiene	87-68-3	1.31	U	6.55	1.31	0.655
Isopropylbenzene	98-82-8	1.31	U	6.55	1.31	0.655
p-Isopropyltoluene	99-87-6	1.31	U	6.55	1.31	0.655
4-Methyl-2-pentanone	108-10-1	6.56	U	13.1	6.56	3.28
Methylene chloride	75-09-2	2.62	U	6.55	2.62	1.31
Naphthalene	91-20-3	1.31	Q	6.55	1.31	0.655
n-Propylbenzene	103-65-1	1.31	U	6.55	1.31	0.655
Styrene	100-42-5	1.31	U	6.55	1.31	0.655
1,1,1,2-Tetrachloroethane	630-20-6	1.31	U	6.55	1.31	0.655
1,1,2,2-Tetrachloroethane	79-34-5	1.31	U	6.55	1.31	0.655
Tetrachloroethene	127-18-4	1.31	U	6.55	1.31	0.655
Toluene	108-88-3	1.31	U	6.55	1.31	0.655
1,2,3-Trichlorobenzene	87-61-6	1.31	U	6.55	1.31	0.655
1,2,4-Trichlorobenzene	120-82-1	1.31	U	6.55	1.31	0.655
1,1,1-Trichloroethane	71-55-6	1.31	U	6.55	1.31	0.655
1,1,2-Trichloroethane	79-00-5	1.31	U	6.55	1.31	0.655
Trichloroethene	79-01-6	1.31	U	6.55	1.31	0.655
Trichlorofluoromethane	75-69-4	2.62	U	6.55	2.62	1.31
1,2,3-Trichloropropane	96-18-4	2.62	Q	6.55	2.62	1.31
1,2,4-Trimethylbenzene	95-63-6	1.31	Q	6.55	1.31	0.655
1,3,5-Trimethylbenzene	108-67-8	1.31	U	6.55	1.31	0.655
Vinyl chloride	75-01-4	2.62	U	6.55	2.62	1.31
o-Xylene	95-47-6	1.31	U	6.55	1.31	0.655
m-,p-Xylene	179601-23-1	1.31	U	6.55	1.31	0.655

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	80	120	
1,2-Dichloroethane-d4	109	80	120	
Toluene-d8	111	85	115	
4-Bromofluorobenzene	119	85	120	

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22R(15-15.5)230416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:21
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 16:16
Collect Date:	04/23/2016 10:10	**Dilution:**	1	**File ID:**	9M974035
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	77.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.3	U	26.5	13.3	6.63
Benzene	71-43-2	1.33	U	6.63	1.33	0.663
Bromobenzene	108-86-1	1.33	U	6.63	1.33	0.663
Bromochloromethane	74-97-5	2.66	U	6.63	2.66	1.33
Bromodichloromethane	75-27-4	1.33	U	6.63	1.33	0.663
Bromoform	75-25-2	1.33	U	6.63	1.33	0.663
Bromomethane	74-83-9	2.66	U	6.63	2.66	1.33
2-Butanone	78-93-3	6.64	U	13.3	6.64	3.32
n-Butylbenzene	104-51-8	1.33	U	6.63	1.33	0.663
sec-Butylbenzene	135-98-8	1.33	U	6.63	1.33	0.663
tert-Butylbenzene	98-06-6	1.33	U	6.63	1.33	0.663
Carbon disulfide	75-15-0	1.33	U	6.63	1.33	0.663
Carbon tetrachloride	56-23-5	1.33	U	6.63	1.33	0.663
Chlorobenzene	108-90-7	1.33	U	6.63	1.33	0.663
Chlorodibromomethane	124-48-1	1.33	U	6.63	1.33	0.663
Chloroethane	75-00-3	2.66	U	6.63	2.66	1.33
Chloroform	67-66-3	1.33	U	6.63	1.33	0.663
Chloromethane	74-87-3	5.30	U	13.3	5.30	2.65
2-Chlorotoluene	95-49-8	1.33	Q	6.63	1.33	0.663
4-Chlorotoluene	106-43-4	1.33	U	6.63	1.33	0.663
1,2-Dibromo-3-chloropropane	96-12-8	5.30	U	13.3	5.30	2.65
1,2-Dibromoethane	106-93-4	1.33	U	6.63	1.33	0.663
Dibromomethane	74-95-3	1.33	U	6.63	1.33	0.663
1,2-Dichlorobenzene	95-50-1	1.33	U	6.63	1.33	0.663
1,3-Dichlorobenzene	541-73-1	1.33	U	6.63	1.33	0.663
1,4-Dichlorobenzene	106-46-7	1.33	U	6.63	1.33	0.663
Dichlorodifluoromethane	75-71-8	2.66	U	6.63	2.66	1.33
1,1-Dichloroethane	75-34-3	2.66	U	6.63	2.66	1.33
1,2-Dichloroethane	107-06-2	1.33	U	6.63	1.33	0.663
1,1-Dichloroethene	75-35-4	1.33	U	6.63	1.33	0.663

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.33	U	6.63	1.33	0.663
trans-1,2-Dichloroethene	156-60-5	1.33	U	6.63	1.33	0.663
1,2-Dichloropropane	78-87-5	1.33	U	6.63	1.33	0.663
1,3-Dichloropropane	142-28-9	1.33	U	6.63	1.33	0.663
2,2-Dichloropropane	594-20-7	1.33	U	6.63	1.33	0.663
cis-1,3-Dichloropropene	10061-01-5	1.33	U	6.63	1.33	0.663
trans-1,3-Dichloropropene	10061-02-6	1.33	U	6.63	1.33	0.663
1,1-Dichloropropene	563-58-6	1.33	U	6.63	1.33	0.663
Ethylbenzene	100-41-4	1.33	U	6.63	1.33	0.663
2-Hexanone	591-78-6	6.64	U	13.3	6.64	3.32
Hexachlorobutadiene	87-68-3	1.33	U	6.63	1.33	0.663
Isopropylbenzene	98-82-8	1.33	U	6.63	1.33	0.663
p-Isopropyltoluene	99-87-6	1.33	U	6.63	1.33	0.663
4-Methyl-2-pentanone	108-10-1	6.64	U	13.3	6.64	3.32
Methylene chloride	75-09-2	2.66	U	6.63	2.66	1.33
Naphthalene	91-20-3	1.33	Q	6.63	1.33	0.663
n-Propylbenzene	103-65-1	1.33	U	6.63	1.33	0.663
Styrene	100-42-5	1.33	U	6.63	1.33	0.663
1,1,1,2-Tetrachloroethane	630-20-6	1.33	U	6.63	1.33	0.663
1,1,2,2-Tetrachloroethane	79-34-5	1.33	U	6.63	1.33	0.663
Tetrachloroethene	127-18-4	1.33	U	6.63	1.33	0.663
Toluene	108-88-3	1.33	U	6.63	1.33	0.663
1,2,3-Trichlorobenzene	87-61-6	1.33	U	6.63	1.33	0.663
1,2,4-Trichlorobenzene	120-82-1	1.33	U	6.63	1.33	0.663
1,1,1-Trichloroethane	71-55-6	1.33	U	6.63	1.33	0.663
1,1,2-Trichloroethane	79-00-5	1.33	U	6.63	1.33	0.663
Trichloroethene	79-01-6	1.33	U	6.63	1.33	0.663
Trichlorofluoromethane	75-69-4	2.66	U	6.63	2.66	1.33
1,2,3-Trichloropropane	96-18-4	2.66	Q	6.63	2.66	1.33
1,2,4-Trimethylbenzene	95-63-6	1.33	Q	6.63	1.33	0.663
1,3,5-Trimethylbenzene	108-67-8	1.33	U	6.63	1.33	0.663
Vinyl chloride	75-01-4	2.66	U	6.63	2.66	1.33
o-Xylene	95-47-6	1.33	U	6.63	1.33	0.663
m-,p-Xylene	179601-23-1	1.33	U	6.63	1.33	0.663

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	80	120	
1,2-Dichloroethane-d4	108	80	120	
Toluene-d8	110	85	115	
4-Bromofluorobenzene	118	85	120	

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW26(5-5.5)230416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:21
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 16:47
Collect Date:	04/23/2016 13:30	**Dilution:**	1	**File ID:**	9M974036
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.1	U	26.2	13.1	6.55
Benzene	71-43-2	1.31	U	6.55	1.31	0.655
Bromobenzene	108-86-1	1.31	U	6.55	1.31	0.655
Bromochloromethane	74-97-5	2.62	U	6.55	2.62	1.31
Bromodichloromethane	75-27-4	1.31	U	6.55	1.31	0.655
Bromoform	75-25-2	1.31	U	6.55	1.31	0.655
Bromomethane	74-83-9	2.62	U	6.55	2.62	1.31
2-Butanone	78-93-3	6.56	U	13.1	6.56	3.28
n-Butylbenzene	104-51-8	1.31	U	6.55	1.31	0.655
sec-Butylbenzene	135-98-8	1.31	U	6.55	1.31	0.655
tert-Butylbenzene	98-06-6	1.31	U	6.55	1.31	0.655
Carbon disulfide	75-15-0	1.31	U	6.55	1.31	0.655
Carbon tetrachloride	56-23-5	1.31	U	6.55	1.31	0.655
Chlorobenzene	108-90-7	1.31	U	6.55	1.31	0.655
Chlorodibromomethane	124-48-1	1.31	U	6.55	1.31	0.655
Chloroethane	75-00-3	2.62	U	6.55	2.62	1.31
Chloroform	67-66-3	1.31	U	6.55	1.31	0.655
Chloromethane	74-87-3	5.24	U	13.1	5.24	2.62
2-Chlorotoluene	95-49-8	1.31	Q	6.55	1.31	0.655
4-Chlorotoluene	106-43-4	1.31	U	6.55	1.31	0.655
1,2-Dibromo-3-chloropropane	96-12-8	5.24	U	13.1	5.24	2.62
1,2-Dibromoethane	106-93-4	1.31	U	6.55	1.31	0.655
Dibromomethane	74-95-3	1.31	U	6.55	1.31	0.655
1,2-Dichlorobenzene	95-50-1	1.31	U	6.55	1.31	0.655
1,3-Dichlorobenzene	541-73-1	1.31	U	6.55	1.31	0.655
1,4-Dichlorobenzene	106-46-7	1.31	U	6.55	1.31	0.655
Dichlorodifluoromethane	75-71-8	2.62	U	6.55	2.62	1.31
1,1-Dichloroethane	75-34-3	2.62	U	6.55	2.62	1.31
1,2-Dichloroethane	107-06-2	1.31	U	6.55	1.31	0.655
1,1-Dichloroethene	75-35-4	1.31	U	6.55	1.31	0.655
cis-1,2-Dichloroethene	156-59-2	1.31	U	6.55	1.31	0.655

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.31	U	6.55	1.31	0.655
1,2-Dichloropropane	78-87-5	1.31	U	6.55	1.31	0.655
1,3-Dichloropropane	142-28-9	1.31	U	6.55	1.31	0.655
2,2-Dichloropropane	594-20-7	1.31	U	6.55	1.31	0.655
cis-1,3-Dichloropropene	10061-01-5	1.31	U	6.55	1.31	0.655
trans-1,3-Dichloropropene	10061-02-6	1.31	U	6.55	1.31	0.655
1,1-Dichloropropene	563-58-6	1.31	U	6.55	1.31	0.655
Ethylbenzene	100-41-4	1.31	U	6.55	1.31	0.655
2-Hexanone	591-78-6	6.56	U	13.1	6.56	3.28
Hexachlorobutadiene	87-68-3	1.31	U	6.55	1.31	0.655
Isopropylbenzene	98-82-8	1.31	U	6.55	1.31	0.655
p-Isopropyltoluene	99-87-6	1.31	U	6.55	1.31	0.655
4-Methyl-2-pentanone	108-10-1	6.56	U	13.1	6.56	3.28
Methylene chloride	75-09-2	2.62	U	6.55	2.62	1.31
Naphthalene	91-20-3	1.31	Q	6.55	1.31	0.655
n-Propylbenzene	103-65-1	1.31	U	6.55	1.31	0.655
Styrene	100-42-5	1.31	U	6.55	1.31	0.655
1,1,1,2-Tetrachloroethane	630-20-6	1.31	U	6.55	1.31	0.655
1,1,2,2-Tetrachloroethane	79-34-5	1.31	U	6.55	1.31	0.655
Tetrachloroethene	127-18-4	1.31	U	6.55	1.31	0.655
Toluene	108-88-3	1.31	U	6.55	1.31	0.655
1,2,3-Trichlorobenzene	87-61-6	1.31	U	6.55	1.31	0.655
1,2,4-Trichlorobenzene	120-82-1	1.31	U	6.55	1.31	0.655
1,1,1-Trichloroethane	71-55-6	1.31	U	6.55	1.31	0.655
1,1,2-Trichloroethane	79-00-5	1.31	U	6.55	1.31	0.655
Trichloroethene	79-01-6	1.31	U	6.55	1.31	0.655
Trichlorofluoromethane	75-69-4	2.62	U	6.55	2.62	1.31
1,2,3-Trichloropropane	96-18-4	2.62	Q	6.55	2.62	1.31
1,2,4-Trimethylbenzene	95-63-6	1.31	Q	6.55	1.31	0.655
1,3,5-Trimethylbenzene	108-67-8	1.31	U	6.55	1.31	0.655
Vinyl chloride	75-01-4	2.62	U	6.55	2.62	1.31
o-Xylene	95-47-6	1.31	U	6.55	1.31	0.655
m-,p-Xylene	179601-23-1	1.31	U	6.55	1.31	0.655

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	80	120	
1,2-Dichloroethane-d4	117	80	120	
Toluene-d8	110	85	115	
4-Bromofluorobenzene	121	85	120	*

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW26(5-5.5)230416DUP	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:22
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 17:17
Collect Date:	04/23/2016 13:30	**Dilution:**	1	**File ID:**	9M974037
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	24.9	12.5	6.23
Benzene	71-43-2	1.25	U	6.23	1.25	0.623
Bromobenzene	108-86-1	1.25	U	6.23	1.25	0.623
Bromochloromethane	74-97-5	2.50	U	6.23	2.50	1.25
Bromodichloromethane	75-27-4	1.25	U	6.23	1.25	0.623
Bromoform	75-25-2	1.25	U	6.23	1.25	0.623
Bromomethane	74-83-9	2.50	U	6.23	2.50	1.25
2-Butanone	78-93-3	6.24	U	12.5	6.24	3.12
n-Butylbenzene	104-51-8	1.25	U	6.23	1.25	0.623
sec-Butylbenzene	135-98-8	1.25	U	6.23	1.25	0.623
tert-Butylbenzene	98-06-6	1.25	U	6.23	1.25	0.623
Carbon disulfide	75-15-0	1.25	U	6.23	1.25	0.623
Carbon tetrachloride	56-23-5	1.25	U	6.23	1.25	0.623
Chlorobenzene	108-90-7	1.25	U	6.23	1.25	0.623
Chlorodibromomethane	124-48-1	1.25	U	6.23	1.25	0.623
Chloroethane	75-00-3	2.50	U	6.23	2.50	1.25
Chloroform	67-66-3	1.25	U	6.23	1.25	0.623
Chloromethane	74-87-3	4.98	U	12.5	4.98	2.49
2-Chlorotoluene	95-49-8	1.25	Q	6.23	1.25	0.623
4-Chlorotoluene	106-43-4	1.25	U	6.23	1.25	0.623
1,2-Dibromo-3-chloropropane	96-12-8	4.98	U	12.5	4.98	2.49
1,2-Dibromoethane	106-93-4	1.25	U	6.23	1.25	0.623
Dibromomethane	74-95-3	1.25	U	6.23	1.25	0.623
1,2-Dichlorobenzene	95-50-1	1.25	U	6.23	1.25	0.623
1,3-Dichlorobenzene	541-73-1	1.25	U	6.23	1.25	0.623
1,4-Dichlorobenzene	106-46-7	1.25	U	6.23	1.25	0.623
Dichlorodifluoromethane	75-71-8	2.50	U	6.23	2.50	1.25
1,1-Dichloroethane	75-34-3	2.50	U	6.23	2.50	1.25
1,2-Dichloroethane	107-06-2	1.25	U	6.23	1.25	0.623
1,1-Dichloroethene	75-35-4	1.25	U	6.23	1.25	0.623

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.25	U	6.23	1.25	0.623
trans-1,2-Dichloroethene	156-60-5	1.25	U	6.23	1.25	0.623
1,2-Dichloropropane	78-87-5	1.25	U	6.23	1.25	0.623
1,3-Dichloropropane	142-28-9	1.25	U	6.23	1.25	0.623
2,2-Dichloropropane	594-20-7	1.25	U	6.23	1.25	0.623
cis-1,3-Dichloropropene	10061-01-5	1.25	U	6.23	1.25	0.623
trans-1,3-Dichloropropene	10061-02-6	1.25	U	6.23	1.25	0.623
1,1-Dichloropropene	563-58-6	1.25	U	6.23	1.25	0.623
Ethylbenzene	100-41-4	1.25	U	6.23	1.25	0.623
2-Hexanone	591-78-6	6.24	U	12.5	6.24	3.12
Hexachlorobutadiene	87-68-3	1.25	U	6.23	1.25	0.623
Isopropylbenzene	98-82-8	1.25	U	6.23	1.25	0.623
p-Isopropyltoluene	99-87-6	1.25	U	6.23	1.25	0.623
4-Methyl-2-pentanone	108-10-1	6.24	U	12.5	6.24	3.12
Methylene chloride	75-09-2	2.50	U	6.23	2.50	1.25
Naphthalene	91-20-3	1.25	Q	6.23	1.25	0.623
n-Propylbenzene	103-65-1	1.25	U	6.23	1.25	0.623
Styrene	100-42-5	1.25	U	6.23	1.25	0.623
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	6.23	1.25	0.623
1,1,2,2-Tetrachloroethane	79-34-5	1.25	U	6.23	1.25	0.623
Tetrachloroethene	127-18-4	1.25	U	6.23	1.25	0.623
Toluene	108-88-3	1.25	U	6.23	1.25	0.623
1,2,3-Trichlorobenzene	87-61-6	1.25	U	6.23	1.25	0.623
1,2,4-Trichlorobenzene	120-82-1	1.25	U	6.23	1.25	0.623
1,1,1-Trichloroethane	71-55-6	1.25	U	6.23	1.25	0.623
1,1,2-Trichloroethane	79-00-5	1.25	U	6.23	1.25	0.623
Trichloroethene	79-01-6	1.25	U	6.23	1.25	0.623
Trichlorofluoromethane	75-69-4	2.50	U	6.23	2.50	1.25
1,2,3-Trichloropropane	96-18-4	2.50	Q	6.23	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	Q	6.23	1.25	0.623
1,3,5-Trimethylbenzene	108-67-8	1.25	U	6.23	1.25	0.623
Vinyl chloride	75-01-4	2.50	U	6.23	2.50	1.25
o-Xylene	95-47-6	1.25	U	6.23	1.25	0.623
m-,p-Xylene	179601-23-1	1.25	U	6.23	1.25	0.623

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	80	120	
1,2-Dichloroethane-d4	119	80	120	
Toluene-d8	111	85	115	
4-Bromofluorobenzene	121	85	120	*

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW26(10-10.5)230416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:23
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 17:47
Collect Date:	04/23/2016 14:00	**Dilution:**	1	**File ID:**	9M974038
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.8	U	25.5	12.8	6.38
Benzene	71-43-2	1.28	U	6.38	1.28	0.638
Bromobenzene	108-86-1	1.28	U	6.38	1.28	0.638
Bromochloromethane	74-97-5	2.56	U	6.38	2.56	1.28
Bromodichloromethane	75-27-4	1.28	U	6.38	1.28	0.638
Bromoform	75-25-2	1.28	U	6.38	1.28	0.638
Bromomethane	74-83-9	2.56	U	6.38	2.56	1.28
2-Butanone	78-93-3	6.38	U	12.8	6.38	3.19
n-Butylbenzene	104-51-8	1.28	U	6.38	1.28	0.638
sec-Butylbenzene	135-98-8	1.28	U	6.38	1.28	0.638
tert-Butylbenzene	98-06-6	1.28	U	6.38	1.28	0.638
Carbon disulfide	75-15-0	1.28	U	6.38	1.28	0.638
Carbon tetrachloride	56-23-5	1.28	U	6.38	1.28	0.638
Chlorobenzene	108-90-7	1.28	U	6.38	1.28	0.638
Chlorodibromomethane	124-48-1	1.28	U	6.38	1.28	0.638
Chloroethane	75-00-3	2.56	U	6.38	2.56	1.28
Chloroform	67-66-3	1.28	U	6.38	1.28	0.638
Chloromethane	74-87-3	5.10	U	12.8	5.10	2.55
2-Chlorotoluene	95-49-8	1.28	Q	6.38	1.28	0.638
4-Chlorotoluene	106-43-4	1.28	U	6.38	1.28	0.638
1,2-Dibromo-3-chloropropane	96-12-8	5.10	U	12.8	5.10	2.55
1,2-Dibromoethane	106-93-4	1.28	U	6.38	1.28	0.638
Dibromomethane	74-95-3	1.28	U	6.38	1.28	0.638
1,2-Dichlorobenzene	95-50-1	1.28	U	6.38	1.28	0.638
1,3-Dichlorobenzene	541-73-1	1.28	U	6.38	1.28	0.638
1,4-Dichlorobenzene	106-46-7	1.28	U	6.38	1.28	0.638
Dichlorodifluoromethane	75-71-8	2.56	U	6.38	2.56	1.28
1,1-Dichloroethane	75-34-3	2.56	U	6.38	2.56	1.28
1,2-Dichloroethane	107-06-2	1.28	U	6.38	1.28	0.638
1,1-Dichloroethene	75-35-4	1.28	U	6.38	1.28	0.638

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.28	U	6.38	1.28	0.638
trans-1,2-Dichloroethene	156-60-5	1.28	U	6.38	1.28	0.638
1,2-Dichloropropane	78-87-5	1.28	U	6.38	1.28	0.638
1,3-Dichloropropane	142-28-9	1.28	U	6.38	1.28	0.638
2,2-Dichloropropane	594-20-7	1.28	U	6.38	1.28	0.638
cis-1,3-Dichloropropene	10061-01-5	1.28	U	6.38	1.28	0.638
trans-1,3-Dichloropropene	10061-02-6	1.28	U	6.38	1.28	0.638
1,1-Dichloropropene	563-58-6	1.28	U	6.38	1.28	0.638
Ethylbenzene	100-41-4	1.28	U	6.38	1.28	0.638
2-Hexanone	591-78-6	6.38	U	12.8	6.38	3.19
Hexachlorobutadiene	87-68-3	1.28	U	6.38	1.28	0.638
Isopropylbenzene	98-82-8	1.28	U	6.38	1.28	0.638
p-Isopropyltoluene	99-87-6	1.28	U	6.38	1.28	0.638
4-Methyl-2-pentanone	108-10-1	6.38	U	12.8	6.38	3.19
Methylene chloride	75-09-2	2.56	U	6.38	2.56	1.28
Naphthalene	91-20-3	1.28	Q	6.38	1.28	0.638
n-Propylbenzene	103-65-1	1.28	U	6.38	1.28	0.638
Styrene	100-42-5	1.28	U	6.38	1.28	0.638
1,1,1,2-Tetrachloroethane	630-20-6	1.28	U	6.38	1.28	0.638
1,1,2,2-Tetrachloroethane	79-34-5	1.28	U	6.38	1.28	0.638
Tetrachloroethene	127-18-4	1.28	U	6.38	1.28	0.638
Toluene	108-88-3	1.28	U	6.38	1.28	0.638
1,2,3-Trichlorobenzene	87-61-6	1.28	U	6.38	1.28	0.638
1,2,4-Trichlorobenzene	120-82-1	1.28	U	6.38	1.28	0.638
1,1,1-Trichloroethane	71-55-6	1.28	U	6.38	1.28	0.638
1,1,2-Trichloroethane	79-00-5	1.28	U	6.38	1.28	0.638
Trichloroethene	79-01-6	1.28	U	6.38	1.28	0.638
Trichlorofluoromethane	75-69-4	2.56	U	6.38	2.56	1.28
1,2,3-Trichloropropane	96-18-4	2.56	Q	6.38	2.56	1.28
1,2,4-Trimethylbenzene	95-63-6	1.28	Q	6.38	1.28	0.638
1,3,5-Trimethylbenzene	108-67-8	1.28	U	6.38	1.28	0.638
Vinyl chloride	75-01-4	2.56	U	6.38	2.56	1.28
o-Xylene	95-47-6	1.28	U	6.38	1.28	0.638
m-,p-Xylene	179601-23-1	1.28	U	6.38	1.28	0.638

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	80	120	
1,2-Dichloroethane-d4	119	80	120	
Toluene-d8	110	85	115	
4-Bromofluorobenzene	120	85	120	

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW26(14.5-15)230416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:25
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 18:17
Collect Date:	04/23/2016 14:05	**Dilution:**	1	**File ID:**	9M974039
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	77.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.1	U	24.2	12.1	6.04
Benzene	71-43-2	1.21	U	6.04	1.21	0.604
Bromobenzene	108-86-1	1.21	U	6.04	1.21	0.604
Bromochloromethane	74-97-5	2.42	U	6.04	2.42	1.21
Bromodichloromethane	75-27-4	1.21	U	6.04	1.21	0.604
Bromoform	75-25-2	1.21	U	6.04	1.21	0.604
Bromomethane	74-83-9	2.42	U	6.04	2.42	1.21
2-Butanone	78-93-3	6.04	U	12.1	6.04	3.02
n-Butylbenzene	104-51-8	1.21	U	6.04	1.21	0.604
sec-Butylbenzene	135-98-8	1.21	U	6.04	1.21	0.604
tert-Butylbenzene	98-06-6	1.21	U	6.04	1.21	0.604
Carbon disulfide	75-15-0	1.21	U	6.04	1.21	0.604
Carbon tetrachloride	56-23-5	1.21	U	6.04	1.21	0.604
Chlorobenzene	108-90-7	1.21	U	6.04	1.21	0.604
Chlorodibromomethane	124-48-1	1.21	U	6.04	1.21	0.604
Chloroethane	75-00-3	2.42	U	6.04	2.42	1.21
Chloroform	67-66-3	1.21	U	6.04	1.21	0.604
Chloromethane	74-87-3	4.84	U	12.1	4.84	2.42
2-Chlorotoluene	95-49-8	1.21	Q	6.04	1.21	0.604
4-Chlorotoluene	106-43-4	1.21	U	6.04	1.21	0.604
1,2-Dibromo-3-chloropropane	96-12-8	4.84	U	12.1	4.84	2.42
1,2-Dibromoethane	106-93-4	1.21	U	6.04	1.21	0.604
Dibromomethane	74-95-3	1.21	U	6.04	1.21	0.604
1,2-Dichlorobenzene	95-50-1	1.21	U	6.04	1.21	0.604
1,3-Dichlorobenzene	541-73-1	1.21	U	6.04	1.21	0.604
1,4-Dichlorobenzene	106-46-7	1.21	U	6.04	1.21	0.604
Dichlorodifluoromethane	75-71-8	2.42	U	6.04	2.42	1.21
1,1-Dichloroethane	75-34-3	2.42	U	6.04	2.42	1.21
1,2-Dichloroethane	107-06-2	1.21	U	6.04	1.21	0.604
1,1-Dichloroethene	75-35-4	1.21	U	6.04	1.21	0.604

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.21	U	6.04	1.21	0.604
trans-1,2-Dichloroethene	156-60-5	1.21	U	6.04	1.21	0.604
1,2-Dichloropropane	78-87-5	1.21	U	6.04	1.21	0.604
1,3-Dichloropropane	142-28-9	1.21	U	6.04	1.21	0.604
2,2-Dichloropropane	594-20-7	1.21	U	6.04	1.21	0.604
cis-1,3-Dichloropropene	10061-01-5	1.21	U	6.04	1.21	0.604
trans-1,3-Dichloropropene	10061-02-6	1.21	U	6.04	1.21	0.604
1,1-Dichloropropene	563-58-6	1.21	U	6.04	1.21	0.604
Ethylbenzene	100-41-4	1.21	U	6.04	1.21	0.604
2-Hexanone	591-78-6	6.04	U	12.1	6.04	3.02
Hexachlorobutadiene	87-68-3	1.21	U	6.04	1.21	0.604
Isopropylbenzene	98-82-8	1.21	U	6.04	1.21	0.604
p-Isopropyltoluene	99-87-6	1.21	U	6.04	1.21	0.604
4-Methyl-2-pentanone	108-10-1	6.04	U	12.1	6.04	3.02
Methylene chloride	75-09-2	2.42	U	6.04	2.42	1.21
Naphthalene	91-20-3	1.21	Q	6.04	1.21	0.604
n-Propylbenzene	103-65-1	1.21	U	6.04	1.21	0.604
Styrene	100-42-5	1.21	U	6.04	1.21	0.604
1,1,1,2-Tetrachloroethane	630-20-6	1.21	U	6.04	1.21	0.604
1,1,2,2-Tetrachloroethane	79-34-5	1.21	U	6.04	1.21	0.604
Tetrachloroethene	127-18-4	1.21	U	6.04	1.21	0.604
Toluene	108-88-3	1.21	U	6.04	1.21	0.604
1,2,3-Trichlorobenzene	87-61-6	1.21	U	6.04	1.21	0.604
1,2,4-Trichlorobenzene	120-82-1	1.21	U	6.04	1.21	0.604
1,1,1-Trichloroethane	71-55-6	1.21	U	6.04	1.21	0.604
1,1,2-Trichloroethane	79-00-5	1.21	U	6.04	1.21	0.604
Trichloroethene	79-01-6	1.21	U	6.04	1.21	0.604
Trichlorofluoromethane	75-69-4	2.42	U	6.04	2.42	1.21
1,2,3-Trichloropropane	96-18-4	2.42	Q	6.04	2.42	1.21
1,2,4-Trimethylbenzene	95-63-6	1.21	Q	6.04	1.21	0.604
1,3,5-Trimethylbenzene	108-67-8	1.21	U	6.04	1.21	0.604
Vinyl chloride	75-01-4	2.42	U	6.04	2.42	1.21
o-Xylene	95-47-6	1.21	U	6.04	1.21	0.604
m-,p-Xylene	179601-23-1	1.21	U	6.04	1.21	0.604

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	80	120	
1,2-Dichloroethane-d4	117	80	120	
Toluene-d8	108	85	115	
4-Bromofluorobenzene	119	85	120	

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW26SW(5-5.5)250416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:26
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 18:47
Collect Date:	04/25/2016 09:35	**Dilution:**	1	**File ID:**	9M974040
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.0	U	24.0	12.0	6.01
Benzene	71-43-2	1.20	U	6.01	1.20	0.601
Bromobenzene	108-86-1	1.20	U	6.01	1.20	0.601
Bromochloromethane	74-97-5	2.40	U	6.01	2.40	1.20
Bromodichloromethane	75-27-4	1.20	U	6.01	1.20	0.601
Bromoform	75-25-2	1.20	U	6.01	1.20	0.601
Bromomethane	74-83-9	2.40	U	6.01	2.40	1.20
2-Butanone	78-93-3	6.00	U	12.0	6.00	3.00
n-Butylbenzene	104-51-8	1.20	U	6.01	1.20	0.601
sec-Butylbenzene	135-98-8	1.20	U	6.01	1.20	0.601
tert-Butylbenzene	98-06-6	1.20	U	6.01	1.20	0.601
Carbon disulfide	75-15-0	1.20	U	6.01	1.20	0.601
Carbon tetrachloride	56-23-5	1.20	U	6.01	1.20	0.601
Chlorobenzene	108-90-7	1.20	U	6.01	1.20	0.601
Chlorodibromomethane	124-48-1	1.20	U	6.01	1.20	0.601
Chloroethane	75-00-3	2.40	U	6.01	2.40	1.20
Chloroform	67-66-3	1.20	U	6.01	1.20	0.601
Chloromethane	74-87-3	4.80	U	12.0	4.80	2.40
2-Chlorotoluene	95-49-8	1.20	Q	6.01	1.20	0.601
4-Chlorotoluene	106-43-4	1.20	U	6.01	1.20	0.601
1,2-Dibromo-3-chloropropane	96-12-8	4.80	U	12.0	4.80	2.40
1,2-Dibromoethane	106-93-4	1.20	U	6.01	1.20	0.601
Dibromomethane	74-95-3	1.20	U	6.01	1.20	0.601
1,2-Dichlorobenzene	95-50-1	1.20	U	6.01	1.20	0.601
1,3-Dichlorobenzene	541-73-1	1.20	U	6.01	1.20	0.601
1,4-Dichlorobenzene	106-46-7	1.20	U	6.01	1.20	0.601
Dichlorodifluoromethane	75-71-8	2.40	U	6.01	2.40	1.20
1,1-Dichloroethane	75-34-3	2.40	U	6.01	2.40	1.20
1,2-Dichloroethane	107-06-2	1.20	U	6.01	1.20	0.601
1,1-Dichloroethene	75-35-4	1.20	U	6.01	1.20	0.601

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.20	U	6.01	1.20	0.601
trans-1,2-Dichloroethene	156-60-5	1.20	U	6.01	1.20	0.601
1,2-Dichloropropane	78-87-5	1.20	U	6.01	1.20	0.601
1,3-Dichloropropane	142-28-9	1.20	U	6.01	1.20	0.601
2,2-Dichloropropane	594-20-7	1.20	U	6.01	1.20	0.601
cis-1,3-Dichloropropene	10061-01-5	1.20	U	6.01	1.20	0.601
trans-1,3-Dichloropropene	10061-02-6	1.20	U	6.01	1.20	0.601
1,1-Dichloropropene	563-58-6	1.20	U	6.01	1.20	0.601
Ethylbenzene	100-41-4	1.20	U	6.01	1.20	0.601
2-Hexanone	591-78-6	6.00	U	12.0	6.00	3.00
Hexachlorobutadiene	87-68-3	1.20	U	6.01	1.20	0.601
Isopropylbenzene	98-82-8	1.20	U	6.01	1.20	0.601
p-Isopropyltoluene	99-87-6	1.20	U	6.01	1.20	0.601
4-Methyl-2-pentanone	108-10-1	6.00	U	12.0	6.00	3.00
Methylene chloride	75-09-2	2.40	U	6.01	2.40	1.20
Naphthalene	91-20-3	1.20	Q	6.01	1.20	0.601
n-Propylbenzene	103-65-1	1.20	U	6.01	1.20	0.601
Styrene	100-42-5	1.20	U	6.01	1.20	0.601
1,1,1,2-Tetrachloroethane	630-20-6	1.20	U	6.01	1.20	0.601
1,1,2,2-Tetrachloroethane	79-34-5	1.20	U	6.01	1.20	0.601
Tetrachloroethene	127-18-4	1.20	U	6.01	1.20	0.601
Toluene	108-88-3	1.20	U	6.01	1.20	0.601
1,2,3-Trichlorobenzene	87-61-6	1.20	U	6.01	1.20	0.601
1,2,4-Trichlorobenzene	120-82-1	1.20	U	6.01	1.20	0.601
1,1,1-Trichloroethane	71-55-6	1.20	U	6.01	1.20	0.601
1,1,2-Trichloroethane	79-00-5	1.20	U	6.01	1.20	0.601
Trichloroethene	79-01-6	1.20	U	6.01	1.20	0.601
Trichlorofluoromethane	75-69-4	2.40	U	6.01	2.40	1.20
1,2,3-Trichloropropane	96-18-4	2.40	Q	6.01	2.40	1.20
1,2,4-Trimethylbenzene	95-63-6	1.20	Q	6.01	1.20	0.601
1,3,5-Trimethylbenzene	108-67-8	1.20	U	6.01	1.20	0.601
Vinyl chloride	75-01-4	2.40	U	6.01	2.40	1.20
o-Xylene	95-47-6	1.20	U	6.01	1.20	0.601
m-,p-Xylene	179601-23-1	1.20	U	6.01	1.20	0.601

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	80	120	
1,2-Dichloroethane-d4	116	80	120	
Toluene-d8	109	85	115	
4-Bromofluorobenzene	119	85	120	

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW26SW(10-10.5)250416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:27
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 19:18
Collect Date:	04/25/2016 09:50	**Dilution:**	1	**File ID:**	9M974041
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	78.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.9	U	27.7	13.9	6.93
Benzene	71-43-2	1.39	U	6.93	1.39	0.693
Bromobenzene	108-86-1	1.39	U	6.93	1.39	0.693
Bromochloromethane	74-97-5	2.78	U	6.93	2.78	1.39
Bromodichloromethane	75-27-4	1.39	U	6.93	1.39	0.693
Bromoform	75-25-2	1.39	U	6.93	1.39	0.693
Bromomethane	74-83-9	2.78	U	6.93	2.78	1.39
2-Butanone	78-93-3	6.92	U	13.9	6.92	3.46
n-Butylbenzene	104-51-8	1.39	U	6.93	1.39	0.693
sec-Butylbenzene	135-98-8	1.39	U	6.93	1.39	0.693
tert-Butylbenzene	98-06-6	1.39	U	6.93	1.39	0.693
Carbon disulfide	75-15-0	1.39	U	6.93	1.39	0.693
Carbon tetrachloride	56-23-5	1.39	U	6.93	1.39	0.693
Chlorobenzene	108-90-7	1.39	U	6.93	1.39	0.693
Chlorodibromomethane	124-48-1	1.39	U	6.93	1.39	0.693
Chloroethane	75-00-3	2.78	U	6.93	2.78	1.39
Chloroform	67-66-3	1.39	U	6.93	1.39	0.693
Chloromethane	74-87-3	5.54	U	13.9	5.54	2.77
2-Chlorotoluene	95-49-8	1.39	Q	6.93	1.39	0.693
4-Chlorotoluene	106-43-4	1.39	U	6.93	1.39	0.693
1,2-Dibromo-3-chloropropane	96-12-8	5.54	U	13.9	5.54	2.77
1,2-Dibromoethane	106-93-4	1.39	U	6.93	1.39	0.693
Dibromomethane	74-95-3	1.39	U	6.93	1.39	0.693
1,2-Dichlorobenzene	95-50-1	1.39	U	6.93	1.39	0.693
1,3-Dichlorobenzene	541-73-1	1.39	U	6.93	1.39	0.693
1,4-Dichlorobenzene	106-46-7	1.39	U	6.93	1.39	0.693
Dichlorodifluoromethane	75-71-8	2.78	U	6.93	2.78	1.39
1,1-Dichloroethane	75-34-3	2.78	U	6.93	2.78	1.39
1,2-Dichloroethane	107-06-2	1.39	U	6.93	1.39	0.693
1,1-Dichloroethene	75-35-4	1.39	U	6.93	1.39	0.693

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.39	U	6.93	1.39	0.693
trans-1,2-Dichloroethene	156-60-5	1.39	U	6.93	1.39	0.693
1,2-Dichloropropane	78-87-5	1.39	U	6.93	1.39	0.693
1,3-Dichloropropane	142-28-9	1.39	U	6.93	1.39	0.693
2,2-Dichloropropane	594-20-7	1.39	U	6.93	1.39	0.693
cis-1,3-Dichloropropene	10061-01-5	1.39	U	6.93	1.39	0.693
trans-1,3-Dichloropropene	10061-02-6	1.39	U	6.93	1.39	0.693
1,1-Dichloropropene	563-58-6	1.39	U	6.93	1.39	0.693
Ethylbenzene	100-41-4	1.39	U	6.93	1.39	0.693
2-Hexanone	591-78-6	6.92	U	13.9	6.92	3.46
Hexachlorobutadiene	87-68-3	1.39	U	6.93	1.39	0.693
Isopropylbenzene	98-82-8	1.39	U	6.93	1.39	0.693
p-Isopropyltoluene	99-87-6	1.39	U	6.93	1.39	0.693
4-Methyl-2-pentanone	108-10-1	6.92	U	13.9	6.92	3.46
Methylene chloride	75-09-2	2.78	U	6.93	2.78	1.39
Naphthalene	91-20-3	1.39	Q	6.93	1.39	0.693
n-Propylbenzene	103-65-1	1.39	U	6.93	1.39	0.693
Styrene	100-42-5	1.39	U	6.93	1.39	0.693
1,1,1,2-Tetrachloroethane	630-20-6	1.39	U	6.93	1.39	0.693
1,1,2,2-Tetrachloroethane	79-34-5	1.39	U	6.93	1.39	0.693
Tetrachloroethene	127-18-4	1.39	U	6.93	1.39	0.693
Toluene	108-88-3	1.39	U	6.93	1.39	0.693
1,2,3-Trichlorobenzene	87-61-6	1.39	U	6.93	1.39	0.693
1,2,4-Trichlorobenzene	120-82-1	1.39	U	6.93	1.39	0.693
1,1,1-Trichloroethane	71-55-6	1.39	U	6.93	1.39	0.693
1,1,2-Trichloroethane	79-00-5	1.39	U	6.93	1.39	0.693
Trichloroethene	79-01-6	1.39	U	6.93	1.39	0.693
Trichlorofluoromethane	75-69-4	2.78	U	6.93	2.78	1.39
1,2,3-Trichloropropane	96-18-4	2.78	Q	6.93	2.78	1.39
1,2,4-Trimethylbenzene	95-63-6	1.39	Q	6.93	1.39	0.693
1,3,5-Trimethylbenzene	108-67-8	1.39	Q	6.93	1.39	0.693
Vinyl chloride	75-01-4	2.78	U	6.93	2.78	1.39
o-Xylene	95-47-6	1.39	U	6.93	1.39	0.693
m-,p-Xylene	179601-23-1	1.39	U	6.93	1.39	0.693

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	80	120	
1,2-Dichloroethane-d4	121	80	120	*
Toluene-d8	110	85	115	
4-Bromofluorobenzene	121	85	120	*

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW26SW(15-15.5)250416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:28
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 19:48
Collect Date:	04/25/2016 10:45	**Dilution:**	1	**File ID:**	9M974042
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	78.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.9	U	23.8	11.9	5.95
Benzene	71-43-2	1.19	U	5.95	1.19	0.595
Bromobenzene	108-86-1	1.19	U	5.95	1.19	0.595
Bromochloromethane	74-97-5	2.38	U	5.95	2.38	1.19
Bromodichloromethane	75-27-4	1.19	U	5.95	1.19	0.595
Bromoform	75-25-2	1.19	U	5.95	1.19	0.595
Bromomethane	74-83-9	2.38	U	5.95	2.38	1.19
2-Butanone	78-93-3	5.94	U	11.9	5.94	2.97
n-Butylbenzene	104-51-8	1.19	U	5.95	1.19	0.595
sec-Butylbenzene	135-98-8	1.19	U	5.95	1.19	0.595
tert-Butylbenzene	98-06-6	1.19	U	5.95	1.19	0.595
Carbon disulfide	75-15-0	1.19	U	5.95	1.19	0.595
Carbon tetrachloride	56-23-5	1.19	U	5.95	1.19	0.595
Chlorobenzene	108-90-7	1.19	U	5.95	1.19	0.595
Chlorodibromomethane	124-48-1	1.19	U	5.95	1.19	0.595
Chloroethane	75-00-3	2.38	U	5.95	2.38	1.19
Chloroform	67-66-3	1.19	U	5.95	1.19	0.595
Chloromethane	74-87-3	4.76	U	11.9	4.76	2.38
2-Chlorotoluene	95-49-8	1.19	Q	5.95	1.19	0.595
4-Chlorotoluene	106-43-4	1.19	U	5.95	1.19	0.595
1,2-Dibromo-3-chloropropane	96-12-8	4.76	U	11.9	4.76	2.38
1,2-Dibromoethane	106-93-4	1.19	U	5.95	1.19	0.595
Dibromomethane	74-95-3	1.19	U	5.95	1.19	0.595
1,2-Dichlorobenzene	95-50-1	1.19	U	5.95	1.19	0.595
1,3-Dichlorobenzene	541-73-1	1.19	U	5.95	1.19	0.595
1,4-Dichlorobenzene	106-46-7	1.19	U	5.95	1.19	0.595
Dichlorodifluoromethane	75-71-8	2.38	U	5.95	2.38	1.19
1,1-Dichloroethane	75-34-3	2.38	U	5.95	2.38	1.19
1,2-Dichloroethane	107-06-2	1.19	U	5.95	1.19	0.595
1,1-Dichloroethene	75-35-4	1.19	U	5.95	1.19	0.595

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.19	U	5.95	1.19	0.595
trans-1,2-Dichloroethene	156-60-5	1.19	U	5.95	1.19	0.595
1,2-Dichloropropane	78-87-5	1.19	U	5.95	1.19	0.595
1,3-Dichloropropane	142-28-9	1.19	U	5.95	1.19	0.595
2,2-Dichloropropane	594-20-7	1.19	U	5.95	1.19	0.595
cis-1,3-Dichloropropene	10061-01-5	1.19	U	5.95	1.19	0.595
trans-1,3-Dichloropropene	10061-02-6	1.19	U	5.95	1.19	0.595
1,1-Dichloropropene	563-58-6	1.19	U	5.95	1.19	0.595
Ethylbenzene	100-41-4	1.19	U	5.95	1.19	0.595
2-Hexanone	591-78-6	5.94	U	11.9	5.94	2.97
Hexachlorobutadiene	87-68-3	1.19	U	5.95	1.19	0.595
Isopropylbenzene	98-82-8	1.19	U	5.95	1.19	0.595
p-Isopropyltoluene	99-87-6	1.19	U	5.95	1.19	0.595
4-Methyl-2-pentanone	108-10-1	5.94	U	11.9	5.94	2.97
Methylene chloride	75-09-2	2.38	U	5.95	2.38	1.19
Naphthalene	91-20-3	1.19	Q	5.95	1.19	0.595
n-Propylbenzene	103-65-1	1.19	U	5.95	1.19	0.595
Styrene	100-42-5	1.19	U	5.95	1.19	0.595
1,1,1,2-Tetrachloroethane	630-20-6	1.19	U	5.95	1.19	0.595
1,1,2,2-Tetrachloroethane	79-34-5	1.19	U	5.95	1.19	0.595
Tetrachloroethene	127-18-4	1.19	U	5.95	1.19	0.595
Toluene	108-88-3	1.19	U	5.95	1.19	0.595
1,2,3-Trichlorobenzene	87-61-6	1.19	U	5.95	1.19	0.595
1,2,4-Trichlorobenzene	120-82-1	1.19	U	5.95	1.19	0.595
1,1,1-Trichloroethane	71-55-6	1.19	U	5.95	1.19	0.595
1,1,2-Trichloroethane	79-00-5	1.19	U	5.95	1.19	0.595
Trichloroethene	79-01-6	1.19	U	5.95	1.19	0.595
Trichlorofluoromethane	75-69-4	2.38	U	5.95	2.38	1.19
1,2,3-Trichloropropane	96-18-4	2.38	Q	5.95	2.38	1.19
1,2,4-Trimethylbenzene	95-63-6	1.19	Q	5.95	1.19	0.595
1,3,5-Trimethylbenzene	108-67-8	1.19	U	5.95	1.19	0.595
Vinyl chloride	75-01-4	2.38	U	5.95	2.38	1.19
o-Xylene	95-47-6	1.19	U	5.95	1.19	0.595
m-,p-Xylene	179601-23-1	1.19	U	5.95	1.19	0.595

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	80	120	
1,2-Dichloroethane-d4	106	80	120	
Toluene-d8	112	85	115	
4-Bromofluorobenzene	122	85	120	*

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW26SW(20-20.5)250416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:28
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 20:18
Collect Date:	04/25/2016 11:45	**Dilution:**	1	**File ID:**	9M974043
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.9	U	25.9	12.9	6.47
Benzene	71-43-2	1.29	U	6.47	1.29	0.647
Bromobenzene	108-86-1	1.29	U	6.47	1.29	0.647
Bromochloromethane	74-97-5	2.58	U	6.47	2.58	1.29
Bromodichloromethane	75-27-4	1.29	U	6.47	1.29	0.647
Bromoform	75-25-2	1.29	U	6.47	1.29	0.647
Bromomethane	74-83-9	2.58	U	6.47	2.58	1.29
2-Butanone	78-93-3	6.46	U	12.9	6.46	3.23
n-Butylbenzene	104-51-8	1.29	U	6.47	1.29	0.647
sec-Butylbenzene	135-98-8	1.29	U	6.47	1.29	0.647
tert-Butylbenzene	98-06-6	1.29	U	6.47	1.29	0.647
Carbon disulfide	75-15-0	1.29	U	6.47	1.29	0.647
Carbon tetrachloride	56-23-5	1.29	U	6.47	1.29	0.647
Chlorobenzene	108-90-7	1.29	U	6.47	1.29	0.647
Chlorodibromomethane	124-48-1	1.29	U	6.47	1.29	0.647
Chloroethane	75-00-3	2.58	U	6.47	2.58	1.29
Chloroform	67-66-3	1.29	U	6.47	1.29	0.647
Chloromethane	74-87-3	5.18	U	12.9	5.18	2.59
2-Chlorotoluene	95-49-8	1.29	Q	6.47	1.29	0.647
4-Chlorotoluene	106-43-4	1.29	U	6.47	1.29	0.647
1,2-Dibromo-3-chloropropane	96-12-8	5.18	U	12.9	5.18	2.59
1,2-Dibromoethane	106-93-4	1.29	U	6.47	1.29	0.647
Dibromomethane	74-95-3	1.29	U	6.47	1.29	0.647
1,2-Dichlorobenzene	95-50-1	1.29	U	6.47	1.29	0.647
1,3-Dichlorobenzene	541-73-1	1.29	U	6.47	1.29	0.647
1,4-Dichlorobenzene	106-46-7	1.29	U	6.47	1.29	0.647
Dichlorodifluoromethane	75-71-8	2.58	U	6.47	2.58	1.29
1,1-Dichloroethane	75-34-3	2.58	U	6.47	2.58	1.29
1,2-Dichloroethane	107-06-2	1.29	U	6.47	1.29	0.647
1,1-Dichloroethene	75-35-4	1.29	U	6.47	1.29	0.647

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.29	U	6.47	1.29	0.647
trans-1,2-Dichloroethene	156-60-5	1.29	U	6.47	1.29	0.647
1,2-Dichloropropane	78-87-5	1.29	U	6.47	1.29	0.647
1,3-Dichloropropane	142-28-9	1.29	U	6.47	1.29	0.647
2,2-Dichloropropane	594-20-7	1.29	U	6.47	1.29	0.647
cis-1,3-Dichloropropene	10061-01-5	1.29	U	6.47	1.29	0.647
trans-1,3-Dichloropropene	10061-02-6	1.29	U	6.47	1.29	0.647
1,1-Dichloropropene	563-58-6	1.29	U	6.47	1.29	0.647
Ethylbenzene	100-41-4	1.29	U	6.47	1.29	0.647
2-Hexanone	591-78-6	6.46	U	12.9	6.46	3.23
Hexachlorobutadiene	87-68-3	1.29	U	6.47	1.29	0.647
Isopropylbenzene	98-82-8	1.29	U	6.47	1.29	0.647
p-Isopropyltoluene	99-87-6	1.29	U	6.47	1.29	0.647
4-Methyl-2-pentanone	108-10-1	6.46	U	12.9	6.46	3.23
Methylene chloride	75-09-2	2.58	U	6.47	2.58	1.29
Naphthalene	91-20-3	1.29	Q	6.47	1.29	0.647
n-Propylbenzene	103-65-1	1.29	U	6.47	1.29	0.647
Styrene	100-42-5	1.29	U	6.47	1.29	0.647
1,1,1,2-Tetrachloroethane	630-20-6	1.29	U	6.47	1.29	0.647
1,1,2,2-Tetrachloroethane	79-34-5	1.29	U	6.47	1.29	0.647
Tetrachloroethene	127-18-4	1.29	U	6.47	1.29	0.647
Toluene	108-88-3	1.29	U	6.47	1.29	0.647
1,2,3-Trichlorobenzene	87-61-6	1.29	U	6.47	1.29	0.647
1,2,4-Trichlorobenzene	120-82-1	1.29	U	6.47	1.29	0.647
1,1,1-Trichloroethane	71-55-6	1.29	U	6.47	1.29	0.647
1,1,2-Trichloroethane	79-00-5	1.29	U	6.47	1.29	0.647
Trichloroethene	79-01-6	1.29	U	6.47	1.29	0.647
Trichlorofluoromethane	75-69-4	2.58	U	6.47	2.58	1.29
1,2,3-Trichloropropane	96-18-4	2.58	Q	6.47	2.58	1.29
1,2,4-Trimethylbenzene	95-63-6	1.29	Q	6.47	1.29	0.647
1,3,5-Trimethylbenzene	108-67-8	1.29	U	6.47	1.29	0.647
Vinyl chloride	75-01-4	2.58	U	6.47	2.58	1.29
o-Xylene	95-47-6	1.29	U	6.47	1.29	0.647
m-,p-Xylene	179601-23-1	1.29	U	6.47	1.29	0.647

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	80	120	
1,2-Dichloroethane-d4	105	80	120	
Toluene-d8	113	85	115	
4-Bromofluorobenzene	125	85	120	*

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW26SW(30-30.5)250416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:29
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 20:48
Collect Date:	04/25/2016 12:05	**Dilution:**	1	**File ID:**	9M974044
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	77.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.2	U	24.4	12.2	6.11
Benzene	71-43-2	1.22	U	6.11	1.22	0.611
Bromobenzene	108-86-1	1.22	U	6.11	1.22	0.611
Bromochloromethane	74-97-5	2.44	U	6.11	2.44	1.22
Bromodichloromethane	75-27-4	1.22	U	6.11	1.22	0.611
Bromoform	75-25-2	1.22	U	6.11	1.22	0.611
Bromomethane	74-83-9	2.44	U	6.11	2.44	1.22
2-Butanone	78-93-3	6.12	U	12.2	6.12	3.06
n-Butylbenzene	104-51-8	1.22	U	6.11	1.22	0.611
sec-Butylbenzene	135-98-8	1.22	U	6.11	1.22	0.611
tert-Butylbenzene	98-06-6	1.22	U	6.11	1.22	0.611
Carbon disulfide	75-15-0	1.22	U	6.11	1.22	0.611
Carbon tetrachloride	56-23-5	1.22	U	6.11	1.22	0.611
Chlorobenzene	108-90-7	1.22	U	6.11	1.22	0.611
Chlorodibromomethane	124-48-1	1.22	U	6.11	1.22	0.611
Chloroethane	75-00-3	2.44	U	6.11	2.44	1.22
Chloroform	67-66-3	1.22	U	6.11	1.22	0.611
Chloromethane	74-87-3	4.88	U	12.2	4.88	2.44
2-Chlorotoluene	95-49-8	1.22	Q	6.11	1.22	0.611
4-Chlorotoluene	106-43-4	1.22	U	6.11	1.22	0.611
1,2-Dibromo-3-chloropropane	96-12-8	4.88	U	12.2	4.88	2.44
1,2-Dibromoethane	106-93-4	1.22	U	6.11	1.22	0.611
Dibromomethane	74-95-3	1.22	U	6.11	1.22	0.611
1,2-Dichlorobenzene	95-50-1	1.22	U	6.11	1.22	0.611
1,3-Dichlorobenzene	541-73-1	1.22	U	6.11	1.22	0.611
1,4-Dichlorobenzene	106-46-7	1.22	U	6.11	1.22	0.611
Dichlorodifluoromethane	75-71-8	2.44	U	6.11	2.44	1.22
1,1-Dichloroethane	75-34-3	2.44	U	6.11	2.44	1.22
1,2-Dichloroethane	107-06-2	1.22	U	6.11	1.22	0.611
1,1-Dichloroethene	75-35-4	1.22	U	6.11	1.22	0.611

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.22	U	6.11	1.22	0.611
trans-1,2-Dichloroethene	156-60-5	1.22	U	6.11	1.22	0.611
1,2-Dichloropropane	78-87-5	1.22	U	6.11	1.22	0.611
1,3-Dichloropropane	142-28-9	1.22	U	6.11	1.22	0.611
2,2-Dichloropropane	594-20-7	1.22	U	6.11	1.22	0.611
cis-1,3-Dichloropropene	10061-01-5	1.22	U	6.11	1.22	0.611
trans-1,3-Dichloropropene	10061-02-6	1.22	U	6.11	1.22	0.611
1,1-Dichloropropene	563-58-6	1.22	U	6.11	1.22	0.611
Ethylbenzene	100-41-4	1.22	U	6.11	1.22	0.611
2-Hexanone	591-78-6	6.12	U	12.2	6.12	3.06
Hexachlorobutadiene	87-68-3	1.22	U	6.11	1.22	0.611
Isopropylbenzene	98-82-8	1.22	U	6.11	1.22	0.611
p-Isopropyltoluene	99-87-6	1.22	U	6.11	1.22	0.611
4-Methyl-2-pentanone	108-10-1	6.12	U	12.2	6.12	3.06
Methylene chloride	75-09-2	2.44	U	6.11	2.44	1.22
Naphthalene	91-20-3	1.22	Q	6.11	1.22	0.611
n-Propylbenzene	103-65-1	1.22	U	6.11	1.22	0.611
Styrene	100-42-5	1.22	U	6.11	1.22	0.611
1,1,1,2-Tetrachloroethane	630-20-6	1.22	U	6.11	1.22	0.611
1,1,2,2-Tetrachloroethane	79-34-5	1.22	U	6.11	1.22	0.611
Tetrachloroethene	127-18-4	1.22	U	6.11	1.22	0.611
Toluene	108-88-3	1.22	U	6.11	1.22	0.611
1,2,3-Trichlorobenzene	87-61-6	1.22	U	6.11	1.22	0.611
1,2,4-Trichlorobenzene	120-82-1	1.22	U	6.11	1.22	0.611
1,1,1-Trichloroethane	71-55-6	1.22	U	6.11	1.22	0.611
1,1,2-Trichloroethane	79-00-5	1.22	U	6.11	1.22	0.611
Trichloroethene	79-01-6	1.22	U	6.11	1.22	0.611
Trichlorofluoromethane	75-69-4	2.44	U	6.11	2.44	1.22
1,2,3-Trichloropropane	96-18-4	2.44	Q	6.11	2.44	1.22
1,2,4-Trimethylbenzene	95-63-6	1.22	Q	6.11	1.22	0.611
1,3,5-Trimethylbenzene	108-67-8	1.22	U	6.11	1.22	0.611
Vinyl chloride	75-01-4	2.44	U	6.11	2.44	1.22
o-Xylene	95-47-6	1.22	U	6.11	1.22	0.611
m-,p-Xylene	179601-23-1	1.22	U	6.11	1.22	0.611

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	80	120	
1,2-Dichloroethane-d4	109	80	120	
Toluene-d8	112	85	115	
4-Bromofluorobenzene	120	85	120	

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-13	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW26SW(40-40.5)250416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:29
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 21:19
Collect Date:	04/25/2016 12:10	**Dilution:**	1	**File ID:**	9M974045
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	71.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	14.8	U	29.7	14.8	7.42
Benzene	71-43-2	1.48	U	7.42	1.48	0.742
Bromobenzene	108-86-1	1.48	U	7.42	1.48	0.742
Bromochloromethane	74-97-5	2.96	U	7.42	2.96	1.48
Bromodichloromethane	75-27-4	1.48	U	7.42	1.48	0.742
Bromoform	75-25-2	1.48	U	7.42	1.48	0.742
Bromomethane	74-83-9	2.96	U	7.42	2.96	1.48
2-Butanone	78-93-3	7.42	U	14.8	7.42	3.71
n-Butylbenzene	104-51-8	1.48	U	7.42	1.48	0.742
sec-Butylbenzene	135-98-8	1.48	U	7.42	1.48	0.742
tert-Butylbenzene	98-06-6	1.48	U	7.42	1.48	0.742
Carbon disulfide	75-15-0	1.48	U	7.42	1.48	0.742
Carbon tetrachloride	56-23-5	1.48	U	7.42	1.48	0.742
Chlorobenzene	108-90-7	1.48	U	7.42	1.48	0.742
Chlorodibromomethane	124-48-1	1.48	U	7.42	1.48	0.742
Chloroethane	75-00-3	2.96	U	7.42	2.96	1.48
Chloroform	67-66-3	1.48	U	7.42	1.48	0.742
Chloromethane	74-87-3	5.94	U	14.8	5.94	2.97
2-Chlorotoluene	95-49-8	1.48	Q	7.42	1.48	0.742
4-Chlorotoluene	106-43-4	1.48	U	7.42	1.48	0.742
1,2-Dibromo-3-chloropropane	96-12-8	5.94	U	14.8	5.94	2.97
1,2-Dibromoethane	106-93-4	1.48	U	7.42	1.48	0.742
Dibromomethane	74-95-3	1.48	U	7.42	1.48	0.742
1,2-Dichlorobenzene	95-50-1	1.48	U	7.42	1.48	0.742
1,3-Dichlorobenzene	541-73-1	1.48	U	7.42	1.48	0.742
1,4-Dichlorobenzene	106-46-7	1.48	U	7.42	1.48	0.742
Dichlorodifluoromethane	75-71-8	2.96	U	7.42	2.96	1.48
1,1-Dichloroethane	75-34-3	2.96	U	7.42	2.96	1.48
1,2-Dichloroethane	107-06-2	1.48	U	7.42	1.48	0.742
1,1-Dichloroethene	75-35-4	1.48	U	7.42	1.48	0.742

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.48	U	7.42	1.48	0.742
trans-1,2-Dichloroethene	156-60-5	1.48	U	7.42	1.48	0.742
1,2-Dichloropropane	78-87-5	1.48	U	7.42	1.48	0.742
1,3-Dichloropropane	142-28-9	1.48	U	7.42	1.48	0.742
2,2-Dichloropropane	594-20-7	1.48	U	7.42	1.48	0.742
cis-1,3-Dichloropropene	10061-01-5	1.48	U	7.42	1.48	0.742
trans-1,3-Dichloropropene	10061-02-6	1.48	U	7.42	1.48	0.742
1,1-Dichloropropene	563-58-6	1.48	U	7.42	1.48	0.742
Ethylbenzene	100-41-4	1.48	U	7.42	1.48	0.742
2-Hexanone	591-78-6	7.42	U	14.8	7.42	3.71
Hexachlorobutadiene	87-68-3	1.48	U	7.42	1.48	0.742
Isopropylbenzene	98-82-8	1.48	U	7.42	1.48	0.742
p-Isopropyltoluene	99-87-6	1.48	U	7.42	1.48	0.742
4-Methyl-2-pentanone	108-10-1	7.42	U	14.8	7.42	3.71
Methylene chloride	75-09-2	2.96	U	7.42	2.96	1.48
Naphthalene	91-20-3	1.48	Q	7.42	1.48	0.742
n-Propylbenzene	103-65-1	1.48	U	7.42	1.48	0.742
Styrene	100-42-5	1.48	U	7.42	1.48	0.742
1,1,1,2-Tetrachloroethane	630-20-6	1.48	U	7.42	1.48	0.742
1,1,2,2-Tetrachloroethane	79-34-5	1.48	U	7.42	1.48	0.742
Tetrachloroethene	127-18-4	1.48	U	7.42	1.48	0.742
Toluene	108-88-3	1.48	U	7.42	1.48	0.742
1,2,3-Trichlorobenzene	87-61-6	1.48	U	7.42	1.48	0.742
1,2,4-Trichlorobenzene	120-82-1	1.48	U	7.42	1.48	0.742
1,1,1-Trichloroethane	71-55-6	1.48	U	7.42	1.48	0.742
1,1,2-Trichloroethane	79-00-5	1.48	U	7.42	1.48	0.742
Trichloroethene	79-01-6	1.48	U	7.42	1.48	0.742
Trichlorofluoromethane	75-69-4	2.96	U	7.42	2.96	1.48
1,2,3-Trichloropropane	96-18-4	2.96	Q	7.42	2.96	1.48
1,2,4-Trimethylbenzene	95-63-6	1.48	Q	7.42	1.48	0.742
1,3,5-Trimethylbenzene	108-67-8	1.48	U	7.42	1.48	0.742
Vinyl chloride	75-01-4	2.96	U	7.42	2.96	1.48
o-Xylene	95-47-6	1.48	U	7.42	1.48	0.742
m-,p-Xylene	179601-23-1	1.48	U	7.42	1.48	0.742

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	80	120	
1,2-Dichloroethane-d4	106	80	120	
Toluene-d8	115	85	115	
4-Bromofluorobenzene	126	85	120	*

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-14	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW26SW(49.5-50)250416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:30
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 21:49
Collect Date:	04/25/2016 12:30	**Dilution:**	1	**File ID:**	9M974046
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	76.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.3	U	26.6	13.3	6.65
Benzene	71-43-2	1.33	U	6.65	1.33	0.665
Bromobenzene	108-86-1	1.33	U	6.65	1.33	0.665
Bromochloromethane	74-97-5	2.66	U	6.65	2.66	1.33
Bromodichloromethane	75-27-4	1.33	U	6.65	1.33	0.665
Bromoform	75-25-2	1.33	U	6.65	1.33	0.665
Bromomethane	74-83-9	2.66	U	6.65	2.66	1.33
2-Butanone	78-93-3	6.64	U	13.3	6.64	3.32
n-Butylbenzene	104-51-8	1.33	U	6.65	1.33	0.665
sec-Butylbenzene	135-98-8	1.33	U	6.65	1.33	0.665
tert-Butylbenzene	98-06-6	1.33	U	6.65	1.33	0.665
Carbon disulfide	75-15-0	1.33	U	6.65	1.33	0.665
Carbon tetrachloride	56-23-5	1.33	U	6.65	1.33	0.665
Chlorobenzene	108-90-7	1.33	U	6.65	1.33	0.665
Chlorodibromomethane	124-48-1	1.33	U	6.65	1.33	0.665
Chloroethane	75-00-3	2.66	U	6.65	2.66	1.33
Chloroform	67-66-3	1.33	U	6.65	1.33	0.665
Chloromethane	74-87-3	5.32	U	13.3	5.32	2.66
2-Chlorotoluene	95-49-8	1.33	Q	6.65	1.33	0.665
4-Chlorotoluene	106-43-4	1.33	U	6.65	1.33	0.665
1,2-Dibromo-3-chloropropane	96-12-8	5.32	U	13.3	5.32	2.66
1,2-Dibromoethane	106-93-4	1.33	U	6.65	1.33	0.665
Dibromomethane	74-95-3	1.33	U	6.65	1.33	0.665
1,2-Dichlorobenzene	95-50-1	1.33	U	6.65	1.33	0.665
1,3-Dichlorobenzene	541-73-1	1.33	U	6.65	1.33	0.665
1,4-Dichlorobenzene	106-46-7	1.33	U	6.65	1.33	0.665
Dichlorodifluoromethane	75-71-8	2.66	U	6.65	2.66	1.33
1,1-Dichloroethane	75-34-3	2.66	U	6.65	2.66	1.33
1,2-Dichloroethane	107-06-2	1.33	U	6.65	1.33	0.665
1,1-Dichloroethene	75-35-4	1.33	U	6.65	1.33	0.665

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.33	U	6.65	1.33	0.665
trans-1,2-Dichloroethene	156-60-5	1.33	U	6.65	1.33	0.665
1,2-Dichloropropane	78-87-5	1.33	U	6.65	1.33	0.665
1,3-Dichloropropane	142-28-9	1.33	U	6.65	1.33	0.665
2,2-Dichloropropane	594-20-7	1.33	U	6.65	1.33	0.665
cis-1,3-Dichloropropene	10061-01-5	1.33	U	6.65	1.33	0.665
trans-1,3-Dichloropropene	10061-02-6	1.33	U	6.65	1.33	0.665
1,1-Dichloropropene	563-58-6	1.33	U	6.65	1.33	0.665
Ethylbenzene	100-41-4	1.33	U	6.65	1.33	0.665
2-Hexanone	591-78-6	6.64	U	13.3	6.64	3.32
Hexachlorobutadiene	87-68-3	1.33	U	6.65	1.33	0.665
Isopropylbenzene	98-82-8	1.33	U	6.65	1.33	0.665
p-Isopropyltoluene	99-87-6	1.33	U	6.65	1.33	0.665
4-Methyl-2-pentanone	108-10-1	6.64	U	13.3	6.64	3.32
Methylene chloride	75-09-2	2.66	U	6.65	2.66	1.33
Naphthalene	91-20-3	1.33	Q	6.65	1.33	0.665
n-Propylbenzene	103-65-1	1.33	U	6.65	1.33	0.665
Styrene	100-42-5	1.33	U	6.65	1.33	0.665
1,1,1,2-Tetrachloroethane	630-20-6	1.33	U	6.65	1.33	0.665
1,1,2,2-Tetrachloroethane	79-34-5	1.33	U	6.65	1.33	0.665
Tetrachloroethene	127-18-4	1.33	U	6.65	1.33	0.665
Toluene	108-88-3	1.33	U	6.65	1.33	0.665
1,2,3-Trichlorobenzene	87-61-6	1.33	U	6.65	1.33	0.665
1,2,4-Trichlorobenzene	120-82-1	1.33	U	6.65	1.33	0.665
1,1,1-Trichloroethane	71-55-6	1.33	U	6.65	1.33	0.665
1,1,2-Trichloroethane	79-00-5	1.33	U	6.65	1.33	0.665
Trichloroethene	79-01-6	1.33	U	6.65	1.33	0.665
Trichlorofluoromethane	75-69-4	2.66	U	6.65	2.66	1.33
1,2,3-Trichloropropane	96-18-4	2.66	Q	6.65	2.66	1.33
1,2,4-Trimethylbenzene	95-63-6	1.33	Q	6.65	1.33	0.665
1,3,5-Trimethylbenzene	108-67-8	1.33	U	6.65	1.33	0.665
Vinyl chloride	75-01-4	2.66	U	6.65	2.66	1.33
o-Xylene	95-47-6	1.33	U	6.65	1.33	0.665
m-,p-Xylene	179601-23-1	1.33	U	6.65	1.33	0.665

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	80	120	
1,2-Dichloroethane-d4	106	80	120	
Toluene-d8	113	85	115	
4-Bromofluorobenzene	125	85	120	*

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.
VOA Preparation/Preservation/Extraction Log

Batch #: WG566882
Analyst: AWE
Method: 5030B/5030C/5035
Run Date: 04/29/2016 10:11
Product: 826-SPE
Purge and trap methanol COA18540
Purified Lab Sand Lot # COA18552

SAMPLE #	Fraction	Collected	Preserved	PCT-S	Tare Wt	Total Wt	Sample Wt	Water	MeOH	Vt	Comments
L16041344-01	A	04/23/16 09:35	04/29/16 10:11	84.4			4.87	5		5	
L16041368-01	A	04/22/16 10:30	04/29/16 09:52	100			4.69		10	10	
L16041579-01	A	04/27/16 14:20	04/29/16 18:37	666	36.95	50.37	13.42		10		
L16041579-02	A	04/27/16 14:20	04/29/16 18:37	666	37.03	48.62	11.60		10		
L16041579-03	A	04/27/16 14:20	04/29/16 18:37	666	36.80	43.04	6.24		10		
L16041580-01	A	04/26/16 09:05	04/29/16 18:37	666			4.75		10		
L16041580-02	A	04/26/16 10:00	04/29/16 18:37	666			5.18		10		
L16041580-03	A	04/26/16 10:35	04/29/16 18:37	666			4.57		10		
L16041580-04	A	04/26/16 11:15	04/29/16 18:37	666			5.05		10		
L16041580-05	A	04/26/16 11:55	04/29/16 18:37	666			5.01		10		
L16041580-06	A	04/26/16 14:15	04/29/16 18:37	666			5.09		10		
L16041580-07	A	04/26/16 14:15	04/29/16 18:16	666			5.00		10		
L16041580-08	A	04/26/16 14:15	04/29/16 18:37	666			4.72		10		
L16041580-09	A	04/26/16 15:00	04/29/16 18:37	666			4.88		10		
L16041580-10	A	04/26/16 15:00	04/29/16 18:37	666			4.58		10		
L16041580-11	A	04/26/16 15:45	04/29/16 18:37	666			4.81		10		
L16041580-12	A	04/26/16 16:45	04/29/16 18:37	666			5.08		10		
L16041580-13	A	04/26/16 17:00	04/29/16 18:37	666			4.60		10		
L16041582-01	A	04/27/16 14:15	04/29/16 18:37	666			5.48		10		
L16041582-02	A	04/27/16 14:40	04/29/16 18:37	666			5.23		10		
L16041582-03	A	04/27/16 14:45	04/29/16 18:37	666			4.96		10		
L16041582-04	A	04/27/16 14:50	04/29/16 18:37	666			4.76		10		
L16041582-05	A	04/27/16 16:15	04/29/16 18:37	666			4.93		10		
L16041582-06	A	04/27/16 17:35	04/29/16 18:37	666			5.05		10		
L16041582-07	A	04/27/16 17:45	04/29/16 18:37	666			4.89		10		
L16041606-01	A	04/28/16 08:30	04/29/16 18:37	666			5.25		10		
WG566882-01	A		04/29/16 09:52	100			4.69		10	10	
WG566882-02	A		04/29/16 09:53	100			4.84		10	10	

Comments:
1 = improperly sealed cap
2 = preserved out of hold
3 = effervesced
4 = preserved with NaHSO4
5 = preserved by freezing
6 = preserved in field

Analyst: Andrew Casey

VOA_EXT - Modified 05/22/2008
PDF ID: 4740792
Report generated: 04/29/2016 18:37

Microbac

Microbac Laboratories Inc.
VOA Preparation/Preservation/Extraction Log

Batch #: WG566711
Method: 5030B/5030C/5035
Product: 8260

Analyst: AWE
Run Date: 04/28/2016 09:31
Purge and trap methanol COA18540
Purified Lab Sand Lot # COA18552

SAMPLE #	Fraction	Collected	Preserved	PCT-S	Tare Wt	Total Wt	Sample Wt	Water	MeOH	Vt	Comments
L16041344-01	A	04/23/16 09:35	04/28/16 09:31	84.4			0.96	5		5	
L16041344-02	A	04/23/16 10:05	04/28/16 09:20	81.9			4.66	5		5	
L16041344-03	A	04/23/16 10:10	04/28/16 09:21	77.7			4.85	5		5	
L16041344-04	A	04/23/16 13:30	04/28/16 09:21	84.0			4.54	5		5	
L16041344-05	A	04/23/16 13:30	04/28/16 09:22	85.1			4.71	5		5	
L16041344-06	A	04/23/16 14:00	04/28/16 09:23	82.3			4.76	5		5	
L16041344-07	A	04/23/16 14:05	04/28/16 09:25	77.2			5.36	5		5	
L16041344-08	A	04/25/16 09:35	04/28/16 09:26	84.1			4.95	5		5	
L16041344-09	A	04/25/16 09:50	04/28/16 09:27	78.8			4.58	5		5	
L16041344-10	A	04/25/16 10:45	04/28/16 09:28	78.9			5.33	5		5	
L16041344-11	A	04/25/16 11:45	04/28/16 09:28	80.9			4.78	5		5	
L16041344-12	A	04/25/16 12:05	04/28/16 09:29	77.9			5.25	5		5	
L16041344-13	A	04/25/16 12:10	04/28/16 09:29	71.8			4.69	5		5	
L16041344-14	A	04/25/16 12:30	04/28/16 09:30	76.0			4.95	5		5	
L16041363-01	A	04/21/16 17:00	04/28/16 09:33	83.9			4.90	5		5	
L16041363-02	A	04/21/16 17:30	04/28/16 09:33	79.9			5.36	5		5	
L16041363-03	A	04/22/16 09:00	04/28/16 09:34	80.0			4.93	5		5	
L16041363-04	A	04/22/16 09:00	04/28/16 09:35	79.4			4.92	5		5	
L16041363-05	A	04/22/16 09:05	04/28/16 09:36	80.8			5.35	5		5	
L16041363-06	A	04/21/16 18:00	04/28/16 09:36	79.1			4.64	5		5	
L16041363-07	A	04/22/16 11:15	04/28/16 09:37	75.9			5.06	5		5	
L16041363-08	A	04/22/16 11:15	04/28/16 09:38	75.9			4.95	5		5	
L16041363-09	A	04/22/16 11:15	04/28/16 09:39	75.9			4.85	5		5	
L16041363-10	A	04/22/16 11:11	04/28/16 09:39	80.5			4.89	5		5	
WG566711-01	A		04/28/16 12:59	81.9			4.66	5		5	
WG566711-02	A		04/28/16 13:01	81.9			4.93	5		5	
WG566711-03	A		04/28/16 13:02	81.9			4.76	5		5	
WG566711-04	A		04/28/16 12:59	83.9			4.90	5		5	
WG566711-05	A		04/28/16 13:03	83.9			4.82	5		5	
WG566711-06	A		04/28/16 13:04	83.9			4.81	5		5	

Comments:
1 = improperly sealed cap
2 = preserved out of hold
3 = effervesced
4 = preserved with NaHSO4
5 = preserved by freezing
6 = preserved in field

Analyst: Andrew Casey

VOA_EXT - Modified 05/22/2008
PDF ID: 4738635
Report generated: 04/28/2016 13:26

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 012516
Analyst1: ADC Analyst2: NA
Method: 8260B/8260C SOP: MSV01(-C) Rev: 23 (2)
Method: 5030B/5030C/5035 SOP: PAT01 Rev: 18
Method: 624 SOP: MSV10 Rev: 12
Maintenance Log ID:

Internal Standard: STD74414 Surrogate Standard: STD74126
CCV: STD74488 LCS: STD74459 MS/MSD: STD74459

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG555000 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M972470	WG555000-01 BFB 50ng A9	NA	7	1	STD74202	01/25/16 10:27
9M972471	RINSE	NA	7	1		01/25/16 10:52
9M972472	WG555000-02 5ug/Kg STD A9	NA	7	1	STD74406	01/25/16 11:22
9M972473	WG555000-03 20ug/Kg STD A9	NA	7	1	STD74406	01/25/16 11:52
9M972474	WG555000-04 50ug/Kg STD A9	NA	7	1	STD74406	01/25/16 12:23
9M972475	WG555000-05 100ug/Kg STD A9	NA	7	1	STD74406	01/25/16 12:53
9M972476	WG555000-06 200ug/Kg STD A9	NA	7	1	STD74406	01/25/16 13:23
9M972477	WG555000-07 300ug/Kg STD A9	NA	7	1	STD74406	01/25/16 13:54
9M972478	WG555000-08 400ug/Kg STD A9	NA	7	1	STD74406	01/25/16 14:25
9M972479	WG555000-09 500ug/Kg STD A9	NA	7	1	STD74406	01/25/16 14:56
9M972480	RINSE	NA	7	1		01/25/16 15:26
9M972481	WG555000-10 100ug/Kg ICV A9	NA	7	1	STD74461	01/25/16 15:56
9M972482	RINSE	NA	7	1		01/25/16 16:28

Approved: January 29, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 040616
Analyst1: ADC Analyst2: NA
Method: 8260 SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD75190 Surrogate Standard: STD75211
CCV: STD75238 LCS: STD75404 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG563259 (ICAL)

Comments: Reanalyzed 100, 200, and 300 ug/kg points.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M973592	WG563259-01 BFB 50ng 8260	NA	7	1	STD75485	04/06/16 09:33
9M973593	RINSE	NA	7	1	STD75238	04/06/16 09:58
9M973594	WG563259-02 50ug/L CCV STD 8260	NA	7	1	STD75238	04/06/16 10:29
9M973595	RINSE	NA	7	1		04/06/16 11:00
9M973596	WG563259-03 0.5ug/kg STD 8260	NA	7	1	STD75238	04/06/16 11:31
9M973597	WG563259-04 1.0ug/kg STD 8260	NA	7	1	STD75238	04/06/16 12:02
9M973598	WG563259-05 2.0ug/kg STD 8260	NA	7	1	STD75238	04/06/16 12:32
9M973599	WG563259-06 5.0ug/kg STD 8260	NA	7	1	STD75238	04/06/16 13:03
9M973600	WG563259-07 20.0ug/kg STD 8260	NA	7	1	STD75238	04/06/16 13:33
9M973601	WG563259-08 100.0ug/kg STD 8260	NA	7	1	STD75238	04/06/16 14:04
9M973602	WG563259-09 200.0ug/kg STD 8260	NA	7	1	STD75238	04/06/16 14:35
9M973603	WG563259-10 300.0ug/kg STD 8260	NA	7	1	STD75238	04/06/16 15:05
9M973604	RINSE	NA	7	1	STD75238	04/06/16 15:36
9M973605	WG563259-08 100.0ug/kg STD 8260	NA	7	1	STD75238	04/06/16 16:15
9M973606	WG563259-09 200.0ug/kg STD 8260	NA	7	1	STD75238	04/06/16 16:46
9M973607	WG563259-10 300.0ug/kg STD 8260	NA	7	1	STD75238	04/06/16 17:16
9M973608	RINSE	NA	7	1		04/06/16 17:47
9M973609	WG563259-11 50.0ug/kg ALTSRC 8260	NA	7	1	STD75404	04/06/16 18:18

Approved: April 08, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 042816
Analyst1: ADC Analyst2: NA
Method: 8260 SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD75711 Surrogate Standard: STD75710
CCV: STD75740 LCS: STD75739 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG566765

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M974027	WG566763-01 BFB 50ng 8260	NA	7	1	STD75485	04/28/16 12:17
9M974028	WG566763-02 50ug/kg CCV STD 8260	NA	7	1	STD75238	04/28/16 12:42
9M974029	WG566763-02 50ug/kg CCV STD 8260	NA	7	1	STD75238	04/28/16 13:13
9M974030	WGXXXXXX-01 A9FOO 100ug/kg	NA	7	1	STDXXXXX	04/28/16 13:43
9M974031	WG566765-01 BLK 8260	NA	7	1		04/28/16 14:14
9M974032	WG566765-02 20ug/kg LCS	NA	7	1	STD75744	04/28/16 14:45
9M974033	RINSE	NA	7	1		04/28/16 15:16
9M974034	WG566711-01 L16041344-02 A 8260 4.66g	NA	7	1		04/28/16 15:46
9M974035	L16041344-03 A 8260 4.85g	NA	7	1		04/28/16 16:16
9M974036	L16041344-04 A 8260 4.54g	NA	7	1		04/28/16 16:47
9M974037	L16041344-05 A 8260 4.71g	NA	7	1		04/28/16 17:17
9M974038	L16041344-06 A 8260 4.76g	NA	7	1		04/28/16 17:47
9M974039	L16041344-07 A 8260 5.36g	NA	7	1		04/28/16 18:17
9M974040	L16041344-08 A 8260 4.95g	NA	7	1		04/28/16 18:47
9M974041	L16041344-09 A 8260 4.58g	NA	7	1		04/28/16 19:18
9M974042	L16041344-10 A 8260 5.33g	NA	7	1		04/28/16 19:48
9M974043	L16041344-11 A 8260 4.78g	NA	7	1		04/28/16 20:18
9M974044	L16041344-12 A 8260 5.25g	NA	7	1		04/28/16 20:48
9M974045	L16041344-13 A 8260 4.69g	NA	7	1		04/28/16 21:19
9M974046	L16041344-14 A 8260 4.95g	NA	7	1		04/28/16 21:49
9M974047	L16041344-01 A 8260 0.96g	NA	7	1		04/28/16 22:20
9M974048	WG566711-02 A MS 8260 4.93g	NA	7	1		04/28/16 22:51
9M974049	WG566711-03 A MSD 8260 4.76g	NA	7	1		04/28/16 23:20
9M974050	RINSE	NA	7	1		04/28/16 23:51
9M974051	RINSE	NA	7	1		04/29/16 00:23

Comments

Seq.	Rerun	Dil.	Reason	Analytes
21	X		Analyzed too dilute	
File ID: 9M974047				
	L16041344-01			

Approved: May 06, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 043016
Analyst1: ADC Analyst2: NA
Method: 8260 SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD75711 Surrogate Standard: STD75710
CCV: STD75824 LCS: STD75739 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG567003

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M974065	WG567052-01 BFB 50ng 8260	NA	7	1	STD75485	04/30/16 12:43
9M974066	WG567052-02 50ug/kg CCV STD 8260	NA	7	1	STD75238	04/30/16 13:10
9M974067	WG567052-02 50ug/kg CCV STD 8260	NA	7	1	STD75238	04/30/16 13:43
9M974068	WGXXXXXX-01 A9FOO 100ug/kg	NA	7	1	STDXXXXX	04/30/16 14:15
9M974069	WG567003-01 BLK 8260	NA	7	1		04/30/16 14:45
9M974070	L16040796-06 A 826-REF-BLK	NA	7	1		04/30/16 15:16
9M974071	L16040796-07 A 826-REF-BLK	NA	7	1		04/30/16 15:46
9M974072	L16040796-08 A 826-REF-BLK	NA	7	1		04/30/16 16:16
9M974073	L16040796-09 A 826-REF-BLK	NA	7	1		04/30/16 16:47
9M974074	WG567003-02 20ug/kg LCS 8260	NA	7	1	STD75739	04/30/16 17:17
9M974075	RINSE	NA	7	1		04/30/16 17:48
9M974076	L16041344-01 B 8260 4.87g	NA	7	1		04/30/16 18:18
9M974077	L16041363-01 A 8260 4.90g	NA	7	1		04/30/16 18:48
9M974078	L16041363-02 A 8260 5.36g	NA	7	1		04/30/16 19:18
9M974079	L16041363-03 A 8260 4.93g	NA	7	1		04/30/16 19:48
9M974080	L16041363-04 A 8260 4.92g	NA	7	1		04/30/16 20:18
9M974081	L16041363-05 A 8260 5.35g	NA	7	1		04/30/16 20:48
9M974082	L16041363-06 A 8260 4.64g	NA	7	1		04/30/16 21:19
9M974083	L16041363-07 A RS 8260 5.06g	NA	7	1		04/30/16 21:49
9M974084	L16041363-10 A 8260 4.89g	NA	7	1		04/30/16 22:19
9M974085	L16041363-08 A MS 8260 4.95g	NA	7	1		04/30/16 22:50
9M974086	L16041363-09 A MSD 8260 4.85g	NA	7	1		04/30/16 23:20
9M974087	RINSE	NA	7	1		04/30/16 23:50
9M974088	H20	NA	7	1		05/02/16 10:06
9M974089	H20 W/ MeOH	NA	7	1		05/02/16 10:36
9M974090	H20	NA	7	1		05/02/16 11:06
9M974091	SAND	NA	7	1		05/02/16 11:37
9M974092	SAND W/MeOH	NA	7	1		05/02/16 12:08

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
File ID: 9M974066				

Approved: May 06, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 043016
Analyst1: ADC Analyst2: NA
Method: 8260 SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD75711 Surrogate Standard: STD75710
CCV: STD75824 LCS: STD75739 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG567003

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			WG567052-02 fails VC. RR.	

Approved: May 06, 2016

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 25-JAN-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 72995
Analytical Workgroups: WG555000

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
28-JAN-2016

Secondary Reviewer:
29-JAN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JAN-29-2016 16:00:23

Microbac Laboratories Inc.

Data Checklist

Date: 06-APR-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: WG563259
Runlog ID: 74305
Analytical Workgroups:

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
08-APR-2016

Secondary Reviewer:
08-APR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: APR-08-2016 15:40:41

Microbac Laboratories Inc.

Data Checklist

Date: 28-APR-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 74802
Analytical Workgroups: WG566765

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
29-APR-2016

Secondary Reviewer:
06-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-06-2016 10:33:44

Microbac Laboratories Inc.

Data Checklist

Date: 30-APR-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 74887
Analytical Workgroups: WG567003

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
04-MAY-2016

Secondary Reviewer:
06-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-06-2016 11:05:37

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG566765

Login Number: L16041344

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW22R(10-10.5)23041	02	04/23/16					04/28/2016	5	14		04/28/16	5.2	14	
18CPTMW22R(15-15.5)23041	03	04/23/16					04/28/2016	5	14		04/28/16	5.3	14	
18CPTMW26(5-5.5)230416	04	04/23/16					04/28/2016	4.8	14		04/28/16	5.1	14	
18CPTMW26(5-5.5)230416DU	05	04/23/16					04/28/2016	4.8	14		04/28/16	5.2	14	
18CPTMW26(10-10.5)230416	06	04/23/16					04/28/2016	4.8	14		04/28/16	5.2	14	
18CPTMW26(14.5-15)230416	07	04/23/16					04/28/2016	4.8	14		04/28/16	5.2	14	
18CPTMW26SW(5-5.5)250416	08	04/25/16					04/28/2016	3	14		04/28/16	3.4	14	
18CPTMW26SW(10-10.5)2504	09	04/25/16					04/28/2016	3	14		04/28/16	3.4	14	
18CPTMW26SW(15-15.5)2504	10	04/25/16					04/28/2016	2.9	14		04/28/16	3.4	14	
18CPTMW26SW(20-20.5)2504	11	04/25/16					04/28/2016	2.9	14		04/28/16	3.4	14	
18CPTMW26SW(30-30.5)2504	12	04/25/16					04/28/2016	2.9	14		04/28/16	3.4	14	
18CPTMW26SW(40-40.5)2504	13	04/25/16					04/28/2016	2.9	14		04/28/16	3.4	14	
18CPTMW26SW(49.5-50)2504	14	04/25/16					04/28/2016	2.9	14		04/28/16	3.4	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4741832
Report generated 05/10/2016 13:22

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG567003

Login Number: L16041344

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW22R(5-5.5)230416	01	04/23/16					04/29/2016	6	14		04/30/16	7.4	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4741832
Report generated 05/10/2016 13:22

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16041344
Instrument Id: HPMS9
Workgroup (AAB#): WG567003

Method: 8260
CAL ID: HPMS9 - 06-APR-16
Matrix: Soil

Sample Number	Dilution	Tag	1	2	3	4
L16041344-01	1.00	02	110	105	123	112
WG567003-01	1.00	01	108	104	124	112
WG567003-02	1.00	01	112	108	121	112

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	80	-	120
2 - Dibromofluoromethane	80	-	120
3 - 4-Bromofluorobenzene	85	-	120
4 - Toluene-d8	85	-	115

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4741840
Report generated: 05/10/2016 13:22

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16041344
Instrument Id: HPMS9
Workgroup (AAB#): WG566765

Method: 8260
CAL ID: HPMS9-06-APR-16
Matrix: Soil

Sample Number	Dilution	Tag	1	2	3	4
L16041344-02	1.00	01	109	102	119	111
L16041344-03	1.00	01	108	103	118	110
L16041344-04	1.00	01	117	104	121	110
L16041344-05	1.00	01	119	105	121	111
L16041344-06	1.00	01	119	104	120	110
L16041344-07	1.00	01	117	104	119	108
L16041344-08	1.00	01	116	103	119	109
L16041344-09	1.00	01	121	107	121	110
L16041344-10	1.00	01	106	103	122	112
L16041344-11	1.00	01	105	101	125	113
L16041344-12	1.00	01	109	104	120	112
L16041344-13	1.00	01	106	106	126	115
L16041344-14	1.00	01	106	103	125	113
WG566765-01	1.00	01	105	102	119	110
WG566765-02	1.00	01	109	107	122	111

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	80	-	120
2 - Dibromofluoromethane	80	-	120
3 - 4-Bromofluorobenzene	85	-	120
4 - Toluene-d8	85	-	115

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4741840
Report generated: 05/10/2016 13:22

METHOD BLANK SUMMARY

Login Number: L16041344
Blank File ID: 9M974031
Prep Date: 04/28/16 14:14
Analyzed Date: 04/28/16 14:14
Analyst: ADC

Work Group: WG566765
Blank Sample ID: WG566765-01
Instrument ID: HPMS9
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG566765-02	9M974032	04/28/16 14:45	01
18CPTMW22R(10-10.5)230416	L16041344-02	9M974034	04/28/16 15:46	01
18CPTMW22R(15-15.5)230416	L16041344-03	9M974035	04/28/16 16:16	01
18CPTMW26(5-5.5)230416	L16041344-04	9M974036	04/28/16 16:47	01
18CPTMW26(5-5.5)230416DUP	L16041344-05	9M974037	04/28/16 17:17	01
18CPTMW26(10-10.5)230416	L16041344-06	9M974038	04/28/16 17:47	01
18CPTMW26(14.5-15)230416	L16041344-07	9M974039	04/28/16 18:17	01
18CPTMW26SW(5-5.5)250416	L16041344-08	9M974040	04/28/16 18:47	01
18CPTMW26SW(10-10.5)250416	L16041344-09	9M974041	04/28/16 19:18	01
18CPTMW26SW(15-15.5)250416	L16041344-10	9M974042	04/28/16 19:48	01
18CPTMW26SW(20-20.5)250416	L16041344-11	9M974043	04/28/16 20:18	01
18CPTMW26SW(30-30.5)250416	L16041344-12	9M974044	04/28/16 20:48	01
18CPTMW26SW(40-40.5)250416	L16041344-13	9M974045	04/28/16 21:19	01
18CPTMW26SW(49.5-50)250416	L16041344-14	9M974046	04/28/16 21:49	01

Report Name: BLANK_SUMMARY
PDF File ID: 4741833
Report generated 05/10/2016 13:22

METHOD BLANK SUMMARY

Login Number: L16041344
Blank File ID: 9M974069
Prep Date: 04/30/16 14:45
Analyzed Date: 04/30/16 14:45
Analyst: ADC

Work Group: WG567003
Blank Sample ID: WG567003-01
Instrument ID: HPMS9
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG567003-02	9M974074	04/30/16 17:17	01
18CPTMW22R(5-5.5)230416	L16041344-01	9M974076	04/30/16 18:18	02

Report Name: BLANK_SUMMARY
PDF File ID: 4741833
Report generated 05/10/2016 13:22

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16041344 Prep Date: 04/28/16 14:14 Sample ID: WG566765-01
Instrument ID: HPMS9 Run Date: 04/28/16 14:14 Prep Method: 5030B/5030C/503
File ID: 9M974031 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG566765 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-06-APR-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	5.00	20.0	5.00	1	U
Benzene	0.500	5.00	0.500	1	U
Bromobenzene	0.500	5.00	0.500	1	U
Bromochloromethane	1.00	5.00	1.00	1	U
Bromodichloromethane	0.500	5.00	0.500	1	U
Bromoform	0.500	5.00	0.500	1	U
Bromomethane	1.00	5.00	1.00	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.500	5.00	0.500	1	U
sec-Butylbenzene	0.500	5.00	0.500	1	U
tert-Butylbenzene	0.500	5.00	0.500	1	U
Carbon disulfide	0.500	5.00	0.500	1	U
Carbon tetrachloride	0.500	5.00	0.500	1	U
Chlorobenzene	0.500	5.00	0.500	1	U
Chlorodibromomethane	0.500	5.00	0.500	1	U
Chloroethane	1.00	5.00	1.00	1	U
Chloroform	0.500	5.00	0.500	1	U
Chloromethane	2.00	10.0	2.00	1	U
2-Chlorotoluene	0.500	5.00	0.500	1	U
4-Chlorotoluene	0.500	5.00	0.500	1	U
1,2-Dibromo-3-chloropropane	2.00	10.0	2.00	1	U
1,2-Dibromoethane	0.500	5.00	0.500	1	U
Dibromomethane	0.500	5.00	0.500	1	U
1,2-Dichlorobenzene	0.500	5.00	0.500	1	U
1,3-Dichlorobenzene	0.500	5.00	0.500	1	U
1,4-Dichlorobenzene	0.500	5.00	0.500	1	U
Dichlorodifluoromethane	1.00	5.00	1.00	1	U
1,1-Dichloroethane	1.00	5.00	1.00	1	U
1,2-Dichloroethane	0.500	5.00	0.500	1	U
1,1-Dichloroethene	0.500	5.00	0.500	1	U
cis-1,2-Dichloroethene	0.500	5.00	0.500	1	U
trans-1,2-Dichloroethene	0.500	5.00	0.500	1	U
1,2-Dichloropropane	0.500	5.00	0.500	1	U
1,3-Dichloropropane	0.500	5.00	0.500	1	U
2,2-Dichloropropane	0.500	5.00	0.500	1	U
cis-1,3-Dichloropropene	0.500	5.00	0.500	1	U
trans-1,3-Dichloropropene	0.500	5.00	0.500	1	U
1,1-Dichloropropene	0.500	5.00	0.500	1	U
Ethylbenzene	0.500	5.00	0.500	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.500	5.00	0.500	1	U
Isopropylbenzene	0.500	5.00	0.500	1	U

Report Name:BLANK
PDF ID: 4741834
10-MAY-2016 13:22

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16041344 Prep Date: 04/28/16 14:14 Sample ID: WG566765-01
Instrument ID: HPMS9 Run Date: 04/28/16 14:14 Prep Method: 5030B/5030C/503
File ID: 9M974031 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG566765 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-06-APR-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.500	5.00	0.500	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	1.00	5.00	1.00	1	U
Naphthalene	0.500	5.00	0.581	1	J
n-Propylbenzene	0.500	5.00	0.500	1	U
Styrene	0.500	5.00	0.500	1	U
1,1,1,2-Tetrachloroethane	0.500	5.00	0.500	1	U
1,1,2,2-Tetrachloroethane	0.500	5.00	0.500	1	U
Tetrachloroethene	0.500	5.00	0.500	1	U
Toluene	0.500	5.00	0.500	1	U
1,2,3-Trichlorobenzene	0.500	5.00	0.500	1	U
1,2,4-Trichlorobenzene	0.500	5.00	0.500	1	U
1,1,1-Trichloroethane	0.500	5.00	0.500	1	U
1,1,2-Trichloroethane	0.500	5.00	0.500	1	U
Trichloroethene	0.500	5.00	0.500	1	U
Trichlorofluoromethane	1.00	5.00	1.00	1	U
1,2,3-Trichloropropane	1.00	5.00	1.00	1	U
1,2,4-Trimethylbenzene	0.500	5.00	0.500	1	U
1,3,5-Trimethylbenzene	0.500	5.00	0.500	1	U
Vinyl chloride	1.00	5.00	1.00	1	U
o-Xylene	0.500	5.00	0.500	1	U
m-,p-Xylene	0.500	5.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	102	80 - 120	PASS
1,2-Dichloroethane-d4	105	80 - 120	PASS
Toluene-d8	110	85 - 115	PASS
4-Bromofluorobenzene	119	85 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4741834
10-MAY-2016 13:22

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16041344 Prep Date: 04/30/16 14:45 Sample ID: WG567003-01
Instrument ID: HPMS9 Run Date: 04/30/16 14:45 Prep Method: 5030B/5030C/503
File ID: 9M974069 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG567003 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-06-APR-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	5.00	20.0	5.00	1	U
Benzene	0.500	5.00	0.500	1	U
Bromobenzene	0.500	5.00	0.500	1	U
Bromochloromethane	1.00	5.00	1.00	1	U
Bromodichloromethane	0.500	5.00	0.500	1	U
Bromoform	0.500	5.00	0.500	1	U
Bromomethane	1.00	5.00	1.00	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.500	5.00	0.500	1	U
sec-Butylbenzene	0.500	5.00	0.500	1	U
tert-Butylbenzene	0.500	5.00	0.500	1	U
Carbon disulfide	0.500	5.00	0.500	1	U
Carbon tetrachloride	0.500	5.00	0.500	1	U
Chlorobenzene	0.500	5.00	0.500	1	U
Chlorodibromomethane	0.500	5.00	0.500	1	U
Chloroethane	1.00	5.00	1.00	1	U
Chloroform	0.500	5.00	0.500	1	U
Chloromethane	2.00	10.0	2.00	1	U
2-Chlorotoluene	0.500	5.00	0.500	1	U
4-Chlorotoluene	0.500	5.00	0.500	1	U
1,2-Dibromo-3-chloropropane	2.00	10.0	2.00	1	U
1,2-Dibromoethane	0.500	5.00	0.500	1	U
Dibromomethane	0.500	5.00	0.500	1	U
1,2-Dichlorobenzene	0.500	5.00	0.500	1	U
1,3-Dichlorobenzene	0.500	5.00	0.500	1	U
1,4-Dichlorobenzene	0.500	5.00	0.500	1	U
Dichlorodifluoromethane	1.00	5.00	1.00	1	U
1,1-Dichloroethane	1.00	5.00	1.00	1	U
1,2-Dichloroethane	0.500	5.00	0.500	1	U
1,1-Dichloroethene	0.500	5.00	0.500	1	U
cis-1,2-Dichloroethene	0.500	5.00	0.500	1	U
trans-1,2-Dichloroethene	0.500	5.00	0.500	1	U
1,2-Dichloropropane	0.500	5.00	0.500	1	U
1,3-Dichloropropane	0.500	5.00	0.500	1	U
2,2-Dichloropropane	0.500	5.00	0.500	1	U
cis-1,3-Dichloropropene	0.500	5.00	0.500	1	U
trans-1,3-Dichloropropene	0.500	5.00	0.500	1	U
1,1-Dichloropropene	0.500	5.00	0.500	1	U
Ethylbenzene	0.500	5.00	0.500	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.500	5.00	0.500	1	U
Isopropylbenzene	0.500	5.00	0.500	1	U

Report Name:BLANK
PDF ID: 4741834
10-MAY-2016 13:22

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16041344 Prep Date: 04/30/16 14:45 Sample ID: WG567003-01
Instrument ID: HPMS9 Run Date: 04/30/16 14:45 Prep Method: 5030B/5030C/503
File ID: 9M974069 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG567003 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-06-APR-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.500	5.00	0.500	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	1.00	5.00	1.00	1	U
Naphthalene	0.500	5.00	0.500	1	U
n-Propylbenzene	0.500	5.00	0.500	1	U
Styrene	0.500	5.00	0.500	1	U
1,1,1,2-Tetrachloroethane	0.500	5.00	0.500	1	U
1,1,2,2-Tetrachloroethane	0.500	5.00	0.500	1	U
Tetrachloroethene	0.500	5.00	0.500	1	U
Toluene	0.500	5.00	0.500	1	U
1,2,3-Trichlorobenzene	0.500	5.00	0.500	1	U
1,2,4-Trichlorobenzene	0.500	5.00	0.500	1	U
1,1,1-Trichloroethane	0.500	5.00	0.500	1	U
1,1,2-Trichloroethane	0.500	5.00	0.500	1	U
Trichloroethene	0.500	5.00	0.500	1	U
Trichlorofluoromethane	1.00	5.00	1.00	1	U
1,2,3-Trichloropropane	1.00	5.00	1.00	1	U
1,2,4-Trimethylbenzene	0.500	5.00	0.500	1	U
1,3,5-Trimethylbenzene	0.500	5.00	0.500	1	U
Vinyl chloride	1.00	5.00	1.00	1	U
o-Xylene	0.500	5.00	0.500	1	U
m-,p-Xylene	0.500	5.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	104	80 - 120	PASS
1,2-Dichloroethane-d4	108	80 - 120	PASS
Toluene-d8	112	85 - 115	PASS
4-Bromofluorobenzene	124	85 - 120	FAIL

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4741834
10-MAY-2016 13:22

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16041344 | Run Date: 04/28/2016 | Sample ID: WG566765-02
Instrument ID: HPMS9 | Run Time: 14:45 | Prep Method: 5030B/5030C/503
File ID: 9M974032 | Analyst: ADC | Method: 8260B
Workgroup (AAB#): WG566765 | Matrix: Soil | Units: ug/kg
QC Key: DOD4 | Lot#: STD75739 | Cal ID: HPMS9-06-APR-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	17.5	87.4	20 - 160	
Benzene	20.0	19.0	94.8	75 - 125	
Bromobenzene	20.0	22.2	111	65 - 120	
Bromochloromethane	20.0	19.5	97.3	70 - 125	
Bromodichloromethane	20.0	18.7	93.6	70 - 130	
Bromoform	20.0	20.2	101	55 - 135	
Bromomethane	20.0	19.3	96.3	30 - 160	
2-Butanone	20.0	19.2	96.2	30 - 160	
n-Butylbenzene	20.0	20.7	104	65 - 140	
sec-Butylbenzene	20.0	22.9	115	65 - 130	
tert-Butylbenzene	20.0	23.6	118	65 - 130	
Carbon disulfide	20.0	17.0	85.2	45 - 160	
Carbon tetrachloride	20.0	20.2	101	65 - 135	
Chlorobenzene	20.0	20.5	103	75 - 125	
Chlorodibromomethane	20.0	19.1	95.5	65 - 130	
Chloroethane	20.0	20.2	101	40 - 155	
Chloroform	20.0	18.9	94.6	70 - 125	
Chloromethane	20.0	23.2	116	50 - 130	
2-Chlorotoluene	20.0	25.2	126	70 - 130	
4-Chlorotoluene	20.0	20.8	104	75 - 125	
1,2-Dibromo-3-chloropropane	20.0	25.5	128	40 - 135	
1,2-Dibromoethane	20.0	19.5	97.6	70 - 125	
Dibromomethane	20.0	18.2	91.1	75 - 130	
1,2-Dichlorobenzene	20.0	21.8	109	75 - 120	
1,3-Dichlorobenzene	20.0	21.9	110	70 - 125	
1,4-Dichlorobenzene	20.0	21.8	109	70 - 125	
Dichlorodifluoromethane	20.0	19.2	95.9	35 - 135	
1,1-Dichloroethane	20.0	18.5	92.7	75 - 125	
1,2-Dichloroethane	20.0	19.1	95.4	70 - 135	
1,1-Dichloroethene	20.0	18.1	90.7	65 - 135	
cis-1,2-Dichloroethene	20.0	20.1	100	65 - 125	
trans-1,2-Dichloroethene	20.0	19.5	97.6	65 - 135	
1,2-Dichloropropane	20.0	19.6	98.2	70 - 120	
1,3-Dichloropropane	20.0	21.6	108	75 - 125	
2,2-Dichloropropane	20.0	19.1	95.4	65 - 135	
cis-1,3-Dichloropropene	20.0	20.3	101	70 - 125	
trans-1,3-Dichloropropene	20.0	20.0	100	65 - 125	
1,1-Dichloropropene	20.0	18.7	93.6	70 - 135	
Ethylbenzene	20.0	20.3	102	75 - 125	
2-Hexanone	20.0	17.8	88.8	45 - 145	
Hexachlorobutadiene	20.0	21.3	107	55 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4741835
Report generated: 05/10/2016 13:22

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16041344 | Run Date: 04/28/2016 | Sample ID: WG566765-02
Instrument ID: HPMS9 | Run Time: 14:45 | Prep Method: 5030B/5030C/503
File ID: 9M974032 | Analyst: ADC | Method: 8260B
Workgroup (AAB#): WG566765 | Matrix: Soil | Units: ug/kg
QC Key: DOD4 | Lot#: STD75739 | Cal ID: HPMS9-06-APR-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	20.5	102	75 - 130	
p-Isopropyltoluene	20.0	22.1	111	75 - 135	
4-Methyl-2-pentanone	20.0	18.2	91.1	45 - 145	
Methylene chloride	20.0	18.7	93.7	55 - 140	
Naphthalene	20.0	21.6	108	40 - 125	
n-Propylbenzene	20.0	22.9	115	65 - 135	
Styrene	20.0	19.6	97.8	75 - 125	
1,1,1,2-Tetrachloroethane	20.0	21.3	106	75 - 125	
1,1,2,2-Tetrachloroethane	20.0	21.7	109	55 - 130	
Tetrachloroethene	20.0	19.1	95.3	65 - 140	
Toluene	20.0	19.8	98.9	70 - 125	
1,2,3-Trichlorobenzene	20.0	21.7	108	60 - 135	
1,2,4-Trichlorobenzene	20.0	20.7	104	65 - 130	
1,1,1-Trichloroethane	20.0	19.8	99.1	70 - 135	
1,1,2-Trichloroethane	20.0	20.9	105	60 - 125	
Trichloroethene	20.0	18.6	93.1	75 - 125	
Trichlorofluoromethane	20.0	19.3	96.3	25 - 185	
1,2,3-Trichloropropane	20.0	24.0	120	65 - 130	
1,2,4-Trimethylbenzene	20.0	23.2	116	65 - 135	
1,3,5-Trimethylbenzene	20.0	22.8	114	65 - 135	
Vinyl chloride	20.0	20.4	102	60 - 125	
o-Xylene	20.0	21.0	105	75 - 125	
m-,p-Xylene	40.0	40.5	101	80 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	107	80 - 120	PASS
1,2-Dichloroethane-d4	109	80 - 120	PASS
Toluene-d8	111	85 - 115	PASS
4-Bromofluorobenzene	122	85 - 120	FAIL

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4741835
Report generated: 05/10/2016 13:22

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16041344 | Run Date: 04/30/2016 | Sample ID: WG567003-02
Instrument ID: HPMS9 | Run Time: 17:17 | Prep Method: 5030B/5030C/503
File ID: 9M974074 | Analyst: ADC | Method: 8260B
Workgroup (AAB#): WG567003 | Matrix: Soil | Units: ug/kg
QC Key: DOD4 | Lot#: STD75739 | Cal ID: HPMS9-06-APR-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	15.5	77.6	20 - 160	
Benzene	20.0	16.5	82.6	75 - 125	
Bromobenzene	20.0	19.1	95.6	65 - 120	
Bromochloromethane	20.0	17.1	85.4	70 - 125	
Bromodichloromethane	20.0	16.7	83.4	70 - 130	
Bromoform	20.0	17.9	89.5	55 - 135	
Bromomethane	20.0	17.3	86.4	30 - 160	
2-Butanone	20.0	18.1	90.7	30 - 160	
n-Butylbenzene	20.0	17.1	85.5	65 - 140	
sec-Butylbenzene	20.0	18.7	93.5	65 - 130	
tert-Butylbenzene	20.0	19.6	98.0	65 - 130	
Carbon disulfide	20.0	15.3	76.6	45 - 160	
Carbon tetrachloride	20.0	16.9	84.3	65 - 135	
Chlorobenzene	20.0	17.8	89.2	75 - 125	
Chlorodibromomethane	20.0	18.1	90.7	65 - 130	
Chloroethane	20.0	17.7	88.6	40 - 155	
Chloroform	20.0	16.9	84.5	70 - 125	
Chloromethane	20.0	21.5	108	50 - 130	
2-Chlorotoluene	20.0	21.1	105	70 - 130	
4-Chlorotoluene	20.0	17.8	89.0	75 - 125	
1,2-Dibromo-3-chloropropane	20.0	22.9	114	40 - 135	
1,2-Dibromoethane	20.0	18.2	91.0	70 - 125	
Dibromomethane	20.0	16.3	81.6	75 - 130	
1,2-Dichlorobenzene	20.0	18.2	91.0	75 - 120	
1,3-Dichlorobenzene	20.0	18.0	89.9	70 - 125	
1,4-Dichlorobenzene	20.0	18.4	92.2	70 - 125	
Dichlorodifluoromethane	20.0	19.3	96.3	35 - 135	
1,1-Dichloroethane	20.0	16.4	82.2	75 - 125	
1,2-Dichloroethane	20.0	18.0	90.2	70 - 135	
1,1-Dichloroethene	20.0	15.9	79.5	65 - 135	
cis-1,2-Dichloroethene	20.0	17.4	86.9	65 - 125	
trans-1,2-Dichloroethene	20.0	17.2	85.8	65 - 135	
1,2-Dichloropropane	20.0	17.4	86.8	70 - 120	
1,3-Dichloropropane	20.0	19.6	97.9	75 - 125	
2,2-Dichloropropane	20.0	16.8	84.2	65 - 135	
cis-1,3-Dichloropropene	20.0	17.8	88.8	70 - 125	
trans-1,3-Dichloropropene	20.0	18.1	90.5	65 - 125	
1,1-Dichloropropene	20.0	16.2	81.1	70 - 135	
Ethylbenzene	20.0	17.5	87.4	75 - 125	
2-Hexanone	20.0	16.7	83.7	45 - 145	
Hexachlorobutadiene	20.0	17.0	85.1	55 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4741835
Report generated: 05/10/2016 13:22

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16041344 | Run Date: 04/30/2016 | Sample ID: WG567003-02
Instrument ID: HPMS9 | Run Time: 17:17 | Prep Method: 5030B/5030C/503
File ID: 9M974074 | Analyst: ADC | Method: 8260B
Workgroup (AAB#): WG567003 | Matrix: Soil | Units: ug/kg
QC Key: DOD4 | Lot#: STD75739 | Cal ID: HPMS9-06-APR-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	17.1	85.7	75 - 130	
p-Isopropyltoluene	20.0	18.0	90.1	75 - 135	
4-Methyl-2-pentanone	20.0	17.5	87.7	45 - 145	
Methylene chloride	20.0	16.9	84.5	55 - 140	
Naphthalene	20.0	18.6	92.9	40 - 125	
n-Propylbenzene	20.0	19.2	96.2	65 - 135	
Styrene	20.0	16.5	82.5	75 - 125	
1,1,1,2-Tetrachloroethane	20.0	18.8	93.8	75 - 125	
1,1,2,2-Tetrachloroethane	20.0	18.6	92.8	55 - 130	
Tetrachloroethene	20.0	16.4	81.8	65 - 140	
Toluene	20.0	17.4	86.8	70 - 125	
1,2,3-Trichlorobenzene	20.0	17.3	86.6	60 - 135	
1,2,4-Trichlorobenzene	20.0	15.8	79.1	65 - 130	
1,1,1-Trichloroethane	20.0	17.3	86.6	70 - 135	
1,1,2-Trichloroethane	20.0	18.3	91.6	60 - 125	
Trichloroethene	20.0	16.3	81.6	75 - 125	
Trichlorofluoromethane	20.0	17.0	85.2	25 - 185	
1,2,3-Trichloropropane	20.0	21.0	105	65 - 130	
1,2,4-Trimethylbenzene	20.0	18.9	94.7	65 - 135	
1,3,5-Trimethylbenzene	20.0	19.0	95.1	65 - 135	
Vinyl chloride	20.0	21.6	108	60 - 125	
o-Xylene	20.0	18.0	90.2	75 - 125	
m-,p-Xylene	40.0	34.0	84.9	80 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	108	80 - 120	PASS
1,2-Dichloroethane-d4	112	80 - 120	PASS
Toluene-d8	112	85 - 115	PASS
4-Bromofluorobenzene	121	85 - 120	FAIL

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4741835
Report generated: 05/10/2016 13:22

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16041344
Instrument: HPMS9
Analyst: FJB
Workgroup: WG555000

Tune ID: WG555000-01
Run Date: 01/25/2016
Run Time: 10:27
File ID: 9M972470
Cal ID: HPMS9 - 25-JAN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	23.0	10289	PASS
75.0	95.0	30.0	60.0	49.3	22030	PASS
95.0	95.0	100	100	100	44728	PASS
96.0	95.0	5.00	9.00	6.98	3122	PASS
173	174	0	2.00	0.381	160	PASS
174	95.0	50.0	100	93.9	41989	PASS
175	174	5.00	9.00	6.62	2778	PASS
176	174	95.0	101	95.6	40133	PASS
177	176	5.00	9.00	6.39	2564	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG555000-02	STD-S	01	01/25/2016 11:22	
WG555000-03	STD-S	01	01/25/2016 11:52	
WG555000-04	STD-S	01	01/25/2016 12:23	
WG555000-05	STD-CCV-S	01	01/25/2016 12:53	
WG555000-06	STD-S	01	01/25/2016 13:23	
WG555000-07	STD-S	01	01/25/2016 13:54	
WG555000-08	STD-S	01	01/25/2016 14:25	
WG555000-09	STD-S	01	01/25/2016 14:56	
WG555000-10	SSCV-S	01	01/25/2016 15:56	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4741837
Report generated 05/10/2016 13:22

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16041344
Instrument: HPMS9
Analyst: ADC
Workgroup: WG563259

Tune ID: WG563259-01
Run Date: 04/06/2016
Run Time: 09:33
File ID: 9M973592
Cal ID: HPMS9 - 06-APR-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.9	9512	PASS
75.0	95.0	30.0	60.0	46.0	20002	PASS
95.0	95.0	100	100	100	43469	PASS
96.0	95.0	5.00	9.00	6.46	2809	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	91.3	39688	PASS
175	174	5.00	9.00	7.37	2925	PASS
176	174	95.0	101	96.9	38458	PASS
177	176	5.00	9.00	6.59	2534	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG563259-02	STD-CCV-S	01	04/06/2016 10:29	
WG563259-03	STD-S	01	04/06/2016 11:31	
WG563259-04	STD-S	01	04/06/2016 12:02	
WG563259-05	STD-S	01	04/06/2016 12:32	
WG563259-06	STD-S	01	04/06/2016 13:03	
WG563259-07	STD-S	01	04/06/2016 13:33	
WG563259-08	STD-S	01	04/06/2016 16:15	
WG563259-09	STD-S	01	04/06/2016 16:46	
WG563259-10	STD-S	01	04/06/2016 17:16	
WG563259-11	SSCV-S	01	04/06/2016 18:18	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4741837
Report generated 05/10/2016 13:22

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16041344
Instrument: HPMS9
Analyst: ADC
Workgroup: WG566763

Tune ID: WG566763-01
Run Date: 04/28/2016
Run Time: 12:17
File ID: 9M974027
Cal ID: HPMS9 - 06-APR-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.0	9692	PASS
75.0	95.0	30.0	60.0	47.4	20847	PASS
95.0	95.0	100	100	100	43965	PASS
96.0	95.0	5.00	9.00	7.08	3114	PASS
173	174	0	2.00	0.387	135	PASS
174	95.0	50.0	100	79.4	34923	PASS
175	174	5.00	9.00	7.46	2607	PASS
176	174	95.0	101	98.0	34238	PASS
177	176	5.00	9.00	6.61	2264	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG566763-02	CCV-S	01	04/28/2016 13:13	
WG566765-01	BLANK	01	04/28/2016 14:14	
WG566765-02	LCS	01	04/28/2016 14:45	
L16041344-02	18CPTMW22R(10-10.5)230416	01	04/28/2016 15:46	
L16041344-03	18CPTMW22R(15-15.5)230416	01	04/28/2016 16:16	
L16041344-04	18CPTMW26(5-5.5)230416	01	04/28/2016 16:47	
L16041344-05	18CPTMW26(5-5.5)230416DUP	01	04/28/2016 17:17	
L16041344-06	18CPTMW26(10-10.5)230416	01	04/28/2016 17:47	
L16041344-07	18CPTMW26(14.5-15)230416	01	04/28/2016 18:17	
L16041344-08	18CPTMW26SW(5-5.5)250416	01	04/28/2016 18:47	
L16041344-09	18CPTMW26SW(10-10.5)250416	01	04/28/2016 19:18	
L16041344-10	18CPTMW26SW(15-15.5)250416	01	04/28/2016 19:48	
L16041344-11	18CPTMW26SW(20-20.5)250416	01	04/28/2016 20:18	
L16041344-12	18CPTMW26SW(30-30.5)250416	01	04/28/2016 20:48	
L16041344-13	18CPTMW26SW(40-40.5)250416	01	04/28/2016 21:19	
L16041344-14	18CPTMW26SW(49.5-50)250416	01	04/28/2016 21:49	
WG566711-02	MS	01	04/28/2016 22:51	
WG566711-03	MSD	01	04/28/2016 23:20	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4741837
Report generated 05/10/2016 13:22

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16041344
Instrument: HPMS9
Analyst: ADC
Workgroup: WG567052

Tune ID: WG567052-01
Run Date: 04/30/2016
Run Time: 12:43
File ID: 9M974065
Cal ID: HPMS9 - 06-APR-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.9	8872	PASS
75.0	95.0	30.0	60.0	46.1	19506	PASS
95.0	95.0	100	100	100	42357	PASS
96.0	95.0	5.00	9.00	6.35	2690	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	89.4	37858	PASS
175	174	5.00	9.00	6.85	2593	PASS
176	174	95.0	101	97.4	36877	PASS
177	176	5.00	9.00	6.48	2391	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG567052-02	CCV-S	01	04/30/2016 13:43	
WG567003-01	BLANK	01	04/30/2016 14:45	
WG567003-02	LCS	01	04/30/2016 17:17	
L16041344-01	18CPTMW22R(5-5.5)230416	02	04/30/2016 18:18	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4741837
Report generated 05/10/2016 13:22

Calibration Table Report
Method: A9FOO_SL.M
Title: FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Calibration: Wed Jan 27 09:49:02 2016
Curve: WG555000
Calibration Files

Compound	5 9M972472.D	20 9M972473.D	50 9M972474.D	100 9M972475.D	200 9M972476.D	300 9M972477.D	400 9M972478.D	500 9M972479.D	Avg	%RSD	R^2 Linear
Fluorobenzene	ISTD										
Acetonitrile		0.053	0.046	0.048	0.052	0.046	0.052	0.054	0.050	6.657	
3-Chloro-1-propene	0.498	0.524	0.450	0.519	0.514	0.434	0.507	0.503	0.494	6.719	
2-Chloro-1,3-butadiene	0.534	0.576	0.519	0.592	0.585	0.509	0.593	0.584	0.561	6.202	
Ethyl Acetate		0.333	0.313	0.339	0.338	0.300	0.341	0.344	0.330	5.124	
Methacrylonitrile	0.102	0.109	0.101	0.112	0.110	0.096	0.112	0.112	0.107	5.912	
Isobutyl Alcohol	0.014	0.018	0.018	0.021	0.024	0.021	0.025	0.025	0.021	18.016	0.993
1-Butanol		0.010	0.013	0.015	0.017	0.015	0.018	0.018	0.015	17.838	0.992
Methyl methacrylate	0.236	0.246	0.231	0.265	0.265	0.231	0.271	0.269	0.252	7.005	
2-Nitropropane	0.069	0.073	0.074	0.083	0.089	0.079	0.093	0.095	0.082	12.090	
Chlorobenzene-d5	ISTD										
Cyclohexanone		0.020	0.022	0.025	0.028	0.023	0.027	0.028	0.025	12.963	
1,4-Dichlorobenzene-d4	ISTD										

Wed Jan 27 10:01:56 2016

Calibration Table Report
Method: 8260-SL.M
Title: 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Calibration: Wed Apr 06 17:47:28 2016
Curve: WG563259
Calibration Files

Compound	0.5 9M973596.D	1 9M973597.D	2 9M973598.D	5 9M973599.D	20 9M973600.D	50 9M973594.D	100 9M973605.D	200 9M973606.D	300 9M973607.D	Avg	%RSD	R^2 Linear	Quadratic
Fluorobenzene	ISTD												
Dichlorodifluoromethane			0.321	0.344	0.364	0.439	0.352	0.427	0.437	0.384	12.892		
Chloromethane			0.411	0.346	0.327	0.352	0.289	0.365	0.378	0.353	10.934		
Vinyl Chloride		0.309	0.277	0.322	0.308	0.270	0.211	0.222	0.229	0.268	16.161	0.993	
1,3-Butadiene		0.146	0.201	0.181	0.179	0.160	0.154			0.170	11.979		
Bromomethane		0.205	0.219	0.231	0.210	0.230	0.191	0.219	0.225	0.216	6.345		
Chloroethane			0.195	0.212	0.214	0.223	0.183	0.219	0.227	0.211	7.590		
Trichlorofluoromethane		0.395	0.427	0.437	0.469	0.497	0.396	0.465	0.478	0.445	8.475		
Diethyl ether		0.265	0.262	0.267	0.267	0.274	0.230		0.269	0.262	5.615		
Isoprene			0.323	0.330	0.362	0.390	0.322	0.362	0.366	0.351	7.435		
Acrolein		0.023	0.024	0.023	0.026	0.027	0.033			0.026	13.903		
1,1,2-Trichloro-1,2,2-Trifluoroet			0.239	0.261	0.288	0.302	0.242	0.284	0.289	0.272	9.162		
Acetone				0.207	0.126	0.108	0.088	0.096	0.100	0.121	36.552	0.996	
1,1-Dichloroethene		0.393	0.440	0.451	0.487	0.508	0.403	0.475	0.489	0.456	9.106		
Tert-Butyl Alcohol			0.046	0.044	0.043	0.046	0.040			0.044	5.343		
Dimethyl Sulfide		0.163	0.203	0.215	0.246	0.257	0.212	0.239	0.251	0.223	14.040		
Iodomethane				0.140	0.151	0.228	0.180	0.225	0.230	0.192	21.187	0.992	
Methyl acetate			0.300	0.297	0.295	0.305	0.255	0.279	0.298	0.290	6.019		
Methylene Chloride			0.297	0.289	0.297	0.300	0.237	0.279	0.295	0.285	7.859		
Carbon Disulfide			0.879	0.837	0.889	0.940	0.768	0.859	0.880	0.865	6.109		
Acrylonitrile		0.130	0.133	0.134	0.135	0.147	0.127		0.158	0.138	8.026		
Methyl Tert Butyl Ether		0.710	0.738	0.776	0.820	0.840	0.665	0.765	0.816	0.766	7.804		
trans-1,2-Dichloroethene		0.386	0.431	0.419	0.467	0.493	0.389	0.455	0.470	0.439	8.924		
n-Hexane			0.693	0.590	0.595	0.575	0.493	0.518	0.524	0.570	11.751		
Diisopropyl ether		1.185	1.152	1.182	1.185	1.243	1.009		1.168	1.161	6.230		
Vinyl Acetate			0.435	0.513	0.546	0.690	0.532	0.621	0.664	0.572	15.821	0.994	
1,1-Dichloroethane		0.465	0.518	0.538	0.574	0.590	0.463	0.544	0.569	0.532	9.010		
Ethyl-Tert-Butyl ether		1.047	1.008	1.036	1.043	1.081	0.892		1.038	1.021	5.954		
2-Butanone				0.163	0.160	0.165	0.140	0.161	0.175	0.161	7.047		
Propionitrile		0.048	0.052	0.053	0.051	0.055	0.048		0.059	0.052	7.830		
2,2-Dichloropropane			0.360	0.367	0.386	0.437	0.344	0.408	0.420	0.389	8.790		
cis-1,2-Dichloroethene		0.241	0.287	0.289	0.317	0.322	0.257	0.302	0.316	0.291	10.075		
Chloroform		0.423	0.428	0.462	0.481	0.489	0.390	0.458	0.482	0.452	7.739		
1-Bromopropane			0.032	0.044	0.051	0.056	0.046	0.052	0.055	0.048	17.607	0.996	
Bromochloromethane		0.135	0.168	0.190	0.194	0.207	0.164	0.192	0.205	0.182	13.364		
Tetrahydrofuran			0.123	0.115	0.112	0.116	0.101		0.118	0.114	6.505		
Dibromofluoromethane				0.247	0.231	0.268	0.266	0.251		0.253	5.970		
1,1,1-Trichloroethane		0.343	0.351	0.372	0.416	0.433	0.343	0.408	0.426	0.386	9.993		
Cyclohexane		0.528	0.595	0.610	0.651	0.675	0.557	0.630	0.642	0.611	8.109		
1,1-Dichloropropene		0.302	0.349	0.362	0.378	0.396	0.314	0.366	0.380	0.356	9.221		
Tert-Amyl-Methyl ether		0.761	0.744	0.770	0.776	0.799	0.663		0.772	0.755	5.813		
Carbon Tetrachloride			0.31341	0.33551	0.37426	0.39892	0.31861	0.38498	0.39957	0.36075	10.3644		
1,2-Dichloroethane-d4				0.26412	0.24802	0.27423	0.2775	0.25788		0.26435	4.55185		
Heptane										0	0		
1,2-Dichloroethane		0.34418	0.40431	0.39865	0.4175	0.41985	0.33321	0.38495	0.40827	0.38886	8.47358		
Benzene	1.21945	1.07403	1.12524	1.10527	1.14242	1.16809	0.92092	1.0739	1.10779	1.10412	7.48919		
Trichloroethene		0.31254	0.31563	0.31565	0.31885	0.33106	0.26092	0.31002	0.31982	0.31056	6.7703		
Methylcyclohexane		0.44779	0.43846	0.47932	0.50651	0.52011	0.43207	0.48337	0.48884	0.47456	6.76996		
1,2-Dichloropropane		0.25742	0.28425	0.3095	0.31809	0.33243	0.26219	0.30921	0.32904	0.30027	9.65942		
1,4-Dioxane			0.00358	0.00385	0.00384	0.00433	0.00386			0.00389	6.99887		
Bromodichloromethane			0.30575	0.31422	0.35204	0.37916	0.30019	0.35975	0.384	0.34216	10.2601		
Dibromomethane		0.15183	0.16316	0.17868	0.18876	0.20056	0.16023	0.18831	0.20263	0.17927	10.6372		
2-Chloroethyl Vinyl Ether			0.13333	0.14657	0.15865	0.17532	0.14997	0.17363	0.18023	0.15967	10.9171		
4-Methyl-2-Pentanone				0.13027	0.13937	0.14048	0.12107	0.14207	0.15624	0.13825	8.57761		
cis-1,3-Dichloropropene			0.40667	0.40942	0.42702	0.47107	0.37094	0.43662	0.46459	0.42662	8.1829		
Dimethyl Disulfide			0.36901	0.41872	0.46393	0.5137	0.43386	0.49585	0.50079	0.45655	11.4623		
Chlorobenzene-d5	ISTD												
Toluene-d8				1.13196	1.13088	1.30099	1.22413	1.17028		1.19165	6.04016		
Toluene	1.61219	1.48974	1.56315	1.53008	1.59395	1.67032	1.25619	1.49851	1.47925	1.52149	7.74689		
Ethyl Methacrylate				0.41975	0.4711	0.51586	0.40825	0.47534	0.48896	0.46321	8.92932		
trans-1,3-Dichloropropene			0.42937	0.46085	0.51207	0.57552	0.43233	0.52283	0.53425	0.49532	11.2077		
1,1,2-Trichloroethane		0.2293	0.29955	0.30264	0.32292	0.34393	0.26026	0.31526	0.32236	0.29953	12.4735		
2-Hexanone				0.29578	0.31857	0.34977	0.27856	0.34895	0.37083	0.32708	10.8635		
1,3-Dichloropropane		0.46311	0.52068	0.51191	0.553	0.58052	0.43541	0.52074	0.53484	0.51503	9.05764		
Tetrachloroethene		0.29083	0.32282	0.31024	0.33607	0.36695	0.28326	0.33869	0.33259	0.32268	8.46057		
Dibromochloromethane			0.31668	0.33233	0.38385	0.42138	0.32331	0.39925	0.41508	0.37027	12.1586		
1,2-Dibromoethane				0.3097	0.33602	0.35904	0.27936	0.34233	0.35327	0.32995	9.14215		
1-Chlorohexane		0.47093	0.49056	0.47786	0.52976	0.56979	0.44743	0.51603	0.50488	0.50091	7.62739		
Chlorobenzene		1.01857	1.10077	1.06982	1.11065	1.1666	0.87778	1.05237	1.05008	1.05583	8.05461		
1,1,1,2-Tetrachloroethane			0.32188	0.32664	0.37788	0.40639	0.3073	0.38163	0.38922	0.35871	10.872		
Ethylbenzene	0.52143	0.53436	0.57903	0.55623	0.61424	0.64352	0.49066	0.58906	0.58341	0.56799	8.36618		
m-,p-Xylene	0.80077	0.66899	0.68611	0.6782	0.73094	0.77557	0.57886	0.69733	0.68594	0.7003	9.21732		
o-Xylene	0.60031	0.61925	0.68439	0.66416	0.69917	0.75296	0.57232	0.70275	0.71046	0.66731	8.80086		
Styrene		1.0373	1.07384	1.08894	1.19996	1.30098	0.99018	1.21772	1.23313	1.14276	9.5938		
Bromoform			0.18687	0.21759	0.23897	0.28565	0.22359	0.2955	0.32514	0.25333	19.5821		0.997
Isopropylbenzene		1.68774	1.6857	1.66547	1.80713	1.95194	1.47104	1.81646	1.80093	1.7358	8.21749		
1,4-Dichlorobenzene-d4	ISTD												
1,1,2,2-Tetrachloroethane		0.5444	0.72678	0.76491	0.83216	0.97949	0.68259	0.81781	0.89422	0.7803	17.1288	0.99	
p-Bromofluorobenzene				0.79123	0.79828	1.029	0.90393	0.80774		0.86604	11.7727		
1,2,3-Trichloropropane		0.22403	0.25537	0.25246	0.25094	0.2923	0.20359	0.24077	0.2657	0.24814	10.7248		

trans-1,4-Dichloro-2-Butene		0.27171	0.26914	0.29308	0.38778	0.26316	0.30387	0.32522	0.302	14.4884	
n-Propylbenzene	4.05685	3.75924	3.71896	3.86505	4.6452	3.07167	3.36046	3.42768	3.73814	12.8869	
Bromobenzene	0.86454	0.91854	0.88256	0.9322	1.09373	0.73348	0.8172	0.87121	0.88918	11.6372	
1,3,5-Trimethylbenzene			2.89935	2.99421	3.53144	2.3397	2.61687	2.69599	2.84626	14.2799	
2-Chlorotoluene		2.26857	2.2413	2.34896	2.80152	1.8716	2.03405	2.06176	2.23254	13.4065	
4-Chlorotoluene	2.47026	2.45111	2.30891	2.39901	2.8502	1.84221	2.12289	2.23652	2.33514	12.5325	
a-Methylstyrene			1.29056	1.42432	1.7914	1.219	1.37439	1.41967	1.41989	13.9866	
tert-Butylbenzene			0.61757	0.65029	0.78744	0.51681	0.59207	0.61945	0.63061	14.1324	
1,2,4-Trimethylbenzene	3.90048	3.3016	3.06186	3.00214	3.57843	2.37041	2.6865	2.76415	3.0832	16.148	0.99
sec-Butylbenzene	3.74125	3.67112	3.56079	3.78968	4.54565	3.04282	3.43902	3.481	3.65892	11.6849	
p-Isopropyltoluene			2.92258	3.1199	3.7687	2.53184	2.89081	2.93937	3.02887	13.5408	
1,3-Dichlorobenzene	1.83452	1.84233	1.66665	1.75292	2.12917	1.41986	1.67401	1.74427	1.75797	11.3908	
1,4-Dichlorobenzene	2.01312	1.89964	1.70378	1.75876	2.11676	1.4289	1.69182	1.74055	1.79417	11.9044	
n-Butylbenzene	2.84419	2.75013	2.68458	2.82669	3.43808	2.33612	2.69074	2.72167	2.78653	10.998	
1,2-Dichlorobenzene	1.82783	1.61719	1.58891	1.65012	1.99737	1.35931	1.64467	1.69357	1.67237	11.0609	
1,2-Dibromo-3-Chloropropane			0.15996	0.19339	0.24797	0.1736	0.21779	0.23454	0.20454	16.9791	0.991
1,2,4-Trichlorobenzene	1.39125	1.17251	1.16617	1.1473	1.48008	1.0466	1.2227	1.24536	1.23399	11.3188	
Hexachlorobutadiene	0.58074	0.56991	0.53761	0.57937	0.71616	0.49159	0.59053	0.5902	0.58201	10.9512	
Naphthalene		3.08125	2.7856	2.89627	3.68341	2.51558	2.90109	2.95451	2.97396	12.0625	
1,2,3-Trichlorobenzene	1.32311	1.13072	1.05256	1.10905	1.42827	0.99218	1.14378	1.17822	1.16974	12.1576	

Fri Apr 08 14:14:52 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16041344 Run Date: 04/06/2016 Sample ID: WG563259-11
Instrument ID: HPMS9 Run Time: 18:18 Method: 8260B
File ID: 9M973609 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG563259 Cal ID: HPMS9 - 06-APR-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.8	ug/kg	0.459	1.60	20	
1,1-Dichloroethene	CCC	50.0	51.0	ug/kg	0.466	2.10	20	
1,2-Dichloropropane	CCC	50.0	54.2	ug/kg	0.326	8.40	20	
Ethylbenzene	CCC	50.0	52.8	ug/kg	0.600	5.60	20	
Toluene	CCC	50.0	51.5	ug/kg	1.57	3.00	20	
Vinyl Chloride	CCC	50.0	53.2	ug/kg	0.246	6.40	20	
Bromoform	SPCC	50.0	50.1	ug/kg	0.241	0.200	20	
Chlorobenzene	SPCC	50.0	53.1	ug/kg	1.12	6.20	20	
Chloromethane	SPCC	50.0	57.0	ug/kg	0.402	14.0	20	
1,1-Dichloroethane	SPCC	50.0	50.1	ug/kg	0.533	0.200	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	48.2	ug/kg	0.810	3.60	20	
Acetone		50.0	52.0	ug/kg	0.109	4.00	20	
Benzene		50.0	50.7	ug/kg	1.12	1.40	20	
Bromobenzene		50.0	49.8	ug/kg	0.886	0.400	20	
Bromochloromethane		50.0	51.3	ug/kg	0.187	2.70	20	
Bromodichloromethane		50.0	50.6	ug/kg	0.346	1.20	20	
Bromomethane		50.0	52.4	ug/kg	0.226	4.70	20	
2-Butanone		50.0	52.5	ug/kg	0.169	5.00	20	
n-Butylbenzene		50.0	51.3	ug/kg	2.86	2.70	20	
sec-Butylbenzene		50.0	52.8	ug/kg	3.86	5.60	20	
tert-Butylbenzene		50.0	52.3	ug/kg	0.660	4.60	20	
Carbon Disulfide		50.0	48.7	ug/kg	0.841	2.70	20	
Carbon Tetrachloride		50.0	51.6	ug/kg	0.372	3.10	20	
Dibromochloromethane		50.0	50.6	ug/kg	0.375	1.30	20	
Chloroethane		50.0	54.8	ug/kg	0.231	9.50	20	
2-Chlorotoluene		50.0	51.3	ug/kg	2.29	2.50	20	
4-Chlorotoluene		50.0	52.0	ug/kg	2.43	4.00	20	
1,2-Dibromo-3-Chloropropane		50.0	55.5	ug/kg	0.230	11.0	20	
1,2-Dibromoethane		50.0	51.3	ug/kg	0.339	2.60	20	
Dibromomethane		50.0	50.2	ug/kg	0.180	0.300	20	
1,2-Dichlorobenzene		50.0	52.0	ug/kg	1.74	4.10	20	
1,3-Dichlorobenzene		50.0	50.5	ug/kg	1.78	1.10	20	
1,4-Dichlorobenzene		50.0	51.0	ug/kg	1.83	1.90	20	
Dichlorodifluoromethane		50.0	61.5	ug/kg	0.472	23.1	20	*
1,2-Dichloroethane		50.0	51.3	ug/kg	0.399	2.70	20	
cis-1,2-Dichloroethene		50.0	53.7	ug/kg	0.313	7.50	20	
trans-1,2-Dichloroethene		50.0	53.6	ug/kg	0.470	7.20	20	
1,3-Dichloropropane		50.0	54.7	ug/kg	0.564	9.40	20	
2,2-Dichloropropane		50.0	51.5	ug/kg	0.401	3.10	20	
cis-1,3-Dichloropropene		50.0	55.5	ug/kg	0.473	10.9	20	
trans-1,3-Dichloropropene		50.0	52.3	ug/kg	0.518	4.70	20	
1,1-Dichloropropene		50.0	51.4	ug/kg	0.366	2.70	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4741836
Report generated 05/10/2016 13:22

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16041344 Run Date: 04/06/2016 Sample ID: WG563259-11
Instrument ID: HPMS9 Run Time: 18:18 Method: 8260B
File ID: 9M973609 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG563259 Cal ID: HPMS9 - 06-APR-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	52.5	ug/kg	0.344	5.00	20	
Hexachlorobutadiene		50.0	58.8	ug/kg	0.684	17.5	20	
Isopropylbenzene		50.0	54.1	ug/kg	1.88	8.10	20	
p-Isopropyltoluene		50.0	51.5	ug/kg	3.12	2.90	20	
4-Methyl-2-Pentanone		50.0	52.0	ug/kg	0.144	4.10	20	
Methylene Chloride		50.0	51.4	ug/kg	0.293	2.90	20	
Naphthalene		50.0	53.9	ug/kg	3.20	7.70	20	
n-Propylbenzene		50.0	51.7	ug/kg	3.86	3.40	20	
Styrene		50.0	53.5	ug/kg	1.22	7.10	20	
1,1,1,2-Tetrachloroethane		50.0	53.0	ug/kg	0.381	6.10	20	
Tetrachloroethene		50.0	51.6	ug/kg	0.333	3.30	20	
1,2,3-Trichlorobenzene		50.0	58.3	ug/kg	1.36	16.7	20	
1,2,4-Trichlorobenzene		50.0	56.8	ug/kg	1.40	13.5	20	
1,1,1-Trichloroethane		50.0	52.8	ug/kg	0.408	5.50	20	
1,1,2-Trichloroethane		50.0	53.9	ug/kg	0.323	7.90	20	
Trichloroethene		50.0	52.5	ug/kg	0.326	5.10	20	
Trichlorofluoromethane		50.0	52.0	ug/kg	0.464	4.10	20	
1,2,3-Trichloropropane		50.0	51.1	ug/kg	0.254	2.20	20	
1,2,4-Trimethylbenzene		50.0	53.2	ug/kg	2.94	6.40	20	
1,3,5-Trimethylbenzene		50.0	51.8	ug/kg	2.95	3.60	20	
o-Xylene		50.0	54.6	ug/kg	0.729	9.30	20	
m-,p-Xylene		100	105	ug/kg	0.735	4.90	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4741836
Report generated 05/10/2016 13:22

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041344 Run Date: 04/28/2016 Sample ID: WG566763-02
Instrument ID: HPMS9 Run Time: 13:13 Method: 8260B
File ID: 9M974029 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG566765 Cal ID: HPMS9 - 06-APR-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	49.0	ug/kg	0.443	1.94	20	
1,1-Dichloroethene	CCC	50.0	49.3	ug/kg	0.450	1.30	20	
1,2-Dichloropropane	CCC	50.0	48.2	ug/kg	0.290	3.53	20	
Ethylbenzene	CCC	50.0	52.4	ug/kg	0.596	4.87	20	
Toluene	CCC	50.0	50.5	ug/kg	1.54	1.05	20	
Vinyl Chloride	CCC	50.0	51.1	ug/kg	0.237	2.21	20	
Bromoform	SPCC	50.0	56.0	ug/kg	0.272	11.9	20	
Chlorobenzene	SPCC	50.0	51.0	ug/kg	1.08	1.92	20	
Chloromethane	SPCC	50.0	56.0	ug/kg	0.395	12.0	20	
1,1-Dichloroethane	SPCC	50.0	49.6	ug/kg	0.528	0.825	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	56.2	ug/kg	0.945	12.3	20	
Xylenes		150	154	ug/kg	0.702	2.50	20	
Acetone		50.0	48.2	ug/kg	0.102	3.59	20	
Benzene		50.0	47.5	ug/kg	1.05	4.91	20	
Bromobenzene		50.0	57.9	ug/kg	1.03	15.9	20	
Bromochloromethane		50.0	50.4	ug/kg	0.183	0.733	20	
Bromodichloromethane		50.0	48.7	ug/kg	0.333	2.59	20	
Bromomethane		50.0	49.2	ug/kg	0.213	1.53	20	
2-Butanone		50.0	49.4	ug/kg	0.159	1.19	20	
n-Butylbenzene		50.0	58.6	ug/kg	3.27	17.2	20	
sec-Butylbenzene		50.0	59.0	ug/kg	4.32	17.9	20	
tert-Butylbenzene		50.0	59.4	ug/kg	0.749	18.8	20	
Carbon Disulfide		50.0	47.5	ug/kg	0.822	4.90	20	
Carbon Tetrachloride		50.0	52.4	ug/kg	0.378	4.89	20	
Dibromochloromethane		50.0	52.2	ug/kg	0.387	4.39	20	
Chloroethane		50.0	50.3	ug/kg	0.212	0.574	20	
2-Chlorotoluene		50.0	61.6	ug/kg	2.75	23.1	20	*
4-Chlorotoluene		50.0	55.1	ug/kg	2.57	10.2	20	
1,2-Dibromo-3-Chloropropane		50.0	58.0	ug/kg	0.241	16.1	20	
1,2-Dibromoethane		50.0	50.2	ug/kg	0.331	0.363	20	
Dibromomethane		50.0	48.1	ug/kg	0.172	3.89	20	
1,2-Dichlorobenzene		50.0	55.5	ug/kg	1.86	11.0	20	
1,3-Dichlorobenzene		50.0	56.4	ug/kg	1.98	12.8	20	
1,4-Dichlorobenzene		50.0	54.9	ug/kg	1.97	9.75	20	
Dichlorodifluoromethane		50.0	48.3	ug/kg	0.371	3.31	20	
1,2-Dichloroethane		50.0	48.5	ug/kg	0.378	2.91	20	
cis-1,2-Dichloroethene		50.0	49.7	ug/kg	0.290	0.547	20	
trans-1,2-Dichloroethene		50.0	49.1	ug/kg	0.431	1.79	20	
1,3-Dichloropropane		50.0	51.3	ug/kg	0.528	2.60	20	
2,2-Dichloropropane		50.0	50.8	ug/kg	0.395	1.53	20	
cis-1,3-Dichloropropene		50.0	48.2	ug/kg	0.411	3.59	20	
trans-1,3-Dichloropropene		50.0	52.8	ug/kg	0.523	5.58	20	

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041344 Run Date: 04/28/2016 Sample ID: WG566763-02
Instrument ID: HPMS9 Run Time: 13:13 Method: 8260B
File ID: 9M974029 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG566765 Cal ID: HPMS9 - 06-APR-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	50.4	ug/kg	0.358	0.702	20	
2-Hexanone		50.0	49.9	ug/kg	0.326	0.200	20	
Hexachlorobutadiene		50.0	57.6	ug/kg	0.671	15.3	20	
Isopropylbenzene		50.0	51.5	ug/kg	1.79	3.07	20	
p-Isopropyltoluene		50.0	59.0	ug/kg	3.57	17.9	20	
4-Methyl-2-Pentanone		50.0	52.4	ug/kg	0.145	4.72	20	
Methylene Chloride		50.0	46.6	ug/kg	0.265	6.82	20	
Naphthalene		50.0	60.2	ug/kg	3.58	20.4	20	*
n-Propylbenzene		50.0	58.1	ug/kg	4.34	16.2	20	
Styrene		50.0	51.2	ug/kg	1.17	2.47	20	
1,1,1,2-Tetrachloroethane		50.0	53.8	ug/kg	0.386	7.50	20	
Tetrachloroethene		50.0	51.9	ug/kg	0.335	3.89	20	
1,2,3-Trichlorobenzene		50.0	57.9	ug/kg	1.36	15.9	20	
1,2,4-Trichlorobenzene		50.0	56.1	ug/kg	1.38	12.2	20	
1,1,1-Trichloroethane		50.0	51.4	ug/kg	0.397	2.78	20	
1,1,2-Trichloroethane		50.0	52.6	ug/kg	0.315	5.15	20	
Trichloroethene		50.0	47.1	ug/kg	0.293	5.74	20	
Trichlorofluoromethane		50.0	51.6	ug/kg	0.460	3.14	20	
1,2,3-Trichloropropane		50.0	60.1	ug/kg	0.298	20.3	20	*
1,2,4-Trimethylbenzene		50.0	61.1	ug/kg	3.37	22.1	20	*
1,3,5-Trimethylbenzene		50.0	58.8	ug/kg	3.35	17.6	20	
o-Xylene		50.0	51.5	ug/kg	0.688	3.09	20	
m-,p-Xylene		100	102	ug/kg	0.716	2.20	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4741838
Report generated 05/10/2016 13:22

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041344 Run Date: 04/30/2016 Sample ID: WG567052-02
Instrument ID: HPMS9 Run Time: 13:43 Method: 8260B
File ID: 9M974067 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG567003 Cal ID: HPMS9 - 06-APR-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	46.3	ug/kg	0.419	7.31	20	
1,1-Dichloroethene	CCC	50.0	45.9	ug/kg	0.419	8.21	20	
1,2-Dichloropropane	CCC	50.0	45.7	ug/kg	0.274	8.65	20	
Ethylbenzene	CCC	50.0	48.4	ug/kg	0.550	3.13	20	
Toluene	CCC	50.0	47.1	ug/kg	1.43	5.76	20	
Vinyl Chloride	CCC	50.0	46.3	ug/kg	0.215	7.50	20	
Bromoform	SPCC	50.0	53.2	ug/kg	0.257	6.45	20	
Chlorobenzene	SPCC	50.0	47.9	ug/kg	1.01	4.21	20	
Chloromethane	SPCC	50.0	54.9	ug/kg	0.387	9.82	20	
1,1-Dichloroethane	SPCC	50.0	45.9	ug/kg	0.489	8.23	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	52.2	ug/kg	0.877	4.31	20	
Xylenes		150	144	ug/kg	0.658	3.95	20	
Acetone		50.0	41.2	ug/kg	0.0888	17.5	20	
Benzene		50.0	44.0	ug/kg	0.971	12.0	20	
Bromobenzene		50.0	53.2	ug/kg	0.946	6.38	20	
Bromochloromethane		50.0	47.0	ug/kg	0.171	5.93	20	
Bromodichloromethane		50.0	45.8	ug/kg	0.313	8.41	20	
Bromomethane		50.0	45.9	ug/kg	0.199	8.18	20	
2-Butanone		50.0	42.4	ug/kg	0.136	15.2	20	
n-Butylbenzene		50.0	52.9	ug/kg	2.95	5.74	20	
sec-Butylbenzene		50.0	53.2	ug/kg	3.89	6.43	20	
tert-Butylbenzene		50.0	53.6	ug/kg	0.677	7.29	20	
Carbon Disulfide		50.0	41.1	ug/kg	0.711	17.7	20	
Carbon Tetrachloride		50.0	48.3	ug/kg	0.349	3.40	20	
Dibromochloromethane		50.0	49.8	ug/kg	0.369	0.451	20	
Chloroethane		50.0	46.8	ug/kg	0.197	6.31	20	
2-Chlorotoluene		50.0	60.0	ug/kg	2.68	20.1	20	*
4-Chlorotoluene		50.0	47.6	ug/kg	2.23	4.71	20	
1,2-Dibromo-3-Chloropropane		50.0	52.3	ug/kg	0.215	4.65	20	
1,2-Dibromoethane		50.0	47.4	ug/kg	0.313	5.16	20	
Dibromomethane		50.0	44.8	ug/kg	0.161	10.4	20	
1,2-Dichlorobenzene		50.0	51.2	ug/kg	1.71	2.42	20	
1,3-Dichlorobenzene		50.0	52.0	ug/kg	1.83	3.94	20	
1,4-Dichlorobenzene		50.0	50.8	ug/kg	1.82	1.55	20	
Dichlorodifluoromethane		50.0	48.3	ug/kg	0.370	3.46	20	
1,2-Dichloroethane		50.0	46.6	ug/kg	0.362	6.81	20	
cis-1,2-Dichloroethene		50.0	46.1	ug/kg	0.269	7.70	20	
trans-1,2-Dichloroethene		50.0	46.1	ug/kg	0.404	7.80	20	
1,3-Dichloropropane		50.0	48.4	ug/kg	0.499	3.11	20	
2,2-Dichloropropane		50.0	48.0	ug/kg	0.373	3.99	20	
cis-1,3-Dichloropropene		50.0	45.7	ug/kg	0.390	8.59	20	
trans-1,3-Dichloropropene		50.0	51.0	ug/kg	0.505	2.01	20	

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041344 Run Date: 04/30/2016 Sample ID: WG567052-02
Instrument ID: HPMS9 Run Time: 13:43 Method: 8260B
File ID: 9M974067 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG567003 Cal ID: HPMS9 - 06-APR-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	46.2	ug/kg	0.329	7.60	20	
2-Hexanone		50.0	44.4	ug/kg	0.291	11.1	20	
Hexachlorobutadiene		50.0	50.9	ug/kg	0.592	1.72	20	
Isopropylbenzene		50.0	48.1	ug/kg	1.67	3.82	20	
p-Isopropyltoluene		50.0	53.8	ug/kg	3.26	7.63	20	
4-Methyl-2-Pentanone		50.0	45.4	ug/kg	0.125	9.28	20	
Methylene Chloride		50.0	44.7	ug/kg	0.255	10.5	20	
Naphthalene		50.0	54.7	ug/kg	3.25	9.37	20	
n-Propylbenzene		50.0	53.2	ug/kg	3.97	6.33	20	
Styrene		50.0	48.1	ug/kg	1.10	3.74	20	
1,1,1,2-Tetrachloroethane		50.0	51.3	ug/kg	0.368	2.57	20	
Tetrachloroethene		50.0	47.7	ug/kg	0.308	4.53	20	
1,2,3-Trichlorobenzene		50.0	53.6	ug/kg	1.25	7.24	20	
1,2,4-Trichlorobenzene		50.0	52.0	ug/kg	1.28	3.92	20	
1,1,1-Trichloroethane		50.0	48.1	ug/kg	0.372	3.78	20	
1,1,2-Trichloroethane		50.0	49.7	ug/kg	0.298	0.650	20	
Trichloroethene		50.0	43.4	ug/kg	0.270	13.2	20	
Trichlorofluoromethane		50.0	48.2	ug/kg	0.430	3.56	20	
1,2,3-Trichloropropane		50.0	54.1	ug/kg	0.269	8.29	20	
1,2,4-Trimethylbenzene		50.0	56.3	ug/kg	3.11	12.5	20	
1,3,5-Trimethylbenzene		50.0	53.6	ug/kg	3.05	7.19	20	
o-Xylene		50.0	48.4	ug/kg	0.647	3.12	20	
m-,p-Xylene		100	95.6	ug/kg	0.670	4.36	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4741838
Report generated 05/10/2016 13:22

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16041344
Instrument ID: HPMS9
Workgroup (AAB#): WG566765

ICAL CCV Number: WG563259-02
CAL ID: HPMS9-06-APR-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG563259-02	NA	NA	189947	405052	551415
Upper Limit	NA	NA	379894	810104	1102830
Lower Limit	NA	NA	94974	202526	275708
L16041344-02	1.00	01	157669	343703	475974
L16041344-03	1.00	01	188853	407609	564213
L16041344-04	1.00	01	193889	413315	568613
L16041344-05	1.00	01	203172	432394	593151
L16041344-06	1.00	01	190833	407386	557814
L16041344-07	1.00	01	195541	419986	578707
L16041344-08	1.00	01	197545	421673	577592
L16041344-09	1.00	01	194016	416442	565807
L16041344-10	1.00	01	189710	417633	582517
L16041344-11	1.00	01	189429	423056	593163
L16041344-12	1.00	01	158830	347606	482589
L16041344-13	1.00	01	190929	423143	604838
L16041344-14	1.00	01	188174	416444	584962
WG566765-01	1.00	01	207761	452113	626030
WG566765-02	1.00	01	195987	427662	586130

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4741839
Report generated 05/10/2016 13:22

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16041344
Instrument ID: HPMS9
Workgroup (AAB#): WG567003

ICAL CCV Number: WG563259-02
CAL ID: HPMS9 - 06-APR-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG563259-02	NA	NA	189947	405052	551415
Upper Limit	NA	NA	379894	810104	1102830
Lower Limit	NA	NA	94974	202526	275708
L16041344-01	1.00	02	172405	385313	539551
WG567003-01	1.00	01	207986	455753	641587
WG567003-02	1.00	01	198992	430069	593466

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4741839
Report generated 05/10/2016 13:22

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16041344
Instrument ID: HPMS9
Workgroup (AAB#): WG566765

ICAL CCV Number: WG563259-02
CAL ID: HPMS9-06-APR-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG563259-02	NA	NA	17.75	14.72	10.84
Upper Limit	NA	NA	18.25	15.22	11.34
Lower Limit	NA	NA	17.25	14.22	10.34
L16041344-02	1.00	01	17.74	14.71	10.84
L16041344-03	1.00	01	17.74	14.72	10.84
L16041344-04	1.00	01	17.74	14.71	10.84
L16041344-05	1.00	01	17.74	14.71	10.84
L16041344-06	1.00	01	17.74	14.71	10.84
L16041344-07	1.00	01	17.74	14.71	10.84
L16041344-08	1.00	01	17.74	14.72	10.84
L16041344-09	1.00	01	17.74	14.71	10.84
L16041344-10	1.00	01	17.74	14.71	10.84
L16041344-11	1.00	01	17.74	14.71	10.84
L16041344-12	1.00	01	17.74	14.71	10.84
L16041344-13	1.00	01	17.74	14.72	10.84
L16041344-14	1.00	01	17.74	14.71	10.84
WG566765-01	1.00	01	17.74	14.71	10.84
WG566765-02	1.00	01	17.74	14.71	10.84

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4741841
Report generated: 05/10/2016 13:22

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16041344
Instrument ID: HPMS9
Workgroup (AAB#): WG567003

ICAL CCV Number: WG563259-02
CAL ID: HPMS9 - 06-APR-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG563259-02	NA	NA	17.75	14.72	10.84
Upper Limit	NA	NA	18.25	15.22	11.34
Lower Limit	NA	NA	17.25	14.22	10.34
L16041344-01	1.00	02	17.74	14.71	10.84
WG567003-01	1.00	01	17.74	14.71	10.84
WG567003-02	1.00	01	17.74	14.71	10.84

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4741841
Report generated: 05/10/2016 13:22

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\043016\9M974076.D Vial: 10
Acq On : 30 Apr 2016 18:18 Operator: ADC
Sample : L16041344-01 B 8260 4.87g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 04 14:28:02 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	539551	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	385313	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	172405	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	143328	52.5984 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.20%		
43) 1,2-Dichloroethane-d4	10.44	65	157294	55.1407 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 110.28%		
58) Toluene-d8	12.81	98	515126	56.0948 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 112.18%		
79) p-Bromofluorobenzene	16.21	95	184302	61.7183 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 123.44%#		

Target Compounds					Qvalue
36) Tetrahydrofuran	9.77	42	3453	2.8022 ug/kg	82
56) Dimethyl Disulfide	12.81	94	13575	2.7554 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.08	105	1940	Below Cal	86

(#) = qualifier out of range (m) = manual integration
9M974076.D 8260-SL.M Wed May 04 14:28:02 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\043016\9M974076.D Vial: 10
Acq On : 30 Apr 2016 18:18 Operator: ADC
Sample : L16041344-01 B 8260 4.87g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 4 14:28 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

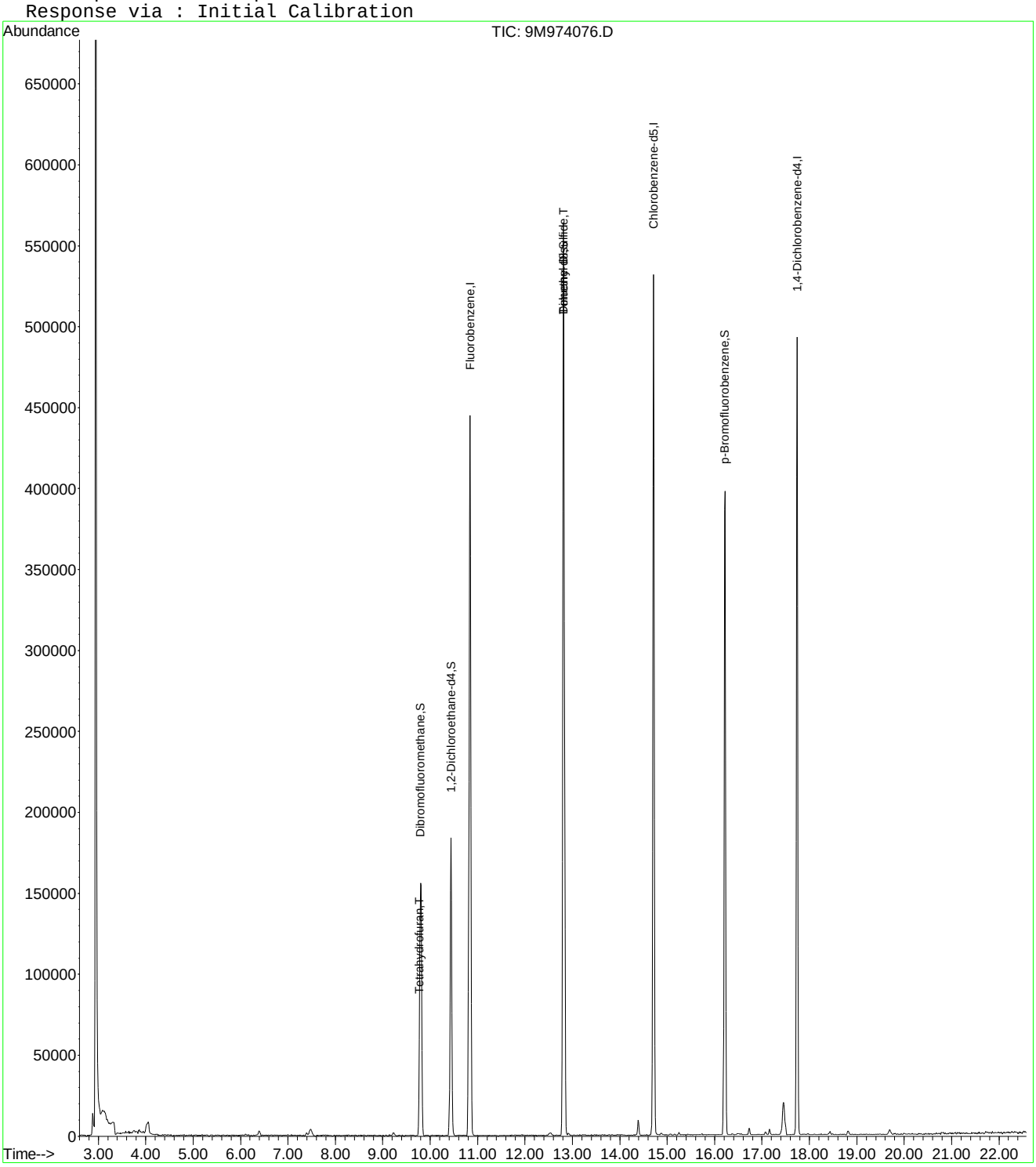

9M974076.D 8260-SL.M Wed May 04 14:28:02 2016 Page 2

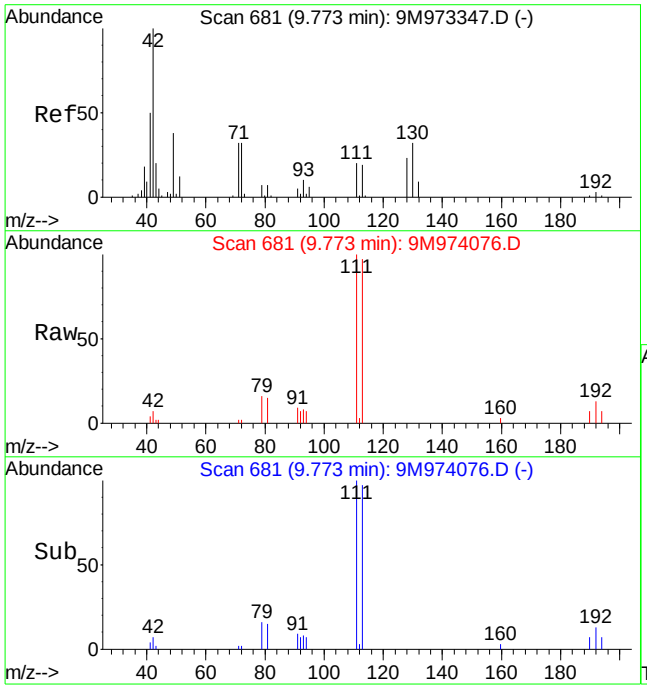

#36
Tetrahydrofuran
Concen: 2.80 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. 0.00 min
Lab File: 9M974076.D
Acq: 30 Apr 2016 18:18

Tgt Ion: 42 Resp: 3453

Ion	Ratio	Lower	Upper
42	100		
72	21.2	19.8	46.2
71	22.8	18.3	42.7

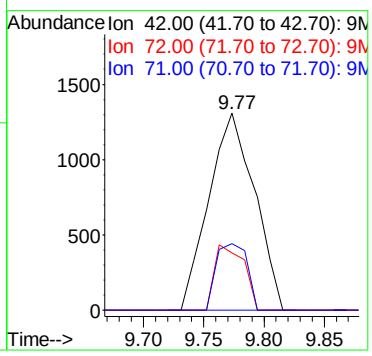

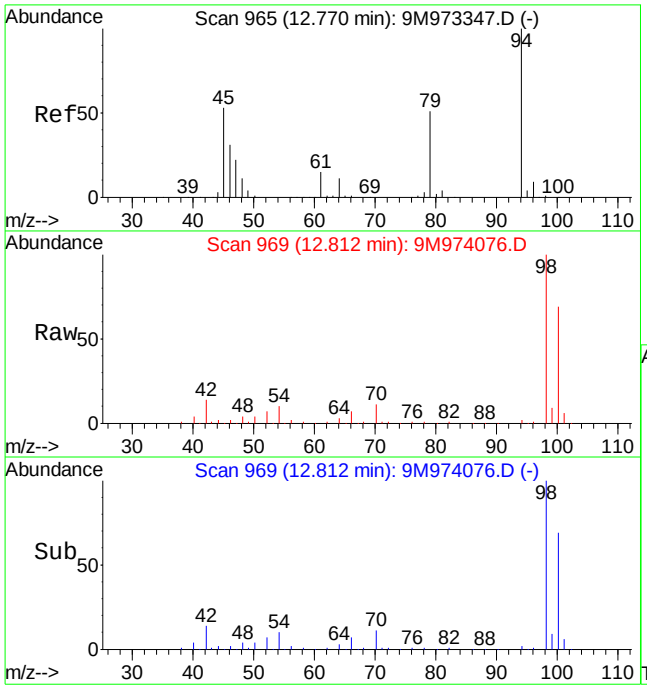

#56
Dimethyl Disulfide
Concen: 2.76 ug/kg
RT: 12.81 min Scan# 969
Delta R.T. 0.04 min
Lab File: 9M974076.D
Acq: 30 Apr 2016 18:18

Tgt Ion: 94 Resp: 13575

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

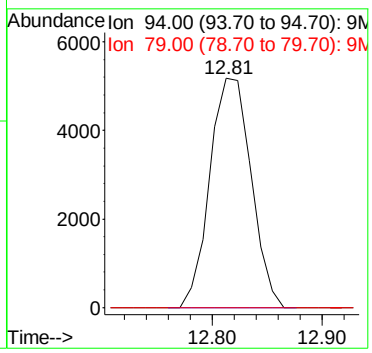

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974034.D Vial: 6
Acq On : 28 Apr 2016 15:46 Operator: ADC
Sample : WG566711-01 L16041344-02 A 8260 4.66g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:39:50 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	475974	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	343703	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.74	152	157669	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	123110	51.2134 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 102.42%		
43) 1,2-Dichloroethane-d4	10.44	65	137565	54.6660 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 109.34%		
58) Toluene-d8	12.82	98	456036	55.6722 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 111.34%		
79) p-Bromofluorobenzene	16.22	95	161955	59.3037 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 118.60%		

Target Compounds

					Qvalue
13) Acetone	6.38	43	8825	3.9938 ug/kg	90
36) Tetrahydrofuran	9.77	42	2525	2.3228 ug/kg#	75
56) Dimethyl Disulfide	12.81	94	12323	2.8354 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.08	105	3266	Below Cal	89

(#) = qualifier out of range (m) = manual integration
9M974034.D 8260-SL.M Fri Apr 29 12:39:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974034.D Vial: 6
Acq On : 28 Apr 2016 15:46 Operator: ADC
Sample : WG566711-01 L16041344-02 A 8260 4.66g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:39 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

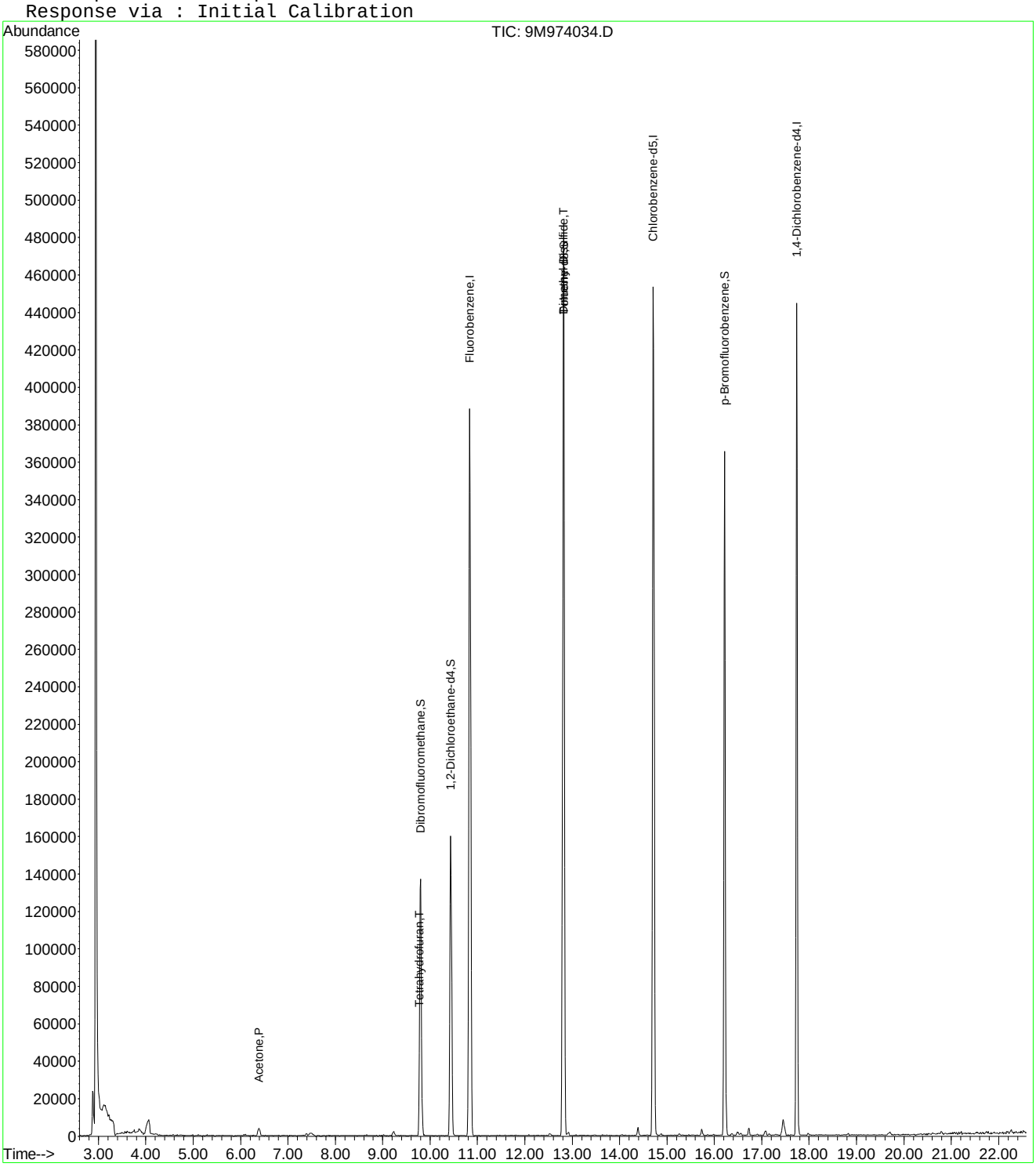

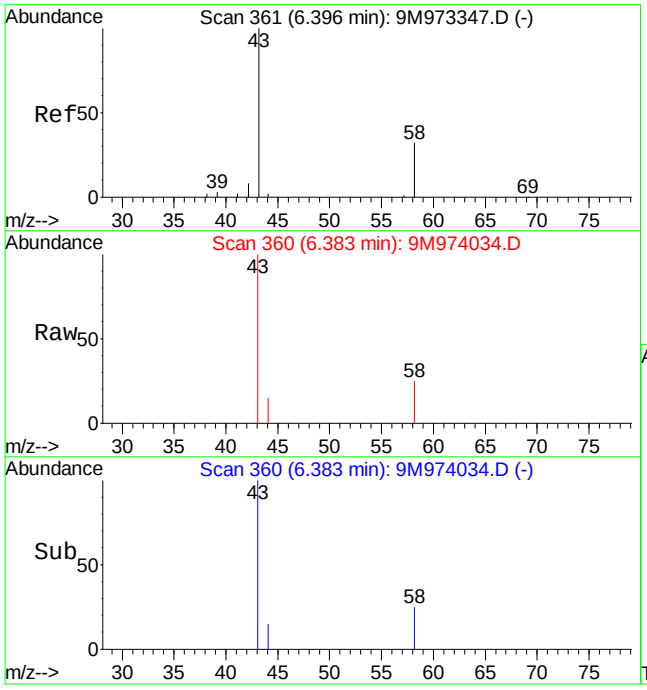

#13
Acetone
Concen: 3.99 ug/kg
RT: 6.38 min Scan# 360
Delta R.T. 0.00 min
Lab File: 9M974034.D
Acq: 28 Apr 2016 15:46

Tgt Ion: 43 Resp: 8825

Ion	Ratio	Lower	Upper
43	100		
58	28.1	20.2	47.2

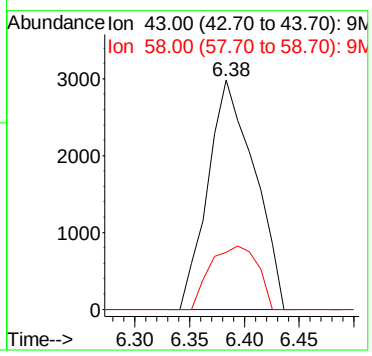

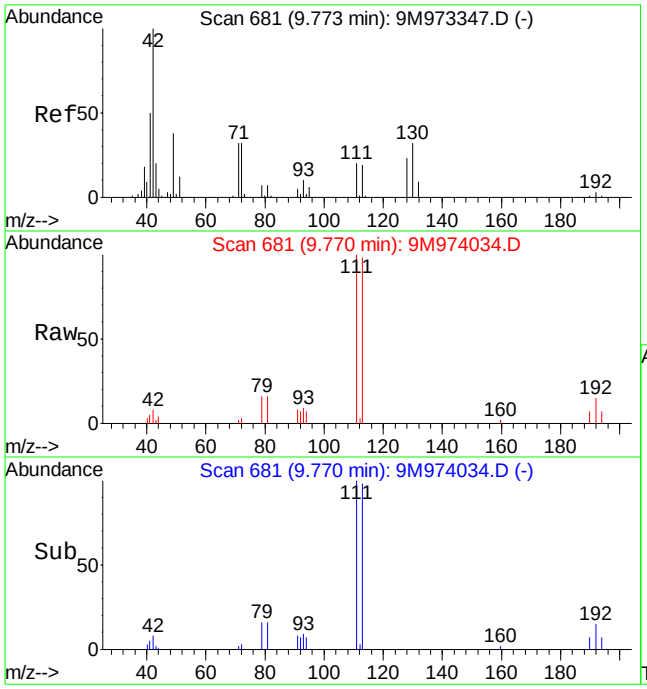

#36
Tetrahydrofuran
Concen: 2.32 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. -0.00 min
Lab File: 9M974034.D
Acq: 28 Apr 2016 15:46

Tgt Ion: 42 Resp: 2525

Ion	Ratio	Lower	Upper
42	100		
72	18.9	19.8	46.2#
71	16.5	18.3	42.7#

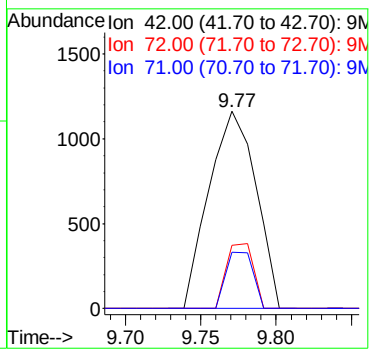

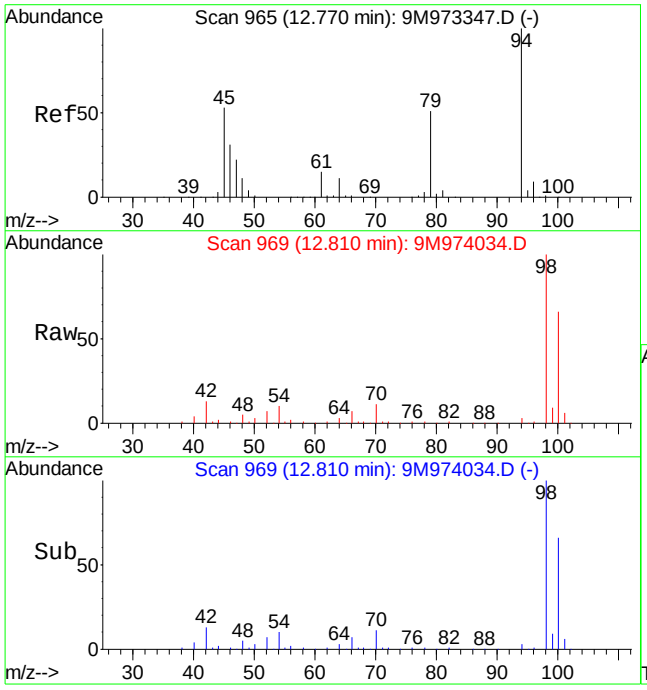

#56
Dimethyl Disulfide
Concen: 2.84 ug/kg
RT: 12.81 min Scan# 969
Delta R.T. 0.04 min
Lab File: 9M974034.D
Acq: 28 Apr 2016 15:46

Tgt Ion: 94 Resp: 12323

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

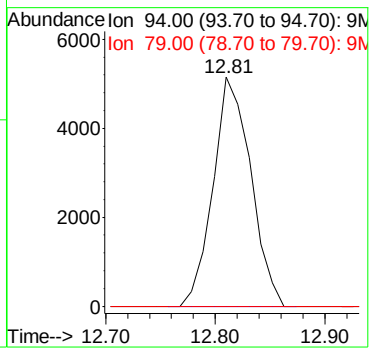

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974035.D Vial: 7
Acq On : 28 Apr 2016 16:16 Operator: ADC
Sample : L16041344-03 A 8260 4.85g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:39:51 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	564213	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	407609	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	188853	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	146227	51.3166 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 102.64%		
43) 1,2-Dichloroethane-d4	10.43	65	161263	54.0611 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 108.12%		
58) Toluene-d8	12.82	98	532777	54.8434 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 109.68%		
79) p-Bromofluorobenzene	16.22	95	193071	59.0237 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 118.04%		

Target Compounds					Qvalue
3) Chloromethane	3.75	50	2203	0.5537 ug/kg	91
13) Acetone	6.38	43	3681	Below Cal	98
36) Tetrahydrofuran	9.77	42	2551	1.9797 ug/kg#	61
56) Dimethyl Disulfide	12.82	94	14510	2.8165 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.08	105	2698	Below Cal	76

(#) = qualifier out of range (m) = manual integration
9M974035.D 8260-SL.M Fri Apr 29 12:39:52 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974035.D Vial: 7
Acq On : 28 Apr 2016 16:16 Operator: ADC
Sample : L16041344-03 A 8260 4.85g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:39 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

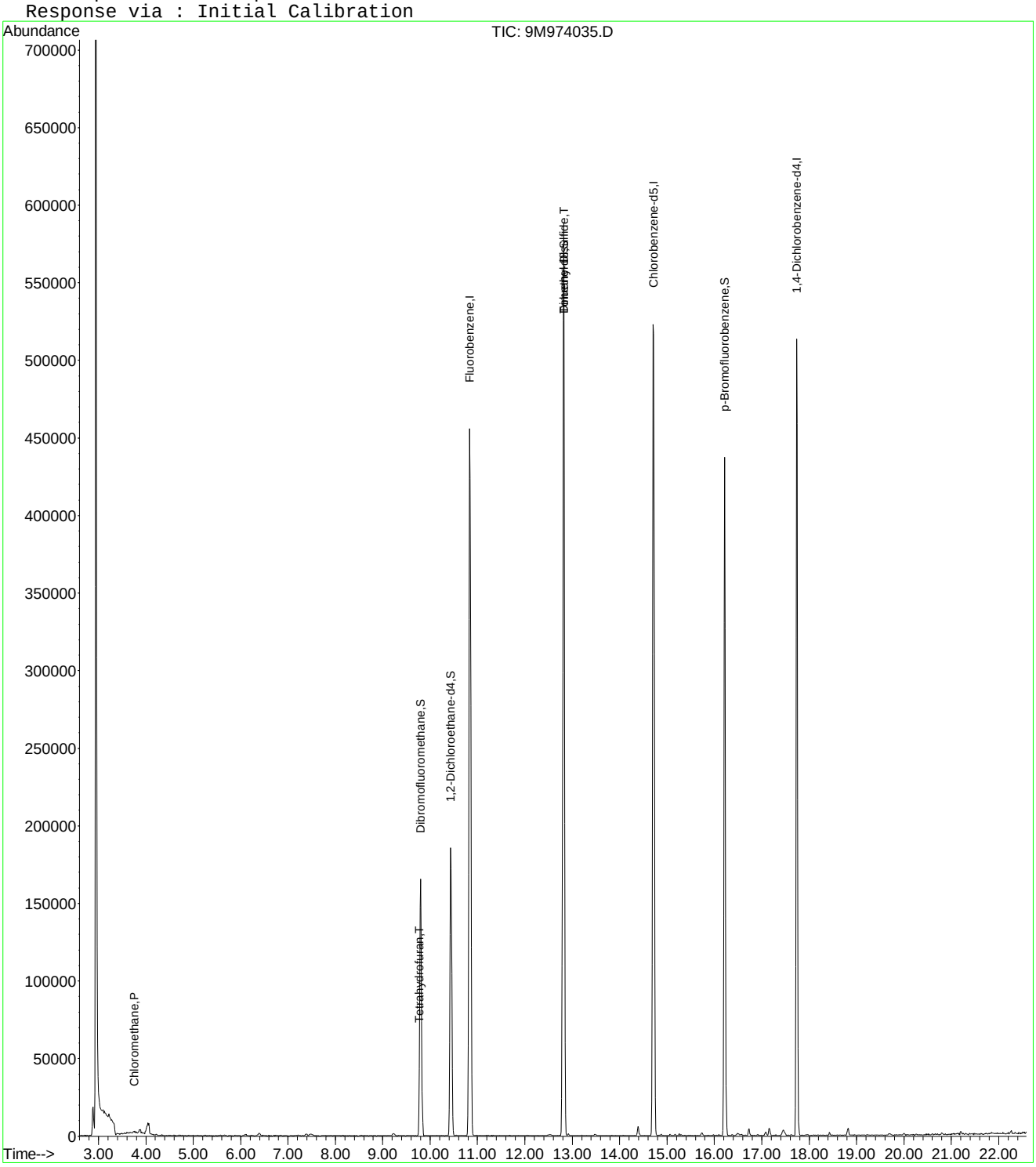

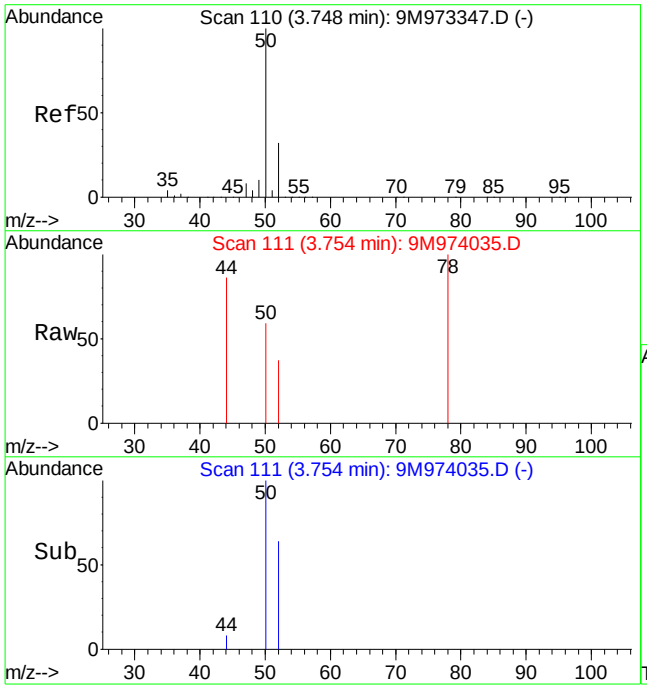

#3
Chloromethane
Concen: 0.55 ug/kg
RT: 3.75 min Scan# 111
Delta R.T. 0.01 min
Lab File: 9M974035.D
Acq: 28 Apr 2016 16:16

Tgt Ion: 50 Resp: 2203

Ion	Ratio	Lower	Upper
50	100		
52	28.2	19.9	46.3

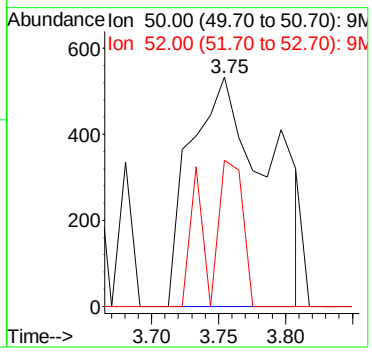

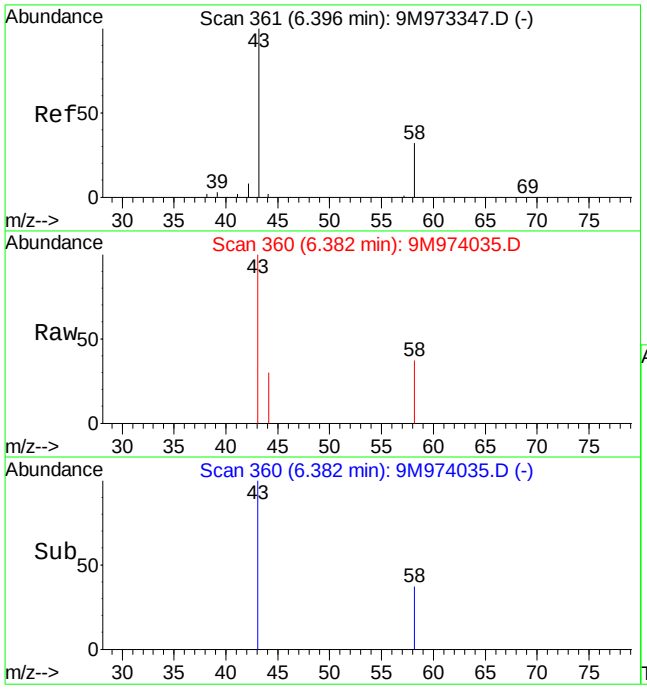

#13
Acetone
Concen: Below Cal
RT: 6.38 min Scan# 360
Delta R.T. -0.00 min
Lab File: 9M974035.D
Acq: 28 Apr 2016 16:16

Tgt Ion: 43 Resp: 3681

Ion	Ratio	Lower	Upper
43	100		
58	34.7	20.2	47.2

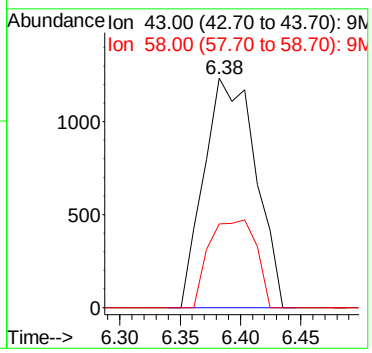

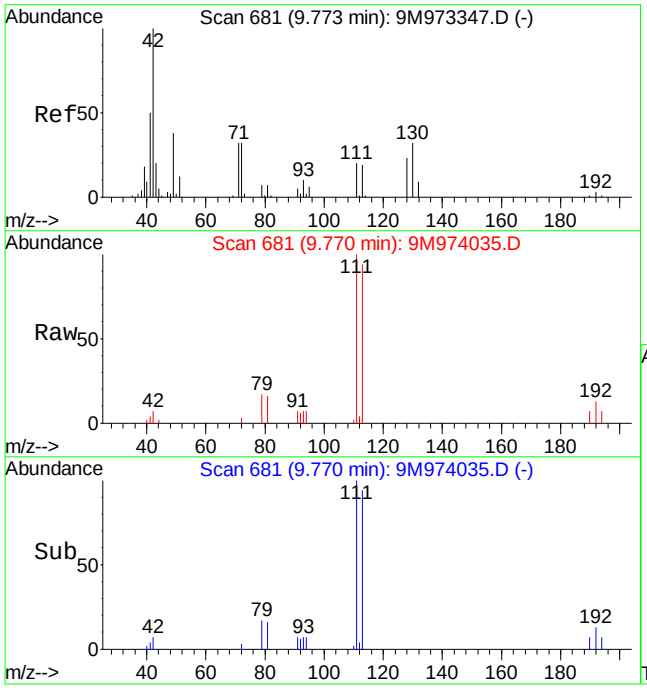

#36
Tetrahydrofuran
Concen: 1.98 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. -0.00 min
Lab File: 9M974035.D
Acq: 28 Apr 2016 16:16

Tgt Ion: 42 Resp: 2551

Ion	Ratio	Lower	Upper
42	100		
72	19.5	19.8	46.2#
71	0.0	18.3	42.7#

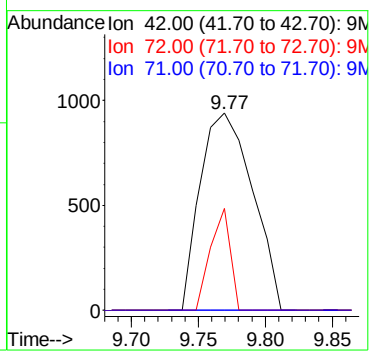

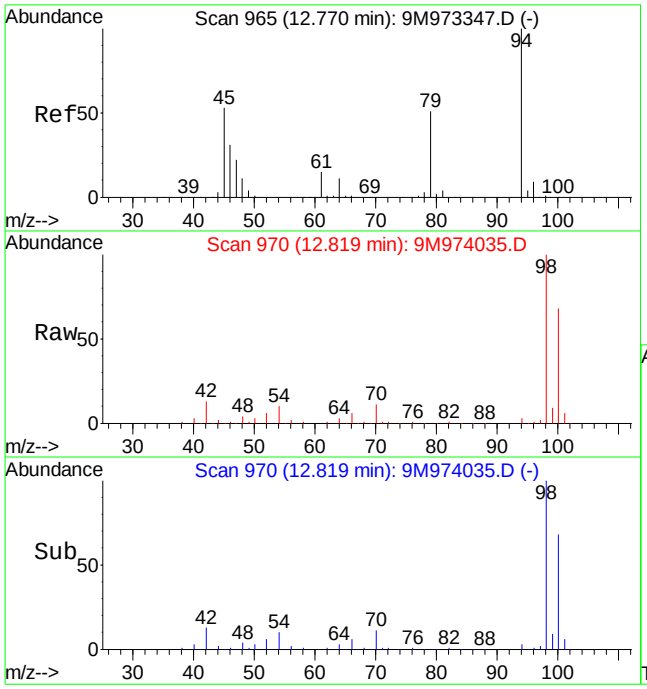

#56
Dimethyl Disulfide
Concen: 2.82 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M974035.D
Acq: 28 Apr 2016 16:16

Tgt Ion: 94 Resp: 14510

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

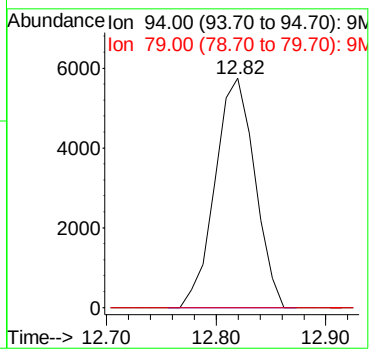

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974036.D Vial: 8
Acq On : 28 Apr 2016 16:47 Operator: ADC
Sample : L16041344-04 A 8260 4.54g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:39:52 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	568613	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	413315	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.74	152	193889	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	149879	52.1912 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.38%		
43) 1,2-Dichloroethane-d4	10.44	65	175566	58.4005 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 116.80%		
58) Toluene-d8	12.82	98	542928	55.1168 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 110.24%		
79) p-Bromofluorobenzene	16.22	95	202523	60.3052 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 120.62%		

Target Compounds

					Qvalue
13) Acetone	6.38	43	5807	Below Cal	83
36) Tetrahydrofuran	9.77	42	2625	2.0214 ug/kg#	65
56) Dimethyl Disulfide	12.82	94	14503	2.7933 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.07	105	2367	Below Cal	99

(#) = qualifier out of range (m) = manual integration
9M974036.D 8260-SL.M Fri Apr 29 12:39:53 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974036.D Vial: 8
Acq On : 28 Apr 2016 16:47 Operator: ADC
Sample : L16041344-04 A 8260 4.54g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:39 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

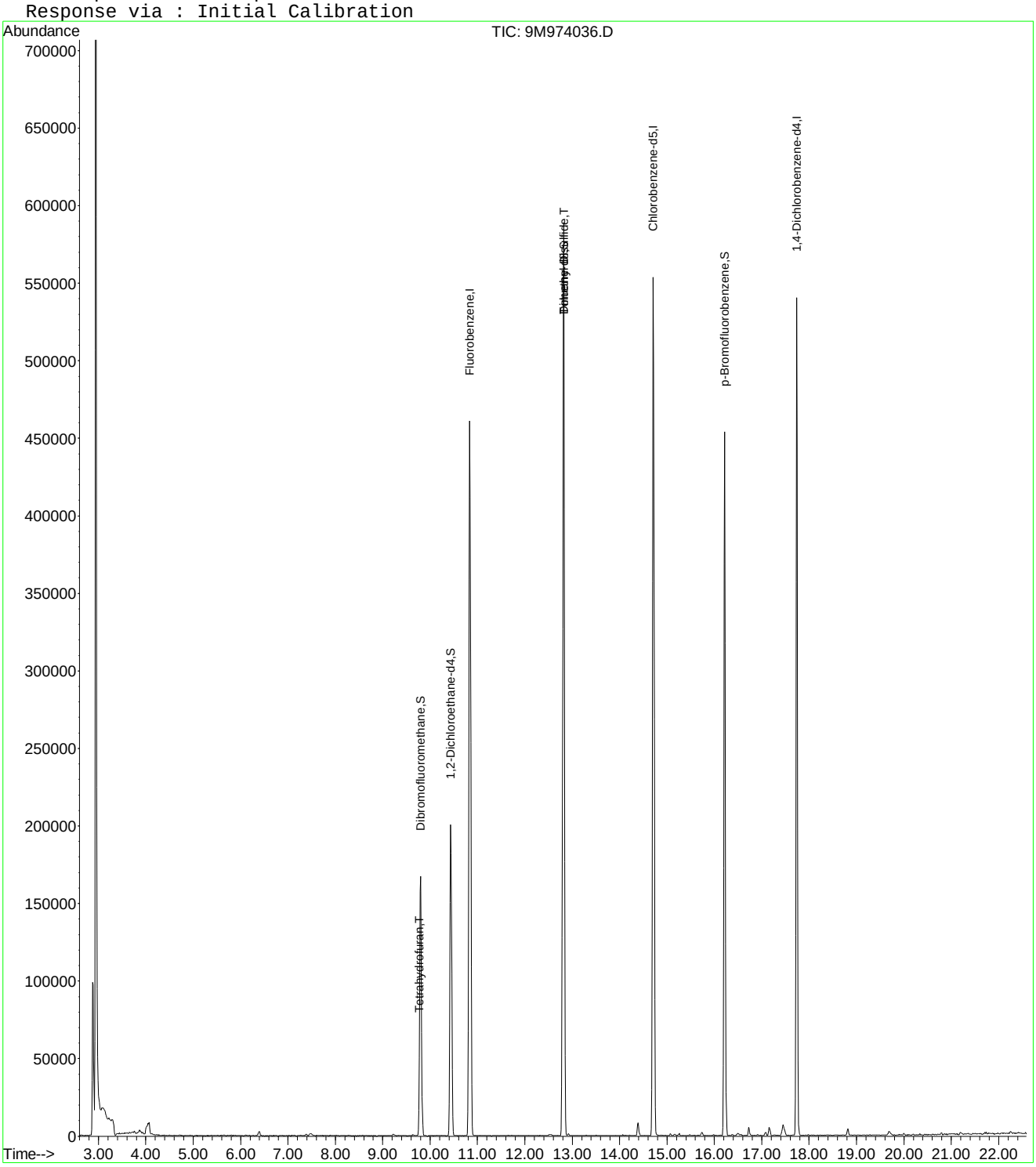

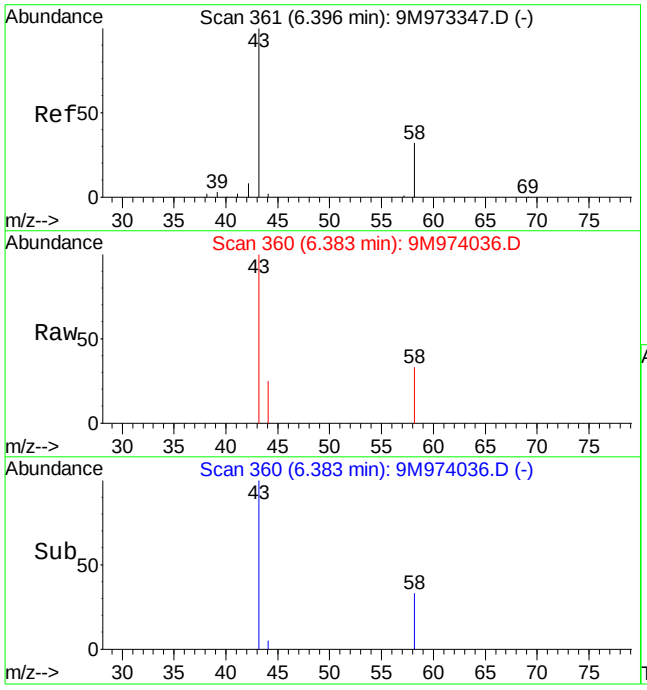

#13
Acetone
Concen: Below Cal
RT: 6.38 min Scan# 360
Delta R.T. -0.00 min
Lab File: 9M974036.D
Acq: 28 Apr 2016 16:47

Tgt Ion: 43 Resp: 5807

Ion	Ratio	Lower	Upper
43	100		
58	23.8	20.2	47.2

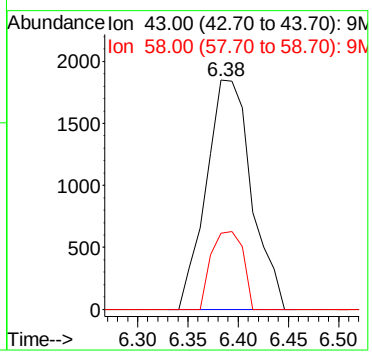

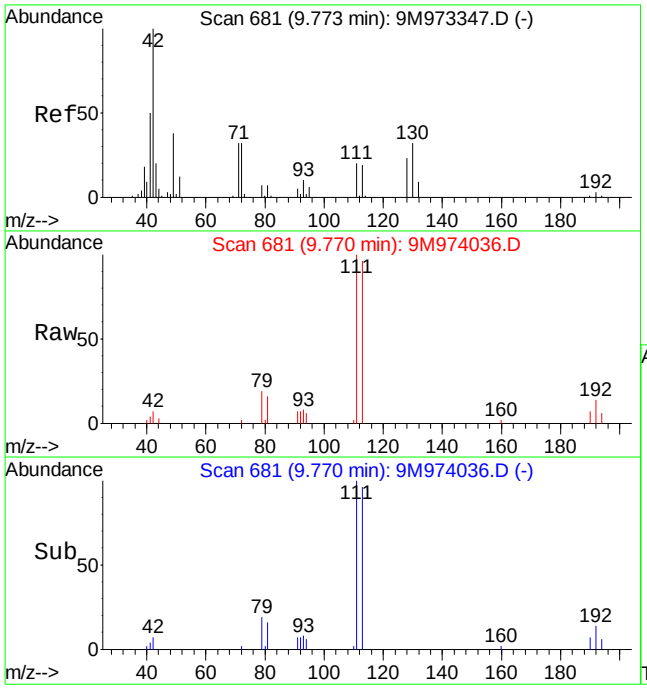

#36
Tetrahydrofuran
Concen: 2.02 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. -0.00 min
Lab File: 9M974036.D
Acq: 28 Apr 2016 16:47

Tgt Ion: 42 Resp: 2625

Ion	Ratio	Lower	Upper
42	100		
72	17.1	19.8	46.2#
71	7.3	18.3	42.7#

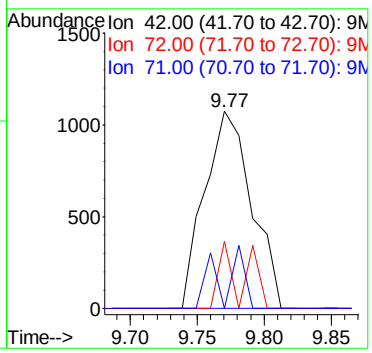

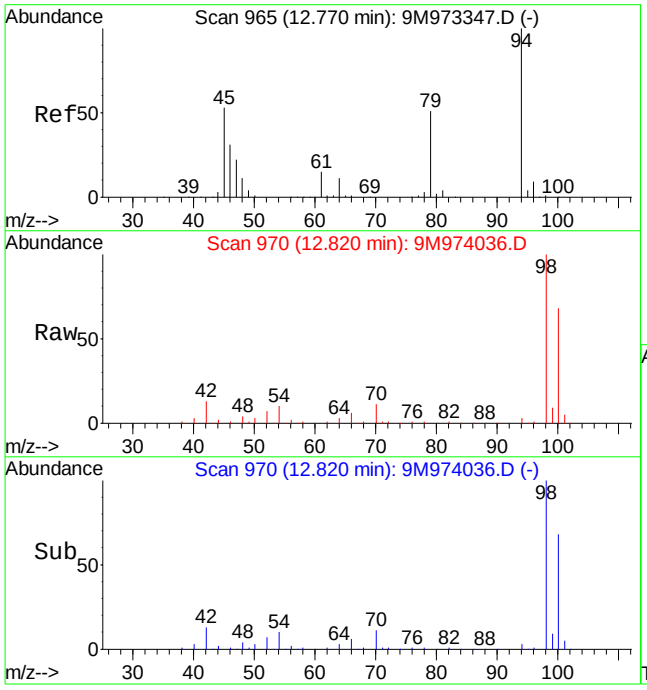

#56
Dimethyl Disulfide
Concen: 2.79 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M974036.D
Acq: 28 Apr 2016 16:47

Tgt Ion: 94 Resp: 14503

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

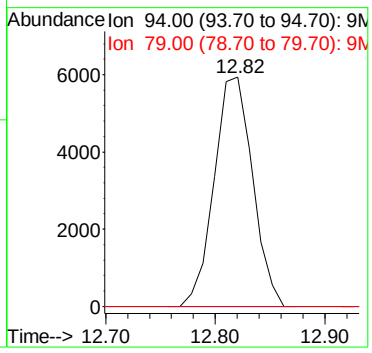

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974037.D Vial: 9
Acq On : 28 Apr 2016 17:17 Operator: ADC
Sample : L16041344-05 A 8260 4.71g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:39:53 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	593151	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	432394	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.74	152	203172	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	157924	52.7177 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.44%		
43) 1,2-Dichloroethane-d4	10.44	65	185831	59.2578 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 118.52%		
58) Toluene-d8	12.82	98	569595	55.2725 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 110.54%		
79) p-Bromofluorobenzene	16.22	95	213203	60.5847 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 121.16%#		

Target Compounds

					Qvalue
13) Acetone	6.39	43	5851	Below Cal	89
36) Tetrahydrofuran	9.77	42	2685	1.9820 ug/kg#	75
56) Dimethyl Disulfide	12.82	94	15383	2.8402 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.07	105	2538	Below Cal	90

(#) = qualifier out of range (m) = manual integration
9M974037.D 8260-SL.M Fri Apr 29 12:39:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974037.D Vial: 9
Acq On : 28 Apr 2016 17:17 Operator: ADC
Sample : L16041344-05 A 8260 4.71g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:39 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

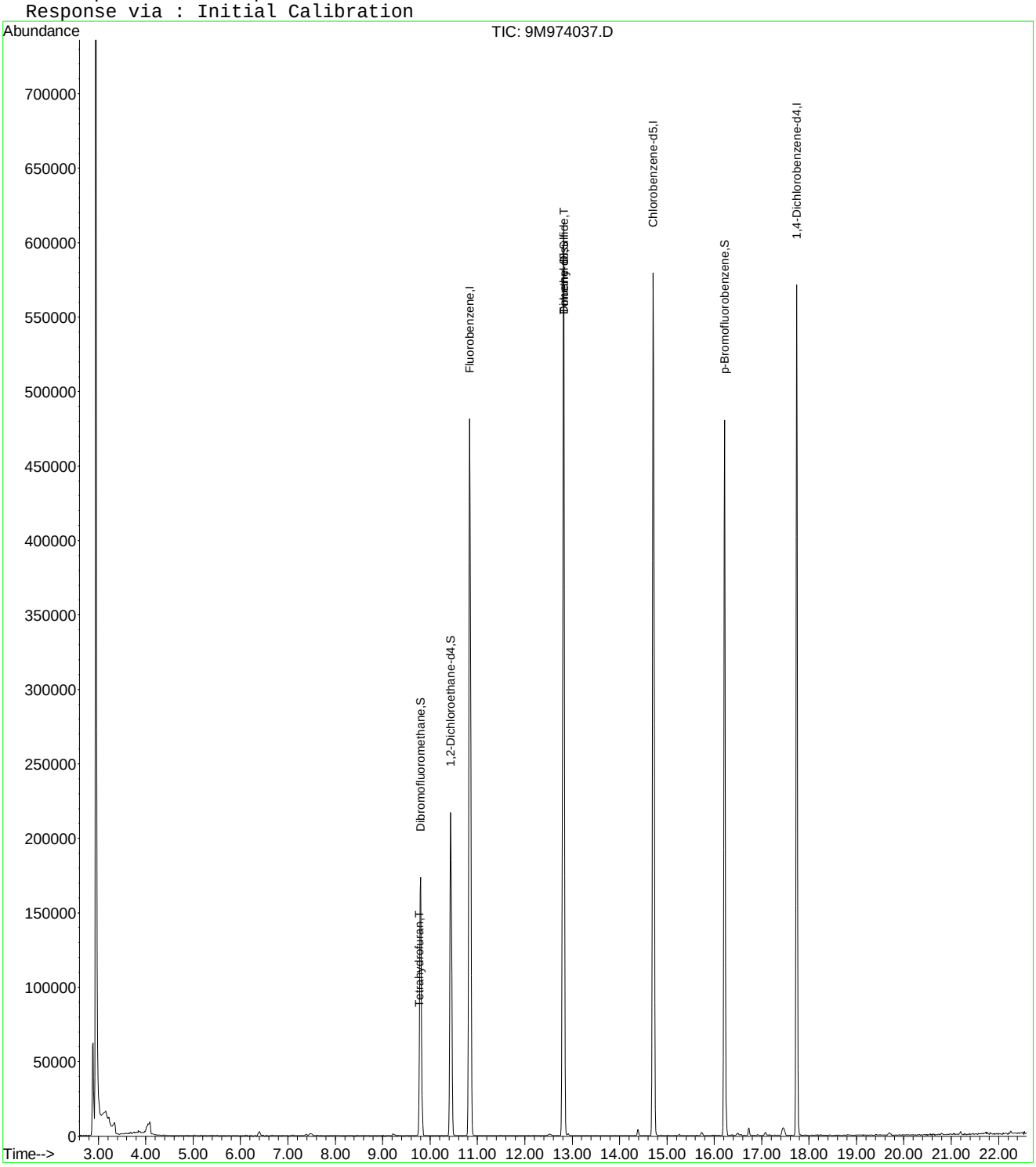

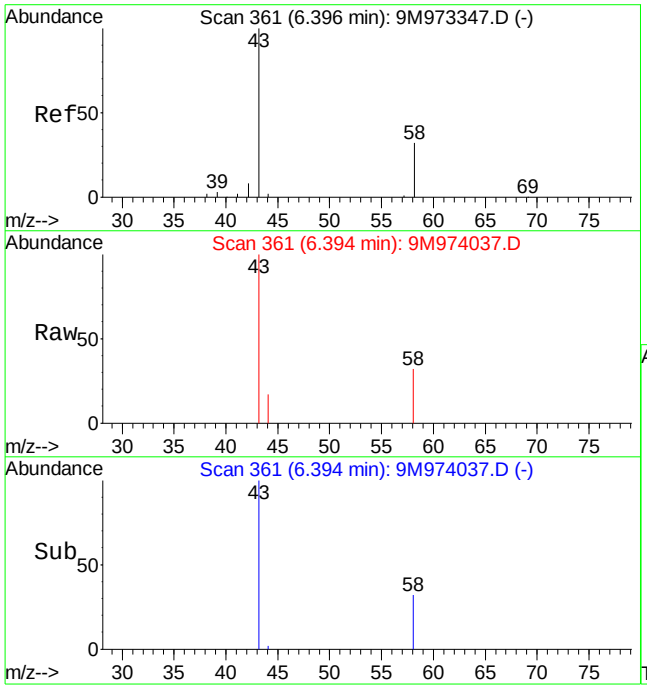

#13
Acetone
Concen: Below Cal
RT: 6.39 min Scan# 361
Delta R.T. 0.01 min
Lab File: 9M974037.D
Acq: 28 Apr 2016 17:17

Tgt Ion: 43 Resp: 5851

Ion	Ratio	Lower	Upper
43	100		
58	27.4	20.2	47.2

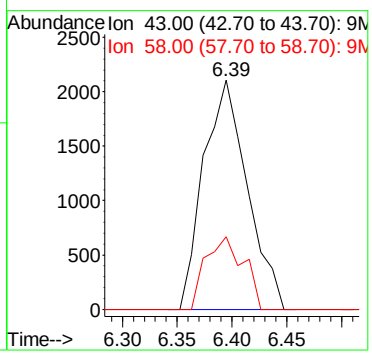

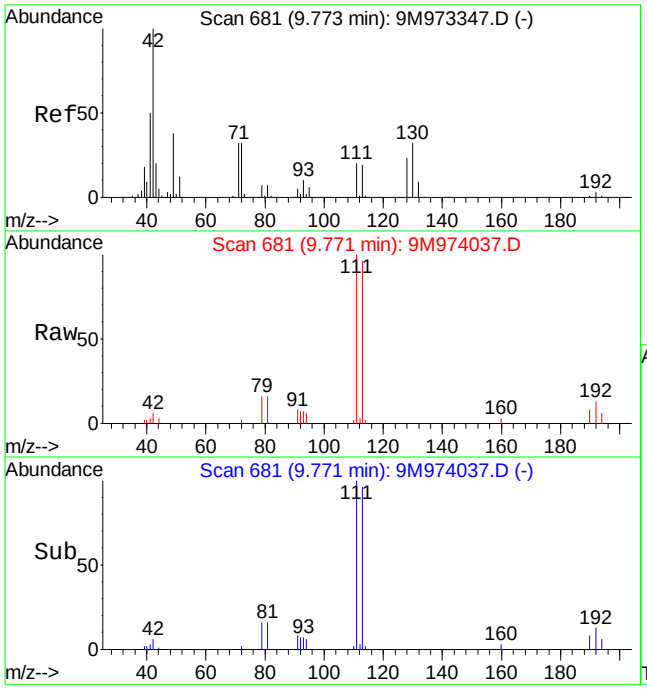

#36
Tetrahydrofuran
Concen: 1.98 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. 0.00 min
Lab File: 9M974037.D
Acq: 28 Apr 2016 17:17

Tgt Ion: 42 Resp: 2685

Ion	Ratio	Lower	Upper
42	100		
72	26.7	19.8	46.2
71	8.9	18.3	42.7#

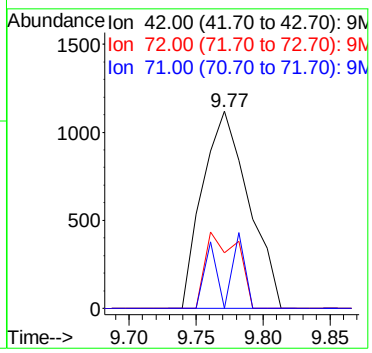

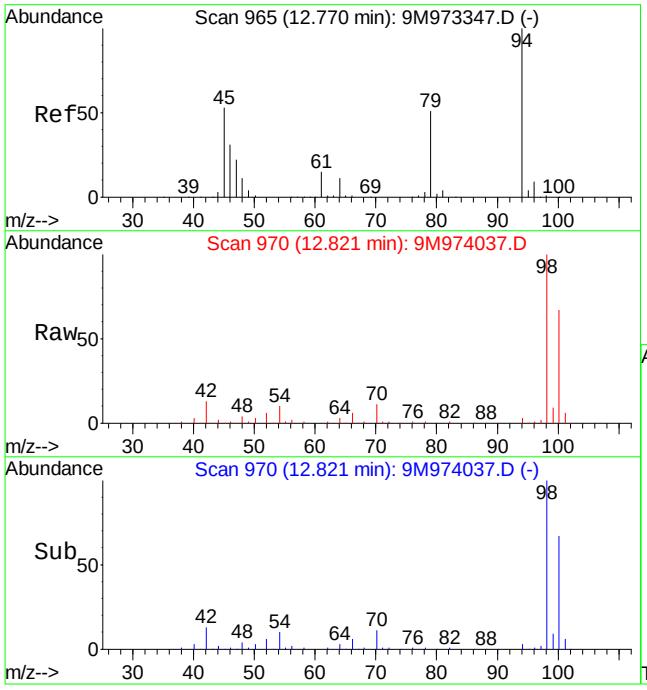

#56
Dimethyl Disulfide
Concen: 2.84 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M974037.D
Acq: 28 Apr 2016 17:17

Tgt Ion: 94 Resp: 15383

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

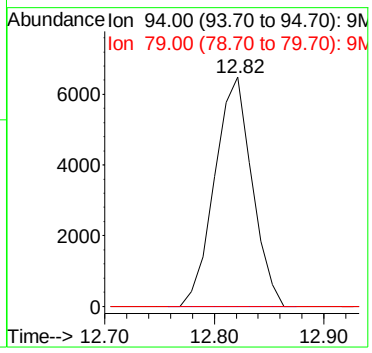

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974038.D Vial: 10
Acq On : 28 Apr 2016 17:47 Operator: ADC
Sample : L16041344-06 A 8260 4.76g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:39:54 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	557814	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	407386	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	190833	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	147016	52.1854 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.38%		
43) 1,2-Dichloroethane-d4	10.44	65	175304	59.4423 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 118.88%		
58) Toluene-d8	12.81	98	533444	54.9422 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 109.88%		
79) p-Bromofluorobenzene	16.22	95	197911	59.8756 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 119.76%		

Target Compounds

					Qvalue
13) Acetone	6.40	43	3732	Below Cal	91
36) Tetrahydrofuran	9.77	42	2669	2.0950 ug/kg#	66
56) Dimethyl Disulfide	12.82	94	14604	2.8672 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.08	105	2045	Below Cal #	64

(#) = qualifier out of range (m) = manual integration
9M974038.D 8260-SL.M Fri Apr 29 12:39:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974038.D Vial: 10
Acq On : 28 Apr 2016 17:47 Operator: ADC
Sample : L16041344-06 A 8260 4.76g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:39 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

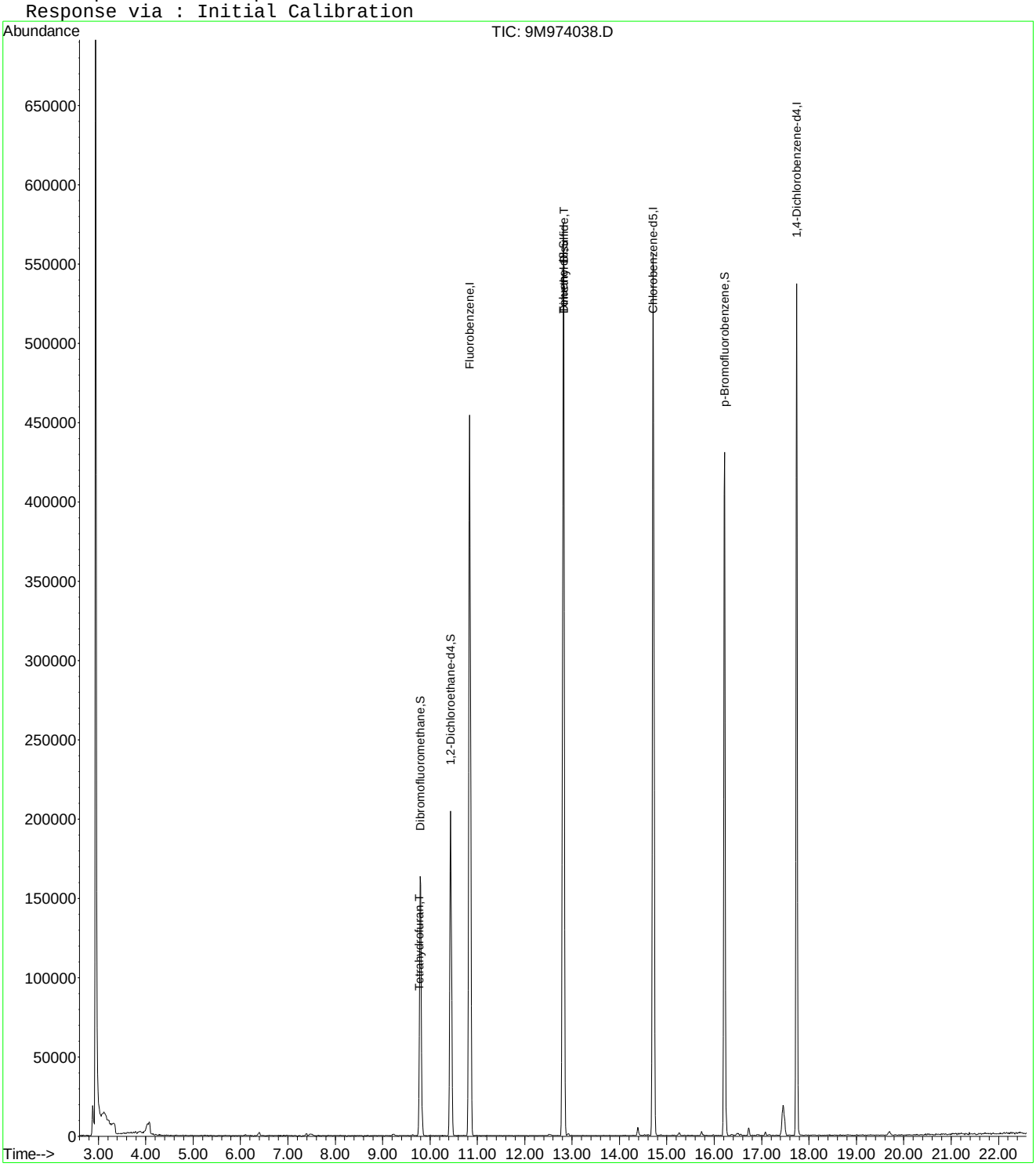

9M974038.D 8260-SL.M Fri Apr 29 12:39:55 2016 Page 2

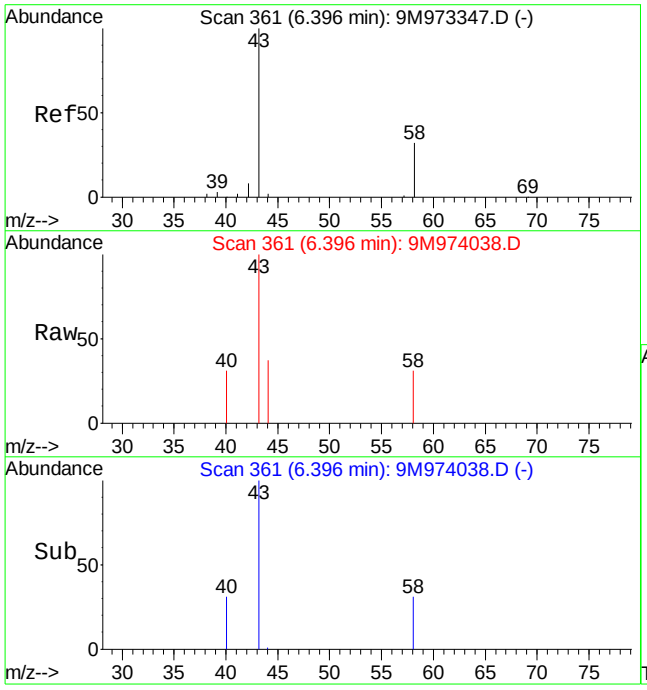

#13
Acetone
Concen: Below Cal
RT: 6.40 min Scan# 361
Delta R.T. 0.01 min
Lab File: 9M974038.D
Acq: 28 Apr 2016 17:47

Tgt Ion: 43 Resp: 3732

Ion	Ratio	Lower	Upper
43	100		
58	28.4	20.2	47.2

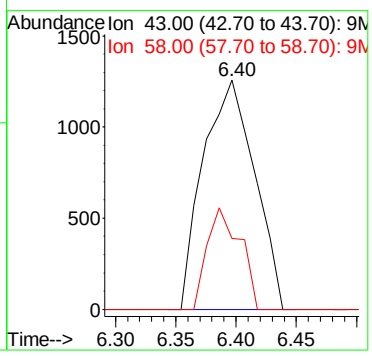

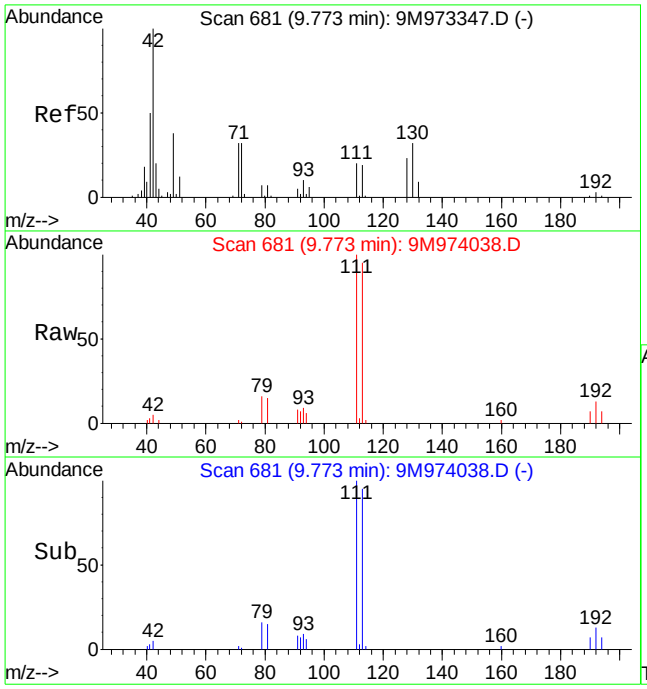

#36
Tetrahydrofuran
Concen: 2.10 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. 0.00 min
Lab File: 9M974038.D
Acq: 28 Apr 2016 17:47

Tgt Ion: 42 Resp: 2669

Ion	Ratio	Lower	Upper
42	100		
72	7.2	19.8	46.2#
71	18.8	18.3	42.7

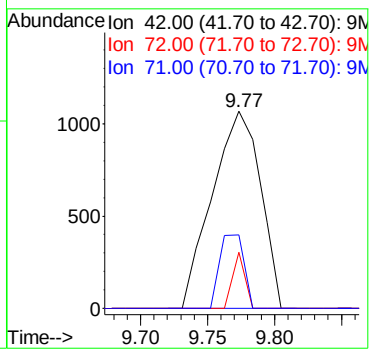

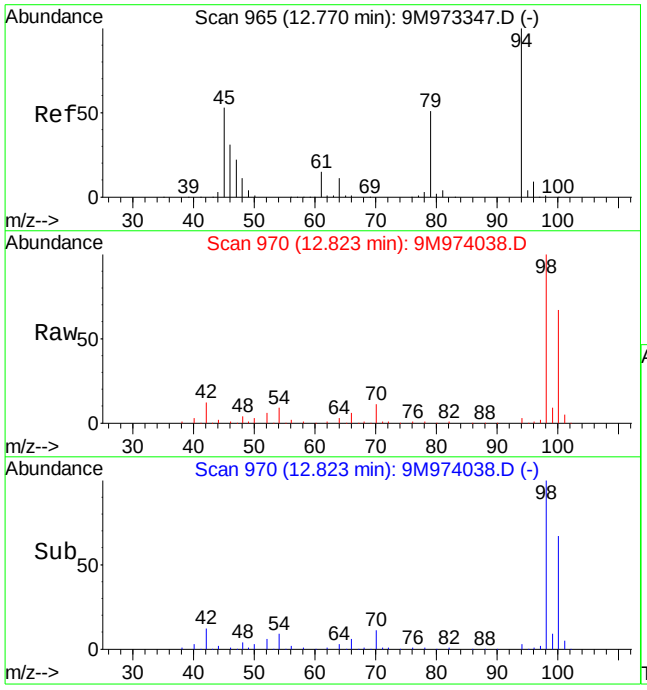

#56
Dimethyl Disulfide
Concen: 2.87 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M974038.D
Acq: 28 Apr 2016 17:47

Tgt Ion: 94 Resp: 14604

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

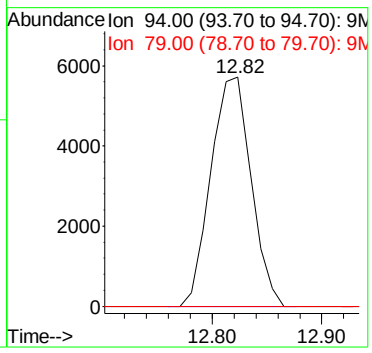

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974039.D Vial: 11
Acq On : 28 Apr 2016 18:17 Operator: ADC
Sample : L16041344-07 A 8260 5.36g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:39:55 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	578707	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	419986	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	195541	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	151581	51.8632 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 103.72%		
43) 1,2-Dichloroethane-d4	10.44	65	179315	58.6072 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 117.22%		
58) Toluene-d8	12.81	98	542122	54.1608 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 108.32%		
79) p-Bromofluorobenzene	16.22	95	201830	59.5911 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 119.18%		

Target Compounds

					Qvalue
13) Acetone	6.40	43	3283	Below Cal #	55
15) Tert-Butyl Alcohol	6.72	59	231	0.4551 ug/kg#	61
36) Tetrahydrofuran	9.77	42	2645	2.0012 ug/kg#	66
56) Dimethyl Disulfide	12.81	94	14535	2.7507 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.08	105	2331	Below Cal	77

(#) = qualifier out of range (m) = manual integration
9M974039.D 8260-SL.M Fri Apr 29 12:39:55 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974039.D Vial: 11
Acq On : 28 Apr 2016 18:17 Operator: ADC
Sample : L16041344-07 A 8260 5.36g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:39 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

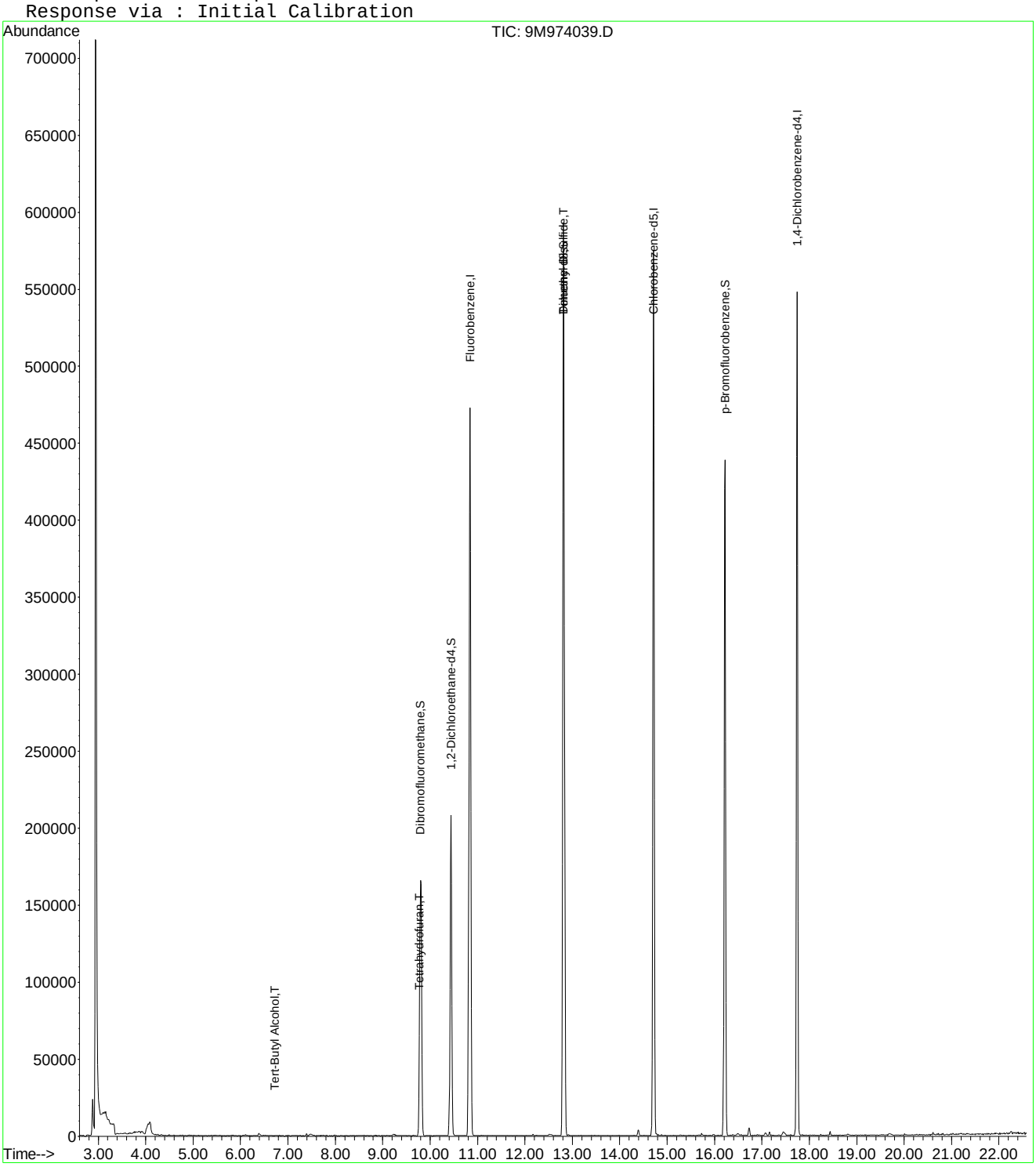

9M974039.D 8260-SL.M Fri Apr 29 12:39:56 2016 Page 2

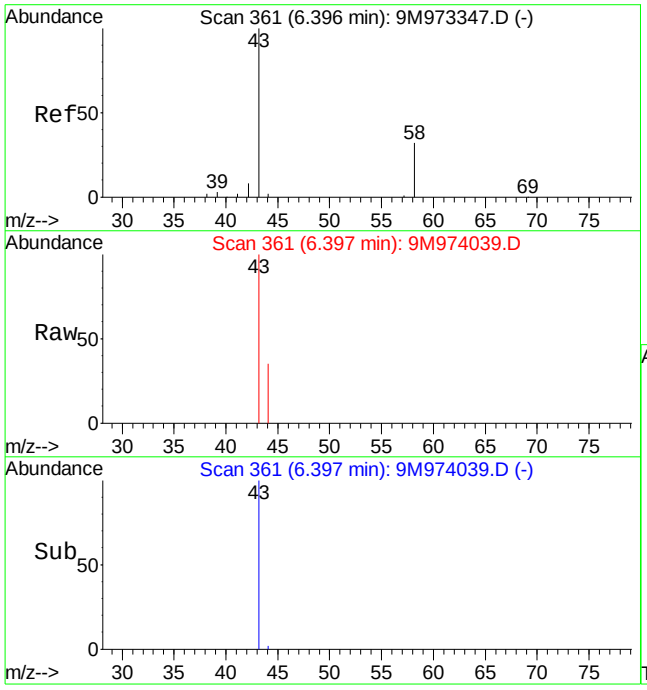

#13
Acetone
Concen: Below Cal
RT: 6.40 min Scan# 361
Delta R.T. 0.01 min
Lab File: 9M974039.D
Acq: 28 Apr 2016 18:17

Tgt Ion: 43 Resp: 3283

Ion	Ratio	Lower	Upper
43	100		
58	8.1	20.2	47.2#

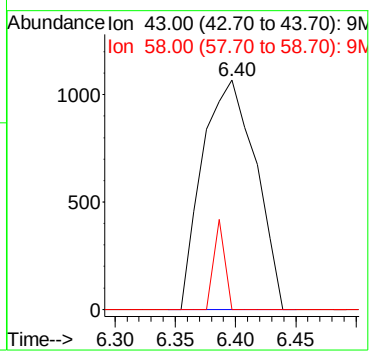

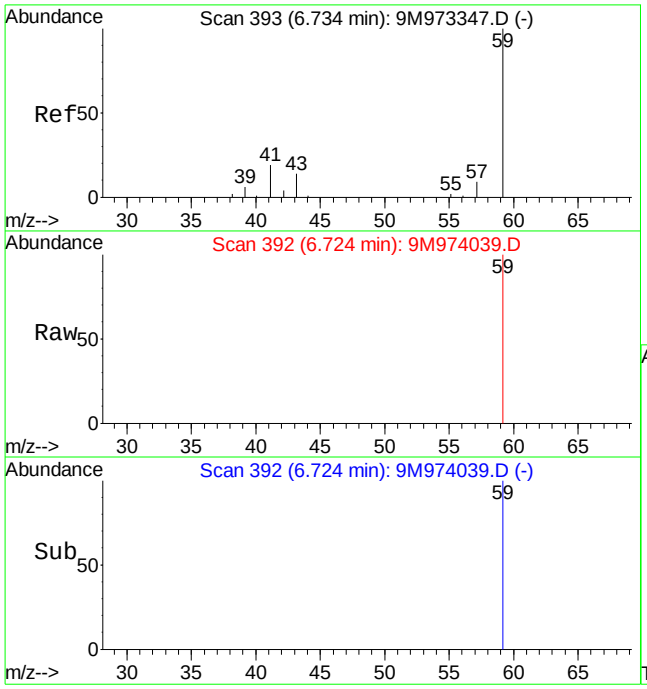

#15
Tert-Butyl Alcohol
Concen: 0.46 ug/kg
RT: 6.72 min Scan# 392
Delta R.T. 0.00 min
Lab File: 9M974039.D
Acq: 28 Apr 2016 18:17

Tgt Ion: 59 Resp: 231

Ion	Ratio	Lower	Upper
59	100		
41	0.0	12.4	29.0#
57	0.0	6.1	14.1#

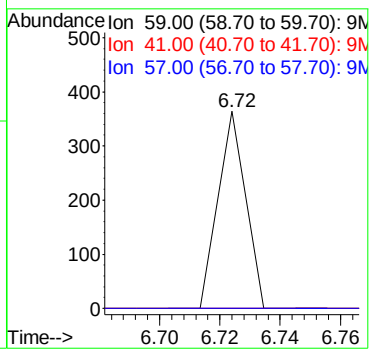

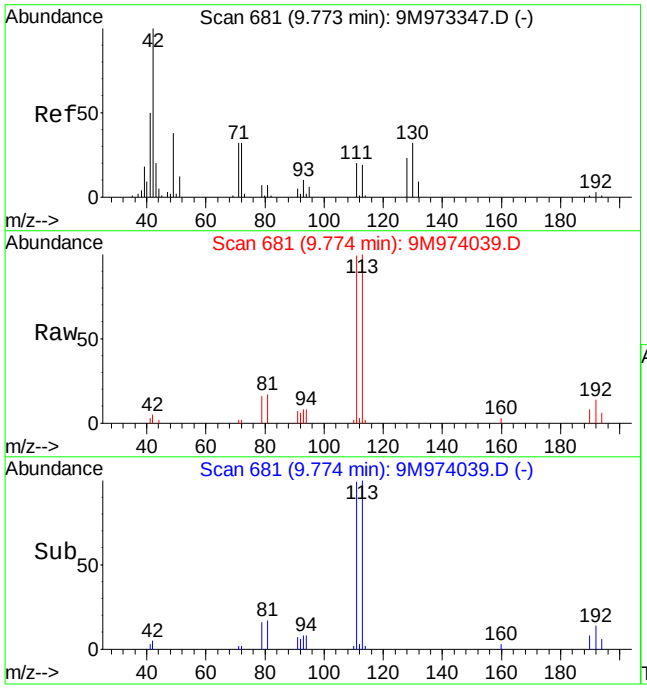

#36
Tetrahydrofuran
Concen: 2.00 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. 0.00 min
Lab File: 9M974039.D
Acq: 28 Apr 2016 18:17

Tgt Ion: 42 Resp: 2645

Ion	Ratio	Lower	Upper
42	100		
72	7.8	19.8	46.2#
71	17.7	18.3	42.7#

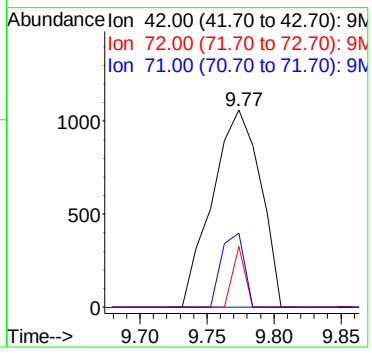

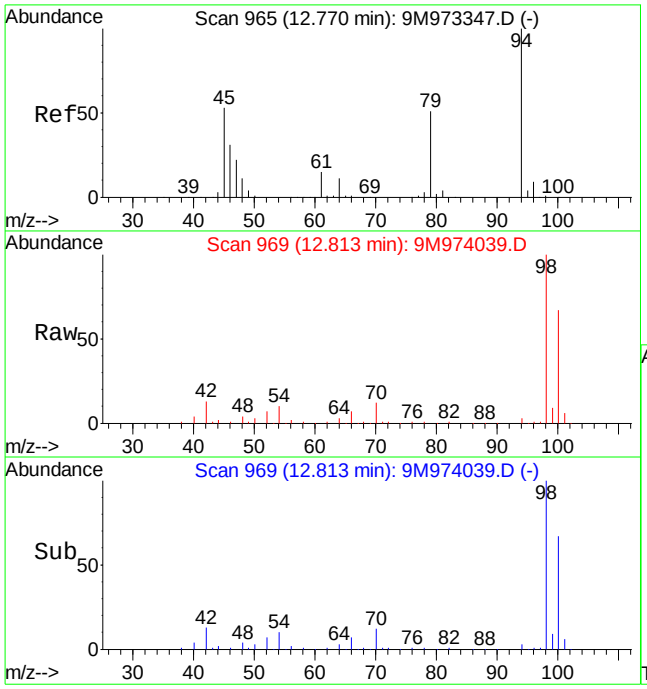

#56
Dimethyl Disulfide
Concen: 2.75 ug/kg
RT: 12.81 min Scan# 969
Delta R.T. 0.05 min
Lab File: 9M974039.D
Acq: 28 Apr 2016 18:17

Tgt Ion: 94 Resp: 14535

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

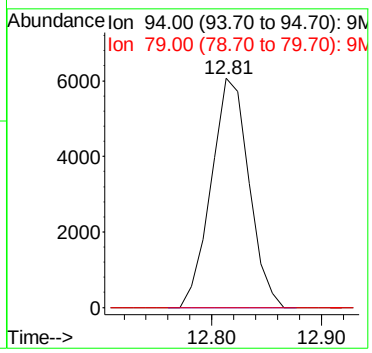

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974040.D Vial: 12
Acq On : 28 Apr 2016 18:47 Operator: ADC
Sample : L16041344-08 A 8260 4.95g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:39:56 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	577592	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	421673	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	197545	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	150353	51.5424 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 103.08%		
43) 1,2-Dichloroethane-d4	10.43	65	177069	57.9848 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 115.96%		
58) Toluene-d8	12.82	98	545345	54.2648 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 108.52%		
79) p-Bromofluorobenzene	16.22	95	204369	59.7286 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 119.46%		

Target Compounds

					Qvalue
13) Acetone	6.39	43	3495	Below Cal	82
36) Tetrahydrofuran	9.77	42	2589	1.9627 ug/kg#	80
56) Dimethyl Disulfide	12.82	94	14532	2.7554 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.08	105	2239	Below Cal	82

(#) = qualifier out of range (m) = manual integration
9M974040.D 8260-SL.M Fri Apr 29 12:39:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974040.D Vial: 12
Acq On : 28 Apr 2016 18:47 Operator: ADC
Sample : L16041344-08 A 8260 4.95g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:39 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

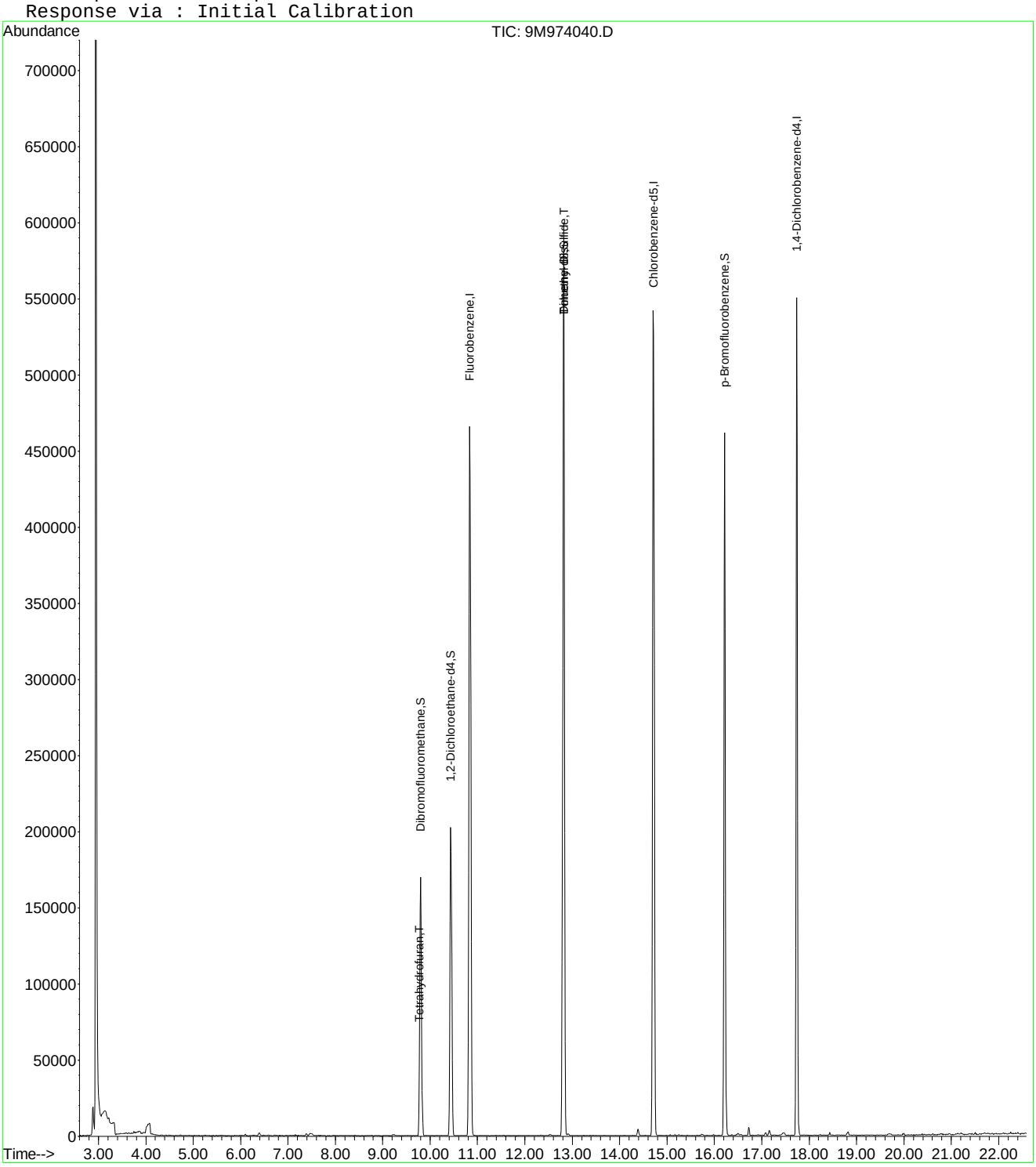

9M974040.D 8260-SL.M Fri Apr 29 12:39:57 2016 Page 2

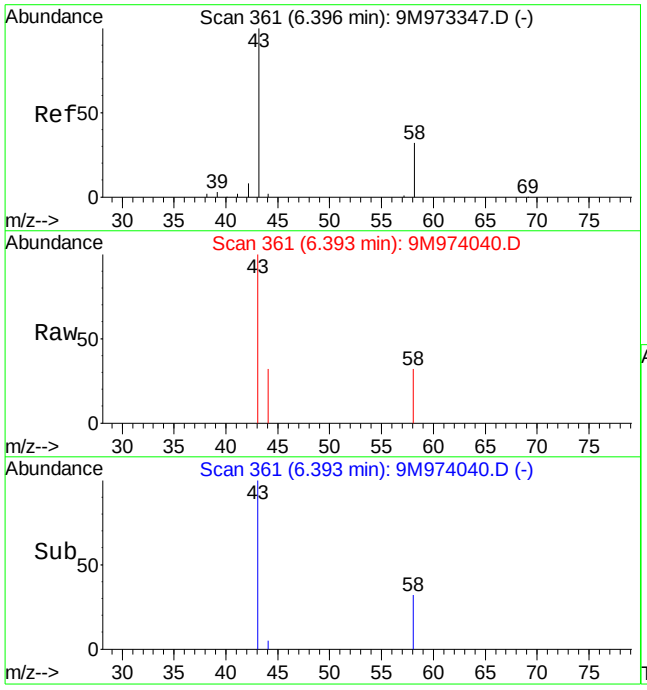

#13
Acetone
Concen: Below Cal
RT: 6.39 min Scan# 361
Delta R.T. 0.01 min
Lab File: 9M974040.D
Acq: 28 Apr 2016 18:47

Tgt Ion: 43 Resp: 3495

Ion	Ratio	Lower	Upper
43	100		
58	23.4	20.2	47.2

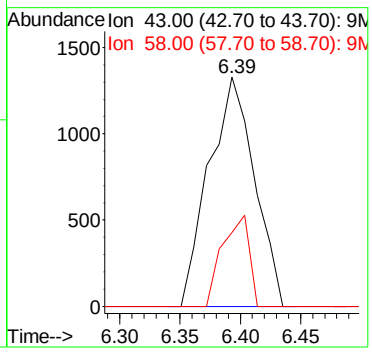

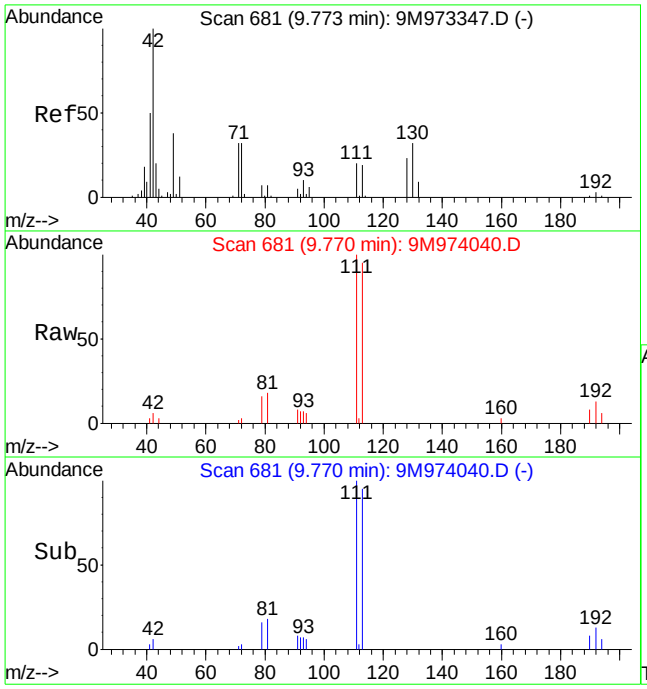

#36
Tetrahydrofuran
Concen: 1.96 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. -0.00 min
Lab File: 9M974040.D
Acq: 28 Apr 2016 18:47

Tgt Ion: 42 Resp: 2589

Ion	Ratio	Lower	Upper
42	100		
72	16.8	19.8	46.2#
71	25.2	18.3	42.7

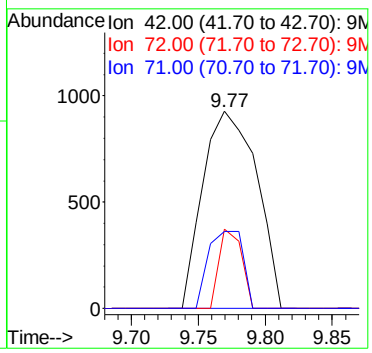

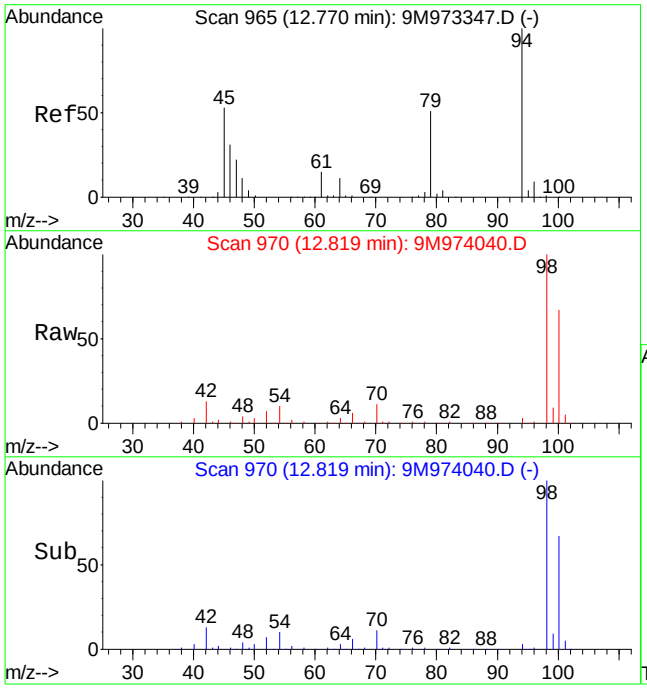

#56
Dimethyl Disulfide
Concen: 2.76 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M974040.D
Acq: 28 Apr 2016 18:47

Tgt Ion: 94 Resp: 14532

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

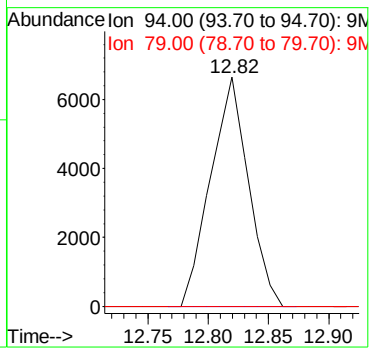

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974041.D Vial: 13
Acq On : 28 Apr 2016 19:18 Operator: ADC
Sample : L16041344-09 A 8260 4.58g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:39:57 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	565807	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	416442	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	194016	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	153233	53.6238 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 107.24%		
43) 1,2-Dichloroethane-d4	10.44	65	181133	60.5511 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 121.10%#		
58) Toluene-d8	12.81	98	545601	54.9723 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 109.94%		
79) p-Bromofluorobenzene	16.21	95	203202	60.4678 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 120.94%		

Target Compounds

					Qvalue
13) Acetone	6.40	43	3411	Below Cal	80
36) Tetrahydrofuran	9.77	42	2287	1.7698 ug/kg#	71
56) Dimethyl Disulfide	12.81	94	14559	2.8180 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.09	105	2528	Below Cal	70

(#) = qualifier out of range (m) = manual integration
9M974041.D 8260-SL.M Fri Apr 29 12:39:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974041.D Vial: 13
Acq On : 28 Apr 2016 19:18 Operator: ADC
Sample : L16041344-09 A 8260 4.58g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:39 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

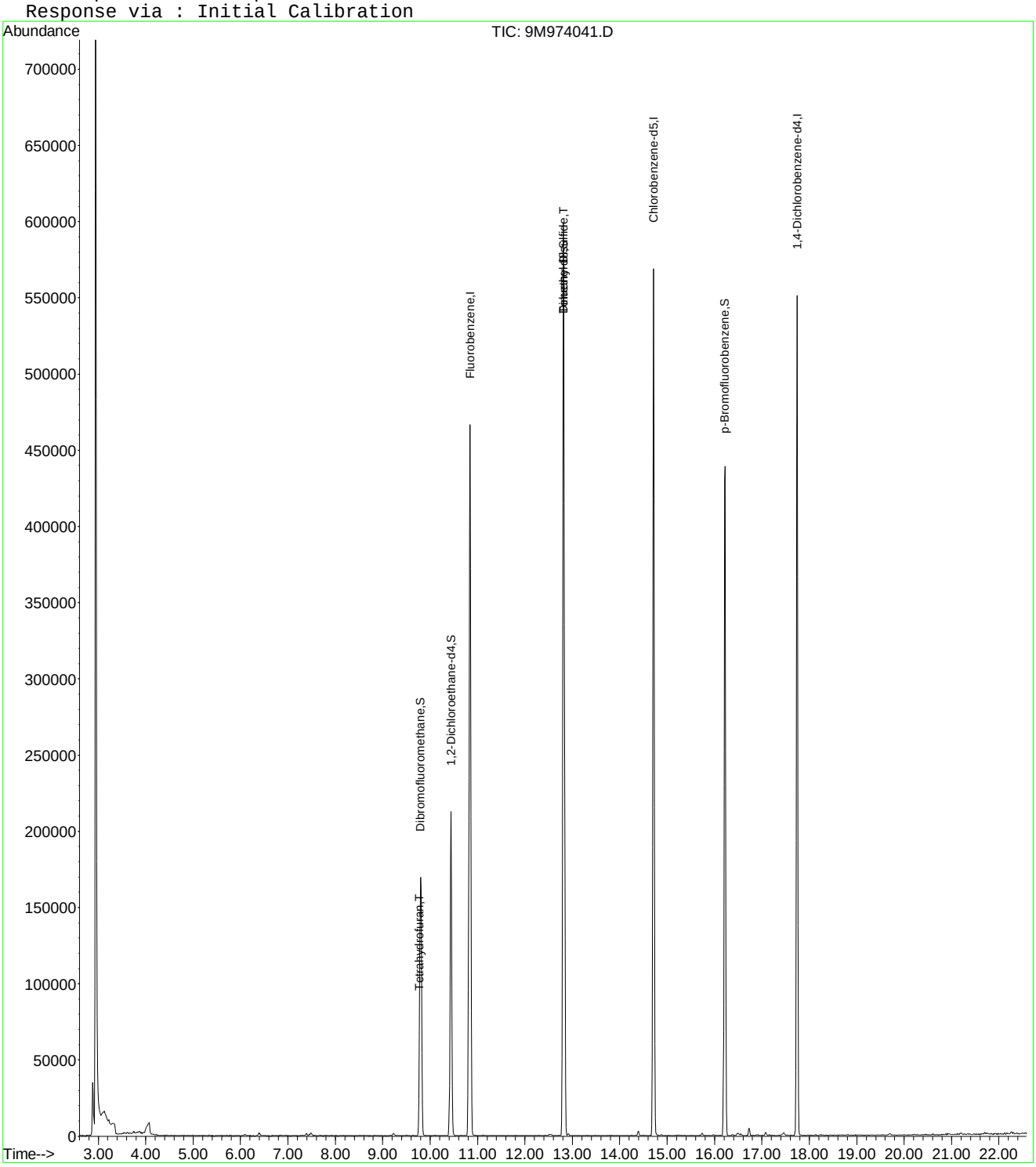

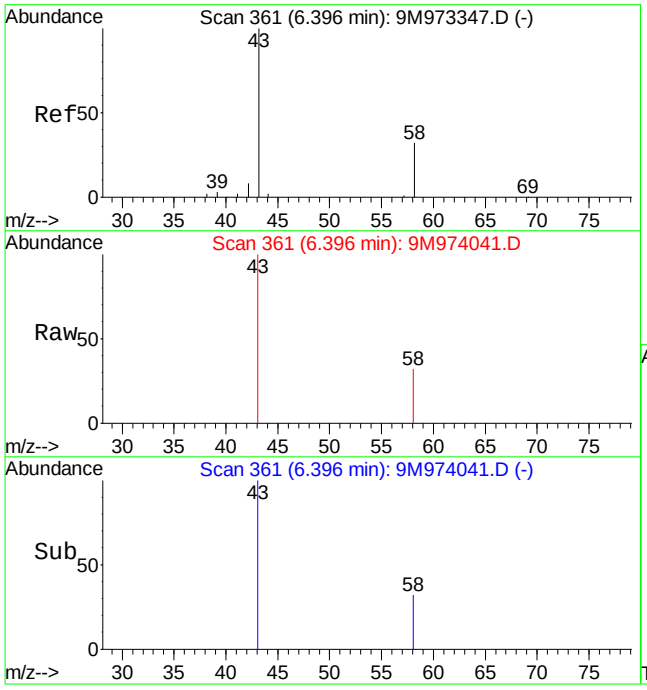

#13
Acetone
Concen: Below Cal
RT: 6.40 min Scan# 361
Delta R.T. 0.01 min
Lab File: 9M974041.D
Acq: 28 Apr 2016 19:18

Tgt Ion: 43 Resp: 3411

Ion	Ratio	Lower	Upper
43	100		
58	22.5	20.2	47.2

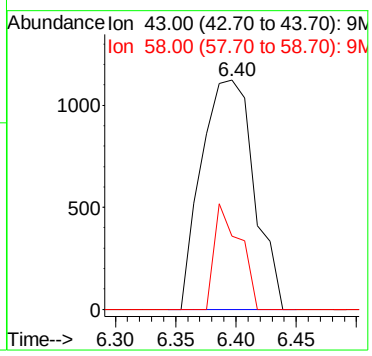

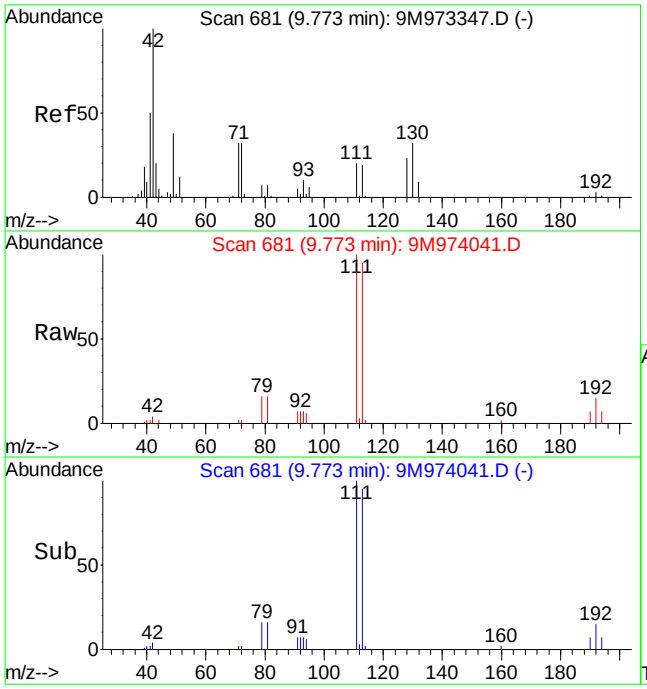

#36
Tetrahydrofuran
Concen: 1.77 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. 0.00 min
Lab File: 9M974041.D
Acq: 28 Apr 2016 19:18

Tgt Ion: 42 Resp: 2287

Ion	Ratio	Lower	Upper
42	100		
72	21.6	19.8	46.2
71	9.2	18.3	42.7#

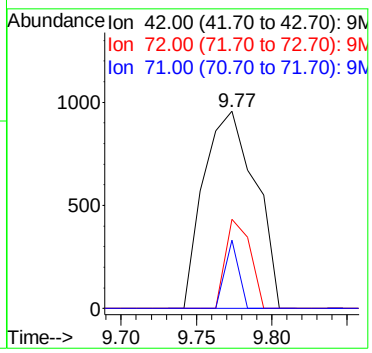

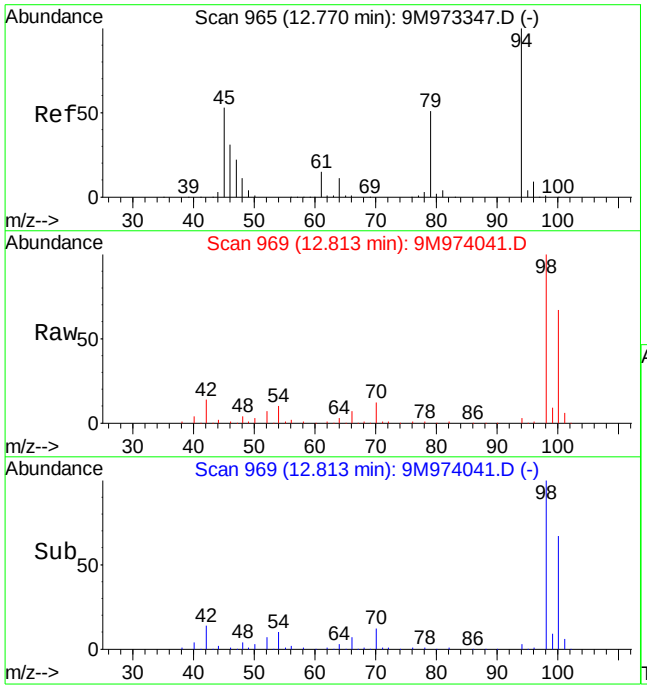

#56
Dimethyl Disulfide
Concen: 2.82 ug/kg
RT: 12.81 min Scan# 969
Delta R.T. 0.04 min
Lab File: 9M974041.D
Acq: 28 Apr 2016 19:18

Tgt Ion: 94 Resp: 14559

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

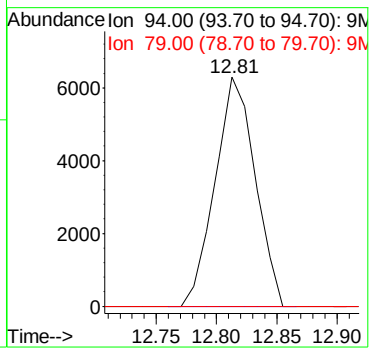

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974042.D Vial: 14
Acq On : 28 Apr 2016 19:48 Operator: ADC
Sample : L16041344-10 A 8260 5.33g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:39:58 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	582517	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	417633	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.74	152	189710	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	150802	51.2592 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 102.52%		
43) 1,2-Dichloroethane-d4	10.44	65	163714	53.1582 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 106.32%		
58) Toluene-d8	12.82	98	557914	56.0526 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 112.10%		
79) p-Bromofluorobenzene	16.22	95	199745	60.7882 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 121.58%#		

Target Compounds

					Qvalue
13) Acetone	6.38	43	4677	Below Cal	99
36) Tetrahydrofuran	9.77	42	2850	2.1422 ug/kg#	79
56) Dimethyl Disulfide	12.82	94	14754	2.7738 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.08	105	2393	Below Cal	93

(#) = qualifier out of range (m) = manual integration
9M974042.D 8260-SL.M Fri Apr 29 12:39:58 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974042.D Vial: 14
Acq On : 28 Apr 2016 19:48 Operator: ADC
Sample : L16041344-10 A 8260 5.33g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:39 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

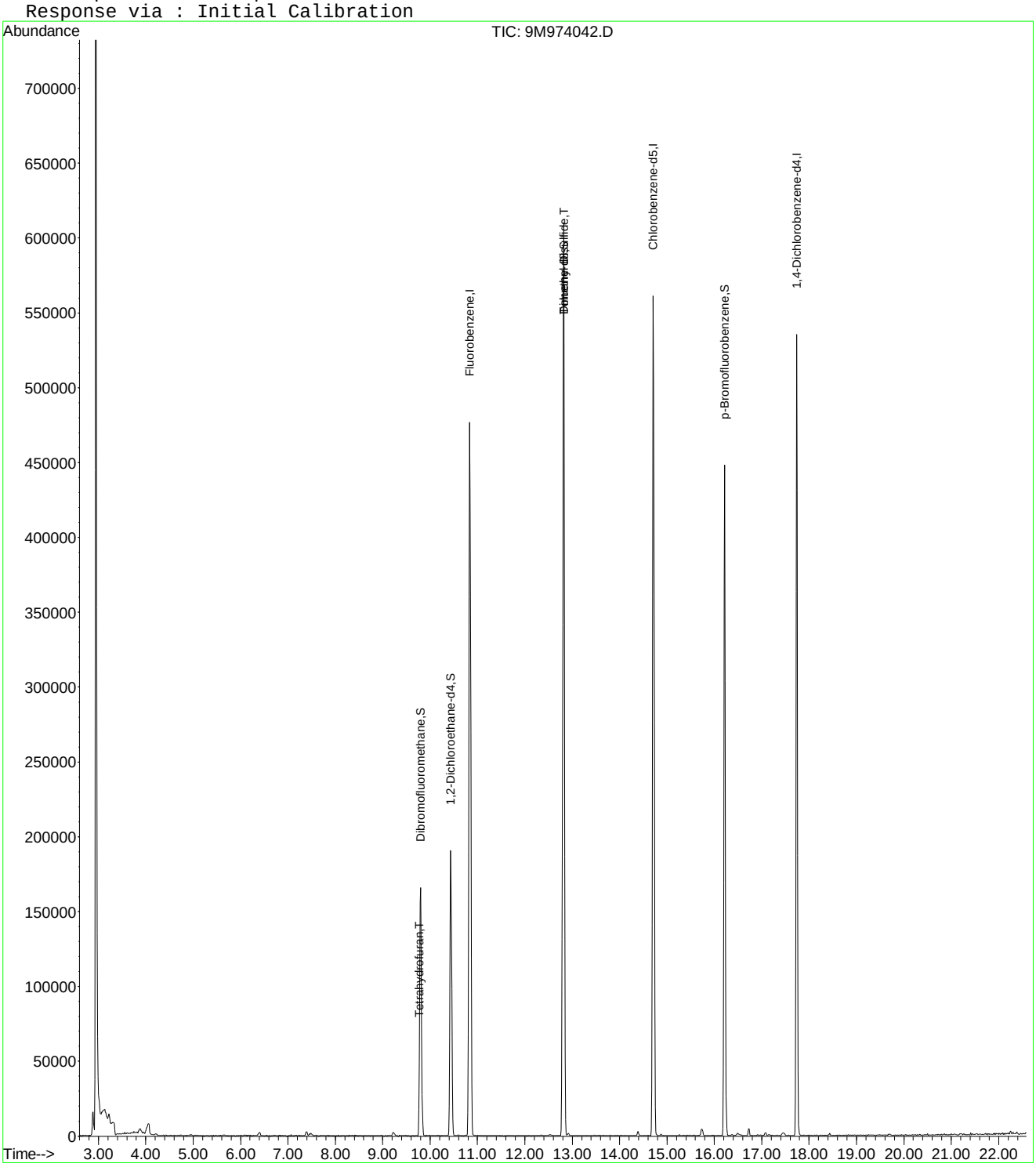

9M974042.D 8260-SL.M Fri Apr 29 12:39:59 2016 Page 2

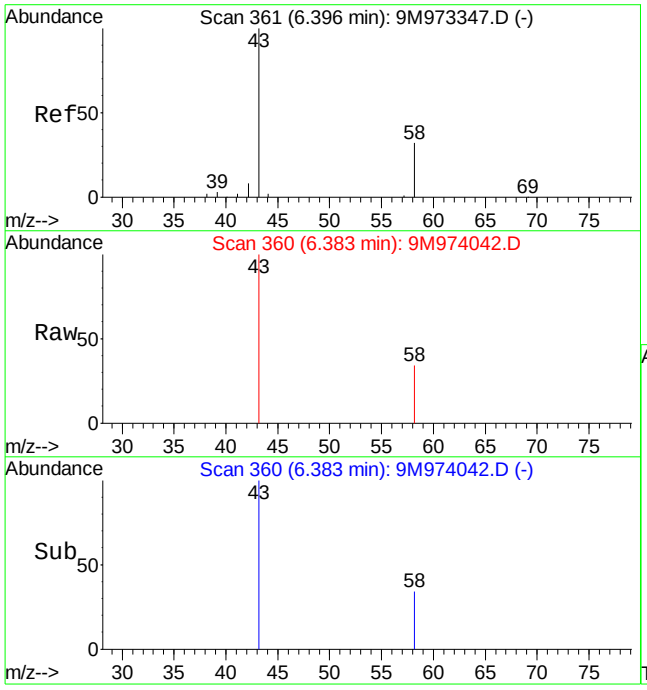

#13
Acetone
Concen: Below Cal
RT: 6.38 min Scan# 360
Delta R.T. 0.00 min
Lab File: 9M974042.D
Acq: 28 Apr 2016 19:48

Tgt Ion: 43 Resp: 4677

Ion	Ratio	Lower	Upper
43	100		
58	32.9	20.2	47.2

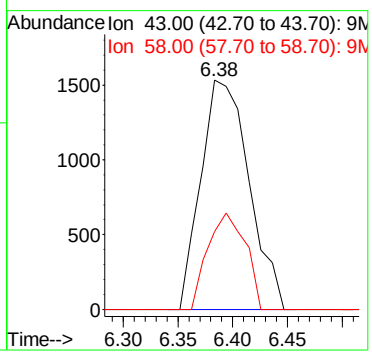

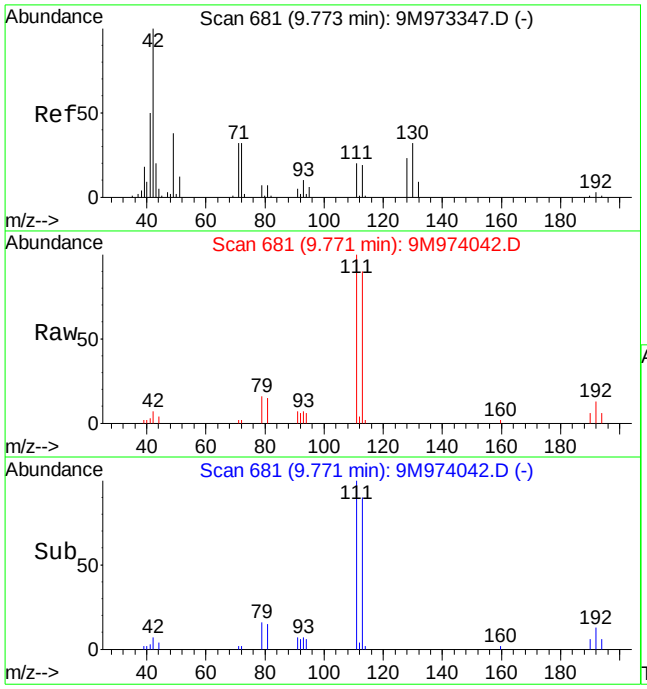

#36
Tetrahydrofuran
Concen: 2.14 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. -0.00 min
Lab File: 9M974042.D
Acq: 28 Apr 2016 19:48

Tgt Ion: 42 Resp: 2850

Ion	Ratio	Lower	Upper
42	100		
72	24.0	19.8	46.2
71	15.7	18.3	42.7#

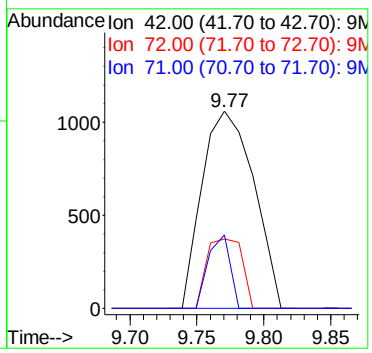

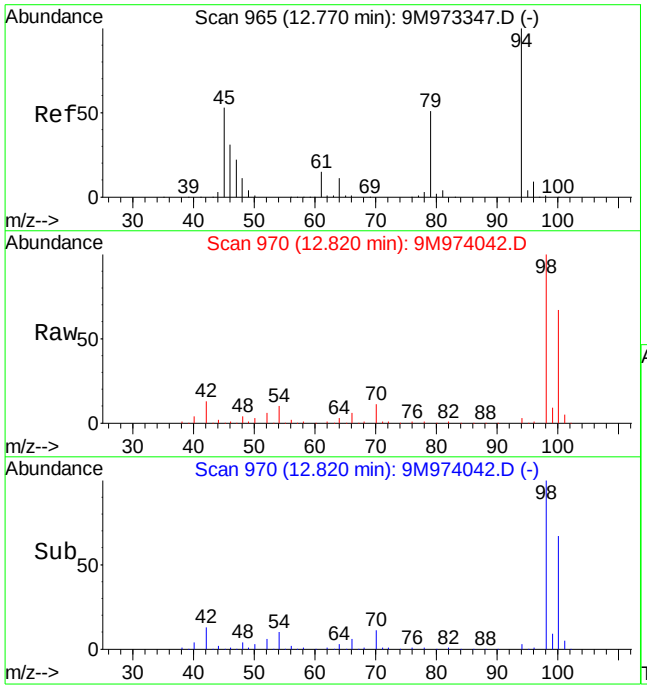

#56
Dimethyl Disulfide
Concen: 2.77 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M974042.D
Acq: 28 Apr 2016 19:48

Tgt Ion: 94 Resp: 14754

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

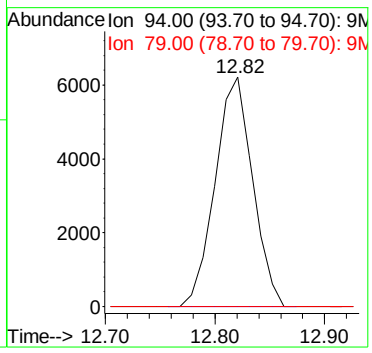

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974043.D Vial: 15
Acq On : 28 Apr 2016 20:18 Operator: ADC
Sample : L16041344-11 A 8260 4.78g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:39:59 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	593163	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	423056	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	189429	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	151850	50.6891 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 101.38%		
43) 1,2-Dichloroethane-d4	10.44	65	165280	52.7035 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.40%		
58) Toluene-d8	12.81	98	567263	56.2613 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 112.52%		
79) p-Bromofluorobenzene	16.21	95	204885	62.4449 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 124.88%#		

Target Compounds

					Qvalue
13) Acetone	6.39	43	3593	Below Cal #	68
19) Methylene Chloride	7.39	84	1387	0.4105 ug/kg	66
36) Tetrahydrofuran	9.77	42	3276	2.4183 ug/kg#	76
56) Dimethyl Disulfide	12.81	94	15003	2.7700 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.08	105	4021	Below Cal	85

(#) = qualifier out of range (m) = manual integration
9M974043.D 8260-SL.M Fri Apr 29 12:39:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974043.D Vial: 15
Acq On : 28 Apr 2016 20:18 Operator: ADC
Sample : L16041344-11 A 8260 4.78g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:39 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

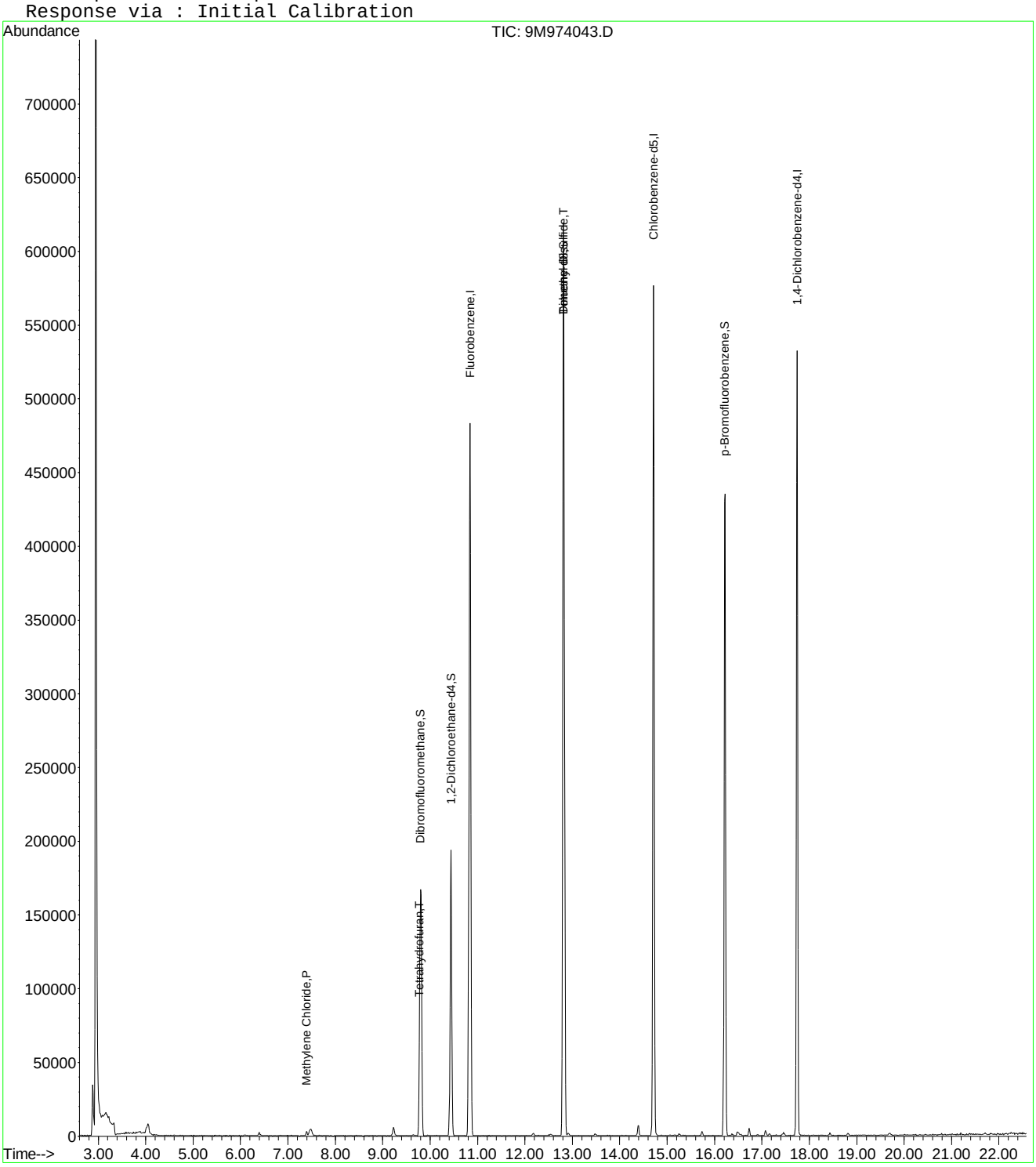

9M974043.D 8260-SL.M Fri Apr 29 12:40:00 2016 Page 2

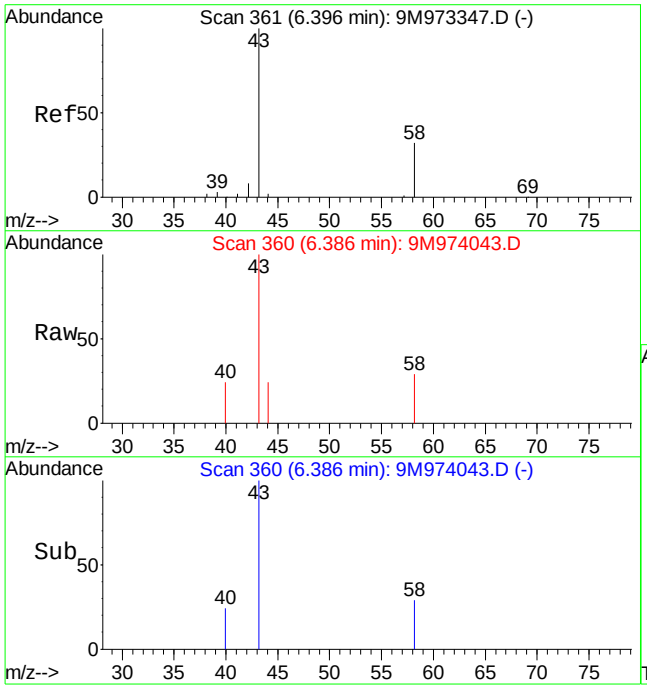

#13
Acetone
Concen: Below Cal
RT: 6.39 min Scan# 360
Delta R.T. 0.00 min
Lab File: 9M974043.D
Acq: 28 Apr 2016 20:18

Tgt Ion: 43 Resp: 3593

Ion	Ratio	Lower	Upper
43	100		
58	15.3	20.2	47.2#

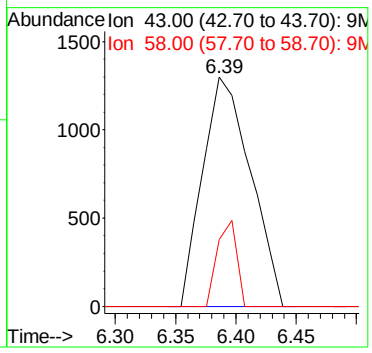

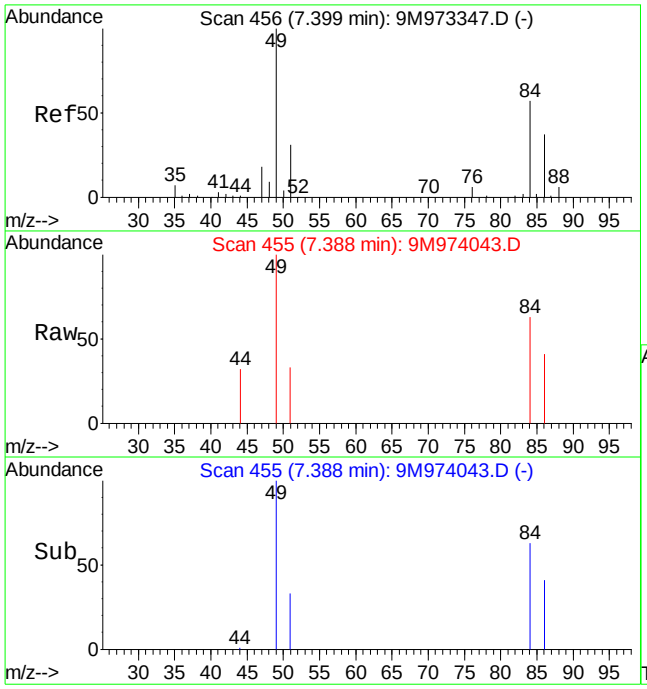

#19
Methylene Chloride
Concen: 0.41 ug/kg
RT: 7.39 min Scan# 455
Delta R.T. -0.01 min
Lab File: 9M974043.D
Acq: 28 Apr 2016 20:18

Tgt Ion: 84 Resp: 1387

Ion	Ratio	Lower	Upper
84	100		
49	220.2	103.9	242.5

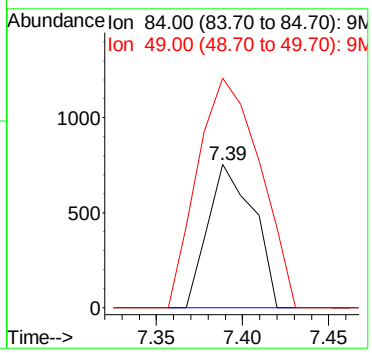

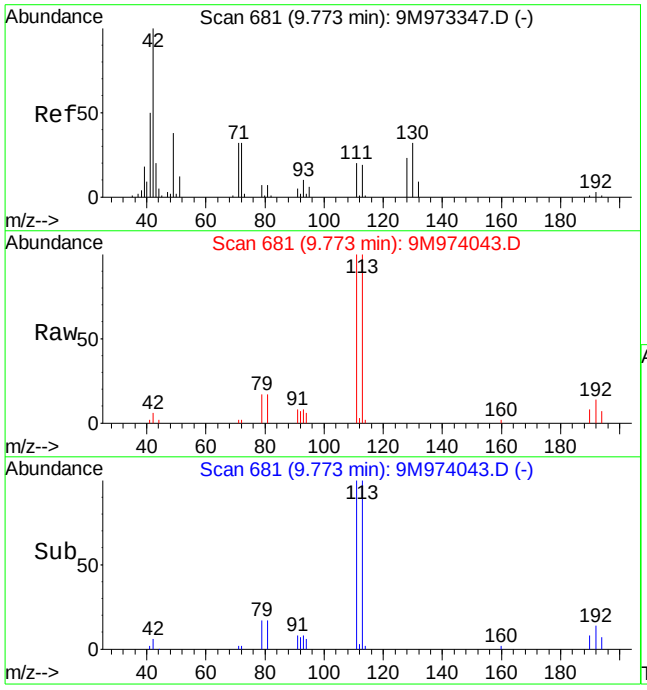

#36
Tetrahydrofuran
Concen: 2.42 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. 0.00 min
Lab File: 9M974043.D
Acq: 28 Apr 2016 20:18

Tgt Ion: 42 Resp: 3276

Ion	Ratio	Lower	Upper
42	100		
72	21.3	19.8	46.2
71	14.9	18.3	42.7#

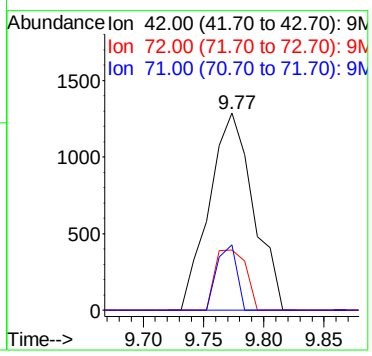

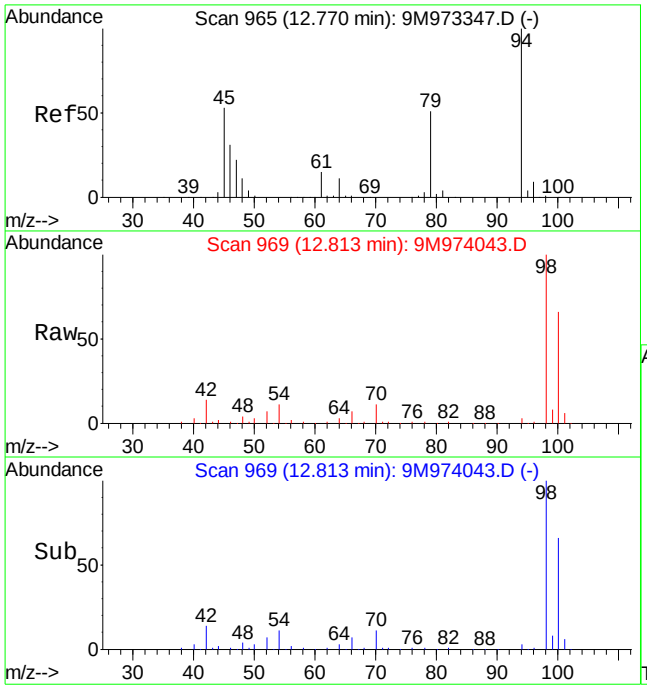

#56
Dimethyl Disulfide
Concen: 2.77 ug/kg
RT: 12.81 min Scan# 969
Delta R.T. 0.04 min
Lab File: 9M974043.D
Acq: 28 Apr 2016 20:18

Tgt Ion: 94 Resp: 15003

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

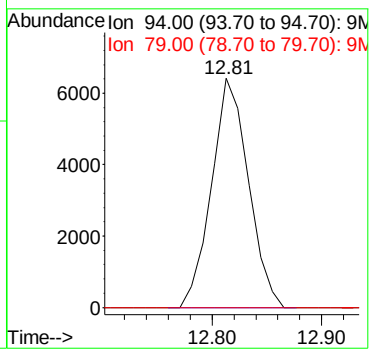

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974044.D Vial: 16
Acq On : 28 Apr 2016 20:48 Operator: ADC
Sample : L16041344-12 A 8260 5.25g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:40:00 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	482589	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	347606	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	158830	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	126218	51.7866 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 103.58%		
43) 1,2-Dichloroethane-d4	10.44	65	139502	54.6759 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 109.36%		
58) Toluene-d8	12.81	98	464958	56.1241 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 112.24%		
79) p-Bromofluorobenzene	16.22	95	165278	60.0781 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 120.16%		

Target Compounds					Qvalue
13) Acetone	6.39	43	8255	3.2333 ug/kg#	66
19) Methylene Chloride	7.39	84	1171	0.4260 ug/kg	94
36) Tetrahydrofuran	9.77	42	2467	2.2383 ug/kg#	82
56) Dimethyl Disulfide	12.82	94	12500	2.8367 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.09	105	2106	Below Cal	75

(#) = qualifier out of range (m) = manual integration
9M974044.D 8260-SL.M Fri Apr 29 12:40:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974044.D Vial: 16
Acq On : 28 Apr 2016 20:48 Operator: ADC
Sample : L16041344-12 A 8260 5.25g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:40 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

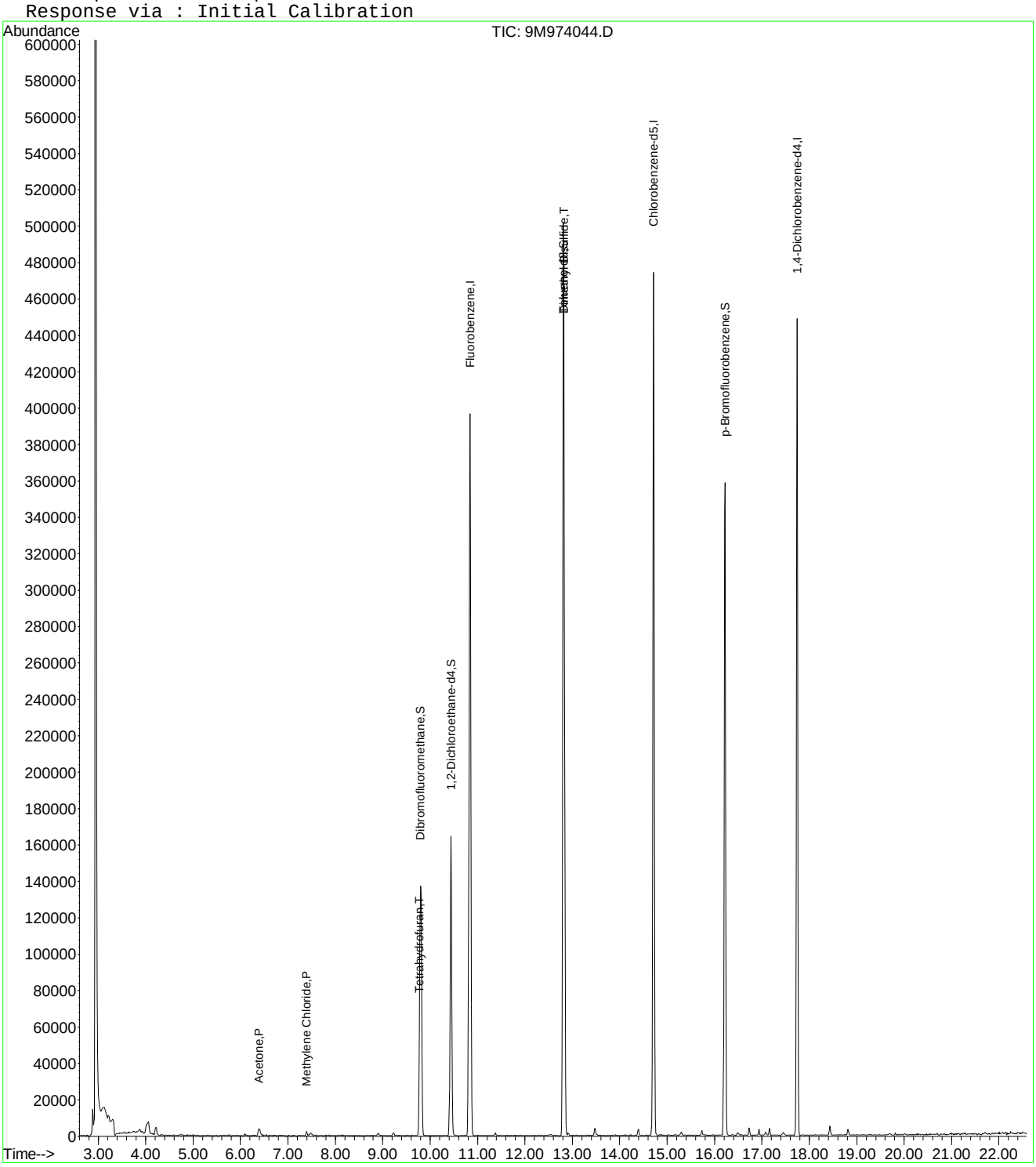

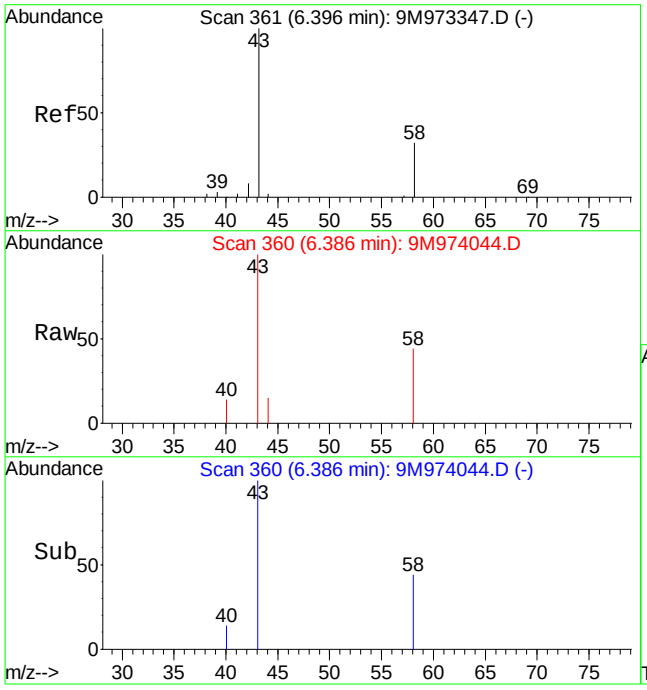

#13
Acetone
Concen: 3.23 ug/kg
RT: 6.39 min Scan# 360
Delta R.T. 0.00 min
Lab File: 9M974044.D
Acq: 28 Apr 2016 20:48

Tgt Ion: 43 Resp: 8255

Ion	Ratio	Lower	Upper
43	100		
58	52.9	20.2	47.2#

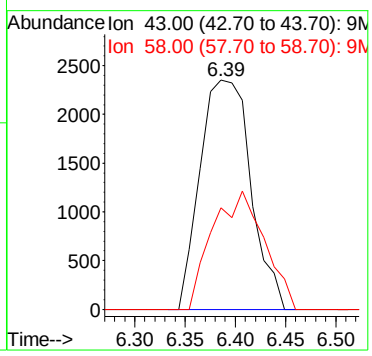

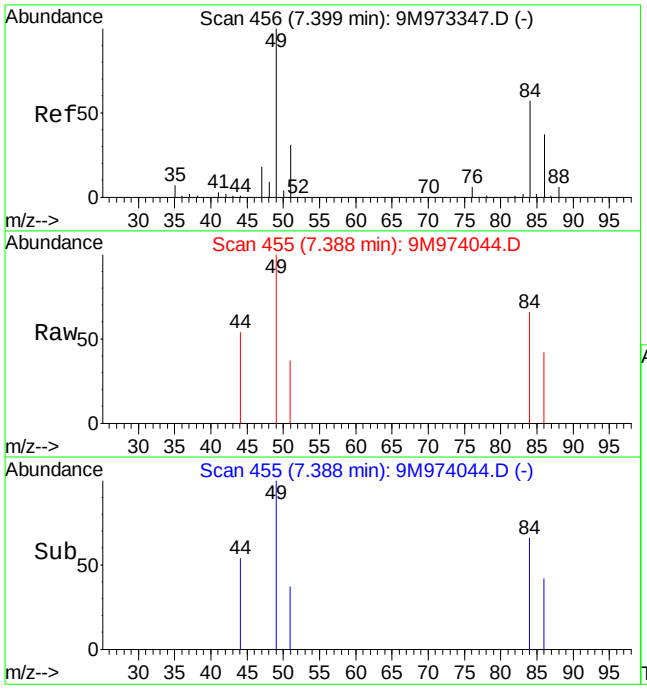

#19
Methylene Chloride
Concen: 0.43 ug/kg
RT: 7.39 min Scan# 455
Delta R.T. -0.01 min
Lab File: 9M974044.D
Acq: 28 Apr 2016 20:48

Tgt Ion: 84 Resp: 1171

Ion	Ratio	Lower	Upper
84	100		
49	181.6	103.9	242.5

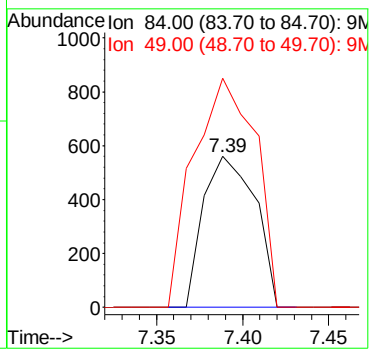

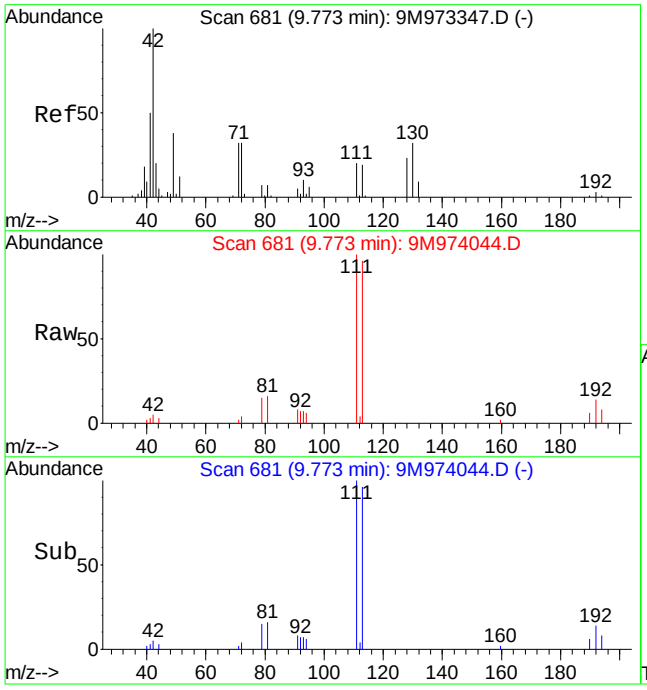

#36
Tetrahydrofuran
Concen: 2.24 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. 0.00 min
Lab File: 9M974044.D
Acq: 28 Apr 2016 20:48

Tgt Ion: 42 Resp: 2467

Ion	Ratio	Lower	Upper
42	100		
72	15.6	19.8	46.2#
71	32.6	18.3	42.7

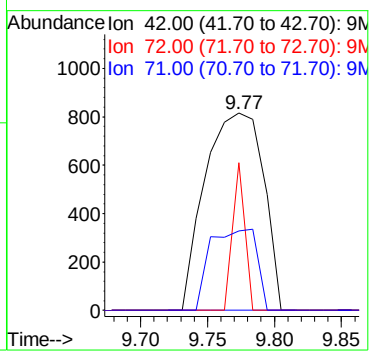

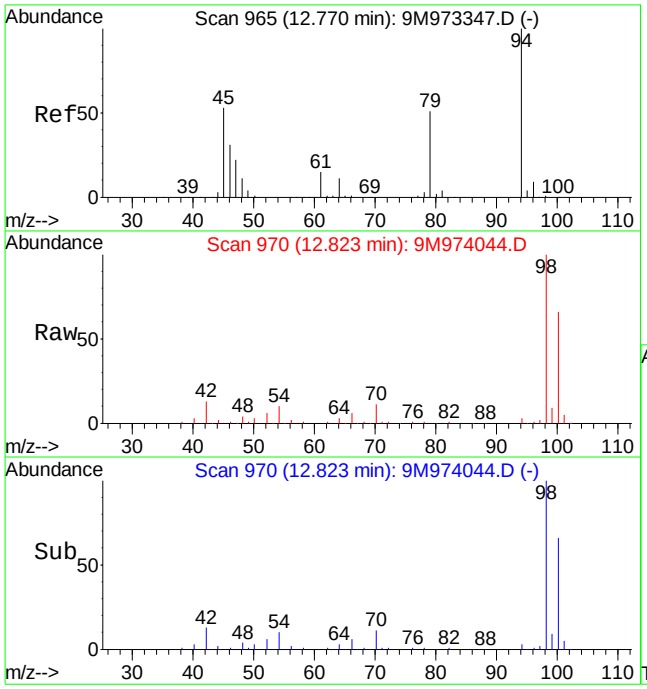

#56
Dimethyl Disulfide
Concen: 2.84 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M974044.D
Acq: 28 Apr 2016 20:48

Tgt Ion: 94 Resp: 12500

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

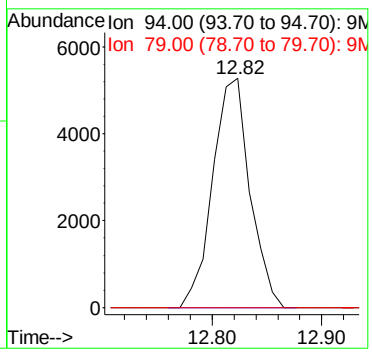

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974045.D Vial: 17
Acq On : 28 Apr 2016 21:19 Operator: ADC
Sample : L16041344-13 A 8260 4.69g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:40:01 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	604838	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	423143	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	190929	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	161415	52.8419 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.68%		
43) 1,2-Dichloroethane-d4	10.43	65	168988	52.8457 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.70%		
58) Toluene-d8	12.82	98	578845	57.3982 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 114.80%		
79) p-Bromofluorobenzene	16.22	95	207709	62.8083 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 125.62%#		

Target Compounds

					Qvalue
13) Acetone	6.39	43	9833	2.7837 ug/kg#	56
19) Methylene Chloride	7.38	84	1694	0.4917 ug/kg	87
26) Vinyl Acetate	8.44	43	202	0.9009 ug/kg#	79
29) 2-Butanone	9.01	43	1786	0.9185 ug/kg#	58
36) Tetrahydrofuran	9.78	42	3256	2.3571 ug/kg#	77
56) Dimethyl Disulfide	12.82	94	15401	2.7886 ug/kg#	29
84) 1,3,5-Trimethylbenzene	16.48	105	4457	0.4101 ug/kg#	52
89) 1,2,4-Trimethylbenzene	17.07	105	3148	Below Cal	88

(#) = qualifier out of range (m) = manual integration
9M974045.D 8260-SL.M Fri Apr 29 12:40:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974045.D Vial: 17
Acq On : 28 Apr 2016 21:19 Operator: ADC
Sample : L16041344-13 A 8260 4.69g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:40 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

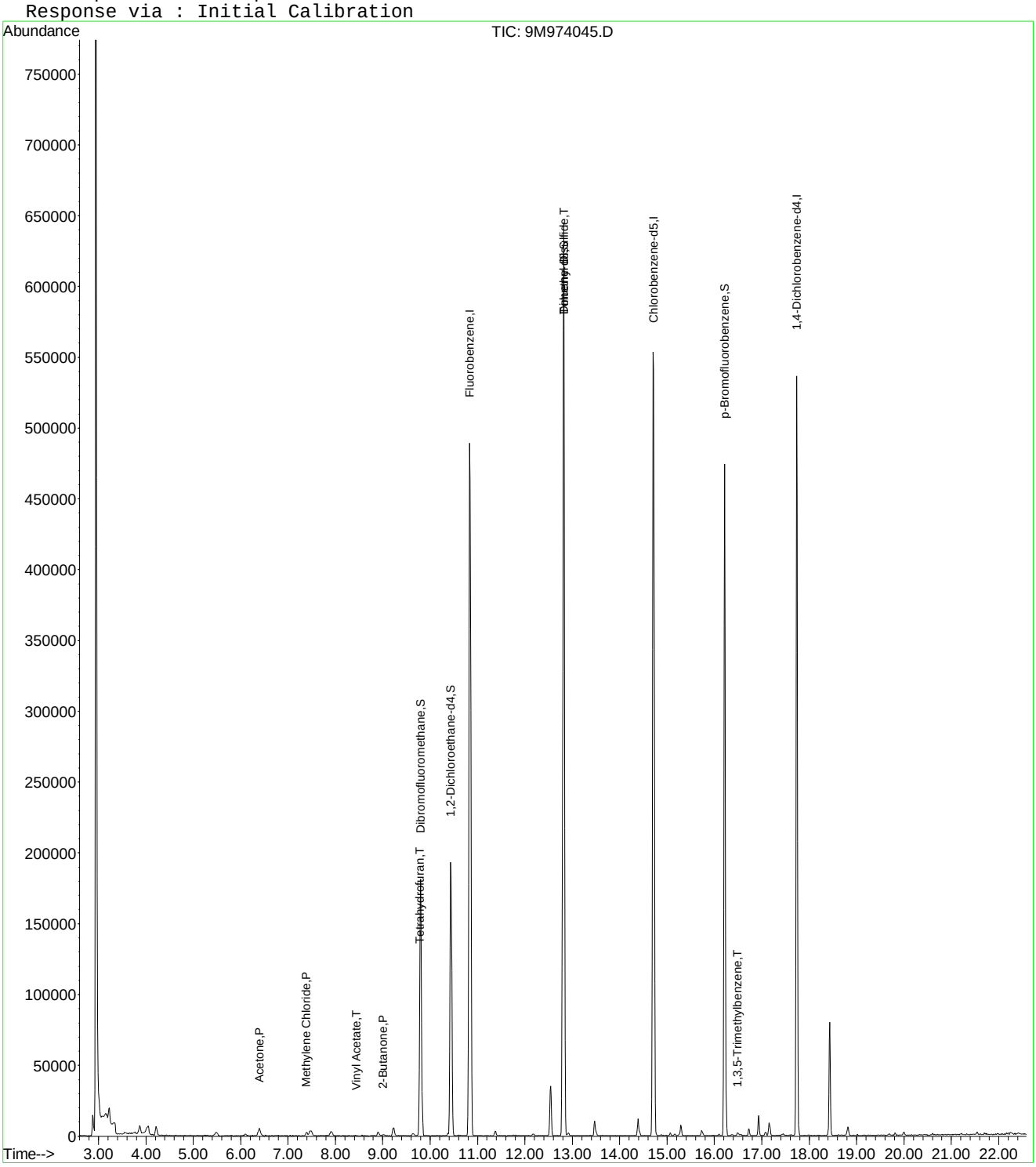

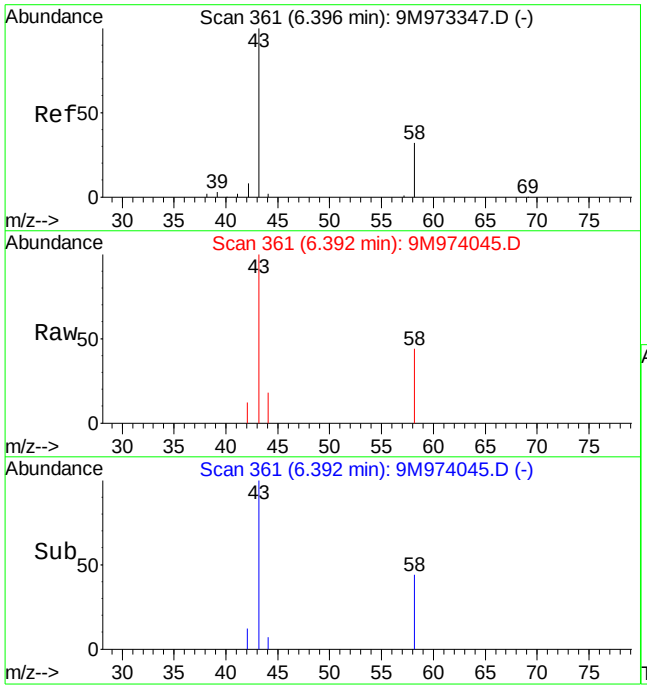

#13
Acetone
Concen: 2.78 ug/kg
RT: 6.39 min Scan# 361
Delta R.T. 0.01 min
Lab File: 9M974045.D
Acq: 28 Apr 2016 21:19

Tgt Ion: 43 Resp: 9833

Ion	Ratio	Lower	Upper
43	100		
58	58.8	20.2	47.2#

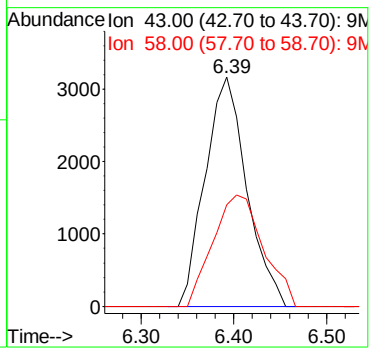

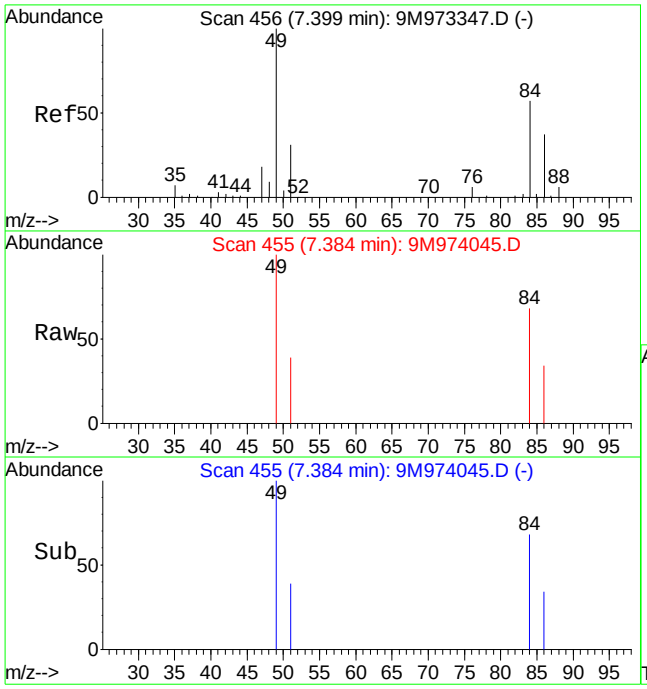

#19
Methylene Chloride
Concen: 0.49 ug/kg
RT: 7.38 min Scan# 455
Delta R.T. -0.01 min
Lab File: 9M974045.D
Acq: 28 Apr 2016 21:19

Tgt Ion: 84 Resp: 1694

Ion	Ratio	Lower	Upper
84	100		
49	155.4	103.9	242.5

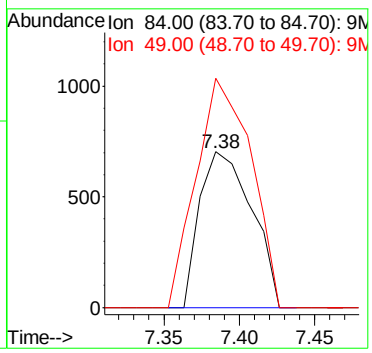

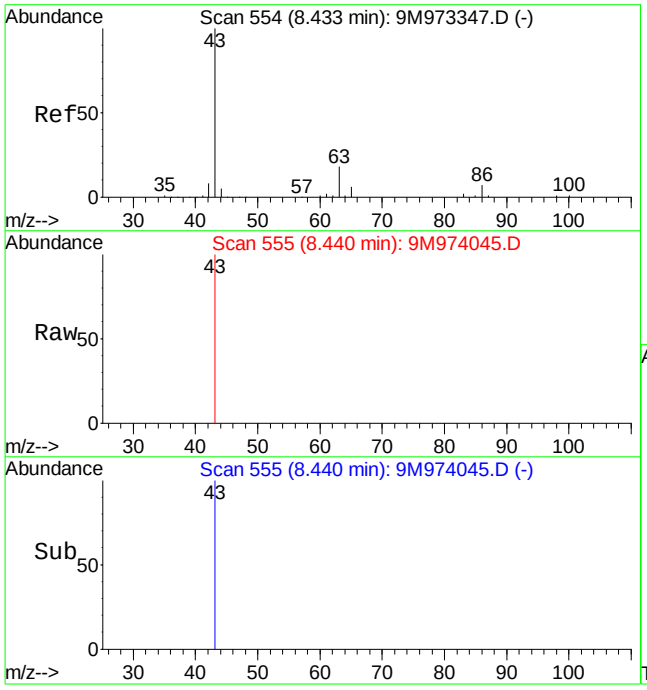

#26
Vinyl Acetate
Concen: 0.90 ug/kg
RT: 8.44 min Scan# 555
Delta R.T. 0.01 min
Lab File: 9M974045.D
Acq: 28 Apr 2016 21:19

Tgt Ion: 43 Resp: 202

Ion	Ratio	Lower	Upper
43	100		
86	0.0	4.4	10.4#

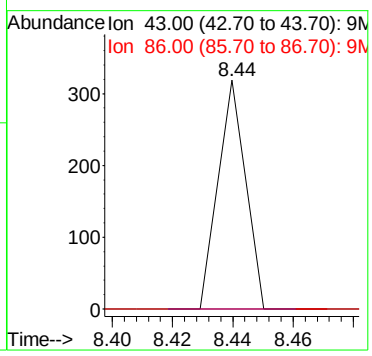

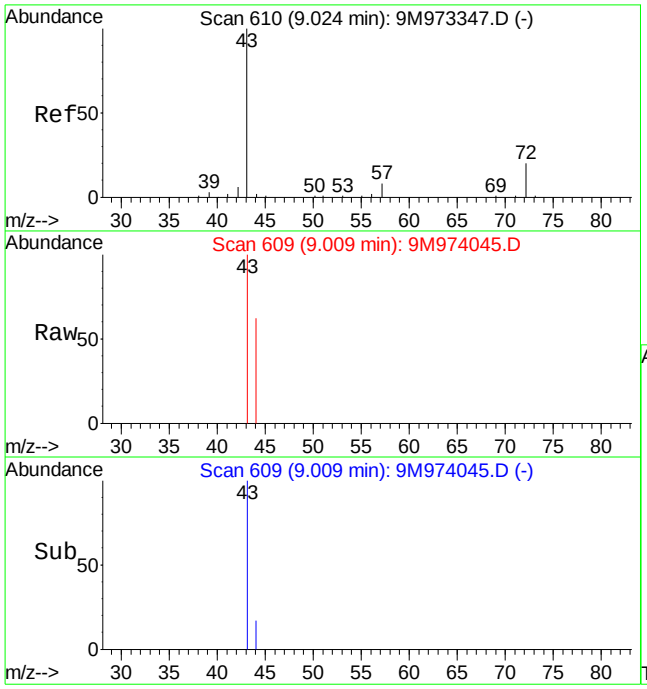

#29
2-Butanone
Concen: 0.92 ug/kg
RT: 9.01 min Scan# 609
Delta R.T. -0.00 min
Lab File: 9M974045.D
Acq: 28 Apr 2016 21:19

Tgt Ion: 43 Resp: 1786

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.5	26.7#

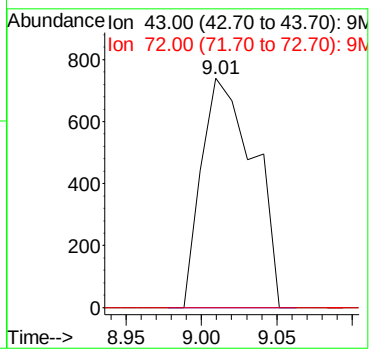

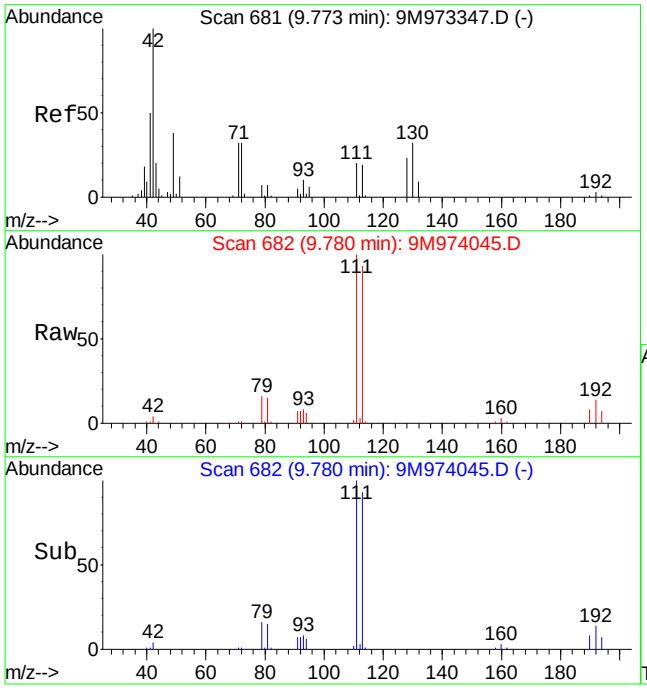

#36
Tetrahydrofuran
Concen: 2.36 ug/kg
RT: 9.78 min Scan# 682
Delta R.T. 0.01 min
Lab File: 9M974045.D
Acq: 28 Apr 2016 21:19

Tgt Ion: 42 Resp: 3256

Ion	Ratio	Lower	Upper
42	100		
72	22.6	19.8	46.2
71	14.7	18.3	42.7#

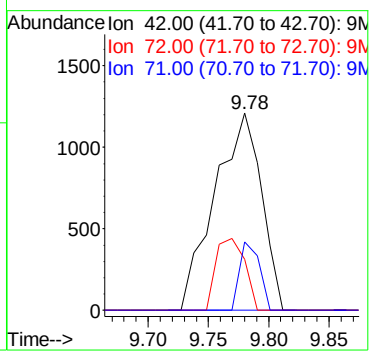

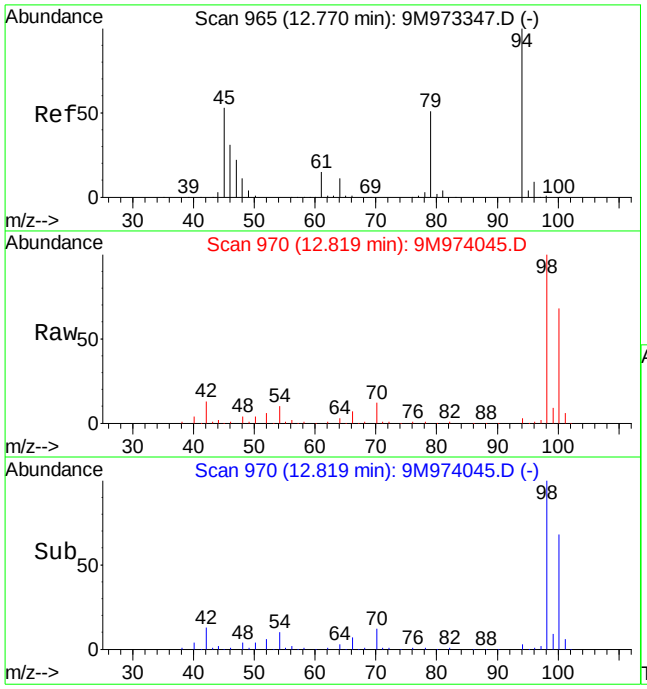

#56
Dimethyl Disulfide
Concen: 2.79 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M974045.D
Acq: 28 Apr 2016 21:19

Tgt Ion: 94 Resp: 15401

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

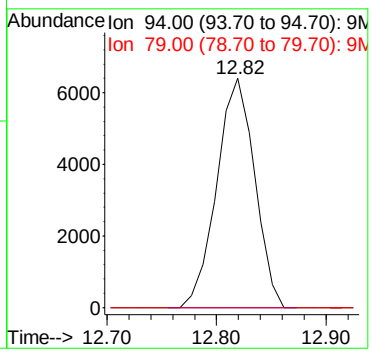

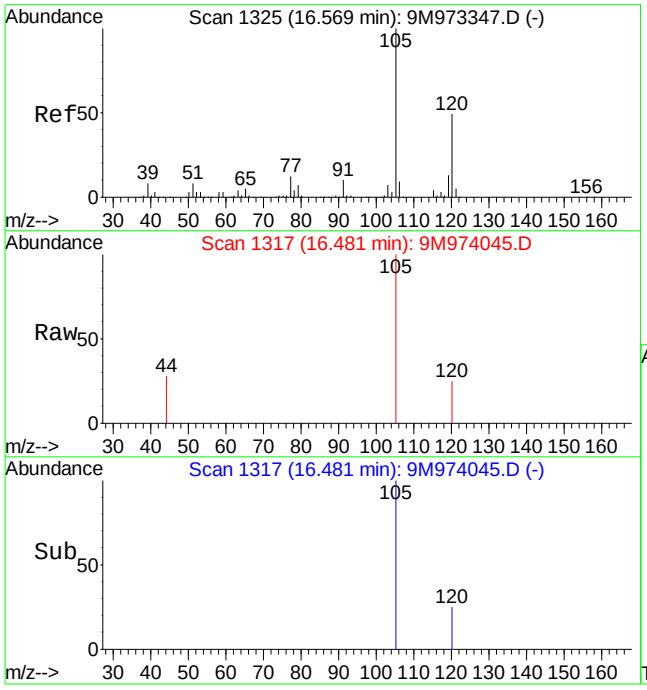

#84
1,3,5-Trimethylbenzene
Concen: 0.41 ug/kg
RT: 16.48 min Scan# 1317
Delta R.T. -0.09 min
Lab File: 9M974045.D
Acq: 28 Apr 2016 21:19

Tgt Ion:105 Resp: 4457

Ion	Ratio	Lower	Upper
105	100		
120	16.9	29.7	69.3#

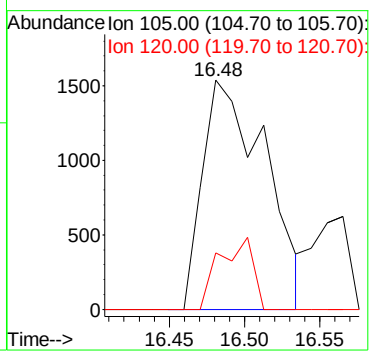

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974046.D Vial: 18
Acq On : 28 Apr 2016 21:49 Operator: ADC
Sample : L16041344-14 A 8260 4.95g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:40:02 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	584962	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	416444	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	188174	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	152463	51.6072 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 103.22%		
43) 1,2-Dichloroethane-d4	10.44	65	164059	53.0476 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 106.10%		
58) Toluene-d8	12.81	98	563075	56.7326 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 113.46%		
79) p-Bromofluorobenzene	16.22	95	203568	62.4573 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 124.92%#		

Target Compounds

					Qvalue
13) Acetone	6.39	43	9310	2.6026 ug/kg	80
19) Methylene Chloride	7.39	84	1610	0.4832 ug/kg	85
29) 2-Butanone	9.02	43	1587	0.8439 ug/kg#	58
36) Tetrahydrofuran	9.77	42	2980	2.2306 ug/kg#	80
56) Dimethyl Disulfide	12.82	94	15291	2.8628 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.09	105	2264	Below Cal	70

(#) = qualifier out of range (m) = manual integration
9M974046.D 8260-SL.M Fri Apr 29 12:40:03 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974046.D Vial: 18
Acq On : 28 Apr 2016 21:49 Operator: ADC
Sample : L16041344-14 A 8260 4.95g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:40 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

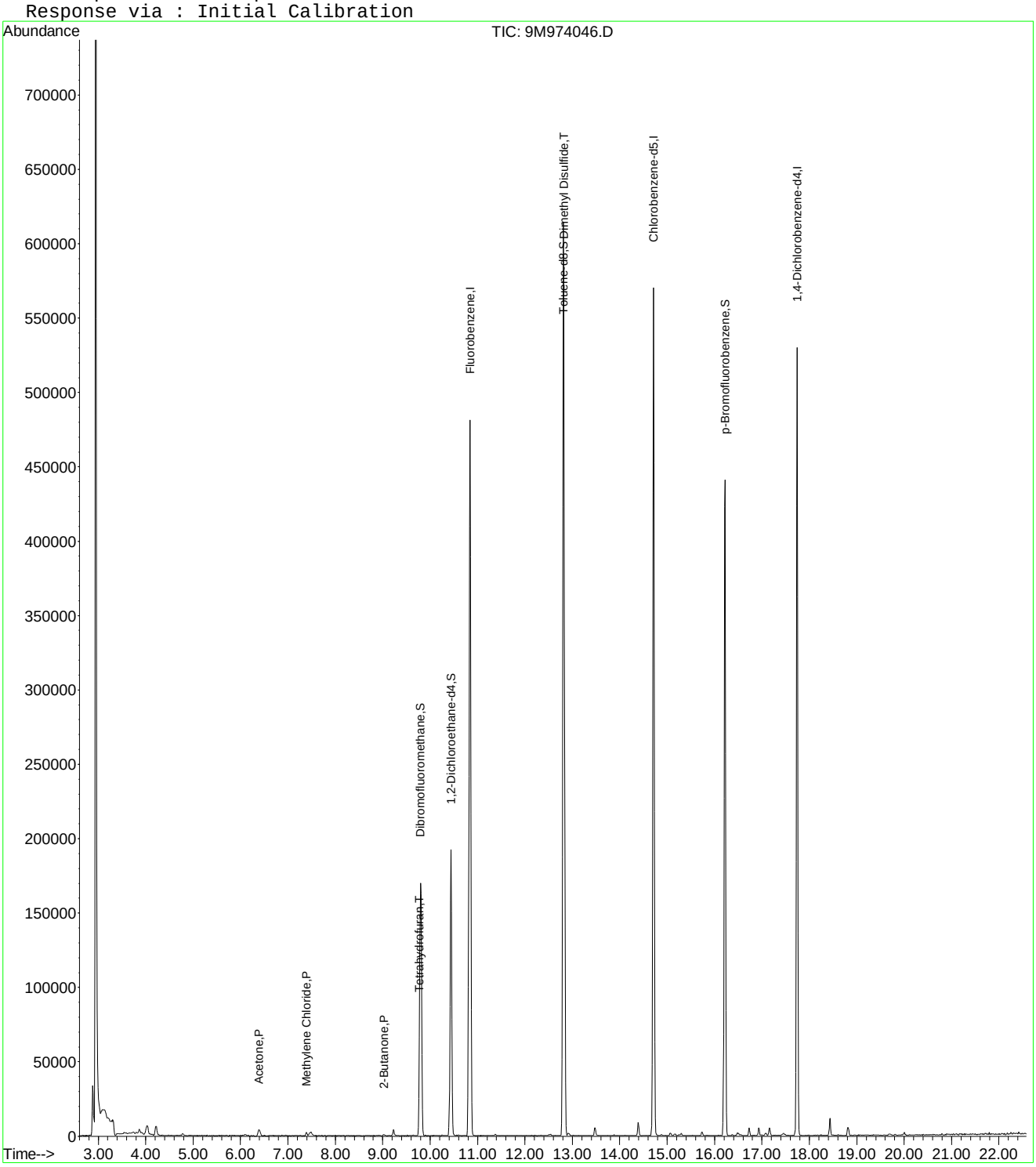

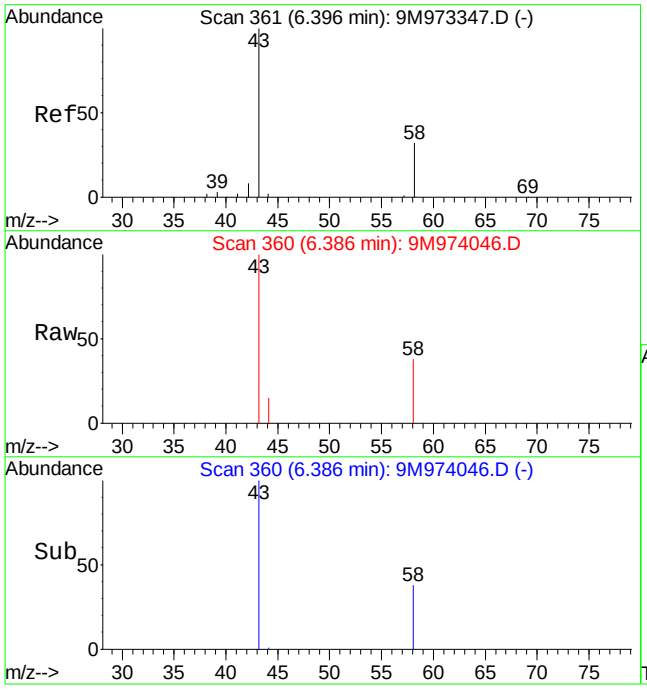

#13
Acetone
Concen: 2.60 ug/kg
RT: 6.39 min Scan# 360
Delta R.T. 0.00 min
Lab File: 9M974046.D
Acq: 28 Apr 2016 21:49

Tgt Ion: 43 Resp: 9310

Ion	Ratio	Lower	Upper
43	100		
58	45.3	20.2	47.2

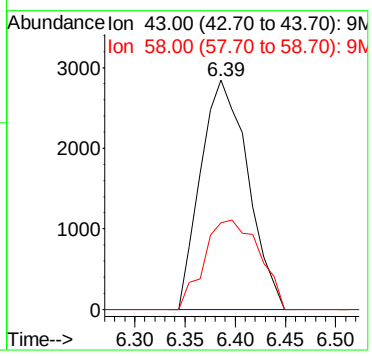

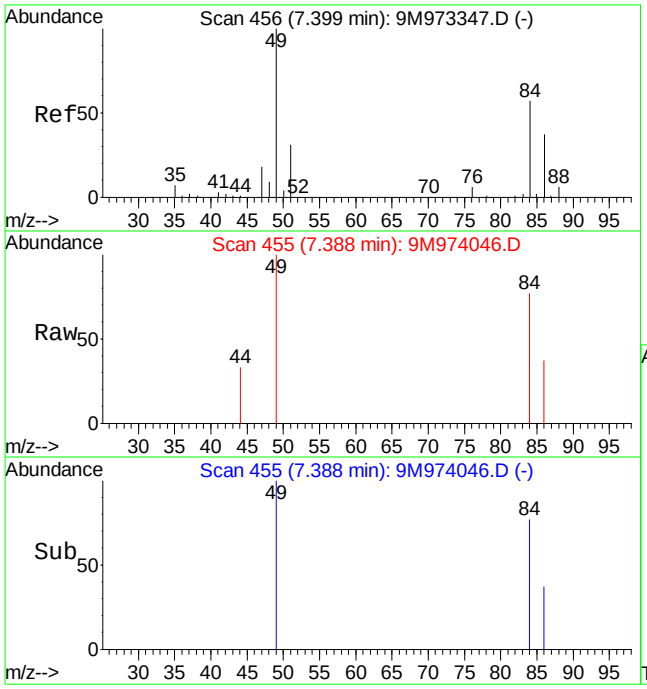

#19
Methylene Chloride
Concen: 0.48 ug/kg
RT: 7.39 min Scan# 455
Delta R.T. -0.01 min
Lab File: 9M974046.D
Acq: 28 Apr 2016 21:49

Tgt Ion: 84 Resp: 1610

Ion	Ratio	Lower	Upper
84	100		
49	152.8	103.9	242.5

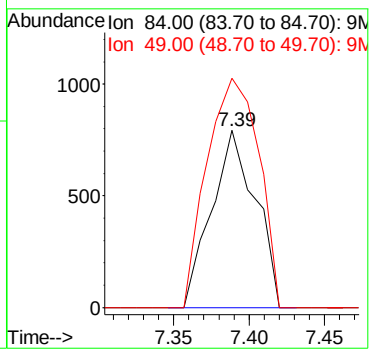

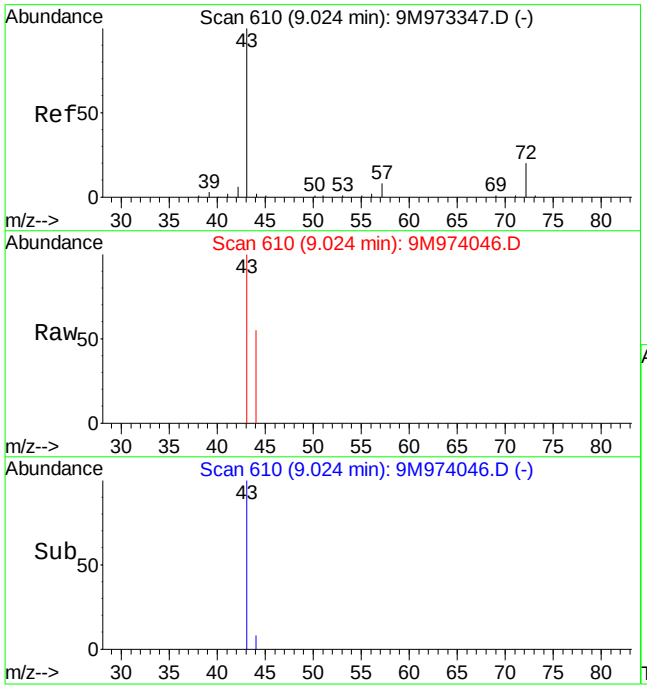

#29
2-Butanone
Concen: 0.84 ug/kg
RT: 9.02 min Scan# 610
Delta R.T. 0.01 min
Lab File: 9M974046.D
Acq: 28 Apr 2016 21:49

Tgt Ion: 43 Resp: 1587

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.5	26.7#

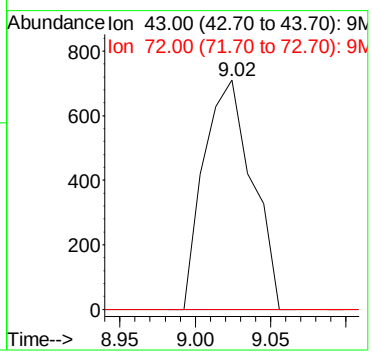

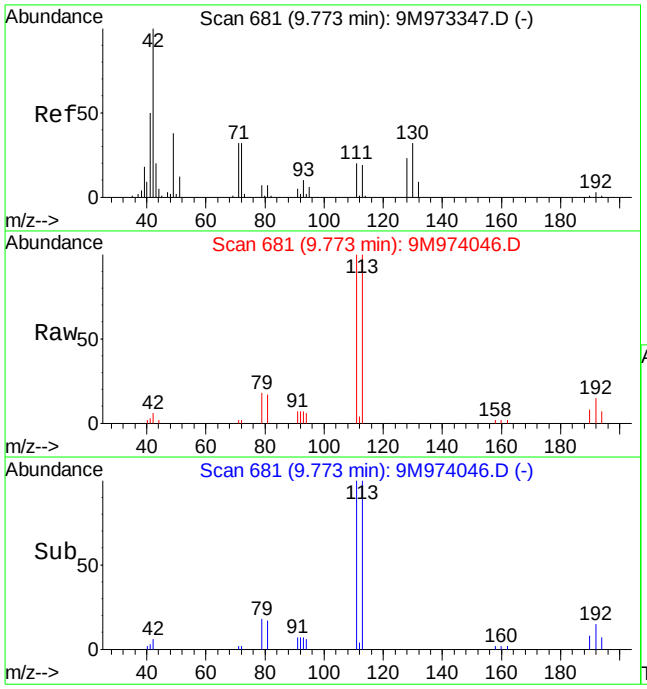

#36
Tetrahydrofuran
Concen: 2.23 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. 0.00 min
Lab File: 9M974046.D
Acq: 28 Apr 2016 21:49

Tgt Ion: 42 Resp: 2980

Ion	Ratio	Lower	Upper
42	100		
72	23.3	19.8	46.2
71	18.0	18.3	42.7#

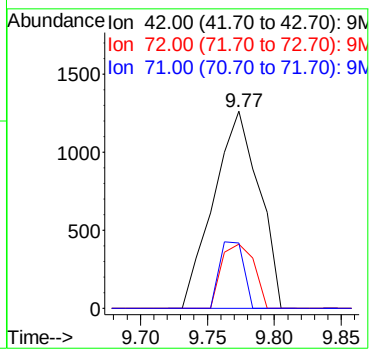

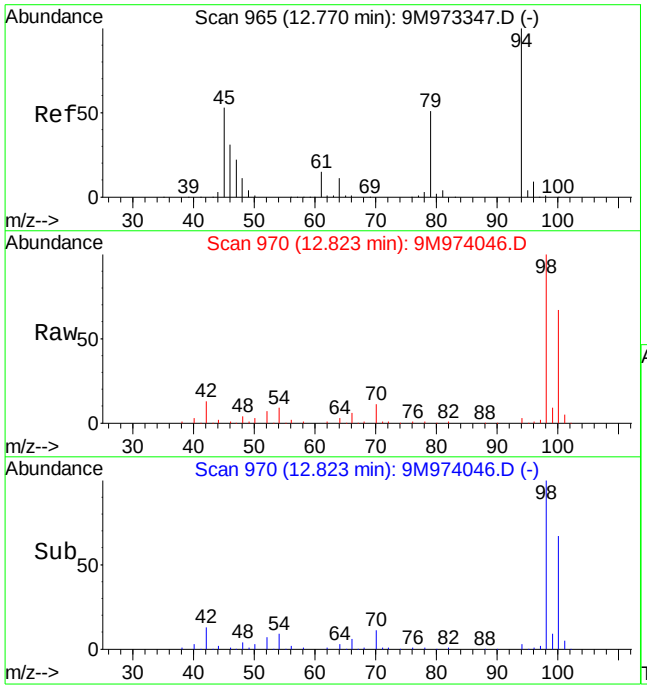

#56
Dimethyl Disulfide
Concen: 2.86 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M974046.D
Acq: 28 Apr 2016 21:49

Tgt Ion: 94 Resp: 15291

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

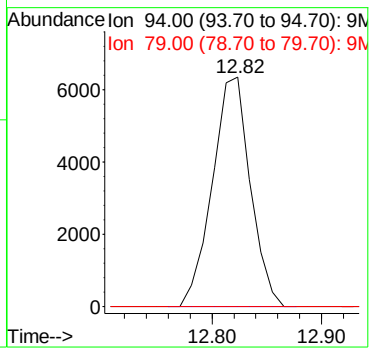

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972472.D Vial: 3
Acq On : 25 Jan 2016 11:22 Operator: FJB
Sample : WG555000-02 5ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:05 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	367739	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	266763	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.77	152	148882	50.00 ug/kg	0.01

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	1974	5.3580 ug/kg#	1
3) 3-Chloro-1-propene	7.23	41	18322	5.0468 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	19639	4.7564 ug/kg	98
5) Ethyl Acetate	9.24	43	12755	5.2595 ug/kg	91
6) Methacrylonitrile	9.40	67	3744	4.7691 ug/kg	95
7) Isobutyl Alcohol	9.42	43	1055	12.9700 ug/kg#	62
8) 1-Butanol	10.36	56	203	11.8711 ug/kg#	26
9) Methyl methacrylate	11.56	41	8689	4.6908 ug/kg	95
10) 2-Nitropropane	11.90	43	2531	4.2058 ug/kg	96

(#) = qualifier out of range (m) = manual integration
9M972472.D A9FOO_SL.M Wed Jan 27 11:22:42 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972472.D Vial: 3
Acq On : 25 Jan 2016 11:22 Operator: FJB
Sample : WG555000-02 5ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

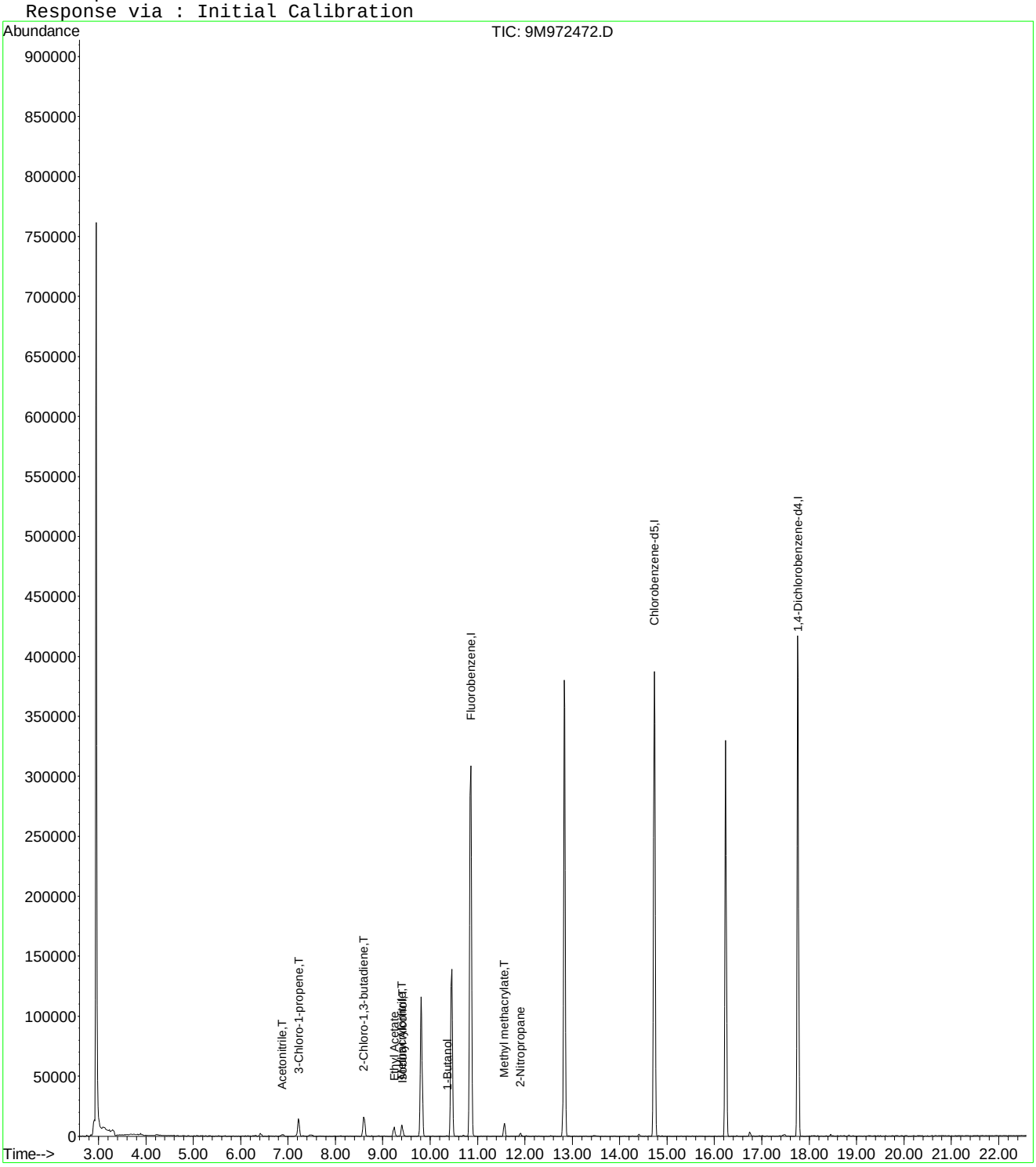

9M972472.D A9FOO_SL.M Wed Jan 27 11:22:42 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972473.D Vial: 4
Acq On : 25 Jan 2016 11:52 Operator: FJB
Sample : WG555000-03 20ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:05 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	359691	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	265773	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	149223	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	7669	21.2815 ug/kg#	77
3) 3-Chloro-1-propene	7.23	41	75360	21.2224 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	82865	20.5181 ug/kg	100
5) Ethyl Acetate	9.23	43	47912	20.1986 ug/kg	97
6) Methacrylonitrile	9.40	67	15740	20.4980 ug/kg	98
7) Isobutyl Alcohol	9.42	43	5287	37.9280 ug/kg	95
8) 1-Butanol	10.35	56	1509	22.3153 ug/kg#	81
9) Methyl methacrylate	11.56	41	35437	19.5588 ug/kg	98
10) 2-Nitropropane	11.90	43	10433	17.7247 ug/kg	98
12) Cyclohexanone	16.01	55	2157	16.3929 ug/kg#	86

(#) = qualifier out of range (m) = manual integration
9M972473.D A9FOO_SL.M Wed Jan 27 11:22:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972473.D Vial: 4
Acq On : 25 Jan 2016 11:52 Operator: FJB
Sample : WG555000-03 20ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

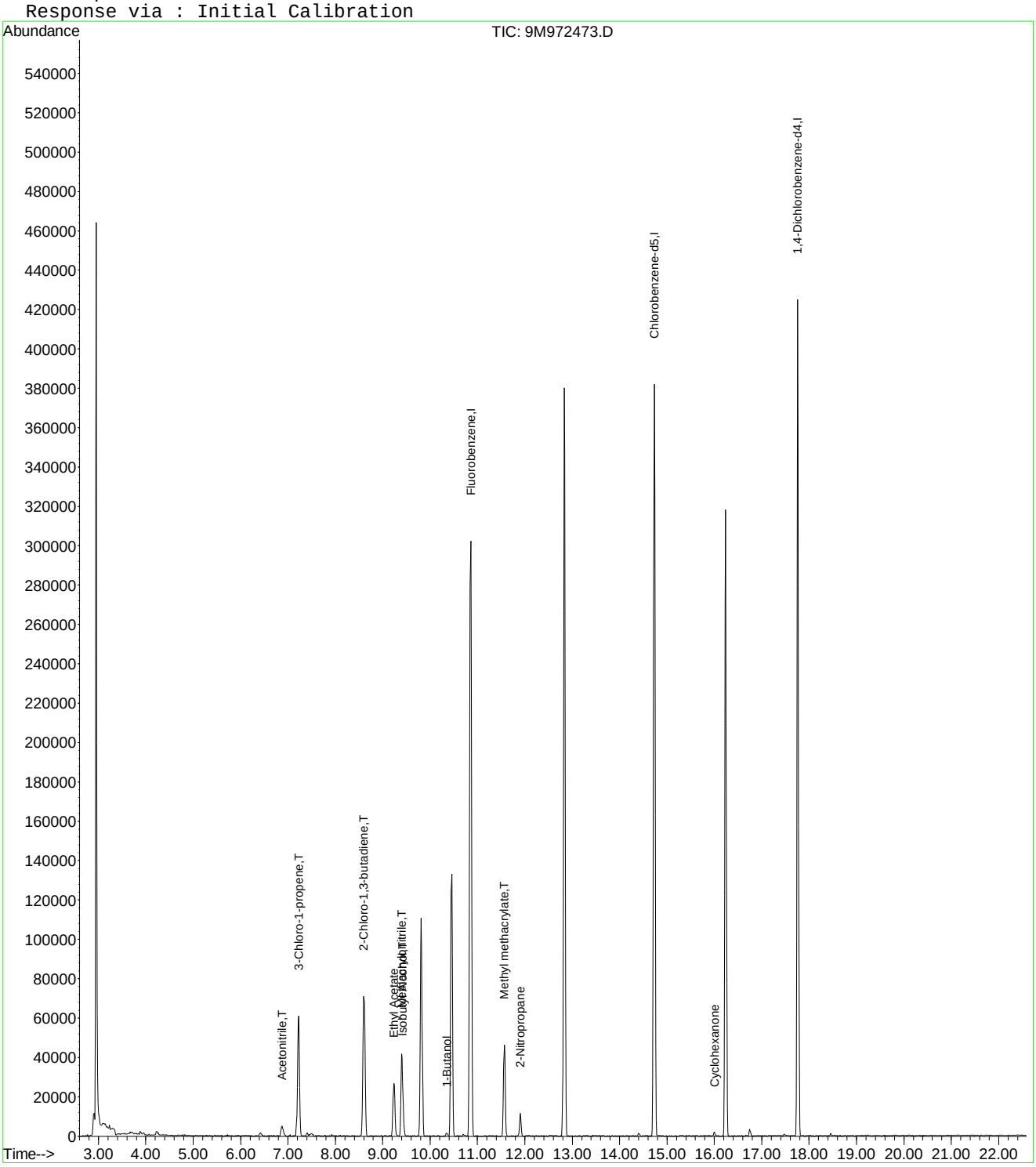

9M972473.D A9FOO_SL.M Wed Jan 27 11:22:46 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972474.D Vial: 5
Acq On : 25 Jan 2016 12:23 Operator: FJB
Sample : WG555000-04 50ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:06 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	356886	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	259679	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	147334	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	16583	46.3795 ug/kg#	94
3) 3-Chloro-1-propene	7.23	41	160601	45.5828 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.61	53	185316	46.2464 ug/kg	99
5) Ethyl Acetate	9.23	43	111538	47.3915 ug/kg	99
6) Methacrylonitrile	9.40	67	36081	47.3572 ug/kg	99
7) Isobutyl Alcohol	9.42	43	12624	81.5447 ug/kg	95
8) 1-Butanol	10.35	56	4707	48.0983 ug/kg#	50
9) Methyl methacrylate	11.56	41	82406	45.8400 ug/kg	99
10) 2-Nitropropane	11.90	43	26302	45.0359 ug/kg	97
12) Cyclohexanone	16.01	55	5625	43.7525 ug/kg	93

(#) = qualifier out of range (m) = manual integration
9M972474.D A9FOO_SL.M Wed Jan 27 11:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972474.D Vial: 5
Acq On : 25 Jan 2016 12:23 Operator: FJB
Sample : WG555000-04 50ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

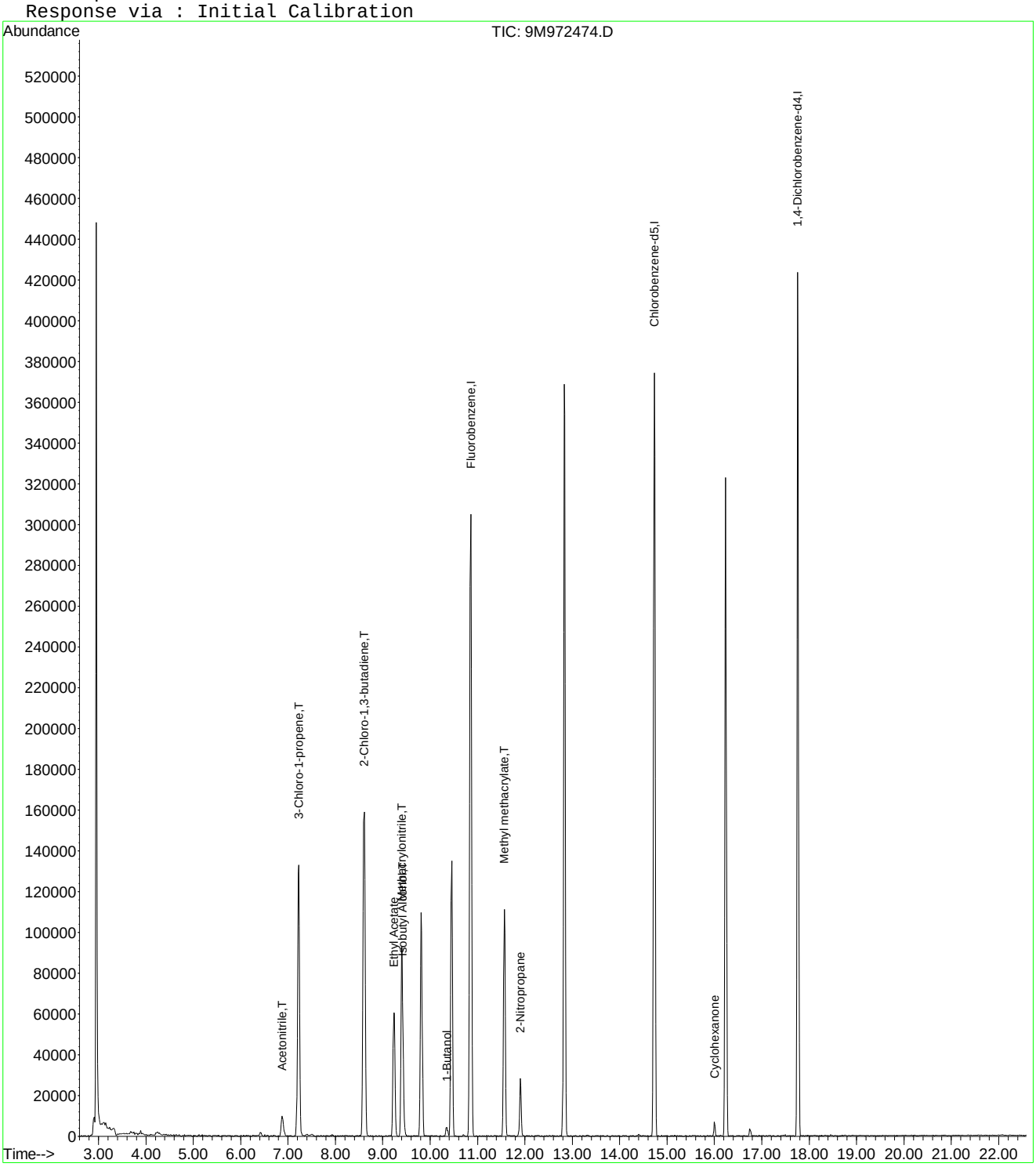

9M972474.D A9FOO_SL.M Wed Jan 27 11:22:51 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972475.D Vial: 6
Acq On : 25 Jan 2016 12:53 Operator: FJB
Sample : WG555000-05 100ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:06 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	394669	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	285851	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	161505	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	37767	95.5151 ug/kg#	100
3) 3-Chloro-1-propene	7.23	41	409870	105.1952 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.61	53	467514	105.5010 ug/kg	100
5) Ethyl Acetate	9.23	43	267513	102.7824 ug/kg	100
6) Methacrylonitrile	9.40	67	88054	104.5088 ug/kg	100
7) Isobutyl Alcohol	9.42	43	33721	187.1766 ug/kg	100
8) 1-Butanol	10.36	56	11671	95.0627 ug/kg	100
9) Methyl methacrylate	11.56	41	209503	105.3834 ug/kg	100
10) 2-Nitropropane	11.90	43	65435	101.3157 ug/kg	100
12) Cyclohexanone	16.01	55	14062	99.3630 ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972475.D A9FOO_SL.M Wed Jan 27 11:22:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972475.D Vial: 6
Acq On : 25 Jan 2016 12:53 Operator: FJB
Sample : WG555000-05 100ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

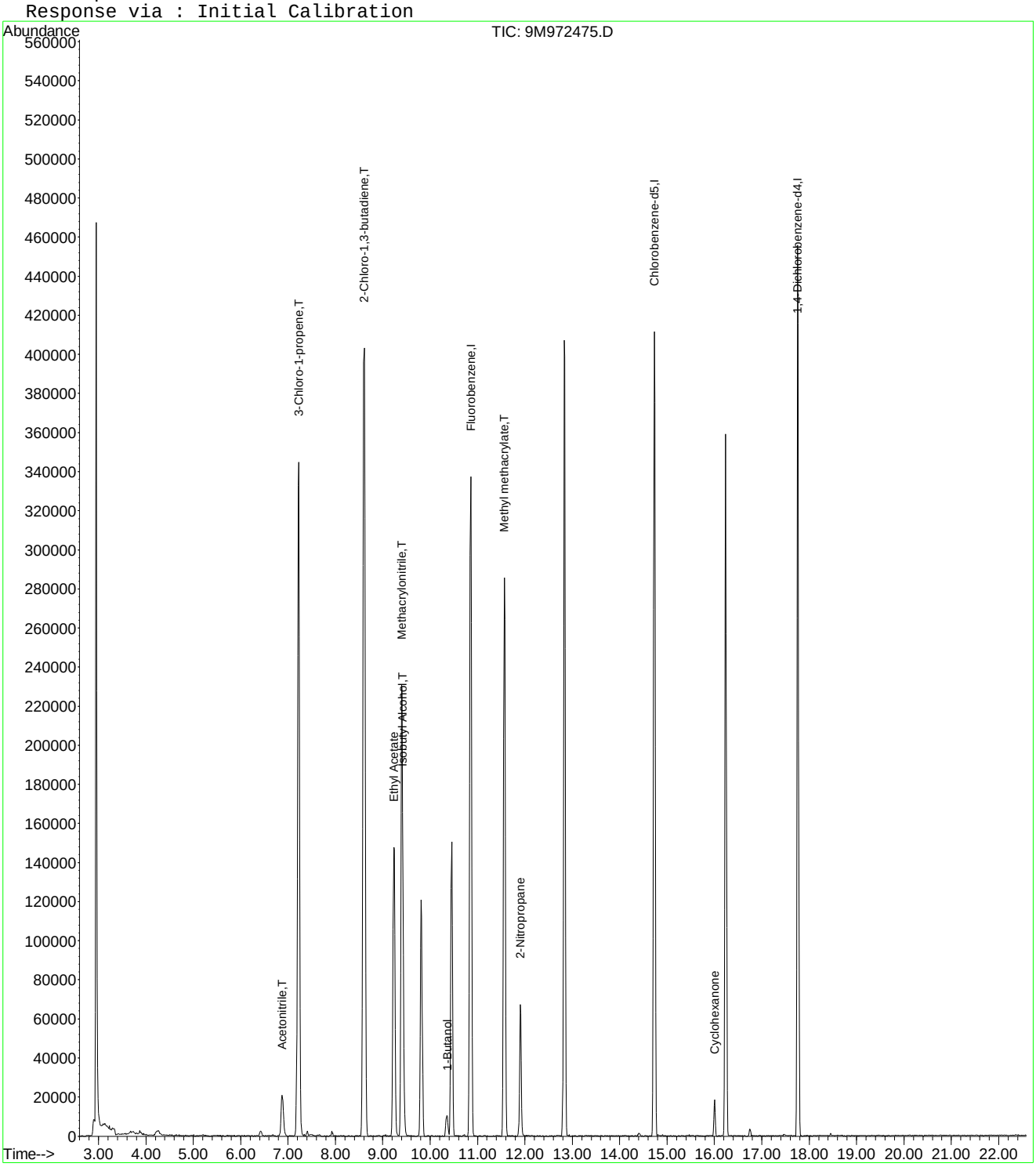

9M972475.D A9FOO_SL.M Wed Jan 27 11:22:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972476.D Vial: 7
Acq On : 25 Jan 2016 13:23 Operator: FJB
Sample : WG555000-06 200ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 09:51:10 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	361792	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	264283	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	150478	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.87	41	75099	207.1896	ug/kg#	94
3) 3-Chloro-1-propene	7.22	41	743262	208.0969	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	846271	208.3269	ug/kg	100
5) Ethyl Acetate	9.23	43	489855	205.3125	ug/kg	100
6) Methacrylonitrile	9.40	67	159879	206.9995	ug/kg	100
7) Isobutyl Alcohol	9.42	43	68551	406.6640	ug/kg	99
8) 1-Butanol	10.35	56	24111	201.3375	ug/kg	97
9) Methyl methacrylate	11.57	41	382820	210.0636	ug/kg	99
10) 2-Nitropropane	11.90	43	129000	217.8866	ug/kg	95
12) Cyclohexanone	16.00	55	30065	229.7785	ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972476.D A9FOO_SL.M Wed Jan 27 09:51:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972476.D Vial: 7
Acq On : 25 Jan 2016 13:23 Operator: FJB
Sample : WG555000-06 200ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 9:51 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

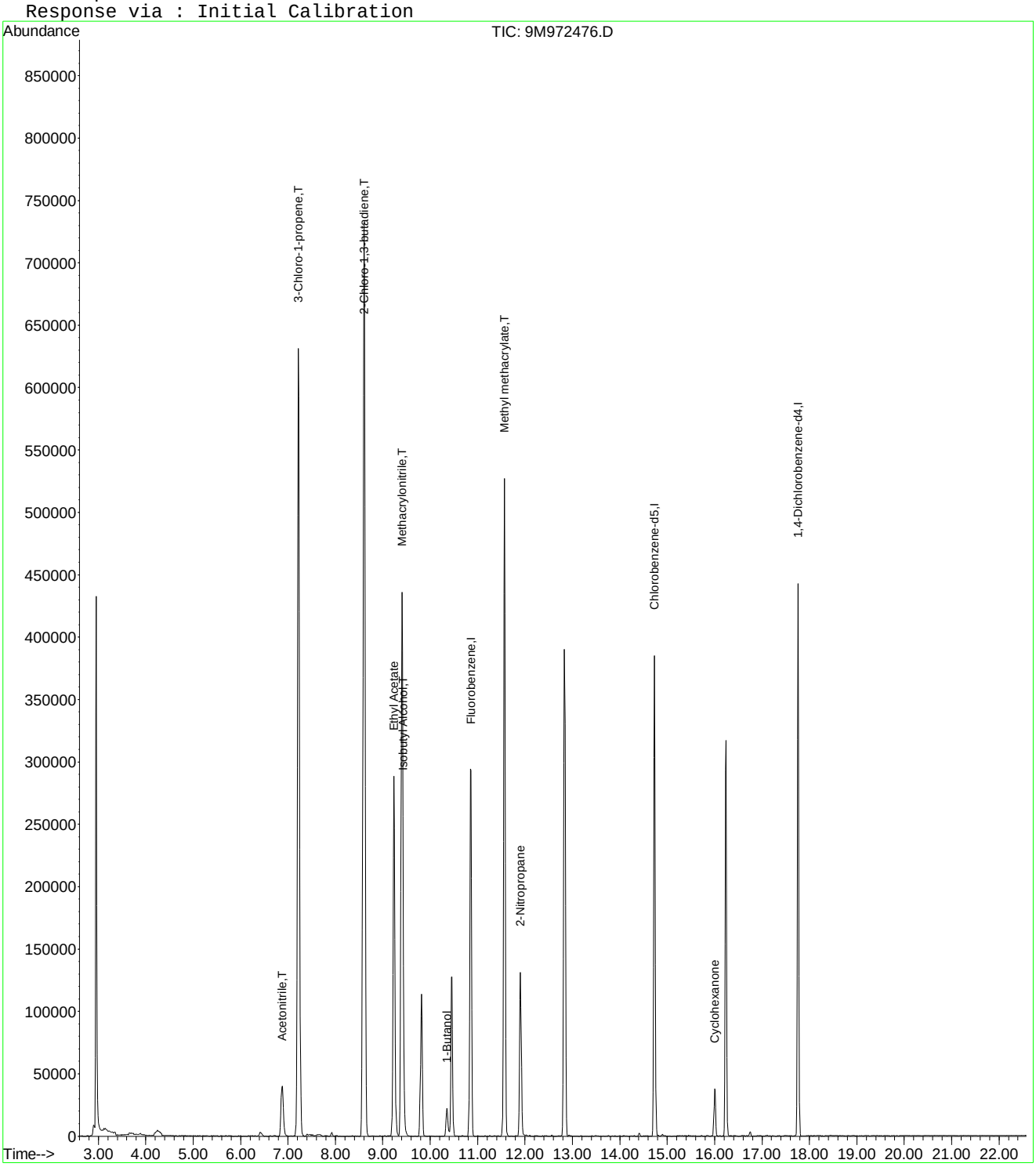

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972477.D Vial: 8
Acq On : 25 Jan 2016 13:54 Operator: FJB
Sample : WG555000-07 300ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:07 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.85	96	362779	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	265659	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	153468	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	99618	274.0870	ug/kg#	97
3) 3-Chloro-1-propene	7.22	41	944879	263.8255	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	1107217	271.8226	ug/kg	99
5) Ethyl Acetate	9.24	43	652386	272.6900	ug/kg	99
6) Methacrylonitrile	9.40	67	208153	268.7679	ug/kg	98
7) Isobutyl Alcohol	9.43	43	89707	528.6093	ug/kg#	99
8) 1-Butanol	10.35	56	31640	260.3131	ug/kg	98
9) Methyl methacrylate	11.57	41	502506	274.9883	ug/kg	98
10) 2-Nitropropane	11.90	43	172692	290.8907	ug/kg	95
12) Cyclohexanone	16.00	55	36951	280.9436	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972477.D A9FOO_SL.M Wed Jan 27 11:23:05 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972477.D Vial: 8
Acq On : 25 Jan 2016 13:54 Operator: FJB
Sample : WG555000-07 300ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

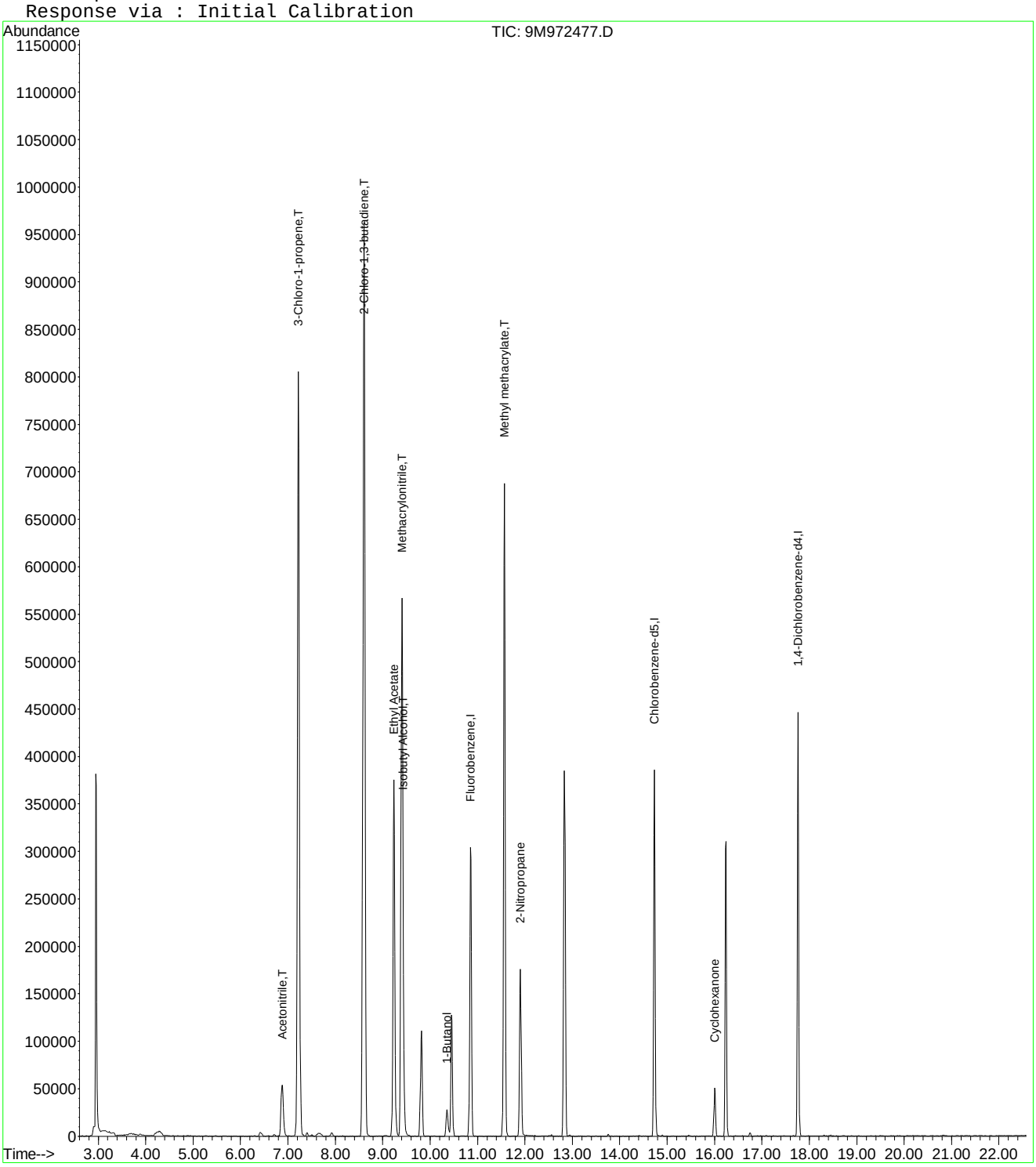

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972478.D Vial: 9
Acq On : 25 Jan 2016 14:25 Operator: FJB
Sample : WG555000-08 400ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 09:51:10 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	359343	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	261674	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	149058	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.89	41	148074	411.3034	ug/kg#	96
3) 3-Chloro-1-propene	7.22	41	1457717	410.9100	ug/kg	99
4) 2-Chloro-1,3-butadiene	8.61	53	1703971	422.3261	ug/kg	100
5) Ethyl Acetate	9.23	43	980479	413.7480	ug/kg	100
6) Methacrylonitrile	9.40	67	321602	419.2243	ug/kg	99
7) Isobutyl Alcohol	9.43	43	142361	842.7355	ug/kg#	98
8) 1-Butanol	10.36	56	51732	422.9922	ug/kg	99
9) Methyl methacrylate	11.56	41	779879	430.8570	ug/kg	98
10) 2-Nitropropane	11.90	43	267565	455.0088	ug/kg	96
12) Cyclohexanone	16.01	55	56623	437.0688	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972478.D A9FOO_SL.M Wed Jan 27 09:51:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972478.D Vial: 9
Acq On : 25 Jan 2016 14:25 Operator: FJB
Sample : WG555000-08 400ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 9:51 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

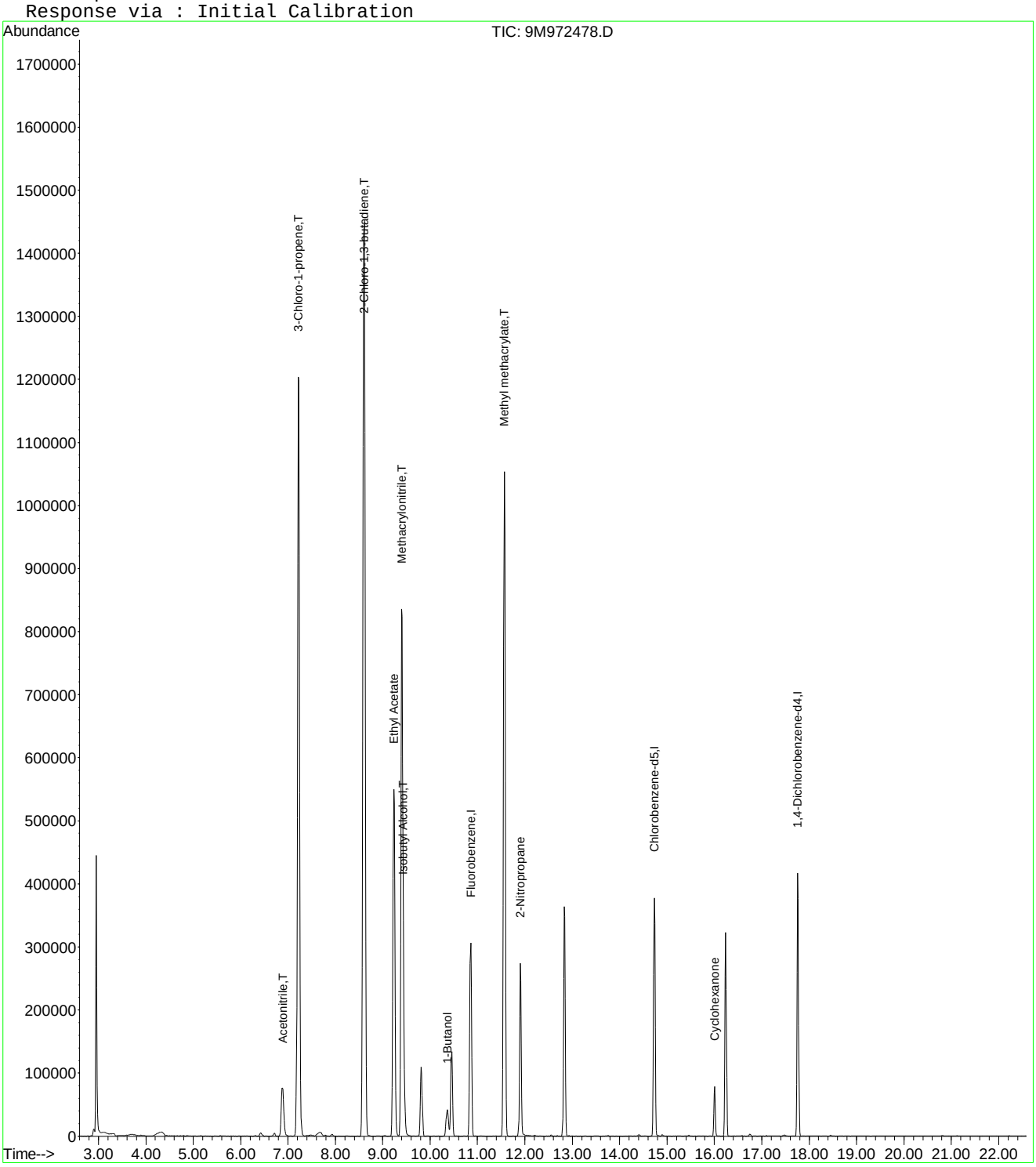

9M972478.D A9FOO_SL.M Wed Jan 27 09:51:11 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972479.D Vial: 10
Acq On : 25 Jan 2016 14:56 Operator: FJB
Sample : WG555000-09 500ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:08 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	364474	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	266311	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	151707	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	196334	537.6773	ug/kg#	94
3) 3-Chloro-1-propene	7.22	41	1832802	509.3680	ug/kg	99
4) 2-Chloro-1,3-butadiene	8.60	53	2126710	519.6807	ug/kg	100
5) Ethyl Acetate	9.23	43	1255294	522.2587	ug/kg	100
6) Methacrylonitrile	9.40	67	408537	525.0513	ug/kg	100
7) Isobutyl Alcohol	9.43	43	180610	1052.3719	ug/kg	98
8) 1-Butanol	10.36	56	64789	519.8809	ug/kg	97
9) Methyl methacrylate	11.56	41	981460	534.5904	ug/kg	100
10) 2-Nitropropane	11.90	43	346571	581.0659	ug/kg	97
12) Cyclohexanone	16.01	55	74733	566.8143	ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972479.D A9FOO_SL.M Wed Jan 27 11:30:29 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972479.D Vial: 10
Acq On : 25 Jan 2016 14:56 Operator: FJB
Sample : WG555000-09 500ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

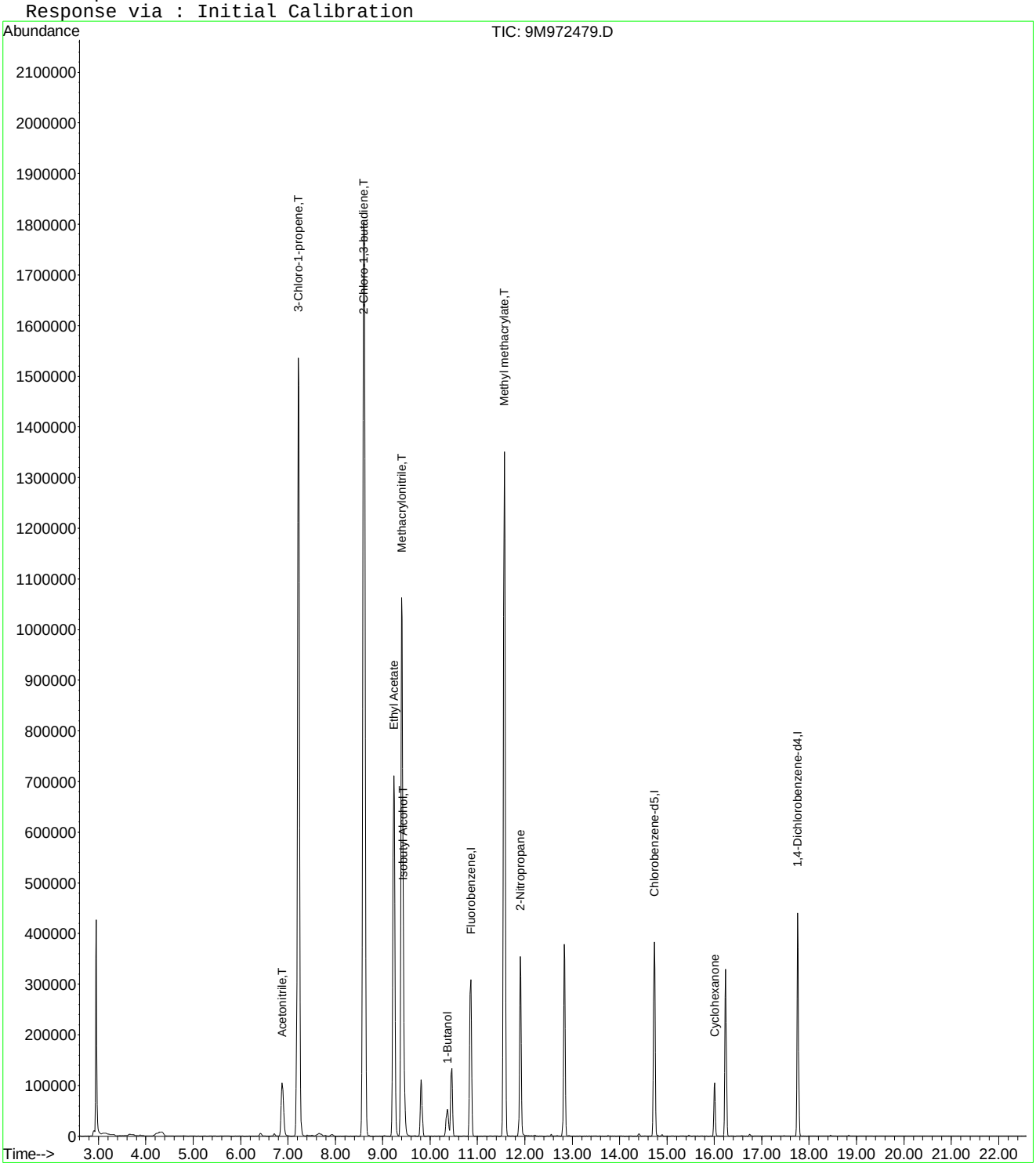

9M972479.D A9FOO_SL.M Wed Jan 27 11:30:29 2016 Page 2

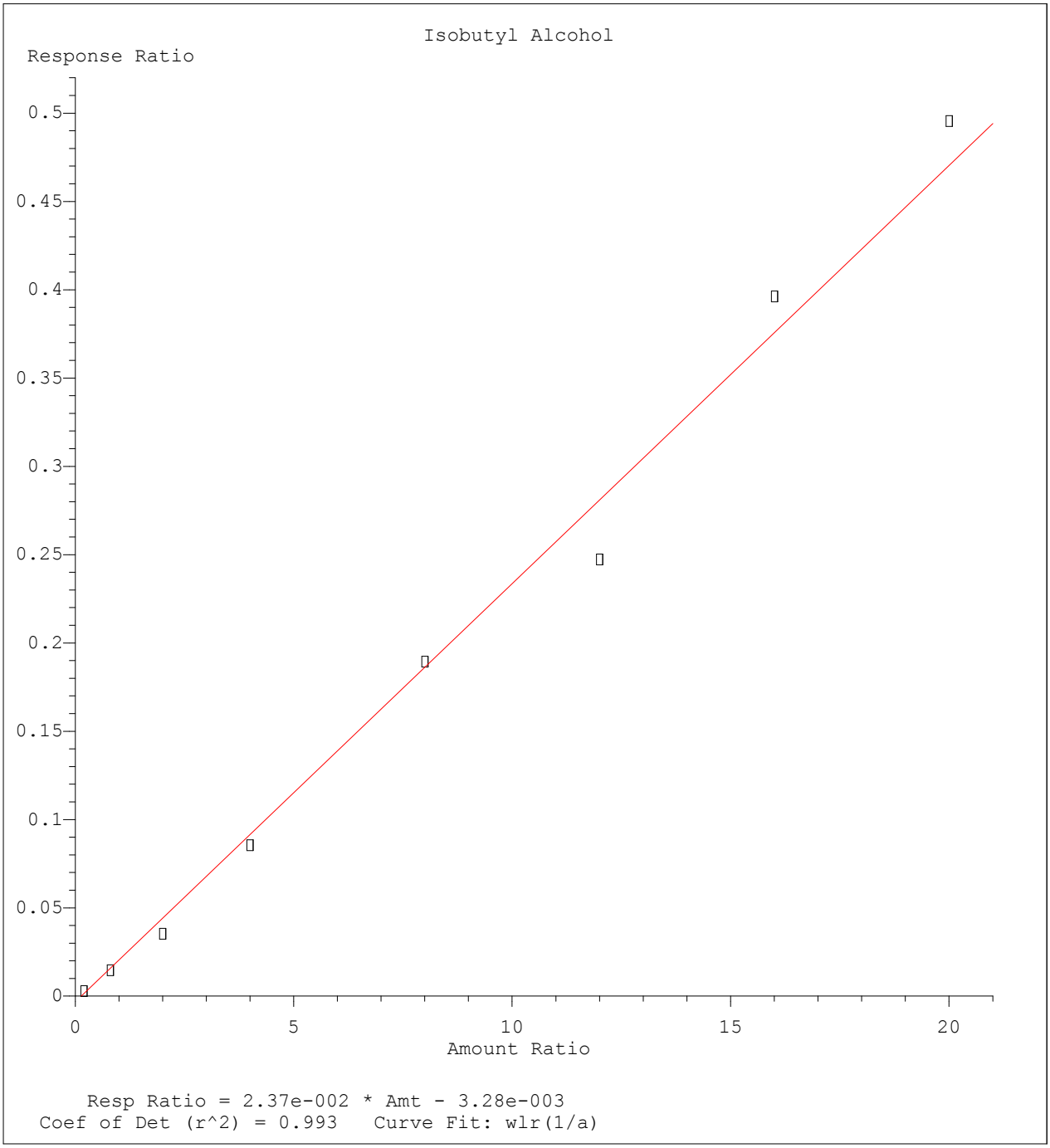

Method Name: C:\MSDCHEM\1\METHODS\A9FOO_SL.M
Calibration Table Last Updated: Wed Jan 27 09:49:02 2016

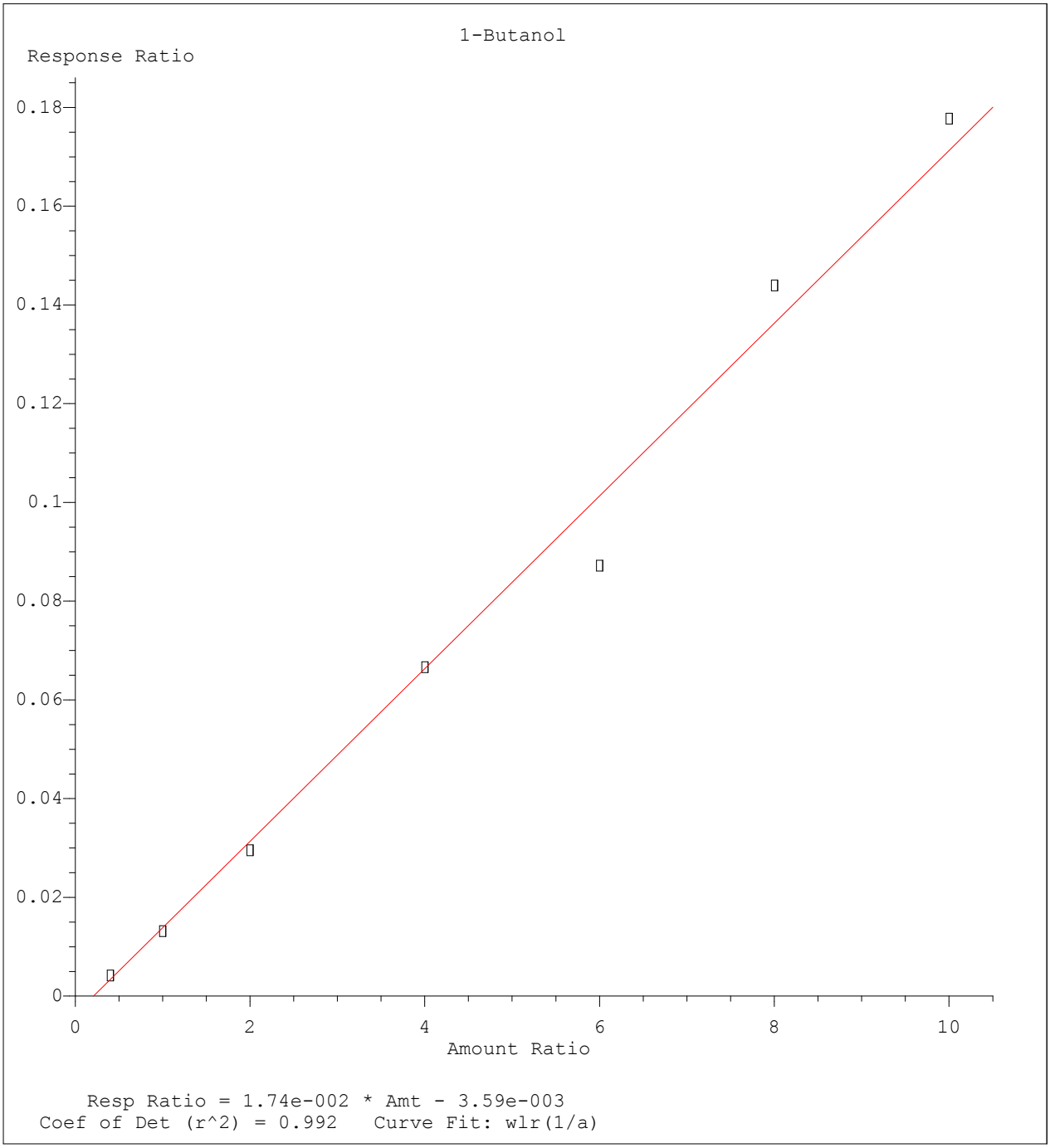

Method Name: C:\MSDCHEM\1\METHODS\A9FOO_SL.M
Calibration Table Last Updated: Wed Jan 27 09:49:02 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:09 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	394765	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	285754	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	159586	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	40054	101.2745 ug/kg#	100
3) 3-Chloro-1-propene	7.22	41	402890	103.3786 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	572568	129.1764 ug/kg	99
5) Ethyl Acetate	9.23	43	275962	106.0028 ug/kg	99
6) Methacrylonitrile	9.40	67	90289	107.1354 ug/kg	96
7) Isobutyl Alcohol	9.42	43	34031	188.7895 ug/kg	99
8) 1-Butanol	10.35	56	12038	97.7072 ug/kg	97
9) Methyl methacrylate	11.56	41	219363	110.3163 ug/kg	100
10) 2-Nitropropane	11.90	43	69288	107.2554 ug/kg	93
12) Cyclohexanone	16.01	55	14203	100.3934 ug/kg	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

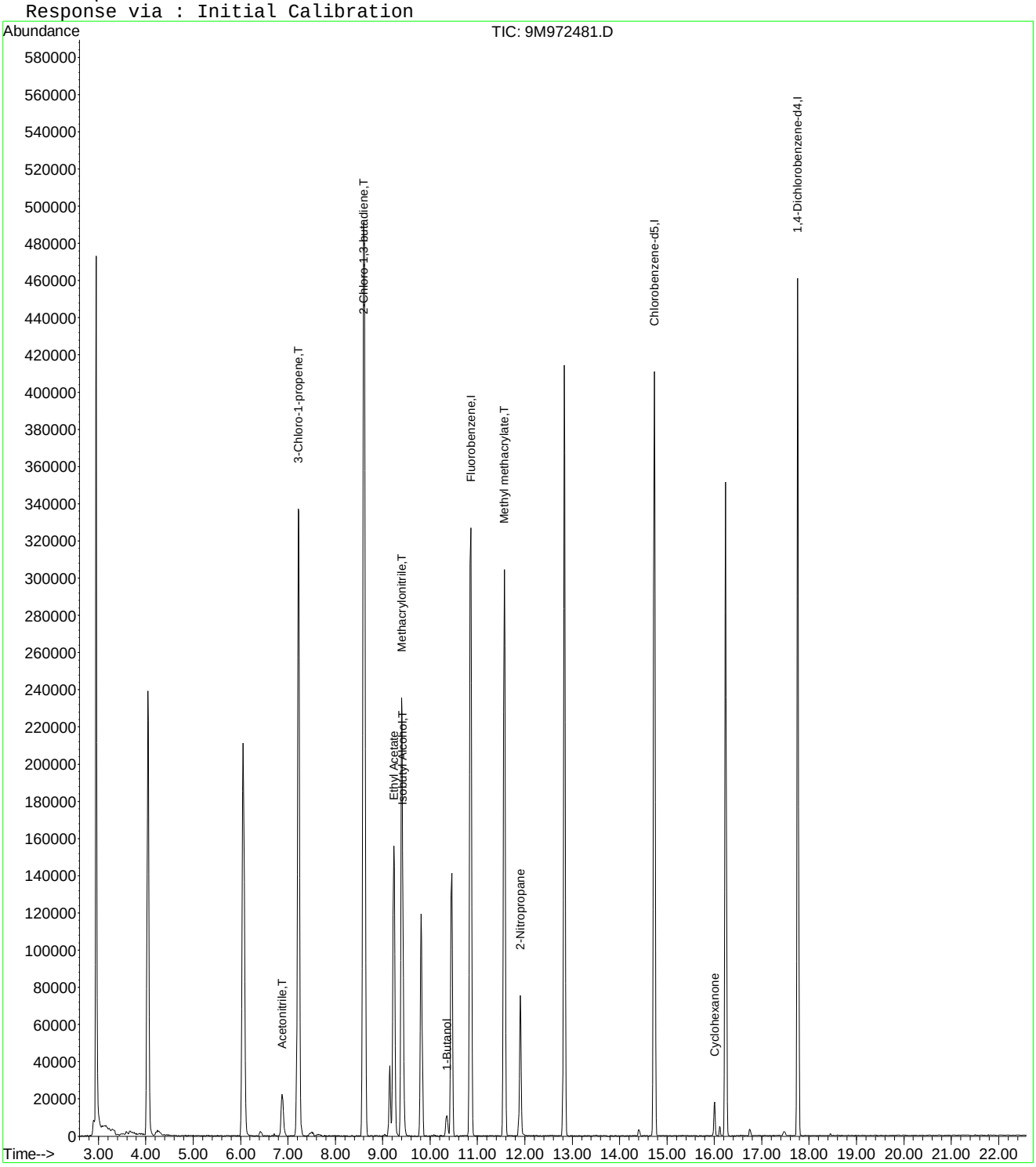

9M972481.D A9FOO_SL.M Wed Jan 27 11:15:09 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	101.2745	-1.3	106	0.00
3	T	3-Chloro-1-propene	100.0000	103.3786	-3.4	98	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	129.1764	-29.2	122	0.00
5		Ethyl Acetate	100.0000	106.0028	-6.0	103	0.00
6	T	Methacrylonitrile	100.0000	107.1354	-7.1	103	0.00
7	T	Isobutyl Alcohol	200.0000	188.7895	5.6	101	0.00
8		1-Butanol	100.0000	97.7072	2.3	103	0.00
9	T	Methyl methacrylate	100.0000	110.3163	-10.3	105	0.00
10		2-Nitropropane	100.0000	107.2554	-7.3	106	0.00
11	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
12		Cyclohexanone	100.0000	100.3934	-0.4	101	0.00
13	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	99	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972481.D A9FOO_SL.M Wed Jan 27 11:32:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973594.D Vial: 2
Acq On : 6 Apr 2016 10:29 Operator: ADC
Sample : WG563259-02 50ug/L CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:10 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	551415	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	405052	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	189947	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	147788	53.0682 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 106.14%		
43) 1,2-Dichloroethane-d4	10.44	65	151213	51.8685 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 103.74%		
58) Toluene-d8	12.82	98	526968	54.5879 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 109.18%		
79) p-Bromofluorobenzene	16.22	95	195456	59.4087 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 118.82%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.28	85	242107	57.2388 ug/kg	100
3) Chloromethane	3.75	50	193873	49.8597 ug/kg	100
4) Vinyl Chloride	3.98	62	149013	58.4247 ug/kg	100
5) 1,3-Butadiene	4.02	54	88480	47.1558 ug/kg	100
6) Bromomethane	4.87	94	126955	53.2516 ug/kg	100
7) Chloroethane	5.03	64	122932	52.9379 ug/kg	100
8) Trichlorofluoromethane	5.52	101	273893	55.7491 ug/kg	100
9) Diethyl ether	6.05	59	302106	104.5639 ug/kg	100
10) Isoprene	6.09	67	215171	55.6416 ug/kg	100
11) Acrolein	6.29	56	15006	52.2353 ug/kg	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	166684	55.5646 ug/kg	100
13) Acetone	6.38	43	59710	51.5489 ug/kg	100
14) 1,1-Dichloroethene	6.62	61	279907	55.6672 ug/kg	100
15) Tert-Butyl Alcohol	6.72	59	100512	207.8196 ug/kg	100
16) Dimethyl Sulfide	6.88	62	141859	57.5847 ug/kg	100
17) Iodomethane	7.13	142	125531	53.7732 ug/kg	100
18) Methyl acetate	7.13	43	167926	52.5703 ug/kg	100
19) Methylene Chloride	7.40	84	165284	52.6229 ug/kg	100
20) Carbon Disulfide	7.44	76	518079	54.3386 ug/kg	100
21) Acrylonitrile	7.58	53	81072	53.3984 ug/kg	100
22) Methyl Tert Butyl Ether	7.60	73	463149	54.8002 ug/kg	100
23) trans-1,2-Dichloroethene	7.84	61	272019	56.2368 ug/kg	100
24) n-Hexane	7.91	57	316831	50.4404 ug/kg	100
25) Diisopropyl ether	8.25	45	1370277	107.0598 ug/kg	100
26) Vinyl Acetate	8.43	43	380358	55.2771 ug/kg	100
27) 1,1-Dichloroethane	8.46	63	325085	55.3706 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	1192196	105.9292 ug/kg	100
29) 2-Butanone	9.01	43	90995	51.3285 ug/kg	100
30) Propionitrile	9.13	54	60922	105.8772 ug/kg	100
31) 2,2-Dichloropropane	9.23	77	240952	56.2039 ug/kg	100
32) cis-1,2-Dichloroethene	9.31	96	177687	55.2767 ug/kg	100
33) Chloroform	9.51	83	269909	54.2007 ug/kg	100
34) 1-Bromopropane	9.64	122	30864	53.5851 ug/kg	100
35) Bromochloromethane	9.75	130	113971	56.8295 ug/kg	100
36) Tetrahydrofuran	9.77	42	128338	101.9085 ug/kg	100
38) 1,1,1-Trichloroethane	10.05	97	238906	56.0533 ug/kg	100
39) Cyclohexane	10.07	56	372130	55.2296 ug/kg	100
40) 1,1-Dichloropropene	10.24	75	218180	55.6101 ug/kg	100
41) Tert-Amyl-Methyl ether	10.34	73	880669	105.7809 ug/kg	100
42) Carbon Tetrachloride	10.38	117	219971	55.2902 ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M973594.D 8260-SL.M Thu Apr 07 13:30:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973594.D Vial: 2
Acq On : 6 Apr 2016 10:29 Operator: ADC
Sample : WG563259-02 50ug/L CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:10 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	231509	53.9837	ug/kg	100
46)	Benzene	10.59	78	644102	52.8967	ug/kg	100
47)	Trichloroethene	11.34	130	182550	53.2999	ug/kg	100
48)	Methylcyclohexane	11.43	83	286794	54.7990	ug/kg	100
49)	1,2-Dichloropropane	11.56	63	183307	55.3560	ug/kg	100
50)	1,4-Dioxane	11.85	88	9560	222.5800	ug/kg	100
51)	Bromodichloromethane	11.86	83	209073	55.4066	ug/kg	100
52)	Dibromomethane	11.96	174	110590	55.9371	ug/kg	100
53)	2-Chloroethyl Vinyl Ether	12.16	63	96674	54.9007	ug/kg	100
54)	4-Methyl-2-Pentanone	12.19	58	77462	50.8064	ug/kg	100
55)	cis-1,3-Dichloropropene	12.49	75	259757	55.2103	ug/kg	100
56)	Dimethyl Disulfide	12.77	94	283262	56.2588	ug/kg	100
59)	Toluene	12.92	91	676568	54.8912	ug/kg	100
60)	Ethyl Methacrylate	13.01	69	208952	55.6836	ug/kg	100
61)	trans-1,3-Dichloropropene	13.09	75	233116	58.0962	ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	139311	57.4128	ug/kg	100
63)	2-Hexanone	13.24	43	141674	53.4685	ug/kg	100
64)	1,3-Dichloropropane	13.62	76	235142	56.3585	ug/kg	100
65)	Tetrachloroethene	13.74	164	148635	56.8598	ug/kg	100
66)	Dibromochloromethane	14.01	129	170681	56.9021	ug/kg	100
67)	1,2-Dibromoethane	14.27	107	145428	54.4071	ug/kg	100
68)	1-Chlorohexane	14.34	91	230794	56.8760	ug/kg	100
69)	Chlorobenzene	14.76	112	472532	55.2455	ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.79	131	164608	56.6465	ug/kg	100
71)	Ethylbenzene	14.79	106	260658	56.6484	ug/kg	100
72)	m-,p-Xylene	14.88	106	628296	110.7487	ug/kg	100
73)	o-Xylene	15.45	106	304989	56.4179	ug/kg	100
74)	Styrene	15.48	104	526964	56.9228	ug/kg	100
75)	Bromoform	15.99	173	115703	58.6080	ug/kg	100
76)	Isopropylbenzene	15.87	105	790639	56.2260	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	186051	58.2080	ug/kg	100
80)	1,2,3-Trichloropropane	16.28	110	55521	58.8971	ug/kg	100
81)	trans-1,4-Dichloro-2-Buten	16.32	53	73658	64.2034	ug/kg	100
82)	n-Propylbenzene	16.38	91	882341	62.1325	ug/kg	100
83)	Bromobenzene	16.51	156	207751	61.5020	ug/kg	100
84)	1,3,5-Trimethylbenzene	16.57	105	670786	62.0365	ug/kg	100
85)	2-Chlorotoluene	16.65	91	532140	62.7429	ug/kg	100
86)	4-Chlorotoluene	16.69	91	541387	61.0285	ug/kg	100
87)	a-Methylstyrene	16.97	118	340272	63.0826	ug/kg	100
88)	tert-Butylbenzene	17.03	134	149571	62.4349	ug/kg	100
89)	1,2,4-Trimethylbenzene	17.08	105	679712	64.7956	ug/kg	100
90)	sec-Butylbenzene	17.29	105	863432	62.1174	ug/kg	100
91)	p-Isopropyltoluene	17.45	119	715853	62.2130	ug/kg	100
92)	1,3-Dichlorobenzene	17.65	146	404430	60.5578	ug/kg	100
93)	1,4-Dichlorobenzene	17.79	146	402073	58.9902	ug/kg	100
94)	n-Butylbenzene	17.98	91	653053	61.6912	ug/kg	100
95)	1,2-Dichlorobenzene	18.29	146	379394	59.7167	ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.28	157	47102	59.4653	ug/kg	100
97)	1,2,4-Trichlorobenzene	20.43	180	281137	59.9711	ug/kg	100
98)	Hexachlorobutadiene	20.58	225	136032	61.5241	ug/kg	100
99)	Naphthalene	20.80	128	699652	61.9276	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.10	180	271295	61.0508	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M973594.D 8260-SL.M Thu Apr 07 13:30:11 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973594.D Vial: 2
Acq On : 6 Apr 2016 10:29 Operator: ADC
Sample : WG563259-02 50ug/L CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 7 13:30 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

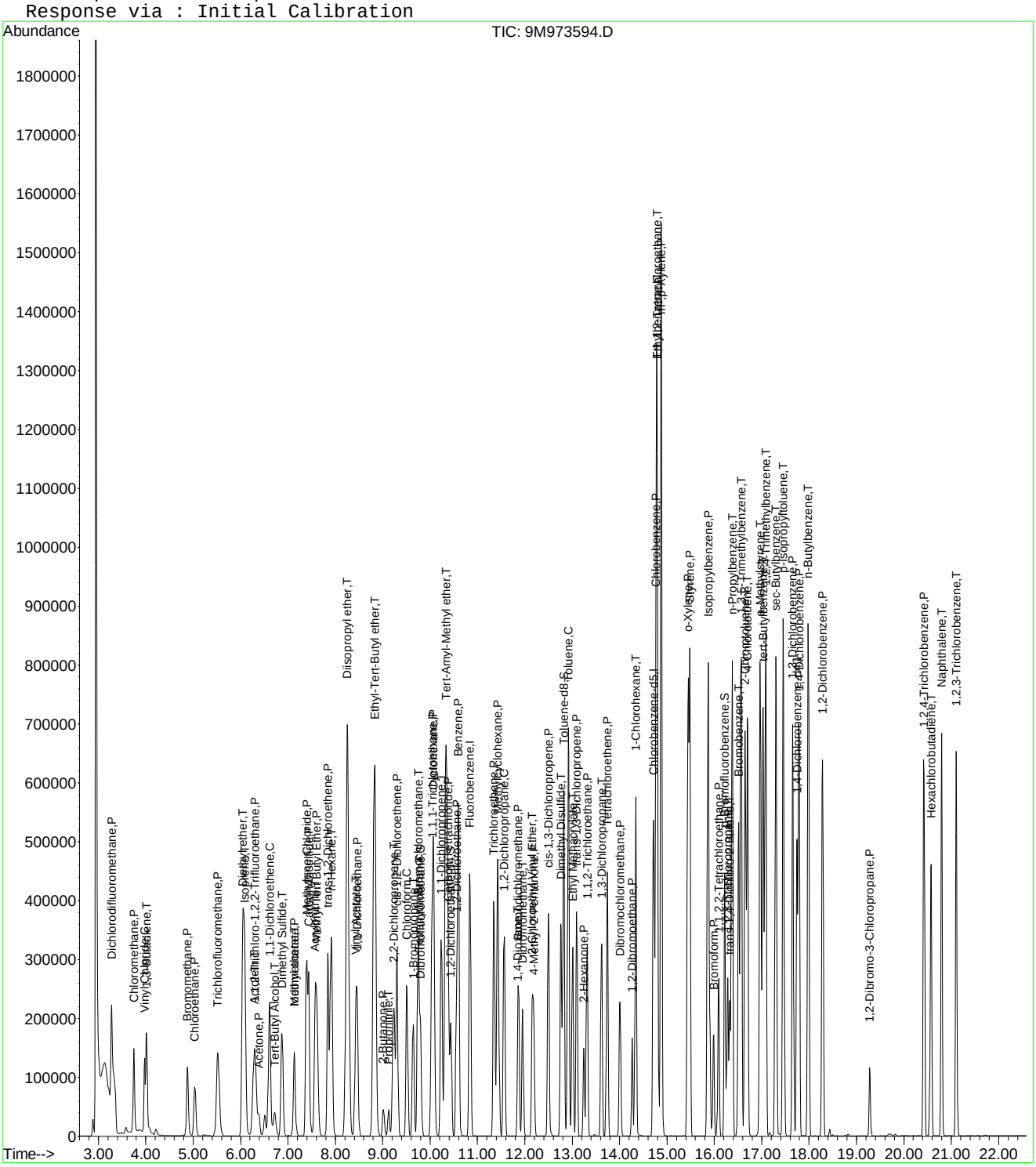

9M973594.D 8260-SL.M Thu Apr 07 13:30:11 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973596.D Vial: 4
Acq On : 6 Apr 2016 11:31 Operator: ADC
Sample : WG563259-03 0.5ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 11:54:23 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/03/16 HPMS9
Last Update : Mon Apr 04 11:23:13 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	553119	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	413289	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	207310	50.00 ug/kg	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.82	98	1650	0.1613 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.32%#	
79) p-Bromofluorobenzene	16.22	95	1730	0.4358 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.88%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	1589	0.9369 ug/kg#	65
3) Chloromethane	3.75	50	4538	1.1611 ug/kg	82
4) Vinyl Chloride	3.98	62	1323	Below Cal #	44
6) Bromomethane	4.88	94	1100	0.4462 ug/kg	95
10) Isoprene	6.09	67	1671	0.4729 ug/kg	77
13) Acetone	6.40	43	8104	2.6130 ug/kg	96
14) 1,1-Dichloroethene	6.61	61	2218	0.4395 ug/kg	93
17) Iodomethane	7.13	142	282	3.4654 ug/kg#	39
18) Methyl acetate	7.14	43	1743	0.4983 ug/kg#	64
19) Methylene Chloride	7.40	84	1679	0.5589 ug/kg	51
20) Carbon Disulfide	7.44	76	5728	0.6270 ug/kg#	74
22) Methyl Tert Butyl Ether	7.61	73	3658	0.4520 ug/kg#	67
23) trans-1,2-Dichloroethene	7.84	61	2293	0.4817 ug/kg	81
24) n-Hexane	7.93	57	9408	1.7150 ug/kg	97
26) Vinyl Acetate	8.43	43	1835	0.4539 ug/kg#	78
27) 1,1-Dichloroethane	8.46	63	2623	0.4668 ug/kg#	71
29) 2-Butanone	9.01	43	1327	0.7345 ug/kg#	56
32) cis-1,2-Dichloroethene	9.31	96	1606	0.5071 ug/kg	83
33) Chloroform	9.52	83	2239	0.4550 ug/kg	94
36) Tetrahydrofuran	9.78	42	3081	2.4866 ug/kg#	60
38) 1,1,1-Trichloroethane	10.05	97	1606	0.4115 ug/kg#	53
39) Cyclohexane	10.09	56	2777	0.4317 ug/kg#	87
40) 1,1-Dichloropropene	10.24	75	1521	0.4015 ug/kg#	65
42) Carbon Tetrachloride	10.39	117	1589	0.4437 ug/kg#	82
45) 1,2-Dichloroethane	10.56	62	1752	0.4168 ug/kg#	69
46) Benzene	10.61	78	6745	0.5761 ug/kg	93
47) Trichloroethene	11.36	130	1871	0.5440 ug/kg	96
48) Methylcyclohexane	11.43	83	2531	0.5027 ug/kg	84
53) 2-Chloroethyl Vinyl Ether	12.16	63	195	1.2486 ug/kg#	47
55) cis-1,3-Dichloropropene	12.49	75	1795	0.4064 ug/kg#	74
59) Toluene	12.92	91	6663	0.5122 ug/kg	98
62) 1,1,2-Trichloroethane	13.32	97	1141	0.4465 ug/kg	67
63) 2-Hexanone	13.25	43	1262	0.4800 ug/kg#	51
64) 1,3-Dichloropropane	13.62	76	1840	0.4299 ug/kg	90
65) Tetrachloroethene	13.75	164	1340	0.5079 ug/kg	86
68) 1-Chlorohexane	14.34	91	2260	0.5662 ug/kg	86
69) Chlorobenzene	14.76	112	5299	0.6131 ug/kg	88
71) Ethylbenzene	14.80	106	2155	0.4724 ug/kg	69
72) m-,p-Xylene	14.88	106	6619	1.1750 ug/kg	91
73) o-Xylene	15.44	106	2481	0.4468 ug/kg	69

(#) = qualifier out of range (m) = manual integration
9M973596.D 8260-SL.M Thu Apr 07 13:28:14 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973596.D Vial: 4
Acq On : 6 Apr 2016 11:31 Operator: ADC
Sample : WG563259-03 0.5ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 11:54:23 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/03/16 HPMS9
Last Update : Mon Apr 04 11:23:13 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
74)	Styrene	15.48	104	5249	0.5704 ug/kg	93
76)	Isopropylbenzene	15.87	105	7442	0.5270 ug/kg	93
82)	n-Propylbenzene	16.38	91	10184	0.6237 ug/kg	98
83)	Bromobenzene	16.52	156	2243	0.5578 ug/kg	73
84)	1,3,5-Trimethylbenzene	16.56	105	8032	0.6524 ug/kg	99
85)	2-Chlorotoluene	16.65	91	5669	0.5575 ug/kg	93
86)	4-Chlorotoluene	16.69	91	5860	0.5871 ug/kg	83
87)	a-Methylstyrene	16.97	118	2629	0.4270 ug/kg	92
88)	tert-Butylbenzene	17.02	134	1136	0.4050 ug/kg	51
89)	1,2,4-Trimethylbenzene	17.09	105	12212	0.5440 ug/kg	86
90)	sec-Butylbenzene	17.30	105	9170	0.5637 ug/kg	88
91)	p-Isopropyltoluene	17.45	119	8260	0.6326 ug/kg	87
92)	1,3-Dichlorobenzene	17.66	146	4559	0.5946 ug/kg	95
93)	1,4-Dichlorobenzene	17.78	146	5206	0.6722 ug/kg	84
94)	n-Butylbenzene	17.98	91	7369	0.6266 ug/kg#	95
95)	1,2-Dichlorobenzene	18.29	146	4519	0.6176 ug/kg	94
97)	1,2,4-Trichlorobenzene	20.43	180	4488	0.8517 ug/kg	95
98)	Hexachlorobutadiene	20.58	225	1813	0.7398 ug/kg#	57
99)	Naphthalene	20.80	128	11728	0.9044 ug/kg	93
100)	1,2,3-Trichlorobenzene	21.11	180	4306	0.8341 ug/kg	90

(#) = qualifier out of range (m) = manual integration
9M973596.D 8260-SL.M Thu Apr 07 13:28:14 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973596.D Vial: 4
Acq On : 6 Apr 2016 11:31 Operator: ADC
Sample : WG563259-03 0.5ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 6 11:54 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

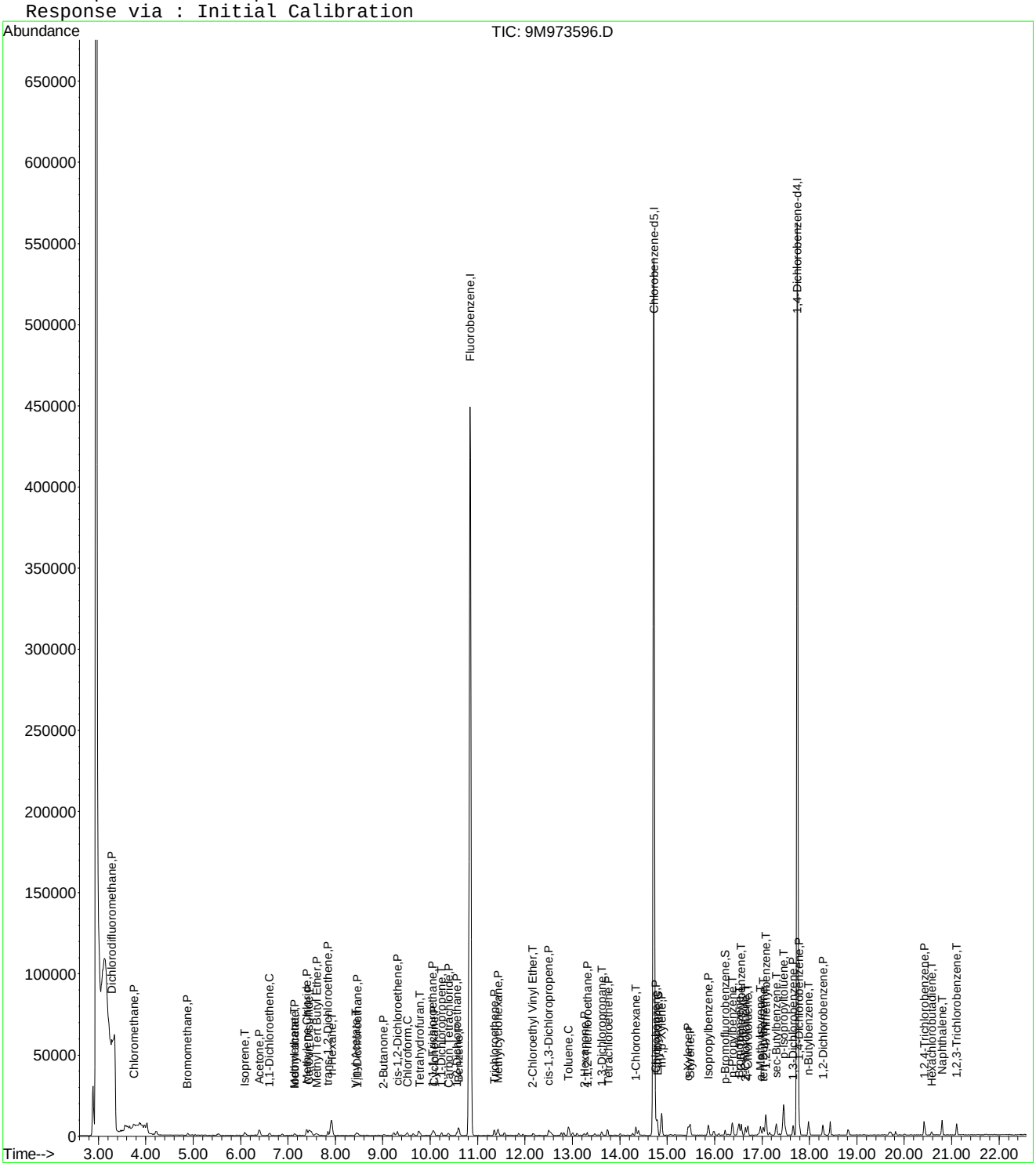

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\040616\9M973596.D Vial: 4
Acq On : 6 Apr 2016 11:31 Operator: ADC
Sample : WG563259-03 0.5ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	0.9369	0.0	100	0.00
3	P	Chloromethane	-1.0000	1.1611	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	-1.0000	0.0	0	0.00
5	T	1,3-Butadiene	-1.0000	0.1052	0.0	0	0.00
6	P	Bromomethane	-1.0000	0.4462	0.0	100	0.00
7	P	Chloroethane	-1.0000	0.2665	0.0	100	0.00
8	P	Trichlorofluoromethane	-1.0000	0.3662	0.0	100	0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.05#
10	T	Isoprene	-1.0000	0.4729	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.29#
12	P	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.0759	0.0	100	0.02
13	P	Acetone	-1.0000	2.6130	0.0	0	0.01
14	C	1,1-Dichloroethene	-1.0000	0.4395	0.0	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.72#
16	T	Dimethyl Sulfide	-1.0000	0.1631	0.0	100	0.01
17	T	Iodomethane	-1.0000	3.4654	0.0	100	0.00
18	P	Methyl acetate	-1.0000	0.4983	0.0	100	0.01
19	P	Methylene Chloride	-1.0000	0.5589	0.0	100	0.00
20	P	Carbon Disulfide	-1.0000	0.6270	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.58#
22	P	Methyl Tert Butyl Ether	-1.0000	0.4520	0.0	100	0.01
23	P	trans-1,2-Dichloroethene	-1.0000	0.4817	0.0	100	0.00
24	T	n-Hexane	-1.0000	1.7150	0.0	100	0.01
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.25#
26	T	Vinyl Acetate	-1.0000	0.4539	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.4668	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.83#
29	P	2-Butanone	-1.0000	0.7345	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.13#
31	T	2,2-Dichloropropane	-1.0000	0.3943	0.0	100	0.00
32	P	cis-1,2-Dichloroethene	-1.0000	0.5071	0.0	100	0.00
33	C	Chloroform	-1.0000	0.4550	0.0	100	0.01
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.64#
35	T	Bromochloromethane	-1.0000	0.2492	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	2.4866	0.0	100	0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	-1.0000	0.4115	0.0	100	0.00
39	P	Cyclohexane	-1.0000	0.4317	0.0	100	0.02
40	T	1,1-Dichloropropene	-1.0000	0.4015	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.34#
42	P	Carbon Tetrachloride	-1.0000	0.4437	0.0	100	0.01
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	-1.0000	0.4168	0.0	100	0.00
46	P	Benzene	0.5000	0.5762	-15.2	100	0.01
47	P	Trichloroethene	-1.0000	0.5440	0.0	100	0.01
48	P	Methylcyclohexane	-1.0000	0.5027	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.3907	0.0	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.85#
51	P	Bromodichloromethane	-1.0000	0.3953	0.0	100	0.00
52	T	Dibromomethane	-1.0000	0.3531	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	1.2486	0.0	100	0.00
54	P	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.19#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\040616\9M973596.D Vial: 4
Acq On : 6 Apr 2016 11:31 Operator: ADC
Sample : WG563259-03 0.5ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	-1.0000	0.4064	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.3326	0.0	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.1613	0.0	100	0.00
59	C	Toluene	0.5000	0.5122	-2.4	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3892	0.0	100	0.00
61	P	trans-1,3-Dichloropropene	-1.0000	0.3760	0.0	100	0.00
62	P	1,1,2-Trichloroethane	-1.0000	0.4465	0.0	100	0.00
63	P	2-Hexanone	-1.0000	0.4800	0.0	100	0.01
64	T	1,3-Dichloropropane	-1.0000	0.4299	0.0	100	0.00
65	P	Tetrachloroethene	-1.0000	0.5079	0.0	100	0.01
66	P	Dibromochloromethane	-1.0000	0.3577	0.0	100	0.00
67	P	1,2-Dibromoethane	-1.0000	0.2258	0.0	100	0.00
68	T	1-Chlorohexane	-1.0000	0.5662	0.0	100	0.00
69	P	Chlorobenzene	-1.0000	0.6131	0.0	100	0.00
70	T	1,1,1,2-Tetrachloroethane	-1.0000	0.3018	0.0	100	0.00
71	C	Ethylbenzene	0.5000	0.4724	5.5	100	0.00
72	P	m-,p-Xylene	1.0000	1.1750	-17.5	100	0.00
73	P	o-Xylene	0.5000	0.4468	10.6	100	0.00
74	P	Styrene	-1.0000	0.5704	0.0	100	0.00
75	P	Bromoform	-1.0000	0.2339	0.0	100	0.00
76	P	Isopropylbenzene	-1.0000	0.5270	0.0	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	-1.0000	0.3405	0.0	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.4358	0.0	100	0.00
80	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.28#
81	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.1888	0.0	100	0.00
82	T	n-Propylbenzene	-1.0000	0.6237	0.0	100	0.00
83	T	Bromobenzene	-1.0000	0.5578	0.0	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	0.6524	0.0	100	0.00
85	T	2-Chlorotoluene	-1.0000	0.5575	0.0	100	0.00
86	T	4-Chlorotoluene	-1.0000	0.5871	0.0	100	0.00
87	T	a-Methylstyrene	-1.0000	0.4270	0.0	100	0.00
88	T	tert-Butylbenzene	-1.0000	0.4050	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	-1.0000	0.5440	0.0	100	0.00
90	T	sec-Butylbenzene	-1.0000	0.5637	0.0	100	0.00
91	T	p-Isopropyltoluene	-1.0000	0.6326	0.0	100	0.00
92	P	1,3-Dichlorobenzene	-1.0000	0.5946	0.0	100	0.00
93	P	1,4-Dichlorobenzene	-1.0000	0.6722	0.0	100	0.00
94	T	n-Butylbenzene	-1.0000	0.6266	0.0	100	0.00
95	P	1,2-Dichlorobenzene	-1.0000	0.6176	0.0	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.28#
97	P	1,2,4-Trichlorobenzene	-1.0000	0.8517	0.0	100	0.00
98	T	Hexachlorobutadiene	-1.0000	0.7398	0.0	100	0.00
99	T	Naphthalene	-1.0000	0.9044	0.0	100	0.00
100	T	1,2,3-Trichlorobenzene	-1.0000	0.8341	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M973596.D 8260-SL.M Thu Apr 07 13:28:08 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973597.D Vial: 5
Acq On : 6 Apr 2016 12:02 Operator: ADC
Sample : WG563259-04 1.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 12:24:39 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/03/16 HPMS9
Last Update : Mon Apr 04 11:23:13 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	557853	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	421718	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	209128	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.82	98	1380	0.1322 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.26%#	
79) p-Bromofluorobenzene	16.22	95	1023	0.2555 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.52%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	3438	1.3902 ug/kg#	65
3) Chloromethane	3.75	50	5181	1.3144 ug/kg#	63
4) Vinyl Chloride	3.98	62	3443	0.7225 ug/kg#	44
6) Bromomethane	4.88	94	2284	0.9187 ug/kg	99
7) Chloroethane	5.04	64	1773	0.9224 ug/kg#	45
8) Trichlorofluoromethane	5.52	101	4412	0.9378 ug/kg#	81
9) Diethyl ether	6.05	59	14756	5.2770 ug/kg	93
10) Isoprene	6.09	67	3715	1.0425 ug/kg	96
11) Acrolein	6.29	56	637	1.7221 ug/kg#	16
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	2305	0.7889 ug/kg	63
13) Acetone	6.39	43	7601	2.0940 ug/kg	96
14) 1,1-Dichloroethene	6.62	61	4390	0.8626 ug/kg	95
15) Tert-Butyl Alcohol	6.72	59	5249	10.8958 ug/kg#	78
16) Dimethyl Sulfide	6.87	62	1824	0.7358 ug/kg	84
17) Iodomethane	7.13	142	1121	3.9269 ug/kg#	39
18) Methyl acetate	7.14	43	3352	0.9502 ug/kg#	64
19) Methylene Chloride	7.40	84	3418	1.1282 ug/kg	86
20) Carbon Disulfide	7.44	76	10560	1.1462 ug/kg	96
21) Acrylonitrile	7.58	53	3633	2.4445 ug/kg	94
22) Methyl Tert Butyl Ether	7.61	73	7926	0.9710 ug/kg	85
23) trans-1,2-Dichloroethene	7.84	61	4306	0.8970 ug/kg	98
24) n-Hexane	7.91	57	10751	1.9432 ug/kg	100
25) Diisopropyl ether	8.25	45	66111	5.4586 ug/kg	98
26) Vinyl Acetate	8.42	43	4318	1.0591 ug/kg#	78
27) 1,1-Dichloroethane	8.46	63	5187	0.9153 ug/kg#	84
28) Ethyl-Tert-Butyl ether	8.83	59	58385	5.6314 ug/kg	97
29) 2-Butanone	9.01	43	2198	1.2063 ug/kg#	56
30) Propionitrile	9.13	54	2656	4.5857 ug/kg#	78
31) 2,2-Dichloropropane	9.23	77	3742	1.0146 ug/kg#	65
32) cis-1,2-Dichloroethene	9.31	96	2691	0.8425 ug/kg	94
33) Chloroform	9.51	83	4714	0.9497 ug/kg	94
35) Bromochloromethane	9.75	130	1511	0.7365 ug/kg	88
36) Tetrahydrofuran	9.77	42	9416	7.5349 ug/kg	88
38) 1,1,1-Trichloroethane	10.05	97	3823	0.9714 ug/kg	98
39) Cyclohexane	10.08	56	5889	0.9076 ug/kg	97
40) 1,1-Dichloropropene	10.24	75	3371	0.8822 ug/kg	92
41) Tert-Amyl-Methyl ether	10.34	73	42435	5.4666 ug/kg	98
42) Carbon Tetrachloride	10.39	117	3273	0.9063 ug/kg#	84
45) 1,2-Dichloroethane	10.56	62	3840	0.9057 ug/kg	91
46) Benzene	10.60	78	11983	1.0149 ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M973597.D 8260-SL.M Thu Apr 07 13:28:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973597.D Vial: 5
Acq On : 6 Apr 2016 12:02 Operator: ADC
Sample : WG563259-04 1.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 12:24:39 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/03/16 HPMS9
Last Update : Mon Apr 04 11:23:13 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
47)	Trichloroethene	11.35	130	3487	1.0053	ug/kg	88
48)	Methylcyclohexane	11.44	83	4996	0.9839	ug/kg	95
49)	1,2-Dichloropropane	11.56	63	2872	0.8788	ug/kg	95
51)	Bromodichloromethane	11.86	83	3283	0.8724	ug/kg#	85
52)	Dibromomethane	11.96	174	1694	0.8620	ug/kg	90
53)	2-Chloroethyl Vinyl Ether	12.17	63	1008	2.4200	ug/kg#	47
54)	4-Methyl-2-Pentanone	12.20	58	973	0.6567	ug/kg#	43
55)	cis-1,3-Dichloropropene	12.49	75	3951	0.8869	ug/kg#	77
56)	Dimethyl Disulfide	12.77	94	3623	0.7258	ug/kg	97
59)	Toluene	12.92	91	12565	0.9465	ug/kg	98
60)	Ethyl Methacrylate	13.00	69	3038	0.7867	ug/kg#	71
61)	trans-1,3-Dichloropropene	13.09	75	3292	0.8033	ug/kg	96
62)	1,1,2-Trichloroethane	13.32	97	1934	0.7417	ug/kg	91
63)	2-Hexanone	13.24	43	2621	0.9770	ug/kg#	71
64)	1,3-Dichloropropane	13.62	76	3906	0.8945	ug/kg	96
65)	Tetrachloroethene	13.75	164	2453	0.9111	ug/kg	99
66)	Dibromochloromethane	14.01	129	2167	0.6862	ug/kg	98
67)	1,2-Dibromoethane	14.27	107	2061	0.7227	ug/kg	87
68)	1-Chlorohexane	14.34	91	3972	0.9753	ug/kg	98
69)	Chlorobenzene	14.76	112	8591	0.9741	ug/kg	95
70)	1,1,1,2-Tetrachloroethane	14.79	131	2410	0.8202	ug/kg	100
71)	Ethylbenzene	14.79	106	4507	0.9682	ug/kg	89
72)	m-,p-Xylene	14.88	106	11285	1.9633	ug/kg	99
73)	o-Xylene	15.45	106	5223	0.9219	ug/kg	92
74)	Styrene	15.48	104	8749	0.9317	ug/kg	92
75)	Bromoform	15.98	173	1483	0.6965	ug/kg	75
76)	Isopropylbenzene	15.87	105	14235	0.9879	ug/kg	93
78)	1,1,2,2-Tetrachloroethane	16.09	83	2277	0.7039	ug/kg#	92
80)	1,2,3-Trichloropropane	16.28	110	937	0.8413	ug/kg#	1
81)	trans-1,4-Dichloro-2-Buten	16.32	53	931	0.7743	ug/kg#	1
82)	n-Propylbenzene	16.38	91	16968	1.0301	ug/kg	95
83)	Bromobenzene	16.51	156	3616	0.8914	ug/kg#	49
84)	1,3,5-Trimethylbenzene	16.56	105	12696	1.0222	ug/kg	97
85)	2-Chlorotoluene	16.65	91	10075	0.9822	ug/kg	94
86)	4-Chlorotoluene	16.69	91	10332	1.0261	ug/kg	93
87)	a-Methylstyrene	16.97	118	5122	0.8247	ug/kg	97
88)	tert-Butylbenzene	17.03	134	2268	0.8015	ug/kg	70
89)	1,2,4-Trimethylbenzene	17.08	105	16314	0.8707	ug/kg	94
90)	sec-Butylbenzene	17.29	105	15648	0.9536	ug/kg	100
91)	p-Isopropyltoluene	17.45	119	12800	0.9718	ug/kg	98
92)	1,3-Dichlorobenzene	17.65	146	7673	0.9920	ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	8420	1.0777	ug/kg	94
94)	n-Butylbenzene	17.98	91	11896	1.0028	ug/kg	96
95)	1,2-Dichlorobenzene	18.29	146	7645	1.0358	ug/kg	89
96)	1,2-Dibromo-3-Chloropropan	19.29	157	415	0.4519	ug/kg	67
97)	1,2,4-Trichlorobenzene	20.43	180	5819	1.0947	ug/kg	94
98)	Hexachlorobutadiene	20.58	225	2429	0.9825	ug/kg	98
99)	Naphthalene	20.80	128	14841	1.1345	ug/kg	93
100)	1,2,3-Trichlorobenzene	21.10	180	5534	1.0627	ug/kg	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973597.D Vial: 5
Acq On : 6 Apr 2016 12:02 Operator: ADC
Sample : WG563259-04 1.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 6 12:24 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

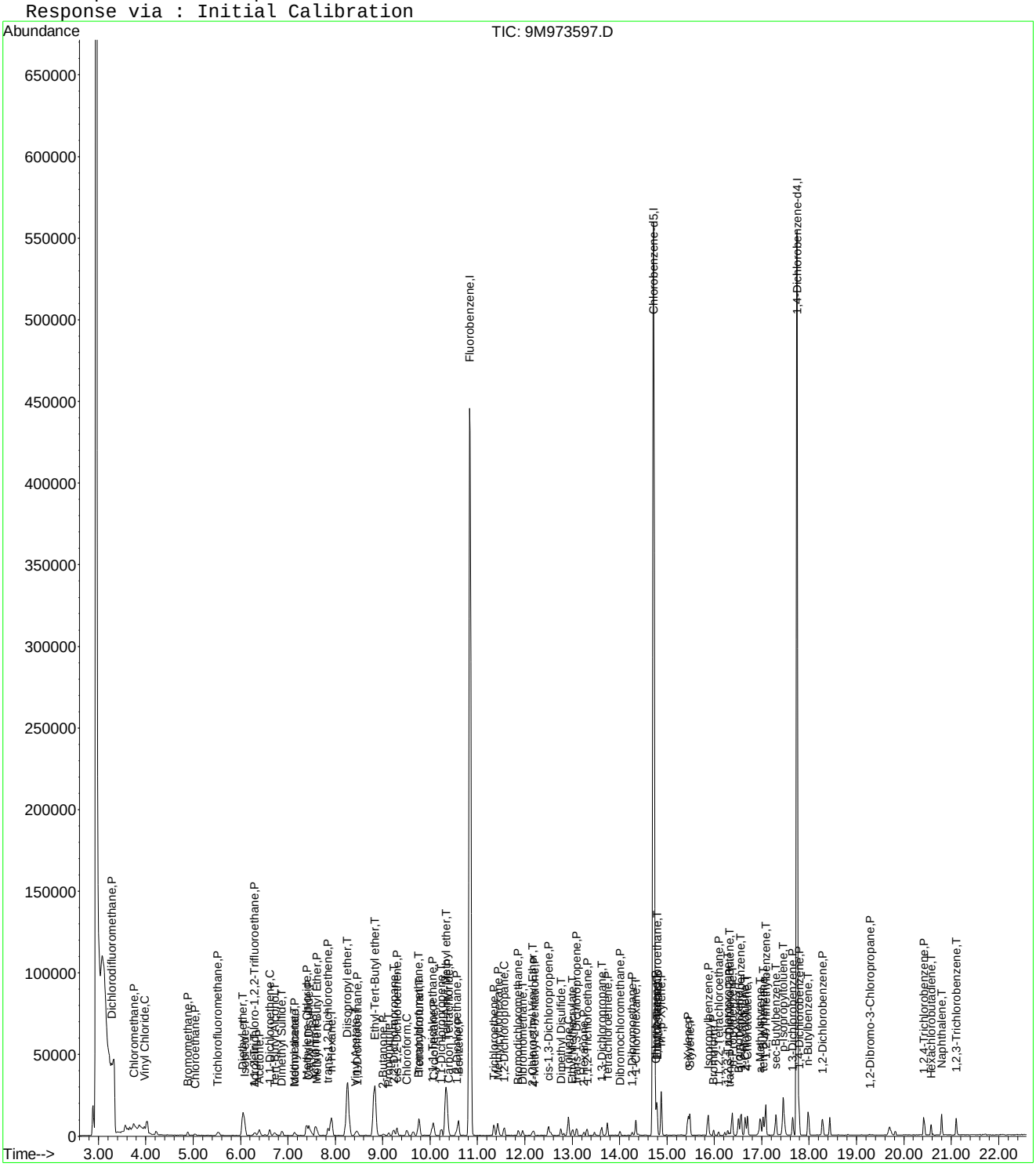

9M973597.D 8260-SL.M Thu Apr 07 13:28:36 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\040616\9M973597.D Vial: 5
Acq On : 6 Apr 2016 12:02 Operator: ADC
Sample : WG563259-04 1.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	1.3902	0.0	100	0.00
3	P	Chloromethane	-1.0000	1.3144	0.0	100	0.00
4	C	Vinyl Chloride	1.0000	0.7226	27.7#	100	0.00
5	T	1,3-Butadiene	1.0000	0.2910	70.9#	100	0.00
6	P	Bromomethane	1.0000	0.9187	8.1	100	0.01
7	P	Chloroethane	-1.0000	0.9224	0.0	100	0.01
8	P	Trichlorofluoromethane	1.0000	0.9378	6.2	100	0.00
9	T	Diethyl ether	5.0000	5.2770	-5.5	100	0.00
10	T	Isoprene	-1.0000	1.0425	0.0	100	0.00
11	T	Acrolein	2.5000	1.7221	31.1#	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.7889	0.0	100	-0.01
13	P	Acetone	-1.0000	2.0940	0.0	0	0.01
14	C	1,1-Dichloroethene	1.0000	0.8626	13.7	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	10.8958	0.0	100	0.00
16	T	Dimethyl Sulfide	1.0000	0.7358	26.4#	100	-0.01
17	T	Iodomethane	-1.0000	3.9269	0.0	100	0.00
18	P	Methyl acetate	-1.0000	0.9502	0.0	100	0.01
19	P	Methylene Chloride	-1.0000	1.1282	0.0	100	0.00
20	P	Carbon Disulfide	-1.0000	1.1462	0.0	100	0.00
21	T	Acrylonitrile	2.5000	2.4445	2.2	100	0.00
22	P	Methyl Tert Butyl Ether	1.0000	0.9710	2.9	100	0.01
23	P	trans-1,2-Dichloroethene	1.0000	0.8970	10.3	100	0.00
24	T	n-Hexane	-1.0000	1.9432	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	5.4586	-9.2	100	0.00
26	T	Vinyl Acetate	-1.0000	1.0591	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	0.9153	8.5	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	5.6315	-12.6	100	0.00
29	P	2-Butanone	-1.0000	1.2063	0.0	100	0.00
30	T	Propionitrile	5.0000	4.5857	8.3	100	0.00
31	T	2,2-Dichloropropane	-1.0000	1.0146	0.0	100	0.00
32	P	cis-1,2-Dichloroethene	1.0000	0.8425	15.7	100	0.00
33	C	Chloroform	1.0000	0.9497	5.0	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.64#
35	T	Bromochloromethane	1.0000	0.7365	26.3#	100	0.00
36	T	Tetrahydrofuran	-1.0000	7.5349	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	1.0000	0.9714	2.9	100	0.00
39	P	Cyclohexane	1.0000	0.9076	9.2	100	0.01
40	T	1,1-Dichloropropene	1.0000	0.8822	11.8	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	5.4666	-9.3	100	0.00
42	P	Carbon Tetrachloride	-1.0000	0.9063	0.0	100	0.01
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	1.0000	0.9057	9.4	100	0.00
46	P	Benzene	1.0000	1.0149	-1.5	100	0.01
47	P	Trichloroethene	1.0000	1.0053	-0.5	100	0.01
48	P	Methylcyclohexane	1.0000	0.9839	1.6	100	0.01
49	C	1,2-Dichloropropane	1.0000	0.8788	12.1	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.85#
51	P	Bromodichloromethane	-1.0000	0.8724	0.0	100	0.00
52	T	Dibromomethane	1.0000	0.8620	13.8	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	2.4200	0.0	100	0.01
54	P	4-Methyl-2-Pentanone	-1.0000	0.6567	0.0	100	0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\040616\9M973597.D Vial: 5
Acq On : 6 Apr 2016 12:02 Operator: ADC
Sample : WG563259-04 1.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	-1.0000	0.8869	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.7258	0.0	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.1322	0.0	100	0.00
59	C	Toluene	1.0000	0.9465	5.3	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.7867	0.0	100	-0.01
61	P	trans-1,3-Dichloropropene	-1.0000	0.8033	0.0	100	0.00
62	P	1,1,2-Trichloroethane	1.0000	0.7417	25.8#	100	0.00
63	P	2-Hexanone	-1.0000	0.9770	0.0	100	0.00
64	T	1,3-Dichloropropane	1.0000	0.8945	10.6	100	0.00
65	P	Tetrachloroethene	1.0000	0.9111	8.9	100	0.01
66	P	Dibromochloromethane	-1.0000	0.6862	0.0	100	0.00
67	P	1,2-Dibromoethane	-1.0000	0.7227	0.0	100	0.00
68	T	1-Chlorohexane	1.0000	0.9753	2.5	100	0.00
69	P	Chlorobenzene	1.0000	0.9741	2.6	100	0.00
70	T	1,1,1,2-Tetrachloroethane	-1.0000	0.8202	0.0	100	0.00
71	C	Ethylbenzene	1.0000	0.9682	3.2	100	0.00
72	P	m-,p-Xylene	2.0000	1.9633	1.8	100	0.00
73	P	o-Xylene	1.0000	0.9219	7.8	100	0.00
74	P	Styrene	1.0000	0.9317	6.8	100	0.00
75	P	Bromoform	-1.0000	0.6965	0.0	100	-0.01
76	P	Isopropylbenzene	1.0000	0.9879	1.2	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	1.0000	0.7039	29.6#	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.2555	0.0	100	0.00
80	T	1,2,3-Trichloropropane	1.0000	0.8413	15.9	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.7743	0.0	100	0.00
82	T	n-Propylbenzene	1.0000	1.0301	-3.0	100	0.00
83	T	Bromobenzene	1.0000	0.8914	10.9	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	1.0222	0.0	100	-0.01
85	T	2-Chlorotoluene	-1.0000	0.9822	0.0	100	0.00
86	T	4-Chlorotoluene	1.0000	1.0261	-2.6	100	0.00
87	T	a-Methylstyrene	-1.0000	0.8247	0.0	100	0.00
88	T	tert-Butylbenzene	-1.0000	0.8015	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	1.0000	0.8708	12.9	100	0.00
90	T	sec-Butylbenzene	1.0000	0.9536	4.6	100	0.00
91	T	p-Isopropyltoluene	-1.0000	0.9718	0.0	100	0.00
92	P	1,3-Dichlorobenzene	1.0000	0.9920	0.8	100	0.00
93	P	1,4-Dichlorobenzene	1.0000	1.0777	-7.8	100	0.00
94	T	n-Butylbenzene	1.0000	1.0028	-0.3	100	0.00
95	P	1,2-Dichlorobenzene	1.0000	1.0358	-3.6	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	0.4519	0.0	100	0.01
97	P	1,2,4-Trichlorobenzene	1.0000	1.0947	-9.5	100	0.00
98	T	Hexachlorobutadiene	1.0000	0.9825	1.7	100	0.00
99	T	Naphthalene	-1.0000	1.1345	0.0	100	0.00
100	T	1,2,3-Trichlorobenzene	1.0000	1.0627	-6.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1
9M973597.D 8260-SL.M Thu Apr 07 13:28:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973598.D Vial: 6
Acq On : 6 Apr 2016 12:32 Operator: ADC
Sample : WG563259-05 2.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 12:54:49 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/03/16 HPMS9
Last Update : Mon Apr 04 11:23:13 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	561568	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	423295	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	214199	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.83	98	883	0.0843 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.16%#	
79) p-Bromofluorobenzene	16.23	95	557	0.1358 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	7213	2.3112 ug/kg	87
3) Chloromethane	3.74	50	9237	2.3278 ug/kg	100
4) Vinyl Chloride	3.98	62	6229	1.6747 ug/kg#	19
5) 1,3-Butadiene	4.02	54	4504	1.3063 ug/kg	77
6) Bromomethane	4.88	94	4915	1.9639 ug/kg	96
7) Chloroethane	5.04	64	4386	2.2666 ug/kg	88
8) Trichlorofluoromethane	5.54	101	9590	2.0249 ug/kg#	94
9) Diethyl ether	6.05	59	73580	26.1395 ug/kg	99
10) Isoprene	6.09	67	7256	2.0227 ug/kg	98
11) Acrolein	6.30	56	3423	9.1925 ug/kg	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	5358	1.8216 ug/kg	95
13) Acetone	6.39	43	7635	2.0790 ug/kg	99
14) 1,1-Dichloroethene	6.61	61	9887	1.9298 ug/kg	100
15) Tert-Butyl Alcohol	6.73	59	25828	53.2585 ug/kg	94
16) Dimethyl Sulfide	6.88	62	4558	1.8265 ug/kg	98
17) Iodomethane	7.13	142	2123	4.4719 ug/kg#	55
18) Methyl acetate	7.14	43	6733	1.8961 ug/kg#	78
19) Methylene Chloride	7.40	84	6667	2.1861 ug/kg	89
20) Carbon Disulfide	7.44	76	19750	2.1295 ug/kg	99
21) Acrylonitrile	7.57	53	18608	12.4377 ug/kg	96
22) Methyl Tert Butyl Ether	7.62	73	16575	2.0171 ug/kg	98
23) trans-1,2-Dichloroethene	7.85	61	9684	2.0039 ug/kg	98
24) n-Hexane	7.92	57	15558	2.7934 ug/kg	93
25) Diisopropyl ether	8.25	45	323385	26.5242 ug/kg	99
26) Vinyl Acetate	8.44	43	9782	2.3835 ug/kg#	78
27) 1,1-Dichloroethane	8.46	63	11630	2.0385 ug/kg	96
28) Ethyl-Tert-Butyl ether	8.83	59	283112	27.1265 ug/kg	99
29) 2-Butanone	9.02	43	4137	2.2555 ug/kg#	56
30) Propionitrile	9.13	54	14459	24.7990 ug/kg	98
31) 2,2-Dichloropropane	9.23	77	8083	2.1772 ug/kg	86
32) cis-1,2-Dichloroethene	9.31	96	6442	2.0036 ug/kg	86
33) Chloroform	9.52	83	9615	1.9244 ug/kg	100
34) 1-Bromopropane	9.65	122	713	1.3267 ug/kg	39
35) Bromochloromethane	9.75	130	3780	1.8303 ug/kg	98
36) Tetrahydrofuran	9.77	42	34463	27.3955 ug/kg	97
38) 1,1,1-Trichloroethane	10.04	97	7884	1.9899 ug/kg	99
39) Cyclohexane	10.08	56	13354	2.0445 ug/kg	97
40) 1,1-Dichloropropene	10.23	75	7832	2.0362 ug/kg	98
41) Tert-Amyl-Methyl ether	10.34	73	209020	26.7483 ug/kg	99
42) Carbon Tetrachloride	10.38	117	7040	1.9364 ug/kg	94

(#) = qualifier out of range (m) = manual integration
9M973598.D 8260-SL.M Thu Apr 07 13:29:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973598.D Vial: 6
Acq On : 6 Apr 2016 12:32 Operator: ADC
Sample : WG563259-05 2.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 12:54:49 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/03/16 HPMS9
Last Update : Mon Apr 04 11:23:13 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	9082	2.1280 ug/kg	90
46)	Benzene	10.60	78	25276	2.1266 ug/kg	96
47)	Trichloroethene	11.35	130	7090	2.0306 ug/kg	94
48)	Methylcyclohexane	11.43	83	9849	1.9269 ug/kg	93
49)	1,2-Dichloropropane	11.56	63	6385	1.9409 ug/kg	98
50)	1,4-Dioxane	11.85	88	2011	38.0886 ug/kg	94
51)	Bromodichloromethane	11.86	83	6868	1.8130 ug/kg#	96
52)	Dibromomethane	11.95	174	3665	1.8525 ug/kg	96
53)	2-Chloroethyl Vinyl Ether	12.15	63	2995	5.2459 ug/kg#	62
54)	4-Methyl-2-Pentanone	12.19	58	2405	1.6125 ug/kg#	60
55)	cis-1,3-Dichloropropene	12.50	75	9135	2.0369 ug/kg	89
56)	Dimethyl Disulfide	12.76	94	8289	1.6496 ug/kg	96
59)	Toluene	12.92	91	26467	1.9863 ug/kg	98
60)	Ethyl Methacrylate	13.01	69	7058	1.8209 ug/kg	87
61)	trans-1,3-Dichloropropene	13.09	75	7270	1.7674 ug/kg	97
62)	1,1,2-Trichloroethane	13.32	97	5072	1.9379 ug/kg	98
63)	2-Hexanone	13.24	43	5448	2.0233 ug/kg#	73
64)	1,3-Dichloropropane	13.62	76	8816	2.0113 ug/kg	97
65)	Tetrachloroethene	13.75	164	5466	2.0227 ug/kg	96
66)	Dibromochloromethane	14.01	129	5362	1.6916 ug/kg	97
67)	1,2-Dibromoethane	14.26	107	4602	1.6077 ug/kg	96
68)	1-Chlorohexane	14.34	91	8306	2.0318 ug/kg	94
69)	Chlorobenzene	14.77	112	18638	2.1054 ug/kg	78
70)	1,1,1,2-Tetrachloroethane	14.79	131	5450	1.8478 ug/kg	96
71)	Ethylbenzene	14.79	106	9804	2.0982 ug/kg	99
72)	m-,p-Xylene	14.88	106	23234	4.0271 ug/kg	97
73)	o-Xylene	15.45	106	11588	2.0377 ug/kg	95
74)	Styrene	15.48	104	18182	1.9290 ug/kg	97
75)	Bromoform	15.98	173	3164	1.4804 ug/kg	95
76)	Isopropylbenzene	15.87	105	28542	1.9733 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	6227	1.8795 ug/kg#	91
80)	1,2,3-Trichloropropane	16.28	110	2188	1.9181 ug/kg#	13
81)	trans-1,4-Dichloro-2-Buten	16.33	53	2328	1.8903 ug/kg#	1
82)	n-Propylbenzene	16.38	91	32209	1.9091 ug/kg	99
83)	Bromobenzene	16.51	156	7870	1.8942 ug/kg	66
84)	1,3,5-Trimethylbenzene	16.57	105	24501	1.9260 ug/kg	97
85)	2-Chlorotoluene	16.65	91	19437	1.8500 ug/kg	89
86)	4-Chlorotoluene	16.70	91	21001	2.0362 ug/kg	88
87)	a-Methylstyrene	16.97	118	10908	1.7148 ug/kg	90
88)	tert-Butylbenzene	17.03	134	5100	1.7596 ug/kg	78
89)	1,2,4-Trimethylbenzene	17.08	105	28288	1.7954 ug/kg	98
90)	sec-Butylbenzene	17.29	105	31454	1.8715 ug/kg	98
91)	p-Isopropyltoluene	17.45	119	26393	1.9564 ug/kg	93
92)	1,3-Dichlorobenzene	17.65	146	15785	1.9925 ug/kg	97
93)	1,4-Dichlorobenzene	17.79	146	16276	2.0339 ug/kg	77
94)	n-Butylbenzene	17.98	91	23563	1.9393 ug/kg	97
95)	1,2-Dichlorobenzene	18.29	146	13856	1.8328 ug/kg	98
96)	1,2-Dibromo-3-Chloropropan	19.29	157	1504	1.5990 ug/kg	71
97)	1,2,4-Trichlorobenzene	20.43	180	10046	1.8451 ug/kg	94
98)	Hexachlorobutadiene	20.58	225	4883	1.9284 ug/kg	97
99)	Naphthalene	20.80	128	26400	1.9704 ug/kg	99
100)	1,2,3-Trichlorobenzene	21.10	180	9688	1.8163 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M973598.D 8260-SL.M Thu Apr 07 13:29:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973598.D Vial: 6
Acq On : 6 Apr 2016 12:32 Operator: ADC
Sample : WG563259-05 2.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 6 12:54 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

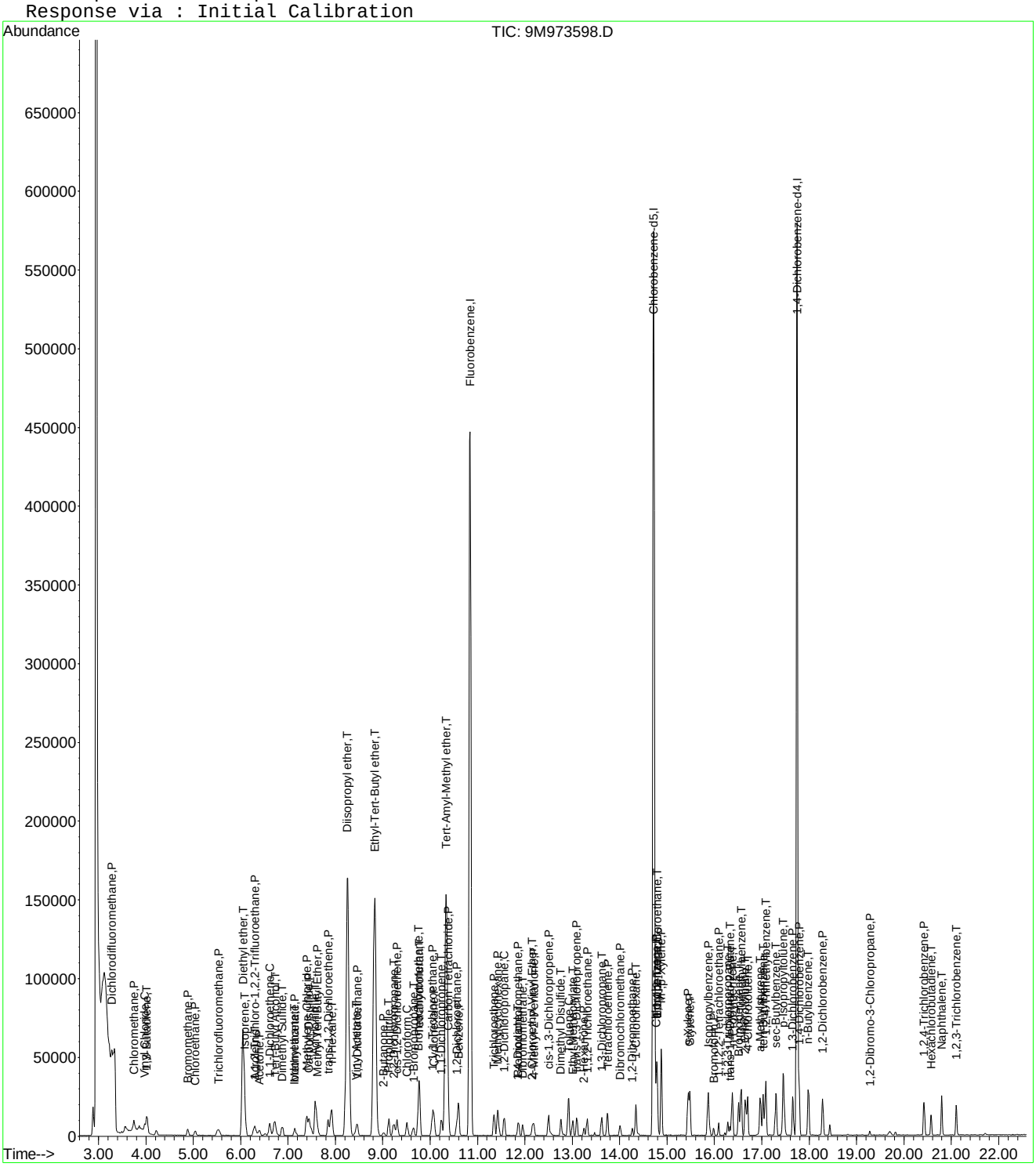

9M973598.D 8260-SL.M Thu Apr 07 13:29:00 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\040616\9M973598.D Vial: 6
Acq On : 6 Apr 2016 12:32 Operator: ADC
Sample : WG563259-05 2.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	2.0000	2.3112	-15.6	100	0.00
3	P	Chloromethane	2.0000	2.3278	-16.4	100	0.00
4	C	Vinyl Chloride	2.0000	1.6747	16.3	100	0.00
5	T	1,3-Butadiene	2.0000	1.3063	34.7#	100	0.00
6	P	Bromomethane	2.0000	1.9639	1.8	100	0.00
7	P	Chloroethane	2.0000	2.2666	-13.3	100	0.00
8	P	Trichlorofluoromethane	2.0000	2.0249	-1.2	100	0.02
9	T	Diethyl ether	25.0000	26.1395	-4.6	100	0.00
10	T	Isoprene	2.0000	2.0227	-1.1	100	0.00
11	T	Acrolein	12.5000	9.1925	26.5#	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.8216	8.9	100	0.00
13	P	Acetone	-1.0000	2.0790	0.0	0	0.00
14	C	1,1-Dichloroethene	2.0000	1.9299	3.5	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	53.2585	-6.5	100	0.00
16	T	Dimethyl Sulfide	2.0000	1.8265	8.7	100	0.00
17	T	Iodomethane	-1.0000	4.4719	0.0	100	0.00
18	P	Methyl acetate	2.0000	1.8961	5.2	100	0.00
19	P	Methylene Chloride	2.0000	2.1861	-9.3	100	0.00
20	P	Carbon Disulfide	2.0000	2.1295	-6.5	100	0.00
21	T	Acrylonitrile	12.5000	12.4377	0.5	100	0.00
22	P	Methyl Tert Butyl Ether	2.0000	2.0171	-0.9	100	0.02
23	P	trans-1,2-Dichloroethene	2.0000	2.0039	-0.2	100	0.00
24	T	n-Hexane	2.0000	2.7934	-39.7#	100	0.00
25	T	Diisopropyl ether	25.0000	26.5242	-6.1	100	0.00
26	T	Vinyl Acetate	2.0000	2.3835	-19.2	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.0385	-1.9	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	27.1265	-8.5	100	0.00
29	P	2-Butanone	-1.0000	2.2555	0.0	100	0.00
30	T	Propionitrile	25.0000	24.7990	0.8	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1772	-8.9	100	0.00
32	P	cis-1,2-Dichloroethene	2.0000	2.0036	-0.2	100	0.00
33	C	Chloroform	2.0000	1.9244	3.8	100	0.00
34	T	1-Bromopropane	2.0000	1.3267	33.7#	100	0.00
35	T	Bromochloromethane	2.0000	1.8303	8.5	100	0.00
36	T	Tetrahydrofuran	25.0000	27.3955	-9.6	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	2.0000	1.9899	0.5	100	0.00
39	P	Cyclohexane	2.0000	2.0445	-2.2	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0362	-1.8	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	26.7483	-7.0	100	0.00
42	P	Carbon Tetrachloride	2.0000	1.9364	3.2	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	2.0000	2.1280	-6.4	100	0.00
46	P	Benzene	2.0000	2.1266	-6.3	100	0.00
47	P	Trichloroethene	2.0000	2.0305	-1.5	100	0.00
48	P	Methylcyclohexane	2.0000	1.9269	3.7	100	0.00
49	C	1,2-Dichloropropane	2.0000	1.9409	3.0	100	0.00
50	T	1,4-Dioxane	50.0000	38.0886	23.8	100	0.00
51	P	Bromodichloromethane	2.0000	1.8130	9.4	100	0.00
52	T	Dibromomethane	2.0000	1.8525	7.4	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	5.2459	-162.3#	100	0.00
54	P	4-Methyl-2-Pentanone	-1.0000	1.6125	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\040616\9M973598.D Vial: 6
Acq On : 6 Apr 2016 12:32 Operator: ADC
Sample : WG563259-05 2.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	2.0000	2.0369	-1.8	100	0.00
56	T	Dimethyl Disulfide	2.0000	1.6496	17.5	100	-0.01
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0843	0.0	100	0.00
59	C	Toluene	2.0000	1.9863	0.7	100	0.00
60	T	Ethyl Methacrylate	-1.0000	1.8209	0.0	100	0.00
61	P	trans-1,3-Dichloropropene	2.0000	1.7674	11.6	100	0.00
62	P	1,1,2-Trichloroethane	2.0000	1.9379	3.1	100	0.00
63	P	2-Hexanone	-1.0000	2.0233	0.0	100	0.00
64	T	1,3-Dichloropropane	2.0000	2.0113	-0.6	100	0.00
65	P	Tetrachloroethene	2.0000	2.0227	-1.1	100	0.00
66	P	Dibromochloromethane	2.0000	1.6916	15.4	100	0.00
67	P	1,2-Dibromoethane	-1.0000	1.6077	0.0	100	0.00
68	T	1-Chlorohexane	2.0000	2.0318	-1.6	100	0.00
69	P	Chlorobenzene	2.0000	2.1054	-5.3	100	0.00
70	T	1,1,1,2-Tetrachloroethane	2.0000	1.8478	7.6	100	0.00
71	C	Ethylbenzene	2.0000	2.0982	-4.9	100	0.00
72	P	m-,p-Xylene	4.0000	4.0271	-0.7	100	0.00
73	P	o-Xylene	2.0000	2.0377	-1.9	100	0.00
74	P	Styrene	2.0000	1.9290	3.5	100	0.00
75	P	Bromoform	2.0000	1.4804	26.0#	100	0.00
76	P	Isopropylbenzene	2.0000	1.9733	1.3	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	2.0000	1.8795	6.0	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.1358	0.0	100	0.00
80	T	1,2,3-Trichloropropane	2.0000	1.9181	4.1	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	2.0000	1.8903	5.5	100	0.00
82	T	n-Propylbenzene	2.0000	1.9091	4.5	100	0.00
83	T	Bromobenzene	2.0000	1.8942	5.3	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	1.9260	0.0	100	0.00
85	T	2-Chlorotoluene	2.0000	1.8500	7.5	100	0.00
86	T	4-Chlorotoluene	2.0000	2.0362	-1.8	100	0.00
87	T	a-Methylstyrene	-1.0000	1.7148	0.0	100	0.00
88	T	tert-Butylbenzene	-1.0000	1.7596	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	2.0000	1.7954	10.2	100	0.00
90	T	sec-Butylbenzene	2.0000	1.8715	6.4	100	0.00
91	T	p-Isopropyltoluene	-1.0000	1.9564	0.0	100	0.00
92	P	1,3-Dichlorobenzene	2.0000	1.9925	0.4	100	0.00
93	P	1,4-Dichlorobenzene	2.0000	2.0339	-1.7	100	0.00
94	T	n-Butylbenzene	2.0000	1.9393	3.0	100	0.00
95	P	1,2-Dichlorobenzene	2.0000	1.8328	8.4	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	1.5990	0.0	100	0.01
97	P	1,2,4-Trichlorobenzene	2.0000	1.8451	7.7	100	0.00
98	T	Hexachlorobutadiene	2.0000	1.9284	3.6	100	0.00
99	T	Naphthalene	2.0000	1.9704	1.5	100	0.00
100	T	1,2,3-Trichlorobenzene	2.0000	1.8163	9.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M973598.D 8260-SL.M Thu Apr 07 13:28:57 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973599.D Vial: 7
Acq On : 6 Apr 2016 13:03 Operator: ADC
Sample : WG563259-06 5.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:12 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	540575	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	410912	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	212234	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	26727	9.7897 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 19.58%#		
43) 1,2-Dichloroethane-d4	10.43	65	28555	9.9912 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 19.98%#		
58) Toluene-d8	12.82	98	93027	9.4991 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 19.00%#		
79) p-Bromofluorobenzene	16.22	95	33585	9.1362 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 18.28%#		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.28	85	18618	4.4899 ug/kg	93
3) Chloromethane	3.74	50	18697	4.9049 ug/kg	96
4) Vinyl Chloride	3.98	62	17383	6.2597 ug/kg#	75
5) 1,3-Butadiene	4.02	54	9801	5.3282 ug/kg	95
6) Bromomethane	4.88	94	12479	5.3393 ug/kg	99
7) Chloroethane	5.03	64	11469	5.0379 ug/kg	93
8) Trichlorofluoromethane	5.53	101	23619	4.9039 ug/kg	98
9) Diethyl ether	6.04	59	144321	50.9536 ug/kg	99
10) Isoprene	6.09	67	17822	4.7011 ug/kg	98
11) Acrolein	6.29	56	6309	22.4018 ug/kg	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	14091	4.7915 ug/kg	96
13) Acetone	6.39	43	11189	5.1370 ug/kg	92
14) 1,1-Dichloroethene	6.61	61	24384	4.9467 ug/kg	97
15) Tert-Butyl Alcohol	6.71	59	47814	100.8431 ug/kg	97
16) Dimethyl Sulfide	6.88	62	11613	4.8086 ug/kg	99
17) Iodomethane	7.13	142	7579	6.0534 ug/kg	95
18) Methyl acetate	7.14	43	16058	5.1279 ug/kg#	92
19) Methylene Chloride	7.40	84	15627	5.0751 ug/kg	98
20) Carbon Disulfide	7.44	76	45259	4.8422 ug/kg	99
21) Acrylonitrile	7.58	53	36084	24.2435 ug/kg	100
22) Methyl Tert Butyl Ether	7.61	73	41971	5.0656 ug/kg	97
23) trans-1,2-Dichloroethene	7.84	61	22643	4.7751 ug/kg	94
24) n-Hexane	7.91	57	31915	5.1828 ug/kg	98
25) Diisopropyl ether	8.25	45	638829	50.9126 ug/kg	100
26) Vinyl Acetate	8.43	43	27708	4.9171 ug/kg	99
27) 1,1-Dichloroethane	8.46	63	29076	5.0517 ug/kg	98
28) Ethyl-Tert-Butyl ether	8.83	59	559829	50.7395 ug/kg	99
29) 2-Butanone	9.02	43	8792	5.0588 ug/kg	93
30) Propionitrile	9.13	54	28464	50.4599 ug/kg	100
31) 2,2-Dichloropropane	9.23	77	19836	4.7197 ug/kg	97
32) cis-1,2-Dichloroethene	9.31	96	15631	4.9602 ug/kg	98
33) Chloroform	9.52	83	24960	5.1128 ug/kg	98
34) 1-Bromopropane	9.64	122	2375	4.9990 ug/kg	92
35) Bromochloromethane	9.74	130	10252	5.2145 ug/kg	97
36) Tetrahydrofuran	9.77	42	62022	50.2370 ug/kg	100
38) 1,1,1-Trichloroethane	10.04	97	20109	4.8127 ug/kg	96
39) Cyclohexane	10.07	56	32971	4.9915 ug/kg	98
40) 1,1-Dichloropropene	10.23	75	19558	5.0849 ug/kg	98
41) Tert-Amyl-Methyl ether	10.34	73	416272	51.0028 ug/kg	99
42) Carbon Tetrachloride	10.38	117	18137	4.6502 ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M973599.D 8260-SL.M Thu Apr 07 13:30:12 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973599.D Vial: 7
Acq On : 6 Apr 2016 13:03 Operator: ADC
Sample : WG563259-06 5.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:12 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	21550	5.1258	ug/kg	98
46)	Benzene	10.59	78	59748	5.0052	ug/kg	100
47)	Trichloroethene	11.35	130	17063	5.0819	ug/kg	98
48)	Methylcyclohexane	11.43	83	25911	5.0502	ug/kg	95
49)	1,2-Dichloropropane	11.56	63	16731	5.1538	ug/kg	98
50)	1,4-Dioxane	11.85	88	4165	98.9158	ug/kg	91
51)	Bromodichloromethane	11.87	83	16986	4.5917	ug/kg	97
52)	Dibromomethane	11.95	174	9659	4.9836	ug/kg	98
53)	2-Chloroethyl Vinyl Ether	12.15	63	7923	4.5897	ug/kg	91
54)	4-Methyl-2-Pentanone	12.19	58	7042	4.7114	ug/kg	93
55)	cis-1,3-Dichloropropene	12.49	75	22132	4.7984	ug/kg	100
56)	Dimethyl Disulfide	12.77	94	22635	4.5857	ug/kg	95
59)	Toluene	12.91	91	62873	5.0283	ug/kg	98
60)	Ethyl Methacrylate	13.01	69	17248	4.5309	ug/kg	97
61)	trans-1,3-Dichloropropene	13.09	75	18937	4.6521	ug/kg	97
62)	1,1,2-Trichloroethane	13.32	97	12436	5.0520	ug/kg	96
63)	2-Hexanone	13.24	43	12154	4.5216	ug/kg#	99
64)	1,3-Dichloropropane	13.62	76	21035	4.9697	ug/kg	100
65)	Tetrachloroethene	13.74	164	12748	4.8072	ug/kg	96
66)	Dibromochloromethane	14.01	129	13656	4.4877	ug/kg	99
67)	1,2-Dibromoethane	14.27	107	12726	4.6931	ug/kg	96
68)	1-Chlorohexane	14.34	91	19636	4.7700	ug/kg	100
69)	Chlorobenzene	14.76	112	43960	5.0662	ug/kg	94
70)	1,1,1,2-Tetrachloroethane	14.79	131	13422	4.5530	ug/kg	96
71)	Ethylbenzene	14.79	106	22856	4.8964	ug/kg	97
72)	m-,p-Xylene	14.88	106	55736	9.6844	ug/kg	97
73)	o-Xylene	15.45	106	27291	4.9764	ug/kg	97
74)	Styrene	15.48	104	44746	4.7645	ug/kg	97
75)	Bromoform	15.99	173	8941	4.9476	ug/kg	96
76)	Isopropylbenzene	15.87	105	68436	4.7974	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	16234	4.8680	ug/kg	96
80)	1,2,3-Trichloropropane	16.28	110	5358	5.0869	ug/kg	75
81)	trans-1,4-Dichloro-2-Buten	16.32	53	5712	4.4560	ug/kg	95
82)	n-Propylbenzene	16.38	91	78929	4.9743	ug/kg	99
83)	Bromobenzene	16.51	156	18731	4.9628	ug/kg	95
84)	1,3,5-Trimethylbenzene	16.57	105	61534	5.0933	ug/kg	97
85)	2-Chlorotoluene	16.65	91	47568	5.0196	ug/kg	100
86)	4-Chlorotoluene	16.69	91	49003	4.9438	ug/kg	98
87)	a-Methylstyrene	16.97	118	27390	4.5446	ug/kg	100
88)	tert-Butylbenzene	17.03	134	13107	4.8967	ug/kg	98
89)	1,2,4-Trimethylbenzene	17.08	105	64983	5.0275	ug/kg	97
90)	sec-Butylbenzene	17.29	105	75572	4.8659	ug/kg	99
91)	p-Isopropyltoluene	17.46	119	62027	4.8245	ug/kg	99
92)	1,3-Dichlorobenzene	17.65	146	35372	4.7403	ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	36160	4.7481	ug/kg	88
94)	n-Butylbenzene	17.98	91	56976	4.8171	ug/kg	97
95)	1,2-Dichlorobenzene	18.29	146	33722	4.7505	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	3395	9.5585	ug/kg	90
97)	1,2,4-Trichlorobenzene	20.43	180	24750	4.7252	ug/kg	98
98)	Hexachlorobutadiene	20.58	225	11410	4.6186	ug/kg	98
99)	Naphthalene	20.80	128	59120	4.6833	ug/kg	99
100)	1,2,3-Trichlorobenzene	21.10	180	22339	4.4992	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M973599.D 8260-SL.M Thu Apr 07 13:30:12 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973599.D Vial: 7
Acq On : 6 Apr 2016 13:03 Operator: ADC
Sample : WG563259-06 5.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 7 13:30 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

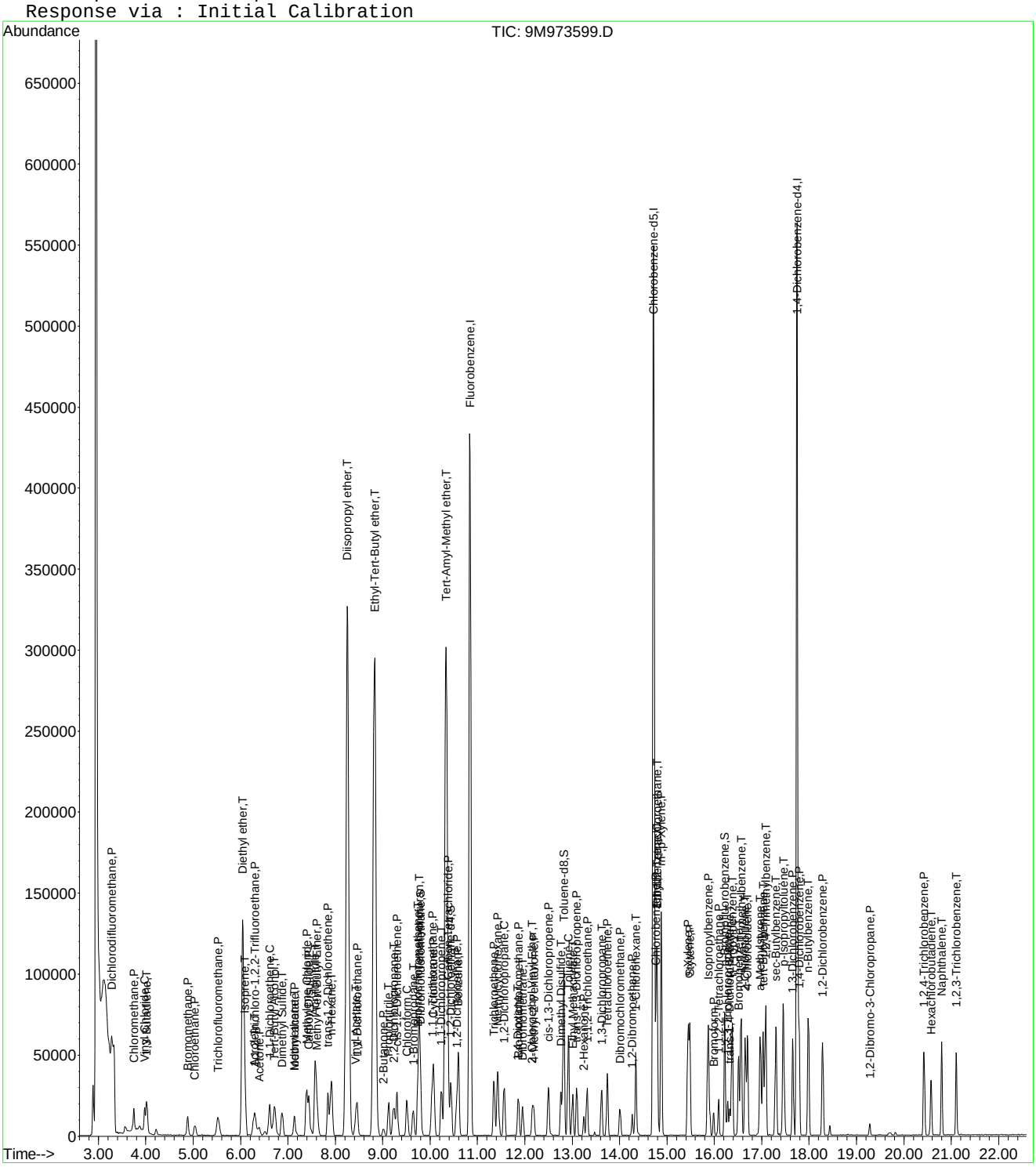

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\040616\9M973599.D Vial: 7
Acq On : 6 Apr 2016 13:03 Operator: ADC
Sample : WG563259-06 5.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	5.0000	5.2946	-5.9	100	0.00
3	P	Chloromethane	5.0000	4.8949	2.1	100	0.00
4	C	Vinyl Chloride	5.0000	5.7498	-15.0	100	0.00
5	T	1,3-Butadiene	5.0000	3.3519	33.0#	100	0.00
6	P	Bromomethane	5.0000	5.1799	-3.6	100	0.00
7	P	Chloroethane	5.0000	6.1572	-23.1	100	0.00
8	P	Trichlorofluoromethane	5.0000	5.1808	-3.6	100	0.00
9	T	Diethyl ether	50.0000	53.2615	-6.5	100	0.00
10	T	Isoprene	5.0000	5.1610	-3.2	100	0.00
11	T	Acrolein	25.0000	17.6008	29.6#	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.9766	0.5	100	0.00
13	P	Acetone	5.0000	5.6720	-13.4	100	0.01
14	C	1,1-Dichloroethene	5.0000	4.9444	1.1	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	102.4236	-2.4	100	-0.01
16	T	Dimethyl Sulfide	5.0000	4.8343	3.3	100	0.00
17	T	Iodomethane	5.0000	7.6230	-52.5#	100	0.00
18	P	Methyl acetate	5.0000	4.6977	6.0	100	0.00
19	P	Methylene Chloride	5.0000	5.3230	-6.5	100	0.00
20	P	Carbon Disulfide	5.0000	5.0694	-1.4	100	0.00
21	T	Acrylonitrile	25.0000	25.0554	-0.2	100	0.00
22	P	Methyl Tert Butyl Ether	5.0000	5.3060	-6.1	100	0.00
23	P	trans-1,2-Dichloroethene	5.0000	4.8674	2.7	100	0.00
24	T	n-Hexane	5.0000	5.9527	-19.1	100	0.00
25	T	Diisopropyl ether	50.0000	54.4320	-8.9	100	0.00
26	T	Vinyl Acetate	5.0000	7.0135	-40.3#	100	0.00
27	P	1,1-Dichloroethane	5.0000	5.2945	-5.9	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	55.7234	-11.4	100	0.00
29	P	2-Butanone	5.0000	4.9796	0.4	100	0.00
30	T	Propionitrile	50.0000	50.7152	-1.4	100	0.00
31	T	2,2-Dichloropropane	5.0000	5.5504	-11.0	100	0.00
32	P	cis-1,2-Dichloroethene	5.0000	5.0504	-1.0	100	0.00
33	C	Chloroform	5.0000	5.1895	-3.8	100	0.00
34	T	1-Bromopropane	5.0000	4.5908	8.2	100	0.00
35	T	Bromochloromethane	5.0000	5.1570	-3.1	100	-0.01
36	T	Tetrahydrofuran	50.0000	51.2175	-2.4	100	0.00
37	S	Dibromofluoromethane	10.0000	9.5422	4.6	100	0.00
38	P	1,1,1-Trichloroethane	5.0000	5.2726	-5.5	100	0.00
39	P	Cyclohexane	5.0000	5.2439	-4.9	100	0.00
40	T	1,1-Dichloropropene	5.0000	5.2821	-5.6	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	55.3390	-10.7	100	0.00
42	P	Carbon Tetrachloride	5.0000	5.1825	-3.7	100	0.00
43	S	1,2-Dichloroethane-d4	10.0000	9.6547	3.5	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	5.0000	5.2454	-4.9	100	0.00
46	P	Benzene	5.0000	5.2220	-4.4	100	0.00
47	P	Trichloroethene	5.0000	5.0766	-1.5	100	0.00
48	P	Methylcyclohexane	5.0000	5.2662	-5.3	100	0.00
49	C	1,2-Dichloropropane	5.0000	5.2833	-5.7	100	0.00
50	T	1,4-Dioxane	100.0000	81.9492	18.1	100	0.00
51	P	Bromodichloromethane	5.0000	4.6580	6.8	100	0.00
52	T	Dibromomethane	5.0000	5.0719	-1.4	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	12.6229	-152.5#	100	0.00
54	P	4-Methyl-2-Pentanone	5.0000	4.9049	1.9	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\040616\9M973599.D Vial: 7
Acq On : 6 Apr 2016 13:03 Operator: ADC
Sample : WG563259-06 5.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	5.0000	5.1266	-2.5	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.6795	6.4	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	10.0000	9.1485	8.5	100	0.00
59	C	Toluene	5.0000	4.8608	2.8	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.5840	8.3	100	0.00
61	P	trans-1,3-Dichloropropene	5.0000	4.7424	5.2	100	0.00
62	P	1,1,2-Trichloroethane	5.0000	4.8948	2.1	100	0.00
63	P	2-Hexanone	5.0000	4.6499	7.0	100	0.00
64	T	1,3-Dichloropropane	5.0000	4.9436	1.1	100	0.00
65	P	Tetrachloroethene	5.0000	4.8596	2.8	100	0.00
66	P	Dibromochloromethane	5.0000	4.4379	11.2	100	0.00
67	P	1,2-Dibromoethane	5.0000	4.5797	8.4	100	0.00
68	T	1-Chlorohexane	5.0000	4.9481	1.0	100	0.00
69	P	Chlorobenzene	5.0000	5.1154	-2.3	100	0.00
70	T	1,1,1,2-Tetrachloroethane	5.0000	4.6879	6.2	100	0.00
71	C	Ethylbenzene	5.0000	5.0389	-0.8	100	0.00
72	P	m-,p-Xylene	10.0000	9.9516	0.5	100	0.00
73	P	o-Xylene	5.0000	4.9435	1.1	100	0.00
74	P	Styrene	5.0000	4.8905	2.2	100	0.00
75	P	Bromoform	5.0000	4.3095	13.8	100	0.00
76	P	Isopropylbenzene	5.0000	4.8741	2.5	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	5.0000	4.9452	1.1	100	0.00
79	S	p-Bromofluorobenzene	10.0000	8.2647	17.4	100	0.00
80	T	1,2,3-Trichloropropane	5.0000	4.7405	5.2	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	5.0000	4.6811	6.4	100	0.00
82	T	n-Propylbenzene	5.0000	4.7217	5.6	100	0.00
83	T	Bromobenzene	5.0000	4.5500	9.0	100	0.00
84	T	1,3,5-Trimethylbenzene	5.0000	4.8818	2.4	100	0.00
85	T	2-Chlorotoluene	5.0000	4.5695	8.6	100	0.00
86	T	4-Chlorotoluene	5.0000	4.7953	4.1	100	0.00
87	T	a-Methylstyrene	5.0000	4.3457	13.1	100	0.00
88	T	tert-Butylbenzene	5.0000	4.5639	8.7	100	0.00
89	T	1,2,4-Trimethylbenzene	5.0000	4.7740	4.5	100	0.00
90	T	sec-Butylbenzene	5.0000	4.5380	9.2	100	0.00
91	T	p-Isopropyltoluene	5.0000	4.6404	7.2	100	0.00
92	P	1,3-Dichlorobenzene	5.0000	4.5063	9.9	100	0.00
93	P	1,4-Dichlorobenzene	5.0000	4.5605	8.8	100	0.00
94	T	n-Butylbenzene	5.0000	4.7327	5.3	100	0.00
95	P	1,2-Dichlorobenzene	5.0000	4.5019	10.0	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	5.0000	3.6428	27.1#	100	0.01
97	P	1,2,4-Trichlorobenzene	5.0000	4.5878	8.2	100	0.00
98	T	Hexachlorobutadiene	5.0000	4.5478	9.0	100	0.00
99	T	Naphthalene	5.0000	4.4533	10.9	100	0.00
100	T	1,2,3-Trichlorobenzene	5.0000	4.2269	15.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M973599.D 8260-SL.M Thu Apr 07 13:29:54 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973600.D Vial: 8
Acq On : 6 Apr 2016 13:33 Operator: ADC
Sample : WG563259-07 20.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:12 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	548817	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	412236	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	214138	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	50685	18.2863 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 36.58%#		
43) 1,2-Dichloroethane-d4	10.45	65	54446	18.7643 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 37.52%#		
58) Toluene-d8	12.82	98	186475	18.9801 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 37.96%#		
79) p-Bromofluorobenzene	16.22	95	68377	18.4353 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 36.88%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	79821	18.9606 ug/kg	97
3) Chloromethane	3.74	50	71839	18.5628 ug/kg	99
4) Vinyl Chloride	3.98	62	67533	26.1754 ug/kg	98
5) 1,3-Butadiene	4.02	54	39283	21.0351 ug/kg	97
6) Bromomethane	4.88	94	46162	19.4544 ug/kg	99
7) Chloroethane	5.04	64	47069	20.3651 ug/kg	99
8) Trichlorofluoromethane	5.53	101	102900	21.0438 ug/kg	99
9) Diethyl ether	6.05	59	234864	81.6752 ug/kg	98
10) Isoprene	6.09	67	79445	20.6411 ug/kg	98
11) Acrolein	6.29	56	11352	39.7029 ug/kg	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	63152	21.1516 ug/kg	98
13) Acetone	6.38	43	27589	20.8069 ug/kg	99
14) 1,1-Dichloroethene	6.61	61	106975	21.3756 ug/kg	99
15) Tert-Butyl Alcohol	6.72	59	76199	158.2956 ug/kg	99
16) Dimethyl Sulfide	6.88	62	54097	22.0635 ug/kg	100
17) Iodomethane	7.13	142	33219	16.4421 ug/kg	99
18) Methyl acetate	7.14	43	64808	20.3846 ug/kg	97
19) Methylene Chloride	7.40	84	65272	20.8796 ug/kg	100
20) Carbon Disulfide	7.44	76	195126	20.5626 ug/kg	100
21) Acrylonitrile	7.58	53	59361	39.2834 ug/kg	99
22) Methyl Tert Butyl Ether	7.60	73	179991	21.3975 ug/kg	100
23) trans-1,2-Dichloroethene	7.84	61	102409	21.2721 ug/kg	98
24) n-Hexane	7.91	57	130558	20.8836 ug/kg	99
25) Diisopropyl ether	8.25	45	1040879	81.7089 ug/kg	100
26) Vinyl Acetate	8.43	43	119893	18.1040 ug/kg	99
27) 1,1-Dichloroethane	8.46	63	125920	21.5491 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	915892	81.7642 ug/kg	100
29) 2-Butanone	9.01	43	35146	19.9190 ug/kg	97
30) Propionitrile	9.13	54	44398	77.5252 ug/kg	97
31) 2,2-Dichloropropane	9.24	77	84630	19.8340 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	69568	21.7444 ug/kg	98
33) Chloroform	9.52	83	105558	21.2976 ug/kg	100
34) 1-Bromopropane	9.64	122	11208	20.0976 ug/kg	99
35) Bromochloromethane	9.75	130	42691	21.3878 ug/kg	99
36) Tetrahydrofuran	9.77	42	98564	78.6366 ug/kg	99
38) 1,1,1-Trichloroethane	10.04	97	91294	21.5213 ug/kg	100
39) Cyclohexane	10.08	56	143014	21.3259 ug/kg	98
40) 1,1-Dichloropropene	10.23	75	82887	21.2264 ug/kg	100
41) Tert-Amyl-Methyl ether	10.34	73	681787	82.2800 ug/kg	99
42) Carbon Tetrachloride	10.38	117	82160	20.7489 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M973600.D 8260-SL.M Thu Apr 07 13:30:13 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973600.D Vial: 8
Acq On : 6 Apr 2016 13:33 Operator: ADC
Sample : WG563259-07 20.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:12 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	91652	21.4727 ug/kg	98
46)	Benzene	10.60	78	250792	20.6937 ug/kg	100
47)	Trichloroethene	11.35	130	69997	20.5341 ug/kg	98
48)	Methylcyclohexane	11.43	83	111193	21.3467 ug/kg	99
49)	1,2-Dichloropropane	11.56	63	69830	21.1874 ug/kg	99
50)	1,4-Dioxane	11.85	88	6747	157.8301 ug/kg	93
51)	Bromodichloromethane	11.87	83	77283	20.5778 ug/kg	99
52)	Dibromomethane	11.95	174	41437	21.0583 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	34827	19.8717 ug/kg	98
54)	4-Methyl-2-Pentanone	12.19	58	30595	20.1619 ug/kg	98
55)	cis-1,3-Dichloropropene	12.50	75	93742	20.0188 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	101844	20.3230 ug/kg	99
59)	Toluene	12.91	91	262833	20.9525 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	77681	20.3404 ug/kg	100
61)	trans-1,3-Dichloropropene	13.09	75	84438	20.6766 ug/kg	98
62)	1,1,2-Trichloroethane	13.32	97	53247	21.5617 ug/kg	98
63)	2-Hexanone	13.24	43	52531	19.4800 ug/kg	100
64)	1,3-Dichloropropane	13.62	76	91187	21.4747 ug/kg	100
65)	Tetrachloroethene	13.74	164	55416	20.8298 ug/kg	98
66)	Dibromochloromethane	14.01	129	63295	20.7337 ug/kg	98
67)	1,2-Dibromoethane	14.27	107	55408	20.3678 ug/kg	98
68)	1-Chlorohexane	14.34	91	87355	21.1523 ug/kg	98
69)	Chlorobenzene	14.76	112	183140	21.0385 ug/kg	97
70)	1,1,1,2-Tetrachloroethane	14.79	131	62310	21.0690 ug/kg	99
71)	Ethylbenzene	14.79	106	101285	21.6285 ug/kg	99
72)	m-,p-Xylene	14.88	106	241056	41.7501 ug/kg	99
73)	o-Xylene	15.45	106	115290	20.9551 ug/kg	98
74)	Styrene	15.48	104	197867	21.0012 ug/kg	99
75)	Bromoform	15.99	173	39405	20.7716 ug/kg	98
76)	Isopropylbenzene	15.87	105	297986	20.8219 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	71279	20.0119 ug/kg	99
80)	1,2,3-Trichloropropane	16.28	110	21494	20.2252 ug/kg	98
81)	trans-1,4-Dichloro-2-Buten	16.32	53	25104	19.4097 ug/kg	88
82)	n-Propylbenzene	16.38	91	331062	20.6790 ug/kg	99
83)	Bromobenzene	16.51	156	79848	20.9676 ug/kg	78
84)	1,3,5-Trimethylbenzene	16.57	105	256470	21.0396 ug/kg	100
85)	2-Chlorotoluene	16.65	91	201201	21.0430 ug/kg	99
86)	4-Chlorotoluene	16.70	91	205488	20.5471 ug/kg	100
87)	a-Methylstyrene	16.97	118	122000	20.0624 ug/kg	100
88)	tert-Butylbenzene	17.03	134	55701	20.6244 ug/kg	98
89)	1,2,4-Trimethylbenzene	17.08	105	257149	21.3688 ug/kg	100
90)	sec-Butylbenzene	17.29	105	324606	20.7148 ug/kg	100
91)	p-Isopropyltoluene	17.45	119	267236	20.6011 ug/kg	100
92)	1,3-Dichlorobenzene	17.65	146	150147	19.9426 ug/kg	100
93)	1,4-Dichlorobenzene	17.79	146	150647	19.6053 ug/kg	100
94)	n-Butylbenzene	17.98	91	242121	20.2883 ug/kg	98
95)	1,2-Dichlorobenzene	18.29	146	141341	19.7339 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	16565	22.7593 ug/kg	100
97)	1,2,4-Trichlorobenzene	20.43	180	98272	18.5949 ug/kg	99
98)	Hexachlorobutadiene	20.58	225	49626	19.9091 ug/kg	97
99)	Naphthalene	20.80	128	248081	19.4776 ug/kg	99
100)	1,2,3-Trichlorobenzene	21.10	180	94996	18.9624 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M973600.D 8260-SL.M Thu Apr 07 13:30:13 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973600.D Vial: 8
Acq On : 6 Apr 2016 13:33 Operator: ADC
Sample : WG563259-07 20.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 7 13:30 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

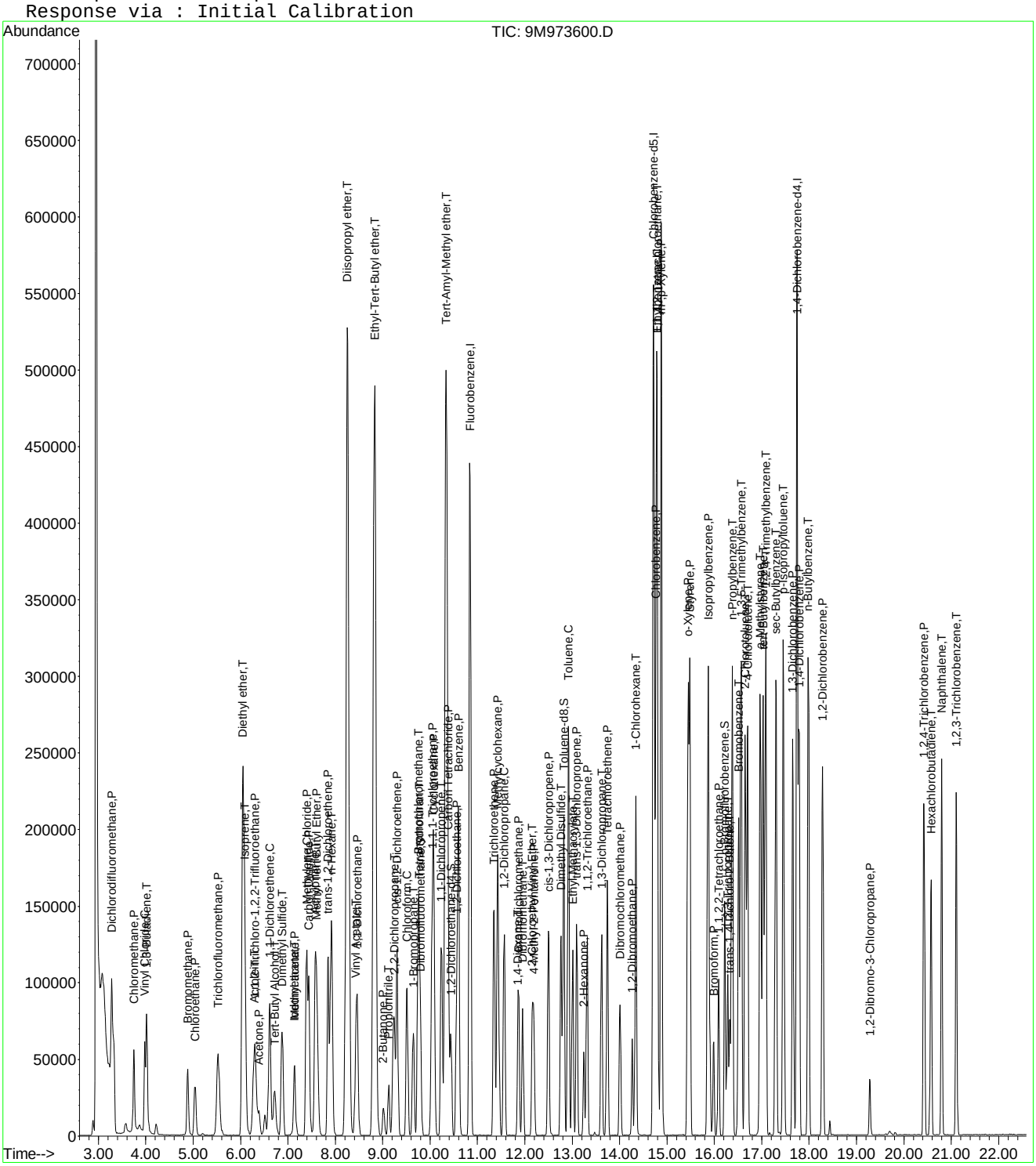

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973605.D Vial: 13
Acq On : 6 Apr 2016 16:15 Operator: ADC
Sample : WG563259-08 100.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:17 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	629513	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	486007	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	262405	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	334345	105.1632 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 210.32%#		
43) 1,2-Dichloroethane-d4	10.44	65	349379	104.9748 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 209.94%#		
58) Toluene-d8	12.82	98	1189867	102.7256 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 205.46%#		
79) p-Bromofluorobenzene	16.22	95	474393	104.3758 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 208.76%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	443445	91.8326 ug/kg	98
3) Chloromethane	3.74	50	364265	82.0585 ug/kg	99
4) Vinyl Chloride	3.97	62	265202	91.5192 ug/kg	95
5) 1,3-Butadiene	4.01	54	193614	90.3859 ug/kg	95
6) Bromomethane	4.87	94	240074	88.2068 ug/kg	99
7) Chloroethane	5.02	64	230056	86.7779 ug/kg	99
8) Trichlorofluoromethane	5.51	101	498633	88.9021 ug/kg	100
9) Diethyl ether	6.04	59	578414	175.3619 ug/kg	99
10) Isoprene	6.08	67	405345	91.8152 ug/kg	99
11) Acrolein	6.28	56	41125	125.3946 ug/kg	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	304962	89.0479 ug/kg	98
13) Acetone	6.39	43	110181	86.9145 ug/kg	99
14) 1,1-Dichloroethene	6.61	61	507904	88.4792 ug/kg	100
15) Tert-Butyl Alcohol	6.71	59	201952	365.7553 ug/kg	99
16) Dimethyl Sulfide	6.87	62	267127	94.9822 ug/kg	100
17) Iodomethane	7.12	142	226546	83.3082 ug/kg	99
18) Methyl acetate	7.13	43	320518	87.8919 ug/kg	99
19) Methylene Chloride	7.39	84	297945	83.0910 ug/kg	99
20) Carbon Disulfide	7.43	76	967157	88.8552 ug/kg	100
21) Acrylonitrile	7.57	53	159761	92.1726 ug/kg	99
22) Methyl Tert Butyl Ether	7.60	73	837531	86.8033 ug/kg	99
23) trans-1,2-Dichloroethene	7.83	61	489265	88.6012 ug/kg	99
24) n-Hexane	7.90	57	620303	86.5024 ug/kg	100
25) Diisopropyl ether	8.25	45	2541732	173.9489 ug/kg	99
26) Vinyl Acetate	8.42	43	670170	84.8371 ug/kg	99
27) 1,1-Dichloroethane	8.45	63	582394	86.8907 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.82	59	2244961	174.7232 ug/kg	99
29) 2-Butanone	9.01	43	176737	87.3258 ug/kg	99
30) Propionitrile	9.12	54	121628	185.1551 ug/kg	100
31) 2,2-Dichloropropane	9.23	77	432972	88.4646 ug/kg	99
32) cis-1,2-Dichloroethene	9.30	96	323942	88.2729 ug/kg	97
33) Chloroform	9.51	83	491054	86.3755 ug/kg	100
34) 1-Bromopropane	9.65	122	57300	86.6017 ug/kg	97
35) Bromochloromethane	9.74	130	206023	89.9847 ug/kg	99
36) Tetrahydrofuran	9.76	42	253958	176.6408 ug/kg	99
38) 1,1,1-Trichloroethane	10.04	97	431230	88.6252 ug/kg	100
39) Cyclohexane	10.07	56	701022	91.1345 ug/kg	99
40) 1,1-Dichloropropene	10.24	75	394734	88.1287 ug/kg	98
41) Tert-Amyl-Methyl ether	10.33	73	1668304	175.5268 ug/kg	100
42) Carbon Tetrachloride	10.38	117	401136	88.3178 ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M973605.D 8260-SL.M Thu Apr 07 13:30:17 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973605.D Vial: 13
Acq On : 6 Apr 2016 16:15 Operator: ADC
Sample : WG563259-08 100.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:17 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.55	62	419521	85.6884 ug/kg	99
46)	Benzene	10.60	78	1159464	83.4075 ug/kg	100
47)	Trichloroethene	11.35	130	328505	84.0157 ug/kg	99
48)	Methylcyclohexane	11.43	83	543983	91.0461 ug/kg	99
49)	1,2-Dichloropropane	11.56	63	330099	87.3179 ug/kg	100
50)	1,4-Dioxane	11.85	88	19457	396.8058 ug/kg	99
51)	Bromodichloromethane	11.86	83	377943	87.7332 ug/kg	100
52)	Dibromomethane	11.96	174	201740	89.3820 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	188811	93.9225 ug/kg	99
54)	4-Methyl-2-Pentanone	12.19	58	152432	87.5749 ug/kg	98
55)	cis-1,3-Dichloropropene	12.50	75	467019	86.9483 ug/kg	99
56)	Dimethyl Disulfide	12.76	94	546237	95.0292 ug/kg	98
59)	Toluene	12.92	91	1221033	82.5632 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	396829	88.1357 ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	420228	87.2828 ug/kg	99
62)	1,1,2-Trichloroethane	13.32	97	252973	86.8892 ug/kg	99
63)	2-Hexanone	13.24	43	270769	85.1678 ug/kg	98
64)	1,3-Dichloropropane	13.61	76	423227	84.5417 ug/kg	100
65)	Tetrachloroethene	13.74	164	275328	87.7815 ug/kg	99
66)	Dibromochloromethane	14.00	129	314257	87.3165 ug/kg	100
67)	1,2-Dibromoethane	14.27	107	271540	84.6661 ug/kg	100
68)	1-Chlorohexane	14.34	91	434911	89.3250 ug/kg	100
69)	Chlorobenzene	14.76	112	853210	83.1362 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	298697	85.6685 ug/kg	98
71)	Ethylbenzene	14.80	106	476927	86.3847 ug/kg	98
72)	m-,p-Xylene	14.88	106	1125320	165.3174 ug/kg	100
73)	o-Xylene	15.44	106	556307	85.7660 ug/kg	100
74)	Styrene	15.48	104	962473	86.6487 ug/kg	100
75)	Bromoform	15.99	173	217337	88.1288 ug/kg	100
76)	Isopropylbenzene	15.87	105	1429867	84.7467 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	358231	80.9909 ug/kg	100
80)	1,2,3-Trichloropropane	16.28	110	106845	82.0448 ug/kg	94
81)	trans-1,4-Dichloro-2-Buten	16.33	53	138111	87.1418 ug/kg	98
82)	n-Propylbenzene	16.38	91	1612041	82.1710 ug/kg	99
83)	Bromobenzene	16.52	156	384939	82.4894 ug/kg	99
84)	1,3,5-Trimethylbenzene	16.57	105	1227900	82.2028 ug/kg	100
85)	2-Chlorotoluene	16.65	91	982237	83.8330 ug/kg	100
86)	4-Chlorotoluene	16.70	91	966811	78.8909 ug/kg	99
87)	a-Methylstyrene	16.97	118	639741	85.8515 ug/kg	100
88)	tert-Butylbenzene	17.03	134	271228	81.9549 ug/kg	100
89)	1,2,4-Trimethylbenzene	17.09	105	1244015	86.0269 ug/kg	100
90)	sec-Butylbenzene	17.30	105	1596904	83.1619 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	1328733	83.5902 ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	745156	80.7671 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	749901	79.6415 ug/kg	100
94)	n-Butylbenzene	17.98	91	1226018	83.8362 ug/kg	100
95)	1,2-Dichlorobenzene	18.29	146	713379	81.2804 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.28	157	91107	80.8122 ug/kg	97
97)	1,2,4-Trichlorobenzene	20.43	180	549265	84.8138 ug/kg	99
98)	Hexachlorobutadiene	20.58	225	257990	84.4632 ug/kg	99
99)	Naphthalene	20.80	128	1320203	84.5870 ug/kg	99
100)	1,2,3-Trichlorobenzene	21.11	180	520705	84.8206 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M973605.D 8260-SL.M Thu Apr 07 13:30:17 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973605.D Vial: 13
Acq On : 6 Apr 2016 16:15 Operator: ADC
Sample : WG563259-08 100.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 7 13:30 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

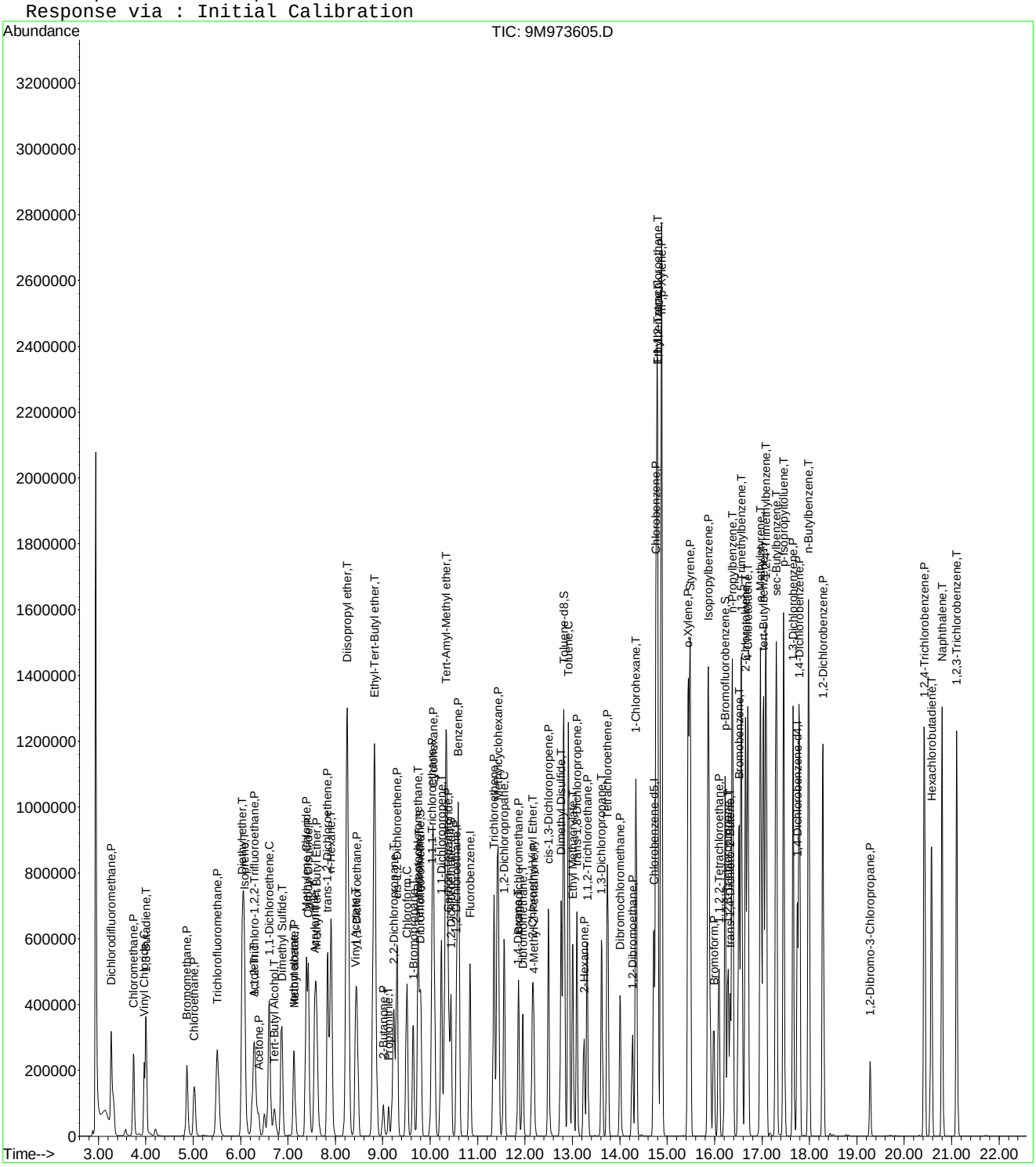

9M973605.D 8260-SL.M Thu Apr 07 13:30:17 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973606.D Vial: 14
Acq On : 6 Apr 2016 16:46 Operator: ADC
Sample : WG563259-09 200.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:17 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	546241	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	412879	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	251426	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	548285	198.7448 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 397.48%#		
43) 1,2-Dichloroethane-d4	10.44	65	563468	195.1093 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 390.22%#		
58) Toluene-d8	12.82	98	1932737	196.4142 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 392.82%#		
79) p-Bromofluorobenzene	16.22	95	812349	186.5374 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 373.08%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	933785	222.8561 ug/kg	98
3) Chloromethane	3.74	50	797646	207.0792 ug/kg	100
4) Vinyl Chloride	3.97	62	484159	193.4178 ug/kg	95
5) 1,3-Butadiene	4.01	54	255123	137.2568 ug/kg	96
6) Bromomethane	4.86	94	478951	202.8002 ug/kg	99
7) Chloroethane	5.02	64	479099	208.2673 ug/kg	100
8) Trichlorofluoromethane	5.51	101	1015843	208.7267 ug/kg	100
10) Isoprene	6.08	67	790457	206.3424 ug/kg	100
11) Acrolein	6.29	56	657	2.3087 ug/kg#	58
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	619484	208.4628 ug/kg	98
13) Acetone	6.38	43	210216	198.0949 ug/kg	100
14) 1,1-Dichloroethene	6.60	61	1038593	208.5093 ug/kg	99
16) Dimethyl Sulfide	6.87	62	522470	214.0948 ug/kg	100
17) Iodomethane	7.12	142	492600	204.3599 ug/kg	99
18) Methyl acetate	7.13	43	608994	192.4553 ug/kg	99
19) Methylene Chloride	7.39	84	609179	195.7867 ug/kg	98
20) Carbon Disulfide	7.44	76	1876122	198.6404 ug/kg	100
21) Acrylonitrile	7.59	53	17884	11.8909 ug/kg#	28
22) Methyl Tert Butyl Ether	7.60	73	1671293	199.6219 ug/kg	99
23) trans-1,2-Dichloroethene	7.84	61	993252	207.2884 ug/kg	98
24) n-Hexane	7.91	57	1132766	182.0476 ug/kg	99
26) Vinyl Acetate	8.43	43	1356495	196.7315 ug/kg	99
27) 1,1-Dichloroethane	8.46	63	1187835	204.2364 ug/kg	99
29) 2-Butanone	9.01	43	352502	200.7230 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	891488	209.9159 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	660199	207.3269 ug/kg	97
33) Chloroform	9.51	83	1000133	202.7401 ug/kg	100
34) 1-Bromopropane	9.64	122	114495	198.3036 ug/kg	99
35) Bromochloromethane	9.74	130	419175	210.9934 ug/kg	98
36) Tetrahydrofuran	9.78	42	3664	2.9370 ug/kg	89
38) 1,1,1-Trichloroethane	10.04	97	891503	211.1502 ug/kg	100
39) Cyclohexane	10.07	56	1376878	206.2846 ug/kg	100
40) 1,1-Dichloropropene	10.23	75	800231	205.8962 ug/kg	99
42) Carbon Tetrachloride	10.38	117	841170	213.4326 ug/kg	99
45) 1,2-Dichloroethane	10.56	62	841093	197.9853 ug/kg	99
46) Benzene	10.59	78	2346439	194.5259 ug/kg	100
47) Trichloroethene	11.34	130	677382	199.6515 ug/kg	99
48) Methylcyclohexane	11.43	83	1056136	203.7119 ug/kg	99
49) 1,2-Dichloropropane	11.56	63	675603	205.9545 ug/kg	100
50) 1,4-Dioxane	11.86	88	487	11.4459 ug/kg#	8

(#) = qualifier out of range (m) = manual integration
9M973606.D 8260-SL.M Thu Apr 07 13:30:18 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973606.D Vial: 14
Acq On : 6 Apr 2016 16:46 Operator: ADC
Sample : WG563259-09 200.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:17 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
51)	Bromodichloromethane	11.86	83	786040	210.2823 ug/kg	99
52)	Dibromomethane	11.96	174	411458	210.0894 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	379377	217.4871 ug/kg	99
54)	4-Methyl-2-Pentanone	12.19	58	310421	205.5298 ug/kg	99
55)	cis-1,3-Dichloropropene	12.49	75	953997	204.6887 ug/kg	99
56)	Dimethyl Disulfide	12.76	94	1083410	217.2147 ug/kg	100
59)	Toluene	12.92	91	2474811	196.9795 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	785034	205.2376 ug/kg	99
61)	trans-1,3-Dichloropropene	13.09	75	863464	211.1094 ug/kg	99
62)	1,1,2-Trichloroethane	13.32	97	520649	210.5021 ug/kg	100
63)	2-Hexanone	13.24	43	576300	213.3756 ug/kg	98
64)	1,3-Dichloropropane	13.62	76	860012	202.2190 ug/kg	99
65)	Tetrachloroethene	13.74	164	559353	209.9221 ug/kg	99
66)	Dibromochloromethane	14.01	129	659361	215.6524 ug/kg	100
67)	1,2-Dibromoethane	14.27	107	565360	207.5011 ug/kg	100
68)	1-Chlorohexane	14.34	91	852225	206.0376 ug/kg	99
69)	Chlorobenzene	14.76	112	1738005	199.3447 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.79	131	630263	212.7806 ug/kg	97
71)	Ethylbenzene	14.79	106	972846	207.4192 ug/kg	97
72)	m-,p-Xylene	14.88	106	2303311	398.3042 ug/kg	98
73)	o-Xylene	15.45	106	1160595	210.6207 ug/kg	99
74)	Styrene	15.48	104	2011077	213.1189 ug/kg	100
75)	Bromoform	15.99	173	488031	202.4064 ug/kg	100
76)	Isopropylbenzene	15.87	105	2999919	209.2939 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	822476	193.5819 ug/kg	100
80)	1,2,3-Trichloropropane	16.28	110	242139	194.0544 ug/kg	98
81)	trans-1,4-Dichloro-2-Buten	16.32	53	305601	201.2403 ug/kg	96
82)	n-Propylbenzene	16.38	91	3379633	179.7935 ug/kg	100
83)	Bromobenzene	16.51	156	821863	183.8094 ug/kg	98
84)	1,3,5-Trimethylbenzene	16.57	105	2631796	183.8813 ug/kg	99
85)	2-Chlorotoluene	16.65	91	2045653	182.2186 ug/kg	100
86)	4-Chlorotoluene	16.70	91	2134994	181.8209 ug/kg	98
87)	a-Methylstyrene	16.97	118	1382227	193.5909 ug/kg	100
88)	tert-Butylbenzene	17.03	134	595447	187.7784 ug/kg	100
89)	1,2,4-Trimethylbenzene	17.08	105	2701823	195.7125 ug/kg	100
90)	sec-Butylbenzene	17.29	105	3458638	187.9804 ug/kg	99
91)	p-Isopropyltoluene	17.45	119	2907302	190.8841 ug/kg	99
92)	1,3-Dichlorobenzene	17.65	146	1683562	190.4487 ug/kg	100
93)	1,4-Dichlorobenzene	17.79	146	1701470	188.5912 ug/kg	100
94)	n-Butylbenzene	17.98	91	2706085	193.1249 ug/kg	100
95)	1,2-Dichlorobenzene	18.29	146	1654050	196.6873 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	219037	193.5387 ug/kg	99
97)	1,2,4-Trichlorobenzene	20.43	180	1229670	198.1687 ug/kg	99
98)	Hexachlorobutadiene	20.58	225	593894	202.9249 ug/kg	99
99)	Naphthalene	20.80	128	2917641	195.0997 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.10	180	1150303	195.5617 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973606.D Vial: 14
Acq On : 6 Apr 2016 16:46 Operator: ADC
Sample : WG563259-09 200.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 7 13:30 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

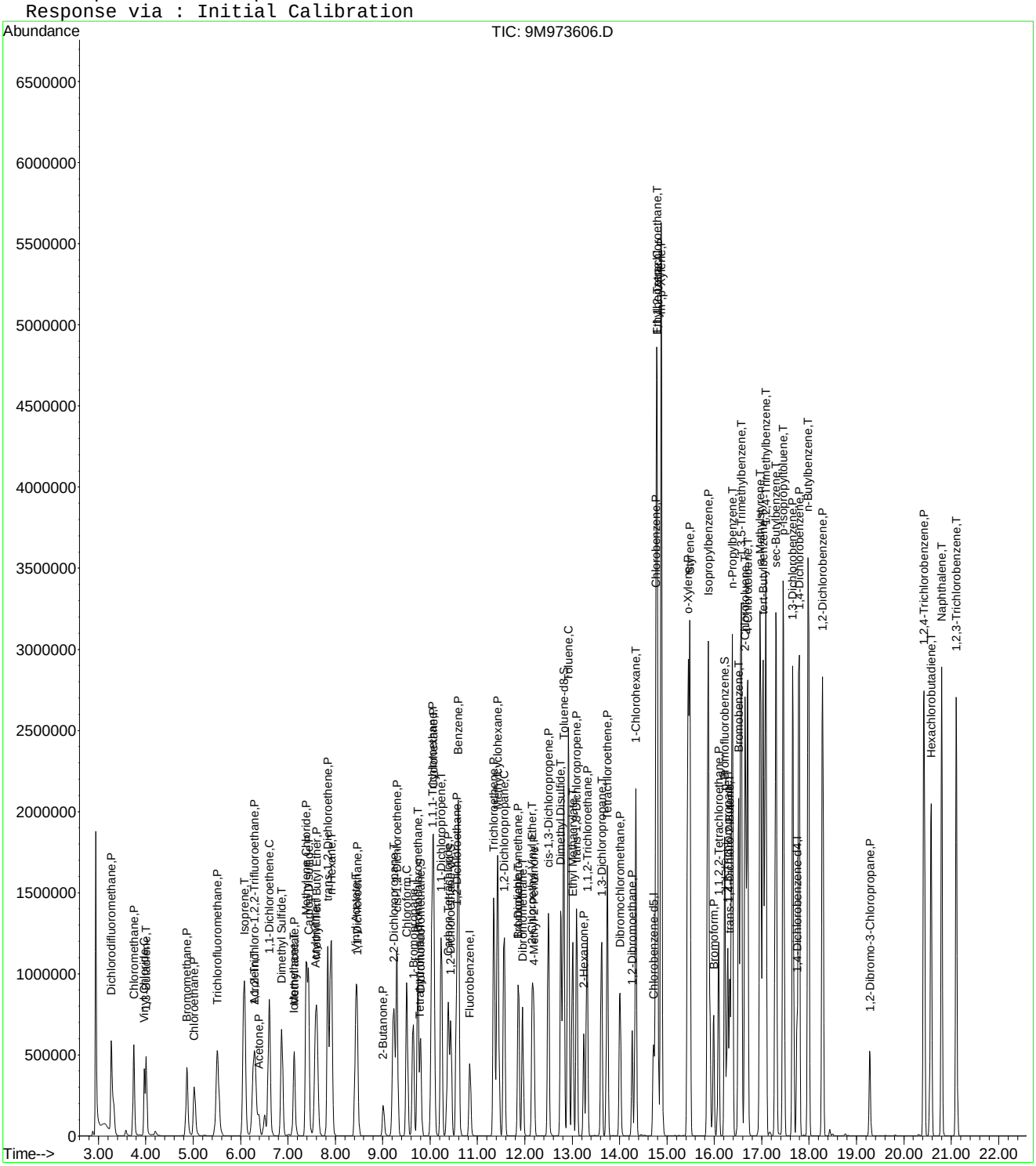

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973607.D Vial: 15
Acq On : 6 Apr 2016 17:16 Operator: ADC
Sample : WG563259-10 300.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:18 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	530747	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	422786	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	250890	50.00 ug/kg	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.79	111	1014	0.3783 ug/kg	-0.01
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.76%#	
43) 1,2-Dichloroethane-d4	10.44	65	1256	0.4476 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.90%#	
58) Toluene-d8	12.82	98	7239	0.7184 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	1.44%#	
79) p-Bromofluorobenzene	16.22	95	8850	2.0365 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	4.08%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	1391592	341.8113 ug/kg	99
3) Chloromethane	3.75	50	1202976	321.4253 ug/kg	100
4) Vinyl Chloride	3.97	62	728585	299.9924 ug/kg	95
5) 1,3-Butadiene	4.01	54	369321	204.4960 ug/kg	96
6) Bromomethane	4.87	94	715376	311.7514 ug/kg	99
7) Chloroethane	5.02	64	723518	323.6994 ug/kg	99
8) Trichlorofluoromethane	5.52	101	1522742	322.0138 ug/kg	100
9) Diethyl ether	6.05	59	857295	308.2789 ug/kg	98
10) Isoprene	6.08	67	1165578	313.1471 ug/kg	99
11) Acrolein	6.29	56	60531	218.9112 ug/kg	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	920907	318.9414 ug/kg	98
13) Acetone	6.39	43	318840	312.4979 ug/kg	99
14) 1,1-Dichloroethene	6.60	61	1557664	321.8479 ug/kg	100
15) Tert-Butyl Alcohol	6.73	59	335746	721.2245 ug/kg	98
16) Dimethyl Sulfide	6.87	62	798739	336.8576 ug/kg	99
17) Iodomethane	7.13	142	732160	311.0633 ug/kg	99
18) Methyl acetate	7.13	43	947968	308.3239 ug/kg	99
19) Methylene Chloride	7.40	84	940131	310.9735 ug/kg	97
20) Carbon Disulfide	7.44	76	2802355	305.3700 ug/kg	100
21) Acrylonitrile	7.58	53	251994	172.4402 ug/kg	96
22) Methyl Tert Butyl Ether	7.60	73	2599096	319.5028 ug/kg	99
23) trans-1,2-Dichloroethene	7.84	61	1496337	321.3970 ug/kg	97
24) n-Hexane	7.91	57	1667090	275.7405 ug/kg	99
25) Diisopropyl ether	8.25	45	3720020	301.9634 ug/kg	99
26) Vinyl Acetate	8.43	43	2113131	314.8849 ug/kg	99
27) 1,1-Dichloroethane	8.46	63	1812056	320.6604 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	3304066	305.0055 ug/kg	99
29) 2-Butanone	9.01	43	557380	326.6507 ug/kg	99
30) Propionitrile	9.13	54	189029	341.3090 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	1337448	324.1183 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	1006604	325.3390 ug/kg	97
33) Chloroform	9.51	83	1534946	320.2372 ug/kg	100
34) 1-Bromopropane	9.64	122	174946	311.3566 ug/kg	99
35) Bromochloromethane	9.75	130	652180	337.8607 ug/kg	98
36) Tetrahydrofuran	9.77	42	376433	310.5517 ug/kg	99
38) 1,1,1-Trichloroethane	10.05	97	1358139	331.0622 ug/kg	100
39) Cyclohexane	10.08	56	2044955	315.3203 ug/kg	100
40) 1,1-Dichloropropene	10.24	75	1211478	320.8081 ug/kg	99
41) Tert-Amyl-Methyl ether	10.34	73	2457523	306.6783 ug/kg	100
42) Carbon Tetrachloride	10.38	117	1272434	332.2836 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973607.D Vial: 15
Acq On : 6 Apr 2016 17:16 Operator: ADC
Sample : WG563259-10 300.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:18 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	1300113	314.9682 ug/kg	99
46)	Benzene	10.60	78	3527729	300.9956 ug/kg	99
47)	Trichloroethene	11.34	130	1018460	308.9439 ug/kg	99
48)	Methylcyclohexane	11.43	83	1556707	309.0297 ug/kg	99
49)	1,2-Dichloropropane	11.56	63	1047836	328.7530 ug/kg	100
50)	1,4-Dioxane	11.85	88	34973	845.9645 ug/kg	98
51)	Bromodichloromethane	11.86	83	1222847	336.6875 ug/kg	100
52)	Dibromomethane	11.96	174	645257	339.0847 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	573936	338.6279 ug/kg	99
54)	4-Methyl-2-Pentanone	12.19	58	497530	339.0313 ug/kg	99
55)	cis-1,3-Dichloropropene	12.49	75	1479465	326.6994 ug/kg	98
56)	Dimethyl Disulfide	12.77	94	1594771	329.0724 ug/kg	95
59)	Toluene	12.92	91	3752438	291.6719 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	1240354	316.6768 ug/kg	99
61)	trans-1,3-Dichloropropene	13.09	75	1355239	323.5798 ug/kg	99
62)	1,1,2-Trichloroethane	13.32	97	817725	322.8649 ug/kg	100
63)	2-Hexanone	13.24	43	940684	340.1278 ug/kg	98
64)	1,3-Dichloropropane	13.62	76	1356741	311.5420 ug/kg	100
65)	Tetrachloroethene	13.74	164	843696	309.2149 ug/kg	99
66)	Dibromochloromethane	14.01	129	1052932	336.3052 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	896155	321.2037 ug/kg	100
68)	1-Chlorohexane	14.34	91	1280726	302.3783 ug/kg	100
69)	Chlorobenzene	14.76	112	2663761	298.3673 ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.79	131	987352	325.5250 ug/kg	98
71)	Ethylbenzene	14.79	106	1479934	308.1410 ug/kg	95
72)	m-,p-Xylene	14.88	106	3480066	587.6949 ug/kg	95
73)	o-Xylene	15.45	106	1802243	319.4008 ug/kg	98
74)	Styrene	15.48	104	3128101	323.7250 ug/kg	99
75)	Bromoform	15.99	173	824796	300.4134 ug/kg	99
76)	Isopropylbenzene	15.87	105	4568446	311.2560 ug/kg	98
78)	1,1,2,2-Tetrachloroethane	16.09	83	1346109	317.2796 ug/kg	100
80)	1,2,3-Trichloropropane	16.28	110	399968	321.2261 ug/kg	64
81)	trans-1,4-Dichloro-2-Buten	16.32	53	489570	323.0738 ug/kg#	59
82)	n-Propylbenzene	16.38	91	5159824	275.0845 ug/kg	99
83)	Bromobenzene	16.51	156	1311462	293.9347 ug/kg	96
84)	1,3,5-Trimethylbenzene	16.57	105	4058376	284.1610 ug/kg	99
85)	2-Chlorotoluene	16.65	91	3103656	277.0520 ug/kg	88
86)	4-Chlorotoluene	16.70	91	3366727	287.3305 ug/kg	93
87)	a-Methylstyrene	16.97	118	2137089	299.9542 ug/kg	100
88)	tert-Butylbenzene	17.03	134	932476	294.6911 ug/kg	98
89)	1,2,4-Trimethylbenzene	17.08	105	4160991	302.3615 ug/kg	99
90)	sec-Butylbenzene	17.31	105	5240087	285.4123 ug/kg	98
91)	p-Isopropyltoluene	17.46	119	4424751	291.1357 ug/kg	98
92)	1,3-Dichlorobenzene	17.66	146	2625717	297.6623 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	2620113	291.0342 ug/kg	99
94)	n-Butylbenzene	17.98	91	4097037	293.0175 ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	2549400	303.8033 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	353064	308.8660 ug/kg	99
97)	1,2,4-Trichlorobenzene	20.43	180	1874690	302.7630 ug/kg	100
98)	Hexachlorobutadiene	20.58	225	888450	304.2189 ug/kg	100
99)	Naphthalene	20.80	128	4447539	298.0378 ug/kg	97
100)	1,2,3-Trichlorobenzene	21.10	180	1773622	302.1756 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M973607.D 8260-SL.M Thu Apr 07 13:30:19 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973607.D Vial: 15
Acq On : 6 Apr 2016 17:16 Operator: ADC
Sample : WG563259-10 300.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 7 13:30 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

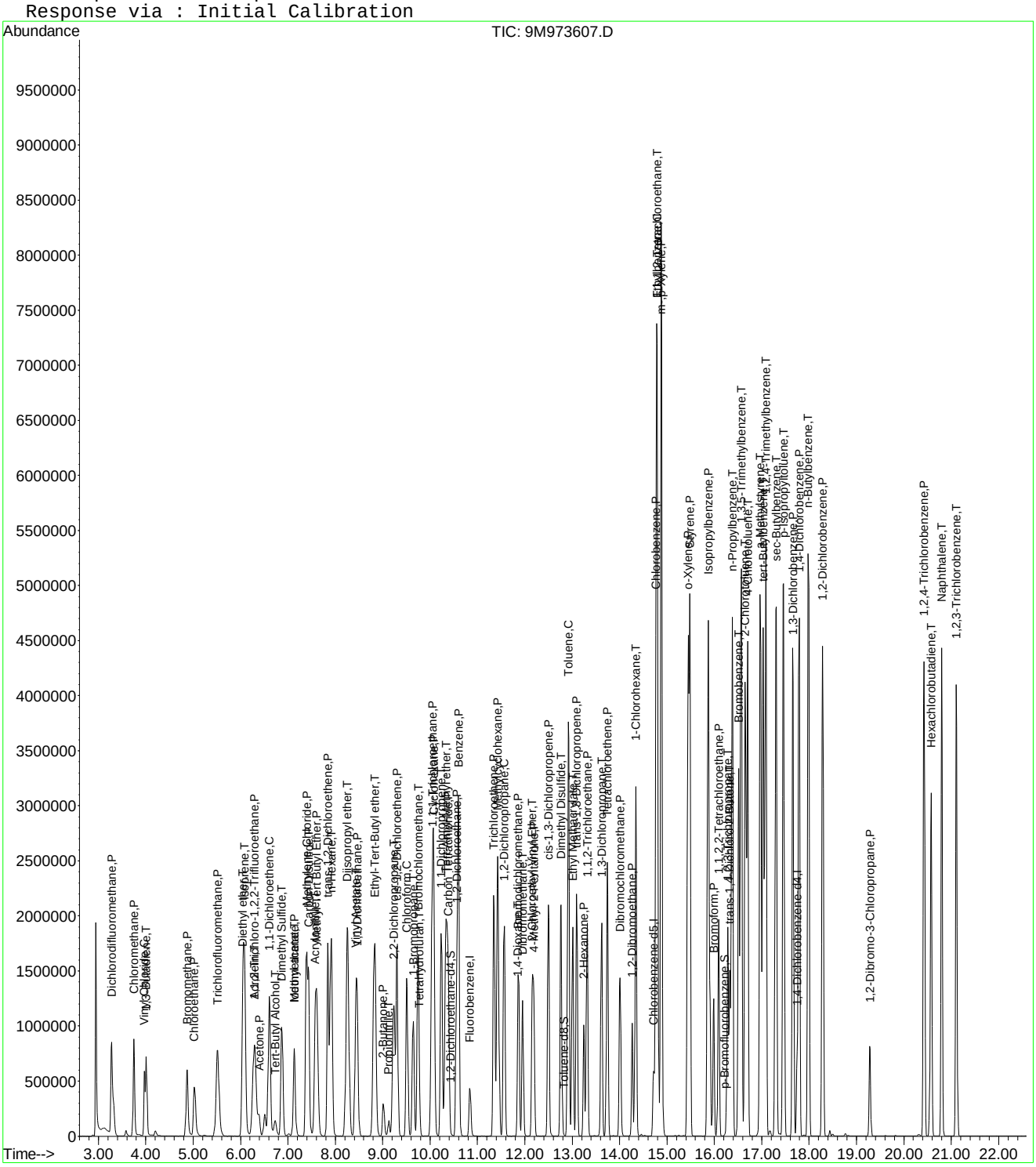

9M973607.D 8260-SL.M Thu Apr 07 13:30:19 2016 Page 3

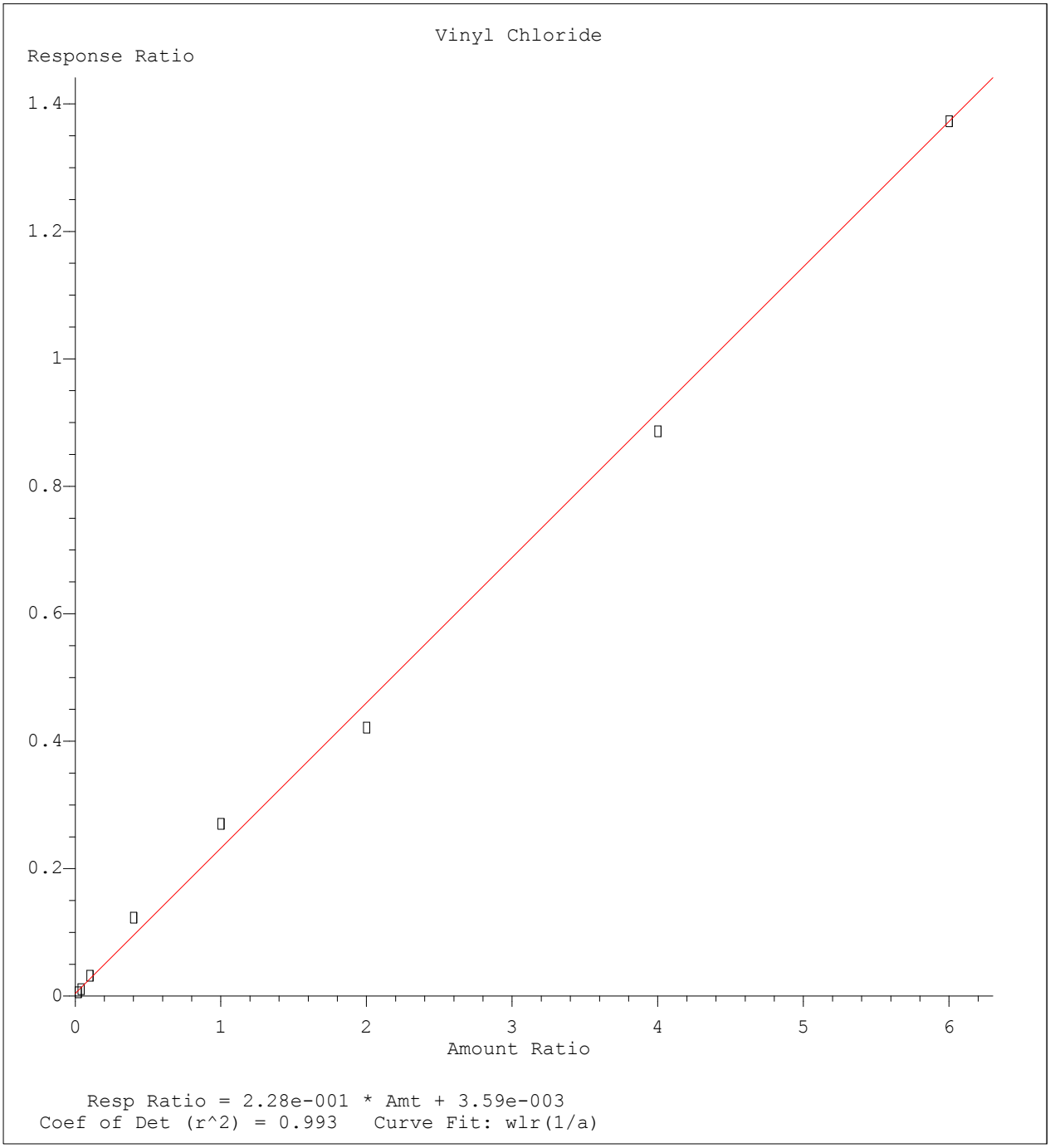

Method Name: C:\MSDCHEM\1\METHODS\8260-SL.M
Calibration Table Last Updated: Wed Apr 06 17:47:28 2016

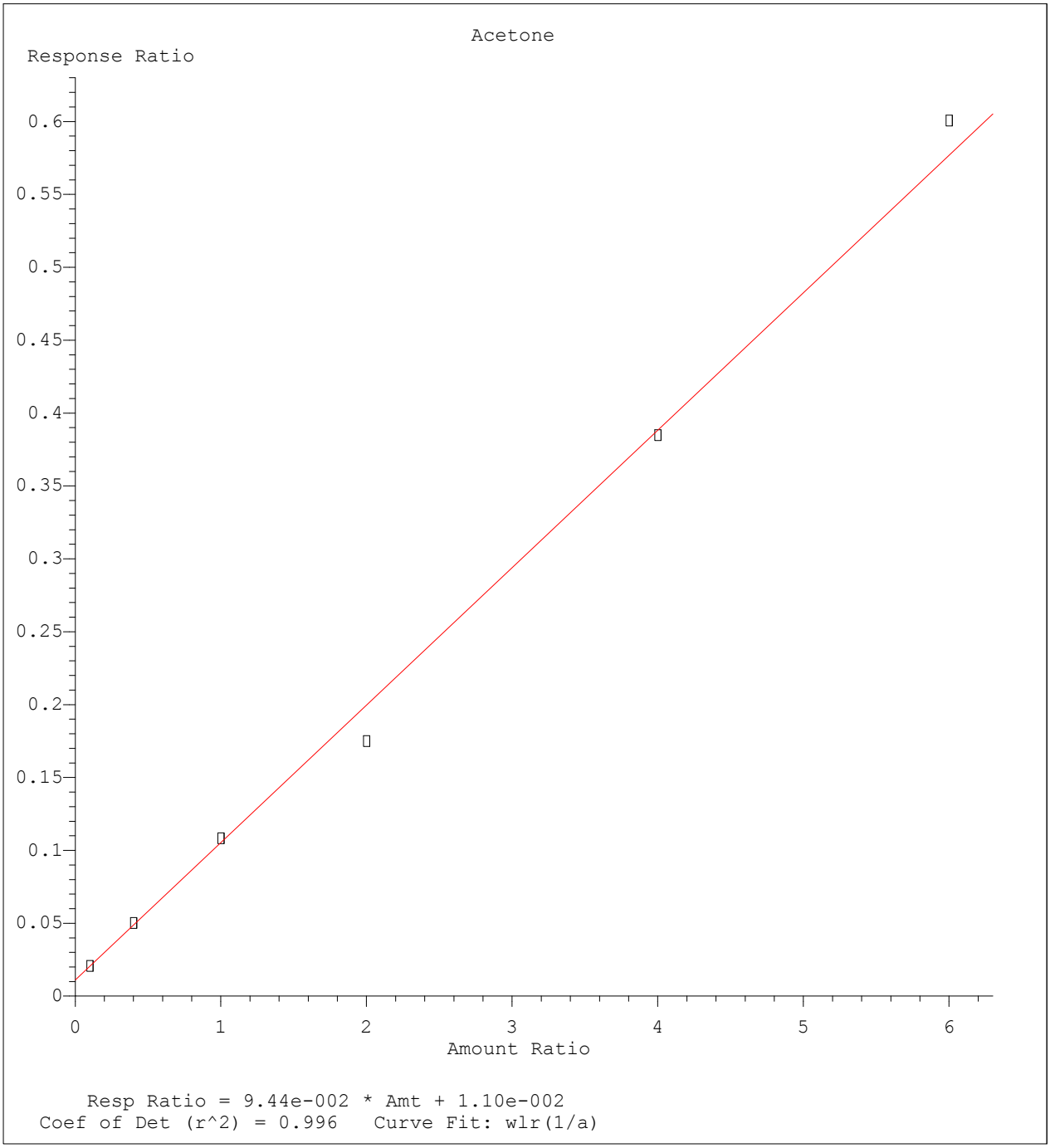

Method Name: C:\MSDCHEM\1\METHODS\8260-SL.M
Calibration Table Last Updated: Wed Apr 06 17:47:28 2016

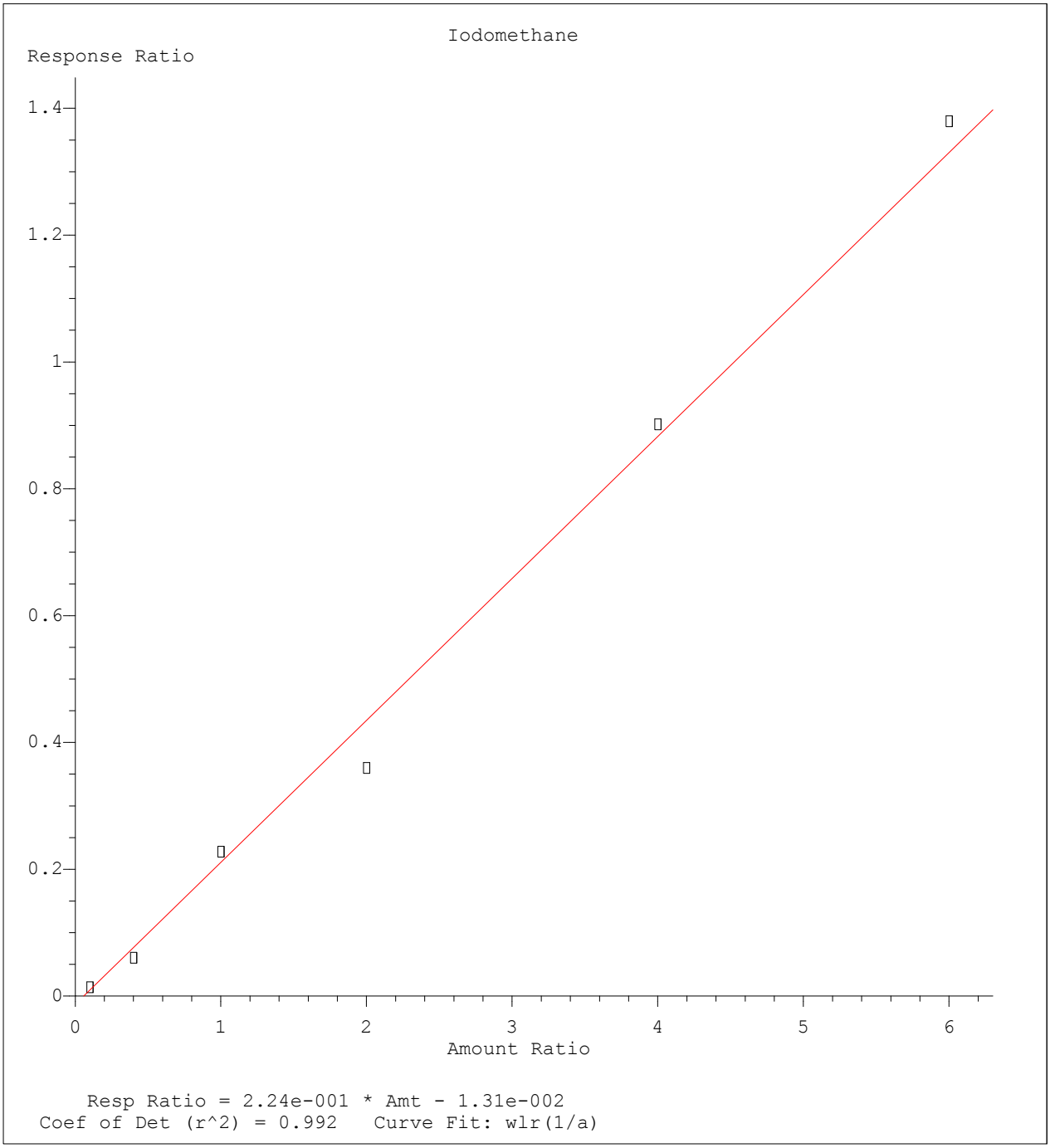

Method Name: C:\MSDCHEM\1\METHODS\8260-SL.M
Calibration Table Last Updated: Wed Apr 06 17:47:28 2016

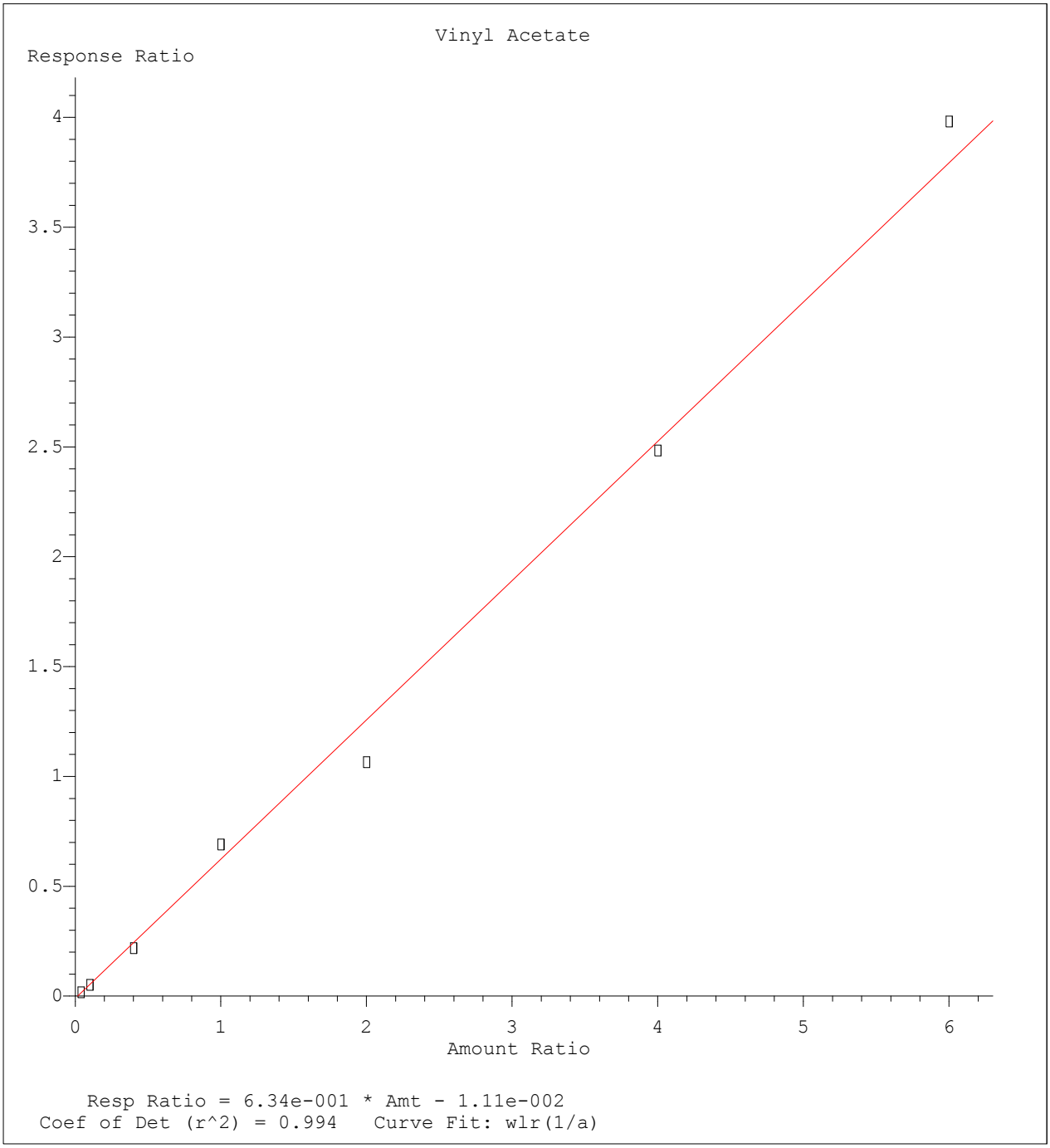

Method Name: C:\MSDCHEM\1\METHODS\8260-SL.M
Calibration Table Last Updated: Wed Apr 06 17:47:28 2016

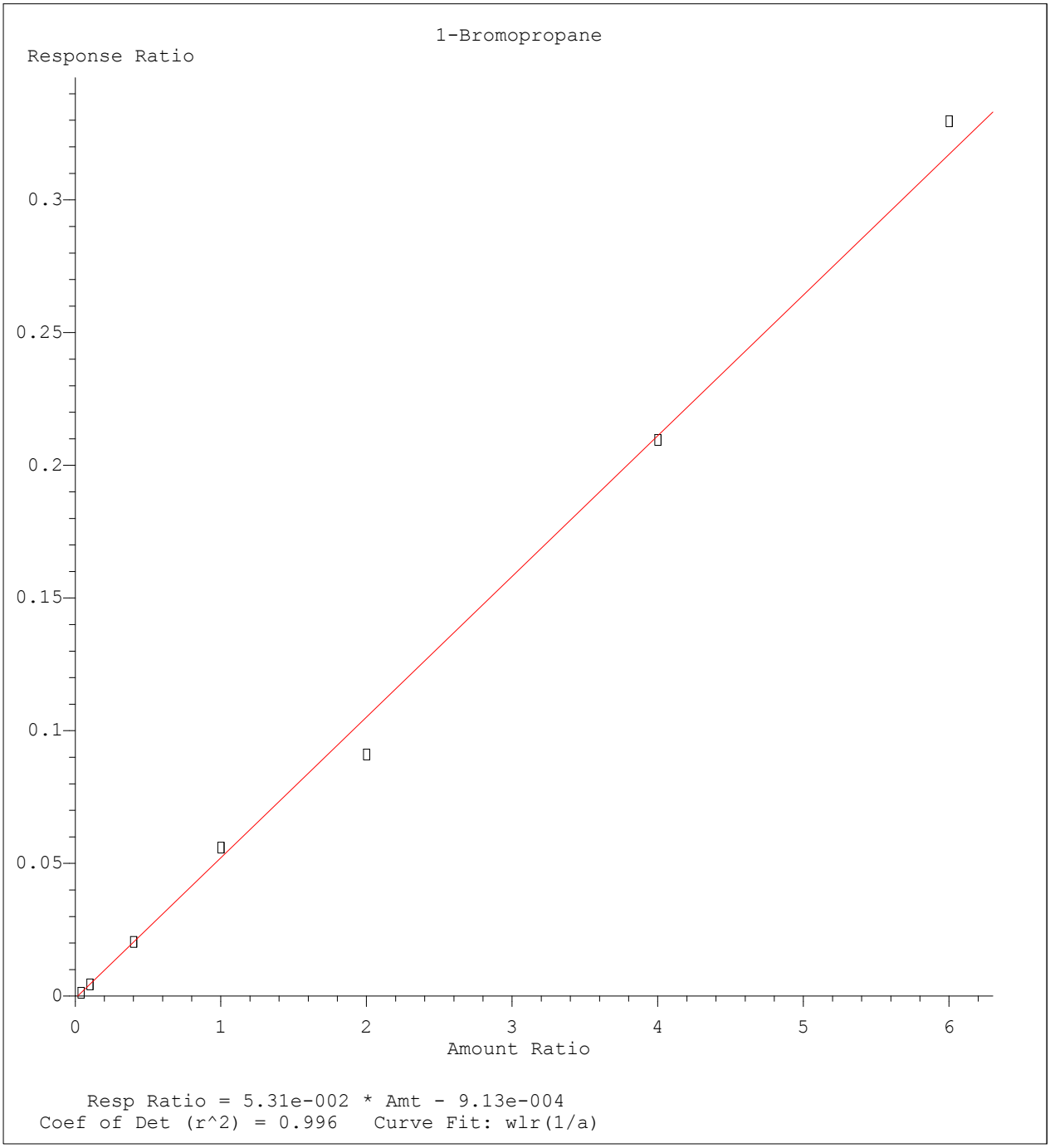

Method Name: C:\MSDCHEM\1\METHODS\8260-SL.M
Calibration Table Last Updated: Wed Apr 06 17:47:28 2016

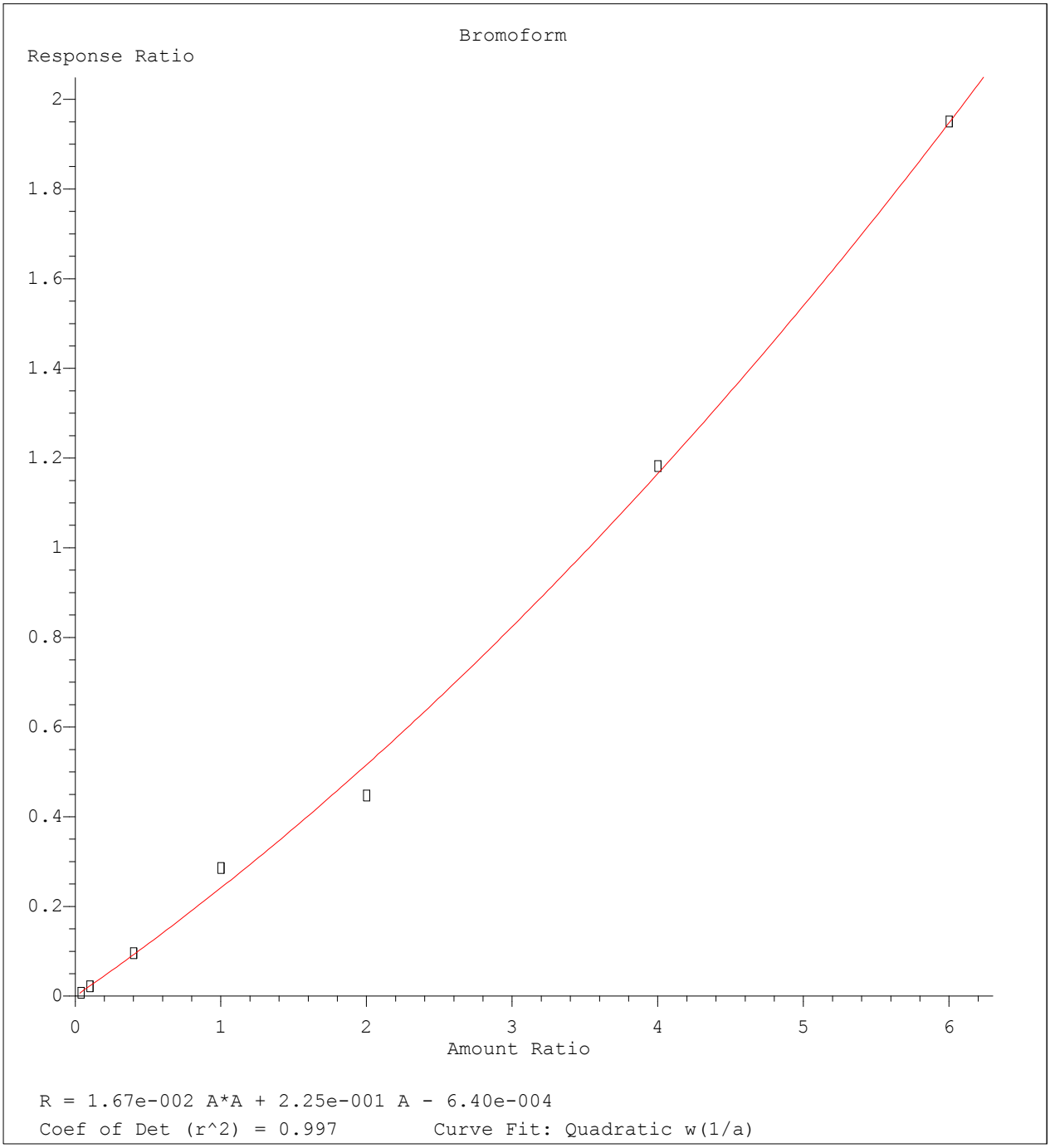

Method Name: C:\MSDCHEM\1\METHODS\8260-SL.M
Calibration Table Last Updated: Wed Apr 06 17:47:28 2016

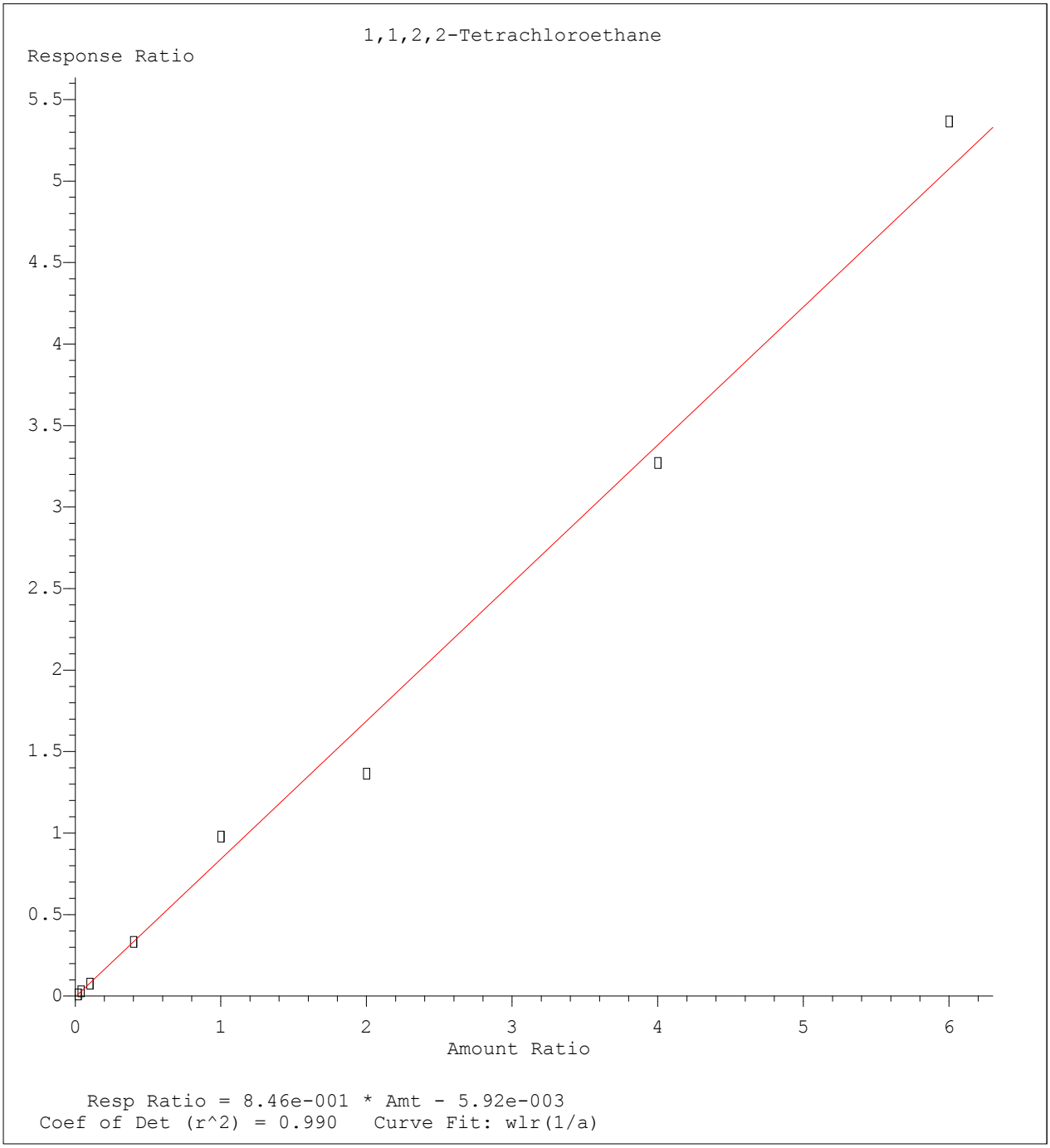

Method Name: C:\MSDCHEM\1\METHODS\8260-SL.M
Calibration Table Last Updated: Wed Apr 06 17:47:28 2016

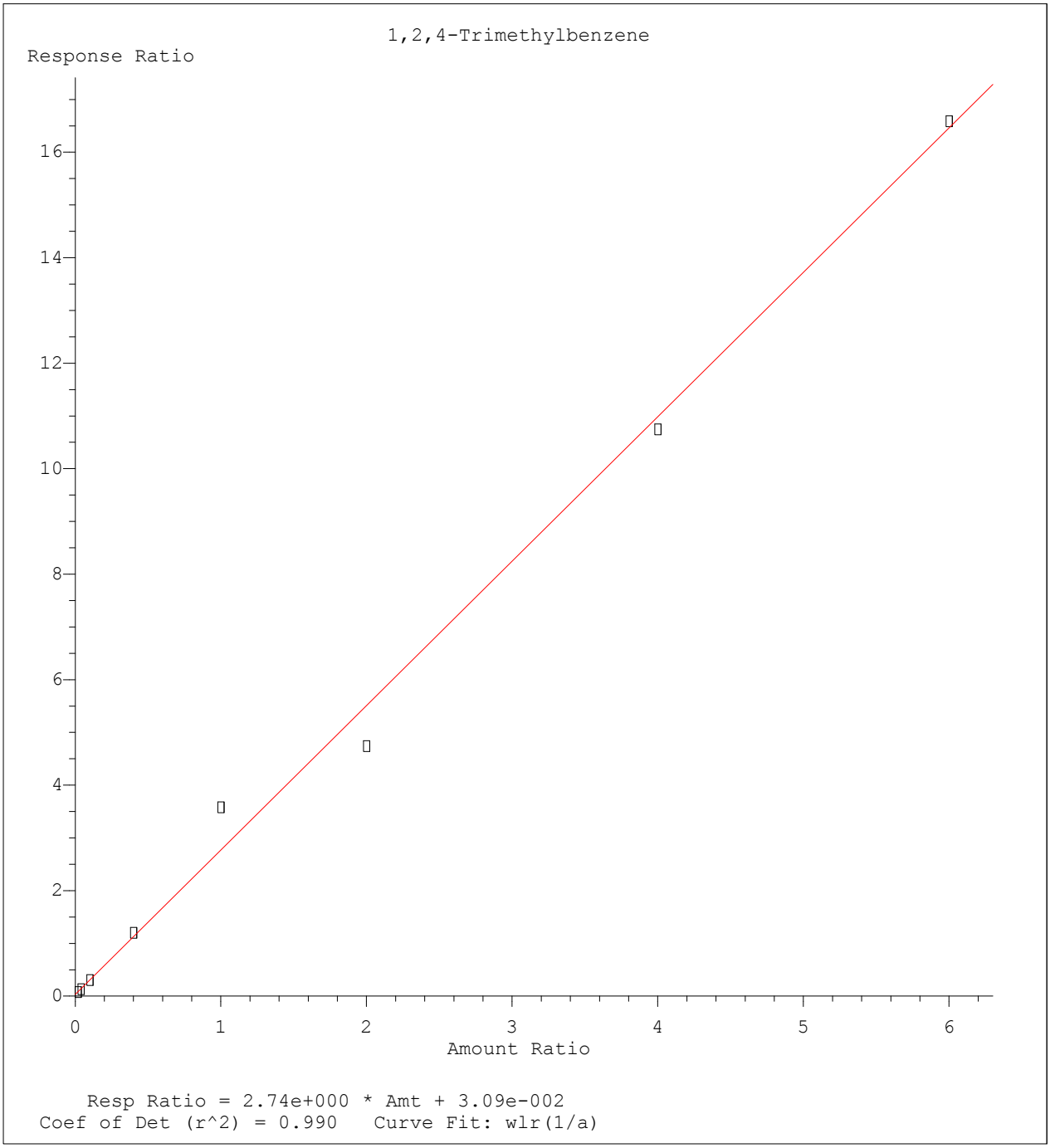

Method Name: C:\MSDCHEM\1\METHODS\8260-SL.M
Calibration Table Last Updated: Wed Apr 06 17:47:28 2016

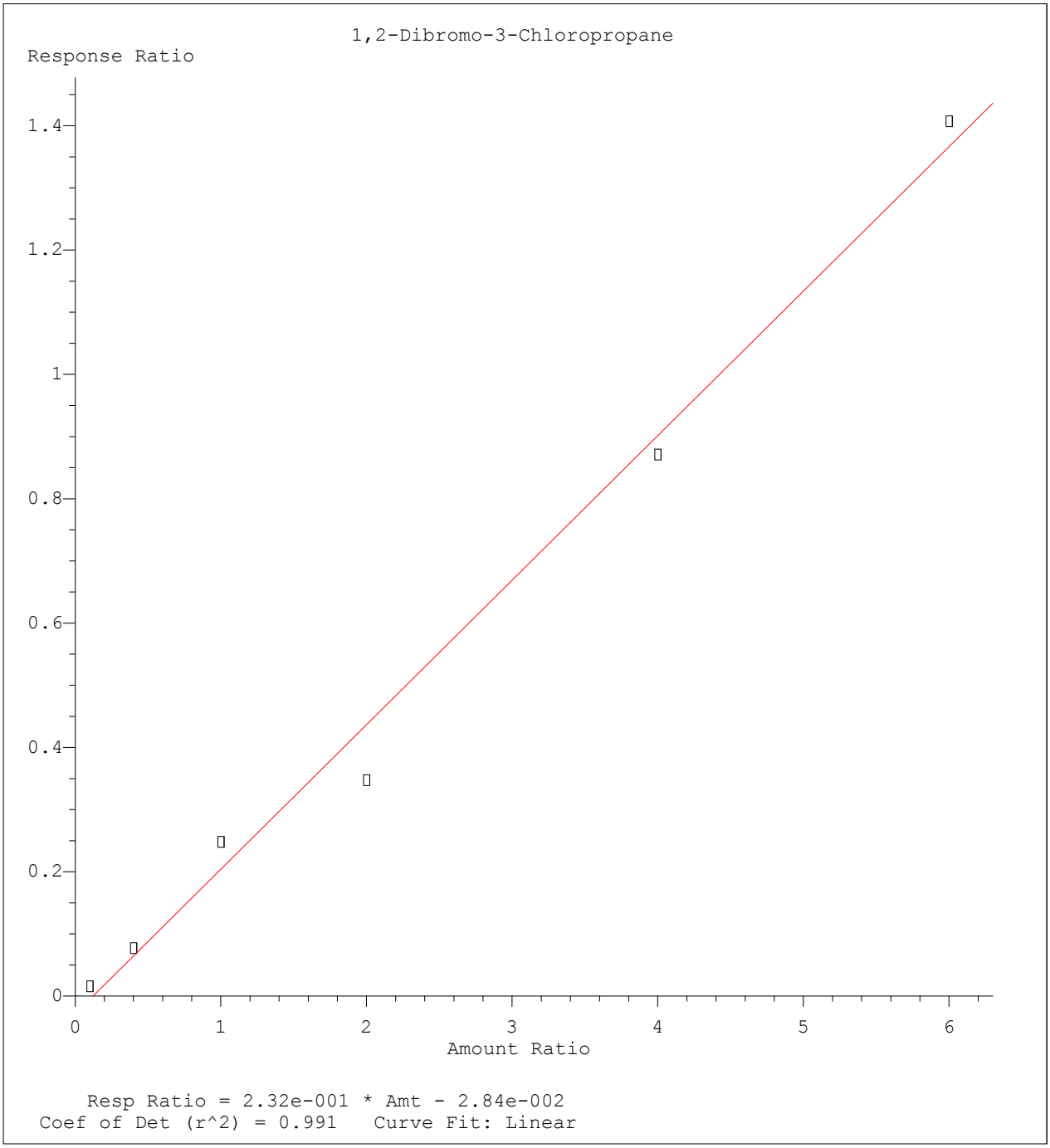

Method Name: C:\MSDCHEM\1\METHODS\8260-SL.M
Calibration Table Last Updated: Wed Apr 06 17:47:28 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973609.D Vial: 17
Acq On : 6 Apr 2016 18:18 Operator: ADC
Sample : WG563259-11 50.0ug/kg ALTSRC 8260 Inst : hpms9
Misc : 7,1 STD75404 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:20 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	530506	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	401118	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	219097	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	141434	52.7882 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.58%		
43) 1,2-Dichloroethane-d4	10.43	65	145958	52.0392 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.08%		
58) Toluene-d8	12.82	98	509727	53.3198 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.64%		
79) p-Bromofluorobenzene	16.22	95	199848	52.6619 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 105.32%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	250423	61.5384 ug/kg	98
3) Chloromethane	3.74	50	213325	57.0246 ug/kg	99
4) Vinyl Chloride	3.97	62	130729	53.2068 ug/kg	94
5) 1,3-Butadiene	4.01	54	50651	28.0586 ug/kg	96
6) Bromomethane	4.86	94	120126	52.3731 ug/kg	99
7) Chloroethane	5.02	64	122333	54.7562 ug/kg	99
8) Trichlorofluoromethane	5.51	101	245915	52.0272 ug/kg	100
9) Diethyl ether	6.04	59	298370	107.3411 ug/kg	99
10) Isoprene	6.08	67	240535	64.6521 ug/kg	100
11) Acrolein	6.29	56	42769	154.7449 ug/kg	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	156650	54.2779 ug/kg	97
13) Acetone	6.39	43	57891	51.9935 ug/kg	99
14) 1,1-Dichloroethene	6.60	61	246948	51.0481 ug/kg	99
15) Tert-Butyl Alcohol	6.73	59	102252	219.7499 ug/kg	99
16) Dimethyl Sulfide	6.87	62	185143	78.1171 ug/kg	99
17) Iodomethane	7.13	142	93186	42.1583 ug/kg	99
18) Methyl acetate	7.14	43	140101	45.5882 ug/kg	98
19) Methylene Chloride	7.38	84	155415	51.4310 ug/kg	97
20) Carbon Disulfide	7.44	76	446333	48.6586 ug/kg	99
21) Acrylonitrile	7.57	53	75240	51.5103 ug/kg	100
22) Methyl Tert Butyl Ether	7.60	73	421938	51.8917 ug/kg	99
23) trans-1,2-Dichloroethene	7.84	61	249458	53.6052 ug/kg	98
24) n-Hexane	7.91	57	291976	48.3154 ug/kg	100
25) Diisopropyl ether	8.25	45	1252311	101.6994 ug/kg	99
26) Vinyl Acetate	8.43	43	309863	46.9410 ug/kg	100
27) 1,1-Dichloroethane	8.46	63	282909	50.0862 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	1046728	96.6696 ug/kg	100
29) 2-Butanone	9.02	43	89553	52.5061 ug/kg	99
30) Propionitrile	9.13	54	55055	99.4519 ug/kg	97
31) 2,2-Dichloropropane	9.23	77	212618	51.5494 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	166197	53.7400 ug/kg	97
33) Chloroform	9.51	83	243436	50.8113 ug/kg	99
34) 1-Bromopropane	9.64	122	38824	69.7970 ug/kg	96
35) Bromochloromethane	9.75	130	99051	51.3365 ug/kg	99
36) Tetrahydrofuran	9.77	42	116541	96.1883 ug/kg	99
38) 1,1,1-Trichloroethane	10.04	97	216396	52.7730 ug/kg	100
39) Cyclohexane	10.08	56	352153	54.3246 ug/kg	99
40) 1,1-Dichloropropene	10.23	75	193887	51.3660 ug/kg	98
41) Tert-Amyl-Methyl ether	10.34	73	820188	102.3991 ug/kg	100
42) Carbon Tetrachloride	10.38	117	197392	51.5704 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973609.D Vial: 17
Acq On : 6 Apr 2016 18:18 Operator: ADC
Sample : WG563259-11 50.0ug/kg ALTSRC 8260 Inst : hpms9
Misc : 7,1 STD75404 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:20 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	211843	51.3449	ug/kg	99
46)	Benzene	10.59	78	593872	50.6938	ug/kg	100
47)	Trichloroethene	11.34	130	173100	52.5327	ug/kg	99
48)	Methylcyclohexane	11.43	83	274526	54.5223	ug/kg	98
49)	1,2-Dichloropropane	11.56	63	172660	54.1958	ug/kg	99
50)	1,4-Dioxane	11.85	88	10566	255.6979	ug/kg	94
51)	Bromodichloromethane	11.86	83	183631	50.5822	ug/kg	100
52)	Dibromomethane	11.95	174	95424	50.1684	ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.15	63	93818	55.3787	ug/kg	99
54)	4-Methyl-2-Pentanone	12.19	58	76339	52.0432	ug/kg	99
55)	cis-1,3-Dichloropropene	12.49	75	251031	55.4585	ug/kg	99
56)	Dimethyl Disulfide	12.77	94	267703	55.2642	ug/kg	99
59)	Toluene	12.91	91	628564	51.4967	ug/kg	100
60)	Ethyl Methacrylate	13.01	69	195518	52.6145	ug/kg	100
61)	trans-1,3-Dichloropropene	13.09	75	207936	52.3291	ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	129591	53.9308	ug/kg	100
63)	2-Hexanone	13.24	43	137776	52.5074	ug/kg	99
64)	1,3-Dichloropropane	13.62	76	226056	54.7122	ug/kg	99
65)	Tetrachloroethene	13.74	164	133666	51.6350	ug/kg	98
66)	Dibromochloromethane	14.01	129	150404	50.6339	ug/kg	99
67)	1,2-Dibromoethane	14.27	107	135771	51.2924	ug/kg	100
68)	1-Chlorohexane	14.34	91	217314	54.0792	ug/kg	100
69)	Chlorobenzene	14.76	112	449730	53.0953	ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.79	131	152648	53.0459	ug/kg	96
71)	Ethylbenzene	14.79	106	240566	52.7946	ug/kg	99
72)	m-,p-Xylene	14.88	106	589545	104.9373	ug/kg	99
73)	o-Xylene	15.45	106	292444	54.6278	ug/kg	100
74)	Styrene	15.48	104	490845	53.5412	ug/kg	100
75)	Bromoform	15.99	173	96808	50.1186	ug/kg	99
76)	Isopropylbenzene	15.87	105	752993	54.0740	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	177488	48.2015	ug/kg	100
80)	1,2,3-Trichloropropane	16.28	110	55590	51.1245	ug/kg#	27
81)	trans-1,4-Dichloro-2-Buten	16.32	53	54162	40.9288	ug/kg#	1
82)	n-Propylbenzene	16.38	91	846693	51.6897	ug/kg	100
83)	Bromobenzene	16.51	156	194075	49.8094	ug/kg	98
84)	1,3,5-Trimethylbenzene	16.57	105	645968	51.7929	ug/kg	100
85)	2-Chlorotoluene	16.65	91	501409	51.2539	ug/kg	99
86)	4-Chlorotoluene	16.70	91	531861	51.9779	ug/kg	99
87)	a-Methylstyrene	16.97	118	350698	56.3654	ug/kg	100
88)	tert-Butylbenzene	17.03	134	144582	52.3227	ug/kg	98
89)	1,2,4-Trimethylbenzene	17.08	105	645060	53.2109	ug/kg	99
90)	sec-Butylbenzene	17.30	105	846506	52.7972	ug/kg	100
91)	p-Isopropyltoluene	17.45	119	683120	51.4696	ug/kg	100
92)	1,3-Dichlorobenzene	17.65	146	389382	50.5474	ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	400589	50.9530	ug/kg	100
94)	n-Butylbenzene	17.98	91	626791	51.3326	ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	381311	52.0332	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	50296	55.5038	ug/kg	99
97)	1,2,4-Trichlorobenzene	20.43	180	306886	56.7541	ug/kg	99
98)	Hexachlorobutadiene	20.58	225	149856	58.7590	ug/kg	99
99)	Naphthalene	20.80	128	701866	53.8583	ug/kg	99
100)	1,2,3-Trichlorobenzene	21.10	180	299028	58.3388	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973609.D Vial: 17
Acq On : 6 Apr 2016 18:18 Operator: ADC
Sample : WG563259-11 50.0ug/kg ALTSRC 8260 Inst : hpms9
Misc : 7,1 STD75404 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 7 13:30 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

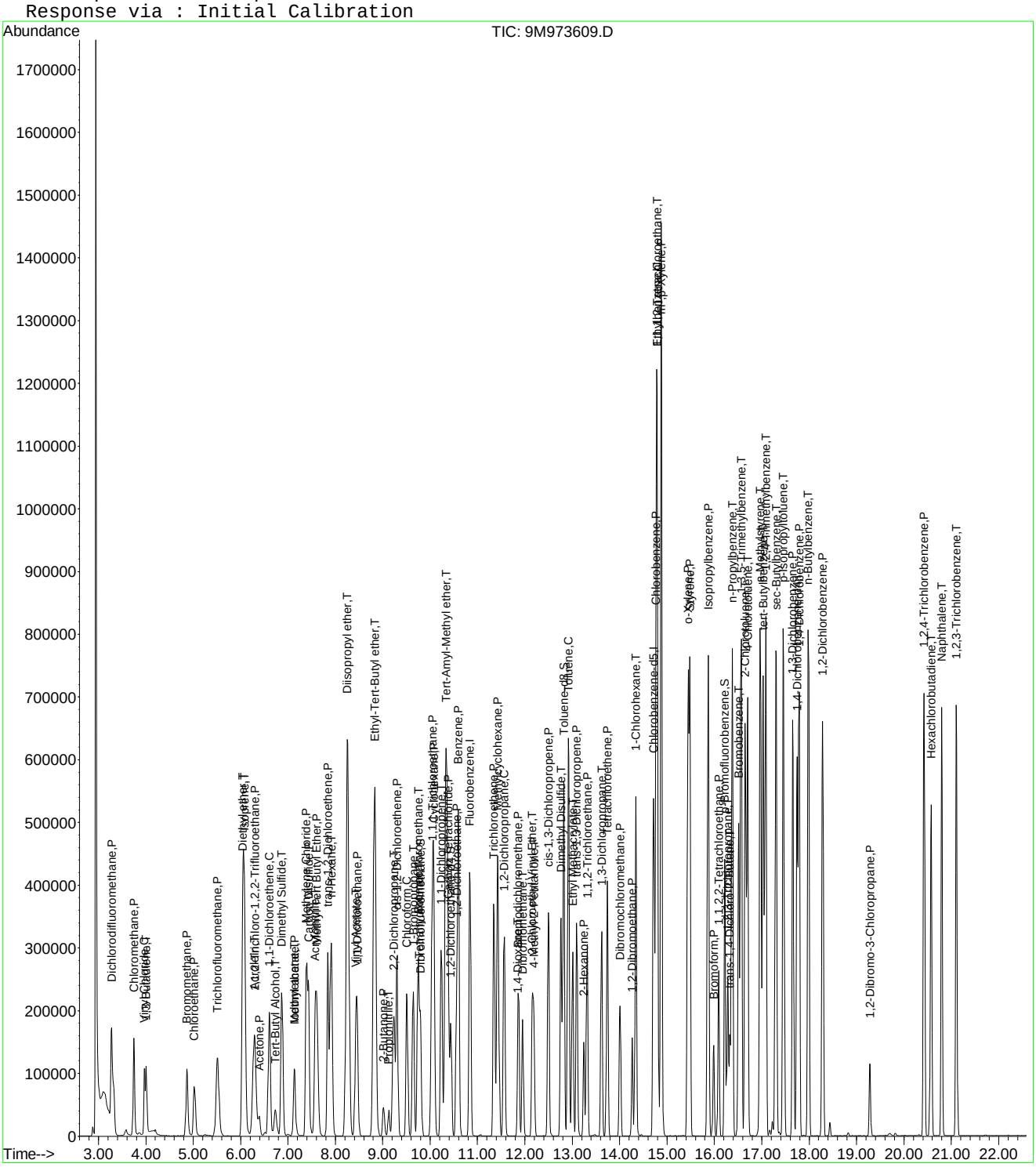

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\040616\9M973609.D Vial: 17
Acq On : 6 Apr 2016 18:18 Operator: ADC
Sample : WG563259-11 50.0ug/kg ALTSRC 8260 Inst : hpms9
Misc : 7,1 STD75404 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	96	0.00
2	P	Dichlorodifluoromethane	50.0000	61.5384	-23.1	103	0.00
3	P	Chloromethane	50.0000	57.0246	-14.0	110	0.00
4	C	Vinyl Chloride	50.0000	53.2068	-6.4	88	-0.01
5	T	1,3-Butadiene	50.0000	28.0586	43.9#	57	-0.01
6	P	Bromomethane	50.0000	52.3731	-4.7	95	-0.01
7	P	Chloroethane	50.0000	54.7562	-9.5	100	-0.01
8	P	Trichlorofluoromethane	50.0000	52.0272	-4.1	90	-0.01
9	T	Diethyl ether	100.0000	107.3411	-7.3	99	0.00
10	T	Isoprene	50.0000	64.6521	-29.3#	112	-0.01
11	T	Acrolein	50.0000	154.7449	-209.5#	285	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	54.2779	-8.6	94	0.00
13	P	Acetone	50.0000	51.9935	-4.0	97	0.00
14	C	1,1-Dichloroethene	50.0000	51.0481	-2.1	88	-0.01
15	T	Tert-Butyl Alcohol	200.0000	219.7499	-9.9	102	0.00
16	T	Dimethyl Sulfide	50.0000	78.1171	-56.2#	131	-0.01
17	T	Iodomethane	50.0000	42.1583	15.7	74	0.00
18	P	Methyl acetate	50.0000	45.5881	8.8	83	0.00
19	P	Methylene Chloride	50.0000	51.4310	-2.9	94	-0.01
20	P	Carbon Disulfide	50.0000	48.6586	2.7	86	0.00
21	T	Acrylonitrile	50.0000	51.5103	-3.0	93	0.00
22	P	Methyl Tert Butyl Ether	50.0000	51.8917	-3.8	91	0.00
23	P	trans-1,2-Dichloroethene	50.0000	53.6052	-7.2	92	0.00
24	T	n-Hexane	50.0000	48.3154	3.4	92	0.00
25	T	Diisopropyl ether	100.0000	101.6994	-1.7	91	0.00
26	T	Vinyl Acetate	50.0000	46.9410	6.1	81	0.00
27	P	1,1-Dichloroethane	50.0000	50.0862	-0.2	87	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	96.6696	3.3	88	0.00
29	P	2-Butanone	50.0000	52.5061	-5.0	98	0.00
30	T	Propionitrile	100.0000	99.4519	0.5	90	0.00
31	T	2,2-Dichloropropane	50.0000	51.5494	-3.1	88	0.00
32	P	cis-1,2-Dichloroethene	50.0000	53.7400	-7.5	94	0.00
33	C	Chloroform	50.0000	50.8113	-1.6	90	0.00
34	T	1-Bromopropane	50.0000	69.7970	-39.6#	126	0.00
35	T	Bromochloromethane	50.0000	51.3365	-2.7	87	0.00
36	T	Tetrahydrofuran	100.0000	96.1883	3.8	91	0.00
37	S	Dibromofluoromethane	50.0000	52.7882	-5.6	96	0.00
38	P	1,1,1-Trichloroethane	50.0000	52.7730	-5.5	91	0.00
39	P	Cyclohexane	50.0000	54.3246	-8.6	95	0.00
40	T	1,1-Dichloropropene	50.0000	51.3660	-2.7	89	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	102.3991	-2.4	93	0.00
42	P	Carbon Tetrachloride	50.0000	51.5704	-3.1	90	0.00
43	S	1,2-Dichloroethane-d4	50.0000	52.0392	-4.1	97	0.00
44		Heptane	-1.0000	0.0000	0.0	90	0.00
45	P	1,2-Dichloroethane	50.0000	51.3449	-2.7	92	0.00
46	P	Benzene	50.0000	50.6938	-1.4	92	0.00
47	P	Trichloroethene	50.0000	52.5327	-5.1	95	0.00
48	P	Methylcyclohexane	50.0000	54.5223	-9.0	96	0.00
49	C	1,2-Dichloropropane	50.0000	54.1958	-8.4	94	0.00
50	T	1,4-Dioxane	200.0000	255.6979	-27.8#	111	0.00
51	P	Bromodichloromethane	50.0000	50.5822	-1.2	88	0.00
52	T	Dibromomethane	50.0000	50.1684	-0.3	86	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	55.3787	-10.8	97	0.00
54	P	4-Methyl-2-Pentanone	50.0000	52.0432	-4.1	99	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\040616\9M973609.D Vial: 17
Acq On : 6 Apr 2016 18:18 Operator: ADC
Sample : WG563259-11 50.0ug/kg ALTSRC 8260 Inst : hpms9
Misc : 7,1 STD75404 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	55.4585	-10.9	97	0.00
56	T	Dimethyl Disulfide	50.0000	55.2642	-10.5	95	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	99	0.00
58	S	Toluene-d8	50.0000	53.3198	-6.6	97	0.00
59	C	Toluene	50.0000	51.4967	-3.0	93	0.00
60	T	Ethyl Methacrylate	50.0000	52.6145	-5.2	94	0.00
61	P	trans-1,3-Dichloropropene	50.0000	52.3291	-4.7	89	0.00
62	P	1,1,2-Trichloroethane	50.0000	53.9308	-7.9	93	0.00
63	P	2-Hexanone	50.0000	52.5074	-5.0	97	0.00
64	T	1,3-Dichloropropane	50.0000	54.7122	-9.4	96	0.00
65	P	Tetrachloroethene	50.0000	51.6350	-3.3	90	0.00
66	P	Dibromochloromethane	50.0000	50.6339	-1.3	88	0.00
67	P	1,2-Dibromoethane	50.0000	51.2924	-2.6	93	0.00
68	T	1-Chlorohexane	50.0000	54.0792	-8.2	94	0.00
69	P	Chlorobenzene	50.0000	53.0953	-6.2	95	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	53.0459	-6.1	93	0.00
71	C	Ethylbenzene	50.0000	52.7946	-5.6	92	0.00
72	P	m-,p-Xylene	100.0000	104.9373	-4.9	94	0.00
73	P	o-Xylene	50.0000	54.6278	-9.3	96	0.00
74	P	Styrene	50.0000	53.5412	-7.1	93	0.00
75	P	Bromoform	50.0000	50.1186	-0.2	84	0.00
76	P	Isopropylbenzene	50.0000	54.0740	-8.1	95	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	115	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	48.2015	3.6	95	0.00
79	S	p-Bromofluorobenzene	50.0000	52.6619	-5.3	102	0.00
80	T	1,2,3-Trichloropropane	50.0000	51.1245	-2.2	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	40.9288	18.1	74	0.00
82	T	n-Propylbenzene	50.0000	51.6897	-3.4	96	0.00
83	T	Bromobenzene	50.0000	49.8094	0.4	93	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	51.7929	-3.6	96	0.00
85	T	2-Chlorotoluene	50.0000	51.2539	-2.5	94	0.00
86	T	4-Chlorotoluene	50.0000	51.9779	-4.0	98	0.00
87	T	a-Methylstyrene	50.0000	56.3654	-12.7	103	0.00
88	T	tert-Butylbenzene	50.0000	52.3227	-4.6	97	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	53.2109	-6.4	95	0.00
90	T	sec-Butylbenzene	50.0000	52.7972	-5.6	98	0.00
91	T	p-Isopropyltoluene	50.0000	51.4696	-2.9	95	0.00
92	P	1,3-Dichlorobenzene	50.0000	50.5474	-1.1	96	0.00
93	P	1,4-Dichlorobenzene	50.0000	50.9530	-1.9	100	0.00
94	T	n-Butylbenzene	50.0000	51.3326	-2.7	96	0.00
95	P	1,2-Dichlorobenzene	50.0000	52.0332	-4.1	101	0.00
96	P	1,2-Dibromo-3-Chloropropane	50.0000	55.5037	-11.0	107	0.01
97	P	1,2,4-Trichlorobenzene	50.0000	56.7541	-13.5	109	0.00
98	T	Hexachlorobutadiene	50.0000	58.7590	-17.5	110	0.00
99	T	Naphthalene	50.0000	53.8583	-7.7	100	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	58.3387	-16.7	110	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M973609.D 8260-SL.M Thu Apr 07 13:32:18 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\042816\9M974029.D Vial: 2
Acq On : 28 Apr 2016 13:13 Operator: ADC
Sample : WG566763-02 50ug/kg CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 13:35:58 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	685029	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	494816	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.74	152	226636	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	185393	53.5868 ug/kg	-0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 107.18%		
43) 1,2-Dichloroethane-d4	10.43	65	194780	53.7809 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 107.56%		
58) Toluene-d8	12.82	98	659940	55.9608 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 111.92%		
79) p-Bromofluorobenzene	16.22	95	242743	61.8374 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 123.68%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	254042	48.3458 ug/kg	97
3) Chloromethane	3.75	50	270552	56.0083 ug/kg	100
4) Vinyl Chloride	3.97	62	162237	51.1054 ug/kg	95
5) 1,3-Butadiene	4.01	54	106148	45.5377 ug/kg	94
6) Bromomethane	4.86	94	145824	49.2359 ug/kg	100
7) Chloroethane	5.02	64	145072	50.2869 ug/kg	99
8) Trichlorofluoromethane	5.51	101	314756	51.5704 ug/kg	100
9) Diethyl ether	6.04	59	343628	95.7372 ug/kg	95
10) Isoprene	6.08	67	238975	49.7437 ug/kg	98
11) Acrolein	6.29	56	24347	68.2204 ug/kg	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	189995	50.9819 ug/kg	98
13) Acetone	6.38	43	69856	48.2053 ug/kg	97
14) 1,1-Dichloroethene	6.60	61	308257	49.3479 ug/kg	99
15) Tert-Butyl Alcohol	6.73	59	126806	211.0464 ug/kg	98
16) Dimethyl Sulfide	6.87	62	152038	49.6789 ug/kg	97
17) Iodomethane	7.12	142	118615	41.5995 ug/kg	100
18) Methyl acetate	7.13	43	181149	45.6487 ug/kg	98
19) Methylene Chloride	7.38	84	181786	46.5880 ug/kg	94
20) Carbon Disulfide	7.43	76	563183	47.5479 ug/kg	99
21) Acrylonitrile	7.57	53	92234	48.9010 ug/kg	99
22) Methyl Tert Butyl Ether	7.60	73	524888	49.9917 ug/kg	99
23) trans-1,2-Dichloroethene	7.84	61	295075	49.1047 ug/kg	98
24) n-Hexane	7.90	57	347584	44.5430 ug/kg	97
25) Diisopropyl ether	8.25	45	1456484	91.5996 ug/kg	99
26) Vinyl Acetate	8.42	43	388209	45.5698 ug/kg	98
27) 1,1-Dichloroethane	8.46	63	361676	49.5875 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.82	59	1346944	96.3357 ug/kg	99
29) 2-Butanone	9.01	43	108804	49.4033 ug/kg	98
30) Propionitrile	9.13	54	67683	94.6842 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	270358	50.7627 ug/kg	99
32) cis-1,2-Dichloroethene	9.29	96	198579	49.7267 ug/kg	97
33) Chloroform	9.51	83	303334	49.0319 ug/kg	100
34) 1-Bromopropane	9.64	122	33315	46.6716 ug/kg	99
35) Bromochloromethane	9.74	130	125485	50.3664 ug/kg	93
36) Tetrahydrofuran	9.76	42	147966	94.5773 ug/kg	96
38) 1,1,1-Trichloroethane	10.03	97	272116	51.3923 ug/kg	98
39) Cyclohexane	10.07	56	403993	48.2637 ug/kg	97
40) 1,1-Dichloropropene	10.23	75	245415	50.3512 ug/kg	99
41) Tert-Amyl-Methyl ether	10.33	73	1025078	99.1108 ug/kg	99
42) Carbon Tetrachloride	10.38	117	259201	52.4432 ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M974029.D 8260-SL.M Thu Apr 28 13:35:58 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\042816\9M974029.D Vial: 2
Acq On : 28 Apr 2016 13:13 Operator: ADC
Sample : WG566763-02 50ug/kg CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 13:35:58 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.55	62	258639	48.5465 ug/kg	97
46)	Benzene	10.59	78	719189	47.5430 ug/kg	98
47)	Trichloroethene	11.34	130	200541	47.1322 ug/kg	98
48)	Methylcyclohexane	11.43	83	329813	50.7271 ug/kg	98
49)	1,2-Dichloropropane	11.56	63	198432	48.2355 ug/kg	99
50)	1,4-Dioxane	11.85	88	11212	210.1265 ug/kg	98
51)	Bromodichloromethane	11.86	83	228325	48.7065 ug/kg	99
52)	Dibromomethane	11.95	174	118025	48.0538 ug/kg	96
53)	2-Chloroethyl Vinyl Ether	12.15	63	124889	57.0903 ug/kg	99
54)	4-Methyl-2-Pentanone	12.18	58	99175	52.3602 ug/kg	98
55)	cis-1,3-Dichloropropene	12.49	75	281766	48.2071 ug/kg	99
56)	Dimethyl Disulfide	12.76	94	323853	51.7750 ug/kg	100
59)	Toluene	12.91	91	760725	50.5226 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	234652	51.1884 ug/kg	99
61)	trans-1,3-Dichloropropene	13.09	75	258763	52.7891 ug/kg	100
62)	1,1,2-Trichloroethane	13.30	97	155843	52.5748 ug/kg	100
63)	2-Hexanone	13.24	43	161520	49.9001 ug/kg	95
64)	1,3-Dichloropropane	13.61	76	261466	51.2993 ug/kg	96
65)	Tetrachloroethene	13.74	164	165882	51.9458 ug/kg	98
66)	Dibromochloromethane	14.00	129	191251	52.1932 ug/kg	100
67)	1,2-Dibromoethane	14.27	107	163858	50.1813 ug/kg	100
68)	1-Chlorohexane	14.34	91	263945	53.2457 ug/kg	96
69)	Chlorobenzene	14.76	112	532475	50.9603 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.79	131	190810	53.7515 ug/kg	98
71)	Ethylbenzene	14.78	106	294747	52.4365 ug/kg	100
72)	m-,p-Xylene	14.88	106	708313	102.2037 ug/kg	99
73)	o-Xylene	15.44	106	340393	51.5442 ug/kg	100
74)	Styrene	15.48	104	579436	51.2363 ug/kg	99
75)	Bromoform	15.97	173	134461	55.9623 ug/kg	99
76)	Isopropylbenzene	15.87	105	885238	51.5331 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.08	83	214173	56.1712 ug/kg	100
80)	1,2,3-Trichloropropane	16.28	110	67632	60.1302 ug/kg#	11
81)	trans-1,4-Dichloro-2-Buten	16.32	53	78317	57.2134 ug/kg#	1
82)	n-Propylbenzene	16.38	91	984381	58.0964 ug/kg	100
83)	Bromobenzene	16.51	156	233532	57.9423 ug/kg	100
84)	1,3,5-Trimethylbenzene	16.56	105	758815	58.8169 ug/kg	100
85)	2-Chlorotoluene	16.65	91	622947	61.5592 ug/kg	100
86)	4-Chlorotoluene	16.69	91	583181	55.0975 ug/kg	99
87)	a-Methylstyrene	16.97	118	368700	57.2875 ug/kg	98
88)	tert-Butylbenzene	17.03	134	169825	59.4135 ug/kg	90
89)	1,2,4-Trimethylbenzene	17.08	105	764649	61.0600 ug/kg	100
90)	sec-Butylbenzene	17.29	105	978015	58.9704 ug/kg	100
91)	p-Isopropyltoluene	17.45	119	809547	58.9662 ug/kg	100
92)	1,3-Dichlorobenzene	17.65	146	449527	56.4139 ug/kg	99
93)	1,4-Dichlorobenzene	17.78	146	446277	54.8761 ug/kg	98
94)	n-Butylbenzene	17.98	91	740000	58.5882 ug/kg	99
95)	1,2-Dichlorobenzene	18.28	146	420540	55.4774 ug/kg	98
96)	1,2-Dibromo-3-Chloropropan	19.28	157	54708	58.0490 ug/kg	100
97)	1,2,4-Trichlorobenzene	20.42	180	313877	56.1161 ug/kg	100
98)	Hexachlorobutadiene	20.57	225	152072	57.6444 ug/kg	99
99)	Naphthalene	20.80	128	811583	60.2059 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.10	180	307202	57.9398 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\042816\9M974029.D Vial: 2
Acq On : 28 Apr 2016 13:13 Operator: ADC
Sample : WG566763-02 50ug/kg CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 13:35 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

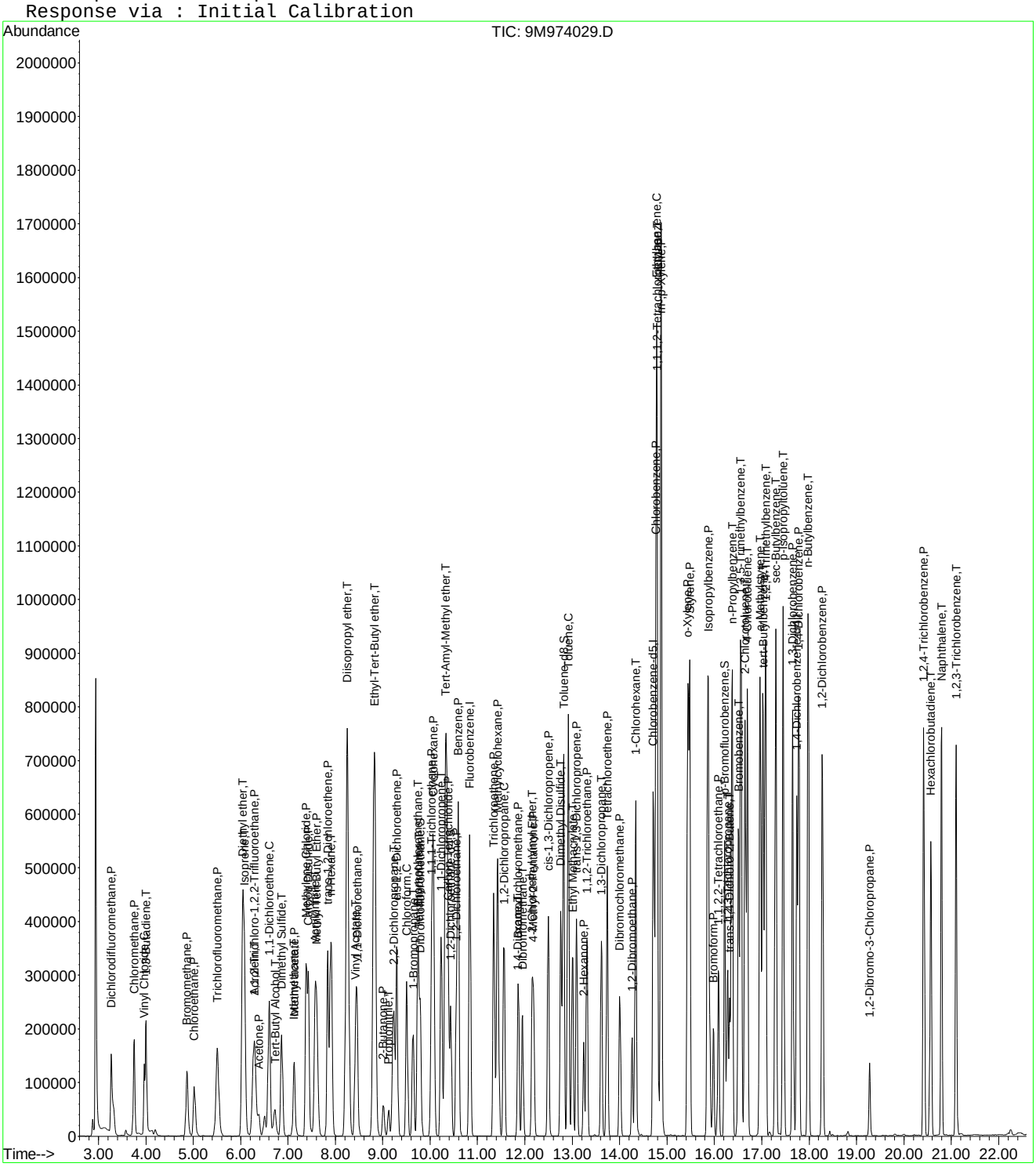

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042816\9M974029.D Vial: 2
Acq On : 28 Apr 2016 13:13 Operator: ADC
Sample : WG566763-02 50ug/kg CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	124	0.00
2	P	Dichlorodifluoromethane	0.3835	0.3709	3.3	105	-0.01
3	P	Chloromethane	0.3526	0.3950	-12.0	140	0.00
4	C	Vinyl Chloride	0.2683	0.2368	11.7	109	-0.01
5	T	1,3-Butadiene	0.1701	0.1550	8.9	120	-0.01
6	P	Bromomethane	0.2162	0.2129	1.5	115	-0.01
7	P	Chloroethane	0.2106	0.2118	-0.6	118	-0.01
8	P	Trichlorofluoromethane	0.4455	0.4595	-3.1	115	-0.01
9	T	Diethyl ether	0.2620	0.2508	4.3	114	0.00
10	T	Isoprene	0.3507	0.3488	0.5	111	-0.01
11	T	Acrolein	0.0261	0.0355	-36.4#	162	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	0.2720	0.2773	-2.0	114	-0.01
13	P	Acetone	0.1208	0.1020	15.6	117	0.00
14	C	1,1-Dichloroethene	0.4559	0.4500	1.3	110	-0.01
15	T	Tert-Butyl Alcohol	0.0439	0.0463	-5.5	126	0.00
16	T	Dimethyl Sulfide	0.2234	0.2219	0.6	107	-0.01
17	T	Iodomethane	0.1924	0.1732	10.0	94	-0.01
18	P	Methyl acetate	0.2897	0.2644	8.7	108	0.00
19	P	Methylene Chloride	0.2848	0.2654	6.8	110	-0.01
20	P	Carbon Disulfide	0.8645	0.8221	4.9	109	-0.01
21	T	Acrylonitrile	0.1377	0.1346	2.2	114	0.00
22	P	Methyl Tert Butyl Ether	0.7664	0.7662	0.0	113	0.00
23	P	trans-1,2-Dichloroethene	0.4386	0.4308	1.8	108	0.00
24	T	n-Hexane	0.5696	0.5074	10.9	110	-0.01
25	T	Diisopropyl ether	1.1606	1.0631	8.4	106	0.00
26	T	Vinyl Acetate	0.5715	0.5667	0.8	102	-0.01
27	P	1,1-Dichloroethane	0.5324	0.5280	0.8	111	0.00
28	T	Ethyl-Tert-Butyl ether	1.0205	0.9831	3.7	113	-0.01
29	P	2-Butanone	0.1608	0.1588	1.2	120	0.00
30	T	Propionitrile	0.0522	0.0494	5.3	111	0.00
31	T	2,2-Dichloropropane	0.3887	0.3947	-1.5	112	0.00
32	P	cis-1,2-Dichloroethene	0.2915	0.2899	0.5	112	-0.01
33	C	Chloroform	0.4516	0.4428	1.9	112	0.00
34	T	1-Bromopropane	0.0479	0.0486	-1.4	108	0.00
35	T	Bromochloromethane	0.1819	0.1832	-0.7	110	-0.01
36	T	Tetrahydrofuran	0.1142	0.1080	5.4	115	-0.01
37	S	Dibromofluoromethane	0.2525	0.2706	-7.2	125	-0.01
38	P	1,1,1-Trichloroethane	0.3865	0.3972	-2.8	114	-0.01
39	P	Cyclohexane	0.6110	0.5898	3.5	109	0.00
40	T	1,1-Dichloropropene	0.3558	0.3583	-0.7	112	0.00
41	T	Tert-Amyl-Methyl ether	0.7549	0.7482	0.9	116	-0.01
42	P	Carbon Tetrachloride	0.3608	0.3784	-4.9	118	0.00
43	S	1,2-Dichloroethane-d4	0.2643	0.2843	-7.6	129	0.00
44		Heptane	0.0000	0.0000	0.0	121	0.00
45	P	1,2-Dichloroethane	0.3889	0.3776	2.9	112	-0.01
46	P	Benzene	1.1041	1.0499	4.9	112	0.00
47	P	Trichloroethene	0.3106	0.2928	5.7	110	0.00
48	P	Methylcyclohexane	0.4746	0.4815	-1.5	115	0.00
49	C	1,2-Dichloropropane	0.3003	0.2897	3.5	108	0.00
50	T	1,4-Dioxane	0.0039	0.0041	-5.1	117	0.00
51	P	Bromodichloromethane	0.3422	0.3333	2.6	109	0.00
52	T	Dibromomethane	0.1793	0.1723	3.9	107	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1597	0.1823	-14.2	129	0.00
54	P	4-Methyl-2-Pentanone	0.1383	0.1448	-4.7	128	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042816\9M974029.D Vial: 2
Acq On : 28 Apr 2016 13:13 Operator: ADC
Sample : WG566763-02 50ug/kg CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	0.4266	0.4113	3.6	108	0.00
56	T	Dimethyl Disulfide	0.4566	0.4728	-3.6	114	-0.01
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	122	-0.01
58	S	Toluene-d8	1.1917	1.3337	-11.9	125	0.00
59	C	Toluene	1.5215	1.5374	-1.0	112	0.00
60	T	Ethyl Methacrylate	0.4632	0.4742	-2.4	112	0.00
61	P	trans-1,3-Dichloropropene	0.4953	0.5230	-5.6	111	0.00
62	P	1,1,2-Trichloroethane	0.2995	0.3150	-5.1	112	-0.01
63	P	2-Hexanone	0.3271	0.3264	0.2	114	0.00
64	T	1,3-Dichloropropane	0.5150	0.5284	-2.6	111	-0.01
65	P	Tetrachloroethene	0.3227	0.3352	-3.9	112	0.00
66	P	Dibromochloromethane	0.3703	0.3865	-4.4	112	-0.01
67	P	1,2-Dibromoethane	0.3300	0.3312	-0.4	113	0.00
68	T	1-Chlorohexane	0.5009	0.5334	-6.5	114	0.00
69	P	Chlorobenzene	1.0558	1.0761	-1.9	113	0.00
70	T	1,1,1,2-Tetrachloroethane	0.3587	0.3856	-7.5	116	0.00
71	C	Ethylbenzene	0.5680	0.5957	-4.9	113	-0.01
72	P	m-,p-Xylene	0.7003	0.7157	-2.2	113	0.00
73	P	o-Xylene	0.6673	0.6879	-3.1	112	-0.01
74	P	Styrene	1.1428	1.1710	-2.5	110	0.00
75	P	Bromoform	0.2533	0.2717	-7.3	116	-0.01
76	P	Isopropylbenzene	1.7358	1.7890	-3.1	112	0.00
77	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	119	-0.01
78	P	1,1,2,2-Tetrachloroethane	0.7803	0.9450	-21.1	115	-0.01
79	S	p-Bromofluorobenzene	0.8660	1.0711	-23.7	124	0.00
80	T	1,2,3-Trichloropropane	0.2481	0.2984	-20.3	122	0.00
81	T	trans-1,4-Dichloro-2-Butene	0.3020	0.3456	-14.4	106	0.00
82	T	n-Propylbenzene	3.7381	4.3434	-16.2	112	0.00
83	T	Bromobenzene	0.8892	1.0304	-15.9	112	0.00
84	T	1,3,5-Trimethylbenzene	2.8463	3.3482	-17.6	113	-0.01
85	T	2-Chlorotoluene	2.2325	2.7487	-23.1	117	0.00
86	T	4-Chlorotoluene	2.3351	2.5732	-10.2	108	0.00
87	T	a-Methylstyrene	1.4199	1.6268	-14.6	108	0.00
88	T	tert-Butylbenzene	0.6306	0.7493	-18.8	114	0.00
89	T	1,2,4-Trimethylbenzene	3.0832	3.3739	-9.4	112	0.00
90	T	sec-Butylbenzene	3.6589	4.3154	-17.9	113	0.00
91	T	p-Isopropyltoluene	3.0289	3.5720	-17.9	113	0.00
92	P	1,3-Dichlorobenzene	1.7580	1.9835	-12.8	111	0.00
93	P	1,4-Dichlorobenzene	1.7942	1.9691	-9.8	111	-0.01
94	T	n-Butylbenzene	2.7865	3.2652	-17.2	113	0.00
95	P	1,2-Dichlorobenzene	1.6724	1.8556	-11.0	111	-0.01
96	P	1,2-Dibromo-3-Chloropropane	0.2045	0.2414	-18.0	116	0.00
97	P	1,2,4-Trichlorobenzene	1.2340	1.3849	-12.2	112	-0.01
98	T	Hexachlorobutadiene	0.5820	0.6710	-15.3	112	-0.01
99	T	Naphthalene	2.9740	3.5810	-20.4	116	0.00
100	T	1,2,3-Trichlorobenzene	1.1697	1.3555	-15.9	113	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M974029.D 8260-SL.M Fri Apr 29 14:56:15 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042816\9M974029.D Vial: 2
Acq On : 28 Apr 2016 13:13 Operator: ADC
Sample : WG566763-02 50ug/kg CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	124	0.00
2	P	Dichlorodifluoromethane	50.0000	48.3458	3.3	105	-0.01
3	P	Chloromethane	50.0000	56.0083	-12.0	140	0.00
4	C	Vinyl Chloride	50.0000	51.1054	-2.2	109	-0.01
5	T	1,3-Butadiene	50.0000	45.5377	8.9	120	-0.01
6	P	Bromomethane	50.0000	49.2359	1.5	115	-0.01
7	P	Chloroethane	50.0000	50.2869	-0.6	118	-0.01
8	P	Trichlorofluoromethane	50.0000	51.5704	-3.1	115	-0.01
9	T	Diethyl ether	100.0000	95.7372	4.3	114	0.00
10	T	Isoprene	50.0000	49.7437	0.5	111	-0.01
11	T	Acrolein	50.0000	68.2204	-36.4#	162	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	50.9819	-2.0	114	-0.01
13	P	Acetone	50.0000	48.2053	3.6	117	0.00
14	C	1,1-Dichloroethene	50.0000	49.3479	1.3	110	-0.01
15	T	Tert-Butyl Alcohol	200.0000	211.0464	-5.5	126	0.00
16	T	Dimethyl Sulfide	50.0000	49.6789	0.6	107	-0.01
17	T	Iodomethane	50.0000	41.5995	16.8	94	-0.01
18	P	Methyl acetate	50.0000	45.6487	8.7	108	0.00
19	P	Methylene Chloride	50.0000	46.5880	6.8	110	-0.01
20	P	Carbon Disulfide	50.0000	47.5479	4.9	109	-0.01
21	T	Acrylonitrile	50.0000	48.9010	2.2	114	0.00
22	P	Methyl Tert Butyl Ether	50.0000	49.9917	0.0	113	0.00
23	P	trans-1,2-Dichloroethene	50.0000	49.1047	1.8	108	0.00
24	T	n-Hexane	50.0000	44.5431	10.9	110	-0.01
25	T	Diisopropyl ether	100.0000	91.5995	8.4	106	0.00
26	T	Vinyl Acetate	50.0000	45.5699	8.9	102	-0.01
27	P	1,1-Dichloroethane	50.0000	49.5875	0.8	111	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	96.3357	3.7	113	-0.01
29	P	2-Butanone	50.0000	49.4033	1.2	120	0.00
30	T	Propionitrile	100.0000	94.6842	5.3	111	0.00
31	T	2,2-Dichloropropane	50.0000	50.7627	-1.5	112	0.00
32	P	cis-1,2-Dichloroethene	50.0000	49.7267	0.5	112	-0.01
33	C	Chloroform	50.0000	49.0319	1.9	112	0.00
34	T	1-Bromopropane	50.0000	46.6716	6.7	108	0.00
35	T	Bromochloromethane	50.0000	50.3664	-0.7	110	-0.01
36	T	Tetrahydrofuran	100.0000	94.5773	5.4	115	-0.01
37	S	Dibromofluoromethane	50.0000	53.5868	-7.2	125	-0.01
38	P	1,1,1-Trichloroethane	50.0000	51.3923	-2.8	114	-0.01
39	P	Cyclohexane	50.0000	48.2637	3.5	109	0.00
40	T	1,1-Dichloropropene	50.0000	50.3512	-0.7	112	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	99.1108	0.9	116	-0.01
42	P	Carbon Tetrachloride	50.0000	52.4432	-4.9	118	0.00
43	S	1,2-Dichloroethane-d4	50.0000	53.7809	-7.6	129	0.00
44		Heptane	-1.0000	0.0000	0.0	121	0.00
45	P	1,2-Dichloroethane	50.0000	48.5465	2.9	112	-0.01
46	P	Benzene	50.0000	47.5430	4.9	112	0.00
47	P	Trichloroethene	50.0000	47.1322	5.7	110	0.00
48	P	Methylcyclohexane	50.0000	50.7271	-1.5	115	0.00
49	C	1,2-Dichloropropane	50.0000	48.2355	3.5	108	0.00
50	T	1,4-Dioxane	200.0000	210.1266	-5.1	117	0.00
51	P	Bromodichloromethane	50.0000	48.7065	2.6	109	0.00
52	T	Dibromomethane	50.0000	48.0538	3.9	107	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	57.0903	-14.2	129	0.00
54	P	4-Methyl-2-Pentanone	50.0000	52.3602	-4.7	128	-0.01

(#) = Out of Range
9M974029.D 8260-SL.M Fri Apr 29 14:56:14 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042816\9M974029.D Vial: 2
Acq On : 28 Apr 2016 13:13 Operator: ADC
Sample : WG566763-02 50ug/kg CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	48.2071	3.6	108	0.00
56	T	Dimethyl Disulfide	50.0000	51.7749	-3.5	114	-0.01
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	122	-0.01
58	S	Toluene-d8	50.0000	55.9608	-11.9	125	0.00
59	C	Toluene	50.0000	50.5226	-1.0	112	0.00
60	T	Ethyl Methacrylate	50.0000	51.1884	-2.4	112	0.00
61	P	trans-1,3-Dichloropropene	50.0000	52.7891	-5.6	111	0.00
62	P	1,1,2-Trichloroethane	50.0000	52.5748	-5.1	112	-0.01
63	P	2-Hexanone	50.0000	49.9001	0.2	114	0.00
64	T	1,3-Dichloropropane	50.0000	51.2993	-2.6	111	-0.01
65	P	Tetrachloroethene	50.0000	51.9458	-3.9	112	0.00
66	P	Dibromochloromethane	50.0000	52.1932	-4.4	112	-0.01
67	P	1,2-Dibromoethane	50.0000	50.1813	-0.4	113	0.00
68	T	1-Chlorohexane	50.0000	53.2457	-6.5	114	0.00
69	P	Chlorobenzene	50.0000	50.9603	-1.9	113	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	53.7515	-7.5	116	0.00
71	C	Ethylbenzene	50.0000	52.4365	-4.9	113	-0.01
72	P	m-,p-Xylene	100.0000	102.2037	-2.2	113	0.00
73	P	o-Xylene	50.0000	51.5442	-3.1	112	-0.01
74	P	Styrene	50.0000	51.2363	-2.5	110	0.00
75	P	Bromoform	50.0000	55.9623	-11.9	116	-0.01
76	P	Isopropylbenzene	50.0000	51.5331	-3.1	112	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	119	-0.01
78	P	1,1,2,2-Tetrachloroethane	50.0000	56.1712	-12.3	115	-0.01
79	S	p-Bromofluorobenzene	50.0000	61.8374	-23.7	124	0.00
80	T	1,2,3-Trichloropropane	50.0000	60.1302	-20.3	122	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	57.2134	-14.4	106	0.00
82	T	n-Propylbenzene	50.0000	58.0964	-16.2	112	0.00
83	T	Bromobenzene	50.0000	57.9423	-15.9	112	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	58.8169	-17.6	113	-0.01
85	T	2-Chlorotoluene	50.0000	61.5592	-23.1	117	0.00
86	T	4-Chlorotoluene	50.0000	55.0975	-10.2	108	0.00
87	T	a-Methylstyrene	50.0000	57.2875	-14.6	108	0.00
88	T	tert-Butylbenzene	50.0000	59.4135	-18.8	114	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	61.0600	-22.1	112	0.00
90	T	sec-Butylbenzene	50.0000	58.9704	-17.9	113	0.00
91	T	p-Isopropyltoluene	50.0000	58.9662	-17.9	113	0.00
92	P	1,3-Dichlorobenzene	50.0000	56.4139	-12.8	111	0.00
93	P	1,4-Dichlorobenzene	50.0000	54.8761	-9.8	111	-0.01
94	T	n-Butylbenzene	50.0000	58.5882	-17.2	113	0.00
95	P	1,2-Dichlorobenzene	50.0000	55.4774	-11.0	111	-0.01
96	P	1,2-Dibromo-3-Chloropropane	50.0000	58.0490	-16.1	116	0.00
97	P	1,2,4-Trichlorobenzene	50.0000	56.1161	-12.2	112	-0.01
98	T	Hexachlorobutadiene	50.0000	57.6444	-15.3	112	-0.01
99	T	Naphthalene	50.0000	60.2059	-20.4	116	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	57.9398	-15.9	113	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M974029.D 8260-SL.M Fri Apr 29 14:56:14 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\043016\9M974067.D Vial: 2
Acq On : 30 Apr 2016 13:43 Operator: ADC
Sample : WG567052-02 50ug/kg CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 30 14:05:40 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	721498	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	515311	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	239486	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	191737	52.6192 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.24%		
43) 1,2-Dichloroethane-d4	10.44	65	202287	53.0305 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 106.06%		
58) Toluene-d8	12.81	98	677225	55.1425 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 110.28%		
79) p-Bromofluorobenzene	16.21	95	250470	60.3822 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 120.76%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	267146	48.2698 ug/kg	98
3) Chloromethane	3.75	50	279372	54.9109 ug/kg	100
4) Vinyl Chloride	3.97	62	154892	46.2519 ug/kg	95
5) 1,3-Butadiene	4.00	54	90745	36.9620 ug/kg	94
6) Bromomethane	4.87	94	143220	45.9124 ug/kg	100
7) Chloroethane	5.02	64	142331	46.8430 ug/kg	99
8) Trichlorofluoromethane	5.51	101	309961	48.2178 ug/kg	100
9) Diethyl ether	6.04	59	338254	89.4765 ug/kg	96
10) Isoprene	6.07	67	214323	42.3573 ug/kg	100
11) Acrolein	6.28	56	22930	61.0023 ug/kg	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	186304	47.4646 ug/kg	100
13) Acetone	6.39	43	64103	41.2488 ug/kg	100
14) 1,1-Dichloroethene	6.60	61	301955	45.8956 ug/kg	97
15) Tert-Butyl Alcohol	6.72	59	114483	180.9060 ug/kg	99
16) Dimethyl Sulfide	6.87	62	143065	44.3841 ug/kg	97
17) Iodomethane	7.12	142	111793	37.5324 ug/kg	99
18) Methyl acetate	7.13	43	173317	41.4674 ug/kg	97
19) Methylene Chloride	7.39	84	183855	44.7366 ug/kg	93
20) Carbon Disulfide	7.43	76	513142	41.1333 ug/kg	100
21) Acrylonitrile	7.57	53	87651	44.1222 ug/kg	100
22) Methyl Tert Butyl Ether	7.60	73	524602	47.4389 ug/kg	99
23) trans-1,2-Dichloroethene	7.83	61	291770	46.1005 ug/kg	100
24) n-Hexane	7.91	57	313068	38.0919 ug/kg	98
25) Diisopropyl ether	8.24	45	1457067	87.0044 ug/kg	99
26) Vinyl Acetate	8.42	43	370347	41.3581 ug/kg	99
27) 1,1-Dichloroethane	8.45	63	352481	45.8841 ug/kg	98
28) Ethyl-Tert-Butyl ether	8.82	59	1336759	90.7746 ug/kg	99
29) 2-Butanone	9.01	43	98352	42.4002 ug/kg	97
30) Propionitrile	9.12	54	63958	84.9506 ug/kg	97
31) 2,2-Dichloropropane	9.23	77	269278	48.0043 ug/kg	100
32) cis-1,2-Dichloroethene	9.30	96	194107	46.1499 ug/kg	98
33) Chloroform	9.51	83	301985	46.3464 ug/kg	99
34) 1-Bromopropane	9.65	122	30323	40.4497 ug/kg	98
35) Bromochloromethane	9.74	130	123421	47.0340 ug/kg	95
36) Tetrahydrofuran	9.76	42	138155	83.8427 ug/kg	97
38) 1,1,1-Trichloroethane	10.04	97	268302	48.1107 ug/kg	99
39) Cyclohexane	10.07	56	375361	42.5765 ug/kg	97
40) 1,1-Dichloropropene	10.24	75	237174	46.2008 ug/kg	98
41) Tert-Amyl-Methyl ether	10.33	73	1009502	92.6713 ug/kg	99
42) Carbon Tetrachloride	10.39	117	251432	48.2999 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\043016\9M974067.D Vial: 2
Acq On : 30 Apr 2016 13:43 Operator: ADC
Sample : WG567052-02 50ug/kg CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 30 14:05:40 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.55	62	261444	46.5926	ug/kg	97
46)	Benzene	10.60	78	700687	43.9786	ug/kg	99
47)	Trichloroethene	11.35	130	194526	43.4076	ug/kg	99
48)	Methylcyclohexane	11.43	83	293473	42.8562	ug/kg	97
49)	1,2-Dichloropropane	11.56	63	197901	45.6748	ug/kg	98
50)	1,4-Dioxane	11.85	88	10306	183.3841	ug/kg	99
51)	Bromodichloromethane	11.86	83	226098	45.7935	ug/kg	99
52)	Dibromomethane	11.95	174	115911	44.8077	ug/kg	97
53)	2-Chloroethyl Vinyl Ether	12.15	63	116302	50.4776	ug/kg	98
54)	4-Methyl-2-Pentanone	12.18	58	90489	45.3596	ug/kg	99
55)	cis-1,3-Dichloropropene	12.50	75	281374	45.7067	ug/kg	100
56)	Dimethyl Disulfide	12.76	94	308820	46.8761	ug/kg	99
59)	Toluene	12.92	91	738892	47.1209	ug/kg	99
60)	Ethyl Methacrylate	13.00	69	221257	46.3467	ug/kg	100
61)	trans-1,3-Dichloropropene	13.09	75	260381	51.0066	ug/kg	100
62)	1,1,2-Trichloroethane	13.31	97	153347	49.6752	ug/kg	99
63)	2-Hexanone	13.24	43	149815	44.4432	ug/kg	97
64)	1,3-Dichloropropane	13.61	76	257152	48.4463	ug/kg	97
65)	Tetrachloroethene	13.74	164	158751	47.7356	ug/kg	98
66)	Dibromochloromethane	14.00	129	189943	49.7746	ug/kg	100
67)	1,2-Dibromoethane	14.26	107	161251	47.4189	ug/kg	100
68)	1-Chlorohexane	14.34	91	241155	46.7134	ug/kg	98
69)	Chlorobenzene	14.76	112	521170	47.8946	ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	189589	51.2834	ug/kg	98
71)	Ethylbenzene	14.79	106	283523	48.4336	ug/kg	100
72)	m-,p-Xylene	14.88	106	690257	95.6371	ug/kg	100
73)	o-Xylene	15.44	106	333133	48.4386	ug/kg	100
74)	Styrene	15.48	104	566862	48.1309	ug/kg	100
75)	Bromoform	15.98	173	132662	53.2241	ug/kg	100
76)	Isopropylbenzene	15.86	105	860313	48.0902	ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.08	83	210037	52.1559	ug/kg	100
80)	1,2,3-Trichloropropane	16.27	110	64353	54.1449	ug/kg	91
81)	trans-1,4-Dichloro-2-Buten	16.33	53	75281	52.0446	ug/kg	96
82)	n-Propylbenzene	16.37	91	951855	53.1625	ug/kg	100
83)	Bromobenzene	16.51	156	226542	53.1921	ug/kg	75
84)	1,3,5-Trimethylbenzene	16.56	105	730662	53.5959	ug/kg	100
85)	2-Chlorotoluene	16.64	91	641892	60.0279	ug/kg	99
86)	4-Chlorotoluene	16.70	91	532897	47.6453	ug/kg	99
87)	a-Methylstyrene	16.97	118	348737	51.2783	ug/kg	99
88)	tert-Butylbenzene	17.02	134	162029	53.6445	ug/kg	90
89)	1,2,4-Trimethylbenzene	17.08	105	745247	56.2737	ug/kg	99
90)	sec-Butylbenzene	17.30	105	932564	53.2128	ug/kg	100
91)	p-Isopropyltoluene	17.46	119	780693	53.8134	ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	437597	51.9701	ug/kg	99
93)	1,4-Dichlorobenzene	17.78	146	436354	50.7769	ug/kg	98
94)	n-Butylbenzene	17.98	91	705629	52.8693	ug/kg	100
95)	1,2-Dichlorobenzene	18.28	146	410190	51.2086	ug/kg	98
96)	1,2-Dibromo-3-Chloropropan	19.28	157	51440	52.3268	ug/kg	98
97)	1,2,4-Trichlorobenzene	20.42	180	307117	51.9613	ug/kg	99
98)	Hexachlorobutadiene	20.57	225	141777	50.8583	ug/kg	99
99)	Naphthalene	20.79	128	778940	54.6838	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	300419	53.6203	ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\043016\9M974067.D Vial: 2
Acq On : 30 Apr 2016 13:43 Operator: ADC
Sample : WG567052-02 50ug/kg CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 30 14:05 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

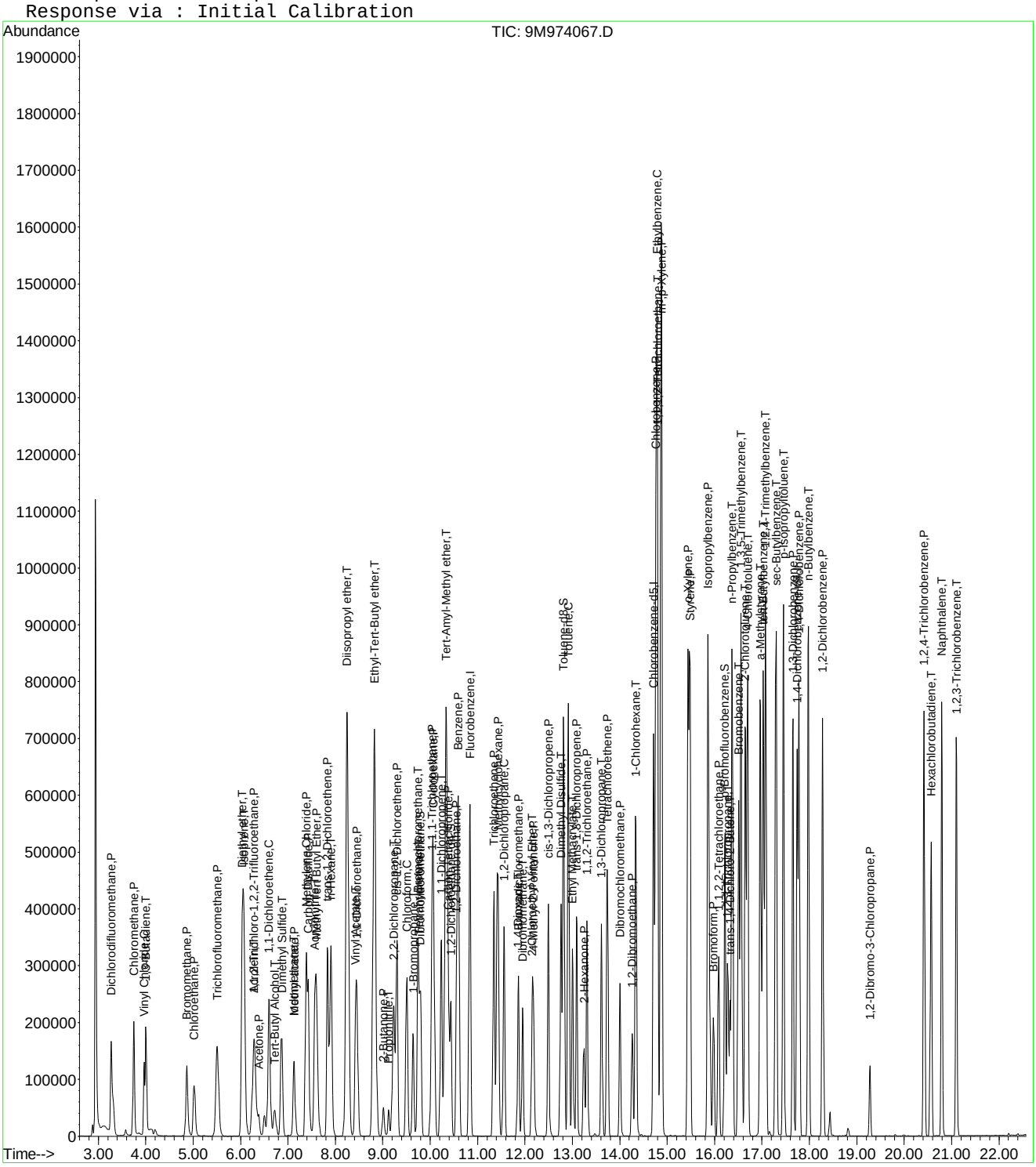
Abundance
TIC: 9M974067.D
Time-->
Dichlorodifluoromethane,P
Chloromethane,P
Vinyl Chloride,P
Bromomethane,P
Chloroethane,P
Trichlorofluoromethane,P
Acrolein,P
Acrylonitrile,P
Acetone,P
Tert-Butyl Alcohol,T
Dimethyl Sulfide,T
1,1-Dichloroethene,C
Methylene Chloride,P
Carbon Disulfide,P
Methyl Tert Butyl Ether,P
Vinyl Acetate,P
Methyl Acetate,P
Hexane,P
1,1-Dichloroethane,P
Diisopropyl ether,T
Ethyl-Tert-Butyl ether,T
Tert-Amyl-Methyl ether,T
Benzene,P
Fluorobenzene,I
Toluene-d8,S
Toluene,C
Chlorobenzene-d5,I
Ethylbenzene,C
m,p-Xylene,P
Styrene,P
o-Xylene,P
Isopropylbenzene,P
n-Propylbenzene,T
1,3,5-Trimethylbenzene,T
1,2,4-Trimethylbenzene,T
sec-Butylbenzene,T
1,3-Dichlorobenzene,P
1,4-Dichlorobenzene,P
n-Butylbenzene,T
1,2-Dichlorobenzene,P
1,2-Dibromo-3-Chloropropane,P
1,2,4-Trichlorobenzene,P
Naphthalene,T
1,2,3-Trichlorobenzene,T
Hexachlorobutadiene,T
1-Chlorohexane,T
1,2-Dibromoethane,P
Dibromochloromethane,P
Bromoform,P
1,2,2-Tetrachloroethane,P
Bromobenzene,P
2-Chlorotoluene,T
4-Chlorotoluene,T
a-Methylstyrene,T
1,3-Dichlorobenzene,P
1,4-Dichlorobenzene,P
1,2-Dichlorobenzene,P
1,2-Dichloroethane,P
1,1,2-Trichloroethane,P
1,3-Dichloropropane,P
2-Hexanone,P
Dimethyl Disulfide,T
cis-1,3-Dichloropropene,P
Ethyl Methacrylate,P
Chloroform,C
1,1,1-Trichloroethane,P
Carbon Tetrachloride,P
Benzene,P
Trichloroethene,P
Bromodichloromethane,P
1,2-Dichloropropane,C
1,4-Dichlorobutane,P
Dibromomethane,P
1,4-Dioxane,P
2-Chloroethyl Vinyl Ether,T
Dibromomethane,P
1,2-Dichloroethane,P
2,2-Dichloropropane,P
1-Bromochloromethane,P
1,1-Dichloropropene,T
1,2-Dichloroethane,P
2-Butanone,P
Propionitrile,T
Methacrylonitrile,T
Methyl Methacrylate,P
2-Pentanone,P
Propionitrile,T
Methacrylonitrile,T
Methyl Methacrylate,P
2-Pentanone,P
Tetrahydrofuran,P
Dibromomethane,P
1,2-Dichloroethane,P
2,2-Dichloropropane,P
1-Bromochloromethane,P
1,1-Dichloropropene,T
1,2-Dichloroethane,P
2-But

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\043016\9M974067.D Vial: 2
Acq On : 30 Apr 2016 13:43 Operator: ADC
Sample : WG567052-02 50ug/kg CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	131	0.00
2	P	Dichlorodifluoromethane	0.3835	0.3703	3.5	110	0.00
3	P	Chloromethane	0.3526	0.3872	-9.8	144	0.00
4	C	Vinyl Chloride	0.2683	0.2147	20.0	104	0.00
5	T	1,3-Butadiene	0.1701	0.1258	26.1#	103	-0.02
6	P	Bromomethane	0.2162	0.1985	8.2	113	0.00
7	P	Chloroethane	0.2106	0.1973	6.3	116	0.00
8	P	Trichlorofluoromethane	0.4455	0.4296	3.6	113	0.00
9	T	Diethyl ether	0.2620	0.2344	10.5	112	0.00
10	T	Isoprene	0.3507	0.2970	15.3	100	-0.02
11	T	Acrolein	0.0261	0.0318	-22.0	153	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	0.2720	0.2582	5.1	112	-0.02
13	P	Acetone	0.1208	0.0888#	26.4#	107	0.00
14	C	1,1-Dichloroethene	0.4559	0.4185	8.2	108	-0.02
15	T	Tert-Butyl Alcohol	0.0439	0.0397	9.6	114	0.00
16	T	Dimethyl Sulfide	0.2234	0.1983	11.2	101	0.00
17	T	Iodomethane	0.1924	0.1550	19.5	89	0.00
18	P	Methyl acetate	0.2897	0.2402	17.1	103	0.00
19	P	Methylene Chloride	0.2848	0.2548	10.5	111	0.00
20	P	Carbon Disulfide	0.8645	0.7112	17.7	99	0.00
21	T	Acrylonitrile	0.1377	0.1215	11.8	108	0.00
22	P	Methyl Tert Butyl Ether	0.7664	0.7271	5.1	113	0.00
23	P	trans-1,2-Dichloroethene	0.4386	0.4044	7.8	107	0.00
24	T	n-Hexane	0.5696	0.4339	23.8	99	0.00
25	T	Diisopropyl ether	1.1606	1.0097	13.0	106	0.00
26	T	Vinyl Acetate	0.5715	0.5133	10.2	97	0.00
27	P	1,1-Dichloroethane	0.5324	0.4885	8.2	108	0.00
28	T	Ethyl-Tert-Butyl ether	1.0205	0.9264	9.2	112	0.00
29	P	2-Butanone	0.1608	0.1363	15.2	108	0.00
30	T	Propionitrile	0.0522	0.0443	15.1	105	0.00
31	T	2,2-Dichloropropane	0.3887	0.3732	4.0	112	0.00
32	P	cis-1,2-Dichloroethene	0.2915	0.2690	7.7	109	0.00
33	C	Chloroform	0.4516	0.4185	7.3	112	0.00
34	T	1-Bromopropane	0.0479	0.0420	12.3	98	0.00
35	T	Bromochloromethane	0.1819	0.1711	5.9	108	0.00
36	T	Tetrahydrofuran	0.1142	0.0957	16.2	108	0.00
37	S	Dibromofluoromethane	0.2525	0.2657	-5.2	130	0.00
38	P	1,1,1-Trichloroethane	0.3865	0.3719	3.8	112	0.00
39	P	Cyclohexane	0.6110	0.5202	14.8	101	0.00
40	T	1,1-Dichloropropene	0.3558	0.3287	7.6	109	0.00
41	T	Tert-Amyl-Methyl ether	0.7549	0.6996	7.3	115	0.00
42	P	Carbon Tetrachloride	0.3608	0.3485	3.4	114	0.00
43	S	1,2-Dichloroethane-d4	0.2643	0.2804	-6.1	134	0.00
44		Heptane	0.0000	0.0000	0.0	129	0.00
45	P	1,2-Dichloroethane	0.3889	0.3624	6.8	113	0.00
46	P	Benzene	1.1041	0.9712	12.0	109	0.00
47	P	Trichloroethene	0.3106	0.2696	13.2	107	0.00
48	P	Methylcyclohexane	0.4746	0.4068	14.3	102	0.00
49	C	1,2-Dichloropropane	0.3003	0.2743	8.7	108	0.00
50	T	1,4-Dioxane	0.0039	0.0036	8.2	108	0.00
51	P	Bromodichloromethane	0.3422	0.3134	8.4	108	0.00
52	T	Dibromomethane	0.1793	0.1606	10.4	105	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1597	0.1612	-1.0	120	0.00
54	P	4-Methyl-2-Pentanone	0.1383	0.1254	9.3	117	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\043016\9M974067.D Vial: 2
Acq On : 30 Apr 2016 13:43 Operator: ADC
Sample : WG567052-02 50ug/kg CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	0.4266	0.3900	8.6	108	0.00
56	T	Dimethyl Disulfide	0.4566	0.4280	6.2	109	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	127	0.00
58	S	Toluene-d8	1.1917	1.3142	-10.3	129	0.00
59	C	Toluene	1.5215	1.4339	5.8	109	0.00
60	T	Ethyl Methacrylate	0.4632	0.4294	7.3	106	0.00
61	P	trans-1,3-Dichloropropene	0.4953	0.5053	-2.0	112	0.00
62	P	1,1,2-Trichloroethane	0.2995	0.2976	0.7	110	0.00
63	P	2-Hexanone	0.3271	0.2907	11.1	106	0.00
64	T	1,3-Dichloropropane	0.5150	0.4990	3.1	109	0.00
65	P	Tetrachloroethene	0.3227	0.3081	4.5	107	0.00
66	P	Dibromochloromethane	0.3703	0.3686	0.5	111	0.00
67	P	1,2-Dibromoethane	0.3300	0.3129	5.2	111	0.00
68	T	1-Chlorohexane	0.5009	0.4680	6.6	104	0.00
69	P	Chlorobenzene	1.0558	1.0114	4.2	110	0.00
70	T	1,1,1,2-Tetrachloroethane	0.3587	0.3679	-2.6	115	0.00
71	C	Ethylbenzene	0.5680	0.5502	3.1	109	0.00
72	P	m-,p-Xylene	0.7003	0.6697	4.4	110	0.00
73	P	o-Xylene	0.6673	0.6465	3.1	109	0.00
74	P	Styrene	1.1428	1.1000	3.7	108	0.00
75	P	Bromoform	0.2533	0.2574	-1.6	115	0.00
76	P	Isopropylbenzene	1.7358	1.6695	3.8	109	0.00
77	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	126	0.00
78	P	1,1,2,2-Tetrachloroethane	0.7803	0.8770	-12.4	113	0.00
79	S	p-Bromofluorobenzene	0.8660	1.0459	-20.8	128	0.00
80	T	1,2,3-Trichloropropane	0.2481	0.2687	-8.3	116	0.00
81	T	trans-1,4-Dichloro-2-Butene	0.3020	0.3143	-4.1	102	0.00
82	T	n-Propylbenzene	3.7381	3.9746	-6.3	108	0.00
83	T	Bromobenzene	0.8892	0.9459	-6.4	109	0.00
84	T	1,3,5-Trimethylbenzene	2.8463	3.0510	-7.2	109	0.00
85	T	2-Chlorotoluene	2.2325	2.6803	-20.1	121	0.00
86	T	4-Chlorotoluene	2.3351	2.2252	4.7	98	0.00
87	T	a-Methylstyrene	1.4199	1.4562	-2.6	102	0.00
88	T	tert-Butylbenzene	0.6306	0.6766	-7.3	108	0.00
89	T	1,2,4-Trimethylbenzene	3.0832	3.1119	-0.9	110	0.00
90	T	sec-Butylbenzene	3.6589	3.8940	-6.4	108	0.00
91	T	p-Isopropyltoluene	3.0289	3.2599	-7.6	109	0.00
92	P	1,3-Dichlorobenzene	1.7580	1.8272	-3.9	108	0.00
93	P	1,4-Dichlorobenzene	1.7942	1.8220	-1.6	109	0.00
94	T	n-Butylbenzene	2.7865	2.9464	-5.7	108	0.00
95	P	1,2-Dichlorobenzene	1.6724	1.7128	-2.4	108	0.00
96	P	1,2-Dibromo-3-Chloropropane	0.2045	0.2148	-5.0	109	0.00
97	P	1,2,4-Trichlorobenzene	1.2340	1.2824	-3.9	109	0.00
98	T	Hexachlorobutadiene	0.5820	0.5920	-1.7	104	0.00
99	T	Naphthalene	2.9740	3.2525	-9.4	111	0.00
100	T	1,2,3-Trichlorobenzene	1.1697	1.2544	-7.2	111	0.00

(#) = Out of Range SPCC's out = 1 CCC's out = 0
9M974067.D 8260-SL.M Sat Apr 30 14:50:56 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\043016\9M974067.D Vial: 2
Acq On : 30 Apr 2016 13:43 Operator: ADC
Sample : WG567052-02 50ug/kg CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	131	0.00
2	P	Dichlorodifluoromethane	50.0000	48.2698	3.5	110	0.00
3	P	Chloromethane	50.0000	54.9109	-9.8	144	0.00
4	C	Vinyl Chloride	50.0000	46.2519	7.5	104	0.00
5	T	1,3-Butadiene	50.0000	36.9620	26.1#	103	-0.02
6	P	Bromomethane	50.0000	45.9124	8.2	113	0.00
7	P	Chloroethane	50.0000	46.8430	6.3	116	0.00
8	P	Trichlorofluoromethane	50.0000	48.2178	3.6	113	0.00
9	T	Diethyl ether	100.0000	89.4765	10.5	112	0.00
10	T	Isoprene	50.0000	42.3573	15.3	100	-0.02
11	T	Acrolein	50.0000	61.0024	-22.0	153	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	47.4646	5.1	112	-0.02
13	P	Acetone	50.0000	41.2488	17.5	107	0.00
14	C	1,1-Dichloroethene	50.0000	45.8957	8.2	108	-0.02
15	T	Tert-Butyl Alcohol	200.0000	180.9060	9.5	114	0.00
16	T	Dimethyl Sulfide	50.0000	44.3841	11.2	101	0.00
17	T	Iodomethane	50.0000	37.5324	24.9	89	0.00
18	P	Methyl acetate	50.0000	41.4674	17.1	103	0.00
19	P	Methylene Chloride	50.0000	44.7366	10.5	111	0.00
20	P	Carbon Disulfide	50.0000	41.1333	17.7	99	0.00
21	T	Acrylonitrile	50.0000	44.1222	11.8	108	0.00
22	P	Methyl Tert Butyl Ether	50.0000	47.4389	5.1	113	0.00
23	P	trans-1,2-Dichloroethene	50.0000	46.1005	7.8	107	0.00
24	T	n-Hexane	50.0000	38.0919	23.8	99	0.00
25	T	Diisopropyl ether	100.0000	87.0044	13.0	106	0.00
26	T	Vinyl Acetate	50.0000	41.3581	17.3	97	0.00
27	P	1,1-Dichloroethane	50.0000	45.8841	8.2	108	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	90.7746	9.2	112	0.00
29	P	2-Butanone	50.0000	42.4002	15.2	108	0.00
30	T	Propionitrile	100.0000	84.9506	15.0	105	0.00
31	T	2,2-Dichloropropane	50.0000	48.0043	4.0	112	0.00
32	P	cis-1,2-Dichloroethene	50.0000	46.1499	7.7	109	0.00
33	C	Chloroform	50.0000	46.3464	7.3	112	0.00
34	T	1-Bromopropane	50.0000	40.4497	19.1	98	0.00
35	T	Bromochloromethane	50.0000	47.0340	5.9	108	0.00
36	T	Tetrahydrofuran	100.0000	83.8427	16.2	108	0.00
37	S	Dibromofluoromethane	50.0000	52.6192	-5.2	130	0.00
38	P	1,1,1-Trichloroethane	50.0000	48.1107	3.8	112	0.00
39	P	Cyclohexane	50.0000	42.5765	14.8	101	0.00
40	T	1,1-Dichloropropene	50.0000	46.2008	7.6	109	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	92.6713	7.3	115	0.00
42	P	Carbon Tetrachloride	50.0000	48.2999	3.4	114	0.00
43	S	1,2-Dichloroethane-d4	50.0000	53.0305	-6.1	134	0.00
44		Heptane	-1.0000	0.0000	0.0	129	0.00
45	P	1,2-Dichloroethane	50.0000	46.5926	6.8	113	0.00
46	P	Benzene	50.0000	43.9786	12.0	109	0.00
47	P	Trichloroethene	50.0000	43.4076	13.2	107	0.00
48	P	Methylcyclohexane	50.0000	42.8562	14.3	102	0.00
49	C	1,2-Dichloropropane	50.0000	45.6748	8.7	108	0.00
50	T	1,4-Dioxane	200.0000	183.3842	8.3	108	0.00
51	P	Bromodichloromethane	50.0000	45.7935	8.4	108	0.00
52	T	Dibromomethane	50.0000	44.8077	10.4	105	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	50.4776	-1.0	120	0.00
54	P	4-Methyl-2-Pentanone	50.0000	45.3595	9.3	117	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\043016\9M974067.D Vial: 2
Acq On : 30 Apr 2016 13:43 Operator: ADC
Sample : WG567052-02 50ug/kg CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	45.7067	8.6	108	0.00
56	T	Dimethyl Disulfide	50.0000	46.8760	6.2	109	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	127	0.00
58	S	Toluene-d8	50.0000	55.1425	-10.3	129	0.00
59	C	Toluene	50.0000	47.1209	5.8	109	0.00
60	T	Ethyl Methacrylate	50.0000	46.3467	7.3	106	0.00
61	P	trans-1,3-Dichloropropene	50.0000	51.0065	-2.0	112	0.00
62	P	1,1,2-Trichloroethane	50.0000	49.6752	0.6	110	0.00
63	P	2-Hexanone	50.0000	44.4432	11.1	106	0.00
64	T	1,3-Dichloropropane	50.0000	48.4463	3.1	109	0.00
65	P	Tetrachloroethene	50.0000	47.7356	4.5	107	0.00
66	P	Dibromochloromethane	50.0000	49.7746	0.5	111	0.00
67	P	1,2-Dibromoethane	50.0000	47.4188	5.2	111	0.00
68	T	1-Chlorohexane	50.0000	46.7134	6.6	104	0.00
69	P	Chlorobenzene	50.0000	47.8946	4.2	110	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	51.2834	-2.6	115	0.00
71	C	Ethylbenzene	50.0000	48.4336	3.1	109	0.00
72	P	m-,p-Xylene	100.0000	95.6371	4.4	110	0.00
73	P	o-Xylene	50.0000	48.4386	3.1	109	0.00
74	P	Styrene	50.0000	48.1309	3.7	108	0.00
75	P	Bromoform	50.0000	53.2241	-6.4	115	0.00
76	P	Isopropylbenzene	50.0000	48.0902	3.8	109	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	126	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	52.1559	-4.3	113	0.00
79	S	p-Bromofluorobenzene	50.0000	60.3822	-20.8	128	0.00
80	T	1,2,3-Trichloropropane	50.0000	54.1449	-8.3	116	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	52.0446	-4.1	102	0.00
82	T	n-Propylbenzene	50.0000	53.1625	-6.3	108	0.00
83	T	Bromobenzene	50.0000	53.1921	-6.4	109	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	53.5959	-7.2	109	0.00
85	T	2-Chlorotoluene	50.0000	60.0279	-20.1	121	0.00
86	T	4-Chlorotoluene	50.0000	47.6453	4.7	98	0.00
87	T	a-Methylstyrene	50.0000	51.2783	-2.6	102	0.00
88	T	tert-Butylbenzene	50.0000	53.6445	-7.3	108	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	56.2737	-12.5	110	0.00
90	T	sec-Butylbenzene	50.0000	53.2128	-6.4	108	0.00
91	T	p-Isopropyltoluene	50.0000	53.8134	-7.6	109	0.00
92	P	1,3-Dichlorobenzene	50.0000	51.9701	-3.9	108	0.00
93	P	1,4-Dichlorobenzene	50.0000	50.7769	-1.6	109	0.00
94	T	n-Butylbenzene	50.0000	52.8693	-5.7	108	0.00
95	P	1,2-Dichlorobenzene	50.0000	51.2086	-2.4	108	0.00
96	P	1,2-Dibromo-3-Chloropropane	50.0000	52.3268	-4.7	109	0.00
97	P	1,2,4-Trichlorobenzene	50.0000	51.9613	-3.9	109	0.00
98	T	Hexachlorobutadiene	50.0000	50.8584	-1.7	104	0.00
99	T	Naphthalene	50.0000	54.6838	-9.4	111	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	53.6203	-7.2	111	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M974067.D 8260-SL.M Sat Apr 30 14:50:46 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\1\DATA\040616\9M973592.D          Vial: 1
Acq On    :  6 Apr 2016   9:33                        Operator: ADC
Sample    : WG563259-01 BFB 50ng 8260                 Inst    : hpms9
Misc      : 7,1 STD75485                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 04/06/16  HPMS9
```

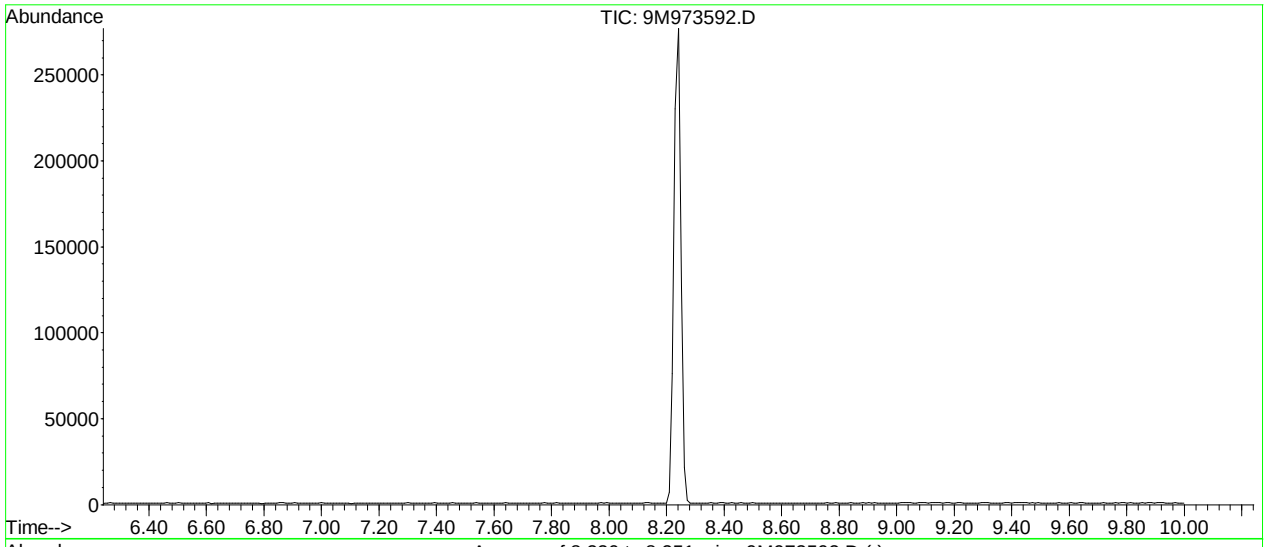

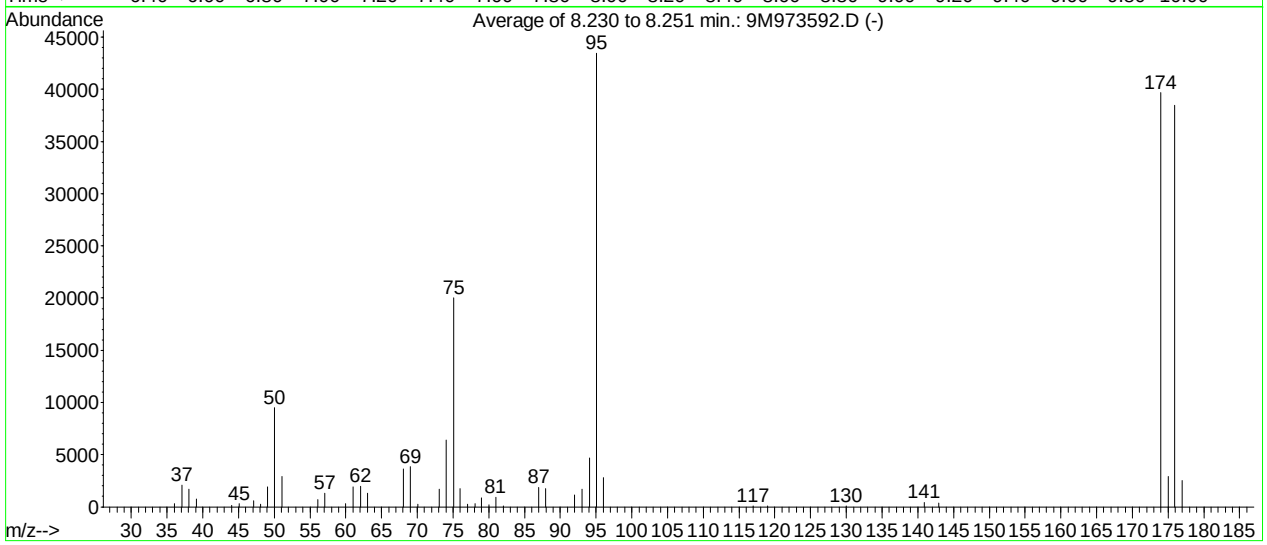

AutoFind: Scans 304, 305, 306; Background Corrected with Scan 299

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.9	9512	PASS
75	95	30	60	46.0	20002	PASS
95	95	100	100	100.0	43469	PASS
96	95	5	9	6.5	2809	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	91.3	39688	PASS
175	174	5	9	7.4	2925	PASS
176	174	95	101	96.9	38458	PASS
177	176	5	9	6.6	2534	PASS

9M973592.D 8260-SL.M Thu Apr 07 13:32:25 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\042816\9M974027.D          Vial: 1
Acq On    : 28 Apr 2016  12:17                        Operator: ADC
Sample    : WG566763-01 BFB 50ng 8260                 Inst    : hpms9
Misc      : 7,1 STD75485                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 04/06/16  HPMS9
```

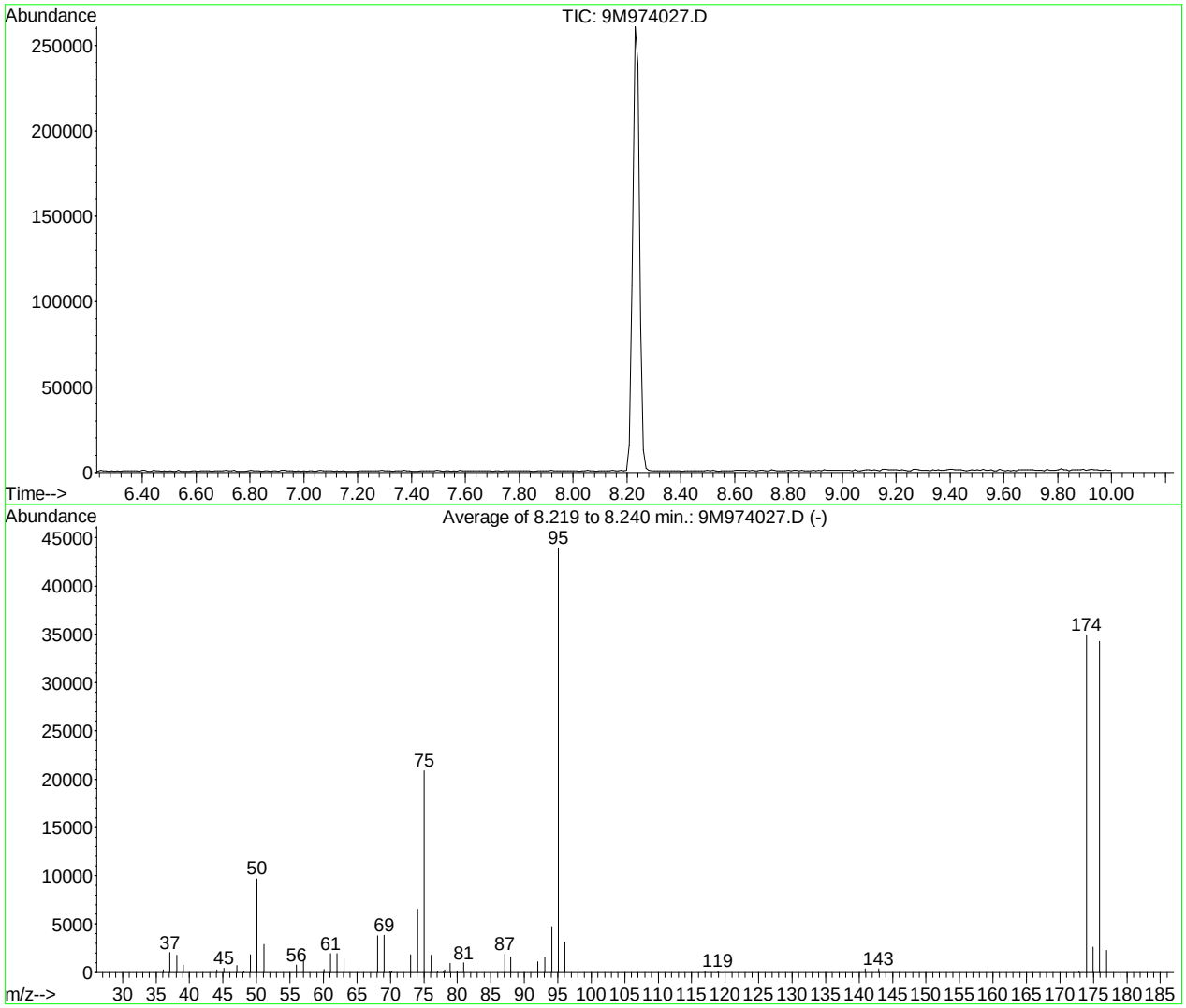

AutoFind: Scans 303, 304, 305; Background Corrected with Scan 299

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.0	9692	PASS
75	95	30	60	47.4	20847	PASS
95	95	100	100	100.0	43965	PASS
96	95	5	9	7.1	3114	PASS
173	174	0.00	2	0.4	135	PASS
174	95	50	100	79.4	34923	PASS
175	174	5	9	7.5	2607	PASS
176	174	95	101	98.0	34238	PASS
177	176	5	9	6.6	2264	PASS

9M974027.D 8260-SL.M Fri Apr 29 14:56:05 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\043016\9M974065.D          Vial: 1
Acq On    : 30 Apr 2016  12:43                       Operator: ADC
Sample    : WG567052-01 BFB 50ng 8260                Inst    : hpms9
Misc      : 7,1 STD75485                             Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 04/06/16  HPMS9
```

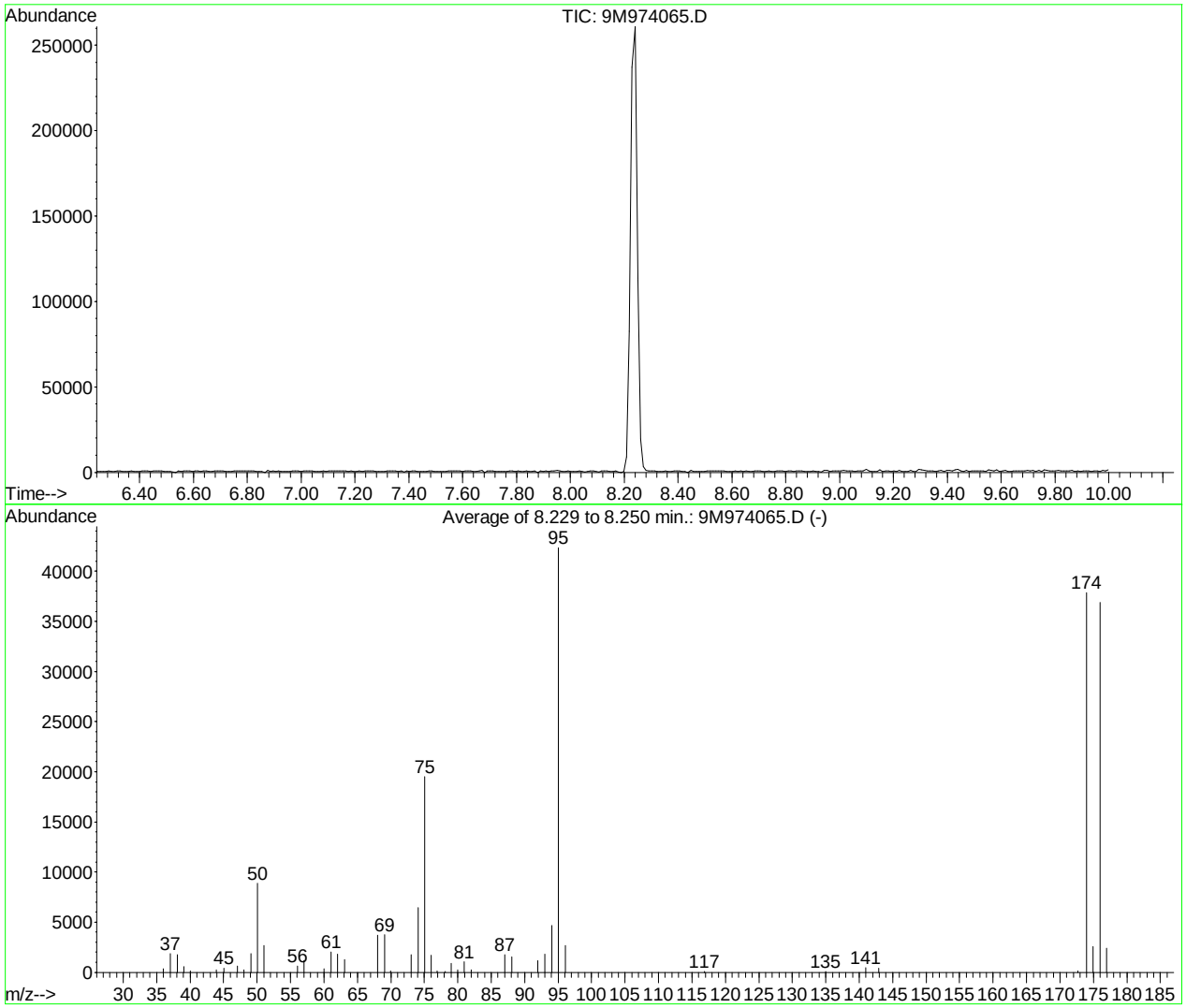

AutoFind: Scans 304, 305, 306; Background Corrected with Scan 299

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.9	8872	PASS
75	95	30	60	46.1	19506	PASS
95	95	100	100	100.0	42357	PASS
96	95	5	9	6.4	2690	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	89.4	37858	PASS
175	174	5	9	6.8	2593	PASS
176	174	95	101	97.4	36877	PASS
177	176	5	9	6.5	2391	PASS

9M974065.D 8260-SL.M Sat Apr 30 14:51:10 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974031.D Vial: 3
Acq On : 28 Apr 2016 14:14 Operator: ADC
Sample : WG566765-01 BLK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:39:49 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	626030	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	452113	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.74	152	207761	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	160845	50.8728 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 101.74%		
43) 1,2-Dichloroethane-d4	10.44	65	173175	52.3218 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.64%		
58) Toluene-d8	12.82	98	593927	55.1200 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 110.24%		
79) p-Bromofluorobenzene	16.22	95	214930	59.7264 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 119.46%		

Target Compounds

					Qvalue
13) Acetone	6.39	43	3395	Below Cal	94
36) Tetrahydrofuran	9.77	42	3540	2.4760 ug/kg	87
56) Dimethyl Disulfide	12.82	94	16037	2.8055 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.07	105	4709	Below Cal	78
99) Naphthalene	20.79	128	7181	0.5811 ug/kg	98

(#) = qualifier out of range (m) = manual integration
9M974031.D 8260-SL.M Fri Apr 29 12:39:50 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974031.D Vial: 3
Acq On : 28 Apr 2016 14:14 Operator: ADC
Sample : WG566765-01 BLK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:39 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

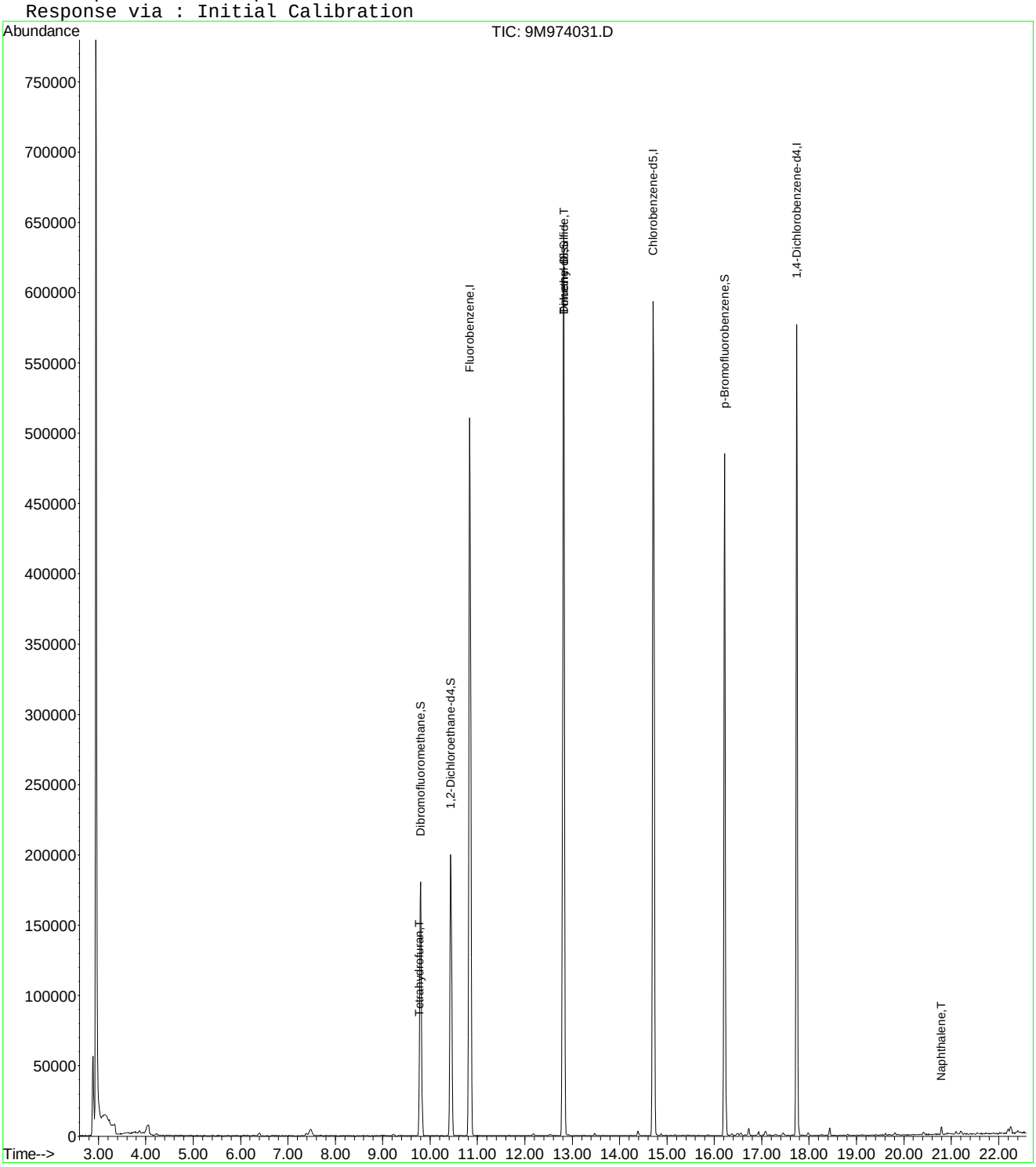

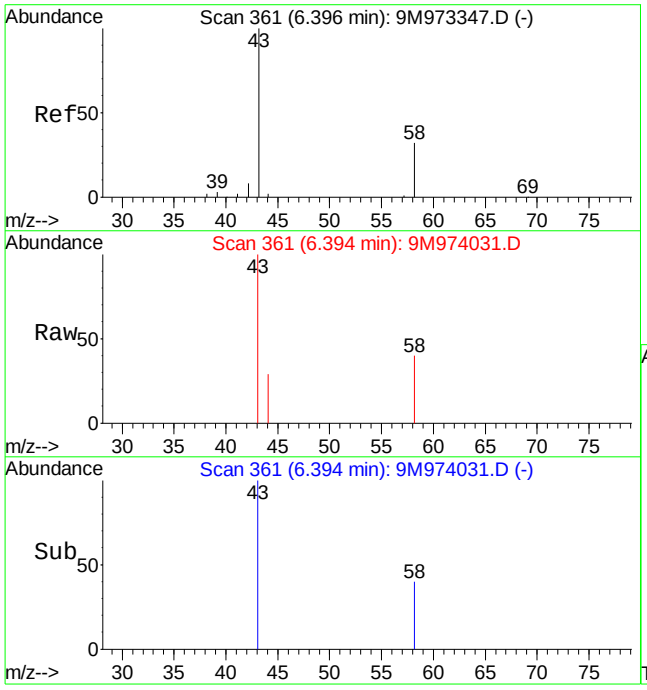

#13
Acetone
Concen: Below Cal
RT: 6.39 min Scan# 361
Delta R.T. 0.01 min
Lab File: 9M974031.D
Acq: 28 Apr 2016 14:14

Tgt Ion: 43 Resp: 3395

Ion	Ratio	Lower	Upper
43	100		
58	30.5	20.2	47.2

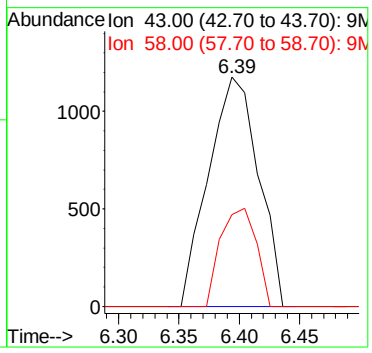

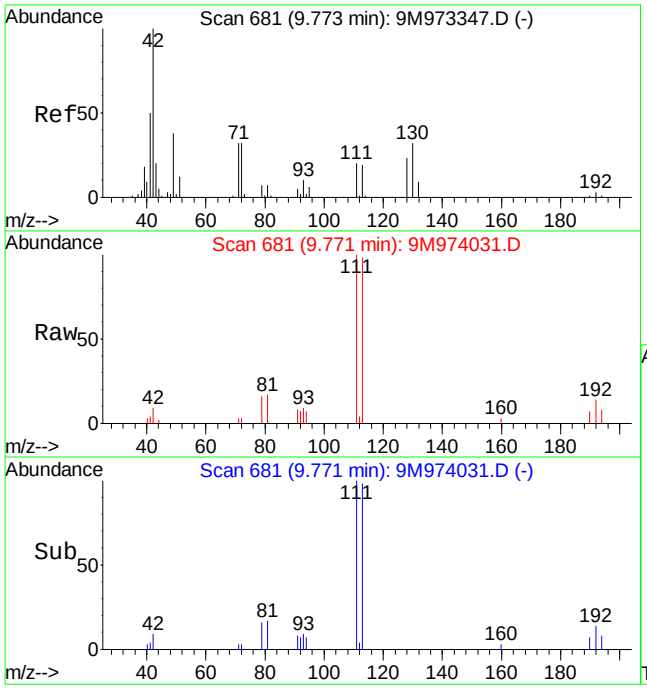

#36
Tetrahydrofuran
Concen: 2.48 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. -0.00 min
Lab File: 9M974031.D
Acq: 28 Apr 2016 14:14

Tgt Ion: 42 Resp: 3540

Ion	Ratio	Lower	Upper
42	100		
72	22.7	19.8	46.2
71	26.6	18.3	42.7

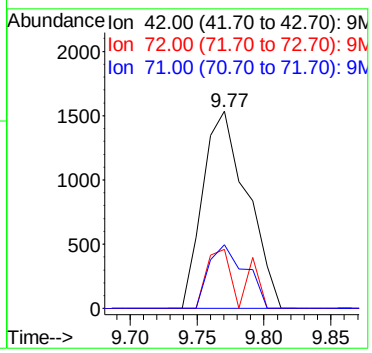

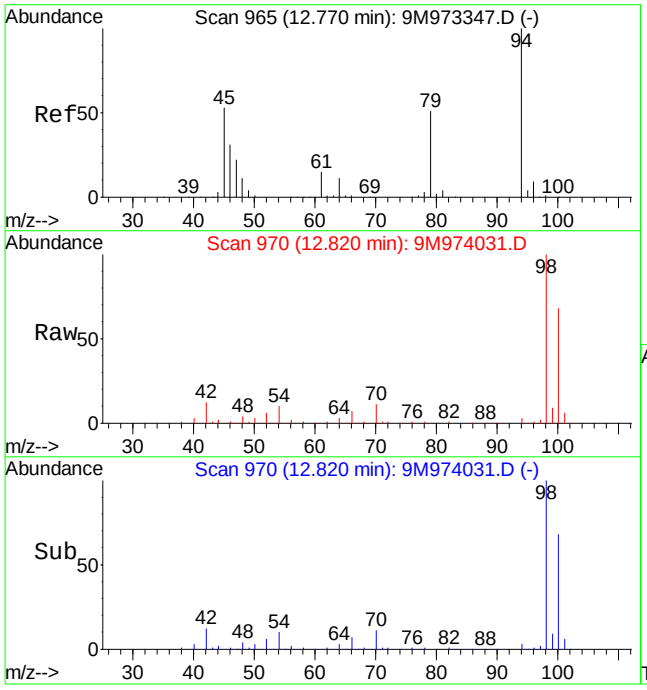

#56
Dimethyl Disulfide
Concen: 2.81 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M974031.D
Acq: 28 Apr 2016 14:14

Tgt Ion: 94 Resp: 16037

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

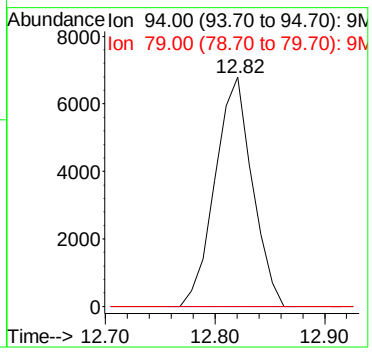

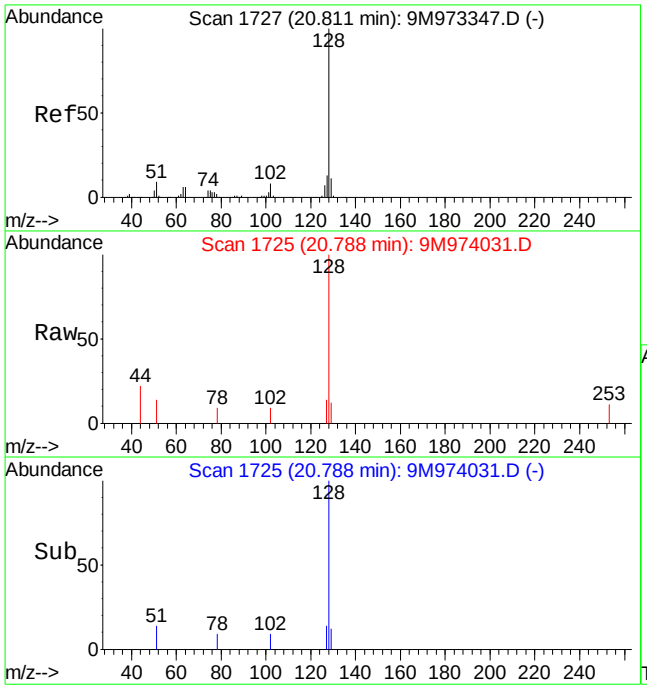

#99
Naphthalene
Concen: 0.58 ug/kg
RT: 20.79 min Scan# 1725
Delta R.T. -0.01 min
Lab File: 9M974031.D
Acq: 28 Apr 2016 14:14

Tgt Ion:128 Resp: 7181

Ion	Ratio	Lower	Upper
128	100		
127	11.9	7.6	17.8

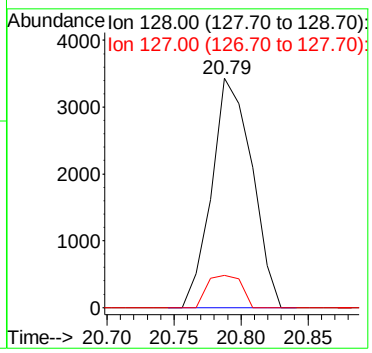

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\043016\9M974069.D Vial: 3
Acq On : 30 Apr 2016 14:45 Operator: ADC
Sample : WG567003-01 BLK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 04 12:27:40 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	641587	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	455753	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.74	152	207986	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	168075	51.8706 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 103.74%		
43) 1,2-Dichloroethane-d4	10.44	65	182497	53.8013 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 107.60%		
58) Toluene-d8	12.82	98	608757	56.0451 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 112.10%		
79) p-Bromofluorobenzene	16.22	95	223820	62.1296 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 124.26%#		

Target Compounds

					Qvalue
13) Acetone	6.39	43	3338	Below Cal	98
36) Tetrahydrofuran	9.77	42	3716	2.5360 ug/kg	81
56) Dimethyl Disulfide	12.82	94	15883	2.7112 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.08	105	4084	Below Cal	90

(#) = qualifier out of range (m) = manual integration
9M974069.D 8260-SL.M Wed May 04 12:27:41 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\043016\9M974069.D Vial: 3
Acq On : 30 Apr 2016 14:45 Operator: ADC
Sample : WG567003-01 BLK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 4 12:27 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

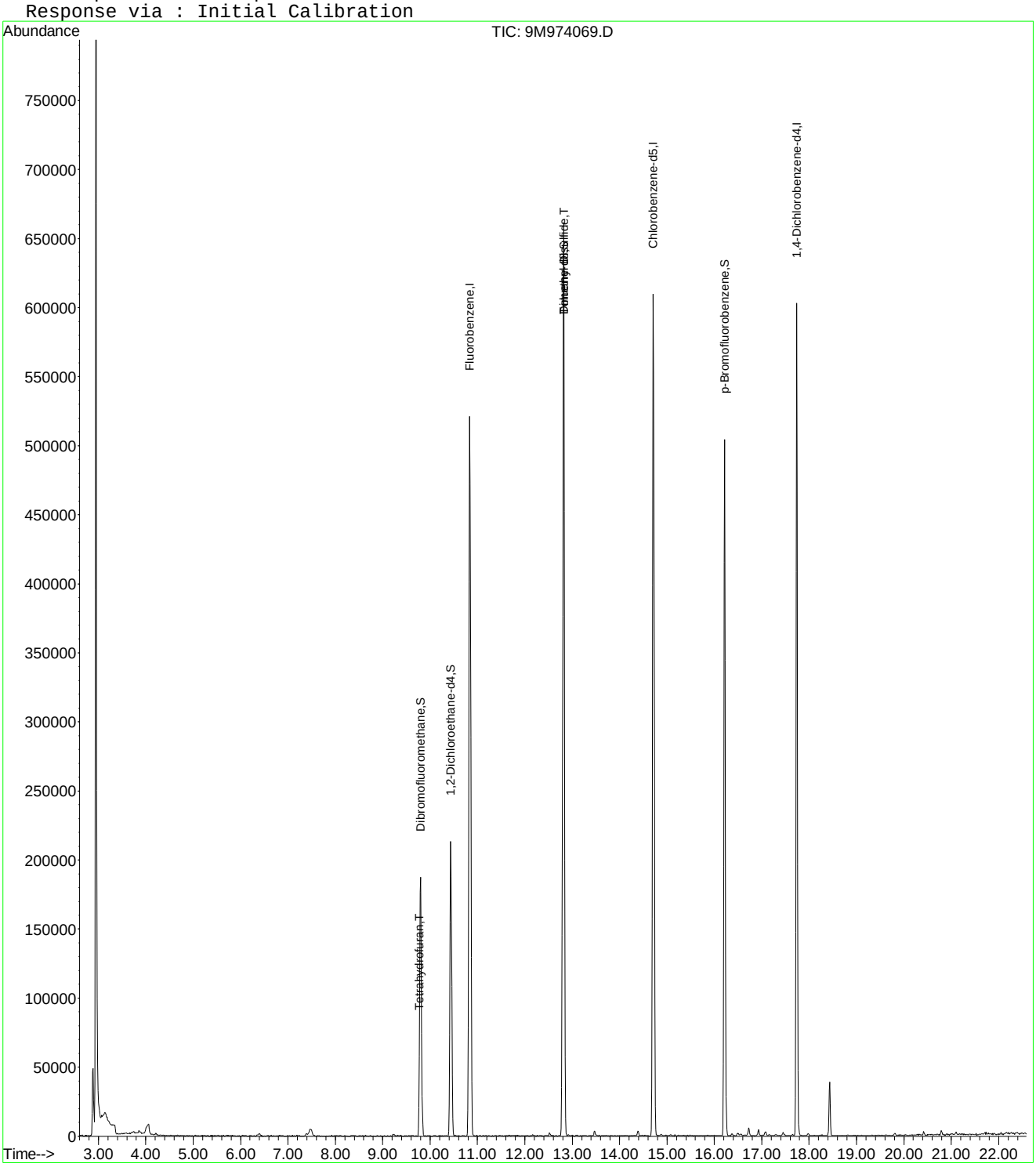

9M974069.D 8260-SL.M Wed May 04 12:27:41 2016 Page 2

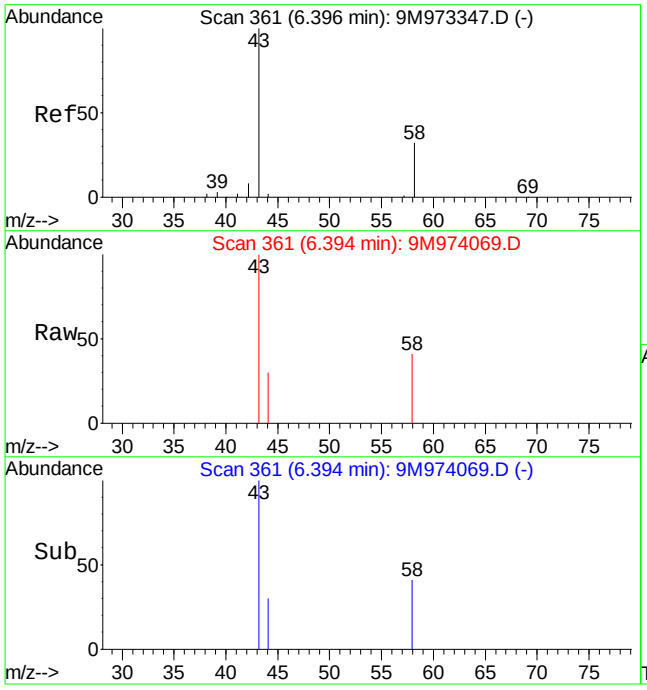

#13
Acetone
Concen: Below Cal
RT: 6.39 min Scan# 361
Delta R.T. 0.01 min
Lab File: 9M974069.D
Acq: 30 Apr 2016 14:45

Tgt Ion: 43 Resp: 3338

Ion	Ratio	Lower	Upper
43	100		
58	32.4	20.2	47.2

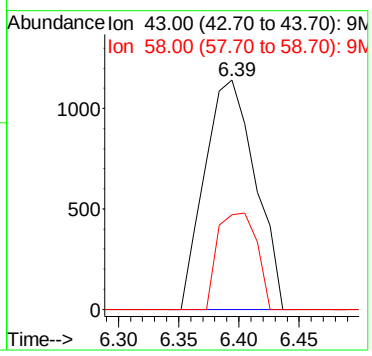

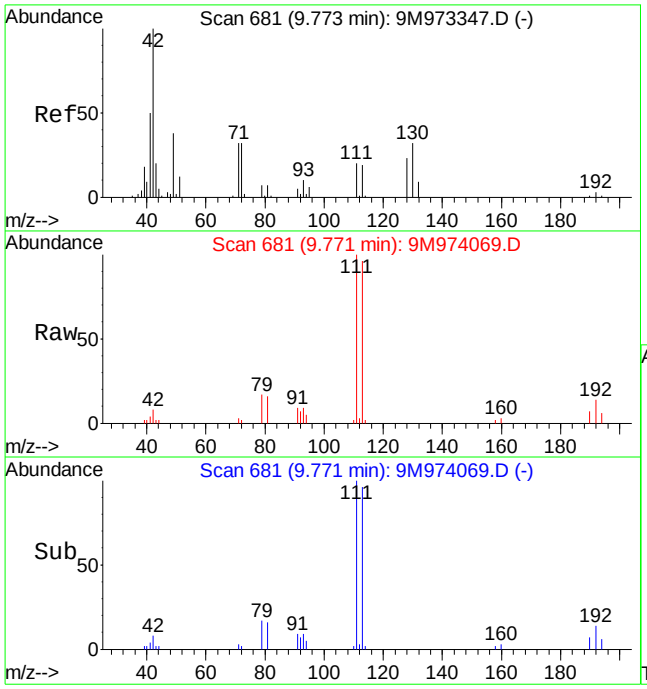

#36
Tetrahydrofuran
Concen: 2.54 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. 0.00 min
Lab File: 9M974069.D
Acq: 30 Apr 2016 14:45

Tgt Ion: 42 Resp: 3716

Ion	Ratio	Lower	Upper
42	100		
72	22.4	19.8	46.2
71	19.8	18.3	42.7

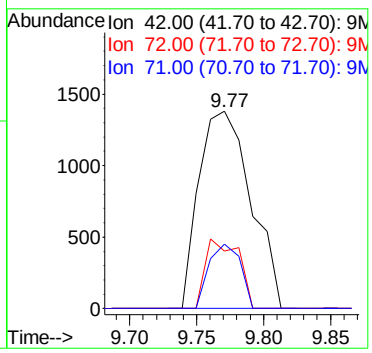

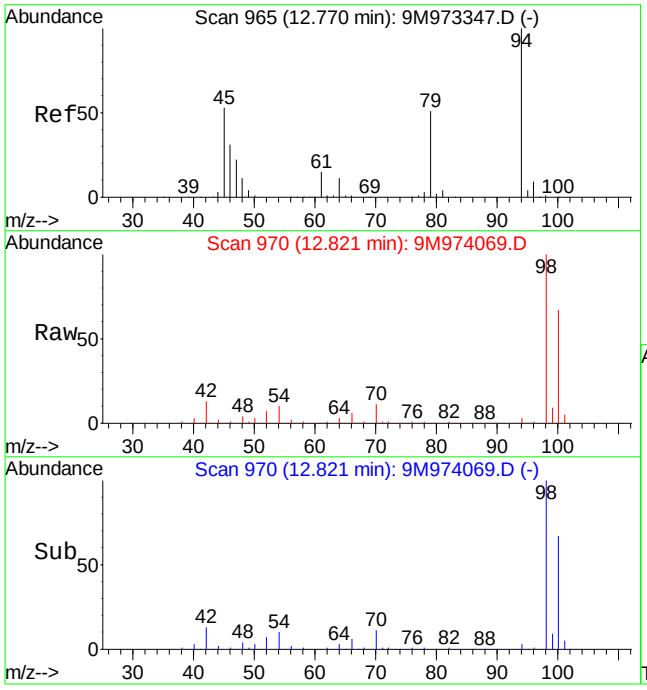

#56
Dimethyl Disulfide
Concen: 2.71 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M974069.D
Acq: 30 Apr 2016 14:45

Tgt Ion: 94 Resp: 15883

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

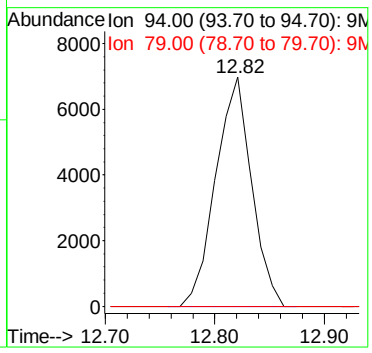

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\042816\9M974032.D Vial: 4
Acq On : 28 Apr 2016 14:45 Operator: ADC
Sample : WG566765-02 20ug/kg LCS Inst : hpms9
Misc : 7,1 STD75744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:08:10 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	586130	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	427662	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	195987	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	158017	53.3806 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 106.76%		
43) 1,2-Dichloroethane-d4	10.44	65	168734	54.4505 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 108.90%		
58) Toluene-d8	12.81	98	564072	55.3423 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 110.68%		
79) p-Bromofluorobenzene	16.22	95	207096	61.0068 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 122.02%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	86270	19.1879 ug/kg	97
3) Chloromethane	3.75	50	95893	23.2008 ug/kg	99
4) Vinyl Chloride	3.97	62	56612	20.3766 ug/kg	94
5) 1,3-Butadiene	4.01	54	29748	14.9153 ug/kg	98
6) Bromomethane	4.87	94	48797	19.2558 ug/kg	99
7) Chloroethane	5.02	64	49948	20.2350 ug/kg	98
8) Trichlorofluoromethane	5.51	101	100612	19.2660 ug/kg	99
9) Diethyl ether	6.05	59	306501	99.8020 ug/kg	96
10) Isoprene	6.08	67	90623	22.0465 ug/kg	99
11) Acrolein	6.28	56	46844	153.4043 ug/kg	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	61550	19.3026 ug/kg	99
13) Acetone	6.40	43	25786	17.4811 ug/kg	97
14) 1,1-Dichloroethene	6.61	61	96924	18.1343 ug/kg	100
15) Tert-Butyl Alcohol	6.72	59	113320	220.4245 ug/kg	98
16) Dimethyl Sulfide	6.87	62	74067	28.2852 ug/kg	95
17) Iodomethane	7.12	142	32694	15.3813 ug/kg	96
18) Methyl acetate	7.13	43	58610	17.2615 ug/kg	95
19) Methylene Chloride	7.39	84	62533	18.7300 ug/kg	94
20) Carbon Disulfide	7.43	76	172786	17.0493 ug/kg	100
21) Acrylonitrile	7.57	53	30388	18.8297 ug/kg	98
22) Methyl Tert Butyl Ether	7.60	73	177984	19.8119 ug/kg	98
23) trans-1,2-Dichloroethene	7.84	61	100346	19.5167 ug/kg	98
24) n-Hexane	7.90	57	103365	15.4813 ug/kg	99
25) Diisopropyl ether	8.25	45	1267326	93.1517 ug/kg	98
26) Vinyl Acetate	8.42	43	132317	18.6789 ug/kg	98
27) 1,1-Dichloroethane	8.45	63	115682	18.5367 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.82	59	1103492	92.2405 ug/kg	99
29) 2-Butanone	9.01	43	36239	19.2310 ug/kg	99
30) Propionitrile	9.13	54	57376	93.8087 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	86986	19.0884 ug/kg	100
32) cis-1,2-Dichloroethene	9.30	96	68611	20.0801 ug/kg	96
33) Chloroform	9.51	83	100146	18.9193 ug/kg	98
34) 1-Bromopropane	9.65	122	14088	23.5014 ug/kg	96
35) Bromochloromethane	9.74	130	41491	19.4634 ug/kg	93
36) Tetrahydrofuran	9.76	42	121239	90.5695 ug/kg	95
38) 1,1,1-Trichloroethane	10.04	97	89838	19.8298 ug/kg	99
39) Cyclohexane	10.07	56	131675	18.3851 ug/kg	99
40) 1,1-Dichloropropene	10.24	75	78086	18.7239 ug/kg	98
41) Tert-Amyl-Methyl ether	10.33	73	914318	103.3181 ug/kg	98
42) Carbon Tetrachloride	10.38	117	85403	20.1948 ug/kg	98

(#) = qualifier out of range (m) = manual integration
9M974032.D 8260-SL.M Thu Apr 28 15:08:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\042816\9M974032.D Vial: 4
Acq On : 28 Apr 2016 14:45 Operator: ADC
Sample : WG566765-02 20ug/kg LCS Inst : hpms9
Misc : 7,1 STD75744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:08:10 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.55	62	86941	19.0723	ug/kg	96
46)	Benzene	10.60	78	245352	18.9561	ug/kg	99
47)	Trichloroethene	11.34	130	67801	18.6237	ug/kg	97
48)	Methylcyclohexane	11.43	83	102312	18.3913	ug/kg	98
49)	1,2-Dichloropropane	11.56	63	69163	19.6492	ug/kg	98
50)	1,4-Dioxane	11.85	88	10099	221.2031	ug/kg	95
51)	Bromodichloromethane	11.86	83	75122	18.7290	ug/kg	98
52)	Dibromomethane	11.96	174	38296	18.2231	ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	38176	20.3959	ug/kg	98
54)	4-Methyl-2-Pentanone	12.18	58	29512	18.2101	ug/kg	98
55)	cis-1,3-Dichloropropene	12.50	75	101343	20.2643	ug/kg	99
56)	Dimethyl Disulfide	12.76	94	119069	22.2477	ug/kg	94
59)	Toluene	12.92	91	257287	19.7706	ug/kg	99
60)	Ethyl Methacrylate	13.00	69	76419	19.2882	ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	84889	20.0372	ug/kg	99
62)	1,1,2-Trichloroethane	13.31	97	53627	20.9323	ug/kg	99
63)	2-Hexanone	13.24	43	49684	17.7597	ug/kg	95
64)	1,3-Dichloropropane	13.61	76	95331	21.6408	ug/kg	95
65)	Tetrachloroethene	13.74	164	52619	19.0650	ug/kg	98
66)	Dibromochloromethane	14.00	129	60477	19.0960	ug/kg	99
67)	1,2-Dibromoethane	14.26	107	55077	19.5159	ug/kg	100
68)	1-Chlorohexane	14.34	91	81508	19.0246	ug/kg	99
69)	Chlorobenzene	14.76	112	185188	20.5064	ug/kg	98
70)	1,1,1,2-Tetrachloroethane	14.80	131	65309	21.2866	ug/kg	96
71)	Ethylbenzene	14.79	106	98782	20.3332	ug/kg	99
72)	m-,p-Xylene	14.88	106	242510	40.4869	ug/kg	99
73)	o-Xylene	15.44	106	119916	21.0097	ug/kg	100
74)	Styrene	15.48	104	191216	19.5632	ug/kg	99
75)	Bromoform	15.98	173	39779	20.2318	ug/kg	99
76)	Isopropylbenzene	15.86	105	303886	20.4682	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.08	83	70998	21.7482	ug/kg	99
80)	1,2,3-Trichloropropane	16.27	110	23385	24.0425	ug/kg#	41
81)	trans-1,4-Dichloro-2-Buten	16.33	53	20398	17.2318	ug/kg#	1
82)	n-Propylbenzene	16.37	91	336252	22.9484	ug/kg	99
83)	Bromobenzene	16.51	156	77262	22.1675	ug/kg	76
84)	1,3,5-Trimethylbenzene	16.56	105	254006	22.7673	ug/kg	100
85)	2-Chlorotoluene	16.65	91	220911	25.2442	ug/kg	100
86)	4-Chlorotoluene	16.70	91	190519	20.8146	ug/kg	99
87)	a-Methylstyrene	16.97	118	125413	22.5336	ug/kg	97
88)	tert-Butylbenzene	17.02	134	58391	23.6228	ug/kg	90
89)	1,2,4-Trimethylbenzene	17.07	105	255048	23.2044	ug/kg	100
90)	sec-Butylbenzene	17.30	105	329119	22.9479	ug/kg	100
91)	p-Isopropyltoluene	17.45	119	262630	22.1211	ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	150970	21.9090	ug/kg	99
93)	1,4-Dichlorobenzene	17.78	146	153103	21.7703	ug/kg	96
94)	n-Butylbenzene	17.98	91	226625	20.7485	ug/kg	100
95)	1,2-Dichlorobenzene	18.28	146	143098	21.8295	ug/kg	98
96)	1,2-Dibromo-3-Chloropropan	19.28	157	17687	25.5322	ug/kg	95
97)	1,2,4-Trichlorobenzene	20.42	180	100275	20.7311	ug/kg	99
98)	Hexachlorobutadiene	20.57	225	48690	21.3427	ug/kg	99
99)	Naphthalene	20.79	128	251767	21.5976	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	99448	21.6895	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\042816\9M974032.D Vial: 4
Acq On : 28 Apr 2016 14:45 Operator: ADC
Sample : WG566765-02 20ug/kg LCS Inst : hpms9
Misc : 7,1 STD75744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:08 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

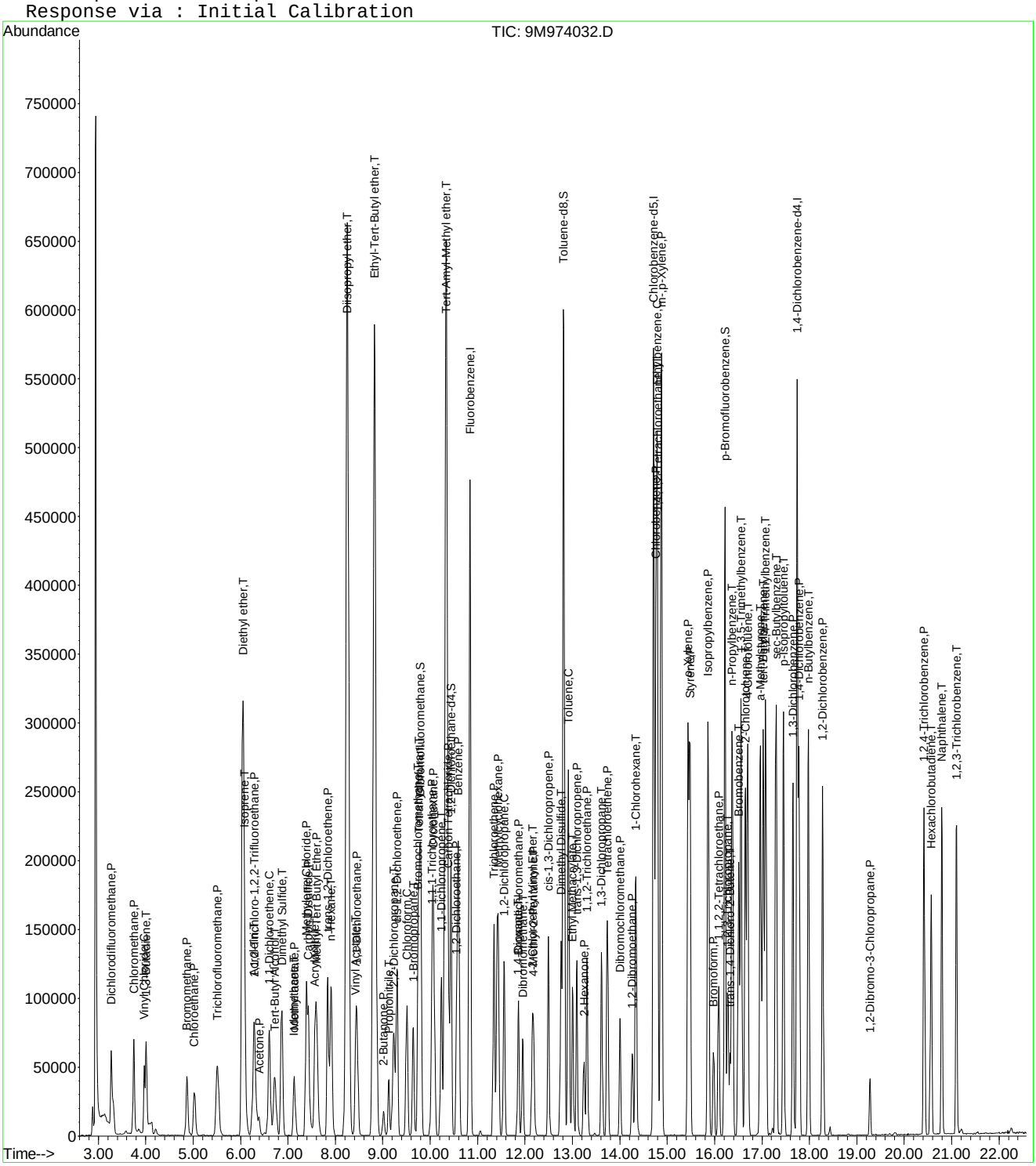

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\043016\9M974074.D Vial: 8
Acq On : 30 Apr 2016 17:17 Operator: ADC
Sample : WG567003-02 20ug/kg LCS 8260 Inst : hpms9
Misc : 7,1 STD75739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 30 17:40:36 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	593466	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	430069	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.74	152	198992	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	161844	53.9976 ug/kg	-0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 108.00%		
43) 1,2-Dichloroethane-d4	10.44	65	175277	55.8627 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 111.72%		
58) Toluene-d8	12.82	98	572092	55.8150 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 111.62%		
79) p-Bromofluorobenzene	16.22	95	208945	60.6220 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 121.24%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	87670	19.2583 ug/kg	98
3) Chloromethane	3.74	50	90126	21.5360 ug/kg	99
4) Vinyl Chloride	3.98	62	60563	21.5737 ug/kg	94
5) 1,3-Butadiene	4.02	54	455018	225.3207 ug/kg	93
6) Bromomethane	4.87	94	44363	17.2897 ug/kg	100
7) Chloroethane	5.03	64	44276	17.7155 ug/kg	98
8) Trichlorofluoromethane	5.52	101	90063	17.0328 ug/kg	98
9) Diethyl ether	6.05	59	281035	90.3786 ug/kg	97
10) Isoprene	6.08	67	83474	20.0563 ug/kg	99
11) Acrolein	6.29	56	39362	127.3090 ug/kg	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	55904	17.3153 ug/kg	98
13) Acetone	6.39	43	23909	15.5170 ug/kg	97
14) 1,1-Dichloroethene	6.60	61	86022	15.8956 ug/kg	98
15) Tert-Butyl Alcohol	6.73	59	112833	216.7642 ug/kg	99
16) Dimethyl Sulfide	6.87	62	69873	26.3538 ug/kg	96
17) Iodomethane	7.12	142	23701	11.8424 ug/kg	97
18) Methyl acetate	7.13	43	52793	15.3561 ug/kg	98
19) Methylene Chloride	7.39	84	57118	16.8966 ug/kg	94
20) Carbon Disulfide	7.44	76	157288	15.3282 ug/kg	100
21) Acrylonitrile	7.58	53	29313	17.9391 ug/kg	99
22) Methyl Tert Butyl Ether	7.61	73	170586	18.7537 ug/kg	98
23) trans-1,2-Dichloroethene	7.84	61	89316	17.1567 ug/kg	99
24) n-Hexane	7.91	57	97245	14.3847 ug/kg	99
25) Diisopropyl ether	8.25	45	1198823	87.0274 ug/kg	99
26) Vinyl Acetate	8.43	43	150868	20.9242 ug/kg	97
27) 1,1-Dichloroethane	8.46	63	103852	16.4354 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.82	59	1039280	85.7992 ug/kg	99
29) 2-Butanone	9.02	43	34599	18.1337 ug/kg	100
30) Propionitrile	9.13	54	55286	89.2742 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	77689	16.8375 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	60152	17.3868 ug/kg	100
33) Chloroform	9.51	83	90595	16.9034 ug/kg	100
34) 1-Bromopropane	9.64	122	13735	22.6613 ug/kg	95
35) Bromochloromethane	9.74	130	36860	17.0772 ug/kg	97
36) Tetrahydrofuran	9.77	42	120018	88.5491 ug/kg	97
38) 1,1,1-Trichloroethane	10.03	97	79467	17.3238 ug/kg	99
39) Cyclohexane	10.07	56	118734	16.3733 ug/kg	98
40) 1,1-Dichloropropene	10.23	75	68468	16.2147 ug/kg	99
41) Tert-Amyl-Methyl ether	10.33	73	868904	96.9726 ug/kg	98
42) Carbon Tetrachloride	10.38	117	72200	16.8617 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\043016\9M974074.D Vial: 8
Acq On : 30 Apr 2016 17:17 Operator: ADC
Sample : WG567003-02 20ug/kg LCS 8260 Inst : hpms9
Misc : 7,1 STD75739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 30 17:40:36 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.55	62	83267	18.0406 ug/kg	97
46)	Benzene	10.59	78	216489	16.5193 ug/kg	99
47)	Trichloroethene	11.34	130	60161	16.3208 ug/kg	98
48)	Methylcyclohexane	11.43	83	94588	16.7927 ug/kg	96
49)	1,2-Dichloropropane	11.55	63	61893	17.3664 ug/kg	97
50)	1,4-Dioxane	11.85	88	12093	261.6044 ug/kg	94
51)	Bromodichloromethane	11.86	83	67709	16.6722 ug/kg	99
52)	Dibromomethane	11.95	174	34730	16.3219 ug/kg	98
53)	2-Chloroethyl Vinyl Ether	12.16	63	38158	20.1343 ug/kg	97
54)	4-Methyl-2-Pentanone	12.19	58	28793	17.5469 ug/kg	98
55)	cis-1,3-Dichloropropene	12.49	75	89927	17.7593 ug/kg	98
56)	Dimethyl Disulfide	12.76	94	110843	20.4547 ug/kg	95
59)	Toluene	12.92	91	227159	17.3578 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	72267	18.1382 ug/kg	99
61)	trans-1,3-Dichloropropene	13.09	75	77105	18.0980 ug/kg	99
62)	1,1,2-Trichloroethane	13.31	97	47219	18.3279 ug/kg	96
63)	2-Hexanone	13.24	43	47076	16.7333 ug/kg	94
64)	1,3-Dichloropropane	13.61	76	86752	19.5831 ug/kg	98
65)	Tetrachloroethene	13.74	164	45403	16.3584 ug/kg	97
66)	Dibromochloromethane	14.00	129	57796	18.1474 ug/kg	97
67)	1,2-Dibromoethane	14.27	107	51651	18.1995 ug/kg	98
68)	1-Chlorohexane	14.34	91	75889	17.6139 ug/kg	99
69)	Chlorobenzene	14.76	112	161956	17.8335 ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.79	131	57882	18.7602 ug/kg	96
71)	Ethylbenzene	14.78	106	85435	17.4874 ug/kg	100
72)	m-,p-Xylene	14.88	106	204501	33.9502 ug/kg	98
73)	o-Xylene	15.44	106	103504	18.0328 ug/kg	100
74)	Styrene	15.48	104	162253	16.5071 ug/kg	97
75)	Bromoform	15.98	173	35238	17.8985 ug/kg	99
76)	Isopropylbenzene	15.86	105	255925	17.1413 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.08	83	61332	18.5558 ug/kg	99
80)	1,2,3-Trichloropropane	16.27	110	20699	20.9596 ug/kg#	34
81)	trans-1,4-Dichloro-2-Buten	16.32	53	18412	15.3192 ug/kg#	1
82)	n-Propylbenzene	16.37	91	286285	19.2432 ug/kg	99
83)	Bromobenzene	16.50	156	67688	19.1273 ug/kg	94
84)	1,3,5-Trimethylbenzene	16.56	105	215400	19.0154 ug/kg	100
85)	2-Chlorotoluene	16.65	91	187057	21.0528 ug/kg	99
86)	4-Chlorotoluene	16.69	91	165429	17.8005 ug/kg	99
87)	a-Methylstyrene	16.97	118	114974	20.3460 ug/kg	100
88)	tert-Butylbenzene	17.02	134	49208	19.6071 ug/kg	88
89)	1,2,4-Trimethylbenzene	17.07	105	212589	18.9482 ug/kg	99
90)	sec-Butylbenzene	17.29	105	272283	18.6983 ug/kg	100
91)	p-Isopropyltoluene	17.45	119	217200	18.0183 ug/kg	99
92)	1,3-Dichlorobenzene	17.65	146	125817	17.9830 ug/kg	99
93)	1,4-Dichlorobenzene	17.78	146	131637	18.4353 ug/kg	97
94)	n-Butylbenzene	17.98	91	189547	17.0918 ug/kg	99
95)	1,2-Dichlorobenzene	18.28	146	121120	18.1978 ug/kg	97
96)	1,2-Dibromo-3-Chloropropan	19.28	157	15478	22.8508 ug/kg	96
97)	1,2,4-Trichlorobenzene	20.42	180	77737	15.8288 ug/kg	99
98)	Hexachlorobutadiene	20.57	225	39408	17.0132 ug/kg	98
99)	Naphthalene	20.80	128	219817	18.5721 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.10	180	80649	17.3239 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\043016\9M974074.D Vial: 8
Acq On : 30 Apr 2016 17:17 Operator: ADC
Sample : WG567003-02 20ug/kg LCS 8260 Inst : hpms9
Misc : 7,1 STD75739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 30 17:40 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

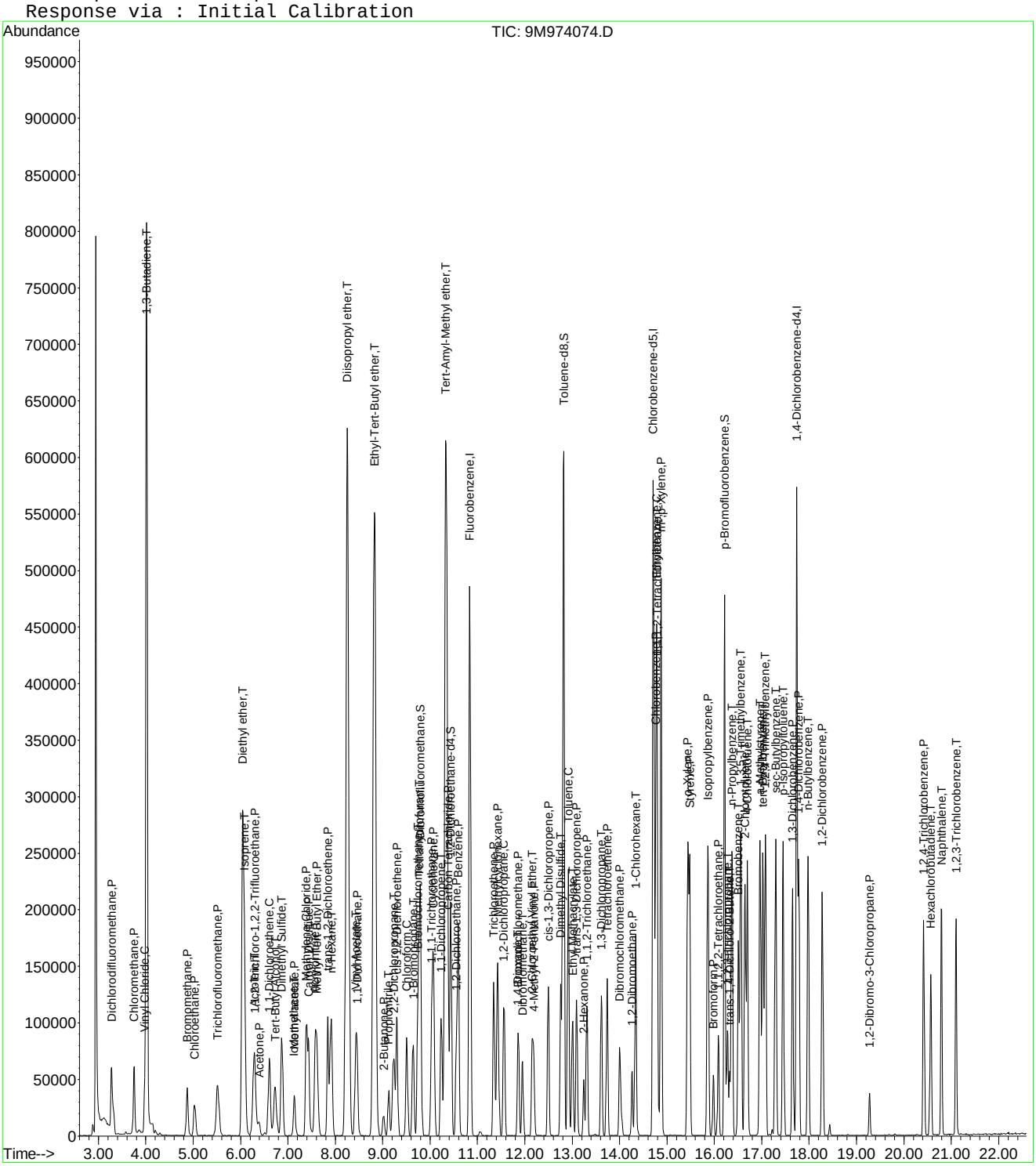

9M974074.D 8260-SL.M Sat Apr 30 17:40:37 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\042816\9M974048.D Vial: 20
Acq On : 28 Apr 2016 22:51 Operator: ADC
Sample : WG566711-02 A MS 8260 4.93g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 23:13:41 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	543098	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	389118	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.74	152	182092	50.00 ug/kg	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.80	111	144738	52.7689 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.54%		
43) 1,2-Dichloroethane-d4	10.44	65	156445	54.4849 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 108.96%		
58) Toluene-d8	12.82	98	515464	55.5827 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 111.16%		
79) p-Bromofluorobenzene	16.22	95	187957	59.5938 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 119.18%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	85226	20.4577 ug/kg	98
3) Chloromethane	3.74	50	78310	20.4479 ug/kg	99
4) Vinyl Chloride	3.98	62	80757	31.7944 ug/kg	92
6) Bromomethane	4.87	94	40928	17.4303 ug/kg	98
7) Chloroethane	5.03	64	41157	17.9947 ug/kg	99
8) Trichlorofluoromethane	5.52	101	84810	17.5269 ug/kg	99
10) Isoprene	6.08	67	75436	19.8059 ug/kg	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	52397	17.7342 ug/kg	100
13) Acetone	6.38	43	23442	17.0412 ug/kg	95
14) 1,1-Dichloroethene	6.60	61	80956	16.3469 ug/kg	96
16) Dimethyl Sulfide	6.87	62	52699	21.7197 ug/kg	96
17) Iodomethane	7.13	142	17006	9.9161 ug/kg	100
18) Methyl acetate	7.13	43	35081	11.1505 ug/kg	99
19) Methylene Chloride	7.39	84	46305	14.9683 ug/kg	97
20) Carbon Disulfide	7.44	76	138070	14.7032 ug/kg	99
21) Acrylonitrile	7.58	53	19962	13.3494 ug/kg	100
22) Methyl Tert Butyl Ether	7.60	73	126764	15.2285 ug/kg	98
23) trans-1,2-Dichloroethene	7.84	61	76831	16.1272 ug/kg	99
24) n-Hexane	7.91	57	91996	14.8703 ug/kg	99
27) 1,1-Dichloroethane	8.46	63	88610	15.3238 ug/kg	100
29) 2-Butanone	9.02	43	22993	13.1685 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	66621	15.7778 ug/kg	98
32) cis-1,2-Dichloroethene	9.30	96	49726	15.7062 ug/kg	100
33) Chloroform	9.51	83	75785	15.4515 ug/kg	98
34) 1-Bromopropane	9.64	122	11249	20.3713 ug/kg	97
35) Bromochloromethane	9.74	130	27541	13.9431 ug/kg	98
36) Tetrahydrofuran	9.77	42	2581	2.0809 ug/kg#	83
38) 1,1,1-Trichloroethane	10.03	97	69562	16.5709 ug/kg	100
39) Cyclohexane	10.07	56	108878	16.4066 ug/kg	97
40) 1,1-Dichloropropene	10.23	75	58839	15.2267 ug/kg	99
42) Carbon Tetrachloride	10.38	117	63652	16.2441 ug/kg	99
45) 1,2-Dichloroethane	10.55	62	63568	15.0499 ug/kg	97
46) Benzene	10.59	78	179281	14.9489 ug/kg	98
47) Trichloroethene	11.34	130	49634	14.7138 ug/kg	99
48) Methylcyclohexane	11.43	83	82116	15.9305 ug/kg	97
49) 1,2-Dichloropropane	11.55	63	48336	14.8203 ug/kg	98
51) Bromodichloromethane	11.86	83	52764	14.1972 ug/kg	99
52) Dibromomethane	11.95	174	25132	12.9066 ug/kg	95
53) 2-Chloroethyl Vinyl Ether	12.16	63	16644	9.5968 ug/kg	99
54) 4-Methyl-2-Pentanone	12.18	58	19673	13.1009 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\042816\9M974048.D Vial: 20
Acq On : 28 Apr 2016 22:51 Operator: ADC
Sample : WG566711-02 A MS 8260 4.93g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 23:13:41 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
55)	cis-1,3-Dichloropropene	12.49	75	64122	13.8376	ug/kg	99
56)	Dimethyl Disulfide	12.76	94	80335	16.1997	ug/kg	92
59)	Toluene	12.92	91	176447	14.9017	ug/kg	99
60)	Ethyl Methacrylate	13.01	69	39670	11.0045	ug/kg	98
61)	trans-1,3-Dichloropropene	13.09	75	53435	13.8621	ug/kg	98
62)	1,1,2-Trichloroethane	13.31	97	34596	14.8415	ug/kg	99
63)	2-Hexanone	13.24	43	31976	12.5621	ug/kg#	77
64)	1,3-Dichloropropane	13.61	76	62959	15.7079	ug/kg	99
65)	Tetrachloroethene	13.74	164	34931	13.9099	ug/kg	97
66)	Dibromochloromethane	14.00	129	39691	13.7741	ug/kg	100
67)	1,2-Dibromoethane	14.27	107	35868	13.9683	ug/kg	99
68)	1-Chlorohexane	14.34	91	52110	13.3676	ug/kg	97
69)	Chlorobenzene	14.76	112	114178	13.8956	ug/kg	97
70)	1,1,1,2-Tetrachloroethane	14.79	131	41795	14.9719	ug/kg	98
71)	Ethylbenzene	14.78	106	59687	13.5029	ug/kg	96
72)	m-,p-Xylene	14.88	106	144046	26.4305	ug/kg	97
73)	o-Xylene	15.44	106	70774	13.6281	ug/kg	97
74)	Styrene	15.48	104	107495	12.0871	ug/kg	97
75)	Bromoform	15.98	173	23697	13.4256	ug/kg	99
76)	Isopropylbenzene	15.86	105	177002	13.1029	ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.08	83	42744	14.2156	ug/kg	98
80)	1,2,3-Trichloropropane	16.28	110	13991	15.4820	ug/kg#	29
81)	trans-1,4-Dichloro-2-Buten	16.32	53	11635	10.5790	ug/kg#	1
82)	n-Propylbenzene	16.37	91	183739	13.4966	ug/kg	98
83)	Bromobenzene	16.50	156	43703	13.4958	ug/kg	95
84)	1,3,5-Trimethylbenzene	16.56	105	141038	13.6063	ug/kg	98
85)	2-Chlorotoluene	16.65	91	121066	14.8903	ug/kg	99
86)	4-Chlorotoluene	16.69	91	105431	12.3975	ug/kg	99
87)	a-Methylstyrene	16.97	118	64184	12.4123	ug/kg	100
88)	tert-Butylbenzene	17.02	134	31451	13.6948	ug/kg	89
89)	1,2,4-Trimethylbenzene	17.07	105	133314	12.8074	ug/kg	99
90)	sec-Butylbenzene	17.29	105	170898	12.8252	ug/kg	100
91)	p-Isopropyltoluene	17.45	119	131024	11.8782	ug/kg	99
92)	1,3-Dichlorobenzene	17.65	146	75947	11.8626	ug/kg	99
93)	1,4-Dichlorobenzene	17.78	146	77946	11.9292	ug/kg	94
94)	n-Butylbenzene	17.98	91	106343	10.4791	ug/kg	100
95)	1,2-Dichlorobenzene	18.28	146	75315	12.3660	ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.28	157	9959	17.8833	ug/kg	98
97)	1,2,4-Trichlorobenzene	20.42	180	41682	9.2750	ug/kg	99
98)	Hexachlorobutadiene	20.57	225	19754	9.3197	ug/kg	98
99)	Naphthalene	20.80	128	119798	11.0610	ug/kg	98
100)	1,2,3-Trichlorobenzene	21.10	180	41082	9.6437	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\042816\9M974048.D Vial: 20
Acq On : 28 Apr 2016 22:51 Operator: ADC
Sample : WG566711-02 A MS 8260 4.93g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 23:13 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

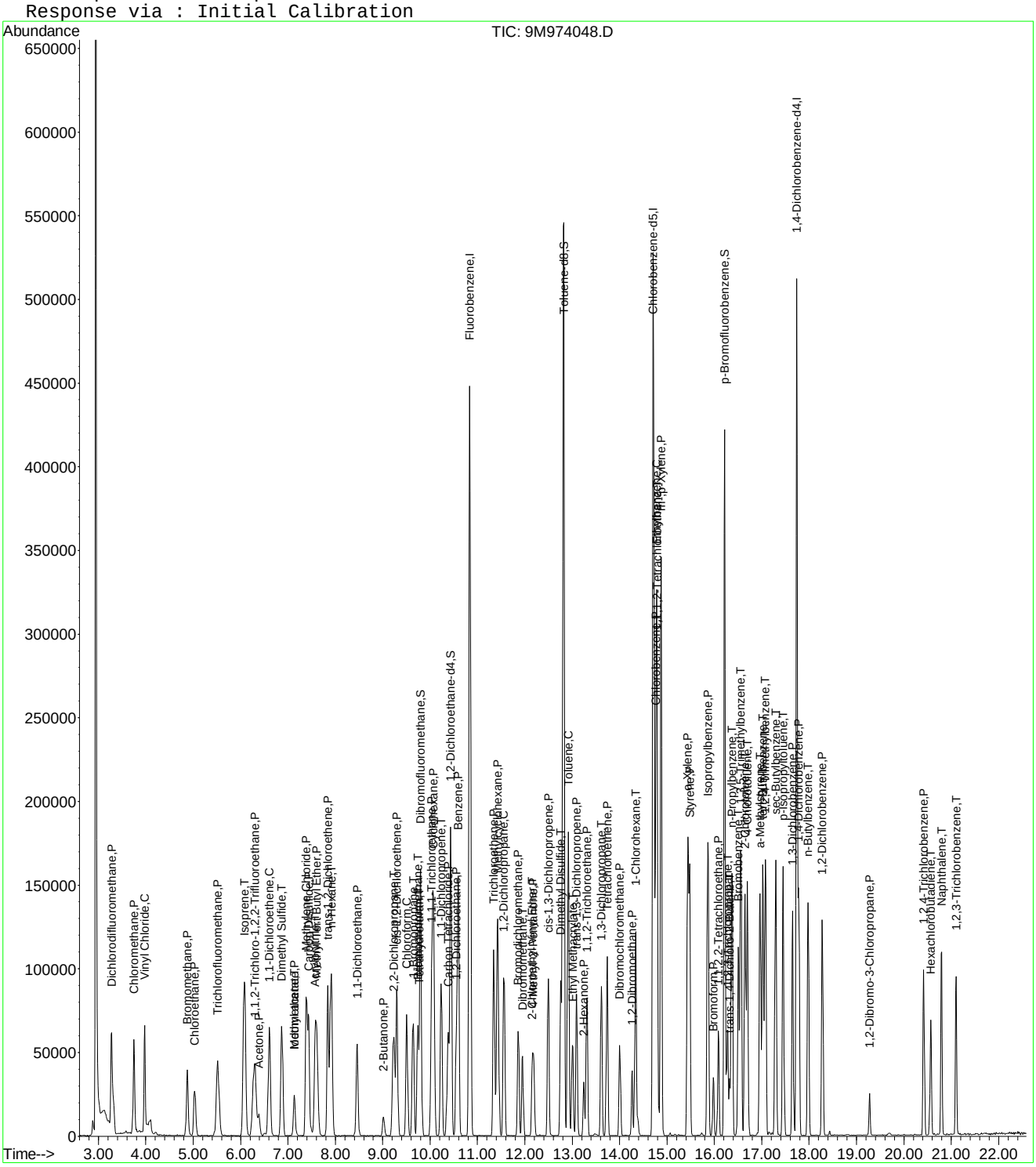

9M974048.D 8260-SL.M Thu Apr 28 23:13:42 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\042816\9M974049.D Vial: 21
Acq On : 28 Apr 2016 23:20 Operator: ADC
Sample : WG566711-03 A MSD 8260 4.76g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 23:43:33 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	584236	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	421450	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	194598	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	157502	53.3791 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 106.76%		
43) 1,2-Dichloroethane-d4	10.44	65	174559	56.5128 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 113.02%		
58) Toluene-d8	12.81	98	566455	56.3952 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 112.80%		
79) p-Bromofluorobenzene	16.21	95	205168	60.8702 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 121.74%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	92822	20.7121 ug/kg	96
3) Chloromethane	3.75	50	77078	18.7091 ug/kg	100
4) Vinyl Chloride	3.97	62	62564	22.6774 ug/kg	90
6) Bromomethane	4.88	94	42291	16.7425 ug/kg	98
7) Chloroethane	5.03	64	44183	17.9575 ug/kg	98
8) Trichlorofluoromethane	5.52	101	95341	18.3159 ug/kg	98
10) Isoprene	6.08	67	83387	20.3519 ug/kg	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	59968	18.8675 ug/kg	100
13) Acetone	6.39	43	21957	14.0838 ug/kg	99
14) 1,1-Dichloroethene	6.61	61	86510	16.2384 ug/kg	98
16) Dimethyl Sulfide	6.87	62	49165	18.8364 ug/kg	99
17) Iodomethane	7.12	142	22073	11.3609 ug/kg	98
18) Methyl acetate	7.13	43	33696	9.9561 ug/kg	98
19) Methylene Chloride	7.39	84	45565	13.6920 ug/kg	95
20) Carbon Disulfide	7.44	76	148301	14.6807 ug/kg	99
21) Acrylonitrile	7.57	53	19677	12.2323 ug/kg	98
22) Methyl Tert Butyl Ether	7.60	73	120753	13.4850 ug/kg	98
23) trans-1,2-Dichloroethene	7.84	61	82498	16.0974 ug/kg	99
24) n-Hexane	7.92	57	102155	15.3497 ug/kg	99
27) 1,1-Dichloroethane	8.46	63	92693	14.9012 ug/kg	99
29) 2-Butanone	9.01	43	21709	11.5577 ug/kg	97
31) 2,2-Dichloropropane	9.23	77	72119	15.8773 ug/kg	99
32) cis-1,2-Dichloroethene	9.30	96	50672	14.8780 ug/kg	100
33) Chloroform	9.51	83	75983	14.4011 ug/kg	99
34) 1-Bromopropane	9.65	122	11833	19.9391 ug/kg	99
35) Bromochloromethane	9.74	130	27088	12.7481 ug/kg	94
36) Tetrahydrofuran	9.77	42	3053	2.2881 ug/kg	83
38) 1,1,1-Trichloroethane	10.04	97	77282	17.1137 ug/kg	98
39) Cyclohexane	10.07	56	121468	17.0149 ug/kg	97
40) 1,1-Dichloropropene	10.24	75	64888	15.6097 ug/kg	99
42) Carbon Tetrachloride	10.38	117	69059	16.3830 ug/kg	99
45) 1,2-Dichloroethane	10.55	62	59596	13.1160 ug/kg	98
46) Benzene	10.60	78	185787	14.4006 ug/kg	98
47) Trichloroethene	11.35	130	52684	14.5182 ug/kg	98
48) Methylcyclohexane	11.42	83	91357	16.4753 ug/kg	98
49) 1,2-Dichloropropane	11.56	63	49433	14.0894 ug/kg	99
51) Bromodichloromethane	11.86	83	50829	12.7135 ug/kg	99
52) Dibromomethane	11.96	174	23925	11.4216 ug/kg	99
53) 2-Chloroethyl Vinyl Ether	12.16	63	16170	8.6670 ug/kg	96
54) 4-Methyl-2-Pentanone	12.18	58	18925	11.7154 ug/kg	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\042816\9M974049.D Vial: 21
Acq On : 28 Apr 2016 23:20 Operator: ADC
Sample : WG566711-03 A MSD 8260 4.76g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 23:43:33 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
55)	cis-1,3-Dichloropropene	12.50	75	63044	12.6470	ug/kg	98
56)	Dimethyl Disulfide	12.76	94	67623	12.6761	ug/kg	98
59)	Toluene	12.92	91	181582	14.1589	ug/kg	100
60)	Ethyl Methacrylate	13.00	69	39053	10.0023	ug/kg	100
61)	trans-1,3-Dichloropropene	13.10	75	50960	12.2059	ug/kg	98
62)	1,1,2-Trichloroethane	13.31	97	31981	12.6672	ug/kg	95
63)	2-Hexanone	13.24	43	30413	11.0314	ug/kg	99
64)	1,3-Dichloropropane	13.61	76	59901	13.7984	ug/kg	95
65)	Tetrachloroethene	13.74	164	36629	13.4671	ug/kg	94
66)	Dibromochloromethane	14.00	129	37757	12.0978	ug/kg	98
67)	1,2-Dibromoethane	14.26	107	31993	11.5034	ug/kg	99
68)	1-Chlorohexane	14.34	91	56091	13.2850	ug/kg	99
69)	Chlorobenzene	14.76	112	114414	12.8561	ug/kg	97
70)	1,1,1,2-Tetrachloroethane	14.80	131	41610	13.7621	ug/kg	98
71)	Ethylbenzene	14.79	106	61073	12.7565	ug/kg	96
72)	m-,p-Xylene	14.88	106	149359	25.3029	ug/kg	100
73)	o-Xylene	15.44	106	71641	12.7368	ug/kg	98
74)	Styrene	15.48	104	103850	10.7814	ug/kg	97
75)	Bromoform	15.98	173	22569	11.8496	ug/kg	99
76)	Isopropylbenzene	15.86	105	185316	12.6659	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.08	83	41433	12.9266	ug/kg	99
80)	1,2,3-Trichloropropane	16.27	110	13211	13.6794	ug/kg#	38
81)	trans-1,4-Dichloro-2-Buten	16.32	53	10871	9.2491	ug/kg#	1
82)	n-Propylbenzene	16.37	91	189771	13.0439	ug/kg	98
83)	Bromobenzene	16.51	156	41735	12.0598	ug/kg	73
84)	1,3,5-Trimethylbenzene	16.56	105	138203	12.4760	ug/kg	100
85)	2-Chlorotoluene	16.64	91	123767	14.2442	ug/kg	100
86)	4-Chlorotoluene	16.70	91	97569	10.7357	ug/kg	98
87)	a-Methylstyrene	16.96	118	61491	11.1273	ug/kg	98
88)	tert-Butylbenzene	17.02	134	33330	13.5803	ug/kg	89
89)	1,2,4-Trimethylbenzene	17.08	105	133136	11.9313	ug/kg	100
90)	sec-Butylbenzene	17.30	105	177020	12.4309	ug/kg	100
91)	p-Isopropyltoluene	17.46	119	131505	11.1556	ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	73380	10.7250	ug/kg	99
93)	1,4-Dichlorobenzene	17.78	146	71108	10.1833	ug/kg	95
94)	n-Butylbenzene	17.98	91	105338	9.7130	ug/kg	99
95)	1,2-Dichlorobenzene	18.28	146	69782	10.7212	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.28	157	9792	16.9426	ug/kg	97
97)	1,2,4-Trichlorobenzene	20.42	180	37422	7.7919	ug/kg	100
98)	Hexachlorobutadiene	20.57	225	19232	8.4903	ug/kg	98
99)	Naphthalene	20.79	128	107229	9.2642	ug/kg	99
100)	1,2,3-Trichlorobenzene	21.11	180	37497	8.2364	ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M974049.D 8260-SL.M Thu Apr 28 23:43:33 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\042816\9M974049.D Vial: 21
Acq On : 28 Apr 2016 23:20 Operator: ADC
Sample : WG566711-03 A MSD 8260 4.76g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 23:43 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

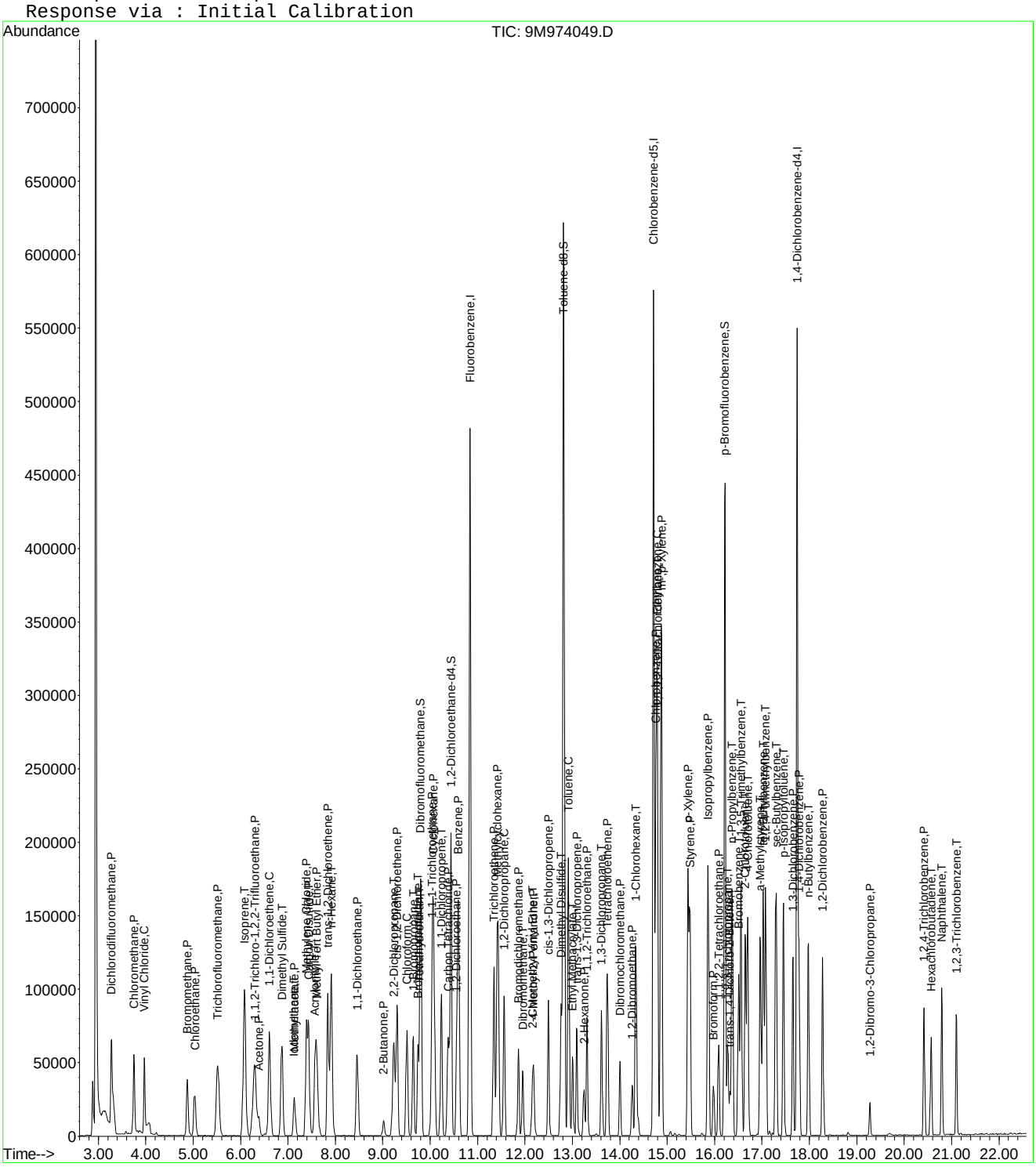

2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22R(5-5.5)230416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 14:07
Collect Date:	04/23/2016 09:35	**Dilution:**	1	**File ID:**	1LM.LM34635
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.28	U	4.56	2.28	1.14

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22R(10-10.5)230416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 15:03
Collect Date:	04/23/2016 10:05	**Dilution:**	1	**File ID:**	1LM.LM34638
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.44	U	4.87	2.44	1.22

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22R(15-15.5)230416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 15:22
Collect Date:	04/23/2016 10:10	**Dilution:**	1	**File ID:**	1LM.LM34639
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	77.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.48	U	4.96	2.48	1.24

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW26(5-5.5)230416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 15:41
Collect Date:	04/23/2016 13:30	**Dilution:**	1	**File ID:**	1LM.LM34640
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.30	U	4.60	2.30	1.15

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW26(5-5.5)230416DUP	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 16:00
Collect Date:	04/23/2016 13:30	**Dilution:**	1	**File ID:**	1LM.LM34641
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.30	U	4.58	2.30	1.15

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW26(10-10.5)230416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 17:16
Collect Date:	04/23/2016 14:00	**Dilution:**	1	**File ID:**	1LM.LM34645
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.32	U	4.66	2.32	1.16

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW26(14.5-15)230416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 17:35
Collect Date:	04/23/2016 14:05	**Dilution:**	1	**File ID:**	1LM.LM34646
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	77.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.46	U	4.94	2.46	1.23

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW26SW(5-5.5)250416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 17:54
Collect Date:	04/25/2016 09:35	**Dilution:**	1	**File ID:**	1LM.LM34647
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.32	U	4.62	2.32	1.16

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-09	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW26SW(10-10.5)250416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 18:13
Collect Date:	04/25/2016 09:50	**Dilution:**	1	**File ID:**	1LM.LM34648
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	78.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.50	U	5.00	2.50	1.25

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-10	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW26SW(15-15.5)250416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 18:32
Collect Date:	04/25/2016 10:45	**Dilution:**	1	**File ID:**	1LM.LM34649
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	78.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1.58	J	4.99	2.50	1.25

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-11	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW26SW(20-20.5)250416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 18:51
Collect Date:	04/25/2016 11:45	**Dilution:**	1	**File ID:**	1LM.LM34650
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	4.60	J	4.86	2.42	1.21

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-12	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW26SW(30-30.5)250416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 19:10
Collect Date:	04/25/2016 12:05	**Dilution:**	1	**File ID:**	1LM.LM34651
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	77.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.52	U	5.03	2.52	1.26

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-13	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW26SW(40-40.5)250416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 19:29
Collect Date:	04/25/2016 12:10	**Dilution:**	1	**File ID:**	1LM.LM34652
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	71.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.68	U	5.34	2.68	1.34

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-14	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW26SW(49.5-50)250416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 19:47
Collect Date:	04/25/2016 12:30	**Dilution:**	1	**File ID:**	1LM.LM34653
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	76.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.48	U	4.97	2.48	1.24

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

MICROBAC

Semivolatile Sample Extract Log

Parameter: Perchlorate
SOP #: HPLC 06
Analyst: JWR
Spike/Surrogate analyst: JWR
Surrogate #: NA
Spike # A: STD75513
Ext Solvent: DI-H2O
Ext Solvent: NA
Ext Disk: NA

Matrix: Soils
Rev #: 08
Date/Time Extracted: 04/29/16/1315
Witness: 4-29-16
Spike # B: NA
Lot #: NA
Lot #: NA
Lot #: NA

Extraction Work Group: WG567008
Analytical Work Group: WG567011
Run ID: R4562964
Pipetter(s): Eppendorf #403
Analytical Balance ID: BAL021
Reagent: Tubes Lot #: RGT34011
Reagent: Sand Lot #: COA18813
Other: IS Lot #: COA18071

Color Code
T = Transparent
C = Colored
O = Opaque

	Sample ID	Test Code	pH	Initial Wt / Vol	JWR ~~Surrogate~~ Amount IS	Amount Spike	Final Volume	Extract Color	Comments
1	WG567008-01	6850		5.001g	0.250ml	1.0ml	50ml		MCT (10,000 us)(2ug/kg)
2	WG567008-02			5.004g		NA			Blank
3	WG567008-03			5.007g		1.0ml			LCS (2ug/kg)
4	L16041344-01 Ref			5.196g		NA			WG567008-04 Ref
5	-01 MS			5.210g		1.0ml			WG567008-05 MS (@2ug/kg)
6	-01 MSD			5.198g		1.0ml			WG567008-06 MSD (@2ug/kg)
7	-02			5.021g		NA			
8	-03			5.189g		NA			
9	-04			5.179g		NA			
10	-05			5.128g		NA			
11	-06			5.215g		NA			
12	-07			5.248g		NA			
13	-08			5.145g		NA			
14	-09			5.075g		NA			
15	-10			5.083g		NA			
16	-11			5.090g		NA			
17	-12			5.100g		NA			
18	-13			5.214g		NA			
19	-14			5.293g		NA			
20									
21									
22				JWR 04/29/16					
23									
24									

Reviewed by: 4-29-16

Analytical WG567011 (soils)

Perchlorate Conductivity Check

(perchlorate1)

Conductivity Probe Calibration Check: 1423 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG567008-01 MCT	10,090.	
WG567008-02 Blank	4.55	
WG567008-03 LCS	4.42	
L16041344-01 Ref	12.37	
-01 MS	12.44	
-01 MSD	12.32	
-02	11.79	
-03	19.25	
-04	80.80	
-05	76.50	
-06	227.	
-07	154.2	
-08	178.1	
-09	186.8	
-10	80.70	
-11	59.40	
-12	50.80	
-13	51.80	
-14	69.30	

Analyst: John Richards

Date/Time: 05/02/16 / 1500

DCN#118148

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 042216_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG566116 (waters)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (04/22/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments: ICAL WG566101 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

All samples were initially filtered and screened on 04/20/16. All samples were analyzed at dilutions based on their pre-run screen results from 04/20/16.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34522	WG566101-01 CCB	1	1		04/22/16 15:08
2	1LM.LM34523	WG566101-02 STD (0.1 ug/L)	1	1	STD75510	04/22/16 15:27
3	1LM.LM34524	WG566101-03 STD (0.2 ug/L)	1	1	STD75510	04/22/16 15:46
4	1LM.LM34525	WG566101-04 STD (0.5 ug/L)	1	1	STD75510	04/22/16 16:05
5	1LM.LM34526	WG566101-05 STD (1.0 ug/L)	1	1	STD75510	04/22/16 16:24
6	1LM.LM34527	WG566101-06 STD (2.0 ug/L)	1	1	STD75510	04/22/16 16:42
7	1LM.LM34528	WG566101-07 STD (5.0 ug/L)	1	1	STD75510	04/22/16 17:01
8	1LM.LM34529	WG566101-08 STD (10 ug/L)	1	1	STD75510	04/22/16 17:20
9	1LM.LM34530	WG566101-09 SSCV (1.0 ug/L)	1	1	STD75512	04/22/16 17:39
10	1LM.LM34531	WG566119-01 CCB	1	1		04/22/16 17:58
11	1LM.LM34532	WG566119-02 CCV (1.0ug/L)	1	1	STD75510	04/22/16 18:17
12	1LM.LM34533	WG566116-05 MRL (0.2ug/L)	1	1	STD75510	04/22/16 18:36
13	1LM.LM34534	WG566116-01 MCT (0.2ug/L)	1	1	STD75512	04/22/16 18:55
14	1LM.LM34535	WG566116-02 BLANK	1	1		04/22/16 19:14
15	1LM.LM34536	WG566116-03 LCS (0.2ug/L)	1	1	STD75512	04/22/16 19:33
16	1LM.LM34537	WG566116-04 LCS2 (0.2ug/L)	1	1	STD75512	04/22/16 19:52
17	1LM.LM34538	L16040973-01 (100x)	1	100		04/22/16 20:11
18	1LM.LM34539	L16040978-01 (100x)	1	100		04/22/16 20:30
19	1LM.LM34540	L16040978-02 (100x)	1	100		04/22/16 20:49
20	1LM.LM34541	WG566119-03 CCV (1.0ug/L)	1	1	STD75510	04/22/16 21:08
21	1LM.LM34542	WG566116-06 MRL (0.2ug/L)	1	1	STD75510	04/22/16 21:27
22	1LM.LM34543	WG566119-04 CCB	1	1		04/22/16 21:45

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 25-APR-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050216_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567011 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (04/22/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: Samples tagged with (NR) will be reanalyzed on 05/03/2016.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34629	WG567042-01 CCB	1	1		05/02/16 12:11
2	1LM.LM34630	WG567042-02 CCV (1.0ug/L)	1	1	STD75510	05/02/16 12:30
3	1LM.LM34631	WG567011-07 MRL (2.0ug/kg)	7	1	STD75510	05/02/16 12:49
4	1LM.LM34632	WG567011-01 MCT (2.0ug/kg)	7	1	STD75512	05/02/16 13:08
5	1LM.LM34633	WG567011-02 BLANK	7	1		05/02/16 13:27
6	1LM.LM34634	WG567011-03 LCS (2.0ug/kg)	7	1	STD75512	05/02/16 13:46
7	1LM.LM34635	L16041344-01 REF	7	1		05/02/16 14:07
8	1LM.LM34636	L16041344-01 MS	7	1	STD75512	05/02/16 14:25
9	1LM.LM34637	L16041344-01 MSD	7	1	STD75512	05/02/16 14:44
10	1LM.LM34638	L16041344-02	7	1		05/02/16 15:03
11	1LM.LM34639	L16041344-03	7	1		05/02/16 15:22
12	1LM.LM34640	L16041344-04	7	1		05/02/16 15:41
13	1LM.LM34641	L16041344-05	7	1		05/02/16 16:00
14	1LM.LM34642	WG567042-03 CCV (1.0ug/L)	1	1	STD75510	05/02/16 16:19
15	1LM.LM34643	WG567011-08 MRL (2.0ug/kg)	7	1	STD75510	05/02/16 16:38
16	1LM.LM34644	WG567042-04 CCB	1	1		05/02/16 16:57
17	1LM.LM34645	L16041344-06	7	1		05/02/16 17:16
18	1LM.LM34646	L16041344-07	7	1		05/02/16 17:35
19	1LM.LM34647	L16041344-08	7	1		05/02/16 17:54
20	1LM.LM34648	L16041344-09	7	1		05/02/16 18:13
21	1LM.LM34649	L16041344-10	7	1		05/02/16 18:32
22	1LM.LM34650	L16041344-11	7	1		05/02/16 18:51
23	1LM.LM34651	L16041344-12	7	1		05/02/16 19:10
24	1LM.LM34652	L16041344-13	7	1		05/02/16 19:29
25	1LM.LM34653	L16041344-14	7	1		05/02/16 19:47
26	1LM.LM34654	WG567042-05 CCV (1.0ug/L)	1	1	STD75510	05/02/16 20:06
27	1LM.LM34655	WG567011-09 MRL (2.0ug/kg)	7	1	STD75510	05/02/16 20:25
28	1LM.LM34656	WG567013-07 MRL (2.0ug/kg) (NR)	7	1	STD75510	05/02/16 20:44
29	1LM.LM34657	WG567042-06 CCB	1	1		05/02/16 21:03
30	1LM.LM34658	WG567013-01 MCT (2.0ug/kg) (NR)	7	1	STD75512	05/02/16 21:22
31	1LM.LM34659	WG567013-02 BLANK (NR)	7	1		05/02/16 21:41
32	1LM.LM34660	WG567013-03 LCS (2.0ug/kg) (NR)	7	1	STD75512	05/02/16 22:00
33	1LM.LM34661	L16041363-07 RS (NR)	7	1		05/02/16 22:19

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050216_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567011 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (04/22/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM34662	L16041363-08 MS (NR)	7	1	STD75512	05/02/16 22:38
35	1LM.LM34663	L16041363-09 MSD (NR)	7	1	STD75512	05/02/16 22:57
36	1LM.LM34664	L16041363-01 (NR)	7	1		05/02/16 23:16
37	1LM.LM34665	L16041363-02 (NR)	7	1		05/02/16 23:35
38	1LM.LM34666	L16041363-03 (NR)	7	1		05/02/16 23:54
39	1LM.LM34667	L16041363-04 (NR)	7	1		05/03/16 00:13
40	1LM.LM34668	WG567042-07 CCV (1.0ug/L) (NR)	1	1	STD75510	05/03/16 00:31
41	1LM.LM34669	WG567013-08 MRL (2.0ug/kg) (NR)	7	1	STD75510	05/03/16 00:50
42	1LM.LM34670	WG567042-08 CCB (NR)	1	1		05/03/16 01:09
43	1LM.LM34671	L16041363-05 (NR)	7	1		05/03/16 01:28
44	1LM.LM34672	L16041363-06 (NR)	7	1		05/03/16 01:47
45	1LM.LM34673	L16041363-10 (NR)	7	1		05/03/16 02:06
46	1LM.LM34674	WG567042-09 CCV (1.0ug/L) (NR)	1	1	STD75510	05/03/16 02:25
47	1LM.LM34675	WG567013-09 MRL (2.0ug/kg) (NR)	7	1	STD75510	05/03/16 02:44
48	1LM.LM34676	WG567042-10 CCB (NR)	1	1		05/03/16 03:03

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 2 Approved: 05-MAY-16

Microbac Laboratories Inc.

Data Checklist

Date: 22-APR-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG566101
Runlog ID: 74691
Analytical Workgroups: L16040973, 0978

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MES

Primary Reviewer: 25-APR-2016 John Richards

Secondary Reviewer: 25-APR-2016 Mary Schilling

CHECKLIST1 - Modified 03/05/2008
Generated: APR-25-2016 16:40:39

Microbac Laboratories Inc.

Data Checklist

Date: 02-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 74889
Analytical Workgroups: L16041344 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
04-MAY-2016
John Richards

Secondary Reviewer:
05-MAY-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:16:50

Microbac Laboratories Inc.

00659522

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG567011

Login Number: L16041344

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW22R(5-5.5)230416	01	04/23/16					04/29/2016	6.2	28		05/02/16	3	28	
18CPTMW22R(10-10.5)23041	02	04/23/16					04/29/2016	6.1	28		05/02/16	3.1	28	
18CPTMW22R(15-15.5)23041	03	04/23/16					04/29/2016	6.1	28		05/02/16	3.1	28	
18CPTMW26(5-5.5)230416	04	04/23/16					04/29/2016	6	28		05/02/16	3.1	28	
18CPTMW26(5-5.5)230416DU	05	04/23/16					04/29/2016	6	28		05/02/16	3.1	28	
18CPTMW26(10-10.5)230416	06	04/23/16					04/29/2016	6	28		05/02/16	3.2	28	
18CPTMW26(14.5-15)230416	07	04/23/16					04/29/2016	6	28		05/02/16	3.2	28	
18CPTMW26SW(5-5.5)250416	08	04/25/16					04/29/2016	4.2	28		05/02/16	3.2	28	
18CPTMW26SW(10-10.5)2504	09	04/25/16					04/29/2016	4.1	28		05/02/16	3.2	28	
18CPTMW26SW(15-15.5)2504	10	04/25/16					04/29/2016	4.1	28		05/02/16	3.2	28	
18CPTMW26SW(20-20.5)2504	11	04/25/16					04/29/2016	4.1	28		05/02/16	3.2	28	
18CPTMW26SW(30-30.5)2504	12	04/25/16					04/29/2016	4	28		05/02/16	3.2	28	
18CPTMW26SW(40-40.5)2504	13	04/25/16					04/29/2016	4	28		05/02/16	3.3	28	
18CPTMW26SW(49.5-50)2504	14	04/25/16					04/29/2016	4	28		05/02/16	3.3	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4747277
Report generated 05/10/2016 09:44

METHOD BLANK SUMMARY

Login Number: L16041344
Blank File ID: 1LM.LM34633
Prep Date: 04/29/16 13:15
Analyzed Date: 05/02/16 13:27
Analyst: JWR

Work Group: WG567011
Blank Sample ID: WG567011-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG567011-07	1LM.LM34631	05/02/16 12:49	01
MCT	WG567011-01	1LM.LM34632	05/02/16 13:08	01
LCS	WG567011-03	1LM.LM34634	05/02/16 13:46	01
18CPTMW22R(5-5.5)230416	L16041344-01	1LM.LM34635	05/02/16 14:07	01
18CPTMW22R(10-10.5)230416	L16041344-02	1LM.LM34638	05/02/16 15:03	01
18CPTMW22R(15-15.5)230416	L16041344-03	1LM.LM34639	05/02/16 15:22	01
18CPTMW26(5-5.5)230416	L16041344-04	1LM.LM34640	05/02/16 15:41	01
18CPTMW26(5-5.5)230416DUP	L16041344-05	1LM.LM34641	05/02/16 16:00	01
QCMRL	WG567011-08	1LM.LM34643	05/02/16 16:38	01
18CPTMW26(10-10.5)230416	L16041344-06	1LM.LM34645	05/02/16 17:16	01
18CPTMW26(14.5-15)230416	L16041344-07	1LM.LM34646	05/02/16 17:35	01
18CPTMW26SW(5-5.5)250416	L16041344-08	1LM.LM34647	05/02/16 17:54	01
18CPTMW26SW(10-10.5)250416	L16041344-09	1LM.LM34648	05/02/16 18:13	01
18CPTMW26SW(15-15.5)250416	L16041344-10	1LM.LM34649	05/02/16 18:32	01
18CPTMW26SW(20-20.5)250416	L16041344-11	1LM.LM34650	05/02/16 18:51	01
18CPTMW26SW(30-30.5)250416	L16041344-12	1LM.LM34651	05/02/16 19:10	01
18CPTMW26SW(40-40.5)250416	L16041344-13	1LM.LM34652	05/02/16 19:29	01
18CPTMW26SW(49.5-50)250416	L16041344-14	1LM.LM34653	05/02/16 19:47	01
QCMRL	WG567011-09	1LM.LM34655	05/02/16 20:25	01

Report Name: BLANK_SUMMARY
PDF File ID: 4747278
Report generated 05/10/2016 09:44

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16041344 Prep Date: 04/29/16 13:15 Sample ID: WG567011-02
Instrument ID: LCMS1 Run Date: 05/02/16 13:27 Prep Method: 6850
File ID: 1LM.LM34633 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567011 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-22-APR-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.999	4.00	0.999	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4747279
10-MAY-2016 09:44

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16041344 Run Date: 05/02/2016 Sample ID: WG567011-03
Instrument ID: LCMS1 Run Time: 13:46 Prep Method: 6850
File ID: 1LM.LM34634 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567011 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD75512 Cal ID: LCMS1-22-APR-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	2.00	2.13	107	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4747280
Report generated: 05/10/2016 09:44

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16041344 Cal ID: LCMS1 - Worknum: WG567011
Instrument ID: LCMS1 Contract #: Method: 6850
Parent ID: WG567011-04 File ID: 1LM.LM34635 Dil: 1 Matrix: SOLID
Sample ID: WG567011-05 MS File ID: 1LM.LM34636 Dil: 1 Units: ug/kg
Sample ID: WG567011-06 MSD File ID: 1LM.LM34637 Dil: 1 Percent Solid: 84.4

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Perchlorate	ND	2.27	2.44	108	2.28	2.56	113	4.78	80 - 120	15	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4747281
Report generated 05/10/2016 09:44

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16041344
Analytical Method: 6850
ICAL Workgroup: WG566101

Instrument ID: LCMS1
Initial Calibration Date: 22-APR-16 17:20
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.650	2.23	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4749625
Report generated 05/10/2016 09:44

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16041344

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 22-APR-16 17:20

Column ID: F

Analyte	WG566101-02			WG566101-03			WG566101-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	12200.0000	1.661	0.200	24400.0000	1.641	0.500	61500.0000	1.632

INT_CAL - Modified 03/06/2008
PDF File ID: 4749625
Report generated 05/10/2016 09:44

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16041344

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 22-APR-16 17:20

Column ID: F

Analyte	WG566101-05			WG566101-06			WG566101-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	127000.000	1.674	2.00	249000.000	1.637	5.00	614000.000	1.645

INT_CAL - Modified 03/06/2008
PDF File ID: 4749625
Report generated 05/10/2016 09:44

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16041344
Analytical Method: 6850

Instrument ID: LCMS1
Initial Calibration Date: 22-APR-16 17:20
Column ID: F

Analyte	WG566101-08		
	CONC	RESP	RF
Perchlorate	10.0	1180000.00	1.661

INT_CAL - Modified 03/06/2008
PDF File ID: 4749625
Report generated 05/10/2016 09:44

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16041344 Run Date: 04/22/2016 Sample ID: WG566101-09
Instrument ID: LCMS1 Run Time: 17:39 Method: 6850
File ID: 1LM.LM34530 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG566101 Cal ID: LCMS1 - 22-APR-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.988	ug/L	1.63	1.20	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4749626
Report generated 05/10/2016 09:45

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16041344
Run Date: 05/02/2016
Sample ID: WG567042-01
Instrument ID: LCMS1
Run Time: 12:11
Method: 6850
File ID: 1LM.LM34629
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG567011
Cal ID: LCMS1 - 22-APR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4747284
Report generated 05/10/2016 09:45

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16041344
Run Date: 05/02/2016
Sample ID: WG567042-04
Instrument ID: LCMS1
Run Time: 16:57
Method: 6850
File ID: 1LM.LM34644
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG567011
Cal ID: LCMS1 - 22-APR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4747284
Report generated 05/10/2016 09:45

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16041344
Run Date: 05/02/2016
Sample ID: WG567042-06
Instrument ID: LCMS1
Run Time: 21:03
Method: 6850
File ID: 1LM.LM34657
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG567011
Cal ID: LCMS1 - 22-APR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4747284
Report generated 05/10/2016 09:45

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041344
Run Date: 05/02/2016
Sample ID: WG567042-02
Instrument ID: LCMS1
Run Time: 12:30
Method: 6850
File ID: 1LM.LM34630
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG567011
Cal ID: LCMS1 - 22-APR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/kg	1.70	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4747283
Report generated 05/10/2016 09:45

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041344
Run Date: 05/02/2016
Sample ID: WG567042-03
Instrument ID: LCMS1
Run Time: 16:19
Method: 6850
File ID: 1LM.LM34642
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG567011
Cal ID: LCMS1 - 22-APR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.00	ug/kg	1.66	0	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4747283
Report generated 05/10/2016 09:45

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041344 Run Date: 05/02/2016 Sample ID: WG567042-05
Instrument ID: LCMS1 Run Time: 20:06 Method: 6850
File ID: 1LM.LM34654 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG567011 Cal ID: LCMS1 - 22-APR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.997	ug/kg	1.65	0.300	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4747283
Report generated 05/10/2016 09:45

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16041344 Run Date: 05/02/2016 Sample ID: WG567011-07

Instrument ID: LCMS1 Run Time: 12:49 Prep Method: 6850

File ID: 1LM.LM34631 Analyst: JWR Method: 6850

Workgroup (AAB#): WG567011 Matrix: Soil Units: ug/kg

Contract #: Cal ID: LCMS1-22-APR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.00	100	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4747282
Report generated 05/10/2016 09:44

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16041344 Run Date: 05/02/2016 Sample ID: WG567011-08
Instrument ID: LCMS1 Run Time: 16:38 Prep Method: 6850
File ID: 1LM.LM34643 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567011 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-22-APR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.99	99.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4747282
Report generated 05/10/2016 09:44

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16041344 Run Date: 05/02/2016 Sample ID: WG567011-09
Instrument ID: LCMS1 Run Time: 20:25 Prep Method: 6850
File ID: 1LM.LM34655 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567011 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-22-APR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.12	106	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4747282
Report generated 05/10/2016 09:44

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16041344
Instrument ID: LCMS1
Workgroup (AAB#): WG567011

ICAL CCV Number: WG566101-05
CAL ID: LCMS1-22-APR-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1
WG566101	NA	NA	372000
Upper Limit	NA	NA	558000
Lower Limit	NA	NA	186000
L16041344-01	1.00	01	440000
L16041344-02	1.00	01	446000
L16041344-03	1.00	01	466000
L16041344-04	1.00	01	479000
L16041344-05	1.00	01	493000
L16041344-06	1.00	01	512000
L16041344-07	1.00	01	554000
L16041344-08	1.00	01	517000
L16041344-09	1.00	01	531000
L16041344-10	1.00	01	512000
L16041344-11	1.00	01	511000
L16041344-12	1.00	01	515000
L16041344-13	1.00	01	513000
L16041344-14	1.00	01	512000
WG567011-02	1.00	01	428000
WG567011-03	1.00	01	431000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4747285
Report generated 05/10/2016 09:45

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**	6850	**Samplenum:**	L16041344-01
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:15	**File ID:**	1LM.LM34635
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567011	**Analysis Date:**	05/02/2016 14:07	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**	6850	**Samplenum:**	L16041344-02
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:15	**File ID:**	1LM.LM34638
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567011	**Analysis Date:**	05/02/2016 15:03	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**	6850	**Samplenum:**	L16041344-03
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:15	**File ID:**	1LM.LM34639
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567011	**Analysis Date:**	05/02/2016 15:22	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	432	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**	6850	**Samplenum:**	L16041344-04
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:15	**File ID:**	1LM.LM34640
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567011	**Analysis Date:**	05/02/2016 15:41	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**	6850	**Samplenum:**	L16041344-05
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:15	**File ID:**	1LM.LM34641
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567011	**Analysis Date:**	05/02/2016 16:00	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**	6850	**Samplenum:**	L16041344-06
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:15	**File ID:**	1LM.LM34645
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567011	**Analysis Date:**	05/02/2016 17:16	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**	6850	**Samplenum:**	L16041344-07
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:15	**File ID:**	1LM.LM34646
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567011	**Analysis Date:**	05/02/2016 17:35	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**	6850	**Samplenum:**	L16041344-08
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:15	**File ID:**	1LM.LM34647
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567011	**Analysis Date:**	05/02/2016 17:54	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	432	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**	6850	**Samplenum:**	L16041344-09
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:15	**File ID:**	1LM.LM34648
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567011	**Analysis Date:**	05/02/2016 18:13	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	361	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**	6850	**Samplenum:**	L16041344-10
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:15	**File ID:**	1LM.LM34649
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567011	**Analysis Date:**	05/02/2016 18:32	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	21300	7300	2.92	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**	6850	**Samplenum:**	L16041344-11
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:15	**File ID:**	1LM.LM34650
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567011	**Analysis Date:**	05/02/2016 18:51	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	63900	21600	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**	6850	**Samplenum:**	L16041344-12
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:15	**File ID:**	1LM.LM34651
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567011	**Analysis Date:**	05/02/2016 19:10	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**	6850	**Samplenum:**	L16041344-13
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:15	**File ID:**	1LM.LM34652
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567011	**Analysis Date:**	05/02/2016 19:29	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**	6850	**Samplenum:**	L16041344-14
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:15	**File ID:**	1LM.LM34653
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567011	**Analysis Date:**	05/02/2016 19:47	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**		**Samplenum:**	WG566101-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34523
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567011	**Analysis Date:**	04/22/2016 15:27	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	12200	4690	2.60	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**		**Samplenum:**	WG566101-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34524
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567011	**Analysis Date:**	04/22/2016 15:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	24400	8930	2.73	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**		**Samplenum:**	WG566101-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34525
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567011	**Analysis Date:**	04/22/2016 16:05	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	61500	21100	2.91	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**		**Samplenum:**	WG566101-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34526
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567011	**Analysis Date:**	04/22/2016 16:24	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	127000	43000	2.95	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**		**Samplenum:**	WG566101-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34527
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567011	**Analysis Date:**	04/22/2016 16:42	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	249000	86800	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**		**Samplenum:**	WG566101-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34528
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567011	**Analysis Date:**	04/22/2016 17:01	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	614000	206000	2.98	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**		**Samplenum:**	WG566101-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34529
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567011	**Analysis Date:**	04/22/2016 17:20	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1180000	398000	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**		**Samplenum:**	WG566101-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34530
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567011	**Analysis Date:**	04/22/2016 17:39	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	130000	45700	2.84	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**	6850	**Samplenum:**	WG567011-01
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:15	**File ID:**	1LM.LM34632
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567011	**Analysis Date:**	05/02/2016 13:08	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	27900	9950	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**	6850	**Samplenum:**	WG567011-02
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:15	**File ID:**	1LM.LM34633
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567011	**Analysis Date:**	05/02/2016 13:27	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**	6850	**Samplenum:**	WG567011-03
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:15	**File ID:**	1LM.LM34634
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567011	**Analysis Date:**	05/02/2016 13:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	30200	10500	2.88	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**	6850	**Samplenum:**	WG567011-05
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:15	**File ID:**	1LM.LM34636
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567011	**Analysis Date:**	05/02/2016 14:25	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	31400	10800	2.91	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**	6850	**Samplenum:**	WG567011-06
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:15	**File ID:**	1LM.LM34637
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567011	**Analysis Date:**	05/02/2016 14:44	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32900	11500	2.86	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**	6850	**Samplenum:**	WG567011-07
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:15	**File ID:**	1LM.LM34631
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567011	**Analysis Date:**	05/02/2016 12:49	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	28200	11100	2.54	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**	6850	**Samplenum:**	WG567011-08
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:15	**File ID:**	1LM.LM34643
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567011	**Analysis Date:**	05/02/2016 16:38	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	33500	12800	2.62	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**	6850	**Samplenum:**	WG567011-09
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:15	**File ID:**	1LM.LM34655
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567011	**Analysis Date:**	05/02/2016 20:25	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37500	12900	2.91	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**		**Samplenum:**	WG567042-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34629
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567011	**Analysis Date:**	05/02/2016 12:11	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	322	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**		**Samplenum:**	WG567042-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34630
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567011	**Analysis Date:**	05/02/2016 12:30	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	140000	47600	2.94	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**		**Samplenum:**	WG567042-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34642
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567011	**Analysis Date:**	05/02/2016 16:19	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	166000	58700	2.83	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**		**Samplenum:**	WG567042-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34644
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567011	**Analysis Date:**	05/02/2016 16:57	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**		**Samplenum:**	WG567042-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34654
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567011	**Analysis Date:**	05/02/2016 20:06	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	174000	58200	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**		**Samplenum:**	WG567042-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34657
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567011	**Analysis Date:**	05/02/2016 21:03	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

2.2.1.3 Sample Data

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Created with Analyst Reporter
Printed: 5/3/2016 11:19 AM

Data File	LM34635.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 2:07:08 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041344-01 REF	**Injection Vial**	7.00
Data File	LM34635.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 2:07:08 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	WG567011-04	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.400e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

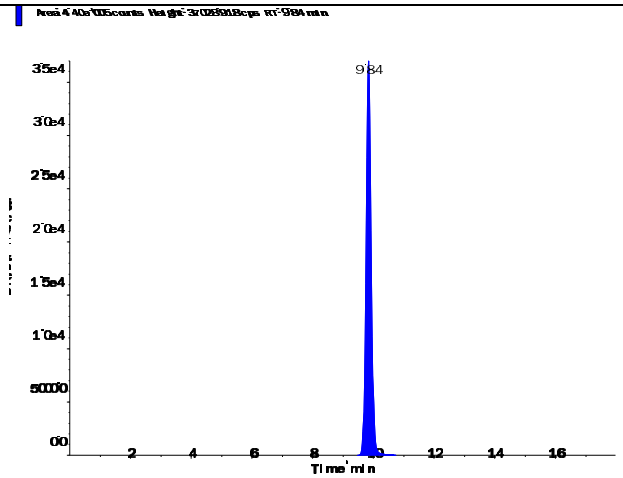

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

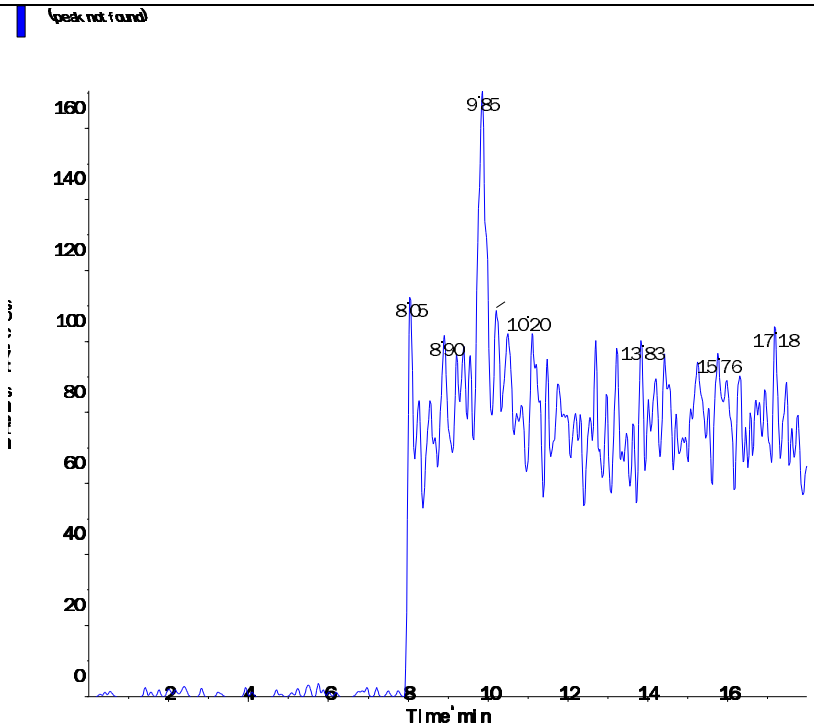

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.90) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

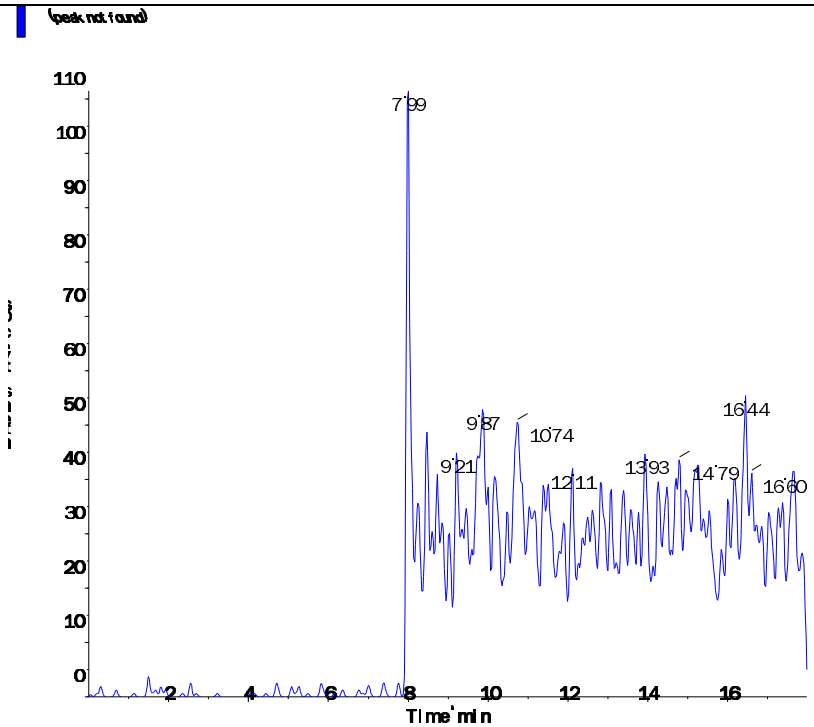

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Created with Analyst Reporter
Printed: 5/3/2016 11:20 AM

Data File	LM34638.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 3:03:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041344-02	**Injection Vial**	10.00
Data File	LM34638.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 3:03:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	L16041344-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.460e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

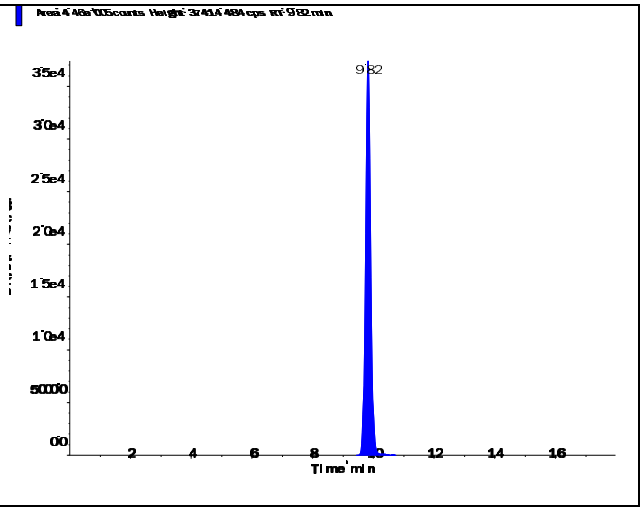

s.dataFile Page 1 of 2

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Created with Analyst Reporter
Printed: 5/3/2016 11:20 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

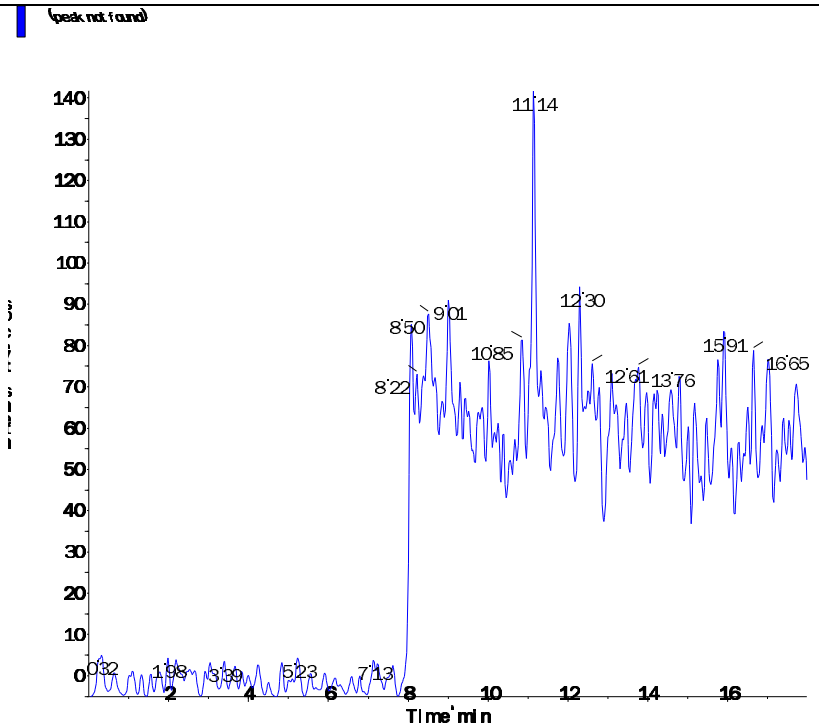

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.90) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

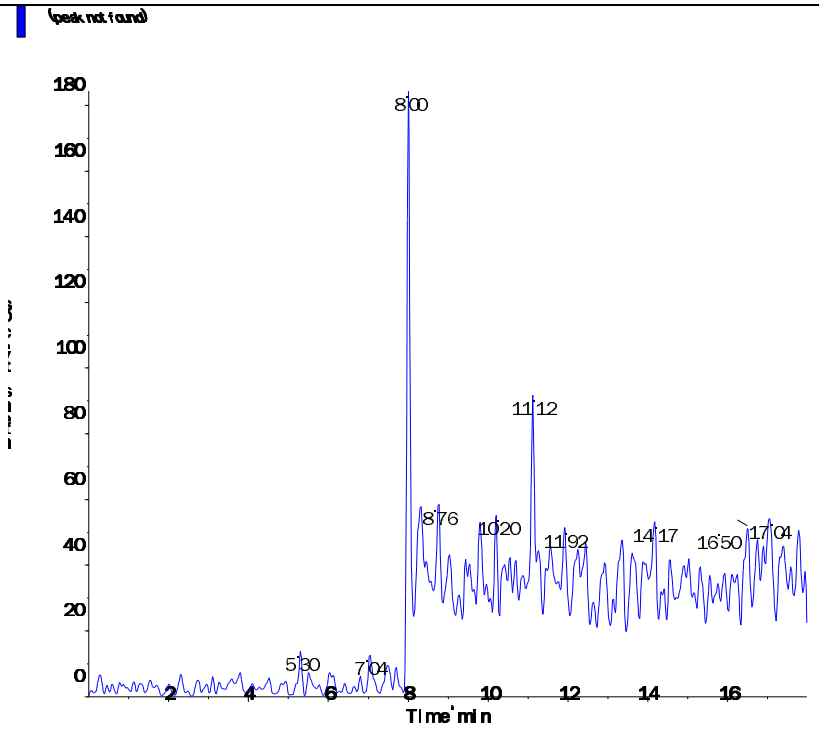

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Data File	LM34639.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 3:22:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041344-03	**Injection Vial**	11.00
Data File	LM34639.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 3:22:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	L16041344-03	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.660e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	4.320e+02	9.80	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

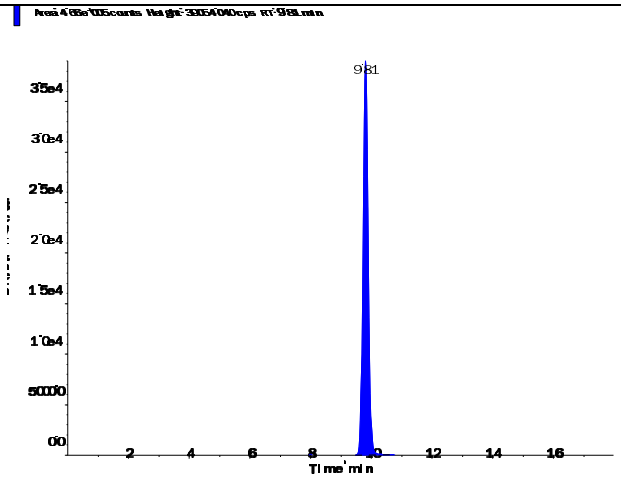

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

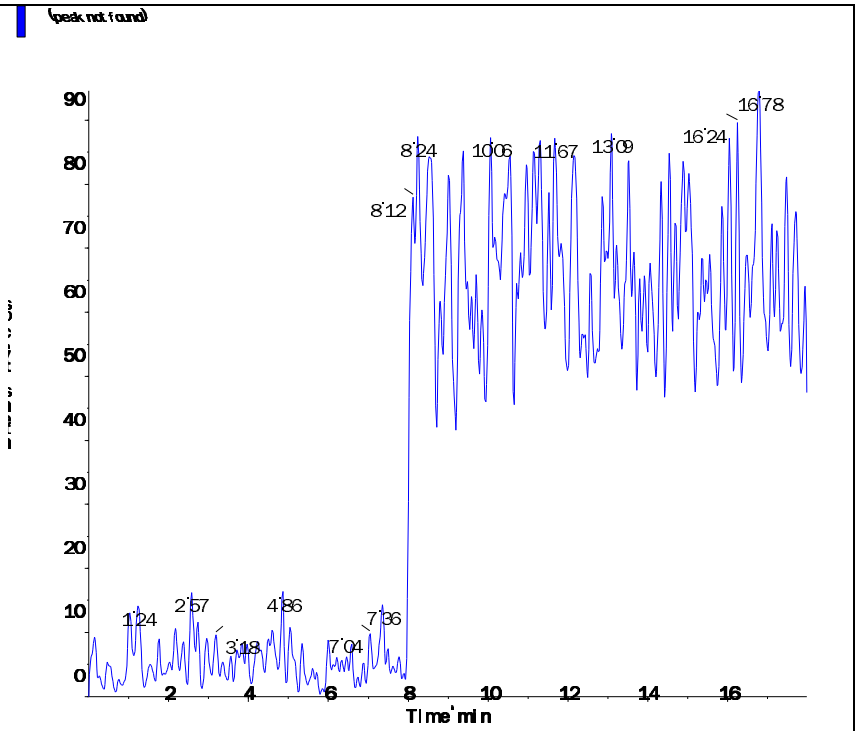

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.80 (9.90) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

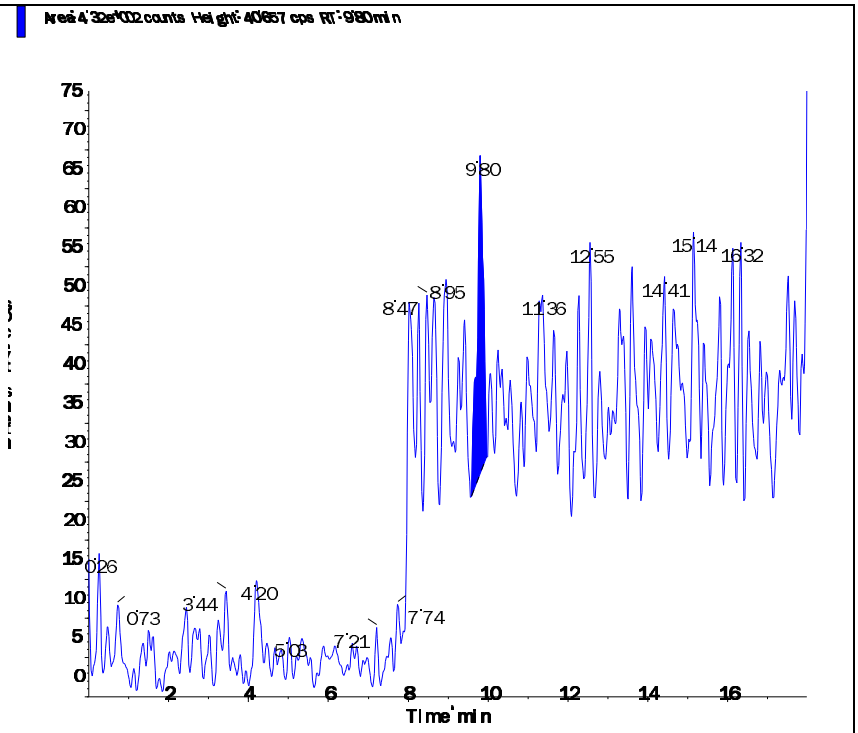

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Data File	LM34640.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 3:41:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041344-04	**Injection Vial**	12.00
Data File	LM34640.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 3:41:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	L16041344-04	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.790e+05	9.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.70(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

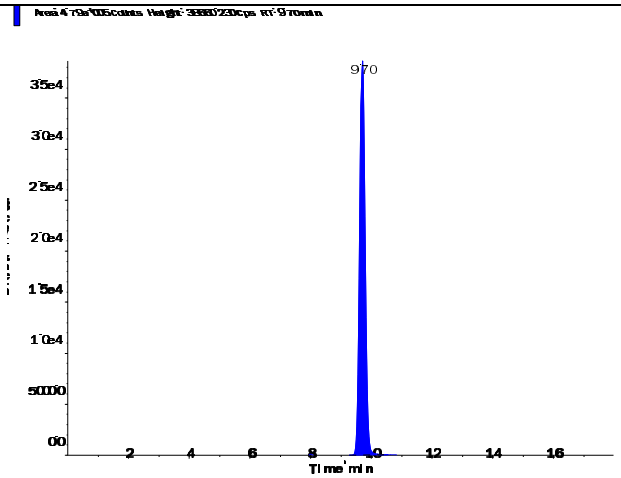

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

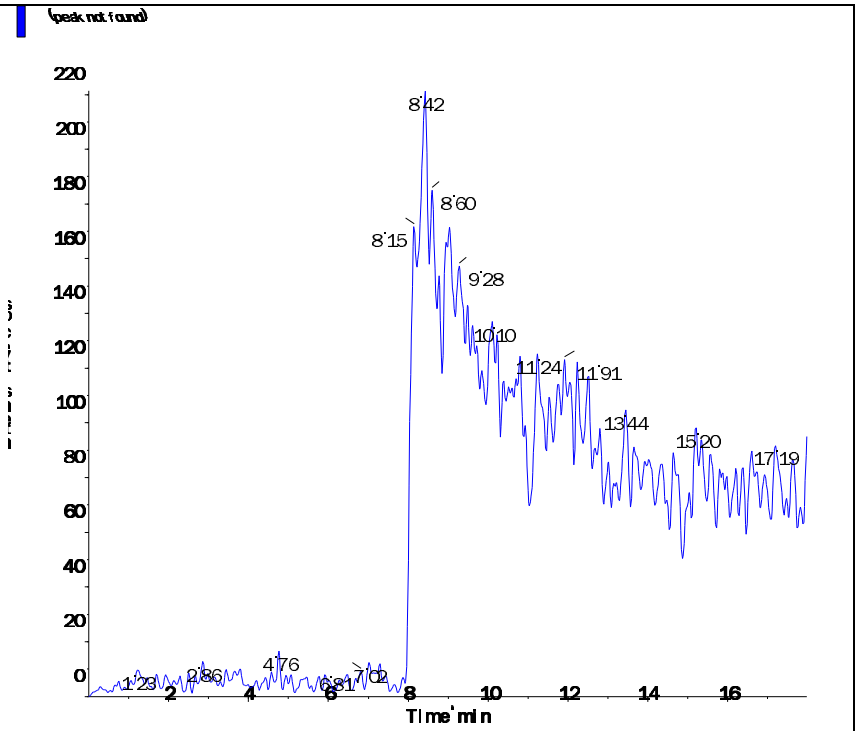

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.90) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

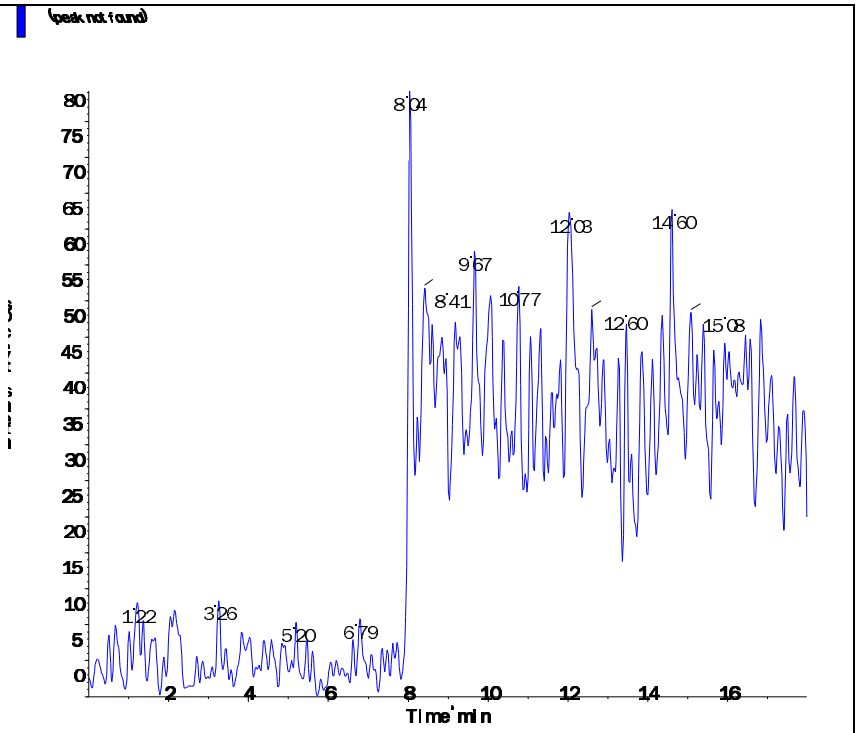

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Data File	LM34641.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 4:00:41 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041344-05	**Injection Vial**	13.00
Data File	LM34641.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 4:00:41 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	L16041344-05	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.70(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

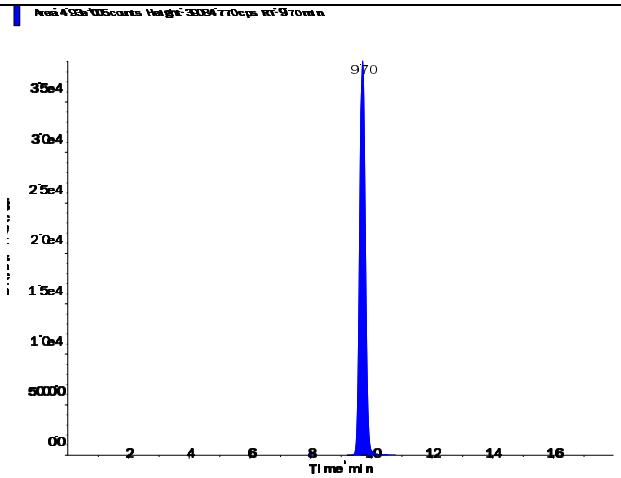

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

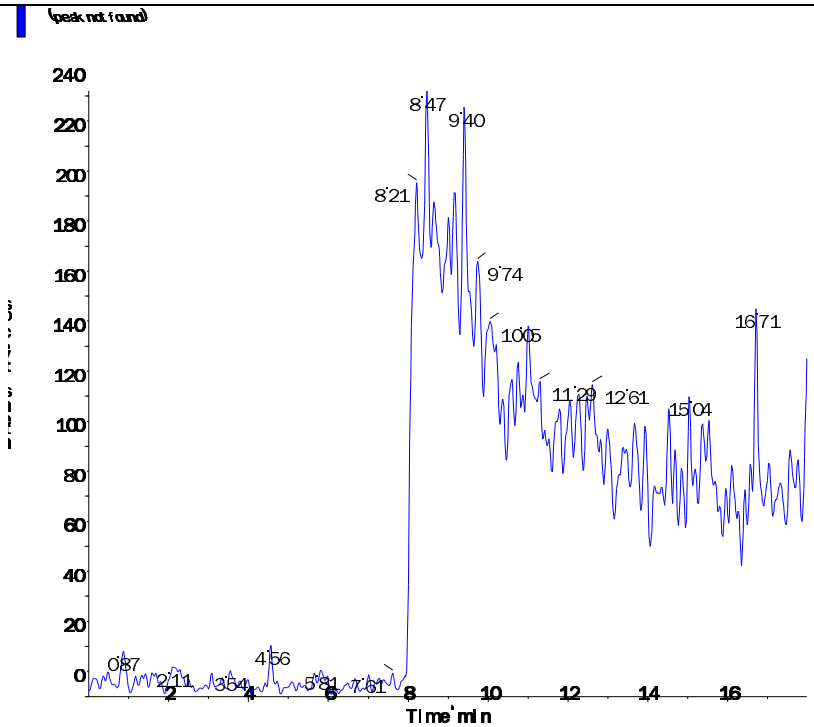

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.90) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

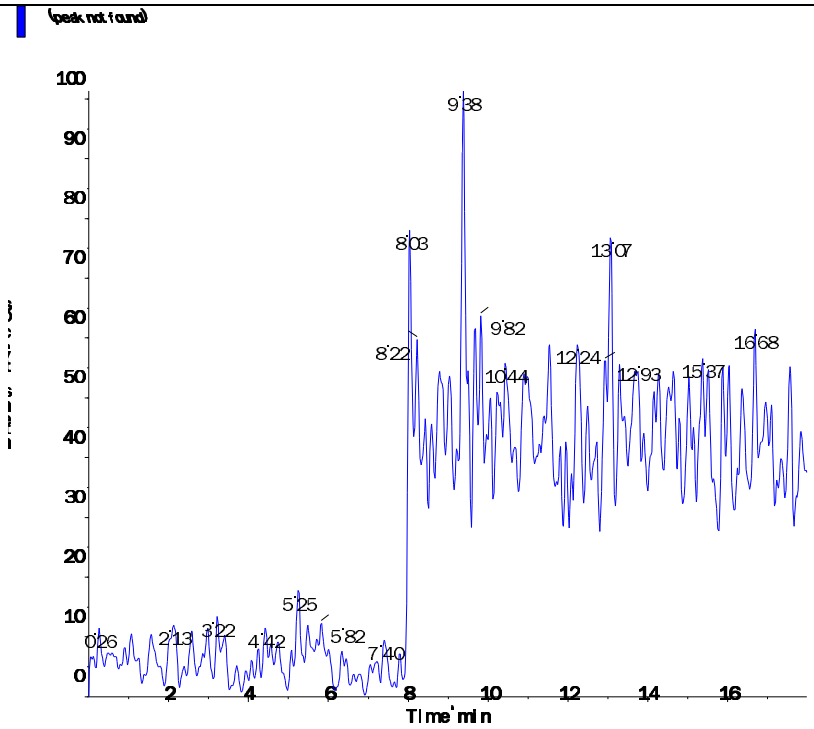

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Data File	LM34645.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 5:16:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041344-06	**Injection Vial**	14.00
Data File	LM34645.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 5:16:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	L16041344-06	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.120e+05	9.65	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.65(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

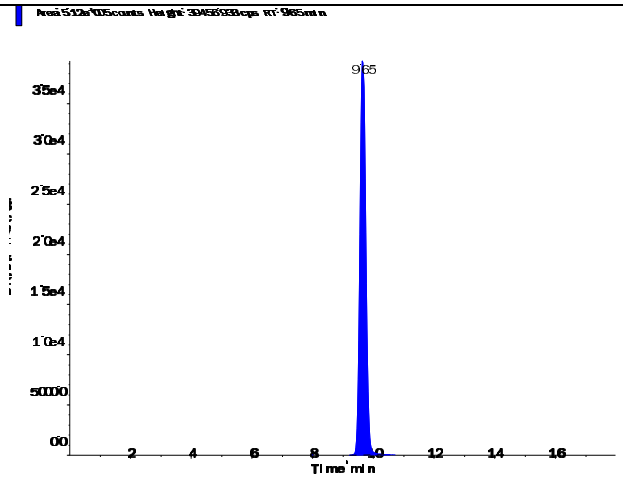

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

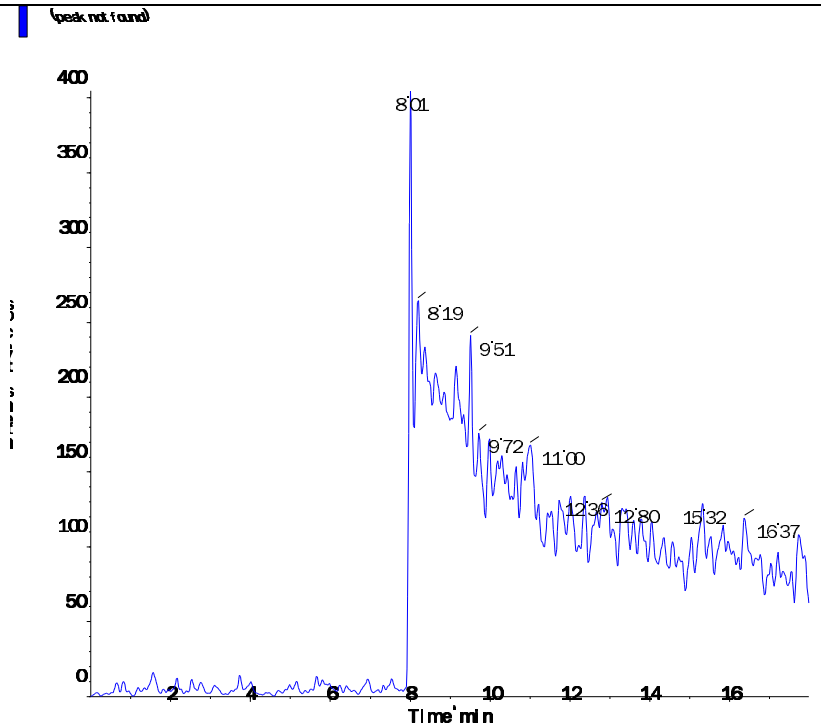

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.90) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

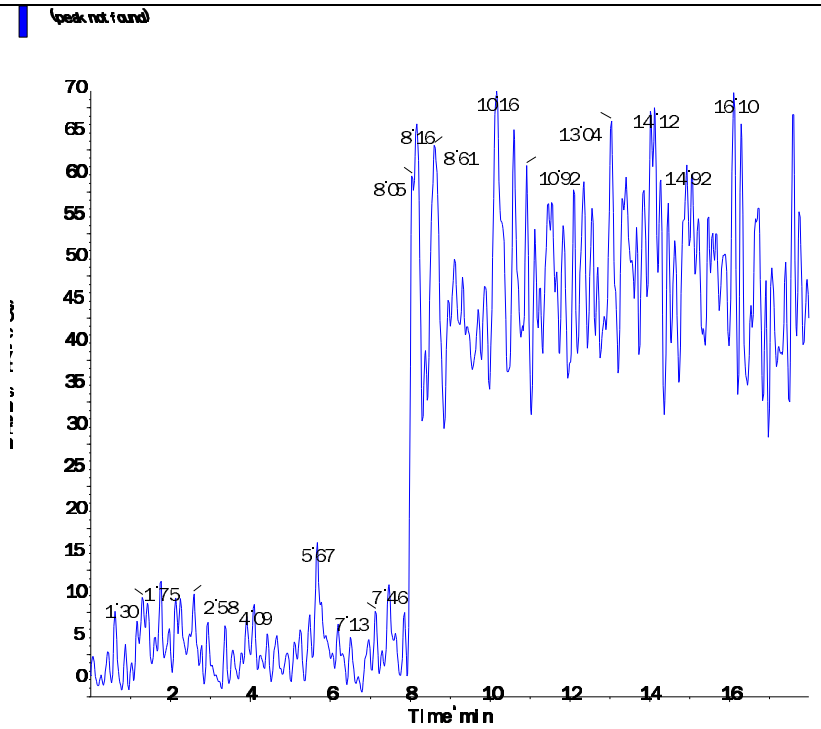

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Data File	LM34646.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 5:35:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041344-07	**Injection Vial**	15.00
Data File	LM34646.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 5:35:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	L16041344-07	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.540e+05	9.65	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.65(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

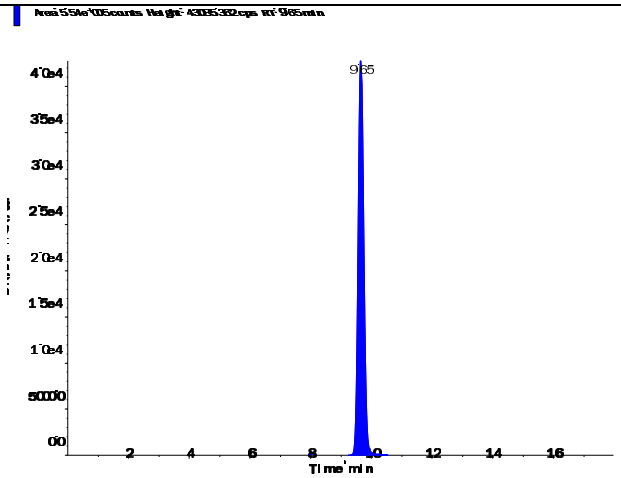

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

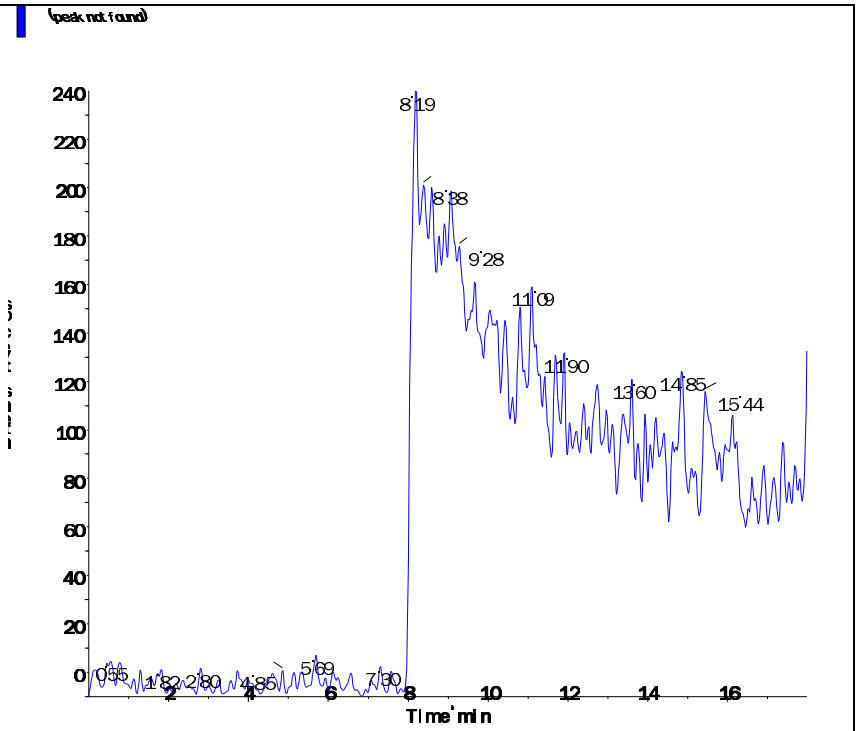

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.90) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

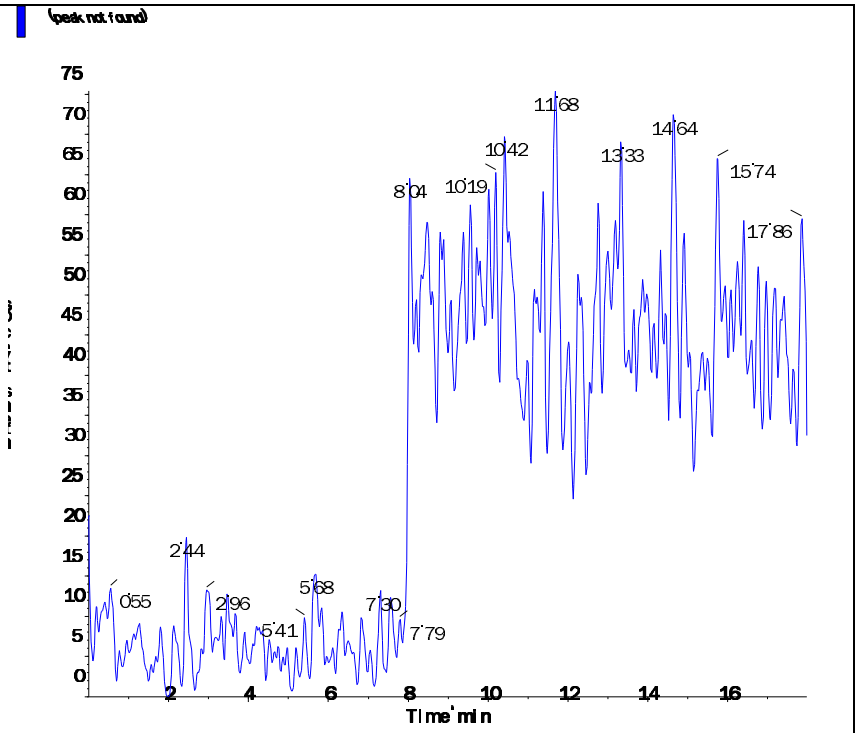

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Data File	LM34647.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 5:54:19 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041344-08	**Injection Vial**	16.00
Data File	LM34647.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 5:54:19 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	L16041344-08	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.170e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	4.320e+02	9.53	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

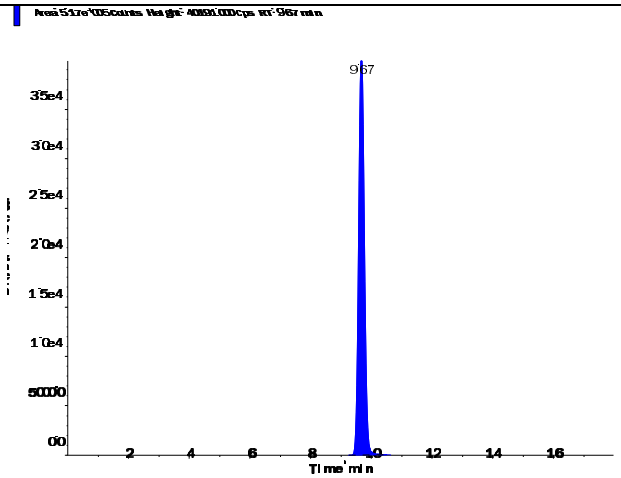

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

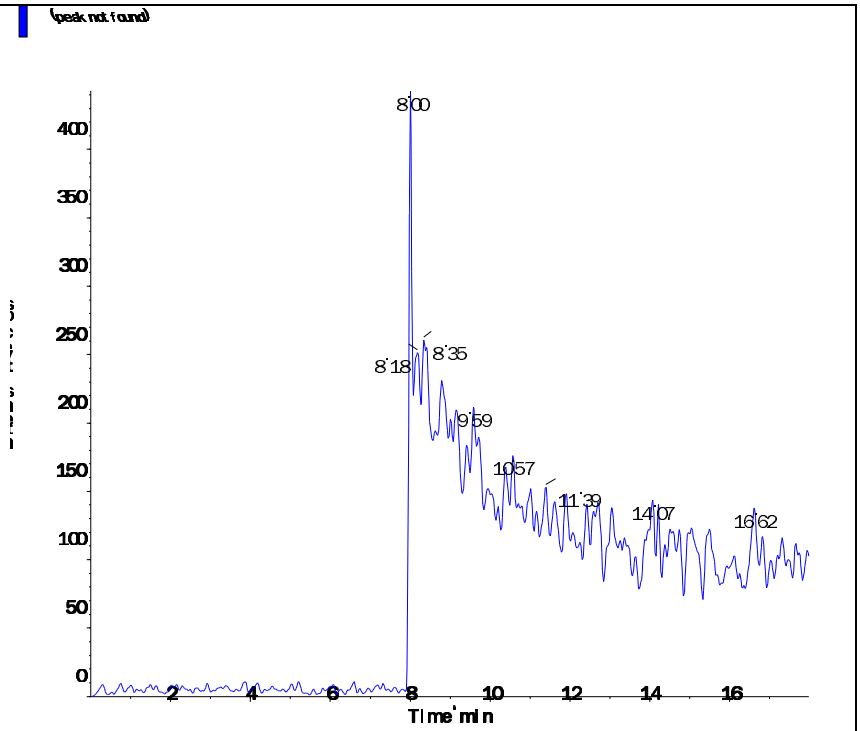

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.53 (9.90) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

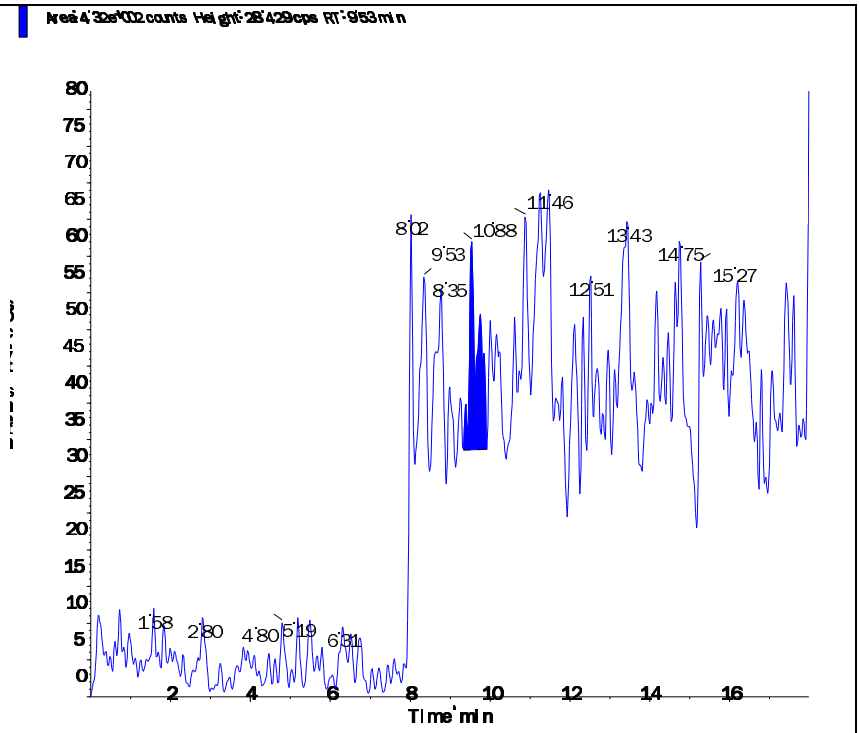

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Data File	LM34648.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 6:13:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041344-09	**Injection Vial**	17.00
Data File	LM34648.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 6:13:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	L16041344-09	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.310e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	3.610e+02	9.51	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

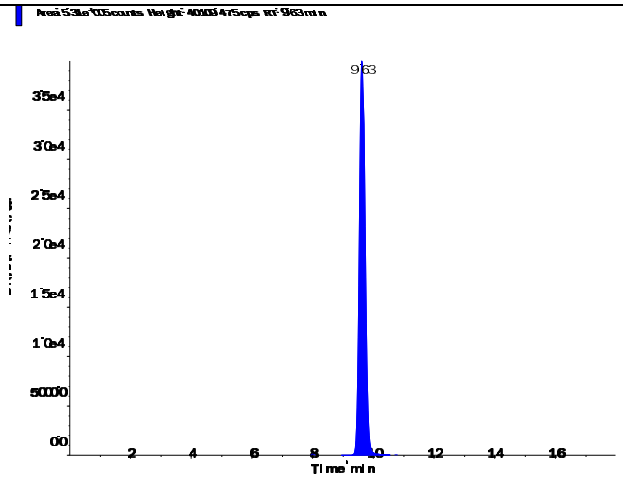

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.92) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	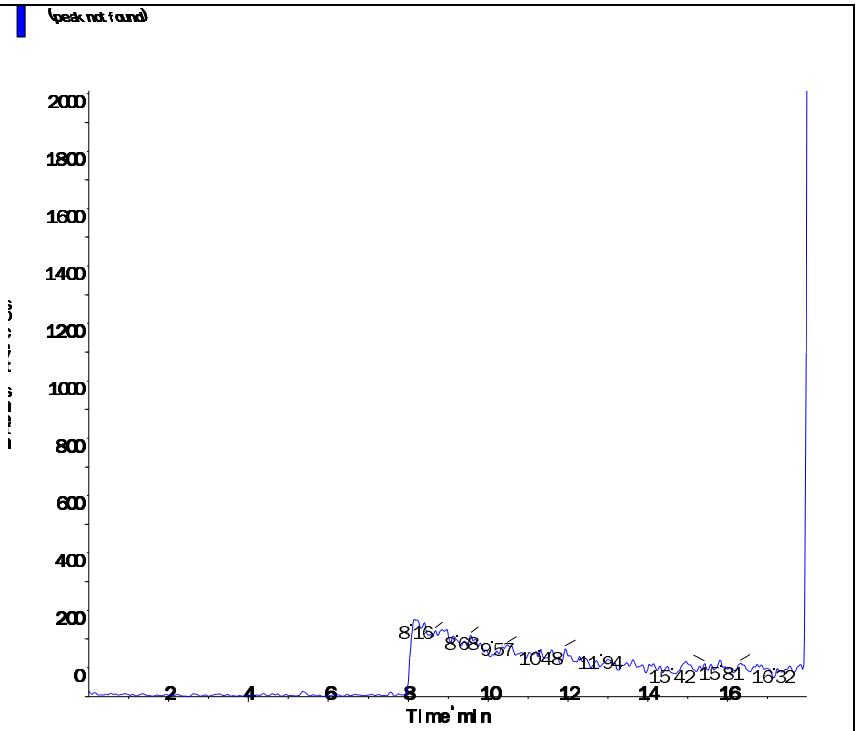
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.51 (9.90) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	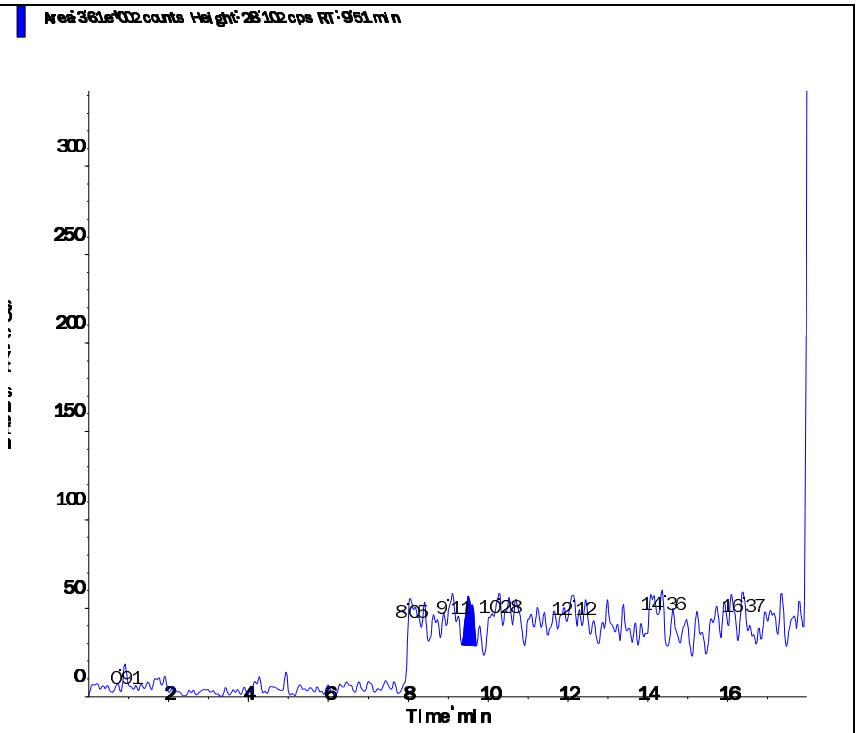

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Data File	LM34649.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 6:32:11 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041344-10	**Injection Vial**	18.00
Data File	LM34649.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 6:32:11 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	L16041344-10	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.120e+05	9.73	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.130e+04	9.75	N/A	0.127
Perchlorate conf	7.300e+03	9.73	N/A	0.114

O18LP (Internal Standard)

RT (Exp. RT): 9.73(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

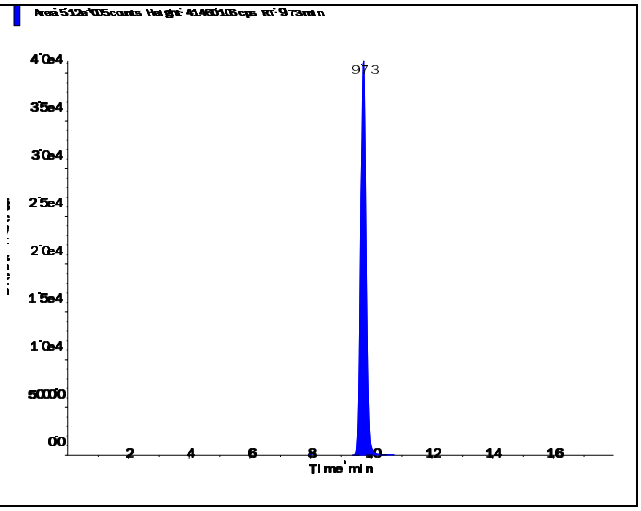

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.75 (9.92) min
Calculated conc:	0.127 ng/ml
Area Ratio:	0.042
Sample Type:	(Unknown)

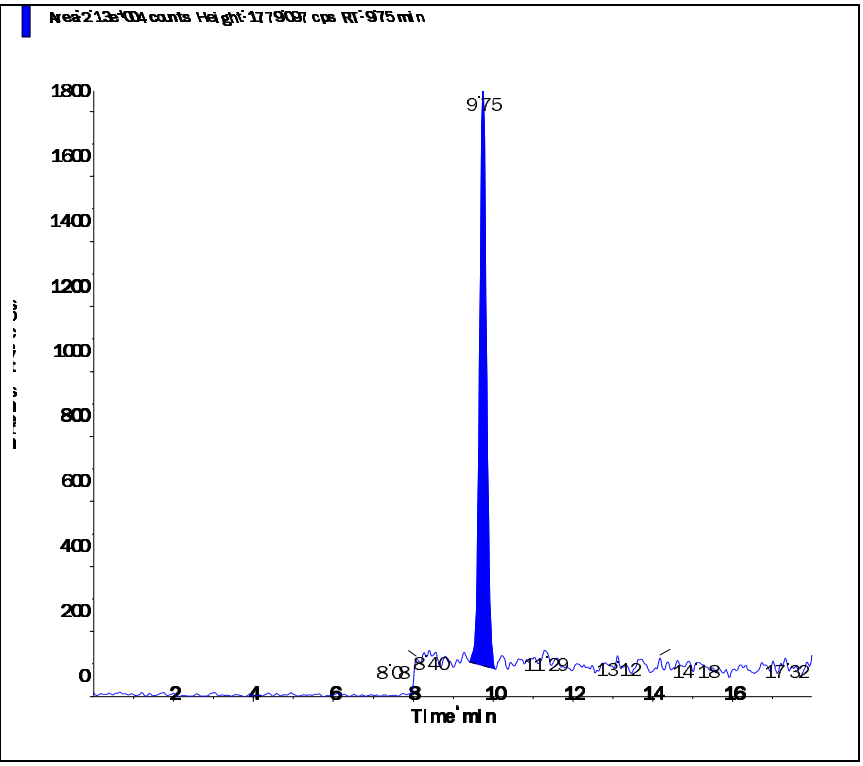

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.73 (9.90) min
Calculated conc:	0.114 ng/ml
Area Ratio:	0.014
Sample Type:	(Unknown)

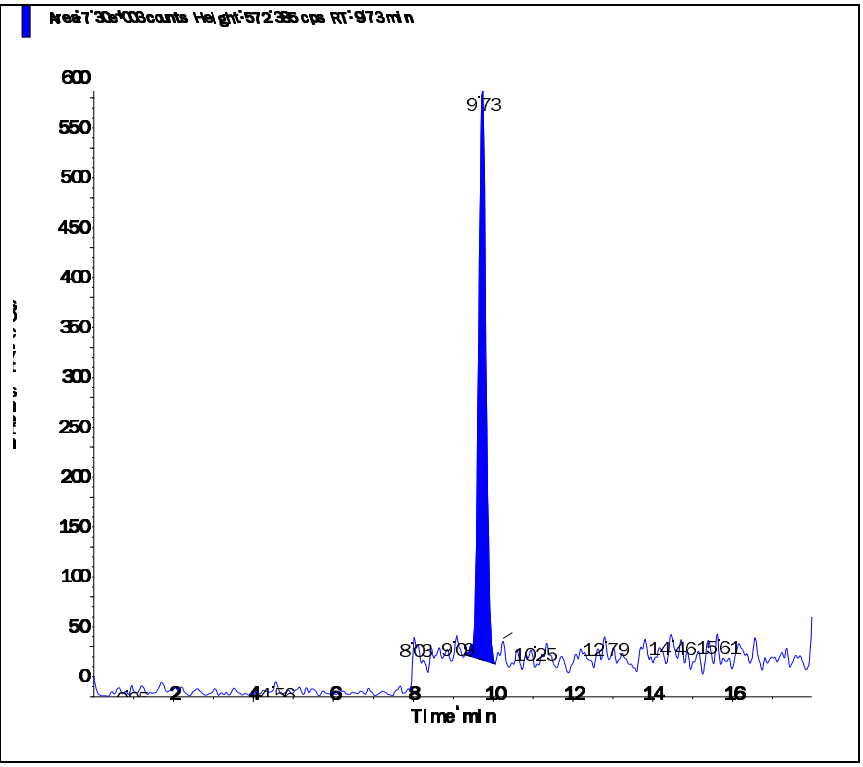

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Data File	LM34650.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 6:51:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041344-11	**Injection Vial**	19.00
Data File	LM34650.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 6:51:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	L16041344-11	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.76	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	6.390e+04	9.77	N/A	0.379
Perchlorate conf	2.160e+04	9.75	N/A	0.366

O18LP (Internal Standard)

RT (Exp. RT): 9.76(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

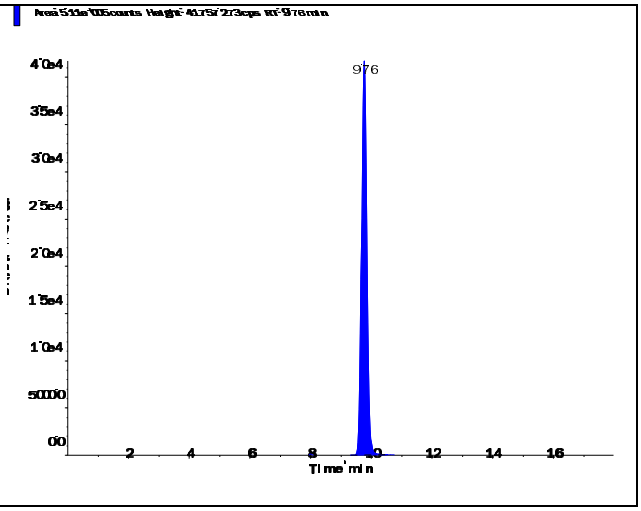

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.77 (9.92) min
Calculated conc:	0.379 ng/ml
Area Ratio:	0.125
Sample Type:	(Unknown)

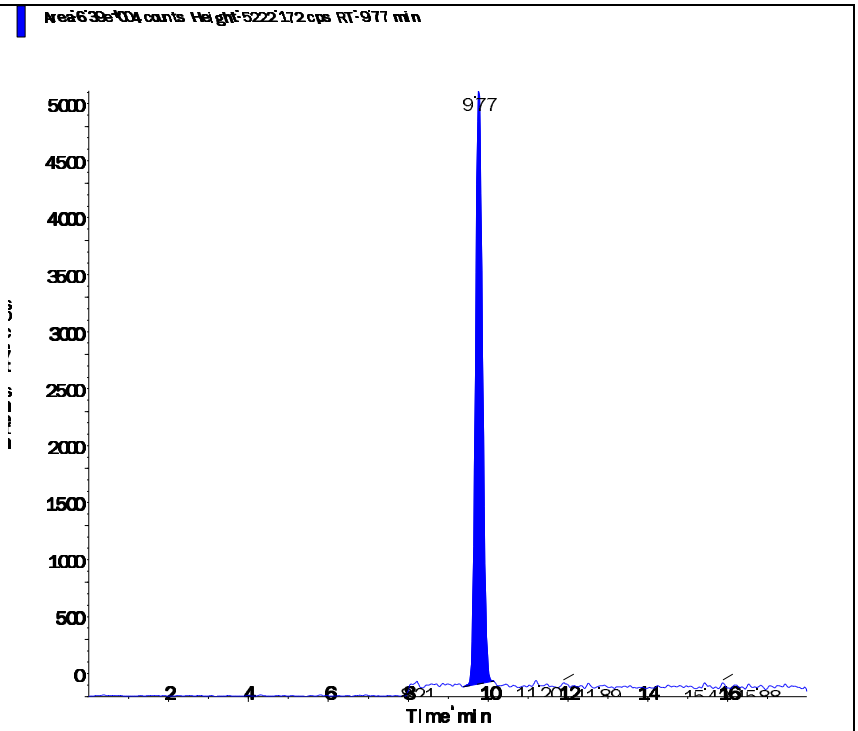

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.75 (9.90) min
Calculated conc:	0.366 ng/ml
Area Ratio:	0.042
Sample Type:	(Unknown)

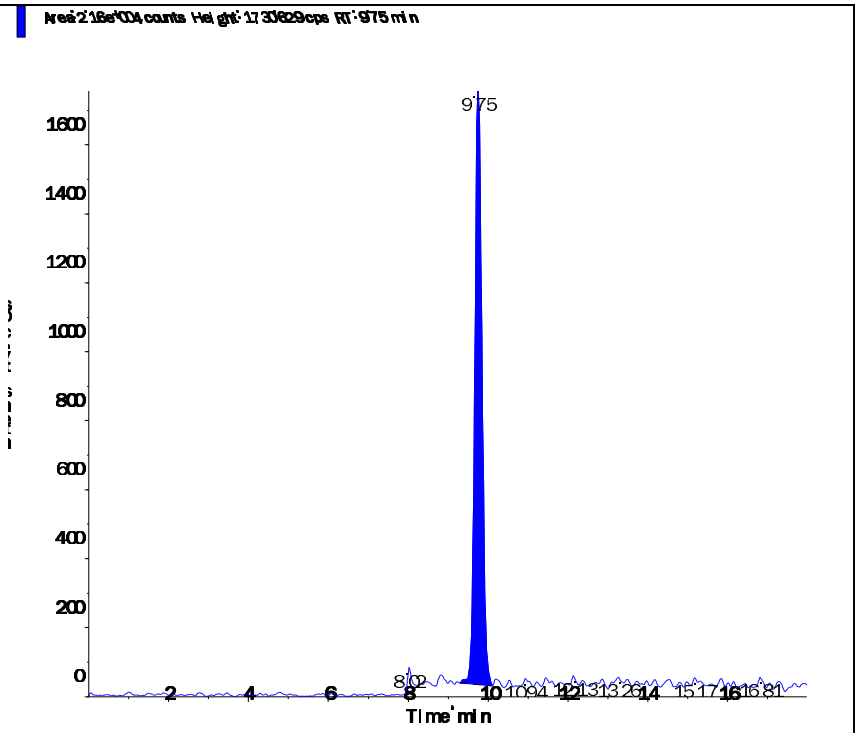

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Data File	LM34651.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 7:10:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041344-12	**Injection Vial**	20.00
Data File	LM34651.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 7:10:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	L16041344-12	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.150e+05	9.77	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.77(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

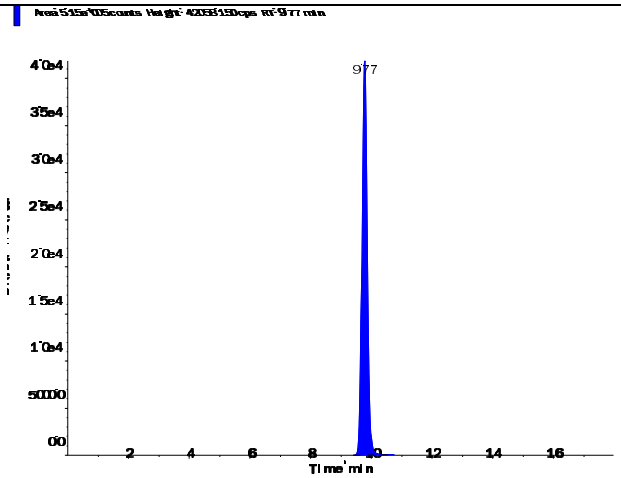

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

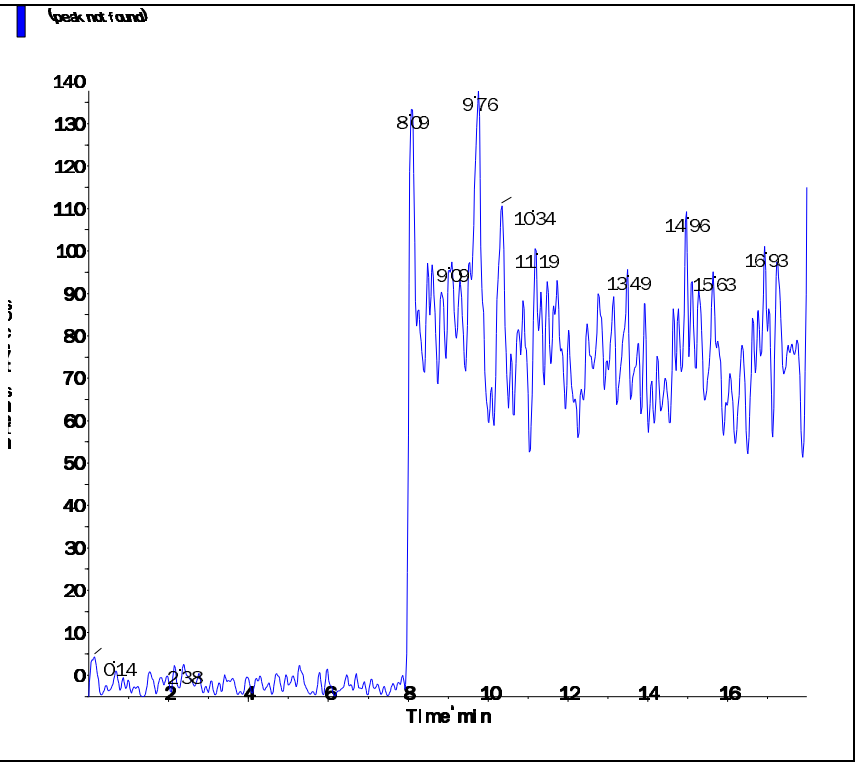

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.90) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

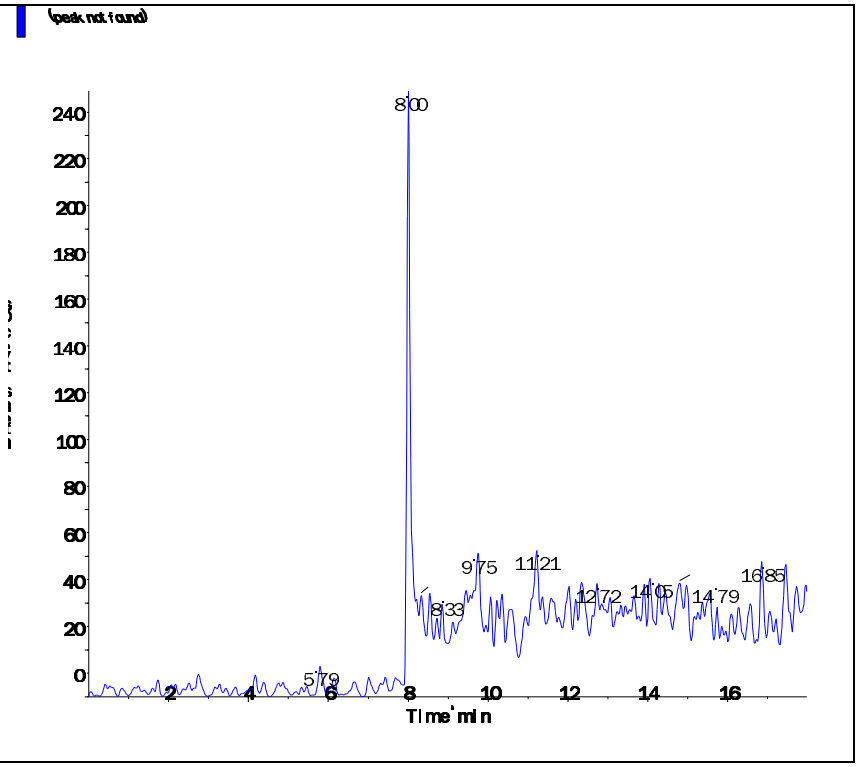

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Data File	LM34652.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 7:29:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041344-13	**Injection Vial**	21.00
Data File	LM34652.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 7:29:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	L16041344-13	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.130e+05	9.77	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.77(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

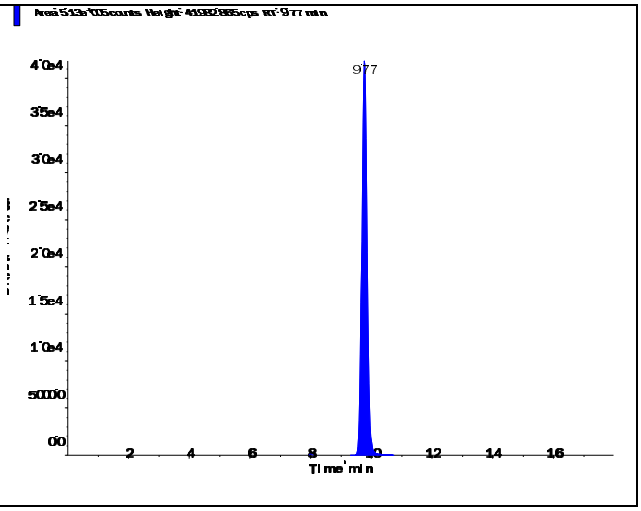

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

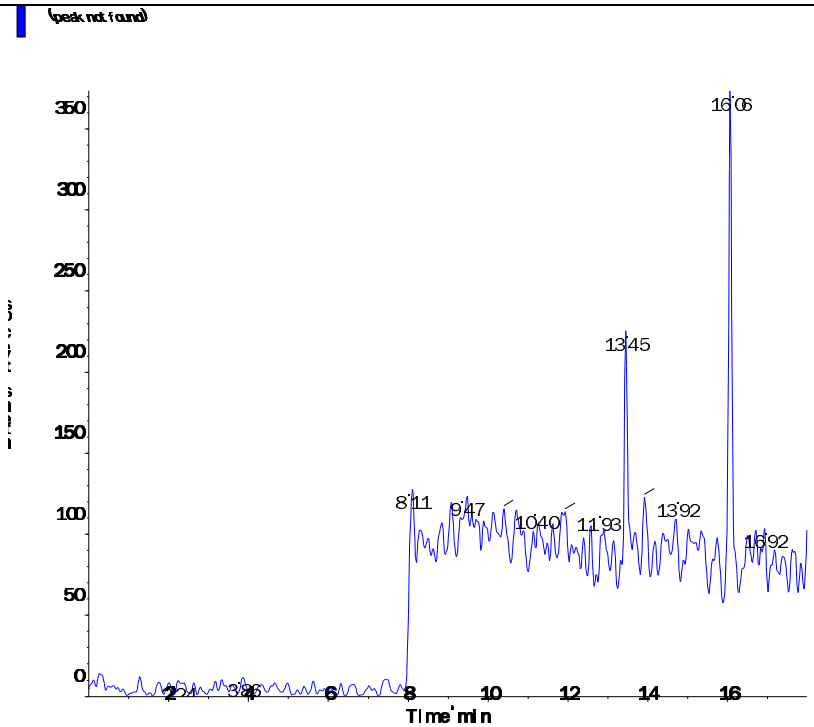

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.90) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

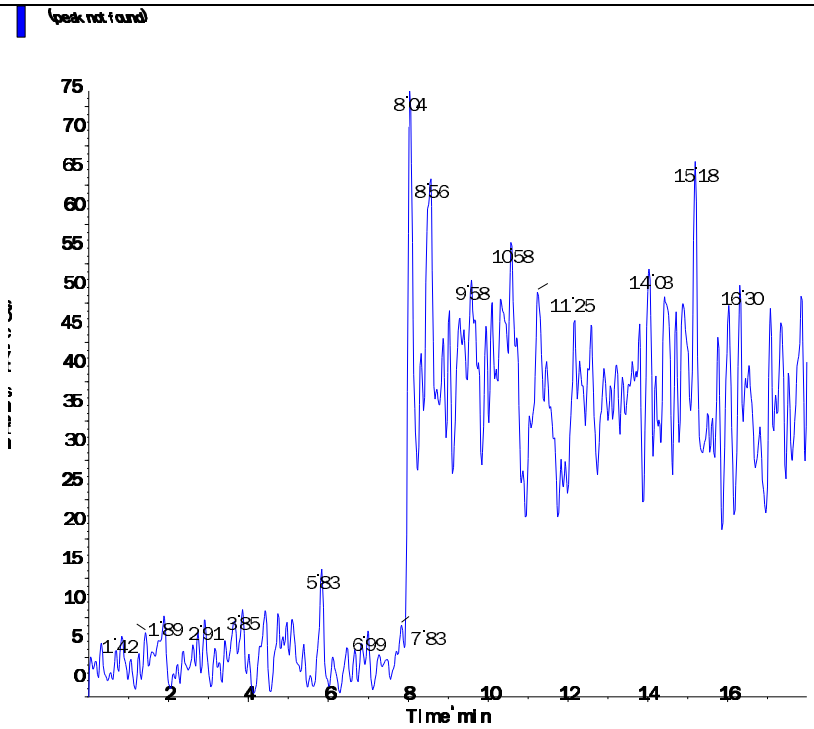

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Data File	LM34653.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 7:47:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041344-14	**Injection Vial**	22.00
Data File	LM34653.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 7:47:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	L16041344-14	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.120e+05	9.78	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.78(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

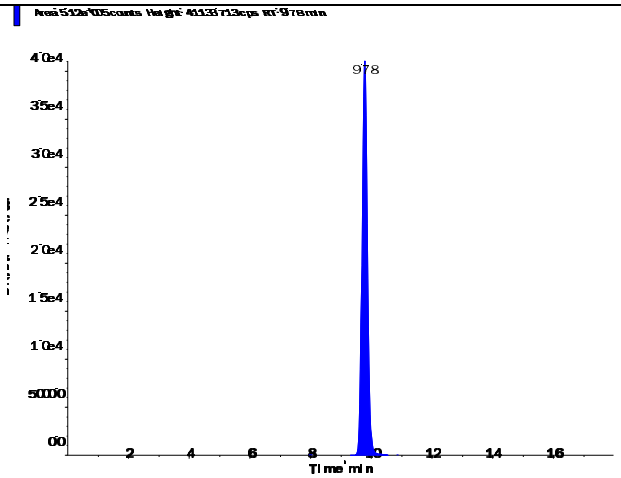

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

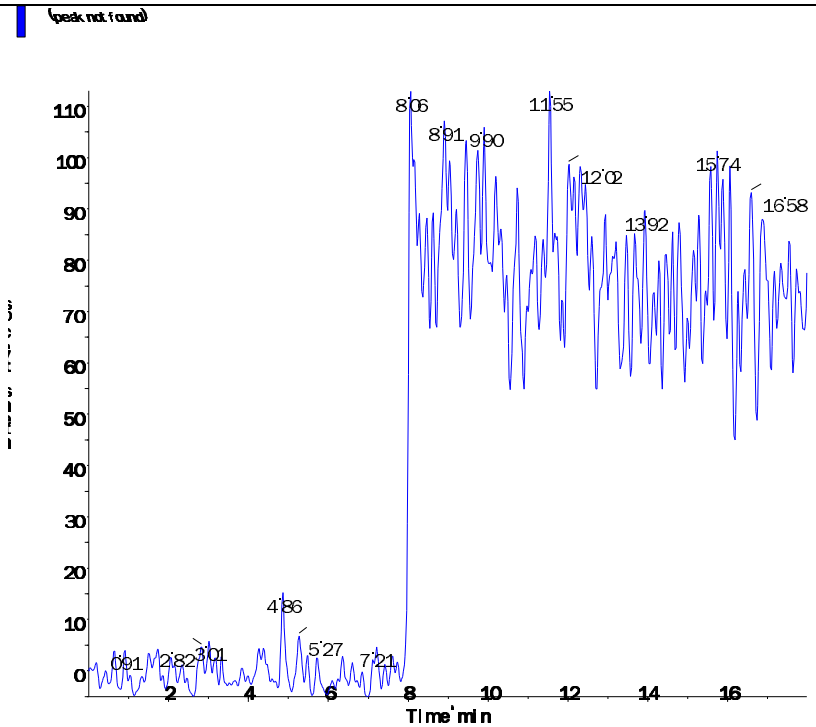

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.90) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

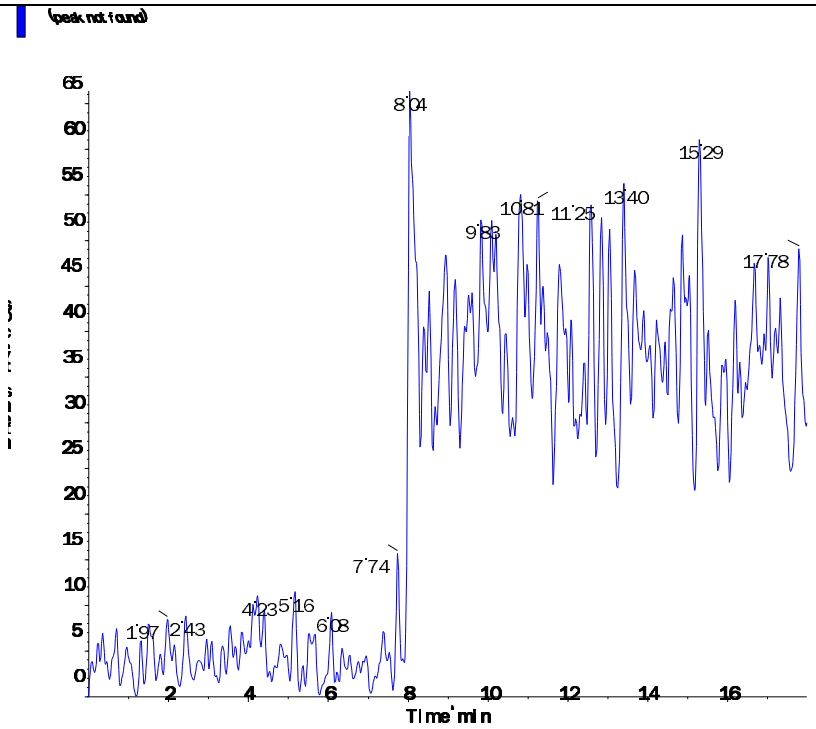

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2.2.1.4 Standards Data

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Data File	LM34522.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	4/22/2016 3:08:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG566101-01 CCB	**Injection Vial**	1.00
Data File	LM34522.wiff	**Injection Volume**	10.00
Acquisition Date	4/22/2016 3:08:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	WG566101-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.690e+05	9.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.90(9.89) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

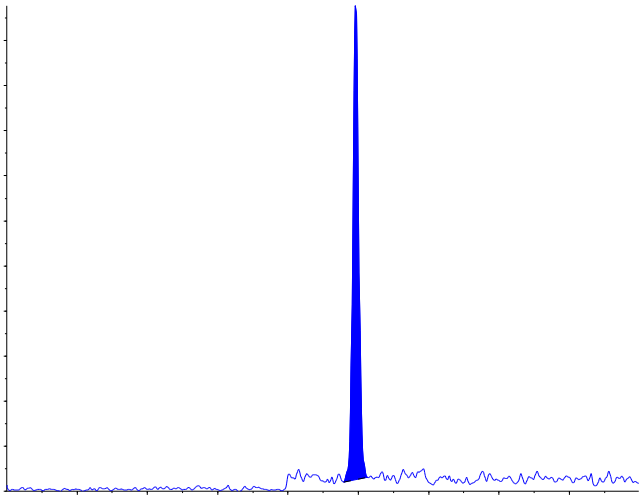

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

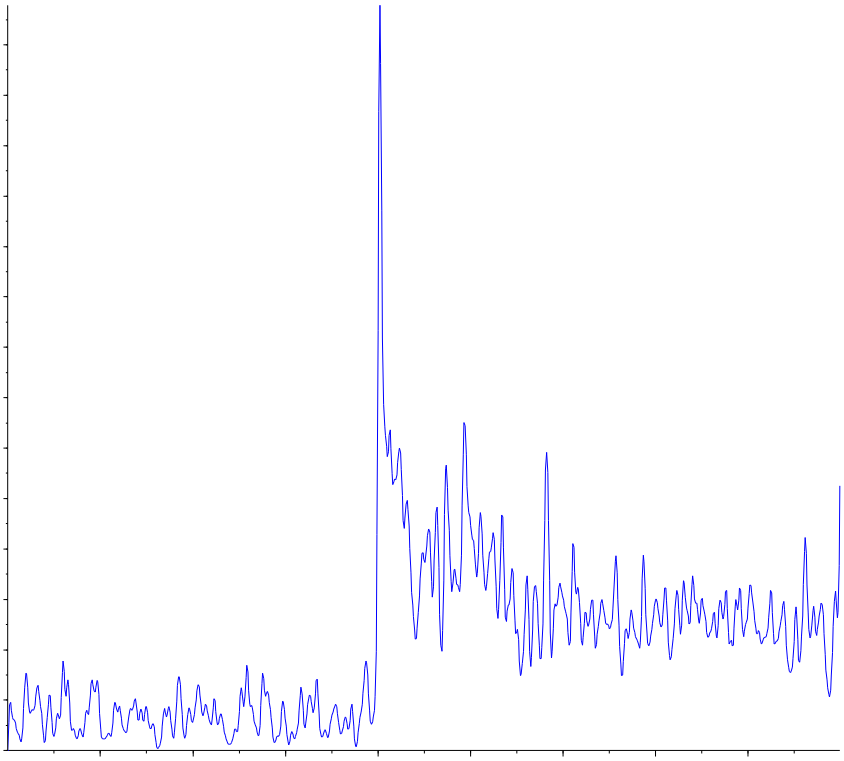

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.90) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

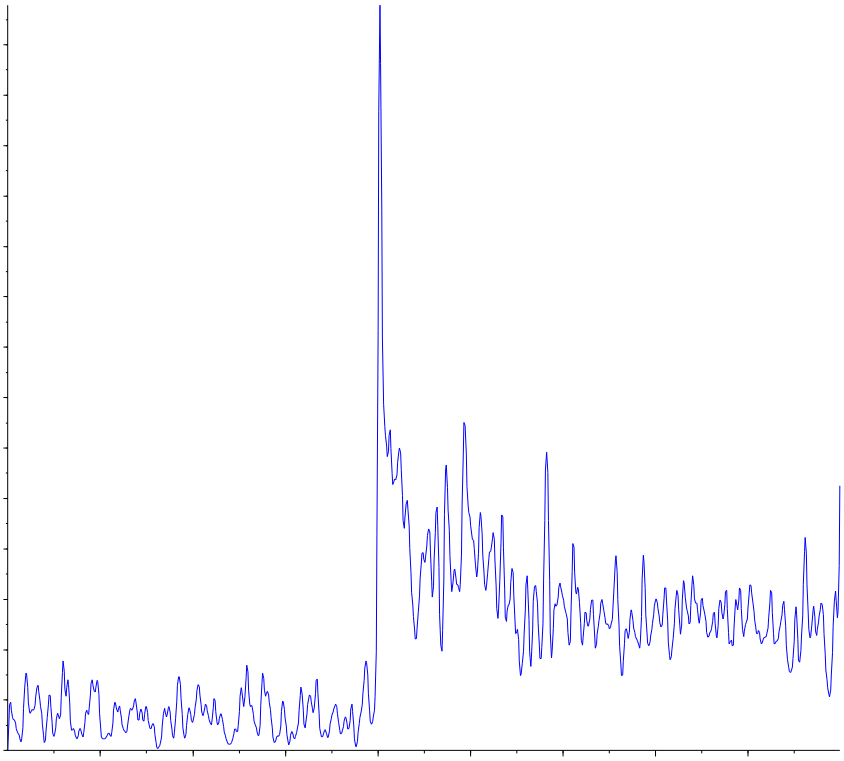

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Printed: 4/25/2016 12:43 PM

Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34522.wiff	**Result Table**	042216_JWR.rdb
Acquisition Date	4/22/2016 3:08:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.65 x + -0.000344 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	101.4	N/A	N/A
0.20	1	0.20	99.7	N/A	N/A
0.50	1	0.49	98.8	N/A	N/A
1.00	1	1.01	101.3	N/A	N/A
2.00	1	1.98	99.0	N/A	N/A
5.00	1	4.97	99.4	N/A	N/A
10.00	1	10.04	100.4	N/A	N/A

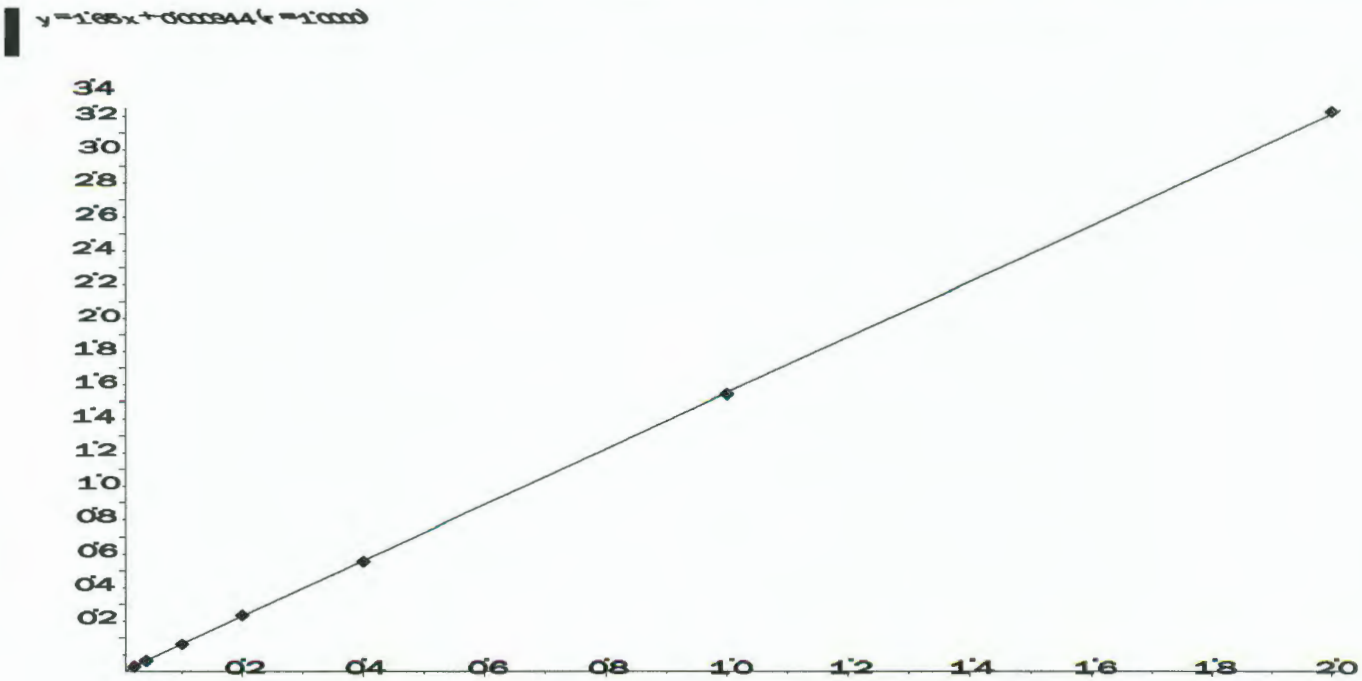

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Created with Analyst Reporter
Printed: 4/25/2016 12:43 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34522.wiff	**Result Table**	042216_JWR.rdb
Acquisition Date	4/22/2016 3:08:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.557 x + 0.00157 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	100.7	N/A	N/A
0.20	1	0.20	100.8	N/A	N/A
0.50	1	0.49	97.6	N/A	N/A
1.00	1	1.00	100.2	N/A	N/A
2.00	1	2.03	101.5	N/A	N/A
5.00	1	4.93	98.6	N/A	N/A
10.00	1	10.05	100.5	N/A	N/A

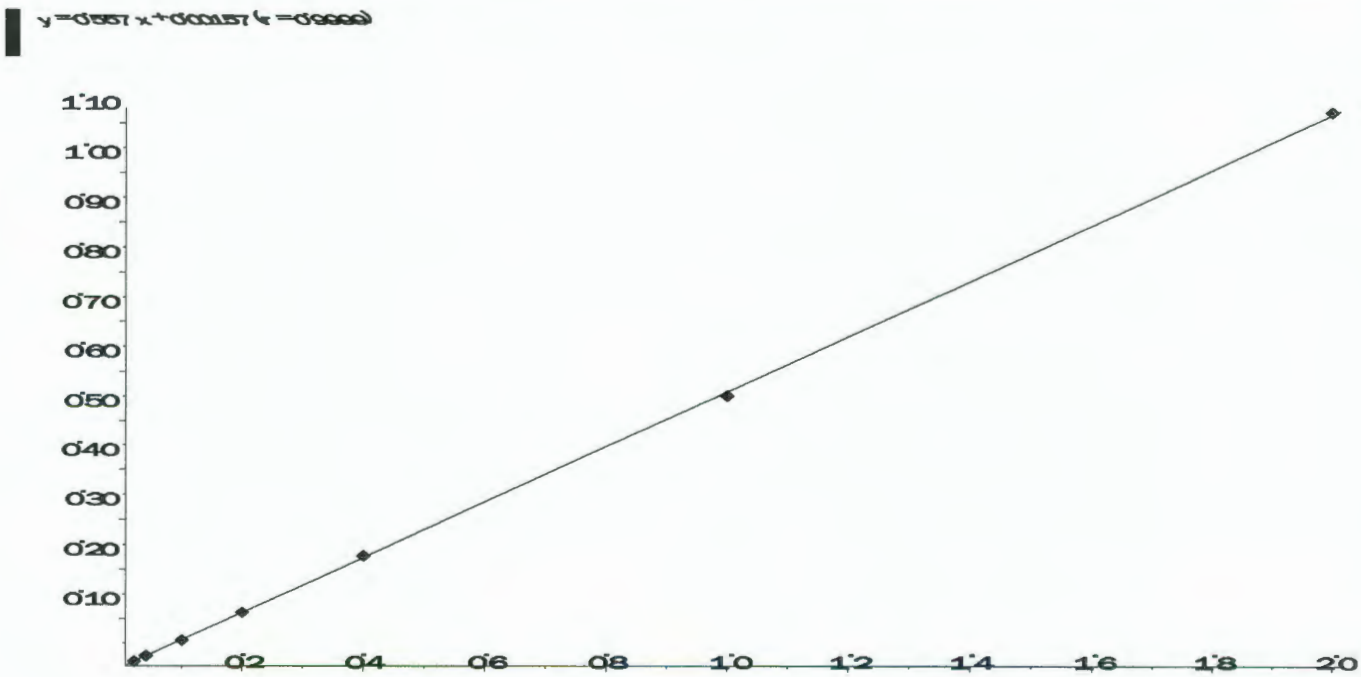

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Data File	LM34523.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	4/22/2016 3:27:15 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG566101-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34523.wiff	**Injection Volume**	10.00
Acquisition Date	4/22/2016 3:27:15 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	WG566101-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.670e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.220e+04	9.93	0.10	0.101
Perchlorate conf	4.690e+03	9.92	0.10	0.101

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

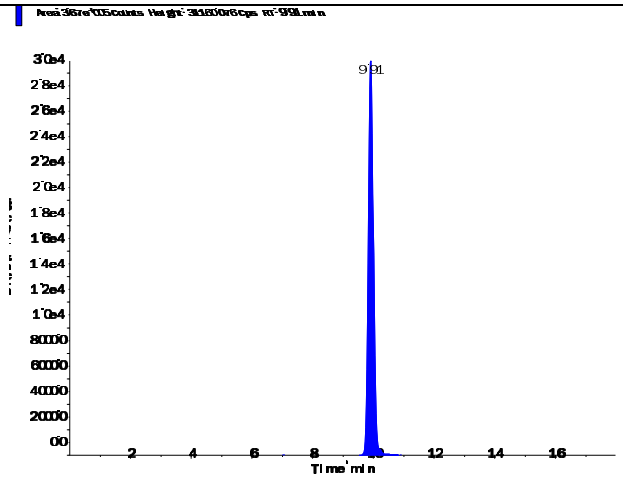

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.93 (9.92) min Calculated conc: 0.101 ng/ml Area Ratio: 0.033 Sample Type: (Standard)	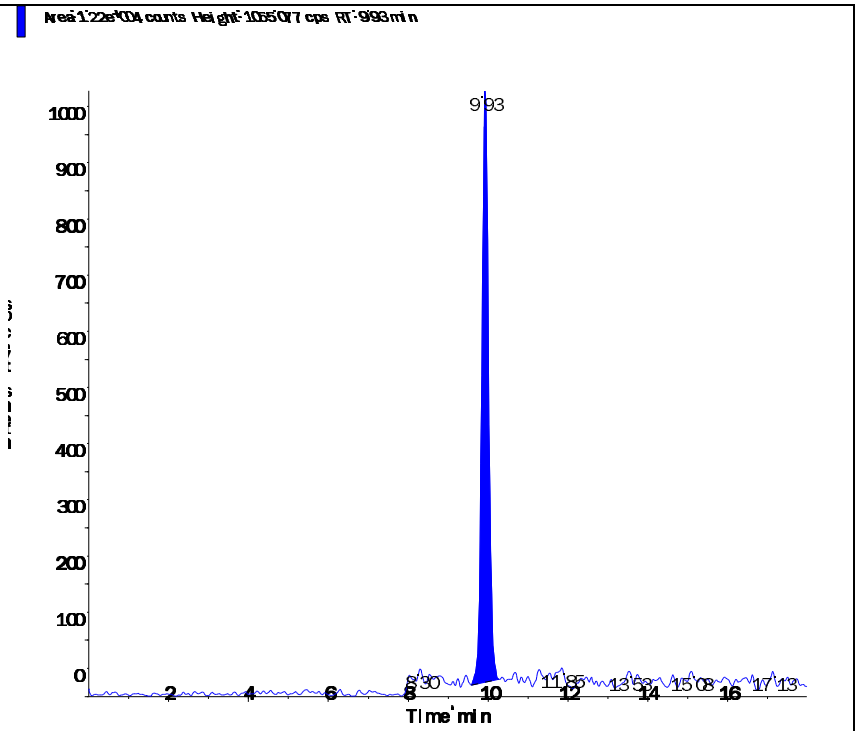
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.92 (9.90) min Calculated conc: 0.101 ng/ml Area Ratio: 0.013 Sample Type: (Standard)	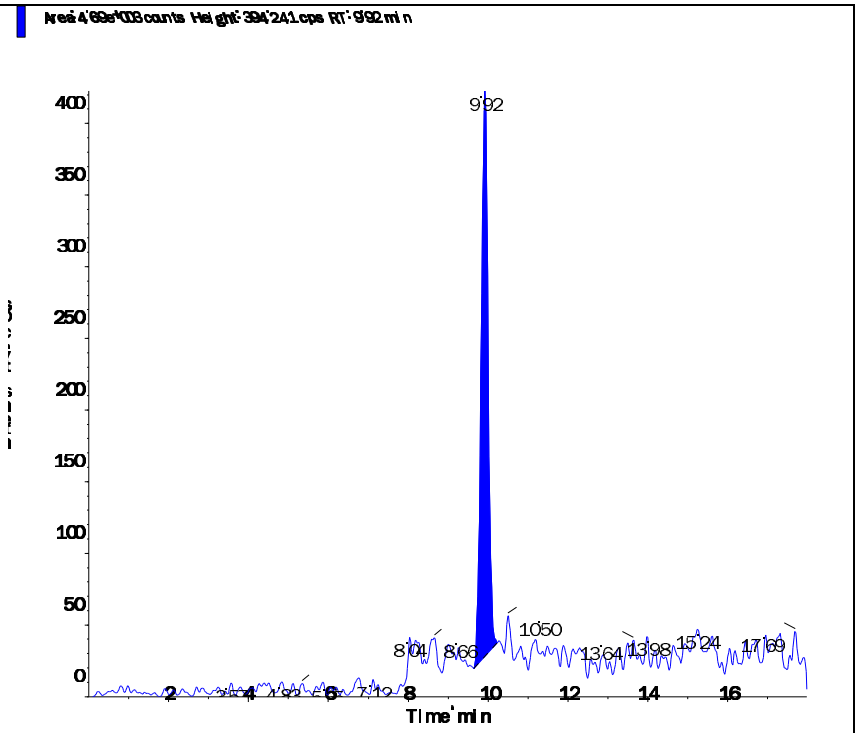

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Data File	LM34524.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	4/22/2016 3:46:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG566101-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34524.wiff	**Injection Volume**	10.00
Acquisition Date	4/22/2016 3:46:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	WG566101-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.710e+05	9.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.440e+04	9.92	0.20	0.199
Perchlorate conf	8.930e+03	9.90	0.20	0.202

O18LP (Internal Standard)

RT (Exp. RT): 9.90(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

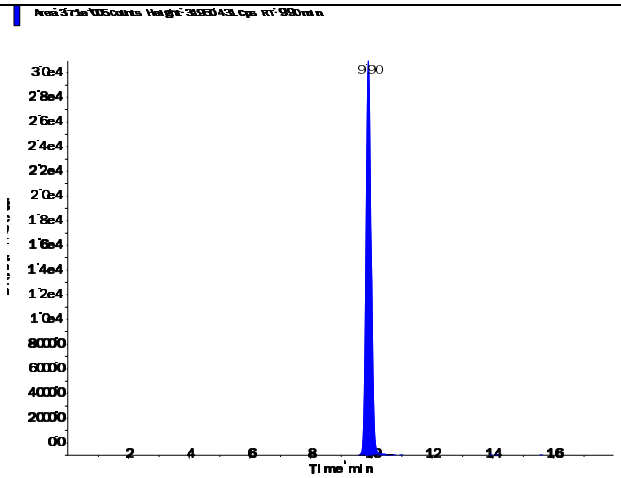

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.92 (9.92) min Calculated conc: 0.199 ng/ml Area Ratio: 0.066 Sample Type: (Standard)	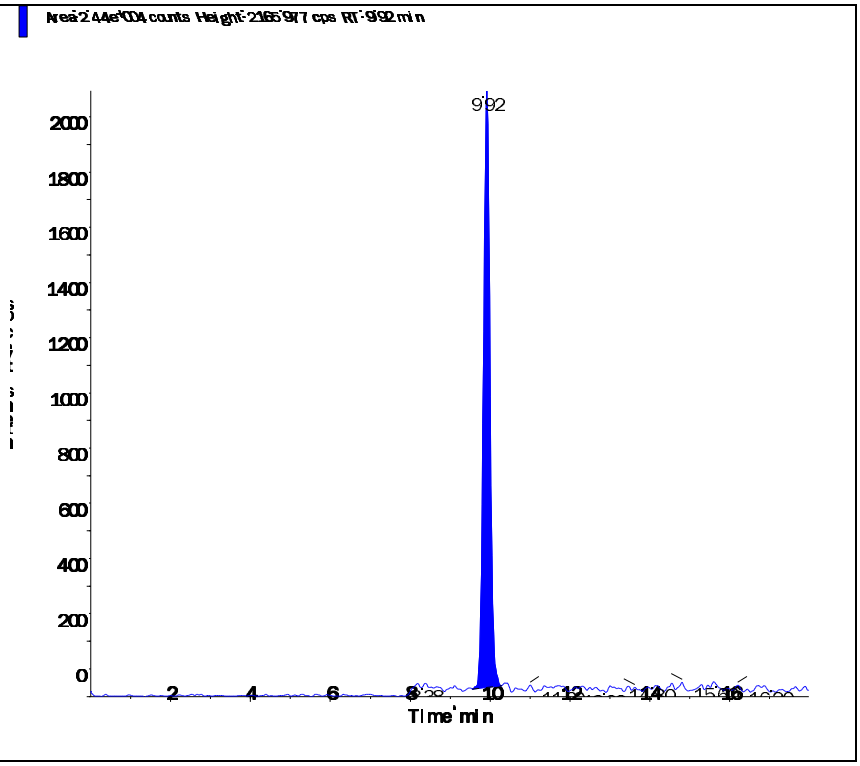
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.90 (9.90) min Calculated conc: 0.202 ng/ml Area Ratio: 0.024 Sample Type: (Standard)	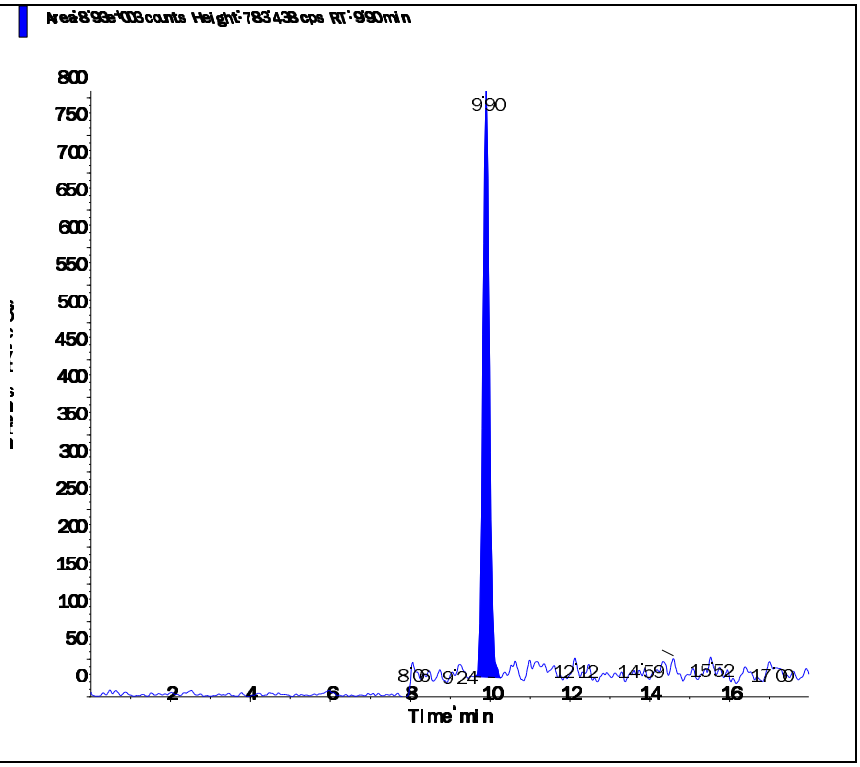

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Data File	LM34525.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	4/22/2016 4:05:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG566101-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34525.wiff	**Injection Volume**	10.00
Acquisition Date	4/22/2016 4:05:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	WG566101-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.770e+05	9.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	6.150e+04	9.92	0.50	0.494
Perchlorate conf	2.110e+04	9.90	0.50	0.488

O18LP (Internal Standard)

RT (Exp. RT): 9.90(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

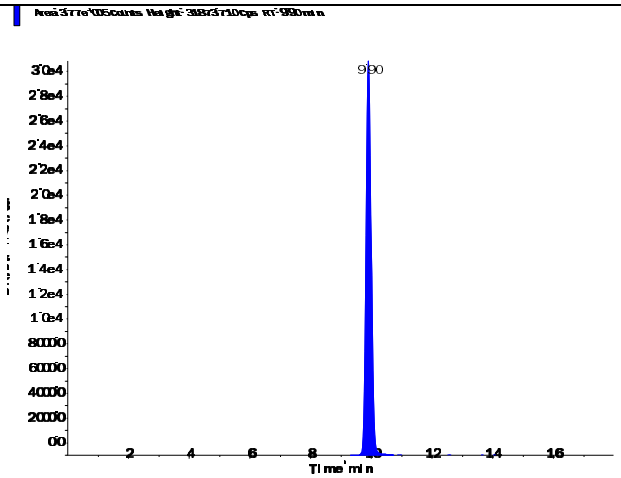

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	0.494 ng/ml
Area Ratio:	0.163
Sample Type:	(Standard)

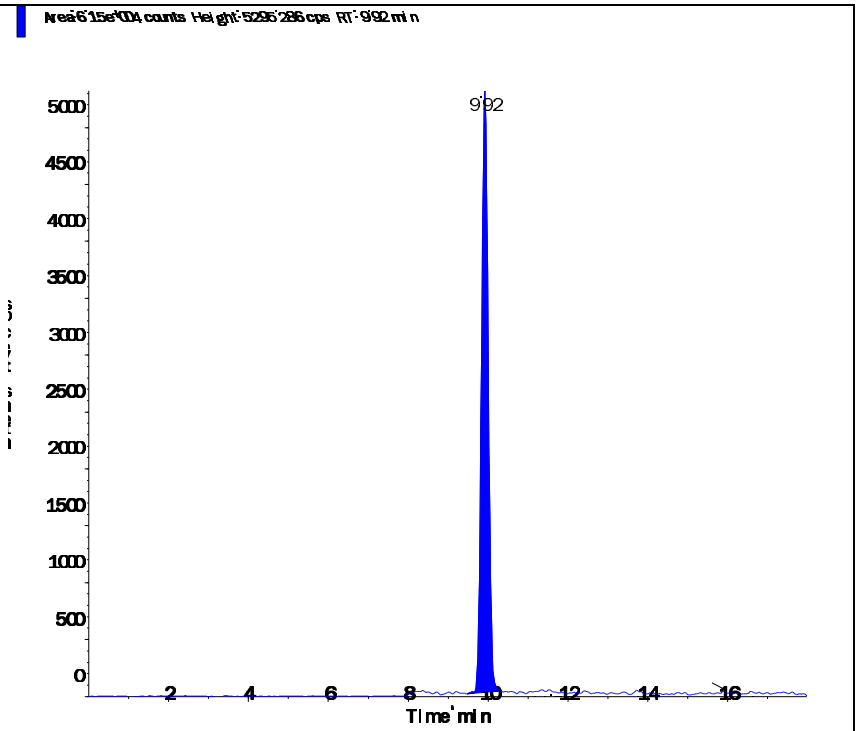

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.90 (9.90) min
Calculated conc:	0.488 ng/ml
Area Ratio:	0.056
Sample Type:	(Standard)

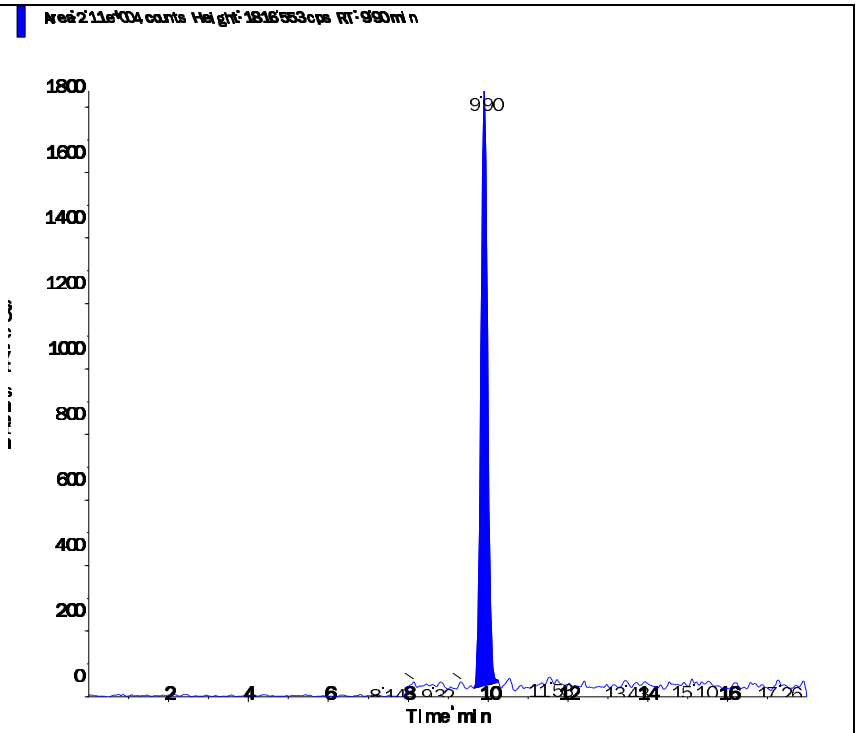

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Data File	LM34526.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	4/22/2016 4:24:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG566101-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34526.wiff	**Injection Volume**	10.00
Acquisition Date	4/22/2016 4:24:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	WG566101-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.800e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.270e+05	9.92	1.00	1.01
Perchlorate conf	4.300e+04	9.91	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

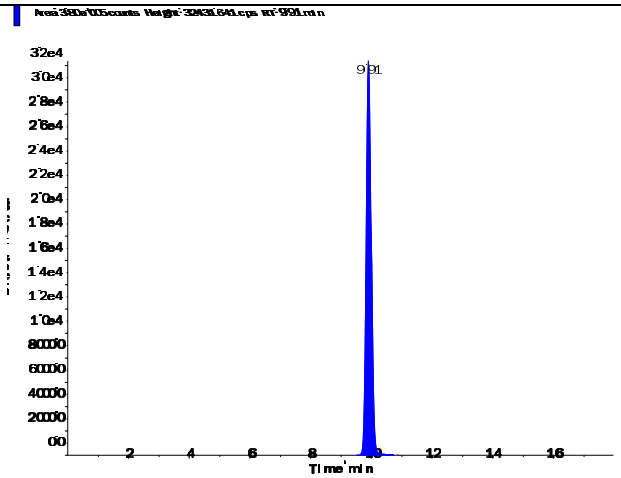

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.92 (9.92) min Calculated conc: 1.01 ng/ml Area Ratio: 0.335 Sample Type: (Standard)	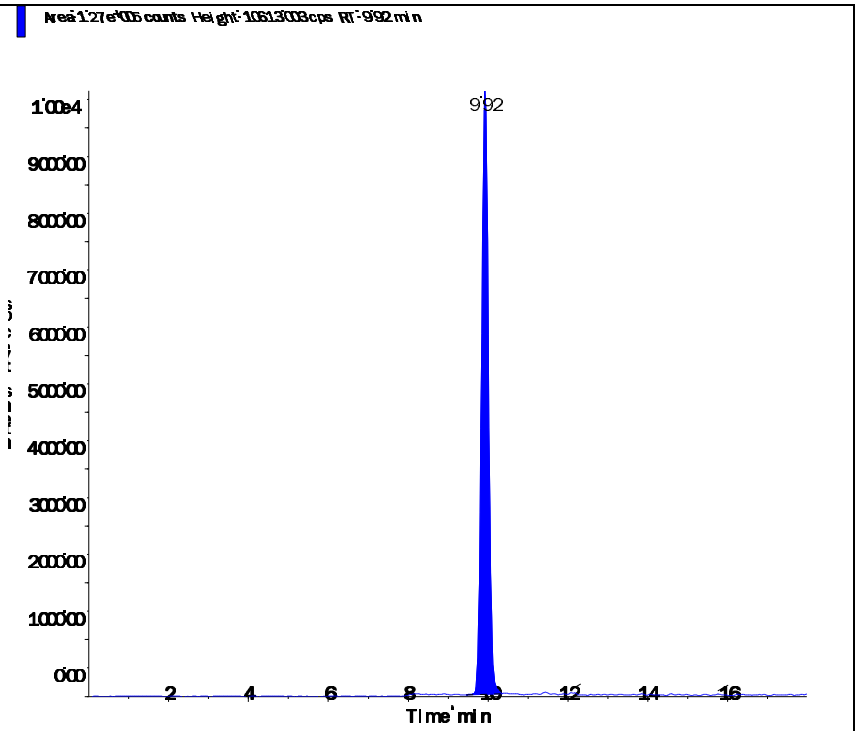
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.91 (9.90) min Calculated conc: 1.00 ng/ml Area Ratio: 0.113 Sample Type: (Standard)	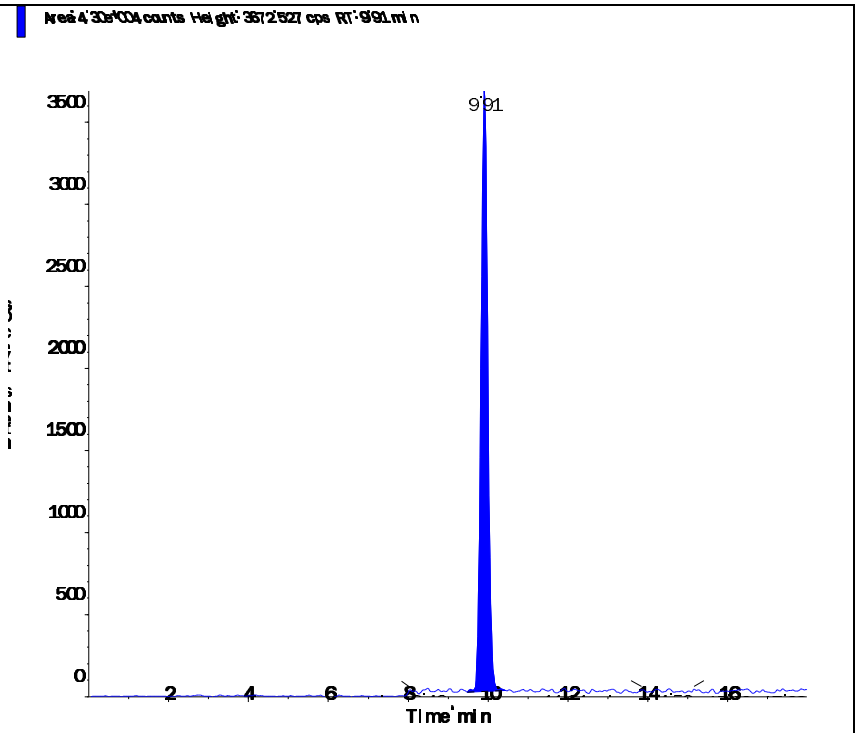

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Data File	LM34527.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	4/22/2016 4:42:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG566101-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34527.wiff	**Injection Volume**	10.00
Acquisition Date	4/22/2016 4:42:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	WG566101-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.810e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.490e+05	9.92	2.00	1.98
Perchlorate conf	8.680e+04	9.91	2.00	2.03

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

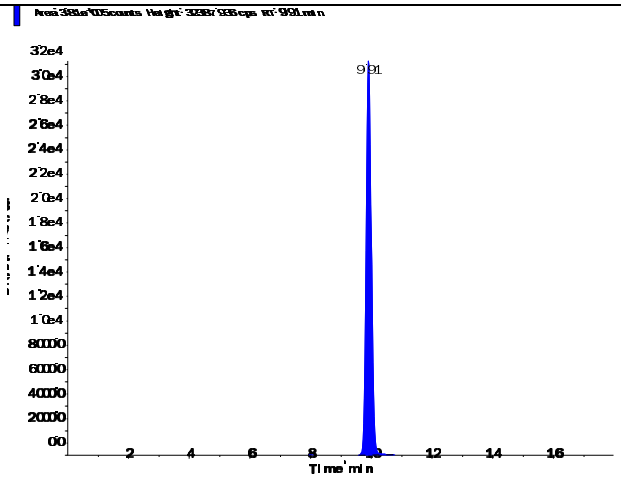

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	1.98 ng/ml
Area Ratio:	0.655
Sample Type:	(Standard)

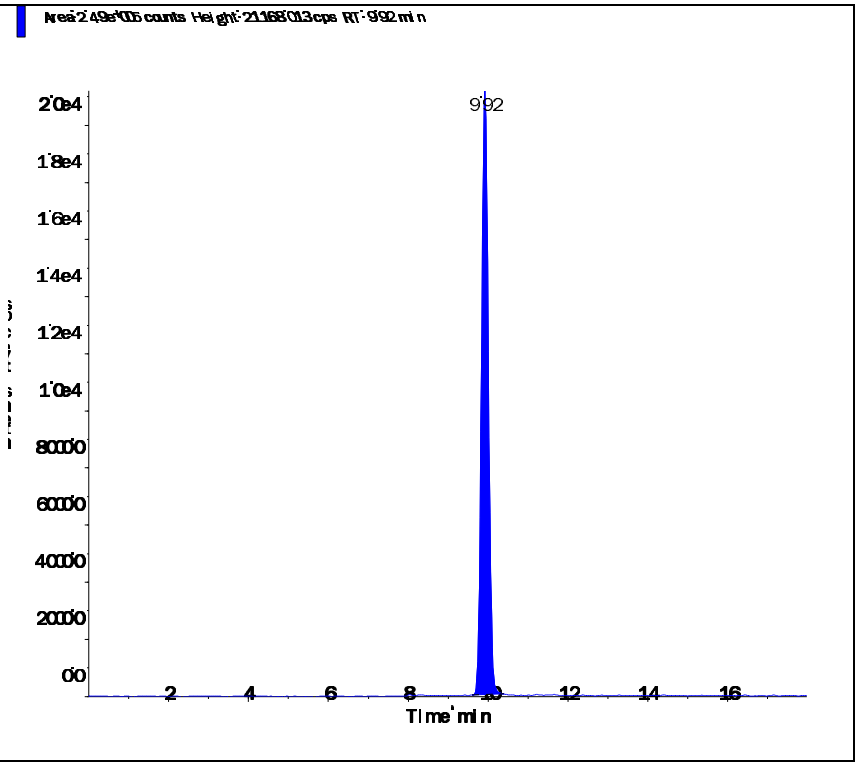

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.90) min
Calculated conc:	2.03 ng/ml
Area Ratio:	0.228
Sample Type:	(Standard)

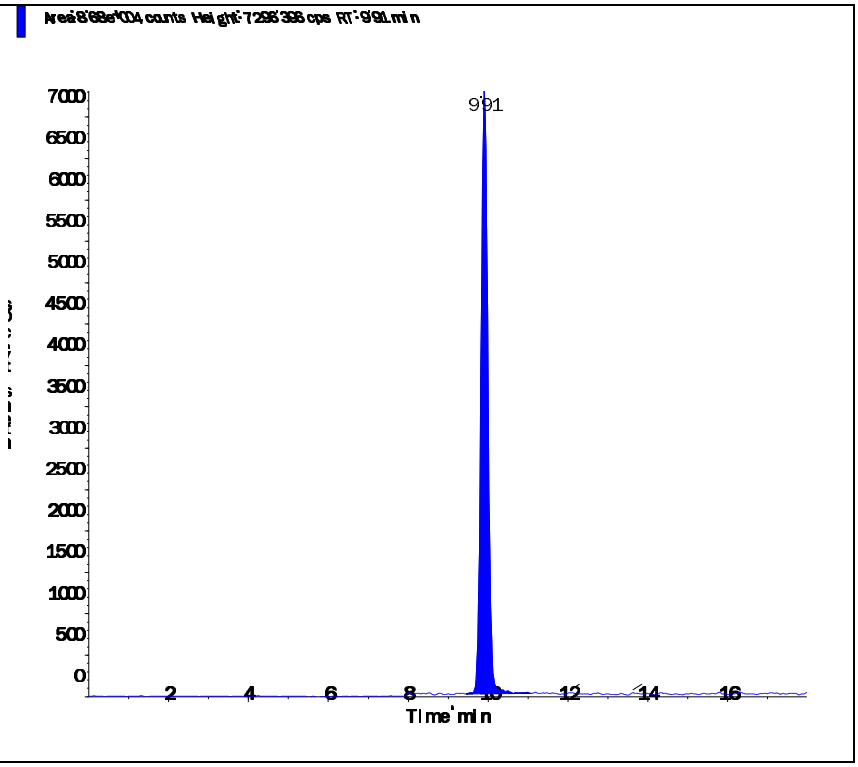

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Data File	LM34528.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	4/22/2016 5:01:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG566101-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34528.wiff	**Injection Volume**	10.00
Acquisition Date	4/22/2016 5:01:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	WG566101-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.730e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	6.140e+05	9.92	5.00	4.97
Perchlorate conf	2.060e+05	9.91	5.00	4.93

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

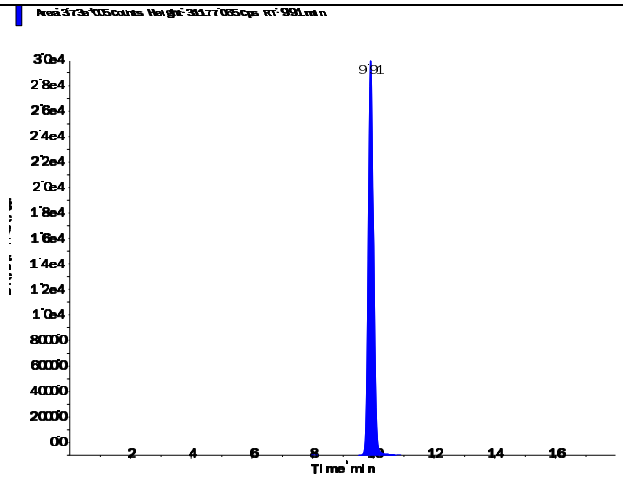

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	4.97 ng/ml
Area Ratio:	1.645
Sample Type:	(Standard)

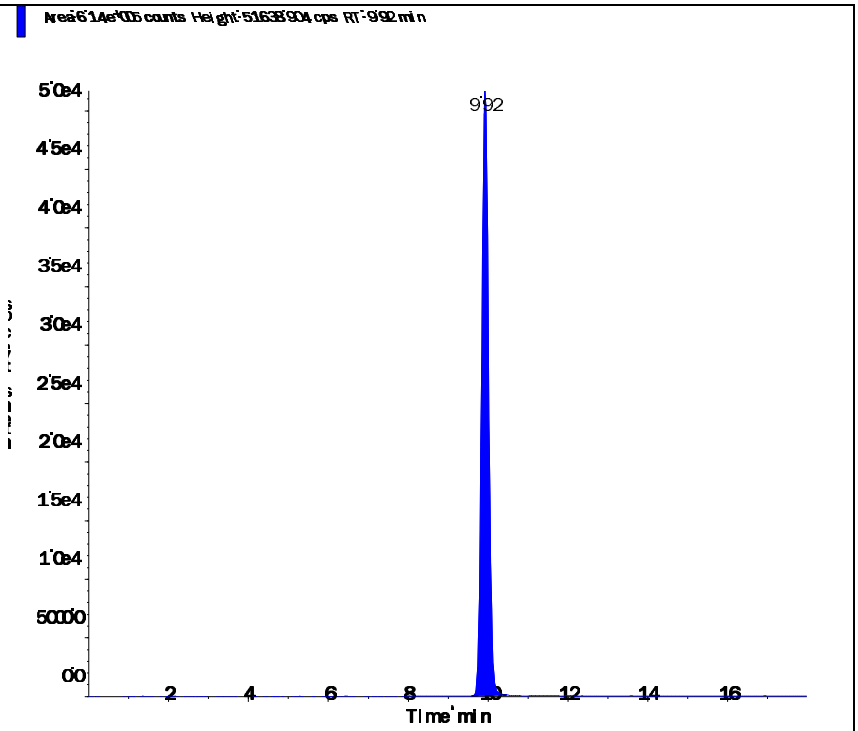

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.90) min
Calculated conc:	4.93 ng/ml
Area Ratio:	0.551
Sample Type:	(Standard)

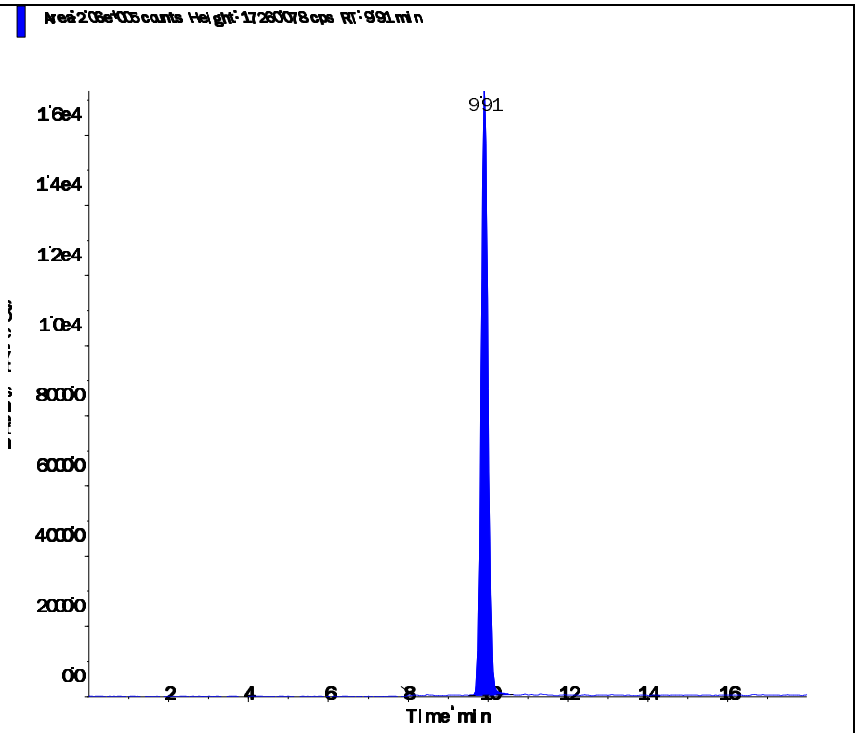

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Data File	LM34529.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	4/22/2016 5:20:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG566101-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34529.wiff	**Injection Volume**	10.00
Acquisition Date	4/22/2016 5:20:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	WG566101-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.550e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.180e+06	9.93	10.00	10.00
Perchlorate conf	3.980e+05	9.91	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

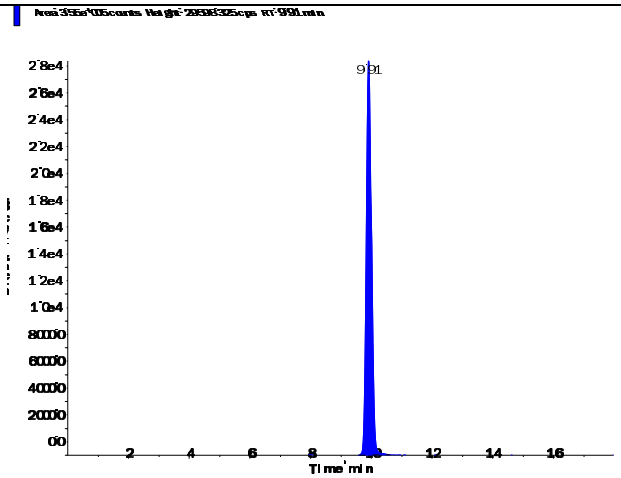

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	10.00 ng/ml
Area Ratio:	3.322
Sample Type:	(Standard)

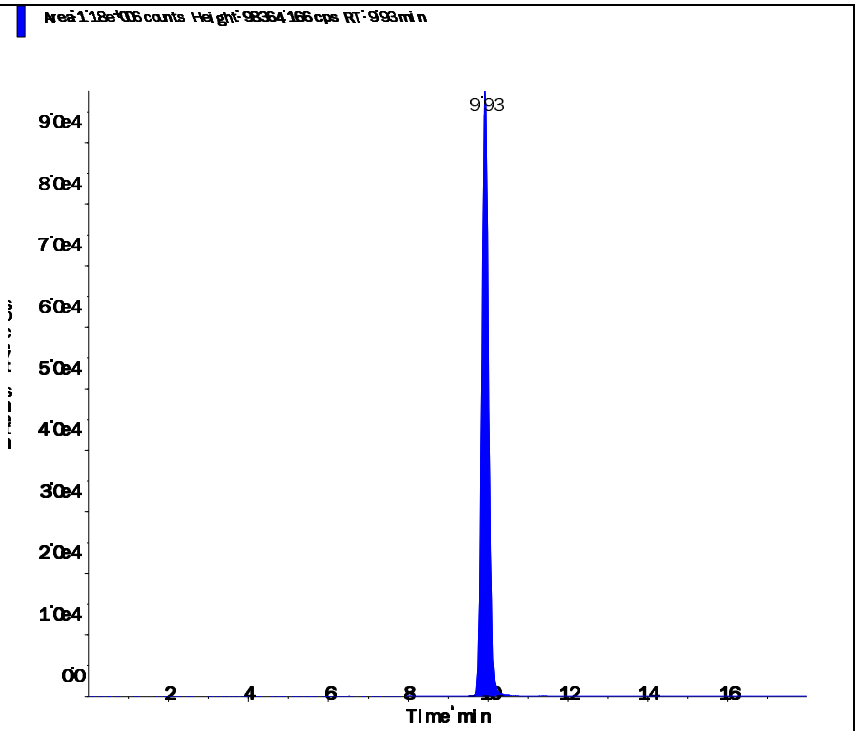

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.90) min
Calculated conc:	10.00 ng/ml
Area Ratio:	1.121
Sample Type:	(Standard)

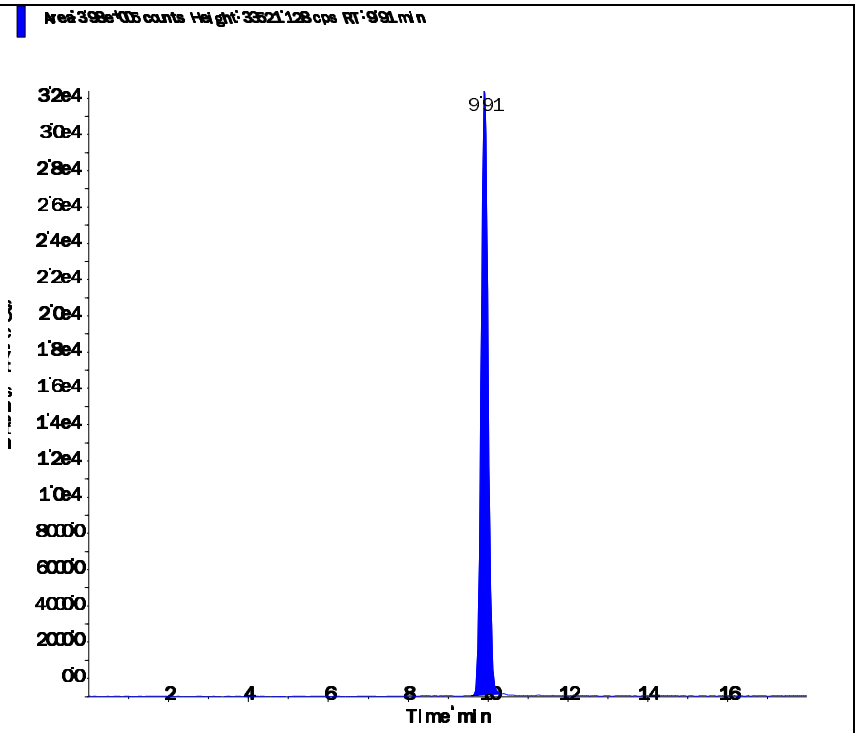

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Data File	LM34530.wiff	**Result Table**	042216_JWR.rdb
Acquisition Date	4/22/2016 5:39:47 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG566101-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34530.wiff	**Injection Volume**	10.00
Acquisition Date	4/22/2016 5:39:47 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	042216_JWR.rdb
Sample ID	WG566101-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.980e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.300e+05	9.92	1.00	0.988
Perchlorate conf	4.570e+04	9.91	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

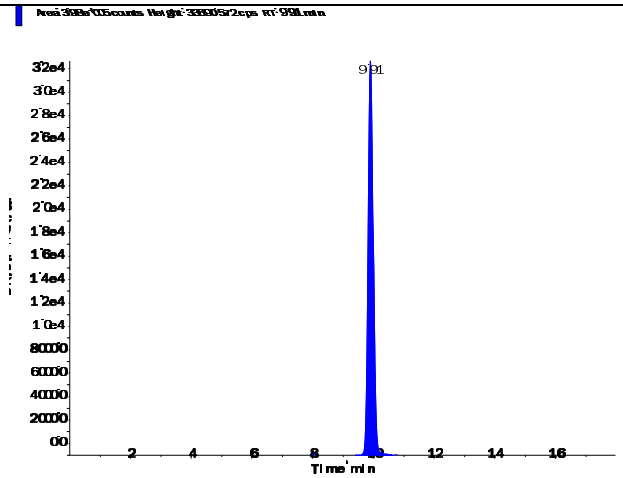

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	0.988 ng/ml
Area Ratio:	0.327
Sample Type:	(Quality Control)

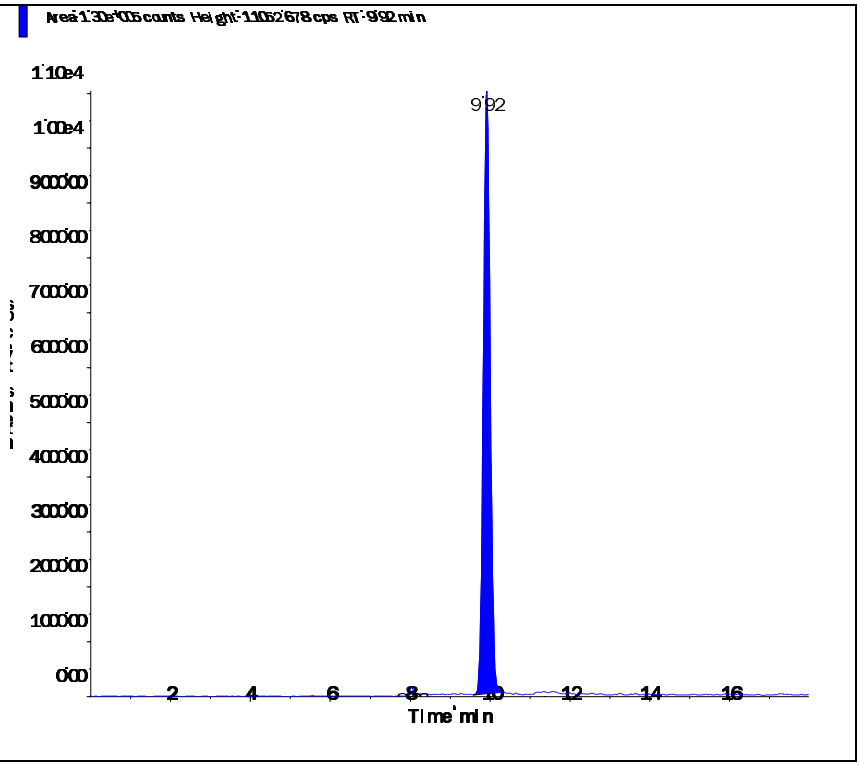

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.90) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.115
Sample Type:	(Quality Control)

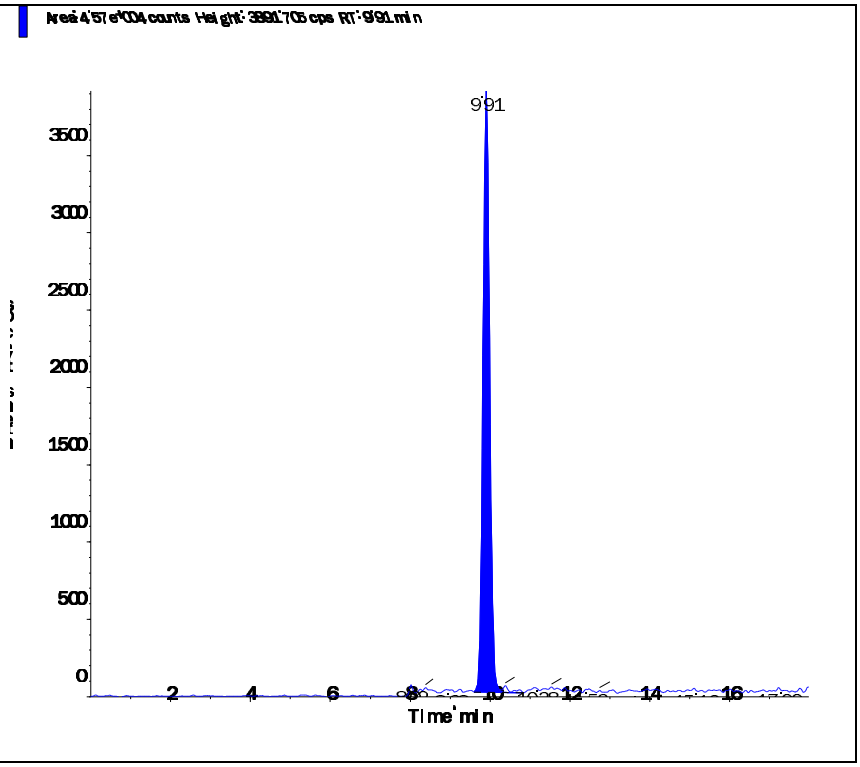

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Data File	LM34630.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 12:30:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567042-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM34630.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 12:30:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	WG567042-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.110e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.400e+05	9.85	1.00	1.03
Perchlorate conf	4.760e+04	9.84	1.00	1.02

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

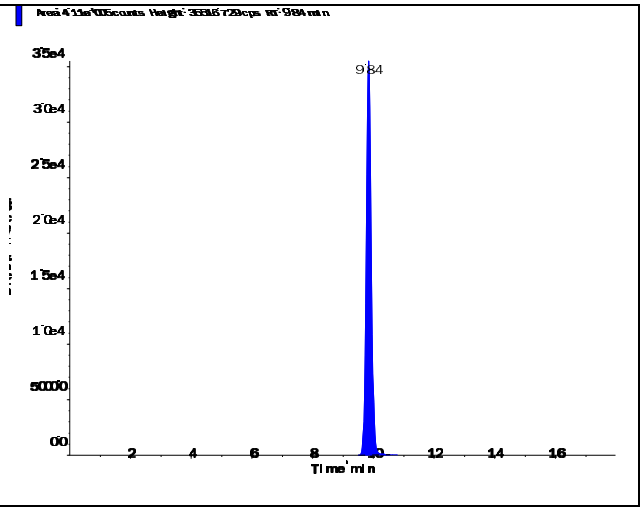

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.92) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.34
Sample Type:	(Quality Control)

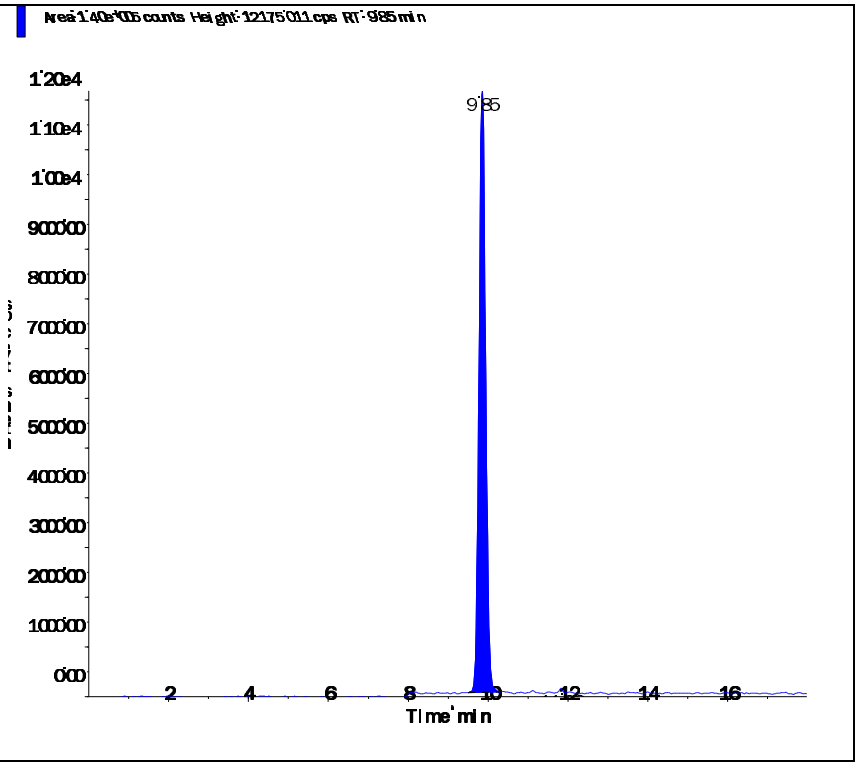

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.90) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.116
Sample Type:	(Quality Control)

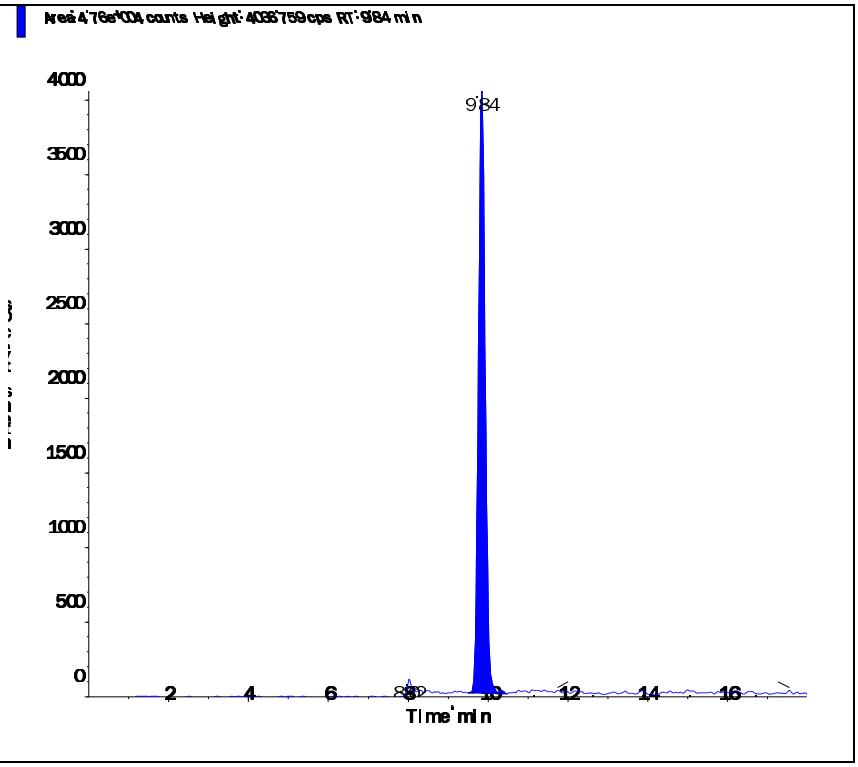

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Printed: 5/3/2016 11:21 AM

Data File	LM34642.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 4:19:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567042-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM34642.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 4:19:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	WG567042-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.010e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.660e+05	9.83	1.00	1.00
Perchlorate conf	5.870e+04	9.81	1.00	1.04

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

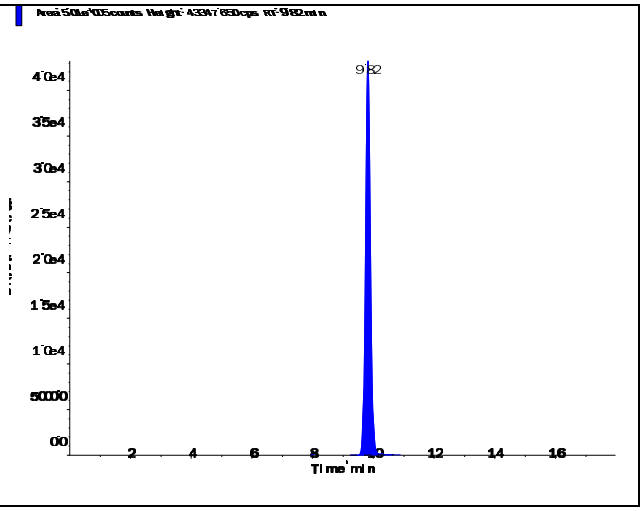

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.83 (9.92) min Calculated conc: 1.00 ng/ml Area Ratio: 0.332 Sample Type: (Quality Control)	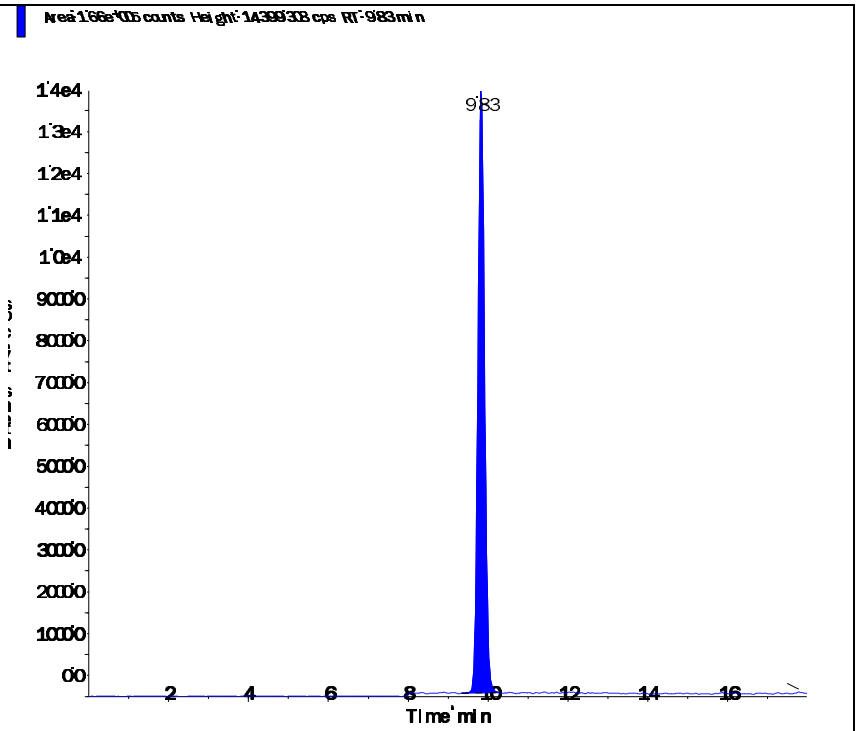
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.81 (9.90) min Calculated conc: 1.04 ng/ml Area Ratio: 0.117 Sample Type: (Quality Control)	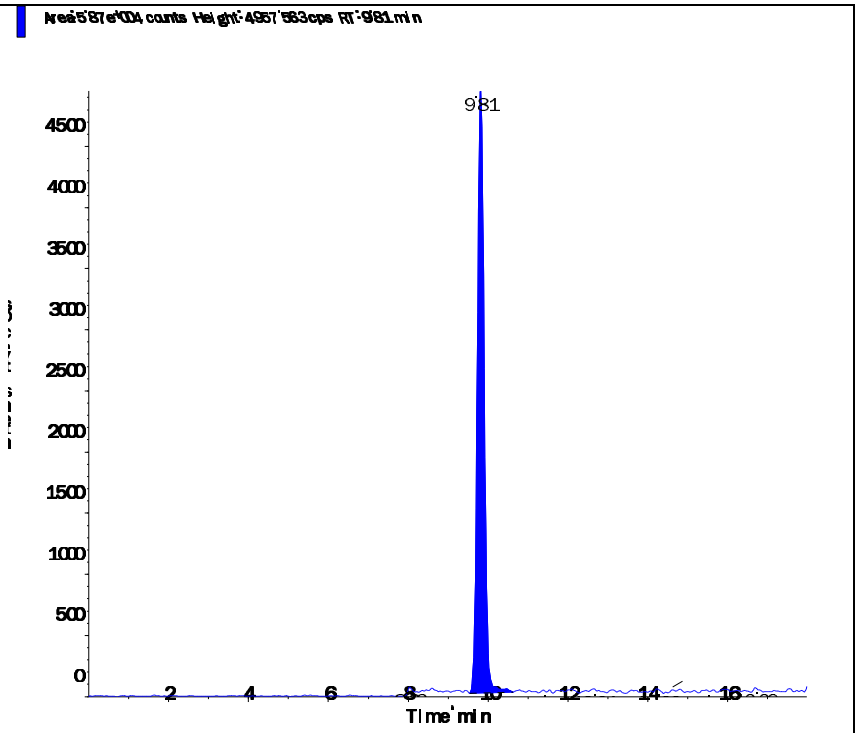

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Data File	LM34654.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 8:06:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567042-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM34654.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 8:06:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	WG567042-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.270e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.740e+05	9.82	1.00	0.997
Perchlorate conf	5.820e+04	9.80	1.00	0.976

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

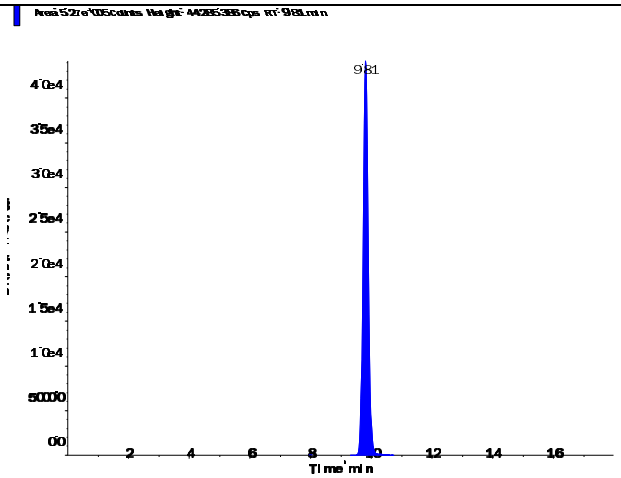

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.82 (9.92) min
Calculated conc:	0.997 ng/ml
Area Ratio:	0.33
Sample Type:	(Quality Control)

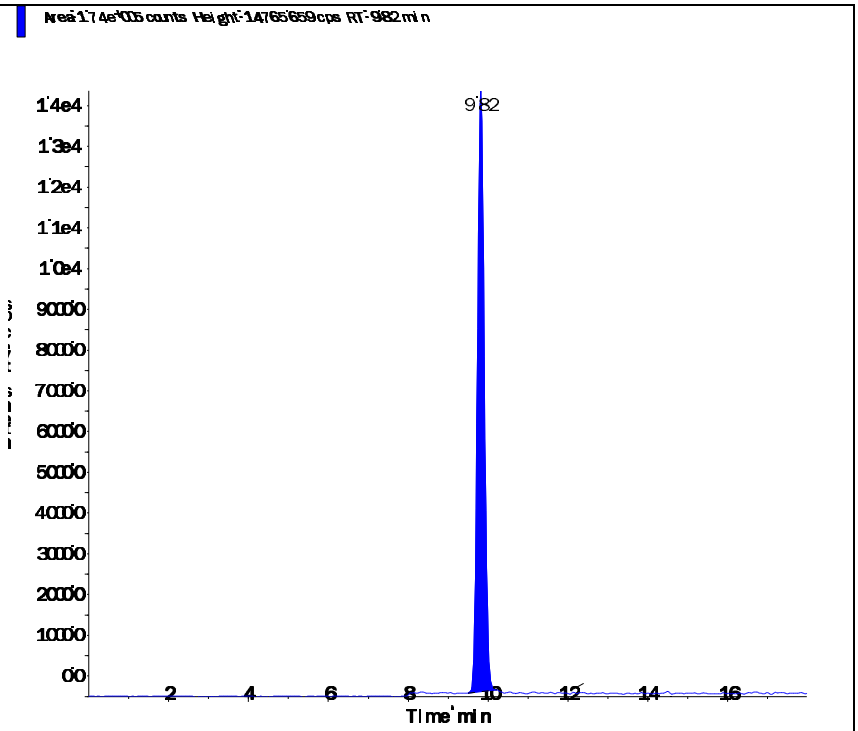

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.80 (9.90) min
Calculated conc:	0.976 ng/ml
Area Ratio:	0.11
Sample Type:	(Quality Control)

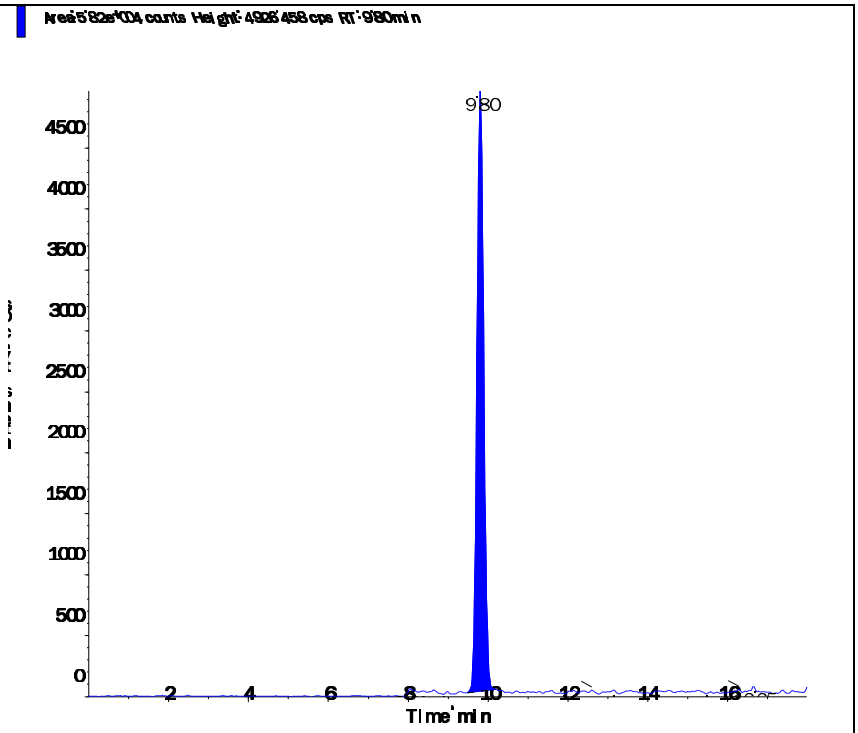

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Data File	LM34631.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 12:49:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567011-07 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM34631.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 12:49:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	WG567011-07	**Dilution Factor**	1.00
Sample Comment	7,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.270e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.820e+04	9.85	N/A	0.20
Perchlorate conf	1.110e+04	9.84	N/A	0.219

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

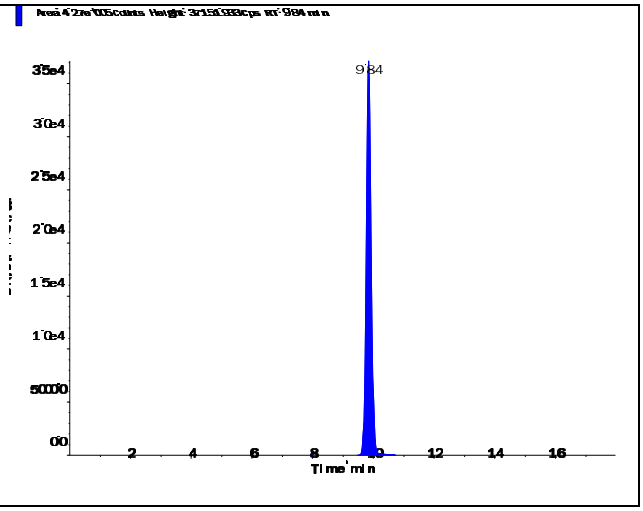

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.92) min
Calculated conc:	0.20 ng/ml
Area Ratio:	0.066
Sample Type:	(Unknown)

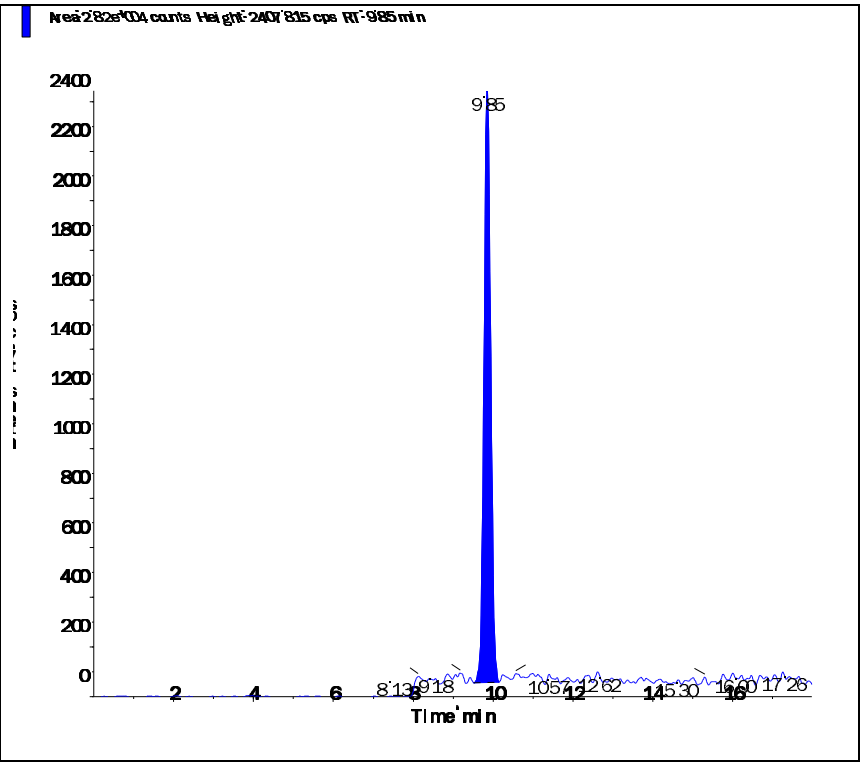

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.90) min
Calculated conc:	0.219 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

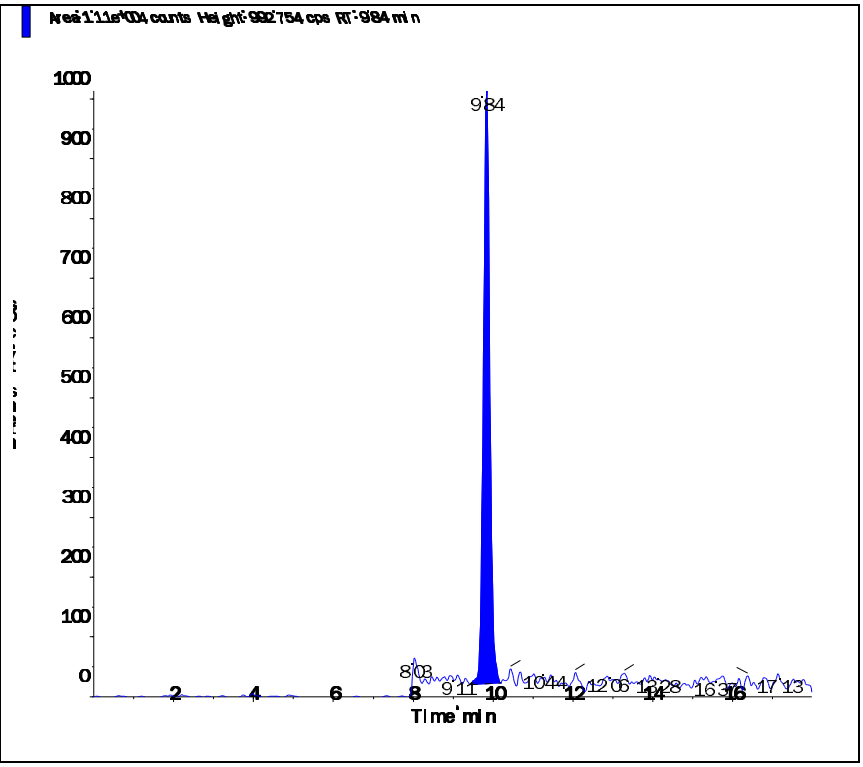

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Data File	LM34643.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 4:38:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567011-08 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM34643.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 4:38:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	WG567011-08	**Dilution Factor**	1.00
Sample Comment	7,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.350e+04	9.82	N/A	0.199
Perchlorate conf	1.280e+04	9.82	N/A	0.21

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

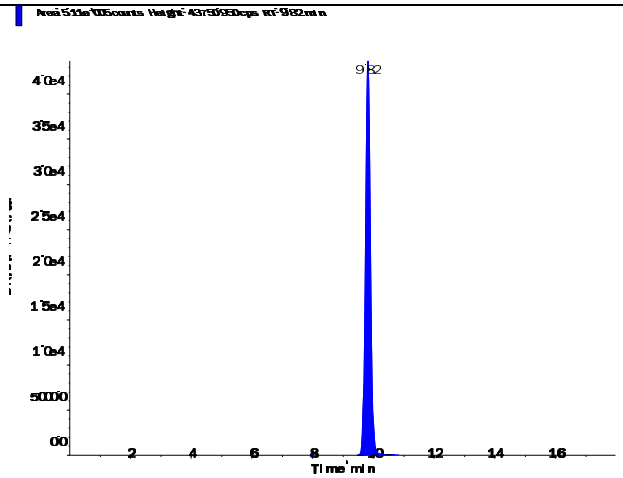

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.82 (9.92) min Calculated conc: 0.199 ng/ml Area Ratio: 0.066 Sample Type: (Unknown)	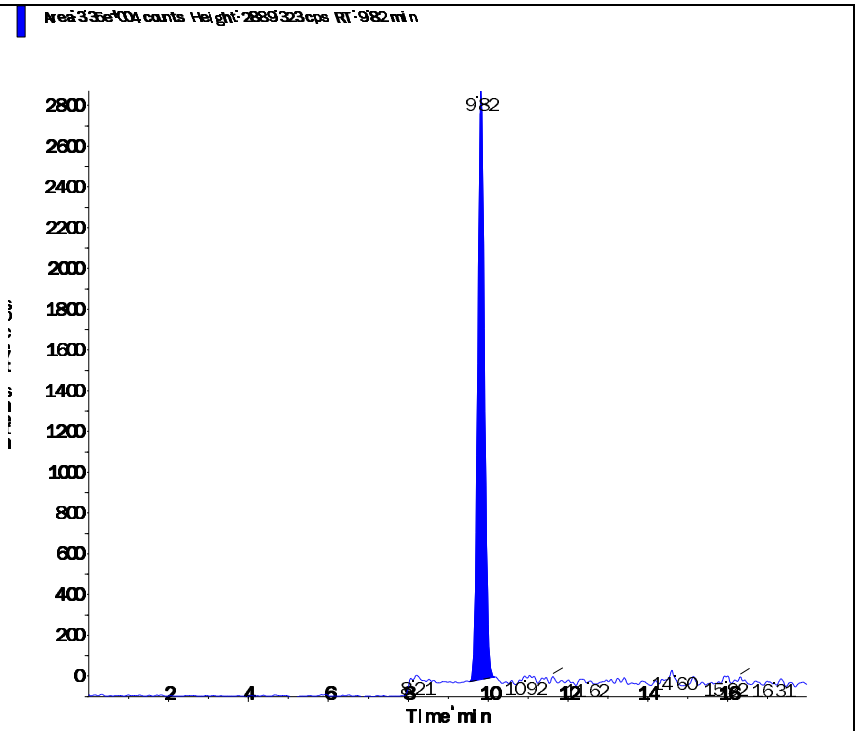
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.82 (9.90) min Calculated conc: 0.21 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	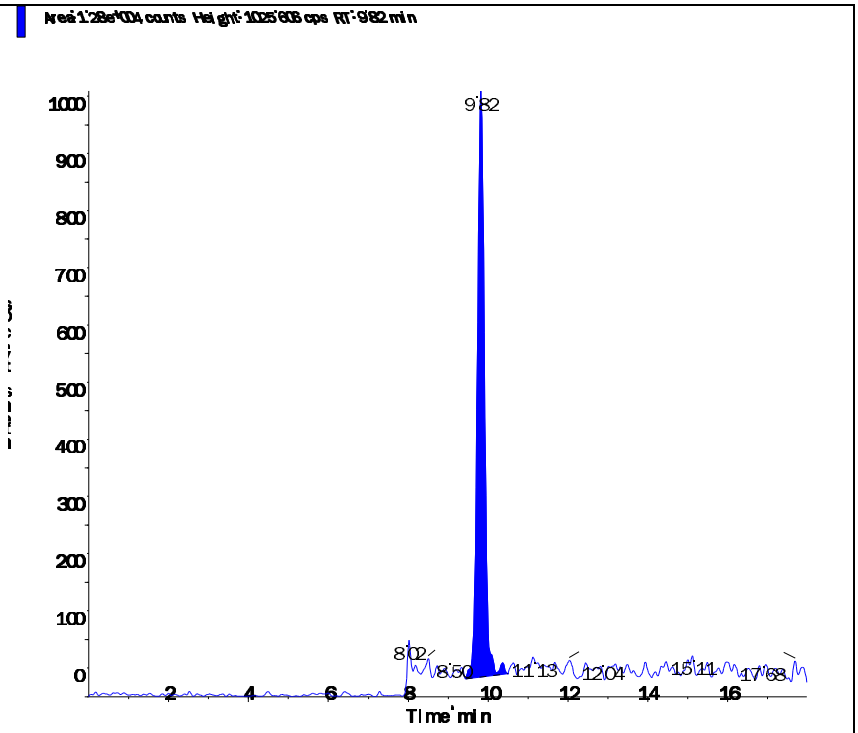

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Data File	LM34655.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 8:25:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567011-09 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM34655.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 8:25:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	WG567011-09	**Dilution Factor**	1.00
Sample Comment	7,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.370e+05	9.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.750e+04	9.81	N/A	0.212
Perchlorate conf	1.290e+04	9.80	N/A	0.202

O18LP (Internal Standard)

RT (Exp. RT): 9.80(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

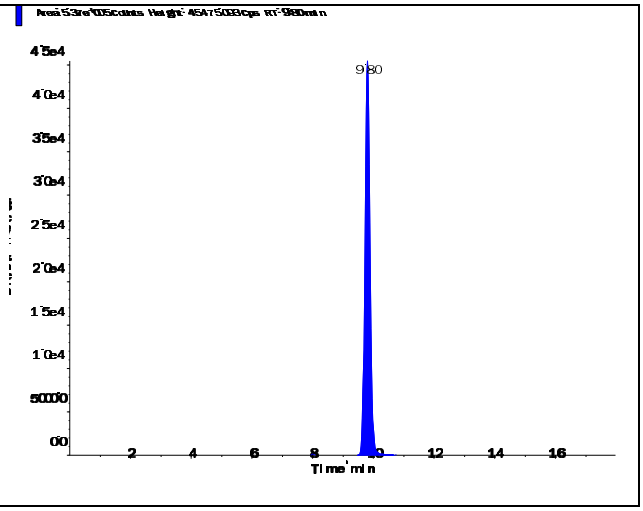

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.81 (9.92) min
Calculated conc:	0.212 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

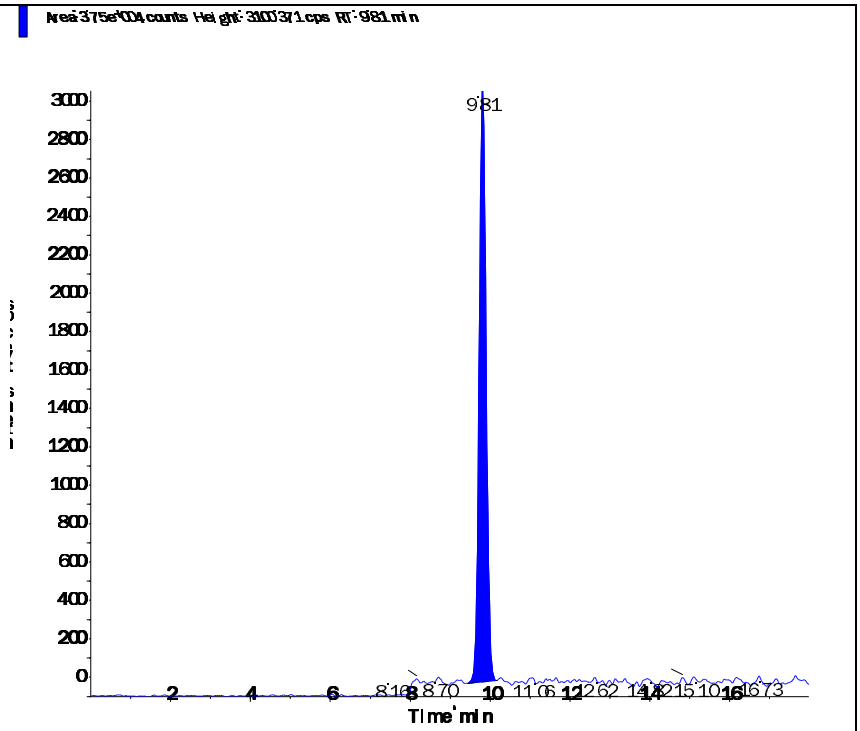

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.80 (9.90) min
Calculated conc:	0.202 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

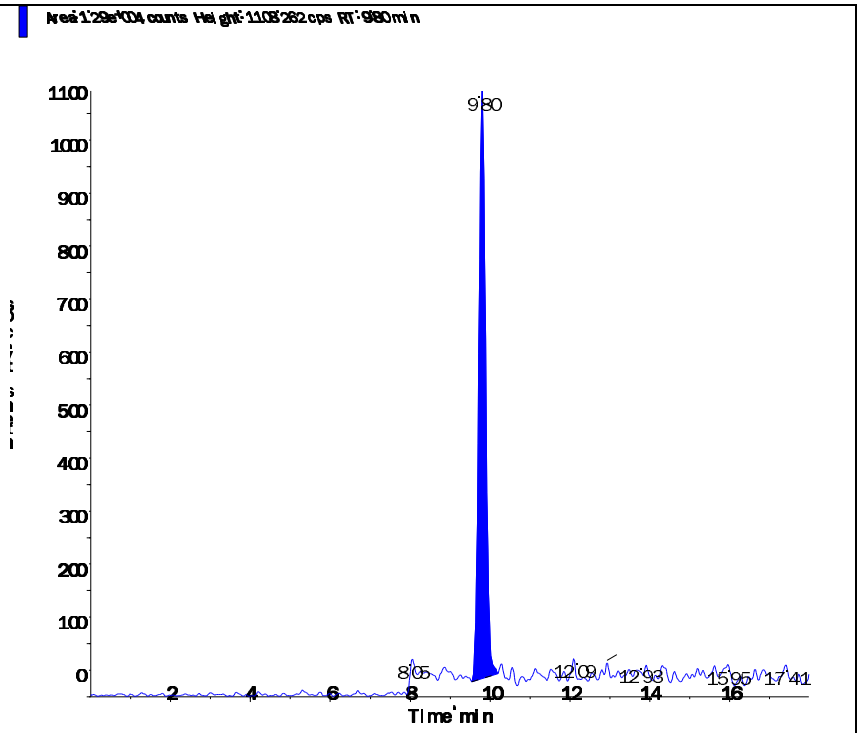

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Data File	LM34629.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 12:11:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567042-01 CCB	**Injection Vial**	1.00
Data File	LM34629.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 12:11:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	WG567042-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.370e+05	9.85	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	3.220e+02	9.69	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.85(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

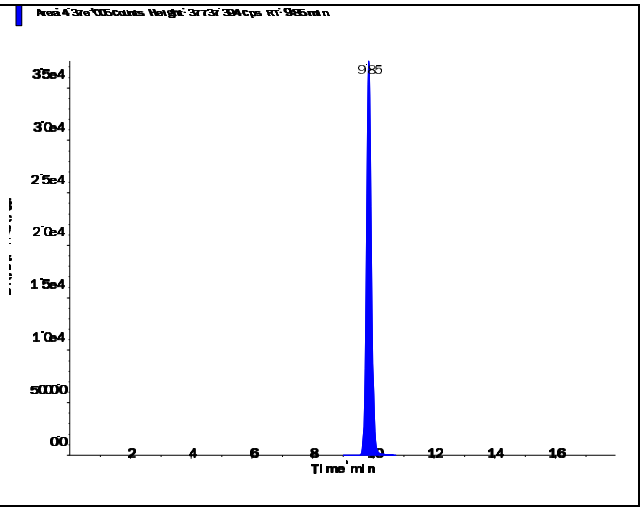

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

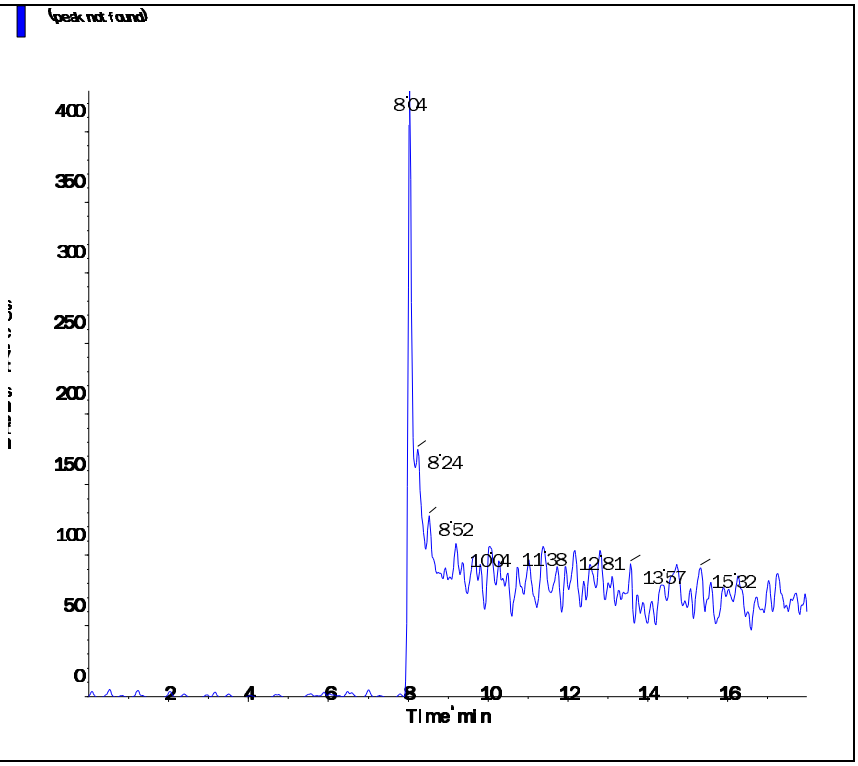

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.69 (9.90) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

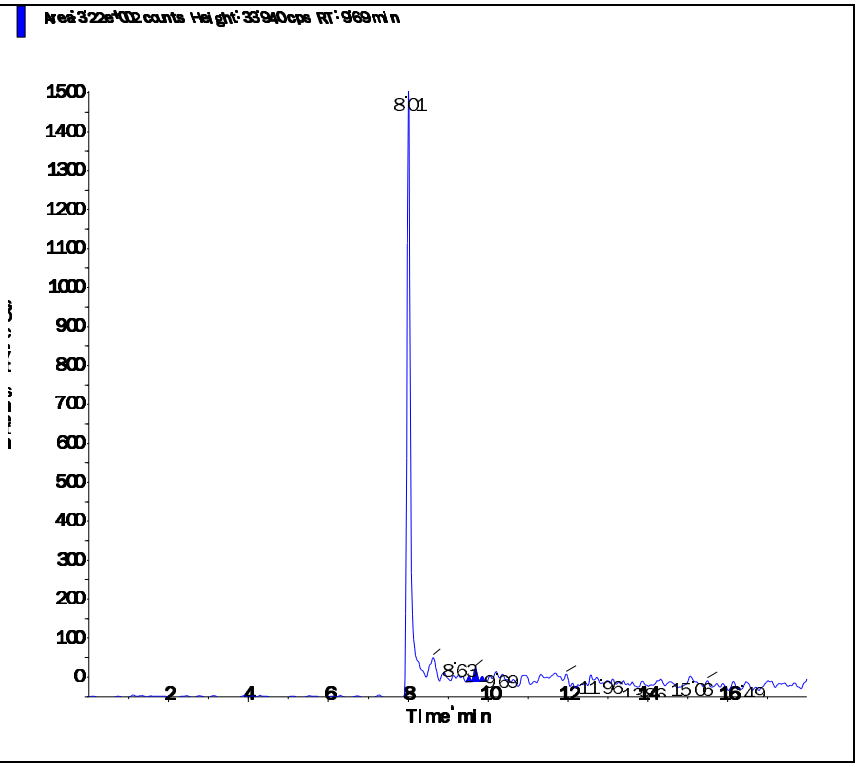

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Data File	LM34644.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 4:57:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567042-04 CCB	**Injection Vial**	1.00
Data File	LM34644.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 4:57:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	WG567042-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.340e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

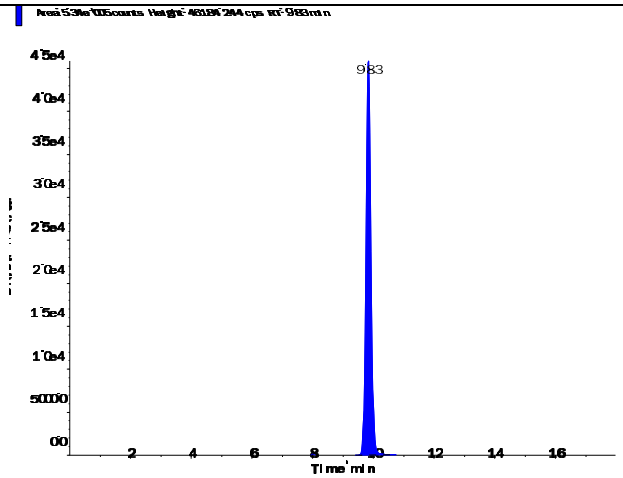

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

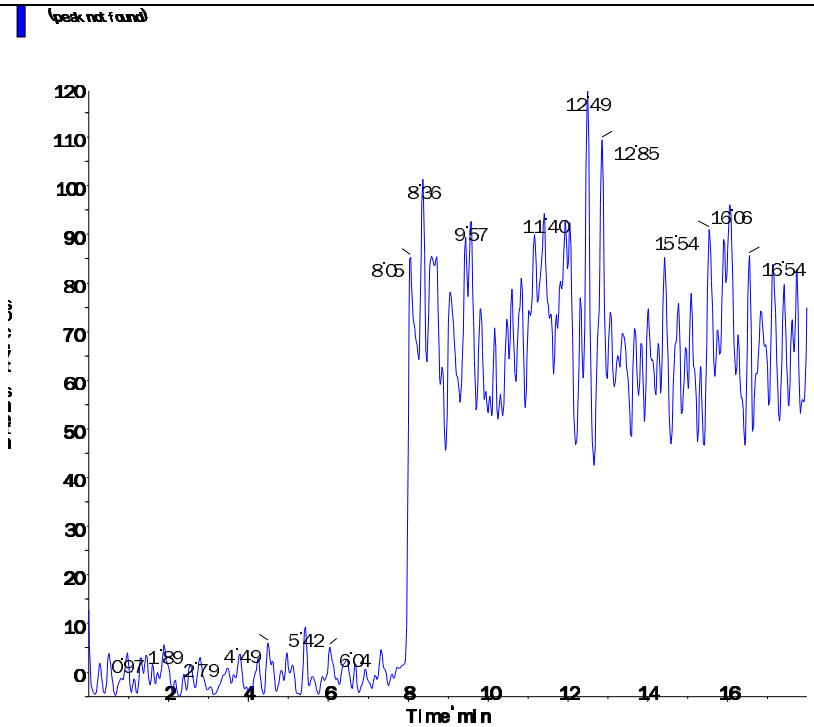

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.90) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

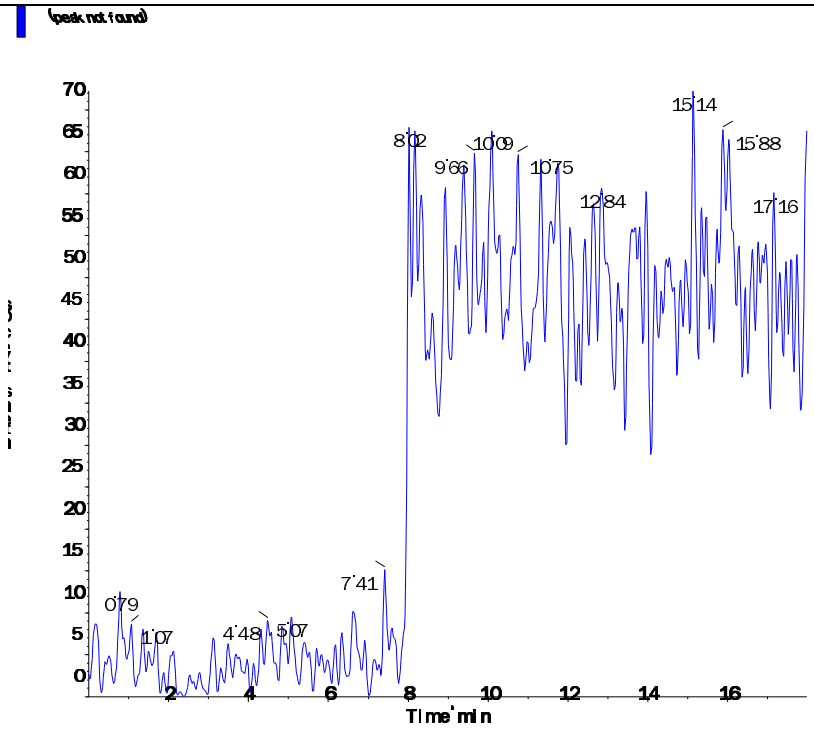

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Data File	LM34657.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 9:03:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567042-06 CCB	**Injection Vial**	1.00
Data File	LM34657.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 9:03:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	WG567042-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.490e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

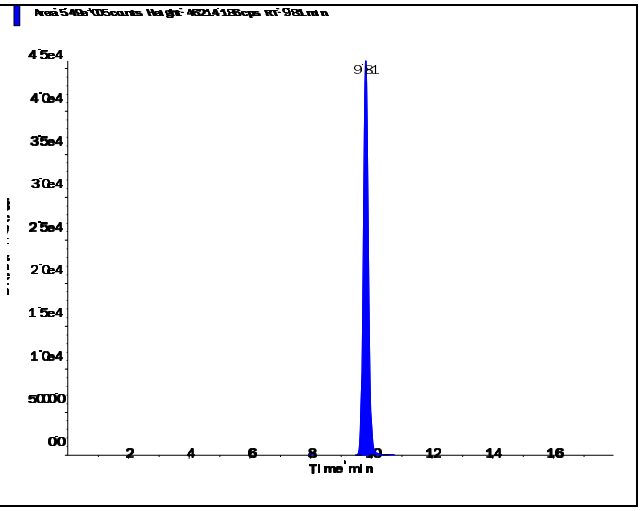

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

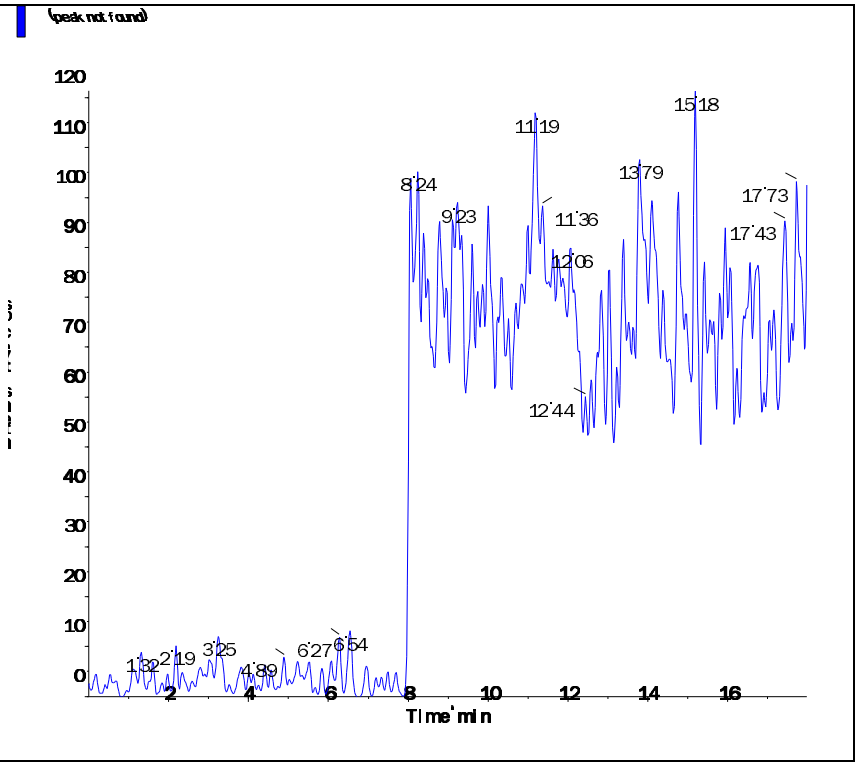

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.90) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

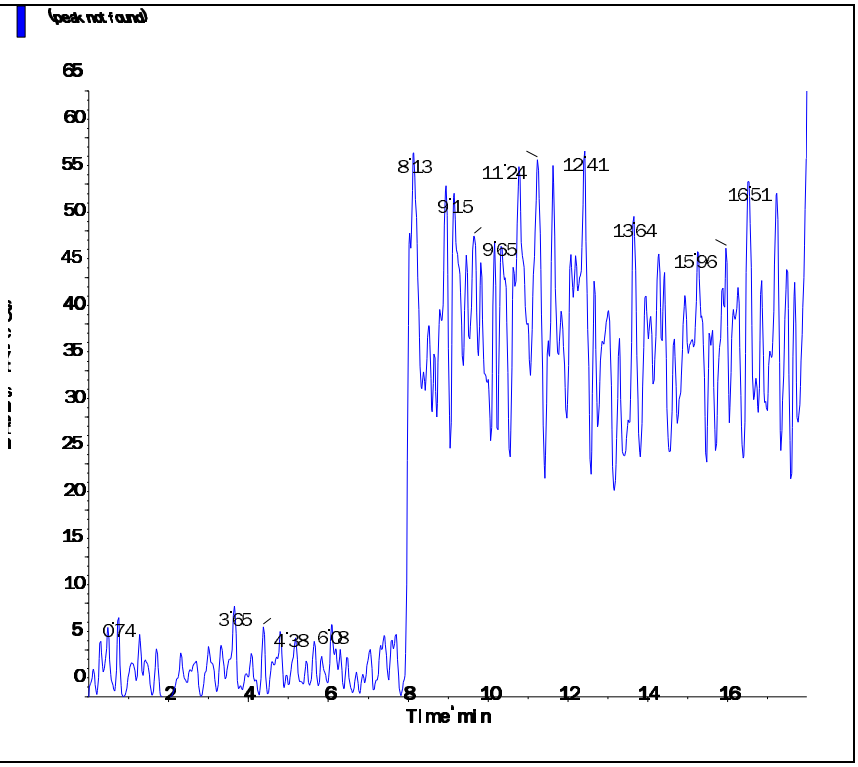

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Created with Analyst Reporter
Printed: 5/3/2016 11:18 AM

Data File	LM34632.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 1:08:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567011-01 MCT (2.0ug/kg)	**Injection Vial**	4.00
Data File	LM34632.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 1:08:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	WG567011-01	**Dilution Factor**	1.00
Sample Comment	7,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.160e+05	9.34	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.790e+04	9.35	N/A	0.204
Perchlorate conf	9.950e+03	9.35	N/A	0.20

O18LP (Internal Standard)

RT (Exp. RT): 9.34(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

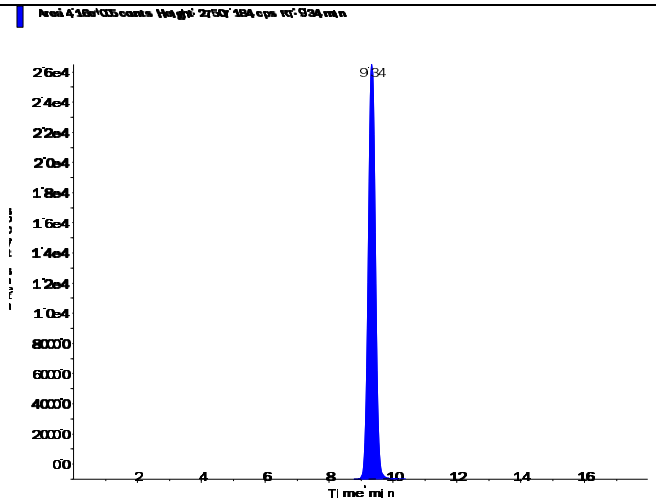

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

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Printed: 5/3/2016 11:18 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.35 (9.92) min
Calculated conc:	0.204 ng/ml
Area Ratio:	0.067
Sample Type:	(Unknown)

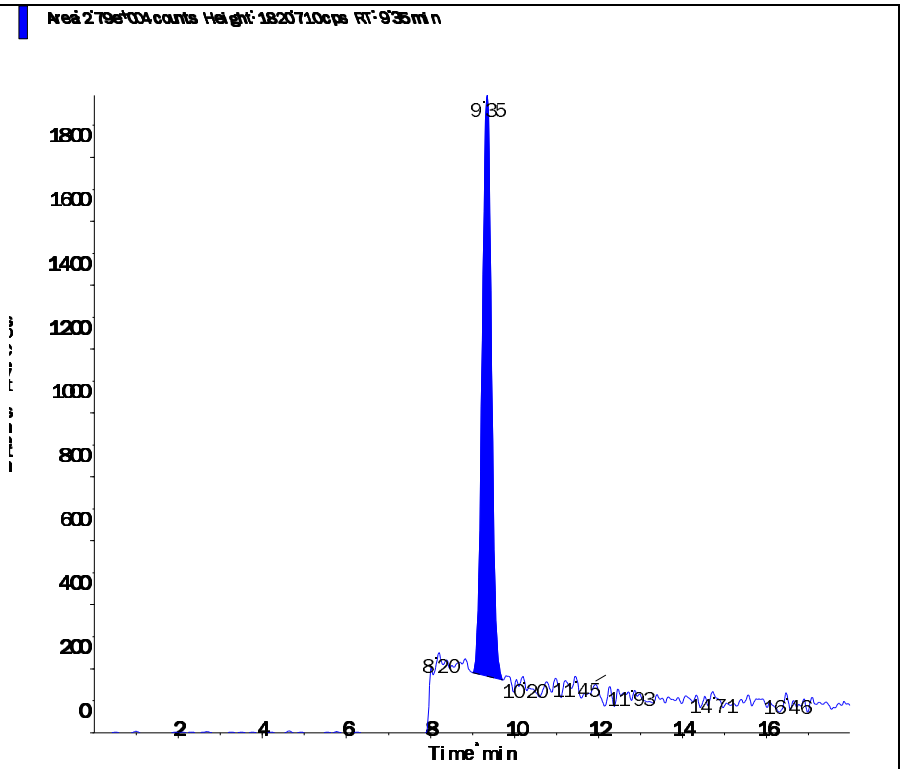

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.35 (9.90) min
Calculated conc:	0.20 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

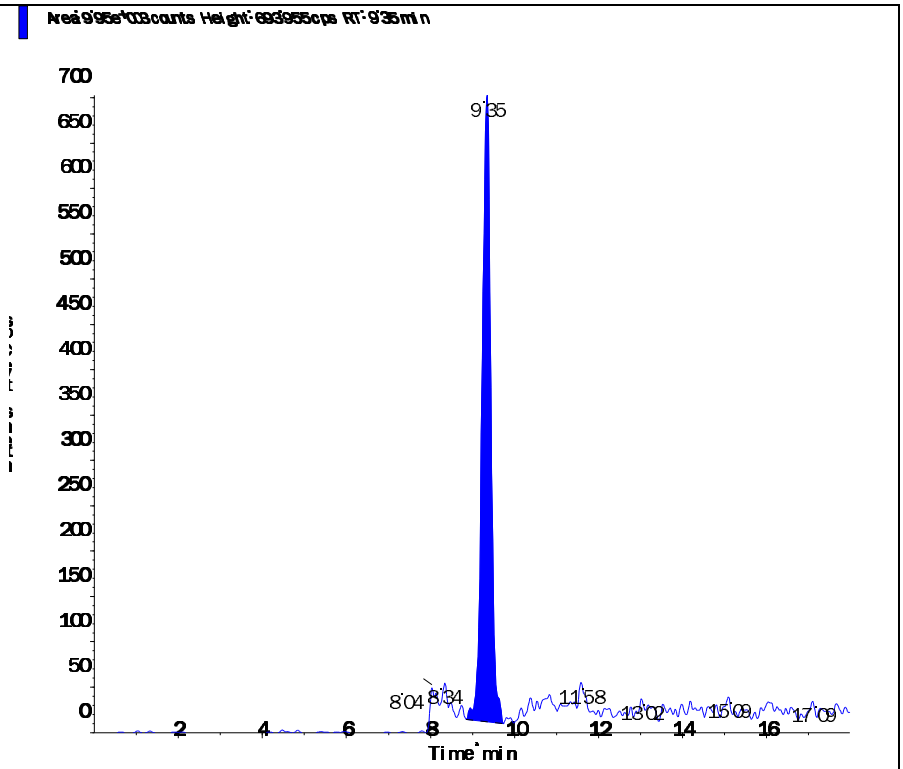

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2.2.1.5 Raw QC Data

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Created with Analyst Reporter
Printed: 5/3/2016 11:19 AM

Data File	LM34633.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 1:27:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567011-02 BLANK	**Injection Vial**	5.00
Data File	LM34633.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 1:27:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	WG567011-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.280e+05	9.86	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.86(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

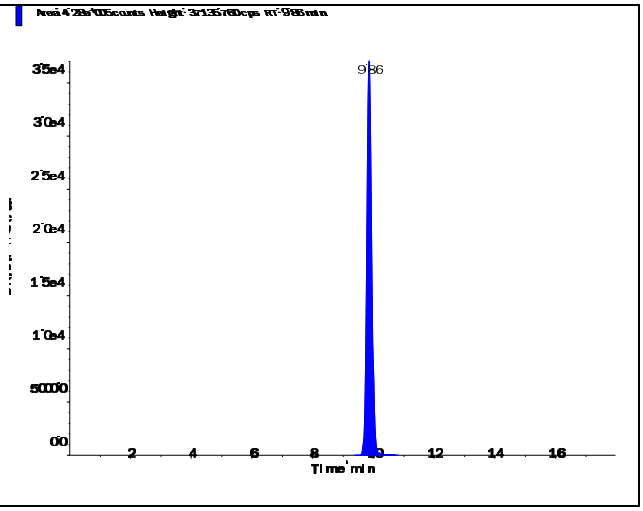

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Printed: 5/3/2016 11:19 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

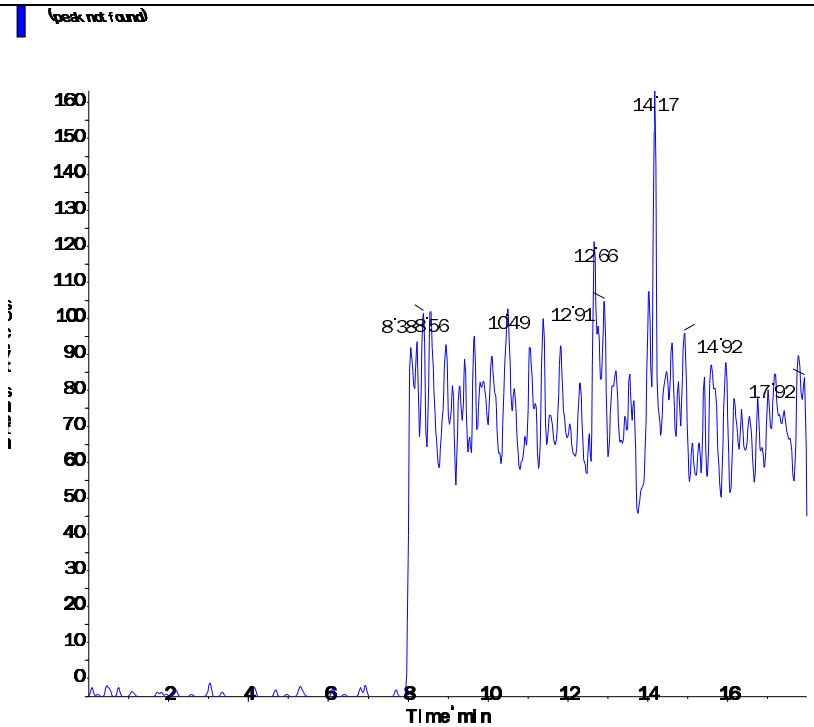

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.90) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

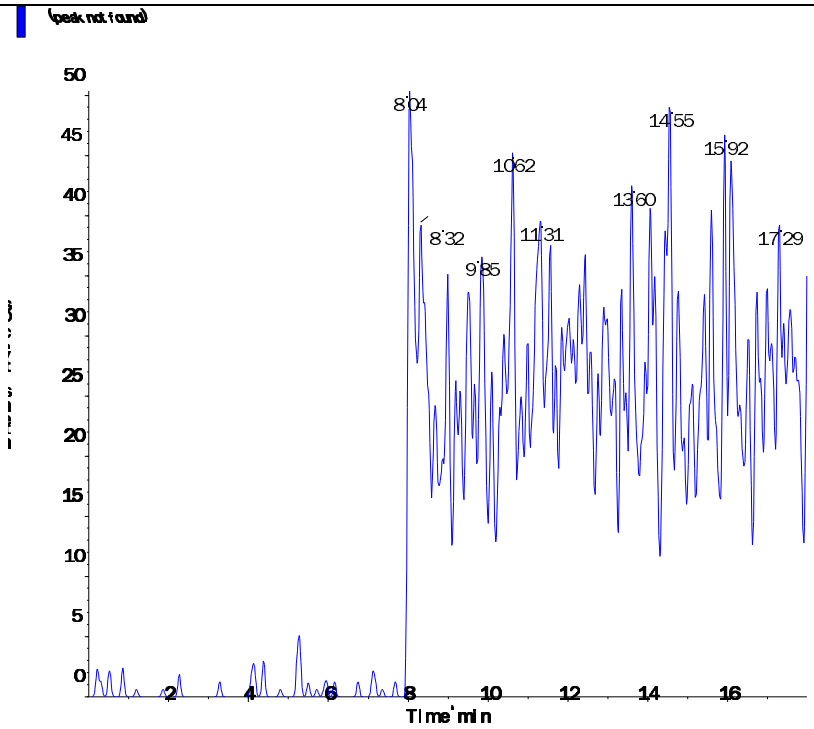

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Created with Analyst Reporter
Printed: 5/3/2016 11:19 AM

Data File	LM34634.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 1:46:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567011-03 LCS (2.0ug/kg)	**Injection Vial**	6.00
Data File	LM34634.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 1:46:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	WG567011-03	**Dilution Factor**	1.00
Sample Comment	7,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.310e+05	9.87	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.020e+04	9.87	N/A	0.213
Perchlorate conf	1.050e+04	9.87	N/A	0.204

O18LP (Internal Standard)

RT (Exp. RT): 9.87(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

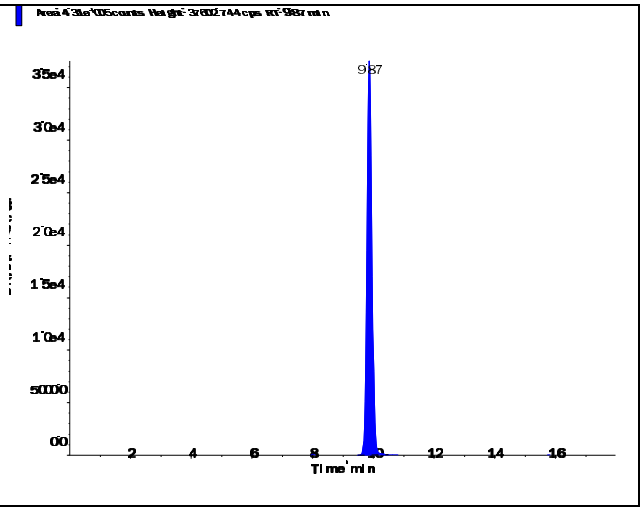

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Printed: 5/3/2016 11:19 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.87 (9.92) min
Calculated conc:	0.213 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

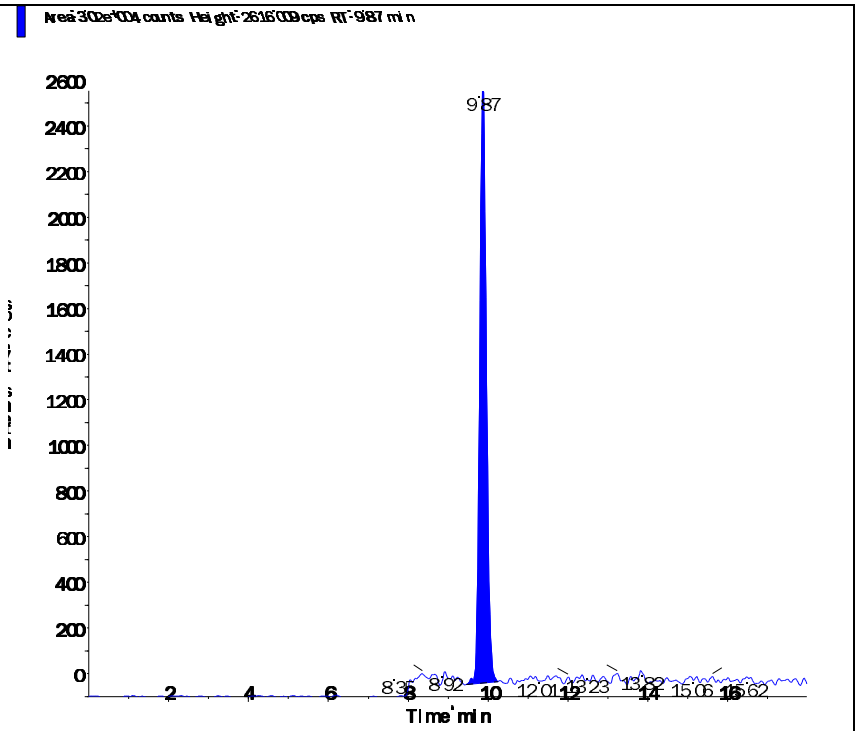

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.87 (9.90) min
Calculated conc:	0.204 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

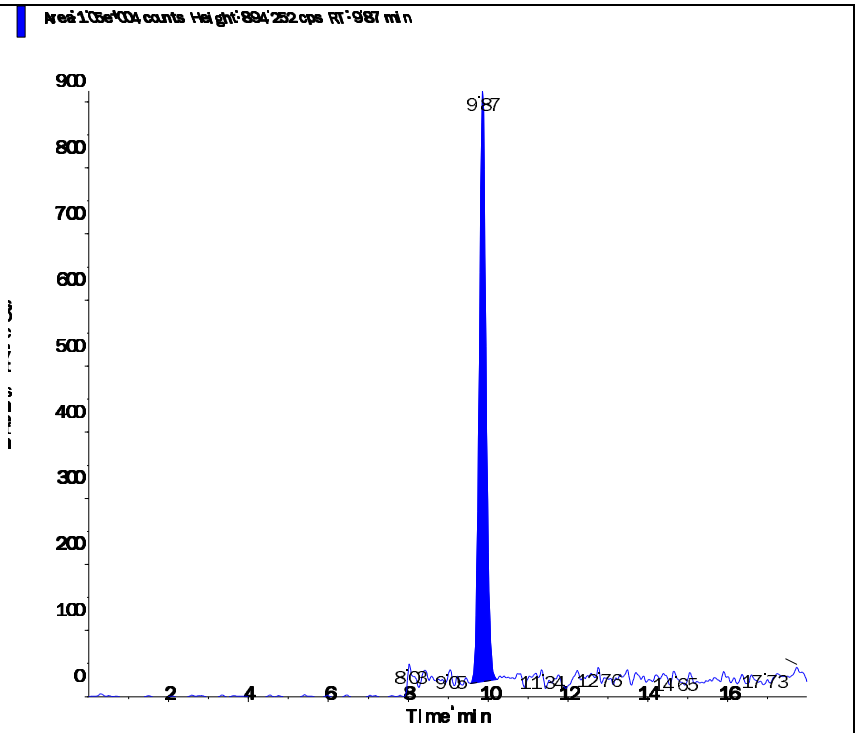

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Printed: 5/3/2016 11:20 AM

Data File	LM34636.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 2:25:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041344-01 MS	**Injection Vial**	8.00
Data File	LM34636.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 2:25:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	WG567011-05	**Dilution Factor**	1.00
Sample Comment	7,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.420e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.140e+04	9.84	N/A	0.215
Perchlorate conf	1.080e+04	9.84	N/A	0.206

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

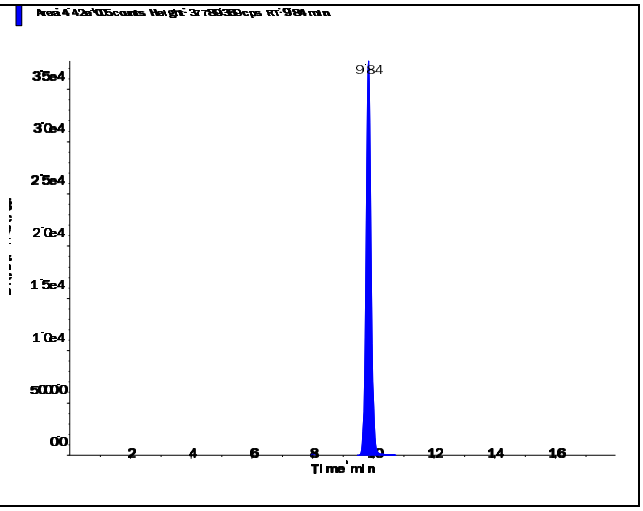

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Printed: 5/3/2016 11:20 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.92) min
Calculated conc:	0.215 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

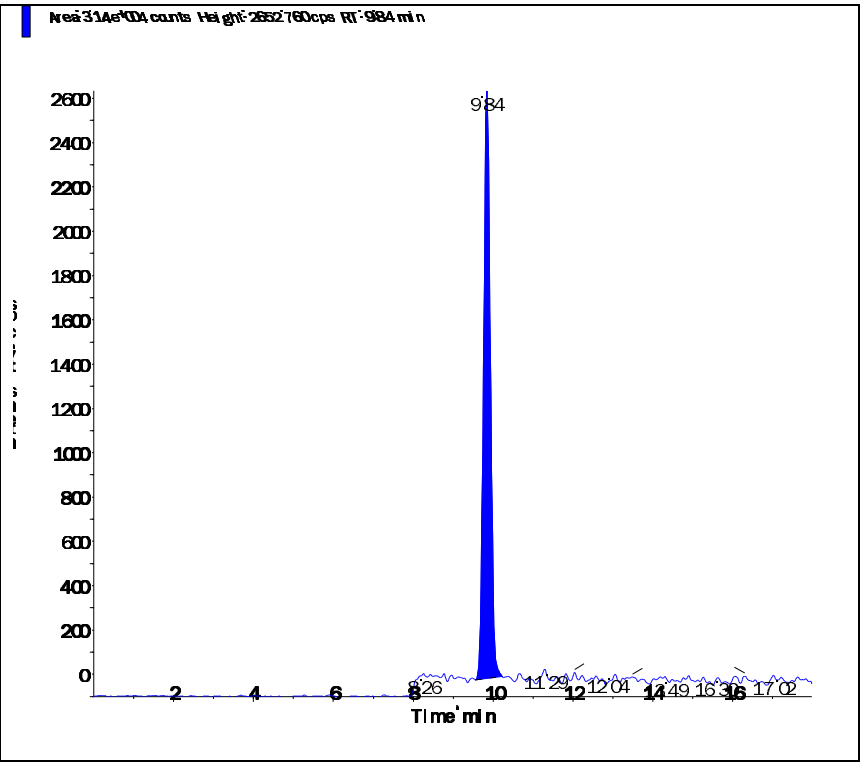

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.90) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

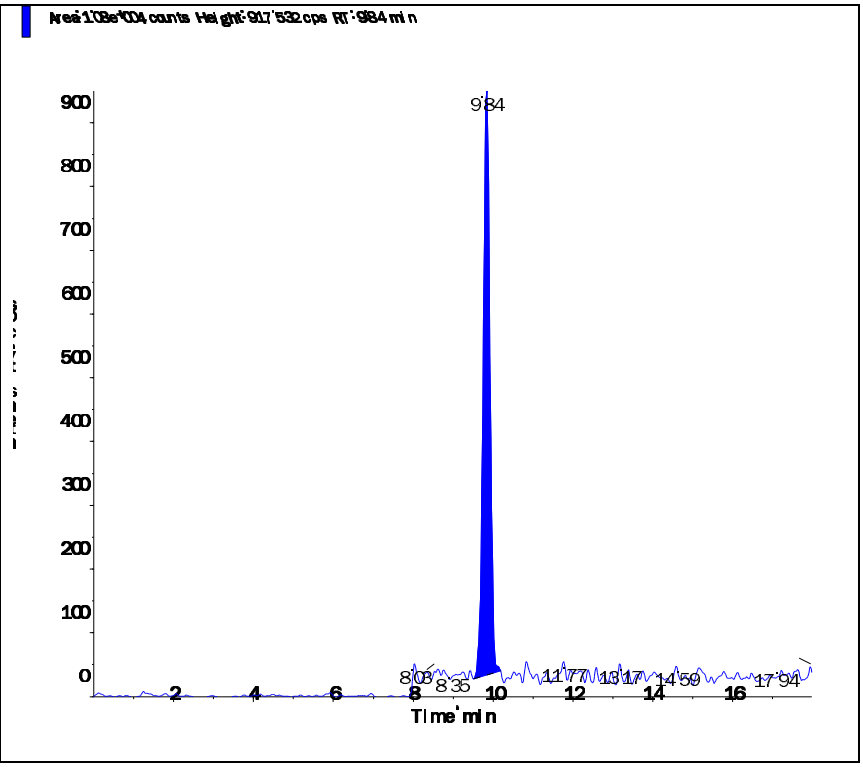

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/3/2016 11:20 AM

Data File	LM34637.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 2:44:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041344-01 MSD	**Injection Vial**	9.00
Data File	LM34637.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 2:44:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	WG567011-06	**Dilution Factor**	1.00
Sample Comment	7,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.440e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.290e+04	9.85	N/A	0.225
Perchlorate conf	1.150e+04	9.83	N/A	0.218

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

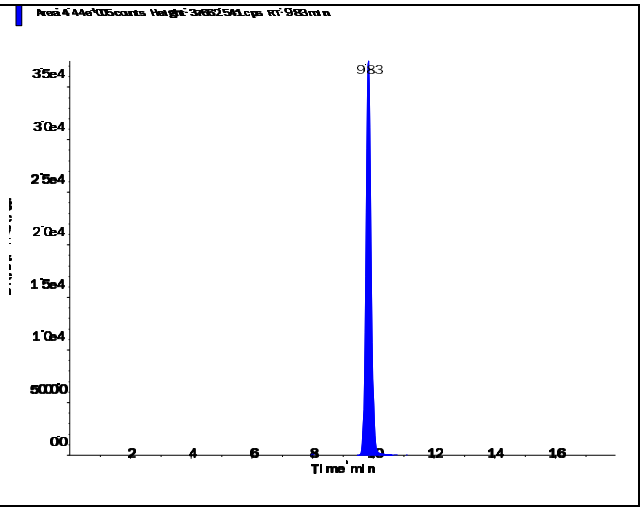

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/3/2016 11:20 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.92) min
Calculated conc:	0.225 ng/ml
Area Ratio:	0.074
Sample Type:	(Unknown)

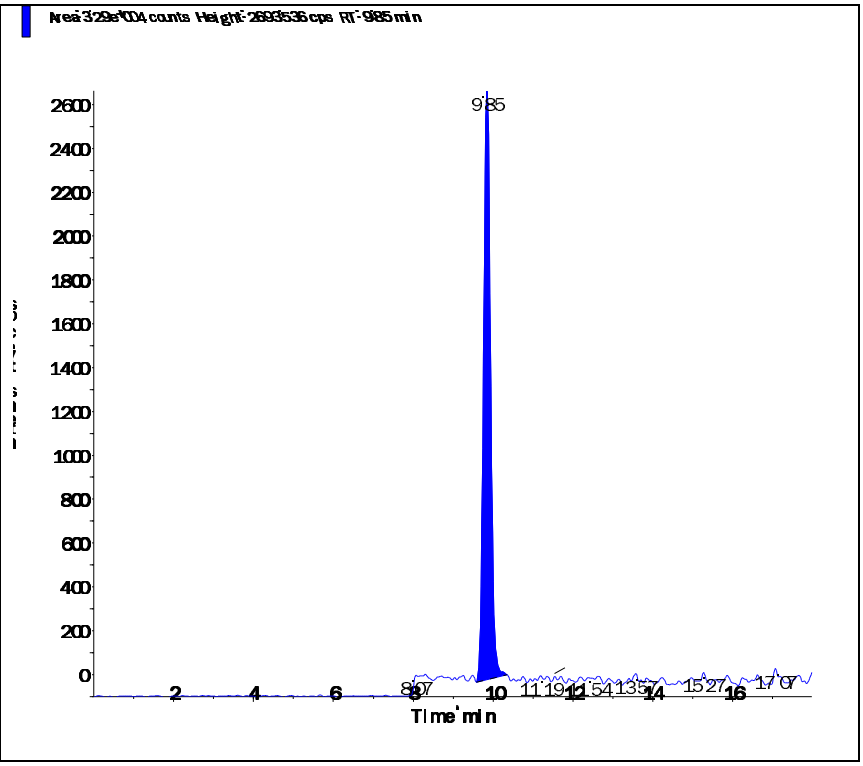

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.90) min
Calculated conc:	0.218 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

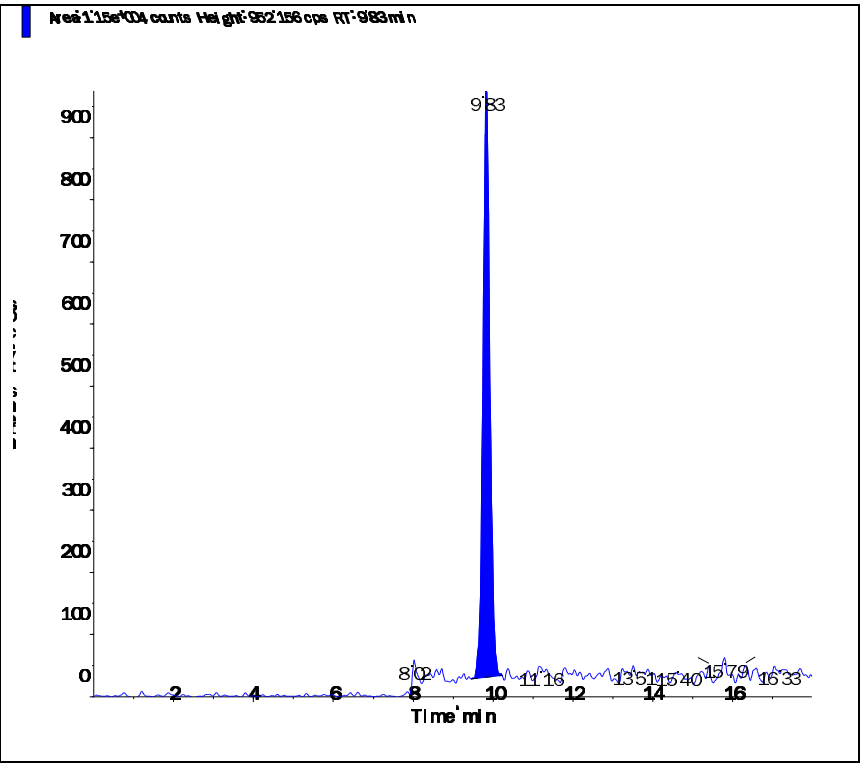

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2.3 General Chemistry Data

2.3.1 Percent Solids Data

2.3.1.1 Raw Data

Example Percent Solids Calculations

1.0 Calculating the percent solids of a sample.

$$\%Solids = \frac{WT3 - WT1}{WT2 - WT1} \times F$$

Where:	
WT1 = Weight, in grams, of the empty container	1.30 g
WT2 = Weight, in grams, of the container and wet sample	21.274 g
WT3 = Weight, in grams, of the container and dried sample	5.21 g
F = Factor to get units as percent weight	100
%Solids = Percent solids present in sample.	19.58%

2.0 Calculating the percent moisture of a sample.

% Moisture = 100 - % Solids from 1.0 calculation

Microbac Laboratories Inc.

PERCENT SOLIDS

Workgroup (AAB#): WG566651 Analyst: AC ADT(on): 04/27/2016 15:04
Method: D2216-90 Instrument: BAL021 ADT(off): 04/28/2016 08:17
SOP: K0003 Rev: 14

SAMPLE NUMBER	EMPTY PAN WT 1	WET WT 2	DRY WT 3A	DRY WT 3B	DRY WT 3C	PERCENT SOLID	PERCENT MOISTURE
L16041344-01	1.295	23.775	20.276			84.44	
L16041344-02	1.292	22.086	18.313			81.86	
L16041344-03	1.29	24.318	19.182			77.70	
L16041344-04	1.292	22.954	19.491			84.01	
L16041344-05	1.295	20.82	17.918			85.14	
L16041344-06	1.294	21.331	17.786			82.31	
L16041344-07	1.294	22.626	17.763			77.20	
L16041344-08	1.284	23.732	20.152			84.05	
L16041344-09	1.297	21.209	16.991			78.82	
L16041344-10	1.297	24.632	19.7			78.86	
L16041344-11	1.285	25.923	21.207			80.86	
L16041344-12	1.293	26.18	20.686			77.92	
L16041344-13	1.287	23.913	17.539			71.83	
L16041344-14	1.293	25.22	19.47			75.97	
L16041363-01	1.298	24.299	20.595			83.90	
L16041363-02	1.292	25.694	20.781			79.87	
L16041363-03	1.298	24.555	19.905			80.01	
L16041363-04	1.295	25.813	20.756			79.37	
L16041363-05	1.282	23.061	18.872			80.77	
L16041363-06	1.295	23.191	18.612			79.09	
L16041363-07	1.299	24.331	18.783			75.91	
L16041363-08	1.299	24.331	18.783			75.91	
L16041363-09	1.299	24.331	18.783			75.91	
L16041363-10	1.287	22.26	18.173			80.51	
WG566651-01	1.293	26.18	20.686			77.92	22.08
WG566651-02	1.295	23.191	18.612			79.09	20.91
WG566651-03	1.29	33.542	26.24			77.36	22.64
WG566651-04	1.289	23.165	18.672			79.46	20.54

Analyst: [signature]

PERCENT_SOLIDS - Modified 04/24/2008
PDF ID: 4738194
Report generated: 04/28/2016 08:22

Microbac

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
May 10, 2016

---

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
May 10, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
May 10, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Stephanie Mossburg	Project Manager: Debra Richmon	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): KAYLIA PALLANES	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Kayla Pallanes	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205			
Turn Around Time: STANDARD	pH:	Program:	
Project Name/Location: Longhorn			
Project Number: 60274185			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOCs 8260	Perchlorate 6850	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
	18CPTMW22R(5-5.5)230416			4/23/16	0935		X	S	2	X	X					
	18CPTMW22R(10-10.5)230416			4/23/16	1005		X	S	2	X	X					
	18CPTMW22R(15-15.5)230416			4/23/16	1010		X	S	2	X	X					
	18CPTMW26(5-5.5)230416			4/23/16	1330		X	S	2	X	X					
	18CPTMW26(5-5.5)230416 DUP			4/23/16	1330		X	S	2	X	X					
	18CPTMW26(10-10.5)230416			4/23/16	1400		X	S	2	X	X					
	18CPTMW26(14.5-15.5)230416			4/23/16	1405		X	S	2	X	X					
	18CPTMW26SW(5-5.5)250416			4/25/16	0935		X	S	2	X	X					
	18CPTMW26SW(10-10.5)250416			4/25/16	0950		X	S	2	X	X					
	18CPTMW26SW(15-15.5)250416			4/25/16	1045		X	S	2	X	X					
	18CPTMW26SW(20-20.5)250416			4/25/16	1145		X	S	2	X	X					
Hold *	18CPTMW26SW(25-25.5)250416			4/25/16	1150		X	S	2	X	X					
	18CPTMW26SW(30-30.5)250416			4/25/16	1205		X	S	2	X	X					
	18CPTMW26SW(40-40.5)250416			4/25/16	1210		X	S	2	X	X					
	18CPTMW26SW(49.5-50)250416			4/25/16	1230		X	S	2	X	X					

Comments:

Relinquished by: (Signature) Kayla Pallanes	Date 4/25/16	Time 1300	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Re (Si		Time	Remarks:

*Homogenize all composite samples prior to analysis

Microbac OVD
Received: 04/26/2016 10:51
By: BRENDA GREGORY 221000085037
Brenda Gregory

...anager, Pink QA/QC Manager

00659666

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041344
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 06-MAY-2016

Samplenum	Container ID	Products
L16041344-01	734367	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-APR-2016 14:01	CLS		
2	ANALYZ	V1	ORG4	26-APR-2016 16:44	AWE	CLS	
3	STORE	ORG1	A1	09-MAY-2016 07:35	CLS	AWE	

Samplenum	Container ID	Products
L16041344-01	734368	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-APR-2016 14:01	CLS		
2	PREP	W1	DIG	27-APR-2016 15:00	AC	BRG	
3	STORE	DIG	W1	27-APR-2016 15:32	BRG	AC	
4	ANALYZ	W1	SEM	29-APR-2016 11:09	JWR	CLS	
5	STORE	SEM	A1	02-MAY-2016 16:35	BRG	JWR	
6	ANALYZ*	DIG	SEMI	04-MAY-2016 17:32	JWR	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041344-02	734369	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-APR-2016 14:01	CLS		
2	ANALYZ	V1	ORG4	26-APR-2016 16:44	AWE	CLS	
3	STORE	ORG1	A1	09-MAY-2016 07:35	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041344
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 06-MAY-2016

Samplenum	Container ID	Products
L16041344-02	734370	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-APR-2016 14:01	CLS		
2	PREP	W1	DIG	27-APR-2016 15:00	AC	BRG	
3	STORE	DIG	W1	27-APR-2016 15:32	BRG	AC	
4	ANALYZ	W1	SEM	29-APR-2016 11:09	JWR	CLS	
5	STORE	SEM	A1	02-MAY-2016 16:35	BRG	JWR	
6	ANALYZ*	DIG	SEMI	04-MAY-2016 17:32	JWR	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041344-03	734371	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-APR-2016 14:01	CLS		
2	ANALYZ	V1	ORG4	26-APR-2016 16:44	AWE	CLS	
3	STORE	ORG1	A1	09-MAY-2016 07:35	CLS	AWE	

Samplenum	Container ID	Products
L16041344-03	734372	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-APR-2016 14:01	CLS		
2	PREP	W1	DIG	27-APR-2016 15:00	AC	BRG	
3	STORE	DIG	W1	27-APR-2016 15:32	BRG	AC	
4	ANALYZ	W1	SEM	29-APR-2016 11:09	JWR	CLS	
5	STORE	SEM	A1	02-MAY-2016 16:35	BRG	JWR	
6	ANALYZ*	DIG	SEMI	04-MAY-2016 17:32	JWR	AC	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041344
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 06-MAY-2016

Samplenum	Container ID	Products
L16041344-04	734373	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-APR-2016 14:01	CLS		
2	ANALYZ	V1	ORG4	26-APR-2016 16:44	AWE	CLS	
3	STORE	ORG1	A1	09-MAY-2016 07:35	CLS	AWE	

Samplenum	Container ID	Products
L16041344-04	734374	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-APR-2016 14:01	CLS		
2	PREP	W1	DIG	27-APR-2016 15:00	AC	BRG	
3	STORE	DIG	W1	27-APR-2016 15:32	BRG	AC	
4	ANALYZ	W1	SEM	29-APR-2016 11:09	JWR	CLS	
5	STORE	SEM	A1	02-MAY-2016 16:35	BRG	JWR	
6	ANALYZ*	DIG	SEMI	04-MAY-2016 17:32	JWR	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041344-05	734375	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-APR-2016 14:01	CLS		
2	ANALYZ	V1	ORG4	26-APR-2016 16:44	AWE	CLS	
3	STORE	ORG1	A1	09-MAY-2016 07:35	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041344
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 06-MAY-2016

Samplenum	Container ID	Products
L16041344-05	734376	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-APR-2016 14:01	CLS		
2	PREP	W1	DIG	27-APR-2016 15:00	AC	BRG	
3	STORE	DIG	W1	27-APR-2016 15:32	BRG	AC	
4	ANALYZ	W1	SEM	29-APR-2016 11:09	JWR	CLS	
5	STORE	SEM	A1	02-MAY-2016 16:35	BRG	JWR	
6	ANALYZ*	DIG	SEMI	04-MAY-2016 17:32	JWR	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041344-06	734377	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-APR-2016 14:01	CLS		
2	ANALYZ	V1	ORG4	26-APR-2016 16:44	AWE	CLS	
3	STORE	ORG1	A1	09-MAY-2016 07:35	CLS	AWE	

Samplenum	Container ID	Products
L16041344-06	734378	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-APR-2016 14:01	CLS		
2	PREP	W1	DIG	27-APR-2016 15:00	AC	BRG	
3	STORE	DIG	W1	27-APR-2016 15:32	BRG	AC	
4	ANALYZ	W1	SEM	29-APR-2016 11:09	JWR	CLS	
5	STORE	SEM	A1	02-MAY-2016 16:35	BRG	JWR	
6	ANALYZ*	DIG	SEMI	04-MAY-2016 17:32	JWR	AC	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041344
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 06-MAY-2016

Samplenum	Container ID	Products
L16041344-07	734379	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-APR-2016 14:01	CLS		
2	ANALYZ	V1	ORG4	26-APR-2016 16:44	AWE	CLS	
3	STORE	ORG1	A1	09-MAY-2016 07:35	CLS	AWE	

Samplenum	Container ID	Products
L16041344-07	734380	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-APR-2016 14:01	CLS		
2	PREP	W1	DIG	27-APR-2016 15:00	AC	BRG	
3	STORE	DIG	W1	27-APR-2016 15:32	BRG	AC	
4	ANALYZ	W1	SEM	29-APR-2016 11:09	JWR	CLS	
5	STORE	SEM	A1	02-MAY-2016 16:35	BRG	JWR	
6	ANALYZ*	DIG	SEMI	04-MAY-2016 17:32	JWR	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041344-08	734381	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-APR-2016 14:01	CLS		
2	ANALYZ	V1	ORG4	26-APR-2016 16:44	AWE	CLS	
3	STORE	ORG1	A1	09-MAY-2016 07:35	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041344
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 06-MAY-2016

Samplenum	Container ID	Products
L16041344-08	734382	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-APR-2016 14:01	CLS		
2	PREP	W1	DIG	27-APR-2016 15:00	AC	BRG	
3	STORE	DIG	W1	27-APR-2016 15:32	BRG	AC	
4	ANALYZ	W1	SEM	29-APR-2016 11:09	JWR	CLS	
5	STORE	SEM	A1	02-MAY-2016 16:35	BRG	JWR	
6	ANALYZ*	DIG	SEMI	04-MAY-2016 17:32	JWR	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041344-09	734383	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-APR-2016 14:01	CLS		
2	ANALYZ	V1	ORG4	26-APR-2016 16:44	AWE	CLS	
3	STORE	ORG1	A1	09-MAY-2016 07:35	CLS	AWE	

Samplenum	Container ID	Products
L16041344-09	734384	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-APR-2016 14:01	CLS		
2	PREP	W1	DIG	27-APR-2016 15:00	AC	BRG	
3	STORE	DIG	W1	27-APR-2016 15:32	BRG	AC	
4	ANALYZ	W1	SEM	29-APR-2016 11:09	JWR	CLS	
5	STORE	SEM	A1	02-MAY-2016 16:36	BRG	JWR	
6	ANALYZ*	DIG	SEMI	04-MAY-2016 17:32	JWR	AC	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041344
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 06-MAY-2016

Samplenum	Container ID	Products
L16041344-10	734385	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-APR-2016 14:01	CLS		
2	ANALYZ	V1	ORG4	26-APR-2016 16:44	AWE	CLS	
3	STORE	ORG1	A1	09-MAY-2016 07:35	CLS	AWE	

Samplenum	Container ID	Products
L16041344-10	734386	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-APR-2016 14:01	CLS		
2	PREP	W1	DIG	27-APR-2016 15:00	AC	BRG	
3	STORE	DIG	W1	27-APR-2016 15:33	BRG	AC	
4	ANALYZ	W1	SEM	29-APR-2016 11:09	JWR	CLS	
5	STORE	SEM	A1	02-MAY-2016 16:36	BRG	JWR	
6	ANALYZ*	DIG	SEMI	04-MAY-2016 17:32	JWR	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041344-11	734387	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-APR-2016 14:01	CLS		
2	ANALYZ	V1	ORG4	26-APR-2016 16:44	AWE	CLS	
3	STORE	ORG1	A1	09-MAY-2016 07:35	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041344
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 06-MAY-2016

Samplenum	Container ID	Products
L16041344-11	734388	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-APR-2016 14:01	CLS		
2	PREP	W1	DIG	27-APR-2016 15:00	AC	BRG	
3	STORE	DIG	W1	27-APR-2016 15:33	BRG	AC	
4	ANALYZ	W1	SEM	29-APR-2016 11:09	JWR	CLS	
5	STORE	SEM	A1	02-MAY-2016 16:36	BRG	JWR	
6	ANALYZ*	DIG	SEMI	04-MAY-2016 17:32	JWR	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041344-12	734389	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-APR-2016 14:01	CLS		
2	ANALYZ	V1	ORG4	26-APR-2016 16:44	AWE	CLS	
3	STORE	ORG1	A1	09-MAY-2016 07:35	CLS	AWE	

Samplenum	Container ID	Products
L16041344-12	734390	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-APR-2016 14:01	CLS		
2	PREP	W1	DIG	27-APR-2016 15:00	AC	BRG	
3	STORE	DIG	W1	27-APR-2016 15:32	BRG	AC	
4	ANALYZ	W1	SEM	29-APR-2016 11:09	JWR	CLS	
5	STORE	SEM	A1	02-MAY-2016 16:36	BRG	JWR	
6	ANALYZ*	DIG	SEMI	04-MAY-2016 17:32	JWR	AC	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041344
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 06-MAY-2016

Samplenum	Container ID	Products
L16041344-13	734391	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-APR-2016 14:01	CLS		
2	ANALYZ	V1	ORG4	26-APR-2016 16:44	AWE	CLS	
3	STORE	ORG1	A1	09-MAY-2016 07:35	CLS	AWE	

Samplenum	Container ID	Products
L16041344-13	734392	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-APR-2016 14:01	CLS		
2	PREP	W1	DIG	27-APR-2016 15:00	AC	BRG	
3	STORE	DIG	W1	27-APR-2016 15:33	BRG	AC	
4	ANALYZ	W1	SEM	29-APR-2016 11:10	JWR	CLS	
5	STORE	SEM	A1	02-MAY-2016 16:37	BRG	JWR	
6	ANALYZ*	DIG	SEMI	04-MAY-2016 17:32	JWR	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041344-14	734393	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-APR-2016 14:01	CLS		
2	ANALYZ	V1	ORG4	26-APR-2016 16:44	AWE	CLS	
3	STORE	ORG1	A1	09-MAY-2016 07:35	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041344
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 06-MAY-2016

Samplenum	Container ID	Products
L16041344-14	734394	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-APR-2016 14:01	CLS		
2	PREP	W1	DIG	27-APR-2016 15:00	AC	BRG	
3	STORE	DIG	W1	27-APR-2016 15:33	BRG	AC	
4	ANALYZ	W1	SEM	29-APR-2016 11:10	JWR	CLS	
5	STORE	SEM	A1	02-MAY-2016 16:37	BRG	JWR	
6	ANALYZ*	DIG	SEMI	04-MAY-2016 17:32	JWR	AC	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16041363

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on May 10 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00113753	I	1.0		J2317165296	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	NA
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	NA

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18CPTMW19SW(5-5.5)210416	L16041363-01	04/21/2016 17:00	04/26/2016 10:51
18CPTMW19SW(10-10.5)210416	L16041363-02	04/21/2016 17:30	04/26/2016 10:51
18CPTMW19SW(30-30.5)220416	L16041363-03	04/22/2016 09:00	04/26/2016 10:51
18CPTMW19SW(30-30.5)220416DUP	L16041363-04	04/22/2016 09:00	04/26/2016 10:51
18CPTMW19SW(40-40.5)220416	L16041363-05	04/22/2016 09:05	04/26/2016 10:51
18CPTMW19SW(20-20.5)220416	L16041363-06	04/21/2016 18:00	04/26/2016 10:51
18CPTMW19SW(60-61)220416	L16041363-07	04/22/2016 11:15	04/26/2016 10:51
18CPTMW19SW(60-61)220416MS	L16041363-08	04/22/2016 11:15	04/26/2016 10:51
18CPTMW19SW(60-61)220416MSD	L16041363-09	04/22/2016 11:15	04/26/2016 10:51
18CPTMW19SW(50-50.5)220416	L16041363-10	04/22/2016 11:11	04/26/2016 10:51

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16041363
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041363
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG567003	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-05-10 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden	Franci Bolden	Analyst I	2016-05-10 18:04:56

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041363
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG567003	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-05-10 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?		X			1
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041363
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG567003	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-05-10 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			4
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041363
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG567003	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-05-10 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			3
Was the ICAL curve verified for each analyte?		X			2
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041363
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG567003	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-05-10 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041363
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG567003	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-05-10 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) Surrogate recoveries marginally exceeded the upper limit for 1,2-Dichloroethane-d4 and 4-Bromofluorobenzene in multiple samples, blank and LCSs. No detections above the reporting limit in affected samples. No reanalysis performed.

2) Dichlorodifluoromethane exceeded the upper limit in the ICV.

3) 2-Chlorotoluene exceeded the upper control limit in the CCV analyzed 4/30/16.

4) Vinyl chloride exceeded the upper control limit in the MS/MSD.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041363
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG567013	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-05-05 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-05-05 20:25:47

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041363
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG567013	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-05-05 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041363
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG567013	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-05-05 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			1
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041363
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG567013	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-05-05 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041363
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG567013	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-05-05 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041363
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG567013	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-05-05 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. The MS and MSD yielded recoveries for perchlorate that were above the acceptance limit.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041363
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG566651	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-04-28 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2016-04-28 14:17:00

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041363
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG566651	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-04-28 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?			X		
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?			X		
Were sample detection limits reported for all analytes not detected?			X		
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?			X		
Were blanks analyzed at the appropriate frequency?			X		
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?			X		
Were blank concentrations < MQL?			X		
Laboratory control samples (LCS):			X		
Were all COCs included in the LCS?			X		

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041363
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG566651	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-04-28 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?			X		
Were LCSs analyzed at the required frequency?			X		
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?			X		
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?			X		
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?			X		
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?			X		
Are unadjusted MQLs and DCSs included in the laboratory data package?			X		
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?			X		
Were percent RSDs or correlation coefficient criteria met?			X		

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041363
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG566651	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-04-28 00:00:00		

Was the number of standards recommended in the method used for all analytes?			X		
Were all points generated between the lowest and highest standard used to calculate the curve?			X		
Are ICAL data available for all instruments used?			X		
Has the initial calibration curve been verified using an appropriate second source standard?			X		
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041363
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG566651	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-04-28 00:00:00		

Was a MDL study performed for each reported analyte?			X		
Is the MDL either adjusted or supported by the analysis of DCSs?			X		
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?			X		
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041363
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG566651	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-04-28 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW19SW(5-5.5)210416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:33
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG567003	**Analyst:**	ADC	**Run Date:**	04/30/2016 18:48
Collect Date:	04/21/2016 17:00	**Dilution:**	1	**File ID:**	9M974077
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.2	U	24.3	12.2	6.08
Benzene	71-43-2	1.22	U	6.08	1.22	0.608
Bromobenzene	108-86-1	1.22	U	6.08	1.22	0.608
Bromochloromethane	74-97-5	2.44	U	6.08	2.44	1.22
Bromodichloromethane	75-27-4	1.22	U	6.08	1.22	0.608
Bromoform	75-25-2	1.22	U	6.08	1.22	0.608
Bromomethane	74-83-9	2.44	U	6.08	2.44	1.22
2-Butanone	78-93-3	6.08	U	12.2	6.08	3.04
n-Butylbenzene	104-51-8	1.22	U	6.08	1.22	0.608
sec-Butylbenzene	135-98-8	1.22	U	6.08	1.22	0.608
tert-Butylbenzene	98-06-6	1.22	U	6.08	1.22	0.608
Carbon disulfide	75-15-0	1.22	U	6.08	1.22	0.608
Carbon tetrachloride	56-23-5	1.22	U	6.08	1.22	0.608
Chlorobenzene	108-90-7	1.22	U	6.08	1.22	0.608
Chlorodibromomethane	124-48-1	1.22	U	6.08	1.22	0.608
Chloroethane	75-00-3	2.44	U	6.08	2.44	1.22
Chloroform	67-66-3	1.22	U	6.08	1.22	0.608
Chloromethane	74-87-3	4.86	U	12.2	4.86	2.43
2-Chlorotoluene	95-49-8	1.22	Q	6.08	1.22	0.608
4-Chlorotoluene	106-43-4	1.22	U	6.08	1.22	0.608
1,2-Dibromo-3-chloropropane	96-12-8	4.86	U	12.2	4.86	2.43
1,2-Dibromoethane	106-93-4	1.22	U	6.08	1.22	0.608
Dibromomethane	74-95-3	1.22	U	6.08	1.22	0.608
1,2-Dichlorobenzene	95-50-1	1.22	U	6.08	1.22	0.608
1,3-Dichlorobenzene	541-73-1	1.22	U	6.08	1.22	0.608
1,4-Dichlorobenzene	106-46-7	1.22	U	6.08	1.22	0.608
Dichlorodifluoromethane	75-71-8	2.44	U	6.08	2.44	1.22
1,1-Dichloroethane	75-34-3	2.44	U	6.08	2.44	1.22
1,2-Dichloroethane	107-06-2	1.22	U	6.08	1.22	0.608
1,1-Dichloroethene	75-35-4	1.22	U	6.08	1.22	0.608
cis-1,2-Dichloroethene	156-59-2	1.22	U	6.08	1.22	0.608

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.22	U	6.08	1.22	0.608
1,2-Dichloropropane	78-87-5	1.22	U	6.08	1.22	0.608
1,3-Dichloropropane	142-28-9	1.22	U	6.08	1.22	0.608
2,2-Dichloropropane	594-20-7	1.22	U	6.08	1.22	0.608
cis-1,3-Dichloropropene	10061-01-5	1.22	U	6.08	1.22	0.608
trans-1,3-Dichloropropene	10061-02-6	1.22	U	6.08	1.22	0.608
1,1-Dichloropropene	563-58-6	1.22	U	6.08	1.22	0.608
Ethylbenzene	100-41-4	1.22	U	6.08	1.22	0.608
2-Hexanone	591-78-6	6.08	U	12.2	6.08	3.04
Hexachlorobutadiene	87-68-3	1.22	U	6.08	1.22	0.608
Isopropylbenzene	98-82-8	1.22	U	6.08	1.22	0.608
p-Isopropyltoluene	99-87-6	1.22	U	6.08	1.22	0.608
4-Methyl-2-pentanone	108-10-1	6.08	U	12.2	6.08	3.04
Methylene chloride	75-09-2	2.44	U	6.08	2.44	1.22
Naphthalene	91-20-3	1.22	U	6.08	1.22	0.608
n-Propylbenzene	103-65-1	1.22	U	6.08	1.22	0.608
Styrene	100-42-5	1.22	U	6.08	1.22	0.608
1,1,1,2-Tetrachloroethane	630-20-6	1.22	U	6.08	1.22	0.608
1,1,2,2-Tetrachloroethane	79-34-5	1.22	U	6.08	1.22	0.608
Tetrachloroethene	127-18-4	1.22	U	6.08	1.22	0.608
Toluene	108-88-3	1.22	U	6.08	1.22	0.608
1,2,3-Trichlorobenzene	87-61-6	1.22	U	6.08	1.22	0.608
1,2,4-Trichlorobenzene	120-82-1	1.22	U	6.08	1.22	0.608
1,1,1-Trichloroethane	71-55-6	1.22	U	6.08	1.22	0.608
1,1,2-Trichloroethane	79-00-5	1.22	U	6.08	1.22	0.608
Trichloroethene	79-01-6	1.22	U	6.08	1.22	0.608
Trichlorofluoromethane	75-69-4	2.44	U	6.08	2.44	1.22
1,2,3-Trichloropropane	96-18-4	2.44	U	6.08	2.44	1.22
1,2,4-Trimethylbenzene	95-63-6	1.22	U	6.08	1.22	0.608
1,3,5-Trimethylbenzene	108-67-8	1.22	U	6.08	1.22	0.608
Vinyl chloride	75-01-4	2.44	U	6.08	2.44	1.22
o-Xylene	95-47-6	1.22	U	6.08	1.22	0.608
m-,p-Xylene	179601-23-1	1.22	U	6.08	1.22	0.608

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	80	120	
1,2-Dichloroethane-d4	109	80	120	
Toluene-d8	113	85	115	
4-Bromofluorobenzene	126	85	120	*

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW19SW(5-5.5)210416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:50
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567013	**Analyst:**	JWR	**Run Date:**	05/03/2016 20:46
Collect Date:	04/21/2016 17:00	**Dilution:**	1	**File ID:**	1LM.LM34704
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.32	U	4.63	2.32	1.16

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW19SW(10-10.5)210416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:33
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG567003	**Analyst:**	ADC	**Run Date:**	04/30/2016 19:18
Collect Date:	04/21/2016 17:30	**Dilution:**	1	**File ID:**	9M974078
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	24.3		23.4	11.7	5.84
Benzene	71-43-2	1.17	U	5.84	1.17	0.584
Bromobenzene	108-86-1	1.17	U	5.84	1.17	0.584
Bromochloromethane	74-97-5	2.34	U	5.84	2.34	1.17
Bromodichloromethane	75-27-4	1.17	U	5.84	1.17	0.584
Bromoform	75-25-2	1.17	U	5.84	1.17	0.584
Bromomethane	74-83-9	2.34	U	5.84	2.34	1.17
2-Butanone	78-93-3	4.20	J	11.7	5.84	2.92
n-Butylbenzene	104-51-8	1.17	U	5.84	1.17	0.584
sec-Butylbenzene	135-98-8	1.17	U	5.84	1.17	0.584
tert-Butylbenzene	98-06-6	1.17	U	5.84	1.17	0.584
Carbon disulfide	75-15-0	1.17	U	5.84	1.17	0.584
Carbon tetrachloride	56-23-5	1.17	U	5.84	1.17	0.584
Chlorobenzene	108-90-7	1.17	U	5.84	1.17	0.584
Chlorodibromomethane	124-48-1	1.17	U	5.84	1.17	0.584
Chloroethane	75-00-3	2.34	U	5.84	2.34	1.17
Chloroform	67-66-3	1.17	U	5.84	1.17	0.584
Chloromethane	74-87-3	4.68	U	11.7	4.68	2.34
2-Chlorotoluene	95-49-8	1.17	Q	5.84	1.17	0.584
4-Chlorotoluene	106-43-4	1.17	U	5.84	1.17	0.584
1,2-Dibromo-3-chloropropane	96-12-8	4.68	U	11.7	4.68	2.34
1,2-Dibromoethane	106-93-4	1.17	U	5.84	1.17	0.584
Dibromomethane	74-95-3	1.17	U	5.84	1.17	0.584
1,2-Dichlorobenzene	95-50-1	1.17	U	5.84	1.17	0.584
1,3-Dichlorobenzene	541-73-1	1.17	U	5.84	1.17	0.584
1,4-Dichlorobenzene	106-46-7	1.17	U	5.84	1.17	0.584
Dichlorodifluoromethane	75-71-8	2.34	U	5.84	2.34	1.17
1,1-Dichloroethane	75-34-3	2.34	U	5.84	2.34	1.17
1,2-Dichloroethane	107-06-2	1.17	U	5.84	1.17	0.584
1,1-Dichloroethene	75-35-4	1.17	U	5.84	1.17	0.584

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.17	U	5.84	1.17	0.584
trans-1,2-Dichloroethene	156-60-5	1.17	U	5.84	1.17	0.584
1,2-Dichloropropane	78-87-5	1.17	U	5.84	1.17	0.584
1,3-Dichloropropane	142-28-9	1.17	U	5.84	1.17	0.584
2,2-Dichloropropane	594-20-7	1.17	U	5.84	1.17	0.584
cis-1,3-Dichloropropene	10061-01-5	1.17	U	5.84	1.17	0.584
trans-1,3-Dichloropropene	10061-02-6	1.17	U	5.84	1.17	0.584
1,1-Dichloropropene	563-58-6	1.17	U	5.84	1.17	0.584
Ethylbenzene	100-41-4	1.17	U	5.84	1.17	0.584
2-Hexanone	591-78-6	5.84	U	11.7	5.84	2.92
Hexachlorobutadiene	87-68-3	1.17	U	5.84	1.17	0.584
Isopropylbenzene	98-82-8	1.17	U	5.84	1.17	0.584
p-Isopropyltoluene	99-87-6	1.17	U	5.84	1.17	0.584
4-Methyl-2-pentanone	108-10-1	5.84	U	11.7	5.84	2.92
Methylene chloride	75-09-2	2.34	U	5.84	2.34	1.17
Naphthalene	91-20-3	1.17	U	5.84	1.17	0.584
n-Propylbenzene	103-65-1	1.17	U	5.84	1.17	0.584
Styrene	100-42-5	1.17	U	5.84	1.17	0.584
1,1,1,2-Tetrachloroethane	630-20-6	1.17	U	5.84	1.17	0.584
1,1,2,2-Tetrachloroethane	79-34-5	1.17	U	5.84	1.17	0.584
Tetrachloroethene	127-18-4	1.17	U	5.84	1.17	0.584
Toluene	108-88-3	1.17	U	5.84	1.17	0.584
1,2,3-Trichlorobenzene	87-61-6	1.17	U	5.84	1.17	0.584
1,2,4-Trichlorobenzene	120-82-1	1.17	U	5.84	1.17	0.584
1,1,1-Trichloroethane	71-55-6	1.17	U	5.84	1.17	0.584
1,1,2-Trichloroethane	79-00-5	1.17	U	5.84	1.17	0.584
Trichloroethene	79-01-6	1.17	U	5.84	1.17	0.584
Trichlorofluoromethane	75-69-4	2.34	U	5.84	2.34	1.17
1,2,3-Trichloropropane	96-18-4	2.34	U	5.84	2.34	1.17
1,2,4-Trimethylbenzene	95-63-6	1.17	U	5.84	1.17	0.584
1,3,5-Trimethylbenzene	108-67-8	1.17	U	5.84	1.17	0.584
Vinyl chloride	75-01-4	2.34	U	5.84	2.34	1.17
o-Xylene	95-47-6	1.17	U	5.84	1.17	0.584
m-,p-Xylene	179601-23-1	1.17	U	5.84	1.17	0.584

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	80	120	
1,2-Dichloroethane-d4	107	80	120	
Toluene-d8	111	85	115	
4-Bromofluorobenzene	120	85	120	

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW19SW(10-10.5)210416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:50
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567013	**Analyst:**	JWR	**Run Date:**	05/03/2016 21:05
Collect Date:	04/21/2016 17:30	**Dilution:**	1	**File ID:**	1LM.LM34705
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.44	U	4.90	2.44	1.22

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW19SW(30-30.5)220416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:34
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG567003	**Analyst:**	ADC	**Run Date:**	04/30/2016 19:48
Collect Date:	04/22/2016 09:00	**Dilution:**	1	**File ID:**	9M974079
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.7	U	25.4	12.7	6.34
Benzene	71-43-2	1.27	U	6.34	1.27	0.634
Bromobenzene	108-86-1	1.27	U	6.34	1.27	0.634
Bromochloromethane	74-97-5	2.54	U	6.34	2.54	1.27
Bromodichloromethane	75-27-4	1.27	U	6.34	1.27	0.634
Bromoform	75-25-2	1.27	U	6.34	1.27	0.634
Bromomethane	74-83-9	2.54	U	6.34	2.54	1.27
2-Butanone	78-93-3	6.34	U	12.7	6.34	3.17
n-Butylbenzene	104-51-8	1.27	U	6.34	1.27	0.634
sec-Butylbenzene	135-98-8	1.27	U	6.34	1.27	0.634
tert-Butylbenzene	98-06-6	1.27	U	6.34	1.27	0.634
Carbon disulfide	75-15-0	1.27	U	6.34	1.27	0.634
Carbon tetrachloride	56-23-5	1.27	U	6.34	1.27	0.634
Chlorobenzene	108-90-7	1.27	U	6.34	1.27	0.634
Chlorodibromomethane	124-48-1	1.27	U	6.34	1.27	0.634
Chloroethane	75-00-3	2.54	U	6.34	2.54	1.27
Chloroform	67-66-3	1.27	U	6.34	1.27	0.634
Chloromethane	74-87-3	5.08	U	12.7	5.08	2.54
2-Chlorotoluene	95-49-8	1.27	Q	6.34	1.27	0.634
4-Chlorotoluene	106-43-4	1.27	U	6.34	1.27	0.634
1,2-Dibromo-3-chloropropane	96-12-8	5.08	U	12.7	5.08	2.54
1,2-Dibromoethane	106-93-4	1.27	U	6.34	1.27	0.634
Dibromomethane	74-95-3	1.27	U	6.34	1.27	0.634
1,2-Dichlorobenzene	95-50-1	1.27	U	6.34	1.27	0.634
1,3-Dichlorobenzene	541-73-1	1.27	U	6.34	1.27	0.634
1,4-Dichlorobenzene	106-46-7	1.27	U	6.34	1.27	0.634
Dichlorodifluoromethane	75-71-8	2.54	U	6.34	2.54	1.27
1,1-Dichloroethane	75-34-3	2.54	U	6.34	2.54	1.27
1,2-Dichloroethane	107-06-2	1.27	U	6.34	1.27	0.634
1,1-Dichloroethene	75-35-4	1.27	U	6.34	1.27	0.634

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.27	U	6.34	1.27	0.634
trans-1,2-Dichloroethene	156-60-5	1.27	U	6.34	1.27	0.634
1,2-Dichloropropane	78-87-5	1.27	U	6.34	1.27	0.634
1,3-Dichloropropane	142-28-9	1.27	U	6.34	1.27	0.634
2,2-Dichloropropane	594-20-7	1.27	U	6.34	1.27	0.634
cis-1,3-Dichloropropene	10061-01-5	1.27	U	6.34	1.27	0.634
trans-1,3-Dichloropropene	10061-02-6	1.27	U	6.34	1.27	0.634
1,1-Dichloropropene	563-58-6	1.27	U	6.34	1.27	0.634
Ethylbenzene	100-41-4	1.27	U	6.34	1.27	0.634
2-Hexanone	591-78-6	6.34	U	12.7	6.34	3.17
Hexachlorobutadiene	87-68-3	1.27	U	6.34	1.27	0.634
Isopropylbenzene	98-82-8	1.27	U	6.34	1.27	0.634
p-Isopropyltoluene	99-87-6	1.27	U	6.34	1.27	0.634
4-Methyl-2-pentanone	108-10-1	6.34	U	12.7	6.34	3.17
Methylene chloride	75-09-2	2.54	U	6.34	2.54	1.27
Naphthalene	91-20-3	1.27	U	6.34	1.27	0.634
n-Propylbenzene	103-65-1	1.27	U	6.34	1.27	0.634
Styrene	100-42-5	1.27	U	6.34	1.27	0.634
1,1,1,2-Tetrachloroethane	630-20-6	1.27	U	6.34	1.27	0.634
1,1,2,2-Tetrachloroethane	79-34-5	1.27	U	6.34	1.27	0.634
Tetrachloroethene	127-18-4	1.27	U	6.34	1.27	0.634
Toluene	108-88-3	1.27	U	6.34	1.27	0.634
1,2,3-Trichlorobenzene	87-61-6	1.27	U	6.34	1.27	0.634
1,2,4-Trichlorobenzene	120-82-1	1.27	U	6.34	1.27	0.634
1,1,1-Trichloroethane	71-55-6	1.27	U	6.34	1.27	0.634
1,1,2-Trichloroethane	79-00-5	1.27	U	6.34	1.27	0.634
Trichloroethene	79-01-6	1.27	U	6.34	1.27	0.634
Trichlorofluoromethane	75-69-4	2.54	U	6.34	2.54	1.27
1,2,3-Trichloropropane	96-18-4	2.54	U	6.34	2.54	1.27
1,2,4-Trimethylbenzene	95-63-6	1.27	U	6.34	1.27	0.634
1,3,5-Trimethylbenzene	108-67-8	1.27	U	6.34	1.27	0.634
Vinyl chloride	75-01-4	2.54	U	6.34	2.54	1.27
o-Xylene	95-47-6	1.27	U	6.34	1.27	0.634
m-,p-Xylene	179601-23-1	1.27	U	6.34	1.27	0.634

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	80	120	
1,2-Dichloroethane-d4	121	80	120	*
Toluene-d8	111	85	115	
4-Bromofluorobenzene	123	85	120	*

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW19SW(30-30.5)220416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:50
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567013	**Analyst:**	JWR	**Run Date:**	05/03/2016 21:24
Collect Date:	04/22/2016 09:00	**Dilution:**	1	**File ID:**	1LM.LM34706
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.42	U	4.85	2.42	1.21

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW19SW(30-30.5)220416DUP	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:35
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG567003	**Analyst:**	ADC	**Run Date:**	04/30/2016 20:18
Collect Date:	04/22/2016 09:00	**Dilution:**	1	**File ID:**	9M974080
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.8	U	25.6	12.8	6.40
Benzene	71-43-2	1.28	U	6.40	1.28	0.640
Bromobenzene	108-86-1	1.28	U	6.40	1.28	0.640
Bromochloromethane	74-97-5	2.56	U	6.40	2.56	1.28
Bromodichloromethane	75-27-4	1.28	U	6.40	1.28	0.640
Bromoform	75-25-2	1.28	U	6.40	1.28	0.640
Bromomethane	74-83-9	2.56	U	6.40	2.56	1.28
2-Butanone	78-93-3	6.40	U	12.8	6.40	3.20
n-Butylbenzene	104-51-8	1.28	U	6.40	1.28	0.640
sec-Butylbenzene	135-98-8	1.28	U	6.40	1.28	0.640
tert-Butylbenzene	98-06-6	1.28	U	6.40	1.28	0.640
Carbon disulfide	75-15-0	1.28	U	6.40	1.28	0.640
Carbon tetrachloride	56-23-5	1.28	U	6.40	1.28	0.640
Chlorobenzene	108-90-7	1.28	U	6.40	1.28	0.640
Chlorodibromomethane	124-48-1	1.28	U	6.40	1.28	0.640
Chloroethane	75-00-3	2.56	U	6.40	2.56	1.28
Chloroform	67-66-3	1.28	U	6.40	1.28	0.640
Chloromethane	74-87-3	5.12	U	12.8	5.12	2.56
2-Chlorotoluene	95-49-8	1.28	Q	6.40	1.28	0.640
4-Chlorotoluene	106-43-4	1.28	U	6.40	1.28	0.640
1,2-Dibromo-3-chloropropane	96-12-8	5.12	U	12.8	5.12	2.56
1,2-Dibromoethane	106-93-4	1.28	U	6.40	1.28	0.640
Dibromomethane	74-95-3	1.28	U	6.40	1.28	0.640
1,2-Dichlorobenzene	95-50-1	1.28	U	6.40	1.28	0.640
1,3-Dichlorobenzene	541-73-1	1.28	U	6.40	1.28	0.640
1,4-Dichlorobenzene	106-46-7	1.28	U	6.40	1.28	0.640
Dichlorodifluoromethane	75-71-8	2.56	U	6.40	2.56	1.28
1,1-Dichloroethane	75-34-3	2.56	U	6.40	2.56	1.28
1,2-Dichloroethane	107-06-2	1.28	U	6.40	1.28	0.640
1,1-Dichloroethene	75-35-4	1.28	U	6.40	1.28	0.640

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.28	U	6.40	1.28	0.640
trans-1,2-Dichloroethene	156-60-5	1.28	U	6.40	1.28	0.640
1,2-Dichloropropane	78-87-5	1.28	U	6.40	1.28	0.640
1,3-Dichloropropane	142-28-9	1.28	U	6.40	1.28	0.640
2,2-Dichloropropane	594-20-7	1.28	U	6.40	1.28	0.640
cis-1,3-Dichloropropene	10061-01-5	1.28	U	6.40	1.28	0.640
trans-1,3-Dichloropropene	10061-02-6	1.28	U	6.40	1.28	0.640
1,1-Dichloropropene	563-58-6	1.28	U	6.40	1.28	0.640
Ethylbenzene	100-41-4	1.28	U	6.40	1.28	0.640
2-Hexanone	591-78-6	6.40	U	12.8	6.40	3.20
Hexachlorobutadiene	87-68-3	1.28	U	6.40	1.28	0.640
Isopropylbenzene	98-82-8	1.28	U	6.40	1.28	0.640
p-Isopropyltoluene	99-87-6	1.28	U	6.40	1.28	0.640
4-Methyl-2-pentanone	108-10-1	6.40	U	12.8	6.40	3.20
Methylene chloride	75-09-2	2.56	U	6.40	2.56	1.28
Naphthalene	91-20-3	1.28	U	6.40	1.28	0.640
n-Propylbenzene	103-65-1	1.28	U	6.40	1.28	0.640
Styrene	100-42-5	1.28	U	6.40	1.28	0.640
1,1,1,2-Tetrachloroethane	630-20-6	1.28	U	6.40	1.28	0.640
1,1,2,2-Tetrachloroethane	79-34-5	1.28	U	6.40	1.28	0.640
Tetrachloroethene	127-18-4	1.28	U	6.40	1.28	0.640
Toluene	108-88-3	1.28	U	6.40	1.28	0.640
1,2,3-Trichlorobenzene	87-61-6	1.28	U	6.40	1.28	0.640
1,2,4-Trichlorobenzene	120-82-1	1.28	U	6.40	1.28	0.640
1,1,1-Trichloroethane	71-55-6	1.28	U	6.40	1.28	0.640
1,1,2-Trichloroethane	79-00-5	1.28	U	6.40	1.28	0.640
Trichloroethene	79-01-6	1.28	U	6.40	1.28	0.640
Trichlorofluoromethane	75-69-4	2.56	U	6.40	2.56	1.28
1,2,3-Trichloropropane	96-18-4	2.56	U	6.40	2.56	1.28
1,2,4-Trimethylbenzene	95-63-6	1.28	U	6.40	1.28	0.640
1,3,5-Trimethylbenzene	108-67-8	1.28	U	6.40	1.28	0.640
Vinyl chloride	75-01-4	2.56	U	6.40	2.56	1.28
o-Xylene	95-47-6	1.28	U	6.40	1.28	0.640
m-,p-Xylene	179601-23-1	1.28	U	6.40	1.28	0.640

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	108	80	120	
1,2-Dichloroethane-d4	122	80	120	*
Toluene-d8	110	85	115	
4-Bromofluorobenzene	125	85	120	*

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW19SW(30-30.5)220416DUP	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:50
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567013	**Analyst:**	JWR	**Run Date:**	05/03/2016 21:43
Collect Date:	04/22/2016 09:00	**Dilution:**	1	**File ID:**	1LM.LM34707
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.46	U	4.93	2.46	1.23

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW19SW(40-40.5)220416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:36
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG567003	**Analyst:**	ADC	**Run Date:**	04/30/2016 20:48
Collect Date:	04/22/2016 09:05	**Dilution:**	1	**File ID:**	9M974081
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.6	U	23.1	11.6	5.79
Benzene	71-43-2	1.16	U	5.79	1.16	0.579
Bromobenzene	108-86-1	1.16	U	5.79	1.16	0.579
Bromochloromethane	74-97-5	2.32	U	5.79	2.32	1.16
Bromodichloromethane	75-27-4	1.16	U	5.79	1.16	0.579
Bromoform	75-25-2	1.16	U	5.79	1.16	0.579
Bromomethane	74-83-9	2.32	U	5.79	2.32	1.16
2-Butanone	78-93-3	5.78	U	11.6	5.78	2.89
n-Butylbenzene	104-51-8	1.16	U	5.79	1.16	0.579
sec-Butylbenzene	135-98-8	1.16	U	5.79	1.16	0.579
tert-Butylbenzene	98-06-6	1.16	U	5.79	1.16	0.579
Carbon disulfide	75-15-0	1.16	U	5.79	1.16	0.579
Carbon tetrachloride	56-23-5	1.16	U	5.79	1.16	0.579
Chlorobenzene	108-90-7	1.16	U	5.79	1.16	0.579
Chlorodibromomethane	124-48-1	1.16	U	5.79	1.16	0.579
Chloroethane	75-00-3	2.32	U	5.79	2.32	1.16
Chloroform	67-66-3	1.16	U	5.79	1.16	0.579
Chloromethane	74-87-3	4.62	U	11.6	4.62	2.31
2-Chlorotoluene	95-49-8	1.16	Q	5.79	1.16	0.579
4-Chlorotoluene	106-43-4	1.16	U	5.79	1.16	0.579
1,2-Dibromo-3-chloropropane	96-12-8	4.62	U	11.6	4.62	2.31
1,2-Dibromoethane	106-93-4	1.16	U	5.79	1.16	0.579
Dibromomethane	74-95-3	1.16	U	5.79	1.16	0.579
1,2-Dichlorobenzene	95-50-1	1.16	U	5.79	1.16	0.579
1,3-Dichlorobenzene	541-73-1	1.16	U	5.79	1.16	0.579
1,4-Dichlorobenzene	106-46-7	1.16	U	5.79	1.16	0.579
Dichlorodifluoromethane	75-71-8	2.32	U	5.79	2.32	1.16
1,1-Dichloroethane	75-34-3	2.32	U	5.79	2.32	1.16
1,2-Dichloroethane	107-06-2	1.16	U	5.79	1.16	0.579
1,1-Dichloroethene	75-35-4	1.16	U	5.79	1.16	0.579

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.16	U	5.79	1.16	0.579
trans-1,2-Dichloroethene	156-60-5	1.16	U	5.79	1.16	0.579
1,2-Dichloropropane	78-87-5	1.16	U	5.79	1.16	0.579
1,3-Dichloropropane	142-28-9	1.16	U	5.79	1.16	0.579
2,2-Dichloropropane	594-20-7	1.16	U	5.79	1.16	0.579
cis-1,3-Dichloropropene	10061-01-5	1.16	U	5.79	1.16	0.579
trans-1,3-Dichloropropene	10061-02-6	1.16	U	5.79	1.16	0.579
1,1-Dichloropropene	563-58-6	1.16	U	5.79	1.16	0.579
Ethylbenzene	100-41-4	1.16	U	5.79	1.16	0.579
2-Hexanone	591-78-6	5.78	U	11.6	5.78	2.89
Hexachlorobutadiene	87-68-3	1.16	U	5.79	1.16	0.579
Isopropylbenzene	98-82-8	1.16	U	5.79	1.16	0.579
p-Isopropyltoluene	99-87-6	1.16	U	5.79	1.16	0.579
4-Methyl-2-pentanone	108-10-1	5.78	U	11.6	5.78	2.89
Methylene chloride	75-09-2	2.32	U	5.79	2.32	1.16
Naphthalene	91-20-3	1.16	U	5.79	1.16	0.579
n-Propylbenzene	103-65-1	1.16	U	5.79	1.16	0.579
Styrene	100-42-5	1.16	U	5.79	1.16	0.579
1,1,1,2-Tetrachloroethane	630-20-6	1.16	U	5.79	1.16	0.579
1,1,2,2-Tetrachloroethane	79-34-5	1.16	U	5.79	1.16	0.579
Tetrachloroethene	127-18-4	1.16	U	5.79	1.16	0.579
Toluene	108-88-3	1.16	U	5.79	1.16	0.579
1,2,3-Trichlorobenzene	87-61-6	1.16	U	5.79	1.16	0.579
1,2,4-Trichlorobenzene	120-82-1	1.16	U	5.79	1.16	0.579
1,1,1-Trichloroethane	71-55-6	1.16	U	5.79	1.16	0.579
1,1,2-Trichloroethane	79-00-5	1.16	U	5.79	1.16	0.579
Trichloroethene	79-01-6	1.16	U	5.79	1.16	0.579
Trichlorofluoromethane	75-69-4	2.32	U	5.79	2.32	1.16
1,2,3-Trichloropropane	96-18-4	2.32	U	5.79	2.32	1.16
1,2,4-Trimethylbenzene	95-63-6	1.16	U	5.79	1.16	0.579
1,3,5-Trimethylbenzene	108-67-8	1.16	U	5.79	1.16	0.579
Vinyl chloride	75-01-4	2.32	U	5.79	2.32	1.16
o-Xylene	95-47-6	1.16	U	5.79	1.16	0.579
m-,p-Xylene	179601-23-1	1.16	U	5.79	1.16	0.579

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	80	120	
1,2-Dichloroethane-d4	119	80	120	
Toluene-d8	111	85	115	
4-Bromofluorobenzene	125	85	120	*

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW19SW(40-40.5)220416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:50
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567013	**Analyst:**	JWR	**Run Date:**	05/03/2016 22:59
Collect Date:	04/22/2016 09:05	**Dilution:**	5	**File ID:**	1LM.LM34711
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	80.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	124		24.1	12.1	6.04

Certificate of Analysis

Sample #:	L16041363-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW19SW(20-20.5)220416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:36
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG567003	**Analyst:**	ADC	**Run Date:**	04/30/2016 21:19
Collect Date:	04/21/2016 18:00	**Dilution:**	1	**File ID:**	9M974082
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.6	U	27.3	13.6	6.81
Benzene	71-43-2	1.36	U	6.81	1.36	0.681
Bromobenzene	108-86-1	1.36	U	6.81	1.36	0.681
Bromochloromethane	74-97-5	2.72	U	6.81	2.72	1.36
Bromodichloromethane	75-27-4	1.36	U	6.81	1.36	0.681
Bromoform	75-25-2	1.36	U	6.81	1.36	0.681
Bromomethane	74-83-9	2.72	U	6.81	2.72	1.36
2-Butanone	78-93-3	6.82	U	13.6	6.82	3.41
n-Butylbenzene	104-51-8	1.36	U	6.81	1.36	0.681
sec-Butylbenzene	135-98-8	1.36	U	6.81	1.36	0.681
tert-Butylbenzene	98-06-6	1.36	U	6.81	1.36	0.681
Carbon disulfide	75-15-0	1.36	U	6.81	1.36	0.681
Carbon tetrachloride	56-23-5	1.36	U	6.81	1.36	0.681
Chlorobenzene	108-90-7	1.36	U	6.81	1.36	0.681
Chlorodibromomethane	124-48-1	1.36	U	6.81	1.36	0.681
Chloroethane	75-00-3	2.72	U	6.81	2.72	1.36
Chloroform	67-66-3	1.36	U	6.81	1.36	0.681
Chloromethane	74-87-3	5.46	U	13.6	5.46	2.73
2-Chlorotoluene	95-49-8	1.36	Q	6.81	1.36	0.681

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
4-Chlorotoluene	106-43-4	1.36	U	6.81	1.36	0.681
1,2-Dibromo-3-chloropropane	96-12-8	5.46	U	13.6	5.46	2.73
1,2-Dibromoethane	106-93-4	1.36	U	6.81	1.36	0.681
Dibromomethane	74-95-3	1.36	U	6.81	1.36	0.681
1,2-Dichlorobenzene	95-50-1	1.36	U	6.81	1.36	0.681
1,3-Dichlorobenzene	541-73-1	1.36	U	6.81	1.36	0.681
1,4-Dichlorobenzene	106-46-7	1.36	U	6.81	1.36	0.681
Dichlorodifluoromethane	75-71-8	2.72	U	6.81	2.72	1.36
1,1-Dichloroethane	75-34-3	2.72	U	6.81	2.72	1.36
1,2-Dichloroethane	107-06-2	1.36	U	6.81	1.36	0.681
1,1-Dichloroethene	75-35-4	1.36	U	6.81	1.36	0.681
cis-1,2-Dichloroethene	156-59-2	1.36	U	6.81	1.36	0.681
trans-1,2-Dichloroethene	156-60-5	1.36	U	6.81	1.36	0.681
1,2-Dichloropropane	78-87-5	1.36	U	6.81	1.36	0.681
1,3-Dichloropropane	142-28-9	1.36	U	6.81	1.36	0.681
2,2-Dichloropropane	594-20-7	1.36	U	6.81	1.36	0.681
cis-1,3-Dichloropropene	10061-01-5	1.36	U	6.81	1.36	0.681
trans-1,3-Dichloropropene	10061-02-6	1.36	U	6.81	1.36	0.681
1,1-Dichloropropene	563-58-6	1.36	U	6.81	1.36	0.681
Ethylbenzene	100-41-4	1.36	U	6.81	1.36	0.681
2-Hexanone	591-78-6	6.82	U	13.6	6.82	3.41
Hexachlorobutadiene	87-68-3	1.36	U	6.81	1.36	0.681
Isopropylbenzene	98-82-8	1.36	U	6.81	1.36	0.681
p-Isopropyltoluene	99-87-6	1.36	U	6.81	1.36	0.681
4-Methyl-2-pentanone	108-10-1	6.82	U	13.6	6.82	3.41
Methylene chloride	75-09-2	2.72	U	6.81	2.72	1.36
Naphthalene	91-20-3	1.36	U	6.81	1.36	0.681
n-Propylbenzene	103-65-1	1.36	U	6.81	1.36	0.681
Styrene	100-42-5	1.36	U	6.81	1.36	0.681
1,1,1,2-Tetrachloroethane	630-20-6	1.36	U	6.81	1.36	0.681
1,1,2,2-Tetrachloroethane	79-34-5	1.36	U	6.81	1.36	0.681
Tetrachloroethene	127-18-4	1.36	U	6.81	1.36	0.681
Toluene	108-88-3	1.36	U	6.81	1.36	0.681
1,2,3-Trichlorobenzene	87-61-6	1.36	U	6.81	1.36	0.681
1,2,4-Trichlorobenzene	120-82-1	1.36	U	6.81	1.36	0.681
1,1,1-Trichloroethane	71-55-6	1.36	U	6.81	1.36	0.681
1,1,2-Trichloroethane	79-00-5	1.36	U	6.81	1.36	0.681
Trichloroethene	79-01-6	1.36	U	6.81	1.36	0.681
Trichlorofluoromethane	75-69-4	2.72	U	6.81	2.72	1.36

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,3-Trichloropropane	96-18-4	2.72	U	6.81	2.72	1.36
1,2,4-Trimethylbenzene	95-63-6	1.36	U	6.81	1.36	0.681
1,3,5-Trimethylbenzene	108-67-8	1.36	U	6.81	1.36	0.681
Vinyl chloride	75-01-4	2.72	U	6.81	2.72	1.36
o-Xylene	95-47-6	1.36	U	6.81	1.36	0.681
m-,p-Xylene	179601-23-1	1.36	U	6.81	1.36	0.681

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	80	120	
1,2-Dichloroethane-d4	109	80	120	
Toluene-d8	112	85	115	
4-Bromofluorobenzene	121	85	120	*

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW19SW(20-20.5)220416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:50
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567013	**Analyst:**	JWR	**Run Date:**	05/03/2016 23:18
Collect Date:	04/21/2016 18:00	**Dilution:**	1	**File ID:**	1LM.LM34712
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	8.74		4.90	2.44	1.22

Certificate of Analysis

Sample #:	L16041363-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW19SW(60-61)220416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:37
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG567003	**Analyst:**	ADC	**Run Date:**	04/30/2016 21:49
Collect Date:	04/22/2016 11:15	**Dilution:**	1	**File ID:**	9M974083
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	75.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	8.63	J	26.0	13.0	6.51
Benzene	71-43-2	1.30	U	6.51	1.30	0.651
Bromobenzene	108-86-1	1.30	U	6.51	1.30	0.651
Bromochloromethane	74-97-5	2.60	U	6.51	2.60	1.30
Bromodichloromethane	75-27-4	1.30	U	6.51	1.30	0.651
Bromoform	75-25-2	1.30	U	6.51	1.30	0.651
Bromomethane	74-83-9	2.60	U	6.51	2.60	1.30
2-Butanone	78-93-3	6.50	U	13.0	6.50	3.25
n-Butylbenzene	104-51-8	1.30	U	6.51	1.30	0.651
sec-Butylbenzene	135-98-8	1.30	U	6.51	1.30	0.651
tert-Butylbenzene	98-06-6	1.30	U	6.51	1.30	0.651
Carbon disulfide	75-15-0	1.30	U	6.51	1.30	0.651
Carbon tetrachloride	56-23-5	1.30	U	6.51	1.30	0.651
Chlorobenzene	108-90-7	1.30	U	6.51	1.30	0.651
Chlorodibromomethane	124-48-1	1.30	U	6.51	1.30	0.651
Chloroethane	75-00-3	2.60	U	6.51	2.60	1.30
Chloroform	67-66-3	1.30	U	6.51	1.30	0.651
Chloromethane	74-87-3	5.20	U	13.0	5.20	2.60
2-Chlorotoluene	95-49-8	1.30	Q	6.51	1.30	0.651

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
4-Chlorotoluene	106-43-4	1.30	U	6.51	1.30	0.651
1,2-Dibromo-3-chloropropane	96-12-8	5.20	U	13.0	5.20	2.60
1,2-Dibromoethane	106-93-4	1.30	U	6.51	1.30	0.651
Dibromomethane	74-95-3	1.30	U	6.51	1.30	0.651
1,2-Dichlorobenzene	95-50-1	1.30	U	6.51	1.30	0.651
1,3-Dichlorobenzene	541-73-1	1.30	U	6.51	1.30	0.651
1,4-Dichlorobenzene	106-46-7	1.30	U	6.51	1.30	0.651
Dichlorodifluoromethane	75-71-8	2.60	U	6.51	2.60	1.30
1,1-Dichloroethane	75-34-3	2.60	U	6.51	2.60	1.30
1,2-Dichloroethane	107-06-2	1.30	U	6.51	1.30	0.651
1,1-Dichloroethene	75-35-4	1.30	U	6.51	1.30	0.651
cis-1,2-Dichloroethene	156-59-2	1.30	U	6.51	1.30	0.651
trans-1,2-Dichloroethene	156-60-5	1.30	U	6.51	1.30	0.651
1,2-Dichloropropane	78-87-5	1.30	U	6.51	1.30	0.651
1,3-Dichloropropane	142-28-9	1.30	U	6.51	1.30	0.651
2,2-Dichloropropane	594-20-7	1.30	U	6.51	1.30	0.651
cis-1,3-Dichloropropene	10061-01-5	1.30	U	6.51	1.30	0.651
trans-1,3-Dichloropropene	10061-02-6	1.30	U	6.51	1.30	0.651
1,1-Dichloropropene	563-58-6	1.30	U	6.51	1.30	0.651
Ethylbenzene	100-41-4	1.30	U	6.51	1.30	0.651
2-Hexanone	591-78-6	6.50	U	13.0	6.50	3.25
Hexachlorobutadiene	87-68-3	1.30	U	6.51	1.30	0.651
Isopropylbenzene	98-82-8	1.30	U	6.51	1.30	0.651
p-Isopropyltoluene	99-87-6	1.30	U	6.51	1.30	0.651
4-Methyl-2-pentanone	108-10-1	6.50	U	13.0	6.50	3.25
Methylene chloride	75-09-2	2.60	U	6.51	2.60	1.30
Naphthalene	91-20-3	1.30	U	6.51	1.30	0.651
n-Propylbenzene	103-65-1	1.30	U	6.51	1.30	0.651
Styrene	100-42-5	1.30	U	6.51	1.30	0.651
1,1,1,2-Tetrachloroethane	630-20-6	1.30	U	6.51	1.30	0.651
1,1,2,2-Tetrachloroethane	79-34-5	1.30	U	6.51	1.30	0.651
Tetrachloroethene	127-18-4	1.30	U	6.51	1.30	0.651
Toluene	108-88-3	1.30	U	6.51	1.30	0.651
1,2,3-Trichlorobenzene	87-61-6	1.30	U	6.51	1.30	0.651
1,2,4-Trichlorobenzene	120-82-1	1.30	U	6.51	1.30	0.651
1,1,1-Trichloroethane	71-55-6	1.30	U	6.51	1.30	0.651
1,1,2-Trichloroethane	79-00-5	1.30	U	6.51	1.30	0.651
Trichloroethene	79-01-6	1.30	U	6.51	1.30	0.651
Trichlorofluoromethane	75-69-4	2.60	U	6.51	2.60	1.30

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,3-Trichloropropane	96-18-4	2.60	U	6.51	2.60	1.30
1,2,4-Trimethylbenzene	95-63-6	1.30	U	6.51	1.30	0.651
1,3,5-Trimethylbenzene	108-67-8	1.30	U	6.51	1.30	0.651
Vinyl chloride	75-01-4	2.60	U	6.51	2.60	1.30
o-Xylene	95-47-6	1.30	U	6.51	1.30	0.651
m-,p-Xylene	179601-23-1	1.30	U	6.51	1.30	0.651

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	80	120	
1,2-Dichloroethane-d4	108	80	120	
Toluene-d8	113	85	115	
4-Bromofluorobenzene	126	85	120	*

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW19SW(60-61)220416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:50
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567013	**Analyst:**	JWR	**Run Date:**	05/03/2016 19:50
Collect Date:	04/22/2016 11:15	**Dilution:**	1	**File ID:**	1LM.LM34701
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	75.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.54	U	5.07	2.54	1.27

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW19SW(60-61)220416MS	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:38
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG567003	**Analyst:**	ADC	**Run Date:**	04/30/2016 22:50
Collect Date:	04/22/2016 11:15	**Dilution:**	1	**File ID:**	9M974085
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	75.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	31.5		26.6	13.3	6.65
Benzene	71-43-2	22.7		6.65	1.33	0.665
Bromobenzene	108-86-1	26.1		6.65	1.33	0.665
Bromochloromethane	74-97-5	22.9		6.65	2.66	1.33
Bromodichloromethane	75-27-4	23.6		6.65	1.33	0.665
Bromoform	75-25-2	23.9		6.65	1.33	0.665
Bromomethane	74-83-9	25.5		6.65	2.66	1.33
2-Butanone	78-93-3	22.2		13.3	6.66	3.33
n-Butylbenzene	104-51-8	23.6		6.65	1.33	0.665
sec-Butylbenzene	135-98-8	26.8		6.65	1.33	0.665
tert-Butylbenzene	98-06-6	26.9		6.65	1.33	0.665
Carbon disulfide	75-15-0	22.5		6.65	1.33	0.665
Carbon tetrachloride	56-23-5	24.0		6.65	1.33	0.665
Chlorobenzene	108-90-7	24.4		6.65	1.33	0.665
Chlorodibromomethane	124-48-1	23.9		6.65	1.33	0.665
Chloroethane	75-00-3	24.9		6.65	2.66	1.33
Chloroform	67-66-3	24.5		6.65	1.33	0.665
Chloromethane	74-87-3	28.8		13.3	5.32	2.66
2-Chlorotoluene	95-49-8	29.1	Q	6.65	1.33	0.665
4-Chlorotoluene	106-43-4	25.3		6.65	1.33	0.665
1,2-Dibromo-3-chloropropane	96-12-8	27.6		13.3	5.32	2.66
1,2-Dibromoethane	106-93-4	23.6		6.65	1.33	0.665
Dibromomethane	74-95-3	21.6		6.65	1.33	0.665
1,2-Dichlorobenzene	95-50-1	24.3		6.65	1.33	0.665
1,3-Dichlorobenzene	541-73-1	24.2		6.65	1.33	0.665
1,4-Dichlorobenzene	106-46-7	24.2		6.65	1.33	0.665
Dichlorodifluoromethane	75-71-8	27.2		6.65	2.66	1.33
1,1-Dichloroethane	75-34-3	23.1		6.65	2.66	1.33
1,2-Dichloroethane	107-06-2	24.9		6.65	1.33	0.665
1,1-Dichloroethene	75-35-4	22.1		6.65	1.33	0.665

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	24.4		6.65	1.33	0.665
trans-1,2-Dichloroethene	156-60-5	24.0		6.65	1.33	0.665
1,2-Dichloropropane	78-87-5	24.7		6.65	1.33	0.665
1,3-Dichloropropane	142-28-9	25.8		6.65	1.33	0.665
2,2-Dichloropropane	594-20-7	22.4		6.65	1.33	0.665
cis-1,3-Dichloropropene	10061-01-5	23.8		6.65	1.33	0.665
trans-1,3-Dichloropropene	10061-02-6	23.9		6.65	1.33	0.665
1,1-Dichloropropene	563-58-6	22.4		6.65	1.33	0.665
Ethylbenzene	100-41-4	24.1		6.65	1.33	0.665
2-Hexanone	591-78-6	20.3		13.3	6.66	3.33
Hexachlorobutadiene	87-68-3	22.3		6.65	1.33	0.665
Isopropylbenzene	98-82-8	23.8		6.65	1.33	0.665
p-Isopropyltoluene	99-87-6	25.5		6.65	1.33	0.665
4-Methyl-2-pentanone	108-10-1	21.9		13.3	6.66	3.33
Methylene chloride	75-09-2	23.5		6.65	2.66	1.33
Naphthalene	91-20-3	17.7		6.65	1.33	0.665
n-Propylbenzene	103-65-1	26.9		6.65	1.33	0.665
Styrene	100-42-5	21.0		6.65	1.33	0.665
1,1,1,2-Tetrachloroethane	630-20-6	25.5		6.65	1.33	0.665
1,1,2,2-Tetrachloroethane	79-34-5	24.9		6.65	1.33	0.665
Tetrachloroethene	127-18-4	22.6		6.65	1.33	0.665
Toluene	108-88-3	23.8		6.65	1.33	0.665
1,2,3-Trichlorobenzene	87-61-6	17.7		6.65	1.33	0.665
1,2,4-Trichlorobenzene	120-82-1	18.2		6.65	1.33	0.665
1,1,1-Trichloroethane	71-55-6	24.7		6.65	1.33	0.665
1,1,2-Trichloroethane	79-00-5	24.6		6.65	1.33	0.665
Trichloroethene	79-01-6	22.2		6.65	1.33	0.665
Trichlorofluoromethane	75-69-4	24.5		6.65	2.66	1.33
1,2,3-Trichloropropane	96-18-4	27.6		6.65	2.66	1.33
1,2,4-Trimethylbenzene	95-63-6	27.0		6.65	1.33	0.665
1,3,5-Trimethylbenzene	108-67-8	27.2		6.65	1.33	0.665
Vinyl chloride	75-01-4	37.5		6.65	2.66	1.33
o-Xylene	95-47-6	24.9		6.65	1.33	0.665
m-,p-Xylene	179601-23-1	47.8		6.65	1.33	0.665

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	80	120	
1,2-Dichloroethane-d4	110	80	120	
Toluene-d8	111	85	115	
4-Bromofluorobenzene	123	85	120	*

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW19SW(60-61)220416MS	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:50
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567013	**Analyst:**	JWR	**Run Date:**	05/03/2016 20:09
Collect Date:	04/22/2016 11:15	**Dilution:**	1	**File ID:**	1LM.LM34702
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	75.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3.26	J	5.05	2.52	1.26

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW19SW(60-61)220416MSD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:39
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG567003	**Analyst:**	ADC	**Run Date:**	04/30/2016 23:20
Collect Date:	04/22/2016 11:15	**Dilution:**	1	**File ID:**	9M974086
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	75.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	35.3		27.2	13.6	6.79
Benzene	71-43-2	25.6		6.79	1.36	0.679
Bromobenzene	108-86-1	28.8		6.79	1.36	0.679
Bromochloromethane	74-97-5	25.0		6.79	2.72	1.36
Bromodichloromethane	75-27-4	26.3		6.79	1.36	0.679
Bromoform	75-25-2	25.6		6.79	1.36	0.679
Bromomethane	74-83-9	26.0		6.79	2.72	1.36
2-Butanone	78-93-3	22.7		13.6	6.80	3.40
n-Butylbenzene	104-51-8	26.1		6.79	1.36	0.679
sec-Butylbenzene	135-98-8	29.7		6.79	1.36	0.679
tert-Butylbenzene	98-06-6	31.4		6.79	1.36	0.679
Carbon disulfide	75-15-0	23.8		6.79	1.36	0.679
Carbon tetrachloride	56-23-5	26.8		6.79	1.36	0.679
Chlorobenzene	108-90-7	27.0		6.79	1.36	0.679
Chlorodibromomethane	124-48-1	27.0		6.79	1.36	0.679
Chloroethane	75-00-3	28.3		6.79	2.72	1.36
Chloroform	67-66-3	27.0		6.79	1.36	0.679
Chloromethane	74-87-3	31.7		13.6	5.44	2.72
2-Chlorotoluene	95-49-8	33.0	Q	6.79	1.36	0.679
4-Chlorotoluene	106-43-4	26.6		6.79	1.36	0.679
1,2-Dibromo-3-chloropropane	96-12-8	29.1		13.6	5.44	2.72
1,2-Dibromoethane	106-93-4	24.8		6.79	1.36	0.679
Dibromomethane	74-95-3	22.3		6.79	1.36	0.679
1,2-Dichlorobenzene	95-50-1	26.3		6.79	1.36	0.679
1,3-Dichlorobenzene	541-73-1	26.7		6.79	1.36	0.679
1,4-Dichlorobenzene	106-46-7	26.6		6.79	1.36	0.679
Dichlorodifluoromethane	75-71-8	29.7		6.79	2.72	1.36
1,1-Dichloroethane	75-34-3	25.4		6.79	2.72	1.36
1,2-Dichloroethane	107-06-2	27.3		6.79	1.36	0.679
1,1-Dichloroethene	75-35-4	25.1		6.79	1.36	0.679

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	26.8		6.79	1.36	0.679
trans-1,2-Dichloroethene	156-60-5	26.4		6.79	1.36	0.679
1,2-Dichloropropane	78-87-5	27.6		6.79	1.36	0.679
1,3-Dichloropropane	142-28-9	29.3		6.79	1.36	0.679
2,2-Dichloropropane	594-20-7	24.5		6.79	1.36	0.679
cis-1,3-Dichloropropene	10061-01-5	26.0		6.79	1.36	0.679
trans-1,3-Dichloropropene	10061-02-6	25.5		6.79	1.36	0.679
1,1-Dichloropropene	563-58-6	25.7		6.79	1.36	0.679
Ethylbenzene	100-41-4	27.0		6.79	1.36	0.679
2-Hexanone	591-78-6	22.1		13.6	6.80	3.40
Hexachlorobutadiene	87-68-3	25.0		6.79	1.36	0.679
Isopropylbenzene	98-82-8	27.0		6.79	1.36	0.679
p-Isopropyltoluene	99-87-6	28.0		6.79	1.36	0.679
4-Methyl-2-pentanone	108-10-1	23.5		13.6	6.80	3.40
Methylene chloride	75-09-2	25.8		6.79	2.72	1.36
Naphthalene	91-20-3	19.0		6.79	1.36	0.679
n-Propylbenzene	103-65-1	30.0		6.79	1.36	0.679
Styrene	100-42-5	22.1		6.79	1.36	0.679
1,1,1,2-Tetrachloroethane	630-20-6	28.9		6.79	1.36	0.679
1,1,2,2-Tetrachloroethane	79-34-5	27.2		6.79	1.36	0.679
Tetrachloroethene	127-18-4	25.3		6.79	1.36	0.679
Toluene	108-88-3	27.4		6.79	1.36	0.679
1,2,3-Trichlorobenzene	87-61-6	18.8		6.79	1.36	0.679
1,2,4-Trichlorobenzene	120-82-1	19.3		6.79	1.36	0.679
1,1,1-Trichloroethane	71-55-6	27.9		6.79	1.36	0.679
1,1,2-Trichloroethane	79-00-5	27.5		6.79	1.36	0.679
Trichloroethene	79-01-6	25.1		6.79	1.36	0.679
Trichlorofluoromethane	75-69-4	26.5		6.79	2.72	1.36
1,2,3-Trichloropropane	96-18-4	28.6		6.79	2.72	1.36
1,2,4-Trimethylbenzene	95-63-6	29.5		6.79	1.36	0.679
1,3,5-Trimethylbenzene	108-67-8	30.2		6.79	1.36	0.679
Vinyl chloride	75-01-4	48.6		6.79	2.72	1.36
o-Xylene	95-47-6	28.3		6.79	1.36	0.679
m-,p-Xylene	179601-23-1	53.9		6.79	1.36	0.679

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	80	120	
1,2-Dichloroethane-d4	108	80	120	
Toluene-d8	112	85	115	
4-Bromofluorobenzene	122	85	120	*

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-09	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW19SW(60-61)220416MSD	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:50
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567013	**Analyst:**	JWR	**Run Date:**	05/03/2016 20:28
Collect Date:	04/22/2016 11:15	**Dilution:**	1	**File ID:**	1LM.LM34703
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	75.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3.30	J	5.05	2.52	1.26

J	Estimated value ; the analyte concentration was less than the LOQ.

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW19SW(50-50.5)220416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:39
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG567003	**Analyst:**	ADC	**Run Date:**	04/30/2016 22:19
Collect Date:	04/22/2016 11:11	**Dilution:**	1	**File ID:**	9M974084
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	8.75	J	25.4	12.7	6.35
Benzene	71-43-2	1.27	U	6.35	1.27	0.635
Bromobenzene	108-86-1	1.27	U	6.35	1.27	0.635
Bromochloromethane	74-97-5	2.54	U	6.35	2.54	1.27
Bromodichloromethane	75-27-4	1.27	U	6.35	1.27	0.635
Bromoform	75-25-2	1.27	U	6.35	1.27	0.635
Bromomethane	74-83-9	2.54	U	6.35	2.54	1.27
2-Butanone	78-93-3	6.34	U	12.7	6.34	3.17
n-Butylbenzene	104-51-8	1.27	U	6.35	1.27	0.635
sec-Butylbenzene	135-98-8	1.27	U	6.35	1.27	0.635
tert-Butylbenzene	98-06-6	1.27	U	6.35	1.27	0.635
Carbon disulfide	75-15-0	1.27	U	6.35	1.27	0.635
Carbon tetrachloride	56-23-5	1.27	U	6.35	1.27	0.635
Chlorobenzene	108-90-7	1.27	U	6.35	1.27	0.635
Chlorodibromomethane	124-48-1	1.27	U	6.35	1.27	0.635
Chloroethane	75-00-3	2.54	U	6.35	2.54	1.27
Chloroform	67-66-3	1.27	U	6.35	1.27	0.635
Chloromethane	74-87-3	5.08	U	12.7	5.08	2.54
2-Chlorotoluene	95-49-8	1.27	Q	6.35	1.27	0.635
4-Chlorotoluene	106-43-4	1.27	U	6.35	1.27	0.635
1,2-Dibromo-3-chloropropane	96-12-8	5.08	U	12.7	5.08	2.54
1,2-Dibromoethane	106-93-4	1.27	U	6.35	1.27	0.635
Dibromomethane	74-95-3	1.27	U	6.35	1.27	0.635
1,2-Dichlorobenzene	95-50-1	1.27	U	6.35	1.27	0.635
1,3-Dichlorobenzene	541-73-1	1.27	U	6.35	1.27	0.635
1,4-Dichlorobenzene	106-46-7	1.27	U	6.35	1.27	0.635
Dichlorodifluoromethane	75-71-8	2.54	U	6.35	2.54	1.27
1,1-Dichloroethane	75-34-3	2.54	U	6.35	2.54	1.27
1,2-Dichloroethane	107-06-2	1.27	U	6.35	1.27	0.635
1,1-Dichloroethene	75-35-4	1.27	U	6.35	1.27	0.635

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.27	U	6.35	1.27	0.635
trans-1,2-Dichloroethene	156-60-5	1.27	U	6.35	1.27	0.635
1,2-Dichloropropane	78-87-5	1.27	U	6.35	1.27	0.635
1,3-Dichloropropane	142-28-9	1.27	U	6.35	1.27	0.635
2,2-Dichloropropane	594-20-7	1.27	U	6.35	1.27	0.635
cis-1,3-Dichloropropene	10061-01-5	1.27	U	6.35	1.27	0.635
trans-1,3-Dichloropropene	10061-02-6	1.27	U	6.35	1.27	0.635
1,1-Dichloropropene	563-58-6	1.27	U	6.35	1.27	0.635
Ethylbenzene	100-41-4	1.27	U	6.35	1.27	0.635
2-Hexanone	591-78-6	6.34	U	12.7	6.34	3.17
Hexachlorobutadiene	87-68-3	1.27	U	6.35	1.27	0.635
Isopropylbenzene	98-82-8	1.27	U	6.35	1.27	0.635
p-Isopropyltoluene	99-87-6	1.27	U	6.35	1.27	0.635
4-Methyl-2-pentanone	108-10-1	6.34	U	12.7	6.34	3.17
Methylene chloride	75-09-2	2.54	U	6.35	2.54	1.27
Naphthalene	91-20-3	1.27	U	6.35	1.27	0.635
n-Propylbenzene	103-65-1	1.27	U	6.35	1.27	0.635
Styrene	100-42-5	1.27	U	6.35	1.27	0.635
1,1,1,2-Tetrachloroethane	630-20-6	1.27	U	6.35	1.27	0.635
1,1,2,2-Tetrachloroethane	79-34-5	1.27	U	6.35	1.27	0.635
Tetrachloroethene	127-18-4	1.27	U	6.35	1.27	0.635
Toluene	108-88-3	1.27	U	6.35	1.27	0.635
1,2,3-Trichlorobenzene	87-61-6	1.27	U	6.35	1.27	0.635
1,2,4-Trichlorobenzene	120-82-1	1.27	U	6.35	1.27	0.635
1,1,1-Trichloroethane	71-55-6	1.27	U	6.35	1.27	0.635
1,1,2-Trichloroethane	79-00-5	1.27	U	6.35	1.27	0.635
Trichloroethene	79-01-6	1.27	U	6.35	1.27	0.635
Trichlorofluoromethane	75-69-4	2.54	U	6.35	2.54	1.27
1,2,3-Trichloropropane	96-18-4	2.54	U	6.35	2.54	1.27
1,2,4-Trimethylbenzene	95-63-6	1.27	U	6.35	1.27	0.635
1,3,5-Trimethylbenzene	108-67-8	1.27	U	6.35	1.27	0.635
Vinyl chloride	75-01-4	2.54	U	6.35	2.54	1.27
o-Xylene	95-47-6	1.27	U	6.35	1.27	0.635
m-,p-Xylene	179601-23-1	1.27	U	6.35	1.27	0.635

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	80	120	
1,2-Dichloroethane-d4	109	80	120	
Toluene-d8	113	85	115	
4-Bromofluorobenzene	125	85	120	*

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-10	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW19SW(50-50.5)220416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:50
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567013	**Analyst:**	JWR	**Run Date:**	05/03/2016 23:37
Collect Date:	04/22/2016 11:11	**Dilution:**	5	**File ID:**	1LM.LM34713
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	80.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	170		24.3	12.2	6.08

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #: L16041363-01 **Client ID:** 18CPTMW19SW(5-5.5)210416 **Matrix:** Soil **Collect Date:** 04/21/2016 17:00

Analyte	Result	Units	Qualifier
Percent Solids	83.9	weight %	

Sample #: L16041363-02 **Client ID:** 18CPTMW19SW(10-10.5)210416 **Matrix:** Soil **Collect Date:** 04/21/2016 17:30

Analyte	Result	Units	Qualifier
Percent Solids	79.9	weight %	

Sample #: L16041363-03 **Client ID:** 18CPTMW19SW(30-30.5)220416 **Matrix:** Soil **Collect Date:** 04/22/2016 09:00

Analyte	Result	Units	Qualifier
Percent Solids	80.0	weight %	

Sample #: L16041363-04 **Client ID:** 18CPTMW19SW(30-30.5)220416DUP **Matrix:** Soil **Collect Date:** 04/22/2016 09:00

Analyte	Result	Units	Qualifier
Percent Solids	79.4	weight %	

Sample #: L16041363-05 **Client ID:** 18CPTMW19SW(40-40.5)220416 **Matrix:** Soil **Collect Date:** 04/22/2016 09:05

Analyte	Result	Units	Qualifier
Percent Solids	80.8	weight %	

Sample #: L16041363-06 **Client ID:** 18CPTMW19SW(20-20.5)220416 **Matrix:** Soil **Collect Date:** 04/21/2016 18:00

Analyte	Result	Units	Qualifier
Percent Solids	79.1	weight %	

Sample #: L16041363-07 **Client ID:** 18CPTMW19SW(60-61)220416 **Matrix:** Soil **Collect Date:** 04/22/2016 11:15

Analyte	Result	Units	Qualifier
Percent Solids	75.9	weight %	

Sample #: L16041363-08 **Client ID:** 18CPTMW19SW(60-61)220416MS **Matrix:** Soil **Collect Date:** 04/22/2016 11:15

Analyte	Result	Units	Qualifier
Percent Solids	75.9	weight %	

Sample #: L16041363-09 **Client ID:** 18CPTMW19SW(60-61)220416MSD **Matrix:** Soil **Collect Date:** 04/22/2016 11:15

Analyte	Result	Units	Qualifier
Percent Solids	75.9	weight %	

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #: L16041363-10 **Client ID:** 18CPTMW19SW(50-50.5)220416 **Matrix:** Soil **Collect Date:** 04/22/2016 11:11

Analyte	Result	Units	Qualifier
Percent Solids	80.5	weight %	

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW19SW(5-5.5)210416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:33
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG567003	**Analyst:**	ADC	**Run Date:**	04/30/2016 18:48
Collect Date:	04/21/2016 17:00	**Dilution:**	1	**File ID:**	9M974077
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.2	U	24.3	12.2	6.08
Benzene	71-43-2	1.22	U	6.08	1.22	0.608
Bromobenzene	108-86-1	1.22	U	6.08	1.22	0.608
Bromochloromethane	74-97-5	2.44	U	6.08	2.44	1.22
Bromodichloromethane	75-27-4	1.22	U	6.08	1.22	0.608
Bromoform	75-25-2	1.22	U	6.08	1.22	0.608
Bromomethane	74-83-9	2.44	U	6.08	2.44	1.22
2-Butanone	78-93-3	6.08	U	12.2	6.08	3.04
n-Butylbenzene	104-51-8	1.22	U	6.08	1.22	0.608
sec-Butylbenzene	135-98-8	1.22	U	6.08	1.22	0.608
tert-Butylbenzene	98-06-6	1.22	U	6.08	1.22	0.608
Carbon disulfide	75-15-0	1.22	U	6.08	1.22	0.608
Carbon tetrachloride	56-23-5	1.22	U	6.08	1.22	0.608
Chlorobenzene	108-90-7	1.22	U	6.08	1.22	0.608
Chlorodibromomethane	124-48-1	1.22	U	6.08	1.22	0.608
Chloroethane	75-00-3	2.44	U	6.08	2.44	1.22
Chloroform	67-66-3	1.22	U	6.08	1.22	0.608
Chloromethane	74-87-3	4.86	U	12.2	4.86	2.43
2-Chlorotoluene	95-49-8	1.22	Q	6.08	1.22	0.608
4-Chlorotoluene	106-43-4	1.22	U	6.08	1.22	0.608
1,2-Dibromo-3-chloropropane	96-12-8	4.86	U	12.2	4.86	2.43
1,2-Dibromoethane	106-93-4	1.22	U	6.08	1.22	0.608
Dibromomethane	74-95-3	1.22	U	6.08	1.22	0.608
1,2-Dichlorobenzene	95-50-1	1.22	U	6.08	1.22	0.608
1,3-Dichlorobenzene	541-73-1	1.22	U	6.08	1.22	0.608
1,4-Dichlorobenzene	106-46-7	1.22	U	6.08	1.22	0.608
Dichlorodifluoromethane	75-71-8	2.44	U	6.08	2.44	1.22
1,1-Dichloroethane	75-34-3	2.44	U	6.08	2.44	1.22
1,2-Dichloroethane	107-06-2	1.22	U	6.08	1.22	0.608
1,1-Dichloroethene	75-35-4	1.22	U	6.08	1.22	0.608
cis-1,2-Dichloroethene	156-59-2	1.22	U	6.08	1.22	0.608

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.22	U	6.08	1.22	0.608
1,2-Dichloropropane	78-87-5	1.22	U	6.08	1.22	0.608
1,3-Dichloropropane	142-28-9	1.22	U	6.08	1.22	0.608
2,2-Dichloropropane	594-20-7	1.22	U	6.08	1.22	0.608
cis-1,3-Dichloropropene	10061-01-5	1.22	U	6.08	1.22	0.608
trans-1,3-Dichloropropene	10061-02-6	1.22	U	6.08	1.22	0.608
1,1-Dichloropropene	563-58-6	1.22	U	6.08	1.22	0.608
Ethylbenzene	100-41-4	1.22	U	6.08	1.22	0.608
2-Hexanone	591-78-6	6.08	U	12.2	6.08	3.04
Hexachlorobutadiene	87-68-3	1.22	U	6.08	1.22	0.608
Isopropylbenzene	98-82-8	1.22	U	6.08	1.22	0.608
p-Isopropyltoluene	99-87-6	1.22	U	6.08	1.22	0.608
4-Methyl-2-pentanone	108-10-1	6.08	U	12.2	6.08	3.04
Methylene chloride	75-09-2	2.44	U	6.08	2.44	1.22
Naphthalene	91-20-3	1.22	U	6.08	1.22	0.608
n-Propylbenzene	103-65-1	1.22	U	6.08	1.22	0.608
Styrene	100-42-5	1.22	U	6.08	1.22	0.608
1,1,1,2-Tetrachloroethane	630-20-6	1.22	U	6.08	1.22	0.608
1,1,2,2-Tetrachloroethane	79-34-5	1.22	U	6.08	1.22	0.608
Tetrachloroethene	127-18-4	1.22	U	6.08	1.22	0.608
Toluene	108-88-3	1.22	U	6.08	1.22	0.608
1,2,3-Trichlorobenzene	87-61-6	1.22	U	6.08	1.22	0.608
1,2,4-Trichlorobenzene	120-82-1	1.22	U	6.08	1.22	0.608
1,1,1-Trichloroethane	71-55-6	1.22	U	6.08	1.22	0.608
1,1,2-Trichloroethane	79-00-5	1.22	U	6.08	1.22	0.608
Trichloroethene	79-01-6	1.22	U	6.08	1.22	0.608
Trichlorofluoromethane	75-69-4	2.44	U	6.08	2.44	1.22
1,2,3-Trichloropropane	96-18-4	2.44	U	6.08	2.44	1.22
1,2,4-Trimethylbenzene	95-63-6	1.22	U	6.08	1.22	0.608
1,3,5-Trimethylbenzene	108-67-8	1.22	U	6.08	1.22	0.608
Vinyl chloride	75-01-4	2.44	U	6.08	2.44	1.22
o-Xylene	95-47-6	1.22	U	6.08	1.22	0.608
m-,p-Xylene	179601-23-1	1.22	U	6.08	1.22	0.608

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	80	120	
1,2-Dichloroethane-d4	109	80	120	
Toluene-d8	113	85	115	
4-Bromofluorobenzene	126	85	120	*

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW19SW(10-10.5)210416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:33
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG567003	**Analyst:**	ADC	**Run Date:**	04/30/2016 19:18
Collect Date:	04/21/2016 17:30	**Dilution:**	1	**File ID:**	9M974078
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	24.3		23.4	11.7	5.84
Benzene	71-43-2	1.17	U	5.84	1.17	0.584
Bromobenzene	108-86-1	1.17	U	5.84	1.17	0.584
Bromochloromethane	74-97-5	2.34	U	5.84	2.34	1.17
Bromodichloromethane	75-27-4	1.17	U	5.84	1.17	0.584
Bromoform	75-25-2	1.17	U	5.84	1.17	0.584
Bromomethane	74-83-9	2.34	U	5.84	2.34	1.17
2-Butanone	78-93-3	4.20	J	11.7	5.84	2.92
n-Butylbenzene	104-51-8	1.17	U	5.84	1.17	0.584
sec-Butylbenzene	135-98-8	1.17	U	5.84	1.17	0.584
tert-Butylbenzene	98-06-6	1.17	U	5.84	1.17	0.584
Carbon disulfide	75-15-0	1.17	U	5.84	1.17	0.584
Carbon tetrachloride	56-23-5	1.17	U	5.84	1.17	0.584
Chlorobenzene	108-90-7	1.17	U	5.84	1.17	0.584
Chlorodibromomethane	124-48-1	1.17	U	5.84	1.17	0.584
Chloroethane	75-00-3	2.34	U	5.84	2.34	1.17
Chloroform	67-66-3	1.17	U	5.84	1.17	0.584
Chloromethane	74-87-3	4.68	U	11.7	4.68	2.34
2-Chlorotoluene	95-49-8	1.17	Q	5.84	1.17	0.584
4-Chlorotoluene	106-43-4	1.17	U	5.84	1.17	0.584
1,2-Dibromo-3-chloropropane	96-12-8	4.68	U	11.7	4.68	2.34
1,2-Dibromoethane	106-93-4	1.17	U	5.84	1.17	0.584
Dibromomethane	74-95-3	1.17	U	5.84	1.17	0.584
1,2-Dichlorobenzene	95-50-1	1.17	U	5.84	1.17	0.584
1,3-Dichlorobenzene	541-73-1	1.17	U	5.84	1.17	0.584
1,4-Dichlorobenzene	106-46-7	1.17	U	5.84	1.17	0.584
Dichlorodifluoromethane	75-71-8	2.34	U	5.84	2.34	1.17
1,1-Dichloroethane	75-34-3	2.34	U	5.84	2.34	1.17
1,2-Dichloroethane	107-06-2	1.17	U	5.84	1.17	0.584
1,1-Dichloroethene	75-35-4	1.17	U	5.84	1.17	0.584

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.17	U	5.84	1.17	0.584
trans-1,2-Dichloroethene	156-60-5	1.17	U	5.84	1.17	0.584
1,2-Dichloropropane	78-87-5	1.17	U	5.84	1.17	0.584
1,3-Dichloropropane	142-28-9	1.17	U	5.84	1.17	0.584
2,2-Dichloropropane	594-20-7	1.17	U	5.84	1.17	0.584
cis-1,3-Dichloropropene	10061-01-5	1.17	U	5.84	1.17	0.584
trans-1,3-Dichloropropene	10061-02-6	1.17	U	5.84	1.17	0.584
1,1-Dichloropropene	563-58-6	1.17	U	5.84	1.17	0.584
Ethylbenzene	100-41-4	1.17	U	5.84	1.17	0.584
2-Hexanone	591-78-6	5.84	U	11.7	5.84	2.92
Hexachlorobutadiene	87-68-3	1.17	U	5.84	1.17	0.584
Isopropylbenzene	98-82-8	1.17	U	5.84	1.17	0.584
p-Isopropyltoluene	99-87-6	1.17	U	5.84	1.17	0.584
4-Methyl-2-pentanone	108-10-1	5.84	U	11.7	5.84	2.92
Methylene chloride	75-09-2	2.34	U	5.84	2.34	1.17
Naphthalene	91-20-3	1.17	U	5.84	1.17	0.584
n-Propylbenzene	103-65-1	1.17	U	5.84	1.17	0.584
Styrene	100-42-5	1.17	U	5.84	1.17	0.584
1,1,1,2-Tetrachloroethane	630-20-6	1.17	U	5.84	1.17	0.584
1,1,2,2-Tetrachloroethane	79-34-5	1.17	U	5.84	1.17	0.584
Tetrachloroethene	127-18-4	1.17	U	5.84	1.17	0.584
Toluene	108-88-3	1.17	U	5.84	1.17	0.584
1,2,3-Trichlorobenzene	87-61-6	1.17	U	5.84	1.17	0.584
1,2,4-Trichlorobenzene	120-82-1	1.17	U	5.84	1.17	0.584
1,1,1-Trichloroethane	71-55-6	1.17	U	5.84	1.17	0.584
1,1,2-Trichloroethane	79-00-5	1.17	U	5.84	1.17	0.584
Trichloroethene	79-01-6	1.17	U	5.84	1.17	0.584
Trichlorofluoromethane	75-69-4	2.34	U	5.84	2.34	1.17
1,2,3-Trichloropropane	96-18-4	2.34	U	5.84	2.34	1.17
1,2,4-Trimethylbenzene	95-63-6	1.17	U	5.84	1.17	0.584
1,3,5-Trimethylbenzene	108-67-8	1.17	U	5.84	1.17	0.584
Vinyl chloride	75-01-4	2.34	U	5.84	2.34	1.17
o-Xylene	95-47-6	1.17	U	5.84	1.17	0.584
m-,p-Xylene	179601-23-1	1.17	U	5.84	1.17	0.584

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	80	120	
1,2-Dichloroethane-d4	107	80	120	
Toluene-d8	111	85	115	
4-Bromofluorobenzene	120	85	120	

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW19SW(30-30.5)220416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:34
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG567003	**Analyst:**	ADC	**Run Date:**	04/30/2016 19:48
Collect Date:	04/22/2016 09:00	**Dilution:**	1	**File ID:**	9M974079
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.7	U	25.4	12.7	6.34
Benzene	71-43-2	1.27	U	6.34	1.27	0.634
Bromobenzene	108-86-1	1.27	U	6.34	1.27	0.634
Bromochloromethane	74-97-5	2.54	U	6.34	2.54	1.27
Bromodichloromethane	75-27-4	1.27	U	6.34	1.27	0.634
Bromoform	75-25-2	1.27	U	6.34	1.27	0.634
Bromomethane	74-83-9	2.54	U	6.34	2.54	1.27
2-Butanone	78-93-3	6.34	U	12.7	6.34	3.17
n-Butylbenzene	104-51-8	1.27	U	6.34	1.27	0.634
sec-Butylbenzene	135-98-8	1.27	U	6.34	1.27	0.634
tert-Butylbenzene	98-06-6	1.27	U	6.34	1.27	0.634
Carbon disulfide	75-15-0	1.27	U	6.34	1.27	0.634
Carbon tetrachloride	56-23-5	1.27	U	6.34	1.27	0.634
Chlorobenzene	108-90-7	1.27	U	6.34	1.27	0.634
Chlorodibromomethane	124-48-1	1.27	U	6.34	1.27	0.634
Chloroethane	75-00-3	2.54	U	6.34	2.54	1.27
Chloroform	67-66-3	1.27	U	6.34	1.27	0.634
Chloromethane	74-87-3	5.08	U	12.7	5.08	2.54
2-Chlorotoluene	95-49-8	1.27	Q	6.34	1.27	0.634
4-Chlorotoluene	106-43-4	1.27	U	6.34	1.27	0.634
1,2-Dibromo-3-chloropropane	96-12-8	5.08	U	12.7	5.08	2.54
1,2-Dibromoethane	106-93-4	1.27	U	6.34	1.27	0.634
Dibromomethane	74-95-3	1.27	U	6.34	1.27	0.634
1,2-Dichlorobenzene	95-50-1	1.27	U	6.34	1.27	0.634
1,3-Dichlorobenzene	541-73-1	1.27	U	6.34	1.27	0.634
1,4-Dichlorobenzene	106-46-7	1.27	U	6.34	1.27	0.634
Dichlorodifluoromethane	75-71-8	2.54	U	6.34	2.54	1.27
1,1-Dichloroethane	75-34-3	2.54	U	6.34	2.54	1.27
1,2-Dichloroethane	107-06-2	1.27	U	6.34	1.27	0.634
1,1-Dichloroethene	75-35-4	1.27	U	6.34	1.27	0.634

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.27	U	6.34	1.27	0.634
trans-1,2-Dichloroethene	156-60-5	1.27	U	6.34	1.27	0.634
1,2-Dichloropropane	78-87-5	1.27	U	6.34	1.27	0.634
1,3-Dichloropropane	142-28-9	1.27	U	6.34	1.27	0.634
2,2-Dichloropropane	594-20-7	1.27	U	6.34	1.27	0.634
cis-1,3-Dichloropropene	10061-01-5	1.27	U	6.34	1.27	0.634
trans-1,3-Dichloropropene	10061-02-6	1.27	U	6.34	1.27	0.634
1,1-Dichloropropene	563-58-6	1.27	U	6.34	1.27	0.634
Ethylbenzene	100-41-4	1.27	U	6.34	1.27	0.634
2-Hexanone	591-78-6	6.34	U	12.7	6.34	3.17
Hexachlorobutadiene	87-68-3	1.27	U	6.34	1.27	0.634
Isopropylbenzene	98-82-8	1.27	U	6.34	1.27	0.634
p-Isopropyltoluene	99-87-6	1.27	U	6.34	1.27	0.634
4-Methyl-2-pentanone	108-10-1	6.34	U	12.7	6.34	3.17
Methylene chloride	75-09-2	2.54	U	6.34	2.54	1.27
Naphthalene	91-20-3	1.27	U	6.34	1.27	0.634
n-Propylbenzene	103-65-1	1.27	U	6.34	1.27	0.634
Styrene	100-42-5	1.27	U	6.34	1.27	0.634
1,1,1,2-Tetrachloroethane	630-20-6	1.27	U	6.34	1.27	0.634
1,1,2,2-Tetrachloroethane	79-34-5	1.27	U	6.34	1.27	0.634
Tetrachloroethene	127-18-4	1.27	U	6.34	1.27	0.634
Toluene	108-88-3	1.27	U	6.34	1.27	0.634
1,2,3-Trichlorobenzene	87-61-6	1.27	U	6.34	1.27	0.634
1,2,4-Trichlorobenzene	120-82-1	1.27	U	6.34	1.27	0.634
1,1,1-Trichloroethane	71-55-6	1.27	U	6.34	1.27	0.634
1,1,2-Trichloroethane	79-00-5	1.27	U	6.34	1.27	0.634
Trichloroethene	79-01-6	1.27	U	6.34	1.27	0.634
Trichlorofluoromethane	75-69-4	2.54	U	6.34	2.54	1.27
1,2,3-Trichloropropane	96-18-4	2.54	U	6.34	2.54	1.27
1,2,4-Trimethylbenzene	95-63-6	1.27	U	6.34	1.27	0.634
1,3,5-Trimethylbenzene	108-67-8	1.27	U	6.34	1.27	0.634
Vinyl chloride	75-01-4	2.54	U	6.34	2.54	1.27
o-Xylene	95-47-6	1.27	U	6.34	1.27	0.634
m-,p-Xylene	179601-23-1	1.27	U	6.34	1.27	0.634

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	80	120	
1,2-Dichloroethane-d4	121	80	120	*
Toluene-d8	111	85	115	
4-Bromofluorobenzene	123	85	120	*

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW19SW(30-30.5)220416DUP	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:35
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG567003	**Analyst:**	ADC	**Run Date:**	04/30/2016 20:18
Collect Date:	04/22/2016 09:00	**Dilution:**	1	**File ID:**	9M974080
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.8	U	25.6	12.8	6.40
Benzene	71-43-2	1.28	U	6.40	1.28	0.640
Bromobenzene	108-86-1	1.28	U	6.40	1.28	0.640
Bromochloromethane	74-97-5	2.56	U	6.40	2.56	1.28
Bromodichloromethane	75-27-4	1.28	U	6.40	1.28	0.640
Bromoform	75-25-2	1.28	U	6.40	1.28	0.640
Bromomethane	74-83-9	2.56	U	6.40	2.56	1.28
2-Butanone	78-93-3	6.40	U	12.8	6.40	3.20
n-Butylbenzene	104-51-8	1.28	U	6.40	1.28	0.640
sec-Butylbenzene	135-98-8	1.28	U	6.40	1.28	0.640
tert-Butylbenzene	98-06-6	1.28	U	6.40	1.28	0.640
Carbon disulfide	75-15-0	1.28	U	6.40	1.28	0.640
Carbon tetrachloride	56-23-5	1.28	U	6.40	1.28	0.640
Chlorobenzene	108-90-7	1.28	U	6.40	1.28	0.640
Chlorodibromomethane	124-48-1	1.28	U	6.40	1.28	0.640
Chloroethane	75-00-3	2.56	U	6.40	2.56	1.28
Chloroform	67-66-3	1.28	U	6.40	1.28	0.640
Chloromethane	74-87-3	5.12	U	12.8	5.12	2.56
2-Chlorotoluene	95-49-8	1.28	Q	6.40	1.28	0.640
4-Chlorotoluene	106-43-4	1.28	U	6.40	1.28	0.640
1,2-Dibromo-3-chloropropane	96-12-8	5.12	U	12.8	5.12	2.56
1,2-Dibromoethane	106-93-4	1.28	U	6.40	1.28	0.640
Dibromomethane	74-95-3	1.28	U	6.40	1.28	0.640
1,2-Dichlorobenzene	95-50-1	1.28	U	6.40	1.28	0.640
1,3-Dichlorobenzene	541-73-1	1.28	U	6.40	1.28	0.640
1,4-Dichlorobenzene	106-46-7	1.28	U	6.40	1.28	0.640
Dichlorodifluoromethane	75-71-8	2.56	U	6.40	2.56	1.28
1,1-Dichloroethane	75-34-3	2.56	U	6.40	2.56	1.28
1,2-Dichloroethane	107-06-2	1.28	U	6.40	1.28	0.640
1,1-Dichloroethene	75-35-4	1.28	U	6.40	1.28	0.640

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.28	U	6.40	1.28	0.640
trans-1,2-Dichloroethene	156-60-5	1.28	U	6.40	1.28	0.640
1,2-Dichloropropane	78-87-5	1.28	U	6.40	1.28	0.640
1,3-Dichloropropane	142-28-9	1.28	U	6.40	1.28	0.640
2,2-Dichloropropane	594-20-7	1.28	U	6.40	1.28	0.640
cis-1,3-Dichloropropene	10061-01-5	1.28	U	6.40	1.28	0.640
trans-1,3-Dichloropropene	10061-02-6	1.28	U	6.40	1.28	0.640
1,1-Dichloropropene	563-58-6	1.28	U	6.40	1.28	0.640
Ethylbenzene	100-41-4	1.28	U	6.40	1.28	0.640
2-Hexanone	591-78-6	6.40	U	12.8	6.40	3.20
Hexachlorobutadiene	87-68-3	1.28	U	6.40	1.28	0.640
Isopropylbenzene	98-82-8	1.28	U	6.40	1.28	0.640
p-Isopropyltoluene	99-87-6	1.28	U	6.40	1.28	0.640
4-Methyl-2-pentanone	108-10-1	6.40	U	12.8	6.40	3.20
Methylene chloride	75-09-2	2.56	U	6.40	2.56	1.28
Naphthalene	91-20-3	1.28	U	6.40	1.28	0.640
n-Propylbenzene	103-65-1	1.28	U	6.40	1.28	0.640
Styrene	100-42-5	1.28	U	6.40	1.28	0.640
1,1,1,2-Tetrachloroethane	630-20-6	1.28	U	6.40	1.28	0.640
1,1,2,2-Tetrachloroethane	79-34-5	1.28	U	6.40	1.28	0.640
Tetrachloroethene	127-18-4	1.28	U	6.40	1.28	0.640
Toluene	108-88-3	1.28	U	6.40	1.28	0.640
1,2,3-Trichlorobenzene	87-61-6	1.28	U	6.40	1.28	0.640
1,2,4-Trichlorobenzene	120-82-1	1.28	U	6.40	1.28	0.640
1,1,1-Trichloroethane	71-55-6	1.28	U	6.40	1.28	0.640
1,1,2-Trichloroethane	79-00-5	1.28	U	6.40	1.28	0.640
Trichloroethene	79-01-6	1.28	U	6.40	1.28	0.640
Trichlorofluoromethane	75-69-4	2.56	U	6.40	2.56	1.28
1,2,3-Trichloropropane	96-18-4	2.56	U	6.40	2.56	1.28
1,2,4-Trimethylbenzene	95-63-6	1.28	U	6.40	1.28	0.640
1,3,5-Trimethylbenzene	108-67-8	1.28	U	6.40	1.28	0.640
Vinyl chloride	75-01-4	2.56	U	6.40	2.56	1.28
o-Xylene	95-47-6	1.28	U	6.40	1.28	0.640
m-,p-Xylene	179601-23-1	1.28	U	6.40	1.28	0.640

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	108	80	120	
1,2-Dichloroethane-d4	122	80	120	*
Toluene-d8	110	85	115	
4-Bromofluorobenzene	125	85	120	*

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW19SW(40-40.5)220416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:36
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG567003	**Analyst:**	ADC	**Run Date:**	04/30/2016 20:48
Collect Date:	04/22/2016 09:05	**Dilution:**	1	**File ID:**	9M974081
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.6	U	23.1	11.6	5.79
Benzene	71-43-2	1.16	U	5.79	1.16	0.579
Bromobenzene	108-86-1	1.16	U	5.79	1.16	0.579
Bromochloromethane	74-97-5	2.32	U	5.79	2.32	1.16
Bromodichloromethane	75-27-4	1.16	U	5.79	1.16	0.579
Bromoform	75-25-2	1.16	U	5.79	1.16	0.579
Bromomethane	74-83-9	2.32	U	5.79	2.32	1.16
2-Butanone	78-93-3	5.78	U	11.6	5.78	2.89
n-Butylbenzene	104-51-8	1.16	U	5.79	1.16	0.579
sec-Butylbenzene	135-98-8	1.16	U	5.79	1.16	0.579
tert-Butylbenzene	98-06-6	1.16	U	5.79	1.16	0.579
Carbon disulfide	75-15-0	1.16	U	5.79	1.16	0.579
Carbon tetrachloride	56-23-5	1.16	U	5.79	1.16	0.579
Chlorobenzene	108-90-7	1.16	U	5.79	1.16	0.579
Chlorodibromomethane	124-48-1	1.16	U	5.79	1.16	0.579
Chloroethane	75-00-3	2.32	U	5.79	2.32	1.16
Chloroform	67-66-3	1.16	U	5.79	1.16	0.579
Chloromethane	74-87-3	4.62	U	11.6	4.62	2.31
2-Chlorotoluene	95-49-8	1.16	Q	5.79	1.16	0.579
4-Chlorotoluene	106-43-4	1.16	U	5.79	1.16	0.579
1,2-Dibromo-3-chloropropane	96-12-8	4.62	U	11.6	4.62	2.31
1,2-Dibromoethane	106-93-4	1.16	U	5.79	1.16	0.579
Dibromomethane	74-95-3	1.16	U	5.79	1.16	0.579
1,2-Dichlorobenzene	95-50-1	1.16	U	5.79	1.16	0.579
1,3-Dichlorobenzene	541-73-1	1.16	U	5.79	1.16	0.579
1,4-Dichlorobenzene	106-46-7	1.16	U	5.79	1.16	0.579
Dichlorodifluoromethane	75-71-8	2.32	U	5.79	2.32	1.16
1,1-Dichloroethane	75-34-3	2.32	U	5.79	2.32	1.16
1,2-Dichloroethane	107-06-2	1.16	U	5.79	1.16	0.579
1,1-Dichloroethene	75-35-4	1.16	U	5.79	1.16	0.579

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.16	U	5.79	1.16	0.579
trans-1,2-Dichloroethene	156-60-5	1.16	U	5.79	1.16	0.579
1,2-Dichloropropane	78-87-5	1.16	U	5.79	1.16	0.579
1,3-Dichloropropane	142-28-9	1.16	U	5.79	1.16	0.579
2,2-Dichloropropane	594-20-7	1.16	U	5.79	1.16	0.579
cis-1,3-Dichloropropene	10061-01-5	1.16	U	5.79	1.16	0.579
trans-1,3-Dichloropropene	10061-02-6	1.16	U	5.79	1.16	0.579
1,1-Dichloropropene	563-58-6	1.16	U	5.79	1.16	0.579
Ethylbenzene	100-41-4	1.16	U	5.79	1.16	0.579
2-Hexanone	591-78-6	5.78	U	11.6	5.78	2.89
Hexachlorobutadiene	87-68-3	1.16	U	5.79	1.16	0.579
Isopropylbenzene	98-82-8	1.16	U	5.79	1.16	0.579
p-Isopropyltoluene	99-87-6	1.16	U	5.79	1.16	0.579
4-Methyl-2-pentanone	108-10-1	5.78	U	11.6	5.78	2.89
Methylene chloride	75-09-2	2.32	U	5.79	2.32	1.16
Naphthalene	91-20-3	1.16	U	5.79	1.16	0.579
n-Propylbenzene	103-65-1	1.16	U	5.79	1.16	0.579
Styrene	100-42-5	1.16	U	5.79	1.16	0.579
1,1,1,2-Tetrachloroethane	630-20-6	1.16	U	5.79	1.16	0.579
1,1,2,2-Tetrachloroethane	79-34-5	1.16	U	5.79	1.16	0.579
Tetrachloroethene	127-18-4	1.16	U	5.79	1.16	0.579
Toluene	108-88-3	1.16	U	5.79	1.16	0.579
1,2,3-Trichlorobenzene	87-61-6	1.16	U	5.79	1.16	0.579
1,2,4-Trichlorobenzene	120-82-1	1.16	U	5.79	1.16	0.579
1,1,1-Trichloroethane	71-55-6	1.16	U	5.79	1.16	0.579
1,1,2-Trichloroethane	79-00-5	1.16	U	5.79	1.16	0.579
Trichloroethene	79-01-6	1.16	U	5.79	1.16	0.579
Trichlorofluoromethane	75-69-4	2.32	U	5.79	2.32	1.16
1,2,3-Trichloropropane	96-18-4	2.32	U	5.79	2.32	1.16
1,2,4-Trimethylbenzene	95-63-6	1.16	U	5.79	1.16	0.579
1,3,5-Trimethylbenzene	108-67-8	1.16	U	5.79	1.16	0.579
Vinyl chloride	75-01-4	2.32	U	5.79	2.32	1.16
o-Xylene	95-47-6	1.16	U	5.79	1.16	0.579
m-,p-Xylene	179601-23-1	1.16	U	5.79	1.16	0.579

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	80	120	
1,2-Dichloroethane-d4	119	80	120	
Toluene-d8	111	85	115	
4-Bromofluorobenzene	125	85	120	*

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW19SW(20-20.5)220416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:36
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG567003	**Analyst:**	ADC	**Run Date:**	04/30/2016 21:19
Collect Date:	04/21/2016 18:00	**Dilution:**	1	**File ID:**	9M974082
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.6	U	27.3	13.6	6.81
Benzene	71-43-2	1.36	U	6.81	1.36	0.681
Bromobenzene	108-86-1	1.36	U	6.81	1.36	0.681
Bromochloromethane	74-97-5	2.72	U	6.81	2.72	1.36
Bromodichloromethane	75-27-4	1.36	U	6.81	1.36	0.681
Bromoform	75-25-2	1.36	U	6.81	1.36	0.681
Bromomethane	74-83-9	2.72	U	6.81	2.72	1.36
2-Butanone	78-93-3	6.82	U	13.6	6.82	3.41
n-Butylbenzene	104-51-8	1.36	U	6.81	1.36	0.681
sec-Butylbenzene	135-98-8	1.36	U	6.81	1.36	0.681
tert-Butylbenzene	98-06-6	1.36	U	6.81	1.36	0.681
Carbon disulfide	75-15-0	1.36	U	6.81	1.36	0.681
Carbon tetrachloride	56-23-5	1.36	U	6.81	1.36	0.681
Chlorobenzene	108-90-7	1.36	U	6.81	1.36	0.681
Chlorodibromomethane	124-48-1	1.36	U	6.81	1.36	0.681
Chloroethane	75-00-3	2.72	U	6.81	2.72	1.36
Chloroform	67-66-3	1.36	U	6.81	1.36	0.681
Chloromethane	74-87-3	5.46	U	13.6	5.46	2.73
2-Chlorotoluene	95-49-8	1.36	Q	6.81	1.36	0.681
4-Chlorotoluene	106-43-4	1.36	U	6.81	1.36	0.681
1,2-Dibromo-3-chloropropane	96-12-8	5.46	U	13.6	5.46	2.73
1,2-Dibromoethane	106-93-4	1.36	U	6.81	1.36	0.681
Dibromomethane	74-95-3	1.36	U	6.81	1.36	0.681
1,2-Dichlorobenzene	95-50-1	1.36	U	6.81	1.36	0.681
1,3-Dichlorobenzene	541-73-1	1.36	U	6.81	1.36	0.681
1,4-Dichlorobenzene	106-46-7	1.36	U	6.81	1.36	0.681
Dichlorodifluoromethane	75-71-8	2.72	U	6.81	2.72	1.36
1,1-Dichloroethane	75-34-3	2.72	U	6.81	2.72	1.36
1,2-Dichloroethane	107-06-2	1.36	U	6.81	1.36	0.681
1,1-Dichloroethene	75-35-4	1.36	U	6.81	1.36	0.681

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.36	U	6.81	1.36	0.681
trans-1,2-Dichloroethene	156-60-5	1.36	U	6.81	1.36	0.681
1,2-Dichloropropane	78-87-5	1.36	U	6.81	1.36	0.681
1,3-Dichloropropane	142-28-9	1.36	U	6.81	1.36	0.681
2,2-Dichloropropane	594-20-7	1.36	U	6.81	1.36	0.681
cis-1,3-Dichloropropene	10061-01-5	1.36	U	6.81	1.36	0.681
trans-1,3-Dichloropropene	10061-02-6	1.36	U	6.81	1.36	0.681
1,1-Dichloropropene	563-58-6	1.36	U	6.81	1.36	0.681
Ethylbenzene	100-41-4	1.36	U	6.81	1.36	0.681
2-Hexanone	591-78-6	6.82	U	13.6	6.82	3.41
Hexachlorobutadiene	87-68-3	1.36	U	6.81	1.36	0.681
Isopropylbenzene	98-82-8	1.36	U	6.81	1.36	0.681
p-Isopropyltoluene	99-87-6	1.36	U	6.81	1.36	0.681
4-Methyl-2-pentanone	108-10-1	6.82	U	13.6	6.82	3.41
Methylene chloride	75-09-2	2.72	U	6.81	2.72	1.36
Naphthalene	91-20-3	1.36	U	6.81	1.36	0.681
n-Propylbenzene	103-65-1	1.36	U	6.81	1.36	0.681
Styrene	100-42-5	1.36	U	6.81	1.36	0.681
1,1,1,2-Tetrachloroethane	630-20-6	1.36	U	6.81	1.36	0.681
1,1,2,2-Tetrachloroethane	79-34-5	1.36	U	6.81	1.36	0.681
Tetrachloroethene	127-18-4	1.36	U	6.81	1.36	0.681
Toluene	108-88-3	1.36	U	6.81	1.36	0.681
1,2,3-Trichlorobenzene	87-61-6	1.36	U	6.81	1.36	0.681
1,2,4-Trichlorobenzene	120-82-1	1.36	U	6.81	1.36	0.681
1,1,1-Trichloroethane	71-55-6	1.36	U	6.81	1.36	0.681
1,1,2-Trichloroethane	79-00-5	1.36	U	6.81	1.36	0.681
Trichloroethene	79-01-6	1.36	U	6.81	1.36	0.681
Trichlorofluoromethane	75-69-4	2.72	U	6.81	2.72	1.36
1,2,3-Trichloropropane	96-18-4	2.72	U	6.81	2.72	1.36
1,2,4-Trimethylbenzene	95-63-6	1.36	U	6.81	1.36	0.681
1,3,5-Trimethylbenzene	108-67-8	1.36	U	6.81	1.36	0.681
Vinyl chloride	75-01-4	2.72	U	6.81	2.72	1.36
o-Xylene	95-47-6	1.36	U	6.81	1.36	0.681
m-,p-Xylene	179601-23-1	1.36	U	6.81	1.36	0.681

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	80	120	
1,2-Dichloroethane-d4	109	80	120	
Toluene-d8	112	85	115	
4-Bromofluorobenzene	121	85	120	*

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW19SW(60-61)220416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:37
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG567003	**Analyst:**	ADC	**Run Date:**	04/30/2016 21:49
Collect Date:	04/22/2016 11:15	**Dilution:**	1	**File ID:**	9M974083
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	75.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	8.63	J	26.0	13.0	6.51
Benzene	71-43-2	1.30	U	6.51	1.30	0.651
Bromobenzene	108-86-1	1.30	U	6.51	1.30	0.651
Bromochloromethane	74-97-5	2.60	U	6.51	2.60	1.30
Bromodichloromethane	75-27-4	1.30	U	6.51	1.30	0.651
Bromoform	75-25-2	1.30	U	6.51	1.30	0.651
Bromomethane	74-83-9	2.60	U	6.51	2.60	1.30
2-Butanone	78-93-3	6.50	U	13.0	6.50	3.25
n-Butylbenzene	104-51-8	1.30	U	6.51	1.30	0.651
sec-Butylbenzene	135-98-8	1.30	U	6.51	1.30	0.651
tert-Butylbenzene	98-06-6	1.30	U	6.51	1.30	0.651
Carbon disulfide	75-15-0	1.30	U	6.51	1.30	0.651
Carbon tetrachloride	56-23-5	1.30	U	6.51	1.30	0.651
Chlorobenzene	108-90-7	1.30	U	6.51	1.30	0.651
Chlorodibromomethane	124-48-1	1.30	U	6.51	1.30	0.651
Chloroethane	75-00-3	2.60	U	6.51	2.60	1.30
Chloroform	67-66-3	1.30	U	6.51	1.30	0.651
Chloromethane	74-87-3	5.20	U	13.0	5.20	2.60
2-Chlorotoluene	95-49-8	1.30	Q	6.51	1.30	0.651
4-Chlorotoluene	106-43-4	1.30	U	6.51	1.30	0.651
1,2-Dibromo-3-chloropropane	96-12-8	5.20	U	13.0	5.20	2.60
1,2-Dibromoethane	106-93-4	1.30	U	6.51	1.30	0.651
Dibromomethane	74-95-3	1.30	U	6.51	1.30	0.651
1,2-Dichlorobenzene	95-50-1	1.30	U	6.51	1.30	0.651
1,3-Dichlorobenzene	541-73-1	1.30	U	6.51	1.30	0.651
1,4-Dichlorobenzene	106-46-7	1.30	U	6.51	1.30	0.651
Dichlorodifluoromethane	75-71-8	2.60	U	6.51	2.60	1.30
1,1-Dichloroethane	75-34-3	2.60	U	6.51	2.60	1.30
1,2-Dichloroethane	107-06-2	1.30	U	6.51	1.30	0.651
1,1-Dichloroethene	75-35-4	1.30	U	6.51	1.30	0.651

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.30	U	6.51	1.30	0.651
trans-1,2-Dichloroethene	156-60-5	1.30	U	6.51	1.30	0.651
1,2-Dichloropropane	78-87-5	1.30	U	6.51	1.30	0.651
1,3-Dichloropropane	142-28-9	1.30	U	6.51	1.30	0.651
2,2-Dichloropropane	594-20-7	1.30	U	6.51	1.30	0.651
cis-1,3-Dichloropropene	10061-01-5	1.30	U	6.51	1.30	0.651
trans-1,3-Dichloropropene	10061-02-6	1.30	U	6.51	1.30	0.651
1,1-Dichloropropene	563-58-6	1.30	U	6.51	1.30	0.651
Ethylbenzene	100-41-4	1.30	U	6.51	1.30	0.651
2-Hexanone	591-78-6	6.50	U	13.0	6.50	3.25
Hexachlorobutadiene	87-68-3	1.30	U	6.51	1.30	0.651
Isopropylbenzene	98-82-8	1.30	U	6.51	1.30	0.651
p-Isopropyltoluene	99-87-6	1.30	U	6.51	1.30	0.651
4-Methyl-2-pentanone	108-10-1	6.50	U	13.0	6.50	3.25
Methylene chloride	75-09-2	2.60	U	6.51	2.60	1.30
Naphthalene	91-20-3	1.30	U	6.51	1.30	0.651
n-Propylbenzene	103-65-1	1.30	U	6.51	1.30	0.651
Styrene	100-42-5	1.30	U	6.51	1.30	0.651
1,1,1,2-Tetrachloroethane	630-20-6	1.30	U	6.51	1.30	0.651
1,1,2,2-Tetrachloroethane	79-34-5	1.30	U	6.51	1.30	0.651
Tetrachloroethene	127-18-4	1.30	U	6.51	1.30	0.651
Toluene	108-88-3	1.30	U	6.51	1.30	0.651
1,2,3-Trichlorobenzene	87-61-6	1.30	U	6.51	1.30	0.651
1,2,4-Trichlorobenzene	120-82-1	1.30	U	6.51	1.30	0.651
1,1,1-Trichloroethane	71-55-6	1.30	U	6.51	1.30	0.651
1,1,2-Trichloroethane	79-00-5	1.30	U	6.51	1.30	0.651
Trichloroethene	79-01-6	1.30	U	6.51	1.30	0.651
Trichlorofluoromethane	75-69-4	2.60	U	6.51	2.60	1.30
1,2,3-Trichloropropane	96-18-4	2.60	U	6.51	2.60	1.30
1,2,4-Trimethylbenzene	95-63-6	1.30	U	6.51	1.30	0.651
1,3,5-Trimethylbenzene	108-67-8	1.30	U	6.51	1.30	0.651
Vinyl chloride	75-01-4	2.60	U	6.51	2.60	1.30
o-Xylene	95-47-6	1.30	U	6.51	1.30	0.651
m-,p-Xylene	179601-23-1	1.30	U	6.51	1.30	0.651

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	80	120	
1,2-Dichloroethane-d4	108	80	120	
Toluene-d8	113	85	115	
4-Bromofluorobenzene	126	85	120	*

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW19SW(60-61)220416MS	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:38
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG567003	**Analyst:**	ADC	**Run Date:**	04/30/2016 22:50
Collect Date:	04/22/2016 11:15	**Dilution:**	1	**File ID:**	9M974085
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	75.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	31.5		26.6	13.3	6.65
Benzene	71-43-2	22.7		6.65	1.33	0.665
Bromobenzene	108-86-1	26.1		6.65	1.33	0.665
Bromochloromethane	74-97-5	22.9		6.65	2.66	1.33
Bromodichloromethane	75-27-4	23.6		6.65	1.33	0.665
Bromoform	75-25-2	23.9		6.65	1.33	0.665
Bromomethane	74-83-9	25.5		6.65	2.66	1.33
2-Butanone	78-93-3	22.2		13.3	6.66	3.33
n-Butylbenzene	104-51-8	23.6		6.65	1.33	0.665
sec-Butylbenzene	135-98-8	26.8		6.65	1.33	0.665
tert-Butylbenzene	98-06-6	26.9		6.65	1.33	0.665
Carbon disulfide	75-15-0	22.5		6.65	1.33	0.665
Carbon tetrachloride	56-23-5	24.0		6.65	1.33	0.665
Chlorobenzene	108-90-7	24.4		6.65	1.33	0.665
Chlorodibromomethane	124-48-1	23.9		6.65	1.33	0.665
Chloroethane	75-00-3	24.9		6.65	2.66	1.33
Chloroform	67-66-3	24.5		6.65	1.33	0.665
Chloromethane	74-87-3	28.8		13.3	5.32	2.66
2-Chlorotoluene	95-49-8	29.1	Q	6.65	1.33	0.665
4-Chlorotoluene	106-43-4	25.3		6.65	1.33	0.665
1,2-Dibromo-3-chloropropane	96-12-8	27.6		13.3	5.32	2.66
1,2-Dibromoethane	106-93-4	23.6		6.65	1.33	0.665
Dibromomethane	74-95-3	21.6		6.65	1.33	0.665
1,2-Dichlorobenzene	95-50-1	24.3		6.65	1.33	0.665
1,3-Dichlorobenzene	541-73-1	24.2		6.65	1.33	0.665
1,4-Dichlorobenzene	106-46-7	24.2		6.65	1.33	0.665
Dichlorodifluoromethane	75-71-8	27.2		6.65	2.66	1.33
1,1-Dichloroethane	75-34-3	23.1		6.65	2.66	1.33
1,2-Dichloroethane	107-06-2	24.9		6.65	1.33	0.665
1,1-Dichloroethene	75-35-4	22.1		6.65	1.33	0.665

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	24.4		6.65	1.33	0.665
trans-1,2-Dichloroethene	156-60-5	24.0		6.65	1.33	0.665
1,2-Dichloropropane	78-87-5	24.7		6.65	1.33	0.665
1,3-Dichloropropane	142-28-9	25.8		6.65	1.33	0.665
2,2-Dichloropropane	594-20-7	22.4		6.65	1.33	0.665
cis-1,3-Dichloropropene	10061-01-5	23.8		6.65	1.33	0.665
trans-1,3-Dichloropropene	10061-02-6	23.9		6.65	1.33	0.665
1,1-Dichloropropene	563-58-6	22.4		6.65	1.33	0.665
Ethylbenzene	100-41-4	24.1		6.65	1.33	0.665
2-Hexanone	591-78-6	20.3		13.3	6.66	3.33
Hexachlorobutadiene	87-68-3	22.3		6.65	1.33	0.665
Isopropylbenzene	98-82-8	23.8		6.65	1.33	0.665
p-Isopropyltoluene	99-87-6	25.5		6.65	1.33	0.665
4-Methyl-2-pentanone	108-10-1	21.9		13.3	6.66	3.33
Methylene chloride	75-09-2	23.5		6.65	2.66	1.33
Naphthalene	91-20-3	17.7		6.65	1.33	0.665
n-Propylbenzene	103-65-1	26.9		6.65	1.33	0.665
Styrene	100-42-5	21.0		6.65	1.33	0.665
1,1,1,2-Tetrachloroethane	630-20-6	25.5		6.65	1.33	0.665
1,1,2,2-Tetrachloroethane	79-34-5	24.9		6.65	1.33	0.665
Tetrachloroethene	127-18-4	22.6		6.65	1.33	0.665
Toluene	108-88-3	23.8		6.65	1.33	0.665
1,2,3-Trichlorobenzene	87-61-6	17.7		6.65	1.33	0.665
1,2,4-Trichlorobenzene	120-82-1	18.2		6.65	1.33	0.665
1,1,1-Trichloroethane	71-55-6	24.7		6.65	1.33	0.665
1,1,2-Trichloroethane	79-00-5	24.6		6.65	1.33	0.665
Trichloroethene	79-01-6	22.2		6.65	1.33	0.665
Trichlorofluoromethane	75-69-4	24.5		6.65	2.66	1.33
1,2,3-Trichloropropane	96-18-4	27.6		6.65	2.66	1.33
1,2,4-Trimethylbenzene	95-63-6	27.0		6.65	1.33	0.665
1,3,5-Trimethylbenzene	108-67-8	27.2		6.65	1.33	0.665
Vinyl chloride	75-01-4	37.5		6.65	2.66	1.33
o-Xylene	95-47-6	24.9		6.65	1.33	0.665
m-,p-Xylene	179601-23-1	47.8		6.65	1.33	0.665

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	80	120	
1,2-Dichloroethane-d4	110	80	120	
Toluene-d8	111	85	115	
4-Bromofluorobenzene	123	85	120	*

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW19SW(60-61)220416MSD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:39
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG567003	**Analyst:**	ADC	**Run Date:**	04/30/2016 23:20
Collect Date:	04/22/2016 11:15	**Dilution:**	1	**File ID:**	9M974086
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	75.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	35.3		27.2	13.6	6.79
Benzene	71-43-2	25.6		6.79	1.36	0.679
Bromobenzene	108-86-1	28.8		6.79	1.36	0.679
Bromochloromethane	74-97-5	25.0		6.79	2.72	1.36
Bromodichloromethane	75-27-4	26.3		6.79	1.36	0.679
Bromoform	75-25-2	25.6		6.79	1.36	0.679
Bromomethane	74-83-9	26.0		6.79	2.72	1.36
2-Butanone	78-93-3	22.7		13.6	6.80	3.40
n-Butylbenzene	104-51-8	26.1		6.79	1.36	0.679
sec-Butylbenzene	135-98-8	29.7		6.79	1.36	0.679
tert-Butylbenzene	98-06-6	31.4		6.79	1.36	0.679
Carbon disulfide	75-15-0	23.8		6.79	1.36	0.679
Carbon tetrachloride	56-23-5	26.8		6.79	1.36	0.679
Chlorobenzene	108-90-7	27.0		6.79	1.36	0.679
Chlorodibromomethane	124-48-1	27.0		6.79	1.36	0.679
Chloroethane	75-00-3	28.3		6.79	2.72	1.36
Chloroform	67-66-3	27.0		6.79	1.36	0.679
Chloromethane	74-87-3	31.7		13.6	5.44	2.72
2-Chlorotoluene	95-49-8	33.0	Q	6.79	1.36	0.679
4-Chlorotoluene	106-43-4	26.6		6.79	1.36	0.679
1,2-Dibromo-3-chloropropane	96-12-8	29.1		13.6	5.44	2.72
1,2-Dibromoethane	106-93-4	24.8		6.79	1.36	0.679
Dibromomethane	74-95-3	22.3		6.79	1.36	0.679
1,2-Dichlorobenzene	95-50-1	26.3		6.79	1.36	0.679
1,3-Dichlorobenzene	541-73-1	26.7		6.79	1.36	0.679
1,4-Dichlorobenzene	106-46-7	26.6		6.79	1.36	0.679
Dichlorodifluoromethane	75-71-8	29.7		6.79	2.72	1.36
1,1-Dichloroethane	75-34-3	25.4		6.79	2.72	1.36
1,2-Dichloroethane	107-06-2	27.3		6.79	1.36	0.679
1,1-Dichloroethene	75-35-4	25.1		6.79	1.36	0.679

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	26.8		6.79	1.36	0.679
trans-1,2-Dichloroethene	156-60-5	26.4		6.79	1.36	0.679
1,2-Dichloropropane	78-87-5	27.6		6.79	1.36	0.679
1,3-Dichloropropane	142-28-9	29.3		6.79	1.36	0.679
2,2-Dichloropropane	594-20-7	24.5		6.79	1.36	0.679
cis-1,3-Dichloropropene	10061-01-5	26.0		6.79	1.36	0.679
trans-1,3-Dichloropropene	10061-02-6	25.5		6.79	1.36	0.679
1,1-Dichloropropene	563-58-6	25.7		6.79	1.36	0.679
Ethylbenzene	100-41-4	27.0		6.79	1.36	0.679
2-Hexanone	591-78-6	22.1		13.6	6.80	3.40
Hexachlorobutadiene	87-68-3	25.0		6.79	1.36	0.679
Isopropylbenzene	98-82-8	27.0		6.79	1.36	0.679
p-Isopropyltoluene	99-87-6	28.0		6.79	1.36	0.679
4-Methyl-2-pentanone	108-10-1	23.5		13.6	6.80	3.40
Methylene chloride	75-09-2	25.8		6.79	2.72	1.36
Naphthalene	91-20-3	19.0		6.79	1.36	0.679
n-Propylbenzene	103-65-1	30.0		6.79	1.36	0.679
Styrene	100-42-5	22.1		6.79	1.36	0.679
1,1,1,2-Tetrachloroethane	630-20-6	28.9		6.79	1.36	0.679
1,1,2,2-Tetrachloroethane	79-34-5	27.2		6.79	1.36	0.679
Tetrachloroethene	127-18-4	25.3		6.79	1.36	0.679
Toluene	108-88-3	27.4		6.79	1.36	0.679
1,2,3-Trichlorobenzene	87-61-6	18.8		6.79	1.36	0.679
1,2,4-Trichlorobenzene	120-82-1	19.3		6.79	1.36	0.679
1,1,1-Trichloroethane	71-55-6	27.9		6.79	1.36	0.679
1,1,2-Trichloroethane	79-00-5	27.5		6.79	1.36	0.679
Trichloroethene	79-01-6	25.1		6.79	1.36	0.679
Trichlorofluoromethane	75-69-4	26.5		6.79	2.72	1.36
1,2,3-Trichloropropane	96-18-4	28.6		6.79	2.72	1.36
1,2,4-Trimethylbenzene	95-63-6	29.5		6.79	1.36	0.679
1,3,5-Trimethylbenzene	108-67-8	30.2		6.79	1.36	0.679
Vinyl chloride	75-01-4	48.6		6.79	2.72	1.36
o-Xylene	95-47-6	28.3		6.79	1.36	0.679
m-,p-Xylene	179601-23-1	53.9		6.79	1.36	0.679

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	80	120	
1,2-Dichloroethane-d4	108	80	120	
Toluene-d8	112	85	115	
4-Bromofluorobenzene	122	85	120	*

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW19SW(50-50.5)220416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:39
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG567003	**Analyst:**	ADC	**Run Date:**	04/30/2016 22:19
Collect Date:	04/22/2016 11:11	**Dilution:**	1	**File ID:**	9M974084
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	8.75	J	25.4	12.7	6.35
Benzene	71-43-2	1.27	U	6.35	1.27	0.635
Bromobenzene	108-86-1	1.27	U	6.35	1.27	0.635
Bromochloromethane	74-97-5	2.54	U	6.35	2.54	1.27
Bromodichloromethane	75-27-4	1.27	U	6.35	1.27	0.635
Bromoform	75-25-2	1.27	U	6.35	1.27	0.635
Bromomethane	74-83-9	2.54	U	6.35	2.54	1.27
2-Butanone	78-93-3	6.34	U	12.7	6.34	3.17
n-Butylbenzene	104-51-8	1.27	U	6.35	1.27	0.635
sec-Butylbenzene	135-98-8	1.27	U	6.35	1.27	0.635
tert-Butylbenzene	98-06-6	1.27	U	6.35	1.27	0.635
Carbon disulfide	75-15-0	1.27	U	6.35	1.27	0.635
Carbon tetrachloride	56-23-5	1.27	U	6.35	1.27	0.635
Chlorobenzene	108-90-7	1.27	U	6.35	1.27	0.635
Chlorodibromomethane	124-48-1	1.27	U	6.35	1.27	0.635
Chloroethane	75-00-3	2.54	U	6.35	2.54	1.27
Chloroform	67-66-3	1.27	U	6.35	1.27	0.635
Chloromethane	74-87-3	5.08	U	12.7	5.08	2.54
2-Chlorotoluene	95-49-8	1.27	Q	6.35	1.27	0.635
4-Chlorotoluene	106-43-4	1.27	U	6.35	1.27	0.635
1,2-Dibromo-3-chloropropane	96-12-8	5.08	U	12.7	5.08	2.54
1,2-Dibromoethane	106-93-4	1.27	U	6.35	1.27	0.635
Dibromomethane	74-95-3	1.27	U	6.35	1.27	0.635
1,2-Dichlorobenzene	95-50-1	1.27	U	6.35	1.27	0.635
1,3-Dichlorobenzene	541-73-1	1.27	U	6.35	1.27	0.635
1,4-Dichlorobenzene	106-46-7	1.27	U	6.35	1.27	0.635
Dichlorodifluoromethane	75-71-8	2.54	U	6.35	2.54	1.27
1,1-Dichloroethane	75-34-3	2.54	U	6.35	2.54	1.27
1,2-Dichloroethane	107-06-2	1.27	U	6.35	1.27	0.635
1,1-Dichloroethene	75-35-4	1.27	U	6.35	1.27	0.635

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.27	U	6.35	1.27	0.635
trans-1,2-Dichloroethene	156-60-5	1.27	U	6.35	1.27	0.635
1,2-Dichloropropane	78-87-5	1.27	U	6.35	1.27	0.635
1,3-Dichloropropane	142-28-9	1.27	U	6.35	1.27	0.635
2,2-Dichloropropane	594-20-7	1.27	U	6.35	1.27	0.635
cis-1,3-Dichloropropene	10061-01-5	1.27	U	6.35	1.27	0.635
trans-1,3-Dichloropropene	10061-02-6	1.27	U	6.35	1.27	0.635
1,1-Dichloropropene	563-58-6	1.27	U	6.35	1.27	0.635
Ethylbenzene	100-41-4	1.27	U	6.35	1.27	0.635
2-Hexanone	591-78-6	6.34	U	12.7	6.34	3.17
Hexachlorobutadiene	87-68-3	1.27	U	6.35	1.27	0.635
Isopropylbenzene	98-82-8	1.27	U	6.35	1.27	0.635
p-Isopropyltoluene	99-87-6	1.27	U	6.35	1.27	0.635
4-Methyl-2-pentanone	108-10-1	6.34	U	12.7	6.34	3.17
Methylene chloride	75-09-2	2.54	U	6.35	2.54	1.27
Naphthalene	91-20-3	1.27	U	6.35	1.27	0.635
n-Propylbenzene	103-65-1	1.27	U	6.35	1.27	0.635
Styrene	100-42-5	1.27	U	6.35	1.27	0.635
1,1,1,2-Tetrachloroethane	630-20-6	1.27	U	6.35	1.27	0.635
1,1,2,2-Tetrachloroethane	79-34-5	1.27	U	6.35	1.27	0.635
Tetrachloroethene	127-18-4	1.27	U	6.35	1.27	0.635
Toluene	108-88-3	1.27	U	6.35	1.27	0.635
1,2,3-Trichlorobenzene	87-61-6	1.27	U	6.35	1.27	0.635
1,2,4-Trichlorobenzene	120-82-1	1.27	U	6.35	1.27	0.635
1,1,1-Trichloroethane	71-55-6	1.27	U	6.35	1.27	0.635
1,1,2-Trichloroethane	79-00-5	1.27	U	6.35	1.27	0.635
Trichloroethene	79-01-6	1.27	U	6.35	1.27	0.635
Trichlorofluoromethane	75-69-4	2.54	U	6.35	2.54	1.27
1,2,3-Trichloropropane	96-18-4	2.54	U	6.35	2.54	1.27
1,2,4-Trimethylbenzene	95-63-6	1.27	U	6.35	1.27	0.635
1,3,5-Trimethylbenzene	108-67-8	1.27	U	6.35	1.27	0.635
Vinyl chloride	75-01-4	2.54	U	6.35	2.54	1.27
o-Xylene	95-47-6	1.27	U	6.35	1.27	0.635
m-,p-Xylene	179601-23-1	1.27	U	6.35	1.27	0.635

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	80	120	
1,2-Dichloroethane-d4	109	80	120	
Toluene-d8	113	85	115	
4-Bromofluorobenzene	125	85	120	*

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.
VOA Preparation/Preservation/Extraction Log

Batch #: WG566711
Method: 5030B/5030C/5035
Product: 8260

Analyst: AWE
Run Date: 04/28/2016 09:31
Purge and trap methanol COA18540
Purified Lab Sand Lot # COA18552

SAMPLE #	Fraction	Collected	Preserved	PCT-S	Tare Wt	Total Wt	Sample Wt	Water	MeOH	Vt	Comments
L16041344-01	A	04/23/16 09:35	04/28/16 09:31	84.4			0.96	5		5	
L16041344-02	A	04/23/16 10:05	04/28/16 09:20	81.9			4.66	5		5	
L16041344-03	A	04/23/16 10:10	04/28/16 09:21	77.7			4.85	5		5	
L16041344-04	A	04/23/16 13:30	04/28/16 09:21	84.0			4.54	5		5	
L16041344-05	A	04/23/16 13:30	04/28/16 09:22	85.1			4.71	5		5	
L16041344-06	A	04/23/16 14:00	04/28/16 09:23	82.3			4.76	5		5	
L16041344-07	A	04/23/16 14:05	04/28/16 09:25	77.2			5.36	5		5	
L16041344-08	A	04/25/16 09:35	04/28/16 09:26	84.1			4.95	5		5	
L16041344-09	A	04/25/16 09:50	04/28/16 09:27	78.8			4.58	5		5	
L16041344-10	A	04/25/16 10:45	04/28/16 09:28	78.9			5.33	5		5	
L16041344-11	A	04/25/16 11:45	04/28/16 09:28	80.9			4.78	5		5	
L16041344-12	A	04/25/16 12:05	04/28/16 09:29	77.9			5.25	5		5	
L16041344-13	A	04/25/16 12:10	04/28/16 09:29	71.8			4.69	5		5	
L16041344-14	A	04/25/16 12:30	04/28/16 09:30	76.0			4.95	5		5	
L16041363-01	A	04/21/16 17:00	04/28/16 09:33	83.9			4.90	5		5	
L16041363-02	A	04/21/16 17:30	04/28/16 09:33	79.9			5.36	5		5	
L16041363-03	A	04/22/16 09:00	04/28/16 09:34	80.0			4.93	5		5	
L16041363-04	A	04/22/16 09:00	04/28/16 09:35	79.4			4.92	5		5	
L16041363-05	A	04/22/16 09:05	04/28/16 09:36	80.8			5.35	5		5	
L16041363-06	A	04/21/16 18:00	04/28/16 09:36	79.1			4.64	5		5	
L16041363-07	A	04/22/16 11:15	04/28/16 09:37	75.9			5.06	5		5	
L16041363-08	A	04/22/16 11:15	04/28/16 09:38	75.9			4.95	5		5	
L16041363-09	A	04/22/16 11:15	04/28/16 09:39	75.9			4.85	5		5	
L16041363-10	A	04/22/16 11:11	04/28/16 09:39	80.5			4.89	5		5	
WG566711-01	A		04/28/16 12:59	81.9			4.66	5		5	
WG566711-02	A		04/28/16 13:01	81.9			4.93	5		5	
WG566711-03	A		04/28/16 13:02	81.9			4.76	5		5	
WG566711-04	A		04/28/16 12:59	83.9			4.90	5		5	
WG566711-05	A		04/28/16 13:03	83.9			4.82	5		5	
WG566711-06	A		04/28/16 13:04	83.9			4.81	5		5	

Comments:
1 = improperly sealed cap
2 = preserved out of hold
3 = effervesced
4 = preserved with NaHSO4
5 = preserved by freezing
6 = preserved in field

Analyst: Andrew Casey

VOA_EXT - Modified 05/22/2008
PDF ID: 4738634
Report generated: 04/28/2016 13:26

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 012516
Analyst1: ADC Analyst2: NA
Method: 8260B/8260C SOP: MSV01(-C) Rev: 23 (2)
Method: 5030B/5030C/5035 SOP: PAT01 Rev: 18
Method: 624 SOP: MSV10 Rev: 12
Maintenance Log ID:

Internal Standard: STD74414 Surrogate Standard: STD74126
CCV: STD74488 LCS: STD74459 MS/MSD: STD74459

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG555000 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M972470	WG555000-01 BFB 50ng A9	NA	7	1	STD74202	01/25/16 10:27
9M972471	RINSE	NA	7	1		01/25/16 10:52
9M972472	WG555000-02 5ug/Kg STD A9	NA	7	1	STD74406	01/25/16 11:22
9M972473	WG555000-03 20ug/Kg STD A9	NA	7	1	STD74406	01/25/16 11:52
9M972474	WG555000-04 50ug/Kg STD A9	NA	7	1	STD74406	01/25/16 12:23
9M972475	WG555000-05 100ug/Kg STD A9	NA	7	1	STD74406	01/25/16 12:53
9M972476	WG555000-06 200ug/Kg STD A9	NA	7	1	STD74406	01/25/16 13:23
9M972477	WG555000-07 300ug/Kg STD A9	NA	7	1	STD74406	01/25/16 13:54
9M972478	WG555000-08 400ug/Kg STD A9	NA	7	1	STD74406	01/25/16 14:25
9M972479	WG555000-09 500ug/Kg STD A9	NA	7	1	STD74406	01/25/16 14:56
9M972480	RINSE	NA	7	1		01/25/16 15:26
9M972481	WG555000-10 100ug/Kg ICV A9	NA	7	1	STD74461	01/25/16 15:56
9M972482	RINSE	NA	7	1		01/25/16 16:28

Approved: January 29, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 040616
Analyst1: ADC Analyst2: NA
Method: 8260 SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD75190 Surrogate Standard: STD75211
CCV: STD75238 LCS: STD75404 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG563259 (ICAL)

Comments: Reanalyzed 100, 200, and 300 ug/kg points.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M973592	WG563259-01 BFB 50ng 8260	NA	7	1	STD75485	04/06/16 09:33
9M973593	RINSE	NA	7	1	STD75238	04/06/16 09:58
9M973594	WG563259-02 50ug/L CCV STD 8260	NA	7	1	STD75238	04/06/16 10:29
9M973595	RINSE	NA	7	1		04/06/16 11:00
9M973596	WG563259-03 0.5ug/kg STD 8260	NA	7	1	STD75238	04/06/16 11:31
9M973597	WG563259-04 1.0ug/kg STD 8260	NA	7	1	STD75238	04/06/16 12:02
9M973598	WG563259-05 2.0ug/kg STD 8260	NA	7	1	STD75238	04/06/16 12:32
9M973599	WG563259-06 5.0ug/kg STD 8260	NA	7	1	STD75238	04/06/16 13:03
9M973600	WG563259-07 20.0ug/kg STD 8260	NA	7	1	STD75238	04/06/16 13:33
9M973601	WG563259-08 100.0ug/kg STD 8260	NA	7	1	STD75238	04/06/16 14:04
9M973602	WG563259-09 200.0ug/kg STD 8260	NA	7	1	STD75238	04/06/16 14:35
9M973603	WG563259-10 300.0ug/kg STD 8260	NA	7	1	STD75238	04/06/16 15:05
9M973604	RINSE	NA	7	1	STD75238	04/06/16 15:36
9M973605	WG563259-08 100.0ug/kg STD 8260	NA	7	1	STD75238	04/06/16 16:15
9M973606	WG563259-09 200.0ug/kg STD 8260	NA	7	1	STD75238	04/06/16 16:46
9M973607	WG563259-10 300.0ug/kg STD 8260	NA	7	1	STD75238	04/06/16 17:16
9M973608	RINSE	NA	7	1		04/06/16 17:47
9M973609	WG563259-11 50.0ug/kg ALTSRC 8260	NA	7	1	STD75404	04/06/16 18:18

Approved: April 08, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 043016
Analyst1: ADC Analyst2: NA
Method: 8260 SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD75711 Surrogate Standard: STD75710
CCV: STD75824 LCS: STD75739 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG567003

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M974065	WG567052-01 BFB 50ng 8260	NA	7	1	STD75485	04/30/16 12:43
9M974066	WG567052-02 50ug/kg CCV STD 8260	NA	7	1	STD75238	04/30/16 13:10
9M974067	WG567052-02 50ug/kg CCV STD 8260	NA	7	1	STD75238	04/30/16 13:43
9M974068	WGXXXXXX-01 A9FOO 100ug/kg	NA	7	1	STDXXXXX	04/30/16 14:15
9M974069	WG567003-01 BLK 8260	NA	7	1		04/30/16 14:45
9M974070	L16040796-06 A 826-REF-BLK	NA	7	1		04/30/16 15:16
9M974071	L16040796-07 A 826-REF-BLK	NA	7	1		04/30/16 15:46
9M974072	L16040796-08 A 826-REF-BLK	NA	7	1		04/30/16 16:16
9M974073	L16040796-09 A 826-REF-BLK	NA	7	1		04/30/16 16:47
9M974074	WG567003-02 20ug/kg LCS 8260	NA	7	1	STD75739	04/30/16 17:17
9M974075	RINSE	NA	7	1		04/30/16 17:48
9M974076	L16041344-01 B 8260 4.87g	NA	7	1		04/30/16 18:18
9M974077	L16041363-01 A 8260 4.90g	NA	7	1		04/30/16 18:48
9M974078	L16041363-02 A 8260 5.36g	NA	7	1		04/30/16 19:18
9M974079	L16041363-03 A 8260 4.93g	NA	7	1		04/30/16 19:48
9M974080	L16041363-04 A 8260 4.92g	NA	7	1		04/30/16 20:18
9M974081	L16041363-05 A 8260 5.35g	NA	7	1		04/30/16 20:48
9M974082	L16041363-06 A 8260 4.64g	NA	7	1		04/30/16 21:19
9M974083	L16041363-07 A RS 8260 5.06g	NA	7	1		04/30/16 21:49
9M974084	L16041363-10 A 8260 4.89g	NA	7	1		04/30/16 22:19
9M974085	L16041363-08 A MS 8260 4.95g	NA	7	1		04/30/16 22:50
9M974086	L16041363-09 A MSD 8260 4.85g	NA	7	1		04/30/16 23:20
9M974087	RINSE	NA	7	1		04/30/16 23:50
9M974088	H20	NA	7	1		05/02/16 10:06
9M974089	H20 W/ MeOH	NA	7	1		05/02/16 10:36
9M974090	H20	NA	7	1		05/02/16 11:06
9M974091	SAND	NA	7	1		05/02/16 11:37
9M974092	SAND W/MeOH	NA	7	1		05/02/16 12:08

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
File ID: 9M974066				

Approved: May 06, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 043016

Analyst1: ADC Analyst2: NA

Method: 8260 SOP: MSV01 Rev: 23

Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD75711 Surrogate Standard: STD75710

CCV: STD75824 LCS: STD75739 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG567003

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			WG567052-02 fails VC. RR.	

Approved: May 06, 2016

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 25-JAN-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 72995
Analytical Workgroups: WG555000

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
28-JAN-2016

Secondary Reviewer:
29-JAN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JAN-29-2016 16:00:23

Microbac Laboratories Inc.

Data Checklist

Date: 06-APR-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: WG563259
Runlog ID: 74305
Analytical Workgroups:

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
08-APR-2016

Secondary Reviewer:
08-APR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: APR-08-2016 15:40:41

Microbac Laboratories Inc.

Data Checklist

Date: 30-APR-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 74887
Analytical Workgroups: WG567003

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
04-MAY-2016

Secondary Reviewer:
06-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-06-2016 11:05:37

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG567003

Login Number: L16041363

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW19SW(5-5.5)210416	01	04/21/16					04/28/2016	6.7	14		04/30/16	9.1	14	
18CPTMW19SW(10-10.5)2104	02	04/21/16					04/28/2016	6.7	14		04/30/16	9.1	14	
18CPTMW19SW(30-30.5)2204	03	04/22/16					04/28/2016	6	14		04/30/16	8.5	14	
18CPTMW19SW(30-30.5)2204	04	04/22/16					04/28/2016	6	14		04/30/16	8.5	14	
18CPTMW19SW(40-40.5)2204	05	04/22/16					04/28/2016	6	14		04/30/16	8.5	14	
18CPTMW19SW(20-20.5)2204	06	04/21/16					04/28/2016	6.7	14		04/30/16	9.1	14	
18CPTMW19SW(60-61)220416	07	04/22/16					04/28/2016	5.9	14		04/30/16	8.4	14	
18CPTMW19SW(60-61)220416	08	04/22/16					04/28/2016	5.9	14		04/30/16	8.5	14	
18CPTMW19SW(60-61)220416	09	04/22/16					04/28/2016	5.9	14		04/30/16	8.5	14	
18CPTMW19SW(50-50.5)2204	10	04/22/16					04/28/2016	5.9	14		04/30/16	8.5	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4747129
Report generated 05/10/2016 13:22

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16041363
Instrument Id: HPMS9
Workgroup (AAB#): WG567003

Method: 8260
CAL ID: HPMS9-06-APR-16
Matrix: Soil

Sample Number	Dilution	Tag	1	2	3	4
L16041363-01	1.00	01	109	105	126	113
L16041363-02	1.00	01	107	101	120	111
L16041363-03	1.00	01	121	107	123	111
L16041363-04	1.00	01	122	108	125	110
L16041363-05	1.00	01	119	106	125	111
L16041363-06	1.00	01	109	105	121	112
L16041363-07	1.00	01	108	104	126	113
L16041363-08	1.00	01	110	105	123	111
L16041363-09	1.00	01	108	105	122	112
L16041363-10	1.00	01	109	104	125	113
WG567003-01	1.00	01	108	104	124	112
WG567003-02	1.00	01	112	108	121	112

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	80	-	120
2 - Dibromofluoromethane	80	-	120
3 - 4-Bromofluorobenzene	85	-	120
4 - Toluene-d8	85	-	115

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4747140
Report generated: 05/10/2016 13:22

METHOD BLANK SUMMARY

Login Number: L16041363
Blank File ID: 9M974069
Prep Date: 04/30/16 14:45
Analyzed Date: 04/30/16 14:45
Analyst: ADC

Work Group: WG567003
Blank Sample ID: WG567003-01
Instrument ID: HPMS9
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG567003-02	9M974074	04/30/16 17:17	01
18CPTMW19SW(5-5.5)210416	L16041363-01	9M974077	04/30/16 18:48	01
18CPTMW19SW(10-10.5)210416	L16041363-02	9M974078	04/30/16 19:18	01
18CPTMW19SW(30-30.5)220416	L16041363-03	9M974079	04/30/16 19:48	01
18CPTMW19SW(30-30.5)220416DUP	L16041363-04	9M974080	04/30/16 20:18	01
18CPTMW19SW(40-40.5)220416	L16041363-05	9M974081	04/30/16 20:48	01
18CPTMW19SW(20-20.5)220416	L16041363-06	9M974082	04/30/16 21:19	01
18CPTMW19SW(60-61)220416	L16041363-07	9M974083	04/30/16 21:49	01
18CPTMW19SW(50-50.5)220416	L16041363-10	9M974084	04/30/16 22:19	01
18CPTMW19SW(60-61)220416MS	L16041363-08	9M974085	04/30/16 22:50	01
18CPTMW19SW(60-61)220416MSD	L16041363-09	9M974086	04/30/16 23:20	01

Report Name: BLANK_SUMMARY
PDF File ID: 4747130
Report generated 05/10/2016 13:22

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16041363 Prep Date: 04/30/16 14:45 Sample ID: WG567003-01
Instrument ID: HPMS9 Run Date: 04/30/16 14:45 Prep Method: 5030B/5030C/503
File ID: 9M974069 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG567003 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-06-APR-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	5.00	20.0	5.00	1	U
Benzene	0.500	5.00	0.500	1	U
Bromobenzene	0.500	5.00	0.500	1	U
Bromochloromethane	1.00	5.00	1.00	1	U
Bromodichloromethane	0.500	5.00	0.500	1	U
Bromoform	0.500	5.00	0.500	1	U
Bromomethane	1.00	5.00	1.00	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.500	5.00	0.500	1	U
sec-Butylbenzene	0.500	5.00	0.500	1	U
tert-Butylbenzene	0.500	5.00	0.500	1	U
Carbon disulfide	0.500	5.00	0.500	1	U
Carbon tetrachloride	0.500	5.00	0.500	1	U
Chlorobenzene	0.500	5.00	0.500	1	U
Chlorodibromomethane	0.500	5.00	0.500	1	U
Chloroethane	1.00	5.00	1.00	1	U
Chloroform	0.500	5.00	0.500	1	U
Chloromethane	2.00	10.0	2.00	1	U
2-Chlorotoluene	0.500	5.00	0.500	1	U
4-Chlorotoluene	0.500	5.00	0.500	1	U
1,2-Dibromo-3-chloropropane	2.00	10.0	2.00	1	U
1,2-Dibromoethane	0.500	5.00	0.500	1	U
Dibromomethane	0.500	5.00	0.500	1	U
1,2-Dichlorobenzene	0.500	5.00	0.500	1	U
1,3-Dichlorobenzene	0.500	5.00	0.500	1	U
1,4-Dichlorobenzene	0.500	5.00	0.500	1	U
Dichlorodifluoromethane	1.00	5.00	1.00	1	U
1,1-Dichloroethane	1.00	5.00	1.00	1	U
1,2-Dichloroethane	0.500	5.00	0.500	1	U
1,1-Dichloroethene	0.500	5.00	0.500	1	U
cis-1,2-Dichloroethene	0.500	5.00	0.500	1	U
trans-1,2-Dichloroethene	0.500	5.00	0.500	1	U
1,2-Dichloropropane	0.500	5.00	0.500	1	U
1,3-Dichloropropane	0.500	5.00	0.500	1	U
2,2-Dichloropropane	0.500	5.00	0.500	1	U
cis-1,3-Dichloropropene	0.500	5.00	0.500	1	U
trans-1,3-Dichloropropene	0.500	5.00	0.500	1	U
1,1-Dichloropropene	0.500	5.00	0.500	1	U
Ethylbenzene	0.500	5.00	0.500	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.500	5.00	0.500	1	U
Isopropylbenzene	0.500	5.00	0.500	1	U

Report Name:BLANK
PDF ID: 4747131
10-MAY-2016 13:22

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16041363 Prep Date: 04/30/16 14:45 Sample ID: WG567003-01
Instrument ID: HPMS9 Run Date: 04/30/16 14:45 Prep Method: 5030B/5030C/503
File ID: 9M974069 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG567003 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-06-APR-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.500	5.00	0.500	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	1.00	5.00	1.00	1	U
Naphthalene	0.500	5.00	0.500	1	U
n-Propylbenzene	0.500	5.00	0.500	1	U
Styrene	0.500	5.00	0.500	1	U
1,1,1,2-Tetrachloroethane	0.500	5.00	0.500	1	U
1,1,2,2-Tetrachloroethane	0.500	5.00	0.500	1	U
Tetrachloroethene	0.500	5.00	0.500	1	U
Toluene	0.500	5.00	0.500	1	U
1,2,3-Trichlorobenzene	0.500	5.00	0.500	1	U
1,2,4-Trichlorobenzene	0.500	5.00	0.500	1	U
1,1,1-Trichloroethane	0.500	5.00	0.500	1	U
1,1,2-Trichloroethane	0.500	5.00	0.500	1	U
Trichloroethene	0.500	5.00	0.500	1	U
Trichlorofluoromethane	1.00	5.00	1.00	1	U
1,2,3-Trichloropropane	1.00	5.00	1.00	1	U
1,2,4-Trimethylbenzene	0.500	5.00	0.500	1	U
1,3,5-Trimethylbenzene	0.500	5.00	0.500	1	U
Vinyl chloride	1.00	5.00	1.00	1	U
o-Xylene	0.500	5.00	0.500	1	U
m-,p-Xylene	0.500	5.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	104	80 - 120	PASS
1,2-Dichloroethane-d4	108	80 - 120	PASS
Toluene-d8	112	85 - 115	PASS
4-Bromofluorobenzene	124	85 - 120	FAIL

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4747131
10-MAY-2016 13:22

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16041363 | Run Date: 04/30/2016 | Sample ID: WG567003-02
Instrument ID: HPMS9 | Run Time: 17:17 | Prep Method: 5030B/5030C/503
File ID: 9M974074 | Analyst: ADC | Method: 8260B
Workgroup (AAB#): WG567003 | Matrix: Soil | Units: ug/kg
QC Key: DOD4 | Lot#: STD75739 | Cal ID: HPMS9-06-APR-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	15.5	77.6	20 - 160	
Benzene	20.0	16.5	82.6	75 - 125	
Bromobenzene	20.0	19.1	95.6	65 - 120	
Bromochloromethane	20.0	17.1	85.4	70 - 125	
Bromodichloromethane	20.0	16.7	83.4	70 - 130	
Bromoform	20.0	17.9	89.5	55 - 135	
Bromomethane	20.0	17.3	86.4	30 - 160	
2-Butanone	20.0	18.1	90.7	30 - 160	
n-Butylbenzene	20.0	17.1	85.5	65 - 140	
sec-Butylbenzene	20.0	18.7	93.5	65 - 130	
tert-Butylbenzene	20.0	19.6	98.0	65 - 130	
Carbon disulfide	20.0	15.3	76.6	45 - 160	
Carbon tetrachloride	20.0	16.9	84.3	65 - 135	
Chlorobenzene	20.0	17.8	89.2	75 - 125	
Chlorodibromomethane	20.0	18.1	90.7	65 - 130	
Chloroethane	20.0	17.7	88.6	40 - 155	
Chloroform	20.0	16.9	84.5	70 - 125	
Chloromethane	20.0	21.5	108	50 - 130	
2-Chlorotoluene	20.0	21.1	105	70 - 130	
4-Chlorotoluene	20.0	17.8	89.0	75 - 125	
1,2-Dibromo-3-chloropropane	20.0	22.9	114	40 - 135	
1,2-Dibromoethane	20.0	18.2	91.0	70 - 125	
Dibromomethane	20.0	16.3	81.6	75 - 130	
1,2-Dichlorobenzene	20.0	18.2	91.0	75 - 120	
1,3-Dichlorobenzene	20.0	18.0	89.9	70 - 125	
1,4-Dichlorobenzene	20.0	18.4	92.2	70 - 125	
Dichlorodifluoromethane	20.0	19.3	96.3	35 - 135	
1,1-Dichloroethane	20.0	16.4	82.2	75 - 125	
1,2-Dichloroethane	20.0	18.0	90.2	70 - 135	
1,1-Dichloroethene	20.0	15.9	79.5	65 - 135	
cis-1,2-Dichloroethene	20.0	17.4	86.9	65 - 125	
trans-1,2-Dichloroethene	20.0	17.2	85.8	65 - 135	
1,2-Dichloropropane	20.0	17.4	86.8	70 - 120	
1,3-Dichloropropane	20.0	19.6	97.9	75 - 125	
2,2-Dichloropropane	20.0	16.8	84.2	65 - 135	
cis-1,3-Dichloropropene	20.0	17.8	88.8	70 - 125	
trans-1,3-Dichloropropene	20.0	18.1	90.5	65 - 125	
1,1-Dichloropropene	20.0	16.2	81.1	70 - 135	
Ethylbenzene	20.0	17.5	87.4	75 - 125	
2-Hexanone	20.0	16.7	83.7	45 - 145	
Hexachlorobutadiene	20.0	17.0	85.1	55 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4747132
Report generated: 05/10/2016 13:22

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16041363 | Run Date: 04/30/2016 | Sample ID: WG567003-02
Instrument ID: HPMS9 | Run Time: 17:17 | Prep Method: 5030B/5030C/503
File ID: 9M974074 | Analyst: ADC | Method: 8260B
Workgroup (AAB#): WG567003 | Matrix: Soil | Units: ug/kg
QC Key: DOD4 | Lot#: STD75739 | Cal ID: HPMS9-06-APR-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	17.1	85.7	75 - 130	
p-Isopropyltoluene	20.0	18.0	90.1	75 - 135	
4-Methyl-2-pentanone	20.0	17.5	87.7	45 - 145	
Methylene chloride	20.0	16.9	84.5	55 - 140	
Naphthalene	20.0	18.6	92.9	40 - 125	
n-Propylbenzene	20.0	19.2	96.2	65 - 135	
Styrene	20.0	16.5	82.5	75 - 125	
1,1,1,2-Tetrachloroethane	20.0	18.8	93.8	75 - 125	
1,1,2,2-Tetrachloroethane	20.0	18.6	92.8	55 - 130	
Tetrachloroethene	20.0	16.4	81.8	65 - 140	
Toluene	20.0	17.4	86.8	70 - 125	
1,2,3-Trichlorobenzene	20.0	17.3	86.6	60 - 135	
1,2,4-Trichlorobenzene	20.0	15.8	79.1	65 - 130	
1,1,1-Trichloroethane	20.0	17.3	86.6	70 - 135	
1,1,2-Trichloroethane	20.0	18.3	91.6	60 - 125	
Trichloroethene	20.0	16.3	81.6	75 - 125	
Trichlorofluoromethane	20.0	17.0	85.2	25 - 185	
1,2,3-Trichloropropane	20.0	21.0	105	65 - 130	
1,2,4-Trimethylbenzene	20.0	18.9	94.7	65 - 135	
1,3,5-Trimethylbenzene	20.0	19.0	95.1	65 - 135	
Vinyl chloride	20.0	21.6	108	60 - 125	
o-Xylene	20.0	18.0	90.2	75 - 125	
m-,p-Xylene	40.0	34.0	84.9	80 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	108	80 - 120	PASS
1,2-Dichloroethane-d4	112	80 - 120	PASS
Toluene-d8	112	85 - 115	PASS
4-Bromofluorobenzene	121	85 - 120	FAIL

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
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Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16041363 Cal ID: HPMS9- 06-APR-16 Worknum: WG567003

Instrument ID: HPMS9 Contract #: Prep Method: 5030B/5030C/

Parent ID: L16041363-07 File ID: 9M974083 Dil: 1 Method: 5035A

Sample ID: L16041363-08 MS File ID: 9M974085 Dil: 1 Matrix: 8260B

Sample ID: L16041363-09 MSD File ID: 9M974086 Dil: 1 Units: Soil

Percent Solid: ug/kg 75.9

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,1,1,2-Tetrachloroethane	U	26.6	25.5	95.9	27.2	28.9	106	12.3	75 - 125	30	
1,1,1-Trichloroethane	U	26.6	24.7	93	27.2	27.9	103	12.1	70 - 135	30	
1,1,2,2-Tetrachloroethane	U	26.6	24.9	93.5	27.2	27.2	100	8.79	55 - 130	30	
1,1,2-Trichloroethane	U	26.6	24.6	92.4	27.2	27.5	101	11.3	60 - 125	30	
1,1-Dichloroethane	U	26.6	23.1	86.7	27.2	25.4	93.5	9.59	75 - 125	30	
1,1-Dichloroethene	U	26.6	22.1	83.2	27.2	25.1	92.2	12.3	65 - 135	30	
1,1-Dichloropropene	U	26.6	22.4	84.2	27.2	25.7	94.7	13.7	70 - 135	30	
1,2,3-Trichlorobenzene	U	26.6	17.7	66.6	27.2	18.8	69.3	6.07	60 - 135	30	
1,2,3-Trichloropropane	U	26.6	27.6	104	27.2	28.6	105	3.62	65 - 130	30	
1,2,4-Trichlorobenzene	U	26.6	18.2	68.2	27.2	19.3	71	6.02	65 - 130	30	
1,2,4-Trimethylbenzene	U	26.6	27.0	101	27.2	29.5	109	9.01	65 - 135	30	
1,2-Dibromo-3-chloropropane	U	26.6	27.6	104	27.2	29.1	107	5.45	40 - 135	30	
1,2-Dibromoethane	U	26.6	23.6	88.8	27.2	24.8	91.2	4.70	70 - 125	30	
1,2-Dichlorobenzene	U	26.6	24.3	91.5	27.2	26.3	97	7.90	75 - 120	30	
1,2-Dichloroethane	U	26.6	24.9	93.7	27.2	27.3	100	9.05	70 - 135	30	
1,2-Dichloropropane	U	26.6	24.7	92.7	27.2	27.6	102	11.4	70 - 120	30	
1,3,5-Trimethylbenzene	U	26.6	27.2	102	27.2	30.2	111	10.6	65 - 135	30	
1,3-Dichlorobenzene	U	26.6	24.2	90.9	27.2	26.7	98.3	9.86	70 - 125	30	
1,3-Dichloropropane	U	26.6	25.8	97	27.2	29.3	108	12.7	75 - 125	30	
1,4-Dichlorobenzene	U	26.6	24.2	91	27.2	26.6	98.1	9.55	70 - 125	30	
2,2-Dichloropropane	U	26.6	22.4	84.3	27.2	24.5	90.1	8.73	65 - 135	30	
2-Butanone	U	26.6	22.2	83.5	27.2	22.7	83.7	2.22	30 - 160	30	
2-Chlorotoluene	U	26.6	29.1	109	27.2	33.0	121	12.7	70 - 130	30	
2-Hexanone	U	26.6	20.3	76.5	27.2	22.1	81.2	8.11	45 - 145	30	
4-Chlorotoluene	U	26.6	25.3	95	27.2	26.6	97.8	4.92	75 - 125	30	
4-Methyl-2-pentanone	U	26.6	21.9	82.2	27.2	23.5	86.6	7.15	45 - 145	30	
Acetone	8.63	26.6	31.5	85.9	27.2	35.3	98.4	11.6	20 - 160	30	
Benzene	U	26.6	22.7	85.3	27.2	25.6	94.2	12.0	75 - 125	30	
Bromobenzene	U	26.6	26.1	98	27.2	28.8	106	9.99	65 - 120	30	
Bromochloromethane	U	26.6	22.9	86	27.2	25.0	92.2	8.95	70 - 125	30	
Bromodichloromethane	U	26.6	23.6	88.6	27.2	26.3	97	11.1	70 - 130	30	
Bromoform	U	26.6	23.9	89.6	27.2	25.6	94.2	7.01	55 - 135	30	
Bromomethane	U	26.6	25.5	95.9	27.2	26.0	95.8	1.92	30 - 160	30	
Carbon disulfide	U	26.6	22.5	84.7	27.2	23.8	87.7	5.60	45 - 160	30	
Carbon tetrachloride	U	26.6	24.0	90.2	27.2	26.8	98.8	11.2	65 - 135	30	
Chlorobenzene	U	26.6	24.4	91.8	27.2	27.0	99.3	9.88	75 - 125	30	
Chloroethane	U	26.6	24.9	93.6	27.2	28.3	104	12.7	40 - 155	30	
Chloroform	U	26.6	24.5	92.2	27.2	27.0	99.2	9.41	70 - 125	30	
Chloromethane	U	26.6	28.8	108	27.2	31.7	117	9.83	50 - 130	30	
cis-1,2-Dichloroethene	U	26.6	24.4	91.8	27.2	26.8	98.7	9.30	65 - 125	30	
cis-1,3-Dichloropropene	U	26.6	23.8	89.6	27.2	26.0	95.7	8.61	70 - 125	30	

MS_MSD - Modified 03/06/2008
PDF File ID: 4747133
Report generated 05/04/2016 15:36

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16041363 Cal ID: HPMS9 06-APR-16 Worknum: WG567003

Instrument ID: HPMS9 Contract #: Prep Method: 5030B/5030C/

Parent ID: L16041363-07 File ID: 9M974083 Dil: 1 Method: 5035A

Sample ID: L16041363-08 MS File ID: 9M974085 Dil: 1 Matrix: 8260B

Sample ID: L16041363-09 MSD File ID: 9M974086 Dil: 1 Units: Soil

Percent Solid: ug/kg 75.9

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chlorodibromomethane	U	26.6	23.9	89.9	27.2	27.0	99.5	12.1	65 - 130	30	
Dibromomethane	U	26.6	21.6	81.2	27.2	22.3	82	3.05	75 - 130	30	
Dichlorodifluoromethane	U	26.6	27.2	102	27.2	29.7	109	8.59	35 - 135	30	
Ethylbenzene	U	26.6	24.1	90.4	27.2	27.0	99.4	11.6	75 - 125	30	
Hexachlorobutadiene	U	26.6	22.3	83.9	27.2	25.0	91.9	11.2	55 - 140	30	
Isopropylbenzene	U	26.6	23.8	89.4	27.2	27.0	99.4	12.6	75 - 130	30	
m-,p-Xylene	U	53.2	47.8	89.8	54.3	53.9	99.2	12.0	80 - 125	30	
Methylene chloride	U	26.6	23.5	88.5	27.2	25.8	95	9.20	55 - 140	30	
n-Butylbenzene	U	26.6	23.6	88.5	27.2	26.1	96.2	10.4	65 - 140	30	
n-Propylbenzene	U	26.6	26.9	101	27.2	30.0	110	10.8	65 - 135	30	
Naphthalene	U	26.6	17.7	66.4	27.2	19.0	70.1	7.51	40 - 125	30	
o-Xylene	U	26.6	24.9	93.4	27.2	28.3	104	12.9	75 - 125	30	
p-Isopropyltoluene	U	26.6	25.5	95.7	27.2	28.0	103	9.39	75 - 135	30	
sec-Butylbenzene	U	26.6	26.8	101	27.2	29.7	109	10.2	65 - 130	30	
Styrene	U	26.6	21.0	79.1	27.2	22.1	81.2	4.75	75 - 125	30	
tert-Butylbenzene	U	26.6	26.9	101	27.2	31.4	115	15.2	65 - 130	30	
Tetrachloroethene	U	26.6	22.6	84.8	27.2	25.3	93.1	11.4	65 - 140	30	
Toluene	U	26.6	23.8	89.3	27.2	27.4	101	14.0	70 - 125	30	
trans-1,2-Dichloroethene	U	26.6	24.0	90	27.2	26.4	97.3	9.87	65 - 135	30	
trans-1,3-Dichloropropene	U	26.6	23.9	89.9	27.2	25.5	94.1	6.51	65 - 125	30	
Trichloroethene	U	26.6	22.2	83.4	27.2	25.1	92.5	12.4	75 - 125	30	
Trichlorofluoromethane	U	26.6	24.5	91.9	27.2	26.5	97.5	7.92	25 - 185	30	
Vinyl chloride	U	26.6	37.5	141	27.2	48.6	179	25.6	60 - 125	30	*

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4747133
Report generated 05/04/2016 15:36

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16041363
Instrument: HPMS9
Analyst: FJB
Workgroup: WG555000

Tune ID: WG555000-01
Run Date: 01/25/2016
Run Time: 10:27
File ID: 9M972470
Cal ID: HPMS9 - 25-JAN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	23.0	10289	PASS
75.0	95.0	30.0	60.0	49.3	22030	PASS
95.0	95.0	100	100	100	44728	PASS
96.0	95.0	5.00	9.00	6.98	3122	PASS
173	174	0	2.00	0.381	160	PASS
174	95.0	50.0	100	93.9	41989	PASS
175	174	5.00	9.00	6.62	2778	PASS
176	174	95.0	101	95.6	40133	PASS
177	176	5.00	9.00	6.39	2564	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG555000-02	STD-S	01	01/25/2016 11:22	
WG555000-03	STD-S	01	01/25/2016 11:52	
WG555000-04	STD-S	01	01/25/2016 12:23	
WG555000-05	STD-CCV-S	01	01/25/2016 12:53	
WG555000-06	STD-S	01	01/25/2016 13:23	
WG555000-07	STD-S	01	01/25/2016 13:54	
WG555000-08	STD-S	01	01/25/2016 14:25	
WG555000-09	STD-S	01	01/25/2016 14:56	
WG555000-10	SSCV-S	01	01/25/2016 15:56	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4747137
Report generated 05/10/2016 13:22

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16041363
Instrument: HPMS9
Analyst: ADC
Workgroup: WG563259

Tune ID: WG563259-01
Run Date: 04/06/2016
Run Time: 09:33
File ID: 9M973592
Cal ID: HPMS9 - 06-APR-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.9	9512	PASS
75.0	95.0	30.0	60.0	46.0	20002	PASS
95.0	95.0	100	100	100	43469	PASS
96.0	95.0	5.00	9.00	6.46	2809	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	91.3	39688	PASS
175	174	5.00	9.00	7.37	2925	PASS
176	174	95.0	101	96.9	38458	PASS
177	176	5.00	9.00	6.59	2534	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG563259-02	STD-CCV-S	01	04/06/2016 10:29	
WG563259-03	STD-S	01	04/06/2016 11:31	
WG563259-04	STD-S	01	04/06/2016 12:02	
WG563259-05	STD-S	01	04/06/2016 12:32	
WG563259-06	STD-S	01	04/06/2016 13:03	
WG563259-07	STD-S	01	04/06/2016 13:33	
WG563259-08	STD-S	01	04/06/2016 16:15	
WG563259-09	STD-S	01	04/06/2016 16:46	
WG563259-10	STD-S	01	04/06/2016 17:16	
WG563259-11	SSCV-S	01	04/06/2016 18:18	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
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Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16041363
Instrument: HPMS9
Analyst: ADC
Workgroup: WG567052

Tune ID: WG567052-01
Run Date: 04/30/2016
Run Time: 12:43
File ID: 9M974065
Cal ID: HPMS9 - 06-APR-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.9	8872	PASS
75.0	95.0	30.0	60.0	46.1	19506	PASS
95.0	95.0	100	100	100	42357	PASS
96.0	95.0	5.00	9.00	6.35	2690	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	89.4	37858	PASS
175	174	5.00	9.00	6.85	2593	PASS
176	174	95.0	101	97.4	36877	PASS
177	176	5.00	9.00	6.48	2391	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG567052-02	CCV-S	01	04/30/2016 13:43	
WG567003-01	BLANK	01	04/30/2016 14:45	
WG567003-02	LCS	01	04/30/2016 17:17	
L16041363-01	18CPTMW19SW(5-5.5)210416	01	04/30/2016 18:48	
L16041363-02	18CPTMW19SW(10-10.5)210416	01	04/30/2016 19:18	
L16041363-03	18CPTMW19SW(30-30.5)220416	01	04/30/2016 19:48	
L16041363-04	18CPTMW19SW(30-30.5)220416DUP	01	04/30/2016 20:18	
L16041363-05	18CPTMW19SW(40-40.5)220416	01	04/30/2016 20:48	
L16041363-06	18CPTMW19SW(20-20.5)220416	01	04/30/2016 21:19	
L16041363-07	18CPTMW19SW(60-61)220416	01	04/30/2016 21:49	
L16041363-10	18CPTMW19SW(50-50.5)220416	01	04/30/2016 22:19	
L16041363-08	18CPTMW19SW(60-61)220416MS	01	04/30/2016 22:50	
L16041363-09	18CPTMW19SW(60-61)220416MSD	01	04/30/2016 23:20	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4747137
Report generated 05/10/2016 13:22

Calibration Table Report
Method: A9FOO_SL.M
Title: FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Calibration: Wed Jan 27 09:49:02 2016
Curve: WG555000
Calibration Files

Compound	5 9M972472.D	20 9M972473.D	50 9M972474.D	100 9M972475.D	200 9M972476.D	300 9M972477.D	400 9M972478.D	500 9M972479.D	Avg	%RSD	R^2 Linear
Fluorobenzene	ISTD										
Acetonitrile		0.053	0.046	0.048	0.052	0.046	0.052	0.054	0.050	6.657	
3-Chloro-1-propene	0.498	0.524	0.450	0.519	0.514	0.434	0.507	0.503	0.494	6.719	
2-Chloro-1,3-butadiene	0.534	0.576	0.519	0.592	0.585	0.509	0.593	0.584	0.561	6.202	
Ethyl Acetate		0.333	0.313	0.339	0.338	0.300	0.341	0.344	0.330	5.124	
Methacrylonitrile	0.102	0.109	0.101	0.112	0.110	0.096	0.112	0.112	0.107	5.912	
Isobutyl Alcohol	0.014	0.018	0.018	0.021	0.024	0.021	0.025	0.025	0.021	18.016	0.993
1-Butanol		0.010	0.013	0.015	0.017	0.015	0.018	0.018	0.015	17.838	0.992
Methyl methacrylate	0.236	0.246	0.231	0.265	0.265	0.231	0.271	0.269	0.252	7.005	
2-Nitropropane	0.069	0.073	0.074	0.083	0.089	0.079	0.093	0.095	0.082	12.090	
Chlorobenzene-d5	ISTD										
Cyclohexanone		0.020	0.022	0.025	0.028	0.023	0.027	0.028	0.025	12.963	
1,4-Dichlorobenzene-d4	ISTD										

Wed Jan 27 10:01:56 2016

Calibration Table Report
Method: 8260-SL.M
Title: 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Calibration: Wed Apr 06 17:47:28 2016
Curve: WG563259
Calibration Files

Compound	0.5 9M973596.D	1 9M973597.D	2 9M973598.D	5 9M973599.D	20 9M973600.D	50 9M973594.D	100 9M973605.D	200 9M973606.D	300 9M973607.D	Avg	%RSD	R^2 Linear	Quadratic
Fluorobenzene	ISTD												
Dichlorodifluoromethane			0.321	0.344	0.364	0.439	0.352	0.427	0.437	0.384	12.892		
Chloromethane			0.411	0.346	0.327	0.352	0.289	0.365	0.378	0.353	10.934		
Vinyl Chloride		0.309	0.277	0.322	0.308	0.270	0.211	0.222	0.229	0.268	16.161	0.993	
1,3-Butadiene		0.146	0.201	0.181	0.179	0.160	0.154			0.170	11.979		
Bromomethane		0.205	0.219	0.231	0.210	0.230	0.191	0.219	0.225	0.216	6.345		
Chloroethane			0.195	0.212	0.214	0.223	0.183	0.219	0.227	0.211	7.590		
Trichlorofluoromethane		0.395	0.427	0.437	0.469	0.497	0.396	0.465	0.478	0.445	8.475		
Diethyl ether		0.265	0.262	0.267	0.267	0.274	0.230		0.269	0.262	5.615		
Isoprene			0.323	0.330	0.362	0.390	0.322	0.362	0.366	0.351	7.435		
Acrolein		0.023	0.024	0.023	0.026	0.027	0.033			0.026	13.903		
1,1,2-Trichloro-1,2,2-Trifluoroet			0.239	0.261	0.288	0.302	0.242	0.284	0.289	0.272	9.162		
Acetone				0.207	0.126	0.108	0.088	0.096	0.100	0.121	36.552	0.996	
1,1-Dichloroethene		0.393	0.440	0.451	0.487	0.508	0.403	0.475	0.489	0.456	9.106		
Tert-Butyl Alcohol			0.046	0.044	0.043	0.046	0.040			0.044	5.343		
Dimethyl Sulfide		0.163	0.203	0.215	0.246	0.257	0.212	0.239	0.251	0.223	14.040		
Iodomethane				0.140	0.151	0.228	0.180	0.225	0.230	0.192	21.187	0.992	
Methyl acetate			0.300	0.297	0.295	0.305	0.255	0.279	0.298	0.290	6.019		
Methylene Chloride			0.297	0.289	0.297	0.300	0.237	0.279	0.295	0.285	7.859		
Carbon Disulfide			0.879	0.837	0.889	0.940	0.768	0.859	0.880	0.865	6.109		
Acrylonitrile		0.130	0.133	0.134	0.135	0.147	0.127		0.158	0.138	8.026		
Methyl Tert Butyl Ether		0.710	0.738	0.776	0.820	0.840	0.665	0.765	0.816	0.766	7.804		
trans-1,2-Dichloroethene		0.386	0.431	0.419	0.467	0.493	0.389	0.455	0.470	0.439	8.924		
n-Hexane			0.693	0.590	0.595	0.575	0.493	0.518	0.524	0.570	11.751		
Diisopropyl ether		1.185	1.152	1.182	1.185	1.243	1.009		1.168	1.161	6.230		
Vinyl Acetate			0.435	0.513	0.546	0.690	0.532	0.621	0.664	0.572	15.821	0.994	
1,1-Dichloroethane		0.465	0.518	0.538	0.574	0.590	0.463	0.544	0.569	0.532	9.010		
Ethyl-Tert-Butyl ether		1.047	1.008	1.036	1.043	1.081	0.892		1.038	1.021	5.954		
2-Butanone				0.163	0.160	0.165	0.140	0.161	0.175	0.161	7.047		
Propionitrile		0.048	0.052	0.053	0.051	0.055	0.048		0.059	0.052	7.830		
2,2-Dichloropropane			0.360	0.367	0.386	0.437	0.344	0.408	0.420	0.389	8.790		
cis-1,2-Dichloroethene		0.241	0.287	0.289	0.317	0.322	0.257	0.302	0.316	0.291	10.075		
Chloroform		0.423	0.428	0.462	0.481	0.489	0.390	0.458	0.482	0.452	7.739		
1-Bromopropane			0.032	0.044	0.051	0.056	0.046	0.052	0.055	0.048	17.607	0.996	
Bromochloromethane		0.135	0.168	0.190	0.194	0.207	0.164	0.192	0.205	0.182	13.364		
Tetrahydrofuran			0.123	0.115	0.112	0.116	0.101		0.118	0.114	6.505		
Dibromofluoromethane				0.247	0.231	0.268	0.266	0.251		0.253	5.970		
1,1,1-Trichloroethane		0.343	0.351	0.372	0.416	0.433	0.343	0.408	0.426	0.386	9.993		
Cyclohexane		0.528	0.595	0.610	0.651	0.675	0.557	0.630	0.642	0.611	8.109		
1,1-Dichloropropene		0.302	0.349	0.362	0.378	0.396	0.314	0.366	0.380	0.356	9.221		
Tert-Amyl-Methyl ether		0.761	0.744	0.770	0.776	0.799	0.663		0.772	0.755	5.813		
Carbon Tetrachloride			0.31341	0.33551	0.37426	0.39892	0.31861	0.38498	0.39957	0.36075	10.3644		
1,2-Dichloroethane-d4				0.26412	0.24802	0.27423	0.2775	0.25788		0.26435	4.55185		
Heptane										0	0		
1,2-Dichloroethane		0.34418	0.40431	0.39865	0.4175	0.41985	0.33321	0.38495	0.40827	0.38886	8.47358		
Benzene	1.21945	1.07403	1.12524	1.10527	1.14242	1.16809	0.92092	1.0739	1.10779	1.10412	7.48919		
Trichloroethene		0.31254	0.31563	0.31565	0.31885	0.33106	0.26092	0.31002	0.31982	0.31056	6.7703		
Methylcyclohexane		0.44779	0.43846	0.47932	0.50651	0.52011	0.43207	0.48337	0.48884	0.47456	6.76996		
1,2-Dichloropropane		0.25742	0.28425	0.3095	0.31809	0.33243	0.26219	0.30921	0.32904	0.30027	9.65942		
1,4-Dioxane			0.00358	0.00385	0.00384	0.00433	0.00386			0.00389	6.99887		
Bromodichloromethane			0.30575	0.31422	0.35204	0.37916	0.30019	0.35975	0.384	0.34216	10.2601		
Dibromomethane		0.15183	0.16316	0.17868	0.18876	0.20056	0.16023	0.18831	0.20263	0.17927	10.6372		
2-Chloroethyl Vinyl Ether			0.13333	0.14657	0.15865	0.17532	0.14997	0.17363	0.18023	0.15967	10.9171		
4-Methyl-2-Pentanone				0.13027	0.13937	0.14048	0.12107	0.14207	0.15624	0.13825	8.57761		
cis-1,3-Dichloropropene			0.40667	0.40942	0.42702	0.47107	0.37094	0.43662	0.46459	0.42662	8.1829		
Dimethyl Disulfide			0.36901	0.41872	0.46393	0.5137	0.43386	0.49585	0.50079	0.45655	11.4623		
Chlorobenzene-d5	ISTD												
Toluene-d8				1.13196	1.13088	1.30099	1.22413	1.17028		1.19165	6.04016		
Toluene	1.61219	1.48974	1.56315	1.53008	1.59395	1.67032	1.25619	1.49851	1.47925	1.52149	7.74689		
Ethyl Methacrylate				0.41975	0.4711	0.51586	0.40825	0.47534	0.48896	0.46321	8.92932		
trans-1,3-Dichloropropene			0.42937	0.46085	0.51207	0.57552	0.43233	0.52283	0.53425	0.49532	11.2077		
1,1,2-Trichloroethane		0.2293	0.29955	0.30264	0.32292	0.34393	0.26026	0.31526	0.32236	0.29953	12.4735		
2-Hexanone				0.29578	0.31857	0.34977	0.27856	0.34895	0.37083	0.32708	10.8635		
1,3-Dichloropropane		0.46311	0.52068	0.51191	0.553	0.58052	0.43541	0.52074	0.53484	0.51503	9.05764		
Tetrachloroethene		0.29083	0.32282	0.31024	0.33607	0.36695	0.28326	0.33869	0.33259	0.32268	8.46057		
Dibromochloromethane			0.31668	0.33233	0.38385	0.42138	0.32331	0.39925	0.41508	0.37027	12.1586		
1,2-Dibromoethane				0.3097	0.33602	0.35904	0.27936	0.34233	0.35327	0.32995	9.14215		
1-Chlorohexane		0.47093	0.49056	0.47786	0.52976	0.56979	0.44743	0.51603	0.50488	0.50091	7.62739		
Chlorobenzene		1.01857	1.10077	1.06982	1.11065	1.1666	0.87778	1.05237	1.05008	1.05583	8.05461		
1,1,1,2-Tetrachloroethane			0.32188	0.32664	0.37788	0.40639	0.3073	0.38163	0.38922	0.35871	10.872		
Ethylbenzene	0.52143	0.53436	0.57903	0.55623	0.61424	0.64352	0.49066	0.58906	0.58341	0.56799	8.36618		
m-,p-Xylene	0.80077	0.66899	0.68611	0.6782	0.73094	0.77557	0.57886	0.69733	0.68594	0.7003	9.21732		
o-Xylene	0.60031	0.61925	0.68439	0.66416	0.69917	0.75296	0.57232	0.70275	0.71046	0.66731	8.80086		
Styrene		1.0373	1.07384	1.08894	1.19996	1.30098	0.99018	1.21772	1.23313	1.14276	9.5938		
Bromoform			0.18687	0.21759	0.23897	0.28565	0.22359	0.2955	0.32514	0.25333	19.5821		0.997
Isopropylbenzene		1.68774	1.6857	1.66547	1.80713	1.95194	1.47104	1.81646	1.80093	1.7358	8.21749		
1,4-Dichlorobenzene-d4	ISTD												
1,1,2,2-Tetrachloroethane		0.5444	0.72678	0.76491	0.83216	0.97949	0.68259	0.81781	0.89422	0.7803	17.1288	0.99	
p-Bromofluorobenzene				0.79123	0.79828	1.029	0.90393	0.80774		0.86604	11.7727		
1,2,3-Trichloropropane		0.22403	0.25537	0.25246	0.25094	0.2923	0.20359	0.24077	0.2657	0.24814	10.7248		

trans-1,4-Dichloro-2-Butene		0.27171	0.26914	0.29308	0.38778	0.26316	0.30387	0.32522	0.302	14.4884	
n-Propylbenzene	4.05685	3.75924	3.71896	3.86505	4.6452	3.07167	3.36046	3.42768	3.73814	12.8869	
Bromobenzene	0.86454	0.91854	0.88256	0.9322	1.09373	0.73348	0.8172	0.87121	0.88918	11.6372	
1,3,5-Trimethylbenzene			2.89935	2.99421	3.53144	2.3397	2.61687	2.69599	2.84626	14.2799	
2-Chlorotoluene		2.26857	2.2413	2.34896	2.80152	1.8716	2.03405	2.06176	2.23254	13.4065	
4-Chlorotoluene	2.47026	2.45111	2.30891	2.39901	2.8502	1.84221	2.12289	2.23652	2.33514	12.5325	
a-Methylstyrene			1.29056	1.42432	1.7914	1.219	1.37439	1.41967	1.41989	13.9866	
tert-Butylbenzene			0.61757	0.65029	0.78744	0.51681	0.59207	0.61945	0.63061	14.1324	
1,2,4-Trimethylbenzene	3.90048	3.3016	3.06186	3.00214	3.57843	2.37041	2.6865	2.76415	3.0832	16.148	0.99
sec-Butylbenzene	3.74125	3.67112	3.56079	3.78968	4.54565	3.04282	3.43902	3.481	3.65892	11.6849	
p-Isopropyltoluene			2.92258	3.1199	3.7687	2.53184	2.89081	2.93937	3.02887	13.5408	
1,3-Dichlorobenzene	1.83452	1.84233	1.66665	1.75292	2.12917	1.41986	1.67401	1.74427	1.75797	11.3908	
1,4-Dichlorobenzene	2.01312	1.89964	1.70378	1.75876	2.11676	1.4289	1.69182	1.74055	1.79417	11.9044	
n-Butylbenzene	2.84419	2.75013	2.68458	2.82669	3.43808	2.33612	2.69074	2.72167	2.78653	10.998	
1,2-Dichlorobenzene	1.82783	1.61719	1.58891	1.65012	1.99737	1.35931	1.64467	1.69357	1.67237	11.0609	
1,2-Dibromo-3-Chloropropane			0.15996	0.19339	0.24797	0.1736	0.21779	0.23454	0.20454	16.9791	0.991
1,2,4-Trichlorobenzene	1.39125	1.17251	1.16617	1.1473	1.48008	1.0466	1.2227	1.24536	1.23399	11.3188	
Hexachlorobutadiene	0.58074	0.56991	0.53761	0.57937	0.71616	0.49159	0.59053	0.5902	0.58201	10.9512	
Naphthalene		3.08125	2.7856	2.89627	3.68341	2.51558	2.90109	2.95451	2.97396	12.0625	
1,2,3-Trichlorobenzene	1.32311	1.13072	1.05256	1.10905	1.42827	0.99218	1.14378	1.17822	1.16974	12.1576	

Fri Apr 08 14:14:52 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16041363 Run Date: 04/06/2016 Sample ID: WG563259-11
Instrument ID: HPMS9 Run Time: 18:18 Method: 8260B
File ID: 9M973609 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG563259 Cal ID: HPMS9 - 06-APR-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.8	ug/kg	0.459	1.60	20	
1,1-Dichloroethene	CCC	50.0	51.0	ug/kg	0.466	2.10	20	
1,2-Dichloropropane	CCC	50.0	54.2	ug/kg	0.326	8.40	20	
Ethylbenzene	CCC	50.0	52.8	ug/kg	0.600	5.60	20	
Toluene	CCC	50.0	51.5	ug/kg	1.57	3.00	20	
Vinyl Chloride	CCC	50.0	53.2	ug/kg	0.246	6.40	20	
Bromoform	SPCC	50.0	50.1	ug/kg	0.241	0.200	20	
Chlorobenzene	SPCC	50.0	53.1	ug/kg	1.12	6.20	20	
Chloromethane	SPCC	50.0	57.0	ug/kg	0.402	14.0	20	
1,1-Dichloroethane	SPCC	50.0	50.1	ug/kg	0.533	0.200	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	48.2	ug/kg	0.810	3.60	20	
Acetone		50.0	52.0	ug/kg	0.109	4.00	20	
Benzene		50.0	50.7	ug/kg	1.12	1.40	20	
Bromobenzene		50.0	49.8	ug/kg	0.886	0.400	20	
Bromochloromethane		50.0	51.3	ug/kg	0.187	2.70	20	
Bromodichloromethane		50.0	50.6	ug/kg	0.346	1.20	20	
Bromomethane		50.0	52.4	ug/kg	0.226	4.70	20	
2-Butanone		50.0	52.5	ug/kg	0.169	5.00	20	
n-Butylbenzene		50.0	51.3	ug/kg	2.86	2.70	20	
sec-Butylbenzene		50.0	52.8	ug/kg	3.86	5.60	20	
tert-Butylbenzene		50.0	52.3	ug/kg	0.660	4.60	20	
Carbon Disulfide		50.0	48.7	ug/kg	0.841	2.70	20	
Carbon Tetrachloride		50.0	51.6	ug/kg	0.372	3.10	20	
Dibromochloromethane		50.0	50.6	ug/kg	0.375	1.30	20	
Chloroethane		50.0	54.8	ug/kg	0.231	9.50	20	
2-Chlorotoluene		50.0	51.3	ug/kg	2.29	2.50	20	
4-Chlorotoluene		50.0	52.0	ug/kg	2.43	4.00	20	
1,2-Dibromo-3-Chloropropane		50.0	55.5	ug/kg	0.230	11.0	20	
1,2-Dibromoethane		50.0	51.3	ug/kg	0.339	2.60	20	
Dibromomethane		50.0	50.2	ug/kg	0.180	0.300	20	
1,2-Dichlorobenzene		50.0	52.0	ug/kg	1.74	4.10	20	
1,3-Dichlorobenzene		50.0	50.5	ug/kg	1.78	1.10	20	
1,4-Dichlorobenzene		50.0	51.0	ug/kg	1.83	1.90	20	
Dichlorodifluoromethane		50.0	61.5	ug/kg	0.472	23.1	20	*
1,2-Dichloroethane		50.0	51.3	ug/kg	0.399	2.70	20	
cis-1,2-Dichloroethene		50.0	53.7	ug/kg	0.313	7.50	20	
trans-1,2-Dichloroethene		50.0	53.6	ug/kg	0.470	7.20	20	
1,3-Dichloropropane		50.0	54.7	ug/kg	0.564	9.40	20	
2,2-Dichloropropane		50.0	51.5	ug/kg	0.401	3.10	20	
cis-1,3-Dichloropropene		50.0	55.5	ug/kg	0.473	10.9	20	
trans-1,3-Dichloropropene		50.0	52.3	ug/kg	0.518	4.70	20	
1,1-Dichloropropene		50.0	51.4	ug/kg	0.366	2.70	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4747135
Report generated 05/10/2016 13:22

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16041363 Run Date: 04/06/2016 Sample ID: WG563259-11
Instrument ID: HPMS9 Run Time: 18:18 Method: 8260B
File ID: 9M973609 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG563259 Cal ID: HPMS9 - 06-APR-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	52.5	ug/kg	0.344	5.00	20	
Hexachlorobutadiene		50.0	58.8	ug/kg	0.684	17.5	20	
Isopropylbenzene		50.0	54.1	ug/kg	1.88	8.10	20	
p-Isopropyltoluene		50.0	51.5	ug/kg	3.12	2.90	20	
4-Methyl-2-Pentanone		50.0	52.0	ug/kg	0.144	4.10	20	
Methylene Chloride		50.0	51.4	ug/kg	0.293	2.90	20	
Naphthalene		50.0	53.9	ug/kg	3.20	7.70	20	
n-Propylbenzene		50.0	51.7	ug/kg	3.86	3.40	20	
Styrene		50.0	53.5	ug/kg	1.22	7.10	20	
1,1,1,2-Tetrachloroethane		50.0	53.0	ug/kg	0.381	6.10	20	
Tetrachloroethene		50.0	51.6	ug/kg	0.333	3.30	20	
1,2,3-Trichlorobenzene		50.0	58.3	ug/kg	1.36	16.7	20	
1,2,4-Trichlorobenzene		50.0	56.8	ug/kg	1.40	13.5	20	
1,1,1-Trichloroethane		50.0	52.8	ug/kg	0.408	5.50	20	
1,1,2-Trichloroethane		50.0	53.9	ug/kg	0.323	7.90	20	
Trichloroethene		50.0	52.5	ug/kg	0.326	5.10	20	
Trichlorofluoromethane		50.0	52.0	ug/kg	0.464	4.10	20	
1,2,3-Trichloropropane		50.0	51.1	ug/kg	0.254	2.20	20	
1,2,4-Trimethylbenzene		50.0	53.2	ug/kg	2.94	6.40	20	
1,3,5-Trimethylbenzene		50.0	51.8	ug/kg	2.95	3.60	20	
o-Xylene		50.0	54.6	ug/kg	0.729	9.30	20	
m-,p-Xylene		100	105	ug/kg	0.735	4.90	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4747135
Report generated 05/10/2016 13:22

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041363 Run Date: 04/30/2016 Sample ID: WG567052-02
Instrument ID: HPMS9 Run Time: 13:43 Method: 8260B
File ID: 9M974067 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG567003 Cal ID: HPMS9 - 06-APR-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	46.3	ug/kg	0.419	7.31	20	
1,1-Dichloroethene	CCC	50.0	45.9	ug/kg	0.419	8.21	20	
1,2-Dichloropropane	CCC	50.0	45.7	ug/kg	0.274	8.65	20	
Ethylbenzene	CCC	50.0	48.4	ug/kg	0.550	3.13	20	
Toluene	CCC	50.0	47.1	ug/kg	1.43	5.76	20	
Vinyl Chloride	CCC	50.0	46.3	ug/kg	0.215	7.50	20	
Bromoform	SPCC	50.0	53.2	ug/kg	0.257	6.45	20	
Chlorobenzene	SPCC	50.0	47.9	ug/kg	1.01	4.21	20	
Chloromethane	SPCC	50.0	54.9	ug/kg	0.387	9.82	20	
1,1-Dichloroethane	SPCC	50.0	45.9	ug/kg	0.489	8.23	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	52.2	ug/kg	0.877	4.31	20	
Xylenes		150	144	ug/kg	0.658	3.95	20	
Acetone		50.0	41.2	ug/kg	0.0888	17.5	20	
Benzene		50.0	44.0	ug/kg	0.971	12.0	20	
Bromobenzene		50.0	53.2	ug/kg	0.946	6.38	20	
Bromochloromethane		50.0	47.0	ug/kg	0.171	5.93	20	
Bromodichloromethane		50.0	45.8	ug/kg	0.313	8.41	20	
Bromomethane		50.0	45.9	ug/kg	0.199	8.18	20	
2-Butanone		50.0	42.4	ug/kg	0.136	15.2	20	
n-Butylbenzene		50.0	52.9	ug/kg	2.95	5.74	20	
sec-Butylbenzene		50.0	53.2	ug/kg	3.89	6.43	20	
tert-Butylbenzene		50.0	53.6	ug/kg	0.677	7.29	20	
Carbon Disulfide		50.0	41.1	ug/kg	0.711	17.7	20	
Carbon Tetrachloride		50.0	48.3	ug/kg	0.349	3.40	20	
Dibromochloromethane		50.0	49.8	ug/kg	0.369	0.451	20	
Chloroethane		50.0	46.8	ug/kg	0.197	6.31	20	
2-Chlorotoluene		50.0	60.0	ug/kg	2.68	20.1	20	*
4-Chlorotoluene		50.0	47.6	ug/kg	2.23	4.71	20	
1,2-Dibromo-3-Chloropropane		50.0	52.3	ug/kg	0.215	4.65	20	
1,2-Dibromoethane		50.0	47.4	ug/kg	0.313	5.16	20	
Dibromomethane		50.0	44.8	ug/kg	0.161	10.4	20	
1,2-Dichlorobenzene		50.0	51.2	ug/kg	1.71	2.42	20	
1,3-Dichlorobenzene		50.0	52.0	ug/kg	1.83	3.94	20	
1,4-Dichlorobenzene		50.0	50.8	ug/kg	1.82	1.55	20	
Dichlorodifluoromethane		50.0	48.3	ug/kg	0.370	3.46	20	
1,2-Dichloroethane		50.0	46.6	ug/kg	0.362	6.81	20	
cis-1,2-Dichloroethene		50.0	46.1	ug/kg	0.269	7.70	20	
trans-1,2-Dichloroethene		50.0	46.1	ug/kg	0.404	7.80	20	
1,3-Dichloropropane		50.0	48.4	ug/kg	0.499	3.11	20	
2,2-Dichloropropane		50.0	48.0	ug/kg	0.373	3.99	20	
cis-1,3-Dichloropropene		50.0	45.7	ug/kg	0.390	8.59	20	
trans-1,3-Dichloropropene		50.0	51.0	ug/kg	0.505	2.01	20	

CCV - Modified 03/05/2008
PDF File ID: 4747138
Report generated 05/10/2016 13:22

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041363 Run Date: 04/30/2016 Sample ID: WG567052-02
Instrument ID: HPMS9 Run Time: 13:43 Method: 8260B
File ID: 9M974067 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG567003 Cal ID: HPMS9 - 06-APR-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	46.2	ug/kg	0.329	7.60	20	
2-Hexanone		50.0	44.4	ug/kg	0.291	11.1	20	
Hexachlorobutadiene		50.0	50.9	ug/kg	0.592	1.72	20	
Isopropylbenzene		50.0	48.1	ug/kg	1.67	3.82	20	
p-Isopropyltoluene		50.0	53.8	ug/kg	3.26	7.63	20	
4-Methyl-2-Pentanone		50.0	45.4	ug/kg	0.125	9.28	20	
Methylene Chloride		50.0	44.7	ug/kg	0.255	10.5	20	
Naphthalene		50.0	54.7	ug/kg	3.25	9.37	20	
n-Propylbenzene		50.0	53.2	ug/kg	3.97	6.33	20	
Styrene		50.0	48.1	ug/kg	1.10	3.74	20	
1,1,1,2-Tetrachloroethane		50.0	51.3	ug/kg	0.368	2.57	20	
Tetrachloroethene		50.0	47.7	ug/kg	0.308	4.53	20	
1,2,3-Trichlorobenzene		50.0	53.6	ug/kg	1.25	7.24	20	
1,2,4-Trichlorobenzene		50.0	52.0	ug/kg	1.28	3.92	20	
1,1,1-Trichloroethane		50.0	48.1	ug/kg	0.372	3.78	20	
1,1,2-Trichloroethane		50.0	49.7	ug/kg	0.298	0.650	20	
Trichloroethene		50.0	43.4	ug/kg	0.270	13.2	20	
Trichlorofluoromethane		50.0	48.2	ug/kg	0.430	3.56	20	
1,2,3-Trichloropropane		50.0	54.1	ug/kg	0.269	8.29	20	
1,2,4-Trimethylbenzene		50.0	56.3	ug/kg	3.11	12.5	20	
1,3,5-Trimethylbenzene		50.0	53.6	ug/kg	3.05	7.19	20	
o-Xylene		50.0	48.4	ug/kg	0.647	3.12	20	
m-,p-Xylene		100	95.6	ug/kg	0.670	4.36	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4747138
Report generated 05/10/2016 13:22

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16041363
Instrument ID: HPMS9
Workgroup (AAB#): WG567003

ICAL CCV Number: WG563259-02
CAL ID: HPMS9-06-APR-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG563259-02	NA	NA	189947	405052	551415
Upper Limit	NA	NA	379894	810104	1102830
Lower Limit	NA	NA	94974	202526	275708
L16041363-01	1.00	01	211853	466892	648715
L16041363-02	1.00	01	197425	428718	604849
L16041363-03	1.00	01	196361	421446	575339
L16041363-04	1.00	01	175209	379392	527759
L16041363-05	1.00	01	183185	404510	567426
L16041363-06	1.00	01	177988	394106	552950
L16041363-07	1.00	01	189873	429799	606330
L16041363-08	1.00	01	204071	455159	629804
L16041363-09	1.00	01	195199	427647	599152
L16041363-10	1.00	01	190398	418410	587937
WG567003-01	1.00	01	207986	455753	641587
WG567003-02	1.00	01	198992	430069	593466

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4747139
Report generated 05/10/2016 13:22

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16041363
Instrument ID: HPMS9
Workgroup (AAB#): WG567003

ICAL CCV Number: WG563259-02
CAL ID: HPMS9-06-APR-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG563259-02	NA	NA	17.75	14.72	10.84
Upper Limit	NA	NA	18.25	15.22	11.34
Lower Limit	NA	NA	17.25	14.22	10.34
L16041363-01	1.00	01	17.74	14.72	10.84
L16041363-02	1.00	01	17.74	14.71	10.84
L16041363-03	1.00	01	17.74	14.71	10.84
L16041363-04	1.00	01	17.74	14.71	10.84
L16041363-05	1.00	01	17.74	14.71	10.84
L16041363-06	1.00	01	17.74	14.71	10.84
L16041363-07	1.00	01	17.74	14.71	10.84
L16041363-08	1.00	01	17.74	14.71	10.84
L16041363-09	1.00	01	17.74	14.71	10.84
L16041363-10	1.00	01	17.74	14.71	10.84
WG567003-01	1.00	01	17.74	14.71	10.84
WG567003-02	1.00	01	17.74	14.71	10.84

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4747141
Report generated: 05/10/2016 13:22

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\043016\9M974077.D Vial: 11
Acq On : 30 Apr 2016 18:48 Operator: ADC
Sample : L16041363-01 A 8260 4.90g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 04 12:27:47 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	648715	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	466892	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	211853	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	172797	52.7419 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.48%		
43) 1,2-Dichloroethane-d4	10.43	65	186723	54.4423 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 108.88%		
58) Toluene-d8	12.82	98	628051	56.4419 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 112.88%		
79) p-Bromofluorobenzene	16.22	95	232053	63.2392 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 126.48%#		

Target Compounds

					Qvalue
13) Acetone	6.39	43	6097	Below Cal	88
36) Tetrahydrofuran	9.77	42	3122	2.1072 ug/kg#	78
56) Dimethyl Disulfide	12.82	94	16487	2.7834 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.08	105	2369	Below Cal #	68

(#) = qualifier out of range (m) = manual integration
9M974077.D 8260-SL.M Wed May 04 12:27:47 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\043016\9M974077.D Vial: 11
Acq On : 30 Apr 2016 18:48 Operator: ADC
Sample : L16041363-01 A 8260 4.90g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 4 12:27 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

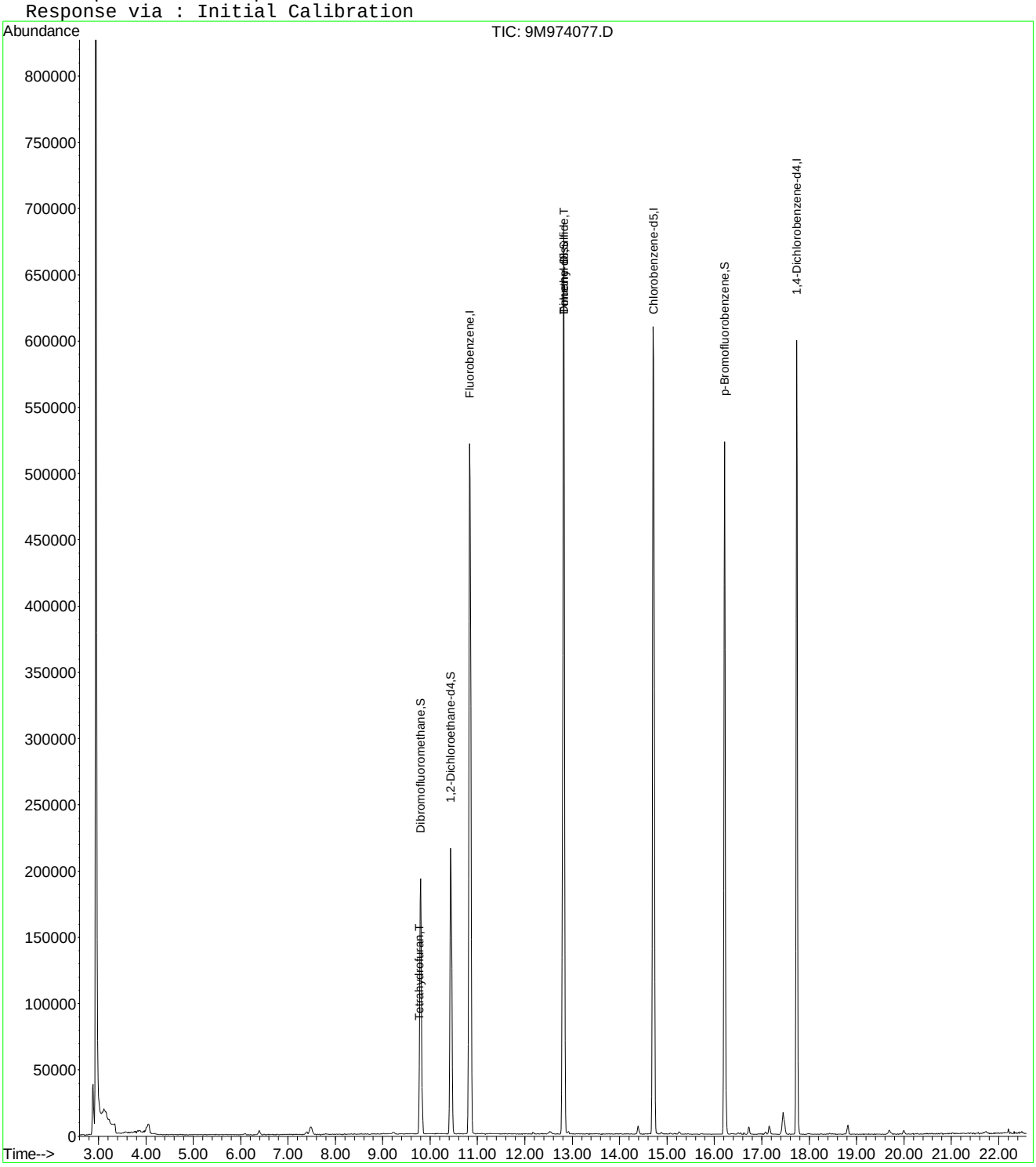

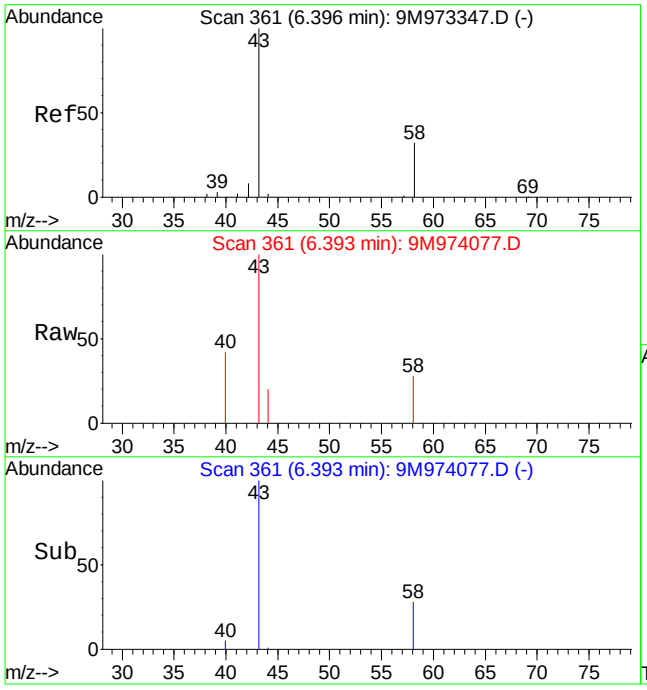

#13
Acetone
Concen: Below Cal
RT: 6.39 min Scan# 361
Delta R.T. 0.01 min
Lab File: 9M974077.D
Acq: 30 Apr 2016 18:48

Tgt Ion: 43 Resp: 6097

Ion	Ratio	Lower	Upper
43	100		
58	26.9	20.2	47.2

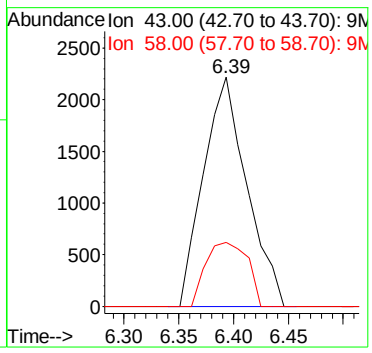

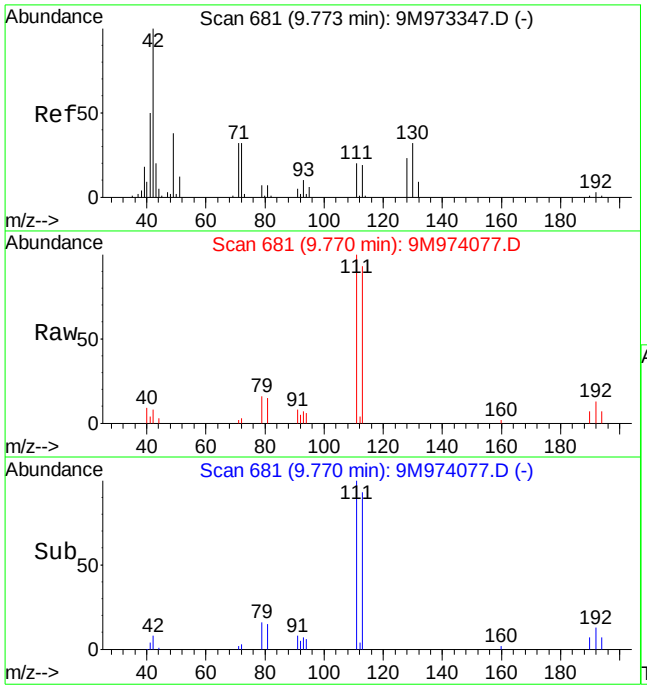

#36
Tetrahydrofuran
Concen: 2.11 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. -0.00 min
Lab File: 9M974077.D
Acq: 30 Apr 2016 18:48

Tgt Ion: 42 Resp: 3122

Ion	Ratio	Lower	Upper
42	100		
72	23.9	19.8	46.2
71	15.4	18.3	42.7#

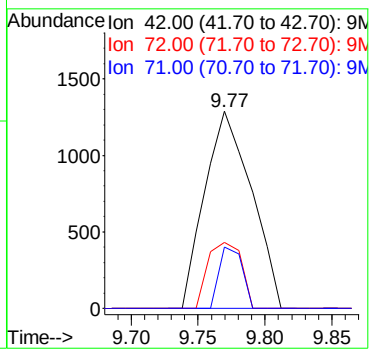

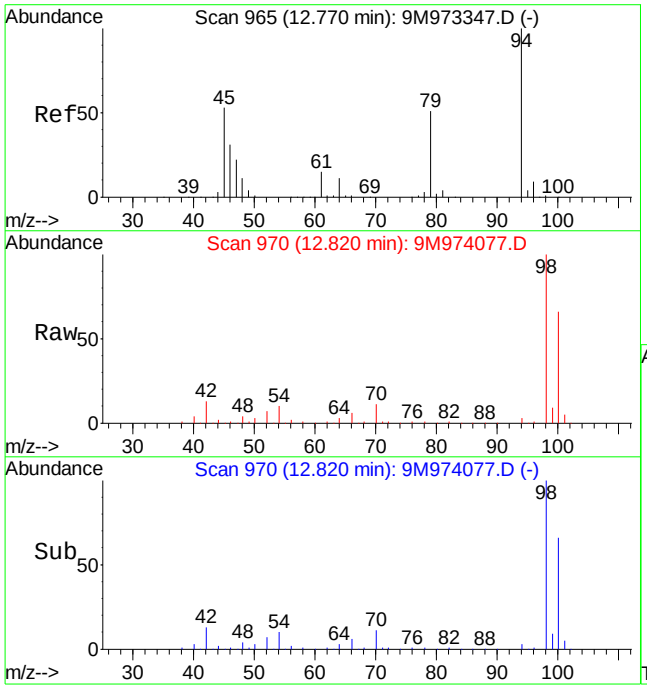

#56
Dimethyl Disulfide
Concen: 2.78 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M974077.D
Acq: 30 Apr 2016 18:48

Tgt Ion: 94 Resp: 16487

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

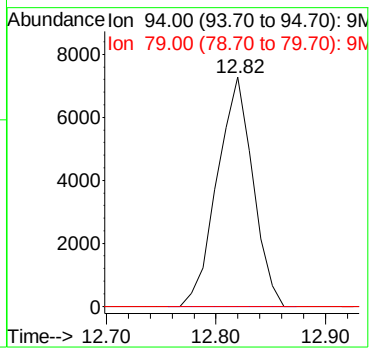

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\043016\9M974078.D Vial: 12
Acq On : 30 Apr 2016 19:18 Operator: ADC
Sample : L16041363-02 A 8260 5.36g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 04 12:27:48 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	604849	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	428718	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.74	152	197425	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	154180	50.4725 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.94%		
43) 1,2-Dichloroethane-d4	10.44	65	171166	53.5258 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 107.06%		
58) Toluene-d8	12.82	98	565722	55.3674 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 110.74%		
79) p-Bromofluorobenzene	16.22	95	204445	59.7872 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 119.58%		

Target Compounds					Qvalue
13) Acetone	6.38	43	30370	20.7756 ug/kg	99
29) 2-Butanone	9.02	43	6990	3.5946 ug/kg	87
36) Tetrahydrofuran	9.77	42	3388	2.4526 ug/kg#	71
56) Dimethyl Disulfide	12.82	94	15208	2.7536 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.08	105	1651	Below Cal #	62

(#) = qualifier out of range (m) = manual integration
9M974078.D 8260-SL.M Wed May 04 12:27:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\043016\9M974078.D Vial: 12
Acq On : 30 Apr 2016 19:18 Operator: ADC
Sample : L16041363-02 A 8260 5.36g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 4 12:27 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

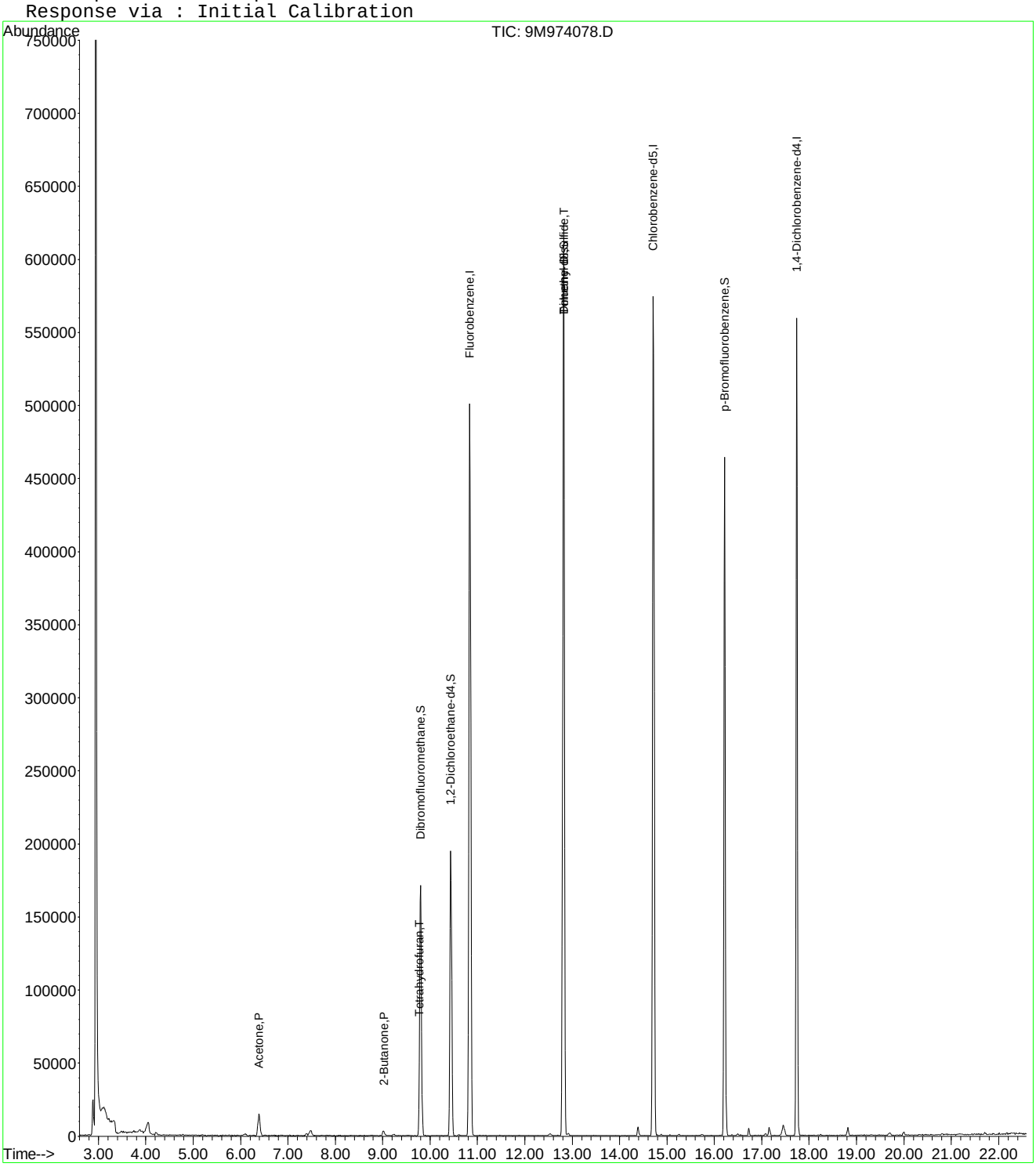

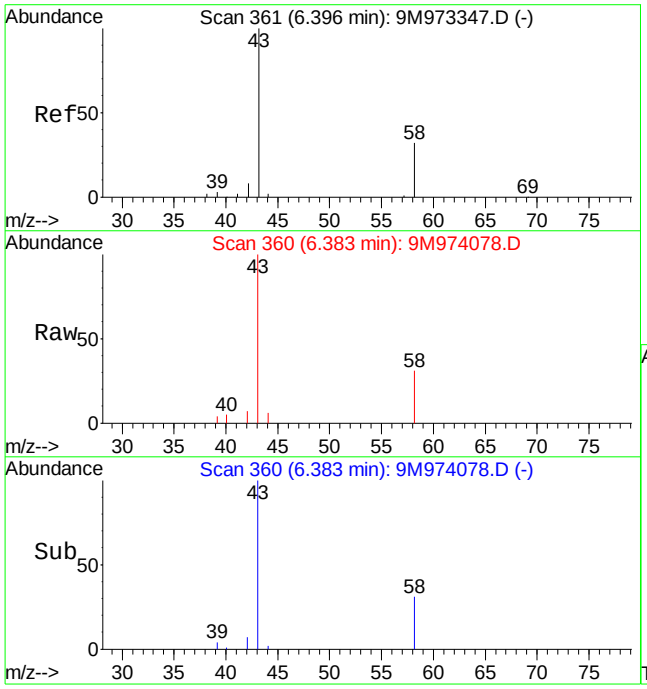

#13
Acetone
Concen: 20.78 ug/kg
RT: 6.38 min Scan# 360
Delta R.T. 0.00 min
Lab File: 9M974078.D
Acq: 30 Apr 2016 19:18

Tgt Ion: 43 Resp: 30370

Ion	Ratio	Lower	Upper
43	100		
58	33.0	20.2	47.2

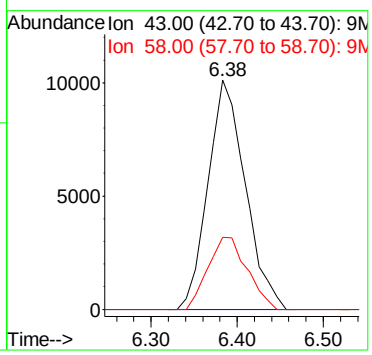

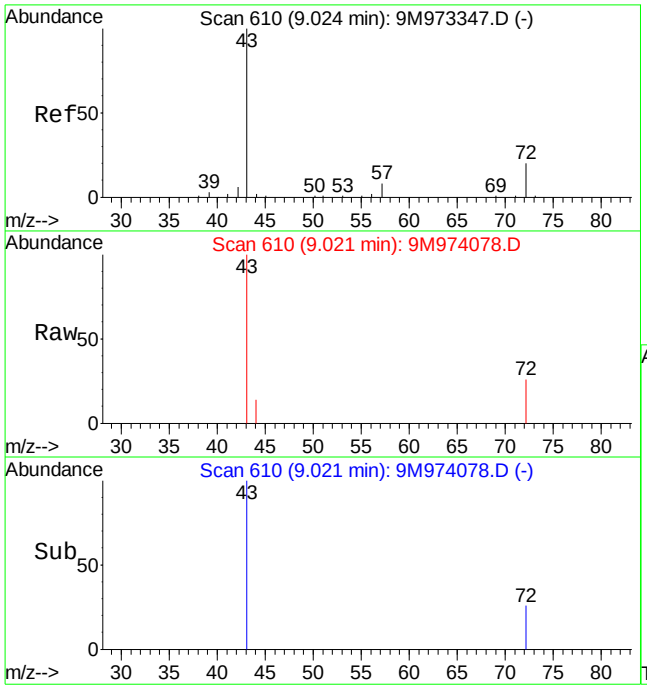

#29
2-Butanone
Concen: 3.59 ug/kg
RT: 9.02 min Scan# 610
Delta R.T. 0.01 min
Lab File: 9M974078.D
Acq: 30 Apr 2016 19:18

Tgt Ion: 43 Resp: 6990

Ion	Ratio	Lower	Upper
43	100		
72	13.3	11.5	26.7

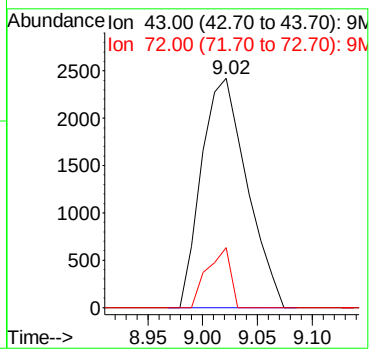

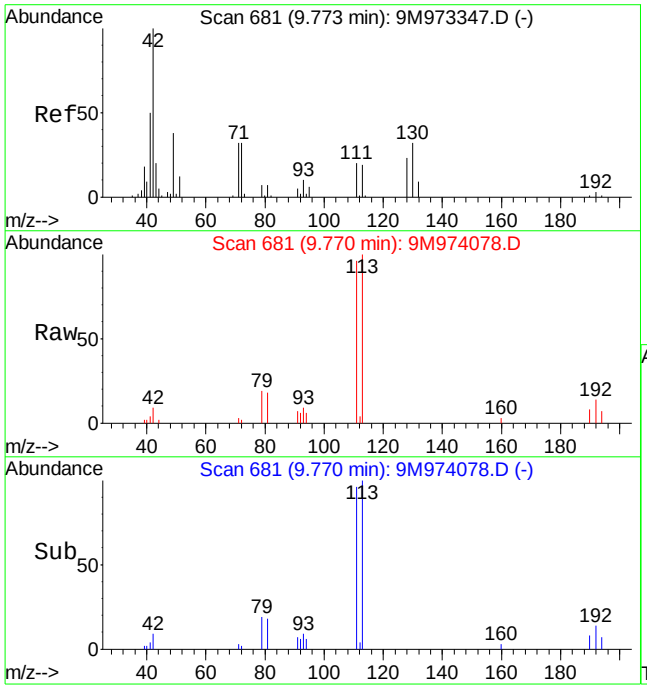

#36
Tetrahydrofuran
Concen: 2.45 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. -0.00 min
Lab File: 9M974078.D
Acq: 30 Apr 2016 19:18

Tgt Ion: 42 Resp: 3388

Ion	Ratio	Lower	Upper
42	100		
72	22.2	19.8	46.2
71	8.7	18.3	42.7#

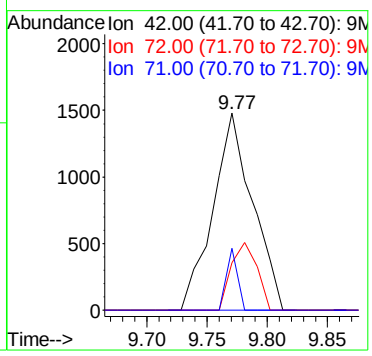

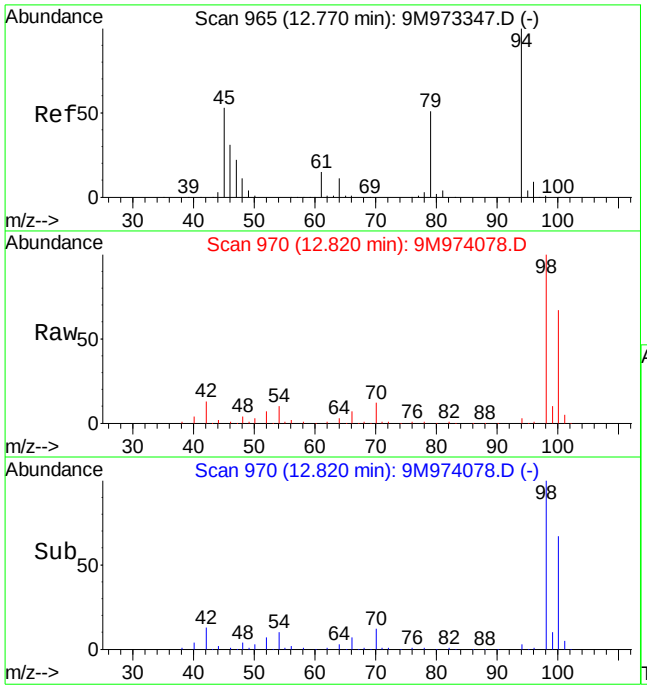

#56
Dimethyl Disulfide
Concen: 2.75 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M974078.D
Acq: 30 Apr 2016 19:18

Tgt Ion: 94 Resp: 15208

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

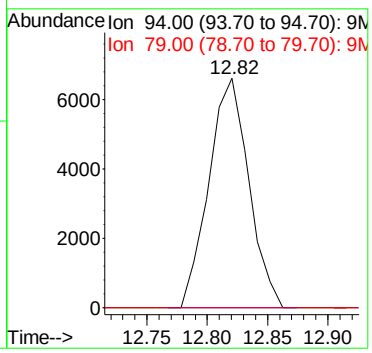

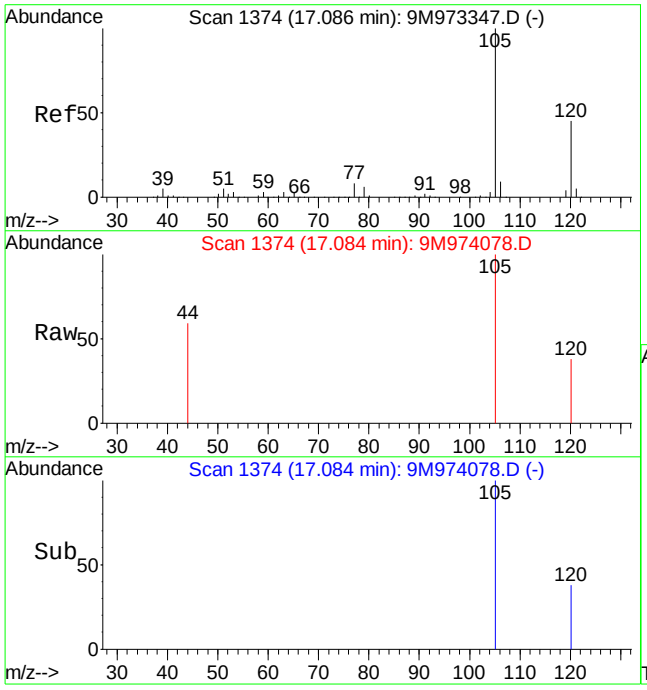

#89
1,2,4-Trimethylbenzene
Concen: Below Cal
RT: 17.08 min Scan# 1374
Delta R.T. 0.00 min
Lab File: 9M974078.D
Acq: 30 Apr 2016 19:18

Tgt Ion:105 Resp: 1651

Ion	Ratio	Lower	Upper
105	100		
120	27.3	33.0	77.0#

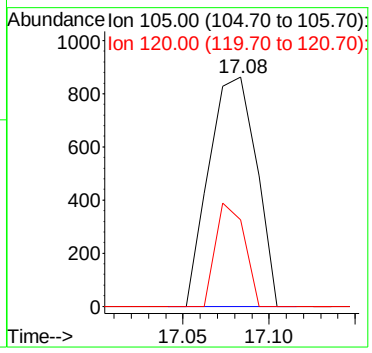

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\043016\9M974079.D Vial: 13
Acq On : 30 Apr 2016 19:48 Operator: ADC
Sample : L16041363-03 A 8260 4.93g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 04 12:27:49 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	575339	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	421446	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.74	152	196361	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	155073	53.3686 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 106.74%		
43) 1,2-Dichloroethane-d4	10.43	65	183717	60.3974 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 120.80%#		
58) Toluene-d8	12.82	98	559733	55.7265 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 111.46%		
79) p-Bromofluorobenzene	16.22	95	208691	61.3595 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 122.72%#		

Target Compounds					Qvalue
3) Chloromethane	3.73	50	1625	0.4005 ug/kg	89
13) Acetone	6.39	43	3746	Below Cal #	63
15) Tert-Butyl Alcohol	6.73	59	211	0.4181 ug/kg#	61
36) Tetrahydrofuran	9.78	42	2994	2.2786 ug/kg#	66
56) Dimethyl Disulfide	12.82	94	14746	2.8069 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.07	105	1323	Below Cal #	48

(#) = qualifier out of range (m) = manual integration
9M974079.D 8260-SL.M Wed May 04 12:27:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\043016\9M974079.D Vial: 13
Acq On : 30 Apr 2016 19:48 Operator: ADC
Sample : L16041363-03 A 8260 4.93g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 4 12:27 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

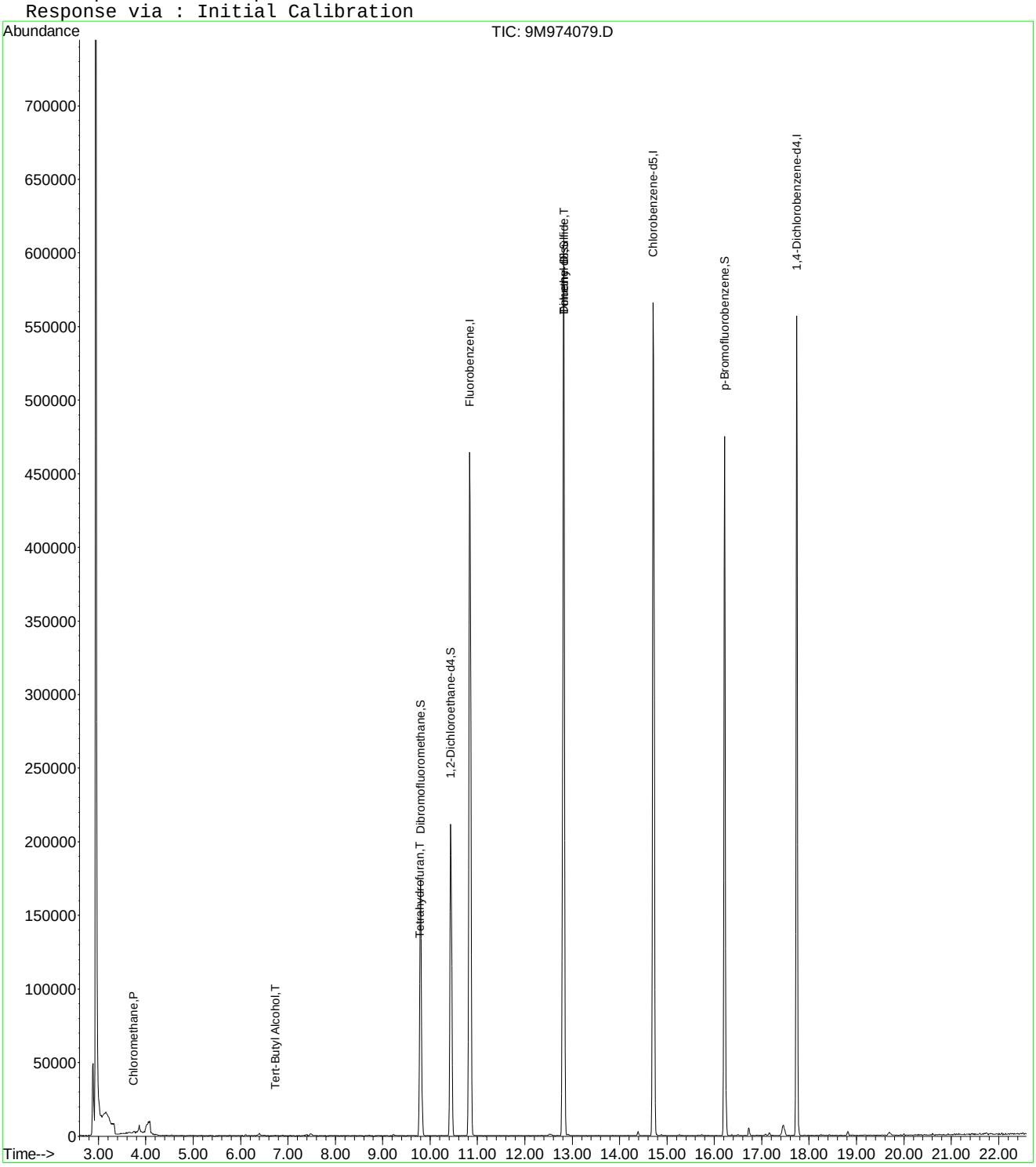

9M974079.D 8260-SL.M Wed May 04 12:27:49 2016 Page 2

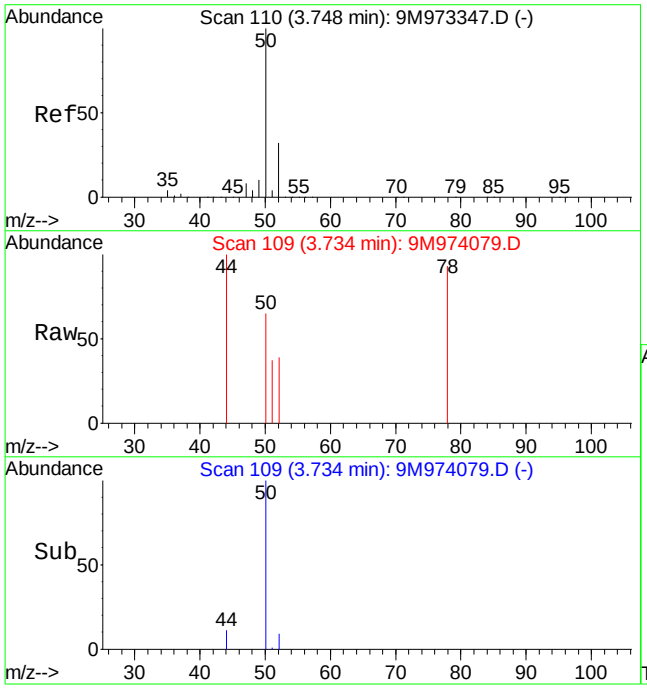

#3
Chloromethane
Concen: 0.40 ug/kg
RT: 3.73 min Scan# 109
Delta R.T. -0.01 min
Lab File: 9M974079.D
Acq: 30 Apr 2016 19:48

Tgt Ion: 50 Resp: 1625

Ion	Ratio	Lower	Upper
50	100		
52	39.2	19.9	46.3

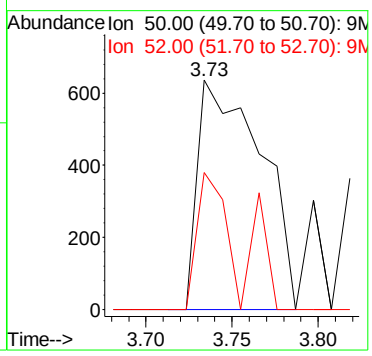

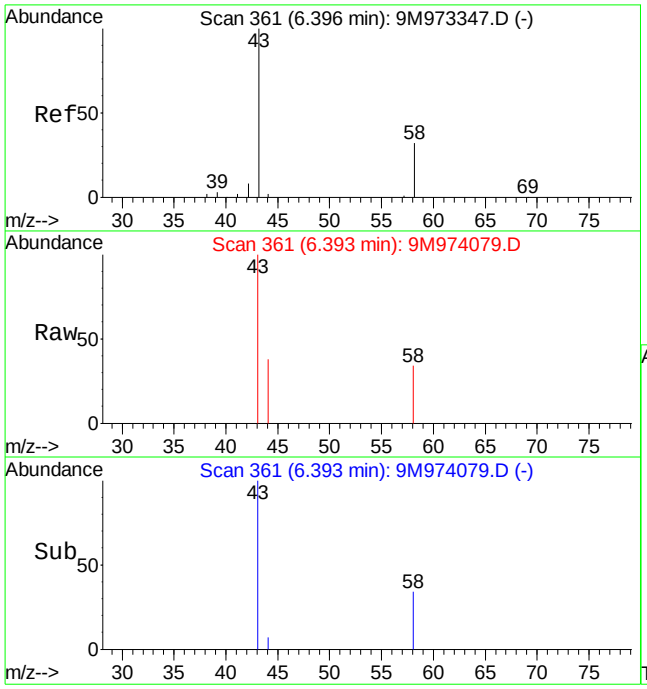

#13
Acetone
Concen: Below Cal
RT: 6.39 min Scan# 361
Delta R.T. 0.01 min
Lab File: 9M974079.D
Acq: 30 Apr 2016 19:48

Tgt Ion: 43 Resp: 3746

Ion	Ratio	Lower	Upper
43	100		
58	12.5	20.2	47.2#

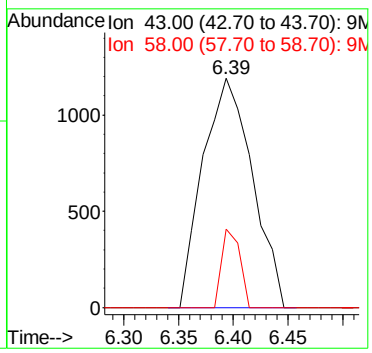

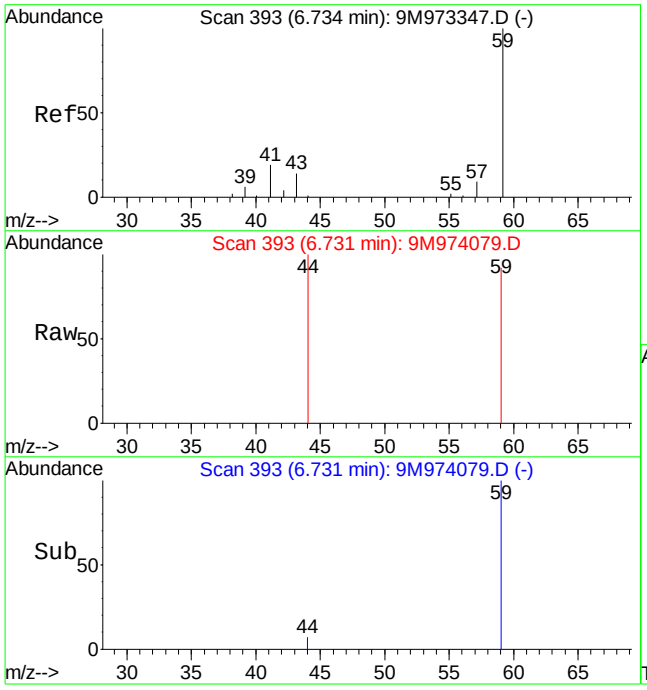

#15
Tert-Butyl Alcohol
Concen: 0.42 ug/kg
RT: 6.73 min Scan# 393
Delta R.T. 0.01 min
Lab File: 9M974079.D
Acq: 30 Apr 2016 19:48

Tgt Ion: 59 Resp: 211

Ion	Ratio	Lower	Upper
59	100		
41	0.0	12.4	29.0#
57	0.0	6.1	14.1#

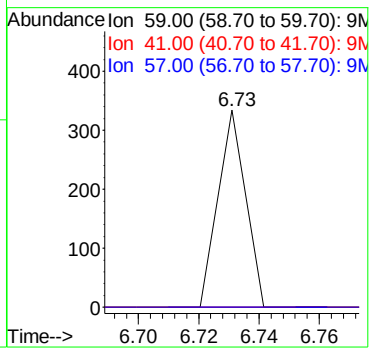

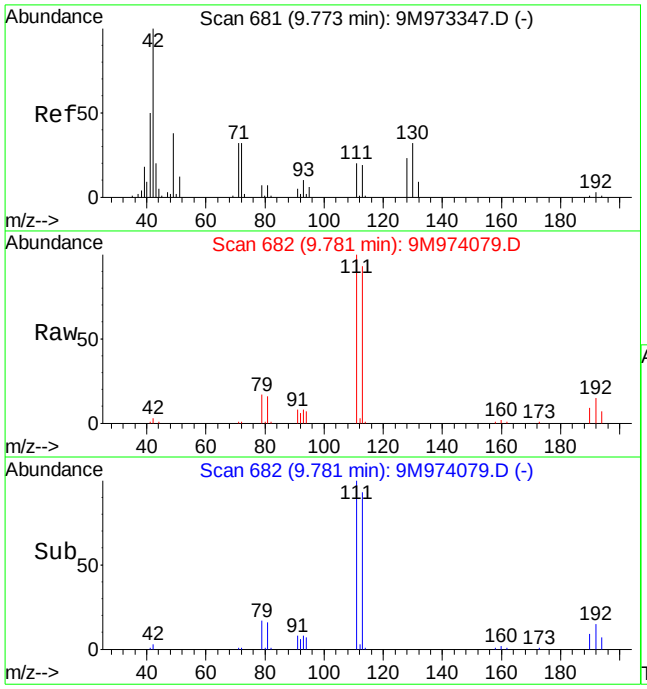

#36
Tetrahydrofuran
Concen: 2.28 ug/kg
RT: 9.78 min Scan# 682
Delta R.T. 0.01 min
Lab File: 9M974079.D
Acq: 30 Apr 2016 19:48

Tgt Ion: 42 Resp: 2994

Ion	Ratio	Lower	Upper
42	100		
72	13.1	19.8	46.2#
71	13.0	18.3	42.7#

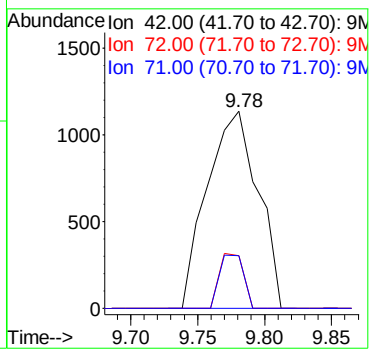

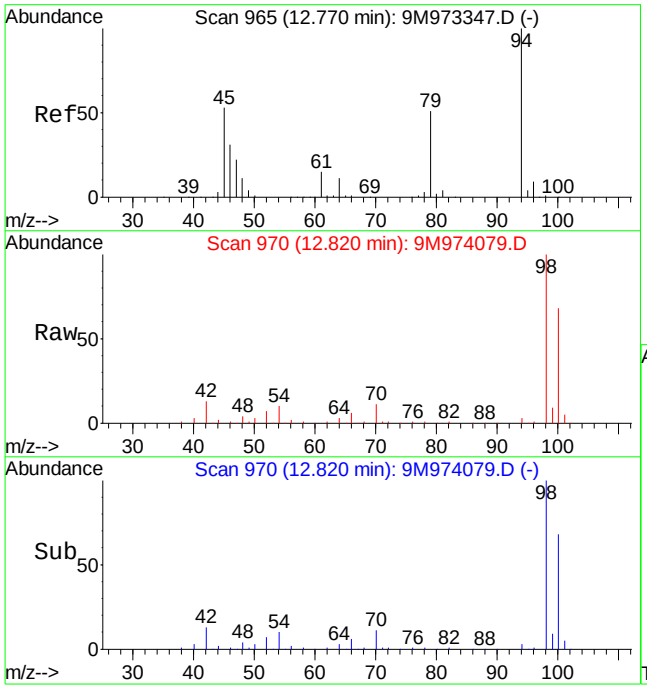

#56
Dimethyl Disulfide
Concen: 2.81 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M974079.D
Acq: 30 Apr 2016 19:48

Tgt Ion: 94 Resp: 14746

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

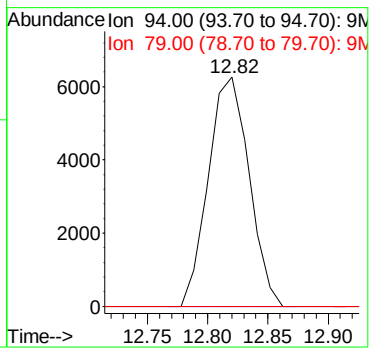

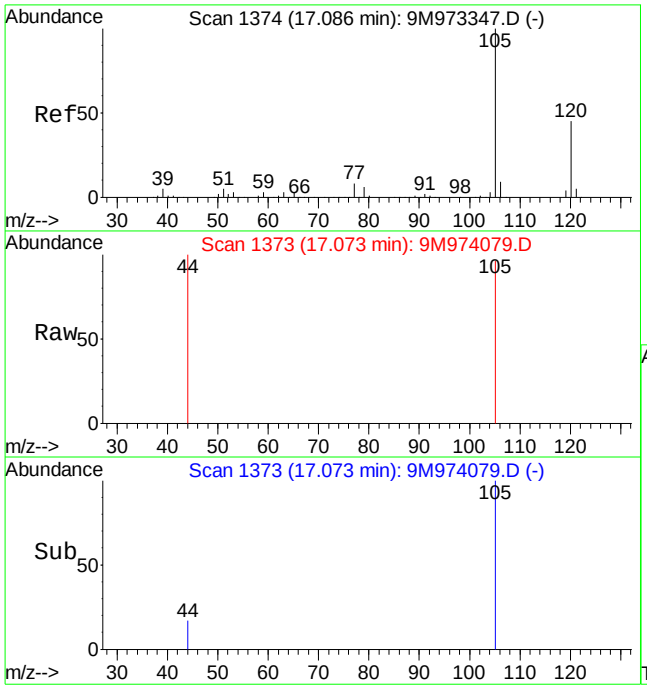

#89
1,2,4-Trimethylbenzene
Concen: Below Cal
RT: 17.07 min Scan# 1373
Delta R.T. -0.01 min
Lab File: 9M974079.D
Acq: 30 Apr 2016 19:48

Tgt Ion:105 Resp: 1323

Ion	Ratio	Lower	Upper
105	100		
120	17.3	33.0	77.0#

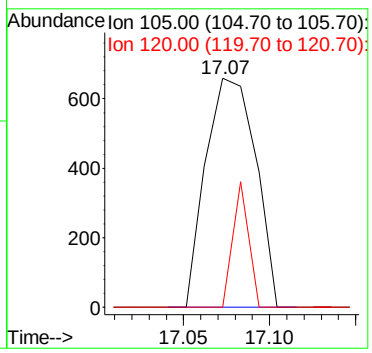

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\043016\9M974080.D Vial: 14
Acq On : 30 Apr 2016 20:18 Operator: ADC
Sample : L16041363-04 A 8260 4.92g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 04 12:27:50 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	527759	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	379392	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.74	152	175209	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	144423	54.1844 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 108.36%		
43) 1,2-Dichloroethane-d4	10.43	65	170049	60.9441 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 121.88%#		
58) Toluene-d8	12.82	98	497202	54.9880 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 109.98%		
79) p-Bromofluorobenzene	16.22	95	189269	62.3673 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 124.74%#		

Target Compounds

					Qvalue
3) Chloromethane	3.74	50	1661	0.4463 ug/kg	89
13) Acetone	6.40	43	2743	Below Cal #	53
36) Tetrahydrofuran	9.77	42	2328	1.9314 ug/kg#	54
56) Dimethyl Disulfide	12.82	94	12845	2.6655 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.07	105	938	Below Cal	89

(#) = qualifier out of range (m) = manual integration
9M974080.D 8260-SL.M Wed May 04 12:27:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\043016\9M974080.D Vial: 14
Acq On : 30 Apr 2016 20:18 Operator: ADC
Sample : L16041363-04 A 8260 4.92g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 4 12:27 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

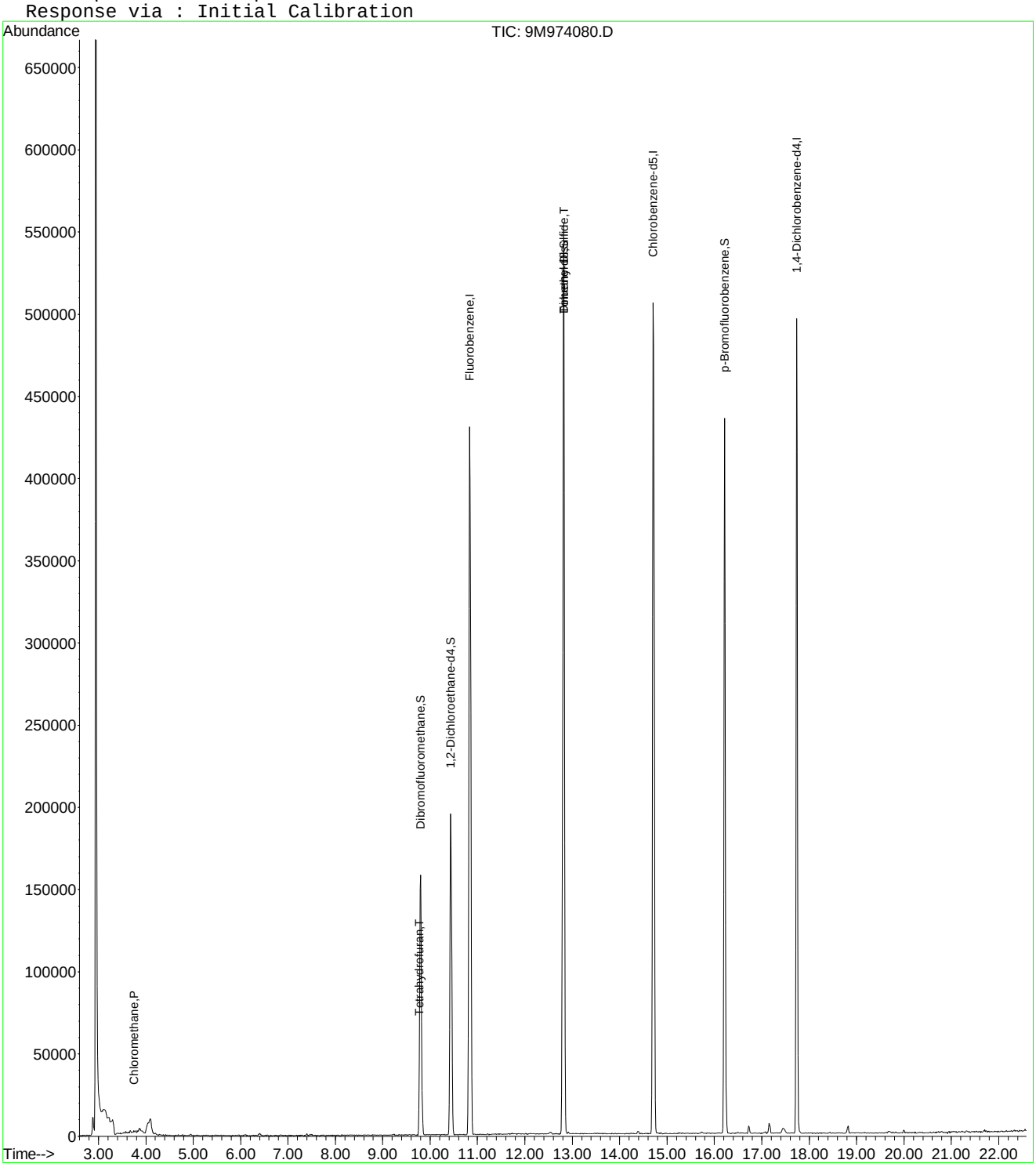

9M974080.D 8260-SL.M Wed May 04 12:27:51 2016 Page 2

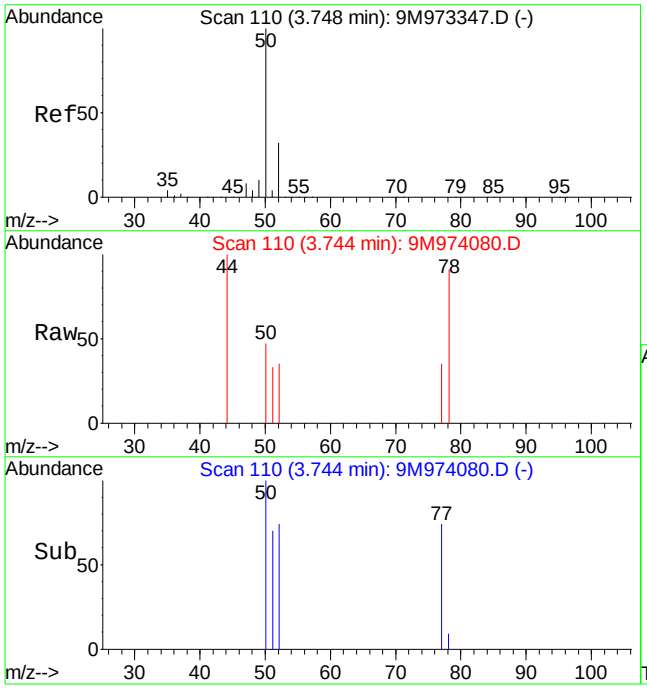

#3
Chloromethane
Concen: 0.45 ug/kg
RT: 3.74 min Scan# 110
Delta R.T. -0.00 min
Lab File: 9M974080.D
Acq: 30 Apr 2016 20:18

Tgt Ion: 50 Resp: 1661

Ion	Ratio	Lower	Upper
50	100		
52	26.6	19.9	46.3

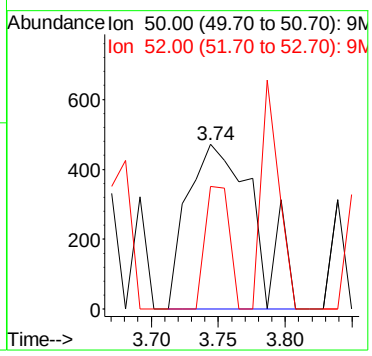

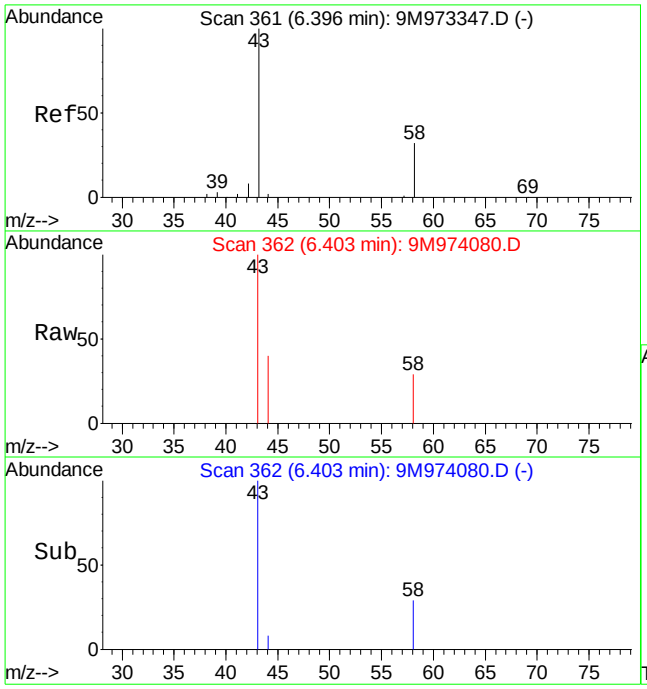

#13
Acetone
Concen: Below Cal
RT: 6.40 min Scan# 362
Delta R.T. 0.02 min
Lab File: 9M974080.D
Acq: 30 Apr 2016 20:18

Tgt Ion: 43 Resp: 2743

Ion	Ratio	Lower	Upper
43	100		
58	7.1	20.2	47.2#

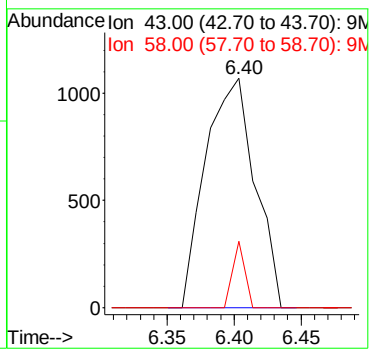

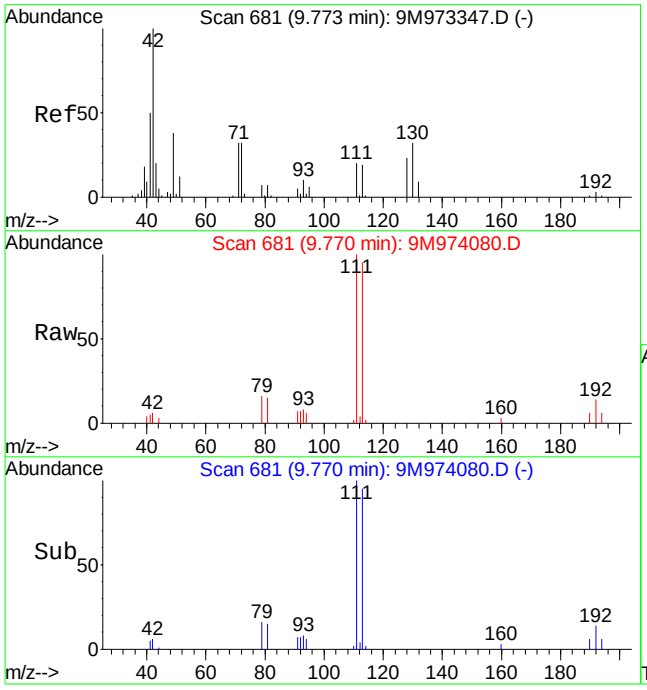

#36
Tetrahydrofuran
Concen: 1.93 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. -0.00 min
Lab File: 9M974080.D
Acq: 30 Apr 2016 20:18

Tgt Ion: 42 Resp: 2328

Ion	Ratio	Lower	Upper
42	100		
72	12.4	19.8	46.2#
71	0.0	18.3	42.7#

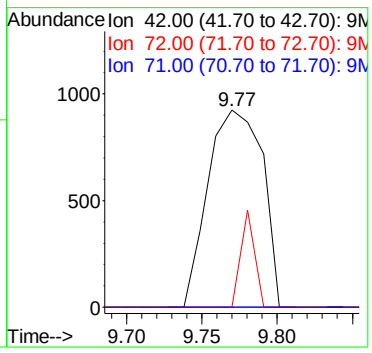

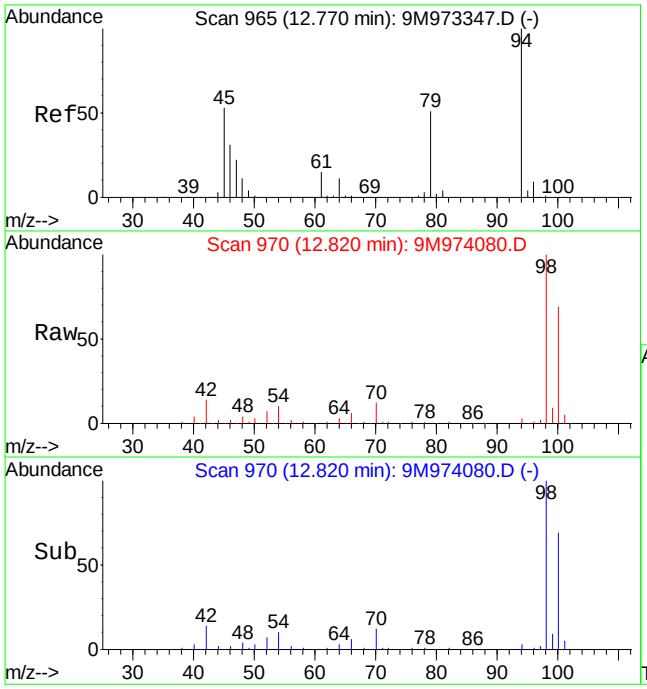

#56
Dimethyl Disulfide
Concen: 2.67 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M974080.D
Acq: 30 Apr 2016 20:18

Tgt Ion: 94 Resp: 12845

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

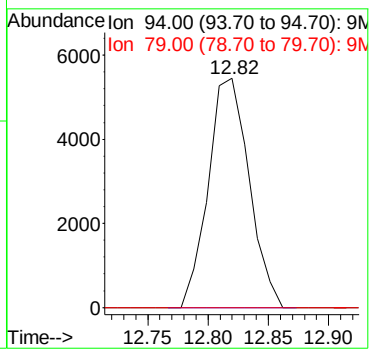

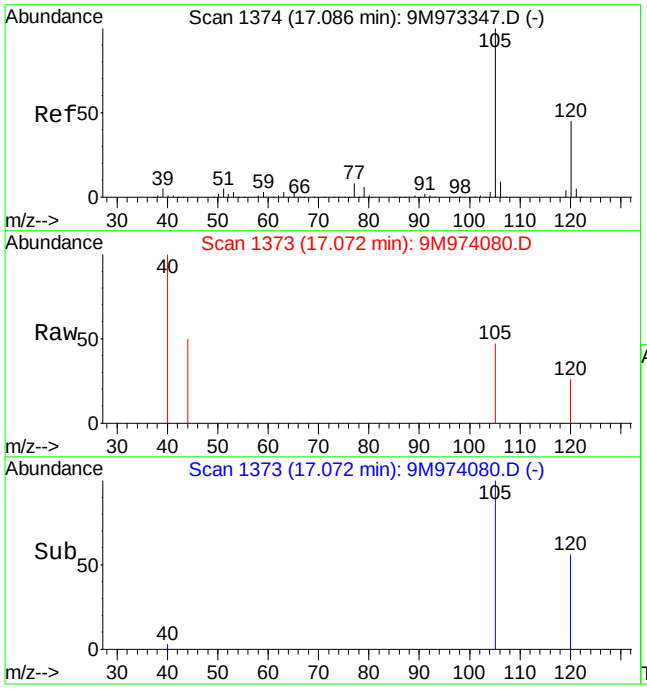

#89
1,2,4-Trimethylbenzene
Concen: Below Cal
RT: 17.07 min Scan# 1373
Delta R.T. -0.01 min
Lab File: 9M974080.D
Acq: 30 Apr 2016 20:18

Tgt Ion:105 Resp: 938

Ion	Ratio	Lower	Upper
105	100		
120	46.8	33.0	77.0

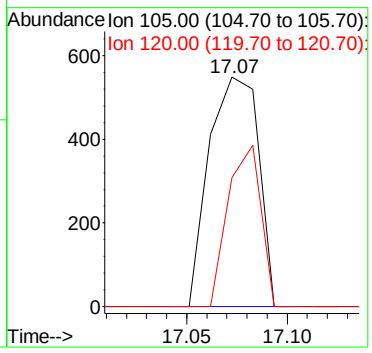

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\043016\9M974081.D Vial: 15
Acq On : 30 Apr 2016 20:48 Operator: ADC
Sample : L16041363-05 A 8260 5.35g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 04 12:27:51 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	567426	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	404510	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.74	152	183185	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	152506	53.2171 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 106.44%		
43) 1,2-Dichloroethane-d4	10.44	65	178523	59.5083 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 119.02%		
58) Toluene-d8	12.82	98	536494	55.6492 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 111.30%		
79) p-Bromofluorobenzene	16.22	95	198328	62.5069 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 125.02%#		

Target Compounds

					Qvalue
3) Chloromethane	3.74	50	1741	0.4351 ug/kg	86
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	1918	0.6213 ug/kg	83
13) Acetone	6.39	43	3572	Below Cal	100
36) Tetrahydrofuran	9.78	42	2912	2.2471 ug/kg	84
56) Dimethyl Disulfide	12.82	94	14319	2.7637 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.07	105	1472	Below Cal	72

(#) = qualifier out of range (m) = manual integration
9M974081.D 8260-SL.M Wed May 04 12:27:52 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\043016\9M974081.D Vial: 15
Acq On : 30 Apr 2016 20:48 Operator: ADC
Sample : L16041363-05 A 8260 5.35g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 4 12:27 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

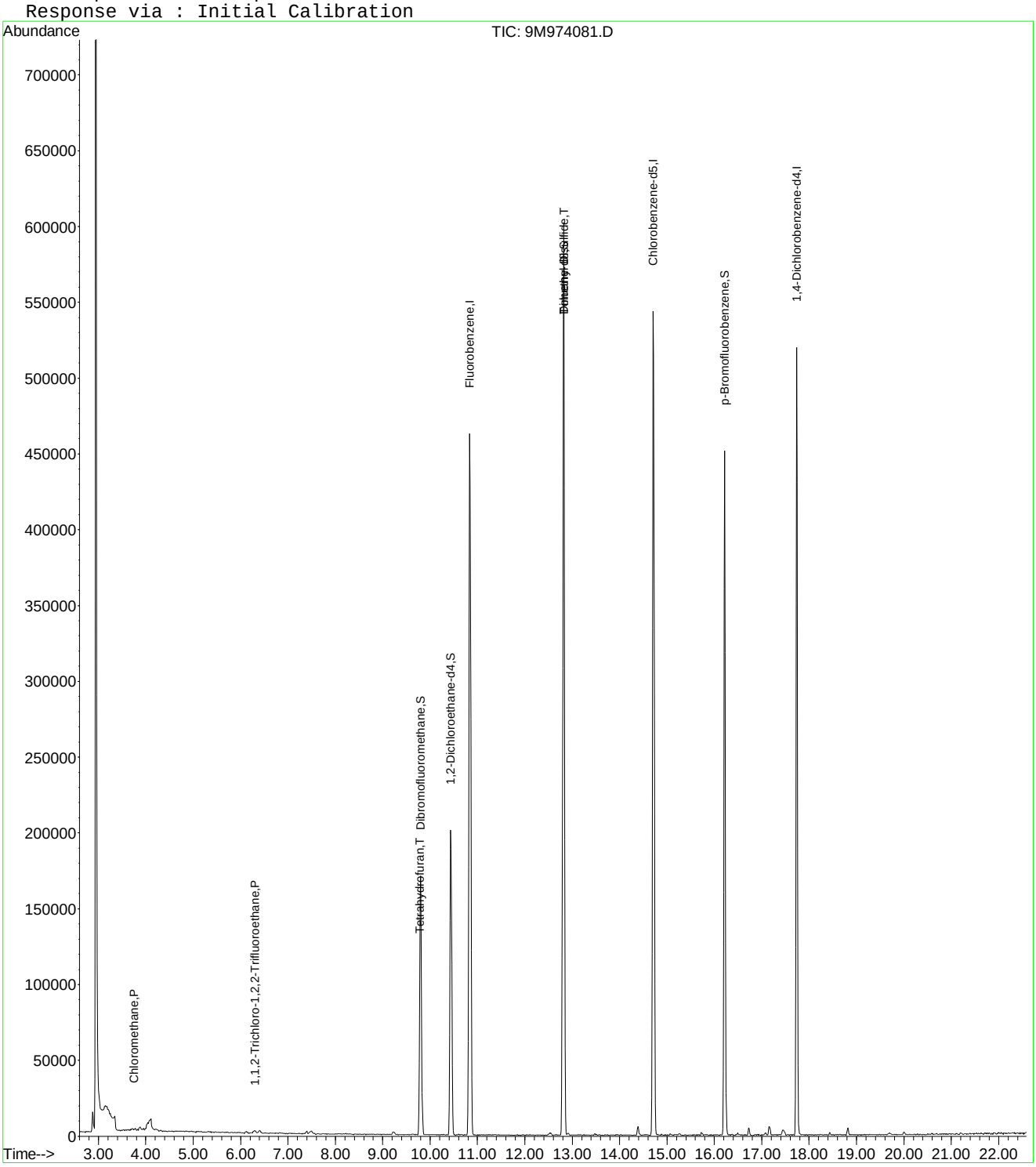

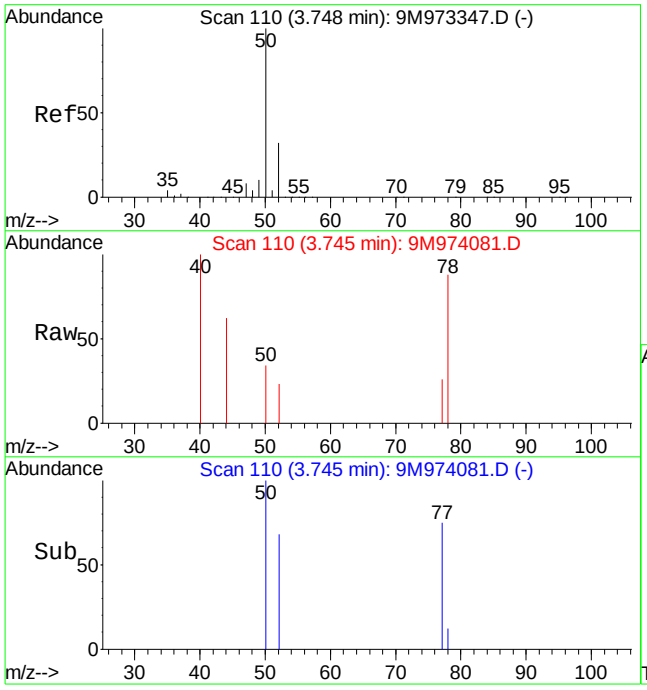

#3
Chloromethane
Concen: 0.44 ug/kg
RT: 3.74 min Scan# 110
Delta R.T. -0.00 min
Lab File: 9M974081.D
Acq: 30 Apr 2016 20:48

Tgt Ion: 50 Resp: 1741

Ion	Ratio	Lower	Upper
50	100		
52	25.3	19.9	46.3

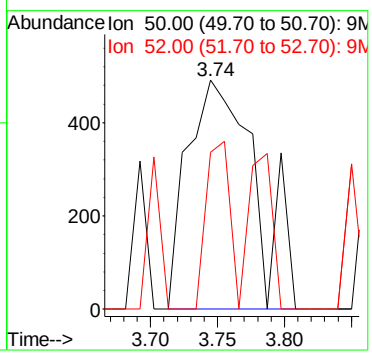

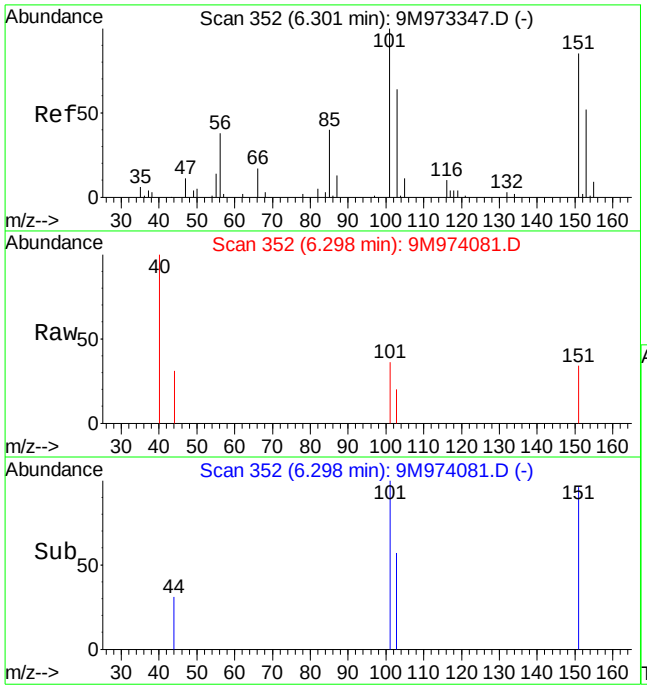

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 0.62 ug/kg
RT: 6.30 min Scan# 352
Delta R.T. -0.00 min
Lab File: 9M974081.D
Acq: 30 Apr 2016 20:48

Tgt Ion:101 Resp: 1918

Ion	Ratio	Lower	Upper
101	100		
151	97.7	42.4	122.4

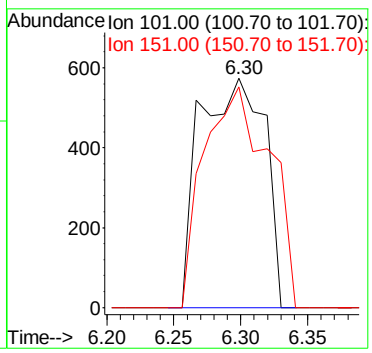

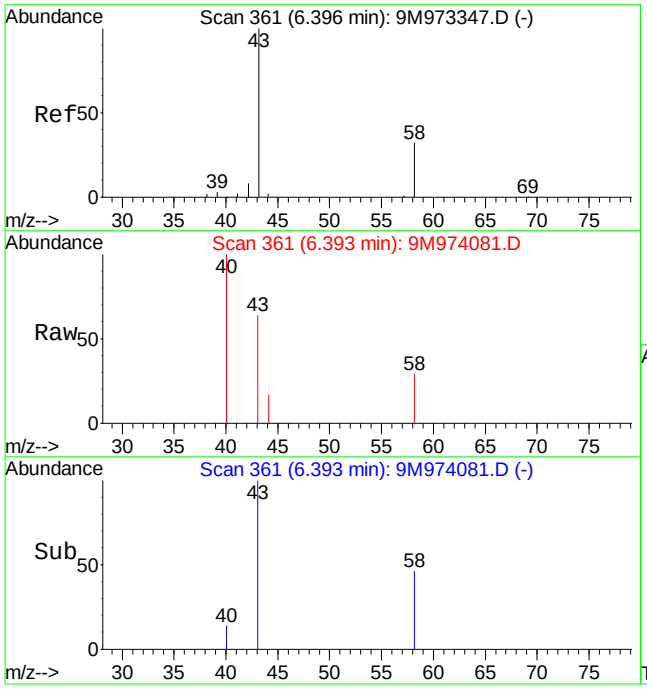

#13
Acetone
Concen: Below Cal
RT: 6.39 min Scan# 361
Delta R.T. 0.01 min
Lab File: 9M974081.D
Acq: 30 Apr 2016 20:48

Tgt Ion: 43 Resp: 3572

Ion	Ratio	Lower	Upper
43	100		
58	33.5	20.2	47.2

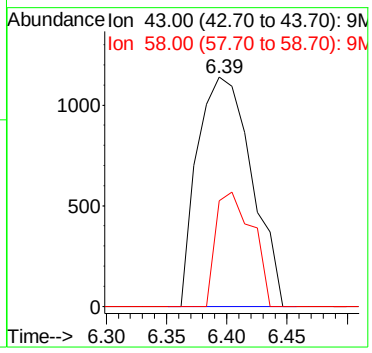

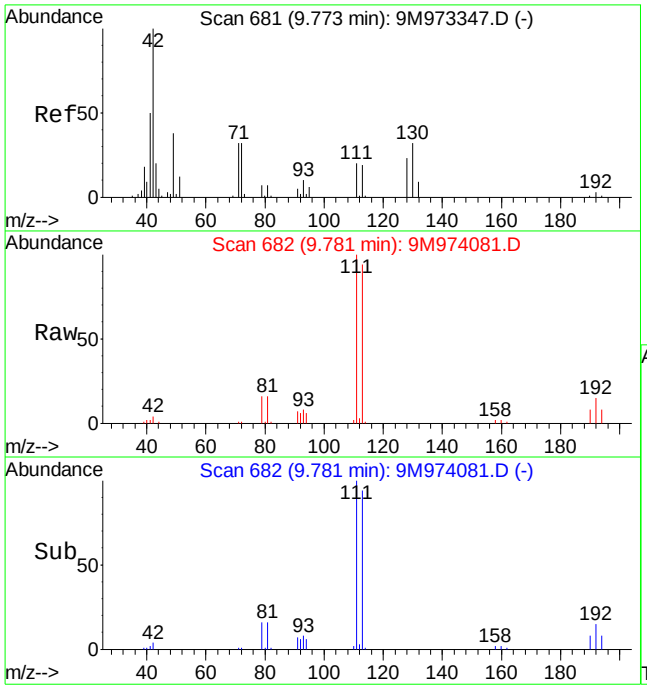

#36
Tetrahydrofuran
Concen: 2.25 ug/kg
RT: 9.78 min Scan# 682
Delta R.T. 0.01 min
Lab File: 9M974081.D
Acq: 30 Apr 2016 20:48

Tgt Ion: 42 Resp: 2912

Ion	Ratio	Lower	Upper
42	100		
72	22.6	19.8	46.2
71	23.1	18.3	42.7

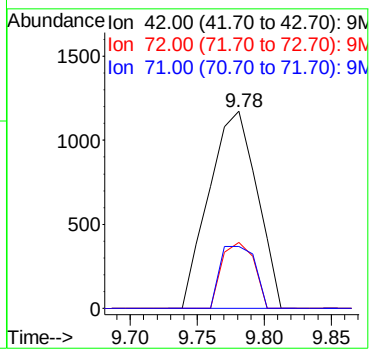

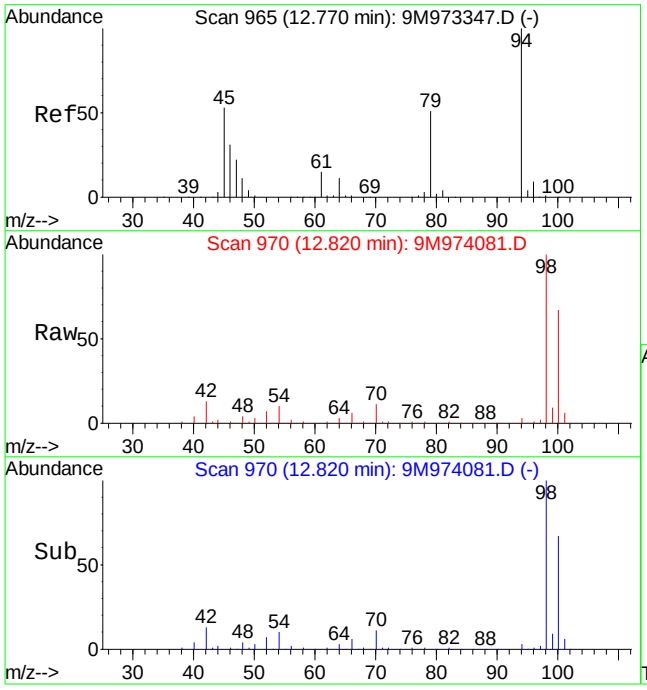

#56
Dimethyl Disulfide
Concen: 2.76 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M974081.D
Acq: 30 Apr 2016 20:48

Tgt Ion: 94 Resp: 14319

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

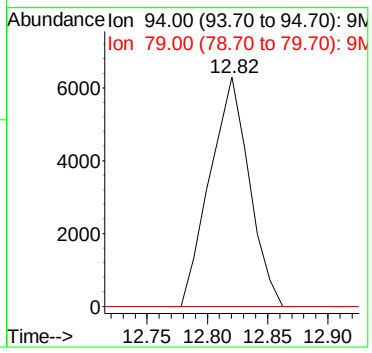

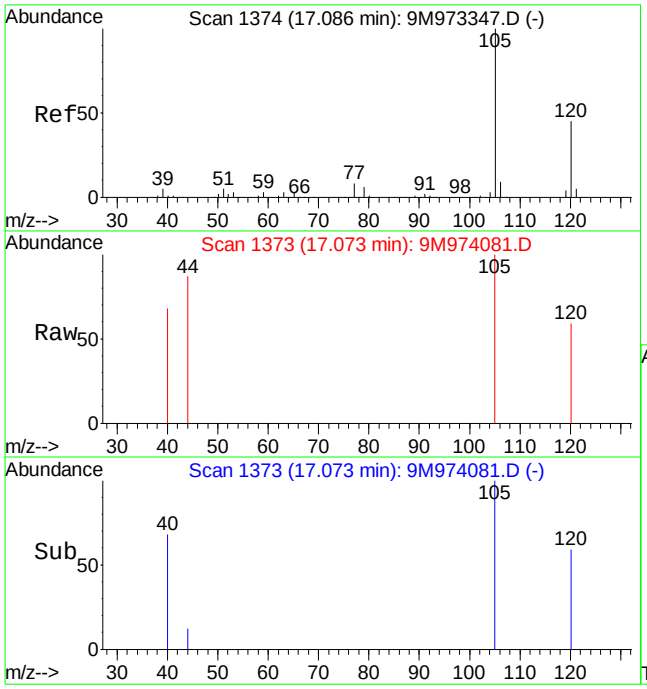

#89
1,2,4-Trimethylbenzene
Concen: Below Cal
RT: 17.07 min Scan# 1373
Delta R.T. -0.01 min
Lab File: 9M974081.D
Acq: 30 Apr 2016 20:48

Tgt Ion:105 Resp: 1472

Ion	Ratio	Lower	Upper
105	100		
120	35.0	33.0	77.0

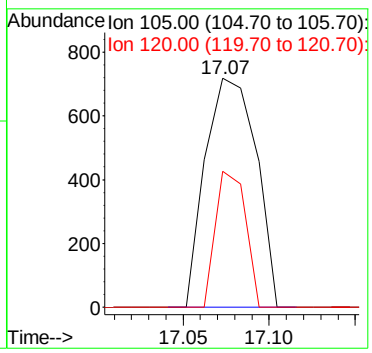

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\043016\9M974082.D Vial: 16
Acq On : 30 Apr 2016 21:19 Operator: ADC
Sample : L16041363-06 A 8260 4.64g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 04 12:27:53 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	552950	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	394106	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	177988	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	145996	52.2792 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.56%		
43) 1,2-Dichloroethane-d4	10.44	65	160040	54.7439 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 109.48%		
58) Toluene-d8	12.81	98	524296	55.8196 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 111.64%		
79) p-Bromofluorobenzene	16.22	95	186335	60.4418 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 120.88%		

Target Compounds					Qvalue
13) Acetone	6.39	43	10338	4.0760 ug/kg	92
15) Tert-Butyl Alcohol	6.71	59	607	1.2516 ug/kg#	61
29) 2-Butanone	9.02	43	1688	0.9495 ug/kg#	58
36) Tetrahydrofuran	9.77	42	3855	3.0526 ug/kg#	71
56) Dimethyl Disulfide	12.81	94	14440	2.8600 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.08	105	2426	Below Cal #	62

(#) = qualifier out of range (m) = manual integration
9M974082.D 8260-SL.M Wed May 04 12:27:53 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\043016\9M974082.D Vial: 16
Acq On : 30 Apr 2016 21:19 Operator: ADC
Sample : L16041363-06 A 8260 4.64g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 4 12:27 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

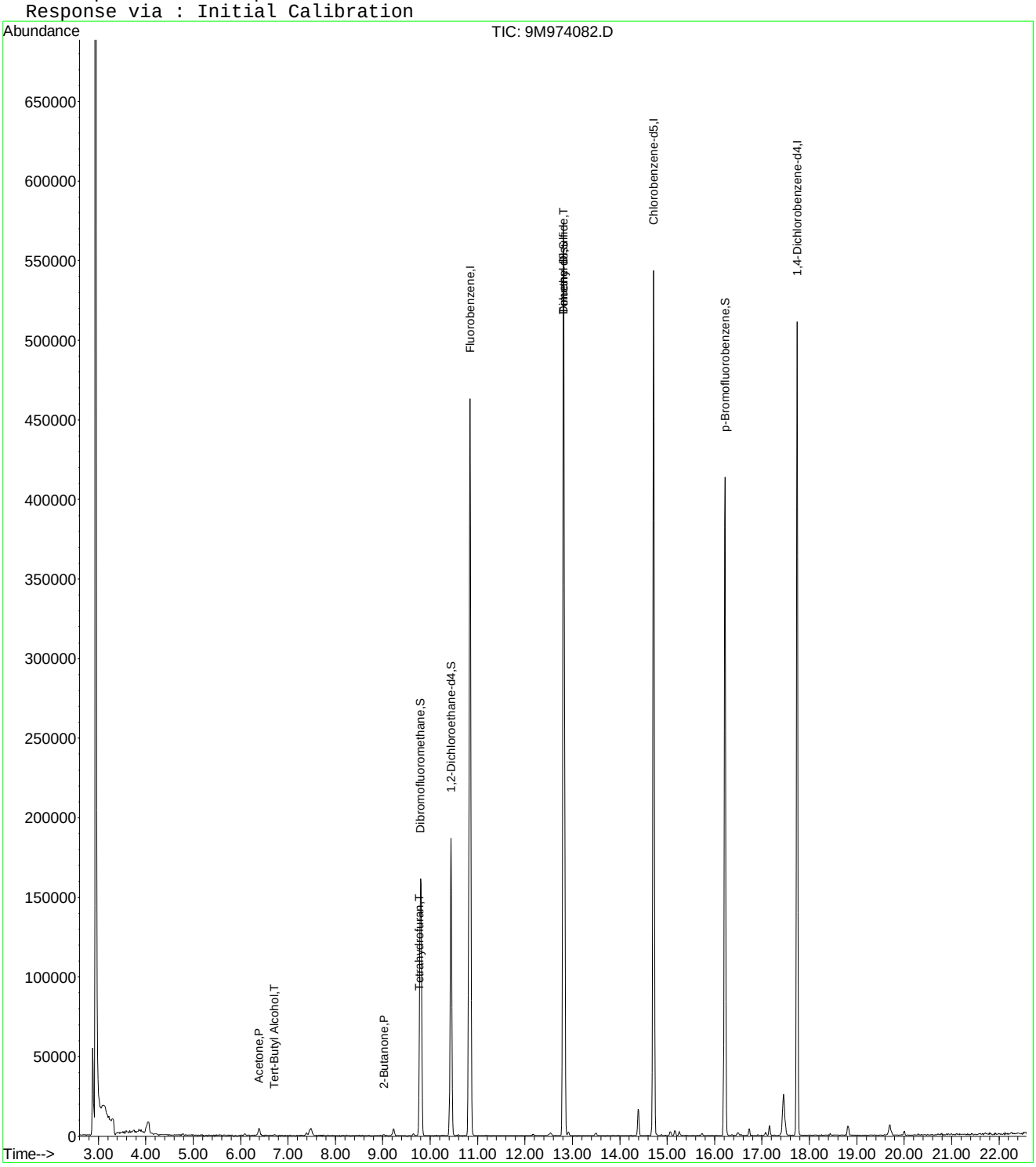

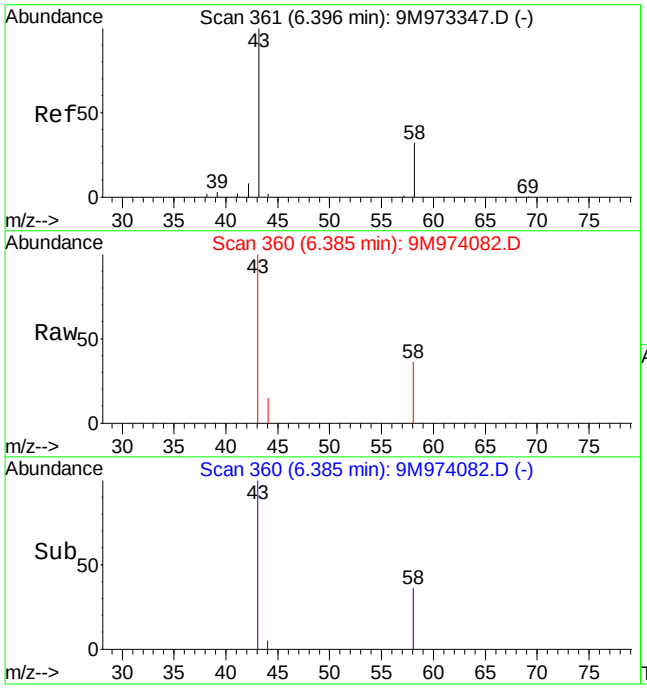

#13
Acetone
Concen: 4.08 ug/kg
RT: 6.39 min Scan# 360
Delta R.T. 0.00 min
Lab File: 9M974082.D
Acq: 30 Apr 2016 21:19

Tgt Ion: 43 Resp: 10338

Ion	Ratio	Lower	Upper
43	100		
58	29.2	20.2	47.2

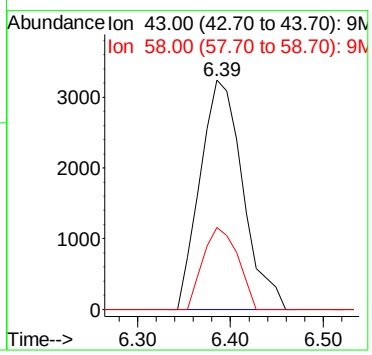

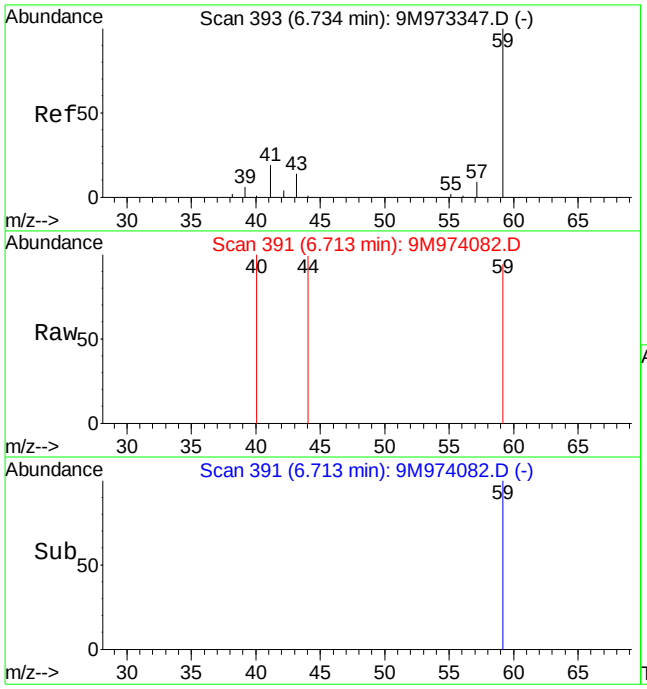

#15
Tert-Butyl Alcohol
Concen: 1.25 ug/kg
RT: 6.71 min Scan# 391
Delta R.T. -0.01 min
Lab File: 9M974082.D
Acq: 30 Apr 2016 21:19

Tgt Ion: 59 Resp: 607

Ion	Ratio	Lower	Upper
59	100		
41	0.0	12.4	29.0#
57	0.0	6.1	14.1#

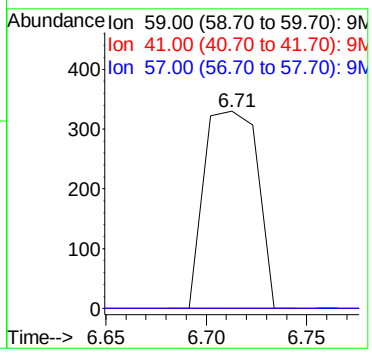

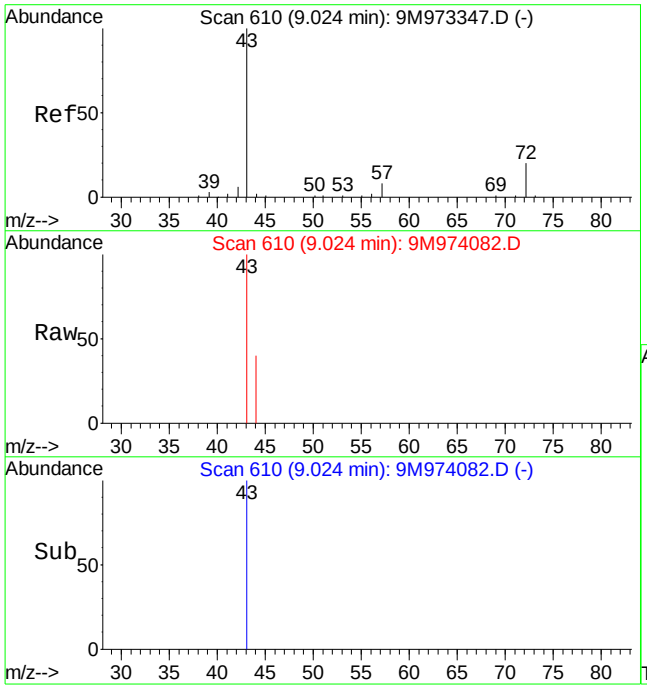

#29
2-Butanone
Concen: 0.95 ug/kg
RT: 9.02 min Scan# 610
Delta R.T. 0.01 min
Lab File: 9M974082.D
Acq: 30 Apr 2016 21:19

Tgt Ion: 43 Resp: 1688

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.5	26.7#

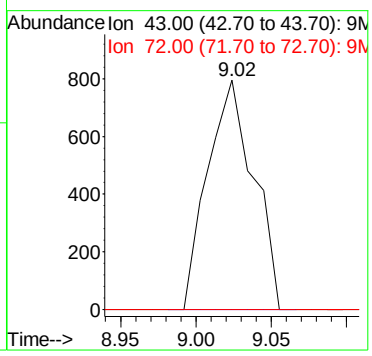

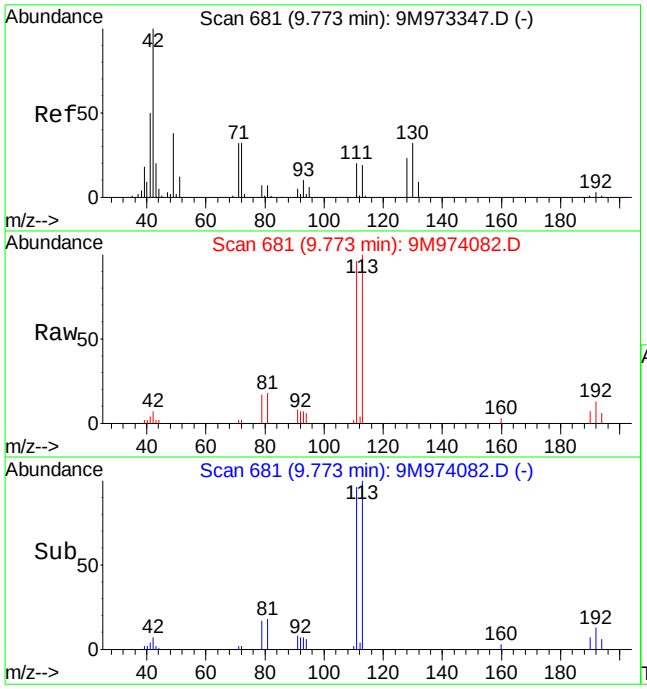

#36
Tetrahydrofuran
Concen: 3.05 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. 0.00 min
Lab File: 9M974082.D
Acq: 30 Apr 2016 21:19

Tgt Ion: 42 Resp: 3855

Ion	Ratio	Lower	Upper
42	100		
72	19.0	19.8	46.2#
71	12.7	18.3	42.7#

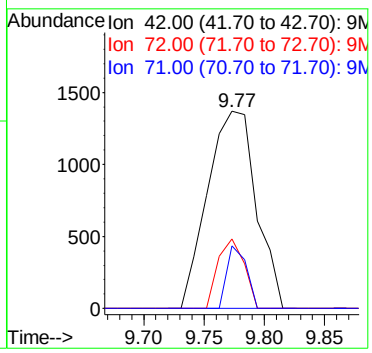

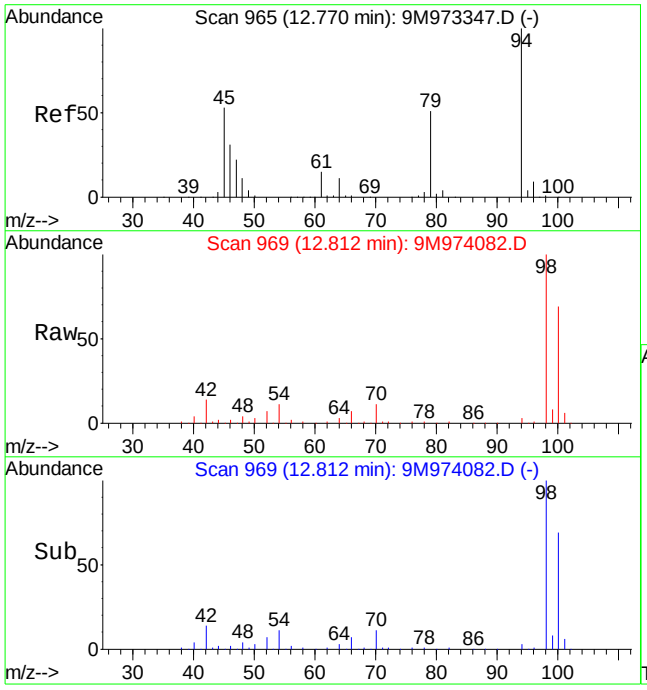

#56
Dimethyl Disulfide
Concen: 2.86 ug/kg
RT: 12.81 min Scan# 969
Delta R.T. 0.04 min
Lab File: 9M974082.D
Acq: 30 Apr 2016 21:19

Tgt Ion: 94 Resp: 14440

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

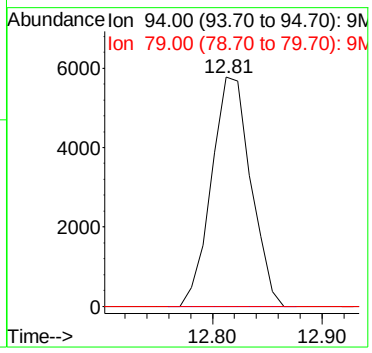

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\043016\9M974083.D Vial: 17
Acq On : 30 Apr 2016 21:49 Operator: ADC
Sample : L16041363-07 A RS 8260 5.06g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 04 12:27:54 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	606330	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	429799	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.74	152	189873	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	159313	52.0254 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.06%		
43) 1,2-Dichloroethane-d4	10.44	65	172557	53.8290 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 107.66%		
58) Toluene-d8	12.82	98	577439	56.3720 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 112.74%		
79) p-Bromofluorobenzene	16.22	95	206832	62.8909 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 125.78%#		

Target Compounds					Qvalue
13) Acetone	6.38	43	14258	6.6297 ug/kg	95
29) 2-Butanone	9.02	43	1357	0.6961 ug/kg#	58
36) Tetrahydrofuran	9.77	42	2952	2.1318 ug/kg	85
56) Dimethyl Disulfide	12.82	94	15857	2.8641 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.08	105	2120	Below Cal #	62

(#) = qualifier out of range (m) = manual integration
9M974083.D 8260-SL.M Wed May 04 12:27:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\043016\9M974083.D Vial: 17
Acq On : 30 Apr 2016 21:49 Operator: ADC
Sample : L16041363-07 A RS 8260 5.06g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 4 12:27 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

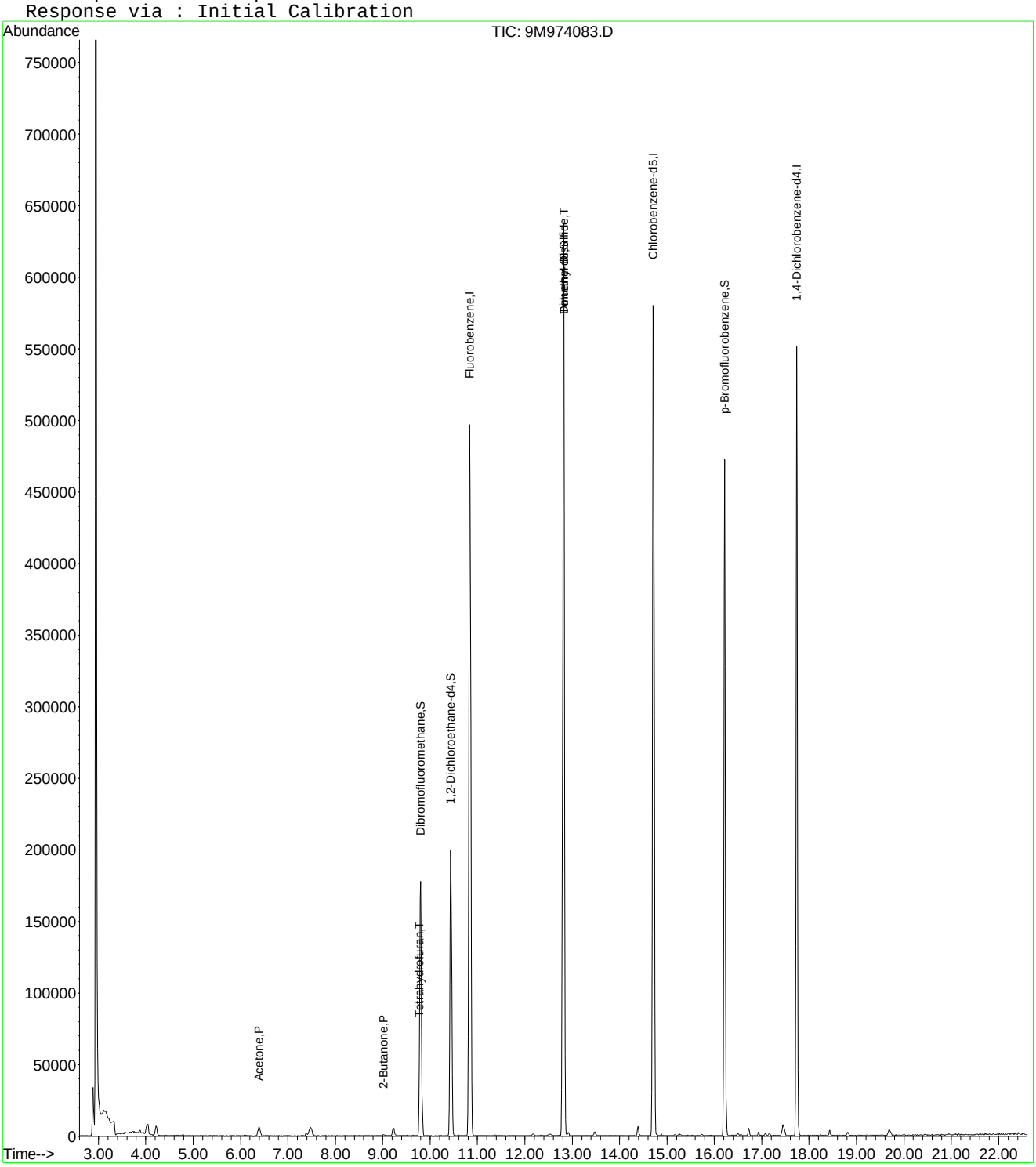

9M974083.D 8260-SL.M Wed May 04 12:27:54 2016 Page 2

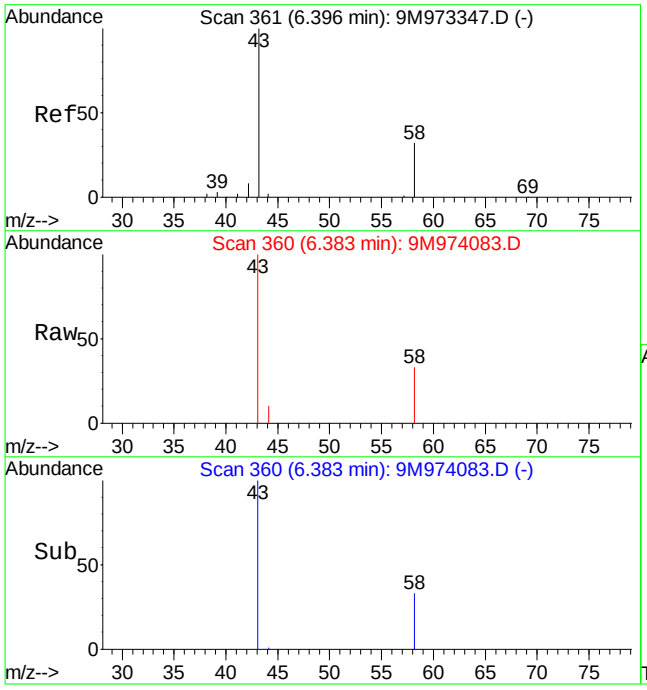

#13
Acetone
Concen: 6.63 ug/kg
RT: 6.38 min Scan# 360
Delta R.T. 0.00 min
Lab File: 9M974083.D
Acq: 30 Apr 2016 21:49

Tgt Ion: 43 Resp: 14258

Ion	Ratio	Lower	Upper
43	100		
58	36.4	20.2	47.2

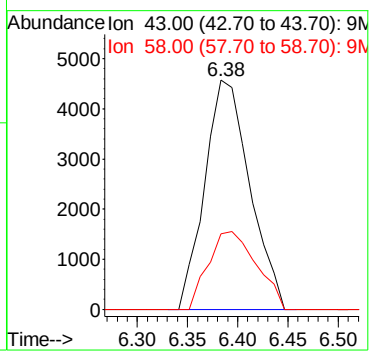

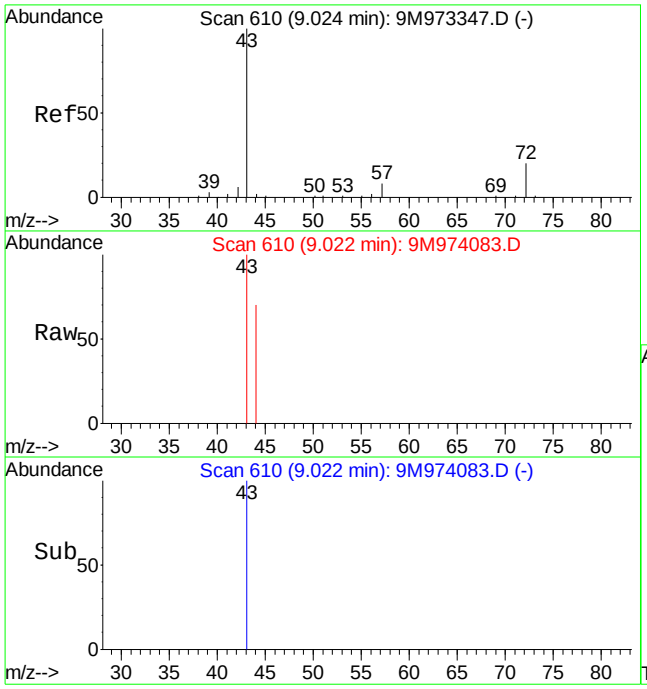

#29
2-Butanone
Concen: 0.70 ug/kg
RT: 9.02 min Scan# 610
Delta R.T. 0.01 min
Lab File: 9M974083.D
Acq: 30 Apr 2016 21:49

Tgt Ion: 43 Resp: 1357

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.5	26.7#

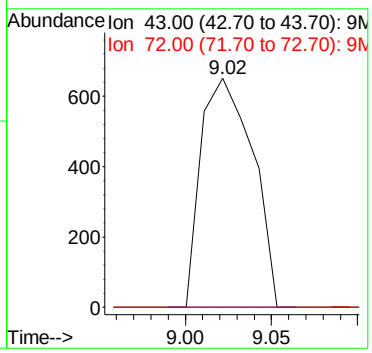

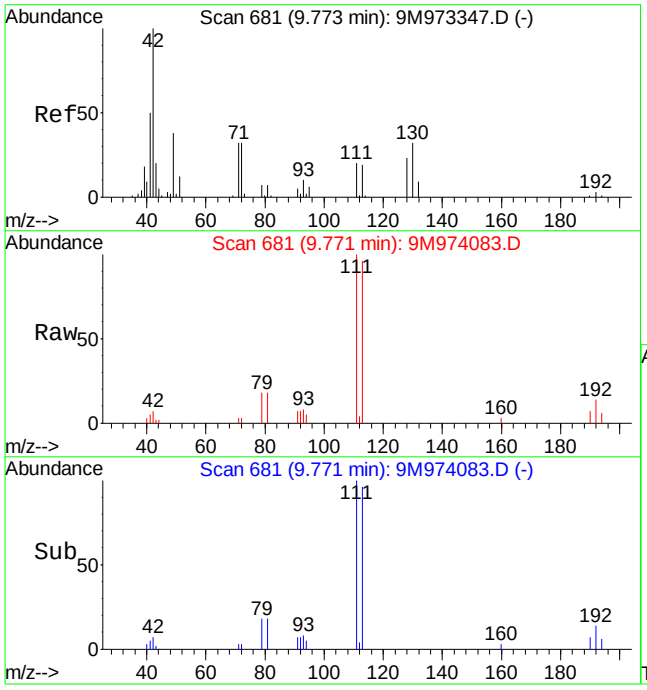

#36
Tetrahydrofuran
Concen: 2.13 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. 0.00 min
Lab File: 9M974083.D
Acq: 30 Apr 2016 21:49

Tgt Ion: 42 Resp: 2952

Ion	Ratio	Lower	Upper
42	100		
72	23.2	19.8	46.2
71	23.5	18.3	42.7

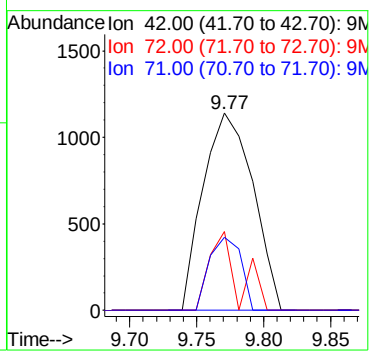

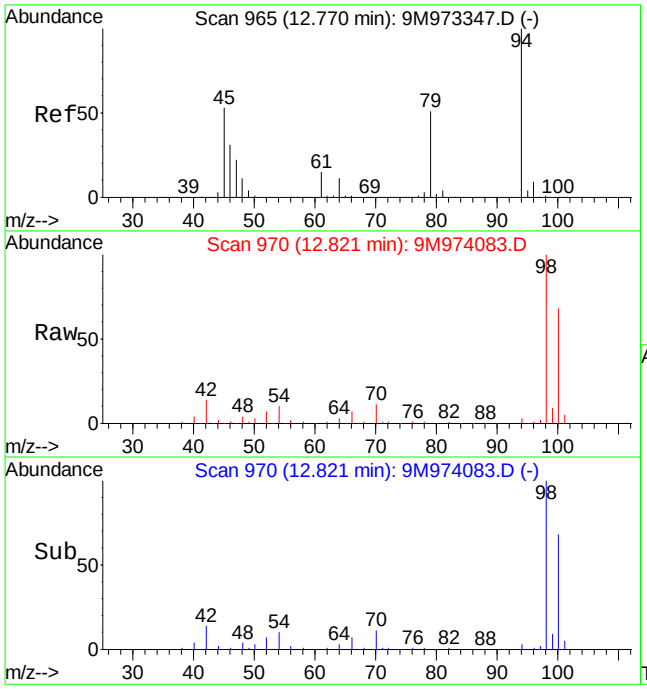

#56
Dimethyl Disulfide
Concen: 2.86 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M974083.D
Acq: 30 Apr 2016 21:49

Tgt Ion: 94 Resp: 15857

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

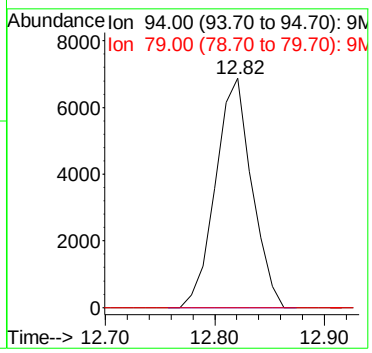

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\043016\9M974085.D Vial: 19
Acq On : 30 Apr 2016 22:50 Operator: ADC
Sample : L16041363-08 A MS 8260 4.95g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 30 23:12:46 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	629804	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	455159	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.74	152	204071	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	167582	52.6860 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.38%		
43) 1,2-Dichloroethane-d4	10.44	65	183107	54.9911 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 109.98%		
58) Toluene-d8	12.82	98	601749	55.4722 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 110.94%		
79) p-Bromofluorobenzene	16.22	95	217938	61.6574 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 123.32%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	98865	20.4644 ug/kg	99
3) Chloromethane	3.76	50	95985	21.6127 ug/kg	99
4) Vinyl Chloride	3.98	62	83365	28.2163 ug/kg	91
6) Bromomethane	4.87	94	52231	19.1816 ug/kg	99
7) Chloroethane	5.03	64	49635	18.7138 ug/kg	99
8) Trichlorofluoromethane	5.52	101	103181	18.3878 ug/kg	100
10) Isoprene	6.08	67	82252	18.6224 ug/kg	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	63620	18.5682 ug/kg	98
13) Acetone	6.39	43	35051	23.6598 ug/kg	99
14) 1,1-Dichloroethene	6.60	61	95543	16.6363 ug/kg	97
16) Dimethyl Sulfide	6.87	62	70906	25.2004 ug/kg	98
17) Iodomethane	7.12	142	23624	11.3004 ug/kg	98
18) Methyl acetate	7.13	43	52731	14.4531 ug/kg	98
19) Methylene Chloride	7.39	84	63476	17.6940 ug/kg	97
20) Carbon Disulfide	7.44	76	184396	16.9331 ug/kg	100
21) Acrylonitrile	7.58	53	28956	16.6982 ug/kg	97
22) Methyl Tert Butyl Ether	7.60	73	187223	19.3952 ug/kg	98
23) trans-1,2-Dichloroethene	7.84	61	99446	18.0004 ug/kg	99
24) n-Hexane	7.91	57	114637	15.9790 ug/kg	98
27) 1,1-Dichloroethane	8.46	63	116325	17.3472 ug/kg	98
29) 2-Butanone	9.01	43	33819	16.7023 ug/kg	98
31) 2,2-Dichloropropane	9.23	77	82515	16.8516 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	67407	18.3597 ug/kg	99
33) Chloroform	9.51	83	104854	18.4351 ug/kg	99
34) 1-Bromopropane	9.64	122	16100	24.9407 ug/kg	98
35) Bromochloromethane	9.75	130	39419	17.2091 ug/kg	97
36) Tetrahydrofuran	9.77	42	2965	2.0614 ug/kg	83
38) 1,1,1-Trichloroethane	10.04	97	90522	18.5952 ug/kg	99
39) Cyclohexane	10.07	56	142655	18.5369 ug/kg	99
40) 1,1-Dichloropropene	10.23	75	75480	16.8439 ug/kg	99
42) Carbon Tetrachloride	10.38	117	81968	18.0385 ug/kg	100
45) 1,2-Dichloroethane	10.56	62	91768	18.7352 ug/kg	96
46) Benzene	10.59	78	237127	17.0501 ug/kg	99
47) Trichloroethene	11.34	130	65218	16.6719 ug/kg	98
48) Methylcyclohexane	11.43	83	109493	18.3173 ug/kg	97
49) 1,2-Dichloropropane	11.56	63	70108	18.5364 ug/kg	99
51) Bromodichloromethane	11.86	83	76403	17.7275 ug/kg	100
52) Dibromomethane	11.95	174	36658	16.2340 ug/kg	96
53) 2-Chloroethyl Vinyl Ether	12.16	63	23431	11.6502 ug/kg	99
54) 4-Methyl-2-Pentanone	12.19	58	28643	16.4483 ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M974085.D 8260-SL.M Sat Apr 30 23:12:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\043016\9M974085.D Vial: 19
Acq On : 30 Apr 2016 22:50 Operator: ADC
Sample : L16041363-08 A MS 8260 4.95g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 30 23:12:46 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
55)	cis-1,3-Dichloropropene	12.49	75	96305	17.9215	ug/kg	99
56)	Dimethyl Disulfide	12.76	94	121161	21.0687	ug/kg	93
59)	Toluene	12.92	91	247490	17.8688	ug/kg	99
60)	Ethyl Methacrylate	13.01	69	76904	18.2380	ug/kg	99
61)	trans-1,3-Dichloropropene	13.09	75	81106	17.9877	ug/kg	98
62)	1,1,2-Trichloroethane	13.32	97	50372	18.4740	ug/kg	97
63)	2-Hexanone	13.24	43	45531	15.2920	ug/kg	97
64)	1,3-Dichloropropane	13.61	76	90984	19.4063	ug/kg	100
65)	Tetrachloroethene	13.74	164	49798	16.9529	ug/kg	96
66)	Dibromochloromethane	14.00	129	60625	17.9863	ug/kg	99
67)	1,2-Dibromoethane	14.27	107	53371	17.7689	ug/kg	100
68)	1-Chlorohexane	14.34	91	84308	18.4893	ug/kg	99
69)	Chlorobenzene	14.76	112	176553	18.3691	ug/kg	98
70)	1,1,1,2-Tetrachloroethane	14.79	131	62604	19.1722	ug/kg	100
71)	Ethylbenzene	14.78	106	93483	18.0799	ug/kg	98
72)	m-,p-Xylene	14.88	106	228936	35.9117	ug/kg	100
73)	o-Xylene	15.44	106	113485	18.6818	ug/kg	99
74)	Styrene	15.48	104	164518	15.8149	ug/kg	96
75)	Bromoform	15.98	173	37354	17.9265	ug/kg	98
76)	Isopropylbenzene	15.87	105	282519	17.8795	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.08	83	63393	18.6992	ug/kg	99
80)	1,2,3-Trichloropropane	16.28	110	21021	20.7559	ug/kg#	35
81)	trans-1,4-Dichloro-2-Buten	16.32	53	18028	14.6264	ug/kg#	1
82)	n-Propylbenzene	16.38	91	308645	20.2298	ug/kg	100
83)	Bromobenzene	16.51	156	71105	19.5928	ug/kg	94
84)	1,3,5-Trimethylbenzene	16.56	105	237455	20.4407	ug/kg	99
85)	2-Chlorotoluene	16.65	91	198945	21.8335	ug/kg	99
86)	4-Chlorotoluene	16.69	91	181096	19.0014	ug/kg	100
87)	a-Methylstyrene	16.97	118	93225	16.0867	ug/kg	100
88)	tert-Butylbenzene	17.02	134	52101	20.2431	ug/kg	88
89)	1,2,4-Trimethylbenzene	17.08	105	233017	20.2910	ug/kg	99
90)	sec-Butylbenzene	17.29	105	300923	20.1508	ug/kg	99
91)	p-Isopropyltoluene	17.45	119	236554	19.1355	ug/kg	99
92)	1,3-Dichlorobenzene	17.65	146	130411	18.1757	ug/kg	97
93)	1,4-Dichlorobenzene	17.78	146	133230	18.1940	ug/kg	97
94)	n-Butylbenzene	17.98	91	201285	17.6985	ug/kg	98
95)	1,2-Dichlorobenzene	18.29	146	124862	18.2931	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.28	157	13864	20.7328	ug/kg	93
97)	1,2,4-Trichlorobenzene	20.42	180	68723	13.6451	ug/kg	99
98)	Hexachlorobutadiene	20.57	225	39840	16.7716	ug/kg	99
99)	Naphthalene	20.80	128	161144	13.2760	ug/kg	99
100)	1,2,3-Trichlorobenzene	21.10	180	63594	13.3204	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M974085.D 8260-SL.M Sat Apr 30 23:12:46 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\043016\9M974085.D Vial: 19
Acq On : 30 Apr 2016 22:50 Operator: ADC
Sample : L16041363-08 A MS 8260 4.95g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 30 23:12 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

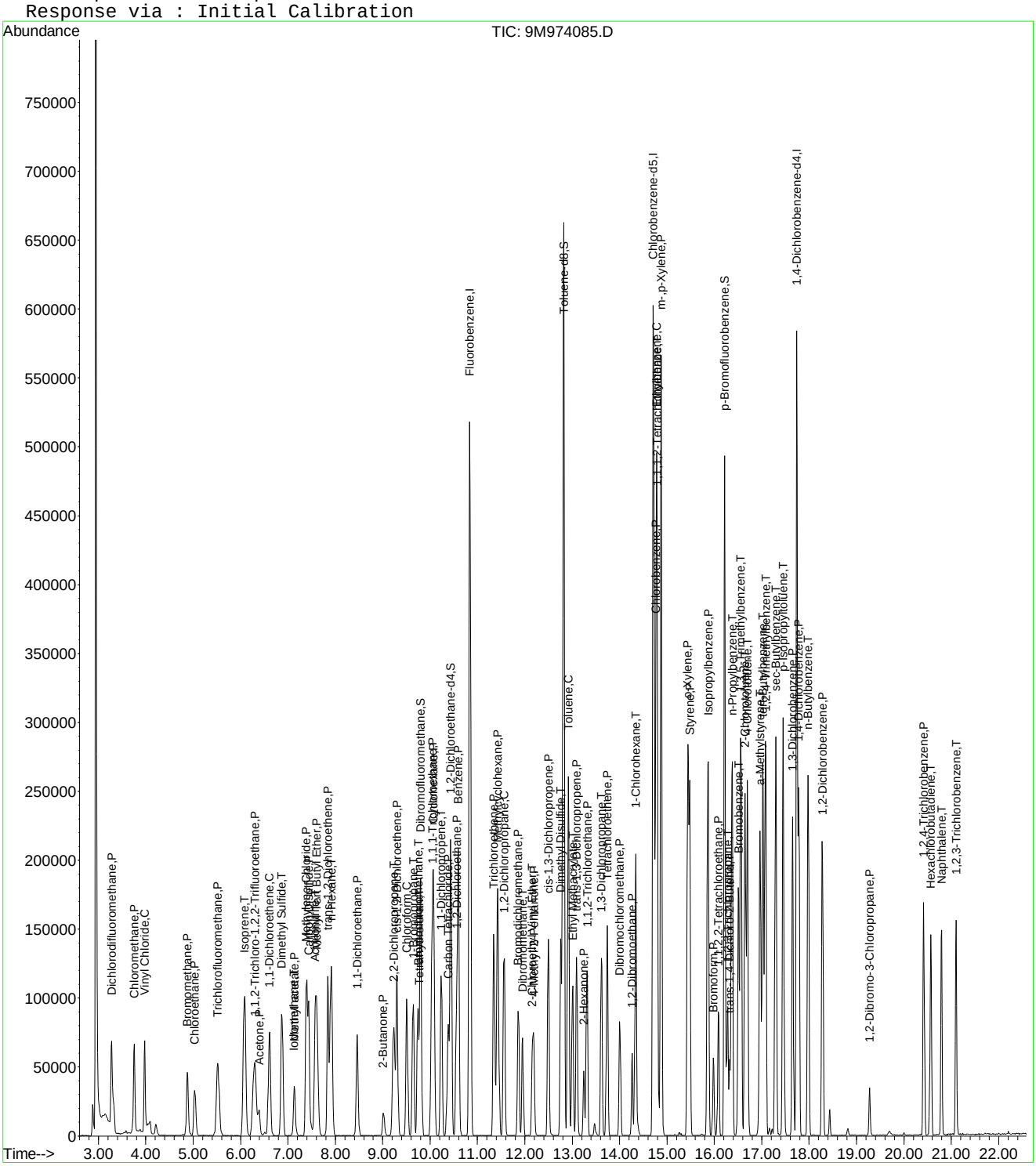

9M974085.D 8260-SL.M Sat Apr 30 23:12:47 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\043016\9M974086.D Vial: 20
Acq On : 30 Apr 2016 23:20 Operator: ADC
Sample : L16041363-09 A MSD 8260 4.85g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 30 23:43:18 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	599152	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	427647	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	195199	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	159399	52.6771 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.36%		
43) 1,2-Dichloroethane-d4	10.44	65	171453	54.1254 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 108.26%		
58) Toluene-d8	12.82	98	568637	55.7921 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 111.58%		
79) p-Bromofluorobenzene	16.22	95	205456	60.7680 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 121.54%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	100424	21.8506 ug/kg	100
3) Chloromethane	3.75	50	98715	23.3645 ug/kg	100
4) Vinyl Chloride	3.97	62	99909	35.7501 ug/kg	94
6) Bromomethane	4.88	94	49629	19.1584 ug/kg	98
7) Chloroethane	5.03	64	52519	20.8142 ug/kg	99
8) Trichlorofluoromethane	5.52	101	104110	19.5025 ug/kg	100
10) Isoprene	6.08	67	77627	18.4744 ug/kg	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	67456	20.6950 ug/kg	97
13) Acetone	6.38	43	36021	26.0264 ug/kg	98
14) 1,1-Dichloroethene	6.61	61	100777	18.4454 ug/kg	97
15) Tert-Butyl Alcohol	6.72	59	419	0.7973 ug/kg#	61
16) Dimethyl Sulfide	6.87	62	63603	23.7613 ug/kg	98
17) Iodomethane	7.12	142	28875	13.6867 ug/kg	100
18) Methyl acetate	7.13	43	51643	14.8791 ug/kg	98
19) Methylene Chloride	7.39	84	64874	19.0089 ug/kg	98
20) Carbon Disulfide	7.44	76	181782	17.5471 ug/kg	99
21) Acrylonitrile	7.58	53	29020	17.5912 ug/kg	97
22) Methyl Tert Butyl Ether	7.60	73	185495	20.1992 ug/kg	99
23) trans-1,2-Dichloroethene	7.84	61	102323	19.4687 ug/kg	100
24) n-Hexane	7.90	57	115250	16.8862 ug/kg	98
27) 1,1-Dichloroethane	8.46	63	119355	18.7096 ug/kg	99
29) 2-Butanone	9.01	43	32232	16.7329 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	83933	18.0181 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	68956	19.7424 ug/kg	98
33) Chloroform	9.51	83	107384	19.8458 ug/kg	100
34) 1-Bromopropane	9.65	122	14864	24.2294 ug/kg	97
35) Bromochloromethane	9.74	130	40187	18.4419 ug/kg	96
36) Tetrahydrofuran	9.77	42	3311	2.4197 ug/kg#	61
38) 1,1,1-Trichloroethane	10.04	97	95270	20.5718 ug/kg	99
39) Cyclohexane	10.07	56	138160	18.8713 ug/kg	97
40) 1,1-Dichloropropene	10.24	75	80732	18.9376 ug/kg	98
42) Carbon Tetrachloride	10.38	117	85443	19.7652 ug/kg	99
45) 1,2-Dichloroethane	10.55	62	93649	20.0974 ug/kg	97
46) Benzene	10.60	78	249247	18.8385 ug/kg	99
47) Trichloroethene	11.34	130	68839	18.4978 ug/kg	99
48) Methylcyclohexane	11.43	83	108418	19.0654 ug/kg	99
49) 1,2-Dichloropropane	11.56	63	73249	20.3577 ug/kg	99
51) Bromodichloromethane	11.86	83	79552	19.4024 ug/kg	99
52) Dibromomethane	11.96	174	35226	16.3979 ug/kg	92
53) 2-Chloroethyl Vinyl Ether	12.16	63	15955	8.3389 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M974086.D 8260-SL.M Sat Apr 30 23:43:18 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\043016\9M974086.D Vial: 20
Acq On : 30 Apr 2016 23:20 Operator: ADC
Sample : L16041363-09 A MSD 8260 4.85g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 30 23:43:18 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
54)	4-Methyl-2-Pentanone	12.18	58	28677	17.3103	ug/kg	99
55)	cis-1,3-Dichloropropene	12.49	75	97845	19.1396	ug/kg	99
56)	Dimethyl Disulfide	12.76	94	116425	21.2809	ug/kg	93
59)	Toluene	12.92	91	262246	20.1523	ug/kg	98
60)	Ethyl Methacrylate	13.00	69	73458	18.5415	ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	79688	18.8102	ug/kg	98
62)	1,1,2-Trichloroethane	13.31	97	51930	20.2706	ug/kg	99
63)	2-Hexanone	13.24	43	45457	16.2493	ug/kg	96
64)	1,3-Dichloropropane	13.61	76	95086	21.5860	ug/kg	98
65)	Tetrachloroethene	13.74	164	51404	18.6254	ug/kg	96
66)	Dibromochloromethane	14.00	129	63011	19.8969	ug/kg	97
67)	1,2-Dibromoethane	14.26	107	51495	18.2473	ug/kg	98
68)	1-Chlorohexane	14.34	91	83608	19.5154	ug/kg	100
69)	Chlorobenzene	14.76	112	179431	19.8696	ug/kg	98
70)	1,1,1,2-Tetrachloroethane	14.80	131	65190	21.2485	ug/kg	98
71)	Ethylbenzene	14.78	106	96608	19.8864	ug/kg	99
72)	m-,p-Xylene	14.88	106	237773	39.6974	ug/kg	99
73)	o-Xylene	15.44	106	118913	20.8347	ug/kg	100
74)	Styrene	15.48	104	158817	16.2490	ug/kg	95
75)	Bromoform	15.98	173	36949	18.8407	ug/kg	99
76)	Isopropylbenzene	15.86	105	295073	19.8753	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.08	83	64955	20.0059	ug/kg	99
80)	1,2,3-Trichloropropane	16.28	110	20428	21.0871	ug/kg#	38
81)	trans-1,4-Dichloro-2-Buten	16.33	53	17078	14.4854	ug/kg#	1
82)	n-Propylbenzene	16.37	91	322346	22.0882	ug/kg	100
83)	Bromobenzene	16.50	156	73645	21.2151	ug/kg	73
84)	1,3,5-Trimethylbenzene	16.56	105	247424	22.2669	ug/kg	98
85)	2-Chlorotoluene	16.65	91	211726	24.2922	ug/kg	98
86)	4-Chlorotoluene	16.69	91	178288	19.5570	ug/kg	99
87)	a-Methylstyrene	16.97	118	79466	14.3357	ug/kg	100
88)	tert-Butylbenzene	17.02	134	56864	23.0979	ug/kg	90
89)	1,2,4-Trimethylbenzene	17.07	105	238557	21.7573	ug/kg	100
90)	sec-Butylbenzene	17.30	105	312192	21.8556	ug/kg	100
91)	p-Isopropyltoluene	17.45	119	243535	20.5956	ug/kg	99
92)	1,3-Dichlorobenzene	17.65	146	134894	19.6551	ug/kg	100
93)	1,4-Dichlorobenzene	17.78	146	137392	19.6151	ug/kg	97
94)	n-Butylbenzene	17.98	91	209384	19.2474	ug/kg	98
95)	1,2-Dichlorobenzene	18.28	146	126647	19.3979	ug/kg	98
96)	1,2-Dibromo-3-Chloropropan	19.28	157	13913	21.4511	ug/kg	93
97)	1,2,4-Trichlorobenzene	20.42	180	68406	14.1995	ug/kg	100
98)	Hexachlorobutadiene	20.57	225	41764	18.3807	ug/kg	98
99)	Naphthalene	20.79	128	162816	14.0234	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	63333	13.8687	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\043016\9M974086.D Vial: 20
Acq On : 30 Apr 2016 23:20 Operator: ADC
Sample : L16041363-09 A MSD 8260 4.85g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 30 23:43 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

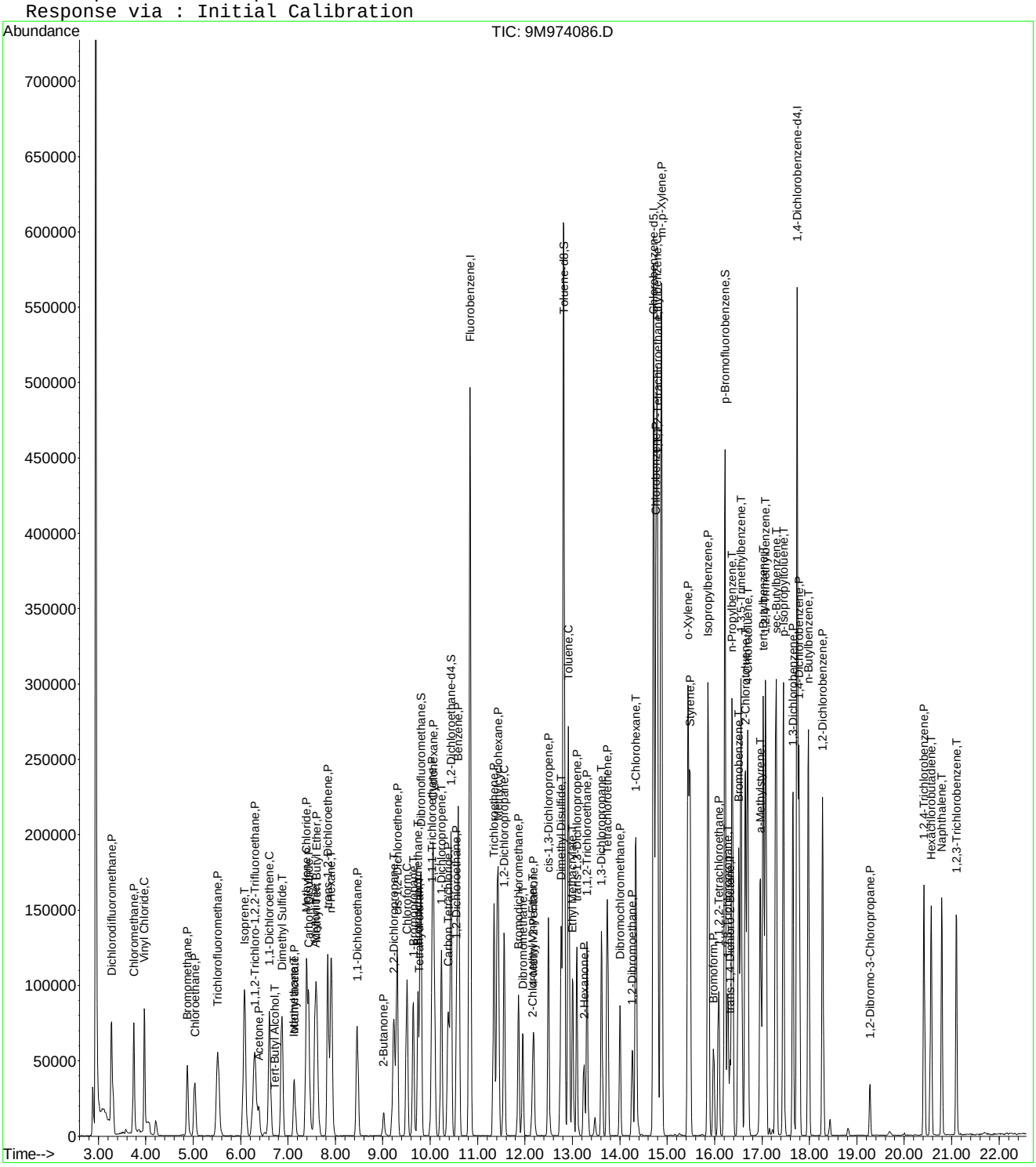

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\043016\9M974084.D Vial: 18
Acq On : 30 Apr 2016 22:19 Operator: ADC
Sample : L16041363-10 A 8260 4.89g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 04 12:27:55 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	587937	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	418410	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.74	152	190398	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	154901	52.1671 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.34%		
43) 1,2-Dichloroethane-d4	10.44	65	170098	54.7219 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 109.44%		
58) Toluene-d8	12.82	98	561863	56.3445 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 112.68%		
79) p-Bromofluorobenzene	16.22	95	206539	62.6287 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 125.26%#		

Target Compounds					Qvalue
13) Acetone	6.38	43	14116	6.8915 ug/kg#	59
29) 2-Butanone	9.02	43	1708	0.9036 ug/kg#	58
36) Tetrahydrofuran	9.77	42	2793	2.0801 ug/kg#	74
56) Dimethyl Disulfide	12.82	94	15525	2.8919 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.07	105	1554	Below Cal #	44

(#) = qualifier out of range (m) = manual integration
9M974084.D 8260-SL.M Wed May 04 12:27:55 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\043016\9M974084.D Vial: 18
Acq On : 30 Apr 2016 22:19 Operator: ADC
Sample : L16041363-10 A 8260 4.89g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 4 12:27 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

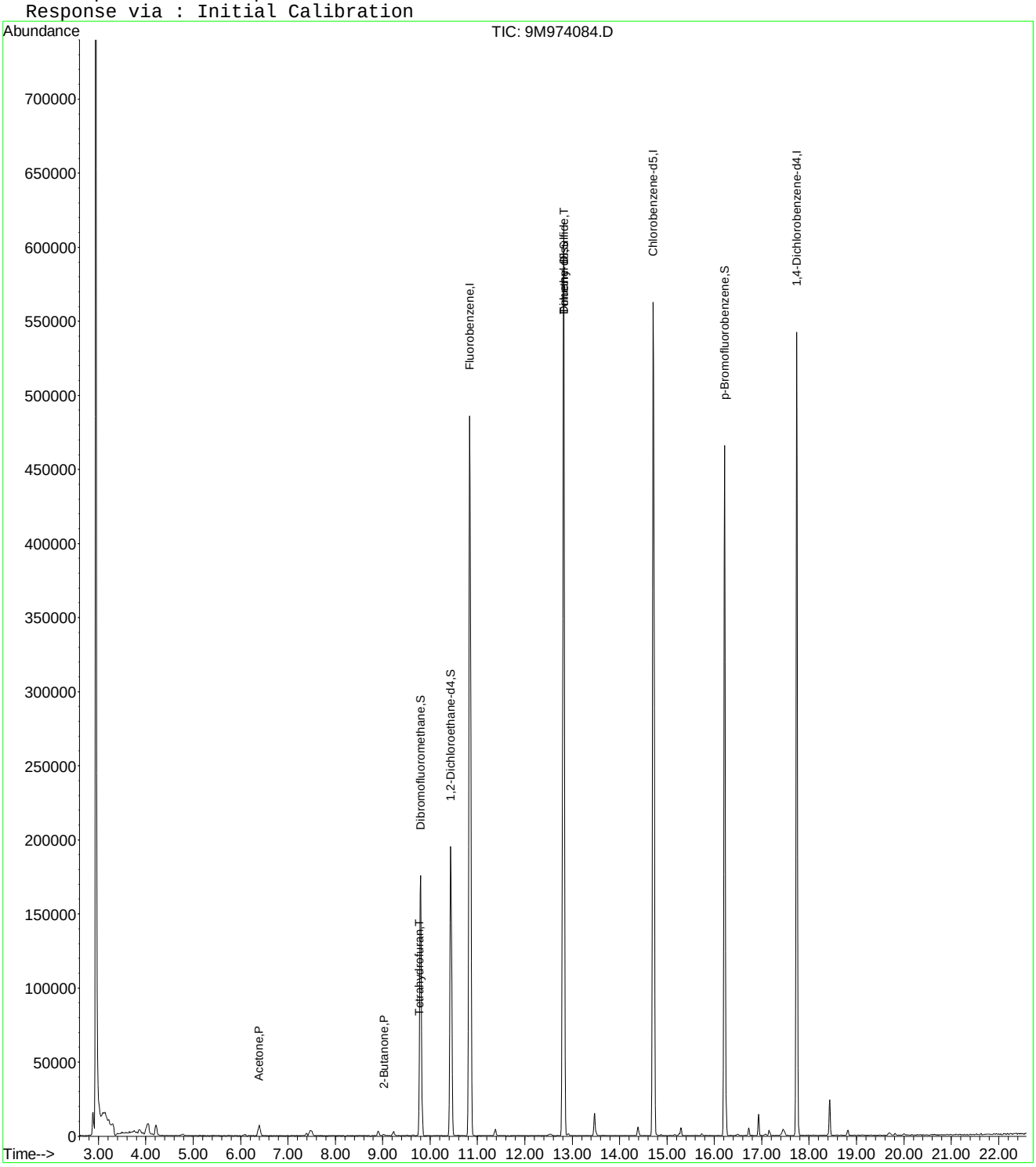

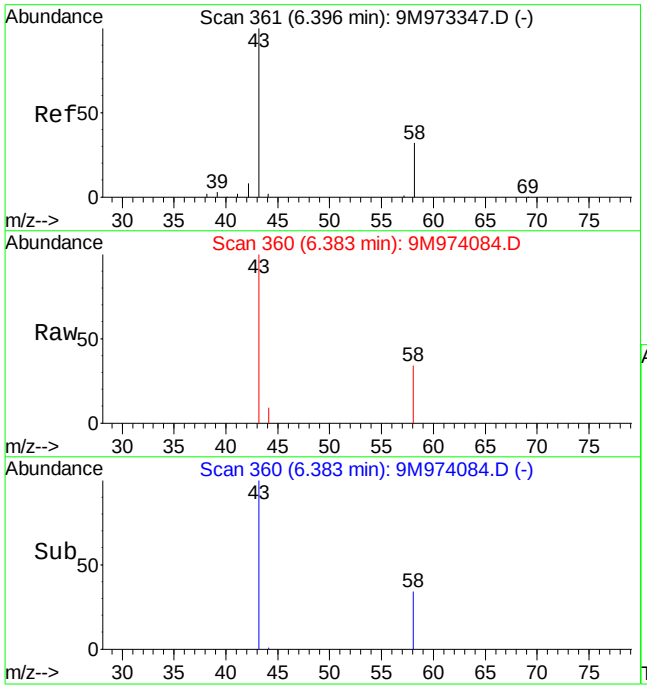

#13
Acetone
Concen: 6.89 ug/kg
RT: 6.38 min Scan# 360
Delta R.T. -0.00 min
Lab File: 9M974084.D
Acq: 30 Apr 2016 22:19

Tgt Ion: 43 Resp: 14116

Ion	Ratio	Lower	Upper
43	100		
58	56.9	20.2	47.2#

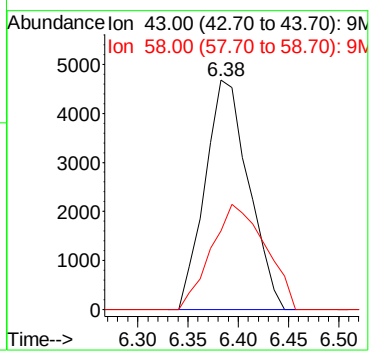

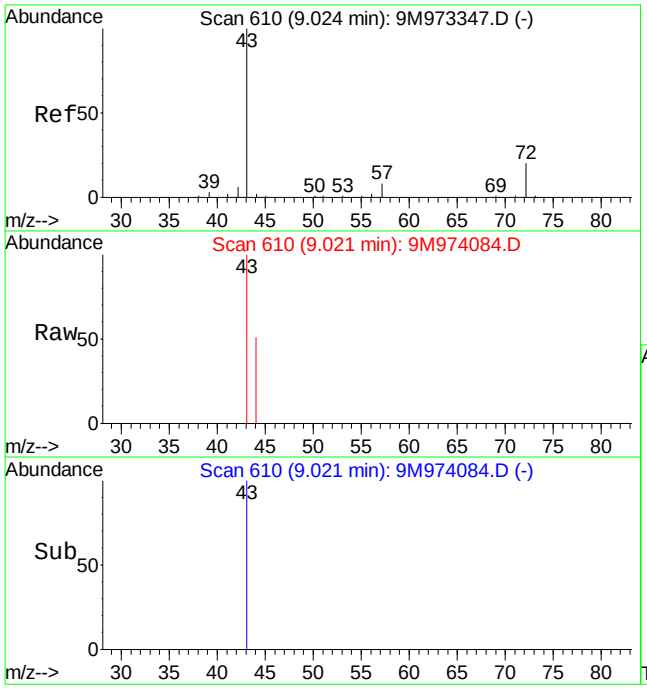

#29
2-Butanone
Concen: 0.90 ug/kg
RT: 9.02 min Scan# 610
Delta R.T. 0.01 min
Lab File: 9M974084.D
Acq: 30 Apr 2016 22:19

Tgt Ion: 43 Resp: 1708

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.5	26.7#

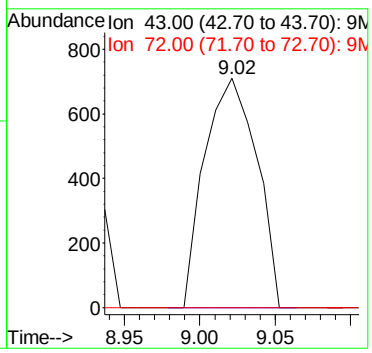

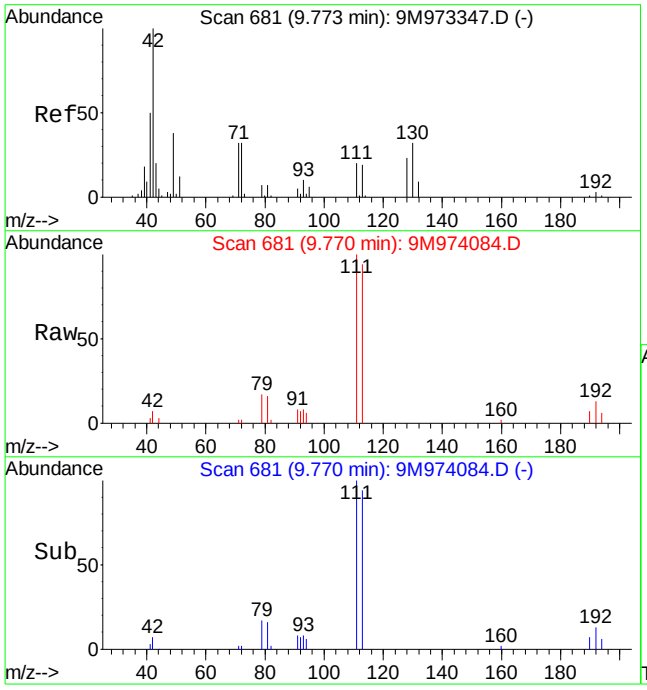

#36
Tetrahydrofuran
Concen: 2.08 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. -0.00 min
Lab File: 9M974084.D
Acq: 30 Apr 2016 22:19

Tgt Ion: 42 Resp: 2793

Ion	Ratio	Lower	Upper
42	100		
72	16.6	19.8	46.2#
71	17.9	18.3	42.7#

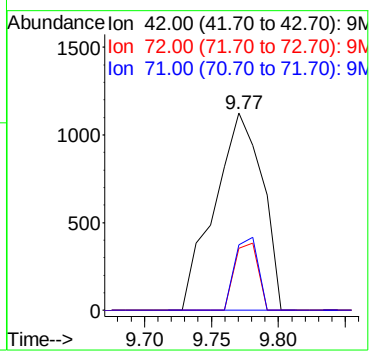

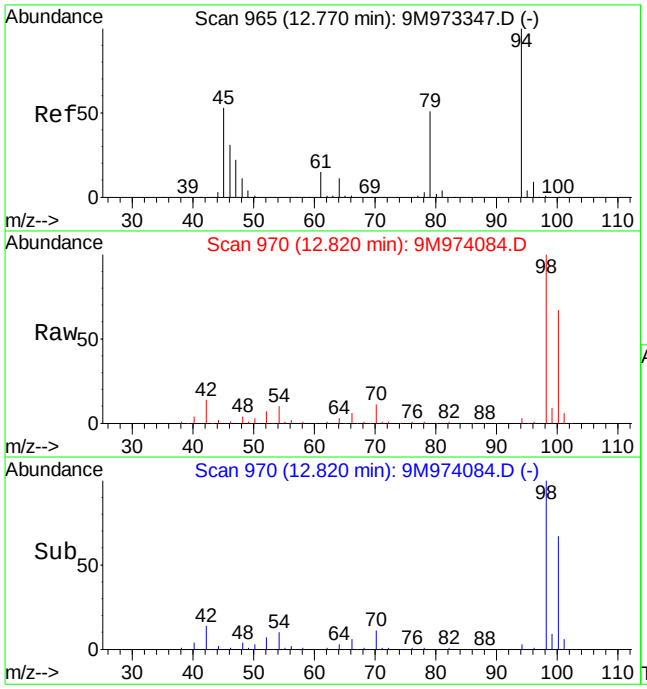

#56
Dimethyl Disulfide
Concen: 2.89 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M974084.D
Acq: 30 Apr 2016 22:19

Tgt Ion: 94 Resp: 15525

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

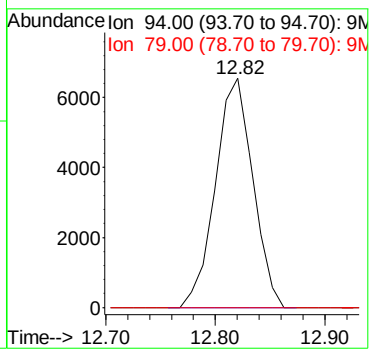

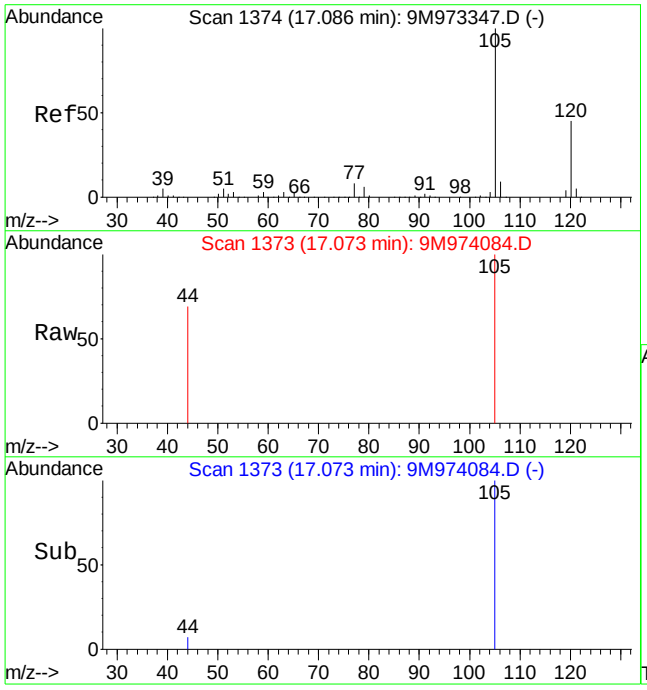

#89
1,2,4-Trimethylbenzene
Concen: Below Cal
RT: 17.07 min Scan# 1373
Delta R.T. -0.01 min
Lab File: 9M974084.D
Acq: 30 Apr 2016 22:19

Tgt Ion:105 Resp: 1554

Ion	Ratio	Lower	Upper
105	100		
120	14.8	33.0	77.0#

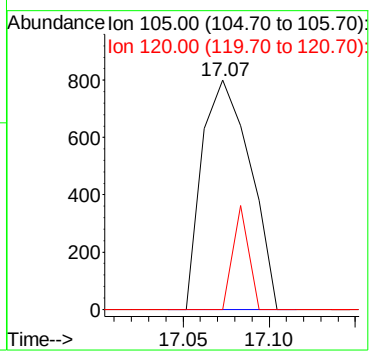

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972472.D Vial: 3
Acq On : 25 Jan 2016 11:22 Operator: FJB
Sample : WG555000-02 5ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:05 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	367739	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	266763	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.77	152	148882	50.00 ug/kg	0.01

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	1974	5.3580 ug/kg#	1
3) 3-Chloro-1-propene	7.23	41	18322	5.0468 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	19639	4.7564 ug/kg	98
5) Ethyl Acetate	9.24	43	12755	5.2595 ug/kg	91
6) Methacrylonitrile	9.40	67	3744	4.7691 ug/kg	95
7) Isobutyl Alcohol	9.42	43	1055	12.9700 ug/kg#	62
8) 1-Butanol	10.36	56	203	11.8711 ug/kg#	26
9) Methyl methacrylate	11.56	41	8689	4.6908 ug/kg	95
10) 2-Nitropropane	11.90	43	2531	4.2058 ug/kg	96

(#) = qualifier out of range (m) = manual integration
9M972472.D A9FOO_SL.M Wed Jan 27 11:22:42 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972472.D Vial: 3
Acq On : 25 Jan 2016 11:22 Operator: FJB
Sample : WG555000-02 5ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

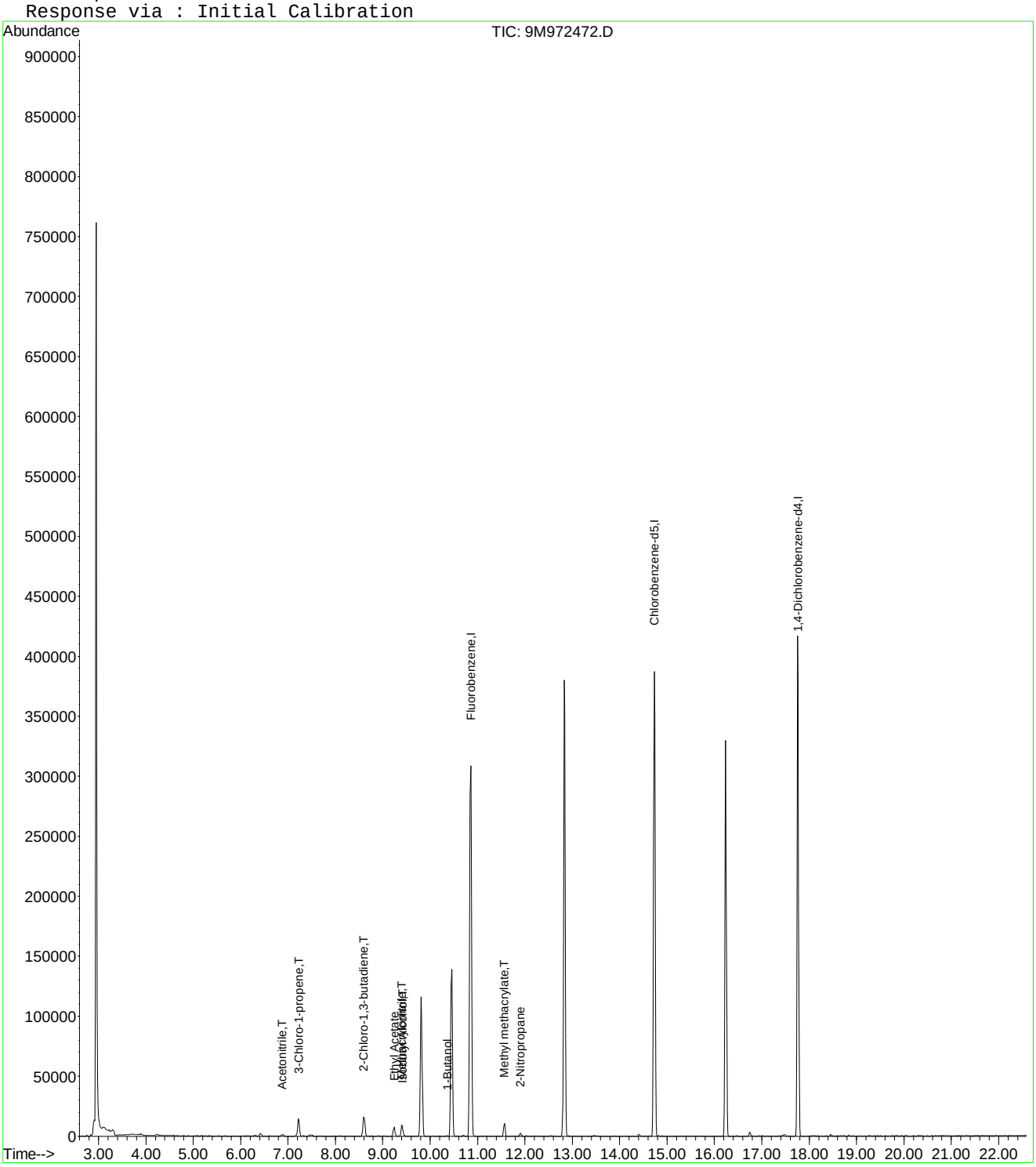

9M972472.D A9FOO_SL.M Wed Jan 27 11:22:42 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972473.D Vial: 4
Acq On : 25 Jan 2016 11:52 Operator: FJB
Sample : WG555000-03 20ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:05 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	359691	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	265773	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	149223	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	7669	21.2815 ug/kg#	77
3) 3-Chloro-1-propene	7.23	41	75360	21.2224 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	82865	20.5181 ug/kg	100
5) Ethyl Acetate	9.23	43	47912	20.1986 ug/kg	97
6) Methacrylonitrile	9.40	67	15740	20.4980 ug/kg	98
7) Isobutyl Alcohol	9.42	43	5287	37.9280 ug/kg	95
8) 1-Butanol	10.35	56	1509	22.3153 ug/kg#	81
9) Methyl methacrylate	11.56	41	35437	19.5588 ug/kg	98
10) 2-Nitropropane	11.90	43	10433	17.7247 ug/kg	98
12) Cyclohexanone	16.01	55	2157	16.3929 ug/kg#	86

(#) = qualifier out of range (m) = manual integration
9M972473.D A9FOO_SL.M Wed Jan 27 11:22:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972473.D Vial: 4
Acq On : 25 Jan 2016 11:52 Operator: FJB
Sample : WG555000-03 20ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

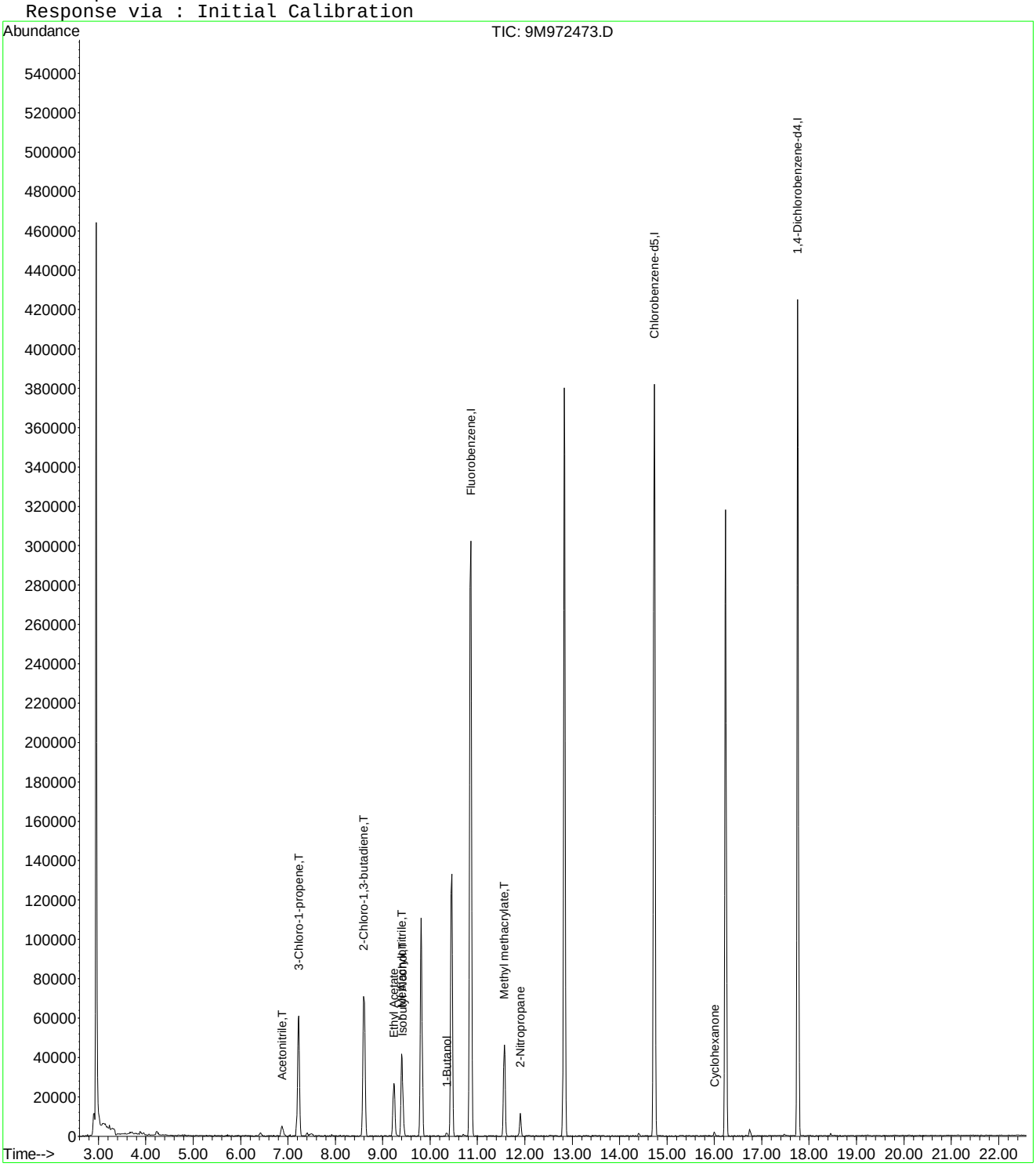

9M972473.D A9FOO_SL.M Wed Jan 27 11:22:46 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972474.D Vial: 5
Acq On : 25 Jan 2016 12:23 Operator: FJB
Sample : WG555000-04 50ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:06 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	356886	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	259679	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	147334	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	16583	46.3795 ug/kg#	94
3) 3-Chloro-1-propene	7.23	41	160601	45.5828 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.61	53	185316	46.2464 ug/kg	99
5) Ethyl Acetate	9.23	43	111538	47.3915 ug/kg	99
6) Methacrylonitrile	9.40	67	36081	47.3572 ug/kg	99
7) Isobutyl Alcohol	9.42	43	12624	81.5447 ug/kg	95
8) 1-Butanol	10.35	56	4707	48.0983 ug/kg#	50
9) Methyl methacrylate	11.56	41	82406	45.8400 ug/kg	99
10) 2-Nitropropane	11.90	43	26302	45.0359 ug/kg	97
12) Cyclohexanone	16.01	55	5625	43.7525 ug/kg	93

(#) = qualifier out of range (m) = manual integration
9M972474.D A9FOO_SL.M Wed Jan 27 11:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972474.D Vial: 5
Acq On : 25 Jan 2016 12:23 Operator: FJB
Sample : WG555000-04 50ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

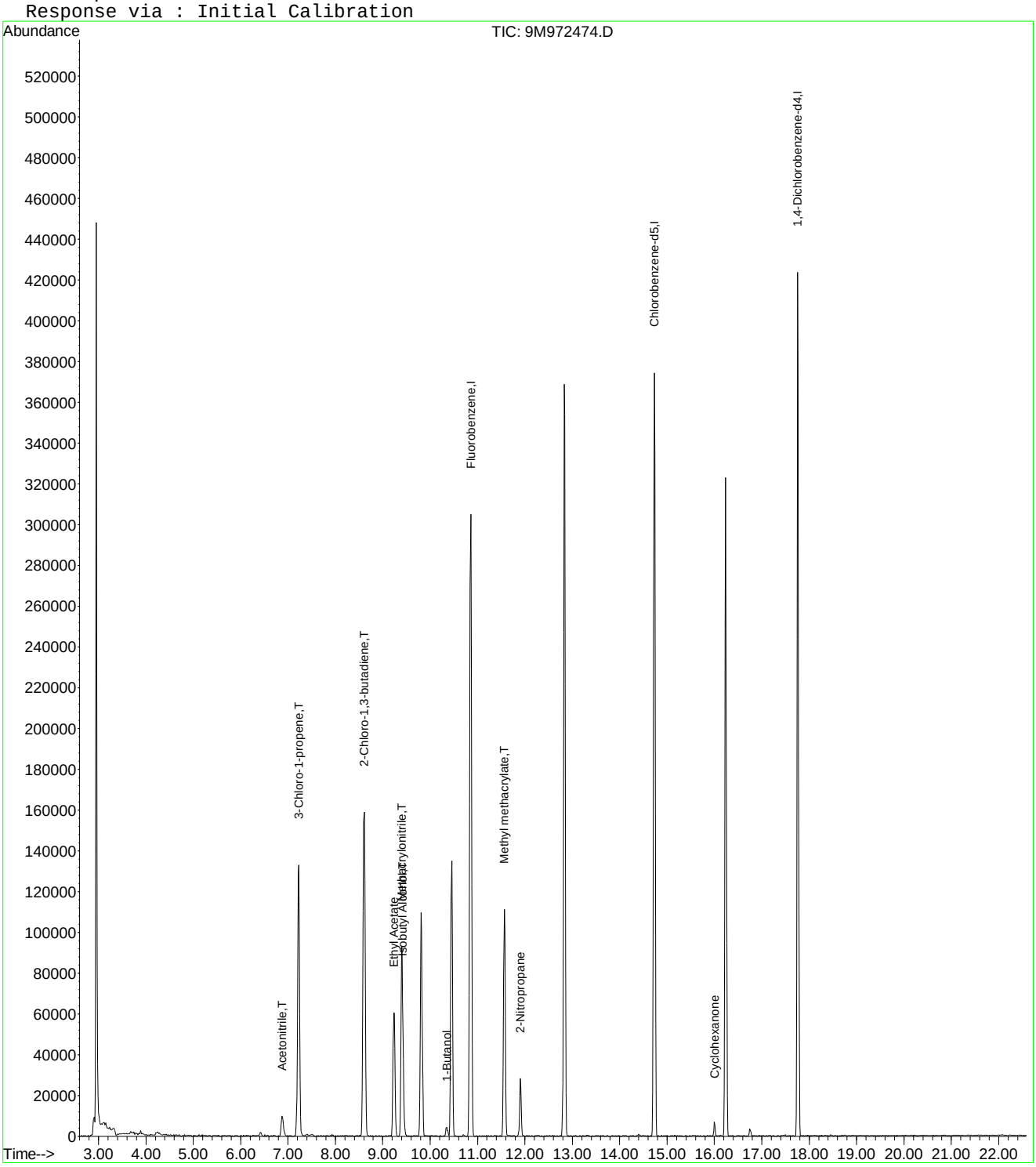

9M972474.D A9FOO_SL.M Wed Jan 27 11:22:51 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972475.D Vial: 6
Acq On : 25 Jan 2016 12:53 Operator: FJB
Sample : WG555000-05 100ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:06 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	394669	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	285851	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	161505	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	37767	95.5151	ug/kg#	100
3) 3-Chloro-1-propene	7.23	41	409870	105.1952	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.61	53	467514	105.5010	ug/kg	100
5) Ethyl Acetate	9.23	43	267513	102.7824	ug/kg	100
6) Methacrylonitrile	9.40	67	88054	104.5088	ug/kg	100
7) Isobutyl Alcohol	9.42	43	33721	187.1766	ug/kg	100
8) 1-Butanol	10.36	56	11671	95.0627	ug/kg	100
9) Methyl methacrylate	11.56	41	209503	105.3834	ug/kg	100
10) 2-Nitropropane	11.90	43	65435	101.3157	ug/kg	100
12) Cyclohexanone	16.01	55	14062	99.3630	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972475.D A9FOO_SL.M Wed Jan 27 11:22:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972475.D Vial: 6
Acq On : 25 Jan 2016 12:53 Operator: FJB
Sample : WG555000-05 100ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

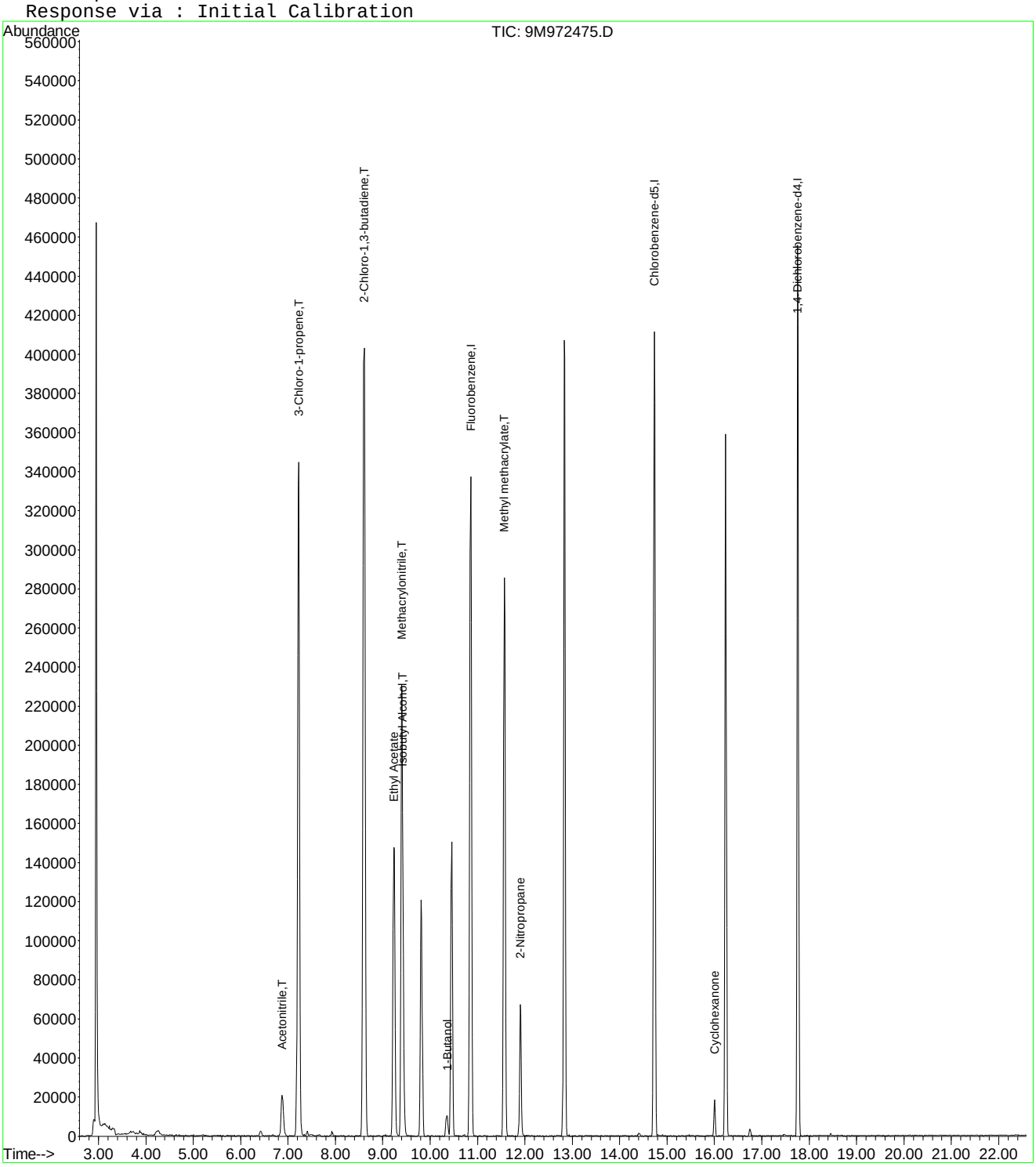

9M972475.D A9FOO_SL.M Wed Jan 27 11:22:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972476.D Vial: 7
Acq On : 25 Jan 2016 13:23 Operator: FJB
Sample : WG555000-06 200ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 09:51:10 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	361792	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	264283	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	150478	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.87	41	75099	207.1896	ug/kg#	94
3) 3-Chloro-1-propene	7.22	41	743262	208.0969	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	846271	208.3269	ug/kg	100
5) Ethyl Acetate	9.23	43	489855	205.3125	ug/kg	100
6) Methacrylonitrile	9.40	67	159879	206.9995	ug/kg	100
7) Isobutyl Alcohol	9.42	43	68551	406.6640	ug/kg	99
8) 1-Butanol	10.35	56	24111	201.3375	ug/kg	97
9) Methyl methacrylate	11.57	41	382820	210.0636	ug/kg	99
10) 2-Nitropropane	11.90	43	129000	217.8866	ug/kg	95
12) Cyclohexanone	16.00	55	30065	229.7785	ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972476.D A9FOO_SL.M Wed Jan 27 09:51:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972476.D Vial: 7
Acq On : 25 Jan 2016 13:23 Operator: FJB
Sample : WG555000-06 200ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 9:51 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

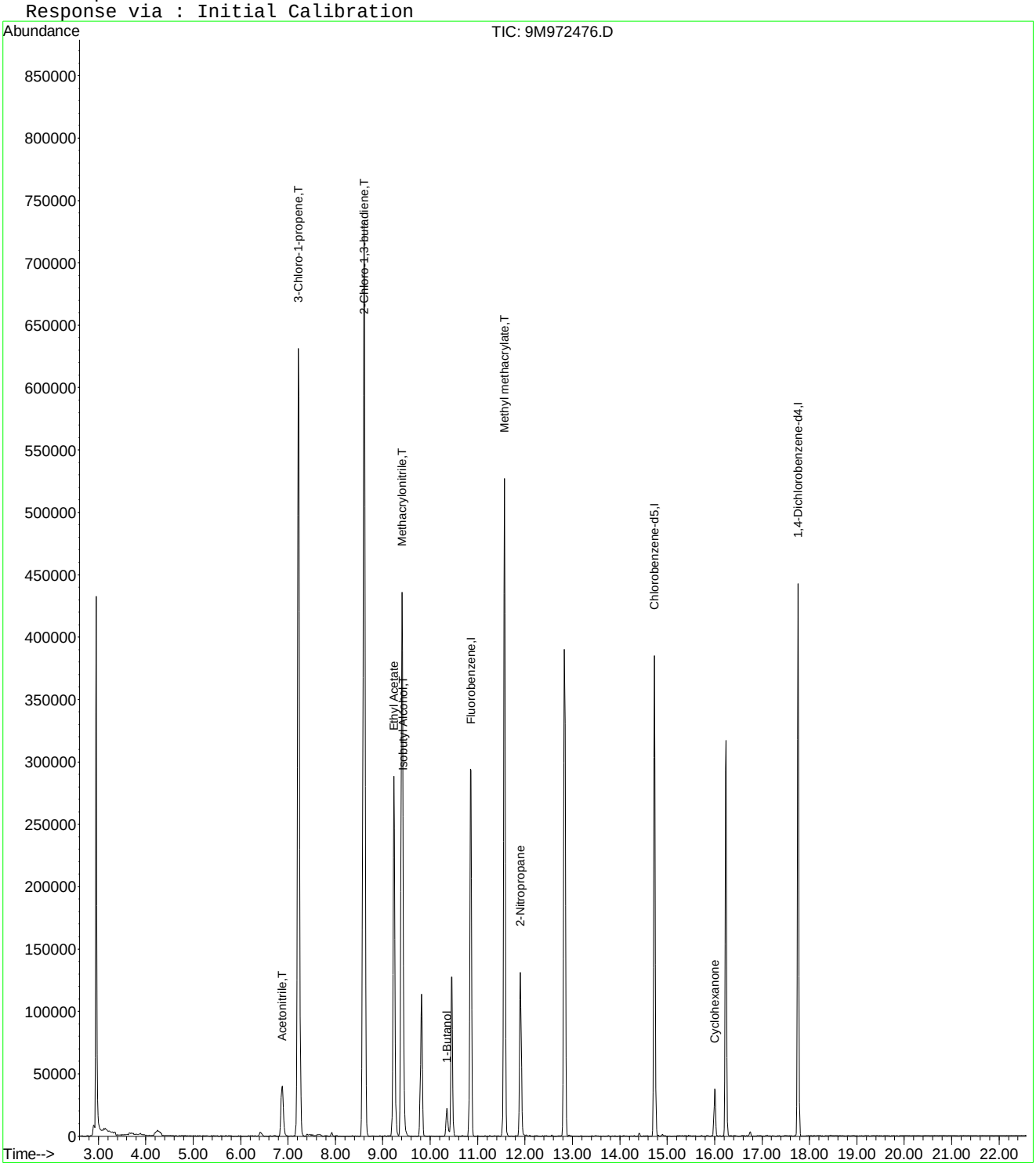

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972477.D Vial: 8
Acq On : 25 Jan 2016 13:54 Operator: FJB
Sample : WG555000-07 300ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:07 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.85	96	362779	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	265659	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	153468	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	99618	274.0870	ug/kg#	97
3) 3-Chloro-1-propene	7.22	41	944879	263.8255	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	1107217	271.8226	ug/kg	99
5) Ethyl Acetate	9.24	43	652386	272.6900	ug/kg	99
6) Methacrylonitrile	9.40	67	208153	268.7679	ug/kg	98
7) Isobutyl Alcohol	9.43	43	89707	528.6093	ug/kg#	99
8) 1-Butanol	10.35	56	31640	260.3131	ug/kg	98
9) Methyl methacrylate	11.57	41	502506	274.9883	ug/kg	98
10) 2-Nitropropane	11.90	43	172692	290.8907	ug/kg	95
12) Cyclohexanone	16.00	55	36951	280.9436	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972477.D A9FOO_SL.M Wed Jan 27 11:23:05 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972477.D Vial: 8
Acq On : 25 Jan 2016 13:54 Operator: FJB
Sample : WG555000-07 300ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

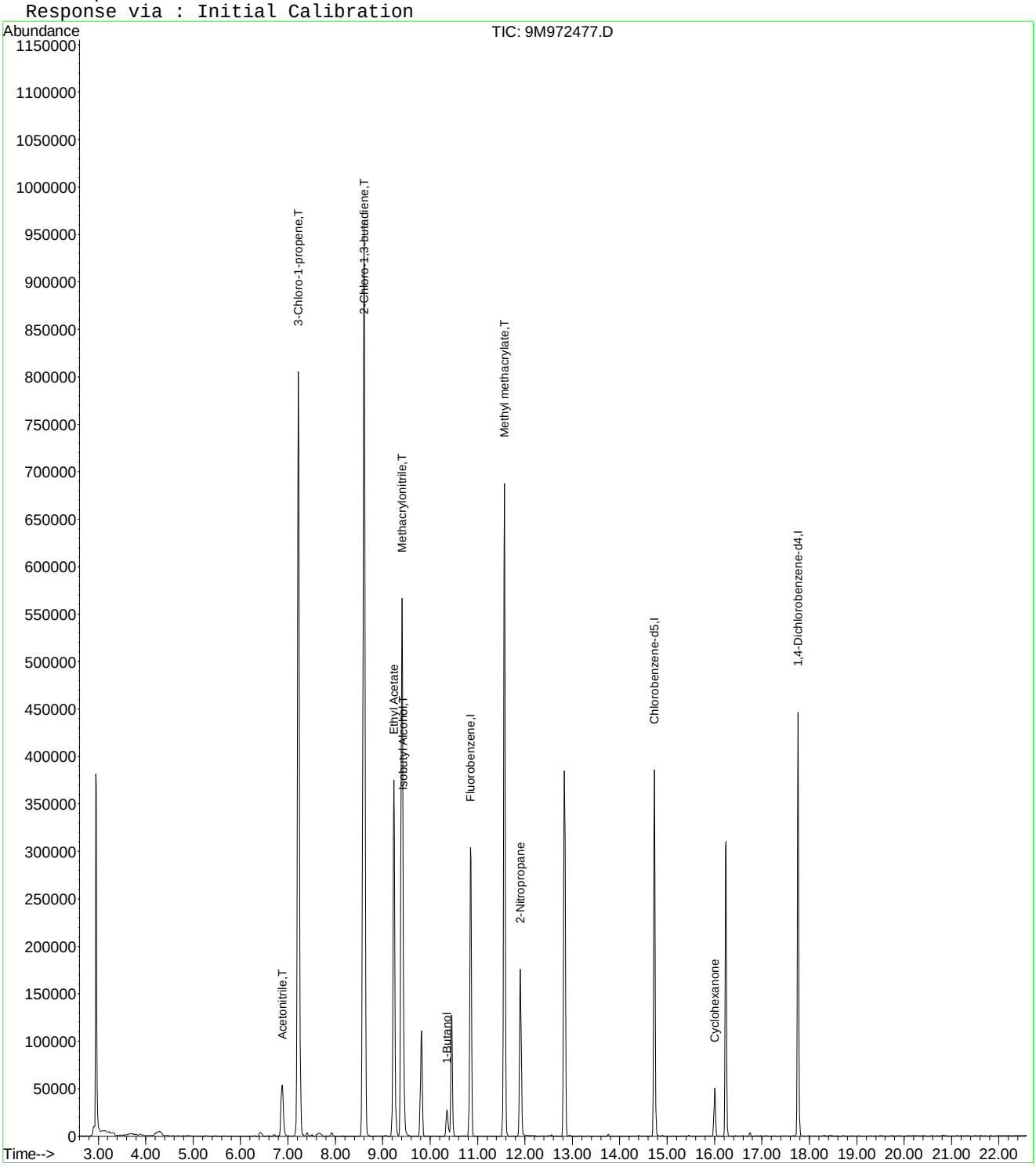

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972478.D Vial: 9
Acq On : 25 Jan 2016 14:25 Operator: FJB
Sample : WG555000-08 400ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 09:51:10 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	359343	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	261674	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	149058	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.89	41	148074	411.3034	ug/kg#	96
3) 3-Chloro-1-propene	7.22	41	1457717	410.9100	ug/kg	99
4) 2-Chloro-1,3-butadiene	8.61	53	1703971	422.3261	ug/kg	100
5) Ethyl Acetate	9.23	43	980479	413.7480	ug/kg	100
6) Methacrylonitrile	9.40	67	321602	419.2243	ug/kg	99
7) Isobutyl Alcohol	9.43	43	142361	842.7355	ug/kg#	98
8) 1-Butanol	10.36	56	51732	422.9922	ug/kg	99
9) Methyl methacrylate	11.56	41	779879	430.8570	ug/kg	98
10) 2-Nitropropane	11.90	43	267565	455.0088	ug/kg	96
12) Cyclohexanone	16.01	55	56623	437.0688	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972478.D A9FOO_SL.M Wed Jan 27 09:51:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972478.D Vial: 9
Acq On : 25 Jan 2016 14:25 Operator: FJB
Sample : WG555000-08 400ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 9:51 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

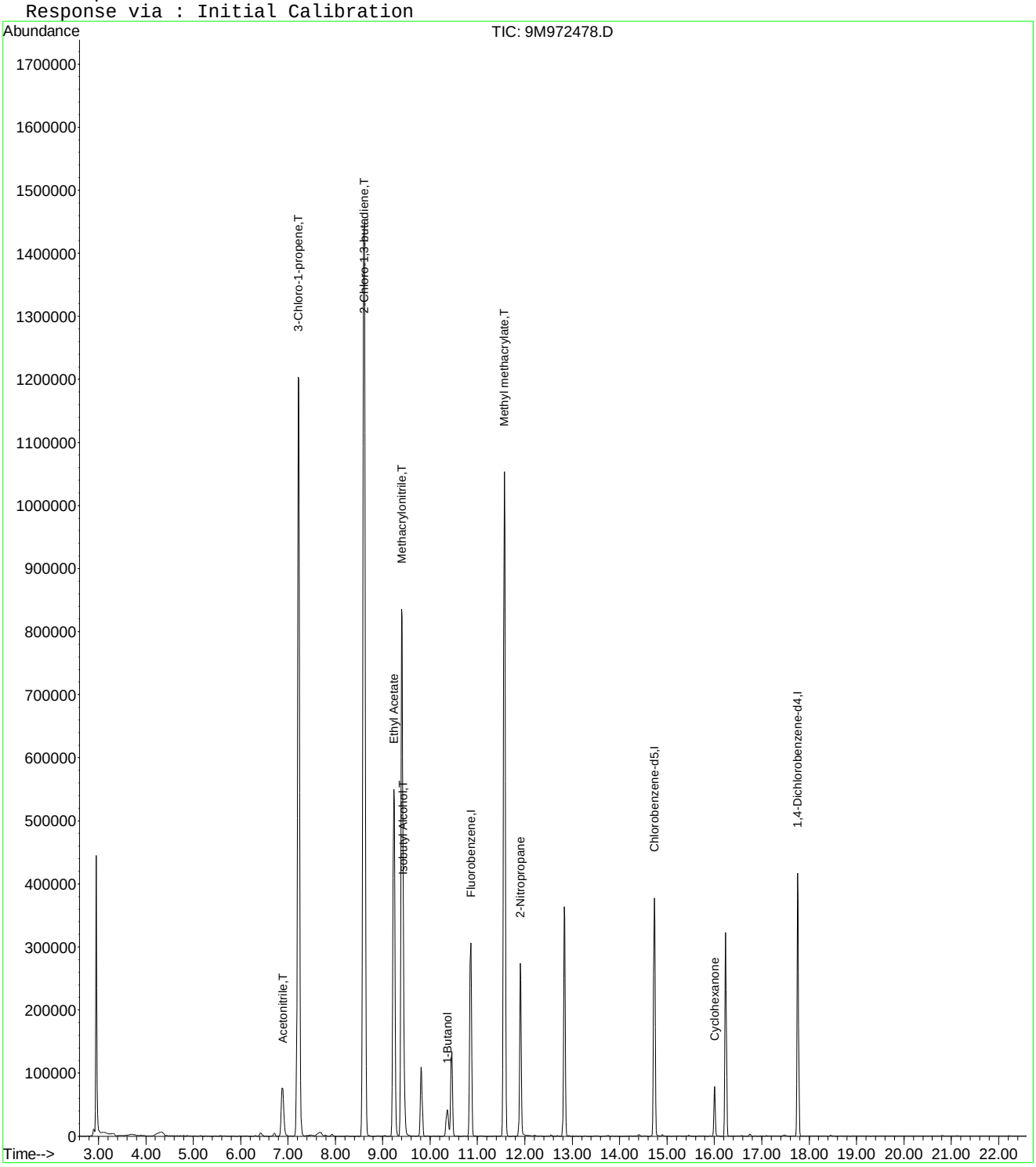

9M972478.D A9FOO_SL.M Wed Jan 27 09:51:11 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972479.D Vial: 10
Acq On : 25 Jan 2016 14:56 Operator: FJB
Sample : WG555000-09 500ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:08 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	364474	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	266311	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	151707	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	196334	537.6773	ug/kg#	94
3) 3-Chloro-1-propene	7.22	41	1832802	509.3680	ug/kg	99
4) 2-Chloro-1,3-butadiene	8.60	53	2126710	519.6807	ug/kg	100
5) Ethyl Acetate	9.23	43	1255294	522.2587	ug/kg	100
6) Methacrylonitrile	9.40	67	408537	525.0513	ug/kg	100
7) Isobutyl Alcohol	9.43	43	180610	1052.3719	ug/kg	98
8) 1-Butanol	10.36	56	64789	519.8809	ug/kg	97
9) Methyl methacrylate	11.56	41	981460	534.5904	ug/kg	100
10) 2-Nitropropane	11.90	43	346571	581.0659	ug/kg	97
12) Cyclohexanone	16.01	55	74733	566.8143	ug/kg	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972479.D Vial: 10
Acq On : 25 Jan 2016 14:56 Operator: FJB
Sample : WG555000-09 500ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

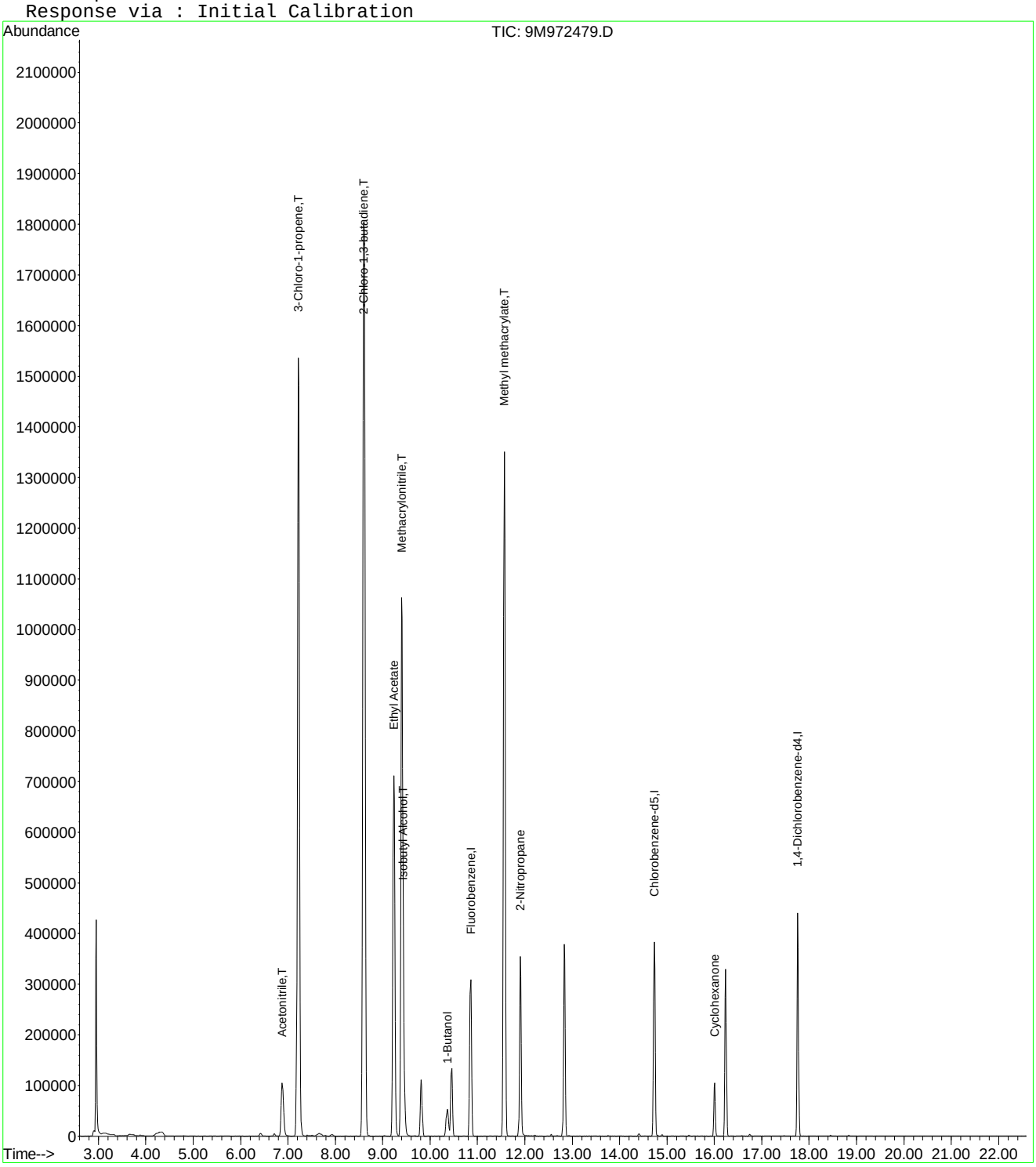

9M972479.D A9FOO_SL.M Wed Jan 27 11:30:29 2016 Page 2

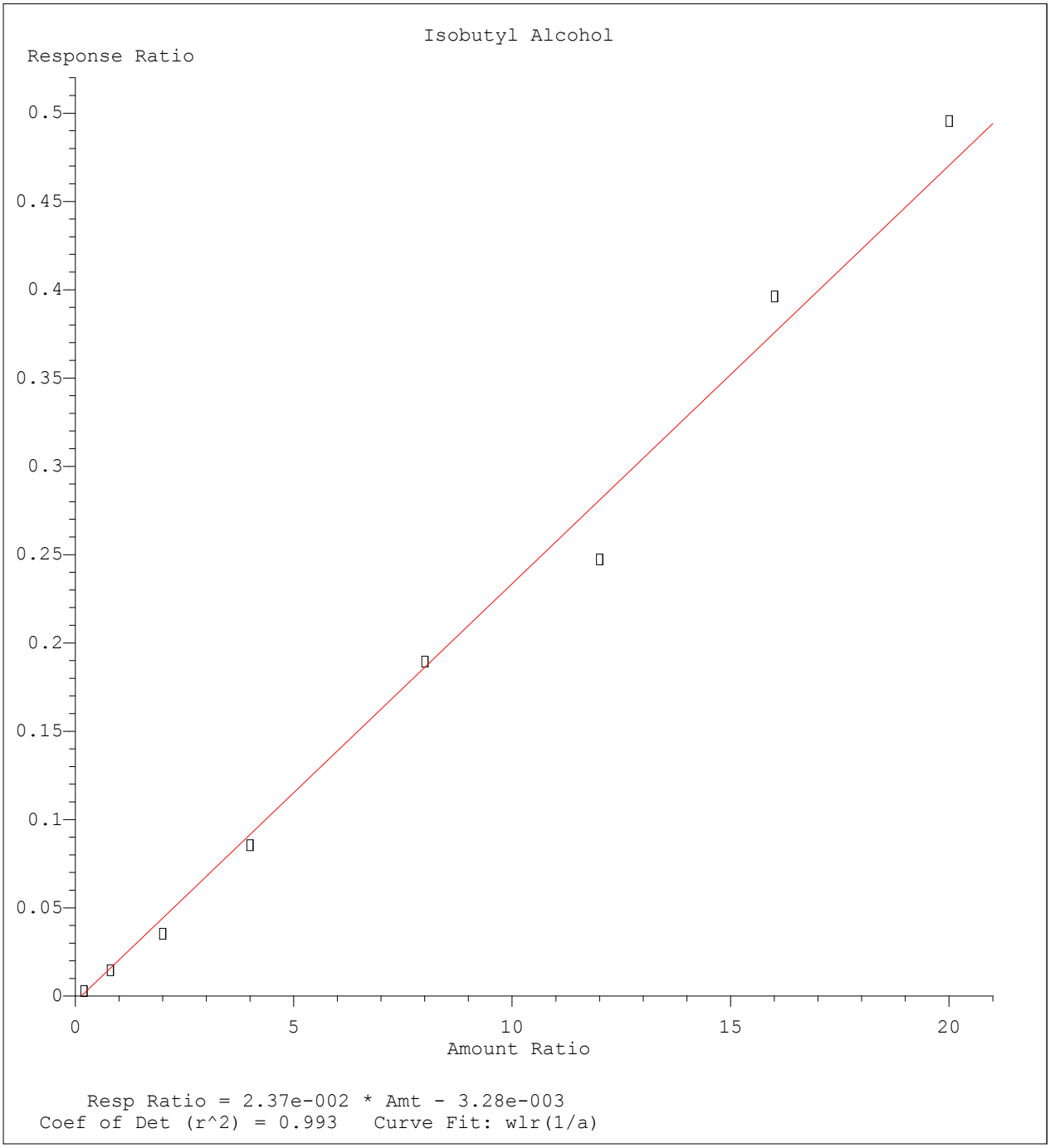

Method Name: C:\MSDCHEM\1\METHODS\A9FOO_SL.M
Calibration Table Last Updated: Wed Jan 27 09:49:02 2016

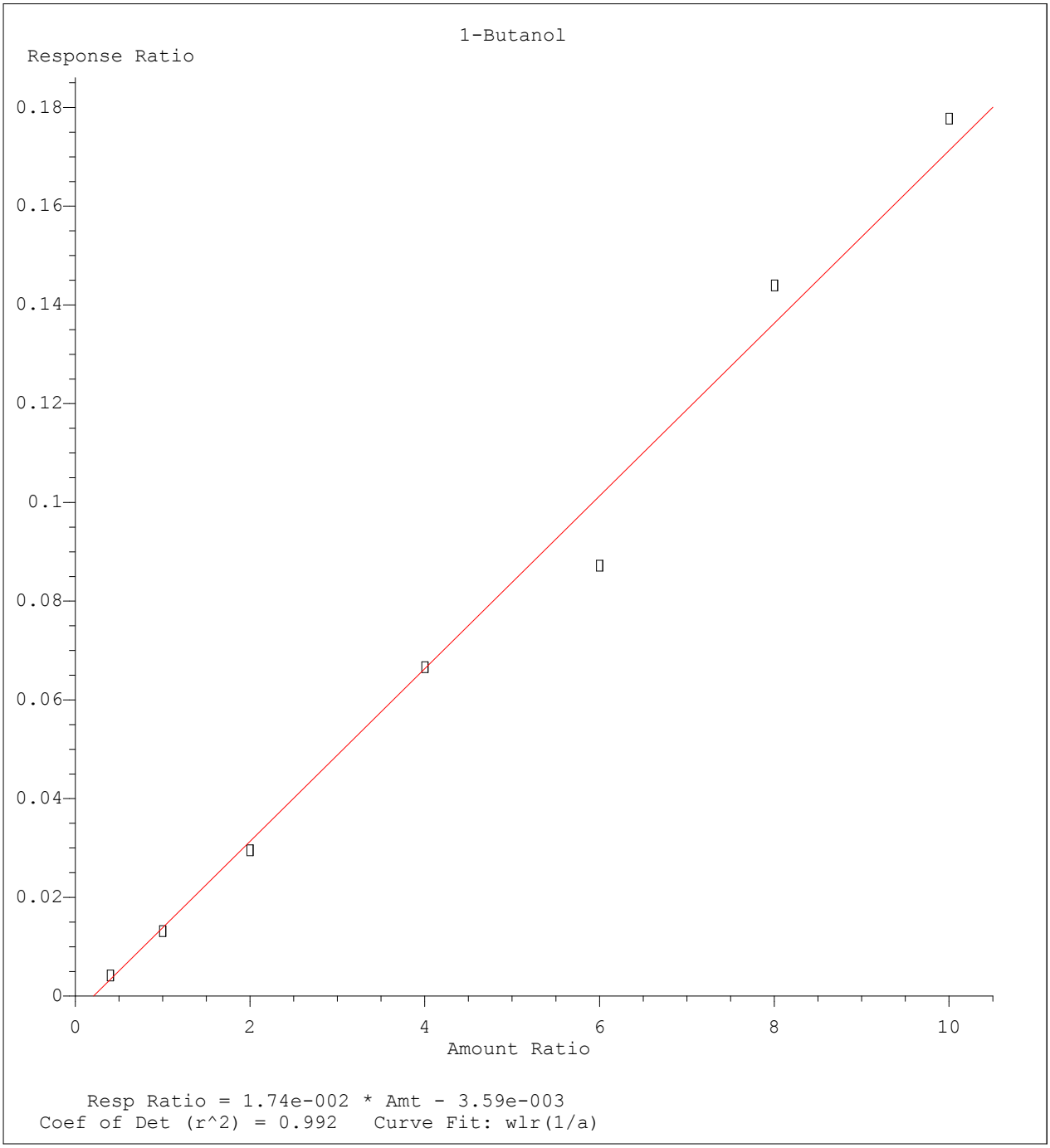

Method Name: C:\MSDCHEM\1\METHODS\A9FOO_SL.M
Calibration Table Last Updated: Wed Jan 27 09:49:02 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:09 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	394765	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	285754	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	159586	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	40054	101.2745	ug/kg#	100
3) 3-Chloro-1-propene	7.22	41	402890	103.3786	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	572568	129.1764	ug/kg	99
5) Ethyl Acetate	9.23	43	275962	106.0028	ug/kg	99
6) Methacrylonitrile	9.40	67	90289	107.1354	ug/kg	96
7) Isobutyl Alcohol	9.42	43	34031	188.7895	ug/kg	99
8) 1-Butanol	10.35	56	12038	97.7072	ug/kg	97
9) Methyl methacrylate	11.56	41	219363	110.3163	ug/kg	100
10) 2-Nitropropane	11.90	43	69288	107.2554	ug/kg	93
12) Cyclohexanone	16.01	55	14203	100.3934	ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972481.D A9FOO_SL.M Wed Jan 27 11:15:09 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

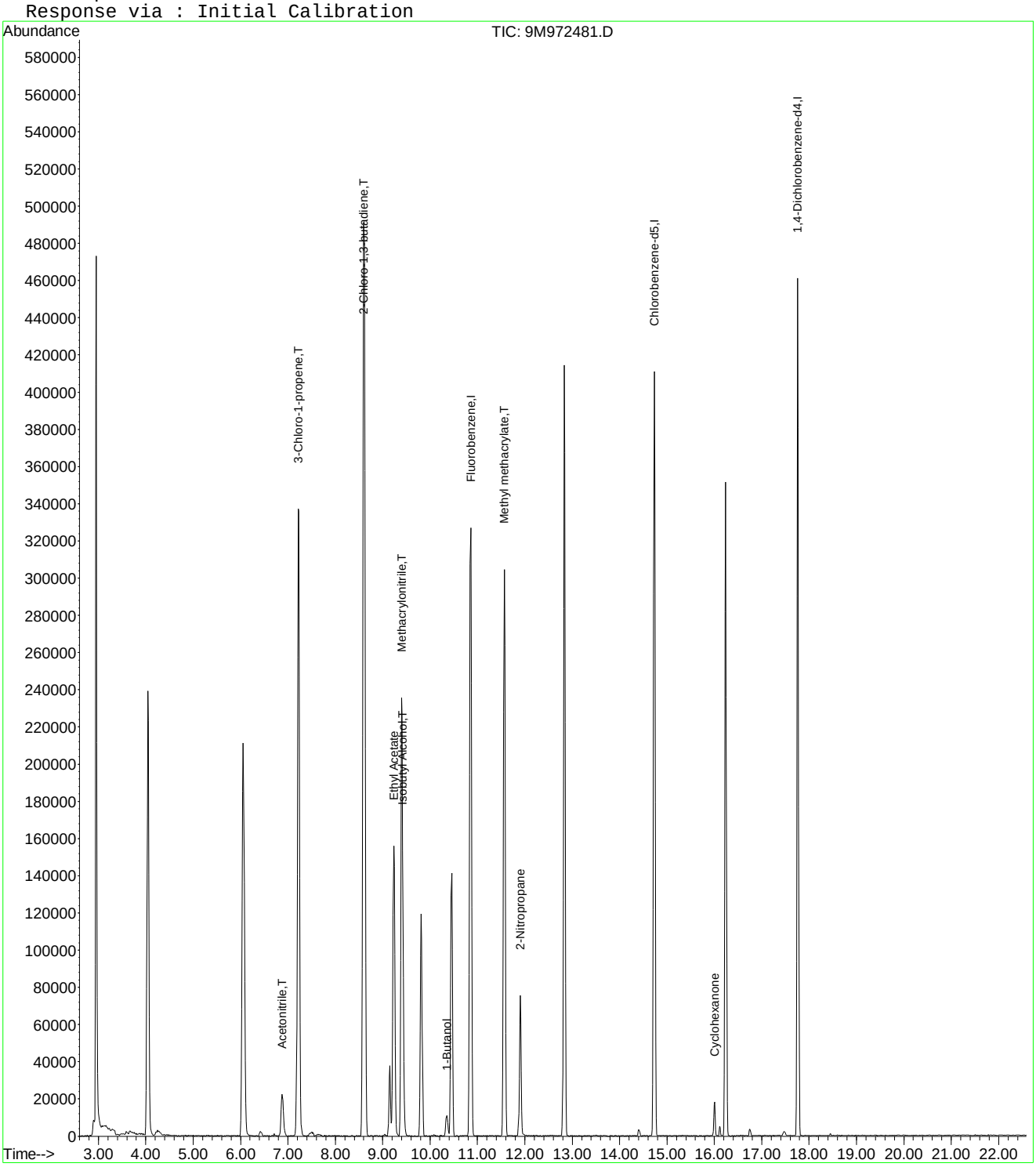

9M972481.D A9FOO_SL.M Wed Jan 27 11:15:09 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	101.2745	-1.3	106	0.00
3	T	3-Chloro-1-propene	100.0000	103.3786	-3.4	98	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	129.1764	-29.2	122	0.00
5		Ethyl Acetate	100.0000	106.0028	-6.0	103	0.00
6	T	Methacrylonitrile	100.0000	107.1354	-7.1	103	0.00
7	T	Isobutyl Alcohol	200.0000	188.7895	5.6	101	0.00
8		1-Butanol	100.0000	97.7072	2.3	103	0.00
9	T	Methyl methacrylate	100.0000	110.3163	-10.3	105	0.00
10		2-Nitropropane	100.0000	107.2554	-7.3	106	0.00
11	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
12		Cyclohexanone	100.0000	100.3934	-0.4	101	0.00
13	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	99	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972481.D A9FOO_SL.M Wed Jan 27 11:32:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973594.D Vial: 2
Acq On : 6 Apr 2016 10:29 Operator: ADC
Sample : WG563259-02 50ug/L CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:10 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	551415	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	405052	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	189947	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	147788	53.0682 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 106.14%		
43) 1,2-Dichloroethane-d4	10.44	65	151213	51.8685 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 103.74%		
58) Toluene-d8	12.82	98	526968	54.5879 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 109.18%		
79) p-Bromofluorobenzene	16.22	95	195456	59.4087 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 118.82%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.28	85	242107	57.2388 ug/kg	100
3) Chloromethane	3.75	50	193873	49.8597 ug/kg	100
4) Vinyl Chloride	3.98	62	149013	58.4247 ug/kg	100
5) 1,3-Butadiene	4.02	54	88480	47.1558 ug/kg	100
6) Bromomethane	4.87	94	126955	53.2516 ug/kg	100
7) Chloroethane	5.03	64	122932	52.9379 ug/kg	100
8) Trichlorofluoromethane	5.52	101	273893	55.7491 ug/kg	100
9) Diethyl ether	6.05	59	302106	104.5639 ug/kg	100
10) Isoprene	6.09	67	215171	55.6416 ug/kg	100
11) Acrolein	6.29	56	15006	52.2353 ug/kg	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	166684	55.5646 ug/kg	100
13) Acetone	6.38	43	59710	51.5489 ug/kg	100
14) 1,1-Dichloroethene	6.62	61	279907	55.6672 ug/kg	100
15) Tert-Butyl Alcohol	6.72	59	100512	207.8196 ug/kg	100
16) Dimethyl Sulfide	6.88	62	141859	57.5847 ug/kg	100
17) Iodomethane	7.13	142	125531	53.7732 ug/kg	100
18) Methyl acetate	7.13	43	167926	52.5703 ug/kg	100
19) Methylene Chloride	7.40	84	165284	52.6229 ug/kg	100
20) Carbon Disulfide	7.44	76	518079	54.3386 ug/kg	100
21) Acrylonitrile	7.58	53	81072	53.3984 ug/kg	100
22) Methyl Tert Butyl Ether	7.60	73	463149	54.8002 ug/kg	100
23) trans-1,2-Dichloroethene	7.84	61	272019	56.2368 ug/kg	100
24) n-Hexane	7.91	57	316831	50.4404 ug/kg	100
25) Diisopropyl ether	8.25	45	1370277	107.0598 ug/kg	100
26) Vinyl Acetate	8.43	43	380358	55.2771 ug/kg	100
27) 1,1-Dichloroethane	8.46	63	325085	55.3706 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	1192196	105.9292 ug/kg	100
29) 2-Butanone	9.01	43	90995	51.3285 ug/kg	100
30) Propionitrile	9.13	54	60922	105.8772 ug/kg	100
31) 2,2-Dichloropropane	9.23	77	240952	56.2039 ug/kg	100
32) cis-1,2-Dichloroethene	9.31	96	177687	55.2767 ug/kg	100
33) Chloroform	9.51	83	269909	54.2007 ug/kg	100
34) 1-Bromopropane	9.64	122	30864	53.5851 ug/kg	100
35) Bromochloromethane	9.75	130	113971	56.8295 ug/kg	100
36) Tetrahydrofuran	9.77	42	128338	101.9085 ug/kg	100
38) 1,1,1-Trichloroethane	10.05	97	238906	56.0533 ug/kg	100
39) Cyclohexane	10.07	56	372130	55.2296 ug/kg	100
40) 1,1-Dichloropropene	10.24	75	218180	55.6101 ug/kg	100
41) Tert-Amyl-Methyl ether	10.34	73	880669	105.7809 ug/kg	100
42) Carbon Tetrachloride	10.38	117	219971	55.2902 ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M973594.D 8260-SL.M Thu Apr 07 13:30:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973594.D Vial: 2
Acq On : 6 Apr 2016 10:29 Operator: ADC
Sample : WG563259-02 50ug/L CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:10 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	231509	53.9837 ug/kg	100
46)	Benzene	10.59	78	644102	52.8967 ug/kg	100
47)	Trichloroethene	11.34	130	182550	53.2999 ug/kg	100
48)	Methylcyclohexane	11.43	83	286794	54.7990 ug/kg	100
49)	1,2-Dichloropropane	11.56	63	183307	55.3560 ug/kg	100
50)	1,4-Dioxane	11.85	88	9560	222.5800 ug/kg	100
51)	Bromodichloromethane	11.86	83	209073	55.4066 ug/kg	100
52)	Dibromomethane	11.96	174	110590	55.9371 ug/kg	100
53)	2-Chloroethyl Vinyl Ether	12.16	63	96674	54.9007 ug/kg	100
54)	4-Methyl-2-Pentanone	12.19	58	77462	50.8064 ug/kg	100
55)	cis-1,3-Dichloropropene	12.49	75	259757	55.2103 ug/kg	100
56)	Dimethyl Disulfide	12.77	94	283262	56.2588 ug/kg	100
59)	Toluene	12.92	91	676568	54.8912 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	208952	55.6836 ug/kg	100
61)	trans-1,3-Dichloropropene	13.09	75	233116	58.0962 ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	139311	57.4128 ug/kg	100
63)	2-Hexanone	13.24	43	141674	53.4685 ug/kg	100
64)	1,3-Dichloropropane	13.62	76	235142	56.3585 ug/kg	100
65)	Tetrachloroethene	13.74	164	148635	56.8598 ug/kg	100
66)	Dibromochloromethane	14.01	129	170681	56.9021 ug/kg	100
67)	1,2-Dibromoethane	14.27	107	145428	54.4071 ug/kg	100
68)	1-Chlorohexane	14.34	91	230794	56.8760 ug/kg	100
69)	Chlorobenzene	14.76	112	472532	55.2455 ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.79	131	164608	56.6465 ug/kg	100
71)	Ethylbenzene	14.79	106	260658	56.6484 ug/kg	100
72)	m-,p-Xylene	14.88	106	628296	110.7487 ug/kg	100
73)	o-Xylene	15.45	106	304989	56.4179 ug/kg	100
74)	Styrene	15.48	104	526964	56.9228 ug/kg	100
75)	Bromoform	15.99	173	115703	58.6080 ug/kg	100
76)	Isopropylbenzene	15.87	105	790639	56.2260 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	186051	58.2080 ug/kg	100
80)	1,2,3-Trichloropropane	16.28	110	55521	58.8971 ug/kg	100
81)	trans-1,4-Dichloro-2-Buten	16.32	53	73658	64.2034 ug/kg	100
82)	n-Propylbenzene	16.38	91	882341	62.1325 ug/kg	100
83)	Bromobenzene	16.51	156	207751	61.5020 ug/kg	100
84)	1,3,5-Trimethylbenzene	16.57	105	670786	62.0365 ug/kg	100
85)	2-Chlorotoluene	16.65	91	532140	62.7429 ug/kg	100
86)	4-Chlorotoluene	16.69	91	541387	61.0285 ug/kg	100
87)	a-Methylstyrene	16.97	118	340272	63.0826 ug/kg	100
88)	tert-Butylbenzene	17.03	134	149571	62.4349 ug/kg	100
89)	1,2,4-Trimethylbenzene	17.08	105	679712	64.7956 ug/kg	100
90)	sec-Butylbenzene	17.29	105	863432	62.1174 ug/kg	100
91)	p-Isopropyltoluene	17.45	119	715853	62.2130 ug/kg	100
92)	1,3-Dichlorobenzene	17.65	146	404430	60.5578 ug/kg	100
93)	1,4-Dichlorobenzene	17.79	146	402073	58.9902 ug/kg	100
94)	n-Butylbenzene	17.98	91	653053	61.6912 ug/kg	100
95)	1,2-Dichlorobenzene	18.29	146	379394	59.7167 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.28	157	47102	59.4653 ug/kg	100
97)	1,2,4-Trichlorobenzene	20.43	180	281137	59.9711 ug/kg	100
98)	Hexachlorobutadiene	20.58	225	136032	61.5241 ug/kg	100
99)	Naphthalene	20.80	128	699652	61.9276 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.10	180	271295	61.0508 ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M973594.D 8260-SL.M Thu Apr 07 13:30:11 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973594.D Vial: 2
Acq On : 6 Apr 2016 10:29 Operator: ADC
Sample : WG563259-02 50ug/L CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 7 13:30 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

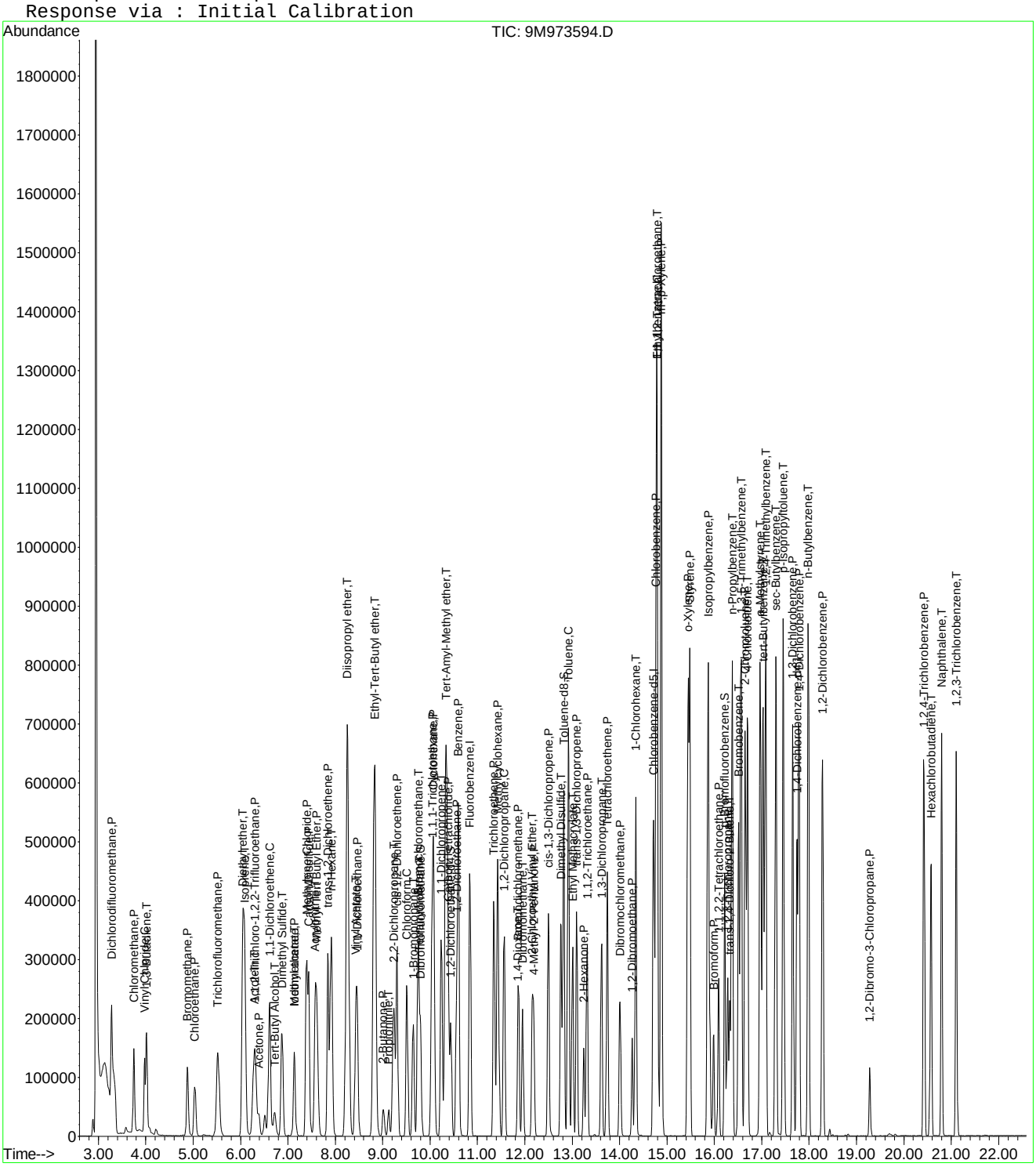

9M973594.D 8260-SL.M Thu Apr 07 13:30:11 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973596.D Vial: 4
Acq On : 6 Apr 2016 11:31 Operator: ADC
Sample : WG563259-03 0.5ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 11:54:23 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/03/16 HPMS9
Last Update : Mon Apr 04 11:23:13 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	553119	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	413289	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	207310	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.82	98	1650	0.1613 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.32%#	
79) p-Bromofluorobenzene	16.22	95	1730	0.4358 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.88%#	

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.28	85	1589	0.9369 ug/kg#	65
3) Chloromethane	3.75	50	4538	1.1611 ug/kg	82
4) Vinyl Chloride	3.98	62	1323	Below Cal #	44
6) Bromomethane	4.88	94	1100	0.4462 ug/kg	95
10) Isoprene	6.09	67	1671	0.4729 ug/kg	77
13) Acetone	6.40	43	8104	2.6130 ug/kg	96
14) 1,1-Dichloroethene	6.61	61	2218	0.4395 ug/kg	93
17) Iodomethane	7.13	142	282	3.4654 ug/kg#	39
18) Methyl acetate	7.14	43	1743	0.4983 ug/kg#	64
19) Methylene Chloride	7.40	84	1679	0.5589 ug/kg	51
20) Carbon Disulfide	7.44	76	5728	0.6270 ug/kg#	74
22) Methyl Tert Butyl Ether	7.61	73	3658	0.4520 ug/kg#	67
23) trans-1,2-Dichloroethene	7.84	61	2293	0.4817 ug/kg	81
24) n-Hexane	7.93	57	9408	1.7150 ug/kg	97
26) Vinyl Acetate	8.43	43	1835	0.4539 ug/kg#	78
27) 1,1-Dichloroethane	8.46	63	2623	0.4668 ug/kg#	71
29) 2-Butanone	9.01	43	1327	0.7345 ug/kg#	56
32) cis-1,2-Dichloroethene	9.31	96	1606	0.5071 ug/kg	83
33) Chloroform	9.52	83	2239	0.4550 ug/kg	94
36) Tetrahydrofuran	9.78	42	3081	2.4866 ug/kg#	60
38) 1,1,1-Trichloroethane	10.05	97	1606	0.4115 ug/kg#	53
39) Cyclohexane	10.09	56	2777	0.4317 ug/kg#	87
40) 1,1-Dichloropropene	10.24	75	1521	0.4015 ug/kg#	65
42) Carbon Tetrachloride	10.39	117	1589	0.4437 ug/kg#	82
45) 1,2-Dichloroethane	10.56	62	1752	0.4168 ug/kg#	69
46) Benzene	10.61	78	6745	0.5761 ug/kg	93
47) Trichloroethene	11.36	130	1871	0.5440 ug/kg	96
48) Methylcyclohexane	11.43	83	2531	0.5027 ug/kg	84
53) 2-Chloroethyl Vinyl Ether	12.16	63	195	1.2486 ug/kg#	47
55) cis-1,3-Dichloropropene	12.49	75	1795	0.4064 ug/kg#	74
59) Toluene	12.92	91	6663	0.5122 ug/kg	98
62) 1,1,2-Trichloroethane	13.32	97	1141	0.4465 ug/kg	67
63) 2-Hexanone	13.25	43	1262	0.4800 ug/kg#	51
64) 1,3-Dichloropropane	13.62	76	1840	0.4299 ug/kg	90
65) Tetrachloroethene	13.75	164	1340	0.5079 ug/kg	86
68) 1-Chlorohexane	14.34	91	2260	0.5662 ug/kg	86
69) Chlorobenzene	14.76	112	5299	0.6131 ug/kg	88
71) Ethylbenzene	14.80	106	2155	0.4724 ug/kg	69
72) m-,p-Xylene	14.88	106	6619	1.1750 ug/kg	91
73) o-Xylene	15.44	106	2481	0.4468 ug/kg	69

(#) = qualifier out of range (m) = manual integration
9M973596.D 8260-SL.M Thu Apr 07 13:28:14 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973596.D Vial: 4
Acq On : 6 Apr 2016 11:31 Operator: ADC
Sample : WG563259-03 0.5ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 11:54:23 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/03/16 HPMS9
Last Update : Mon Apr 04 11:23:13 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
74)	Styrene	15.48	104	5249	0.5704 ug/kg	93
76)	Isopropylbenzene	15.87	105	7442	0.5270 ug/kg	93
82)	n-Propylbenzene	16.38	91	10184	0.6237 ug/kg	98
83)	Bromobenzene	16.52	156	2243	0.5578 ug/kg	73
84)	1,3,5-Trimethylbenzene	16.56	105	8032	0.6524 ug/kg	99
85)	2-Chlorotoluene	16.65	91	5669	0.5575 ug/kg	93
86)	4-Chlorotoluene	16.69	91	5860	0.5871 ug/kg	83
87)	a-Methylstyrene	16.97	118	2629	0.4270 ug/kg	92
88)	tert-Butylbenzene	17.02	134	1136	0.4050 ug/kg	51
89)	1,2,4-Trimethylbenzene	17.09	105	12212	0.5440 ug/kg	86
90)	sec-Butylbenzene	17.30	105	9170	0.5637 ug/kg	88
91)	p-Isopropyltoluene	17.45	119	8260	0.6326 ug/kg	87
92)	1,3-Dichlorobenzene	17.66	146	4559	0.5946 ug/kg	95
93)	1,4-Dichlorobenzene	17.78	146	5206	0.6722 ug/kg	84
94)	n-Butylbenzene	17.98	91	7369	0.6266 ug/kg#	95
95)	1,2-Dichlorobenzene	18.29	146	4519	0.6176 ug/kg	94
97)	1,2,4-Trichlorobenzene	20.43	180	4488	0.8517 ug/kg	95
98)	Hexachlorobutadiene	20.58	225	1813	0.7398 ug/kg#	57
99)	Naphthalene	20.80	128	11728	0.9044 ug/kg	93
100)	1,2,3-Trichlorobenzene	21.11	180	4306	0.8341 ug/kg	90

(#) = qualifier out of range (m) = manual integration
9M973596.D 8260-SL.M Thu Apr 07 13:28:14 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973596.D Vial: 4
Acq On : 6 Apr 2016 11:31 Operator: ADC
Sample : WG563259-03 0.5ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 6 11:54 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

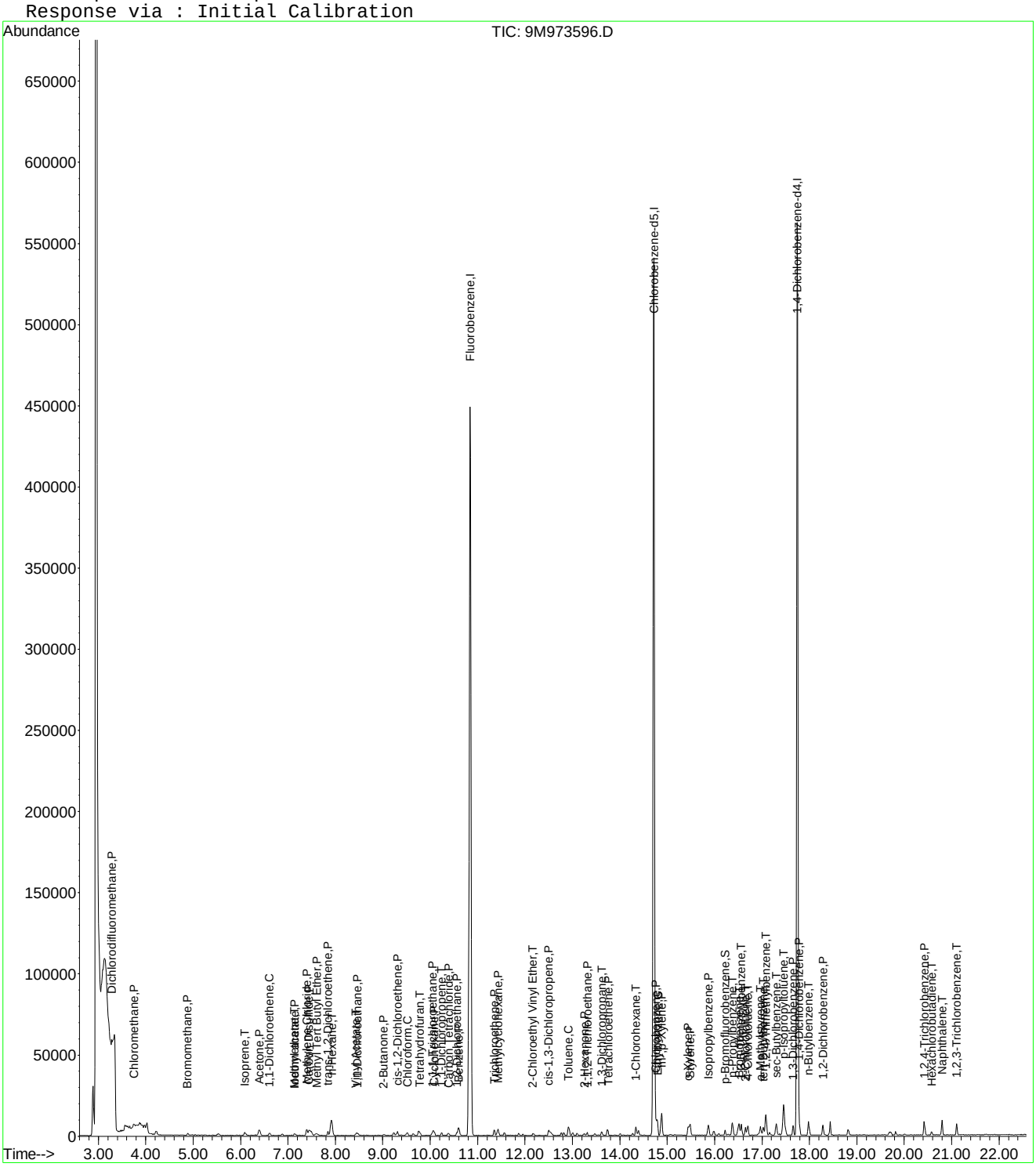

9M973596.D 8260-SL.M Thu Apr 07 13:28:14 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\040616\9M973596.D Vial: 4
Acq On : 6 Apr 2016 11:31 Operator: ADC
Sample : WG563259-03 0.5ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	0.9369	0.0	100	0.00
3	P	Chloromethane	-1.0000	1.1611	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	-1.0000	0.0	0	0.00
5	T	1,3-Butadiene	-1.0000	0.1052	0.0	0	0.00
6	P	Bromomethane	-1.0000	0.4462	0.0	100	0.00
7	P	Chloroethane	-1.0000	0.2665	0.0	100	0.00
8	P	Trichlorofluoromethane	-1.0000	0.3662	0.0	100	0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.05#
10	T	Isoprene	-1.0000	0.4729	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.29#
12	P	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.0759	0.0	100	0.02
13	P	Acetone	-1.0000	2.6130	0.0	0	0.01
14	C	1,1-Dichloroethene	-1.0000	0.4395	0.0	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.72#
16	T	Dimethyl Sulfide	-1.0000	0.1631	0.0	100	0.01
17	T	Iodomethane	-1.0000	3.4654	0.0	100	0.00
18	P	Methyl acetate	-1.0000	0.4983	0.0	100	0.01
19	P	Methylene Chloride	-1.0000	0.5589	0.0	100	0.00
20	P	Carbon Disulfide	-1.0000	0.6270	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.58#
22	P	Methyl Tert Butyl Ether	-1.0000	0.4520	0.0	100	0.01
23	P	trans-1,2-Dichloroethene	-1.0000	0.4817	0.0	100	0.00
24	T	n-Hexane	-1.0000	1.7150	0.0	100	0.01
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.25#
26	T	Vinyl Acetate	-1.0000	0.4539	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.4668	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.83#
29	P	2-Butanone	-1.0000	0.7345	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.13#
31	T	2,2-Dichloropropane	-1.0000	0.3943	0.0	100	0.00
32	P	cis-1,2-Dichloroethene	-1.0000	0.5071	0.0	100	0.00
33	C	Chloroform	-1.0000	0.4550	0.0	100	0.01
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.64#
35	T	Bromochloromethane	-1.0000	0.2492	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	2.4866	0.0	100	0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	-1.0000	0.4115	0.0	100	0.00
39	P	Cyclohexane	-1.0000	0.4317	0.0	100	0.02
40	T	1,1-Dichloropropene	-1.0000	0.4015	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.34#
42	P	Carbon Tetrachloride	-1.0000	0.4437	0.0	100	0.01
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	-1.0000	0.4168	0.0	100	0.00
46	P	Benzene	0.5000	0.5762	-15.2	100	0.01
47	P	Trichloroethene	-1.0000	0.5440	0.0	100	0.01
48	P	Methylcyclohexane	-1.0000	0.5027	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.3907	0.0	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.85#
51	P	Bromodichloromethane	-1.0000	0.3953	0.0	100	0.00
52	T	Dibromomethane	-1.0000	0.3531	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	1.2486	0.0	100	0.00
54	P	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.19#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\040616\9M973596.D Vial: 4
Acq On : 6 Apr 2016 11:31 Operator: ADC
Sample : WG563259-03 0.5ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	-1.0000	0.4064	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.3326	0.0	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.1613	0.0	100	0.00
59	C	Toluene	0.5000	0.5122	-2.4	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3892	0.0	100	0.00
61	P	trans-1,3-Dichloropropene	-1.0000	0.3760	0.0	100	0.00
62	P	1,1,2-Trichloroethane	-1.0000	0.4465	0.0	100	0.00
63	P	2-Hexanone	-1.0000	0.4800	0.0	100	0.01
64	T	1,3-Dichloropropane	-1.0000	0.4299	0.0	100	0.00
65	P	Tetrachloroethene	-1.0000	0.5079	0.0	100	0.01
66	P	Dibromochloromethane	-1.0000	0.3577	0.0	100	0.00
67	P	1,2-Dibromoethane	-1.0000	0.2258	0.0	100	0.00
68	T	1-Chlorohexane	-1.0000	0.5662	0.0	100	0.00
69	P	Chlorobenzene	-1.0000	0.6131	0.0	100	0.00
70	T	1,1,1,2-Tetrachloroethane	-1.0000	0.3018	0.0	100	0.00
71	C	Ethylbenzene	0.5000	0.4724	5.5	100	0.00
72	P	m-,p-Xylene	1.0000	1.1750	-17.5	100	0.00
73	P	o-Xylene	0.5000	0.4468	10.6	100	0.00
74	P	Styrene	-1.0000	0.5704	0.0	100	0.00
75	P	Bromoform	-1.0000	0.2339	0.0	100	0.00
76	P	Isopropylbenzene	-1.0000	0.5270	0.0	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	-1.0000	0.3405	0.0	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.4358	0.0	100	0.00
80	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.28#
81	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.1888	0.0	100	0.00
82	T	n-Propylbenzene	-1.0000	0.6237	0.0	100	0.00
83	T	Bromobenzene	-1.0000	0.5578	0.0	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	0.6524	0.0	100	0.00
85	T	2-Chlorotoluene	-1.0000	0.5575	0.0	100	0.00
86	T	4-Chlorotoluene	-1.0000	0.5871	0.0	100	0.00
87	T	a-Methylstyrene	-1.0000	0.4270	0.0	100	0.00
88	T	tert-Butylbenzene	-1.0000	0.4050	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	-1.0000	0.5440	0.0	100	0.00
90	T	sec-Butylbenzene	-1.0000	0.5637	0.0	100	0.00
91	T	p-Isopropyltoluene	-1.0000	0.6326	0.0	100	0.00
92	P	1,3-Dichlorobenzene	-1.0000	0.5946	0.0	100	0.00
93	P	1,4-Dichlorobenzene	-1.0000	0.6722	0.0	100	0.00
94	T	n-Butylbenzene	-1.0000	0.6266	0.0	100	0.00
95	P	1,2-Dichlorobenzene	-1.0000	0.6176	0.0	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.28#
97	P	1,2,4-Trichlorobenzene	-1.0000	0.8517	0.0	100	0.00
98	T	Hexachlorobutadiene	-1.0000	0.7398	0.0	100	0.00
99	T	Naphthalene	-1.0000	0.9044	0.0	100	0.00
100	T	1,2,3-Trichlorobenzene	-1.0000	0.8341	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M973596.D 8260-SL.M Thu Apr 07 13:28:08 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973597.D Vial: 5
Acq On : 6 Apr 2016 12:02 Operator: ADC
Sample : WG563259-04 1.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 12:24:39 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/03/16 HPMS9
Last Update : Mon Apr 04 11:23:13 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	557853	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	421718	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	209128	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.82	98	1380	0.1322 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.26%#	
79) p-Bromofluorobenzene	16.22	95	1023	0.2555 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.52%#	

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.28	85	3438	1.3902 ug/kg#	65
3) Chloromethane	3.75	50	5181	1.3144 ug/kg#	63
4) Vinyl Chloride	3.98	62	3443	0.7225 ug/kg#	44
6) Bromomethane	4.88	94	2284	0.9187 ug/kg	99
7) Chloroethane	5.04	64	1773	0.9224 ug/kg#	45
8) Trichlorofluoromethane	5.52	101	4412	0.9378 ug/kg#	81
9) Diethyl ether	6.05	59	14756	5.2770 ug/kg	93
10) Isoprene	6.09	67	3715	1.0425 ug/kg	96
11) Acrolein	6.29	56	637	1.7221 ug/kg#	16
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	2305	0.7889 ug/kg	63
13) Acetone	6.39	43	7601	2.0940 ug/kg	96
14) 1,1-Dichloroethene	6.62	61	4390	0.8626 ug/kg	95
15) Tert-Butyl Alcohol	6.72	59	5249	10.8958 ug/kg#	78
16) Dimethyl Sulfide	6.87	62	1824	0.7358 ug/kg	84
17) Iodomethane	7.13	142	1121	3.9269 ug/kg#	39
18) Methyl acetate	7.14	43	3352	0.9502 ug/kg#	64
19) Methylene Chloride	7.40	84	3418	1.1282 ug/kg	86
20) Carbon Disulfide	7.44	76	10560	1.1462 ug/kg	96
21) Acrylonitrile	7.58	53	3633	2.4445 ug/kg	94
22) Methyl Tert Butyl Ether	7.61	73	7926	0.9710 ug/kg	85
23) trans-1,2-Dichloroethene	7.84	61	4306	0.8970 ug/kg	98
24) n-Hexane	7.91	57	10751	1.9432 ug/kg	100
25) Diisopropyl ether	8.25	45	66111	5.4586 ug/kg	98
26) Vinyl Acetate	8.42	43	4318	1.0591 ug/kg#	78
27) 1,1-Dichloroethane	8.46	63	5187	0.9153 ug/kg#	84
28) Ethyl-Tert-Butyl ether	8.83	59	58385	5.6314 ug/kg	97
29) 2-Butanone	9.01	43	2198	1.2063 ug/kg#	56
30) Propionitrile	9.13	54	2656	4.5857 ug/kg#	78
31) 2,2-Dichloropropane	9.23	77	3742	1.0146 ug/kg#	65
32) cis-1,2-Dichloroethene	9.31	96	2691	0.8425 ug/kg	94
33) Chloroform	9.51	83	4714	0.9497 ug/kg	94
35) Bromochloromethane	9.75	130	1511	0.7365 ug/kg	88
36) Tetrahydrofuran	9.77	42	9416	7.5349 ug/kg	88
38) 1,1,1-Trichloroethane	10.05	97	3823	0.9714 ug/kg	98
39) Cyclohexane	10.08	56	5889	0.9076 ug/kg	97
40) 1,1-Dichloropropene	10.24	75	3371	0.8822 ug/kg	92
41) Tert-Amyl-Methyl ether	10.34	73	42435	5.4666 ug/kg	98
42) Carbon Tetrachloride	10.39	117	3273	0.9063 ug/kg#	84
45) 1,2-Dichloroethane	10.56	62	3840	0.9057 ug/kg	91
46) Benzene	10.60	78	11983	1.0149 ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M973597.D 8260-SL.M Thu Apr 07 13:28:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973597.D Vial: 5
Acq On : 6 Apr 2016 12:02 Operator: ADC
Sample : WG563259-04 1.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 12:24:39 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/03/16 HPMS9
Last Update : Mon Apr 04 11:23:13 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
47)	Trichloroethene	11.35	130	3487	1.0053	ug/kg	88
48)	Methylcyclohexane	11.44	83	4996	0.9839	ug/kg	95
49)	1,2-Dichloropropane	11.56	63	2872	0.8788	ug/kg	95
51)	Bromodichloromethane	11.86	83	3283	0.8724	ug/kg#	85
52)	Dibromomethane	11.96	174	1694	0.8620	ug/kg	90
53)	2-Chloroethyl Vinyl Ether	12.17	63	1008	2.4200	ug/kg#	47
54)	4-Methyl-2-Pentanone	12.20	58	973	0.6567	ug/kg#	43
55)	cis-1,3-Dichloropropene	12.49	75	3951	0.8869	ug/kg#	77
56)	Dimethyl Disulfide	12.77	94	3623	0.7258	ug/kg	97
59)	Toluene	12.92	91	12565	0.9465	ug/kg	98
60)	Ethyl Methacrylate	13.00	69	3038	0.7867	ug/kg#	71
61)	trans-1,3-Dichloropropene	13.09	75	3292	0.8033	ug/kg	96
62)	1,1,2-Trichloroethane	13.32	97	1934	0.7417	ug/kg	91
63)	2-Hexanone	13.24	43	2621	0.9770	ug/kg#	71
64)	1,3-Dichloropropane	13.62	76	3906	0.8945	ug/kg	96
65)	Tetrachloroethene	13.75	164	2453	0.9111	ug/kg	99
66)	Dibromochloromethane	14.01	129	2167	0.6862	ug/kg	98
67)	1,2-Dibromoethane	14.27	107	2061	0.7227	ug/kg	87
68)	1-Chlorohexane	14.34	91	3972	0.9753	ug/kg	98
69)	Chlorobenzene	14.76	112	8591	0.9741	ug/kg	95
70)	1,1,1,2-Tetrachloroethane	14.79	131	2410	0.8202	ug/kg	100
71)	Ethylbenzene	14.79	106	4507	0.9682	ug/kg	89
72)	m-,p-Xylene	14.88	106	11285	1.9633	ug/kg	99
73)	o-Xylene	15.45	106	5223	0.9219	ug/kg	92
74)	Styrene	15.48	104	8749	0.9317	ug/kg	92
75)	Bromoform	15.98	173	1483	0.6965	ug/kg	75
76)	Isopropylbenzene	15.87	105	14235	0.9879	ug/kg	93
78)	1,1,2,2-Tetrachloroethane	16.09	83	2277	0.7039	ug/kg#	92
80)	1,2,3-Trichloropropane	16.28	110	937	0.8413	ug/kg#	1
81)	trans-1,4-Dichloro-2-Buten	16.32	53	931	0.7743	ug/kg#	1
82)	n-Propylbenzene	16.38	91	16968	1.0301	ug/kg	95
83)	Bromobenzene	16.51	156	3616	0.8914	ug/kg#	49
84)	1,3,5-Trimethylbenzene	16.56	105	12696	1.0222	ug/kg	97
85)	2-Chlorotoluene	16.65	91	10075	0.9822	ug/kg	94
86)	4-Chlorotoluene	16.69	91	10332	1.0261	ug/kg	93
87)	a-Methylstyrene	16.97	118	5122	0.8247	ug/kg	97
88)	tert-Butylbenzene	17.03	134	2268	0.8015	ug/kg	70
89)	1,2,4-Trimethylbenzene	17.08	105	16314	0.8707	ug/kg	94
90)	sec-Butylbenzene	17.29	105	15648	0.9536	ug/kg	100
91)	p-Isopropyltoluene	17.45	119	12800	0.9718	ug/kg	98
92)	1,3-Dichlorobenzene	17.65	146	7673	0.9920	ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	8420	1.0777	ug/kg	94
94)	n-Butylbenzene	17.98	91	11896	1.0028	ug/kg	96
95)	1,2-Dichlorobenzene	18.29	146	7645	1.0358	ug/kg	89
96)	1,2-Dibromo-3-Chloropropan	19.29	157	415	0.4519	ug/kg	67
97)	1,2,4-Trichlorobenzene	20.43	180	5819	1.0947	ug/kg	94
98)	Hexachlorobutadiene	20.58	225	2429	0.9825	ug/kg	98
99)	Naphthalene	20.80	128	14841	1.1345	ug/kg	93
100)	1,2,3-Trichlorobenzene	21.10	180	5534	1.0627	ug/kg	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973597.D Vial: 5
Acq On : 6 Apr 2016 12:02 Operator: ADC
Sample : WG563259-04 1.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 6 12:24 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

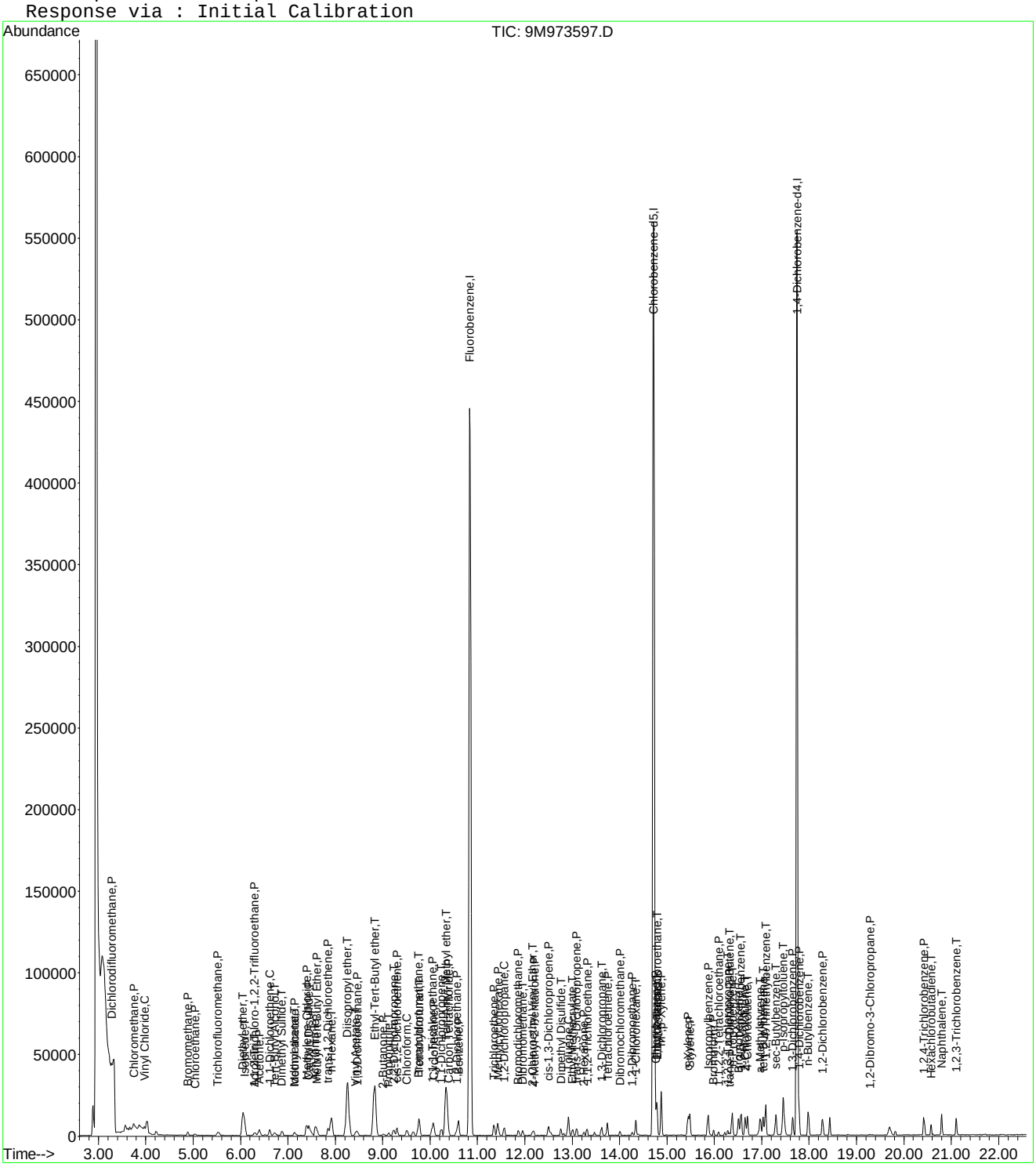

9M973597.D 8260-SL.M Thu Apr 07 13:28:36 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\040616\9M973597.D Vial: 5
Acq On : 6 Apr 2016 12:02 Operator: ADC
Sample : WG563259-04 1.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	1.3902	0.0	100	0.00
3	P	Chloromethane	-1.0000	1.3144	0.0	100	0.00
4	C	Vinyl Chloride	1.0000	0.7226	27.7#	100	0.00
5	T	1,3-Butadiene	1.0000	0.2910	70.9#	100	0.00
6	P	Bromomethane	1.0000	0.9187	8.1	100	0.01
7	P	Chloroethane	-1.0000	0.9224	0.0	100	0.01
8	P	Trichlorofluoromethane	1.0000	0.9378	6.2	100	0.00
9	T	Diethyl ether	5.0000	5.2770	-5.5	100	0.00
10	T	Isoprene	-1.0000	1.0425	0.0	100	0.00
11	T	Acrolein	2.5000	1.7221	31.1#	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.7889	0.0	100	-0.01
13	P	Acetone	-1.0000	2.0940	0.0	0	0.01
14	C	1,1-Dichloroethene	1.0000	0.8626	13.7	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	10.8958	0.0	100	0.00
16	T	Dimethyl Sulfide	1.0000	0.7358	26.4#	100	-0.01
17	T	Iodomethane	-1.0000	3.9269	0.0	100	0.00
18	P	Methyl acetate	-1.0000	0.9502	0.0	100	0.01
19	P	Methylene Chloride	-1.0000	1.1282	0.0	100	0.00
20	P	Carbon Disulfide	-1.0000	1.1462	0.0	100	0.00
21	T	Acrylonitrile	2.5000	2.4445	2.2	100	0.00
22	P	Methyl Tert Butyl Ether	1.0000	0.9710	2.9	100	0.01
23	P	trans-1,2-Dichloroethene	1.0000	0.8970	10.3	100	0.00
24	T	n-Hexane	-1.0000	1.9432	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	5.4586	-9.2	100	0.00
26	T	Vinyl Acetate	-1.0000	1.0591	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	0.9153	8.5	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	5.6315	-12.6	100	0.00
29	P	2-Butanone	-1.0000	1.2063	0.0	100	0.00
30	T	Propionitrile	5.0000	4.5857	8.3	100	0.00
31	T	2,2-Dichloropropane	-1.0000	1.0146	0.0	100	0.00
32	P	cis-1,2-Dichloroethene	1.0000	0.8425	15.7	100	0.00
33	C	Chloroform	1.0000	0.9497	5.0	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.64#
35	T	Bromochloromethane	1.0000	0.7365	26.3#	100	0.00
36	T	Tetrahydrofuran	-1.0000	7.5349	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	1.0000	0.9714	2.9	100	0.00
39	P	Cyclohexane	1.0000	0.9076	9.2	100	0.01
40	T	1,1-Dichloropropene	1.0000	0.8822	11.8	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	5.4666	-9.3	100	0.00
42	P	Carbon Tetrachloride	-1.0000	0.9063	0.0	100	0.01
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	1.0000	0.9057	9.4	100	0.00
46	P	Benzene	1.0000	1.0149	-1.5	100	0.01
47	P	Trichloroethene	1.0000	1.0053	-0.5	100	0.01
48	P	Methylcyclohexane	1.0000	0.9839	1.6	100	0.01
49	C	1,2-Dichloropropane	1.0000	0.8788	12.1	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.85#
51	P	Bromodichloromethane	-1.0000	0.8724	0.0	100	0.00
52	T	Dibromomethane	1.0000	0.8620	13.8	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	2.4200	0.0	100	0.01
54	P	4-Methyl-2-Pentanone	-1.0000	0.6567	0.0	100	0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\040616\9M973597.D Vial: 5
Acq On : 6 Apr 2016 12:02 Operator: ADC
Sample : WG563259-04 1.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	-1.0000	0.8869	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.7258	0.0	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.1322	0.0	100	0.00
59	C	Toluene	1.0000	0.9465	5.3	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.7867	0.0	100	-0.01
61	P	trans-1,3-Dichloropropene	-1.0000	0.8033	0.0	100	0.00
62	P	1,1,2-Trichloroethane	1.0000	0.7417	25.8#	100	0.00
63	P	2-Hexanone	-1.0000	0.9770	0.0	100	0.00
64	T	1,3-Dichloropropane	1.0000	0.8945	10.6	100	0.00
65	P	Tetrachloroethene	1.0000	0.9111	8.9	100	0.01
66	P	Dibromochloromethane	-1.0000	0.6862	0.0	100	0.00
67	P	1,2-Dibromoethane	-1.0000	0.7227	0.0	100	0.00
68	T	1-Chlorohexane	1.0000	0.9753	2.5	100	0.00
69	P	Chlorobenzene	1.0000	0.9741	2.6	100	0.00
70	T	1,1,1,2-Tetrachloroethane	-1.0000	0.8202	0.0	100	0.00
71	C	Ethylbenzene	1.0000	0.9682	3.2	100	0.00
72	P	m-,p-Xylene	2.0000	1.9633	1.8	100	0.00
73	P	o-Xylene	1.0000	0.9219	7.8	100	0.00
74	P	Styrene	1.0000	0.9317	6.8	100	0.00
75	P	Bromoform	-1.0000	0.6965	0.0	100	-0.01
76	P	Isopropylbenzene	1.0000	0.9879	1.2	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	1.0000	0.7039	29.6#	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.2555	0.0	100	0.00
80	T	1,2,3-Trichloropropane	1.0000	0.8413	15.9	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.7743	0.0	100	0.00
82	T	n-Propylbenzene	1.0000	1.0301	-3.0	100	0.00
83	T	Bromobenzene	1.0000	0.8914	10.9	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	1.0222	0.0	100	-0.01
85	T	2-Chlorotoluene	-1.0000	0.9822	0.0	100	0.00
86	T	4-Chlorotoluene	1.0000	1.0261	-2.6	100	0.00
87	T	a-Methylstyrene	-1.0000	0.8247	0.0	100	0.00
88	T	tert-Butylbenzene	-1.0000	0.8015	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	1.0000	0.8708	12.9	100	0.00
90	T	sec-Butylbenzene	1.0000	0.9536	4.6	100	0.00
91	T	p-Isopropyltoluene	-1.0000	0.9718	0.0	100	0.00
92	P	1,3-Dichlorobenzene	1.0000	0.9920	0.8	100	0.00
93	P	1,4-Dichlorobenzene	1.0000	1.0777	-7.8	100	0.00
94	T	n-Butylbenzene	1.0000	1.0028	-0.3	100	0.00
95	P	1,2-Dichlorobenzene	1.0000	1.0358	-3.6	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	0.4519	0.0	100	0.01
97	P	1,2,4-Trichlorobenzene	1.0000	1.0947	-9.5	100	0.00
98	T	Hexachlorobutadiene	1.0000	0.9825	1.7	100	0.00
99	T	Naphthalene	-1.0000	1.1345	0.0	100	0.00
100	T	1,2,3-Trichlorobenzene	1.0000	1.0627	-6.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1
9M973597.D 8260-SL.M Thu Apr 07 13:28:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973598.D Vial: 6
Acq On : 6 Apr 2016 12:32 Operator: ADC
Sample : WG563259-05 2.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 12:54:49 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/03/16 HPMS9
Last Update : Mon Apr 04 11:23:13 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	561568	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	423295	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	214199	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.83	98	883	0.0843 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.16%#	
79) p-Bromofluorobenzene	16.23	95	557	0.1358 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	7213	2.3112 ug/kg	87
3) Chloromethane	3.74	50	9237	2.3278 ug/kg	100
4) Vinyl Chloride	3.98	62	6229	1.6747 ug/kg#	19
5) 1,3-Butadiene	4.02	54	4504	1.3063 ug/kg	77
6) Bromomethane	4.88	94	4915	1.9639 ug/kg	96
7) Chloroethane	5.04	64	4386	2.2666 ug/kg	88
8) Trichlorofluoromethane	5.54	101	9590	2.0249 ug/kg#	94
9) Diethyl ether	6.05	59	73580	26.1395 ug/kg	99
10) Isoprene	6.09	67	7256	2.0227 ug/kg	98
11) Acrolein	6.30	56	3423	9.1925 ug/kg	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	5358	1.8216 ug/kg	95
13) Acetone	6.39	43	7635	2.0790 ug/kg	99
14) 1,1-Dichloroethene	6.61	61	9887	1.9298 ug/kg	100
15) Tert-Butyl Alcohol	6.73	59	25828	53.2585 ug/kg	94
16) Dimethyl Sulfide	6.88	62	4558	1.8265 ug/kg	98
17) Iodomethane	7.13	142	2123	4.4719 ug/kg#	55
18) Methyl acetate	7.14	43	6733	1.8961 ug/kg#	78
19) Methylene Chloride	7.40	84	6667	2.1861 ug/kg	89
20) Carbon Disulfide	7.44	76	19750	2.1295 ug/kg	99
21) Acrylonitrile	7.57	53	18608	12.4377 ug/kg	96
22) Methyl Tert Butyl Ether	7.62	73	16575	2.0171 ug/kg	98
23) trans-1,2-Dichloroethene	7.85	61	9684	2.0039 ug/kg	98
24) n-Hexane	7.92	57	15558	2.7934 ug/kg	93
25) Diisopropyl ether	8.25	45	323385	26.5242 ug/kg	99
26) Vinyl Acetate	8.44	43	9782	2.3835 ug/kg#	78
27) 1,1-Dichloroethane	8.46	63	11630	2.0385 ug/kg	96
28) Ethyl-Tert-Butyl ether	8.83	59	283112	27.1265 ug/kg	99
29) 2-Butanone	9.02	43	4137	2.2555 ug/kg#	56
30) Propionitrile	9.13	54	14459	24.7990 ug/kg	98
31) 2,2-Dichloropropane	9.23	77	8083	2.1772 ug/kg	86
32) cis-1,2-Dichloroethene	9.31	96	6442	2.0036 ug/kg	86
33) Chloroform	9.52	83	9615	1.9244 ug/kg	100
34) 1-Bromopropane	9.65	122	713	1.3267 ug/kg	39
35) Bromochloromethane	9.75	130	3780	1.8303 ug/kg	98
36) Tetrahydrofuran	9.77	42	34463	27.3955 ug/kg	97
38) 1,1,1-Trichloroethane	10.04	97	7884	1.9899 ug/kg	99
39) Cyclohexane	10.08	56	13354	2.0445 ug/kg	97
40) 1,1-Dichloropropene	10.23	75	7832	2.0362 ug/kg	98
41) Tert-Amyl-Methyl ether	10.34	73	209020	26.7483 ug/kg	99
42) Carbon Tetrachloride	10.38	117	7040	1.9364 ug/kg	94

(#) = qualifier out of range (m) = manual integration
9M973598.D 8260-SL.M Thu Apr 07 13:29:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973598.D Vial: 6
Acq On : 6 Apr 2016 12:32 Operator: ADC
Sample : WG563259-05 2.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 12:54:49 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/03/16 HPMS9
Last Update : Mon Apr 04 11:23:13 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	9082	2.1280 ug/kg	90
46)	Benzene	10.60	78	25276	2.1266 ug/kg	96
47)	Trichloroethene	11.35	130	7090	2.0306 ug/kg	94
48)	Methylcyclohexane	11.43	83	9849	1.9269 ug/kg	93
49)	1,2-Dichloropropane	11.56	63	6385	1.9409 ug/kg	98
50)	1,4-Dioxane	11.85	88	2011	38.0886 ug/kg	94
51)	Bromodichloromethane	11.86	83	6868	1.8130 ug/kg#	96
52)	Dibromomethane	11.95	174	3665	1.8525 ug/kg	96
53)	2-Chloroethyl Vinyl Ether	12.15	63	2995	5.2459 ug/kg#	62
54)	4-Methyl-2-Pentanone	12.19	58	2405	1.6125 ug/kg#	60
55)	cis-1,3-Dichloropropene	12.50	75	9135	2.0369 ug/kg	89
56)	Dimethyl Disulfide	12.76	94	8289	1.6496 ug/kg	96
59)	Toluene	12.92	91	26467	1.9863 ug/kg	98
60)	Ethyl Methacrylate	13.01	69	7058	1.8209 ug/kg	87
61)	trans-1,3-Dichloropropene	13.09	75	7270	1.7674 ug/kg	97
62)	1,1,2-Trichloroethane	13.32	97	5072	1.9379 ug/kg	98
63)	2-Hexanone	13.24	43	5448	2.0233 ug/kg#	73
64)	1,3-Dichloropropane	13.62	76	8816	2.0113 ug/kg	97
65)	Tetrachloroethene	13.75	164	5466	2.0227 ug/kg	96
66)	Dibromochloromethane	14.01	129	5362	1.6916 ug/kg	97
67)	1,2-Dibromoethane	14.26	107	4602	1.6077 ug/kg	96
68)	1-Chlorohexane	14.34	91	8306	2.0318 ug/kg	94
69)	Chlorobenzene	14.77	112	18638	2.1054 ug/kg	78
70)	1,1,1,2-Tetrachloroethane	14.79	131	5450	1.8478 ug/kg	96
71)	Ethylbenzene	14.79	106	9804	2.0982 ug/kg	99
72)	m-,p-Xylene	14.88	106	23234	4.0271 ug/kg	97
73)	o-Xylene	15.45	106	11588	2.0377 ug/kg	95
74)	Styrene	15.48	104	18182	1.9290 ug/kg	97
75)	Bromoform	15.98	173	3164	1.4804 ug/kg	95
76)	Isopropylbenzene	15.87	105	28542	1.9733 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	6227	1.8795 ug/kg#	91
80)	1,2,3-Trichloropropane	16.28	110	2188	1.9181 ug/kg#	13
81)	trans-1,4-Dichloro-2-Buten	16.33	53	2328	1.8903 ug/kg#	1
82)	n-Propylbenzene	16.38	91	32209	1.9091 ug/kg	99
83)	Bromobenzene	16.51	156	7870	1.8942 ug/kg	66
84)	1,3,5-Trimethylbenzene	16.57	105	24501	1.9260 ug/kg	97
85)	2-Chlorotoluene	16.65	91	19437	1.8500 ug/kg	89
86)	4-Chlorotoluene	16.70	91	21001	2.0362 ug/kg	88
87)	a-Methylstyrene	16.97	118	10908	1.7148 ug/kg	90
88)	tert-Butylbenzene	17.03	134	5100	1.7596 ug/kg	78
89)	1,2,4-Trimethylbenzene	17.08	105	28288	1.7954 ug/kg	98
90)	sec-Butylbenzene	17.29	105	31454	1.8715 ug/kg	98
91)	p-Isopropyltoluene	17.45	119	26393	1.9564 ug/kg	93
92)	1,3-Dichlorobenzene	17.65	146	15785	1.9925 ug/kg	97
93)	1,4-Dichlorobenzene	17.79	146	16276	2.0339 ug/kg	77
94)	n-Butylbenzene	17.98	91	23563	1.9393 ug/kg	97
95)	1,2-Dichlorobenzene	18.29	146	13856	1.8328 ug/kg	98
96)	1,2-Dibromo-3-Chloropropan	19.29	157	1504	1.5990 ug/kg	71
97)	1,2,4-Trichlorobenzene	20.43	180	10046	1.8451 ug/kg	94
98)	Hexachlorobutadiene	20.58	225	4883	1.9284 ug/kg	97
99)	Naphthalene	20.80	128	26400	1.9704 ug/kg	99
100)	1,2,3-Trichlorobenzene	21.10	180	9688	1.8163 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973598.D Vial: 6
Acq On : 6 Apr 2016 12:32 Operator: ADC
Sample : WG563259-05 2.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 6 12:54 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

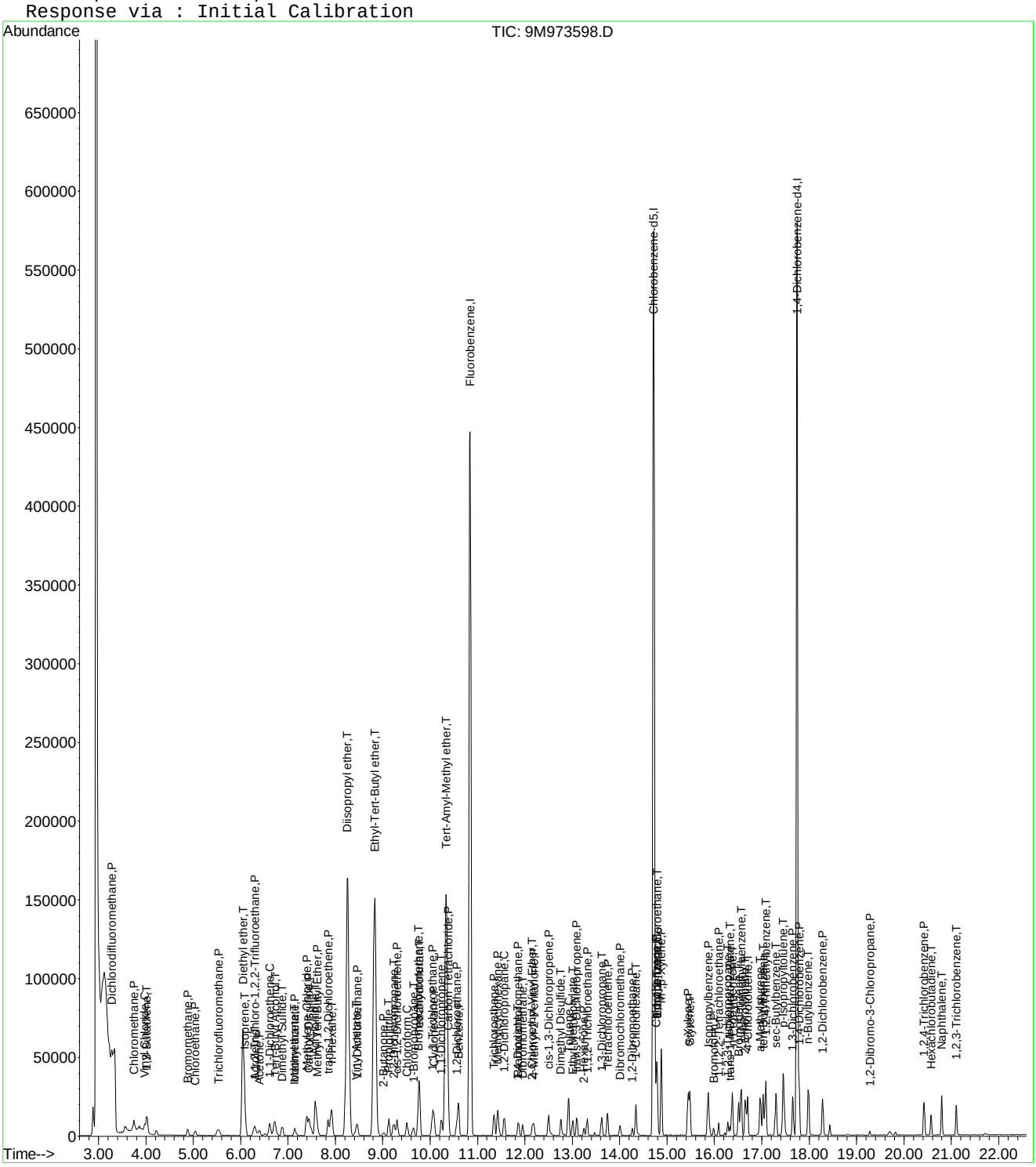

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\040616\9M973598.D Vial: 6
Acq On : 6 Apr 2016 12:32 Operator: ADC
Sample : WG563259-05 2.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	2.0000	2.3112	-15.6	100	0.00
3	P	Chloromethane	2.0000	2.3278	-16.4	100	0.00
4	C	Vinyl Chloride	2.0000	1.6747	16.3	100	0.00
5	T	1,3-Butadiene	2.0000	1.3063	34.7#	100	0.00
6	P	Bromomethane	2.0000	1.9639	1.8	100	0.00
7	P	Chloroethane	2.0000	2.2666	-13.3	100	0.00
8	P	Trichlorofluoromethane	2.0000	2.0249	-1.2	100	0.02
9	T	Diethyl ether	25.0000	26.1395	-4.6	100	0.00
10	T	Isoprene	2.0000	2.0227	-1.1	100	0.00
11	T	Acrolein	12.5000	9.1925	26.5#	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.8216	8.9	100	0.00
13	P	Acetone	-1.0000	2.0790	0.0	0	0.00
14	C	1,1-Dichloroethene	2.0000	1.9299	3.5	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	53.2585	-6.5	100	0.00
16	T	Dimethyl Sulfide	2.0000	1.8265	8.7	100	0.00
17	T	Iodomethane	-1.0000	4.4719	0.0	100	0.00
18	P	Methyl acetate	2.0000	1.8961	5.2	100	0.00
19	P	Methylene Chloride	2.0000	2.1861	-9.3	100	0.00
20	P	Carbon Disulfide	2.0000	2.1295	-6.5	100	0.00
21	T	Acrylonitrile	12.5000	12.4377	0.5	100	0.00
22	P	Methyl Tert Butyl Ether	2.0000	2.0171	-0.9	100	0.02
23	P	trans-1,2-Dichloroethene	2.0000	2.0039	-0.2	100	0.00
24	T	n-Hexane	2.0000	2.7934	-39.7#	100	0.00
25	T	Diisopropyl ether	25.0000	26.5242	-6.1	100	0.00
26	T	Vinyl Acetate	2.0000	2.3835	-19.2	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.0385	-1.9	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	27.1265	-8.5	100	0.00
29	P	2-Butanone	-1.0000	2.2555	0.0	100	0.00
30	T	Propionitrile	25.0000	24.7990	0.8	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1772	-8.9	100	0.00
32	P	cis-1,2-Dichloroethene	2.0000	2.0036	-0.2	100	0.00
33	C	Chloroform	2.0000	1.9244	3.8	100	0.00
34	T	1-Bromopropane	2.0000	1.3267	33.7#	100	0.00
35	T	Bromochloromethane	2.0000	1.8303	8.5	100	0.00
36	T	Tetrahydrofuran	25.0000	27.3955	-9.6	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	2.0000	1.9899	0.5	100	0.00
39	P	Cyclohexane	2.0000	2.0445	-2.2	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0362	-1.8	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	26.7483	-7.0	100	0.00
42	P	Carbon Tetrachloride	2.0000	1.9364	3.2	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	2.0000	2.1280	-6.4	100	0.00
46	P	Benzene	2.0000	2.1266	-6.3	100	0.00
47	P	Trichloroethene	2.0000	2.0305	-1.5	100	0.00
48	P	Methylcyclohexane	2.0000	1.9269	3.7	100	0.00
49	C	1,2-Dichloropropane	2.0000	1.9409	3.0	100	0.00
50	T	1,4-Dioxane	50.0000	38.0886	23.8	100	0.00
51	P	Bromodichloromethane	2.0000	1.8130	9.4	100	0.00
52	T	Dibromomethane	2.0000	1.8525	7.4	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	5.2459	-162.3#	100	0.00
54	P	4-Methyl-2-Pentanone	-1.0000	1.6125	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\040616\9M973598.D Vial: 6
Acq On : 6 Apr 2016 12:32 Operator: ADC
Sample : WG563259-05 2.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	2.0000	2.0369	-1.8	100	0.00
56	T	Dimethyl Disulfide	2.0000	1.6496	17.5	100	-0.01
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0843	0.0	100	0.00
59	C	Toluene	2.0000	1.9863	0.7	100	0.00
60	T	Ethyl Methacrylate	-1.0000	1.8209	0.0	100	0.00
61	P	trans-1,3-Dichloropropene	2.0000	1.7674	11.6	100	0.00
62	P	1,1,2-Trichloroethane	2.0000	1.9379	3.1	100	0.00
63	P	2-Hexanone	-1.0000	2.0233	0.0	100	0.00
64	T	1,3-Dichloropropane	2.0000	2.0113	-0.6	100	0.00
65	P	Tetrachloroethene	2.0000	2.0227	-1.1	100	0.00
66	P	Dibromochloromethane	2.0000	1.6916	15.4	100	0.00
67	P	1,2-Dibromoethane	-1.0000	1.6077	0.0	100	0.00
68	T	1-Chlorohexane	2.0000	2.0318	-1.6	100	0.00
69	P	Chlorobenzene	2.0000	2.1054	-5.3	100	0.00
70	T	1,1,1,2-Tetrachloroethane	2.0000	1.8478	7.6	100	0.00
71	C	Ethylbenzene	2.0000	2.0982	-4.9	100	0.00
72	P	m-,p-Xylene	4.0000	4.0271	-0.7	100	0.00
73	P	o-Xylene	2.0000	2.0377	-1.9	100	0.00
74	P	Styrene	2.0000	1.9290	3.5	100	0.00
75	P	Bromoform	2.0000	1.4804	26.0#	100	0.00
76	P	Isopropylbenzene	2.0000	1.9733	1.3	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	2.0000	1.8795	6.0	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.1358	0.0	100	0.00
80	T	1,2,3-Trichloropropane	2.0000	1.9181	4.1	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	2.0000	1.8903	5.5	100	0.00
82	T	n-Propylbenzene	2.0000	1.9091	4.5	100	0.00
83	T	Bromobenzene	2.0000	1.8942	5.3	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	1.9260	0.0	100	0.00
85	T	2-Chlorotoluene	2.0000	1.8500	7.5	100	0.00
86	T	4-Chlorotoluene	2.0000	2.0362	-1.8	100	0.00
87	T	a-Methylstyrene	-1.0000	1.7148	0.0	100	0.00
88	T	tert-Butylbenzene	-1.0000	1.7596	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	2.0000	1.7954	10.2	100	0.00
90	T	sec-Butylbenzene	2.0000	1.8715	6.4	100	0.00
91	T	p-Isopropyltoluene	-1.0000	1.9564	0.0	100	0.00
92	P	1,3-Dichlorobenzene	2.0000	1.9925	0.4	100	0.00
93	P	1,4-Dichlorobenzene	2.0000	2.0339	-1.7	100	0.00
94	T	n-Butylbenzene	2.0000	1.9393	3.0	100	0.00
95	P	1,2-Dichlorobenzene	2.0000	1.8328	8.4	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	1.5990	0.0	100	0.01
97	P	1,2,4-Trichlorobenzene	2.0000	1.8451	7.7	100	0.00
98	T	Hexachlorobutadiene	2.0000	1.9284	3.6	100	0.00
99	T	Naphthalene	2.0000	1.9704	1.5	100	0.00
100	T	1,2,3-Trichlorobenzene	2.0000	1.8163	9.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M973598.D 8260-SL.M Thu Apr 07 13:28:57 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973599.D Vial: 7
Acq On : 6 Apr 2016 13:03 Operator: ADC
Sample : WG563259-06 5.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:12 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	540575	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	410912	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	212234	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	26727	9.7897 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 19.58%#		
43) 1,2-Dichloroethane-d4	10.43	65	28555	9.9912 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 19.98%#		
58) Toluene-d8	12.82	98	93027	9.4991 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 19.00%#		
79) p-Bromofluorobenzene	16.22	95	33585	9.1362 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 18.28%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	18618	4.4899 ug/kg	93
3) Chloromethane	3.74	50	18697	4.9049 ug/kg	96
4) Vinyl Chloride	3.98	62	17383	6.2597 ug/kg#	75
5) 1,3-Butadiene	4.02	54	9801	5.3282 ug/kg	95
6) Bromomethane	4.88	94	12479	5.3393 ug/kg	99
7) Chloroethane	5.03	64	11469	5.0379 ug/kg	93
8) Trichlorofluoromethane	5.53	101	23619	4.9039 ug/kg	98
9) Diethyl ether	6.04	59	144321	50.9536 ug/kg	99
10) Isoprene	6.09	67	17822	4.7011 ug/kg	98
11) Acrolein	6.29	56	6309	22.4018 ug/kg	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	14091	4.7915 ug/kg	96
13) Acetone	6.39	43	11189	5.1370 ug/kg	92
14) 1,1-Dichloroethene	6.61	61	24384	4.9467 ug/kg	97
15) Tert-Butyl Alcohol	6.71	59	47814	100.8431 ug/kg	97
16) Dimethyl Sulfide	6.88	62	11613	4.8086 ug/kg	99
17) Iodomethane	7.13	142	7579	6.0534 ug/kg	95
18) Methyl acetate	7.14	43	16058	5.1279 ug/kg#	92
19) Methylene Chloride	7.40	84	15627	5.0751 ug/kg	98
20) Carbon Disulfide	7.44	76	45259	4.8422 ug/kg	99
21) Acrylonitrile	7.58	53	36084	24.2435 ug/kg	100
22) Methyl Tert Butyl Ether	7.61	73	41971	5.0656 ug/kg	97
23) trans-1,2-Dichloroethene	7.84	61	22643	4.7751 ug/kg	94
24) n-Hexane	7.91	57	31915	5.1828 ug/kg	98
25) Diisopropyl ether	8.25	45	638829	50.9126 ug/kg	100
26) Vinyl Acetate	8.43	43	27708	4.9171 ug/kg	99
27) 1,1-Dichloroethane	8.46	63	29076	5.0517 ug/kg	98
28) Ethyl-Tert-Butyl ether	8.83	59	559829	50.7395 ug/kg	99
29) 2-Butanone	9.02	43	8792	5.0588 ug/kg	93
30) Propionitrile	9.13	54	28464	50.4599 ug/kg	100
31) 2,2-Dichloropropane	9.23	77	19836	4.7197 ug/kg	97
32) cis-1,2-Dichloroethene	9.31	96	15631	4.9602 ug/kg	98
33) Chloroform	9.52	83	24960	5.1128 ug/kg	98
34) 1-Bromopropane	9.64	122	2375	4.9990 ug/kg	92
35) Bromochloromethane	9.74	130	10252	5.2145 ug/kg	97
36) Tetrahydrofuran	9.77	42	62022	50.2370 ug/kg	100
38) 1,1,1-Trichloroethane	10.04	97	20109	4.8127 ug/kg	96
39) Cyclohexane	10.07	56	32971	4.9915 ug/kg	98
40) 1,1-Dichloropropene	10.23	75	19558	5.0849 ug/kg	98
41) Tert-Amyl-Methyl ether	10.34	73	416272	51.0028 ug/kg	99
42) Carbon Tetrachloride	10.38	117	18137	4.6502 ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M973599.D 8260-SL.M Thu Apr 07 13:30:12 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973599.D Vial: 7
Acq On : 6 Apr 2016 13:03 Operator: ADC
Sample : WG563259-06 5.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:12 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	21550	5.1258	ug/kg	98
46)	Benzene	10.59	78	59748	5.0052	ug/kg	100
47)	Trichloroethene	11.35	130	17063	5.0819	ug/kg	98
48)	Methylcyclohexane	11.43	83	25911	5.0502	ug/kg	95
49)	1,2-Dichloropropane	11.56	63	16731	5.1538	ug/kg	98
50)	1,4-Dioxane	11.85	88	4165	98.9158	ug/kg	91
51)	Bromodichloromethane	11.87	83	16986	4.5917	ug/kg	97
52)	Dibromomethane	11.95	174	9659	4.9836	ug/kg	98
53)	2-Chloroethyl Vinyl Ether	12.15	63	7923	4.5897	ug/kg	91
54)	4-Methyl-2-Pentanone	12.19	58	7042	4.7114	ug/kg	93
55)	cis-1,3-Dichloropropene	12.49	75	22132	4.7984	ug/kg	100
56)	Dimethyl Disulfide	12.77	94	22635	4.5857	ug/kg	95
59)	Toluene	12.91	91	62873	5.0283	ug/kg	98
60)	Ethyl Methacrylate	13.01	69	17248	4.5309	ug/kg	97
61)	trans-1,3-Dichloropropene	13.09	75	18937	4.6521	ug/kg	97
62)	1,1,2-Trichloroethane	13.32	97	12436	5.0520	ug/kg	96
63)	2-Hexanone	13.24	43	12154	4.5216	ug/kg#	99
64)	1,3-Dichloropropane	13.62	76	21035	4.9697	ug/kg	100
65)	Tetrachloroethene	13.74	164	12748	4.8072	ug/kg	96
66)	Dibromochloromethane	14.01	129	13656	4.4877	ug/kg	99
67)	1,2-Dibromoethane	14.27	107	12726	4.6931	ug/kg	96
68)	1-Chlorohexane	14.34	91	19636	4.7700	ug/kg	100
69)	Chlorobenzene	14.76	112	43960	5.0662	ug/kg	94
70)	1,1,1,2-Tetrachloroethane	14.79	131	13422	4.5530	ug/kg	96
71)	Ethylbenzene	14.79	106	22856	4.8964	ug/kg	97
72)	m-,p-Xylene	14.88	106	55736	9.6844	ug/kg	97
73)	o-Xylene	15.45	106	27291	4.9764	ug/kg	97
74)	Styrene	15.48	104	44746	4.7645	ug/kg	97
75)	Bromoform	15.99	173	8941	4.9476	ug/kg	96
76)	Isopropylbenzene	15.87	105	68436	4.7974	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	16234	4.8680	ug/kg	96
80)	1,2,3-Trichloropropane	16.28	110	5358	5.0869	ug/kg	75
81)	trans-1,4-Dichloro-2-Buten	16.32	53	5712	4.4560	ug/kg	95
82)	n-Propylbenzene	16.38	91	78929	4.9743	ug/kg	99
83)	Bromobenzene	16.51	156	18731	4.9628	ug/kg	95
84)	1,3,5-Trimethylbenzene	16.57	105	61534	5.0933	ug/kg	97
85)	2-Chlorotoluene	16.65	91	47568	5.0196	ug/kg	100
86)	4-Chlorotoluene	16.69	91	49003	4.9438	ug/kg	98
87)	a-Methylstyrene	16.97	118	27390	4.5446	ug/kg	100
88)	tert-Butylbenzene	17.03	134	13107	4.8967	ug/kg	98
89)	1,2,4-Trimethylbenzene	17.08	105	64983	5.0275	ug/kg	97
90)	sec-Butylbenzene	17.29	105	75572	4.8659	ug/kg	99
91)	p-Isopropyltoluene	17.46	119	62027	4.8245	ug/kg	99
92)	1,3-Dichlorobenzene	17.65	146	35372	4.7403	ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	36160	4.7481	ug/kg	88
94)	n-Butylbenzene	17.98	91	56976	4.8171	ug/kg	97
95)	1,2-Dichlorobenzene	18.29	146	33722	4.7505	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	3395	9.5585	ug/kg	90
97)	1,2,4-Trichlorobenzene	20.43	180	24750	4.7252	ug/kg	98
98)	Hexachlorobutadiene	20.58	225	11410	4.6186	ug/kg	98
99)	Naphthalene	20.80	128	59120	4.6833	ug/kg	99
100)	1,2,3-Trichlorobenzene	21.10	180	22339	4.4992	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M973599.D 8260-SL.M Thu Apr 07 13:30:12 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973599.D Vial: 7
Acq On : 6 Apr 2016 13:03 Operator: ADC
Sample : WG563259-06 5.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 7 13:30 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

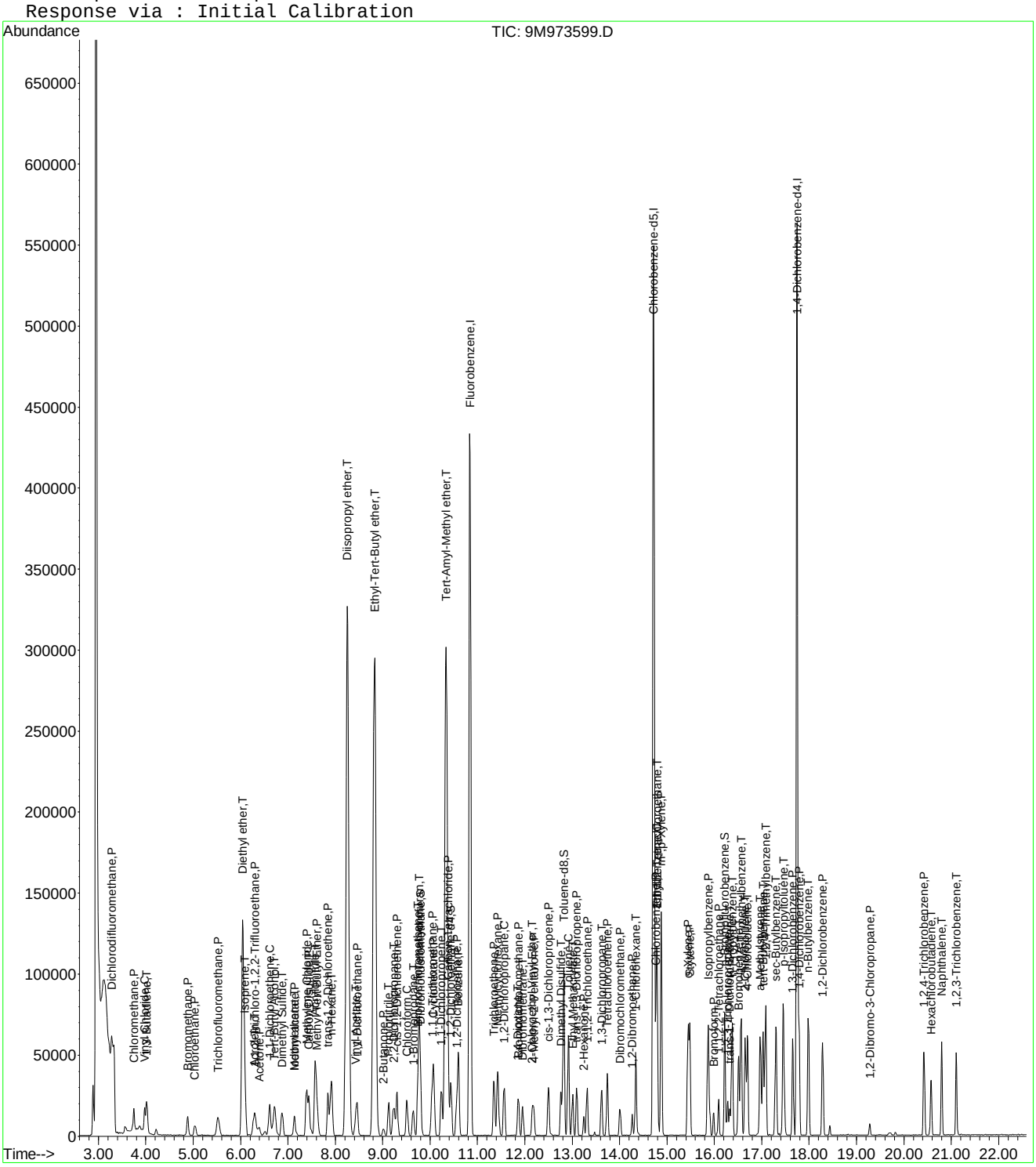

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\040616\9M973599.D Vial: 7
Acq On : 6 Apr 2016 13:03 Operator: ADC
Sample : WG563259-06 5.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	5.0000	5.2946	-5.9	100	0.00
3	P	Chloromethane	5.0000	4.8949	2.1	100	0.00
4	C	Vinyl Chloride	5.0000	5.7498	-15.0	100	0.00
5	T	1,3-Butadiene	5.0000	3.3519	33.0#	100	0.00
6	P	Bromomethane	5.0000	5.1799	-3.6	100	0.00
7	P	Chloroethane	5.0000	6.1572	-23.1	100	0.00
8	P	Trichlorofluoromethane	5.0000	5.1808	-3.6	100	0.00
9	T	Diethyl ether	50.0000	53.2615	-6.5	100	0.00
10	T	Isoprene	5.0000	5.1610	-3.2	100	0.00
11	T	Acrolein	25.0000	17.6008	29.6#	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.9766	0.5	100	0.00
13	P	Acetone	5.0000	5.6720	-13.4	100	0.01
14	C	1,1-Dichloroethene	5.0000	4.9444	1.1	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	102.4236	-2.4	100	-0.01
16	T	Dimethyl Sulfide	5.0000	4.8343	3.3	100	0.00
17	T	Iodomethane	5.0000	7.6230	-52.5#	100	0.00
18	P	Methyl acetate	5.0000	4.6977	6.0	100	0.00
19	P	Methylene Chloride	5.0000	5.3230	-6.5	100	0.00
20	P	Carbon Disulfide	5.0000	5.0694	-1.4	100	0.00
21	T	Acrylonitrile	25.0000	25.0554	-0.2	100	0.00
22	P	Methyl Tert Butyl Ether	5.0000	5.3060	-6.1	100	0.00
23	P	trans-1,2-Dichloroethene	5.0000	4.8674	2.7	100	0.00
24	T	n-Hexane	5.0000	5.9527	-19.1	100	0.00
25	T	Diisopropyl ether	50.0000	54.4320	-8.9	100	0.00
26	T	Vinyl Acetate	5.0000	7.0135	-40.3#	100	0.00
27	P	1,1-Dichloroethane	5.0000	5.2945	-5.9	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	55.7234	-11.4	100	0.00
29	P	2-Butanone	5.0000	4.9796	0.4	100	0.00
30	T	Propionitrile	50.0000	50.7152	-1.4	100	0.00
31	T	2,2-Dichloropropane	5.0000	5.5504	-11.0	100	0.00
32	P	cis-1,2-Dichloroethene	5.0000	5.0504	-1.0	100	0.00
33	C	Chloroform	5.0000	5.1895	-3.8	100	0.00
34	T	1-Bromopropane	5.0000	4.5908	8.2	100	0.00
35	T	Bromochloromethane	5.0000	5.1570	-3.1	100	-0.01
36	T	Tetrahydrofuran	50.0000	51.2175	-2.4	100	0.00
37	S	Dibromofluoromethane	10.0000	9.5422	4.6	100	0.00
38	P	1,1,1-Trichloroethane	5.0000	5.2726	-5.5	100	0.00
39	P	Cyclohexane	5.0000	5.2439	-4.9	100	0.00
40	T	1,1-Dichloropropene	5.0000	5.2821	-5.6	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	55.3390	-10.7	100	0.00
42	P	Carbon Tetrachloride	5.0000	5.1825	-3.7	100	0.00
43	S	1,2-Dichloroethane-d4	10.0000	9.6547	3.5	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	5.0000	5.2454	-4.9	100	0.00
46	P	Benzene	5.0000	5.2220	-4.4	100	0.00
47	P	Trichloroethene	5.0000	5.0766	-1.5	100	0.00
48	P	Methylcyclohexane	5.0000	5.2662	-5.3	100	0.00
49	C	1,2-Dichloropropane	5.0000	5.2833	-5.7	100	0.00
50	T	1,4-Dioxane	100.0000	81.9492	18.1	100	0.00
51	P	Bromodichloromethane	5.0000	4.6580	6.8	100	0.00
52	T	Dibromomethane	5.0000	5.0719	-1.4	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	12.6229	-152.5#	100	0.00
54	P	4-Methyl-2-Pentanone	5.0000	4.9049	1.9	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\040616\9M973599.D Vial: 7
Acq On : 6 Apr 2016 13:03 Operator: ADC
Sample : WG563259-06 5.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	5.0000	5.1266	-2.5	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.6795	6.4	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	10.0000	9.1485	8.5	100	0.00
59	C	Toluene	5.0000	4.8608	2.8	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.5840	8.3	100	0.00
61	P	trans-1,3-Dichloropropene	5.0000	4.7424	5.2	100	0.00
62	P	1,1,2-Trichloroethane	5.0000	4.8948	2.1	100	0.00
63	P	2-Hexanone	5.0000	4.6499	7.0	100	0.00
64	T	1,3-Dichloropropane	5.0000	4.9436	1.1	100	0.00
65	P	Tetrachloroethene	5.0000	4.8596	2.8	100	0.00
66	P	Dibromochloromethane	5.0000	4.4379	11.2	100	0.00
67	P	1,2-Dibromoethane	5.0000	4.5797	8.4	100	0.00
68	T	1-Chlorohexane	5.0000	4.9481	1.0	100	0.00
69	P	Chlorobenzene	5.0000	5.1154	-2.3	100	0.00
70	T	1,1,1,2-Tetrachloroethane	5.0000	4.6879	6.2	100	0.00
71	C	Ethylbenzene	5.0000	5.0389	-0.8	100	0.00
72	P	m-,p-Xylene	10.0000	9.9516	0.5	100	0.00
73	P	o-Xylene	5.0000	4.9435	1.1	100	0.00
74	P	Styrene	5.0000	4.8905	2.2	100	0.00
75	P	Bromoform	5.0000	4.3095	13.8	100	0.00
76	P	Isopropylbenzene	5.0000	4.8741	2.5	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	5.0000	4.9452	1.1	100	0.00
79	S	p-Bromofluorobenzene	10.0000	8.2647	17.4	100	0.00
80	T	1,2,3-Trichloropropane	5.0000	4.7405	5.2	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	5.0000	4.6811	6.4	100	0.00
82	T	n-Propylbenzene	5.0000	4.7217	5.6	100	0.00
83	T	Bromobenzene	5.0000	4.5500	9.0	100	0.00
84	T	1,3,5-Trimethylbenzene	5.0000	4.8818	2.4	100	0.00
85	T	2-Chlorotoluene	5.0000	4.5695	8.6	100	0.00
86	T	4-Chlorotoluene	5.0000	4.7953	4.1	100	0.00
87	T	a-Methylstyrene	5.0000	4.3457	13.1	100	0.00
88	T	tert-Butylbenzene	5.0000	4.5639	8.7	100	0.00
89	T	1,2,4-Trimethylbenzene	5.0000	4.7740	4.5	100	0.00
90	T	sec-Butylbenzene	5.0000	4.5380	9.2	100	0.00
91	T	p-Isopropyltoluene	5.0000	4.6404	7.2	100	0.00
92	P	1,3-Dichlorobenzene	5.0000	4.5063	9.9	100	0.00
93	P	1,4-Dichlorobenzene	5.0000	4.5605	8.8	100	0.00
94	T	n-Butylbenzene	5.0000	4.7327	5.3	100	0.00
95	P	1,2-Dichlorobenzene	5.0000	4.5019	10.0	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	5.0000	3.6428	27.1#	100	0.01
97	P	1,2,4-Trichlorobenzene	5.0000	4.5878	8.2	100	0.00
98	T	Hexachlorobutadiene	5.0000	4.5478	9.0	100	0.00
99	T	Naphthalene	5.0000	4.4533	10.9	100	0.00
100	T	1,2,3-Trichlorobenzene	5.0000	4.2269	15.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M973599.D 8260-SL.M Thu Apr 07 13:29:54 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973600.D Vial: 8
Acq On : 6 Apr 2016 13:33 Operator: ADC
Sample : WG563259-07 20.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:12 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	548817	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	412236	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	214138	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	50685	18.2863 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 36.58%#		
43) 1,2-Dichloroethane-d4	10.45	65	54446	18.7643 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 37.52%#		
58) Toluene-d8	12.82	98	186475	18.9801 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 37.96%#		
79) p-Bromofluorobenzene	16.22	95	68377	18.4353 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 36.88%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	79821	18.9606 ug/kg	97
3) Chloromethane	3.74	50	71839	18.5628 ug/kg	99
4) Vinyl Chloride	3.98	62	67533	26.1754 ug/kg	98
5) 1,3-Butadiene	4.02	54	39283	21.0351 ug/kg	97
6) Bromomethane	4.88	94	46162	19.4544 ug/kg	99
7) Chloroethane	5.04	64	47069	20.3651 ug/kg	99
8) Trichlorofluoromethane	5.53	101	102900	21.0438 ug/kg	99
9) Diethyl ether	6.05	59	234864	81.6752 ug/kg	98
10) Isoprene	6.09	67	79445	20.6411 ug/kg	98
11) Acrolein	6.29	56	11352	39.7029 ug/kg	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	63152	21.1516 ug/kg	98
13) Acetone	6.38	43	27589	20.8069 ug/kg	99
14) 1,1-Dichloroethene	6.61	61	106975	21.3756 ug/kg	99
15) Tert-Butyl Alcohol	6.72	59	76199	158.2956 ug/kg	99
16) Dimethyl Sulfide	6.88	62	54097	22.0635 ug/kg	100
17) Iodomethane	7.13	142	33219	16.4421 ug/kg	99
18) Methyl acetate	7.14	43	64808	20.3846 ug/kg	97
19) Methylene Chloride	7.40	84	65272	20.8796 ug/kg	100
20) Carbon Disulfide	7.44	76	195126	20.5626 ug/kg	100
21) Acrylonitrile	7.58	53	59361	39.2834 ug/kg	99
22) Methyl Tert Butyl Ether	7.60	73	179991	21.3975 ug/kg	100
23) trans-1,2-Dichloroethene	7.84	61	102409	21.2721 ug/kg	98
24) n-Hexane	7.91	57	130558	20.8836 ug/kg	99
25) Diisopropyl ether	8.25	45	1040879	81.7089 ug/kg	100
26) Vinyl Acetate	8.43	43	119893	18.1040 ug/kg	99
27) 1,1-Dichloroethane	8.46	63	125920	21.5491 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	915892	81.7642 ug/kg	100
29) 2-Butanone	9.01	43	35146	19.9190 ug/kg	97
30) Propionitrile	9.13	54	44398	77.5252 ug/kg	97
31) 2,2-Dichloropropane	9.24	77	84630	19.8340 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	69568	21.7444 ug/kg	98
33) Chloroform	9.52	83	105558	21.2976 ug/kg	100
34) 1-Bromopropane	9.64	122	11208	20.0976 ug/kg	99
35) Bromochloromethane	9.75	130	42691	21.3878 ug/kg	99
36) Tetrahydrofuran	9.77	42	98564	78.6366 ug/kg	99
38) 1,1,1-Trichloroethane	10.04	97	91294	21.5213 ug/kg	100
39) Cyclohexane	10.08	56	143014	21.3259 ug/kg	98
40) 1,1-Dichloropropene	10.23	75	82887	21.2264 ug/kg	100
41) Tert-Amyl-Methyl ether	10.34	73	681787	82.2800 ug/kg	99
42) Carbon Tetrachloride	10.38	117	82160	20.7489 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M973600.D 8260-SL.M Thu Apr 07 13:30:13 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973600.D Vial: 8
Acq On : 6 Apr 2016 13:33 Operator: ADC
Sample : WG563259-07 20.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:12 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	91652	21.4727 ug/kg	98
46)	Benzene	10.60	78	250792	20.6937 ug/kg	100
47)	Trichloroethene	11.35	130	69997	20.5341 ug/kg	98
48)	Methylcyclohexane	11.43	83	111193	21.3467 ug/kg	99
49)	1,2-Dichloropropane	11.56	63	69830	21.1874 ug/kg	99
50)	1,4-Dioxane	11.85	88	6747	157.8301 ug/kg	93
51)	Bromodichloromethane	11.87	83	77283	20.5778 ug/kg	99
52)	Dibromomethane	11.95	174	41437	21.0583 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	34827	19.8717 ug/kg	98
54)	4-Methyl-2-Pentanone	12.19	58	30595	20.1619 ug/kg	98
55)	cis-1,3-Dichloropropene	12.50	75	93742	20.0188 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	101844	20.3230 ug/kg	99
59)	Toluene	12.91	91	262833	20.9525 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	77681	20.3404 ug/kg	100
61)	trans-1,3-Dichloropropene	13.09	75	84438	20.6766 ug/kg	98
62)	1,1,2-Trichloroethane	13.32	97	53247	21.5617 ug/kg	98
63)	2-Hexanone	13.24	43	52531	19.4800 ug/kg	100
64)	1,3-Dichloropropane	13.62	76	91187	21.4747 ug/kg	100
65)	Tetrachloroethene	13.74	164	55416	20.8298 ug/kg	98
66)	Dibromochloromethane	14.01	129	63295	20.7337 ug/kg	98
67)	1,2-Dibromoethane	14.27	107	55408	20.3678 ug/kg	98
68)	1-Chlorohexane	14.34	91	87355	21.1523 ug/kg	98
69)	Chlorobenzene	14.76	112	183140	21.0385 ug/kg	97
70)	1,1,1,2-Tetrachloroethane	14.79	131	62310	21.0690 ug/kg	99
71)	Ethylbenzene	14.79	106	101285	21.6285 ug/kg	99
72)	m-,p-Xylene	14.88	106	241056	41.7501 ug/kg	99
73)	o-Xylene	15.45	106	115290	20.9551 ug/kg	98
74)	Styrene	15.48	104	197867	21.0012 ug/kg	99
75)	Bromoform	15.99	173	39405	20.7716 ug/kg	98
76)	Isopropylbenzene	15.87	105	297986	20.8219 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	71279	20.0119 ug/kg	99
80)	1,2,3-Trichloropropane	16.28	110	21494	20.2252 ug/kg	98
81)	trans-1,4-Dichloro-2-Buten	16.32	53	25104	19.4097 ug/kg	88
82)	n-Propylbenzene	16.38	91	331062	20.6790 ug/kg	99
83)	Bromobenzene	16.51	156	79848	20.9676 ug/kg	78
84)	1,3,5-Trimethylbenzene	16.57	105	256470	21.0396 ug/kg	100
85)	2-Chlorotoluene	16.65	91	201201	21.0430 ug/kg	99
86)	4-Chlorotoluene	16.70	91	205488	20.5471 ug/kg	100
87)	a-Methylstyrene	16.97	118	122000	20.0624 ug/kg	100
88)	tert-Butylbenzene	17.03	134	55701	20.6244 ug/kg	98
89)	1,2,4-Trimethylbenzene	17.08	105	257149	21.3688 ug/kg	100
90)	sec-Butylbenzene	17.29	105	324606	20.7148 ug/kg	100
91)	p-Isopropyltoluene	17.45	119	267236	20.6011 ug/kg	100
92)	1,3-Dichlorobenzene	17.65	146	150147	19.9426 ug/kg	100
93)	1,4-Dichlorobenzene	17.79	146	150647	19.6053 ug/kg	100
94)	n-Butylbenzene	17.98	91	242121	20.2883 ug/kg	98
95)	1,2-Dichlorobenzene	18.29	146	141341	19.7339 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	16565	22.7593 ug/kg	100
97)	1,2,4-Trichlorobenzene	20.43	180	98272	18.5949 ug/kg	99
98)	Hexachlorobutadiene	20.58	225	49626	19.9091 ug/kg	97
99)	Naphthalene	20.80	128	248081	19.4776 ug/kg	99
100)	1,2,3-Trichlorobenzene	21.10	180	94996	18.9624 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M973600.D 8260-SL.M Thu Apr 07 13:30:13 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973600.D Vial: 8
Acq On : 6 Apr 2016 13:33 Operator: ADC
Sample : WG563259-07 20.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 7 13:30 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

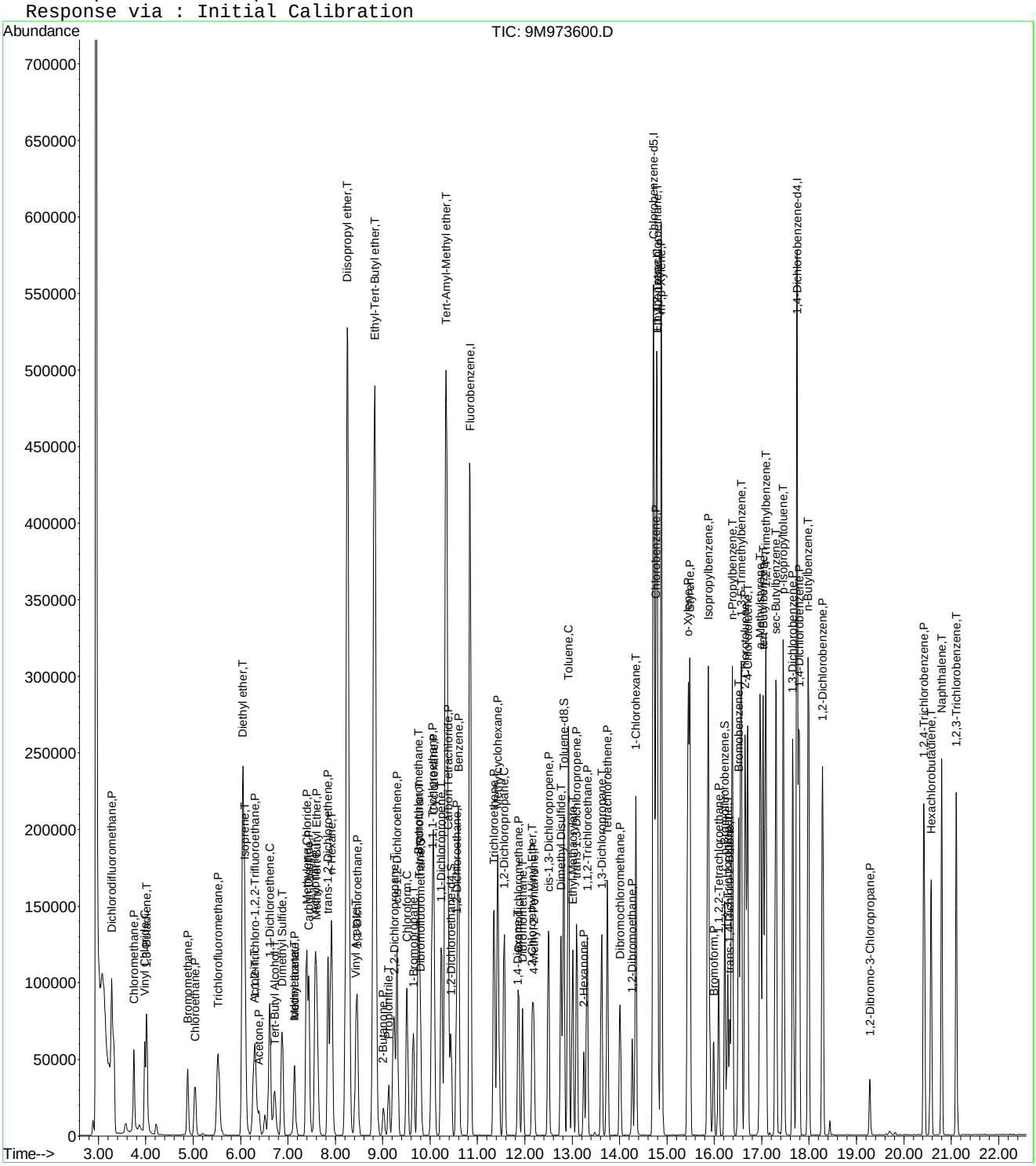

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973605.D Vial: 13
Acq On : 6 Apr 2016 16:15 Operator: ADC
Sample : WG563259-08 100.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:17 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	629513	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	486007	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	262405	50.00 ug/kg	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.79	111	334345	105.1632 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 210.32%#		
43) 1,2-Dichloroethane-d4	10.44	65	349379	104.9748 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 209.94%#		
58) Toluene-d8	12.82	98	1189867	102.7256 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 205.46%#		
79) p-Bromofluorobenzene	16.22	95	474393	104.3758 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 208.76%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	443445	91.8326 ug/kg	98
3) Chloromethane	3.74	50	364265	82.0585 ug/kg	99
4) Vinyl Chloride	3.97	62	265202	91.5192 ug/kg	95
5) 1,3-Butadiene	4.01	54	193614	90.3859 ug/kg	95
6) Bromomethane	4.87	94	240074	88.2068 ug/kg	99
7) Chloroethane	5.02	64	230056	86.7779 ug/kg	99
8) Trichlorofluoromethane	5.51	101	498633	88.9021 ug/kg	100
9) Diethyl ether	6.04	59	578414	175.3619 ug/kg	99
10) Isoprene	6.08	67	405345	91.8152 ug/kg	99
11) Acrolein	6.28	56	41125	125.3946 ug/kg	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	304962	89.0479 ug/kg	98
13) Acetone	6.39	43	110181	86.9145 ug/kg	99
14) 1,1-Dichloroethene	6.61	61	507904	88.4792 ug/kg	100
15) Tert-Butyl Alcohol	6.71	59	201952	365.7553 ug/kg	99
16) Dimethyl Sulfide	6.87	62	267127	94.9822 ug/kg	100
17) Iodomethane	7.12	142	226546	83.3082 ug/kg	99
18) Methyl acetate	7.13	43	320518	87.8919 ug/kg	99
19) Methylene Chloride	7.39	84	297945	83.0910 ug/kg	99
20) Carbon Disulfide	7.43	76	967157	88.8552 ug/kg	100
21) Acrylonitrile	7.57	53	159761	92.1726 ug/kg	99
22) Methyl Tert Butyl Ether	7.60	73	837531	86.8033 ug/kg	99
23) trans-1,2-Dichloroethene	7.83	61	489265	88.6012 ug/kg	99
24) n-Hexane	7.90	57	620303	86.5024 ug/kg	100
25) Diisopropyl ether	8.25	45	2541732	173.9489 ug/kg	99
26) Vinyl Acetate	8.42	43	670170	84.8371 ug/kg	99
27) 1,1-Dichloroethane	8.45	63	582394	86.8907 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.82	59	2244961	174.7232 ug/kg	99
29) 2-Butanone	9.01	43	176737	87.3258 ug/kg	99
30) Propionitrile	9.12	54	121628	185.1551 ug/kg	100
31) 2,2-Dichloropropane	9.23	77	432972	88.4646 ug/kg	99
32) cis-1,2-Dichloroethene	9.30	96	323942	88.2729 ug/kg	97
33) Chloroform	9.51	83	491054	86.3755 ug/kg	100
34) 1-Bromopropane	9.65	122	57300	86.6017 ug/kg	97
35) Bromochloromethane	9.74	130	206023	89.9847 ug/kg	99
36) Tetrahydrofuran	9.76	42	253958	176.6408 ug/kg	99
38) 1,1,1-Trichloroethane	10.04	97	431230	88.6252 ug/kg	100
39) Cyclohexane	10.07	56	701022	91.1345 ug/kg	99
40) 1,1-Dichloropropene	10.24	75	394734	88.1287 ug/kg	98
41) Tert-Amyl-Methyl ether	10.33	73	1668304	175.5268 ug/kg	100
42) Carbon Tetrachloride	10.38	117	401136	88.3178 ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M973605.D 8260-SL.M Thu Apr 07 13:30:17 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973605.D Vial: 13
Acq On : 6 Apr 2016 16:15 Operator: ADC
Sample : WG563259-08 100.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:17 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.55	62	419521	85.6884 ug/kg	99
46)	Benzene	10.60	78	1159464	83.4075 ug/kg	100
47)	Trichloroethene	11.35	130	328505	84.0157 ug/kg	99
48)	Methylcyclohexane	11.43	83	543983	91.0461 ug/kg	99
49)	1,2-Dichloropropane	11.56	63	330099	87.3179 ug/kg	100
50)	1,4-Dioxane	11.85	88	19457	396.8058 ug/kg	99
51)	Bromodichloromethane	11.86	83	377943	87.7332 ug/kg	100
52)	Dibromomethane	11.96	174	201740	89.3820 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	188811	93.9225 ug/kg	99
54)	4-Methyl-2-Pentanone	12.19	58	152432	87.5749 ug/kg	98
55)	cis-1,3-Dichloropropene	12.50	75	467019	86.9483 ug/kg	99
56)	Dimethyl Disulfide	12.76	94	546237	95.0292 ug/kg	98
59)	Toluene	12.92	91	1221033	82.5632 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	396829	88.1357 ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	420228	87.2828 ug/kg	99
62)	1,1,2-Trichloroethane	13.32	97	252973	86.8892 ug/kg	99
63)	2-Hexanone	13.24	43	270769	85.1678 ug/kg	98
64)	1,3-Dichloropropane	13.61	76	423227	84.5417 ug/kg	100
65)	Tetrachloroethene	13.74	164	275328	87.7815 ug/kg	99
66)	Dibromochloromethane	14.00	129	314257	87.3165 ug/kg	100
67)	1,2-Dibromoethane	14.27	107	271540	84.6661 ug/kg	100
68)	1-Chlorohexane	14.34	91	434911	89.3250 ug/kg	100
69)	Chlorobenzene	14.76	112	853210	83.1362 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	298697	85.6685 ug/kg	98
71)	Ethylbenzene	14.80	106	476927	86.3847 ug/kg	98
72)	m-,p-Xylene	14.88	106	1125320	165.3174 ug/kg	100
73)	o-Xylene	15.44	106	556307	85.7660 ug/kg	100
74)	Styrene	15.48	104	962473	86.6487 ug/kg	100
75)	Bromoform	15.99	173	217337	88.1288 ug/kg	100
76)	Isopropylbenzene	15.87	105	1429867	84.7467 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	358231	80.9909 ug/kg	100
80)	1,2,3-Trichloropropane	16.28	110	106845	82.0448 ug/kg	94
81)	trans-1,4-Dichloro-2-Buten	16.33	53	138111	87.1418 ug/kg	98
82)	n-Propylbenzene	16.38	91	1612041	82.1710 ug/kg	99
83)	Bromobenzene	16.52	156	384939	82.4894 ug/kg	99
84)	1,3,5-Trimethylbenzene	16.57	105	1227900	82.2028 ug/kg	100
85)	2-Chlorotoluene	16.65	91	982237	83.8330 ug/kg	100
86)	4-Chlorotoluene	16.70	91	966811	78.8909 ug/kg	99
87)	a-Methylstyrene	16.97	118	639741	85.8515 ug/kg	100
88)	tert-Butylbenzene	17.03	134	271228	81.9549 ug/kg	100
89)	1,2,4-Trimethylbenzene	17.09	105	1244015	86.0269 ug/kg	100
90)	sec-Butylbenzene	17.30	105	1596904	83.1619 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	1328733	83.5902 ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	745156	80.7671 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	749901	79.6415 ug/kg	100
94)	n-Butylbenzene	17.98	91	1226018	83.8362 ug/kg	100
95)	1,2-Dichlorobenzene	18.29	146	713379	81.2804 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.28	157	91107	80.8122 ug/kg	97
97)	1,2,4-Trichlorobenzene	20.43	180	549265	84.8138 ug/kg	99
98)	Hexachlorobutadiene	20.58	225	257990	84.4632 ug/kg	99
99)	Naphthalene	20.80	128	1320203	84.5870 ug/kg	99
100)	1,2,3-Trichlorobenzene	21.11	180	520705	84.8206 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M973605.D 8260-SL.M Thu Apr 07 13:30:17 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973605.D Vial: 13
Acq On : 6 Apr 2016 16:15 Operator: ADC
Sample : WG563259-08 100.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 7 13:30 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

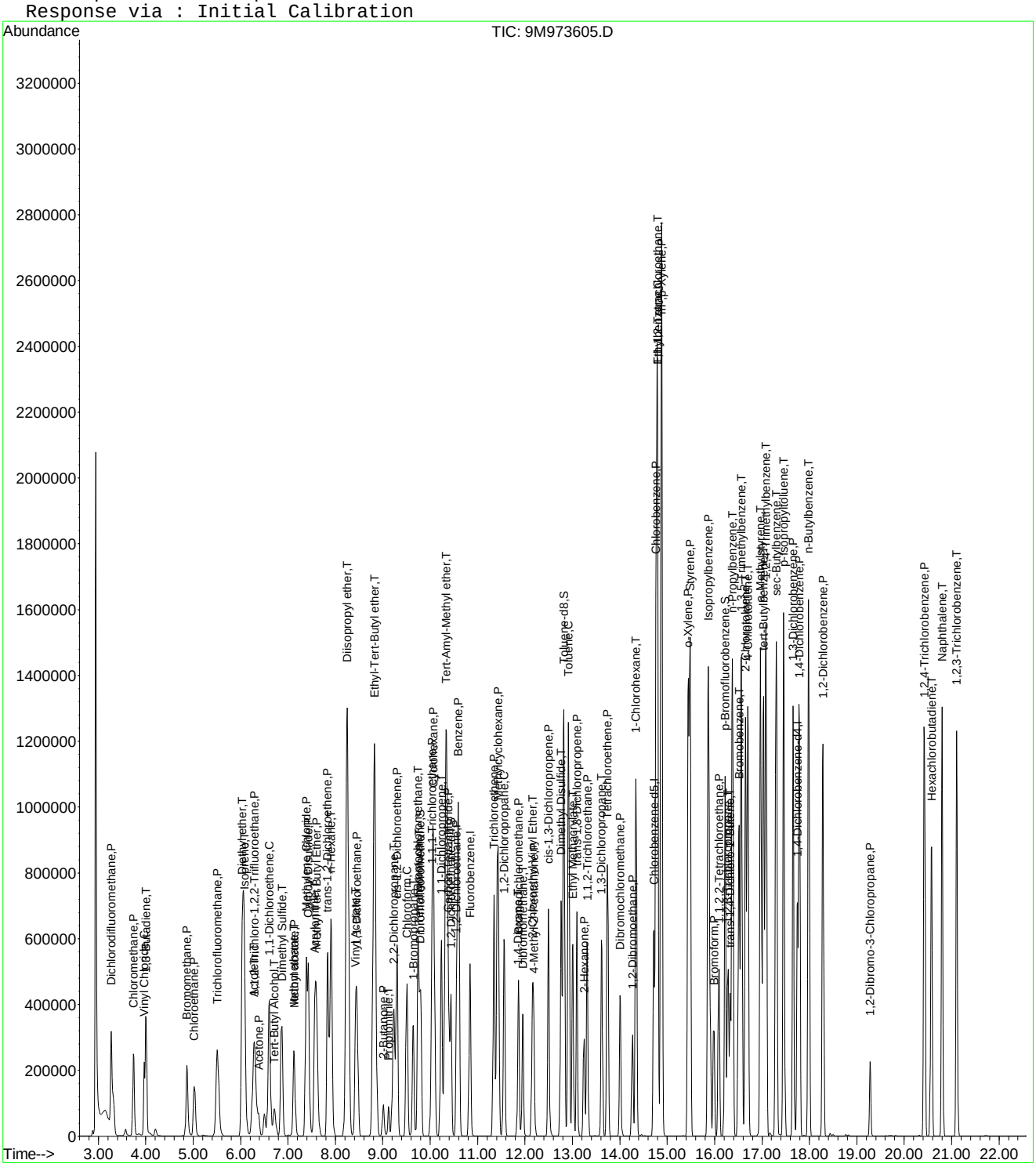

9M973605.D 8260-SL.M Thu Apr 07 13:30:17 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973606.D Vial: 14
Acq On : 6 Apr 2016 16:46 Operator: ADC
Sample : WG563259-09 200.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:17 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	546241	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	412879	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	251426	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	548285	198.7448 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 397.48%#		
43) 1,2-Dichloroethane-d4	10.44	65	563468	195.1093 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 390.22%#		
58) Toluene-d8	12.82	98	1932737	196.4142 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 392.82%#		
79) p-Bromofluorobenzene	16.22	95	812349	186.5374 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 373.08%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	933785	222.8561 ug/kg	98
3) Chloromethane	3.74	50	797646	207.0792 ug/kg	100
4) Vinyl Chloride	3.97	62	484159	193.4178 ug/kg	95
5) 1,3-Butadiene	4.01	54	255123	137.2568 ug/kg	96
6) Bromomethane	4.86	94	478951	202.8002 ug/kg	99
7) Chloroethane	5.02	64	479099	208.2673 ug/kg	100
8) Trichlorofluoromethane	5.51	101	1015843	208.7267 ug/kg	100
10) Isoprene	6.08	67	790457	206.3424 ug/kg	100
11) Acrolein	6.29	56	657	2.3087 ug/kg#	58
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	619484	208.4628 ug/kg	98
13) Acetone	6.38	43	210216	198.0949 ug/kg	100
14) 1,1-Dichloroethene	6.60	61	1038593	208.5093 ug/kg	99
16) Dimethyl Sulfide	6.87	62	522470	214.0948 ug/kg	100
17) Iodomethane	7.12	142	492600	204.3599 ug/kg	99
18) Methyl acetate	7.13	43	608994	192.4553 ug/kg	99
19) Methylene Chloride	7.39	84	609179	195.7867 ug/kg	98
20) Carbon Disulfide	7.44	76	1876122	198.6404 ug/kg	100
21) Acrylonitrile	7.59	53	17884	11.8909 ug/kg#	28
22) Methyl Tert Butyl Ether	7.60	73	1671293	199.6219 ug/kg	99
23) trans-1,2-Dichloroethene	7.84	61	993252	207.2884 ug/kg	98
24) n-Hexane	7.91	57	1132766	182.0476 ug/kg	99
26) Vinyl Acetate	8.43	43	1356495	196.7315 ug/kg	99
27) 1,1-Dichloroethane	8.46	63	1187835	204.2364 ug/kg	99
29) 2-Butanone	9.01	43	352502	200.7230 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	891488	209.9159 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	660199	207.3269 ug/kg	97
33) Chloroform	9.51	83	1000133	202.7401 ug/kg	100
34) 1-Bromopropane	9.64	122	114495	198.3036 ug/kg	99
35) Bromochloromethane	9.74	130	419175	210.9934 ug/kg	98
36) Tetrahydrofuran	9.78	42	3664	2.9370 ug/kg	89
38) 1,1,1-Trichloroethane	10.04	97	891503	211.1502 ug/kg	100
39) Cyclohexane	10.07	56	1376878	206.2846 ug/kg	100
40) 1,1-Dichloropropene	10.23	75	800231	205.8962 ug/kg	99
42) Carbon Tetrachloride	10.38	117	841170	213.4326 ug/kg	99
45) 1,2-Dichloroethane	10.56	62	841093	197.9853 ug/kg	99
46) Benzene	10.59	78	2346439	194.5259 ug/kg	100
47) Trichloroethene	11.34	130	677382	199.6515 ug/kg	99
48) Methylcyclohexane	11.43	83	1056136	203.7119 ug/kg	99
49) 1,2-Dichloropropane	11.56	63	675603	205.9545 ug/kg	100
50) 1,4-Dioxane	11.86	88	487	11.4459 ug/kg#	8

(#) = qualifier out of range (m) = manual integration
9M973606.D 8260-SL.M Thu Apr 07 13:30:18 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973606.D Vial: 14
Acq On : 6 Apr 2016 16:46 Operator: ADC
Sample : WG563259-09 200.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:17 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
51)	Bromodichloromethane	11.86	83	786040	210.2823 ug/kg	99
52)	Dibromomethane	11.96	174	411458	210.0894 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	379377	217.4871 ug/kg	99
54)	4-Methyl-2-Pentanone	12.19	58	310421	205.5298 ug/kg	99
55)	cis-1,3-Dichloropropene	12.49	75	953997	204.6887 ug/kg	99
56)	Dimethyl Disulfide	12.76	94	1083410	217.2147 ug/kg	100
59)	Toluene	12.92	91	2474811	196.9795 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	785034	205.2376 ug/kg	99
61)	trans-1,3-Dichloropropene	13.09	75	863464	211.1094 ug/kg	99
62)	1,1,2-Trichloroethane	13.32	97	520649	210.5021 ug/kg	100
63)	2-Hexanone	13.24	43	576300	213.3756 ug/kg	98
64)	1,3-Dichloropropane	13.62	76	860012	202.2190 ug/kg	99
65)	Tetrachloroethene	13.74	164	559353	209.9221 ug/kg	99
66)	Dibromochloromethane	14.01	129	659361	215.6524 ug/kg	100
67)	1,2-Dibromoethane	14.27	107	565360	207.5011 ug/kg	100
68)	1-Chlorohexane	14.34	91	852225	206.0376 ug/kg	99
69)	Chlorobenzene	14.76	112	1738005	199.3447 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.79	131	630263	212.7806 ug/kg	97
71)	Ethylbenzene	14.79	106	972846	207.4192 ug/kg	97
72)	m-,p-Xylene	14.88	106	2303311	398.3042 ug/kg	98
73)	o-Xylene	15.45	106	1160595	210.6207 ug/kg	99
74)	Styrene	15.48	104	2011077	213.1189 ug/kg	100
75)	Bromoform	15.99	173	488031	202.4064 ug/kg	100
76)	Isopropylbenzene	15.87	105	2999919	209.2939 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	822476	193.5819 ug/kg	100
80)	1,2,3-Trichloropropane	16.28	110	242139	194.0544 ug/kg	98
81)	trans-1,4-Dichloro-2-Buten	16.32	53	305601	201.2403 ug/kg	96
82)	n-Propylbenzene	16.38	91	3379633	179.7935 ug/kg	100
83)	Bromobenzene	16.51	156	821863	183.8094 ug/kg	98
84)	1,3,5-Trimethylbenzene	16.57	105	2631796	183.8813 ug/kg	99
85)	2-Chlorotoluene	16.65	91	2045653	182.2186 ug/kg	100
86)	4-Chlorotoluene	16.70	91	2134994	181.8209 ug/kg	98
87)	a-Methylstyrene	16.97	118	1382227	193.5909 ug/kg	100
88)	tert-Butylbenzene	17.03	134	595447	187.7784 ug/kg	100
89)	1,2,4-Trimethylbenzene	17.08	105	2701823	195.7125 ug/kg	100
90)	sec-Butylbenzene	17.29	105	3458638	187.9804 ug/kg	99
91)	p-Isopropyltoluene	17.45	119	2907302	190.8841 ug/kg	99
92)	1,3-Dichlorobenzene	17.65	146	1683562	190.4487 ug/kg	100
93)	1,4-Dichlorobenzene	17.79	146	1701470	188.5912 ug/kg	100
94)	n-Butylbenzene	17.98	91	2706085	193.1249 ug/kg	100
95)	1,2-Dichlorobenzene	18.29	146	1654050	196.6873 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	219037	193.5387 ug/kg	99
97)	1,2,4-Trichlorobenzene	20.43	180	1229670	198.1687 ug/kg	99
98)	Hexachlorobutadiene	20.58	225	593894	202.9249 ug/kg	99
99)	Naphthalene	20.80	128	2917641	195.0997 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.10	180	1150303	195.5617 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973606.D Vial: 14
Acq On : 6 Apr 2016 16:46 Operator: ADC
Sample : WG563259-09 200.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 7 13:30 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

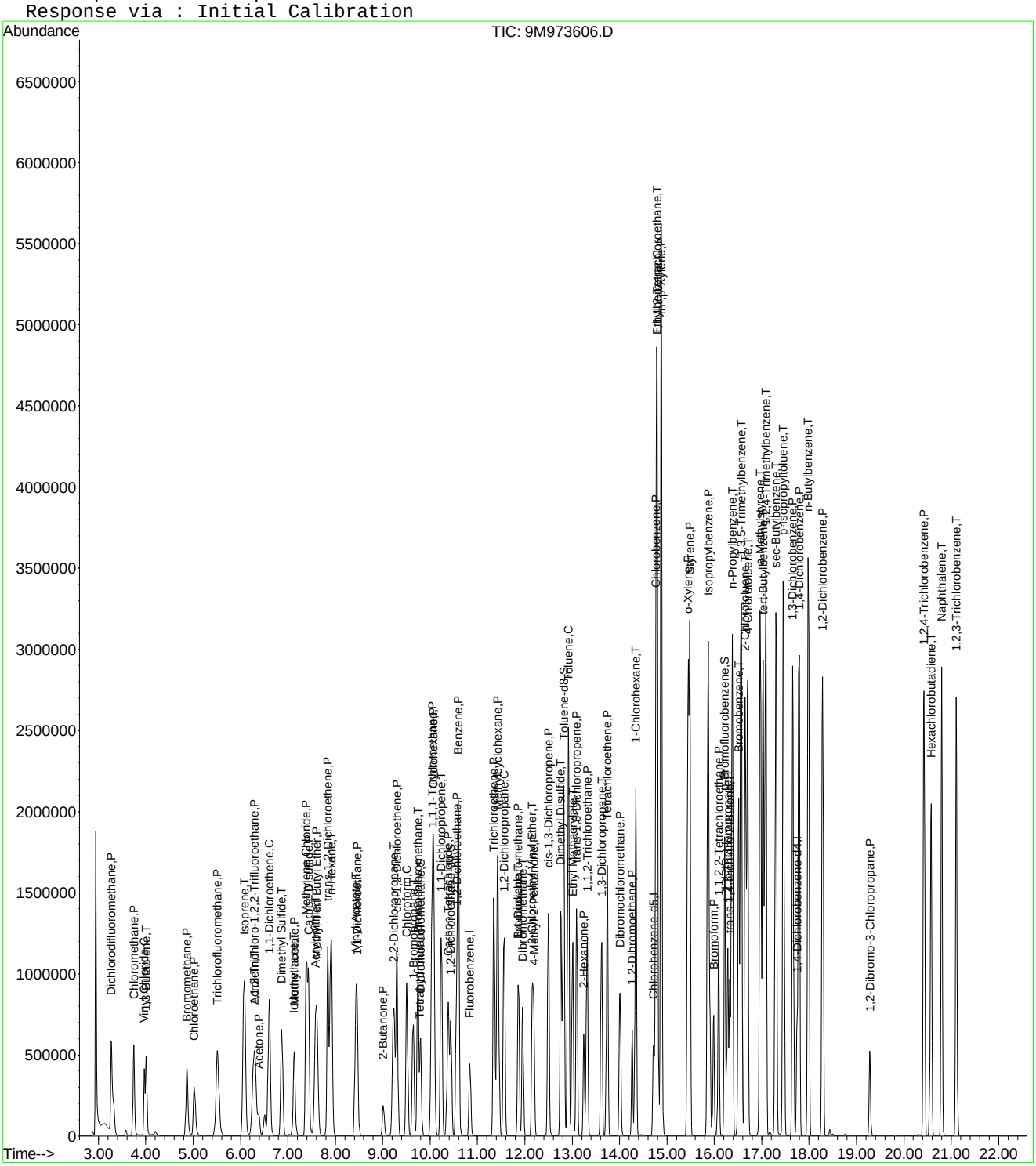

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973607.D Vial: 15
Acq On : 6 Apr 2016 17:16 Operator: ADC
Sample : WG563259-10 300.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:18 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.84	96	530747	50.00	ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	422786	50.00	ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	250890	50.00	ug/kg	0.00

System Monitoring Compounds						
37) Dibromofluoromethane	9.79	111	1014	0.3783	ug/kg	-0.01
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.76%#		
43) 1,2-Dichloroethane-d4	10.44	65	1256	0.4476	ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.90%#		
58) Toluene-d8	12.82	98	7239	0.7184	ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	1.44%#		
79) p-Bromofluorobenzene	16.22	95	8850	2.0365	ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	4.08%#		

Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.28	85	1391592	341.8113	ug/kg	99
3) Chloromethane	3.75	50	1202976	321.4253	ug/kg	100
4) Vinyl Chloride	3.97	62	728585	299.9924	ug/kg	95
5) 1,3-Butadiene	4.01	54	369321	204.4960	ug/kg	96
6) Bromomethane	4.87	94	715376	311.7514	ug/kg	99
7) Chloroethane	5.02	64	723518	323.6994	ug/kg	99
8) Trichlorofluoromethane	5.52	101	1522742	322.0138	ug/kg	100
9) Diethyl ether	6.05	59	857295	308.2789	ug/kg	98
10) Isoprene	6.08	67	1165578	313.1471	ug/kg	99
11) Acrolein	6.29	56	60531	218.9112	ug/kg	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	920907	318.9414	ug/kg	98
13) Acetone	6.39	43	318840	312.4979	ug/kg	99
14) 1,1-Dichloroethene	6.60	61	1557664	321.8479	ug/kg	100
15) Tert-Butyl Alcohol	6.73	59	335746	721.2245	ug/kg	98
16) Dimethyl Sulfide	6.87	62	798739	336.8576	ug/kg	99
17) Iodomethane	7.13	142	732160	311.0633	ug/kg	99
18) Methyl acetate	7.13	43	947968	308.3239	ug/kg	99
19) Methylene Chloride	7.40	84	940131	310.9735	ug/kg	97
20) Carbon Disulfide	7.44	76	2802355	305.3700	ug/kg	100
21) Acrylonitrile	7.58	53	251994	172.4402	ug/kg	96
22) Methyl Tert Butyl Ether	7.60	73	2599096	319.5028	ug/kg	99
23) trans-1,2-Dichloroethene	7.84	61	1496337	321.3970	ug/kg	97
24) n-Hexane	7.91	57	1667090	275.7405	ug/kg	99
25) Diisopropyl ether	8.25	45	3720020	301.9634	ug/kg	99
26) Vinyl Acetate	8.43	43	2113131	314.8849	ug/kg	99
27) 1,1-Dichloroethane	8.46	63	1812056	320.6604	ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	3304066	305.0055	ug/kg	99
29) 2-Butanone	9.01	43	557380	326.6507	ug/kg	99
30) Propionitrile	9.13	54	189029	341.3090	ug/kg	99
31) 2,2-Dichloropropane	9.23	77	1337448	324.1183	ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	1006604	325.3390	ug/kg	97
33) Chloroform	9.51	83	1534946	320.2372	ug/kg	100
34) 1-Bromopropane	9.64	122	174946	311.3566	ug/kg	99
35) Bromochloromethane	9.75	130	652180	337.8607	ug/kg	98
36) Tetrahydrofuran	9.77	42	376433	310.5517	ug/kg	99
38) 1,1,1-Trichloroethane	10.05	97	1358139	331.0622	ug/kg	100
39) Cyclohexane	10.08	56	2044955	315.3203	ug/kg	100
40) 1,1-Dichloropropene	10.24	75	1211478	320.8081	ug/kg	99
41) Tert-Amyl-Methyl ether	10.34	73	2457523	306.6783	ug/kg	100
42) Carbon Tetrachloride	10.38	117	1272434	332.2836	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973607.D Vial: 15
Acq On : 6 Apr 2016 17:16 Operator: ADC
Sample : WG563259-10 300.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:18 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	1300113	314.9682 ug/kg	99
46)	Benzene	10.60	78	3527729	300.9956 ug/kg	99
47)	Trichloroethene	11.34	130	1018460	308.9439 ug/kg	99
48)	Methylcyclohexane	11.43	83	1556707	309.0297 ug/kg	99
49)	1,2-Dichloropropane	11.56	63	1047836	328.7530 ug/kg	100
50)	1,4-Dioxane	11.85	88	34973	845.9645 ug/kg	98
51)	Bromodichloromethane	11.86	83	1222847	336.6875 ug/kg	100
52)	Dibromomethane	11.96	174	645257	339.0847 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	573936	338.6279 ug/kg	99
54)	4-Methyl-2-Pentanone	12.19	58	497530	339.0313 ug/kg	99
55)	cis-1,3-Dichloropropene	12.49	75	1479465	326.6994 ug/kg	98
56)	Dimethyl Disulfide	12.77	94	1594771	329.0724 ug/kg	95
59)	Toluene	12.92	91	3752438	291.6719 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	1240354	316.6768 ug/kg	99
61)	trans-1,3-Dichloropropene	13.09	75	1355239	323.5798 ug/kg	99
62)	1,1,2-Trichloroethane	13.32	97	817725	322.8649 ug/kg	100
63)	2-Hexanone	13.24	43	940684	340.1278 ug/kg	98
64)	1,3-Dichloropropane	13.62	76	1356741	311.5420 ug/kg	100
65)	Tetrachloroethene	13.74	164	843696	309.2149 ug/kg	99
66)	Dibromochloromethane	14.01	129	1052932	336.3052 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	896155	321.2037 ug/kg	100
68)	1-Chlorohexane	14.34	91	1280726	302.3783 ug/kg	100
69)	Chlorobenzene	14.76	112	2663761	298.3673 ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.79	131	987352	325.5250 ug/kg	98
71)	Ethylbenzene	14.79	106	1479934	308.1410 ug/kg	95
72)	m-,p-Xylene	14.88	106	3480066	587.6949 ug/kg	95
73)	o-Xylene	15.45	106	1802243	319.4008 ug/kg	98
74)	Styrene	15.48	104	3128101	323.7250 ug/kg	99
75)	Bromoform	15.99	173	824796	300.4134 ug/kg	99
76)	Isopropylbenzene	15.87	105	4568446	311.2560 ug/kg	98
78)	1,1,2,2-Tetrachloroethane	16.09	83	1346109	317.2796 ug/kg	100
80)	1,2,3-Trichloropropane	16.28	110	399968	321.2261 ug/kg	64
81)	trans-1,4-Dichloro-2-Buten	16.32	53	489570	323.0738 ug/kg#	59
82)	n-Propylbenzene	16.38	91	5159824	275.0845 ug/kg	99
83)	Bromobenzene	16.51	156	1311462	293.9347 ug/kg	96
84)	1,3,5-Trimethylbenzene	16.57	105	4058376	284.1610 ug/kg	99
85)	2-Chlorotoluene	16.65	91	3103656	277.0520 ug/kg	88
86)	4-Chlorotoluene	16.70	91	3366727	287.3305 ug/kg	93
87)	a-Methylstyrene	16.97	118	2137089	299.9542 ug/kg	100
88)	tert-Butylbenzene	17.03	134	932476	294.6911 ug/kg	98
89)	1,2,4-Trimethylbenzene	17.08	105	4160991	302.3615 ug/kg	99
90)	sec-Butylbenzene	17.31	105	5240087	285.4123 ug/kg	98
91)	p-Isopropyltoluene	17.46	119	4424751	291.1357 ug/kg	98
92)	1,3-Dichlorobenzene	17.66	146	2625717	297.6623 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	2620113	291.0342 ug/kg	99
94)	n-Butylbenzene	17.98	91	4097037	293.0175 ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	2549400	303.8033 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	353064	308.8660 ug/kg	99
97)	1,2,4-Trichlorobenzene	20.43	180	1874690	302.7630 ug/kg	100
98)	Hexachlorobutadiene	20.58	225	888450	304.2189 ug/kg	100
99)	Naphthalene	20.80	128	4447539	298.0378 ug/kg	97
100)	1,2,3-Trichlorobenzene	21.10	180	1773622	302.1756 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M973607.D 8260-SL.M Thu Apr 07 13:30:19 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973607.D Vial: 15
Acq On : 6 Apr 2016 17:16 Operator: ADC
Sample : WG563259-10 300.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 7 13:30 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

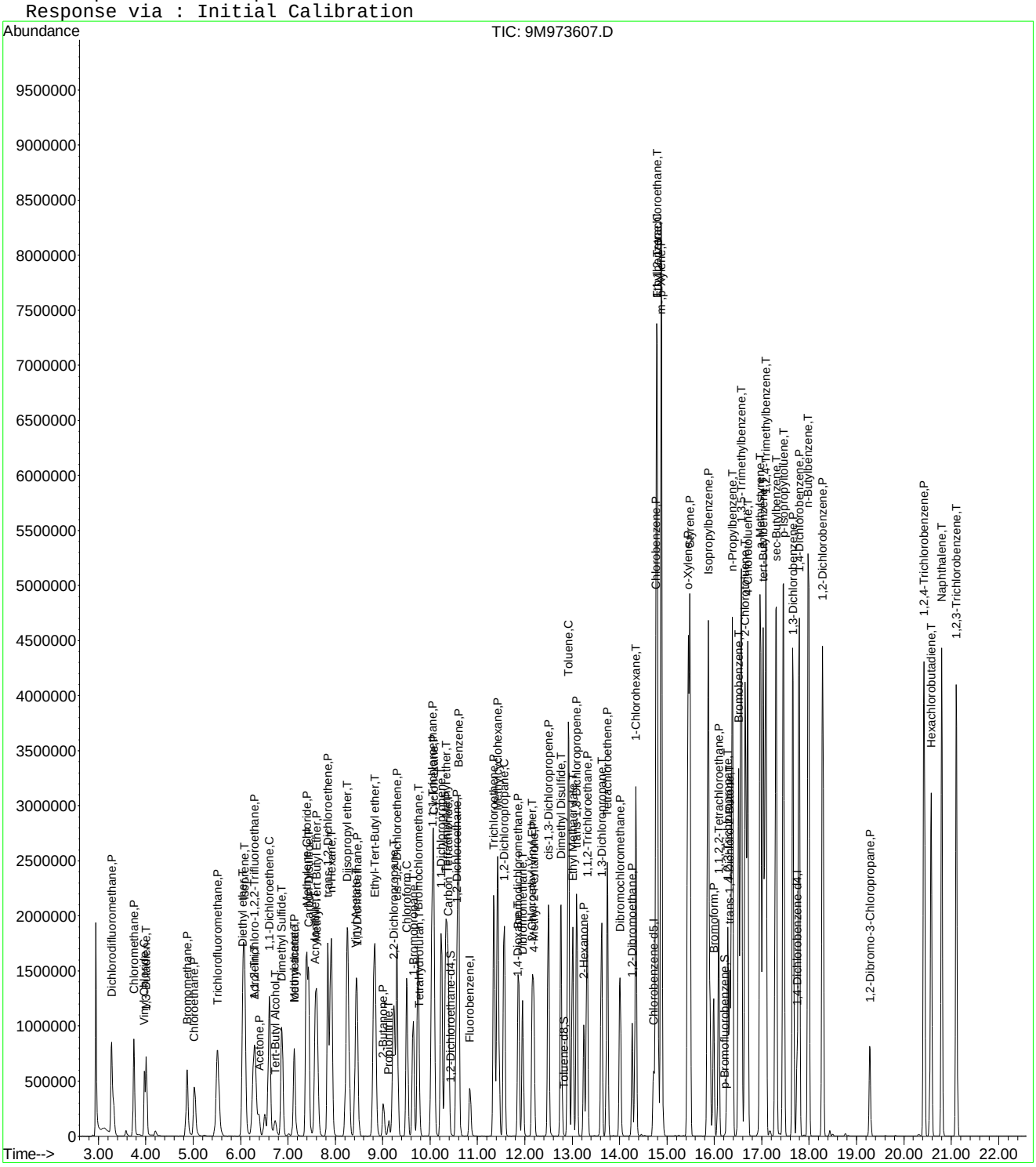

9M973607.D 8260-SL.M Thu Apr 07 13:30:19 2016 Page 3

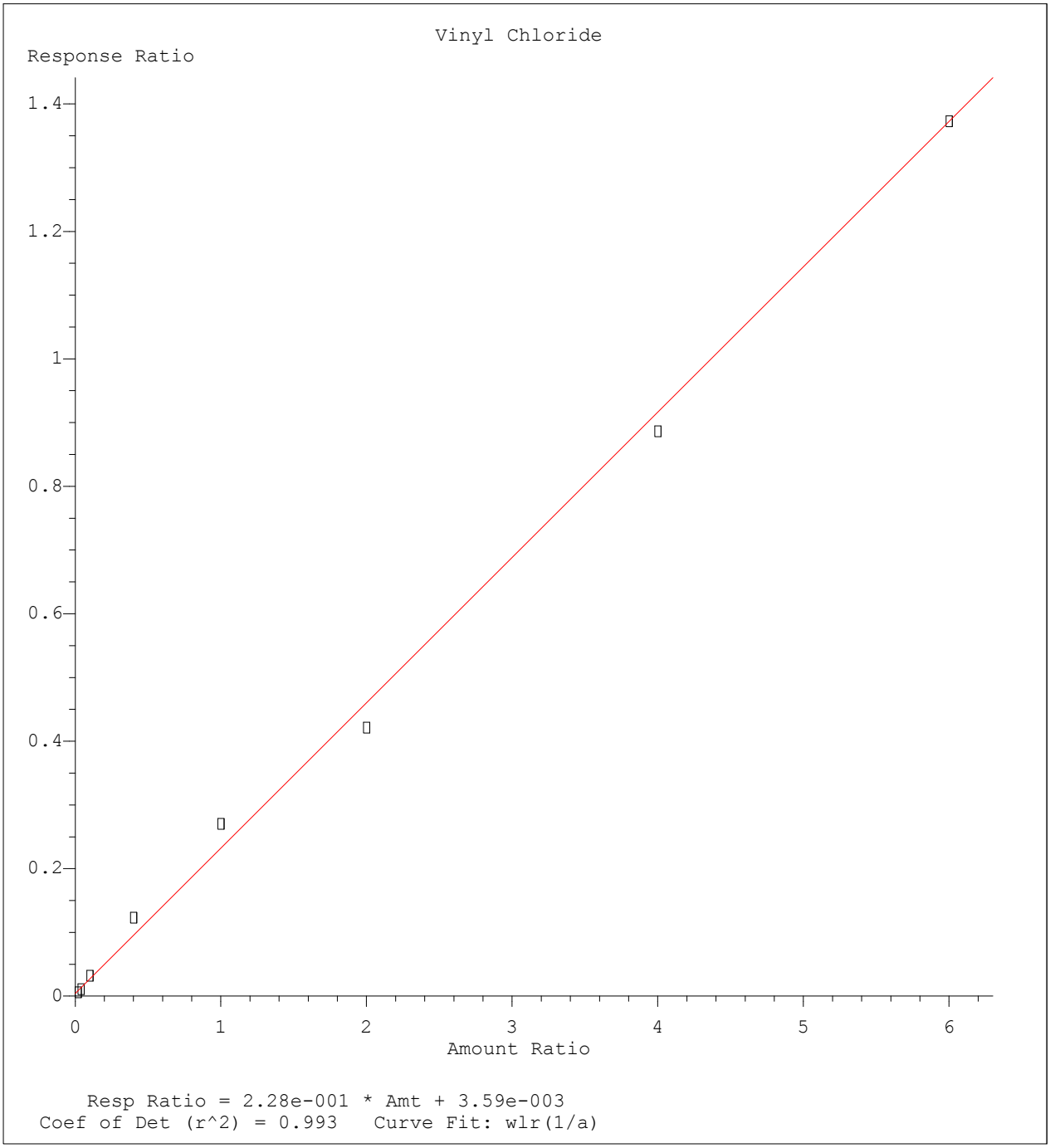

Method Name: C:\MSDCHEM\1\METHODS\8260-SL.M
Calibration Table Last Updated: Wed Apr 06 17:47:28 2016

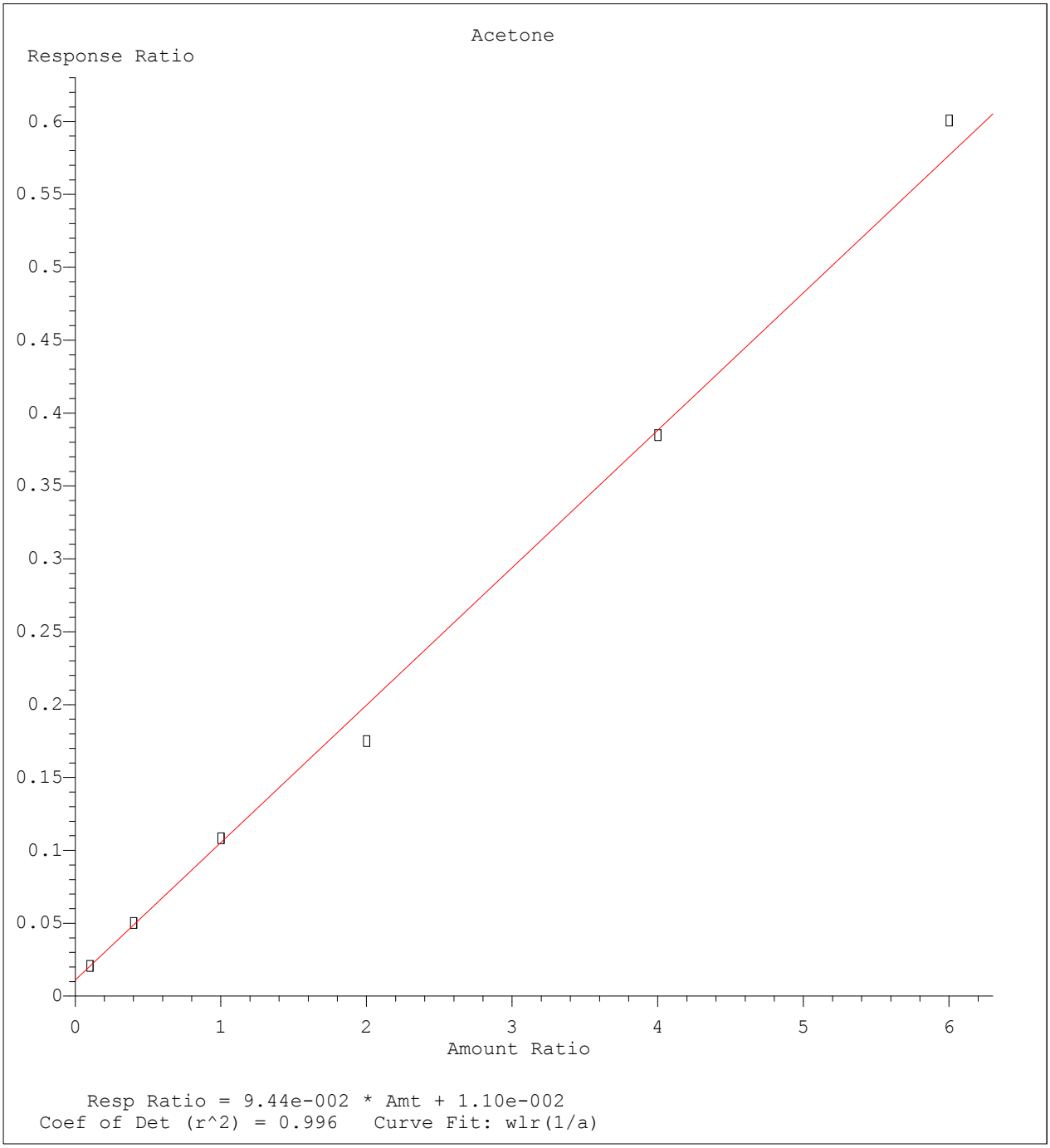

Method Name: C:\MSDCHEM\1\METHODS\8260-SL.M
Calibration Table Last Updated: Wed Apr 06 17:47:28 2016

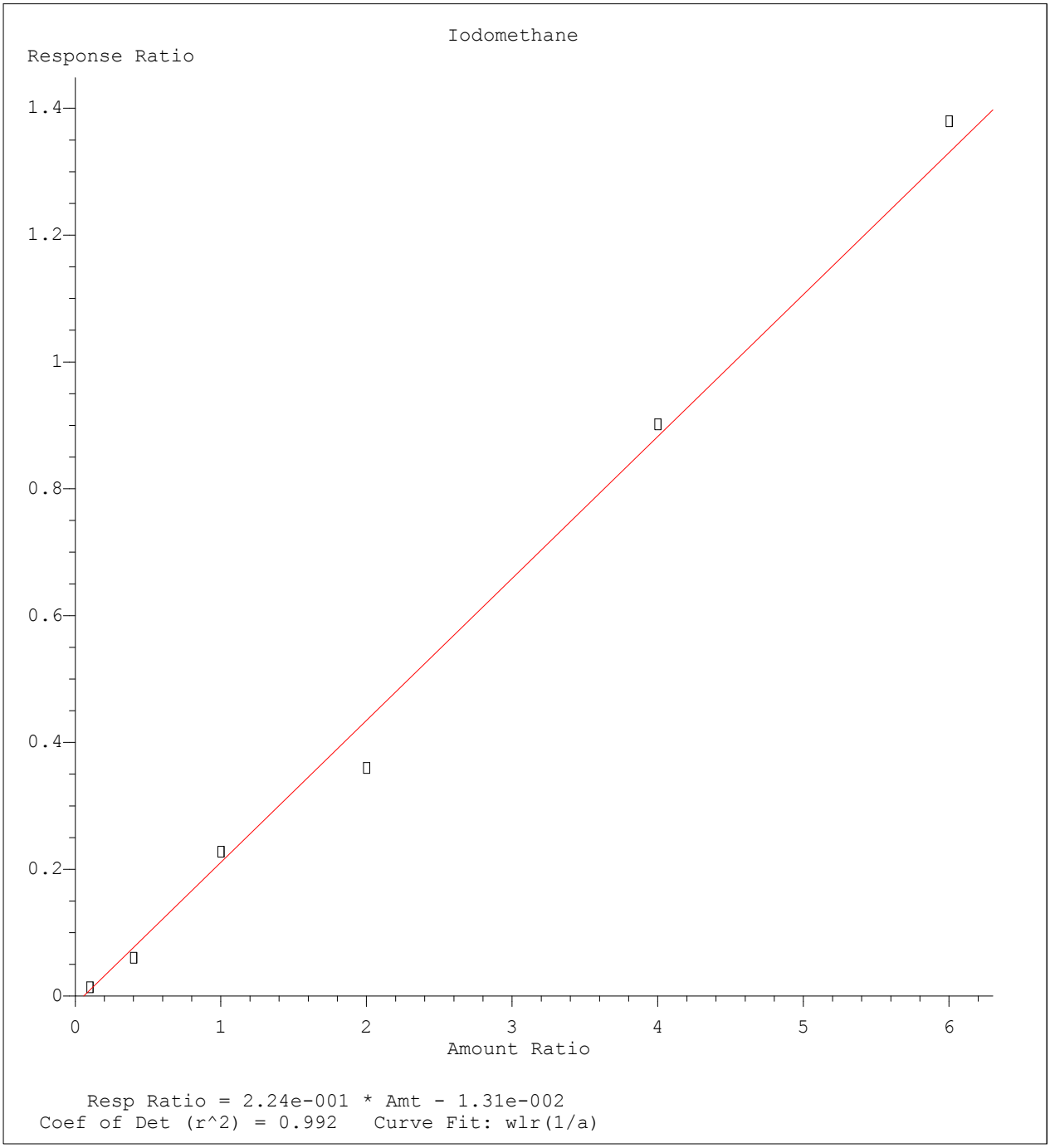

Method Name: C:\MSDCHEM\1\METHODS\8260-SL.M
Calibration Table Last Updated: Wed Apr 06 17:47:28 2016

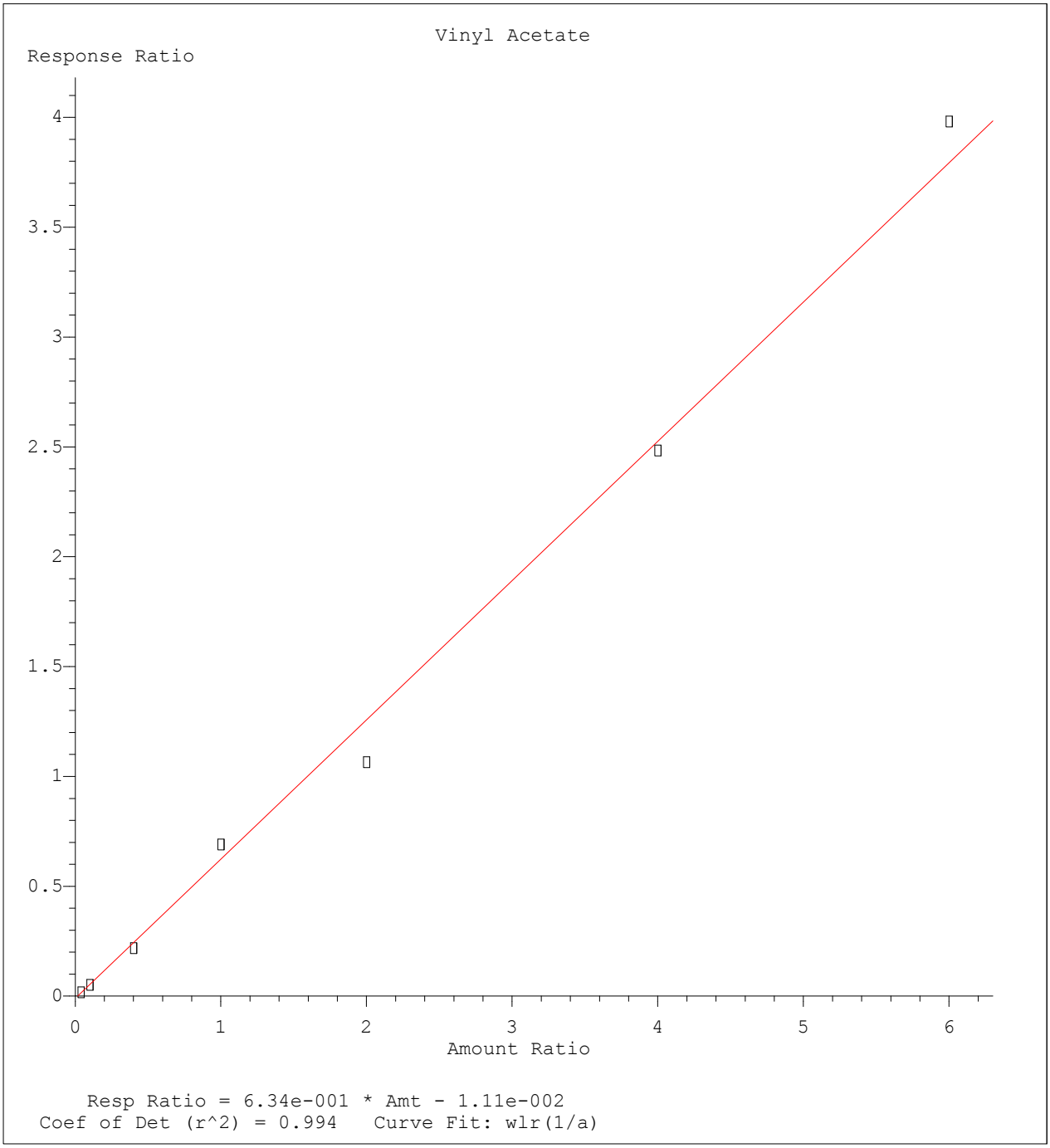

Method Name: C:\MSDCHEM\1\METHODS\8260-SL.M
Calibration Table Last Updated: Wed Apr 06 17:47:28 2016

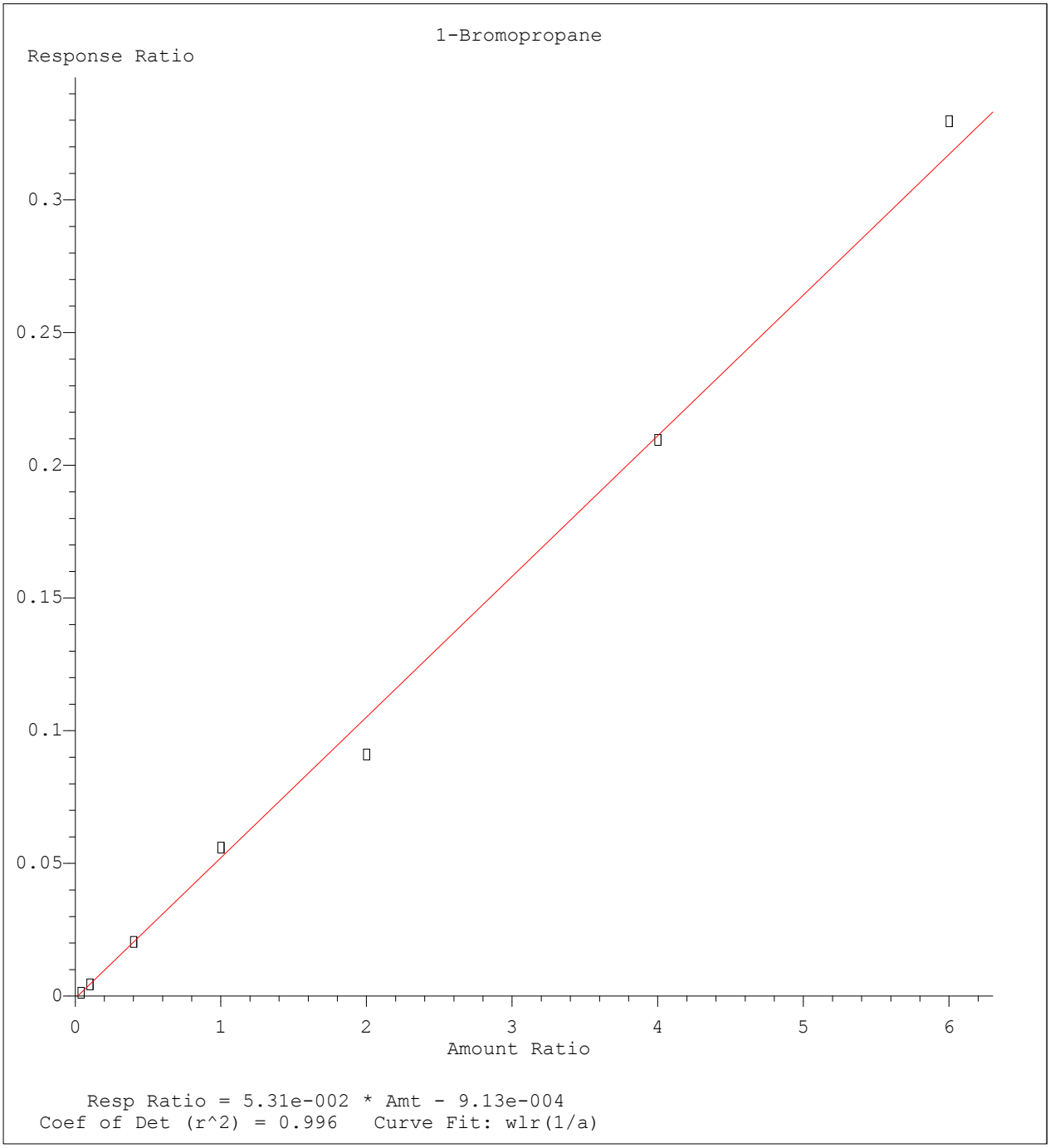

Method Name: C:\MSDCHEM\1\METHODS\8260-SL.M
Calibration Table Last Updated: Wed Apr 06 17:47:28 2016

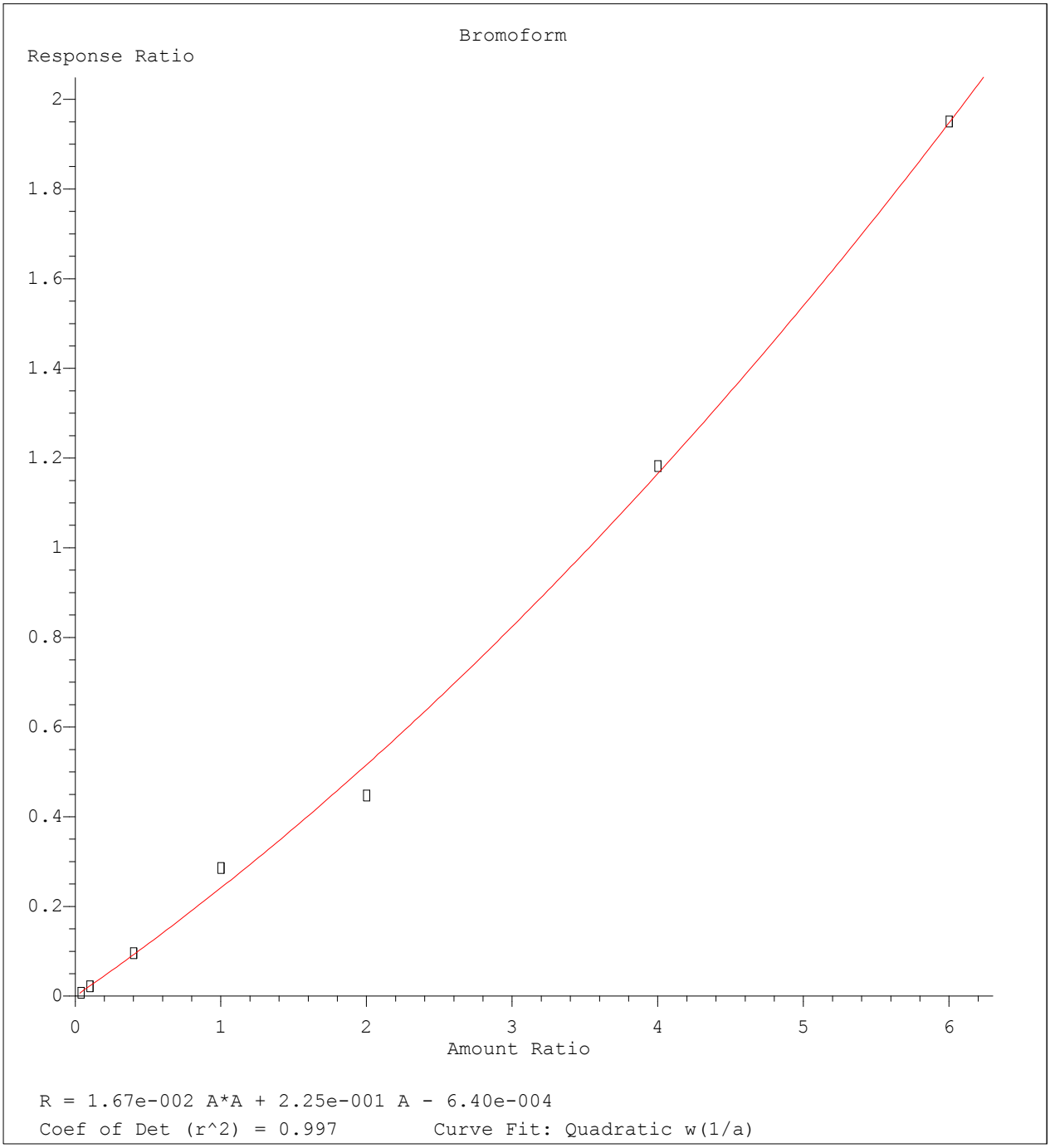

Method Name: C:\MSDCHEM\1\METHODS\8260-SL.M
Calibration Table Last Updated: Wed Apr 06 17:47:28 2016

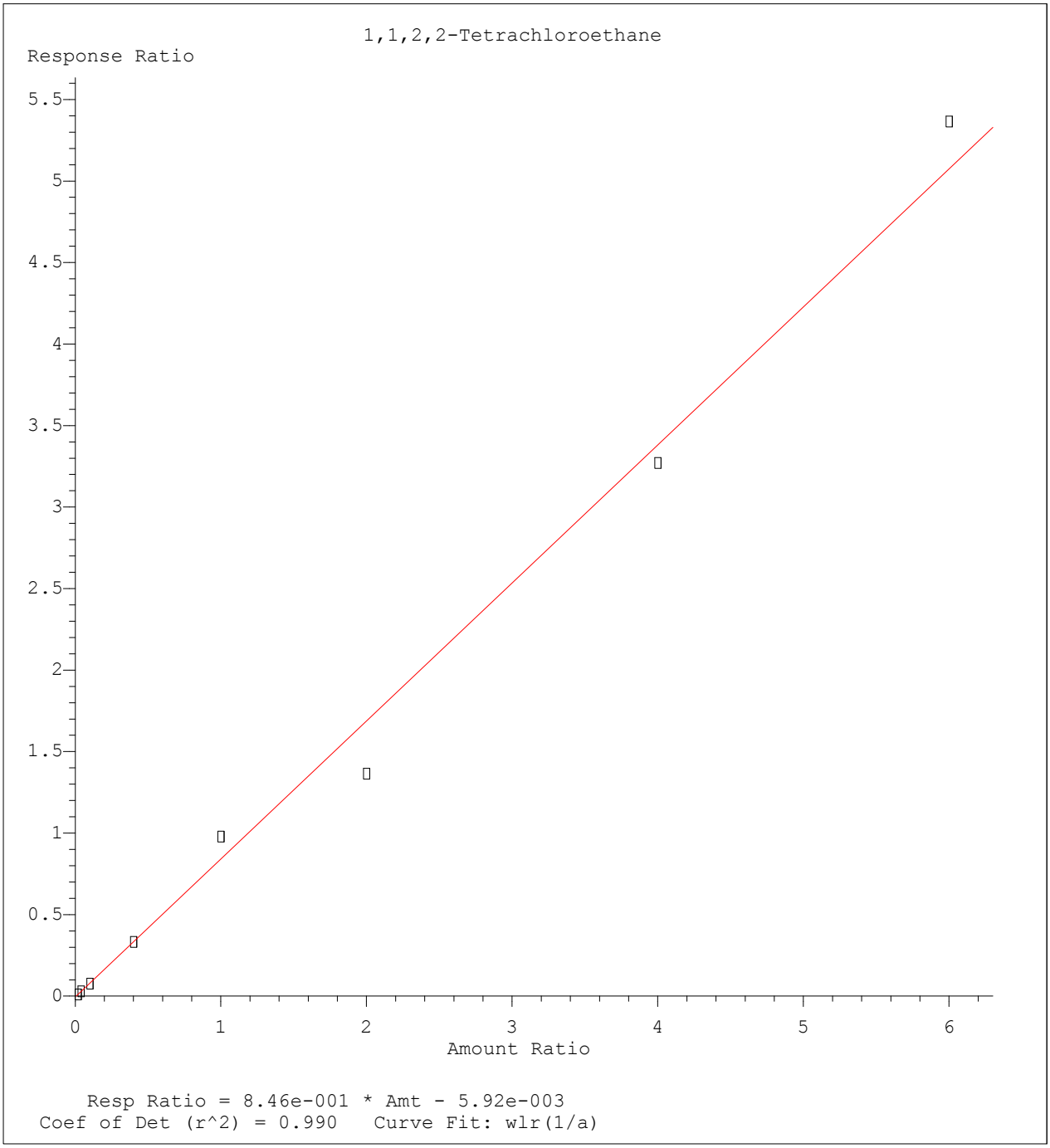

Method Name: C:\MSDCHEM\1\METHODS\8260-SL.M
Calibration Table Last Updated: Wed Apr 06 17:47:28 2016

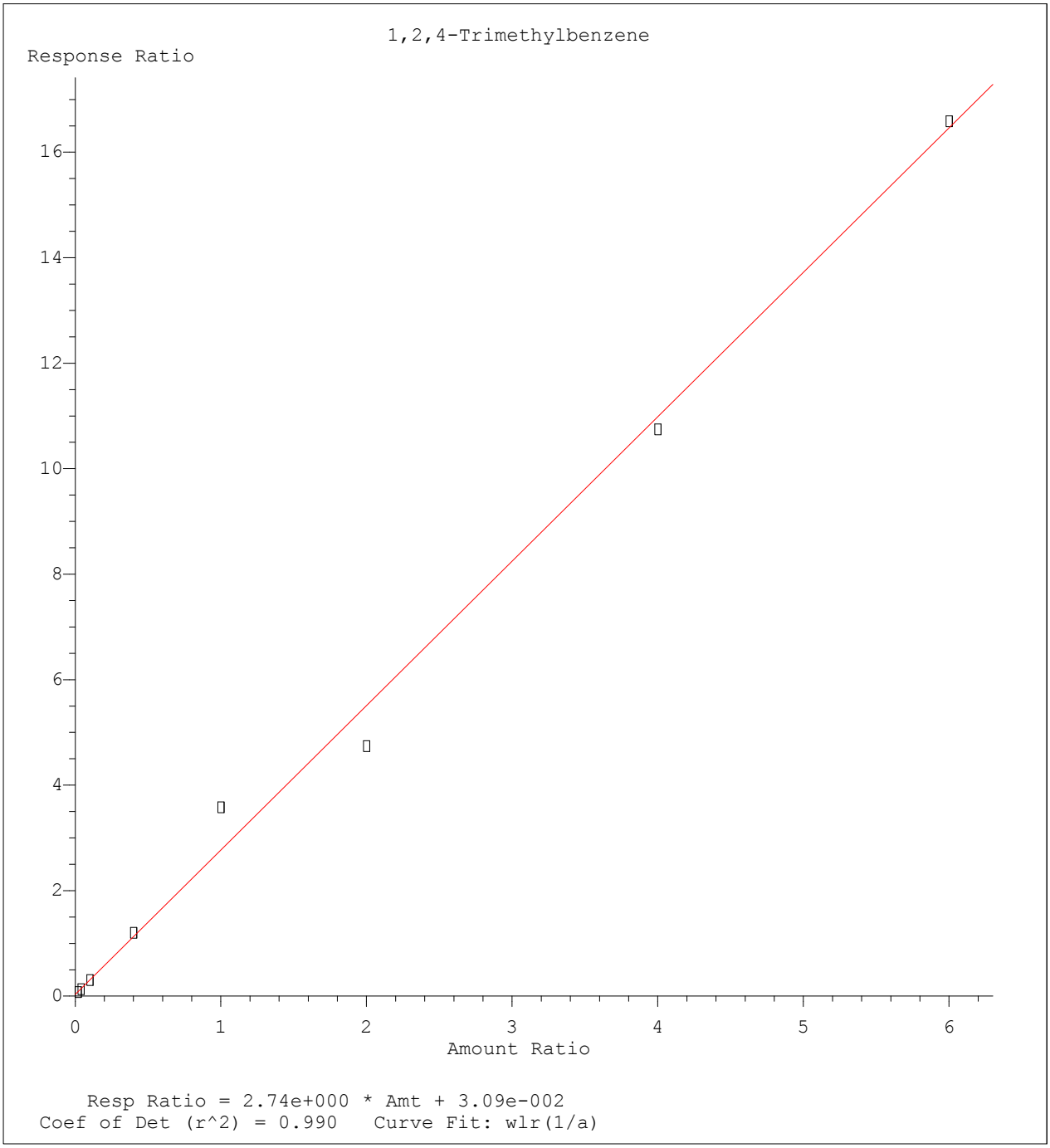

Method Name: C:\MSDCHEM\1\METHODS\8260-SL.M
Calibration Table Last Updated: Wed Apr 06 17:47:28 2016

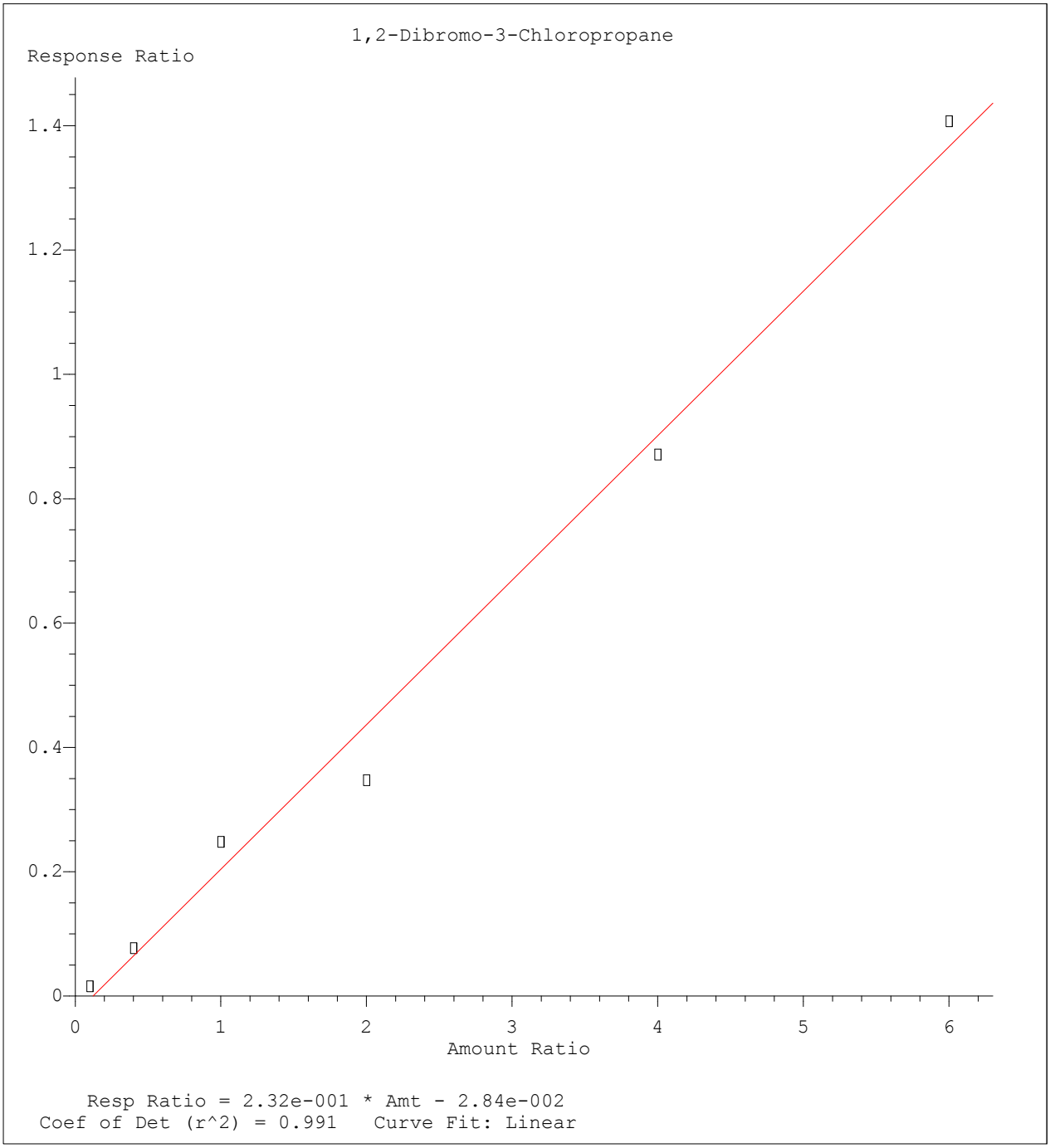

Method Name: C:\MSDCHEM\1\METHODS\8260-SL.M
Calibration Table Last Updated: Wed Apr 06 17:47:28 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973609.D Vial: 17
Acq On : 6 Apr 2016 18:18 Operator: ADC
Sample : WG563259-11 50.0ug/kg ALTSRC 8260 Inst : hpms9
Misc : 7,1 STD75404 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:20 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	530506	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	401118	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	219097	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	141434	52.7882 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.58%		
43) 1,2-Dichloroethane-d4	10.43	65	145958	52.0392 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.08%		
58) Toluene-d8	12.82	98	509727	53.3198 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.64%		
79) p-Bromofluorobenzene	16.22	95	199848	52.6619 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 105.32%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.28	85	250423	61.5384 ug/kg	98
3) Chloromethane	3.74	50	213325	57.0246 ug/kg	99
4) Vinyl Chloride	3.97	62	130729	53.2068 ug/kg	94
5) 1,3-Butadiene	4.01	54	50651	28.0586 ug/kg	96
6) Bromomethane	4.86	94	120126	52.3731 ug/kg	99
7) Chloroethane	5.02	64	122333	54.7562 ug/kg	99
8) Trichlorofluoromethane	5.51	101	245915	52.0272 ug/kg	100
9) Diethyl ether	6.04	59	298370	107.3411 ug/kg	99
10) Isoprene	6.08	67	240535	64.6521 ug/kg	100
11) Acrolein	6.29	56	42769	154.7449 ug/kg	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	156650	54.2779 ug/kg	97
13) Acetone	6.39	43	57891	51.9935 ug/kg	99
14) 1,1-Dichloroethene	6.60	61	246948	51.0481 ug/kg	99
15) Tert-Butyl Alcohol	6.73	59	102252	219.7499 ug/kg	99
16) Dimethyl Sulfide	6.87	62	185143	78.1171 ug/kg	99
17) Iodomethane	7.13	142	93186	42.1583 ug/kg	99
18) Methyl acetate	7.14	43	140101	45.5882 ug/kg	98
19) Methylene Chloride	7.38	84	155415	51.4310 ug/kg	97
20) Carbon Disulfide	7.44	76	446333	48.6586 ug/kg	99
21) Acrylonitrile	7.57	53	75240	51.5103 ug/kg	100
22) Methyl Tert Butyl Ether	7.60	73	421938	51.8917 ug/kg	99
23) trans-1,2-Dichloroethene	7.84	61	249458	53.6052 ug/kg	98
24) n-Hexane	7.91	57	291976	48.3154 ug/kg	100
25) Diisopropyl ether	8.25	45	1252311	101.6994 ug/kg	99
26) Vinyl Acetate	8.43	43	309863	46.9410 ug/kg	100
27) 1,1-Dichloroethane	8.46	63	282909	50.0862 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	1046728	96.6696 ug/kg	100
29) 2-Butanone	9.02	43	89553	52.5061 ug/kg	99
30) Propionitrile	9.13	54	55055	99.4519 ug/kg	97
31) 2,2-Dichloropropane	9.23	77	212618	51.5494 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	166197	53.7400 ug/kg	97
33) Chloroform	9.51	83	243436	50.8113 ug/kg	99
34) 1-Bromopropane	9.64	122	38824	69.7970 ug/kg	96
35) Bromochloromethane	9.75	130	99051	51.3365 ug/kg	99
36) Tetrahydrofuran	9.77	42	116541	96.1883 ug/kg	99
38) 1,1,1-Trichloroethane	10.04	97	216396	52.7730 ug/kg	100
39) Cyclohexane	10.08	56	352153	54.3246 ug/kg	99
40) 1,1-Dichloropropene	10.23	75	193887	51.3660 ug/kg	98
41) Tert-Amyl-Methyl ether	10.34	73	820188	102.3991 ug/kg	100
42) Carbon Tetrachloride	10.38	117	197392	51.5704 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973609.D Vial: 17
Acq On : 6 Apr 2016 18:18 Operator: ADC
Sample : WG563259-11 50.0ug/kg ALTSRC 8260 Inst : hpms9
Misc : 7,1 STD75404 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:20 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	211843	51.3449	ug/kg	99
46)	Benzene	10.59	78	593872	50.6938	ug/kg	100
47)	Trichloroethene	11.34	130	173100	52.5327	ug/kg	99
48)	Methylcyclohexane	11.43	83	274526	54.5223	ug/kg	98
49)	1,2-Dichloropropane	11.56	63	172660	54.1958	ug/kg	99
50)	1,4-Dioxane	11.85	88	10566	255.6979	ug/kg	94
51)	Bromodichloromethane	11.86	83	183631	50.5822	ug/kg	100
52)	Dibromomethane	11.95	174	95424	50.1684	ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.15	63	93818	55.3787	ug/kg	99
54)	4-Methyl-2-Pentanone	12.19	58	76339	52.0432	ug/kg	99
55)	cis-1,3-Dichloropropene	12.49	75	251031	55.4585	ug/kg	99
56)	Dimethyl Disulfide	12.77	94	267703	55.2642	ug/kg	99
59)	Toluene	12.91	91	628564	51.4967	ug/kg	100
60)	Ethyl Methacrylate	13.01	69	195518	52.6145	ug/kg	100
61)	trans-1,3-Dichloropropene	13.09	75	207936	52.3291	ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	129591	53.9308	ug/kg	100
63)	2-Hexanone	13.24	43	137776	52.5074	ug/kg	99
64)	1,3-Dichloropropane	13.62	76	226056	54.7122	ug/kg	99
65)	Tetrachloroethene	13.74	164	133666	51.6350	ug/kg	98
66)	Dibromochloromethane	14.01	129	150404	50.6339	ug/kg	99
67)	1,2-Dibromoethane	14.27	107	135771	51.2924	ug/kg	100
68)	1-Chlorohexane	14.34	91	217314	54.0792	ug/kg	100
69)	Chlorobenzene	14.76	112	449730	53.0953	ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.79	131	152648	53.0459	ug/kg	96
71)	Ethylbenzene	14.79	106	240566	52.7946	ug/kg	99
72)	m-,p-Xylene	14.88	106	589545	104.9373	ug/kg	99
73)	o-Xylene	15.45	106	292444	54.6278	ug/kg	100
74)	Styrene	15.48	104	490845	53.5412	ug/kg	100
75)	Bromoform	15.99	173	96808	50.1186	ug/kg	99
76)	Isopropylbenzene	15.87	105	752993	54.0740	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	177488	48.2015	ug/kg	100
80)	1,2,3-Trichloropropane	16.28	110	55590	51.1245	ug/kg#	27
81)	trans-1,4-Dichloro-2-Buten	16.32	53	54162	40.9288	ug/kg#	1
82)	n-Propylbenzene	16.38	91	846693	51.6897	ug/kg	100
83)	Bromobenzene	16.51	156	194075	49.8094	ug/kg	98
84)	1,3,5-Trimethylbenzene	16.57	105	645968	51.7929	ug/kg	100
85)	2-Chlorotoluene	16.65	91	501409	51.2539	ug/kg	99
86)	4-Chlorotoluene	16.70	91	531861	51.9779	ug/kg	99
87)	a-Methylstyrene	16.97	118	350698	56.3654	ug/kg	100
88)	tert-Butylbenzene	17.03	134	144582	52.3227	ug/kg	98
89)	1,2,4-Trimethylbenzene	17.08	105	645060	53.2109	ug/kg	99
90)	sec-Butylbenzene	17.30	105	846506	52.7972	ug/kg	100
91)	p-Isopropyltoluene	17.45	119	683120	51.4696	ug/kg	100
92)	1,3-Dichlorobenzene	17.65	146	389382	50.5474	ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	400589	50.9530	ug/kg	100
94)	n-Butylbenzene	17.98	91	626791	51.3326	ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	381311	52.0332	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	50296	55.5038	ug/kg	99
97)	1,2,4-Trichlorobenzene	20.43	180	306886	56.7541	ug/kg	99
98)	Hexachlorobutadiene	20.58	225	149856	58.7590	ug/kg	99
99)	Naphthalene	20.80	128	701866	53.8583	ug/kg	99
100)	1,2,3-Trichlorobenzene	21.10	180	299028	58.3388	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M973609.D 8260-SL.M Thu Apr 07 13:30:20 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973609.D Vial: 17
Acq On : 6 Apr 2016 18:18 Operator: ADC
Sample : WG563259-11 50.0ug/kg ALTSRC 8260 Inst : hpms9
Misc : 7,1 STD75404 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 7 13:30 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

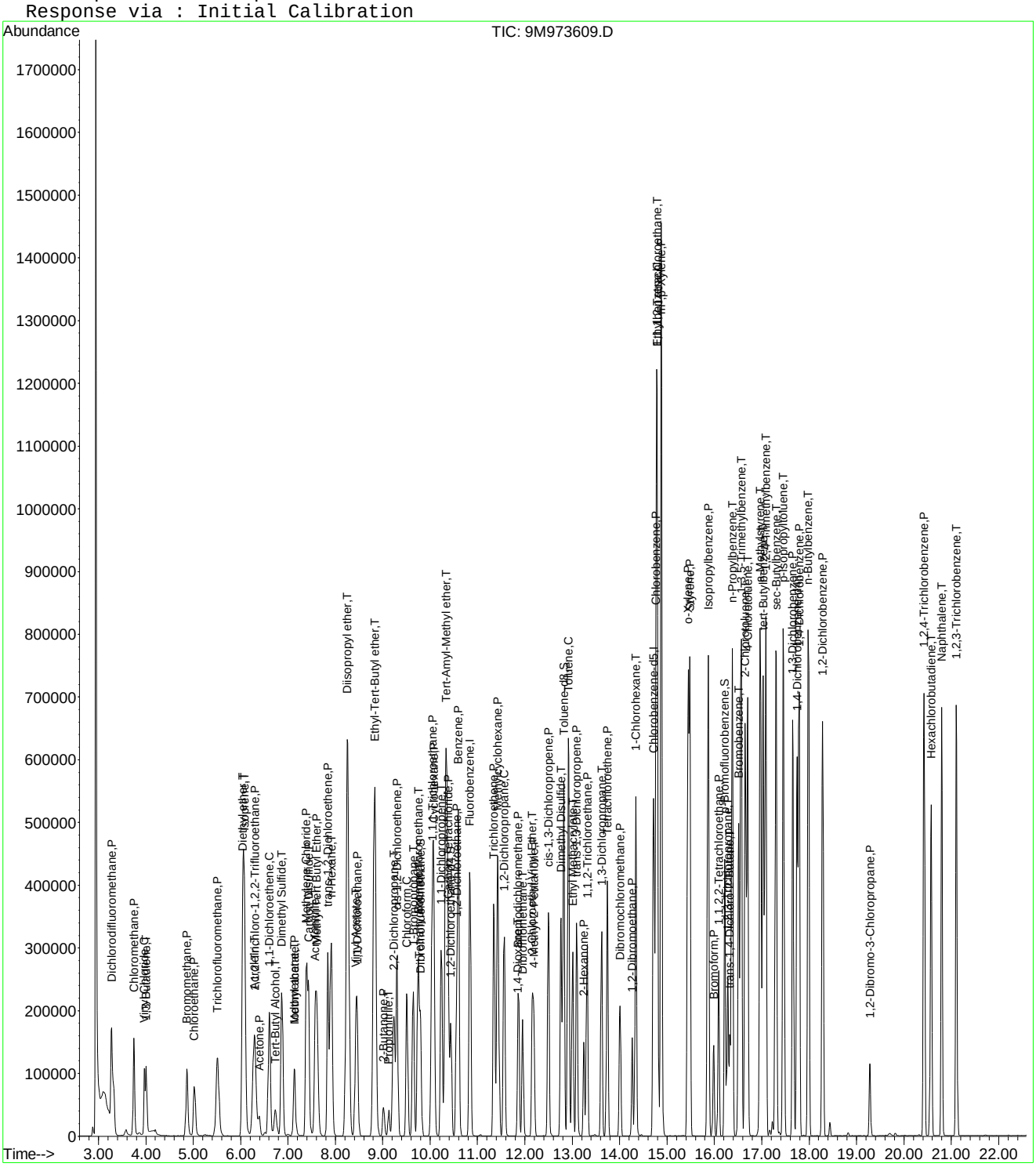

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\040616\9M973609.D Vial: 17
Acq On : 6 Apr 2016 18:18 Operator: ADC
Sample : WG563259-11 50.0ug/kg ALTSRC 8260 Inst : hpms9
Misc : 7,1 STD75404 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	96	0.00
2	P	Dichlorodifluoromethane	50.0000	61.5384	-23.1	103	0.00
3	P	Chloromethane	50.0000	57.0246	-14.0	110	0.00
4	C	Vinyl Chloride	50.0000	53.2068	-6.4	88	-0.01
5	T	1,3-Butadiene	50.0000	28.0586	43.9#	57	-0.01
6	P	Bromomethane	50.0000	52.3731	-4.7	95	-0.01
7	P	Chloroethane	50.0000	54.7562	-9.5	100	-0.01
8	P	Trichlorofluoromethane	50.0000	52.0272	-4.1	90	-0.01
9	T	Diethyl ether	100.0000	107.3411	-7.3	99	0.00
10	T	Isoprene	50.0000	64.6521	-29.3#	112	-0.01
11	T	Acrolein	50.0000	154.7449	-209.5#	285	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	54.2779	-8.6	94	0.00
13	P	Acetone	50.0000	51.9935	-4.0	97	0.00
14	C	1,1-Dichloroethene	50.0000	51.0481	-2.1	88	-0.01
15	T	Tert-Butyl Alcohol	200.0000	219.7499	-9.9	102	0.00
16	T	Dimethyl Sulfide	50.0000	78.1171	-56.2#	131	-0.01
17	T	Iodomethane	50.0000	42.1583	15.7	74	0.00
18	P	Methyl acetate	50.0000	45.5881	8.8	83	0.00
19	P	Methylene Chloride	50.0000	51.4310	-2.9	94	-0.01
20	P	Carbon Disulfide	50.0000	48.6586	2.7	86	0.00
21	T	Acrylonitrile	50.0000	51.5103	-3.0	93	0.00
22	P	Methyl Tert Butyl Ether	50.0000	51.8917	-3.8	91	0.00
23	P	trans-1,2-Dichloroethene	50.0000	53.6052	-7.2	92	0.00
24	T	n-Hexane	50.0000	48.3154	3.4	92	0.00
25	T	Diisopropyl ether	100.0000	101.6994	-1.7	91	0.00
26	T	Vinyl Acetate	50.0000	46.9410	6.1	81	0.00
27	P	1,1-Dichloroethane	50.0000	50.0862	-0.2	87	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	96.6696	3.3	88	0.00
29	P	2-Butanone	50.0000	52.5061	-5.0	98	0.00
30	T	Propionitrile	100.0000	99.4519	0.5	90	0.00
31	T	2,2-Dichloropropane	50.0000	51.5494	-3.1	88	0.00
32	P	cis-1,2-Dichloroethene	50.0000	53.7400	-7.5	94	0.00
33	C	Chloroform	50.0000	50.8113	-1.6	90	0.00
34	T	1-Bromopropane	50.0000	69.7970	-39.6#	126	0.00
35	T	Bromochloromethane	50.0000	51.3365	-2.7	87	0.00
36	T	Tetrahydrofuran	100.0000	96.1883	3.8	91	0.00
37	S	Dibromofluoromethane	50.0000	52.7882	-5.6	96	0.00
38	P	1,1,1-Trichloroethane	50.0000	52.7730	-5.5	91	0.00
39	P	Cyclohexane	50.0000	54.3246	-8.6	95	0.00
40	T	1,1-Dichloropropene	50.0000	51.3660	-2.7	89	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	102.3991	-2.4	93	0.00
42	P	Carbon Tetrachloride	50.0000	51.5704	-3.1	90	0.00
43	S	1,2-Dichloroethane-d4	50.0000	52.0392	-4.1	97	0.00
44		Heptane	-1.0000	0.0000	0.0	90	0.00
45	P	1,2-Dichloroethane	50.0000	51.3449	-2.7	92	0.00
46	P	Benzene	50.0000	50.6938	-1.4	92	0.00
47	P	Trichloroethene	50.0000	52.5327	-5.1	95	0.00
48	P	Methylcyclohexane	50.0000	54.5223	-9.0	96	0.00
49	C	1,2-Dichloropropane	50.0000	54.1958	-8.4	94	0.00
50	T	1,4-Dioxane	200.0000	255.6979	-27.8#	111	0.00
51	P	Bromodichloromethane	50.0000	50.5822	-1.2	88	0.00
52	T	Dibromomethane	50.0000	50.1684	-0.3	86	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	55.3787	-10.8	97	0.00
54	P	4-Methyl-2-Pentanone	50.0000	52.0432	-4.1	99	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\040616\9M973609.D Vial: 17
Acq On : 6 Apr 2016 18:18 Operator: ADC
Sample : WG563259-11 50.0ug/kg ALTSRC 8260 Inst : hpms9
Misc : 7,1 STD75404 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	55.4585	-10.9	97	0.00
56	T	Dimethyl Disulfide	50.0000	55.2642	-10.5	95	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	99	0.00
58	S	Toluene-d8	50.0000	53.3198	-6.6	97	0.00
59	C	Toluene	50.0000	51.4967	-3.0	93	0.00
60	T	Ethyl Methacrylate	50.0000	52.6145	-5.2	94	0.00
61	P	trans-1,3-Dichloropropene	50.0000	52.3291	-4.7	89	0.00
62	P	1,1,2-Trichloroethane	50.0000	53.9308	-7.9	93	0.00
63	P	2-Hexanone	50.0000	52.5074	-5.0	97	0.00
64	T	1,3-Dichloropropane	50.0000	54.7122	-9.4	96	0.00
65	P	Tetrachloroethene	50.0000	51.6350	-3.3	90	0.00
66	P	Dibromochloromethane	50.0000	50.6339	-1.3	88	0.00
67	P	1,2-Dibromoethane	50.0000	51.2924	-2.6	93	0.00
68	T	1-Chlorohexane	50.0000	54.0792	-8.2	94	0.00
69	P	Chlorobenzene	50.0000	53.0953	-6.2	95	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	53.0459	-6.1	93	0.00
71	C	Ethylbenzene	50.0000	52.7946	-5.6	92	0.00
72	P	m-,p-Xylene	100.0000	104.9373	-4.9	94	0.00
73	P	o-Xylene	50.0000	54.6278	-9.3	96	0.00
74	P	Styrene	50.0000	53.5412	-7.1	93	0.00
75	P	Bromoform	50.0000	50.1186	-0.2	84	0.00
76	P	Isopropylbenzene	50.0000	54.0740	-8.1	95	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	115	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	48.2015	3.6	95	0.00
79	S	p-Bromofluorobenzene	50.0000	52.6619	-5.3	102	0.00
80	T	1,2,3-Trichloropropane	50.0000	51.1245	-2.2	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	40.9288	18.1	74	0.00
82	T	n-Propylbenzene	50.0000	51.6897	-3.4	96	0.00
83	T	Bromobenzene	50.0000	49.8094	0.4	93	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	51.7929	-3.6	96	0.00
85	T	2-Chlorotoluene	50.0000	51.2539	-2.5	94	0.00
86	T	4-Chlorotoluene	50.0000	51.9779	-4.0	98	0.00
87	T	a-Methylstyrene	50.0000	56.3654	-12.7	103	0.00
88	T	tert-Butylbenzene	50.0000	52.3227	-4.6	97	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	53.2109	-6.4	95	0.00
90	T	sec-Butylbenzene	50.0000	52.7972	-5.6	98	0.00
91	T	p-Isopropyltoluene	50.0000	51.4696	-2.9	95	0.00
92	P	1,3-Dichlorobenzene	50.0000	50.5474	-1.1	96	0.00
93	P	1,4-Dichlorobenzene	50.0000	50.9530	-1.9	100	0.00
94	T	n-Butylbenzene	50.0000	51.3326	-2.7	96	0.00
95	P	1,2-Dichlorobenzene	50.0000	52.0332	-4.1	101	0.00
96	P	1,2-Dibromo-3-Chloropropane	50.0000	55.5037	-11.0	107	0.01
97	P	1,2,4-Trichlorobenzene	50.0000	56.7541	-13.5	109	0.00
98	T	Hexachlorobutadiene	50.0000	58.7590	-17.5	110	0.00
99	T	Naphthalene	50.0000	53.8583	-7.7	100	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	58.3387	-16.7	110	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M973609.D 8260-SL.M Thu Apr 07 13:32:18 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\043016\9M974067.D Vial: 2
Acq On : 30 Apr 2016 13:43 Operator: ADC
Sample : WG567052-02 50ug/kg CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 30 14:05:40 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	721498	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	515311	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	239486	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	191737	52.6192 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.24%		
43) 1,2-Dichloroethane-d4	10.44	65	202287	53.0305 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 106.06%		
58) Toluene-d8	12.81	98	677225	55.1425 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 110.28%		
79) p-Bromofluorobenzene	16.21	95	250470	60.3822 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 120.76%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	267146	48.2698 ug/kg	98
3) Chloromethane	3.75	50	279372	54.9109 ug/kg	100
4) Vinyl Chloride	3.97	62	154892	46.2519 ug/kg	95
5) 1,3-Butadiene	4.00	54	90745	36.9620 ug/kg	94
6) Bromomethane	4.87	94	143220	45.9124 ug/kg	100
7) Chloroethane	5.02	64	142331	46.8430 ug/kg	99
8) Trichlorofluoromethane	5.51	101	309961	48.2178 ug/kg	100
9) Diethyl ether	6.04	59	338254	89.4765 ug/kg	96
10) Isoprene	6.07	67	214323	42.3573 ug/kg	100
11) Acrolein	6.28	56	22930	61.0023 ug/kg	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	186304	47.4646 ug/kg	100
13) Acetone	6.39	43	64103	41.2488 ug/kg	100
14) 1,1-Dichloroethene	6.60	61	301955	45.8956 ug/kg	97
15) Tert-Butyl Alcohol	6.72	59	114483	180.9060 ug/kg	99
16) Dimethyl Sulfide	6.87	62	143065	44.3841 ug/kg	97
17) Iodomethane	7.12	142	111793	37.5324 ug/kg	99
18) Methyl acetate	7.13	43	173317	41.4674 ug/kg	97
19) Methylene Chloride	7.39	84	183855	44.7366 ug/kg	93
20) Carbon Disulfide	7.43	76	513142	41.1333 ug/kg	100
21) Acrylonitrile	7.57	53	87651	44.1222 ug/kg	100
22) Methyl Tert Butyl Ether	7.60	73	524602	47.4389 ug/kg	99
23) trans-1,2-Dichloroethene	7.83	61	291770	46.1005 ug/kg	100
24) n-Hexane	7.91	57	313068	38.0919 ug/kg	98
25) Diisopropyl ether	8.24	45	1457067	87.0044 ug/kg	99
26) Vinyl Acetate	8.42	43	370347	41.3581 ug/kg	99
27) 1,1-Dichloroethane	8.45	63	352481	45.8841 ug/kg	98
28) Ethyl-Tert-Butyl ether	8.82	59	1336759	90.7746 ug/kg	99
29) 2-Butanone	9.01	43	98352	42.4002 ug/kg	97
30) Propionitrile	9.12	54	63958	84.9506 ug/kg	97
31) 2,2-Dichloropropane	9.23	77	269278	48.0043 ug/kg	100
32) cis-1,2-Dichloroethene	9.30	96	194107	46.1499 ug/kg	98
33) Chloroform	9.51	83	301985	46.3464 ug/kg	99
34) 1-Bromopropane	9.65	122	30323	40.4497 ug/kg	98
35) Bromochloromethane	9.74	130	123421	47.0340 ug/kg	95
36) Tetrahydrofuran	9.76	42	138155	83.8427 ug/kg	97
38) 1,1,1-Trichloroethane	10.04	97	268302	48.1107 ug/kg	99
39) Cyclohexane	10.07	56	375361	42.5765 ug/kg	97
40) 1,1-Dichloropropene	10.24	75	237174	46.2008 ug/kg	98
41) Tert-Amyl-Methyl ether	10.33	73	1009502	92.6713 ug/kg	99
42) Carbon Tetrachloride	10.39	117	251432	48.2999 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\043016\9M974067.D Vial: 2
Acq On : 30 Apr 2016 13:43 Operator: ADC
Sample : WG567052-02 50ug/kg CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 30 14:05:40 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.55	62	261444	46.5926 ug/kg	97
46)	Benzene	10.60	78	700687	43.9786 ug/kg	99
47)	Trichloroethene	11.35	130	194526	43.4076 ug/kg	99
48)	Methylcyclohexane	11.43	83	293473	42.8562 ug/kg	97
49)	1,2-Dichloropropane	11.56	63	197901	45.6748 ug/kg	98
50)	1,4-Dioxane	11.85	88	10306	183.3841 ug/kg	99
51)	Bromodichloromethane	11.86	83	226098	45.7935 ug/kg	99
52)	Dibromomethane	11.95	174	115911	44.8077 ug/kg	97
53)	2-Chloroethyl Vinyl Ether	12.15	63	116302	50.4776 ug/kg	98
54)	4-Methyl-2-Pentanone	12.18	58	90489	45.3596 ug/kg	99
55)	cis-1,3-Dichloropropene	12.50	75	281374	45.7067 ug/kg	100
56)	Dimethyl Disulfide	12.76	94	308820	46.8761 ug/kg	99
59)	Toluene	12.92	91	738892	47.1209 ug/kg	99
60)	Ethyl Methacrylate	13.00	69	221257	46.3467 ug/kg	100
61)	trans-1,3-Dichloropropene	13.09	75	260381	51.0066 ug/kg	100
62)	1,1,2-Trichloroethane	13.31	97	153347	49.6752 ug/kg	99
63)	2-Hexanone	13.24	43	149815	44.4432 ug/kg	97
64)	1,3-Dichloropropane	13.61	76	257152	48.4463 ug/kg	97
65)	Tetrachloroethene	13.74	164	158751	47.7356 ug/kg	98
66)	Dibromochloromethane	14.00	129	189943	49.7746 ug/kg	100
67)	1,2-Dibromoethane	14.26	107	161251	47.4189 ug/kg	100
68)	1-Chlorohexane	14.34	91	241155	46.7134 ug/kg	98
69)	Chlorobenzene	14.76	112	521170	47.8946 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	189589	51.2834 ug/kg	98
71)	Ethylbenzene	14.79	106	283523	48.4336 ug/kg	100
72)	m-,p-Xylene	14.88	106	690257	95.6371 ug/kg	100
73)	o-Xylene	15.44	106	333133	48.4386 ug/kg	100
74)	Styrene	15.48	104	566862	48.1309 ug/kg	100
75)	Bromoform	15.98	173	132662	53.2241 ug/kg	100
76)	Isopropylbenzene	15.86	105	860313	48.0902 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.08	83	210037	52.1559 ug/kg	100
80)	1,2,3-Trichloropropane	16.27	110	64353	54.1449 ug/kg	91
81)	trans-1,4-Dichloro-2-Buten	16.33	53	75281	52.0446 ug/kg	96
82)	n-Propylbenzene	16.37	91	951855	53.1625 ug/kg	100
83)	Bromobenzene	16.51	156	226542	53.1921 ug/kg	75
84)	1,3,5-Trimethylbenzene	16.56	105	730662	53.5959 ug/kg	100
85)	2-Chlorotoluene	16.64	91	641892	60.0279 ug/kg	99
86)	4-Chlorotoluene	16.70	91	532897	47.6453 ug/kg	99
87)	a-Methylstyrene	16.97	118	348737	51.2783 ug/kg	99
88)	tert-Butylbenzene	17.02	134	162029	53.6445 ug/kg	90
89)	1,2,4-Trimethylbenzene	17.08	105	745247	56.2737 ug/kg	99
90)	sec-Butylbenzene	17.30	105	932564	53.2128 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	780693	53.8134 ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	437597	51.9701 ug/kg	99
93)	1,4-Dichlorobenzene	17.78	146	436354	50.7769 ug/kg	98
94)	n-Butylbenzene	17.98	91	705629	52.8693 ug/kg	100
95)	1,2-Dichlorobenzene	18.28	146	410190	51.2086 ug/kg	98
96)	1,2-Dibromo-3-Chloropropan	19.28	157	51440	52.3268 ug/kg	98
97)	1,2,4-Trichlorobenzene	20.42	180	307117	51.9613 ug/kg	99
98)	Hexachlorobutadiene	20.57	225	141777	50.8583 ug/kg	99
99)	Naphthalene	20.79	128	778940	54.6838 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	300419	53.6203 ug/kg	98

(#) = qualifier out of range (m) = manual integration
9M974067.D 8260-SL.M Sat Apr 30 14:05:40 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\043016\9M974067.D Vial: 2
Acq On : 30 Apr 2016 13:43 Operator: ADC
Sample : WG567052-02 50ug/kg CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 30 14:05 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

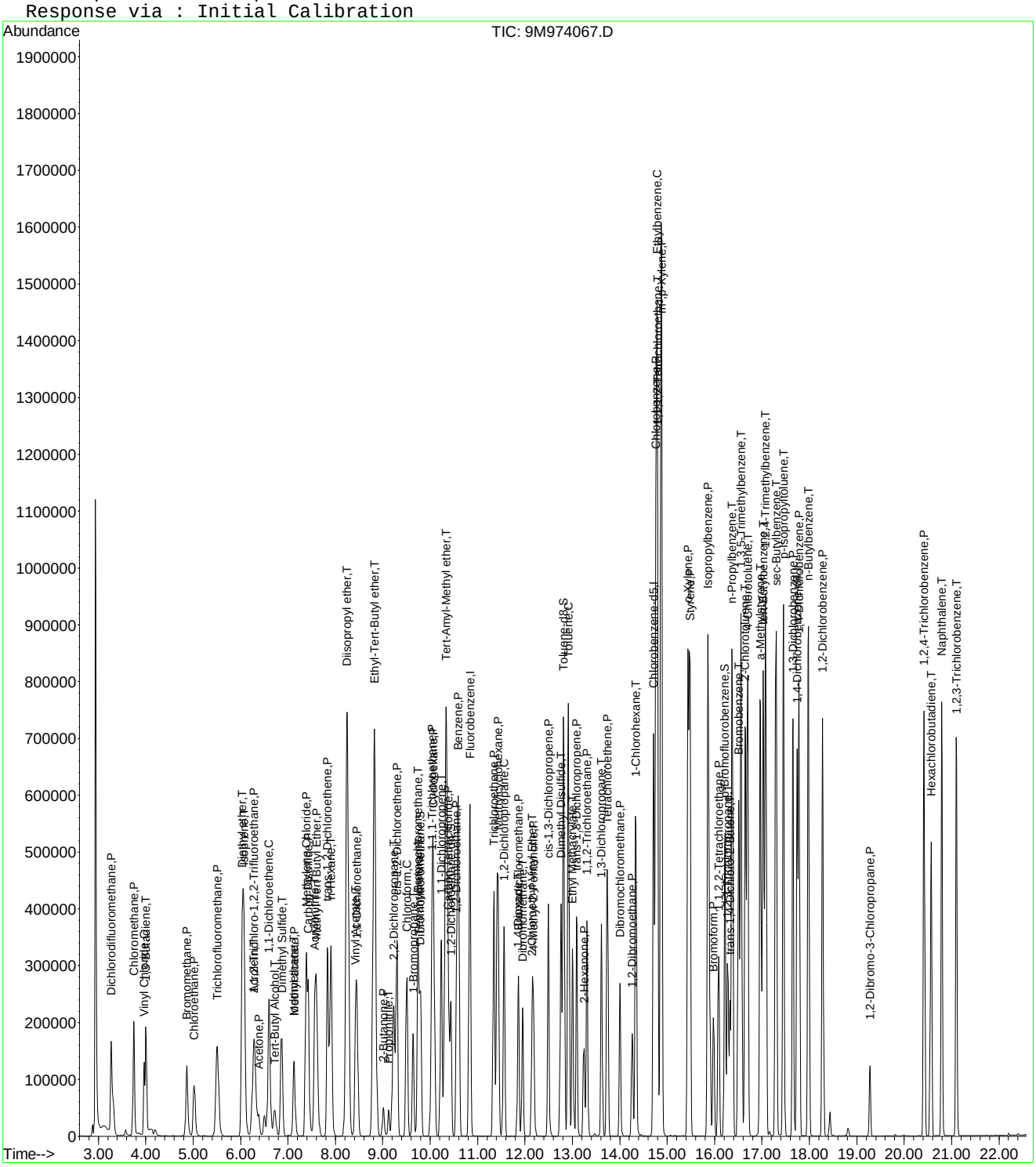

9M974067.D 8260-SL.M Sat Apr 30 14:05:40 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\043016\9M974067.D Vial: 2
Acq On : 30 Apr 2016 13:43 Operator: ADC
Sample : WG567052-02 50ug/kg CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	131	0.00
2	P	Dichlorodifluoromethane	0.3835	0.3703	3.5	110	0.00
3	P	Chloromethane	0.3526	0.3872	-9.8	144	0.00
4	C	Vinyl Chloride	0.2683	0.2147	20.0	104	0.00
5	T	1,3-Butadiene	0.1701	0.1258	26.1#	103	-0.02
6	P	Bromomethane	0.2162	0.1985	8.2	113	0.00
7	P	Chloroethane	0.2106	0.1973	6.3	116	0.00
8	P	Trichlorofluoromethane	0.4455	0.4296	3.6	113	0.00
9	T	Diethyl ether	0.2620	0.2344	10.5	112	0.00
10	T	Isoprene	0.3507	0.2970	15.3	100	-0.02
11	T	Acrolein	0.0261	0.0318	-22.0	153	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	0.2720	0.2582	5.1	112	-0.02
13	P	Acetone	0.1208	0.0888#	26.4#	107	0.00
14	C	1,1-Dichloroethene	0.4559	0.4185	8.2	108	-0.02
15	T	Tert-Butyl Alcohol	0.0439	0.0397	9.6	114	0.00
16	T	Dimethyl Sulfide	0.2234	0.1983	11.2	101	0.00
17	T	Iodomethane	0.1924	0.1550	19.5	89	0.00
18	P	Methyl acetate	0.2897	0.2402	17.1	103	0.00
19	P	Methylene Chloride	0.2848	0.2548	10.5	111	0.00
20	P	Carbon Disulfide	0.8645	0.7112	17.7	99	0.00
21	T	Acrylonitrile	0.1377	0.1215	11.8	108	0.00
22	P	Methyl Tert Butyl Ether	0.7664	0.7271	5.1	113	0.00
23	P	trans-1,2-Dichloroethene	0.4386	0.4044	7.8	107	0.00
24	T	n-Hexane	0.5696	0.4339	23.8	99	0.00
25	T	Diisopropyl ether	1.1606	1.0097	13.0	106	0.00
26	T	Vinyl Acetate	0.5715	0.5133	10.2	97	0.00
27	P	1,1-Dichloroethane	0.5324	0.4885	8.2	108	0.00
28	T	Ethyl-Tert-Butyl ether	1.0205	0.9264	9.2	112	0.00
29	P	2-Butanone	0.1608	0.1363	15.2	108	0.00
30	T	Propionitrile	0.0522	0.0443	15.1	105	0.00
31	T	2,2-Dichloropropane	0.3887	0.3732	4.0	112	0.00
32	P	cis-1,2-Dichloroethene	0.2915	0.2690	7.7	109	0.00
33	C	Chloroform	0.4516	0.4185	7.3	112	0.00
34	T	1-Bromopropane	0.0479	0.0420	12.3	98	0.00
35	T	Bromochloromethane	0.1819	0.1711	5.9	108	0.00
36	T	Tetrahydrofuran	0.1142	0.0957	16.2	108	0.00
37	S	Dibromofluoromethane	0.2525	0.2657	-5.2	130	0.00
38	P	1,1,1-Trichloroethane	0.3865	0.3719	3.8	112	0.00
39	P	Cyclohexane	0.6110	0.5202	14.8	101	0.00
40	T	1,1-Dichloropropene	0.3558	0.3287	7.6	109	0.00
41	T	Tert-Amyl-Methyl ether	0.7549	0.6996	7.3	115	0.00
42	P	Carbon Tetrachloride	0.3608	0.3485	3.4	114	0.00
43	S	1,2-Dichloroethane-d4	0.2643	0.2804	-6.1	134	0.00
44		Heptane	0.0000	0.0000	0.0	129	0.00
45	P	1,2-Dichloroethane	0.3889	0.3624	6.8	113	0.00
46	P	Benzene	1.1041	0.9712	12.0	109	0.00
47	P	Trichloroethene	0.3106	0.2696	13.2	107	0.00
48	P	Methylcyclohexane	0.4746	0.4068	14.3	102	0.00
49	C	1,2-Dichloropropane	0.3003	0.2743	8.7	108	0.00
50	T	1,4-Dioxane	0.0039	0.0036	8.2	108	0.00
51	P	Bromodichloromethane	0.3422	0.3134	8.4	108	0.00
52	T	Dibromomethane	0.1793	0.1606	10.4	105	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1597	0.1612	-1.0	120	0.00
54	P	4-Methyl-2-Pentanone	0.1383	0.1254	9.3	117	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\043016\9M974067.D Vial: 2
Acq On : 30 Apr 2016 13:43 Operator: ADC
Sample : WG567052-02 50ug/kg CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	0.4266	0.3900	8.6	108	0.00
56	T	Dimethyl Disulfide	0.4566	0.4280	6.2	109	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	127	0.00
58	S	Toluene-d8	1.1917	1.3142	-10.3	129	0.00
59	C	Toluene	1.5215	1.4339	5.8	109	0.00
60	T	Ethyl Methacrylate	0.4632	0.4294	7.3	106	0.00
61	P	trans-1,3-Dichloropropene	0.4953	0.5053	-2.0	112	0.00
62	P	1,1,2-Trichloroethane	0.2995	0.2976	0.7	110	0.00
63	P	2-Hexanone	0.3271	0.2907	11.1	106	0.00
64	T	1,3-Dichloropropane	0.5150	0.4990	3.1	109	0.00
65	P	Tetrachloroethene	0.3227	0.3081	4.5	107	0.00
66	P	Dibromochloromethane	0.3703	0.3686	0.5	111	0.00
67	P	1,2-Dibromoethane	0.3300	0.3129	5.2	111	0.00
68	T	1-Chlorohexane	0.5009	0.4680	6.6	104	0.00
69	P	Chlorobenzene	1.0558	1.0114	4.2	110	0.00
70	T	1,1,1,2-Tetrachloroethane	0.3587	0.3679	-2.6	115	0.00
71	C	Ethylbenzene	0.5680	0.5502	3.1	109	0.00
72	P	m-,p-Xylene	0.7003	0.6697	4.4	110	0.00
73	P	o-Xylene	0.6673	0.6465	3.1	109	0.00
74	P	Styrene	1.1428	1.1000	3.7	108	0.00
75	P	Bromoform	0.2533	0.2574	-1.6	115	0.00
76	P	Isopropylbenzene	1.7358	1.6695	3.8	109	0.00
77	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	126	0.00
78	P	1,1,2,2-Tetrachloroethane	0.7803	0.8770	-12.4	113	0.00
79	S	p-Bromofluorobenzene	0.8660	1.0459	-20.8	128	0.00
80	T	1,2,3-Trichloropropane	0.2481	0.2687	-8.3	116	0.00
81	T	trans-1,4-Dichloro-2-Butene	0.3020	0.3143	-4.1	102	0.00
82	T	n-Propylbenzene	3.7381	3.9746	-6.3	108	0.00
83	T	Bromobenzene	0.8892	0.9459	-6.4	109	0.00
84	T	1,3,5-Trimethylbenzene	2.8463	3.0510	-7.2	109	0.00
85	T	2-Chlorotoluene	2.2325	2.6803	-20.1	121	0.00
86	T	4-Chlorotoluene	2.3351	2.2252	4.7	98	0.00
87	T	a-Methylstyrene	1.4199	1.4562	-2.6	102	0.00
88	T	tert-Butylbenzene	0.6306	0.6766	-7.3	108	0.00
89	T	1,2,4-Trimethylbenzene	3.0832	3.1119	-0.9	110	0.00
90	T	sec-Butylbenzene	3.6589	3.8940	-6.4	108	0.00
91	T	p-Isopropyltoluene	3.0289	3.2599	-7.6	109	0.00
92	P	1,3-Dichlorobenzene	1.7580	1.8272	-3.9	108	0.00
93	P	1,4-Dichlorobenzene	1.7942	1.8220	-1.6	109	0.00
94	T	n-Butylbenzene	2.7865	2.9464	-5.7	108	0.00
95	P	1,2-Dichlorobenzene	1.6724	1.7128	-2.4	108	0.00
96	P	1,2-Dibromo-3-Chloropropane	0.2045	0.2148	-5.0	109	0.00
97	P	1,2,4-Trichlorobenzene	1.2340	1.2824	-3.9	109	0.00
98	T	Hexachlorobutadiene	0.5820	0.5920	-1.7	104	0.00
99	T	Naphthalene	2.9740	3.2525	-9.4	111	0.00
100	T	1,2,3-Trichlorobenzene	1.1697	1.2544	-7.2	111	0.00

(#) = Out of Range SPCC's out = 1 CCC's out = 0
9M974067.D 8260-SL.M Sat Apr 30 14:50:56 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\043016\9M974067.D Vial: 2
Acq On : 30 Apr 2016 13:43 Operator: ADC
Sample : WG567052-02 50ug/kg CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	131	0.00
2	P	Dichlorodifluoromethane	50.0000	48.2698	3.5	110	0.00
3	P	Chloromethane	50.0000	54.9109	-9.8	144	0.00
4	C	Vinyl Chloride	50.0000	46.2519	7.5	104	0.00
5	T	1,3-Butadiene	50.0000	36.9620	26.1#	103	-0.02
6	P	Bromomethane	50.0000	45.9124	8.2	113	0.00
7	P	Chloroethane	50.0000	46.8430	6.3	116	0.00
8	P	Trichlorofluoromethane	50.0000	48.2178	3.6	113	0.00
9	T	Diethyl ether	100.0000	89.4765	10.5	112	0.00
10	T	Isoprene	50.0000	42.3573	15.3	100	-0.02
11	T	Acrolein	50.0000	61.0024	-22.0	153	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	47.4646	5.1	112	-0.02
13	P	Acetone	50.0000	41.2488	17.5	107	0.00
14	C	1,1-Dichloroethene	50.0000	45.8957	8.2	108	-0.02
15	T	Tert-Butyl Alcohol	200.0000	180.9060	9.5	114	0.00
16	T	Dimethyl Sulfide	50.0000	44.3841	11.2	101	0.00
17	T	Iodomethane	50.0000	37.5324	24.9	89	0.00
18	P	Methyl acetate	50.0000	41.4674	17.1	103	0.00
19	P	Methylene Chloride	50.0000	44.7366	10.5	111	0.00
20	P	Carbon Disulfide	50.0000	41.1333	17.7	99	0.00
21	T	Acrylonitrile	50.0000	44.1222	11.8	108	0.00
22	P	Methyl Tert Butyl Ether	50.0000	47.4389	5.1	113	0.00
23	P	trans-1,2-Dichloroethene	50.0000	46.1005	7.8	107	0.00
24	T	n-Hexane	50.0000	38.0919	23.8	99	0.00
25	T	Diisopropyl ether	100.0000	87.0044	13.0	106	0.00
26	T	Vinyl Acetate	50.0000	41.3581	17.3	97	0.00
27	P	1,1-Dichloroethane	50.0000	45.8841	8.2	108	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	90.7746	9.2	112	0.00
29	P	2-Butanone	50.0000	42.4002	15.2	108	0.00
30	T	Propionitrile	100.0000	84.9506	15.0	105	0.00
31	T	2,2-Dichloropropane	50.0000	48.0043	4.0	112	0.00
32	P	cis-1,2-Dichloroethene	50.0000	46.1499	7.7	109	0.00
33	C	Chloroform	50.0000	46.3464	7.3	112	0.00
34	T	1-Bromopropane	50.0000	40.4497	19.1	98	0.00
35	T	Bromochloromethane	50.0000	47.0340	5.9	108	0.00
36	T	Tetrahydrofuran	100.0000	83.8427	16.2	108	0.00
37	S	Dibromofluoromethane	50.0000	52.6192	-5.2	130	0.00
38	P	1,1,1-Trichloroethane	50.0000	48.1107	3.8	112	0.00
39	P	Cyclohexane	50.0000	42.5765	14.8	101	0.00
40	T	1,1-Dichloropropene	50.0000	46.2008	7.6	109	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	92.6713	7.3	115	0.00
42	P	Carbon Tetrachloride	50.0000	48.2999	3.4	114	0.00
43	S	1,2-Dichloroethane-d4	50.0000	53.0305	-6.1	134	0.00
44		Heptane	-1.0000	0.0000	0.0	129	0.00
45	P	1,2-Dichloroethane	50.0000	46.5926	6.8	113	0.00
46	P	Benzene	50.0000	43.9786	12.0	109	0.00
47	P	Trichloroethene	50.0000	43.4076	13.2	107	0.00
48	P	Methylcyclohexane	50.0000	42.8562	14.3	102	0.00
49	C	1,2-Dichloropropane	50.0000	45.6748	8.7	108	0.00
50	T	1,4-Dioxane	200.0000	183.3842	8.3	108	0.00
51	P	Bromodichloromethane	50.0000	45.7935	8.4	108	0.00
52	T	Dibromomethane	50.0000	44.8077	10.4	105	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	50.4776	-1.0	120	0.00
54	P	4-Methyl-2-Pentanone	50.0000	45.3595	9.3	117	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\043016\9M974067.D Vial: 2
Acq On : 30 Apr 2016 13:43 Operator: ADC
Sample : WG567052-02 50ug/kg CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	45.7067	8.6	108	0.00
56	T	Dimethyl Disulfide	50.0000	46.8760	6.2	109	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	127	0.00
58	S	Toluene-d8	50.0000	55.1425	-10.3	129	0.00
59	C	Toluene	50.0000	47.1209	5.8	109	0.00
60	T	Ethyl Methacrylate	50.0000	46.3467	7.3	106	0.00
61	P	trans-1,3-Dichloropropene	50.0000	51.0065	-2.0	112	0.00
62	P	1,1,2-Trichloroethane	50.0000	49.6752	0.6	110	0.00
63	P	2-Hexanone	50.0000	44.4432	11.1	106	0.00
64	T	1,3-Dichloropropane	50.0000	48.4463	3.1	109	0.00
65	P	Tetrachloroethene	50.0000	47.7356	4.5	107	0.00
66	P	Dibromochloromethane	50.0000	49.7746	0.5	111	0.00
67	P	1,2-Dibromoethane	50.0000	47.4188	5.2	111	0.00
68	T	1-Chlorohexane	50.0000	46.7134	6.6	104	0.00
69	P	Chlorobenzene	50.0000	47.8946	4.2	110	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	51.2834	-2.6	115	0.00
71	C	Ethylbenzene	50.0000	48.4336	3.1	109	0.00
72	P	m-,p-Xylene	100.0000	95.6371	4.4	110	0.00
73	P	o-Xylene	50.0000	48.4386	3.1	109	0.00
74	P	Styrene	50.0000	48.1309	3.7	108	0.00
75	P	Bromoform	50.0000	53.2241	-6.4	115	0.00
76	P	Isopropylbenzene	50.0000	48.0902	3.8	109	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	126	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	52.1559	-4.3	113	0.00
79	S	p-Bromofluorobenzene	50.0000	60.3822	-20.8	128	0.00
80	T	1,2,3-Trichloropropane	50.0000	54.1449	-8.3	116	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	52.0446	-4.1	102	0.00
82	T	n-Propylbenzene	50.0000	53.1625	-6.3	108	0.00
83	T	Bromobenzene	50.0000	53.1921	-6.4	109	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	53.5959	-7.2	109	0.00
85	T	2-Chlorotoluene	50.0000	60.0279	-20.1	121	0.00
86	T	4-Chlorotoluene	50.0000	47.6453	4.7	98	0.00
87	T	a-Methylstyrene	50.0000	51.2783	-2.6	102	0.00
88	T	tert-Butylbenzene	50.0000	53.6445	-7.3	108	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	56.2737	-12.5	110	0.00
90	T	sec-Butylbenzene	50.0000	53.2128	-6.4	108	0.00
91	T	p-Isopropyltoluene	50.0000	53.8134	-7.6	109	0.00
92	P	1,3-Dichlorobenzene	50.0000	51.9701	-3.9	108	0.00
93	P	1,4-Dichlorobenzene	50.0000	50.7769	-1.6	109	0.00
94	T	n-Butylbenzene	50.0000	52.8693	-5.7	108	0.00
95	P	1,2-Dichlorobenzene	50.0000	51.2086	-2.4	108	0.00
96	P	1,2-Dibromo-3-Chloropropane	50.0000	52.3268	-4.7	109	0.00
97	P	1,2,4-Trichlorobenzene	50.0000	51.9613	-3.9	109	0.00
98	T	Hexachlorobutadiene	50.0000	50.8584	-1.7	104	0.00
99	T	Naphthalene	50.0000	54.6838	-9.4	111	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	53.6203	-7.2	111	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M974067.D 8260-SL.M Sat Apr 30 14:50:46 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\1\DATA\040616\9M973592.D          Vial: 1
Acq On    :  6 Apr 2016   9:33                        Operator: ADC
Sample    : WG563259-01 BFB 50ng 8260                 Inst    : hpms9
Misc      : 7,1 STD75485                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 04/06/16  HPMS9
```

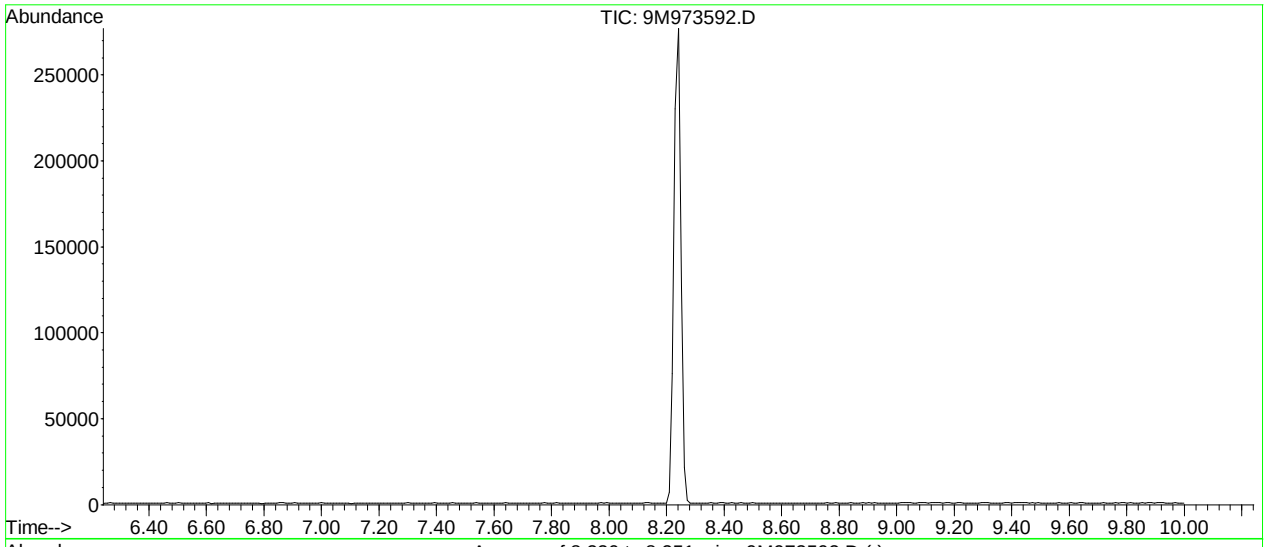

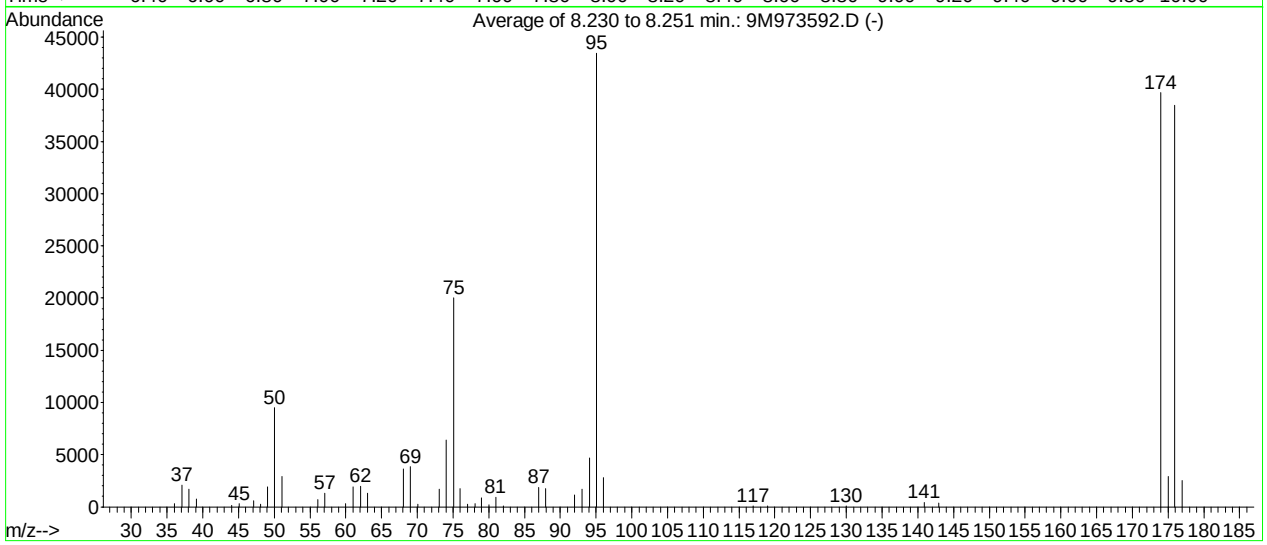

AutoFind: Scans 304, 305, 306; Background Corrected with Scan 299

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.9	9512	PASS
75	95	30	60	46.0	20002	PASS
95	95	100	100	100.0	43469	PASS
96	95	5	9	6.5	2809	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	91.3	39688	PASS
175	174	5	9	7.4	2925	PASS
176	174	95	101	96.9	38458	PASS
177	176	5	9	6.6	2534	PASS

9M973592.D 8260-SL.M Thu Apr 07 13:32:25 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\043016\9M974065.D          Vial: 1
Acq On    : 30 Apr 2016  12:43                        Operator: ADC
Sample    : WG567052-01 BFB 50ng 8260                 Inst    : hpms9
Misc      : 7,1 STD75485                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 04/06/16  HPMS9
```

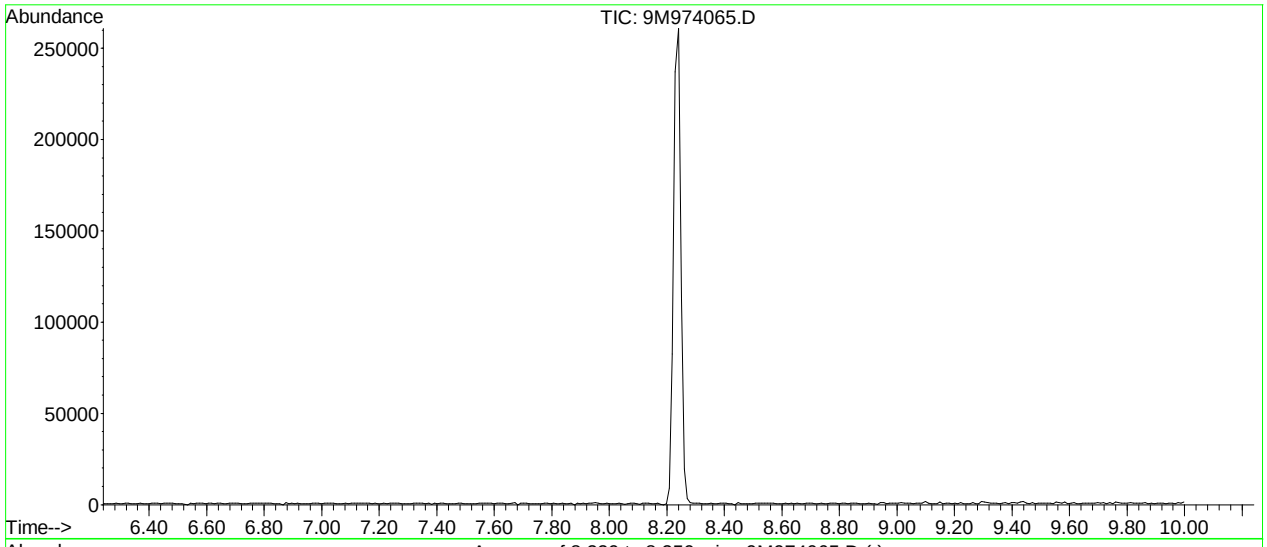

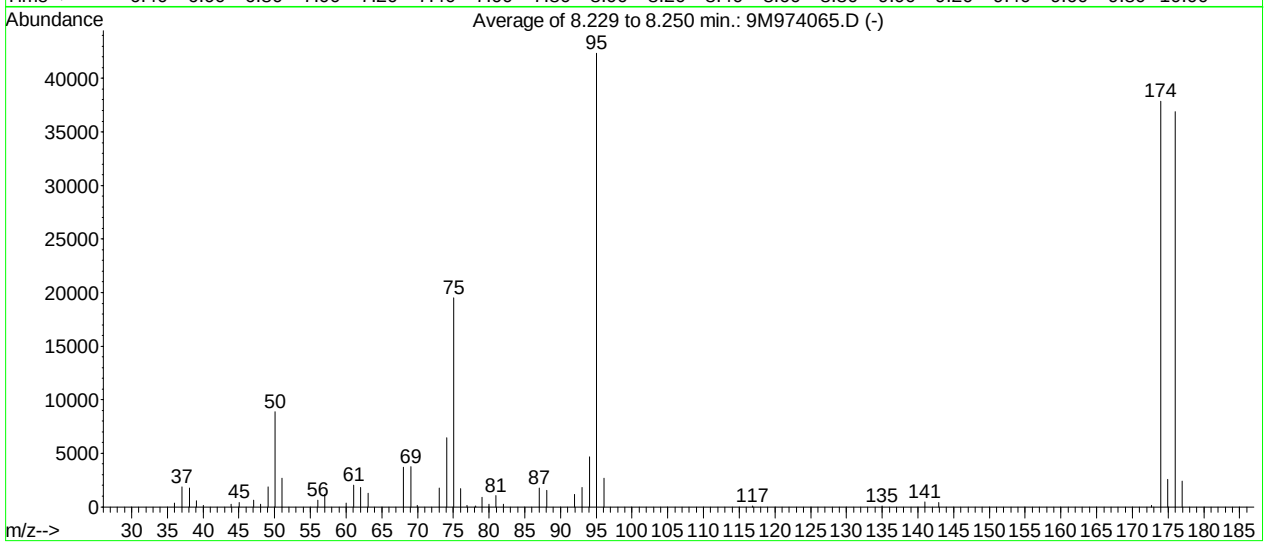

AutoFind: Scans 304, 305, 306; Background Corrected with Scan 299

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.9	8872	PASS
75	95	30	60	46.1	19506	PASS
95	95	100	100	100.0	42357	PASS
96	95	5	9	6.4	2690	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	89.4	37858	PASS
175	174	5	9	6.8	2593	PASS
176	174	95	101	97.4	36877	PASS
177	176	5	9	6.5	2391	PASS

9M974065.D 8260-SL.M Sat Apr 30 14:51:10 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\043016\9M974069.D Vial: 3
Acq On : 30 Apr 2016 14:45 Operator: ADC
Sample : WG567003-01 BLK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 04 12:27:40 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	641587	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	455753	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.74	152	207986	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	168075	51.8706 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 103.74%		
43) 1,2-Dichloroethane-d4	10.44	65	182497	53.8013 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 107.60%		
58) Toluene-d8	12.82	98	608757	56.0451 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 112.10%		
79) p-Bromofluorobenzene	16.22	95	223820	62.1296 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 124.26%#		

Target Compounds

					Qvalue
13) Acetone	6.39	43	3338	Below Cal	98
36) Tetrahydrofuran	9.77	42	3716	2.5360 ug/kg	81
56) Dimethyl Disulfide	12.82	94	15883	2.7112 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.08	105	4084	Below Cal	90

(#) = qualifier out of range (m) = manual integration
9M974069.D 8260-SL.M Wed May 04 12:27:41 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\043016\9M974069.D Vial: 3
Acq On : 30 Apr 2016 14:45 Operator: ADC
Sample : WG567003-01 BLK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 4 12:27 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

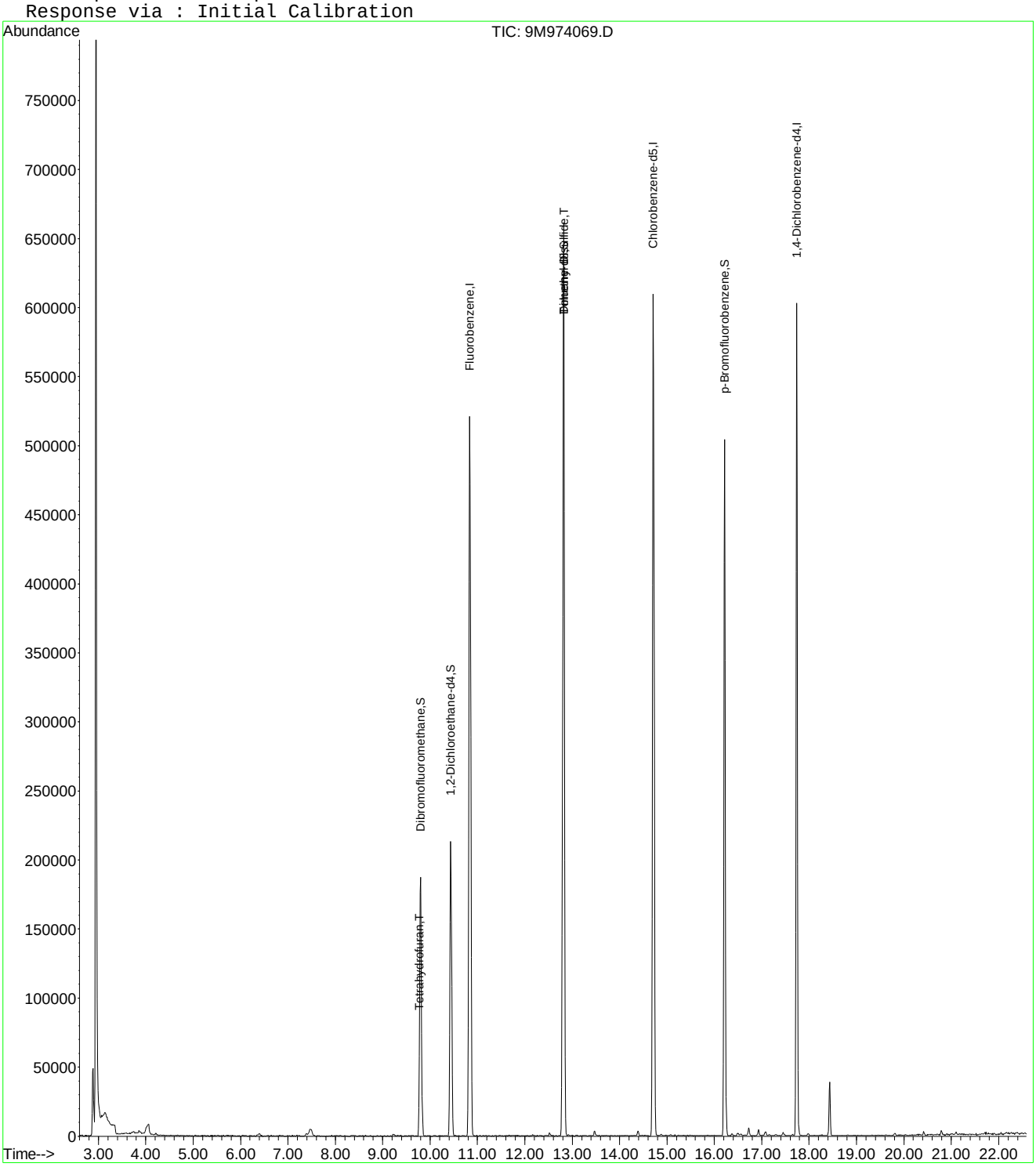

9M974069.D 8260-SL.M Wed May 04 12:27:41 2016 Page 2

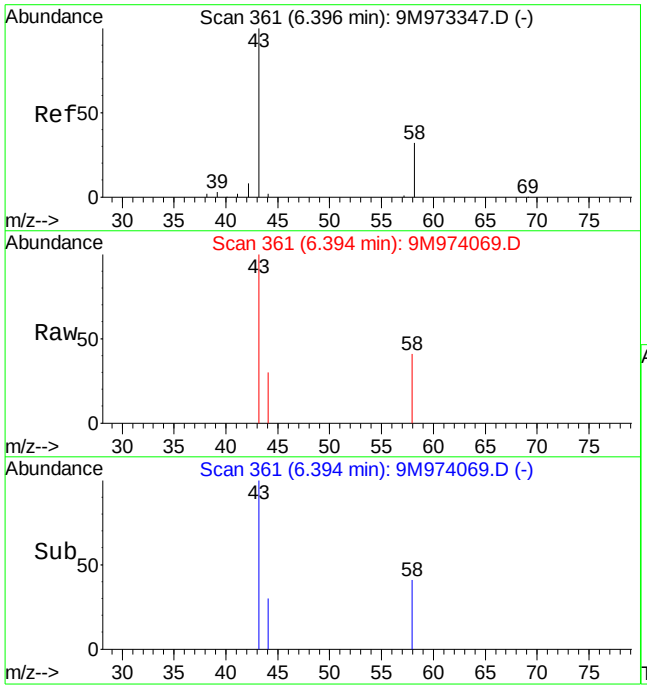

#13
Acetone
Concen: Below Cal
RT: 6.39 min Scan# 361
Delta R.T. 0.01 min
Lab File: 9M974069.D
Acq: 30 Apr 2016 14:45

Tgt Ion: 43 Resp: 3338

Ion	Ratio	Lower	Upper
43	100		
58	32.4	20.2	47.2

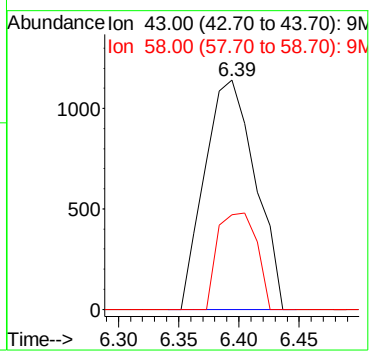

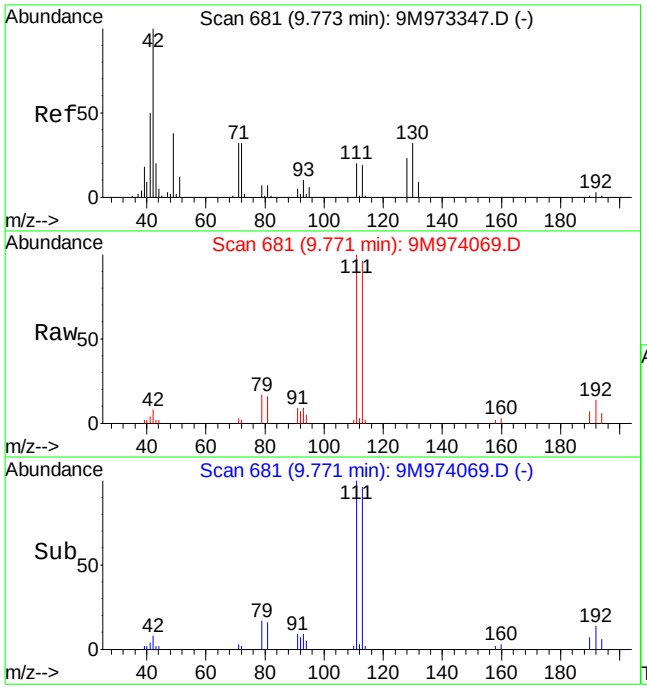

#36
Tetrahydrofuran
Concen: 2.54 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. 0.00 min
Lab File: 9M974069.D
Acq: 30 Apr 2016 14:45

Tgt Ion: 42 Resp: 3716

Ion	Ratio	Lower	Upper
42	100		
72	22.4	19.8	46.2
71	19.8	18.3	42.7

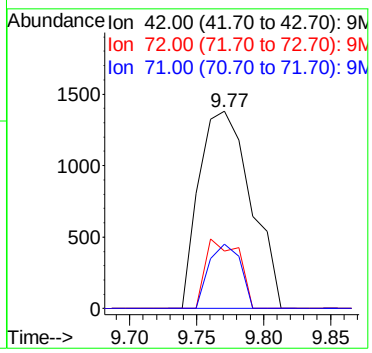

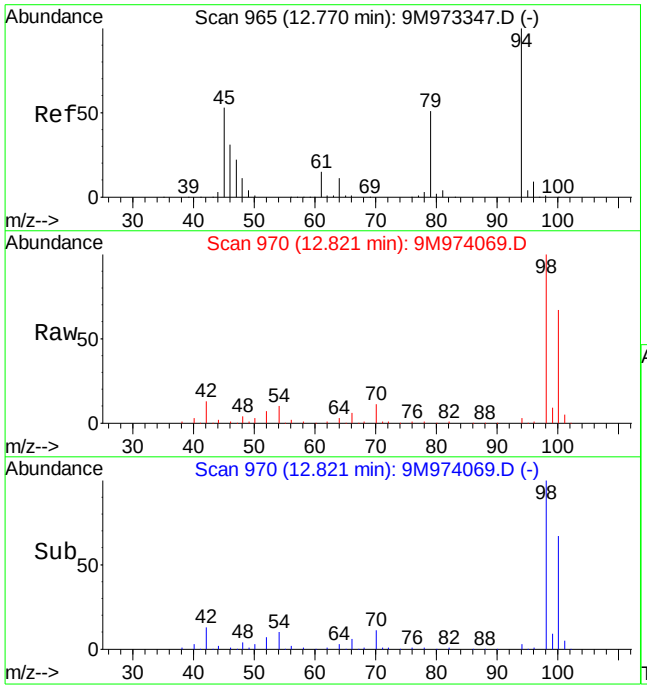

#56
Dimethyl Disulfide
Concen: 2.71 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M974069.D
Acq: 30 Apr 2016 14:45

Tgt Ion: 94 Resp: 15883

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

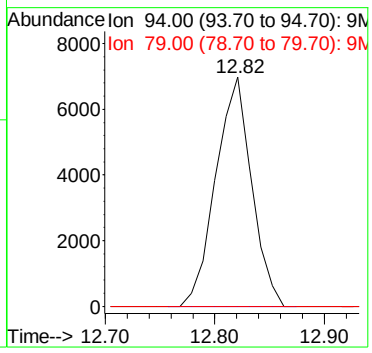

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\043016\9M974074.D Vial: 8
Acq On : 30 Apr 2016 17:17 Operator: ADC
Sample : WG567003-02 20ug/kg LCS 8260 Inst : hpms9
Misc : 7,1 STD75739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 30 17:40:36 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	593466	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	430069	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.74	152	198992	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	161844	53.9976 ug/kg	-0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 108.00%		
43) 1,2-Dichloroethane-d4	10.44	65	175277	55.8627 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 111.72%		
58) Toluene-d8	12.82	98	572092	55.8150 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 111.62%		
79) p-Bromofluorobenzene	16.22	95	208945	60.6220 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 121.24%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	87670	19.2583 ug/kg	98
3) Chloromethane	3.74	50	90126	21.5360 ug/kg	99
4) Vinyl Chloride	3.98	62	60563	21.5737 ug/kg	94
5) 1,3-Butadiene	4.02	54	455018	225.3207 ug/kg	93
6) Bromomethane	4.87	94	44363	17.2897 ug/kg	100
7) Chloroethane	5.03	64	44276	17.7155 ug/kg	98
8) Trichlorofluoromethane	5.52	101	90063	17.0328 ug/kg	98
9) Diethyl ether	6.05	59	281035	90.3786 ug/kg	97
10) Isoprene	6.08	67	83474	20.0563 ug/kg	99
11) Acrolein	6.29	56	39362	127.3090 ug/kg	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	55904	17.3153 ug/kg	98
13) Acetone	6.39	43	23909	15.5170 ug/kg	97
14) 1,1-Dichloroethene	6.60	61	86022	15.8956 ug/kg	98
15) Tert-Butyl Alcohol	6.73	59	112833	216.7642 ug/kg	99
16) Dimethyl Sulfide	6.87	62	69873	26.3538 ug/kg	96
17) Iodomethane	7.12	142	23701	11.8424 ug/kg	97
18) Methyl acetate	7.13	43	52793	15.3561 ug/kg	98
19) Methylene Chloride	7.39	84	57118	16.8966 ug/kg	94
20) Carbon Disulfide	7.44	76	157288	15.3282 ug/kg	100
21) Acrylonitrile	7.58	53	29313	17.9391 ug/kg	99
22) Methyl Tert Butyl Ether	7.61	73	170586	18.7537 ug/kg	98
23) trans-1,2-Dichloroethene	7.84	61	89316	17.1567 ug/kg	99
24) n-Hexane	7.91	57	97245	14.3847 ug/kg	99
25) Diisopropyl ether	8.25	45	1198823	87.0274 ug/kg	99
26) Vinyl Acetate	8.43	43	150868	20.9242 ug/kg	97
27) 1,1-Dichloroethane	8.46	63	103852	16.4354 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.82	59	1039280	85.7992 ug/kg	99
29) 2-Butanone	9.02	43	34599	18.1337 ug/kg	100
30) Propionitrile	9.13	54	55286	89.2742 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	77689	16.8375 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	60152	17.3868 ug/kg	100
33) Chloroform	9.51	83	90595	16.9034 ug/kg	100
34) 1-Bromopropane	9.64	122	13735	22.6613 ug/kg	95
35) Bromochloromethane	9.74	130	36860	17.0772 ug/kg	97
36) Tetrahydrofuran	9.77	42	120018	88.5491 ug/kg	97
38) 1,1,1-Trichloroethane	10.03	97	79467	17.3238 ug/kg	99
39) Cyclohexane	10.07	56	118734	16.3733 ug/kg	98
40) 1,1-Dichloropropene	10.23	75	68468	16.2147 ug/kg	99
41) Tert-Amyl-Methyl ether	10.33	73	868904	96.9726 ug/kg	98
42) Carbon Tetrachloride	10.38	117	72200	16.8617 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\043016\9M974074.D Vial: 8
Acq On : 30 Apr 2016 17:17 Operator: ADC
Sample : WG567003-02 20ug/kg LCS 8260 Inst : hpms9
Misc : 7,1 STD75739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 30 17:40:36 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.55	62	83267	18.0406 ug/kg	97
46)	Benzene	10.59	78	216489	16.5193 ug/kg	99
47)	Trichloroethene	11.34	130	60161	16.3208 ug/kg	98
48)	Methylcyclohexane	11.43	83	94588	16.7927 ug/kg	96
49)	1,2-Dichloropropane	11.55	63	61893	17.3664 ug/kg	97
50)	1,4-Dioxane	11.85	88	12093	261.6044 ug/kg	94
51)	Bromodichloromethane	11.86	83	67709	16.6722 ug/kg	99
52)	Dibromomethane	11.95	174	34730	16.3219 ug/kg	98
53)	2-Chloroethyl Vinyl Ether	12.16	63	38158	20.1343 ug/kg	97
54)	4-Methyl-2-Pentanone	12.19	58	28793	17.5469 ug/kg	98
55)	cis-1,3-Dichloropropene	12.49	75	89927	17.7593 ug/kg	98
56)	Dimethyl Disulfide	12.76	94	110843	20.4547 ug/kg	95
59)	Toluene	12.92	91	227159	17.3578 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	72267	18.1382 ug/kg	99
61)	trans-1,3-Dichloropropene	13.09	75	77105	18.0980 ug/kg	99
62)	1,1,2-Trichloroethane	13.31	97	47219	18.3279 ug/kg	96
63)	2-Hexanone	13.24	43	47076	16.7333 ug/kg	94
64)	1,3-Dichloropropane	13.61	76	86752	19.5831 ug/kg	98
65)	Tetrachloroethene	13.74	164	45403	16.3584 ug/kg	97
66)	Dibromochloromethane	14.00	129	57796	18.1474 ug/kg	97
67)	1,2-Dibromoethane	14.27	107	51651	18.1995 ug/kg	98
68)	1-Chlorohexane	14.34	91	75889	17.6139 ug/kg	99
69)	Chlorobenzene	14.76	112	161956	17.8335 ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.79	131	57882	18.7602 ug/kg	96
71)	Ethylbenzene	14.78	106	85435	17.4874 ug/kg	100
72)	m-,p-Xylene	14.88	106	204501	33.9502 ug/kg	98
73)	o-Xylene	15.44	106	103504	18.0328 ug/kg	100
74)	Styrene	15.48	104	162253	16.5071 ug/kg	97
75)	Bromoform	15.98	173	35238	17.8985 ug/kg	99
76)	Isopropylbenzene	15.86	105	255925	17.1413 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.08	83	61332	18.5558 ug/kg	99
80)	1,2,3-Trichloropropane	16.27	110	20699	20.9596 ug/kg#	34
81)	trans-1,4-Dichloro-2-Buten	16.32	53	18412	15.3192 ug/kg#	1
82)	n-Propylbenzene	16.37	91	286285	19.2432 ug/kg	99
83)	Bromobenzene	16.50	156	67688	19.1273 ug/kg	94
84)	1,3,5-Trimethylbenzene	16.56	105	215400	19.0154 ug/kg	100
85)	2-Chlorotoluene	16.65	91	187057	21.0528 ug/kg	99
86)	4-Chlorotoluene	16.69	91	165429	17.8005 ug/kg	99
87)	a-Methylstyrene	16.97	118	114974	20.3460 ug/kg	100
88)	tert-Butylbenzene	17.02	134	49208	19.6071 ug/kg	88
89)	1,2,4-Trimethylbenzene	17.07	105	212589	18.9482 ug/kg	99
90)	sec-Butylbenzene	17.29	105	272283	18.6983 ug/kg	100
91)	p-Isopropyltoluene	17.45	119	217200	18.0183 ug/kg	99
92)	1,3-Dichlorobenzene	17.65	146	125817	17.9830 ug/kg	99
93)	1,4-Dichlorobenzene	17.78	146	131637	18.4353 ug/kg	97
94)	n-Butylbenzene	17.98	91	189547	17.0918 ug/kg	99
95)	1,2-Dichlorobenzene	18.28	146	121120	18.1978 ug/kg	97
96)	1,2-Dibromo-3-Chloropropan	19.28	157	15478	22.8508 ug/kg	96
97)	1,2,4-Trichlorobenzene	20.42	180	77737	15.8288 ug/kg	99
98)	Hexachlorobutadiene	20.57	225	39408	17.0132 ug/kg	98
99)	Naphthalene	20.80	128	219817	18.5721 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.10	180	80649	17.3239 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\043016\9M974074.D Vial: 8
Acq On : 30 Apr 2016 17:17 Operator: ADC
Sample : WG567003-02 20ug/kg LCS 8260 Inst : hpms9
Misc : 7,1 STD75739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 30 17:40 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

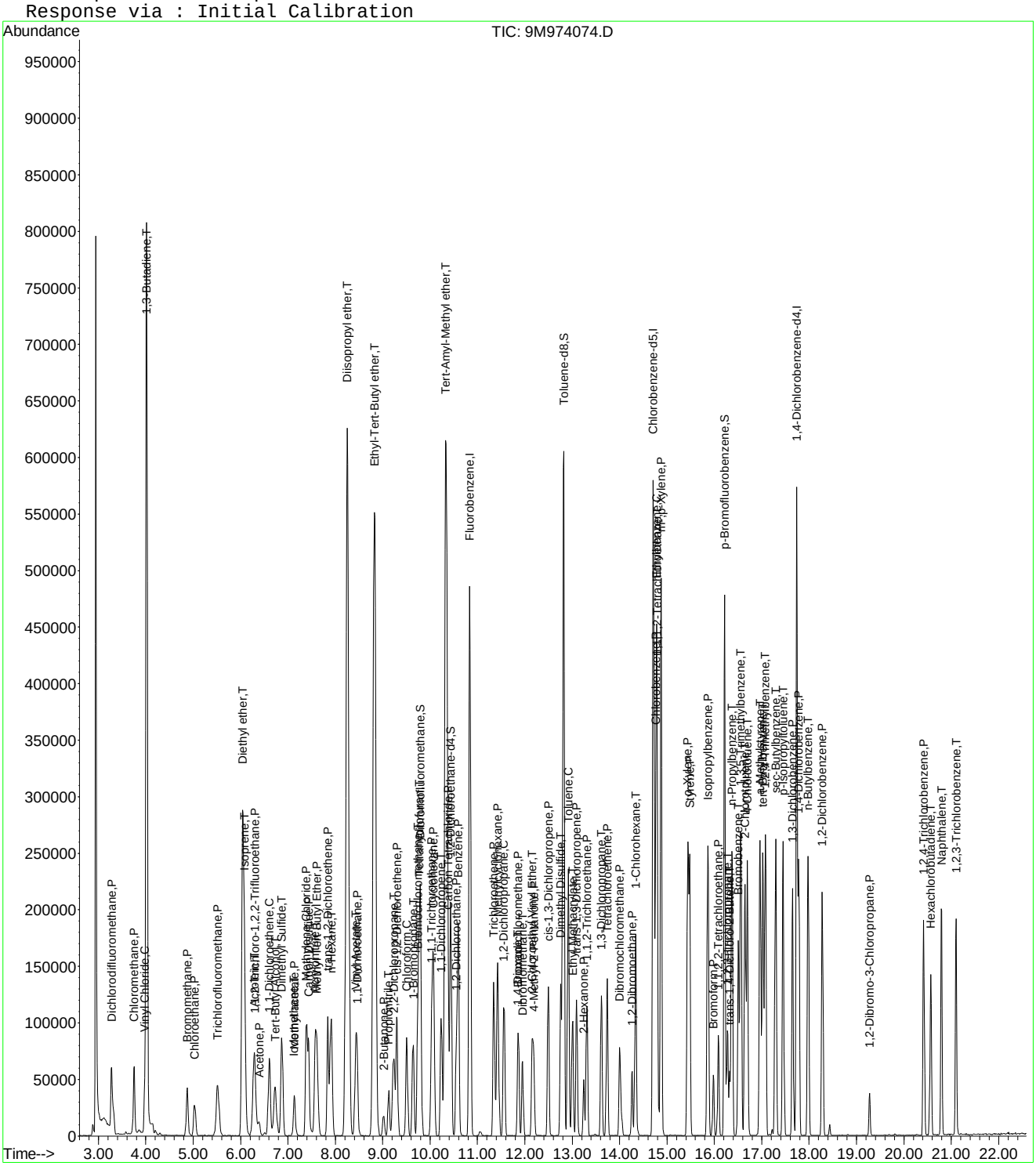

9M974074.D 8260-SL.M Sat Apr 30 17:40:37 2016 Page 3

2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW19SW(5-5.5)210416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:50
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567013	**Analyst:**	JWR	**Run Date:**	05/03/2016 20:46
Collect Date:	04/21/2016 17:00	**Dilution:**	1	**File ID:**	1LM.LM34704
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.32	U	4.63	2.32	1.16

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW19SW(10-10.5)210416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:50
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567013	**Analyst:**	JWR	**Run Date:**	05/03/2016 21:05
Collect Date:	04/21/2016 17:30	**Dilution:**	1	**File ID:**	1LM.LM34705
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.44	U	4.90	2.44	1.22

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW19SW(30-30.5)220416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:50
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567013	**Analyst:**	JWR	**Run Date:**	05/03/2016 21:24
Collect Date:	04/22/2016 09:00	**Dilution:**	1	**File ID:**	1LM.LM34706
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.42	U	4.85	2.42	1.21

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW19SW(30-30.5)220416DUP	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:50
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567013	**Analyst:**	JWR	**Run Date:**	05/03/2016 21:43
Collect Date:	04/22/2016 09:00	**Dilution:**	1	**File ID:**	1LM.LM34707
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.46	U	4.93	2.46	1.23

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW19SW(40-40.5)220416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:50
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567013	**Analyst:**	JWR	**Run Date:**	05/03/2016 22:59
Collect Date:	04/22/2016 09:05	**Dilution:**	5	**File ID:**	1LM.LM34711
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	80.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	124		24.1	12.1	6.04

Certificate of Analysis

Sample #:	L16041363-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW19SW(20-20.5)220416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:50
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567013	**Analyst:**	JWR	**Run Date:**	05/03/2016 23:18
Collect Date:	04/21/2016 18:00	**Dilution:**	1	**File ID:**	1LM.LM34712
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	8.74		4.90	2.44	1.22

Certificate of Analysis

Sample #:	L16041363-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW19SW(60-61)220416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:50
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567013	**Analyst:**	JWR	**Run Date:**	05/03/2016 19:50
Collect Date:	04/22/2016 11:15	**Dilution:**	1	**File ID:**	1LM.LM34701
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	75.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.54	U	5.07	2.54	1.27

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW19SW(60-61)220416MS	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:50
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567013	**Analyst:**	JWR	**Run Date:**	05/03/2016 20:09
Collect Date:	04/22/2016 11:15	**Dilution:**	1	**File ID:**	1LM.LM34702
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	75.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3.26	J	5.05	2.52	1.26

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-09	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW19SW(60-61)220416MSD	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:50
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567013	**Analyst:**	JWR	**Run Date:**	05/03/2016 20:28
Collect Date:	04/22/2016 11:15	**Dilution:**	1	**File ID:**	1LM.LM34703
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	75.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3.30	J	5.05	2.52	1.26

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-10	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW19SW(50-50.5)220416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:50
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567013	**Analyst:**	JWR	**Run Date:**	05/03/2016 23:37
Collect Date:	04/22/2016 11:11	**Dilution:**	5	**File ID:**	1LM.LM34713
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	80.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	170		24.3	12.2	6.08

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

MICROBAC

Semivolatile Sample Extract Log

Parameter: Perchlorate
SOP #: HPLC06
Analyst: JWR
Spike/Surrogate analyst: JWR
Surrogate #: NA
Spike # A: STD75513
Ext Solvent: DI-H2O
Ext Solvent: NA
Ext Disk: NA

Matrix: Soils
Rev #: 08
Date/Time Extracted: 04/29/16/1350
Witness: EC 4-29-16

Spike # B: NA
Lot #: NA
Lot #: NA
Lot #: NA

Extraction Work Group: WG567010
Analytical Work Group: WG567013
Run ID: R4562978

Pipetter(s): Eppendorf #403
Analytical Balance ID: BAL021
Reagent: Tubes Lot #: RGT34011
Reagent: Sand Lot #: COA18813
Other: IS Lot #: COA18071

Color Code
T = Transparent
C = Colored
O = Opaque

	Sample ID	Test Code	pH	Initial Wt / Vol	JWR ~~Surrogate~~ IS Amount	Amount Spike	Final Volume	Extract Color	Comments
1	WG567010-01	6850		5.006g	0.250ml	1.0ml	50ml		MCT (10,000 us)(2ug/kg)
2	WG567010-02			5.002g		NA			Blank
3	WG567010-03			5.005g		1.0ml			LCS (2ug/kg)
4	L16041363-01			5.154g		NA			
5	-02			5.112g		NA			
6	-03			5.153g		NA			
7	-04			5.115g		NA			
8	-05			5.128g		NA			
9	-06			5.164g		NA			
10	-07 RS			5.196g		NA			WG567010-04 Ref
11	-08 MS			5.217g		1.0ml			WG567010-05 MS (@2ug/kg)
12	-09 MSD			5.212g		1.0ml			WG567010-06 MSD (@2ug/kg)
13	-10			5.108g		NA			
14									
15									
16									
17									
18									
19									
20					JWR 04/29/16				
21									
22									
23									
24									

Reviewed by: EC 4-29-16

Analytical WG567013 (soils)

Perchlorate Conductivity Check

(perchlorate1)

Conductivity Probe Calibration Check: 1409 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG567010-01 MCT	9,930.	
WG567010-02 Blank	4.10	
WG567010-03 LCS	3.81	
L16041363-01	5.35	
-02	6.08	
-03	5.45	
-04	5.71	
-05	6.31	
-06	16.03	
-07 RS	2.95	
-08 MS	2.89	
-09 MSD	3.26	
-10	2.78	

Analyst: John Richards

Date/Time: 05/02/16 / 1548

DCN#118149

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

Page: 1 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

Page: 2 Approved: 05-MAY-16

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
04-MAY-2016
John Richards

Secondary Reviewer:
05-MAY-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG567013

Login Number: L16041363

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW19SW(5-5.5)210416	01	04/21/16					04/29/2016	7.9	28		05/03/16	4.3	28	
18CPTMW19SW(10-10.5)2104	02	04/21/16					04/29/2016	7.8	28		05/03/16	4.3	28	
18CPTMW19SW(30-30.5)2204	03	04/22/16					04/29/2016	7.2	28		05/03/16	4.3	28	
18CPTMW19SW(30-30.5)2204	04	04/22/16					04/29/2016	7.2	28		05/03/16	4.3	28	
18CPTMW19SW(40-40.5)2204	05	04/22/16					04/29/2016	7.2	28		05/03/16	4.4	28	
18CPTMW19SW(20-20.5)2204	06	04/21/16					04/29/2016	7.8	28		05/03/16	4.4	28	
18CPTMW19SW(60-61)220416	07	04/22/16					04/29/2016	7.1	28		05/03/16	4.3	28	
18CPTMW19SW(60-61)220416	08	04/22/16					04/29/2016	7.1	28		05/03/16	4.3	28	
18CPTMW19SW(60-61)220416	09	04/22/16					04/29/2016	7.1	28		05/03/16	4.3	28	
18CPTMW19SW(50-50.5)2204	10	04/22/16					04/29/2016	7.1	28		05/03/16	4.4	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4747291
Report generated 05/10/2016 10:40

METHOD BLANK SUMMARY

Login Number: L16041363
Blank File ID: 1LM.LM34699
Prep Date: 04/29/16 13:50
Analyzed Date: 05/03/16 19:12
Analyst: JWR

Work Group: WG567013
Blank Sample ID: WG567013-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG567013-07	1LM.LM34697	05/03/16 18:34	01
MCT	WG567013-01	1LM.LM34698	05/03/16 18:53	01
LCS	WG567013-03	1LM.LM34700	05/03/16 19:31	01
18CPTMW19SW(60-61)220416	L16041363-07	1LM.LM34701	05/03/16 19:50	01
18CPTMW19SW(60-61)220416MS	L16041363-08	1LM.LM34702	05/03/16 20:09	01
18CPTMW19SW(60-61)220416MSD	L16041363-09	1LM.LM34703	05/03/16 20:28	01
18CPTMW19SW(5-5.5)210416	L16041363-01	1LM.LM34704	05/03/16 20:46	01
18CPTMW19SW(10-10.5)210416	L16041363-02	1LM.LM34705	05/03/16 21:05	01
18CPTMW19SW(30-30.5)220416	L16041363-03	1LM.LM34706	05/03/16 21:24	01
18CPTMW19SW(30-30.5)220416DUP	L16041363-04	1LM.LM34707	05/03/16 21:43	01
QCMRL	WG567013-08	1LM.LM34709	05/03/16 22:21	01
18CPTMW19SW(40-40.5)220416	L16041363-05	1LM.LM34711	05/03/16 22:59	DL01
18CPTMW19SW(20-20.5)220416	L16041363-06	1LM.LM34712	05/03/16 23:18	01
18CPTMW19SW(50-50.5)220416	L16041363-10	1LM.LM34713	05/03/16 23:37	DL01
QCMRL	WG567013-09	1LM.LM34715	05/04/16 00:15	01

Report Name: BLANK_SUMMARY
PDF File ID: 4747292
Report generated 05/10/2016 10:40

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16041363 Prep Date: 04/29/16 13:50 Sample ID: WG567013-02
Instrument ID: LCMS1 Run Date: 05/03/16 19:12 Prep Method: 6850
File ID: 1LM.LM34699 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567013 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	1.00	4.00	1.00	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4747293
10-MAY-2016 10:40

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16041363 Run Date: 05/03/2016 Sample ID: WG567013-03
Instrument ID: LCMS1 Run Time: 19:31 Prep Method: 6850
File ID: 1LM.LM34700 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567013 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD75512 Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	2.00	2.04	102	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4747294
Report generated: 05/10/2016 10:40

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16041363 Cal ID: LCMS1- 03-MAY-16 Worknum: WG567013
Instrument ID: LCMS1 Contract #: Prep Method: 6850
Parent ID: L16041363-07 File ID: 1LM.LM34701 Dil: 1 Method: 6850
Sample ID: L16041363-08 MS File ID: 1LM.LM34702 Dil: 1 Matrix: Soil
Sample ID: L16041363-09 MSD File ID: 1LM.LM34703 Dil: 1 Units: ug/kg
Percent Solid: 75.9

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Perchlorate	U	2.53	3.26	129	2.53	3.30	131	1.25	80 - 120	15	*

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4747295
Report generated 05/10/2016 10:40

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16041363
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4747297
Report generated 05/10/2016 10:40

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16041363

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4747297
Report generated 05/10/2016 10:40

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16041363
Analytical Method: 6850

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4747297
Report generated 05/10/2016 10:40

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16041363

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008

PDF File ID: 4747297

Report generated 05/10/2016 10:40

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16041363 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4747298
Report generated 05/10/2016 10:40

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16041363
Run Date: 05/03/2016
Sample ID: WG567321-01
Instrument ID: LCMS1
Run Time: 17:56
Method: 6850
File ID: 1LM.LM34695
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG567013
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4747300
Report generated 05/10/2016 10:40

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16041363
Run Date: 05/03/2016
Sample ID: WG567321-04
Instrument ID: LCMS1
Run Time: 22:40
Method: 6850
File ID: 1LM.LM34710
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG567013
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4747300
Report generated 05/10/2016 10:40

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16041363
Run Date: 05/04/2016
Sample ID: WG567321-06
Instrument ID: LCMS1
Run Time: 00:34
Method: 6850
File ID: 1LM.LM34716
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG567013
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4747300
Report generated 05/10/2016 10:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041363
Run Date: 05/03/2016
Sample ID: WG567321-02
Instrument ID: LCMS1
Run Time: 18:15
Method: 6850
File ID: 1LM.LM34696
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG567013
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/kg	1.70	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4747299
Report generated 05/10/2016 10:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041363
Run Date: 05/03/2016
Sample ID: WG567321-03
Instrument ID: LCMS1
Run Time: 22:02
Method: 6850
File ID: 1LM.LM34708
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG567013
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.00	ug/kg	1.69	0	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4747299
Report generated 05/10/2016 10:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041363
Run Date: 05/03/2016
Sample ID: WG567321-05
Instrument ID: LCMS1
Run Time: 23:56
Method: 6850
File ID: 1LM.LM34714
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG567013
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.00	ug/kg	1.69	0	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4747299
Report generated 05/10/2016 10:40

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16041363 Run Date: 05/03/2016 Sample ID: WG567013-07
Instrument ID: LCMS1 Run Time: 18:34 Prep Method: 6850
File ID: 1LM.LM34697 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567013 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.07	104	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4747296
Report generated 05/10/2016 10:40

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16041363 Run Date: 05/03/2016 Sample ID: WG567013-08
Instrument ID: LCMS1 Run Time: 22:21 Prep Method: 6850
File ID: 1LM.LM34709 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567013 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.08	104	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4747296
Report generated 05/10/2016 10:40

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16041363 Run Date: 05/04/2016 Sample ID: WG567013-09
Instrument ID: LCMS1 Run Time: 00:15 Prep Method: 6850
File ID: 1LM.LM34715 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567013 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.04	102	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4747296
Report generated 05/10/2016 10:40

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16041363
Instrument ID: LCMS1
Workgroup (AAB#): WG567013

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16041363-04	1.00	01	560000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4747301
Report generated 05/10/2016 10:40

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16041363
Instrument ID: LCMS1
Workgroup (AAB#): WG567013

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16041363-07	1.00	01	511000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4747301
Report generated 05/10/2016 10:40

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16041363
Instrument ID: LCMS1
Workgroup (AAB#): WG567013

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
WG567013-02	1.00	01	509000
WG567013-03	1.00	01	500000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4747301
Report generated 05/10/2016 10:40

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16041363
Instrument ID: LCMS1
Workgroup (AAB#): WG567013

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16041363-06	1.00	01	554000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4747301
Report generated 05/10/2016 10:40

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16041363
Instrument ID: LCMS1
Workgroup (AAB#): WG567013

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16041363-01	1.00	01	518000
L16041363-02	1.00	01	515000
L16041363-03	1.00	01	553000
L16041363-05	5.00	DL01	497000
L16041363-08	1.00	01	506000
L16041363-09	1.00	01	515000
L16041363-10	5.00	DL01	508000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4747301
Report generated 05/10/2016 10:40

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**	6850	**Samplenum:**	L16041363-01
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:50	**File ID:**	1LM.LM34704
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567013	**Analysis Date:**	05/03/2016 20:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	753	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**	6850	**Samplenum:**	L16041363-02
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:50	**File ID:**	1LM.LM34705
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567013	**Analysis Date:**	05/03/2016 21:05	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	2230	533	4.18	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**	6850	**Samplenum:**	L16041363-03
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:50	**File ID:**	1LM.LM34706
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567013	**Analysis Date:**	05/03/2016 21:24	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	13100	4370	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**	6850	**Samplenum:**	L16041363-04
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:50	**File ID:**	1LM.LM34707
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567013	**Analysis Date:**	05/03/2016 21:43	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	7250	2270	3.19	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**	6850	**Samplenum:**	L16041363-05
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:50	**File ID:**	1LM.LM34711
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567013	**Analysis Date:**	05/03/2016 22:59	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	344000	112000	3.07	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**	6850	**Samplenum:**	L16041363-06
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:50	**File ID:**	1LM.LM34712
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567013	**Analysis Date:**	05/03/2016 23:18	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	134000	44900	2.98	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**	6850	**Samplenum:**	L16041363-07
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:50	**File ID:**	1LM.LM34701
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567013	**Analysis Date:**	05/03/2016 19:50	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	12700	5340	2.38	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**	6850	**Samplenum:**	L16041363-08
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:50	**File ID:**	1LM.LM34702
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567013	**Analysis Date:**	05/03/2016 20:09	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	44500	15800	2.82	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**	6850	**Samplenum:**	L16041363-09
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:50	**File ID:**	1LM.LM34703
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567013	**Analysis Date:**	05/03/2016 20:28	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	45800	16400	2.79	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**	6850	**Samplenum:**	L16041363-10
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:50	**File ID:**	1LM.LM34713
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567013	**Analysis Date:**	05/03/2016 23:37	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	478000	162000	2.95	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**	6850	**Samplenum:**	WG567013-01
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:50	**File ID:**	1LM.LM34698
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567013	**Analysis Date:**	05/03/2016 18:53	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32600	10600	3.08	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**	6850	**Samplenum:**	WG567013-02
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:50	**File ID:**	1LM.LM34699
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567013	**Analysis Date:**	05/03/2016 19:12	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**	6850	**Samplenum:**	WG567013-03
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:50	**File ID:**	1LM.LM34700
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567013	**Analysis Date:**	05/03/2016 19:31	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35000	11500	3.04	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**	6850	**Samplenum:**	WG567013-07
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:50	**File ID:**	1LM.LM34697
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567013	**Analysis Date:**	05/03/2016 18:34	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36700	11300	3.25	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**	6850	**Samplenum:**	WG567013-08
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:50	**File ID:**	1LM.LM34709
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567013	**Analysis Date:**	05/03/2016 22:21	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35100	11400	3.08	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**	6850	**Samplenum:**	WG567013-09
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:50	**File ID:**	1LM.LM34715
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567013	**Analysis Date:**	05/04/2016 00:15	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	40000	12900	3.10	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567013	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567013	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567013	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567013	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567013	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567013	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567013	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567013	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**		**Samplenum:**	WG567321-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34695
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567013	**Analysis Date:**	05/03/2016 17:56	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**		**Samplenum:**	WG567321-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34696
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567013	**Analysis Date:**	05/03/2016 18:15	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	172000	57100	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**		**Samplenum:**	WG567321-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34708
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567013	**Analysis Date:**	05/03/2016 22:02	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	180000	59700	3.02	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**		**Samplenum:**	WG567321-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34710
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567013	**Analysis Date:**	05/03/2016 22:40	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**		**Samplenum:**	WG567321-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34714
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567013	**Analysis Date:**	05/03/2016 23:56	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	191000	62100	3.08	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**		**Samplenum:**	WG567321-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34716
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567013	**Analysis Date:**	05/04/2016 00:34	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

2.2.1.3 Sample Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/4/2016 1:27 PM

Data File	LM34704.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 8:46:55 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041363-01	**Injection Vial**	16.00
Data File	LM34704.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 8:46:55 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	L16041363-01	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.180e+05	9.85	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	7.530e+02	9.89	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.85(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

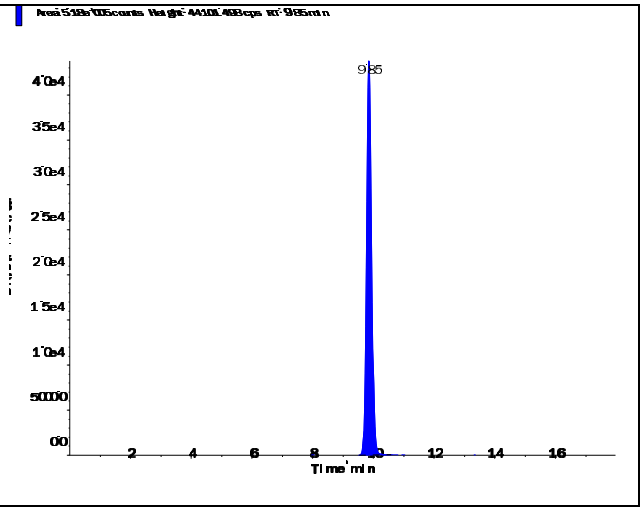

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/4/2016 1:27 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	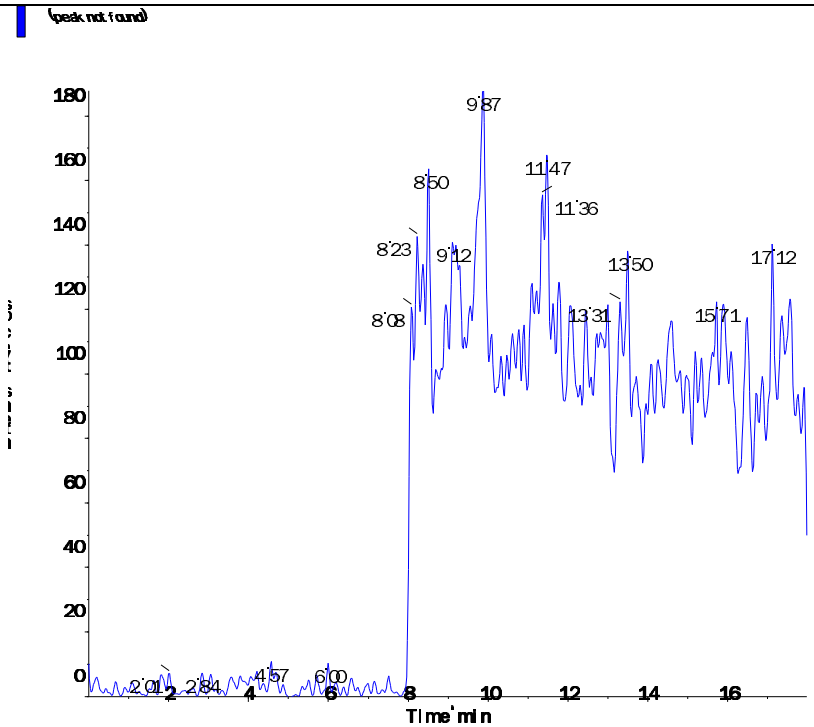
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.89 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	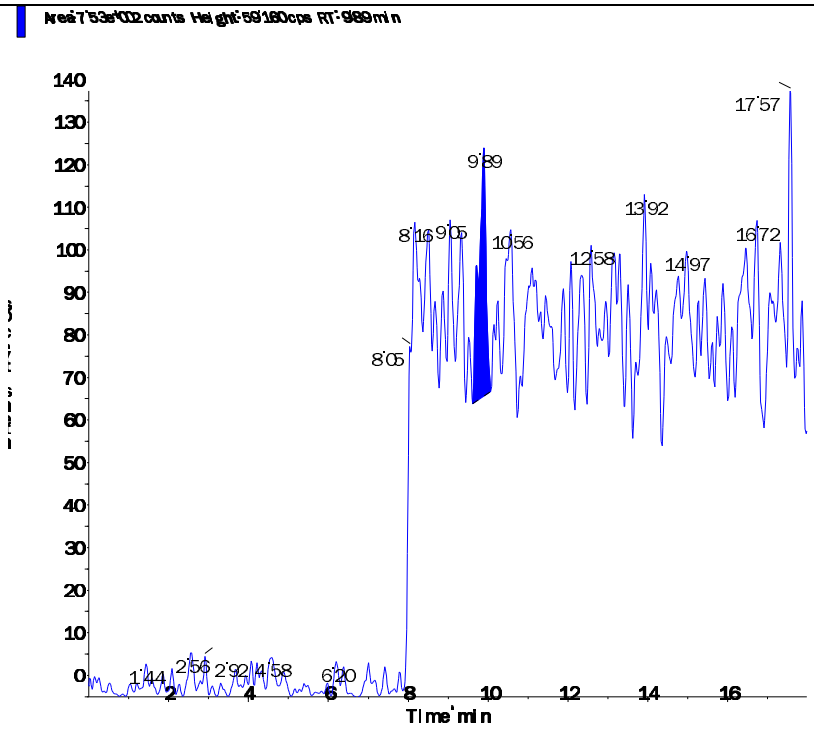

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/4/2016 1:27 PM

Data File	LM34705.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 9:05:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041363-02	**Injection Vial**	17.00
Data File	LM34705.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 9:05:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	L16041363-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.150e+05	9.85	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.230e+03	9.86	N/A	0.0091
Perchlorate conf	5.330e+02	9.84	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.85(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

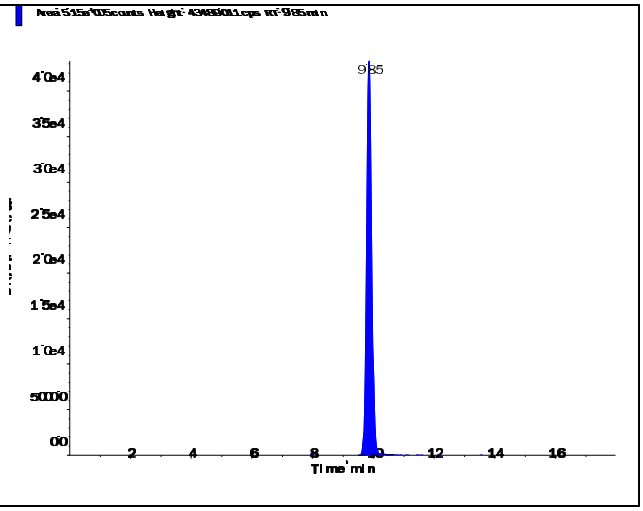

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.86 (9.84) min
Calculated conc:	0.0091 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)

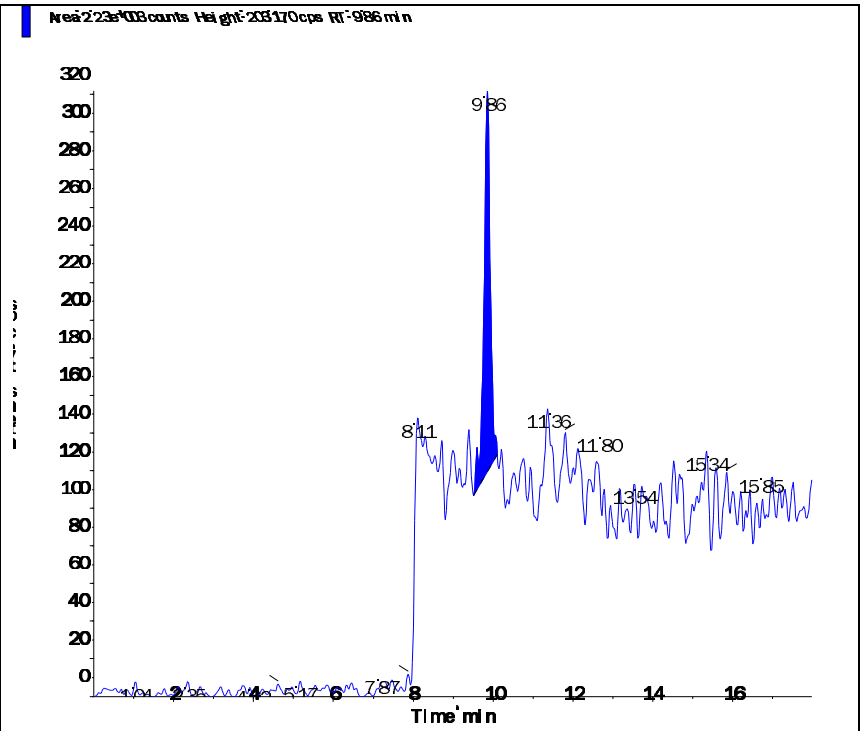

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

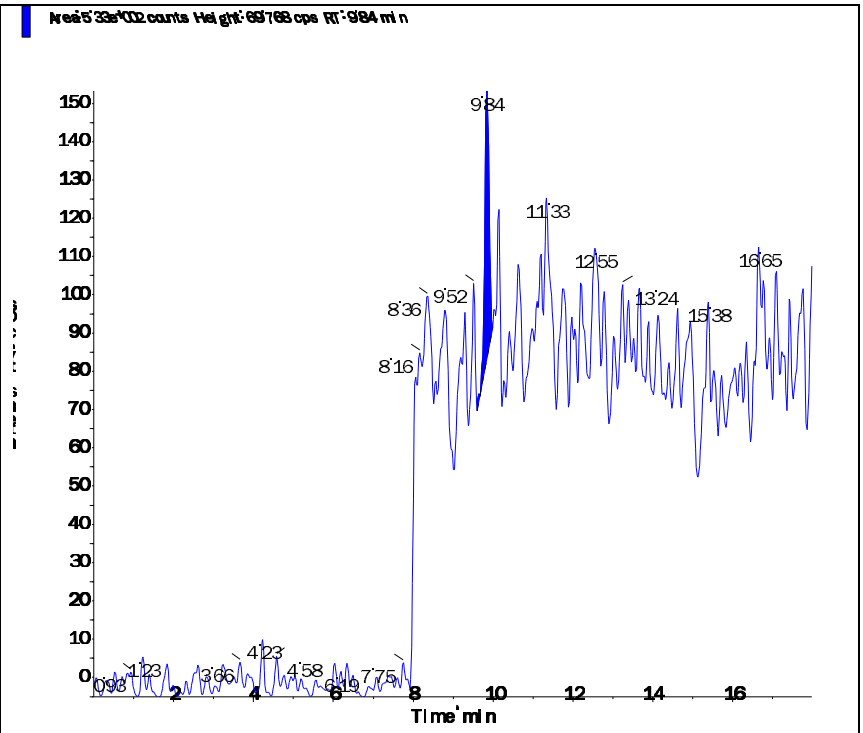

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Data File	LM34706.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 9:24:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041363-03	**Injection Vial**	18.00
Data File	LM34706.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 9:24:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	L16041363-03	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.530e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.310e+04	9.86	N/A	0.0667
Perchlorate conf	4.370e+03	9.83	N/A	0.0504

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

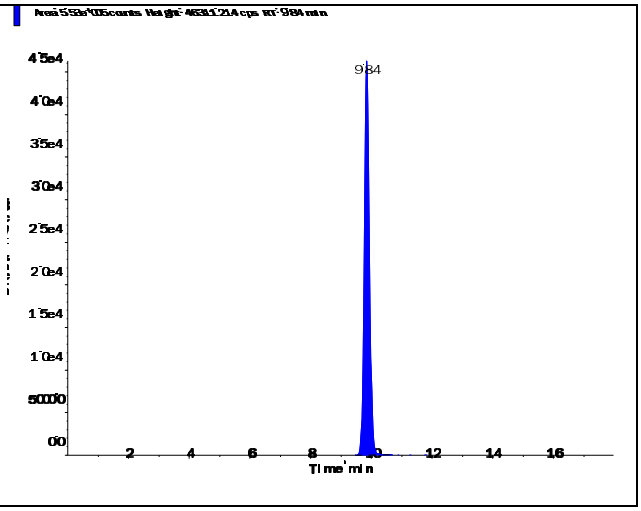

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.86 (9.84) min
Calculated conc:	0.0667 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

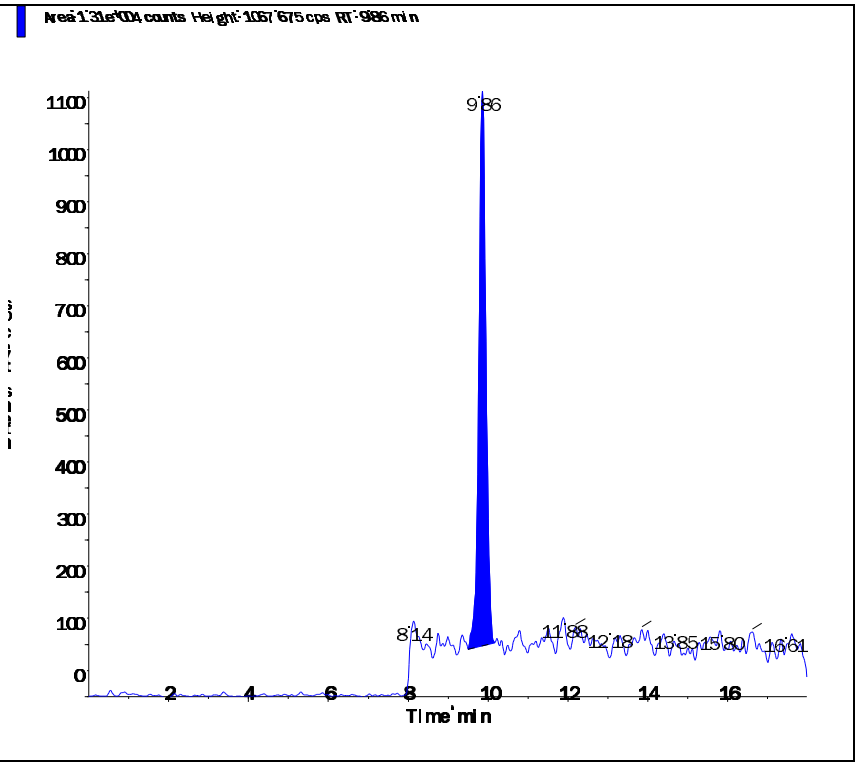

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.0504 ng/ml
Area Ratio:	0.008
Sample Type:	(Unknown)

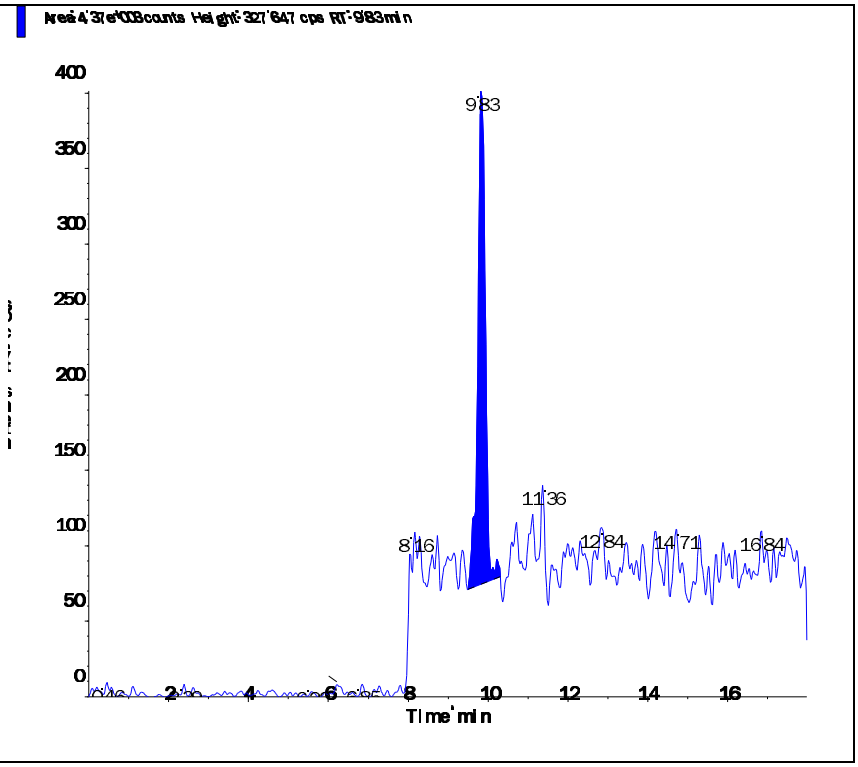

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Data File	LM34707.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 9:43:44 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041363-04	**Injection Vial**	19.00
Data File	LM34707.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 9:43:44 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	L16041363-04	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.600e+05	9.85	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.250e+03	9.86	N/A	0.0347
Perchlorate conf	2.270e+03	9.82	N/A	0.0159

O18LP (Internal Standard)

RT (Exp. RT): 9.85(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

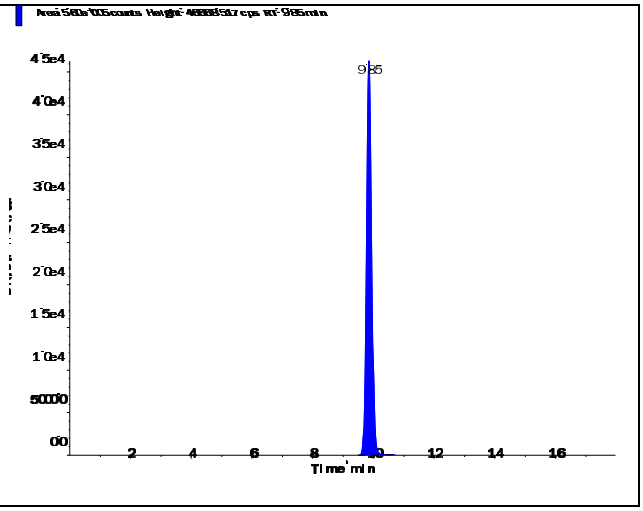

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.86 (9.84) min
Calculated conc:	0.0347 ng/ml
Area Ratio:	0.013
Sample Type:	(Unknown)

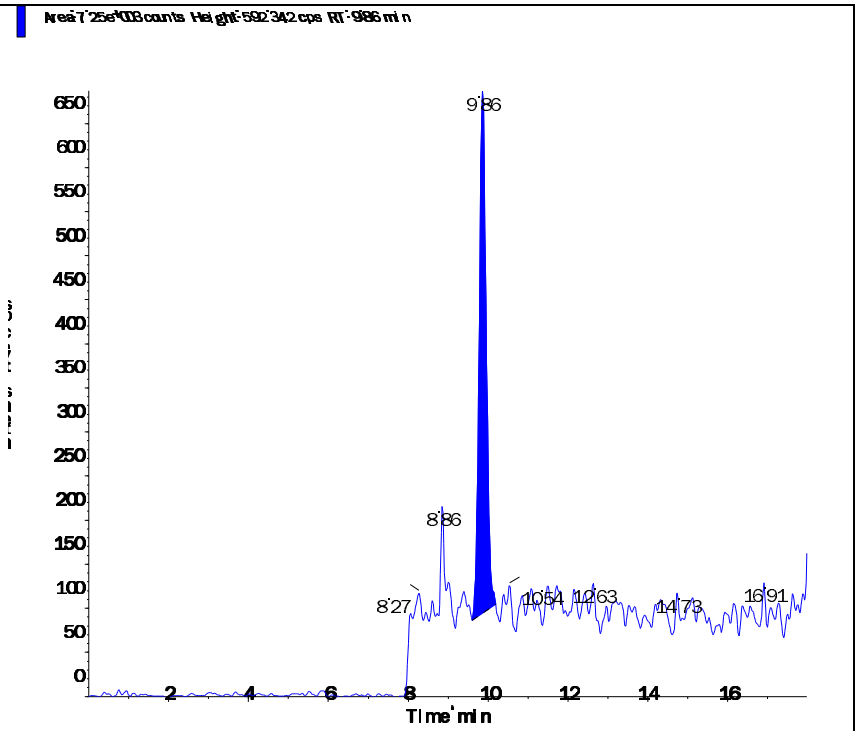

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	0.0159 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)

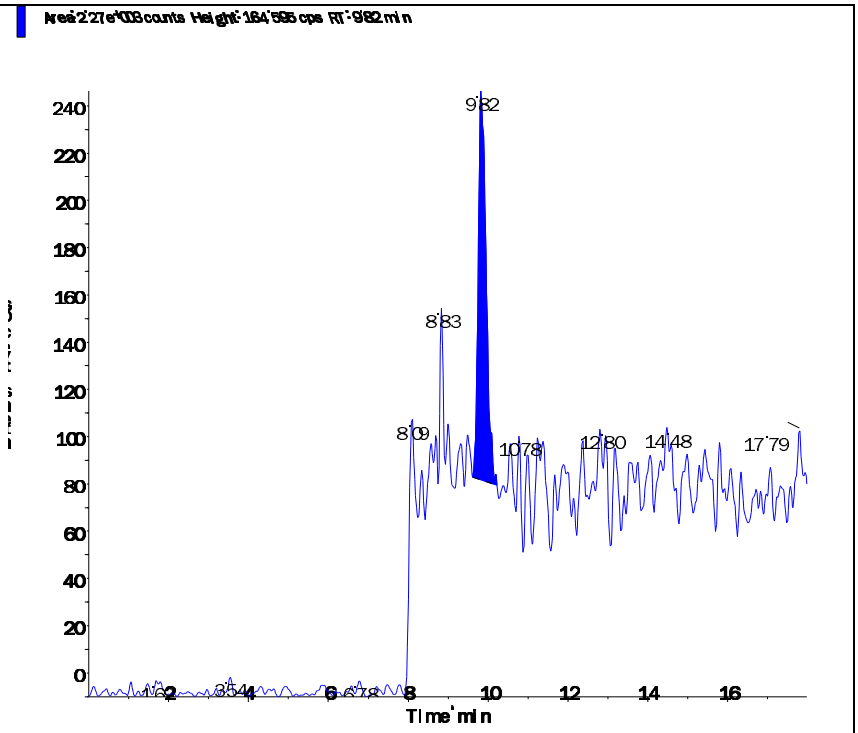

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Data File	LM34711.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 10:59:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041363-05 (5x)	**Injection Vial**	20.00
Data File	LM34711.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 10:59:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	L16041363-05	**Dilution Factor**	1.00
Sample Comment	7,5 (screened)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.85	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.440e+05	9.86	N/A	2.05
Perchlorate conf	1.120e+05	9.85	N/A	1.99

O18LP (Internal Standard)

RT (Exp. RT): 9.85(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

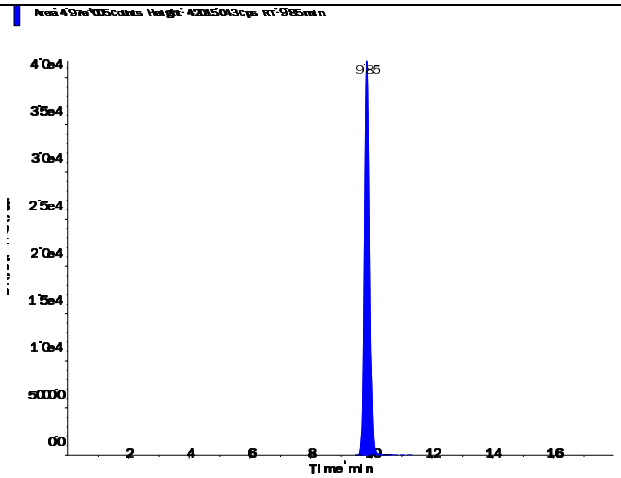

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.86 (9.84) min
Calculated conc:	2.05 ng/ml
Area Ratio:	0.692
Sample Type:	(Unknown)

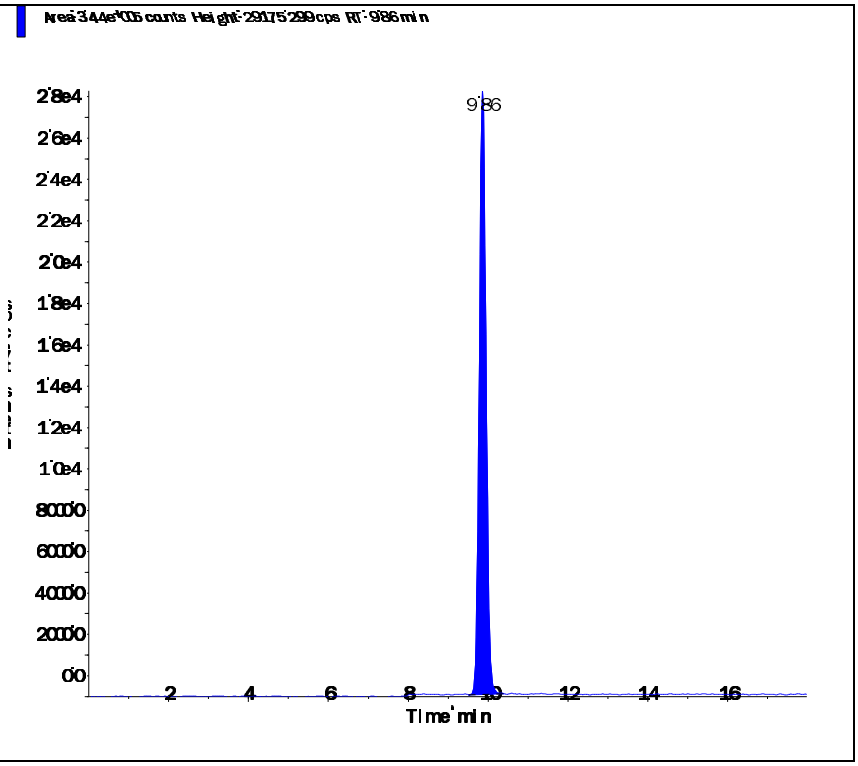

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	1.99 ng/ml
Area Ratio:	0.225
Sample Type:	(Unknown)

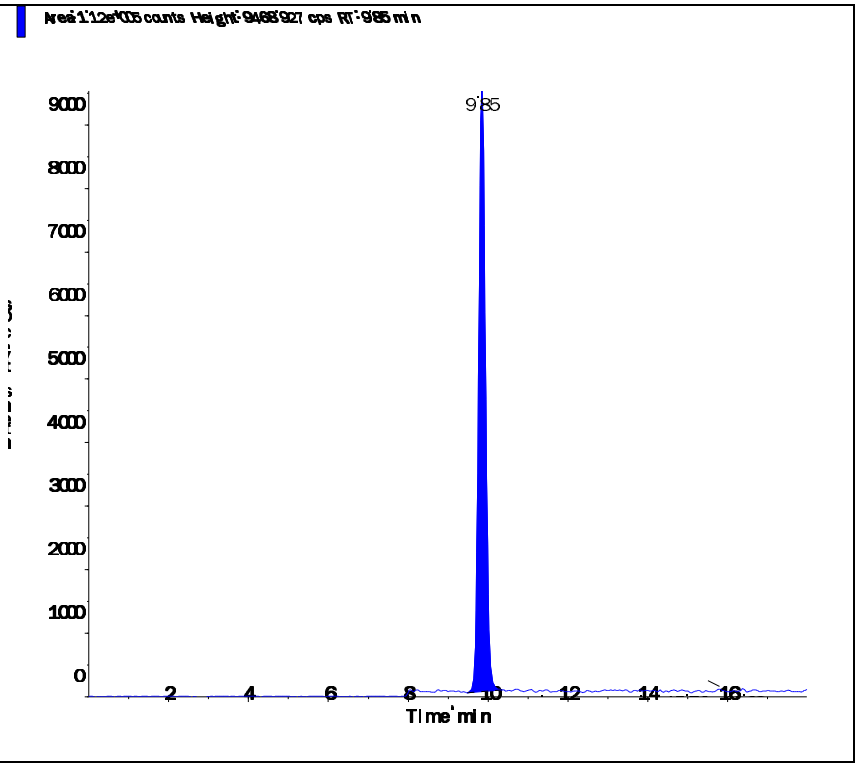

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Data File	LM34712.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 11:18:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041363-06	**Injection Vial**	21.00
Data File	LM34712.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 11:18:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	L16041363-06	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.540e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.340e+05	9.83	N/A	0.714
Perchlorate conf	4.490e+04	9.82	N/A	0.706

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

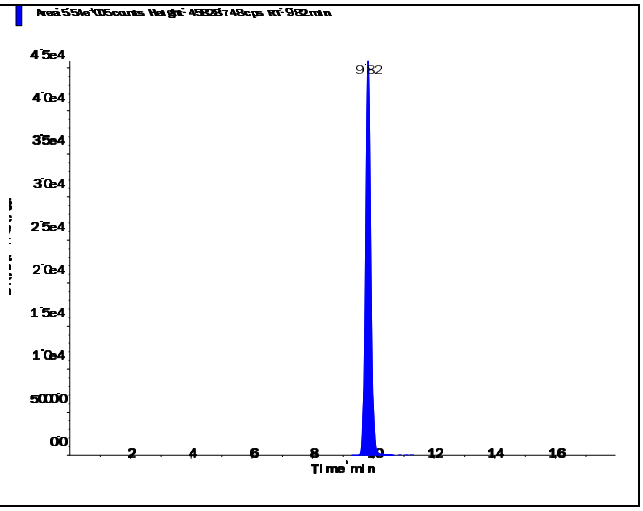

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.714 ng/ml
Area Ratio:	0.241
Sample Type:	(Unknown)

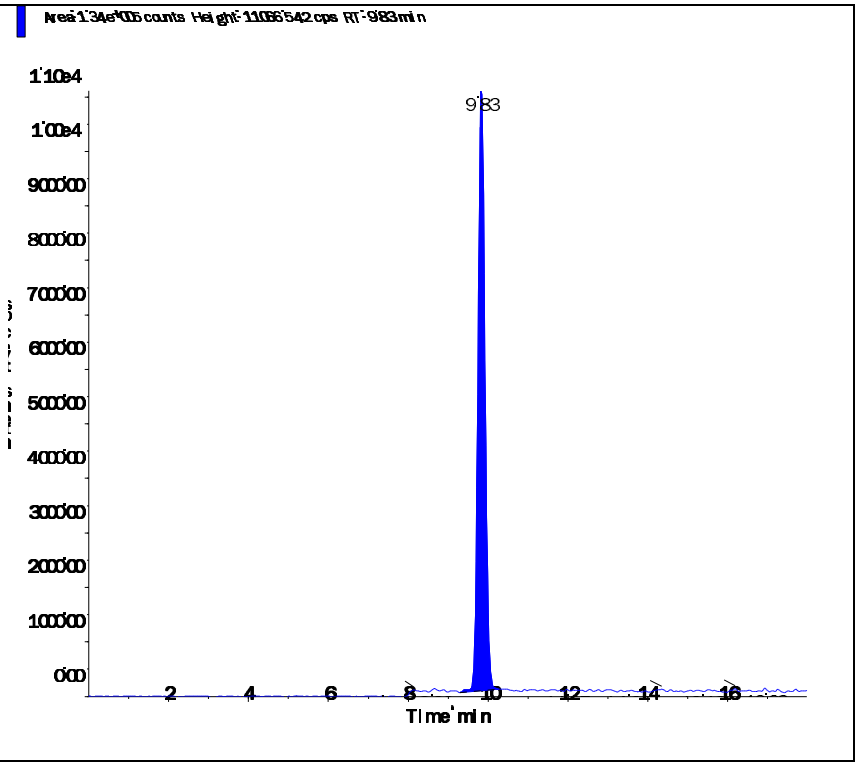

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	0.706 ng/ml
Area Ratio:	0.081
Sample Type:	(Unknown)

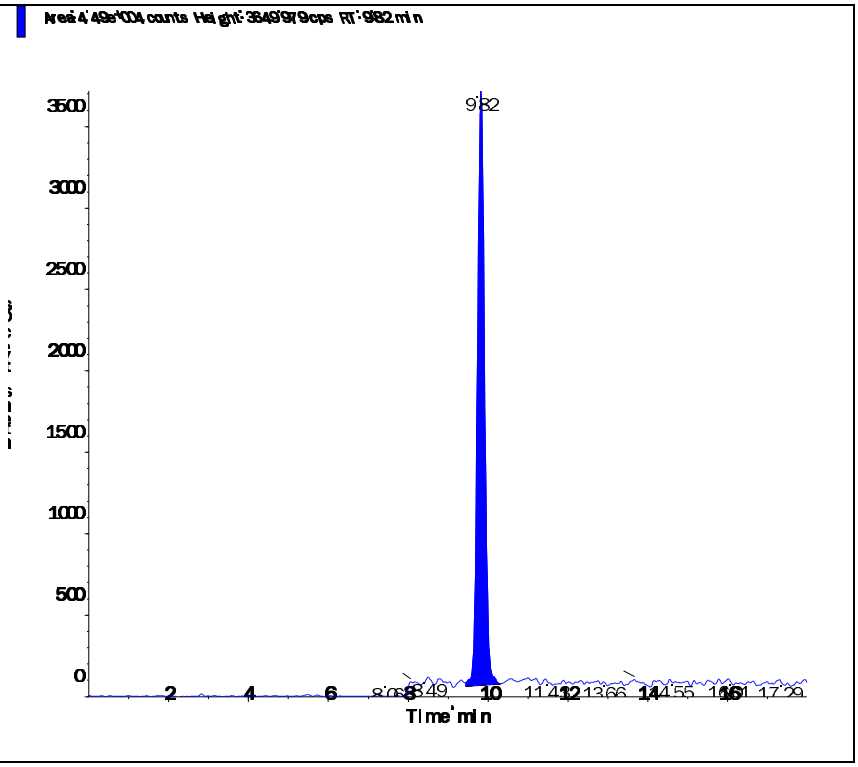

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Data File	LM34701.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 7:50:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041363-07 RS	**Injection Vial**	13.00
Data File	LM34701.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 7:50:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567013-04	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.86	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.270e+04	9.88	N/A	0.0702
Perchlorate conf	5.340e+03	9.87	N/A	0.0732

O18LP (Internal Standard)

RT (Exp. RT): 9.86(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

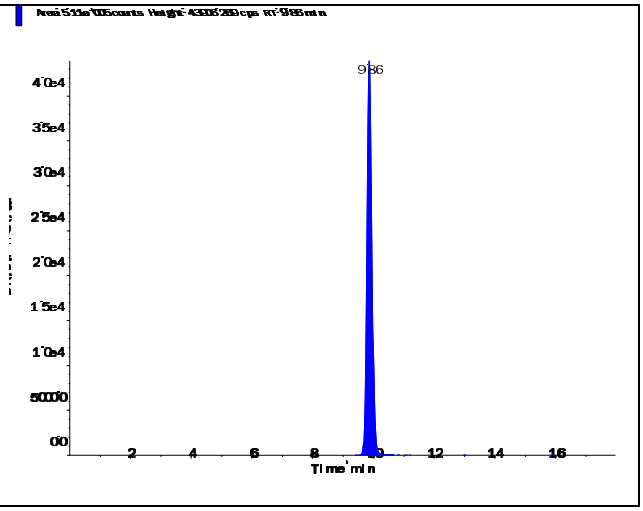

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.88 (9.84) min
Calculated conc:	0.0702 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

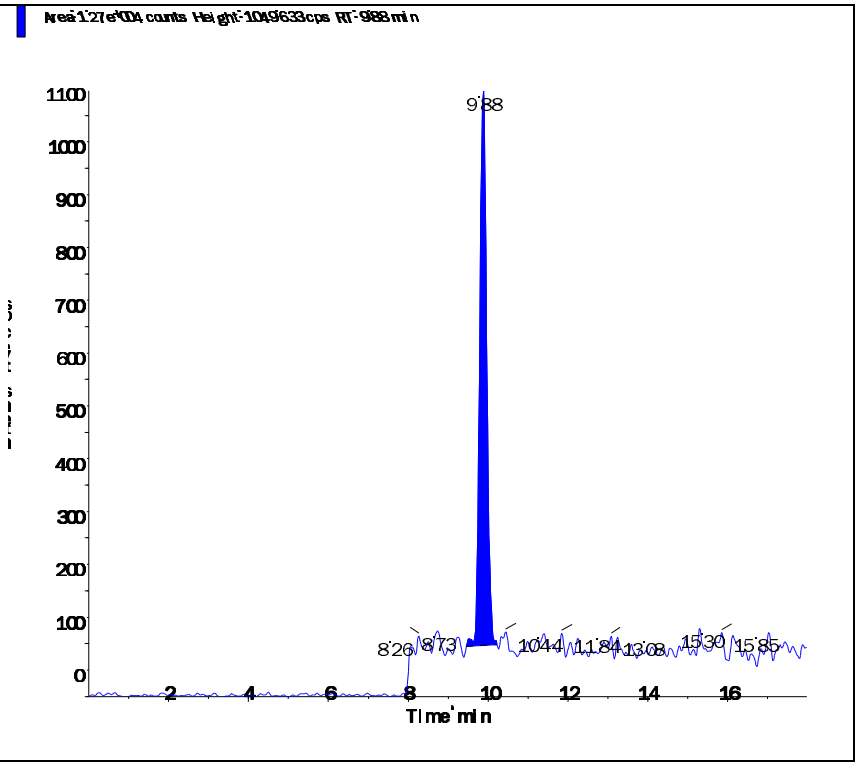

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.87 (9.84) min
Calculated conc:	0.0732 ng/ml
Area Ratio:	0.01
Sample Type:	(Unknown)

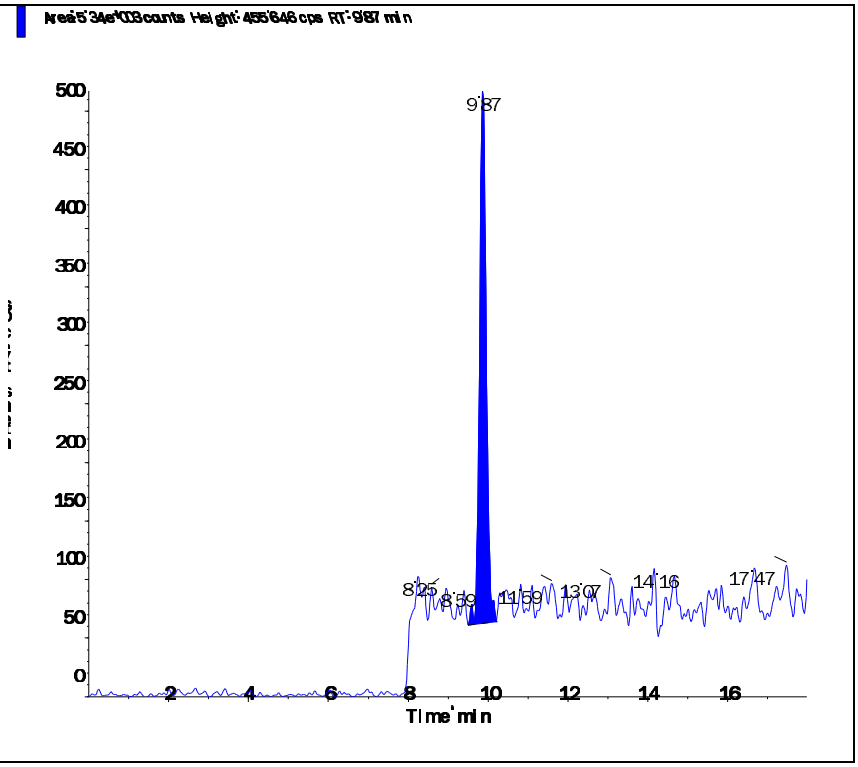

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Data File	LM34702.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 8:09:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041363-08 MS	**Injection Vial**	14.00
Data File	LM34702.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 8:09:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567013-05	**Dilution Factor**	1.00
Sample Comment	7,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.060e+05	9.86	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.450e+04	9.88	N/A	0.258
Perchlorate conf	1.580e+04	9.86	N/A	0.259

O18LP (Internal Standard)

RT (Exp. RT): 9.86(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

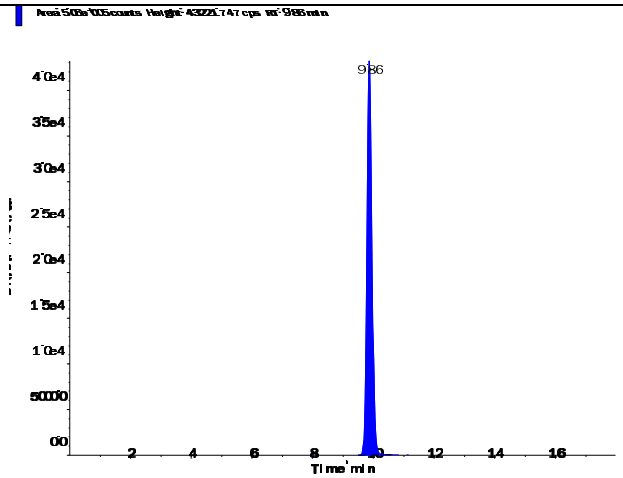

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.88 (9.84) min
Calculated conc:	0.258 ng/ml
Area Ratio:	0.088
Sample Type:	(Unknown)

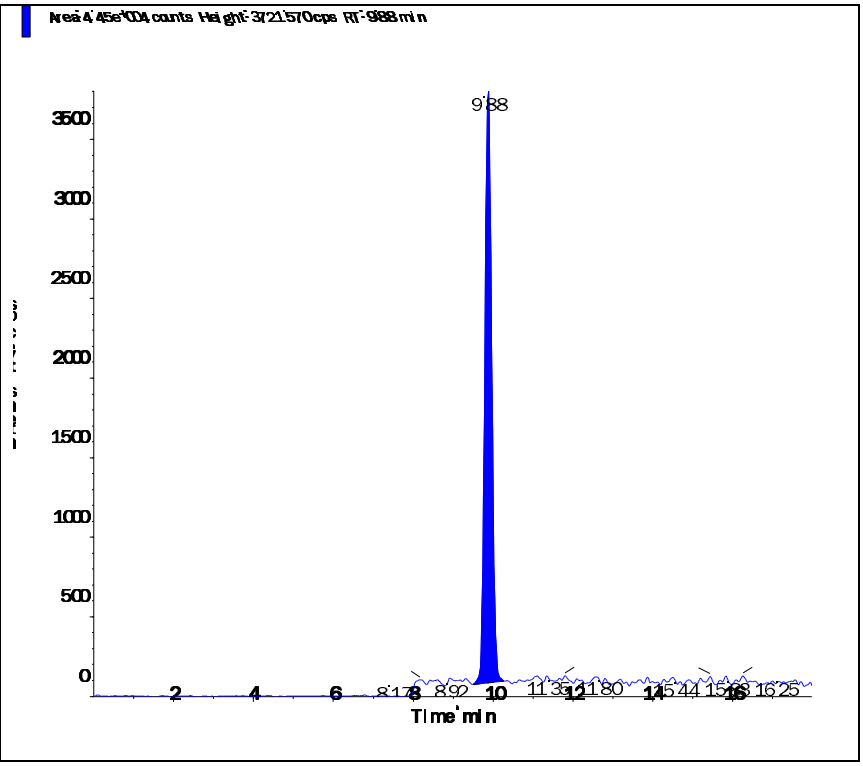

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.86 (9.84) min
Calculated conc:	0.259 ng/ml
Area Ratio:	0.031
Sample Type:	(Unknown)

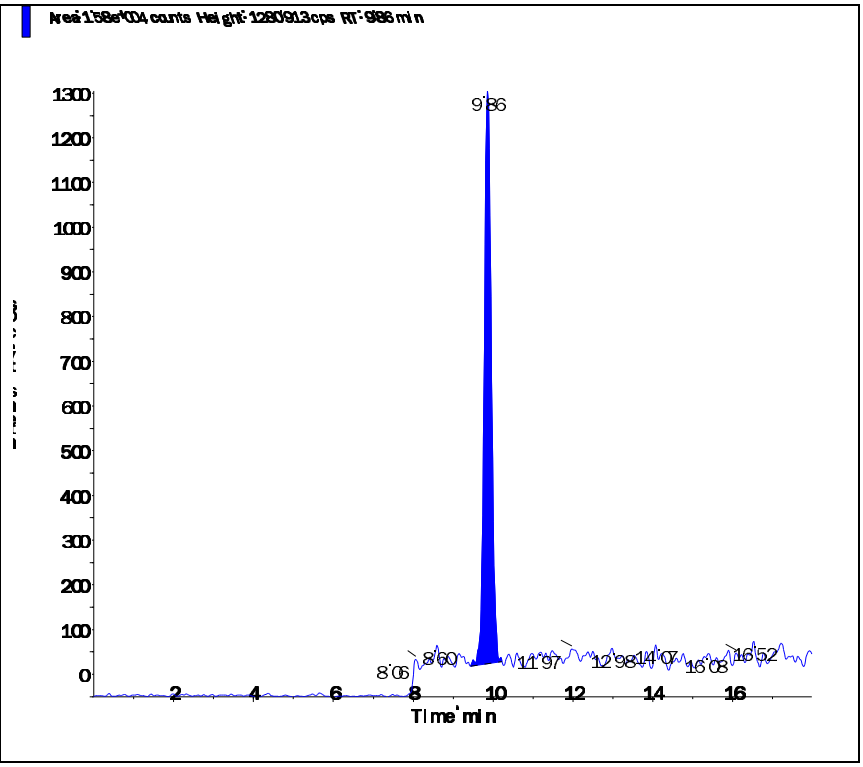

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Data File	LM34703.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 8:28:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041363-09 MSD	**Injection Vial**	15.00
Data File	LM34703.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 8:28:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567013-06	**Dilution Factor**	1.00
Sample Comment	7,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.150e+05	9.88	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.580e+04	9.89	N/A	0.261
Perchlorate conf	1.640e+04	9.88	N/A	0.265

O18LP (Internal Standard)

RT (Exp. RT): 9.88(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

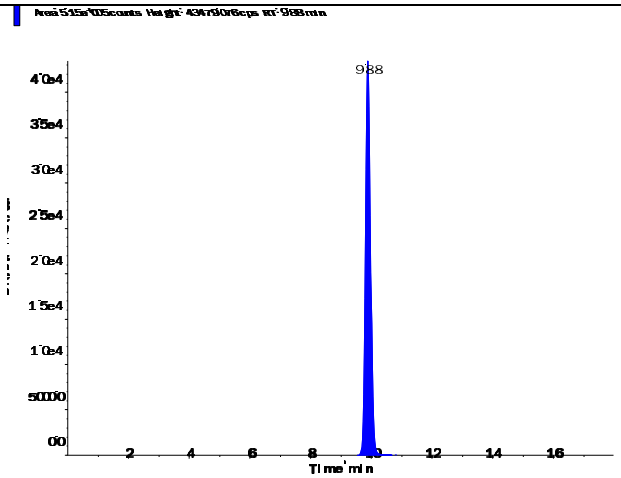

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.89 (9.84) min
Calculated conc:	0.261 ng/ml
Area Ratio:	0.089
Sample Type:	(Unknown)

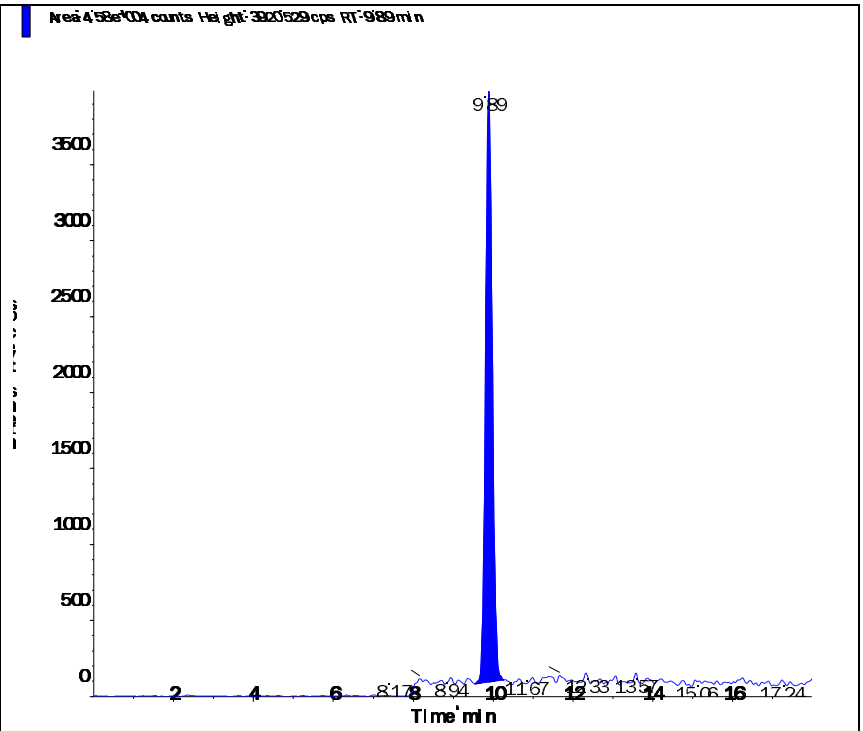

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.88 (9.84) min
Calculated conc:	0.265 ng/ml
Area Ratio:	0.032
Sample Type:	(Unknown)

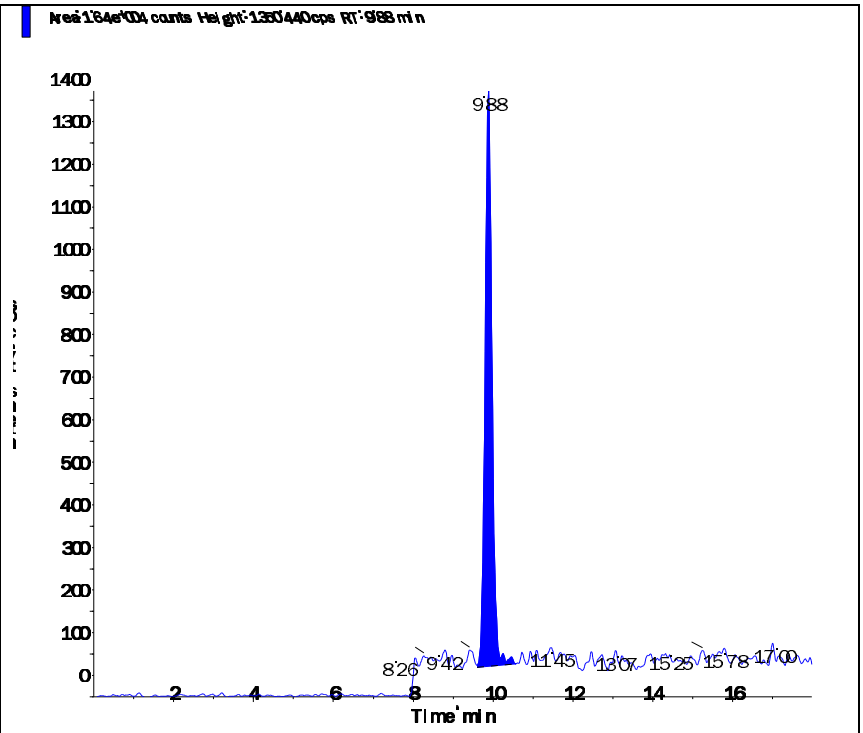

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Data File	LM34713.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 11:37:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041363-10 (5x)	**Injection Vial**	22.00
Data File	LM34713.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 11:37:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	L16041363-10	**Dilution Factor**	1.00
Sample Comment	7,5 (screened)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.85	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.780e+05	9.86	N/A	2.79
Perchlorate conf	1.620e+05	9.84	N/A	2.83

O18LP (Internal Standard)

RT (Exp. RT): 9.85(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

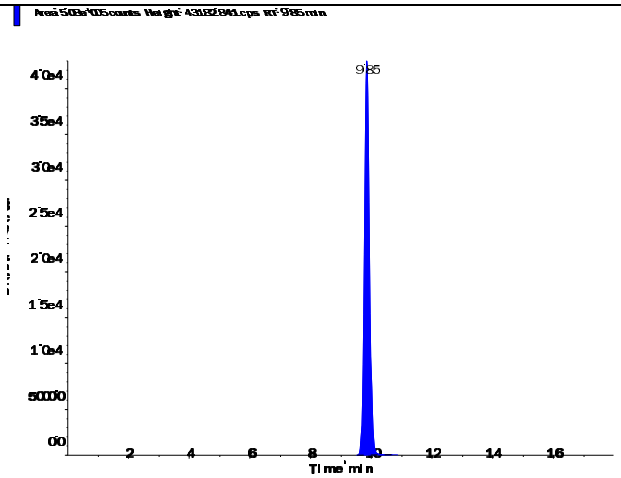

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.86 (9.84) min
Calculated conc:	2.79 ng/ml
Area Ratio:	0.941
Sample Type:	(Unknown)

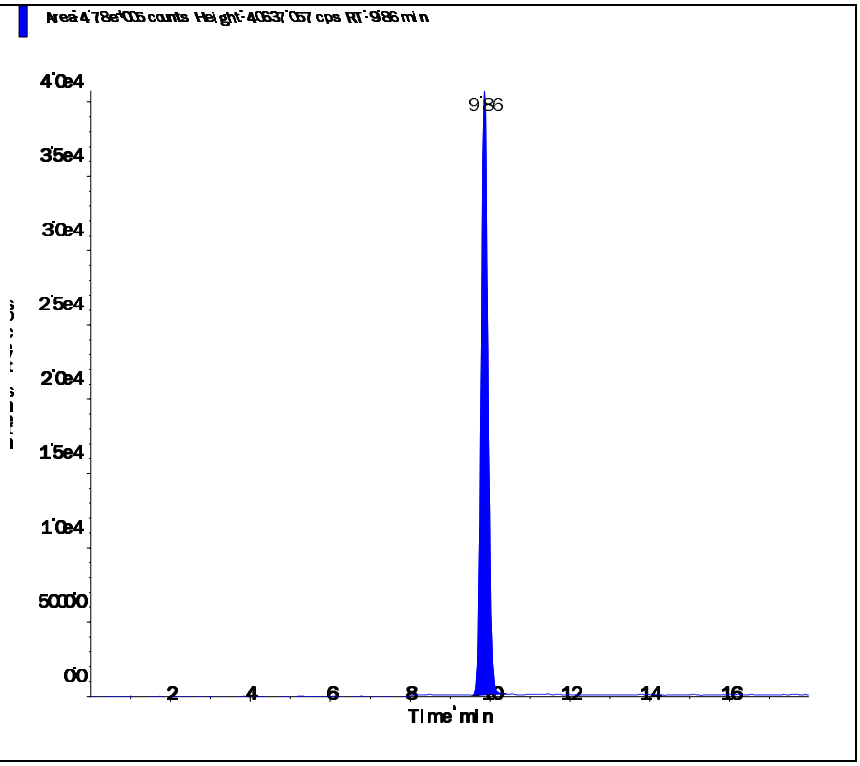

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	2.83 ng/ml
Area Ratio:	0.318
Sample Type:	(Unknown)

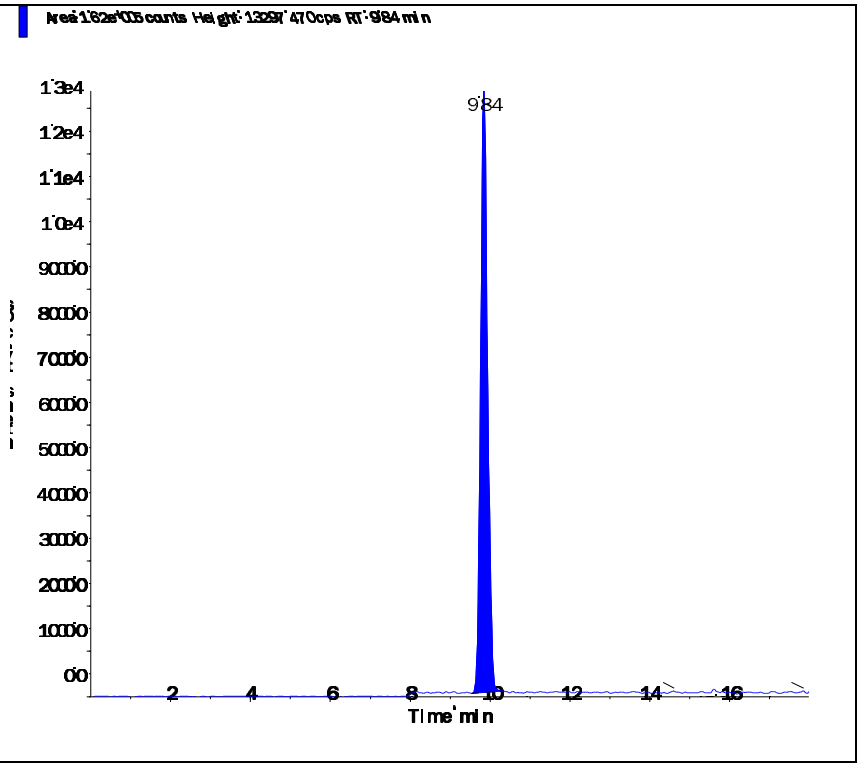

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2.2.1.4 Standards Data

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Data File	LM34686.wiff	**Result Table**	050616_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050616_JWR.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

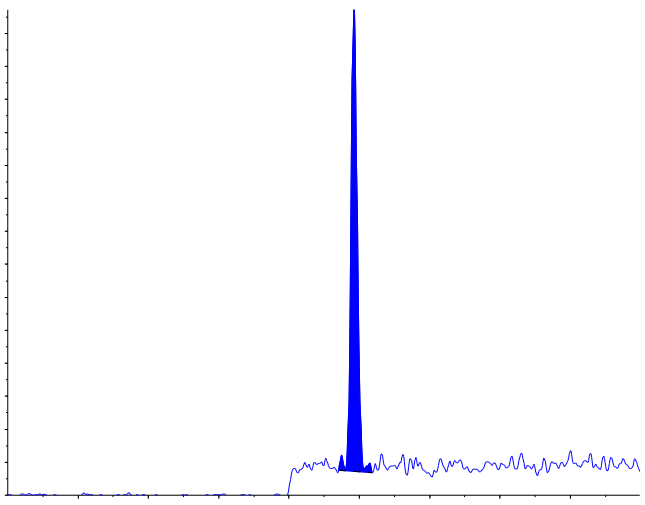

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	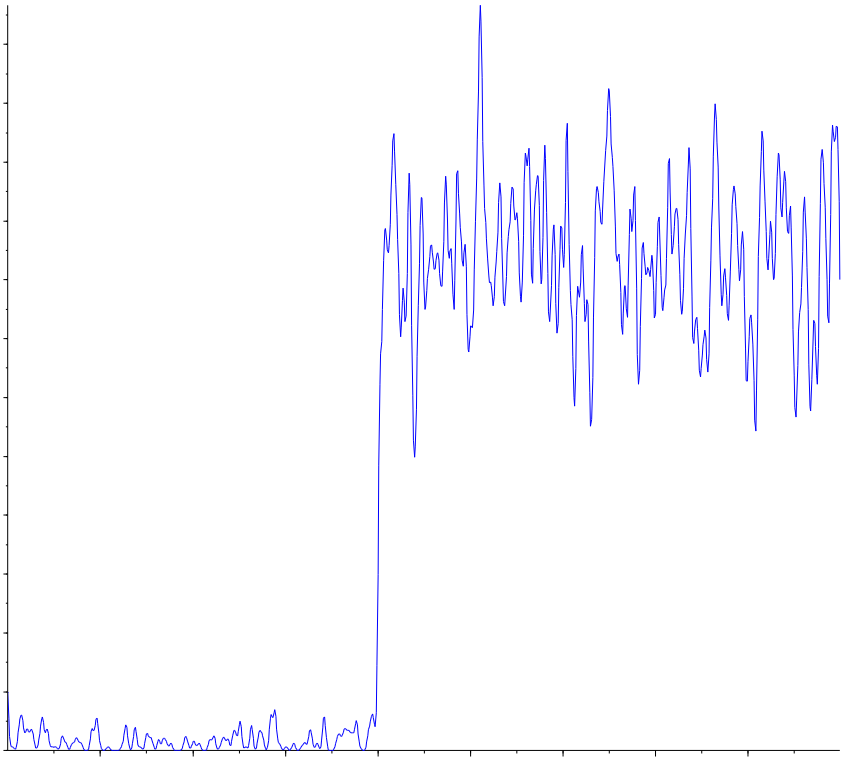
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	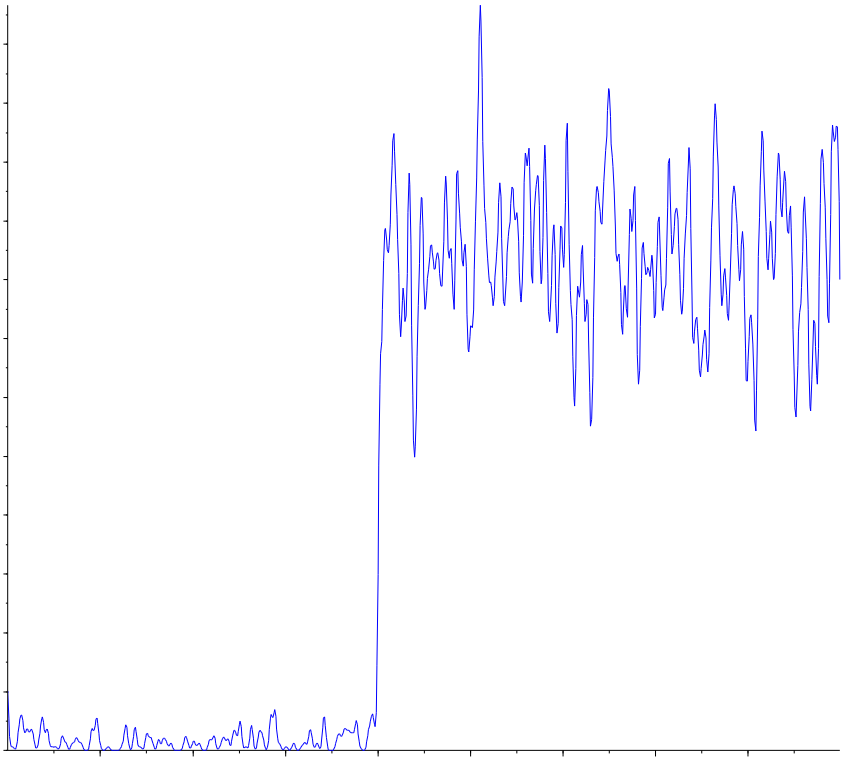

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Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

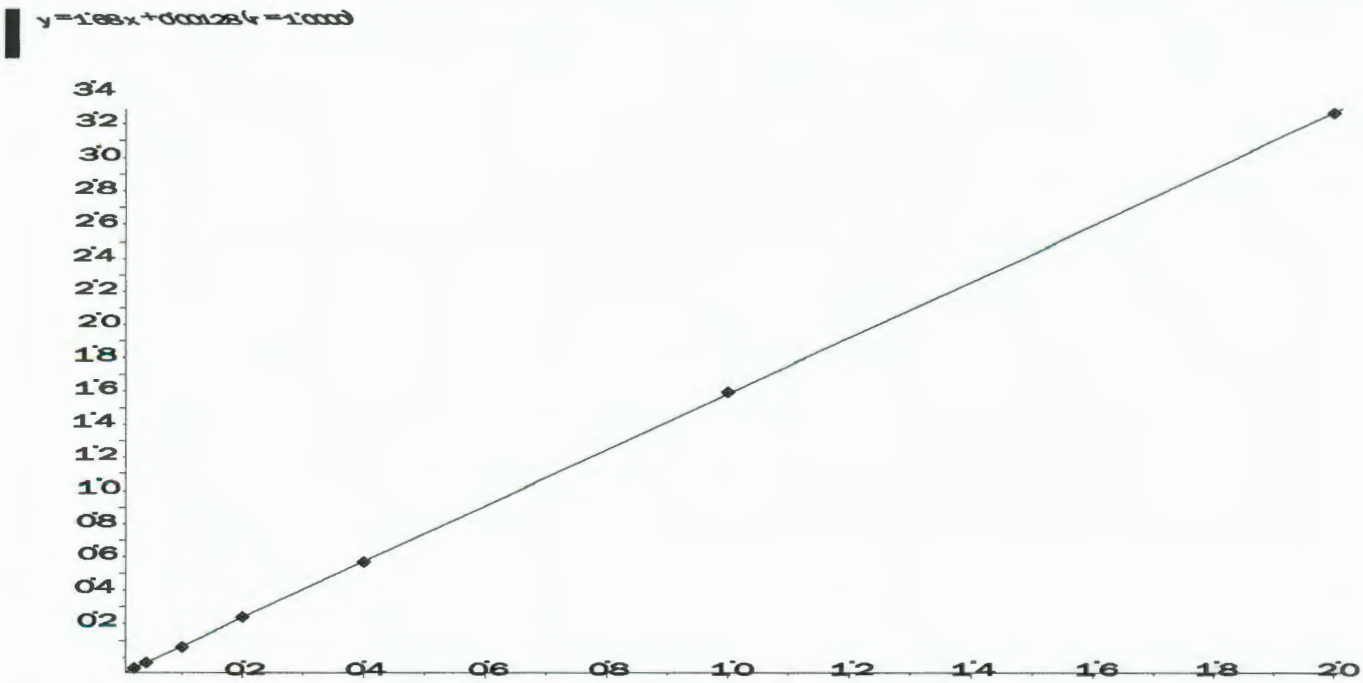

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Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

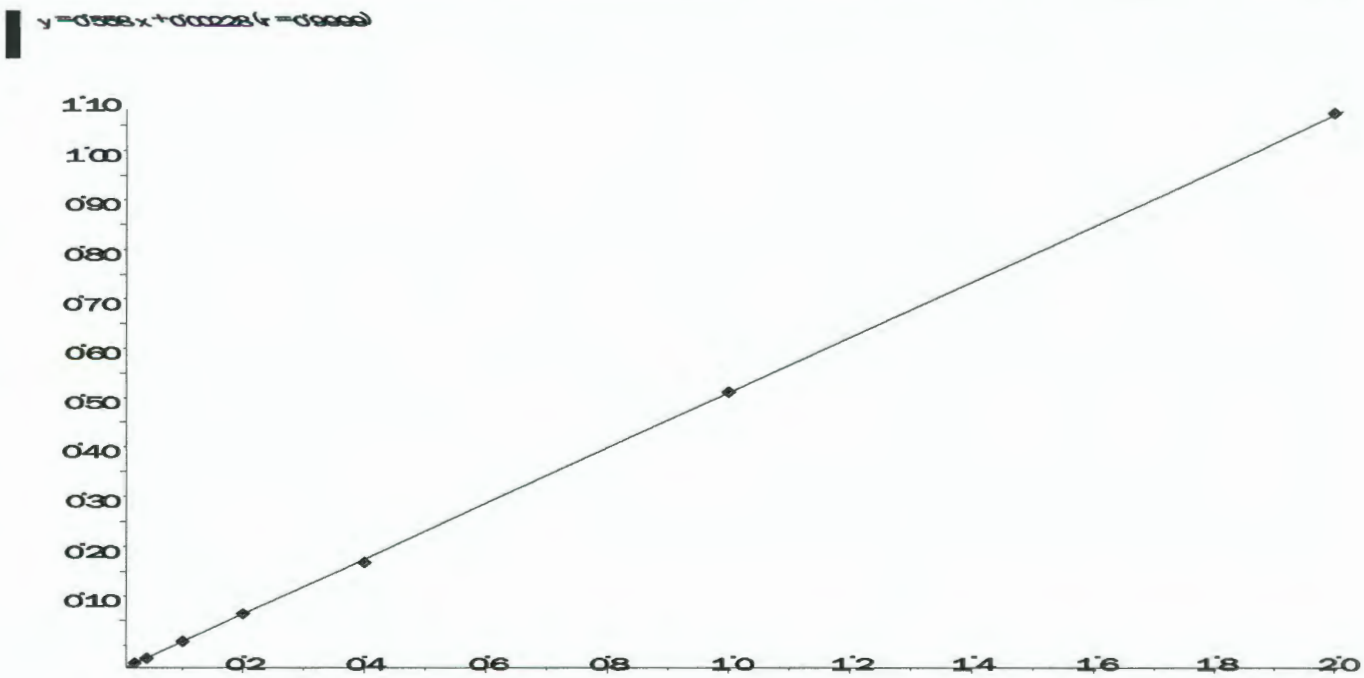

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Data File	LM34687.wiff	**Result Table**	050616_JWR.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050616_JWR.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

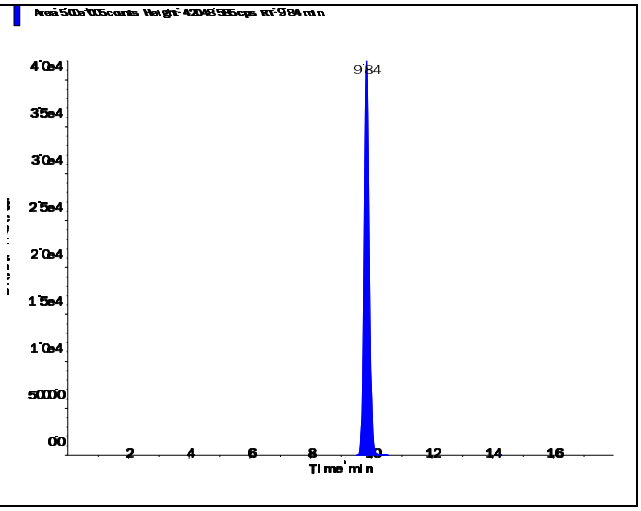

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.103 ng/ml
Area Ratio:	0.036
Sample Type:	(Standard)

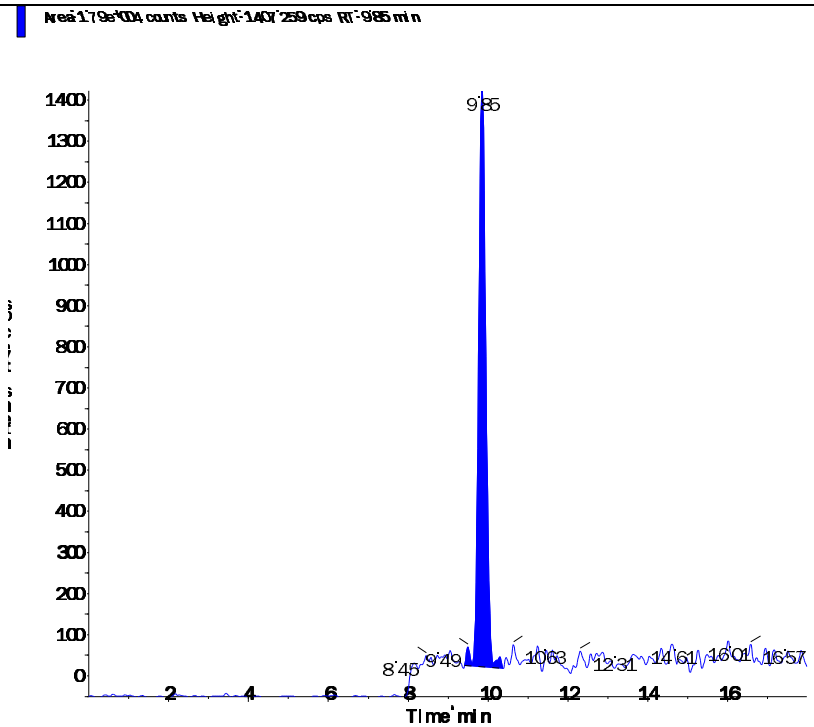

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.104 ng/ml
Area Ratio:	0.014
Sample Type:	(Standard)

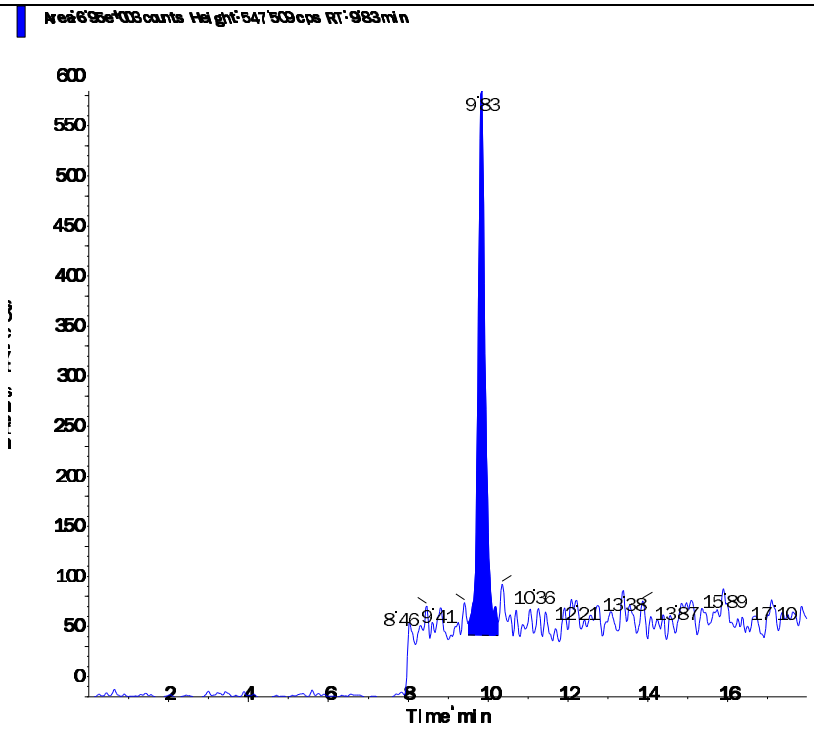

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Data File	LM34688.wiff	**Result Table**	050616_JWR.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050616_JWR.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

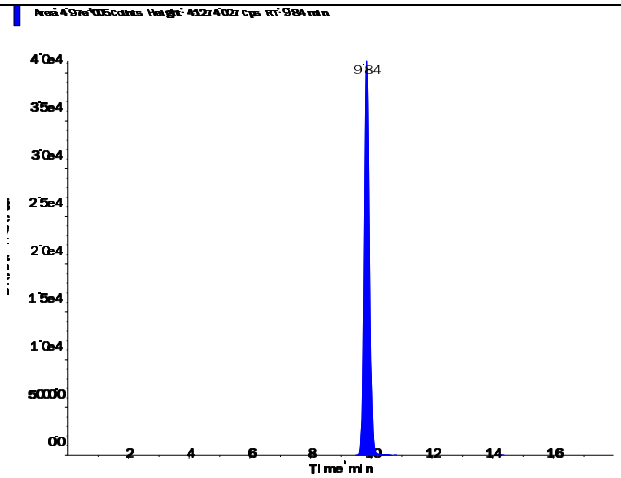

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

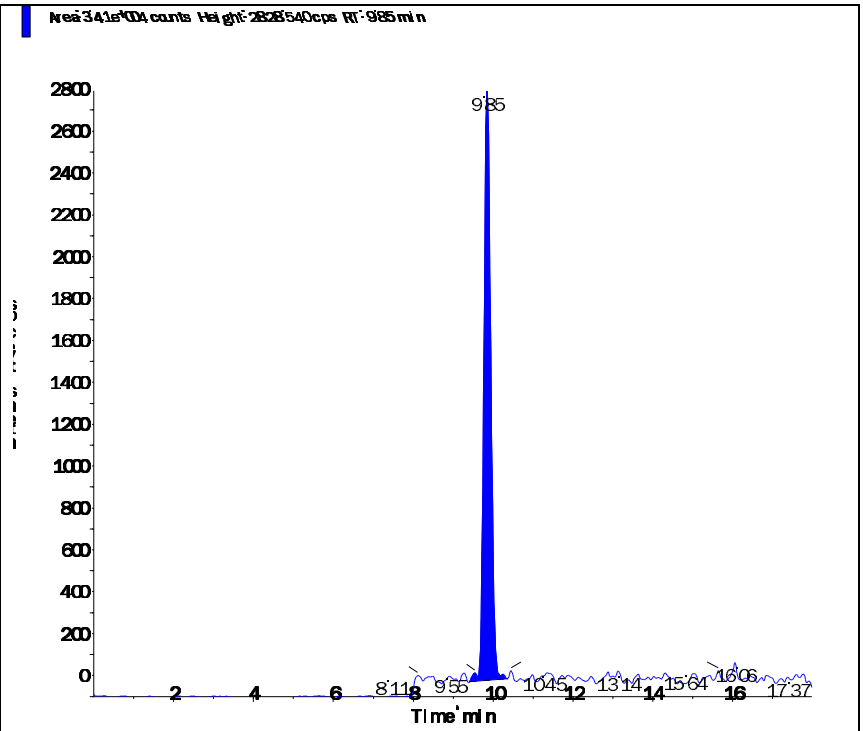

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

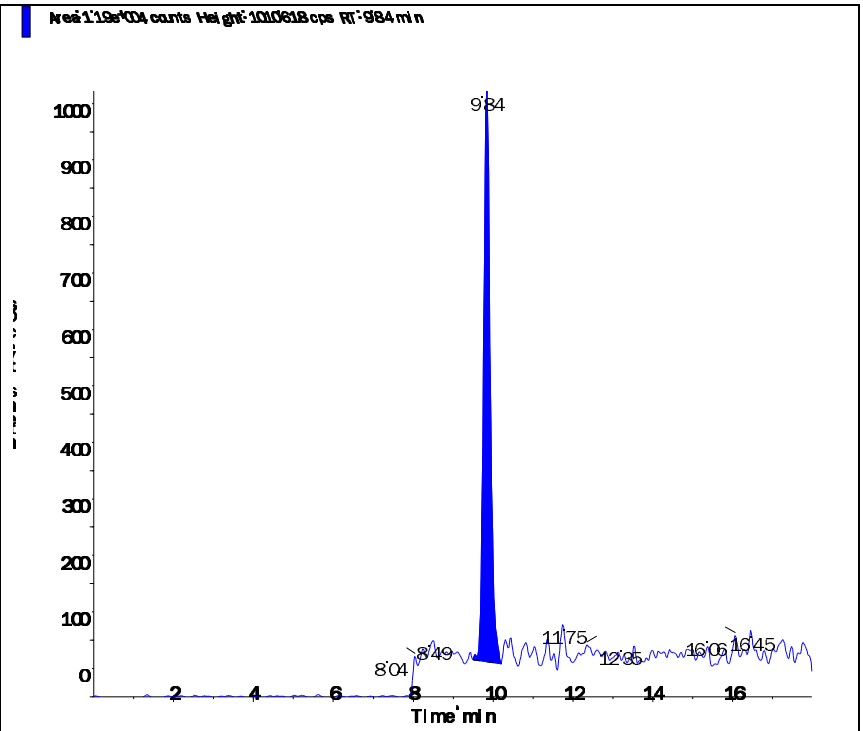

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Data File	LM34689.wiff	**Result Table**	050616_JWR.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050616_JWR.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

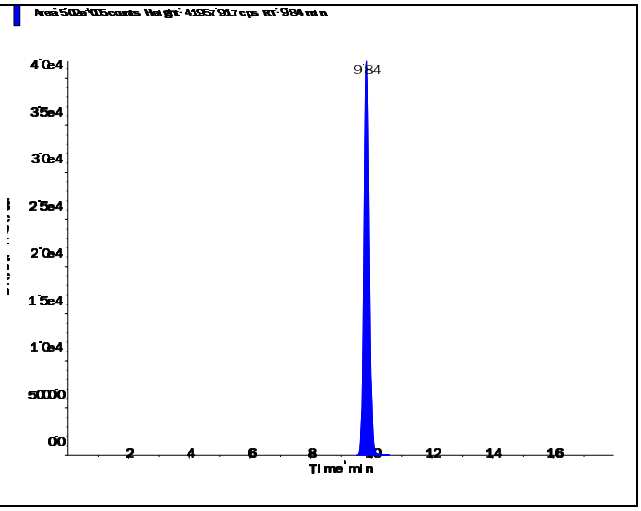

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.483 ng/ml
Area Ratio:	0.164
Sample Type:	(Standard)

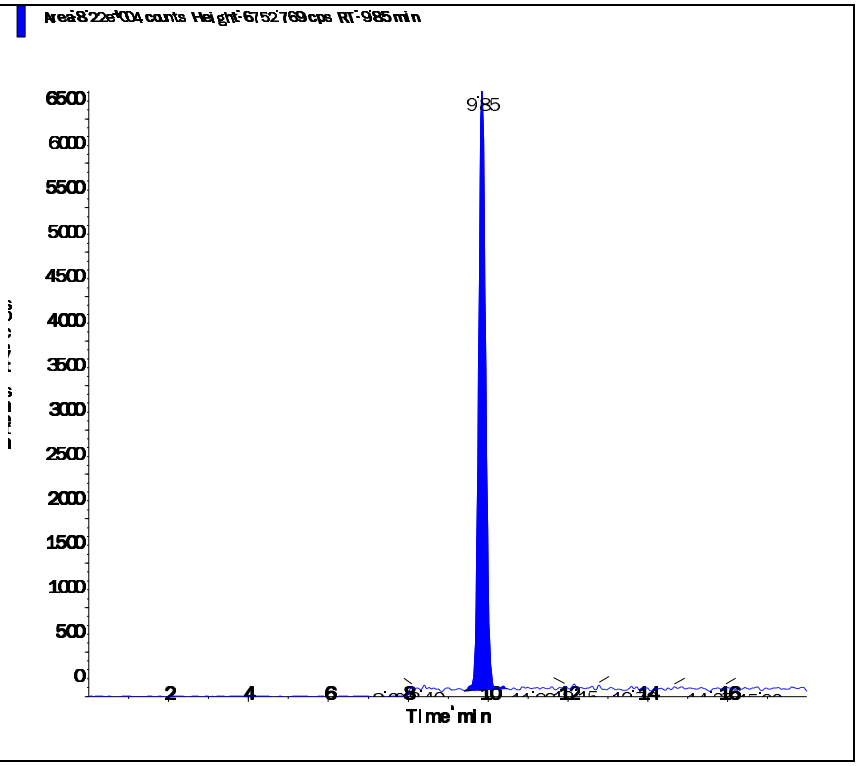

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.503 ng/ml
Area Ratio:	0.058
Sample Type:	(Standard)

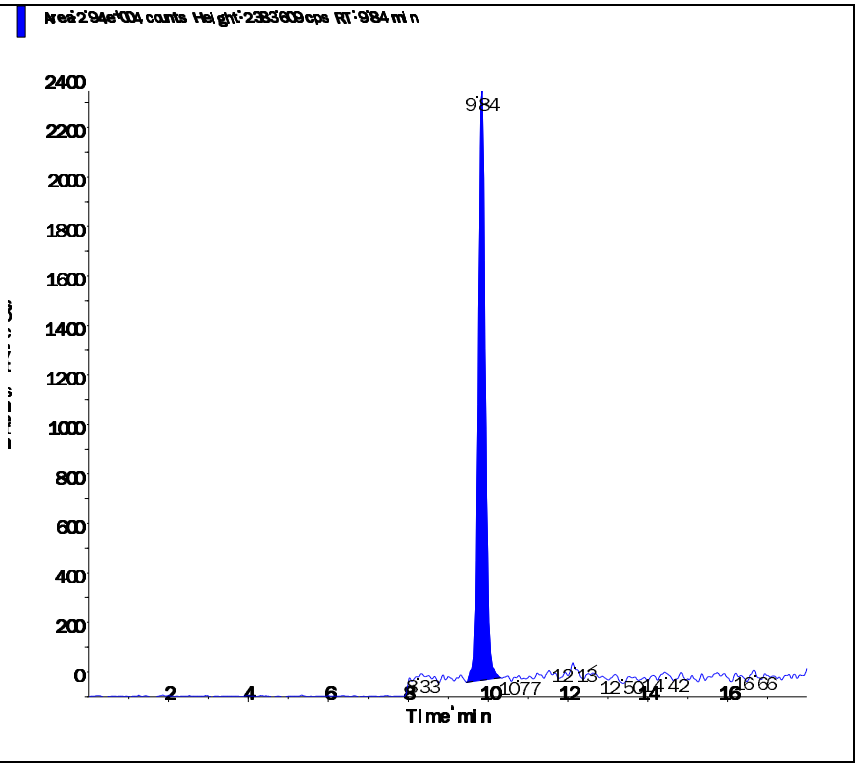

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Data File	LM34690.wiff	**Result Table**	050616_JWR.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050616_JWR.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

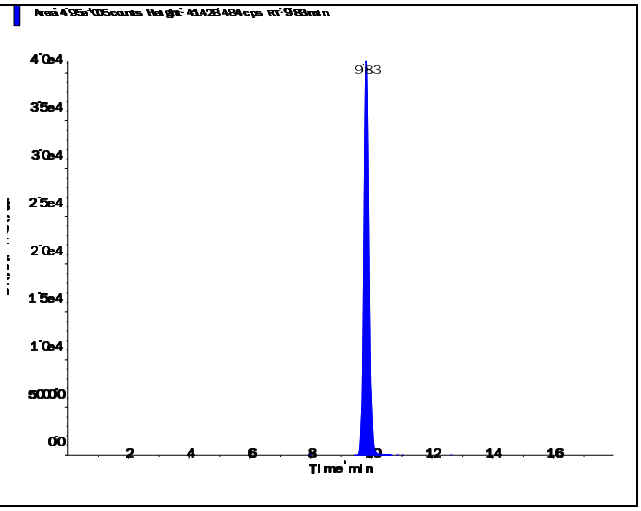

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

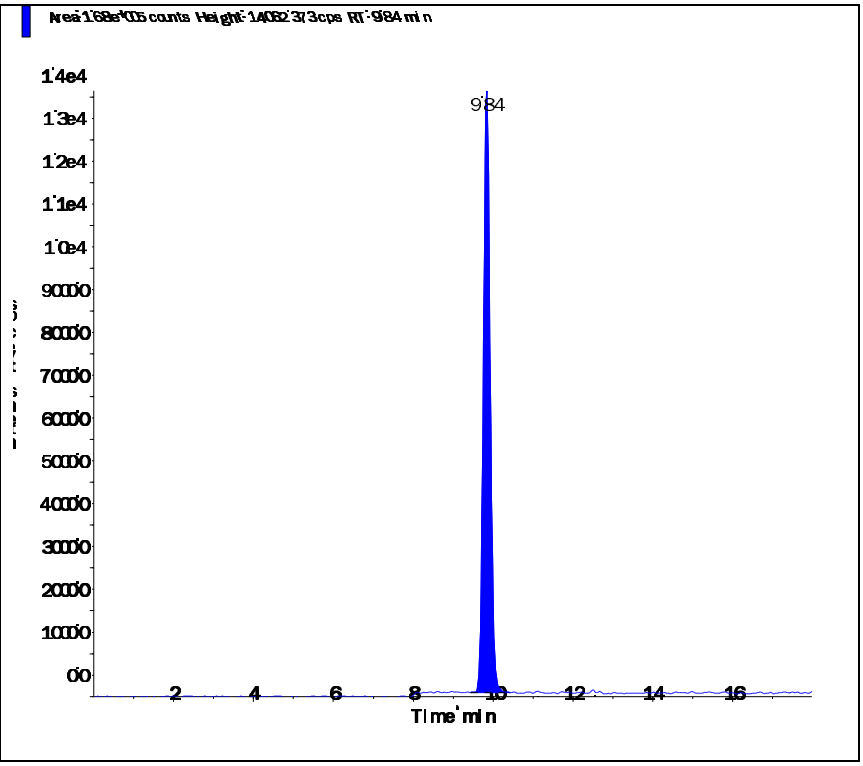

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

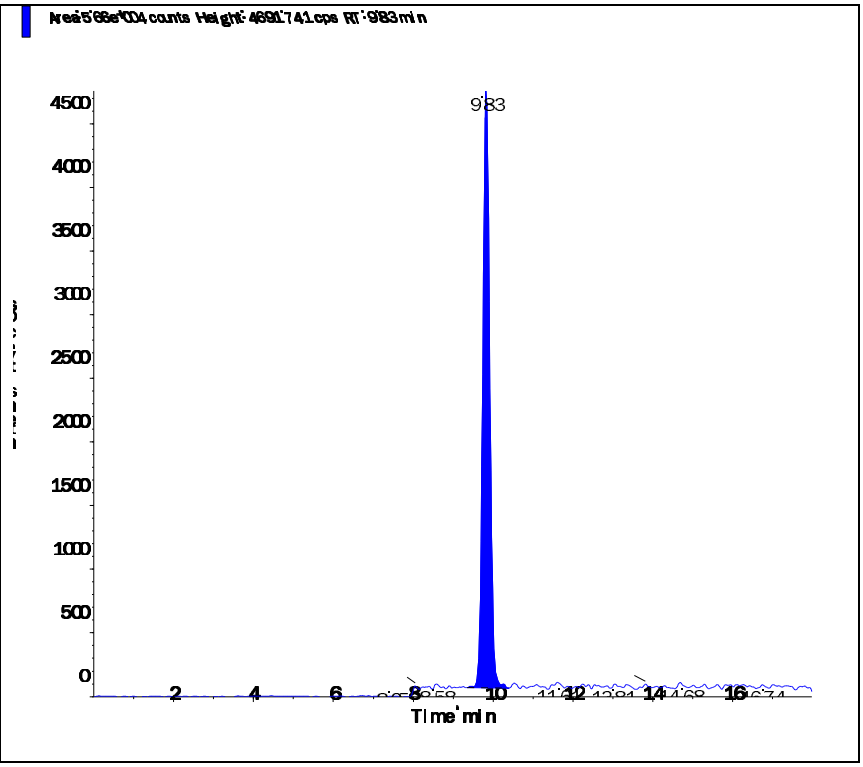

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Data File	LM34691.wiff	**Result Table**	050616_JWR.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050616_JWR.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

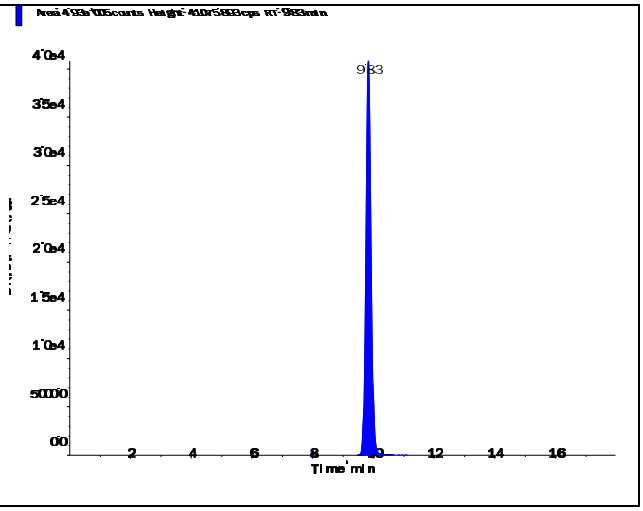

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 1.99 ng/ml Area Ratio: 0.669 Sample Type: (Standard)	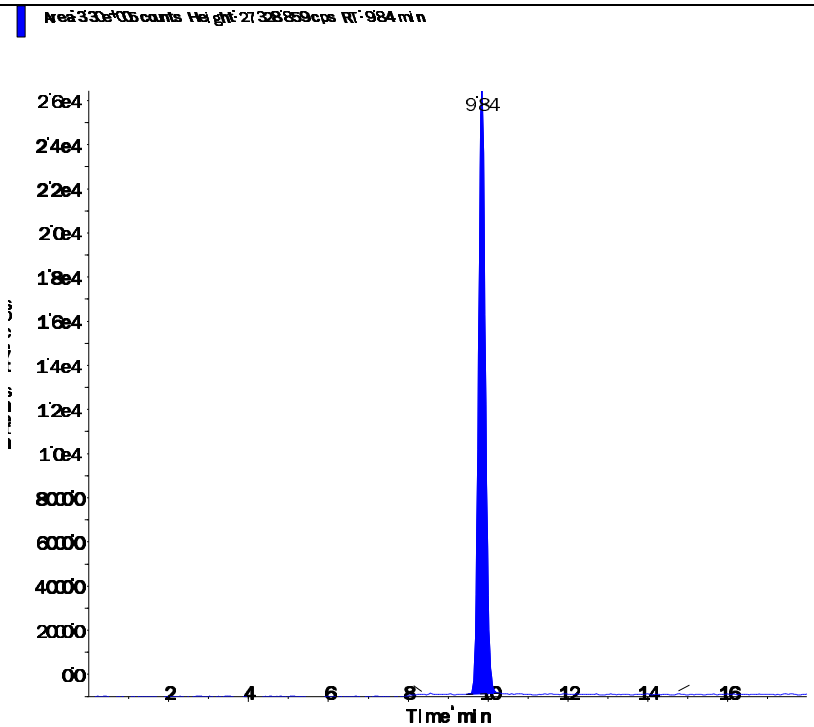
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 1.94 ng/ml Area Ratio: 0.219 Sample Type: (Standard)	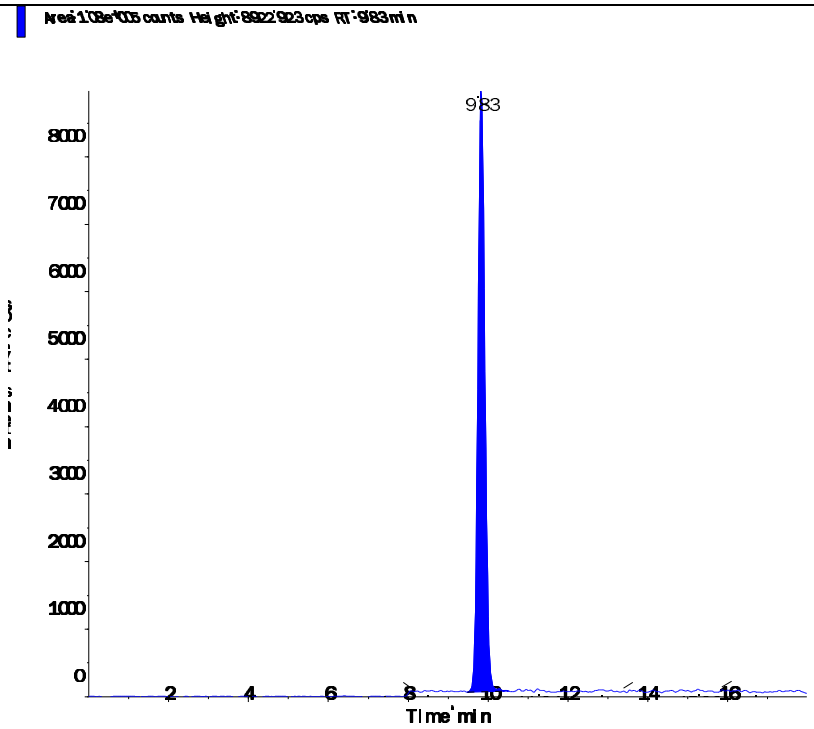

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Printed: 5/9/2016 3:33 PM

Data File	LM34692.wiff	**Result Table**	050616_JWR.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050616_JWR.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

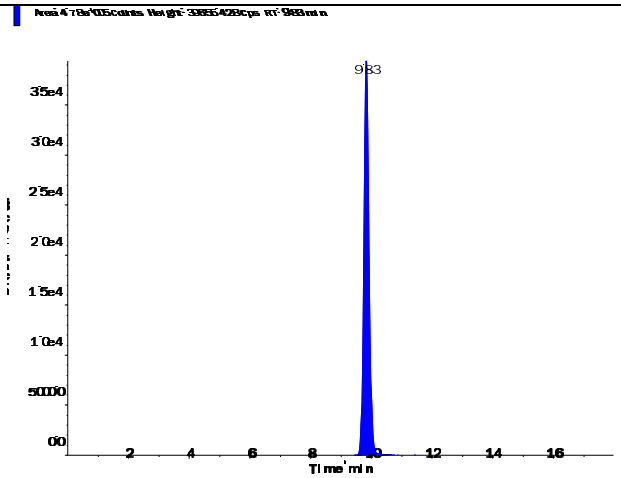

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

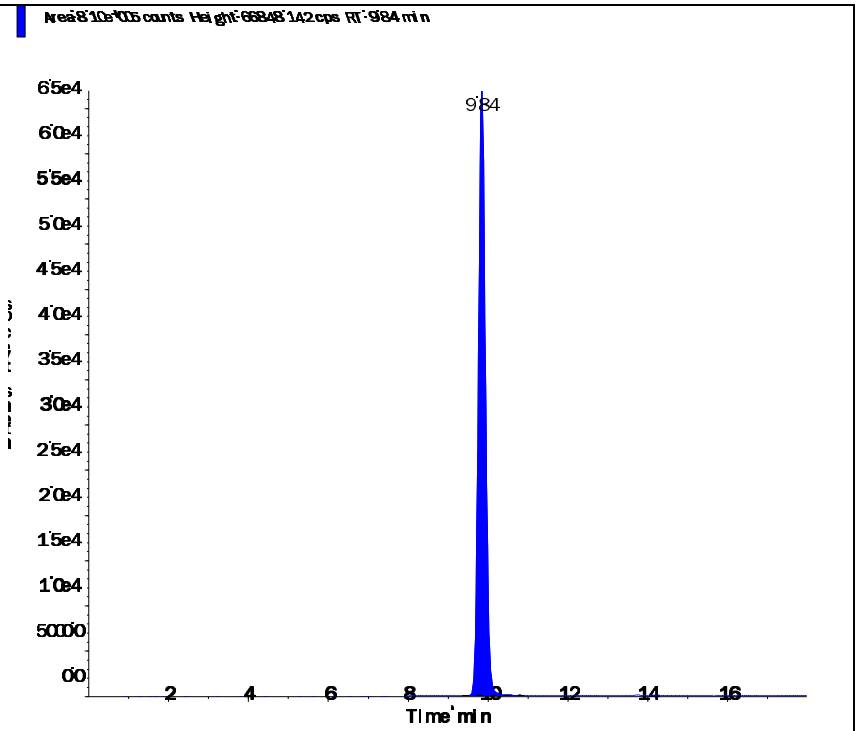

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

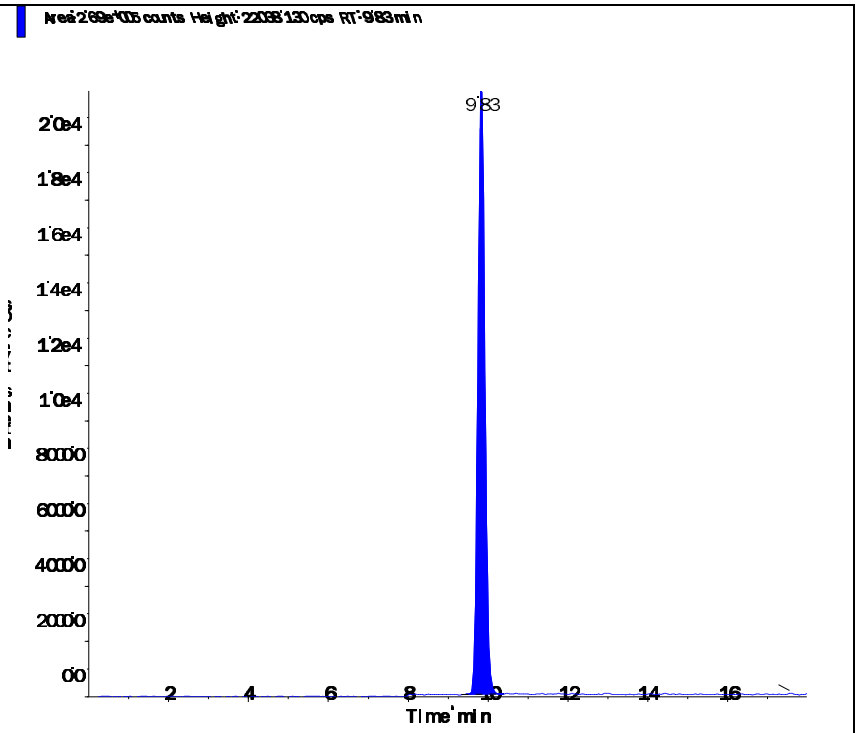

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Data File	LM34693.wiff	**Result Table**	050616_JWR.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050616_JWR.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

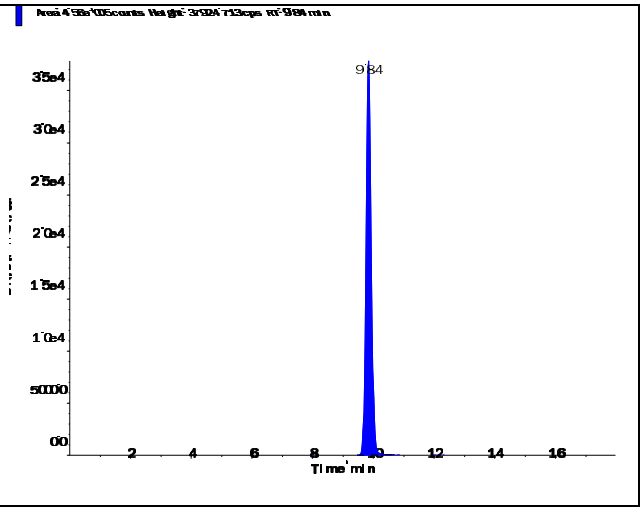

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 9.99 ng/ml Area Ratio: 3.36 Sample Type: (Standard)	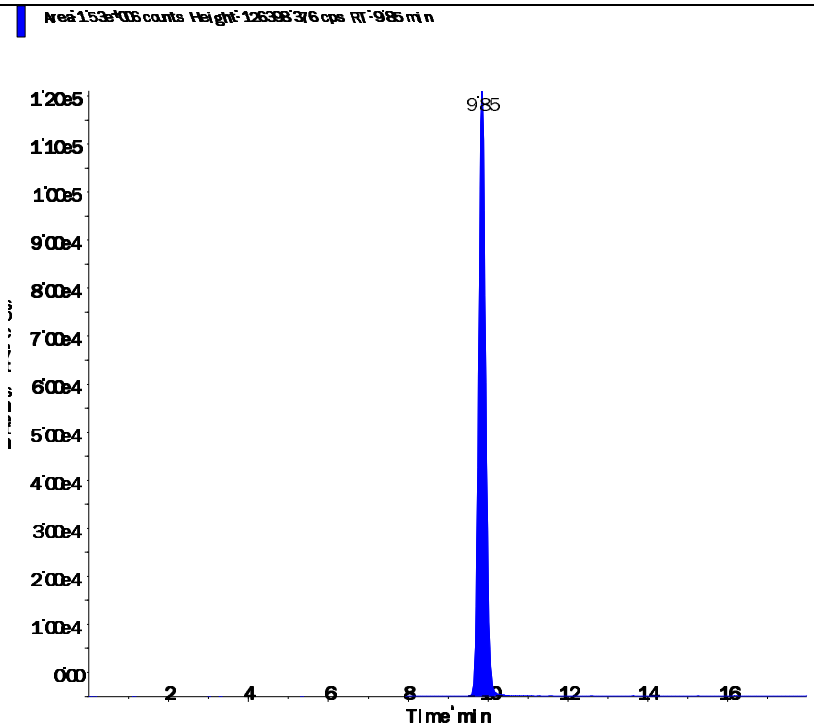
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 10.00 ng/ml Area Ratio: 1.122 Sample Type: (Standard)	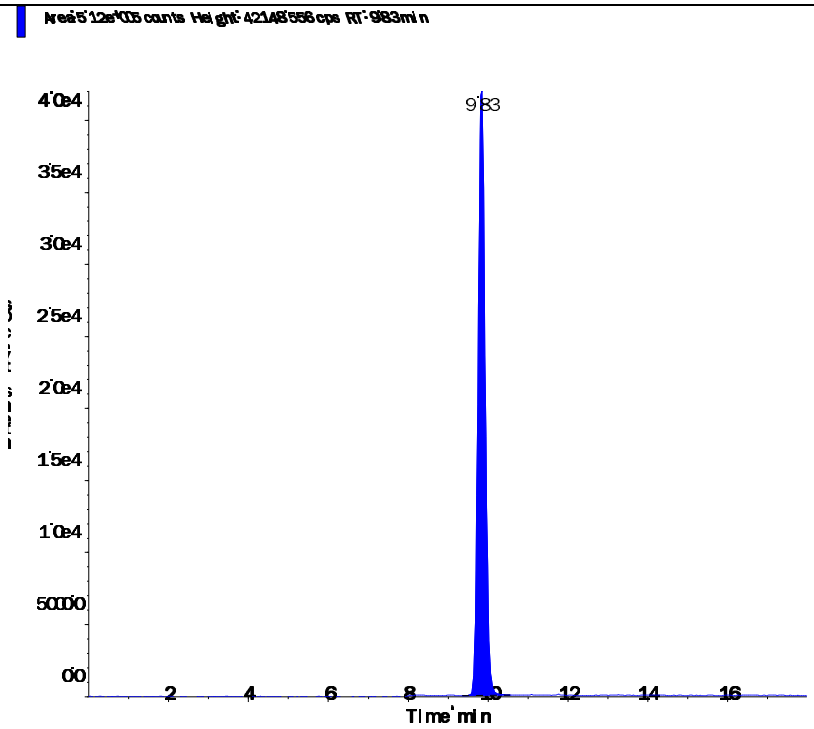

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Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

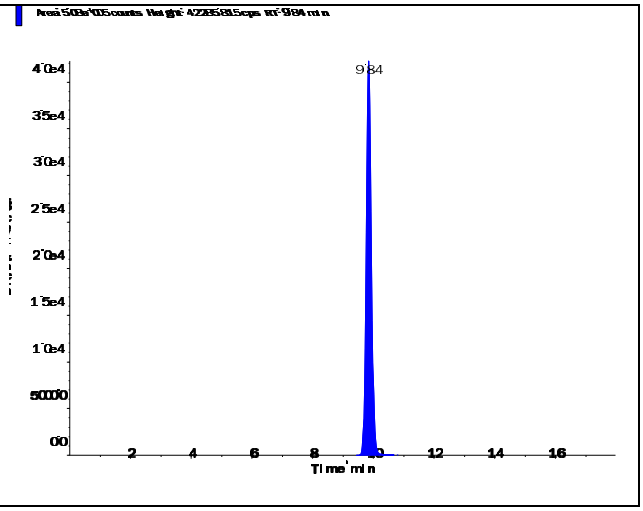

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.332
Sample Type:	(Quality Control)

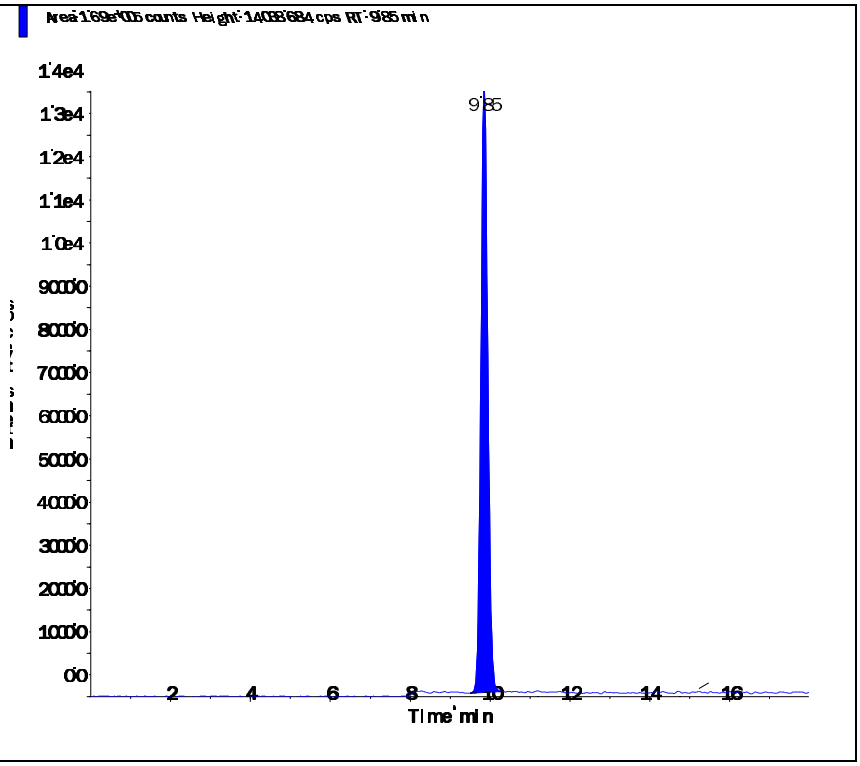

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

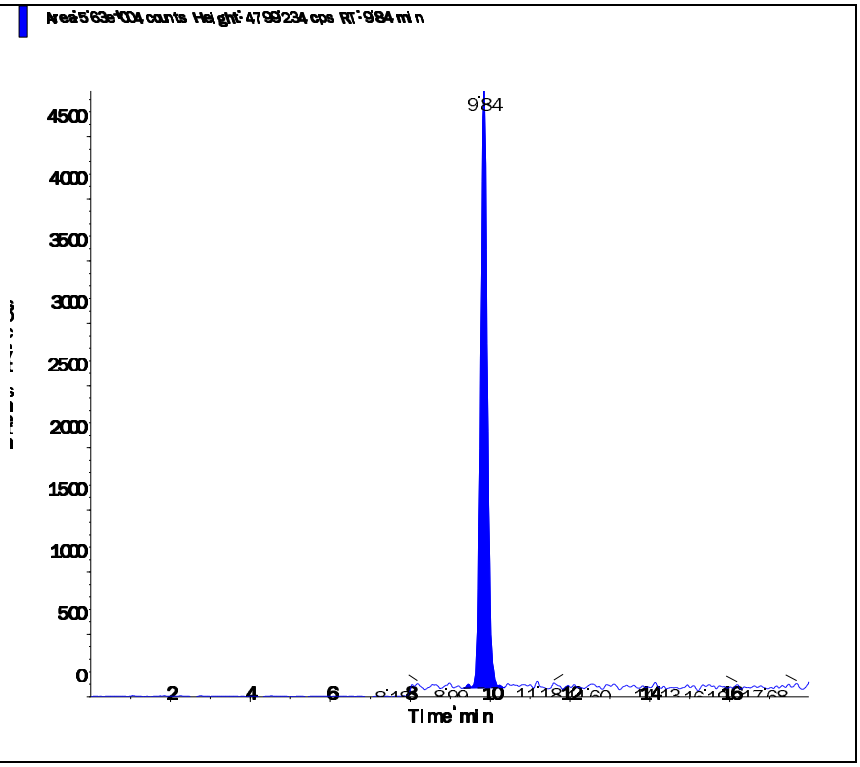

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Data File	LM34696.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 6:15:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567321-02 CCV (1.0ug/L)	**Injection Vial**	5.00
Data File	LM34696.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 6:15:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567321-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.050e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.720e+05	9.85	1.00	1.01
Perchlorate conf	5.710e+04	9.84	1.00	0.994

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

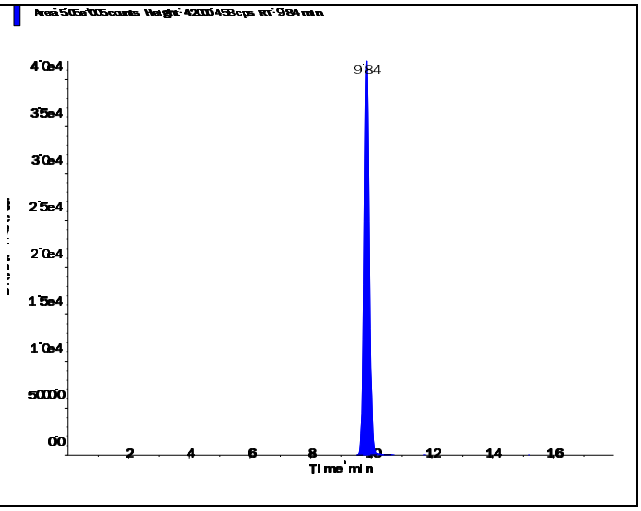

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.341
Sample Type:	(Quality Control)

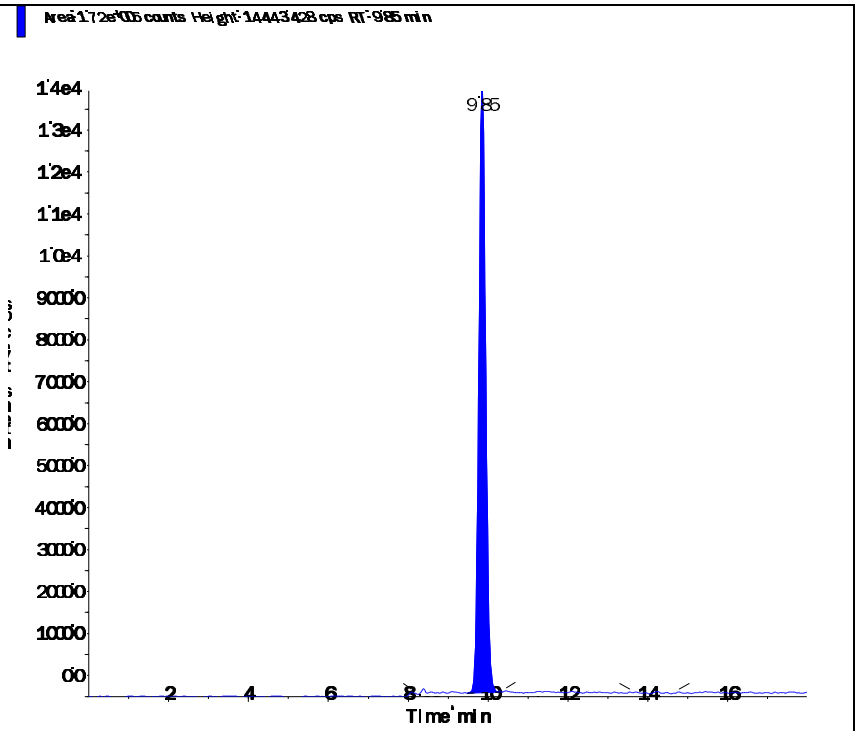

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.994 ng/ml
Area Ratio:	0.113
Sample Type:	(Quality Control)

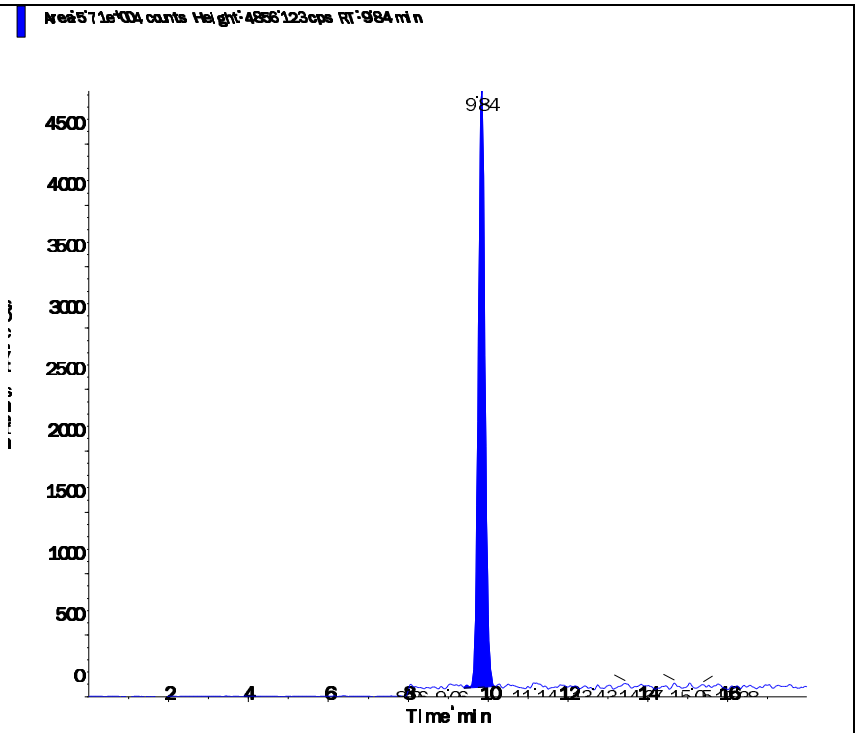

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Data File	LM34708.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 10:02:41 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567321-03 CCV (1.0ug/L)	**Injection Vial**	5.00
Data File	LM34708.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 10:02:41 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567321-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.340e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.800e+05	9.84	1.00	1.00
Perchlorate conf	5.970e+04	9.83	1.00	0.982

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

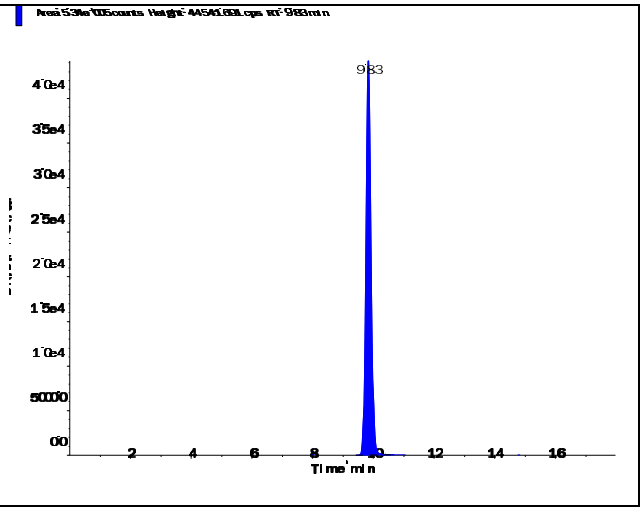

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.338
Sample Type:	(Quality Control)

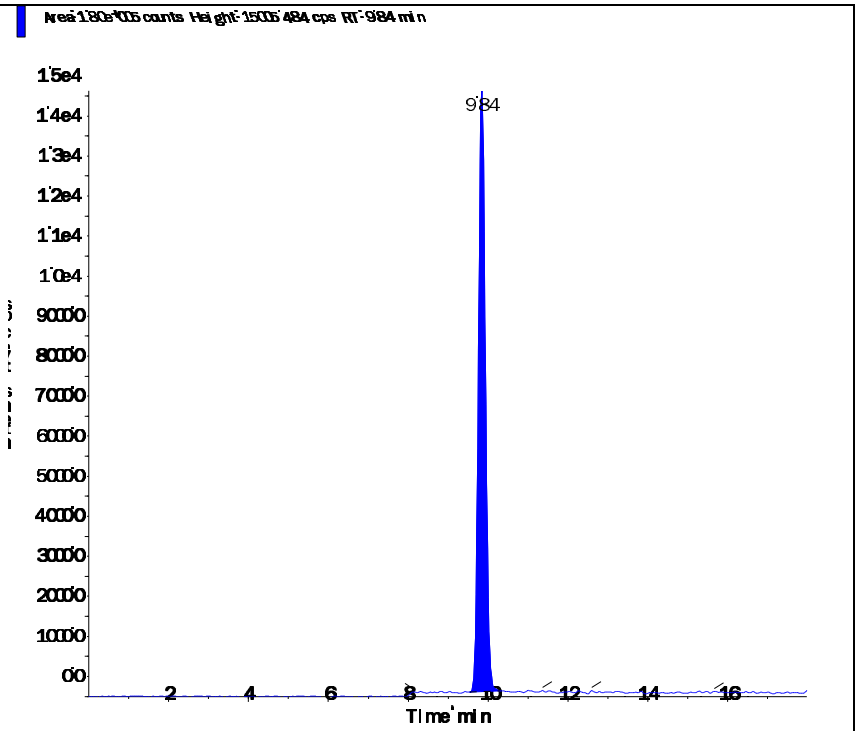

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.982 ng/ml
Area Ratio:	0.112
Sample Type:	(Quality Control)

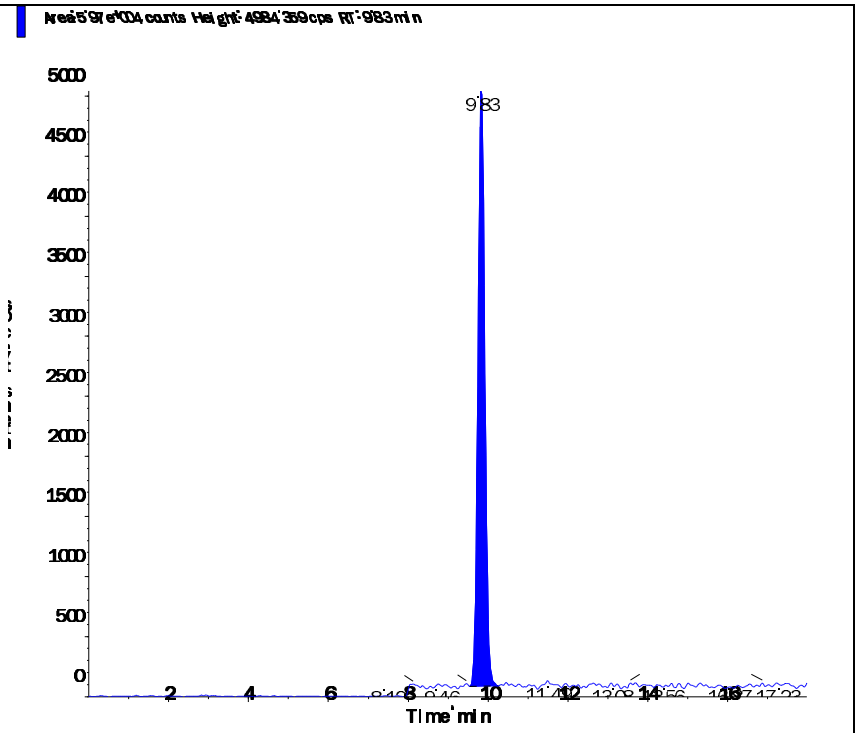

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Data File	LM34714.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 11:56:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567321-05 CCV (1.0ug/L)	**Injection Vial**	5.00
Data File	LM34714.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 11:56:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567321-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.630e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.910e+05	9.83	1.00	1.00
Perchlorate conf	6.210e+04	9.82	1.00	0.967

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

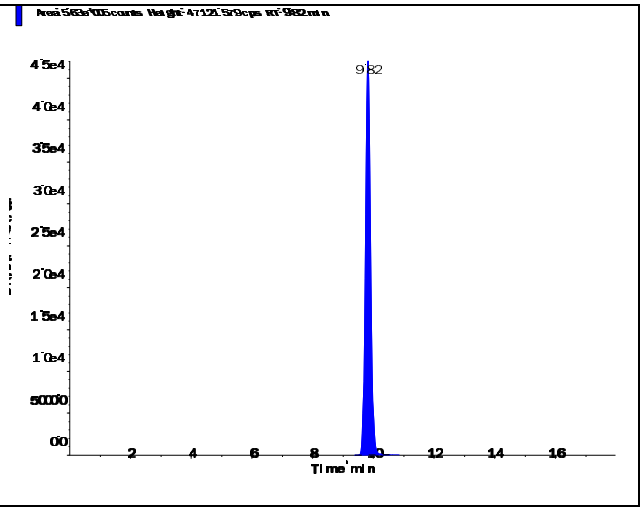

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.339
Sample Type:	(Quality Control)

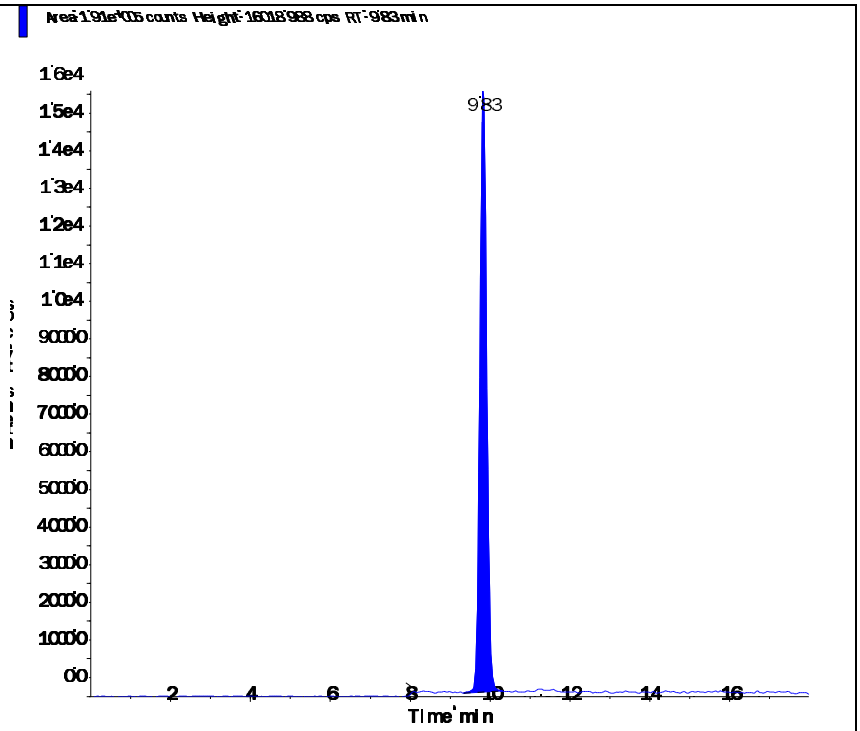

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	0.967 ng/ml
Area Ratio:	0.11
Sample Type:	(Quality Control)

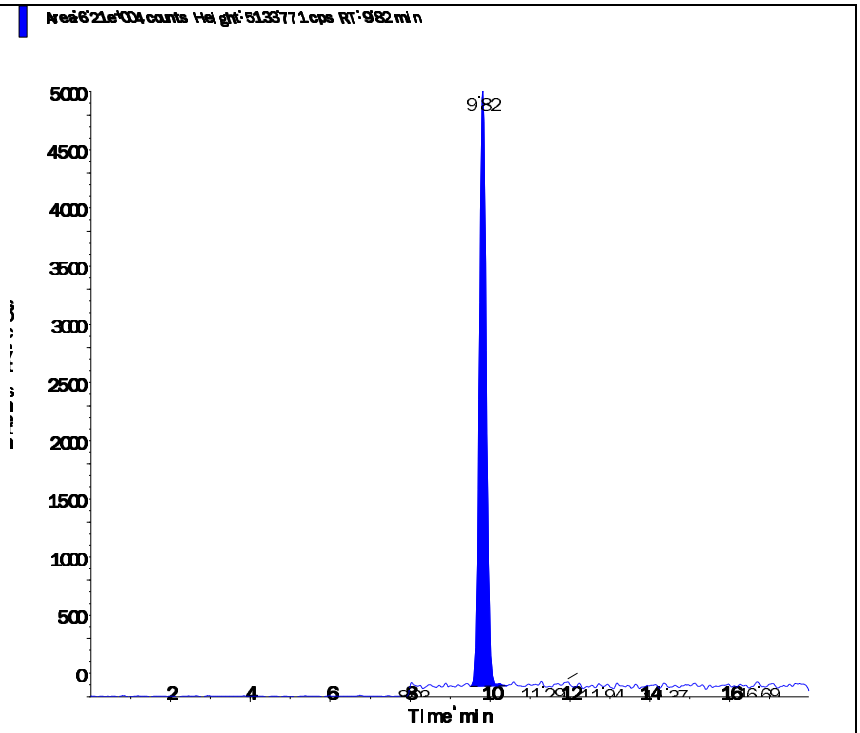

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Data File	LM34697.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 6:34:26 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567013-07 MRL (2.0ug/kg)	**Injection Vial**	3.00
Data File	LM34697.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 6:34:26 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567013-07	**Dilution Factor**	1.00
Sample Comment	7,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.170e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.670e+04	9.85	N/A	0.207
Perchlorate conf	1.130e+04	9.84	N/A	0.176

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

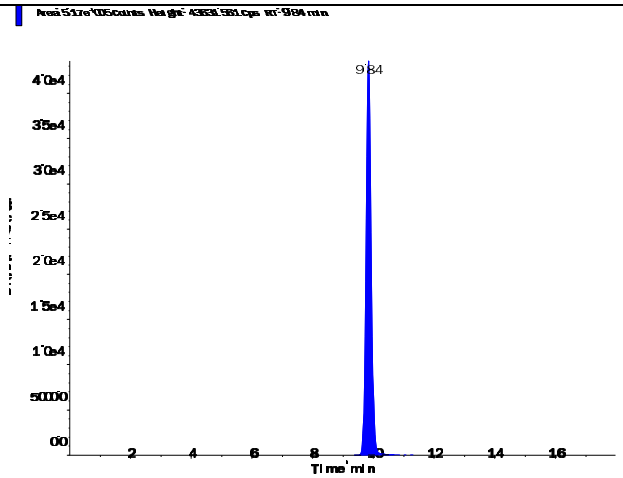

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

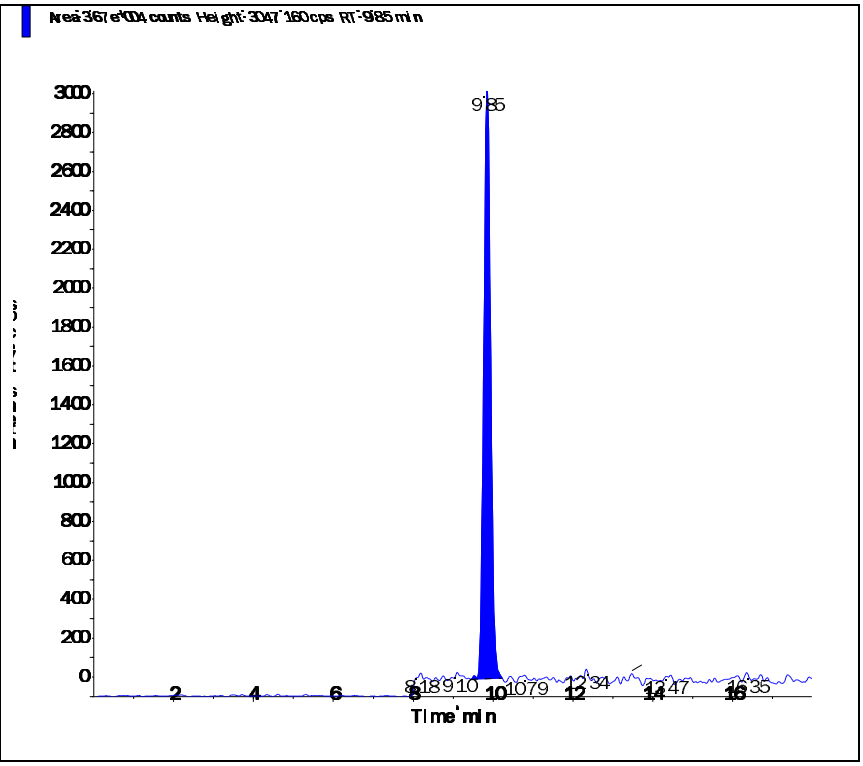

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.176 ng/ml
Area Ratio:	0.022
Sample Type:	(Unknown)

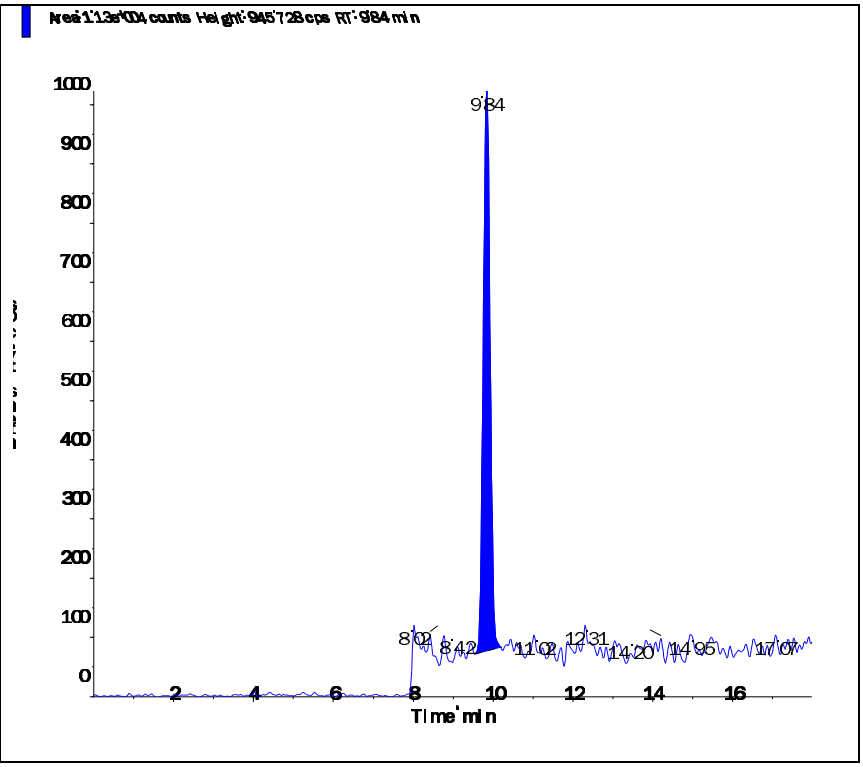

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Data File	LM34709.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 10:21:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567013-08 MRL (2.0ug/kg)	**Injection Vial**	3.00
Data File	LM34709.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 10:21:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567013-08	**Dilution Factor**	1.00
Sample Comment	7,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.940e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.510e+04	9.83	N/A	0.208
Perchlorate conf	1.140e+04	9.82	N/A	0.186

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

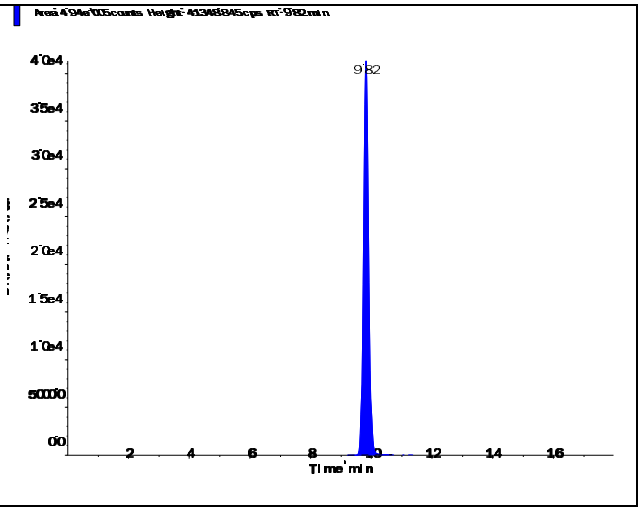

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.208 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

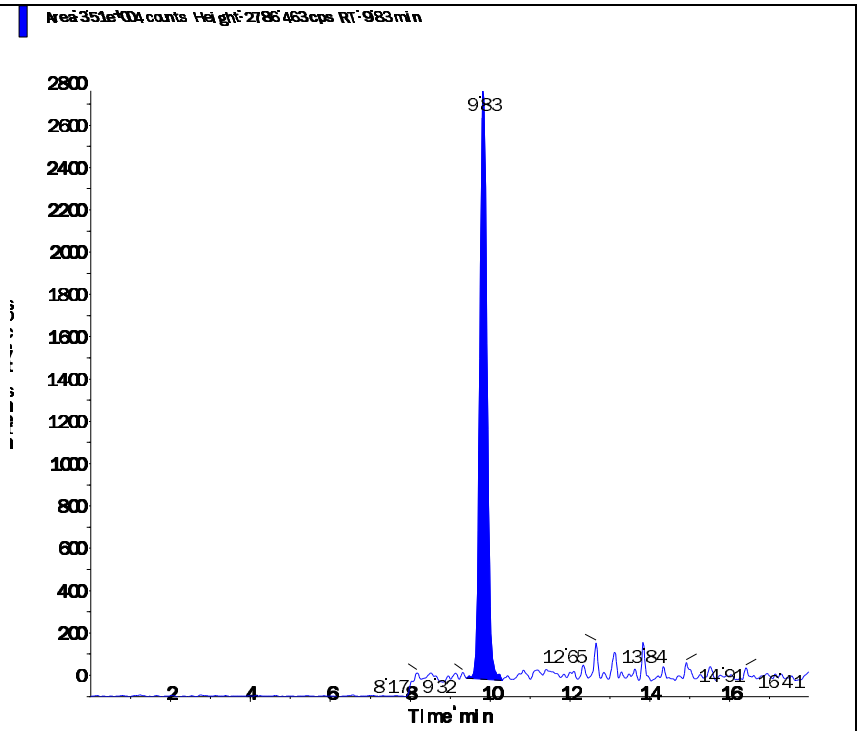

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	0.186 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

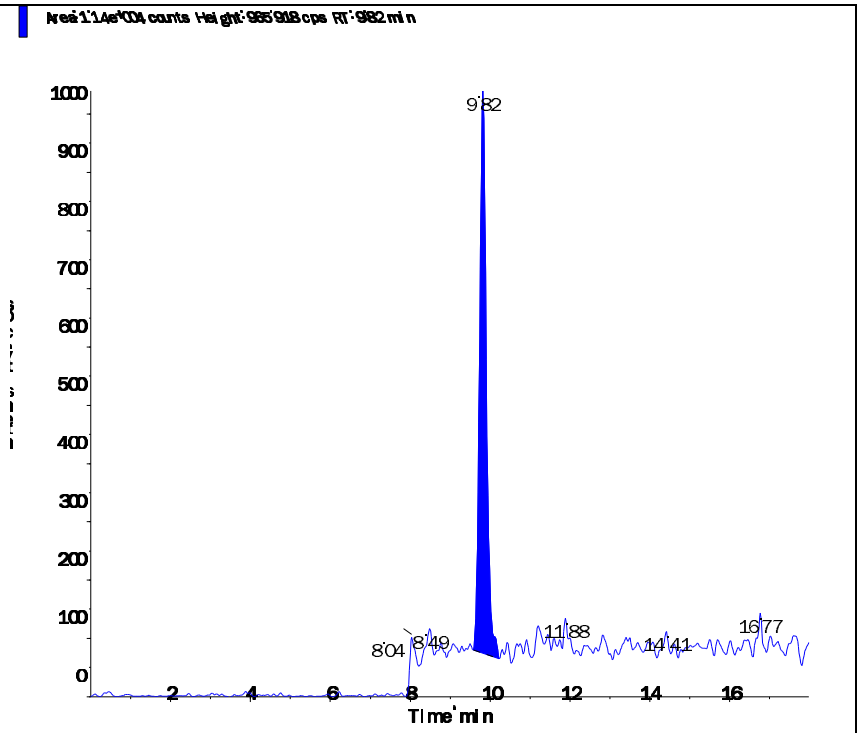

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Printed: 5/4/2016 1:31 PM

Data File	LM34715.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/4/2016 12:15:14 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567013-09 MRL (2.0ug/kg)	**Injection Vial**	3.00
Data File	LM34715.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 12:15:14 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567013-09	**Dilution Factor**	1.00
Sample Comment	7,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.730e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.000e+04	9.82	N/A	0.204
Perchlorate conf	1.290e+04	9.82	N/A	0.18

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

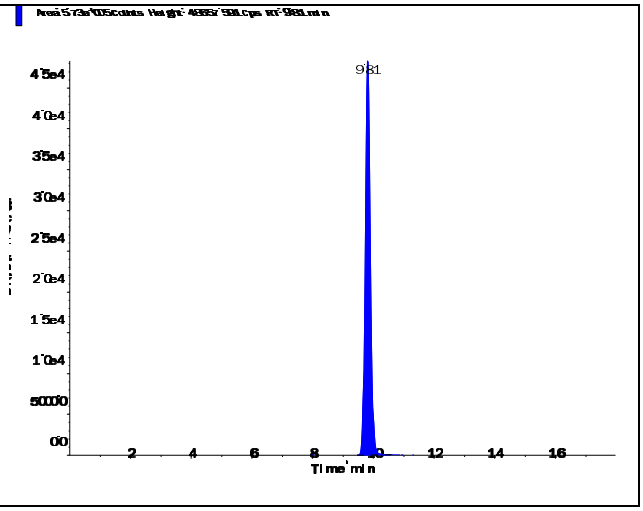

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	0.204 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

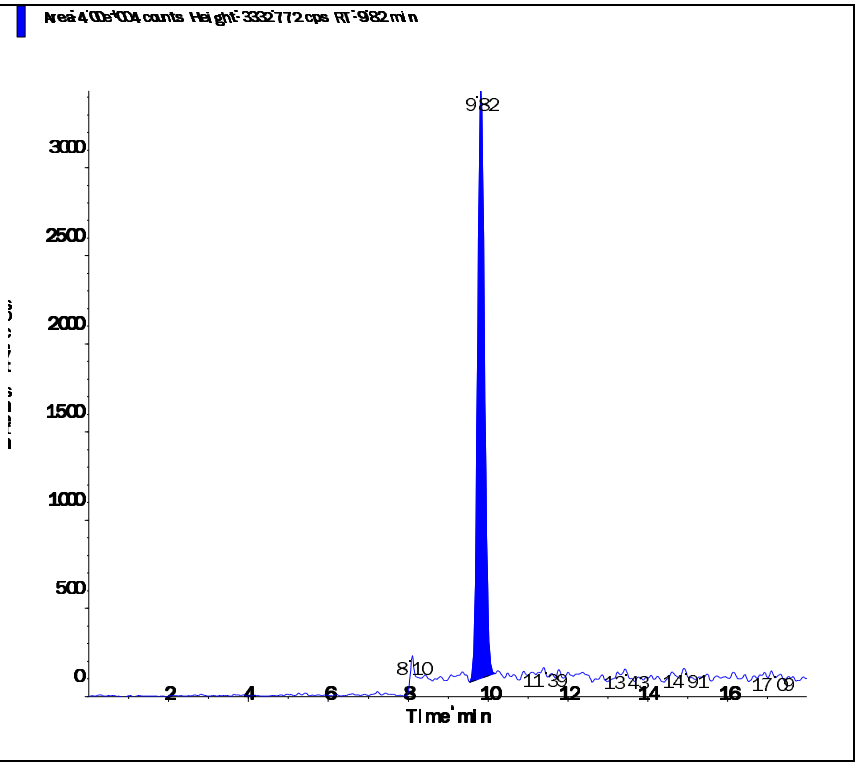

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	0.18 ng/ml
Area Ratio:	0.022
Sample Type:	(Unknown)

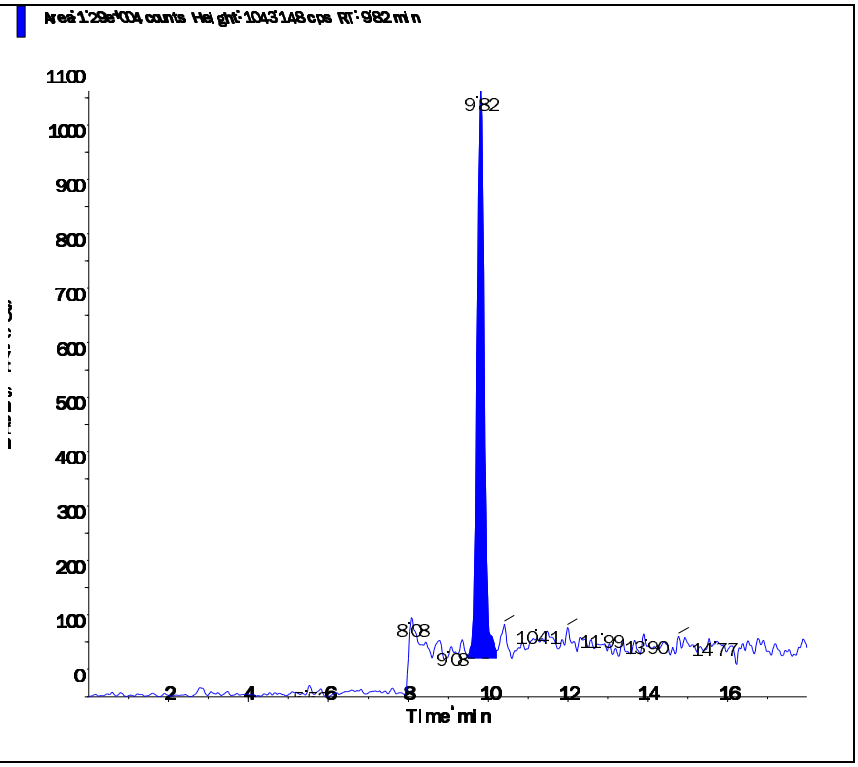

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Data File	LM34695.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:56:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567321-01 CCB	**Injection Vial**	1.00
Data File	LM34695.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:56:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567321-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.260e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

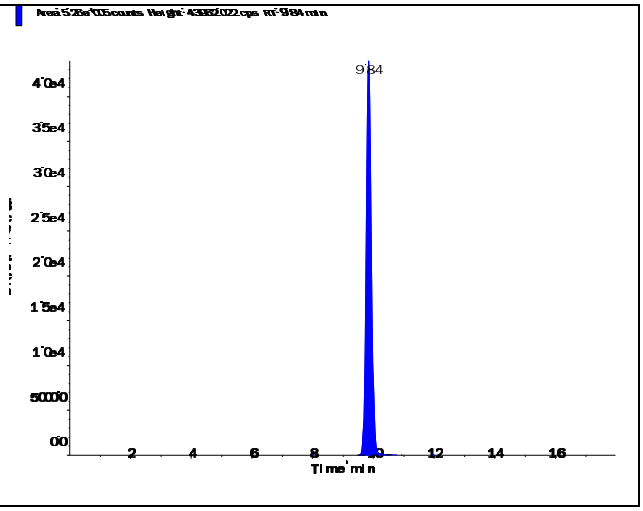

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

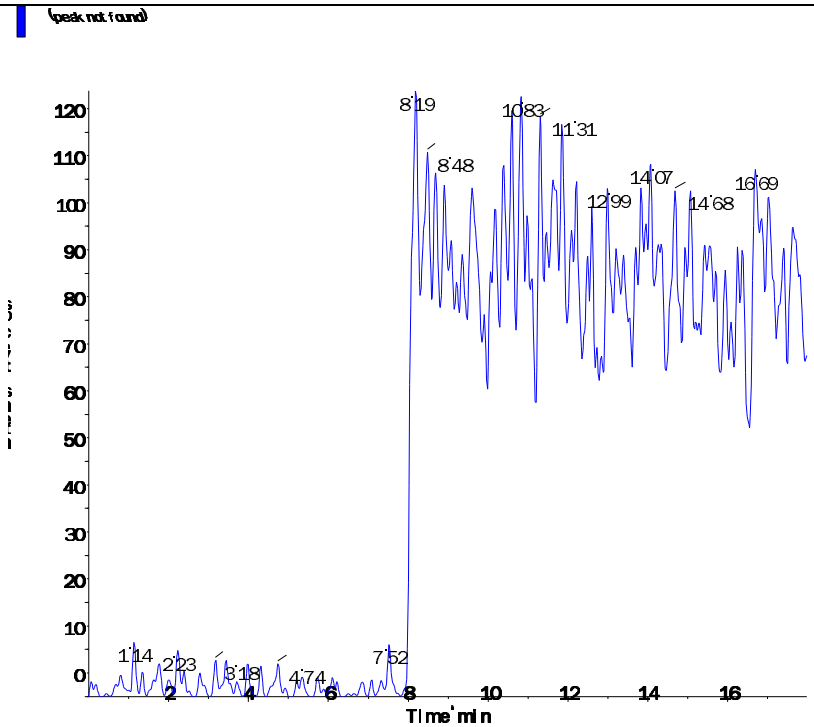

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

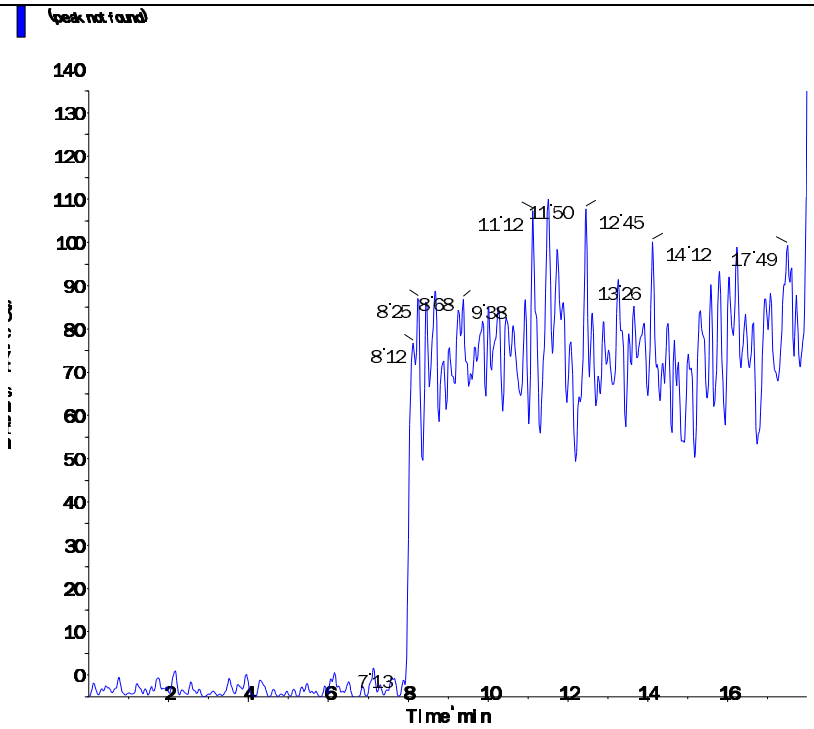

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Data File	LM34710.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 10:40:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567321-04 CCB	**Injection Vial**	1.00
Data File	LM34710.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 10:40:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567321-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.280e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

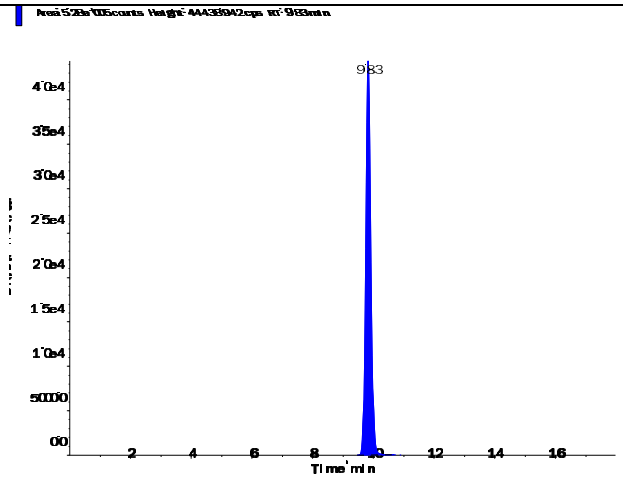

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

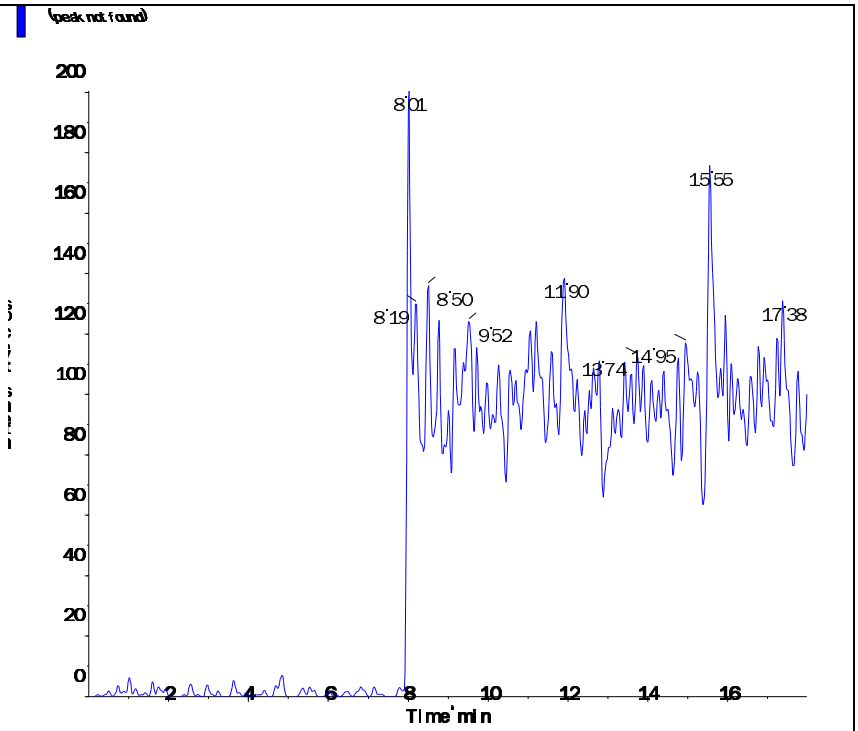

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

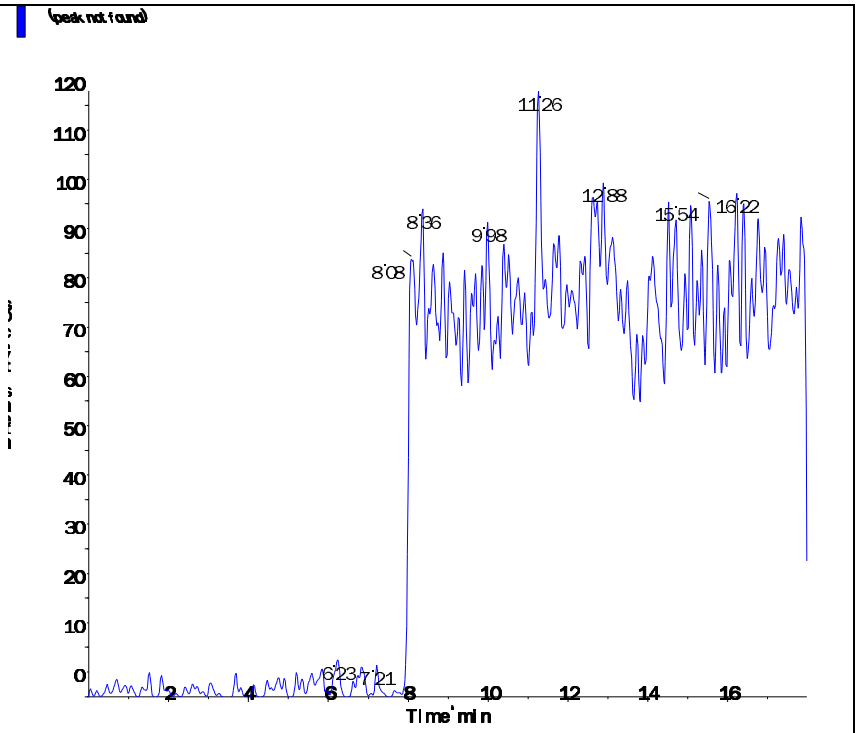

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Data File	LM34716.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/4/2016 12:34:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567321-06 CCB	**Injection Vial**	1.00
Data File	LM34716.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 12:34:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567321-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.820e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

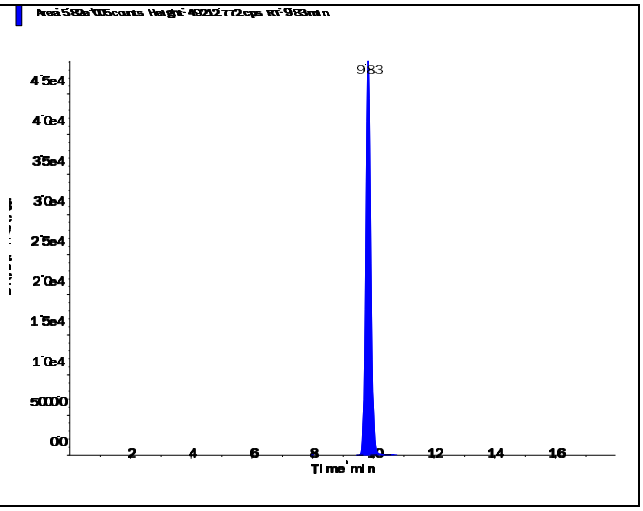

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

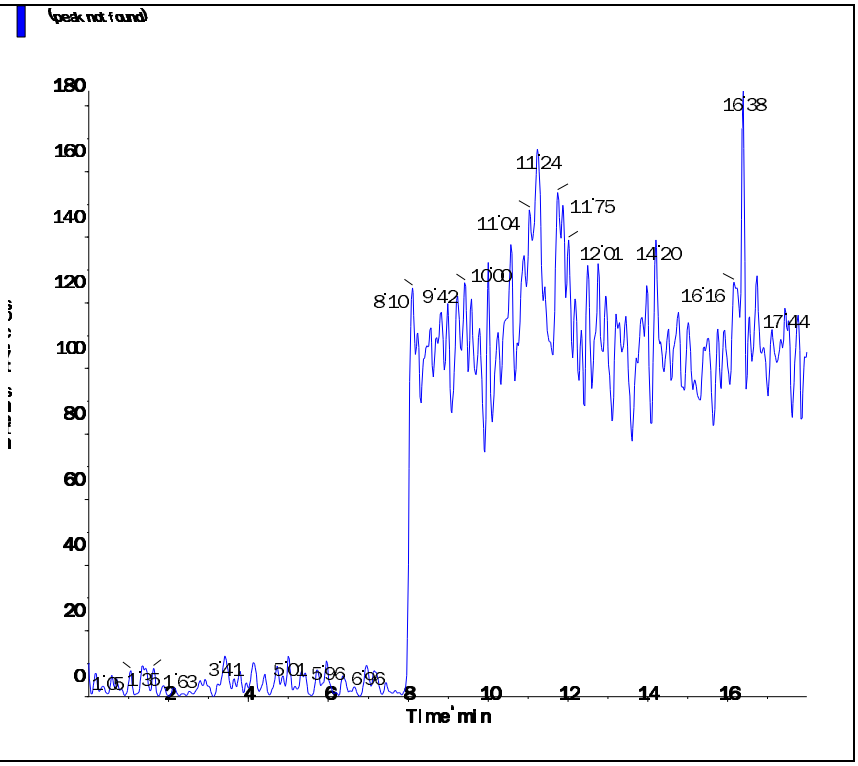

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

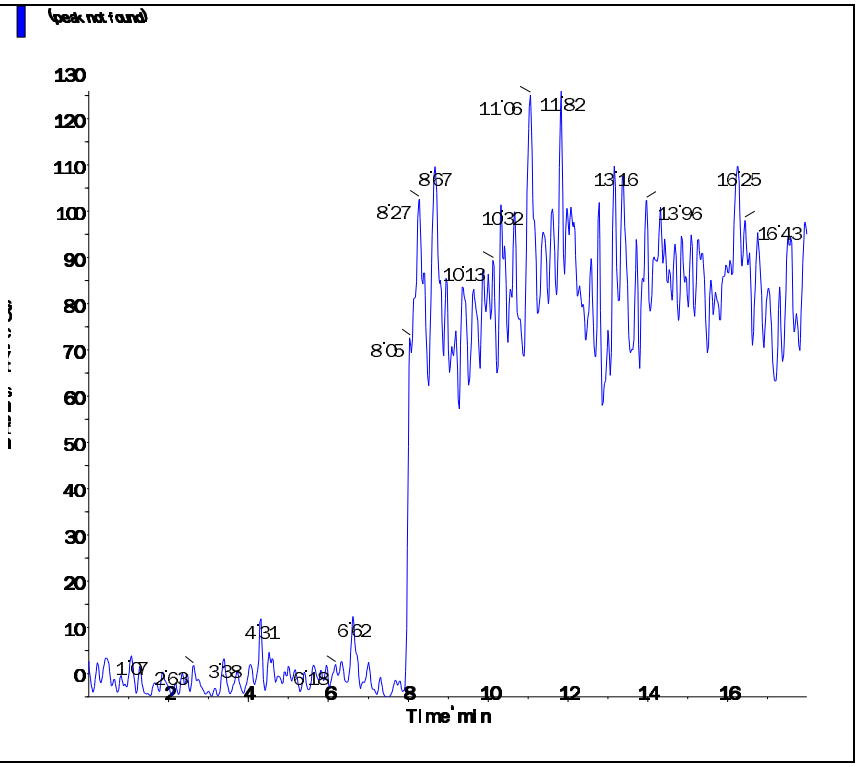

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Data File	LM34698.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 6:53:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567013-01 MCT (2.0ug/kg)	**Injection Vial**	10.00
Data File	LM34698.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 6:53:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567013-01	**Dilution Factor**	1.00
Sample Comment	7,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.870e+05	9.11	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.260e+04	9.11	N/A	0.196
Perchlorate conf	1.060e+04	9.10	N/A	0.175

O18LP (Internal Standard)

RT (Exp. RT): 9.11(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

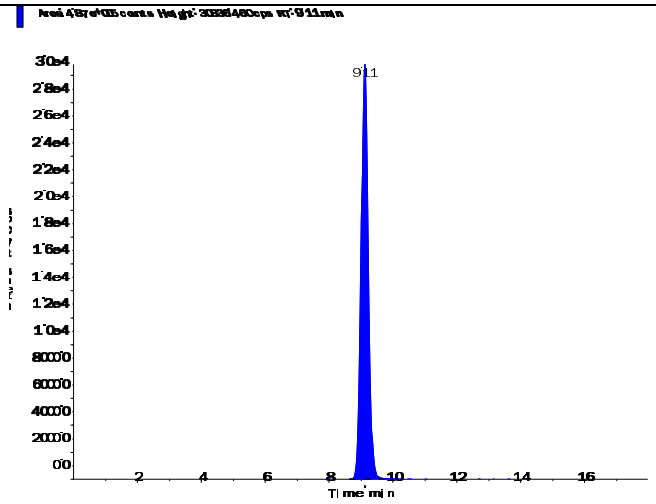

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.11 (9.84) min
Calculated conc:	0.196 ng/ml
Area Ratio:	0.067
Sample Type:	(Unknown)

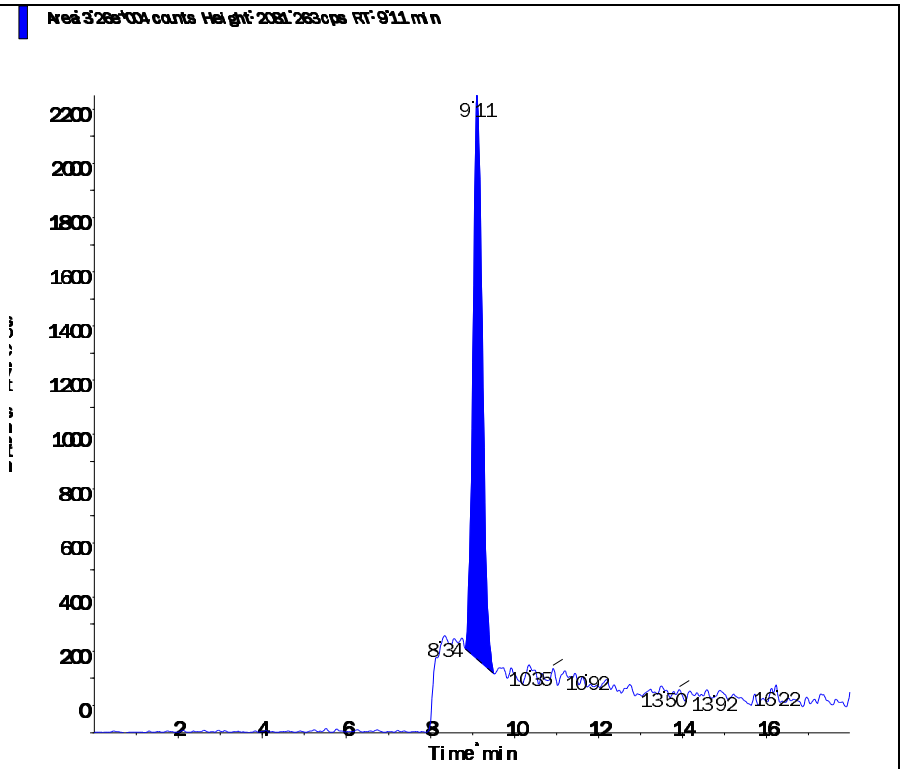

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.10 (9.84) min
Calculated conc:	0.175 ng/ml
Area Ratio:	0.022
Sample Type:	(Unknown)

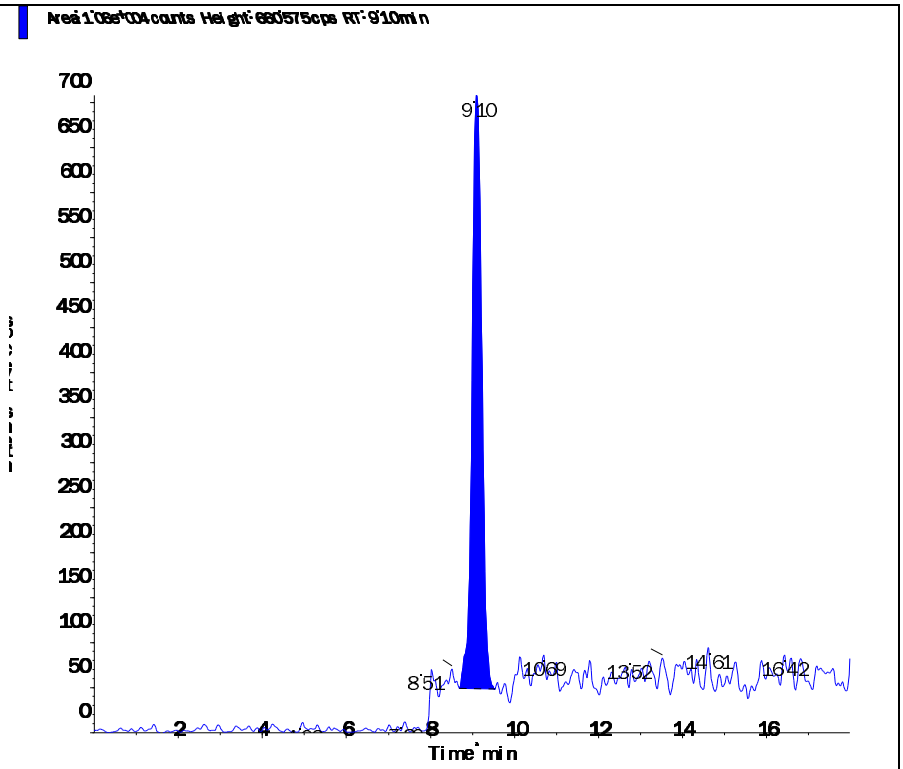

2.2.1.5 Raw QC Data

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Printed: 5/4/2016 1:25 PM

Data File	LM34699.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 7:12:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567013-02 BLANK	**Injection Vial**	11.00
Data File	LM34699.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 7:12:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567013-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.090e+05	9.86	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.86(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

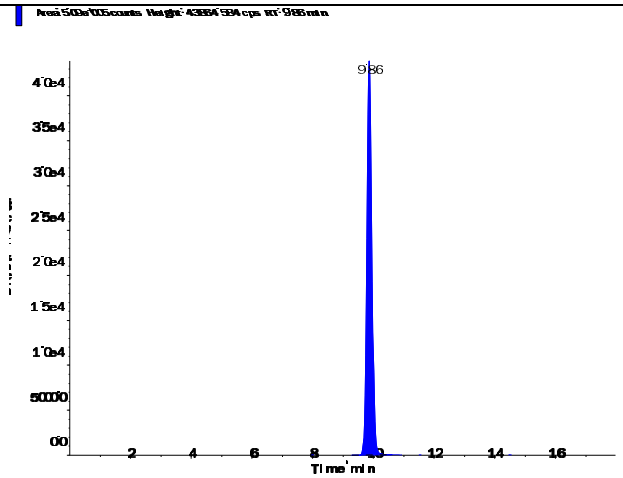

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

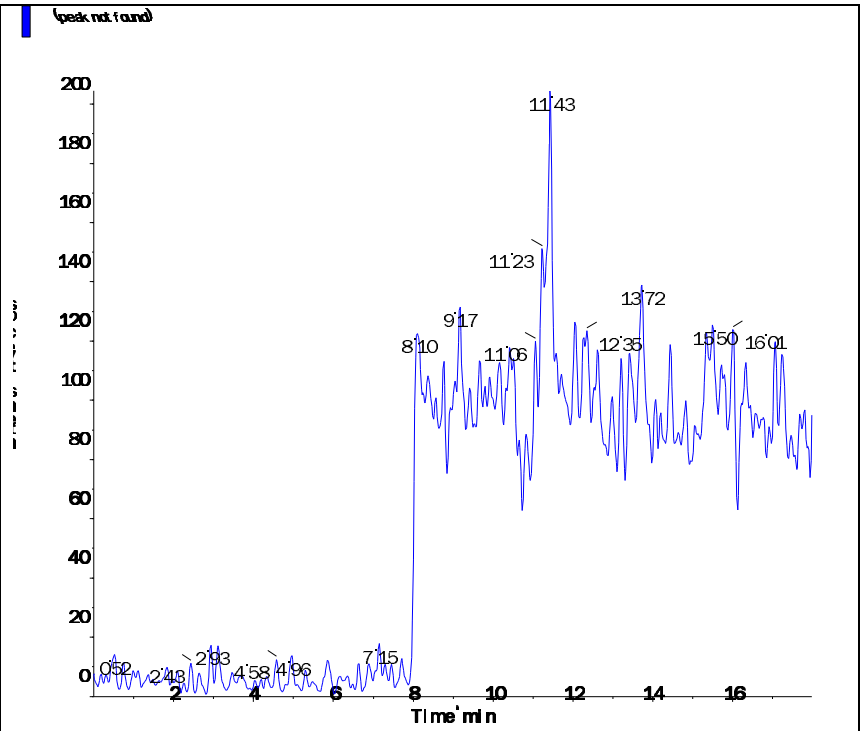

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

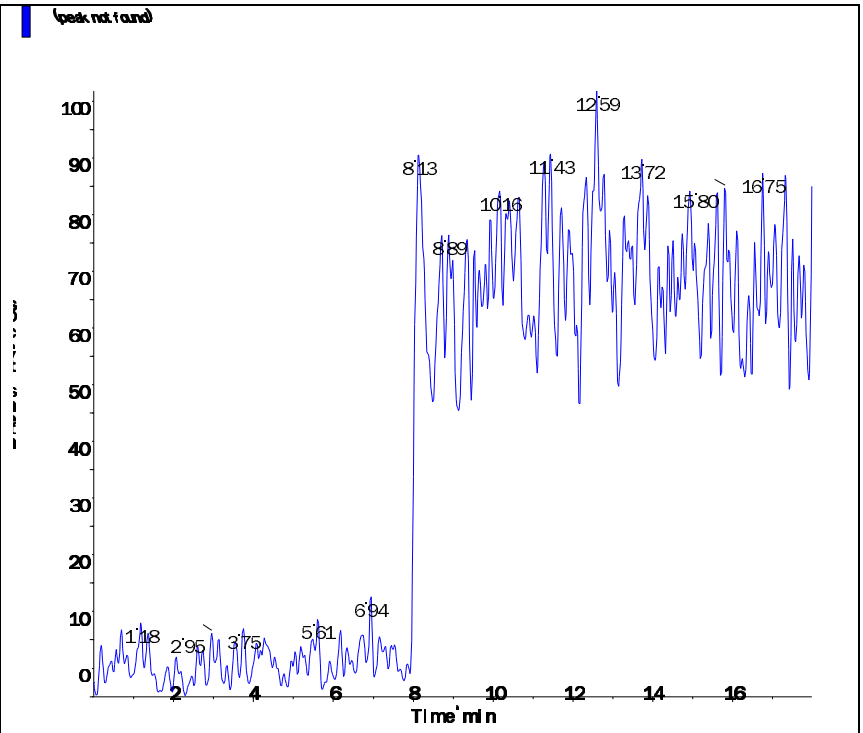

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Data File	LM34700.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 7:31:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567013-03 LCS (2.0ug/kg)	**Injection Vial**	12.00
Data File	LM34700.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 7:31:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567013-03	**Dilution Factor**	1.00
Sample Comment	7,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.86	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.500e+04	9.88	N/A	0.204
Perchlorate conf	1.150e+04	9.87	N/A	0.186

O18LP (Internal Standard)

RT (Exp. RT): 9.86(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

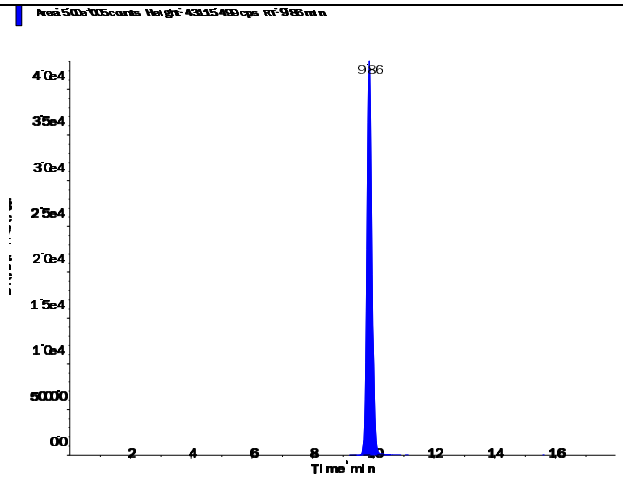

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Printed: 5/4/2016 1:26 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.88 (9.84) min Calculated conc: 0.204 ng/ml Area Ratio: 0.07 Sample Type: (Unknown)	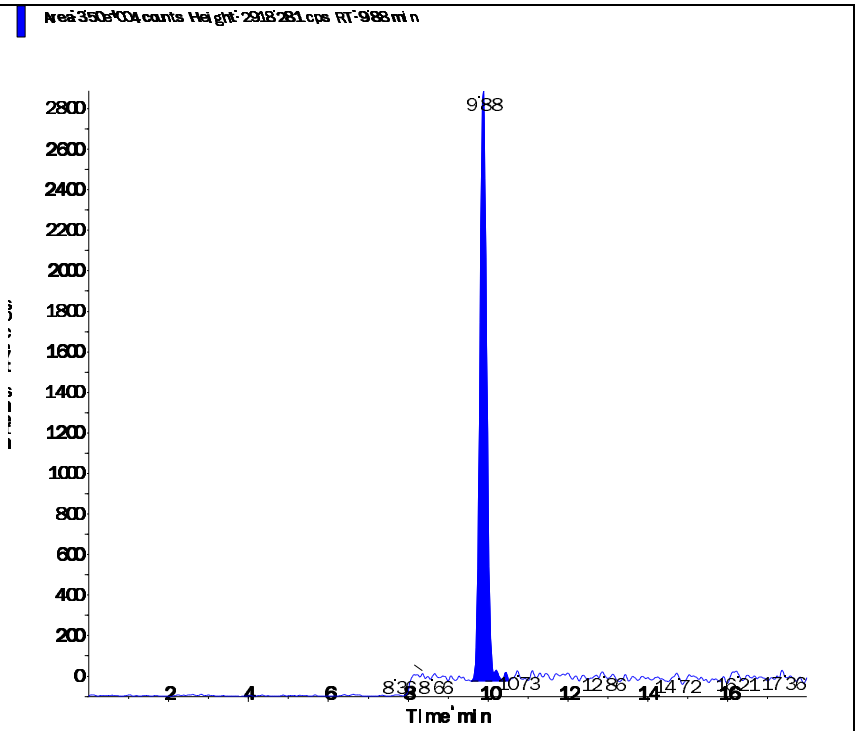
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.87 (9.84) min Calculated conc: 0.186 ng/ml Area Ratio: 0.023 Sample Type: (Unknown)	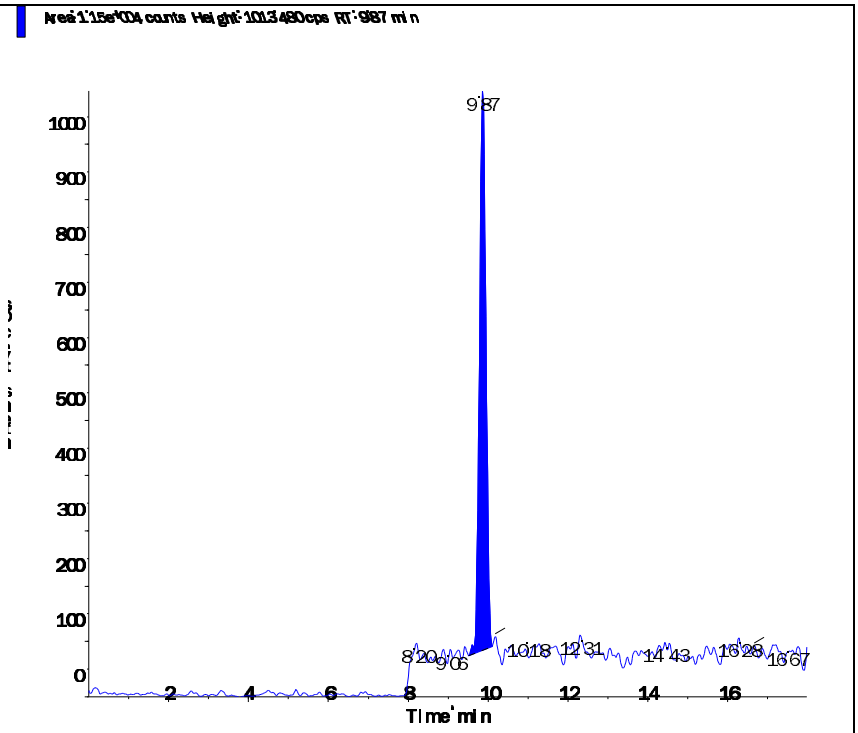

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2.3 General Chemistry Data

2.3.1 Percent Solids Data

2.3.1.1 Raw Data

Example Percent Solids Calculations

1.0 Calculating the percent solids of a sample.

$$\%Solids = \frac{WT3 - WT1}{WT2 - WT1} \times F$$

Where:	
WT1 = Weight, in grams, of the empty container	1.30 g
WT2 = Weight, in grams, of the container and wet sample	21.274 g
WT3 = Weight, in grams, of the container and dried sample	5.21 g
F = Factor to get units as percent weight	100
%Solids = Percent solids present in sample.	19.58%

2.0 Calculating the percent moisture of a sample.

% Moisture = 100 - % Solids from 1.0 calculation

Microbac Laboratories Inc.

PERCENT SOLIDS

Workgroup (AAB#): WG566651 Analyst: AC ADT(on): 04/27/2016 15:04
Method: D2216-90 Instrument: BAL021 ADT(off): 04/28/2016 08:17
SOP: K0003 Rev: 14

SAMPLE NUMBER	EMPTY PAN WT 1	WET WT 2	DRY WT 3A	DRY WT 3B	DRY WT 3C	PERCENT SOLID	PERCENT MOISTURE
L16041344-01	1.295	23.775	20.276			84.44	
L16041344-02	1.292	22.086	18.313			81.86	
L16041344-03	1.29	24.318	19.182			77.70	
L16041344-04	1.292	22.954	19.491			84.01	
L16041344-05	1.295	20.82	17.918			85.14	
L16041344-06	1.294	21.331	17.786			82.31	
L16041344-07	1.294	22.626	17.763			77.20	
L16041344-08	1.284	23.732	20.152			84.05	
L16041344-09	1.297	21.209	16.991			78.82	
L16041344-10	1.297	24.632	19.7			78.86	
L16041344-11	1.285	25.923	21.207			80.86	
L16041344-12	1.293	26.18	20.686			77.92	
L16041344-13	1.287	23.913	17.539			71.83	
L16041344-14	1.293	25.22	19.47			75.97	
L16041363-01	1.298	24.299	20.595			83.90	
L16041363-02	1.292	25.694	20.781			79.87	
L16041363-03	1.298	24.555	19.905			80.01	
L16041363-04	1.295	25.813	20.756			79.37	
L16041363-05	1.282	23.061	18.872			80.77	
L16041363-06	1.295	23.191	18.612			79.09	
L16041363-07	1.299	24.331	18.783			75.91	
L16041363-08	1.299	24.331	18.783			75.91	
L16041363-09	1.299	24.331	18.783			75.91	
L16041363-10	1.287	22.26	18.173			80.51	
WG566651-01	1.293	26.18	20.686			77.92	22.08
WG566651-02	1.295	23.191	18.612			79.09	20.91
WG566651-03	1.29	33.542	26.24			77.36	22.64
WG566651-04	1.289	23.165	18.672			79.46	20.54

Analyst: [illegible]

PERCENT_SOLIDS - Modified 04/24/2008
PDF ID: 4738193
Report generated: 04/28/2016 08:22

Microbac

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
May 10, 2016

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001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
May 10, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
May 10, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Stephanie Mossburg	Project Manager: Debra Richmon	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): KUYLIA PALLANES	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Kuylia Pallanes	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205			
Turn Around Time: STANDARD	pH:	Program:	
Project Name/Location: Longhorn			
Project Number: 60274185			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOCs 8260	Perchlorate 6850	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
18/24 Investigation	18CPTMW19SW(5-5.5)210416			4/21/16	1700		X	S	2	X	X					
	18CPTMW19SW(10-10.5)210416			4/21/16	1730		X	S	2	X	X					
	18CPTMW19SW(30-30.5)220416			4/22/16	0900		X	S	2	X	X					
	18CPTMW19SW(30-30.5)220416 DUP			4/22/16	0900		X	S	2	X	X					
	18CPTMW19SW(40-40.5)220416			4/22/16	0905		X	S	2	X	X					
	18CPTMW19SW(20-20.5)220416			4/21/16	1800		X	S	2	X	X					
	18CPTMW19SW(60-61)220416			4/22/16	1115		X	S	2	X	X					
	18CPTMW19SW(60-61)220416 MS			4/22/16	1115		X	S	2	X	X					
	18CPTMW19SW(60-61)220416 MSD			4/22/16	1115		X	S	2	X	X					
	18CPTMW19SW(50-50.5)220416			4/22	1111		X	S	2	X	X					

ERPIMS REQUIRED FIELDS

Comments:

Relinquished by: (Signature) Kuylia Pallanes	Date 4/25/16	Time 1300	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time			Time	Remarks:

Microbac OVD
Received: 04/26/2016 10:51
By: BRENDA GREGORY
221000085036
Brenda Gregory

*Homogenize all composite samples prior to analysis

Manager, Pink QA/QC Manager

00660093

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041363
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 06-MAY-2016

Samplenum	Container ID	Products
L16041363-01	734737	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-APR-2016 14:57	CLS		
2	ANALYZ	V1	ORG4	26-APR-2016 16:44	AWE	CLS	
3	STORE	ORG1	A1	09-MAY-2016 07:34	CLS	AWE	

Samplenum	Container ID	Products
L16041363-01	734738	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-APR-2016 14:57	CLS		
2	PREP	W1	DIG	27-APR-2016 15:00	AC	BRG	
3	STORE	DIG	W1	27-APR-2016 15:32	BRG	AC	
4	ANALYZ	W1	SEM	29-APR-2016 11:10	JWR	CLS	
5	STORE	SEM	A1	02-MAY-2016 16:37	BRG	JWR	
6	ANALYZ*	DIG	SEMI	04-MAY-2016 18:52	JWR	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041363-02	734739	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-APR-2016 14:57	CLS		
2	ANALYZ	V1	ORG4	26-APR-2016 16:44	AWE	CLS	

Samplenum	Container ID	Products
L16041363-02	734740	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-APR-2016 14:57	CLS		
2	PREP	W1	DIG	27-APR-2016 15:00	AC	BRG	
3	STORE	DIG	W1	27-APR-2016 15:32	BRG	AC	
4	ANALYZ	W1	SEM	29-APR-2016 11:10	JWR	CLS	
5	STORE	SEM	A1	02-MAY-2016 16:37	BRG	JWR	
6	ANALYZ*	DIG	SEMI	04-MAY-2016 18:52	JWR	AC	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041363
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 06-MAY-2016

Samplenum	Container ID	Products
L16041363-03	734741	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-APR-2016 14:57	CLS		
2	ANALYZ	V1	ORG4	26-APR-2016 16:44	AWE	CLS	
3	STORE	ORG1	A1	09-MAY-2016 07:35	CLS	AWE	

Samplenum	Container ID	Products
L16041363-03	734742	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-APR-2016 14:57	CLS		
2	PREP	W1	DIG	27-APR-2016 15:00	AC	BRG	
3	STORE	DIG	W1	27-APR-2016 15:32	BRG	AC	
4	ANALYZ	W1	SEM	29-APR-2016 11:10	JWR	CLS	
5	STORE	SEM	A1	02-MAY-2016 16:37	BRG	JWR	
6	ANALYZ*	DIG	SEMI	04-MAY-2016 18:52	JWR	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041363-04	734743	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-APR-2016 14:57	CLS		
2	ANALYZ	V1	ORG4	26-APR-2016 16:44	AWE	CLS	
3	STORE	ORG1	A1	09-MAY-2016 07:34	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041363
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 06-MAY-2016

Samplenum	Container ID	Products
L16041363-04	734744	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-APR-2016 14:57	CLS		
2	PREP	W1	DIG	27-APR-2016 15:00	AC	BRG	
3	STORE	DIG	W1	27-APR-2016 15:32	BRG	AC	
4	ANALYZ	W1	SEM	29-APR-2016 11:10	JWR	CLS	
5	STORE	SEM	A1	02-MAY-2016 16:37	BRG	JWR	
6	ANALYZ*	DIG	SEMI	04-MAY-2016 18:52	JWR	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041363-05	734745	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-APR-2016 14:57	CLS		
2	ANALYZ	V1	ORG4	26-APR-2016 16:44	AWE	CLS	
3	STORE	ORG1	A1	09-MAY-2016 07:35	CLS	AWE	

Samplenum	Container ID	Products
L16041363-05	734746	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-APR-2016 14:57	CLS		
2	PREP	W1	DIG	27-APR-2016 15:00	AC	BRG	
3	STORE	DIG	W1	27-APR-2016 15:32	BRG	AC	
4	ANALYZ	W1	SEM	29-APR-2016 11:10	JWR	CLS	
5	STORE	SEM	A1	02-MAY-2016 16:37	BRG	JWR	
6	ANALYZ*	DIG	SEMI	04-MAY-2016 18:52	JWR	AC	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041363
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 06-MAY-2016

Samplenum	Container ID	Products
L16041363-06	734747	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-APR-2016 14:57	CLS		
2	ANALYZ	V1	ORG4	26-APR-2016 16:44	AWE	CLS	
3	STORE	ORG1	A1	09-MAY-2016 07:35	CLS	AWE	

Samplenum	Container ID	Products
L16041363-06	734748	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-APR-2016 14:57	CLS		
2	PREP	W1	DIG	27-APR-2016 15:00	AC	BRG	
3	STORE	DIG	W1	27-APR-2016 15:32	BRG	AC	
4	ANALYZ	W1	SEM	29-APR-2016 11:10	JWR	CLS	
5	STORE	SEM	A1	02-MAY-2016 16:38	BRG	JWR	
6	ANALYZ*	DIG	SEMI	04-MAY-2016 18:52	JWR	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041363-07	734749	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-APR-2016 14:57	CLS		
2	ANALYZ	V1	ORG4	26-APR-2016 16:44	AWE	CLS	
3	STORE	ORG1	A1	09-MAY-2016 07:35	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041363
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 06-MAY-2016

Samplenum	Container ID	Products
L16041363-07	734750	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-APR-2016 14:57	CLS		
2	PREP	W1	DIG	27-APR-2016 15:00	AC	BRG	
3	STORE	DIG	W1	27-APR-2016 15:32	BRG	AC	
4	ANALYZ	W1	SEM	29-APR-2016 11:10	JWR	CLS	
5	STORE	SEM	A1	02-MAY-2016 16:38	BRG	JWR	
6	ANALYZ*	DIG	SEMI	04-MAY-2016 18:52	JWR	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041363-08	734751	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-APR-2016 14:57	CLS		
2	ANALYZ	V1	ORG4	26-APR-2016 16:44	AWE	CLS	
3	STORE	ORG1	A1	09-MAY-2016 07:35	CLS	AWE	

Samplenum	Container ID	Products
L16041363-08	734752	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-APR-2016 14:57	CLS		
2	PREP	W1	DIG	27-APR-2016 15:00	AC	BRG	
3	STORE	DIG	W1	27-APR-2016 15:32	BRG	AC	
4	ANALYZ	W1	SEM	29-APR-2016 11:10	JWR	CLS	
5	STORE	SEM	A1	02-MAY-2016 16:38	BRG	JWR	
6	ANALYZ*	DIG	SEMI	04-MAY-2016 18:52	JWR	AC	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041363
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 06-MAY-2016

Samplenum	Container ID	Products
L16041363-09	734753	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-APR-2016 14:57	CLS		
2	ANALYZ	V1	ORG4	26-APR-2016 16:44	AWE	CLS	
3	STORE	ORG1	A1	09-MAY-2016 07:35	CLS	AWE	

Samplenum	Container ID	Products
L16041363-09	734754	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-APR-2016 14:57	CLS		
2	PREP	W1	DIG	27-APR-2016 15:00	AC	BRG	
3	STORE	DIG	W1	27-APR-2016 15:32	BRG	AC	
4	ANALYZ	W1	SEM	29-APR-2016 11:10	JWR	CLS	
5	STORE	SEM	A1	02-MAY-2016 16:38	BRG	JWR	
6	ANALYZ*	DIG	SEMI	04-MAY-2016 18:52	JWR	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041363-10	734755	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-APR-2016 14:57	CLS		
2	ANALYZ	V1	ORG4	26-APR-2016 16:44	AWE	CLS	
3	STORE	ORG1	A1	09-MAY-2016 07:35	CLS	AWE	

A1 - Sample Archive (COLD)
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Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041363
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 06-MAY-2016

Samplenum	Container ID	Products
L16041363-10	734756	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-APR-2016 14:57	CLS		
2	PREP	W1	DIG	27-APR-2016 15:01	AC	BRG	
3	STORE	DIG	W1	27-APR-2016 15:32	BRG	AC	
4	ANALYZ	W1	SEM	29-APR-2016 11:10	JWR	CLS	
5	STORE	SEM	A1	02-MAY-2016 16:38	BRG	JWR	
6	ANALYZ*	DIG	SEMI	04-MAY-2016 18:52	JWR	AC	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16041580

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on May 16 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

The following discrepancies were noted:

Discrepancy	Resolution
Sample ID: Equipment Blank (4/25 @ 17:00). COC states "2" bottles received. Received "4". 3 voas and 1 250p. BRG	Please proceed with the volume received. SLM

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00113829	H	0.0		J2317165689	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	No
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18CPTMW22DW(5-5.5)260416	L16041580-01	04/26/2016 09:05	04/29/2016 09:52
18CPTMW22DW(10-10.5)260416	L16041580-02	04/26/2016 10:00	04/29/2016 09:52
18CPTMW22DW(20-20.5)260416	L16041580-03	04/26/2016 10:35	04/29/2016 09:52
18CPTMW22DW(29.5-30)260416	L16041580-04	04/26/2016 11:15	04/29/2016 09:52
18CPTMW22DW(40-40.5)260416	L16041580-05	04/26/2016 11:55	04/29/2016 09:52
18CPTMW22DW(50-51)260416	L16041580-06	04/26/2016 14:15	04/29/2016 09:52
18CPTMW22DW(50-51)260416MS	L16041580-07	04/26/2016 14:15	04/29/2016 09:52
18CPTMW22DW(50-51)260416MSD	L16041580-08	04/26/2016 14:15	04/29/2016 09:52
18CPTMW22DW(60-60.5)260416	L16041580-09	04/26/2016 15:00	04/29/2016 09:52
18CPTMW22DW(60-60.5)260416DUP	L16041580-10	04/26/2016 15:00	04/29/2016 09:52
18CPTMW22DW(70-70.5)260416	L16041580-11	04/26/2016 15:45	04/29/2016 09:52
18CPTMW22DW(80-80.5)260416	L16041580-12	04/26/2016 16:45	04/29/2016 09:52
18CPTMW22DW(89.5-90)260416	L16041580-13	04/26/2016 17:00	04/29/2016 09:52
EQUIPMENT BLANK	L16041580-14	04/25/2016 17:00	04/29/2016 09:52

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16041580
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.0 Summary Data

1.1 Narratives

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041580
Project Name:		**Method:**	8260
Prep Batch Number(s):	567935,567680	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-05-12 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2016-05-12 19:03:07

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041580
Project Name:		**Method:**	8260
Prep Batch Number(s):	567935,567680	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-05-12 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041580
Project Name:		**Method:**	8260
Prep Batch Number(s):	567935,567680	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-05-12 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041580
Project Name:		**Method:**	8260
Prep Batch Number(s):	567935,567680	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-05-12 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041580
Project Name:		**Method:**	8260
Prep Batch Number(s):	567935,567680	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-05-12 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041580
Project Name:		**Method:**	8260
Prep Batch Number(s):	567935,567680	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-05-12 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1)Chloromethane and n-Propylbenzene exceeded the UCL in the CCV analyzed 05/05/2016 on HPMS9.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041580
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG567224	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-05-09 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Wade DeLong	Wade DeLong	Chemist I	2016-05-09 13:31:44

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041580
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG567224	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-05-09 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?	X				
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041580
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG567224	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-05-09 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041580
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG567224	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-05-09 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041580
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG567224	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-05-09 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041580
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG567224	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-05-09 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER1 The recoveries for the MS and MSD were below the advisory limit.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041580
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG567166	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-05-09 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2016-05-09 16:03:11

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041580
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG567166	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-05-09 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?			X		
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?			X		
Were sample detection limits reported for all analytes not detected?			X		
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?			X		
Were blanks analyzed at the appropriate frequency?			X		
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?			X		
Were blank concentrations < MQL?			X		
Laboratory control samples (LCS):			X		
Were all COCs included in the LCS?			X		

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041580
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG567166	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-05-09 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?			X		
Were LCSs analyzed at the required frequency?			X		
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?			X		
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?			X		
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?			X		
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?			X		
Are unadjusted MQLs and DCSs included in the laboratory data package?			X		
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?			X		
Were percent RSDs or correlation coefficient criteria met?			X		

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041580
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG567166	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-05-09 00:00:00		

Was the number of standards recommended in the method used for all analytes?			X		
Were all points generated between the lowest and highest standard used to calculate the curve?			X		
Are ICAL data available for all instruments used?			X		
Has the initial calibration curve been verified using an appropriate second source standard?			X		
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041580
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG567166	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-05-09 00:00:00		

Was a MDL study performed for each reported analyte?			X		
Is the MDL either adjusted or supported by the analysis of DCSs?			X		
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?			X		
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041580
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG567166	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-05-09 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(5-5.5)260416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:42
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 15:35
Collect Date:	04/26/2016 09:05	**Dilution:**	1	**File ID:**	9M974171
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.2	Q	24.5	12.2	6.12
Benzene	71-43-2	1.22	U	6.12	1.22	0.612
Bromobenzene	108-86-1	1.22	U	6.12	1.22	0.612
Bromochloromethane	74-97-5	2.44	U	6.12	2.44	1.22
Bromodichloromethane	75-27-4	1.22	U	6.12	1.22	0.612
Bromoform	75-25-2	1.22	U	6.12	1.22	0.612
Bromomethane	74-83-9	2.44	U	6.12	2.44	1.22
2-Butanone	78-93-3	6.12	Q	12.2	6.12	3.06
n-Butylbenzene	104-51-8	1.22	U	6.12	1.22	0.612
sec-Butylbenzene	135-98-8	1.22	U	6.12	1.22	0.612
tert-Butylbenzene	98-06-6	1.22	U	6.12	1.22	0.612
Carbon disulfide	75-15-0	1.22	Q	6.12	1.22	0.612
Carbon tetrachloride	56-23-5	1.22	U	6.12	1.22	0.612
Chlorobenzene	108-90-7	1.22	U	6.12	1.22	0.612
Chlorodibromomethane	124-48-1	1.22	U	6.12	1.22	0.612
Chloroethane	75-00-3	2.44	U	6.12	2.44	1.22
Chloroform	67-66-3	1.22	U	6.12	1.22	0.612
Chloromethane	74-87-3	4.90	Q	12.2	4.90	2.45
2-Chlorotoluene	95-49-8	1.22	U	6.12	1.22	0.612
4-Chlorotoluene	106-43-4	1.22	U	6.12	1.22	0.612
1,2-Dibromo-3-chloropropane	96-12-8	4.90	U	12.2	4.90	2.45
1,2-Dibromoethane	106-93-4	1.22	U	6.12	1.22	0.612
Dibromomethane	74-95-3	1.22	U	6.12	1.22	0.612
1,2-Dichlorobenzene	95-50-1	1.22	U	6.12	1.22	0.612
1,3-Dichlorobenzene	541-73-1	1.22	U	6.12	1.22	0.612
1,4-Dichlorobenzene	106-46-7	1.22	U	6.12	1.22	0.612
Dichlorodifluoromethane	75-71-8	2.44	U	6.12	2.44	1.22
1,1-Dichloroethane	75-34-3	2.44	U	6.12	2.44	1.22
1,2-Dichloroethane	107-06-2	1.22	U	6.12	1.22	0.612
1,1-Dichloroethene	75-35-4	1.22	U	6.12	1.22	0.612
cis-1,2-Dichloroethene	156-59-2	1.22	U	6.12	1.22	0.612

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.22	U	6.12	1.22	0.612
1,2-Dichloropropane	78-87-5	1.22	U	6.12	1.22	0.612
1,3-Dichloropropane	142-28-9	1.22	U	6.12	1.22	0.612
2,2-Dichloropropane	594-20-7	1.22	U	6.12	1.22	0.612
cis-1,3-Dichloropropene	10061-01-5	1.22	U	6.12	1.22	0.612
trans-1,3-Dichloropropene	10061-02-6	1.22	U	6.12	1.22	0.612
1,1-Dichloropropene	563-58-6	1.22	U	6.12	1.22	0.612
Ethylbenzene	100-41-4	1.22	U	6.12	1.22	0.612
2-Hexanone	591-78-6	6.12	Q	12.2	6.12	3.06
Hexachlorobutadiene	87-68-3	1.22	U	6.12	1.22	0.612
Isopropylbenzene	98-82-8	1.22	U	6.12	1.22	0.612
p-Isopropyltoluene	99-87-6	1.22	U	6.12	1.22	0.612
4-Methyl-2-pentanone	108-10-1	6.12	Q	12.2	6.12	3.06
Methylene chloride	75-09-2	2.44	U	6.12	2.44	1.22
Naphthalene	91-20-3	1.22	U	6.12	1.22	0.612
n-Propylbenzene	103-65-1	1.22	Q	6.12	1.22	0.612
Styrene	100-42-5	1.22	U	6.12	1.22	0.612
1,1,1,2-Tetrachloroethane	630-20-6	1.22	U	6.12	1.22	0.612
1,1,2,2-Tetrachloroethane	79-34-5	1.22	U	6.12	1.22	0.612
Tetrachloroethene	127-18-4	1.22	U	6.12	1.22	0.612
Toluene	108-88-3	1.22	U	6.12	1.22	0.612
1,2,3-Trichlorobenzene	87-61-6	1.22	U	6.12	1.22	0.612
1,2,4-Trichlorobenzene	120-82-1	1.22	U	6.12	1.22	0.612
1,1,1-Trichloroethane	71-55-6	1.22	U	6.12	1.22	0.612
1,1,2-Trichloroethane	79-00-5	1.22	U	6.12	1.22	0.612
Trichloroethene	79-01-6	1.22	U	6.12	1.22	0.612
Trichlorofluoromethane	75-69-4	2.44	U	6.12	2.44	1.22
1,2,3-Trichloropropane	96-18-4	2.44	U	6.12	2.44	1.22
1,2,4-Trimethylbenzene	95-63-6	1.22	U	6.12	1.22	0.612
1,3,5-Trimethylbenzene	108-67-8	1.22	U	6.12	1.22	0.612
Vinyl chloride	75-01-4	2.44	U	6.12	2.44	1.22
o-Xylene	95-47-6	1.22	U	6.12	1.22	0.612
m-,p-Xylene	179601-23-1	1.22	U	6.12	1.22	0.612

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	80	120	
1,2-Dichloroethane-d4	102	80	120	
Toluene-d8	108	85	115	
4-Bromofluorobenzene	112	85	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(5-5.5)260416	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 17:53
Collect Date:	04/26/2016 09:05	**Dilution:**	1	**File ID:**	1LM.LM34726
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.34	U	4.69	2.34	1.17

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(10-10.5)260416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:42
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 16:06
Collect Date:	04/26/2016 10:00	**Dilution:**	1	**File ID:**	9M974172
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.4	Q	24.9	12.4	6.21
Benzene	71-43-2	1.24	U	6.21	1.24	0.621
Bromobenzene	108-86-1	1.24	U	6.21	1.24	0.621
Bromochloromethane	74-97-5	2.48	U	6.21	2.48	1.24
Bromodichloromethane	75-27-4	1.24	U	6.21	1.24	0.621
Bromoform	75-25-2	1.24	U	6.21	1.24	0.621
Bromomethane	74-83-9	2.48	U	6.21	2.48	1.24
2-Butanone	78-93-3	6.22	Q	12.4	6.22	3.11
n-Butylbenzene	104-51-8	1.24	U	6.21	1.24	0.621
sec-Butylbenzene	135-98-8	1.24	U	6.21	1.24	0.621
tert-Butylbenzene	98-06-6	1.24	U	6.21	1.24	0.621
Carbon disulfide	75-15-0	1.24	Q	6.21	1.24	0.621
Carbon tetrachloride	56-23-5	1.24	U	6.21	1.24	0.621
Chlorobenzene	108-90-7	1.24	U	6.21	1.24	0.621
Chlorodibromomethane	124-48-1	1.24	U	6.21	1.24	0.621
Chloroethane	75-00-3	2.48	U	6.21	2.48	1.24
Chloroform	67-66-3	1.24	U	6.21	1.24	0.621
Chloromethane	74-87-3	4.98	Q	12.4	4.98	2.49
2-Chlorotoluene	95-49-8	1.24	U	6.21	1.24	0.621
4-Chlorotoluene	106-43-4	1.24	U	6.21	1.24	0.621
1,2-Dibromo-3-chloropropane	96-12-8	4.98	U	12.4	4.98	2.49
1,2-Dibromoethane	106-93-4	1.24	U	6.21	1.24	0.621
Dibromomethane	74-95-3	1.24	U	6.21	1.24	0.621
1,2-Dichlorobenzene	95-50-1	1.24	U	6.21	1.24	0.621
1,3-Dichlorobenzene	541-73-1	1.24	U	6.21	1.24	0.621
1,4-Dichlorobenzene	106-46-7	1.24	U	6.21	1.24	0.621
Dichlorodifluoromethane	75-71-8	2.48	U	6.21	2.48	1.24
1,1-Dichloroethane	75-34-3	2.48	U	6.21	2.48	1.24
1,2-Dichloroethane	107-06-2	1.24	U	6.21	1.24	0.621
1,1-Dichloroethene	75-35-4	1.24	U	6.21	1.24	0.621

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.24	U	6.21	1.24	0.621
trans-1,2-Dichloroethene	156-60-5	1.24	U	6.21	1.24	0.621
1,2-Dichloropropane	78-87-5	1.24	U	6.21	1.24	0.621
1,3-Dichloropropane	142-28-9	1.24	U	6.21	1.24	0.621
2,2-Dichloropropane	594-20-7	1.24	U	6.21	1.24	0.621
cis-1,3-Dichloropropene	10061-01-5	1.24	U	6.21	1.24	0.621
trans-1,3-Dichloropropene	10061-02-6	1.24	U	6.21	1.24	0.621
1,1-Dichloropropene	563-58-6	1.24	U	6.21	1.24	0.621
Ethylbenzene	100-41-4	1.24	U	6.21	1.24	0.621
2-Hexanone	591-78-6	6.22	Q	12.4	6.22	3.11
Hexachlorobutadiene	87-68-3	1.24	U	6.21	1.24	0.621
Isopropylbenzene	98-82-8	1.24	U	6.21	1.24	0.621
p-Isopropyltoluene	99-87-6	1.24	U	6.21	1.24	0.621
4-Methyl-2-pentanone	108-10-1	6.22	Q	12.4	6.22	3.11
Methylene chloride	75-09-2	2.48	U	6.21	2.48	1.24
Naphthalene	91-20-3	1.24	U	6.21	1.24	0.621
n-Propylbenzene	103-65-1	1.24	Q	6.21	1.24	0.621
Styrene	100-42-5	1.24	U	6.21	1.24	0.621
1,1,1,2-Tetrachloroethane	630-20-6	1.24	U	6.21	1.24	0.621
1,1,2,2-Tetrachloroethane	79-34-5	1.24	U	6.21	1.24	0.621
Tetrachloroethene	127-18-4	1.24	U	6.21	1.24	0.621
Toluene	108-88-3	1.24	U	6.21	1.24	0.621
1,2,3-Trichlorobenzene	87-61-6	1.24	U	6.21	1.24	0.621
1,2,4-Trichlorobenzene	120-82-1	1.24	U	6.21	1.24	0.621
1,1,1-Trichloroethane	71-55-6	1.24	U	6.21	1.24	0.621
1,1,2-Trichloroethane	79-00-5	1.24	U	6.21	1.24	0.621
Trichloroethene	79-01-6	1.24	U	6.21	1.24	0.621
Trichlorofluoromethane	75-69-4	2.48	U	6.21	2.48	1.24
1,2,3-Trichloropropane	96-18-4	2.48	U	6.21	2.48	1.24
1,2,4-Trimethylbenzene	95-63-6	1.24	U	6.21	1.24	0.621
1,3,5-Trimethylbenzene	108-67-8	1.24	U	6.21	1.24	0.621
Vinyl chloride	75-01-4	2.48	U	6.21	2.48	1.24
o-Xylene	95-47-6	1.24	U	6.21	1.24	0.621
m-,p-Xylene	179601-23-1	1.24	U	6.21	1.24	0.621

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	80	120	
1,2-Dichloroethane-d4	104	80	120	
Toluene-d8	106	85	115	
4-Bromofluorobenzene	109	85	120	

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(10-10.5)260416	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 18:12
Collect Date:	04/26/2016 10:00	**Dilution:**	1	**File ID:**	1LM.LM34727
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.38	U	4.78	2.38	1.19

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(20-20.5)260416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:44
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 16:37
Collect Date:	04/26/2016 10:35	**Dilution:**	1	**File ID:**	9M974173
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.5	Q	27.0	13.5	6.74
Benzene	71-43-2	1.35	U	6.74	1.35	0.674
Bromobenzene	108-86-1	1.35	U	6.74	1.35	0.674
Bromochloromethane	74-97-5	2.70	U	6.74	2.70	1.35
Bromodichloromethane	75-27-4	1.35	U	6.74	1.35	0.674
Bromoform	75-25-2	1.35	U	6.74	1.35	0.674
Bromomethane	74-83-9	2.70	U	6.74	2.70	1.35
2-Butanone	78-93-3	6.74	Q	13.5	6.74	3.37
n-Butylbenzene	104-51-8	1.35	U	6.74	1.35	0.674
sec-Butylbenzene	135-98-8	1.35	U	6.74	1.35	0.674
tert-Butylbenzene	98-06-6	1.35	U	6.74	1.35	0.674
Carbon disulfide	75-15-0	1.35	Q	6.74	1.35	0.674
Carbon tetrachloride	56-23-5	1.35	U	6.74	1.35	0.674
Chlorobenzene	108-90-7	1.35	U	6.74	1.35	0.674
Chlorodibromomethane	124-48-1	1.35	U	6.74	1.35	0.674
Chloroethane	75-00-3	2.70	U	6.74	2.70	1.35
Chloroform	67-66-3	1.35	U	6.74	1.35	0.674
Chloromethane	74-87-3	5.40	Q	13.5	5.40	2.70
2-Chlorotoluene	95-49-8	1.35	U	6.74	1.35	0.674
4-Chlorotoluene	106-43-4	1.35	U	6.74	1.35	0.674
1,2-Dibromo-3-chloropropane	96-12-8	5.40	U	13.5	5.40	2.70
1,2-Dibromoethane	106-93-4	1.35	U	6.74	1.35	0.674
Dibromomethane	74-95-3	1.35	U	6.74	1.35	0.674
1,2-Dichlorobenzene	95-50-1	1.35	U	6.74	1.35	0.674
1,3-Dichlorobenzene	541-73-1	1.35	U	6.74	1.35	0.674
1,4-Dichlorobenzene	106-46-7	1.35	U	6.74	1.35	0.674
Dichlorodifluoromethane	75-71-8	2.70	U	6.74	2.70	1.35
1,1-Dichloroethane	75-34-3	2.70	U	6.74	2.70	1.35
1,2-Dichloroethane	107-06-2	1.35	U	6.74	1.35	0.674
1,1-Dichloroethene	75-35-4	1.35	U	6.74	1.35	0.674

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.35	U	6.74	1.35	0.674
trans-1,2-Dichloroethene	156-60-5	1.35	U	6.74	1.35	0.674
1,2-Dichloropropane	78-87-5	1.35	U	6.74	1.35	0.674
1,3-Dichloropropane	142-28-9	1.35	U	6.74	1.35	0.674
2,2-Dichloropropane	594-20-7	1.35	U	6.74	1.35	0.674
cis-1,3-Dichloropropene	10061-01-5	1.35	U	6.74	1.35	0.674
trans-1,3-Dichloropropene	10061-02-6	1.35	U	6.74	1.35	0.674
1,1-Dichloropropene	563-58-6	1.35	U	6.74	1.35	0.674
Ethylbenzene	100-41-4	1.35	U	6.74	1.35	0.674
2-Hexanone	591-78-6	6.74	Q	13.5	6.74	3.37
Hexachlorobutadiene	87-68-3	1.35	U	6.74	1.35	0.674
Isopropylbenzene	98-82-8	1.35	U	6.74	1.35	0.674
p-Isopropyltoluene	99-87-6	1.35	U	6.74	1.35	0.674
4-Methyl-2-pentanone	108-10-1	6.74	Q	13.5	6.74	3.37
Methylene chloride	75-09-2	2.70	U	6.74	2.70	1.35
Naphthalene	91-20-3	1.35	U	6.74	1.35	0.674
n-Propylbenzene	103-65-1	1.35	Q	6.74	1.35	0.674
Styrene	100-42-5	1.35	U	6.74	1.35	0.674
1,1,1,2-Tetrachloroethane	630-20-6	1.35	U	6.74	1.35	0.674
1,1,2,2-Tetrachloroethane	79-34-5	1.35	U	6.74	1.35	0.674
Tetrachloroethene	127-18-4	1.35	U	6.74	1.35	0.674
Toluene	108-88-3	1.35	U	6.74	1.35	0.674
1,2,3-Trichlorobenzene	87-61-6	1.35	U	6.74	1.35	0.674
1,2,4-Trichlorobenzene	120-82-1	1.35	U	6.74	1.35	0.674
1,1,1-Trichloroethane	71-55-6	1.35	U	6.74	1.35	0.674
1,1,2-Trichloroethane	79-00-5	1.35	U	6.74	1.35	0.674
Trichloroethene	79-01-6	1.35	U	6.74	1.35	0.674
Trichlorofluoromethane	75-69-4	2.70	U	6.74	2.70	1.35
1,2,3-Trichloropropane	96-18-4	2.70	U	6.74	2.70	1.35
1,2,4-Trimethylbenzene	95-63-6	1.35	U	6.74	1.35	0.674
1,3,5-Trimethylbenzene	108-67-8	1.35	U	6.74	1.35	0.674
Vinyl chloride	75-01-4	2.70	U	6.74	2.70	1.35
o-Xylene	95-47-6	1.35	U	6.74	1.35	0.674
m-,p-Xylene	179601-23-1	1.35	U	6.74	1.35	0.674

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	80	120	
1,2-Dichloroethane-d4	102	80	120	
Toluene-d8	107	85	115	
4-Bromofluorobenzene	110	85	120	

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(20-20.5)260416	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/05/2016 13:50
Collect Date:	04/26/2016 10:35	**Dilution:**	200	**File ID:**	1LM.LM34755
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	79.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	5400		982	492	246

Certificate of Analysis

Sample #:	L16041580-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(29.5-30)260416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:44
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 17:08
Collect Date:	04/26/2016 11:15	**Dilution:**	1	**File ID:**	9M974174
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	78.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.5	Q	26.9	13.5	6.73
Benzene	71-43-2	1.35	U	6.73	1.35	0.673
Bromobenzene	108-86-1	1.35	U	6.73	1.35	0.673
Bromochloromethane	74-97-5	2.70	U	6.73	2.70	1.35
Bromodichloromethane	75-27-4	1.35	U	6.73	1.35	0.673
Bromoform	75-25-2	1.35	U	6.73	1.35	0.673
Bromomethane	74-83-9	2.70	U	6.73	2.70	1.35
2-Butanone	78-93-3	6.74	Q	13.5	6.74	3.37
n-Butylbenzene	104-51-8	1.35	U	6.73	1.35	0.673
sec-Butylbenzene	135-98-8	1.35	U	6.73	1.35	0.673
tert-Butylbenzene	98-06-6	1.35	U	6.73	1.35	0.673
Carbon disulfide	75-15-0	1.35	Q	6.73	1.35	0.673
Carbon tetrachloride	56-23-5	1.35	U	6.73	1.35	0.673
Chlorobenzene	108-90-7	1.35	U	6.73	1.35	0.673
Chlorodibromomethane	124-48-1	1.35	U	6.73	1.35	0.673
Chloroethane	75-00-3	2.70	U	6.73	2.70	1.35
Chloroform	67-66-3	1.35	U	6.73	1.35	0.673
Chloromethane	74-87-3	5.38	Q	13.5	5.38	2.69
2-Chlorotoluene	95-49-8	1.35	U	6.73	1.35	0.673

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Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
4-Chlorotoluene	106-43-4	1.35	U	6.73	1.35	0.673
1,2-Dibromo-3-chloropropane	96-12-8	5.38	U	13.5	5.38	2.69
1,2-Dibromoethane	106-93-4	1.35	U	6.73	1.35	0.673
Dibromomethane	74-95-3	1.35	U	6.73	1.35	0.673
1,2-Dichlorobenzene	95-50-1	1.35	U	6.73	1.35	0.673
1,3-Dichlorobenzene	541-73-1	1.35	U	6.73	1.35	0.673
1,4-Dichlorobenzene	106-46-7	1.35	U	6.73	1.35	0.673
Dichlorodifluoromethane	75-71-8	2.70	U	6.73	2.70	1.35
1,1-Dichloroethane	75-34-3	2.70	U	6.73	2.70	1.35
1,2-Dichloroethane	107-06-2	1.35	U	6.73	1.35	0.673
1,1-Dichloroethene	75-35-4	1.35	U	6.73	1.35	0.673
cis-1,2-Dichloroethene	156-59-2	1.35	U	6.73	1.35	0.673
trans-1,2-Dichloroethene	156-60-5	1.35	U	6.73	1.35	0.673
1,2-Dichloropropane	78-87-5	1.35	U	6.73	1.35	0.673
1,3-Dichloropropane	142-28-9	1.35	U	6.73	1.35	0.673
2,2-Dichloropropane	594-20-7	1.35	U	6.73	1.35	0.673
cis-1,3-Dichloropropene	10061-01-5	1.35	U	6.73	1.35	0.673
trans-1,3-Dichloropropene	10061-02-6	1.35	U	6.73	1.35	0.673
1,1-Dichloropropene	563-58-6	1.35	U	6.73	1.35	0.673
Ethylbenzene	100-41-4	1.35	U	6.73	1.35	0.673
2-Hexanone	591-78-6	6.74	Q	13.5	6.74	3.37
Hexachlorobutadiene	87-68-3	1.35	U	6.73	1.35	0.673
Isopropylbenzene	98-82-8	1.35	U	6.73	1.35	0.673
p-Isopropyltoluene	99-87-6	1.35	U	6.73	1.35	0.673
4-Methyl-2-pentanone	108-10-1	6.74	Q	13.5	6.74	3.37
Methylene chloride	75-09-2	2.70	U	6.73	2.70	1.35
Naphthalene	91-20-3	1.35	U	6.73	1.35	0.673
n-Propylbenzene	103-65-1	1.35	Q	6.73	1.35	0.673
Styrene	100-42-5	1.35	U	6.73	1.35	0.673
1,1,1,2-Tetrachloroethane	630-20-6	1.35	U	6.73	1.35	0.673
1,1,2,2-Tetrachloroethane	79-34-5	1.35	U	6.73	1.35	0.673
Tetrachloroethene	127-18-4	1.35	U	6.73	1.35	0.673
Toluene	108-88-3	1.35	U	6.73	1.35	0.673
1,2,3-Trichlorobenzene	87-61-6	1.35	U	6.73	1.35	0.673
1,2,4-Trichlorobenzene	120-82-1	1.35	U	6.73	1.35	0.673
1,1,1-Trichloroethane	71-55-6	1.35	U	6.73	1.35	0.673
1,1,2-Trichloroethane	79-00-5	1.35	U	6.73	1.35	0.673
Trichloroethene	79-01-6	1.35	U	6.73	1.35	0.673
Trichlorofluoromethane	75-69-4	2.70	U	6.73	2.70	1.35

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,3-Trichloropropane	96-18-4	2.70	U	6.73	2.70	1.35
1,2,4-Trimethylbenzene	95-63-6	1.35	U	6.73	1.35	0.673
1,3,5-Trimethylbenzene	108-67-8	1.35	U	6.73	1.35	0.673
Vinyl chloride	75-01-4	2.70	U	6.73	2.70	1.35
o-Xylene	95-47-6	1.35	U	6.73	1.35	0.673
m-,p-Xylene	179601-23-1	1.35	U	6.73	1.35	0.673

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	80	120	
1,2-Dichloroethane-d4	110	80	120	
Toluene-d8	106	85	115	
4-Bromofluorobenzene	112	85	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(29.5-30)260416	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/05/2016 14:09
Collect Date:	04/26/2016 11:15	**Dilution:**	400	**File ID:**	1LM.LM34756
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	78.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	9440		2010	1000	502

Certificate of Analysis

Sample #:	L16041580-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(40-40.5)260416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:45
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 17:40
Collect Date:	04/26/2016 11:55	**Dilution:**	1	**File ID:**	9M974175
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.0	Q	24.0	12.0	5.99
Benzene	71-43-2	1.20	U	5.99	1.20	0.599
Bromobenzene	108-86-1	1.20	U	5.99	1.20	0.599
Bromochloromethane	74-97-5	2.40	U	5.99	2.40	1.20
Bromodichloromethane	75-27-4	1.20	U	5.99	1.20	0.599
Bromoform	75-25-2	1.20	U	5.99	1.20	0.599
Bromomethane	74-83-9	2.40	U	5.99	2.40	1.20
2-Butanone	78-93-3	6.00	Q	12.0	6.00	3.00
n-Butylbenzene	104-51-8	1.20	U	5.99	1.20	0.599
sec-Butylbenzene	135-98-8	1.20	U	5.99	1.20	0.599
tert-Butylbenzene	98-06-6	1.20	U	5.99	1.20	0.599
Carbon disulfide	75-15-0	1.20	Q	5.99	1.20	0.599
Carbon tetrachloride	56-23-5	1.20	U	5.99	1.20	0.599
Chlorobenzene	108-90-7	1.20	U	5.99	1.20	0.599
Chlorodibromomethane	124-48-1	1.20	U	5.99	1.20	0.599
Chloroethane	75-00-3	2.40	U	5.99	2.40	1.20
Chloroform	67-66-3	1.20	U	5.99	1.20	0.599
Chloromethane	74-87-3	4.80	Q	12.0	4.80	2.40
2-Chlorotoluene	95-49-8	1.20	U	5.99	1.20	0.599

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
4-Chlorotoluene	106-43-4	1.20	U	5.99	1.20	0.599
1,2-Dibromo-3-chloropropane	96-12-8	4.80	U	12.0	4.80	2.40
1,2-Dibromoethane	106-93-4	1.20	U	5.99	1.20	0.599
Dibromomethane	74-95-3	1.20	U	5.99	1.20	0.599
1,2-Dichlorobenzene	95-50-1	1.20	U	5.99	1.20	0.599
1,3-Dichlorobenzene	541-73-1	1.20	U	5.99	1.20	0.599
1,4-Dichlorobenzene	106-46-7	1.20	U	5.99	1.20	0.599
Dichlorodifluoromethane	75-71-8	2.40	U	5.99	2.40	1.20
1,1-Dichloroethane	75-34-3	2.40	U	5.99	2.40	1.20
1,2-Dichloroethane	107-06-2	1.20	U	5.99	1.20	0.599
1,1-Dichloroethene	75-35-4	1.20	U	5.99	1.20	0.599
cis-1,2-Dichloroethene	156-59-2	1.20	U	5.99	1.20	0.599
trans-1,2-Dichloroethene	156-60-5	1.20	U	5.99	1.20	0.599
1,2-Dichloropropane	78-87-5	1.20	U	5.99	1.20	0.599
1,3-Dichloropropane	142-28-9	1.20	U	5.99	1.20	0.599
2,2-Dichloropropane	594-20-7	1.20	U	5.99	1.20	0.599
cis-1,3-Dichloropropene	10061-01-5	1.20	U	5.99	1.20	0.599
trans-1,3-Dichloropropene	10061-02-6	1.20	U	5.99	1.20	0.599
1,1-Dichloropropene	563-58-6	1.20	U	5.99	1.20	0.599
Ethylbenzene	100-41-4	1.20	U	5.99	1.20	0.599
2-Hexanone	591-78-6	6.00	Q	12.0	6.00	3.00
Hexachlorobutadiene	87-68-3	1.20	U	5.99	1.20	0.599
Isopropylbenzene	98-82-8	1.20	U	5.99	1.20	0.599
p-Isopropyltoluene	99-87-6	1.20	U	5.99	1.20	0.599
4-Methyl-2-pentanone	108-10-1	6.00	Q	12.0	6.00	3.00
Methylene chloride	75-09-2	2.40	U	5.99	2.40	1.20
Naphthalene	91-20-3	1.20	U	5.99	1.20	0.599
n-Propylbenzene	103-65-1	1.20	Q	5.99	1.20	0.599
Styrene	100-42-5	1.20	U	5.99	1.20	0.599
1,1,1,2-Tetrachloroethane	630-20-6	1.20	U	5.99	1.20	0.599
1,1,2,2-Tetrachloroethane	79-34-5	1.20	U	5.99	1.20	0.599
Tetrachloroethene	127-18-4	1.20	U	5.99	1.20	0.599
Toluene	108-88-3	1.20	U	5.99	1.20	0.599
1,2,3-Trichlorobenzene	87-61-6	1.20	U	5.99	1.20	0.599
1,2,4-Trichlorobenzene	120-82-1	1.20	U	5.99	1.20	0.599
1,1,1-Trichloroethane	71-55-6	1.20	U	5.99	1.20	0.599
1,1,2-Trichloroethane	79-00-5	1.20	U	5.99	1.20	0.599
Trichloroethene	79-01-6	1.20	U	5.99	1.20	0.599
Trichlorofluoromethane	75-69-4	2.40	U	5.99	2.40	1.20

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,3-Trichloropropane	96-18-4	2.40	U	5.99	2.40	1.20
1,2,4-Trimethylbenzene	95-63-6	1.20	U	5.99	1.20	0.599
1,3,5-Trimethylbenzene	108-67-8	1.20	U	5.99	1.20	0.599
Vinyl chloride	75-01-4	2.40	U	5.99	2.40	1.20
o-Xylene	95-47-6	1.20	U	5.99	1.20	0.599
m-,p-Xylene	179601-23-1	1.20	U	5.99	1.20	0.599

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	80	120	
1,2-Dichloroethane-d4	111	80	120	
Toluene-d8	108	85	115	
4-Bromofluorobenzene	114	85	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(40-40.5)260416	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/05/2016 14:28
Collect Date:	04/26/2016 11:55	**Dilution:**	200	**File ID:**	1LM.LM34757
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	79.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	4040		1010	504	252

Certificate of Analysis

Sample #:	L16041580-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(50-51)260416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:45
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 15:04
Collect Date:	04/26/2016 14:15	**Dilution:**	1	**File ID:**	9M974170
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	6.11	Q	23.3	11.7	5.83
Benzene	71-43-2	1.17	U	5.83	1.17	0.583
Bromobenzene	108-86-1	1.17	U	5.83	1.17	0.583
Bromochloromethane	74-97-5	2.34	U	5.83	2.34	1.17
Bromodichloromethane	75-27-4	1.17	U	5.83	1.17	0.583
Bromoform	75-25-2	1.17	U	5.83	1.17	0.583
Bromomethane	74-83-9	2.34	U	5.83	2.34	1.17
2-Butanone	78-93-3	5.82	Q	11.7	5.82	2.91
n-Butylbenzene	104-51-8	1.17	U	5.83	1.17	0.583
sec-Butylbenzene	135-98-8	1.17	U	5.83	1.17	0.583
tert-Butylbenzene	98-06-6	1.17	U	5.83	1.17	0.583
Carbon disulfide	75-15-0	1.17	Q	5.83	1.17	0.583
Carbon tetrachloride	56-23-5	1.17	U	5.83	1.17	0.583
Chlorobenzene	108-90-7	1.17	U	5.83	1.17	0.583
Chlorodibromomethane	124-48-1	1.17	U	5.83	1.17	0.583
Chloroethane	75-00-3	2.34	U	5.83	2.34	1.17
Chloroform	67-66-3	1.17	U	5.83	1.17	0.583
Chloromethane	74-87-3	4.66	Q	11.7	4.66	2.33
2-Chlorotoluene	95-49-8	1.17	U	5.83	1.17	0.583

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
4-Chlorotoluene	106-43-4	1.17	U	5.83	1.17	0.583
1,2-Dibromo-3-chloropropane	96-12-8	4.66	U	11.7	4.66	2.33
1,2-Dibromoethane	106-93-4	1.17	U	5.83	1.17	0.583
Dibromomethane	74-95-3	1.17	U	5.83	1.17	0.583
1,2-Dichlorobenzene	95-50-1	1.17	U	5.83	1.17	0.583
1,3-Dichlorobenzene	541-73-1	1.17	U	5.83	1.17	0.583
1,4-Dichlorobenzene	106-46-7	1.17	U	5.83	1.17	0.583
Dichlorodifluoromethane	75-71-8	2.34	U	5.83	2.34	1.17
1,1-Dichloroethane	75-34-3	2.34	U	5.83	2.34	1.17
1,2-Dichloroethane	107-06-2	1.17	U	5.83	1.17	0.583
1,1-Dichloroethene	75-35-4	1.17	U	5.83	1.17	0.583
cis-1,2-Dichloroethene	156-59-2	1.17	U	5.83	1.17	0.583
trans-1,2-Dichloroethene	156-60-5	1.17	U	5.83	1.17	0.583
1,2-Dichloropropane	78-87-5	1.17	U	5.83	1.17	0.583
1,3-Dichloropropane	142-28-9	1.17	U	5.83	1.17	0.583
2,2-Dichloropropane	594-20-7	1.17	U	5.83	1.17	0.583
cis-1,3-Dichloropropene	10061-01-5	1.17	U	5.83	1.17	0.583
trans-1,3-Dichloropropene	10061-02-6	1.17	U	5.83	1.17	0.583
1,1-Dichloropropene	563-58-6	1.17	U	5.83	1.17	0.583
Ethylbenzene	100-41-4	1.17	U	5.83	1.17	0.583
2-Hexanone	591-78-6	5.82	Q	11.7	5.82	2.91
Hexachlorobutadiene	87-68-3	1.17	U	5.83	1.17	0.583
Isopropylbenzene	98-82-8	1.17	U	5.83	1.17	0.583
p-Isopropyltoluene	99-87-6	1.17	U	5.83	1.17	0.583
4-Methyl-2-pentanone	108-10-1	5.82	Q	11.7	5.82	2.91
Methylene chloride	75-09-2	2.34	U	5.83	2.34	1.17
Naphthalene	91-20-3	1.17	U	5.83	1.17	0.583
n-Propylbenzene	103-65-1	1.17	Q	5.83	1.17	0.583
Styrene	100-42-5	1.17	U	5.83	1.17	0.583
1,1,1,2-Tetrachloroethane	630-20-6	1.17	U	5.83	1.17	0.583
1,1,2,2-Tetrachloroethane	79-34-5	1.17	U	5.83	1.17	0.583
Tetrachloroethene	127-18-4	1.17	U	5.83	1.17	0.583
Toluene	108-88-3	1.17	U	5.83	1.17	0.583
1,2,3-Trichlorobenzene	87-61-6	1.17	U	5.83	1.17	0.583
1,2,4-Trichlorobenzene	120-82-1	1.17	U	5.83	1.17	0.583
1,1,1-Trichloroethane	71-55-6	1.17	U	5.83	1.17	0.583
1,1,2-Trichloroethane	79-00-5	1.17	U	5.83	1.17	0.583
Trichloroethene	79-01-6	1.17	U	5.83	1.17	0.583
Trichlorofluoromethane	75-69-4	2.34	U	5.83	2.34	1.17

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,3-Trichloropropane	96-18-4	2.34	U	5.83	2.34	1.17
1,2,4-Trimethylbenzene	95-63-6	1.17	U	5.83	1.17	0.583
1,3,5-Trimethylbenzene	108-67-8	1.17	U	5.83	1.17	0.583
Vinyl chloride	75-01-4	2.34	U	5.83	2.34	1.17
o-Xylene	95-47-6	1.17	U	5.83	1.17	0.583
m-,p-Xylene	179601-23-1	1.17	U	5.83	1.17	0.583

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	80	120	
1,2-Dichloroethane-d4	102	80	120	
Toluene-d8	106	85	115	
4-Bromofluorobenzene	110	85	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(50-51)260416	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 16:56
Collect Date:	04/26/2016 14:15	**Dilution:**	1	**File ID:**	1LM.LM34723
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3.36	J	4.70	2.34	1.17

J	Estimated value ; the analyte concentration was less than the LOQ.

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(50-51)260416MS	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:46
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 13:34
Collect Date:	04/26/2016 14:15	**Dilution:**	1	**File ID:**	9M974167
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	28.9	Q	22.3	11.1	5.57
Benzene	71-43-2	23.4		5.57	1.11	0.557
Bromobenzene	108-86-1	24.6		5.57	1.11	0.557
Bromochloromethane	74-97-5	22.5		5.57	2.22	1.11
Bromodichloromethane	75-27-4	22.5		5.57	1.11	0.557
Bromoform	75-25-2	19.0		5.57	1.11	0.557
Bromomethane	74-83-9	22.8		5.57	2.22	1.11
2-Butanone	78-93-3	23.4	Q	11.1	5.56	2.78
n-Butylbenzene	104-51-8	24.5		5.57	1.11	0.557
sec-Butylbenzene	135-98-8	26.3		5.57	1.11	0.557
tert-Butylbenzene	98-06-6	27.3		5.57	1.11	0.557
Carbon disulfide	75-15-0	21.3	Q	5.57	1.11	0.557
Carbon tetrachloride	56-23-5	23.2		5.57	1.11	0.557
Chlorobenzene	108-90-7	24.3		5.57	1.11	0.557
Chlorodibromomethane	124-48-1	22.0		5.57	1.11	0.557
Chloroethane	75-00-3	25.6		5.57	2.22	1.11
Chloroform	67-66-3	23.8		5.57	1.11	0.557
Chloromethane	74-87-3	22.3	Q	11.1	4.46	2.23
2-Chlorotoluene	95-49-8	25.9		5.57	1.11	0.557
4-Chlorotoluene	106-43-4	26.1		5.57	1.11	0.557
1,2-Dibromo-3-chloropropane	96-12-8	20.3		11.1	4.46	2.23
1,2-Dibromoethane	106-93-4	22.8		5.57	1.11	0.557
Dibromomethane	74-95-3	20.6		5.57	1.11	0.557
1,2-Dichlorobenzene	95-50-1	23.9		5.57	1.11	0.557
1,3-Dichlorobenzene	541-73-1	24.2		5.57	1.11	0.557
1,4-Dichlorobenzene	106-46-7	24.5		5.57	1.11	0.557
Dichlorodifluoromethane	75-71-8	26.3		5.57	2.22	1.11
1,1-Dichloroethane	75-34-3	22.7		5.57	2.22	1.11
1,2-Dichloroethane	107-06-2	23.2		5.57	1.11	0.557
1,1-Dichloroethene	75-35-4	23.4		5.57	1.11	0.557

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	24.3		5.57	1.11	0.557
trans-1,2-Dichloroethene	156-60-5	24.4		5.57	1.11	0.557
1,2-Dichloropropane	78-87-5	24.0		5.57	1.11	0.557
1,3-Dichloropropane	142-28-9	23.6		5.57	1.11	0.557
2,2-Dichloropropane	594-20-7	24.2		5.57	1.11	0.557
cis-1,3-Dichloropropene	10061-01-5	24.9		5.57	1.11	0.557
trans-1,3-Dichloropropene	10061-02-6	23.0		5.57	1.11	0.557
1,1-Dichloropropene	563-58-6	24.0		5.57	1.11	0.557
Ethylbenzene	100-41-4	24.9		5.57	1.11	0.557
2-Hexanone	591-78-6	20.9	Q	11.1	5.56	2.78
Hexachlorobutadiene	87-68-3	23.3		5.57	1.11	0.557
Isopropylbenzene	98-82-8	25.2		5.57	1.11	0.557
p-Isopropyltoluene	99-87-6	26.6		5.57	1.11	0.557
4-Methyl-2-pentanone	108-10-1	21.6	Q	11.1	5.56	2.78
Methylene chloride	75-09-2	22.3		5.57	2.22	1.11
Naphthalene	91-20-3	18.8		5.57	1.11	0.557
n-Propylbenzene	103-65-1	29.3	Q	5.57	1.11	0.557
Styrene	100-42-5	23.7		5.57	1.11	0.557
1,1,1,2-Tetrachloroethane	630-20-6	23.2		5.57	1.11	0.557
1,1,2,2-Tetrachloroethane	79-34-5	22.0		5.57	1.11	0.557
Tetrachloroethene	127-18-4	23.8		5.57	1.11	0.557
Toluene	108-88-3	23.8		5.57	1.11	0.557
1,2,3-Trichlorobenzene	87-61-6	20.1		5.57	1.11	0.557
1,2,4-Trichlorobenzene	120-82-1	21.0		5.57	1.11	0.557
1,1,1-Trichloroethane	71-55-6	24.9		5.57	1.11	0.557
1,1,2-Trichloroethane	79-00-5	22.6		5.57	1.11	0.557
Trichloroethene	79-01-6	24.6		5.57	1.11	0.557
Trichlorofluoromethane	75-69-4	24.6		5.57	2.22	1.11
1,2,3-Trichloropropane	96-18-4	22.6		5.57	2.22	1.11
1,2,4-Trimethylbenzene	95-63-6	26.7		5.57	1.11	0.557
1,3,5-Trimethylbenzene	108-67-8	27.6		5.57	1.11	0.557
Vinyl chloride	75-01-4	27.1		5.57	2.22	1.11
o-Xylene	95-47-6	24.6		5.57	1.11	0.557
m-,p-Xylene	179601-23-1	48.9		5.57	1.11	0.557

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	80	120	
1,2-Dichloroethane-d4	102	80	120	
Toluene-d8	107	85	115	
4-Bromofluorobenzene	110	85	120	

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(50-51)260416MS	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 17:15
Collect Date:	04/26/2016 14:15	**Dilution:**	1	**File ID:**	1LM.LM34724
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	4.38	J	4.69	2.34	1.17

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(50-51)260416MSD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:47
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 14:04
Collect Date:	04/26/2016 14:15	**Dilution:**	1	**File ID:**	9M974168
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	29.6	Q	23.9	11.9	5.96
Benzene	71-43-2	23.4		5.96	1.19	0.596
Bromobenzene	108-86-1	24.3		5.96	1.19	0.596
Bromochloromethane	74-97-5	22.8		5.96	2.38	1.19
Bromodichloromethane	75-27-4	23.0		5.96	1.19	0.596
Bromoform	75-25-2	19.5		5.96	1.19	0.596
Bromomethane	74-83-9	23.3		5.96	2.38	1.19
2-Butanone	78-93-3	24.5	Q	11.9	5.96	2.98
n-Butylbenzene	104-51-8	23.2		5.96	1.19	0.596
sec-Butylbenzene	135-98-8	24.7		5.96	1.19	0.596
tert-Butylbenzene	98-06-6	26.9		5.96	1.19	0.596
Carbon disulfide	75-15-0	22.4	Q	5.96	1.19	0.596
Carbon tetrachloride	56-23-5	23.2		5.96	1.19	0.596
Chlorobenzene	108-90-7	24.7		5.96	1.19	0.596
Chlorodibromomethane	124-48-1	21.6		5.96	1.19	0.596
Chloroethane	75-00-3	25.4		5.96	2.38	1.19
Chloroform	67-66-3	23.9		5.96	1.19	0.596
Chloromethane	74-87-3	22.1	Q	11.9	4.78	2.39
2-Chlorotoluene	95-49-8	24.5		5.96	1.19	0.596
4-Chlorotoluene	106-43-4	25.9		5.96	1.19	0.596
1,2-Dibromo-3-chloropropane	96-12-8	20.9		11.9	4.78	2.39
1,2-Dibromoethane	106-93-4	23.2		5.96	1.19	0.596
Dibromomethane	74-95-3	20.8		5.96	1.19	0.596
1,2-Dichlorobenzene	95-50-1	23.0		5.96	1.19	0.596
1,3-Dichlorobenzene	541-73-1	23.6		5.96	1.19	0.596
1,4-Dichlorobenzene	106-46-7	23.3		5.96	1.19	0.596
Dichlorodifluoromethane	75-71-8	25.8		5.96	2.38	1.19
1,1-Dichloroethane	75-34-3	22.8		5.96	2.38	1.19
1,2-Dichloroethane	107-06-2	23.4		5.96	1.19	0.596
1,1-Dichloroethene	75-35-4	23.6		5.96	1.19	0.596

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	24.6		5.96	1.19	0.596
trans-1,2-Dichloroethene	156-60-5	25.0		5.96	1.19	0.596
1,2-Dichloropropane	78-87-5	24.1		5.96	1.19	0.596
1,3-Dichloropropane	142-28-9	24.1		5.96	1.19	0.596
2,2-Dichloropropane	594-20-7	23.8		5.96	1.19	0.596
cis-1,3-Dichloropropene	10061-01-5	24.8		5.96	1.19	0.596
trans-1,3-Dichloropropene	10061-02-6	23.0		5.96	1.19	0.596
1,1-Dichloropropene	563-58-6	24.1		5.96	1.19	0.596
Ethylbenzene	100-41-4	24.6		5.96	1.19	0.596
2-Hexanone	591-78-6	21.3	Q	11.9	5.96	2.98
Hexachlorobutadiene	87-68-3	20.9		5.96	1.19	0.596
Isopropylbenzene	98-82-8	24.9		5.96	1.19	0.596
p-Isopropyltoluene	99-87-6	25.3		5.96	1.19	0.596
4-Methyl-2-pentanone	108-10-1	22.0	Q	11.9	5.96	2.98
Methylene chloride	75-09-2	23.0		5.96	2.38	1.19
Naphthalene	91-20-3	18.0		5.96	1.19	0.596
n-Propylbenzene	103-65-1	28.1	Q	5.96	1.19	0.596
Styrene	100-42-5	23.9		5.96	1.19	0.596
1,1,1,2-Tetrachloroethane	630-20-6	23.0		5.96	1.19	0.596
1,1,2,2-Tetrachloroethane	79-34-5	21.4		5.96	1.19	0.596
Tetrachloroethene	127-18-4	23.9		5.96	1.19	0.596
Toluene	108-88-3	23.6		5.96	1.19	0.596
1,2,3-Trichlorobenzene	87-61-6	18.8		5.96	1.19	0.596
1,2,4-Trichlorobenzene	120-82-1	19.3		5.96	1.19	0.596
1,1,1-Trichloroethane	71-55-6	24.6		5.96	1.19	0.596
1,1,2-Trichloroethane	79-00-5	23.3		5.96	1.19	0.596
Trichloroethene	79-01-6	24.5		5.96	1.19	0.596
Trichlorofluoromethane	75-69-4	24.3		5.96	2.38	1.19
1,2,3-Trichloropropane	96-18-4	24.0		5.96	2.38	1.19
1,2,4-Trimethylbenzene	95-63-6	25.2		5.96	1.19	0.596
1,3,5-Trimethylbenzene	108-67-8	26.3		5.96	1.19	0.596
Vinyl chloride	75-01-4	26.8		5.96	2.38	1.19
o-Xylene	95-47-6	24.1		5.96	1.19	0.596
m-,p-Xylene	179601-23-1	48.0		5.96	1.19	0.596

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	80	120	
1,2-Dichloroethane-d4	103	80	120	
Toluene-d8	106	85	115	
4-Bromofluorobenzene	109	85	120	

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(50-51)260416MSD	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 17:34
Collect Date:	04/26/2016 14:15	**Dilution:**	1	**File ID:**	1LM.LM34725
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3.81	J	4.69	2.34	1.17

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(60-60.5)260416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:48
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 18:10
Collect Date:	04/26/2016 15:00	**Dilution:**	1	**File ID:**	9M974176
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	86.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	18.4	Q	24.2	12.1	6.06
Benzene	71-43-2	1.21	U	6.06	1.21	0.606
Bromobenzene	108-86-1	1.21	U	6.06	1.21	0.606
Bromochloromethane	74-97-5	2.42	U	6.06	2.42	1.21
Bromodichloromethane	75-27-4	1.21	U	6.06	1.21	0.606
Bromoform	75-25-2	1.21	U	6.06	1.21	0.606
Bromomethane	74-83-9	2.42	U	6.06	2.42	1.21
2-Butanone	78-93-3	6.06	Q	12.1	6.06	3.03
n-Butylbenzene	104-51-8	1.21	U	6.06	1.21	0.606
sec-Butylbenzene	135-98-8	1.21	U	6.06	1.21	0.606
tert-Butylbenzene	98-06-6	1.21	U	6.06	1.21	0.606
Carbon disulfide	75-15-0	1.21	Q	6.06	1.21	0.606
Carbon tetrachloride	56-23-5	1.21	U	6.06	1.21	0.606
Chlorobenzene	108-90-7	1.21	U	6.06	1.21	0.606
Chlorodibromomethane	124-48-1	1.21	U	6.06	1.21	0.606
Chloroethane	75-00-3	2.42	U	6.06	2.42	1.21
Chloroform	67-66-3	1.21	U	6.06	1.21	0.606
Chloromethane	74-87-3	4.84	Q	12.1	4.84	2.42
2-Chlorotoluene	95-49-8	1.21	U	6.06	1.21	0.606
4-Chlorotoluene	106-43-4	1.21	U	6.06	1.21	0.606
1,2-Dibromo-3-chloropropane	96-12-8	4.84	U	12.1	4.84	2.42
1,2-Dibromoethane	106-93-4	1.21	U	6.06	1.21	0.606
Dibromomethane	74-95-3	1.21	U	6.06	1.21	0.606
1,2-Dichlorobenzene	95-50-1	1.21	U	6.06	1.21	0.606
1,3-Dichlorobenzene	541-73-1	1.21	U	6.06	1.21	0.606
1,4-Dichlorobenzene	106-46-7	1.21	U	6.06	1.21	0.606
Dichlorodifluoromethane	75-71-8	2.42	U	6.06	2.42	1.21
1,1-Dichloroethane	75-34-3	2.42	U	6.06	2.42	1.21
1,2-Dichloroethane	107-06-2	1.21	U	6.06	1.21	0.606
1,1-Dichloroethene	75-35-4	1.21	U	6.06	1.21	0.606

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.21	U	6.06	1.21	0.606
trans-1,2-Dichloroethene	156-60-5	1.21	U	6.06	1.21	0.606
1,2-Dichloropropane	78-87-5	1.21	U	6.06	1.21	0.606
1,3-Dichloropropane	142-28-9	1.21	U	6.06	1.21	0.606
2,2-Dichloropropane	594-20-7	1.21	U	6.06	1.21	0.606
cis-1,3-Dichloropropene	10061-01-5	1.21	U	6.06	1.21	0.606
trans-1,3-Dichloropropene	10061-02-6	1.21	U	6.06	1.21	0.606
1,1-Dichloropropene	563-58-6	1.21	U	6.06	1.21	0.606
Ethylbenzene	100-41-4	1.21	U	6.06	1.21	0.606
2-Hexanone	591-78-6	6.06	Q	12.1	6.06	3.03
Hexachlorobutadiene	87-68-3	1.21	U	6.06	1.21	0.606
Isopropylbenzene	98-82-8	1.21	U	6.06	1.21	0.606
p-Isopropyltoluene	99-87-6	1.21	U	6.06	1.21	0.606
4-Methyl-2-pentanone	108-10-1	6.06	Q	12.1	6.06	3.03
Methylene chloride	75-09-2	2.42	U	6.06	2.42	1.21
Naphthalene	91-20-3	1.21	U	6.06	1.21	0.606
n-Propylbenzene	103-65-1	1.21	Q	6.06	1.21	0.606
Styrene	100-42-5	1.21	U	6.06	1.21	0.606
1,1,1,2-Tetrachloroethane	630-20-6	1.21	U	6.06	1.21	0.606
1,1,2,2-Tetrachloroethane	79-34-5	1.21	U	6.06	1.21	0.606
Tetrachloroethene	127-18-4	1.21	U	6.06	1.21	0.606
Toluene	108-88-3	1.21	U	6.06	1.21	0.606
1,2,3-Trichlorobenzene	87-61-6	1.21	U	6.06	1.21	0.606
1,2,4-Trichlorobenzene	120-82-1	1.21	U	6.06	1.21	0.606
1,1,1-Trichloroethane	71-55-6	1.21	U	6.06	1.21	0.606
1,1,2-Trichloroethane	79-00-5	1.21	U	6.06	1.21	0.606
Trichloroethene	79-01-6	1.21	U	6.06	1.21	0.606
Trichlorofluoromethane	75-69-4	2.42	U	6.06	2.42	1.21
1,2,3-Trichloropropane	96-18-4	2.42	U	6.06	2.42	1.21
1,2,4-Trimethylbenzene	95-63-6	1.21	U	6.06	1.21	0.606
1,3,5-Trimethylbenzene	108-67-8	1.21	U	6.06	1.21	0.606
Vinyl chloride	75-01-4	2.42	U	6.06	2.42	1.21
o-Xylene	95-47-6	1.21	U	6.06	1.21	0.606
m-,p-Xylene	179601-23-1	1.21	U	6.06	1.21	0.606

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.0	80	120	
1,2-Dichloroethane-d4	104	80	120	
Toluene-d8	107	85	115	
4-Bromofluorobenzene	115	85	120	

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-09	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(60-60.5)260416	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 20:24
Collect Date:	04/26/2016 15:00	**Dilution:**	1	**File ID:**	1LM.LM34734
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	86.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.26	U	4.52	2.26	1.13

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(60-60.5)260416DUP	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:48
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 18:40
Collect Date:	04/26/2016 15:00	**Dilution:**	1	**File ID:**	9M974177
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	87.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	20.8	Q	24.7	12.3	6.17
Benzene	71-43-2	1.23	U	6.17	1.23	0.617
Bromobenzene	108-86-1	1.23	U	6.17	1.23	0.617
Bromochloromethane	74-97-5	2.46	U	6.17	2.46	1.23
Bromodichloromethane	75-27-4	1.23	U	6.17	1.23	0.617
Bromoform	75-25-2	1.23	U	6.17	1.23	0.617
Bromomethane	74-83-9	2.46	U	6.17	2.46	1.23
2-Butanone	78-93-3	6.18	Q	12.3	6.18	3.09
n-Butylbenzene	104-51-8	1.23	U	6.17	1.23	0.617
sec-Butylbenzene	135-98-8	1.23	U	6.17	1.23	0.617
tert-Butylbenzene	98-06-6	1.23	U	6.17	1.23	0.617
Carbon disulfide	75-15-0	0.638	Q	6.17	1.23	0.617
Carbon tetrachloride	56-23-5	1.23	U	6.17	1.23	0.617
Chlorobenzene	108-90-7	1.23	U	6.17	1.23	0.617
Chlorodibromomethane	124-48-1	1.23	U	6.17	1.23	0.617
Chloroethane	75-00-3	2.46	U	6.17	2.46	1.23
Chloroform	67-66-3	1.23	U	6.17	1.23	0.617
Chloromethane	74-87-3	4.94	Q	12.3	4.94	2.47
2-Chlorotoluene	95-49-8	1.23	U	6.17	1.23	0.617
4-Chlorotoluene	106-43-4	1.23	U	6.17	1.23	0.617
1,2-Dibromo-3-chloropropane	96-12-8	4.94	U	12.3	4.94	2.47
1,2-Dibromoethane	106-93-4	1.23	U	6.17	1.23	0.617
Dibromomethane	74-95-3	1.23	U	6.17	1.23	0.617
1,2-Dichlorobenzene	95-50-1	1.23	U	6.17	1.23	0.617
1,3-Dichlorobenzene	541-73-1	1.23	U	6.17	1.23	0.617
1,4-Dichlorobenzene	106-46-7	1.23	U	6.17	1.23	0.617
Dichlorodifluoromethane	75-71-8	2.46	U	6.17	2.46	1.23
1,1-Dichloroethane	75-34-3	2.46	U	6.17	2.46	1.23
1,2-Dichloroethane	107-06-2	1.23	U	6.17	1.23	0.617
1,1-Dichloroethene	75-35-4	1.23	U	6.17	1.23	0.617

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.23	U	6.17	1.23	0.617
trans-1,2-Dichloroethene	156-60-5	1.23	U	6.17	1.23	0.617
1,2-Dichloropropane	78-87-5	1.23	U	6.17	1.23	0.617
1,3-Dichloropropane	142-28-9	1.23	U	6.17	1.23	0.617
2,2-Dichloropropane	594-20-7	1.23	U	6.17	1.23	0.617
cis-1,3-Dichloropropene	10061-01-5	1.23	U	6.17	1.23	0.617
trans-1,3-Dichloropropene	10061-02-6	1.23	U	6.17	1.23	0.617
1,1-Dichloropropene	563-58-6	1.23	U	6.17	1.23	0.617
Ethylbenzene	100-41-4	1.23	U	6.17	1.23	0.617
2-Hexanone	591-78-6	6.18	Q	12.3	6.18	3.09
Hexachlorobutadiene	87-68-3	1.23	U	6.17	1.23	0.617
Isopropylbenzene	98-82-8	1.23	U	6.17	1.23	0.617
p-Isopropyltoluene	99-87-6	1.23	U	6.17	1.23	0.617
4-Methyl-2-pentanone	108-10-1	6.18	Q	12.3	6.18	3.09
Methylene chloride	75-09-2	2.46	U	6.17	2.46	1.23
Naphthalene	91-20-3	1.23	U	6.17	1.23	0.617
n-Propylbenzene	103-65-1	1.23	Q	6.17	1.23	0.617
Styrene	100-42-5	1.23	U	6.17	1.23	0.617
1,1,1,2-Tetrachloroethane	630-20-6	1.23	U	6.17	1.23	0.617
1,1,2,2-Tetrachloroethane	79-34-5	1.23	U	6.17	1.23	0.617
Tetrachloroethene	127-18-4	1.23	U	6.17	1.23	0.617
Toluene	108-88-3	1.23	U	6.17	1.23	0.617
1,2,3-Trichlorobenzene	87-61-6	1.23	U	6.17	1.23	0.617
1,2,4-Trichlorobenzene	120-82-1	1.23	U	6.17	1.23	0.617
1,1,1-Trichloroethane	71-55-6	1.23	U	6.17	1.23	0.617
1,1,2-Trichloroethane	79-00-5	1.23	U	6.17	1.23	0.617
Trichloroethene	79-01-6	1.23	U	6.17	1.23	0.617
Trichlorofluoromethane	75-69-4	2.46	U	6.17	2.46	1.23
1,2,3-Trichloropropane	96-18-4	2.46	U	6.17	2.46	1.23
1,2,4-Trimethylbenzene	95-63-6	1.23	U	6.17	1.23	0.617
1,3,5-Trimethylbenzene	108-67-8	1.23	U	6.17	1.23	0.617
Vinyl chloride	75-01-4	2.46	U	6.17	2.46	1.23
o-Xylene	95-47-6	1.23	U	6.17	1.23	0.617
m-,p-Xylene	179601-23-1	1.23	U	6.17	1.23	0.617

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	80	120	
1,2-Dichloroethane-d4	105	80	120	
Toluene-d8	108	85	115	
4-Bromofluorobenzene	118	85	120	

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-10	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(60-60.5)260416DUP	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 20:43
Collect Date:	04/26/2016 15:00	**Dilution:**	1	**File ID:**	1LM.LM34735
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	87.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.24	U	4.47	2.24	1.12

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(70-70.5)260416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:49
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 19:10
Collect Date:	04/26/2016 15:45	**Dilution:**	1	**File ID:**	9M974178
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	7.02	Q	24.3	12.1	6.07
Benzene	71-43-2	1.21	U	6.07	1.21	0.607
Bromobenzene	108-86-1	1.21	U	6.07	1.21	0.607
Bromochloromethane	74-97-5	2.42	U	6.07	2.42	1.21
Bromodichloromethane	75-27-4	1.21	U	6.07	1.21	0.607
Bromoform	75-25-2	1.21	U	6.07	1.21	0.607
Bromomethane	74-83-9	2.42	U	6.07	2.42	1.21
2-Butanone	78-93-3	6.08	Q	12.1	6.08	3.04
n-Butylbenzene	104-51-8	1.21	U	6.07	1.21	0.607
sec-Butylbenzene	135-98-8	1.21	U	6.07	1.21	0.607
tert-Butylbenzene	98-06-6	1.21	U	6.07	1.21	0.607
Carbon disulfide	75-15-0	1.21	Q	6.07	1.21	0.607
Carbon tetrachloride	56-23-5	1.21	U	6.07	1.21	0.607
Chlorobenzene	108-90-7	1.21	U	6.07	1.21	0.607
Chlorodibromomethane	124-48-1	1.21	U	6.07	1.21	0.607
Chloroethane	75-00-3	2.42	U	6.07	2.42	1.21
Chloroform	67-66-3	1.21	U	6.07	1.21	0.607
Chloromethane	74-87-3	4.86	Q	12.1	4.86	2.43
2-Chlorotoluene	95-49-8	1.21	U	6.07	1.21	0.607
4-Chlorotoluene	106-43-4	1.21	U	6.07	1.21	0.607
1,2-Dibromo-3-chloropropane	96-12-8	4.86	U	12.1	4.86	2.43
1,2-Dibromoethane	106-93-4	1.21	U	6.07	1.21	0.607
Dibromomethane	74-95-3	1.21	U	6.07	1.21	0.607
1,2-Dichlorobenzene	95-50-1	1.21	U	6.07	1.21	0.607
1,3-Dichlorobenzene	541-73-1	1.21	U	6.07	1.21	0.607
1,4-Dichlorobenzene	106-46-7	1.21	U	6.07	1.21	0.607
Dichlorodifluoromethane	75-71-8	2.42	U	6.07	2.42	1.21
1,1-Dichloroethane	75-34-3	2.42	U	6.07	2.42	1.21
1,2-Dichloroethane	107-06-2	1.21	U	6.07	1.21	0.607
1,1-Dichloroethene	75-35-4	1.21	U	6.07	1.21	0.607

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.21	U	6.07	1.21	0.607
trans-1,2-Dichloroethene	156-60-5	1.21	U	6.07	1.21	0.607
1,2-Dichloropropane	78-87-5	1.21	U	6.07	1.21	0.607
1,3-Dichloropropane	142-28-9	1.21	U	6.07	1.21	0.607
2,2-Dichloropropane	594-20-7	1.21	U	6.07	1.21	0.607
cis-1,3-Dichloropropene	10061-01-5	1.21	U	6.07	1.21	0.607
trans-1,3-Dichloropropene	10061-02-6	1.21	U	6.07	1.21	0.607
1,1-Dichloropropene	563-58-6	1.21	U	6.07	1.21	0.607
Ethylbenzene	100-41-4	1.21	U	6.07	1.21	0.607
2-Hexanone	591-78-6	6.08	Q	12.1	6.08	3.04
Hexachlorobutadiene	87-68-3	1.21	U	6.07	1.21	0.607
Isopropylbenzene	98-82-8	1.21	U	6.07	1.21	0.607
p-Isopropyltoluene	99-87-6	1.21	U	6.07	1.21	0.607
4-Methyl-2-pentanone	108-10-1	6.08	Q	12.1	6.08	3.04
Methylene chloride	75-09-2	2.42	U	6.07	2.42	1.21
Naphthalene	91-20-3	1.21	U	6.07	1.21	0.607
n-Propylbenzene	103-65-1	1.21	Q	6.07	1.21	0.607
Styrene	100-42-5	1.21	U	6.07	1.21	0.607
1,1,1,2-Tetrachloroethane	630-20-6	1.21	U	6.07	1.21	0.607
1,1,2,2-Tetrachloroethane	79-34-5	1.21	U	6.07	1.21	0.607
Tetrachloroethene	127-18-4	1.21	U	6.07	1.21	0.607
Toluene	108-88-3	1.21	U	6.07	1.21	0.607
1,2,3-Trichlorobenzene	87-61-6	1.21	U	6.07	1.21	0.607
1,2,4-Trichlorobenzene	120-82-1	1.21	U	6.07	1.21	0.607
1,1,1-Trichloroethane	71-55-6	1.21	U	6.07	1.21	0.607
1,1,2-Trichloroethane	79-00-5	1.21	U	6.07	1.21	0.607
Trichloroethene	79-01-6	1.21	U	6.07	1.21	0.607
Trichlorofluoromethane	75-69-4	2.42	U	6.07	2.42	1.21
1,2,3-Trichloropropane	96-18-4	2.42	U	6.07	2.42	1.21
1,2,4-Trimethylbenzene	95-63-6	1.21	U	6.07	1.21	0.607
1,3,5-Trimethylbenzene	108-67-8	1.21	U	6.07	1.21	0.607
Vinyl chloride	75-01-4	2.42	U	6.07	2.42	1.21
o-Xylene	95-47-6	1.21	U	6.07	1.21	0.607
m-,p-Xylene	179601-23-1	1.21	U	6.07	1.21	0.607

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	80	120	
1,2-Dichloroethane-d4	107	80	120	
Toluene-d8	109	85	115	
4-Bromofluorobenzene	114	85	120	

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-11	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(70-70.5)260416	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 21:02
Collect Date:	04/26/2016 15:45	**Dilution:**	1	**File ID:**	1LM.LM34736
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.36	U	4.73	2.36	1.18

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(80-80.5)260416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:50
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 19:41
Collect Date:	04/26/2016 16:45	**Dilution:**	1	**File ID:**	9M974179
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	9.31	Q	25.2	12.6	6.31
Benzene	71-43-2	1.26	U	6.31	1.26	0.631
Bromobenzene	108-86-1	1.26	U	6.31	1.26	0.631
Bromochloromethane	74-97-5	2.52	U	6.31	2.52	1.26
Bromodichloromethane	75-27-4	1.26	U	6.31	1.26	0.631
Bromoform	75-25-2	1.26	U	6.31	1.26	0.631
Bromomethane	74-83-9	2.52	U	6.31	2.52	1.26
2-Butanone	78-93-3	6.30	Q	12.6	6.30	3.15
n-Butylbenzene	104-51-8	1.26	U	6.31	1.26	0.631
sec-Butylbenzene	135-98-8	1.26	U	6.31	1.26	0.631
tert-Butylbenzene	98-06-6	1.26	U	6.31	1.26	0.631
Carbon disulfide	75-15-0	0.825	Q	6.31	1.26	0.631
Carbon tetrachloride	56-23-5	1.26	U	6.31	1.26	0.631
Chlorobenzene	108-90-7	1.26	U	6.31	1.26	0.631
Chlorodibromomethane	124-48-1	1.26	U	6.31	1.26	0.631
Chloroethane	75-00-3	2.52	U	6.31	2.52	1.26
Chloroform	67-66-3	1.26	U	6.31	1.26	0.631
Chloromethane	74-87-3	5.04	Q	12.6	5.04	2.52
2-Chlorotoluene	95-49-8	1.26	U	6.31	1.26	0.631
4-Chlorotoluene	106-43-4	1.26	U	6.31	1.26	0.631
1,2-Dibromo-3-chloropropane	96-12-8	5.04	U	12.6	5.04	2.52
1,2-Dibromoethane	106-93-4	1.26	U	6.31	1.26	0.631
Dibromomethane	74-95-3	1.26	U	6.31	1.26	0.631
1,2-Dichlorobenzene	95-50-1	1.26	U	6.31	1.26	0.631
1,3-Dichlorobenzene	541-73-1	1.26	U	6.31	1.26	0.631
1,4-Dichlorobenzene	106-46-7	1.26	U	6.31	1.26	0.631
Dichlorodifluoromethane	75-71-8	2.52	U	6.31	2.52	1.26
1,1-Dichloroethane	75-34-3	2.52	U	6.31	2.52	1.26
1,2-Dichloroethane	107-06-2	1.26	U	6.31	1.26	0.631
1,1-Dichloroethene	75-35-4	1.26	U	6.31	1.26	0.631

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.26	U	6.31	1.26	0.631
trans-1,2-Dichloroethene	156-60-5	1.26	U	6.31	1.26	0.631
1,2-Dichloropropane	78-87-5	1.26	U	6.31	1.26	0.631
1,3-Dichloropropane	142-28-9	1.26	U	6.31	1.26	0.631
2,2-Dichloropropane	594-20-7	1.26	U	6.31	1.26	0.631
cis-1,3-Dichloropropene	10061-01-5	1.26	U	6.31	1.26	0.631
trans-1,3-Dichloropropene	10061-02-6	1.26	U	6.31	1.26	0.631
1,1-Dichloropropene	563-58-6	1.26	U	6.31	1.26	0.631
Ethylbenzene	100-41-4	1.26	U	6.31	1.26	0.631
2-Hexanone	591-78-6	6.30	Q	12.6	6.30	3.15
Hexachlorobutadiene	87-68-3	1.26	U	6.31	1.26	0.631
Isopropylbenzene	98-82-8	1.26	U	6.31	1.26	0.631
p-Isopropyltoluene	99-87-6	1.26	U	6.31	1.26	0.631
4-Methyl-2-pentanone	108-10-1	6.30	Q	12.6	6.30	3.15
Methylene chloride	75-09-2	2.52	U	6.31	2.52	1.26
Naphthalene	91-20-3	1.26	U	6.31	1.26	0.631
n-Propylbenzene	103-65-1	1.26	Q	6.31	1.26	0.631
Styrene	100-42-5	1.26	U	6.31	1.26	0.631
1,1,1,2-Tetrachloroethane	630-20-6	1.26	U	6.31	1.26	0.631
1,1,2,2-Tetrachloroethane	79-34-5	1.26	U	6.31	1.26	0.631
Tetrachloroethene	127-18-4	1.26	U	6.31	1.26	0.631
Toluene	108-88-3	1.26	U	6.31	1.26	0.631
1,2,3-Trichlorobenzene	87-61-6	1.26	U	6.31	1.26	0.631
1,2,4-Trichlorobenzene	120-82-1	1.26	U	6.31	1.26	0.631
1,1,1-Trichloroethane	71-55-6	1.26	U	6.31	1.26	0.631
1,1,2-Trichloroethane	79-00-5	1.26	U	6.31	1.26	0.631
Trichloroethene	79-01-6	1.26	U	6.31	1.26	0.631
Trichlorofluoromethane	75-69-4	2.52	U	6.31	2.52	1.26
1,2,3-Trichloropropane	96-18-4	2.52	U	6.31	2.52	1.26
1,2,4-Trimethylbenzene	95-63-6	1.26	U	6.31	1.26	0.631
1,3,5-Trimethylbenzene	108-67-8	1.26	U	6.31	1.26	0.631
Vinyl chloride	75-01-4	2.52	U	6.31	2.52	1.26
o-Xylene	95-47-6	1.26	U	6.31	1.26	0.631
m-,p-Xylene	179601-23-1	1.26	U	6.31	1.26	0.631

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	80	120	
1,2-Dichloroethane-d4	109	80	120	
Toluene-d8	108	85	115	
4-Bromofluorobenzene	110	85	120	

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-12	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(80-80.5)260416	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 21:21
Collect Date:	04/26/2016 16:45	**Dilution:**	1	**File ID:**	1LM.LM34737
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.38	U	4.76	2.38	1.19

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-13	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(89.5-90)260416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:51
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 20:12
Collect Date:	04/26/2016 17:00	**Dilution:**	1	**File ID:**	9M974180
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	9.42	Q	25.4	12.7	6.35
Benzene	71-43-2	1.27	U	6.35	1.27	0.635
Bromobenzene	108-86-1	1.27	U	6.35	1.27	0.635
Bromochloromethane	74-97-5	2.54	U	6.35	2.54	1.27
Bromodichloromethane	75-27-4	1.27	U	6.35	1.27	0.635
Bromoform	75-25-2	1.27	U	6.35	1.27	0.635
Bromomethane	74-83-9	2.54	U	6.35	2.54	1.27
2-Butanone	78-93-3	6.34	Q	12.7	6.34	3.17
n-Butylbenzene	104-51-8	1.27	U	6.35	1.27	0.635
sec-Butylbenzene	135-98-8	1.27	U	6.35	1.27	0.635
tert-Butylbenzene	98-06-6	1.27	U	6.35	1.27	0.635
Carbon disulfide	75-15-0	1.47	Q	6.35	1.27	0.635
Carbon tetrachloride	56-23-5	1.27	U	6.35	1.27	0.635
Chlorobenzene	108-90-7	1.27	U	6.35	1.27	0.635
Chlorodibromomethane	124-48-1	1.27	U	6.35	1.27	0.635
Chloroethane	75-00-3	2.54	U	6.35	2.54	1.27
Chloroform	67-66-3	1.27	U	6.35	1.27	0.635
Chloromethane	74-87-3	5.08	Q	12.7	5.08	2.54
2-Chlorotoluene	95-49-8	1.27	U	6.35	1.27	0.635
4-Chlorotoluene	106-43-4	1.27	U	6.35	1.27	0.635
1,2-Dibromo-3-chloropropane	96-12-8	5.08	U	12.7	5.08	2.54
1,2-Dibromoethane	106-93-4	1.27	U	6.35	1.27	0.635
Dibromomethane	74-95-3	1.27	U	6.35	1.27	0.635
1,2-Dichlorobenzene	95-50-1	1.27	U	6.35	1.27	0.635
1,3-Dichlorobenzene	541-73-1	1.27	U	6.35	1.27	0.635
1,4-Dichlorobenzene	106-46-7	1.27	U	6.35	1.27	0.635
Dichlorodifluoromethane	75-71-8	2.54	U	6.35	2.54	1.27
1,1-Dichloroethane	75-34-3	2.54	U	6.35	2.54	1.27
1,2-Dichloroethane	107-06-2	1.27	U	6.35	1.27	0.635
1,1-Dichloroethene	75-35-4	1.27	U	6.35	1.27	0.635

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.27	U	6.35	1.27	0.635
trans-1,2-Dichloroethene	156-60-5	1.27	U	6.35	1.27	0.635
1,2-Dichloropropane	78-87-5	1.27	U	6.35	1.27	0.635
1,3-Dichloropropane	142-28-9	1.27	U	6.35	1.27	0.635
2,2-Dichloropropane	594-20-7	1.27	U	6.35	1.27	0.635
cis-1,3-Dichloropropene	10061-01-5	1.27	U	6.35	1.27	0.635
trans-1,3-Dichloropropene	10061-02-6	1.27	U	6.35	1.27	0.635
1,1-Dichloropropene	563-58-6	1.27	U	6.35	1.27	0.635
Ethylbenzene	100-41-4	1.27	U	6.35	1.27	0.635
2-Hexanone	591-78-6	6.34	Q	12.7	6.34	3.17
Hexachlorobutadiene	87-68-3	1.27	U	6.35	1.27	0.635
Isopropylbenzene	98-82-8	1.27	U	6.35	1.27	0.635
p-Isopropyltoluene	99-87-6	1.27	U	6.35	1.27	0.635
4-Methyl-2-pentanone	108-10-1	6.34	Q	12.7	6.34	3.17
Methylene chloride	75-09-2	2.54	U	6.35	2.54	1.27
Naphthalene	91-20-3	1.27	U	6.35	1.27	0.635
n-Propylbenzene	103-65-1	1.27	Q	6.35	1.27	0.635
Styrene	100-42-5	1.27	U	6.35	1.27	0.635
1,1,1,2-Tetrachloroethane	630-20-6	1.27	U	6.35	1.27	0.635
1,1,2,2-Tetrachloroethane	79-34-5	1.27	U	6.35	1.27	0.635
Tetrachloroethene	127-18-4	1.27	U	6.35	1.27	0.635
Toluene	108-88-3	1.27	U	6.35	1.27	0.635
1,2,3-Trichlorobenzene	87-61-6	1.27	U	6.35	1.27	0.635
1,2,4-Trichlorobenzene	120-82-1	1.27	U	6.35	1.27	0.635
1,1,1-Trichloroethane	71-55-6	1.27	U	6.35	1.27	0.635
1,1,2-Trichloroethane	79-00-5	1.27	U	6.35	1.27	0.635
Trichloroethene	79-01-6	1.27	U	6.35	1.27	0.635
Trichlorofluoromethane	75-69-4	2.54	U	6.35	2.54	1.27
1,2,3-Trichloropropane	96-18-4	2.54	U	6.35	2.54	1.27
1,2,4-Trimethylbenzene	95-63-6	1.27	U	6.35	1.27	0.635
1,3,5-Trimethylbenzene	108-67-8	1.27	U	6.35	1.27	0.635
Vinyl chloride	75-01-4	2.54	U	6.35	2.54	1.27
o-Xylene	95-47-6	1.27	U	6.35	1.27	0.635
m-,p-Xylene	179601-23-1	1.27	U	6.35	1.27	0.635

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	80	120	
1,2-Dichloroethane-d4	110	80	120	
Toluene-d8	108	85	115	
4-Bromofluorobenzene	117	85	120	

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-13	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(89.5-90)260416	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 21:40
Collect Date:	04/26/2016 17:00	**Dilution:**	1	**File ID:**	1LM.LM34738
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.44	U	4.86	2.44	1.22

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-14	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	EQUIPMENT BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/28/2016 12:21
Workgroup #:	WG567935	**Analyst:**	TMB	**Run Date:**	05/07/2016 13:31
Collect Date:	04/25/2016 17:00	**Dilution:**	1	**File ID:**	8M412050
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	9.05	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.322	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	114	70	120	
Toluene-d8	98.4	85	120	
4-Bromofluorobenzene	99.0	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-14	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	EQUIPMENT BLANK	**Prep Method:**	6850	**Prep Date:**	05/05/2016 17:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567744	**Analyst:**	JWR	**Run Date:**	05/05/2016 20:55
Collect Date:	04/25/2016 17:00	**Dilution:**	1	**File ID:**	1LM.LM34776
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #: L16041580-01 **Client ID:** 18CPTMW22DW(5-5.5)260416 **Matrix:** Soil **Collect Date:** 04/26/2016 09:05

Analyte	Result	Units	Qualifier
Percent Solids	84.8	weight %	

Sample #: L16041580-02 **Client ID:** 18CPTMW22DW(10-10.5)260416 **Matrix:** Soil **Collect Date:** 04/26/2016 10:00

Analyte	Result	Units	Qualifier
Percent Solids	82.0	weight %	

Sample #: L16041580-03 **Client ID:** 18CPTMW22DW(20-20.5)260416 **Matrix:** Soil **Collect Date:** 04/26/2016 10:35

Analyte	Result	Units	Qualifier
Percent Solids	79.2	weight %	

Sample #: L16041580-04 **Client ID:** 18CPTMW22DW(29.5-30)260416 **Matrix:** Soil **Collect Date:** 04/26/2016 11:15

Analyte	Result	Units	Qualifier
Percent Solids	78.2	weight %	

Sample #: L16041580-05 **Client ID:** 18CPTMW22DW(40-40.5)260416 **Matrix:** Soil **Collect Date:** 04/26/2016 11:55

Analyte	Result	Units	Qualifier
Percent Solids	79.0	weight %	

Sample #: L16041580-06 **Client ID:** 18CPTMW22DW(50-51)260416 **Matrix:** Soil **Collect Date:** 04/26/2016 14:15

Analyte	Result	Units	Qualifier
Percent Solids	83.5	weight %	

Sample #: L16041580-07 **Client ID:** 18CPTMW22DW(50-51)260416MS **Matrix:** Soil **Collect Date:** 04/26/2016 14:15

Analyte	Result	Units	Qualifier
Percent Solids	83.5	weight %	

Sample #: L16041580-08 **Client ID:** 18CPTMW22DW(50-51)260416MSD **Matrix:** Soil **Collect Date:** 04/26/2016 14:15

Analyte	Result	Units	Qualifier
Percent Solids	83.5	weight %	

Sample #: L16041580-09 **Client ID:** 18CPTMW22DW(60-60.5)260416 **Matrix:** Soil **Collect Date:** 04/26/2016 15:00

Analyte	Result	Units	Qualifier
Percent Solids	86.5	weight %	

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #: L16041580-10 **Client ID:** 18CPTMW22DW(60-60.5)260416DUP **Matrix:** Soil **Collect Date:** 04/26/2016 15:00

Analyte	Result	Units	Qualifier
Percent Solids	87.1	weight %	

Sample #: L16041580-11 **Client ID:** 18CPTMW22DW(70-70.5)260416 **Matrix:** Soil **Collect Date:** 04/26/2016 15:45

Analyte	Result	Units	Qualifier
Percent Solids	83.7	weight %	

Sample #: L16041580-12 **Client ID:** 18CPTMW22DW(80-80.5)260416 **Matrix:** Soil **Collect Date:** 04/26/2016 16:45

Analyte	Result	Units	Qualifier
Percent Solids	82.3	weight %	

Sample #: L16041580-13 **Client ID:** 18CPTMW22DW(89.5-90)260416 **Matrix:** Soil **Collect Date:** 04/26/2016 17:00

Analyte	Result	Units	Qualifier
Percent Solids	80.0	weight %	

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(5-5.5)260416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:42
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 15:35
Collect Date:	04/26/2016 09:05	**Dilution:**	1	**File ID:**	9M974171
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.2	Q	24.5	12.2	6.12
Benzene	71-43-2	1.22	U	6.12	1.22	0.612
Bromobenzene	108-86-1	1.22	U	6.12	1.22	0.612
Bromochloromethane	74-97-5	2.44	U	6.12	2.44	1.22
Bromodichloromethane	75-27-4	1.22	U	6.12	1.22	0.612
Bromoform	75-25-2	1.22	U	6.12	1.22	0.612
Bromomethane	74-83-9	2.44	U	6.12	2.44	1.22
2-Butanone	78-93-3	6.12	Q	12.2	6.12	3.06
n-Butylbenzene	104-51-8	1.22	U	6.12	1.22	0.612
sec-Butylbenzene	135-98-8	1.22	U	6.12	1.22	0.612
tert-Butylbenzene	98-06-6	1.22	U	6.12	1.22	0.612
Carbon disulfide	75-15-0	1.22	Q	6.12	1.22	0.612
Carbon tetrachloride	56-23-5	1.22	U	6.12	1.22	0.612
Chlorobenzene	108-90-7	1.22	U	6.12	1.22	0.612
Chlorodibromomethane	124-48-1	1.22	U	6.12	1.22	0.612
Chloroethane	75-00-3	2.44	U	6.12	2.44	1.22
Chloroform	67-66-3	1.22	U	6.12	1.22	0.612
Chloromethane	74-87-3	4.90	Q	12.2	4.90	2.45
2-Chlorotoluene	95-49-8	1.22	U	6.12	1.22	0.612
4-Chlorotoluene	106-43-4	1.22	U	6.12	1.22	0.612
1,2-Dibromo-3-chloropropane	96-12-8	4.90	U	12.2	4.90	2.45
1,2-Dibromoethane	106-93-4	1.22	U	6.12	1.22	0.612
Dibromomethane	74-95-3	1.22	U	6.12	1.22	0.612
1,2-Dichlorobenzene	95-50-1	1.22	U	6.12	1.22	0.612
1,3-Dichlorobenzene	541-73-1	1.22	U	6.12	1.22	0.612
1,4-Dichlorobenzene	106-46-7	1.22	U	6.12	1.22	0.612
Dichlorodifluoromethane	75-71-8	2.44	U	6.12	2.44	1.22
1,1-Dichloroethane	75-34-3	2.44	U	6.12	2.44	1.22
1,2-Dichloroethane	107-06-2	1.22	U	6.12	1.22	0.612
1,1-Dichloroethene	75-35-4	1.22	U	6.12	1.22	0.612
cis-1,2-Dichloroethene	156-59-2	1.22	U	6.12	1.22	0.612

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.22	U	6.12	1.22	0.612
1,2-Dichloropropane	78-87-5	1.22	U	6.12	1.22	0.612
1,3-Dichloropropane	142-28-9	1.22	U	6.12	1.22	0.612
2,2-Dichloropropane	594-20-7	1.22	U	6.12	1.22	0.612
cis-1,3-Dichloropropene	10061-01-5	1.22	U	6.12	1.22	0.612
trans-1,3-Dichloropropene	10061-02-6	1.22	U	6.12	1.22	0.612
1,1-Dichloropropene	563-58-6	1.22	U	6.12	1.22	0.612
Ethylbenzene	100-41-4	1.22	U	6.12	1.22	0.612
2-Hexanone	591-78-6	6.12	Q	12.2	6.12	3.06
Hexachlorobutadiene	87-68-3	1.22	U	6.12	1.22	0.612
Isopropylbenzene	98-82-8	1.22	U	6.12	1.22	0.612
p-Isopropyltoluene	99-87-6	1.22	U	6.12	1.22	0.612
4-Methyl-2-pentanone	108-10-1	6.12	Q	12.2	6.12	3.06
Methylene chloride	75-09-2	2.44	U	6.12	2.44	1.22
Naphthalene	91-20-3	1.22	U	6.12	1.22	0.612
n-Propylbenzene	103-65-1	1.22	Q	6.12	1.22	0.612
Styrene	100-42-5	1.22	U	6.12	1.22	0.612
1,1,1,2-Tetrachloroethane	630-20-6	1.22	U	6.12	1.22	0.612
1,1,2,2-Tetrachloroethane	79-34-5	1.22	U	6.12	1.22	0.612
Tetrachloroethene	127-18-4	1.22	U	6.12	1.22	0.612
Toluene	108-88-3	1.22	U	6.12	1.22	0.612
1,2,3-Trichlorobenzene	87-61-6	1.22	U	6.12	1.22	0.612
1,2,4-Trichlorobenzene	120-82-1	1.22	U	6.12	1.22	0.612
1,1,1-Trichloroethane	71-55-6	1.22	U	6.12	1.22	0.612
1,1,2-Trichloroethane	79-00-5	1.22	U	6.12	1.22	0.612
Trichloroethene	79-01-6	1.22	U	6.12	1.22	0.612
Trichlorofluoromethane	75-69-4	2.44	U	6.12	2.44	1.22
1,2,3-Trichloropropane	96-18-4	2.44	U	6.12	2.44	1.22
1,2,4-Trimethylbenzene	95-63-6	1.22	U	6.12	1.22	0.612
1,3,5-Trimethylbenzene	108-67-8	1.22	U	6.12	1.22	0.612
Vinyl chloride	75-01-4	2.44	U	6.12	2.44	1.22
o-Xylene	95-47-6	1.22	U	6.12	1.22	0.612
m-,p-Xylene	179601-23-1	1.22	U	6.12	1.22	0.612

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	80	120	
1,2-Dichloroethane-d4	102	80	120	
Toluene-d8	108	85	115	
4-Bromofluorobenzene	112	85	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(10-10.5)260416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:42
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 16:06
Collect Date:	04/26/2016 10:00	**Dilution:**	1	**File ID:**	9M974172
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.4	Q	24.9	12.4	6.21
Benzene	71-43-2	1.24	U	6.21	1.24	0.621
Bromobenzene	108-86-1	1.24	U	6.21	1.24	0.621
Bromochloromethane	74-97-5	2.48	U	6.21	2.48	1.24
Bromodichloromethane	75-27-4	1.24	U	6.21	1.24	0.621
Bromoform	75-25-2	1.24	U	6.21	1.24	0.621
Bromomethane	74-83-9	2.48	U	6.21	2.48	1.24
2-Butanone	78-93-3	6.22	Q	12.4	6.22	3.11
n-Butylbenzene	104-51-8	1.24	U	6.21	1.24	0.621
sec-Butylbenzene	135-98-8	1.24	U	6.21	1.24	0.621
tert-Butylbenzene	98-06-6	1.24	U	6.21	1.24	0.621
Carbon disulfide	75-15-0	1.24	Q	6.21	1.24	0.621
Carbon tetrachloride	56-23-5	1.24	U	6.21	1.24	0.621
Chlorobenzene	108-90-7	1.24	U	6.21	1.24	0.621
Chlorodibromomethane	124-48-1	1.24	U	6.21	1.24	0.621
Chloroethane	75-00-3	2.48	U	6.21	2.48	1.24
Chloroform	67-66-3	1.24	U	6.21	1.24	0.621
Chloromethane	74-87-3	4.98	Q	12.4	4.98	2.49
2-Chlorotoluene	95-49-8	1.24	U	6.21	1.24	0.621
4-Chlorotoluene	106-43-4	1.24	U	6.21	1.24	0.621
1,2-Dibromo-3-chloropropane	96-12-8	4.98	U	12.4	4.98	2.49
1,2-Dibromoethane	106-93-4	1.24	U	6.21	1.24	0.621
Dibromomethane	74-95-3	1.24	U	6.21	1.24	0.621
1,2-Dichlorobenzene	95-50-1	1.24	U	6.21	1.24	0.621
1,3-Dichlorobenzene	541-73-1	1.24	U	6.21	1.24	0.621
1,4-Dichlorobenzene	106-46-7	1.24	U	6.21	1.24	0.621
Dichlorodifluoromethane	75-71-8	2.48	U	6.21	2.48	1.24
1,1-Dichloroethane	75-34-3	2.48	U	6.21	2.48	1.24
1,2-Dichloroethane	107-06-2	1.24	U	6.21	1.24	0.621
1,1-Dichloroethene	75-35-4	1.24	U	6.21	1.24	0.621

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.24	U	6.21	1.24	0.621
trans-1,2-Dichloroethene	156-60-5	1.24	U	6.21	1.24	0.621
1,2-Dichloropropane	78-87-5	1.24	U	6.21	1.24	0.621
1,3-Dichloropropane	142-28-9	1.24	U	6.21	1.24	0.621
2,2-Dichloropropane	594-20-7	1.24	U	6.21	1.24	0.621
cis-1,3-Dichloropropene	10061-01-5	1.24	U	6.21	1.24	0.621
trans-1,3-Dichloropropene	10061-02-6	1.24	U	6.21	1.24	0.621
1,1-Dichloropropene	563-58-6	1.24	U	6.21	1.24	0.621
Ethylbenzene	100-41-4	1.24	U	6.21	1.24	0.621
2-Hexanone	591-78-6	6.22	Q	12.4	6.22	3.11
Hexachlorobutadiene	87-68-3	1.24	U	6.21	1.24	0.621
Isopropylbenzene	98-82-8	1.24	U	6.21	1.24	0.621
p-Isopropyltoluene	99-87-6	1.24	U	6.21	1.24	0.621
4-Methyl-2-pentanone	108-10-1	6.22	Q	12.4	6.22	3.11
Methylene chloride	75-09-2	2.48	U	6.21	2.48	1.24
Naphthalene	91-20-3	1.24	U	6.21	1.24	0.621
n-Propylbenzene	103-65-1	1.24	Q	6.21	1.24	0.621
Styrene	100-42-5	1.24	U	6.21	1.24	0.621
1,1,1,2-Tetrachloroethane	630-20-6	1.24	U	6.21	1.24	0.621
1,1,2,2-Tetrachloroethane	79-34-5	1.24	U	6.21	1.24	0.621
Tetrachloroethene	127-18-4	1.24	U	6.21	1.24	0.621
Toluene	108-88-3	1.24	U	6.21	1.24	0.621
1,2,3-Trichlorobenzene	87-61-6	1.24	U	6.21	1.24	0.621
1,2,4-Trichlorobenzene	120-82-1	1.24	U	6.21	1.24	0.621
1,1,1-Trichloroethane	71-55-6	1.24	U	6.21	1.24	0.621
1,1,2-Trichloroethane	79-00-5	1.24	U	6.21	1.24	0.621
Trichloroethene	79-01-6	1.24	U	6.21	1.24	0.621
Trichlorofluoromethane	75-69-4	2.48	U	6.21	2.48	1.24
1,2,3-Trichloropropane	96-18-4	2.48	U	6.21	2.48	1.24
1,2,4-Trimethylbenzene	95-63-6	1.24	U	6.21	1.24	0.621
1,3,5-Trimethylbenzene	108-67-8	1.24	U	6.21	1.24	0.621
Vinyl chloride	75-01-4	2.48	U	6.21	2.48	1.24
o-Xylene	95-47-6	1.24	U	6.21	1.24	0.621
m-,p-Xylene	179601-23-1	1.24	U	6.21	1.24	0.621

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	80	120	
1,2-Dichloroethane-d4	104	80	120	
Toluene-d8	106	85	115	
4-Bromofluorobenzene	109	85	120	

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(20-20.5)260416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:44
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 16:37
Collect Date:	04/26/2016 10:35	**Dilution:**	1	**File ID:**	9M974173
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.5	Q	27.0	13.5	6.74
Benzene	71-43-2	1.35	U	6.74	1.35	0.674
Bromobenzene	108-86-1	1.35	U	6.74	1.35	0.674
Bromochloromethane	74-97-5	2.70	U	6.74	2.70	1.35
Bromodichloromethane	75-27-4	1.35	U	6.74	1.35	0.674
Bromoform	75-25-2	1.35	U	6.74	1.35	0.674
Bromomethane	74-83-9	2.70	U	6.74	2.70	1.35
2-Butanone	78-93-3	6.74	Q	13.5	6.74	3.37
n-Butylbenzene	104-51-8	1.35	U	6.74	1.35	0.674
sec-Butylbenzene	135-98-8	1.35	U	6.74	1.35	0.674
tert-Butylbenzene	98-06-6	1.35	U	6.74	1.35	0.674
Carbon disulfide	75-15-0	1.35	Q	6.74	1.35	0.674
Carbon tetrachloride	56-23-5	1.35	U	6.74	1.35	0.674
Chlorobenzene	108-90-7	1.35	U	6.74	1.35	0.674
Chlorodibromomethane	124-48-1	1.35	U	6.74	1.35	0.674
Chloroethane	75-00-3	2.70	U	6.74	2.70	1.35
Chloroform	67-66-3	1.35	U	6.74	1.35	0.674
Chloromethane	74-87-3	5.40	Q	13.5	5.40	2.70
2-Chlorotoluene	95-49-8	1.35	U	6.74	1.35	0.674
4-Chlorotoluene	106-43-4	1.35	U	6.74	1.35	0.674
1,2-Dibromo-3-chloropropane	96-12-8	5.40	U	13.5	5.40	2.70
1,2-Dibromoethane	106-93-4	1.35	U	6.74	1.35	0.674
Dibromomethane	74-95-3	1.35	U	6.74	1.35	0.674
1,2-Dichlorobenzene	95-50-1	1.35	U	6.74	1.35	0.674
1,3-Dichlorobenzene	541-73-1	1.35	U	6.74	1.35	0.674
1,4-Dichlorobenzene	106-46-7	1.35	U	6.74	1.35	0.674
Dichlorodifluoromethane	75-71-8	2.70	U	6.74	2.70	1.35
1,1-Dichloroethane	75-34-3	2.70	U	6.74	2.70	1.35
1,2-Dichloroethane	107-06-2	1.35	U	6.74	1.35	0.674
1,1-Dichloroethene	75-35-4	1.35	U	6.74	1.35	0.674

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.35	U	6.74	1.35	0.674
trans-1,2-Dichloroethene	156-60-5	1.35	U	6.74	1.35	0.674
1,2-Dichloropropane	78-87-5	1.35	U	6.74	1.35	0.674
1,3-Dichloropropane	142-28-9	1.35	U	6.74	1.35	0.674
2,2-Dichloropropane	594-20-7	1.35	U	6.74	1.35	0.674
cis-1,3-Dichloropropene	10061-01-5	1.35	U	6.74	1.35	0.674
trans-1,3-Dichloropropene	10061-02-6	1.35	U	6.74	1.35	0.674
1,1-Dichloropropene	563-58-6	1.35	U	6.74	1.35	0.674
Ethylbenzene	100-41-4	1.35	U	6.74	1.35	0.674
2-Hexanone	591-78-6	6.74	Q	13.5	6.74	3.37
Hexachlorobutadiene	87-68-3	1.35	U	6.74	1.35	0.674
Isopropylbenzene	98-82-8	1.35	U	6.74	1.35	0.674
p-Isopropyltoluene	99-87-6	1.35	U	6.74	1.35	0.674
4-Methyl-2-pentanone	108-10-1	6.74	Q	13.5	6.74	3.37
Methylene chloride	75-09-2	2.70	U	6.74	2.70	1.35
Naphthalene	91-20-3	1.35	U	6.74	1.35	0.674
n-Propylbenzene	103-65-1	1.35	Q	6.74	1.35	0.674
Styrene	100-42-5	1.35	U	6.74	1.35	0.674
1,1,1,2-Tetrachloroethane	630-20-6	1.35	U	6.74	1.35	0.674
1,1,2,2-Tetrachloroethane	79-34-5	1.35	U	6.74	1.35	0.674
Tetrachloroethene	127-18-4	1.35	U	6.74	1.35	0.674
Toluene	108-88-3	1.35	U	6.74	1.35	0.674
1,2,3-Trichlorobenzene	87-61-6	1.35	U	6.74	1.35	0.674
1,2,4-Trichlorobenzene	120-82-1	1.35	U	6.74	1.35	0.674
1,1,1-Trichloroethane	71-55-6	1.35	U	6.74	1.35	0.674
1,1,2-Trichloroethane	79-00-5	1.35	U	6.74	1.35	0.674
Trichloroethene	79-01-6	1.35	U	6.74	1.35	0.674
Trichlorofluoromethane	75-69-4	2.70	U	6.74	2.70	1.35
1,2,3-Trichloropropane	96-18-4	2.70	U	6.74	2.70	1.35
1,2,4-Trimethylbenzene	95-63-6	1.35	U	6.74	1.35	0.674
1,3,5-Trimethylbenzene	108-67-8	1.35	U	6.74	1.35	0.674
Vinyl chloride	75-01-4	2.70	U	6.74	2.70	1.35
o-Xylene	95-47-6	1.35	U	6.74	1.35	0.674
m-,p-Xylene	179601-23-1	1.35	U	6.74	1.35	0.674

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	80	120	
1,2-Dichloroethane-d4	102	80	120	
Toluene-d8	107	85	115	
4-Bromofluorobenzene	110	85	120	

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(29.5-30)260416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:44
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 17:08
Collect Date:	04/26/2016 11:15	**Dilution:**	1	**File ID:**	9M974174
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	78.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.5	Q	26.9	13.5	6.73
Benzene	71-43-2	1.35	U	6.73	1.35	0.673
Bromobenzene	108-86-1	1.35	U	6.73	1.35	0.673
Bromochloromethane	74-97-5	2.70	U	6.73	2.70	1.35
Bromodichloromethane	75-27-4	1.35	U	6.73	1.35	0.673
Bromoform	75-25-2	1.35	U	6.73	1.35	0.673
Bromomethane	74-83-9	2.70	U	6.73	2.70	1.35
2-Butanone	78-93-3	6.74	Q	13.5	6.74	3.37
n-Butylbenzene	104-51-8	1.35	U	6.73	1.35	0.673
sec-Butylbenzene	135-98-8	1.35	U	6.73	1.35	0.673
tert-Butylbenzene	98-06-6	1.35	U	6.73	1.35	0.673
Carbon disulfide	75-15-0	1.35	Q	6.73	1.35	0.673
Carbon tetrachloride	56-23-5	1.35	U	6.73	1.35	0.673
Chlorobenzene	108-90-7	1.35	U	6.73	1.35	0.673
Chlorodibromomethane	124-48-1	1.35	U	6.73	1.35	0.673
Chloroethane	75-00-3	2.70	U	6.73	2.70	1.35
Chloroform	67-66-3	1.35	U	6.73	1.35	0.673
Chloromethane	74-87-3	5.38	Q	13.5	5.38	2.69
2-Chlorotoluene	95-49-8	1.35	U	6.73	1.35	0.673
4-Chlorotoluene	106-43-4	1.35	U	6.73	1.35	0.673
1,2-Dibromo-3-chloropropane	96-12-8	5.38	U	13.5	5.38	2.69
1,2-Dibromoethane	106-93-4	1.35	U	6.73	1.35	0.673
Dibromomethane	74-95-3	1.35	U	6.73	1.35	0.673
1,2-Dichlorobenzene	95-50-1	1.35	U	6.73	1.35	0.673
1,3-Dichlorobenzene	541-73-1	1.35	U	6.73	1.35	0.673
1,4-Dichlorobenzene	106-46-7	1.35	U	6.73	1.35	0.673
Dichlorodifluoromethane	75-71-8	2.70	U	6.73	2.70	1.35
1,1-Dichloroethane	75-34-3	2.70	U	6.73	2.70	1.35
1,2-Dichloroethane	107-06-2	1.35	U	6.73	1.35	0.673
1,1-Dichloroethene	75-35-4	1.35	U	6.73	1.35	0.673

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.35	U	6.73	1.35	0.673
trans-1,2-Dichloroethene	156-60-5	1.35	U	6.73	1.35	0.673
1,2-Dichloropropane	78-87-5	1.35	U	6.73	1.35	0.673
1,3-Dichloropropane	142-28-9	1.35	U	6.73	1.35	0.673
2,2-Dichloropropane	594-20-7	1.35	U	6.73	1.35	0.673
cis-1,3-Dichloropropene	10061-01-5	1.35	U	6.73	1.35	0.673
trans-1,3-Dichloropropene	10061-02-6	1.35	U	6.73	1.35	0.673
1,1-Dichloropropene	563-58-6	1.35	U	6.73	1.35	0.673
Ethylbenzene	100-41-4	1.35	U	6.73	1.35	0.673
2-Hexanone	591-78-6	6.74	Q	13.5	6.74	3.37
Hexachlorobutadiene	87-68-3	1.35	U	6.73	1.35	0.673
Isopropylbenzene	98-82-8	1.35	U	6.73	1.35	0.673
p-Isopropyltoluene	99-87-6	1.35	U	6.73	1.35	0.673
4-Methyl-2-pentanone	108-10-1	6.74	Q	13.5	6.74	3.37
Methylene chloride	75-09-2	2.70	U	6.73	2.70	1.35
Naphthalene	91-20-3	1.35	U	6.73	1.35	0.673
n-Propylbenzene	103-65-1	1.35	Q	6.73	1.35	0.673
Styrene	100-42-5	1.35	U	6.73	1.35	0.673
1,1,1,2-Tetrachloroethane	630-20-6	1.35	U	6.73	1.35	0.673
1,1,2,2-Tetrachloroethane	79-34-5	1.35	U	6.73	1.35	0.673
Tetrachloroethene	127-18-4	1.35	U	6.73	1.35	0.673
Toluene	108-88-3	1.35	U	6.73	1.35	0.673
1,2,3-Trichlorobenzene	87-61-6	1.35	U	6.73	1.35	0.673
1,2,4-Trichlorobenzene	120-82-1	1.35	U	6.73	1.35	0.673
1,1,1-Trichloroethane	71-55-6	1.35	U	6.73	1.35	0.673
1,1,2-Trichloroethane	79-00-5	1.35	U	6.73	1.35	0.673
Trichloroethene	79-01-6	1.35	U	6.73	1.35	0.673
Trichlorofluoromethane	75-69-4	2.70	U	6.73	2.70	1.35
1,2,3-Trichloropropane	96-18-4	2.70	U	6.73	2.70	1.35
1,2,4-Trimethylbenzene	95-63-6	1.35	U	6.73	1.35	0.673
1,3,5-Trimethylbenzene	108-67-8	1.35	U	6.73	1.35	0.673
Vinyl chloride	75-01-4	2.70	U	6.73	2.70	1.35
o-Xylene	95-47-6	1.35	U	6.73	1.35	0.673
m-,p-Xylene	179601-23-1	1.35	U	6.73	1.35	0.673

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	80	120	
1,2-Dichloroethane-d4	110	80	120	
Toluene-d8	106	85	115	
4-Bromofluorobenzene	112	85	120	

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(40-40.5)260416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:45
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 17:40
Collect Date:	04/26/2016 11:55	**Dilution:**	1	**File ID:**	9M974175
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.0	Q	24.0	12.0	5.99
Benzene	71-43-2	1.20	U	5.99	1.20	0.599
Bromobenzene	108-86-1	1.20	U	5.99	1.20	0.599
Bromochloromethane	74-97-5	2.40	U	5.99	2.40	1.20
Bromodichloromethane	75-27-4	1.20	U	5.99	1.20	0.599
Bromoform	75-25-2	1.20	U	5.99	1.20	0.599
Bromomethane	74-83-9	2.40	U	5.99	2.40	1.20
2-Butanone	78-93-3	6.00	Q	12.0	6.00	3.00
n-Butylbenzene	104-51-8	1.20	U	5.99	1.20	0.599
sec-Butylbenzene	135-98-8	1.20	U	5.99	1.20	0.599
tert-Butylbenzene	98-06-6	1.20	U	5.99	1.20	0.599
Carbon disulfide	75-15-0	1.20	Q	5.99	1.20	0.599
Carbon tetrachloride	56-23-5	1.20	U	5.99	1.20	0.599
Chlorobenzene	108-90-7	1.20	U	5.99	1.20	0.599
Chlorodibromomethane	124-48-1	1.20	U	5.99	1.20	0.599
Chloroethane	75-00-3	2.40	U	5.99	2.40	1.20
Chloroform	67-66-3	1.20	U	5.99	1.20	0.599
Chloromethane	74-87-3	4.80	Q	12.0	4.80	2.40
2-Chlorotoluene	95-49-8	1.20	U	5.99	1.20	0.599
4-Chlorotoluene	106-43-4	1.20	U	5.99	1.20	0.599
1,2-Dibromo-3-chloropropane	96-12-8	4.80	U	12.0	4.80	2.40
1,2-Dibromoethane	106-93-4	1.20	U	5.99	1.20	0.599
Dibromomethane	74-95-3	1.20	U	5.99	1.20	0.599
1,2-Dichlorobenzene	95-50-1	1.20	U	5.99	1.20	0.599
1,3-Dichlorobenzene	541-73-1	1.20	U	5.99	1.20	0.599
1,4-Dichlorobenzene	106-46-7	1.20	U	5.99	1.20	0.599
Dichlorodifluoromethane	75-71-8	2.40	U	5.99	2.40	1.20
1,1-Dichloroethane	75-34-3	2.40	U	5.99	2.40	1.20
1,2-Dichloroethane	107-06-2	1.20	U	5.99	1.20	0.599
1,1-Dichloroethene	75-35-4	1.20	U	5.99	1.20	0.599

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.20	U	5.99	1.20	0.599
trans-1,2-Dichloroethene	156-60-5	1.20	U	5.99	1.20	0.599
1,2-Dichloropropane	78-87-5	1.20	U	5.99	1.20	0.599
1,3-Dichloropropane	142-28-9	1.20	U	5.99	1.20	0.599
2,2-Dichloropropane	594-20-7	1.20	U	5.99	1.20	0.599
cis-1,3-Dichloropropene	10061-01-5	1.20	U	5.99	1.20	0.599
trans-1,3-Dichloropropene	10061-02-6	1.20	U	5.99	1.20	0.599
1,1-Dichloropropene	563-58-6	1.20	U	5.99	1.20	0.599
Ethylbenzene	100-41-4	1.20	U	5.99	1.20	0.599
2-Hexanone	591-78-6	6.00	Q	12.0	6.00	3.00
Hexachlorobutadiene	87-68-3	1.20	U	5.99	1.20	0.599
Isopropylbenzene	98-82-8	1.20	U	5.99	1.20	0.599
p-Isopropyltoluene	99-87-6	1.20	U	5.99	1.20	0.599
4-Methyl-2-pentanone	108-10-1	6.00	Q	12.0	6.00	3.00
Methylene chloride	75-09-2	2.40	U	5.99	2.40	1.20
Naphthalene	91-20-3	1.20	U	5.99	1.20	0.599
n-Propylbenzene	103-65-1	1.20	Q	5.99	1.20	0.599
Styrene	100-42-5	1.20	U	5.99	1.20	0.599
1,1,1,2-Tetrachloroethane	630-20-6	1.20	U	5.99	1.20	0.599
1,1,2,2-Tetrachloroethane	79-34-5	1.20	U	5.99	1.20	0.599
Tetrachloroethene	127-18-4	1.20	U	5.99	1.20	0.599
Toluene	108-88-3	1.20	U	5.99	1.20	0.599
1,2,3-Trichlorobenzene	87-61-6	1.20	U	5.99	1.20	0.599
1,2,4-Trichlorobenzene	120-82-1	1.20	U	5.99	1.20	0.599
1,1,1-Trichloroethane	71-55-6	1.20	U	5.99	1.20	0.599
1,1,2-Trichloroethane	79-00-5	1.20	U	5.99	1.20	0.599
Trichloroethene	79-01-6	1.20	U	5.99	1.20	0.599
Trichlorofluoromethane	75-69-4	2.40	U	5.99	2.40	1.20
1,2,3-Trichloropropane	96-18-4	2.40	U	5.99	2.40	1.20
1,2,4-Trimethylbenzene	95-63-6	1.20	U	5.99	1.20	0.599
1,3,5-Trimethylbenzene	108-67-8	1.20	U	5.99	1.20	0.599
Vinyl chloride	75-01-4	2.40	U	5.99	2.40	1.20
o-Xylene	95-47-6	1.20	U	5.99	1.20	0.599
m-,p-Xylene	179601-23-1	1.20	U	5.99	1.20	0.599

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	80	120	
1,2-Dichloroethane-d4	111	80	120	
Toluene-d8	108	85	115	
4-Bromofluorobenzene	114	85	120	

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(50-51)260416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:45
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 15:04
Collect Date:	04/26/2016 14:15	**Dilution:**	1	**File ID:**	9M974170
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	6.11	Q	23.3	11.7	5.83
Benzene	71-43-2	1.17	U	5.83	1.17	0.583
Bromobenzene	108-86-1	1.17	U	5.83	1.17	0.583
Bromochloromethane	74-97-5	2.34	U	5.83	2.34	1.17
Bromodichloromethane	75-27-4	1.17	U	5.83	1.17	0.583
Bromoform	75-25-2	1.17	U	5.83	1.17	0.583
Bromomethane	74-83-9	2.34	U	5.83	2.34	1.17
2-Butanone	78-93-3	5.82	Q	11.7	5.82	2.91
n-Butylbenzene	104-51-8	1.17	U	5.83	1.17	0.583
sec-Butylbenzene	135-98-8	1.17	U	5.83	1.17	0.583
tert-Butylbenzene	98-06-6	1.17	U	5.83	1.17	0.583
Carbon disulfide	75-15-0	1.17	Q	5.83	1.17	0.583
Carbon tetrachloride	56-23-5	1.17	U	5.83	1.17	0.583
Chlorobenzene	108-90-7	1.17	U	5.83	1.17	0.583
Chlorodibromomethane	124-48-1	1.17	U	5.83	1.17	0.583
Chloroethane	75-00-3	2.34	U	5.83	2.34	1.17
Chloroform	67-66-3	1.17	U	5.83	1.17	0.583
Chloromethane	74-87-3	4.66	Q	11.7	4.66	2.33
2-Chlorotoluene	95-49-8	1.17	U	5.83	1.17	0.583
4-Chlorotoluene	106-43-4	1.17	U	5.83	1.17	0.583
1,2-Dibromo-3-chloropropane	96-12-8	4.66	U	11.7	4.66	2.33
1,2-Dibromoethane	106-93-4	1.17	U	5.83	1.17	0.583
Dibromomethane	74-95-3	1.17	U	5.83	1.17	0.583
1,2-Dichlorobenzene	95-50-1	1.17	U	5.83	1.17	0.583
1,3-Dichlorobenzene	541-73-1	1.17	U	5.83	1.17	0.583
1,4-Dichlorobenzene	106-46-7	1.17	U	5.83	1.17	0.583
Dichlorodifluoromethane	75-71-8	2.34	U	5.83	2.34	1.17
1,1-Dichloroethane	75-34-3	2.34	U	5.83	2.34	1.17
1,2-Dichloroethane	107-06-2	1.17	U	5.83	1.17	0.583
1,1-Dichloroethene	75-35-4	1.17	U	5.83	1.17	0.583

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.17	U	5.83	1.17	0.583
trans-1,2-Dichloroethene	156-60-5	1.17	U	5.83	1.17	0.583
1,2-Dichloropropane	78-87-5	1.17	U	5.83	1.17	0.583
1,3-Dichloropropane	142-28-9	1.17	U	5.83	1.17	0.583
2,2-Dichloropropane	594-20-7	1.17	U	5.83	1.17	0.583
cis-1,3-Dichloropropene	10061-01-5	1.17	U	5.83	1.17	0.583
trans-1,3-Dichloropropene	10061-02-6	1.17	U	5.83	1.17	0.583
1,1-Dichloropropene	563-58-6	1.17	U	5.83	1.17	0.583
Ethylbenzene	100-41-4	1.17	U	5.83	1.17	0.583
2-Hexanone	591-78-6	5.82	Q	11.7	5.82	2.91
Hexachlorobutadiene	87-68-3	1.17	U	5.83	1.17	0.583
Isopropylbenzene	98-82-8	1.17	U	5.83	1.17	0.583
p-Isopropyltoluene	99-87-6	1.17	U	5.83	1.17	0.583
4-Methyl-2-pentanone	108-10-1	5.82	Q	11.7	5.82	2.91
Methylene chloride	75-09-2	2.34	U	5.83	2.34	1.17
Naphthalene	91-20-3	1.17	U	5.83	1.17	0.583
n-Propylbenzene	103-65-1	1.17	Q	5.83	1.17	0.583
Styrene	100-42-5	1.17	U	5.83	1.17	0.583
1,1,1,2-Tetrachloroethane	630-20-6	1.17	U	5.83	1.17	0.583
1,1,2,2-Tetrachloroethane	79-34-5	1.17	U	5.83	1.17	0.583
Tetrachloroethene	127-18-4	1.17	U	5.83	1.17	0.583
Toluene	108-88-3	1.17	U	5.83	1.17	0.583
1,2,3-Trichlorobenzene	87-61-6	1.17	U	5.83	1.17	0.583
1,2,4-Trichlorobenzene	120-82-1	1.17	U	5.83	1.17	0.583
1,1,1-Trichloroethane	71-55-6	1.17	U	5.83	1.17	0.583
1,1,2-Trichloroethane	79-00-5	1.17	U	5.83	1.17	0.583
Trichloroethene	79-01-6	1.17	U	5.83	1.17	0.583
Trichlorofluoromethane	75-69-4	2.34	U	5.83	2.34	1.17
1,2,3-Trichloropropane	96-18-4	2.34	U	5.83	2.34	1.17
1,2,4-Trimethylbenzene	95-63-6	1.17	U	5.83	1.17	0.583
1,3,5-Trimethylbenzene	108-67-8	1.17	U	5.83	1.17	0.583
Vinyl chloride	75-01-4	2.34	U	5.83	2.34	1.17
o-Xylene	95-47-6	1.17	U	5.83	1.17	0.583
m-,p-Xylene	179601-23-1	1.17	U	5.83	1.17	0.583

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	80	120	
1,2-Dichloroethane-d4	102	80	120	
Toluene-d8	106	85	115	
4-Bromofluorobenzene	110	85	120	

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(50-51)260416MS	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:46
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 13:34
Collect Date:	04/26/2016 14:15	**Dilution:**	1	**File ID:**	9M974167
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	28.9	Q	22.3	11.1	5.57
Benzene	71-43-2	23.4		5.57	1.11	0.557
Bromobenzene	108-86-1	24.6		5.57	1.11	0.557
Bromochloromethane	74-97-5	22.5		5.57	2.22	1.11
Bromodichloromethane	75-27-4	22.5		5.57	1.11	0.557
Bromoform	75-25-2	19.0		5.57	1.11	0.557
Bromomethane	74-83-9	22.8		5.57	2.22	1.11
2-Butanone	78-93-3	23.4	Q	11.1	5.56	2.78
n-Butylbenzene	104-51-8	24.5		5.57	1.11	0.557
sec-Butylbenzene	135-98-8	26.3		5.57	1.11	0.557
tert-Butylbenzene	98-06-6	27.3		5.57	1.11	0.557
Carbon disulfide	75-15-0	21.3	Q	5.57	1.11	0.557
Carbon tetrachloride	56-23-5	23.2		5.57	1.11	0.557
Chlorobenzene	108-90-7	24.3		5.57	1.11	0.557
Chlorodibromomethane	124-48-1	22.0		5.57	1.11	0.557
Chloroethane	75-00-3	25.6		5.57	2.22	1.11
Chloroform	67-66-3	23.8		5.57	1.11	0.557
Chloromethane	74-87-3	22.3	Q	11.1	4.46	2.23
2-Chlorotoluene	95-49-8	25.9		5.57	1.11	0.557
4-Chlorotoluene	106-43-4	26.1		5.57	1.11	0.557
1,2-Dibromo-3-chloropropane	96-12-8	20.3		11.1	4.46	2.23
1,2-Dibromoethane	106-93-4	22.8		5.57	1.11	0.557
Dibromomethane	74-95-3	20.6		5.57	1.11	0.557
1,2-Dichlorobenzene	95-50-1	23.9		5.57	1.11	0.557
1,3-Dichlorobenzene	541-73-1	24.2		5.57	1.11	0.557
1,4-Dichlorobenzene	106-46-7	24.5		5.57	1.11	0.557
Dichlorodifluoromethane	75-71-8	26.3		5.57	2.22	1.11
1,1-Dichloroethane	75-34-3	22.7		5.57	2.22	1.11
1,2-Dichloroethane	107-06-2	23.2		5.57	1.11	0.557
1,1-Dichloroethene	75-35-4	23.4		5.57	1.11	0.557

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	24.3		5.57	1.11	0.557
trans-1,2-Dichloroethene	156-60-5	24.4		5.57	1.11	0.557
1,2-Dichloropropane	78-87-5	24.0		5.57	1.11	0.557
1,3-Dichloropropane	142-28-9	23.6		5.57	1.11	0.557
2,2-Dichloropropane	594-20-7	24.2		5.57	1.11	0.557
cis-1,3-Dichloropropene	10061-01-5	24.9		5.57	1.11	0.557
trans-1,3-Dichloropropene	10061-02-6	23.0		5.57	1.11	0.557
1,1-Dichloropropene	563-58-6	24.0		5.57	1.11	0.557
Ethylbenzene	100-41-4	24.9		5.57	1.11	0.557
2-Hexanone	591-78-6	20.9	Q	11.1	5.56	2.78
Hexachlorobutadiene	87-68-3	23.3		5.57	1.11	0.557
Isopropylbenzene	98-82-8	25.2		5.57	1.11	0.557
p-Isopropyltoluene	99-87-6	26.6		5.57	1.11	0.557
4-Methyl-2-pentanone	108-10-1	21.6	Q	11.1	5.56	2.78
Methylene chloride	75-09-2	22.3		5.57	2.22	1.11
Naphthalene	91-20-3	18.8		5.57	1.11	0.557
n-Propylbenzene	103-65-1	29.3	Q	5.57	1.11	0.557
Styrene	100-42-5	23.7		5.57	1.11	0.557
1,1,1,2-Tetrachloroethane	630-20-6	23.2		5.57	1.11	0.557
1,1,2,2-Tetrachloroethane	79-34-5	22.0		5.57	1.11	0.557
Tetrachloroethene	127-18-4	23.8		5.57	1.11	0.557
Toluene	108-88-3	23.8		5.57	1.11	0.557
1,2,3-Trichlorobenzene	87-61-6	20.1		5.57	1.11	0.557
1,2,4-Trichlorobenzene	120-82-1	21.0		5.57	1.11	0.557
1,1,1-Trichloroethane	71-55-6	24.9		5.57	1.11	0.557
1,1,2-Trichloroethane	79-00-5	22.6		5.57	1.11	0.557
Trichloroethene	79-01-6	24.6		5.57	1.11	0.557
Trichlorofluoromethane	75-69-4	24.6		5.57	2.22	1.11
1,2,3-Trichloropropane	96-18-4	22.6		5.57	2.22	1.11
1,2,4-Trimethylbenzene	95-63-6	26.7		5.57	1.11	0.557
1,3,5-Trimethylbenzene	108-67-8	27.6		5.57	1.11	0.557
Vinyl chloride	75-01-4	27.1		5.57	2.22	1.11
o-Xylene	95-47-6	24.6		5.57	1.11	0.557
m-,p-Xylene	179601-23-1	48.9		5.57	1.11	0.557

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	80	120	
1,2-Dichloroethane-d4	102	80	120	
Toluene-d8	107	85	115	
4-Bromofluorobenzene	110	85	120	

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(50-51)260416MSD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:47
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 14:04
Collect Date:	04/26/2016 14:15	**Dilution:**	1	**File ID:**	9M974168
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	29.6	Q	23.9	11.9	5.96
Benzene	71-43-2	23.4		5.96	1.19	0.596
Bromobenzene	108-86-1	24.3		5.96	1.19	0.596
Bromochloromethane	74-97-5	22.8		5.96	2.38	1.19
Bromodichloromethane	75-27-4	23.0		5.96	1.19	0.596
Bromoform	75-25-2	19.5		5.96	1.19	0.596
Bromomethane	74-83-9	23.3		5.96	2.38	1.19
2-Butanone	78-93-3	24.5	Q	11.9	5.96	2.98
n-Butylbenzene	104-51-8	23.2		5.96	1.19	0.596
sec-Butylbenzene	135-98-8	24.7		5.96	1.19	0.596
tert-Butylbenzene	98-06-6	26.9		5.96	1.19	0.596
Carbon disulfide	75-15-0	22.4	Q	5.96	1.19	0.596
Carbon tetrachloride	56-23-5	23.2		5.96	1.19	0.596
Chlorobenzene	108-90-7	24.7		5.96	1.19	0.596
Chlorodibromomethane	124-48-1	21.6		5.96	1.19	0.596
Chloroethane	75-00-3	25.4		5.96	2.38	1.19
Chloroform	67-66-3	23.9		5.96	1.19	0.596
Chloromethane	74-87-3	22.1	Q	11.9	4.78	2.39
2-Chlorotoluene	95-49-8	24.5		5.96	1.19	0.596
4-Chlorotoluene	106-43-4	25.9		5.96	1.19	0.596
1,2-Dibromo-3-chloropropane	96-12-8	20.9		11.9	4.78	2.39
1,2-Dibromoethane	106-93-4	23.2		5.96	1.19	0.596
Dibromomethane	74-95-3	20.8		5.96	1.19	0.596
1,2-Dichlorobenzene	95-50-1	23.0		5.96	1.19	0.596
1,3-Dichlorobenzene	541-73-1	23.6		5.96	1.19	0.596
1,4-Dichlorobenzene	106-46-7	23.3		5.96	1.19	0.596
Dichlorodifluoromethane	75-71-8	25.8		5.96	2.38	1.19
1,1-Dichloroethane	75-34-3	22.8		5.96	2.38	1.19
1,2-Dichloroethane	107-06-2	23.4		5.96	1.19	0.596
1,1-Dichloroethene	75-35-4	23.6		5.96	1.19	0.596

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	24.6		5.96	1.19	0.596
trans-1,2-Dichloroethene	156-60-5	25.0		5.96	1.19	0.596
1,2-Dichloropropane	78-87-5	24.1		5.96	1.19	0.596
1,3-Dichloropropane	142-28-9	24.1		5.96	1.19	0.596
2,2-Dichloropropane	594-20-7	23.8		5.96	1.19	0.596
cis-1,3-Dichloropropene	10061-01-5	24.8		5.96	1.19	0.596
trans-1,3-Dichloropropene	10061-02-6	23.0		5.96	1.19	0.596
1,1-Dichloropropene	563-58-6	24.1		5.96	1.19	0.596
Ethylbenzene	100-41-4	24.6		5.96	1.19	0.596
2-Hexanone	591-78-6	21.3	Q	11.9	5.96	2.98
Hexachlorobutadiene	87-68-3	20.9		5.96	1.19	0.596
Isopropylbenzene	98-82-8	24.9		5.96	1.19	0.596
p-Isopropyltoluene	99-87-6	25.3		5.96	1.19	0.596
4-Methyl-2-pentanone	108-10-1	22.0	Q	11.9	5.96	2.98
Methylene chloride	75-09-2	23.0		5.96	2.38	1.19
Naphthalene	91-20-3	18.0		5.96	1.19	0.596
n-Propylbenzene	103-65-1	28.1	Q	5.96	1.19	0.596
Styrene	100-42-5	23.9		5.96	1.19	0.596
1,1,1,2-Tetrachloroethane	630-20-6	23.0		5.96	1.19	0.596
1,1,2,2-Tetrachloroethane	79-34-5	21.4		5.96	1.19	0.596
Tetrachloroethene	127-18-4	23.9		5.96	1.19	0.596
Toluene	108-88-3	23.6		5.96	1.19	0.596
1,2,3-Trichlorobenzene	87-61-6	18.8		5.96	1.19	0.596
1,2,4-Trichlorobenzene	120-82-1	19.3		5.96	1.19	0.596
1,1,1-Trichloroethane	71-55-6	24.6		5.96	1.19	0.596
1,1,2-Trichloroethane	79-00-5	23.3		5.96	1.19	0.596
Trichloroethene	79-01-6	24.5		5.96	1.19	0.596
Trichlorofluoromethane	75-69-4	24.3		5.96	2.38	1.19
1,2,3-Trichloropropane	96-18-4	24.0		5.96	2.38	1.19
1,2,4-Trimethylbenzene	95-63-6	25.2		5.96	1.19	0.596
1,3,5-Trimethylbenzene	108-67-8	26.3		5.96	1.19	0.596
Vinyl chloride	75-01-4	26.8		5.96	2.38	1.19
o-Xylene	95-47-6	24.1		5.96	1.19	0.596
m-,p-Xylene	179601-23-1	48.0		5.96	1.19	0.596

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	80	120	
1,2-Dichloroethane-d4	103	80	120	
Toluene-d8	106	85	115	
4-Bromofluorobenzene	109	85	120	

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(60-60.5)260416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:48
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 18:10
Collect Date:	04/26/2016 15:00	**Dilution:**	1	**File ID:**	9M974176
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	86.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	18.4	Q	24.2	12.1	6.06
Benzene	71-43-2	1.21	U	6.06	1.21	0.606
Bromobenzene	108-86-1	1.21	U	6.06	1.21	0.606
Bromochloromethane	74-97-5	2.42	U	6.06	2.42	1.21
Bromodichloromethane	75-27-4	1.21	U	6.06	1.21	0.606
Bromoform	75-25-2	1.21	U	6.06	1.21	0.606
Bromomethane	74-83-9	2.42	U	6.06	2.42	1.21
2-Butanone	78-93-3	6.06	Q	12.1	6.06	3.03
n-Butylbenzene	104-51-8	1.21	U	6.06	1.21	0.606
sec-Butylbenzene	135-98-8	1.21	U	6.06	1.21	0.606
tert-Butylbenzene	98-06-6	1.21	U	6.06	1.21	0.606
Carbon disulfide	75-15-0	1.21	Q	6.06	1.21	0.606
Carbon tetrachloride	56-23-5	1.21	U	6.06	1.21	0.606
Chlorobenzene	108-90-7	1.21	U	6.06	1.21	0.606
Chlorodibromomethane	124-48-1	1.21	U	6.06	1.21	0.606
Chloroethane	75-00-3	2.42	U	6.06	2.42	1.21
Chloroform	67-66-3	1.21	U	6.06	1.21	0.606
Chloromethane	74-87-3	4.84	Q	12.1	4.84	2.42
2-Chlorotoluene	95-49-8	1.21	U	6.06	1.21	0.606
4-Chlorotoluene	106-43-4	1.21	U	6.06	1.21	0.606
1,2-Dibromo-3-chloropropane	96-12-8	4.84	U	12.1	4.84	2.42
1,2-Dibromoethane	106-93-4	1.21	U	6.06	1.21	0.606
Dibromomethane	74-95-3	1.21	U	6.06	1.21	0.606
1,2-Dichlorobenzene	95-50-1	1.21	U	6.06	1.21	0.606
1,3-Dichlorobenzene	541-73-1	1.21	U	6.06	1.21	0.606
1,4-Dichlorobenzene	106-46-7	1.21	U	6.06	1.21	0.606
Dichlorodifluoromethane	75-71-8	2.42	U	6.06	2.42	1.21
1,1-Dichloroethane	75-34-3	2.42	U	6.06	2.42	1.21
1,2-Dichloroethane	107-06-2	1.21	U	6.06	1.21	0.606
1,1-Dichloroethene	75-35-4	1.21	U	6.06	1.21	0.606

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.21	U	6.06	1.21	0.606
trans-1,2-Dichloroethene	156-60-5	1.21	U	6.06	1.21	0.606
1,2-Dichloropropane	78-87-5	1.21	U	6.06	1.21	0.606
1,3-Dichloropropane	142-28-9	1.21	U	6.06	1.21	0.606
2,2-Dichloropropane	594-20-7	1.21	U	6.06	1.21	0.606
cis-1,3-Dichloropropene	10061-01-5	1.21	U	6.06	1.21	0.606
trans-1,3-Dichloropropene	10061-02-6	1.21	U	6.06	1.21	0.606
1,1-Dichloropropene	563-58-6	1.21	U	6.06	1.21	0.606
Ethylbenzene	100-41-4	1.21	U	6.06	1.21	0.606
2-Hexanone	591-78-6	6.06	Q	12.1	6.06	3.03
Hexachlorobutadiene	87-68-3	1.21	U	6.06	1.21	0.606
Isopropylbenzene	98-82-8	1.21	U	6.06	1.21	0.606
p-Isopropyltoluene	99-87-6	1.21	U	6.06	1.21	0.606
4-Methyl-2-pentanone	108-10-1	6.06	Q	12.1	6.06	3.03
Methylene chloride	75-09-2	2.42	U	6.06	2.42	1.21
Naphthalene	91-20-3	1.21	U	6.06	1.21	0.606
n-Propylbenzene	103-65-1	1.21	Q	6.06	1.21	0.606
Styrene	100-42-5	1.21	U	6.06	1.21	0.606
1,1,1,2-Tetrachloroethane	630-20-6	1.21	U	6.06	1.21	0.606
1,1,2,2-Tetrachloroethane	79-34-5	1.21	U	6.06	1.21	0.606
Tetrachloroethene	127-18-4	1.21	U	6.06	1.21	0.606
Toluene	108-88-3	1.21	U	6.06	1.21	0.606
1,2,3-Trichlorobenzene	87-61-6	1.21	U	6.06	1.21	0.606
1,2,4-Trichlorobenzene	120-82-1	1.21	U	6.06	1.21	0.606
1,1,1-Trichloroethane	71-55-6	1.21	U	6.06	1.21	0.606
1,1,2-Trichloroethane	79-00-5	1.21	U	6.06	1.21	0.606
Trichloroethene	79-01-6	1.21	U	6.06	1.21	0.606
Trichlorofluoromethane	75-69-4	2.42	U	6.06	2.42	1.21
1,2,3-Trichloropropane	96-18-4	2.42	U	6.06	2.42	1.21
1,2,4-Trimethylbenzene	95-63-6	1.21	U	6.06	1.21	0.606
1,3,5-Trimethylbenzene	108-67-8	1.21	U	6.06	1.21	0.606
Vinyl chloride	75-01-4	2.42	U	6.06	2.42	1.21
o-Xylene	95-47-6	1.21	U	6.06	1.21	0.606
m-,p-Xylene	179601-23-1	1.21	U	6.06	1.21	0.606

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.0	80	120	
1,2-Dichloroethane-d4	104	80	120	
Toluene-d8	107	85	115	
4-Bromofluorobenzene	115	85	120	

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(60-60.5)260416DUP	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:48
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 18:40
Collect Date:	04/26/2016 15:00	**Dilution:**	1	**File ID:**	9M974177
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	87.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	20.8	Q	24.7	12.3	6.17
Benzene	71-43-2	1.23	U	6.17	1.23	0.617
Bromobenzene	108-86-1	1.23	U	6.17	1.23	0.617
Bromochloromethane	74-97-5	2.46	U	6.17	2.46	1.23
Bromodichloromethane	75-27-4	1.23	U	6.17	1.23	0.617
Bromoform	75-25-2	1.23	U	6.17	1.23	0.617
Bromomethane	74-83-9	2.46	U	6.17	2.46	1.23
2-Butanone	78-93-3	6.18	Q	12.3	6.18	3.09
n-Butylbenzene	104-51-8	1.23	U	6.17	1.23	0.617
sec-Butylbenzene	135-98-8	1.23	U	6.17	1.23	0.617
tert-Butylbenzene	98-06-6	1.23	U	6.17	1.23	0.617
Carbon disulfide	75-15-0	0.638	Q	6.17	1.23	0.617
Carbon tetrachloride	56-23-5	1.23	U	6.17	1.23	0.617
Chlorobenzene	108-90-7	1.23	U	6.17	1.23	0.617
Chlorodibromomethane	124-48-1	1.23	U	6.17	1.23	0.617
Chloroethane	75-00-3	2.46	U	6.17	2.46	1.23
Chloroform	67-66-3	1.23	U	6.17	1.23	0.617
Chloromethane	74-87-3	4.94	Q	12.3	4.94	2.47
2-Chlorotoluene	95-49-8	1.23	U	6.17	1.23	0.617
4-Chlorotoluene	106-43-4	1.23	U	6.17	1.23	0.617
1,2-Dibromo-3-chloropropane	96-12-8	4.94	U	12.3	4.94	2.47
1,2-Dibromoethane	106-93-4	1.23	U	6.17	1.23	0.617
Dibromomethane	74-95-3	1.23	U	6.17	1.23	0.617
1,2-Dichlorobenzene	95-50-1	1.23	U	6.17	1.23	0.617
1,3-Dichlorobenzene	541-73-1	1.23	U	6.17	1.23	0.617
1,4-Dichlorobenzene	106-46-7	1.23	U	6.17	1.23	0.617
Dichlorodifluoromethane	75-71-8	2.46	U	6.17	2.46	1.23
1,1-Dichloroethane	75-34-3	2.46	U	6.17	2.46	1.23
1,2-Dichloroethane	107-06-2	1.23	U	6.17	1.23	0.617
1,1-Dichloroethene	75-35-4	1.23	U	6.17	1.23	0.617

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.23	U	6.17	1.23	0.617
trans-1,2-Dichloroethene	156-60-5	1.23	U	6.17	1.23	0.617
1,2-Dichloropropane	78-87-5	1.23	U	6.17	1.23	0.617
1,3-Dichloropropane	142-28-9	1.23	U	6.17	1.23	0.617
2,2-Dichloropropane	594-20-7	1.23	U	6.17	1.23	0.617
cis-1,3-Dichloropropene	10061-01-5	1.23	U	6.17	1.23	0.617
trans-1,3-Dichloropropene	10061-02-6	1.23	U	6.17	1.23	0.617
1,1-Dichloropropene	563-58-6	1.23	U	6.17	1.23	0.617
Ethylbenzene	100-41-4	1.23	U	6.17	1.23	0.617
2-Hexanone	591-78-6	6.18	Q	12.3	6.18	3.09
Hexachlorobutadiene	87-68-3	1.23	U	6.17	1.23	0.617
Isopropylbenzene	98-82-8	1.23	U	6.17	1.23	0.617
p-Isopropyltoluene	99-87-6	1.23	U	6.17	1.23	0.617
4-Methyl-2-pentanone	108-10-1	6.18	Q	12.3	6.18	3.09
Methylene chloride	75-09-2	2.46	U	6.17	2.46	1.23
Naphthalene	91-20-3	1.23	U	6.17	1.23	0.617
n-Propylbenzene	103-65-1	1.23	Q	6.17	1.23	0.617
Styrene	100-42-5	1.23	U	6.17	1.23	0.617
1,1,1,2-Tetrachloroethane	630-20-6	1.23	U	6.17	1.23	0.617
1,1,2,2-Tetrachloroethane	79-34-5	1.23	U	6.17	1.23	0.617
Tetrachloroethene	127-18-4	1.23	U	6.17	1.23	0.617
Toluene	108-88-3	1.23	U	6.17	1.23	0.617
1,2,3-Trichlorobenzene	87-61-6	1.23	U	6.17	1.23	0.617
1,2,4-Trichlorobenzene	120-82-1	1.23	U	6.17	1.23	0.617
1,1,1-Trichloroethane	71-55-6	1.23	U	6.17	1.23	0.617
1,1,2-Trichloroethane	79-00-5	1.23	U	6.17	1.23	0.617
Trichloroethene	79-01-6	1.23	U	6.17	1.23	0.617
Trichlorofluoromethane	75-69-4	2.46	U	6.17	2.46	1.23
1,2,3-Trichloropropane	96-18-4	2.46	U	6.17	2.46	1.23
1,2,4-Trimethylbenzene	95-63-6	1.23	U	6.17	1.23	0.617
1,3,5-Trimethylbenzene	108-67-8	1.23	U	6.17	1.23	0.617
Vinyl chloride	75-01-4	2.46	U	6.17	2.46	1.23
o-Xylene	95-47-6	1.23	U	6.17	1.23	0.617
m-,p-Xylene	179601-23-1	1.23	U	6.17	1.23	0.617

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	80	120	
1,2-Dichloroethane-d4	105	80	120	
Toluene-d8	108	85	115	
4-Bromofluorobenzene	118	85	120	

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(70-70.5)260416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:49
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 19:10
Collect Date:	04/26/2016 15:45	**Dilution:**	1	**File ID:**	9M974178
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	7.02	Q	24.3	12.1	6.07
Benzene	71-43-2	1.21	U	6.07	1.21	0.607
Bromobenzene	108-86-1	1.21	U	6.07	1.21	0.607
Bromochloromethane	74-97-5	2.42	U	6.07	2.42	1.21
Bromodichloromethane	75-27-4	1.21	U	6.07	1.21	0.607
Bromoform	75-25-2	1.21	U	6.07	1.21	0.607
Bromomethane	74-83-9	2.42	U	6.07	2.42	1.21
2-Butanone	78-93-3	6.08	Q	12.1	6.08	3.04
n-Butylbenzene	104-51-8	1.21	U	6.07	1.21	0.607
sec-Butylbenzene	135-98-8	1.21	U	6.07	1.21	0.607
tert-Butylbenzene	98-06-6	1.21	U	6.07	1.21	0.607
Carbon disulfide	75-15-0	1.21	Q	6.07	1.21	0.607
Carbon tetrachloride	56-23-5	1.21	U	6.07	1.21	0.607
Chlorobenzene	108-90-7	1.21	U	6.07	1.21	0.607
Chlorodibromomethane	124-48-1	1.21	U	6.07	1.21	0.607
Chloroethane	75-00-3	2.42	U	6.07	2.42	1.21
Chloroform	67-66-3	1.21	U	6.07	1.21	0.607
Chloromethane	74-87-3	4.86	Q	12.1	4.86	2.43
2-Chlorotoluene	95-49-8	1.21	U	6.07	1.21	0.607
4-Chlorotoluene	106-43-4	1.21	U	6.07	1.21	0.607
1,2-Dibromo-3-chloropropane	96-12-8	4.86	U	12.1	4.86	2.43
1,2-Dibromoethane	106-93-4	1.21	U	6.07	1.21	0.607
Dibromomethane	74-95-3	1.21	U	6.07	1.21	0.607
1,2-Dichlorobenzene	95-50-1	1.21	U	6.07	1.21	0.607
1,3-Dichlorobenzene	541-73-1	1.21	U	6.07	1.21	0.607
1,4-Dichlorobenzene	106-46-7	1.21	U	6.07	1.21	0.607
Dichlorodifluoromethane	75-71-8	2.42	U	6.07	2.42	1.21
1,1-Dichloroethane	75-34-3	2.42	U	6.07	2.42	1.21
1,2-Dichloroethane	107-06-2	1.21	U	6.07	1.21	0.607
1,1-Dichloroethene	75-35-4	1.21	U	6.07	1.21	0.607

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.21	U	6.07	1.21	0.607
trans-1,2-Dichloroethene	156-60-5	1.21	U	6.07	1.21	0.607
1,2-Dichloropropane	78-87-5	1.21	U	6.07	1.21	0.607
1,3-Dichloropropane	142-28-9	1.21	U	6.07	1.21	0.607
2,2-Dichloropropane	594-20-7	1.21	U	6.07	1.21	0.607
cis-1,3-Dichloropropene	10061-01-5	1.21	U	6.07	1.21	0.607
trans-1,3-Dichloropropene	10061-02-6	1.21	U	6.07	1.21	0.607
1,1-Dichloropropene	563-58-6	1.21	U	6.07	1.21	0.607
Ethylbenzene	100-41-4	1.21	U	6.07	1.21	0.607
2-Hexanone	591-78-6	6.08	Q	12.1	6.08	3.04
Hexachlorobutadiene	87-68-3	1.21	U	6.07	1.21	0.607
Isopropylbenzene	98-82-8	1.21	U	6.07	1.21	0.607
p-Isopropyltoluene	99-87-6	1.21	U	6.07	1.21	0.607
4-Methyl-2-pentanone	108-10-1	6.08	Q	12.1	6.08	3.04
Methylene chloride	75-09-2	2.42	U	6.07	2.42	1.21
Naphthalene	91-20-3	1.21	U	6.07	1.21	0.607
n-Propylbenzene	103-65-1	1.21	Q	6.07	1.21	0.607
Styrene	100-42-5	1.21	U	6.07	1.21	0.607
1,1,1,2-Tetrachloroethane	630-20-6	1.21	U	6.07	1.21	0.607
1,1,2,2-Tetrachloroethane	79-34-5	1.21	U	6.07	1.21	0.607
Tetrachloroethene	127-18-4	1.21	U	6.07	1.21	0.607
Toluene	108-88-3	1.21	U	6.07	1.21	0.607
1,2,3-Trichlorobenzene	87-61-6	1.21	U	6.07	1.21	0.607
1,2,4-Trichlorobenzene	120-82-1	1.21	U	6.07	1.21	0.607
1,1,1-Trichloroethane	71-55-6	1.21	U	6.07	1.21	0.607
1,1,2-Trichloroethane	79-00-5	1.21	U	6.07	1.21	0.607
Trichloroethene	79-01-6	1.21	U	6.07	1.21	0.607
Trichlorofluoromethane	75-69-4	2.42	U	6.07	2.42	1.21
1,2,3-Trichloropropane	96-18-4	2.42	U	6.07	2.42	1.21
1,2,4-Trimethylbenzene	95-63-6	1.21	U	6.07	1.21	0.607
1,3,5-Trimethylbenzene	108-67-8	1.21	U	6.07	1.21	0.607
Vinyl chloride	75-01-4	2.42	U	6.07	2.42	1.21
o-Xylene	95-47-6	1.21	U	6.07	1.21	0.607
m-,p-Xylene	179601-23-1	1.21	U	6.07	1.21	0.607

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	80	120	
1,2-Dichloroethane-d4	107	80	120	
Toluene-d8	109	85	115	
4-Bromofluorobenzene	114	85	120	

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(80-80.5)260416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:50
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 19:41
Collect Date:	04/26/2016 16:45	**Dilution:**	1	**File ID:**	9M974179
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	9.31	Q	25.2	12.6	6.31
Benzene	71-43-2	1.26	U	6.31	1.26	0.631
Bromobenzene	108-86-1	1.26	U	6.31	1.26	0.631
Bromochloromethane	74-97-5	2.52	U	6.31	2.52	1.26
Bromodichloromethane	75-27-4	1.26	U	6.31	1.26	0.631
Bromoform	75-25-2	1.26	U	6.31	1.26	0.631
Bromomethane	74-83-9	2.52	U	6.31	2.52	1.26
2-Butanone	78-93-3	6.30	Q	12.6	6.30	3.15
n-Butylbenzene	104-51-8	1.26	U	6.31	1.26	0.631
sec-Butylbenzene	135-98-8	1.26	U	6.31	1.26	0.631
tert-Butylbenzene	98-06-6	1.26	U	6.31	1.26	0.631
Carbon disulfide	75-15-0	0.825	Q	6.31	1.26	0.631
Carbon tetrachloride	56-23-5	1.26	U	6.31	1.26	0.631
Chlorobenzene	108-90-7	1.26	U	6.31	1.26	0.631
Chlorodibromomethane	124-48-1	1.26	U	6.31	1.26	0.631
Chloroethane	75-00-3	2.52	U	6.31	2.52	1.26
Chloroform	67-66-3	1.26	U	6.31	1.26	0.631
Chloromethane	74-87-3	5.04	Q	12.6	5.04	2.52
2-Chlorotoluene	95-49-8	1.26	U	6.31	1.26	0.631
4-Chlorotoluene	106-43-4	1.26	U	6.31	1.26	0.631
1,2-Dibromo-3-chloropropane	96-12-8	5.04	U	12.6	5.04	2.52
1,2-Dibromoethane	106-93-4	1.26	U	6.31	1.26	0.631
Dibromomethane	74-95-3	1.26	U	6.31	1.26	0.631
1,2-Dichlorobenzene	95-50-1	1.26	U	6.31	1.26	0.631
1,3-Dichlorobenzene	541-73-1	1.26	U	6.31	1.26	0.631
1,4-Dichlorobenzene	106-46-7	1.26	U	6.31	1.26	0.631
Dichlorodifluoromethane	75-71-8	2.52	U	6.31	2.52	1.26
1,1-Dichloroethane	75-34-3	2.52	U	6.31	2.52	1.26
1,2-Dichloroethane	107-06-2	1.26	U	6.31	1.26	0.631
1,1-Dichloroethene	75-35-4	1.26	U	6.31	1.26	0.631

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.26	U	6.31	1.26	0.631
trans-1,2-Dichloroethene	156-60-5	1.26	U	6.31	1.26	0.631
1,2-Dichloropropane	78-87-5	1.26	U	6.31	1.26	0.631
1,3-Dichloropropane	142-28-9	1.26	U	6.31	1.26	0.631
2,2-Dichloropropane	594-20-7	1.26	U	6.31	1.26	0.631
cis-1,3-Dichloropropene	10061-01-5	1.26	U	6.31	1.26	0.631
trans-1,3-Dichloropropene	10061-02-6	1.26	U	6.31	1.26	0.631
1,1-Dichloropropene	563-58-6	1.26	U	6.31	1.26	0.631
Ethylbenzene	100-41-4	1.26	U	6.31	1.26	0.631
2-Hexanone	591-78-6	6.30	Q	12.6	6.30	3.15
Hexachlorobutadiene	87-68-3	1.26	U	6.31	1.26	0.631
Isopropylbenzene	98-82-8	1.26	U	6.31	1.26	0.631
p-Isopropyltoluene	99-87-6	1.26	U	6.31	1.26	0.631
4-Methyl-2-pentanone	108-10-1	6.30	Q	12.6	6.30	3.15
Methylene chloride	75-09-2	2.52	U	6.31	2.52	1.26
Naphthalene	91-20-3	1.26	U	6.31	1.26	0.631
n-Propylbenzene	103-65-1	1.26	Q	6.31	1.26	0.631
Styrene	100-42-5	1.26	U	6.31	1.26	0.631
1,1,1,2-Tetrachloroethane	630-20-6	1.26	U	6.31	1.26	0.631
1,1,2,2-Tetrachloroethane	79-34-5	1.26	U	6.31	1.26	0.631
Tetrachloroethene	127-18-4	1.26	U	6.31	1.26	0.631
Toluene	108-88-3	1.26	U	6.31	1.26	0.631
1,2,3-Trichlorobenzene	87-61-6	1.26	U	6.31	1.26	0.631
1,2,4-Trichlorobenzene	120-82-1	1.26	U	6.31	1.26	0.631
1,1,1-Trichloroethane	71-55-6	1.26	U	6.31	1.26	0.631
1,1,2-Trichloroethane	79-00-5	1.26	U	6.31	1.26	0.631
Trichloroethene	79-01-6	1.26	U	6.31	1.26	0.631
Trichlorofluoromethane	75-69-4	2.52	U	6.31	2.52	1.26
1,2,3-Trichloropropane	96-18-4	2.52	U	6.31	2.52	1.26
1,2,4-Trimethylbenzene	95-63-6	1.26	U	6.31	1.26	0.631
1,3,5-Trimethylbenzene	108-67-8	1.26	U	6.31	1.26	0.631
Vinyl chloride	75-01-4	2.52	U	6.31	2.52	1.26
o-Xylene	95-47-6	1.26	U	6.31	1.26	0.631
m-,p-Xylene	179601-23-1	1.26	U	6.31	1.26	0.631

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	80	120	
1,2-Dichloroethane-d4	109	80	120	
Toluene-d8	108	85	115	
4-Bromofluorobenzene	110	85	120	

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-13	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(89.5-90)260416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:51
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 20:12
Collect Date:	04/26/2016 17:00	**Dilution:**	1	**File ID:**	9M974180
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	9.42	Q	25.4	12.7	6.35
Benzene	71-43-2	1.27	U	6.35	1.27	0.635
Bromobenzene	108-86-1	1.27	U	6.35	1.27	0.635
Bromochloromethane	74-97-5	2.54	U	6.35	2.54	1.27
Bromodichloromethane	75-27-4	1.27	U	6.35	1.27	0.635
Bromoform	75-25-2	1.27	U	6.35	1.27	0.635
Bromomethane	74-83-9	2.54	U	6.35	2.54	1.27
2-Butanone	78-93-3	6.34	Q	12.7	6.34	3.17
n-Butylbenzene	104-51-8	1.27	U	6.35	1.27	0.635
sec-Butylbenzene	135-98-8	1.27	U	6.35	1.27	0.635
tert-Butylbenzene	98-06-6	1.27	U	6.35	1.27	0.635
Carbon disulfide	75-15-0	1.47	Q	6.35	1.27	0.635
Carbon tetrachloride	56-23-5	1.27	U	6.35	1.27	0.635
Chlorobenzene	108-90-7	1.27	U	6.35	1.27	0.635
Chlorodibromomethane	124-48-1	1.27	U	6.35	1.27	0.635
Chloroethane	75-00-3	2.54	U	6.35	2.54	1.27
Chloroform	67-66-3	1.27	U	6.35	1.27	0.635
Chloromethane	74-87-3	5.08	Q	12.7	5.08	2.54
2-Chlorotoluene	95-49-8	1.27	U	6.35	1.27	0.635
4-Chlorotoluene	106-43-4	1.27	U	6.35	1.27	0.635
1,2-Dibromo-3-chloropropane	96-12-8	5.08	U	12.7	5.08	2.54
1,2-Dibromoethane	106-93-4	1.27	U	6.35	1.27	0.635
Dibromomethane	74-95-3	1.27	U	6.35	1.27	0.635
1,2-Dichlorobenzene	95-50-1	1.27	U	6.35	1.27	0.635
1,3-Dichlorobenzene	541-73-1	1.27	U	6.35	1.27	0.635
1,4-Dichlorobenzene	106-46-7	1.27	U	6.35	1.27	0.635
Dichlorodifluoromethane	75-71-8	2.54	U	6.35	2.54	1.27
1,1-Dichloroethane	75-34-3	2.54	U	6.35	2.54	1.27
1,2-Dichloroethane	107-06-2	1.27	U	6.35	1.27	0.635
1,1-Dichloroethene	75-35-4	1.27	U	6.35	1.27	0.635

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.27	U	6.35	1.27	0.635
trans-1,2-Dichloroethene	156-60-5	1.27	U	6.35	1.27	0.635
1,2-Dichloropropane	78-87-5	1.27	U	6.35	1.27	0.635
1,3-Dichloropropane	142-28-9	1.27	U	6.35	1.27	0.635
2,2-Dichloropropane	594-20-7	1.27	U	6.35	1.27	0.635
cis-1,3-Dichloropropene	10061-01-5	1.27	U	6.35	1.27	0.635
trans-1,3-Dichloropropene	10061-02-6	1.27	U	6.35	1.27	0.635
1,1-Dichloropropene	563-58-6	1.27	U	6.35	1.27	0.635
Ethylbenzene	100-41-4	1.27	U	6.35	1.27	0.635
2-Hexanone	591-78-6	6.34	Q	12.7	6.34	3.17
Hexachlorobutadiene	87-68-3	1.27	U	6.35	1.27	0.635
Isopropylbenzene	98-82-8	1.27	U	6.35	1.27	0.635
p-Isopropyltoluene	99-87-6	1.27	U	6.35	1.27	0.635
4-Methyl-2-pentanone	108-10-1	6.34	Q	12.7	6.34	3.17
Methylene chloride	75-09-2	2.54	U	6.35	2.54	1.27
Naphthalene	91-20-3	1.27	U	6.35	1.27	0.635
n-Propylbenzene	103-65-1	1.27	Q	6.35	1.27	0.635
Styrene	100-42-5	1.27	U	6.35	1.27	0.635
1,1,1,2-Tetrachloroethane	630-20-6	1.27	U	6.35	1.27	0.635
1,1,2,2-Tetrachloroethane	79-34-5	1.27	U	6.35	1.27	0.635
Tetrachloroethene	127-18-4	1.27	U	6.35	1.27	0.635
Toluene	108-88-3	1.27	U	6.35	1.27	0.635
1,2,3-Trichlorobenzene	87-61-6	1.27	U	6.35	1.27	0.635
1,2,4-Trichlorobenzene	120-82-1	1.27	U	6.35	1.27	0.635
1,1,1-Trichloroethane	71-55-6	1.27	U	6.35	1.27	0.635
1,1,2-Trichloroethane	79-00-5	1.27	U	6.35	1.27	0.635
Trichloroethene	79-01-6	1.27	U	6.35	1.27	0.635
Trichlorofluoromethane	75-69-4	2.54	U	6.35	2.54	1.27
1,2,3-Trichloropropane	96-18-4	2.54	U	6.35	2.54	1.27
1,2,4-Trimethylbenzene	95-63-6	1.27	U	6.35	1.27	0.635
1,3,5-Trimethylbenzene	108-67-8	1.27	U	6.35	1.27	0.635
Vinyl chloride	75-01-4	2.54	U	6.35	2.54	1.27
o-Xylene	95-47-6	1.27	U	6.35	1.27	0.635
m-,p-Xylene	179601-23-1	1.27	U	6.35	1.27	0.635

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	80	120	
1,2-Dichloroethane-d4	110	80	120	
Toluene-d8	108	85	115	
4-Bromofluorobenzene	117	85	120	

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-14	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	EQUIPMENT BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/28/2016 12:21
Workgroup #:	WG567935	**Analyst:**	TMB	**Run Date:**	05/07/2016 13:31
Collect Date:	04/25/2016 17:00	**Dilution:**	1	**File ID:**	8M412050
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	9.05	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.322	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	114	70	120	
Toluene-d8	98.4	85	120	
4-Bromofluorobenzene	99.0	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.
VOA Preparation/Preservation/Extraction Log

Batch #: WG567289
Analyst: AWE
Method: 5030B/5030C/5035
Run Date: 05/03/2016 09:42
Product: 826-SPE
Purge and trap methanol COA18540
Purified Lab Sand Lot # COA18552

SAMPLE #	Fraction	Collected	Preserved	PCT-S	Tare Wt	Total Wt	Sample Wt	Water	MeOH	Vt	Comments
L16041580-01	A	04/26/16 09:05	05/03/16 09:42	84.8			4.82	5		5	
L16041580-02	A	04/26/16 10:00	05/03/16 09:42	82.0			4.91	5		5	
L16041580-03	A	04/26/16 10:35	05/03/16 09:44	79.2			4.68	5		5	
L16041580-04	A	04/26/16 11:15	05/03/16 09:44	78.2			4.75	5		5	
L16041580-05	A	04/26/16 11:55	05/03/16 09:45	79.0			5.28	5		5	
L16041580-06	A	04/26/16 14:15	05/03/16 09:45	83.5			5.14	5		5	
L16041580-07	A	04/26/16 14:15	05/03/16 09:46	83.5			5.38	5		5	
L16041580-08	A	04/26/16 14:15	05/03/16 09:47	83.5			5.02	5		5	
L16041580-09	A	04/26/16 15:00	05/03/16 09:48	86.5			4.77	5		5	
L16041580-10	A	04/26/16 15:00	05/03/16 09:48	87.1			4.65	5		5	
L16041580-11	A	04/26/16 15:45	05/03/16 09:49	83.7			4.92	5		5	
L16041580-12	A	04/26/16 16:45	05/03/16 09:50	82.3			4.82	5		5	
L16041580-13	A	04/26/16 17:00	05/03/16 09:51	80.0			4.92	5		5	
L16041582-01	A	04/27/16 14:15	05/03/16 09:52	74.6			4.57	5		5	
L16041582-02	A	04/27/16 14:40	05/03/16 09:54	81.8			4.93	5		5	
L16041582-03	A	04/27/16 14:45	05/03/16 09:54	81.8			5.16	5		5	
L16041582-04	A	04/27/16 14:50	05/03/16 09:55	81.0			4.77	5		5	
L16041582-05	A	04/27/16 16:15	05/03/16 09:56	84.8			4.89	5		5	
L16041582-06	A	04/27/16 17:35	05/03/16 09:56	82.2			5.00	5		5	
L16041582-07	A	04/27/16 17:45	05/03/16 09:57	80.4			5.01	5		5	
L16041606-01	A	04/28/16 08:30	05/03/16 09:57	93.0			5.09	5		5	
WG567289-01	A		05/03/16 09:52	74.6			4.57	5		5	
WG567289-02	A		05/03/16 09:52	74.6			4.80	5		5	
WG567289-03	A		05/03/16 09:53	74.6			4.86	5		5	

Comments:
1 = improperly sealed cap
2 = preserved out of hold
3 = effervesced
4 = preserved with NaHSO4
5 = preserved by freezing
6 = preserved in field

Analyst: Andrew Casey

VOA_EXT - Modified 05/22/2008
PDF ID: 4744442
Report generated: 05/07/2016 13:20

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 012516
Analyst1: ADC Analyst2: NA
Method: 8260B/8260C SOP: MSV01(-C) Rev: 23 (2)
Method: 5030B/5030C/5035 SOP: PAT01 Rev: 18
Method: 624 SOP: MSV10 Rev: 12
Maintenance Log ID:

Internal Standard: STD74414 Surrogate Standard: STD74126
CCV: STD74488 LCS: STD74459 MS/MSD: STD74459

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG555000 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M972470	WG555000-01 BFB 50ng A9	NA	7	1	STD74202	01/25/16 10:27
9M972471	RINSE	NA	7	1		01/25/16 10:52
9M972472	WG555000-02 5ug/Kg STD A9	NA	7	1	STD74406	01/25/16 11:22
9M972473	WG555000-03 20ug/Kg STD A9	NA	7	1	STD74406	01/25/16 11:52
9M972474	WG555000-04 50ug/Kg STD A9	NA	7	1	STD74406	01/25/16 12:23
9M972475	WG555000-05 100ug/Kg STD A9	NA	7	1	STD74406	01/25/16 12:53
9M972476	WG555000-06 200ug/Kg STD A9	NA	7	1	STD74406	01/25/16 13:23
9M972477	WG555000-07 300ug/Kg STD A9	NA	7	1	STD74406	01/25/16 13:54
9M972478	WG555000-08 400ug/Kg STD A9	NA	7	1	STD74406	01/25/16 14:25
9M972479	WG555000-09 500ug/Kg STD A9	NA	7	1	STD74406	01/25/16 14:56
9M972480	RINSE	NA	7	1		01/25/16 15:26
9M972481	WG555000-10 100ug/Kg ICV A9	NA	7	1	STD74461	01/25/16 15:56
9M972482	RINSE	NA	7	1		01/25/16 16:28

Approved: January 29, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 042416
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75545 Surrogate Standard: STD75545
CCV: STD75791 LCS: STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG566154

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M411680	WG566154-01 50ng BFB STD 826-A9	NA	1	1	STD75485	04/24/16 16:31
8M411681	WG566154-01 50ng BFB STD 826-A9	NA	1	1	STD75485	04/24/16 16:45
8M411682	WG566154-02 5ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 17:10
8M411683	WG566154-03 20ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 17:39
8M411684	WG566154-04 50ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 18:08
8M411685	WG566154-05 100ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 18:37
8M411686	WG566154-06 200ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 19:06
8M411687	WG566154-07 300ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 19:36
8M411688	WG566154-08 400ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 20:05
8M411689	WG566154-09 500ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 20:34
8M411690	RINSE	NA	1	1	STD75791	04/24/16 21:04
8M411691	RINSE	NA	1	1	STD75791	04/24/16 21:33
8M411692	WG566154-10 100ug/L ALT SRC STD 826-A	NA	1	1	STD75801	04/24/16 22:02
8M411693	RISNE	NA	1	1		04/24/16 22:31
8M411694	RISNE	NA	1	1		04/24/16 23:00

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1	X			
File ID: 8M411680				
	Tune failed, DNR.			

Approved: April 29, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 042816
Analyst1: ADC Analyst2: TMB
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD75878 LCS: STD75898 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG566682; WG566800

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M411789	WG566682-01 50ng BFB STD 8260	NA	1	1	STD75485	04/28/16 07:05
8M411790	RINSE	NA	1	1	STD75855	04/28/16 07:29
8M411791	WG566682-02 0.3ug/L STD 8260	NA	1	1	STD75878	04/28/16 07:58
8M411792	WG566682-03 0.4ug/L STD 8260	NA	1	1	STD75878	04/28/16 08:27
8M411793	WG566682-04 1.0ug/L STD 8260	NA	1	1	STD75878	04/28/16 08:56
8M411794	WG566682-05 2.0ug/L STD 8260	NA	1	1	STD75878	04/28/16 09:26
8M411795	WG566682-06 5.0ug/L STD 8260	NA	1	1	STD75878	04/28/16 09:55
8M411796	WG566682-07 20.0ug/L STD 8260	NA	1	1	STD75878	04/28/16 10:24
8M411797	WG566682-08 50.0ug/L STD 8260	NA	1	1	STD75878	04/28/16 10:54
8M411798	WG566682-09 100.0ug/L STD 8260	NA	1	1	STD75878	04/28/16 11:23
8M411799	WG566682-10 200.0ug/L STD 8260	NA	1	1	STD75878	04/28/16 11:52
8M411800	WG566682-11 300.0ug/L STD 8260	NA	1	1	STD75878	04/28/16 12:21
8M411801	RINSE	NA	1	1	STD75878	04/28/16 13:09
8M411802	RINSE	NA	1	1	STD75878	04/28/16 13:38
8M411803	WG566682-12 50.0ug/L ALTSRC 8260	NA	1	1	STD75898	04/28/16 14:08
8M411804	WG566799-01 50ng BFB STD 8260	NA	1	1	STD75485	04/28/16 14:50
8M411805	WG566799-01 50ng BFB STD 8260	NA	1	1	STD75485	04/28/16 15:06
8M411806	WG566799-02 50ug/L CCV STD 8260	NA	1	1	STD75878	04/28/16 15:29
8M411807	WG566799-02 50ug/L CCV STD 8260	NA	1	1	STD75878	04/28/16 15:59
8M411808	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD75791	04/28/16 16:28
8M411809	WG566800-01 VBLK0428 BLANK STD 826	NA	1	1		04/28/16 16:57
8M411810	L16041205-11 A TB 826-SPE	<2	1	1		04/28/16 17:26
8M411811	L16041221-03 A TB 826-SPE	<2	1	1		04/28/16 17:55
8M411812	L16041205-01 A 826-SPE	<2	1	1		04/28/16 18:24
8M411813	L16041205-02 A 826-SPE	<2	1	1		04/28/16 18:54
8M411814	L16041205-03 A 826-SPE	<2	1	1		04/28/16 19:23
8M411815	L16041205-04 A 826-SPE	<2	1	1		04/28/16 19:52
8M411816	L16041205-05 A 826-SPE	<2	1	1		04/28/16 20:20
8M411817	L16041205-06 A 826-SPE	<2	1	1		04/28/16 20:50
8M411818	L16041205-07 A 826-SPE	<2	1	1		04/28/16 21:19
8M411819	L16041205-08 A 826-SPE	<2	1	1		04/28/16 21:47
8M411820	L16041205-09 A 826-SPE	<2	1	1		04/28/16 22:16
8M411821	L16041205-10 A 826-SPE	<2	1	1		04/28/16 22:46
8M411822	L16040984-06 B 826-SPE	<2	1	1		04/28/16 23:15

Approved: April 29, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 042816
Analyst1: ADC Analyst2: TMB
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD75878 LCS: STD75898 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG566682; WG566800

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M411823	L16041221-01 A 826-SPE	<2	1	1		04/28/16 23:43
8M411824	L16041221-05 A 826-SPE	<2	1	1		04/29/16 00:12
8M411825	L16041221-08 A 826-SPE	<2	1	1		04/29/16 00:41
8M411826	L16041221-04 A 826-SPE	<2	1	1		04/29/16 01:10
8M411827	L16041221-02 A 826-SPE	<2	1	1		04/29/16 01:38
8M411828	WG566800-02 20ug/L LCS STD 8260	NA	1	1	STD75898	04/29/16 02:07
8M411829	WG566800-03 20ug/L LCS2 STD 8260	NA	1	1	STD75898	04/29/16 02:36
8M411830	CCV	NA	1	1		04/29/16 03:05
8M411831	RINSE	NA	1	1		04/29/16 03:34

Comments

Seq.	Rerun	Dil.	Reason	Analytes
16	X			
File ID: 8M411804				
	Tune failed, DNR.			
18	X			
File ID: 8M411806				
	Ketones were low, DNR.			
20				
File ID: 8M411808				
	Not needed. DNR.			

Approved: April 29, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 050416
Analyst1: ADC Analyst2: NA
Method: 8260 SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD75711 Surrogate Standard: STD75710
CCV: STD75824 LCS: STD75739 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG567358 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M974137	WG567358-01 BFB 50ng 8260	NA	7	1	STD75485	05/04/16 11:25
9M974138	WG567358-02 50ug/kg STD 8260	NA	7	1	STD75740	05/04/16 11:50
9M974139	RINSE	NA	7	1	STD75740	05/04/16 12:20
9M974140	WG567358-03 0.5ug/kg STD 8260	NA	7	1	STD75740	05/04/16 12:51
9M974141	WG567358-04 1.0ug/kg STD 8260	NA	7	1	STD75740	05/04/16 13:21
9M974142	WG567358-05 2.0ug/kg STD 8260	NA	7	1	STD75740	05/04/16 13:52
9M974143	WG567358-06 5.0ug/kg STD 8260	NA	7	1	STD75740	05/04/16 14:23
9M974144	WG567358-07 20.0ug/kg STD 8260	NA	7	1	STD75740	05/04/16 14:53
9M974145	WG567358-08 100.0ug/kg STD 8260	NA	7	1	STD75740	05/04/16 15:24
9M974146	WG567358-09 200.0ug/kg STD 8260	NA	7	1	STD75740	05/04/16 15:54
9M974147	WG567358-10 300.0ug/kg STD 8260	NA	7	1	STD75740	05/04/16 16:24
9M974148	RINSE	NA	7	1		05/04/16 16:55
9M974149	WG567358-08 100.0ug/kg STD 8260	NA	7	1	STD75740	05/04/16 17:25
9M974150	WG567358-02 50ug/kg STD 8260	NA	7	1	STD75740	05/04/16 17:56
9M974151	RINSE	NA	7	1		05/04/16 18:28
9M974152	WG567358-11 20.0ug/kg ALTSRC 8260	NA	7	1	STD75739	05/04/16 18:59
9M974153	RINSE	NA	7	1		05/04/16 19:30
9M974154	63-01	NA	7	1		05/04/16 20:01
9M974155	63-02	NA	7	1		05/04/16 20:32
9M974156	63-03	NA	7	1		05/04/16 21:03
9M974157	63-04	NA	7	1		05/04/16 21:33
9M974158	63-05	NA	7	1		05/04/16 22:04
9M974159	63-06	NA	7	1		05/04/16 22:35
9M974160	RINSE	NA	7	1		05/04/16 23:06

Approved: May 10, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 050516
Analyst1: ADC Analyst2: NA
Method: 8260 SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD75711 Surrogate Standard: STD75710
CCV: STD76050 LCS: STD75977 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG567680

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M974161	WG567630-01 BFB 50ng 8260	NA	7	1	STD75485	05/05/16 09:51
9M974162	WG567630-02 50ug/kg STD 8260	NA	7	1	STD75740	05/05/16 10:17
9M974163	WG567630-02 50ug/kg STD 8260	NA	7	1	STD75740	05/05/16 11:29
9M974164	WGXXXXXX-01 100ug/kg A9FOO CCV	NA	7	1	STDXXXXX	05/05/16 12:00
9M974165	WG567680-01 BLANK 8260	NA	7	1		05/05/16 12:32
9M974166	WG567680-02 LCS 20ug/kg 8260	NA	7	1	STD75739	05/05/16 13:02
9M974167	L16041580-07 A MS 8260 5.38g	NA	7	1	STD75739	05/05/16 13:34
9M974168	L16041580-08 A MSD 8260 5.02g	NA	7	1	STD75739	05/05/16 14:04
9M974169	RINSE	NA	7	1		05/05/16 14:34
9M974170	L16041580-06 A RS 8260 5.14g	NA	7	1		05/05/16 15:04
9M974171	L16041580-01 A 8260 4.82g	NA	7	1		05/05/16 15:35
9M974172	L16041580-02 A 8260 4.91g	NA	7	1		05/05/16 16:06
9M974173	L16041580-03 A 8260 4.68g	NA	7	1		05/05/16 16:37
9M974174	L16041580-04 A 8260 4.75g	NA	7	1		05/05/16 17:08
9M974175	L16041580-05 A 8260 5.28g	NA	7	1		05/05/16 17:40
9M974176	L16041580-09 A 8260 5.02g	NA	7	1		05/05/16 18:10
9M974177	L16041580-10 A 8260 4.65g	NA	7	1		05/05/16 18:40
9M974178	L16041580-11 A 8260 4.92g	NA	7	1		05/05/16 19:10
9M974179	L16041580-12 A 8260 4.82g	NA	7	1		05/05/16 19:41
9M974180	L16041580-13 A 8260 4.92g	NA	7	1		05/05/16 20:12
9M974181	L16041606-01 A 8260 5.09g	NA	7	1		05/05/16 20:43
9M974182	RINSE	NA	7	1		05/05/16 21:14
9M974183	SCREEN 100X 0156-01	NA	7	1		05/05/16 21:44
9M974184	SCREEN 100X 0156-02	NA	7	1		05/05/16 22:15
9M974185	SCREEN 100X 0156-03	NA	7	1		05/05/16 22:45
9M974186	SCREEN 100X 0156-04	NA	7	1		05/05/16 23:16
9M974187	SCREEN 100X 0156-05	NA	7	1		05/05/16 23:47
9M974188	SCREEN 100X 0156-06	NA	7	1		05/06/16 00:18
9M974189	SCREEN 100X 0156-07	NA	7	1		05/06/16 00:48
9M974190	SCREEN 100X 0156-08	NA	7	1		05/06/16 01:19
9M974191	SCREEN 100X 0156-09	NA	7	1		05/06/16 01:50
9M974192	RINSE	NA	7	1		05/06/16 02:21

Approved: May 10, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 050516
Analyst1: ADC Analyst2: NA
Method: 8260 SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD75711 Surrogate Standard: STD75710
CCV: STD76050 LCS: STD75977 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG567680

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
File ID: 9M974162				
WG567630-02 RR VC HIGH.				

Approved: May 10, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 050716
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53741

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD75976 LCS: STD75977 MS/MSD: STD75977

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG567935

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412045	WG567934-01 50ng BFB STD 8260	NA	1	1	STD76034	05/07/16 11:26
8M412046	WG567934-01 50ng BFB STD 8260	NA	1	1	STD76034	05/07/16 11:41
8M412047	WG567934-02 50ug/L CCV STD 8260	NA	1	1	STD75976	05/07/16 12:05
8M412048	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD75791	05/07/16 12:33
8M412049	WG567935-01 VBLK0507 BLANK STD 826	NA	1	1		05/07/16 13:02
8M412050	L16041580-14 B EB 826-LOW	<2	1	1		05/07/16 13:31
8M412051	L16041551-01 A 826-SPE1	<2	1	1		05/07/16 14:00
8M412052	L16041551-03 A 826-SPE1	<2	1	1		05/07/16 14:29
8M412053	L16041551-05 A 826-SPE1	<2	1	1		05/07/16 14:58
8M412054	L16041551-07 A 826-SPE1	<2	1	1		05/07/16 15:27
8M412055	L16041551-09 A 826-SPE1	<2	1	1		05/07/16 15:56
8M412056	L16041551-11 A 826-SPE1	<2	1	1		05/07/16 16:25
8M412057	L16041551-13 A 826-SPE1	6	1	1		05/07/16 16:54
8M412058	L16041551-15 A 826-SPE1	<2	1	1		05/07/16 17:24
8M412059	L16041551-17 A 826-SPE1	<2	1	1		05/07/16 17:53
8M412060	L16041551-19 A REF 826-SPE1	<2	1	1		05/07/16 18:21
8M412061	L16041551-25 A 826-SPE1	<2	1	1		05/07/16 18:51
8M412062	L16041551-27 A 826-SPE1	<2	1	1		05/07/16 19:20
8M412063	L16041551-29 A 826-SPE1	<2	1	1		05/07/16 19:48
8M412064	L16041551-31 A 826-SPE1	3	1	1		05/07/16 20:18
8M412065	L16041551-33 A 826-SPE1	<2	1	1		05/07/16 20:47
8M412066	L16041551-35 A 826-SPE1	<2	1	1		05/07/16 21:16
8M412067	L16041551-37 A 826-SPE1	<2	1	1		05/07/16 21:45
8M412068	WG567935-02 20ug/L LCS STD 8260	NA	1	1	STD75977	05/07/16 22:15
8M412069	L16041551-21 A MS 826-SPE1	NA	1	1	STD75977	05/07/16 22:44
8M412070	L16041551-23 A MSD 826-SPE1	NA	1	1	STD75977	05/07/16 23:13
8M412071	CCV	NA	1	1		05/07/16 23:43
8M412072	RINSE	NA	1	1		05/08/16 00:12
8M412073	L16050011-01 B 8260 A1	5	1	1		05/08/16 00:41
8M412074	RINSE	NA	1	1		05/08/16 01:11

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Approved: May 11, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS8	Dataset:	050716		
Analyst1:	TMB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	23
Method:	624	SOP:	MSV10	Rev:	14
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:	53741				

Internal Standard: STD75899 Surrogate Standard: STD75899

CCV: STD75976 LCS: STD75977 MS/MSD: STD75977

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG567935

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1	X			
File ID: 8M412045				
	Tune failed, DNR.			
4				
File ID: 8M412048				
	Not needed, DNR.			

Approved: May 11, 2016

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Microbac Laboratories Inc.

Data Checklist

Date: 25-JAN-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 72995
Analytical Workgroups: WG555000

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
28-JAN-2016

Secondary Reviewer:
29-JAN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JAN-29-2016 16:00:23

Microbac Laboratories Inc.

Data Checklist

Date: 24-APR-2016
Analyst: JDS
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 74755
Analytical Workgroups: WG566154

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
27-APR-2016
Tiffany Bailey

Secondary Reviewer:
29-APR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: APR-29-2016 12:26:26

Microbac Laboratories Inc.

Data Checklist

Date: 28-APR-2016
Analyst: ADC
Analyst: TMB
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 74783
Analytical Workgroups: WG566682; WG566800

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	X
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
28-APR-2016
Tiffany Bailey

Secondary Reviewer:
29-APR-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: APR-29-2016 12:21:03

Microbac Laboratories Inc.

Data Checklist

Date: 04-MAY-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: WG567358
Runlog ID: 74928
Analytical Workgroups:

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
05-MAY-2016

Secondary Reviewer:
10-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-10-2016 15:39:42

Microbac Laboratories Inc.

Data Checklist

Date: 05-MAY-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 75000
Analytical Workgroups: WG567680

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
10-MAY-2016

Secondary Reviewer:
10-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-10-2016 15:47:35

Microbac Laboratories Inc.

Data Checklist

Date: 07-MAY-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 74968
Analytical Workgroups: WG567935

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
09-MAY-2016
Tiffany Bailey

Secondary Reviewer:
11-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-11-2016 14:29:22

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG567935

Login Number: L16041580

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
EQUIPMENT BLANK	14	04/25/16					05/07/2016	11.9	14		05/07/16	11.9	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4752346
Report generated 05/12/2016 14:55

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG567680

Login Number: L16041580

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW22DW(5-5.5)260416	01	04/26/16					05/03/2016	7	14		05/05/16	9.3	14	
18CPTMW22DW(10-10.5)2604	02	04/26/16					05/03/2016	7	14		05/05/16	9.3	14	
18CPTMW22DW(20-20.5)2604	03	04/26/16					05/03/2016	7	14		05/05/16	9.3	14	
18CPTMW22DW(29.5-30)2604	04	04/26/16					05/03/2016	6.9	14		05/05/16	9.2	14	
18CPTMW22DW(40-40.5)2604	05	04/26/16					05/03/2016	6.9	14		05/05/16	9.2	14	
18CPTMW22DW(50-51)260416	06	04/26/16					05/03/2016	6.8	14		05/05/16	9	14	
18CPTMW22DW(50-51)260416	07	04/26/16					05/03/2016	6.8	14		05/05/16	9	14	
18CPTMW22DW(50-51)260416	08	04/26/16					05/03/2016	6.8	14		05/05/16	9	14	
18CPTMW22DW(60-60.5)2604	09	04/26/16					05/03/2016	6.8	14		05/05/16	9.1	14	
18CPTMW22DW(60-60.5)2604	10	04/26/16					05/03/2016	6.8	14		05/05/16	9.2	14	
18CPTMW22DW(70-70.5)2604	11	04/26/16					05/03/2016	6.8	14		05/05/16	9.1	14	
18CPTMW22DW(80-80.5)2604	12	04/26/16					05/03/2016	6.7	14		05/05/16	9.1	14	
18CPTMW22DW(89.5-90)2604	13	04/26/16					05/03/2016	6.7	14		05/05/16	9.1	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4755294
Report generated 05/12/2016 14:55

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16041580
Instrument Id: HPMS8
Workgroup (AAB#): WG567935

Method: 8260
CAL ID: HPMS8-28-APR-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16041580-14	1.00	01	114	101	99.0	98.4
WG567935-01	1.00	01	116	102	99.2	98.1
WG567935-02	1.00	01	117	102	94.2	98.5

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4752351
Report generated: 05/12/2016 14:55

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16041580
Instrument Id: HPMS9
Workgroup (AAB#): WG567680

Method: 8260
CAL ID: HPMS9-04-MAY-16
Matrix: Soil

Sample Number	Dilution	Tag	1	2	3	4
L16041580-01	1.00	01	102	101	112	108
L16041580-02	1.00	01	104	101	109	106
L16041580-03	1.00	01	102	100	110	107
L16041580-04	1.00	01	110	103	112	106
L16041580-05	1.00	01	111	102	114	108
L16041580-06	1.00	01	102	102	110	106
L16041580-07	1.00	01	102	104	110	107
L16041580-08	1.00	01	103	104	109	106
L16041580-09	1.00	01	104	99.0	115	107
L16041580-10	1.00	01	105	100	118	108
L16041580-11	1.00	01	107	103	114	109
L16041580-12	1.00	01	109	101	110	108
L16041580-13	1.00	01	110	101	117	108
WG567680-01	1.00	01	104	101	110	106
WG567680-02	1.00	01	105	104	108	106

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	80	-	120
2 - Dibromofluoromethane	80	-	120
3 - 4-Bromofluorobenzene	85	-	120
4 - Toluene-d8	85	-	115

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4755303
Report generated: 05/12/2016 14:56

METHOD BLANK SUMMARY

Login Number: L16041580
Blank File ID: 8M412049
Prep Date: 05/07/16 13:02
Analyzed Date: 05/07/16 13:02
Analyst: TMB

Work Group: WG567935
Blank Sample ID: WG567935-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
EQUIPMENT BLANK	L16041580-14	8M412050	05/07/16 13:31	01
LCS	WG567935-02	8M412068	05/07/16 22:15	01

Report Name: BLANK_SUMMARY
PDF File ID: 4759214
Report generated 05/12/2016 14:55

METHOD BLANK SUMMARY

Login Number: L16041580
Blank File ID: 9M974165
Prep Date: 05/05/16 12:32
Analyzed Date: 05/05/16 12:32
Analyst: ADC

Work Group: WG567680
Blank Sample ID: WG567680-01
Instrument ID: HPMS9
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG567680-02	9M974166	05/05/16 13:02	01
18CPTMW22DW(50-51)260416MS	L16041580-07	9M974167	05/05/16 13:34	01
18CPTMW22DW(50-51)260416MSD	L16041580-08	9M974168	05/05/16 14:04	01
18CPTMW22DW(50-51)260416	L16041580-06	9M974170	05/05/16 15:04	01
18CPTMW22DW(5-5.5)260416	L16041580-01	9M974171	05/05/16 15:35	01
18CPTMW22DW(10-10.5)260416	L16041580-02	9M974172	05/05/16 16:06	01
18CPTMW22DW(20-20.5)260416	L16041580-03	9M974173	05/05/16 16:37	01
18CPTMW22DW(29.5-30)260416	L16041580-04	9M974174	05/05/16 17:08	01
18CPTMW22DW(40-40.5)260416	L16041580-05	9M974175	05/05/16 17:40	01
18CPTMW22DW(60-60.5)260416	L16041580-09	9M974176	05/05/16 18:10	01
18CPTMW22DW(60-60.5)260416DUP	L16041580-10	9M974177	05/05/16 18:40	01
18CPTMW22DW(70-70.5)260416	L16041580-11	9M974178	05/05/16 19:10	01
18CPTMW22DW(80-80.5)260416	L16041580-12	9M974179	05/05/16 19:41	01
18CPTMW22DW(89.5-90)260416	L16041580-13	9M974180	05/05/16 20:12	01

Report Name: BLANK_SUMMARY
PDF File ID: 4755295
Report generated 05/12/2016 14:55

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16041580 Prep Date: 05/07/16 13:02 Sample ID: WG567935-01
Instrument ID: HPMS8 Run Date: 05/07/16 13:02 Prep Method: 5030B/5030C/503
File ID: 8M412049 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG567935 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-28-APR-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4759215
12-MAY-2016 14:55

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16041580 Prep Date: 05/07/16 13:02 Sample ID: WG567935-01
Instrument ID: HPMS8 Run Date: 05/07/16 13:02 Prep Method: 5030B/5030C/503
File ID: 8M412049 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG567935 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-28-APR-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	102	85 - 115	PASS
1,2-Dichloroethane-d4	116	70 - 120	PASS
Toluene-d8	98.1	85 - 120	PASS
4-Bromofluorobenzene	99.2	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4759215
12-MAY-2016 14:55

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16041580 Prep Date: 05/05/16 12:32 Sample ID: WG567680-01
Instrument ID: HPMS9 Run Date: 05/05/16 12:32 Prep Method: 5030B/5030C/503
File ID: 9M974165 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG567680 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-04-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	5.00	20.0	5.00	1	U
Benzene	0.500	5.00	0.500	1	U
Bromobenzene	0.500	5.00	0.500	1	U
Bromochloromethane	1.00	5.00	1.00	1	U
Bromodichloromethane	0.500	5.00	0.500	1	U
Bromoform	0.500	5.00	0.500	1	U
Bromomethane	1.00	5.00	1.00	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.500	5.00	0.500	1	U
sec-Butylbenzene	0.500	5.00	0.500	1	U
tert-Butylbenzene	0.500	5.00	0.500	1	U
Carbon disulfide	0.500	5.00	0.500	1	U
Carbon tetrachloride	0.500	5.00	0.500	1	U
Chlorobenzene	0.500	5.00	0.500	1	U
Chlorodibromomethane	0.500	5.00	0.500	1	U
Chloroethane	1.00	5.00	1.00	1	U
Chloroform	0.500	5.00	0.500	1	U
Chloromethane	2.00	10.0	2.00	1	U
2-Chlorotoluene	0.500	5.00	0.500	1	U
4-Chlorotoluene	0.500	5.00	0.500	1	U
1,2-Dibromo-3-chloropropane	2.00	10.0	2.00	1	U
1,2-Dibromoethane	0.500	5.00	0.500	1	U
Dibromomethane	0.500	5.00	0.500	1	U
1,2-Dichlorobenzene	0.500	5.00	0.500	1	U
1,3-Dichlorobenzene	0.500	5.00	0.500	1	U
1,4-Dichlorobenzene	0.500	5.00	0.500	1	U
Dichlorodifluoromethane	1.00	5.00	1.00	1	U
1,1-Dichloroethane	1.00	5.00	1.00	1	U
1,2-Dichloroethane	0.500	5.00	0.500	1	U
1,1-Dichloroethene	0.500	5.00	0.500	1	U
cis-1,2-Dichloroethene	0.500	5.00	0.500	1	U
trans-1,2-Dichloroethene	0.500	5.00	0.500	1	U
1,2-Dichloropropane	0.500	5.00	0.500	1	U
1,3-Dichloropropane	0.500	5.00	0.500	1	U
2,2-Dichloropropane	0.500	5.00	0.500	1	U
cis-1,3-Dichloropropene	0.500	5.00	0.500	1	U
trans-1,3-Dichloropropene	0.500	5.00	0.500	1	U
1,1-Dichloropropene	0.500	5.00	0.500	1	U
Ethylbenzene	0.500	5.00	0.500	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.500	5.00	0.500	1	U
Isopropylbenzene	0.500	5.00	0.500	1	U

Report Name:BLANK
PDF ID: 4755296
12-MAY-2016 14:55

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16041580 Prep Date: 05/05/16 12:32 Sample ID: WG567680-01
Instrument ID: HPMS9 Run Date: 05/05/16 12:32 Prep Method: 5030B/5030C/503
File ID: 9M974165 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG567680 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-04-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.500	5.00	0.500	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	1.00	5.00	1.00	1	U
Naphthalene	0.500	5.00	0.500	1	U
n-Propylbenzene	0.500	5.00	0.500	1	U
Styrene	0.500	5.00	0.500	1	U
1,1,1,2-Tetrachloroethane	0.500	5.00	0.500	1	U
1,1,2,2-Tetrachloroethane	0.500	5.00	0.500	1	U
Tetrachloroethene	0.500	5.00	0.500	1	U
Toluene	0.500	5.00	0.500	1	U
1,2,3-Trichlorobenzene	0.500	5.00	0.500	1	U
1,2,4-Trichlorobenzene	0.500	5.00	0.500	1	U
1,1,1-Trichloroethane	0.500	5.00	0.500	1	U
1,1,2-Trichloroethane	0.500	5.00	0.500	1	U
Trichloroethene	0.500	5.00	0.500	1	U
Trichlorofluoromethane	1.00	5.00	1.00	1	U
1,2,3-Trichloropropane	1.00	5.00	1.00	1	U
1,2,4-Trimethylbenzene	0.500	5.00	0.500	1	U
1,3,5-Trimethylbenzene	0.500	5.00	0.500	1	U
Vinyl chloride	1.00	5.00	1.00	1	U
o-Xylene	0.500	5.00	0.500	1	U
m-,p-Xylene	0.500	5.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	101	80 - 120	PASS
1,2-Dichloroethane-d4	104	80 - 120	PASS
Toluene-d8	106	85 - 115	PASS
4-Bromofluorobenzene	110	85 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4755296
12-MAY-2016 14:55

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16041580 | Run Date: 05/07/2016 | Sample ID: WG567935-02
Instrument ID: HPMS8 | Run Time: 22:15 | Prep Method: 5030B/5030C/503
File ID: 8M412068 | Analyst: TMB | Method: 8260B
Workgroup (AAB#): WG567935 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD75977 | Cal ID: HPMS8-28-APR-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	22.1	111	40 - 140	
Benzene	20.0	17.9	89.5	80 - 120	
Bromobenzene	20.0	18.6	93.2	75 - 125	
Bromochloromethane	20.0	18.9	94.3	65 - 130	
Bromodichloromethane	20.0	20.9	105	75 - 120	
Bromoform	20.0	19.1	95.6	70 - 130	
Bromomethane	20.0	11.0	54.8	30 - 145	
2-Butanone	20.0	20.0	99.8	30 - 150	
n-Butylbenzene	20.0	18.4	92.0	70 - 135	
sec-Butylbenzene	20.0	19.6	97.8	70 - 125	
tert-Butylbenzene	20.0	20.1	100	70 - 130	
Carbon disulfide	20.0	16.5	82.7	35 - 160	
Carbon tetrachloride	20.0	22.4	112	65 - 140	
Chlorobenzene	20.0	19.2	95.8	80 - 120	
Chlorodibromomethane	20.0	20.8	104	60 - 135	
Chloroethane	20.0	17.2	86.0	60 - 135	
Chloroform	20.0	20.1	100	65 - 135	
Chloromethane	20.0	18.3	91.5	40 - 125	
2-Chlorotoluene	20.0	19.7	98.6	75 - 125	
4-Chlorotoluene	20.0	19.2	96.2	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	19.9	99.4	50 - 130	
1,2-Dibromoethane	20.0	18.9	94.3	80 - 120	
Dibromomethane	20.0	19.4	96.8	75 - 125	
1,2-Dichlorobenzene	20.0	19.6	97.8	70 - 120	
1,3-Dichlorobenzene	20.0	19.3	96.4	75 - 125	
1,4-Dichlorobenzene	20.0	19.8	99.1	75 - 125	
Dichlorodifluoromethane	20.0	19.1	95.5	30 - 155	
1,1-Dichloroethane	20.0	17.8	89.1	70 - 135	
1,2-Dichloroethane	20.0	22.9	115	70 - 130	
1,1-Dichloroethene	20.0	18.2	91.1	70 - 130	
cis-1,2-Dichloroethene	20.0	18.0	89.8	70 - 125	
trans-1,2-Dichloroethene	20.0	18.9	94.7	60 - 140	
1,2-Dichloropropane	20.0	18.5	92.4	75 - 125	
1,3-Dichloropropane	20.0	18.4	92.1	75 - 125	
2,2-Dichloropropane	20.0	17.5	87.7	70 - 135	
cis-1,3-Dichloropropene	20.0	19.9	99.3	70 - 130	
trans-1,3-Dichloropropene	20.0	19.3	96.4	55 - 140	
1,1-Dichloropropene	20.0	18.1	90.6	75 - 130	
Ethylbenzene	20.0	18.5	92.5	75 - 125	
2-Hexanone	20.0	16.1	80.7	55 - 130	
Hexachlorobutadiene	20.0	19.9	99.3	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4752347
Report generated: 05/12/2016 14:55

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16041580 | Run Date: 05/07/2016 | Sample ID: WG567935-02
Instrument ID: HPMS8 | Run Time: 22:15 | Prep Method: 5030B/5030C/503
File ID: 8M412068 | Analyst: TMB | Method: 8260B
Workgroup (AAB#): WG567935 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD75977 | Cal ID: HPMS8-28-APR-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	20.8	104	75 - 125	
p-Isopropyltoluene	20.0	19.7	98.5	75 - 130	
4-Methyl-2-pentanone	20.0	18.3	91.6	60 - 135	
Methylene chloride	20.0	17.0	84.8	55 - 140	
Naphthalene	20.0	16.9	84.3	55 - 140	
n-Propylbenzene	20.0	19.3	96.4	70 - 130	
Styrene	20.0	19.8	99.1	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	21.5	107	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	14.3	71.7	65 - 130	
Tetrachloroethene	20.0	19.1	95.6	45 - 150	
Toluene	20.0	18.4	92.1	75 - 120	
1,2,3-Trichlorobenzene	20.0	18.3	91.3	55 - 140	
1,2,4-Trichlorobenzene	20.0	18.5	92.3	65 - 135	
1,1,1-Trichloroethane	20.0	21.6	108	65 - 130	
1,1,2-Trichloroethane	20.0	18.6	93.0	75 - 125	
Trichloroethene	20.0	20.9	104	70 - 125	
Trichlorofluoromethane	20.0	21.1	105	60 - 145	
1,2,3-Trichloropropane	20.0	18.8	93.8	75 - 125	
1,2,4-Trimethylbenzene	20.0	20.0	99.9	75 - 130	
1,3,5-Trimethylbenzene	20.0	19.5	97.3	75 - 130	
Vinyl chloride	20.0	21.2	106	50 - 145	
o-Xylene	20.0	19.7	98.3	80 - 120	
m-,p-Xylene	40.0	40.3	101	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	102	85 - 115	PASS
1,2-Dichloroethane-d4	117	70 - 120	PASS
Toluene-d8	98.5	85 - 120	PASS
4-Bromofluorobenzene	94.2	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4752347
Report generated: 05/12/2016 14:55

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16041580 Run Date: 05/05/2016 Sample ID: WG567680-02
Instrument ID: HPMS9 Run Time: 13:02 Prep Method: 5030B/5030C/503
File ID: 9M974166 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG567680 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD75739 Cal ID: HPMS9-04-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	21.7	109	20 - 160	
Benzene	20.0	19.8	99.1	75 - 125	
Bromobenzene	20.0	20.3	101	65 - 120	
Bromochloromethane	20.0	19.2	96.1	70 - 125	
Bromodichloromethane	20.0	19.1	95.5	70 - 130	
Bromoform	20.0	16.7	83.4	55 - 135	
Bromomethane	20.0	18.9	94.5	30 - 160	
2-Butanone	20.0	21.8	109	30 - 160	
n-Butylbenzene	20.0	20.9	105	65 - 140	
sec-Butylbenzene	20.0	22.2	111	65 - 130	
tert-Butylbenzene	20.0	23.0	115	65 - 130	
Carbon disulfide	20.0	18.8	93.8	45 - 160	
Carbon tetrachloride	20.0	19.6	97.8	65 - 135	
Chlorobenzene	20.0	20.8	104	75 - 125	
Chlorodibromomethane	20.0	18.7	93.5	65 - 130	
Chloroethane	20.0	20.7	104	40 - 155	
Chloroform	20.0	19.9	99.5	70 - 125	
Chloromethane	20.0	20.1	100	50 - 130	
2-Chlorotoluene	20.0	21.3	106	70 - 130	
4-Chlorotoluene	20.0	22.3	112	75 - 125	
1,2-Dibromo-3-chloropropane	20.0	19.7	98.6	40 - 135	
1,2-Dibromoethane	20.0	19.9	99.3	70 - 125	
Dibromomethane	20.0	17.8	89.2	75 - 130	
1,2-Dichlorobenzene	20.0	20.1	100	75 - 120	
1,3-Dichlorobenzene	20.0	20.5	103	70 - 125	
1,4-Dichlorobenzene	20.0	20.5	103	70 - 125	
Dichlorodifluoromethane	20.0	21.7	109	35 - 135	
1,1-Dichloroethane	20.0	19.1	95.3	75 - 125	
1,2-Dichloroethane	20.0	20.0	100	70 - 135	
1,1-Dichloroethene	20.0	20.2	101	65 - 135	
cis-1,2-Dichloroethene	20.0	20.3	101	65 - 125	
trans-1,2-Dichloroethene	20.0	21.1	106	65 - 135	
1,2-Dichloropropane	20.0	20.4	102	70 - 120	
1,3-Dichloropropane	20.0	20.7	103	75 - 125	
2,2-Dichloropropane	20.0	20.6	103	65 - 135	
cis-1,3-Dichloropropene	20.0	21.0	105	70 - 125	
trans-1,3-Dichloropropene	20.0	19.9	99.4	65 - 125	
1,1-Dichloropropene	20.0	20.6	103	70 - 135	
Ethylbenzene	20.0	20.9	105	75 - 125	
2-Hexanone	20.0	20.1	101	45 - 145	
Hexachlorobutadiene	20.0	21.2	106	55 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4755297
Report generated: 05/12/2016 14:55

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16041580 | Run Date: 05/05/2016 | Sample ID: WG567680-02
Instrument ID: HPMS9 | Run Time: 13:02 | Prep Method: 5030B/5030C/503
File ID: 9M974166 | Analyst: ADC | Method: 8260B
Workgroup (AAB#): WG567680 | Matrix: Soil | Units: ug/kg
QC Key: DOD4 | Lot#: STD75739 | Cal ID: HPMS9-04-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	21.5	108	75 - 130	
p-Isopropyltoluene	20.0	22.3	112	75 - 135	
4-Methyl-2-pentanone	20.0	20.2	101	45 - 145	
Methylene chloride	20.0	18.9	94.6	55 - 140	
Naphthalene	20.0	18.2	91.0	40 - 125	
n-Propylbenzene	20.0	24.5	122	65 - 135	
Styrene	20.0	20.2	101	75 - 125	
1,1,1,2-Tetrachloroethane	20.0	19.4	96.8	75 - 125	
1,1,2,2-Tetrachloroethane	20.0	19.1	95.6	55 - 130	
Tetrachloroethene	20.0	20.5	103	65 - 140	
Toluene	20.0	20.1	100	70 - 125	
1,2,3-Trichlorobenzene	20.0	19.1	95.3	60 - 135	
1,2,4-Trichlorobenzene	20.0	19.3	96.7	65 - 130	
1,1,1-Trichloroethane	20.0	21.1	106	70 - 135	
1,1,2-Trichloroethane	20.0	19.9	99.4	60 - 125	
Trichloroethene	20.0	20.9	105	75 - 125	
Trichlorofluoromethane	20.0	20.5	103	25 - 185	
1,2,3-Trichloropropane	20.0	21.2	106	65 - 130	
1,2,4-Trimethylbenzene	20.0	22.2	111	65 - 135	
1,3,5-Trimethylbenzene	20.0	22.8	114	65 - 135	
Vinyl chloride	20.0	16.0	79.8	60 - 125	
o-Xylene	20.0	20.2	101	75 - 125	
m-,p-Xylene	40.0	41.4	104	80 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	104	80 - 120	PASS
1,2-Dichloroethane-d4	105	80 - 120	PASS
Toluene-d8	106	85 - 115	PASS
4-Bromofluorobenzene	108	85 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4755297
Report generated: 05/12/2016 14:55

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16041580 Cal ID: HPMS9- 04-MAY-16 Worknum: WG567680

Instrument ID: HPMS9 Contract #: Prep Method: 5030B/5030C/

Parent ID: L16041580-06 File ID: 9M974170 Dil: 1 Method: 5035A

Sample ID: L16041580-07 MS File ID: 9M974167 Dil: 1 Matrix: 8260B

Sample ID: L16041580-08 MSD File ID: 9M974168 Dil: 1 Units: Soil

Percent Solid: ug/kg

83.5

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,1,1,2-Tetrachloroethane	U	22.3	23.2	104	23.9	23.0	96.4	0.877	75 - 125	30	
1,1,1-Trichloroethane	U	22.3	24.9	112	23.9	24.6	103	1.11	70 - 135	30	
1,1,2,2-Tetrachloroethane	U	22.3	22.0	98.6	23.9	21.4	89.6	2.65	55 - 130	30	
1,1,2-Trichloroethane	U	22.3	22.6	102	23.9	23.3	97.7	2.94	60 - 125	30	
1,1-Dichloroethane	U	22.3	22.7	102	23.9	22.8	95.4	0.205	75 - 125	30	
1,1-Dichloroethene	U	22.3	23.4	105	23.9	23.6	98.9	0.823	65 - 135	30	
1,1-Dichloropropene	U	22.3	24.0	108	23.9	24.1	101	0.422	70 - 135	30	
1,2,3-Trichlorobenzene	U	22.3	20.1	90.1	23.9	18.8	78.6	6.70	60 - 135	30	
1,2,3-Trichloropropane	U	22.3	22.6	101	23.9	24.0	101	6.08	65 - 130	30	
1,2,4-Trichlorobenzene	U	22.3	21.0	94.4	23.9	19.3	80.9	8.49	65 - 130	30	
1,2,4-Trimethylbenzene	U	22.3	26.7	120	23.9	25.2	106	5.96	65 - 135	30	
1,2-Dibromo-3-chloropropane	U	22.3	20.3	91	23.9	20.9	87.6	3.12	40 - 135	30	
1,2-Dibromoethane	U	22.3	22.8	103	23.9	23.2	97.4	1.65	70 - 125	30	
1,2-Dichlorobenzene	U	22.3	23.9	107	23.9	23.0	96.2	4.14	75 - 120	30	
1,2-Dichloroethane	U	22.3	23.2	104	23.9	23.4	97.9	0.604	70 - 135	30	
1,2-Dichloropropane	U	22.3	24.0	108	23.9	24.1	101	0.555	70 - 120	30	
1,3,5-Trimethylbenzene	U	22.3	27.6	124	23.9	26.3	110	5.14	65 - 135	30	
1,3-Dichlorobenzene	U	22.3	24.2	109	23.9	23.6	99	2.56	70 - 125	30	
1,3-Dichloropropane	U	22.3	23.6	106	23.9	24.1	101	1.99	75 - 125	30	
1,4-Dichlorobenzene	U	22.3	24.5	110	23.9	23.3	97.6	5.21	70 - 125	30	
2,2-Dichloropropane	U	22.3	24.2	109	23.9	23.8	99.9	1.67	65 - 135	30	
2-Butanone	U	22.3	23.4	105	23.9	24.5	103	4.63	30 - 160	30	
2-Chlorotoluene	U	22.3	25.9	117	23.9	24.5	102	5.95	70 - 130	30	
2-Hexanone	U	22.3	20.9	93.9	23.9	21.3	89.1	1.64	45 - 145	30	
4-Chlorotoluene	U	22.3	26.1	117	23.9	25.9	108	0.809	75 - 125	30	
4-Methyl-2-pentanone	U	22.3	21.6	97.1	23.9	22.0	92.3	1.86	45 - 145	30	
Acetone	6.11	22.3	28.9	102	23.9	29.6	98.4	2.29	20 - 160	30	
Benzene	U	22.3	23.4	105	23.9	23.4	98.1	0.131	75 - 125	30	
Bromobenzene	U	22.3	24.6	110	23.9	24.3	102	1.04	65 - 120	30	
Bromochloromethane	U	22.3	22.5	101	23.9	22.8	95.6	1.27	70 - 125	30	
Bromodichloromethane	U	22.3	22.5	101	23.9	23.0	96.3	1.86	70 - 130	30	
Bromoform	U	22.3	19.0	85.3	23.9	19.5	81.8	2.71	55 - 135	30	
Bromomethane	U	22.3	22.8	103	23.9	23.3	97.8	2.19	30 - 160	30	
Carbon disulfide	U	22.3	21.3	95.9	23.9	22.4	93.9	4.90	45 - 160	30	
Carbon tetrachloride	U	22.3	23.2	104	23.9	23.2	97.1	0.0097	65 - 135	30	
Chlorobenzene	U	22.3	24.3	109	23.9	24.7	103	1.73	75 - 125	30	
Chloroethane	U	22.3	25.6	115	23.9	25.4	106	0.970	40 - 155	30	
Chloroform	U	22.3	23.8	107	23.9	23.9	100	0.620	70 - 125	30	
Chloromethane	U	22.3	22.3	100	23.9	22.1	92.4	1.03	50 - 130	30	
cis-1,2-Dichloroethene	U	22.3	24.3	109	23.9	24.6	103	1.27	65 - 125	30	
cis-1,3-Dichloropropene	U	22.3	24.9	112	23.9	24.8	104	0.590	70 - 125	30	

MS_MSD - Modified 03/06/2008
PDF File ID: 4755298
Report generated 05/12/2016 14:55

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16041580 Cal ID: HPMS9 04-MAY-16 Worknum: WG567680

Instrument ID: HPMS9 Contract #: Prep Method: 5030B/5030C/

Parent ID: L16041580-06 File ID: 9M974170 Dil: 1 Method: 5035A

Sample ID: L16041580-07 MS File ID: 9M974167 Dil: 1 Matrix: 8260B

Sample ID: L16041580-08 MSD File ID: 9M974168 Dil: 1 Units: Soil

ug/kg

Percent Solid: 83.5

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chlorodibromomethane	U	22.3	22.0	98.8	23.9	21.6	90.3	2.02	65 - 130	30	
Dibromomethane	U	22.3	20.6	92.3	23.9	20.8	87	0.973	75 - 130	30	
Dichlorodifluoromethane	U	22.3	26.3	118	23.9	25.8	108	2.07	35 - 135	30	
Ethylbenzene	U	22.3	24.9	112	23.9	24.6	103	1.25	75 - 125	30	
Hexachlorobutadiene	U	22.3	23.3	105	23.9	20.9	87.7	10.7	55 - 140	30	
Isopropylbenzene	U	22.3	25.2	113	23.9	24.9	104	1.26	75 - 130	30	
m-,p-Xylene	U	44.5	48.9	110	47.7	48.0	100	1.97	80 - 125	30	
Methylene chloride	U	22.3	22.3	100	23.9	23.0	96.5	3.35	55 - 140	30	
n-Butylbenzene	U	22.3	24.5	110	23.9	23.2	97.2	5.30	65 - 140	30	
n-Propylbenzene	U	22.3	29.3	132	23.9	28.1	118	4.22	65 - 135	30	
Naphthalene	U	22.3	18.8	84.3	23.9	18.0	75.3	4.36	40 - 125	30	
o-Xylene	U	22.3	24.6	110	23.9	24.1	101	2.11	75 - 125	30	
p-Isopropyltoluene	U	22.3	26.6	120	23.9	25.3	106	5.13	75 - 135	30	
sec-Butylbenzene	U	22.3	26.3	118	23.9	24.7	104	6.20	65 - 130	30	
Styrene	U	22.3	23.7	106	23.9	23.9	100	0.961	75 - 125	30	
tert-Butylbenzene	U	22.3	27.3	123	23.9	26.9	113	1.67	65 - 130	30	
Tetrachloroethene	U	22.3	23.8	107	23.9	23.9	100	0.470	65 - 140	30	
Toluene	U	22.3	23.8	107	23.9	23.6	98.9	0.718	70 - 125	30	
trans-1,2-Dichloroethene	U	22.3	24.4	109	23.9	25.0	105	2.52	65 - 135	30	
trans-1,3-Dichloropropene	U	22.3	23.0	103	23.9	23.0	96.4	0.174	65 - 125	30	
Trichloroethene	U	22.3	24.6	111	23.9	24.5	103	0.590	75 - 125	30	
Trichlorofluoromethane	U	22.3	24.6	110	23.9	24.3	102	1.24	25 - 185	30	
Vinyl chloride	U	22.3	27.1	122	23.9	26.8	112	1.09	60 - 125	30	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4755298
Report generated 05/12/2016 14:55

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16041580
Instrument: HPMS8
Analyst: JDS
Workgroup: WG566154

Tune ID: WG566154-01
Run Date: 04/24/2016
Run Time: 16:45
File ID: 8M411681
Cal ID: HPMS8 - 24-APR-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	29.7	11578	PASS
75.0	95.0	30.0	60.0	54.6	21298	PASS
95.0	95.0	100	100	100	39034	PASS
96.0	95.0	5.00	9.00	6.34	2474	PASS
173	174	0	2.00	1.15	333	PASS
174	95.0	50.0	100	74.1	28941	PASS
175	174	5.00	9.00	6.71	1943	PASS
176	174	95.0	101	99.4	28765	PASS
177	176	5.00	9.00	5.88	1691	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG566154-02	STD	01	04/24/2016 17:10	
WG566154-03	STD	01	04/24/2016 17:39	
WG566154-04	STD-CCV	01	04/24/2016 18:08	
WG566154-05	STD	01	04/24/2016 18:37	
WG566154-06	STD	01	04/24/2016 19:06	
WG566154-07	STD	01	04/24/2016 19:36	
WG566154-08	STD	01	04/24/2016 20:05	
WG566154-09	STD	01	04/24/2016 20:34	
WG566154-10	SSCV	01	04/24/2016 22:02	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4752349
Report generated 05/12/2016 14:55

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16041580
Instrument: HPMS8
Analyst: ADC
Workgroup: WG566682

Tune ID: WG566682-01
Run Date: 04/28/2016
Run Time: 07:05
File ID: 8M411789
Cal ID: HPMS8 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	25.9	11810	PASS
75.0	95.0	30.0	60.0	52.9	24061	PASS
95.0	95.0	100	100	100	45522	PASS
96.0	95.0	5.00	9.00	5.64	2567	PASS
173	174	0	2.00	0.332	118	PASS
174	95.0	50.0	100	78.1	35560	PASS
175	174	5.00	9.00	7.55	2684	PASS
176	174	95.0	101	95.4	33930	PASS
177	176	5.00	9.00	6.95	2358	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG566682-02	STD	01	04/28/2016 07:58	
WG566682-03	STD	01	04/28/2016 08:27	
WG566682-04	STD	01	04/28/2016 08:56	
WG566682-05	STD	01	04/28/2016 09:26	
WG566682-06	STD	01	04/28/2016 09:55	
WG566682-07	STD	01	04/28/2016 10:24	
WG566682-08	STD-CCV	01	04/28/2016 10:54	
WG566682-09	STD	01	04/28/2016 11:23	
WG566682-10	STD	01	04/28/2016 11:52	
WG566682-11	STD	01	04/28/2016 12:21	
WG566682-12	SSCV	01	04/28/2016 14:08	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4752349
Report generated 05/12/2016 14:55

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16041580
Instrument: HPMS8
Analyst: TMB
Workgroup: WG567934

Tune ID: WG567934-01
Run Date: 05/07/2016
Run Time: 11:41
File ID: 8M412046
Cal ID: HPMS8 - 28-APR-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	34.8	9756	PASS
75.0	95.0	30.0	60.0	59.8	16761	PASS
95.0	95.0	100	100	100	28050	PASS
96.0	95.0	5.00	9.00	6.21	1742	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	83.2	23343	PASS
175	174	5.00	9.00	7.08	1652	PASS
176	174	95.0	101	97.4	22736	PASS
177	176	5.00	9.00	7.16	1627	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG567934-02	CCV	01	05/07/2016 12:05	
WG567935-01	BLANK	01	05/07/2016 13:02	
L16041580-14	EQUIPMENT BLANK	01	05/07/2016 13:31	
WG567935-02	LCS	01	05/07/2016 22:15	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4752349
Report generated 05/12/2016 14:55

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16041580
Instrument: HPMS9
Analyst: FJB
Workgroup: WG555000

Tune ID: WG555000-01
Run Date: 01/25/2016
Run Time: 10:27
File ID: 9M972470
Cal ID: HPMS9 - 25-JAN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	23.0	10289	PASS
75.0	95.0	30.0	60.0	49.3	22030	PASS
95.0	95.0	100	100	100	44728	PASS
96.0	95.0	5.00	9.00	6.98	3122	PASS
173	174	0	2.00	0.381	160	PASS
174	95.0	50.0	100	93.9	41989	PASS
175	174	5.00	9.00	6.62	2778	PASS
176	174	95.0	101	95.6	40133	PASS
177	176	5.00	9.00	6.39	2564	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG555000-02	STD-S	01	01/25/2016 11:22	
WG555000-03	STD-S	01	01/25/2016 11:52	
WG555000-04	STD-S	01	01/25/2016 12:23	
WG555000-05	STD-CCV-S	01	01/25/2016 12:53	
WG555000-06	STD-S	01	01/25/2016 13:23	
WG555000-07	STD-S	01	01/25/2016 13:54	
WG555000-08	STD-S	01	01/25/2016 14:25	
WG555000-09	STD-S	01	01/25/2016 14:56	
WG555000-10	SSCV-S	01	01/25/2016 15:56	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4755300
Report generated 05/12/2016 14:56

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16041580
Instrument: HPMS9
Analyst: ADC
Workgroup: WG567358

Tune ID: WG567358-01
Run Date: 05/04/2016
Run Time: 11:25
File ID: 9M974137
Cal ID: HPMS9 - 04-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.9	8610	PASS
75.0	95.0	30.0	60.0	47.6	17874	PASS
95.0	95.0	100	100	100	37554	PASS
96.0	95.0	5.00	9.00	7.31	2747	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	86.0	32312	PASS
175	174	5.00	9.00	7.32	2364	PASS
176	174	95.0	101	97.4	31461	PASS
177	176	5.00	9.00	5.94	1870	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG567358-03	STD-S	01	05/04/2016 12:51	
WG567358-04	STD-S	01	05/04/2016 13:21	
WG567358-05	STD-S	01	05/04/2016 13:52	
WG567358-06	STD-S	01	05/04/2016 14:23	
WG567358-07	STD-S	01	05/04/2016 14:53	
WG567358-09	STD-S	01	05/04/2016 15:54	
WG567358-10	STD-S	01	05/04/2016 16:24	
WG567358-08	STD-S	01	05/04/2016 17:25	
WG567358-02	STD-CCV-S	01	05/04/2016 17:56	
WG567358-11	SSCV-S	01	05/04/2016 18:59	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4755300
Report generated 05/12/2016 14:56

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16041580
Instrument: HPMS9
Analyst: ADC
Workgroup: WG567630

Tune ID: WG567630-01
Run Date: 05/05/2016
Run Time: 09:51
File ID: 9M974161
Cal ID: HPMS9 - 04-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.4	10328	PASS
75.0	95.0	30.0	60.0	46.1	22204	PASS
95.0	95.0	100	100	100	48200	PASS
96.0	95.0	5.00	9.00	6.93	3341	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	87.1	41965	PASS
175	174	5.00	9.00	7.28	3055	PASS
176	174	95.0	101	98.0	41133	PASS
177	176	5.00	9.00	6.53	2685	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG567630-02	CCV-S	01	05/05/2016 11:29	
WG567680-01	BLANK	01	05/05/2016 12:32	
WG567680-02	LCS	01	05/05/2016 13:02	
L16041580-07	18CPTMW22DW(50-51)260416MS	01	05/05/2016 13:34	
L16041580-08	18CPTMW22DW(50-51)260416MSD	01	05/05/2016 14:04	
L16041580-06	18CPTMW22DW(50-51)260416	01	05/05/2016 15:04	
L16041580-01	18CPTMW22DW(5-5.5)260416	01	05/05/2016 15:35	
L16041580-02	18CPTMW22DW(10-10.5)260416	01	05/05/2016 16:06	
L16041580-03	18CPTMW22DW(20-20.5)260416	01	05/05/2016 16:37	
L16041580-04	18CPTMW22DW(29.5-30)260416	01	05/05/2016 17:08	
L16041580-05	18CPTMW22DW(40-40.5)260416	01	05/05/2016 17:40	
L16041580-09	18CPTMW22DW(60-60.5)260416	01	05/05/2016 18:10	
L16041580-10	18CPTMW22DW(60-60.5)260416DUP	01	05/05/2016 18:40	
L16041580-11	18CPTMW22DW(70-70.5)260416	01	05/05/2016 19:10	
L16041580-12	18CPTMW22DW(80-80.5)260416	01	05/05/2016 19:41	
L16041580-13	18CPTMW22DW(89.5-90)260416	01	05/05/2016 20:12	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4755300
Report generated 05/12/2016 14:56

Calibration Table Report
Method: A9FOOWTR.M
Title: A9-FOO Water SOP:MSV01 04-24-16 HPMS8
Last Calibration: Wed Apr 27 16:38:22 2016
Curve: WG566154
Calibration Files

Compound	5 8M411682.D	20 8M411683.D	50 8M411684.D	100 8M411685.D	200 8M411686.D	300 8M411687.D	400 8M411688.D	500 8M411689.D	Avg	%RSD	Linear	Quad
Fluorobenzene	ISTD											
Acetonitrile	0.015	0.021	0.025	0.021	0.023	0.021	0.022	0.020	0.021	14.242		
3-Chloro-1-propene	0.700	0.851	0.809	0.812	0.854	0.828	0.748	0.723	0.791	7.496		
2-Chloro-1,3-butadiene	0.628	0.756	0.714	0.729	0.800	0.779	0.702	0.702	0.726	7.386		
Ethyl Acetate	0.150	0.220	0.239	0.217	0.234	0.228	0.227	0.209	0.215	12.995		
Methacrylonitrile	0.037	0.060	0.065	0.062	0.064	0.063	0.062	0.057	0.059	15.761	0.997	
Isobutyl Alcohol			0.006	0.005	0.005	0.005	0.005	0.005	0.005	10.922		
1-Butanol									0.000	0.000		
Methyl methacrylate	0.132	0.215	0.225	0.217	0.232	0.226	0.224	0.207	0.210	15.492	0.998	
2-Nitropropane			0.072	0.067	0.074	0.074	0.075	0.069	0.072	4.567		
Chlorobenzene-d5	ISTD											
1,4-Dichlorobenzene-d4	ISTD											
Cyclohexanone			0.017	0.015	0.017	0.017	0.016	0.017	0.017	5.604		

Wed Apr 27 16:46:49 2016

Calibration Table Report
Method: 8260WTR.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Calibration: Thu Apr 28 15:05:04 2016
Curve: WG566682
Calibration Files

	Compound	0.3 8M411791.D	0.4 8M411792.D	1 8M411793.D	2 8M411794.D	5 8M411795.D	20 8M411796.D	50 8M411797.D	100 8M411798.D	200 8M411799.D	300 8M411800.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane		0.522	0.507	0.479	0.475	0.551	0.563	0.559	0.547	0.511	0.524	6.325		
P	Chloromethane			0.591	0.533	0.461	0.461	0.480	0.485	0.484	0.454	0.494	9.377		
C	Vinyl Chloride		0.331	0.314	0.311	0.311	0.313	0.336	0.361	0.367	0.356	0.333	6.924		
T	1,3-Butadiene				0.317	0.284	0.315	0.337	0.356	0.341	0.331	0.326	7.154		
T	Bromomethane			0.146	0.151	0.170	0.189	0.215	0.232	0.246	0.245	0.199	20.645	0.997	
T	Chloroethane		0.211	0.209	0.220	0.241	0.215	0.220	0.219	0.221	0.208	0.218	4.527		
T	Trichlorofluoromethane		0.645	0.649	0.672	0.660	0.644	0.665	0.681	0.679	0.659	0.662	2.129		
T	Diethyl ether			0.207	0.198	0.204	0.205	0.203	0.204		0.196	0.202	2.010		
T	Isoprene		0.343	0.319	0.337	0.345	0.344	0.347	0.342	0.341	0.329	0.339	2.677		
T	Acrolein				0.014	0.017	0.017	0.018	0.020		0.021	0.018	13.483		
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.280	0.315	0.312	0.293	0.305	0.310	0.311	0.297	0.303	3.951		
T	Acetone					0.068	0.066	0.060	0.054	0.064	0.056	0.061	9.101		
C	1,1-Dichloroethene		0.608	0.591	0.593	0.608	0.571	0.583	0.599	0.588	0.551	0.588	3.077		
T	Tert-Butyl Alcohol				0.013	0.015	0.014	0.014	0.015		0.013	0.014	5.268		
T	Dimethyl Sulfide		0.174	0.203	0.229	0.230	0.225	0.227	0.225	0.224	0.217	0.217	8.334		
T	Iodomethane			0.061	0.058	0.078	0.107	0.145	0.155	0.167	0.161	0.116	39.605		0.999
T	Methyl acetate					0.205	0.187	0.181	0.182	0.179	0.167	0.183	6.888		
T	Methylene Chloride			0.336	0.276	0.289	0.267	0.270	0.268	0.267	0.256	0.279	8.940		
T	Carbon Disulfide			0.877	0.880	0.883	0.863	0.863	0.844	0.815	0.776	0.850	4.396		
T	Acrylonitrile			0.066	0.071	0.077	0.078	0.084	0.086		0.090	0.079	10.857		
T	Methyl Tert Butyl Ether			0.549	0.579	0.623	0.612	0.633	0.652	0.666	0.610	0.616	6.156		
T	trans-1,2-Dichloroethene		0.508	0.584	0.557	0.539	0.510	0.530	0.534	0.529	0.494	0.532	5.096		
T	n-Hexane					0.506	0.492	0.494	0.482	0.472	0.449	0.483	4.137		
T	Diisopropyl ether			1.478	1.378	1.427	1.399	1.388	1.317		1.178	1.366	7.057		
T	Vinyl Acetate				0.542	0.556	0.552	0.575	0.570	0.535	0.509	0.549	4.067		
P	1,1-Dichloroethane		0.638	0.655	0.676	0.666	0.617	0.635	0.635	0.623	0.581	0.636	4.428		
T	Ethyl-Tert-Butyl ether			0.967	0.949	0.978	0.975	0.965	0.962		0.916	0.959	2.230		
T	2-Butanone					0.100	0.095	0.099	0.098	0.102	0.095	0.098	2.822		
T	Propionitrile			0.018	0.025	0.026	0.026	0.027	0.027		0.026	0.025	12.077		
T	2,2-Dichloropropane		0.575	0.592	0.554	0.572	0.541	0.549	0.565	0.564	0.530	0.560	3.384		
T	cis-1,2-Dichloroethene		0.324	0.346	0.310	0.347	0.309	0.307	0.314	0.313	0.294	0.318	5.603		
C	Chloroform	0.631	0.560	0.618	0.603	0.604	0.569	0.586	0.595	0.590	0.547	0.590	4.374		
T	1-Bromopropane			0.044	0.045	0.052	0.051	0.052	0.052	0.053	0.052	0.050	6.886		
T	Bromochloromethane		0.130	0.169	0.178	0.167	0.170	0.170	0.174	0.175	0.165	0.167	8.487		
T	Tetrahydrofuran			0.078	0.063	0.064	0.065	0.062	0.063		0.059	0.065	9.373		
S	Dibromofluoromethane			0.325	0.330	0.313	0.295	0.319	0.310	0.318	0.301	0.314	3.775		
T	1,1,1-Trichloroethane		0.572	0.576	0.611	0.620	0.570	0.597	0.610	0.616	0.584	0.595	3.367		
T	Cyclohexane			0.638	0.706	0.660	0.657	0.658	0.644	0.632	0.600	0.650	4.631		
T	1,1-Dichloropropene			0.373	0.463	0.444	0.417	0.439	0.439	0.438	0.413	0.428	6.334		
T	Tert-Amyl-Methyl ether			0.610	0.599	0.615	0.624	0.617	0.626		0.609	0.614	1.522		
T	Carbon Tetrachloride		0.54	0.531	0.529	0.575	0.544	0.575	0.59	0.593	0.562	0.5599	4.45795		
S	1,2-Dichloroethane-d4			0.339	0.321	0.376	0.356	0.377	0.373	0.377	0.352	0.3591	5.81799		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.531	0.48	0.501	0.49	0.481	0.493	0.507	0.509	0.47	0.4958	3.74245		
T	Benzene		1.235	1.134	1.169	1.125	1.087	1.096	1.069	1.003	0.9	1.091	8.84885		
T	Trichloroethene		0.309	0.316	0.322	0.321	0.306	0.315	0.321	0.32	0.304	0.3149	2.22363		
T	Methylcyclohexane					0.44	0.437	0.454	0.444	0.441	0.425	0.4402	2.15111		
C	1,2-Dichloropropane		0.335	0.307	0.337	0.329	0.307	0.315	0.319	0.314	0.296	0.3176	4.35963		
T	Bromodichloromethane		0.442	0.406	0.426	0.458	0.436	0.448	0.463	0.463	0.435	0.4419	4.23502		
T	1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.0013	13.943		
T	Dibromomethane		0.109	0.151	0.157	0.155	0.152	0.152	0.158	0.16	0.151	0.1495	10.424		
T	2-Chloroethyl Vinyl Ether				0.116	0.132	0.137	0.138	0.136	0.14	0.133	0.133	5.9858		
T	4-Methyl-2-Pentanone					0.068	0.068	0.072	0.074	0.079	0.075	0.0726	5.72689		
T	cis-1,3-Dichloropropene		0.374	0.454	0.447	0.462	0.45	0.46	0.466	0.461	0.43	0.4447	6.47719		

T	Dimethyl Disulfide					0.208	0.228	0.233	0.243	0.247	0.24	0.233	6.06187
I	Chlorobenzene-d5	ISTD											
S	Toluene-d8			1.317	1.293	1.364	1.281	1.39	1.292	1.24	1.164	1.2927	5.45457
C	Toluene		1.553	1.601	1.635	1.63	1.501	1.55	1.48	1.338	1.185	1.4971	9.91225
T	Ethyl Methacrylate			0.253	0.252	0.273	0.294	0.301	0.301	0.294	0.279	0.2809	7.1387
T	Paraldehyde											0	0
T	trans-1,3-Dichloropropene			0.487	0.522	0.532	0.524	0.541	0.545	0.529	0.498	0.5223	3.85828
T	1,1,2-Trichloroethane		0.228	0.196	0.253	0.253	0.242	0.248	0.245	0.244	0.23	0.2376	7.61886
T	2-Hexanone					0.075	0.085	0.09	0.088	0.089	0.085	0.0853	6.33709
T	1,3-Dichloropropane		0.447	0.444	0.477	0.448	0.433	0.449	0.439	0.429	0.4	0.4406	4.66138
T	Tetrachloroethene		0.327	0.351	0.318	0.362	0.334	0.343	0.348	0.34	0.329	0.339	3.98079
T	Dibromochloromethane		0.289	0.352	0.394	0.389	0.369	0.392	0.404	0.4	0.383	0.3745	9.58661
T	1,2-Dibromoethane		0.226	0.215	0.249	0.253	0.253	0.264	0.263	0.259	0.246	0.2476	6.77276
T	1-Chlorohexane		0.513	0.469	0.542	0.543	0.517	0.528	0.509	0.49	0.478	0.5099	5.16886
P	Chlorobenzene		1.055	1.066	1.107	1.158	1.041	1.068	1.024	0.955	0.881	1.0395	7.82938
T	1,1,1,2-Tetrachloroethane		0.339	0.373	0.429	0.426	0.396	0.424	0.425	0.422	0.412	0.4051	7.58799
C	Ethylbenzene		0.64	0.603	0.607	0.617	0.568	0.588	0.581	0.561	0.543	0.5898	5.12115
T	m-,p-Xylene		0.665	0.707	0.738	0.741	0.693	0.713	0.68	0.62	0.56	0.6795	8.57611
T	o-Xylene			0.717	0.729	0.711	0.657	0.71	0.685	0.649	0.618	0.6846	5.74055
T	Styrene		1.045	1.16	1.15	1.158	1.089	1.156	1.103	1.027	0.938	1.0916	6.97584
P	Bromoform			0.177	0.203	0.205	0.214	0.226	0.232	0.238	0.224	0.2149	9.11243
T	Isopropylbenzene		1.662	1.848	1.912	1.922	1.763	1.844	1.758	1.563	1.349	1.7356	10.6999
I	1,4-Dichlorobenzene-d4	ISTD											
P	1,1,2,2-Tetrachloroethane		0.56	0.456	0.537	0.491	0.473	0.491	0.515	0.501	0.464	0.4987	6.82842
S	p-Bromofluorobenzene				1.013	1.057	0.984	1.036	1.042	1.036	0.995	1.0233	2.59873
T	1,2,3-Trichloropropane			0.158	0.136	0.17	0.158	0.159	0.169	0.171	0.161	0.1602	7.11331
T	trans-1,4-Dichloro-2-Butene			0.218	0.227	0.234	0.244	0.247	0.264	0.26	0.25	0.2429	6.58905
T	n-Propylbenzene		4.376	4.118	4.164	4.188	3.974	3.927	3.863	3.285	2.779	3.8527	13.1356
T	Bromobenzene	0.842	0.783	0.673	0.87	0.887	0.779	0.808	0.83	0.797	0.763	0.8032	7.56985
T	1,3,5-Trimethylbenzene		2.765	2.982	3.05	3.034	2.909	2.931	2.966	2.665	2.358	2.851	7.81959
T	2-Chlorotoluene		2.342	2.583	2.754	2.629	2.464	2.437	2.518	2.237	2.241	2.4672	7.10091
T	4-Chlorotoluene		2.895	2.755	2.762	2.731	2.55	2.562	2.532	2.303	1.785	2.5416	13.0833
T	a-Methylstyrene					1.44	1.427	1.423	1.47	1.36	1.31	1.4048	4.17798
T	tert-Butylbenzene			0.503	0.57	0.594	0.573	0.578	0.586	0.565	0.55	0.5649	4.97872
T	1,2,4-Trimethylbenzene		3.127	2.846	3.184	3.156	2.922	3.01	2.995	2.669	2.354	2.9182	9.15355
T	sec-Butylbenzene			3.616	3.904	3.762	3.504	3.509	3.477	3.028	2.624	3.4281	12.0497
T	p-Isopropyltoluene			3.093	3.082	3.209	2.957	3.021	3.03	2.661	2.36	2.9268	9.52197
T	1,3-Dichlorobenzene		1.725	1.605	1.684	1.649	1.568	1.606	1.606	1.494	1.411	1.5943	5.98394
T	1,4-Dichlorobenzene	1.564	1.798	1.602	1.672	1.702	1.557	1.556	1.599	1.485	1.377	1.5913	7.31329
T	n-Butylbenzene			2.901	3.094	3.088	2.815	2.859	2.834	2.488	2.194	2.784	10.921
T	1,2-Dichlorobenzene	1.362	1.401	1.435	1.488	1.478	1.385	1.39	1.428	1.35	1.255	1.3972	4.83699
T	1,2-Dibromo-3-Chloropropane				0.112	0.096	0.109	0.104	0.117	0.117	0.11	0.1092	6.68132
T	1,2,4-Trichlorobenzene		1.188	1.053	1.146	1.1	1.064	1.068	1.111	1.038	0.971	1.0821	5.8761
T	Hexachlorobutadiene		0.512	0.455	0.502	0.511	0.483	0.502	0.527	0.512	0.504	0.5008	4.16025
T	Naphthalene		1.688	1.482	1.736	1.713	1.683	1.668	1.76	1.624	1.454	1.6454	6.55749
T	1,2,3-Trichlorobenzene	0.92	1.026	0.944	0.942	0.946	0.884	0.897	0.937	0.884	0.825	0.9206	5.77363

Thu Apr 28 15:14:32 2016

Calibration Table Report
Method: A9FOO_SL.M
Title: FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Calibration: Wed Jan 27 09:49:02 2016
Curve: WG555000
Calibration Files

Compound	5 9M972472.D	20 9M972473.D	50 9M972474.D	100 9M972475.D	200 9M972476.D	300 9M972477.D	400 9M972478.D	500 9M972479.D	Avg	%RSD	R^2 Linear
Fluorobenzene	ISTD										
Acetonitrile		0.053	0.046	0.048	0.052	0.046	0.052	0.054	0.050	6.657	
3-Chloro-1-propene	0.498	0.524	0.450	0.519	0.514	0.434	0.507	0.503	0.494	6.719	
2-Chloro-1,3-butadiene	0.534	0.576	0.519	0.592	0.585	0.509	0.593	0.584	0.561	6.202	
Ethyl Acetate		0.333	0.313	0.339	0.338	0.300	0.341	0.344	0.330	5.124	
Methacrylonitrile	0.102	0.109	0.101	0.112	0.110	0.096	0.112	0.112	0.107	5.912	
Isobutyl Alcohol	0.014	0.018	0.018	0.021	0.024	0.021	0.025	0.025	0.021	18.016	0.993
1-Butanol		0.010	0.013	0.015	0.017	0.015	0.018	0.018	0.015	17.838	0.992
Methyl methacrylate	0.236	0.246	0.231	0.265	0.265	0.231	0.271	0.269	0.252	7.005	
2-Nitropropane	0.069	0.073	0.074	0.083	0.089	0.079	0.093	0.095	0.082	12.090	
Chlorobenzene-d5	ISTD										
Cyclohexanone		0.020	0.022	0.025	0.028	0.023	0.027	0.028	0.025	12.963	
1,4-Dichlorobenzene-d4	ISTD										

Wed Jan 27 10:01:56 2016

Calibration Table Report
Method: 8260SL.M
Title: 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Calibration: Thu May 05 08:58:14 2016
Curve: WG567358
Calibration Files

Compound	0.5 9M974140.D	1 9M974141.D	2 9M974142.D	5 9M974143.D	20 9M974144.D	50 9M974150.D	100 9M974149.D	200 9M974146.D	300 9M974147.D	Avg	%RSD	R^2 Linear	Quadratic
Fluorobenzene	ISTD												
Dichlorodifluoromethane			0.390	0.271	0.365	0.363	0.341	0.324	0.335	0.341	11.126		
Chloromethane			0.511	0.374	0.408	0.375	0.369	0.447	0.459	0.421	12.810		
Vinyl Chloride		0.256	0.447	0.326	0.389	0.277	0.310	0.225	0.237	0.308	25.037		0.993
1,3-Butadiene		0.268	0.316	0.200	0.212	0.168	0.161			0.221	27.245	0.990	
Bromomethane		0.187	0.275	0.189	0.220	0.217	0.192	0.197	0.207	0.211	13.661		
Chloroethane			0.227	0.165	0.200	0.206	0.188	0.204	0.215	0.201	9.879		
Trichlorofluoromethane		0.385	0.503	0.389	0.442	0.444	0.407	0.422	0.433	0.428	8.802		
Diethyl ether		0.211	0.203	0.242	0.261	0.264	0.234		0.271	0.241	11.065		
Isoprene			0.381	0.302	0.327	0.348	0.318	0.345	0.362	0.340	7.909		
Acrolein		0.033	0.035	0.041	0.041	0.047	0.044			0.040	13.389		
1,1,2-Trichloro-1,2,2-Trifluoroet			0.274	0.217	0.251	0.263	0.242	0.249	0.260	0.251	7.285		
Acetone				0.141	0.105	0.099	0.085	0.089	0.093	0.102	20.132	0.998	
1,1-Dichloroethene		0.351	0.499	0.364	0.439	0.437	0.398	0.423	0.433	0.418	11.215		
Tert-Butyl Alcohol			0.036	0.043	0.048	0.048	0.042			0.043	11.593		
Dimethyl Sulfide		0.119	0.202	0.176	0.192	0.196	0.181	0.205	0.213	0.185	15.830	0.997	
Iodomethane				0.076	0.119	0.141	0.144	0.192	0.204	0.146	32.323		1.000
Methyl acetate			0.308	0.248	0.267	0.283	0.248	0.260	0.274	0.270	7.864		
Methylene Chloride			0.318	0.241	0.263	0.262	0.236	0.262	0.273	0.265	10.185		
Carbon Disulfide			1.050	0.706	0.799	0.806	0.731	0.805	0.834	0.819	13.633		
Acrylonitrile		0.104	0.092	0.114	0.125	0.136	0.121			0.115	13.591		
Methyl Tert Butyl Ether		0.639	0.879	0.671	0.784	0.768	0.683	0.732	0.765	0.740	10.337		
trans-1,2-Dichloroethene		0.352	0.489	0.348	0.422	0.418	0.382	0.411	0.424	0.406	11.209		
n-Hexane			0.605	0.419	0.434	0.473	0.462	0.465	0.501	0.480	12.728		
Diisopropyl ether		0.851	0.810	0.945	1.039	1.030	0.915		1.050	0.949	10.103		
Vinyl Acetate			0.593	0.435	0.509	0.552	0.487	0.502	0.526	0.515	9.675		
1,1-Dichloroethane		0.435	0.615	0.443	0.525	0.510	0.463	0.500	0.520	0.501	11.447		
Ethyl-Tert-Butyl ether		0.806	0.767	0.901	0.986	0.982	0.873		1.005	0.903	10.347		
2-Butanone				0.125	0.145	0.153	0.136	0.140	0.150	0.141	7.359		
Propionitrile		0.027	0.035	0.043	0.046	0.049	0.044		0.052	0.042	20.124	0.993	
2,2-Dichloropropane			0.460	0.327	0.369	0.383	0.355	0.363	0.378	0.376	10.912		
cis-1,2-Dichloroethene		0.233	0.299	0.238	0.282	0.282	0.255	0.279	0.289	0.269	9.090		
Chloroform		0.355	0.491	0.375	0.450	0.441	0.398	0.432	0.450	0.424	10.600		
1-Bromopropane			0.052	0.036	0.044	0.047	0.044	0.047	0.050	0.046	11.302		
Bromochloromethane		0.142	0.193	0.150	0.182	0.183	0.163	0.177	0.187	0.172	10.702		
Tetrahydrofuran			0.086	0.098	0.105	0.110	0.095		0.105	0.100	8.776		
Dibromofluoromethane				0.245	0.236	0.272	0.271	0.255		0.256	6.204		
1,1,1-Trichloroethane		0.306	0.463	0.323	0.391	0.391	0.356	0.386	0.398	0.377	12.952		
Cyclohexane		0.537	0.665	0.477	0.539	0.573	0.522	0.565	0.587	0.558	9.900		
1,1-Dichloropropene		0.268	0.379	0.286	0.342	0.345	0.315	0.335	0.344	0.327	10.964		
Tert-Amyl-Methyl ether		0.618	0.581	0.684	0.740	0.754	0.670		0.766	0.688	10.250		
Carbon Tetrachloride			0.42915	0.30485	0.37148	0.37912	0.34546	0.36843	0.38127	0.36854	10.2405		
1,2-Dichloroethane-d4				0.28316	0.2557	0.28553	0.29145	0.26749		0.27667	5.30977		
Heptane										0	0		
1,2-Dichloroethane		0.33194	0.44394	0.35005	0.40263	0.38524	0.34734	0.37417	0.3864	0.37772	9.45842		
Benzene	1.1427	0.90401	1.21702	0.87247	1.03155	1.01185	0.91502	0.98294	1.01671	1.01047	11.113		
Trichloroethene		0.24963	0.32595	0.2361	0.28591	0.28707	0.26189	0.27526	0.2878	0.2762	10.0017		
Methylcyclohexane		0.40922	0.50697	0.36895	0.41758	0.46125	0.42334	0.4467	0.46736	0.43767	9.6407		
1,2-Dichloropropane		0.23785	0.33589	0.23992	0.28853	0.28543	0.25699	0.28259	0.29598	0.2779	11.6722		
1,4-Dioxane			0.00245	0.00314	0.00389	0.00409	0.00406			0.00353	20.3177	0.997	
Bromodichloromethane			0.37381	0.27295	0.33673	0.33659	0.3072	0.33929	0.3572	0.33197	9.9766		
Dibromomethane		0.11206	0.18681	0.14117	0.17637	0.17649	0.15615	0.17153	0.18069	0.16266	15.4673	0.997	
2-Chloroethyl Vinyl Ether			0.16045	0.13319	0.16432	0.18158	0.16402	0.17292	0.18374	0.16575	10.2107		
4-Methyl-2-Pentanone				0.10441	0.12536	0.13694	0.1193	0.13	0.14154	0.12626	10.5573		
cis-1,3-Dichloropropene			0.45547	0.32512	0.40553	0.41223	0.37415	0.40266	0.42341	0.3998	10.2558		
Dimethyl Disulfide			0.42947	0.37726	0.44739	0.48272	0.4486	0.49534	0.498	0.45411	9.4436		
Chlorobenzene-d5	ISTD												
Toluene-d8				1.1459	1.10711	1.28526	1.26755	1.1667		1.1945	6.53112		
Toluene	1.62265	1.33007	1.6695	1.19104	1.42249	1.43605	1.27607	1.3549	1.33212	1.40388	11.1045		
Ethyl Methacrylate				0.31881	0.42265	0.46027	0.4124	0.45245	0.46274	0.42155	12.902		
trans-1,3-Dichloropropene			0.53162	0.41382	0.49439	0.5095	0.46218	0.48605	0.48818	0.48368	7.75778		
1,1,2-Trichloroethane		0.2236	0.3387	0.25902	0.30238	0.30493	0.26832	0.28795	0.28934	0.28428	12.1341		
2-Hexanone				0.22607	0.27898	0.30911	0.27189	0.31012	0.33177	0.28799	13.017		
1,3-Dichloropropane		0.45841	0.58904	0.43327	0.52461	0.50992	0.44955	0.48271	0.48543	0.49162	10.1148		
Tetrachloroethene		0.2649	0.33114	0.25683	0.29646	0.306	0.27712	0.28975	0.28738	0.2887	8.15468		
Dibromochloromethane			0.39396	0.28876	0.3625	0.38108	0.33849	0.37603	0.37942	0.36003	9.99951		
1,2-Dibromoethane				0.25011	0.32015	0.32839	0.29079	0.31114	0.31503	0.3026	9.45681		
1-Chlorohexane		0.40184	0.55784	0.38716	0.43645	0.48935	0.45684	0.4722	0.47661	0.45979	11.6575		
Chlorobenzene		0.88042	1.16949	0.84345	0.99558	1.00707	0.90066	0.97183	0.97089	0.96742	10.3827		
1,1,1,2-Tetrachloroethane			0.40671	0.29103	0.35969	0.3704	0.3297	0.36266	0.3699	0.35573	10.2277		
Ethylbenzene	0.48178	0.46801	0.61304	0.44946	0.54816	0.55385	0.4958	0.53887	0.53993	0.52099	9.84962		
m-,p-Xylene	0.74892	0.54214	0.76438	0.53818	0.64399	0.66673	0.60452	0.63943	0.63836	0.64296	12.1957		
o-Xylene	0.6721	0.55617	0.74017	0.52547	0.63524	0.64679	0.57872	0.6294	0.64142	0.62505	10.2964		
Styrene		0.83057	1.10919	0.81182	1.04338	1.0964	0.99325	1.10188	1.1281	1.01432	12.493		
Bromoform			0.25394	0.18595	0.24652	0.2638	0.23753	0.28383	0.30193	0.25336	14.6257		
Isopropylbenzene		1.40318	1.84489	1.31225	1.60433	1.67459	1.50706	1.60498	1.6099	1.57015	10.4574		
1,4-Dichlorobenzene-d4	ISTD												
1,1,2,2-Tetrachloroethane		0.66463	0.8203	0.65242	0.75567	0.78885	0.6551	0.71608	0.79259	0.73071	9.29403		
p-Bromofluorobenzene				0.8783	0.82066	0.95031	0.9232	0.76162		0.86682	8.83863		
1,2,3-Trichloropropane		0.18728	0.27724	0.2005	0.2436	0.24474	0.21042	0.21779	0.23696	0.22732	12.7205		

trans-1,4-Dichloro-2-Butene		0.27895	0.21568	0.27291	0.29828	0.26783	0.27452	0.29892	0.27244	10.2284	
n-Propylbenzene	3.17716	4.29176	2.86236	3.45146	3.51329	3.11636	2.78016	2.84442	3.25462	15.3789	0.994
Bromobenzene	0.72871	0.93635	0.68838	0.83389	0.83642	0.73243	0.69807	0.73457	0.7736	11.1701	
1,3,5-Trimethylbenzene			2.1575	2.66635	2.6779	2.38683	2.19218	2.25982	2.3901	9.71178	
2-Chlorotoluene		2.58366	1.77913	2.1784	2.28742	1.95581	1.86069	1.88279	2.07541	13.8977	
4-Chlorotoluene	2.08356	2.40943	1.76617	2.10803	2.0263	1.87206	1.66972	1.77221	1.96343	12.3006	
a-Methylstyrene			0.97363	1.24581	1.37986	1.25204	1.2569	1.32777	1.23934	11.3354	
tert-Butylbenzene			0.46121	0.5851	0.59753	0.52831	0.50935	0.52689	0.53473	9.40042	
1,2,4-Trimethylbenzene	3.06212	3.46886	2.3299	2.6656	2.72902	2.42267	2.28879	2.353	2.66499	15.6516	0.997
sec-Butylbenzene	3.12426	4.01602	2.73261	3.351	3.49357	3.10554	2.88632	2.95534	3.20808	12.7205	
p-Isopropyltoluene			2.22625	2.69956	2.86542	2.58255	2.43678	2.50088	2.55191	8.63785	
1,3-Dichlorobenzene	1.4572	1.8729	1.32604	1.55426	1.6115	1.43087	1.423	1.50392	1.52246	10.9124	
1,4-Dichlorobenzene	1.65007	1.89928	1.34063	1.56341	1.59843	1.44563	1.45899	1.54228	1.56234	10.721	
n-Butylbenzene	2.42157	2.93112	2.04912	2.42475	2.589	2.37657	2.26935	2.35947	2.42762	10.504	
1,2-Dichlorobenzene	1.37635	1.72946	1.2312	1.47683	1.51069	1.35836	1.45899	1.5714	1.46416	10.2419	
1,2-Dibromo-3-Chloropropane		0.17152	0.13489	0.17231	0.19045	0.18352	0.19138	0.21706	0.18016	13.9512	
1,2,4-Trichlorobenzene	1.08822	1.24018	0.82022	0.95563	1.05757	1.01737	1.02522	1.15516	1.04495	12.1009	
Hexachlorobutadiene	0.45843	0.59983	0.37929	0.4821	0.52055	0.48935	0.50582	0.55724	0.49908	13.2095	
Naphthalene		2.89441	2.15031	2.59635	2.81496	2.62902	2.58944	2.86129	2.64797	9.60635	
1,2,3-Trichlorobenzene	1.05941	1.1158	0.80337	0.93997	1.03172	1.00605	1.01039	1.13474	1.01268	10.372	

Thu May 05 14:59:29 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16041580 Run Date: 04/28/2016 Sample ID: WG566682-12
Instrument ID: HPMS8 Run Time: 14:08 Method: 8260B
File ID: 8M411803 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG566682 Cal ID: HPMS8 - 28-APR-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.7	ug/L	0.563	4.60	20	
1,1-Dichloroethene	CCC	50.0	45.1	ug/L	0.531	9.80	20	
1,2-Dichloropropane	CCC	50.0	47.8	ug/L	0.304	4.40	20	
Ethylbenzene	CCC	50.0	48.9	ug/L	0.577	2.10	20	
Toluene	CCC	50.0	49.0	ug/L	1.47	1.90	20	
Vinyl Chloride	CCC	50.0	57.2	ug/L	0.381	14.4	20	
Bromoform	SPCC	50.0	49.6	ug/L	0.213	0.900	20	
Chlorobenzene	SPCC	50.0	50.1	ug/L	1.04	0.100	20	
Chloromethane	SPCC	50.0	49.3	ug/L	0.487	1.30	20	
1,1-Dichloroethane	SPCC	50.0	44.8	ug/L	0.571	10.3	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	45.3	ug/L	0.452	9.30	20	
Acetone		50.0	46.5	ug/L	0.0571	6.90	20	
Benzene		50.0	47.1	ug/L	1.03	5.90	20	
Bromobenzene		50.0	48.3	ug/L	0.776	3.40	20	
Bromochloromethane		50.0	49.4	ug/L	0.165	1.10	20	
Bromodichloromethane		50.0	49.4	ug/L	0.436	1.30	20	
Bromomethane		50.0	45.8	ug/L	0.217	8.40	20	
2-Butanone		50.0	44.4	ug/L	0.0872	11.3	20	
n-Butylbenzene		50.0	49.0	ug/L	2.73	2.00	20	
sec-Butylbenzene		50.0	50.9	ug/L	3.49	1.80	20	
tert-Butylbenzene		50.0	50.9	ug/L	0.575	1.70	20	
Carbon Disulfide		50.0	44.6	ug/L	0.758	10.8	20	
Carbon Tetrachloride		50.0	48.7	ug/L	0.545	2.70	20	
Dibromochloromethane		50.0	50.7	ug/L	0.380	1.50	20	
Chloroethane		50.0	48.8	ug/L	0.213	2.40	20	
2-Chlorotoluene		50.0	52.1	ug/L	2.57	4.10	20	
4-Chlorotoluene		50.0	49.3	ug/L	2.51	1.40	20	
1,2-Dibromo-3-Chloropropane		50.0	48.3	ug/L	0.106	3.30	20	
1,2-Dibromoethane		50.0	50.7	ug/L	0.251	1.30	20	
Dibromomethane		50.0	46.9	ug/L	0.140	6.10	20	
1,2-Dichlorobenzene		50.0	49.3	ug/L	1.38	1.40	20	
1,3-Dichlorobenzene		50.0	49.4	ug/L	1.57	1.30	20	
1,4-Dichlorobenzene		50.0	49.3	ug/L	1.57	1.40	20	
Dichlorodifluoromethane		50.0	55.7	ug/L	0.584	11.5	20	
1,2-Dichloroethane		50.0	48.1	ug/L	0.477	3.80	20	
cis-1,2-Dichloroethene		50.0	48.7	ug/L	0.310	2.60	20	
trans-1,2-Dichloroethene		50.0	47.7	ug/L	0.508	4.60	20	
1,3-Dichloropropane		50.0	50.3	ug/L	0.443	0.600	20	
2,2-Dichloropropane		50.0	50.3	ug/L	0.564	0.600	20	
cis-1,3-Dichloropropene		50.0	53.8	ug/L	0.479	7.60	20	
trans-1,3-Dichloropropene		50.0	50.1	ug/L	0.523	0.200	20	
1,1-Dichloropropene		50.0	47.5	ug/L	0.407	4.90	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4752348
Report generated 05/12/2016 14:55

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16041580 Run Date: 04/28/2016 Sample ID: WG566682-12
Instrument ID: HPMS8 Run Time: 14:08 Method: 8260B
File ID: 8M411803 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG566682 Cal ID: HPMS8 - 28-APR-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	46.8	ug/L	0.0798	6.50	20	
Hexachlorobutadiene		50.0	51.4	ug/L	0.515	2.80	20	
Isopropylbenzene		50.0	52.6	ug/L	1.83	5.20	20	
p-Isopropyltoluene		50.0	51.2	ug/L	3.00	2.30	20	
4-Methyl-2-Pentanone		50.0	46.5	ug/L	0.0675	7.00	20	
Methylene Chloride		50.0	46.3	ug/L	0.258	7.40	20	
Naphthalene		50.0	43.2	ug/L	1.42	13.5	20	
n-Propylbenzene		50.0	51.1	ug/L	3.94	2.10	20	
Styrene		50.0	50.8	ug/L	1.11	1.50	20	
1,1,1,2-Tetrachloroethane		50.0	51.1	ug/L	0.414	2.10	20	
Tetrachloroethene		50.0	49.6	ug/L	0.337	0.700	20	
1,2,3-Trichlorobenzene		50.0	45.6	ug/L	0.840	8.80	20	
1,2,4-Trichlorobenzene		50.0	47.7	ug/L	1.03	4.60	20	
1,1,1-Trichloroethane		50.0	49.2	ug/L	0.586	1.60	20	
1,1,2-Trichloroethane		50.0	49.7	ug/L	0.236	0.500	20	
Trichloroethene		50.0	49.6	ug/L	0.312	0.900	20	
Trichlorofluoromethane		50.0	47.8	ug/L	0.633	4.40	20	
1,2,3-Trichloropropane		50.0	49.3	ug/L	0.158	1.50	20	
1,2,4-Trimethylbenzene		50.0	50.3	ug/L	2.94	0.700	20	
1,3,5-Trimethylbenzene		50.0	52.0	ug/L	2.96	3.90	20	
o-Xylene		50.0	50.7	ug/L	0.695	1.50	20	
m-,p-Xylene		100	102	ug/L	0.693	1.90	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4752348
Report generated 05/12/2016 14:55

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16041580 Run Date: 05/04/2016 Sample ID: WG567358-11
Instrument ID: HPMS9 Run Time: 18:59 Method: 8260B
File ID: 9M974152 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG567358 Cal ID: HPMS9 - 04-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	20.0	20.1	ug/kg	0.426	0.500	20	
1,1-Dichloroethene	CCC	20.0	19.4	ug/kg	0.406	2.90	20	
1,2-Dichloropropane	CCC	20.0	20.8	ug/kg	0.288	3.80	20	
Ethylbenzene	CCC	20.0	20.2	ug/kg	0.526	1.00	20	
Toluene	CCC	20.0	19.6	ug/kg	1.38	1.80	20	
Vinyl Chloride	CCC	20.0	16.4	ug/kg	0.259	17.8	20	
Bromoform	SPCC	20.0	17.7	ug/kg	0.224	11.6	20	
Chlorobenzene	SPCC	20.0	20.5	ug/kg	0.993	2.70	20	
Chloromethane	SPCC	20.0	20.6	ug/kg	0.433	3.00	20	
1,1-Dichloroethane	SPCC	20.0	19.2	ug/kg	0.481	4.00	20	
1,1,2,2-Tetrachloroethane	SPCC	20.0	19.8	ug/kg	0.724	1.00	20	
Acetone		20.0	22.7	ug/kg	0.115	13.3	20	
Benzene		20.0	19.9	ug/kg	1.01	0.400	20	
Bromobenzene		20.0	20.9	ug/kg	0.810	4.70	20	
Bromochloromethane		20.0	20.0	ug/kg	0.172	0.100	20	
Bromodichloromethane		20.0	19.7	ug/kg	0.327	1.50	20	
Bromomethane		20.0	20.6	ug/kg	0.217	3.00	20	
2-Butanone		20.0	21.8	ug/kg	0.154	9.00	20	
n-Butylbenzene		20.0	19.4	ug/kg	2.35	3.00	20	
sec-Butylbenzene		20.0	20.8	ug/kg	3.33	3.80	20	
tert-Butylbenzene		20.0	22.6	ug/kg	0.604	12.9	20	
Carbon Disulfide		20.0	18.5	ug/kg	0.756	7.70	20	
Carbon Tetrachloride		20.0	19.1	ug/kg	0.353	4.30	20	
Dibromochloromethane		20.0	19.5	ug/kg	0.350	2.70	20	
Chloroethane		20.0	21.2	ug/kg	0.213	6.00	20	
2-Chlorotoluene		20.0	20.5	ug/kg	2.13	2.70	20	
4-Chlorotoluene		20.0	21.2	ug/kg	2.08	5.90	20	
1,2-Dibromo-3-Chloropropane		20.0	20.3	ug/kg	0.183	1.50	20	
1,2-Dibromoethane		20.0	21.0	ug/kg	0.318	5.00	20	
Dibromomethane		20.0	18.9	ug/kg	0.162	5.70	20	
1,2-Dichlorobenzene		20.0	20.1	ug/kg	1.47	0.300	20	
1,3-Dichlorobenzene		20.0	19.8	ug/kg	1.50	1.20	20	
1,4-Dichlorobenzene		20.0	20.0	ug/kg	1.56	0.200	20	
Dichlorodifluoromethane		20.0	23.5	ug/kg	0.400	17.3	20	
1,2-Dichloroethane		20.0	20.2	ug/kg	0.382	1.00	20	
cis-1,2-Dichloroethene		20.0	20.6	ug/kg	0.278	3.00	20	
trans-1,2-Dichloroethene		20.0	20.5	ug/kg	0.416	2.50	20	
1,3-Dichloropropane		20.0	21.4	ug/kg	0.527	7.20	20	
2,2-Dichloropropane		20.0	18.7	ug/kg	0.352	6.50	20	
cis-1,3-Dichloropropene		20.0	21.1	ug/kg	0.421	5.30	20	
trans-1,3-Dichloropropene		20.0	20.0	ug/kg	0.485	0.200	20	
1,1-Dichloropropene		20.0	19.9	ug/kg	0.325	0.500	20	

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Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16041580 Run Date: 05/04/2016 Sample ID: WG567358-11
Instrument ID: HPMS9 Run Time: 18:59 Method: 8260B
File ID: 9M974152 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG567358 Cal ID: HPMS9 - 04-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		20.0	19.8	ug/kg	0.285	1.00	20	
Hexachlorobutadiene		20.0	20.0	ug/kg	0.500	0.100	20	
Isopropylbenzene		20.0	20.6	ug/kg	1.62	3.00	20	
p-Isopropyltoluene		20.0	20.6	ug/kg	2.63	3.00	20	
4-Methyl-2-Pentanone		20.0	21.0	ug/kg	0.132	4.90	20	
Methylene Chloride		20.0	19.9	ug/kg	0.264	0.300	20	
Naphthalene		20.0	19.1	ug/kg	2.53	4.40	20	
n-Propylbenzene		20.0	22.7	ug/kg	3.39	13.6	20	
Styrene		20.0	20.4	ug/kg	1.03	1.80	20	
1,1,1,2-Tetrachloroethane		20.0	20.0	ug/kg	0.356	0.200	20	
Tetrachloroethene		20.0	19.2	ug/kg	0.277	4.00	20	
1,2,3-Trichlorobenzene		20.0	19.5	ug/kg	0.986	2.70	20	
1,2,4-Trichlorobenzene		20.0	18.3	ug/kg	0.954	8.70	20	
1,1,1-Trichloroethane		20.0	20.3	ug/kg	0.383	1.60	20	
1,1,2-Trichloroethane		20.0	20.1	ug/kg	0.286	0.600	20	
Trichloroethene		20.0	20.4	ug/kg	0.282	2.00	20	
Trichlorofluoromethane		20.0	19.7	ug/kg	0.422	1.50	20	
1,2,3-Trichloropropane		20.0	21.5	ug/kg	0.244	7.40	20	
1,2,4-Trimethylbenzene		20.0	21.3	ug/kg	2.58	6.30	20	
1,3,5-Trimethylbenzene		20.0	22.0	ug/kg	2.62	9.80	20	
o-Xylene		20.0	20.5	ug/kg	0.640	2.40	20	
m-,p-Xylene		40.0	40.3	ug/kg	0.647	0.700	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4755299
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041580 Run Date: 05/07/2016 Sample ID: WG567934-02
Instrument ID: HPMS8 Run Time: 12:05 Method: 8260B
File ID: 8M412047 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG567935 Cal ID: HPMS8 - 28-APR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	52.6	ug/L	0.622	5.28	20	
1,1-Dichloroethene	CCC	50.0	51.3	ug/L	0.603	2.62	20	
1,2-Dichloropropane	CCC	50.0	46.4	ug/L	0.295	7.15	20	
Ethylbenzene	CCC	50.0	49.6	ug/L	0.585	0.771	20	
Toluene	CCC	50.0	48.4	ug/L	1.45	3.29	20	
Vinyl Chloride	CCC	50.0	54.8	ug/L	0.365	9.51	20	
Bromoform	SPCC	50.0	55.3	ug/L	0.238	10.6	20	
Chlorobenzene	SPCC	50.0	50.2	ug/L	1.04	0.323	20	
Chloromethane	SPCC	50.0	49.7	ug/L	0.491	0.508	20	
1,1-Dichloroethane	SPCC	50.0	48.8	ug/L	0.620	2.48	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	43.1	ug/L	0.430	13.8	20	
Xylenes		150	156	ug/L	0.706	3.74	20	
Acetone		50.0	47.3	ug/L	0.0581	5.41	20	
Benzene		50.0	46.8	ug/L	1.02	6.43	20	
Bromobenzene		50.0	49.6	ug/L	0.797	0.795	20	
Bromochloromethane		50.0	48.3	ug/L	0.161	3.38	20	
Bromodichloromethane		50.0	55.4	ug/L	0.489	10.8	20	
Bromomethane		50.0	44.7	ug/L	0.211	10.7	20	
2-Butanone		50.0	43.6	ug/L	0.0857	12.8	20	
n-Butylbenzene		50.0	51.7	ug/L	2.88	3.43	20	
sec-Butylbenzene		50.0	50.9	ug/L	3.49	1.79	20	
tert-Butylbenzene		50.0	50.7	ug/L	0.573	1.39	20	
Carbon Disulfide		50.0	43.4	ug/L	0.738	13.2	20	
Carbon Tetrachloride		50.0	59.6	ug/L	0.667	19.1	20	
Dibromochloromethane		50.0	53.3	ug/L	0.399	6.55	20	
Chloroethane		50.0	45.0	ug/L	0.196	9.95	20	
2-Chlorotoluene		50.0	51.6	ug/L	2.54	3.10	20	
4-Chlorotoluene		50.0	51.7	ug/L	2.63	3.42	20	
1,2-Dibromo-3-Chloropropane		50.0	51.2	ug/L	0.112	2.50	20	
1,2-Dibromoethane		50.0	48.7	ug/L	0.241	2.65	20	
Dibromomethane		50.0	51.7	ug/L	0.155	3.39	20	
1,2-Dichlorobenzene		50.0	50.9	ug/L	1.42	1.75	20	
1,3-Dichlorobenzene		50.0	51.4	ug/L	1.64	2.79	20	
1,4-Dichlorobenzene		50.0	50.7	ug/L	1.61	1.35	20	
Dichlorodifluoromethane		50.0	52.6	ug/L	0.551	5.18	20	
1,2-Dichloroethane		50.0	56.4	ug/L	0.559	12.8	20	
cis-1,2-Dichloroethene		50.0	46.7	ug/L	0.297	6.67	20	
trans-1,2-Dichloroethene		50.0	49.4	ug/L	0.525	1.28	20	
1,3-Dichloropropane		50.0	46.2	ug/L	0.407	7.64	20	
2,2-Dichloropropane		50.0	56.9	ug/L	0.638	13.8	20	
cis-1,3-Dichloropropene		50.0	50.3	ug/L	0.448	0.652	20	
trans-1,3-Dichloropropene		50.0	52.1	ug/L	0.544	4.11	20	

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041580 Run Date: 05/07/2016 Sample ID: WG567934-02
Instrument ID: HPMS8 Run Time: 12:05 Method: 8260B
File ID: 8M412047 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG567935 Cal ID: HPMS8 - 28-APR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	50.1	ug/L	0.429	0.102	20	
2-Hexanone		50.0	40.1	ug/L	0.0684	19.8	20	
Hexachlorobutadiene		50.0	53.5	ug/L	0.536	7.04	20	
Isopropylbenzene		50.0	54.0	ug/L	1.87	7.99	20	
p-Isopropyltoluene		50.0	52.3	ug/L	3.06	4.58	20	
4-Methyl-2-Pentanone		50.0	42.3	ug/L	0.0614	15.4	20	
Methylene Chloride		50.0	44.1	ug/L	0.246	11.9	20	
Naphthalene		50.0	48.1	ug/L	1.58	3.89	20	
n-Propylbenzene		50.0	50.0	ug/L	3.85	0.0660	20	
Styrene		50.0	52.4	ug/L	1.14	4.80	20	
1,1,1,2-Tetrachloroethane		50.0	55.8	ug/L	0.452	11.5	20	
Tetrachloroethene		50.0	52.1	ug/L	0.354	4.27	20	
1,2,3-Trichlorobenzene		50.0	47.0	ug/L	0.865	6.01	20	
1,2,4-Trichlorobenzene		50.0	48.9	ug/L	1.06	2.28	20	
1,1,1-Trichloroethane		50.0	56.9	ug/L	0.677	13.7	20	
1,1,2-Trichloroethane		50.0	48.1	ug/L	0.229	3.83	20	
Trichloroethene		50.0	49.7	ug/L	0.313	0.635	20	
Trichlorofluoromethane		50.0	57.0	ug/L	0.754	14.0	20	
1,2,3-Trichloropropane		50.0	49.3	ug/L	0.158	1.50	20	
1,2,4-Trimethylbenzene		50.0	53.2	ug/L	3.10	6.35	20	
1,3,5-Trimethylbenzene		50.0	52.5	ug/L	2.99	5.01	20	
o-Xylene		50.0	51.5	ug/L	0.705	3.03	20	
m-,p-Xylene		100	104	ug/L	0.707	4.09	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4752350
Report generated 05/12/2016 14:55

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041580 Run Date: 05/05/2016 Sample ID: WG567630-02
Instrument ID: HPMS9 Run Time: 11:29 Method: 8260B
File ID: 9M974163 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG567680 Cal ID: HPMS9 - 04-MAY-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	55.3	ug/kg	0.469	10.6	20	
1,1-Dichloroethene	CCC	50.0	57.2	ug/kg	0.478	14.3	20	
1,2-Dichloropropane	CCC	50.0	54.3	ug/kg	0.302	8.54	20	
Ethylbenzene	CCC	50.0	55.6	ug/kg	0.580	11.3	20	
Toluene	CCC	50.0	53.6	ug/kg	1.50	7.12	20	
Vinyl Chloride	CCC	50.0	51.3	ug/kg	0.309	2.53	20	
Bromoform	SPCC	50.0	52.7	ug/kg	0.267	5.31	20	
Chlorobenzene	SPCC	50.0	54.5	ug/kg	1.05	8.95	20	
Chloromethane	SPCC	50.0	60.8	ug/kg	0.512	21.6	20	*
1,1-Dichloroethane	SPCC	50.0	55.0	ug/kg	0.551	9.94	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	52.9	ug/kg	0.772	5.71	20	
Xylenes		150	162	ug/kg	0.681	7.67	20	
Acetone		100	103	ug/kg	0.191	3.49	20	
Benzene		50.0	53.1	ug/kg	1.07	6.25	20	
Bromobenzene		50.0	55.7	ug/kg	0.862	11.4	20	
Bromochloromethane		50.0	55.1	ug/kg	0.190	10.1	20	
Bromodichloromethane		50.0	53.6	ug/kg	0.356	7.18	20	
Bromomethane		50.0	59.4	ug/kg	0.250	18.7	20	
2-Butanone		100	105	ug/kg	0.298	5.27	20	
n-Butylbenzene		50.0	55.8	ug/kg	2.71	11.6	20	
sec-Butylbenzene		50.0	56.4	ug/kg	3.62	12.7	20	
tert-Butylbenzene		50.0	58.7	ug/kg	0.628	17.5	20	
Carbon Disulfide		100	100	ug/kg	1.64	0.0119	20	
Carbon Tetrachloride		50.0	54.5	ug/kg	0.402	8.95	20	
Dibromochloromethane		50.0	54.6	ug/kg	0.393	9.26	20	
Chloroethane		50.0	56.1	ug/kg	0.225	12.3	20	
2-Chlorotoluene		50.0	53.4	ug/kg	2.21	6.71	20	
4-Chlorotoluene		50.0	57.6	ug/kg	2.26	15.2	20	
1,2-Dibromo-3-Chloropropane		50.0	53.8	ug/kg	0.194	7.63	20	
1,2-Dibromoethane		50.0	55.5	ug/kg	0.336	10.9	20	
Dibromomethane		50.0	52.3	ug/kg	0.181	4.67	20	
1,2-Dichlorobenzene		50.0	53.3	ug/kg	1.56	6.67	20	
1,3-Dichlorobenzene		50.0	54.0	ug/kg	1.64	7.96	20	
1,4-Dichlorobenzene		50.0	53.0	ug/kg	1.66	5.95	20	
Dichlorodifluoromethane		50.0	59.7	ug/kg	0.408	19.5	20	
1,2-Dichloroethane		50.0	53.9	ug/kg	0.407	7.76	20	
cis-1,2-Dichloroethene		50.0	55.5	ug/kg	0.299	11.0	20	
trans-1,2-Dichloroethene		50.0	55.9	ug/kg	0.453	11.7	20	
1,3-Dichloropropane		50.0	53.3	ug/kg	0.524	6.62	20	
2,2-Dichloropropane		50.0	54.2	ug/kg	0.408	8.41	20	
cis-1,3-Dichloropropene		50.0	53.9	ug/kg	0.431	7.83	20	
trans-1,3-Dichloropropene		50.0	55.5	ug/kg	0.537	11.0	20	

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041580 Run Date: 05/05/2016 Sample ID: WG567630-02
Instrument ID: HPMS9 Run Time: 11:29 Method: 8260B
File ID: 9M974163 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG567680 Cal ID: HPMS9 - 04-MAY-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	56.0	ug/kg	0.366	12.1	20	
2-Hexanone		100	104	ug/kg	0.599	3.98	20	
Hexachlorobutadiene		50.0	54.0	ug/kg	0.539	7.97	20	
Isopropylbenzene		50.0	55.1	ug/kg	1.73	10.3	20	
p-Isopropyltoluene		50.0	58.5	ug/kg	2.98	17.0	20	
4-Methyl-2-Pentanone		100	104	ug/kg	0.263	4.14	20	
Methylene Chloride		50.0	53.1	ug/kg	0.281	6.10	20	
Naphthalene		50.0	55.3	ug/kg	2.93	10.5	20	
n-Propylbenzene		50.0	63.2	ug/kg	3.72	26.3	20	*
Styrene		50.0	56.0	ug/kg	1.14	12.1	20	
1,1,1,2-Tetrachloroethane		50.0	54.3	ug/kg	0.387	8.66	20	
Tetrachloroethene		50.0	55.4	ug/kg	0.320	10.8	20	
1,2,3-Trichlorobenzene		50.0	54.6	ug/kg	1.11	9.15	20	
1,2,4-Trichlorobenzene		50.0	53.0	ug/kg	1.11	6.08	20	
1,1,1-Trichloroethane		50.0	55.2	ug/kg	0.416	10.4	20	
1,1,2-Trichloroethane		50.0	54.4	ug/kg	0.309	8.76	20	
Trichloroethene		50.0	54.1	ug/kg	0.299	8.27	20	
Trichlorofluoromethane		50.0	56.4	ug/kg	0.483	12.8	20	
1,2,3-Trichloropropane		50.0	54.9	ug/kg	0.250	9.88	20	
1,2,4-Trimethylbenzene		50.0	59.4	ug/kg	2.84	18.8	20	
1,3,5-Trimethylbenzene		50.0	58.3	ug/kg	2.79	16.6	20	
o-Xylene		50.0	53.4	ug/kg	0.667	6.74	20	
m-,p-Xylene		100	108	ug/kg	0.695	8.13	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4755301
Report generated 05/12/2016 14:56

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16041580
Instrument ID: HPMS8
Workgroup (AAB#): WG567935

ICAL CCV Number: WG566682-08
CAL ID: HPMS8 - 28-APR-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG566682-08	NA	NA	287363	522516	692530
Upper Limit	NA	NA	574726	1045032	1385060
Lower Limit	NA	NA	143682	261258	346265
L16041580-14	1.00	01	179259	337529	421419
WG567935-01	1.00	01	190127	351990	444939
WG567935-02	1.00	01	179323	313955	392246

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4759216
Report generated 05/12/2016 14:55

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16041580
Instrument ID: HPMS9
Workgroup (AAB#): WG567680

ICAL CCV Number: WG567358-02
CAL ID: HPMS9 - 04-MAY-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG567358-02	NA	NA	266170	505652	675036
Upper Limit	NA	NA	532340	1011304	1350072
Lower Limit	NA	NA	133085	252826	337518
L16041580-01	1.00	01	217692	434921	595413
L16041580-02	1.00	01	231218	456356	605188
L16041580-03	1.00	01	211184	419082	566593
L16041580-04	1.00	01	203881	400888	533640
L16041580-05	1.00	01	181849	360619	484278
L16041580-06	1.00	01	248894	485674	648463
L16041580-07	1.00	01	233270	454664	604518
L16041580-08	1.00	01	249394	475998	630423
L16041580-09	1.00	01	193157	408424	563947
L16041580-10	1.00	01	210644	437142	603642
L16041580-11	1.00	01	197478	395423	536936
L16041580-12	1.00	01	173606	343661	465195
L16041580-13	1.00	01	180181	393461	543599
WG567680-01	1.00	01	240057	471370	623086
WG567680-02	1.00	01	249978	476283	634794

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4755302
Report generated 05/12/2016 14:56

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16041580
Instrument ID: HPMS8
Workgroup (AAB#): WG567935

ICAL CCV Number: WG566682-08
CAL ID: HPMS8 - 28-APR-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG566682-08	NA	NA	17.59	14.57	10.72
Upper Limit	NA	NA	18.09	15.07	11.22
Lower Limit	NA	NA	17.09	14.07	10.22
L16041580-14	1.00	01	17.59	14.57	10.71
WG567935-01	1.00	01	17.59	14.57	10.71
WG567935-02	1.00	01	17.59	14.57	10.71

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4759217
Report generated: 05/12/2016 14:55

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16041580
Instrument ID: HPMS9
Workgroup (AAB#): WG567680

ICAL CCV Number: WG567358-02
CAL ID: HPMS9-04-MAY-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG567358-02	NA	NA	17.74	14.71	10.84
Upper Limit	NA	NA	18.24	15.21	11.34
Lower Limit	NA	NA	17.24	14.21	10.34
L16041580-01	1.00	01	17.74	14.71	10.84
L16041580-02	1.00	01	17.74	14.72	10.84
L16041580-03	1.00	01	17.74	14.71	10.84
L16041580-04	1.00	01	17.74	14.71	10.84
L16041580-05	1.00	01	17.74	14.72	10.84
L16041580-06	1.00	01	17.75	14.72	10.85
L16041580-07	1.00	01	17.74	14.72	10.84
L16041580-08	1.00	01	17.74	14.72	10.84
L16041580-09	1.00	01	17.74	14.72	10.84
L16041580-10	1.00	01	17.74	14.71	10.84
L16041580-11	1.00	01	17.74	14.72	10.85
L16041580-12	1.00	01	17.74	14.71	10.84
L16041580-13	1.00	01	17.74	14.71	10.84
WG567680-01	1.00	01	17.74	14.72	10.84
WG567680-02	1.00	01	17.75	14.72	10.84

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4755304
Report generated: 05/12/2016 14:56

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050516\9M974171.D Vial: 9
Acq On : 5 May 2016 15:35 Operator: ADC
Sample : L16041580-01 A 8260 4.82g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 11:40:48 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	595413	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	434921	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	217692	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	153682	50.5054 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 101.02%		
43) 1,2-Dichloroethane-d4	10.44	65	168667	51.1949 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 102.38%		
58) Toluene-d8	12.82	98	561409	54.0321 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 108.06%		
79) p-Bromofluorobenzene	16.22	95	211484	56.0372 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 112.08%		

Target Compounds

					Qvalue
13) Acetone	6.39	43	2352	Below Cal #	72
36) Tetrahydrofuran	9.77	42	3361	2.8306 ug/kg	79
56) Dimethyl Disulfide	12.82	94	15580	2.8811 ug/kg#	28
82) n-Propylbenzene	16.37	91	967	Below Cal #	51
89) 1,2,4-Trimethylbenzene	17.08	105	2472	Below Cal	78

(#) = qualifier out of range (m) = manual integration
9M974171.D 8260SL.M Tue May 10 11:40:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050516\9M974171.D Vial: 9
Acq On : 5 May 2016 15:35 Operator: ADC
Sample : L16041580-01 A 8260 4.82g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 11:40 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

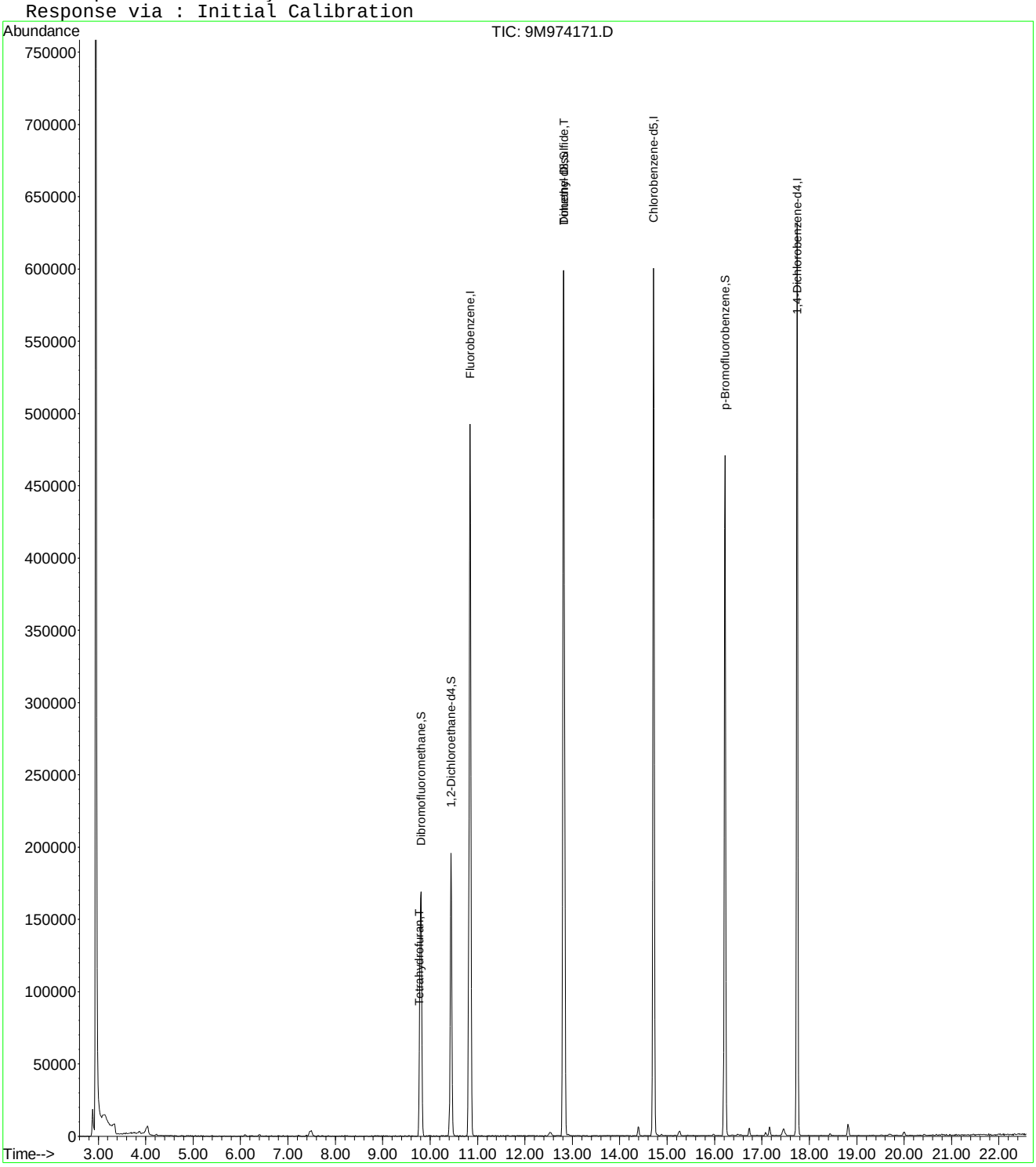

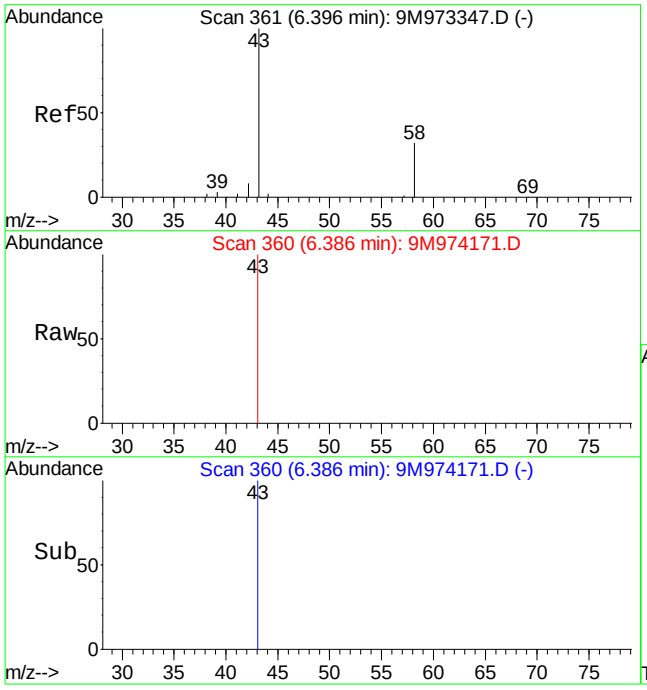

#13
Acetone
Concen: Below Cal
RT: 6.39 min Scan# 360
Delta R.T. 0.00 min
Lab File: 9M974171.D
Acq: 5 May 2016 15:35

Tgt Ion: 43 Resp: 2352

Ion	Ratio	Lower	Upper
43	100		
58	17.7	20.2	47.2#

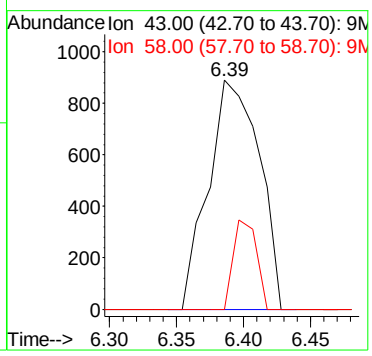

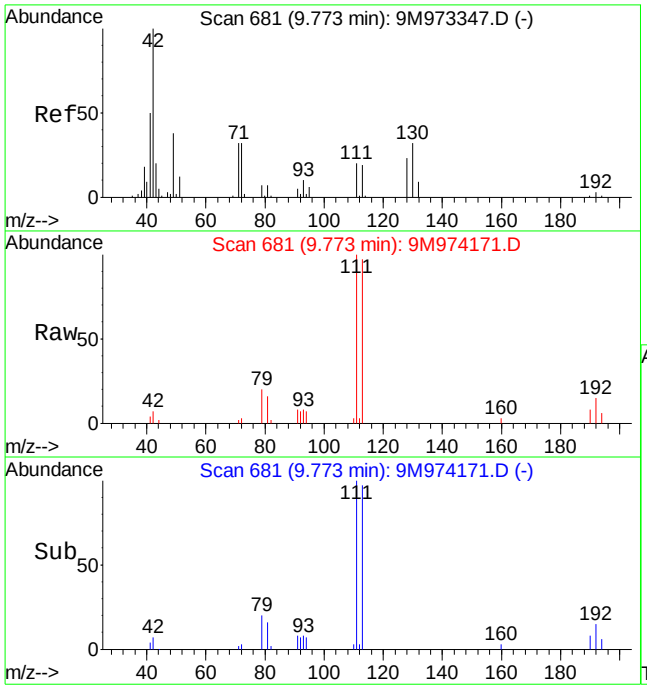

#36
Tetrahydrofuran
Concen: 2.83 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. 0.01 min
Lab File: 9M974171.D
Acq: 5 May 2016 15:35

Tgt Ion: 42 Resp: 3361

Ion	Ratio	Lower	Upper
42	100		
72	23.4	20.8	48.6
71	20.1	20.0	46.8

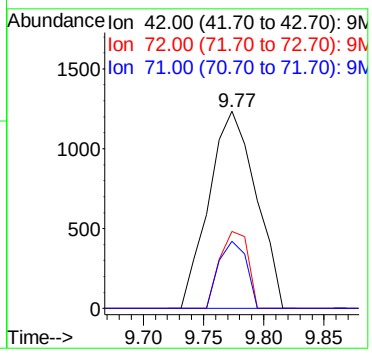

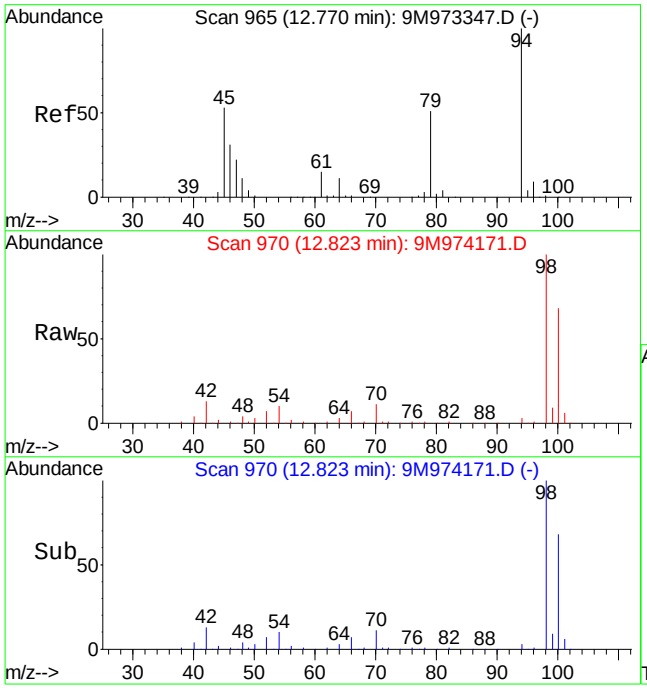

#56
Dimethyl Disulfide
Concen: 2.88 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M974171.D
Acq: 5 May 2016 15:35

Tgt Ion: 94 Resp: 15580

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.3	68.5#

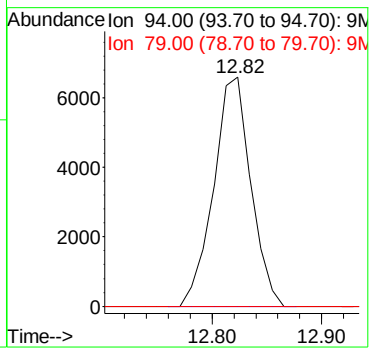

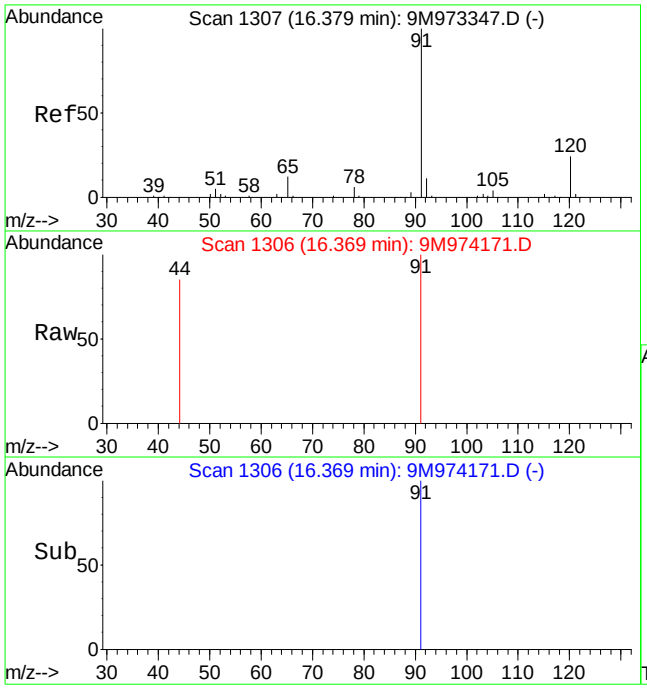

#82
n-Propylbenzene
Concen: Below Cal
RT: 16.37 min Scan# 1306
Delta R.T. 0.00 min
Lab File: 9M974171.D
Acq: 5 May 2016 15:35

Tgt Ion: 91 Resp: 967

Ion	Ratio	Lower	Upper
91	100		
120	0.0	14.7	34.3#

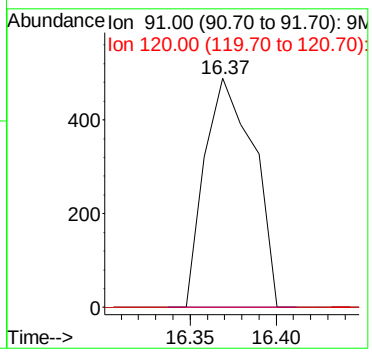

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050516\9M974172.D Vial: 10
Acq On : 5 May 2016 16:06 Operator: ADC
Sample : L16041580-02 A 8260 4.91g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 11:40:48 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	605188	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	456356	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	231218	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	155620	50.3162 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.64%		
43) 1,2-Dichloroethane-d4	10.44	65	174779	52.1932 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.38%		
58) Toluene-d8	12.82	98	578212	53.0354 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.08%		
79) p-Bromofluorobenzene	16.22	95	219339	54.7187 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 109.44%		

Target Compounds

					Qvalue
13) Acetone	6.39	43	4199	0.9628 ug/kg	85
36) Tetrahydrofuran	9.77	42	2785	2.3076 ug/kg#	71
56) Dimethyl Disulfide	12.82	94	15647	2.8467 ug/kg#	28
82) n-Propylbenzene	16.38	91	793	Below Cal #	51
89) 1,2,4-Trimethylbenzene	17.08	105	2558	Below Cal #	69

(#) = qualifier out of range (m) = manual integration
9M974172.D 8260SL.M Tue May 10 11:40:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050516\9M974172.D Vial: 10
Acq On : 5 May 2016 16:06 Operator: ADC
Sample : L16041580-02 A 8260 4.91g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 11:40 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

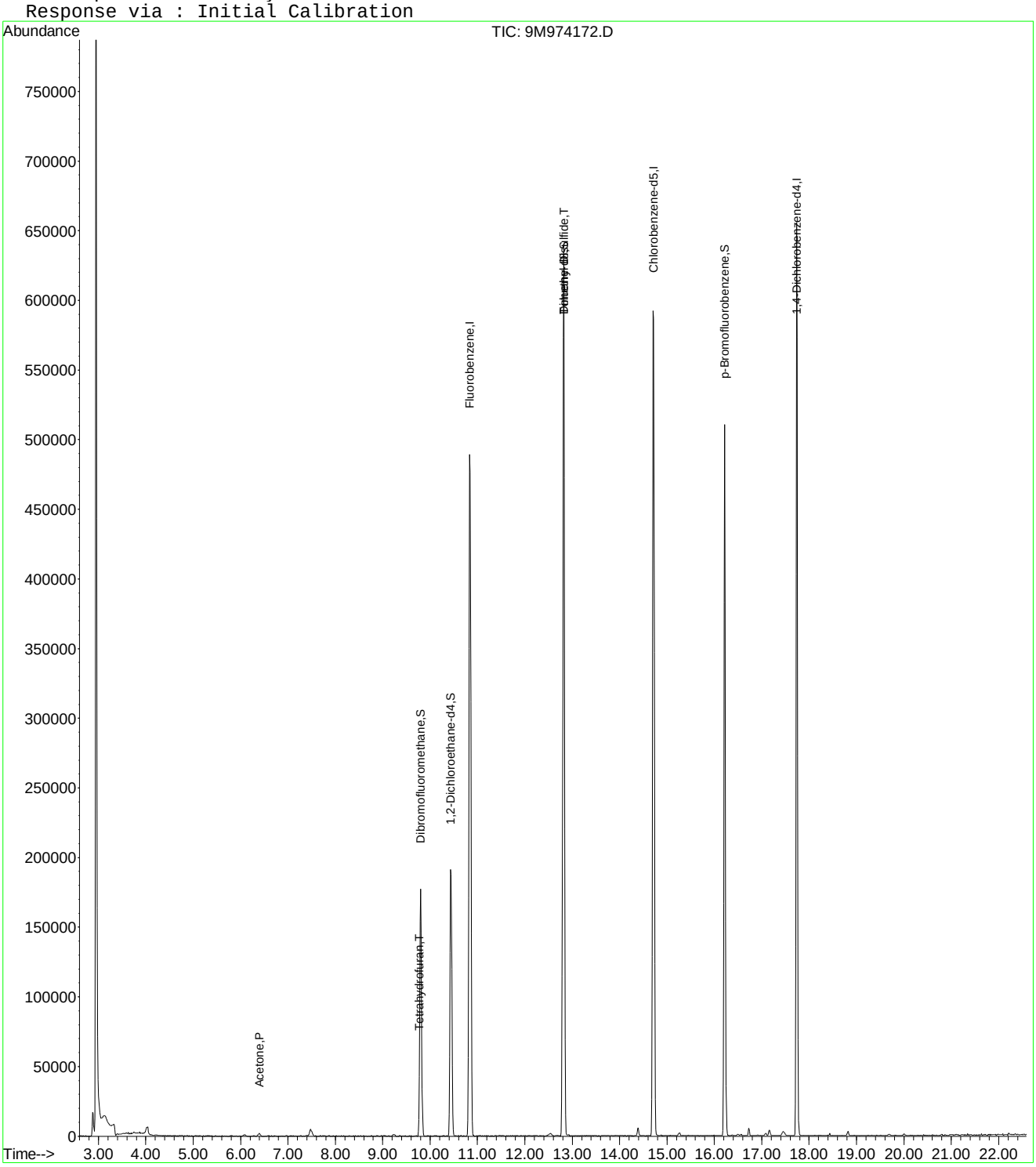

9M974172.D 8260SL.M Tue May 10 11:40:49 2016 Page 2

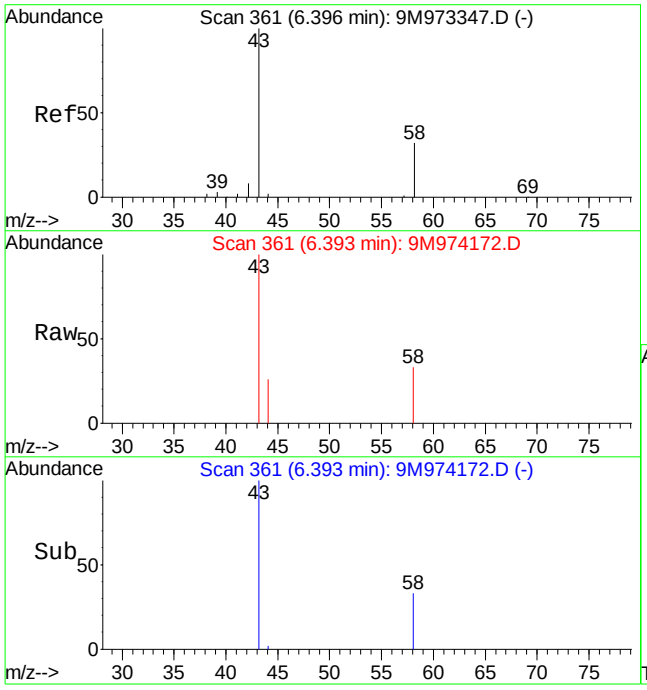

#13
Acetone
Concen: 0.96 ug/kg
RT: 6.39 min Scan# 361
Delta R.T. 0.01 min
Lab File: 9M974172.D
Acq: 5 May 2016 16:06

Tgt Ion: 43 Resp: 4199

Ion	Ratio	Lower	Upper
43	100		
58	25.4	20.2	47.2

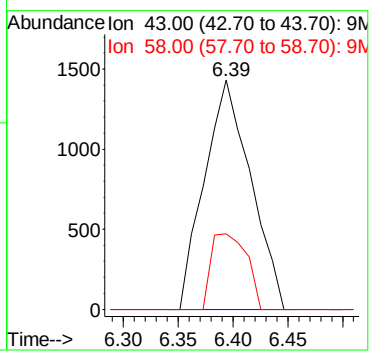

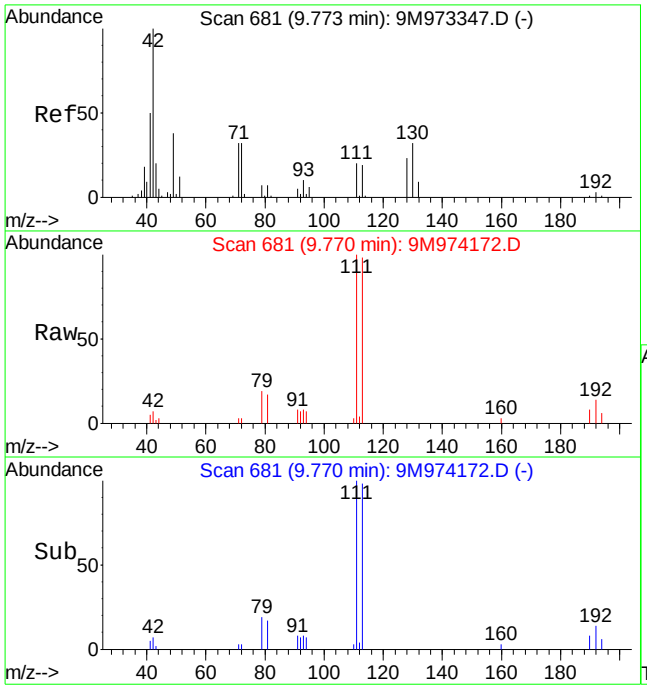

#36
Tetrahydrofuran
Concen: 2.31 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. 0.01 min
Lab File: 9M974172.D
Acq: 5 May 2016 16:06

Tgt Ion: 42 Resp: 2785

Ion	Ratio	Lower	Upper
42	100		
72	17.1	20.8	48.6#
71	17.3	20.0	46.8#

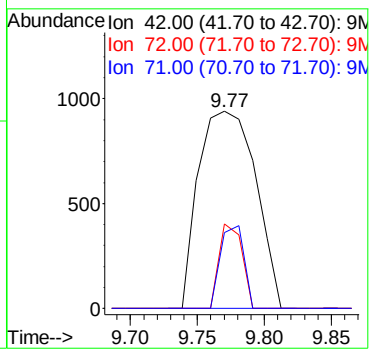

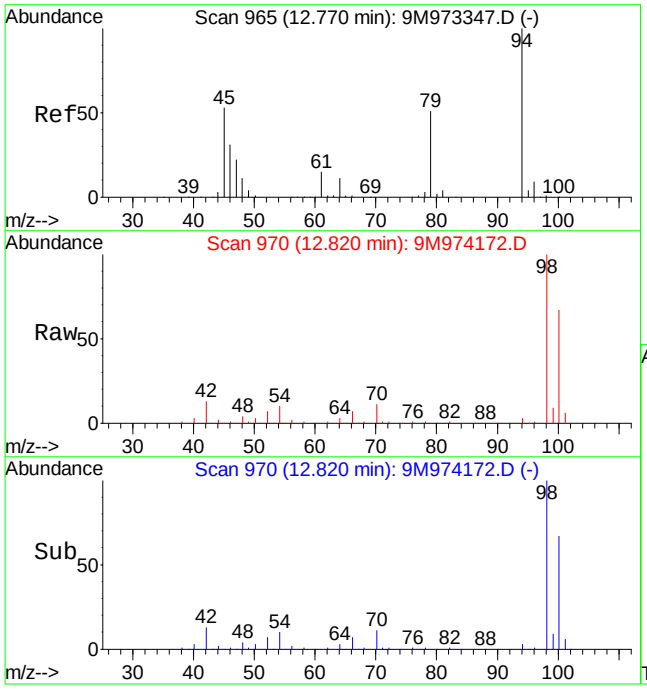

#56
Dimethyl Disulfide
Concen: 2.85 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M974172.D
Acq: 5 May 2016 16:06

Tgt Ion: 94 Resp: 15647

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.3	68.5#

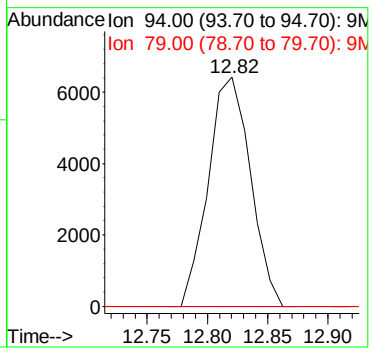

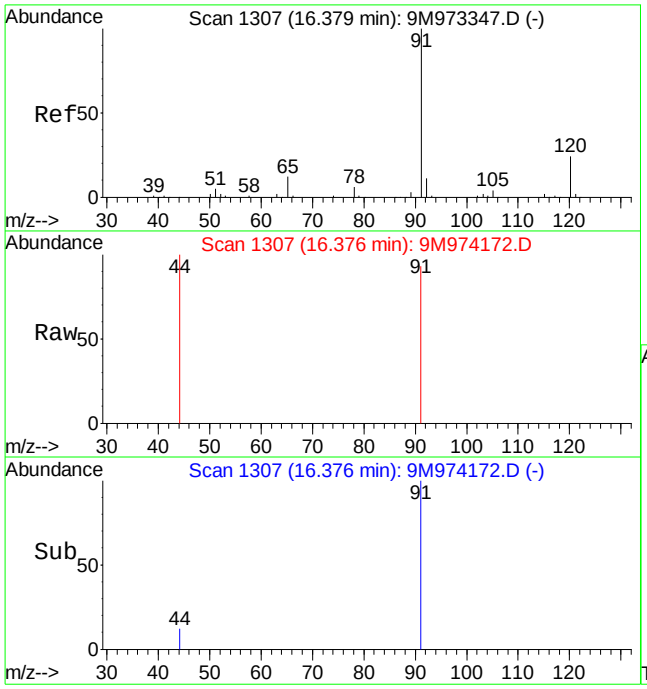

#82
n-Propylbenzene
Concen: Below Cal
RT: 16.38 min Scan# 1307
Delta R.T. 0.01 min
Lab File: 9M974172.D
Acq: 5 May 2016 16:06

Tgt Ion: 91 Resp: 793

Ion	Ratio	Lower	Upper
91	100		
120	0.0	14.7	34.3#

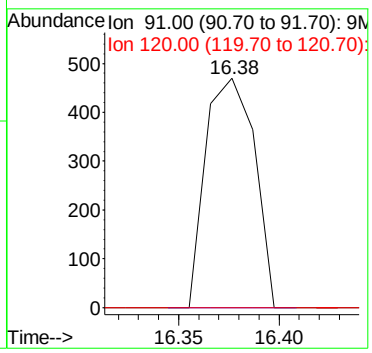

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050516\9M974173.D Vial: 11
Acq On : 5 May 2016 16:37 Operator: ADC
Sample : L16041580-03 A 8260 4.68g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 11:40:49 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	566593	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	419082	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	211184	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	145247	50.1613 ug/kg	-0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.32%		
43) 1,2-Dichloroethane-d4	10.44	65	160464	51.1825 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 102.36%		
58) Toluene-d8	12.82	98	536040	53.5403 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 107.08%		
79) p-Bromofluorobenzene	16.22	95	201023	54.9068 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 109.82%		

Target Compounds

					Qvalue
36) Tetrahydrofuran	9.76	42	3022	2.6746 ug/kg#	62
56) Dimethyl Disulfide	12.82	94	14140	2.7478 ug/kg#	28
82) n-Propylbenzene	16.38	91	734	Below Cal #	51
89) 1,2,4-Trimethylbenzene	17.09	105	2154	Below Cal #	67

(#) = qualifier out of range (m) = manual integration
9M974173.D 8260SL.M Tue May 10 11:40:50 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050516\9M974173.D Vial: 11
Acq On : 5 May 2016 16:37 Operator: ADC
Sample : L16041580-03 A 8260 4.68g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 11:40 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

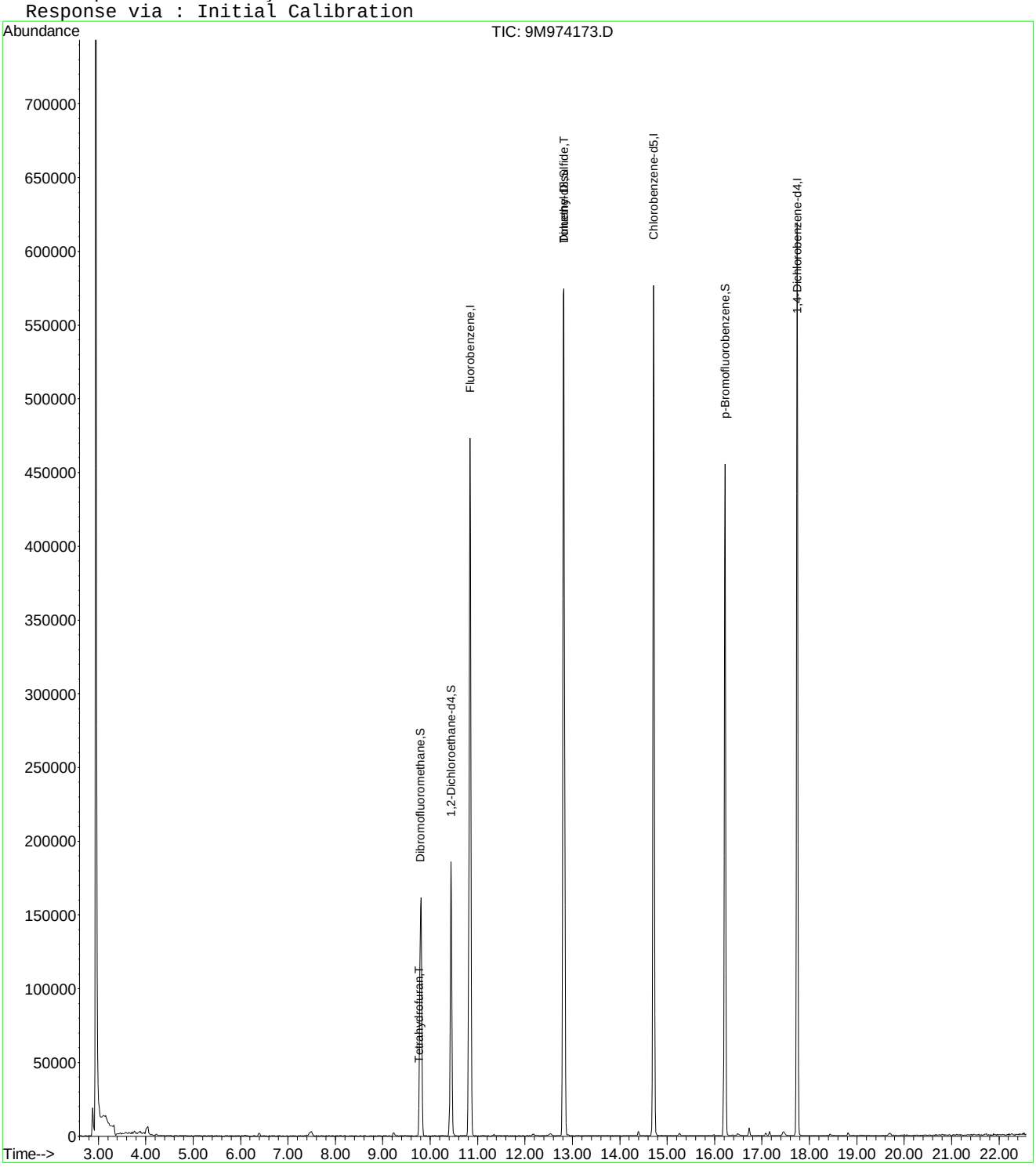

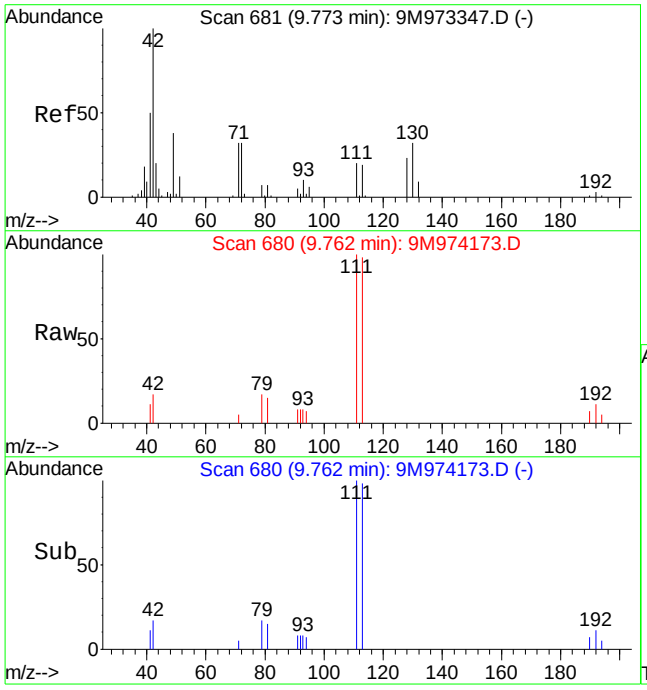

#36
Tetrahydrofuran
Concen: 2.67 ug/kg
RT: 9.76 min Scan# 680
Delta R.T. 0.00 min
Lab File: 9M974173.D
Acq: 5 May 2016 16:37

Tgt Ion: 42 Resp: 3022

Ion	Ratio	Lower	Upper
42	100		
72	9.0	20.8	48.6#
71	15.6	20.0	46.8#

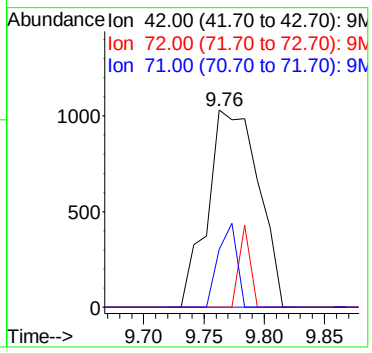

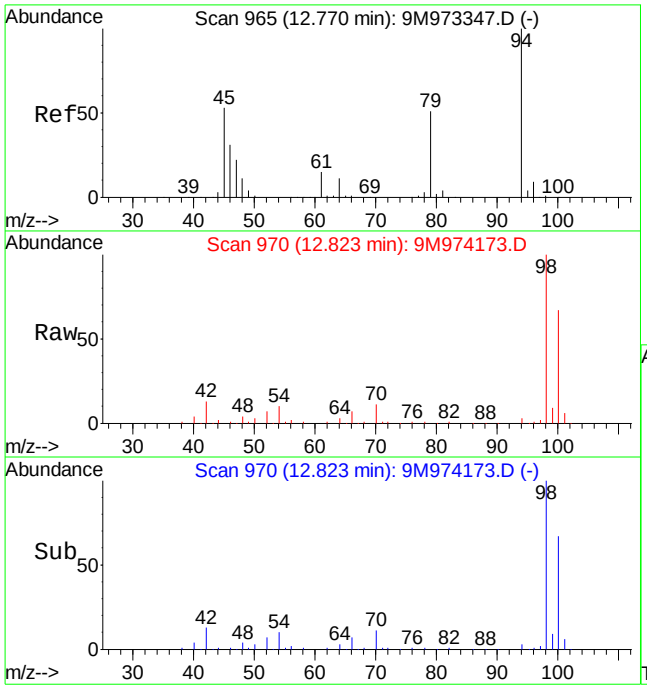

#56
Dimethyl Disulfide
Concen: 2.75 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M974173.D
Acq: 5 May 2016 16:37

Tgt Ion: 94 Resp: 14140

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.3	68.5#

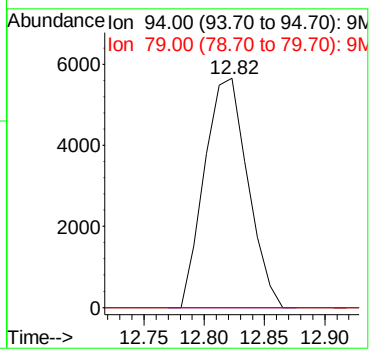

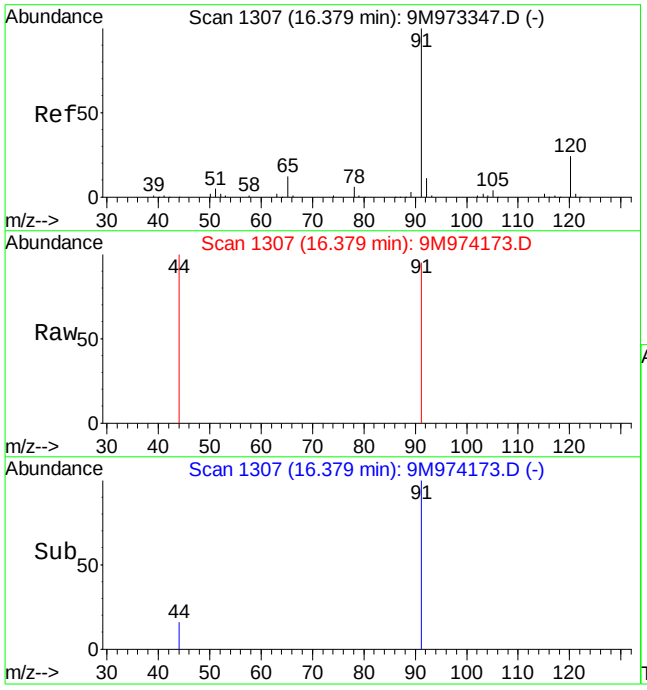

#82
n-Propylbenzene
Concen: Below Cal
RT: 16.38 min Scan# 1307
Delta R.T. 0.01 min
Lab File: 9M974173.D
Acq: 5 May 2016 16:37

Tgt Ion: 91 Resp: 734

Ion	Ratio	Lower	Upper
91	100		
120	0.0	14.7	34.3#

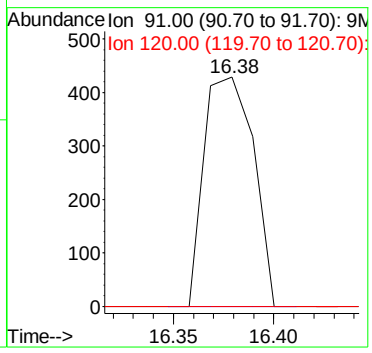

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050516\9M974174.D Vial: 12
Acq On : 5 May 2016 17:08 Operator: ADC
Sample : L16041580-04 A 8260 4.75g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 11:40:50 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	533640	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	400888	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	203881	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	141053	51.7210 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 103.44%		
43) 1,2-Dichloroethane-d4	10.44	65	161834	54.8070 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 109.62%		
58) Toluene-d8	12.82	98	506045	52.8383 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 105.68%		
79) p-Bromofluorobenzene	16.22	95	198698	56.2158 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 112.44%		

Target Compounds

					Qvalue
13) Acetone	6.38	43	3631	0.8879 ug/kg	89
36) Tetrahydrofuran	9.78	42	2241	2.1058 ug/kg#	66
56) Dimethyl Disulfide	12.82	94	14352	2.9612 ug/kg#	28
82) n-Propylbenzene	16.37	91	440	Below Cal #	51
89) 1,2,4-Trimethylbenzene	17.07	105	1776	Below Cal #	57

(#) = qualifier out of range (m) = manual integration
9M974174.D 8260SL.M Tue May 10 11:40:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050516\9M974174.D Vial: 12
Acq On : 5 May 2016 17:08 Operator: ADC
Sample : L16041580-04 A 8260 4.75g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 11:40 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

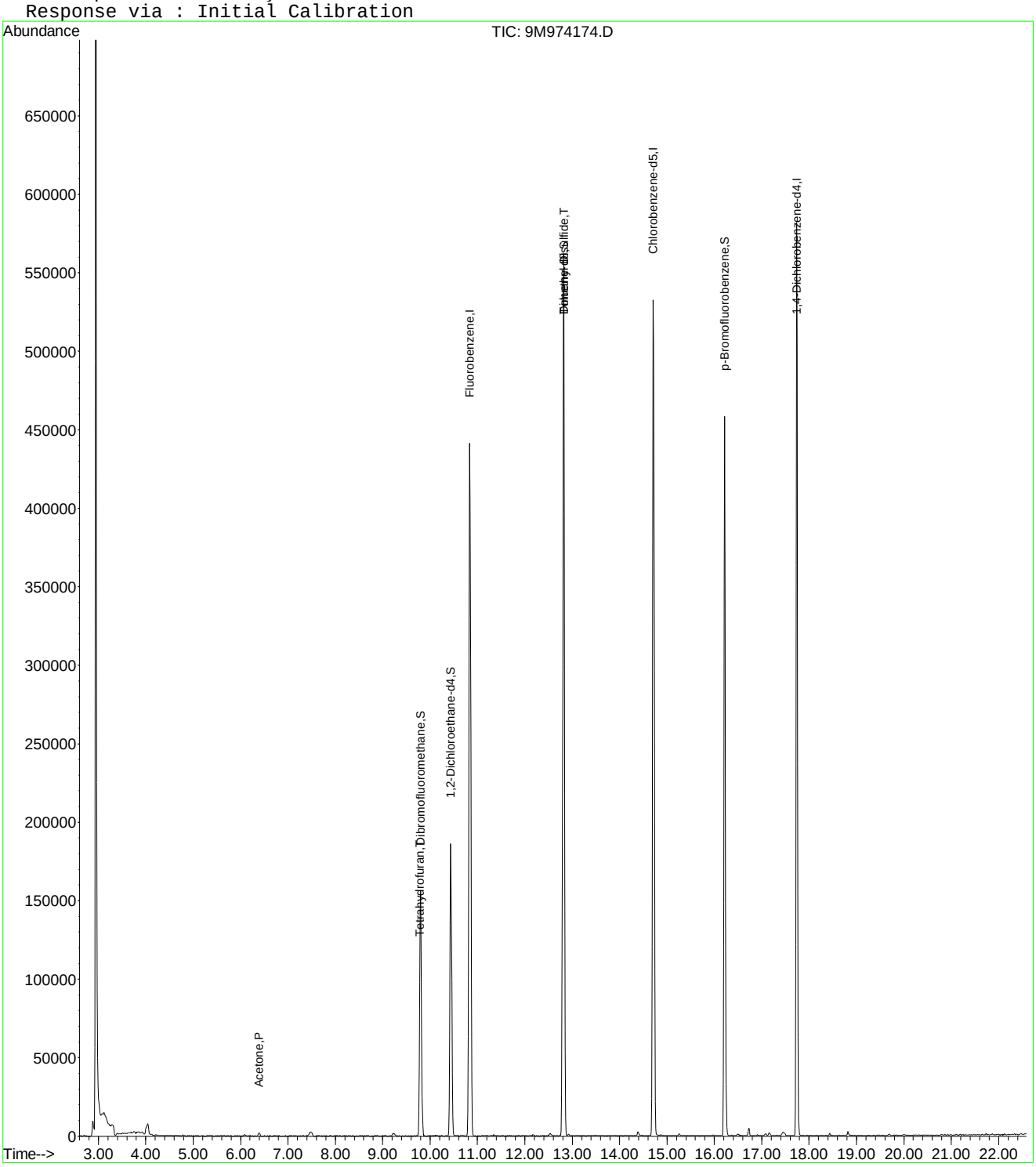

9M974174.D 8260SL.M Tue May 10 11:40:51 2016 Page 2

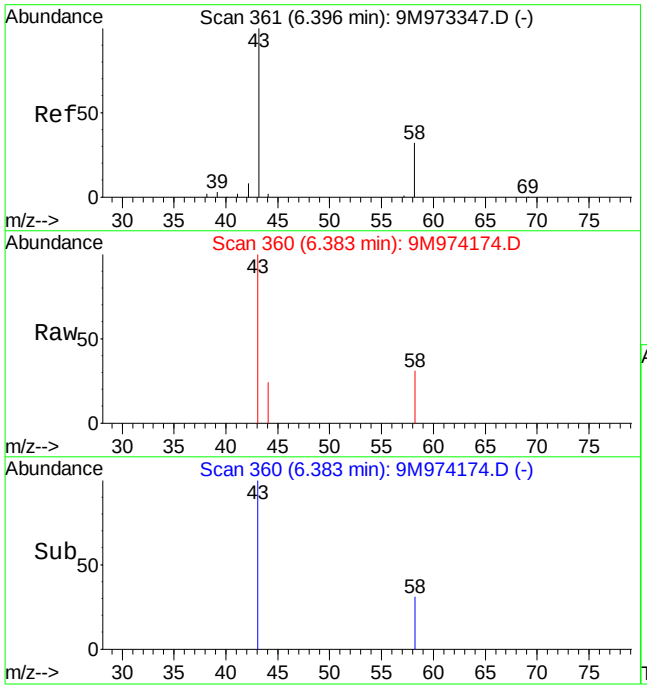

#13
Acetone
Concen: 0.89 ug/kg
RT: 6.38 min Scan# 360
Delta R.T. -0.00 min
Lab File: 9M974174.D
Acq: 5 May 2016 17:08

Tgt Ion: 43 Resp: 3631

Ion	Ratio	Lower	Upper
43	100		
58	27.2	20.2	47.2

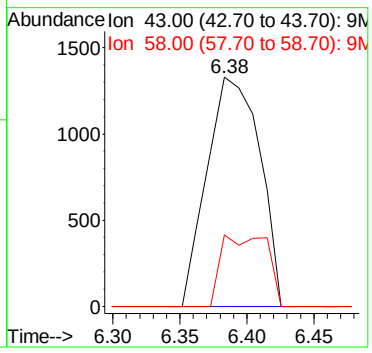

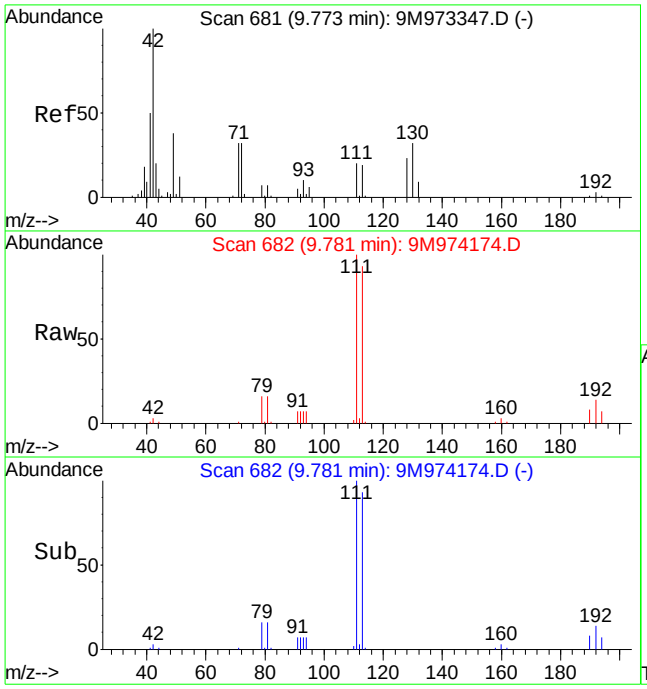

#36
Tetrahydrofuran
Concen: 2.11 ug/kg
RT: 9.78 min Scan# 682
Delta R.T. 0.02 min
Lab File: 9M974174.D
Acq: 5 May 2016 17:08

Tgt Ion: 42 Resp: 2241

Ion	Ratio	Lower	Upper
42	100		
72	0.0	20.8	48.6#
71	29.4	20.0	46.8

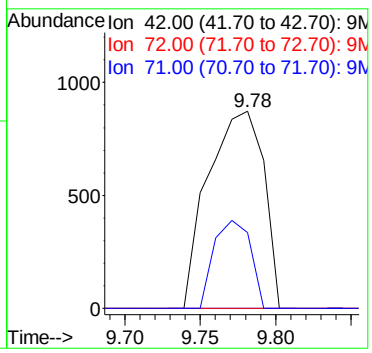

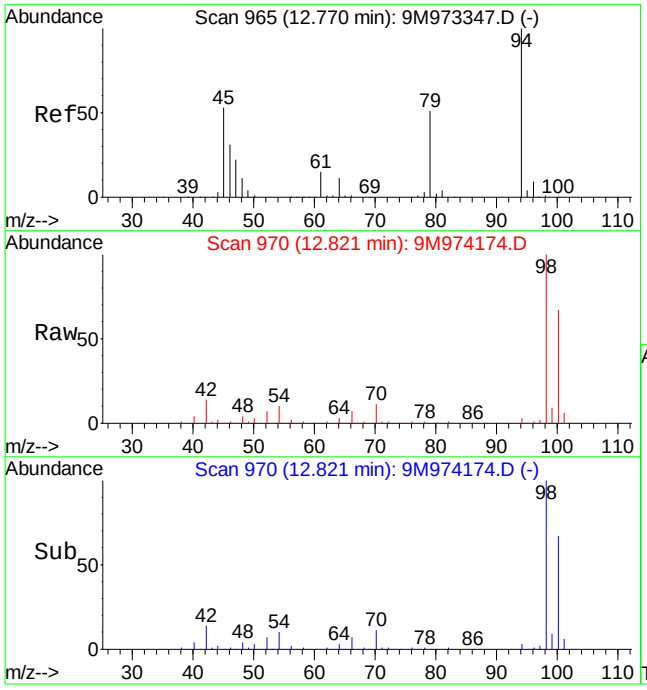

#56
Dimethyl Disulfide
Concen: 2.96 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M974174.D
Acq: 5 May 2016 17:08

Tgt Ion: 94 Resp: 14352

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.3	68.5#

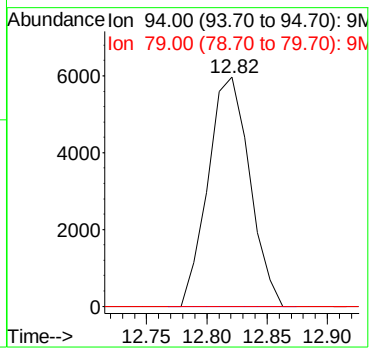

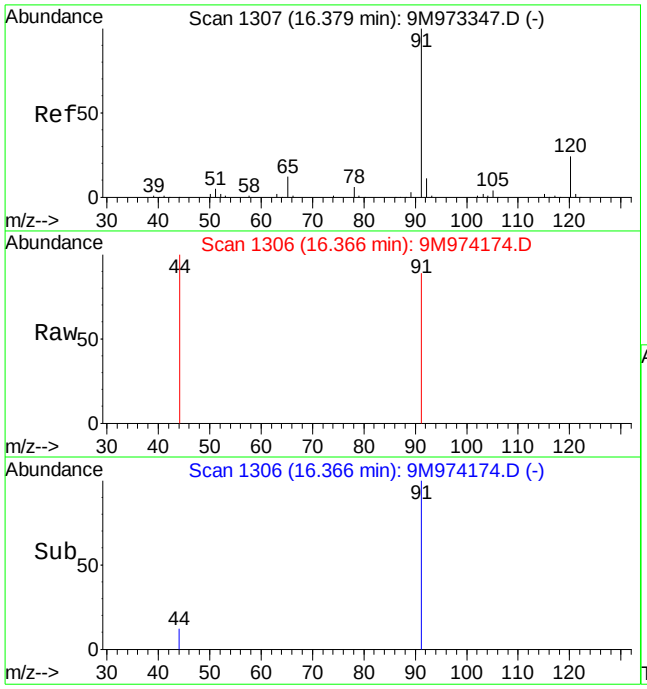

#82
n-Propylbenzene
Concen: Below Cal
RT: 16.37 min Scan# 1306
Delta R.T. -0.00 min
Lab File: 9M974174.D
Acq: 5 May 2016 17:08

Tgt Ion: 91 Resp: 440

Ion	Ratio	Lower	Upper
91	100		
120	0.0	14.7	34.3#

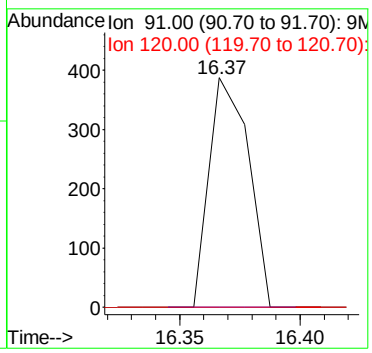

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050516\9M974175.D Vial: 13
Acq On : 5 May 2016 17:40 Operator: ADC
Sample : L16041580-05 A 8260 5.28g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 11:40:51 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	484278	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	360619	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	181849	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	126346	51.0505 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 102.10%		
43) 1,2-Dichloroethane-d4	10.43	65	148779	55.5216 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 111.04%		
58) Toluene-d8	12.82	98	464241	53.8862 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 107.78%		
79) p-Bromofluorobenzene	16.22	95	179101	56.8105 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 113.62%		

Target Compounds

					Qvalue
13) Acetone	6.39	43	5131	3.0059 ug/kg	88
36) Tetrahydrofuran	9.77	42	2864	2.9656 ug/kg#	67
56) Dimethyl Disulfide	12.82	94	12820	2.9148 ug/kg#	28
82) n-Propylbenzene	16.38	91	659	Below Cal #	51
84) 1,3,5-Trimethylbenzene	16.49	105	3573	0.4110 ug/kg#	49
89) 1,2,4-Trimethylbenzene	17.08	105	3243	Below Cal	79

(#) = qualifier out of range (m) = manual integration
9M974175.D 8260SL.M Tue May 10 11:40:52 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050516\9M974175.D Vial: 13
Acq On : 5 May 2016 17:40 Operator: ADC
Sample : L16041580-05 A 8260 5.28g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 11:40 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

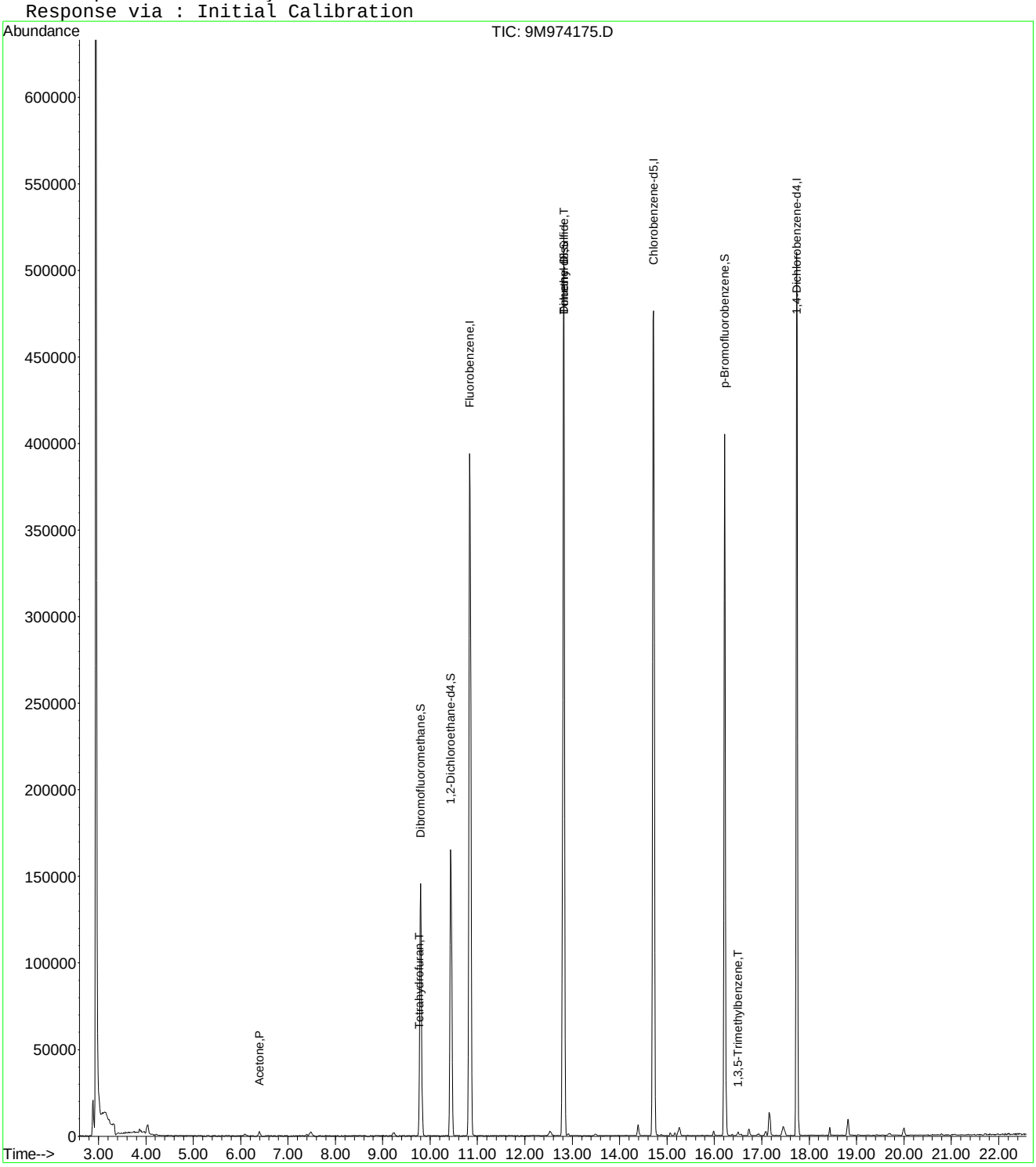

9M974175.D 8260SL.M Tue May 10 11:40:52 2016 Page 2

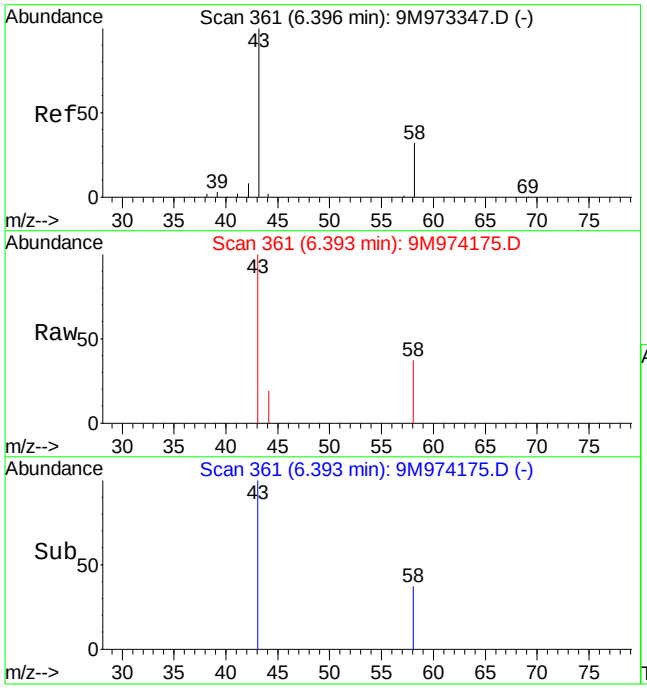

#13
Acetone
Concen: 3.01 ug/kg
RT: 6.39 min Scan# 361
Delta R.T. 0.01 min
Lab File: 9M974175.D
Acq: 5 May 2016 17:40

Tgt Ion: 43 Resp: 5131

Ion	Ratio	Lower	Upper
43	100		
58	26.7	20.2	47.2

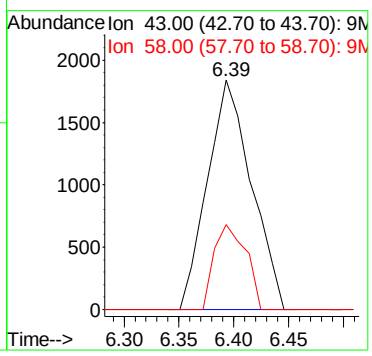

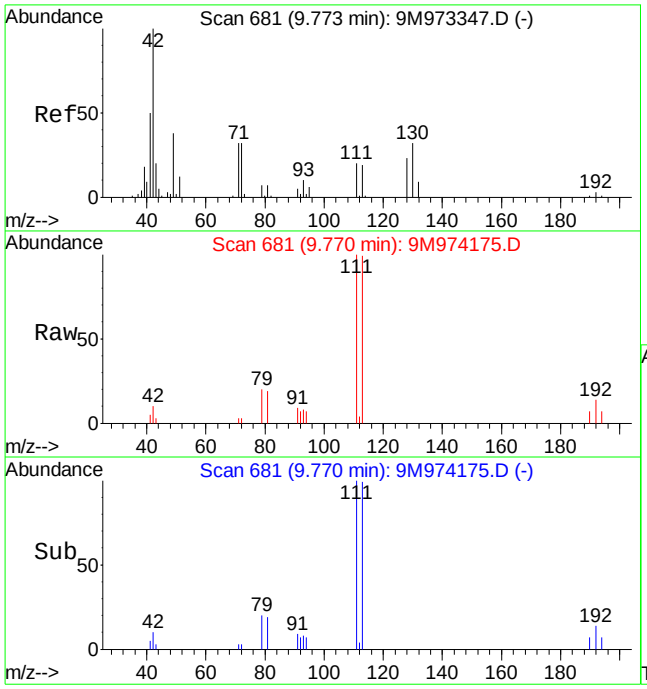

#36
Tetrahydrofuran
Concen: 2.97 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. 0.01 min
Lab File: 9M974175.D
Acq: 5 May 2016 17:40

Tgt Ion: 42 Resp: 2864

Ion	Ratio	Lower	Upper
42	100		
72	8.4	20.8	48.6#
71	22.0	20.0	46.8

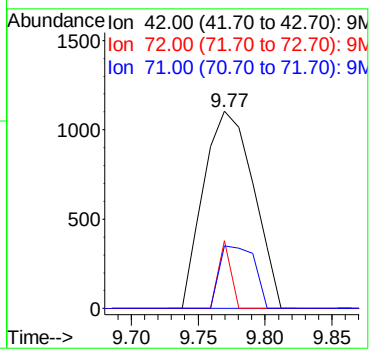

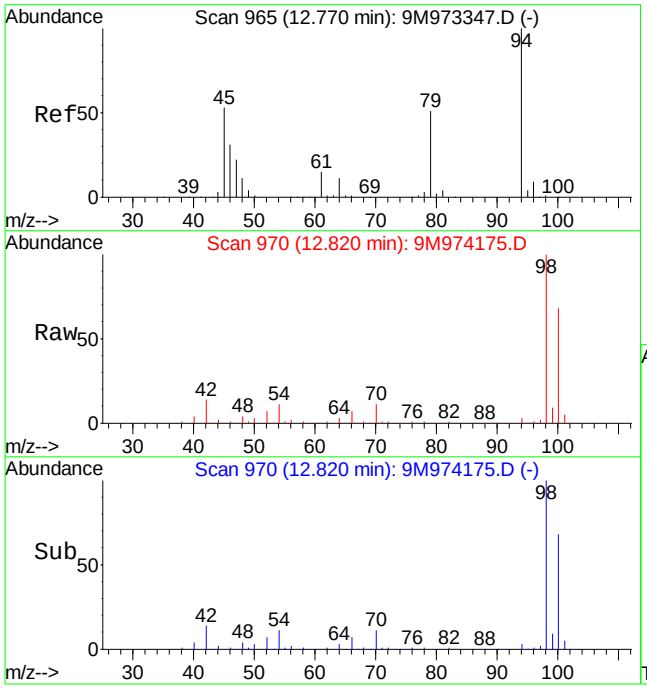

#56
Dimethyl Disulfide
Concen: 2.91 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M974175.D
Acq: 5 May 2016 17:40

Tgt Ion: 94 Resp: 12820

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.3	68.5#

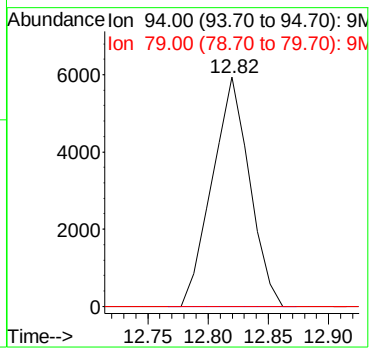

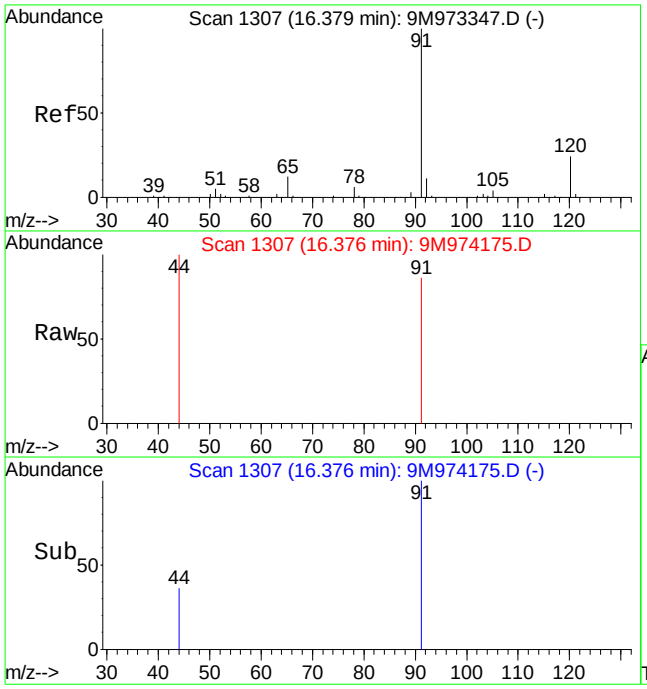

#82
n-Propylbenzene
Concen: Below Cal
RT: 16.38 min Scan# 1307
Delta R.T. 0.01 min
Lab File: 9M974175.D
Acq: 5 May 2016 17:40

Tgt Ion: 91 Resp: 659

Ion	Ratio	Lower	Upper
91	100		
120	0.0	14.7	34.3#

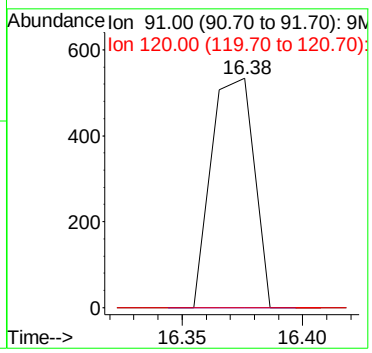

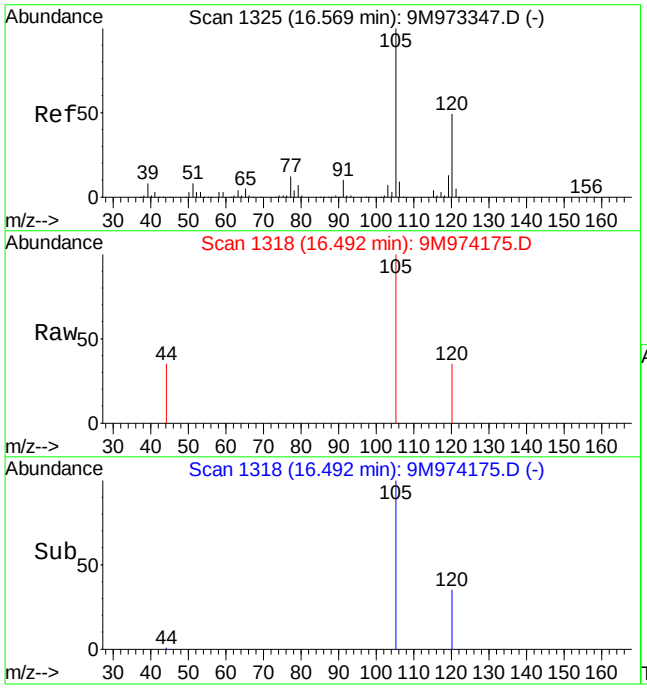

#84
1,3,5-Trimethylbenzene
Concen: 0.41 ug/kg
RT: 16.49 min Scan# 1318
Delta R.T. -0.07 min
Lab File: 9M974175.D
Acq: 5 May 2016 17:40

Tgt Ion:105 Resp: 3573

Ion	Ratio	Lower	Upper
105	100		
120	14.4	29.6	69.0#

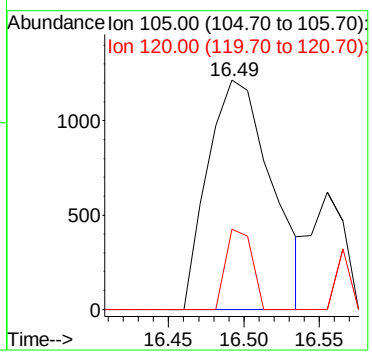

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050516\9M974170.D Vial: 8
Acq On : 5 May 2016 15:04 Operator: ADC
Sample : L16041580-06 A RS 8260 5.14g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 11:40:46 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	648463	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	485674	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	248894	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	169746	51.2209 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 102.44%		
43) 1,2-Dichloroethane-d4	10.43	65	182269	50.7975 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 101.60%		
58) Toluene-d8	12.82	98	617655	53.2333 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.46%		
79) p-Bromofluorobenzene	16.22	95	237293	54.9936 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 109.98%		

Target Compounds					Qvalue
13) Acetone	6.39	43	9473	5.2480 ug/kg	91
29) 2-Butanone	9.02	43	2083	1.1357 ug/kg#	56
36) Tetrahydrofuran	9.78	42	3472	2.6849 ug/kg	91
56) Dimethyl Disulfide	12.82	94	16467	2.7960 ug/kg#	28
82) n-Propylbenzene	16.37	91	1451	Below Cal #	51
89) 1,2,4-Trimethylbenzene	17.08	105	3746	Below Cal	83

(#) = qualifier out of range (m) = manual integration
9M974170.D 8260SL.M Tue May 10 11:40:47 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050516\9M974170.D Vial: 8
Acq On : 5 May 2016 15:04 Operator: ADC
Sample : L16041580-06 A RS 8260 5.14g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 11:40 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

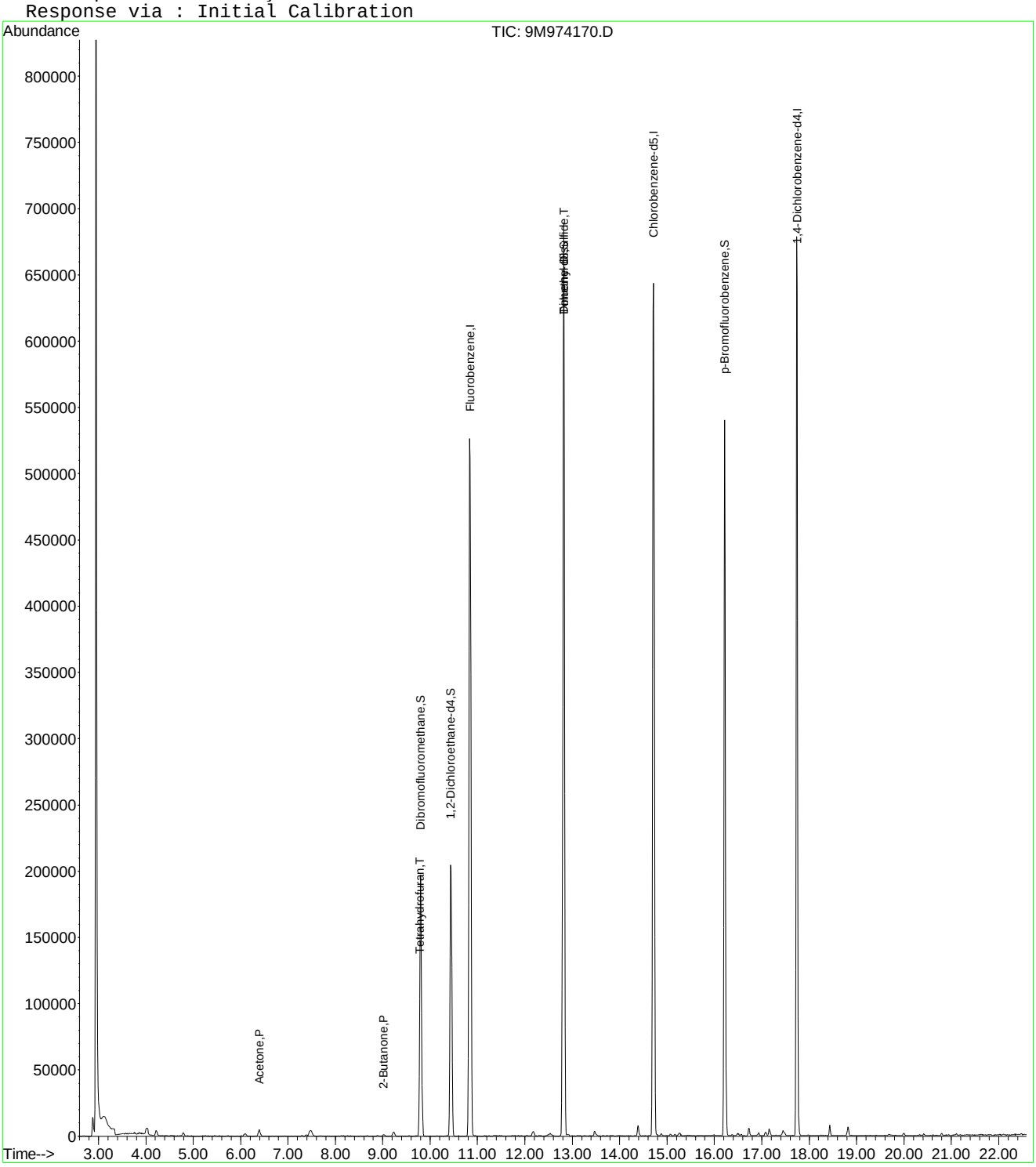

9M974170.D 8260SL.M Tue May 10 11:40:47 2016 Page 2

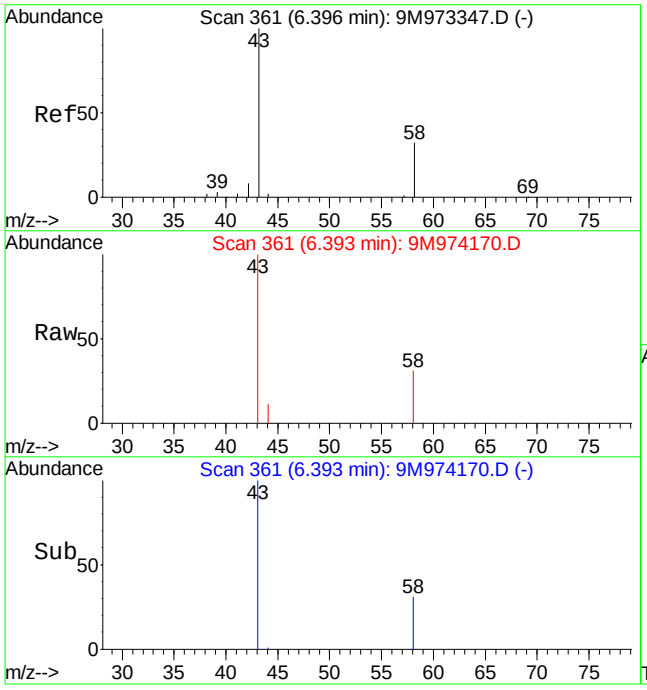

#13
Acetone
Concen: 5.25 ug/kg
RT: 6.39 min Scan# 361
Delta R.T. 0.01 min
Lab File: 9M974170.D
Acq: 5 May 2016 15:04

Tgt Ion: 43 Resp: 9473

Ion	Ratio	Lower	Upper
43	100		
58	38.6	20.2	47.2

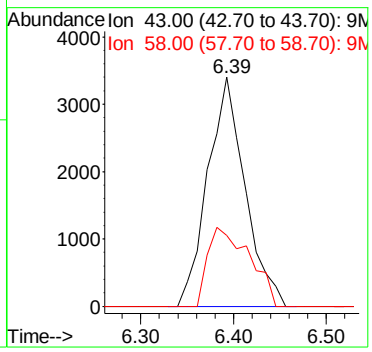

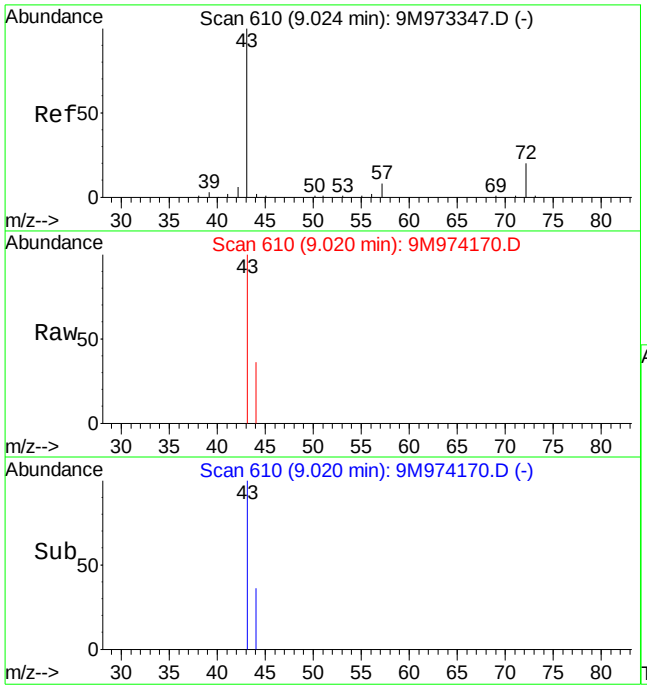

#29
2-Butanone
Concen: 1.14 ug/kg
RT: 9.02 min Scan# 610
Delta R.T. 0.01 min
Lab File: 9M974170.D
Acq: 5 May 2016 15:04

Tgt Ion: 43 Resp: 2083

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.1	28.1#

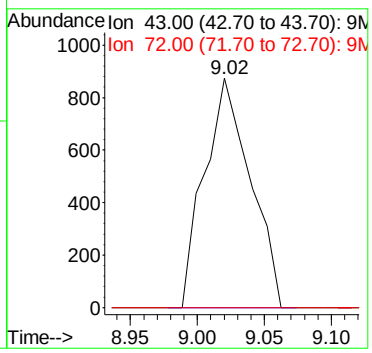

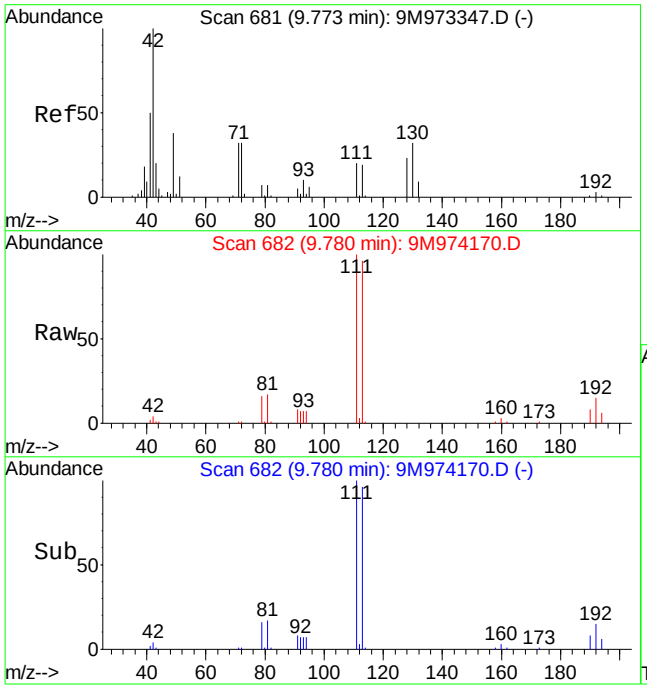

#36
Tetrahydrofuran
Concen: 2.68 ug/kg
RT: 9.78 min Scan# 682
Delta R.T. 0.02 min
Lab File: 9M974170.D
Acq: 5 May 2016 15:04

Tgt Ion: 42 Resp: 3472

Ion	Ratio	Lower	Upper
42	100		
72	35.2	20.8	48.6
71	23.2	20.0	46.8

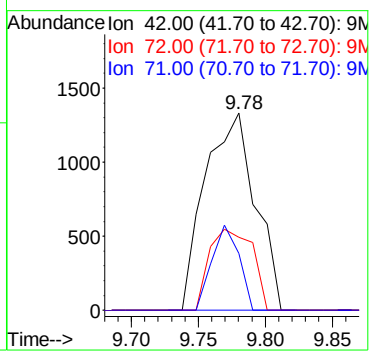

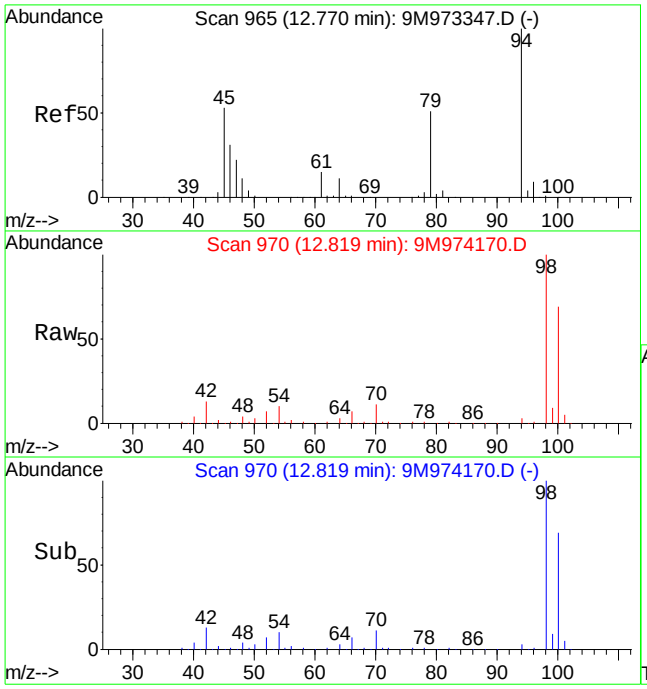

#56
Dimethyl Disulfide
Concen: 2.80 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M974170.D
Acq: 5 May 2016 15:04

Tgt Ion: 94 Resp: 16467

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.3	68.5#

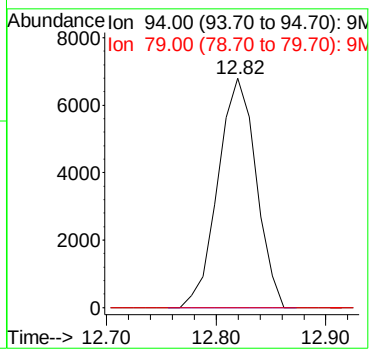

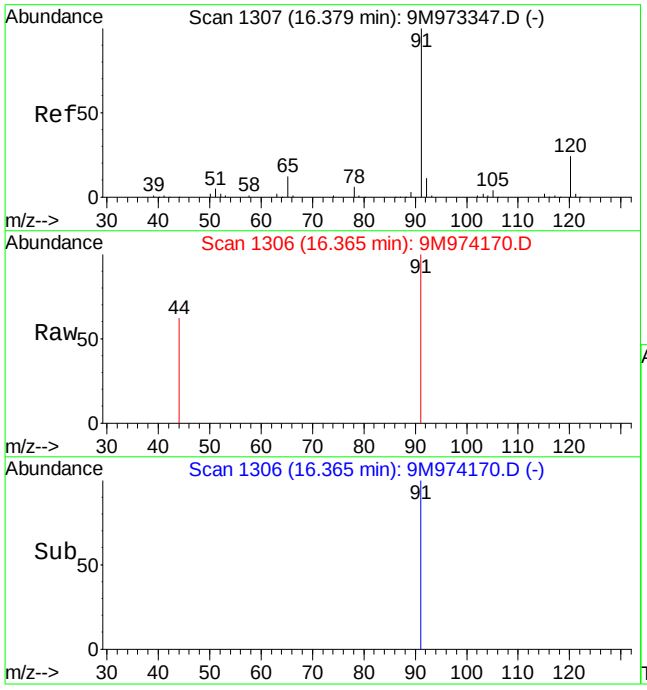

#82
n-Propylbenzene
Concen: Below Cal
RT: 16.37 min Scan# 1306
Delta R.T. -0.00 min
Lab File: 9M974170.D
Acq: 5 May 2016 15:04

Tgt Ion: 91 Resp: 1451

Ion	Ratio	Lower	Upper
91	100		
120	0.0	14.7	34.3#

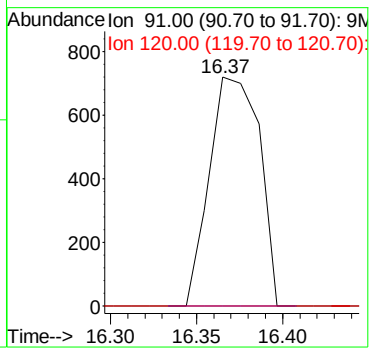

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\050516\9M974167.D Vial: 5
Acq On : 5 May 2016 13:34 Operator: ADC
Sample : L16041580-07 A MS 8260 5.38g Inst : hpms9
Misc : 7,1 STD75739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 13:56:38 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	604518	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	454664	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	233270	50.00 ug/kg	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.80	111	161343	52.2245 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.44%		
43) 1,2-Dichloroethane-d4	10.44	65	170880	51.0854 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 102.18%		
58) Toluene-d8	12.82	98	579870	53.3854 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.78%		
79) p-Bromofluorobenzene	16.22	95	222491	55.0168 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 110.04%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	97601	23.6623 ug/kg	100
3) Chloromethane	3.76	50	101783	20.0197 ug/kg	99
4) Vinyl Chloride	3.98	62	91434	24.3037 ug/kg	100
6) Bromomethane	4.88	94	52213	20.5061 ug/kg	99
7) Chloroethane	5.03	64	55836	23.0128 ug/kg	100
8) Trichlorofluoromethane	5.52	101	114411	22.0906 ug/kg	100
9) Diethyl ether	6.06	59	1456	0.5001 ug/kg#	1
10) Isoprene	6.09	67	99292	24.1287 ug/kg	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	70396	23.2248 ug/kg	99
13) Acetone	6.38	43	31277	25.9927 ug/kg	95
14) 1,1-Dichloroethene	6.61	61	106239	21.0188 ug/kg	99
15) Tert-Butyl Alcohol	6.73	59	413	0.7908 ug/kg#	62
16) Dimethyl Sulfide	6.88	62	75343	30.8711 ug/kg	100
17) Iodomethane	7.13	142	37440	24.5180 ug/kg	100
18) Methyl acetate	7.14	43	53699	16.4665 ug/kg	100
19) Methylene Chloride	7.40	84	64064	20.0026 ug/kg	95
20) Carbon Disulfide	7.44	76	189800	19.1729 ug/kg	99
21) Acrylonitrile	7.58	53	29889	21.4520 ug/kg	100
22) Methyl Tert Butyl Ether	7.60	73	192056	21.4613 ug/kg	99
23) trans-1,2-Dichloroethene	7.84	61	107448	21.8996 ug/kg	100
24) n-Hexane	7.91	57	122979	21.1997 ug/kg	99
27) 1,1-Dichloroethane	8.46	63	123669	20.3990 ug/kg	98
29) 2-Butanone	9.02	43	35979	21.0422 ug/kg	97
31) 2,2-Dichloropropane	9.23	77	99049	21.7679 ug/kg	98
32) cis-1,2-Dichloroethene	9.31	96	71199	21.8607 ug/kg	87
33) Chloroform	9.51	83	109589	21.3762 ug/kg	99
34) 1-Bromopropane	9.64	122	16642	30.1008 ug/kg	98
35) Bromochloromethane	9.75	130	42106	20.2287 ug/kg	98
36) Tetrahydrofuran	9.77	42	3309	2.7449 ug/kg#	78
38) 1,1,1-Trichloroethane	10.04	97	101687	22.3285 ug/kg	98
39) Cyclohexane	10.08	56	149275	22.1211 ug/kg	99
40) 1,1-Dichloropropene	10.23	75	85236	21.5863 ug/kg	100
41) Tert-Amyl-Methyl ether	10.23	73	11697	1.4066 ug/kg#	50
42) Carbon Tetrachloride	10.38	117	92754	20.8166 ug/kg	99
45) 1,2-Dichloroethane	10.56	62	95273	20.8625 ug/kg	99
46) Benzene	10.59	78	256670	21.0093 ug/kg	99
47) Trichloroethene	11.34	130	73887	22.1260 ug/kg	99
48) Methylcyclohexane	11.43	83	118724	22.4362 ug/kg	99
49) 1,2-Dichloropropane	11.56	63	72421	21.5547 ug/kg	97
51) Bromodichloromethane	11.86	83	81302	20.2567 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\050516\9M974167.D Vial: 5
Acq On : 5 May 2016 13:34 Operator: ADC
Sample : L16041580-07 A MS 8260 5.38g Inst : hpms9
Misc : 7,1 STD75739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 13:56:38 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
52)	Dibromomethane	11.95	174	38260	18.4652	ug/kg	98
53)	2-Chloroethyl Vinyl Ether	12.16	63	41211	20.5652	ug/kg	99
54)	4-Methyl-2-Pentanone	12.19	58	29637	19.4149	ug/kg	97
55)	cis-1,3-Dichloropropene	12.49	75	108204	22.3855	ug/kg	99
56)	Dimethyl Disulfide	12.77	94	126563	23.0519	ug/kg	96
59)	Toluene	12.91	91	272531	21.3484	ug/kg	98
60)	Ethyl Methacrylate	13.01	69	78256	20.4149	ug/kg	99
61)	trans-1,3-Dichloropropene	13.09	75	90994	20.6889	ug/kg	99
62)	1,1,2-Trichloroethane	13.32	97	52578	20.3394	ug/kg	99
63)	2-Hexanone	13.24	43	49188	18.7830	ug/kg	98
64)	1,3-Dichloropropane	13.62	76	94960	21.2419	ug/kg	97
65)	Tetrachloroethene	13.74	164	56221	21.4157	ug/kg	96
66)	Dibromochloromethane	14.00	129	64685	19.7579	ug/kg	99
67)	1,2-Dibromoethane	14.27	107	56478	20.5252	ug/kg	100
68)	1-Chlorohexane	14.34	91	96693	23.1270	ug/kg	99
69)	Chlorobenzene	14.76	112	191667	21.7877	ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.79	131	67394	20.8346	ug/kg	98
71)	Ethylbenzene	14.79	106	106114	22.3987	ug/kg	100
72)	m-,p-Xylene	14.88	106	256869	43.9346	ug/kg	100
73)	o-Xylene	15.44	106	125589	22.0960	ug/kg	99
74)	Styrene	15.48	104	196154	21.2667	ug/kg	99
75)	Bromoform	15.99	173	39308	17.0619	ug/kg	99
76)	Isopropylbenzene	15.87	105	323703	22.6718	ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	67240	19.7241	ug/kg	99
80)	1,2,3-Trichloropropane	16.28	110	21517	20.2891	ug/kg#	8
81)	trans-1,4-Dichloro-2-Buten	16.32	53	20529	16.1513	ug/kg#	1
82)	n-Propylbenzene	16.38	91	365777	26.3371	ug/kg	99
83)	Bromobenzene	16.51	156	79680	22.0771	ug/kg	100
84)	1,3,5-Trimethylbenzene	16.56	105	276922	24.8344	ug/kg	99
85)	2-Chlorotoluene	16.65	91	225734	23.3133	ug/kg	99
86)	4-Chlorotoluene	16.69	91	214608	23.4283	ug/kg	100
87)	a-Methylstyrene	16.97	118	136907	23.6781	ug/kg	100
88)	tert-Butylbenzene	17.03	134	61218	24.5389	ug/kg	98
89)	1,2,4-Trimethylbenzene	17.08	105	271586	24.0066	ug/kg	99
90)	sec-Butylbenzene	17.29	105	353849	23.6420	ug/kg	100
91)	p-Isopropyltoluene	17.45	119	284786	23.9202	ug/kg	100
92)	1,3-Dichlorobenzene	17.65	146	154619	21.7685	ug/kg	99
93)	1,4-Dichlorobenzene	17.78	146	160707	22.0481	ug/kg	99
94)	n-Butylbenzene	17.98	91	248923	21.9784	ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	146830	21.4950	ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.28	157	15296	18.1980	ug/kg	99
97)	1,2,4-Trichlorobenzene	20.42	180	92029	18.8774	ug/kg	99
98)	Hexachlorobutadiene	20.58	225	48730	20.9286	ug/kg	100
99)	Naphthalene	20.80	128	208165	16.8502	ug/kg	99
100)	1,2,3-Trichlorobenzene	21.10	180	85154	18.0237	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\050516\9M974167.D Vial: 5
Acq On : 5 May 2016 13:34 Operator: ADC
Sample : L16041580-07 A MS 8260 5.38g Inst : hpms9
Misc : 7,1 STD75739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 5 13:56 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

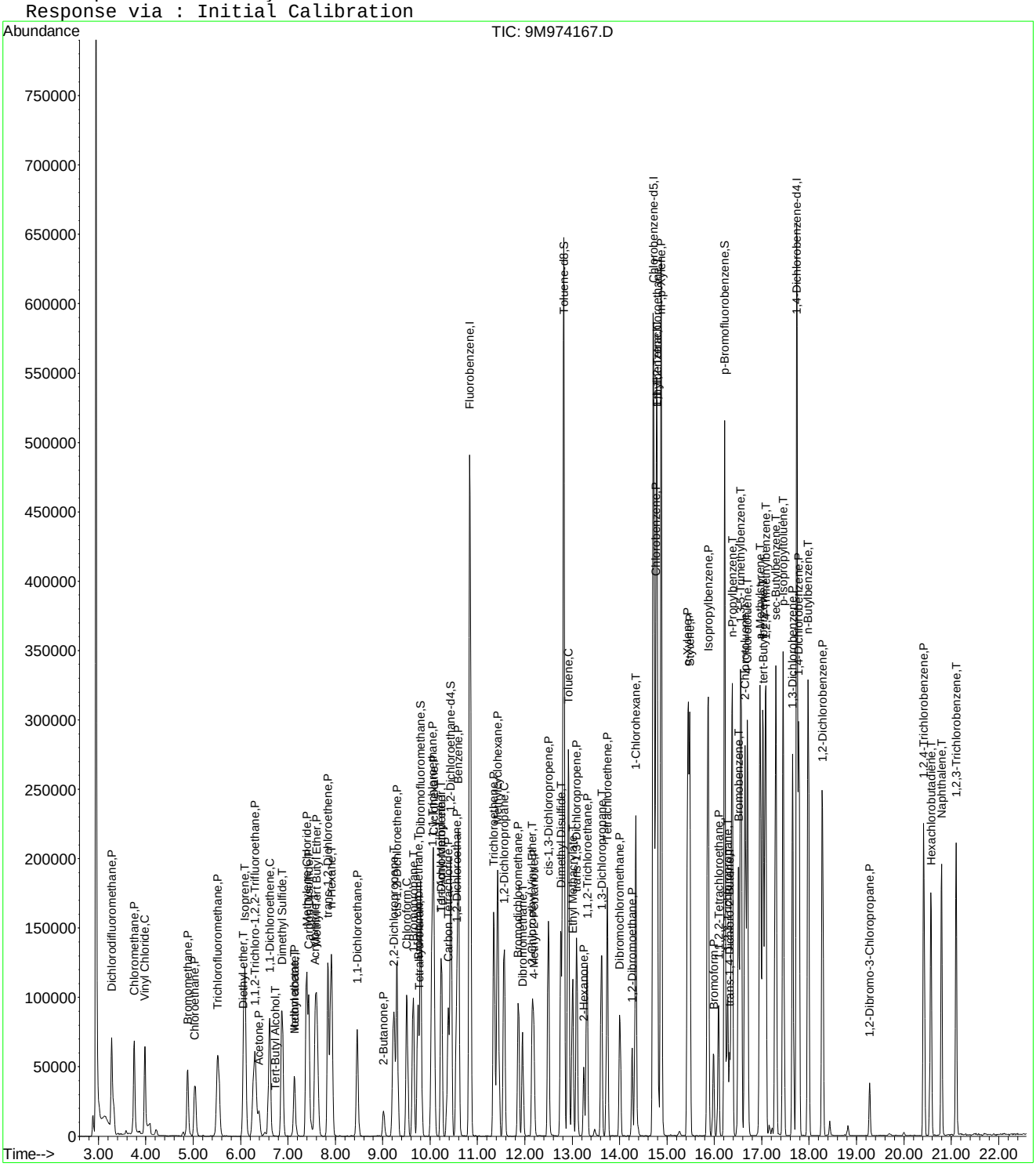

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\050516\9M974168.D Vial: 6
Acq On : 5 May 2016 14:04 Operator: ADC
Sample : L16041580-08 A MSD 8260 5.02g Inst : hpms9
Misc : 7,1 STD75739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 14:27:21 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	630423	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	475998	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	249394	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	167699	52.0513 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.10%		
43) 1,2-Dichloroethane-d4	10.43	65	180304	51.6878 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 103.38%		
58) Toluene-d8	12.82	98	603995	53.1142 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.22%		
79) p-Bromofluorobenzene	16.22	95	235644	54.5019 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 109.00%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.28	85	93027	21.6266 ug/kg	100
3) Chloromethane	3.75	50	98030	18.4892 ug/kg	98
4) Vinyl Chloride	3.98	62	88244	22.4310 ug/kg	100
6) Bromomethane	4.88	94	51932	19.5576 ug/kg	100
7) Chloroethane	5.03	64	53808	21.2656 ug/kg	99
8) Trichlorofluoromethane	5.52	101	109953	20.3575 ug/kg	99
10) Isoprene	6.09	67	100113	23.3285 ug/kg	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	68406	21.6409 ug/kg	99
13) Acetone	6.38	43	31288	24.8146 ug/kg	98
14) 1,1-Dichloroethene	6.61	61	104232	19.7743 ug/kg	99
15) Tert-Butyl Alcohol	6.72	59	291	0.5343 ug/kg#	62
16) Dimethyl Sulfide	6.88	62	76512	30.0728 ug/kg	96
17) Iodomethane	7.13	142	35232	22.4316 ug/kg	98
18) Methyl acetate	7.14	43	54016	15.8831 ug/kg	99
19) Methylene Chloride	7.40	84	64465	19.3007 ug/kg	99
20) Carbon Disulfide	7.44	76	193974	18.7894 ug/kg	99
21) Acrylonitrile	7.57	53	29964	20.6221 ug/kg	98
22) Methyl Tert Butyl Ether	7.60	73	189518	20.3075 ug/kg	99
23) trans-1,2-Dichloroethene	7.84	61	107223	20.9558 ug/kg	97
24) n-Hexane	7.91	57	125978	20.8243 ug/kg	98
27) 1,1-Dichloroethane	8.46	63	120585	19.0729 ug/kg	98
29) 2-Butanone	9.02	43	36668	20.5639 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	94788	19.9754 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	70165	20.6580 ug/kg	98
33) Chloroform	9.51	83	107301	20.0698 ug/kg	99
34) 1-Bromopropane	9.64	122	16346	28.3505 ug/kg	98
35) Bromochloromethane	9.75	130	41494	19.1155 ug/kg	98
36) Tetrahydrofuran	9.77	42	3278	2.6074 ug/kg	84
38) 1,1,1-Trichloroethane	10.04	97	97856	20.6044 ug/kg	99
39) Cyclohexane	10.08	56	148761	21.1390 ug/kg	99
40) 1,1-Dichloropropene	10.23	75	83291	20.2269 ug/kg	100
41) Tert-Amyl-Methyl ether	10.23	73	12420	1.4322 ug/kg#	48
42) Carbon Tetrachloride	10.38	117	90265	19.4256 ug/kg	99
45) 1,2-Dichloroethane	10.56	62	93269	19.5844 ug/kg	99
46) Benzene	10.60	78	250086	19.6292 ug/kg	100
47) Trichloroethene	11.34	130	71474	20.5239 ug/kg	98
48) Methylcyclohexane	11.43	83	119079	21.5786 ug/kg	98
49) 1,2-Dichloropropane	11.56	63	70863	20.2243 ug/kg	99
51) Bromodichloromethane	11.86	83	80596	19.2557 ug/kg	97
52) Dibromomethane	11.95	174	37556	17.3980 ug/kg	96

(#) = qualifier out of range (m) = manual integration
9M974168.D 8260SL.M Thu May 05 14:27:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\050516\9M974168.D Vial: 6
Acq On : 5 May 2016 14:04 Operator: ADC
Sample : L16041580-08 A MSD 8260 5.02g Inst : hpms9
Misc : 7,1 STD75739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 14:27:21 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
53)	2-Chloroethyl Vinyl Ether	12.15	63	41047	19.6416	ug/kg	99
54)	4-Methyl-2-Pentanone	12.19	58	29380	18.4557	ug/kg	96
55)	cis-1,3-Dichloropropene	12.49	75	104671	20.7647	ug/kg	100
56)	Dimethyl Disulfide	12.77	94	127703	22.3037	ug/kg	93
59)	Toluene	12.91	91	264321	19.7773	ug/kg	98
60)	Ethyl Methacrylate	13.01	69	79755	19.8734	ug/kg	97
61)	trans-1,3-Dichloropropene	13.09	75	88735	19.2710	ug/kg	99
62)	1,1,2-Trichloroethane	13.32	97	52893	19.5442	ug/kg	98
63)	2-Hexanone	13.24	43	48846	17.8164	ug/kg	95
64)	1,3-Dichloropropane	13.61	76	94630	20.2194	ug/kg	98
65)	Tetrachloroethene	13.74	164	55179	20.0767	ug/kg	98
66)	Dibromochloromethane	14.00	129	61923	18.0665	ug/kg	100
67)	1,2-Dibromoethane	14.27	107	56091	19.4710	ug/kg	97
68)	1-Chlorohexane	14.34	91	94422	21.5716	ug/kg	99
69)	Chlorobenzene	14.76	112	190508	20.6853	ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.79	131	65260	19.2706	ug/kg	99
71)	Ethylbenzene	14.79	106	102370	20.6399	ug/kg	100
72)	m-,p-Xylene	14.88	106	246043	40.1968	ug/kg	100
73)	o-Xylene	15.45	106	120122	20.1869	ug/kg	98
74)	Styrene	15.48	104	193467	20.0352	ug/kg	100
75)	Bromoform	15.99	173	39454	16.3577	ug/kg	99
76)	Isopropylbenzene	15.87	105	312242	20.8889	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	65326	17.9237	ug/kg	100
80)	1,2,3-Trichloropropane	16.28	110	22810	20.1177	ug/kg#	17
81)	trans-1,4-Dichloro-2-Buten	16.32	53	20062	14.7634	ug/kg#	1
82)	n-Propylbenzene	16.38	91	350596	23.5589	ug/kg	100
83)	Bromobenzene	16.51	156	78661	20.3857	ug/kg	100
84)	1,3,5-Trimethylbenzene	16.56	105	262399	22.0106	ug/kg	99
85)	2-Chlorotoluene	16.65	91	212178	20.4965	ug/kg	99
86)	4-Chlorotoluene	16.69	91	212365	21.6846	ug/kg	99
87)	a-Methylstyrene	16.97	118	137897	22.3074	ug/kg	97
88)	tert-Butylbenzene	17.03	134	60060	22.5182	ug/kg	95
89)	1,2,4-Trimethylbenzene	17.08	105	256052	21.1043	ug/kg	100
90)	sec-Butylbenzene	17.29	105	331772	20.7338	ug/kg	100
91)	p-Isopropyltoluene	17.45	119	269888	21.2033	ug/kg	99
92)	1,3-Dichlorobenzene	17.65	146	150347	19.7985	ug/kg	100
93)	1,4-Dichlorobenzene	17.78	146	152180	19.5284	ug/kg	98
94)	n-Butylbenzene	17.98	91	235507	19.4494	ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	140539	19.2438	ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.28	157	15743	17.5188	ug/kg	98
97)	1,2,4-Trichlorobenzene	20.42	180	84327	16.1792	ug/kg	99
98)	Hexachlorobutadiene	20.58	225	43686	17.5493	ug/kg	99
99)	Naphthalene	20.80	128	198795	15.0514	ug/kg	99
100)	1,2,3-Trichlorobenzene	21.10	180	79438	15.7268	ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\050516\9M974168.D Vial: 6
Acq On : 5 May 2016 14:04 Operator: ADC
Sample : L16041580-08 A MSD 8260 5.02g Inst : hpms9
Misc : 7,1 STD75739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 5 14:27 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

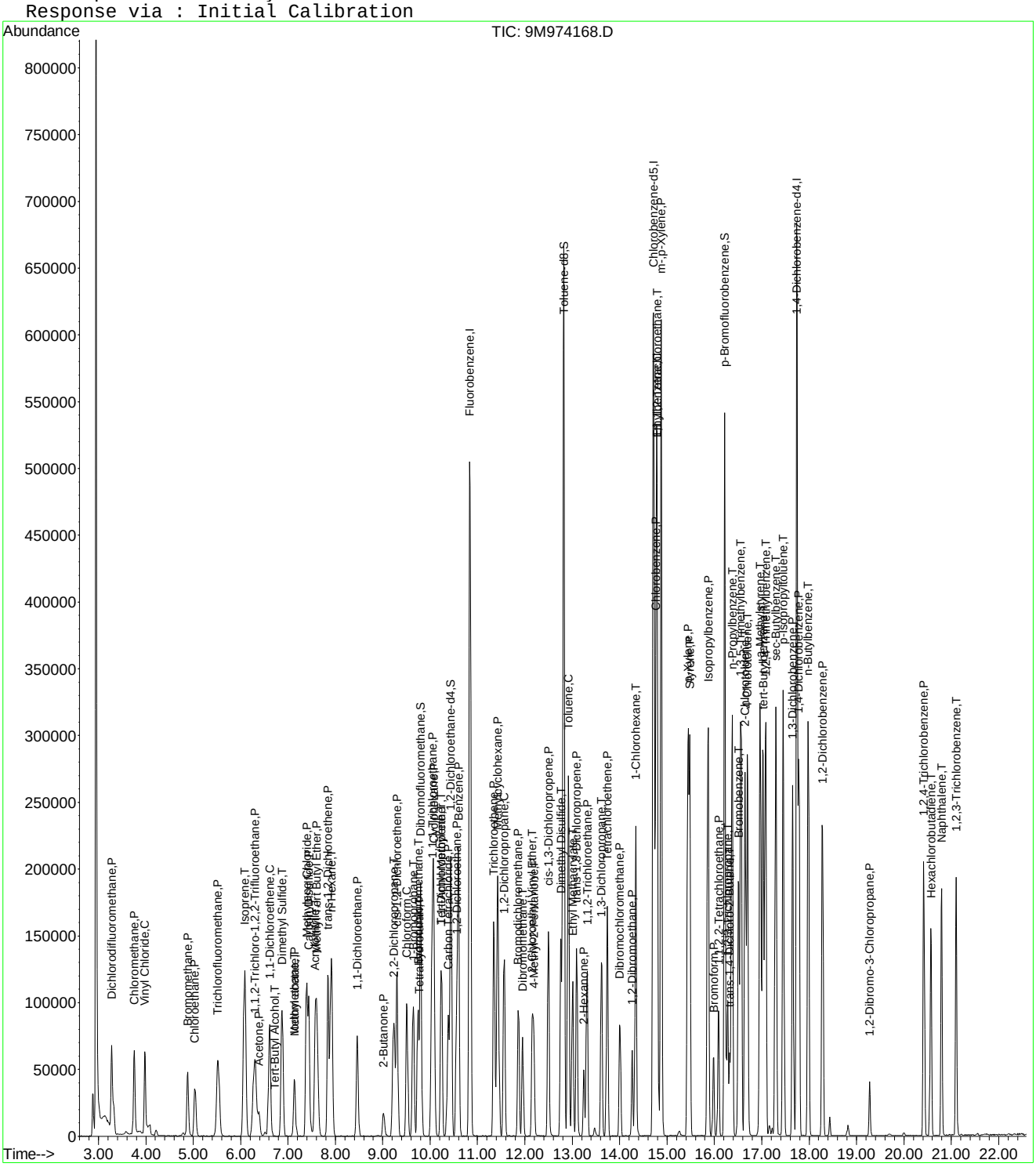

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050516\9M974176.D Vial: 14
Acq On : 5 May 2016 18:10 Operator: ADC
Sample : L16041580-09 A 8260 5.02g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 11:40:52 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	563947	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	408424	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	193157	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	142616	49.4838 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.96%		
43) 1,2-Dichloroethane-d4	10.43	65	162908	52.2058 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.42%		
58) Toluene-d8	12.82	98	520478	53.3426 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.68%		
79) p-Bromofluorobenzene	16.22	95	192605	57.5173 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 115.04%		

Target Compounds

					Qvalue
13) Acetone	6.38	43	18248	15.1645 ug/kg	85
20) Carbon Disulfide	7.44	76	4574	0.4953 ug/kg#	74
29) 2-Butanone	9.02	43	2649	1.6607 ug/kg#	56
36) Tetrahydrofuran	9.77	42	2451	2.1794 ug/kg#	66
56) Dimethyl Disulfide	12.82	94	13967	2.7269 ug/kg#	28
82) n-Propylbenzene	16.37	91	405	Below Cal #	51
89) 1,2,4-Trimethylbenzene	17.08	105	2013	Below Cal #	55

(#) = qualifier out of range (m) = manual integration
9M974176.D 8260SL.M Tue May 10 11:40:53 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050516\9M974176.D Vial: 14
Acq On : 5 May 2016 18:10 Operator: ADC
Sample : L16041580-09 A 8260 5.02g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 11:40 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

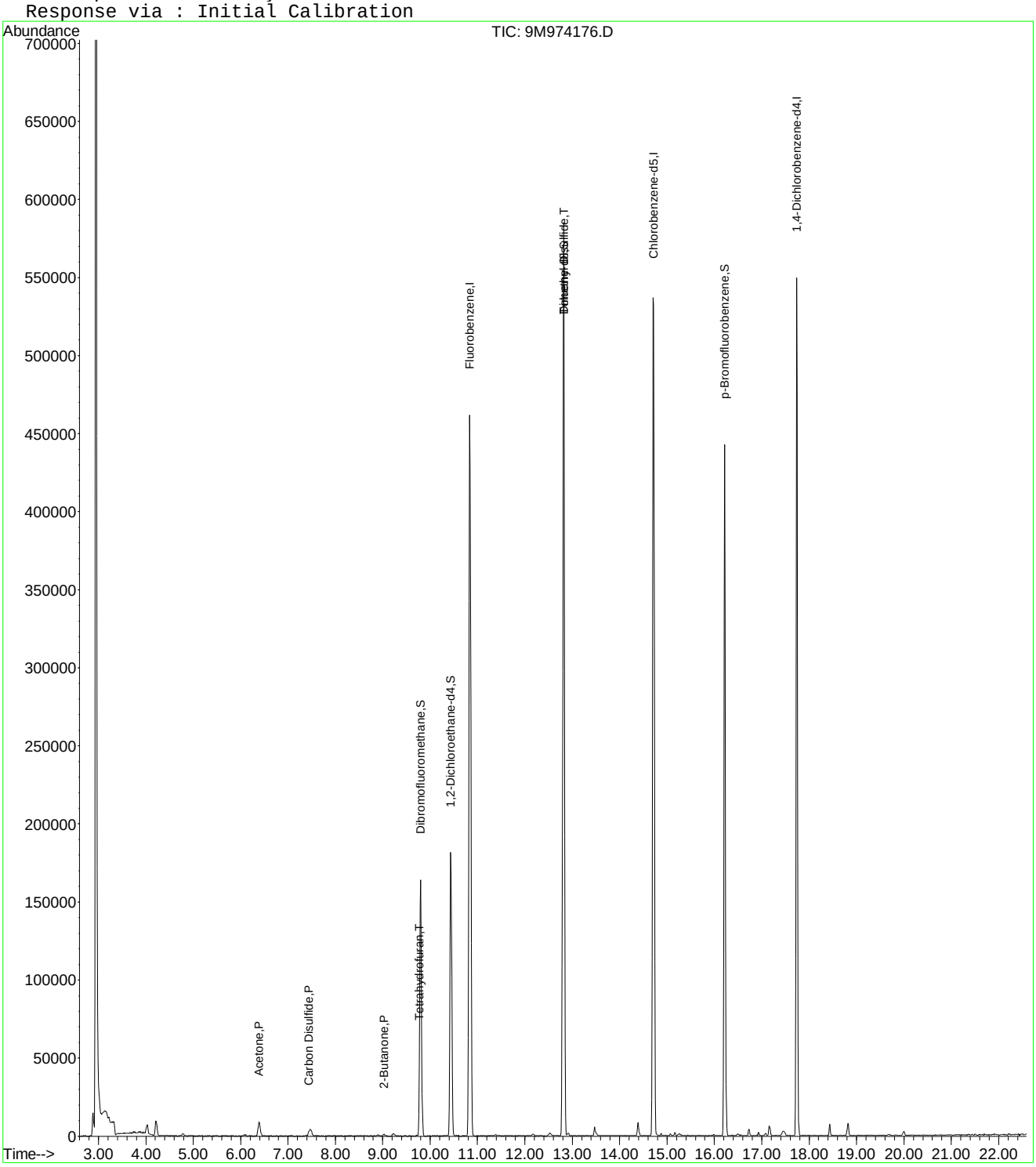

9M974176.D 8260SL.M Tue May 10 11:40:53 2016 Page 2

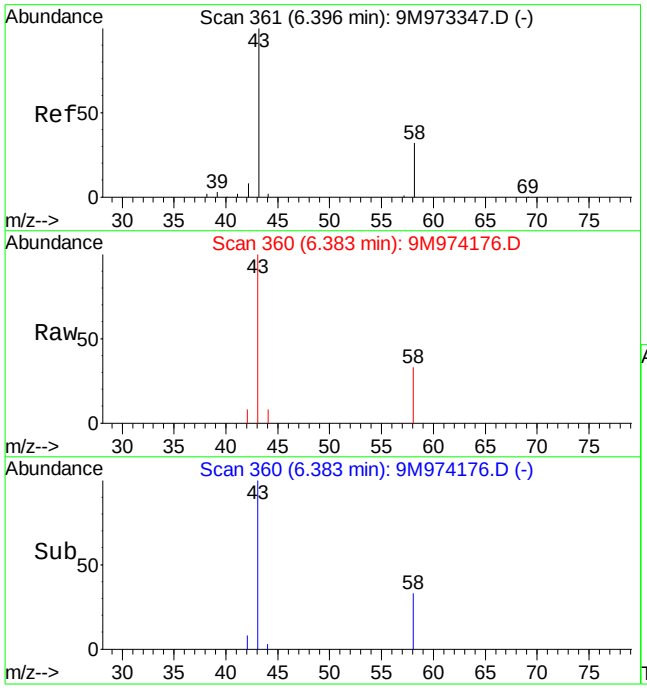

#13
Acetone
Concen: 15.16 ug/kg
RT: 6.38 min Scan# 360
Delta R.T. -0.00 min
Lab File: 9M974176.D
Acq: 5 May 2016 18:10

Tgt Ion: 43 Resp: 18248

Ion	Ratio	Lower	Upper
43	100		
58	42.4	20.2	47.2

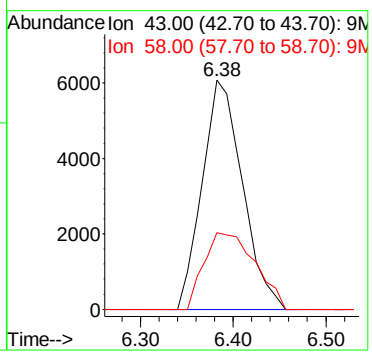

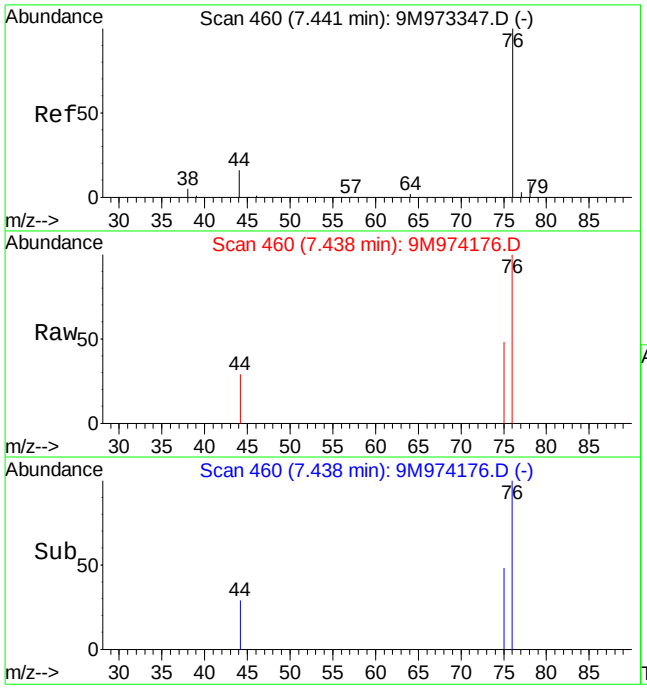

#20
Carbon Disulfide
Concen: 0.50 ug/kg
RT: 7.44 min Scan# 460
Delta R.T. -0.00 min
Lab File: 9M974176.D
Acq: 5 May 2016 18:10

Tgt Ion: 76 Resp: 4574

Ion	Ratio	Lower	Upper
76	100		
78	0.0	5.6	13.0#

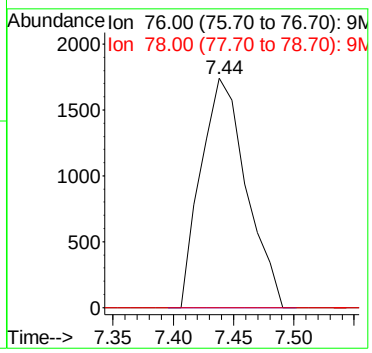

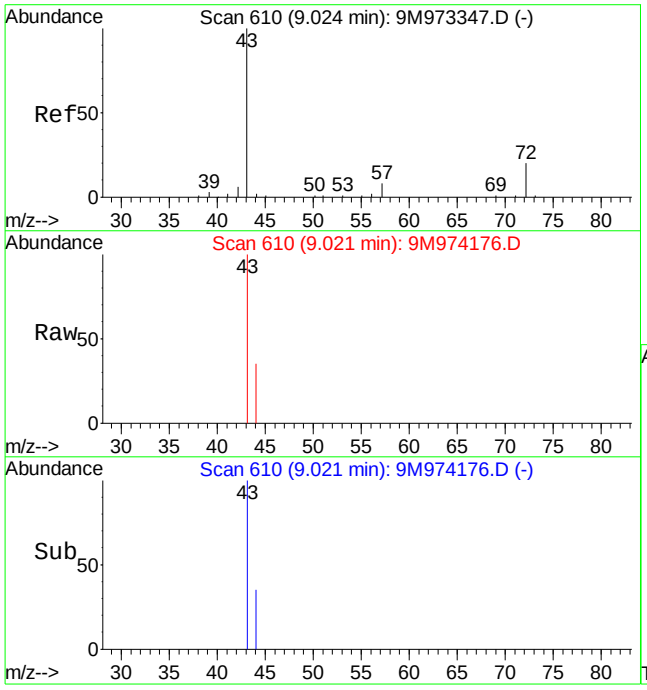

#29
2-Butanone
Concen: 1.66 ug/kg
RT: 9.02 min Scan# 610
Delta R.T. 0.01 min
Lab File: 9M974176.D
Acq: 5 May 2016 18:10

Tgt Ion: 43 Resp: 2649

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.1	28.1#

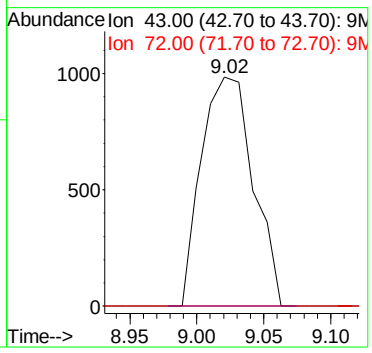

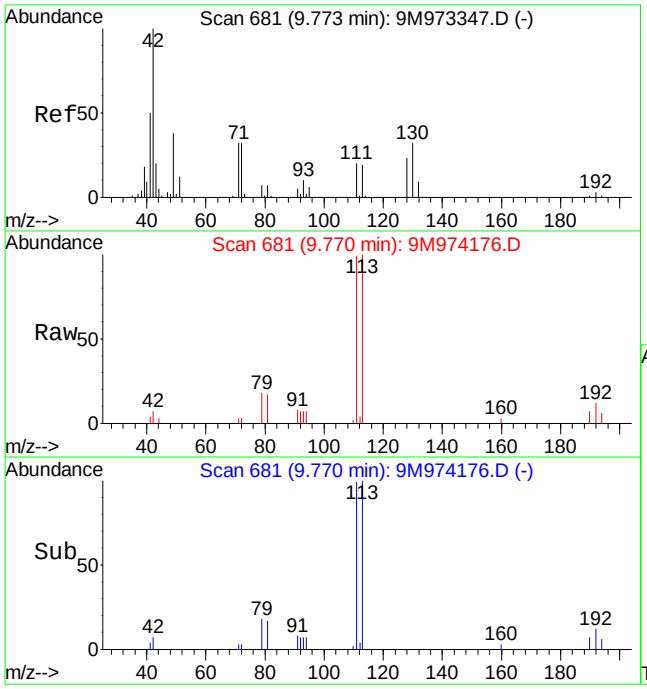

#36
Tetrahydrofuran
Concen: 2.18 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. 0.01 min
Lab File: 9M974176.D
Acq: 5 May 2016 18:10

Tgt Ion: 42 Resp: 2451

Ion	Ratio	Lower	Upper
42	100		
72	9.9	20.8	48.6#
71	19.1	20.0	46.8#

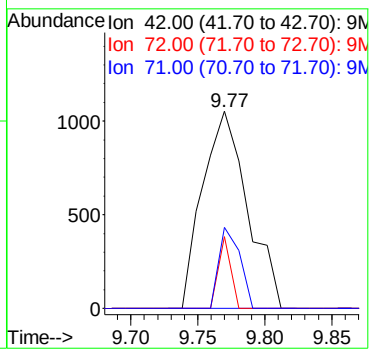

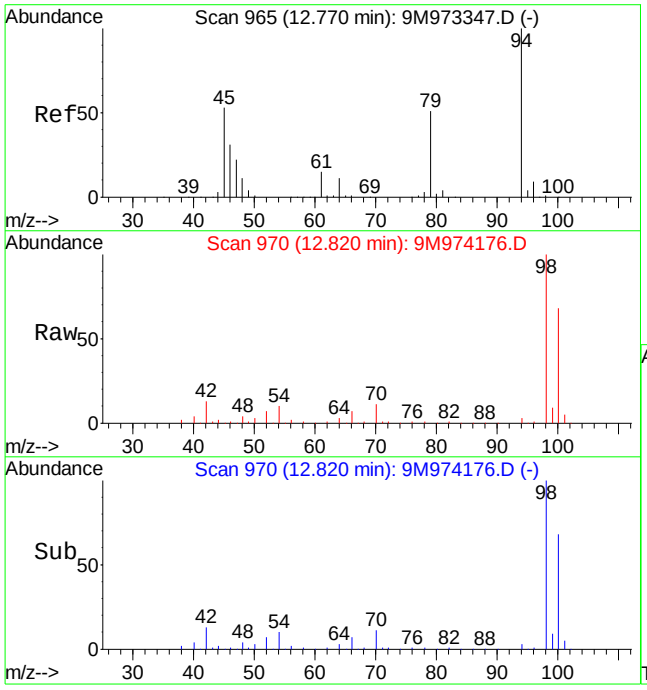

#56
Dimethyl Disulfide
Concen: 2.73 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M974176.D
Acq: 5 May 2016 18:10

Tgt Ion: 94 Resp: 13967

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.3	68.5#

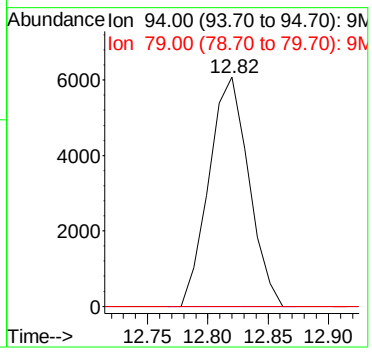

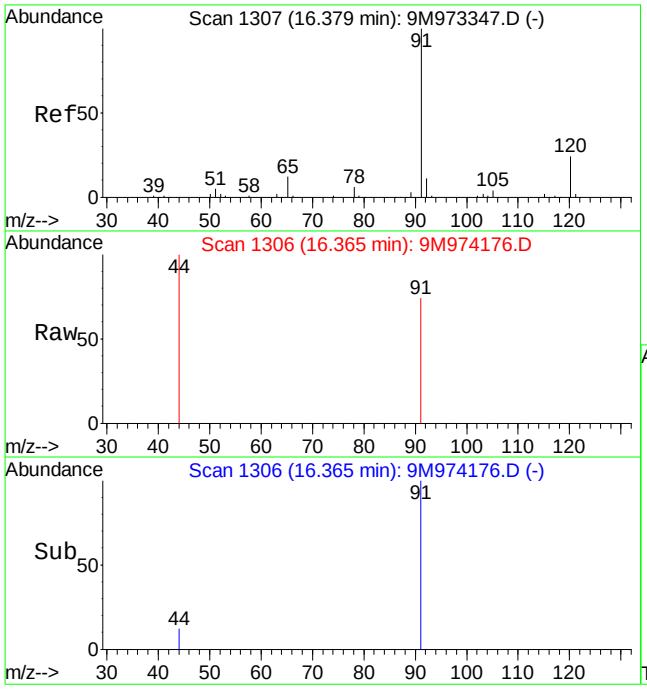

#82
n-Propylbenzene
Concen: Below Cal
RT: 16.37 min Scan# 1306
Delta R.T. -0.00 min
Lab File: 9M974176.D
Acq: 5 May 2016 18:10

Tgt Ion: 91 Resp: 405

Ion	Ratio	Lower	Upper
91	100		
120	0.0	14.7	34.3#

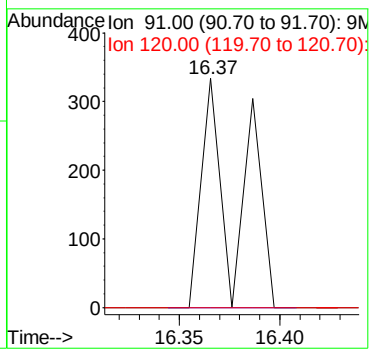

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050516\9M974177.D Vial: 15
Acq On : 5 May 2016 18:40 Operator: ADC
Sample : L16041580-10 A 8260 4.65g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 11:40:53 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	603642	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	437142	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	210644	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	154823	50.1867 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.38%		
43) 1,2-Dichloroethane-d4	10.44	65	175676	52.5954 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.20%		
58) Toluene-d8	12.82	98	565498	54.1491 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 108.30%		
79) p-Bromofluorobenzene	16.22	95	214745	58.8052 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 117.62%		

Target Compounds					Qvalue
13) Acetone	6.39	43	21376	16.8708 ug/kg	88
15) Tert-Butyl Alcohol	6.72	59	433	0.8303 ug/kg#	62
20) Carbon Disulfide	7.44	76	5110	0.5169 ug/kg#	74
29) 2-Butanone	9.01	43	3412	1.9984 ug/kg#	70
36) Tetrahydrofuran	9.77	42	2831	2.3518 ug/kg	83
56) Dimethyl Disulfide	12.82	94	16098	2.9363 ug/kg#	28
82) n-Propylbenzene	16.37	91	647	Below Cal #	51
89) 1,2,4-Trimethylbenzene	17.08	105	2408	Below Cal	87

(#) = qualifier out of range (m) = manual integration
9M974177.D 8260SL.M Tue May 10 11:40:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050516\9M974177.D Vial: 15
Acq On : 5 May 2016 18:40 Operator: ADC
Sample : L16041580-10 A 8260 4.65g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 11:40 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

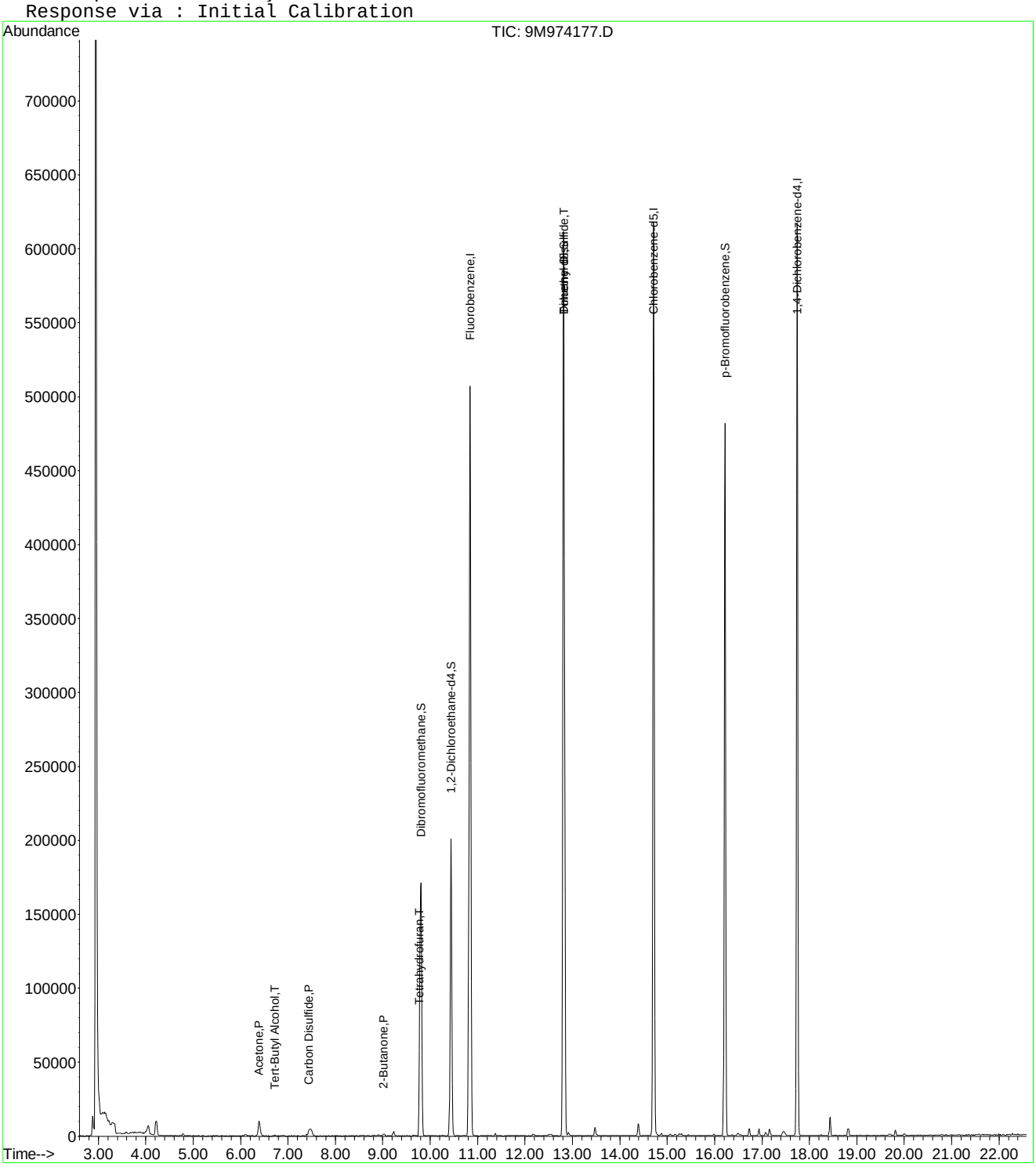

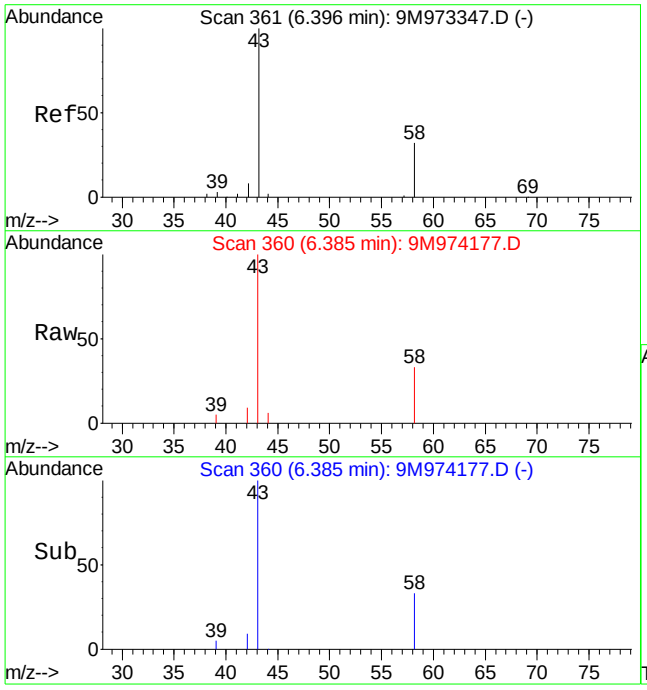

#13
Acetone
Concen: 16.87 ug/kg
RT: 6.39 min Scan# 360
Delta R.T. 0.00 min
Lab File: 9M974177.D
Acq: 5 May 2016 18:40

Tgt Ion: 43 Resp: 21376

Ion	Ratio	Lower	Upper
43	100		
58	40.3	20.2	47.2

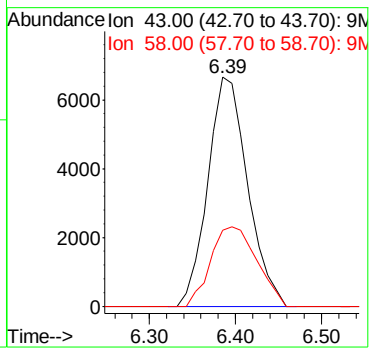

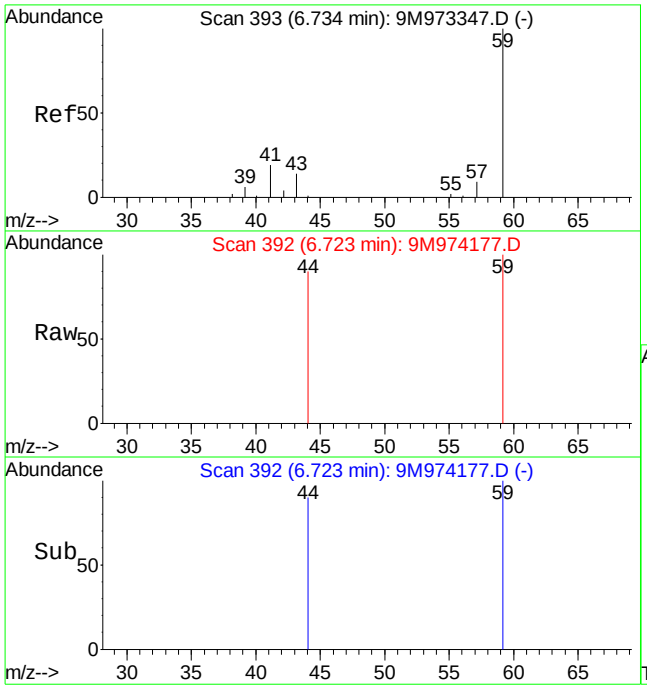

#15
Tert-Butyl Alcohol
Concen: 0.83 ug/kg
RT: 6.72 min Scan# 392
Delta R.T. -0.00 min
Lab File: 9M974177.D
Acq: 5 May 2016 18:40

Tgt Ion: 59 Resp: 433

Ion	Ratio	Lower	Upper
59	100		
41	0.0	12.0	28.0#
57	0.0	6.0	14.0#

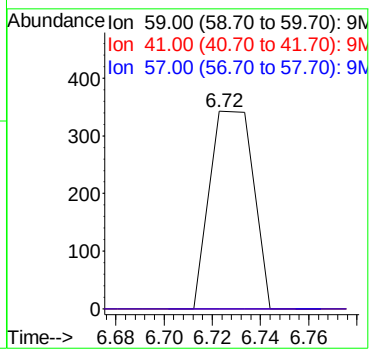

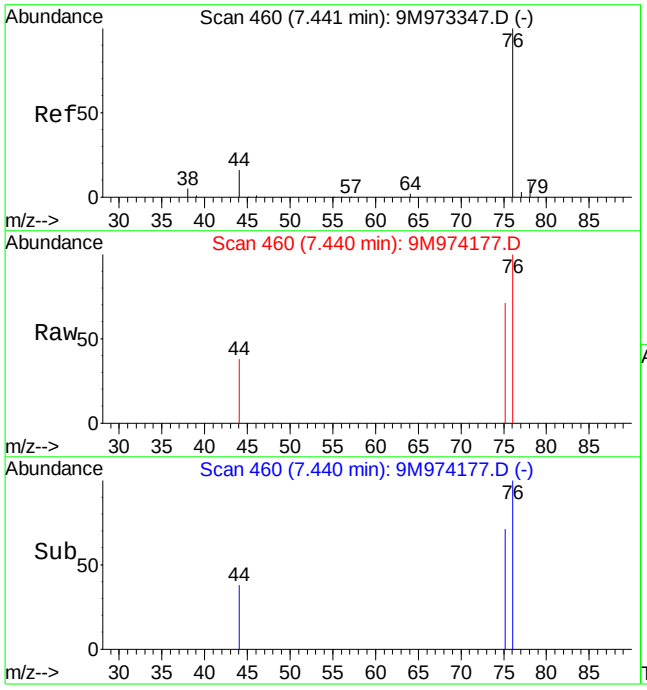

#20
Carbon Disulfide
Concen: 0.52 ug/kg
RT: 7.44 min Scan# 460
Delta R.T. -0.00 min
Lab File: 9M974177.D
Acq: 5 May 2016 18:40

Tgt Ion: 76 Resp: 5110

Ion	Ratio	Lower	Upper
76	100		
78	0.0	5.6	13.0#

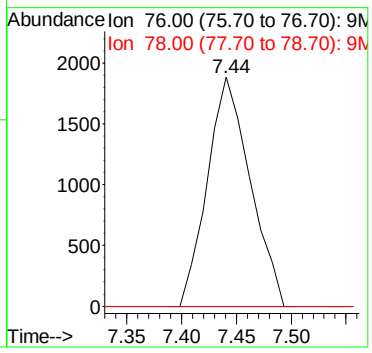

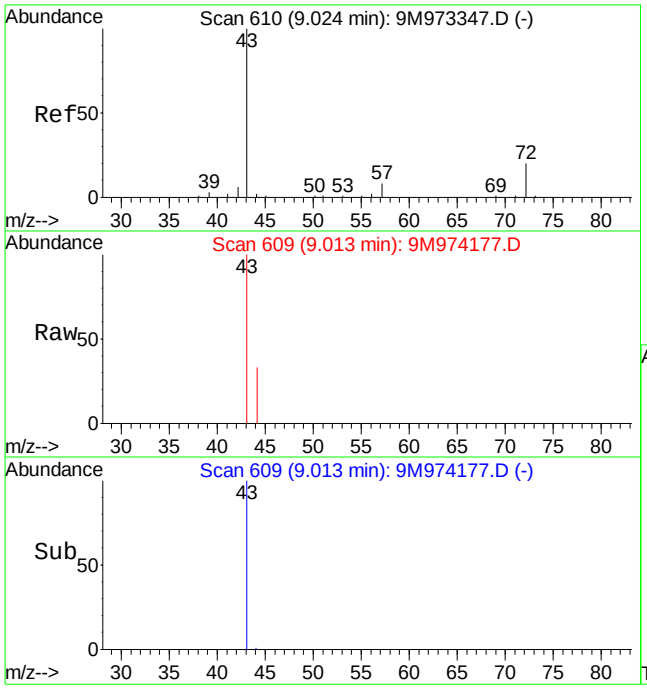

#29
2-Butanone
Concen: 2.00 ug/kg
RT: 9.01 min Scan# 609
Delta R.T. -0.00 min
Lab File: 9M974177.D
Acq: 5 May 2016 18:40

Tgt Ion: 43 Resp: 3412

Ion	Ratio	Lower	Upper
43	100		
72	6.4	12.1	28.1#

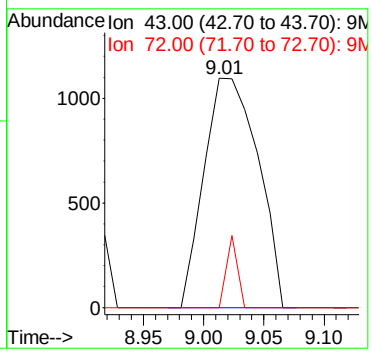

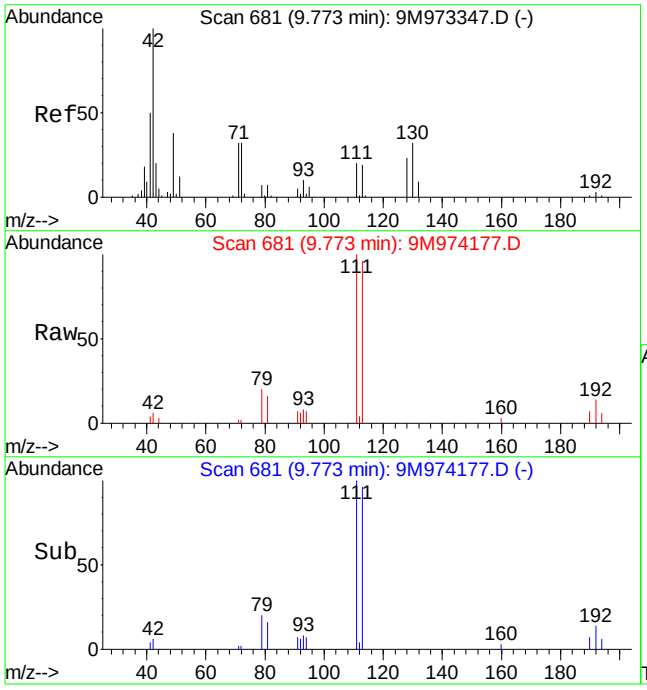

#36
Tetrahydrofuran
Concen: 2.35 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. 0.01 min
Lab File: 9M974177.D
Acq: 5 May 2016 18:40

Tgt Ion: 42 Resp: 2831

Ion	Ratio	Lower	Upper
42	100		
72	27.0	20.8	48.6
71	21.4	20.0	46.8

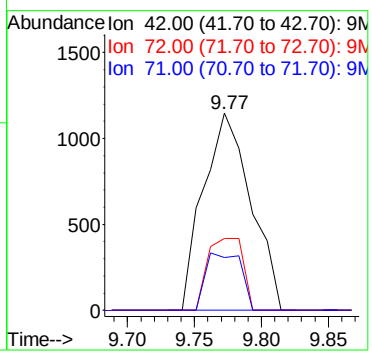

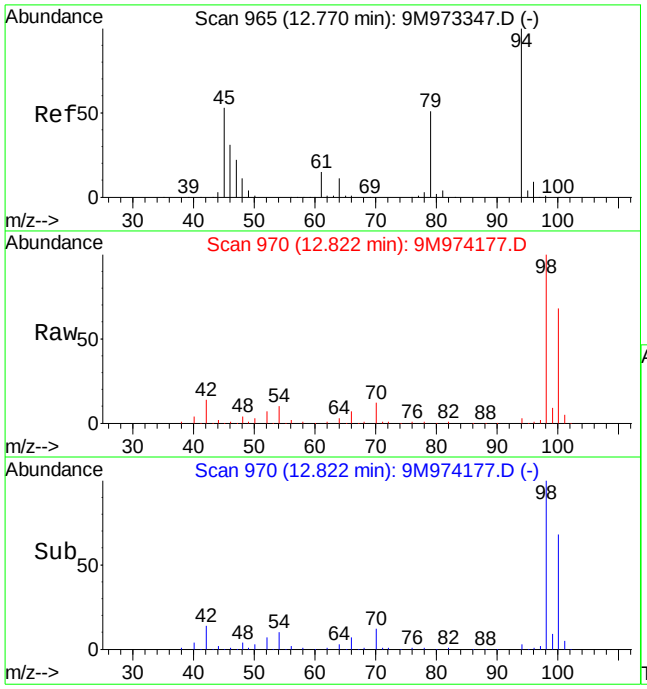

#56
Dimethyl Disulfide
Concen: 2.94 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M974177.D
Acq: 5 May 2016 18:40

Tgt Ion: 94 Resp: 16098

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.3	68.5#

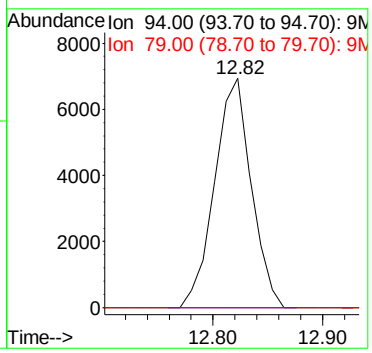

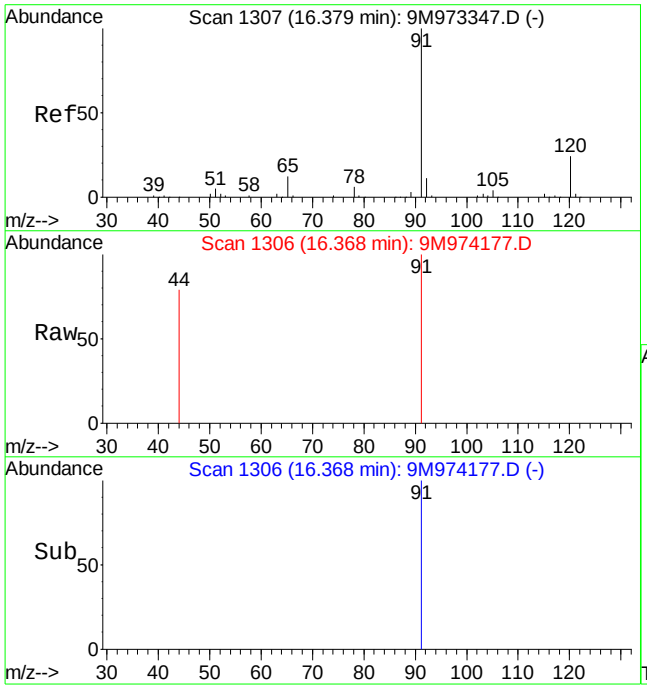

#82
n-Propylbenzene
Concen: Below Cal
RT: 16.37 min Scan# 1306
Delta R.T. 0.00 min
Lab File: 9M974177.D
Acq: 5 May 2016 18:40

Tgt Ion: 91 Resp: 647

Ion	Ratio	Lower	Upper
91	100		
120	0.0	14.7	34.3#

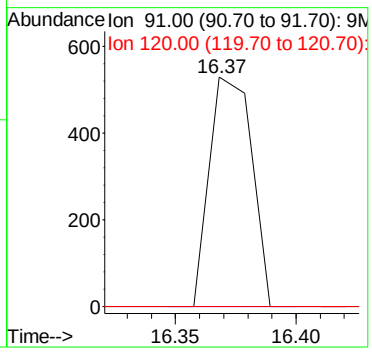

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050516\9M974178.D Vial: 16
Acq On : 5 May 2016 19:10 Operator: ADC
Sample : L16041580-11 A 8260 4.92g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 11:40:55 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	536936	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	395423	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	197478	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	141207	51.4596 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 102.92%		
43) 1,2-Dichloroethane-d4	10.43	65	159501	53.6853 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 107.38%		
58) Toluene-d8	12.82	98	513101	54.3155 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 108.64%		
79) p-Bromofluorobenzene	16.22	95	194429	56.7916 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 113.58%		

Target Compounds					Qvalue
13) Acetone	6.39	43	8356	5.7810 ug/kg	84
29) 2-Butanone	9.02	43	1537	1.0120 ug/kg#	56
36) Tetrahydrofuran	9.77	42	2617	2.4441 ug/kg#	65
56) Dimethyl Disulfide	12.82	94	13514	2.7712 ug/kg#	28
82) n-Propylbenzene	16.39	91	403	Below Cal #	51
89) 1,2,4-Trimethylbenzene	17.08	105	1882	Below Cal	77

(#) = qualifier out of range (m) = manual integration
9M974178.D 8260SL.M Tue May 10 11:40:55 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050516\9M974178.D Vial: 16
Acq On : 5 May 2016 19:10 Operator: ADC
Sample : L16041580-11 A 8260 4.92g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 11:40 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

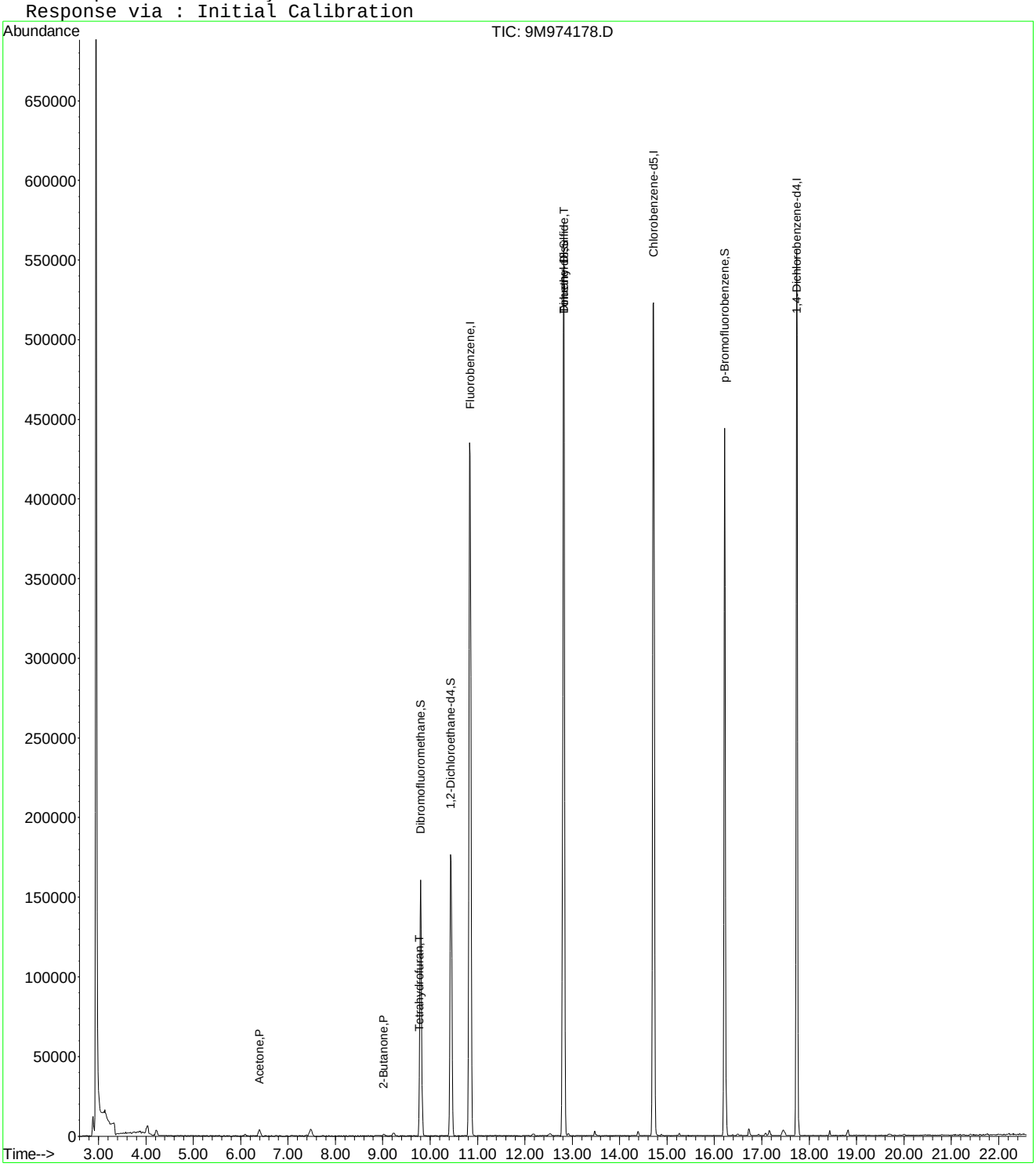

9M974178.D 8260SL.M Tue May 10 11:40:55 2016 Page 2

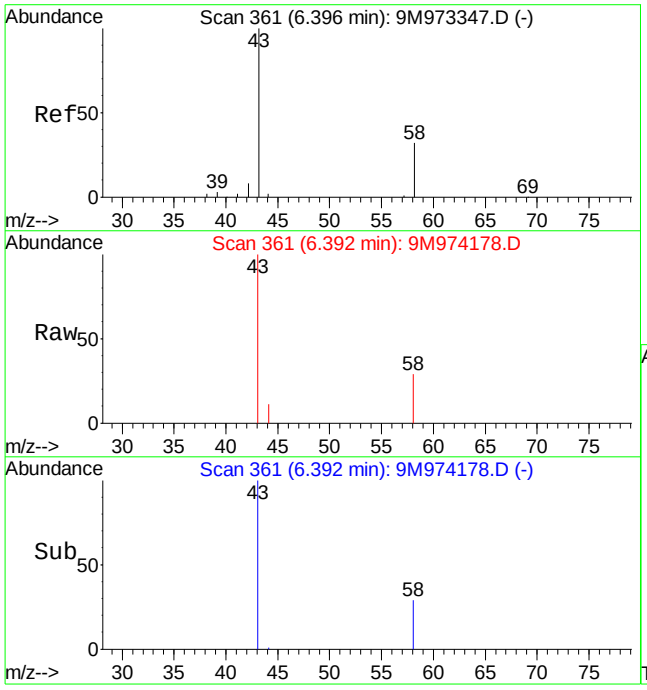

#13
Acetone
Concen: 5.78 ug/kg
RT: 6.39 min Scan# 361
Delta R.T. 0.01 min
Lab File: 9M974178.D
Acq: 5 May 2016 19:10

Tgt Ion: 43 Resp: 8356

Ion	Ratio	Lower	Upper
43	100		
58	42.6	20.2	47.2

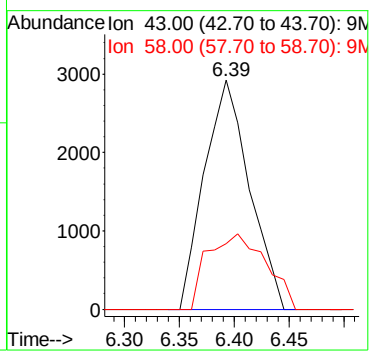

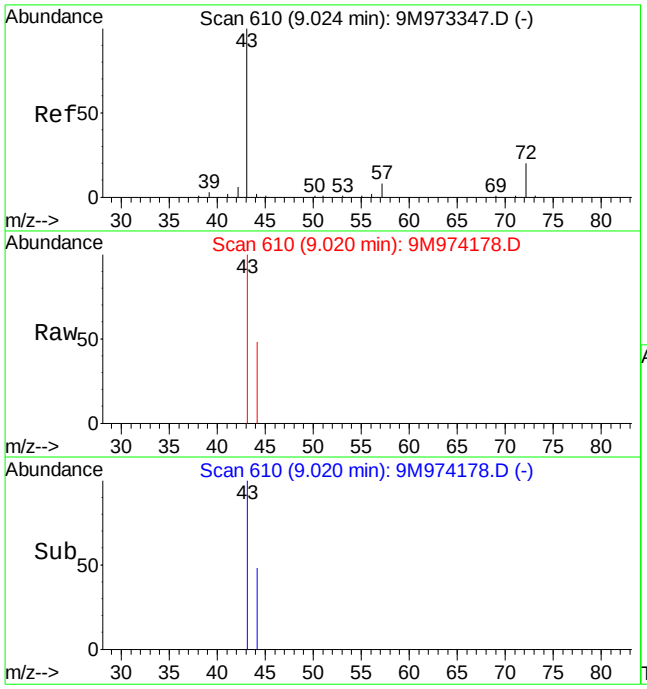

#29
2-Butanone
Concen: 1.01 ug/kg
RT: 9.02 min Scan# 610
Delta R.T. 0.01 min
Lab File: 9M974178.D
Acq: 5 May 2016 19:10

Tgt Ion: 43 Resp: 1537

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.1	28.1#

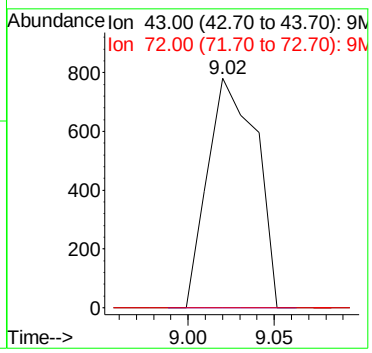

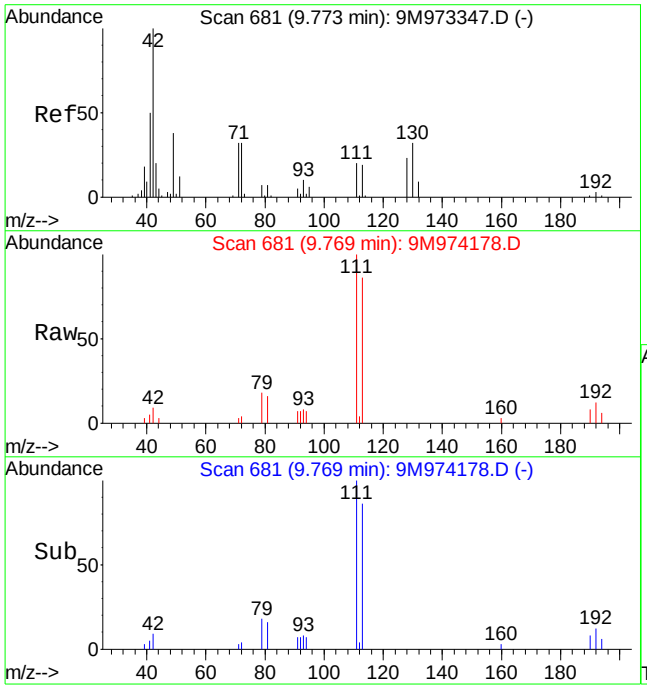

#36
Tetrahydrofuran
Concen: 2.44 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. 0.01 min
Lab File: 9M974178.D
Acq: 5 May 2016 19:10

Tgt Ion: 42 Resp: 2617

Ion	Ratio	Lower	Upper
42	100		
72	18.9	20.8	48.6#
71	9.0	20.0	46.8#

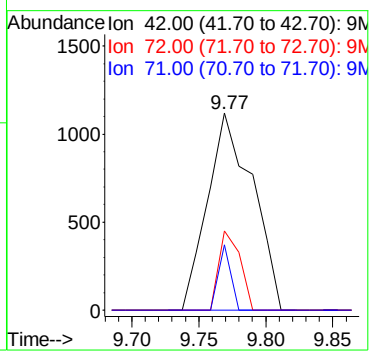

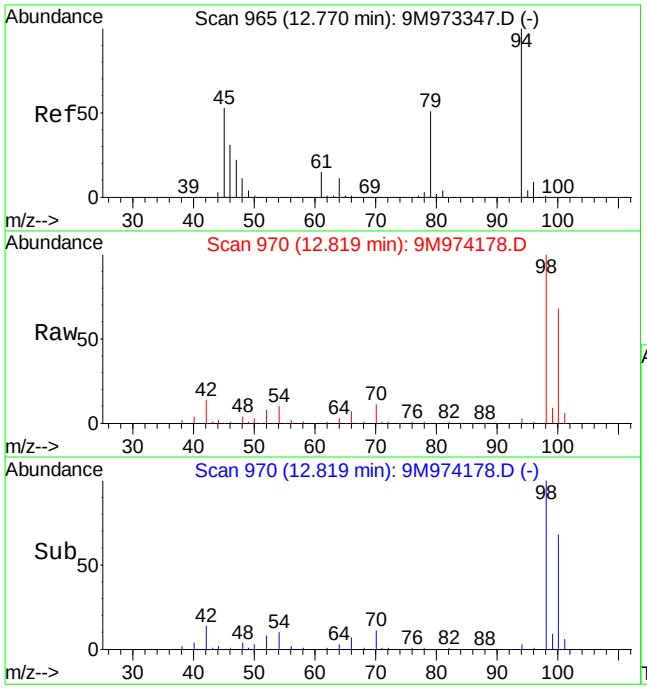

#56
Dimethyl Disulfide
Concen: 2.77 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M974178.D
Acq: 5 May 2016 19:10

Tgt Ion: 94 Resp: 13514

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.3	68.5#

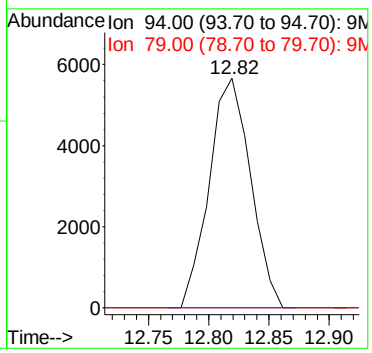

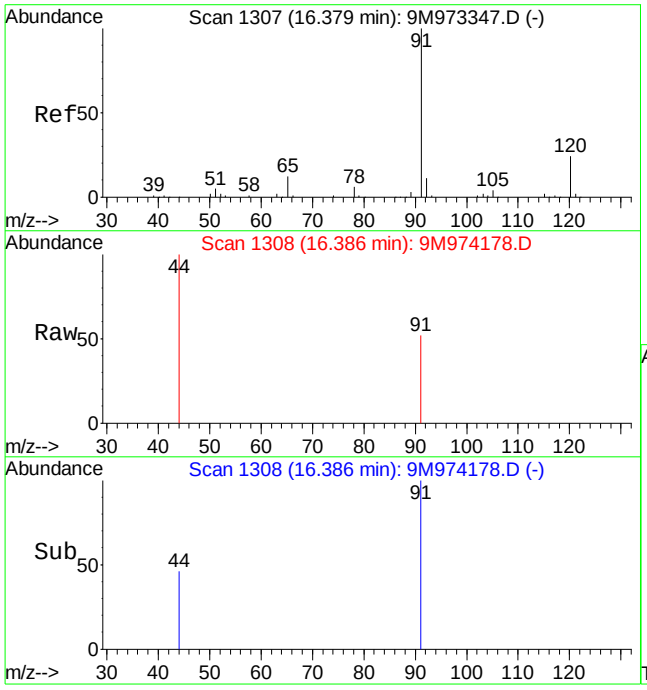

#82
n-Propylbenzene
Concen: Below Cal
RT: 16.39 min Scan# 1308
Delta R.T. 0.02 min
Lab File: 9M974178.D
Acq: 5 May 2016 19:10

Tgt Ion: 91 Resp: 403

Ion	Ratio	Lower	Upper
91	100		
120	0.0	14.7	34.3#

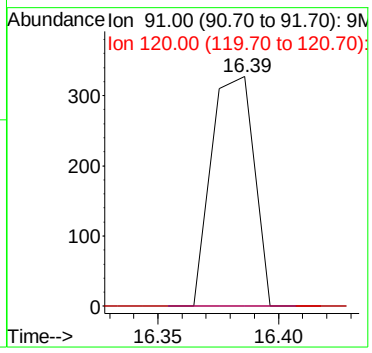

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050516\9M974179.D Vial: 17
Acq On : 5 May 2016 19:41 Operator: ADC
Sample : L16041580-12 A 8260 4.82g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 11:40:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	465195	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	343661	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	173606	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	120226	50.5704 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 101.14%		
43) 1,2-Dichloroethane-d4	10.44	65	140530	54.5945 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 109.18%		
58) Toluene-d8	12.81	98	442328	53.8762 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 107.76%		
79) p-Bromofluorobenzene	16.22	95	165710	55.0586 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 110.12%		

Target Compounds

					Qvalue
13) Acetone	6.40	43	8575	7.3849 ug/kg	95
20) Carbon Disulfide	7.44	76	4985	0.6544 ug/kg#	74
29) 2-Butanone	9.03	43	1370	1.0412 ug/kg#	56
36) Tetrahydrofuran	9.78	42	2738	2.9514 ug/kg#	69
56) Dimethyl Disulfide	12.81	94	11867	2.8088 ug/kg#	28
82) n-Propylbenzene	16.38	91	230	Below Cal #	51
89) 1,2,4-Trimethylbenzene	17.08	105	1678	Below Cal #	44

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050516\9M974179.D Vial: 17
Acq On : 5 May 2016 19:41 Operator: ADC
Sample : L16041580-12 A 8260 4.82g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 11:40 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

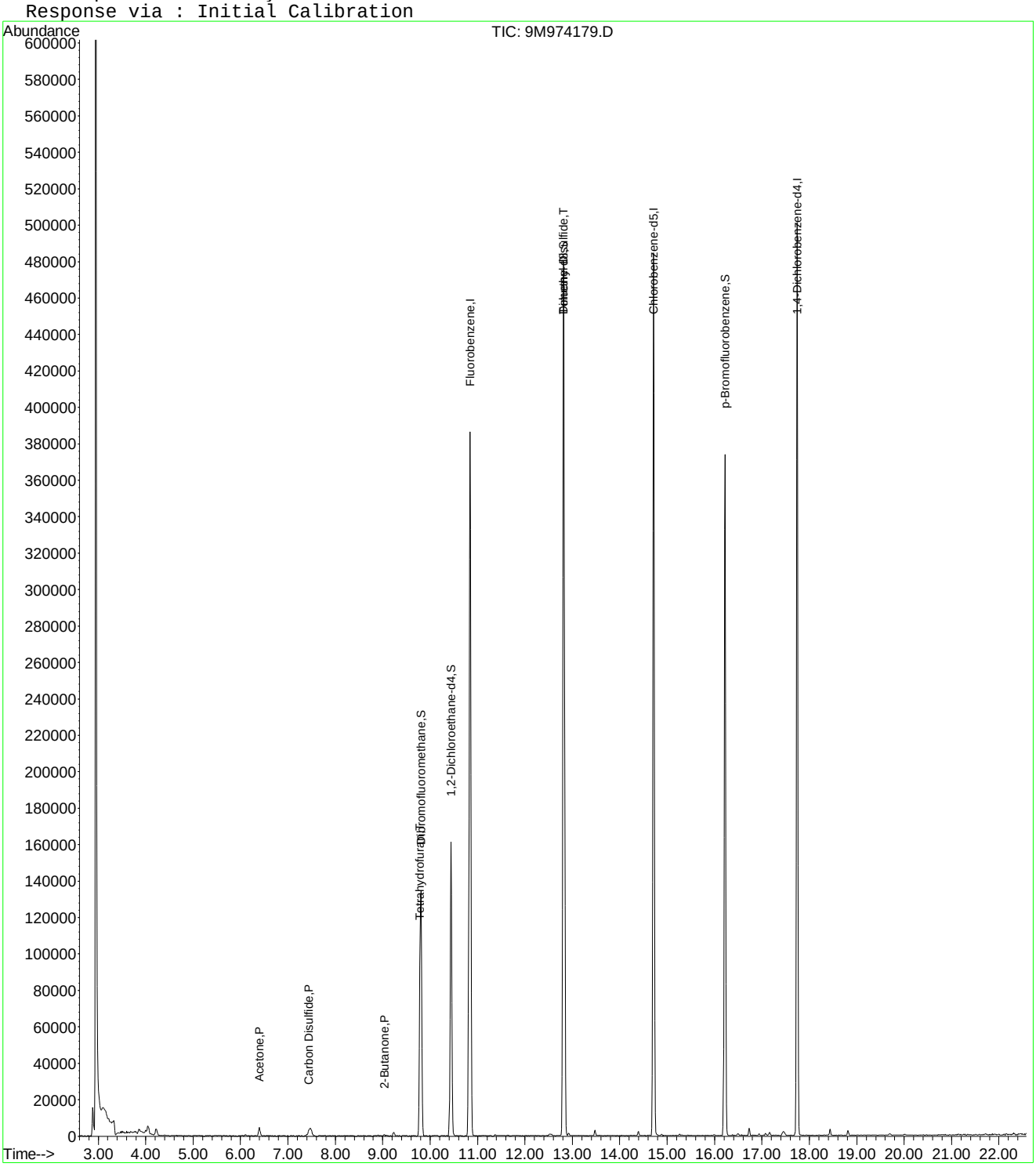

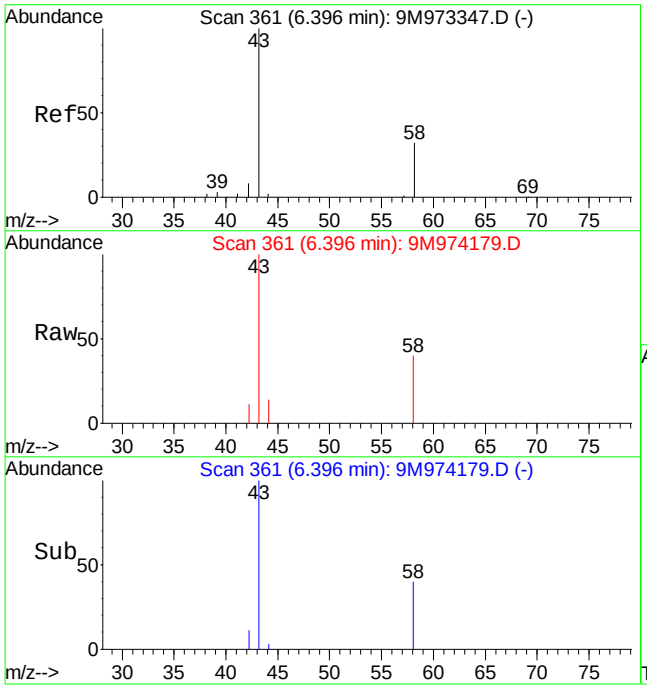

#13
Acetone
Concen: 7.38 ug/kg
RT: 6.40 min Scan# 361
Delta R.T. 0.01 min
Lab File: 9M974179.D
Acq: 5 May 2016 19:41

Tgt Ion: 43 Resp: 8575

Ion	Ratio	Lower	Upper
43	100		
58	36.7	20.2	47.2

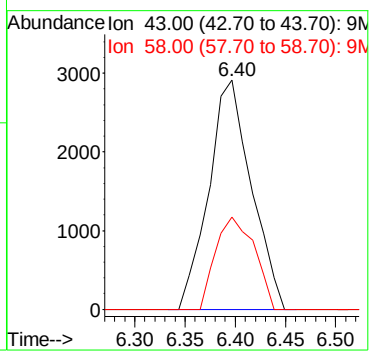

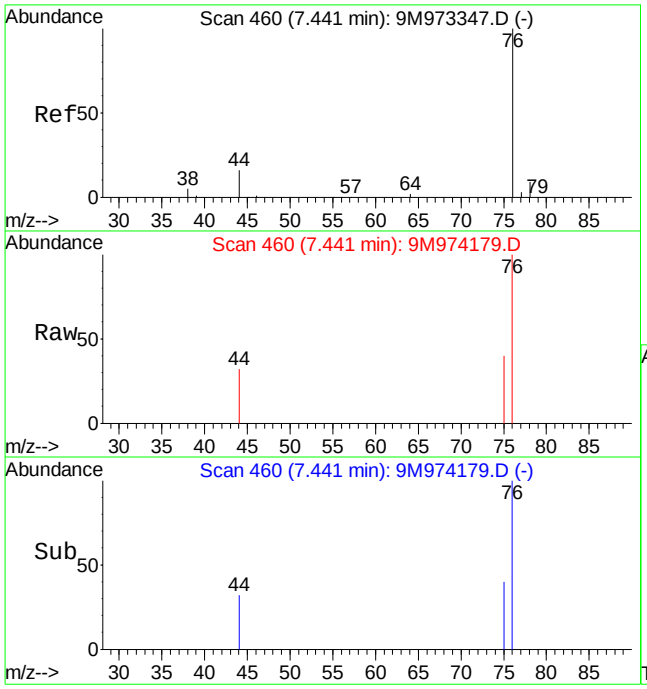

#20
Carbon Disulfide
Concen: 0.65 ug/kg
RT: 7.44 min Scan# 460
Delta R.T. 0.00 min
Lab File: 9M974179.D
Acq: 5 May 2016 19:41

Tgt Ion: 76 Resp: 4985

Ion	Ratio	Lower	Upper
76	100		
78	0.0	5.6	13.0#

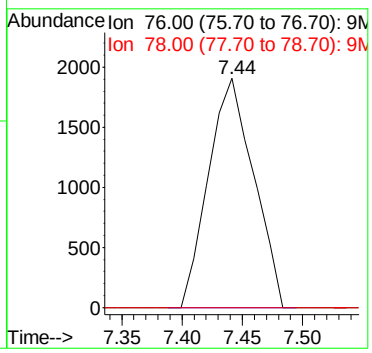

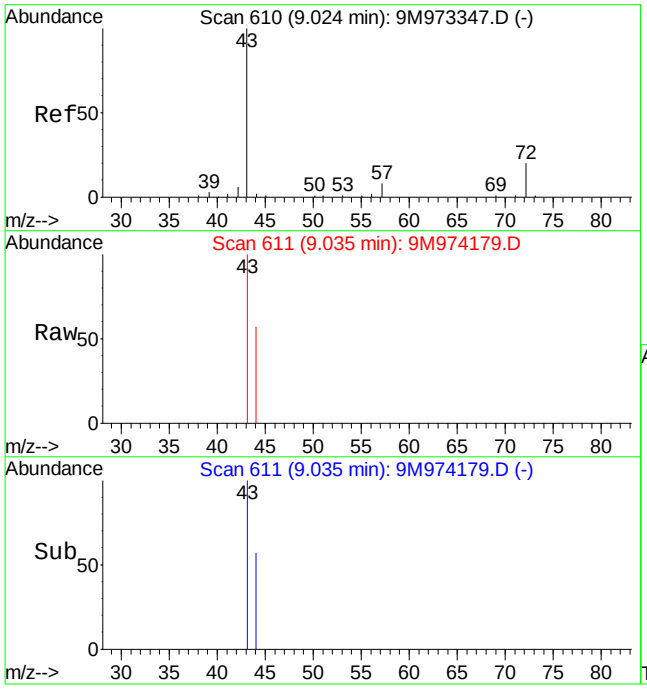

#29
2-Butanone
Concen: 1.04 ug/kg
RT: 9.03 min Scan# 611
Delta R.T. 0.02 min
Lab File: 9M974179.D
Acq: 5 May 2016 19:41

Tgt Ion: 43 Resp: 1370

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.1	28.1#

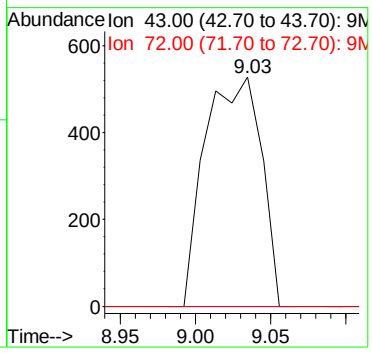

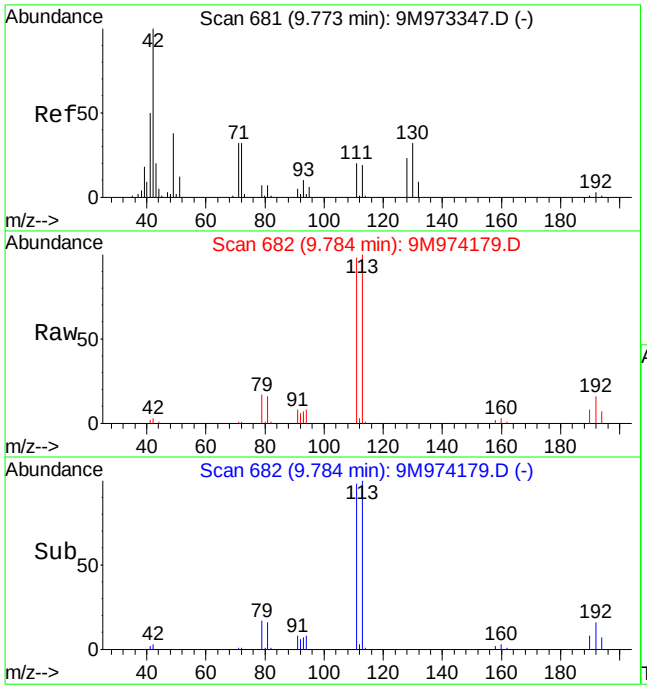

#36
Tetrahydrofuran
Concen: 2.95 ug/kg
RT: 9.78 min Scan# 682
Delta R.T. 0.02 min
Lab File: 9M974179.D
Acq: 5 May 2016 19:41

Tgt Ion: 42 Resp: 2738

Ion	Ratio	Lower	Upper
42	100		
72	17.8	20.8	48.6#
71	14.6	20.0	46.8#

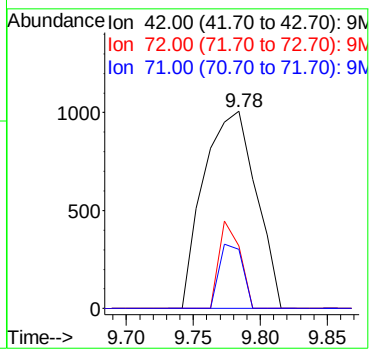

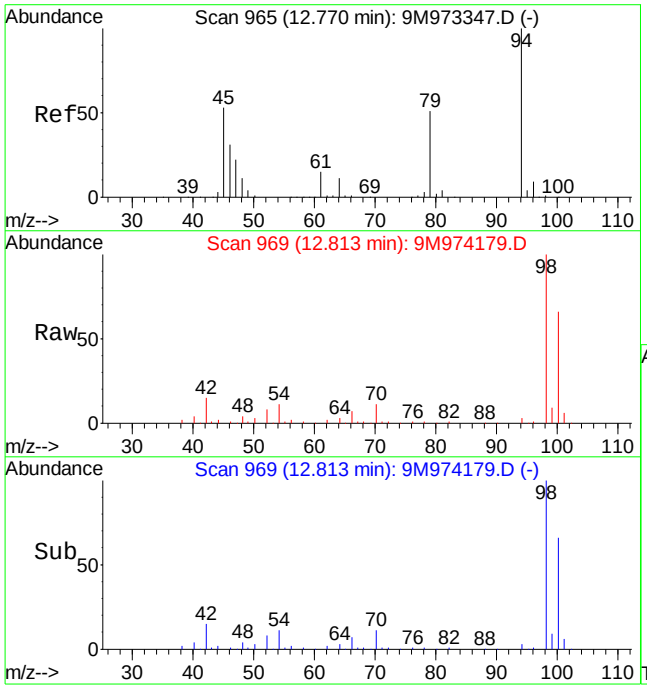

#56
Dimethyl Disulfide
Concen: 2.81 ug/kg
RT: 12.81 min Scan# 969
Delta R.T. 0.05 min
Lab File: 9M974179.D
Acq: 5 May 2016 19:41

Tgt Ion: 94 Resp: 11867

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.3	68.5#

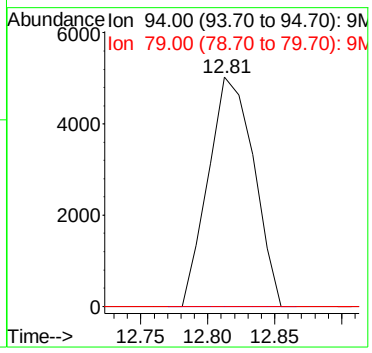

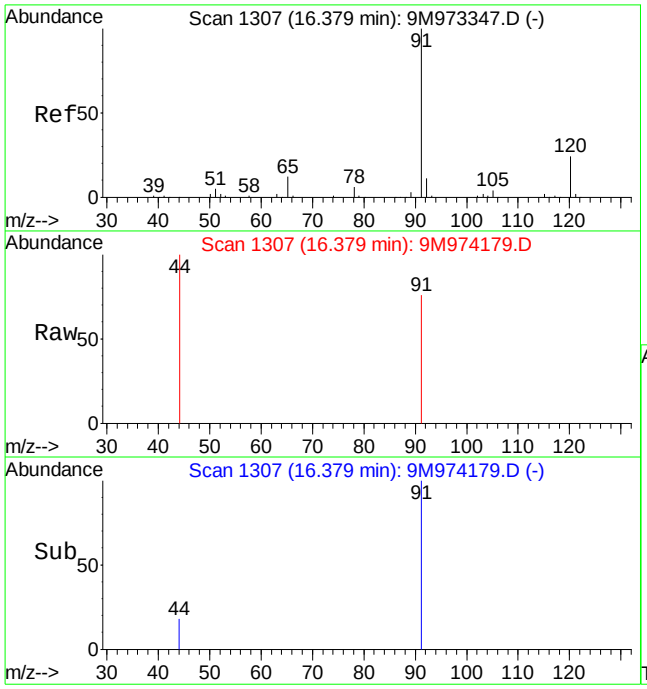

#82
n-Propylbenzene
Concen: Below Cal
RT: 16.38 min Scan# 1307
Delta R.T. 0.01 min
Lab File: 9M974179.D
Acq: 5 May 2016 19:41

Tgt Ion: 91 Resp: 230

Ion	Ratio	Lower	Upper
91	100		
120	0.0	14.7	34.3#

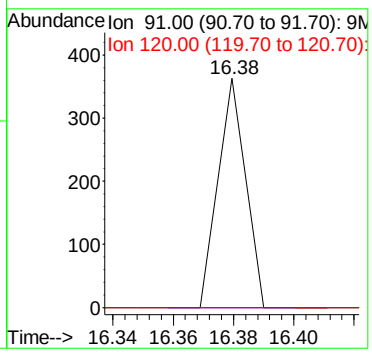

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050516\9M974180.D Vial: 18
Acq On : 5 May 2016 20:12 Operator: ADC
Sample : L16041580-13 A 8260 4.92g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 11:40:58 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	543599	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	393461	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	180181	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	140829	50.6928 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 101.38%		
43) 1,2-Dichloroethane-d4	10.44	65	165201	54.9223 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 109.84%		
58) Toluene-d8	12.82	98	506586	53.8932 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 107.78%		
79) p-Bromofluorobenzene	16.22	95	182862	58.5404 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 117.08%		

Target Compounds

					Qvalue
13) Acetone	6.39	43	10053	7.4186 ug/kg#	54
20) Carbon Disulfide	7.44	76	10294	1.1564 ug/kg	99
29) 2-Butanone	9.02	43	1588	1.0328 ug/kg#	56
36) Tetrahydrofuran	9.77	42	2660	2.4538 ug/kg#	68
56) Dimethyl Disulfide	12.81	94	13949	2.8254 ug/kg#	28
82) n-Propylbenzene	16.36	91	427	Below Cal #	51
89) 1,2,4-Trimethylbenzene	17.08	105	1285	Below Cal #	24

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050516\9M974180.D Vial: 18
Acq On : 5 May 2016 20:12 Operator: ADC
Sample : L16041580-13 A 8260 4.92g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 11:40 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

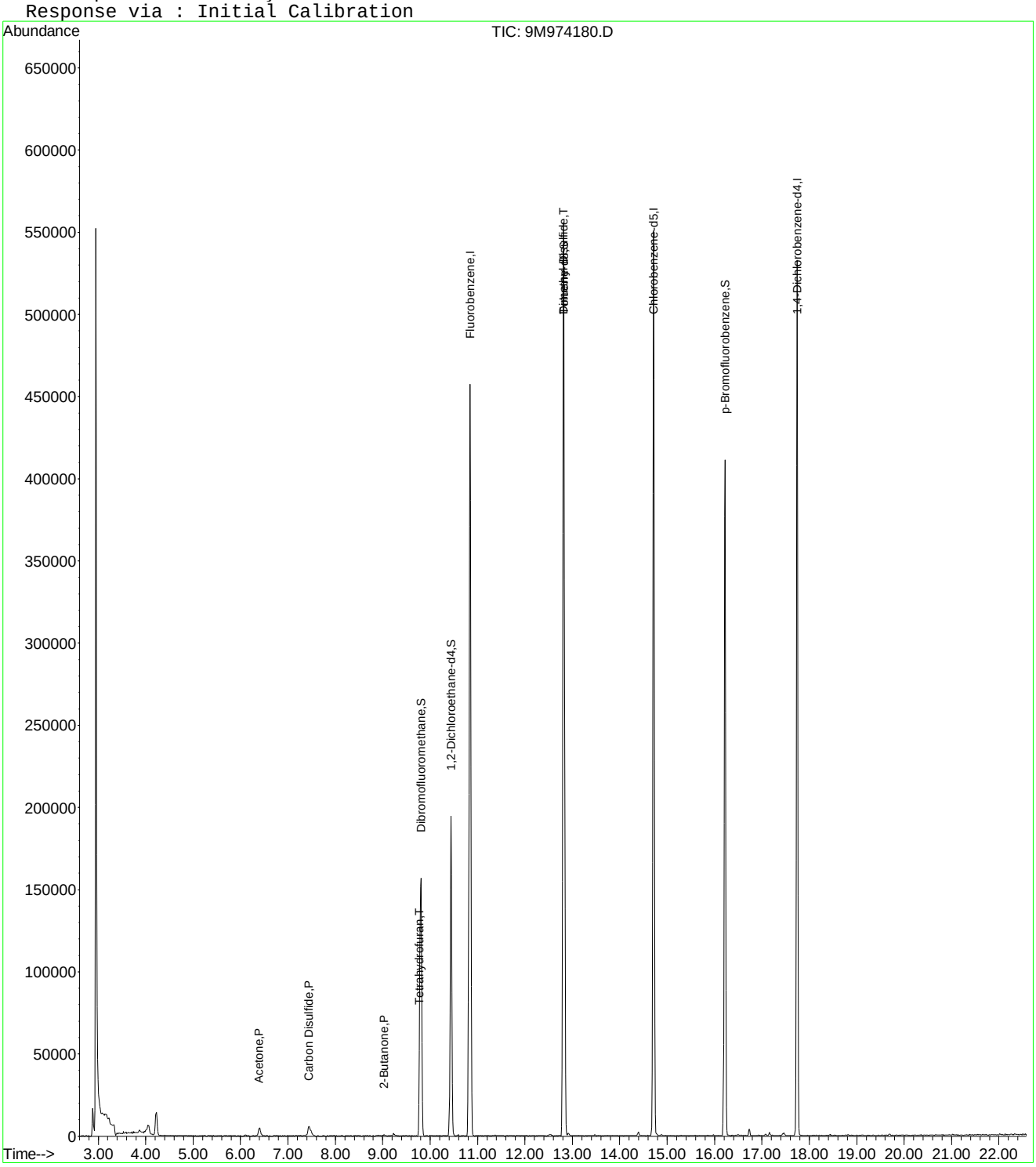

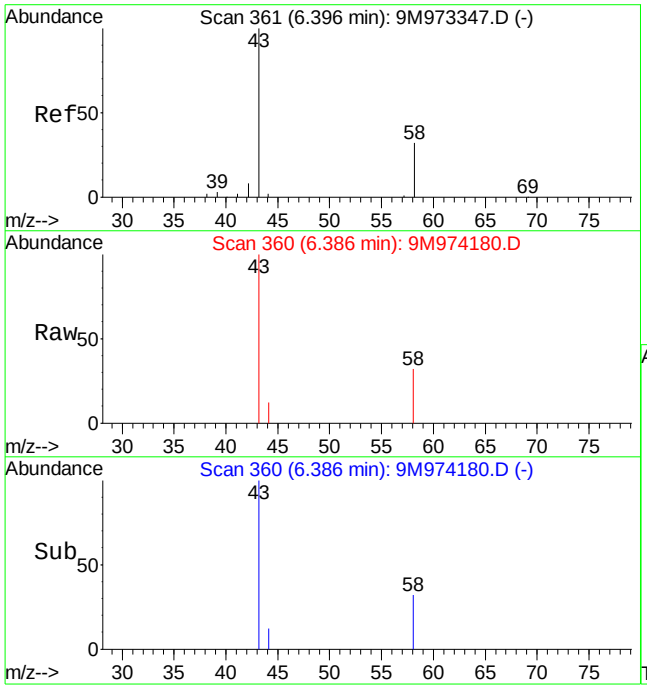

#13
Acetone
Concen: 7.42 ug/kg
RT: 6.39 min Scan# 360
Delta R.T. 0.00 min
Lab File: 9M974180.D
Acq: 5 May 2016 20:12

Tgt Ion: 43 Resp: 10053

Ion	Ratio	Lower	Upper
43	100		
58	59.9	20.2	47.2#

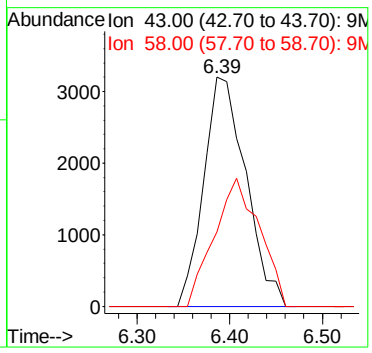

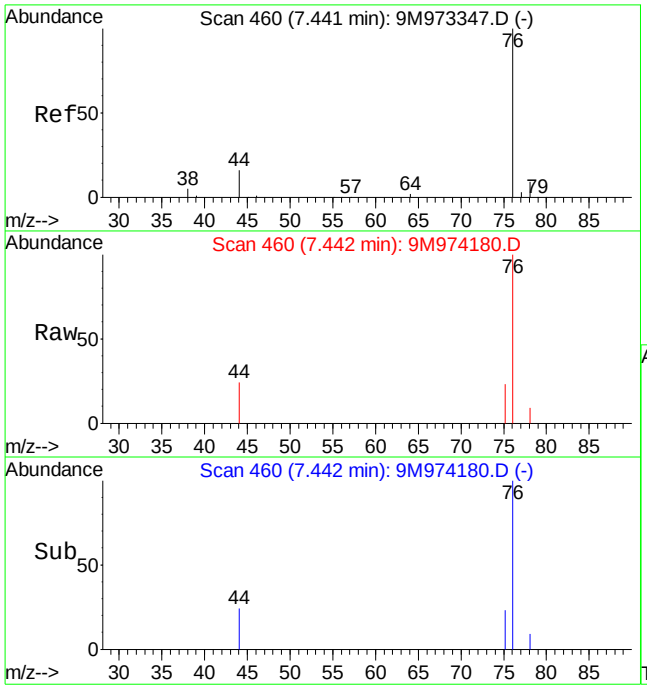

#20
Carbon Disulfide
Concen: 1.16 ug/kg
RT: 7.44 min Scan# 460
Delta R.T. 0.00 min
Lab File: 9M974180.D
Acq: 5 May 2016 20:12

Tgt Ion: 76 Resp: 10294

Ion	Ratio	Lower	Upper
76	100		
78	8.8	5.6	13.0

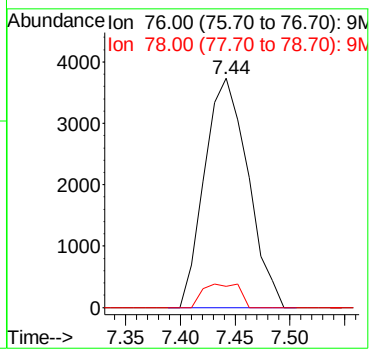

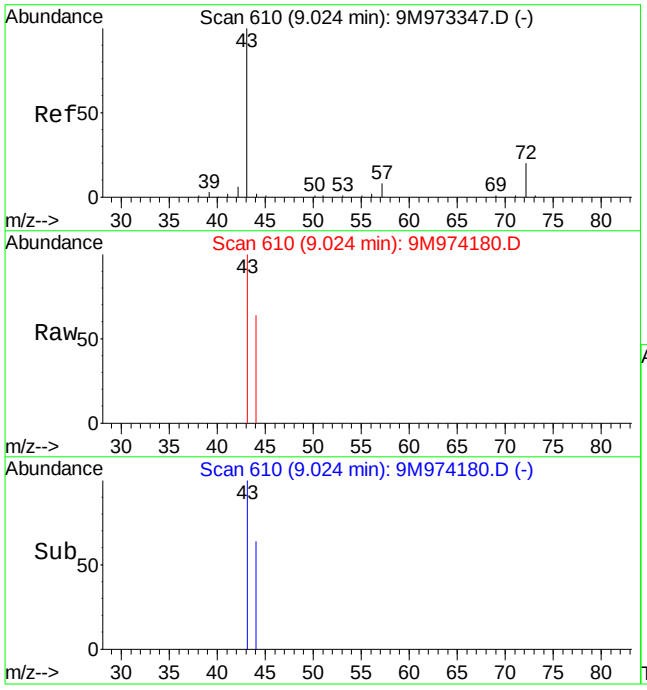

#29
2-Butanone
Concen: 1.03 ug/kg
RT: 9.02 min Scan# 610
Delta R.T. 0.01 min
Lab File: 9M974180.D
Acq: 5 May 2016 20:12

Tgt Ion: 43 Resp: 1588

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.1	28.1#

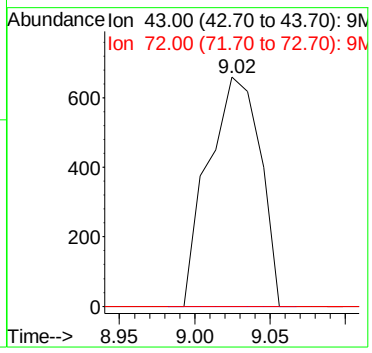

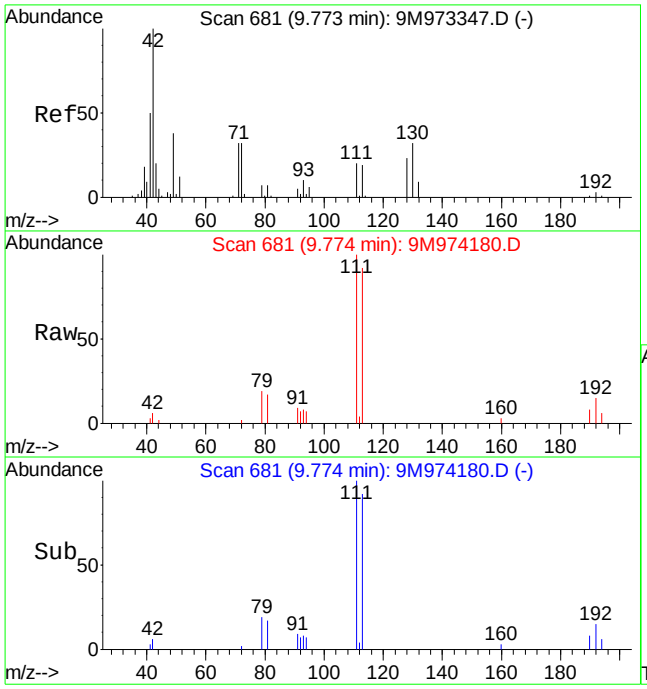

#36
Tetrahydrofuran
Concen: 2.45 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. 0.01 min
Lab File: 9M974180.D
Acq: 5 May 2016 20:12

Tgt Ion: 42 Resp: 2660

Ion	Ratio	Lower	Upper
42	100		
72	23.2	20.8	48.6
71	7.7	20.0	46.8#

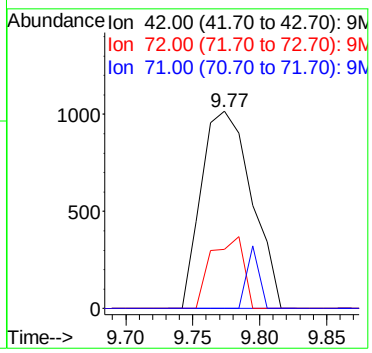

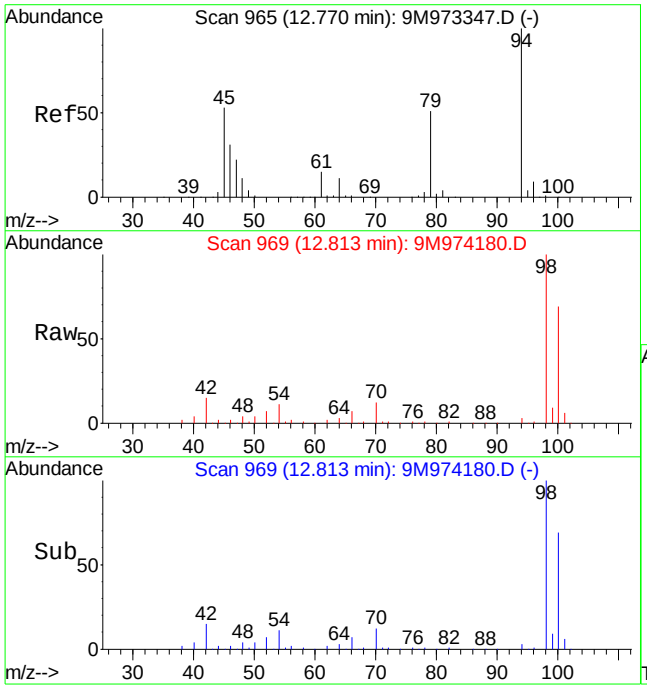

#56
Dimethyl Disulfide
Concen: 2.83 ug/kg
RT: 12.81 min Scan# 969
Delta R.T. 0.05 min
Lab File: 9M974180.D
Acq: 5 May 2016 20:12

Tgt Ion: 94 Resp: 13949

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.3	68.5#

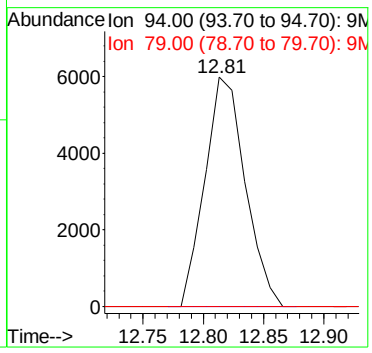

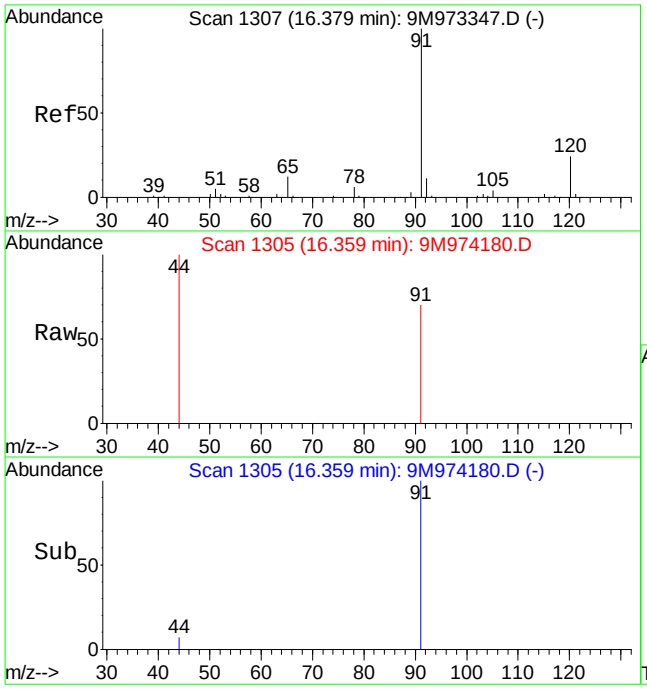

#82
n-Propylbenzene
Concen: Below Cal
RT: 16.36 min Scan# 1305
Delta R.T. -0.01 min
Lab File: 9M974180.D
Acq: 5 May 2016 20:12

Tgt Ion: 91 Resp: 427

Ion	Ratio	Lower	Upper
91	100		
120	0.0	14.7	34.3#

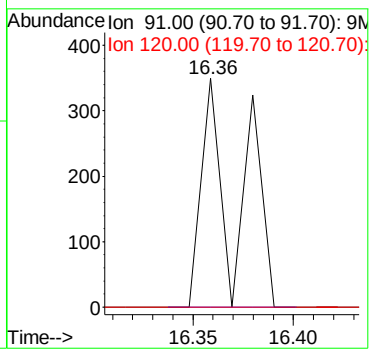

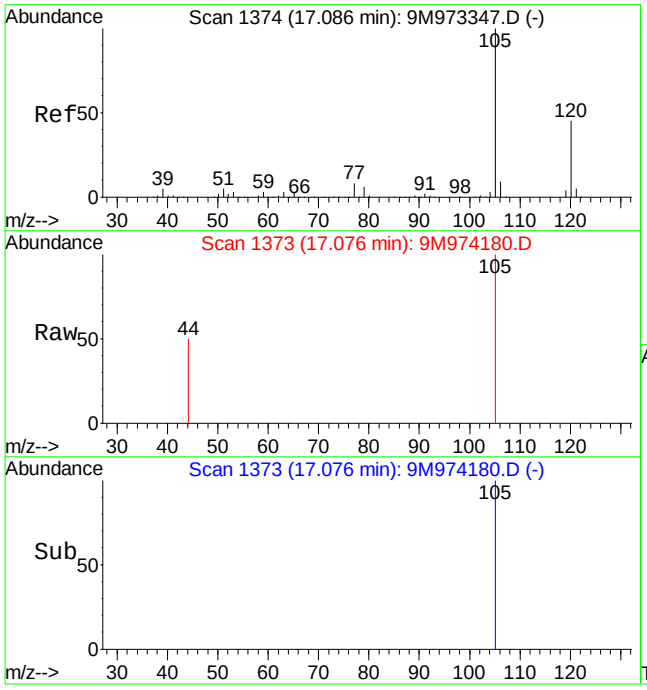

#89
1,2,4-Trimethylbenzene
Concen: Below Cal
RT: 17.08 min Scan# 1373
Delta R.T. 0.00 min
Lab File: 9M974180.D
Acq: 5 May 2016 20:12

Tgt Ion:105 Resp: 1285

Ion	Ratio	Lower	Upper
105	100		
120	0.0	32.9	76.7#

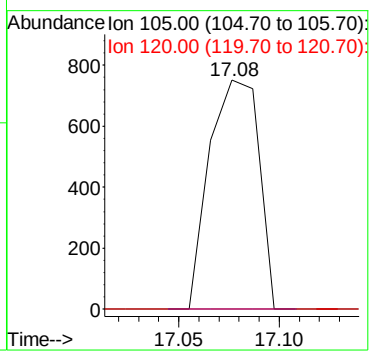

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\050716\8M412050.D Vial: 5
Acq On : 7 May 2016 13:31 Operator: TMB
Sample : L16041580-14 B EB 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 09 08:24:00 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	421419	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	337529	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	179259	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	133565	25.2421 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.96%		
43) 1,2-Dichloroethane-d4	10.30	65	173100	28.5946 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 114.36%		
58) Toluene-d8	12.68	98	429424	24.6046 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.40%		
80) p-Bromofluorobenzene	16.07	95	181626	24.7525 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.00%		

Target Compounds

					Qvalue
13) Acetone	6.25	43	9361	9.0482 ug/L #	64
33) Chloroform	9.38	83	3205	0.3221 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412050.D 8260WTR.M Mon May 09 08:24:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\050716\8M412050.D Vial: 5
Acq On : 7 May 2016 13:31 Operator: TMB
Sample : L16041580-14 B EB 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 9 8:24 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

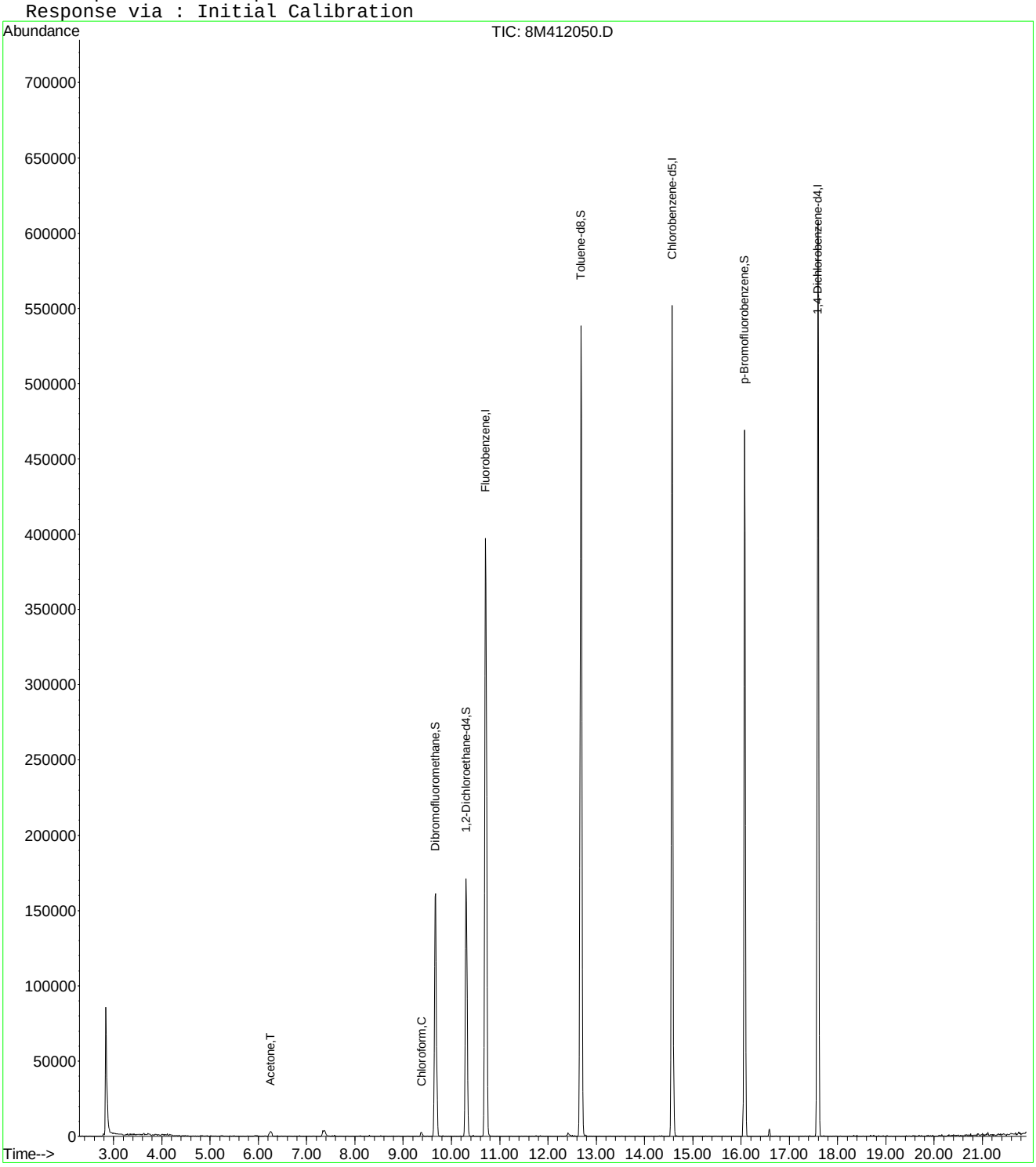

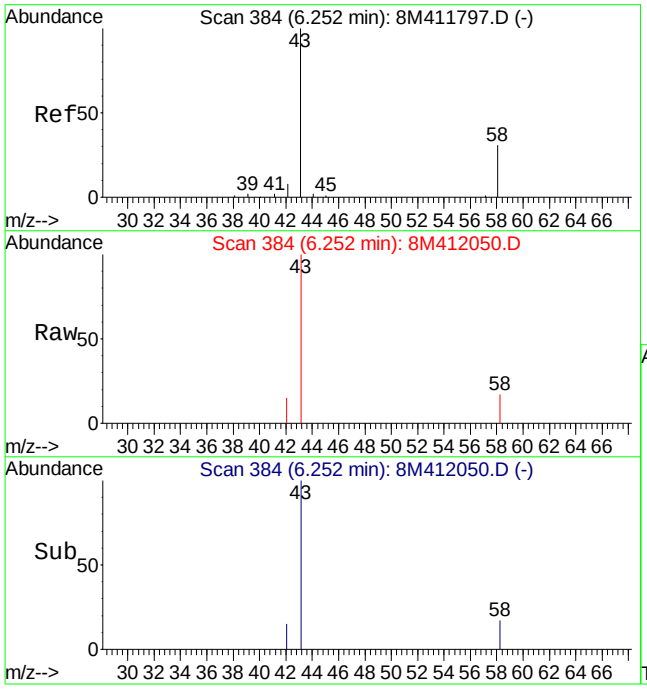

#13
Acetone
Concen: 9.05 ug/L
RT: 6.25 min Scan# 384
Delta R.T. 0.00 min
Lab File: 8M412050.D
Acq: 7 May 2016 13:31

Tgt Ion: 43 Resp: 9361

Ion	Ratio	Lower	Upper
43	100		
58	8.3	16.2	37.8#

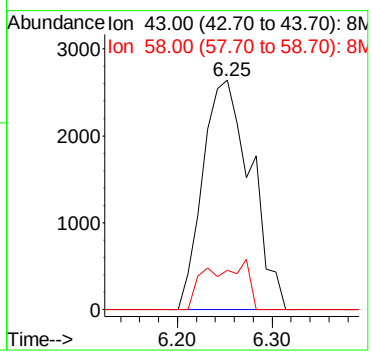

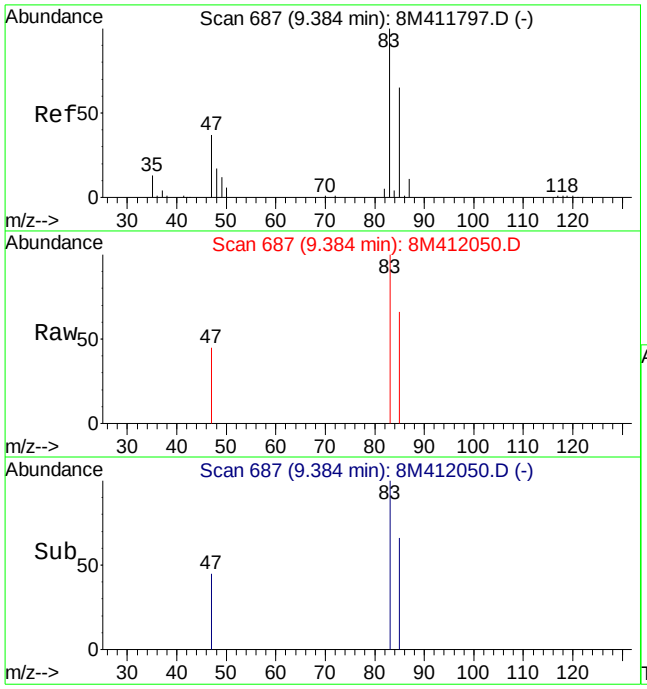

#33
Chloroform
Concen: 0.32 ug/L
RT: 9.38 min Scan# 687
Delta R.T. 0.00 min
Lab File: 8M412050.D
Acq: 7 May 2016 13:31

Tgt Ion: 83 Resp: 3205

Ion	Ratio	Lower	Upper
83	100		
85	65.5	38.8	90.6

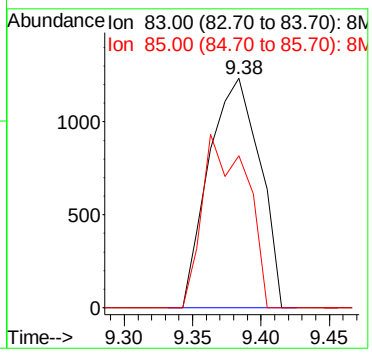

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\042416\8M411682.D Vial: 2
Acq On : 24 Apr 2016 17:10 Operator: JDS
Sample : WG566154-02 5ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 24 17:32:47 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-13-16 HPMS 8
Last Update : Thu Apr 14 09:40:40 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	646930	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	464810	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	245771	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	159052	24.0456 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.20%		
43) 1,2-Dichloroethane-d4	10.30	65	172894	24.8956 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.60%		
58) Toluene-d8	12.68	98	551733	23.7203 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 94.88%		
80) p-Bromofluorobenzene	16.07	95	218440	22.7488 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 91.00%		

Target Compounds					Qvalue
36) Tetrahydrofuran	9.63	42	5896	3.9174 ug/L #	68

(#) = qualifier out of range (m) = manual integration
8M411682.D 8260WT.M Sun Apr 24 17:32:47 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\042416\8M411682.D Vial: 2
Acq On : 24 Apr 2016 17:10 Operator: JDS
Sample : WG566154-02 5ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 24 17:32 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-13-16 HPMS 8
Last Update : Thu Apr 14 09:40:40 2016
Response via : Initial Calibration

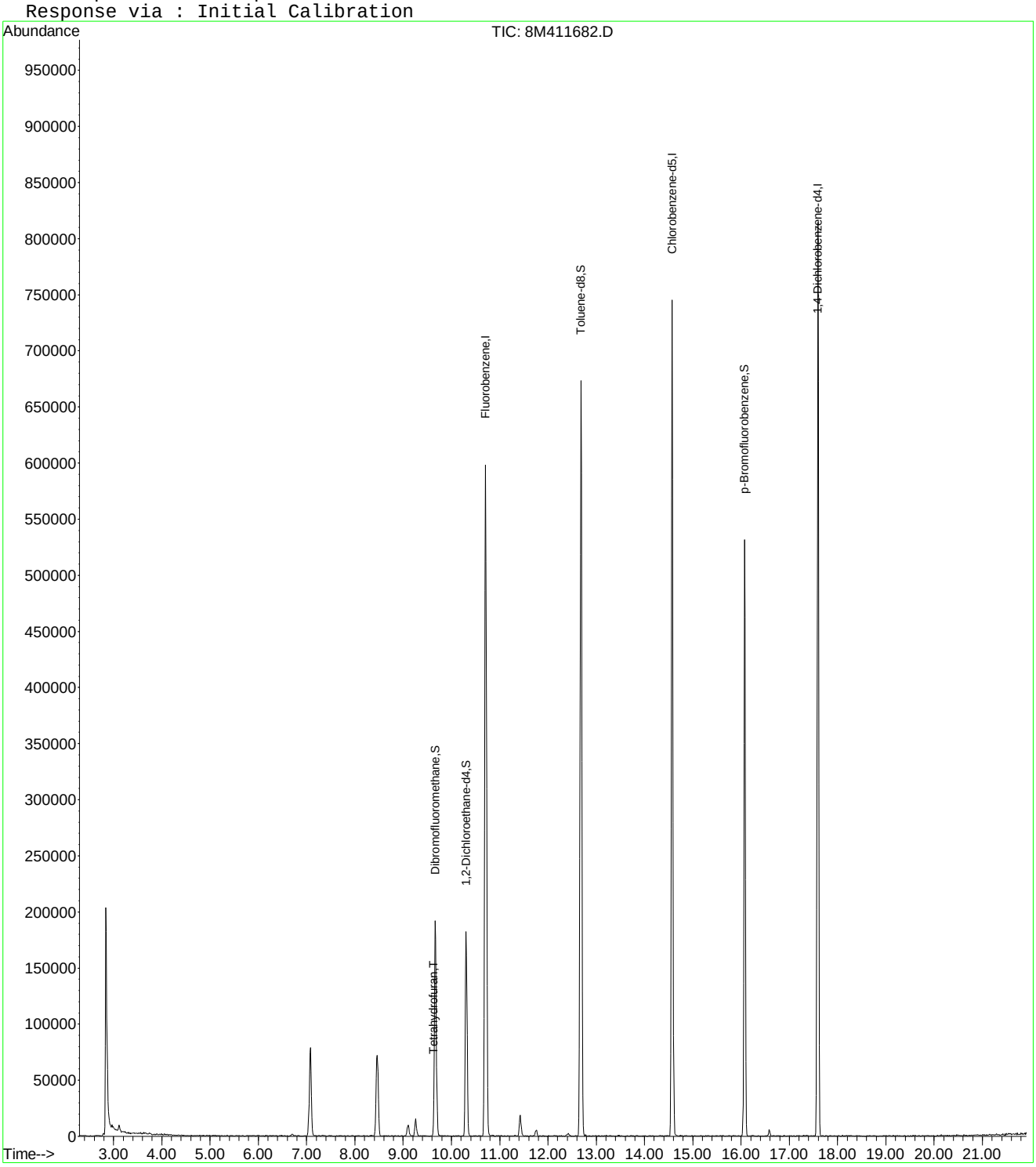

8M411682.D 8260WT.M Sun Apr 24 17:32:47 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411682.D Vial: 2
Acq On : 24 Apr 2016 17:10 Operator: JDS
Sample : WG566154-02 5ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:24:17 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	646930	25.00 ug/L	-0.01
11) Chlorobenzene-d5	14.57	117	464810	25.00 ug/L	-0.01
12) 1,4-Dichlorobenzene-d4	17.59	152	245771	25.00 ug/L	-0.01

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
8M411682.D A9FOOWTR.M Wed Apr 27 16:24:17 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411682.D Vial: 2
Acq On : 24 Apr 2016 17:10 Operator: JDS
Sample : WG566154-02 5ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:24 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:23:52 2016
Response via : Initial Calibration

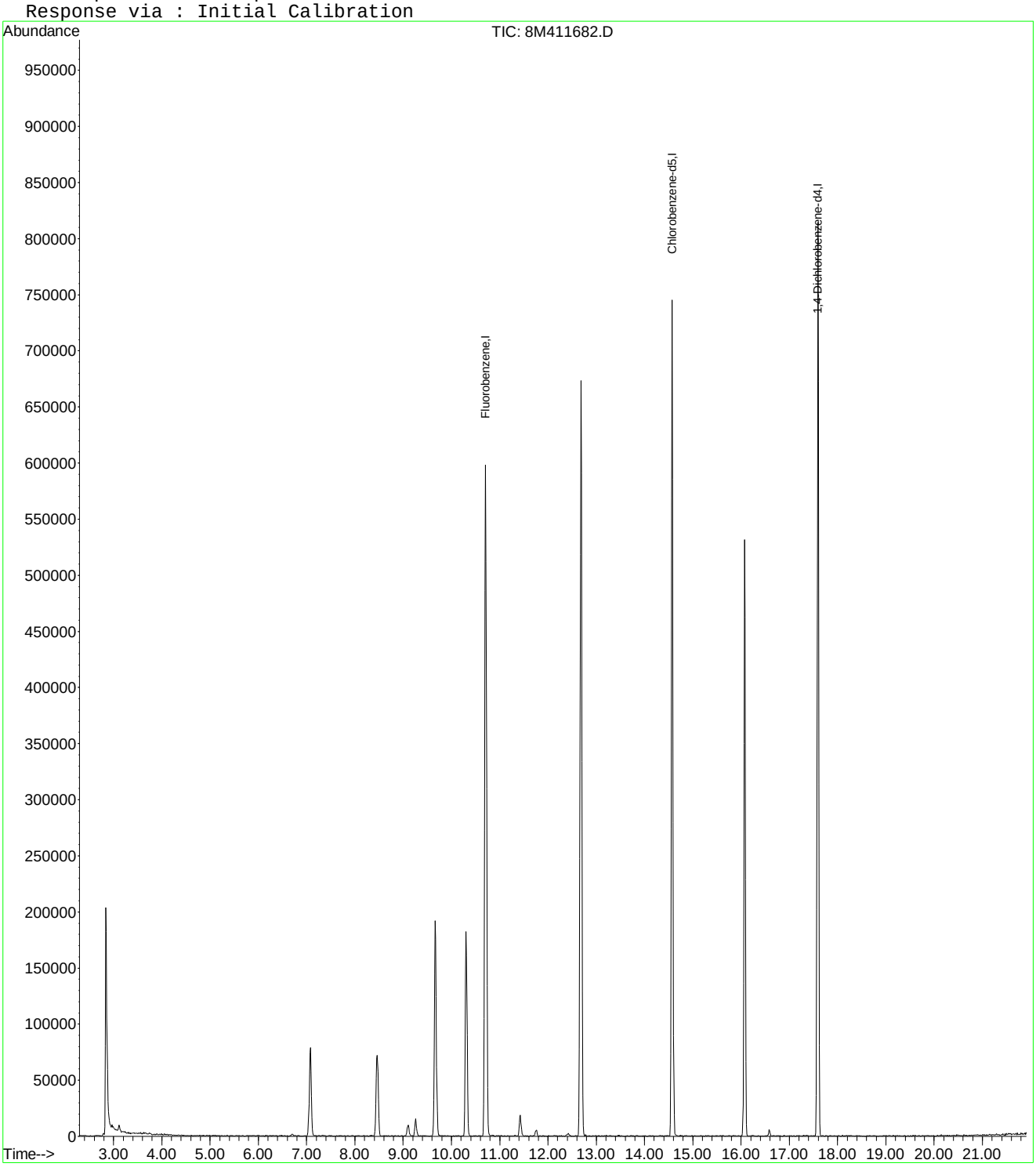

8M411682.D A9FOOWTR.M Wed Apr 27 16:24:17 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411682.D Vial: 2
Acq On : 24 Apr 2016 17:10 Operator: JDS
Sample : WG566154-02 5ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:35:43 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:34:16 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	646930	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	464810	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	245771	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	1890	3.4902 ug/L #	1
3) 3-Chloro-1-propene	7.08	41	90551	4.4265 ug/L	94
4) 2-Chloro-1,3-butadiene	8.45	53	81221	4.3223 ug/L	79
5) Ethyl Acetate	9.11	43	19443	3.4878 ug/L	89
6) Methacrylonitrile	9.26	67	4737	Below Cal #	44
7) Isobutyl Alcohol	9.11	43	19443	147.9172 ug/L #	12
9) Methyl methacrylate	11.43	41	17036	Below Cal	79
10) 2-Nitropropane	11.74	43	5104	2.7455 ug/L	90
13) Cyclohexanone	16.08	55	458	2.8191 ug/L #	43

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411682.D Vial: 2
Acq On : 24 Apr 2016 17:10 Operator: JDS
Sample : WG566154-02 5ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:35 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:34:16 2016
Response via : Initial Calibration

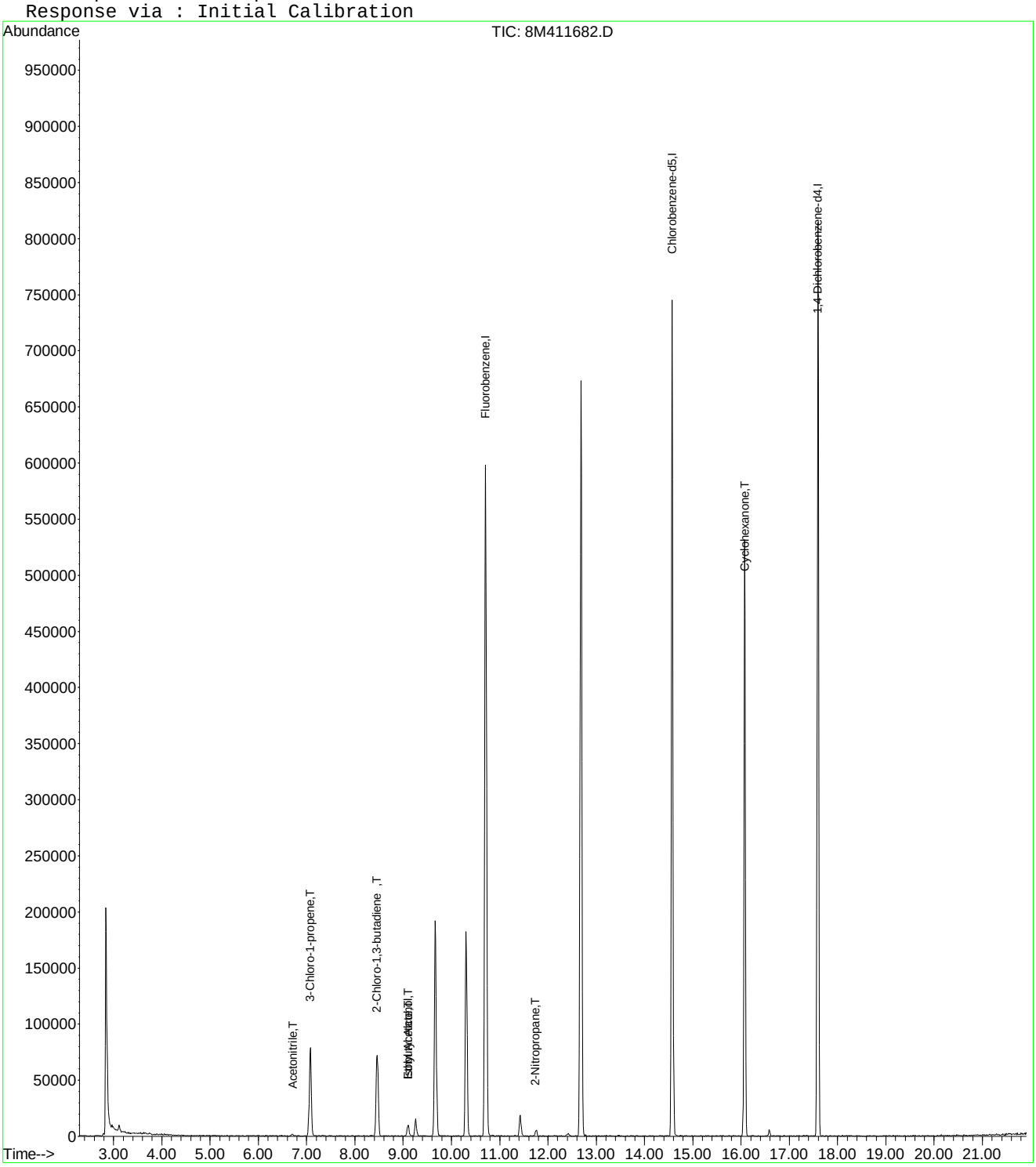

8M411682.D A9FOOWTR.M Wed Apr 27 16:35:43 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411682.D Vial: 2
Acq On : 24 Apr 2016 17:10 Operator: JDS
Sample : WG566154-02 5ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:37:31 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:36:22 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	646930	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	464810	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	245771	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	1890	3.4902 ug/L #	1
3) 3-Chloro-1-propene	7.08	41	90551	4.4265 ug/L	94
4) 2-Chloro-1,3-butadiene	8.45	53	81221	4.3223 ug/L	79
5) Ethyl Acetate	9.11	43	19443	3.4878 ug/L	89
6) Methacrylonitrile	9.26	67	4737	4.1475 ug/L #	44
7) Isobutyl Alcohol	9.11	43	19443	147.9172 ug/L #	12
9) Methyl methacrylate	11.43	41	17036	4.3620 ug/L	79
10) 2-Nitropropane	11.74	43	5104	2.7455 ug/L	90
13) Cyclohexanone	16.08	55	458	2.8191 ug/L #	43

(#) = qualifier out of range (m) = manual integration
8M411682.D A9FOOWTR.M Wed Apr 27 16:37:31 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411682.D Vial: 2
Acq On : 24 Apr 2016 17:10 Operator: JDS
Sample : WG566154-02 5ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:37 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:36:22 2016
Response via : Initial Calibration

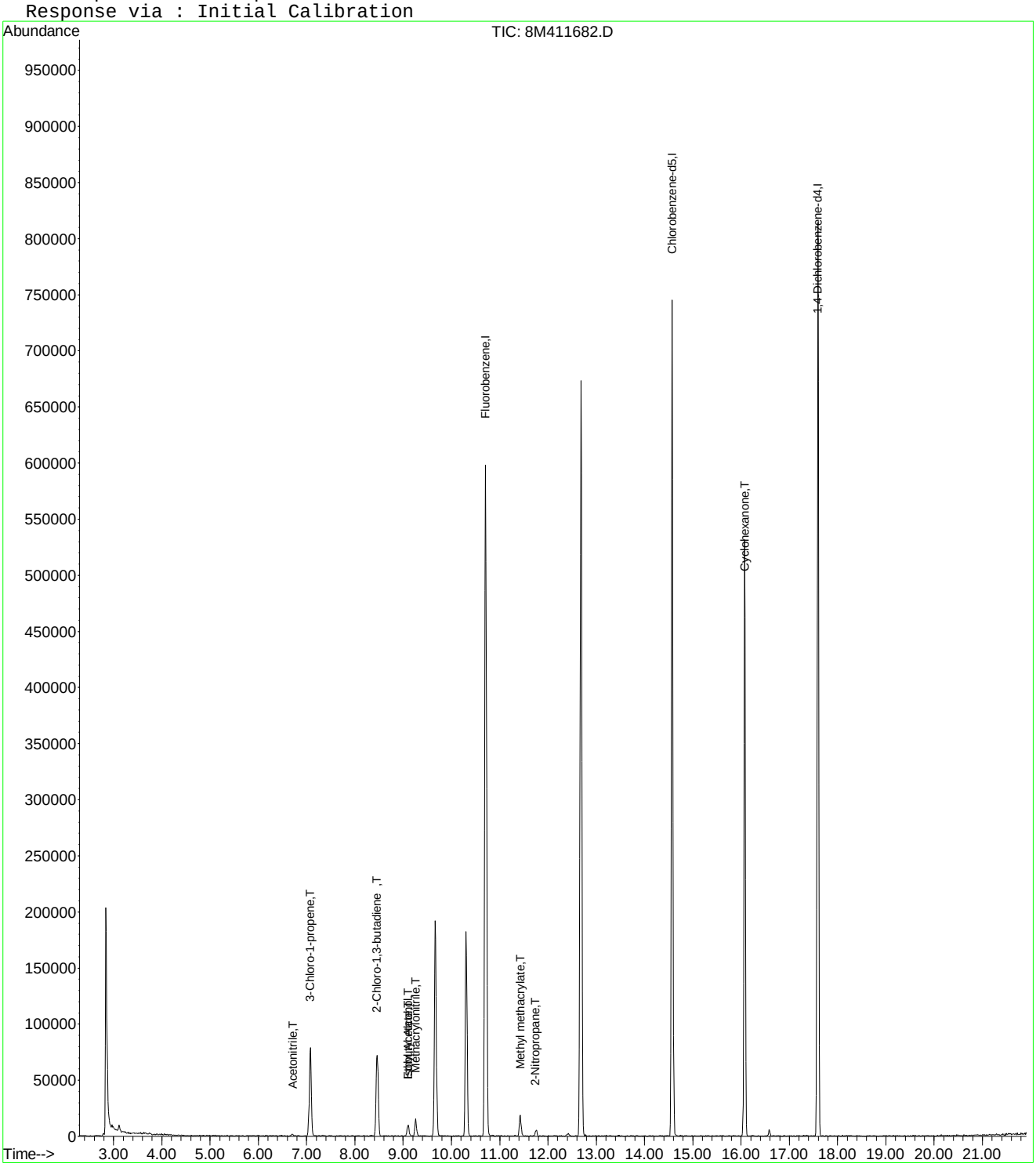

8M411682.D A9FOOWTR.M Wed Apr 27 16:37:31 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411682.D Vial: 2
Acq On : 24 Apr 2016 17:10 Operator: JDS
Sample : WG566154-02 5ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:39:38 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 04-24-16 HPMS8
Last Update : Wed Apr 27 16:38:22 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	646930	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	464810	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	245771	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	1890	3.4902 ug/L #	1
3) 3-Chloro-1-propene	7.08	41	90551	4.4265 ug/L	94
4) 2-Chloro-1,3-butadiene	8.45	53	81221	4.3223 ug/L	79
5) Ethyl Acetate	9.11	43	19443	3.4878 ug/L	89
6) Methacrylonitrile	9.26	67	4737	4.1475 ug/L #	44
7) Isobutyl Alcohol	9.11	43	19443	147.9172 ug/L #	12
9) Methyl methacrylate	11.43	41	17036	4.3620 ug/L	79
10) 2-Nitropropane	11.74	43	5104	2.7455 ug/L	90
13) Cyclohexanone	16.08	55	458	2.8191 ug/L #	43

(#) = qualifier out of range (m) = manual integration
8M411682.D A9FOOWTR.M Wed Apr 27 16:39:38 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411682.D Vial: 2
Acq On : 24 Apr 2016 17:10 Operator: JDS
Sample : WG566154-02 5ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:39 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 04-24-16 HPMS8
Last Update : Wed Apr 27 16:38:22 2016
Response via : Initial Calibration

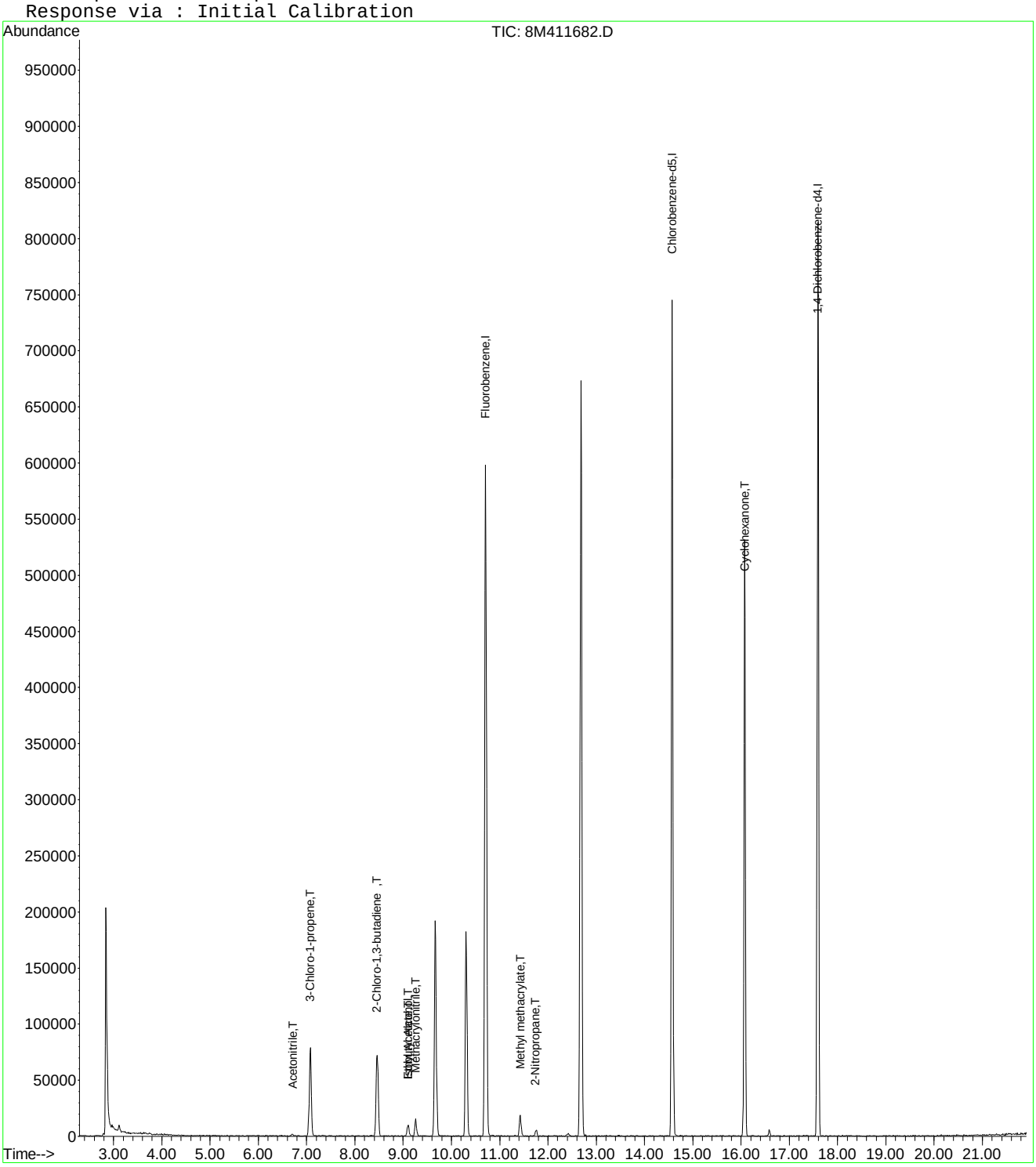

8M411682.D A9FOOWTR.M Wed Apr 27 16:39:38 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\042416\8M411682.D Vial: 2
Acq On : 24 Apr 2016 17:10 Operator: JDS
Sample : WG566154-02 5ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 04-24-16 HPMS8
Last Update : Wed Apr 27 16:38:22 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	5.0000	3.4902	30.2	100	0.02
3	T	3-Chloro-1-propene	5.0000	4.4265	11.5	100	0.00
4	T	2-Chloro-1,3-butadiene	5.0000	4.3223	13.6	100	0.00
5	T	Ethyl Acetate	5.0000	3.4878	30.2	100	0.01
6	T	Methacrylonitrile	5.0000	4.1475	17.0	100	0.00
7	T	Isobutyl Alcohol	-1.0000	147.9172	0.0	100	-0.16
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.21#
9	T	Methyl methacrylate	5.0000	4.3620	12.8	100	0.01
10	T	2-Nitropropane	-1.0000	2.7455	0.0	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	2.8191	0.0	100	0.25

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M411682.D A9FOOWTR.M Wed Apr 27 16:39:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\042416\8M411683.D Vial: 3
Acq On : 24 Apr 2016 17:39 Operator: JDS
Sample : WG566154-03 20ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 24 18:01:53 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-13-16 HPMS 8
Last Update : Thu Apr 14 09:40:40 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	513778	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	386200	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	211054	25.00 ug/L	-0.01
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	136680	26.0186 ug/L	0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.08%		
43) 1,2-Dichloroethane-d4	10.30	65	157620	28.5783 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 114.32%		
58) Toluene-d8	12.68	98	444418	22.9956 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 92.00%		
80) p-Bromofluorobenzene	16.07	95	188016	22.8012 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 91.20%		
Target Compounds					Qvalue
36) Tetrahydrofuran	9.63	42	2184	1.8271 ug/L #	41

(#) = qualifier out of range (m) = manual integration
8M411683.D 8260WT.M Sun Apr 24 18:01:53 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\042416\8M411683.D Vial: 3
Acq On : 24 Apr 2016 17:39 Operator: JDS
Sample : WG566154-03 20ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 24 18:01 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-13-16 HPMS 8
Last Update : Thu Apr 14 09:40:40 2016
Response via : Initial Calibration

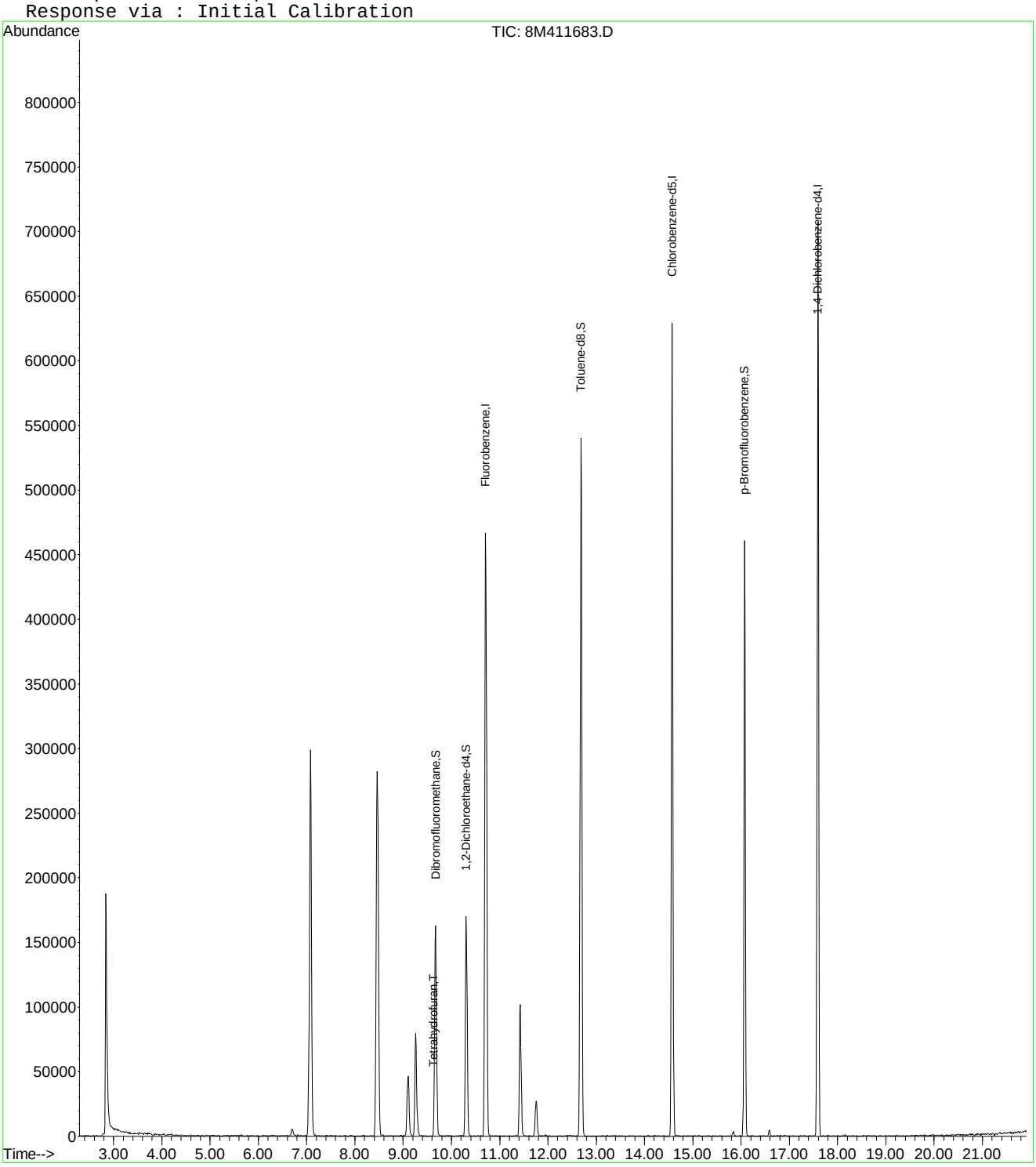

8M411683.D 8260WT.M Sun Apr 24 18:01:53 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411683.D Vial: 3
Acq On : 24 Apr 2016 17:39 Operator: JDS
Sample : WG566154-03 20ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:24:18 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:23:52 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	513778	25.00 ug/L	-0.01
11) Chlorobenzene-d5	14.57	117	386200	25.00 ug/L	-0.01
12) 1,4-Dichlorobenzene-d4	17.59	152	211054	25.00 ug/L	-0.01

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
8M411683.D A9FOOWTR.M Wed Apr 27 16:24:18 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411683.D Vial: 3
Acq On : 24 Apr 2016 17:39 Operator: JDS
Sample : WG566154-03 20ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:24 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:23:52 2016
Response via : Initial Calibration

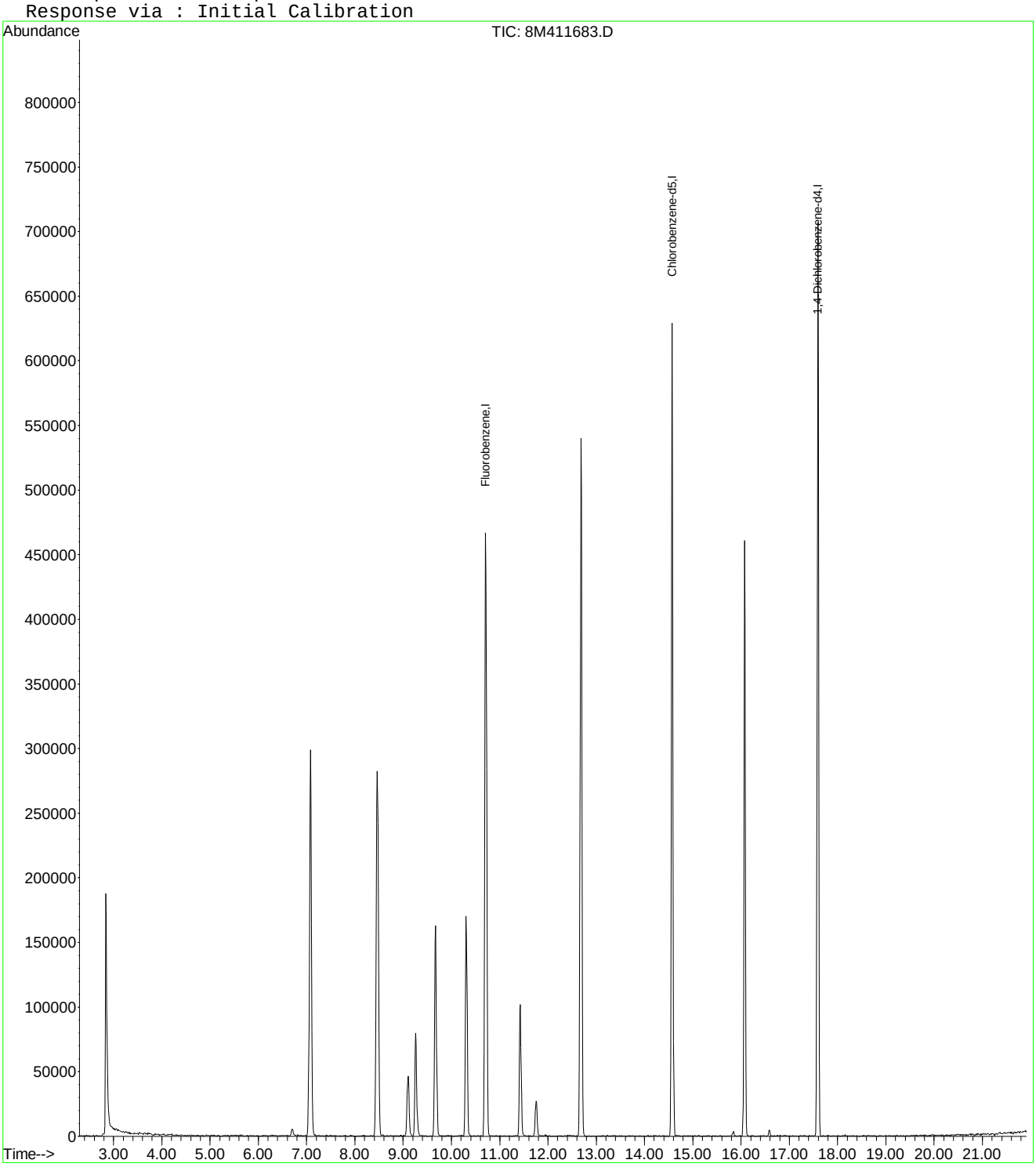

8M411683.D A9FOOWTR.M Wed Apr 27 16:24:18 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411683.D Vial: 3
Acq On : 24 Apr 2016 17:39 Operator: JDS
Sample : WG566154-03 20ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:35:44 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:34:16 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	513778	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	386200	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	211054	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.71	41	8646	20.1042 ug/L	79
3) 3-Chloro-1-propene	7.08	41	349770	21.5293 ug/L	91
4) 2-Chloro-1,3-butadiene	8.46	53	310625	20.8142 ug/L	81
5) Ethyl Acetate	9.11	43	90359	20.4098 ug/L	90
6) Methacrylonitrile	9.26	67	24496	14.4553 ug/L #	42
7) Isobutyl Alcohol	9.27	43	4573	43.8065 ug/L #	97
9) Methyl methacrylate	11.43	41	88173	15.7422 ug/L	77
10) 2-Nitropropane	11.76	43	26563	17.9917 ug/L	99
13) Cyclohexanone	15.83	55	2546	18.2487 ug/L #	43

(#) = qualifier out of range (m) = manual integration
8M411683.D A9FOOWTR.M Wed Apr 27 16:35:44 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411683.D Vial: 3
Acq On : 24 Apr 2016 17:39 Operator: JDS
Sample : WG566154-03 20ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:35 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:34:16 2016
Response via : Initial Calibration

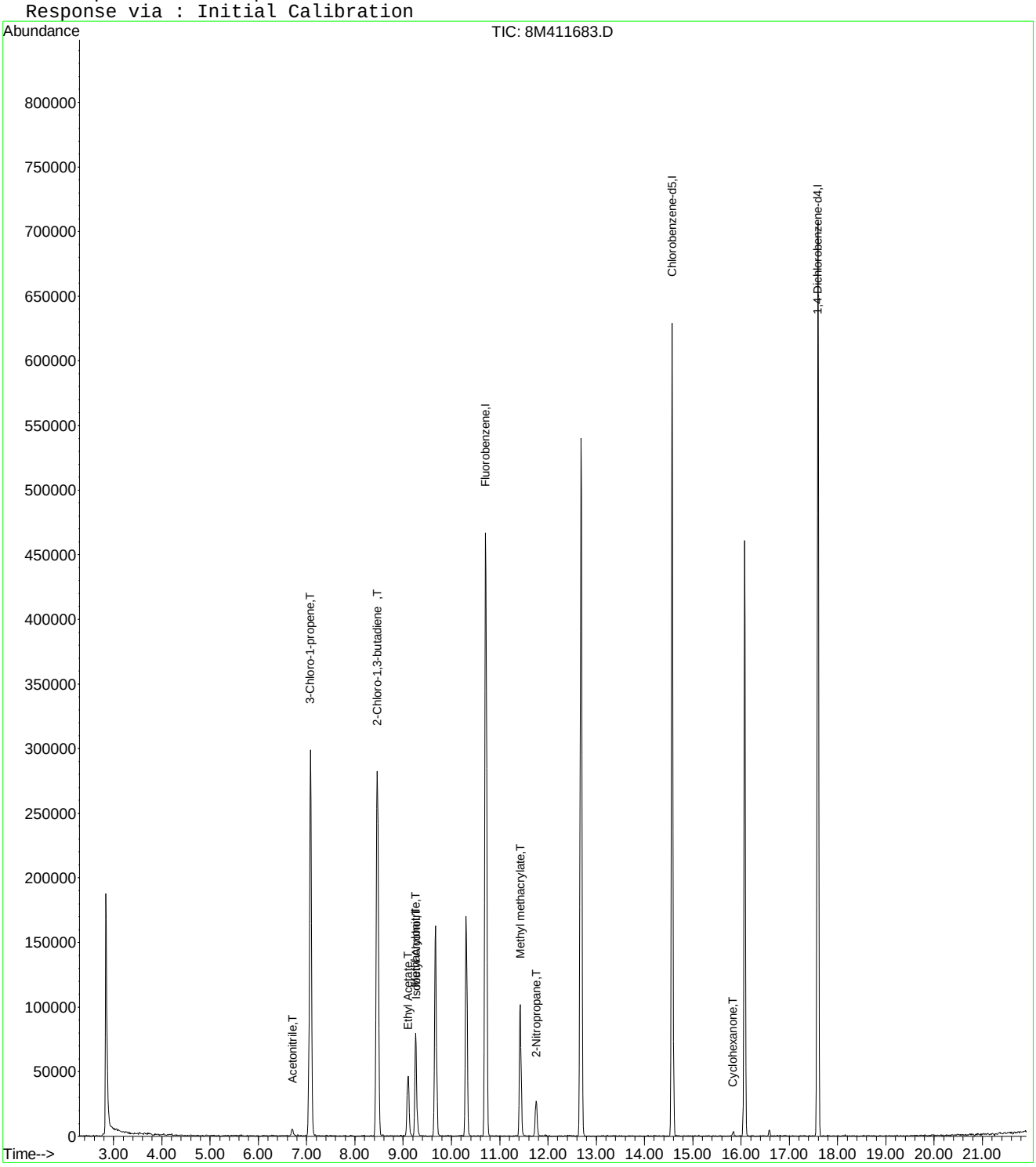

8M411683.D A9FOOWTR.M Wed Apr 27 16:35:44 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411683.D Vial: 3
Acq On : 24 Apr 2016 17:39 Operator: JDS
Sample : WG566154-03 20ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:37:32 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:36:22 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	513778	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	386200	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	211054	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.71	41	8646	20.1042 ug/L	79
3) 3-Chloro-1-propene	7.08	41	349770	21.5293 ug/L	91
4) 2-Chloro-1,3-butadiene	8.46	53	310625	20.8142 ug/L	81
5) Ethyl Acetate	9.11	43	90359	20.4098 ug/L	90
6) Methacrylonitrile	9.26	67	24496	20.6309 ug/L #	42
7) Isobutyl Alcohol	9.27	43	4573	43.8065 ug/L #	97
9) Methyl methacrylate	11.43	41	88173	20.7999 ug/L	77
10) 2-Nitropropane	11.76	43	26563	17.9917 ug/L	99
13) Cyclohexanone	15.83	55	2546	18.2487 ug/L #	43

(#) = qualifier out of range (m) = manual integration
8M411683.D A9FOOWTR.M Wed Apr 27 16:37:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411683.D Vial: 3
Acq On : 24 Apr 2016 17:39 Operator: JDS
Sample : WG566154-03 20ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:37 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:36:22 2016
Response via : Initial Calibration

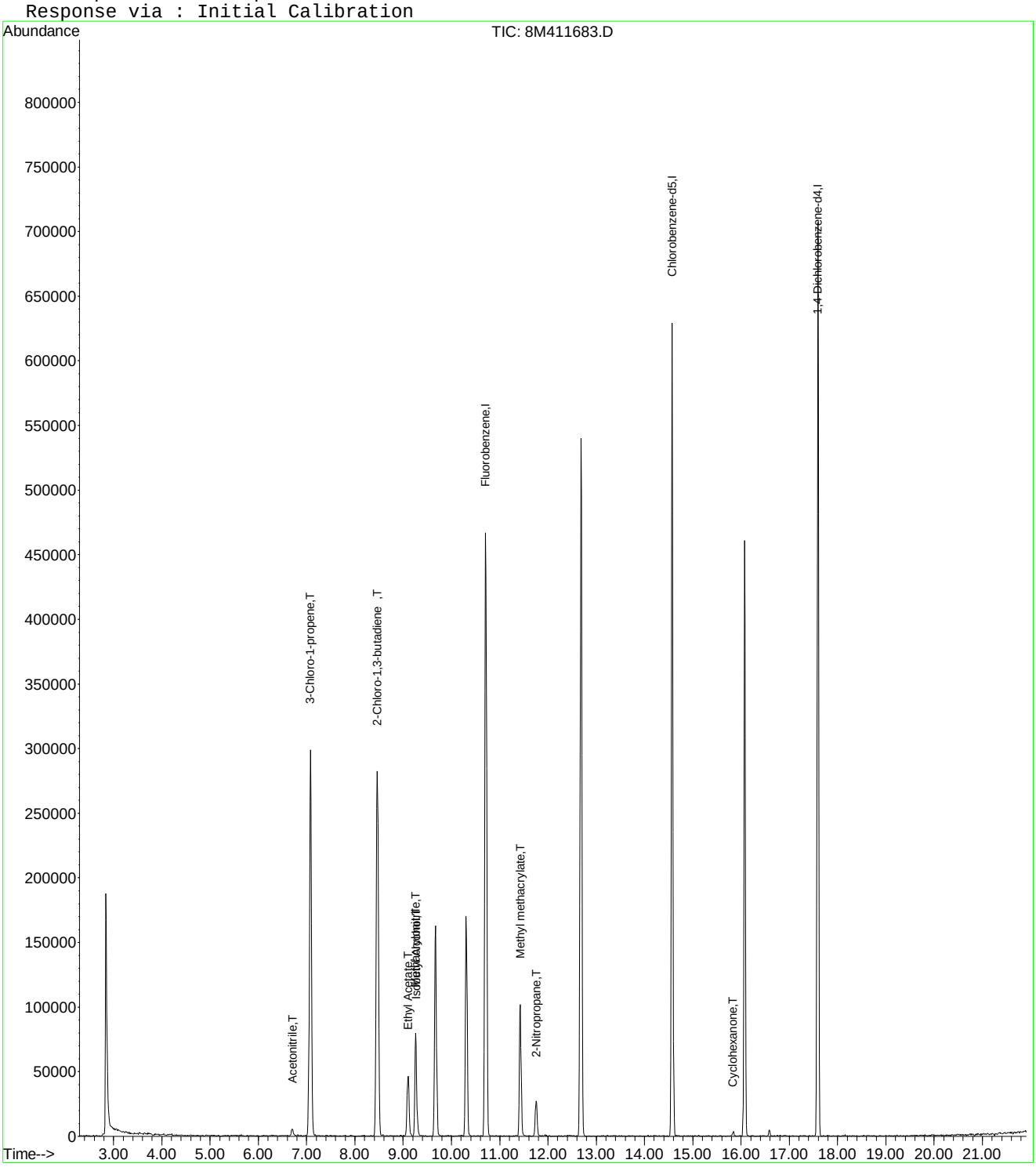

8M411683.D A9FOOWTR.M Wed Apr 27 16:37:32 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411683.D Vial: 3
Acq On : 24 Apr 2016 17:39 Operator: JDS
Sample : WG566154-03 20ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:39:38 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 04-24-16 HPMS8
Last Update : Wed Apr 27 16:38:22 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	513778	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	386200	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	211054	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.71	41	8646	20.1042 ug/L	79
3) 3-Chloro-1-propene	7.08	41	349770	21.5293 ug/L	91
4) 2-Chloro-1,3-butadiene	8.46	53	310625	20.8142 ug/L	81
5) Ethyl Acetate	9.11	43	90359	20.4098 ug/L	90
6) Methacrylonitrile	9.26	67	24496	20.6309 ug/L #	42
7) Isobutyl Alcohol	9.27	43	4573	43.8065 ug/L #	97
9) Methyl methacrylate	11.43	41	88173	20.7999 ug/L	77
10) 2-Nitropropane	11.76	43	26563	17.9917 ug/L	99
13) Cyclohexanone	15.83	55	2546	18.2487 ug/L #	43

(#) = qualifier out of range (m) = manual integration
8M411683.D A9FOOWTR.M Wed Apr 27 16:39:38 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411683.D Vial: 3
Acq On : 24 Apr 2016 17:39 Operator: JDS
Sample : WG566154-03 20ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:39 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 04-24-16 HPMS8
Last Update : Wed Apr 27 16:38:22 2016
Response via : Initial Calibration

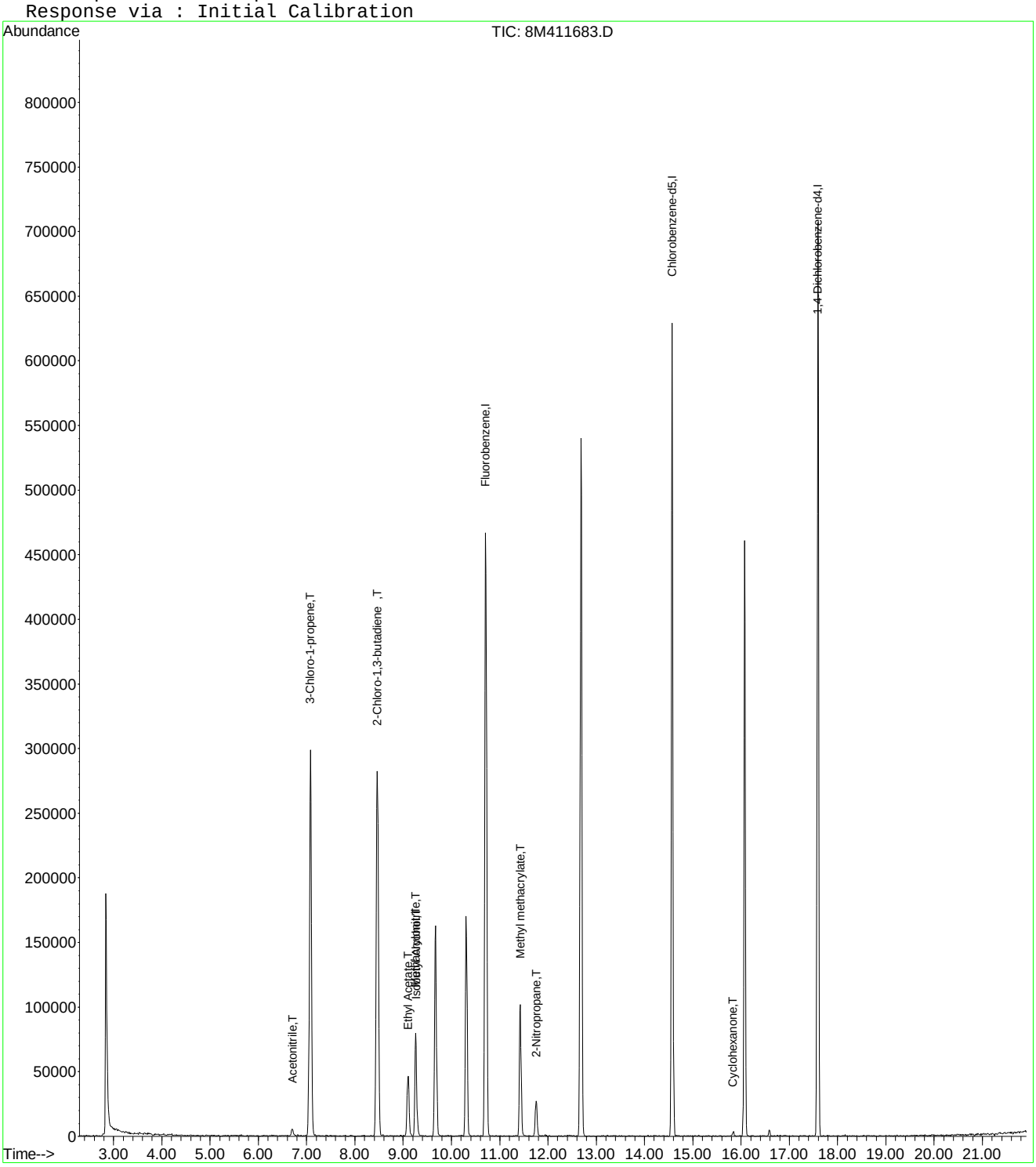

8M411683.D A9FOOWTR.M Wed Apr 27 16:39:39 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\042416\8M411683.D Vial: 3
Acq On : 24 Apr 2016 17:39 Operator: JDS
Sample : WG566154-03 20ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 04-24-16 HPMS8
Last Update : Wed Apr 27 16:38:22 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	20.1042	-0.5	100	0.01
3	T	3-Chloro-1-propene	20.0000	21.5293	-7.6	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	20.8142	-4.1	100	0.00
5	T	Ethyl Acetate	20.0000	20.4098	-2.0	100	0.01
6	T	Methacrylonitrile	20.0000	20.6309	-3.2	100	0.00
7	T	Isobutyl Alcohol	-1.0000	43.8065	0.0	5	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.21#
9	T	Methyl methacrylate	20.0000	20.7999	-4.0	100	0.01
10	T	2-Nitropropane	-1.0000	17.9917	0.0	100	0.01
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	18.2487	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M411683.D A9FOOWTR.M Wed Apr 27 16:40:07 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\042416\8M411684.D Vial: 4
Acq On : 24 Apr 2016 18:08 Operator: JDS
Sample : WG566154-04 50ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 24 18:30:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-13-16 HPMS 8
Last Update : Thu Apr 14 09:40:40 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	515597	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	383322	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	211367	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	137461	26.0749 ug/L	0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.28%		
43) 1,2-Dichloroethane-d4	10.30	65	161055	29.0980 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 116.40%		
58) Toluene-d8	12.68	98	448828	23.3982 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 93.60%		
80) p-Bromofluorobenzene	16.07	95	187810	22.7425 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 90.96%		

Target Compounds

					Qvalue
13) Acetone	6.26	43	212	0.2163 ug/L #	48
36) Tetrahydrofuran	9.62	42	2800	2.3342 ug/L #	48

(#) = qualifier out of range (m) = manual integration
8M411684.D 8260WT.M Sun Apr 24 18:30:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\042416\8M411684.D Vial: 4
Acq On : 24 Apr 2016 18:08 Operator: JDS
Sample : WG566154-04 50ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 24 18:30 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-13-16 HPMS 8
Last Update : Thu Apr 14 09:40:40 2016
Response via : Initial Calibration

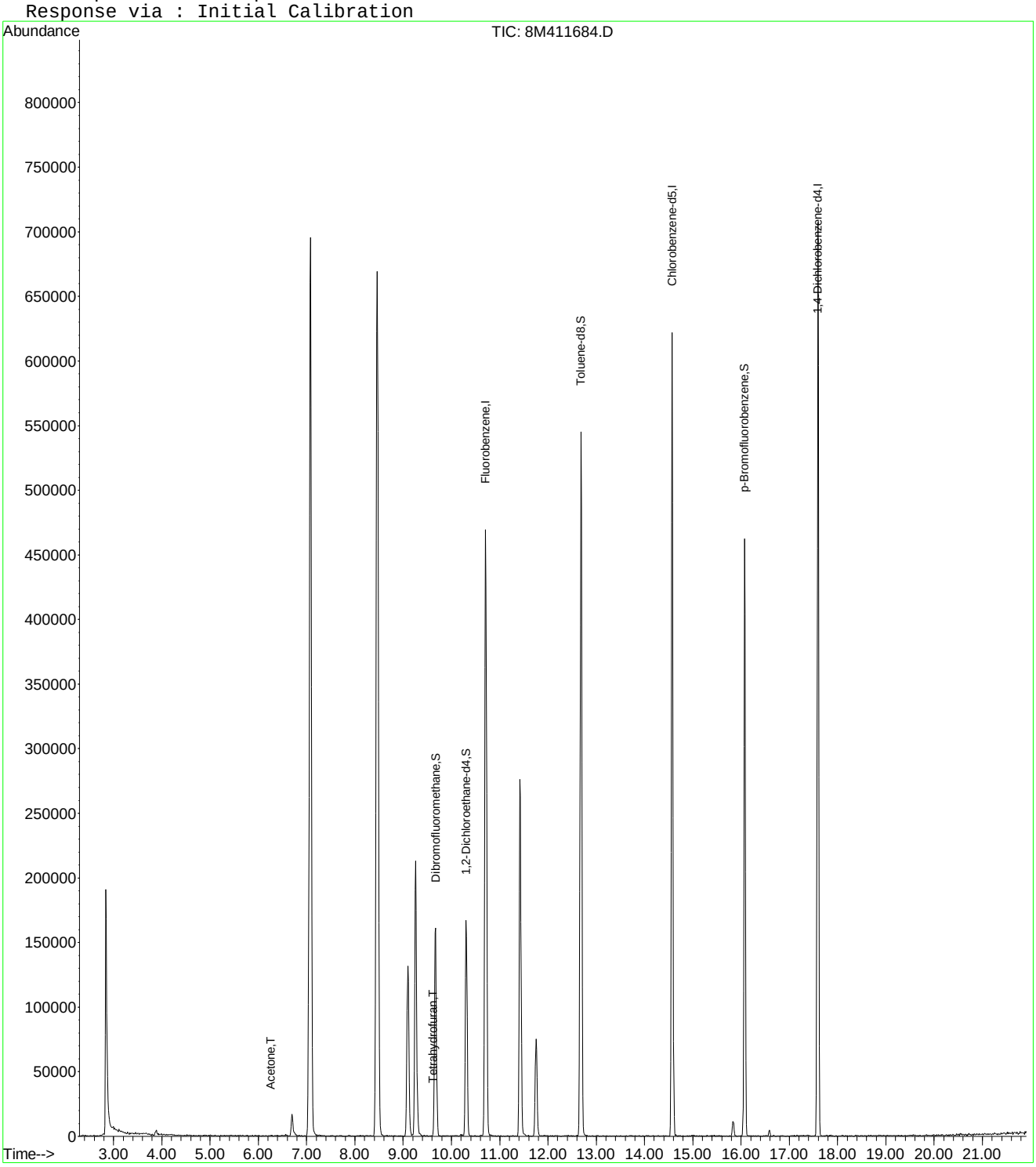

8M411684.D 8260WT.M Sun Apr 24 18:30:36 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411684.D Vial: 4
Acq On : 24 Apr 2016 18:08 Operator: JDS
Sample : WG566154-04 50ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:24:18 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:23:52 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	515597	25.00 ug/L	-0.01
11) Chlorobenzene-d5	14.57	117	383322	25.00 ug/L	-0.01
12) 1,4-Dichlorobenzene-d4	17.59	152	211367	25.00 ug/L	-0.01

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
8M411684.D A9FOOWTR.M Wed Apr 27 16:24:18 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411684.D Vial: 4
Acq On : 24 Apr 2016 18:08 Operator: JDS
Sample : WG566154-04 50ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:24 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:23:52 2016
Response via : Initial Calibration

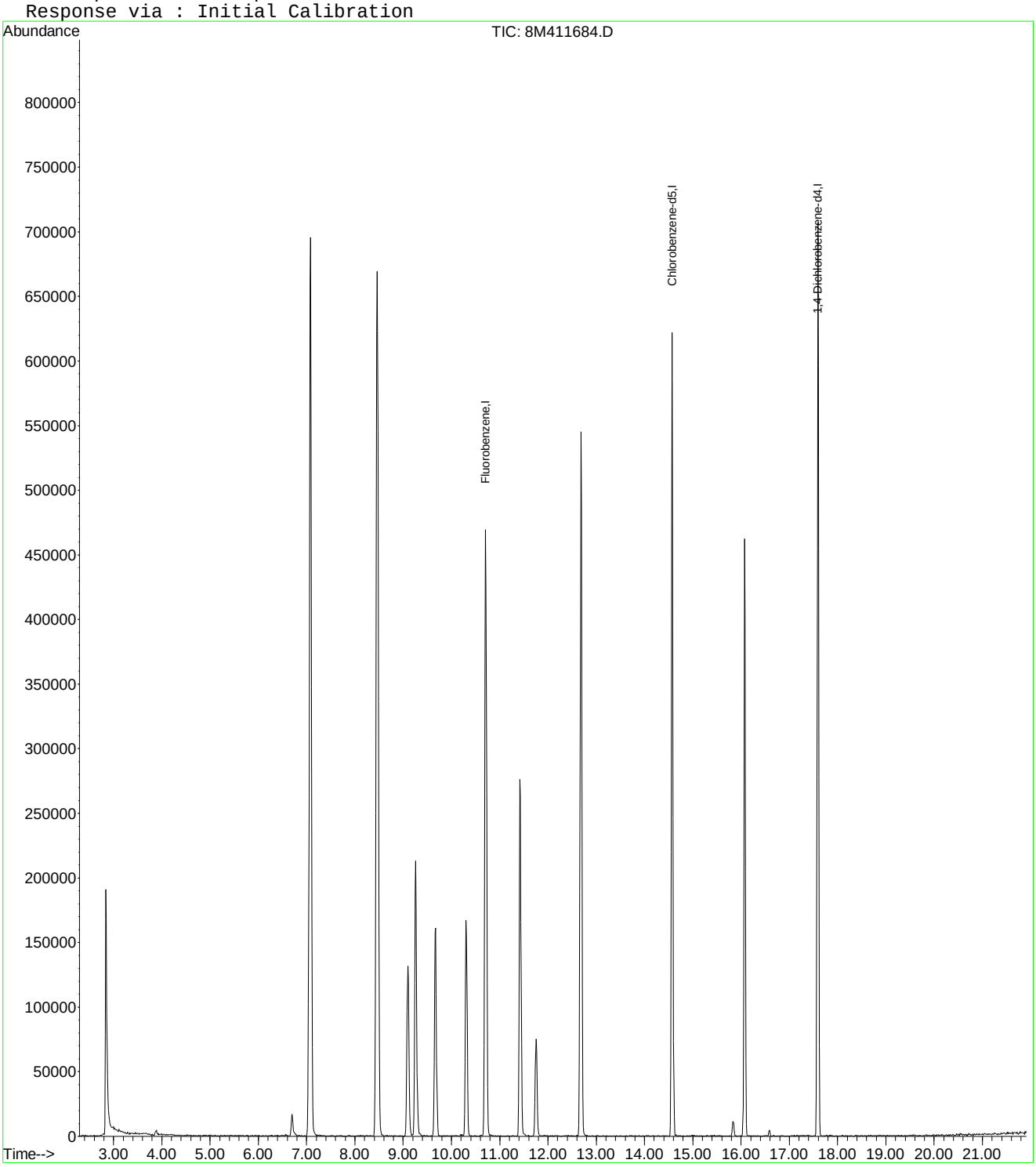

8M411684.D A9FOOWTR.M Wed Apr 27 16:24:19 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411684.D Vial: 4
Acq On : 24 Apr 2016 18:08 Operator: JDS
Sample : WG566154-04 50ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:35:44 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:34:16 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	515597	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	383322	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	211367	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	25791	59.7591 ug/L	97
3) 3-Chloro-1-propene	7.08	41	834497	51.1843 ug/L	92
4) 2-Chloro-1,3-butadiene	8.46	53	736179	49.1555 ug/L	82
5) Ethyl Acetate	9.09	43	246068	55.3845 ug/L	90
6) Methacrylonitrile	9.26	67	67048	49.2745 ug/L #	49
7) Isobutyl Alcohol	9.27	43	12675	120.9902 ug/L #	96
9) Methyl methacrylate	11.42	41	232409	48.2324 ug/L	78
10) 2-Nitropropane	11.75	43	74242	50.1083 ug/L	96
13) Cyclohexanone	15.83	55	7183	51.4087 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M411684.D A9FOOWTR.M Wed Apr 27 16:35:44 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411684.D Vial: 4
Acq On : 24 Apr 2016 18:08 Operator: JDS
Sample : WG566154-04 50ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:35 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:34:16 2016
Response via : Initial Calibration

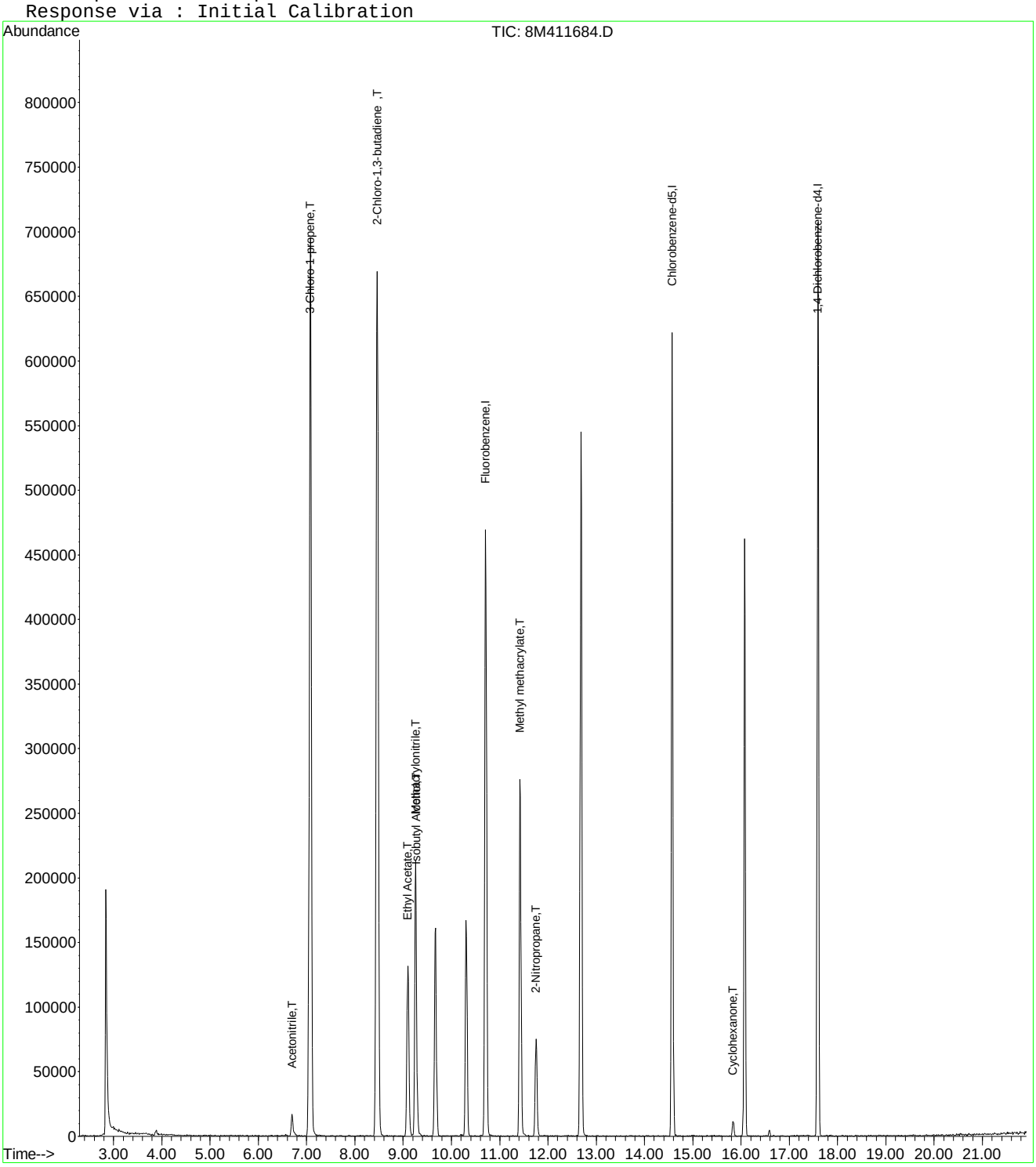

8M411684.D A9FOOWTR.M Wed Apr 27 16:35:45 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411684.D Vial: 4
Acq On : 24 Apr 2016 18:08 Operator: JDS
Sample : WG566154-04 50ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:37:32 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:36:22 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	515597	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	383322	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	211367	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	25791	59.7591 ug/L	97
3) 3-Chloro-1-propene	7.08	41	834497	51.1843 ug/L	92
4) 2-Chloro-1,3-butadiene	8.46	53	736179	49.1555 ug/L	82
5) Ethyl Acetate	9.09	43	246068	55.3845 ug/L	90
6) Methacrylonitrile	9.26	67	67048	54.2713 ug/L #	49
7) Isobutyl Alcohol	9.27	43	12675	120.9902 ug/L #	96
9) Methyl methacrylate	11.42	41	232409	52.3829 ug/L	78
10) 2-Nitropropane	11.75	43	74242	50.1083 ug/L	96
13) Cyclohexanone	15.83	55	7183	51.4087 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M411684.D A9FOOWTR.M Wed Apr 27 16:37:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411684.D Vial: 4
Acq On : 24 Apr 2016 18:08 Operator: JDS
Sample : WG566154-04 50ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:37 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:36:22 2016
Response via : Initial Calibration

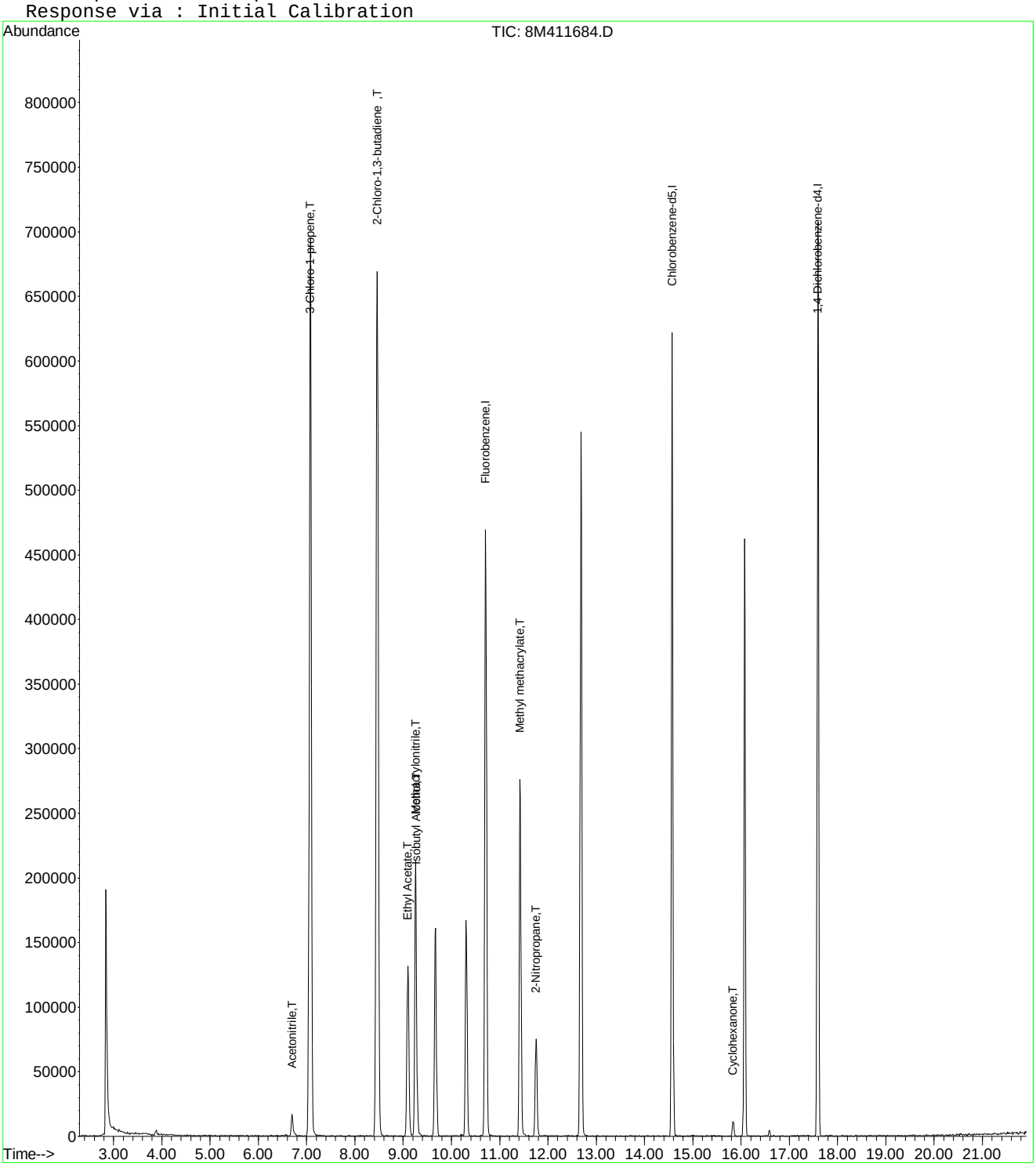

8M411684.D A9FOOWTR.M Wed Apr 27 16:37:33 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411684.D Vial: 4
Acq On : 24 Apr 2016 18:08 Operator: JDS
Sample : WG566154-04 50ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:39:39 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 04-24-16 HPMS8
Last Update : Wed Apr 27 16:38:22 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	515597	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	383322	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	211367	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	25791	59.7591 ug/L	97
3) 3-Chloro-1-propene	7.08	41	834497	51.1843 ug/L	92
4) 2-Chloro-1,3-butadiene	8.46	53	736179	49.1555 ug/L	82
5) Ethyl Acetate	9.09	43	246068	55.3845 ug/L	90
6) Methacrylonitrile	9.26	67	67048	54.2713 ug/L #	49
7) Isobutyl Alcohol	9.27	43	12675	120.9902 ug/L #	96
9) Methyl methacrylate	11.42	41	232409	52.3829 ug/L	78
10) 2-Nitropropane	11.75	43	74242	50.1083 ug/L	96
13) Cyclohexanone	15.83	55	7183	51.4087 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M411684.D A9FOOWTR.M Wed Apr 27 16:39:39 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411684.D Vial: 4
Acq On : 24 Apr 2016 18:08 Operator: JDS
Sample : WG566154-04 50ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:39 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 04-24-16 HPMS8
Last Update : Wed Apr 27 16:38:22 2016
Response via : Initial Calibration

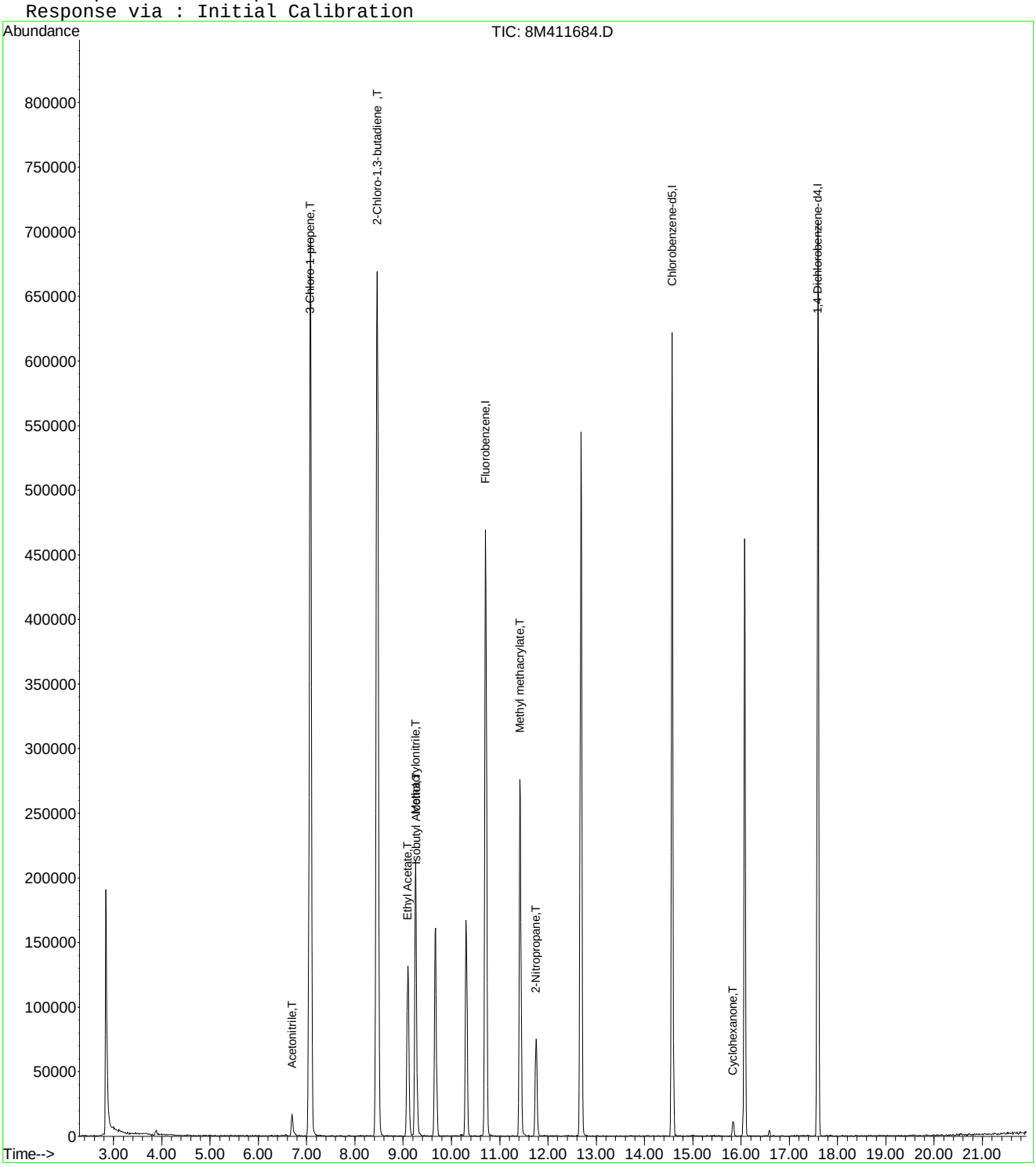

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\042416\8M411684.D Vial: 4
Acq On : 24 Apr 2016 18:08 Operator: JDS
Sample : WG566154-04 50ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 04-24-16 HPMS8
Last Update : Wed Apr 27 16:38:22 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	59.7591	-19.5	100	0.00
3	T	3-Chloro-1-propene	50.0000	51.1843	-2.4	100	0.00
4	T	2-Chloro-1,3-butadiene	50.0000	49.1555	1.7	100	0.00
5	T	Ethyl Acetate	50.0000	55.3845	-10.8	100	0.00
6	T	Methacrylonitrile	50.0000	54.2713	-8.5	100	0.00
7	T	Isobutyl Alcohol	100.0000	120.9902	-21.0	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	100	-0.02
9	T	Methyl methacrylate	50.0000	52.3829	-4.8	100	0.00
10	T	2-Nitropropane	50.0000	50.1083	-0.2	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	50.0000	51.4087	-2.8	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M411684.D A9FOOWTR.M Wed Apr 27 16:40:17 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\042416\8M411685.D Vial: 5
Acq On : 24 Apr 2016 18:37 Operator: JDS
Sample : WG566154-05 100ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 24 18:59:42 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-13-16 HPMS 8
Last Update : Thu Apr 14 09:40:40 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	517888	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	397825	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	213163	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	139574	26.3586 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 105.44%		
43) 1,2-Dichloroethane-d4	10.31	65	162185	29.1726 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 116.68%		
58) Toluene-d8	12.68	98	459616	23.0871 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 92.36%		
80) p-Bromofluorobenzene	16.07	95	188673	22.6545 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 90.60%		

Target Compounds					Qvalue
36) Tetrahydrofuran	9.65	42	2366	1.9637 ug/L #	49

(#) = qualifier out of range (m) = manual integration
8M411685.D 8260WT.M Sun Apr 24 18:59:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\042416\8M411685.D Vial: 5
Acq On : 24 Apr 2016 18:37 Operator: JDS
Sample : WG566154-05 100ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 24 18:59 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-13-16 HPMS 8
Last Update : Thu Apr 14 09:40:40 2016
Response via : Initial Calibration

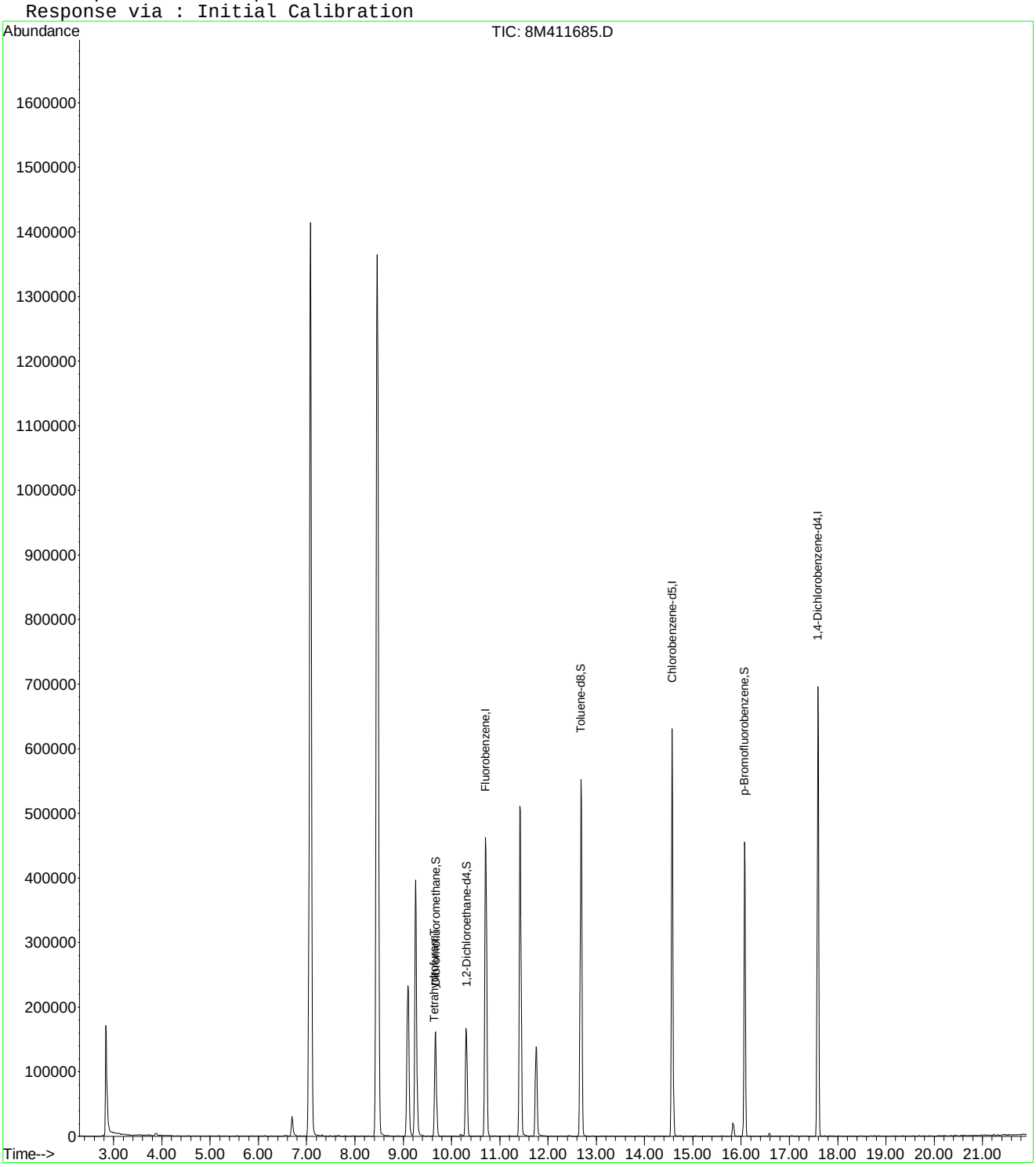

8M411685.D 8260WT.M Sun Apr 24 18:59:43 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411685.D Vial: 5
Acq On : 24 Apr 2016 18:37 Operator: JDS
Sample : WG566154-05 100ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:24:19 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:23:52 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	517888	25.00 ug/L	-0.01
11) Chlorobenzene-d5	14.57	117	397825	25.00 ug/L	-0.01
12) 1,4-Dichlorobenzene-d4	17.59	152	213163	25.00 ug/L	-0.01

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
8M411685.D A9FOOWTR.M Wed Apr 27 16:24:19 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411685.D Vial: 5
Acq On : 24 Apr 2016 18:37 Operator: JDS
Sample : WG566154-05 100ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:24 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:23:52 2016
Response via : Initial Calibration

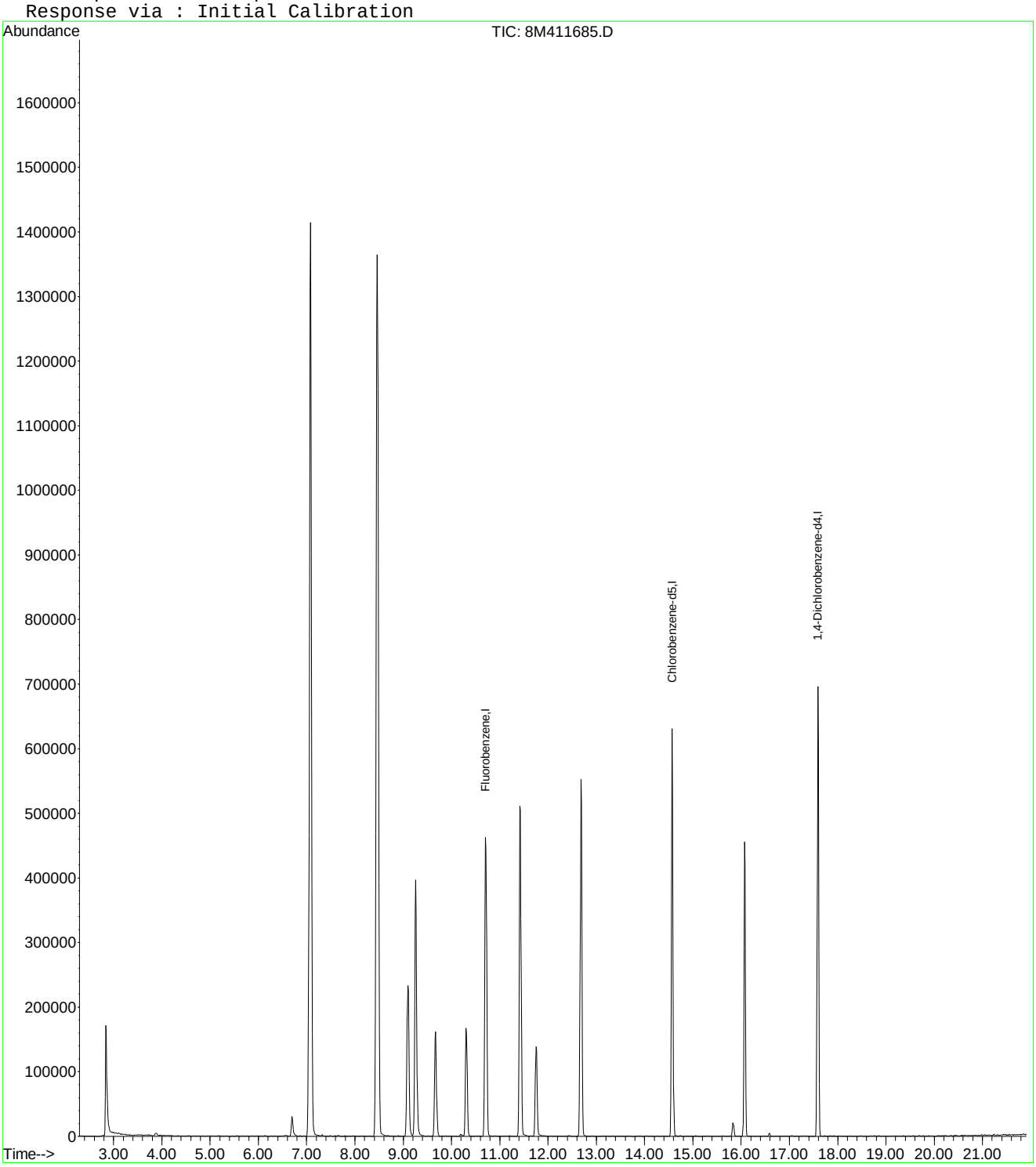

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411685.D Vial: 5
Acq On : 24 Apr 2016 18:37 Operator: JDS
Sample : WG566154-05 100ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:35:45 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:34:16 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	517888	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	397825	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	213163	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	44530	102.7219 ug/L	99
3) 3-Chloro-1-propene	7.08	41	1681799	102.6977 ug/L	92
4) 2-Chloro-1,3-butadiene	8.46	53	1509422	100.3399 ug/L	81
5) Ethyl Acetate	9.09	43	448879	100.5859 ug/L	91
6) Methacrylonitrile	9.26	67	127796	98.6210 ug/L #	56
7) Isobutyl Alcohol	9.27	43	19901	189.1262 ug/L #	85
9) Methyl methacrylate	11.42	41	449038	96.6870 ug/L	77
10) 2-Nitropropane	11.75	43	138709	93.2050 ug/L	96
13) Cyclohexanone	15.83	55	12941	91.8384 ug/L	96

(#) = qualifier out of range (m) = manual integration
8M411685.D A9FOOWTR.M Wed Apr 27 16:35:45 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411685.D Vial: 5
Acq On : 24 Apr 2016 18:37 Operator: JDS
Sample : WG566154-05 100ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:35 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:34:16 2016
Response via : Initial Calibration

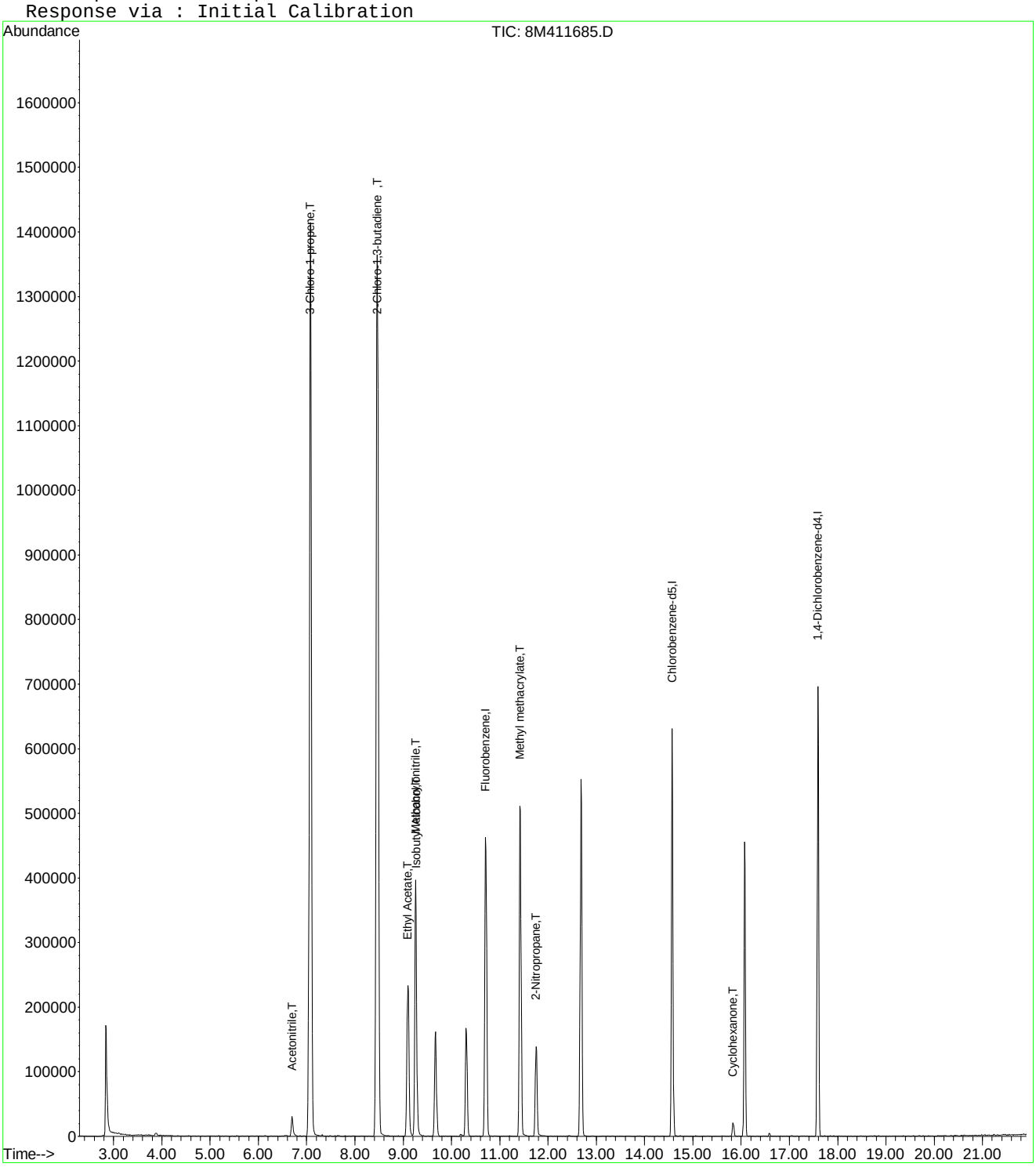

8M411685.D A9FOOWTR.M Wed Apr 27 16:35:45 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411685.D Vial: 5
Acq On : 24 Apr 2016 18:37 Operator: JDS
Sample : WG566154-05 100ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:37:33 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:36:22 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	517888	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	397825	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	213163	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	44530	102.7219 ug/L	99
3) 3-Chloro-1-propene	7.08	41	1681799	102.6977 ug/L	92
4) 2-Chloro-1,3-butadiene	8.46	53	1509422	100.3399 ug/L	81
5) Ethyl Acetate	9.09	43	448879	100.5859 ug/L	91
6) Methacrylonitrile	9.26	67	127796	101.9472 ug/L #	56
7) Isobutyl Alcohol	9.27	43	19901	189.1262 ug/L #	85
9) Methyl methacrylate	11.42	41	449038	99.4846 ug/L	77
10) 2-Nitropropane	11.75	43	138709	93.2050 ug/L	96
13) Cyclohexanone	15.83	55	12941	91.8384 ug/L	96

(#) = qualifier out of range (m) = manual integration
8M411685.D A9FOOWTR.M Wed Apr 27 16:37:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411685.D Vial: 5
Acq On : 24 Apr 2016 18:37 Operator: JDS
Sample : WG566154-05 100ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:37 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:36:22 2016
Response via : Initial Calibration

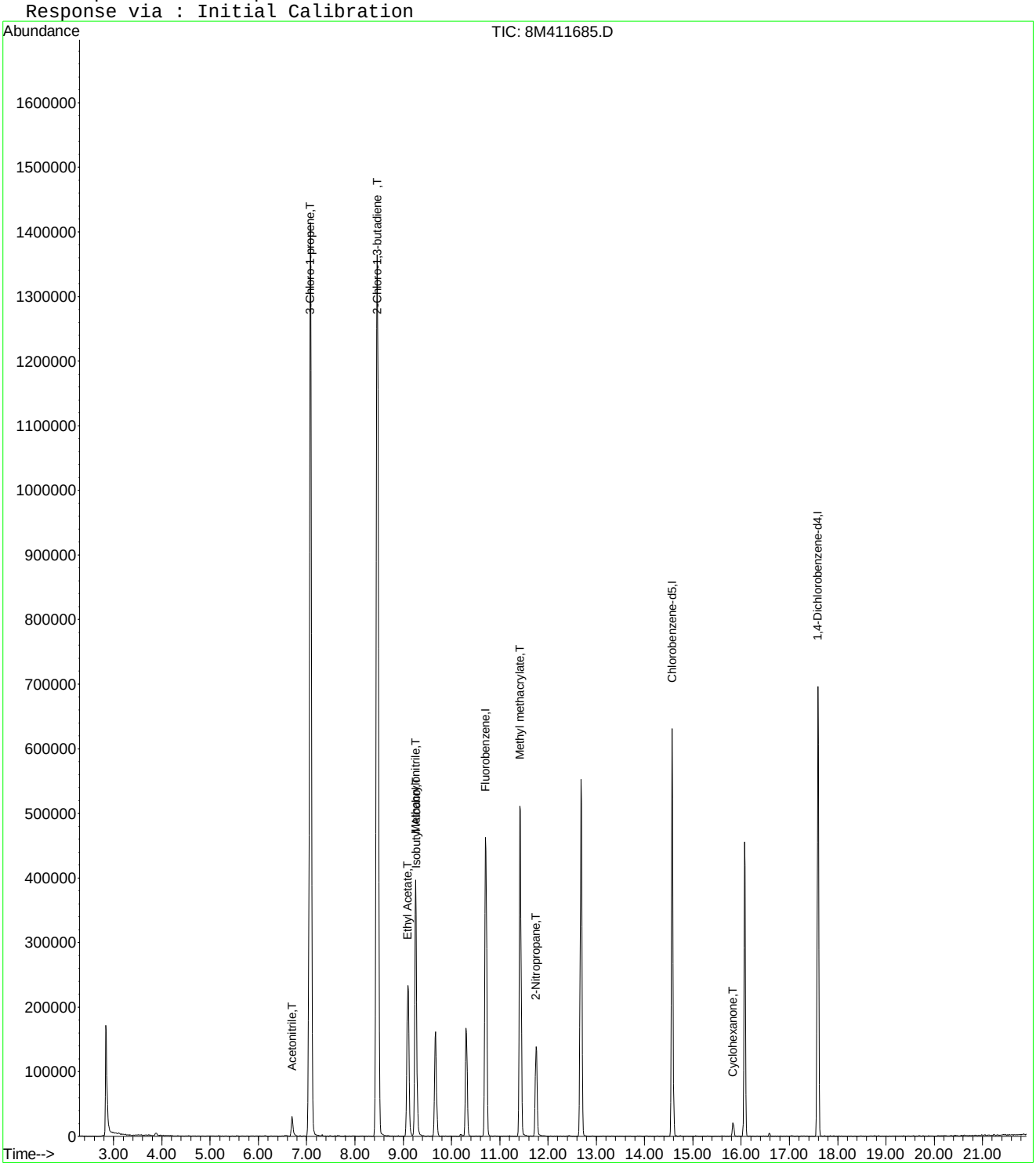

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411685.D Vial: 5
Acq On : 24 Apr 2016 18:37 Operator: JDS
Sample : WG566154-05 100ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:39:39 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 04-24-16 HPMS8
Last Update : Wed Apr 27 16:38:22 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	517888	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	397825	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	213163	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	44530	102.7219 ug/L	99
3) 3-Chloro-1-propene	7.08	41	1681799	102.6977 ug/L	92
4) 2-Chloro-1,3-butadiene	8.46	53	1509422	100.3399 ug/L	81
5) Ethyl Acetate	9.09	43	448879	100.5859 ug/L	91
6) Methacrylonitrile	9.26	67	127796	101.9472 ug/L #	56
7) Isobutyl Alcohol	9.27	43	19901	189.1262 ug/L #	85
9) Methyl methacrylate	11.42	41	449038	99.4846 ug/L	77
10) 2-Nitropropane	11.75	43	138709	93.2050 ug/L	96
13) Cyclohexanone	15.83	55	12941	91.8384 ug/L	96

(#) = qualifier out of range (m) = manual integration
8M411685.D A9FOOWTR.M Wed Apr 27 16:39:40 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411685.D Vial: 5
Acq On : 24 Apr 2016 18:37 Operator: JDS
Sample : WG566154-05 100ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:39 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 04-24-16 HPMS8
Last Update : Wed Apr 27 16:38:22 2016
Response via : Initial Calibration

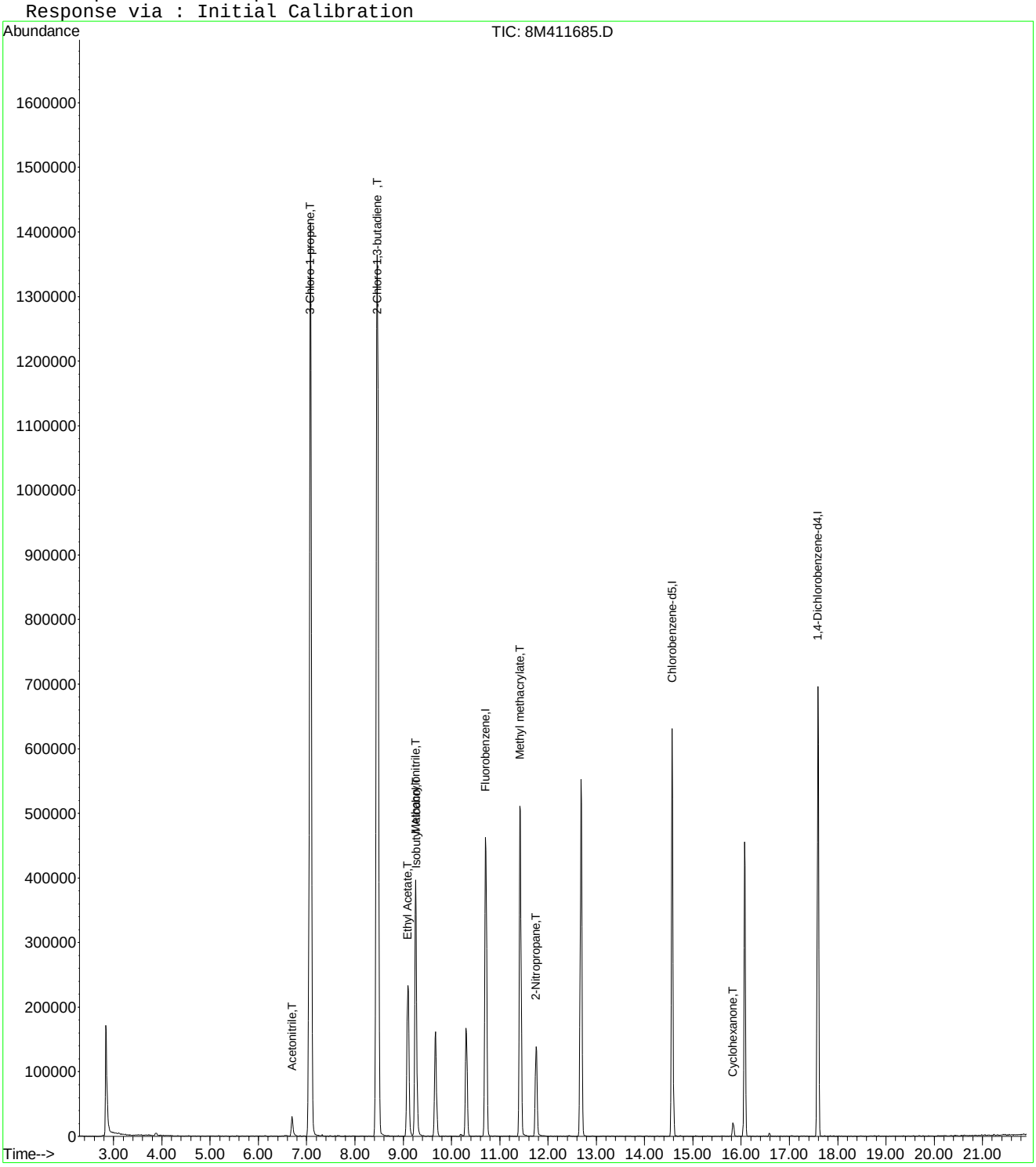

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\042416\8M411686.D Vial: 6
Acq On : 24 Apr 2016 19:06 Operator: JDS
Sample : WG566154-06 200ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 24 19:28:57 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-13-16 HPMS 8
Last Update : Thu Apr 14 09:40:40 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	498952	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	386433	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	208057	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	136304	26.7180 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.88%		
43) 1,2-Dichloroethane-d4	10.31	65	159113	29.7062 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 118.84%		
58) Toluene-d8	12.68	98	438319	22.6664 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 90.68%		
80) p-Bromofluorobenzene	16.07	95	186702	22.9680 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 91.88%		

Target Compounds					Qvalue
13) Acetone	6.27	43	868	0.9151 ug/L #	48
18) Methyl acetate	7.07	43	1238	0.3705 ug/L #	1
22) Methyl Tert Butyl Ether	7.50	73	2308	0.2195 ug/L #	51
29) 2-Butanone	8.89	43	277	0.1761 ug/L #	57
30) Propionitrile	9.07	54	289	0.6323 ug/L #	1
36) Tetrahydrofuran	9.64	42	2905	2.5026 ug/L #	56

(#) = qualifier out of range (m) = manual integration
8M411686.D 8260WT.M Sun Apr 24 19:28:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\042416\8M411686.D Vial: 6
Acq On : 24 Apr 2016 19:06 Operator: JDS
Sample : WG566154-06 200ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 24 19:28 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-13-16 HPMS 8
Last Update : Thu Apr 14 09:40:40 2016
Response via : Initial Calibration

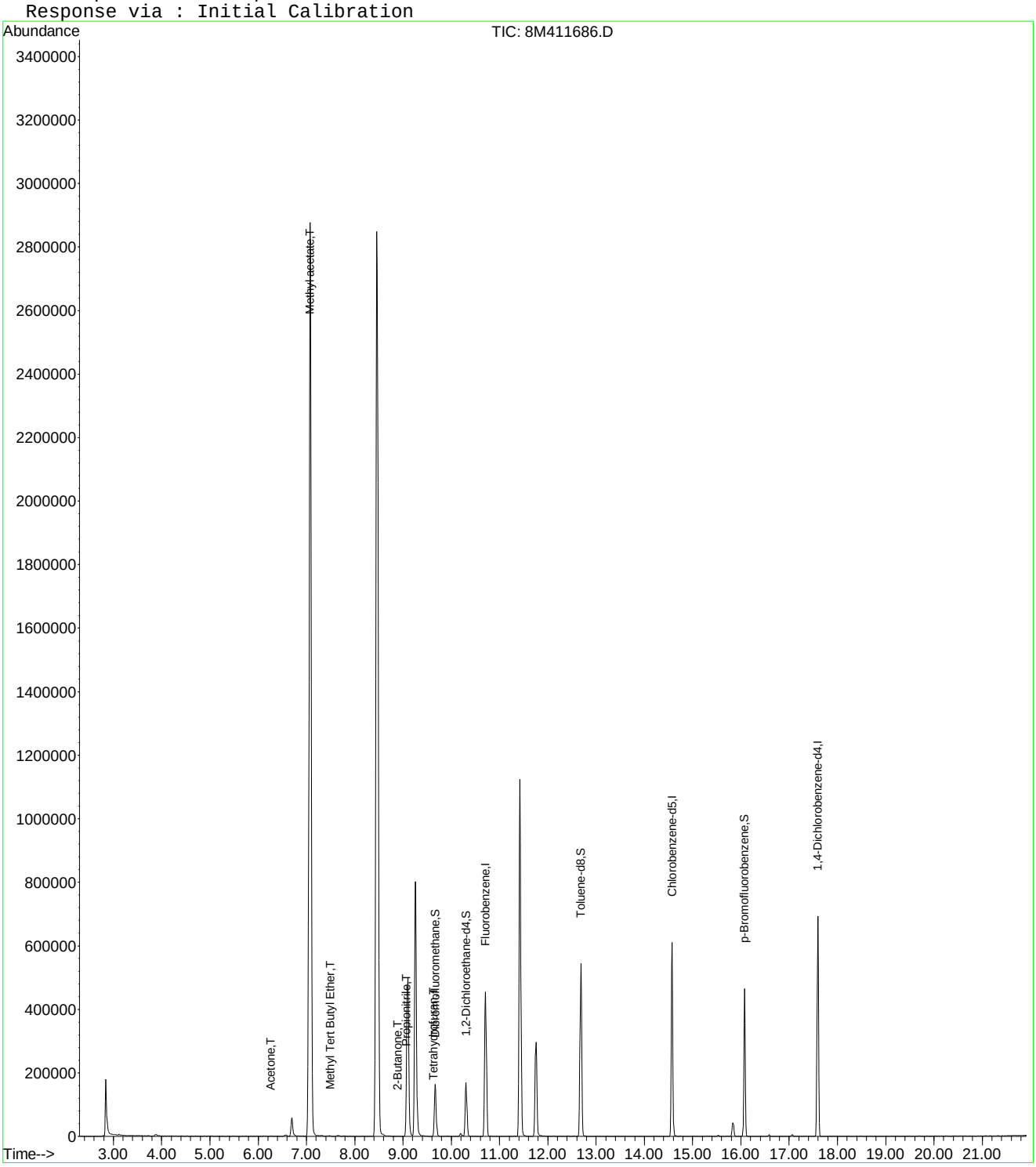

8M411686.D 8260WT.M Sun Apr 24 19:28:58 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411686.D Vial: 6
Acq On : 24 Apr 2016 19:06 Operator: JDS
Sample : WG566154-06 200ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:24:19 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:23:52 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	498952	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	386433	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	208057	25.00 ug/L	0.00

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
8M411686.D A9FOOWTR.M Wed Apr 27 16:24:20 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411686.D Vial: 6
Acq On : 24 Apr 2016 19:06 Operator: JDS
Sample : WG566154-06 200ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:24 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:23:52 2016
Response via : Initial Calibration

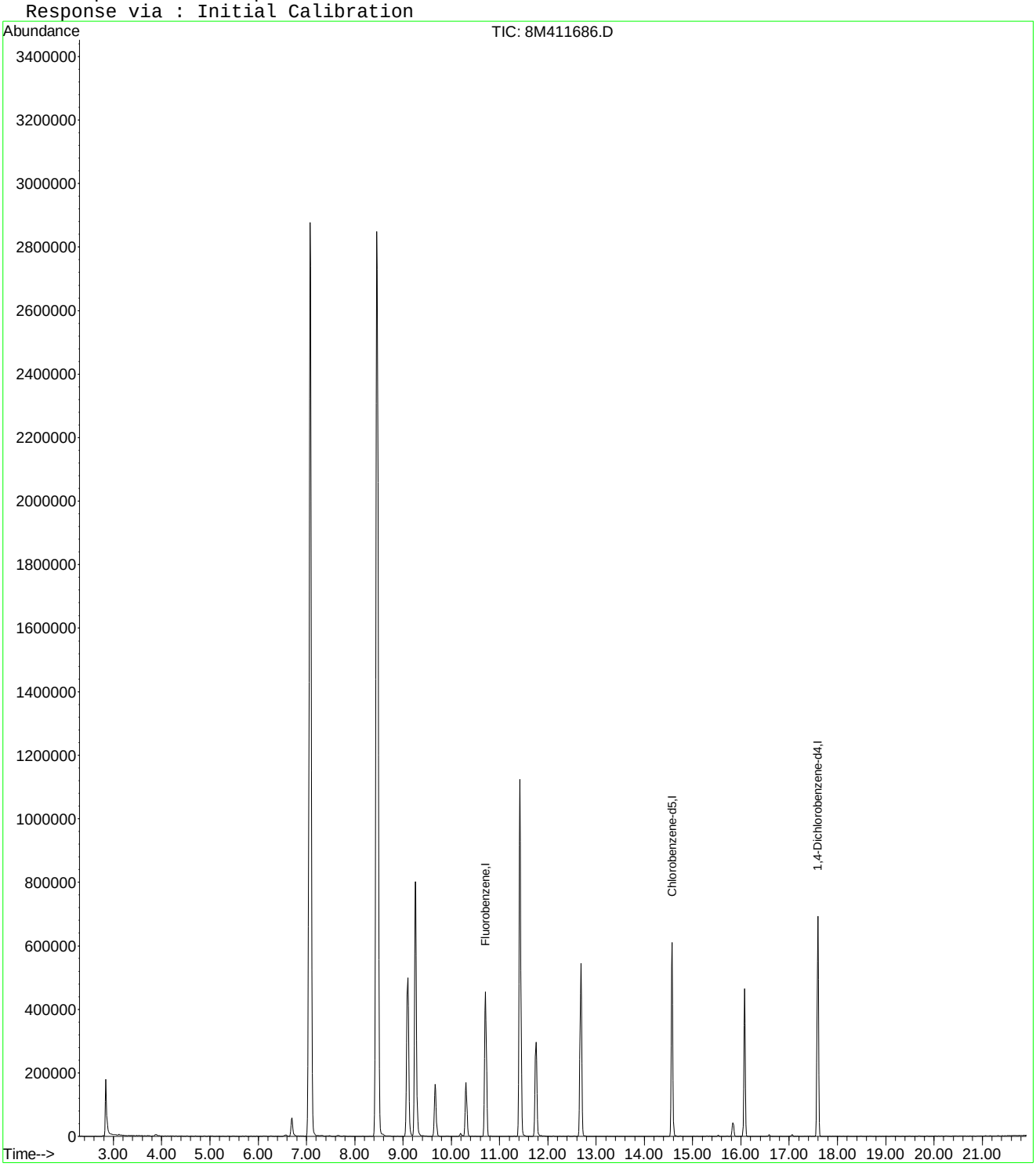

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411686.D Vial: 6
Acq On : 24 Apr 2016 19:06 Operator: JDS
Sample : WG566154-06 200ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:35:45 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:34:16 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	498952	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	386433	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	208057	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	90138	215.8219 ug/L	99
3) 3-Chloro-1-propene	7.07	41	3410620	216.1708 ug/L	92
4) 2-Chloro-1,3-butadiene	8.46	53	3193354	220.3369 ug/L	81
5) Ethyl Acetate	9.10	43	935454	217.5743 ug/L	92
6) Methacrylonitrile	9.26	67	254897	210.2727 ug/L #	48
7) Isobutyl Alcohol	9.26	43	42509	419.3096 ug/L	81
9) Methyl methacrylate	11.42	41	925980	211.7766 ug/L	77
10) 2-Nitropropane	11.75	43	297081	207.1985 ug/L	94
13) Cyclohexanone	15.84	55	27645	201.0030 ug/L	92

(#) = qualifier out of range (m) = manual integration
8M411686.D A9FOOWTR.M Wed Apr 27 16:35:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411686.D Vial: 6
Acq On : 24 Apr 2016 19:06 Operator: JDS
Sample : WG566154-06 200ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:35 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:34:16 2016
Response via : Initial Calibration

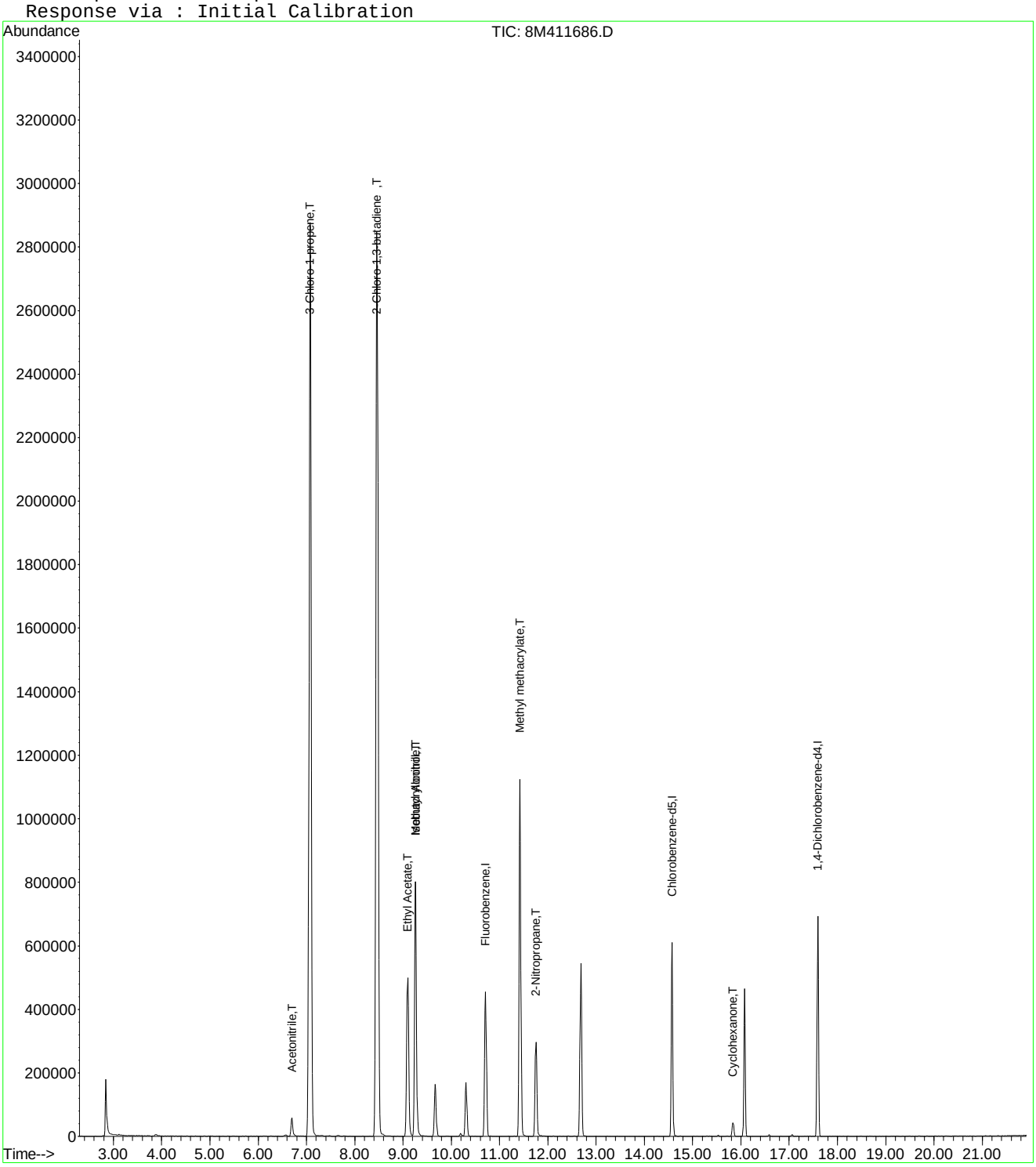

8M411686.D A9FOOWTR.M Wed Apr 27 16:35:46 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411686.D Vial: 6
Acq On : 24 Apr 2016 19:06 Operator: JDS
Sample : WG566154-06 200ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:37:34 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:36:22 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	498952	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.58	117	386433	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	208057	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.70	41	90138	215.8219	ug/L	99
3) 3-Chloro-1-propene	7.07	41	3410620	216.1708	ug/L	92
4) 2-Chloro-1,3-butadiene	8.46	53	3193354	220.3369	ug/L	81
5) Ethyl Acetate	9.10	43	935454	217.5743	ug/L	92
6) Methacrylonitrile	9.26	67	254897	209.8191	ug/L #	48
7) Isobutyl Alcohol	9.26	43	42509	419.3096	ug/L	81
9) Methyl methacrylate	11.42	41	925980	211.3605	ug/L	77
10) 2-Nitropropane	11.75	43	297081	207.1985	ug/L	94
13) Cyclohexanone	15.84	55	27645	201.0030	ug/L	92

(#) = qualifier out of range (m) = manual integration
8M411686.D A9FOOWTR.M Wed Apr 27 16:37:34 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411686.D Vial: 6
Acq On : 24 Apr 2016 19:06 Operator: JDS
Sample : WG566154-06 200ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:37 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:36:22 2016
Response via : Initial Calibration

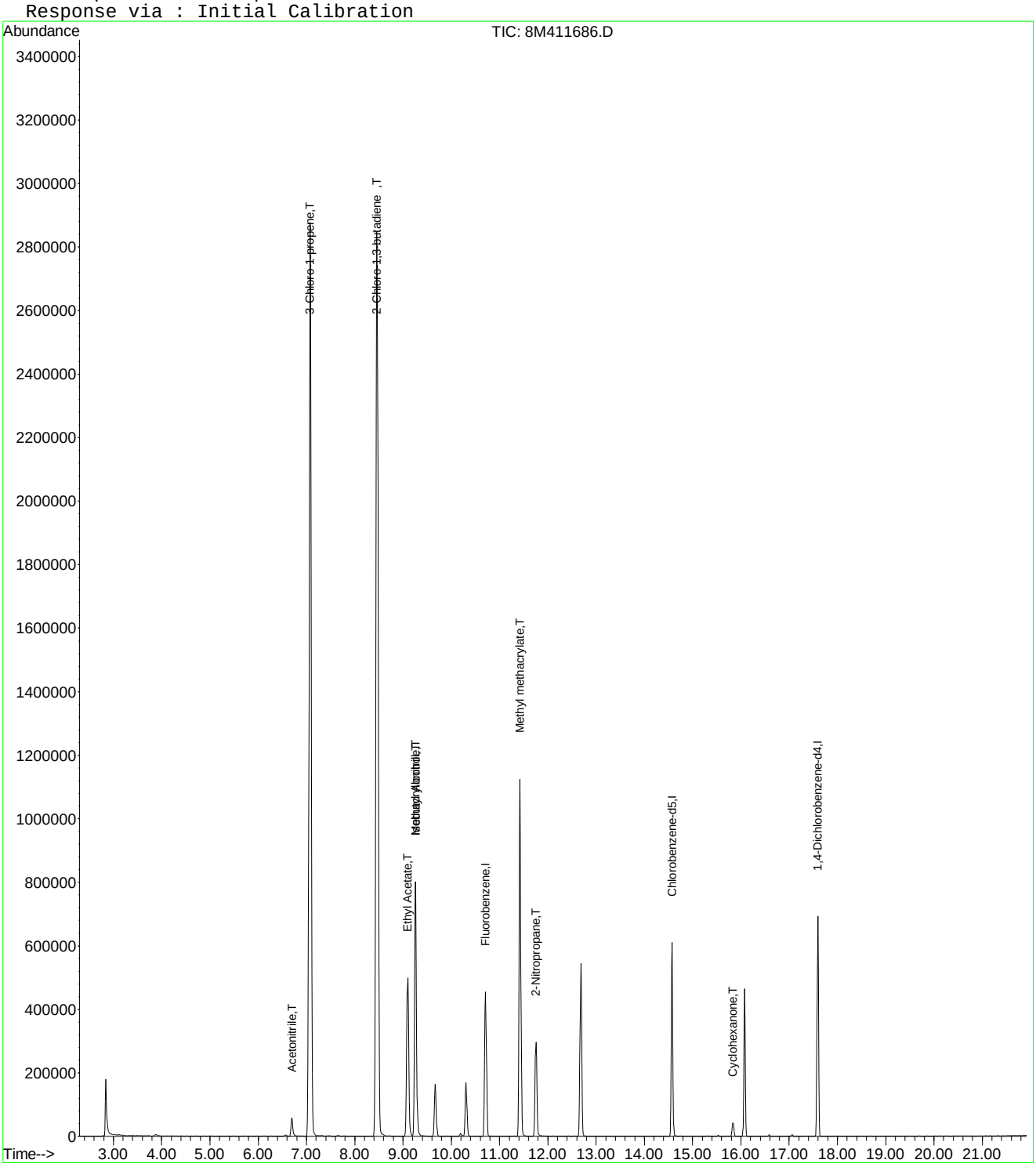

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411686.D Vial: 6
Acq On : 24 Apr 2016 19:06 Operator: JDS
Sample : WG566154-06 200ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:39:40 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 04-24-16 HPMS8
Last Update : Wed Apr 27 16:38:22 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	498952	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	386433	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	208057	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	90138	215.8219 ug/L	99
3) 3-Chloro-1-propene	7.07	41	3410620	216.1708 ug/L	92
4) 2-Chloro-1,3-butadiene	8.46	53	3193354	220.3369 ug/L	81
5) Ethyl Acetate	9.10	43	935454	217.5743 ug/L	92
6) Methacrylonitrile	9.26	67	254897	209.8191 ug/L #	48
7) Isobutyl Alcohol	9.26	43	42509	419.3096 ug/L	81
9) Methyl methacrylate	11.42	41	925980	211.3605 ug/L	77
10) 2-Nitropropane	11.75	43	297081	207.1985 ug/L	94
13) Cyclohexanone	15.84	55	27645	201.0030 ug/L	92

(#) = qualifier out of range (m) = manual integration
8M411686.D A9FOOWTR.M Wed Apr 27 16:39:40 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411686.D Vial: 6
Acq On : 24 Apr 2016 19:06 Operator: JDS
Sample : WG566154-06 200ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:39 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 04-24-16 HPMS8
Last Update : Wed Apr 27 16:38:22 2016
Response via : Initial Calibration

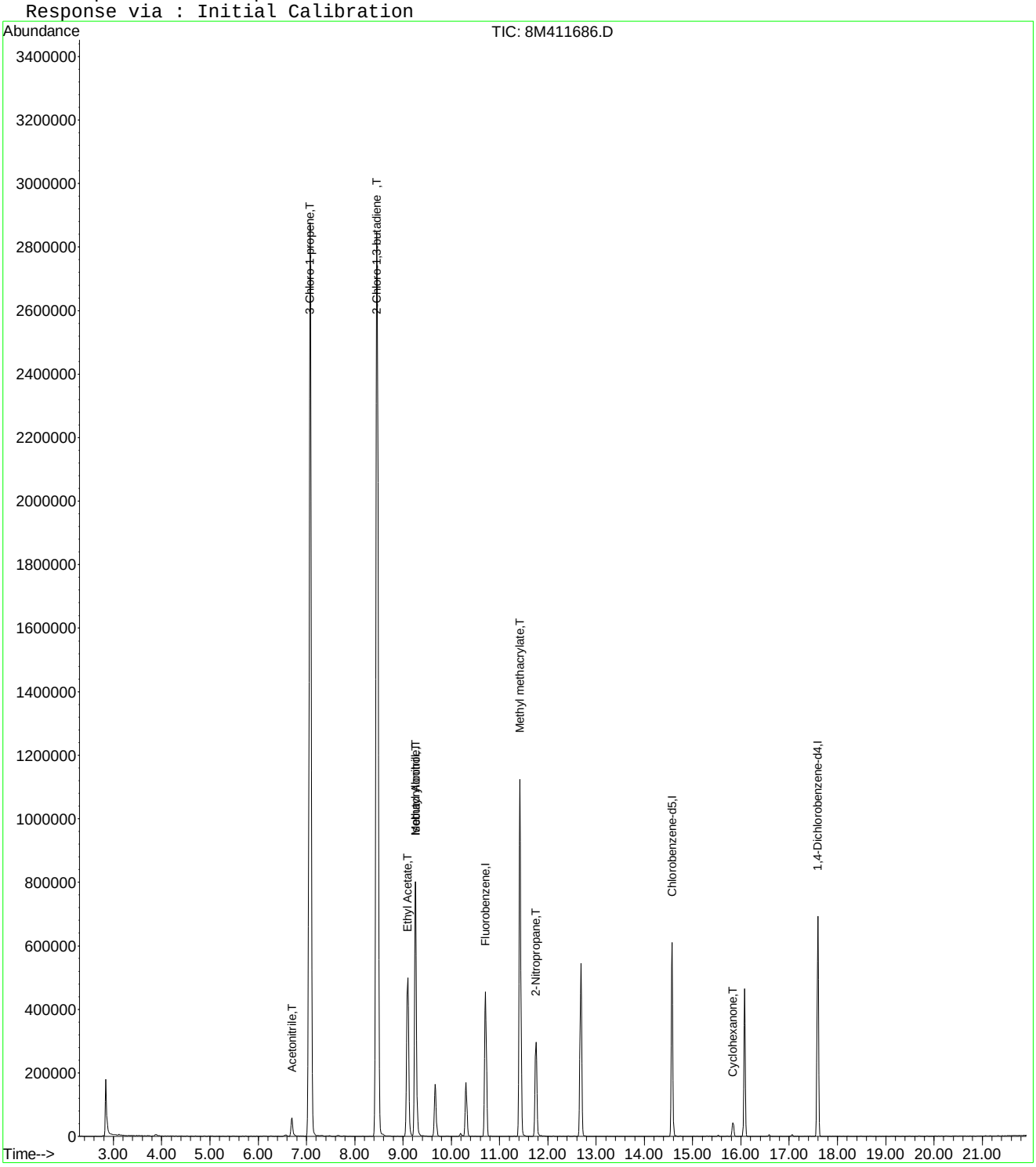

8M411686.D A9FOOWTR.M Wed Apr 27 16:39:41 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\042416\8M411687.D Vial: 7
Acq On : 24 Apr 2016 19:36 Operator: JDS
Sample : WG566154-07 300ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 24 19:58:11 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-13-16 HPMS 8
Last Update : Thu Apr 14 09:40:40 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	504106	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	384116	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	207668	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	138398	26.8511 ug/L	0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.40%		
43) 1,2-Dichloroethane-d4	10.30	65	161645	29.8704 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 119.48%		
58) Toluene-d8	12.68	98	445623	23.1831 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 92.72%		
80) p-Bromofluorobenzene	16.07	95	186670	23.0071 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.04%		

Target Compounds

					Qvalue
13) Acetone	6.26	43	1164	1.2146 ug/L #	48
18) Methyl acetate	7.08	43	2246	0.6652 ug/L #	1
22) Methyl Tert Butyl Ether	7.49	73	3842	0.3617 ug/L #	62
24) n-Hexane	7.78	57	1544	0.1743 ug/L	66
29) 2-Butanone	8.88	43	1543	0.9709 ug/L #	57
30) Propionitrile	9.06	54	494	1.0698 ug/L #	1
36) Tetrahydrofuran	9.64	42	2875	2.4514 ug/L #	58
73) m-,p-Xylene	14.75	106	1741	0.1765 ug/L	73

(#) = qualifier out of range (m) = manual integration
8M411687.D 8260WT.M Sun Apr 24 19:58:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\042416\8M411687.D Vial: 7
Acq On : 24 Apr 2016 19:36 Operator: JDS
Sample : WG566154-07 300ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 24 19:58 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-13-16 HPMS 8
Last Update : Thu Apr 14 09:40:40 2016
Response via : Initial Calibration

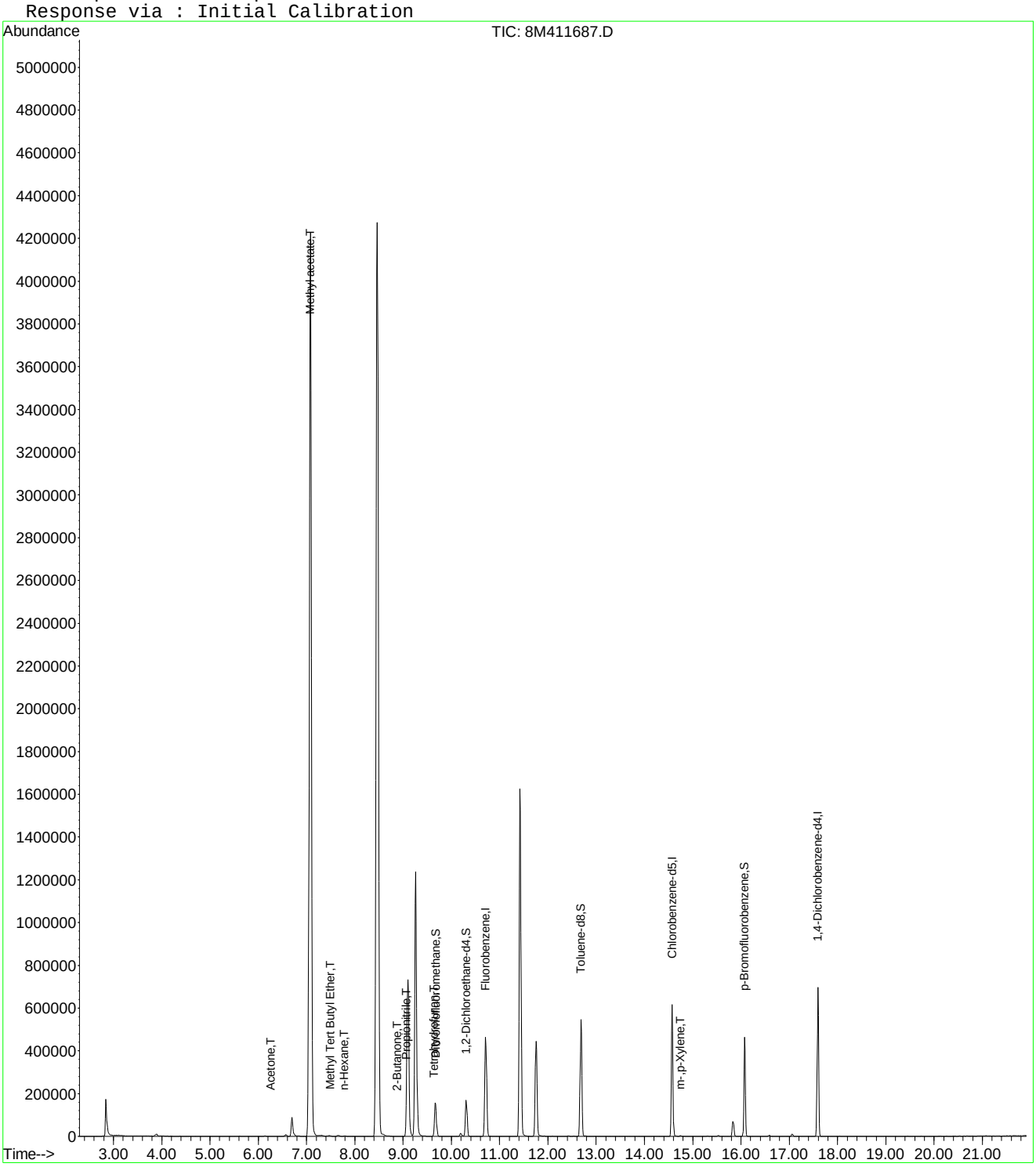

8M411687.D 8260WT.M Sun Apr 24 19:58:11 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411687.D Vial: 7
Acq On : 24 Apr 2016 19:36 Operator: JDS
Sample : WG566154-07 300ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:24:20 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:23:52 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	504106	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	384116	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	207668	25.00 ug/L	0.00

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
8M411687.D A9FOOWTR.M Wed Apr 27 16:24:20 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411687.D Vial: 7
Acq On : 24 Apr 2016 19:36 Operator: JDS
Sample : WG566154-07 300ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:24 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:23:52 2016
Response via : Initial Calibration

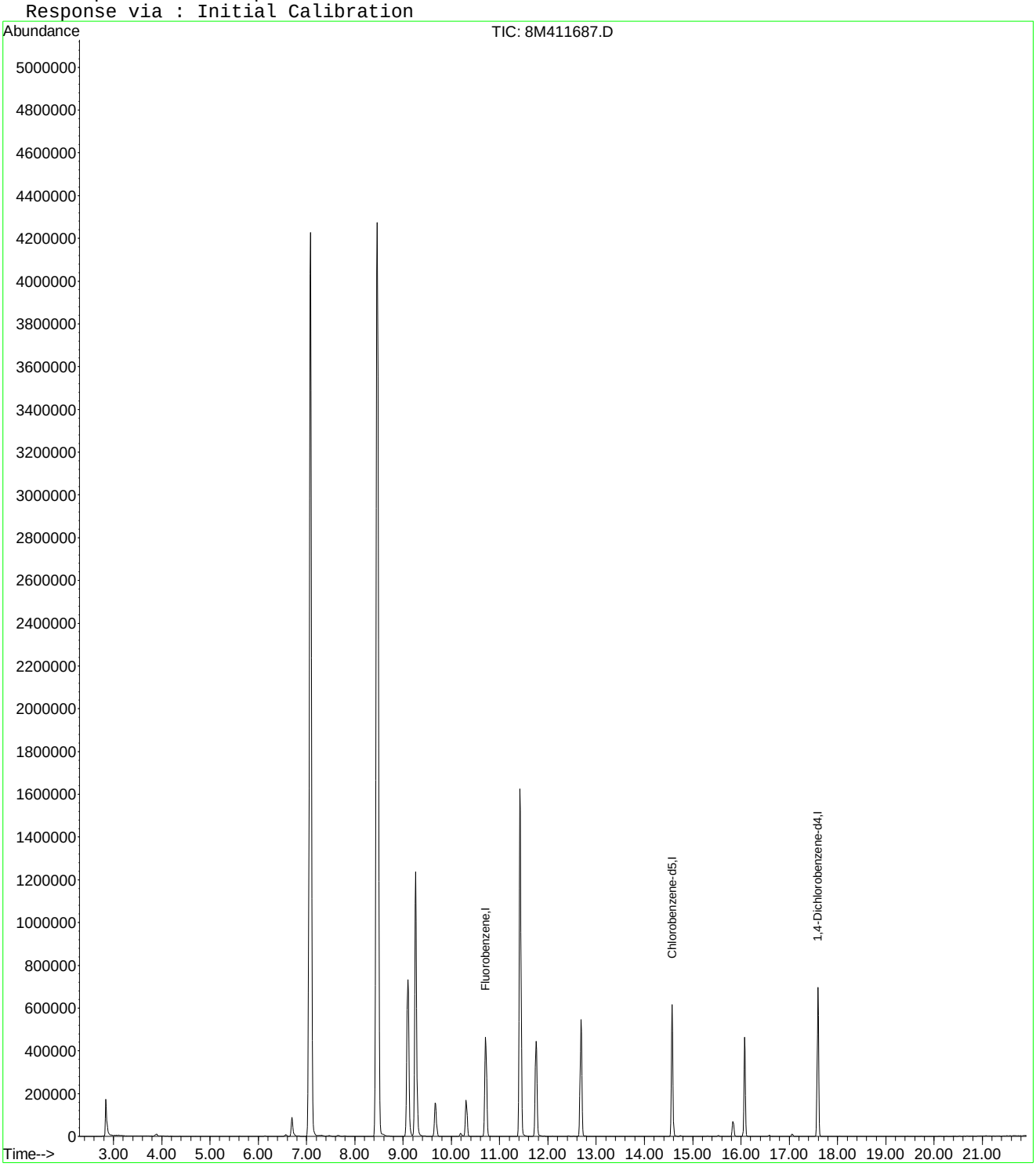

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411687.D Vial: 7
Acq On : 24 Apr 2016 19:36 Operator: JDS
Sample : WG566154-07 300ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:35:46 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:34:16 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	504106	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	384116	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	207668	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	130023	308.1375 ug/L	100
3) 3-Chloro-1-propene	7.08	41	5005910	314.0391 ug/L	93
4) 2-Chloro-1,3-butadiene	8.47	53	4713359	321.8901 ug/L	81
5) Ethyl Acetate	9.10	43	1379082	317.4769 ug/L	93
6) Methacrylonitrile	9.26	67	380399	313.3150 ug/L #	50
7) Isobutyl Alcohol	9.27	43	57826	564.5650 ug/L #	75
9) Methyl methacrylate	11.42	41	1368958	311.8480 ug/L	77
10) 2-Nitropropane	11.75	43	448281	309.4560 ug/L	94
13) Cyclohexanone	15.83	55	43488	316.7876 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M411687.D A9FOOWTR.M Wed Apr 27 16:35:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411687.D Vial: 7
Acq On : 24 Apr 2016 19:36 Operator: JDS
Sample : WG566154-07 300ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:35 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:34:16 2016
Response via : Initial Calibration

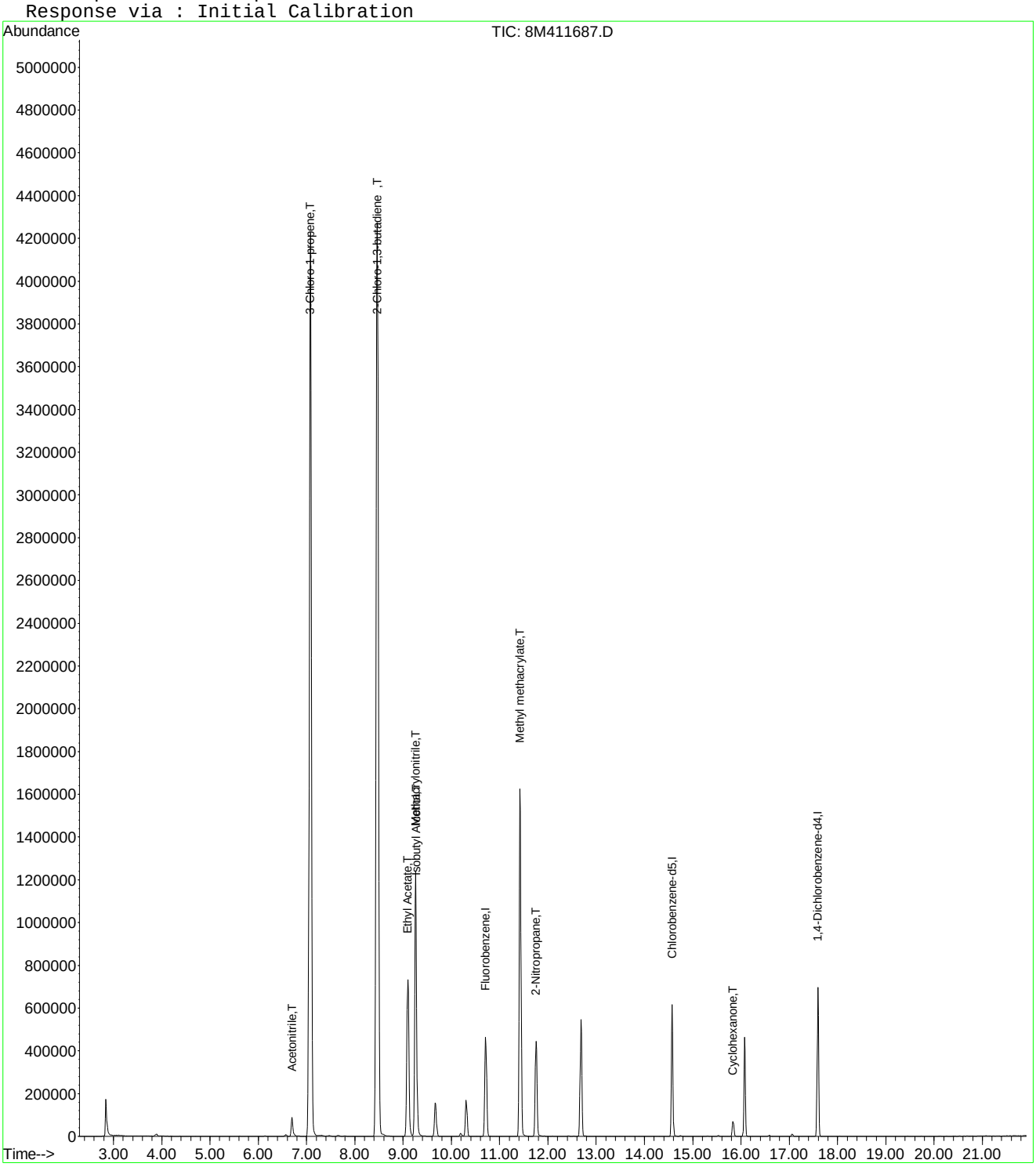

8M411687.D A9FOOWTR.M Wed Apr 27 16:35:47 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411687.D Vial: 7
Acq On : 24 Apr 2016 19:36 Operator: JDS
Sample : WG566154-07 300ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:37:34 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:36:22 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	504106	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	384116	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	207668	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	130023	308.1375 ug/L	100
3) 3-Chloro-1-propene	7.08	41	5005910	314.0391 ug/L	93
4) 2-Chloro-1,3-butadiene	8.47	53	4713359	321.8901 ug/L	81
5) Ethyl Acetate	9.10	43	1379082	317.4769 ug/L	93
6) Methacrylonitrile	9.26	67	380399	309.3731 ug/L #	50
7) Isobutyl Alcohol	9.27	43	57826	564.5650 ug/L #	75
9) Methyl methacrylate	11.42	41	1368958	308.6376 ug/L	77
10) 2-Nitropropane	11.75	43	448281	309.4560 ug/L	94
13) Cyclohexanone	15.83	55	43488	316.7876 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M411687.D A9FOOWTR.M Wed Apr 27 16:37:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411687.D Vial: 7
Acq On : 24 Apr 2016 19:36 Operator: JDS
Sample : WG566154-07 300ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:37 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:36:22 2016
Response via : Initial Calibration

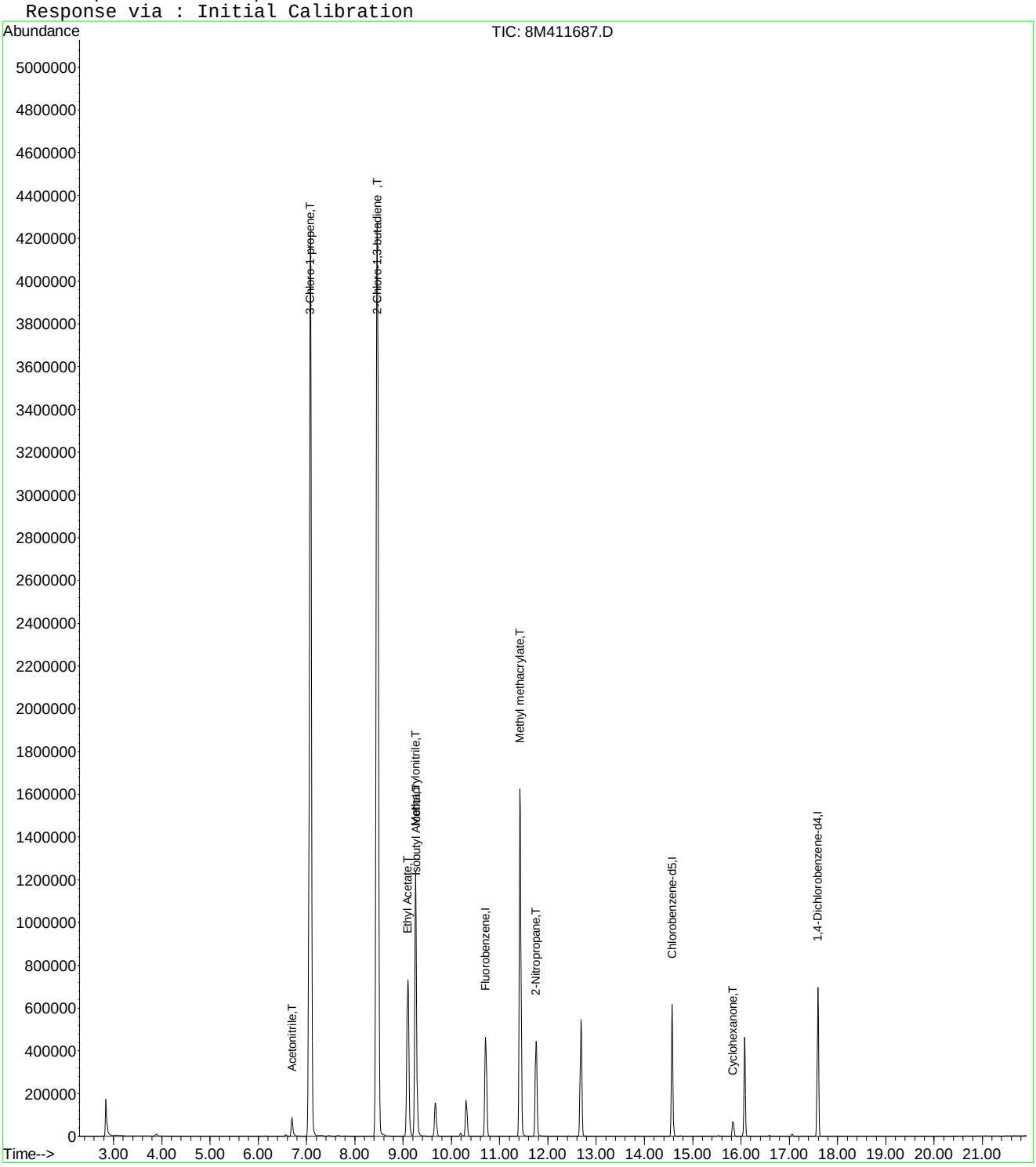

8M411687.D A9FOOWTR.M Wed Apr 27 16:37:35 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411687.D Vial: 7
Acq On : 24 Apr 2016 19:36 Operator: JDS
Sample : WG566154-07 300ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:39:41 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 04-24-16 HPMS8
Last Update : Wed Apr 27 16:38:22 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	504106	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	384116	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	207668	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	130023	308.1375 ug/L	100
3) 3-Chloro-1-propene	7.08	41	5005910	314.0391 ug/L	93
4) 2-Chloro-1,3-butadiene	8.47	53	4713359	321.8901 ug/L	81
5) Ethyl Acetate	9.10	43	1379082	317.4769 ug/L	93
6) Methacrylonitrile	9.26	67	380399	309.3731 ug/L #	50
7) Isobutyl Alcohol	9.27	43	57826	564.5650 ug/L #	75
9) Methyl methacrylate	11.42	41	1368958	308.6376 ug/L	77
10) 2-Nitropropane	11.75	43	448281	309.4560 ug/L	94
13) Cyclohexanone	15.83	55	43488	316.7876 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M411687.D A9FOOWTR.M Wed Apr 27 16:39:41 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411687.D Vial: 7
Acq On : 24 Apr 2016 19:36 Operator: JDS
Sample : WG566154-07 300ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:39 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 04-24-16 HPMS8
Last Update : Wed Apr 27 16:38:22 2016
Response via : Initial Calibration

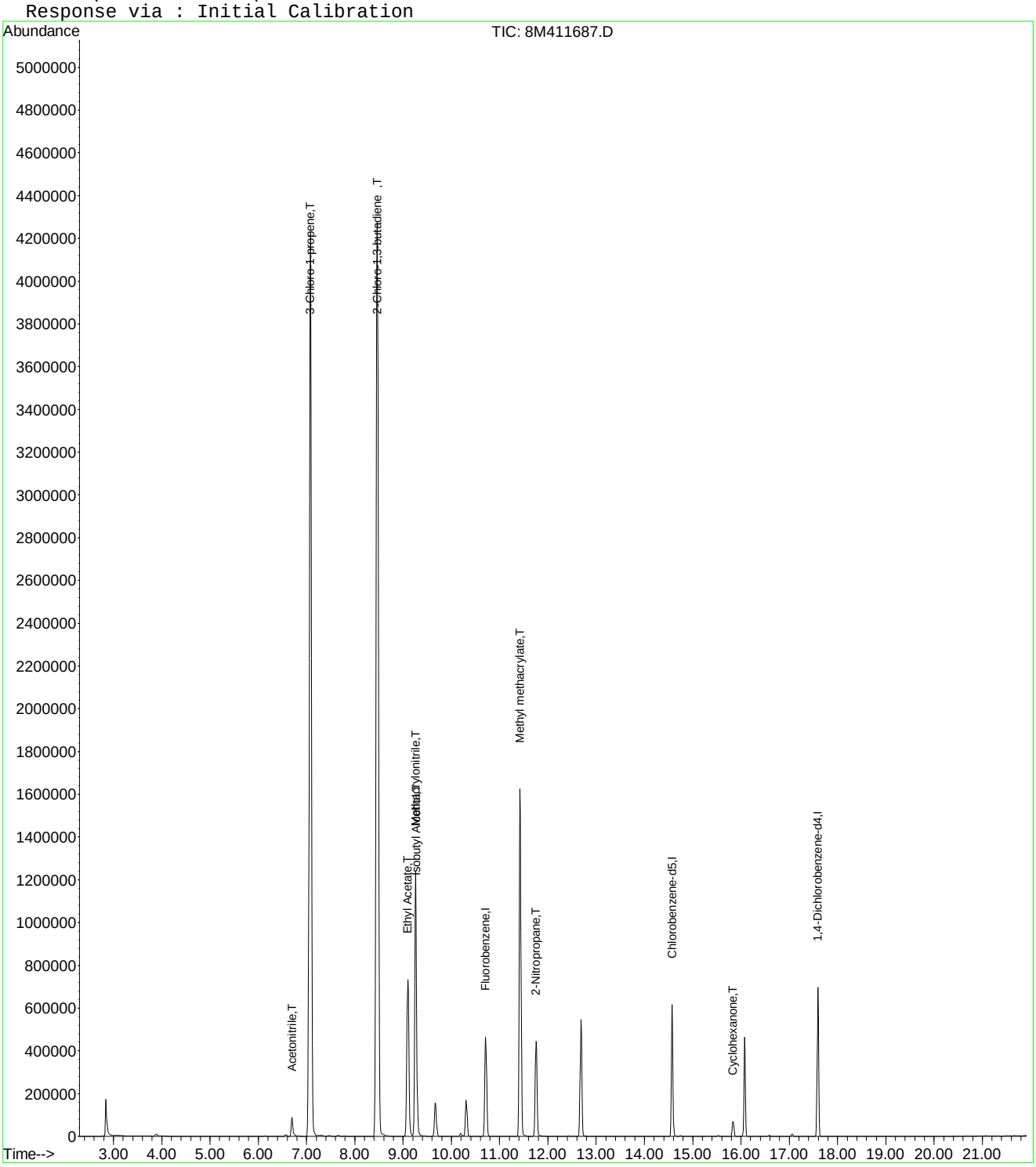

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\042416\8M411688.D Vial: 8
Acq On : 24 Apr 2016 20:05 Operator: JDS
Sample : WG566154-08 400ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 24 20:27:54 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-13-16 HPMS 8
Last Update : Thu Apr 14 09:40:40 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	500330	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	381094	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	205053	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	134694	26.3297 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 105.32%		
43) 1,2-Dichloroethane-d4	10.31	65	158137	29.4426 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 117.76%		
58) Toluene-d8	12.68	98	446263	23.4005 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 93.60%		
80) p-Bromofluorobenzene	16.07	95	190063	23.7240 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.88%		

Target Compounds

					Qvalue
5) 1,3-Butadiene	3.89	54	236	Below Cal #	1
13) Acetone	6.26	43	1721	1.8094 ug/L #	48
18) Methyl acetate	7.07	43	2761	0.8239 ug/L #	1
22) Methyl Tert Butyl Ether	7.47	73	5145	0.4880 ug/L	91
24) n-Hexane	7.80	57	2882	0.3277 ug/L	93
29) 2-Butanone	8.90	43	868	0.5503 ug/L #	57
30) Propionitrile	9.05	54	634	1.3833 ug/L #	1
36) Tetrahydrofuran	9.63	42	3416	2.9347 ug/L #	41
73) m-,p-Xylene	14.74	106	2657	0.2715 ug/L	90

(#) = qualifier out of range (m) = manual integration
8M411688.D 8260WT.M Sun Apr 24 20:27:55 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\042416\8M411688.D Vial: 8
Acq On : 24 Apr 2016 20:05 Operator: JDS
Sample : WG566154-08 400ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 24 20:27 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-13-16 HPMS 8
Last Update : Thu Apr 14 09:40:40 2016
Response via : Initial Calibration

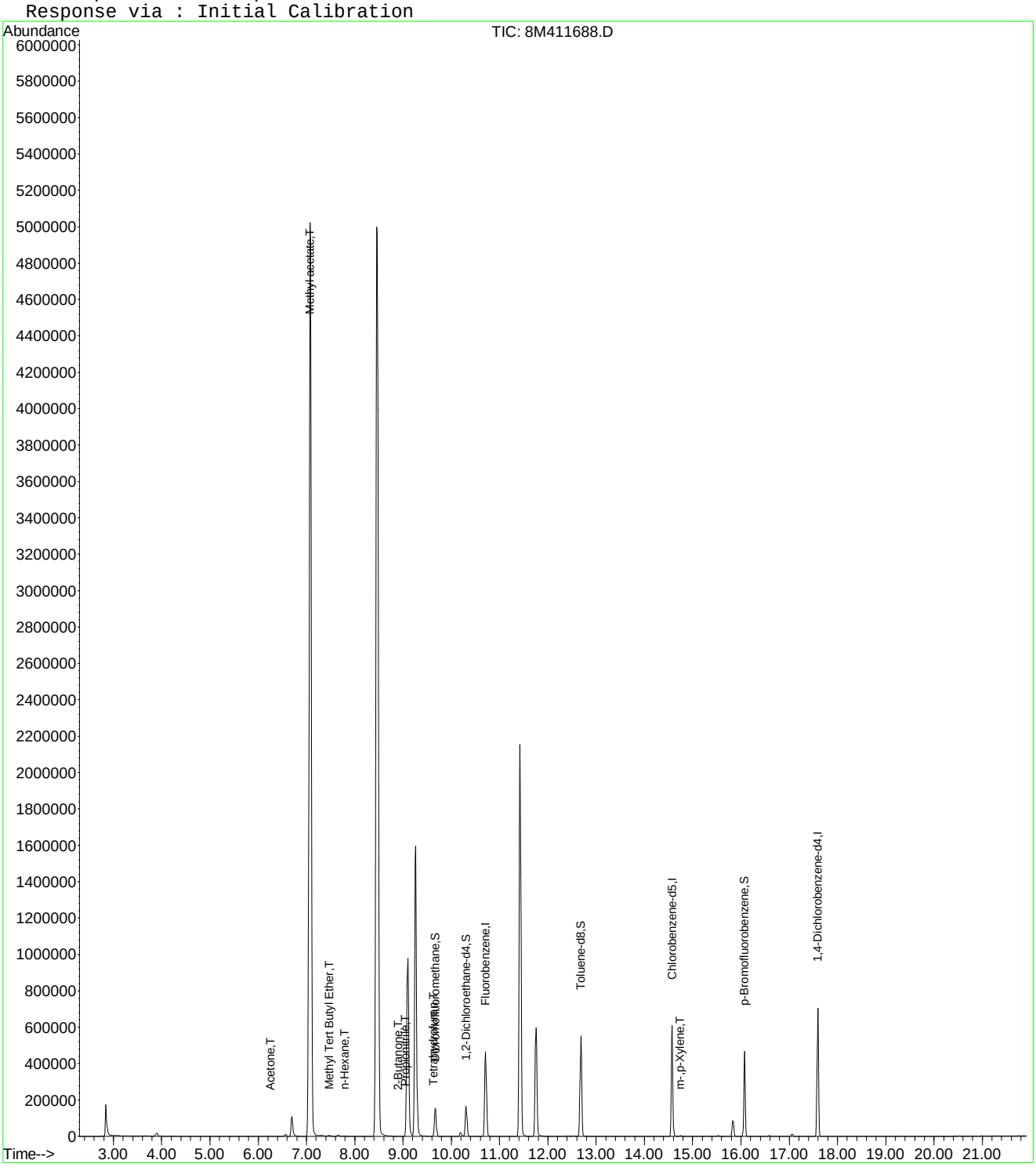

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411688.D Vial: 8
Acq On : 24 Apr 2016 20:05 Operator: JDS
Sample : WG566154-08 400ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:24:21 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:23:52 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	500330	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	381094	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	205053	25.00 ug/L	0.00

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
8M411688.D A9FOOWTR.M Wed Apr 27 16:24:21 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411688.D Vial: 8
Acq On : 24 Apr 2016 20:05 Operator: JDS
Sample : WG566154-08 400ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:24 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:23:52 2016
Response via : Initial Calibration

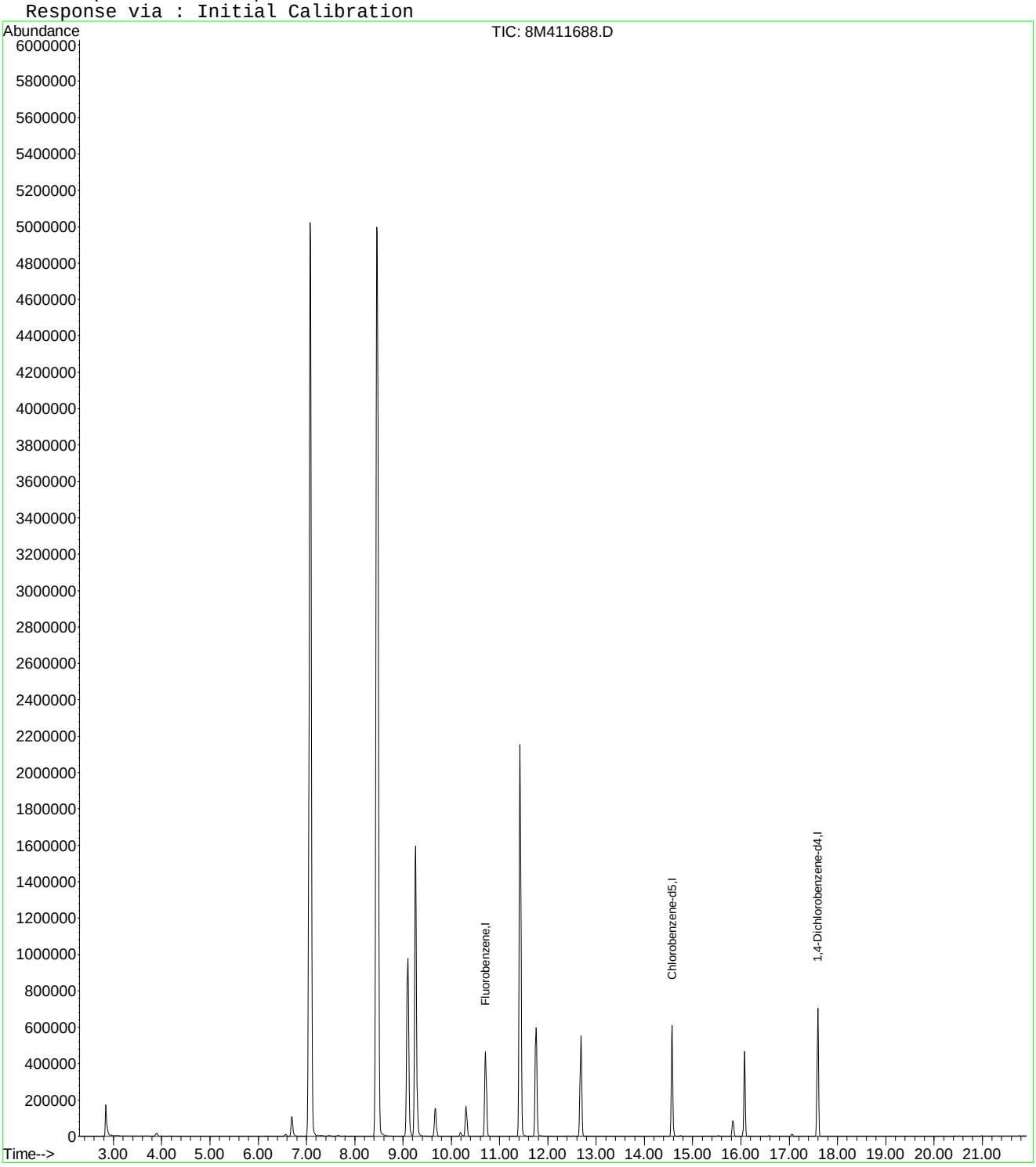

8M411688.D A9FOOWTR.M Wed Apr 27 16:24:21 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411688.D Vial: 8
Acq On : 24 Apr 2016 20:05 Operator: JDS
Sample : WG566154-08 400ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:35:47 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:34:16 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	500330	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	381094	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	205053	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	172742	412.4656 ug/L	93
3) 3-Chloro-1-propene	7.07	41	5986006	378.3582 ug/L	93
4) 2-Chloro-1,3-butadiene	8.46	53	5617601	386.5390 ug/L	81
5) Ethyl Acetate	9.10	43	1813965	420.7424 ug/L	92
6) Methacrylonitrile	9.26	67	498596	415.5950 ug/L #	49
7) Isobutyl Alcohol	9.27	43	83074	817.1866 ug/L	86
9) Methyl methacrylate	11.42	41	1794157	413.1493 ug/L	77
10) 2-Nitropropane	11.75	43	598724	416.4286 ug/L	94
13) Cyclohexanone	15.84	55	51287	378.3637 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M411688.D A9FOOWTR.M Wed Apr 27 16:35:47 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411688.D Vial: 8
Acq On : 24 Apr 2016 20:05 Operator: JDS
Sample : WG566154-08 400ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:35 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:34:16 2016
Response via : Initial Calibration

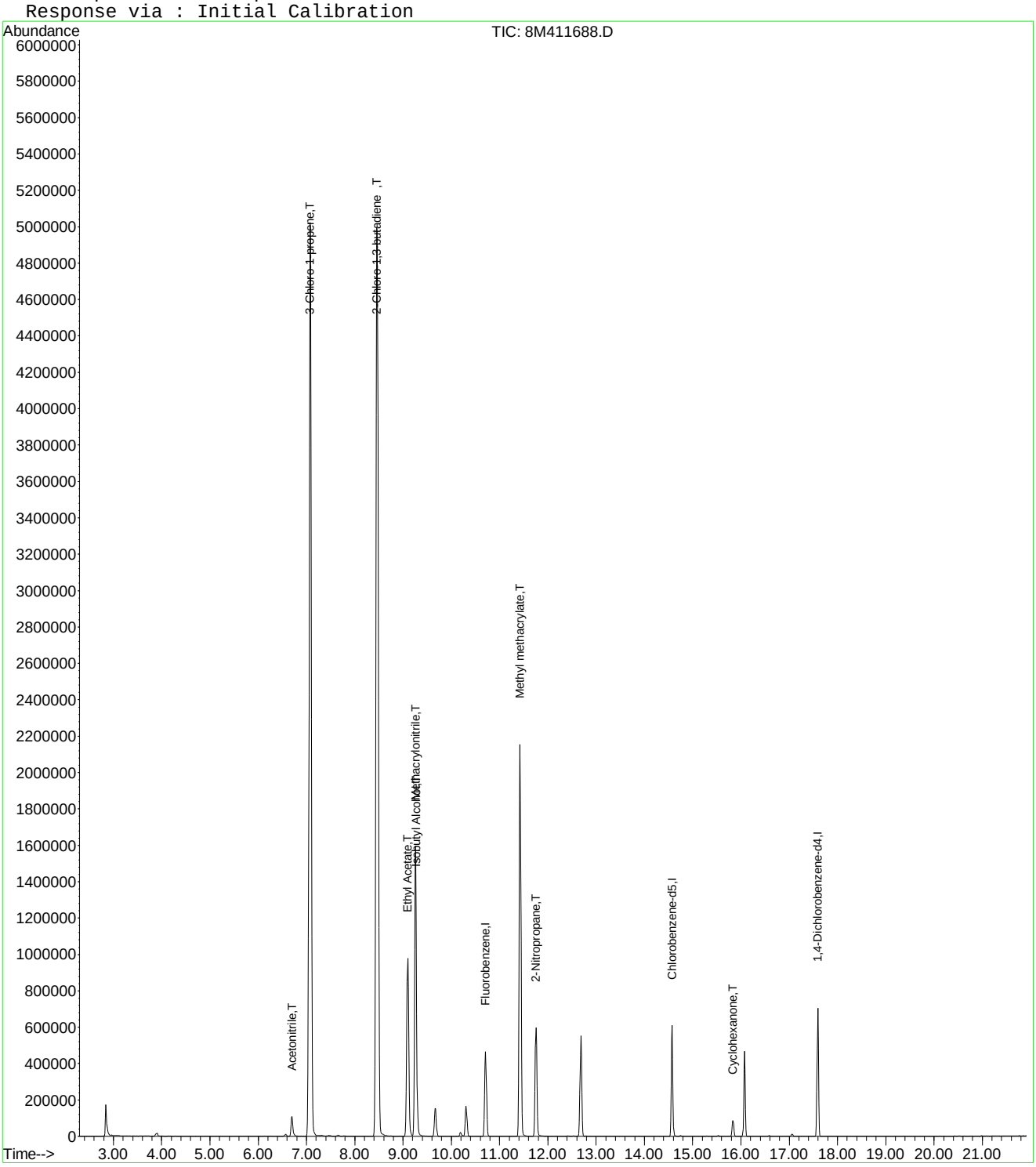

8M411688.D A9FOOWTR.M Wed Apr 27 16:35:47 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411688.D Vial: 8
Acq On : 24 Apr 2016 20:05 Operator: JDS
Sample : WG566154-08 400ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:37:35 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:36:22 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	500330	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	381094	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	205053	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	172742	412.4656 ug/L	93
3) 3-Chloro-1-propene	7.07	41	5986006	378.3582 ug/L	93
4) 2-Chloro-1,3-butadiene	8.46	53	5617601	386.5390 ug/L	81
5) Ethyl Acetate	9.10	43	1813965	420.7424 ug/L	92
6) Methacrylonitrile	9.26	67	498596	408.1905 ug/L #	49
7) Isobutyl Alcohol	9.27	43	83074	817.1866 ug/L	86
9) Methyl methacrylate	11.42	41	1794157	407.1103 ug/L	77
10) 2-Nitropropane	11.75	43	598724	416.4286 ug/L	94
13) Cyclohexanone	15.84	55	51287	378.3637 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M411688.D A9FOOWTR.M Wed Apr 27 16:37:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411688.D Vial: 8
Acq On : 24 Apr 2016 20:05 Operator: JDS
Sample : WG566154-08 400ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:37 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:36:22 2016
Response via : Initial Calibration

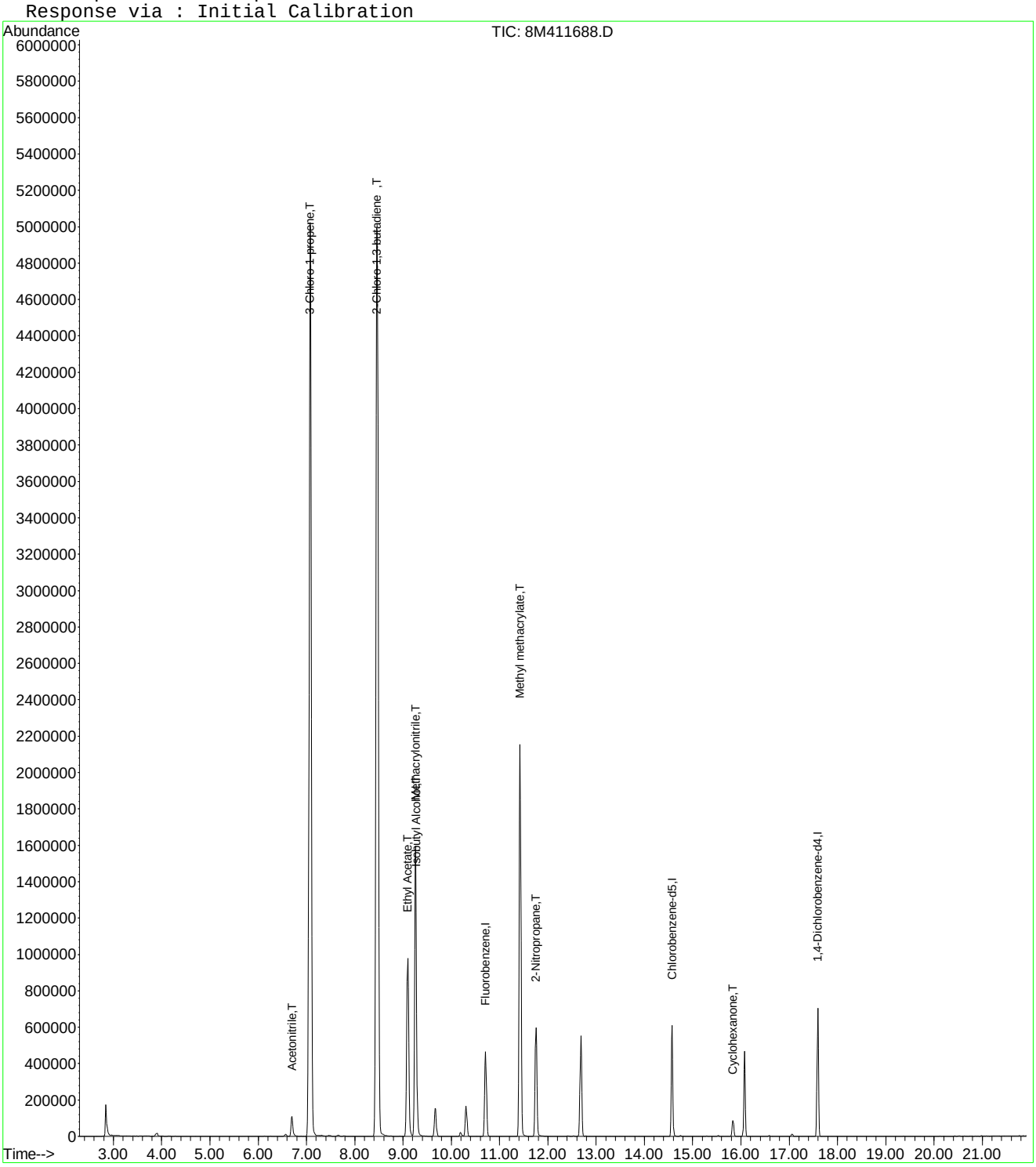

8M411688.D A9FOOWTR.M Wed Apr 27 16:37:36 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411688.D Vial: 8
Acq On : 24 Apr 2016 20:05 Operator: JDS
Sample : WG566154-08 400ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:39:41 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 04-24-16 HPMS8
Last Update : Wed Apr 27 16:38:22 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	500330	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	381094	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	205053	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	172742	412.4656 ug/L	93
3) 3-Chloro-1-propene	7.07	41	5986006	378.3582 ug/L	93
4) 2-Chloro-1,3-butadiene	8.46	53	5617601	386.5390 ug/L	81
5) Ethyl Acetate	9.10	43	1813965	420.7424 ug/L	92
6) Methacrylonitrile	9.26	67	498596	408.1905 ug/L #	49
7) Isobutyl Alcohol	9.27	43	83074	817.1866 ug/L	86
9) Methyl methacrylate	11.42	41	1794157	407.1103 ug/L	77
10) 2-Nitropropane	11.75	43	598724	416.4286 ug/L	94
13) Cyclohexanone	15.84	55	51287	378.3637 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M411688.D A9FOOWTR.M Wed Apr 27 16:39:42 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411688.D Vial: 8
Acq On : 24 Apr 2016 20:05 Operator: JDS
Sample : WG566154-08 400ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:39 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 04-24-16 HPMS8
Last Update : Wed Apr 27 16:38:22 2016
Response via : Initial Calibration

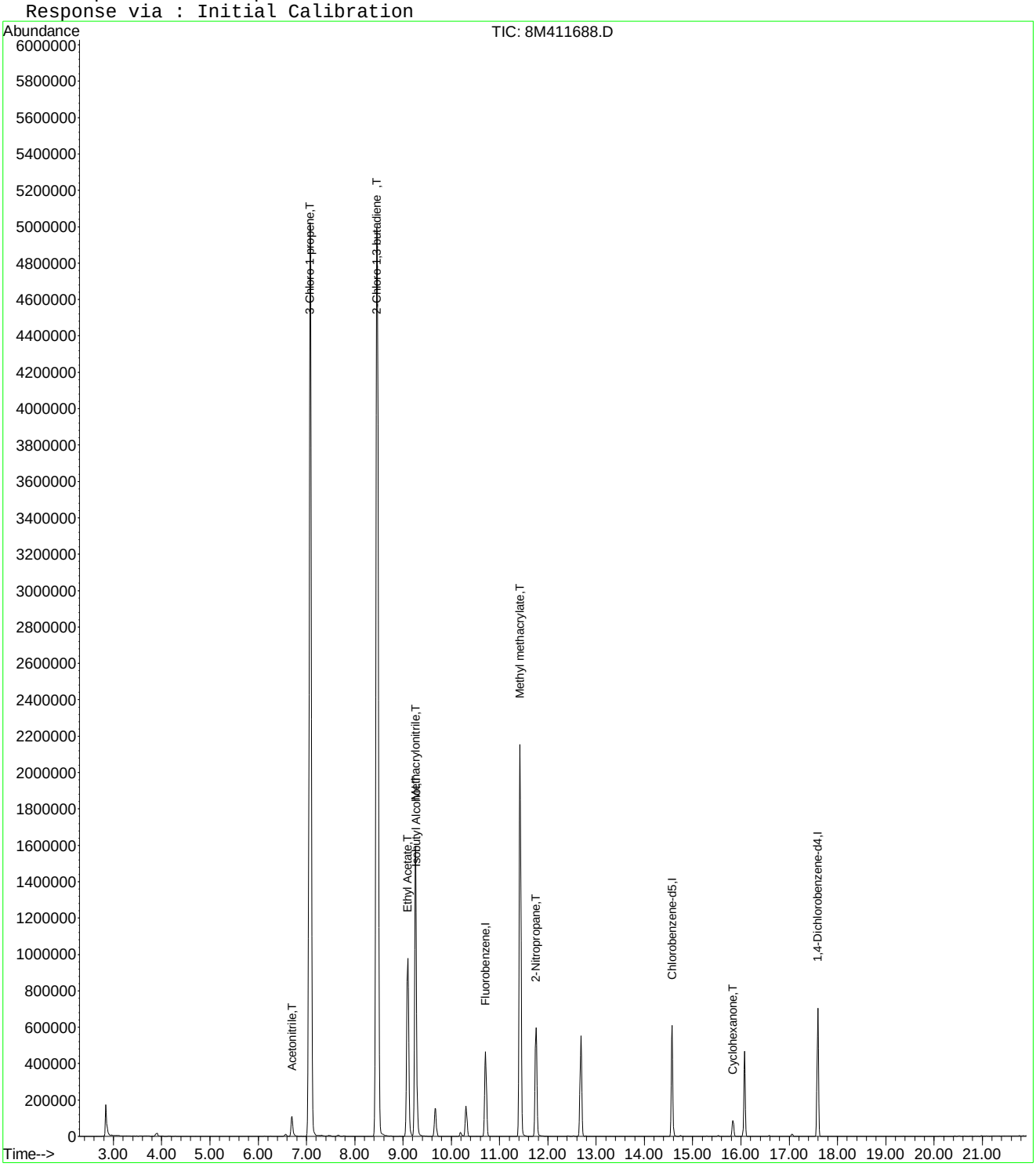

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\042416\8M411689.D Vial: 9
Acq On : 24 Apr 2016 20:34 Operator: JDS
Sample : WG566154-09 500ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 24 20:56:47 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-13-16 HPMS 8
Last Update : Thu Apr 14 09:40:40 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	525063	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	395482	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	214549	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	136843	25.4897 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.96%		
43) 1,2-Dichloroethane-d4	10.30	65	163370	28.9842 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 115.92%		
58) Toluene-d8	12.68	98	458754	23.1803 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 92.72%		
80) p-Bromofluorobenzene	16.07	95	190698	22.7497 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 91.00%		

Target Compounds

					Qvalue
13) Acetone	6.26	43	2191	2.1950 ug/L #	48
18) Methyl acetate	7.00	43	661	0.1880 ug/L #	66
20) Carbon Disulfide	7.31	76	3224	0.1769 ug/L #	74
22) Methyl Tert Butyl Ether	7.48	73	6362	0.5750 ug/L #	57
24) n-Hexane	7.79	57	3582	0.3881 ug/L	90
29) 2-Butanone	8.90	43	1895	1.1448 ug/L #	57
30) Propionitrile	9.05	54	892	1.8545 ug/L #	1
36) Tetrahydrofuran	9.64	42	2279	1.8656 ug/L #	65
73) m-,p-Xylene	14.75	106	2740	0.2698 ug/L	62

(#) = qualifier out of range (m) = manual integration
8M411689.D 8260WT.M Sun Apr 24 20:56:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\042416\8M411689.D Vial: 9
Acq On : 24 Apr 2016 20:34 Operator: JDS
Sample : WG566154-09 500ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 24 20:56 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-13-16 HPMS 8
Last Update : Thu Apr 14 09:40:40 2016
Response via : Initial Calibration

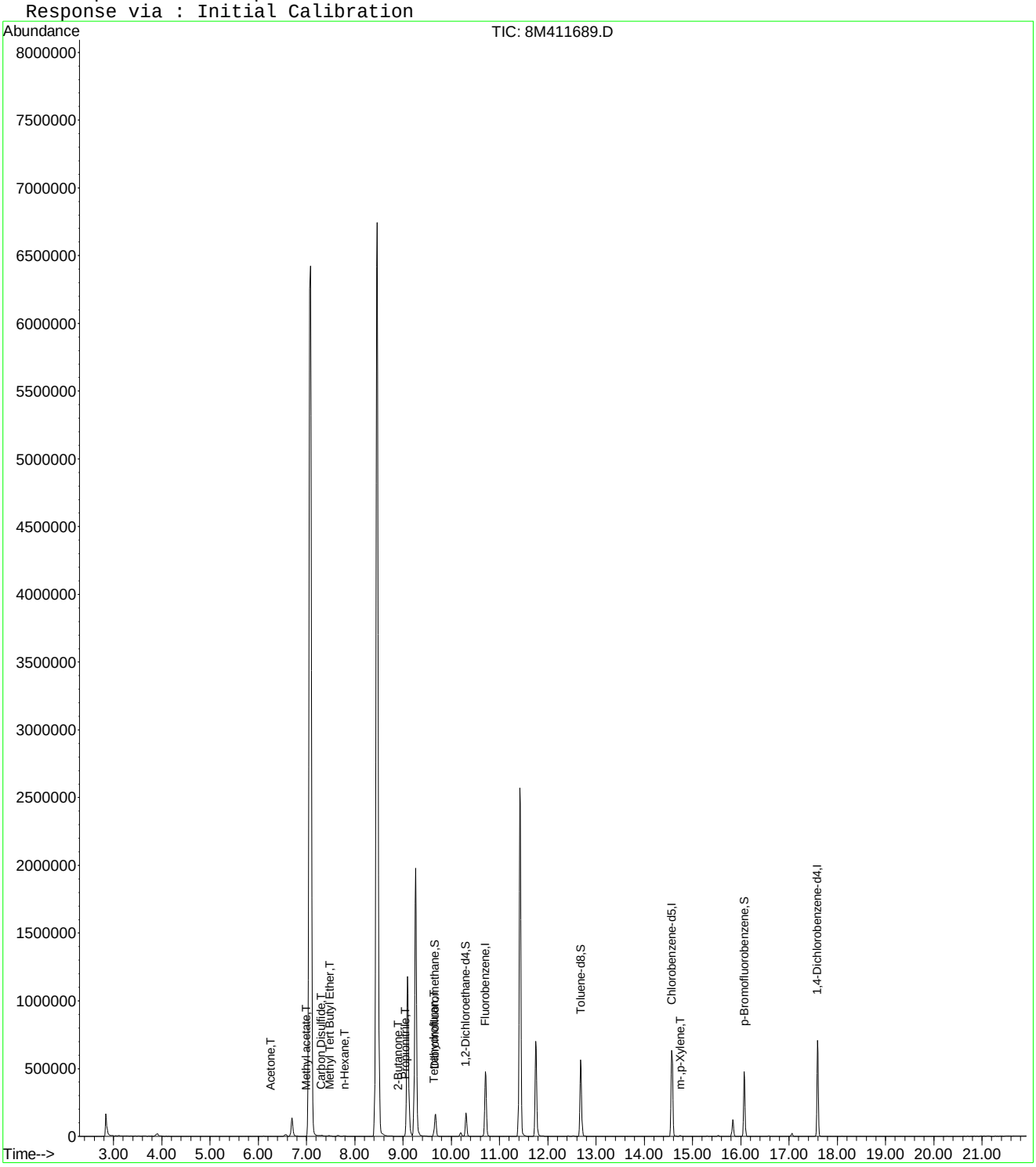

8M411689.D 8260WT.M Sun Apr 24 20:56:48 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411689.D Vial: 9
Acq On : 24 Apr 2016 20:34 Operator: JDS
Sample : WG566154-09 500ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:24:21 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:23:52 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	525063	25.00 ug/L	-0.01
11) Chlorobenzene-d5	14.57	117	395482	25.00 ug/L	-0.01
12) 1,4-Dichlorobenzene-d4	17.59	152	214549	25.00 ug/L	-0.01

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
8M411689.D A9FOOWTR.M Wed Apr 27 16:24:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411689.D Vial: 9
Acq On : 24 Apr 2016 20:34 Operator: JDS
Sample : WG566154-09 500ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:24 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:23:52 2016
Response via : Initial Calibration

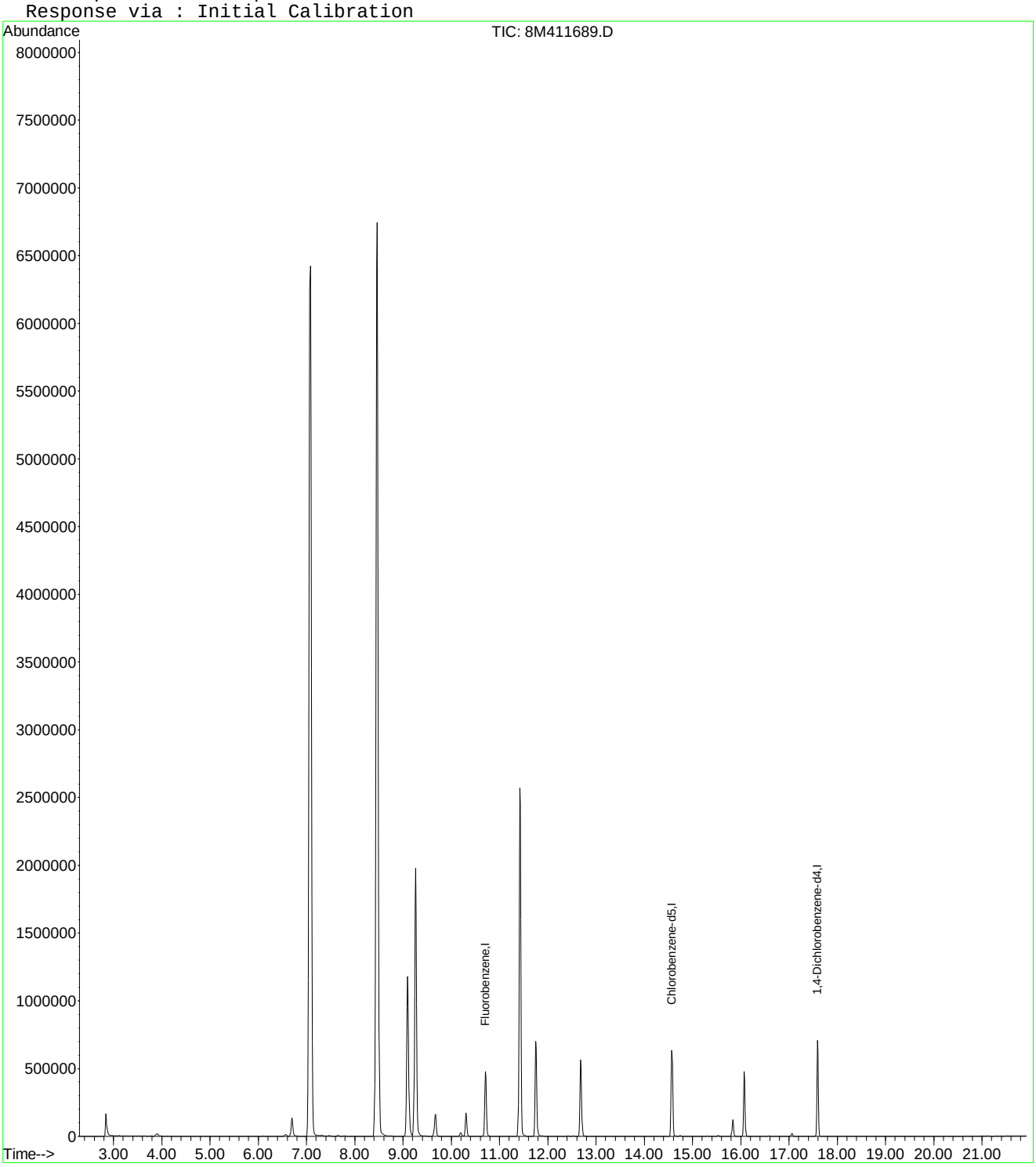

8M411689.D A9FOOWTR.M Wed Apr 27 16:24:22 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411689.D Vial: 9
Acq On : 24 Apr 2016 20:34 Operator: JDS
Sample : WG566154-09 500ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:35:47 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:34:16 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	525063	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	395482	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	214549	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	205898	468.4756 ug/L	97
3) 3-Chloro-1-propene	7.08	41	7587863	457.0151 ug/L	94
4) 2-Chloro-1,3-butadiene	8.46	53	7376630	483.6659 ug/L	82
5) Ethyl Acetate	9.09	43	2195309	485.2082 ug/L	92
6) Methacrylonitrile	9.26	67	598355	476.0721 ug/L #	48
7) Isobutyl Alcohol	9.27	43	103527	970.4092 ug/L	84
9) Methyl methacrylate	11.42	41	2178700	478.7325 ug/L	77
10) 2-Nitropropane	11.75	43	722127	478.5999 ug/L	93
13) Cyclohexanone	15.83	55	74215	523.2792 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M411689.D A9FOOWTR.M Wed Apr 27 16:35:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411689.D Vial: 9
Acq On : 24 Apr 2016 20:34 Operator: JDS
Sample : WG566154-09 500ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:35 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:34:16 2016
Response via : Initial Calibration

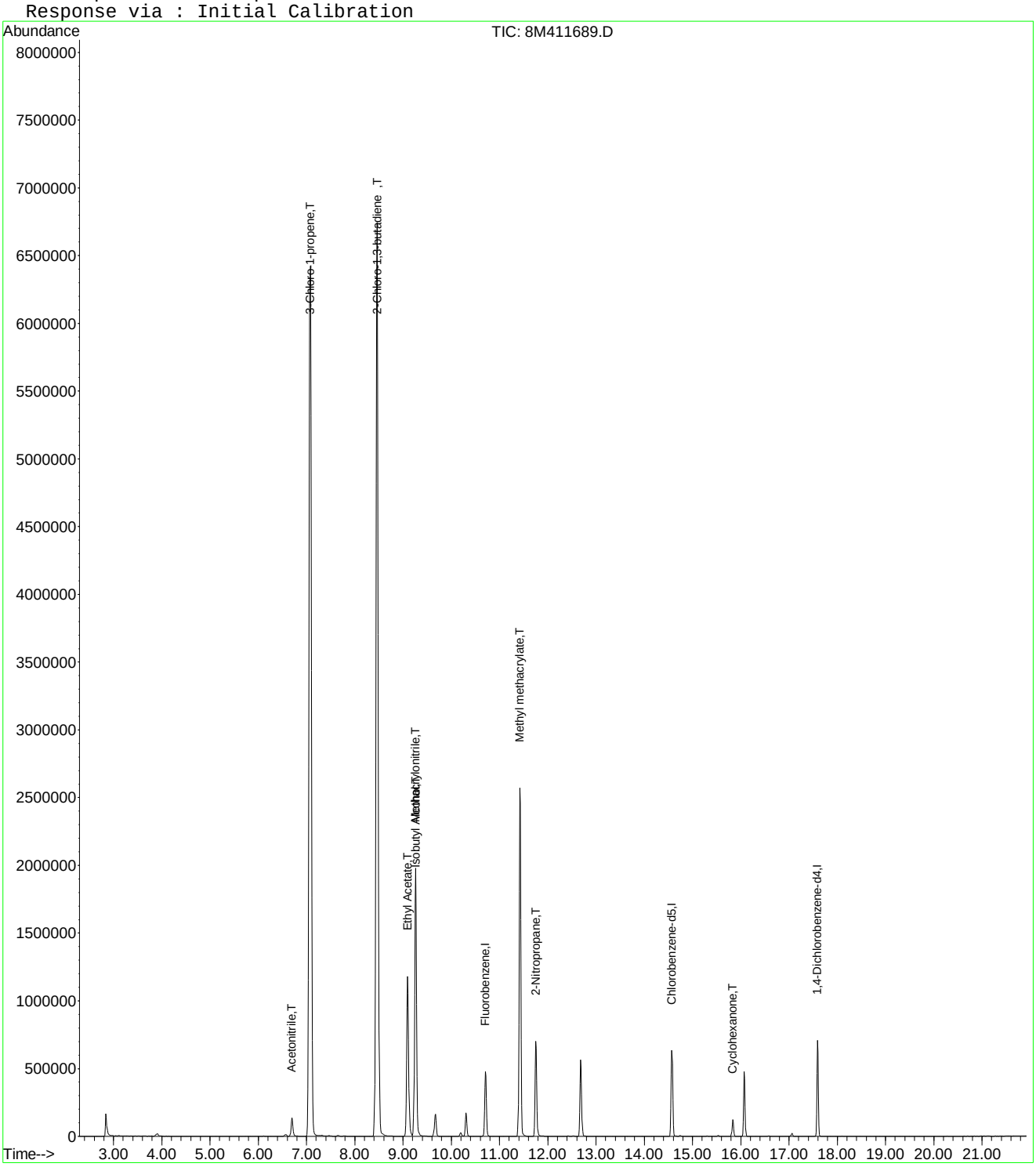

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411689.D Vial: 9
Acq On : 24 Apr 2016 20:34 Operator: JDS
Sample : WG566154-09 500ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:37:36 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:36:22 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	525063	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	395482	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	214549	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	205898	468.4756 ug/L	97
3) 3-Chloro-1-propene	7.08	41	7587863	457.0151 ug/L	94
4) 2-Chloro-1,3-butadiene	8.46	53	7376630	483.6659 ug/L	82
5) Ethyl Acetate	9.09	43	2195309	485.2082 ug/L	92
6) Methacrylonitrile	9.26	67	598355	466.6203 ug/L #	48
7) Isobutyl Alcohol	9.27	43	103527	970.4092 ug/L	84
9) Methyl methacrylate	11.42	41	2178700	470.8622 ug/L	77
10) 2-Nitropropane	11.75	43	722127	478.5999 ug/L	93
13) Cyclohexanone	15.83	55	74215	523.2792 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M411689.D A9FOOWTR.M Wed Apr 27 16:37:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411689.D Vial: 9
Acq On : 24 Apr 2016 20:34 Operator: JDS
Sample : WG566154-09 500ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:37 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:36:22 2016
Response via : Initial Calibration

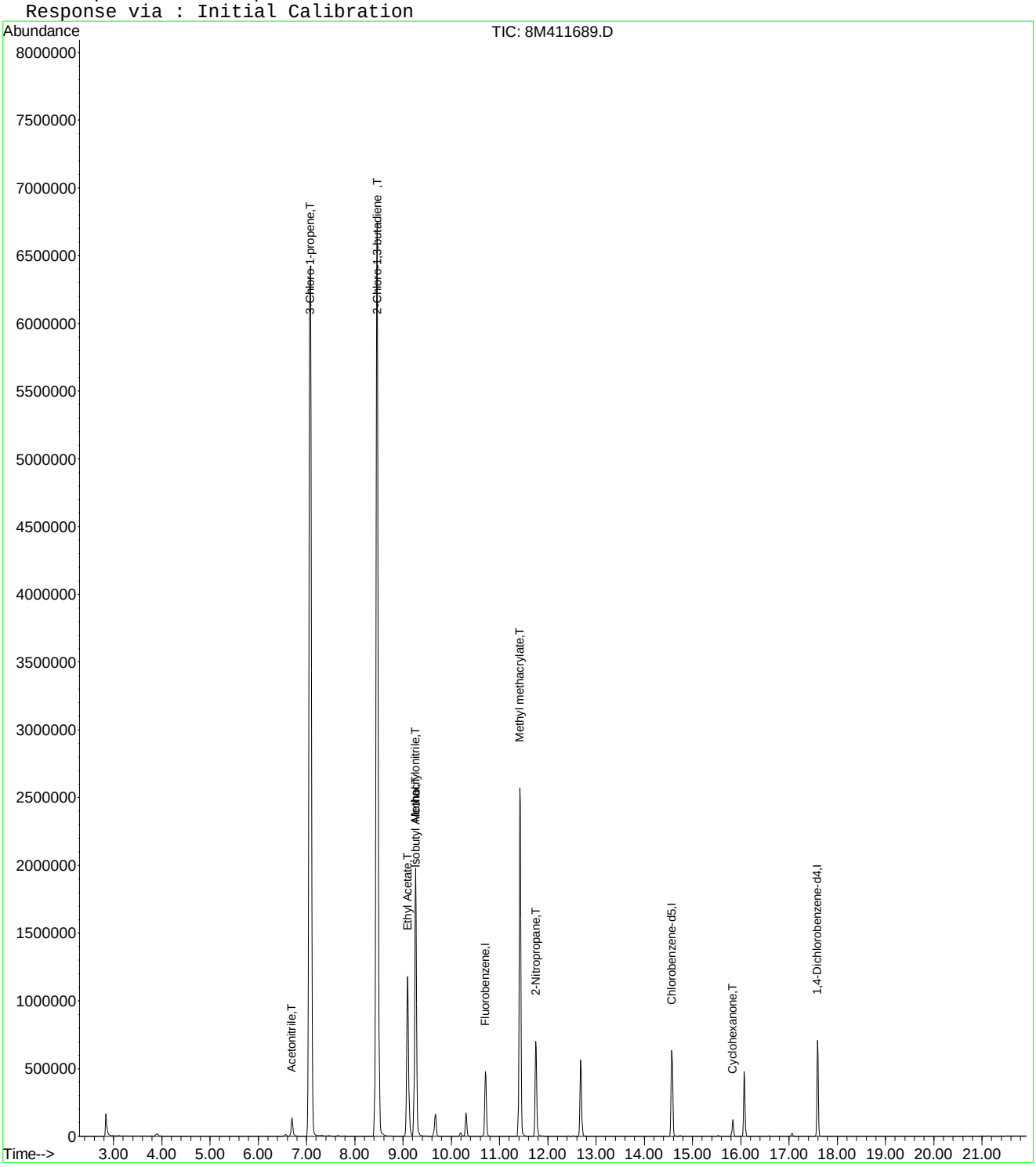

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411689.D Vial: 9
Acq On : 24 Apr 2016 20:34 Operator: JDS
Sample : WG566154-09 500ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:39:42 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 04-24-16 HPMS8
Last Update : Wed Apr 27 16:38:22 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	525063	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	395482	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	214549	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	205898	468.4756 ug/L	97
3) 3-Chloro-1-propene	7.08	41	7587863	457.0151 ug/L	94
4) 2-Chloro-1,3-butadiene	8.46	53	7376630	483.6659 ug/L	82
5) Ethyl Acetate	9.09	43	2195309	485.2082 ug/L	92
6) Methacrylonitrile	9.26	67	598355	466.6203 ug/L #	48
7) Isobutyl Alcohol	9.27	43	103527	970.4092 ug/L	84
9) Methyl methacrylate	11.42	41	2178700	470.8622 ug/L	77
10) 2-Nitropropane	11.75	43	722127	478.5999 ug/L	93
13) Cyclohexanone	15.83	55	74215	523.2792 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M411689.D A9FOOWTR.M Wed Apr 27 16:39:42 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411689.D Vial: 9
Acq On : 24 Apr 2016 20:34 Operator: JDS
Sample : WG566154-09 500ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:39 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 04-24-16 HPMS8
Last Update : Wed Apr 27 16:38:22 2016
Response via : Initial Calibration

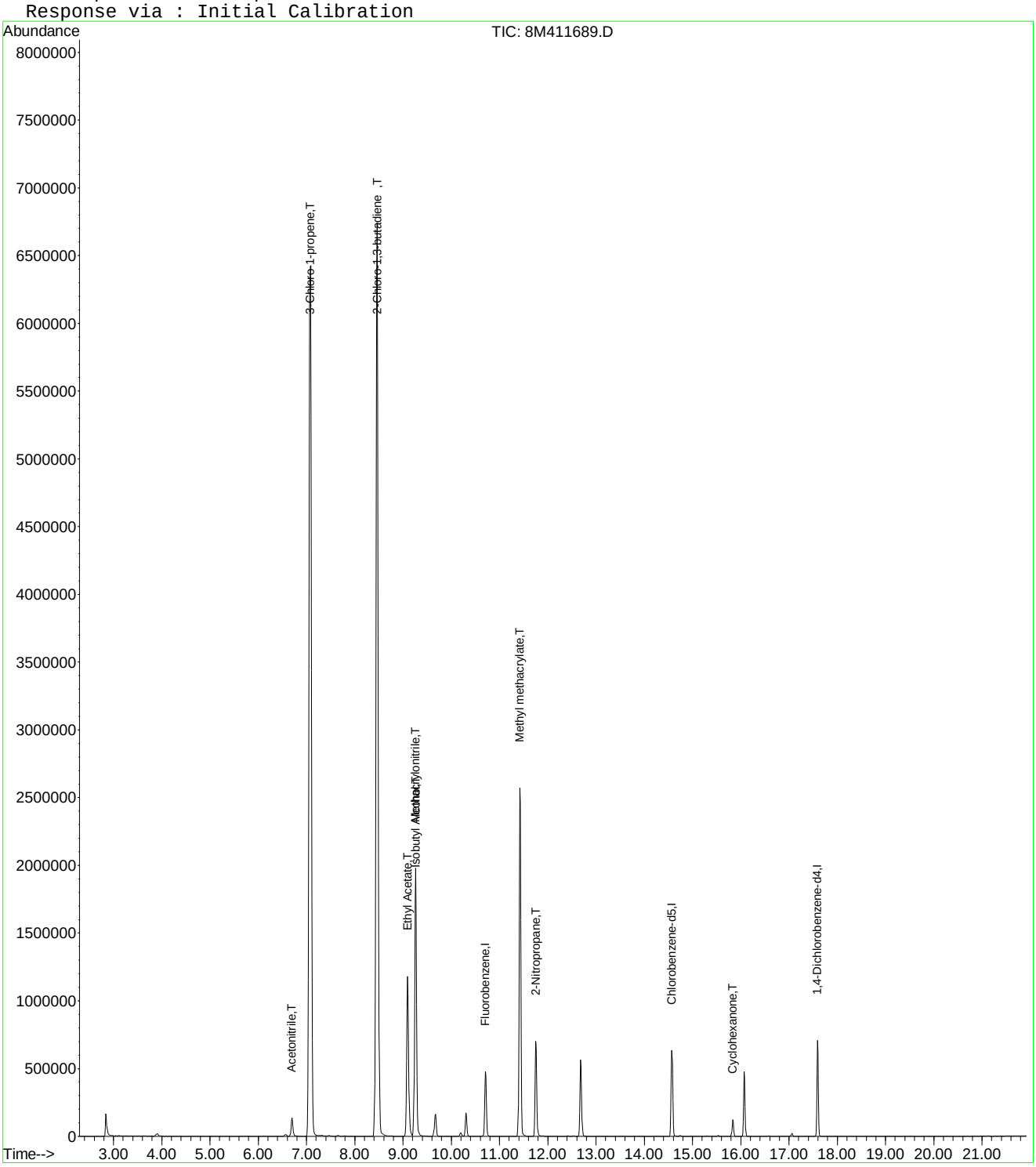

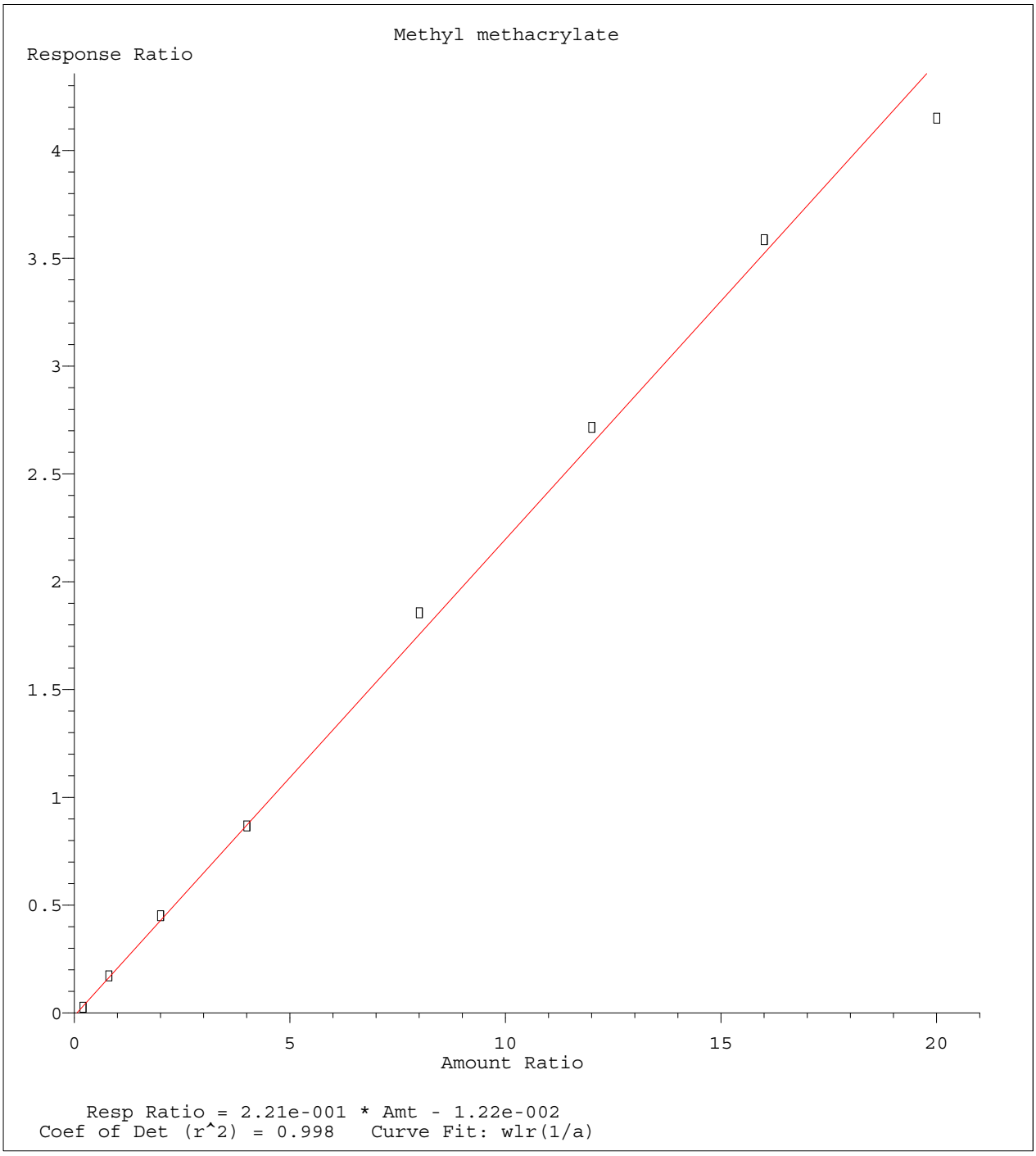

Method Name: C:\MSDCHEM\2\METHODS\A9FOOWTR.M
Calibration Table Last Updated: Wed Apr 27 16:38:22 2016

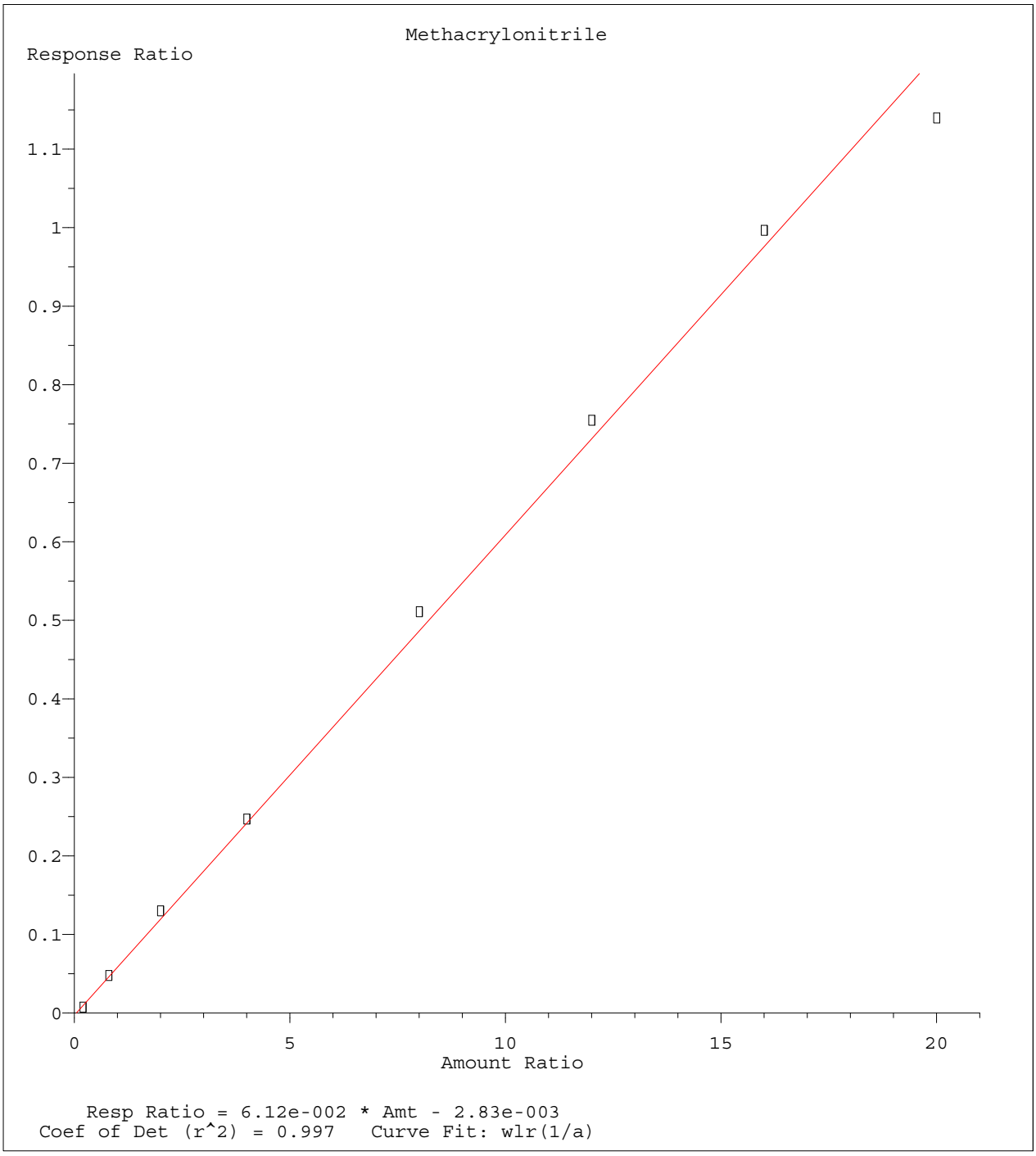

Method Name: C:\MSDCHEM\2\METHODS\A9FOOWTR.M
Calibration Table Last Updated: Wed Apr 27 16:38:22 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\042416\8M411692.D Vial: 12
Acq On : 24 Apr 2016 22:02 Operator: JDS
Sample : WG566154-10 100ug/L ALT SRC STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 24 22:24:19 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-13-16 HPMS 8
Last Update : Thu Apr 14 09:40:40 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	492773	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	377229	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	208753	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.68	111	132035	26.2057 ug/L	0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.84%		
43) 1,2-Dichloroethane-d4	10.31	65	155866	29.4649 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 117.84%		
58) Toluene-d8	12.68	98	434696	23.0275 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 92.12%		
80) p-Bromofluorobenzene	16.07	95	180494	22.1303 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 88.52%		

Target Compounds					Qvalue
5) 1,3-Butadiene	3.91	54	299316	42.4793 ug/L	88
6) Bromomethane	4.75	94	201	0.7151 ug/L #	1
9) Diethyl ether	5.91	59	491725	135.2095 ug/L	83
13) Acetone	6.25	43	265	0.2829 ug/L #	48
29) 2-Butanone	8.90	43	3035	1.9536 ug/L #	57
30) Propionitrile	8.99	54	45548	100.9028 ug/L	93
36) Tetrahydrofuran	9.64	42	2805	2.4467 ug/L #	54
39) Cyclohexane	9.95	56	3058	0.2666 ug/L #	69

(#) = qualifier out of range (m) = manual integration
8M411692.D 8260WT.M Sun Apr 24 22:24:20 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\042416\8M411692.D Vial: 12
Acq On : 24 Apr 2016 22:02 Operator: JDS
Sample : WG566154-10 100ug/L ALT SRC STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 24 22:24 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-13-16 HPMS 8
Last Update : Thu Apr 14 09:40:40 2016
Response via : Initial Calibration

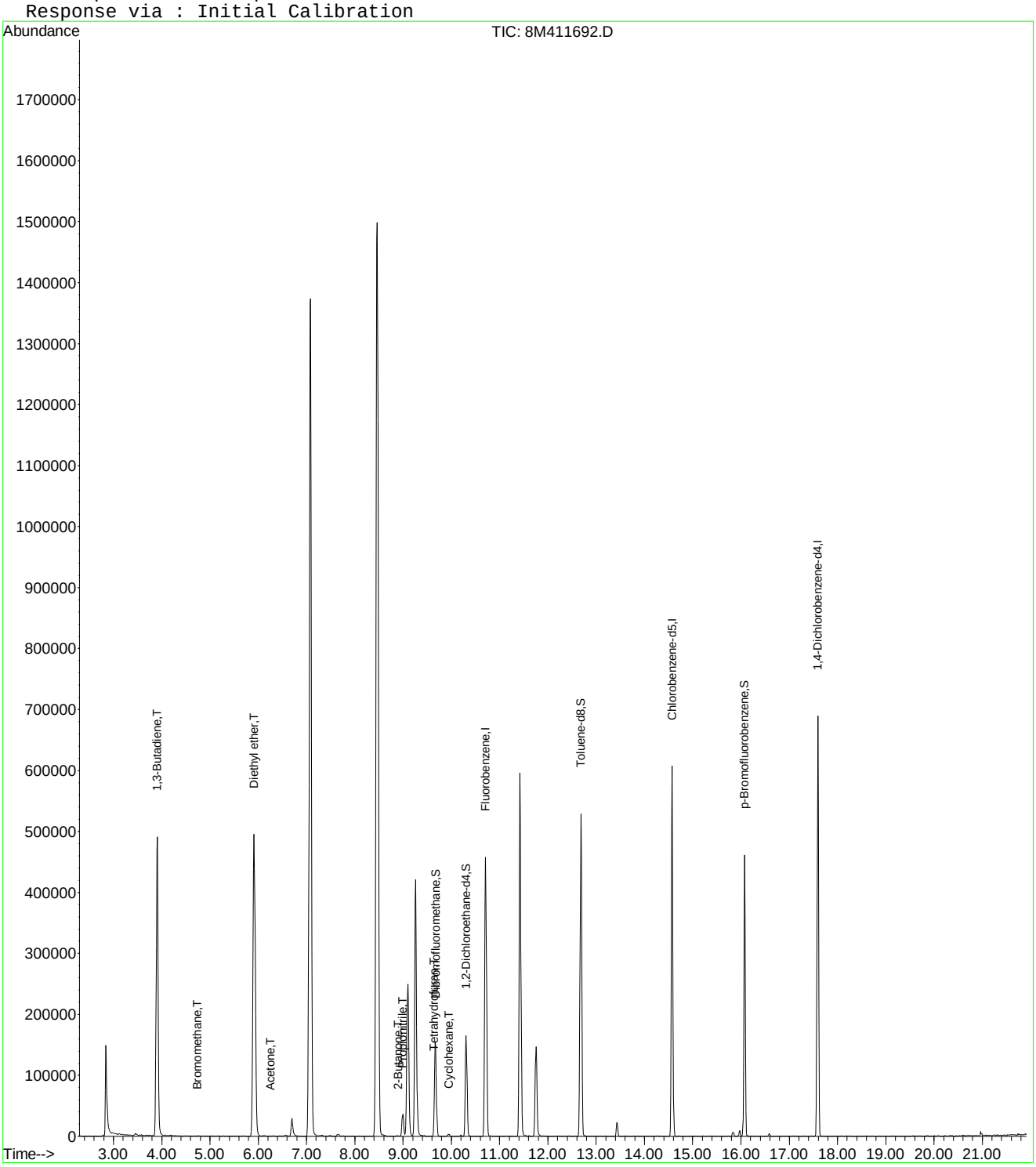

8M411692.D 8260WT.M Sun Apr 24 22:24:20 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411692.D Vial: 12
Acq On : 24 Apr 2016 22:02 Operator: JDS
Sample : WG566154-10 100ug/L ALT SRC STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:24:24 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:23:52 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	492773	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	377229	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	208753	25.00 ug/L	0.00

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
8M411692.D A9FOOWTR.M Wed Apr 27 16:24:24 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411692.D Vial: 12
Acq On : 24 Apr 2016 22:02 Operator: JDS
Sample : WG566154-10 100ug/L ALT SRC STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:24 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:23:52 2016
Response via : Initial Calibration

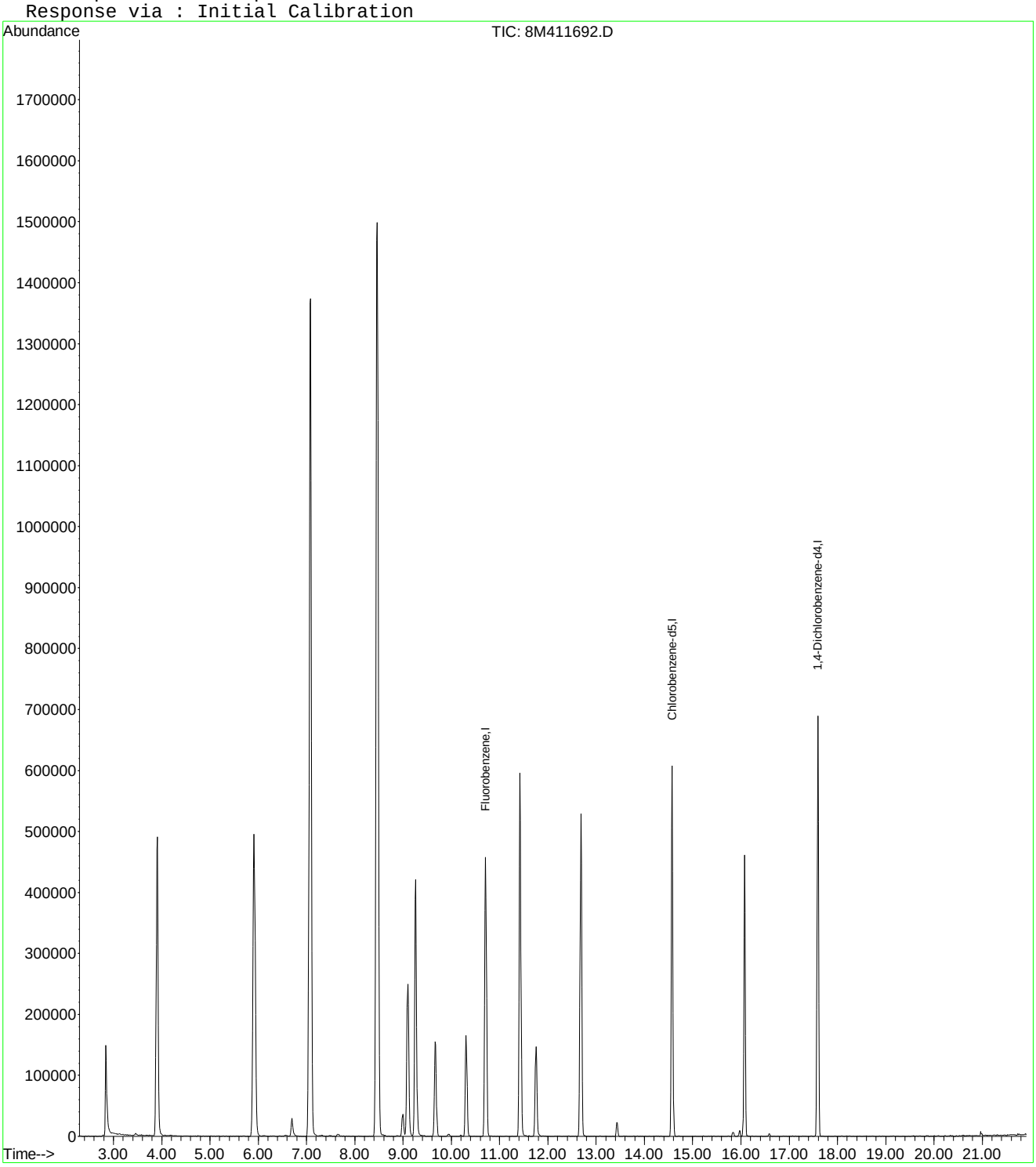

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411692.D Vial: 12
Acq On : 24 Apr 2016 22:02 Operator: JDS
Sample : WG566154-10 100ug/L ALT SRC STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:35:48 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:34:16 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	492773	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	377229	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	208753	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.70	41	44894	108.8398	ug/L	98
3) 3-Chloro-1-propene	7.07	41	1669509	107.1431	ug/L	92
4) 2-Chloro-1,3-butadiene	8.47	53	1673770	116.9359	ug/L	81
5) Ethyl Acetate	9.10	43	466332	109.8227	ug/L	92
6) Methacrylonitrile	9.26	67	132401	107.8887	ug/L #	54
7) Isobutyl Alcohol	9.27	43	12420	124.0473	ug/L #	39
9) Methyl methacrylate	11.42	41	494305	112.5227	ug/L	77
10) 2-Nitropropane	11.75	43	142984	100.9743	ug/L	94
13) Cyclohexanone	15.84	55	4200	30.4358	ug/L	98

(#) = qualifier out of range (m) = manual integration
8M411692.D A9FOOWTR.M Wed Apr 27 16:35:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411692.D Vial: 12
Acq On : 24 Apr 2016 22:02 Operator: JDS
Sample : WG566154-10 100ug/L ALT SRC STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:35 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:34:16 2016
Response via : Initial Calibration

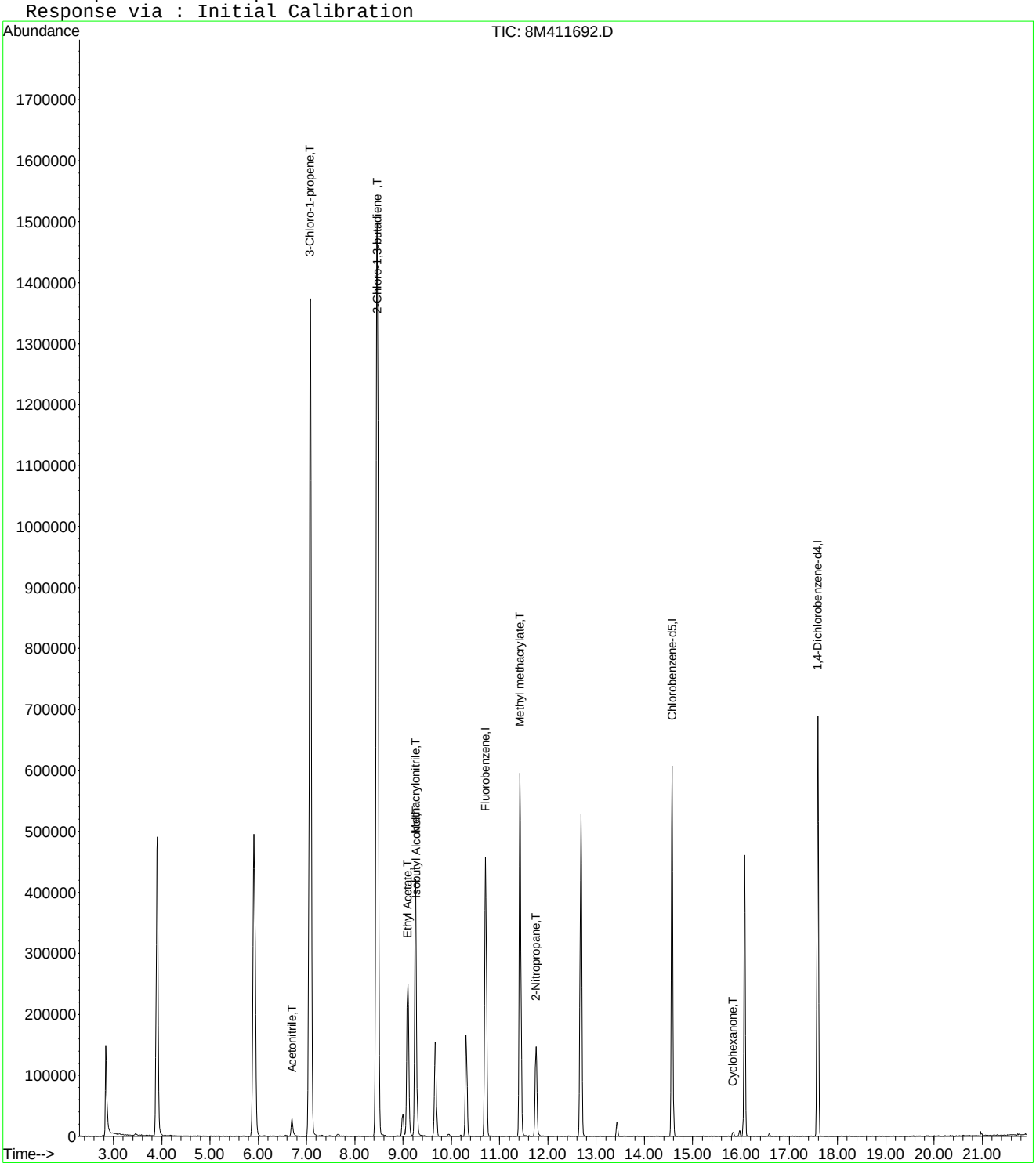

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411692.D Vial: 12
Acq On : 24 Apr 2016 22:02 Operator: JDS
Sample : WG566154-10 100ug/L ALT SRC STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:37:36 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:36:22 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	492773	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	377229	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	208753	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	44894	108.8398 ug/L	98
3) 3-Chloro-1-propene	7.07	41	1669509	107.1431 ug/L	92
4) 2-Chloro-1,3-butadiene	8.47	53	1673770	116.9359 ug/L	81
5) Ethyl Acetate	9.10	43	466332	109.8227 ug/L	92
6) Methacrylonitrile	9.26	67	132401	110.9012 ug/L #	54
7) Isobutyl Alcohol	9.27	43	12420	124.0473 ug/L #	39
9) Methyl methacrylate	11.42	41	494305	114.8781 ug/L	77
10) 2-Nitropropane	11.75	43	142984	100.9743 ug/L	94
13) Cyclohexanone	15.84	55	4200	30.4358 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M411692.D A9FOOWTR.M Wed Apr 27 16:37:37 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411692.D Vial: 12
Acq On : 24 Apr 2016 22:02 Operator: JDS
Sample : WG566154-10 100ug/L ALT SRC STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:37 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:36:22 2016
Response via : Initial Calibration

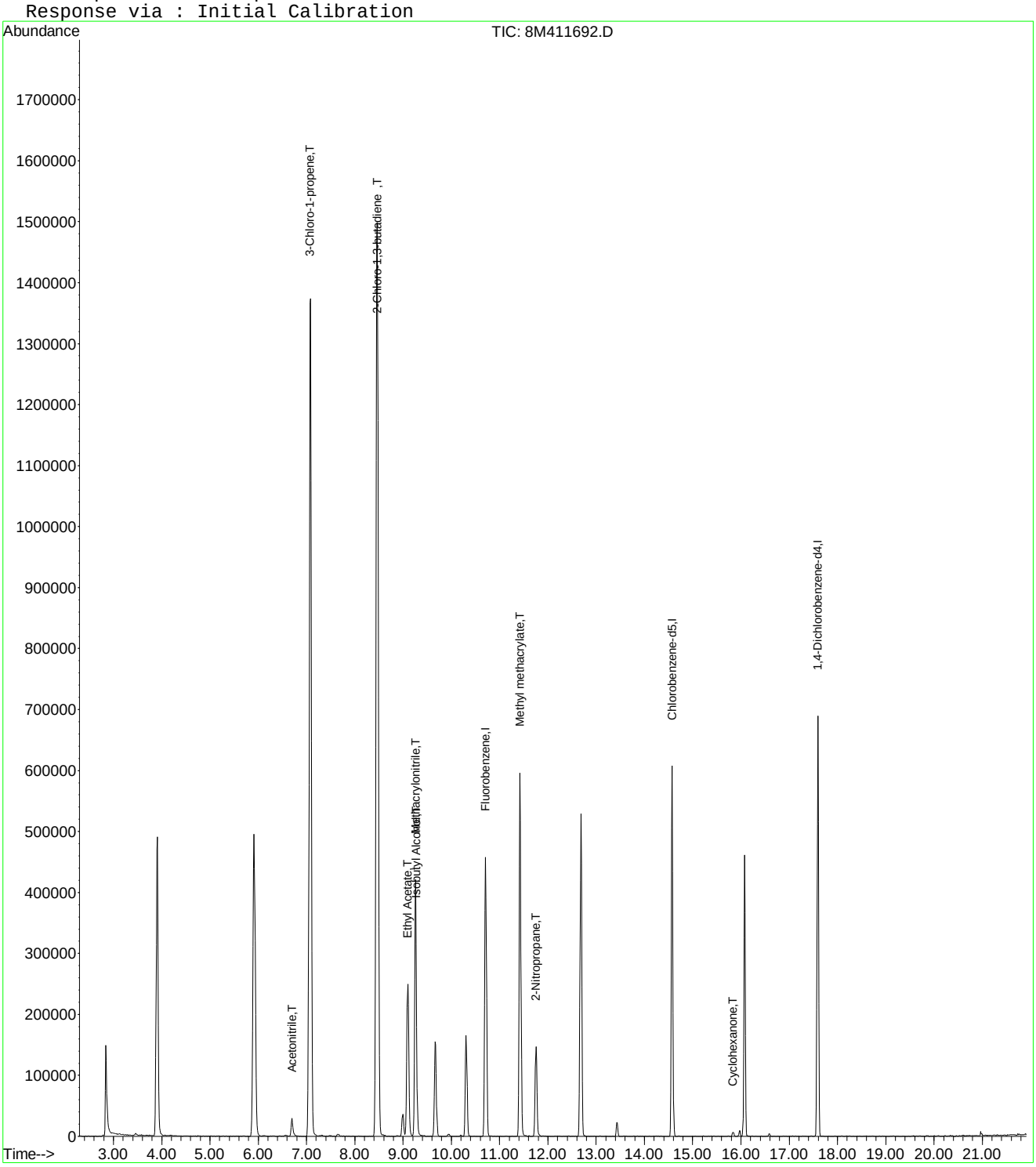

8M411692.D A9FOOWTR.M Wed Apr 27 16:37:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411692.D Vial: 12
Acq On : 24 Apr 2016 22:02 Operator: JDS
Sample : WG566154-10 100ug/L ALT SRC STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:39:43 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 04-24-16 HPMS8
Last Update : Wed Apr 27 16:38:22 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	492773	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	377229	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	208753	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	44894	108.8398 ug/L	98
3) 3-Chloro-1-propene	7.07	41	1669509	107.1431 ug/L	92
4) 2-Chloro-1,3-butadiene	8.47	53	1673770	116.9359 ug/L	81
5) Ethyl Acetate	9.10	43	466332	109.8227 ug/L	92
6) Methacrylonitrile	9.26	67	132401	110.9012 ug/L #	54
7) Isobutyl Alcohol	9.27	43	12420	124.0473 ug/L #	39
9) Methyl methacrylate	11.42	41	494305	114.8781 ug/L	77
10) 2-Nitropropane	11.75	43	142984	100.9743 ug/L	94
13) Cyclohexanone	15.84	55	4200	30.4358 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M411692.D A9FOOWTR.M Wed Apr 27 16:39:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411692.D Vial: 12
Acq On : 24 Apr 2016 22:02 Operator: JDS
Sample : WG566154-10 100ug/L ALT SRC STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:39 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 04-24-16 HPMS8
Last Update : Wed Apr 27 16:38:22 2016
Response via : Initial Calibration

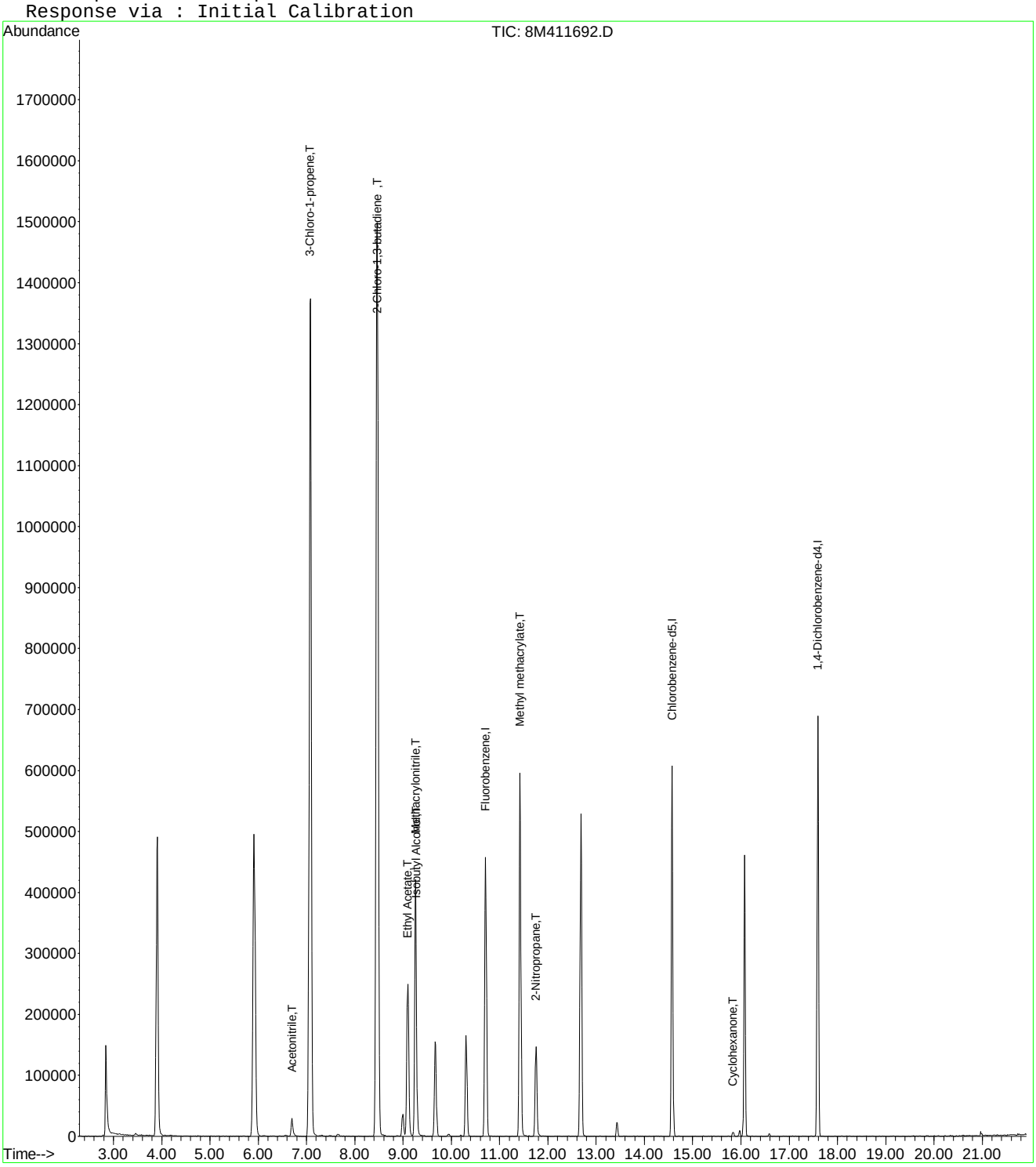

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\042416\8M411692.D Vial: 12
Acq On : 24 Apr 2016 22:02 Operator: JDS
Sample : WG566154-10 100ug/L ALT SRC STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 04-24-16 HPMS8
Last Update : Wed Apr 27 16:38:22 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	95	0.00
2	T	Acetonitrile	100.0000	108.8398	-8.8	101	0.00
3	T	3-Chloro-1-propene	100.0000	107.1431	-7.1	99	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	116.9359	-16.9	111	0.00
5	T	Ethyl Acetate	100.0000	109.8227	-9.8	104	0.00
6	T	Methacrylonitrile	100.0000	110.9012	-10.9	104	0.00
7	T	Isobutyl Alcohol	200.0000	124.0473	38.0	62	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	51	-0.02
9	T	Methyl methacrylate	100.0000	114.8781	-14.9	110	0.00
10	T	2-Nitropropane	100.0000	100.9743	-1.0	103	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	95	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	98	0.00
13	T	Cyclohexanone	100.0000	30.4358	69.6	32	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M411692.D A9FOOWTR.M Wed Apr 27 16:40:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411791.D Vial: 3
Acq On : 28 Apr 2016 7:58 Operator: ADC
Sample : WG566682-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07:09 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:04:09 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	679680	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	519007	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	275871	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	12.67	98	984	0.0367 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.16%#	
80) p-Bromofluorobenzene	16.07	95	208	0.0184 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.08%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	3819	0.2681 ug/L #	74
3) Chloromethane	3.62	50	7083	0.5278 ug/L #	71
4) Vinyl Chloride	3.86	62	2540	0.2803 ug/L #	64
5) 1,3-Butadiene	3.91	54	2628	0.2968 ug/L #	70
6) Bromomethane	4.74	94	1025	0.9322 ug/L	74
7) Chloroethane	4.89	64	1280	0.2158 ug/L #	57
8) Trichlorofluoromethane	5.37	101	5232	0.2908 ug/L #	89
10) Isoprene	5.97	67	2461	0.2674 ug/L	75
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	2192	0.2661 ug/L #	10
14) 1,1-Dichloroethene	6.46	61	4728	0.2958 ug/L	74
16) Dimethyl Sulfide	6.73	62	1235	0.2091 ug/L #	38
18) Methyl acetate	6.99	43	735	0.1474 ug/L #	66
19) Methylene Chloride	7.28	84	2343	0.3093 ug/L #	37
20) Carbon Disulfide	7.30	76	7764	0.3359 ug/L #	83
22) Methyl Tert Butyl Ether	7.47	73	4295	0.2567 ug/L #	74
23) trans-1,2-Dichloroethene	7.72	61	3959	0.2738 ug/L	80
24) n-Hexane	7.78	57	4601	0.3507 ug/L	81
26) Vinyl Acetate	8.31	43	3435	0.2303 ug/L #	79
27) 1,1-Dichloroethane	8.33	63	5013	0.2898 ug/L #	56
31) 2,2-Dichloropropane	9.12	77	4871	0.3197 ug/L	88
32) cis-1,2-Dichloroethene	9.17	96	2796	0.3231 ug/L	87
33) Chloroform	9.38	83	5145	0.3206 ug/L	100
35) Bromochloromethane	9.61	130	958	0.2116 ug/L #	13
36) Tetrahydrofuran	9.63	42	3038	1.7195 ug/L #	41
38) 1,1,1-Trichloroethane	9.91	97	5124	0.3167 ug/L	99
39) Cyclohexane	9.95	56	5213	0.2952 ug/L #	74
40) 1,1-Dichloropropene	10.11	75	3057	0.2625 ug/L	77
42) Carbon Tetrachloride	10.25	117	5282	0.3470 ug/L #	78
45) 1,2-Dichloroethane	10.43	62	3349	0.2485 ug/L	84
46) Benzene	10.46	78	8860	0.2987 ug/L	94
47) Trichloroethene	11.21	130	2298	0.2685 ug/L	87
48) Methylcyclohexane	11.31	83	2897	0.2421 ug/L	78
49) 1,2-Dichloropropane	11.43	63	2400	0.2780 ug/L	84
50) Bromodichloromethane	11.72	83	3372	0.2807 ug/L #	93
52) Dibromomethane	11.82	93	609	0.1498 ug/L #	38
55) cis-1,3-Dichloropropene	12.35	75	2572	0.2127 ug/L	95
56) Dimethyl Disulfide	12.62	79	1079	0.1703 ug/L	77
59) Toluene	12.79	91	9738	0.3133 ug/L	97
60) Ethyl Methacrylate	12.88	69	1176	0.2017 ug/L	90
62) trans-1,3-Dichloropropene	12.96	75	2155	0.1987 ug/L	93

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411791.D Vial: 3
Acq On : 28 Apr 2016 7:58 Operator: ADC
Sample : WG566682-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07:09 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:04:09 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
63)	1,1,2-Trichloroethane	13.17	97	1455	0.2950 ug/L	#	49
65)	1,3-Dichloropropane	13.48	76	2412	0.2637 ug/L		67
66)	Tetrachloroethene	13.60	164	1907	0.2709 ug/L		91
67)	Dibromochloromethane	13.87	129	1909	0.2455 ug/L		91
68)	1,2-Dibromoethane	14.12	107	1451	0.2823 ug/L		97
69)	1-Chlorohexane	14.21	91	2991	0.2825 ug/L		70
70)	Chlorobenzene	14.63	112	6537	0.3029 ug/L		82
71)	1,1,1,2-Tetrachloroethane	14.66	131	2161	0.2570 ug/L		96
72)	Ethylbenzene	14.65	106	3516	0.2871 ug/L		98
73)	m-,p-Xylene	14.74	106	8868	0.6286 ug/L		97
74)	o-Xylene	15.30	106	4239	0.2983 ug/L		94
75)	Styrene	15.34	104	5915	0.2610 ug/L		81
76)	Bromoform	15.85	173	750	0.1681 ug/L	#	76
77)	Isopropylbenzene	15.73	105	11447	0.3177 ug/L		93
79)	1,1,2,2-Tetrachloroethane	15.94	83	1527	0.2775 ug/L	#	79
83)	n-Propylbenzene	16.23	91	14461	0.3401 ug/L		94
84)	Bromobenzene	16.36	156	2787	0.3144 ug/L		93
85)	1,3,5-Trimethylbenzene	16.41	105	9008	0.2863 ug/L		99
86)	2-Chlorotoluene	16.50	91	8469	0.3111 ug/L		86
87)	4-Chlorotoluene	16.55	91	8024	0.2861 ug/L		94
88)	a-Methylstyrene	16.83	118	4250	0.2742 ug/L		86
89)	tert-Butylbenzene	16.89	134	1694	0.2718 ug/L		76
90)	1,2,4-Trimethylbenzene	16.93	105	10121	0.3143 ug/L		89
91)	sec-Butylbenzene	17.16	105	12896	0.3409 ug/L		98
92)	p-Isopropyltoluene	17.31	119	10196	0.3157 ug/L		81
93)	1,3-Dichlorobenzene	17.50	146	5507	0.3130 ug/L		94
94)	1,4-Dichlorobenzene	17.63	146	5177	0.2948 ug/L	#	1
95)	n-Butylbenzene	17.84	91	10075	0.3280 ug/L		89
96)	1,2-Dichlorobenzene	18.13	146	4510	0.2925 ug/L		92
98)	1,2,4-Trichlorobenzene	20.27	180	3489	0.2922 ug/L		87
99)	Hexachlorobutadiene	20.42	225	1544	0.2794 ug/L	#	81
100)	Naphthalene	20.63	128	5314	0.2927 ug/L	#	80
101)	1,2,3-Trichlorobenzene	20.94	180	3047	0.2999 ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411791.D Vial: 3
Acq On : 28 Apr 2016 7:58 Operator: ADC
Sample : WG566682-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

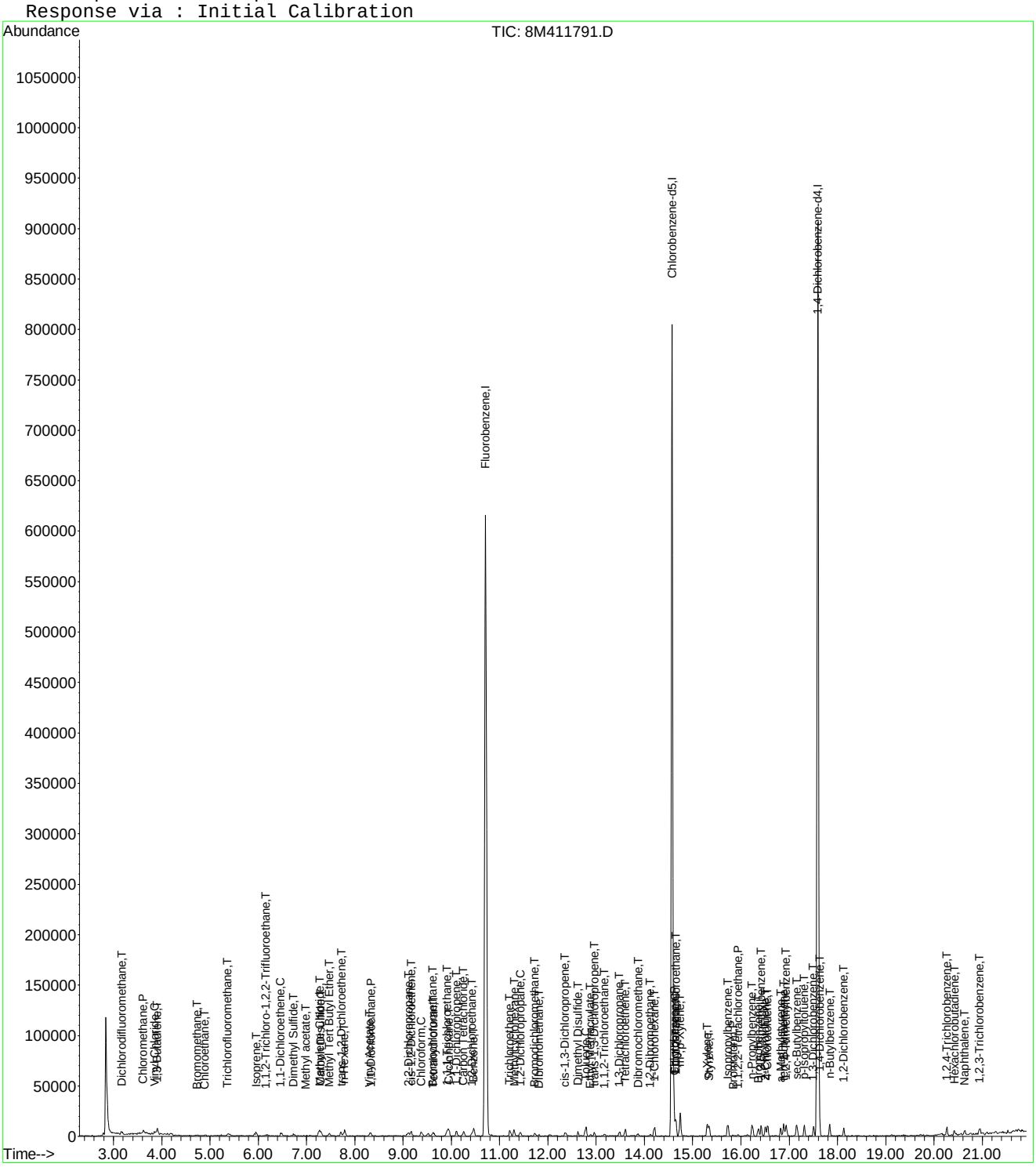

8M411791.D 8260WTR.M Thu Apr 28 15:07:10 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\042816\8M411791.D Vial: 3
Acq On : 28 Apr 2016 7:58 Operator: ADC
Sample : WG566682-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2681	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.5278	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.2803	0.0	100	0.01
5	T	1,3-Butadiene	-1.0000	0.2968	0.0	100	0.02
6	T	Bromomethane	-1.0000	0.9322	0.0	0	0.00
7	T	Chloroethane	-1.0000	0.2158	0.0	100	0.00
8	T	Trichlorofluoromethane	-1.0000	0.2908	0.0	100	-0.02
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.91#
10	T	Isoprene	-1.0000	0.2674	0.0	100	0.02
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.15#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2661	0.0	100	0.00
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	-1.0000	0.2958	0.0	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.59#
16	T	Dimethyl Sulfide	-1.0000	0.2091	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.00#
18	T	Methyl acetate	-1.0000	0.1474	0.0	100	-0.02
19	T	Methylene Chloride	-1.0000	0.3093	0.0	100	0.02
20	T	Carbon Disulfide	-1.0000	0.3359	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.44#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2567	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	-1.0000	0.2738	0.0	100	0.01
24	T	n-Hexane	-1.0000	0.3507	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.2303	0.0	100	0.01
27	P	1,1-Dichloroethane	-1.0000	0.2898	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0879	0.0	100	0.01
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.99#
31	T	2,2-Dichloropropane	-1.0000	0.3197	0.0	100	0.01
32	T	cis-1,2-Dichloroethene	-1.0000	0.3231	0.0	100	0.00
33	C	Chloroform	0.3000	0.3206	-6.9	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.52#
35	T	Bromochloromethane	-1.0000	0.2116	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	1.7195	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	-1.0000	0.3167	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.2952	0.0	100	0.01
40	T	1,1-Dichloropropene	-1.0000	0.2625	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	-1.0000	0.3470	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.30#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	-1.0000	0.2485	0.0	100	0.00
46	T	Benzene	-1.0000	0.2987	0.0	100	0.00
47	T	Trichloroethene	-1.0000	0.2685	0.0	100	0.00
48	T	Methylcyclohexane	-1.0000	0.2421	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2780	0.0	100	0.00
50	T	Bromodichloromethane	-1.0000	0.2807	0.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.72#
52	T	Dibromomethane	-1.0000	0.1498	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.0686	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.06#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\042816\8M411791.D Vial: 3
Acq On : 28 Apr 2016 7:58 Operator: ADC
Sample : WG566682-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.2127	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.1703	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0367	0.0	100	0.00
59	C	Toluene	-1.0000	0.3133	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2017	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.1987	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.2950	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.11#
65	T	1,3-Dichloropropane	-1.0000	0.2637	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.2709	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.2455	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.2823	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.2825	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.3029	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.2570	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.2871	0.0	100	0.00
73	T	m-,p-Xylene	-1.0000	0.6286	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.2983	0.0	100	0.00
75	T	Styrene	-1.0000	0.2610	0.0	100	0.00
76	P	Bromoform	-1.0000	0.1681	0.0	100	0.01
77	T	Isopropylbenzene	-1.0000	0.3177	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2775	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0184	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.13#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.18#
83	T	n-Propylbenzene	-1.0000	0.3401	0.0	100	0.00
84	T	Bromobenzene	0.3000	0.3144	-4.8	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.2863	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.3111	0.0	100	0.00
87	T	4-Chlorotoluene	-1.0000	0.2861	0.0	0	0.00
88	T	a-Methylstyrene	-1.0000	0.2742	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.2718	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.3143	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3409	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.3157	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.3130	0.0	100	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.2948	1.7	100	0.00
95	T	n-Butylbenzene	-1.0000	0.3280	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.2925	2.5	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.12#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.2922	0.0	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.2794	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.2927	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.2999	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M411791.D 8260WTR.M Thu Apr 28 15:07:32 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411792.D Vial: 4
Acq On : 28 Apr 2016 8:27 Operator: ADC
Sample : WG566682-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07:10 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	674715	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	525611	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	275085	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	12.69	98	273	0.0100 ug/L	0.01
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.04%#	
80) p-Bromofluorobenzene	0.00	95	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	5633	0.3984 ug/L	89
3) Chloromethane	3.63	50	6706	0.5034 ug/L	84
4) Vinyl Chloride	3.85	62	3571	0.3969 ug/L #	69
5) 1,3-Butadiene	3.91	54	3010	0.3425 ug/L #	56
6) Bromomethane	4.73	94	1041	0.9358 ug/L	99
7) Chloroethane	4.90	64	2279	0.3871 ug/L #	71
8) Trichlorofluoromethane	5.40	101	6967	0.3901 ug/L #	90
10) Isoprene	5.95	67	3698	0.4047 ug/L	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	2780	0.3400 ug/L	85
14) 1,1-Dichloroethene	6.47	61	6568	0.4139 ug/L	83
16) Dimethyl Sulfide	6.74	62	1881	0.3208 ug/L #	58
18) Methyl acetate	7.01	43	1244	0.2513 ug/L #	66
19) Methylene Chloride	7.26	84	3620	0.4814 ug/L	68
20) Carbon Disulfide	7.30	76	9966	0.4344 ug/L	96
22) Methyl Tert Butyl Ether	7.48	73	5868	0.3532 ug/L #	75
23) trans-1,2-Dichloroethene	7.70	61	5489	0.3824 ug/L	95
24) n-Hexane	7.79	57	4986	0.3828 ug/L	98
26) Vinyl Acetate	8.31	43	5242	0.3541 ug/L #	79
27) 1,1-Dichloroethane	8.33	63	6889	0.4012 ug/L #	82
29) 2-Butanone	8.88	43	419	0.1579 ug/L #	57
31) 2,2-Dichloropropane	9.10	77	6211	0.4106 ug/L	87
32) cis-1,2-Dichloroethene	9.17	96	3502	0.4077 ug/L	89
33) Chloroform	9.39	83	6047	0.3796 ug/L	93
35) Bromochloromethane	9.61	130	1407	0.3131 ug/L #	33
36) Tetrahydrofuran	9.64	42	2614	1.4904 ug/L #	41
38) 1,1,1-Trichloroethane	9.90	97	6174	0.3844 ug/L	90
39) Cyclohexane	9.94	56	7807	0.4454 ug/L #	74
40) 1,1-Dichloropropene	10.11	75	4748	0.4107 ug/L	87
42) Carbon Tetrachloride	10.24	117	5830	0.3858 ug/L	94
45) 1,2-Dichloroethane	10.42	62	5733	0.4285 ug/L	80
46) Benzene	10.46	78	13335	0.4529 ug/L	89
47) Trichloroethene	11.22	130	3331	0.3920 ug/L	91
48) Methylcyclohexane	11.30	83	4563	0.3841 ug/L	83
49) 1,2-Dichloropropane	11.42	63	3612	0.4214 ug/L	94
50) Bromodichloromethane	11.73	83	4774	0.4003 ug/L #	89
52) Dibromomethane	11.81	93	1176	0.2914 ug/L	92
53) 2-Chloroethyl Vinyl Ether	12.03	63	711	0.1981 ug/L #	51
55) cis-1,3-Dichloropropene	12.36	75	4033	0.3360 ug/L	98
56) Dimethyl Disulfide	12.61	79	1401	0.2228 ug/L	78
59) Toluene	12.78	91	13061	0.4150 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M411792.D 8260WTR.M Thu Apr 28 15:07:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411792.D Vial: 4
Acq On : 28 Apr 2016 8:27 Operator: ADC
Sample : WG566682-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07:10 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
60)	Ethyl Methacrylate	12.88	69	1864	0.3156 ug/L		92
62)	trans-1,3-Dichloropropene	12.96	75	3516	0.3202 ug/L		90
63)	1,1,2-Trichloroethane	13.18	97	1914	0.3832 ug/L		98
65)	1,3-Dichloropropane	13.48	76	3756	0.4055 ug/L		97
66)	Tetrachloroethene	13.60	164	2748	0.3855 ug/L		82
67)	Dibromochloromethane	13.86	129	2430	0.3086 ug/L		67
68)	1,2-Dibromoethane	14.12	107	1900	0.3650 ug/L		78
69)	1-Chlorohexane	14.21	91	4316	0.4026 ug/L		70
70)	Chlorobenzene	14.63	112	8876	0.4061 ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.66	131	2852	0.3349 ug/L		97
72)	Ethylbenzene	14.66	106	5385	0.4343 ug/L		88
73)	m-,p-Xylene	14.74	106	11192	0.7834 ug/L		85
74)	o-Xylene	15.30	106	6229	0.4328 ug/L		97
75)	Styrene	15.34	104	8785	0.3828 ug/L		87
76)	Bromoform	15.83	173	1238	0.2740 ug/L	#	60
77)	Isopropylbenzene	15.73	105	13974	0.3830 ug/L		93
79)	1,1,2,2-Tetrachloroethane	15.94	83	2466	0.4494 ug/L	#	91
81)	1,2,3-Trichloropropane	16.13	110	523	0.2966 ug/L		59
82)	trans-1,4-Dichloro-2-Buten	16.19	53	586	0.2193 ug/L	#	51
83)	n-Propylbenzene	16.24	91	19262	0.4544 ug/L		97
84)	Bromobenzene	16.36	156	3446	0.3899 ug/L		90
85)	1,3,5-Trimethylbenzene	16.42	105	12171	0.3880 ug/L		100
86)	2-Chlorotoluene	16.51	91	10306	0.3796 ug/L		100
87)	4-Chlorotoluene	16.56	91	12740	0.4556 ug/L		92
88)	a-Methylstyrene	16.83	118	5408	0.3499 ug/L		83
89)	tert-Butylbenzene	16.89	134	2473	0.3979 ug/L		80
90)	1,2,4-Trimethylbenzene	16.93	105	13762	0.4286 ug/L		93
91)	sec-Butylbenzene	17.16	105	15974	0.4235 ug/L		96
92)	p-Isopropyltoluene	17.31	119	13803	0.4286 ug/L		95
93)	1,3-Dichlorobenzene	17.51	146	7592	0.4328 ug/L		87
94)	1,4-Dichlorobenzene	17.63	146	7914	0.4520 ug/L	#	16
95)	n-Butylbenzene	17.84	91	12573	0.4104 ug/L		95
96)	1,2-Dichlorobenzene	18.13	146	6165	0.4010 ug/L		97
98)	1,2,4-Trichlorobenzene	20.27	180	5231	0.4393 ug/L		97
99)	Hexachlorobutadiene	20.41	225	2252	0.4087 ug/L		91
100)	Naphthalene	20.64	128	7428	0.4103 ug/L		98
101)	1,2,3-Trichlorobenzene	20.95	180	4517	0.4459 ug/L	#	74

(#) = qualifier out of range (m) = manual integration
8M411792.D 8260WTR.M Thu Apr 28 15:07:11 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411792.D Vial: 4
Acq On : 28 Apr 2016 8:27 Operator: ADC
Sample : WG566682-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

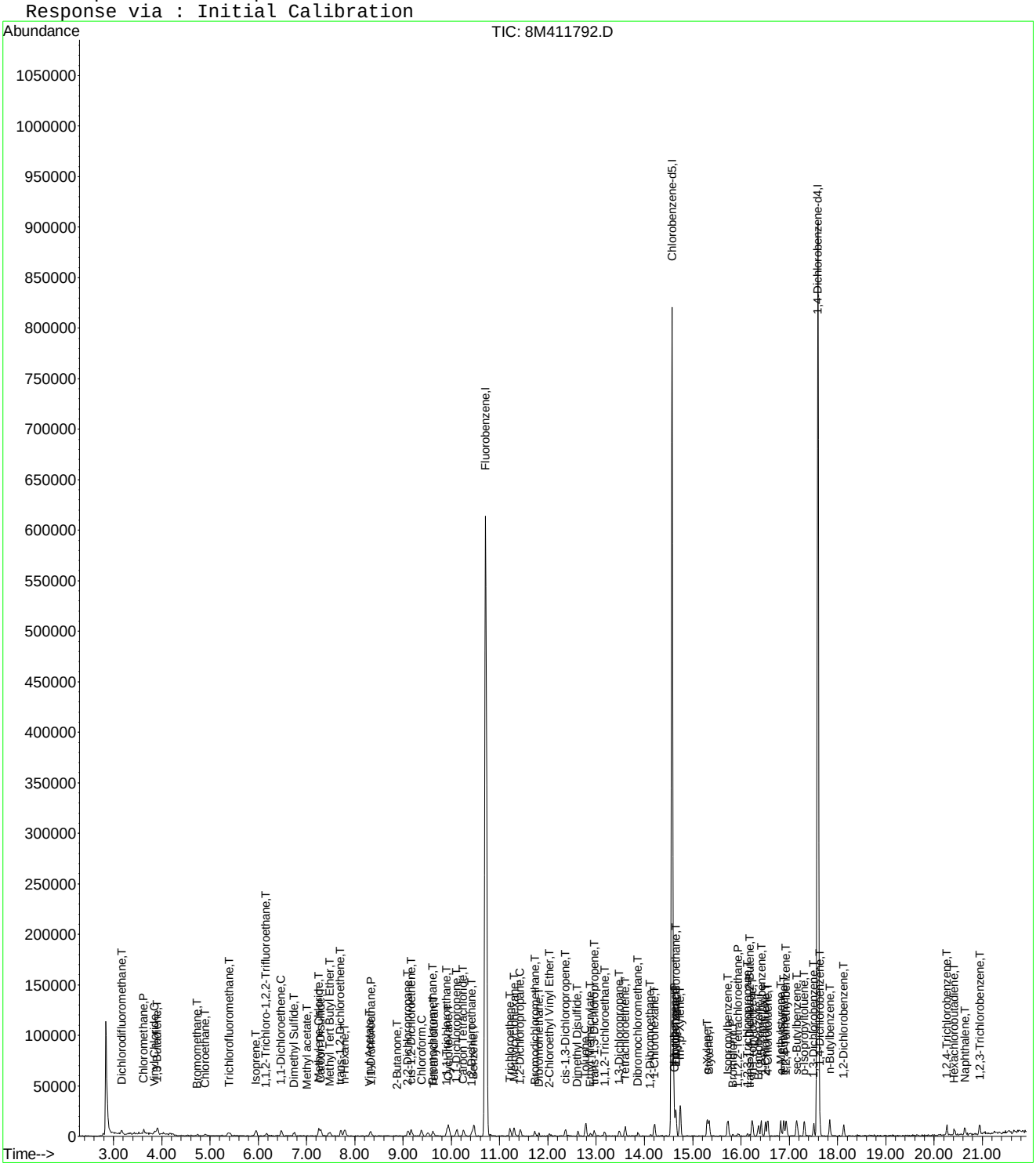

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\042816\8M411792.D Vial: 4
Acq On : 28 Apr 2016 8:27 Operator: ADC
Sample : WG566682-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	0.4000	0.3983	0.4	100	0.00
3	P	Chloromethane	-1.0000	0.5034	0.0	100	0.01
4	C	Vinyl Chloride	0.4000	0.3970	0.8	100	0.00
5	T	1,3-Butadiene	-1.0000	0.3425	0.0	100	0.02
6	T	Bromomethane	-1.0000	0.9358	0.0	0	0.00
7	T	Chloroethane	0.4000	0.3871	3.2	100	0.00
8	T	Trichlorofluoromethane	0.4000	0.3901	2.5	100	0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.91#
10	T	Isoprene	0.4000	0.4047	-1.2	100	0.01
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.15#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3400	0.0	100	0.00
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	0.4000	0.4139	-3.5	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.59#
16	T	Dimethyl Sulfide	0.4000	0.3207	19.8	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.00#
18	T	Methyl acetate	-1.0000	0.2513	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4814	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4344	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.44#
22	T	Methyl Tert Butyl Ether	-1.0000	0.3532	0.0	100	0.01
23	T	trans-1,2-Dichloroethene	0.4000	0.3824	4.4	100	0.00
24	T	n-Hexane	-1.0000	0.3828	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.3541	0.0	100	0.01
27	P	1,1-Dichloroethane	0.4000	0.4012	-0.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.1579	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.99#
31	T	2,2-Dichloropropane	0.4000	0.4106	-2.6	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.4077	-1.9	100	0.00
33	C	Chloroform	0.4000	0.3796	5.1	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.52#
35	T	Bromochloromethane	0.4000	0.3131	21.7	100	0.00
36	T	Tetrahydrofuran	-1.0000	1.4904	0.0	100	0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	0.4000	0.3844	3.9	100	0.00
39	T	Cyclohexane	-1.0000	0.4454	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4107	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0412	0.0	100	-0.09
42	T	Carbon Tetrachloride	0.4000	0.3858	3.5	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.30#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	0.4000	0.4285	-7.1	100	0.00
46	T	Benzene	0.4000	0.4529	-13.2	100	0.00
47	T	Trichloroethene	0.4000	0.3920	2.0	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3841	0.0	100	0.00
49	C	1,2-Dichloropropane	0.4000	0.4214	-5.3	100	0.00
50	T	Bromodichloromethane	0.4000	0.4003	-0.1	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.72#
52	T	Dibromomethane	0.4000	0.2914	27.1#	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1981	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.1031	0.0	100	-0.02

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\042816\8M411792.D Vial: 4
Acq On : 28 Apr 2016 8:27 Operator: ADC
Sample : WG566682-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3360	16.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2228	0.0	100	-0.02
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0100	0.0	100	0.01
59	C	Toluene	0.4000	0.4150	-3.7	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3156	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3202	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.3832	4.2	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.11#
65	T	1,3-Dichloropropane	0.4000	0.4055	-1.4	100	0.00
66	T	Tetrachloroethene	0.4000	0.3855	3.6	100	0.00
67	T	Dibromochloromethane	0.4000	0.3086	22.8	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.3650	8.8	100	0.00
69	T	1-Chlorohexane	0.4000	0.4026	-0.6	100	0.00
70	P	Chlorobenzene	0.4000	0.4062	-1.5	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3349	16.3	100	0.00
72	C	Ethylbenzene	0.4000	0.4343	-8.6	100	0.00
73	T	m-,p-Xylene	0.8000	0.7834	2.1	100	0.00
74	T	o-Xylene	-1.0000	0.4328	0.0	100	0.00
75	T	Styrene	0.4000	0.3828	4.3	100	0.00
76	P	Bromoform	-1.0000	0.2740	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.3830	4.3	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.4494	-12.4	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0000	0.0	0	-16.07#
81	T	1,2,3-Trichloropropane	-1.0000	0.2966	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.2193	0.0	100	0.00
83	T	n-Propylbenzene	0.4000	0.4544	-13.6	100	0.00
84	T	Bromobenzene	0.4000	0.3899	2.5	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.3880	3.0	100	0.00
86	T	2-Chlorotoluene	0.4000	0.3796	5.1	100	0.00
87	T	4-Chlorotoluene	0.4000	0.4556	-13.9	100	0.00
88	T	a-Methylstyrene	-1.0000	0.3499	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3979	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	0.4000	0.4286	-7.1	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.4235	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4286	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.4328	-8.2	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.4520	-13.0	100	0.00
95	T	n-Butylbenzene	-1.0000	0.4104	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.4010	-0.3	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.12#
98	T	1,2,4-Trichlorobenzene	0.4000	0.4393	-9.8	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.4087	-2.2	100	0.00
100	T	Naphthalene	0.4000	0.4103	-2.6	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.4459	-11.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M411792.D 8260WTR.M Thu Apr 28 15:07:42 2016 Page 2

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411793.D Vial: 5
Acq On : 28 Apr 2016 8:56 Operator: ADC
Sample : WG566682-04 1.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07:11 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	667746	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	507968	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	274777	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	4345	0.5182 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery	= 2.08%#	
43) 1,2-Dichloroethane-d4	10.30	65	4523	0.4715 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery	= 1.88%#	
58) Toluene-d8	12.68	98	13382	0.5095 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 2.04%#	
80) p-Bromofluorobenzene	16.07	95	6086	0.5411 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery	= 2.16%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	13554	0.9685 ug/L	96
3) Chloromethane	3.63	50	15776	1.1965 ug/L	98
4) Vinyl Chloride	3.85	62	8374	0.9406 ug/L	95
5) 1,3-Butadiene	3.91	54	8315	0.9559 ug/L	86
6) Bromomethane	4.74	94	3894	1.3809 ug/L	98
7) Chloroethane	4.90	64	5574	0.9567 ug/L	98
8) Trichlorofluoromethane	5.39	101	17332	0.9807 ug/L	98
9) Diethyl ether	5.92	59	27660	5.1151 ug/L	78
10) Isoprene	5.95	67	8519	0.9420 ug/L	71
11) Acrolein	6.14	56	404	0.8413 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	7480m	0.9243 ug/L	
13) Acetone	6.26	43	1468	0.8955 ug/L #	48
14) 1,1-Dichloroethene	6.47	61	15793	1.0056 ug/L	89
15) Tert-Butyl Alcohol	6.59	59	3550	9.4066 ug/L #	64
16) Dimethyl Sulfide	6.74	62	5434	0.9363 ug/L	82
17) Iodomethane	7.00	142	1630	1.4994 ug/L #	66
18) Methyl acetate	7.01	43	4495	0.9175 ug/L #	66
19) Methylene Chloride	7.25	84	8970	1.2052 ug/L	76
20) Carbon Disulfide	7.30	76	23423	1.0316 ug/L	95
21) Acrylonitrile	7.44	53	4410	2.0930 ug/L	90
22) Methyl Tert Butyl Ether	7.47	73	14659	0.8916 ug/L	91
23) trans-1,2-Dichloroethene	7.71	61	15605	1.0984 ug/L	79
24) n-Hexane	7.80	57	12743	0.9887 ug/L	88
25) Diisopropyl ether	8.13	45	197391	5.4083 ug/L	94
26) Vinyl Acetate	8.31	43	13510	0.9221 ug/L #	87
27) 1,1-Dichloroethane	8.33	63	17493	1.0294 ug/L	97
28) Ethyl-Tert-Butyl ether	8.71	59	129200	5.0439 ug/L	96
29) 2-Butanone	8.91	43	2157	0.8216 ug/L #	57
30) Propionitrile	8.99	54	2440	3.6751 ug/L #	56
31) 2,2-Dichloropropane	9.12	77	15824	1.0570 ug/L	91
32) cis-1,2-Dichloroethene	9.18	96	9229	1.0857 ug/L	94
33) Chloroform	9.38	83	16506	1.0469 ug/L	98
34) 1-Bromopropane	9.51	122	1173	0.8759 ug/L	73
35) Bromochloromethane	9.60	130	4524	1.0172 ug/L	80
36) Tetrahydrofuran	9.64	42	10437	6.0130 ug/L #	79
38) 1,1,1-Trichloroethane	9.92	97	15394	0.9685 ug/L	95
39) Cyclohexane	9.94	56	17039	0.9822 ug/L	90
40) 1,1-Dichloropropene	10.11	75	9971	0.8715 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	81460	4.9651 ug/L	82
42) Carbon Tetrachloride	10.25	117	14177	0.9480 ug/L	95

(#) = qualifier out of range (m) = manual integration
8M411793.D 8260WTR.M Thu Apr 28 15:09:47 2016 Page 1

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411793.D Vial: 5
Acq On : 28 Apr 2016 8:56 Operator: ADC
Sample : WG566682-04 1.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07:11 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	12811	0.9675 ug/L		95
46)	Benzene	10.47	78	30293	1.0395 ug/L		85
47)	Trichloroethene	11.21	130	8436	1.0031 ug/L		94
48)	Methylcyclohexane	11.31	83	10669	0.9074 ug/L		80
49)	1,2-Dichloropropane	11.43	63	8199	0.9665 ug/L		97
50)	Bromodichloromethane	11.73	83	10846	0.9190 ug/L	#	95
52)	Dibromomethane	11.81	93	4029	1.0089 ug/L		94
53)	2-Chloroethyl Vinyl Ether	12.03	63	2843	0.8005 ug/L	#	51
54)	4-Methyl-2-Pentanone	12.06	58	1626	0.8387 ug/L	#	41
55)	cis-1,3-Dichloropropene	12.36	75	12116	1.0200 ug/L		97
56)	Dimethyl Disulfide	12.63	79	4721	0.7586 ug/L		96
59)	Toluene	12.78	91	32525	1.0693 ug/L		97
60)	Ethyl Methacrylate	12.88	69	5137	0.9000 ug/L	#	58
62)	trans-1,3-Dichloropropene	12.96	75	9904	0.9332 ug/L		96
63)	1,1,2-Trichloroethane	13.18	97	3978	0.8241 ug/L		90
64)	2-Hexanone	13.11	58	1371	0.7913 ug/L	#	92
65)	1,3-Dichloropropane	13.48	76	9024	1.0081 ug/L		82
66)	Tetrachloroethene	13.61	164	7128	1.0347 ug/L		91
67)	Dibromochloromethane	13.87	129	7148	0.9393 ug/L		87
68)	1,2-Dibromoethane	14.13	107	4372	0.8690 ug/L		91
69)	1-Chlorohexane	14.21	91	9529	0.9197 ug/L	#	62
70)	Chlorobenzene	14.62	112	21659	1.0255 ug/L		89
71)	1,1,1,2-Tetrachloroethane	14.65	131	7571	0.9198 ug/L		91
72)	Ethylbenzene	14.65	106	12247	1.0219 ug/L		97
73)	m-,p-Xylene	14.74	106	28711	2.0795 ug/L		87
74)	o-Xylene	15.31	106	14578	1.0481 ug/L		97
75)	Styrene	15.34	104	23561	1.0623 ug/L		99
76)	Bromoform	15.83	173	3597	0.8239 ug/L		94
77)	Isopropylbenzene	15.73	105	37553	1.0649 ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	5014	0.9148 ug/L	#	97
81)	1,2,3-Trichloropropane	16.13	110	1742	0.9890 ug/L	#	81
82)	trans-1,4-Dichloro-2-Buten	16.18	53	2391	0.8957 ug/L	#	78
83)	n-Propylbenzene	16.23	91	45264	1.0689 ug/L		99
84)	Bromobenzene	16.37	156	7397	0.8379 ug/L		71
85)	1,3,5-Trimethylbenzene	16.42	105	32777	1.0460 ug/L		92
86)	2-Chlorotoluene	16.50	91	28395	1.0471 ug/L		97
87)	4-Chlorotoluene	16.56	91	30282	1.0840 ug/L		99
88)	a-Methylstyrene	16.83	118	14207	0.9202 ug/L		98
89)	tert-Butylbenzene	16.90	134	5534	0.8914 ug/L	#	46
90)	1,2,4-Trimethylbenzene	16.94	105	31278	0.9752 ug/L		88
91)	sec-Butylbenzene	17.16	105	39744	1.0548 ug/L		100
92)	p-Isopropyltoluene	17.31	119	33999	1.0569 ug/L		92
93)	1,3-Dichlorobenzene	17.51	146	17639	1.0066 ug/L		99
94)	1,4-Dichlorobenzene	17.64	146	17608	1.0068 ug/L	#	56
95)	n-Butylbenzene	17.84	91	31880	1.0419 ug/L		98
96)	1,2-Dichlorobenzene	18.13	146	15777	1.0274 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.12	75	805	0.6707 ug/L		82
98)	1,2,4-Trichlorobenzene	20.27	180	11576	0.9733 ug/L		98
99)	Hexachlorobutadiene	20.42	225	4999	0.9082 ug/L		91
100)	Naphthalene	20.64	128	16291	0.9008 ug/L		97
101)	1,2,3-Trichlorobenzene	20.95	180	10373	1.0252 ug/L		94

(#) = qualifier out of range (m) = manual integration
8M411793.D 8260WTR.M Thu Apr 28 15:09:47 2016 Page 2

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411793.D Vial: 5
Acq On : 28 Apr 2016 8:56 Operator: ADC
Sample : WG566682-04 1.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:09 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

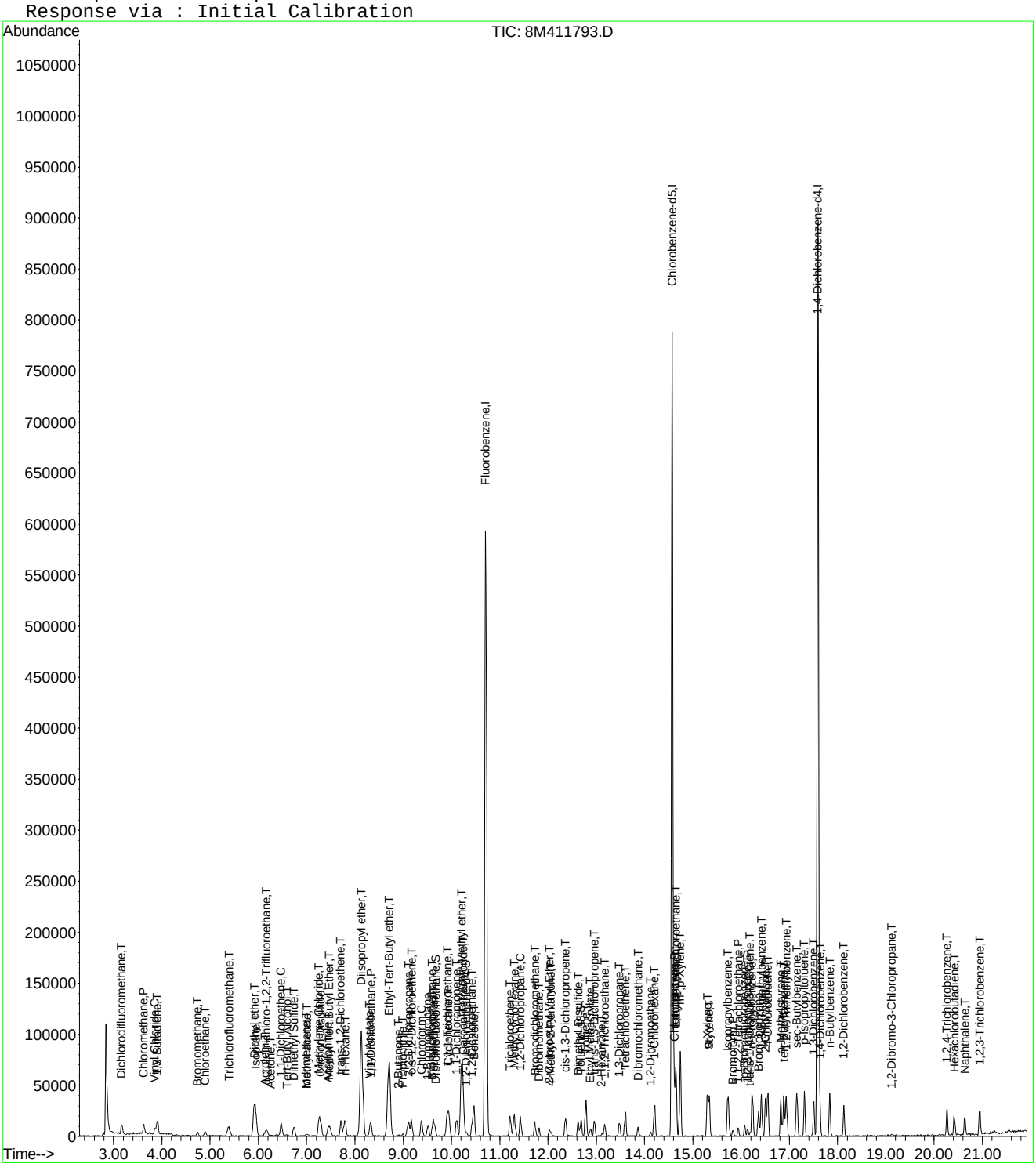

8M411793.D 8260WTR.M Thu Apr 28 15:09:48 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\042816\8M411793.D Vial: 5
Acq On : 28 Apr 2016 8:56 Operator: ADC
Sample : WG566682-04 1.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9685	3.1	100	0.00
3	P	Chloromethane	1.0000	1.1965	-19.7	100	0.01
4	C	Vinyl Chloride	1.0000	0.9406	5.9	100	0.01
5	T	1,3-Butadiene	-1.0000	0.9559	0.0	100	0.02
6	T	Bromomethane	1.0000	1.3809	-38.1#	100	0.01
7	T	Chloroethane	1.0000	0.9567	4.3	100	0.00
8	T	Trichlorofluoromethane	1.0000	0.9807	1.9	100	0.01
9	T	Diethyl ether	5.0000	5.1151	-2.3	100	0.01
10	T	Isoprene	1.0000	0.9420	5.8	100	0.01
11	T	Acrolein	-1.0000	0.8413	0.0	0	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	0.9244	7.6	100	0.01
13	T	Acetone	-1.0000	0.8955	0.0	100	0.01
14	C	1,1-Dichloroethene	1.0000	1.0056	-0.6	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	9.4066	0.0	100	0.00
16	T	Dimethyl Sulfide	1.0000	0.9363	6.4	100	0.00
17	T	Iodomethane	1.0000	1.4994	-49.9#	100	0.00
18	T	Methyl acetate	-1.0000	0.9175	0.0	100	0.00
19	T	Methylene Chloride	1.0000	1.2052	-20.5	100	0.00
20	T	Carbon Disulfide	1.0000	1.0316	-3.2	100	0.00
21	T	Acrylonitrile	2.5000	2.0930	16.3	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.8916	10.8	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	1.0984	-9.8	100	0.00
24	T	n-Hexane	-1.0000	0.9887	0.0	100	0.01
25	T	Diisopropyl ether	5.0000	5.4083	-8.2	100	0.00
26	T	Vinyl Acetate	-1.0000	0.9221	0.0	100	0.01
27	P	1,1-Dichloroethane	1.0000	1.0294	-2.9	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	5.0439	-0.9	100	0.00
29	T	2-Butanone	-1.0000	0.8216	0.0	100	0.02
30	T	Propionitrile	5.0000	3.6751	26.5#	100	0.00
31	T	2,2-Dichloropropane	1.0000	1.0570	-5.7	100	0.01
32	T	cis-1,2-Dichloroethene	1.0000	1.0857	-8.6	100	0.00
33	C	Chloroform	1.0000	1.0469	-4.7	100	0.00
34		1-Bromopropane	1.0000	0.8759	12.4	100	0.00
35	T	Bromochloromethane	1.0000	1.0172	-1.7	100	0.00
36	T	Tetrahydrofuran	5.0000	6.0130	-20.3	100	0.01
37	S	Dibromofluoromethane	0.5000	0.5182	-3.6	100	0.00
38	T	1,1,1-Trichloroethane	1.0000	0.9685	3.2	100	0.01
39	T	Cyclohexane	1.0000	0.9822	1.8	100	0.00
40	T	1,1-Dichloropropene	1.0000	0.8715	12.8	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	4.9651	0.7	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.9480	5.2	100	0.00
43	S	1,2-Dichloroethane-d4	0.5000	0.4715	5.7	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	1.0000	0.9675	3.3	100	0.00
46	T	Benzene	1.0000	1.0395	-4.0	100	0.00
47	T	Trichloroethene	1.0000	1.0031	-0.3	100	0.00
48	T	Methylcyclohexane	-1.0000	0.9074	0.0	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.9665	3.3	100	0.00
50	T	Bromodichloromethane	1.0000	0.9190	8.1	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.72#
52	T	Dibromomethane	1.0000	1.0089	-0.9	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.8005	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.8387	0.0	100	0.00

(#) = Out of Range

8M411793.D 8260WTR.M Thu Apr 28 15:09:55 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\042816\8M411793.D Vial: 5
Acq On : 28 Apr 2016 8:56 Operator: ADC
Sample : WG566682-04 1.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	1.0200	-2.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.7586	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	0.5000	0.5095	-1.9	100	0.00
59	C	Toluene	1.0000	1.0693	-6.9	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.9000	10.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	1.0000	0.9332	6.7	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.8241	17.6	100	0.00
64	T	2-Hexanone	-1.0000	0.7913	0.0	100	0.00
65	T	1,3-Dichloropropane	1.0000	1.0081	-0.8	100	0.00
66	T	Tetrachloroethene	1.0000	1.0347	-3.5	100	0.01
67	T	Dibromochloromethane	1.0000	0.9394	6.1	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.8690	13.1	100	0.01
69	T	1-Chlorohexane	1.0000	0.9197	8.0	100	0.00
70	P	Chlorobenzene	1.0000	1.0255	-2.6	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.9198	8.0	100	0.00
72	C	Ethylbenzene	1.0000	1.0219	-2.2	100	0.00
73	T	m-,p-Xylene	2.0000	2.0795	-4.0	100	0.00
74	T	o-Xylene	1.0000	1.0481	-4.8	100	0.00
75	T	Styrene	1.0000	1.0623	-6.2	100	0.00
76	P	Bromoform	1.0000	0.8239	17.6	100	0.00
77	T	Isopropylbenzene	1.0000	1.0649	-6.5	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	0.9148	8.5	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5411	0.0	100	0.00
81	T	1,2,3-Trichloropropane	1.0000	0.9890	1.1	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	1.0000	0.8956	10.4	100	0.00
83	T	n-Propylbenzene	1.0000	1.0689	-6.9	100	-0.01
84	T	Bromobenzene	1.0000	0.8379	16.2	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	1.0460	-4.6	100	0.00
86	T	2-Chlorotoluene	1.0000	1.0471	-4.7	100	0.00
87	T	4-Chlorotoluene	1.0000	1.0840	-8.4	100	0.00
88	T	a-Methylstyrene	-1.0000	0.9202	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	0.8914	10.9	100	0.01
90	T	1,2,4-Trimethylbenzene	1.0000	0.9752	2.5	100	0.00
91	T	sec-Butylbenzene	1.0000	1.0548	-5.5	100	0.00
92	T	p-Isopropyltoluene	1.0000	1.0569	-5.7	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0066	-0.7	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	1.0068	-0.7	100	0.00
95	T	n-Butylbenzene	1.0000	1.0419	-4.2	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0274	-2.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.6707	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	1.0000	0.9733	2.7	100	0.00
99	T	Hexachlorobutadiene	1.0000	0.9082	9.2	100	0.00
100	T	Naphthalene	1.0000	0.9008	9.9	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	1.0252	-2.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M411793.D 8260WTR.M Thu Apr 28 15:09:55 2016 Page 2

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\2\DATA\042816\8M411793.D Vial: 5
Acq On : 28 Apr 2016 8:56 Operator: ADC
Sample : WG566682-04 1.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 9:18 2016 Quant Results File: temp.res

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 12:10:21 2016
Response via : Single Level Calibration

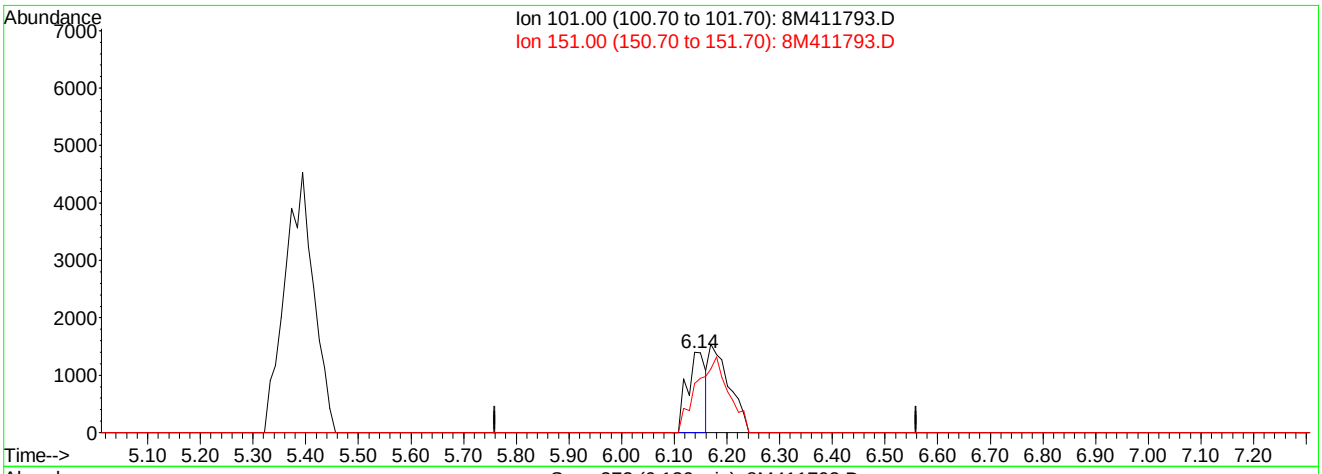

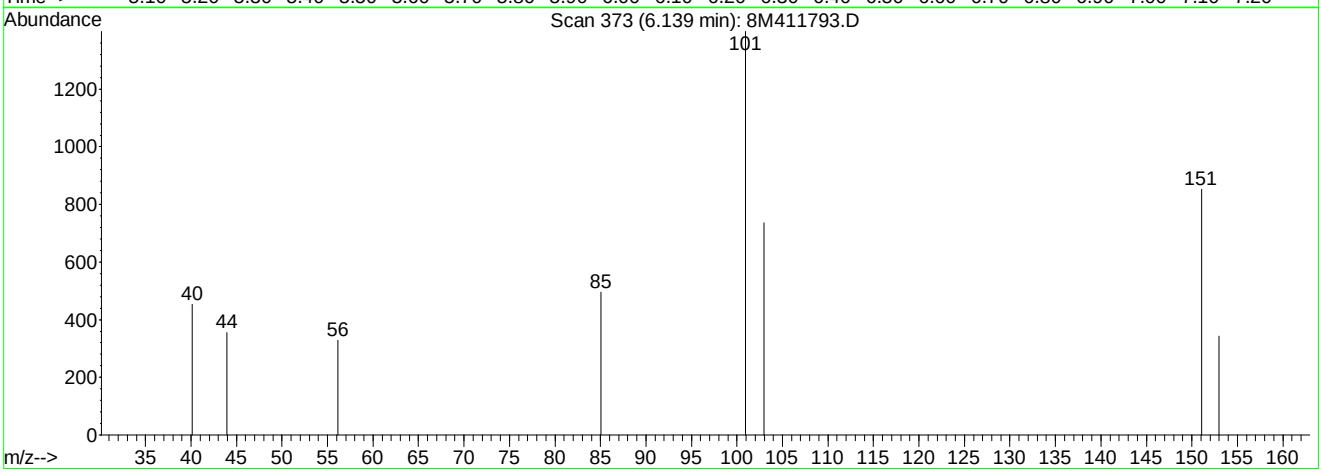

TIC: 8M411793.D

(12) 1,1,2-Trichloro-1,2,2-Trifluoroethane (T)

6.14min 0.51ug/L

response 3382

Ion	Exp%	Act%
101.00	100	100
151.00	77.80	164.81#
0.00	0.00	0.00
0.00	0.00	0.00

8M411793.D 8260WTR.M Thu Apr 28 12:12:58 2016

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\2\DATA\042816\8M411793.D Vial: 5
Acq On : 28 Apr 2016 8:56 Operator: ADC
Sample : WG566682-04 1.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 12:13 2016 Quant Results File: temp.res

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 12:10:21 2016
Response via : Single Level Calibration

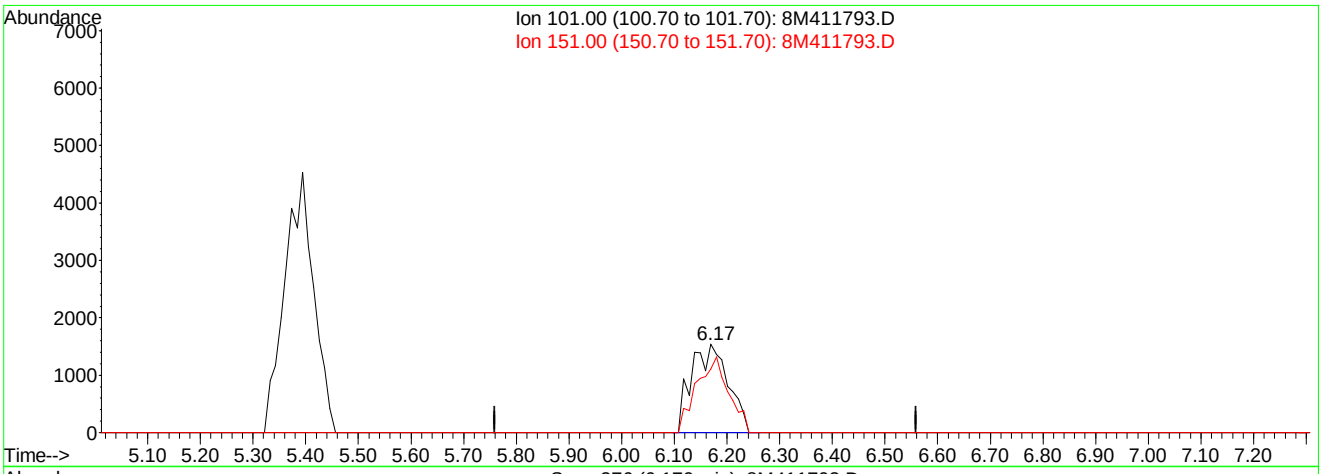

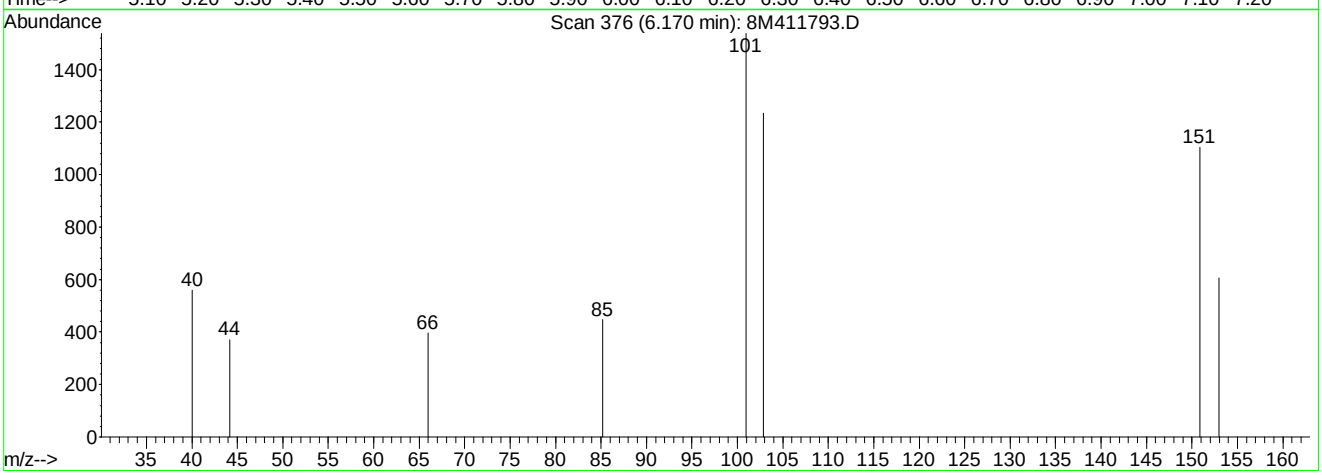

TIC: 8M411793.D

(12) 1,1,2-Trichloro-1,2,2-Trifluoroethane (T)

6.17min 1.13ug/L mint

response 7481

Ion	Exp%	Act%
101.00	100	100
151.00	77.80	74.51
0.00	0.00	0.00
0.00	0.00	0.00

8M411793.D 8260WTR.M Thu Apr 28 2016

Analyst: 04/28/2016 16:03 Supervisor: 04/29/2016 14:59

#2 - Data system splits the peak incorrectly or integrates a false peak as a rider peak

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411794.D Vial: 6
Acq On : 28 Apr 2016 9:26 Operator: ADC
Sample : WG566682-05 2.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07:13 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	671510	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	517924	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	272593	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	8867	1.0517 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	4.20%#	
43) 1,2-Dichloroethane-d4	10.30	65	8633	0.8950 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.56%#	
58) Toluene-d8	12.68	98	26785	1.0002 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.00%#	
80) p-Bromofluorobenzene	16.07	95	11042	0.9896 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	3.96%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	25758	1.8303 ug/L	98
3) Chloromethane	3.63	50	28626	2.1590 ug/L	94
4) Vinyl Chloride	3.86	62	16730	1.8686 ug/L	94
5) 1,3-Butadiene	3.90	54	17017	1.9454 ug/L	79
6) Bromomethane	4.73	94	8087	2.0255 ug/L	90
7) Chloroethane	4.90	64	11840	2.0208 ug/L	89
8) Trichlorofluoromethane	5.39	101	36125	2.0325 ug/L	95
9) Diethyl ether	5.91	59	132911	24.4413 ug/L	85
10) Isoprene	5.95	67	18121	1.9926 ug/L	74
11) Acrolein	6.15	56	4786	9.9112 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	16944	2.0821 ug/L	99
13) Acetone	6.25	43	3853	2.3372 ug/L #	48
14) 1,1-Dichloroethene	6.47	61	31831	2.0154 ug/L	86
15) Tert-Butyl Alcohol	6.58	59	17928	47.2382 ug/L	97
16) Dimethyl Sulfide	6.74	62	12326	2.1119 ug/L	78
17) Iodomethane	7.00	142	3110	1.8724 ug/L	96
18) Methyl acetate	7.01	43	10418	2.1145 ug/L #	73
19) Methylene Chloride	7.27	84	14810	1.9787 ug/L #	47
20) Carbon Disulfide	7.30	76	47285	2.0708 ug/L	98
21) Acrylonitrile	7.44	53	23715	11.1923 ug/L	92
22) Methyl Tert Butyl Ether	7.48	73	31122	1.8824 ug/L	86
23) trans-1,2-Dichloroethene	7.71	61	29932	2.0951 ug/L	82
24) n-Hexane	7.79	57	27350	2.1100 ug/L	89
25) Diisopropyl ether	8.13	45	925347	25.2114 ug/L	94
26) Vinyl Acetate	8.31	43	29118	1.9762 ug/L #	87
27) 1,1-Dichloroethane	8.33	63	36306	2.1246 ug/L	94
28) Ethyl-Tert-Butyl ether	8.70	59	637185	24.7361 ug/L	97
29) 2-Butanone	8.90	43	4765	1.8047 ug/L #	78
30) Propionitrile	9.00	54	16573	24.8223 ug/L	91
31) 2,2-Dichloropropane	9.11	77	29785	1.9784 ug/L	98
32) cis-1,2-Dichloroethene	9.18	96	16671	1.9501 ug/L	81
33) Chloroform	9.39	83	32394	2.0431 ug/L	95
34) 1-Bromopropane	9.51	122	2441	1.8125 ug/L	90
35) Bromochloromethane	9.61	130	9546	2.1343 ug/L	83
36) Tetrahydrofuran	9.64	42	42094	24.1155 ug/L	83
38) 1,1,1-Trichloroethane	9.91	97	32811	2.0526 ug/L	96
39) Cyclohexane	9.94	56	37925	2.1739 ug/L	82
40) 1,1-Dichloropropene	10.11	75	24899	2.1642 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	401979	24.3638 ug/L	87
42) Carbon Tetrachloride	10.25	117	28394	1.8880 ug/L	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411794.D Vial: 6
Acq On : 28 Apr 2016 9:26 Operator: ADC
Sample : WG566682-05 2.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07:13 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	26899	2.0200 ug/L		97
46)	Benzene	10.47	78	62808	2.1432 ug/L		86
47)	Trichloroethene	11.21	130	17279	2.0432 ug/L		99
48)	Methylcyclohexane	11.30	83	24880	2.1041 ug/L		86
49)	1,2-Dichloropropane	11.43	63	18117	2.1238 ug/L		93
50)	Bromodichloromethane	11.73	83	22892	1.9287 ug/L		97
51)	1,4-Dioxane	11.72	88	1236	36.3441 ug/L	#	44
52)	Dibromomethane	11.81	93	8437	2.1009 ug/L		95
53)	2-Chloroethyl Vinyl Ether	12.02	63	6234	1.7454 ug/L	#	73
54)	4-Methyl-2-Pentanone	12.06	58	3092	1.5860 ug/L	#	69
55)	cis-1,3-Dichloropropene	12.36	75	24020	2.0109 ug/L		96
56)	Dimethyl Disulfide	12.62	79	10426	1.6660 ug/L		96
59)	Toluene	12.79	91	67754	2.1846 ug/L		98
60)	Ethyl Methacrylate	12.88	69	10460	1.7974 ug/L	#	61
62)	trans-1,3-Dichloropropene	12.96	75	21630	1.9990 ug/L		97
63)	1,1,2-Trichloroethane	13.18	97	10497	2.1329 ug/L		81
64)	2-Hexanone	13.12	58	2950	1.6700 ug/L	#	89
65)	1,3-Dichloropropane	13.48	76	19775	2.1666 ug/L		81
66)	Tetrachloroethene	13.61	164	13191	1.8781 ug/L		86
67)	Dibromochloromethane	13.87	129	16308	2.1019 ug/L		89
68)	1,2-Dibromoethane	14.12	107	10299	2.0078 ug/L		92
69)	1-Chlorohexane	14.21	91	22440	2.1242 ug/L		77
70)	Chlorobenzene	14.63	112	45869	2.1300 ug/L		91
71)	1,1,1,2-Tetrachloroethane	14.66	131	17780	2.1186 ug/L		94
72)	Ethylbenzene	14.66	106	25144	2.0578 ug/L		95
73)	m-,p-Xylene	14.74	106	61126	4.3421 ug/L		96
74)	o-Xylene	15.31	106	30203	2.1297 ug/L		99
75)	Styrene	15.34	104	47634	2.1063 ug/L		96
76)	Bromoform	15.83	173	8425	1.8926 ug/L		92
77)	Isopropylbenzene	15.72	105	79207	2.2029 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	11700	2.1518 ug/L		99
81)	1,2,3-Trichloropropane	16.13	110	2957	1.6923 ug/L		68
82)	trans-1,4-Dichloro-2-Buten	16.19	53	4951	1.8695 ug/L		93
83)	n-Propylbenzene	16.24	91	90812	2.1617 ug/L		95
84)	Bromobenzene	16.36	156	18963	2.1652 ug/L		98
85)	1,3,5-Trimethylbenzene	16.42	105	66505	2.1393 ug/L		100
86)	2-Chlorotoluene	16.51	91	60054	2.2323 ug/L		100
87)	4-Chlorotoluene	16.56	91	60225	2.1732 ug/L		98
88)	a-Methylstyrene	16.83	118	28311	1.8483 ug/L		99
89)	tert-Butylbenzene	16.89	134	12424	2.0172 ug/L		71
90)	1,2,4-Trimethylbenzene	16.94	105	69438	2.1823 ug/L		99
91)	sec-Butylbenzene	17.16	105	85133	2.2776 ug/L		99
92)	p-Isopropyltoluene	17.31	119	67212	2.1061 ug/L		98
93)	1,3-Dichlorobenzene	17.51	146	36729	2.1128 ug/L		95
94)	1,4-Dichlorobenzene	17.63	146	36472	2.1021 ug/L		80
95)	n-Butylbenzene	17.84	91	67471	2.2227 ug/L		96
96)	1,2-Dichlorobenzene	18.13	146	32441	2.1295 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.12	75	2436	2.0458 ug/L		94
98)	1,2,4-Trichlorobenzene	20.27	180	24999	2.1187 ug/L		95
99)	Hexachlorobutadiene	20.42	225	10941	2.0037 ug/L		94
100)	Naphthalene	20.64	128	37860	2.1103 ug/L		100
101)	1,2,3-Trichlorobenzene	20.95	180	20549	2.0471 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M411794.D 8260WTR.M Thu Apr 28 15:07:13 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411794.D Vial: 6
Acq On : 28 Apr 2016 9:26 Operator: ADC
Sample : WG566682-05 2.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

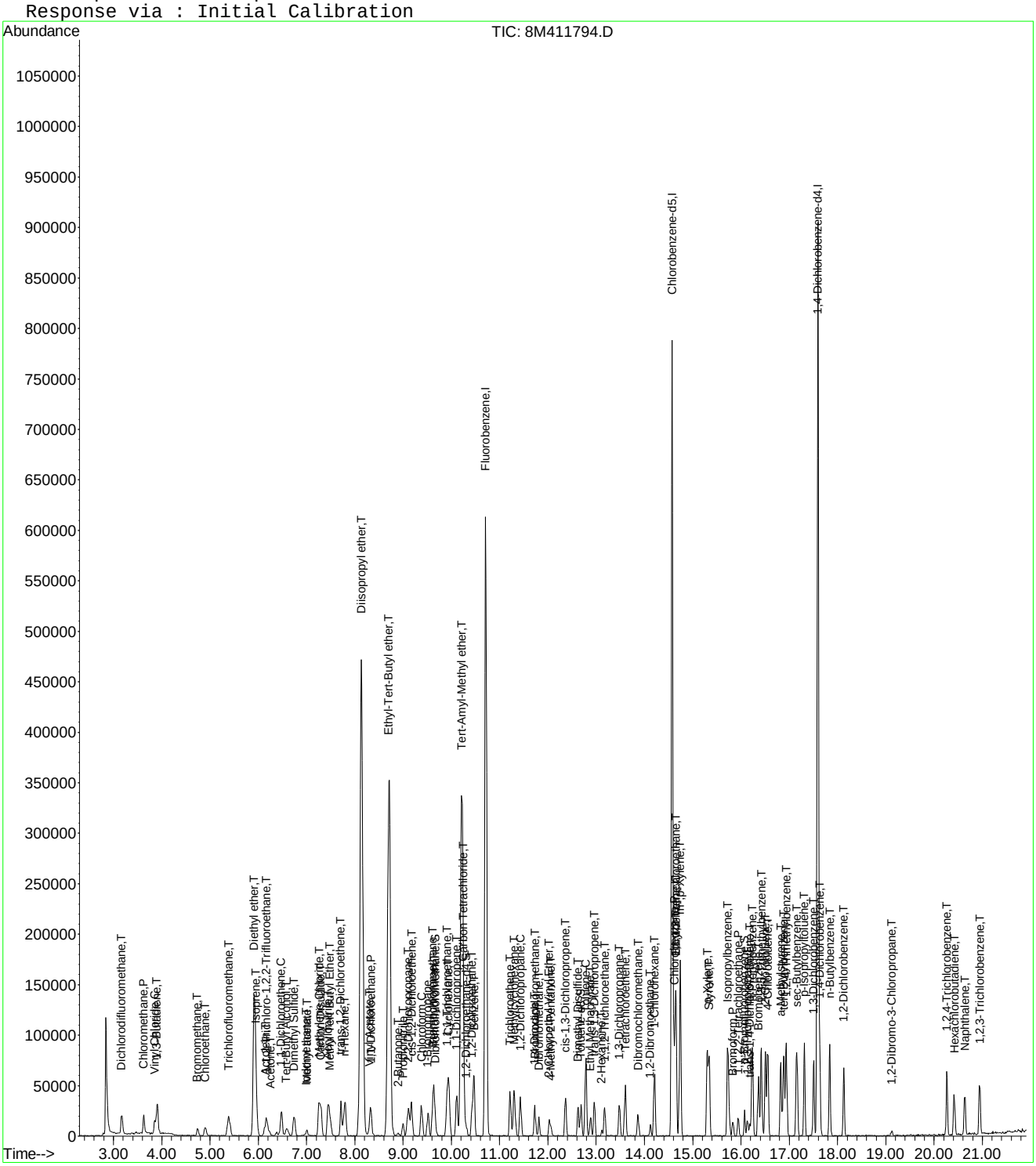

8M411794.D 8260WTR.M Thu Apr 28 15:07:14 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\042816\8M411794.D Vial: 6
Acq On : 28 Apr 2016 9:26 Operator: ADC
Sample : WG566682-05 2.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.8302	8.5	100	0.00
3	P	Chloromethane	2.0000	2.1590	-7.9	100	0.01
4	C	Vinyl Chloride	2.0000	1.8686	6.6	100	0.01
5	T	1,3-Butadiene	2.0000	1.9454	2.7	100	0.01
6	T	Bromomethane	2.0000	2.0255	-1.3	100	0.00
7	T	Chloroethane	2.0000	2.0208	-1.0	100	0.00
8	T	Trichlorofluoromethane	2.0000	2.0325	-1.6	100	0.00
9	T	Diethyl ether	25.0000	24.4413	2.2	100	0.00
10	T	Isoprene	2.0000	1.9926	0.4	100	0.01
11	T	Acrolein	12.5000	9.9112	20.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	2.0821	-4.1	100	0.01
13	T	Acetone	-1.0000	2.3372	0.0	100	0.00
14	C	1,1-Dichloroethene	2.0000	2.0154	-0.8	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	47.2382	5.5	100	0.00
16	T	Dimethyl Sulfide	2.0000	2.1119	-5.6	100	0.00
17	T	Iodomethane	2.0000	1.8724	6.4	100	0.00
18	T	Methyl acetate	-1.0000	2.1145	0.0	100	0.00
19	T	Methylene Chloride	2.0000	1.9787	1.1	100	0.01
20	T	Carbon Disulfide	2.0000	2.0708	-3.5	100	0.00
21	T	Acrylonitrile	12.5000	11.1923	10.5	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.8824	5.9	100	0.01
23	T	trans-1,2-Dichloroethene	2.0000	2.0951	-4.8	100	0.00
24	T	n-Hexane	-1.0000	2.1100	0.0	100	0.00
25	T	Diisopropyl ether	25.0000	25.2114	-0.8	100	0.00
26	T	Vinyl Acetate	2.0000	1.9762	1.2	100	0.01
27	P	1,1-Dichloroethane	2.0000	2.1246	-6.2	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	24.7361	1.1	100	0.00
29	T	2-Butanone	-1.0000	1.8047	0.0	100	0.01
30	T	Propionitrile	25.0000	24.8223	0.7	100	0.01
31	T	2,2-Dichloropropane	2.0000	1.9784	1.1	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	1.9501	2.5	100	0.00
33	C	Chloroform	2.0000	2.0431	-2.2	100	0.00
34		1-Bromopropane	2.0000	1.8125	9.4	100	0.00
35	T	Bromochloromethane	2.0000	2.1343	-6.7	100	0.00
36	T	Tetrahydrofuran	25.0000	24.1155	3.5	100	0.01
37	S	Dibromofluoromethane	1.0000	1.0517	-5.2	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	2.0526	-2.6	100	0.00
39	T	Cyclohexane	2.0000	2.1739	-8.7	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.1642	-8.2	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	24.3638	2.5	100	0.00
42	T	Carbon Tetrachloride	2.0000	1.8880	5.6	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	0.8950	10.5	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	2.0000	2.0200	-1.0	100	0.00
46	T	Benzene	2.0000	2.1432	-7.2	100	0.00
47	T	Trichloroethene	2.0000	2.0432	-2.2	100	0.00
48	T	Methylcyclohexane	-1.0000	2.1041	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.1238	-6.2	100	0.00
50	T	Bromodichloromethane	2.0000	1.9287	3.6	100	0.00
51	T	1,4-Dioxane	-1.0000	36.3441	0.0	100	0.00
52	T	Dibromomethane	2.0000	2.1009	-5.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	1.7454	12.7	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.5860	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\042816\8M411794.D Vial: 6
Acq On : 28 Apr 2016 9:26 Operator: ADC
Sample : WG566682-05 2.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	2.0109	-0.5	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.6660	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	1.0002	-0.0	100	0.00
59	C	Toluene	2.0000	2.1846	-9.2	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.7974	10.1	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	2.0000	1.9990	0.1	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	2.1329	-6.6	100	0.00
64	T	2-Hexanone	-1.0000	1.6700	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.1666	-8.3	100	0.00
66	T	Tetrachloroethene	2.0000	1.8781	6.1	100	0.01
67	T	Dibromochloromethane	2.0000	2.1019	-5.1	100	0.00
68	T	1,2-Dibromoethane	2.0000	2.0078	-0.4	100	0.00
69	T	1-Chlorohexane	2.0000	2.1242	-6.2	100	0.00
70	P	Chlorobenzene	2.0000	2.1300	-6.5	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	2.1186	-5.9	100	0.00
72	C	Ethylbenzene	2.0000	2.0578	-2.9	100	0.00
73	T	m-,p-Xylene	4.0000	4.3421	-8.6	100	0.00
74	T	o-Xylene	2.0000	2.1297	-6.5	100	0.00
75	T	Styrene	2.0000	2.1063	-5.3	100	0.00
76	P	Bromoform	2.0000	1.8926	5.4	100	0.00
77	T	Isopropylbenzene	2.0000	2.2029	-10.1	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	2.1518	-7.6	100	0.00
80	S	p-Bromofluorobenzene	1.0000	0.9896	1.0	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	1.6923	15.4	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	1.8695	6.5	100	0.00
83	T	n-Propylbenzene	2.0000	2.1617	-8.1	100	0.00
84	T	Bromobenzene	2.0000	2.1652	-8.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.1393	-7.0	100	0.00
86	T	2-Chlorotoluene	2.0000	2.2323	-11.6	100	0.00
87	T	4-Chlorotoluene	2.0000	2.1732	-8.7	100	0.00
88	T	a-Methylstyrene	-1.0000	1.8483	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	2.0172	-0.9	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.1823	-9.1	100	0.00
91	T	sec-Butylbenzene	2.0000	2.2776	-13.9	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.1061	-5.3	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.1128	-5.6	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.1021	-5.1	100	0.00
95	T	n-Butylbenzene	2.0000	2.2227	-11.1	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.1295	-6.5	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	2.0458	-2.3	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	2.1187	-5.9	100	0.00
99	T	Hexachlorobutadiene	2.0000	2.0037	-0.2	100	0.00
100	T	Naphthalene	2.0000	2.1103	-5.5	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	2.0471	-2.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M411794.D 8260WTR.M Thu Apr 28 15:08:02 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411795.D Vial: 7
Acq On : 28 Apr 2016 9:55 Operator: ADC
Sample : WG566682-06 5.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07:14 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	680098	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	511929	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	273776	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	21254	2.4890 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 9.96%#		
43) 1,2-Dichloroethane-d4	10.30	65	25602	2.6206 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 10.48%#		
58) Toluene-d8	12.69	98	69824	2.6378 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 10.56%#		
80) p-Bromofluorobenzene	16.07	95	28937	2.5821 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 10.32%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	64668	4.5370 ug/L	99
3) Chloromethane	3.63	50	62654	4.6657 ug/L	99
4) Vinyl Chloride	3.85	62	42288	4.6635 ug/L	95
5) 1,3-Butadiene	3.91	54	38585	4.3553 ug/L	78
6) Bromomethane	4.74	94	23131	4.3053 ug/L	99
7) Chloroethane	4.90	64	32752	5.5193 ug/L	92
8) Trichlorofluoromethane	5.39	101	89754	4.9861 ug/L	98
9) Diethyl ether	5.92	59	277811	50.4422 ug/L	84
10) Isoprene	5.95	67	46931	5.0953 ug/L	67
11) Acrolein	6.15	56	11696	23.9151 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.18	101	42434	5.1486 ug/L	98
13) Acetone	6.26	43	9285	5.5611 ug/L	87
14) 1,1-Dichloroethene	6.47	61	82655	5.1672 ug/L	88
15) Tert-Butyl Alcohol	6.58	59	39941	103.9109 ug/L	100
16) Dimethyl Sulfide	6.74	62	31312	5.2971 ug/L	79
17) Iodomethane	7.00	142	10593	3.7346 ug/L	93
18) Methyl acetate	7.01	43	27892	5.5895 ug/L #	84
19) Methylene Chloride	7.26	84	39343	5.1901 ug/L	57
20) Carbon Disulfide	7.30	76	120053	5.1912 ug/L	100
21) Acrylonitrile	7.44	53	52382	24.4096 ug/L	100
22) Methyl Tert Butyl Ether	7.48	73	84721	5.0595 ug/L	91
23) trans-1,2-Dichloroethene	7.71	61	73344	5.0690 ug/L	88
24) n-Hexane	7.79	57	68811	5.2417 ug/L	91
25) Diisopropyl ether	8.13	45	1940469	52.2011 ug/L	94
26) Vinyl Acetate	8.30	43	75660	5.0701 ug/L	95
27) 1,1-Dichloroethane	8.34	63	90547	5.2318 ug/L	95
28) Ethyl-Tert-Butyl ether	8.71	59	1330623	51.0036 ug/L	98
29) 2-Butanone	8.89	43	13634	5.0986 ug/L #	80
30) Propionitrile	8.99	54	34767	51.4149 ug/L	99
31) 2,2-Dichloropropane	9.10	77	77861	5.1064 ug/L	96
32) cis-1,2-Dichloroethene	9.18	96	47235	5.4556 ug/L	92
33) Chloroform	9.38	83	82144	5.1154 ug/L	98
34) 1-Bromopropane	9.52	122	7080	5.1907 ug/L	92
35) Bromochloromethane	9.62	130	22754	5.0232 ug/L	68
36) Tetrahydrofuran	9.64	42	86893	49.1521 ug/L	83
38) 1,1,1-Trichloroethane	9.91	97	84297	5.2070 ug/L	96
39) Cyclohexane	9.94	56	89790	5.0818 ug/L	88
40) 1,1-Dichloropropene	10.11	75	60327	5.1773 ug/L	96
41) Tert-Amyl-Methyl ether	10.22	73	836962	50.0875 ug/L	87
42) Carbon Tetrachloride	10.25	117	78184	5.1331 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M411795.D 8260WTR.M Thu Apr 28 15:07:14 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411795.D Vial: 7
Acq On : 28 Apr 2016 9:55 Operator: ADC
Sample : WG566682-06 5.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07:14 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.43	62	66582	4.9368 ug/L	100
46)	Benzene	10.47	78	153055	5.1568 ug/L	84
47)	Trichloroethene	11.21	130	43718	5.1042 ug/L	96
48)	Methylcyclohexane	11.31	83	59809	4.9943 ug/L	80
49)	1,2-Dichloropropane	11.43	63	44737	5.1780 ug/L	93
50)	Bromodichloromethane	11.73	83	62324	5.1847 ug/L	96
51)	1,4-Dioxane	11.71	88	2768	80.3642 ug/L	73
52)	Dibromomethane	11.81	93	21031	5.1709 ug/L	96
53)	2-Chloroethyl Vinyl Ether	12.03	63	17908	4.9506 ug/L	97
54)	4-Methyl-2-Pentanone	12.06	58	9300	4.7101 ug/L	90
55)	cis-1,3-Dichloropropene	12.36	75	62833	5.1937 ug/L	95
56)	Dimethyl Disulfide	12.63	79	28262	4.4591 ug/L	95
59)	Toluene	12.78	91	166902	5.4445 ug/L	97
60)	Ethyl Methacrylate	12.88	69	27966	4.8619 ug/L	73
62)	trans-1,3-Dichloropropene	12.96	75	54476	5.0934 ug/L	98
63)	1,1,2-Trichloroethane	13.18	97	25929	5.3303 ug/L	97
64)	2-Hexanone	13.11	58	7677	4.3968 ug/L #	78
65)	1,3-Dichloropropane	13.48	76	45863	5.0837 ug/L	69
66)	Tetrachloroethene	13.60	164	37044	5.3359 ug/L	94
67)	Dibromochloromethane	13.87	129	39814	5.1916 ug/L	97
68)	1,2-Dibromoethane	14.12	107	25945	5.1173 ug/L	100
69)	1-Chlorohexane	14.21	91	55571	5.3220 ug/L	74
70)	Chlorobenzene	14.62	112	118558	5.5700 ug/L	96
71)	1,1,1,2-Tetrachloroethane	14.65	131	43592	5.2552 ug/L	99
72)	Ethylbenzene	14.65	106	63130	5.2271 ug/L	99
73)	m-,p-Xylene	14.74	106	151689	10.9015 ug/L	93
74)	o-Xylene	15.31	106	72785	5.1923 ug/L	97
75)	Styrene	15.34	104	118521	5.3023 ug/L	94
76)	Bromoform	15.83	173	20984	4.7690 ug/L	99
77)	Isopropylbenzene	15.73	105	196751	5.5361 ug/L	100
79)	1,1,2,2-Tetrachloroethane	15.95	83	26893	4.9247 ug/L	99
81)	1,2,3-Trichloropropane	16.13	110	9288	5.2926 ug/L	100
82)	trans-1,4-Dichloro-2-Buten	16.17	53	12793	4.8097 ug/L	93
83)	n-Propylbenzene	16.24	91	229297	5.4347 ug/L	97
84)	Bromobenzene	16.37	156	48580	5.5229 ug/L	97
85)	1,3,5-Trimethylbenzene	16.42	105	166104	5.3202 ug/L	99
86)	2-Chlorotoluene	16.50	91	143955	5.3280 ug/L	99
87)	4-Chlorotoluene	16.56	91	149542	5.3728 ug/L	99
88)	a-Methylstyrene	16.82	118	78840	5.1250 ug/L	99
89)	tert-Butylbenzene	16.89	134	32532	5.2591 ug/L	79
90)	1,2,4-Trimethylbenzene	16.94	105	172807	5.4075 ug/L	97
91)	sec-Butylbenzene	17.16	105	205992	5.4871 ug/L	98
92)	p-Isopropyltoluene	17.31	119	175707	5.4820 ug/L	96
93)	1,3-Dichlorobenzene	17.51	146	90302	5.1721 ug/L	95
94)	1,4-Dichlorobenzene	17.64	146	93169	5.3466 ug/L	89
95)	n-Butylbenzene	17.84	91	169071	5.5456 ug/L	98
96)	1,2-Dichlorobenzene	18.13	146	80918	5.2886 ug/L	91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	5260	4.3983 ug/L	96
98)	1,2,4-Trichlorobenzene	20.27	180	60205	5.0804 ug/L	98
99)	Hexachlorobutadiene	20.42	225	28006	5.1068 ug/L	100
100)	Naphthalene	20.64	128	93783	5.2048 ug/L	98
101)	1,2,3-Trichlorobenzene	20.95	180	51772	5.1353 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M411795.D 8260WTR.M Thu Apr 28 15:07:14 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411795.D Vial: 7
Acq On : 28 Apr 2016 9:55 Operator: ADC
Sample : WG566682-06 5.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

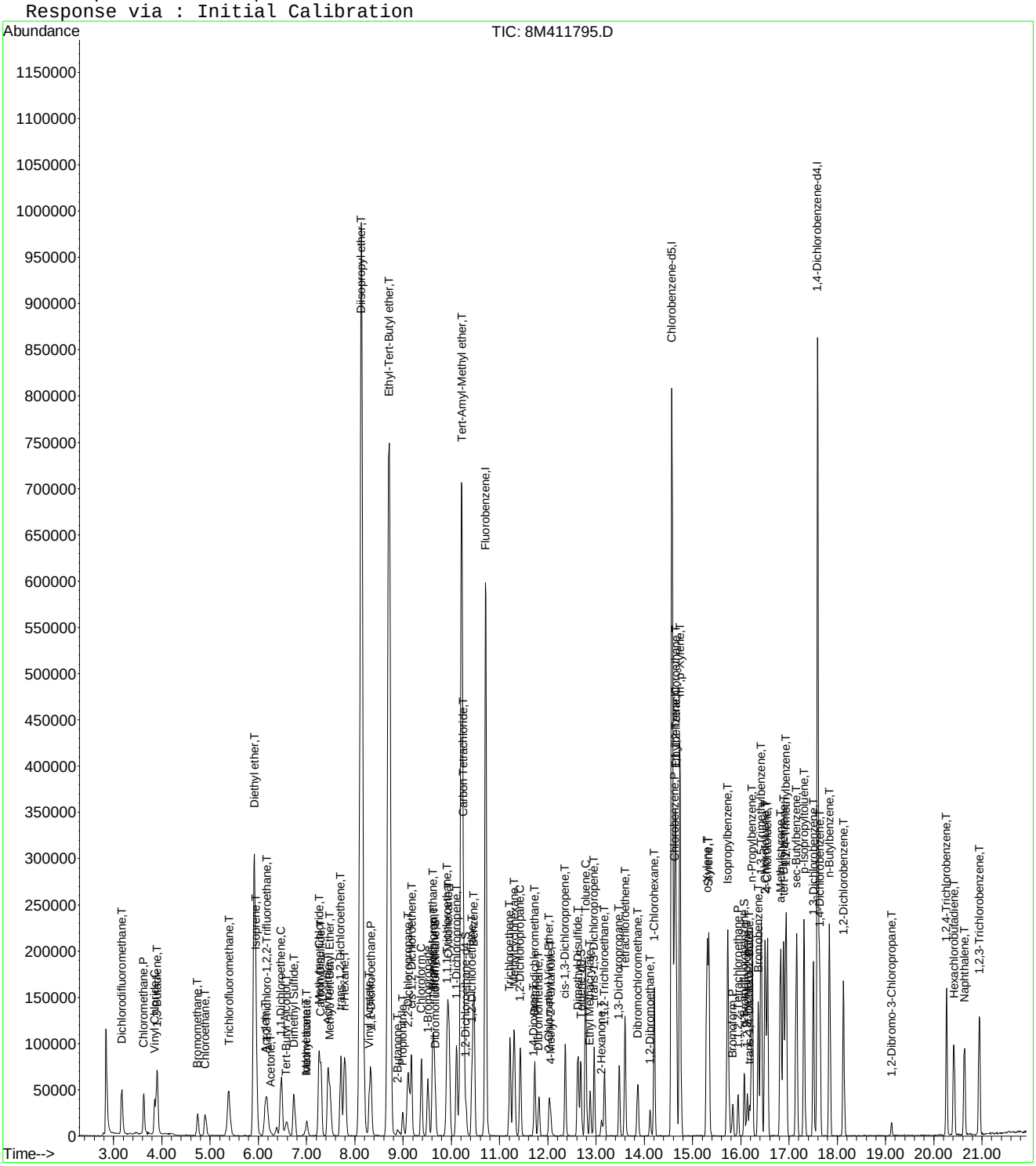

8M411795.D 8260WTR.M Thu Apr 28 15:07:15 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\042816\8M411795.D Vial: 7
Acq On : 28 Apr 2016 9:55 Operator: ADC
Sample : WG566682-06 5.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.5370	9.3	100	0.00
3	P	Chloromethane	5.0000	4.6657	6.7	100	0.00
4	C	Vinyl Chloride	5.0000	4.6635	6.7	100	0.00
5	T	1,3-Butadiene	5.0000	4.3553	12.9	100	0.02
6	T	Bromomethane	5.0000	4.3053	13.9	100	0.01
7	T	Chloroethane	5.0000	5.5193	-10.4	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.9861	0.3	100	0.00
9	T	Diethyl ether	50.0000	50.4422	-0.9	100	0.00
10	T	Isoprene	5.0000	5.0953	-1.9	100	0.00
11	T	Acrolein	25.0000	23.9151	4.3	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	5.1486	-3.0	100	0.02
13	T	Acetone	5.0000	5.5611	-11.2	100	0.00
14	C	1,1-Dichloroethene	5.0000	5.1672	-3.3	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	103.9109	-3.9	100	-0.01
16	T	Dimethyl Sulfide	5.0000	5.2971	-5.9	100	0.00
17	T	Iodomethane	5.0000	3.7346	25.3#	100	0.00
18	T	Methyl acetate	5.0000	5.5896	-11.8	100	0.00
19	T	Methylene Chloride	5.0000	5.1901	-3.8	100	0.00
20	T	Carbon Disulfide	5.0000	5.1912	-3.8	100	0.00
21	T	Acrylonitrile	25.0000	24.4096	2.4	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	5.0595	-1.2	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	5.0690	-1.4	100	0.00
24	T	n-Hexane	5.0000	5.2417	-4.8	100	0.00
25	T	Diisopropyl ether	50.0000	52.2011	-4.4	100	0.00
26	T	Vinyl Acetate	5.0000	5.0701	-1.4	100	0.00
27	P	1,1-Dichloroethane	5.0000	5.2318	-4.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	51.0037	-2.0	100	0.00
29	T	2-Butanone	5.0000	5.0986	-2.0	100	0.00
30	T	Propionitrile	50.0000	51.4149	-2.8	100	0.00
31	T	2,2-Dichloropropane	5.0000	5.1064	-2.1	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	5.4557	-9.1	100	0.00
33	C	Chloroform	5.0000	5.1154	-2.3	100	0.00
34		1-Bromopropane	5.0000	5.1907	-3.8	100	0.00
35	T	Bromochloromethane	5.0000	5.0232	-0.5	100	0.00
36	T	Tetrahydrofuran	50.0000	49.1521	1.7	100	0.00
37	S	Dibromofluoromethane	2.5000	2.4890	0.4	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	5.2070	-4.1	100	0.00
39	T	Cyclohexane	5.0000	5.0818	-1.6	100	0.00
40	T	1,1-Dichloropropene	5.0000	5.1773	-3.5	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	50.0875	-0.2	100	0.00
42	T	Carbon Tetrachloride	5.0000	5.1331	-2.7	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.6206	-4.8	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	5.0000	4.9368	1.3	100	0.00
46	T	Benzene	5.0000	5.1568	-3.1	100	0.00
47	T	Trichloroethene	5.0000	5.1042	-2.1	100	0.00
48	T	Methylcyclohexane	5.0000	4.9943	0.1	100	0.00
49	C	1,2-Dichloropropane	5.0000	5.1780	-3.6	100	0.00
50	T	Bromodichloromethane	5.0000	5.1847	-3.7	100	0.00
51	T	1,4-Dioxane	100.0000	80.3642	19.6	100	-0.01
52	T	Dibromomethane	5.0000	5.1709	-3.4	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.9506	1.0	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.7101	5.8	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\042816\8M411795.D Vial: 7
Acq On : 28 Apr 2016 9:55 Operator: ADC
Sample : WG566682-06 5.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	5.1937	-3.9	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.4591	10.8	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.6378	-5.5	100	0.00
59	C	Toluene	5.0000	5.4445	-8.9	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.8619	2.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	5.0000	5.0934	-1.9	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	5.3303	-6.6	100	0.00
64	T	2-Hexanone	5.0000	4.3968	12.1	100	0.00
65	T	1,3-Dichloropropane	5.0000	5.0837	-1.7	100	0.00
66	T	Tetrachloroethene	5.0000	5.3359	-6.7	100	0.00
67	T	Dibromochloromethane	5.0000	5.1917	-3.8	100	0.00
68	T	1,2-Dibromoethane	5.0000	5.1173	-2.3	100	0.00
69	T	1-Chlorohexane	5.0000	5.3220	-6.4	100	0.00
70	P	Chlorobenzene	5.0000	5.5700	-11.4	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	5.2552	-5.1	100	0.00
72	C	Ethylbenzene	5.0000	5.2271	-4.5	100	0.00
73	T	m-,p-Xylene	10.0000	10.9015	-9.0	100	-0.01
74	T	o-Xylene	5.0000	5.1923	-3.8	100	0.00
75	T	Styrene	5.0000	5.3023	-6.0	100	0.00
76	P	Bromoform	5.0000	4.7690	4.6	100	0.00
77	T	Isopropylbenzene	5.0000	5.5361	-10.7	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	4.9247	1.5	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.5821	-3.3	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.2926	-5.9	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.8097	3.8	100	-0.01
83	T	n-Propylbenzene	5.0000	5.4347	-8.7	100	0.00
84	T	Bromobenzene	5.0000	5.5229	-10.5	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	5.3201	-6.4	100	0.00
86	T	2-Chlorotoluene	5.0000	5.3280	-6.6	100	0.00
87	T	4-Chlorotoluene	5.0000	5.3728	-7.5	100	0.00
88	T	a-Methylstyrene	5.0000	5.1250	-2.5	100	0.00
89	T	tert-Butylbenzene	5.0000	5.2591	-5.2	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.4075	-8.2	100	0.00
91	T	sec-Butylbenzene	5.0000	5.4871	-9.7	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.4820	-9.6	100	-0.01
93	T	1,3-Dichlorobenzene	5.0000	5.1721	-3.4	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	5.3466	-6.9	100	0.00
95	T	n-Butylbenzene	5.0000	5.5456	-10.9	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	5.2886	-5.8	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	4.3983	12.0	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	5.0804	-1.6	100	0.00
99	T	Hexachlorobutadiene	5.0000	5.1068	-2.1	100	0.00
100	T	Naphthalene	5.0000	5.2048	-4.1	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	5.1353	-2.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M411795.D 8260WTR.M Thu Apr 28 15:08:12 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411796.D Vial: 8
Acq On : 28 Apr 2016 10:24 Operator: ADC
Sample : WG566682-07 20.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07:15 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	679501	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	520396	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	277805	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	80112	9.3898 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 37.56%#		
43) 1,2-Dichloroethane-d4	10.30	65	96806	9.9177 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 39.68%#		
58) Toluene-d8	12.68	98	266719	9.9120 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 39.64%#		
80) p-Bromofluorobenzene	16.07	95	109352	9.6163 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 38.48%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	299446	21.0271 ug/L	99
3) Chloromethane	3.63	50	250555	18.6748 ug/L	96
4) Vinyl Chloride	3.85	62	170007	18.7646 ug/L	97
5) 1,3-Butadiene	3.90	54	171006	19.3195 ug/L	91
6) Bromomethane	4.74	94	102505	16.4311 ug/L	100
7) Chloroethane	4.90	64	116890	19.7153 ug/L	91
8) Trichlorofluoromethane	5.38	101	349821	19.4506 ug/L	100
9) Diethyl ether	5.91	59	445764	81.0086 ug/L	85
10) Isoprene	5.95	67	187232	20.3457 ug/L	72
11) Acrolein	6.15	56	18798	38.4704 ug/L	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	159464	19.3650 ug/L	98
13) Acetone	6.25	43	35640	21.3649 ug/L	93
14) 1,1-Dichloroethene	6.48	61	310132	19.4052 ug/L	88
15) Tert-Butyl Alcohol	6.59	59	61370	159.8010 ug/L	99
16) Dimethyl Sulfide	6.74	62	122523	20.7458 ug/L	73
17) Iodomethane	7.00	142	58066	15.5555 ug/L	85
18) Methyl acetate	7.01	43	101836	20.4258 ug/L	89
19) Methylene Chloride	7.25	84	145372	19.1940 ug/L	57
20) Carbon Disulfide	7.30	76	469224	20.3075 ug/L	99
21) Acrylonitrile	7.44	53	85261	39.7658 ug/L	98
22) Methyl Tert Butyl Ether	7.47	73	332662	19.8840 ug/L	94
23) trans-1,2-Dichloroethene	7.71	61	277252	19.1783 ug/L	87
24) n-Hexane	7.79	57	267253	20.3760 ug/L	88
25) Diisopropyl ether	8.13	45	3042632	81.9227 ug/L	94
26) Vinyl Acetate	8.30	43	300193	20.1340 ug/L	95
27) 1,1-Dichloroethane	8.33	63	335629	19.4095 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	2121056	81.3729 ug/L	98
29) 2-Butanone	8.89	43	51676	19.3420 ug/L	86
30) Propionitrile	8.99	54	56287	83.3127 ug/L	97
31) 2,2-Dichloropropane	9.10	77	294029	19.3006 ug/L	99
32) cis-1,2-Dichloroethene	9.18	96	167950	19.4153 ug/L	79
33) Chloroform	9.38	83	309449	19.2873 ug/L	100
34) 1-Bromopropane	9.52	122	27778	20.3835 ug/L	94
35) Bromochloromethane	9.61	130	92542	20.4474 ug/L	78
36) Tetrahydrofuran	9.63	42	142166	80.4886 ug/L	82
38) 1,1,1-Trichloroethane	9.91	97	309619	19.1418 ug/L	100
39) Cyclohexane	9.94	56	357392	20.2448 ug/L	86
40) 1,1-Dichloropropene	10.11	75	226779	19.4793 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1355880	81.2131 ug/L	88
42) Carbon Tetrachloride	10.25	117	295652	19.4278 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M411796.D 8260WTR.M Thu Apr 28 15:07:16 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411796.D Vial: 8
Acq On : 28 Apr 2016 10:24 Operator: ADC
Sample : WG566682-07 20.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07:15 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	261723	19.4230 ug/L		96
46)	Benzene	10.47	78	590944	19.9277 ug/L		85
47)	Trichloroethene	11.21	130	166422	19.4472 ug/L		98
48)	Methylcyclohexane	11.30	83	237665	19.8633 ug/L		79
49)	1,2-Dichloropropane	11.43	63	166884	19.3328 ug/L		89
50)	Bromodichloromethane	11.73	83	236842	19.7201 ug/L		99
51)	1,4-Dioxane	11.72	88	5036	146.3403 ug/L		86
52)	Dibromomethane	11.81	93	82718	20.3557 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.02	63	74534	20.6229 ug/L		100
54)	4-Methyl-2-Pentanone	12.06	58	36714	18.6106 ug/L		97
55)	cis-1,3-Dichloropropene	12.36	75	244515	20.2292 ug/L		99
56)	Dimethyl Disulfide	12.62	79	123792	19.5486 ug/L		99
59)	Toluene	12.78	91	624843	20.0513 ug/L		98
60)	Ethyl Methacrylate	12.88	69	122270	20.9107 ug/L		68
62)	trans-1,3-Dichloropropene	12.96	75	218225	20.0717 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	100643	20.3527 ug/L		95
64)	2-Hexanone	13.11	58	35383	19.9350 ug/L	#	85
65)	1,3-Dichloropropane	13.48	76	180170	19.6462 ug/L		74
66)	Tetrachloroethene	13.60	164	139093	19.7092 ug/L		94
67)	Dibromochloromethane	13.87	129	153622	19.7060 ug/L		99
68)	1,2-Dibromoethane	14.12	107	105284	20.4279 ug/L		100
69)	1-Chlorohexane	14.21	91	215375	20.2909 ug/L		69
70)	Chlorobenzene	14.62	112	433442	20.0323 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.65	131	165028	19.5710 ug/L		99
72)	Ethylbenzene	14.65	106	236599	19.2713 ug/L		99
73)	m-,p-Xylene	14.74	106	576789	40.7779 ug/L		98
74)	o-Xylene	15.31	106	273665	19.2050 ug/L		96
75)	Styrene	15.34	104	453240	19.9467 ug/L		92
76)	Bromoform	15.83	173	89140	19.9290 ug/L		99
77)	Isopropylbenzene	15.73	105	734098	20.3196 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	105230	18.9904 ug/L		98
81)	1,2,3-Trichloropropane	16.13	110	35056	19.6865 ug/L		93
82)	trans-1,4-Dichloro-2-Buten	16.18	53	54204	20.0831 ug/L		84
83)	n-Propylbenzene	16.24	91	883090	20.6270 ug/L		99
84)	Bromobenzene	16.36	156	173229	19.4081 ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	646463	20.4053 ug/L		100
86)	2-Chlorotoluene	16.50	91	547682	19.9765 ug/L		99
87)	4-Chlorotoluene	16.56	91	566818	20.0696 ug/L		98
88)	a-Methylstyrene	16.82	118	317062	20.3117 ug/L		97
89)	tert-Butylbenzene	16.89	134	127248	20.2725 ug/L		87
90)	1,2,4-Trimethylbenzene	16.94	105	649463	20.0284 ug/L		100
91)	sec-Butylbenzene	17.16	105	778835	20.4455 ug/L		98
92)	p-Isopropyltoluene	17.31	119	657236	20.2081 ug/L		97
93)	1,3-Dichlorobenzene	17.51	146	348548	19.6738 ug/L		93
94)	1,4-Dichlorobenzene	17.63	146	346055	19.5706 ug/L		92
95)	n-Butylbenzene	17.84	91	625633	20.2235 ug/L		100
96)	1,2-Dichlorobenzene	18.13	146	307785	19.8244 ug/L		94
97)	1,2-Dibromo-3-Chloropropan	19.12	75	24203	19.9445 ug/L		80
98)	1,2,4-Trichlorobenzene	20.27	180	236399	19.6591 ug/L		99
99)	Hexachlorobutadiene	20.42	225	107262	19.2753 ug/L		97
100)	Naphthalene	20.64	128	374113	20.4616 ug/L		98
101)	1,2,3-Trichlorobenzene	20.95	180	196521	19.2104 ug/L		100

(#) = qualifier out of range (m) = manual integration
8M411796.D 8260WTR.M Thu Apr 28 15:07:16 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411796.D Vial: 8
Acq On : 28 Apr 2016 10:24 Operator: ADC
Sample : WG566682-07 20.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

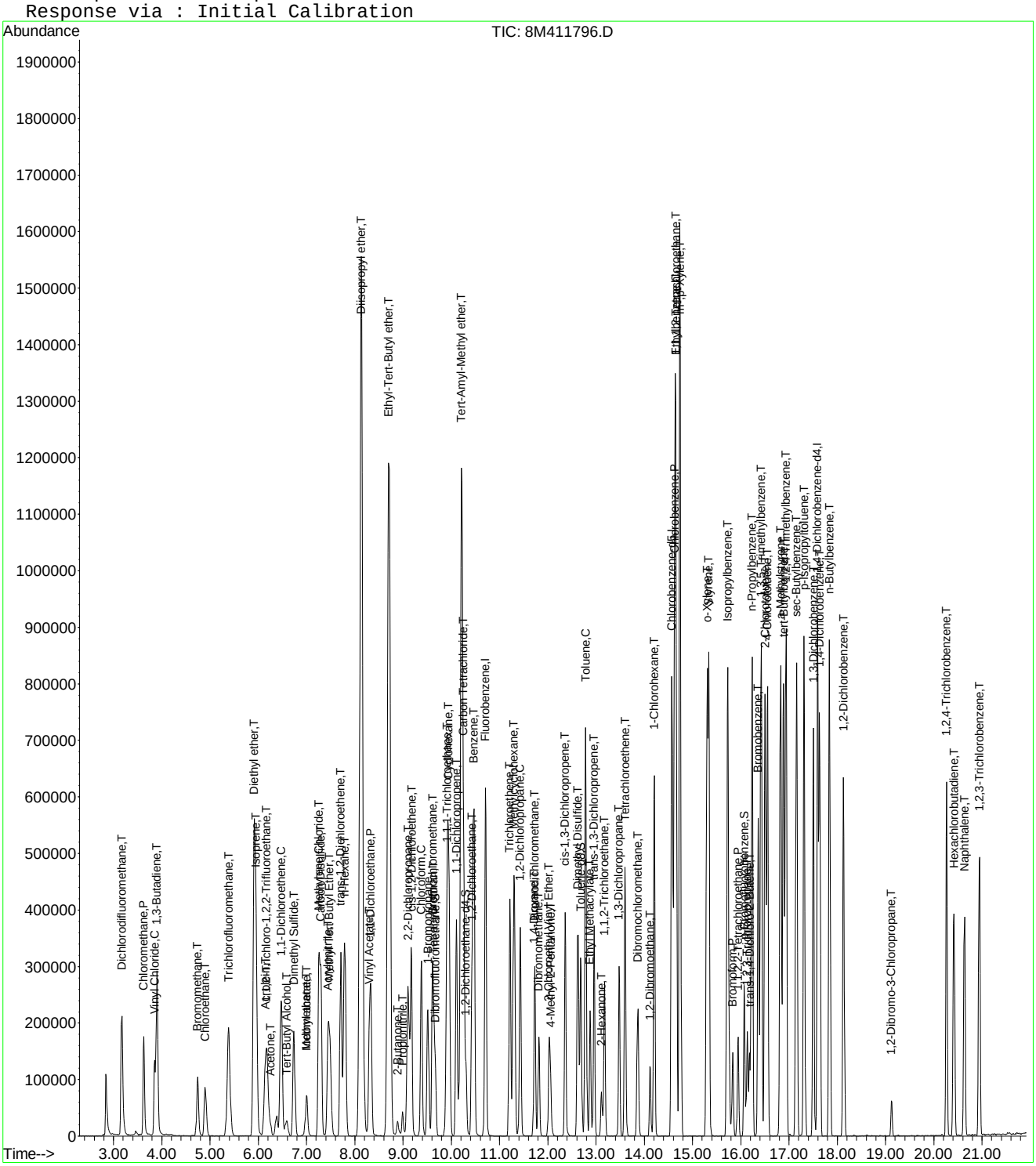

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411797.D Vial: 9
Acq On : 28 Apr 2016 10:54 Operator: ADC
Sample : WG566682-08 50.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07:16 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	692530	25.00 ug/L	0.01
57) Chlorobenzene-d5	14.57	117	522516	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	287363	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	220940	25.4087 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.64%		
43) 1,2-Dichloroethane-d4	10.30	65	261165	26.2529 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 105.00%		
58) Toluene-d8	12.68	98	726479	26.8884 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 107.56%		
80) p-Bromofluorobenzene	16.07	95	297805	25.3177 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.28%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	779563	53.7110 ug/L	100
3) Chloromethane	3.63	50	664808	48.6184 ug/L	96
4) Vinyl Chloride	3.85	62	465615	50.4256 ug/L	97
5) 1,3-Butadiene	3.90	54	466308	51.6902 ug/L	99
6) Bromomethane	4.74	94	297256	45.3209 ug/L	97
7) Chloroethane	4.90	64	304152	50.3348 ug/L	91
8) Trichlorofluoromethane	5.38	101	921664	50.2818 ug/L	99
9) Diethyl ether	5.92	59	562949	100.3798 ug/L	86
10) Isoprene	5.95	67	480894	51.2734 ug/L	72
11) Acrolein	6.16	56	24848	49.8952 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	421971	50.2793 ug/L	99
13) Acetone	6.25	43	83399	49.0540 ug/L	96
14) 1,1-Dichloroethene	6.48	61	808165	49.6161 ug/L	88
15) Tert-Butyl Alcohol	6.59	59	77628	198.3323 ug/L	95
16) Dimethyl Sulfide	6.74	62	314388	52.2312 ug/L	76
17) Iodomethane	7.00	142	200307	49.3772 ug/L	88
18) Methyl acetate	7.01	43	250038	49.2080 ug/L	92
19) Methylene Chloride	7.27	84	373750	48.4193 ug/L	55
20) Carbon Disulfide	7.30	76	1194872	50.7397 ug/L	100
21) Acrylonitrile	7.44	53	116078	53.1203 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	876409	51.3996 ug/L	94
23) trans-1,2-Dichloroethene	7.71	61	734652	49.8619 ug/L	87
24) n-Hexane	7.79	57	684631	51.2159 ug/L	91
25) Diisopropyl ether	8.13	45	3845273	101.5859 ug/L	94
26) Vinyl Acetate	8.30	43	795848	52.3735 ug/L	95
27) 1,1-Dichloroethane	8.33	63	879267	49.8916 ug/L	97
28) Ethyl-Tert-Butyl ether	8.71	59	2674089	100.6595 ug/L	98
29) 2-Butanone	8.89	43	137042	50.3289 ug/L	87
30) Propionitrile	9.00	54	73792	107.1678 ug/L	96
31) 2,2-Dichloropropane	9.10	77	760860	49.0046 ug/L	99
32) cis-1,2-Dichloroethene	9.18	96	424670	48.1689 ug/L	72
33) Chloroform	9.38	83	811397	49.6212 ug/L	100
34) 1-Bromopropane	9.52	122	71573	51.5322 ug/L	98
35) Bromochloromethane	9.61	130	235703	51.0995 ug/L	75
36) Tetrahydrofuran	9.63	42	172188	95.6518 ug/L	84
38) 1,1,1-Trichloroethane	9.91	97	827132	50.1743 ug/L	99
39) Cyclohexane	9.94	56	911679	50.6712 ug/L	86
40) 1,1-Dichloropropene	10.11	75	607987	51.2409 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	1709995	100.4966 ug/L	87
42) Carbon Tetrachloride	10.25	117	796774	51.3725 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411797.D Vial: 9
Acq On : 28 Apr 2016 10:54 Operator: ADC
Sample : WG566682-08 50.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07:16 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	682493	49.6963	ug/L		97
46)	Benzene	10.47	78	1518318	50.2371	ug/L		84
47)	Trichloroethene	11.21	130	436689	50.0692	ug/L		98
48)	Methylcyclohexane	11.31	83	629369	51.6111	ug/L		82
49)	1,2-Dichloropropane	11.43	63	436819	49.6517	ug/L		88
50)	Bromodichloromethane	11.73	83	620355	50.6806	ug/L		99
51)	1,4-Dioxane	11.72	88	7961	226.9851	ug/L		92
52)	Dibromomethane	11.81	93	210250	50.7662	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.03	63	190621	51.7508	ug/L		99
54)	4-Methyl-2-Pentanone	12.06	58	99917	49.6958	ug/L		96
55)	cis-1,3-Dichloropropene	12.36	75	636564	51.6733	ug/L		99
56)	Dimethyl Disulfide	12.62	79	322466	49.9640	ug/L		98
59)	Toluene	12.78	91	1619619	51.7628	ug/L		98
60)	Ethyl Methacrylate	12.88	69	314653	53.5938	ug/L		68
62)	trans-1,3-Dichloropropene	12.96	75	565338	51.7872	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	259013	52.1669	ug/L		97
64)	2-Hexanone	13.11	58	93585	52.5125	ug/L	#	92
65)	1,3-Dichloropropane	13.48	76	468876	50.9200	ug/L		73
66)	Tetrachloroethene	13.60	164	358138	50.5416	ug/L		92
67)	Dibromochloromethane	13.87	129	409868	52.3629	ug/L		100
68)	1,2-Dibromoethane	14.12	107	276241	53.3806	ug/L		99
69)	1-Chlorohexane	14.21	91	551856	51.7804	ug/L		71
70)	Chlorobenzene	14.62	112	1115909	51.3644	ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.65	131	442743	52.2928	ug/L		100
72)	Ethylbenzene	14.65	106	614875	49.8792	ug/L		99
73)	m-,p-Xylene	14.74	106	1489959	104.9100	ug/L		100
74)	o-Xylene	15.31	106	742056	51.8640	ug/L		100
75)	Styrene	15.34	104	1207669	52.9328	ug/L		93
76)	Bromoform	15.83	173	236338	52.6236	ug/L		99
77)	Isopropylbenzene	15.73	105	1926670	53.1132	ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.94	83	282186	49.2311	ug/L		99
81)	1,2,3-Trichloropropane	16.13	110	91241	49.5341	ug/L		97
82)	trans-1,4-Dichloro-2-Buten	16.18	53	141742	50.7701	ug/L		86
83)	n-Propylbenzene	16.24	91	2257116	50.9676	ug/L		97
84)	Bromobenzene	16.36	156	464156	50.2730	ug/L		99
85)	1,3,5-Trimethylbenzene	16.42	105	1684361	51.3977	ug/L		100
86)	2-Chlorotoluene	16.50	91	1400500	49.3838	ug/L		97
87)	4-Chlorotoluene	16.56	91	1472321	50.3973	ug/L		99
88)	a-Methylstyrene	16.83	118	817623	50.6365	ug/L		96
89)	tert-Butylbenzene	16.89	134	332041	51.1396	ug/L		86
90)	1,2,4-Trimethylbenzene	16.94	105	1729952	51.5746	ug/L		100
91)	sec-Butylbenzene	17.16	105	2016558	51.1766	ug/L		99
92)	p-Isopropyltoluene	17.31	119	1736525	51.6172	ug/L		97
93)	1,3-Dichlorobenzene	17.51	146	922868	50.3586	ug/L		94
94)	1,4-Dichlorobenzene	17.63	146	894385	48.8982	ug/L		92
95)	n-Butylbenzene	17.84	91	1643133	51.3473	ug/L		99
96)	1,2-Dichlorobenzene	18.13	146	798761	49.7369	ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.12	75	59973	47.7769	ug/L		86
98)	1,2,4-Trichlorobenzene	20.27	180	613974	49.3602	ug/L		99
99)	Hexachlorobutadiene	20.42	225	288799	50.1718	ug/L		97
100)	Naphthalene	20.64	128	958886	50.7005	ug/L		100
101)	1,2,3-Trichlorobenzene	20.95	180	515801	48.7437	ug/L		99

(#) = qualifier out of range (m) = manual integration
8M411797.D 8260WTR.M Thu Apr 28 15:07:17 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411797.D Vial: 9
Acq On : 28 Apr 2016 10:54 Operator: ADC
Sample : WG566682-08 50.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

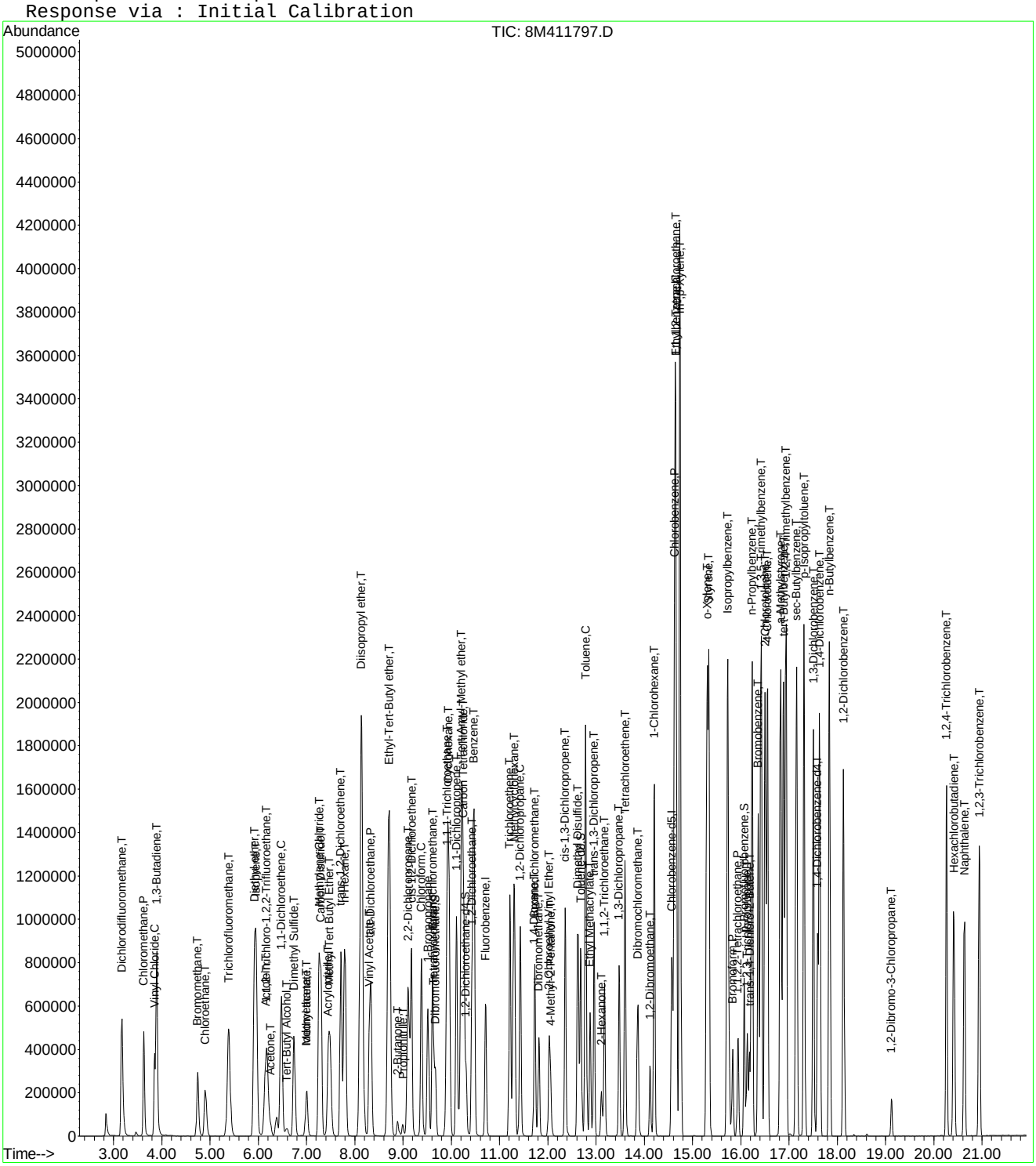

8M411797.D 8260WTR.M Thu Apr 28 15:07:17 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411798.D Vial: 10
Acq On : 28 Apr 2016 11:23 Operator: ADC
Sample : WG566682-09 100.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07:17 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	718845	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	556665	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	290305	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	445894	49.4019 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 197.60%#		
43) 1,2-Dichloroethane-d4	10.31	65	536691	51.9744 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 207.88%#		
58) Toluene-d8	12.68	98	1438950	49.9912 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 199.96%#		
80) p-Bromofluorobenzene	16.07	95	605005	50.9128 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 203.64%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	1608301	106.7537 ug/L	99
3) Chloromethane	3.63	50	1395981	98.3529 ug/L	97
4) Vinyl Chloride	3.85	62	1039267	108.4314 ug/L	98
5) 1,3-Butadiene	3.89	54	1022900	109.2375 ug/L	92
6) Bromomethane	4.74	94	666618	97.0147 ug/L	99
7) Chloroethane	4.90	64	630111	100.4611 ug/L	90
8) Trichlorofluoromethane	5.39	101	1959147	102.9695 ug/L	99
9) Diethyl ether	5.91	59	1172554	201.4251 ug/L	87
10) Isoprene	5.95	67	983476	101.0207 ug/L	72
11) Acrolein	6.15	56	57435	111.1084 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	891137	102.2949 ug/L	100
13) Acetone	6.25	43	156350	88.5962 ug/L	95
14) 1,1-Dichloroethene	6.47	61	1721368	101.8122 ug/L	88
15) Tert-Butyl Alcohol	6.59	59	175437	431.8168 ug/L	98
16) Dimethyl Sulfide	6.74	62	645754	103.3557 ug/L	74
17) Iodomethane	7.00	142	445230	102.2685 ug/L	87
18) Methyl acetate	7.01	43	523328	99.2218 ug/L	91
19) Methylene Chloride	7.26	84	770178	96.1239 ug/L	57
20) Carbon Disulfide	7.30	76	2427013	99.2892 ug/L	100
21) Acrylonitrile	7.44	53	247608	109.1638 ug/L	98
22) Methyl Tert Butyl Ether	7.47	73	1875981	105.9948 ug/L	93
23) trans-1,2-Dichloroethene	7.71	61	1535010	100.3696 ug/L	86
24) n-Hexane	7.79	57	1387110	99.9684 ug/L	90
25) Diisopropyl ether	8.13	45	7576265	192.8256 ug/L	97
26) Vinyl Acetate	8.30	43	1639551	103.9464 ug/L	96
27) 1,1-Dichloroethane	8.33	63	1825778	99.8064 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	5532370	200.6290 ug/L	98
29) 2-Butanone	8.89	43	281904	99.7398 ug/L	89
30) Propionitrile	8.99	54	155581	217.6781 ug/L	97
31) 2,2-Dichloropropane	9.11	77	1625250	100.8452 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	904162	98.8018 ug/L	77
33) Chloroform	9.38	83	1711122	100.8133 ug/L	99
34) 1-Bromopropane	9.52	122	148550	103.0398 ug/L	99
35) Bromochloromethane	9.61	130	500617	104.5587 ug/L	80
36) Tetrahydrofuran	9.63	42	363887	194.7422 ug/L	84
38) 1,1,1-Trichloroethane	9.91	97	1754959	102.5597 ug/L	100
39) Cyclohexane	9.94	56	1851316	99.1296 ug/L	87
40) 1,1-Dichloropropene	10.11	75	1261234	102.4051 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	3599696	203.8100 ug/L	87
42) Carbon Tetrachloride	10.25	117	1696838	105.3996 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411798.D Vial: 10
Acq On : 28 Apr 2016 11:23 Operator: ADC
Sample : WG566682-09 100.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07:17 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	1459051	102.3528 ug/L		97
46)	Benzene	10.47	78	3073448	97.9696 ug/L	#	82
47)	Trichloroethene	11.21	130	921869	101.8289 ug/L		98
48)	Methylcyclohexane	11.30	83	1276476	100.8448 ug/L		82
49)	1,2-Dichloropropane	11.43	63	916376	100.3481 ug/L		88
50)	Bromodichloromethane	11.73	83	1331148	104.7685 ug/L		99
51)	1,4-Dioxane	11.71	88	15073	414.0309 ug/L		79
52)	Dibromomethane	11.81	93	455028	105.8473 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.02	63	390527	102.1411 ug/L		100
54)	4-Methyl-2-Pentanone	12.05	58	213402	102.2544 ug/L		95
55)	cis-1,3-Dichloropropene	12.36	75	1338935	104.7097 ug/L		100
56)	Dimethyl Disulfide	12.62	79	698553	104.2741 ug/L		100
59)	Toluene	12.79	91	3295214	98.8541 ug/L		96
60)	Ethyl Methacrylate	12.88	69	669998	107.1179 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	1214242	104.4060 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	545757	103.1759 ug/L		97
64)	2-Hexanone	13.12	58	196609	103.5536 ug/L	#	89
65)	1,3-Dichloropropane	13.48	76	977023	99.5957 ug/L		74
66)	Tetrachloroethene	13.60	164	774474	102.5915 ug/L		92
67)	Dibromochloromethane	13.86	129	899060	107.8137 ug/L		100
68)	1,2-Dibromoethane	14.12	107	586283	106.3429 ug/L		99
69)	1-Chlorohexane	14.21	91	1133882	99.8650 ug/L		70
70)	Chlorobenzene	14.63	112	2280940	98.5491 ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.66	131	945659	104.8409 ug/L		100
72)	Ethylbenzene	14.66	106	1294084	98.5374 ug/L		94
73)	m-,p-Xylene	14.74	106	3026458	200.0244 ug/L		95
74)	o-Xylene	15.30	106	1524725	100.0292 ug/L		98
75)	Styrene	15.34	104	2455809	101.0362 ug/L		90
76)	Bromoform	15.83	173	516240	107.8958 ug/L		99
77)	Isopropylbenzene	15.73	105	3914971	101.3046 ug/L		98
79)	1,1,2,2-Tetrachloroethane	15.94	83	597794	103.2361 ug/L		99
81)	1,2,3-Trichloropropane	16.13	110	196632	105.6684 ug/L		91
82)	trans-1,4-Dichloro-2-Buten	16.19	53	306359	108.6217 ug/L		82
83)	n-Propylbenzene	16.24	91	4485525	100.2605 ug/L		95
84)	Bromobenzene	16.36	156	964072	103.3610 ug/L		99
85)	1,3,5-Trimethylbenzene	16.42	105	3443691	104.0182 ug/L		99
86)	2-Chlorotoluene	16.51	91	2924351	102.0721 ug/L		98
87)	4-Chlorotoluene	16.55	91	2939774	99.6082 ug/L		100
88)	a-Methylstyrene	16.83	118	1706519	104.6160 ug/L		96
89)	tert-Butylbenzene	16.89	134	680513	103.7477 ug/L		86
90)	1,2,4-Trimethylbenzene	16.94	105	3478158	102.6426 ug/L		98
91)	sec-Butylbenzene	17.16	105	4037887	101.4358 ug/L		100
92)	p-Isopropyltoluene	17.31	119	3518580	103.5279 ug/L		97
93)	1,3-Dichlorobenzene	17.51	146	1865360	100.7565 ug/L		91
94)	1,4-Dichlorobenzene	17.63	146	1856572	100.4746 ug/L		92
95)	n-Butylbenzene	17.84	91	3290631	101.7890 ug/L		98
96)	1,2-Dichlorobenzene	18.13	146	1658612	102.2310 ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.12	75	135362	106.7421 ug/L		84
98)	1,2,4-Trichlorobenzene	20.27	180	1290328	102.6842 ug/L		99
99)	Hexachlorobutadiene	20.42	225	611409	105.1409 ug/L		96
100)	Naphthalene	20.64	128	2043360	106.9465 ug/L		99
101)	1,2,3-Trichlorobenzene	20.95	180	1088029	101.7779 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M411798.D 8260WTR.M Thu Apr 28 15:07:18 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411798.D Vial: 10
Acq On : 28 Apr 2016 11:23 Operator: ADC
Sample : WG566682-09 100.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

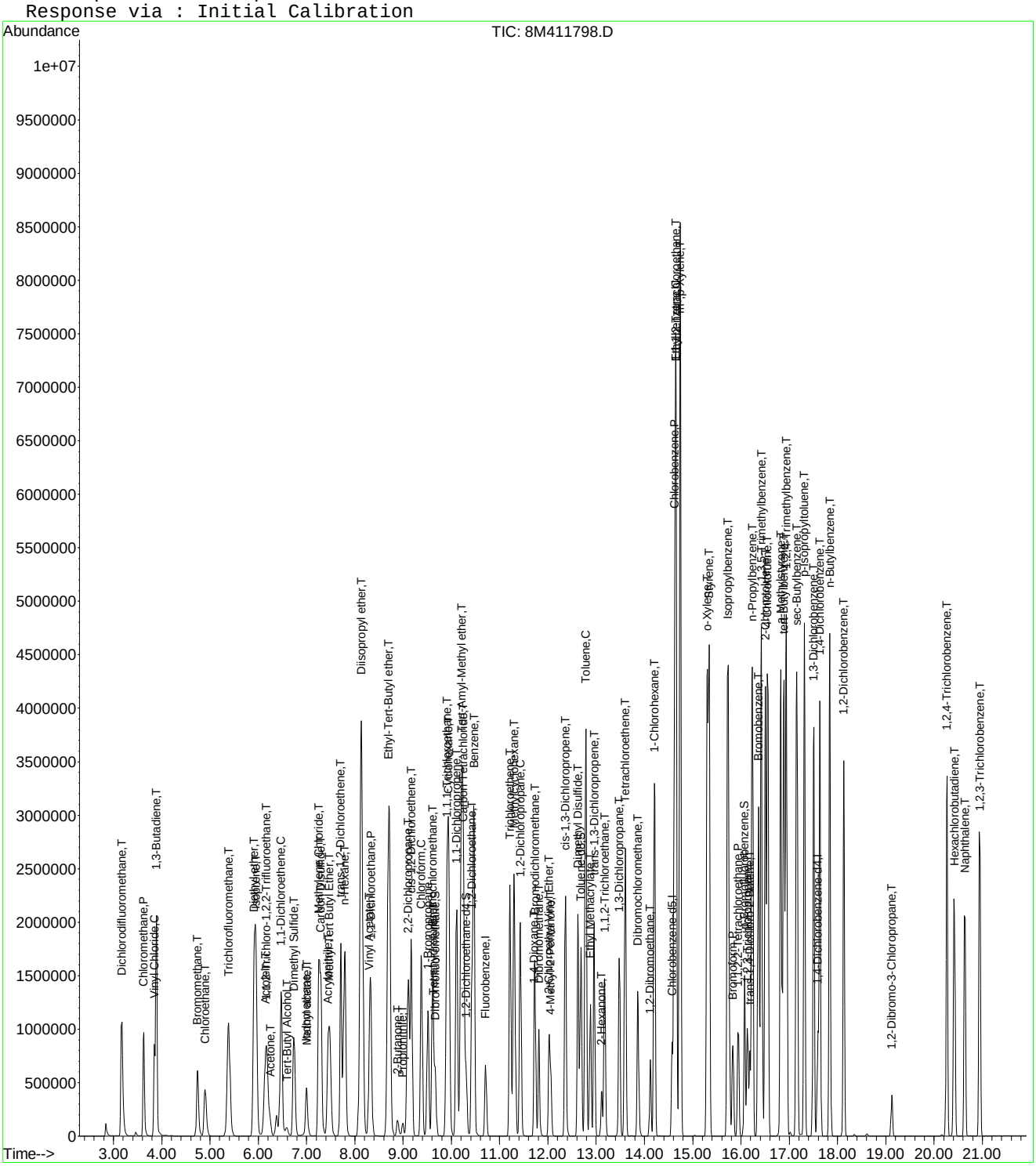

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411799.D Vial: 11
Acq On : 28 Apr 2016 11:52 Operator: ADC
Sample : WG566682-10 200.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07:19 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	740643	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	592078	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	310127	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	942473	101.3462 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 405.40%#		
43) 1,2-Dichloroethane-d4	10.31	65	1118235	105.1053 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 420.44%#		
58) Toluene-d8	12.68	98	2936259	95.9085 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 383.64%#		
80) p-Bromofluorobenzene	16.07	95	1285036	101.2275 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 404.92%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	3241038	208.7979 ug/L	98
3) Chloromethane	3.62	50	2868489	196.1495 ug/L	100
4) Vinyl Chloride	3.85	62	2176875	220.4386 ug/L	99
5) 1,3-Butadiene	3.89	54	2020471	209.4198 ug/L	91
6) Bromomethane	4.74	94	1459364	205.2618 ug/L	98
7) Chloroethane	4.90	64	1306821	202.2195 ug/L	91
8) Trichlorofluoromethane	5.39	101	4023660	205.2528 ug/L	99
9) Diethyl ether	5.91	59	1223	0.2039 ug/L #	55
10) Isoprene	5.94	67	2017667	201.1511 ug/L	72
11) Acrolein	6.14	56	210	0.3943 ug/L #	33
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	1843483	205.3880 ug/L	99
13) Acetone	6.25	43	380297	209.1541 ug/L	97
14) 1,1-Dichloroethene	6.47	61	3484846	200.0489 ug/L	88
15) Tert-Butyl Alcohol	6.59	59	6406	15.3035 ug/L #	73
16) Dimethyl Sulfide	6.74	62	1329931	206.5963 ug/L	76
17) Iodomethane	6.99	142	989674	210.1835 ug/L	89
18) Methyl acetate	7.00	43	1061500	195.3347 ug/L	94
19) Methylene Chloride	7.26	84	1581962	191.6296 ug/L	61
20) Carbon Disulfide	7.30	76	4831214	191.8283 ug/L	99
21) Acrylonitrile	7.46	53	51284	21.9443 ug/L #	30
22) Methyl Tert Butyl Ether	7.47	73	3944434	216.3053 ug/L	93
23) trans-1,2-Dichloroethene	7.71	61	3134962	198.9525 ug/L	87
24) n-Hexane	7.79	57	2796653	195.6216 ug/L	93
26) Vinyl Acetate	8.30	43	3172508	195.2152 ug/L	96
27) 1,1-Dichloroethane	8.33	63	3689791	195.7665 ug/L	99
29) 2-Butanone	8.89	43	605349	207.8737 ug/L	90
30) Propionitrile	8.94	54	226	0.3069 ug/L #	56
31) 2,2-Dichloropropane	9.11	77	3342267	201.2810 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	1854138	196.6468 ug/L	77
33) Chloroform	9.38	83	3493547	199.7698 ug/L	98
34) 1-Bromopropane	9.52	122	315918	212.6832 ug/L	96
35) Bromochloromethane	9.61	130	1035049	209.8176 ug/L	83
36) Tetrahydrofuran	9.64	42	5164	2.6823 ug/L #	73
38) 1,1,1-Trichloroethane	9.91	97	3652076	207.1456 ug/L	99
39) Cyclohexane	9.94	56	3746375	194.6975 ug/L	87
40) 1,1-Dichloropropene	10.11	75	2595547	204.5414 ug/L	100
42) Carbon Tetrachloride	10.25	117	3516224	211.9833 ug/L	99
45) 1,2-Dichloroethane	10.43	62	3016831	205.4029 ug/L	97
46) Benzene	10.47	78	5942714	183.8555 ug/L #	78
47) Trichloroethene	11.22	130	1898309	203.5143 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411799.D Vial: 11
Acq On : 28 Apr 2016 11:52 Operator: ADC
Sample : WG566682-10 200.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07:19 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
48)	Methylcyclohexane	11.30	83	2611697	200.2580 ug/L		82
49)	1,2-Dichloropropane	11.43	63	1860653	197.7549 ug/L		85
50)	Bromodichloromethane	11.73	83	2742201	209.4740 ug/L		98
51)	1,4-Dioxane	11.72	88	4942	131.7535 ug/L	#	30
52)	Dibromomethane	11.81	93	950630	214.6247 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.02	63	827593	210.0837 ug/L		99
54)	4-Methyl-2-Pentanone	12.05	58	465719	216.5877 ug/L		96
55)	cis-1,3-Dichloropropene	12.36	75	2734413	207.5476 ug/L		99
56)	Dimethyl Disulfide	12.62	79	1461110	211.6831 ug/L		98
59)	Toluene	12.79	91	6339121	178.7948 ug/L		93
60)	Ethyl Methacrylate	12.88	69	1394227	209.5737 ug/L		72
62)	trans-1,3-Dichloropropene	12.96	75	2504662	202.4810 ug/L		98
63)	1,1,2-Trichloroethane	13.18	97	1154290	205.1676 ug/L		96
64)	2-Hexanone	13.12	58	420613	208.2858 ug/L	#	92
65)	1,3-Dichloropropane	13.48	76	2032560	194.8023 ug/L		76
66)	Tetrachloroethene	13.60	164	1611262	200.6715 ug/L		93
67)	Dibromochloromethane	13.86	129	1893794	213.5173 ug/L		99
68)	1,2-Dibromoethane	14.12	107	1227784	209.3814 ug/L		99
69)	1-Chlorohexane	14.21	91	2319738	192.0876 ug/L		70
70)	Chlorobenzene	14.63	112	4521921	183.6863 ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	1999764	208.4442 ug/L		99
72)	Ethylbenzene	14.66	106	2657073	190.2204 ug/L		81
73)	m-,p-Xylene	14.74	106	5874686	365.0463 ug/L		80
74)	o-Xylene	15.31	106	3072169	189.4940 ug/L		94
75)	Styrene	15.34	104	4866320	188.2339 ug/L		85
76)	Bromoform	15.84	173	1126176	221.2963 ug/L		99
77)	Isopropylbenzene	15.73	105	7401873	180.0766 ug/L		94
79)	1,1,2,2-Tetrachloroethane	15.94	83	1242763	200.9016 ug/L		98
81)	1,2,3-Trichloropropane	16.13	110	424595	213.5899 ug/L		70
82)	trans-1,4-Dichloro-2-Buten	16.19	53	646191	214.4676 ug/L	#	58
83)	n-Propylbenzene	16.24	91	8151254	170.5517 ug/L		89
84)	Bromobenzene	16.36	156	1977833	198.4959 ug/L		99
85)	1,3,5-Trimethylbenzene	16.42	105	6612873	186.9778 ug/L		96
86)	2-Chlorotoluene	16.51	91	5549936	181.3344 ug/L		94
87)	4-Chlorotoluene	16.56	91	5713786	181.2258 ug/L		97
88)	a-Methylstyrene	16.83	118	3373242	193.5750 ug/L		92
89)	tert-Butylbenzene	16.89	134	1402022	200.0838 ug/L		90
90)	1,2,4-Trimethylbenzene	16.94	105	6622000	182.9289 ug/L		94
91)	sec-Butylbenzene	17.16	105	7512585	176.6613 ug/L		96
92)	p-Isopropyltoluene	17.31	119	6602638	181.8538 ug/L		100
93)	1,3-Dichlorobenzene	17.51	146	3706727	187.4200 ug/L		87
94)	1,4-Dichlorobenzene	17.63	146	3685042	186.6817 ug/L		88
95)	n-Butylbenzene	17.84	91	6172660	178.7347 ug/L		95
96)	1,2-Dichlorobenzene	18.13	146	3349756	193.2707 ug/L		88
97)	1,2-Dibromo-3-Chloropropan	19.12	75	290523	214.4541 ug/L		84
98)	1,2,4-Trichlorobenzene	20.27	180	2574912	191.8141 ug/L		98
99)	Hexachlorobutadiene	20.42	225	1269874	204.4164 ug/L		97
100)	Naphthalene	20.64	128	4028388	197.3639 ug/L		97
101)	1,2,3-Trichlorobenzene	20.94	180	2194079	192.1233 ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411799.D Vial: 11
Acq On : 28 Apr 2016 11:52 Operator: ADC
Sample : WG566682-10 200.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

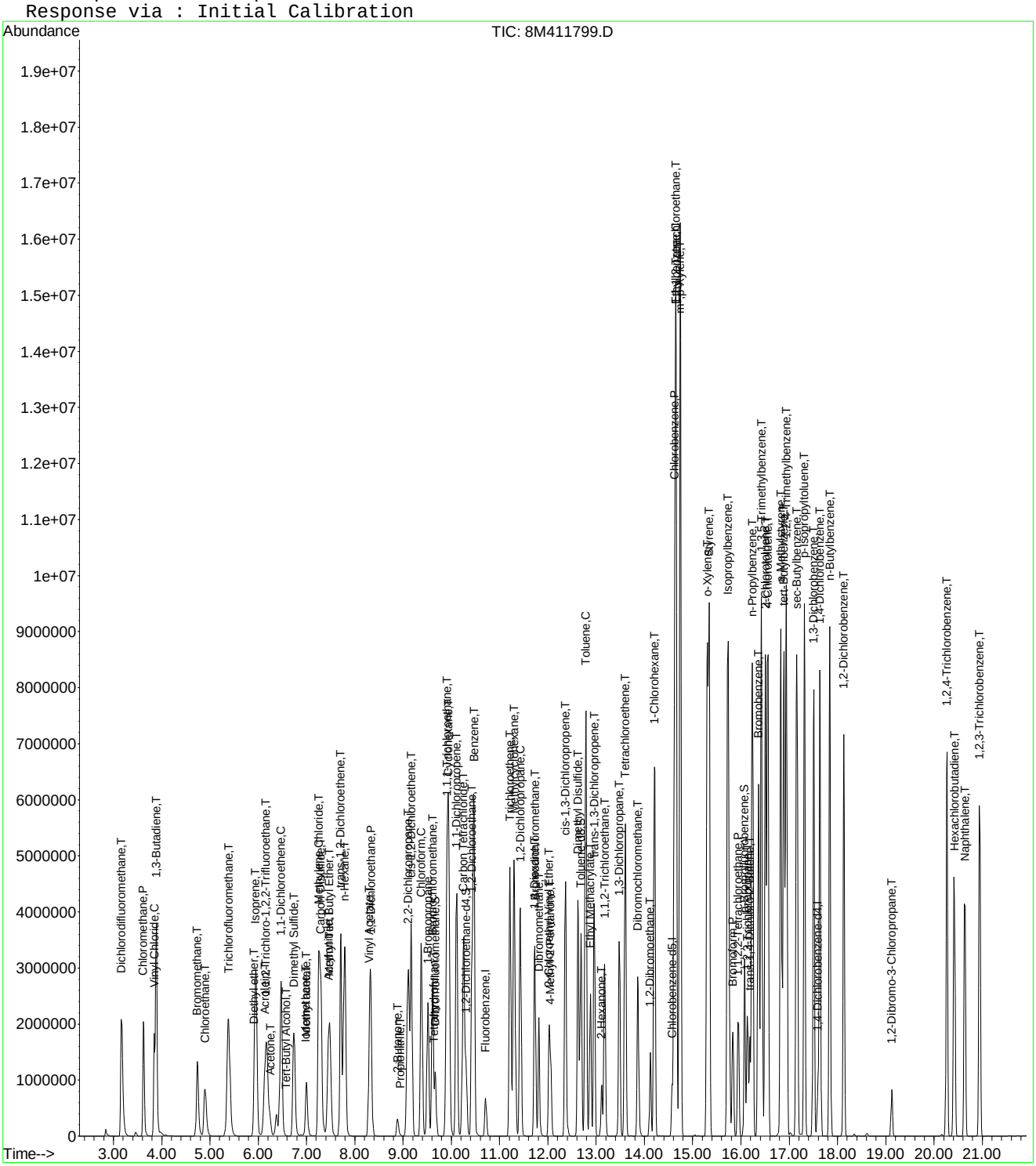

8M411799.D 8260WTR.M Thu Apr 28 15:07:19 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411800.D Vial: 12
Acq On : 28 Apr 2016 12:21 Operator: ADC
Sample : WG566682-11 300.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07:20 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	771690	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	613540	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	317582	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	1394502	143.9209 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 575.68%#		
43) 1,2-Dichloroethane-d4	10.30	65	1631646	147.1918 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 588.76%#		
58) Toluene-d8	12.68	98	4283511	135.0202 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 540.08%#		
80) p-Bromofluorobenzene	16.07	95	1896676	145.9016 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 583.60%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	4735323	292.7909 ug/L	97
3) Chloromethane	3.62	50	4207382	276.1289 ug/L	98
4) Vinyl Chloride	3.84	62	3293107	320.0561 ug/L	98
5) 1,3-Butadiene	3.89	54	3066958	305.0977 ug/L	91
6) Bromomethane	4.73	94	2271550	306.2598 ug/L	98
7) Chloroethane	4.90	64	1925283	285.9352 ug/L	91
8) Trichlorofluoromethane	5.38	101	6105800	298.9347 ug/L	99
9) Diethyl ether	5.91	59	1812804	290.0841 ug/L	89
10) Isoprene	5.94	67	3048128	291.6568 ug/L	71
11) Acrolein	6.15	56	98202	176.9632 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	2752318	294.3070 ug/L	100
13) Acetone	6.25	43	514846	271.7608 ug/L	99
14) 1,1-Dichloroethene	6.47	61	5105466	281.2898 ug/L	90
15) Tert-Butyl Alcohol	6.59	59	247599	567.7009 ug/L	95
16) Dimethyl Sulfide	6.74	62	2008130	299.3997 ug/L	79
17) Iodomethane	7.00	142	1487925	293.3205 ug/L	92
18) Methyl acetate	7.01	43	1541917	272.3244 ug/L	94
19) Methylene Chloride	7.25	84	2373916	275.9930 ug/L	70
20) Carbon Disulfide	7.30	76	7184219	273.7802 ug/L	98
21) Acrylonitrile	7.44	53	417413	171.4243 ug/L	94
22) Methyl Tert Butyl Ether	7.47	73	5650388	297.3903 ug/L	93
23) trans-1,2-Dichloroethene	7.71	61	4578755	278.8885 ug/L	88
24) n-Hexane	7.79	57	4159179	279.2234 ug/L	95
25) Diisopropyl ether	8.13	45	10905512	258.5521 ug/L	98
26) Vinyl Acetate	8.30	43	4714929	278.4532 ug/L	98
27) 1,1-Dichloroethane	8.33	63	5382830	274.1027 ug/L	100
28) Ethyl-Tert-Butyl ether	8.71	59	8477944	286.3950 ug/L	98
29) 2-Butanone	8.89	43	882786	290.9479 ug/L	90
30) Propionitrile	8.99	54	243424	317.2590 ug/L	98
31) 2,2-Dichloropropane	9.10	77	4910267	283.8133 ug/L	97
32) cis-1,2-Dichloroethene	9.18	96	2721667	277.0422 ug/L	78
33) Chloroform	9.38	83	5068129	278.1486 ug/L	96
34) 1-Bromopropane	9.52	122	481040	310.8179 ug/L	98
35) Bromochloromethane	9.61	130	1525422	296.7817 ug/L	88
36) Tetrahydrofuran	9.63	42	545399	271.8943 ug/L	86
38) 1,1,1-Trichloroethane	9.91	97	5405625	294.2713 ug/L	99
39) Cyclohexane	9.94	56	5558029	277.2273 ug/L	89
40) 1,1-Dichloropropene	10.11	75	3829122	289.6127 ug/L	100
41) Tert-Amyl-Methyl ether	10.21	73	5638675	297.3919 ug/L	88
42) Carbon Tetrachloride	10.25	117	5205873	301.2206 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M411800.D 8260WTR.M Thu Apr 28 15:07:20 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411800.D Vial: 12
Acq On : 28 Apr 2016 12:21 Operator: ADC
Sample : WG566682-11 300.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07:20 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	4353850	284.5085 ug/L		96
46)	Benzene	10.47	78	8337787	247.5761 ug/L	#	74
47)	Trichloroethene	11.21	130	2813039	289.4475 ug/L		98
48)	Methylcyclohexane	11.31	83	3938004	289.8073 ug/L		81
49)	1,2-Dichloropropane	11.43	63	2736680	279.1592 ug/L		83
50)	Bromodichloromethane	11.73	83	4027549	295.2825 ug/L		97
51)	1,4-Dioxane	11.72	88	26069	667.0368 ug/L		99
52)	Dibromomethane	11.81	93	1402599	303.9259 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	1230334	299.7538 ug/L		98
54)	4-Methyl-2-Pentanone	12.06	58	690971	308.4152 ug/L		97
55)	cis-1,3-Dichloropropene	12.36	75	3978049	289.7942 ug/L		97
56)	Dimethyl Disulfide	12.63	79	2222927	309.0968 ug/L		95
59)	Toluene	12.78	91	8726897	237.5318 ug/L		88
60)	Ethyl Methacrylate	12.88	69	2052506	297.7308 ug/L		74
62)	trans-1,3-Dichloropropene	12.96	75	3664001	285.8425 ug/L		96
63)	1,1,2-Trichloroethane	13.18	97	1690811	290.0181 ug/L		95
64)	2-Hexanone	13.11	58	625692	299.0017 ug/L	#	97
65)	1,3-Dichloropropane	13.48	76	2943455	272.2351 ug/L		79
66)	Tetrachloroethene	13.60	164	2420435	290.9036 ug/L		92
67)	Dibromochloromethane	13.87	129	2816697	306.4619 ug/L		100
68)	1,2-Dibromoethane	14.12	107	1807929	297.5319 ug/L		99
69)	1-Chlorohexane	14.21	91	3521806	281.4245 ug/L		71
70)	Chlorobenzene	14.62	112	6484328	254.1879 ug/L		92
71)	1,1,1,2-Tetrachloroethane	14.65	131	3034974	305.2827 ug/L		99
72)	Ethylbenzene	14.65	106	3997030	276.1386 ug/L		66
73)	m-,p-Xylene	14.75	106	8245168	494.4232 ug/L		68
74)	o-Xylene	15.31	106	4552854	271.0005 ug/L		84
75)	Styrene	15.34	104	6908772	257.8898 ug/L		81
76)	Bromoform	15.83	173	1648020	312.5117 ug/L		99
77)	Isopropylbenzene	15.73	105	9933685	233.2179 ug/L		88
79)	1,1,2,2-Tetrachloroethane	15.95	83	1766876	278.9233 ug/L		98
81)	1,2,3-Trichloropropane	16.13	110	614758	301.9908 ug/L		90
82)	trans-1,4-Dichloro-2-Buten	16.18	53	952990	308.8679 ug/L		82
83)	n-Propylbenzene	16.24	91	10590688	216.3912 ug/L	#	81
84)	Bromobenzene	16.37	156	2908504	285.0462 ug/L		99
85)	1,3,5-Trimethylbenzene	16.42	105	8986512	248.1274 ug/L		90
86)	2-Chlorotoluene	16.50	91	8539060	272.4495 ug/L		90
87)	4-Chlorotoluene	16.56	91	6802370	210.6881 ug/L		90
88)	a-Methylstyrene	16.82	118	4992948	279.7966 ug/L		90
89)	tert-Butylbenzene	16.89	134	2096524	292.1734 ug/L		95
90)	1,2,4-Trimethylbenzene	16.94	105	8971043	242.0025 ug/L		87
91)	sec-Butylbenzene	17.16	105	10000418	229.6433 ug/L		90
92)	p-Isopropyltoluene	17.32	119	8994265	241.9103 ug/L		94
93)	1,3-Dichlorobenzene	17.51	146	5377989	265.5394 ug/L		86
94)	1,4-Dichlorobenzene	17.64	146	5248663	259.6521 ug/L		85
95)	n-Butylbenzene	17.84	91	8360190	236.3939 ug/L		90
96)	1,2-Dichlorobenzene	18.13	146	4781001	269.3738 ug/L		86
97)	1,2-Dibromo-3-Chloropropan	19.12	75	418266	301.5019 ug/L		85
98)	1,2,4-Trichlorobenzene	20.27	180	3699038	269.0858 ug/L		97
99)	Hexachlorobutadiene	20.42	225	1920145	301.8372 ug/L		96
100)	Naphthalene	20.64	128	5543033	265.1964 ug/L		95
101)	1,2,3-Trichlorobenzene	20.95	180	3142985	268.7534 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M411800.D 8260WTR.M Thu Apr 28 15:07:20 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411800.D Vial: 12
Acq On : 28 Apr 2016 12:21 Operator: ADC
Sample : WG566682-11 300.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

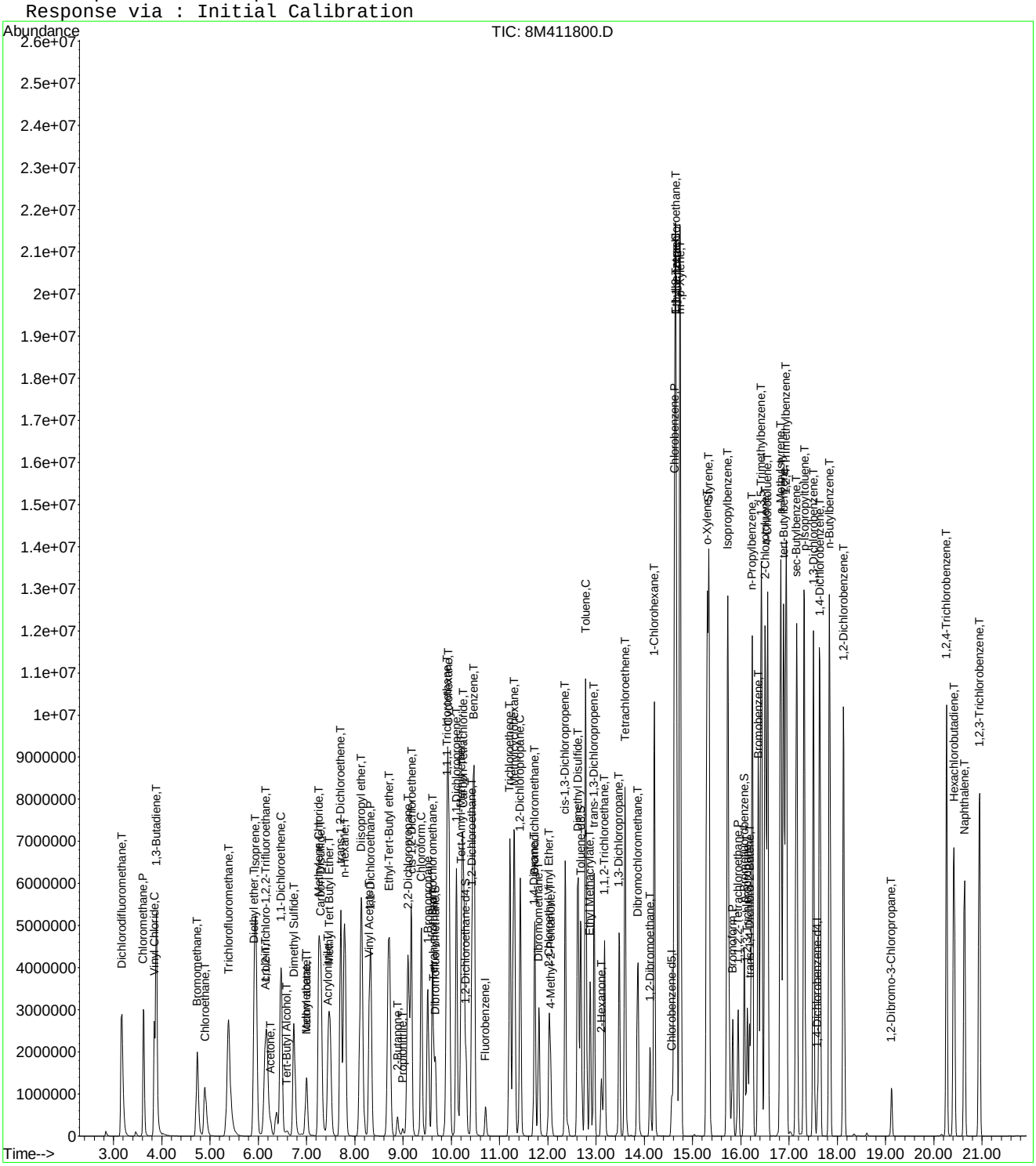

8M411800.D 8260WTR.M Thu Apr 28 15:07:21 2016 Page 3

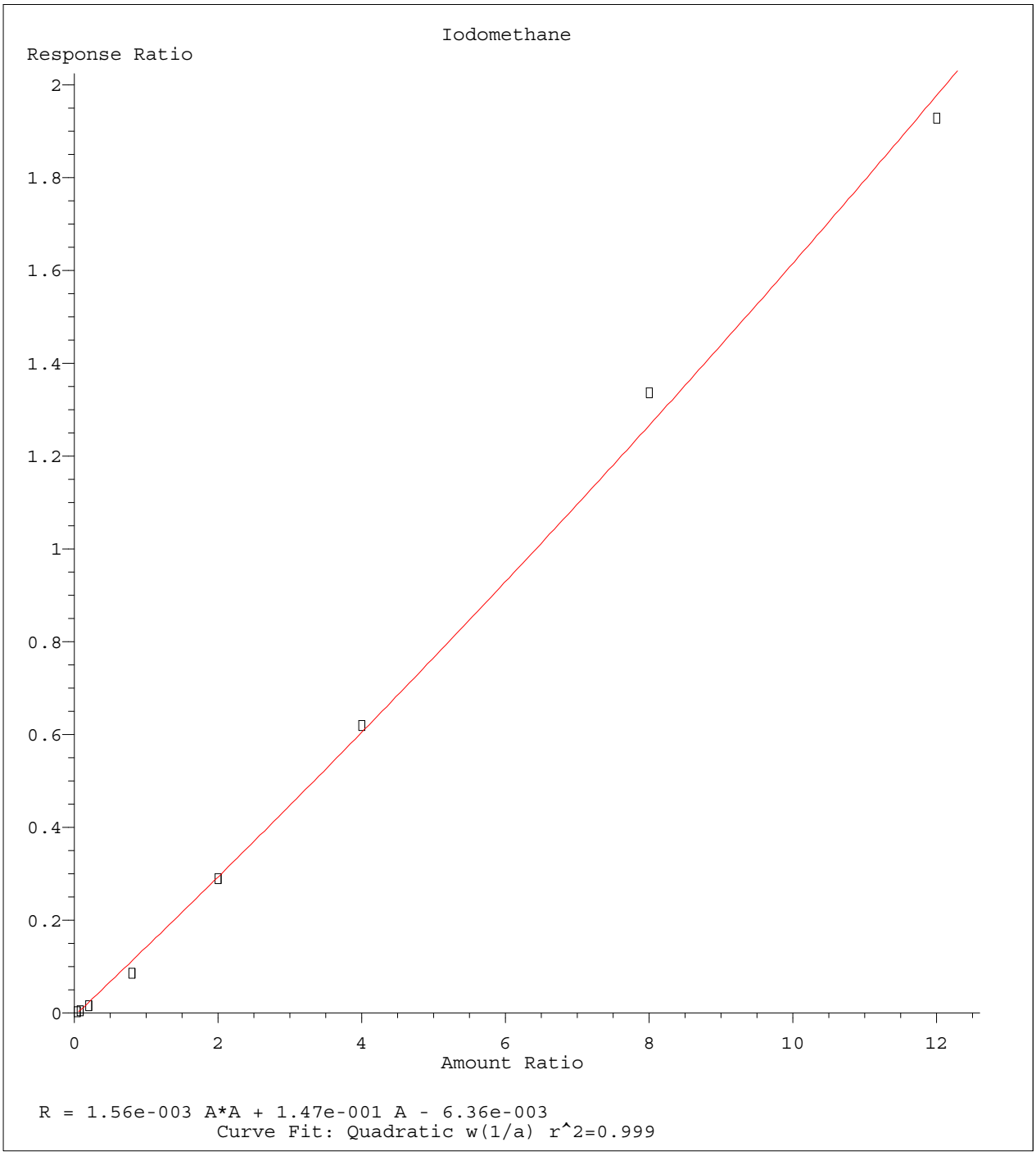

Method Name: C:\MSDCHEM\2\METHODS\8260WTR.M
Calibration Table Last Updated: Thu Apr 28 15:05:04 2016

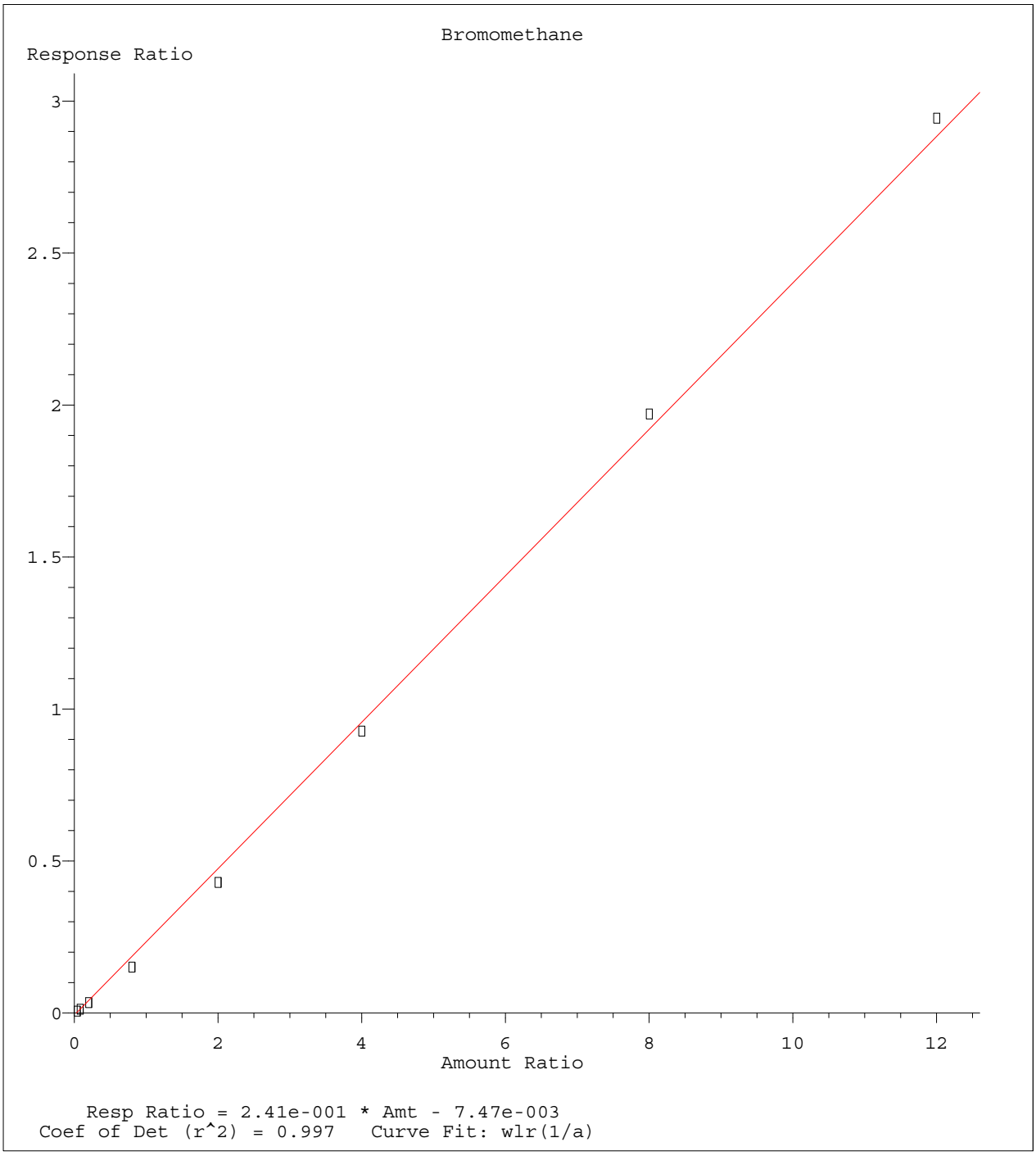

Method Name: C:\MSDCHEM\2\METHODS\8260WTR.M
Calibration Table Last Updated: Thu Apr 28 15:05:04 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411803.D Vial: 15
Acq On : 28 Apr 2016 14:08 Operator: ADC
Sample : WG566682-12 50.0ug/L ALTSRC 8260 Inst : HPMS8
Misc : 1,1 STD75898 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07:21 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	789528	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	608846	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	330921	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.68	111	210927	21.2771 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 85.12%#		
43) 1,2-Dichloroethane-d4	10.31	65	240272	21.1854 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 84.76%		
58) Toluene-d8	12.68	98	691641	21.9692 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 87.88%#		
80) p-Bromofluorobenzene	16.07	95	288541	21.3013 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 85.20%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	922346	55.7413 ug/L	99
3) Chloromethane	3.62	50	769011	49.3296 ug/L	99
4) Vinyl Chloride	3.85	62	602096	57.1954 ug/L	99
5) 1,3-Butadiene	3.89	54	487331	47.3839 ug/L	92
6) Bromomethane	4.74	94	342606	45.8093 ug/L	100
7) Chloroethane	4.90	64	336184	48.8006 ug/L	91
8) Trichlorofluoromethane	5.38	101	999005	47.8054 ug/L	100
9) Diethyl ether	5.91	59	628626	98.3198 ug/L	90
10) Isoprene	5.94	67	612346	57.2679 ug/L	74
11) Acrolein	6.15	56	72733	128.1060 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	473164	49.4526 ug/L	98
13) Acetone	6.25	43	90218	46.5455 ug/L	98
14) 1,1-Dichloroethene	6.47	61	837819	45.1174 ug/L	89
15) Tert-Butyl Alcohol	6.61	59	80473	180.3417 ug/L #	96
16) Dimethyl Sulfide	6.74	62	466906	68.0400 ug/L	80
17) Iodomethane	7.00	142	187662	40.9104 ug/L	91
18) Methyl acetate	7.01	43	250265	43.2017 ug/L	93
19) Methylene Chloride	7.26	84	407431	46.2980 ug/L	67
20) Carbon Disulfide	7.30	76	1197151	44.5910 ug/L	99
21) Acrylonitrile	7.44	53	124461	49.9592 ug/L	98
22) Methyl Tert Butyl Ether	7.47	73	959268	49.3473 ug/L	95
23) trans-1,2-Dichloroethene	7.71	61	801374	47.7083 ug/L	89
24) n-Hexane	7.79	57	724312	47.5275 ug/L	97
25) Diisopropyl ether	8.14	45	3929020	91.0461 ug/L	95
26) Vinyl Acetate	8.30	43	842454	48.6294 ug/L	97
27) 1,1-Dichloroethane	8.33	63	900989	44.8433 ug/L	98
28) Ethyl-Tert-Butyl ether	8.71	59	2783637	91.9100 ug/L	99
29) 2-Butanone	8.89	43	137728	44.3667 ug/L	90
30) Propionitrile	8.99	54	74830	95.3239 ug/L	96
31) 2,2-Dichloropropane	9.11	77	890247	50.2937 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	489347	48.6859 ug/L	79
33) Chloroform	9.39	83	889578	47.7187 ug/L	100
34) 1-Bromopropane	9.52	122	107320	67.7768 ug/L	98
35) Bromochloromethane	9.61	130	259985	49.4391 ug/L	89
36) Tetrahydrofuran	9.63	42	173266	84.4257 ug/L	87
38) 1,1,1-Trichloroethane	9.91	97	924894	49.2118 ug/L	100
39) Cyclohexane	9.94	56	979597	47.7571 ug/L	88
40) 1,1-Dichloropropene	10.11	75	643207	47.5493 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	1943002	100.1615 ug/L	90
42) Carbon Tetrachloride	10.25	117	860614	48.6715 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M411803.D 8260WTR.M Thu Apr 28 15:07:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411803.D Vial: 15
Acq On : 28 Apr 2016 14:08 Operator: ADC
Sample : WG566682-12 50.0ug/L ALTSRC 8260 Inst : HPMS8
Misc : 1,1 STD75898 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07:21 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	753032	48.0962 ug/L		95
46)	Benzene	10.47	78	1621689	47.0653 ug/L		85
47)	Trichloroethene	11.22	130	492803	49.5613 ug/L		98
48)	Methylcyclohexane	11.30	83	686315	49.3665 ug/L		82
49)	1,2-Dichloropropane	11.43	63	479665	47.8235 ug/L		86
50)	Bromodichloromethane	11.73	83	688686	49.3507 ug/L		100
51)	1,4-Dioxane	11.72	88	6947	173.7393 ug/L		98
52)	Dibromomethane	11.81	93	221576	46.9280 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.02	63	208061	49.5459 ug/L		99
54)	4-Methyl-2-Pentanone	12.05	58	106626	46.5173 ug/L		96
55)	cis-1,3-Dichloropropene	12.36	75	755865	53.8194 ug/L		99
56)	Dimethyl Disulfide	12.62	79	382505	51.9854 ug/L		98
59)	Toluene	12.79	91	1788108	49.0446 ug/L		99
60)	Ethyl Methacrylate	12.88	69	360962	52.7638 ug/L		82
62)	trans-1,3-Dichloropropene	12.96	75	637049	50.0818 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	287819	49.7491 ug/L		94
64)	2-Hexanone	13.12	58	97130	46.7737 ug/L	#	98
65)	1,3-Dichloropropane	13.48	76	539436	50.2762 ug/L		82
66)	Tetrachloroethene	13.60	164	409903	49.6446 ug/L		96
67)	Dibromochloromethane	13.86	129	462724	50.7334 ug/L		99
68)	1,2-Dibromoethane	14.12	107	305430	50.6523 ug/L		100
69)	1-Chlorohexane	14.21	91	621519	50.0480 ug/L		73
70)	Chlorobenzene	14.63	112	1267360	50.0640 ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.66	131	503657	51.0526 ug/L		100
72)	Ethylbenzene	14.66	106	702786	48.9270 ug/L		96
73)	m-,p-Xylene	14.74	106	1686439	101.9073 ug/L		99
74)	o-Xylene	15.30	106	845754	50.7301 ug/L		98
75)	Styrene	15.34	104	1349388	50.7581 ug/L		92
76)	Bromoform	15.84	173	259360	49.5613 ug/L		98
77)	Isopropylbenzene	15.73	105	2223381	52.6018 ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.94	83	299327	45.3478 ug/L		97
81)	1,2,3-Trichloropropane	16.13	110	104518	49.2734 ug/L		91
82)	trans-1,4-Dichloro-2-Buten	16.18	53	111080	34.5503 ug/L		80
83)	n-Propylbenzene	16.24	91	2604452	51.0697 ug/L		97
84)	Bromobenzene	16.36	156	513627	48.3087 ug/L		99
85)	1,3,5-Trimethylbenzene	16.42	105	1960949	51.9615 ug/L		98
86)	2-Chlorotoluene	16.51	91	1700362	52.0654 ug/L		99
87)	4-Chlorotoluene	16.55	91	1659105	49.3157 ug/L		99
88)	a-Methylstyrene	16.83	118	1012541	54.4540 ug/L		95
89)	tert-Butylbenzene	16.89	134	380223	50.8523 ug/L		84
90)	1,2,4-Trimethylbenzene	16.94	105	1944261	50.3342 ug/L		99
91)	sec-Butylbenzene	17.16	105	2310610	50.9206 ug/L		99
92)	p-Isopropyltoluene	17.31	119	1982490	51.1719 ug/L		95
93)	1,3-Dichlorobenzene	17.51	146	1041583	49.3554 ug/L		92
94)	1,4-Dichlorobenzene	17.63	146	1038157	49.2876 ug/L		93
95)	n-Butylbenzene	17.84	91	1806327	49.0171 ug/L		99
96)	1,2-Dichlorobenzene	18.13	146	912145	49.3210 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.12	75	69864	48.3306 ug/L		81
98)	1,2,4-Trichlorobenzene	20.27	180	683149	47.6924 ug/L		100
99)	Hexachlorobutadiene	20.42	225	340588	51.3807 ug/L		96
100)	Naphthalene	20.64	128	941717	43.2387 ug/L		99
101)	1,2,3-Trichlorobenzene	20.94	180	555596	45.5934 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M411803.D 8260WTR.M Thu Apr 28 15:07:22 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411803.D Vial: 15
Acq On : 28 Apr 2016 14:08 Operator: ADC
Sample : WG566682-12 50.0ug/L ALTSRC 8260 Inst : HPMS8
Misc : 1,1 STD75898 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

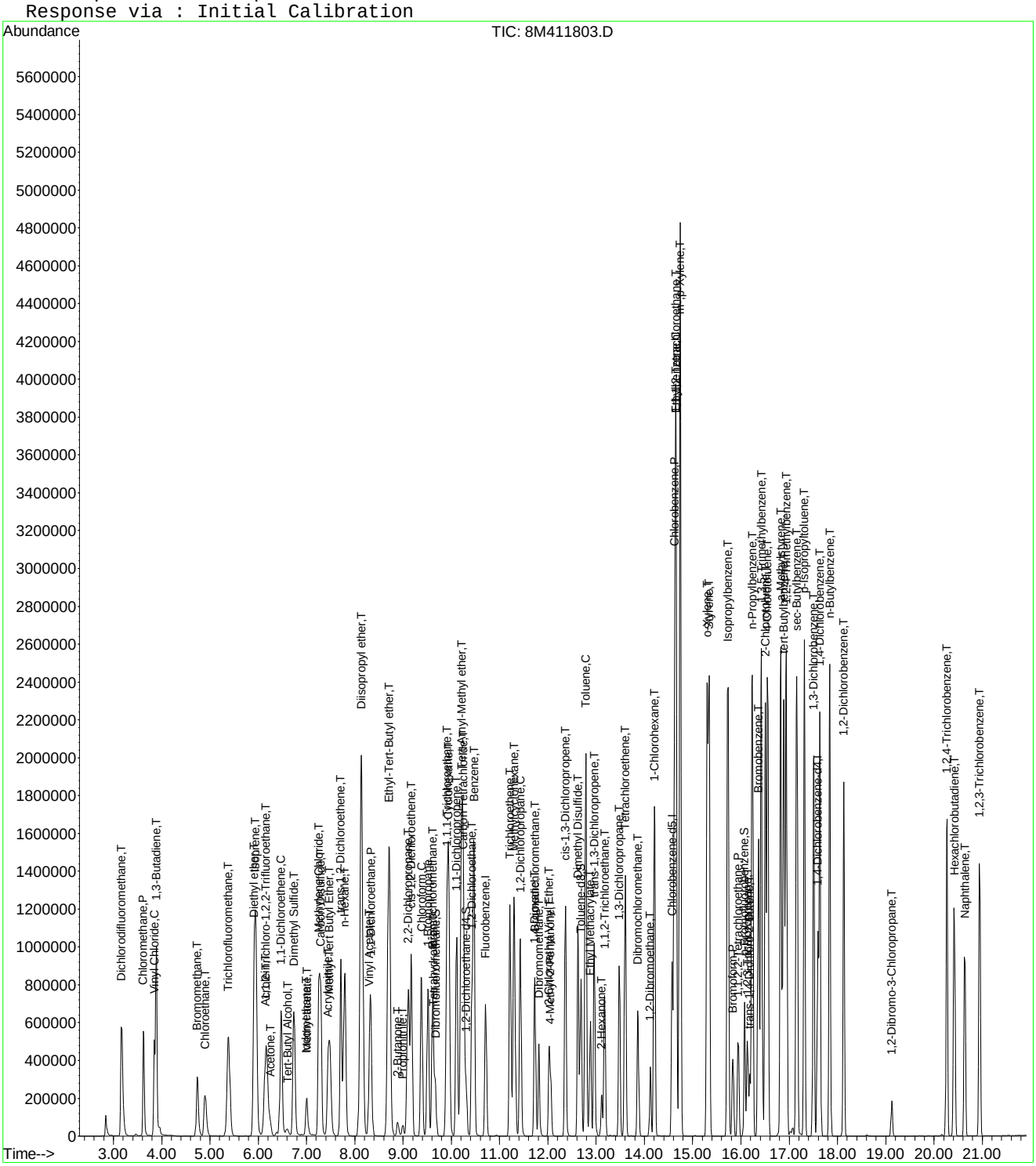

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\042816\8M411803.D Vial: 15
Acq On : 28 Apr 2016 14:08 Operator: ADC
Sample : WG566682-12 50.0ug/L ALTSRC 8260 Inst : HPMS8
Misc : 1,1 STD75898 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	114	0.00
2	T	Dichlorodifluoromethane	50.0000	55.7413	-11.5	118	0.00
3	P	Chloromethane	50.0000	49.3296	1.3	116	0.00
4	C	Vinyl Chloride	50.0000	57.1954	-14.4	129	0.00
5	T	1,3-Butadiene	50.0000	47.3839	5.2	105	0.00
6	T	Bromomethane	50.0000	45.8093	8.4	115	0.00
7	T	Chloroethane	50.0000	48.8006	2.4	111	0.00
8	T	Trichlorofluoromethane	50.0000	47.8054	4.4	108	0.00
9	T	Diethyl ether	100.0000	98.3197	1.7	112	0.00
10	T	Isoprene	50.0000	57.2679	-14.5	127	0.00
11	T	Acrolein	50.0000	128.1060	-156.2#	293	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	49.4526	1.1	112	0.00
13	T	Acetone	50.0000	46.5455	6.9	108	0.00
14	C	1,1-Dichloroethene	50.0000	45.1174	9.8	104	0.00
15	T	Tert-Butyl Alcohol	200.0000	180.3417	9.8	104	0.01
16	T	Dimethyl Sulfide	50.0000	68.0400	-36.1#	149	0.00
17	T	Iodomethane	50.0000	40.9104	18.2	94	0.00
18	T	Methyl acetate	50.0000	43.2017	13.6	100	0.00
19	T	Methylene Chloride	50.0000	46.2980	7.4	109	0.00
20	T	Carbon Disulfide	50.0000	44.5909	10.8	100	0.00
21	T	Acrylonitrile	50.0000	49.9592	0.1	107	0.00
22	T	Methyl Tert Butyl Ether	50.0000	49.3473	1.3	109	0.00
23	T	trans-1,2-Dichloroethene	50.0000	47.7083	4.6	109	0.00
24	T	n-Hexane	50.0000	47.5275	4.9	106	0.00
25	T	Diisopropyl ether	100.0000	91.0461	9.0	102	0.00
26	T	Vinyl Acetate	50.0000	48.6294	2.7	106	0.00
27	P	1,1-Dichloroethane	50.0000	44.8433	10.3	102	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	91.9100	8.1	104	0.00
29	T	2-Butanone	50.0000	44.3667	11.3	101	0.00
30	T	Propionitrile	100.0000	95.3239	4.7	101	0.00
31	T	2,2-Dichloropropane	50.0000	50.2937	-0.6	117	0.00
32	T	cis-1,2-Dichloroethene	50.0000	48.6859	2.6	115	0.00
33	C	Chloroform	50.0000	47.7187	4.6	110	0.00
34		1-Bromopropane	50.0000	67.7768	-35.6#	150	0.00
35	T	Bromochloromethane	50.0000	49.4391	1.1	110	0.00
36	T	Tetrahydrofuran	100.0000	84.4257	15.6	101	0.00
37	S	Dibromofluoromethane	25.0000	21.2771	14.9	95	0.00
38	T	1,1,1-Trichloroethane	50.0000	49.2118	1.6	112	0.00
39	T	Cyclohexane	50.0000	47.7571	4.5	107	0.00
40	T	1,1-Dichloropropene	50.0000	47.5493	4.9	106	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	100.1615	-0.2	114	0.00
42	T	Carbon Tetrachloride	50.0000	48.6715	2.7	108	0.00
43	S	1,2-Dichloroethane-d4	25.0000	21.1854	15.3	92	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	48.0962	3.8	110	0.00
46	T	Benzene	50.0000	47.0653	5.9	107	0.00
47	T	Trichloroethene	50.0000	49.5613	0.9	113	0.00
48	T	Methylcyclohexane	50.0000	49.3665	1.3	109	0.00
49	C	1,2-Dichloropropane	50.0000	47.8235	4.4	110	0.00
50	T	Bromodichloromethane	50.0000	49.3507	1.3	111	0.00
51	T	1,4-Dioxane	200.0000	173.7393	13.1	87	0.00
52	T	Dibromomethane	50.0000	46.9280	6.1	105	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	49.5459	0.9	109	0.00
54	T	4-Methyl-2-Pentanone	50.0000	46.5173	7.0	107	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\042816\8M411803.D Vial: 15
Acq On : 28 Apr 2016 14:08 Operator: ADC
Sample : WG566682-12 50.0ug/L ALTSRC 8260 Inst : HPMS8
Misc : 1,1 STD75898 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.8194	-7.6	119	0.00
56	T	Dimethyl Disulfide	50.0000	51.9855	-4.0	119	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	117	0.00
58	S	Toluene-d8	25.0000	21.9692	12.1	95	0.00
59	C	Toluene	50.0000	49.0446	1.9	110	0.00
60	T	Ethyl Methacrylate	50.0000	52.7638	-5.5	115	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	50.0818	-0.2	113	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.7491	0.5	111	0.00
64	T	2-Hexanone	50.0000	46.7737	6.5	104	0.00
65	T	1,3-Dichloropropane	50.0000	50.2762	-0.6	115	0.00
66	T	Tetrachloroethene	50.0000	49.6446	0.7	114	0.00
67	T	Dibromochloromethane	50.0000	50.7334	-1.5	113	0.00
68	T	1,2-Dibromoethane	50.0000	50.6523	-1.3	111	0.00
69	T	1-Chlorohexane	50.0000	50.0480	-0.1	113	0.00
70	P	Chlorobenzene	50.0000	50.0640	-0.1	114	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	51.0525	-2.1	114	0.00
72	C	Ethylbenzene	50.0000	48.9270	2.1	114	0.00
73	T	m-,p-Xylene	100.0000	101.9073	-1.9	113	0.00
74	T	o-Xylene	50.0000	50.7301	-1.5	114	0.00
75	T	Styrene	50.0000	50.7581	-1.5	112	0.00
76	P	Bromoform	50.0000	49.5613	0.9	110	0.00
77	T	Isopropylbenzene	50.0000	52.6018	-5.2	115	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	115	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	45.3478	9.3	106	0.00
80	S	p-Bromofluorobenzene	25.0000	21.3013	14.8	97	0.00
81	T	1,2,3-Trichloropropane	50.0000	49.2734	1.5	115	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	34.5503	30.9#	78	0.00
83	T	n-Propylbenzene	50.0000	51.0697	-2.1	115	0.00
84	T	Bromobenzene	50.0000	48.3087	3.4	111	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	51.9615	-3.9	116	0.00
86	T	2-Chlorotoluene	50.0000	52.0654	-4.1	121	0.00
87	T	4-Chlorotoluene	50.0000	49.3157	1.4	113	0.00
88	T	a-Methylstyrene	50.0000	54.4540	-8.9	124	0.00
89	T	tert-Butylbenzene	50.0000	50.8523	-1.7	115	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	50.3342	-0.7	112	0.00
91	T	sec-Butylbenzene	50.0000	50.9206	-1.8	115	0.00
92	T	p-Isopropyltoluene	50.0000	51.1719	-2.3	114	0.00
93	T	1,3-Dichlorobenzene	50.0000	49.3554	1.3	113	0.00
94	T	1,4-Dichlorobenzene	50.0000	49.2876	1.4	116	0.00
95	T	n-Butylbenzene	50.0000	49.0172	2.0	110	0.00
96	T	1,2-Dichlorobenzene	50.0000	49.3210	1.4	114	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	48.3306	3.3	116	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	47.6924	4.6	111	0.00
99	T	Hexachlorobutadiene	50.0000	51.3807	-2.8	118	0.00
100	T	Naphthalene	50.0000	43.2387	13.5	98	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	45.5934	8.8	108	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M411803.D 8260WTR.M Thu Apr 28 15:08:48 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972472.D Vial: 3
Acq On : 25 Jan 2016 11:22 Operator: FJB
Sample : WG555000-02 5ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:05 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	367739	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	266763	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.77	152	148882	50.00 ug/kg	0.01

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	1974	5.3580 ug/kg#	1
3) 3-Chloro-1-propene	7.23	41	18322	5.0468 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	19639	4.7564 ug/kg	98
5) Ethyl Acetate	9.24	43	12755	5.2595 ug/kg	91
6) Methacrylonitrile	9.40	67	3744	4.7691 ug/kg	95
7) Isobutyl Alcohol	9.42	43	1055	12.9700 ug/kg#	62
8) 1-Butanol	10.36	56	203	11.8711 ug/kg#	26
9) Methyl methacrylate	11.56	41	8689	4.6908 ug/kg	95
10) 2-Nitropropane	11.90	43	2531	4.2058 ug/kg	96

(#) = qualifier out of range (m) = manual integration
9M972472.D A9FOO_SL.M Wed Jan 27 11:22:42 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972472.D Vial: 3
Acq On : 25 Jan 2016 11:22 Operator: FJB
Sample : WG555000-02 5ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

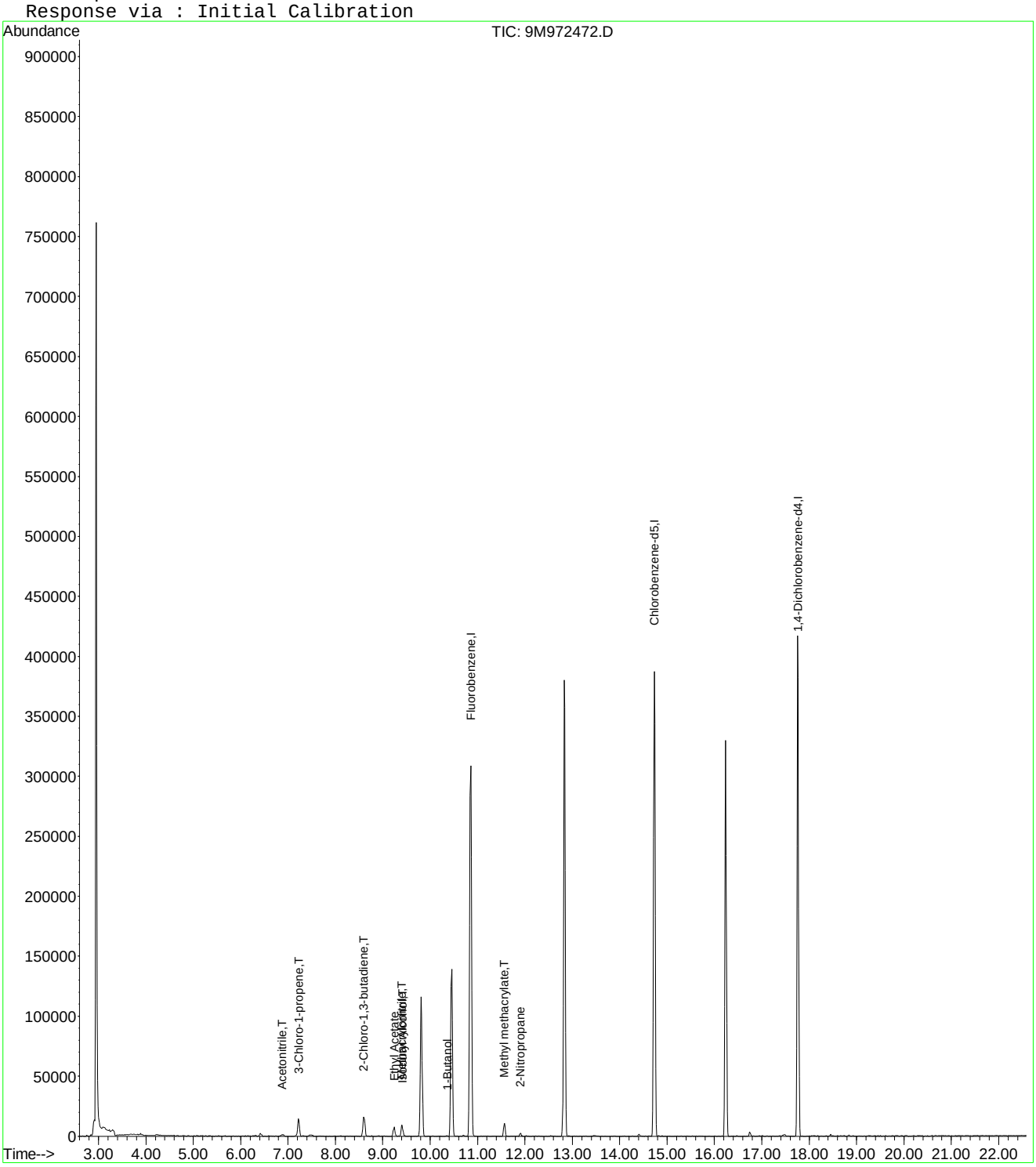

9M972472.D A9FOO_SL.M Wed Jan 27 11:22:42 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972473.D Vial: 4
Acq On : 25 Jan 2016 11:52 Operator: FJB
Sample : WG555000-03 20ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:05 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	359691	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	265773	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	149223	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	7669	21.2815 ug/kg#	77
3) 3-Chloro-1-propene	7.23	41	75360	21.2224 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	82865	20.5181 ug/kg	100
5) Ethyl Acetate	9.23	43	47912	20.1986 ug/kg	97
6) Methacrylonitrile	9.40	67	15740	20.4980 ug/kg	98
7) Isobutyl Alcohol	9.42	43	5287	37.9280 ug/kg	95
8) 1-Butanol	10.35	56	1509	22.3153 ug/kg#	81
9) Methyl methacrylate	11.56	41	35437	19.5588 ug/kg	98
10) 2-Nitropropane	11.90	43	10433	17.7247 ug/kg	98
12) Cyclohexanone	16.01	55	2157	16.3929 ug/kg#	86

(#) = qualifier out of range (m) = manual integration
9M972473.D A9FOO_SL.M Wed Jan 27 11:22:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972473.D Vial: 4
Acq On : 25 Jan 2016 11:52 Operator: FJB
Sample : WG555000-03 20ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

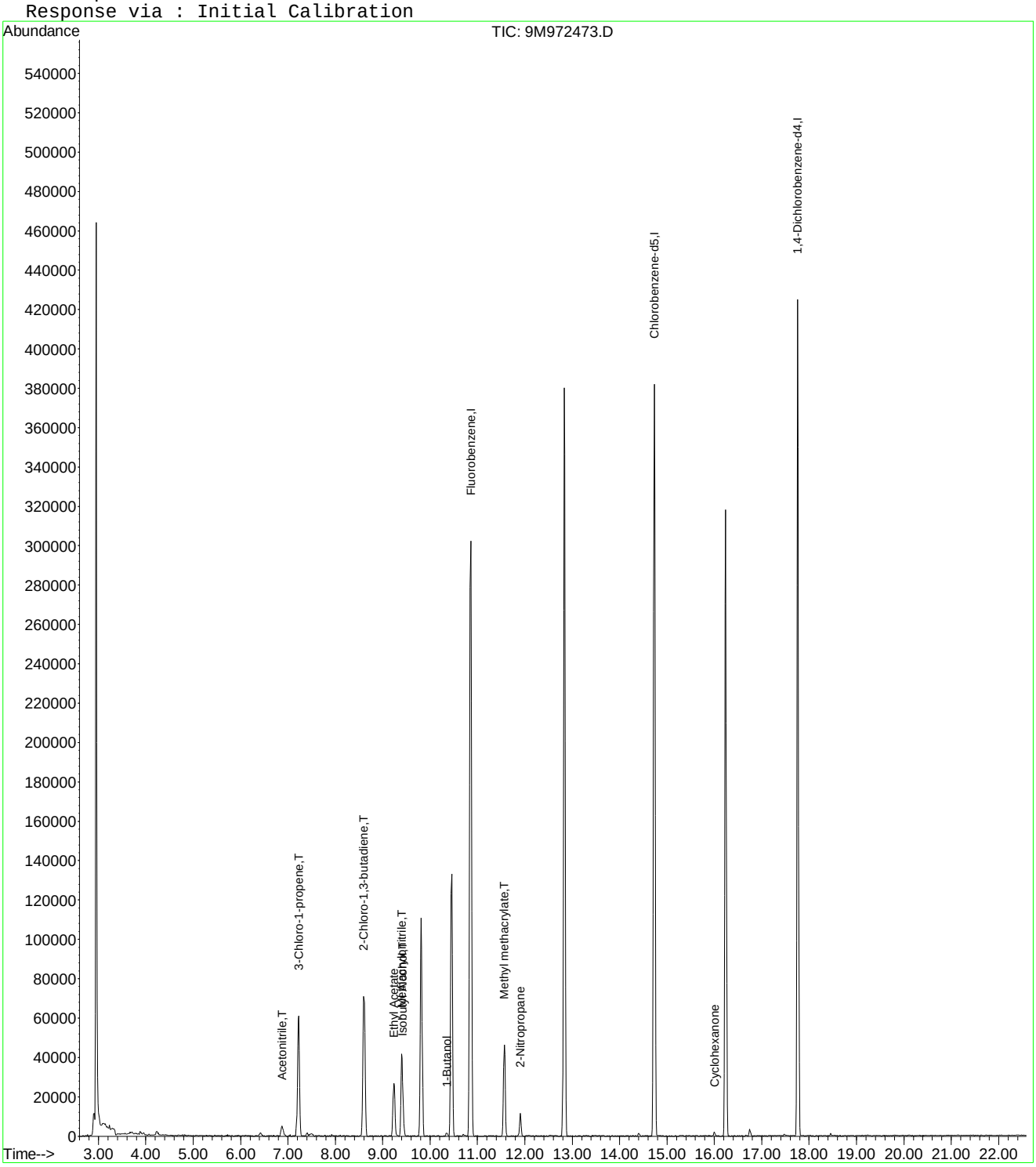

9M972473.D A9FOO_SL.M Wed Jan 27 11:22:46 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972474.D Vial: 5
Acq On : 25 Jan 2016 12:23 Operator: FJB
Sample : WG555000-04 50ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:06 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	356886	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	259679	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	147334	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	16583	46.3795 ug/kg#	94
3) 3-Chloro-1-propene	7.23	41	160601	45.5828 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.61	53	185316	46.2464 ug/kg	99
5) Ethyl Acetate	9.23	43	111538	47.3915 ug/kg	99
6) Methacrylonitrile	9.40	67	36081	47.3572 ug/kg	99
7) Isobutyl Alcohol	9.42	43	12624	81.5447 ug/kg	95
8) 1-Butanol	10.35	56	4707	48.0983 ug/kg#	50
9) Methyl methacrylate	11.56	41	82406	45.8400 ug/kg	99
10) 2-Nitropropane	11.90	43	26302	45.0359 ug/kg	97
12) Cyclohexanone	16.01	55	5625	43.7525 ug/kg	93

(#) = qualifier out of range (m) = manual integration
9M972474.D A9FOO_SL.M Wed Jan 27 11:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972474.D Vial: 5
Acq On : 25 Jan 2016 12:23 Operator: FJB
Sample : WG555000-04 50ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

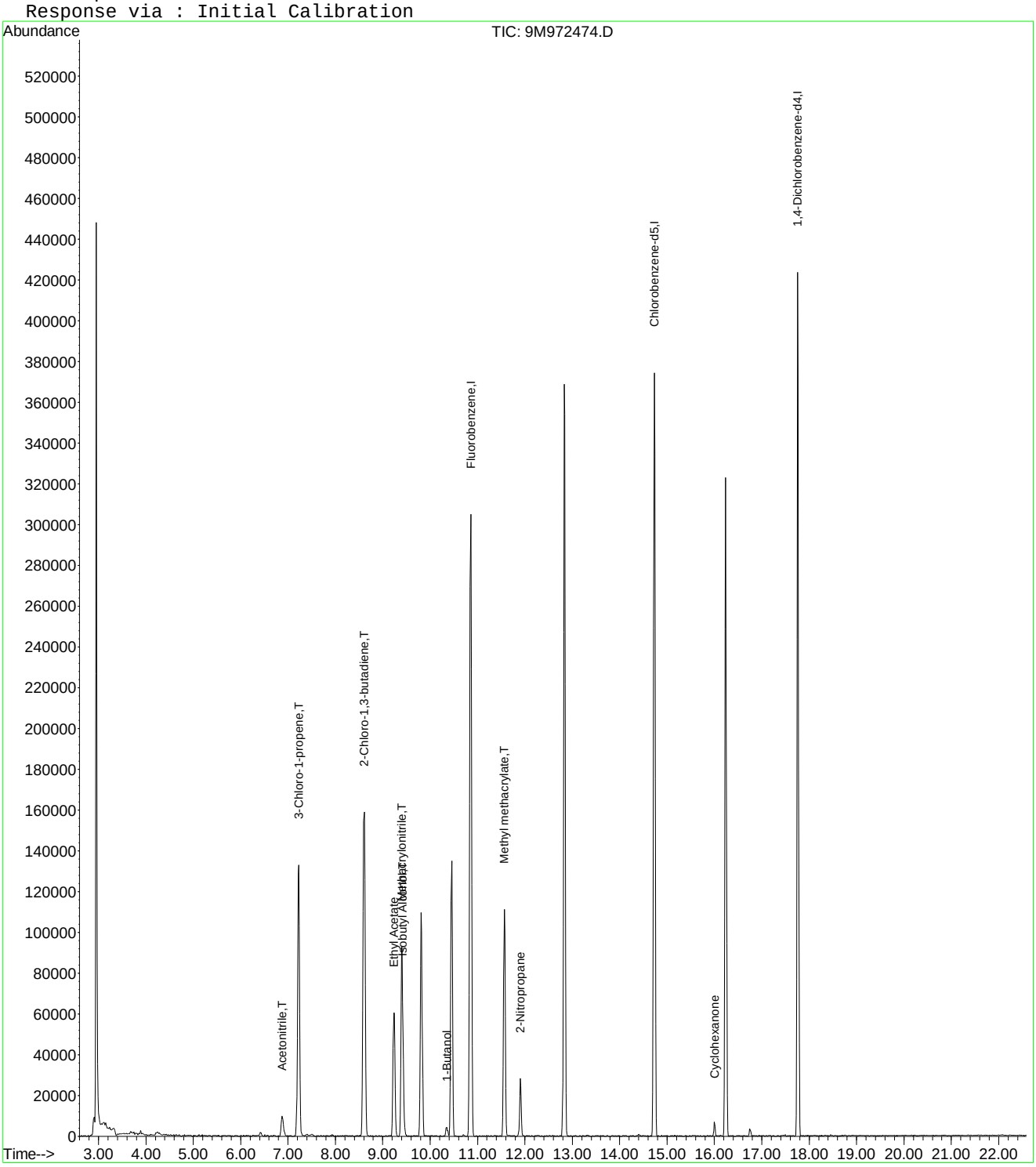

9M972474.D A9FOO_SL.M Wed Jan 27 11:22:51 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972475.D Vial: 6
Acq On : 25 Jan 2016 12:53 Operator: FJB
Sample : WG555000-05 100ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:06 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	394669	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	285851	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	161505	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	37767	95.5151	ug/kg#	100
3) 3-Chloro-1-propene	7.23	41	409870	105.1952	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.61	53	467514	105.5010	ug/kg	100
5) Ethyl Acetate	9.23	43	267513	102.7824	ug/kg	100
6) Methacrylonitrile	9.40	67	88054	104.5088	ug/kg	100
7) Isobutyl Alcohol	9.42	43	33721	187.1766	ug/kg	100
8) 1-Butanol	10.36	56	11671	95.0627	ug/kg	100
9) Methyl methacrylate	11.56	41	209503	105.3834	ug/kg	100
10) 2-Nitropropane	11.90	43	65435	101.3157	ug/kg	100
12) Cyclohexanone	16.01	55	14062	99.3630	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972475.D A9FOO_SL.M Wed Jan 27 11:22:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972475.D Vial: 6
Acq On : 25 Jan 2016 12:53 Operator: FJB
Sample : WG555000-05 100ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

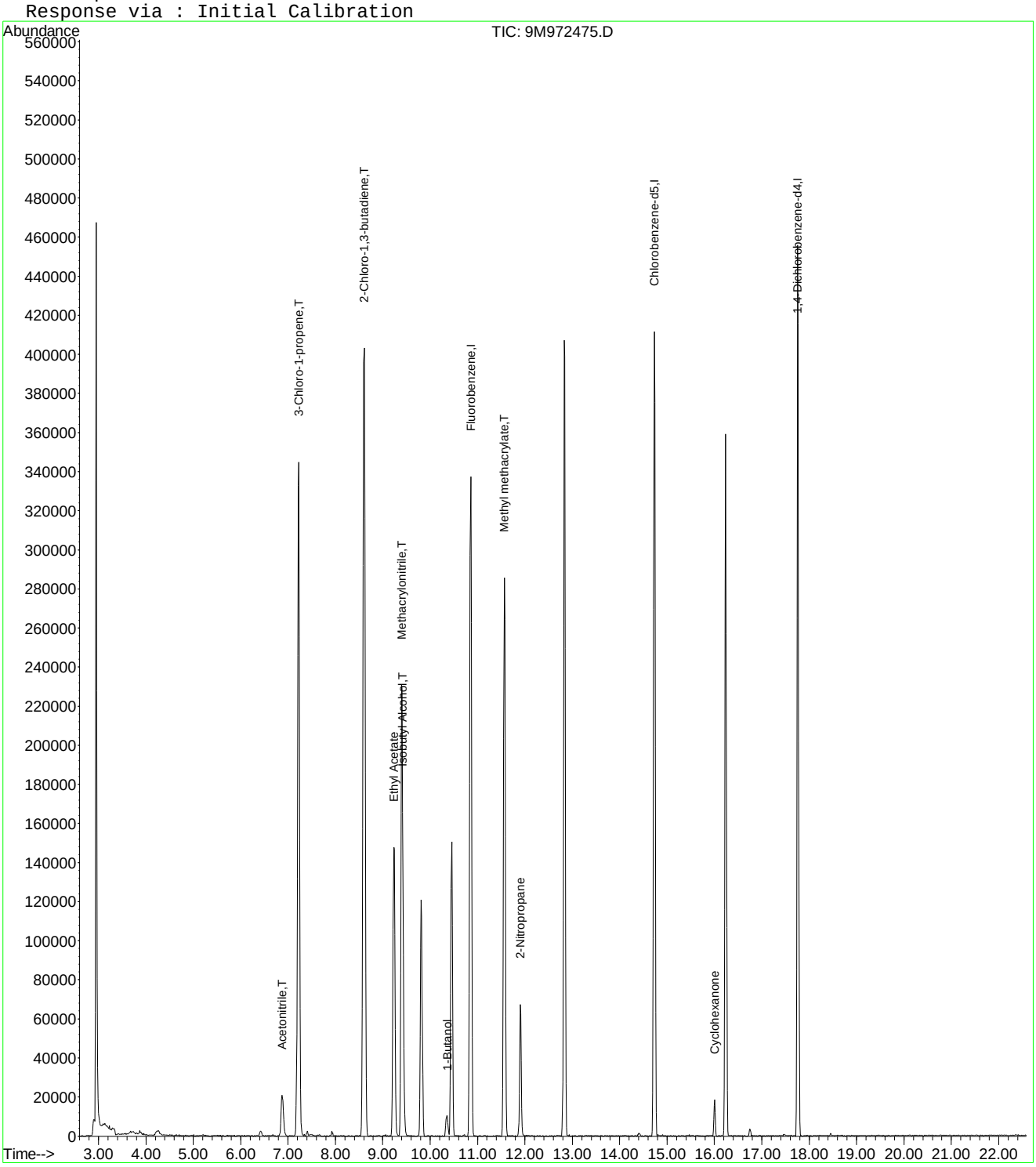

9M972475.D A9FOO_SL.M Wed Jan 27 11:22:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972476.D Vial: 7
Acq On : 25 Jan 2016 13:23 Operator: FJB
Sample : WG555000-06 200ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 09:51:10 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	361792	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	264283	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	150478	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.87	41	75099	207.1896	ug/kg#	94
3) 3-Chloro-1-propene	7.22	41	743262	208.0969	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	846271	208.3269	ug/kg	100
5) Ethyl Acetate	9.23	43	489855	205.3125	ug/kg	100
6) Methacrylonitrile	9.40	67	159879	206.9995	ug/kg	100
7) Isobutyl Alcohol	9.42	43	68551	406.6640	ug/kg	99
8) 1-Butanol	10.35	56	24111	201.3375	ug/kg	97
9) Methyl methacrylate	11.57	41	382820	210.0636	ug/kg	99
10) 2-Nitropropane	11.90	43	129000	217.8866	ug/kg	95
12) Cyclohexanone	16.00	55	30065	229.7785	ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972476.D A9FOO_SL.M Wed Jan 27 09:51:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972476.D Vial: 7
Acq On : 25 Jan 2016 13:23 Operator: FJB
Sample : WG555000-06 200ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 9:51 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

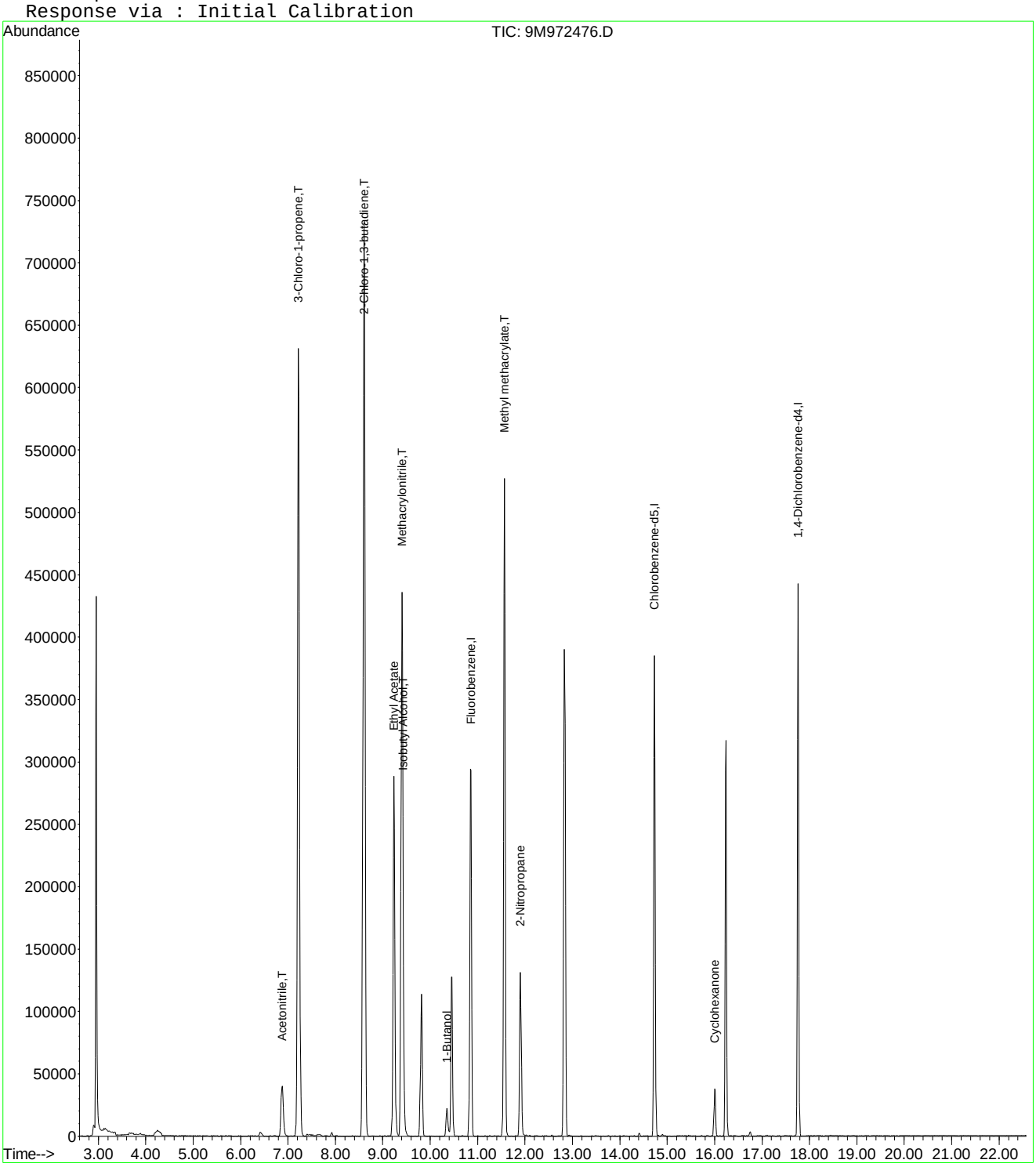

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972477.D Vial: 8
Acq On : 25 Jan 2016 13:54 Operator: FJB
Sample : WG555000-07 300ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:07 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.85	96	362779	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	265659	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	153468	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	99618	274.0870	ug/kg#	97
3) 3-Chloro-1-propene	7.22	41	944879	263.8255	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	1107217	271.8226	ug/kg	99
5) Ethyl Acetate	9.24	43	652386	272.6900	ug/kg	99
6) Methacrylonitrile	9.40	67	208153	268.7679	ug/kg	98
7) Isobutyl Alcohol	9.43	43	89707	528.6093	ug/kg#	99
8) 1-Butanol	10.35	56	31640	260.3131	ug/kg	98
9) Methyl methacrylate	11.57	41	502506	274.9883	ug/kg	98
10) 2-Nitropropane	11.90	43	172692	290.8907	ug/kg	95
12) Cyclohexanone	16.00	55	36951	280.9436	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972477.D A9FOO_SL.M Wed Jan 27 11:23:05 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972477.D Vial: 8
Acq On : 25 Jan 2016 13:54 Operator: FJB
Sample : WG555000-07 300ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

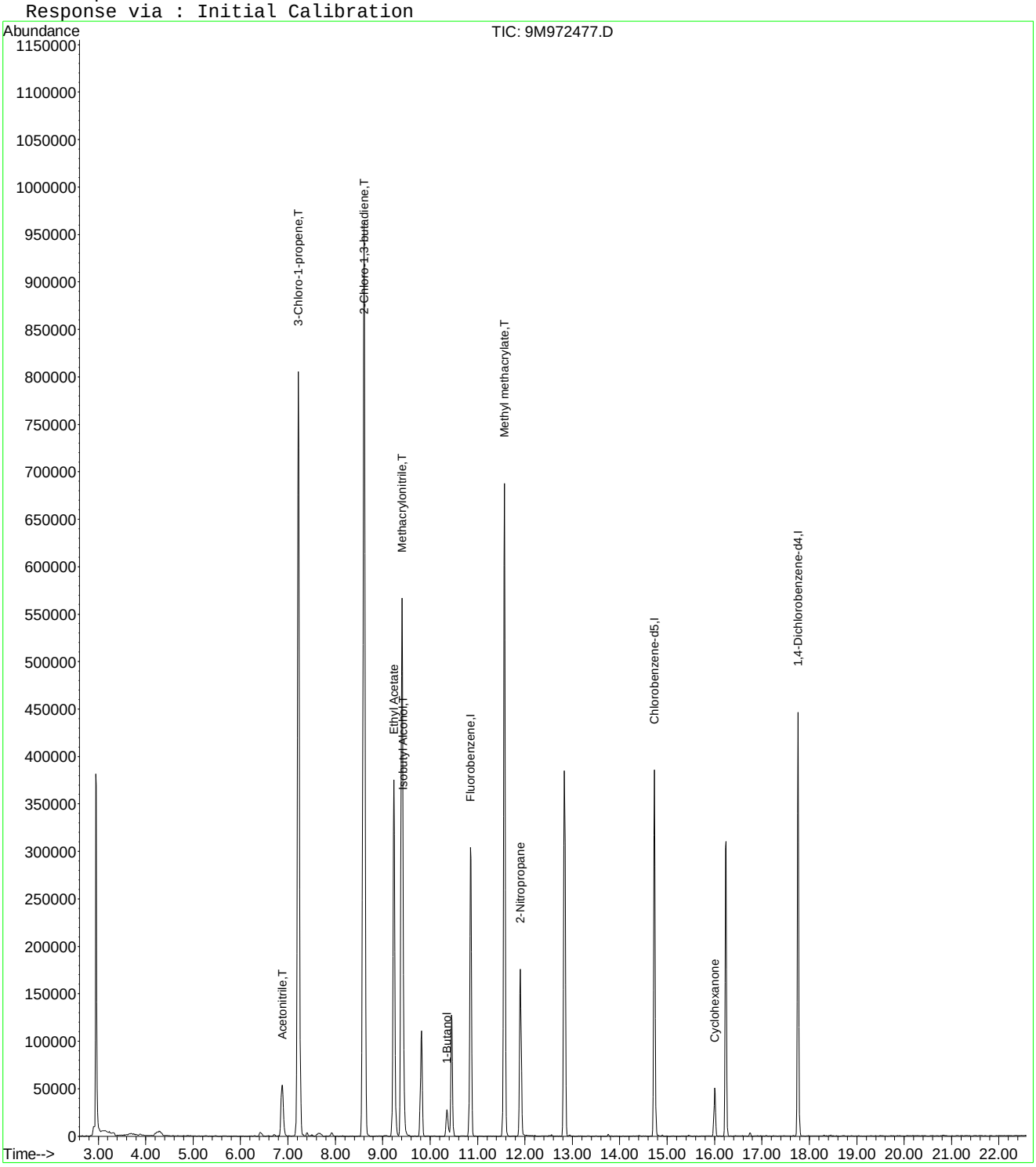

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972478.D Vial: 9
Acq On : 25 Jan 2016 14:25 Operator: FJB
Sample : WG555000-08 400ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 09:51:10 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	359343	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	261674	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	149058	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.89	41	148074	411.3034	ug/kg#	96
3) 3-Chloro-1-propene	7.22	41	1457717	410.9100	ug/kg	99
4) 2-Chloro-1,3-butadiene	8.61	53	1703971	422.3261	ug/kg	100
5) Ethyl Acetate	9.23	43	980479	413.7480	ug/kg	100
6) Methacrylonitrile	9.40	67	321602	419.2243	ug/kg	99
7) Isobutyl Alcohol	9.43	43	142361	842.7355	ug/kg#	98
8) 1-Butanol	10.36	56	51732	422.9922	ug/kg	99
9) Methyl methacrylate	11.56	41	779879	430.8570	ug/kg	98
10) 2-Nitropropane	11.90	43	267565	455.0088	ug/kg	96
12) Cyclohexanone	16.01	55	56623	437.0688	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972478.D A9FOO_SL.M Wed Jan 27 09:51:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972478.D Vial: 9
Acq On : 25 Jan 2016 14:25 Operator: FJB
Sample : WG555000-08 400ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 9:51 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

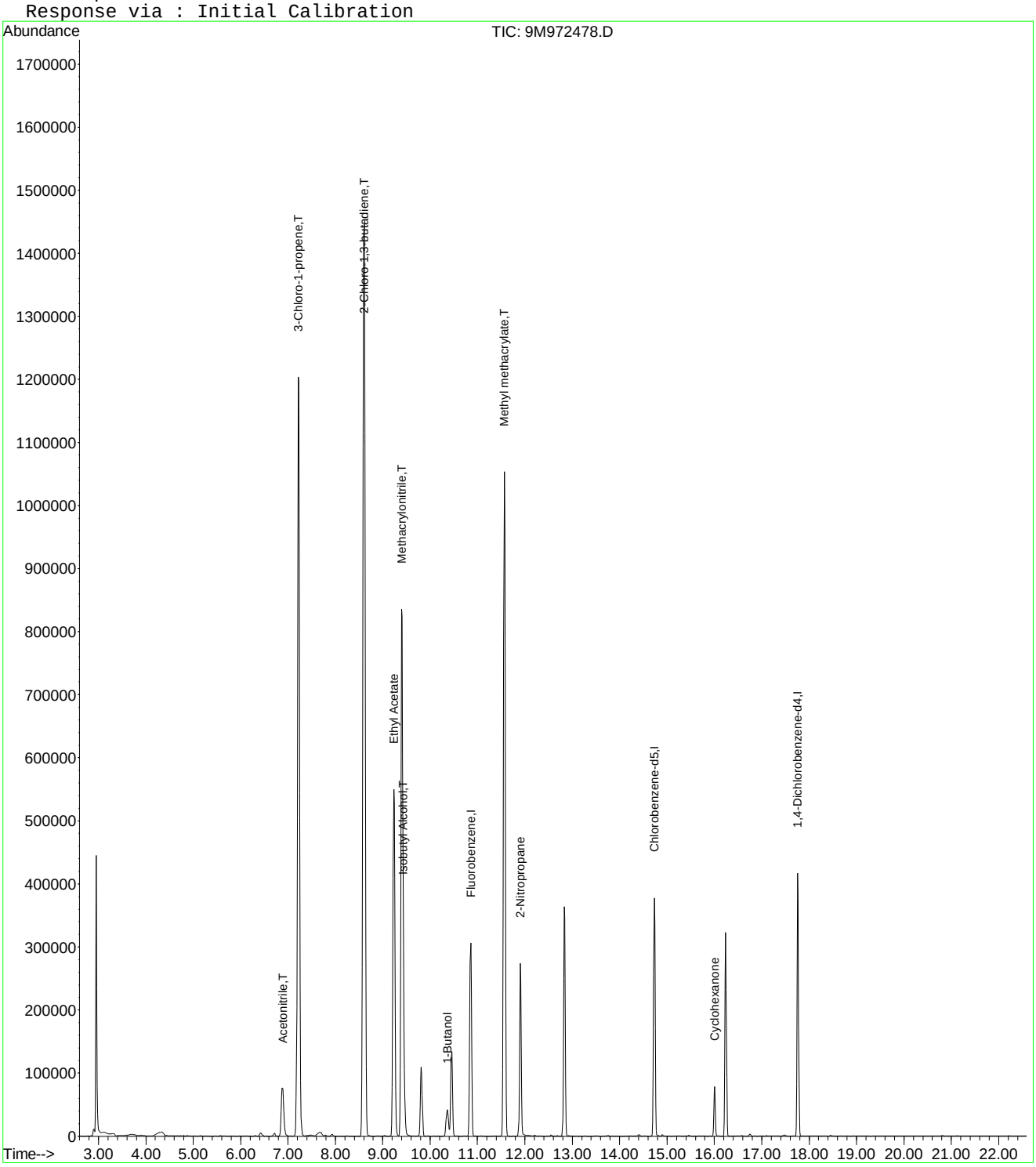

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972479.D Vial: 10
Acq On : 25 Jan 2016 14:56 Operator: FJB
Sample : WG555000-09 500ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:08 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	364474	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	266311	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	151707	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	196334	537.6773	ug/kg#	94
3) 3-Chloro-1-propene	7.22	41	1832802	509.3680	ug/kg	99
4) 2-Chloro-1,3-butadiene	8.60	53	2126710	519.6807	ug/kg	100
5) Ethyl Acetate	9.23	43	1255294	522.2587	ug/kg	100
6) Methacrylonitrile	9.40	67	408537	525.0513	ug/kg	100
7) Isobutyl Alcohol	9.43	43	180610	1052.3719	ug/kg	98
8) 1-Butanol	10.36	56	64789	519.8809	ug/kg	97
9) Methyl methacrylate	11.56	41	981460	534.5904	ug/kg	100
10) 2-Nitropropane	11.90	43	346571	581.0659	ug/kg	97
12) Cyclohexanone	16.01	55	74733	566.8143	ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972479.D A9FOO_SL.M Wed Jan 27 11:30:29 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972479.D Vial: 10
Acq On : 25 Jan 2016 14:56 Operator: FJB
Sample : WG555000-09 500ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

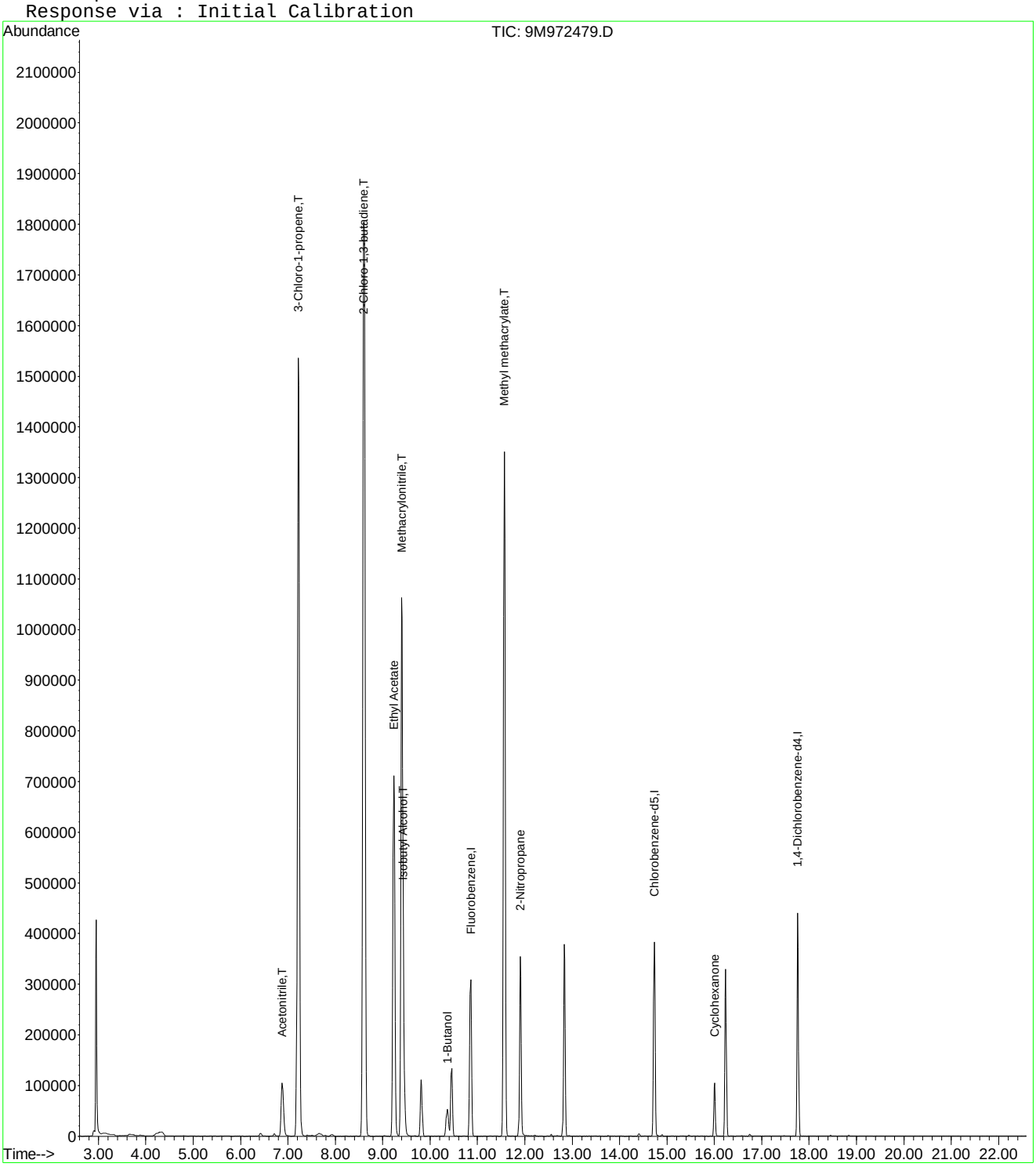

9M972479.D A9FOO_SL.M Wed Jan 27 11:30:29 2016 Page 2

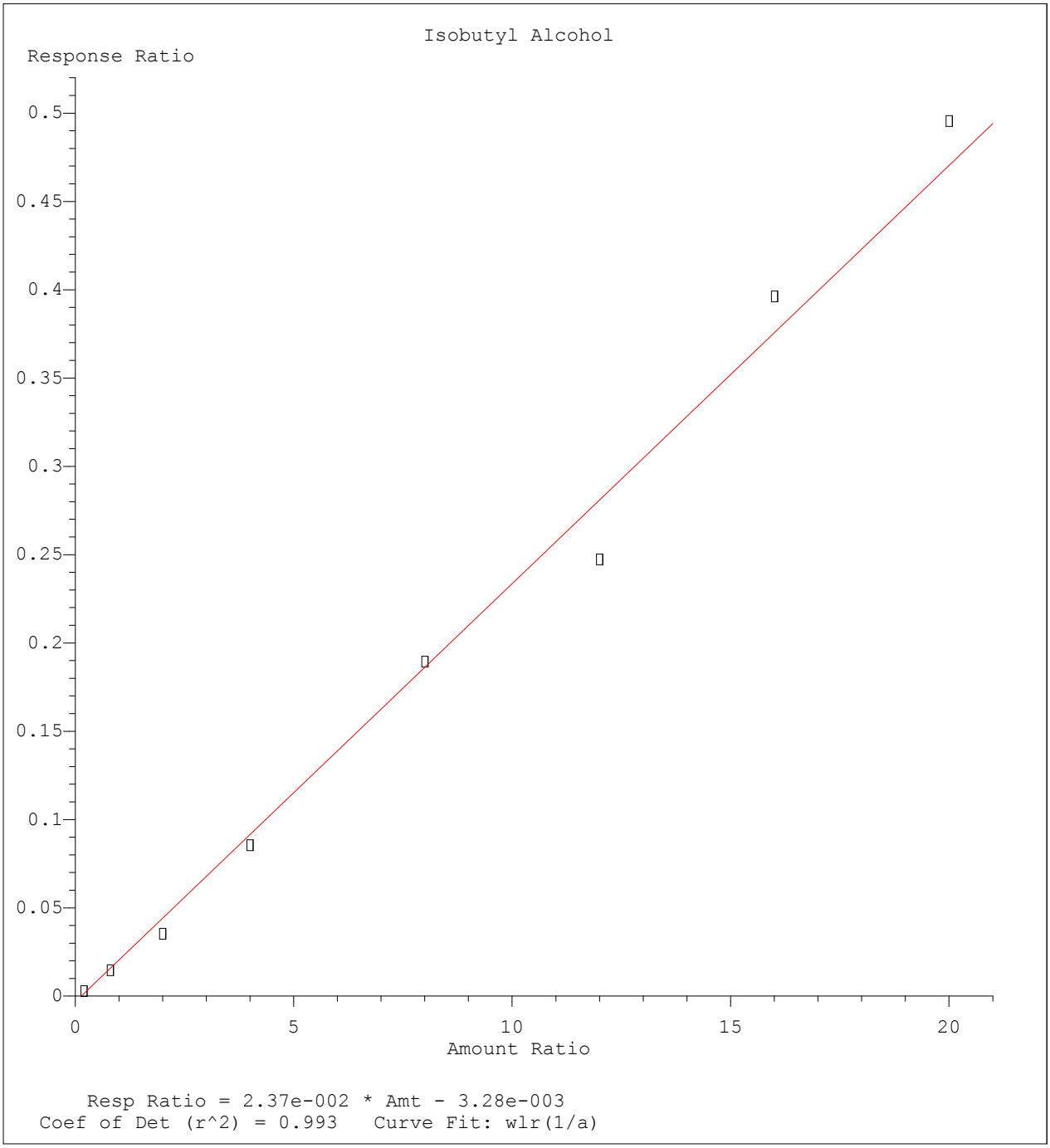

Method Name: C:\MSDCHEM\1\METHODS\A9FOO_SL.M
Calibration Table Last Updated: Wed Jan 27 09:49:02 2016

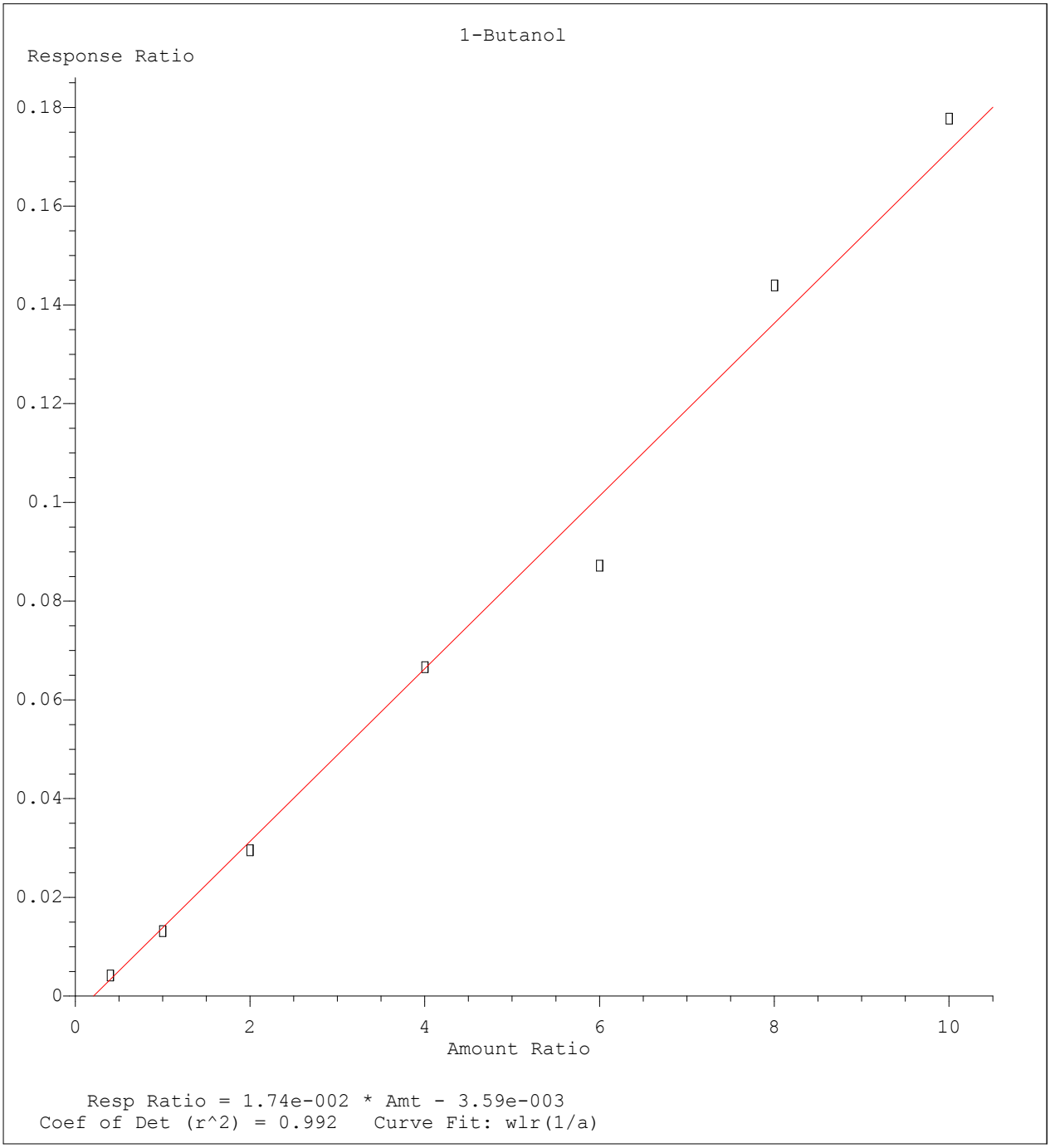

Method Name: C:\MSDCHEM\1\METHODS\A9FOO_SL.M
Calibration Table Last Updated: Wed Jan 27 09:49:02 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:09 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	394765	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	285754	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	159586	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	40054	101.2745 ug/kg#	100
3) 3-Chloro-1-propene	7.22	41	402890	103.3786 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	572568	129.1764 ug/kg	99
5) Ethyl Acetate	9.23	43	275962	106.0028 ug/kg	99
6) Methacrylonitrile	9.40	67	90289	107.1354 ug/kg	96
7) Isobutyl Alcohol	9.42	43	34031	188.7895 ug/kg	99
8) 1-Butanol	10.35	56	12038	97.7072 ug/kg	97
9) Methyl methacrylate	11.56	41	219363	110.3163 ug/kg	100
10) 2-Nitropropane	11.90	43	69288	107.2554 ug/kg	93
12) Cyclohexanone	16.01	55	14203	100.3934 ug/kg	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

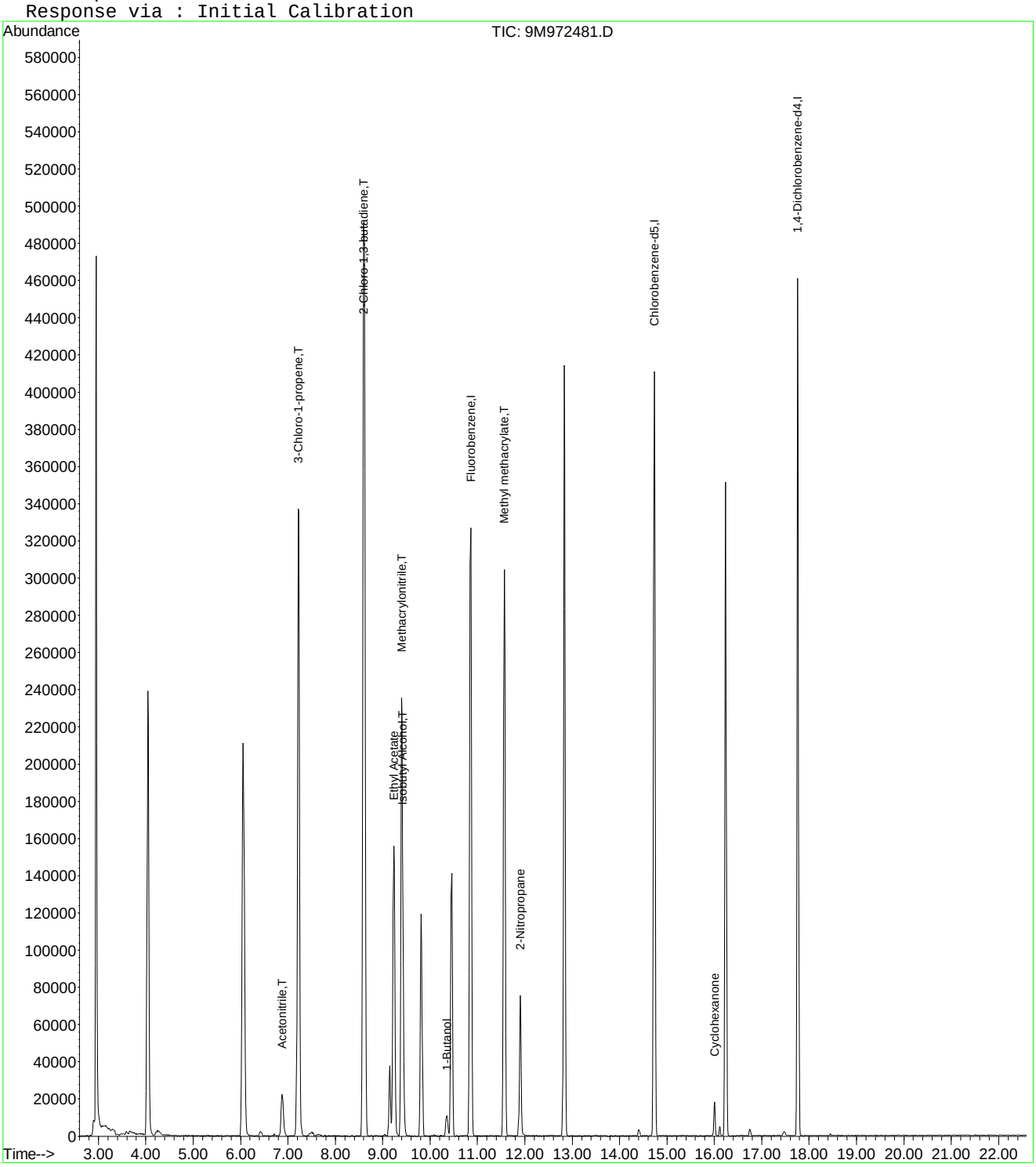

9M972481.D A9FOO_SL.M Wed Jan 27 11:15:09 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	101.2745	-1.3	106	0.00
3	T	3-Chloro-1-propene	100.0000	103.3786	-3.4	98	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	129.1764	-29.2	122	0.00
5		Ethyl Acetate	100.0000	106.0028	-6.0	103	0.00
6	T	Methacrylonitrile	100.0000	107.1354	-7.1	103	0.00
7	T	Isobutyl Alcohol	200.0000	188.7895	5.6	101	0.00
8		1-Butanol	100.0000	97.7072	2.3	103	0.00
9	T	Methyl methacrylate	100.0000	110.3163	-10.3	105	0.00
10		2-Nitropropane	100.0000	107.2554	-7.3	106	0.00
11	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
12		Cyclohexanone	100.0000	100.3934	-0.4	101	0.00
13	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	99	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972481.D A9FOO_SL.M Wed Jan 27 11:32:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974140.D Vial: 3
Acq On : 4 May 2016 12:51 Operator: ADC
Sample : WG567358-03 0.5ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 16:42:24 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	619322	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	468678	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	232303	50.00 ug/kg	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	10.43	65	449	0.1310 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.26%#	
58) Toluene-d8	12.82	98	3036	0.2712 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.54%#	
79) p-Bromofluorobenzene	16.22	95	3186	0.7911 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	1.58%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	1985	0.4697 ug/kg#	65
3) Chloromethane	3.74	50	4097	0.7866 ug/kg	94
5) 1,3-Butadiene	4.02	54	1905	Below Cal #	66
6) Bromomethane	4.88	94	1630	0.6249 ug/kg	86
7) Chloroethane	5.04	64	1223	0.4920 ug/kg#	45
8) Trichlorofluoromethane	5.51	101	2761	0.5204 ug/kg#	63
10) Isoprene	6.09	67	2118	0.5024 ug/kg	87
13) Acetone	6.39	43	4556	1.1964 ug/kg	86
14) 1,1-Dichloroethene	6.60	61	2723	0.5259 ug/kg	95
16) Dimethyl Sulfide	6.87	62	646	0.6738 ug/kg#	58
17) Iodomethane	7.13	142	394	2.6173 ug/kg#	37
18) Methyl acetate	7.14	43	1404	0.4202 ug/kg#	66
19) Methylene Chloride	7.38	84	2210	0.6735 ug/kg	96
20) Carbon Disulfide	7.44	76	6633	0.6540 ug/kg	91
22) Methyl Tert Butyl Ether	7.61	73	4778	0.5212 ug/kg#	56
23) trans-1,2-Dichloroethene	7.84	61	2690	0.5352 ug/kg	86
24) n-Hexane	7.91	57	3329	0.5602 ug/kg	93
26) Vinyl Acetate	8.43	43	3008	0.4715 ug/kg#	78
27) 1,1-Dichloroethane	8.46	63	3251	0.5234 ug/kg#	78
29) 2-Butanone	9.03	43	1041	0.5943 ug/kg#	56
31) 2,2-Dichloropropane	9.22	77	2126	0.4561 ug/kg#	42
32) cis-1,2-Dichloroethene	9.31	96	1411	0.4229 ug/kg	97
33) Chloroform	9.51	83	2791	0.5314 ug/kg	98
36) Tetrahydrofuran	9.77	42	3247	2.6291 ug/kg	83
39) Cyclohexane	10.08	56	3639	0.5264 ug/kg#	78
40) 1,1-Dichloropropene	10.24	75	2041	0.5045 ug/kg#	57
42) Carbon Tetrachloride	10.38	117	2135	0.4677 ug/kg#	80
45) 1,2-Dichloroethane	10.56	62	2513	0.5371 ug/kg#	70
46) Benzene	10.59	78	7077	0.5654 ug/kg	91
47) Trichloroethene	11.35	130	1590	0.4648 ug/kg	82
48) Methylcyclohexane	11.43	83	3019	0.5569 ug/kg	89
49) 1,2-Dichloropropane	11.56	63	1666	0.4840 ug/kg#	38
51) Bromodichloromethane	11.86	83	2030	0.4937 ug/kg#	87
52) Dibromomethane	11.95	174	780	0.6571 ug/kg	78
55) cis-1,3-Dichloropropene	12.49	75	2348	0.4741 ug/kg#	50
59) Toluene	12.91	91	7605	0.5779 ug/kg	94
60) Ethyl Methacrylate	13.02	69	1660	0.4201 ug/kg#	56
61) trans-1,3-Dichloropropene	13.09	75	1881	0.4149 ug/kg#	69
62) 1,1,2-Trichloroethane	13.32	97	1444	0.5419 ug/kg#	54
64) 1,3-Dichloropropane	13.62	76	2051	0.4451 ug/kg	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974140.D Vial: 3
Acq On : 4 May 2016 12:51 Operator: ADC
Sample : WG567358-03 0.5ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 16:42:24 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
65)	Tetrachloroethene	13.75	164	1262	0.4663	ug/kg#	65
66)	Dibromochloromethane	14.00	129	1420	0.4208	ug/kg	75
67)	1,2-Dibromoethane	14.27	107	1386	0.4886	ug/kg	95
68)	1-Chlorohexane	14.34	91	2434	0.5648	ug/kg	96
69)	Chlorobenzene	14.76	112	5023	0.5539	ug/kg	73
70)	1,1,1,2-Tetrachloroethane	14.79	131	1447	0.4340	ug/kg	88
71)	Ethylbenzene	14.78	106	2258	0.4624	ug/kg	63
72)	m-,p-Xylene	14.88	106	7020	1.1648	ug/kg	97
73)	o-Xylene	15.45	106	3150	0.5376	ug/kg	93
74)	Styrene	15.48	104	4629	0.4869	ug/kg	88
76)	Isopropylbenzene	15.86	105	8571	0.5824	ug/kg	88
78)	1,1,2,2-Tetrachloroethane	16.09	83	1451	0.4274	ug/kg#	78
80)	1,2,3-Trichloropropane	16.27	110	482	0.4564	ug/kg#	4
83)	Bromobenzene	16.51	156	2082	0.5793	ug/kg	64
84)	1,3,5-Trimethylbenzene	16.57	105	7992	0.7197	ug/kg	97
85)	2-Chlorotoluene	16.65	91	5987	0.6209	ug/kg	97
86)	4-Chlorotoluene	16.69	91	6160	0.6753	ug/kg	94
87)	a-Methylstyrene	16.97	118	3116	0.5412	ug/kg	93
88)	tert-Butylbenzene	17.03	134	1229	0.4947	ug/kg	56
89)	1,2,4-Trimethylbenzene	17.08	105	11315	0.4706	ug/kg	86
90)	sec-Butylbenzene	17.29	105	9570	0.6421	ug/kg	99
91)	p-Isopropyltoluene	17.45	119	7752	0.6538	ug/kg	96
92)	1,3-Dichlorobenzene	17.65	146	4817	0.6810	ug/kg	92
93)	1,4-Dichlorobenzene	17.78	146	4931	0.6793	ug/kg#	64
94)	n-Butylbenzene	17.98	91	7938	0.7038	ug/kg#	94
95)	1,2-Dichlorobenzene	18.29	146	4228	0.6215	ug/kg	91
97)	1,2,4-Trichlorobenzene	20.43	180	3618	0.7452	ug/kg	89
98)	Hexachlorobutadiene	20.58	225	1560	0.6728	ug/kg#	73
99)	Naphthalene	20.80	128	10058	0.8175	ug/kg	95
100)	1,2,3-Trichlorobenzene	21.10	180	3624	0.7702	ug/kg	95

(#) = qualifier out of range (m) = manual integration
9M974140.D 8260SL.M Thu May 05 16:47:10 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974140.D Vial: 3
Acq On : 4 May 2016 12:51 Operator: ADC
Sample : WG567358-03 0.5ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 5 16:42 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

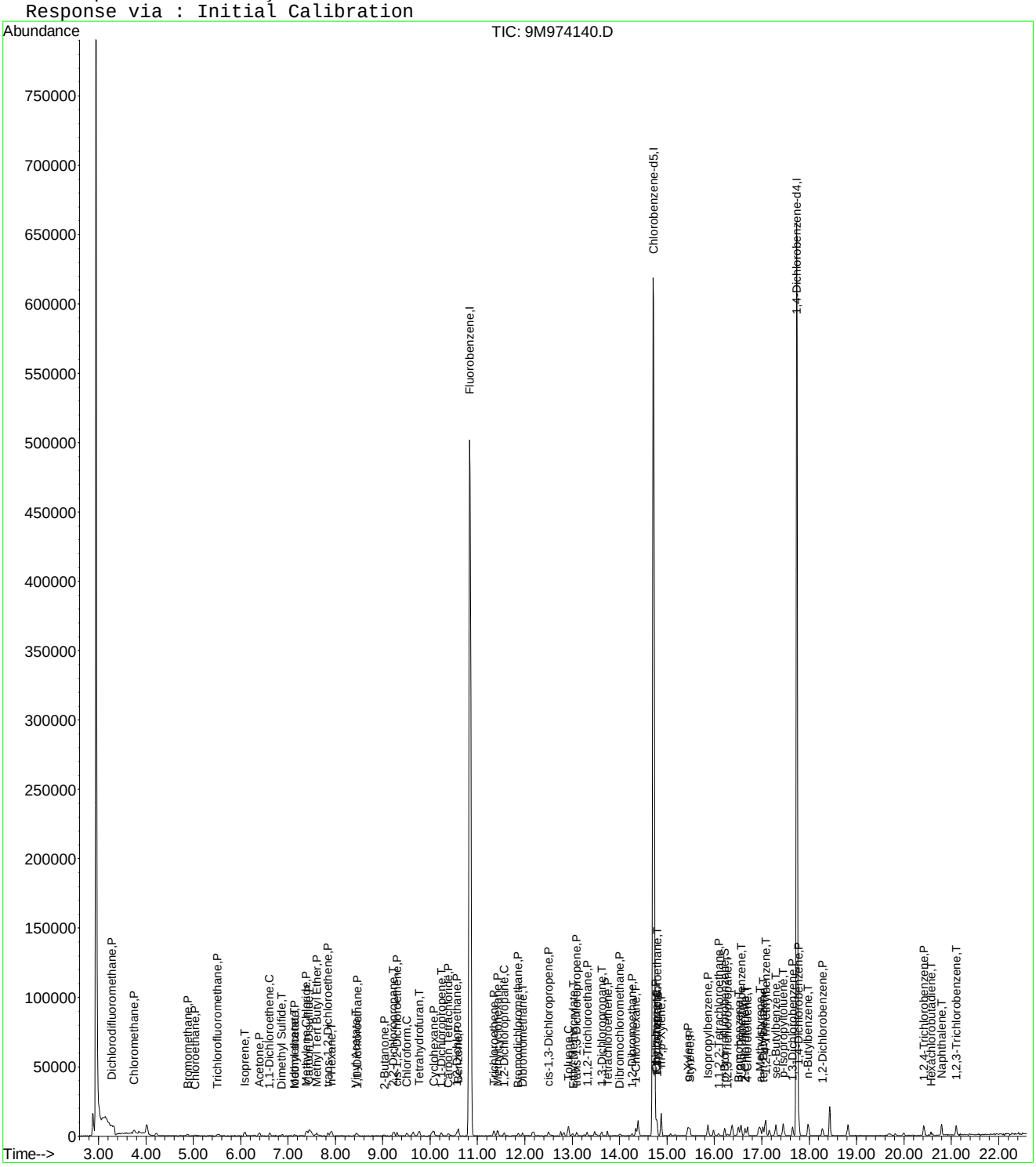

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\050416\9M974140.D Vial: 3
Acq On : 4 May 2016 12:51 Operator: ADC
Sample : WG567358-03 0.5ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	0.4697	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.7866	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.3423	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	-0.1893	0.0	100	0.00
6	P	Bromomethane	-1.0000	0.6249	0.0	100	0.00
7	P	Chloroethane	-1.0000	0.4920	0.0	100	0.00
8	P	Trichlorofluoromethane	-1.0000	0.5204	0.0	100	-0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.05#
10	T	Isoprene	-1.0000	0.5024	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.29#
12	P	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2154	0.0	100	0.00
13	P	Acetone	-1.0000	1.1964	0.0	0	0.00
14	C	1,1-Dichloroethene	-1.0000	0.5259	0.0	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.3944	0.0	100	0.02
16	T	Dimethyl Sulfide	-1.0000	0.6738	0.0	100	0.00
17	T	Iodomethane	-1.0000	2.6173	0.0	100	0.00
18	P	Methyl acetate	-1.0000	0.4202	0.0	100	0.00
19	P	Methylene Chloride	-1.0000	0.6735	0.0	100	0.00
20	P	Carbon Disulfide	-1.0000	0.6540	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.58#
22	P	Methyl Tert Butyl Ether	-1.0000	0.5212	0.0	100	0.00
23	P	trans-1,2-Dichloroethene	-1.0000	0.5352	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.5602	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.25#
26	T	Vinyl Acetate	-1.0000	0.4715	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.5234	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.82#
29	P	2-Butanone	-1.0000	0.5943	0.0	100	0.02
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.13#
31	T	2,2-Dichloropropane	-1.0000	0.4561	0.0	100	-0.01
32	P	cis-1,2-Dichloroethene	-1.0000	0.4229	0.0	100	0.00
33	C	Chloroform	-1.0000	0.5314	0.0	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.65#
35	T	Bromochloromethane	-1.0000	0.3841	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	2.6291	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	-1.0000	0.3942	0.0	100	0.00
39	P	Cyclohexane	-1.0000	0.5264	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.5045	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.33#
42	P	Carbon Tetrachloride	-1.0000	0.4677	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.1310	0.0	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	-1.0000	0.5371	0.0	100	0.00
46	P	Benzene	0.5000	0.5654	-13.1	100	0.00
47	P	Trichloroethene	-1.0000	0.4648	0.0	100	0.00
48	P	Methylcyclohexane	-1.0000	0.5569	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.4840	0.0	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.85#
51	P	Bromodichloromethane	-1.0000	0.4937	0.0	100	0.00
52	T	Dibromomethane	-1.0000	0.6571	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2684	0.0	100	0.00
54	P	4-Methyl-2-Pentanone	-1.0000	0.1688	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\050416\9M974140.D Vial: 3
Acq On : 4 May 2016 12:51 Operator: ADC
Sample : WG567358-03 0.5ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	-1.0000	0.4741	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.3716	0.0	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.2712	0.0	100	0.00
59	C	Toluene	0.5000	0.5779	-15.6	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.4201	0.0	100	0.02
61	P	trans-1,3-Dichloropropene	-1.0000	0.4149	0.0	100	0.00
62	P	1,1,2-Trichloroethane	-1.0000	0.5419	0.0	100	0.00
63	P	2-Hexanone	-1.0000	0.3493	0.0	100	0.00
64	T	1,3-Dichloropropane	-1.0000	0.4451	0.0	100	0.00
65	P	Tetrachloroethene	-1.0000	0.4663	0.0	100	0.00
66	P	Dibromochloromethane	-1.0000	0.4208	0.0	100	0.00
67	P	1,2-Dibromoethane	-1.0000	0.4886	0.0	100	0.00
68	T	1-Chlorohexane	-1.0000	0.5648	0.0	100	0.00
69	P	Chlorobenzene	-1.0000	0.5539	0.0	100	0.00
70	T	1,1,1,2-Tetrachloroethane	-1.0000	0.4340	0.0	100	0.00
71	C	Ethylbenzene	0.5000	0.4624	7.5	100	0.00
72	P	m-,p-Xylene	1.0000	1.1648	-16.5	100	0.00
73	P	o-Xylene	0.5000	0.5376	-7.5	100	0.00
74	P	Styrene	-1.0000	0.4869	0.0	100	0.00
75	P	Bromoform	-1.0000	0.3440	0.0	100	0.00
76	P	Isopropylbenzene	-1.0000	0.5824	0.0	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	-1.0000	0.4274	0.0	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.7911	0.0	100	0.00
80	T	1,2,3-Trichloropropane	-1.0000	0.4564	0.0	100	-0.01
81	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.1627	0.0	100	0.00
82	T	n-Propylbenzene	-1.0000	0.2283	0.0	0	0.00
83	T	Bromobenzene	-1.0000	0.5793	0.0	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	0.7197	0.0	100	0.00
85	T	2-Chlorotoluene	-1.0000	0.6209	0.0	100	0.00
86	T	4-Chlorotoluene	-1.0000	0.6753	0.0	100	0.00
87	T	a-Methylstyrene	-1.0000	0.5412	0.0	100	0.00
88	T	tert-Butylbenzene	-1.0000	0.4947	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	-1.0000	0.4706	0.0	100	0.00
90	T	sec-Butylbenzene	-1.0000	0.6421	0.0	100	0.00
91	T	p-Isopropyltoluene	-1.0000	0.6538	0.0	100	0.00
92	P	1,3-Dichlorobenzene	-1.0000	0.6810	0.0	100	0.00
93	P	1,4-Dichlorobenzene	-1.0000	0.6793	0.0	100	0.00
94	T	n-Butylbenzene	-1.0000	0.7038	0.0	100	0.00
95	P	1,2-Dichlorobenzene	-1.0000	0.6215	0.0	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.28#
97	P	1,2,4-Trichlorobenzene	-1.0000	0.7452	0.0	100	0.00
98	T	Hexachlorobutadiene	-1.0000	0.6728	0.0	100	0.00
99	T	Naphthalene	-1.0000	0.8175	0.0	100	0.00
100	T	1,2,3-Trichlorobenzene	-1.0000	0.7702	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M974140.D 8260SL.M Thu May 05 16:47:07 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974141.D Vial: 4
Acq On : 4 May 2016 13:21 Operator: ADC
Sample : WG567358-04 1.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 16:42:24 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	615313	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	468471	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	232535	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.82	98	2218	0.1982 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.40%#	
79) p-Bromofluorobenzene	16.22	95	2949	0.7315 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	1.46%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	3205	0.7634 ug/kg#	80
3) Chloromethane	3.74	50	6120	1.1826 ug/kg	79
4) Vinyl Chloride	3.98	62	3152	0.5481 ug/kg	88
5) 1,3-Butadiene	4.02	54	3296	0.4981 ug/kg	81
6) Bromomethane	4.88	94	2307	0.8902 ug/kg	99
7) Chloroethane	5.04	64	2041	0.8264 ug/kg#	45
8) Trichlorofluoromethane	5.53	101	4742	0.8995 ug/kg#	83
9) Diethyl ether	6.06	59	12982	4.3807 ug/kg	96
10) Isoprene	6.09	67	3278	0.7826 ug/kg	98
11) Acrolein	6.28	56	1009	2.0431 ug/kg#	43
12) 1,1,2-Trichloro-1,2,2-Trif	6.33	101	1890	0.6126 ug/kg	86
13) Acetone	6.39	43	4414	1.0942 ug/kg	93
14) 1,1-Dichloroethene	6.61	61	4314	0.8385 ug/kg	97
15) Tert-Butyl Alcohol	6.72	59	5758	10.8323 ug/kg#	73
16) Dimethyl Sulfide	6.88	62	1470	1.0027 ug/kg	69
17) Iodomethane	7.13	142	445	2.6496 ug/kg#	37
18) Methyl acetate	7.14	43	2732	0.8231 ug/kg#	66
19) Methylene Chloride	7.39	84	3455	1.0598 ug/kg	98
20) Carbon Disulfide	7.44	76	9946	0.9871 ug/kg	95
21) Acrylonitrile	7.58	53	3202	2.2578 ug/kg	89
22) Methyl Tert Butyl Ether	7.60	73	7861	0.8630 ug/kg	93
23) trans-1,2-Dichloroethene	7.84	61	4334	0.8678 ug/kg	96
24) n-Hexane	7.92	57	5723	0.9692 ug/kg	89
25) Diisopropyl ether	8.26	45	52378	4.4861 ug/kg	97
26) Vinyl Acetate	8.43	43	5729	0.9039 ug/kg#	78
27) 1,1-Dichloroethane	8.46	63	5359	0.8684 ug/kg#	81
28) Ethyl-Tert-Butyl ether	8.83	59	49583	4.4630 ug/kg	98
29) 2-Butanone	9.03	43	1835	1.0544 ug/kg#	56
30) Propionitrile	9.14	54	1690	6.1109 ug/kg#	61
31) 2,2-Dichloropropane	9.24	77	3933	0.8492 ug/kg#	51
32) cis-1,2-Dichloroethene	9.30	96	2862	0.8633 ug/kg	86
33) Chloroform	9.52	83	4363	0.8361 ug/kg	94
34) 1-Bromopropane	9.63	122	390	0.6930 ug/kg	59
35) Bromochloromethane	9.74	130	1748	0.8250 ug/kg	88
36) Tetrahydrofuran	9.77	42	8367	6.8188 ug/kg	98
38) 1,1,1-Trichloroethane	10.04	97	3768	0.8129 ug/kg	91
39) Cyclohexane	10.08	56	6603	0.9613 ug/kg#	89
40) 1,1-Dichloropropene	10.23	75	3293	0.8193 ug/kg	96
41) Tert-Amyl-Methyl ether	10.34	73	38025	4.4925 ug/kg	97
42) Carbon Tetrachloride	10.38	117	3212	0.7082 ug/kg#	86

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974141.D Vial: 4
Acq On : 4 May 2016 13:21 Operator: ADC
Sample : WG567358-04 1.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 16:42:24 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	4085	0.8788 ug/kg	88
46)	Benzene	10.59	78	11125	0.8946 ug/kg	96
47)	Trichloroethene	11.34	130	3072	0.9038 ug/kg	94
48)	Methylcyclohexane	11.43	83	5036	0.9350 ug/kg	94
49)	1,2-Dichloropropane	11.56	63	2927	0.8559 ug/kg	86
51)	Bromodichloromethane	11.87	83	2957	0.7238 ug/kg#	85
52)	Dibromomethane	11.95	174	1379	0.9389 ug/kg	90
53)	2-Chloroethyl Vinyl Ether	12.16	63	1335	0.6545 ug/kg#	49
54)	4-Methyl-2-Pentanone	12.19	58	715	0.4602 ug/kg#	42
55)	cis-1,3-Dichloropropene	12.50	75	4117	0.8368 ug/kg	86
56)	Dimethyl Disulfide	12.77	94	3880	0.6943 ug/kg	91
59)	Toluene	12.91	91	12462	0.9474 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	2650	0.6709 ug/kg#	73
61)	trans-1,3-Dichloropropene	13.09	75	3338	0.7366 ug/kg	81
62)	1,1,2-Trichloroethane	13.32	97	2095	0.7865 ug/kg	97
63)	2-Hexanone	13.25	43	1717	0.6363 ug/kg#	41
64)	1,3-Dichloropropane	13.61	76	4295	0.9324 ug/kg	99
65)	Tetrachloroethene	13.74	164	2482	0.9176 ug/kg	91
66)	Dibromochloromethane	14.01	129	2884	0.8549 ug/kg	78
67)	1,2-Dibromoethane	14.27	107	2602	0.9177 ug/kg	88
68)	1-Chlorohexane	14.34	91	3765	0.8740 ug/kg	81
69)	Chlorobenzene	14.76	112	8249	0.9101 ug/kg	97
70)	1,1,1,2-Tetrachloroethane	14.79	131	2633	0.7900 ug/kg	100
71)	Ethylbenzene	14.78	106	4385	0.8983 ug/kg	92
72)	m-,p-Xylene	14.88	106	10159	1.6864 ug/kg	90
73)	o-Xylene	15.44	106	5211	0.8898 ug/kg	90
74)	Styrene	15.48	104	7782	0.8188 ug/kg	94
75)	Bromoform	15.99	173	1410	0.5940 ug/kg	75
76)	Isopropylbenzene	15.86	105	13147	0.8937 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.08	83	3091	0.9096 ug/kg#	94
80)	1,2,3-Trichloropropane	16.27	110	871	0.8239 ug/kg#	1
81)	trans-1,4-Dichloro-2-Buten	16.32	53	585	0.4617 ug/kg#	1
82)	n-Propylbenzene	16.38	91	14776	0.5755 ug/kg	99
83)	Bromobenzene	16.51	156	3389	0.9420 ug/kg	55
84)	1,3,5-Trimethylbenzene	16.57	105	12905	1.1610 ug/kg	95
85)	2-Chlorotoluene	16.65	91	9669	1.0017 ug/kg	95
86)	4-Chlorotoluene	16.69	91	9690	1.0612 ug/kg	97
87)	a-Methylstyrene	16.97	118	4652	0.8071 ug/kg	96
88)	tert-Butylbenzene	17.02	134	2283	0.9180 ug/kg	70
89)	1,2,4-Trimethylbenzene	17.08	105	14241	0.7350 ug/kg	94
90)	sec-Butylbenzene	17.29	105	14530	0.9739 ug/kg	99
91)	p-Isopropyltoluene	17.45	119	12126	1.0217 ug/kg	94
92)	1,3-Dichlorobenzene	17.65	146	6777	0.9571 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	7674	1.0562 ug/kg	91
94)	n-Butylbenzene	17.98	91	11262	0.9975 ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	6401	0.9400 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	506	0.6039 ug/kg	97
97)	1,2,4-Trichlorobenzene	20.42	180	5061	1.0414 ug/kg	97
98)	Hexachlorobutadiene	20.57	225	2132	0.9185 ug/kg	94
99)	Naphthalene	20.80	128	12603	1.0234 ug/kg	99
100)	1,2,3-Trichlorobenzene	21.10	180	4927	1.0461 ug/kg	93

(#) = qualifier out of range (m) = manual integration
9M974141.D 8260SL.M Thu May 05 16:48:01 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974141.D Vial: 4
Acq On : 4 May 2016 13:21 Operator: ADC
Sample : WG567358-04 1.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 5 16:42 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

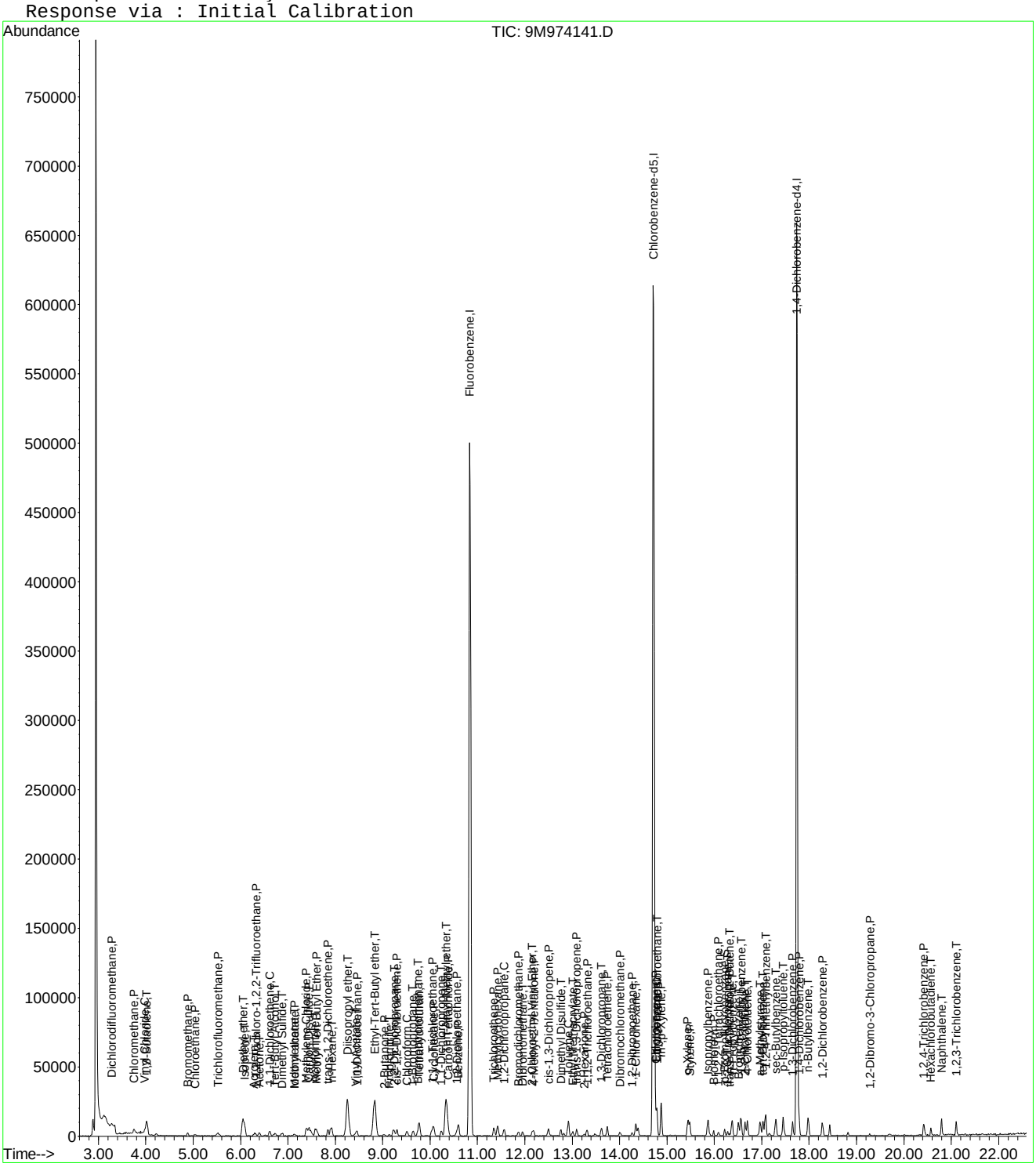

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\050416\9M974141.D Vial: 4
Acq On : 4 May 2016 13:21 Operator: ADC
Sample : WG567358-04 1.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	0.7634	0.0	100	0.00
3	P	Chloromethane	-1.0000	1.1826	0.0	100	0.00
4	C	Vinyl Chloride	1.0000	0.5481	45.2#	100	0.00
5	T	1,3-Butadiene	1.0000	0.4980	50.2#	100	0.00
6	P	Bromomethane	1.0000	0.8902	11.0	100	0.00
7	P	Chloroethane	-1.0000	0.8264	0.0	100	0.00
8	P	Trichlorofluoromethane	1.0000	0.8995	10.0	100	0.00
9	T	Diethyl ether	5.0000	4.3807	12.4	100	0.00
10	T	Isoprene	-1.0000	0.7826	0.0	100	0.00
11	T	Acrolein	2.5000	2.0431	18.3	100	-0.01
12	P	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.6126	0.0	100	0.03
13	P	Acetone	-1.0000	1.0942	0.0	0	0.00
14	C	1,1-Dichloroethene	1.0000	0.8385	16.1	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	10.8323	0.0	100	0.00
16	T	Dimethyl Sulfide	1.0000	1.0027	-0.3	100	0.00
17	T	Iodomethane	-1.0000	2.6496	0.0	100	0.00
18	P	Methyl acetate	-1.0000	0.8231	0.0	100	0.00
19	P	Methylene Chloride	-1.0000	1.0598	0.0	100	0.00
20	P	Carbon Disulfide	-1.0000	0.9871	0.0	100	0.00
21	T	Acrylonitrile	2.5000	2.2578	9.7	100	0.00
22	P	Methyl Tert Butyl Ether	1.0000	0.8630	13.7	100	0.00
23	P	trans-1,2-Dichloroethene	1.0000	0.8678	13.2	100	0.00
24	T	n-Hexane	-1.0000	0.9692	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	4.4861	10.3	100	0.00
26	T	Vinyl Acetate	-1.0000	0.9039	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	0.8685	13.2	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.4630	10.7	100	0.00
29	P	2-Butanone	-1.0000	1.0544	0.0	100	0.02
30	T	Propionitrile	5.0000	6.1109	-22.2	100	0.00
31	T	2,2-Dichloropropane	-1.0000	0.8492	0.0	100	0.00
32	P	cis-1,2-Dichloroethene	1.0000	0.8633	13.7	100	0.00
33	C	Chloroform	1.0000	0.8361	16.4	100	0.00
34	T	1-Bromopropane	-1.0000	0.6930	0.0	100	-0.01
35	T	Bromochloromethane	1.0000	0.8250	17.5	100	0.00
36	T	Tetrahydrofuran	-1.0000	6.8188	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	1.0000	0.8129	18.7	100	0.00
39	P	Cyclohexane	1.0000	0.9613	3.9	100	0.00
40	T	1,1-Dichloropropene	1.0000	0.8193	18.1	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	4.4925	10.2	100	0.00
42	P	Carbon Tetrachloride	-1.0000	0.7082	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	1.0000	0.8788	12.1	100	0.00
46	P	Benzene	1.0000	0.8946	10.5	100	0.00
47	P	Trichloroethene	1.0000	0.9038	9.6	100	0.00
48	P	Methylcyclohexane	1.0000	0.9350	6.5	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.8559	14.4	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.85#
51	P	Bromodichloromethane	-1.0000	0.7238	0.0	100	0.00
52	T	Dibromomethane	1.0000	0.9389	6.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.6545	0.0	100	0.00
54	P	4-Methyl-2-Pentanone	-1.0000	0.4602	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\050416\9M974141.D Vial: 4
Acq On : 4 May 2016 13:21 Operator: ADC
Sample : WG567358-04 1.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	-1.0000	0.8368	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.6943	0.0	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.1982	0.0	100	0.00
59	C	Toluene	1.0000	0.9474	5.3	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.6709	0.0	100	0.00
61	P	trans-1,3-Dichloropropene	-1.0000	0.7366	0.0	100	0.00
62	P	1,1,2-Trichloroethane	1.0000	0.7865	21.3	100	0.00
63	P	2-Hexanone	-1.0000	0.6363	0.0	100	0.00
64	T	1,3-Dichloropropane	1.0000	0.9325	6.8	100	0.00
65	P	Tetrachloroethene	1.0000	0.9176	8.2	100	0.00
66	P	Dibromochloromethane	-1.0000	0.8549	0.0	100	0.00
67	P	1,2-Dibromoethane	-1.0000	0.9177	0.0	100	0.00
68	T	1-Chlorohexane	1.0000	0.8740	12.6	100	0.00
69	P	Chlorobenzene	1.0000	0.9101	9.0	100	0.00
70	T	1,1,1,2-Tetrachloroethane	-1.0000	0.7900	0.0	100	0.00
71	C	Ethylbenzene	1.0000	0.8983	10.2	100	0.00
72	P	m-,p-Xylene	2.0000	1.6864	15.7	100	0.00
73	P	o-Xylene	1.0000	0.8898	11.0	100	0.00
74	P	Styrene	1.0000	0.8188	18.1	100	0.00
75	P	Bromoform	-1.0000	0.5940	0.0	100	0.00
76	P	Isopropylbenzene	1.0000	0.8937	10.6	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	1.0000	0.9096	9.0	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.7315	0.0	100	0.00
80	T	1,2,3-Trichloropropane	1.0000	0.8239	17.6	100	-0.01
81	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.4617	0.0	100	0.00
82	T	n-Propylbenzene	1.0000	0.5755	42.5#	100	0.00
83	T	Bromobenzene	1.0000	0.9420	5.8	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	1.1610	0.0	100	0.00
85	T	2-Chlorotoluene	-1.0000	1.0017	0.0	100	0.00
86	T	4-Chlorotoluene	1.0000	1.0612	-6.1	100	0.00
87	T	a-Methylstyrene	-1.0000	0.8071	0.0	100	0.00
88	T	tert-Butylbenzene	-1.0000	0.9180	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	1.0000	0.7350	26.5#	100	0.00
90	T	sec-Butylbenzene	1.0000	0.9739	2.6	100	0.00
91	T	p-Isopropyltoluene	-1.0000	1.0217	0.0	100	0.00
92	P	1,3-Dichlorobenzene	1.0000	0.9571	4.3	100	0.00
93	P	1,4-Dichlorobenzene	1.0000	1.0562	-5.6	100	0.00
94	T	n-Butylbenzene	1.0000	0.9975	0.2	100	0.00
95	P	1,2-Dichlorobenzene	1.0000	0.9400	6.0	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	0.6039	0.0	0	0.00
97	P	1,2,4-Trichlorobenzene	1.0000	1.0414	-4.1	100	0.00
98	T	Hexachlorobutadiene	1.0000	0.9185	8.1	100	0.00
99	T	Naphthalene	-1.0000	1.0234	0.0	100	0.00
100	T	1,2,3-Trichlorobenzene	1.0000	1.0461	-4.6	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1
9M974141.D 8260SL.M Thu May 05 16:47:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974142.D Vial: 5
Acq On : 4 May 2016 13:52 Operator: ADC
Sample : WG567358-05 2.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 16:42:24 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	644115	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	486344	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	249239	50.00 ug/kg	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.82	98	1460	0.1257 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.26%#	
79) p-Bromofluorobenzene	16.21	95	2444	0.5656 ug/kg	-0.01
Spiked Amount 50.000	Range 74 - 121		Recovery =	1.14%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	10046	2.2858 ug/kg	87
3) Chloromethane	3.76	50	13372	2.4684 ug/kg	85
4) Vinyl Chloride	3.99	62	11521	2.5803 ug/kg	100
5) 1,3-Butadiene	4.03	54	8138	2.6916 ug/kg	89
6) Bromomethane	4.87	94	7077	2.6085 ug/kg	99
7) Chloroethane	5.04	64	5843	2.2601 ug/kg	88
8) Trichlorofluoromethane	5.53	101	12969	2.3501 ug/kg#	97
9) Diethyl ether	6.05	59	65304	21.0511 ug/kg	99
10) Isoprene	6.09	67	9828	2.2415 ug/kg	97
11) Acrolein	6.29	56	5702	11.0297 ug/kg	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	7061	2.1863 ug/kg	94
13) Acetone	6.39	43	6336	2.5821 ug/kg	96
14) 1,1-Dichloroethene	6.62	61	12844	2.3849 ug/kg	98
15) Tert-Butyl Alcohol	6.72	59	22928	41.2048 ug/kg	96
16) Dimethyl Sulfide	6.88	62	5197	2.3904 ug/kg	95
17) Iodomethane	7.14	142	2192	3.6444 ug/kg	90
18) Methyl acetate	7.14	43	7934	2.2834 ug/kg#	78
19) Methylene Chloride	7.40	84	8198	2.4023 ug/kg	88
20) Carbon Disulfide	7.44	76	27056	2.5651 ug/kg	100
21) Acrylonitrile	7.58	53	14817	9.9807 ug/kg	99
22) Methyl Tert Butyl Ether	7.60	73	22659	2.3764 ug/kg	97
23) trans-1,2-Dichloroethene	7.84	61	12600	2.4102 ug/kg	97
24) n-Hexane	7.91	57	15578	2.5203 ug/kg	96
25) Diisopropyl ether	8.25	45	260817	21.3399 ug/kg	99
26) Vinyl Acetate	8.43	43	15284	2.3036 ug/kg	91
27) 1,1-Dichloroethane	8.46	63	15837	2.4517 ug/kg	95
28) Ethyl-Tert-Butyl ether	8.83	59	247082	21.2454 ug/kg	99
29) 2-Butanone	9.03	43	4766	2.6160 ug/kg#	65
30) Propionitrile	9.13	54	11119	20.9161 ug/kg	86
31) 2,2-Dichloropropane	9.24	77	11847	2.4435 ug/kg	88
32) cis-1,2-Dichloroethene	9.31	96	7692	2.2165 ug/kg	97
33) Chloroform	9.51	83	12652	2.3162 ug/kg	96
34) 1-Bromopropane	9.64	122	1345	2.2832 ug/kg	84
35) Bromochloromethane	9.75	130	4980	2.2454 ug/kg	90
36) Tetrahydrofuran	9.77	42	27615	21.4988 ug/kg	99
38) 1,1,1-Trichloroethane	10.05	97	11924	2.4573 ug/kg	97
39) Cyclohexane	10.07	56	17145	2.3845 ug/kg	96
40) 1,1-Dichloropropene	10.24	75	9764	2.3207 ug/kg	94
41) Tert-Amyl-Methyl ether	10.34	73	187212	21.1293 ug/kg	98
42) Carbon Tetrachloride	10.38	117	11057	2.3290 ug/kg	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974142.D Vial: 5
Acq On : 4 May 2016 13:52 Operator: ADC
Sample : WG567358-05 2.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 16:42:24 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.55	62	11438	2.3507 ug/kg	95
46)	Benzene	10.59	78	31356	2.4088 ug/kg	98
47)	Trichloroethene	11.34	130	8398	2.3602 ug/kg	94
48)	Methylcyclohexane	11.43	83	13062	2.3167 ug/kg	93
49)	1,2-Dichloropropane	11.55	63	8654	2.4174 ug/kg	97
50)	1,4-Dioxane	11.86	88	1577	50.4271 ug/kg	98
51)	Bromodichloromethane	11.86	83	9631	2.2521 ug/kg	93
52)	Dibromomethane	11.96	174	4813	2.4407 ug/kg	98
53)	2-Chloroethyl Vinyl Ether	12.16	63	4134	1.9361 ug/kg	94
54)	4-Methyl-2-Pentanone	12.19	58	3195	1.9643 ug/kg#	76
55)	cis-1,3-Dichloropropene	12.49	75	11735	2.2785 ug/kg	95
56)	Dimethyl Disulfide	12.76	94	11065	1.8915 ug/kg	95
59)	Toluene	12.92	91	32478	2.3784 ug/kg	98
60)	Ethyl Methacrylate	13.01	69	8584	2.0935 ug/kg	95
61)	trans-1,3-Dichloropropene	13.09	75	10342	2.1982 ug/kg	95
62)	1,1,2-Trichloroethane	13.32	97	6589	2.3829 ug/kg	98
63)	2-Hexanone	13.24	43	5259	1.8774 ug/kg#	79
64)	1,3-Dichloropropane	13.61	76	11459	2.3963 ug/kg	100
65)	Tetrachloroethene	13.74	164	6442	2.2940 ug/kg	95
66)	Dibromochloromethane	14.00	129	7664	2.1885 ug/kg	96
67)	1,2-Dibromoethane	14.27	107	6886	2.3395 ug/kg	97
68)	1-Chlorohexane	14.34	91	10852	2.4265 ug/kg	88
69)	Chlorobenzene	14.76	112	22751	2.4177 ug/kg	72
70)	1,1,1,2-Tetrachloroethane	14.79	131	7912	2.2866 ug/kg	100
71)	Ethylbenzene	14.79	106	11926	2.3534 ug/kg	95
72)	m-,p-Xylene	14.88	106	29740	4.7554 ug/kg	98
73)	o-Xylene	15.44	106	14399	2.3683 ug/kg	98
74)	Styrene	15.48	104	21578	2.1871 ug/kg	98
75)	Bromoform	15.99	173	4940	2.0046 ug/kg	93
76)	Isopropylbenzene	15.86	105	35890	2.3500 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.08	83	8178	2.2452 ug/kg#	97
80)	1,2,3-Trichloropropane	16.28	110	2764	2.4393 ug/kg#	10
81)	trans-1,4-Dichloro-2-Buten	16.32	53	2781	2.0478 ug/kg#	1
82)	n-Propylbenzene	16.38	91	42787	2.4270 ug/kg	95
83)	Bromobenzene	16.51	156	9335	2.4208 ug/kg	88
84)	1,3,5-Trimethylbenzene	16.56	105	31768	2.6664 ug/kg	100
85)	2-Chlorotoluene	16.65	91	25758	2.4898 ug/kg	98
86)	4-Chlorotoluene	16.69	91	24021	2.4543 ug/kg	97
87)	a-Methylstyrene	16.97	118	12950	2.0962 ug/kg	98
88)	tert-Butylbenzene	17.02	134	6535	2.4517 ug/kg	79
89)	1,2,4-Trimethylbenzene	17.08	105	34583	2.3704 ug/kg	97
90)	sec-Butylbenzene	17.29	105	40038	2.5037 ug/kg	96
91)	p-Isopropyltoluene	17.45	119	31667	2.4894 ug/kg	99
92)	1,3-Dichlorobenzene	17.65	146	18672	2.4604 ug/kg	96
93)	1,4-Dichlorobenzene	17.78	146	18935	2.4313 ug/kg	77
94)	n-Butylbenzene	17.98	91	29222	2.4148 ug/kg	99
95)	1,2-Dichlorobenzene	18.28	146	17242	2.3624 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.28	157	1710	1.9041 ug/kg	88
97)	1,2,4-Trichlorobenzene	20.42	180	12364	2.3737 ug/kg	96
98)	Hexachlorobutadiene	20.58	225	5980	2.4037 ug/kg	96
99)	Naphthalene	20.80	128	28856	2.1861 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.10	180	11124	2.2036 ug/kg	98

(#) = qualifier out of range (m) = manual integration
9M974142.D 8260SL.M Thu May 05 16:48:28 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974142.D Vial: 5
Acq On : 4 May 2016 13:52 Operator: ADC
Sample : WG567358-05 2.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 5 16:42 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

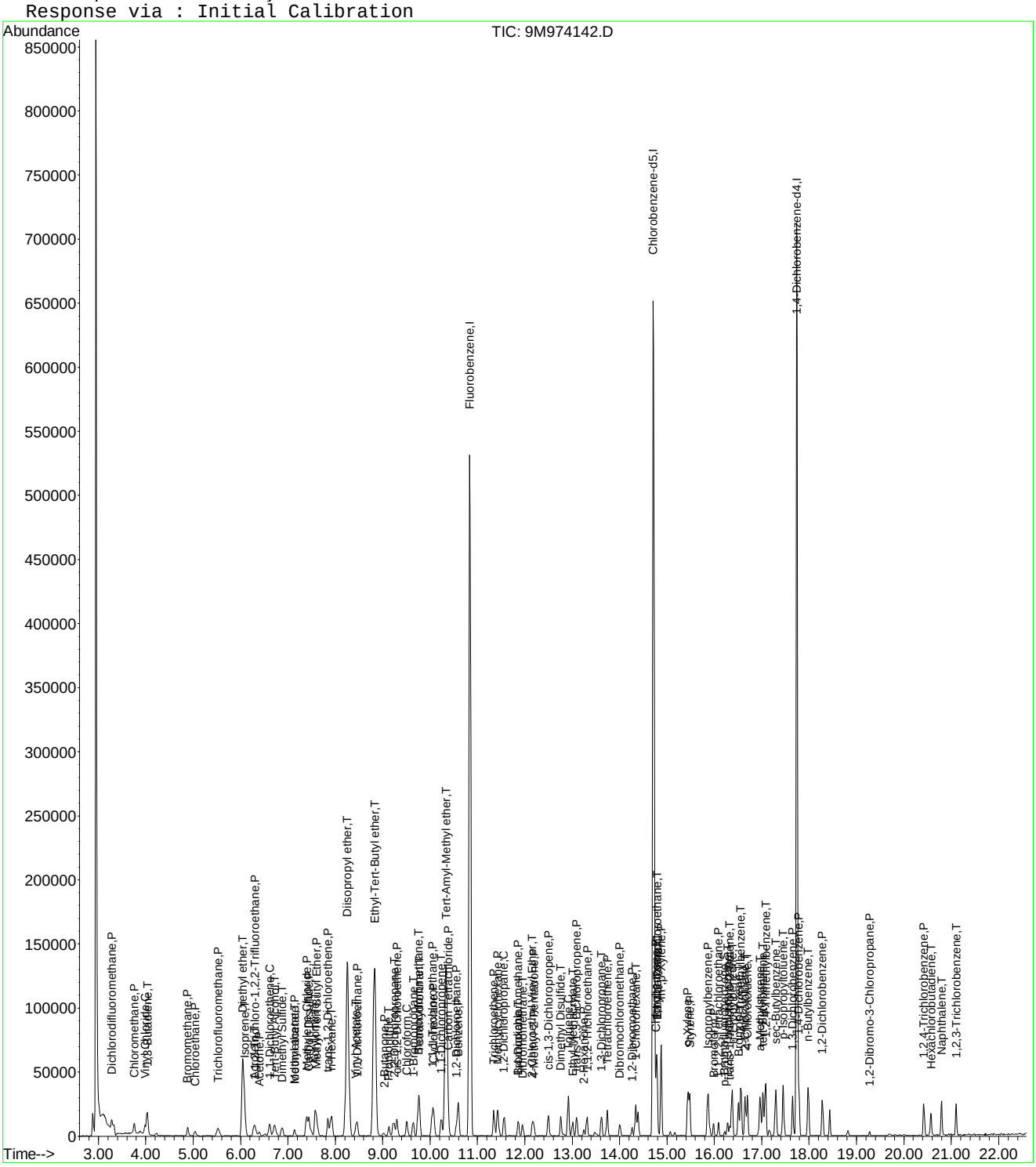

9M974142.D 8260SL.M Thu May 05 16:48:28 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\050416\9M974142.D Vial: 5
Acq On : 4 May 2016 13:52 Operator: ADC
Sample : WG567358-05 2.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	2.0000	2.2858	-14.3	100	0.00
3	P	Chloromethane	2.0000	2.4684	-23.4	102	0.00
4	C	Vinyl Chloride	2.0000	2.5803	-29.0#	100	0.02
5	T	1,3-Butadiene	2.0000	2.6916	-34.6#	100	0.02
6	P	Bromomethane	2.0000	2.6086	-30.4#	100	0.00
7	P	Chloroethane	2.0000	2.2601	-13.0	100	0.00
8	P	Trichlorofluoromethane	2.0000	2.3501	-17.5	100	0.00
9	T	Diethyl ether	25.0000	21.0511	15.8	100	0.00
10	T	Isoprene	2.0000	2.2415	-12.1	100	0.00
11	T	Acrolein	12.5000	11.0298	11.8	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	2.0000	2.1863	-9.3	100	0.00
13	P	Acetone	-1.0000	2.5821	0.0	0	0.00
14	C	1,1-Dichloroethene	2.0000	2.3849	-19.2	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	41.2048	17.6	100	0.00
16	T	Dimethyl Sulfide	2.0000	2.3904	-19.5	100	0.00
17	T	Iodomethane	-1.0000	3.6444	0.0	100	0.00
18	P	Methyl acetate	2.0000	2.2834	-14.2	100	0.00
19	P	Methylene Chloride	2.0000	2.4023	-20.1	100	0.00
20	P	Carbon Disulfide	2.0000	2.5651	-28.3#	100	0.00
21	T	Acrylonitrile	12.5000	9.9807	20.2	100	0.00
22	P	Methyl Tert Butyl Ether	2.0000	2.3764	-18.8	100	0.00
23	P	trans-1,2-Dichloroethene	2.0000	2.4102	-20.5	100	0.00
24	T	n-Hexane	2.0000	2.5203	-26.0#	100	0.00
25	T	Diisopropyl ether	25.0000	21.3398	14.6	100	0.00
26	T	Vinyl Acetate	2.0000	2.3036	-15.2	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.4517	-22.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	21.2455	15.0	100	0.00
29	P	2-Butanone	-1.0000	2.6160	0.0	100	0.02
30	T	Propionitrile	25.0000	20.9161	16.3	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.4435	-22.2	100	0.00
32	P	cis-1,2-Dichloroethene	2.0000	2.2165	-10.8	100	0.00
33	C	Chloroform	2.0000	2.3162	-15.8	100	0.00
34	T	1-Bromopropane	2.0000	2.2832	-14.2	100	0.00
35	T	Bromochloromethane	2.0000	2.2454	-12.3	100	0.00
36	T	Tetrahydrofuran	25.0000	21.4988	14.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	2.0000	2.4573	-22.9	100	0.00
39	P	Cyclohexane	2.0000	2.3845	-19.2	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.3207	-16.0	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	21.1292	15.5	100	0.00
42	P	Carbon Tetrachloride	2.0000	2.3289	-16.4	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	2.0000	2.3507	-17.5	100	0.00
46	P	Benzene	2.0000	2.4088	-20.4	100	0.00
47	P	Trichloroethene	2.0000	2.3602	-18.0	100	0.00
48	P	Methylcyclohexane	2.0000	2.3167	-15.8	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.4173	-20.9#	100	0.00
50	T	1,4-Dioxane	50.0000	50.4271	-0.9	100	0.00
51	P	Bromodichloromethane	2.0000	2.2521	-12.6	100	0.00
52	T	Dibromomethane	2.0000	2.4407	-22.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	1.9361	3.2	100	0.00
54	P	4-Methyl-2-Pentanone	-1.0000	1.9643	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\050416\9M974142.D Vial: 5
Acq On : 4 May 2016 13:52 Operator: ADC
Sample : WG567358-05 2.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	2.0000	2.2785	-13.9	100	0.00
56	T	Dimethyl Disulfide	2.0000	1.8915	5.4	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.1257	0.0	100	0.00
59	C	Toluene	2.0000	2.3784	-18.9	100	0.00
60	T	Ethyl Methacrylate	-1.0000	2.0935	0.0	100	0.00
61	P	trans-1,3-Dichloropropene	2.0000	2.1982	-9.9	100	0.00
62	P	1,1,2-Trichloroethane	2.0000	2.3829	-19.1	100	0.00
63	P	2-Hexanone	-1.0000	1.8774	0.0	100	0.00
64	T	1,3-Dichloropropane	2.0000	2.3963	-19.8	100	0.00
65	P	Tetrachloroethene	2.0000	2.2940	-14.7	100	0.00
66	P	Dibromochloromethane	2.0000	2.1885	-9.4	100	0.00
67	P	1,2-Dibromoethane	-1.0000	2.3395	0.0	100	0.00
68	T	1-Chlorohexane	2.0000	2.4265	-21.3	100	0.00
69	P	Chlorobenzene	2.0000	2.4177	-20.9	100	0.00
70	T	1,1,1,2-Tetrachloroethane	2.0000	2.2866	-14.3	100	0.00
71	C	Ethylbenzene	2.0000	2.3534	-17.7	100	0.00
72	P	m-,p-Xylene	4.0000	4.7554	-18.9	100	0.00
73	P	o-Xylene	2.0000	2.3683	-18.4	100	0.00
74	P	Styrene	2.0000	2.1871	-9.4	100	0.00
75	P	Bromoform	2.0000	2.0046	-0.2	100	0.00
76	P	Isopropylbenzene	2.0000	2.3500	-17.5	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	2.0000	2.2452	-12.3	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.5656	0.0	100	-0.01
80	T	1,2,3-Trichloropropane	2.0000	2.4393	-22.0	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	2.0000	2.0478	-2.4	100	0.00
82	T	n-Propylbenzene	2.0000	2.4270	-21.3	100	0.00
83	T	Bromobenzene	2.0000	2.4208	-21.0	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	2.6664	0.0	100	0.00
85	T	2-Chlorotoluene	2.0000	2.4898	-24.5	100	0.00
86	T	4-Chlorotoluene	2.0000	2.4543	-22.7	100	0.00
87	T	a-Methylstyrene	-1.0000	2.0962	0.0	100	0.00
88	T	tert-Butylbenzene	-1.0000	2.4517	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	2.0000	2.3704	-18.5	100	0.00
90	T	sec-Butylbenzene	2.0000	2.5037	-25.2#	100	0.00
91	T	p-Isopropyltoluene	-1.0000	2.4894	0.0	100	0.00
92	P	1,3-Dichlorobenzene	2.0000	2.4604	-23.0	100	0.00
93	P	1,4-Dichlorobenzene	2.0000	2.4313	-21.6	100	0.00
94	T	n-Butylbenzene	2.0000	2.4148	-20.7	100	0.00
95	P	1,2-Dichlorobenzene	2.0000	2.3624	-18.1	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	2.0000	1.9041	4.8	100	0.00
97	P	1,2,4-Trichlorobenzene	2.0000	2.3737	-18.7	100	0.00
98	T	Hexachlorobutadiene	2.0000	2.4037	-20.2	100	0.00
99	T	Naphthalene	2.0000	2.1861	-9.3	100	0.00
100	T	1,2,3-Trichlorobenzene	2.0000	2.2037	-10.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 2
9M974142.D 8260SL.M Thu May 05 16:48:25 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974143.D Vial: 6
Acq On : 4 May 2016 14:23 Operator: ADC
Sample : WG567358-06 5.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 16:50:02 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	612792	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	465827	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	239156	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	29986	9.5750 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 19.14%#		
43) 1,2-Dichloroethane-d4	10.43	65	34704	10.2348 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 20.46%#		
58) Toluene-d8	12.82	98	106758	9.5931 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 19.18%#		
79) p-Bromofluorobenzene	16.22	95	42010	10.1324 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 20.26%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	16624	3.9759 ug/kg	95
3) Chloromethane	3.74	50	22909	4.4451 ug/kg	99
4) Vinyl Chloride	3.98	62	19949	4.9253 ug/kg	96
5) 1,3-Butadiene	4.02	54	12285	4.9259 ug/kg	97
6) Bromomethane	4.88	94	11588	4.4896 ug/kg	95
7) Chloroethane	5.04	64	10121	4.1150 ug/kg	95
8) Trichlorofluoromethane	5.53	101	23843	4.5415 ug/kg	96
9) Diethyl ether	6.04	59	148261	50.2356 ug/kg	99
10) Isoprene	6.09	67	18518	4.4393 ug/kg	100
11) Acrolein	6.29	56	12420	25.2528 ug/kg	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	13278	4.3215 ug/kg	94
13) Acetone	6.38	43	8667	4.9883 ug/kg	94
14) 1,1-Dichloroethene	6.61	61	22322	4.3567 ug/kg	97
15) Tert-Butyl Alcohol	6.71	59	52819	99.7751 ug/kg	99
16) Dimethyl Sulfide	6.87	62	10785	4.7192 ug/kg	97
17) Iodomethane	7.12	142	4639	5.1838 ug/kg	95
18) Methyl acetate	7.13	43	15211	4.6014 ug/kg	96
19) Methylene Chloride	7.40	84	14755	4.5447 ug/kg	97
20) Carbon Disulfide	7.44	76	43288	4.3138 ug/kg	99
21) Acrylonitrile	7.57	53	34811	24.6473 ug/kg	95
22) Methyl Tert Butyl Ether	7.61	73	41147	4.5359 ug/kg	97
23) trans-1,2-Dichloroethene	7.84	61	21332	4.2891 ug/kg	100
24) n-Hexane	7.91	57	25701	4.3706 ug/kg	97
25) Diisopropyl ether	8.25	45	579094	49.8029 ug/kg	99
26) Vinyl Acetate	8.43	43	26677	4.2264 ug/kg	98
27) 1,1-Dichloroethane	8.46	63	27120	4.4130 ug/kg	98
28) Ethyl-Tert-Butyl ether	8.83	59	551903	49.8813 ug/kg	99
29) 2-Butanone	9.02	43	7636	4.4056 ug/kg	91
30) Propionitrile	9.13	54	26268	47.0300 ug/kg	98
31) 2,2-Dichloropropane	9.23	77	20068	4.3508 ug/kg	98
32) cis-1,2-Dichloroethene	9.31	96	14563	4.4110 ug/kg	95
33) Chloroform	9.51	83	22985	4.4229 ug/kg	98
34) 1-Bromopropane	9.65	122	2232	3.9826 ug/kg	84
35) Bromochloromethane	9.74	130	9198	4.3593 ug/kg	95
36) Tetrahydrofuran	9.77	42	60115	49.1930 ug/kg	99
38) 1,1,1-Trichloroethane	10.04	97	19770	4.2825 ug/kg	96
39) Cyclohexane	10.08	56	29222	4.2719 ug/kg	99
40) 1,1-Dichloropropene	10.23	75	17514	4.3756 ug/kg	99
41) Tert-Amyl-Methyl ether	10.34	73	419384	49.7522 ug/kg	98
42) Carbon Tetrachloride	10.38	117	18681	4.1359 ug/kg	98

(#) = qualifier out of range (m) = manual integration
9M974143.D 8260SL.M Thu May 05 16:50:03 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974143.D Vial: 6
Acq On : 4 May 2016 14:23 Operator: ADC
Sample : WG567358-06 5.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 16:50:02 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	21451	4.6338	ug/kg	96
46)	Benzene	10.59	78	53464	4.3171	ug/kg	98
47)	Trichloroethene	11.34	130	14468	4.2740	ug/kg	95
48)	Methylcyclohexane	11.43	83	22609	4.2149	ug/kg	98
49)	1,2-Dichloropropane	11.56	63	14702	4.3167	ug/kg	93
50)	1,4-Dioxane	11.85	88	3844	93.9572	ug/kg	98
51)	Bromodichloromethane	11.86	83	16726	4.1111	ug/kg	99
52)	Dibromomethane	11.95	174	8651	4.3484	ug/kg	96
53)	2-Chloroethyl Vinyl Ether	12.15	63	8162	4.0180	ug/kg	93
54)	4-Methyl-2-Pentanone	12.19	58	6398	4.1347	ug/kg	92
55)	cis-1,3-Dichloropropene	12.49	75	19923	4.0661	ug/kg	99
56)	Dimethyl Disulfide	12.76	94	23118	4.1538	ug/kg	94
59)	Toluene	12.91	91	55482	4.2420	ug/kg	100
60)	Ethyl Methacrylate	13.01	69	14851	3.7814	ug/kg	98
61)	trans-1,3-Dichloropropene	13.09	75	19277	4.2779	ug/kg	95
62)	1,1,2-Trichloroethane	13.32	97	12066	4.5558	ug/kg	100
63)	2-Hexanone	13.24	43	10531	3.9250	ug/kg#	79
64)	1,3-Dichloropropane	13.62	76	20183	4.4066	ug/kg	93
65)	Tetrachloroethene	13.74	164	11964	4.4481	ug/kg	97
66)	Dibromochloromethane	14.01	129	13451	4.0101	ug/kg	96
67)	1,2-Dibromoethane	14.26	107	11651	4.1327	ug/kg	89
68)	1-Chlorohexane	14.34	91	18035	4.2102	ug/kg	98
69)	Chlorobenzene	14.76	112	39290	4.3592	ug/kg	86
70)	1,1,1,2-Tetrachloroethane	14.79	131	13557	4.0907	ug/kg	98
71)	Ethylbenzene	14.78	106	20937	4.3135	ug/kg	97
72)	m-,p-Xylene	14.88	106	50140	8.3704	ug/kg	96
73)	o-Xylene	15.45	106	24478	4.2034	ug/kg	99
74)	Styrene	15.48	104	37817	4.0018	ug/kg	97
75)	Bromoform	15.99	173	8662	3.6697	ug/kg	97
76)	Isopropylbenzene	15.87	105	61128	4.1787	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	15603	4.4643	ug/kg	98
80)	1,2,3-Trichloropropane	16.28	110	4795	4.4101	ug/kg	97
81)	trans-1,4-Dichloro-2-Buten	16.32	53	5158	3.9582	ug/kg	85
82)	n-Propylbenzene	16.38	91	68455	4.3887	ug/kg	98
83)	Bromobenzene	16.51	156	16463	4.4492	ug/kg	70
84)	1,3,5-Trimethylbenzene	16.57	105	51598	4.5134	ug/kg	97
85)	2-Chlorotoluene	16.65	91	42549	4.2862	ug/kg	99
86)	4-Chlorotoluene	16.69	91	42239	4.4977	ug/kg	100
87)	a-Methylstyrene	16.97	118	23285	3.9280	ug/kg	98
88)	tert-Butylbenzene	17.02	134	11030	4.3125	ug/kg	89
89)	1,2,4-Trimethylbenzene	17.08	105	55721	4.3586	ug/kg	99
90)	sec-Butylbenzene	17.29	105	65352	4.2589	ug/kg	97
91)	p-Isopropyltoluene	17.45	119	53242	4.3619	ug/kg	98
92)	1,3-Dichlorobenzene	17.65	146	31713	4.3549	ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	32062	4.2905	ug/kg	86
94)	n-Butylbenzene	17.98	91	49006	4.2204	ug/kg	97
95)	1,2-Dichlorobenzene	18.29	146	29445	4.2045	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.28	157	3226	3.7436	ug/kg	89
97)	1,2,4-Trichlorobenzene	20.43	180	19616	3.9247	ug/kg	99
98)	Hexachlorobutadiene	20.58	225	9071	3.7999	ug/kg	95
99)	Naphthalene	20.80	128	51426	4.0603	ug/kg	99
100)	1,2,3-Trichlorobenzene	21.10	180	19213	3.9665	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974143.D Vial: 6
Acq On : 4 May 2016 14:23 Operator: ADC
Sample : WG567358-06 5.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 5 16:50 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

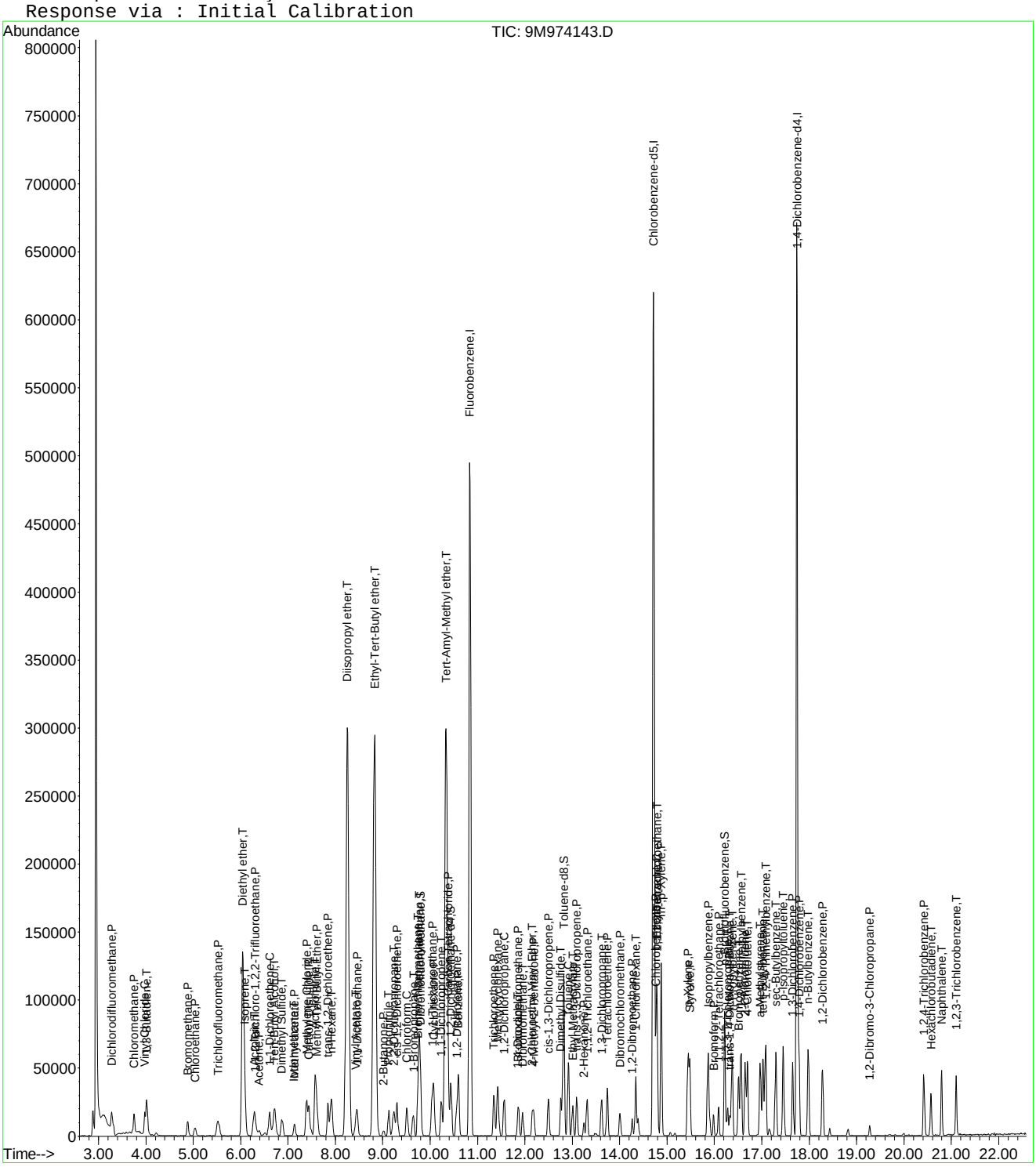

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\050416\9M974143.D Vial: 6
Acq On : 4 May 2016 14:23 Operator: ADC
Sample : WG567358-06 5.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	5.0000	3.9759	20.5	100	0.00
3	P	Chloromethane	5.0000	4.4451	11.1	100	0.00
4	C	Vinyl Chloride	5.0000	4.9253	1.5	100	0.00
5	T	1,3-Butadiene	5.0000	4.9259	1.5	100	0.00
6	P	Bromomethane	5.0000	4.4896	10.2	100	0.00
7	P	Chloroethane	5.0000	4.1150	17.7	100	0.00
8	P	Trichlorofluoromethane	5.0000	4.5415	9.2	100	0.00
9	T	Diethyl ether	50.0000	50.2356	-0.5	100	0.00
10	T	Isoprene	5.0000	4.4393	11.2	100	0.00
11	T	Acrolein	25.0000	25.2528	-1.0	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.3215	13.6	100	0.00
13	P	Acetone	5.0000	4.9883	0.2	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.3567	12.9	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	99.7751	0.2	100	-0.01
16	T	Dimethyl Sulfide	5.0000	4.7192	5.6	100	0.00
17	T	Iodomethane	5.0000	5.1838	-3.7	100	-0.01
18	P	Methyl acetate	5.0000	4.6014	8.0	100	0.00
19	P	Methylene Chloride	5.0000	4.5447	9.1	100	0.00
20	P	Carbon Disulfide	5.0000	4.3138	13.7	100	0.00
21	T	Acrylonitrile	25.0000	24.6473	1.4	100	0.00
22	P	Methyl Tert Butyl Ether	5.0000	4.5359	9.3	100	0.00
23	P	trans-1,2-Dichloroethene	5.0000	4.2891	14.2	100	0.00
24	T	n-Hexane	5.0000	4.3706	12.6	100	0.00
25	T	Diisopropyl ether	50.0000	49.8029	0.4	100	0.00
26	T	Vinyl Acetate	5.0000	4.2264	15.5	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.4130	11.7	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	49.8813	0.2	100	0.00
29	P	2-Butanone	5.0000	4.4056	11.9	100	0.00
30	T	Propionitrile	50.0000	47.0300	5.9	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.3508	13.0	100	0.00
32	P	cis-1,2-Dichloroethene	5.0000	4.4110	11.8	100	0.00
33	C	Chloroform	5.0000	4.4229	11.5	100	0.00
34	T	1-Bromopropane	5.0000	3.9826	20.3	100	0.00
35	T	Bromochloromethane	5.0000	4.3593	12.8	100	0.00
36	T	Tetrahydrofuran	50.0000	49.1930	1.6	100	0.00
37	S	Dibromofluoromethane	10.0000	9.5750	4.3	100	0.00
38	P	1,1,1-Trichloroethane	5.0000	4.2825	14.4	100	0.00
39	P	Cyclohexane	5.0000	4.2719	14.6	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.3756	12.5	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	49.7522	0.5	100	0.00
42	P	Carbon Tetrachloride	5.0000	4.1359	17.3	100	0.00
43	S	1,2-Dichloroethane-d4	10.0000	10.2348	-2.3	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	5.0000	4.6338	7.3	100	0.00
46	P	Benzene	5.0000	4.3171	13.7	100	0.00
47	P	Trichloroethene	5.0000	4.2740	14.5	100	0.00
48	P	Methylcyclohexane	5.0000	4.2149	15.7	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.3167	13.7	100	0.00
50	T	1,4-Dioxane	100.0000	93.9572	6.0	100	0.00
51	P	Bromodichloromethane	5.0000	4.1111	17.8	100	0.00
52	T	Dibromomethane	5.0000	4.3484	13.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.0180	19.6	100	0.00
54	P	4-Methyl-2-Pentanone	5.0000	4.1347	17.3	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\050416\9M974143.D Vial: 6
Acq On : 4 May 2016 14:23 Operator: ADC
Sample : WG567358-06 5.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	5.0000	4.0661	18.7	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.1538	16.9	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	10.0000	9.5931	4.1	100	0.00
59	C	Toluene	5.0000	4.2420	15.2	100	0.00
60	T	Ethyl Methacrylate	5.0000	3.7814	24.4	100	0.00
61	P	trans-1,3-Dichloropropene	5.0000	4.2779	14.4	100	0.00
62	P	1,1,2-Trichloroethane	5.0000	4.5558	8.9	100	0.00
63	P	2-Hexanone	5.0000	3.9250	21.5	100	0.00
64	T	1,3-Dichloropropane	5.0000	4.4066	11.9	100	0.00
65	P	Tetrachloroethene	5.0000	4.4481	11.0	100	0.00
66	P	Dibromochloromethane	5.0000	4.0101	19.8	100	0.00
67	P	1,2-Dibromoethane	5.0000	4.1327	17.3	100	0.00
68	T	1-Chlorohexane	5.0000	4.2102	15.8	100	0.00
69	P	Chlorobenzene	5.0000	4.3592	12.8	100	0.00
70	T	1,1,1,2-Tetrachloroethane	5.0000	4.0907	18.2	100	0.00
71	C	Ethylbenzene	5.0000	4.3135	13.7	100	0.00
72	P	m-,p-Xylene	10.0000	8.3704	16.3	100	0.00
73	P	o-Xylene	5.0000	4.2034	15.9	100	0.00
74	P	Styrene	5.0000	4.0018	20.0	100	0.00
75	P	Bromoform	5.0000	3.6697	26.6#	100	0.00
76	P	Isopropylbenzene	5.0000	4.1787	16.4	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	5.0000	4.4643	10.7	100	0.00
79	S	p-Bromofluorobenzene	10.0000	10.1324	-1.3	100	0.00
80	T	1,2,3-Trichloropropane	5.0000	4.4101	11.8	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	5.0000	3.9582	20.8	100	0.00
82	T	n-Propylbenzene	5.0000	4.3887	12.2	100	0.00
83	T	Bromobenzene	5.0000	4.4492	11.0	100	0.00
84	T	1,3,5-Trimethylbenzene	5.0000	4.5134	9.7	100	0.00
85	T	2-Chlorotoluene	5.0000	4.2862	14.3	100	0.00
86	T	4-Chlorotoluene	5.0000	4.4977	10.0	100	0.00
87	T	a-Methylstyrene	5.0000	3.9280	21.4	100	0.00
88	T	tert-Butylbenzene	5.0000	4.3125	13.8	100	0.00
89	T	1,2,4-Trimethylbenzene	5.0000	4.3586	12.8	100	0.00
90	T	sec-Butylbenzene	5.0000	4.2589	14.8	100	0.00
91	T	p-Isopropyltoluene	5.0000	4.3619	12.8	100	0.00
92	P	1,3-Dichlorobenzene	5.0000	4.3549	12.9	100	0.00
93	P	1,4-Dichlorobenzene	5.0000	4.2905	14.2	100	0.00
94	T	n-Butylbenzene	5.0000	4.2204	15.6	100	0.00
95	P	1,2-Dichlorobenzene	5.0000	4.2045	15.9	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	5.0000	3.7436	25.1#	100	0.00
97	P	1,2,4-Trichlorobenzene	5.0000	3.9247	21.5	100	0.00
98	T	Hexachlorobutadiene	5.0000	3.7999	24.0	100	0.00
99	T	Naphthalene	5.0000	4.0603	18.8	100	0.00
100	T	1,2,3-Trichlorobenzene	5.0000	3.9665	20.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974144.D Vial: 7
Acq On : 4 May 2016 14:53 Operator: ADC
Sample : WG567358-07 20.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 16:50:03 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	626764	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	472169	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	244385	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	59118	18.4565 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 36.92%#		
43) 1,2-Dichloroethane-d4	10.43	65	64105	18.4843 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 36.96%#		
58) Toluene-d8	12.82	98	209097	18.5367 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 37.08%#		
79) p-Bromofluorobenzene	16.22	95	80223	18.9350 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 37.88%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	91595	21.4180 ug/kg	99
3) Chloromethane	3.75	50	102346	19.4159 ug/kg	97
4) Vinyl Chloride	3.98	62	97418	24.9996 ug/kg	100
5) 1,3-Butadiene	4.02	54	53098	24.4177 ug/kg	99
6) Bromomethane	4.88	94	55227	20.9199 ug/kg	100
7) Chloroethane	5.04	64	50030	19.8880 ug/kg	99
8) Trichlorofluoromethane	5.52	101	110735	20.6220 ug/kg	99
9) Diethyl ether	6.04	59	262213	86.8656 ug/kg	99
10) Isoprene	6.09	67	82028	19.2259 ug/kg	97
11) Acrolein	6.29	56	20357	40.4680 ug/kg	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	62875	20.0073 ug/kg	100
13) Acetone	6.39	43	26292	20.5231 ug/kg	98
14) 1,1-Dichloroethene	6.61	61	110174	21.0236 ug/kg	98
15) Tert-Butyl Alcohol	6.72	59	95410	176.2118 ug/kg	99
16) Dimethyl Sulfide	6.88	62	48204	19.2105 ug/kg	97
17) Iodomethane	7.13	142	29955	19.6154 ug/kg	100
18) Methyl acetate	7.14	43	67014	19.8201 ug/kg	100
19) Methylene Chloride	7.40	84	66039	19.8874 ug/kg	96
20) Carbon Disulfide	7.44	76	200201	19.5058 ug/kg	100
21) Acrylonitrile	7.58	53	62501	43.2661 ug/kg	99
22) Methyl Tert Butyl Ether	7.60	73	196497	21.1782 ug/kg	99
23) trans-1,2-Dichloroethene	7.84	61	105773	20.7931 ug/kg	99
24) n-Hexane	7.91	57	108702	18.0735 ug/kg	99
25) Diisopropyl ether	8.25	45	1042426	87.6517 ug/kg	100
26) Vinyl Acetate	8.43	43	127675	19.7762 ug/kg	99
27) 1,1-Dichloroethane	8.46	63	131668	20.9475 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	988417	87.3423 ug/kg	99
29) 2-Butanone	9.02	43	36354	20.5068 ug/kg	99
30) Propionitrile	9.13	54	46412	78.8356 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	92452	19.5969 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	70587	20.9036 ug/kg	98
33) Chloroform	9.51	83	112904	21.2411 ug/kg	99
34) 1-Bromopropane	9.64	122	10917	19.0450 ug/kg	95
35) Bromochloromethane	9.75	130	45535	21.0996 ug/kg	99
36) Tetrahydrofuran	9.77	42	105018	84.0220 ug/kg	99
38) 1,1,1-Trichloroethane	10.03	97	98111	20.7787 ug/kg	99
39) Cyclohexane	10.08	56	135199	19.3240 ug/kg	99
40) 1,1-Dichloropropene	10.23	75	85750	20.9456 ug/kg	97
41) Tert-Amyl-Methyl ether	10.34	73	742436	86.1130 ug/kg	99
42) Carbon Tetrachloride	10.38	117	93133	20.1598 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974144.D Vial: 7
Acq On : 4 May 2016 14:53 Operator: ADC
Sample : WG567358-07 20.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 16:50:03 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	100942	21.3193 ug/kg	99
46)	Benzene	10.59	78	258615	20.4171 ug/kg	99
47)	Trichloroethene	11.35	130	71680	20.7032 ug/kg	99
48)	Methylcyclohexane	11.43	83	104690	19.0819 ug/kg	97
49)	1,2-Dichloropropane	11.56	63	72335	20.7649 ug/kg	99
50)	1,4-Dioxane	11.85	88	7806	164.3126 ug/kg	96
51)	Bromodichloromethane	11.86	83	84420	20.2870 ug/kg	99
52)	Dibromomethane	11.95	174	44218	20.5494 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.15	63	41197	19.8285 ug/kg	99
54)	4-Methyl-2-Pentanone	12.19	58	31428	19.8575 ug/kg	97
55)	cis-1,3-Dichloropropene	12.49	75	101668	20.2867 ug/kg	99
56)	Dimethyl Disulfide	12.76	94	112163	19.7040 ug/kg	100
59)	Toluene	12.91	91	268663	20.2652 ug/kg	98
60)	Ethyl Methacrylate	13.01	69	79824	20.0519 ug/kg	99
61)	trans-1,3-Dichloropropene	13.09	75	93374	20.4430 ug/kg	99
62)	1,1,2-Trichloroethane	13.32	97	57109	21.2732 ug/kg	100
63)	2-Hexanone	13.24	43	52690	19.3743 ug/kg	96
64)	1,3-Dichloropropane	13.62	76	99082	21.3423 ug/kg	100
65)	Tetrachloroethene	13.74	164	55991	20.5374 ug/kg	99
66)	Dibromochloromethane	14.00	129	68465	20.1371 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	60466	21.1599 ug/kg	99
68)	1-Chlorohexane	14.34	91	82432	18.9851 ug/kg	96
69)	Chlorobenzene	14.76	112	188032	20.5820 ug/kg	97
70)	1,1,1,2-Tetrachloroethane	14.79	131	67933	20.2226 ug/kg	98
71)	Ethylbenzene	14.79	106	103530	21.0431 ug/kg	98
72)	m-,p-Xylene	14.88	106	243257	40.0639 ug/kg	98
73)	o-Xylene	15.45	106	119976	20.3259 ug/kg	100
74)	Styrene	15.48	104	197061	20.5729 ug/kg	99
75)	Bromoform	15.99	173	46560	19.4604 ug/kg	99
76)	Isopropylbenzene	15.87	105	303006	20.4354 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.08	83	73870	20.6834 ug/kg	100
80)	1,2,3-Trichloropropane	16.28	110	23813	21.4328 ug/kg	95
81)	trans-1,4-Dichloro-2-Buten	16.32	53	26678	20.0345 ug/kg	88
82)	n-Propylbenzene	16.38	91	337394	23.1272 ug/kg	99
83)	Bromobenzene	16.51	156	81516	21.5586 ug/kg	100
84)	1,3,5-Trimethylbenzene	16.57	105	260646	22.3116 ug/kg	99
85)	2-Chlorotoluene	16.65	91	212947	20.9924 ug/kg	99
86)	4-Chlorotoluene	16.69	91	206068	21.4728 ug/kg	98
87)	a-Methylstyrene	16.97	118	121783	20.1045 ug/kg	98
88)	tert-Butylbenzene	17.03	134	57196	21.8840 ug/kg	89
89)	1,2,4-Trimethylbenzene	17.08	105	260573	21.9386 ug/kg	100
90)	sec-Butylbenzene	17.29	105	327574	20.8910 ug/kg	99
91)	p-Isopropyltoluene	17.45	119	263893	21.1572 ug/kg	100
92)	1,3-Dichlorobenzene	17.65	146	151935	20.4177 ug/kg	99
93)	1,4-Dichlorobenzene	17.78	146	152830	20.0137 ug/kg	98
94)	n-Butylbenzene	17.98	91	237029	19.9764 ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	144366	20.1730 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.28	157	16844	19.1282 ug/kg	95
97)	1,2,4-Trichlorobenzene	20.43	180	93417	18.2906 ug/kg	98
98)	Hexachlorobutadiene	20.58	225	47127	19.3196 ug/kg	99
99)	Naphthalene	20.80	128	253804	19.6102 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.10	180	91886	18.5640 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974144.D Vial: 7
Acq On : 4 May 2016 14:53 Operator: ADC
Sample : WG567358-07 20.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 5 16:50 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

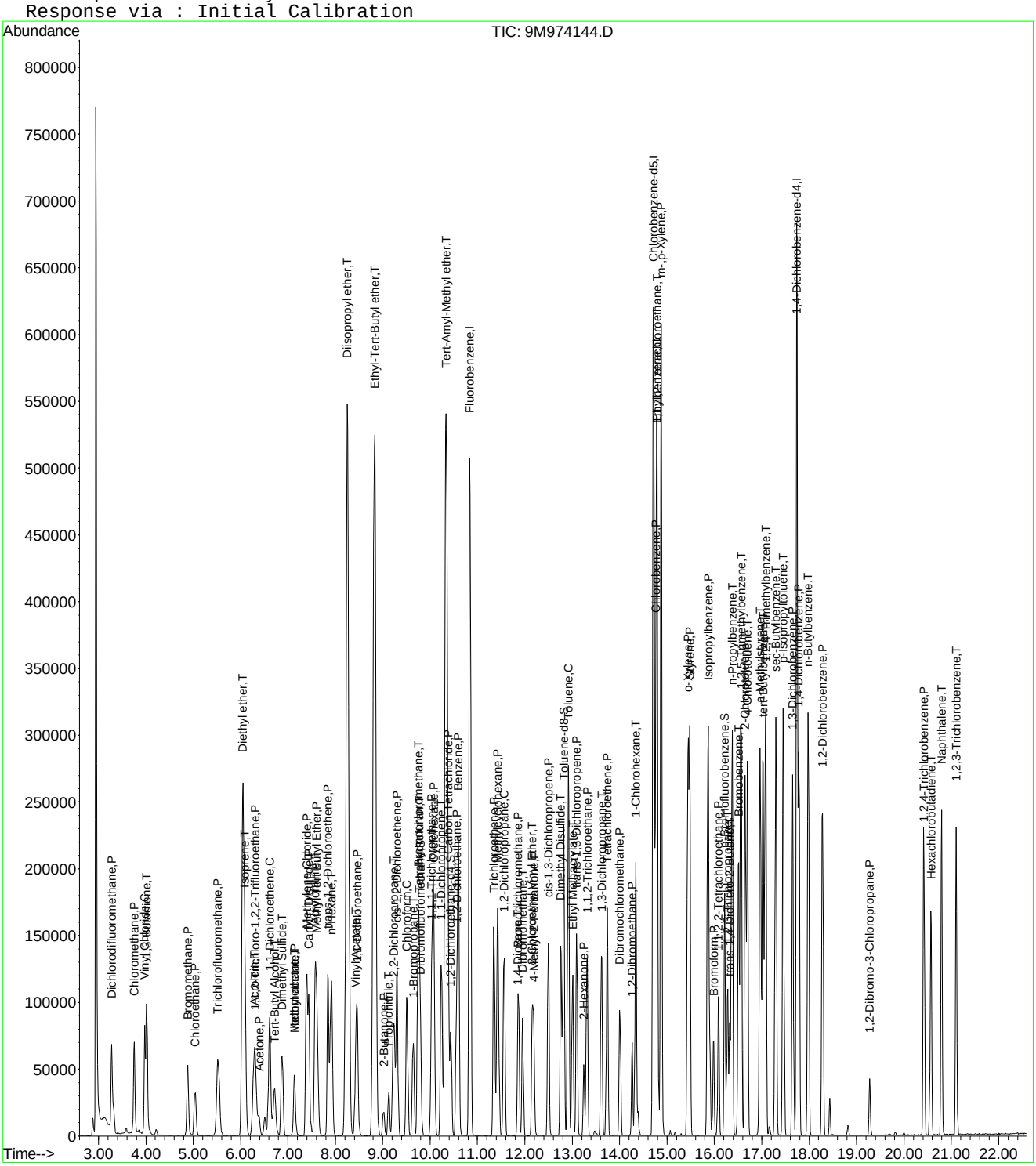

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974146.D Vial: 9
Acq On : 4 May 2016 15:54 Operator: ADC
Sample : WG567358-09 200.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 16:50:05 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	630494	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	484155	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	314739	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	642080	199.2697 ug/kg	-0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 398.54%#		
43) 1,2-Dichloroethane-d4	10.44	65	674594	193.3643 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 386.72%#		
58) Toluene-d8	12.81	98	2259462	195.3455 ug/kg	-0.01
Spiked Amount 50.000	Range 81 - 117		Recovery = 390.70%#		
79) p-Bromofluorobenzene	16.22	95	958847	175.7277 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 351.46%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	816959	189.9025 ug/kg	100
3) Chloromethane	3.75	50	1127261	212.5859 ug/kg	100
4) Vinyl Chloride	3.97	62	568497	170.3731 ug/kg	99
5) 1,3-Butadiene	4.01	54	268823	127.3920 ug/kg	98
6) Bromomethane	4.86	94	496572	186.9882 ug/kg	99
7) Chloroethane	5.01	64	515296	203.6290 ug/kg	99
8) Trichlorofluoromethane	5.50	101	1065052	197.1690 ug/kg	99
10) Isoprene	6.07	67	869523	202.5953 ug/kg	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	627089	198.3635 ug/kg	98
13) Acetone	6.40	43	224257	195.8066 ug/kg	99
14) 1,1-Dichloroethene	6.60	61	1066403	202.2895 ug/kg	99
15) Tert-Butyl Alcohol	6.77	59	1380	2.5336 ug/kg#	62
16) Dimethyl Sulfide	6.87	62	516563	200.6015 ug/kg	98
17) Iodomethane	7.12	142	483678	208.4790 ug/kg	99
18) Methyl acetate	7.13	43	656088	192.8972 ug/kg	98
19) Methylene Chloride	7.39	84	659986	197.5767 ug/kg	100
20) Carbon Disulfide	7.43	76	2029966	196.6116 ug/kg	99
21) Acrylonitrile	7.61	53	20110	13.8387 ug/kg#	32
22) Methyl Tert Butyl Ether	7.60	73	1845048	197.6809 ug/kg	100
23) trans-1,2-Dichloroethene	7.83	61	1036462	202.5443 ug/kg	100
24) n-Hexane	7.91	57	1172324	193.7647 ug/kg	100
26) Vinyl Acetate	8.42	43	1266836	195.0658 ug/kg	99
27) 1,1-Dichloroethane	8.45	63	1261184	199.4591 ug/kg	100
29) 2-Butanone	9.01	43	352233	197.5148 ug/kg	98
30) Propionitrile	9.03	54	266	3.7399 ug/kg#	1
31) 2,2-Dichloropropane	9.23	77	915242	192.8547 ug/kg	100
32) cis-1,2-Dichloroethene	9.30	96	703714	207.1642 ug/kg	98
33) Chloroform	9.51	83	1089321	203.7263 ug/kg	100
34) 1-Bromopropane	9.65	122	118997	206.3654 ug/kg	99
35) Bromochloromethane	9.74	130	446669	205.7493 ug/kg	98
36) Tetrahydrofuran	9.77	42	4628	3.6808 ug/kg	88
38) 1,1,1-Trichloroethane	10.04	97	972909	204.8309 ug/kg	99
39) Cyclohexane	10.07	56	1425776	202.5810 ug/kg	100
40) 1,1-Dichloropropene	10.24	75	844121	204.9685 ug/kg	99
42) Carbon Tetrachloride	10.39	117	929180	199.9429 ug/kg	100
45) 1,2-Dichloroethane	10.55	62	943639	198.1211 ug/kg	99
46) Benzene	10.60	78	2478939	194.5494 ug/kg	99
47) Trichloroethene	11.35	130	694196	199.3171 ug/kg	99
48) Methylcyclohexane	11.43	83	1126567	204.1250 ug/kg	99
49) 1,2-Dichloropropane	11.56	63	712696	203.3807 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974146.D Vial: 9
Acq On : 4 May 2016 15:54 Operator: ADC
Sample : WG567358-09 200.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 16:50:05 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
50)	1,4-Dioxane	11.86	88	873	38.3206	ug/kg#	8
51)	Bromodichloromethane	11.86	83	855671	204.4104	ug/kg	99
52)	Dibromomethane	11.96	174	432605	197.2760	ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	436088	208.6516	ug/kg	99
54)	4-Methyl-2-Pentanone	12.18	58	327861	205.9301	ug/kg	99
55)	cis-1,3-Dichloropropene	12.50	75	1015500	201.4332	ug/kg	100
56)	Dimethyl Disulfide	12.76	94	1249246	218.1601	ug/kg	99
59)	Toluene	12.92	91	2623928	193.0226	ug/kg	99
60)	Ethyl Methacrylate	13.00	69	876225	214.6599	ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	941287	200.9801	ug/kg	100
62)	1,1,2-Trichloroethane	13.31	97	557657	202.5851	ug/kg	100
63)	2-Hexanone	13.25	43	600577	215.3675	ug/kg	99
64)	1,3-Dichloropropane	13.61	76	934827	196.3769	ug/kg	99
65)	Tetrachloroethene	13.74	164	561144	200.7311	ug/kg	99
66)	Dibromochloromethane	14.00	129	728234	208.8879	ug/kg	100
67)	1,2-Dibromoethane	14.26	107	602563	205.6446	ug/kg	99
68)	1-Chlorohexane	14.34	91	914463	205.3978	ug/kg	99
69)	Chlorobenzene	14.76	112	1882070	200.9116	ug/kg	98
70)	1,1,1,2-Tetrachloroethane	14.80	131	702342	203.9003	ug/kg	100
71)	Ethylbenzene	14.79	106	1043591	206.8647	ug/kg	96
72)	m-,p-Xylene	14.88	106	2476651	397.8013	ug/kg	96
73)	o-Xylene	15.44	106	1218918	201.3923	ug/kg	98
74)	Styrene	15.48	104	2133914	217.2628	ug/kg	99
75)	Bromoform	15.98	173	549670	224.0549	ug/kg	99
76)	Isopropylbenzene	15.86	105	3108244	204.4374	ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.08	83	901519	195.9981	ug/kg	100
80)	1,2,3-Trichloropropane	16.28	110	274182	191.6143	ug/kg	98
81)	trans-1,4-Dichloro-2-Buten	16.33	53	345603	201.5235	ug/kg	98
82)	n-Propylbenzene	16.37	91	3500097	189.9067	ug/kg	99
83)	Bromobenzene	16.51	156	878845	180.4735	ug/kg	98
84)	1,3,5-Trimethylbenzene	16.56	105	2759856	183.4386	ug/kg	99
85)	2-Chlorotoluene	16.65	91	2342521	179.3074	ug/kg	99
86)	4-Chlorotoluene	16.70	91	2102107	170.0818	ug/kg	98
87)	a-Methylstyrene	16.97	118	1582385	202.8348	ug/kg	99
88)	tert-Butylbenzene	17.02	134	641243	190.5054	ug/kg	95
89)	1,2,4-Trimethylbenzene	17.08	105	2881484	192.5998	ug/kg	99
90)	sec-Butylbenzene	17.30	105	3633748	179.9403	ug/kg	99
91)	p-Isopropyltoluene	17.46	119	3067802	190.9773	ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	1791497	186.9344	ug/kg	99
93)	1,4-Dichlorobenzene	17.78	146	1836798	186.7691	ug/kg	99
94)	n-Butylbenzene	17.98	91	2857014	186.9611	ug/kg	99
95)	1,2-Dichlorobenzene	18.28	146	1836802	199.2934	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.28	157	240943	212.4554	ug/kg	99
97)	1,2,4-Trichlorobenzene	20.42	180	1290706	196.2245	ug/kg	100
98)	Hexachlorobutadiene	20.57	225	636811	202.7043	ug/kg	99
99)	Naphthalene	20.80	128	3259986	195.5791	ug/kg	98
100)	1,2,3-Trichlorobenzene	21.11	180	1272035	199.5471	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974146.D Vial: 9
Acq On : 4 May 2016 15:54 Operator: ADC
Sample : WG567358-09 200.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 5 16:50 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

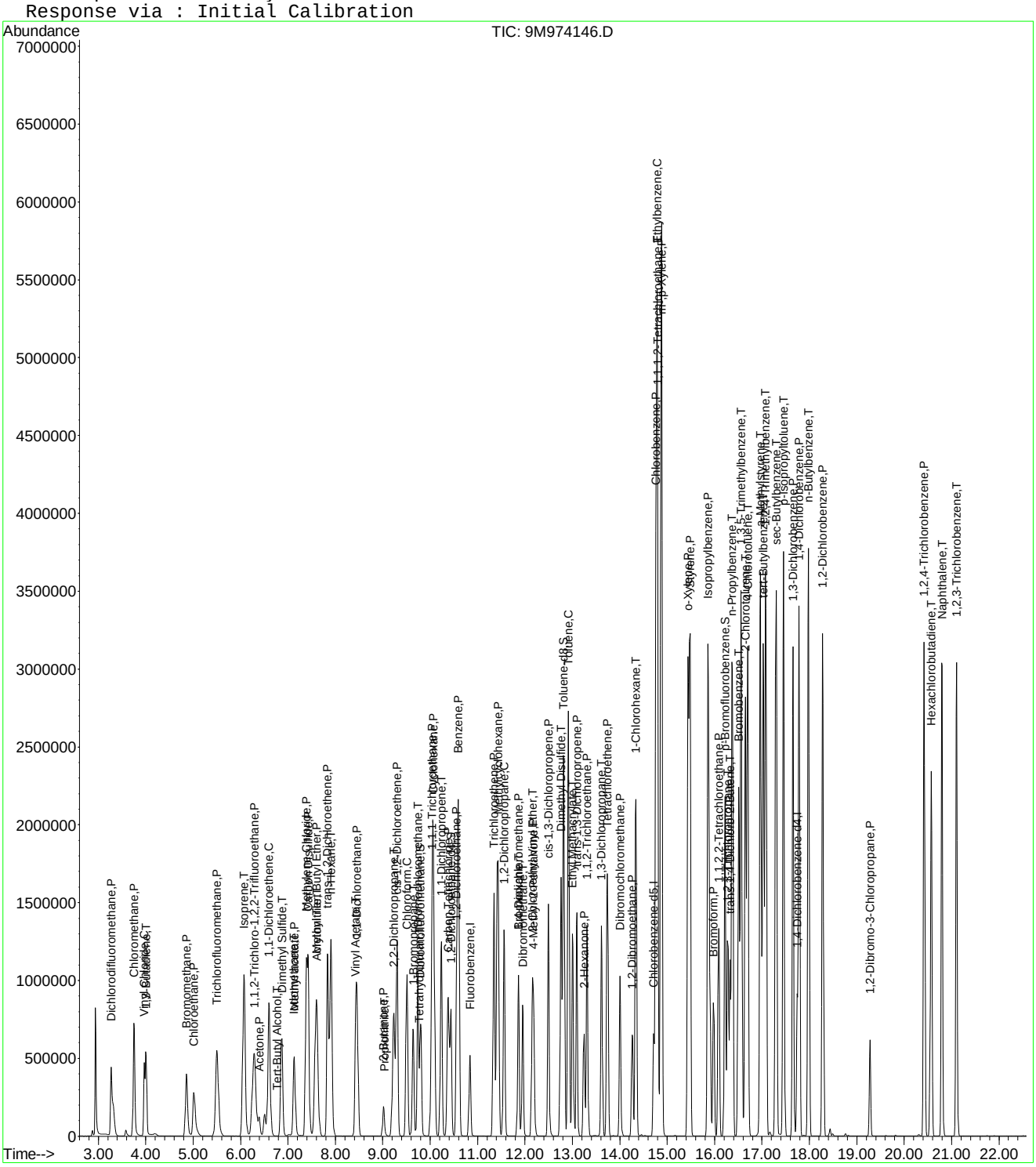

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974147.D Vial: 10
Acq On : 4 May 2016 16:24 Operator: ADC
Sample : WG567358-10 300.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 16:50:06 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	562617	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	452052	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	289236	50.00 ug/kg	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.80	111	1482	0.5154 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	1.04%#	
43) 1,2-Dichloroethane-d4	10.44	65	1998	0.6418 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	1.28%#	
58) Toluene-d8	12.82	98	9163	0.8485 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	1.70%#	
79) p-Bromofluorobenzene	16.22	95	9900	1.9744 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	3.94%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	1129159	294.1397 ug/kg	100
3) Chloromethane	3.75	50	1561962	330.1023 ug/kg	100
4) Vinyl Chloride	3.97	62	799368	325.9734 ug/kg	99
5) 1,3-Butadiene	4.01	54	364863	194.3460 ug/kg	97
6) Bromomethane	4.85	94	698836	294.9003 ug/kg	99
7) Chloroethane	5.01	64	727150	322.0142 ug/kg	100
8) Trichlorofluoromethane	5.50	101	1463020	303.5193 ug/kg	100
9) Diethyl ether	6.05	59	913278	337.0448 ug/kg	100
10) Isoprene	6.07	67	1220606	318.7072 ug/kg	99
11) Acrolein	6.29	56	85355	189.0244 ug/kg	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	876693	310.7765 ug/kg	99
13) Acetone	6.40	43	314378	309.2744 ug/kg	100
14) 1,1-Dichloroethene	6.60	61	1462548	310.9068 ug/kg	98
15) Tert-Butyl Alcohol	6.75	59	374880	771.3021 ug/kg	100
16) Dimethyl Sulfide	6.87	62	720197	313.1870 ug/kg	99
17) Iodomethane	7.12	142	689168	296.5093 ug/kg	99
18) Methyl acetate	7.13	43	926118	305.1393 ug/kg	98
19) Methylene Chloride	7.39	84	921735	309.2254 ug/kg	99
20) Carbon Disulfide	7.43	76	2814887	305.5269 ug/kg	100
21) Acrylonitrile	7.58	53	247246	190.6697 ug/kg	94
22) Methyl Tert Butyl Ether	7.60	73	2583302	310.1704 ug/kg	99
23) trans-1,2-Dichloroethene	7.83	61	1431429	313.4762 ug/kg	99
24) n-Hexane	7.90	57	1690582	313.1349 ug/kg	99
25) Diisopropyl ether	8.25	45	3545105	332.0742 ug/kg	99
26) Vinyl Acetate	8.42	43	1776079	306.4722 ug/kg	99
27) 1,1-Dichloroethane	8.45	63	1754423	310.9410 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	3393912	334.0996 ug/kg	100
29) 2-Butanone	9.01	43	505960	317.9463 ug/kg	98
30) Propionitrile	9.13	54	175167	320.8580 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	1274446	300.9427 ug/kg	100
32) cis-1,2-Dichloroethene	9.30	96	974287	321.4204 ug/kg	98
33) Chloroform	9.51	83	1520502	318.6738 ug/kg	99
34) 1-Bromopropane	9.65	122	168722	327.8994 ug/kg	98
35) Bromochloromethane	9.74	130	630758	325.5992 ug/kg	99
36) Tetrahydrofuran	9.77	42	355431	316.7930 ug/kg	99
38) 1,1,1-Trichloroethane	10.04	97	1342702	316.7897 ug/kg	99
39) Cyclohexane	10.07	56	1981516	315.5099 ug/kg	99
40) 1,1-Dichloropropene	10.24	75	1162054	316.2109 ug/kg	99
41) Tert-Amyl-Methyl ether	10.33	73	2585493	334.0753 ug/kg	100
42) Carbon Tetrachloride	10.38	117	1287065	310.3665 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974147.D Vial: 10
Acq On : 4 May 2016 16:24 Operator: ADC
Sample : WG567358-10 300.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 16:50:06 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.55	62	1304375	306.8990 ug/kg	99
46)	Benzene	10.60	78	3432125	301.8528 ug/kg	99
47)	Trichloroethene	11.34	130	971532	312.5991 ug/kg	99
48)	Methylcyclohexane	11.43	83	1577669	320.3489 ug/kg	99
49)	1,2-Dichloropropane	11.56	63	999130	319.5181 ug/kg	100
50)	1,4-Dioxane	11.85	88	37347	778.0801 ug/kg	97
51)	Bromodichloromethane	11.86	83	1205784	322.8002 ug/kg	99
52)	Dibromomethane	11.96	174	609941	311.5299 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	620236	332.5620 ug/kg	98
54)	4-Methyl-2-Pentanone	12.19	58	477798	336.3122 ug/kg	99
55)	cis-1,3-Dichloropropene	12.49	75	1429295	317.7175 ug/kg	99
56)	Dimethyl Disulfide	12.76	94	1681097	328.9943 ug/kg	96
59)	Toluene	12.92	91	3613124	284.6658 ug/kg	98
60)	Ethyl Methacrylate	13.01	69	1255087	329.3101 ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	1324091	302.7923 ug/kg	99
62)	1,1,2-Trichloroethane	13.31	97	784779	305.3401 ug/kg	100
63)	2-Hexanone	13.24	43	899861	345.6073 ug/kg	100
64)	1,3-Dichloropropane	13.61	76	1316626	296.2222 ug/kg	99
65)	Tetrachloroethene	13.74	164	779456	298.6262 ug/kg	100
66)	Dibromochloromethane	14.00	129	1029106	316.1539 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	854447	312.3173 ug/kg	99
68)	1-Chlorohexane	14.34	91	1292715	310.9771 ug/kg	100
69)	Chlorobenzene	14.76	112	2633354	301.0749 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	1003278	311.9512 ug/kg	100
71)	Ethylbenzene	14.78	106	1464467	310.9079 ug/kg	95
72)	m-,p-Xylene	14.88	106	3462887	595.7112 ug/kg	94
73)	o-Xylene	15.44	106	1739722	307.8536 ug/kg	96
74)	Styrene	15.48	104	3059763	333.6509 ug/kg	99
75)	Bromoform	15.98	173	818932	357.5166 ug/kg	99
76)	Isopropylbenzene	15.86	105	4366556	307.5957 ug/kg	98
78)	1,1,2,2-Tetrachloroethane	16.08	83	1375472	325.4070 ug/kg	100
80)	1,2,3-Trichloropropane	16.28	110	411230	312.7317 ug/kg#	57
81)	trans-1,4-Dichloro-2-Buten	16.33	53	518749	329.1575 ug/kg	68
82)	n-Propylbenzene	16.38	91	4936254	291.7186 ug/kg	98
83)	Bromobenzene	16.52	156	1274789	284.8641 ug/kg	97
84)	1,3,5-Trimethylbenzene	16.56	105	3921720	283.6475 ug/kg	99
85)	2-Chlorotoluene	16.65	91	3267429	272.1567 ug/kg	98
86)	4-Chlorotoluene	16.69	91	3075513	270.7814 ug/kg	98
87)	a-Methylstyrene	16.97	118	2304225	321.4056 ug/kg	99
88)	tert-Butylbenzene	17.03	134	914369	295.5999 ug/kg	95
89)	1,2,4-Trimethylbenzene	17.09	105	4083436	297.3068 ug/kg	98
90)	sec-Butylbenzene	17.30	105	5128747	276.3651 ug/kg	98
91)	p-Isopropyltoluene	17.45	119	4340068	294.0013 ug/kg	98
92)	1,3-Dichlorobenzene	17.66	146	2609928	296.3466 ug/kg	99
93)	1,4-Dichlorobenzene	17.78	146	2676490	296.1472 ug/kg	99
94)	n-Butylbenzene	17.98	91	4094663	291.5783 ug/kg	99
95)	1,2-Dichlorobenzene	18.28	146	2727035	321.9730 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.28	157	376695	361.4443 ug/kg	97
97)	1,2,4-Trichlorobenzene	20.42	180	2004680	331.6417 ug/kg	100
98)	Hexachlorobutadiene	20.57	225	967036	334.9603 ug/kg	99
99)	Naphthalene	20.80	128	4965520	324.1676 ug/kg	97
100)	1,2,3-Trichlorobenzene	21.11	180	1969254	336.1601 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974147.D Vial: 10
Acq On : 4 May 2016 16:24 Operator: ADC
Sample : WG567358-10 300.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 5 16:50 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

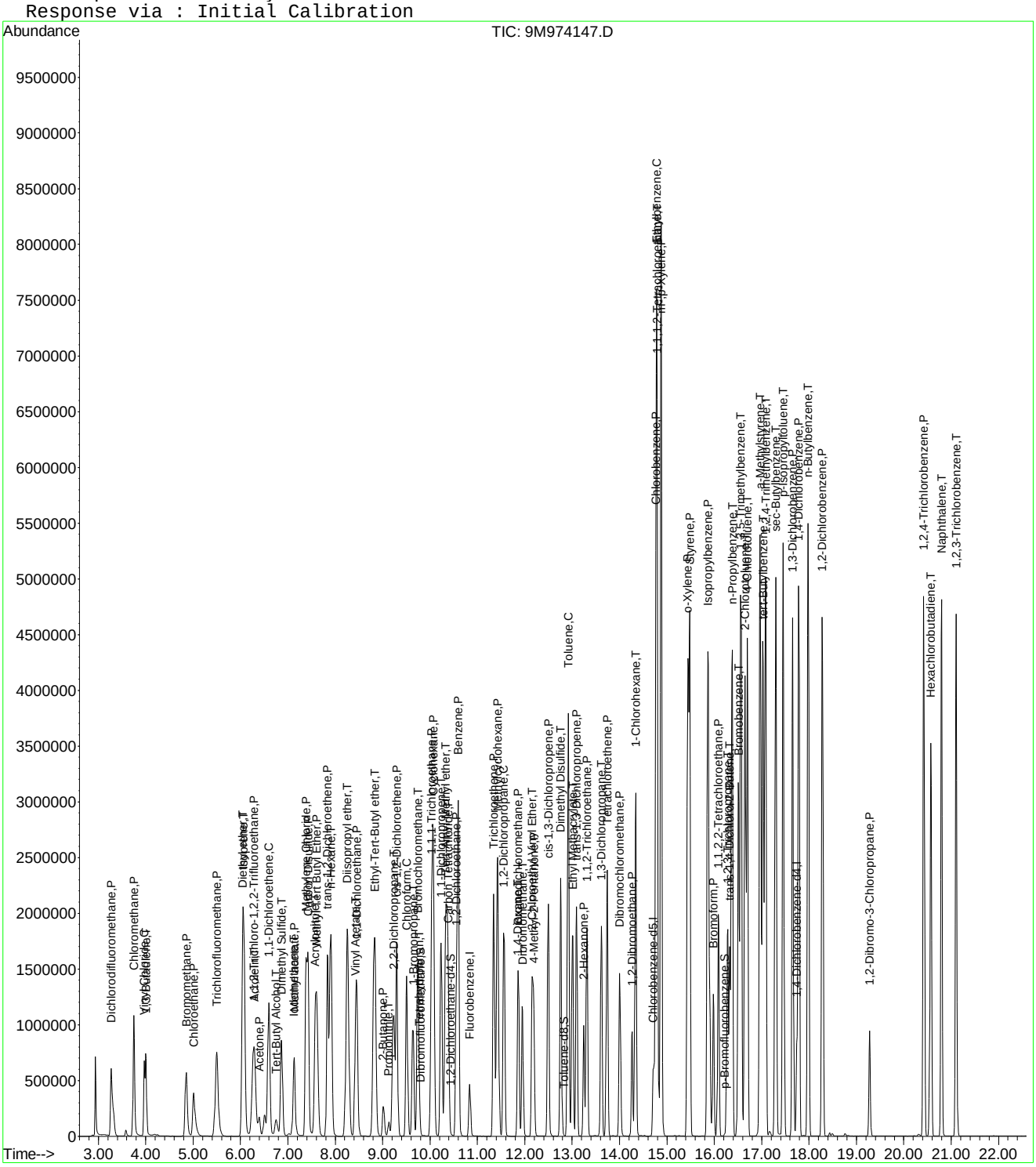

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974149.D Vial: 12
Acq On : 4 May 2016 17:25 Operator: ADC
Sample : WG567358-08 100.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 16:50:07 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	626603	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	475331	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	257003	50.00 ug/kg	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.80	111	339144	105.9070 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 211.82%#		
43) 1,2-Dichloroethane-d4	10.44	65	365242	105.3424 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 210.68%#		
58) Toluene-d8	12.82	98	1205010	106.1151 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 212.24%#		
79) p-Bromofluorobenzene	16.22	95	474532	106.5047 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 213.00%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	426803	99.8266 ug/kg	100
3) Chloromethane	3.74	50	464209	88.0870 ug/kg	100
4) Vinyl Chloride	3.97	62	389076	109.7057 ug/kg	100
5) 1,3-Butadiene	4.01	54	201746	95.9253 ug/kg	100
6) Bromomethane	4.87	94	240513	91.1295 ug/kg	98
7) Chloroethane	5.02	64	235616	93.6863 ug/kg	99
8) Trichlorofluoromethane	5.51	101	510609	95.1141 ug/kg	99
9) Diethyl ether	6.05	59	585312	193.9512 ug/kg	99
10) Isoprene	6.08	67	398296	93.3776 ug/kg	100
11) Acrolein	6.28	56	55231	109.8227 ug/kg	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	303721	96.6709 ug/kg	99
13) Acetone	6.38	43	106664	92.1911 ug/kg	98
14) 1,1-Dichloroethene	6.60	61	499257	95.2938 ug/kg	100
15) Tert-Butyl Alcohol	6.72	59	209845	387.6602 ug/kg	100
16) Dimethyl Sulfide	6.87	62	226390	88.6962 ug/kg	99
17) Iodomethane	7.12	142	180948	94.1277 ug/kg	100
18) Methyl acetate	7.13	43	310217	91.7736 ug/kg	98
19) Methylene Chloride	7.39	84	295313	88.9553 ug/kg	99
20) Carbon Disulfide	7.44	76	916684	89.3364 ug/kg	100
21) Acrylonitrile	7.58	53	151493	104.8976 ug/kg	100
22) Methyl Tert Butyl Ether	7.60	73	856464	92.3325 ug/kg	99
23) trans-1,2-Dichloroethene	7.84	61	478533	94.0951 ug/kg	100
24) n-Hexane	7.91	57	579599	96.3925 ug/kg	100
25) Diisopropyl ether	8.25	45	2293714	192.9149 ug/kg	100
26) Vinyl Acetate	8.42	43	610610	94.6048 ug/kg	100
27) 1,1-Dichloroethane	8.46	63	580810	92.4268 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.82	59	2187686	193.3663 ug/kg	100
29) 2-Butanone	9.01	43	170463	96.1807 ug/kg	99
30) Propionitrile	9.13	54	110627	183.3787 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	444332	94.2086 ug/kg	99
32) cis-1,2-Dichloroethene	9.30	96	319478	94.6341 ug/kg	100
33) Chloroform	9.51	83	498603	93.8285 ug/kg	100
34) 1-Bromopropane	9.64	122	54606	95.2861 ug/kg	98
35) Bromochloromethane	9.74	130	204319	94.7000 ug/kg	100
36) Tetrahydrofuran	9.76	42	237013	189.6762 ug/kg	99
38) 1,1,1-Trichloroethane	10.03	97	446497	94.5867 ug/kg	99
39) Cyclohexane	10.07	56	653782	93.4693 ug/kg	99
40) 1,1-Dichloropropene	10.23	75	394358	96.3522 ug/kg	99
41) Tert-Amyl-Methyl ether	10.33	73	1680084	194.9182 ug/kg	100
42) Carbon Tetrachloride	10.38	117	432930	93.7373 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M974149.D 8260SL.M Thu May 05 16:50:07 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974149.D Vial: 12
Acq On : 4 May 2016 17:25 Operator: ADC
Sample : WG567358-08 100.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 16:50:07 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.55	62	435287	91.9579	ug/kg	99
46)	Benzene	10.59	78	1146709	90.5536	ug/kg	100
47)	Trichloroethene	11.34	130	328205	94.8192	ug/kg	98
48)	Methylcyclohexane	11.43	83	530535	96.7257	ug/kg	99
49)	1,2-Dichloropropane	11.56	63	322065	92.4778	ug/kg	99
50)	1,4-Dioxane	11.85	88	20374	392.6334	ug/kg	100
51)	Bromodichloromethane	11.86	83	384991	92.5412	ug/kg	99
52)	Dibromomethane	11.96	174	195690	89.9534	ug/kg	98
53)	2-Chloroethyl Vinyl Ether	12.16	63	205545	98.9562	ug/kg	99
54)	4-Methyl-2-Pentanone	12.19	58	149507	94.4888	ug/kg	98
55)	cis-1,3-Dichloropropene	12.49	75	468890	93.5859	ug/kg	100
56)	Dimethyl Disulfide	12.76	94	562186	98.7861	ug/kg	99
59)	Toluene	12.92	91	1213115	90.8964	ug/kg	99
60)	Ethyl Methacrylate	13.01	69	392053	97.8292	ug/kg	100
61)	trans-1,3-Dichloropropene	13.09	75	439375	95.5553	ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	255078	94.3847	ug/kg	99
63)	2-Hexanone	13.24	43	258472	94.4090	ug/kg	99
64)	1,3-Dichloropropane	13.61	76	427371	91.4434	ug/kg	99
65)	Tetrachloroethene	13.74	164	263447	95.9891	ug/kg	99
66)	Dibromochloromethane	14.00	129	321786	94.0152	ug/kg	100
67)	1,2-Dibromoethane	14.27	107	276443	96.0968	ug/kg	99
68)	1-Chlorohexane	14.34	91	434301	99.3593	ug/kg	99
69)	Chlorobenzene	14.76	112	856226	93.0992	ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.79	131	313430	92.6826	ug/kg	100
71)	Ethylbenzene	14.79	106	471334	95.1641	ug/kg	99
72)	m-,p-Xylene	14.88	106	1149390	188.0430	ug/kg	98
73)	o-Xylene	15.44	106	550164	92.5868	ug/kg	99
74)	Styrene	15.48	104	944244	97.9222	ug/kg	100
75)	Bromoform	15.99	173	225812	93.7535	ug/kg	100
76)	Isopropylbenzene	15.87	105	1432705	95.9821	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.08	83	336727	89.6535	ug/kg	99
80)	1,2,3-Trichloropropane	16.28	110	108156	92.5661	ug/kg	96
81)	trans-1,4-Dichloro-2-Buten	16.32	53	137668	98.3091	ug/kg	99
82)	n-Propylbenzene	16.38	91	1601829	106.2107	ug/kg	100
83)	Bromobenzene	16.51	156	376473	94.6776	ug/kg	98
84)	1,3,5-Trimethylbenzene	16.56	105	1226843	99.8632	ug/kg	100
85)	2-Chlorotoluene	16.65	91	1005297	94.2370	ug/kg	99
86)	4-Chlorotoluene	16.69	91	962252	95.3464	ug/kg	100
87)	a-Methylstyrene	16.97	118	643558	101.0254	ug/kg	99
88)	tert-Butylbenzene	17.03	134	271557	98.8002	ug/kg	98
89)	1,2,4-Trimethylbenzene	17.08	105	1245266	101.6706	ug/kg	100
90)	sec-Butylbenzene	17.29	105	1596268	96.8037	ug/kg	100
91)	p-Isopropyltoluene	17.45	119	1327446	101.2008	ug/kg	100
92)	1,3-Dichlorobenzene	17.65	146	735478	93.9843	ug/kg	99
93)	1,4-Dichlorobenzene	17.78	146	743062	92.5297	ug/kg	99
94)	n-Butylbenzene	17.98	91	1221571	97.8971	ug/kg	100
95)	1,2-Dichlorobenzene	18.29	146	698206	92.7740	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.28	157	94330	101.8628	ug/kg	97
97)	1,2,4-Trichlorobenzene	20.42	180	522933	97.3608	ug/kg	99
98)	Hexachlorobutadiene	20.57	225	251531	98.0520	ug/kg	99
99)	Naphthalene	20.80	128	1351333	99.2845	ug/kg	99
100)	1,2,3-Trichlorobenzene	21.10	180	517118	99.3455	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M974149.D 8260SL.M Thu May 05 16:50:08 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974149.D Vial: 12
Acq On : 4 May 2016 17:25 Operator: ADC
Sample : WG567358-08 100.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 5 16:50 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

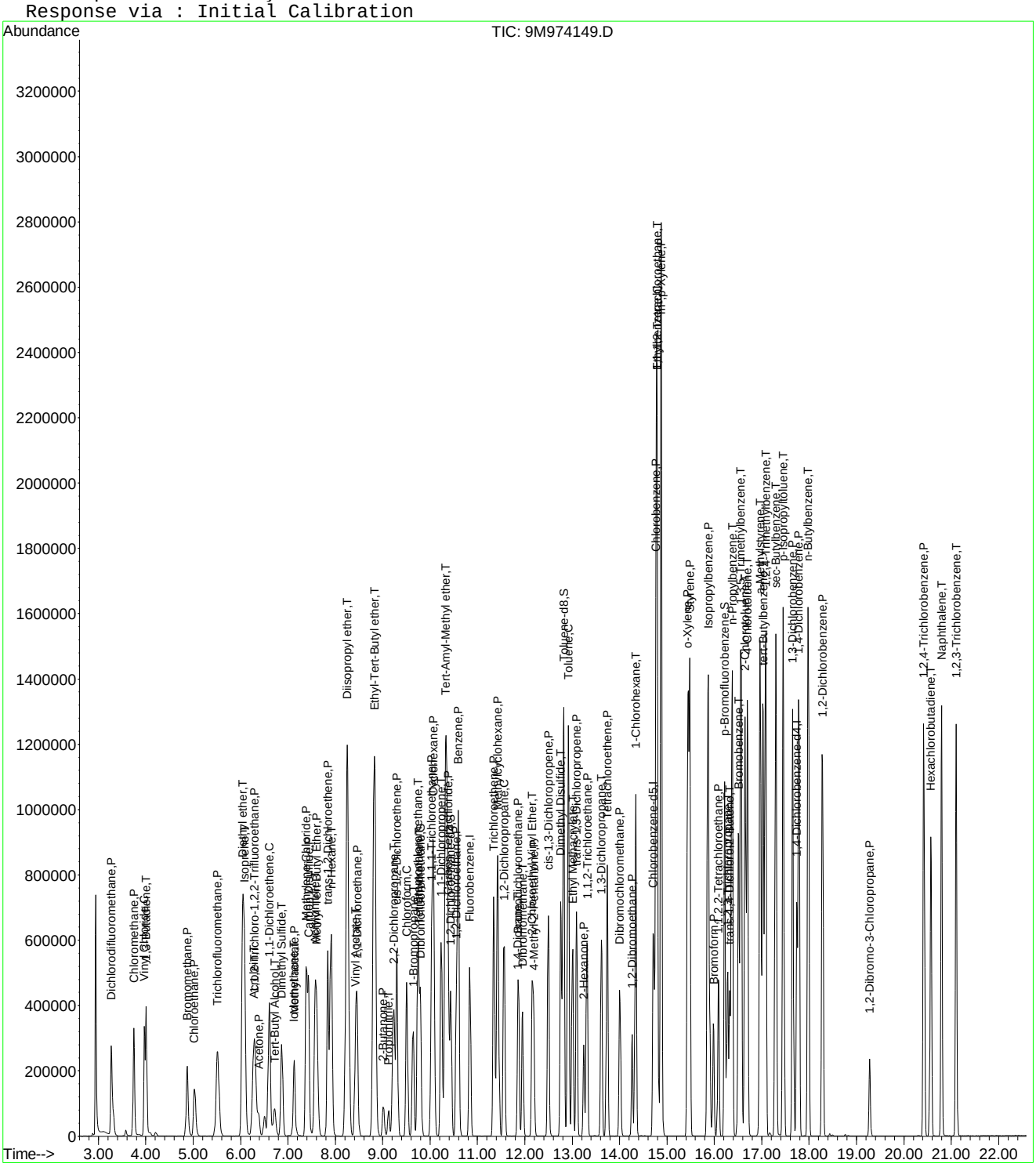

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974150.D Vial: 13
Acq On : 4 May 2016 17:56 Operator: ADC
Sample : WG567358-02 50ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 16:50:08 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	675036	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	505652	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	266170	50.00 ug/kg	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.80	111	183574	53.2129 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 106.42%		
43) 1,2-Dichloroethane-d4	10.44	65	192746	51.6028 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 103.20%		
58) Toluene-d8	12.82	98	649893	53.7988 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 107.60%		
79) p-Bromofluorobenzene	16.22	95	252945	54.8161 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 109.64%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	244751	53.1385 ug/kg	100
3) Chloromethane	3.75	50	253390	44.6327 ug/kg	100
4) Vinyl Chloride	3.97	62	186869	45.6530 ug/kg	100
5) 1,3-Butadiene	4.01	54	113456	49.5414 ug/kg	100
6) Bromomethane	4.88	94	146771	51.6210 ug/kg	100
7) Chloroethane	5.03	64	138736	51.2066 ug/kg	100
8) Trichlorofluoromethane	5.52	101	299952	51.8649 ug/kg	100
9) Diethyl ether	6.05	59	356986	109.8049 ug/kg	100
10) Isoprene	6.09	67	234584	51.0506 ug/kg	100
11) Acrolein	6.29	56	31974	59.0163 ug/kg	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	177309	52.3863 ug/kg	100
13) Acetone	6.39	43	66610	52.2165 ug/kg	100
14) 1,1-Dichloroethene	6.61	61	295121	52.2885 ug/kg	100
15) Tert-Butyl Alcohol	6.72	59	129189	221.5357 ug/kg	100
16) Dimethyl Sulfide	6.87	62	131987	48.1926 ug/kg	100
17) Iodomethane	7.13	142	95224	50.5500 ug/kg	100
18) Methyl acetate	7.13	43	190758	52.3842 ug/kg	100
19) Methylene Chloride	7.39	84	176557	49.3674 ug/kg	100
20) Carbon Disulfide	7.44	76	544181	49.2286 ug/kg	100
21) Acrylonitrile	7.58	53	91941	59.0946 ug/kg	100
22) Methyl Tert Butyl Ether	7.60	73	518165	51.8536 ug/kg	100
23) trans-1,2-Dichloroethene	7.84	61	282425	51.5494 ug/kg	100
24) n-Hexane	7.92	57	319189	49.2753 ug/kg	100
25) Diisopropyl ether	8.25	45	1391018	108.5987 ug/kg	100
26) Vinyl Acetate	8.43	43	372395	53.5573 ug/kg	100
27) 1,1-Dichloroethane	8.46	63	344476	50.8848 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.82	59	1325620	108.7628 ug/kg	100
29) 2-Butanone	9.01	43	103517	54.2170 ug/kg	100
30) Propionitrile	9.13	54	65894	102.8706 ug/kg	100
31) 2,2-Dichloropropane	9.23	77	258809	50.9363 ug/kg	100
32) cis-1,2-Dichloroethene	9.30	96	190475	52.3734 ug/kg	100
33) Chloroform	9.51	83	297693	52.0013 ug/kg	100
34) 1-Bromopropane	9.65	122	31855	51.5980 ug/kg	100
35) Bromochloromethane	9.74	130	123691	53.2163 ug/kg	100
36) Tetrahydrofuran	9.76	42	148286	110.1555 ug/kg	100
38) 1,1,1-Trichloroethane	10.04	97	263689	51.8524 ug/kg	100
39) Cyclohexane	10.07	56	386754	51.3259 ug/kg	100
40) 1,1-Dichloropropene	10.24	75	232697	52.7749 ug/kg	100
41) Tert-Amyl-Methyl ether	10.33	73	1018336	109.6675 ug/kg	100
42) Carbon Tetrachloride	10.38	117	255917	51.4351 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974150.D Vial: 13
Acq On : 4 May 2016 17:56 Operator: ADC
Sample : WG567358-02 50ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 16:50:08 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.55	62	260051	50.9962	ug/kg	100
46)	Benzene	10.60	78	683034	50.0680	ug/kg	100
47)	Trichloroethene	11.35	130	193782	51.9673	ug/kg	100
48)	Methylcyclohexane	11.43	83	311362	52.6937	ug/kg	100
49)	1,2-Dichloropropane	11.56	63	192678	51.3560	ug/kg	100
50)	1,4-Dioxane	11.85	88	11038	208.6697	ug/kg	100
51)	Bromodichloromethane	11.86	83	227209	50.6962	ug/kg	100
52)	Dibromomethane	11.96	174	119137	50.9633	ug/kg	100
53)	2-Chloroethyl Vinyl Ether	12.16	63	122574	54.7772	ug/kg	100
54)	4-Methyl-2-Pentanone	12.18	58	92440	54.2306	ug/kg	100
55)	cis-1,3-Dichloropropene	12.50	75	278272	51.5555	ug/kg	100
56)	Dimethyl Disulfide	12.76	94	325854	53.1502	ug/kg	100
59)	Toluene	12.92	91	726141	51.1458	ug/kg	100
60)	Ethyl Methacrylate	13.00	69	232734	54.5918	ug/kg	100
61)	trans-1,3-Dichloropropene	13.10	75	257629	52.6694	ug/kg	100
62)	1,1,2-Trichloroethane	13.31	97	154186	53.6313	ug/kg	100
63)	2-Hexanone	13.24	43	156300	53.6665	ug/kg	100
64)	1,3-Dichloropropane	13.61	76	257841	51.8613	ug/kg	100
65)	Tetrachloroethene	13.74	164	154731	52.9969	ug/kg	100
66)	Dibromochloromethane	14.00	129	192693	52.9226	ug/kg	100
67)	1,2-Dibromoethane	14.27	107	166049	54.2605	ug/kg	100
68)	1-Chlorohexane	14.34	91	247443	53.2154	ug/kg	100
69)	Chlorobenzene	14.76	112	509226	52.0490	ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.80	131	187295	52.0629	ug/kg	100
71)	Ethylbenzene	14.79	106	280057	53.1539	ug/kg	100
72)	m-,p-Xylene	14.88	106	674270	103.6974	ug/kg	100
73)	o-Xylene	15.44	106	327051	51.7388	ug/kg	100
74)	Styrene	15.48	104	554396	54.0457	ug/kg	100
75)	Bromoform	15.98	173	133392	52.0613	ug/kg	100
76)	Isopropylbenzene	15.86	105	846758	53.3258	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.08	83	209968	53.9786	ug/kg	100
80)	1,2,3-Trichloropropane	16.28	110	65142	53.8321	ug/kg	100
81)	trans-1,4-Dichloro-2-Buten	16.33	53	79393	54.7422	ug/kg	100
82)	n-Propylbenzene	16.37	91	935132	59.6457	ug/kg	100
83)	Bromobenzene	16.51	156	222631	54.0603	ug/kg	100
84)	1,3,5-Trimethylbenzene	16.56	105	712777	56.0208	ug/kg	100
85)	2-Chlorotoluene	16.65	91	608843	55.1076	ug/kg	100
86)	4-Chlorotoluene	16.70	91	539340	51.6009	ug/kg	100
87)	a-Methylstyrene	16.97	118	367278	55.6694	ug/kg	100
88)	tert-Butylbenzene	17.02	134	159044	55.8719	ug/kg	100
89)	1,2,4-Trimethylbenzene	17.08	105	726383	57.0202	ug/kg	100
90)	sec-Butylbenzene	17.30	105	929884	54.4495	ug/kg	100
91)	p-Isopropyltoluene	17.46	119	762690	56.1428	ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	428932	52.9240	ug/kg	100
93)	1,4-Dichlorobenzene	17.78	146	425455	51.1551	ug/kg	100
94)	n-Butylbenzene	17.98	91	689114	53.3238	ug/kg	100
95)	1,2-Dichlorobenzene	18.28	146	402100	51.5889	ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.28	157	50693	52.8558	ug/kg	100
97)	1,2,4-Trichlorobenzene	20.42	180	281493	50.6040	ug/kg	100
98)	Hexachlorobutadiene	20.57	225	138556	52.1518	ug/kg	100
99)	Naphthalene	20.80	128	749257	53.1531	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	274614	50.9402	ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974150.D Vial: 13
Acq On : 4 May 2016 17:56 Operator: ADC
Sample : WG567358-02 50ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 5 16:50 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

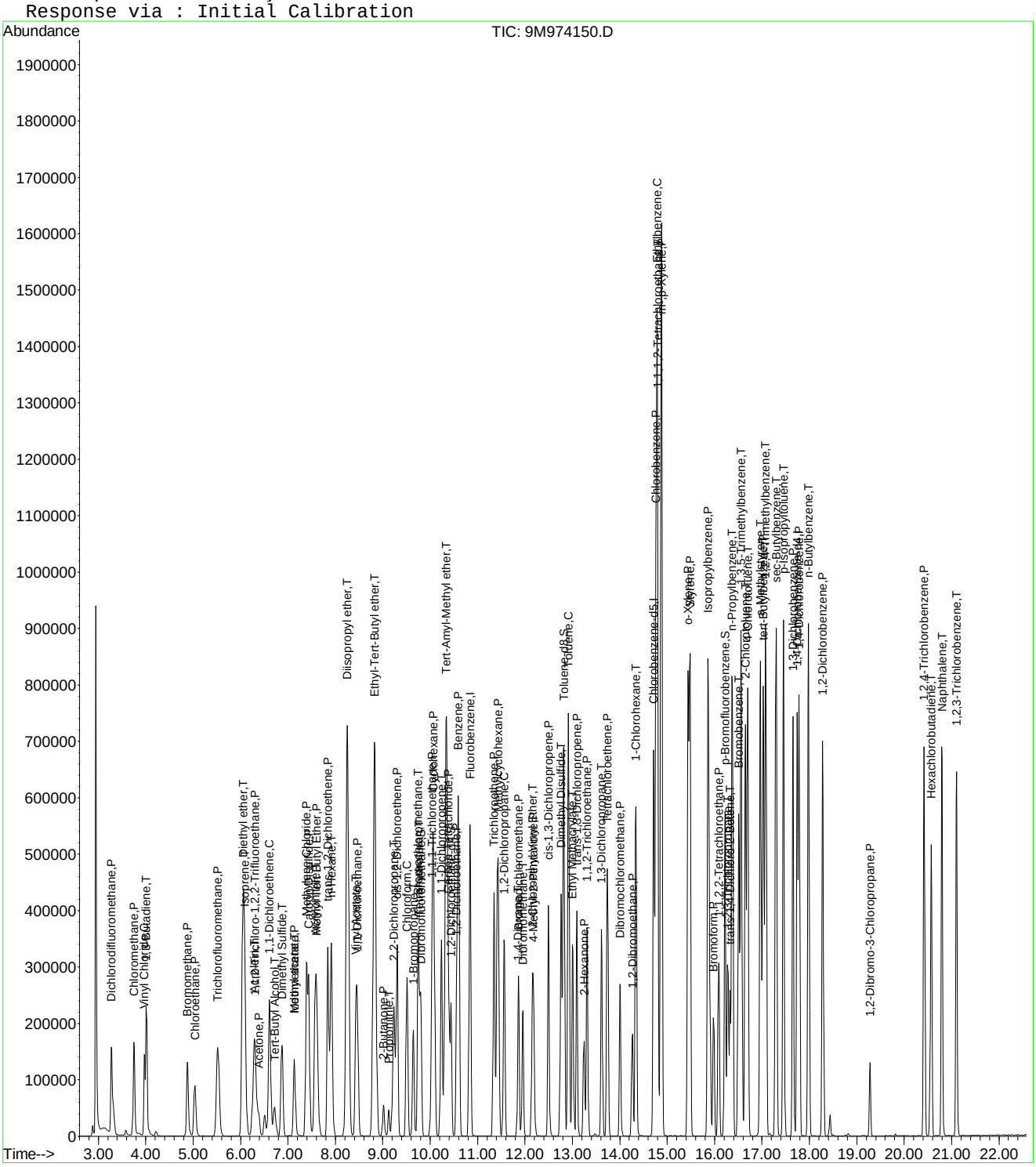

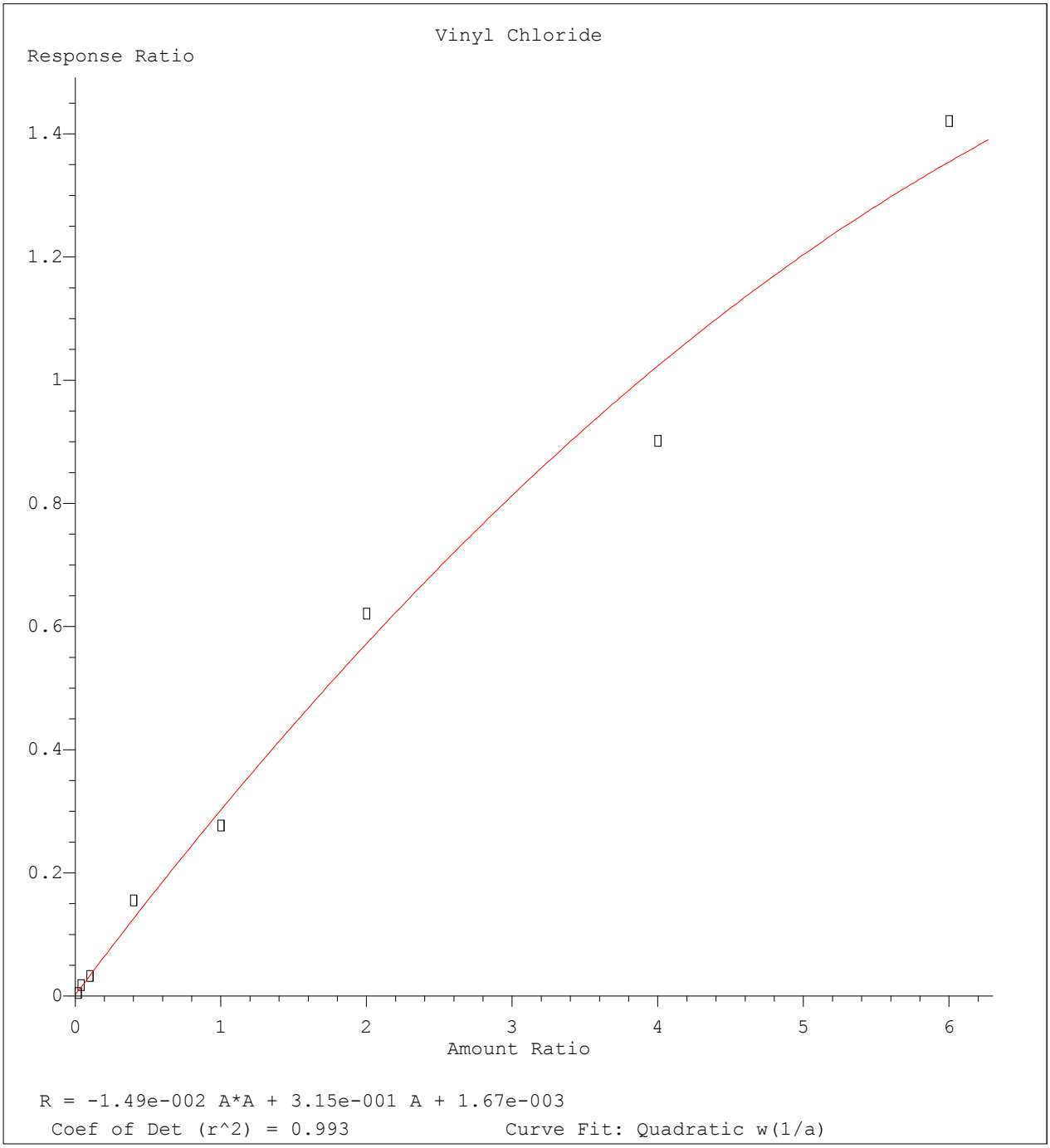

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Thu May 05 08:58:14 2016

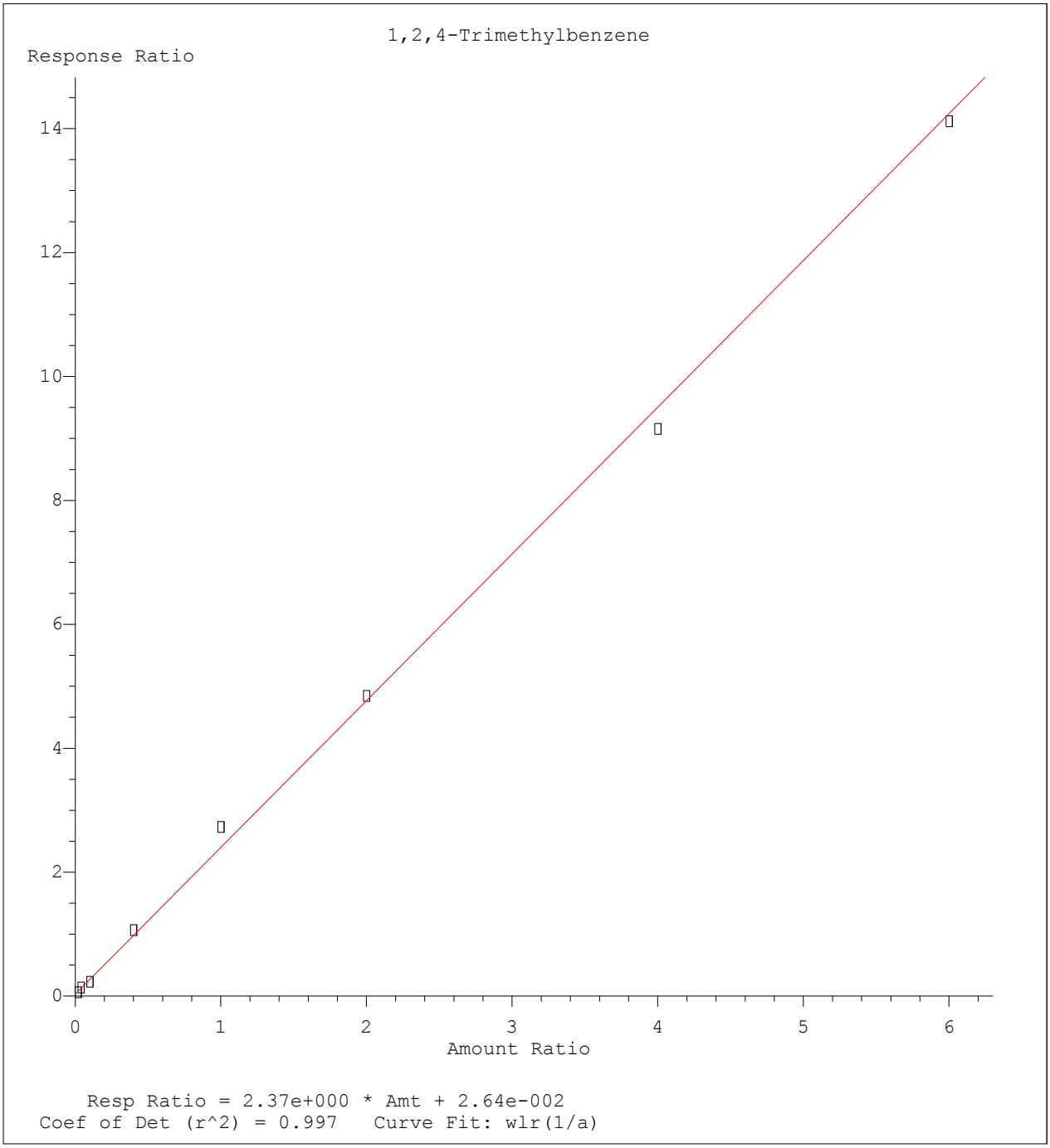

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Thu May 05 08:58:14 2016

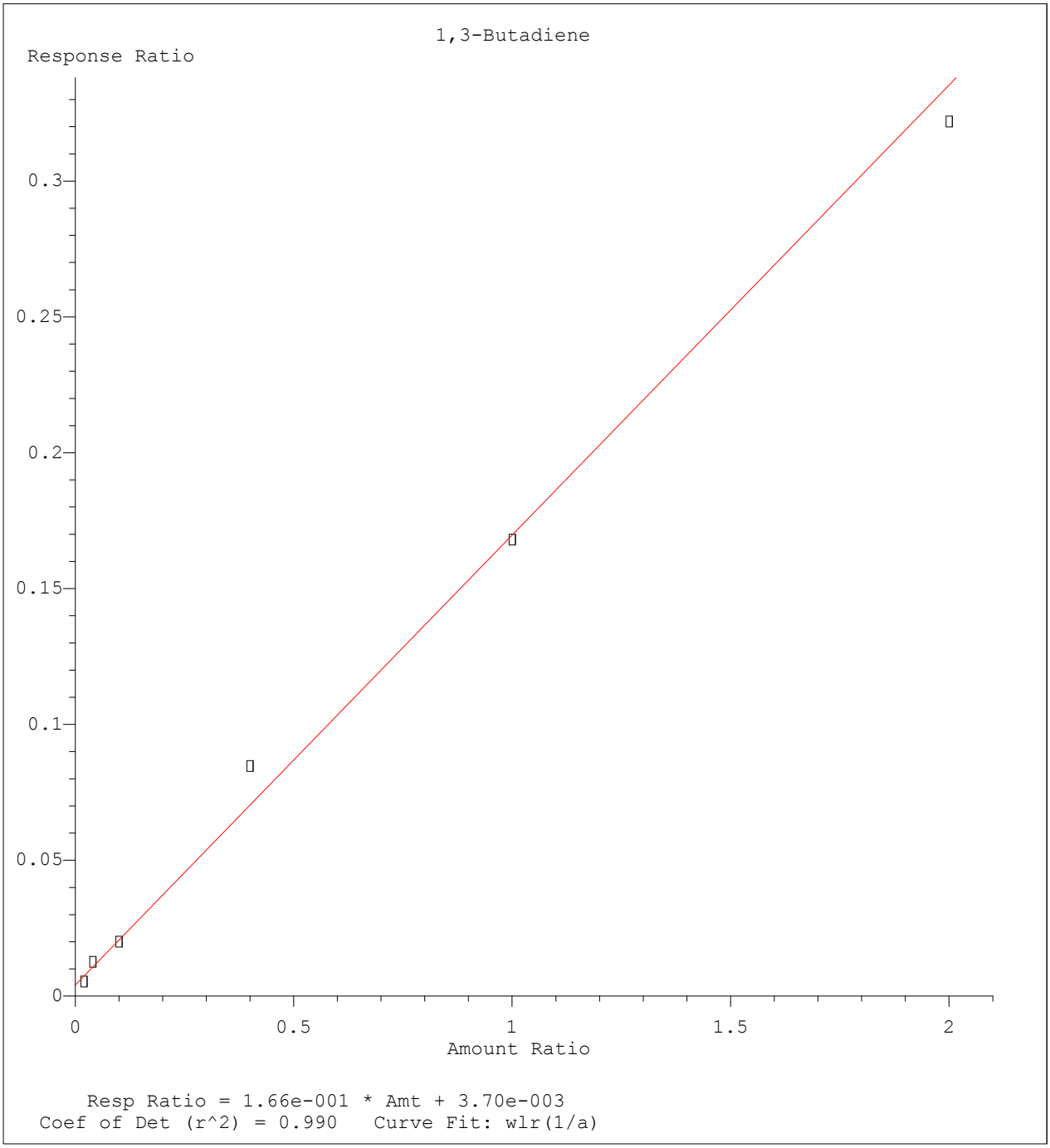

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Thu May 05 08:58:14 2016

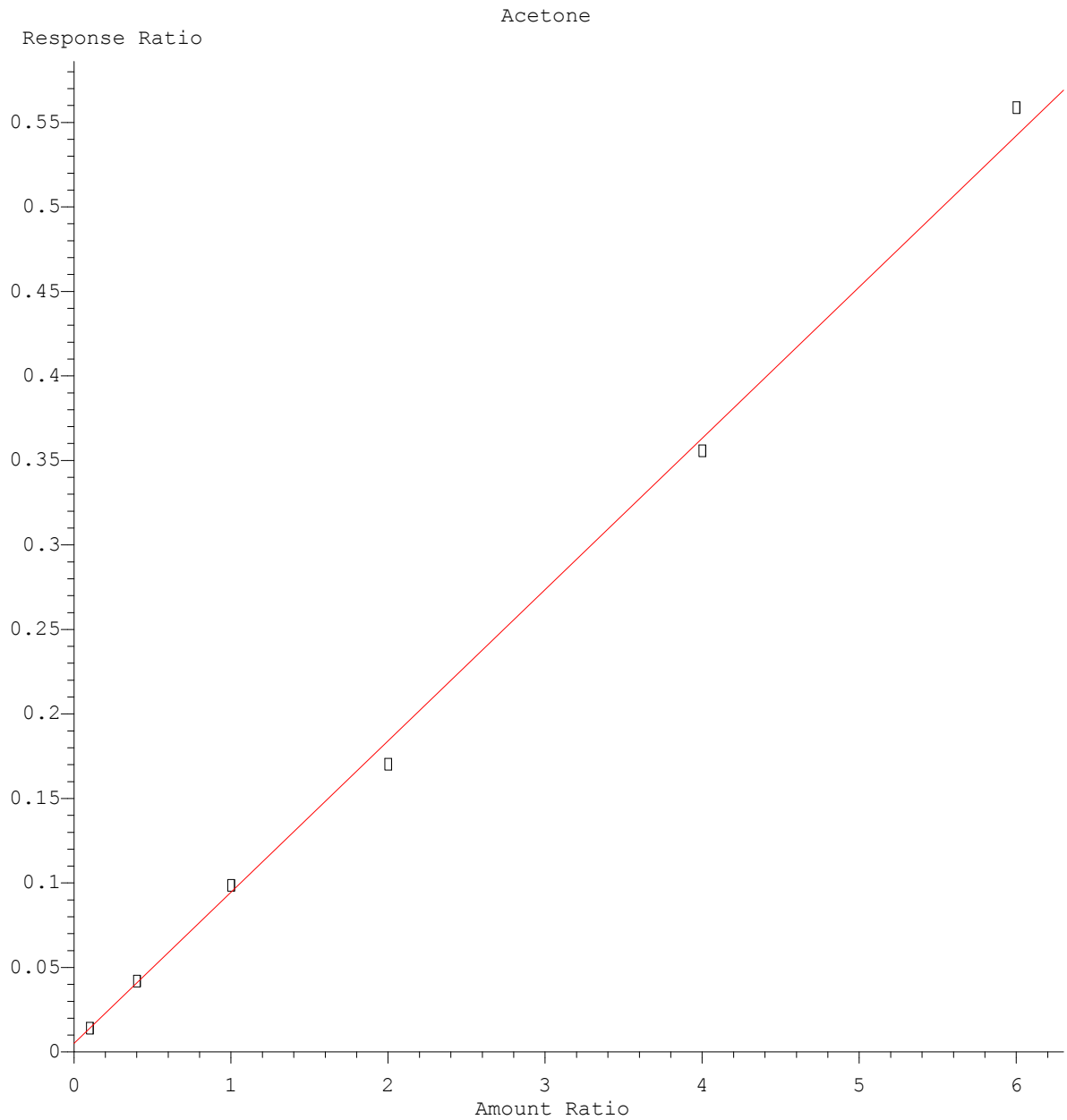

Resp Ratio = 8.95e-002 * Amt + 5.22e-003
Coef of Det (r^2) = 0.998 Curve Fit: wlr(1/a)

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Thu May 05 08:58:14 2016

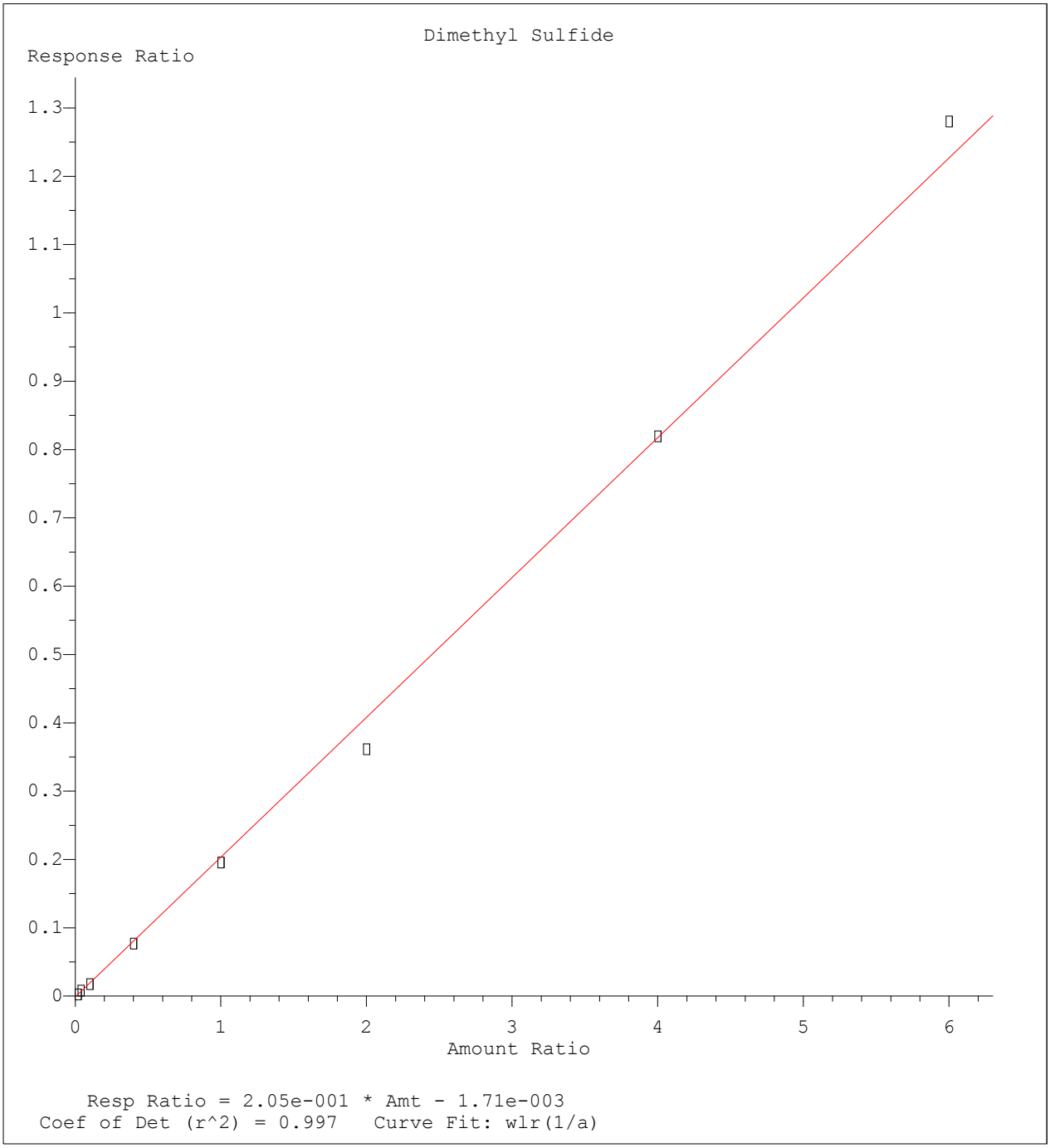

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Thu May 05 08:58:14 2016

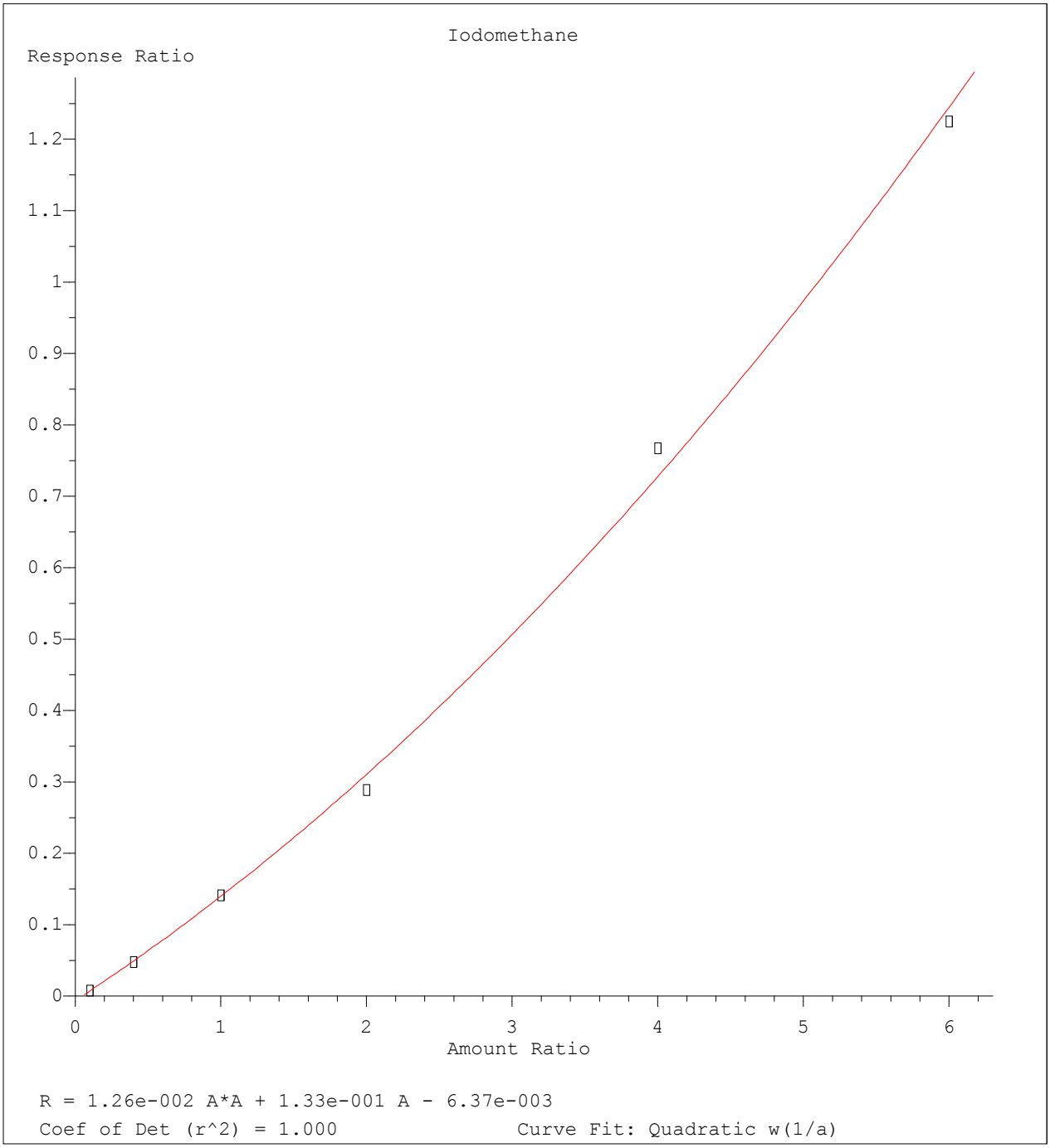

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Thu May 05 08:58:14 2016

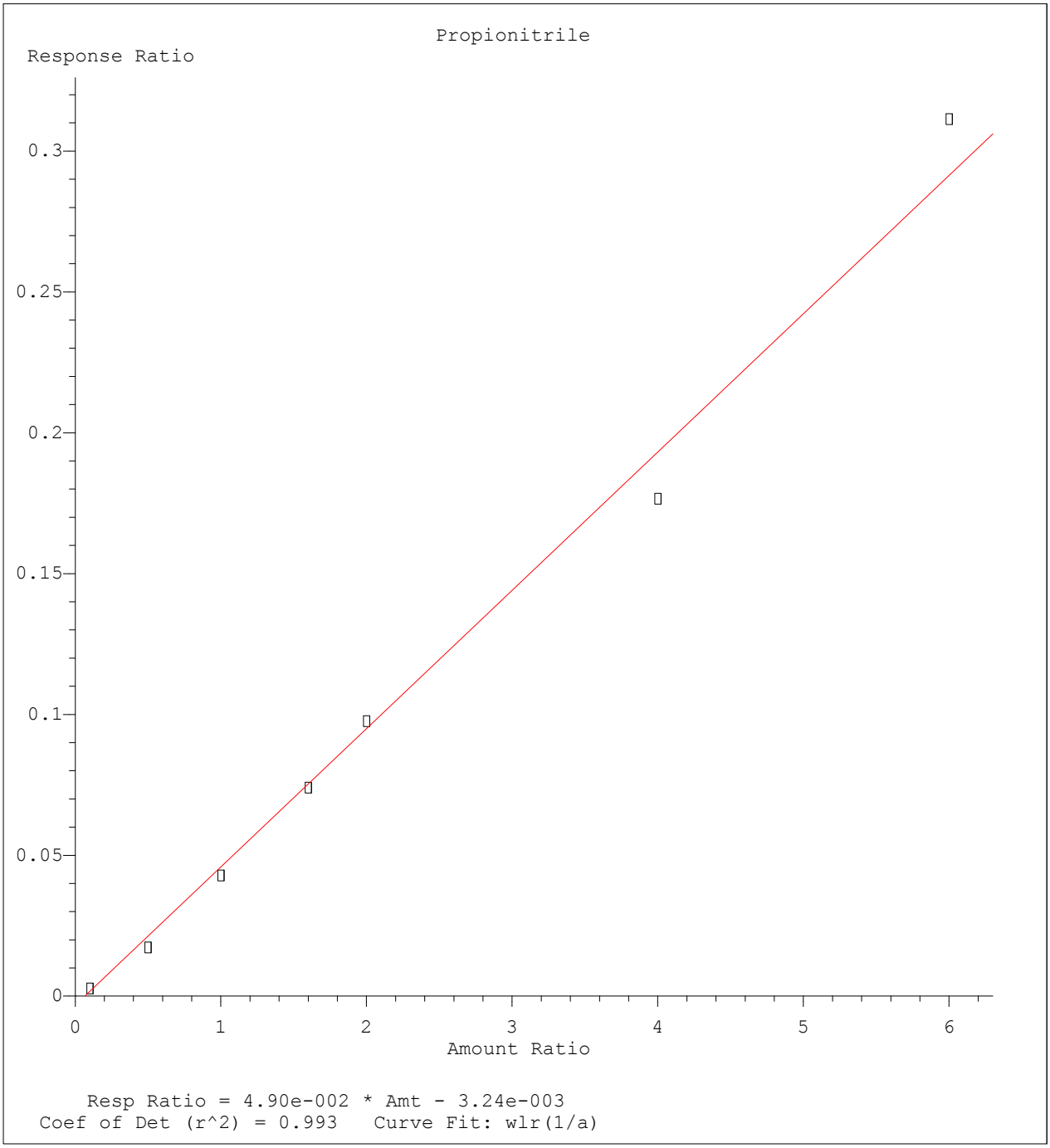

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Thu May 05 08:58:14 2016

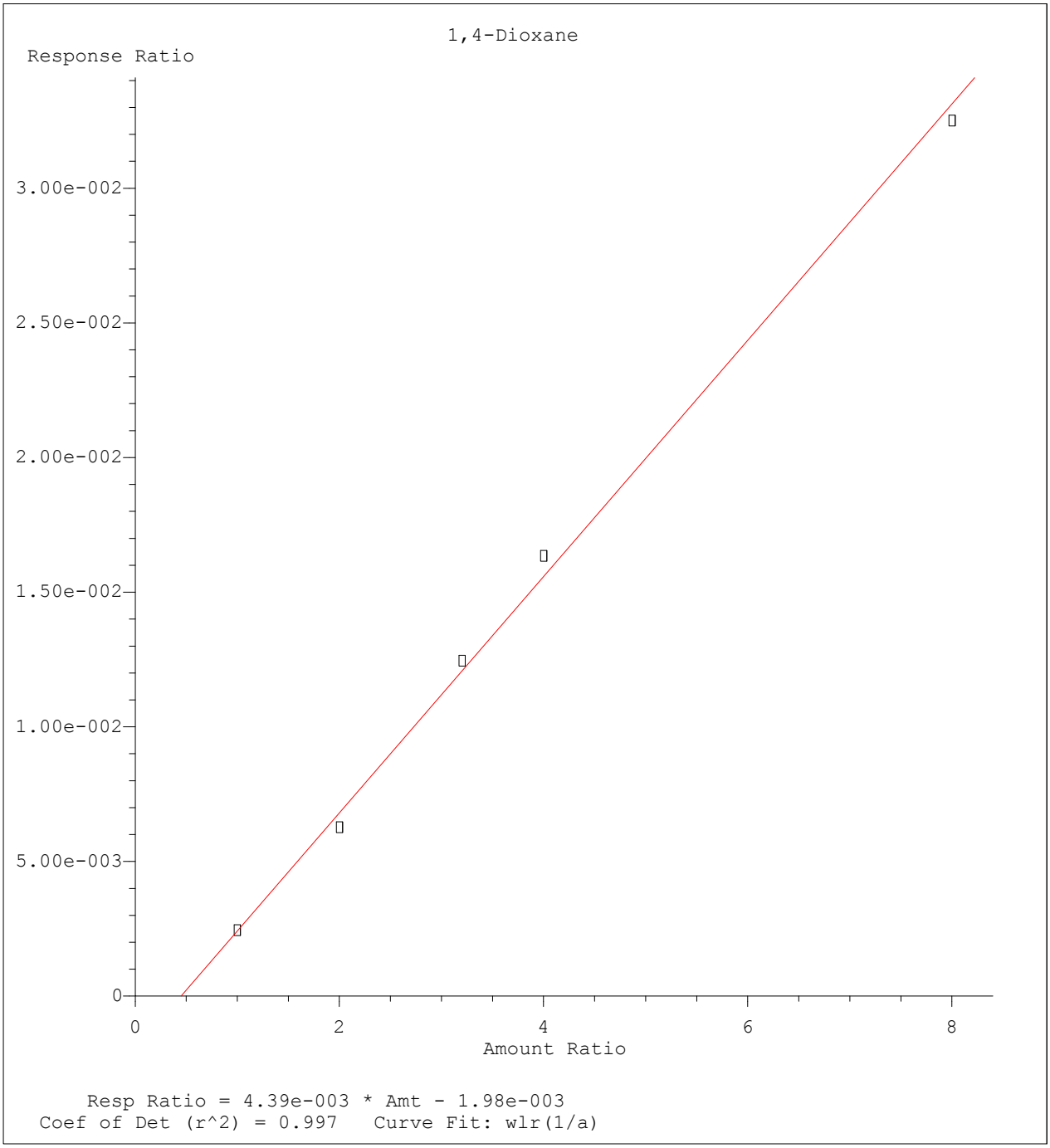

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Thu May 05 08:58:14 2016

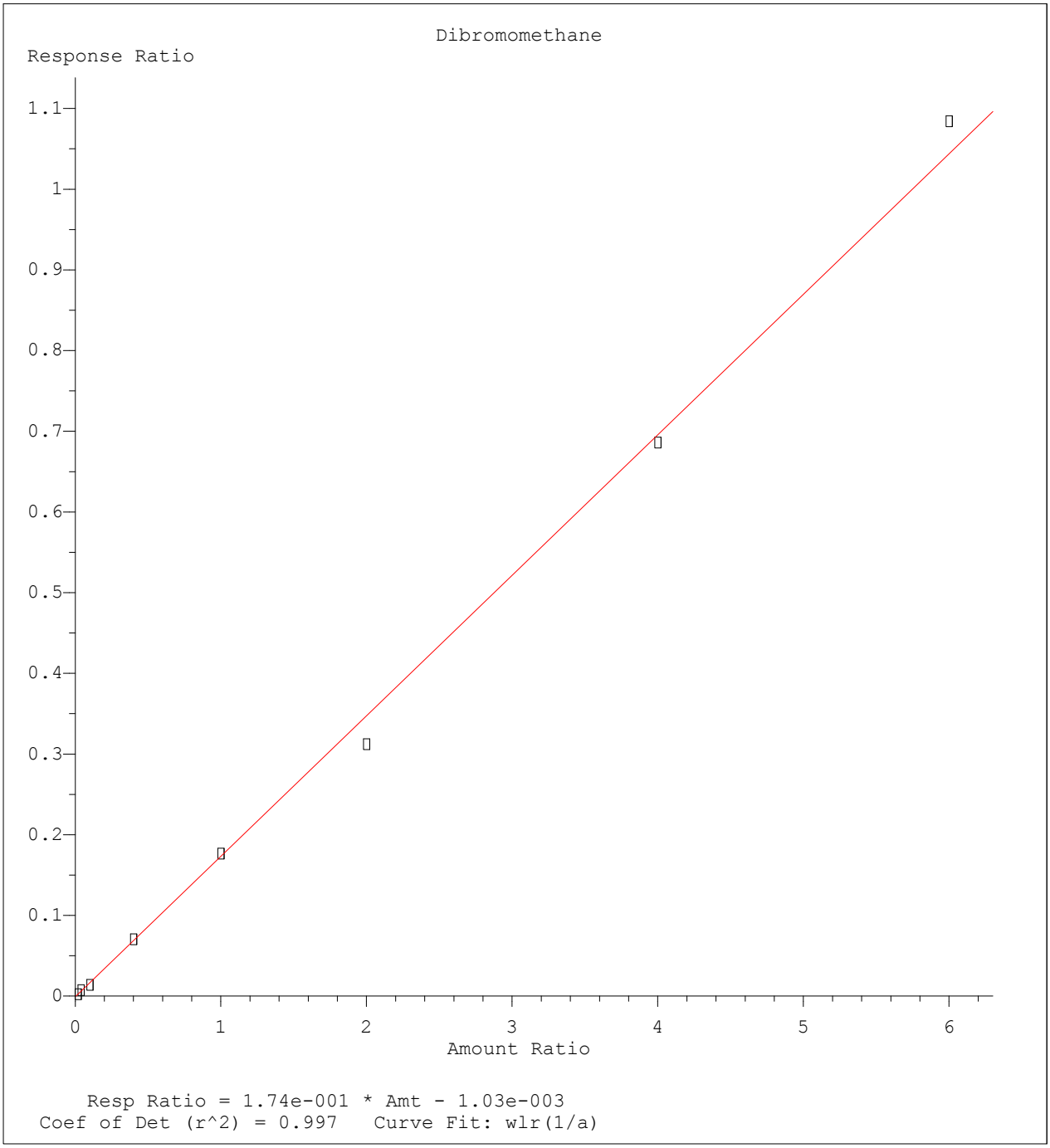

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Thu May 05 08:58:14 2016

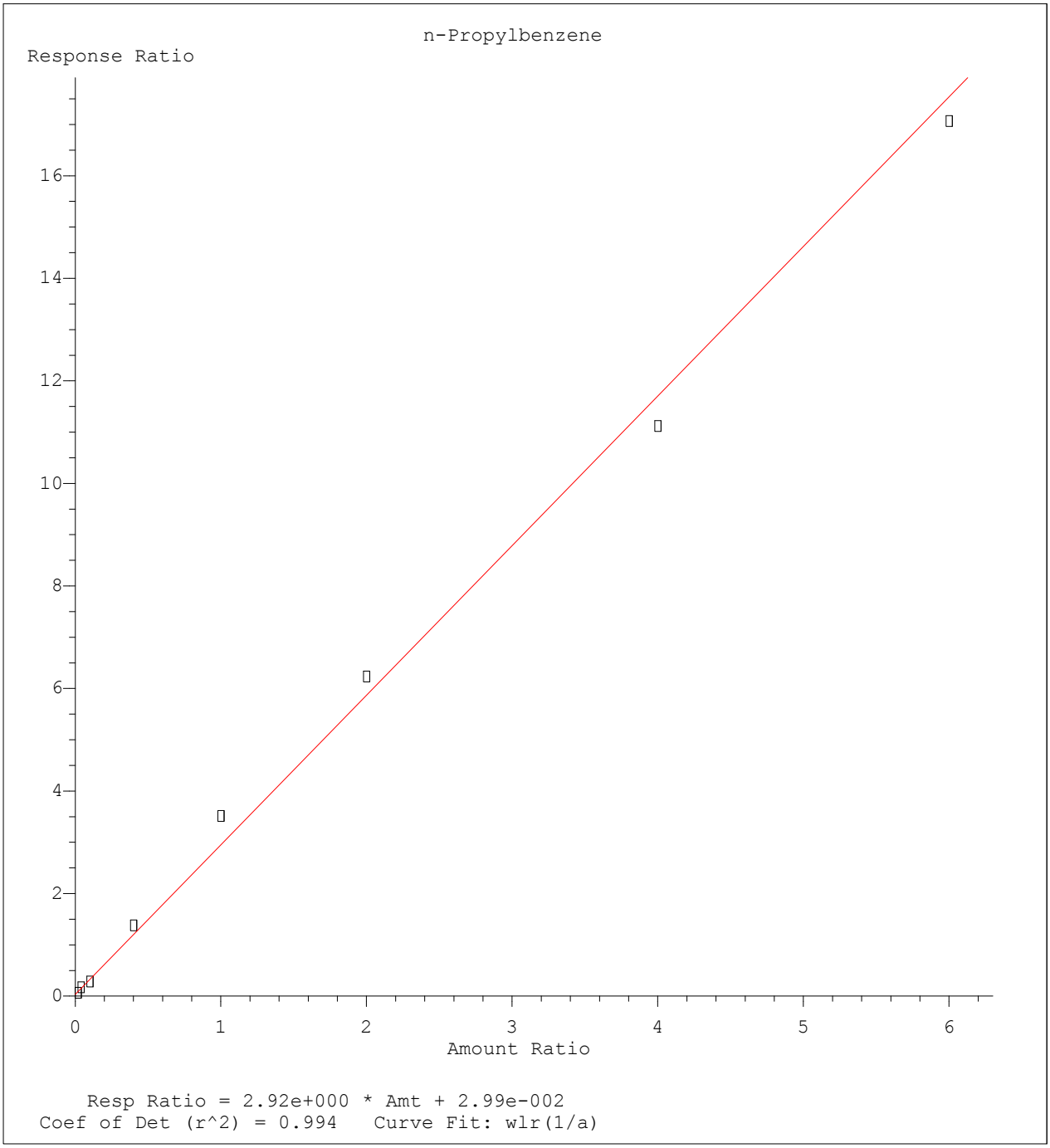

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Thu May 05 08:58:14 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974152.D Vial: 15
Acq On : 4 May 2016 18:59 Operator: ADC
Sample : WG567358-11 20.0ug/kg ALTSRC 8260 Inst : hpms9
Misc : 7,1 STD75739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 16:50:10 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	643883	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	486835	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	254991	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	175306	53.2749 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 106.54%		
43) 1,2-Dichloroethane-d4	10.43	65	185237	51.9919 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 103.98%		
58) Toluene-d8	12.82	98	617692	53.1096 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.22%		
79) p-Bromofluorobenzene	16.22	95	242125	54.7717 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 109.54%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.28	85	103029	23.4511 ug/kg	100
3) Chloromethane	3.75	50	111537	20.5969 ug/kg	100
4) Vinyl Chloride	3.98	62	66706	16.4359 ug/kg	96
5) 1,3-Butadiene	4.01	54	369016	171.6202 ug/kg	100
6) Bromomethane	4.87	94	55877	20.6034 ug/kg	99
7) Chloroethane	5.03	64	54801	21.2053 ug/kg	98
8) Trichlorofluoromethane	5.52	101	108723	19.7089 ug/kg	99
9) Diethyl ether	6.04	59	366396	118.1521 ug/kg	99
10) Isoprene	6.08	67	100447	22.9171 ug/kg	97
11) Acrolein	6.28	56	50776	98.2547 ug/kg	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	65917	20.4176 ug/kg	98
13) Acetone	6.39	43	29480	22.6662 ug/kg	99
14) 1,1-Dichloroethene	6.60	61	104541	19.4184 ug/kg	100
15) Tert-Butyl Alcohol	6.72	59	133716	240.3928 ug/kg	100
16) Dimethyl Sulfide	6.87	62	78745	30.3003 ug/kg	99
17) Iodomethane	7.13	142	29044	18.6748 ug/kg	98
18) Methyl acetate	7.13	43	62155	17.8943 ug/kg	99
19) Methylene Chloride	7.40	84	68016	19.9382 ug/kg	100
20) Carbon Disulfide	7.44	76	194578	18.4539 ug/kg	99
21) Acrylonitrile	7.57	53	34218	23.0575 ug/kg	96
22) Methyl Tert Butyl Ether	7.60	73	201841	21.1758 ug/kg	98
23) trans-1,2-Dichloroethene	7.84	61	107179	20.5093 ug/kg	99
24) n-Hexane	7.91	57	118237	19.1361 ug/kg	100
25) Diisopropyl ether	8.25	45	1468379	120.1850 ug/kg	100
26) Vinyl Acetate	8.43	43	151936	22.9084 ug/kg	100
27) 1,1-Dichloroethane	8.46	63	123962	19.1972 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	1318965	113.4526 ug/kg	100
29) 2-Butanone	9.02	43	39697	21.7972 ug/kg	100
30) Propionitrile	9.13	54	63712	104.2313 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	90650	18.7041 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	71476	20.6041 ug/kg	99
33) Chloroform	9.51	83	109769	20.1023 ug/kg	98
34) 1-Bromopropane	9.64	122	16913	28.7207 ug/kg	97
35) Bromochloromethane	9.74	130	44368	20.0123 ug/kg	97
36) Tetrahydrofuran	9.77	42	139491	108.6357 ug/kg	99
38) 1,1,1-Trichloroethane	10.03	97	98558	20.3184 ug/kg	100
39) Cyclohexane	10.07	56	142890	19.8803 ug/kg	99
40) 1,1-Dichloropropene	10.23	75	83712	19.9042 ug/kg	100
41) Tert-Amyl-Methyl ether	10.33	73	1062365	119.9446 ug/kg	100
42) Carbon Tetrachloride	10.38	117	90833	19.1392 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974152.D Vial: 15
Acq On : 4 May 2016 18:59 Operator: ADC
Sample : WG567358-11 20.0ug/kg ALTSRC 8260 Inst : hpms9
Misc : 7,1 STD75739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 16:50:10 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	98270	20.2032	ug/kg	99
46)	Benzene	10.59	78	259096	19.9113	ug/kg	99
47)	Trichloroethene	11.34	130	72570	20.4030	ug/kg	99
48)	Methylcyclohexane	11.43	83	113272	20.0972	ug/kg	98
49)	1,2-Dichloropropane	11.56	63	74264	20.7519	ug/kg	98
50)	1,4-Dioxane	11.85	88	12161	237.5249	ug/kg	99
51)	Bromodichloromethane	11.86	83	84232	19.7037	ug/kg	98
52)	Dibromomethane	11.95	174	41634	18.8587	ug/kg	98
53)	2-Chloroethyl Vinyl Ether	12.15	63	44308	20.7589	ug/kg	99
54)	4-Methyl-2-Pentanone	12.19	58	34105	20.9760	ug/kg	98
55)	cis-1,3-Dichloropropene	12.49	75	108409	21.0567	ug/kg	99
56)	Dimethyl Disulfide	12.76	94	133410	22.8134	ug/kg	94
59)	Toluene	12.91	91	268571	19.6480	ug/kg	98
60)	Ethyl Methacrylate	13.01	69	85792	20.9018	ug/kg	98
61)	trans-1,3-Dichloropropene	13.09	75	94348	20.0339	ug/kg	99
62)	1,1,2-Trichloroethane	13.32	97	55686	20.1182	ug/kg	98
63)	2-Hexanone	13.24	43	55541	19.8074	ug/kg	98
64)	1,3-Dichloropropane	13.61	76	102641	21.4429	ug/kg	99
65)	Tetrachloroethene	13.74	164	53984	19.2047	ug/kg	98
66)	Dibromochloromethane	14.00	129	68235	19.4649	ug/kg	99
67)	1,2-Dibromoethane	14.27	107	61872	20.9996	ug/kg	100
68)	1-Chlorohexane	14.34	91	91034	20.3346	ug/kg	99
69)	Chlorobenzene	14.76	112	193451	20.5373	ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.79	131	69378	20.0306	ug/kg	100
71)	Ethylbenzene	14.79	106	102427	20.1917	ug/kg	96
72)	m-,p-Xylene	14.88	106	252141	40.2761	ug/kg	100
73)	o-Xylene	15.44	106	124657	20.4827	ug/kg	100
74)	Styrene	15.48	104	201019	20.3539	ug/kg	98
75)	Bromoform	15.99	173	43603	17.6755	ug/kg	100
76)	Isopropylbenzene	15.87	105	315023	20.6058	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.08	83	73803	19.8051	ug/kg	99
80)	1,2,3-Trichloropropane	16.28	110	24911	21.4885	ug/kg#	19
81)	trans-1,4-Dichloro-2-Buten	16.32	53	21651	15.5830	ug/kg#	1
82)	n-Propylbenzene	16.38	91	345824	22.7101	ug/kg	100
83)	Bromobenzene	16.51	156	82640	20.9468	ug/kg	98
84)	1,3,5-Trimethylbenzene	16.56	105	267694	21.9618	ug/kg	100
85)	2-Chlorotoluene	16.65	91	217459	20.5455	ug/kg	99
86)	4-Chlorotoluene	16.69	91	212047	21.1768	ug/kg	100
87)	a-Methylstyrene	16.97	118	138575	21.9251	ug/kg	98
88)	tert-Butylbenzene	17.03	134	61589	22.5847	ug/kg	96
89)	1,2,4-Trimethylbenzene	17.08	105	263571	21.2510	ug/kg	99
90)	sec-Butylbenzene	17.29	105	339691	20.7627	ug/kg	100
91)	p-Isopropyltoluene	17.45	119	268115	20.6016	ug/kg	100
92)	1,3-Dichlorobenzene	17.65	146	153486	19.7682	ug/kg	98
93)	1,4-Dichlorobenzene	17.78	146	159110	19.9695	ug/kg	99
94)	n-Butylbenzene	17.98	91	240104	19.3938	ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	149759	20.0562	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.28	157	18657	20.3058	ug/kg	99
97)	1,2,4-Trichlorobenzene	20.42	180	97271	18.2530	ug/kg	99
98)	Hexachlorobutadiene	20.58	225	50965	20.0240	ug/kg	98
99)	Naphthalene	20.80	128	258183	19.1188	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.10	180	100542	19.4679	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974152.D Vial: 15
Acq On : 4 May 2016 18:59 Operator: ADC
Sample : WG567358-11 20.0ug/kg ALTSRC 8260 Inst : hpms9
Misc : 7,1 STD75739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 5 16:50 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

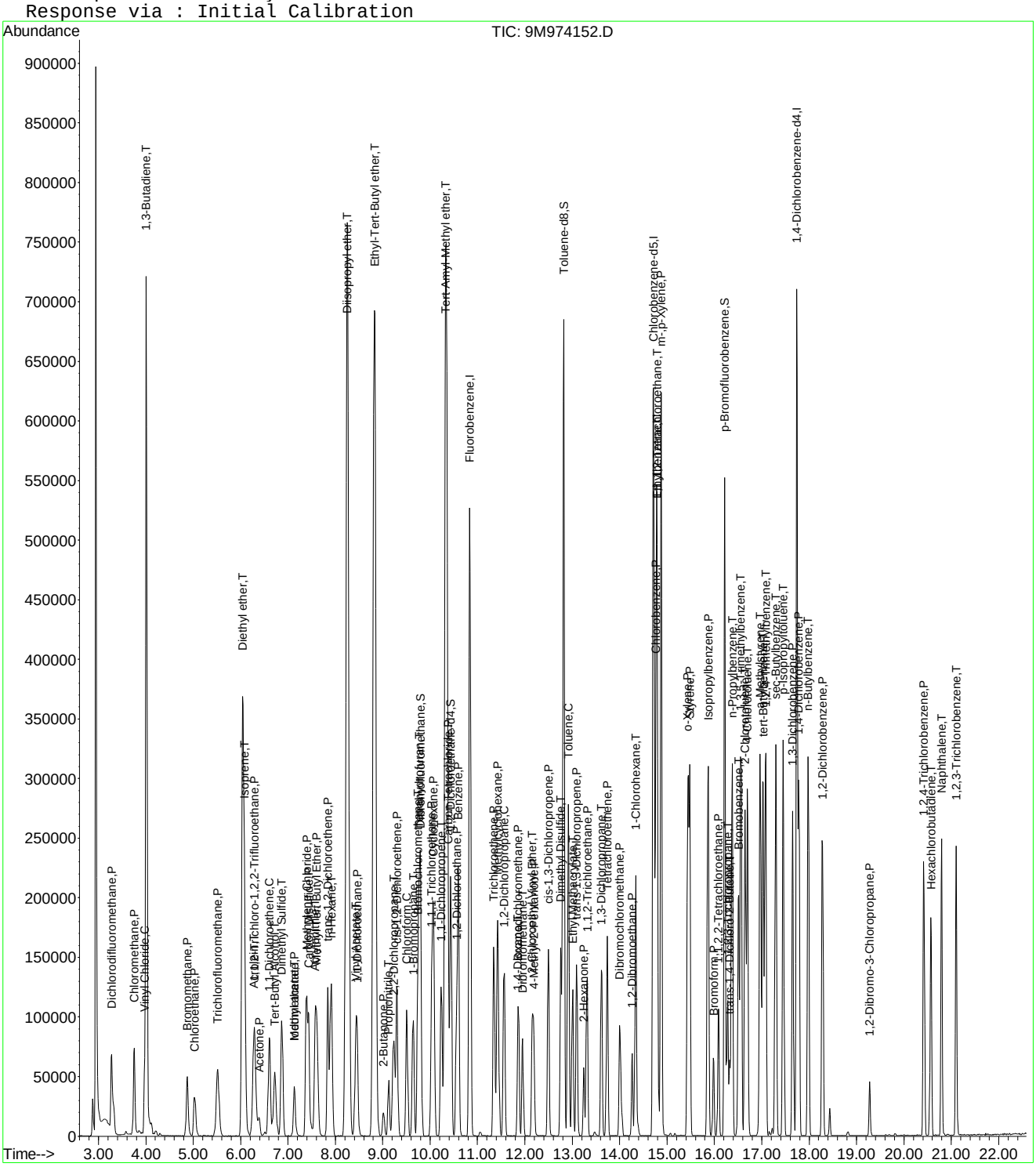

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\050416\9M974152.D Vial: 15
Acq On : 4 May 2016 18:59 Operator: ADC
Sample : WG567358-11 20.0ug/kg ALTSRC 8260 Inst : hpms9
Misc : 7,1 STD75739 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	103	0.00
2	P	Dichlorodifluoromethane	20.0000	23.4511	-17.3	112	0.00
3	P	Chloromethane	20.0000	20.5970	-3.0	109	0.00
4	C	Vinyl Chloride	20.0000	16.4359	17.8	68	0.00
5	T	1,3-Butadiene	20.0000	171.6202	-758.1#	695	0.00
6	P	Bromomethane	20.0000	20.6034	-3.0	101	0.00
7	P	Chloroethane	20.0000	21.2053	-6.0	110	0.00
8	P	Trichlorofluoromethane	20.0000	19.7089	1.5	98	0.00
9	T	Diethyl ether	80.0000	118.1521	-47.7#	140	0.00
10	T	Isoprene	20.0000	22.9171	-14.6	122	-0.01
11	T	Acrolein	40.0000	98.2547	-145.6#	249	-0.01
12	P	1,1,2-Trichloro-1,2,2-Trifl	20.0000	20.4176	-2.1	105	-0.01
13	P	Acetone	20.0000	22.6662	-13.3	112	0.00
14	C	1,1-Dichloroethene	20.0000	19.4184	2.9	95	0.00
15	T	Tert-Butyl Alcohol	160.0000	240.3928	-50.2#	140	0.00
16	T	Dimethyl Sulfide	20.0000	30.3003	-51.5#	163	0.00
17	T	Iodomethane	20.0000	18.6748	6.6	97	0.00
18	P	Methyl acetate	20.0000	17.8943	10.5	93	0.00
19	P	Methylene Chloride	20.0000	19.9382	0.3	103	0.00
20	P	Carbon Disulfide	20.0000	18.4539	7.7	97	0.00
21	T	Acrylonitrile	40.0000	23.0575	42.4#	55	0.00
22	P	Methyl Tert Butyl Ether	20.0000	21.1758	-5.9	103	0.00
23	P	trans-1,2-Dichloroethene	20.0000	20.5093	-2.5	101	0.00
24	T	n-Hexane	20.0000	19.1362	4.3	109	0.00
25	T	Diisopropyl ether	80.0000	120.1850	-50.2#	141	0.00
26	T	Vinyl Acetate	20.0000	22.9084	-14.5	119	0.00
27	P	1,1-Dichloroethane	20.0000	19.1972	4.0	94	0.00
28	T	Ethyl-Tert-Butyl ether	80.0000	113.4526	-41.8#	133	0.00
29	P	2-Butanone	20.0000	21.7972	-9.0	109	0.00
30	T	Propionitrile	80.0000	104.2314	-30.3#	137	0.00
31	T	2,2-Dichloropropane	20.0000	18.7041	6.5	98	0.00
32	P	cis-1,2-Dichloroethene	20.0000	20.6041	-3.0	101	0.00
33	C	Chloroform	20.0000	20.1023	-0.5	97	0.00
34	T	1-Bromopropane	20.0000	28.7207	-43.6#	155	0.00
35	T	Bromochloromethane	20.0000	20.0123	-0.1	97	0.00
36	T	Tetrahydrofuran	80.0000	108.6357	-35.8#	133	0.00
37	S	Dibromofluoromethane	20.0000	53.2749	-166.4#	297	0.00
38	P	1,1,1-Trichloroethane	20.0000	20.3184	-1.6	100	0.00
39	P	Cyclohexane	20.0000	19.8803	0.6	106	0.00
40	T	1,1-Dichloropropene	20.0000	19.9042	0.5	98	0.00
41	T	Tert-Amyl-Methyl ether	80.0000	119.9446	-49.9#	143	0.00
42	P	Carbon Tetrachloride	20.0000	19.1392	4.3	98	0.00
43	S	1,2-Dichloroethane-d4	20.0000	51.9919	-160.0#	289	0.00
44		Heptane	-1.0000	0.0000	0.0	103	0.00
45	P	1,2-Dichloroethane	20.0000	20.2032	-1.0	97	0.00
46	P	Benzene	20.0000	19.9113	0.4	100	0.00
47	P	Trichloroethene	20.0000	20.4030	-2.0	101	0.00
48	P	Methylcyclohexane	20.0000	20.0972	-0.5	108	0.00
49	C	1,2-Dichloropropane	20.0000	20.7519	-3.8	103	0.00
50	T	1,4-Dioxane	160.0000	237.5249	-48.5#	156	0.00
51	P	Bromodichloromethane	20.0000	19.7037	1.5	100	0.00
52	T	Dibromomethane	20.0000	18.8587	5.7	94	0.00
53	T	2-Chloroethyl Vinyl Ether	20.0000	20.7589	-3.8	108	0.00
54	P	4-Methyl-2-Pentanone	20.0000	20.9760	-4.9	109	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\050416\9M974152.D Vial: 15
Acq On : 4 May 2016 18:59 Operator: ADC
Sample : WG567358-11 20.0ug/kg ALTSRC 8260 Inst : hpms9
Misc : 7,1 STD75739 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	20.0000	21.0567	-5.3	107	0.00
56	T	Dimethyl Disulfide	20.0000	22.8134	-14.1	119	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	103	0.00
58	S	Toluene-d8	20.0000	53.1096	-165.5#	295	0.00
59	C	Toluene	20.0000	19.6480	1.8	100	0.00
60	T	Ethyl Methacrylate	20.0000	20.9019	-4.5	107	0.00
61	P	trans-1,3-Dichloropropene	20.0000	20.0339	-0.2	101	0.00
62	P	1,1,2-Trichloroethane	20.0000	20.1182	-0.6	98	0.00
63	P	2-Hexanone	20.0000	19.8074	1.0	105	0.00
64	T	1,3-Dichloropropane	20.0000	21.4429	-7.2	104	0.00
65	P	Tetrachloroethene	20.0000	19.2047	4.0	96	0.00
66	P	Dibromochloromethane	20.0000	19.4649	2.7	100	0.00
67	P	1,2-Dibromoethane	20.0000	20.9996	-5.0	102	0.00
68	T	1-Chlorohexane	20.0000	20.3346	-1.7	110	0.00
69	P	Chlorobenzene	20.0000	20.5373	-2.7	103	0.00
70	T	1,1,1,2-Tetrachloroethane	20.0000	20.0306	-0.2	102	0.00
71	C	Ethylbenzene	20.0000	20.1917	-1.0	99	0.00
72	P	m-,p-Xylene	40.0000	40.2761	-0.7	104	0.00
73	P	o-Xylene	20.0000	20.4827	-2.4	104	0.00
74	P	Styrene	20.0000	20.3539	-1.8	102	0.00
75	P	Bromoform	20.0000	17.6755	11.6	94	0.00
76	P	Isopropylbenzene	20.0000	20.6058	-3.0	104	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	104	0.00
78	P	1,1,2,2-Tetrachloroethane	20.0000	19.8051	1.0	100	0.00
79	S	p-Bromofluorobenzene	20.0000	54.7717	-173.9#	302	0.00
80	T	1,2,3-Trichloropropane	20.0000	21.4885	-7.4	105	0.00
81	T	trans-1,4-Dichloro-2-Butene	20.0000	15.5830	22.1	81	0.00
82	T	n-Propylbenzene	20.0000	22.7101	-13.6	102	0.00
83	T	Bromobenzene	20.0000	20.9468	-4.7	101	0.00
84	T	1,3,5-Trimethylbenzene	20.0000	21.9618	-9.8	103	0.00
85	T	2-Chlorotoluene	20.0000	20.5455	-2.7	102	0.00
86	T	4-Chlorotoluene	20.0000	21.1768	-5.9	103	0.00
87	T	a-Methylstyrene	20.0000	21.9251	-9.6	114	0.00
88	T	tert-Butylbenzene	20.0000	22.5847	-12.9	108	0.00
89	T	1,2,4-Trimethylbenzene	20.0000	21.2510	-6.3	101	0.00
90	T	sec-Butylbenzene	20.0000	20.7627	-3.8	104	0.00
91	T	p-Isopropyltoluene	20.0000	20.6016	-3.0	102	0.00
92	P	1,3-Dichlorobenzene	20.0000	19.7682	1.2	101	0.00
93	P	1,4-Dichlorobenzene	20.0000	19.9695	0.2	104	0.00
94	T	n-Butylbenzene	20.0000	19.3938	3.0	101	0.00
95	P	1,2-Dichlorobenzene	20.0000	20.0562	-0.3	104	0.00
96	P	1,2-Dibromo-3-Chloropropane	20.0000	20.3058	-1.5	111	0.00
97	P	1,2,4-Trichlorobenzene	20.0000	18.2530	8.7	104	0.00
98	T	Hexachlorobutadiene	20.0000	20.0240	-0.1	108	0.00
99	T	Naphthalene	20.0000	19.1188	4.4	102	0.00
100	T	1,2,3-Trichlorobenzene	20.0000	19.4679	2.7	109	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M974152.D 8260SL.M Thu May 05 16:51:49 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\050716\8M412047.D Vial: 2
Acq On : 7 May 2016 12:05 Operator: TMB
Sample : WG567934-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD75976 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 07 12:26:58 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	441473	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	347752	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	196094	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	135658	24.4731 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.88%		
43) 1,2-Dichloroethane-d4	10.30	65	174229	27.4737 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 109.88%		
58) Toluene-d8	12.68	98	440195	24.4803 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.92%		
80) p-Bromofluorobenzene	16.07	95	190344	23.7136 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.84%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	486600	52.5919 ug/L	98
3) Chloromethane	3.63	50	433631	49.7461 ug/L	95
4) Vinyl Chloride	3.85	62	322311	54.7563 ug/L	98
5) 1,3-Butadiene	3.90	54	270028	46.9547 ug/L	96
6) Bromomethane	4.74	94	186651	44.6525 ug/L	99
7) Chloroethane	4.90	64	173444	45.0268 ug/L #	83
8) Trichlorofluoromethane	5.38	101	665875	56.9856 ug/L	99
9) Diethyl ether	5.91	59	319792	89.4498 ug/L	85
10) Isoprene	5.94	67	265617	44.4256 ug/L #	54
11) Acrolein	6.15	56	21023	66.2211 ug/L	91
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	261700	48.9153 ug/L	96
13) Acetone	6.25	43	51261	47.2972 ug/L	85
14) 1,1-Dichloroethene	6.47	61	532757	51.3082 ug/L	83
15) Tert-Butyl Alcohol	6.58	59	48129	192.8929 ug/L	98
16) Dimethyl Sulfide	6.74	62	166611	43.4212 ug/L	66
17) Iodomethane	6.99	142	119998	46.5216 ug/L	74
18) Methyl acetate	7.01	43	155572	48.0281 ug/L	89
19) Methylene Chloride	7.25	84	216762	44.0509 ug/L #	40
20) Carbon Disulfide	7.30	76	651762	43.4160 ug/L	100
21) Acrylonitrile	7.44	53	66174	47.5043 ug/L	99
22) Methyl Tert Butyl Ether	7.46	73	516576	47.5249 ug/L	96
23) trans-1,2-Dichloroethene	7.71	61	463601	49.3590 ug/L	85
24) n-Hexane	7.79	57	381776	44.8014 ug/L	87
25) Diisopropyl ether	8.13	45	2197063	91.0507 ug/L	97
26) Vinyl Acetate	8.30	43	399450	41.2362 ug/L	94
27) 1,1-Dichloroethane	8.33	63	547773	48.7576 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	1576418	93.0861 ug/L	98
29) 2-Butanone	8.89	43	75696	43.6085 ug/L	83
30) Propionitrile	8.99	54	37815	86.1496 ug/L	92
31) 2,2-Dichloropropane	9.10	77	563302	56.9125 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	262279	46.6674 ug/L	65
33) Chloroform	9.37	83	548732	52.6415 ug/L	97
34) 1-Bromopropane	9.52	122	40614	45.8711 ug/L	88
35) Bromochloromethane	9.61	130	142052	48.3096 ug/L	73
36) Tetrahydrofuran	9.63	42	118426	103.1981 ug/L	82
38) 1,1,1-Trichloroethane	9.91	97	597636	56.8692 ug/L	100
39) Cyclohexane	9.94	56	526455	45.9003 ug/L	85
40) 1,1-Dichloropropene	10.11	75	378580	50.0512 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	973392	89.7384 ug/L	84
42) Carbon Tetrachloride	10.25	117	588909	59.5632 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M412047.D 8260WTR.M Sat May 07 12:26:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\050716\8M412047.D Vial: 2
Acq On : 7 May 2016 12:05 Operator: TMB
Sample : WG567934-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD75976 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 07 12:26:58 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	493876	56.4129 ug/L		93
46)	Benzene	10.47	78	901414	46.7865 ug/L	#	76
47)	Trichloroethene	11.21	130	276230	49.6825 ug/L		98
48)	Methylcyclohexane	11.30	83	368716	47.4312 ug/L		77
49)	1,2-Dichloropropane	11.43	63	260355	46.4229 ug/L		73
50)	Bromodichloromethane	11.73	83	432098	55.3755 ug/L		99
51)	1,4-Dioxane	11.71	88	3970	177.5639 ug/L		77
52)	Dibromomethane	11.81	93	136478	51.6935 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	100417	42.7649 ug/L		96
54)	4-Methyl-2-Pentanone	12.05	58	54240	42.3189 ug/L		93
55)	cis-1,3-Dichloropropene	12.36	75	395217	50.3262 ug/L		99
56)	Dimethyl Disulfide	12.62	79	207588	50.4557 ug/L		98
59)	Toluene	12.78	91	1006972	48.3562 ug/L		98
60)	Ethyl Methacrylate	12.88	69	177010	45.3013 ug/L	#	55
62)	trans-1,3-Dichloropropene	12.96	75	378209	52.0567 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	158895	48.0854 ug/L		94
64)	2-Hexanone	13.11	58	47562	40.1002 ug/L	#	72
65)	1,3-Dichloropropane	13.48	76	282994	46.1782 ug/L	#	64
66)	Tetrachloroethene	13.60	164	245877	52.1371 ug/L		91
67)	Dibromochloromethane	13.87	129	277526	53.2737 ug/L		98
68)	1,2-Dibromoethane	14.12	107	167647	48.6767 ug/L		99
69)	1-Chlorohexane	14.21	91	353995	49.9076 ug/L	#	61
70)	Chlorobenzene	14.62	112	725284	50.1616 ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.65	131	314211	55.7624 ug/L		98
72)	Ethylbenzene	14.65	106	407050	49.6147 ug/L		100
73)	m-,p-Xylene	14.74	106	983886	104.0920 ug/L		94
74)	o-Xylene	15.31	106	490536	51.5146 ug/L		97
75)	Styrene	15.34	104	795641	52.3991 ug/L		87
76)	Bromoform	15.83	173	165231	55.2801 ug/L		99
77)	Isopropylbenzene	15.73	105	1303598	53.9969 ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	168576	43.0989 ug/L		99
81)	1,2,3-Trichloropropane	16.13	110	61908	49.2525 ug/L		83
82)	trans-1,4-Dichloro-2-Buten	16.18	53	100557	52.7823 ug/L		71
83)	n-Propylbenzene	16.24	91	1509997	49.9670 ug/L		97
84)	Bromobenzene	16.36	156	312512	49.6025 ug/L		99
85)	1,3,5-Trimethylbenzene	16.42	105	1174152	52.5049 ug/L		98
86)	2-Chlorotoluene	16.50	91	997611	51.5500 ug/L		99
87)	4-Chlorotoluene	16.56	91	1030843	51.7087 ug/L		98
88)	a-Methylstyrene	16.82	118	582900	52.9019 ug/L		93
89)	tert-Butylbenzene	16.89	134	224605	50.6934 ug/L		80
90)	1,2,4-Trimethylbenzene	16.94	105	1217185	53.1771 ug/L		98
91)	sec-Butylbenzene	17.16	105	1368472	50.8936 ug/L		98
92)	p-Isopropyltoluene	17.31	119	1200447	52.2906 ug/L		95
93)	1,3-Dichlorobenzene	17.51	146	642693	51.3930 ug/L		92
94)	1,4-Dichlorobenzene	17.63	146	632516	50.6765 ug/L		92
95)	n-Butylbenzene	17.84	91	1129326	51.7167 ug/L		99
96)	1,2-Dichlorobenzene	18.13	146	557545	50.8754 ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.12	75	43898	51.2476 ug/L		79
98)	1,2,4-Trichlorobenzene	20.27	180	414716	48.8590 ug/L		99
99)	Hexachlorobutadiene	20.42	225	210217	53.5178 ug/L		94
100)	Naphthalene	20.64	128	620178	48.0538 ug/L		100
101)	1,2,3-Trichlorobenzene	20.95	180	339353	46.9953 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412047.D 8260WTR.M Sat May 07 12:26:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\050716\8M412047.D Vial: 2
Acq On : 7 May 2016 12:05 Operator: TMB
Sample : WG567934-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD75976 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 7 12:26 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

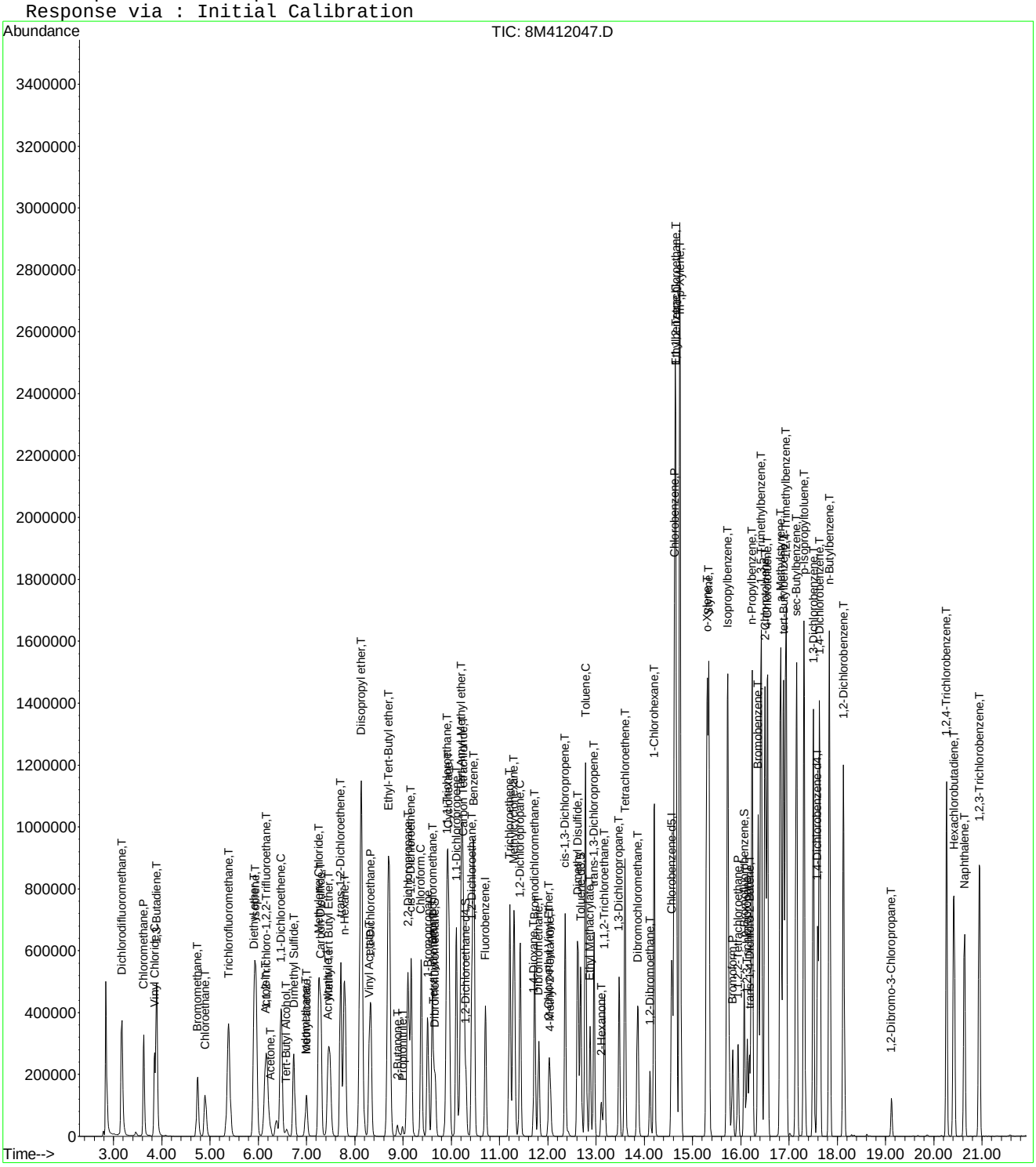

Continuing Calibration Area and RT check

Instrument: HPMS8
Initial cal date: 28 Apr 2016 10:54
CCV date: 7 May 2016 12:05
CCV Filename: 8M412047.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	692530	10.72	522516	14.57	287363	17.59
CCV	441473	10.71	347752	14.57	196094	17.59

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\050716\8M412047.D Vial: 2
Acq On : 7 May 2016 12:05 Operator: TMB
Sample : WG567934-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD75976 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	64	0.00
2	T	Dichlorodifluoromethane	0.5240	0.5511	-5.2	62	0.00
3	P	Chloromethane	0.4936	0.4911	0.5	65	0.01
4	C	Vinyl Chloride	0.3333	0.3650	-9.5	69	0.01
5	T	1,3-Butadiene	0.3257	0.3058	6.1	58	0.01
6	T	Bromomethane	0.1991	0.2114	-6.2	63	0.01
7	T	Chloroethane	0.2181	0.1964	9.9	57	0.00
8	T	Trichlorofluoromethane	0.6617	0.7541	-14.0	72	0.00
9	T	Diethyl ether	0.2024	0.1811	10.6	57	0.00
10	T	Isoprene	0.3386	0.3008	11.1	55	0.00
11	T	Acrolein	0.0180	0.0238	-32.4#	85	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.3030	0.2964	2.2	62	0.01
13	T	Acetone	0.0614	0.0581	5.4	61	0.00
14	C	1,1-Dichloroethene	0.5880	0.6034	-2.6	66	0.00
15	T	Tert-Butyl Alcohol	0.0141	0.0136	3.5	62	-0.01
16	T	Dimethyl Sulfide	0.2173	0.1887	13.2	53	0.00
17	T	Iodomethane	0.1164	0.1359	-16.8	60	-0.01
18	T	Methyl acetate	0.1834	0.1762	3.9	62	0.00
19	T	Methylene Chloride	0.2787	0.2455	11.9	58	0.00
20	T	Carbon Disulfide	0.8501	0.7382	13.2	55	0.00
21	T	Acrylonitrile	0.0789	0.0750	5.0	57	0.00
22	T	Methyl Tert Butyl Ether	0.6155	0.5851	5.0	59	-0.01
23	T	trans-1,2-Dichloroethene	0.5319	0.5251	1.3	63	0.00
24	T	n-Hexane	0.4826	0.4324	10.4	56	0.00
25	T	Diisopropyl ether	1.3664	1.2442	8.9	57	0.00
26	T	Vinyl Acetate	0.5485	0.4524	17.5	50	0.00
27	P	1,1-Dichloroethane	0.6362	0.6204	2.5	62	0.00
28	T	Ethyl-Tert-Butyl ether	0.9590	0.8927	6.9	59	-0.01
29	T	2-Butanone	0.0983	0.0857	12.8	55	0.00
30	T	Propionitrile	0.0249	0.0214	13.9	51	0.00
31	T	2,2-Dichloropropane	0.5605	0.6380	-13.8	74	0.00
32	T	cis-1,2-Dichloroethene	0.3183	0.2970	6.7	62	-0.01
33	C	Chloroform	0.5903	0.6215	-5.3	68	-0.01
34		1-Bromopropane	0.0501	0.0460	8.3	57	0.00
35	T	Bromochloromethane	0.1665	0.1609	3.4	60	0.00
36	T	Tetrahydrofuran	0.0650	0.0671	-3.2	69	0.00
37	S	Dibromofluoromethane	0.3139	0.3073	2.1	61	-0.01
38	T	1,1,1-Trichloroethane	0.5951	0.6769	-13.7	72	0.00
39	T	Cyclohexane	0.6495	0.5962	8.2	58	0.00
40	T	1,1-Dichloropropene	0.4283	0.4288	-0.1	62	0.00
41	T	Tert-Amyl-Methyl ether	0.6142	0.5512	10.3	57	0.00
42	T	Carbon Tetrachloride	0.5599	0.6670	-19.1	74	0.00
43	S	1,2-Dichloroethane-d4	0.3591	0.3947	-9.9	67	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.4958	0.5594	-12.8	72	0.00
46	T	Benzene	1.0910	1.0209	6.4	59	0.00
47	T	Trichloroethene	0.3149	0.3129	0.6	63	0.00
48	T	Methylcyclohexane	0.4402	0.4176	5.1	59	-0.01
49	C	1,2-Dichloropropane	0.3176	0.2949	7.2	60	0.00
50	T	Bromodichloromethane	0.4419	0.4894	-10.7	70	0.00
51	T	1,4-Dioxane	0.0013	0.0011	11.8	50#	-0.01
52	T	Dibromomethane	0.1495	0.1546	-3.4	65	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1330	0.1137	14.5	53	-0.01
54	T	4-Methyl-2-Pentanone	0.0726	0.0614	15.4	54	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\050716\8M412047.D Vial: 2
Acq On : 7 May 2016 12:05 Operator: TMB
Sample : WG567934-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD75976 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4447	0.4476	-0.7	62	0.00
56	T	Dimethyl Disulfide	0.2330	0.2351	-0.9	64	-0.01
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	67	0.00
58	S	Toluene-d8	1.2927	1.2658	2.1	61	0.00
59	C	Toluene	1.4971	1.4478	3.3	62	0.00
60	T	Ethyl Methacrylate	0.2809	0.2545	9.4	56	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.5223	0.5438	-4.1	67	0.00
63	T	1,1,2-Trichloroethane	0.2376	0.2285	3.8	61	0.00
64	T	2-Hexanone	0.0853	0.0684	19.8	51	0.00
65	T	1,3-Dichloropropane	0.4406	0.4069	7.6	60	0.00
66	T	Tetrachloroethene	0.3390	0.3535	-4.3	69	0.00
67	T	Dibromochloromethane	0.3745	0.3990	-6.5	68	0.00
68	T	1,2-Dibromoethane	0.2476	0.2410	2.6	61	0.00
69	T	1-Chlorohexane	0.5099	0.5090	0.2	64	0.00
70	P	Chlorobenzene	1.0395	1.0428	-0.3	65	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4051	0.4518	-11.5	71	0.00
72	C	Ethylbenzene	0.5898	0.5853	0.8	66	0.00
73	T	m-,p-Xylene	0.6795	0.7073	-4.1	66	-0.01
74	T	o-Xylene	0.6846	0.7053	-3.0	66	0.00
75	T	Styrene	1.0916	1.1440	-4.8	66	0.00
76	P	Bromoform	0.2149	0.2376	-10.6	70	0.00
77	T	Isopropylbenzene	1.7356	1.8743	-8.0	68	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	68	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4987	0.4298	13.8	60	0.00
80	S	p-Bromofluorobenzene	1.0233	0.9707	5.1	64	0.00
81	T	1,2,3-Trichloropropane	0.1603	0.1578	1.5	68	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.2429	0.2564	-5.6	71	0.00
83	T	n-Propylbenzene	3.8527	3.8502	0.1	67	0.00
84	T	Bromobenzene	0.8032	0.7968	0.8	67	-0.01
85	T	1,3,5-Trimethylbenzene	2.8510	2.9939	-5.0	70	0.00
86	T	2-Chlorotoluene	2.4672	2.5437	-3.1	71	0.00
87	T	4-Chlorotoluene	2.5416	2.6284	-3.4	70	0.00
88	T	a-Methylstyrene	1.4047	1.4863	-5.8	71	0.00
89	T	tert-Butylbenzene	0.5649	0.5727	-1.4	68	0.00
90	T	1,2,4-Trimethylbenzene	2.9181	3.1036	-6.4	70	0.00
91	T	sec-Butylbenzene	3.4281	3.4893	-1.8	68	0.00
92	T	p-Isopropyltoluene	2.9268	3.0609	-4.6	69	-0.01
93	T	1,3-Dichlorobenzene	1.5943	1.6387	-2.8	70	0.00
94	T	1,4-Dichlorobenzene	1.5913	1.6128	-1.4	71	-0.01
95	T	n-Butylbenzene	2.7840	2.8796	-3.4	69	0.00
96	T	1,2-Dichlorobenzene	1.3972	1.4216	-1.8	70	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1092	0.1119	-2.5	73	0.00
98	T	1,2,4-Trichlorobenzene	1.0821	1.0574	2.3	68	0.00
99	T	Hexachlorobutadiene	0.5008	0.5360	-7.0	73	0.00
100	T	Naphthalene	1.6454	1.5813	3.9	65	0.00
101	T	1,2,3-Trichlorobenzene	0.9206	0.8653	6.0	66	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412047.D 8260WTR.M Sat May 07 12:28:33 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\050716\8M412047.D Vial: 2
Acq On : 7 May 2016 12:05 Operator: TMB
Sample : WG567934-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD75976 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	64	0.00
2	T	Dichlorodifluoromethane	50.0000	52.5919	-5.2	62	0.00
3	P	Chloromethane	50.0000	49.7461	0.5	65	0.01
4	C	Vinyl Chloride	50.0000	54.7563	-9.5	69	0.01
5	T	1,3-Butadiene	50.0000	46.9547	6.1	58	0.01
6	T	Bromomethane	50.0000	44.6525	10.7	63	0.01
7	T	Chloroethane	50.0000	45.0268	9.9	57	0.00
8	T	Trichlorofluoromethane	50.0000	56.9856	-14.0	72	0.00
9	T	Diethyl ether	100.0000	89.4498	10.6	57	0.00
10	T	Isoprene	50.0000	44.4256	11.1	55	0.00
11	T	Acrolein	50.0000	66.2211	-32.4#	85	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	48.9153	2.2	62	0.01
13	T	Acetone	50.0000	47.2972	5.4	61	0.00
14	C	1,1-Dichloroethene	50.0000	51.3082	-2.6	66	0.00
15	T	Tert-Butyl Alcohol	200.0000	192.8929	3.6	62	-0.01
16	T	Dimethyl Sulfide	50.0000	43.4212	13.2	53	0.00
17	T	Iodomethane	50.0000	46.5216	7.0	60	-0.01
18	T	Methyl acetate	50.0000	48.0281	3.9	62	0.00
19	T	Methylene Chloride	50.0000	44.0509	11.9	58	0.00
20	T	Carbon Disulfide	50.0000	43.4160	13.2	55	0.00
21	T	Acrylonitrile	50.0000	47.5043	5.0	57	0.00
22	T	Methyl Tert Butyl Ether	50.0000	47.5249	5.0	59	-0.01
23	T	trans-1,2-Dichloroethene	50.0000	49.3590	1.3	63	0.00
24	T	n-Hexane	50.0000	44.8014	10.4	56	0.00
25	T	Diisopropyl ether	100.0000	91.0507	8.9	57	0.00
26	T	Vinyl Acetate	50.0000	41.2362	17.5	50	0.00
27	P	1,1-Dichloroethane	50.0000	48.7576	2.5	62	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	93.0861	6.9	59	-0.01
29	T	2-Butanone	50.0000	43.6085	12.8	55	0.00
30	T	Propionitrile	100.0000	86.1496	13.9	51	0.00
31	T	2,2-Dichloropropane	50.0000	56.9125	-13.8	74	0.00
32	T	cis-1,2-Dichloroethene	50.0000	46.6673	6.7	62	-0.01
33	C	Chloroform	50.0000	52.6415	-5.3	68	-0.01
34		1-Bromopropane	50.0000	45.8711	8.3	57	0.00
35	T	Bromochloromethane	50.0000	48.3096	3.4	60	0.00
36	T	Tetrahydrofuran	100.0000	103.1981	-3.2	69	0.00
37	S	Dibromofluoromethane	25.0000	24.4731	2.1	61	-0.01
38	T	1,1,1-Trichloroethane	50.0000	56.8692	-13.7	72	0.00
39	T	Cyclohexane	50.0000	45.9003	8.2	58	0.00
40	T	1,1-Dichloropropene	50.0000	50.0512	-0.1	62	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	89.7385	10.3	57	0.00
42	T	Carbon Tetrachloride	50.0000	59.5632	-19.1	74	0.00
43	S	1,2-Dichloroethane-d4	25.0000	27.4737	-9.9	67	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	56.4129	-12.8	72	0.00
46	T	Benzene	50.0000	46.7865	6.4	59	0.00
47	T	Trichloroethene	50.0000	49.6825	0.6	63	0.00
48	T	Methylcyclohexane	50.0000	47.4312	5.1	59	-0.01
49	C	1,2-Dichloropropane	50.0000	46.4229	7.2	60	0.00
50	T	Bromodichloromethane	50.0000	55.3755	-10.8	70	0.00
51	T	1,4-Dioxane	200.0000	177.5639	11.2	50	-0.01
52	T	Dibromomethane	50.0000	51.6935	-3.4	65	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	42.7649	14.5	53	-0.01
54	T	4-Methyl-2-Pentanone	50.0000	42.3189	15.4	54	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\050716\8M412047.D Vial: 2
Acq On : 7 May 2016 12:05 Operator: TMB
Sample : WG567934-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD75976 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	50.3262	-0.7	62	0.00
56	T	Dimethyl Disulfide	50.0000	50.4557	-0.9	64	-0.01
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	67	0.00
58	S	Toluene-d8	25.0000	24.4803	2.1	61	0.00
59	C	Toluene	50.0000	48.3563	3.3	62	0.00
60	T	Ethyl Methacrylate	50.0000	45.3013	9.4	56	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	52.0567	-4.1	67	0.00
63	T	1,1,2-Trichloroethane	50.0000	48.0854	3.8	61	0.00
64	T	2-Hexanone	50.0000	40.1002	19.8	51	0.00
65	T	1,3-Dichloropropane	50.0000	46.1782	7.6	60	0.00
66	T	Tetrachloroethene	50.0000	52.1371	-4.3	69	0.00
67	T	Dibromochloromethane	50.0000	53.2738	-6.5	68	0.00
68	T	1,2-Dibromoethane	50.0000	48.6767	2.6	61	0.00
69	T	1-Chlorohexane	50.0000	49.9076	0.2	64	0.00
70	P	Chlorobenzene	50.0000	50.1616	-0.3	65	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	55.7624	-11.5	71	0.00
72	C	Ethylbenzene	50.0000	49.6147	0.8	66	0.00
73	T	m-,p-Xylene	100.0000	104.0920	-4.1	66	-0.01
74	T	o-Xylene	50.0000	51.5146	-3.0	66	0.00
75	T	Styrene	50.0000	52.3991	-4.8	66	0.00
76	P	Bromoform	50.0000	55.2801	-10.6	70	0.00
77	T	Isopropylbenzene	50.0000	53.9969	-8.0	68	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	68	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	43.0989	13.8	60	0.00
80	S	p-Bromofluorobenzene	25.0000	23.7136	5.1	64	0.00
81	T	1,2,3-Trichloropropane	50.0000	49.2525	1.5	68	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	52.7823	-5.6	71	0.00
83	T	n-Propylbenzene	50.0000	49.9670	0.1	67	0.00
84	T	Bromobenzene	50.0000	49.6025	0.8	67	-0.01
85	T	1,3,5-Trimethylbenzene	50.0000	52.5049	-5.0	70	0.00
86	T	2-Chlorotoluene	50.0000	51.5500	-3.1	71	0.00
87	T	4-Chlorotoluene	50.0000	51.7087	-3.4	70	0.00
88	T	a-Methylstyrene	50.0000	52.9019	-5.8	71	0.00
89	T	tert-Butylbenzene	50.0000	50.6934	-1.4	68	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	53.1771	-6.4	70	0.00
91	T	sec-Butylbenzene	50.0000	50.8936	-1.8	68	0.00
92	T	p-Isopropyltoluene	50.0000	52.2906	-4.6	69	-0.01
93	T	1,3-Dichlorobenzene	50.0000	51.3930	-2.8	70	0.00
94	T	1,4-Dichlorobenzene	50.0000	50.6765	-1.4	71	-0.01
95	T	n-Butylbenzene	50.0000	51.7167	-3.4	69	0.00
96	T	1,2-Dichlorobenzene	50.0000	50.8754	-1.8	70	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	51.2476	-2.5	73	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	48.8590	2.3	68	0.00
99	T	Hexachlorobutadiene	50.0000	53.5178	-7.0	73	0.00
100	T	Naphthalene	50.0000	48.0538	3.9	65	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	46.9954	6.0	66	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412047.D 8260WTR.M Sat May 07 12:28:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\050516\9M974163.D Vial: 2
Acq On : 5 May 2016 11:29 Operator: ADC
Sample : WG567630-02 50ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 11:52:31 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	636564	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	471661	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	248210	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	170091	52.2844 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.56%		
43) 1,2-Dichloroethane-d4	10.43	65	183667	52.1439 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.28%		
58) Toluene-d8	12.82	98	600430	53.2862 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.58%		
79) p-Bromofluorobenzene	16.22	95	234912	54.5918 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 109.18%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	259462	59.7370 ug/kg	99
3) Chloromethane	3.74	50	325629	60.8236 ug/kg	99
4) Vinyl Chloride	3.97	62	196659	51.2656 ug/kg	98
5) 1,3-Butadiene	4.01	54	164530	76.7857 ug/kg	99
6) Bromomethane	4.87	94	159152	59.3585 ug/kg	99
7) Chloroethane	5.03	64	143398	56.1261 ug/kg	99
8) Trichlorofluoromethane	5.52	101	307566	56.3956 ug/kg	100
9) Diethyl ether	6.04	59	345573	112.7185 ug/kg	99
10) Isoprene	6.08	67	455131	105.0325 ug/kg	100
11) Acrolein	6.28	56	30994	60.6649 ug/kg	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	182510	57.1818 ug/kg	97
13) Acetone	6.38	43	121236	103.4925 ug/kg	98
14) 1,1-Dichloroethene	6.60	61	304307	57.1746 ug/kg	99
15) Tert-Butyl Alcohol	6.71	59	120213	218.6022 ug/kg	99
16) Dimethyl Sulfide	6.87	62	264988	102.1300 ug/kg	97
17) Iodomethane	7.12	142	231831	114.4512 ug/kg	99
18) Methyl acetate	7.13	43	336225	97.9113 ug/kg	99
19) Methylene Chloride	7.38	84	178916	53.0504 ug/kg	100
20) Carbon Disulfide	7.44	76	1042539	100.0119 ug/kg	100
21) Acrylonitrile	7.56	53	87986	59.9704 ug/kg	98
22) Methyl Tert Butyl Ether	7.60	73	513184	54.4589 ug/kg	100
23) trans-1,2-Dichloroethene	7.84	61	288629	55.8657 ug/kg	99
24) n-Hexane	7.91	57	647336	105.9731 ug/kg	100
25) Diisopropyl ether	8.25	45	1357585	112.3942 ug/kg	99
26) Vinyl Acetate	8.43	43	363656	55.4613 ug/kg	100
27) 1,1-Dichloroethane	8.46	63	350909	54.9679 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.82	59	1274409	110.8805 ug/kg	100
29) 2-Butanone	9.01	43	189530	105.2656 ug/kg	100
30) Propionitrile	9.13	54	61826	102.3699 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	259709	54.2026 ug/kg	100
32) cis-1,2-Dichloroethene	9.29	96	190367	55.5072 ug/kg	99
33) Chloroform	9.51	83	298663	55.3237 ug/kg	100
34) 1-Bromopropane	9.64	122	63479	109.0360 ug/kg	97
35) Bromochloromethane	9.74	130	120700	55.0679 ug/kg	99
36) Tetrahydrofuran	9.76	42	135792	106.9708 ug/kg	99
38) 1,1,1-Trichloroethane	10.04	97	264711	55.1994 ug/kg	99
39) Cyclohexane	10.06	56	742932	104.5527 ug/kg	99
40) 1,1-Dichloropropene	10.23	75	233034	56.0455 ug/kg	99
41) Tert-Amyl-Methyl ether	10.33	73	961413	109.7948 ug/kg	99
42) Carbon Tetrachloride	10.38	117	255597	54.4754 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\050516\9M974163.D Vial: 2
Acq On : 5 May 2016 11:29 Operator: ADC
Sample : WG567630-02 50ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 11:52:31 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	259086	53.8775 ug/kg	100
46)	Benzene	10.59	78	683451	53.1264 ug/kg	100
47)	Trichloroethene	11.34	130	190365	54.1363 ug/kg	98
48)	Methylcyclohexane	11.43	83	594289	106.6537 ug/kg	98
49)	1,2-Dichloropropane	11.56	63	191999	54.2679 ug/kg	99
50)	1,4-Dioxane	11.85	88	11164	222.1704 ug/kg	98
51)	Bromodichloromethane	11.86	83	226495	53.5912 ug/kg	99
52)	Dibromomethane	11.95	174	115392	52.3366 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.15	63	226942	107.5477 ug/kg	98
54)	4-Methyl-2-Pentanone	12.19	58	167393	104.1373 ug/kg	98
55)	cis-1,3-Dichloropropene	12.49	75	274433	53.9171 ug/kg	100
56)	Dimethyl Disulfide	12.77	94	627450	108.5289 ug/kg	99
59)	Toluene	12.91	91	709331	53.5624 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	446019	112.1613 ug/kg	99
61)	trans-1,3-Dichloropropene	13.09	75	253283	55.5126 ug/kg	99
62)	1,1,2-Trichloroethane	13.31	97	145830	54.3803 ug/kg	98
63)	2-Hexanone	13.24	43	282471	103.9776 ug/kg	100
64)	1,3-Dichloropropane	13.62	76	247235	53.3118 ug/kg	98
65)	Tetrachloroethene	13.74	164	150836	55.3860 ug/kg	100
66)	Dibromochloromethane	14.01	129	185540	54.6304 ug/kg	99
67)	1,2-Dibromoethane	14.26	107	158342	55.4709 ug/kg	100
68)	1-Chlorohexane	14.34	91	484792	111.7737 ug/kg	100
69)	Chlorobenzene	14.76	112	497144	54.4761 ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.79	131	182316	54.3311 ug/kg	99
71)	Ethylbenzene	14.79	106	273414	55.6329 ug/kg	100
72)	m-,p-Xylene	14.88	106	655851	108.1337 ug/kg	99
73)	o-Xylene	15.45	106	314687	53.3705 ug/kg	100
74)	Styrene	15.48	104	536199	56.0388 ug/kg	100
75)	Bromoform	15.98	173	125839	52.6529 ug/kg	99
76)	Isopropylbenzene	15.87	105	816646	55.1358 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	191718	52.8532 ug/kg	99
80)	1,2,3-Trichloropropane	16.28	110	61998	54.9412 ug/kg	65
81)	trans-1,4-Dichloro-2-Buten	16.32	53	144290	106.6881 ug/kg	71
82)	n-Propylbenzene	16.38	91	922999	63.1616 ug/kg	100
83)	Bromobenzene	16.51	156	213965	55.7154 ug/kg	98
84)	1,3,5-Trimethylbenzene	16.57	105	691784	58.3050 ug/kg	100
85)	2-Chlorotoluene	16.65	91	549728	53.3573 ug/kg	99
86)	4-Chlorotoluene	16.70	91	561301	57.5877 ug/kg	99
87)	a-Methylstyrene	16.97	118	711827	115.7007 ug/kg	97
88)	tert-Butylbenzene	17.03	134	155889	58.7261 ug/kg	94
89)	1,2,4-Trimethylbenzene	17.08	105	705170	59.3832 ug/kg	100
90)	sec-Butylbenzene	17.29	105	897656	56.3657 ug/kg	100
91)	p-Isopropyltoluene	17.45	119	740847	58.4809 ug/kg	100
92)	1,3-Dichlorobenzene	17.65	146	407964	53.9792 ug/kg	98
93)	1,4-Dichlorobenzene	17.79	146	410849	52.9733 ug/kg	100
94)	n-Butylbenzene	17.98	91	672589	55.8110 ug/kg	100
95)	1,2-Dichlorobenzene	18.29	146	387653	53.3341 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	48129	53.8135 ug/kg	100
97)	1,2,4-Trichlorobenzene	20.43	180	275136	53.0401 ug/kg	99
98)	Hexachlorobutadiene	20.58	225	133748	53.9847 ug/kg	98
99)	Naphthalene	20.80	128	726529	55.2702 ug/kg	99
100)	1,2,3-Trichlorobenzene	21.10	180	274354	54.5744 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M974163.D 8260SL.M Thu May 05 11:52:31 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\050516\9M974163.D Vial: 2
Acq On : 5 May 2016 11:29 Operator: ADC
Sample : WG567630-02 50ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 5 11:52 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

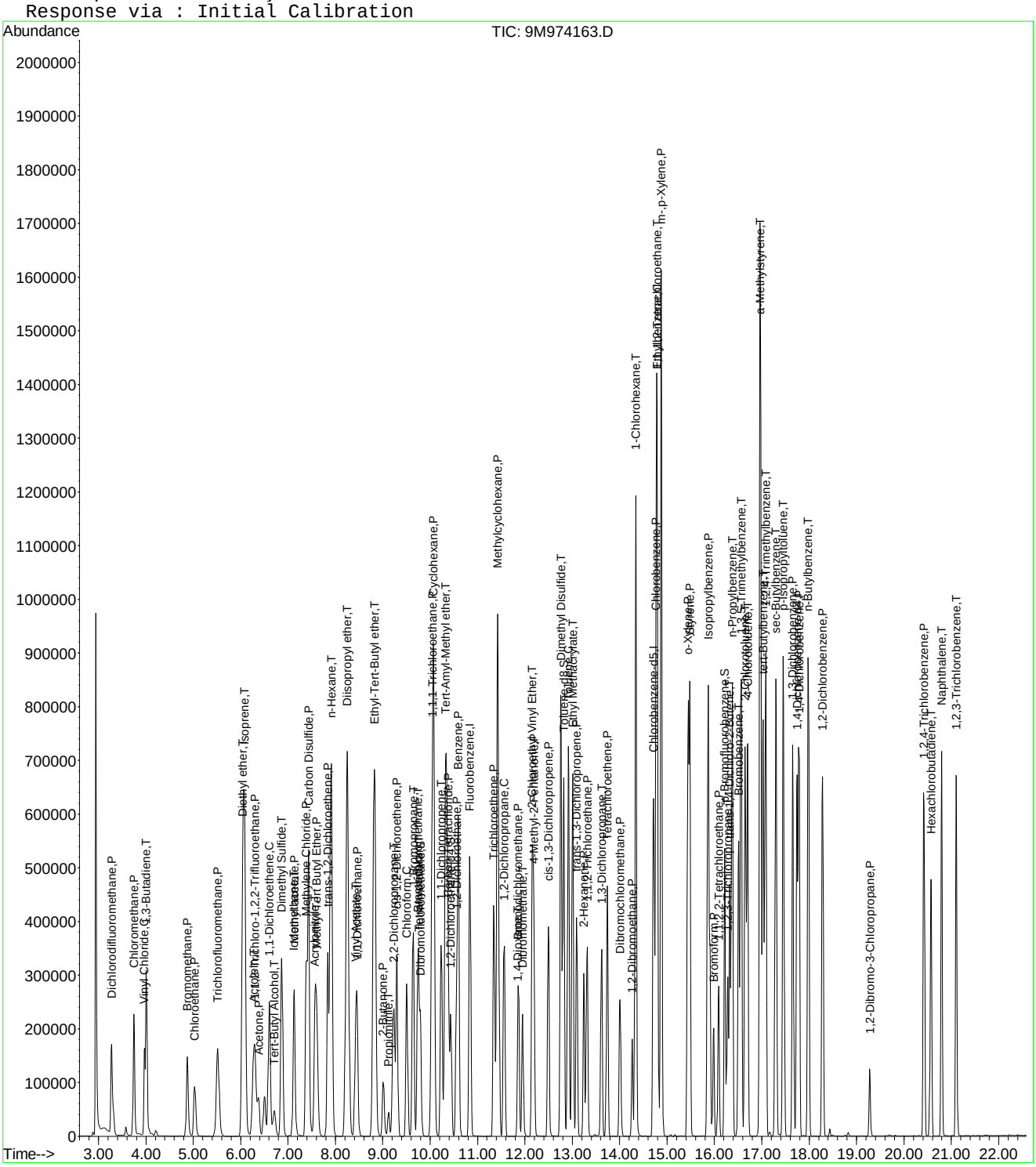

9M974163.D 8260SL.M Thu May 05 11:52:31 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\050516\9M974163.D Vial: 2
Acq On : 5 May 2016 11:29 Operator: ADC
Sample : WG567630-02 50ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	94	0.00
2	P	Dichlorodifluoromethane	0.3412	0.4076	-19.5	106	0.00
3	P	Chloromethane	0.4205	0.5115	-21.6	129	0.00
4	C	Vinyl Chloride	0.3084	0.3089	-0.2	105	0.00
5	T	1,3-Butadiene	0.2208	0.2585	-17.0	145	0.00
6	P	Bromomethane	0.2106	0.2500	-18.7	108	0.00
7	P	Chloroethane	0.2007	0.2253	-12.3	103	0.00
8	P	Trichlorofluoromethane	0.4284	0.4832	-12.8	103	0.00
9	T	Diethyl ether	0.2408	0.2714	-12.7	97	0.00
10	T	Isoprene	0.3404	0.7150	-110.1#	194	-0.01
11	T	Acrolein	0.0401	0.0487	-21.3	97	-0.01
12	P	1,1,2-Trichloro-1,2,2-Trifl	0.2507	0.2867	-14.4	103	0.00
13	P	Acetone	0.1020	0.1905	-86.7#	182	0.00
14	C	1,1-Dichloroethene	0.4181	0.4780	-14.3	103	0.00
15	T	Tert-Butyl Alcohol	0.0432	0.0472	-9.3	93	-0.01
16	T	Dimethyl Sulfide	0.1855	0.4163	-124.4#	201#	0.00
17	T	Iodomethane	0.1461	0.3642	-149.3#	243#	-0.01
18	P	Methyl acetate	0.2697	0.5282	-95.8#	176	0.00
19	P	Methylene Chloride	0.2649	0.2811	-6.1	101	0.00
20	P	Carbon Disulfide	0.8188	1.6378	-100.0#	192	0.00
21	T	Acrylonitrile	0.1152	0.1382	-19.9	96	-0.01
22	P	Methyl Tert Butyl Ether	0.7402	0.8062	-8.9	99	0.00
23	P	trans-1,2-Dichloroethene	0.4058	0.4534	-11.7	102	0.00
24	T	n-Hexane	0.4798	1.0169	-111.9#	203#	0.00
25	T	Diisopropyl ether	0.9487	1.0663	-12.4	98	0.00
26	T	Vinyl Acetate	0.5150	0.5713	-10.9	98	0.00
27	P	1,1-Dichloroethane	0.5014	0.5513	-9.9	102	0.00
28	T	Ethyl-Tert-Butyl ether	0.9028	1.0010	-10.9	96	0.00
29	P	2-Butanone	0.1414	0.2977	-110.5#	183	0.00
30	T	Propionitrile	0.0423	0.0486	-14.9	94	0.00
31	T	2,2-Dichloropropane	0.3764	0.4080	-8.4	100	0.00
32	P	cis-1,2-Dichloroethene	0.2694	0.2990	-11.0	100	0.00
33	C	Chloroform	0.4240	0.4692	-10.6	100	0.00
34	T	1-Bromopropane	0.0457	0.0997	-118.1#	199	0.00
35	T	Bromochloromethane	0.1722	0.1896	-10.1	98	0.00
36	T	Tetrahydrofuran	0.0997	0.1067	-7.0	92	0.00
37	S	Dibromofluoromethane	0.2555	0.2672	-4.6	93	0.00
38	P	1,1,1-Trichloroethane	0.3767	0.4158	-10.4	100	0.00
39	P	Cyclohexane	0.5581	1.1671	-109.1#	192	0.00
40	T	1,1-Dichloropropene	0.3266	0.3661	-12.1	100	0.00
41	T	Tert-Amyl-Methyl ether	0.6878	0.7552	-9.8	94	0.00
42	P	Carbon Tetrachloride	0.3685	0.4015	-9.0	100	0.00
43	S	1,2-Dichloroethane-d4	0.2767	0.2885	-4.3	95	0.00
44		Heptane	0.0000	0.0000	0.0	96	0.00
45	P	1,2-Dichloroethane	0.3777	0.4070	-7.8	100	0.00
46	P	Benzene	1.0105	1.0737	-6.3	100	0.00
47	P	Trichloroethene	0.2762	0.2990	-8.3	98	0.00
48	P	Methylcyclohexane	0.4377	0.9336	-113.3#	191	0.00
49	C	1,2-Dichloropropane	0.2779	0.3016	-8.5	100	0.00
50	T	1,4-Dioxane	0.0035	0.0044	-24.1	101	0.00
51	P	Bromodichloromethane	0.3320	0.3558	-7.2	100	0.00
52	T	Dibromomethane	0.1627	0.1813	-11.4	97	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1658	0.3565	-115.1#	185	0.00
54	P	4-Methyl-2-Pentanone	0.1263	0.2630	-108.3#	181	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\050516\9M974163.D Vial: 2
Acq On : 5 May 2016 11:29 Operator: ADC
Sample : WG567630-02 50ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	0.3998	0.4311	-7.8	99	0.00
56	T	Dimethyl Disulfide	0.4541	0.9857	-117.1#	193	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	93	0.00
58	S	Toluene-d8	1.1945	1.2730	-6.6	92	0.00
59	C	Toluene	1.4039	1.5039	-7.1	98	0.00
60	T	Ethyl Methacrylate	0.4215	0.9456	-124.3#	192	0.00
61	P	trans-1,3-Dichloropropene	0.4837	0.5370	-11.0	98	0.00
62	P	1,1,2-Trichloroethane	0.2843	0.3092	-8.8	95	0.00
63	P	2-Hexanone	0.2880	0.5989	-108.0#	181	0.00
64	T	1,3-Dichloropropane	0.4916	0.5242	-6.6	96	0.00
65	P	Tetrachloroethene	0.2887	0.3198	-10.8	97	0.00
66	P	Dibromochloromethane	0.3600	0.3934	-9.3	96	0.00
67	P	1,2-Dibromoethane	0.3026	0.3357	-10.9	95	0.00
68	T	1-Chlorohexane	0.4598	1.0278	-123.5#	196	0.00
69	P	Chlorobenzene	0.9674	1.0540	-9.0	98	0.00
70	T	1,1,1,2-Tetrachloroethane	0.3557	0.3865	-8.7	97	0.00
71	C	Ethylbenzene	0.5210	0.5797	-11.3	98	0.00
72	P	m-,p-Xylene	0.6430	0.6953	-8.1	97	0.00
73	P	o-Xylene	0.6250	0.6672	-6.7	96	0.00
74	P	Styrene	1.0143	1.1368	-12.1	97	0.00
75	P	Bromoform	0.2534	0.2668	-5.3	94	0.00
76	P	Isopropylbenzene	1.5701	1.7314	-10.3	96	0.00
77	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	93	0.00
78	P	1,1,2,2-Tetrachloroethane	0.7307	0.7724	-5.7	91	0.00
79	S	p-Bromofluorobenzene	0.8668	0.9464	-9.2	93	0.00
80	T	1,2,3-Trichloropropane	0.2273	0.2498	-9.9	95	0.00
81	T	trans-1,4-Dichloro-2-Butene	0.2724	0.5813	-113.4#	182	0.00
82	T	n-Propylbenzene	3.2546	3.7186	-14.3	99	0.00
83	T	Bromobenzene	0.7736	0.8620	-11.4	96	0.00
84	T	1,3,5-Trimethylbenzene	2.3901	2.7871	-16.6	97	0.00
85	T	2-Chlorotoluene	2.0754	2.2148	-6.7	90	0.00
86	T	4-Chlorotoluene	1.9634	2.2614	-15.2	104	0.00
87	T	a-Methylstyrene	1.2393	2.8678	-131.4#	194	0.00
88	T	tert-Butylbenzene	0.5347	0.6281	-17.5	98	0.00
89	T	1,2,4-Trimethylbenzene	2.6650	2.8410	-6.6	97	0.00
90	T	sec-Butylbenzene	3.2081	3.6165	-12.7	97	0.00
91	T	p-Isopropyltoluene	2.5519	2.9848	-17.0	97	0.00
92	P	1,3-Dichlorobenzene	1.5225	1.6436	-8.0	95	0.00
93	P	1,4-Dichlorobenzene	1.5623	1.6553	-5.9	97	0.00
94	T	n-Butylbenzene	2.4276	2.7098	-11.6	98	0.00
95	P	1,2-Dichlorobenzene	1.4642	1.5618	-6.7	96	0.00
96	P	1,2-Dibromo-3-Chloropropane	0.1802	0.1939	-7.6	95	0.00
97	P	1,2,4-Trichlorobenzene	1.0450	1.1085	-6.1	98	0.00
98	T	Hexachlorobutadiene	0.4991	0.5389	-8.0	97	0.00
99	T	Naphthalene	2.6480	2.9271	-10.5	97	0.00
100	T	1,2,3-Trichlorobenzene	1.0127	1.1053	-9.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M974163.D 8260SL.M Thu May 05 11:53:28 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\050516\9M974163.D Vial: 2
Acq On : 5 May 2016 11:29 Operator: ADC
Sample : WG567630-02 50ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	94	0.00
2	P	Dichlorodifluoromethane	50.0000	59.7370	-19.5	106	0.00
3	P	Chloromethane	50.0000	60.8236	-21.6	129	0.00
4	C	Vinyl Chloride	50.0000	51.2656	-2.5	105	0.00
5	T	1,3-Butadiene	50.0000	76.7857	-53.6#	145	0.00
6	P	Bromomethane	50.0000	59.3585	-18.7	108	0.00
7	P	Chloroethane	50.0000	56.1261	-12.3	103	0.00
8	P	Trichlorofluoromethane	50.0000	56.3956	-12.8	103	0.00
9	T	Diethyl ether	100.0000	112.7185	-12.7	97	0.00
10	T	Isoprene	50.0000	105.0325	-110.1#	194	-0.01
11	T	Acrolein	50.0000	60.6649	-21.3	97	-0.01
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	57.1818	-14.4	103	0.00
13	P	Acetone	50.0000	103.4925	-107.0#	182	0.00
14	C	1,1-Dichloroethene	50.0000	57.1746	-14.3	103	0.00
15	T	Tert-Butyl Alcohol	200.0000	218.6022	-9.3	93	-0.01
16	T	Dimethyl Sulfide	50.0000	102.1300	-104.3#	201	0.00
17	T	Iodomethane	50.0000	114.4512	-128.9#	243	-0.01
18	P	Methyl acetate	50.0000	97.9113	-95.8#	176	0.00
19	P	Methylene Chloride	50.0000	53.0504	-6.1	101	0.00
20	P	Carbon Disulfide	50.0000	100.0119	-100.0#	192	0.00
21	T	Acrylonitrile	50.0000	59.9704	-19.9	96	-0.01
22	P	Methyl Tert Butyl Ether	50.0000	54.4589	-8.9	99	0.00
23	P	trans-1,2-Dichloroethene	50.0000	55.8657	-11.7	102	0.00
24	T	n-Hexane	50.0000	105.9731	-111.9#	203	0.00
25	T	Diisopropyl ether	100.0000	112.3942	-12.4	98	0.00
26	T	Vinyl Acetate	50.0000	55.4613	-10.9	98	0.00
27	P	1,1-Dichloroethane	50.0000	54.9679	-9.9	102	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	110.8805	-10.9	96	0.00
29	P	2-Butanone	50.0000	105.2656	-110.5#	183	0.00
30	T	Propionitrile	100.0000	102.3699	-2.4	94	0.00
31	T	2,2-Dichloropropane	50.0000	54.2026	-8.4	100	0.00
32	P	cis-1,2-Dichloroethene	50.0000	55.5072	-11.0	100	0.00
33	C	Chloroform	50.0000	55.3237	-10.6	100	0.00
34	T	1-Bromopropane	50.0000	109.0360	-118.1#	199	0.00
35	T	Bromochloromethane	50.0000	55.0679	-10.1	98	0.00
36	T	Tetrahydrofuran	100.0000	106.9708	-7.0	92	0.00
37	S	Dibromofluoromethane	50.0000	52.2844	-4.6	93	0.00
38	P	1,1,1-Trichloroethane	50.0000	55.1994	-10.4	100	0.00
39	P	Cyclohexane	50.0000	104.5527	-109.1#	192	0.00
40	T	1,1-Dichloropropene	50.0000	56.0455	-12.1	100	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	109.7948	-9.8	94	0.00
42	P	Carbon Tetrachloride	50.0000	54.4755	-9.0	100	0.00
43	S	1,2-Dichloroethane-d4	50.0000	52.1439	-4.3	95	0.00
44		Heptane	-1.0000	0.0000	0.0	96	0.00
45	P	1,2-Dichloroethane	50.0000	53.8775	-7.8	100	0.00
46	P	Benzene	50.0000	53.1264	-6.3	100	0.00
47	P	Trichloroethene	50.0000	54.1363	-8.3	98	0.00
48	P	Methylcyclohexane	50.0000	106.6537	-113.3#	191	0.00
49	C	1,2-Dichloropropane	50.0000	54.2679	-8.5	100	0.00
50	T	1,4-Dioxane	200.0000	222.1704	-11.1	101	0.00
51	P	Bromodichloromethane	50.0000	53.5912	-7.2	100	0.00
52	T	Dibromomethane	50.0000	52.3366	-4.7	97	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	107.5477	-115.1#	185	0.00
54	P	4-Methyl-2-Pentanone	50.0000	104.1373	-108.3#	181	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\050516\9M974163.D Vial: 2
Acq On : 5 May 2016 11:29 Operator: ADC
Sample : WG567630-02 50ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	53.9171	-7.8	99	0.00
56	T	Dimethyl Disulfide	50.0000	108.5289	-117.1#	193	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	93	0.00
58	S	Toluene-d8	50.0000	53.2862	-6.6	92	0.00
59	C	Toluene	50.0000	53.5624	-7.1	98	0.00
60	T	Ethyl Methacrylate	50.0000	112.1613	-124.3#	192	0.00
61	P	trans-1,3-Dichloropropene	50.0000	55.5126	-11.0	98	0.00
62	P	1,1,2-Trichloroethane	50.0000	54.3803	-8.8	95	0.00
63	P	2-Hexanone	50.0000	103.9776	-108.0#	181	0.00
64	T	1,3-Dichloropropane	50.0000	53.3118	-6.6	96	0.00
65	P	Tetrachloroethene	50.0000	55.3860	-10.8	97	0.00
66	P	Dibromochloromethane	50.0000	54.6304	-9.3	96	0.00
67	P	1,2-Dibromoethane	50.0000	55.4709	-10.9	95	0.00
68	T	1-Chlorohexane	50.0000	111.7737	-123.5#	196	0.00
69	P	Chlorobenzene	50.0000	54.4761	-9.0	98	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	54.3311	-8.7	97	0.00
71	C	Ethylbenzene	50.0000	55.6328	-11.3	98	0.00
72	P	m-,p-Xylene	100.0000	108.1337	-8.1	97	0.00
73	P	o-Xylene	50.0000	53.3706	-6.7	96	0.00
74	P	Styrene	50.0000	56.0388	-12.1	97	0.00
75	P	Bromoform	50.0000	52.6529	-5.3	94	0.00
76	P	Isopropylbenzene	50.0000	55.1358	-10.3	96	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	93	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	52.8532	-5.7	91	0.00
79	S	p-Bromofluorobenzene	50.0000	54.5918	-9.2	93	0.00
80	T	1,2,3-Trichloropropane	50.0000	54.9412	-9.9	95	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	106.6881	-113.4#	182	0.00
82	T	n-Propylbenzene	50.0000	63.1616	-26.3#	99	0.00
83	T	Bromobenzene	50.0000	55.7154	-11.4	96	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	58.3050	-16.6	97	0.00
85	T	2-Chlorotoluene	50.0000	53.3573	-6.7	90	0.00
86	T	4-Chlorotoluene	50.0000	57.5878	-15.2	104	0.00
87	T	a-Methylstyrene	50.0000	115.7007	-131.4#	194	0.00
88	T	tert-Butylbenzene	50.0000	58.7261	-17.5	98	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	59.3832	-18.8	97	0.00
90	T	sec-Butylbenzene	50.0000	56.3657	-12.7	97	0.00
91	T	p-Isopropyltoluene	50.0000	58.4809	-17.0	97	0.00
92	P	1,3-Dichlorobenzene	50.0000	53.9792	-8.0	95	0.00
93	P	1,4-Dichlorobenzene	50.0000	52.9733	-5.9	97	0.00
94	T	n-Butylbenzene	50.0000	55.8110	-11.6	98	0.00
95	P	1,2-Dichlorobenzene	50.0000	53.3341	-6.7	96	0.00
96	P	1,2-Dibromo-3-Chloropropane	50.0000	53.8135	-7.6	95	0.00
97	P	1,2,4-Trichlorobenzene	50.0000	53.0401	-6.1	98	0.00
98	T	Hexachlorobutadiene	50.0000	53.9847	-8.0	97	0.00
99	T	Naphthalene	50.0000	55.2702	-10.5	97	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	54.5744	-9.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M974163.D 8260SL.M Thu May 05 11:53:27 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\2\DATA\042416\8M411681.D          Vial: 1
Acq On    : 24 Apr 2016  16:45                       Operator: JDS
Sample    : WG566154-01 50ng BFB STD 826-A9          Inst    : HPMS8
Misc      : 1,1 STD75485                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

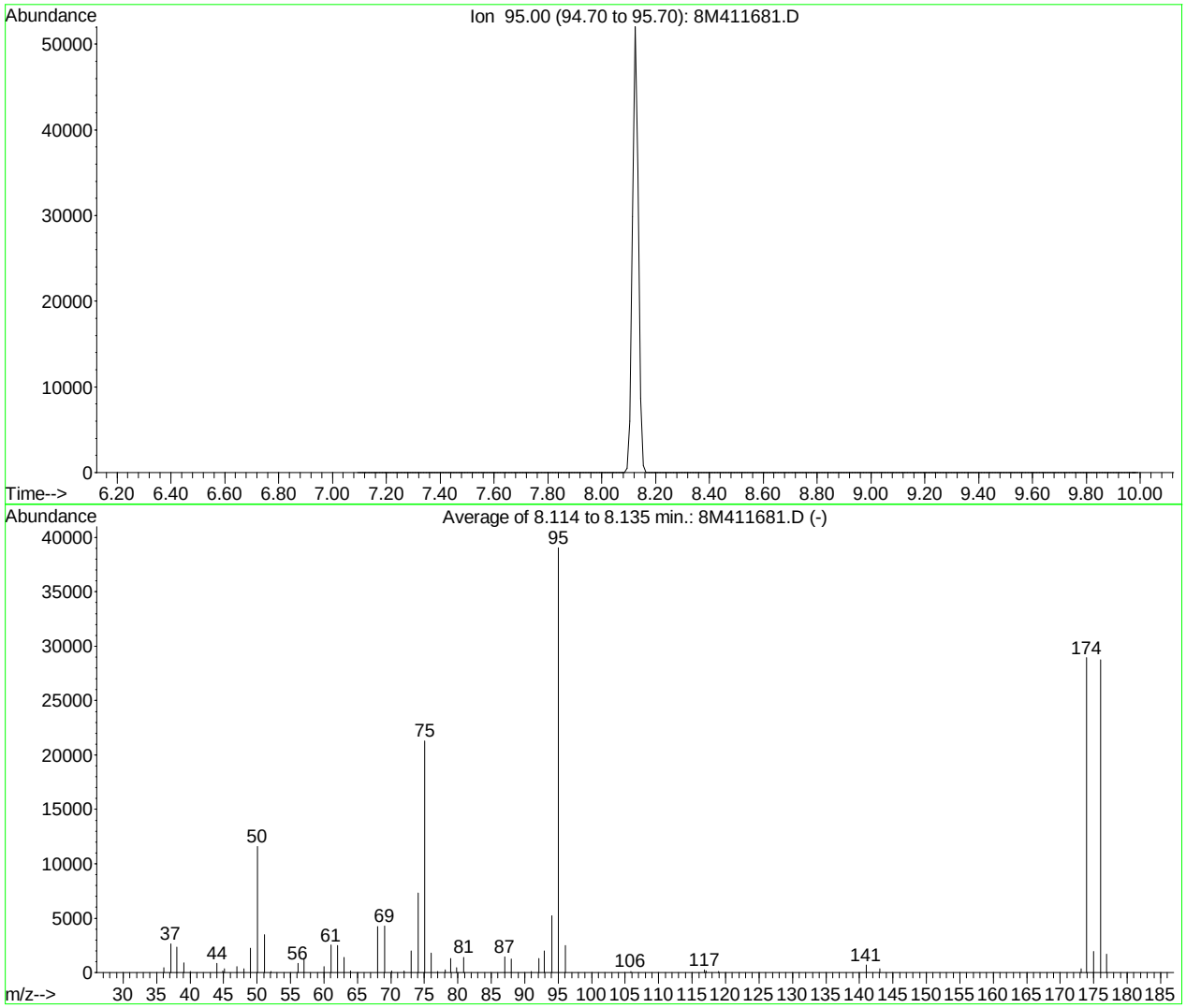

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 96

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	29.7	11578	PASS
75	95	30	60	54.6	21298	PASS
95	95	100	100	100.0	39034	PASS
96	95	5	9	6.3	2474	PASS
173	174	0.00	2	1.2	333	PASS
174	95	50	100	74.1	28941	PASS
175	174	5	9	6.7	1943	PASS
176	174	95	101	99.4	28765	PASS
177	176	5	9	5.9	1691	PASS

8M411681.D BFB.M Mon Apr 25 09:05:43 2016

BFB

Data File : C:\MSDCHEM\2\DATA\042816\8M411789.D Vial: 1
Acq On : 28 Apr 2016 7:05 Operator: ADC
Sample : WG566682-01 50ng BFB STD 8260 Inst : HPMS8
Misc : 1,1 STD75485 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title : SOP:OVL MSV01

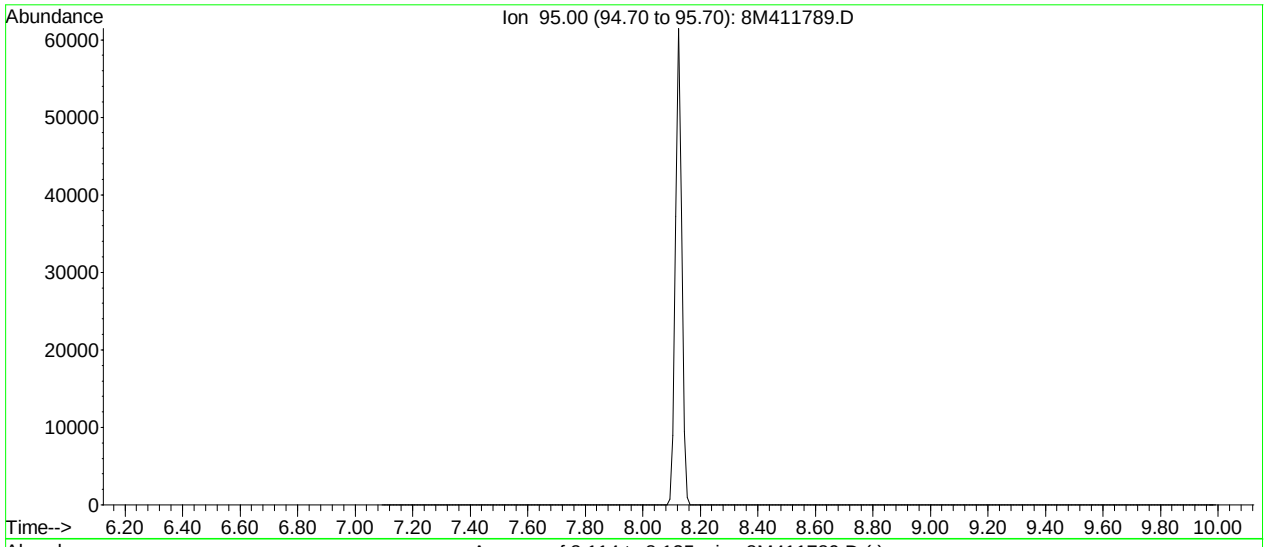

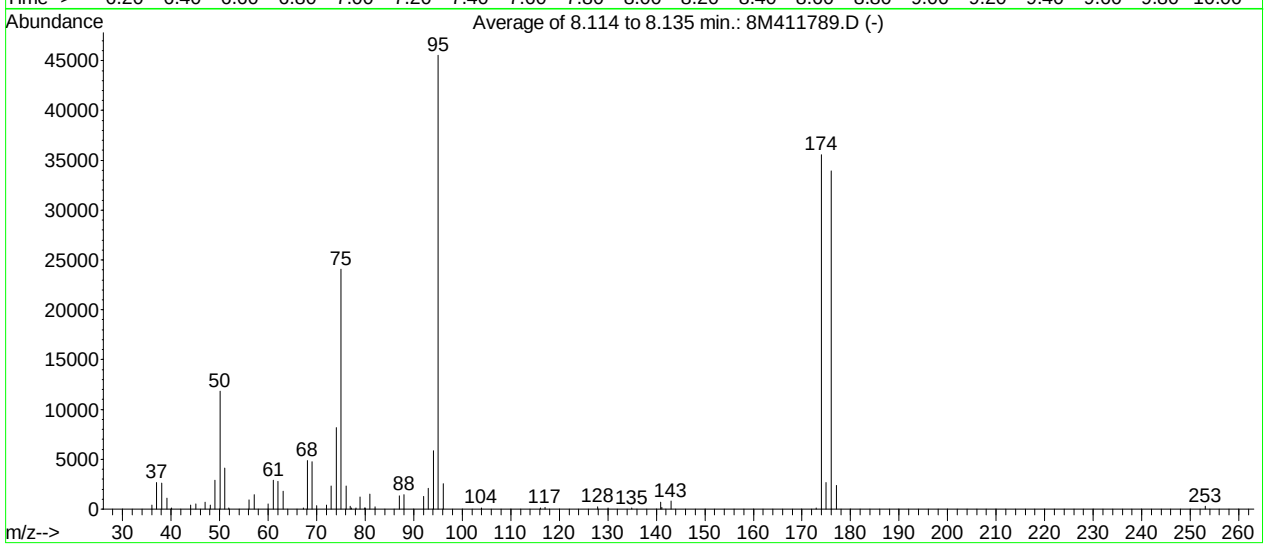

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 96

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	25.9	11810	PASS
75	95	30	60	52.9	24061	PASS
95	95	100	100	100.0	45522	PASS
96	95	5	9	5.6	2567	PASS
173	174	0.00	2	0.3	118	PASS
174	95	50	100	78.1	35560	PASS
175	174	5	9	7.5	2684	PASS
176	174	95	101	95.4	33930	PASS
177	176	5	9	6.9	2358	PASS

8M411789.D BFB.M Thu Apr 28 12:28:52 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\050416\9M974137.D          Vial: 1
Acq On    :  4 May 2016  11:25                        Operator: ADC
Sample    : WG567358-01 BFB 50ng 8260                 Inst    : hpms9
Misc      : 7,1 STD75485                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 05/04/16  HPMS9
```

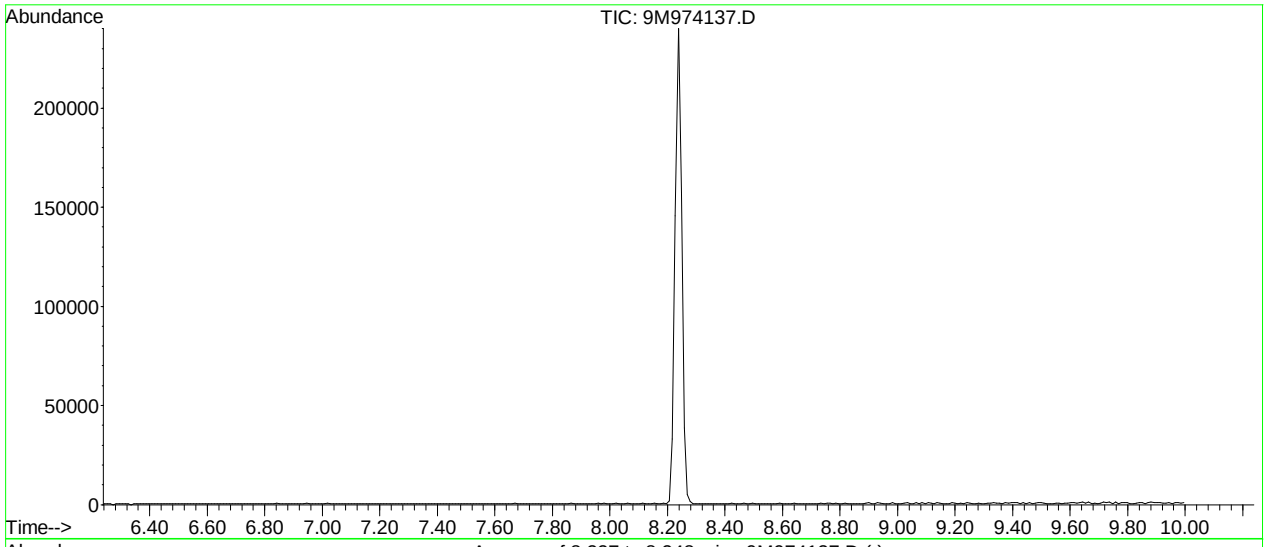

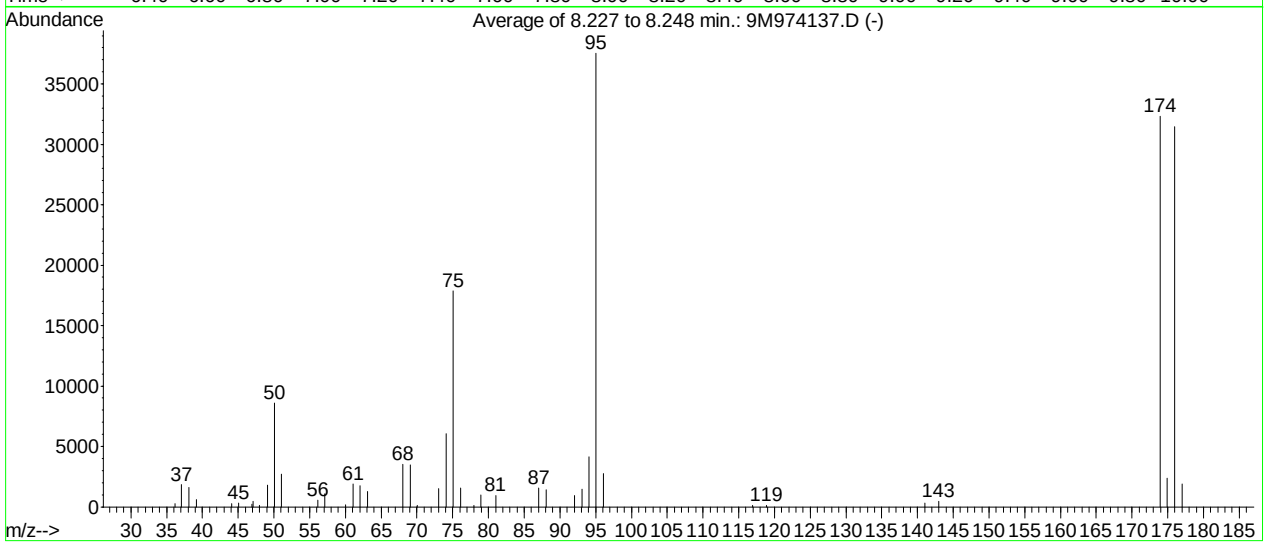

AutoFind: Scans 304, 305, 306; Background Corrected with Scan 299

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.9	8610	PASS
75	95	30	60	47.6	17874	PASS
95	95	100	100	100.0	37554	PASS
96	95	5	9	7.3	2747	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	86.0	32312	PASS
175	174	5	9	7.3	2364	PASS
176	174	95	101	97.4	31461	PASS
177	176	5	9	5.9	1870	PASS

9M974137.D 8260SL.M Thu May 05 16:52:23 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\050516\9M974161.D          Vial: 1
Acq On    :  5 May 2016   9:51                        Operator: ADC
Sample    : WG567630-01 BFB 50ng 8260                 Inst    : hpms9
Misc      : 7,1 STD75485                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 05/04/16  HPMS9
```

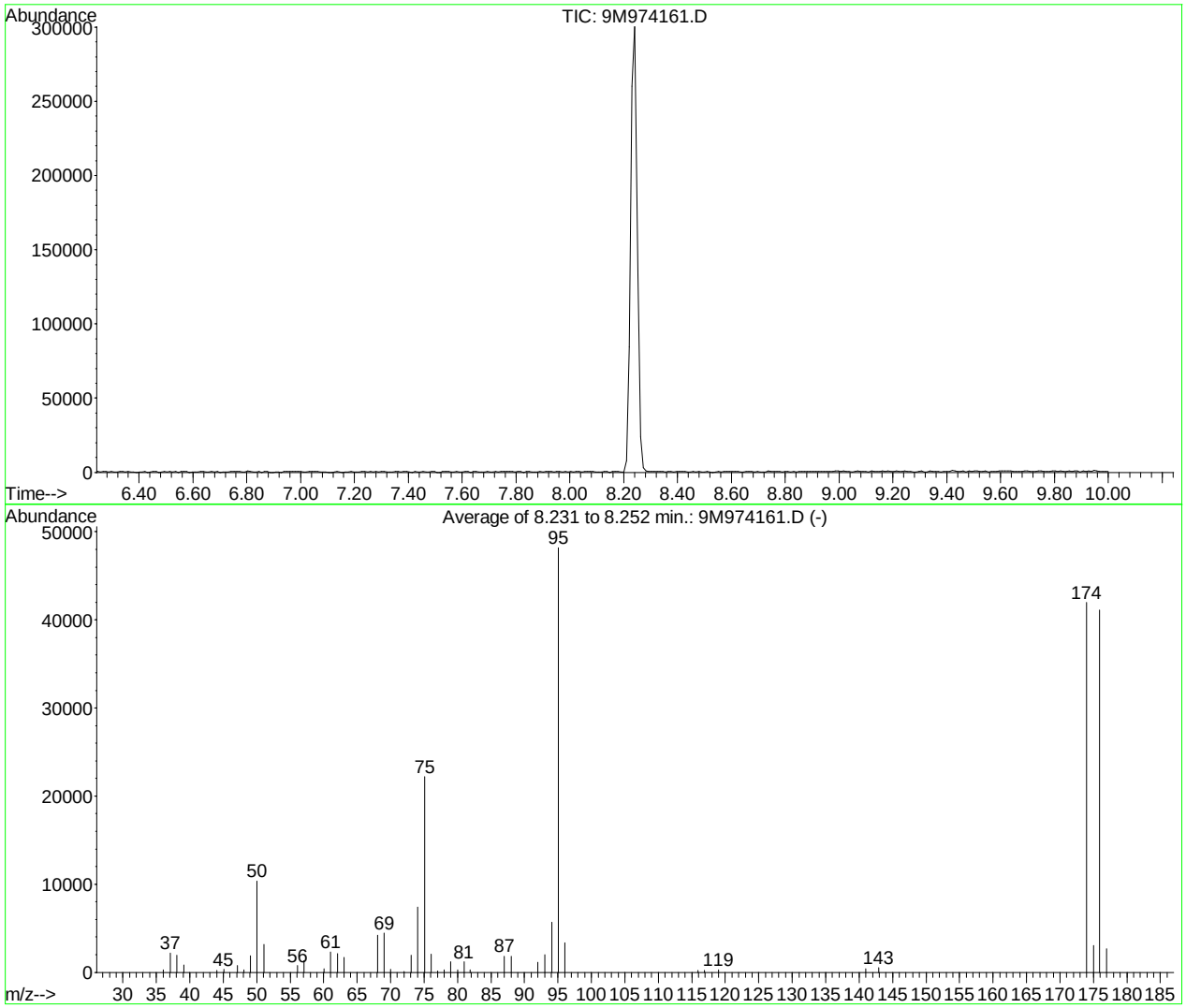

AutoFind: Scans 304, 305, 306; Background Corrected with Scan 299

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.4	10328	PASS
75	95	30	60	46.1	22204	PASS
95	95	100	100	100.0	48200	PASS
96	95	5	9	6.9	3341	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	87.1	41965	PASS
175	174	5	9	7.3	3055	PASS
176	174	95	101	98.0	41133	PASS
177	176	5	9	6.5	2685	PASS

9M974161.D 8260SL.M Thu May 05 11:52:37 2016

BFB

```
Data File : C:\MSDCHEM\2\DATA\050716\8M412046.D          Vial: 2
Acq On    :  7 May 2016  11:41                        Operator: TMB
Sample    : WG567934-01 50ng BFB STD 8260             Inst    : HPMS8
Misc      : 1,1 STD76034                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title     : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
```

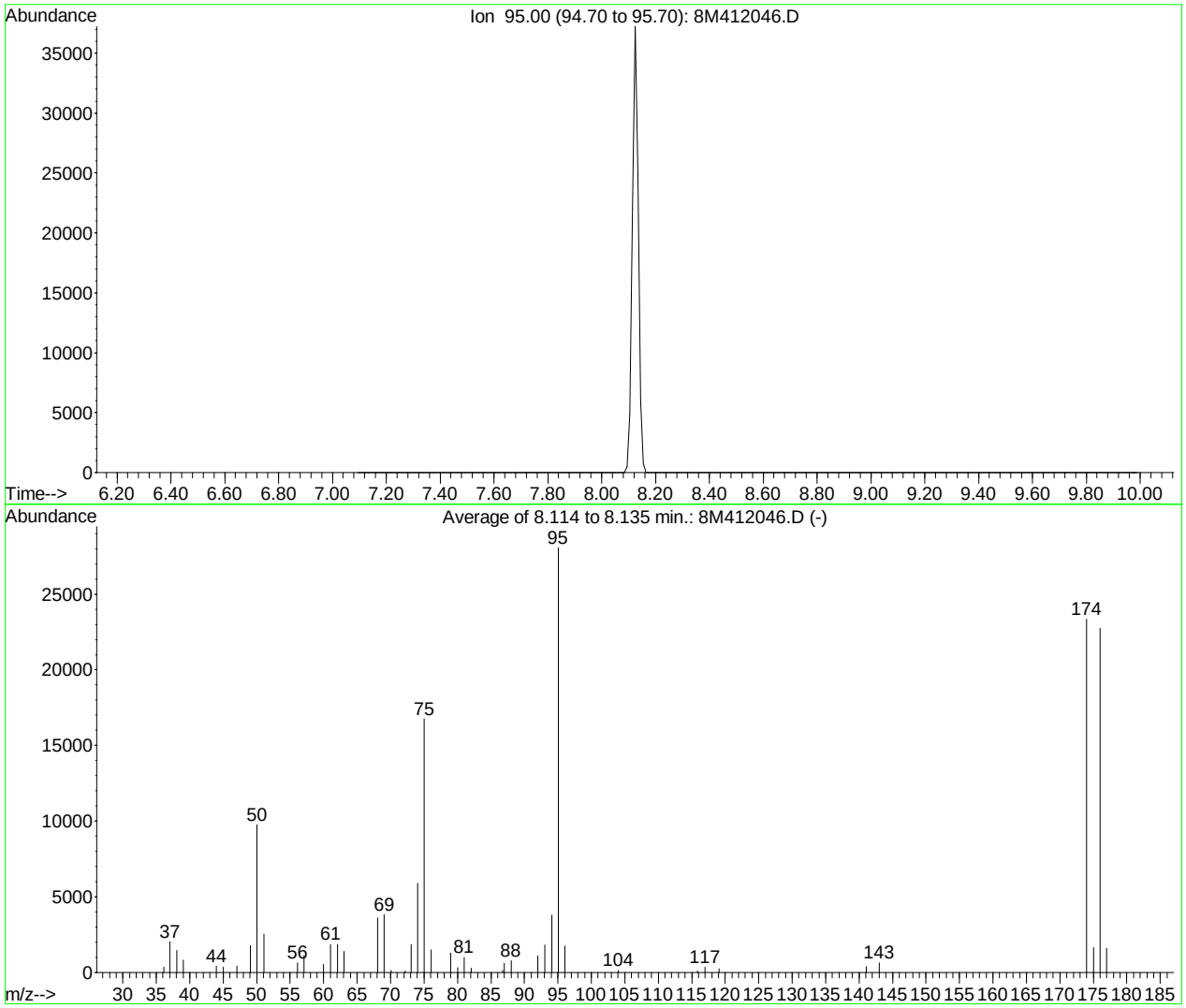

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 96

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	34.8	9756	PASS
75	95	30	60	59.8	16761	PASS
95	95	100	100	100.0	28050	PASS
96	95	5	9	6.2	1742	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	83.2	23343	PASS
175	174	5	9	7.1	1652	PASS
176	174	95	101	97.4	22736	PASS
177	176	5	9	7.2	1627	PASS

8M412046.D 8260WTR.M Sat May 07 12:22:13 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\050716\8M412049.D Vial: 4
Acq On : 7 May 2016 13:02 Operator: TMB
Sample : WG567935-01 VBLK0507 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 09 08:23:59 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	444939	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	351990	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	190127	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	142562	25.5182 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.08%		
43) 1,2-Dichloroethane-d4	10.30	65	185455	29.0161 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 116.08%		
58) Toluene-d8	12.68	98	446279	24.5198 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.08%		
80) p-Bromofluorobenzene	16.07	95	193056	24.8063 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.24%		

Target Compounds					Qvalue
36) Tetrahydrofuran	9.64	42	2028	1.7535 ug/L #	41

(#) = qualifier out of range (m) = manual integration
8M412049.D 8260WTR.M Mon May 09 08:23:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\050716\8M412049.D Vial: 4
Acq On : 7 May 2016 13:02 Operator: TMB
Sample : WG567935-01 VBLK0507 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 9 8:23 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

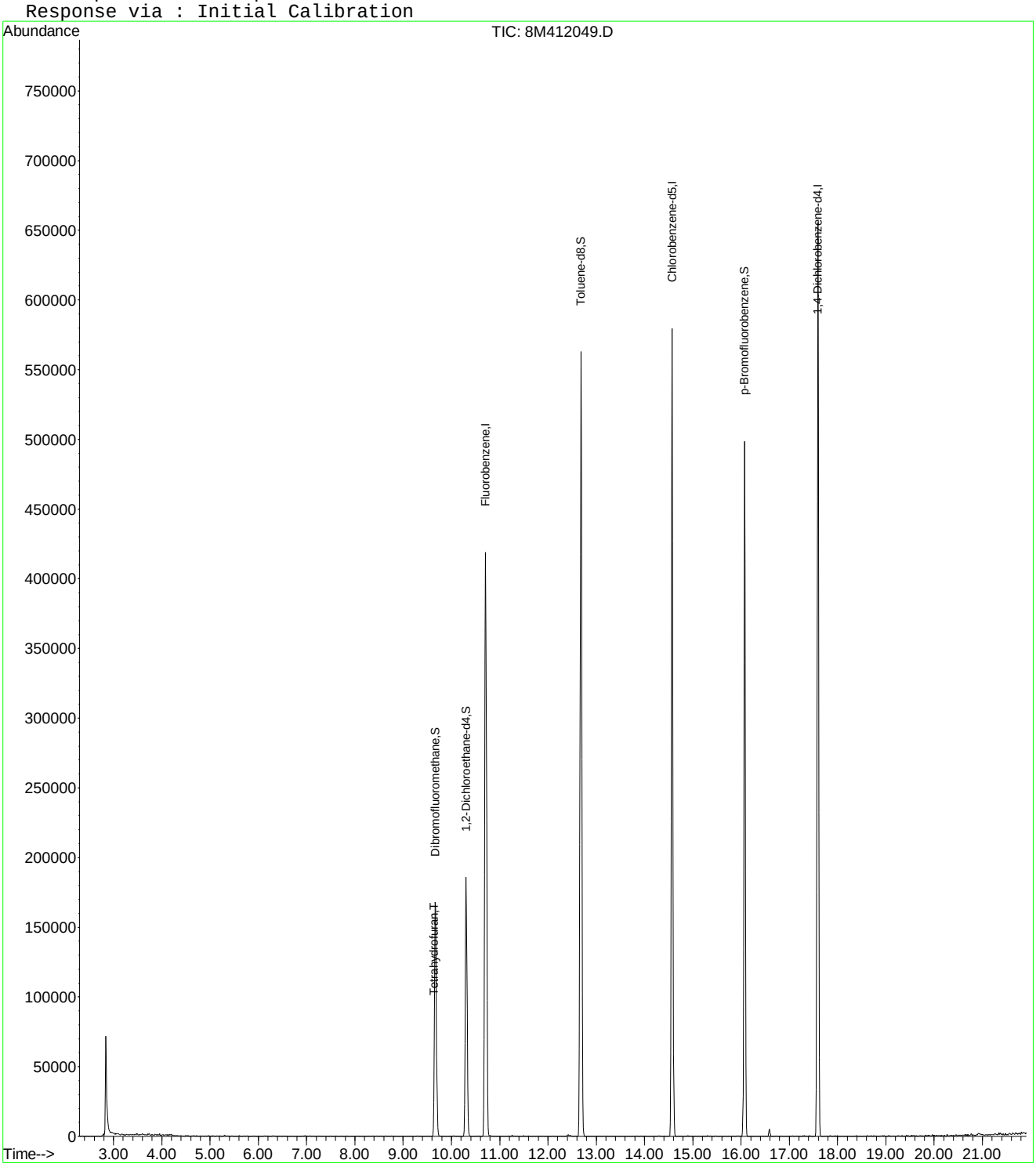

8M412049.D 8260WTR.M Mon May 09 08:23:59 2016 Page 2

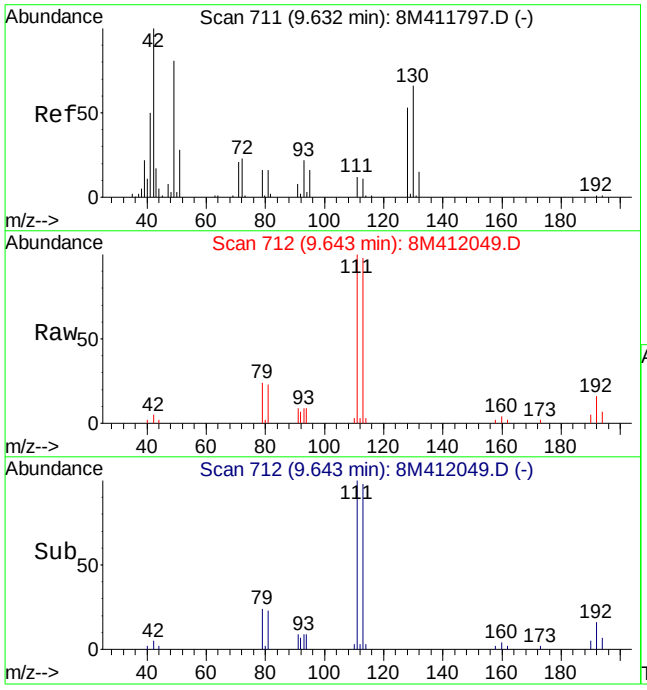

#36
Tetrahydrofuran
Concen: 1.75 ug/L
RT: 9.64 min Scan# 712
Delta R.T. 0.01 min
Lab File: 8M412049.D
Acq: 7 May 2016 13:02

Tgt Ion: 42 Resp: 2028

Ion	Ratio	Lower	Upper
42	100		
72	0.0	20.8	48.6#
71	0.0	19.0	44.4#

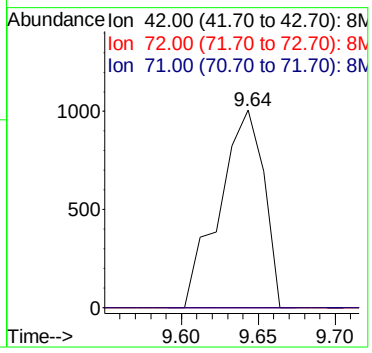

8M412049.D 8260WTR.M Mon May 09 08:23:59 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050516\9M974165.D Vial: 3
Acq On : 5 May 2016 12:32 Operator: ADC
Sample : WG567680-01 BLANK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 11:40:46 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	623086	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	471370	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	240057	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	160236	50.3205 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.64%		
43) 1,2-Dichloroethane-d4	10.44	65	178616	51.8068 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 103.62%		
58) Toluene-d8	12.82	98	594346	52.7789 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 105.56%		
79) p-Bromofluorobenzene	16.22	95	229553	55.1582 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 110.32%		

Target Compounds					Qvalue
13) Acetone	6.39	43	4562	1.1769 ug/kg	94
36) Tetrahydrofuran	9.77	42	3537	2.8466 ug/kg	80
56) Dimethyl Disulfide	12.82	94	16557	2.9258 ug/kg#	28
82) n-Propylbenzene	16.38	91	1949	Below Cal #	51
89) 1,2,4-Trimethylbenzene	17.08	105	3715	Below Cal	76

(#) = qualifier out of range (m) = manual integration
9M974165.D 8260SL.M Tue May 10 11:40:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050516\9M974165.D Vial: 3
Acq On : 5 May 2016 12:32 Operator: ADC
Sample : WG567680-01 BLANK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 11:40 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

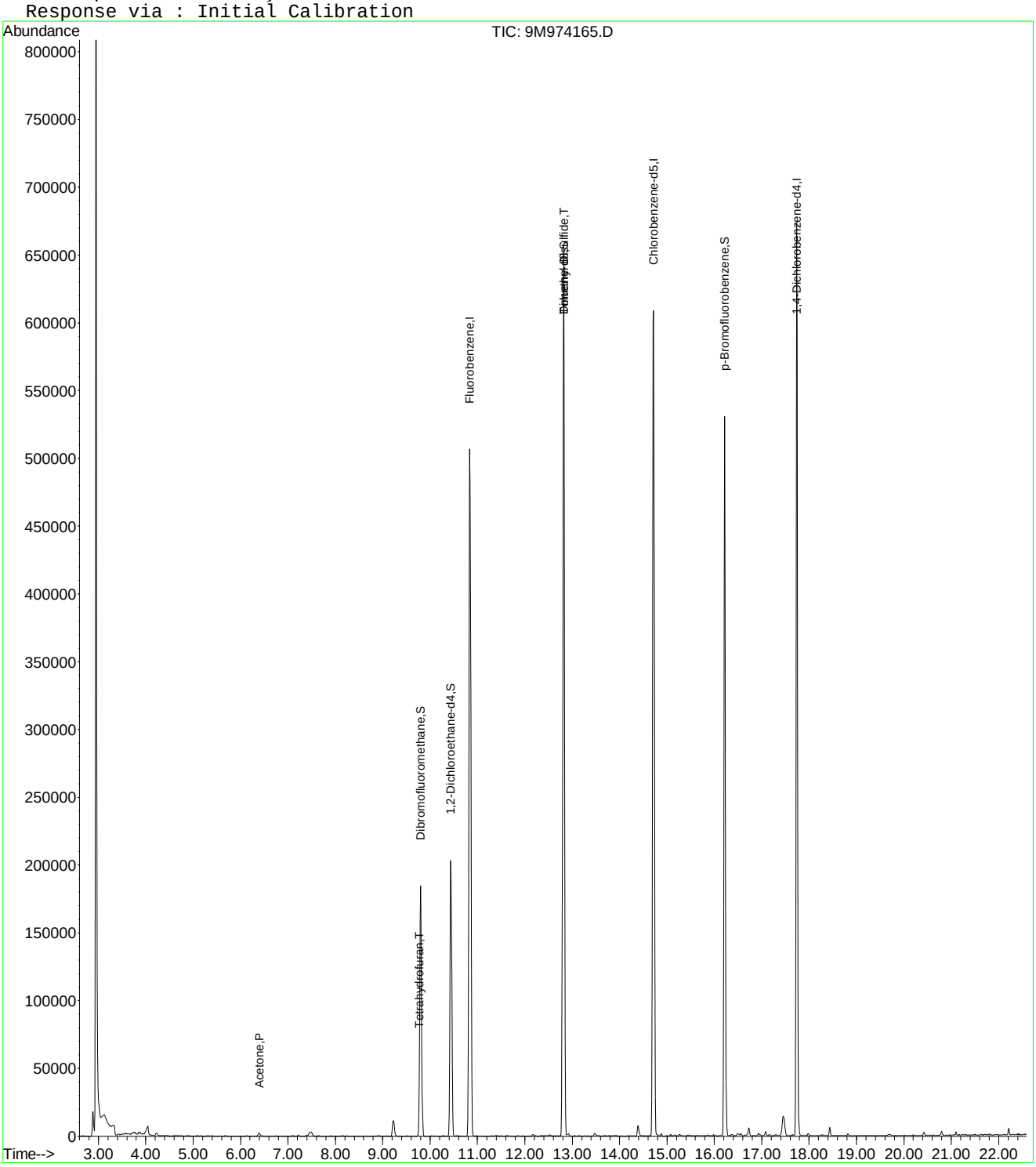

9M974165.D 8260SL.M Tue May 10 11:40:46 2016 Page 2

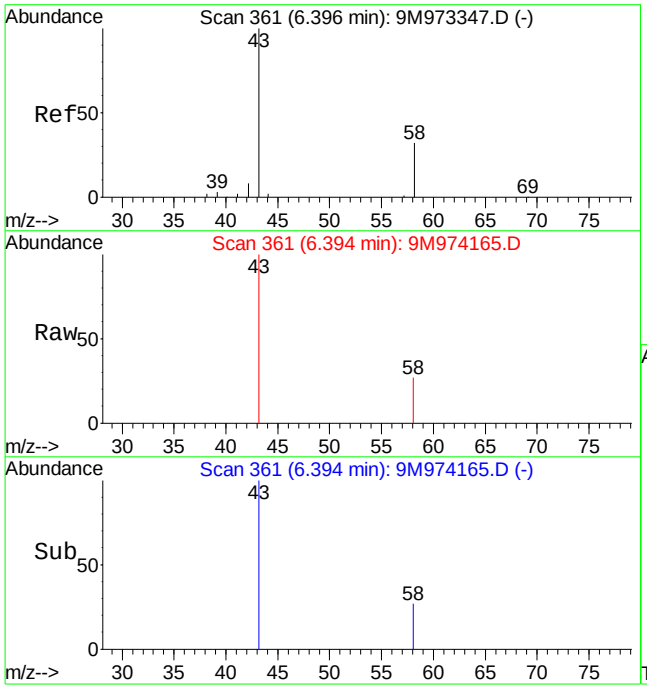

#13
Acetone
Concen: 1.18 ug/kg
RT: 6.39 min Scan# 361
Delta R.T. 0.01 min
Lab File: 9M974165.D
Acq: 5 May 2016 12:32

Tgt Ion: 43 Resp: 4562

Ion	Ratio	Lower	Upper
43	100		
58	30.6	20.2	47.2

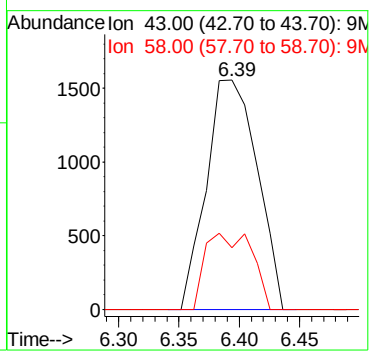

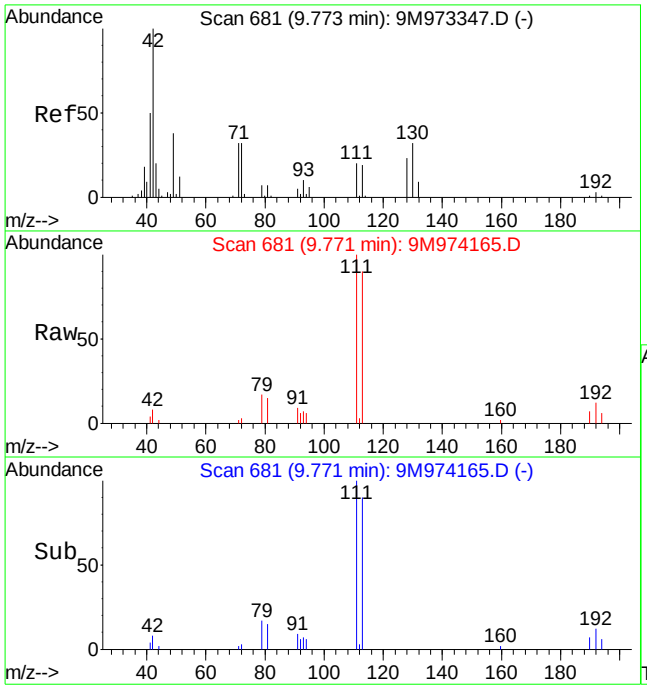

#36
Tetrahydrofuran
Concen: 2.85 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. 0.01 min
Lab File: 9M974165.D
Acq: 5 May 2016 12:32

Tgt Ion: 42 Resp: 3537

Ion	Ratio	Lower	Upper
42	100		
72	24.8	20.8	48.6
71	20.5	20.0	46.8

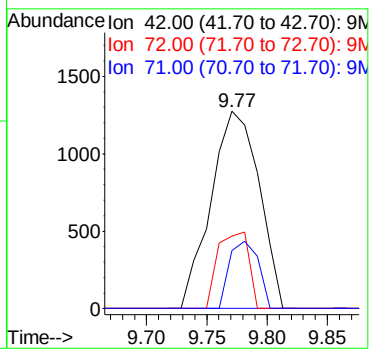

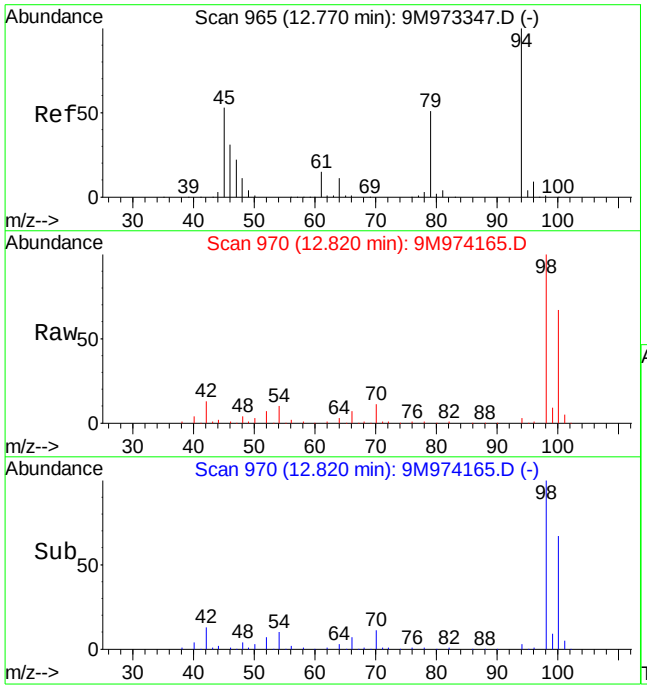

#56
Dimethyl Disulfide
Concen: 2.93 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M974165.D
Acq: 5 May 2016 12:32

Tgt Ion: 94 Resp: 16557

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.3	68.5#

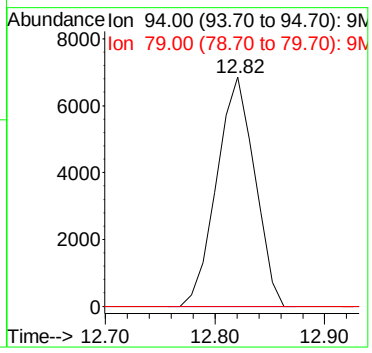

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\050716\8M412068.D Vial: 23
Acq On : 7 May 2016 22:15 Operator: TMB
Sample : WG567935-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD75977 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 07 22:37:24 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	392246	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	313955	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	179323	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	125691	25.5207 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.08%		
43) 1,2-Dichloroethane-d4	10.30	65	165177	29.3151 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 117.28%		
58) Toluene-d8	12.68	98	399641	24.6175 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.48%		
80) p-Bromofluorobenzene	16.07	95	172828	23.5451 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.20%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	157085	19.1085 ug/L	99
3) Chloromethane	3.63	50	141712	18.2975 ug/L	93
4) Vinyl Chloride	3.84	62	111051	21.2338 ug/L	97
5) 1,3-Butadiene	3.89	54	1471844	288.0562 ug/L	94
6) Bromomethane	4.74	94	38507	10.9637 ug/L	100
7) Chloroethane	4.90	64	58876	17.2027 ug/L #	83
8) Trichlorofluoromethane	5.38	101	218745	21.0696 ug/L	99
9) Diethyl ether	5.91	59	321623	101.2522 ug/L	84
10) Isoprene	5.95	67	109174	20.5514 ug/L #	55
11) Acrolein	6.15	56	35915	127.3277 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	91724	19.2961 ug/L	96
13) Acetone	6.25	43	21311	22.1308 ug/L	97
14) 1,1-Dichloroethene	6.47	61	168042	18.2146 ug/L	83
15) Tert-Butyl Alcohol	6.59	59	42757	192.8689 ug/L	96
16) Dimethyl Sulfide	6.74	62	86790	25.4574 ug/L	60
17) Iodomethane	6.99	142	22043	10.6206 ug/L #	72
18) Methyl acetate	7.01	43	54313	18.8718 ug/L	90
19) Methylene Chloride	7.27	84	74143	16.9585 ug/L #	41
20) Carbon Disulfide	7.30	76	220522	16.5333 ug/L	98
21) Acrylonitrile	7.44	53	23706	19.1535 ug/L	94
22) Methyl Tert Butyl Ether	7.48	73	196566	20.3536 ug/L	96
23) trans-1,2-Dichloroethene	7.71	61	158031	18.9369 ug/L	85
24) n-Hexane	7.78	57	114841	15.1679 ug/L	87
25) Diisopropyl ether	8.13	45	2167135	101.0816 ug/L	97
26) Vinyl Acetate	8.31	43	91682	10.6524 ug/L	96
27) 1,1-Dichloroethane	8.33	63	177780	17.8102 ug/L	97
28) Ethyl-Tert-Butyl ether	8.71	59	1476802	98.1480 ug/L	98
29) 2-Butanone	8.89	43	30769	19.9507 ug/L #	81
30) Propionitrile	8.99	54	37718	96.7127 ug/L	95
31) 2,2-Dichloropropane	9.11	77	154215	17.5363 ug/L	100
32) cis-1,2-Dichloroethene	9.18	96	89647	17.9528 ug/L	66
33) Chloroform	9.38	83	186056	20.0890 ug/L	96
34) 1-Bromopropane	9.52	122	20765	26.3962 ug/L	95
35) Bromochloromethane	9.61	130	49257	18.8538 ug/L	77
36) Tetrahydrofuran	9.63	42	89040	87.3284 ug/L	79
38) 1,1,1-Trichloroethane	9.91	97	201224	21.5509 ug/L	99
39) Cyclohexane	9.94	56	189164	18.5626 ug/L	85
40) 1,1-Dichloropropene	10.11	75	121735	18.1142 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	968633	100.5069 ug/L #	86
42) Carbon Tetrachloride	10.25	117	196856	22.4091 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M412068.D 8260WTR.M Sat May 07 22:37:27 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\050716\8M412068.D Vial: 23
Acq On : 7 May 2016 22:15 Operator: TMB
Sample : WG567935-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD75977 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 07 22:37:24 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	178499	22.9478 ug/L		92
46)	Benzene	10.47	78	306411	17.8997 ug/L	#	75
47)	Trichloroethene	11.21	130	103041	20.8588 ug/L		98
48)	Methylcyclohexane	11.30	83	120789	17.4882 ug/L	#	71
49)	1,2-Dichloropropane	11.43	63	92066	18.4762 ug/L		74
50)	Bromodichloromethane	11.73	83	144941	20.9061 ug/L		97
51)	1,4-Dioxane	11.73	88	2817	141.8067 ug/L		79
52)	Dibromomethane	11.81	93	45407	19.3571 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.03	63	39827	19.0899 ug/L		99
54)	4-Methyl-2-Pentanone	12.05	58	20857	18.3152 ug/L		95
55)	cis-1,3-Dichloropropene	12.36	75	138521	19.8527 ug/L		98
56)	Dimethyl Disulfide	12.63	79	76201	20.8456 ug/L		96
59)	Toluene	12.78	91	346158	18.4125 ug/L		99
60)	Ethyl Methacrylate	12.88	69	67713	19.1949 ug/L	#	58
62)	trans-1,3-Dichloropropene	12.96	75	126402	19.2708 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	55498	18.6030 ug/L		95
64)	2-Hexanone	13.12	58	17288	16.1448 ug/L	#	70
65)	1,3-Dichloropropane	13.48	76	101878	18.4138 ug/L	#	55
66)	Tetrachloroethene	13.60	164	81404	19.1195 ug/L		90
67)	Dibromochloromethane	13.87	129	97863	20.8080 ug/L		98
68)	1,2-Dibromoethane	14.12	107	58659	18.8652 ug/L		98
69)	1-Chlorohexane	14.21	91	123143	19.2301 ug/L	#	62
70)	Chlorobenzene	14.62	112	250183	19.1656 ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.66	131	109343	21.4938 ug/L		96
72)	Ethylbenzene	14.64	106	137101	18.5100 ug/L		100
73)	m-,p-Xylene	14.74	106	344282	40.3449 ug/L		94
74)	o-Xylene	15.31	106	168939	19.6513 ug/L		91
75)	Styrene	15.34	104	271683	19.8185 ug/L		89
76)	Bromoform	15.83	173	51619	19.1289 ug/L		99
77)	Isopropylbenzene	15.73	105	453969	20.8283 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.94	83	51304	14.3433 ug/L		99
81)	1,2,3-Trichloropropane	16.13	110	21555	18.7524 ug/L		84
82)	trans-1,4-Dichloro-2-Buten	16.18	53	24745	14.2034 ug/L		90
83)	n-Propylbenzene	16.24	91	532908	19.2836 ug/L		97
84)	Bromobenzene	16.36	156	107445	18.6488 ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	397809	19.4526 ug/L		99
86)	2-Chlorotoluene	16.51	91	348924	19.7164 ug/L		99
87)	4-Chlorotoluene	16.56	91	350625	19.2328 ug/L		100
88)	a-Methylstyrene	16.83	118	218820	21.7166 ug/L		92
89)	tert-Butylbenzene	16.89	134	81328	20.0725 ug/L		80
90)	1,2,4-Trimethylbenzene	16.94	105	418024	19.9709 ug/L		98
91)	sec-Butylbenzene	17.16	105	481109	19.5659 ug/L		98
92)	p-Isopropyltoluene	17.31	119	413403	19.6917 ug/L		94
93)	1,3-Dichlorobenzene	17.51	146	220577	19.2881 ug/L		93
94)	1,4-Dichlorobenzene	17.63	146	226180	19.8161 ug/L		92
95)	n-Butylbenzene	17.84	91	367616	18.4092 ug/L		99
96)	1,2-Dichlorobenzene	18.13	146	196065	19.5639 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.12	75	15567	19.8729 ug/L		74
98)	1,2,4-Trichlorobenzene	20.27	180	143300	18.4615 ug/L		98
99)	Hexachlorobutadiene	20.42	225	71360	19.8661 ug/L		98
100)	Naphthalene	20.64	128	198876	16.8509 ug/L		99
101)	1,2,3-Trichlorobenzene	20.94	180	120567	18.2583 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M412068.D 8260WTR.M Sat May 07 22:37:27 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\050716\8M412068.D Vial: 23
Acq On : 7 May 2016 22:15 Operator: TMB
Sample : WG567935-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD75977 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 7 22:37 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

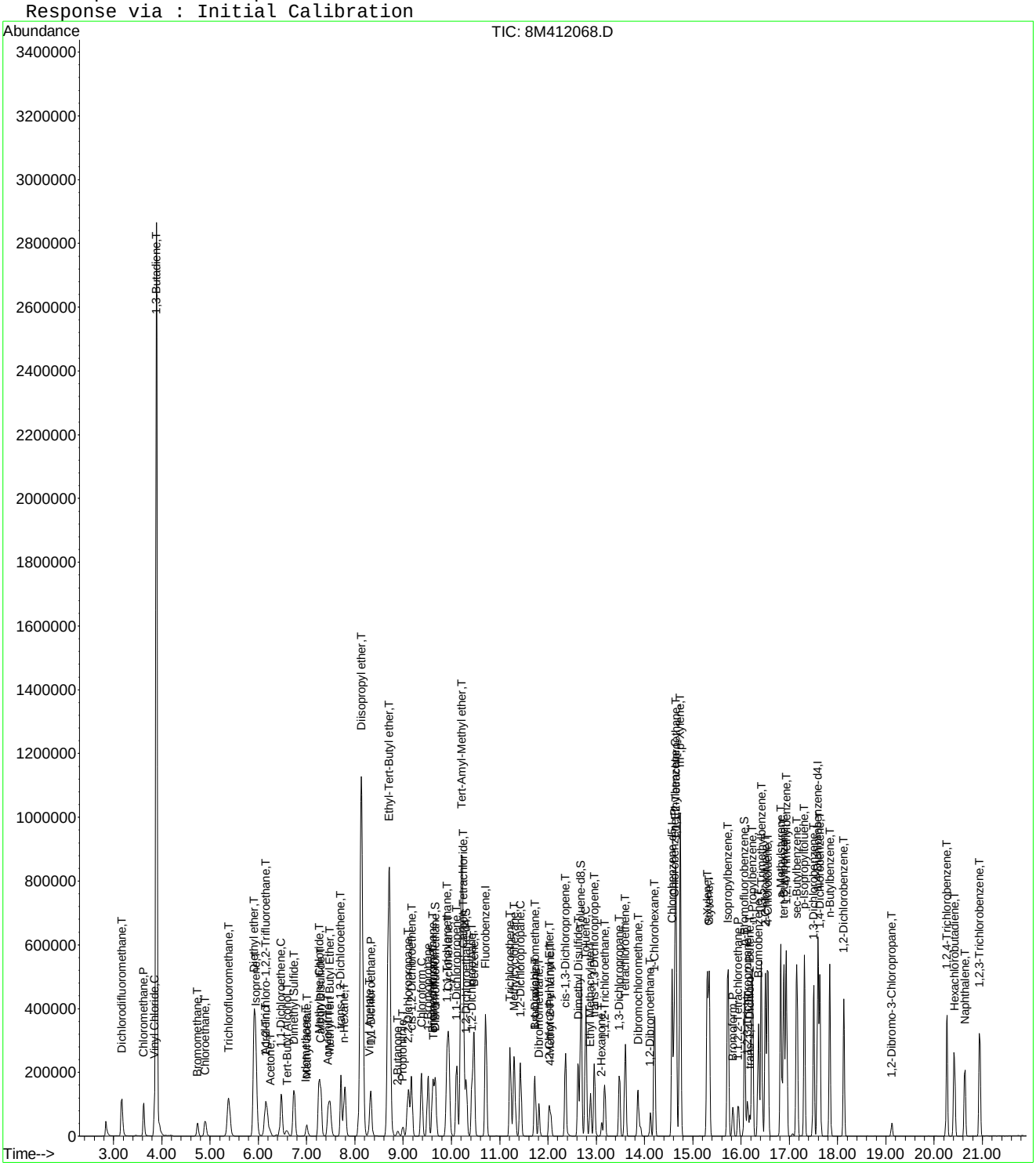

8M412068.D 8260WTR.M Sat May 07 22:37:27 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\050516\9M974166.D Vial: 4
Acq On : 5 May 2016 13:02 Operator: ADC
Sample : WG567680-02 LCS 20ug/kg 8260 Inst : hpms9
Misc : 7,1 STD75739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 13:25:34 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	634794	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	476283	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	249978	50.00 ug/kg	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.80	111	167891	51.7521 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 103.50%		
43) 1,2-Dichloroethane-d4	10.43	65	184469	52.5177 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.04%		
58) Toluene-d8	12.82	98	601121	52.8299 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 105.66%		
79) p-Bromofluorobenzene	16.22	95	233423	53.8621 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 107.72%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	94138	21.7342 ug/kg	100
3) Chloromethane	3.75	50	107243	20.0876 ug/kg	100
4) Vinyl Chloride	3.98	62	63954	15.9688 ug/kg	98
5) 1,3-Butadiene	4.02	54	345422	162.8910 ug/kg	99
6) Bromomethane	4.87	94	50519	18.8945 ug/kg	99
7) Chloroethane	5.03	64	52752	20.7047 ug/kg	98
8) Trichlorofluoromethane	5.52	101	111556	20.5120 ug/kg	100
9) Diethyl ether	6.04	59	349647	114.3654 ug/kg	100
10) Isoprene	6.09	67	100844	23.3371 ug/kg	99
11) Acrolein	6.29	56	69679	136.7637 ug/kg	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	68961	21.6663 ug/kg	99
13) Acetone	6.39	43	28011	21.7395 ug/kg	98
14) 1,1-Dichloroethene	6.60	61	107351	20.2258 ug/kg	98
15) Tert-Butyl Alcohol	6.73	59	130254	237.5217 ug/kg	99
16) Dimethyl Sulfide	6.87	62	75075	29.3155 ug/kg	99
17) Iodomethane	7.13	142	35004	22.1739 ug/kg	99
18) Methyl acetate	7.14	43	60261	17.5974 ug/kg	99
19) Methylene Chloride	7.39	84	63609	18.9133 ug/kg	97
20) Carbon Disulfide	7.44	76	194918	18.7508 ug/kg	99
21) Acrylonitrile	7.57	53	32561	22.2551 ug/kg	100
22) Methyl Tert Butyl Ether	7.60	73	192214	20.4546 ug/kg	98
23) trans-1,2-Dichloroethene	7.84	61	108782	21.1141 ug/kg	98
24) n-Hexane	7.91	57	120273	19.7444 ug/kg	99
25) Diisopropyl ether	8.25	45	1421301	117.9973 ug/kg	99
26) Vinyl Acetate	8.43	43	162194	24.8053 ug/kg	99
27) 1,1-Dichloroethane	8.46	63	121334	19.0593 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	1254977	109.4942 ug/kg	100
29) 2-Butanone	9.02	43	39075	21.7629 ug/kg	98
30) Propionitrile	9.13	54	62175	103.2068 ug/kg	98
31) 2,2-Dichloropropane	9.23	77	98499	20.6146 ug/kg	100
32) cis-1,2-Dichloroethene	9.30	96	69298	20.2622 ug/kg	90
33) Chloroform	9.51	83	107091	19.8926 ug/kg	97
34) 1-Bromopropane	9.64	122	16632	28.6479 ug/kg	97
35) Bromochloromethane	9.75	130	41994	19.2127 ug/kg	98
36) Tetrahydrofuran	9.77	42	135784	107.2628 ug/kg	100
38) 1,1,1-Trichloroethane	10.04	97	101004	21.1208 ug/kg	99
39) Cyclohexane	10.08	56	148826	21.0027 ug/kg	100
40) 1,1-Dichloropropene	10.23	75	85261	20.5627 ug/kg	100
41) Tert-Amyl-Methyl ether	10.34	73	1012934	116.0011 ug/kg	100
42) Carbon Tetrachloride	10.38	117	91475	19.5504 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\050516\9M974166.D Vial: 4
Acq On : 5 May 2016 13:02 Operator: ADC
Sample : WG567680-02 LCS 20ug/kg 8260 Inst : hpms9
Misc : 7,1 STD75739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 13:25:34 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	96070	20.0337 ug/kg	100
46)	Benzene	10.59	78	254254	19.8189 ug/kg	100
47)	Trichloroethene	11.34	130	73389	20.9287 ug/kg	98
48)	Methylcyclohexane	11.43	83	120860	21.7505 ug/kg	100
49)	1,2-Dichloropropane	11.56	63	72057	20.4235 ug/kg	100
50)	1,4-Dioxane	11.86	88	10943	218.7645 ug/kg	94
51)	Bromodichloromethane	11.86	83	80540	19.1098 ug/kg	99
52)	Dibromomethane	11.95	174	38809	17.8469 ug/kg	98
53)	2-Chloroethyl Vinyl Ether	12.15	63	42672	20.2786 ug/kg	100
54)	4-Methyl-2-Pentanone	12.19	58	32408	20.2176 ug/kg	97
55)	cis-1,3-Dichloropropene	12.49	75	106531	20.9882 ug/kg	100
56)	Dimethyl Disulfide	12.77	94	123894	21.4895 ug/kg	95
59)	Toluene	12.91	91	268397	20.0703 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	81946	20.4071 ug/kg	99
61)	trans-1,3-Dichloropropene	13.09	75	91567	19.8742 ug/kg	97
62)	1,1,2-Trichloroethane	13.32	97	53825	19.8767 ug/kg	99
63)	2-Hexanone	13.24	43	55166	20.1095 ug/kg	98
64)	1,3-Dichloropropane	13.62	76	96849	20.6811 ug/kg	98
65)	Tetrachloroethene	13.74	164	56430	20.5196 ug/kg	99
66)	Dibromochloromethane	14.00	129	64138	18.7015 ug/kg	99
67)	1,2-Dibromoethane	14.26	107	57230	19.8545 ug/kg	99
68)	1-Chlorohexane	14.34	91	94117	21.4890 ug/kg	98
69)	Chlorobenzene	14.76	112	191342	20.7634 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.79	131	65597	19.3585 ug/kg	100
71)	Ethylbenzene	14.79	106	103935	20.9429 ug/kg	97
72)	m-,p-Xylene	14.88	106	253800	41.4393 ug/kg	99
73)	o-Xylene	15.45	106	120490	20.2367 ug/kg	97
74)	Styrene	15.48	104	194740	20.1550 ug/kg	99
75)	Bromoform	15.98	173	40249	16.6773 ug/kg	97
76)	Isopropylbenzene	15.87	105	321808	21.5160 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	69881	19.1287 ug/kg	97
80)	1,2,3-Trichloropropane	16.28	110	24084	21.1917 ug/kg#	13
81)	trans-1,4-Dichloro-2-Buten	16.32	53	22115	16.2362 ug/kg#	1
82)	n-Propylbenzene	16.38	91	364446	24.4513 ug/kg	99
83)	Bromobenzene	16.51	156	78409	20.2729 ug/kg	98
84)	1,3,5-Trimethylbenzene	16.55	105	272954	22.8424 ug/kg	99
85)	2-Chlorotoluene	16.65	91	220539	21.2544 ug/kg	100
86)	4-Chlorotoluene	16.69	91	219272	22.3375 ug/kg	100
87)	a-Methylstyrene	16.97	118	138800	22.4011 ug/kg	99
88)	tert-Butylbenzene	17.03	134	61508	23.0073 ug/kg	98
89)	1,2,4-Trimethylbenzene	17.08	105	270138	22.2426 ug/kg	100
90)	sec-Butylbenzene	17.29	105	355607	22.1714 ug/kg	100
91)	p-Isopropyltoluene	17.45	119	284835	22.3253 ug/kg	100
92)	1,3-Dichlorobenzene	17.65	146	156155	20.5153 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	160277	20.5194 ug/kg	97
94)	n-Butylbenzene	17.98	91	253803	20.9115 ug/kg	100
95)	1,2-Dichlorobenzene	18.29	146	146881	20.0653 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.28	157	17763	19.7205 ug/kg	98
97)	1,2,4-Trichlorobenzene	20.43	180	101080	19.3482 ug/kg	100
98)	Hexachlorobutadiene	20.58	225	53002	21.2419 ug/kg	99
99)	Naphthalene	20.80	128	241000	18.2042 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.10	180	96478	19.0556 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\050516\9M974166.D Vial: 4
Acq On : 5 May 2016 13:02 Operator: ADC
Sample : WG567680-02 LCS 20ug/kg 8260 Inst : hpms9
Misc : 7,1 STD75739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 5 13:25 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

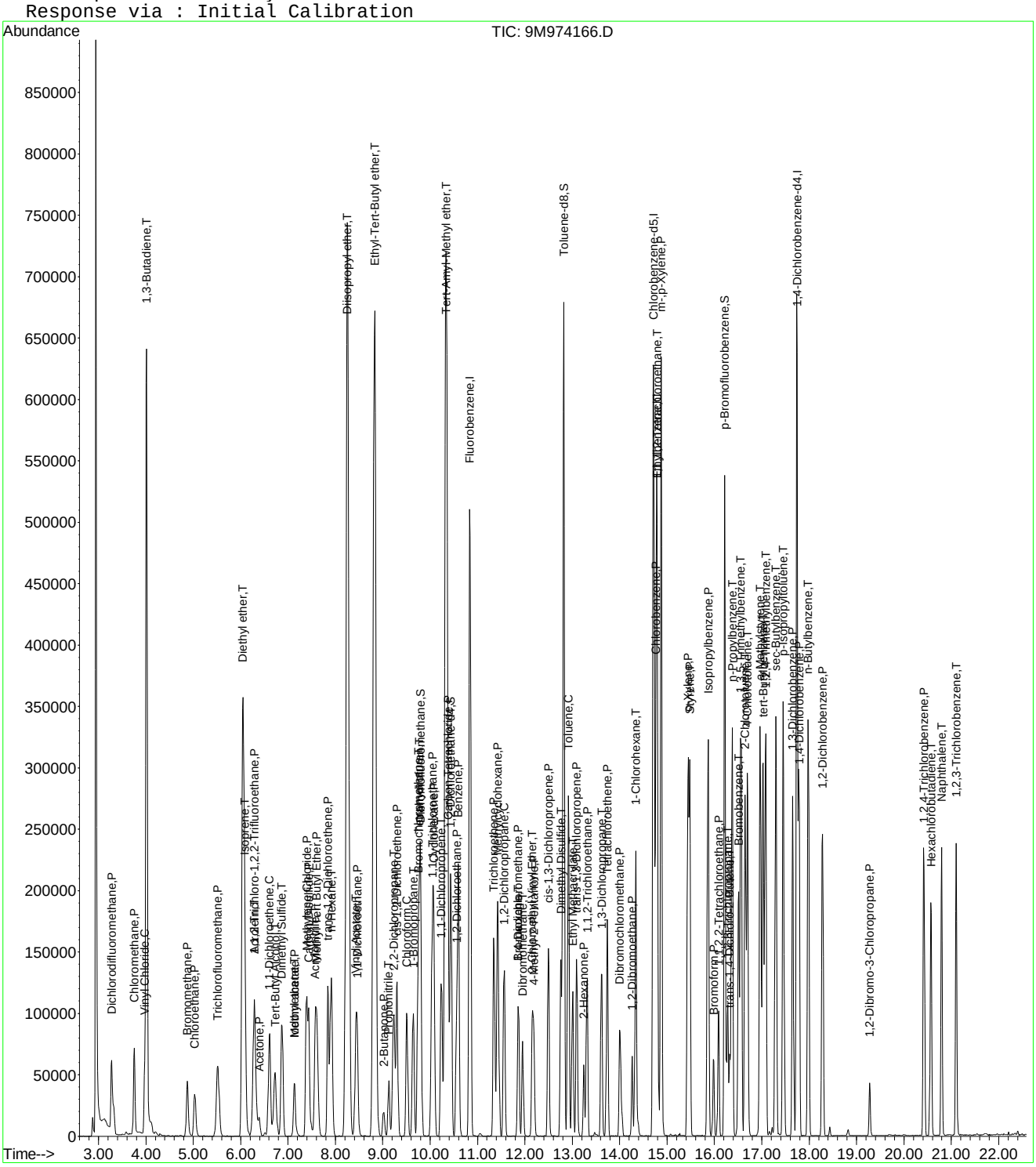

9M974166.D 8260SL.M Thu May 05 13:25:34 2016 Page 3

2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(5-5.5)260416	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 17:53
Collect Date:	04/26/2016 09:05	**Dilution:**	1	**File ID:**	1LM.LM34726
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.34	U	4.69	2.34	1.17

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(10-10.5)260416	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 18:12
Collect Date:	04/26/2016 10:00	**Dilution:**	1	**File ID:**	1LM.LM34727
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.38	U	4.78	2.38	1.19

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(20-20.5)260416	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/05/2016 13:50
Collect Date:	04/26/2016 10:35	**Dilution:**	200	**File ID:**	1LM.LM34755
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	79.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	5400		982	492	246

Certificate of Analysis

Sample #:	L16041580-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(29.5-30)260416	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/05/2016 14:09
Collect Date:	04/26/2016 11:15	**Dilution:**	400	**File ID:**	1LM.LM34756
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	78.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	9440		2010	1000	502

Certificate of Analysis

Sample #:	L16041580-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(40-40.5)260416	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/05/2016 14:28
Collect Date:	04/26/2016 11:55	**Dilution:**	200	**File ID:**	1LM.LM34757
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	79.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	4040		1010	504	252

Certificate of Analysis

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L16041580-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(50-51)260416	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 16:56
Collect Date:	04/26/2016 14:15	**Dilution:**	1	**File ID:**	1LM.LM34723
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3.36	J	4.70	2.34	1.17

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(50-51)260416MS	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 17:15
Collect Date:	04/26/2016 14:15	**Dilution:**	1	**File ID:**	1LM.LM34724
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	4.38	J	4.69	2.34	1.17

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(50-51)260416MSD	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 17:34
Collect Date:	04/26/2016 14:15	**Dilution:**	1	**File ID:**	1LM.LM34725
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3.81	J	4.69	2.34	1.17

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-09	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(60-60.5)260416	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 20:24
Collect Date:	04/26/2016 15:00	**Dilution:**	1	**File ID:**	1LM.LM34734
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	86.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.26	U	4.52	2.26	1.13

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-10	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(60-60.5)260416DUP	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 20:43
Collect Date:	04/26/2016 15:00	**Dilution:**	1	**File ID:**	1LM.LM34735
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	87.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.24	U	4.47	2.24	1.12

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-11	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(70-70.5)260416	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 21:02
Collect Date:	04/26/2016 15:45	**Dilution:**	1	**File ID:**	1LM.LM34736
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.36	U	4.73	2.36	1.18

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-12	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(80-80.5)260416	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 21:21
Collect Date:	04/26/2016 16:45	**Dilution:**	1	**File ID:**	1LM.LM34737
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.38	U	4.76	2.38	1.19

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-13	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(89.5-90)260416	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 21:40
Collect Date:	04/26/2016 17:00	**Dilution:**	1	**File ID:**	1LM.LM34738
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.44	U	4.86	2.44	1.22

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-14	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	EQUIPMENT BLANK	**Prep Method:**	6850	**Prep Date:**	05/05/2016 17:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567744	**Analyst:**	JWR	**Run Date:**	05/05/2016 20:55
Collect Date:	04/25/2016 17:00	**Dilution:**	1	**File ID:**	1LM.LM34776
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

MICROBAC

Semivolatile Sample Extract Log

Document Control No. 1753 Page: 13 of 100

Parameter: Perchlorate
SOP #: HPLC 06
Analyst: JWR
Spike/Surrogate analyst: JWR
Surrogate #: NA
Spike # A: STD75513
Ext Solvent: DI-H2O
Ext Solvent: NA
Ext Disk: NA

Matrix: Soils
Rev #: 08
Date/Time Extracted: 05/04/16/1200
Witness: EC 5-4-16

Spike # B: NA
Lot #: NA
Lot #: NA
Lot #: NA

Extraction Work Group: WG567220
Analytical Work Group: WG567224
Run ID: R4569641

Pipetter(s): Eppendorf #403
Analytical Balance ID: BAL017
Reagent: Tubes Lot #: RGT34011
Reagent: Sand Lot #: COA18813
Other: IS Lot #: COA18071

Color Code
T = Transparent
C = Colored
O = Opaque

	Sample ID	Test Code	pH	Initial Wt / Vol	JWR ~~Surrogate~~ Amount IS	Amount Spike	Final Volume	Extract Color	Comments
1	WG567220-01	6850		5.009g	0.250ml	1.0ml	50ml		MCT (10,000 us)(2ug/kg)
2	WG567220-02			5.014g		NA			Blank
3	WG567220-03			5.009g		1.0ml			LCS (2ug/kg)
4	L16041580-01			5.031g		NA			
5	-02			5.110g		NA			
6	-03			5.138g		NA			
7	-04			5.094g		NA			
8	-05			5.017g		NA			
9	-06 RS			5.100g		NA			WG567220-04 Ref
10	-07 MS			5.109g		1.0ml			WG567220-05 MS (@2ug/kg)
11	-08 MSD			5.104g		1.0ml			WG567220-06 MSD (@2ug/kg)
12	-09			5.114g		NA			
13	-10			5.131g		NA			
14	-11			5.050g		NA			
15	-12			5.111g		NA			
16	-13			5.137g		NA			
17	L16041582-01			5.191g		NA			
18	-02			5.113g		NA			
19	-03			5.095g		NA			
20	-04			5.097g		NA			
21	-05			5.170g		NA			
22	-06			5.194g		NA			
23	-07			5.102g		NA			
24									

Reviewed by: EC 5-4-16

Analytical WG567224 (soils)

Perchlorate Conductivity Check

(perchlorate1)

Conductivity Probe Calibration Check: 1404 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG567220-01 MCT	9,960.	
WG567220-02 Blank	2.14	
WG567220-03 LCS	3.60	
L16041580-01	4.31	
-02	3.67	
-03	30.4	
-04	25.2	
-05	45.5	
-06 RS	53.4	
-07 MS	56.3	
-08 MSD	56.0	
-09	42.4	
-10	34.4	
-11	32.0	
-12	69.5	
-13	168.7	
L16041582-01	15.72	
-02	14.75	
-03	7.79	
-04	15.01	
-05	11.87	
-06	16.03	
-07	17.28	

Analyst: John Richards

Date/Time: 05/05/16 17:00

DCN#118217

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1408 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG567744-01 MCT	9,990.	
-02 Blank	0.33	
-03 LCS	0.51	
-04 LCS2	0.50	
L16041580-14	5.34	
L16050151-01	2,510.	
-03	2,490.	
-05	2,640.	
-07	3,390.	
-09	944.	
L16050221-01	1,933.	
L16050223-01	1,917.	
-02	2,370.	

Analyst: John Richards

Date/Time: 05/06/16 11:30

DCN#118316

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050416_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567224 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: Samples tagged with (NR) had "On Column" results over the calibration range. These samples were reanalyzed on the end of this run at dilutions based on their initial "over-range" results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34717	WG567549-01 CCB	1	1		05/04/16 15:02
2	1LM.LM34718	WG567549-02 CCV (1.0ug/L)	1	1	STD75510	05/04/16 15:21
3	1LM.LM34719	WG567224-07 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 15:40
4	1LM.LM34720	WG567224-01 MCT (2.0ug/kg)	7	1	STD75512	05/04/16 15:59
5	1LM.LM34721	WG567224-02 BLANK	7	1		05/04/16 16:18
6	1LM.LM34722	WG567224-03 LCS (2.0ug/kg)	7	1	STD75512	05/04/16 16:37
7	1LM.LM34723	L16041580-06 RS	7	1		05/04/16 16:56
8	1LM.LM34724	L16041580-07 MS	7	1	STD75512	05/04/16 17:15
9	1LM.LM34725	L16041580-08 MSD	7	1	STD75512	05/04/16 17:34
10	1LM.LM34726	L16041580-01	7	1		05/04/16 17:53
11	1LM.LM34727	L16041580-02	7	1		05/04/16 18:12
12	1LM.LM34728	L16041580-03 (NR)	7	1		05/04/16 18:31
13	1LM.LM34729	L16041580-04 (NR)	7	1		05/04/16 18:50
14	1LM.LM34730	WG567549-03 CCV (1.0ug/L)	1	1	STD75510	05/04/16 19:08
15	1LM.LM34731	WG567224-08 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 19:27
16	1LM.LM34732	WG567549-04 CCB	1	1		05/04/16 19:46
17	1LM.LM34733	L16041580-05 (NR)	7	1		05/04/16 20:05
18	1LM.LM34734	L16041580-09	7	1		05/04/16 20:24
19	1LM.LM34735	L16041580-10	7	1		05/04/16 20:43
20	1LM.LM34736	L16041580-11	7	1		05/04/16 21:02
21	1LM.LM34737	L16041580-12	7	1		05/04/16 21:21
22	1LM.LM34738	L16041580-13	7	1		05/04/16 21:40
23	1LM.LM34739	L16041582-01	7	1		05/04/16 21:59
24	1LM.LM34740	L16041582-02 (NR)	7	1		05/04/16 22:18
25	1LM.LM34741	L16041582-03	7	1		05/04/16 22:37
26	1LM.LM34742	L16041582-04	7	1		05/04/16 22:56
27	1LM.LM34743	WG567549-05 CCV (1.0ug/L)	1	1	STD75510	05/04/16 23:14
28	1LM.LM34744	WG567224-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 23:33
29	1LM.LM34745	WG567549-06 CCB	1	1		05/04/16 23:52
30	1LM.LM34746	L16041582-05	7	1		05/05/16 00:11
31	1LM.LM34747	L16041582-06	7	1		05/05/16 00:30
32	1LM.LM34748	L16041582-07	7	1		05/05/16 00:49
33	1LM.LM34749	WG567549-07 CCV (1.0ug/L)	1	1	STD75510	05/05/16 01:08

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050416_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567224 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM34750	WG567224-10 MRL (2.0ug/kg)	7	1	STD75510	05/05/16 01:27
35	1LM.LM34751	WG567549-08 CCB	1	1		05/05/16 01:46
36	1LM.LM34752	WG567549-09 CCV (1.0ug/L)	1	1	STD75510	05/05/16 12:54
37	1LM.LM34753	WG567224-11 MRL (2.0ug/kg)	7	1	STD75510	05/05/16 13:13
38	1LM.LM34754	WG567549-10 CCB	1	1		05/05/16 13:32
39	1LM.LM34755	L16041580-03 (RR 200x)	7	200		05/05/16 13:50
40	1LM.LM34756	L16041580-04 (RR 400x)	7	400		05/05/16 14:09
41	1LM.LM34757	L16041580-05 (RR 200x)	7	200		05/05/16 14:28
42	1LM.LM34758	L16041582-02 (RR 100x)	7	100		05/05/16 14:47
43	1LM.LM34759	WG567549-11 CCV (1.0ug/L)	1	1	STD75510	05/05/16 15:06
44	1LM.LM34760	WG567224-12 MRL (2.0ug/kg)	7	1	STD75510	05/05/16 15:25
45	1LM.LM34761	WG567549-12 CCB	1	1		05/05/16 15:44

Comments

Seq.	Rerun	Dil.	Reason	Analytes
8				
	L16041580-07 MS : The MS %Rec is below the advisory limit. This sample's matrix is composed of a very wet, non-homogeneous mixture of grey, brown, and orange colored sand.			
9				
	L16041580-08 MSD : The MSD %Rec is below the advisory limit. This sample's matrix is composed of a very wet, non-homogeneous mixture of grey, brown, and orange colored sand.			

Page: 2 Approved: 09-MAY-16

Wadei D

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050516_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567744 (waters)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments: Samples L16050151(-05,-09) were analyzed at dilutions based on their historical results.
Samples L16050151-01, L16050221-01, and L16050223(-01,-02) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34766	WG567745-01 CCB	1	1		05/05/16 17:45
2	1LM.LM34767	WG567745-02 CCV (1.0ug/L)	1	1	STD75510	05/05/16 18:04
3	1LM.LM34768	WG567744-05 MRL (0.2ug/L)	1	1	STD75510	05/05/16 18:23
4	1LM.LM34769	WG567744-01 MCT (0.2ug/L)	1	1	STD75512	05/05/16 18:42
5	1LM.LM34770	WG567744-02 BLANK	1	1		05/05/16 19:01
6	1LM.LM34771	WG567744-03 LCS (0.2ug/L)	1	1	STD75512	05/05/16 19:20
7	1LM.LM34772	WG567744-04 LCS2 (0.2ug/L)	1	1	STD75512	05/05/16 19:39
8	1LM.LM34773	L16050221-01 (100x)	1	100		05/05/16 19:58
9	1LM.LM34774	L16050223-01 (100x)	1	100		05/05/16 20:17
10	1LM.LM34775	L16050223-02 (100x)	1	100		05/05/16 20:36
11	1LM.LM34776	L16041580-14 EB	1	1		05/05/16 20:55
12	1LM.LM34777	L16050151-01 (100x)	1	100		05/05/16 21:14
13	1LM.LM34778	L16050151-03	1	1		05/05/16 21:33
14	1LM.LM34779	WG567745-03 CCV (1.0ug/L)	1	1	STD75510	05/05/16 21:52
15	1LM.LM34780	WG567744-06 MRL (0.2ug/L)	1	1	STD75510	05/05/16 22:10
16	1LM.LM34781	WG567745-04 CCB	1	1		05/05/16 22:29
17	1LM.LM34782	L16050151-05 (50x)	1	50		05/05/16 22:48
18	1LM.LM34783	L16050151-07	1	1		05/05/16 23:07
19	1LM.LM34784	L16050151-09 (10x)	1	10		05/05/16 23:26
20	1LM.LM34785	WG567745-05 CCV (1.0ug/L)	1	1	STD75510	05/05/16 23:45
21	1LM.LM34786	WG567744-07 MRL (0.2ug/L)	1	1	STD75510	05/06/16 00:04
22	1LM.LM34787	WG567745-06 CCB	1	1		05/06/16 00:23

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 06-MAY-16

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 04-MAY-2016 John Richards

Secondary Reviewer: 05-MAY-2016 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 04-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 74947
Analytical Workgroups: L16041580, 1582 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	LOW
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
06-MAY-2016
John Richards

Secondary Reviewer:
09-MAY-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-09-2016 09:51:39

Microbac Laboratories Inc.

Data Checklist

Date: 05-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 74938
Analytical Workgroups: L16041580-14 L16050151, 0221, 0223 (WATERS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
06-MAY-2016
John Richards

Secondary Reviewer:
06-MAY-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-06-2016 14:31:42

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG567224

Login Number: L16041580

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW22DW(5-5.5)260416	01	04/26/16					05/04/2016	8.1	28		05/04/16	.2	28	
18CPTMW22DW(10-10.5)2604	02	04/26/16					05/04/2016	8.1	28		05/04/16	.3	28	
18CPTMW22DW(20-20.5)2604	03	04/26/16					05/04/2016	8.1	28		05/05/16	1.1	28	
18CPTMW22DW(29.5-30)2604	04	04/26/16					05/04/2016	8	28		05/05/16	1.1	28	
18CPTMW22DW(40-40.5)2604	05	04/26/16					05/04/2016	8	28		05/05/16	1.1	28	
18CPTMW22DW(50-51)260416	06	04/26/16					05/04/2016	7.9	28		05/04/16	.2	28	
18CPTMW22DW(50-51)260416	07	04/26/16					05/04/2016	7.9	28		05/04/16	.2	28	
18CPTMW22DW(50-51)260416	08	04/26/16					05/04/2016	7.9	28		05/04/16	.2	28	
18CPTMW22DW(60-60.5)2604	09	04/26/16					05/04/2016	7.9	28		05/04/16	.4	28	
18CPTMW22DW(60-60.5)2604	10	04/26/16					05/04/2016	7.9	28		05/04/16	.4	28	
18CPTMW22DW(70-70.5)2604	11	04/26/16					05/04/2016	7.8	28		05/04/16	.4	28	
18CPTMW22DW(80-80.5)2604	12	04/26/16					05/04/2016	7.8	28		05/04/16	.4	28	
18CPTMW22DW(89.5-90)2604	13	04/26/16					05/04/2016	7.8	28		05/04/16	.4	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4750548
Report generated 05/10/2016 11:20

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG567744

Login Number: L16041580

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
EQUIPMENT BLANK	14	04/25/16					05/05/2016	10	28		05/05/16	.2	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4750548
Report generated 05/10/2016 11:20

METHOD BLANK SUMMARY

Login Number: L16041580
Blank File ID: 1LM.LM34721
Prep Date: 05/04/16 12:00
Analyzed Date: 05/04/16 16:18
Analyst: JWR

Work Group: WG567224
Blank Sample ID: WG567224-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG567224-07	1LM.LM34719	05/04/16 15:40	01
MCT	WG567224-01	1LM.LM34720	05/04/16 15:59	01
LCS	WG567224-03	1LM.LM34722	05/04/16 16:37	01
18CPTMW22DW(50-51)260416	L16041580-06	1LM.LM34723	05/04/16 16:56	01
18CPTMW22DW(50-51)260416MS	L16041580-07	1LM.LM34724	05/04/16 17:15	01
18CPTMW22DW(50-51)260416MSD	L16041580-08	1LM.LM34725	05/04/16 17:34	01
18CPTMW22DW(5-5.5)260416	L16041580-01	1LM.LM34726	05/04/16 17:53	01
18CPTMW22DW(10-10.5)260416	L16041580-02	1LM.LM34727	05/04/16 18:12	01
QCMRL	WG567224-08	1LM.LM34731	05/04/16 19:27	01
18CPTMW22DW(60-60.5)260416	L16041580-09	1LM.LM34734	05/04/16 20:24	01
18CPTMW22DW(60-60.5)260416DUP	L16041580-10	1LM.LM34735	05/04/16 20:43	01
18CPTMW22DW(70-70.5)260416	L16041580-11	1LM.LM34736	05/04/16 21:02	01
18CPTMW22DW(80-80.5)260416	L16041580-12	1LM.LM34737	05/04/16 21:21	01
18CPTMW22DW(89.5-90)260416	L16041580-13	1LM.LM34738	05/04/16 21:40	01
QCMRL	WG567224-09	1LM.LM34744	05/04/16 23:33	01
QCMRL	WG567224-10	1LM.LM34750	05/05/16 01:27	01
QCMRL	WG567224-11	1LM.LM34753	05/05/16 13:13	01
18CPTMW22DW(20-20.5)260416	L16041580-03	1LM.LM34755	05/05/16 13:50	DL01
18CPTMW22DW(29.5-30)260416	L16041580-04	1LM.LM34756	05/05/16 14:09	DL01
18CPTMW22DW(40-40.5)260416	L16041580-05	1LM.LM34757	05/05/16 14:28	DL01
QCMRL	WG567224-12	1LM.LM34760	05/05/16 15:25	01

Report Name: BLANK_SUMMARY
PDF File ID: 4750549
Report generated 05/10/2016 11:20

METHOD BLANK SUMMARY

Login Number: L16041580
Blank File ID: 1LM.LM34770
Prep Date: 05/05/16 17:00
Analyzed Date: 05/05/16 19:01
Analyst: JWR

Work Group: WG567744
Blank Sample ID: WG567744-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG567744-05	1LM.LM34768	05/05/16 18:23	01
MCT	WG567744-01	1LM.LM34769	05/05/16 18:42	01
LCS	WG567744-03	1LM.LM34771	05/05/16 19:20	01
LCS2	WG567744-04	1LM.LM34772	05/05/16 19:39	01
EQUIPMENT BLANK	L16041580-14	1LM.LM34776	05/05/16 20:55	01
QCMRL	WG567744-06	1LM.LM34780	05/05/16 22:10	01
QCMRL	WG567744-07	1LM.LM34786	05/06/16 00:04	01

Report Name: BLANK_SUMMARY
PDF File ID: 4750549
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16041580 Prep Date: 05/04/16 12:00 Sample ID: WG567224-02
Instrument ID: LCMS1 Run Date: 05/04/16 16:18 Prep Method: 6850
File ID: 1LM.LM34721 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567224 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.997	3.99	0.997	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4750550
10-MAY-2016 11:20

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16041580 Prep Date: 05/05/16 17:00 Sample ID: WG567744-02
Instrument ID: LCMS1 Run Date: 05/05/16 19:01 Prep Method: 6850
File ID: 1LM.LM34770 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567744 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4750550
10-MAY-2016 11:20

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16041580 Run Date: 05/04/2016 Sample ID: WG567224-03
Instrument ID: LCMS1 Run Time: 16:37 Prep Method: 6850
File ID: 1LM.LM34722 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567224 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD75512 Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	2.00	1.91	95.5	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4751003
Report generated: 05/10/2016 11:20

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16041580 Analyst: JWR Prep Method: 6850
Instrument ID: LCMS1 Matrix: Water Method: 6850
Workgroup (AAB#): WG567744 Units: ug/L
QC Key: DOD4 Lot #: STD75512

Sample ID: WG567744-03 LCS File ID: 1LM.LM34771 Run Date: 05/05/2016 19:20
Sample ID: WG567744-04 LCS2 File ID: 1LM.LM34772 Run Date: 05/05/2016 19:39

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Perchlorate	0.200	0.204	102	0.200	0.203	102	0.491	80 - 120	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4750552
Report generated: 05/10/2016 11:20

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16041580 Cal ID: LCMS1- 03-MAY-16 Worknum: WG567224
Instrument ID: LCMS1 Contract #: Prep Method: 6850
Parent ID: L16041580-06 File ID: 1LM.LM34723 Dil: 1 Method: 6850
Sample ID: L16041580-07 MS File ID: 1LM.LM34724 Dil: 1 Matrix: Soil
Sample ID: L16041580-08 MSD File ID: 1LM.LM34725 Dil: 1 Units: ug/kg
Percent Solid: 83.5

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Perchlorate	3.36	2.34	4.38	43.7	2.35	3.81	19.4	13.9	80 - 120	15	*

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4751004
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16041580
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4750905
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16041580

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4750905
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16041580

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4750905
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16041580

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008

PDF File ID: 4750905

Report generated 05/10/2016 11:20

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16041580 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4750906
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16041580
Run Date: 05/04/2016
Sample ID: WG567549-01
Instrument ID: LCMS1
Run Time: 15:02
Method: 6850
File ID: 1LM.LM34717
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG567224
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16041580
Run Date: 05/04/2016
Sample ID: WG567549-04
Instrument ID: LCMS1
Run Time: 19:46
Method: 6850
File ID: 1LM.LM34732
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG567224
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4750585
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16041580
Run Date: 05/04/2016
Sample ID: WG567549-06
Instrument ID: LCMS1
Run Time: 23:52
Method: 6850
File ID: 1LM.LM34745
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG567224
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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PDF File ID: 4750585
Report generated 05/10/2016 11:20

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16041580
Run Date: 05/05/2016
Sample ID: WG567549-08
Instrument ID: LCMS1
Run Time: 01:46
Method: 6850
File ID: 1LM.LM34751
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG567224
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4750585
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16041580
Run Date: 05/05/2016
Sample ID: WG567549-10
Instrument ID: LCMS1
Run Time: 13:32
Method: 6850
File ID: 1LM.LM34754
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG567224
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4750585
Report generated 05/10/2016 11:20

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16041580
Run Date: 05/05/2016
Sample ID: WG567549-12
Instrument ID: LCMS1
Run Time: 15:44
Method: 6850
File ID: 1LM.LM34761
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG567224
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4750585
Report generated 05/10/2016 11:20

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16041580
Run Date: 05/05/2016
Sample ID: WG567745-01
Instrument ID: LCMS1
Run Time: 17:45
Method: 6850
File ID: 1LM.LM34766
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG567744
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	1.00	4.00	1.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4750585
Report generated 05/10/2016 11:20

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16041580
Run Date: 05/05/2016
Sample ID: WG567745-04
Instrument ID: LCMS1
Run Time: 22:29
Method: 6850
File ID: 1LM.LM34781
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG567744
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	1.00	4.00	1.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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PDF File ID: 4750585
Report generated 05/10/2016 11:20

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16041580
Run Date: 05/06/2016
Sample ID: WG567745-06
Instrument ID: LCMS1
Run Time: 00:23
Method: 6850
File ID: 1LM.LM34787
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG567744
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	1.00	4.00	1.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4750585
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041580
Run Date: 05/04/2016
Sample ID: WG567549-02
Instrument ID: LCMS1
Run Time: 15:21
Method: 6850
File ID: 1LM.LM34718
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG567224
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.996	ug/kg	1.68	0.400	15	

* Exceeds %D Criteria

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PDF File ID: 4750568
Report generated 05/10/2016 11:20

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041580
Run Date: 05/04/2016
Sample ID: WG567549-03
Instrument ID: LCMS1
Run Time: 19:08
Method: 6850
File ID: 1LM.LM34730
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG567224
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/kg	1.72	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4750568
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041580
Run Date: 05/04/2016
Sample ID: WG567549-05
Instrument ID: LCMS1
Run Time: 23:14
Method: 6850
File ID: 1LM.LM34743
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG567224
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/kg	1.71	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041580 Run Date: 05/05/2016 Sample ID: WG567549-07
Instrument ID: LCMS1 Run Time: 01:08 Method: 6850
File ID: 1LM.LM34749 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG567224 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.990	ug/kg	1.67	1.00	15	

* Exceeds %D Criteria

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Report generated 05/10/2016 11:20

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041580
Run Date: 05/05/2016
Sample ID: WG567549-09
Instrument ID: LCMS1
Run Time: 12:54
Method: 6850
File ID: 1LM.LM34752
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG567224
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.998	ug/kg	1.68	0.200	15	

* Exceeds %D Criteria

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Report generated 05/10/2016 11:20

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041580
Run Date: 05/05/2016
Sample ID: WG567549-11
Instrument ID: LCMS1
Run Time: 15:06
Method: 6850
File ID: 1LM.LM34759
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG567224
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.00	ug/kg	1.69	0	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
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Report generated 05/10/2016 11:20

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041580
Run Date: 05/05/2016
Sample ID: WG567745-02
Instrument ID: LCMS1
Run Time: 18:04
Method: 6850
File ID: 1LM.LM34767
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG567744
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.70	1.00	15	

* Exceeds %D Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041580
Run Date: 05/05/2016
Sample ID: WG567745-03
Instrument ID: LCMS1
Run Time: 21:52
Method: 6850
File ID: 1LM.LM34779
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG567744
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.70	1.00	15	

* Exceeds %D Criteria

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Report generated 05/10/2016 11:20

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041580
Run Date: 05/05/2016
Sample ID: WG567745-05
Instrument ID: LCMS1
Run Time: 23:45
Method: 6850
File ID: 1LM.LM34785
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG567744
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.71	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4750568
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16041580 Run Date: 05/04/2016 Sample ID: WG567224-07
Instrument ID: LCMS1 Run Time: 15:40 Prep Method: 6850
File ID: 1LM.LM34719 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567224 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.01	101	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4750561
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16041580 Run Date: 05/04/2016 Sample ID: WG567224-08
Instrument ID: LCMS1 Run Time: 19:27 Prep Method: 6850
File ID: 1LM.LM34731 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567224 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.10	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4750561
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16041580 Run Date: 05/04/2016 Sample ID: WG567224-09
Instrument ID: LCMS1 Run Time: 23:33 Prep Method: 6850
File ID: 1LM.LM34744 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567224 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.09	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4750561
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16041580 Run Date: 05/05/2016 Sample ID: WG567224-10
Instrument ID: LCMS1 Run Time: 01:27 Prep Method: 6850
File ID: 1LM.LM34750 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567224 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.00	100	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4750561
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16041580 Run Date: 05/05/2016 Sample ID: WG567224-11
Instrument ID: LCMS1 Run Time: 13:13 Prep Method: 6850
File ID: 1LM.LM34753 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567224 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.06	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4750561
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16041580 Run Date: 05/05/2016 Sample ID: WG567224-12
Instrument ID: LCMS1 Run Time: 15:25 Prep Method: 6850
File ID: 1LM.LM34760 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567224 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.00	100	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4750561
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16041580 Run Date: 05/05/2016 Sample ID: WG567744-05
Instrument ID: LCMS1 Run Time: 18:23 Prep Method: 6850
File ID: 1LM.LM34768 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567744 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.209	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4750561
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16041580 Run Date: 05/05/2016 Sample ID: WG567744-06
Instrument ID: LCMS1 Run Time: 22:10 Prep Method: 6850
File ID: 1LM.LM34780 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567744 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4750561
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16041580 Run Date: 05/06/2016 Sample ID: WG567744-07
Instrument ID: LCMS1 Run Time: 00:04 Prep Method: 6850
File ID: 1LM.LM34786 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567744 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.205	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4750561
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16041580
Instrument ID: LCMS1
Workgroup (AAB#): WG567224

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16041580-01	1.00	01	469000
L16041580-02	1.00	01	467000
L16041580-03	200	DL01	457000
L16041580-04	400	DL01	465000
L16041580-05	200	DL01	471000
L16041580-06	1.00	01	434000
L16041580-07	1.00	01	442000
L16041580-08	1.00	01	449000
L16041580-09	1.00	01	469000
L16041580-10	1.00	01	491000
L16041580-11	1.00	01	480000
L16041580-12	1.00	01	482000
L16041580-13	1.00	01	478000
WG567224-02	1.00	01	442000
WG567224-03	1.00	01	442000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4750606
Report generated 05/10/2016 11:21

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16041580
Instrument ID: LCMS1
Workgroup (AAB#): WG567744

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16041580-14	1.00	01	561000
WG567744-02	1.00	01	528000
WG567744-03	1.00	01	531000
WG567744-04	1.00	01	534000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4750606
Report generated 05/10/2016 11:21

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	L16041580-01
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34726
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 17:53	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	L16041580-02
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34727
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 18:12	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	L16041580-03
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34755
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/05/2016 13:50	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	338000	112000	3.02	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	L16041580-04
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34756
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/05/2016 14:09	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	294000	99300	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	L16041580-05
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34757
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/05/2016 14:28	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	254000	83900	3.03	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	L16041580-06
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34723
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 16:56	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	42300	14400	2.94	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	L16041580-07
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34724
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 17:15	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	56200	19200	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	L16041580-08
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34725
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 17:34	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	49700	18200	2.73	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	L16041580-09
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34734
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 20:24	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1150	1250	0.920	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	L16041580-10
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34735
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 20:43	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	933	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	L16041580-11
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34736
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 21:02	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	2050	2020	1.01	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	L16041580-12
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34737
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 21:21	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	2140	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	L16041580-13
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34738
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 21:40	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	1020	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	L16041580-14
Instrument:	LCMS1	**Prep Date:**	05/05/2016 17:00	**File ID:**	1LM.LM34776
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567744	**Analysis Date:**	05/05/2016 20:55	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	WG567224-01
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34720
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 15:59	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	28100	10100	2.78	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	WG567224-02
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34721
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 16:18	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	2220	592	3.75	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	WG567224-03
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34722
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 16:37	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	28900	11400	2.54	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	WG567224-07
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34719
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 15:40	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	29900	10300	2.90	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	WG567224-08
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34731
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 19:27	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	33400	11300	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	WG567224-09
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34744
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 23:33	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38400	11700	3.28	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	WG567224-10
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34750
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/05/2016 01:27	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36200	13800	2.62	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	WG567224-11
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34753
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/05/2016 13:13	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34200	12500	2.74	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	WG567224-12
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34760
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/05/2016 15:25	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35500	12900	2.75	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567744	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567744	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567744	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567744	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567744	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567744	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567744	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567744	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567549-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34717
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/04/2016 15:02	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567549-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34718
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/04/2016 15:21	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	143000	47800	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567549-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34730
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/04/2016 19:08	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	159000	53200	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567549-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34732
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/04/2016 19:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	604	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567549-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34743
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/04/2016 23:14	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	178000	58200	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567549-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34745
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/04/2016 23:52	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567549-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34749
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/05/2016 01:08	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	177000	59800	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567549-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34751
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/05/2016 01:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567549-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34752
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/05/2016 12:54	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	156000	55000	2.84	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567549-10
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34754
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/05/2016 13:32	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567549-11
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34759
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/05/2016 15:06	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	174000	59100	2.94	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567549-12
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34761
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/05/2016 15:44	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	449	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	WG567744-01
Instrument:	LCMS1	**Prep Date:**	05/05/2016 17:00	**File ID:**	1LM.LM34769
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567744	**Analysis Date:**	05/05/2016 18:42	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32500	11700	2.78	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	WG567744-02
Instrument:	LCMS1	**Prep Date:**	05/05/2016 17:00	**File ID:**	1LM.LM34770
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567744	**Analysis Date:**	05/05/2016 19:01	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	WG567744-03
Instrument:	LCMS1	**Prep Date:**	05/05/2016 17:00	**File ID:**	1LM.LM34771
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567744	**Analysis Date:**	05/05/2016 19:20	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37100	12000	3.09	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	WG567744-04
Instrument:	LCMS1	**Prep Date:**	05/05/2016 17:00	**File ID:**	1LM.LM34772
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567744	**Analysis Date:**	05/05/2016 19:39	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37100	12200	3.04	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	WG567744-05
Instrument:	LCMS1	**Prep Date:**	05/05/2016 17:00	**File ID:**	1LM.LM34768
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567744	**Analysis Date:**	05/05/2016 18:23	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36800	12600	2.92	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	WG567744-06
Instrument:	LCMS1	**Prep Date:**	05/05/2016 17:00	**File ID:**	1LM.LM34780
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567744	**Analysis Date:**	05/05/2016 22:10	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	40600	13500	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	WG567744-07
Instrument:	LCMS1	**Prep Date:**	05/05/2016 17:00	**File ID:**	1LM.LM34786
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567744	**Analysis Date:**	05/06/2016 00:04	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	42200	14800	2.85	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567745-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34766
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567744	**Analysis Date:**	05/05/2016 17:45	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	258	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567745-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34767
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567744	**Analysis Date:**	05/05/2016 18:04	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	172000	57700	2.98	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567745-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34779
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567744	**Analysis Date:**	05/05/2016 21:52	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	190000	63700	2.98	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567745-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34781
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567744	**Analysis Date:**	05/05/2016 22:29	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567745-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34785
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567744	**Analysis Date:**	05/05/2016 23:45	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	198000	63700	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567745-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34787
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567744	**Analysis Date:**	05/06/2016 00:23	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

2.2.1.3 Sample Data

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Data File	LM34726.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 5:53:12 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041580-01	**Injection Vial**	10.00
Data File	LM34726.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 5:53:12 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	L16041580-01	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.690e+05	9.86	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.86(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

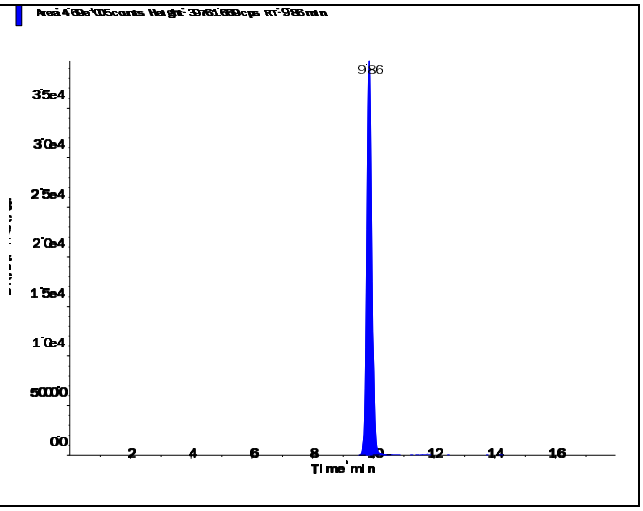

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

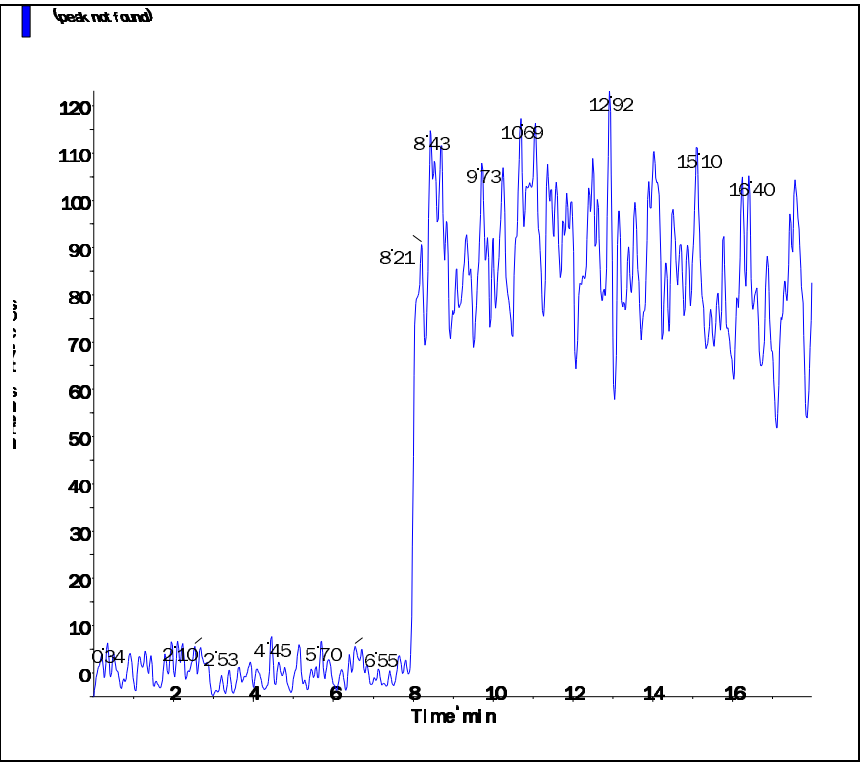

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

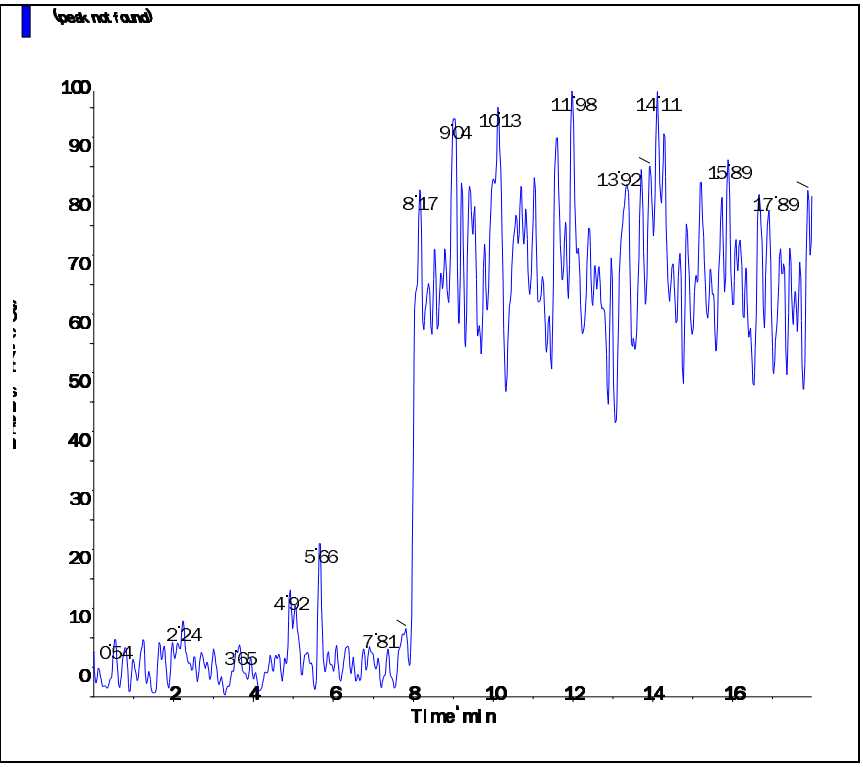

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Data File	LM34727.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 6:12:08 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041580-02	**Injection Vial**	11.00
Data File	LM34727.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 6:12:08 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	L16041580-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.670e+05	9.86	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.86(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

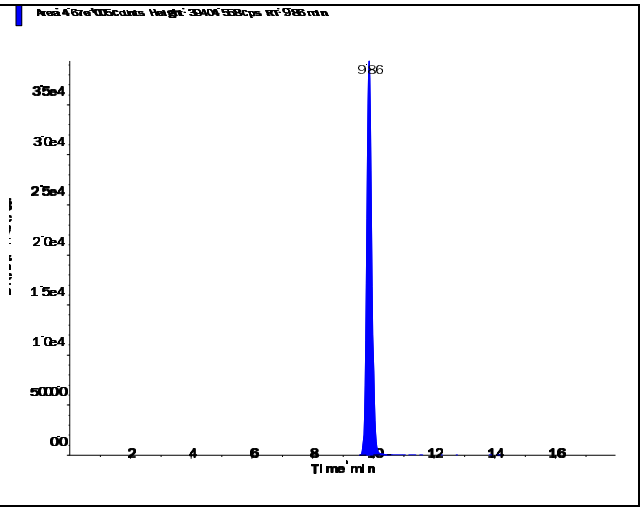

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

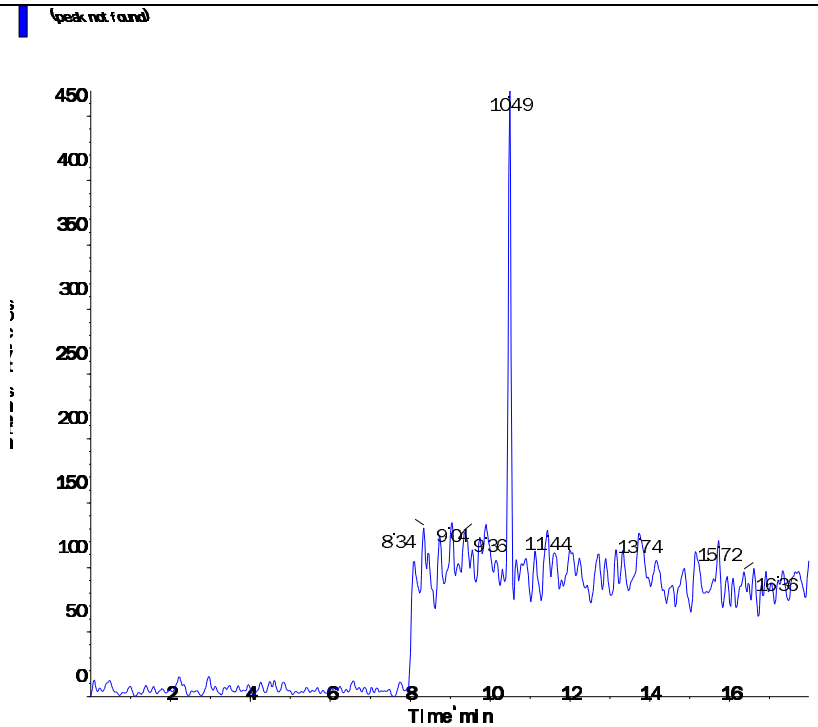

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

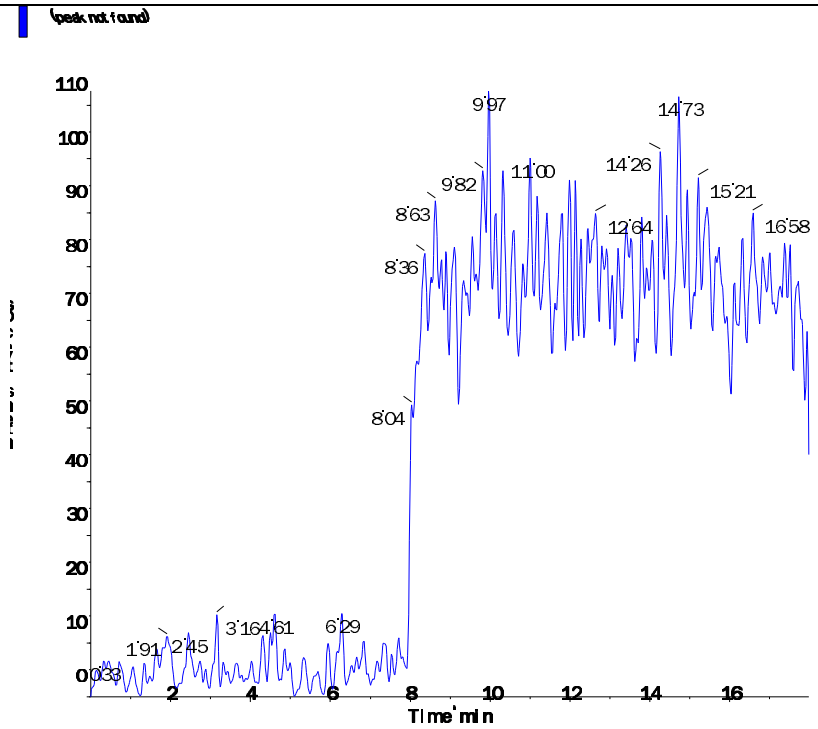

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Data File	LM34755.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 1:50:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041580-03 (RR 200x)	**Injection Vial**	27.00
Data File	LM34755.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 1:50:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	L16041580-03	**Dilution Factor**	1.00
Sample Comment	7,200.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.570e+05	9.85	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.380e+05	9.86	N/A	2.20
Perchlorate conf	1.120e+05	9.85	N/A	2.17

O18LP (Internal Standard)

RT (Exp. RT): 9.85(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

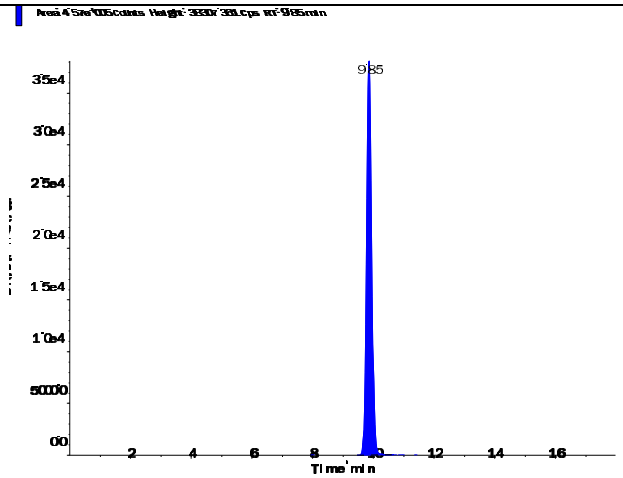

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.86 (9.84) min
Calculated conc:	2.20 ng/ml
Area Ratio:	0.74
Sample Type:	(Unknown)

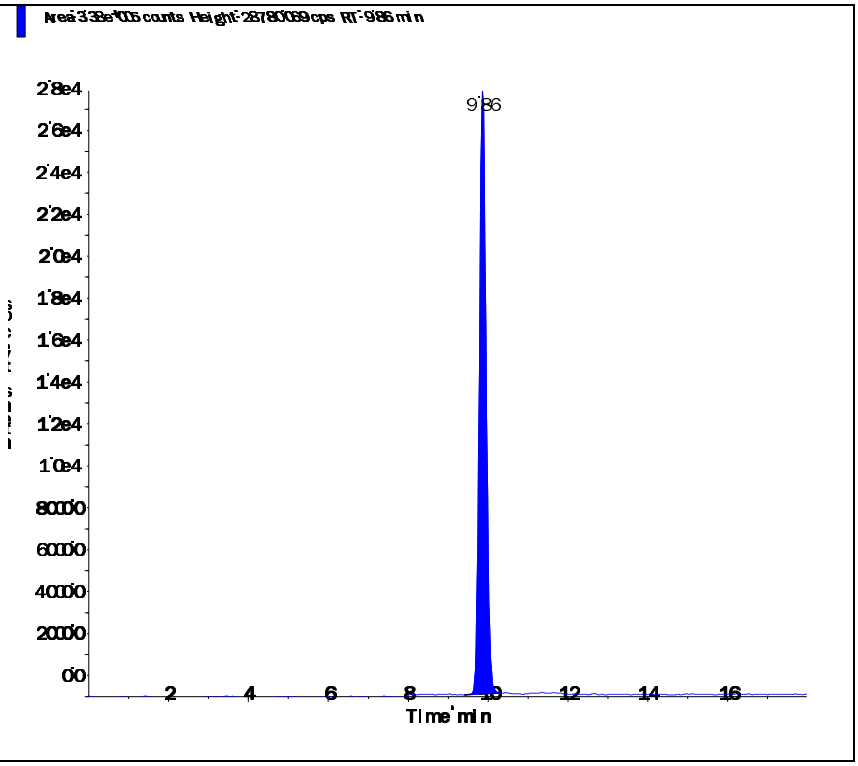

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	2.17 ng/ml
Area Ratio:	0.245
Sample Type:	(Unknown)

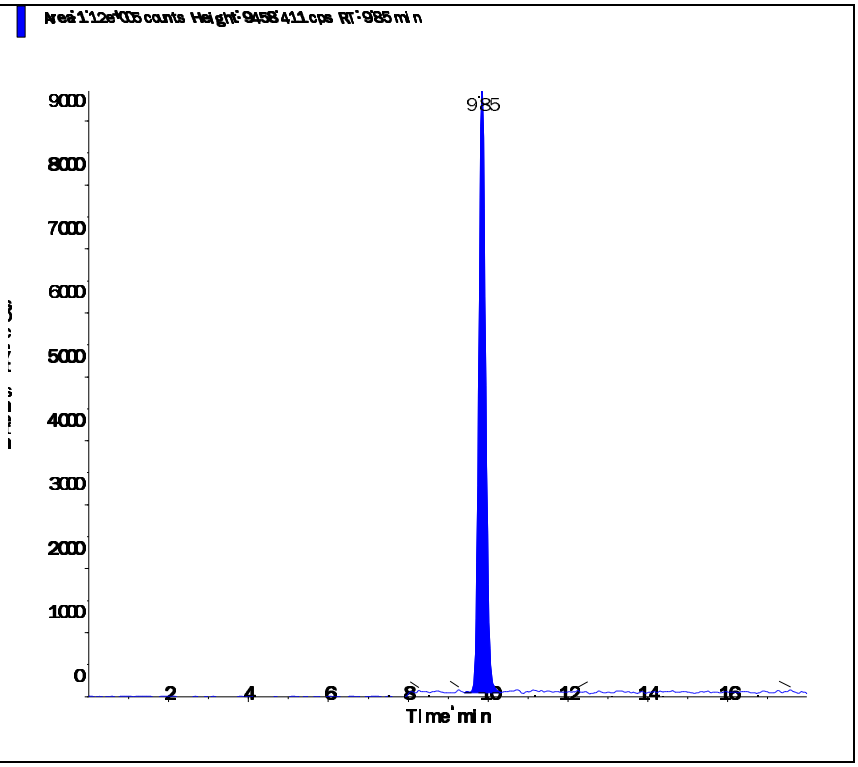

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Data File	LM34756.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 2:09:55 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041580-04 (RR 400x)	**Injection Vial**	28.00
Data File	LM34756.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 2:09:55 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	L16041580-04	**Dilution Factor**	1.00
Sample Comment	7,400.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.650e+05	9.85	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.940e+05	9.86	N/A	1.88
Perchlorate conf	9.930e+04	9.85	N/A	1.89

O18LP (Internal Standard)

RT (Exp. RT): 9.85(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

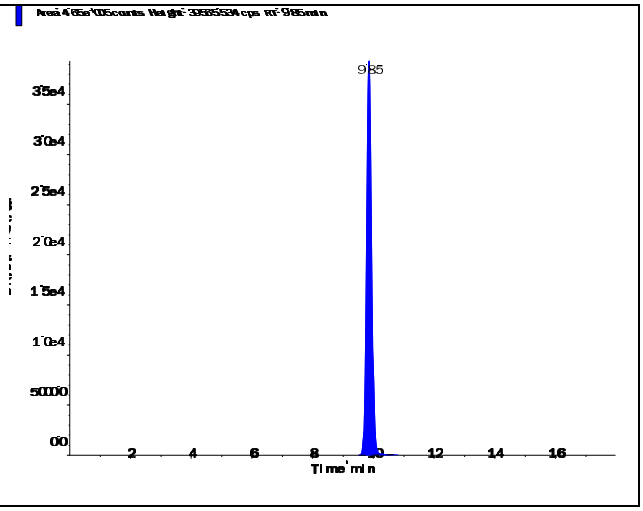

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.86 (9.84) min
Calculated conc:	1.88 ng/ml
Area Ratio:	0.632
Sample Type:	(Unknown)

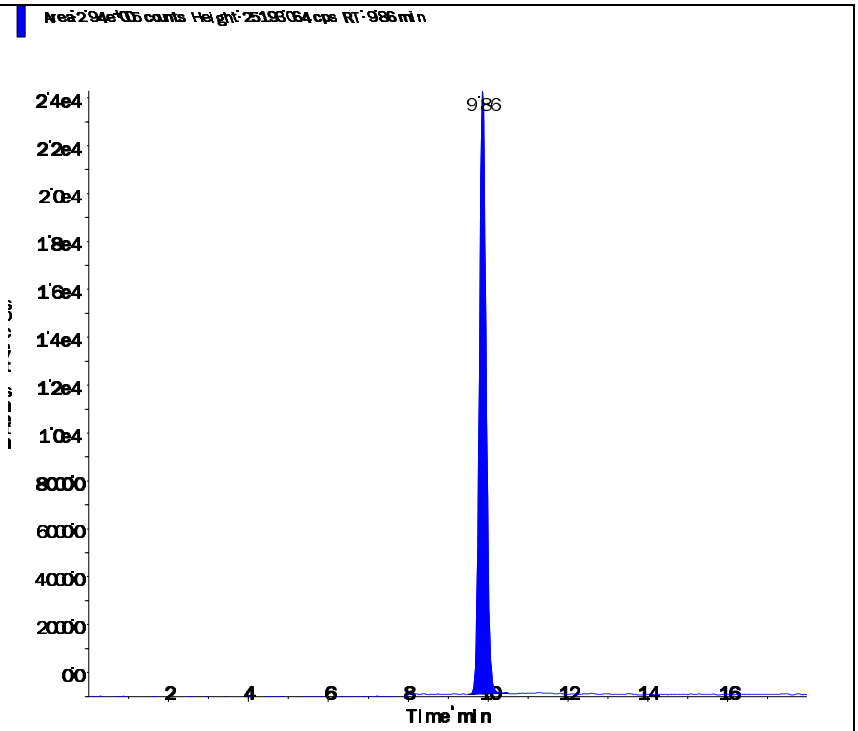

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	1.89 ng/ml
Area Ratio:	0.213
Sample Type:	(Unknown)

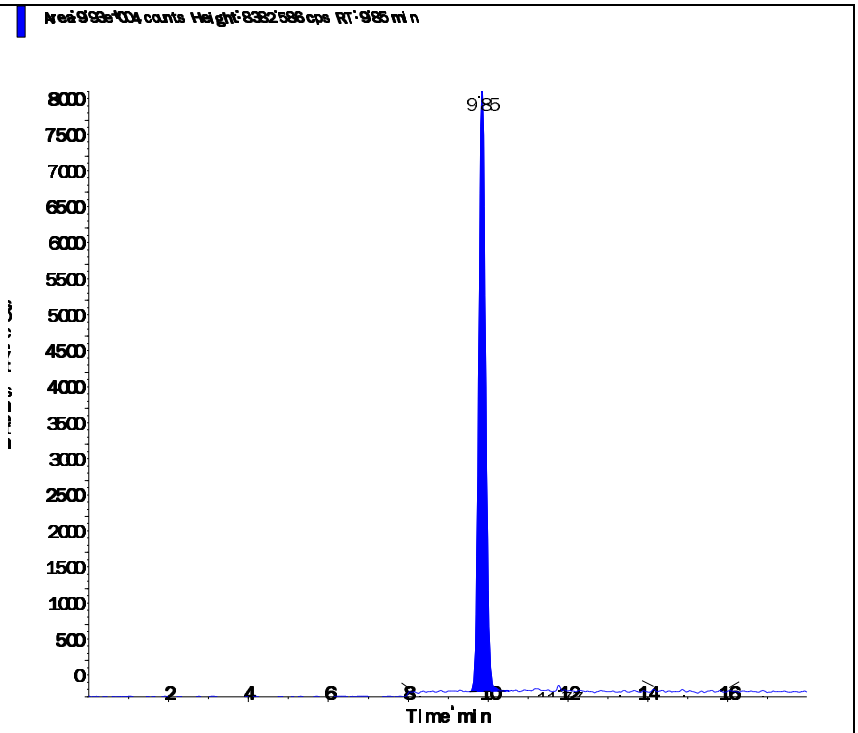

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Data File	LM34757.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 2:28:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041580-05 (RR 200x)	**Injection Vial**	29.00
Data File	LM34757.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 2:28:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	L16041580-05	**Dilution Factor**	1.00
Sample Comment	7,200.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.710e+05	9.85	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.540e+05	9.86	N/A	1.60
Perchlorate conf	8.390e+04	9.85	N/A	1.57

O18LP (Internal Standard)

RT (Exp. RT): 9.85(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

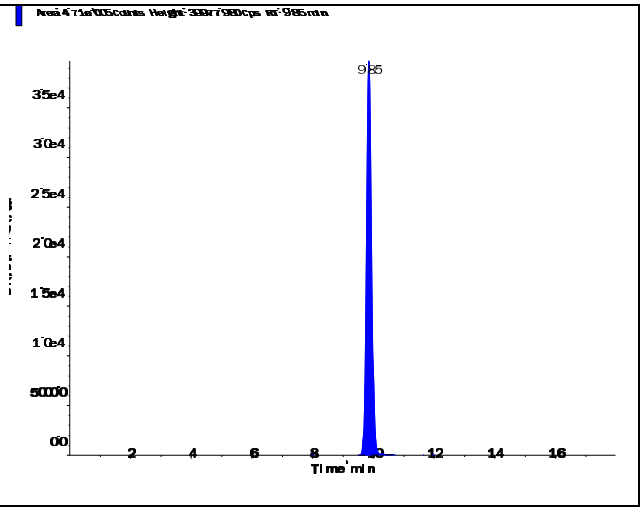

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.86 (9.84) min
Calculated conc:	1.60 ng/ml
Area Ratio:	0.54
Sample Type:	(Unknown)

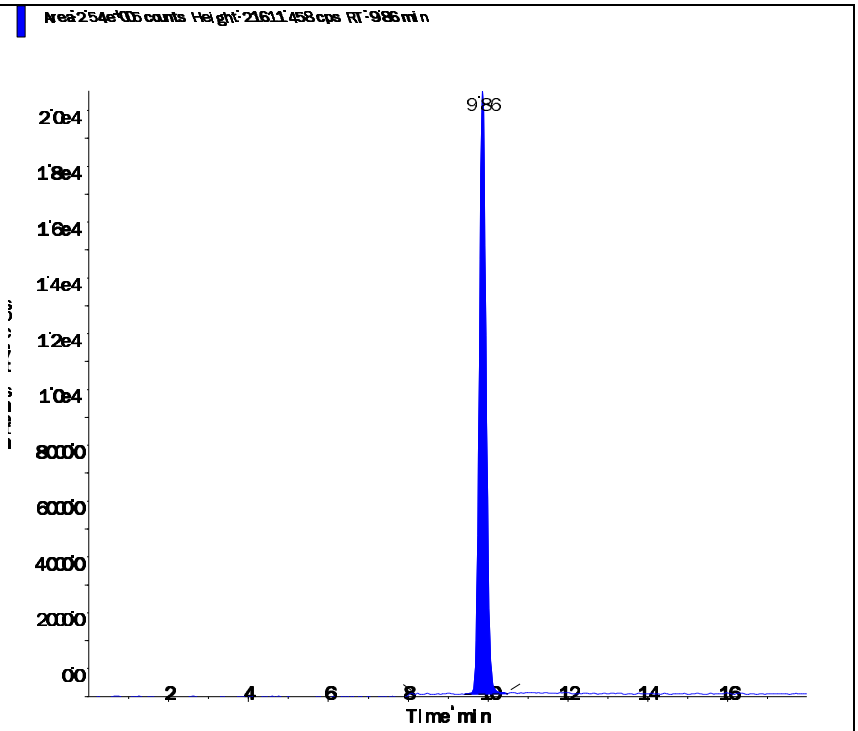

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	1.57 ng/ml
Area Ratio:	0.178
Sample Type:	(Unknown)

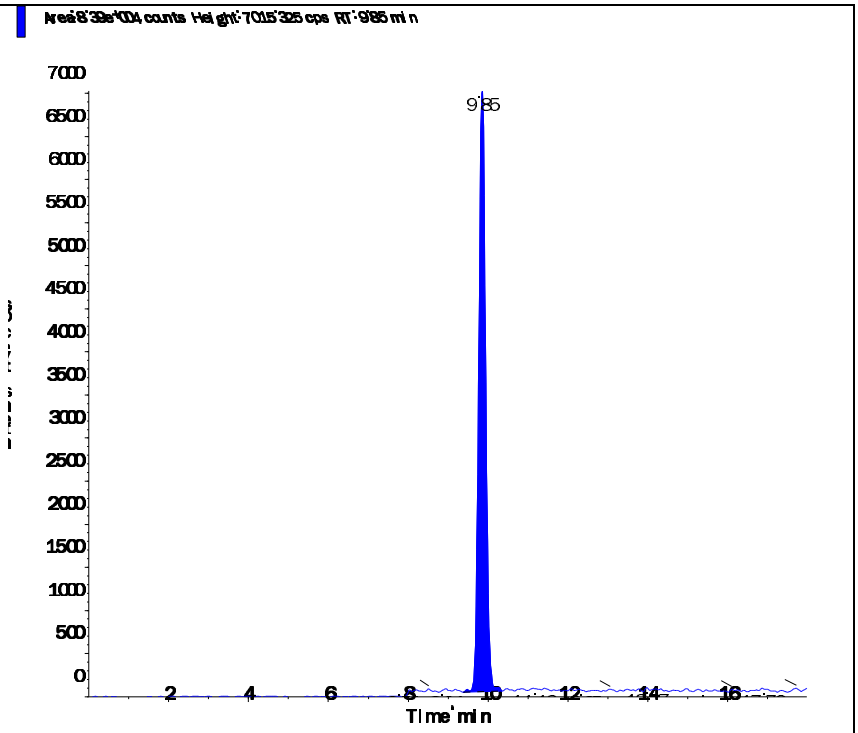

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Data File	LM34723.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 4:56:23 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041580-06 RS	**Injection Vial**	7.00
Data File	LM34723.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 4:56:23 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567224-04	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.340e+05	9.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.230e+04	9.81	N/A	0.286
Perchlorate conf	1.440e+04	9.79	N/A	0.276

O18LP (Internal Standard)

RT (Exp. RT): 9.80(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

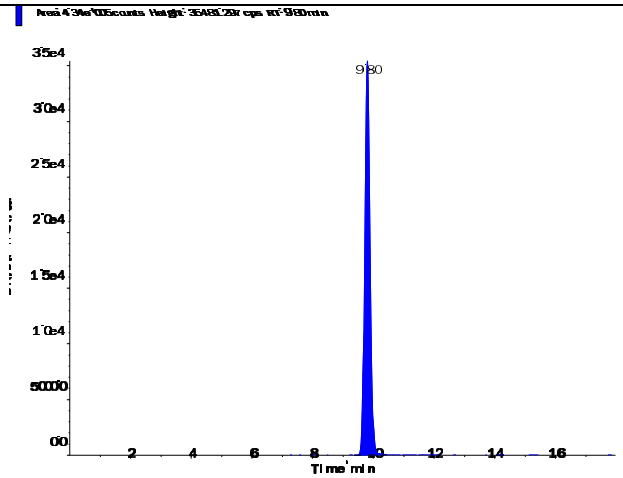

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.81 (9.84) min Calculated conc: 0.286 ng/ml Area Ratio: 0.097 Sample Type: (Unknown)	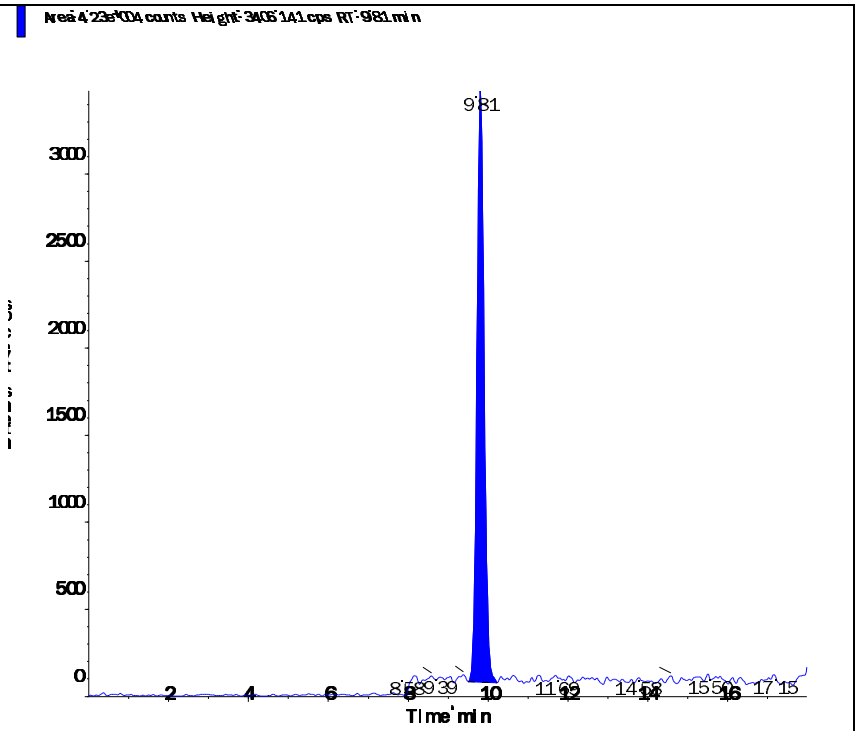
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.79 (9.84) min Calculated conc: 0.276 ng/ml Area Ratio: 0.033 Sample Type: (Unknown)	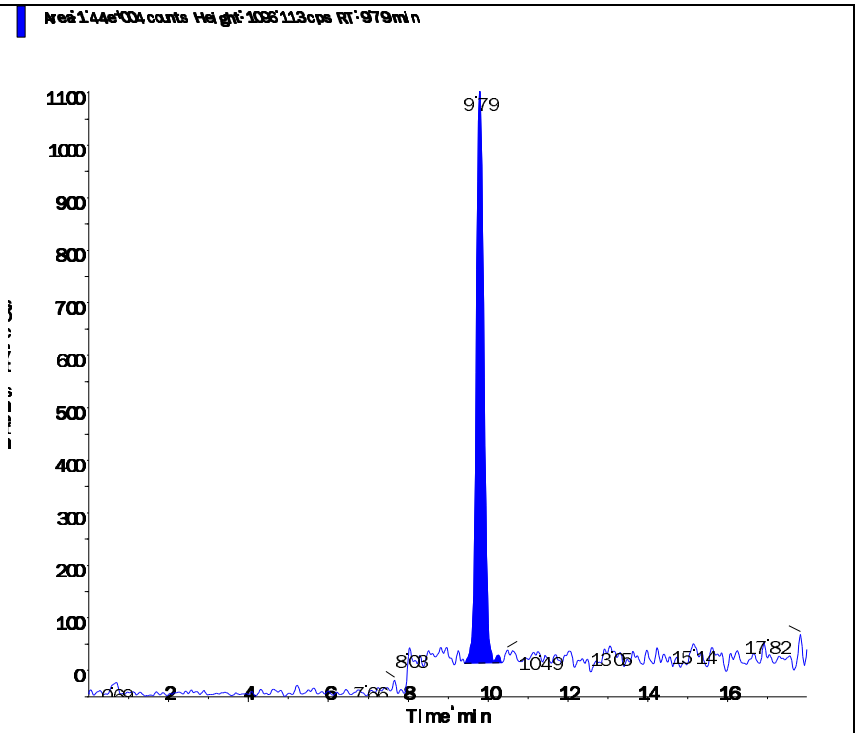

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Printed: 5/6/2016 1:50 PM

Data File	LM34724.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 5:15:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041580-07 MS	**Injection Vial**	8.00
Data File	LM34724.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 5:15:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567224-05	**Dilution Factor**	1.00
Sample Comment	7,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.420e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.620e+04	9.81	N/A	0.374
Perchlorate conf	1.920e+04	9.80	N/A	0.369

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

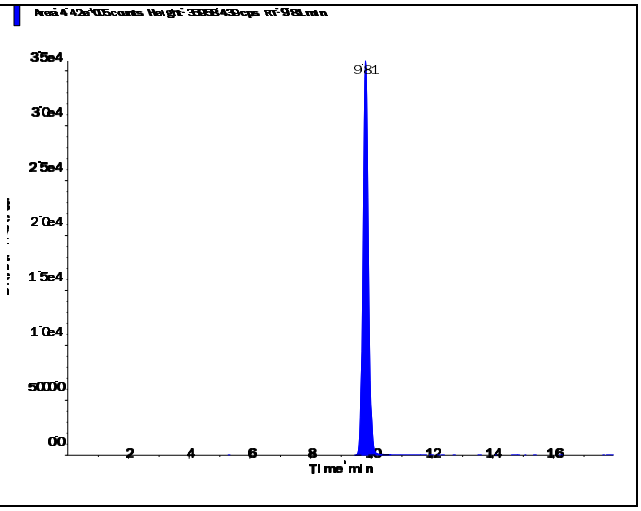

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.81 (9.84) min Calculated conc: 0.374 ng/ml Area Ratio: 0.127 Sample Type: (Unknown)	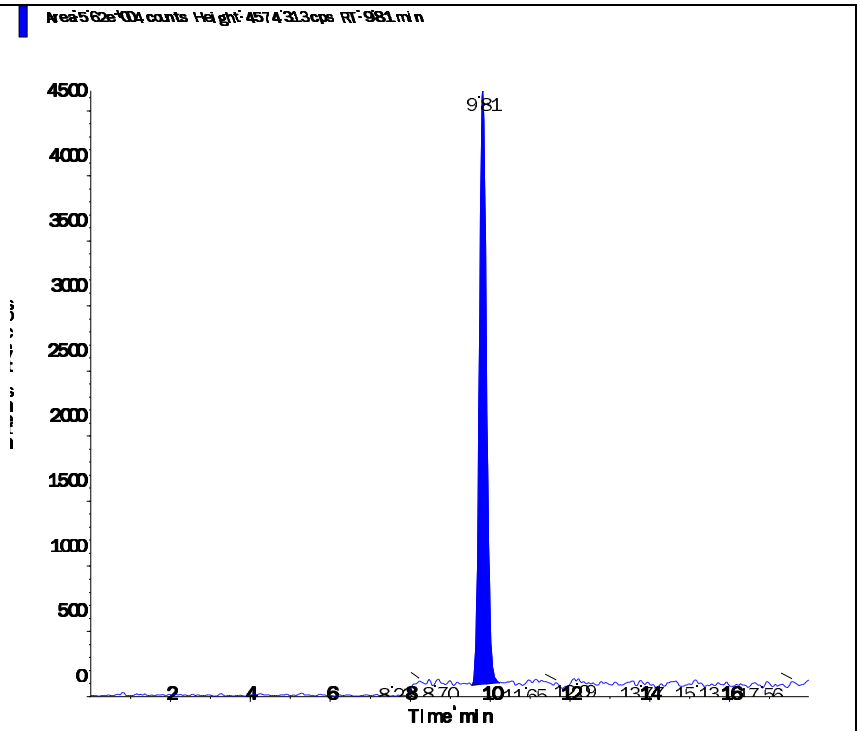
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.80 (9.84) min Calculated conc: 0.369 ng/ml Area Ratio: 0.043 Sample Type: (Unknown)	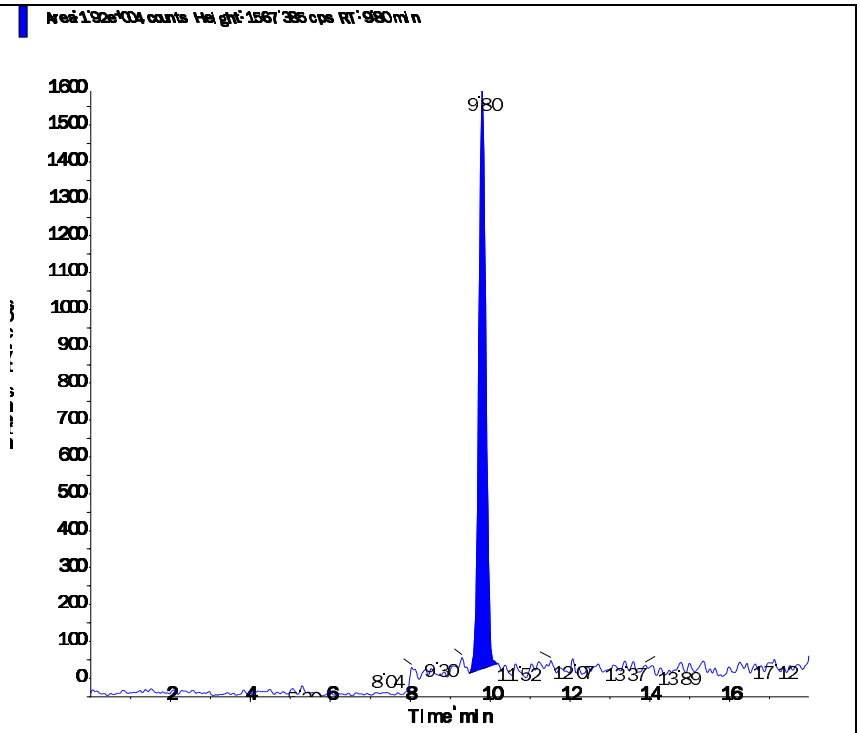

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Data File	LM34725.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 5:34:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041580-08 MSD	**Injection Vial**	9.00
Data File	LM34725.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 5:34:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567224-06	**Dilution Factor**	1.00
Sample Comment	7,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.490e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.970e+04	9.82	N/A	0.325
Perchlorate conf	1.820e+04	9.82	N/A	0.342

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

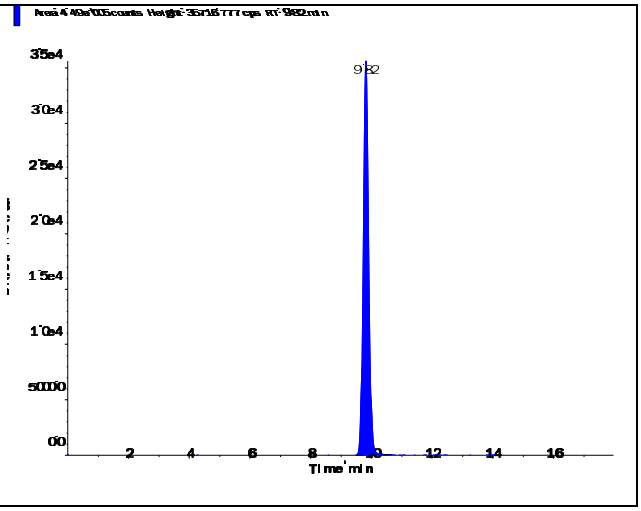

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.82 (9.84) min Calculated conc: 0.325 ng/ml Area Ratio: 0.111 Sample Type: (Unknown)	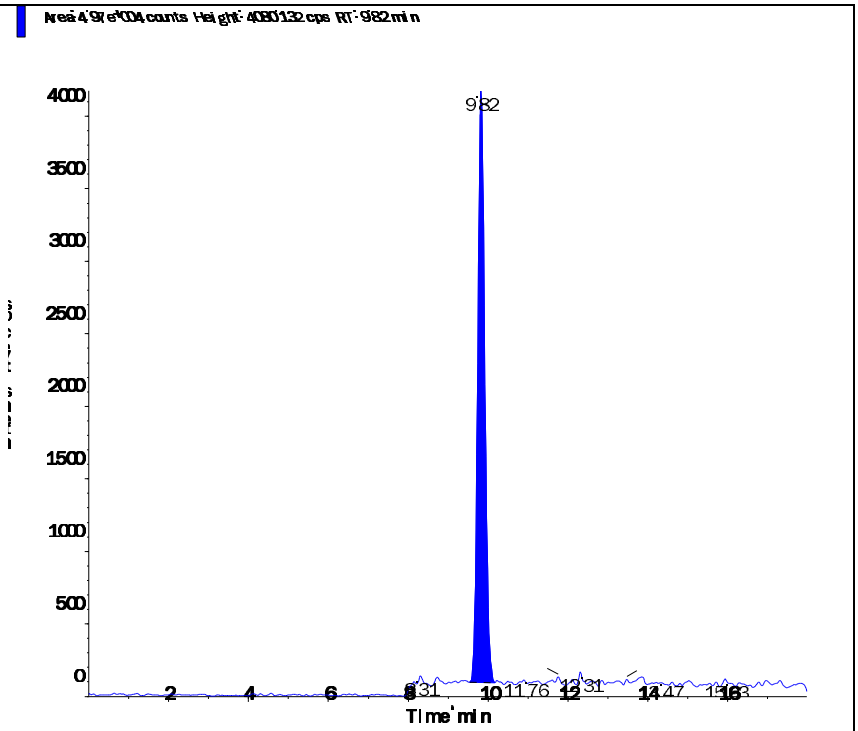
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.82 (9.84) min Calculated conc: 0.342 ng/ml Area Ratio: 0.04 Sample Type: (Unknown)	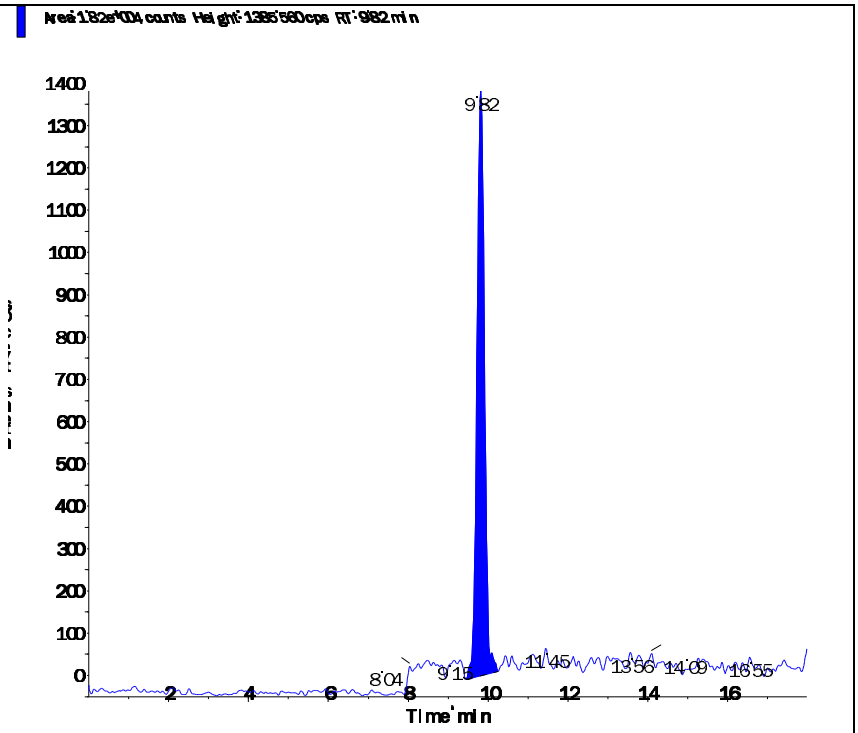

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Data File	LM34734.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 8:24:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041580-09	**Injection Vial**	15.00
Data File	LM34734.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 8:24:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	L16041580-09	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.690e+05	9.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.150e+03	9.82	N/A	0.0035
Perchlorate conf	1.250e+03	9.71	N/A	0.0034

O18LP (Internal Standard)

RT (Exp. RT): 9.80(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

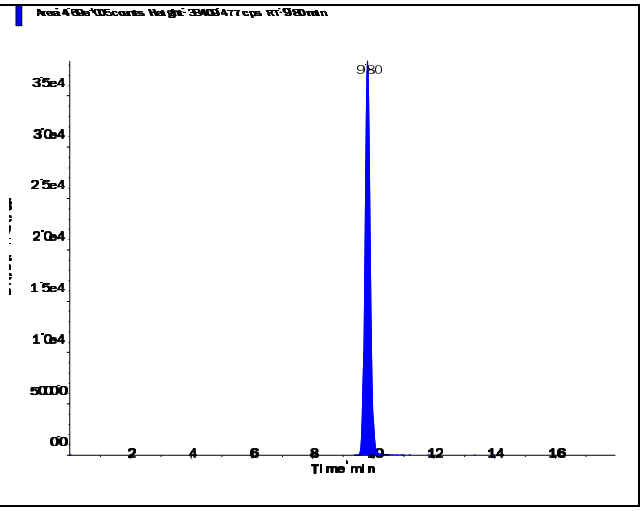

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	0.0035 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

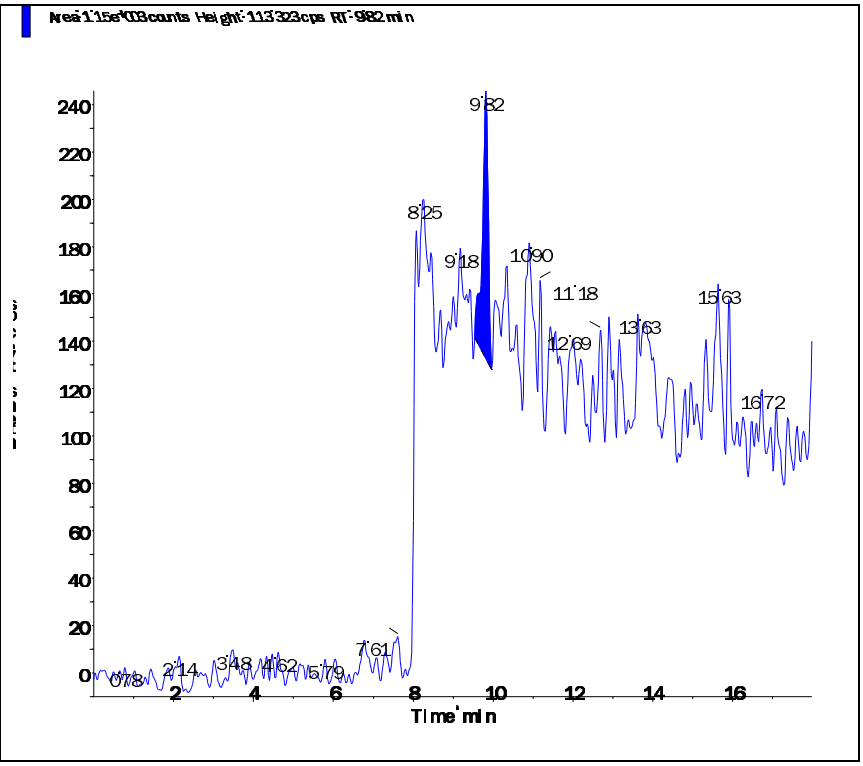

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.71 (9.84) min
Calculated conc:	0.0034 ng/ml
Area Ratio:	0.003
Sample Type:	(Unknown)

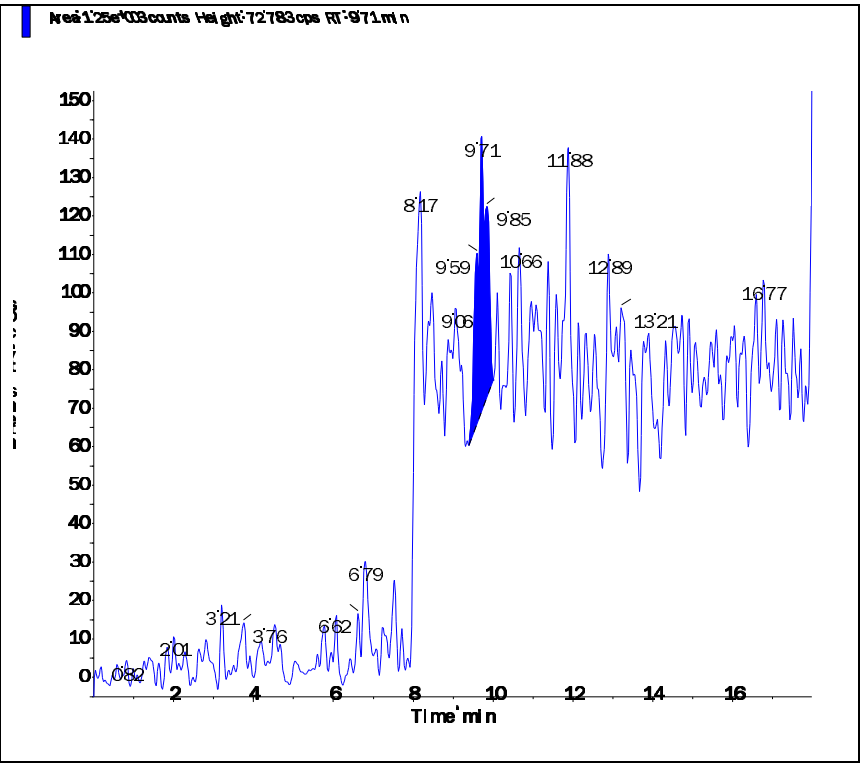

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Data File	LM34735.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 8:43:31 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041580-10	**Injection Vial**	16.00
Data File	LM34735.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 8:43:31 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	L16041580-10	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.910e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	9.330e+02	9.81	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

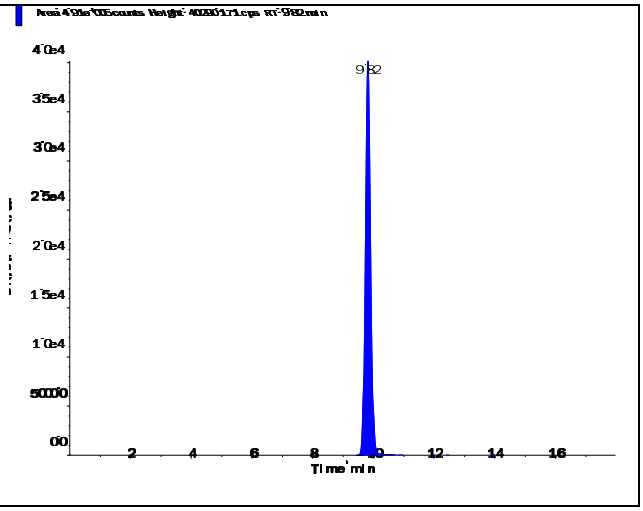

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

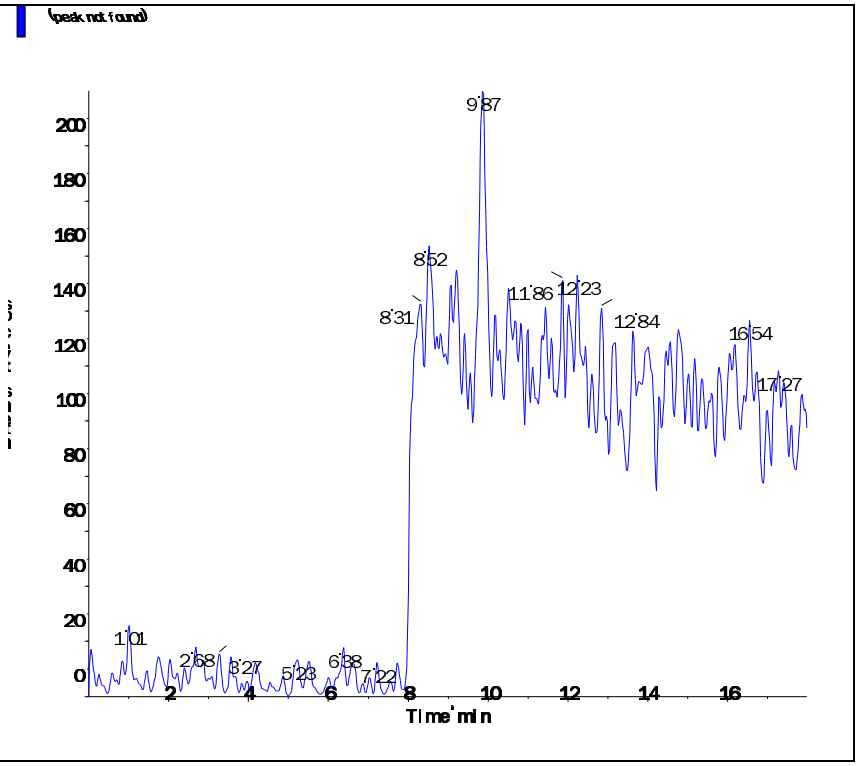

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.81 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

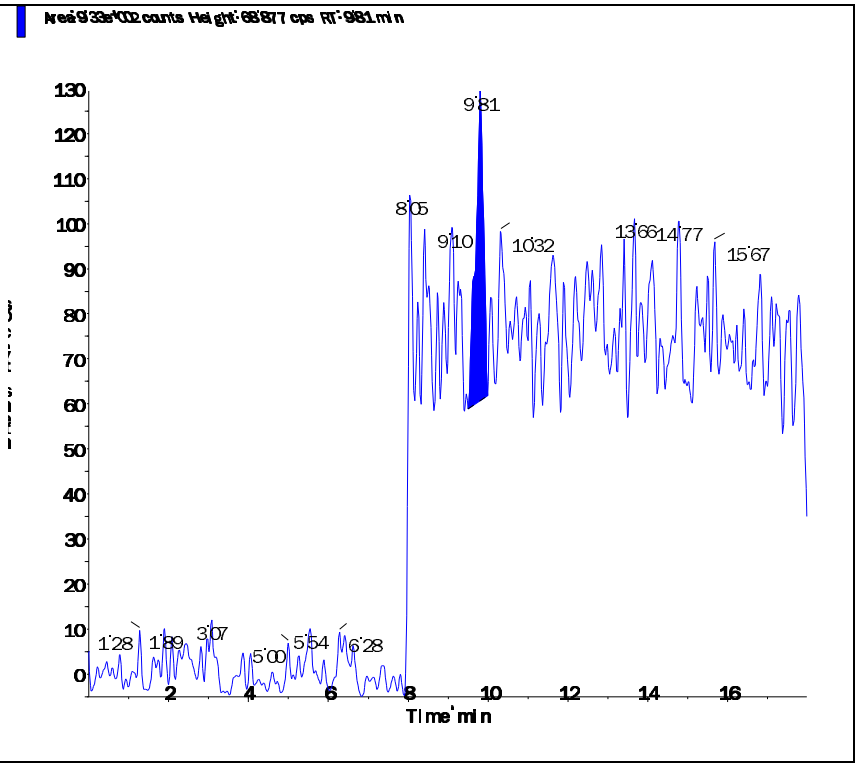

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Data File	LM34736.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 9:02:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041580-11	**Injection Vial**	17.00
Data File	LM34736.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 9:02:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	L16041580-11	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.800e+05	9.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.050e+03	9.80	N/A	0.0089
Perchlorate conf	2.020e+03	9.82	N/A	0.0172

O18LP (Internal Standard)

RT (Exp. RT): 9.80(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

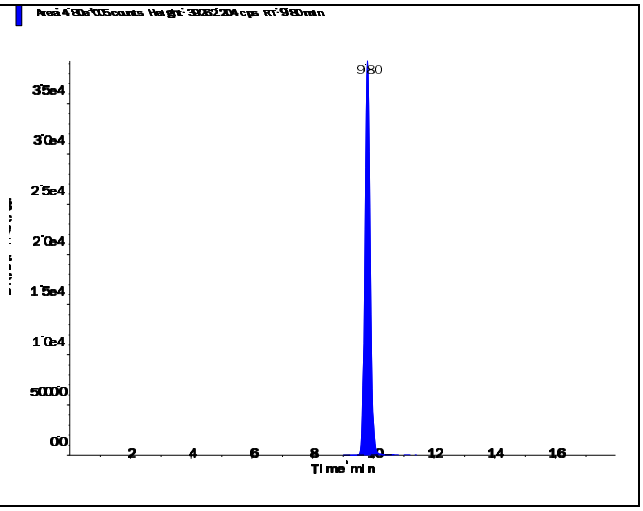

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.80 (9.84) min
Calculated conc:	0.0089 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)

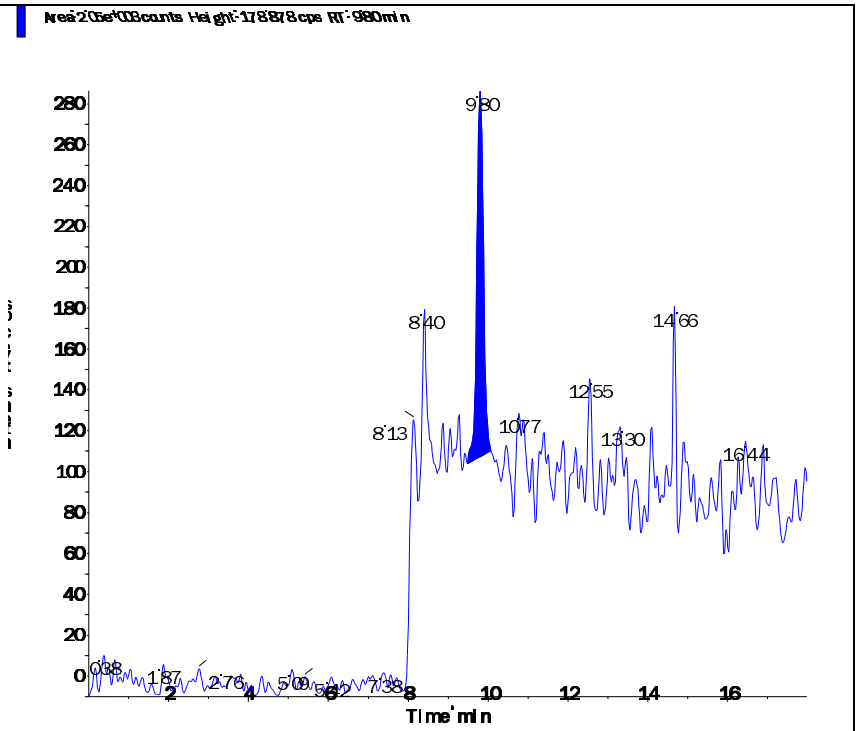

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	0.0172 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)

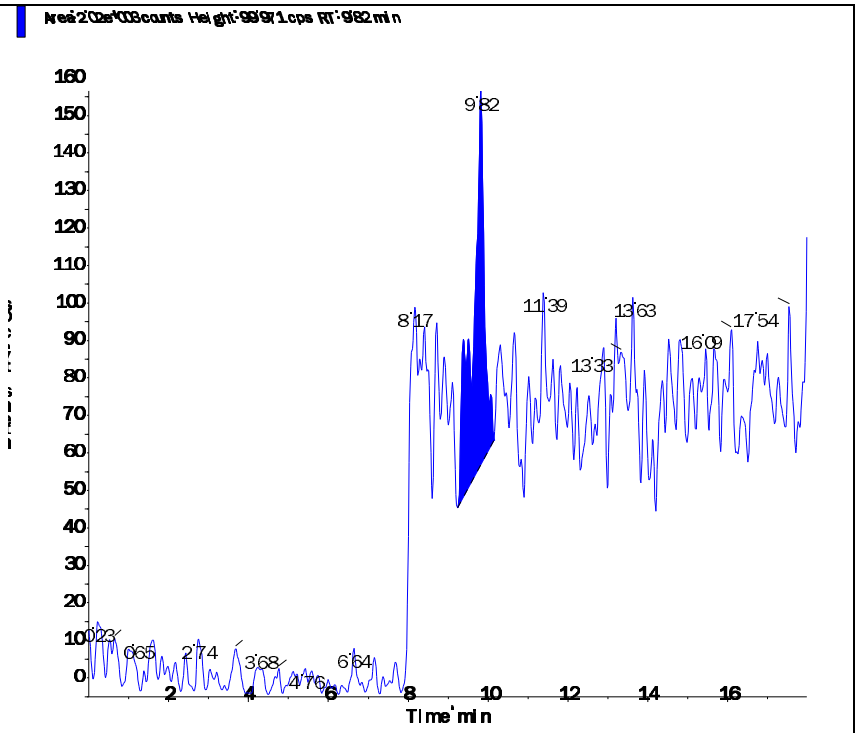

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Data File	LM34737.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 9:21:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041580-12	**Injection Vial**	18.00
Data File	LM34737.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 9:21:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	L16041580-12	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.820e+05	9.76	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	2.140e+03	9.72	N/A	0.0194

O18LP (Internal Standard)

RT (Exp. RT): 9.76(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

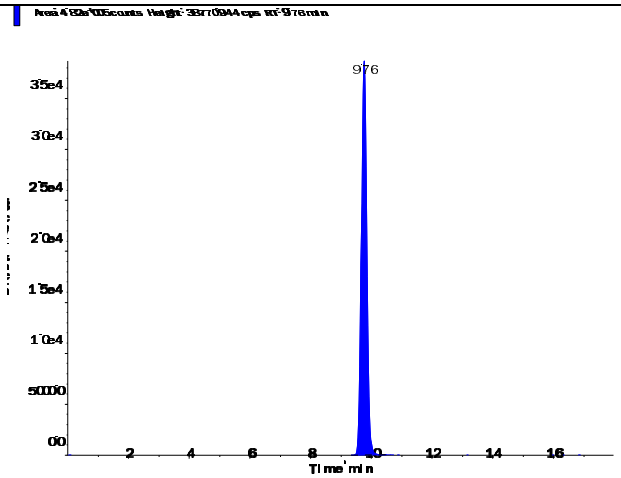

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

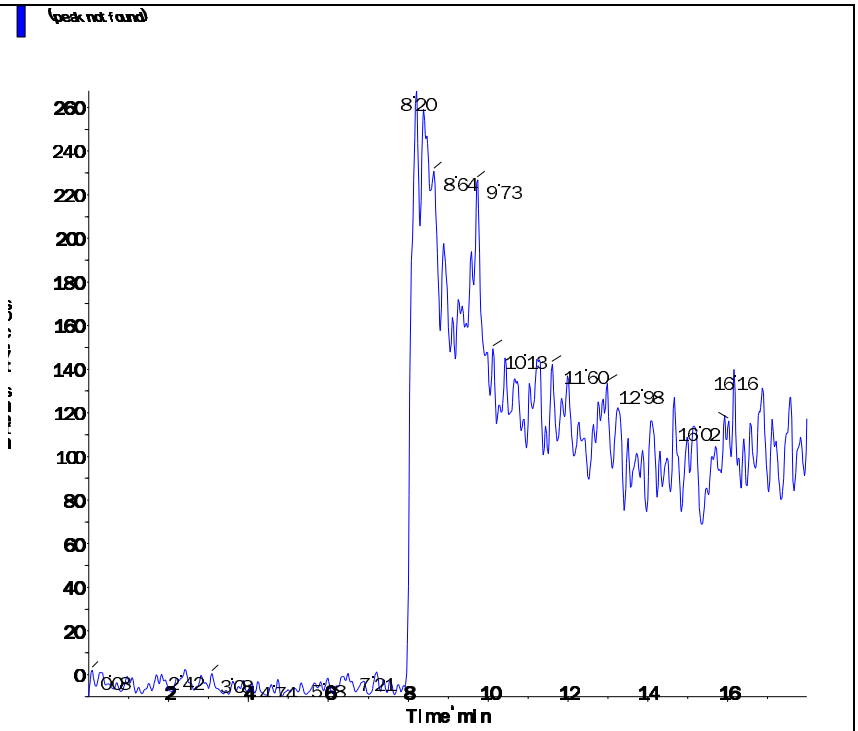

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.72 (9.84) min
Calculated conc:	0.0194 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)

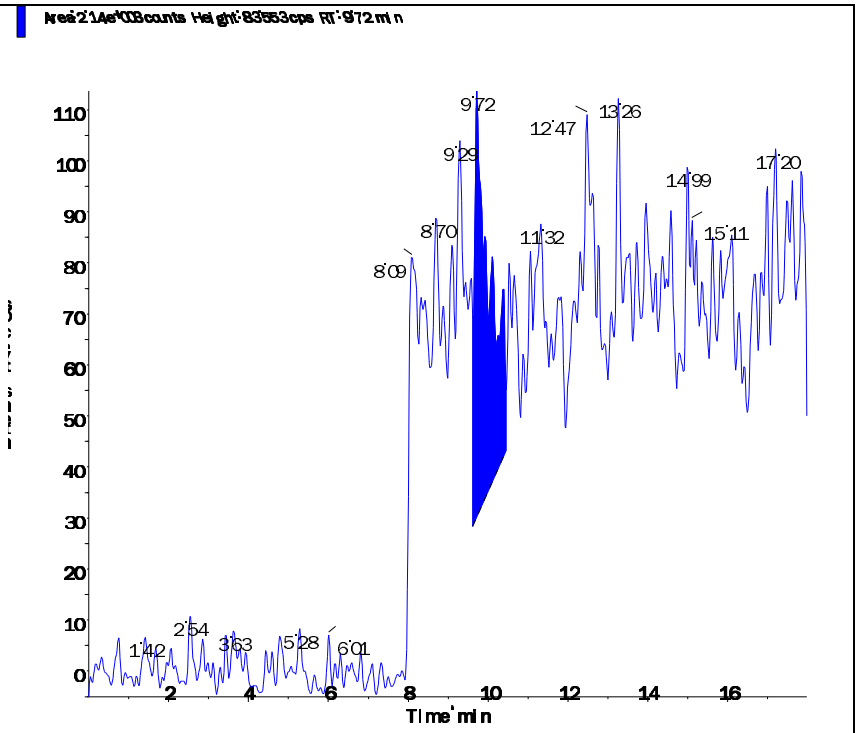

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Data File	LM34738.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 9:40:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041580-13	**Injection Vial**	19.00
Data File	LM34738.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 9:40:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	L16041580-13	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	1.020e+03	9.67	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.70(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

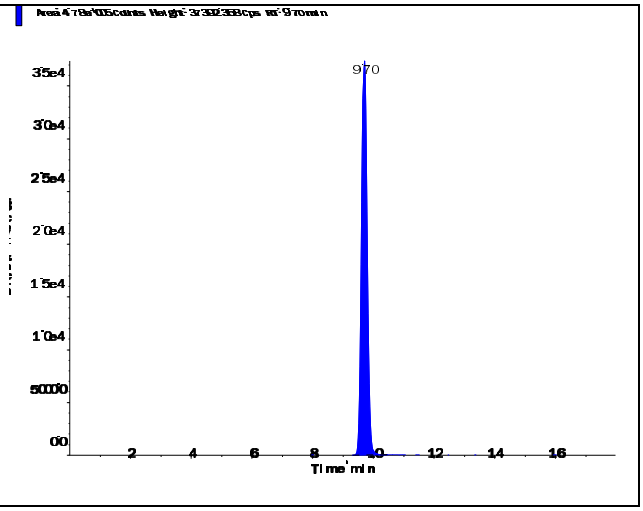

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

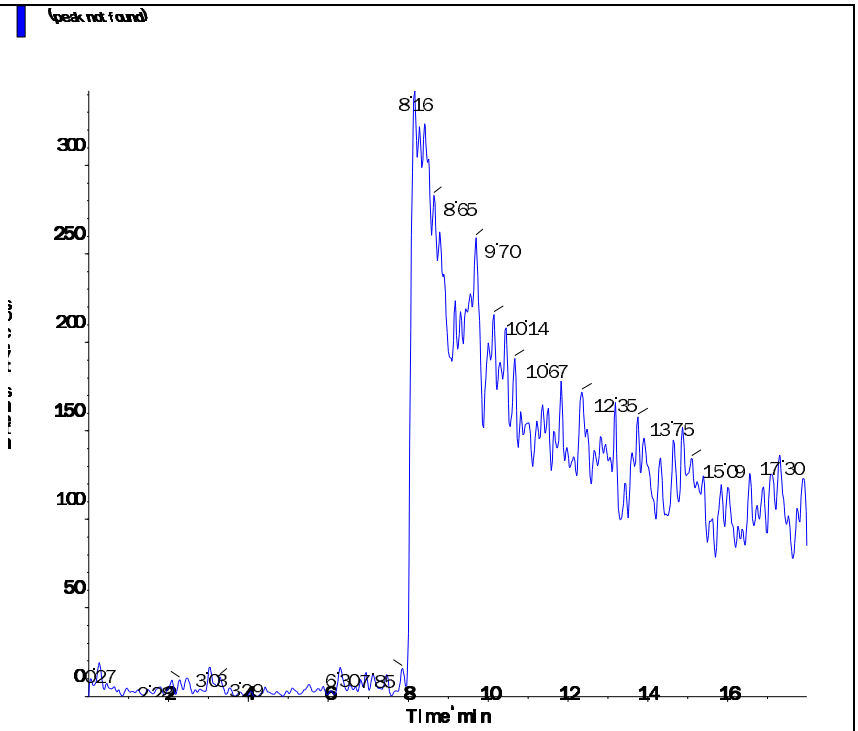

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.67 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

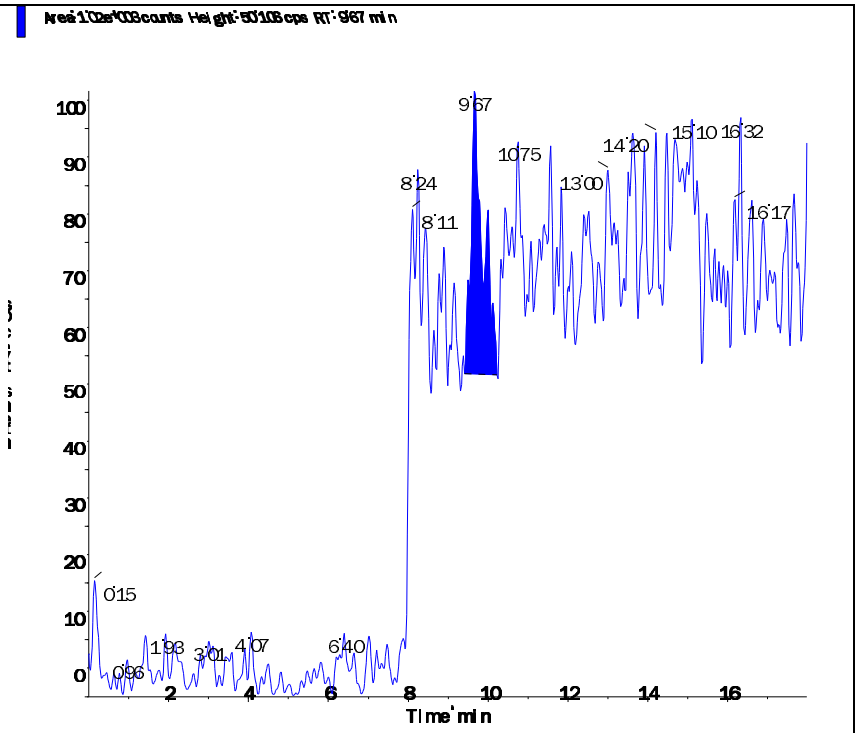

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Data File	LM34776.wiff	**Result Table**	050516_JWR.rdb
Acquisition Date	5/5/2016 8:55:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041580-14 EB	**Injection Vial**	11.00
Data File	LM34776.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 8:55:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050516_JWR.rdb
Sample ID	L16041580-14	**Dilution Factor**	1.00
Sample Comment	1,1 (EB)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.610e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

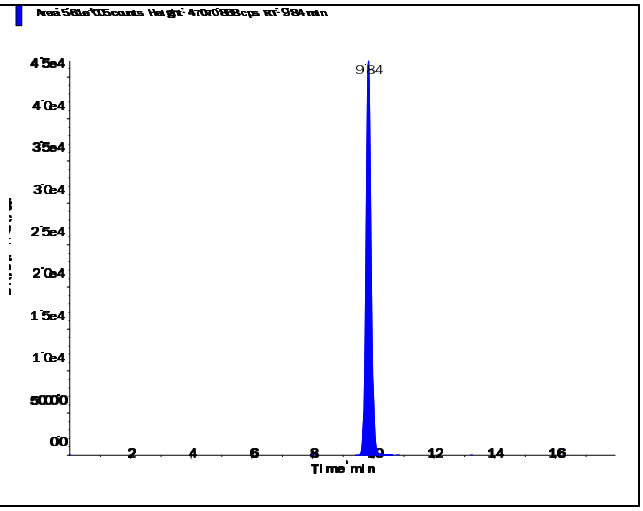

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

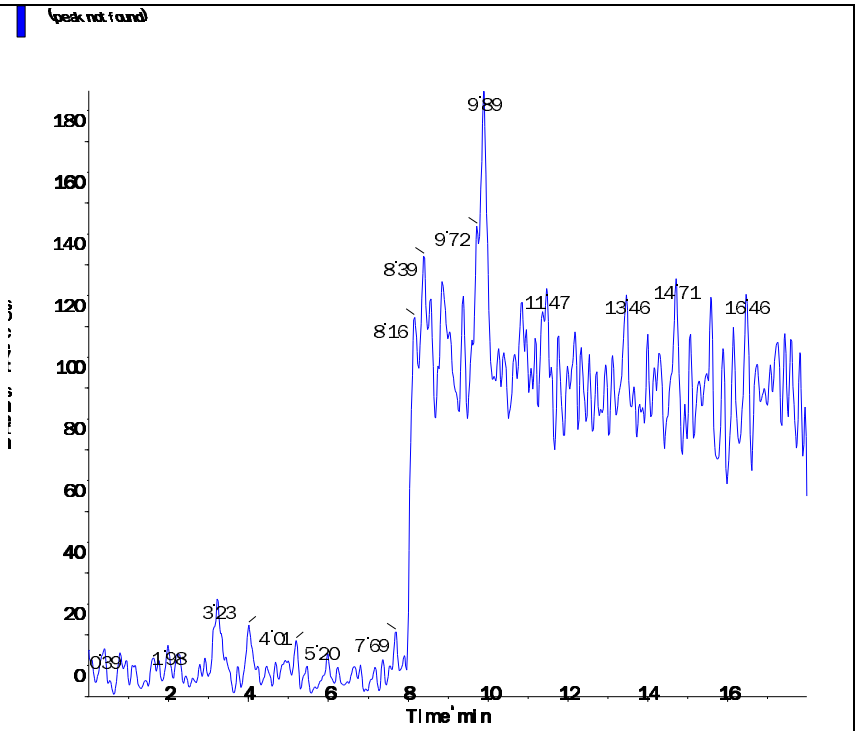

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

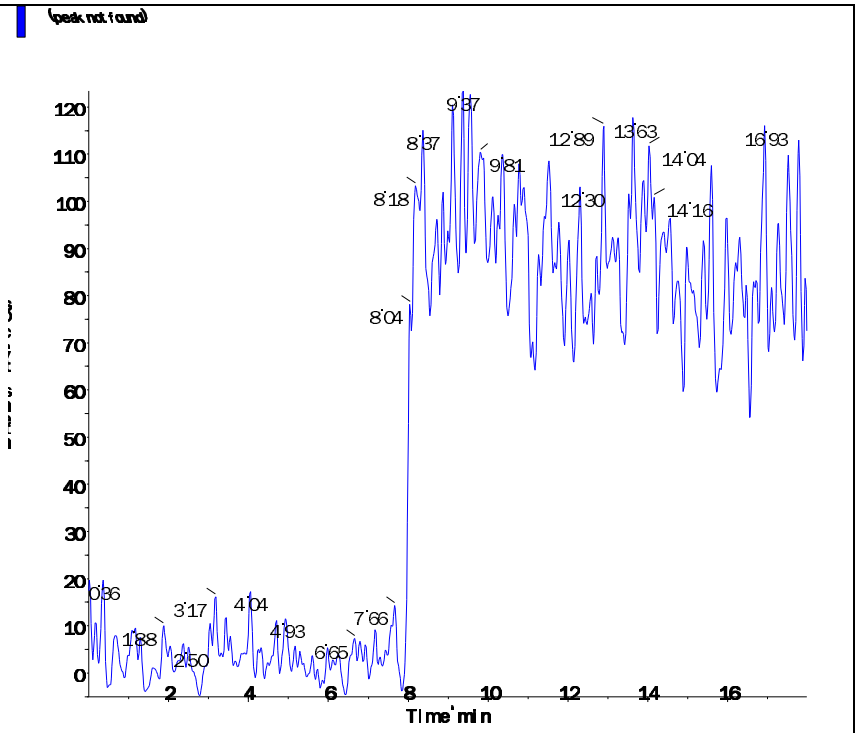

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2.2.1.4 Standards Data

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Data File	LM34686.wiff	**Result Table**	050616_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050616_JWR.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

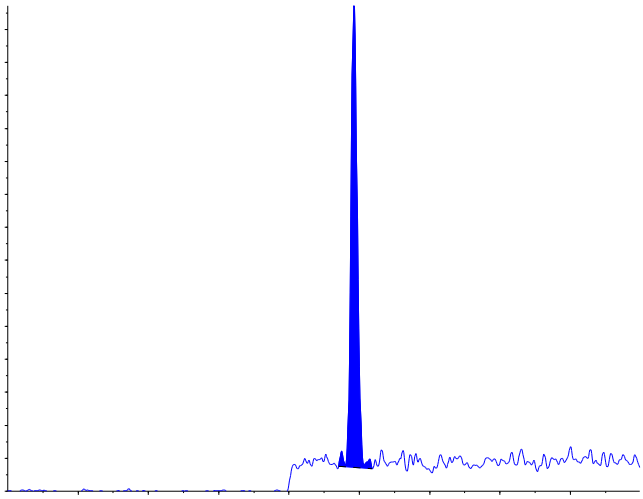

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

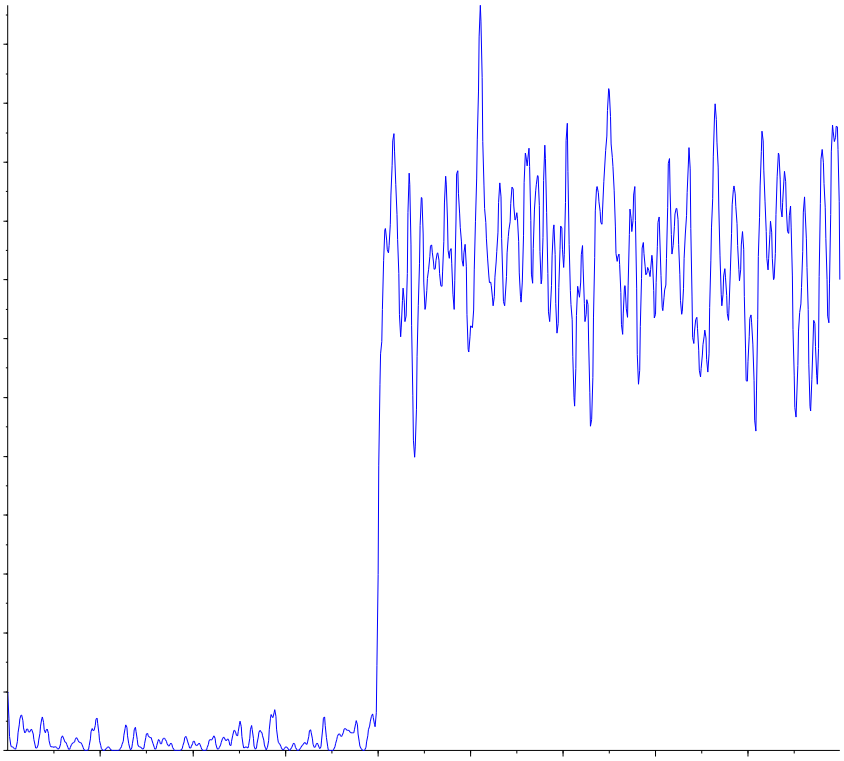

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

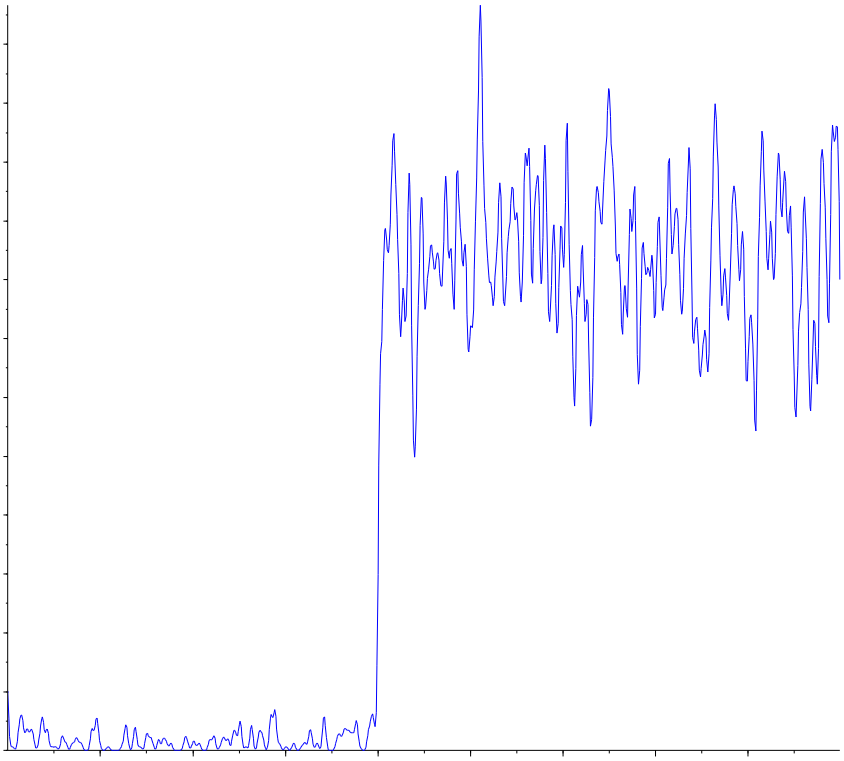

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Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

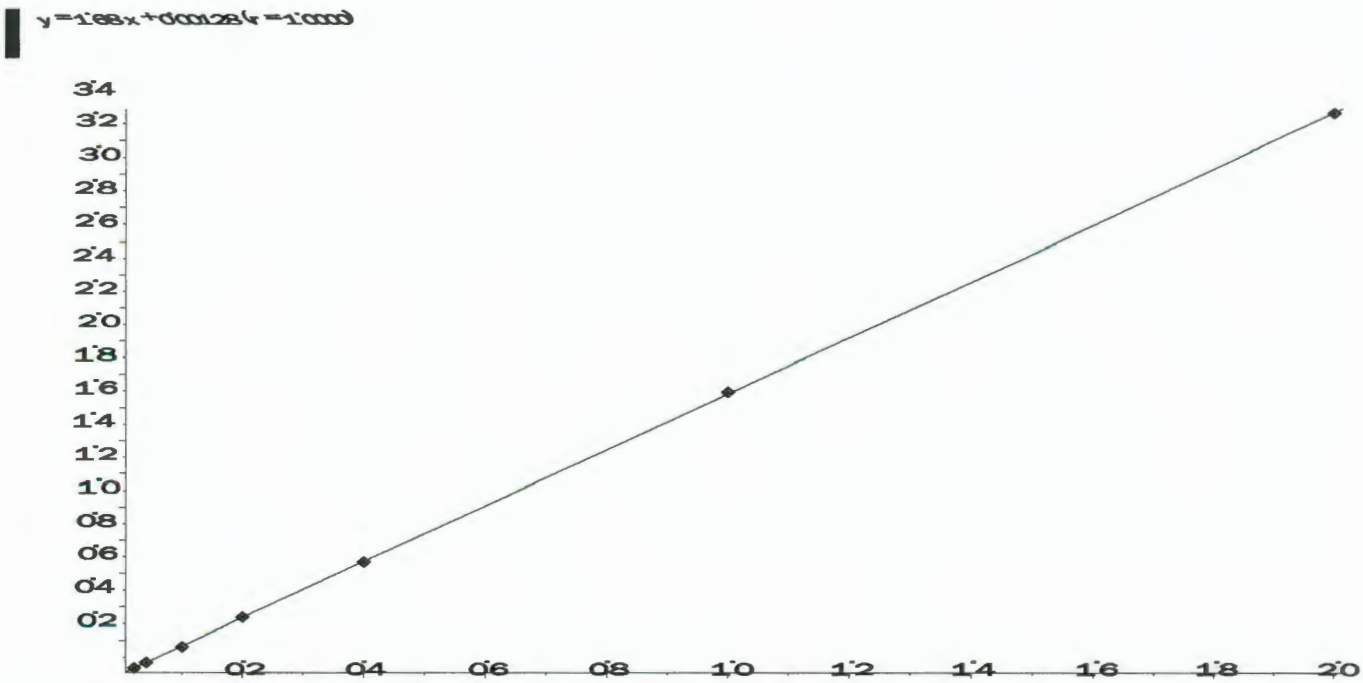

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Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

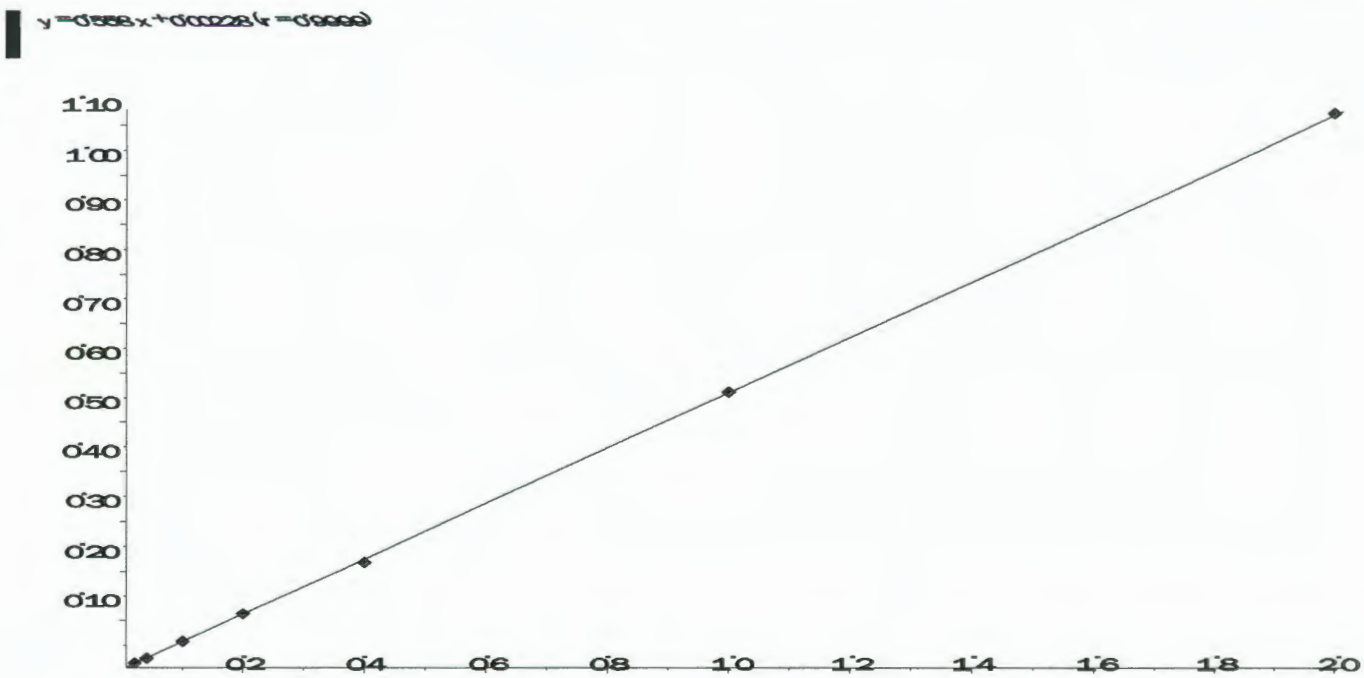

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Data File	LM34687.wiff	**Result Table**	050616_JWR.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050616_JWR.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

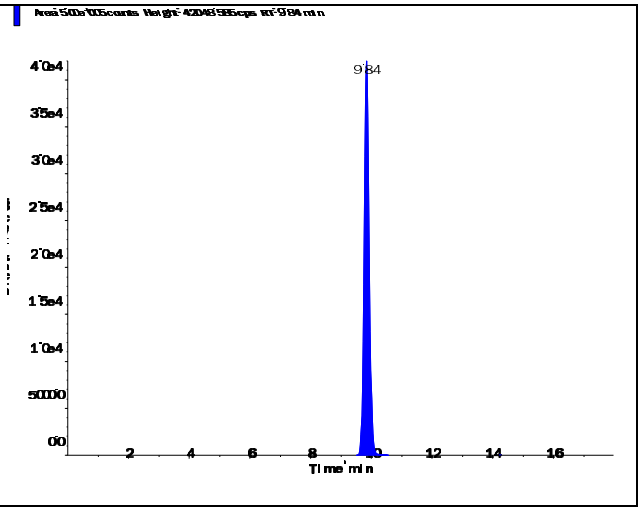

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.103 ng/ml
Area Ratio:	0.036
Sample Type:	(Standard)

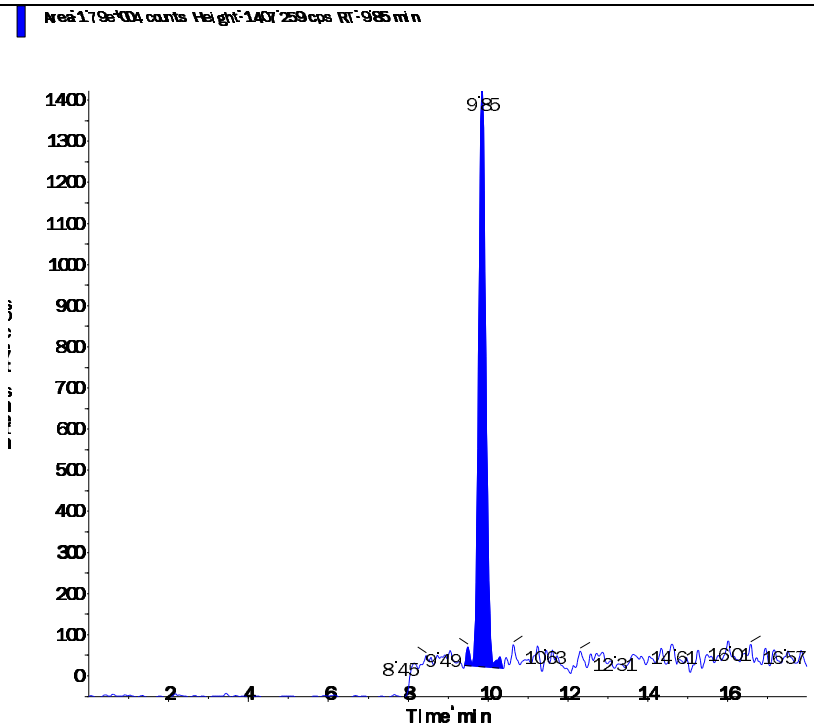

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.104 ng/ml
Area Ratio:	0.014
Sample Type:	(Standard)

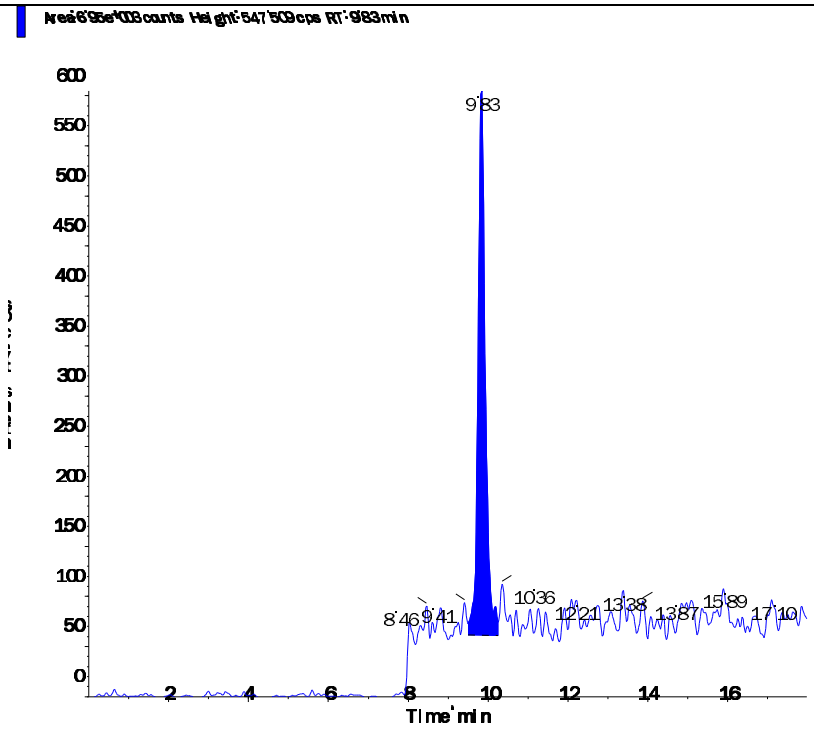

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Data File	LM34688.wiff	**Result Table**	050616_JWR.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050616_JWR.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

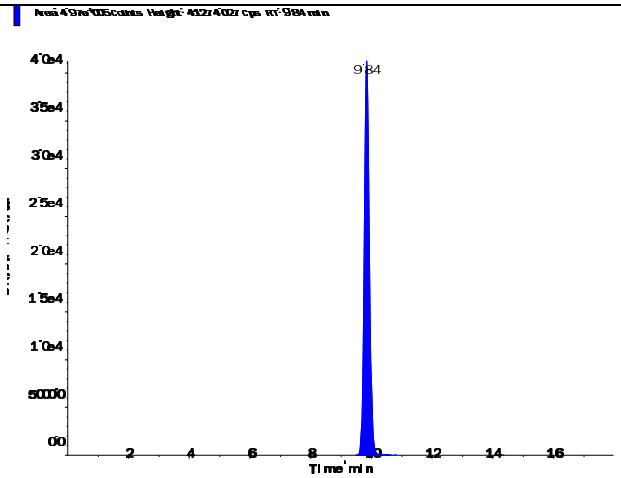

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

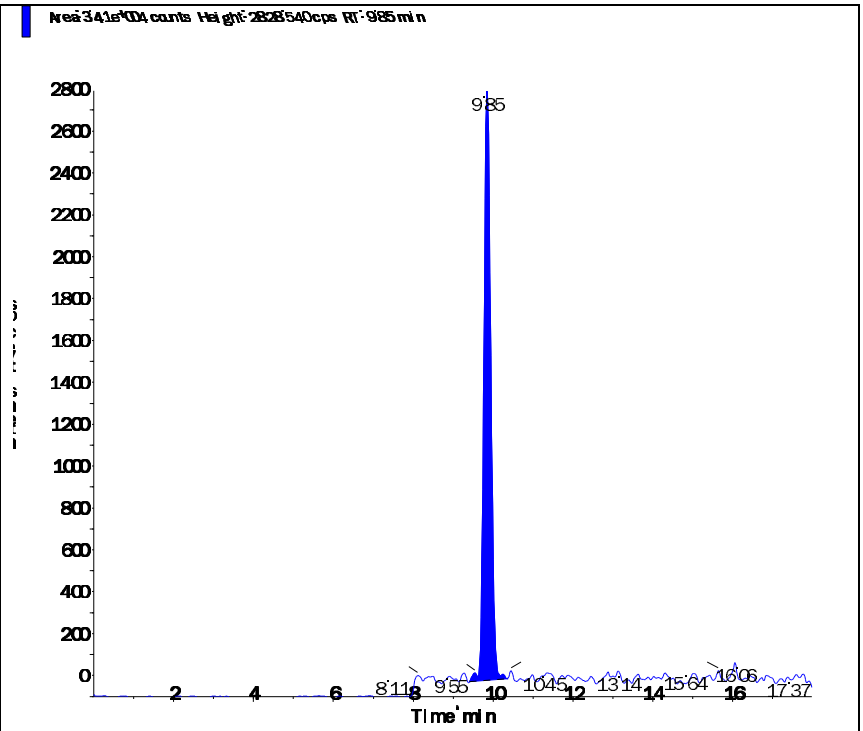

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

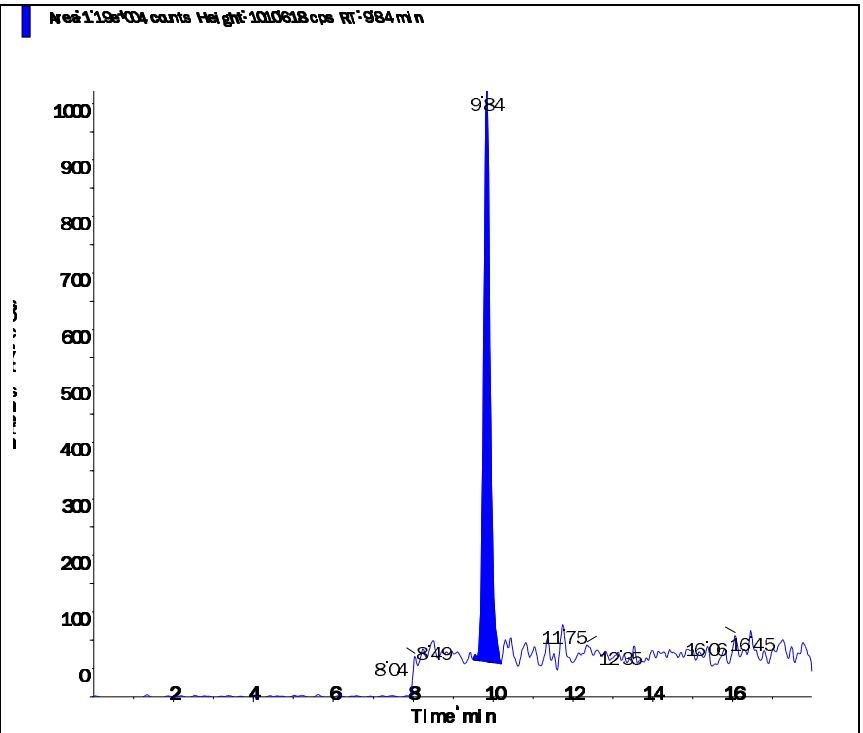

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Data File	LM34689.wiff	**Result Table**	050616_JWR.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050616_JWR.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

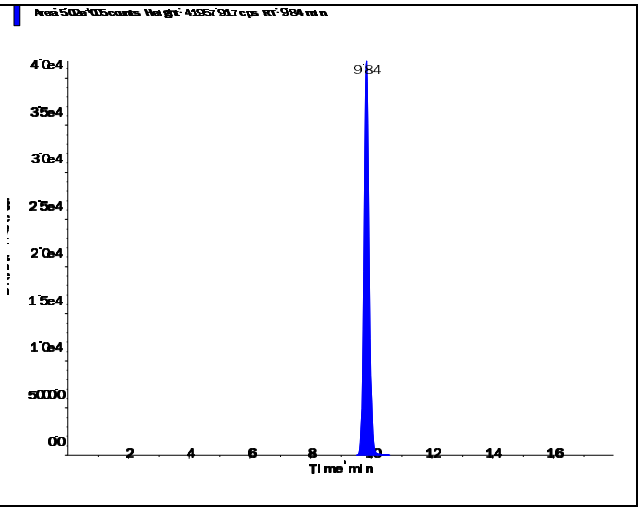

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.483 ng/ml
Area Ratio:	0.164
Sample Type:	(Standard)

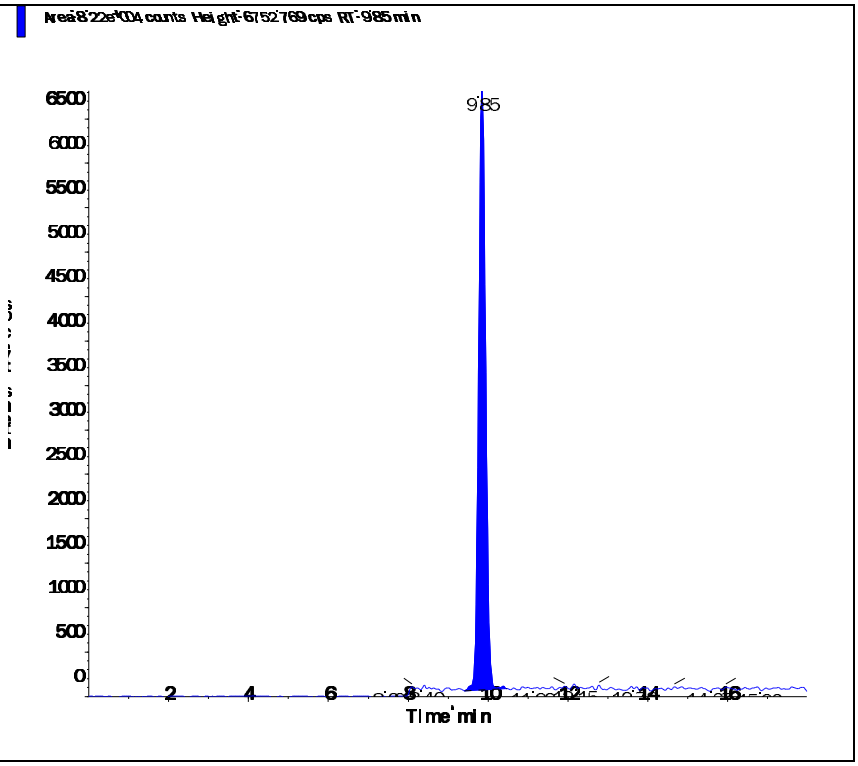

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.503 ng/ml
Area Ratio:	0.058
Sample Type:	(Standard)

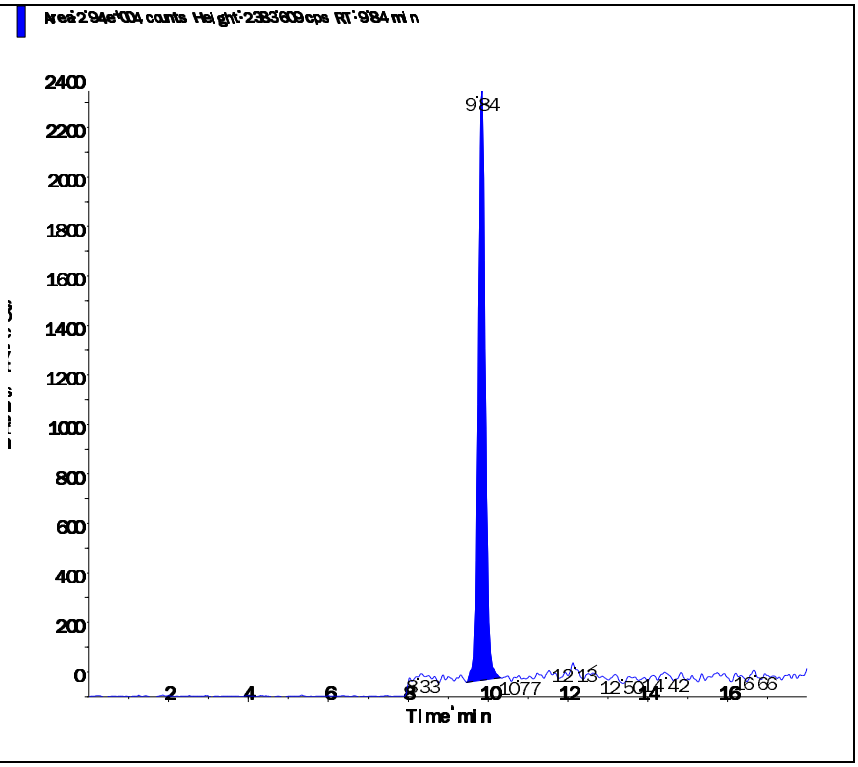

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Data File	LM34690.wiff	**Result Table**	050616_JWR.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050616_JWR.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

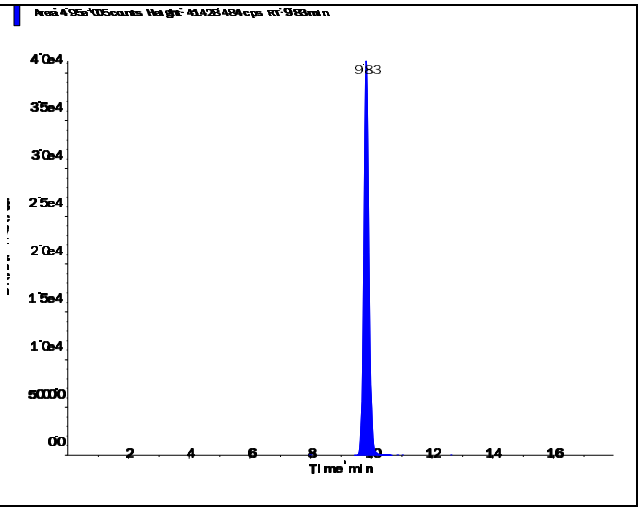

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

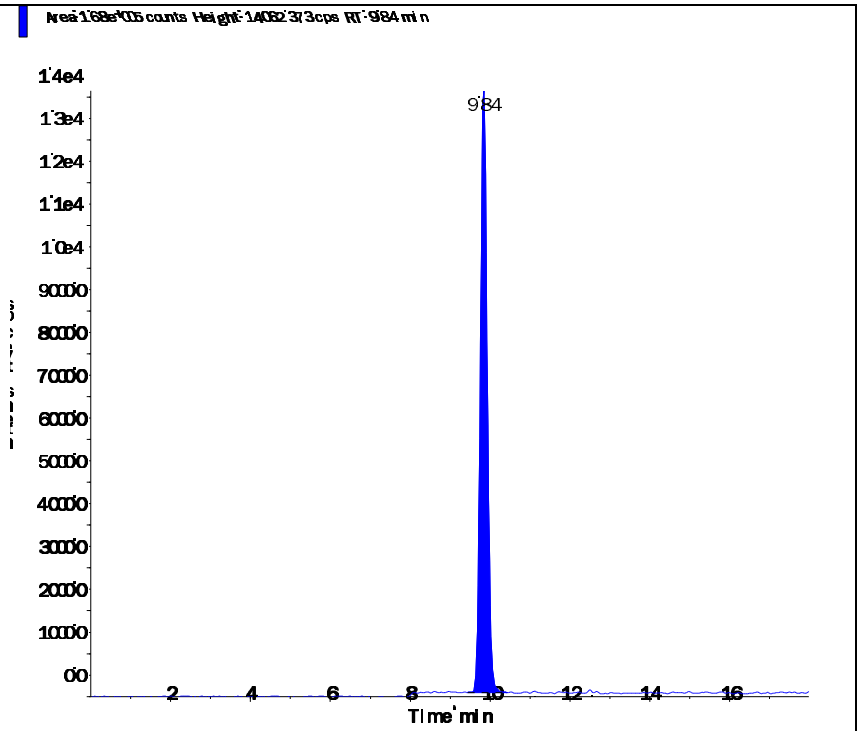

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

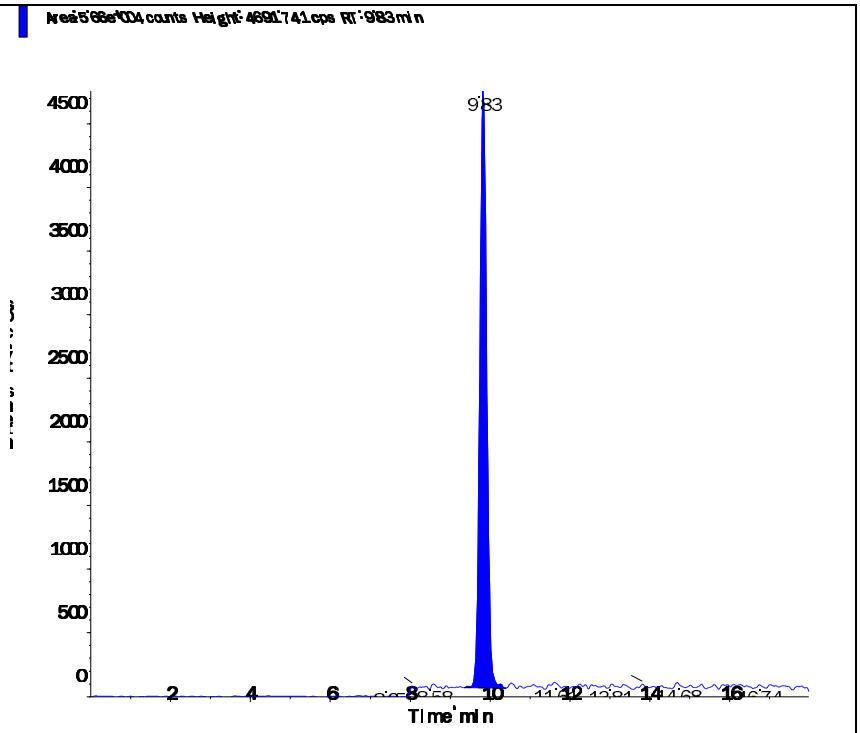

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Data File	LM34691.wiff	**Result Table**	050616_JWR.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050616_JWR.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

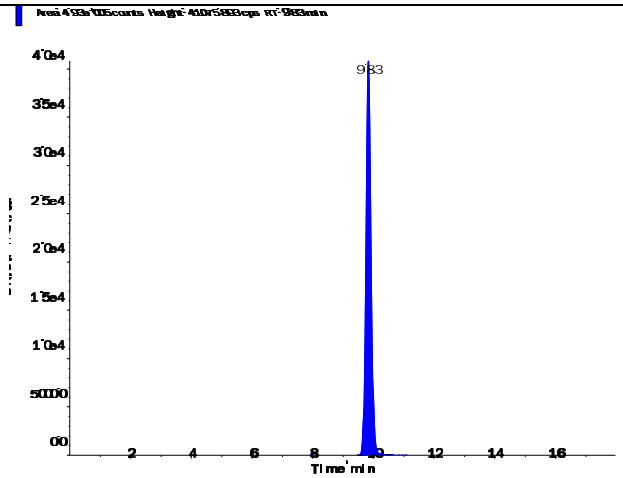

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 1.99 ng/ml Area Ratio: 0.669 Sample Type: (Standard)	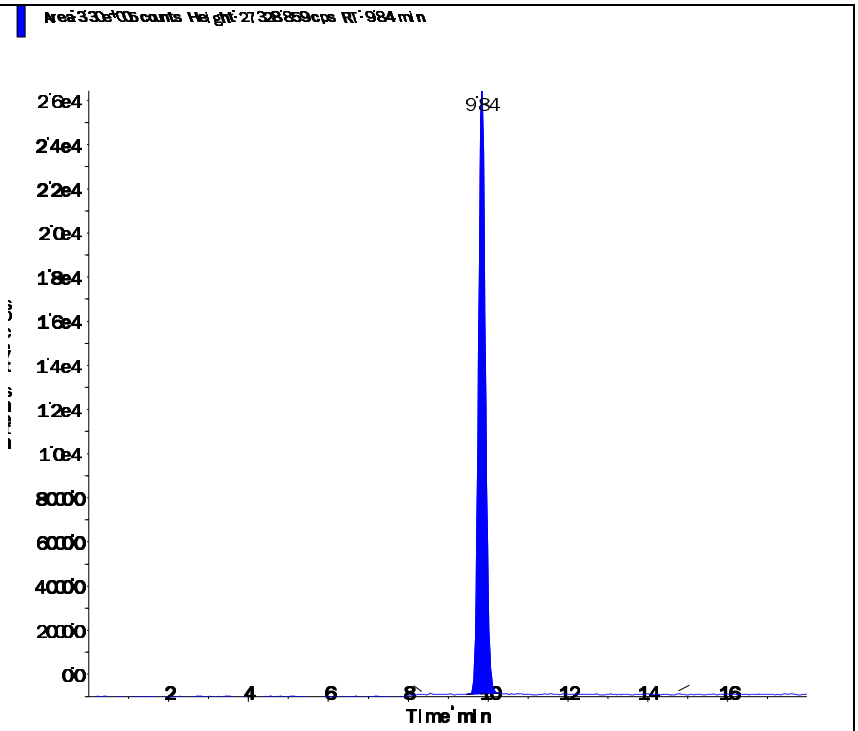
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 1.94 ng/ml Area Ratio: 0.219 Sample Type: (Standard)	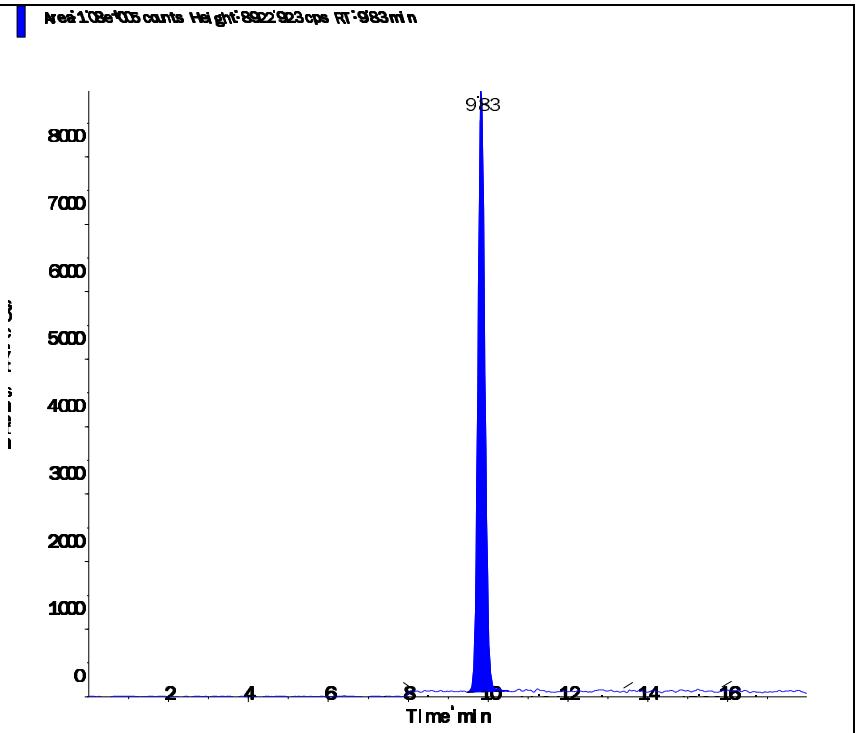

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Data File	LM34692.wiff	**Result Table**	050616_JWR.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050616_JWR.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

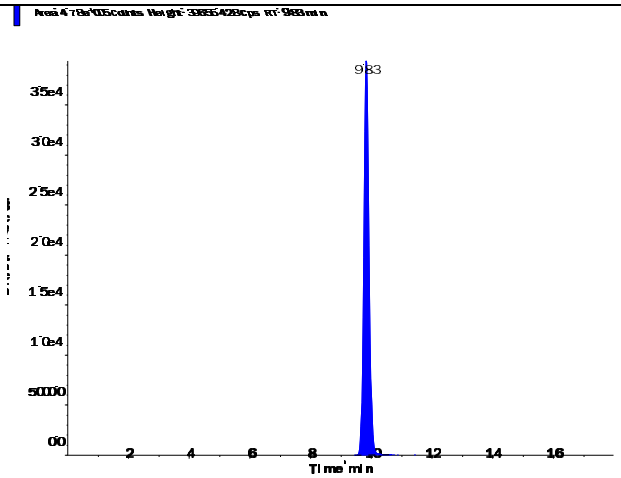

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

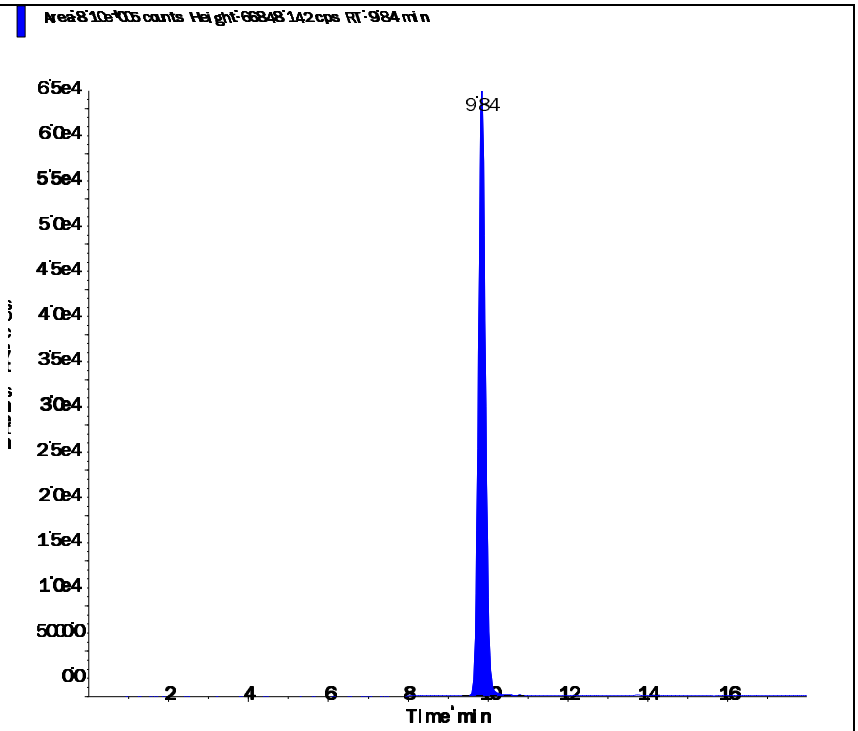

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

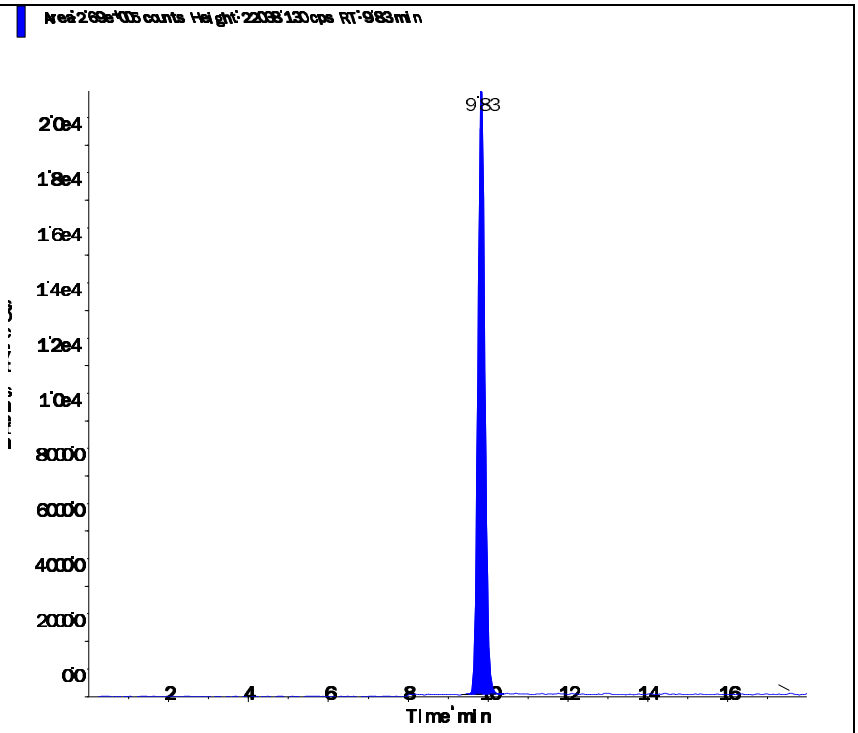

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Created with Analyst Reporter
Printed: 5/9/2016 3:33 PM

Data File	LM34693.wiff	**Result Table**	050616_JWR.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050616_JWR.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

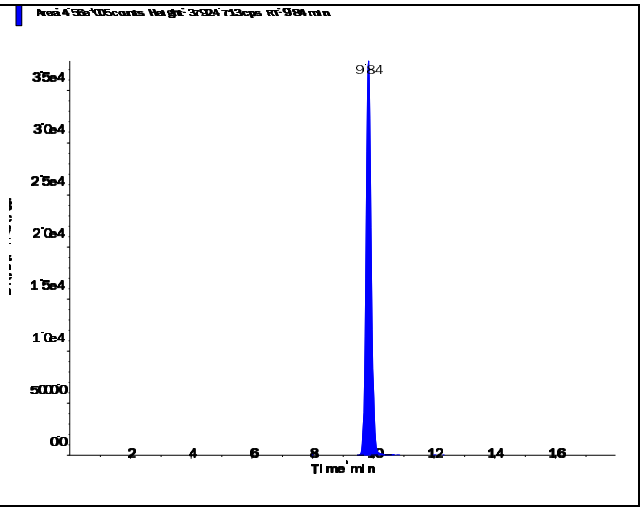

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	9.99 ng/ml
Area Ratio:	3.36
Sample Type:	(Standard)

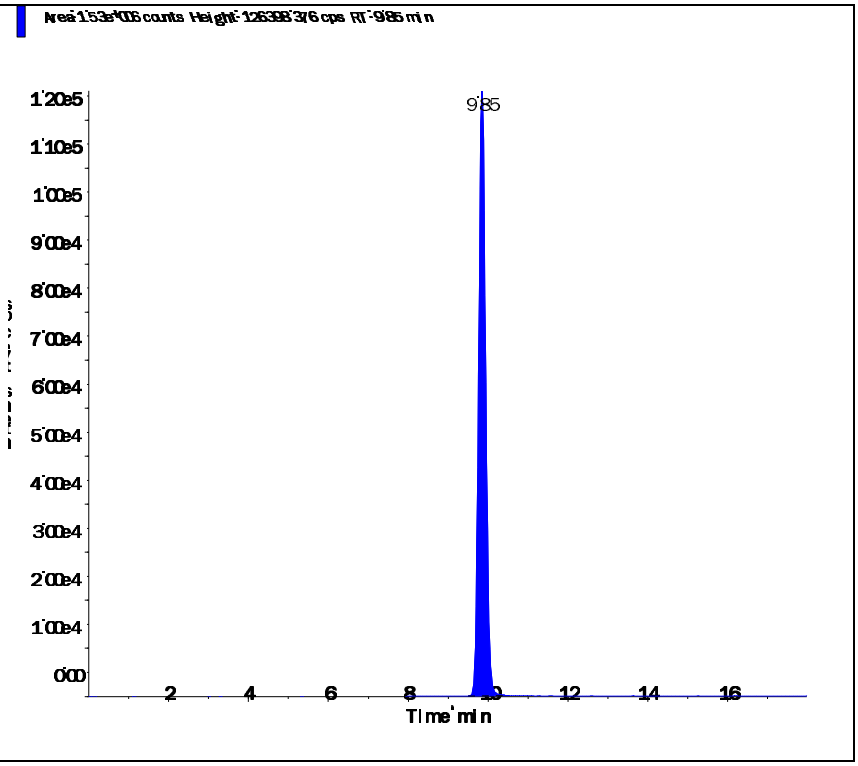

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	10.00 ng/ml
Area Ratio:	1.122
Sample Type:	(Standard)

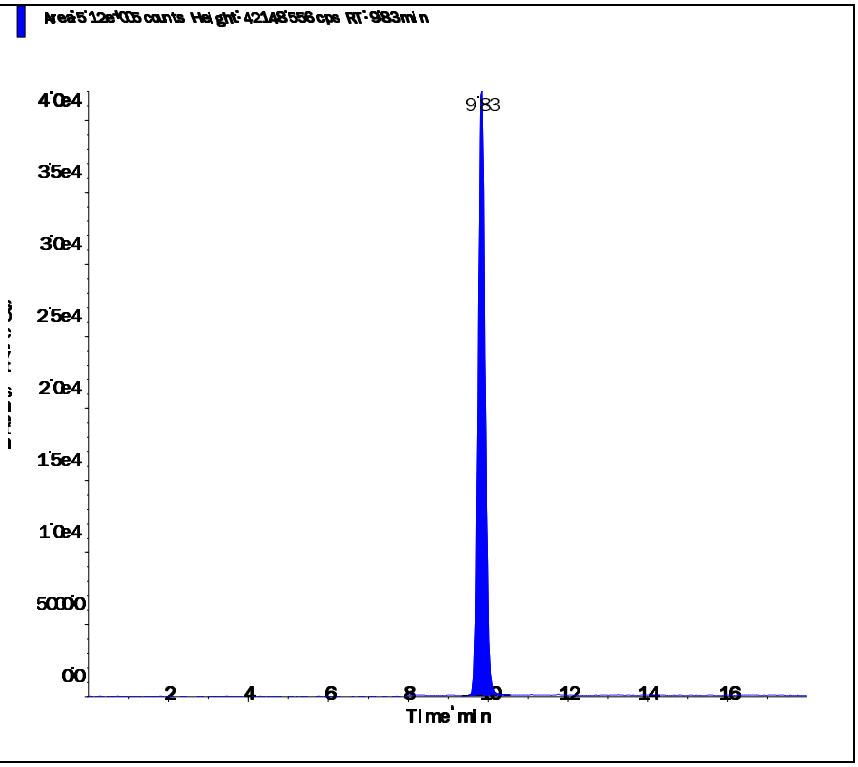

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Printed: 5/4/2016 1:23 PM

Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

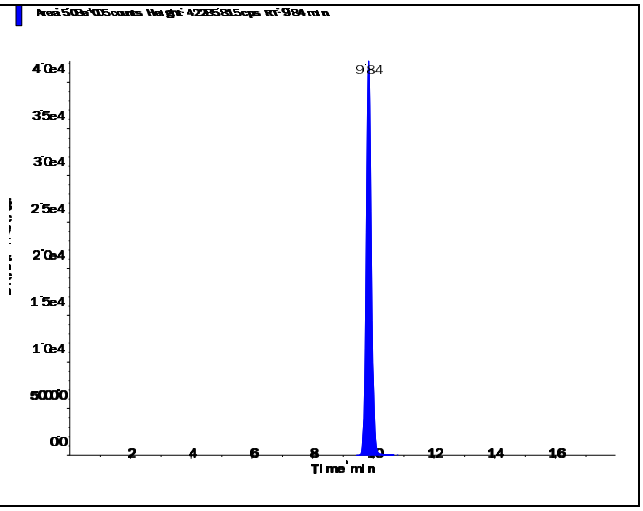

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.332
Sample Type:	(Quality Control)

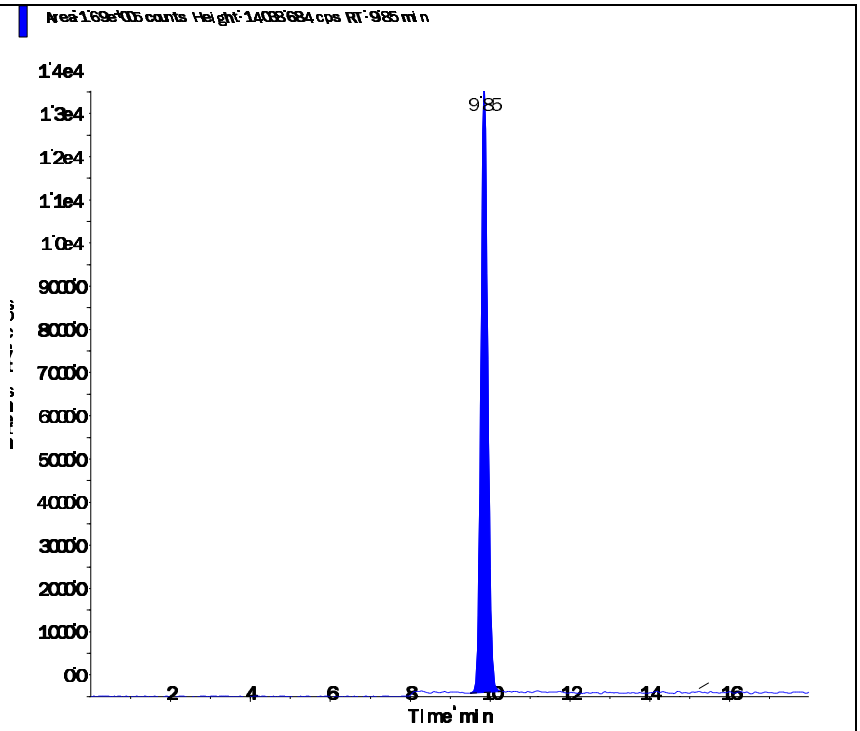

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

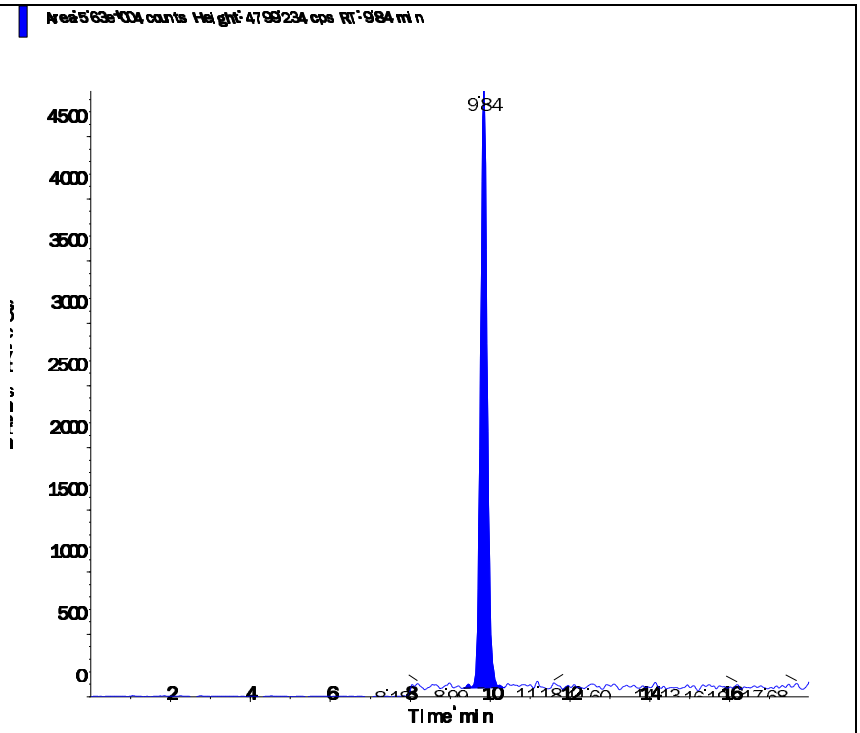

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Data File	LM34718.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 3:21:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567549-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM34718.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 3:21:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567549-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.250e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.430e+05	9.84	1.00	0.996
Perchlorate conf	4.780e+04	9.83	1.00	0.989

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

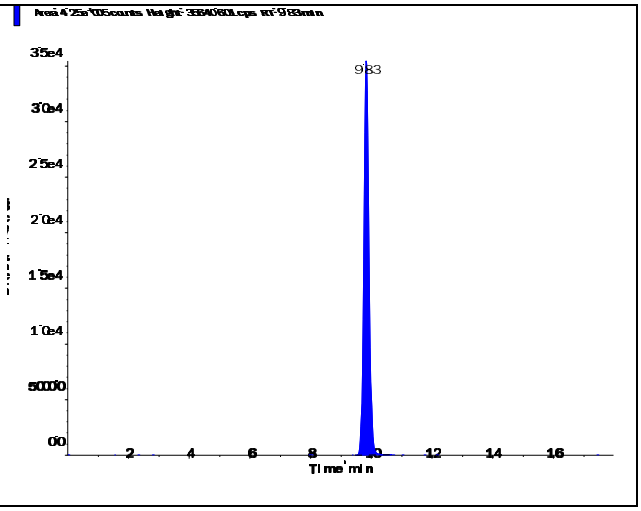

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.996 ng/ml
Area Ratio:	0.336
Sample Type:	(Quality Control)

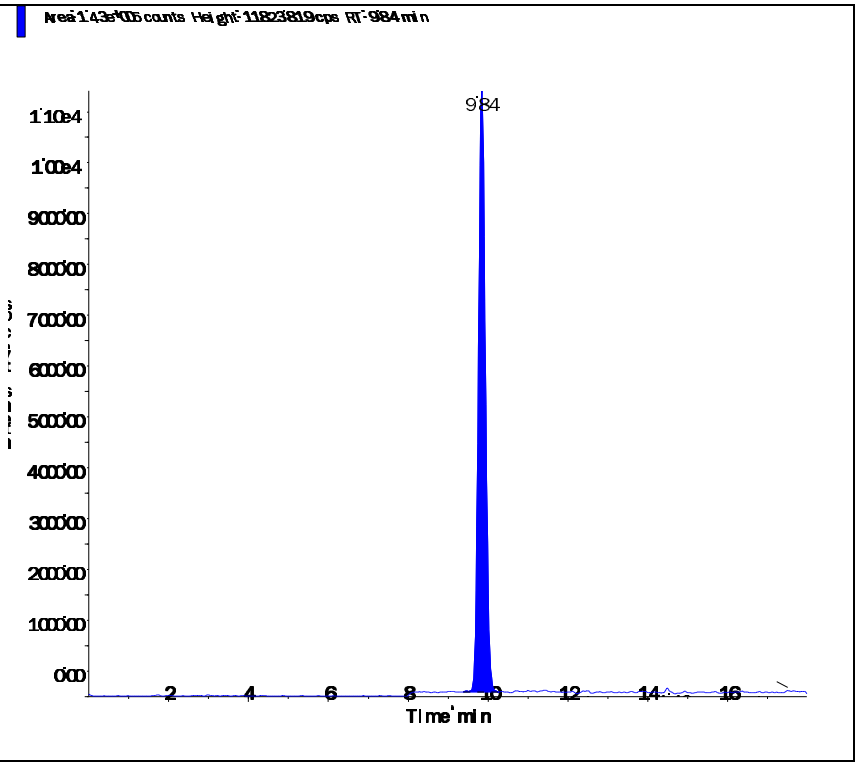

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.989 ng/ml
Area Ratio:	0.113
Sample Type:	(Quality Control)

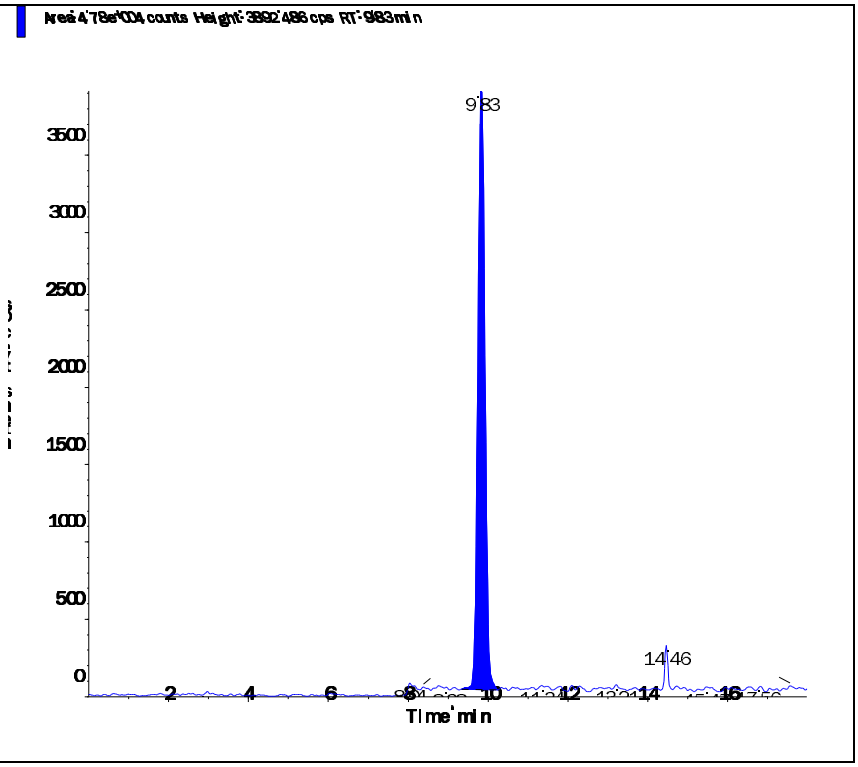

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Data File	LM34730.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 7:08:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567549-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM34730.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 7:08:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567549-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.610e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.590e+05	9.84	1.00	1.02
Perchlorate conf	5.320e+04	9.83	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

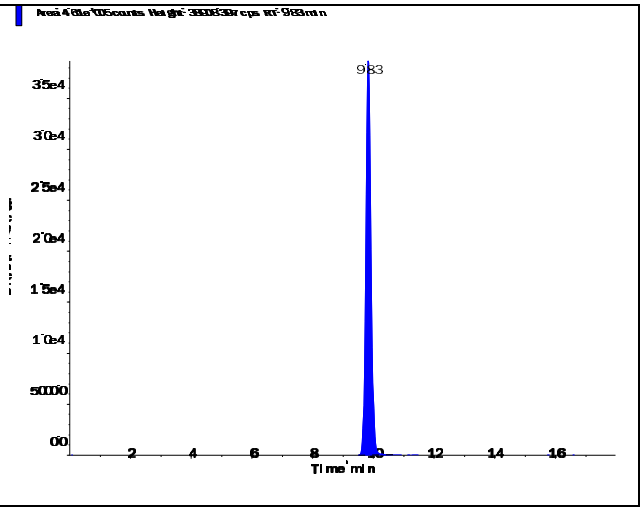

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.344
Sample Type:	(Quality Control)

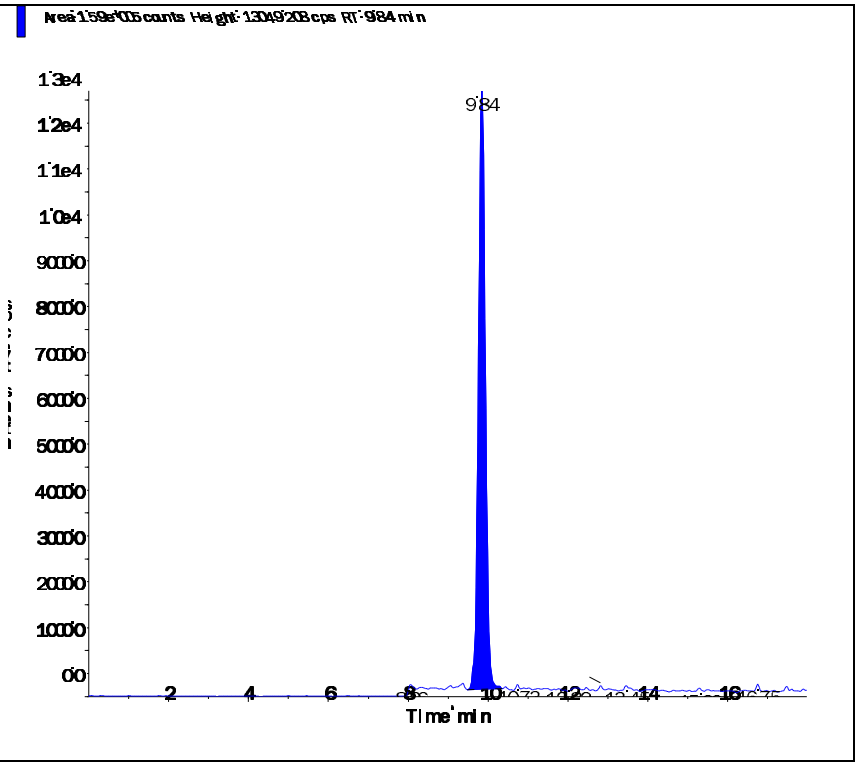

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.115
Sample Type:	(Quality Control)

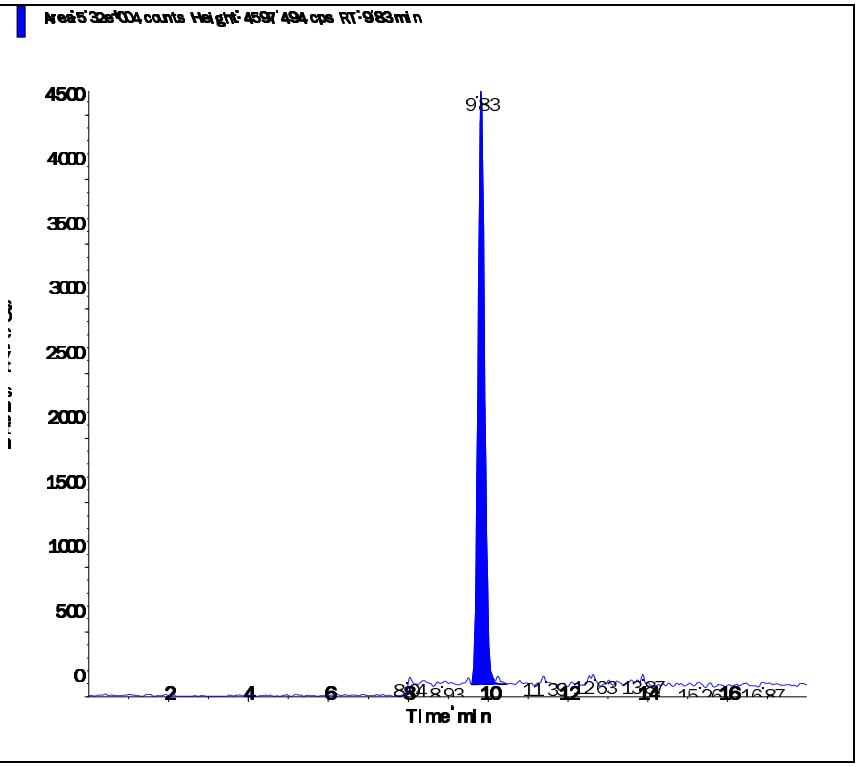

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Data File	LM34743.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 11:14:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567549-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM34743.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 11:14:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567549-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.230e+05	9.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.780e+05	9.82	1.00	1.01
Perchlorate conf	5.820e+04	9.81	1.00	0.977

O18LP (Internal Standard)

RT (Exp. RT): 9.80(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

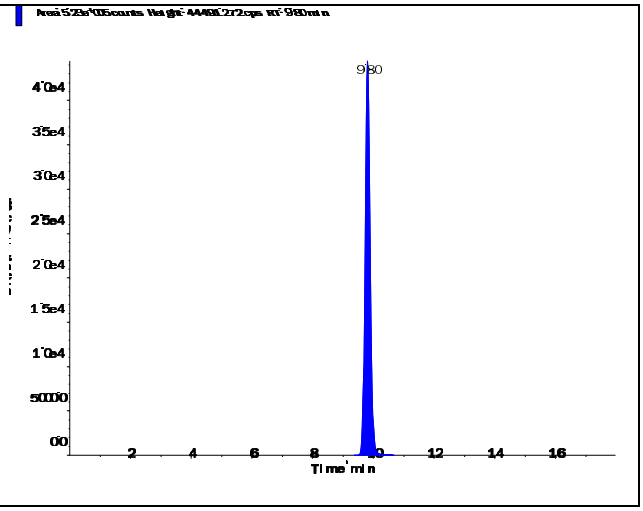

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.341
Sample Type:	(Quality Control)

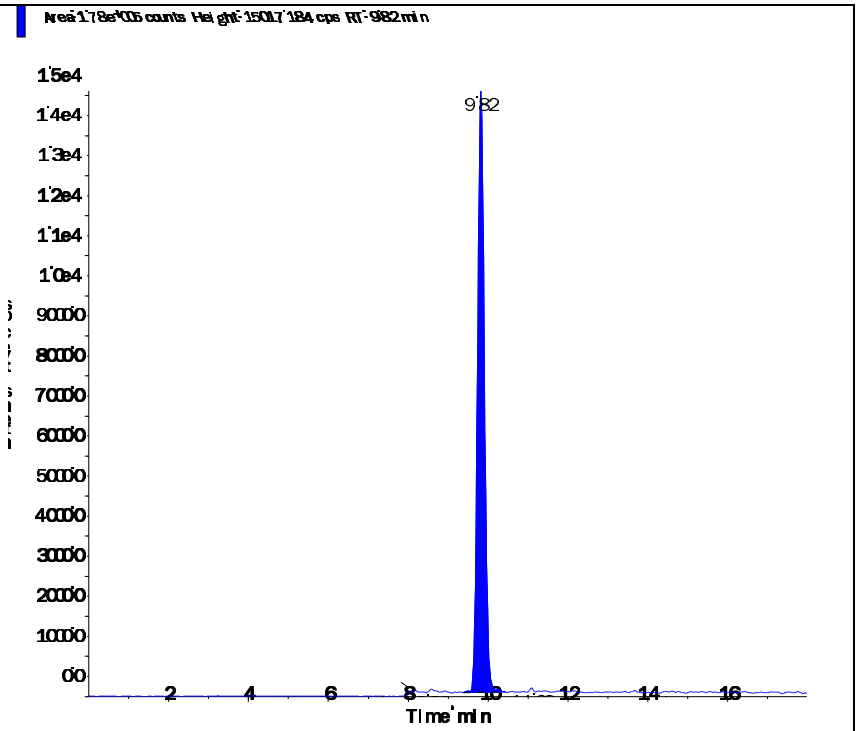

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.81 (9.84) min
Calculated conc:	0.977 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

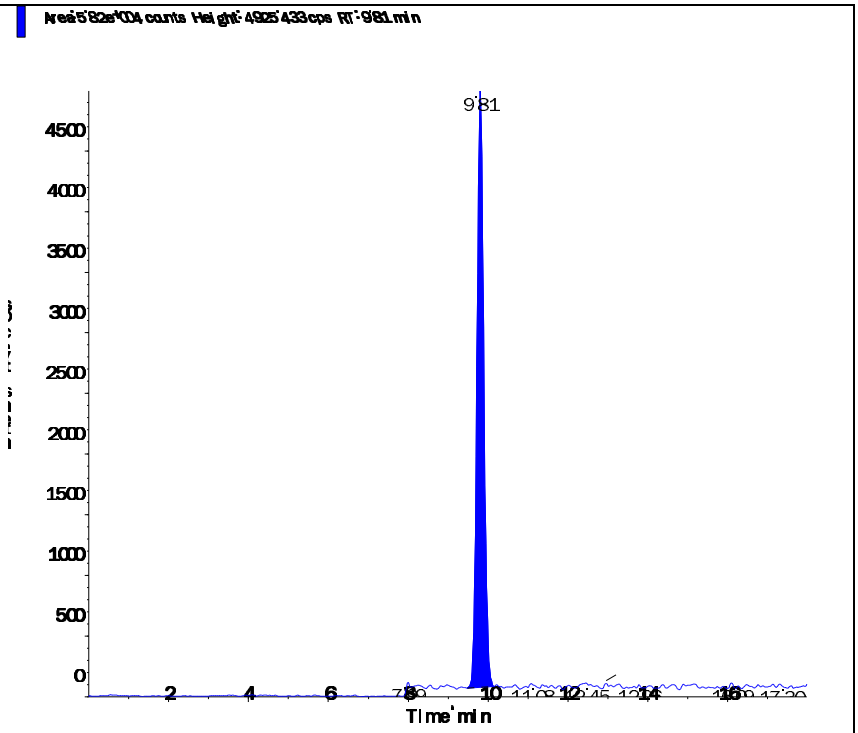

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Data File	LM34749.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 1:08:31 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567549-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM34749.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 1:08:31 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567549-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.280e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.770e+05	9.82	1.00	0.99
Perchlorate conf	5.980e+04	9.81	1.00	0.994

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

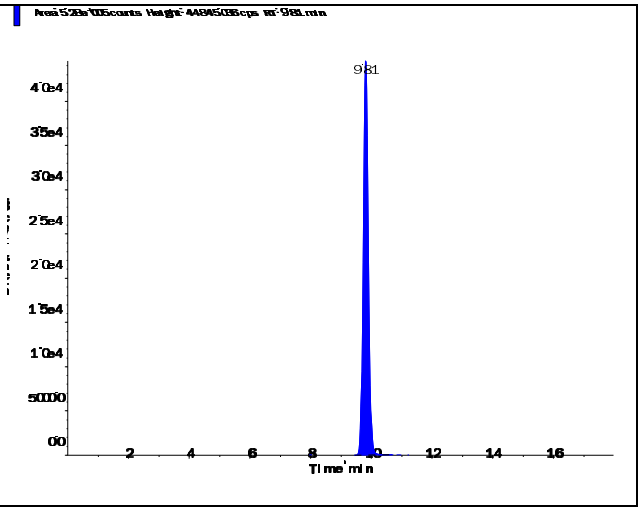

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Printed: 5/6/2016 1:56 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	0.99 ng/ml
Area Ratio:	0.334
Sample Type:	(Quality Control)

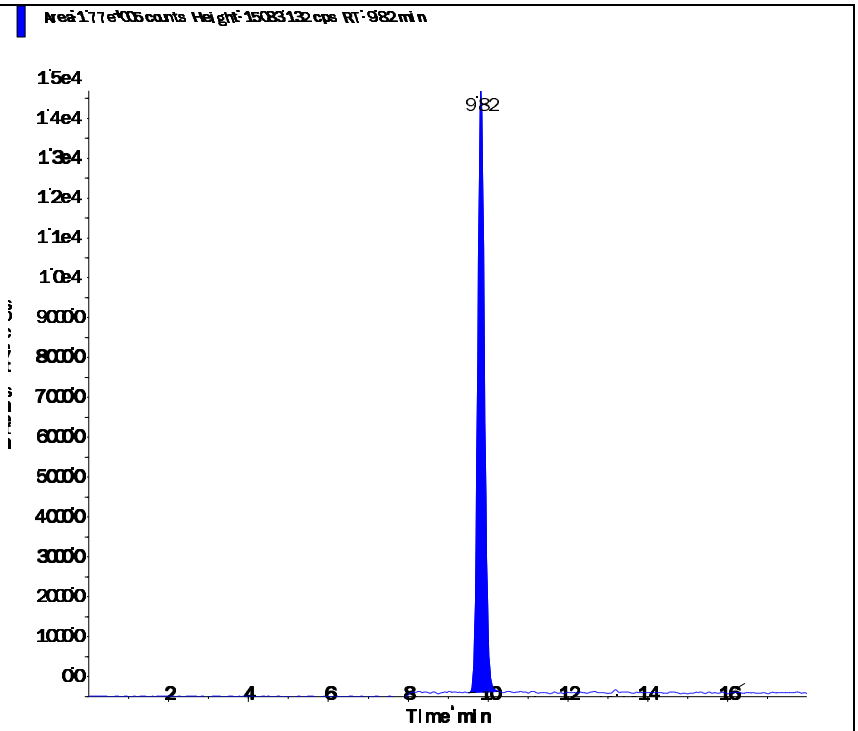

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.81 (9.84) min
Calculated conc:	0.994 ng/ml
Area Ratio:	0.113
Sample Type:	(Quality Control)

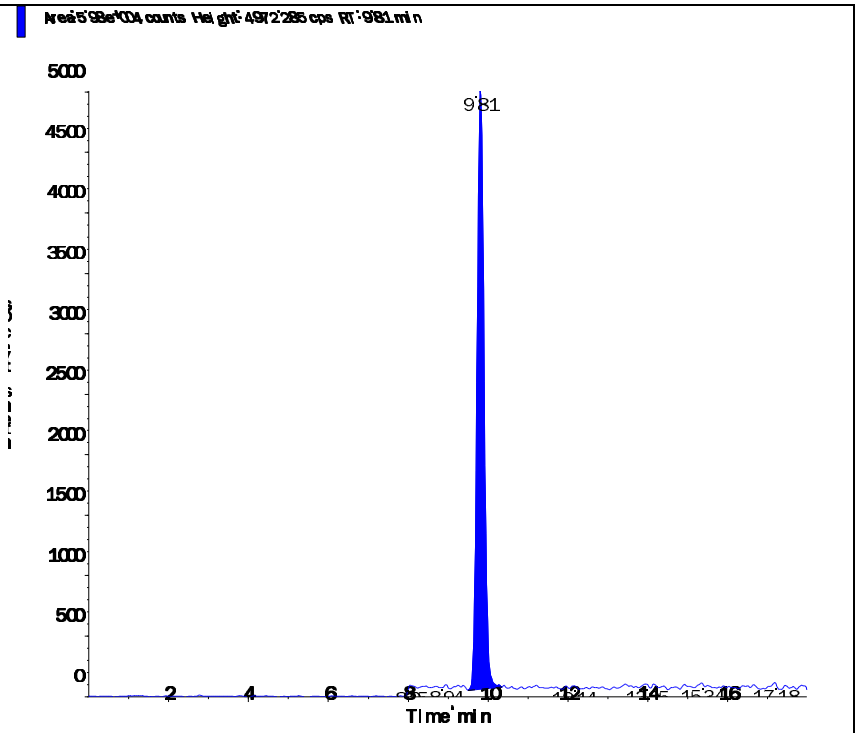

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Printed: 5/6/2016 1:57 PM

Data File	LM34752.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 12:54:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567549-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM34752.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 12:54:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567549-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.620e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.560e+05	9.83	1.00	0.998
Perchlorate conf	5.500e+04	9.81	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

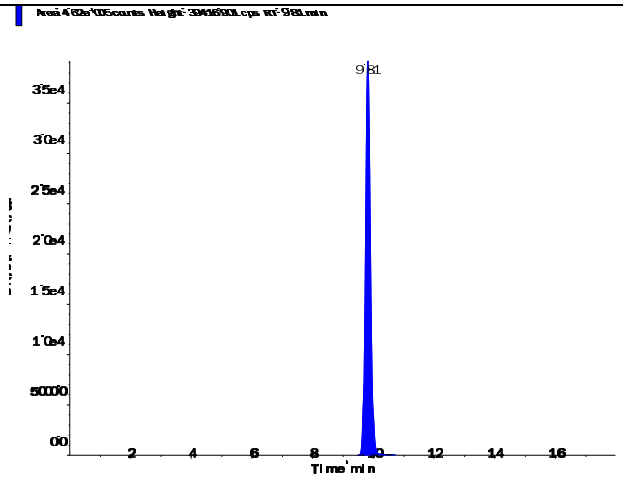

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Printed: 5/6/2016 1:57 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 0.998 ng/ml Area Ratio: 0.337 Sample Type: (Quality Control)	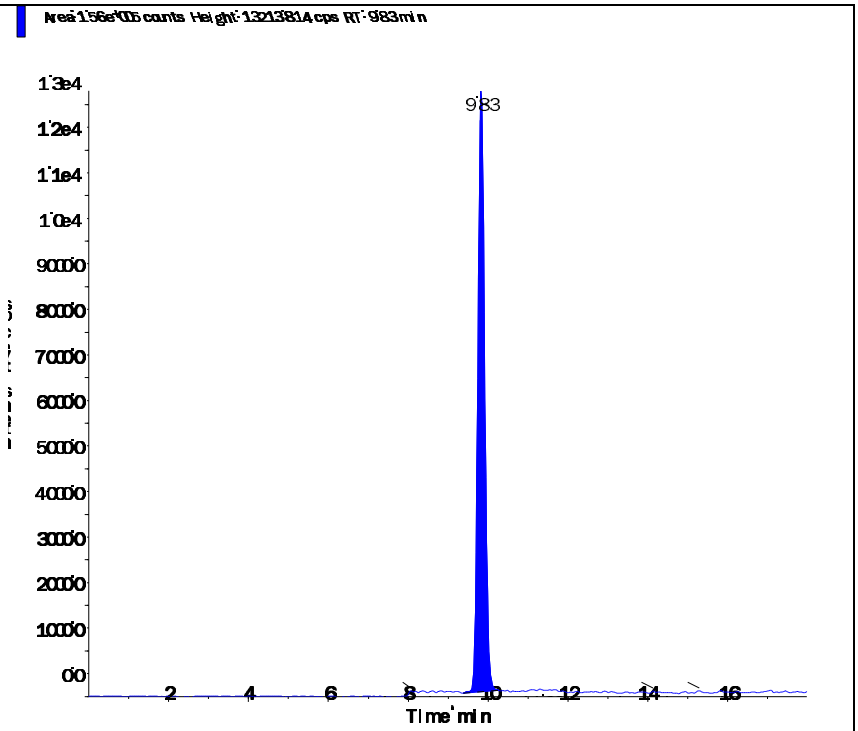
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.81 (9.84) min Calculated conc: 1.05 ng/ml Area Ratio: 0.119 Sample Type: (Quality Control)	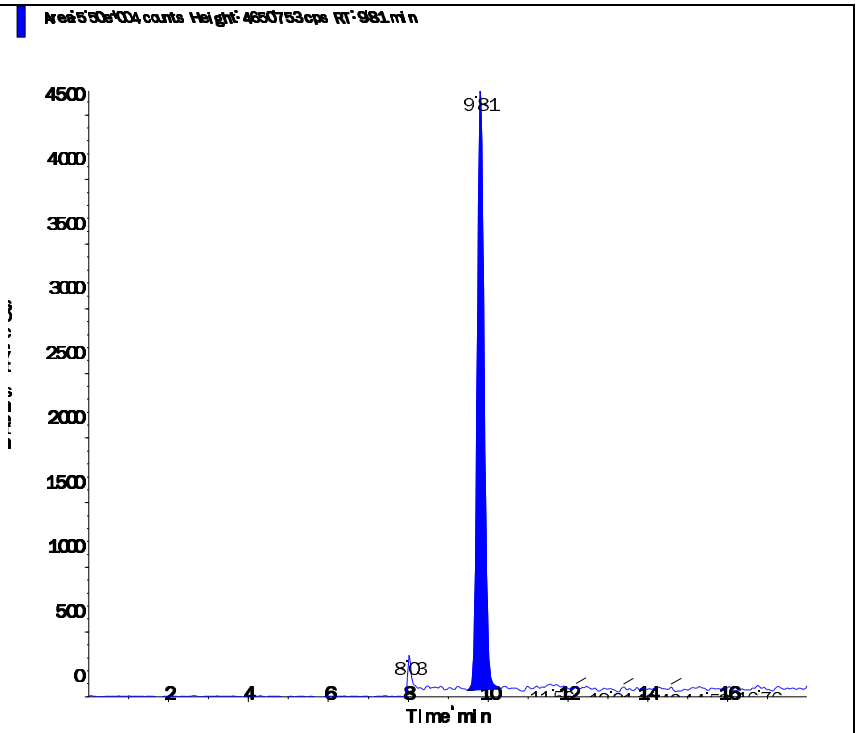

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Printed: 5/6/2016 1:59 PM

Data File	LM34759.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 3:06:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567549-11 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM34759.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 3:06:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567549-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.150e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.740e+05	9.83	1.00	1.00
Perchlorate conf	5.910e+04	9.82	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

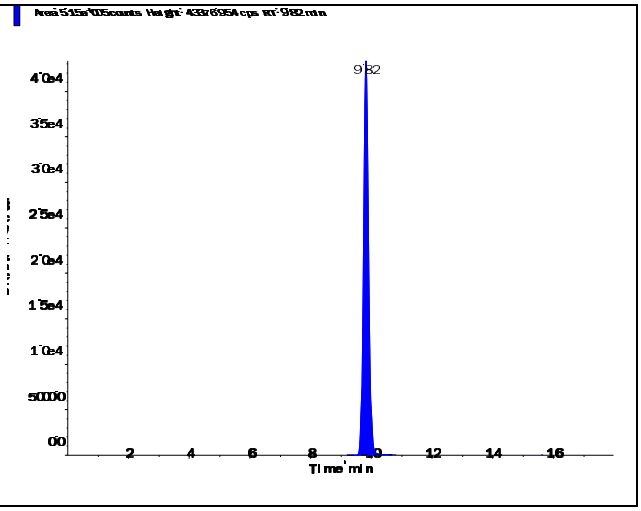

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.339
Sample Type:	(Quality Control)

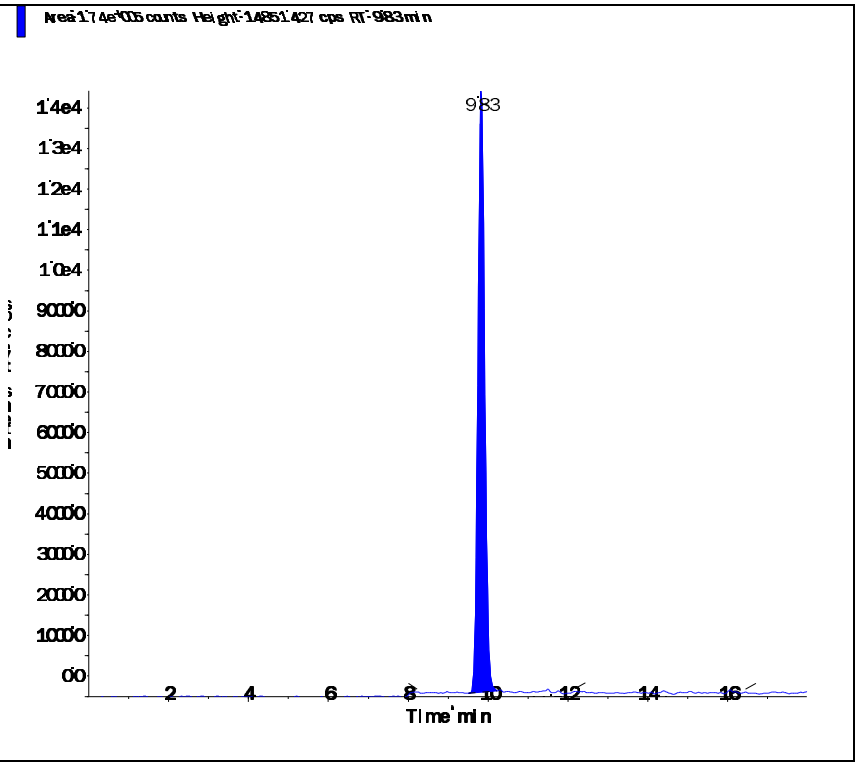

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.115
Sample Type:	(Quality Control)

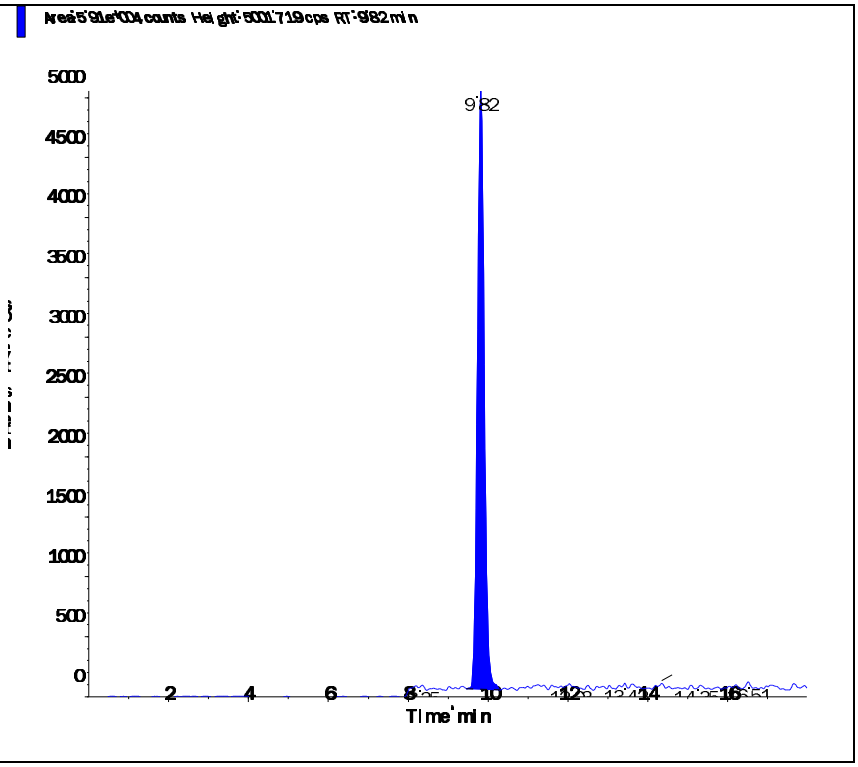

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Data File	LM34767.wiff	**Result Table**	050516_JWR.rdb
Acquisition Date	5/5/2016 6:04:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567745-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM34767.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 6:04:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050516_JWR.rdb
Sample ID	WG567745-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.060e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.720e+05	9.84	1.00	1.01
Perchlorate conf	5.770e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

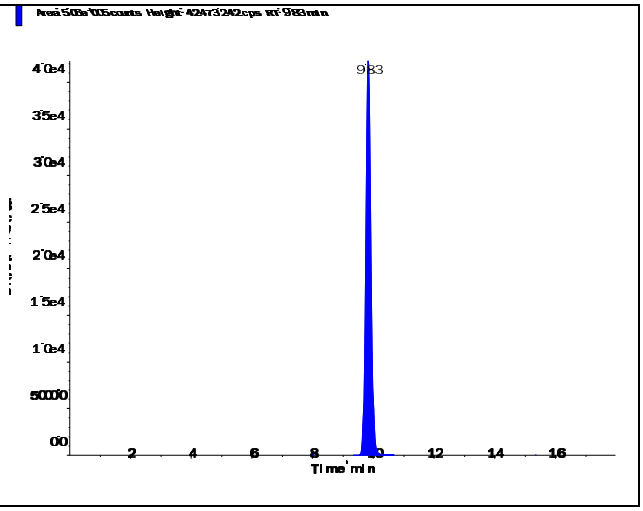

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.34
Sample Type:	(Quality Control)

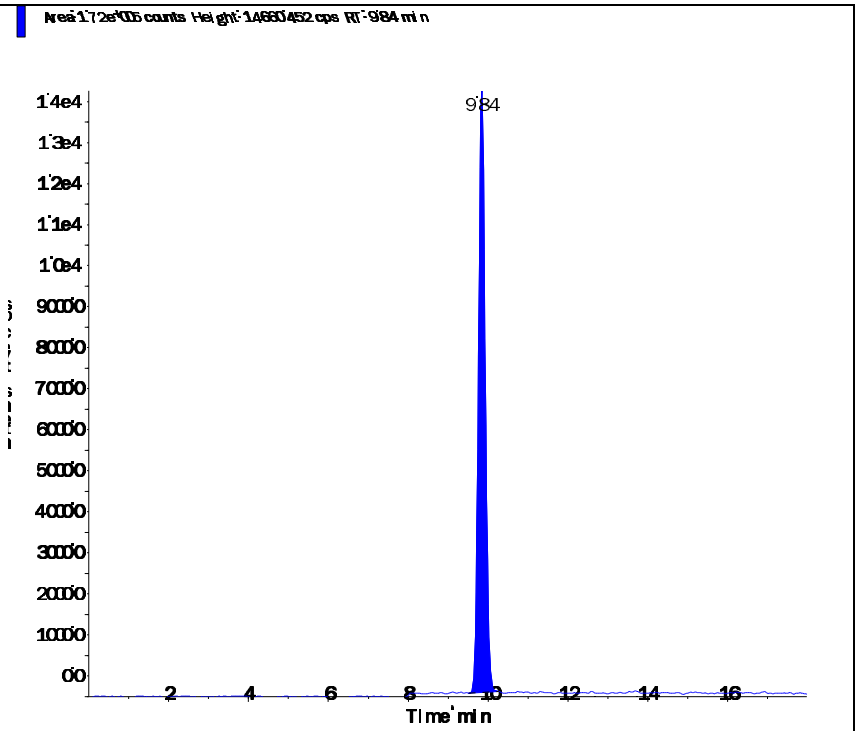

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Quality Control)

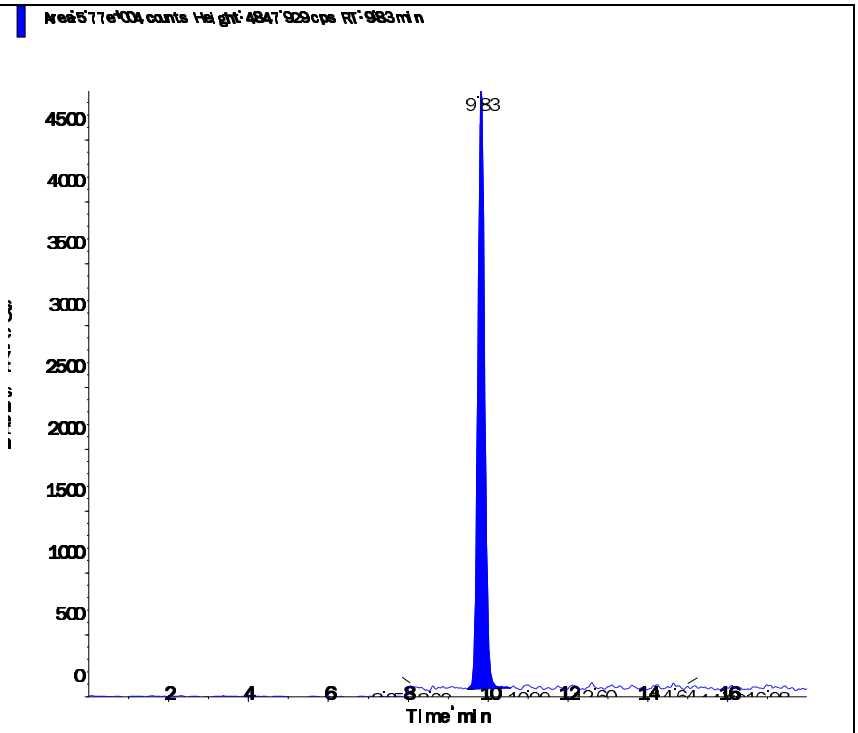

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Data File	LM34779.wiff	**Result Table**	050516_JWR.rdb
Acquisition Date	5/5/2016 9:52:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567745-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM34779.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 9:52:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050516_JWR.rdb
Sample ID	WG567745-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.590e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.900e+05	9.83	1.00	1.01
Perchlorate conf	6.370e+04	9.81	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

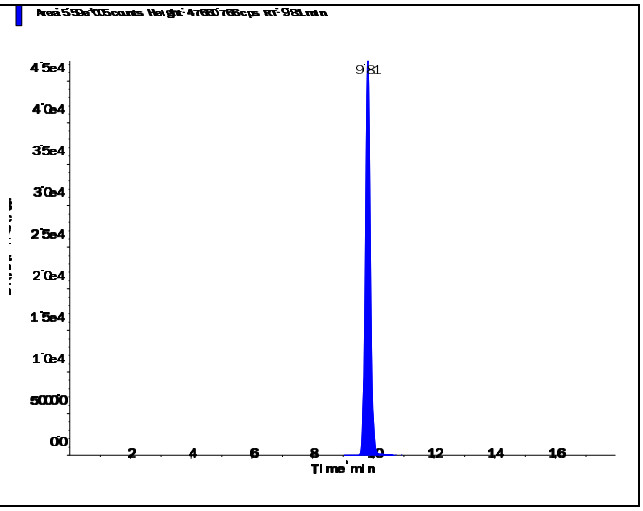

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.34
Sample Type:	(Quality Control)

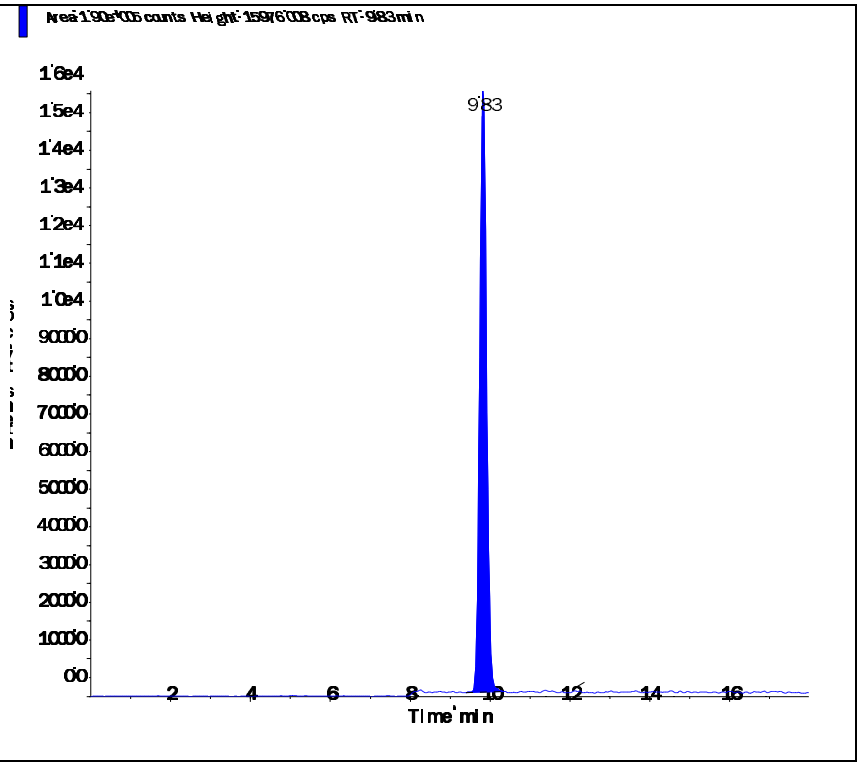

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.81 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Quality Control)

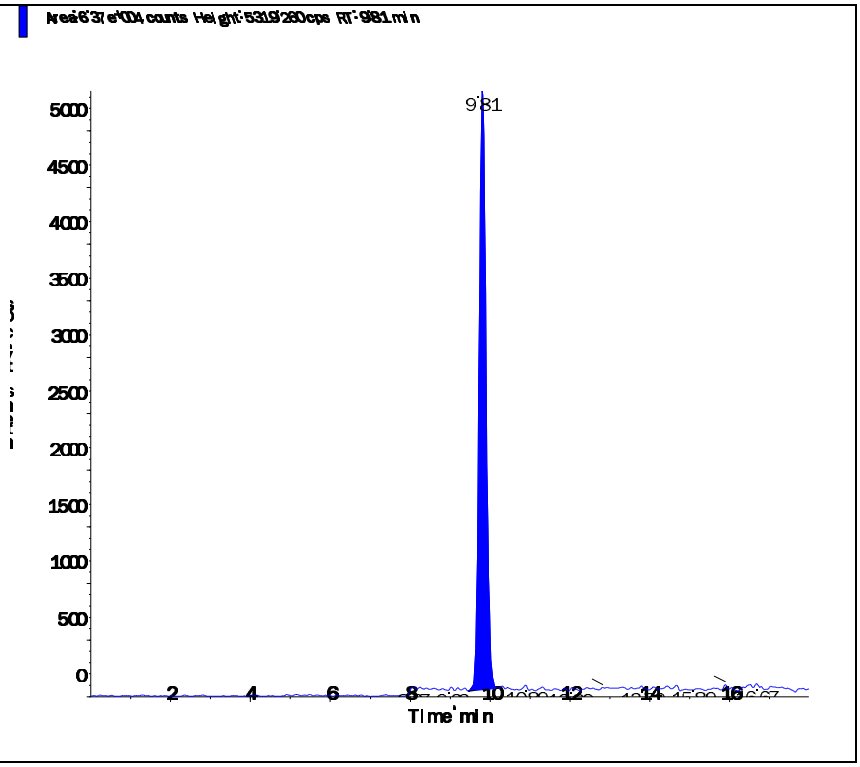

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Data File	LM34785.wiff	**Result Table**	050516_JWR.rdb
Acquisition Date	5/5/2016 11:45:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567745-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM34785.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 11:45:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050516_JWR.rdb
Sample ID	WG567745-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.770e+05	9.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.980e+05	9.82	1.00	1.02
Perchlorate conf	6.370e+04	9.80	1.00	0.969

O18LP (Internal Standard)

RT (Exp. RT): 9.80(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

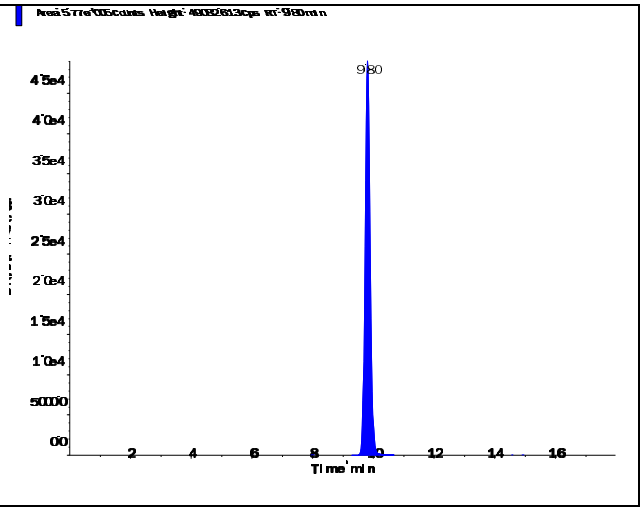

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.343
Sample Type:	(Quality Control)

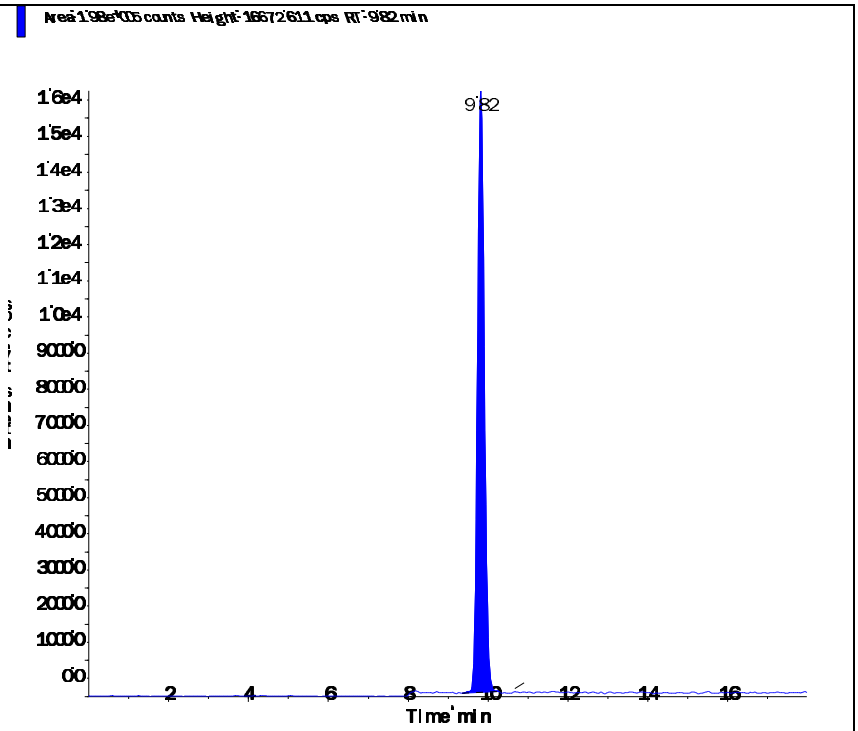

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.80 (9.84) min
Calculated conc:	0.969 ng/ml
Area Ratio:	0.11
Sample Type:	(Quality Control)

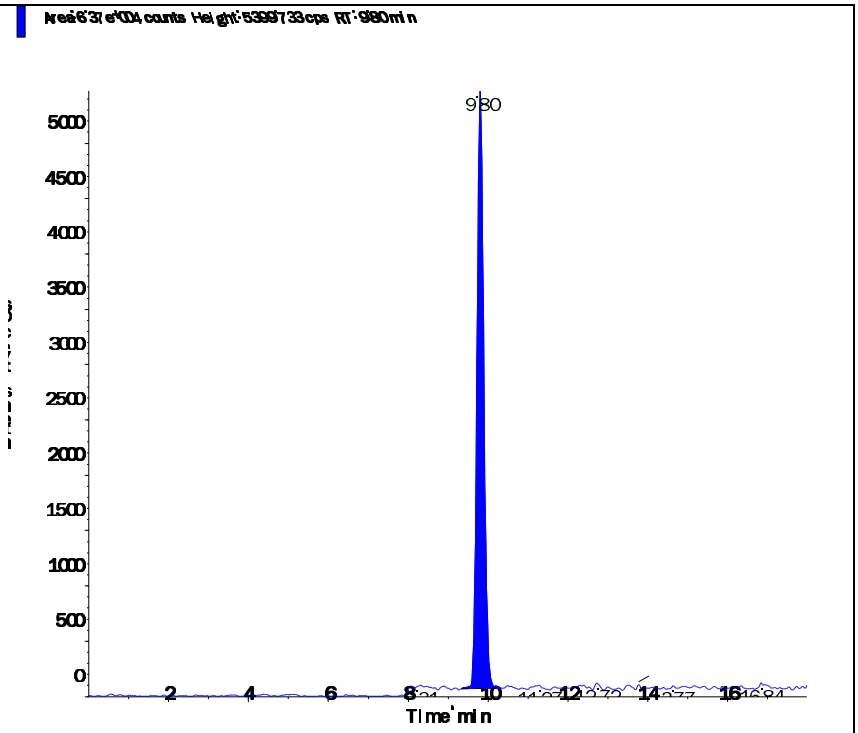

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Data File	LM34719.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 3:40:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567224-07 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM34719.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 3:40:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567224-07	**Dilution Factor**	1.00
Sample Comment	7,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.350e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.990e+04	9.84	N/A	0.201
Perchlorate conf	1.030e+04	9.83	N/A	0.193

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

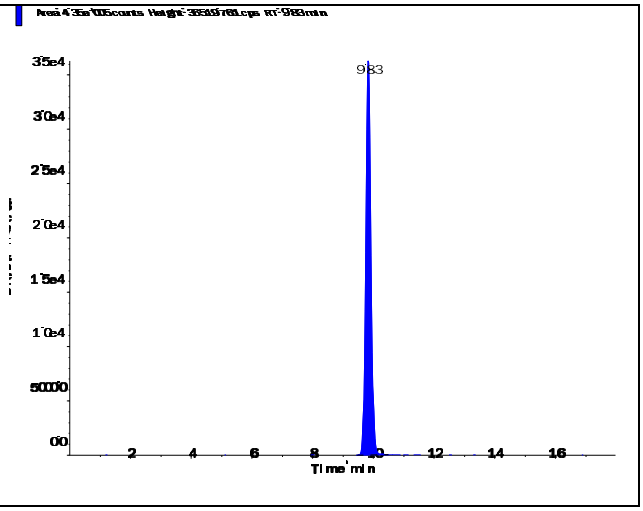

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

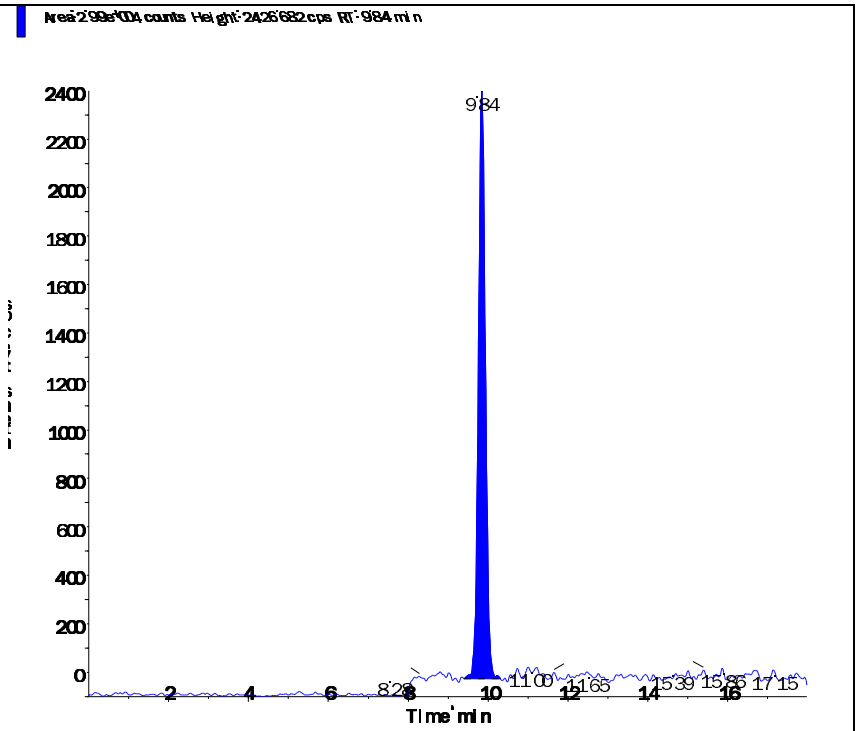

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.193 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

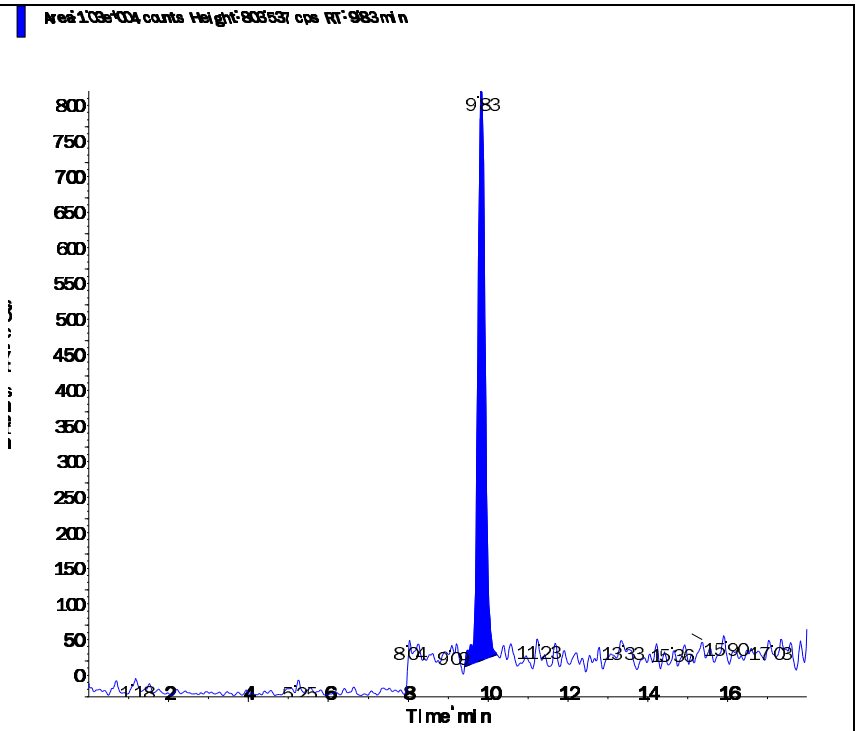

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Data File	LM34731.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 7:27:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567224-08 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM34731.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 7:27:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567224-08	**Dilution Factor**	1.00
Sample Comment	7,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.640e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.340e+04	9.84	N/A	0.21
Perchlorate conf	1.130e+04	9.82	N/A	0.197

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

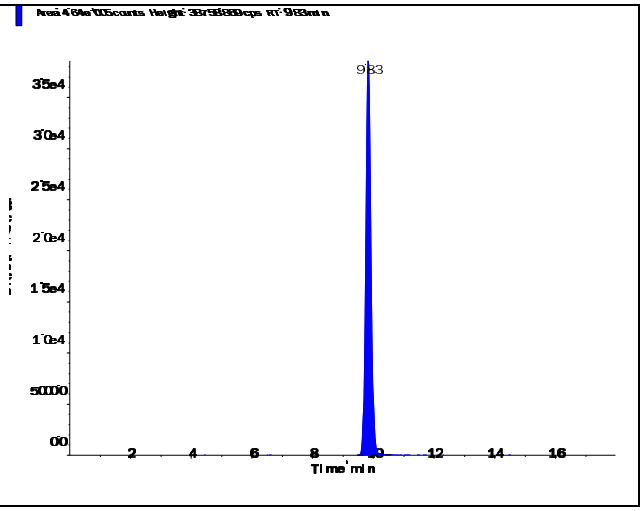

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

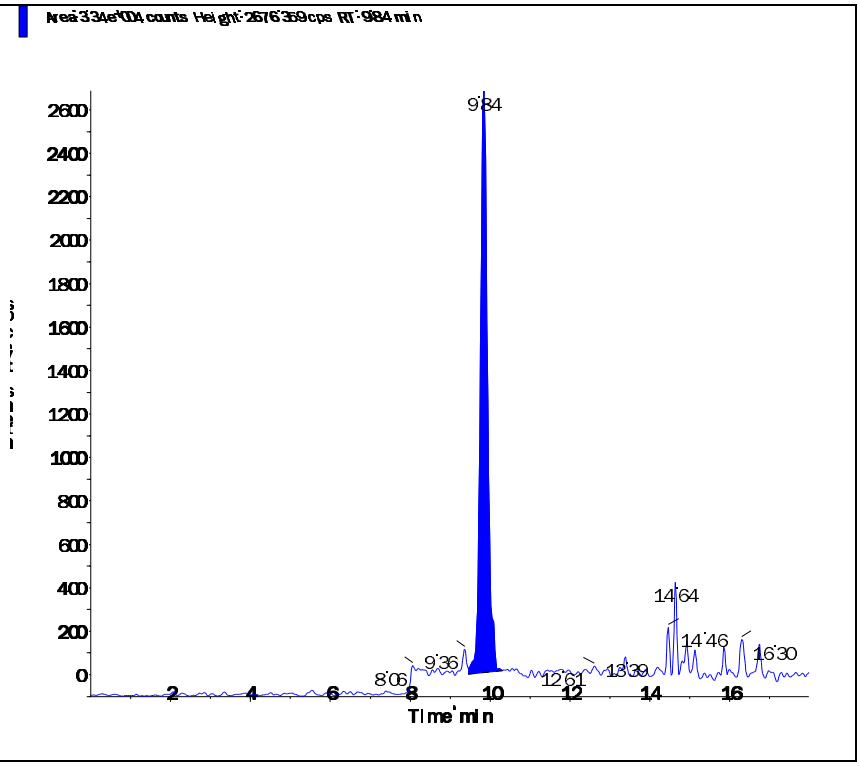

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

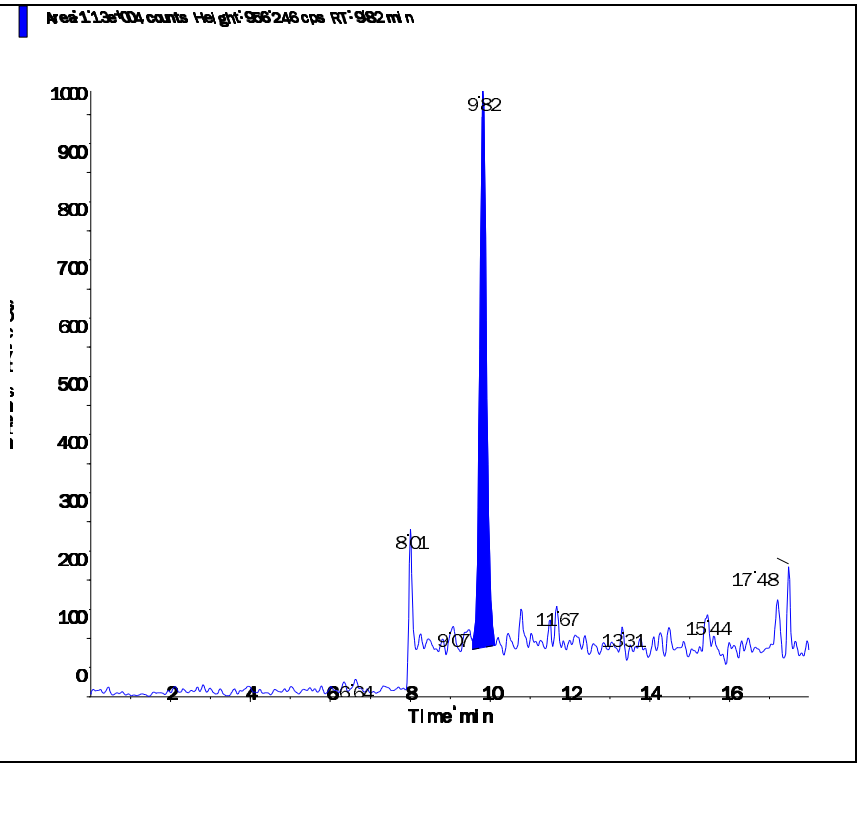

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Data File	LM34744.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 11:33:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567224-09 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM34744.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 11:33:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567224-09	**Dilution Factor**	1.00
Sample Comment	7,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.360e+05	9.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.840e+04	9.82	N/A	0.209
Perchlorate conf	1.170e+04	9.80	N/A	0.176

O18LP (Internal Standard)

RT (Exp. RT): 9.80(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

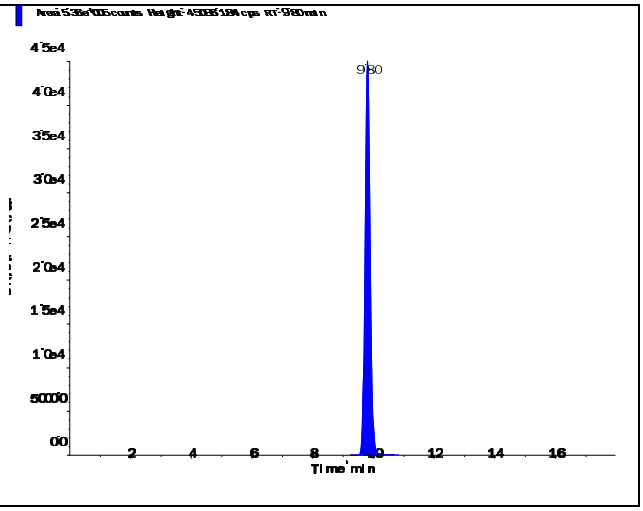

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	0.209 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

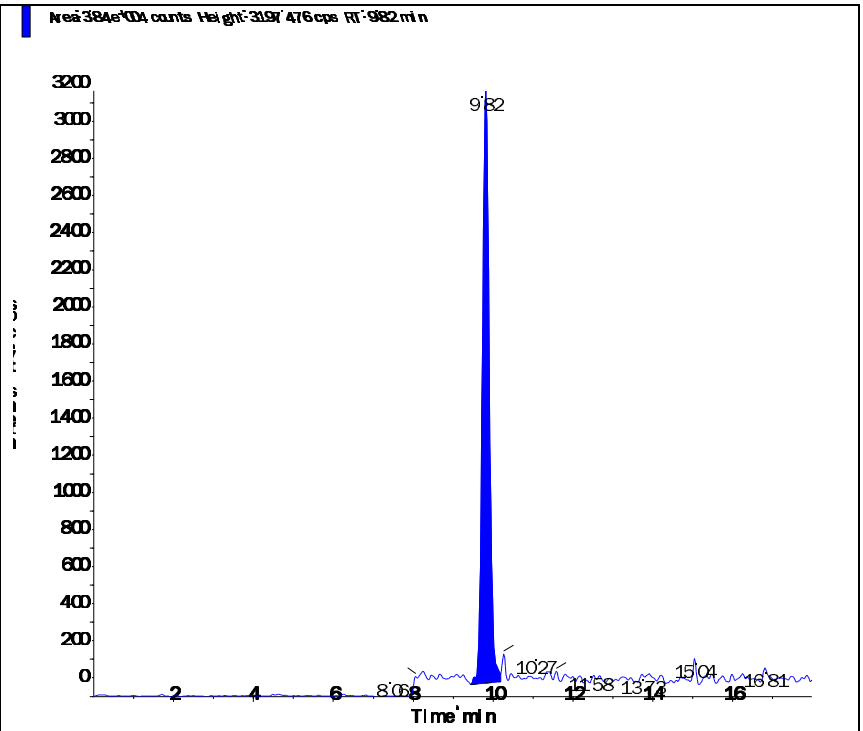

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.80 (9.84) min
Calculated conc:	0.176 ng/ml
Area Ratio:	0.022
Sample Type:	(Unknown)

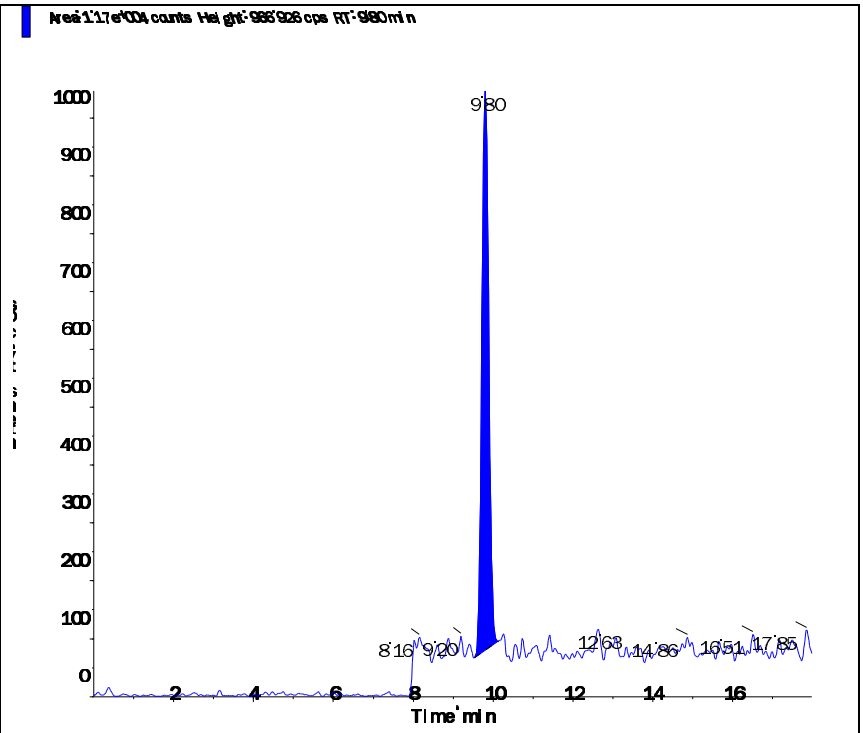

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Data File	LM34750.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 1:27:27 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567224-10 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM34750.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 1:27:27 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567224-10	**Dilution Factor**	1.00
Sample Comment	7,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.280e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.620e+04	9.82	N/A	0.20
Perchlorate conf	1.380e+04	9.81	N/A	0.213

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

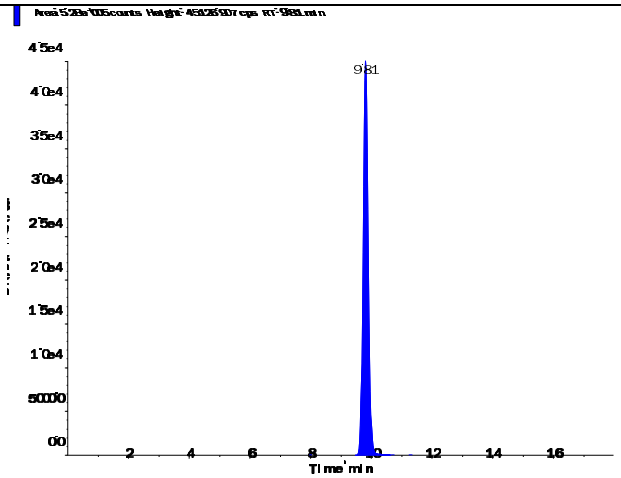

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	0.20 ng/ml
Area Ratio:	0.068
Sample Type:	(Unknown)

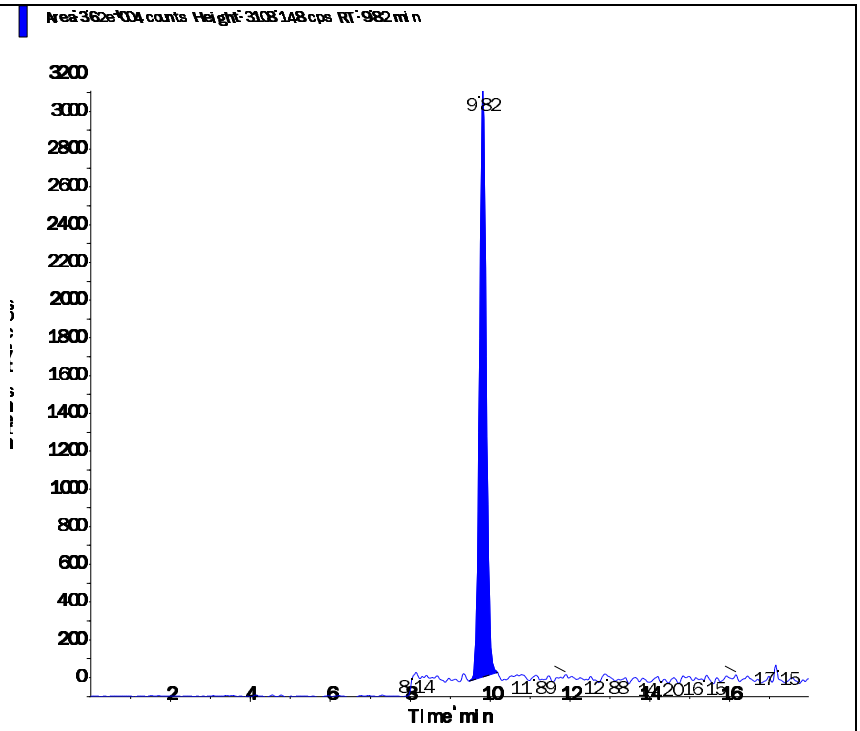

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.81 (9.84) min
Calculated conc:	0.213 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

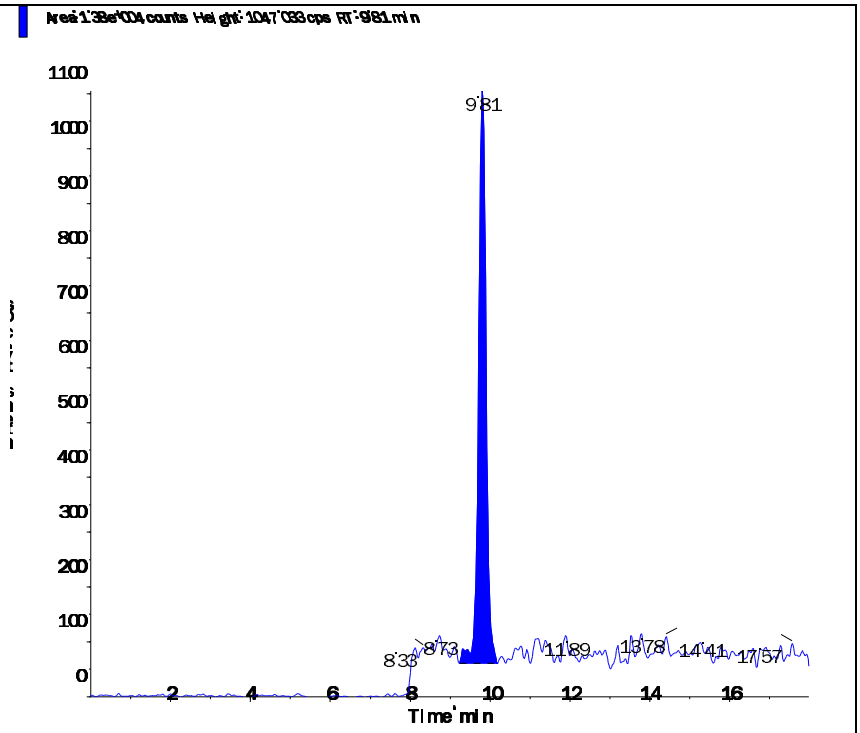

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Printed: 5/6/2016 1:57 PM

Data File	LM34753.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 1:13:08 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567224-11 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM34753.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 1:13:08 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567224-11	**Dilution Factor**	1.00
Sample Comment	7,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.840e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.420e+04	9.82	N/A	0.206
Perchlorate conf	1.250e+04	9.80	N/A	0.212

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

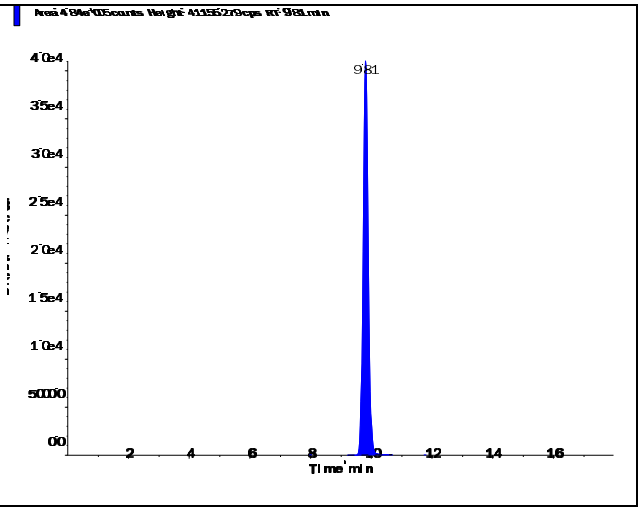

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

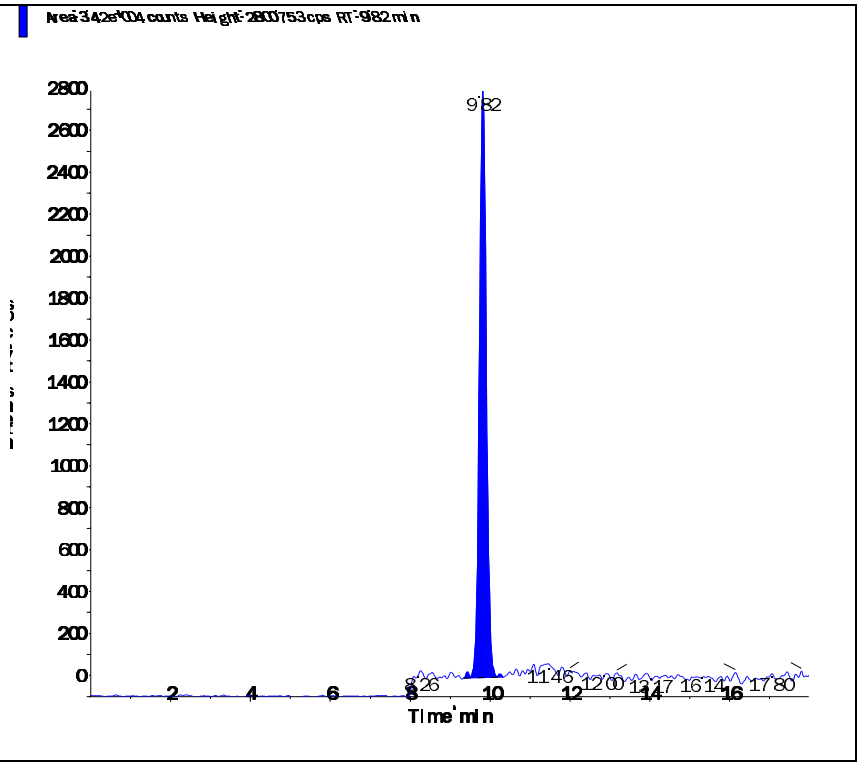

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.80 (9.84) min
Calculated conc:	0.212 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

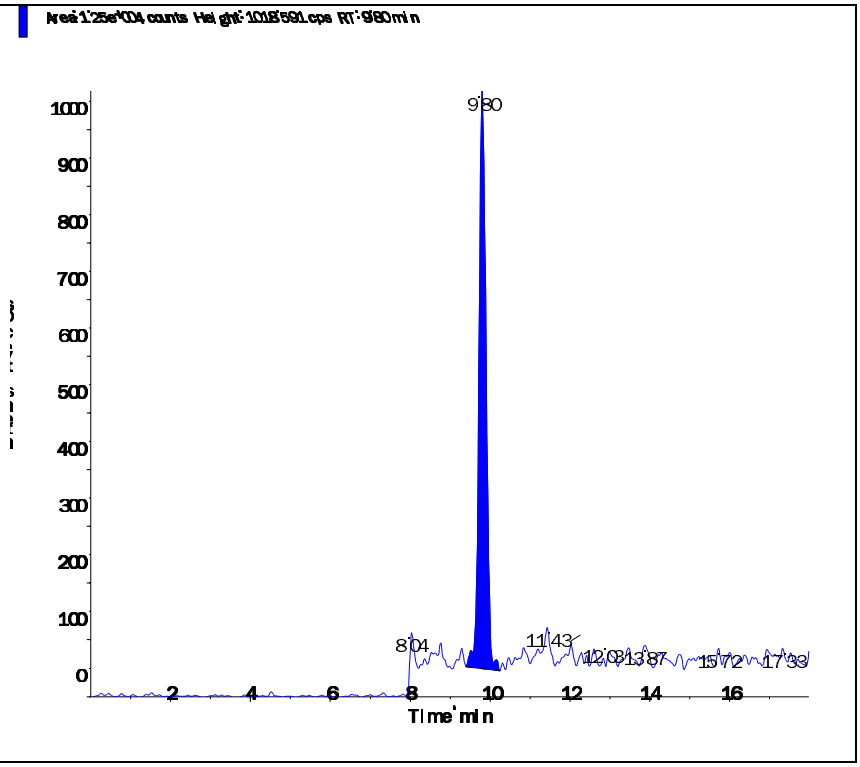

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Printed: 5/6/2016 1:59 PM

Data File	LM34760.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 3:25:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567224-12 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM34760.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 3:25:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567224-12	**Dilution Factor**	1.00
Sample Comment	7,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.180e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.550e+04	9.82	N/A	0.20
Perchlorate conf	1.290e+04	9.82	N/A	0.202

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

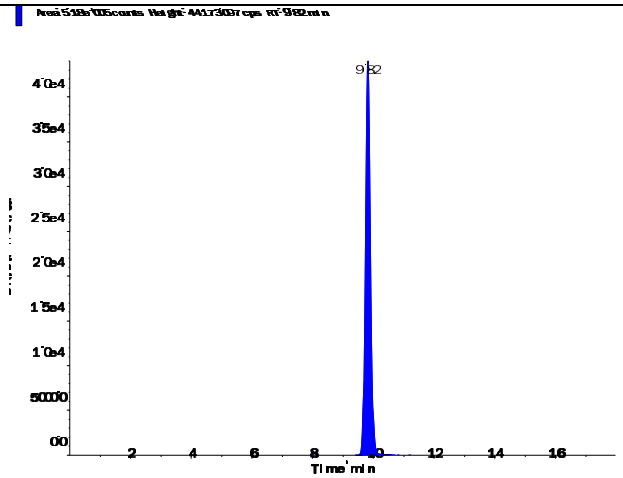

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	0.20 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

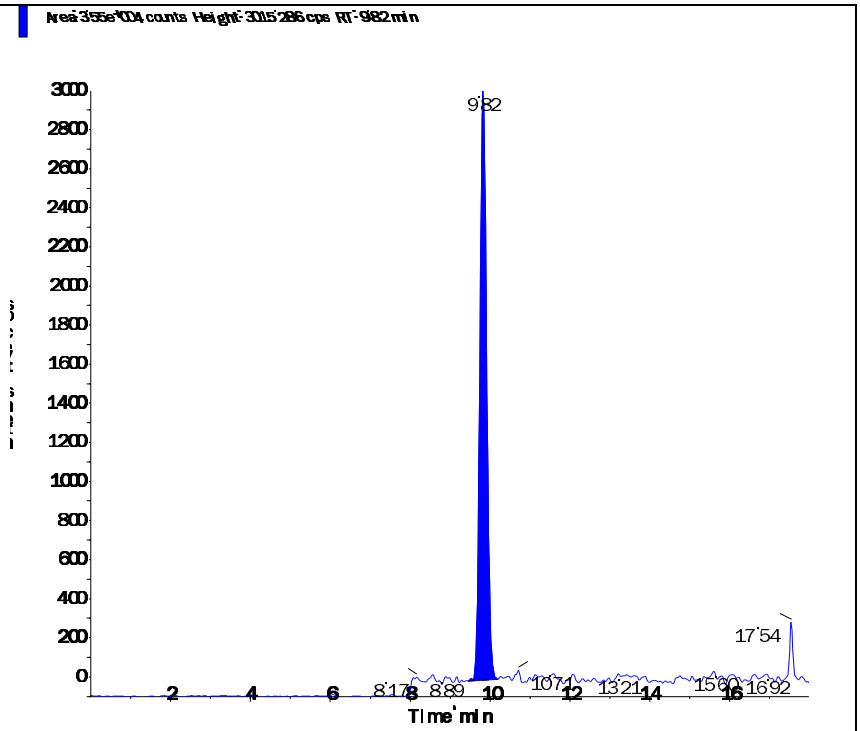

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	0.202 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

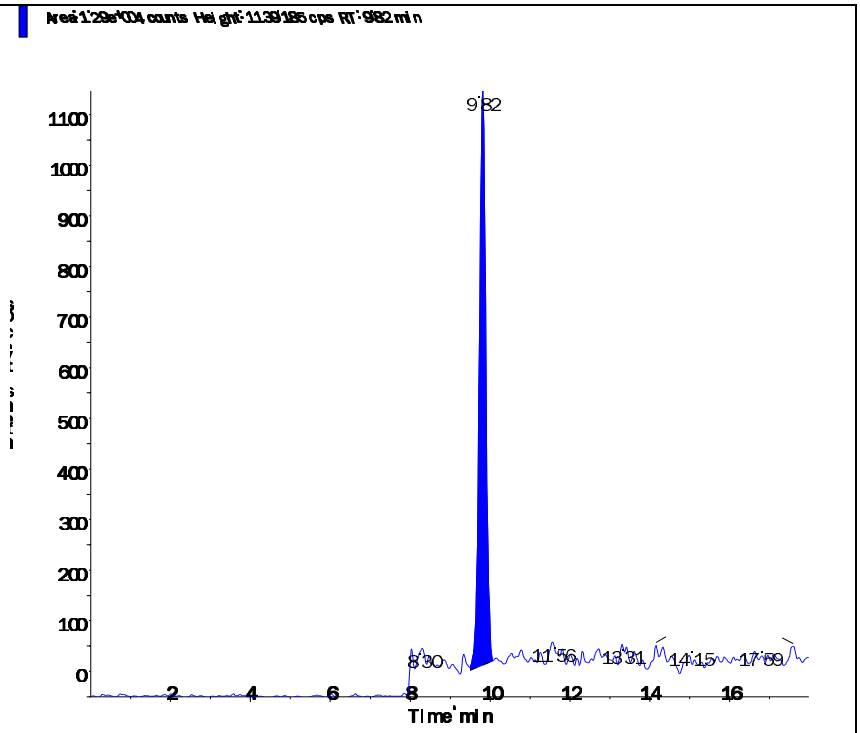

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Data File	LM34768.wiff	**Result Table**	050516_JWR.rdb
Acquisition Date	5/5/2016 6:23:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567744-05 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM34768.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 6:23:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050516_JWR.rdb
Sample ID	WG567744-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.120e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.680e+04	9.83	N/A	0.209
Perchlorate conf	1.260e+04	9.83	N/A	0.201

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

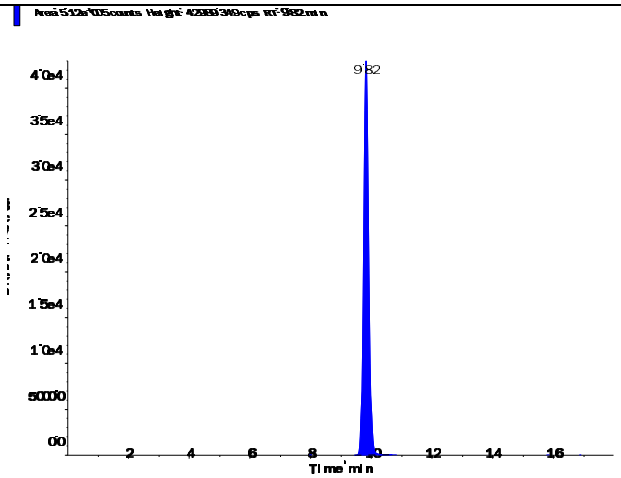

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.209 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

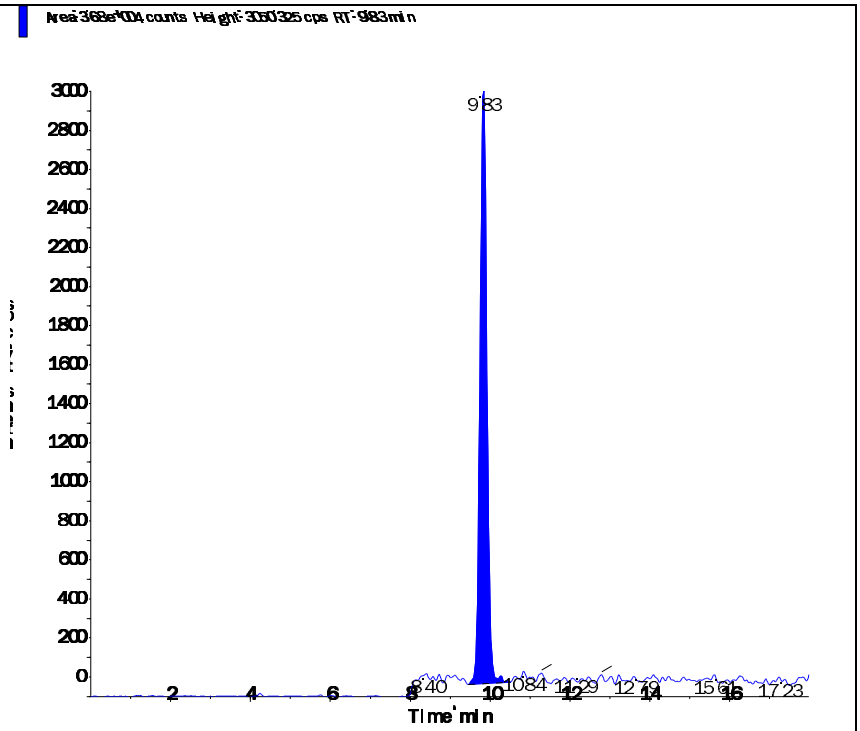

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

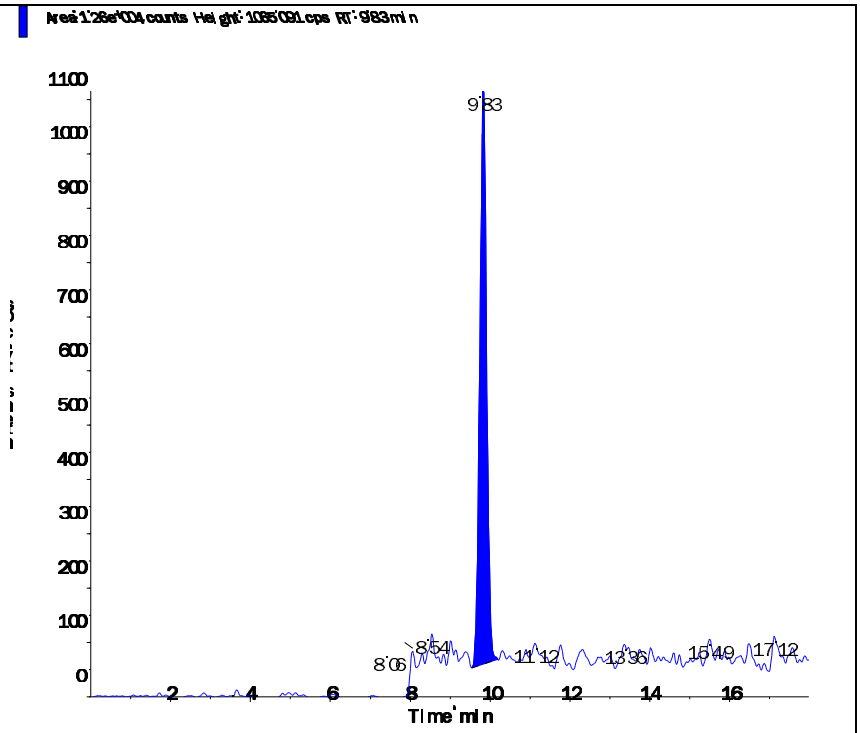

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Data File	LM34780.wiff	**Result Table**	050516_JWR.rdb
Acquisition Date	5/5/2016 10:10:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567744-06 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM34780.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 10:10:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050516_JWR.rdb
Sample ID	WG567744-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.770e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.060e+04	9.82	N/A	0.206
Perchlorate conf	1.350e+04	9.81	N/A	0.19

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

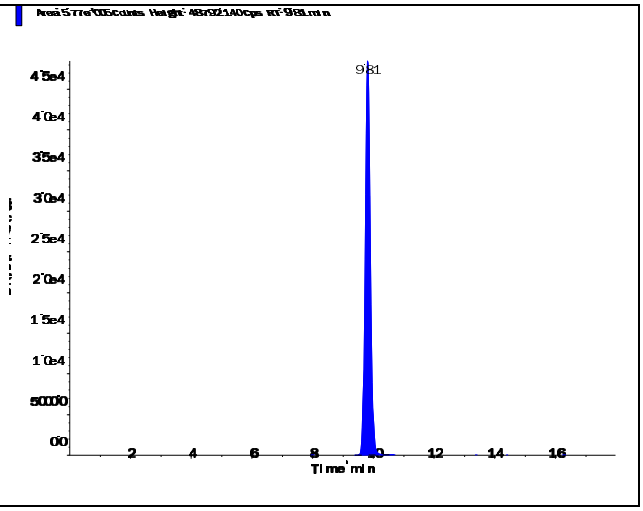

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

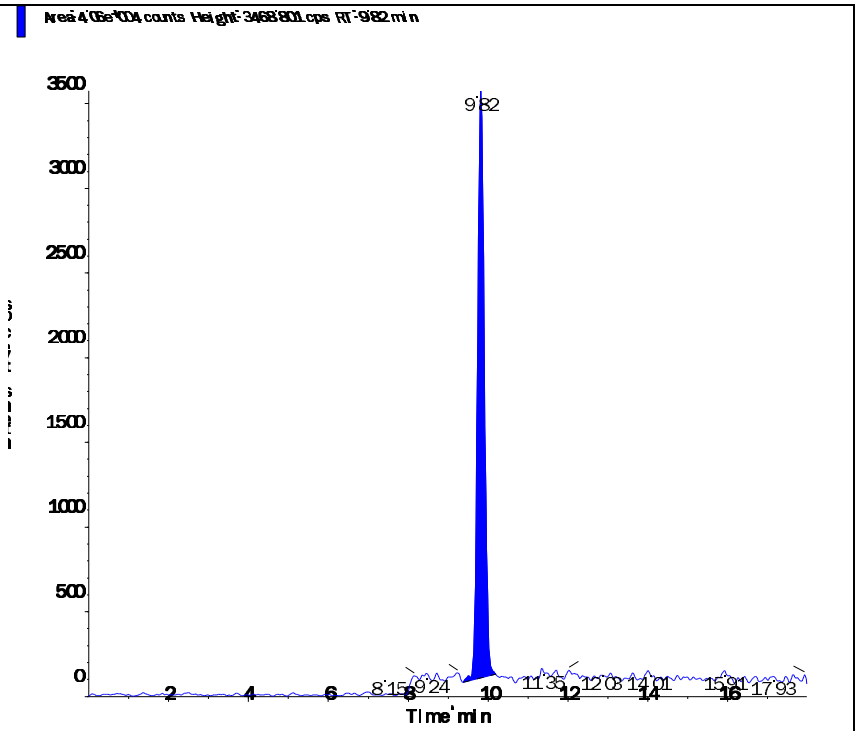

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.81 (9.84) min
Calculated conc:	0.19 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

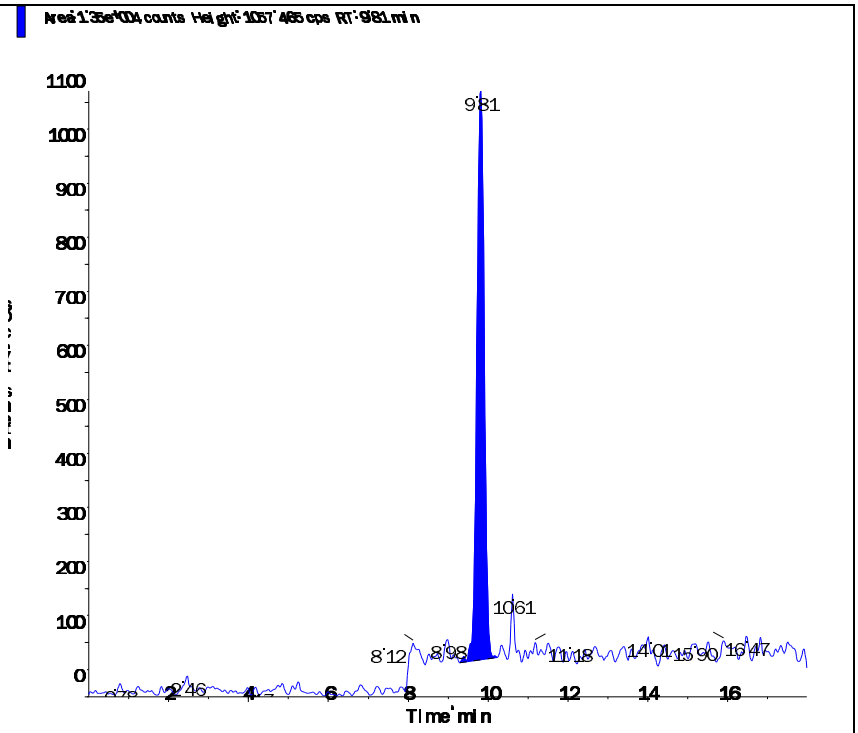

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Data File	LM34786.wiff	**Result Table**	050516_JWR.rdb
Acquisition Date	5/6/2016 12:04:35 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567744-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM34786.wiff	**Injection Volume**	10.00
Acquisition Date	5/6/2016 12:04:35 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050516_JWR.rdb
Sample ID	WG567744-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	6.010e+05	9.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.220e+04	9.82	N/A	0.205
Perchlorate conf	1.480e+04	9.80	N/A	0.20

O18LP (Internal Standard)

RT (Exp. RT): 9.80(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

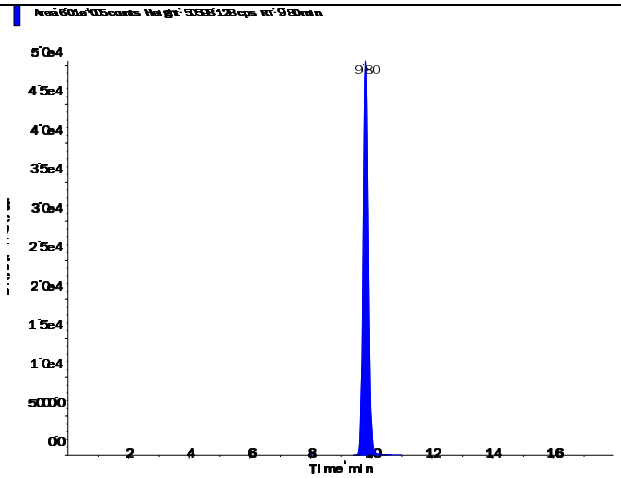

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	0.205 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

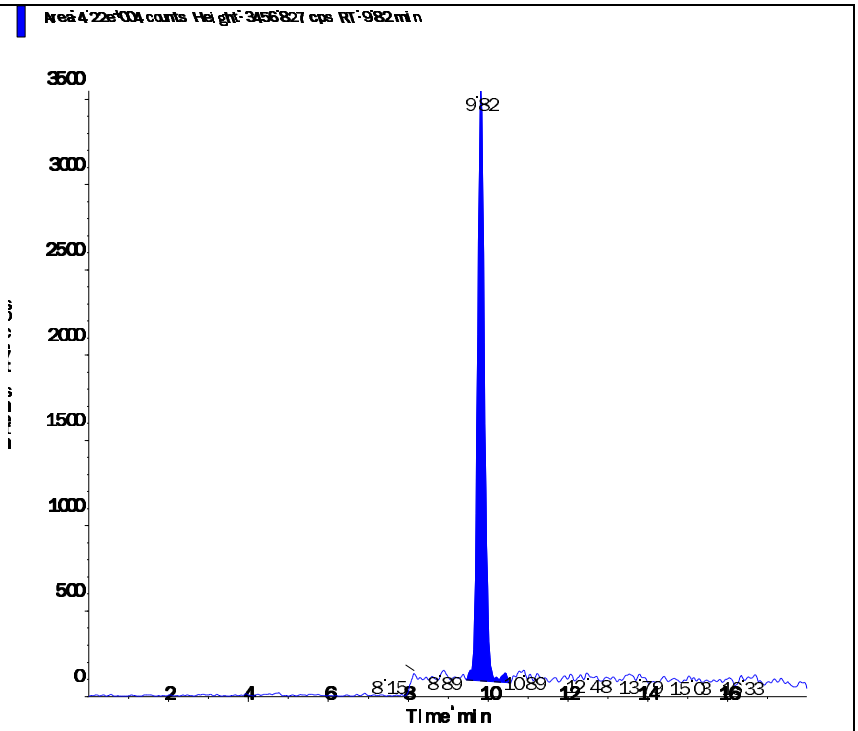

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.80 (9.84) min
Calculated conc:	0.20 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

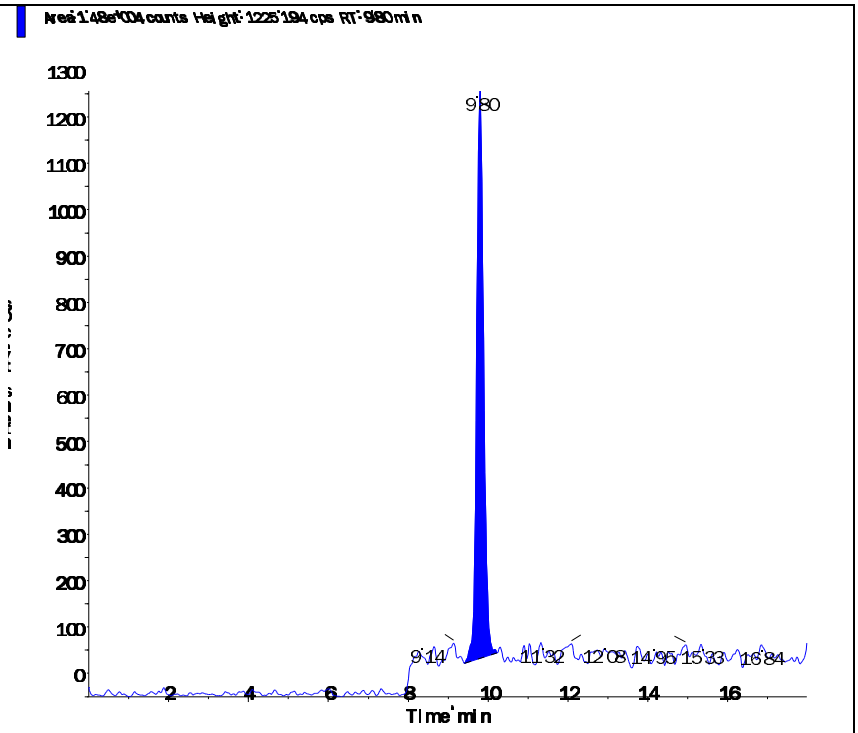

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Data File	LM34717.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 3:02:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567549-01 CCB	**Injection Vial**	1.00
Data File	LM34717.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 3:02:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567549-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.220e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

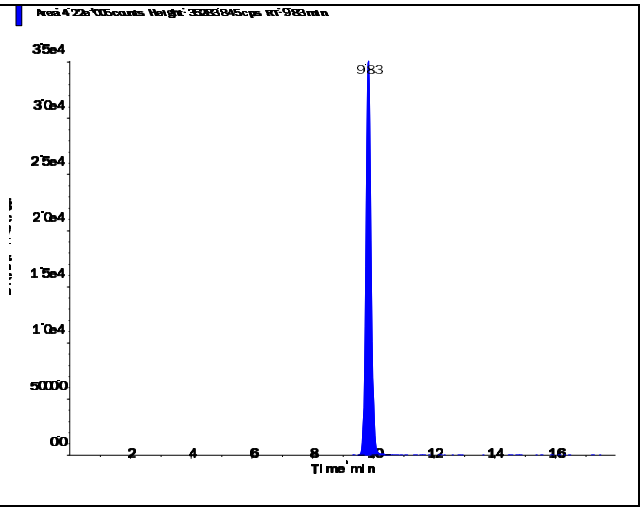

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

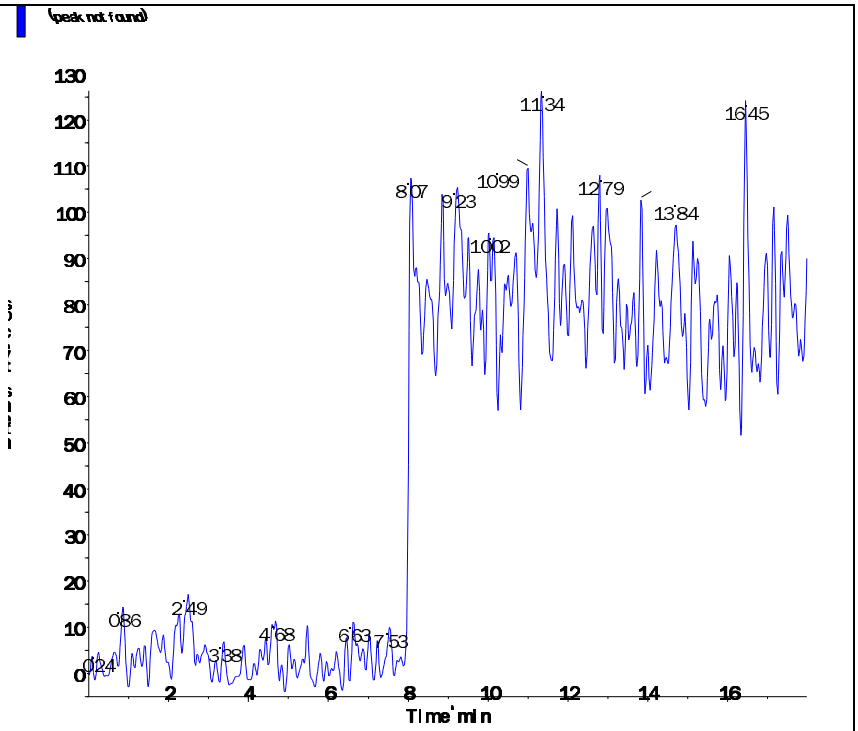

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

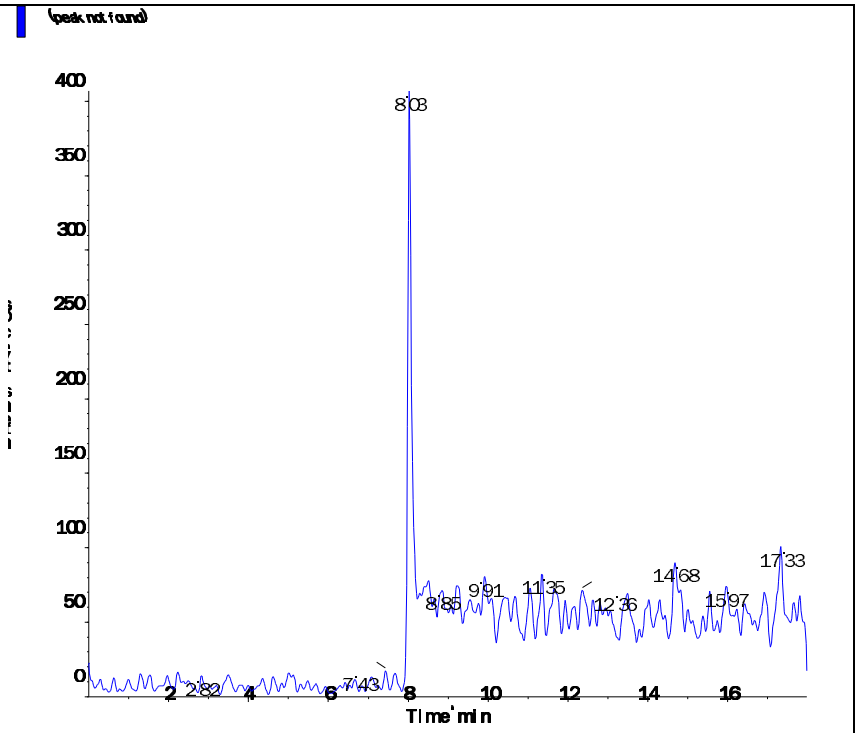

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Printed: 5/6/2016 1:52 PM

Data File	LM34732.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 7:46:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567549-04 CCB	**Injection Vial**	1.00
Data File	LM34732.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 7:46:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567549-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.520e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	6.040e+02	9.69	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

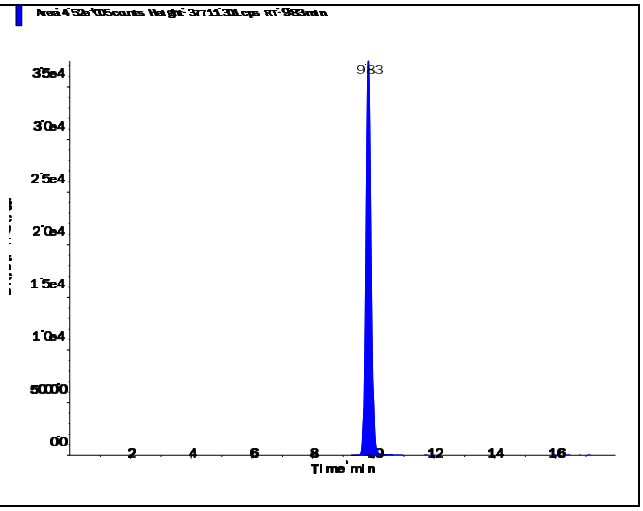

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

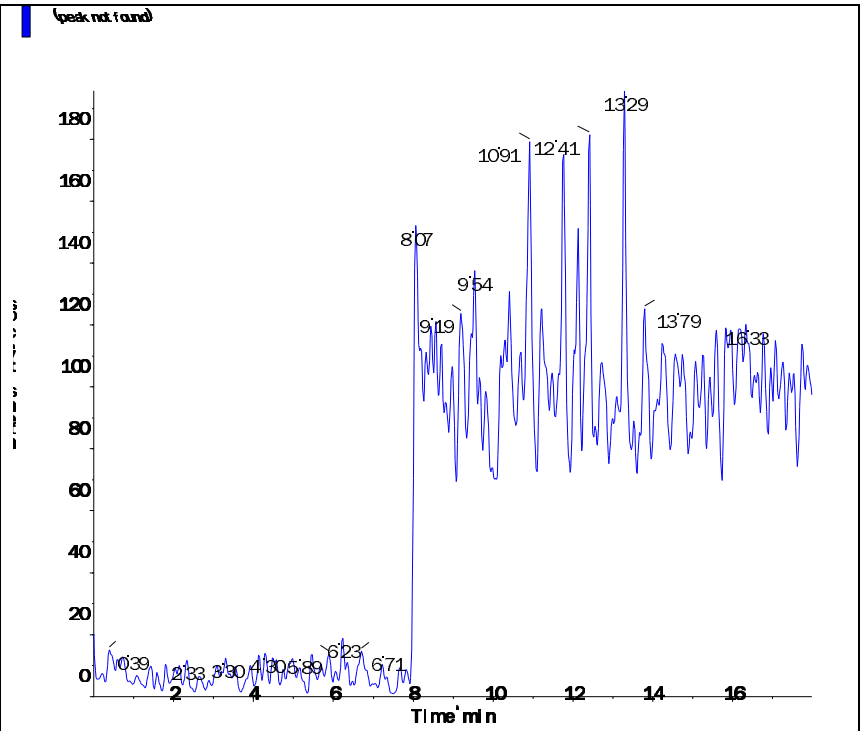

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.69 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

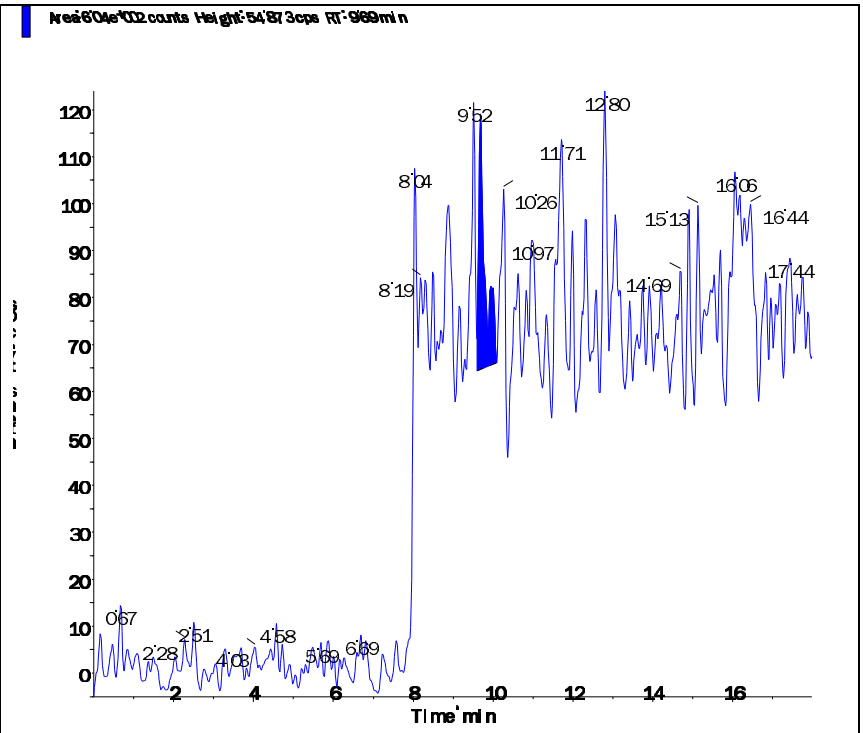

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Data File	LM34745.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 11:52:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567549-06 CCB	**Injection Vial**	1.00
Data File	LM34745.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 11:52:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567549-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.580e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

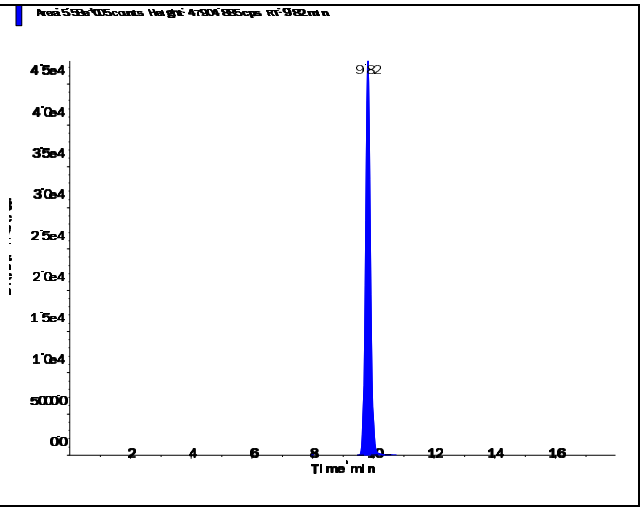

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

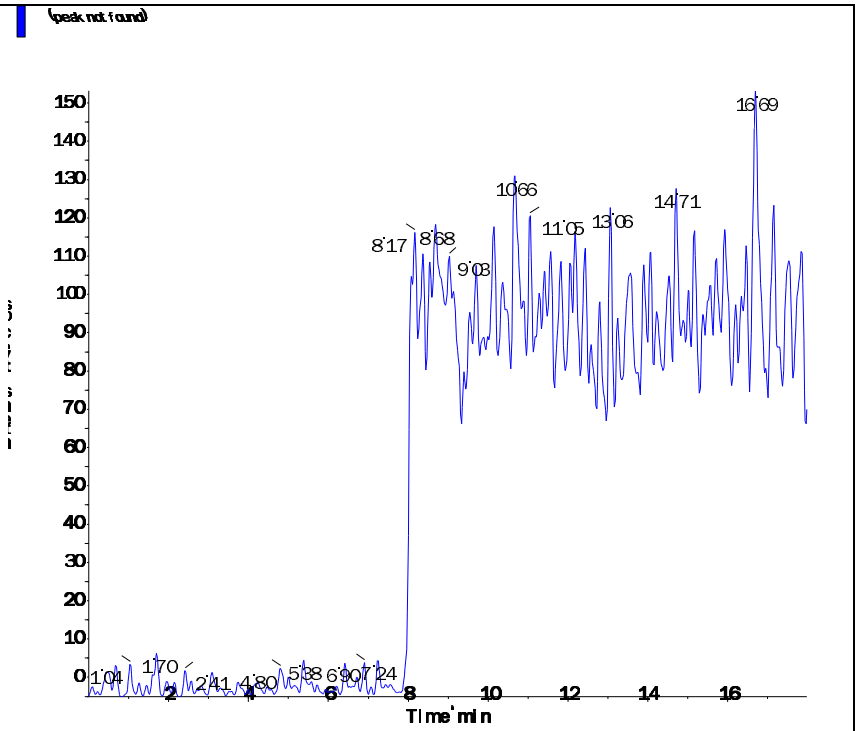

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

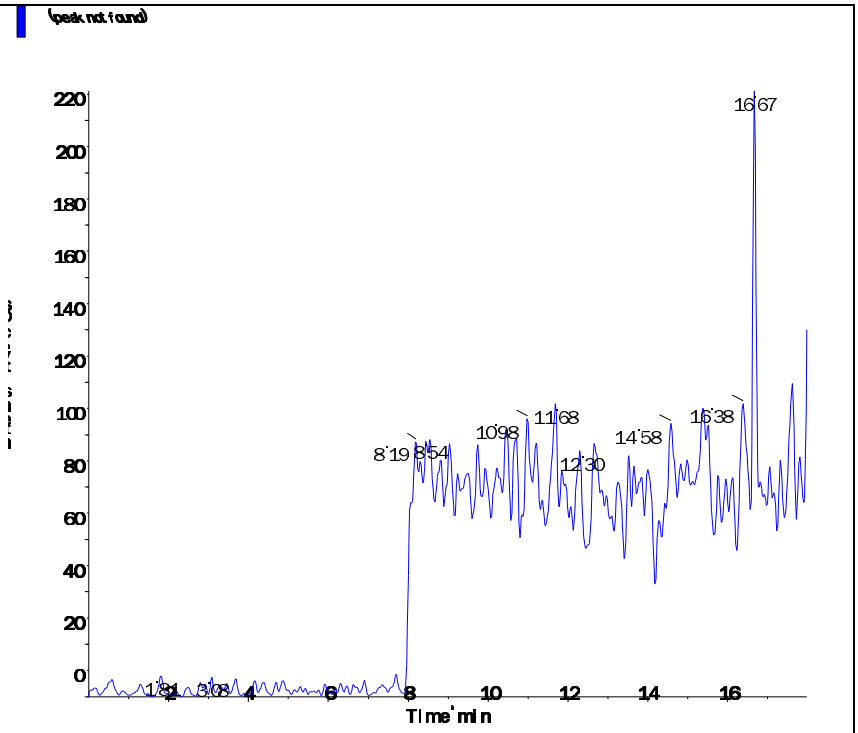

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Created with Analyst Reporter
Printed: 5/6/2016 1:57 PM

Data File	LM34751.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 1:46:23 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567549-08 CCB	**Injection Vial**	1.00
Data File	LM34751.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 1:46:23 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567549-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.530e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

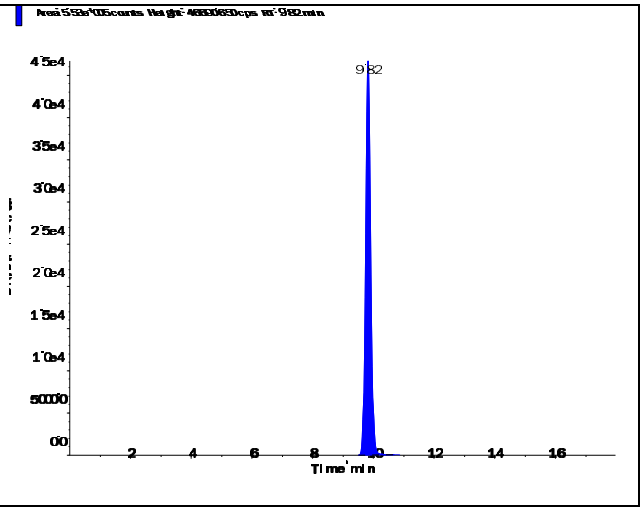

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Printed: 5/6/2016 1:57 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

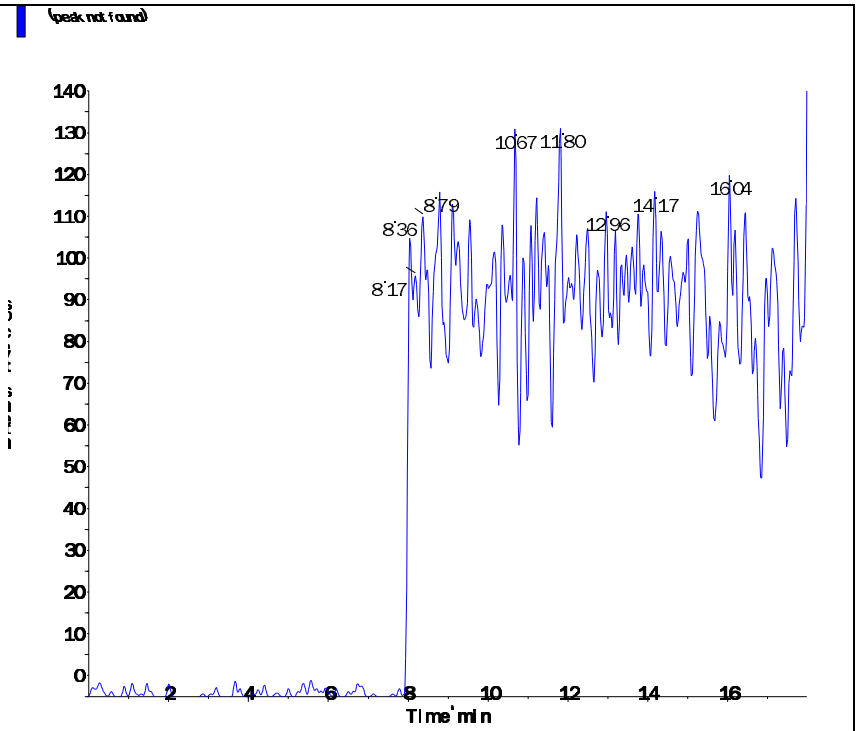

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

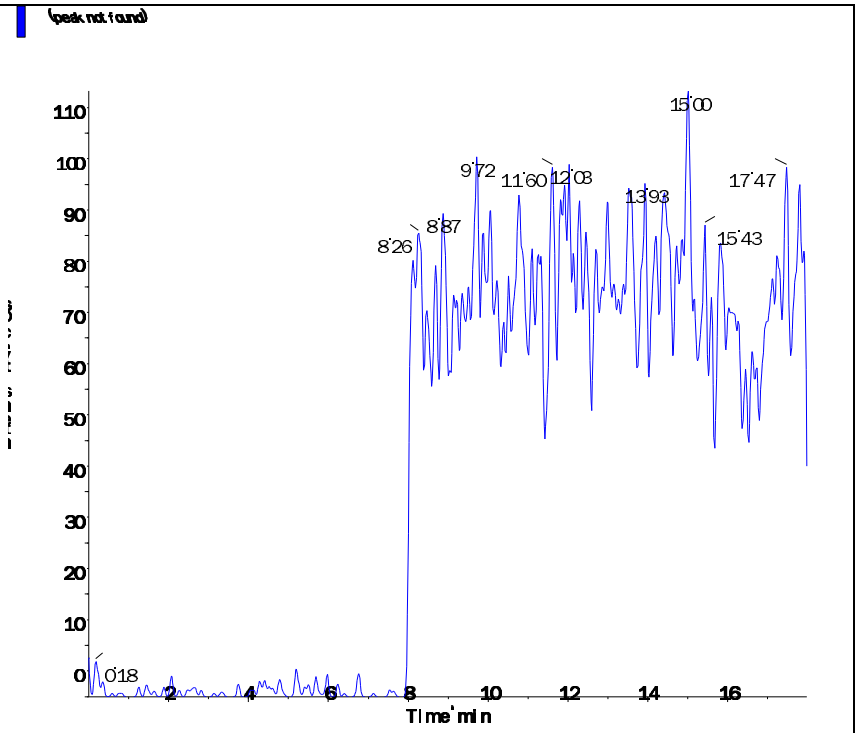

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Created with Analyst Reporter
Printed: 5/6/2016 1:58 PM

Data File	LM34754.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 1:32:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567549-10 CCB	**Injection Vial**	1.00
Data File	LM34754.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 1:32:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567549-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.070e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

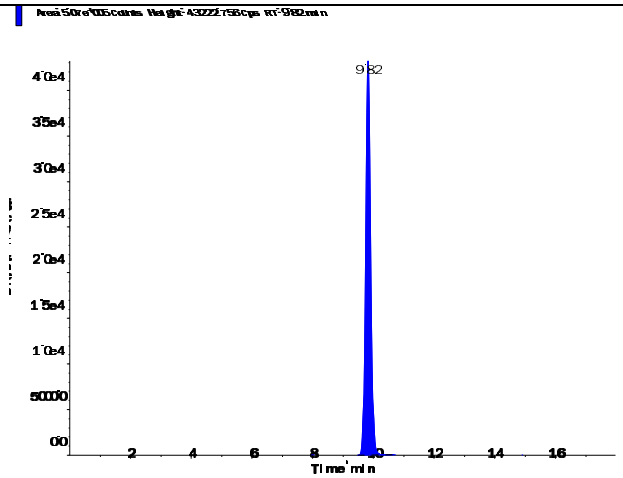

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Printed: 5/6/2016 1:58 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

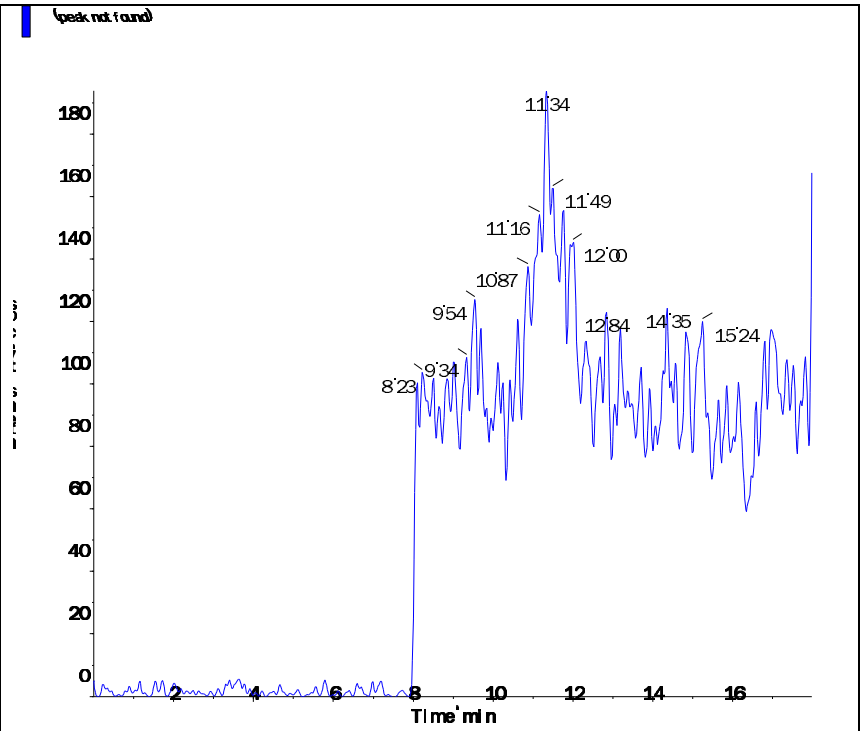

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

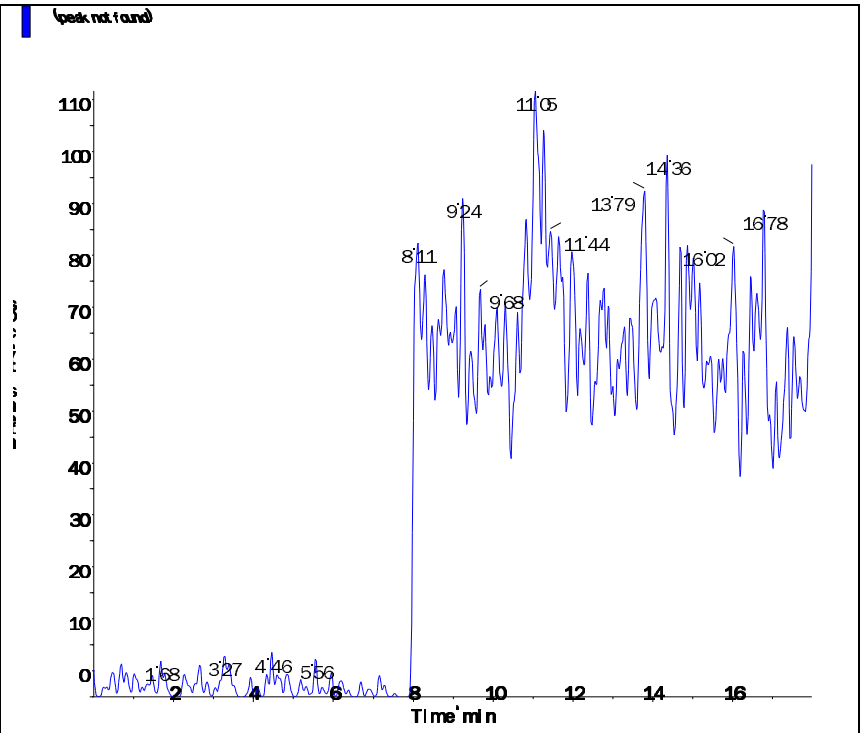

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Created with Analyst Reporter
Printed: 5/6/2016 2:00 PM

Data File	LM34761.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 3:44:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567549-12 CCB	**Injection Vial**	1.00
Data File	LM34761.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 3:44:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567549-12	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.270e+05	9.85	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	4.490e+02	9.89	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.85(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

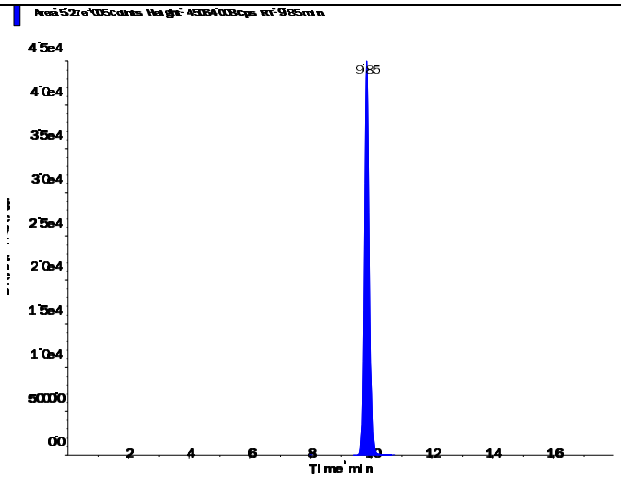

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

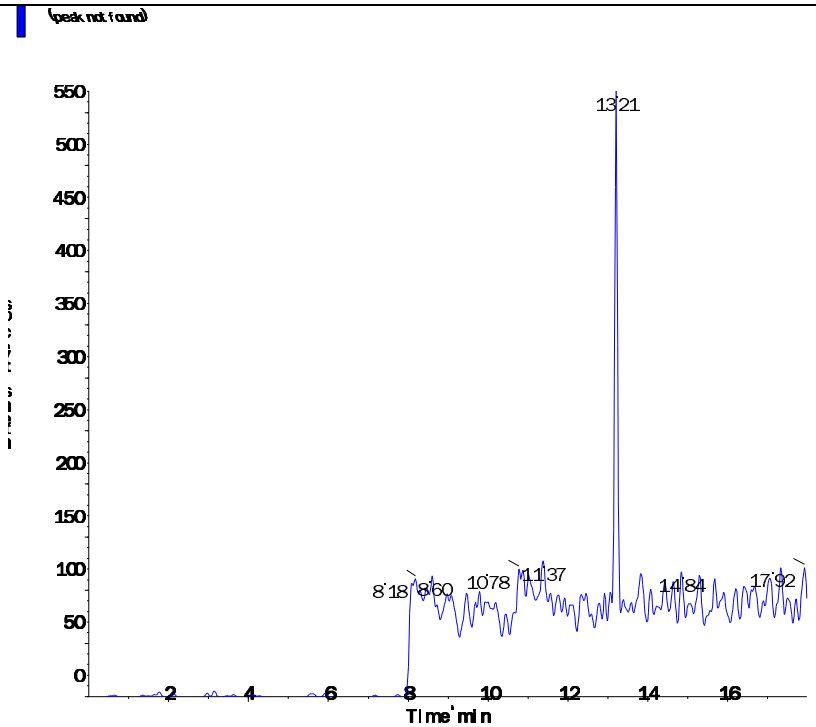

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.89 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

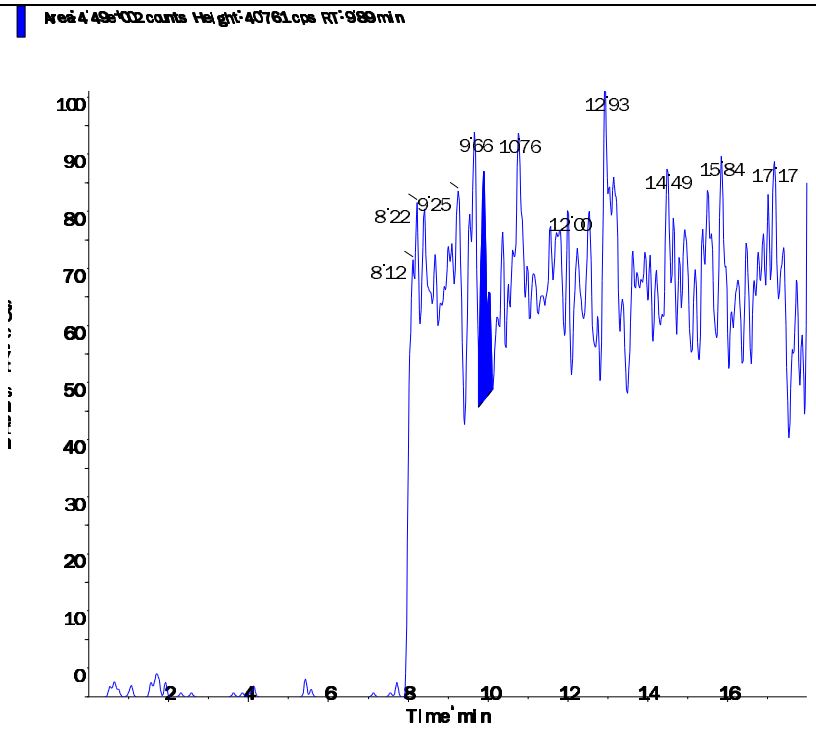

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Printed: 5/6/2016 12:47 PM

Data File	LM34766.wiff	**Result Table**	050516_JWR.rdb
Acquisition Date	5/5/2016 5:45:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567745-01 CCB	**Injection Vial**	1.00
Data File	LM34766.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 5:45:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050516_JWR.rdb
Sample ID	WG567745-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.030e+05	9.85	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	2.580e+02	9.83	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.85(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

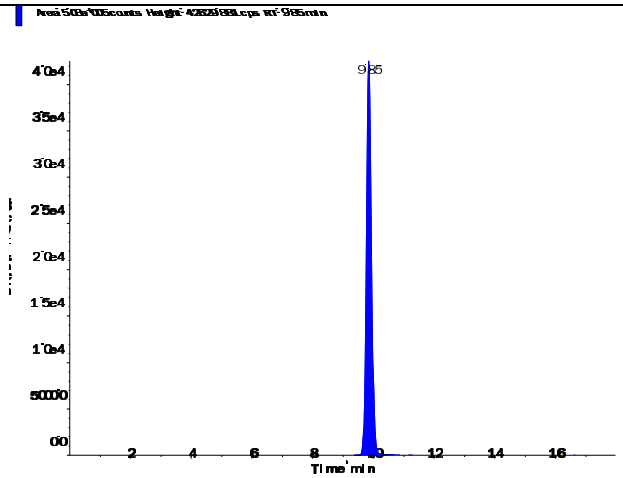

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

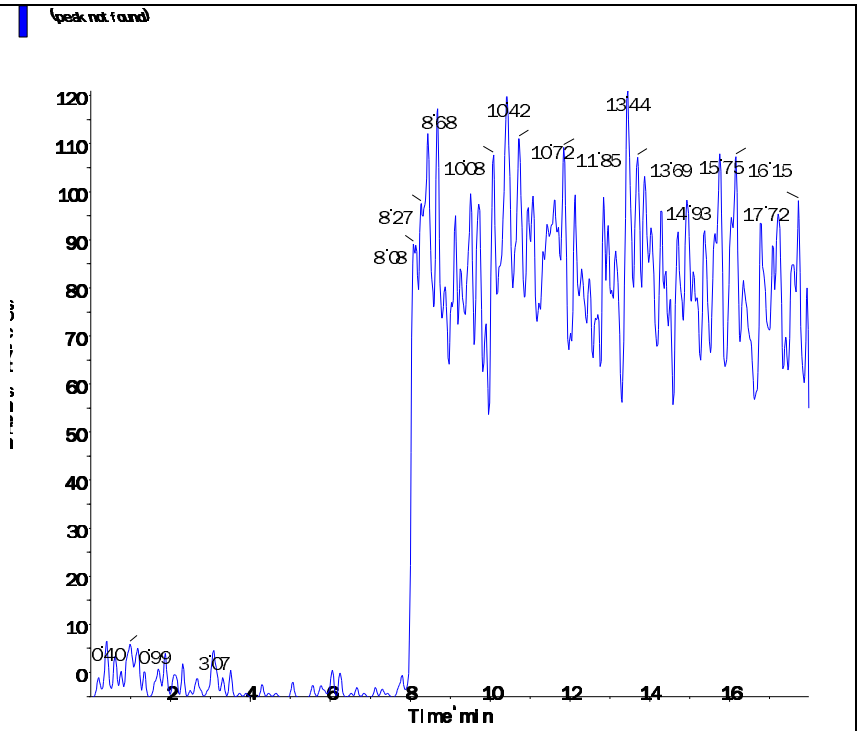

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

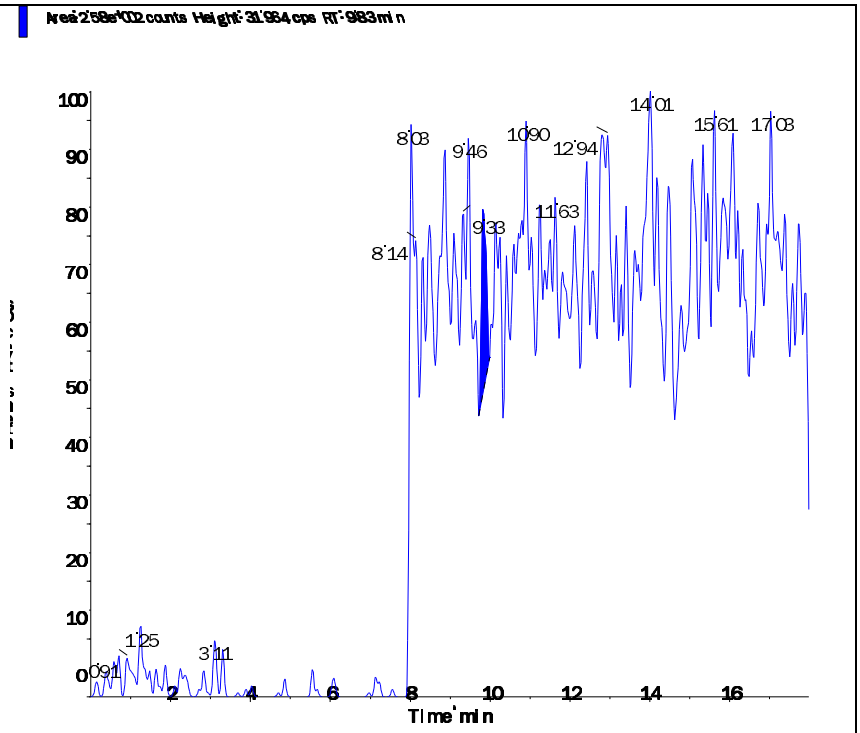

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Printed: 5/6/2016 12:52 PM

Data File	LM34781.wiff	**Result Table**	050516_JWR.rdb
Acquisition Date	5/5/2016 10:29:55 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567745-04 CCB	**Injection Vial**	1.00
Data File	LM34781.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 10:29:55 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050516_JWR.rdb
Sample ID	WG567745-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	6.050e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

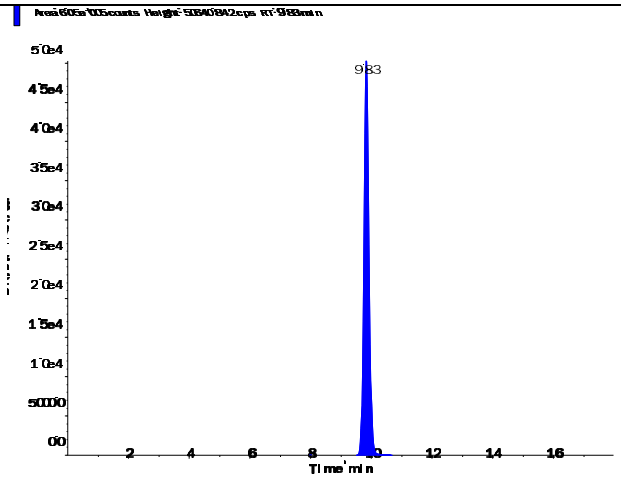

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Printed: 5/6/2016 12:52 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

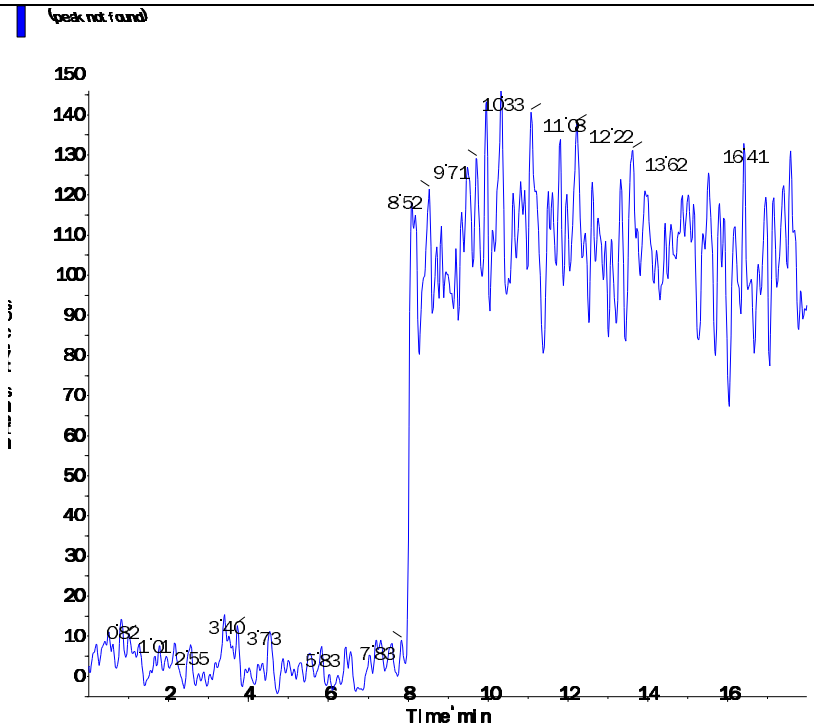

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

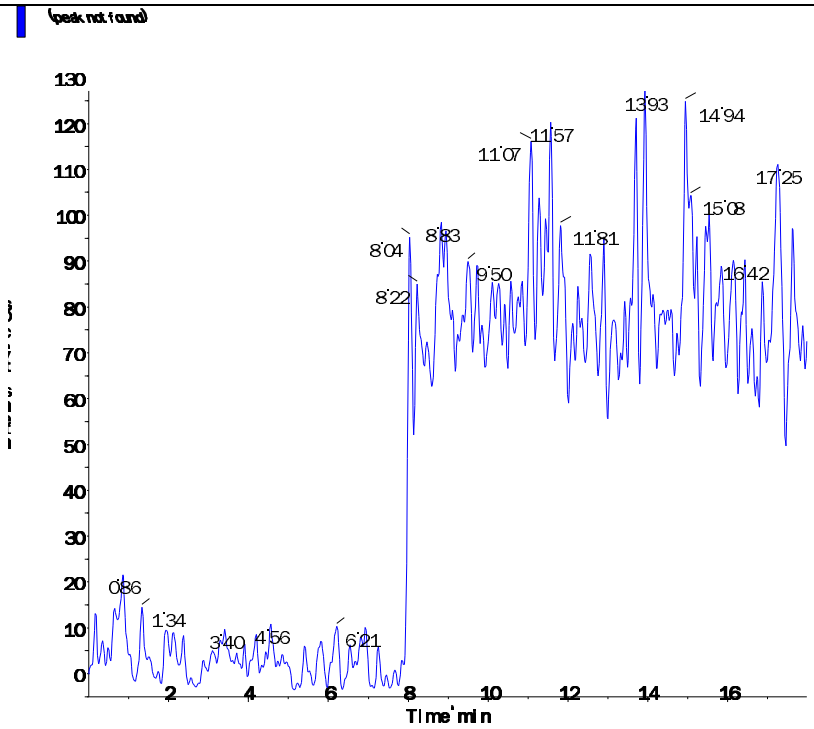

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Printed: 5/6/2016 12:55 PM

Data File	LM34787.wiff	**Result Table**	050516_JWR.rdb
Acquisition Date	5/6/2016 12:23:31 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567745-06 CCB	**Injection Vial**	1.00
Data File	LM34787.wiff	**Injection Volume**	10.00
Acquisition Date	5/6/2016 12:23:31 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050516_JWR.rdb
Sample ID	WG567745-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	6.220e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

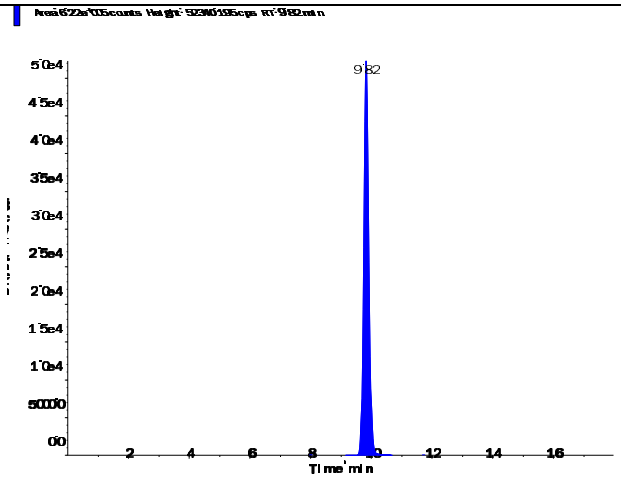

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Printed: 5/6/2016 12:55 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

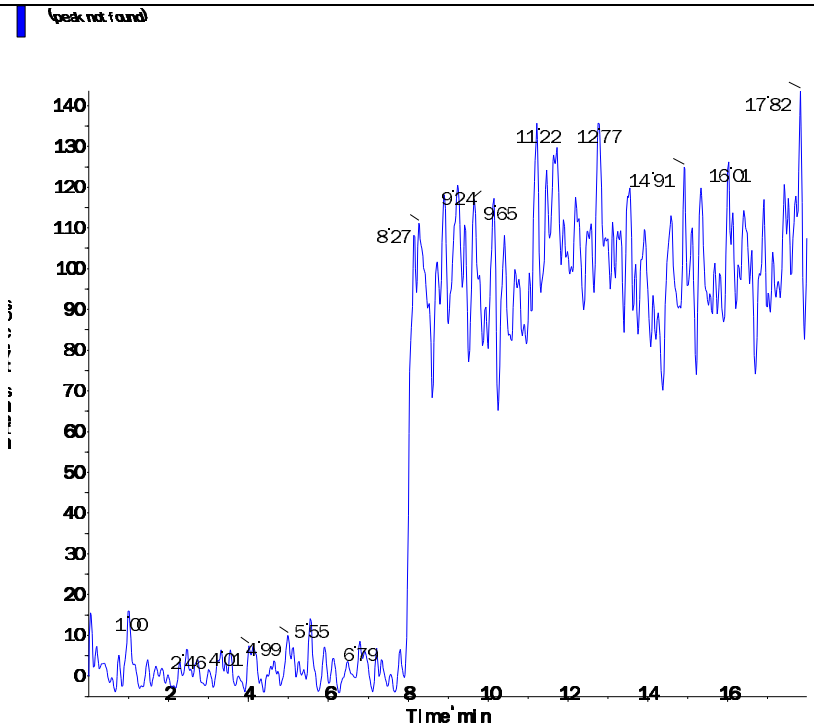

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

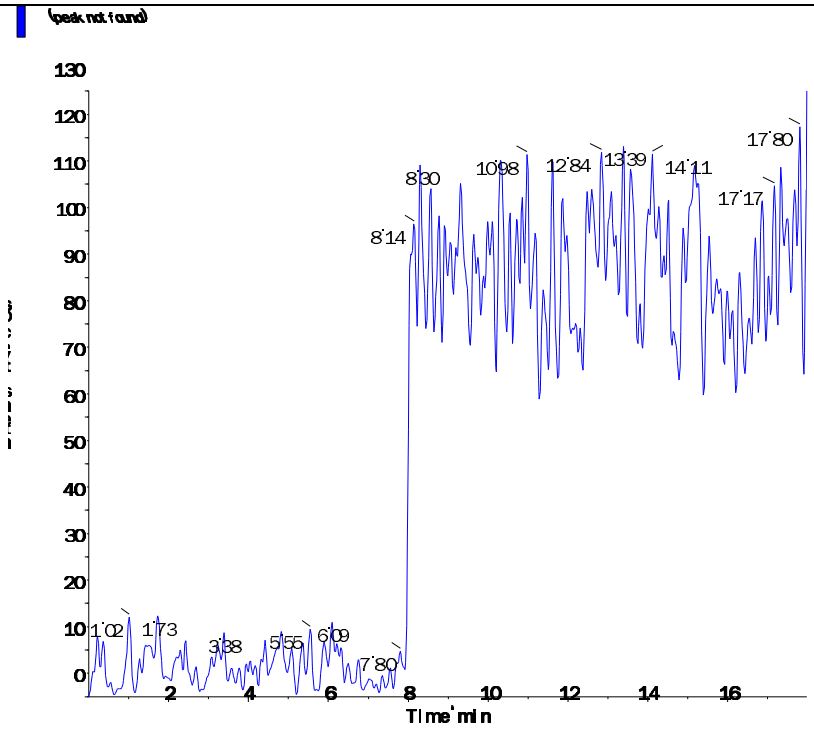

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Data File	LM34720.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 3:59:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567224-01 MCT (2.0ug/kg)	**Injection Vial**	4.00
Data File	LM34720.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 3:59:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567224-01	**Dilution Factor**	1.00
Sample Comment	7,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.200e+05	9.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.810e+04	9.10	N/A	0.195
Perchlorate conf	1.010e+04	9.10	N/A	0.196

O18LP (Internal Standard)

RT (Exp. RT): 9.10(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

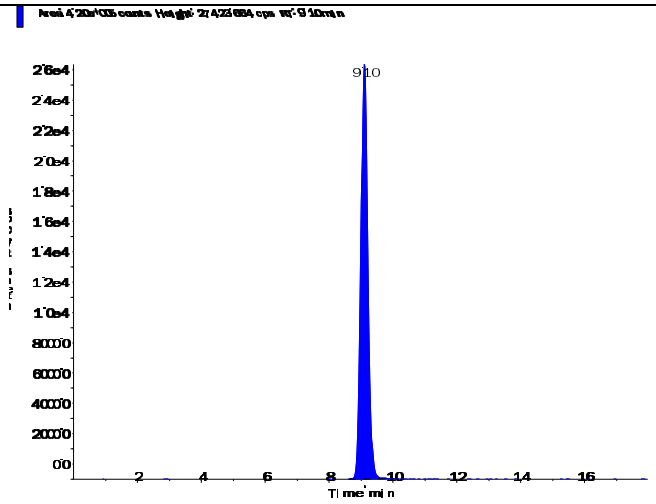

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Printed: 5/6/2016 1:49 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.10 (9.84) min
Calculated conc:	0.195 ng/ml
Area Ratio:	0.067
Sample Type:	(Unknown)

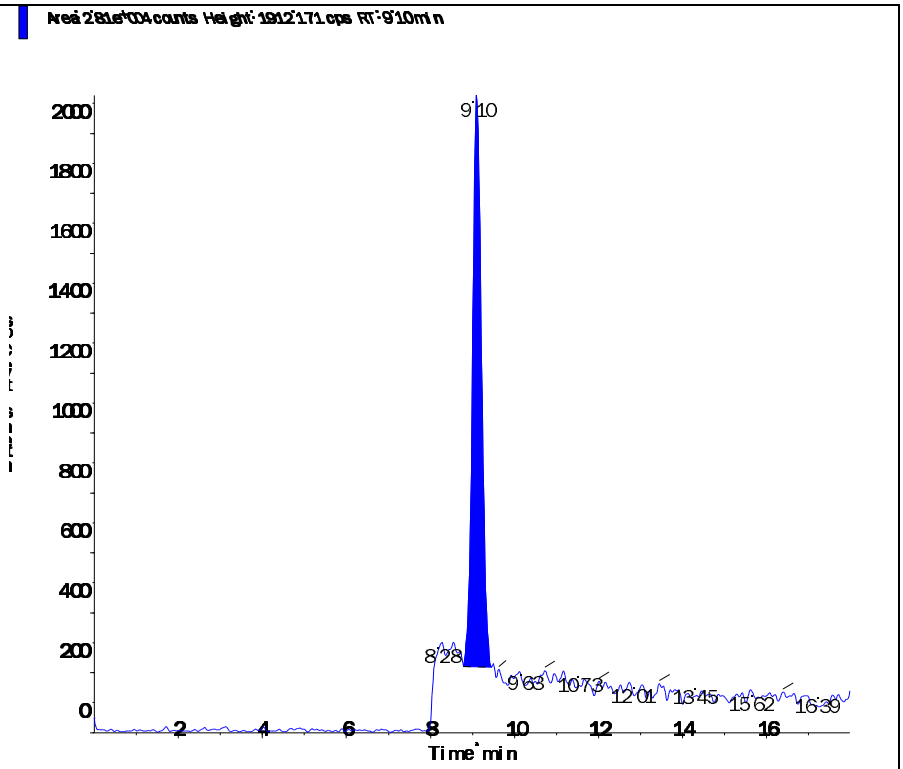

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.10 (9.84) min
Calculated conc:	0.196 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

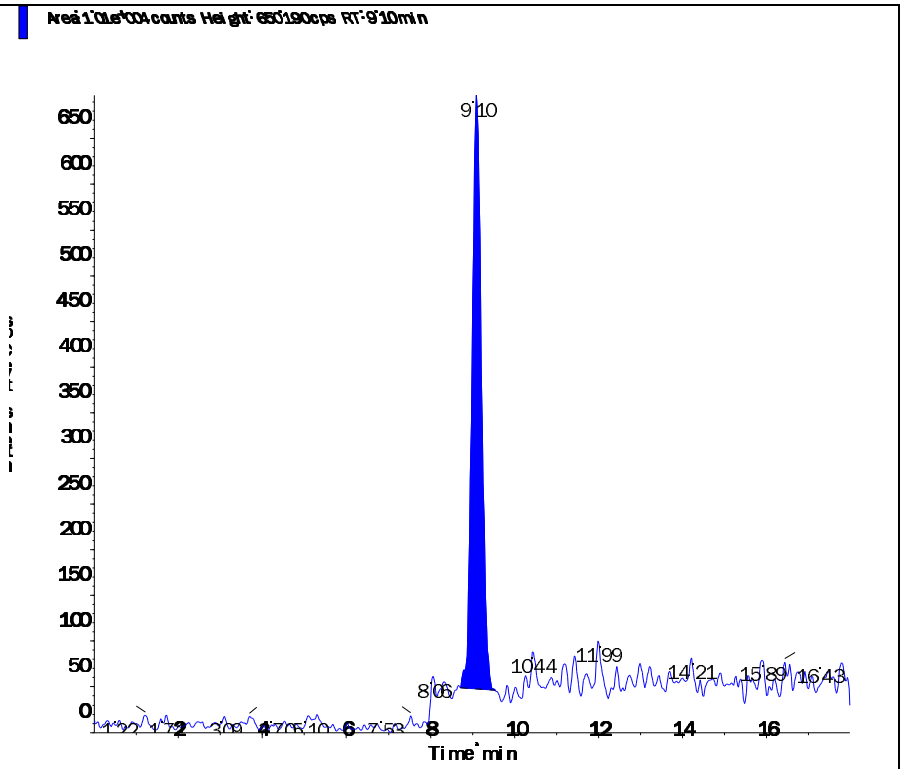

Printing Time: 4:40:40 PM
Printing Date: Wednesday, May 04, 2016

Sample Name: "WG567224-01 MCT (2.0ug/kg)" Sample ID: "WG567224-01" File: "LM34720.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "7,1 STD75512" Annotation: ""

Sample Index:	1	
Sample Type:	Unknown	
Concentration:	N/A	
Calculated Conc:	0.220	ug/L
Acq. Date:	5/4/2016	
Acq. Time:	3:59:35 PM	
Modified:	No	
Proc. Algorithm:	Analyst Classic	
Punching Factor:	2	
Noise Threshold:	18.48	cps
Area Threshold:	92.40	cps
Num. Smooths:	5	
Sep. Width:	0.20	
Sep. Height:	0.01	
Exp. Peak Ratio:	5.00	
Exp. Adj. Ratio:	4.00	
Exp. Val. Ratio:	3.00	
RT Window:	30.000	sec
Expected RT:	9.84	min
Use Relative RT:	Yes	
Int. Type:	Valley	
Retention Time:	9.10	min
Area:	3.16e+004	counts
Height:	1997.611	cps
Start Time:	8.789	min
End Time:	9.559	min

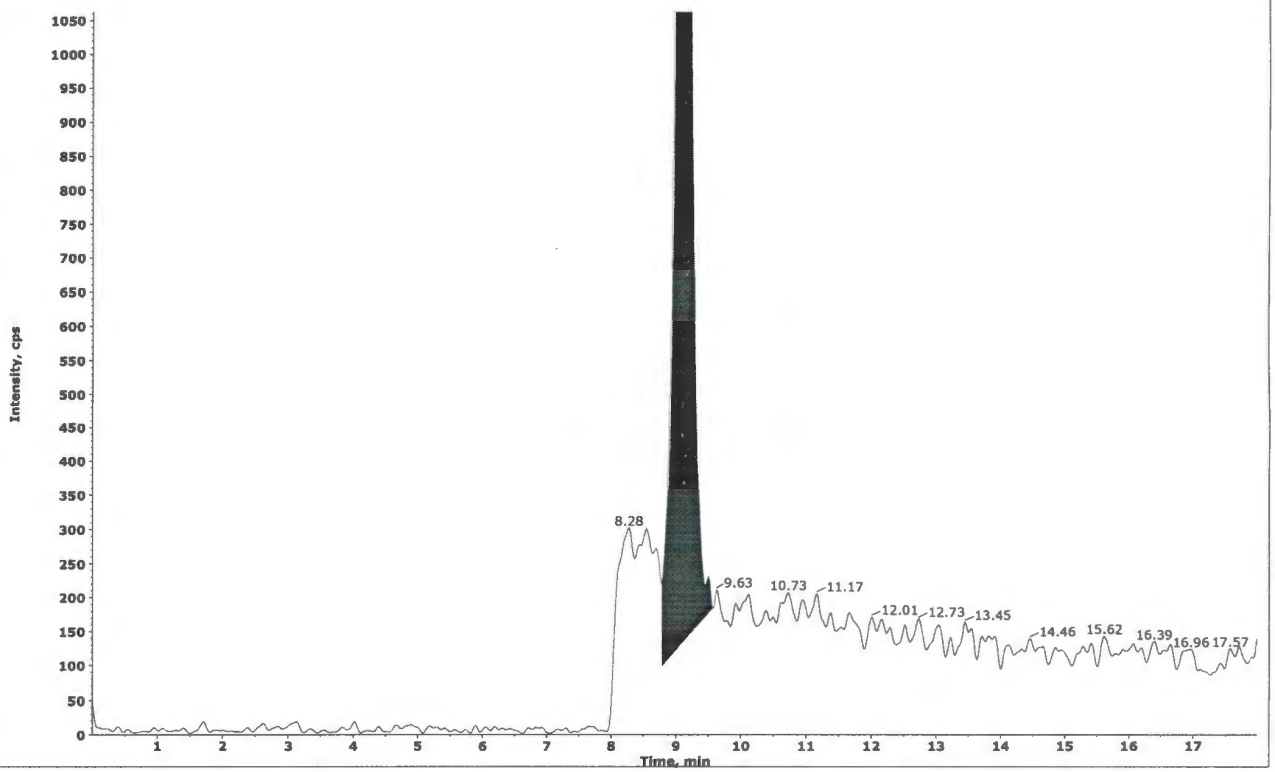

Collected by: N/A
Electronic Signature: no
Operator: lcms1

Printing Time: 4:41:25 PM
Printing Date: Wednesday, May 04, 2016

Sample Name: "WG567224-01 MCT (2.0ug/kg)" Sample ID: "WG567224-01" File: "LM34720.wiff"
Peak Name: "Parchlorate" Mass(es): "98.8/83.3 amu"
Comment: "7.1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.195 mg/L
Acq. Date:	5/4/2016
Acq. Time:	3:59:35 PM
Modified:	Yes
Proc. Algorithm:	Analyst Classic
Bunching Factor:	1
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Sep. Width:	0.20
Sep. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Base To Base
Retention Time:	9.10 min
Area:	2.81e+004 counts
Height:	1912.171 cps
Start Time:	8.789 min
End Time:	9.457 min

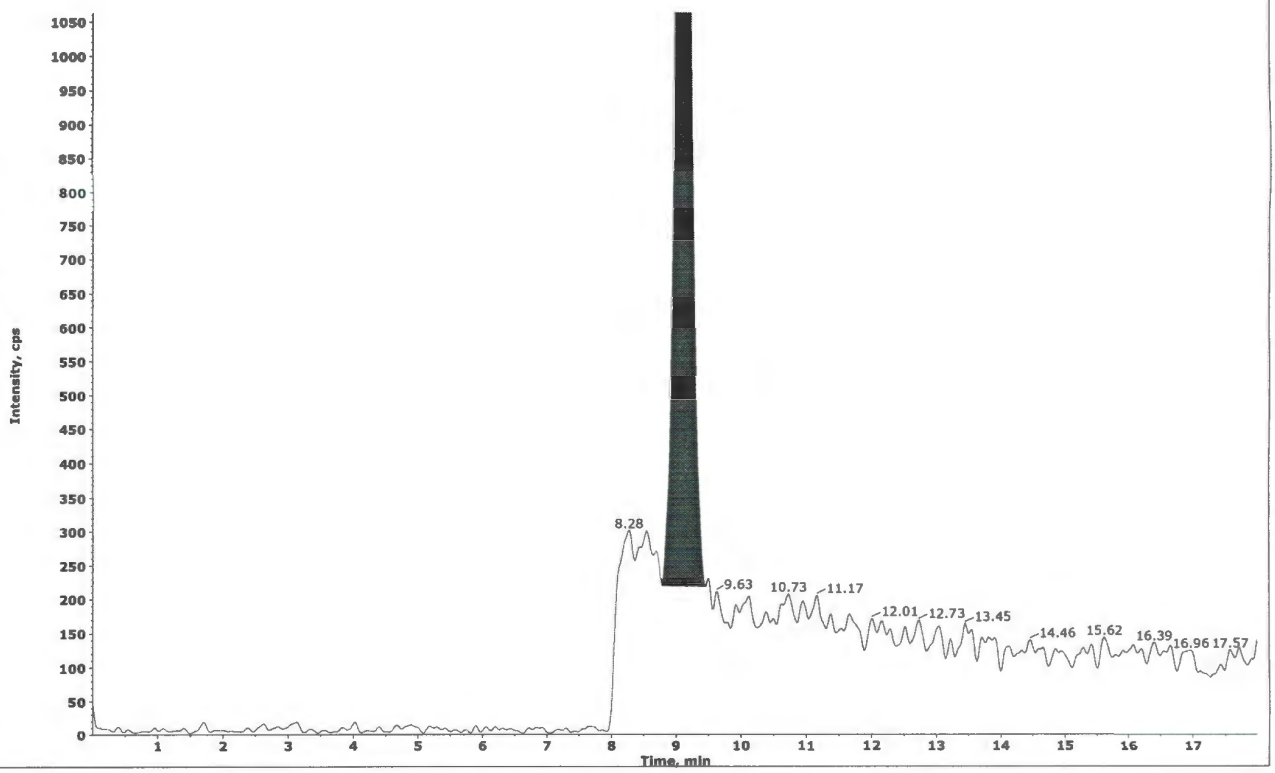

#4
JWR/05/04/16

✓ WD
5-9-16

Collected by: N/A
Electronic Signature: no
Operator: lcms1

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Created with Analyst Reporter
Printed: 5/6/2016 12:48 PM

Data File	LM34769.wiff	**Result Table**	050516_JWR.rdb
Acquisition Date	5/5/2016 6:42:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567744-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM34769.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 6:42:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050516_JWR.rdb
Sample ID	WG567744-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.160e+05	9.09	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.250e+04	9.10	N/A	0.183
Perchlorate conf	1.170e+04	9.09	N/A	0.182

O18LP (Internal Standard)

RT (Exp. RT): 9.09(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

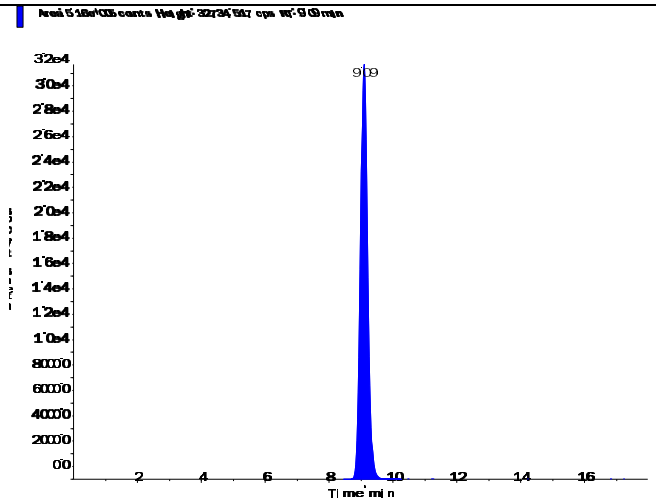

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Created with Analyst Reporter
Printed: 5/6/2016 12:48 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.10 (9.84) min
Calculated conc:	0.183 ng/ml
Area Ratio:	0.063
Sample Type:	(Unknown)

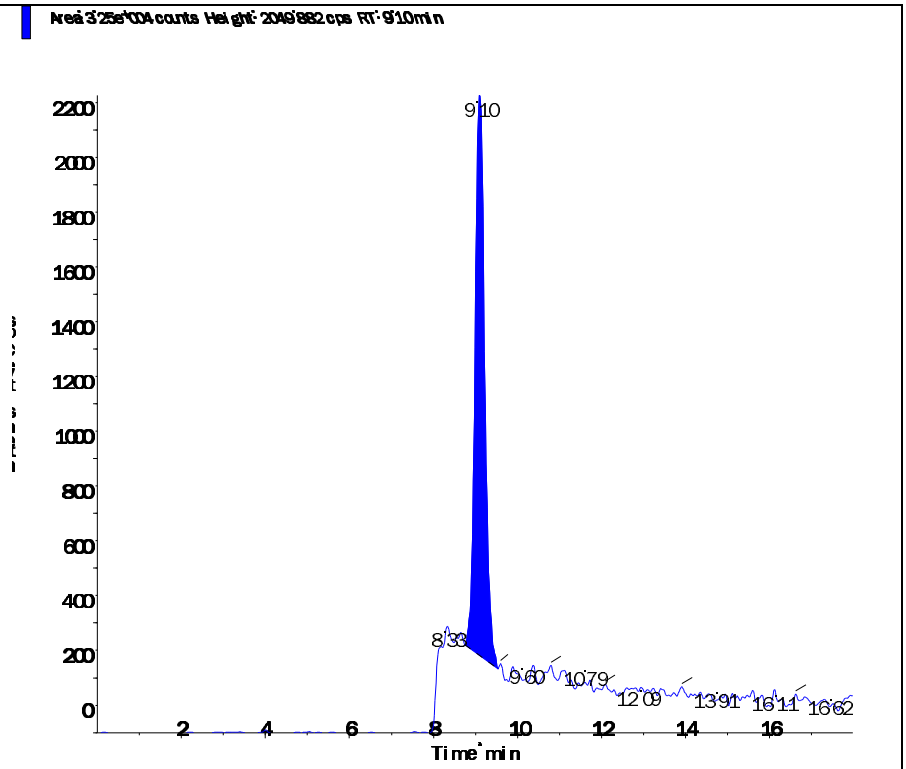

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.09 (9.84) min
Calculated conc:	0.182 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

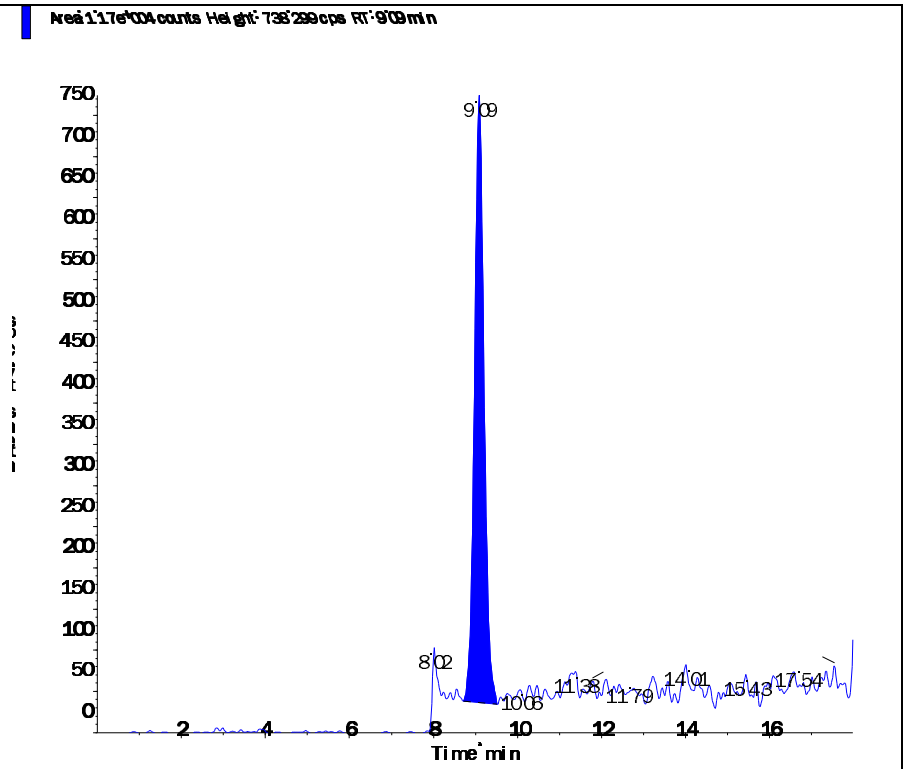

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Printing Time: 10:02:10 AM
Printing Date: Friday, May 06, 2016

Sample Name: "WG567744-01 MCT (0.2ug/L)" Sample ID: "WG567744-01" File: "LM34769.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.230 ug/L
Acq. Date:	5/5/2016
Acq. Time:	6:42:37 PM
Modified:	No
Proc. Algorithm:	Analyst Classic
Bunching Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Sep. Width:	0.20
Sep. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Valley
Retention Time:	9.10 min
Area:	4.05e+004 counts
Height:	2214.111 cps
Start Time:	8.749 min
End Time:	9.781 min

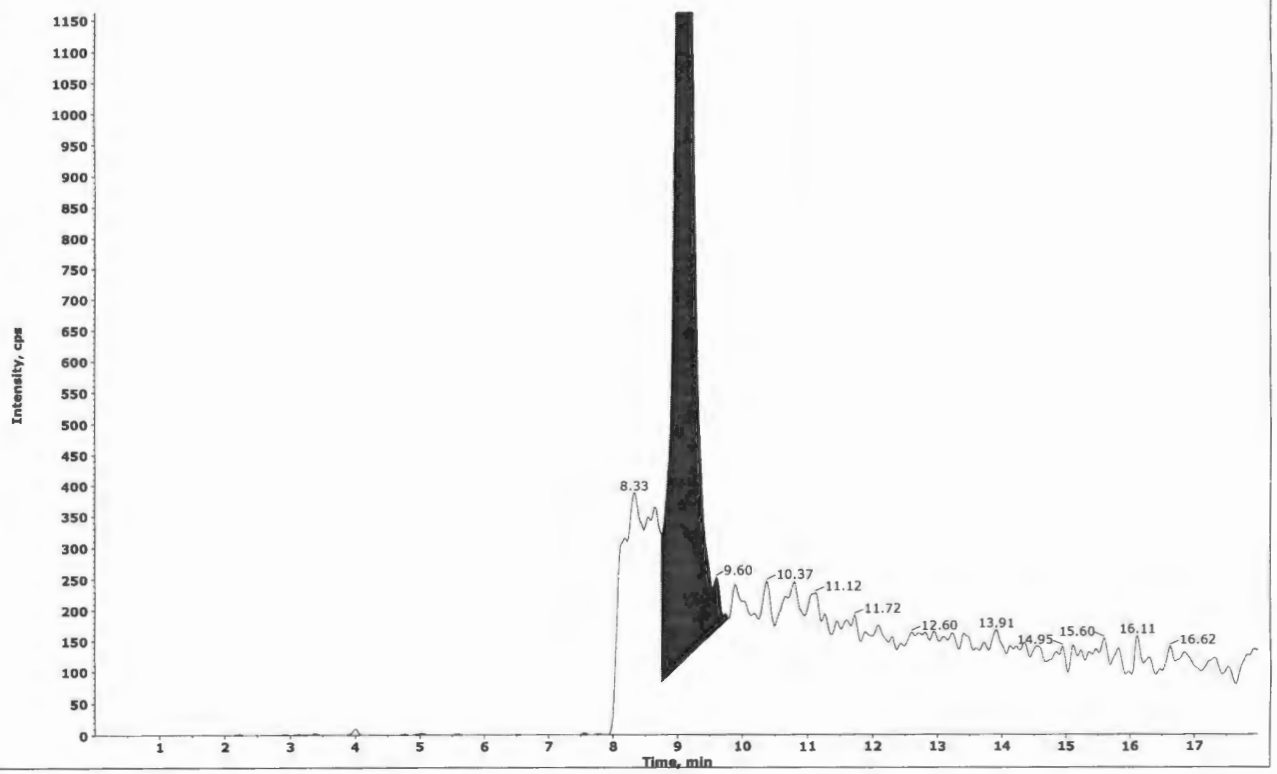

Collected by: N/A
Electronic Signature: no
Operator: lcms1

Printing Time: 10:08:19 AM
Printing Date: Friday, May 06, 2016

Sample Name: "WG567744-01 MCT (0.2ug/L)" Sample ID: "WG567744-01" File: "LM34769.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1.1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.183 ug/L
Acq. Date:	5/5/2016
Acq. Time:	6:42:37 PM
Modified:	Yes
Proc. Algorithm:	Analyst Classic
Smoothing Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Sep. Width:	0.20
Sep. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Manual
Retention Time:	9.10 min
Area:	3.25e+004 counts
Height:	2049.882 cps
Start Time:	8.749 min
End Time:	9.538 min

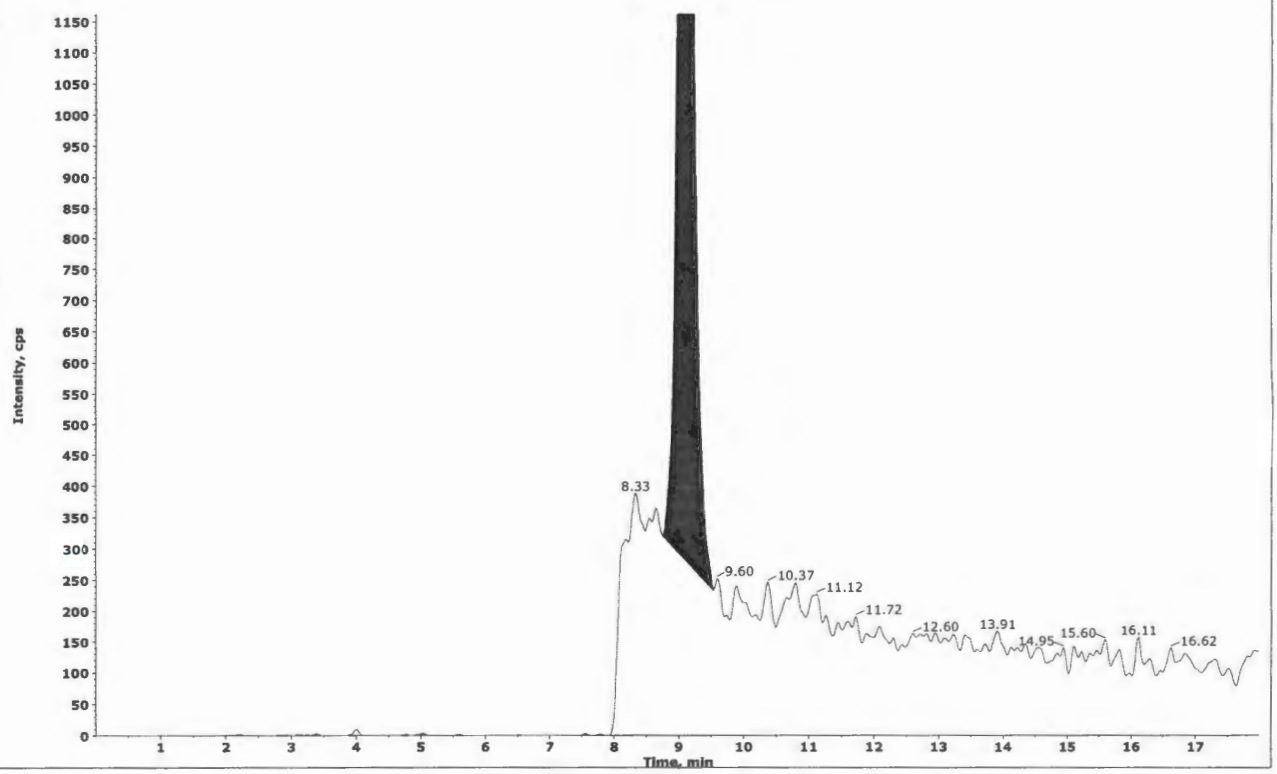

#4
JWR/05/06/16

/WD
05-06-16

Collected by: N/A
Electronic Signature: no
Operator: lcms1

2.2.1.5 Raw QC Data

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Created with Analyst Reporter
Printed: 5/6/2016 1:49 PM

Data File	LM34721.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 4:18:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567224-02 BLANK	**Injection Vial**	5.00
Data File	LM34721.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 4:18:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567224-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.420e+05	9.86	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.220e+03	9.84	N/A	0.0111
Perchlorate conf	5.920e+02	9.89	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.86(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

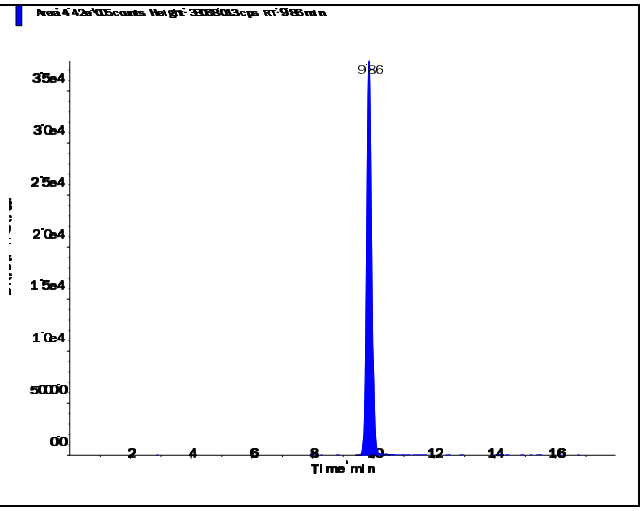

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.0111 ng/ml
Area Ratio:	0.005
Sample Type:	(Unknown)

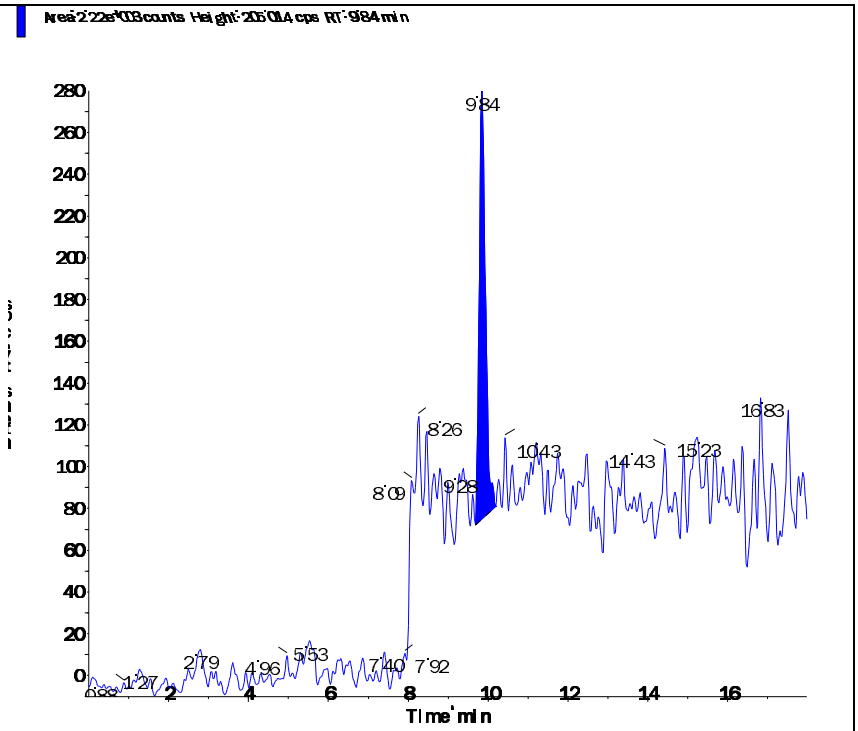

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.89 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

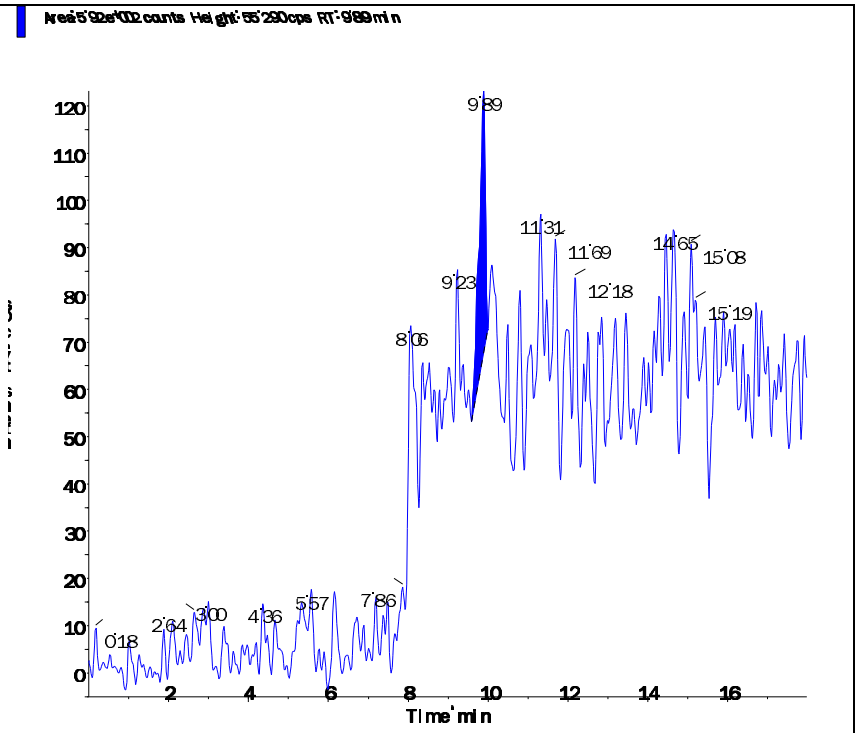

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Printed: 5/6/2016 12:48 PM

Data File	LM34770.wiff	**Result Table**	050516_JWR.rdb
Acquisition Date	5/5/2016 7:01:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567744-02 BLANK	**Injection Vial**	5.00
Data File	LM34770.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 7:01:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050516_JWR.rdb
Sample ID	WG567744-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.280e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

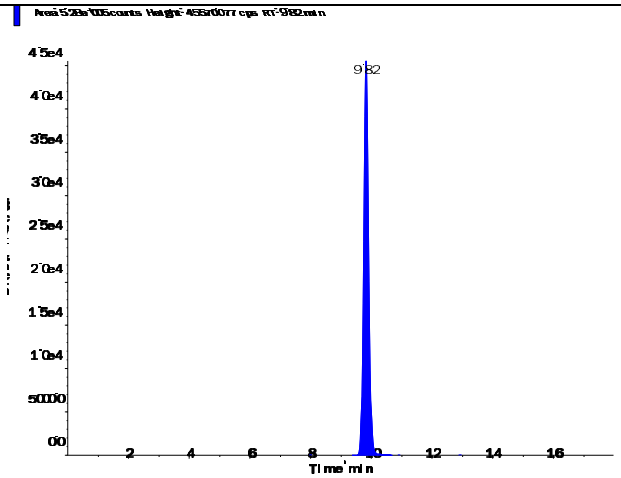

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

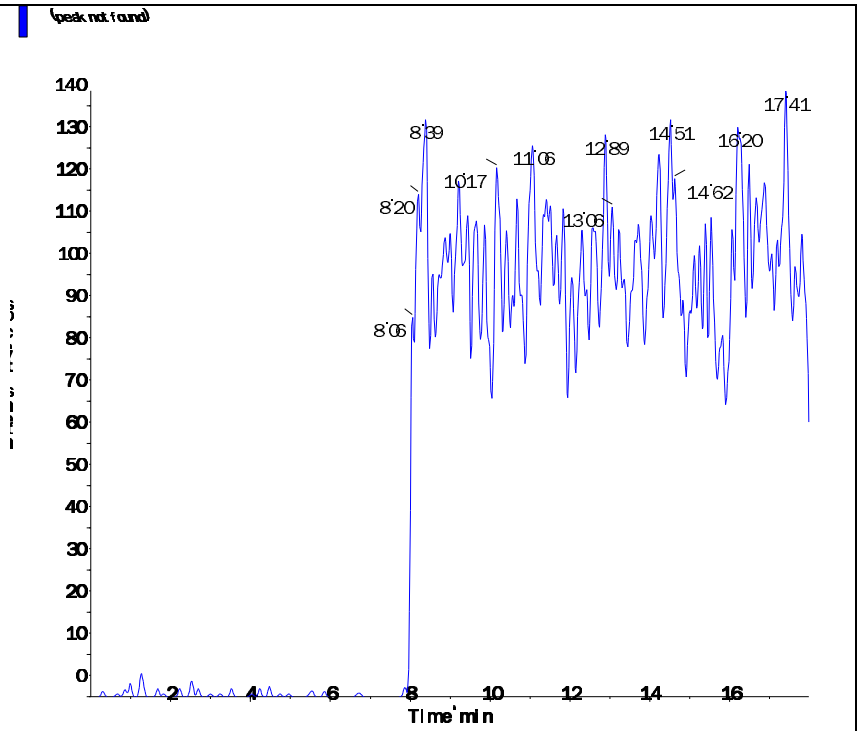

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

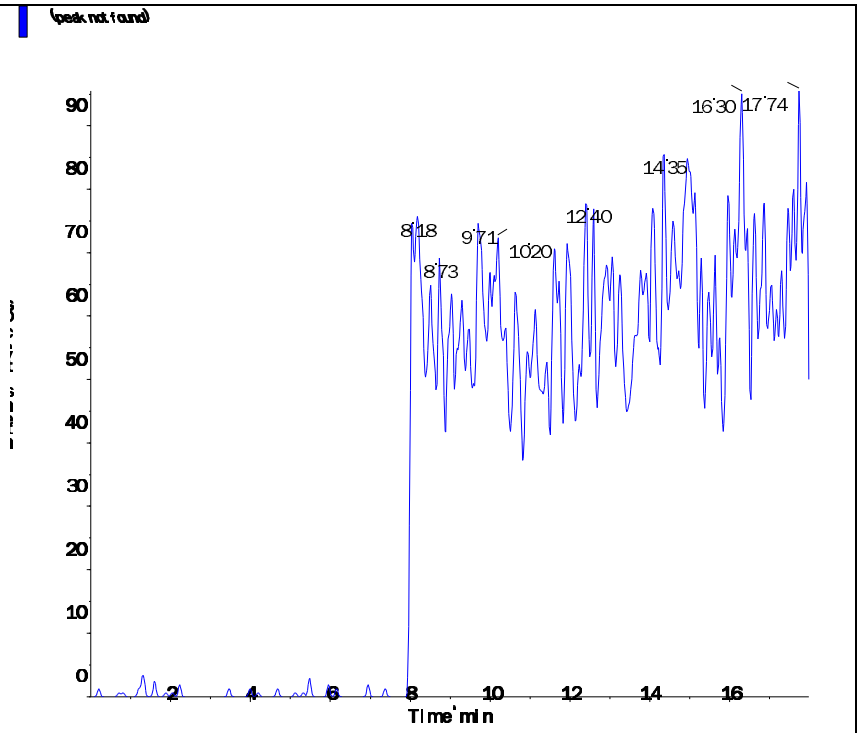

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Created with Analyst Reporter
Printed: 5/6/2016 1:49 PM

Data File	LM34722.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 4:37:26 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567224-03 LCS (2.0ug/kg)	**Injection Vial**	6.00
Data File	LM34722.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 4:37:26 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567224-03	**Dilution Factor**	1.00
Sample Comment	7,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.420e+05	9.86	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.890e+04	9.87	N/A	0.191
Perchlorate conf	1.140e+04	9.85	N/A	0.21

O18LP (Internal Standard)

RT (Exp. RT): 9.86(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

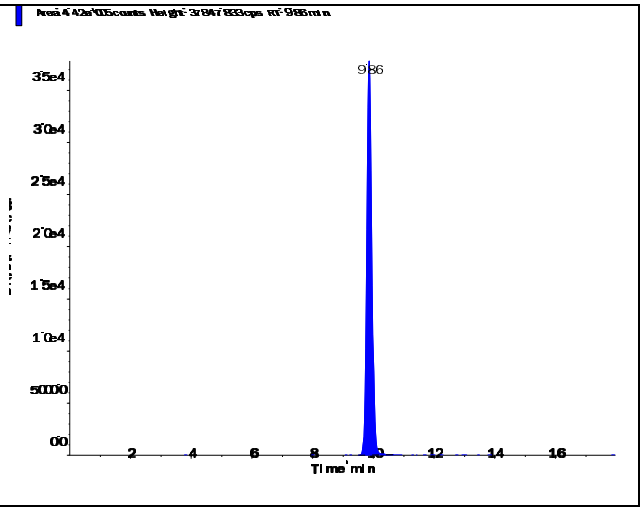

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Printed: 5/6/2016 1:49 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.87 (9.84) min
Calculated conc:	0.191 ng/ml
Area Ratio:	0.065
Sample Type:	(Unknown)

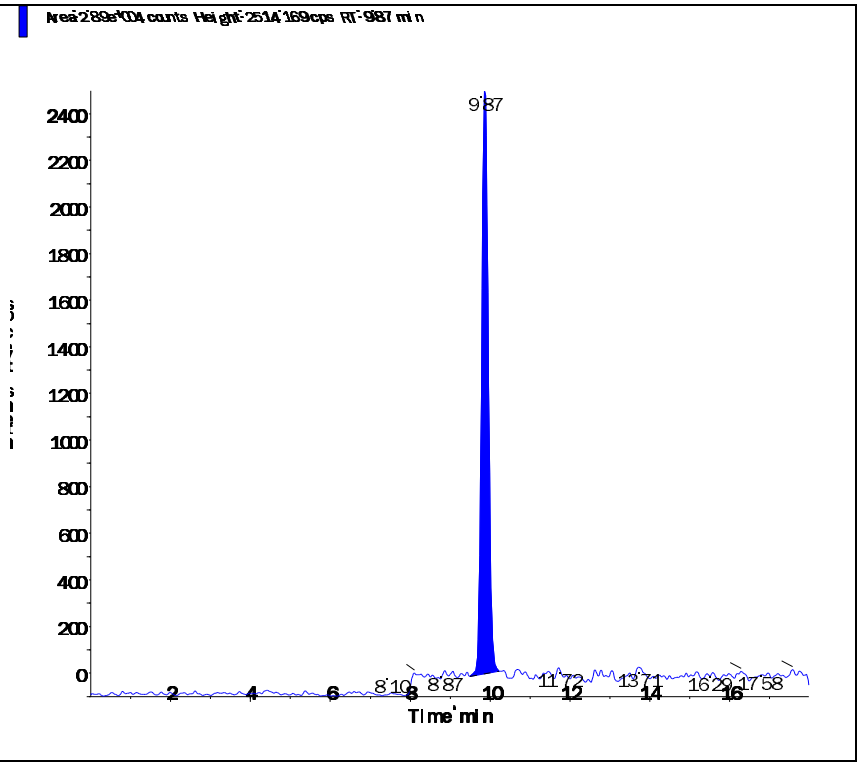

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

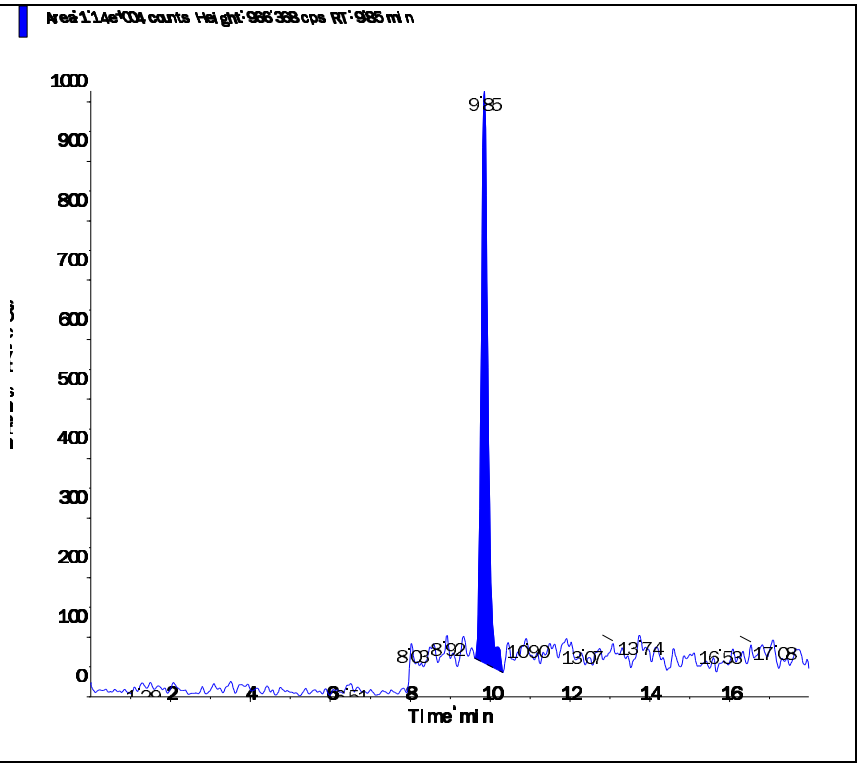

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/6/2016 12:49 PM

Data File	LM34771.wiff	**Result Table**	050516_JWR.rdb
Acquisition Date	5/5/2016 7:20:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567744-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM34771.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 7:20:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050516_JWR.rdb
Sample ID	WG567744-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.310e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.710e+04	9.84	N/A	0.204
Perchlorate conf	1.200e+04	9.83	N/A	0.182

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

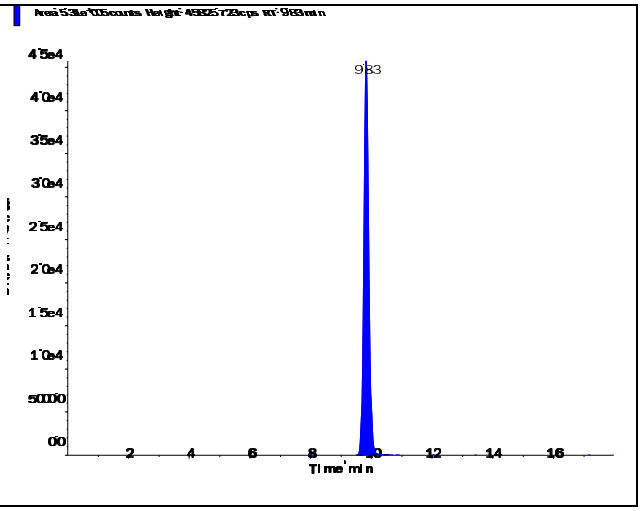

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Created with Analyst Reporter
Printed: 5/6/2016 12:49 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.204 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

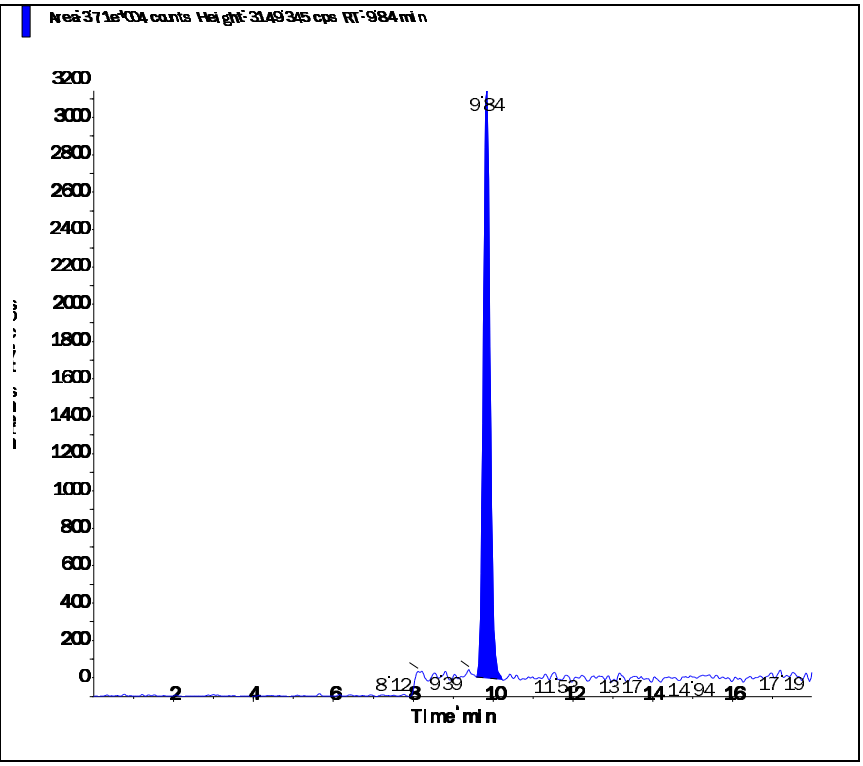

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.182 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

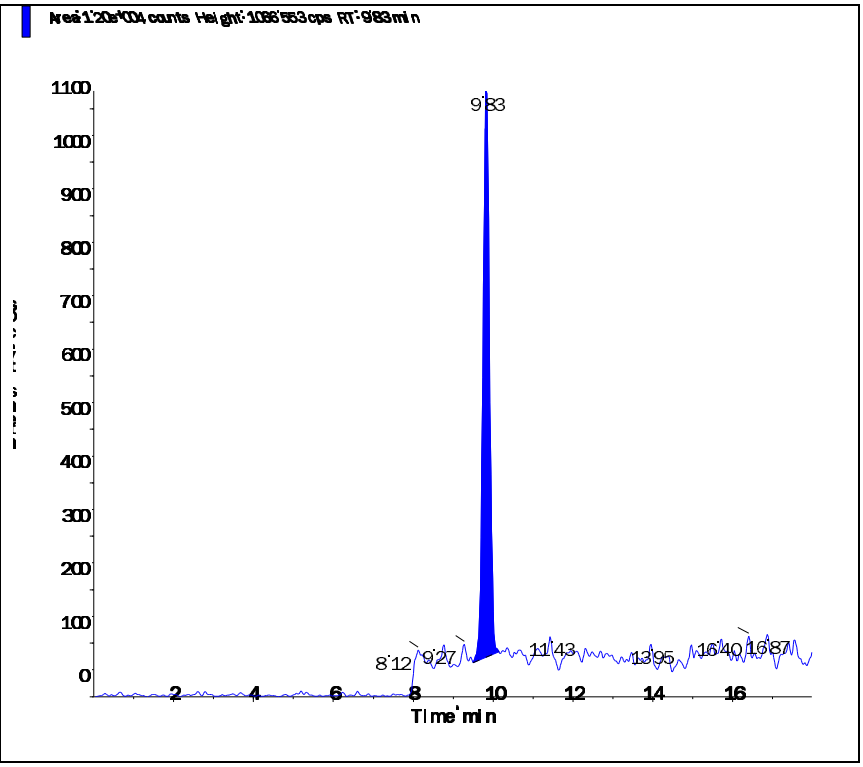

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/6/2016 12:49 PM

Data File	LM34772.wiff	**Result Table**	050516_JWR.rdb
Acquisition Date	5/5/2016 7:39:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567744-04 LCS2 (0.2ug/L)	**Injection Vial**	7.00
Data File	LM34772.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 7:39:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050516_JWR.rdb
Sample ID	WG567744-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.340e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.710e+04	9.84	N/A	0.203
Perchlorate conf	1.220e+04	9.81	N/A	0.185

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

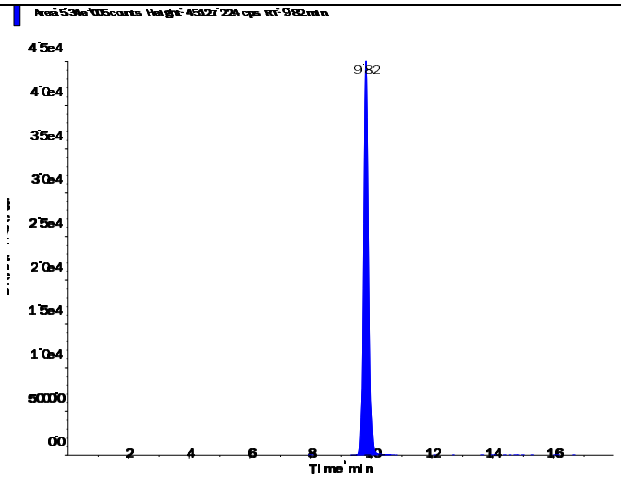

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Printed: 5/6/2016 12:49 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.203 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

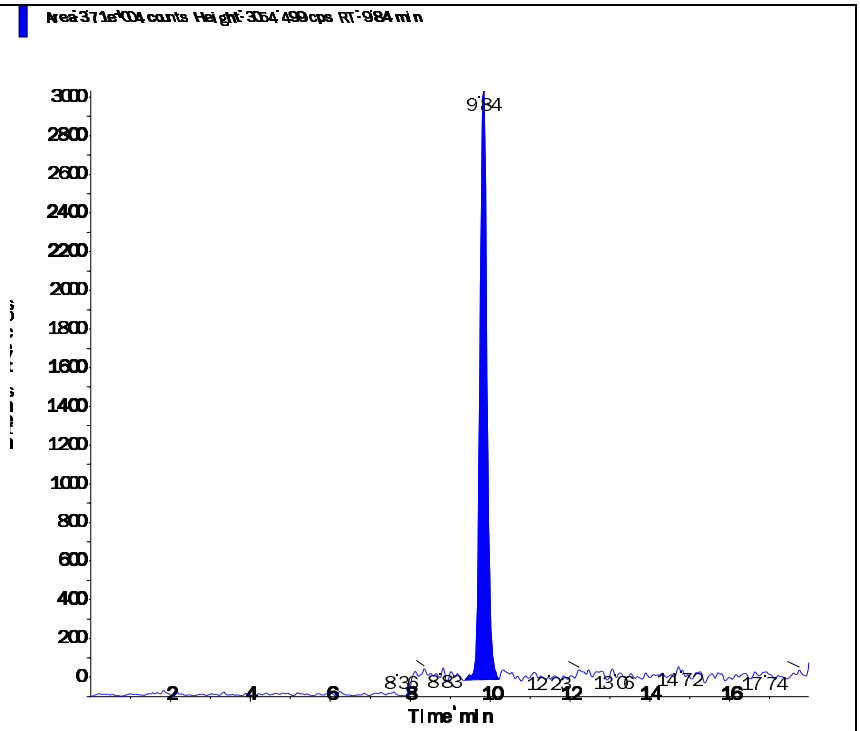

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.81 (9.84) min
Calculated conc:	0.185 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

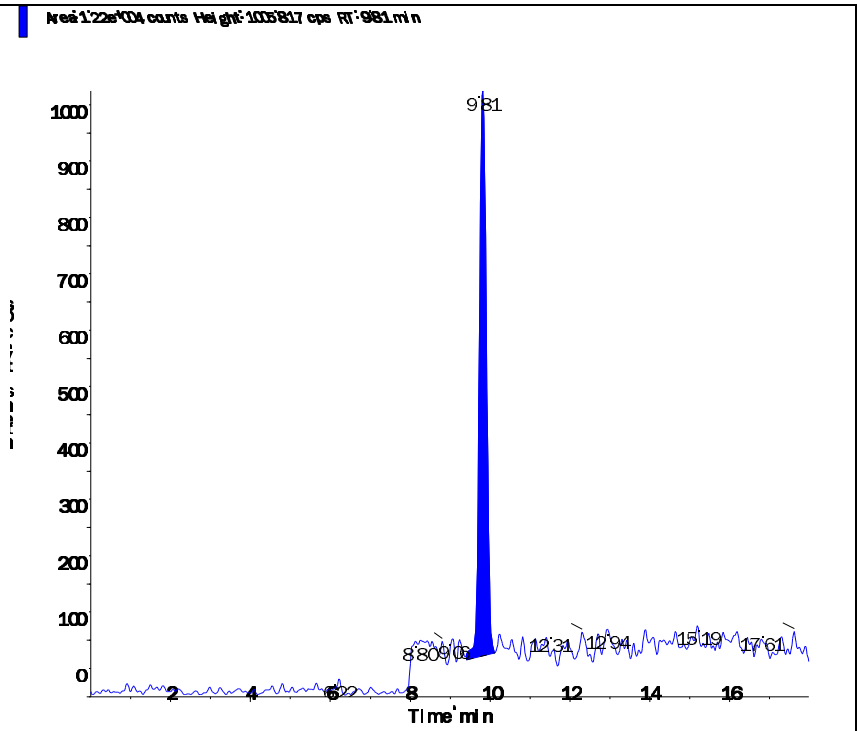

s.dataFile Page 2 of 2

2.3 General Chemistry Data

2.3.1 Percent Solids Data

2.3.1.1 Raw Data

Example Percent Solids Calculations

1.0 Calculating the percent solids of a sample.

$$\%Solids = \frac{WT3 - WT1}{WT2 - WT1} \times F$$

Where:	
WT1 = Weight, in grams, of the empty container	1.30 g
WT2 = Weight, in grams, of the container and wet sample	21.274 g
WT3 = Weight, in grams, of the container and dried sample	5.21 g
F = Factor to get units as percent weight	100
%Solids = Percent solids present in sample.	19.58%

2.0 Calculating the percent moisture of a sample.

% Moisture = 100 - % Solids from 1.0 calculation

Microbac Laboratories Inc.

PERCENT SOLIDS

Workgroup (AAB#): WG567166 Analyst: AC ADT(on): 05/02/2016 13:27
Method: D2216-90 Instrument: BAL021 ADT(off): 05/03/2016 07:46
SOP: K0003 Rev: 14

SAMPLE NUMBER	EMPTY PAN WT 1	WET WT 2	DRY WT 3A	DRY WT 3B	DRY WT 3C	PERCENT SOLID	PERCENT MOISTURE
L16041580-01	1.29	22.615	19.375			84.81	
L16041580-02	1.29	26.3	21.786			81.95	
L16041580-03	1.292	21.625	17.404			79.24	
L16041580-04	1.289	23.096	18.339			78.19	
L16041580-05	1.29	21.915	17.591			79.04	
L16041580-06	1.291	23.333	19.695			83.50	
L16041580-07	1.291	23.333	19.695			83.50	
L16041580-08	1.291	23.333	19.695			83.50	
L16041580-09	1.291	24.126	21.052			86.54	
L16041580-10	1.279	23.631	20.752			87.12	
L16041580-11	1.287	26.575	22.453			83.70	
L16041580-12	1.287	22.289	18.564			82.26	
L16041580-13	1.29	22.339	18.135			80.03	
L16041582-01	1.294	23.384	17.777			74.62	
L16041582-02	1.29	28.32	23.412			81.84	
L16041582-03	1.284	27.318	22.576			81.79	
L16041582-04	1.286	24.705	20.245			80.96	
L16041582-05	1.282	22.281	19.089			84.80	
L16041582-06	1.287	22.079	18.368			82.15	
L16041582-07	1.295	25.736	20.946			80.40	
L16041606-01	1.285	21.833	20.389			92.97	
L16050014-01	1.283	24.256	20.829			85.08	
L16050014-02	1.3	24.953	19.642			77.55	
L16050014-03	1.291	20.806	17.713			84.15	
L16050014-04	1.288	21.983	19.998			90.41	
L16050014-05	1.293	24.293	20.492			83.47	
L16050014-06	1.282	21.966	19.672			88.91	
L16050030-01	1.287	25.15	21.127			83.14	
L16050030-02	1.293	25.733	21.431			82.40	
L16050030-03	1.292	33.629	27.446			80.88	
L16050030-04	1.284	22.714	19.483			84.92	
L16050030-05	1.284	22.779	18.96			82.23	
L16050030-06	1.284	25.307	21.079			82.40	
L16050030-07	1.284	21.993	18.291			82.12	
L16050030-08	1.296	27.13	22.36			81.54	
L16050030-09	1.299	22.008	18.096			81.11	
L16050030-10	1.293	23.646	19.239			80.28	
L16050030-11	1.294	25.085	20.158			79.29	
L16050030-12	1.293	22.244	18.628			82.74	
L16050030-13	1.294	25.484	20.914			81.11	
WG567166-01	1.287	22.079	18.368			82.15	17.85
WG567166-02	1.293	22.244	18.628			82.74	17.26

PERCENT_SOLIDS - Modified 04/24/2008
PDF ID: 4744054
Report generated: 05/03/2016 07:53

Microbac Laboratories Inc.

PERCENT SOLIDS

Workgroup (AAB#): WG567166 Analyst: AC ADT(on): 05/02/2016 13:27
Method: D2216-90 Instrument: BAL021 ADT(off): 05/03/2016 07:46
SOP: K0003 Rev: 14

SAMPLE NUMBER	EMPTY PAN WT 1	WET WT 2	DRY WT 3A	DRY WT 3B	DRY WT 3C	PERCENT SOLID	PERCENT MOISTURE
WG567166-03	1.288	23.865	19.897			82.42	17.58
WG567166-04	1.299	23.081	19.351			82.88	17.12

Analyst: [signature]

PERCENT_SOLIDS - Modified 04/24/2008
PDF ID: 4744054
Report generated: 05/03/2016 07:53

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
May 16, 2016

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001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
May 16, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
May 16, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

COC No. A49373

158 Starlite Drive
Marietta, OH 45750

MICROBAC®

CHAIN-OF-CUSTODY RECORD

Phone: 740-373-4071
Toll Free: 800-373-4071

Company Name: AECOM

Project Contact: Linda Raabe ~~Marwan Sakallah~~

Contact Phone #: 210-253-7518

Turn Around Requirements: STANDARD

Location: LHAAP 5.25 18/24

Project ID: 60274185

Sampler (print): KAULIA PATIANES

Signature: Kaulia Patianes

Sample I.D. No.	Comp	Grab	Date	Time	Matrix*	NUMBER OF CONTAINERS	Hold	VOCs 8260	Benzenamine 6850													TOTAL # (LAB USE)	ADDITIONAL REQUIREMENTS
18CPTMW22DW(5-5.5)260416			4/26/16	0905	Soil	2		X	X														
18CPTMW22DW(10-10.5)260416				1000	"	2		X	X														
18CPTMW22DW(20-20.5)260416				1035	"	2		X	X														
18CPTMW22DW(29.5-30)260416				1115	"	2		X	X														
18CPTMW22DW(40-40.5)260416				1155	"	2		X	X														
18CPTMW22DW(50-51)260416				1415	"	2		X	X														
18CPTMW22DW(50-51)260416MS				1415	"	2		X	X														
18CPTMW22DW(50-51)260416MSD				1415	"	2		X	X														
18CPTMW22DW(60-60.5)260416				1500	"	2		X	X														
18CPTMW22DW(60-60.5)260416DUP				1500	"	2		X	X														
18CPTMW22DW(70-70.5)260416				1545	"	2		X	X														
18CPTMW22DW(80-80.5)260416				1645	"	2		X	X														
18CPTMW22DW(89.5-90)260416				1700	"	2		X	X														
Equipment Blank			4/25/16	1700	WQ	2		X	X														

Program: ☐ CWA ☐ RCRA ☐ DOD ☐ AFCEE ☐ Other _____

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Relinquished by: (Signature)	Date	Time	Received by: (Signature)
Kaulia Patianes	4/28/16	1500					
Relinquished by: (Signature)	Date	Time	Received by: (Signature)				

Remarks:

Microbac OVD
Received: 04/29/2016 09:52
By: BRENDA GREGORY 221000085220

Brenda Gregory

*Water (W), Soil (S), Solid Waste (SD), Unknown (X)

Page _____ of _____

00660874

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041580
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 10-MAY-2016

Samplenum	Container ID	Products
L16041580-01	737053	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-APR-2016 12:58	BRG		
2	ANALYZ	V1	ORG4	29-APR-2016 18:12	AWE	AZH	
3	STORE	ORG4	A1	13-MAY-2016 07:39	CLS	AWE	

Samplenum	Container ID	Products
L16041580-01	737054	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-APR-2016 12:58	BRG		
2	PREP	W1	DIG	02-MAY-2016 13:18	AC	BRG	
3	STORE	DIG	W1	02-MAY-2016 13:56	BRG	AC	
4	ANALYZ	W1	SEM	02-MAY-2016 16:41	JWR	BRG	
5	ANALYZ*	DIG	SEMI	06-MAY-2016 15:22	JWR	AC	
6	STORE	SEM	A1	06-MAY-2016 15:51	CLS	JWR	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041580-02	737055	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-APR-2016 12:58	BRG		
2	ANALYZ	V1	ORG4	29-APR-2016 18:12	AWE	AZH	
3	STORE	ORG4	A1	13-MAY-2016 07:39	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041580
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 10-MAY-2016

Samplenum	Container ID	Products
L16041580-02	737056	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-APR-2016 12:58	BRG		
2	PREP	W1	DIG	02-MAY-2016 13:18	AC	BRG	
3	STORE	DIG	W1	02-MAY-2016 13:56	BRG	AC	
4	ANALYZ	W1	SEM	02-MAY-2016 16:42	JWR	BRG	
5	ANALYZ*	DIG	SEMI	06-MAY-2016 15:22	JWR	AC	
6	STORE	SEM	A1	06-MAY-2016 15:51	CLS	JWR	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041580-03	737057	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-APR-2016 12:58	BRG		
2	ANALYZ	V1	ORG4	29-APR-2016 18:12	AWE	AZH	
3	STORE	ORG4	A1	13-MAY-2016 07:39	CLS	AWE	

Samplenum	Container ID	Products
L16041580-03	737058	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-APR-2016 12:58	BRG		
2	PREP	W1	DIG	02-MAY-2016 13:18	AC	BRG	
3	STORE	DIG	W1	02-MAY-2016 13:56	BRG	AC	
4	ANALYZ	W1	SEM	02-MAY-2016 16:42	JWR	BRG	
5	ANALYZ*	DIG	SEMI	06-MAY-2016 15:22	JWR	AC	
6	STORE	SEM	A1	06-MAY-2016 15:51	CLS	JWR	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041580
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 10-MAY-2016

Samplenum	Container ID	Products
L16041580-04	737059	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-APR-2016 12:58	BRG		
2	ANALYZ	V1	ORG4	29-APR-2016 18:12	AWE	AZH	
3	STORE	ORG4	A1	13-MAY-2016 07:39	CLS	AWE	

Samplenum	Container ID	Products
L16041580-04	737060	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-APR-2016 12:58	BRG		
2	PREP	W1	DIG	02-MAY-2016 13:18	AC	BRG	
3	STORE	DIG	W1	02-MAY-2016 13:56	BRG	AC	
4	ANALYZ	W1	SEM	02-MAY-2016 16:42	JWR	BRG	
5	ANALYZ*	DIG	SEMI	06-MAY-2016 15:22	JWR	AC	
6	STORE	SEM	A1	06-MAY-2016 15:51	CLS	JWR	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041580-05	737061	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-APR-2016 12:58	BRG		
2	ANALYZ	V1	ORG4	29-APR-2016 18:12	AWE	AZH	
3	STORE	ORG4	A1	13-MAY-2016 07:39	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041580
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 10-MAY-2016

Samplenum	Container ID	Products
L16041580-05	737062	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-APR-2016 12:58	BRG		
2	PREP	W1	DIG	02-MAY-2016 13:18	AC	BRG	
3	STORE	DIG	W1	02-MAY-2016 13:56	BRG	AC	
4	ANALYZ	W1	SEM	02-MAY-2016 16:42	JWR	BRG	
5	ANALYZ*	DIG	SEMI	06-MAY-2016 15:22	JWR	AC	
6	STORE	SEM	A1	06-MAY-2016 15:52	CLS	JWR	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041580-06	737063	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-APR-2016 12:58	BRG		
2	ANALYZ	V1	ORG4	29-APR-2016 18:12	AWE	AZH	
3	STORE	ORG4	A1	13-MAY-2016 07:39	CLS	AWE	

Samplenum	Container ID	Products
L16041580-06	737064	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-APR-2016 12:58	BRG		
2	PREP	W1	DIG	02-MAY-2016 13:18	AC	BRG	
3	STORE	DIG	W1	02-MAY-2016 13:56	BRG	AC	
4	ANALYZ	W1	SEM	02-MAY-2016 16:42	JWR	BRG	
5	ANALYZ*	DIG	SEMI	06-MAY-2016 15:22	JWR	AC	
6	STORE	SEM	A1	06-MAY-2016 15:52	CLS	JWR	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041580
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 10-MAY-2016

Samplenum	Container ID	Products
L16041580-07	737065	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-APR-2016 12:58	BRG		
2	ANALYZ	V1	ORG4	29-APR-2016 18:12	AWE	AZH	
3	STORE	ORG4	A1	13-MAY-2016 07:39	CLS	AWE	

Samplenum	Container ID	Products
L16041580-07	737066	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	DIG	29-APR-2016 12:58	BRG		
2	STORE	DIG	W1	02-MAY-2016 13:56	BRG	AC	
3	ANALYZ	W1	SEM	02-MAY-2016 16:42	JWR	BRG	
4	STORE	SEM	A1	06-MAY-2016 15:52	CLS	JWR	

Samplenum	Container ID	Products
L16041580-08	737067	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-APR-2016 12:58	BRG		
2	ANALYZ	V1	ORG4	29-APR-2016 18:12	AWE	AZH	
3	STORE	ORG4	A1	13-MAY-2016 07:39	CLS	AWE	

Samplenum	Container ID	Products
L16041580-08	737068	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-APR-2016 12:58	BRG		
2	PREP	W1	DIG	02-MAY-2016 13:18	AC	BRG	
3	STORE	DIG	W1	02-MAY-2016 13:56	BRG	AC	
4	ANALYZ	W1	SEM	02-MAY-2016 16:42	JWR	BRG	
5	ANALYZ*	DIG	SEMI	06-MAY-2016 15:22	JWR	AC	
6	STORE	SEM	A1	06-MAY-2016 15:52	CLS	JWR	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041580
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 10-MAY-2016

Samplenum	Container ID	Products
L16041580-09	737069	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-APR-2016 12:58	BRG		
2	ANALYZ	V1	ORG4	29-APR-2016 18:12	AWE	AZH	
3	STORE	ORG4	A1	13-MAY-2016 07:39	CLS	AWE	

Samplenum	Container ID	Products
L16041580-09	737070	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-APR-2016 12:58	BRG		
2	PREP	W1	DIG	02-MAY-2016 13:18	AC	BRG	
3	STORE	DIG	W1	02-MAY-2016 13:56	BRG	AC	
4	ANALYZ	W1	SEM	02-MAY-2016 16:42	JWR	BRG	
5	ANALYZ*	DIG	SEMI	06-MAY-2016 15:22	JWR	AC	
6	STORE	SEM	A1	06-MAY-2016 15:52	CLS	JWR	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041580-10	737071	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-APR-2016 12:58	BRG		
2	ANALYZ	V1	ORG4	29-APR-2016 18:12	AWE	AZH	
3	STORE	ORG4	A1	13-MAY-2016 07:39	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041580
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 10-MAY-2016

Samplenum	Container ID	Products
L16041580-10	737072	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-APR-2016 12:58	BRG		
2	PREP	W1	DIG	02-MAY-2016 13:18	AC	BRG	
3	STORE	DIG	W1	02-MAY-2016 13:56	BRG	AC	
4	ANALYZ	W1	SEM	02-MAY-2016 16:42	JWR	BRG	
5	ANALYZ*	DIG	SEMI	06-MAY-2016 15:22	JWR	AC	
6	STORE	SEM	A1	06-MAY-2016 15:52	CLS	JWR	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041580-11	737073	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-APR-2016 12:58	BRG		
2	ANALYZ	V1	ORG4	29-APR-2016 18:12	AWE	AZH	
3	STORE	ORG4	A1	13-MAY-2016 07:39	CLS	AWE	

Samplenum	Container ID	Products
L16041580-11	737074	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-APR-2016 12:58	BRG		
2	PREP	W1	DIG	02-MAY-2016 13:18	AC	BRG	
3	STORE	DIG	W1	02-MAY-2016 13:56	BRG	AC	
4	ANALYZ	W1	SEM	02-MAY-2016 16:42	JWR	BRG	
5	ANALYZ*	DIG	SEMI	06-MAY-2016 15:22	JWR	AC	
6	STORE	SEM	A1	06-MAY-2016 15:52	CLS	JWR	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041580
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 10-MAY-2016

Samplenum	Container ID	Products
L16041580-12	737075	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-APR-2016 12:58	BRG		
2	ANALYZ	V1	ORG4	29-APR-2016 18:12	AWE	AZH	
3	STORE	ORG4	A1	13-MAY-2016 07:39	CLS	AWE	

Samplenum	Container ID	Products
L16041580-12	737076	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-APR-2016 12:58	BRG		
2	PREP	W1	DIG	02-MAY-2016 13:18	AC	BRG	
3	STORE	DIG	W1	02-MAY-2016 13:56	BRG	AC	
4	ANALYZ	W1	SEM	02-MAY-2016 16:42	JWR	BRG	
5	ANALYZ*	DIG	SEMI	06-MAY-2016 15:22	JWR	AC	
6	STORE	SEM	A1	06-MAY-2016 15:52	CLS	JWR	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041580-13	737077	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-APR-2016 12:58	BRG		
2	ANALYZ	V1	ORG4	29-APR-2016 18:12	AWE	AZH	
3	STORE	ORG4	A1	13-MAY-2016 07:39	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041580
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 10-MAY-2016

Samplenum	Container ID	Products
L16041580-13	737078	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-APR-2016 12:58	BRG		
2	PREP	W1	DIG	02-MAY-2016 13:18	AC	BRG	
3	STORE	DIG	W1	02-MAY-2016 13:56	BRG	AC	
4	ANALYZ	W1	SEM	02-MAY-2016 16:42	JWR	BRG	
5	ANALYZ*	DIG	SEMI	06-MAY-2016 15:22	JWR	AC	
6	STORE	SEM	A1	06-MAY-2016 15:52	CLS	JWR	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041580-14	737079	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-APR-2016 12:58	BRG		
2	ANALYZ	V1	ORG4	02-MAY-2016 07:35	AWE	CLS	
3	STORE	ORG4	A1	12-MAY-2016 07:34	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-APR-2016 12:58	BRG		
2	ANALYZ	V1	ORG4	02-MAY-2016 07:35	AWE	CLS	
3	STORE	ORG4	A1	12-MAY-2016 07:34	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-APR-2016 12:58	BRG		
2	ANALYZ	V1	ORG4	02-MAY-2016 07:35	AWE	CLS	

Samplenum	Container ID	Products
L16041580-14	737080	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-APR-2016 12:58	BRG		
2	ANALYZ	W1	SEM	05-MAY-2016 14:26	JWR	CLS	
3	STORE	SEM	A1	06-MAY-2016 15:51	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16041582

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on May 12 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00113829	H	0.0		J2317165689	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	NA
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	NA

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18CPTMW23SW(5-5.5)	L16041582-01	04/27/2016 14:15	04/29/2016 09:52
18CPTMW23SW(10-10.5)	L16041582-02	04/27/2016 14:40	04/29/2016 09:52
18CPTMW23SW(20-20.5)	L16041582-03	04/27/2016 14:45	04/29/2016 09:52
18CPTMW23SW(30-30.5)	L16041582-04	04/27/2016 14:50	04/29/2016 09:52
18CPTMW23SW(40-40.5)	L16041582-05	04/27/2016 16:15	04/29/2016 09:52
18CPTMW23SW(60-60.5)	L16041582-06	04/27/2016 17:35	04/29/2016 09:52
18CPTMW23SW(50-50.5)	L16041582-07	04/27/2016 17:45	04/29/2016 09:52

Microbac REPORT L16041582
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041582
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG567938	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-05-11 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2016-05-11 18:24:21

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041582
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG567938	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-05-11 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041582
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG567938	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-05-11 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			1
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041582
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG567938	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-05-11 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			2
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041582
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG567938	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-05-11 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041582
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG567938	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-05-11 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1)Trichloroethene exceeded the UCL in the MS/MSD.

2)1,2-Dibromo-3-Chloropropane, 2-Hexanone, 4-Methyl-2-Pentanone, Naphthalene exceeded the UCL in the CCV.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041582
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG567224	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-05-09 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Wade DeLong	Wade DeLong	Chemist I	2016-05-09 13:44:04

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041582
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG567224	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-05-09 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?	X				
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041582
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG567224	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-05-09 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			ER1
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041582
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG567224	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-05-09 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041582
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG567224	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-05-09 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041582
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG567224	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-05-09 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER1 The MS and MSD recoveries were below the advisory limit. The MS and MSD were not associated with this SDG.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041582
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG567166	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-05-09 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2016-05-09 16:02:36

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041582
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG567166	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-05-09 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?			X		
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?			X		
Were sample detection limits reported for all analytes not detected?			X		
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?			X		
Were blanks analyzed at the appropriate frequency?			X		
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?			X		
Were blank concentrations < MQL?			X		
Laboratory control samples (LCS):			X		
Were all COCs included in the LCS?			X		

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041582
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG567166	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-05-09 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?			X		
Were LCSs analyzed at the required frequency?			X		
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?			X		
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?			X		
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?			X		
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?			X		
Are unadjusted MQLs and DCSs included in the laboratory data package?			X		
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?			X		
Were percent RSDs or correlation coefficient criteria met?			X		

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041582
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG567166	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-05-09 00:00:00		

Was the number of standards recommended in the method used for all analytes?			X		
Were all points generated between the lowest and highest standard used to calculate the curve?			X		
Are ICAL data available for all instruments used?			X		
Has the initial calibration curve been verified using an appropriate second source standard?			X		
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041582
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG567166	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-05-09 00:00:00		

Was a MDL study performed for each reported analyte?			X		
Is the MDL either adjusted or supported by the analysis of DCSs?			X		
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?			X		
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041582
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG567166	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-05-09 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041582-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW23SW(5-5.5)	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:52
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG567938	**Analyst:**	TMB	**Run Date:**	05/07/2016 16:44
Collect Date:	04/27/2016 14:15	**Dilution:**	1	**File ID:**	6M139125
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	74.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	14.7	U	29.3	14.7	7.33
Benzene	71-43-2	1.47	U	7.33	1.47	0.733
Bromobenzene	108-86-1	1.47	U	7.33	1.47	0.733
Bromochloromethane	74-97-5	2.94	U	7.33	2.94	1.47
Bromodichloromethane	75-27-4	1.47	U	7.33	1.47	0.733
Bromoform	75-25-2	1.47	U	7.33	1.47	0.733
Bromomethane	74-83-9	2.94	U	7.33	2.94	1.47
2-Butanone	78-93-3	7.34	U	14.7	7.34	3.67
n-Butylbenzene	104-51-8	1.47	U	7.33	1.47	0.733
sec-Butylbenzene	135-98-8	1.47	U	7.33	1.47	0.733
tert-Butylbenzene	98-06-6	1.47	U	7.33	1.47	0.733
Carbon disulfide	75-15-0	1.47	U	7.33	1.47	0.733
Carbon tetrachloride	56-23-5	1.47	U	7.33	1.47	0.733
Chlorobenzene	108-90-7	1.47	U	7.33	1.47	0.733
Chlorodibromomethane	124-48-1	1.47	U	7.33	1.47	0.733
Chloroethane	75-00-3	2.94	U	7.33	2.94	1.47
Chloroform	67-66-3	1.47	U	7.33	1.47	0.733
Chloromethane	74-87-3	5.86	U	14.7	5.86	2.93
2-Chlorotoluene	95-49-8	1.47	U	7.33	1.47	0.733
4-Chlorotoluene	106-43-4	1.47	U	7.33	1.47	0.733
1,2-Dibromo-3-chloropropane	96-12-8	5.86	Q	14.7	5.86	2.93
1,2-Dibromoethane	106-93-4	1.47	U	7.33	1.47	0.733
Dibromomethane	74-95-3	1.47	U	7.33	1.47	0.733
1,2-Dichlorobenzene	95-50-1	1.47	U	7.33	1.47	0.733
1,3-Dichlorobenzene	541-73-1	1.47	U	7.33	1.47	0.733
1,4-Dichlorobenzene	106-46-7	1.47	U	7.33	1.47	0.733
Dichlorodifluoromethane	75-71-8	2.94	U	7.33	2.94	1.47
1,1-Dichloroethane	75-34-3	2.94	U	7.33	2.94	1.47
1,2-Dichloroethane	107-06-2	4.13	J	7.33	1.47	0.733
1,1-Dichloroethene	75-35-4	1.47	U	7.33	1.47	0.733
cis-1,2-Dichloroethene	156-59-2	9.99		7.33	1.47	0.733
trans-1,2-Dichloroethene	156-60-5	1.47	U	7.33	1.47	0.733

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Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.47	U	7.33	1.47	0.733
1,3-Dichloropropane	142-28-9	1.47	U	7.33	1.47	0.733
2,2-Dichloropropane	594-20-7	1.47	U	7.33	1.47	0.733
cis-1,3-Dichloropropene	10061-01-5	1.47	U	7.33	1.47	0.733
trans-1,3-Dichloropropene	10061-02-6	1.47	U	7.33	1.47	0.733
1,1-Dichloropropene	563-58-6	1.47	U	7.33	1.47	0.733
Ethylbenzene	100-41-4	1.47	U	7.33	1.47	0.733
2-Hexanone	591-78-6	7.34	Q	14.7	7.34	3.67
Hexachlorobutadiene	87-68-3	1.47	U	7.33	1.47	0.733
Isopropylbenzene	98-82-8	1.47	U	7.33	1.47	0.733
p-Isopropyltoluene	99-87-6	4.51	J	7.33	1.47	0.733
4-Methyl-2-pentanone	108-10-1	7.34	Q	14.7	7.34	3.67
Methylene chloride	75-09-2	2.94	U	7.33	2.94	1.47
Naphthalene	91-20-3	1.47	Q	7.33	1.47	0.733
n-Propylbenzene	103-65-1	1.47	U	7.33	1.47	0.733
Styrene	100-42-5	1.47	U	7.33	1.47	0.733
1,1,1,2-Tetrachloroethane	630-20-6	1.47	U	7.33	1.47	0.733
1,1,2,2-Tetrachloroethane	79-34-5	1.47	U	7.33	1.47	0.733
Tetrachloroethene	127-18-4	1.47	U	7.33	1.47	0.733
Toluene	108-88-3	1.47	U	7.33	1.47	0.733
1,2,3-Trichlorobenzene	87-61-6	1.47	U	7.33	1.47	0.733
1,2,4-Trichlorobenzene	120-82-1	1.47	U	7.33	1.47	0.733
1,1,1-Trichloroethane	71-55-6	1.47	U	7.33	1.47	0.733
1,1,2-Trichloroethane	79-00-5	1.47	U	7.33	1.47	0.733
Trichloroethene	79-01-6	47.6		7.33	1.47	0.733
Trichlorofluoromethane	75-69-4	2.94	U	7.33	2.94	1.47
1,2,3-Trichloropropane	96-18-4	2.94	U	7.33	2.94	1.47
1,2,4-Trimethylbenzene	95-63-6	2.29	J	7.33	1.47	0.733
1,3,5-Trimethylbenzene	108-67-8	1.47	U	7.33	1.47	0.733
Vinyl chloride	75-01-4	2.94	U	7.33	2.94	1.47
o-Xylene	95-47-6	1.47	U	7.33	1.47	0.733
m-,p-Xylene	179601-23-1	1.47	U	7.33	1.47	0.733

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.5	80	120	
1,2-Dichloroethane-d4	86.4	80	120	
Toluene-d8	105	85	115	
4-Bromofluorobenzene	106	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041582-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW23SW(5-5.5)	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 21:59
Collect Date:	04/27/2016 14:15	**Dilution:**	1	**File ID:**	1LM.LM34739
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	74.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	19.6		5.16	2.58	1.29

Certificate of Analysis

Sample #:	L16041582-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW23SW(10-10.5)	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:54
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG567938	**Analyst:**	TMB	**Run Date:**	05/07/2016 17:17
Collect Date:	04/27/2016 14:40	**Dilution:**	1	**File ID:**	6M139126
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.4	U	24.8	12.4	6.20
Benzene	71-43-2	1.24	U	6.20	1.24	0.620
Bromobenzene	108-86-1	1.24	U	6.20	1.24	0.620
Bromochloromethane	74-97-5	2.48	U	6.20	2.48	1.24
Bromodichloromethane	75-27-4	1.24	U	6.20	1.24	0.620
Bromoform	75-25-2	1.24	U	6.20	1.24	0.620
Bromomethane	74-83-9	2.48	U	6.20	2.48	1.24
2-Butanone	78-93-3	6.20	U	12.4	6.20	3.10
n-Butylbenzene	104-51-8	1.24	U	6.20	1.24	0.620
sec-Butylbenzene	135-98-8	1.24	U	6.20	1.24	0.620
tert-Butylbenzene	98-06-6	1.24	U	6.20	1.24	0.620
Carbon disulfide	75-15-0	1.24	U	6.20	1.24	0.620
Carbon tetrachloride	56-23-5	1.24	U	6.20	1.24	0.620
Chlorobenzene	108-90-7	1.24	U	6.20	1.24	0.620
Chlorodibromomethane	124-48-1	1.24	U	6.20	1.24	0.620
Chloroethane	75-00-3	2.48	U	6.20	2.48	1.24
Chloroform	67-66-3	1.24	U	6.20	1.24	0.620
Chloromethane	74-87-3	4.96	U	12.4	4.96	2.48
2-Chlorotoluene	95-49-8	1.24	U	6.20	1.24	0.620
4-Chlorotoluene	106-43-4	1.24	U	6.20	1.24	0.620

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Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	4.96	Q	12.4	4.96	2.48
1,2-Dibromoethane	106-93-4	1.24	U	6.20	1.24	0.620
Dibromomethane	74-95-3	1.24	U	6.20	1.24	0.620
1,2-Dichlorobenzene	95-50-1	1.24	U	6.20	1.24	0.620
1,3-Dichlorobenzene	541-73-1	1.24	U	6.20	1.24	0.620
1,4-Dichlorobenzene	106-46-7	1.24	U	6.20	1.24	0.620
Dichlorodifluoromethane	75-71-8	2.48	U	6.20	2.48	1.24
1,1-Dichloroethane	75-34-3	2.48	U	6.20	2.48	1.24
1,2-Dichloroethane	107-06-2	26.3		6.20	1.24	0.620
1,1-Dichloroethene	75-35-4	1.24	U	6.20	1.24	0.620
cis-1,2-Dichloroethene	156-59-2	10.9		6.20	1.24	0.620
trans-1,2-Dichloroethene	156-60-5	1.24	U	6.20	1.24	0.620
1,2-Dichloropropane	78-87-5	1.24	U	6.20	1.24	0.620
1,3-Dichloropropane	142-28-9	1.24	U	6.20	1.24	0.620
2,2-Dichloropropane	594-20-7	1.24	U	6.20	1.24	0.620
cis-1,3-Dichloropropene	10061-01-5	1.24	U	6.20	1.24	0.620
trans-1,3-Dichloropropene	10061-02-6	1.24	U	6.20	1.24	0.620
1,1-Dichloropropene	563-58-6	1.24	U	6.20	1.24	0.620
Ethylbenzene	100-41-4	1.24	U	6.20	1.24	0.620
2-Hexanone	591-78-6	6.20	Q	12.4	6.20	3.10
Hexachlorobutadiene	87-68-3	1.24	U	6.20	1.24	0.620
Isopropylbenzene	98-82-8	1.24	U	6.20	1.24	0.620
p-Isopropyltoluene	99-87-6	1.24	U	6.20	1.24	0.620
4-Methyl-2-pentanone	108-10-1	6.20	Q	12.4	6.20	3.10
Methylene chloride	75-09-2	2.48	U	6.20	2.48	1.24
Naphthalene	91-20-3	1.24	Q	6.20	1.24	0.620
n-Propylbenzene	103-65-1	1.24	U	6.20	1.24	0.620
Styrene	100-42-5	1.24	U	6.20	1.24	0.620
1,1,1,2-Tetrachloroethane	630-20-6	1.24	U	6.20	1.24	0.620
1,1,2,2-Tetrachloroethane	79-34-5	1.24	U	6.20	1.24	0.620
Tetrachloroethene	127-18-4	1.24	U	6.20	1.24	0.620
Toluene	108-88-3	1.24	U	6.20	1.24	0.620
1,2,3-Trichlorobenzene	87-61-6	1.24	U	6.20	1.24	0.620
1,2,4-Trichlorobenzene	120-82-1	1.24	U	6.20	1.24	0.620
1,1,1-Trichloroethane	71-55-6	1.24	U	6.20	1.24	0.620
1,1,2-Trichloroethane	79-00-5	1.24	U	6.20	1.24	0.620
Trichloroethene	79-01-6	187		6.20	1.24	0.620
Trichlorofluoromethane	75-69-4	2.48	U	6.20	2.48	1.24
1,2,3-Trichloropropane	96-18-4	2.48	U	6.20	2.48	1.24

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Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.24	U	6.20	1.24	0.620
1,3,5-Trimethylbenzene	108-67-8	1.24	U	6.20	1.24	0.620
Vinyl chloride	75-01-4	2.48	U	6.20	2.48	1.24
o-Xylene	95-47-6	1.24	U	6.20	1.24	0.620
m-,p-Xylene	179601-23-1	1.24	U	6.20	1.24	0.620

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.2	80	120	
1,2-Dichloroethane-d4	88.9	80	120	
Toluene-d8	98.7	85	115	
4-Bromofluorobenzene	102	85	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041582-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW23SW(10-10.5)	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/05/2016 14:47
Collect Date:	04/27/2016 14:40	**Dilution:**	100	**File ID:**	1LM.LM34758
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	81.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1920		478	238	119

Certificate of Analysis

Sample #:	L16041582-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW23SW(20-20.5)	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:54
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG567938	**Analyst:**	TMB	**Run Date:**	05/07/2016 17:49
Collect Date:	04/27/2016 14:45	**Dilution:**	1	**File ID:**	6M139127
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.1	J	23.7	11.8	5.92
Benzene	71-43-2	1.18	U	5.92	1.18	0.592
Bromobenzene	108-86-1	1.18	U	5.92	1.18	0.592
Bromochloromethane	74-97-5	2.36	U	5.92	2.36	1.18
Bromodichloromethane	75-27-4	1.18	U	5.92	1.18	0.592
Bromoform	75-25-2	1.18	U	5.92	1.18	0.592
Bromomethane	74-83-9	2.36	U	5.92	2.36	1.18
2-Butanone	78-93-3	5.92	U	11.8	5.92	2.96
n-Butylbenzene	104-51-8	1.18	U	5.92	1.18	0.592
sec-Butylbenzene	135-98-8	1.18	U	5.92	1.18	0.592
tert-Butylbenzene	98-06-6	1.18	U	5.92	1.18	0.592
Carbon disulfide	75-15-0	1.18	U	5.92	1.18	0.592
Carbon tetrachloride	56-23-5	1.18	U	5.92	1.18	0.592
Chlorobenzene	108-90-7	1.18	U	5.92	1.18	0.592
Chlorodibromomethane	124-48-1	1.18	U	5.92	1.18	0.592
Chloroethane	75-00-3	2.36	U	5.92	2.36	1.18
Chloroform	67-66-3	1.18	U	5.92	1.18	0.592
Chloromethane	74-87-3	4.74	U	11.8	4.74	2.37
2-Chlorotoluene	95-49-8	1.18	U	5.92	1.18	0.592
4-Chlorotoluene	106-43-4	1.18	U	5.92	1.18	0.592

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Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	4.74	Q	11.8	4.74	2.37
1,2-Dibromoethane	106-93-4	1.18	U	5.92	1.18	0.592
Dibromomethane	74-95-3	1.18	U	5.92	1.18	0.592
1,2-Dichlorobenzene	95-50-1	1.18	U	5.92	1.18	0.592
1,3-Dichlorobenzene	541-73-1	1.18	U	5.92	1.18	0.592
1,4-Dichlorobenzene	106-46-7	1.18	U	5.92	1.18	0.592
Dichlorodifluoromethane	75-71-8	2.36	U	5.92	2.36	1.18
1,1-Dichloroethane	75-34-3	2.36	U	5.92	2.36	1.18
1,2-Dichloroethane	107-06-2	1.64	J	5.92	1.18	0.592
1,1-Dichloroethene	75-35-4	1.18	U	5.92	1.18	0.592
cis-1,2-Dichloroethene	156-59-2	1.18	U	5.92	1.18	0.592
trans-1,2-Dichloroethene	156-60-5	1.18	U	5.92	1.18	0.592
1,2-Dichloropropane	78-87-5	1.18	U	5.92	1.18	0.592
1,3-Dichloropropane	142-28-9	1.18	U	5.92	1.18	0.592
2,2-Dichloropropane	594-20-7	1.18	U	5.92	1.18	0.592
cis-1,3-Dichloropropene	10061-01-5	1.18	U	5.92	1.18	0.592
trans-1,3-Dichloropropene	10061-02-6	1.18	U	5.92	1.18	0.592
1,1-Dichloropropene	563-58-6	1.18	U	5.92	1.18	0.592
Ethylbenzene	100-41-4	1.18	U	5.92	1.18	0.592
2-Hexanone	591-78-6	5.92	Q	11.8	5.92	2.96
Hexachlorobutadiene	87-68-3	1.18	U	5.92	1.18	0.592
Isopropylbenzene	98-82-8	1.18	U	5.92	1.18	0.592
p-Isopropyltoluene	99-87-6	1.18	U	5.92	1.18	0.592
4-Methyl-2-pentanone	108-10-1	5.92	Q	11.8	5.92	2.96
Methylene chloride	75-09-2	2.36	U	5.92	2.36	1.18
Naphthalene	91-20-3	1.18	Q	5.92	1.18	0.592
n-Propylbenzene	103-65-1	1.18	U	5.92	1.18	0.592
Styrene	100-42-5	1.18	U	5.92	1.18	0.592
1,1,1,2-Tetrachloroethane	630-20-6	1.18	U	5.92	1.18	0.592
1,1,2,2-Tetrachloroethane	79-34-5	1.18	U	5.92	1.18	0.592
Tetrachloroethene	127-18-4	1.18	U	5.92	1.18	0.592
Toluene	108-88-3	1.18	U	5.92	1.18	0.592
1,2,3-Trichlorobenzene	87-61-6	1.18	U	5.92	1.18	0.592
1,2,4-Trichlorobenzene	120-82-1	1.18	U	5.92	1.18	0.592
1,1,1-Trichloroethane	71-55-6	1.18	U	5.92	1.18	0.592
1,1,2-Trichloroethane	79-00-5	1.18	U	5.92	1.18	0.592
Trichloroethene	79-01-6	11.7		5.92	1.18	0.592
Trichlorofluoromethane	75-69-4	2.36	U	5.92	2.36	1.18
1,2,3-Trichloropropane	96-18-4	2.36	U	5.92	2.36	1.18

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Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.18	U	5.92	1.18	0.592
1,3,5-Trimethylbenzene	108-67-8	1.18	U	5.92	1.18	0.592
Vinyl chloride	75-01-4	2.36	U	5.92	2.36	1.18
o-Xylene	95-47-6	1.18	U	5.92	1.18	0.592
m-,p-Xylene	179601-23-1	1.18	U	5.92	1.18	0.592

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.1	80	120	
1,2-Dichloroethane-d4	88.6	80	120	
Toluene-d8	98.9	85	115	
4-Bromofluorobenzene	106	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041582-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW23SW(20-20.5)	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 22:37
Collect Date:	04/27/2016 14:45	**Dilution:**	1	**File ID:**	1LM.LM34741
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	29.3		4.80	2.40	1.20

Certificate of Analysis

Sample #:	L16041582-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW23SW(30-30.5)	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:55
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG567938	**Analyst:**	TMB	**Run Date:**	05/07/2016 18:22
Collect Date:	04/27/2016 14:50	**Dilution:**	1	**File ID:**	6M139128
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	18.9	J	25.9	12.9	6.47
Benzene	71-43-2	1.29	U	6.47	1.29	0.647
Bromobenzene	108-86-1	1.29	U	6.47	1.29	0.647
Bromochloromethane	74-97-5	2.58	U	6.47	2.58	1.29
Bromodichloromethane	75-27-4	1.29	U	6.47	1.29	0.647
Bromoform	75-25-2	1.29	U	6.47	1.29	0.647
Bromomethane	74-83-9	2.58	U	6.47	2.58	1.29
2-Butanone	78-93-3	6.48	U	12.9	6.48	3.24
n-Butylbenzene	104-51-8	1.29	U	6.47	1.29	0.647
sec-Butylbenzene	135-98-8	1.29	U	6.47	1.29	0.647
tert-Butylbenzene	98-06-6	1.29	U	6.47	1.29	0.647
Carbon disulfide	75-15-0	2.62	J	6.47	1.29	0.647
Carbon tetrachloride	56-23-5	1.29	U	6.47	1.29	0.647
Chlorobenzene	108-90-7	1.29	U	6.47	1.29	0.647
Chlorodibromomethane	124-48-1	1.29	U	6.47	1.29	0.647
Chloroethane	75-00-3	2.58	U	6.47	2.58	1.29
Chloroform	67-66-3	1.29	U	6.47	1.29	0.647
Chloromethane	74-87-3	5.18	U	12.9	5.18	2.59
2-Chlorotoluene	95-49-8	1.29	U	6.47	1.29	0.647
4-Chlorotoluene	106-43-4	1.29	U	6.47	1.29	0.647

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Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	5.18	Q	12.9	5.18	2.59
1,2-Dibromoethane	106-93-4	1.29	U	6.47	1.29	0.647
Dibromomethane	74-95-3	1.29	U	6.47	1.29	0.647
1,2-Dichlorobenzene	95-50-1	1.29	U	6.47	1.29	0.647
1,3-Dichlorobenzene	541-73-1	1.29	U	6.47	1.29	0.647
1,4-Dichlorobenzene	106-46-7	1.29	U	6.47	1.29	0.647
Dichlorodifluoromethane	75-71-8	2.58	U	6.47	2.58	1.29
1,1-Dichloroethane	75-34-3	2.58	U	6.47	2.58	1.29
1,2-Dichloroethane	107-06-2	1.29	U	6.47	1.29	0.647
1,1-Dichloroethene	75-35-4	1.29	U	6.47	1.29	0.647
cis-1,2-Dichloroethene	156-59-2	1.29	U	6.47	1.29	0.647
trans-1,2-Dichloroethene	156-60-5	1.29	U	6.47	1.29	0.647
1,2-Dichloropropane	78-87-5	1.29	U	6.47	1.29	0.647
1,3-Dichloropropane	142-28-9	1.29	U	6.47	1.29	0.647
2,2-Dichloropropane	594-20-7	1.29	U	6.47	1.29	0.647
cis-1,3-Dichloropropene	10061-01-5	1.29	U	6.47	1.29	0.647
trans-1,3-Dichloropropene	10061-02-6	1.29	U	6.47	1.29	0.647
1,1-Dichloropropene	563-58-6	1.29	U	6.47	1.29	0.647
Ethylbenzene	100-41-4	1.29	U	6.47	1.29	0.647
2-Hexanone	591-78-6	6.48	Q	12.9	6.48	3.24
Hexachlorobutadiene	87-68-3	1.29	U	6.47	1.29	0.647
Isopropylbenzene	98-82-8	1.29	U	6.47	1.29	0.647
p-Isopropyltoluene	99-87-6	1.29	U	6.47	1.29	0.647
4-Methyl-2-pentanone	108-10-1	6.48	Q	12.9	6.48	3.24
Methylene chloride	75-09-2	2.58	U	6.47	2.58	1.29
Naphthalene	91-20-3	1.29	Q	6.47	1.29	0.647
n-Propylbenzene	103-65-1	1.29	U	6.47	1.29	0.647
Styrene	100-42-5	1.29	U	6.47	1.29	0.647
1,1,1,2-Tetrachloroethane	630-20-6	1.29	U	6.47	1.29	0.647
1,1,2,2-Tetrachloroethane	79-34-5	1.29	U	6.47	1.29	0.647
Tetrachloroethene	127-18-4	1.29	U	6.47	1.29	0.647
Toluene	108-88-3	1.29	U	6.47	1.29	0.647
1,2,3-Trichlorobenzene	87-61-6	1.29	U	6.47	1.29	0.647
1,2,4-Trichlorobenzene	120-82-1	1.29	U	6.47	1.29	0.647
1,1,1-Trichloroethane	71-55-6	1.29	U	6.47	1.29	0.647
1,1,2-Trichloroethane	79-00-5	1.29	U	6.47	1.29	0.647
Trichloroethene	79-01-6	1.29	U	6.47	1.29	0.647
Trichlorofluoromethane	75-69-4	2.58	U	6.47	2.58	1.29
1,2,3-Trichloropropane	96-18-4	2.58	U	6.47	2.58	1.29

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Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.29	U	6.47	1.29	0.647
1,3,5-Trimethylbenzene	108-67-8	1.29	U	6.47	1.29	0.647
Vinyl chloride	75-01-4	2.58	U	6.47	2.58	1.29
o-Xylene	95-47-6	1.29	U	6.47	1.29	0.647
m-,p-Xylene	179601-23-1	1.29	U	6.47	1.29	0.647

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.4	80	120	
1,2-Dichloroethane-d4	89.3	80	120	
Toluene-d8	102	85	115	
4-Bromofluorobenzene	103	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041582-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW23SW(30-30.5)	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 22:56
Collect Date:	04/27/2016 14:50	**Dilution:**	1	**File ID:**	1LM.LM34742
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.42	U	4.85	2.42	1.21

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041582-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW23SW(40-40.5)	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:56
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG567938	**Analyst:**	TMB	**Run Date:**	05/07/2016 18:54
Collect Date:	04/27/2016 16:15	**Dilution:**	1	**File ID:**	6M139129
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	15.4	J	24.1	12.1	6.03
Benzene	71-43-2	1.21	U	6.03	1.21	0.603
Bromobenzene	108-86-1	1.21	U	6.03	1.21	0.603
Bromochloromethane	74-97-5	2.42	U	6.03	2.42	1.21
Bromodichloromethane	75-27-4	1.21	U	6.03	1.21	0.603
Bromoform	75-25-2	1.21	U	6.03	1.21	0.603
Bromomethane	74-83-9	2.42	U	6.03	2.42	1.21
2-Butanone	78-93-3	6.02	U	12.1	6.02	3.01
n-Butylbenzene	104-51-8	1.21	U	6.03	1.21	0.603
sec-Butylbenzene	135-98-8	1.21	U	6.03	1.21	0.603
tert-Butylbenzene	98-06-6	1.21	U	6.03	1.21	0.603
Carbon disulfide	75-15-0	1.21	U	6.03	1.21	0.603
Carbon tetrachloride	56-23-5	1.21	U	6.03	1.21	0.603
Chlorobenzene	108-90-7	1.21	U	6.03	1.21	0.603
Chlorodibromomethane	124-48-1	1.21	U	6.03	1.21	0.603
Chloroethane	75-00-3	2.42	U	6.03	2.42	1.21
Chloroform	67-66-3	1.21	U	6.03	1.21	0.603
Chloromethane	74-87-3	4.82	U	12.1	4.82	2.41
2-Chlorotoluene	95-49-8	1.21	U	6.03	1.21	0.603
4-Chlorotoluene	106-43-4	1.21	U	6.03	1.21	0.603
1,2-Dibromo-3-chloropropane	96-12-8	4.82	Q	12.1	4.82	2.41
1,2-Dibromoethane	106-93-4	1.21	U	6.03	1.21	0.603
Dibromomethane	74-95-3	1.21	U	6.03	1.21	0.603
1,2-Dichlorobenzene	95-50-1	1.21	U	6.03	1.21	0.603
1,3-Dichlorobenzene	541-73-1	1.21	U	6.03	1.21	0.603
1,4-Dichlorobenzene	106-46-7	1.21	U	6.03	1.21	0.603
Dichlorodifluoromethane	75-71-8	2.42	U	6.03	2.42	1.21
1,1-Dichloroethane	75-34-3	2.42	U	6.03	2.42	1.21
1,2-Dichloroethane	107-06-2	1.21	U	6.03	1.21	0.603
1,1-Dichloroethene	75-35-4	1.21	U	6.03	1.21	0.603
cis-1,2-Dichloroethene	156-59-2	1.21	U	6.03	1.21	0.603

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Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.21	U	6.03	1.21	0.603
1,2-Dichloropropane	78-87-5	1.21	U	6.03	1.21	0.603
1,3-Dichloropropane	142-28-9	1.21	U	6.03	1.21	0.603
2,2-Dichloropropane	594-20-7	1.21	U	6.03	1.21	0.603
cis-1,3-Dichloropropene	10061-01-5	1.21	U	6.03	1.21	0.603
trans-1,3-Dichloropropene	10061-02-6	1.21	U	6.03	1.21	0.603
1,1-Dichloropropene	563-58-6	1.21	U	6.03	1.21	0.603
Ethylbenzene	100-41-4	1.21	U	6.03	1.21	0.603
2-Hexanone	591-78-6	6.02	Q	12.1	6.02	3.01
Hexachlorobutadiene	87-68-3	1.21	U	6.03	1.21	0.603
Isopropylbenzene	98-82-8	1.21	U	6.03	1.21	0.603
p-Isopropyltoluene	99-87-6	1.21	U	6.03	1.21	0.603
4-Methyl-2-pentanone	108-10-1	6.02	Q	12.1	6.02	3.01
Methylene chloride	75-09-2	2.42	U	6.03	2.42	1.21
Naphthalene	91-20-3	1.21	Q	6.03	1.21	0.603
n-Propylbenzene	103-65-1	1.21	U	6.03	1.21	0.603
Styrene	100-42-5	1.21	U	6.03	1.21	0.603
1,1,1,2-Tetrachloroethane	630-20-6	1.21	U	6.03	1.21	0.603
1,1,2,2-Tetrachloroethane	79-34-5	1.21	U	6.03	1.21	0.603
Tetrachloroethene	127-18-4	1.21	U	6.03	1.21	0.603
Toluene	108-88-3	1.21	U	6.03	1.21	0.603
1,2,3-Trichlorobenzene	87-61-6	1.21	U	6.03	1.21	0.603
1,2,4-Trichlorobenzene	120-82-1	1.21	U	6.03	1.21	0.603
1,1,1-Trichloroethane	71-55-6	1.21	U	6.03	1.21	0.603
1,1,2-Trichloroethane	79-00-5	1.21	U	6.03	1.21	0.603
Trichloroethene	79-01-6	1.21	U	6.03	1.21	0.603
Trichlorofluoromethane	75-69-4	2.42	U	6.03	2.42	1.21
1,2,3-Trichloropropane	96-18-4	2.42	U	6.03	2.42	1.21
1,2,4-Trimethylbenzene	95-63-6	1.21	U	6.03	1.21	0.603
1,3,5-Trimethylbenzene	108-67-8	1.21	U	6.03	1.21	0.603
Vinyl chloride	75-01-4	2.42	U	6.03	2.42	1.21
o-Xylene	95-47-6	1.21	U	6.03	1.21	0.603
m-,p-Xylene	179601-23-1	1.21	U	6.03	1.21	0.603

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	80	120	
1,2-Dichloroethane-d4	91.2	80	120	
Toluene-d8	100	85	115	
4-Bromofluorobenzene	107	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

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Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041582-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW23SW(40-40.5)	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/05/2016 00:11
Collect Date:	04/27/2016 16:15	**Dilution:**	1	**File ID:**	1LM.LM34746
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.28	U	4.56	2.28	1.14

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041582-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW23SW(60-60.5)	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:56
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG567938	**Analyst:**	TMB	**Run Date:**	05/07/2016 19:27
Collect Date:	04/27/2016 17:35	**Dilution:**	1	**File ID:**	6M139130
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	9.75	J	24.3	12.2	6.09
Benzene	71-43-2	1.22	U	6.09	1.22	0.609
Bromobenzene	108-86-1	1.22	U	6.09	1.22	0.609
Bromochloromethane	74-97-5	2.44	U	6.09	2.44	1.22
Bromodichloromethane	75-27-4	1.22	U	6.09	1.22	0.609
Bromoform	75-25-2	1.22	U	6.09	1.22	0.609
Bromomethane	74-83-9	2.44	U	6.09	2.44	1.22
2-Butanone	78-93-3	6.08	U	12.2	6.08	3.04
n-Butylbenzene	104-51-8	1.22	U	6.09	1.22	0.609
sec-Butylbenzene	135-98-8	1.22	U	6.09	1.22	0.609
tert-Butylbenzene	98-06-6	1.22	U	6.09	1.22	0.609
Carbon disulfide	75-15-0	1.22	U	6.09	1.22	0.609
Carbon tetrachloride	56-23-5	1.22	U	6.09	1.22	0.609
Chlorobenzene	108-90-7	1.22	U	6.09	1.22	0.609
Chlorodibromomethane	124-48-1	1.22	U	6.09	1.22	0.609
Chloroethane	75-00-3	2.44	U	6.09	2.44	1.22
Chloroform	67-66-3	1.22	U	6.09	1.22	0.609
Chloromethane	74-87-3	4.86	U	12.2	4.86	2.43
2-Chlorotoluene	95-49-8	1.22	U	6.09	1.22	0.609
4-Chlorotoluene	106-43-4	1.22	U	6.09	1.22	0.609
1,2-Dibromo-3-chloropropane	96-12-8	4.86	Q	12.2	4.86	2.43
1,2-Dibromoethane	106-93-4	1.22	U	6.09	1.22	0.609
Dibromomethane	74-95-3	1.22	U	6.09	1.22	0.609
1,2-Dichlorobenzene	95-50-1	1.22	U	6.09	1.22	0.609
1,3-Dichlorobenzene	541-73-1	1.22	U	6.09	1.22	0.609
1,4-Dichlorobenzene	106-46-7	1.22	U	6.09	1.22	0.609
Dichlorodifluoromethane	75-71-8	2.44	U	6.09	2.44	1.22
1,1-Dichloroethane	75-34-3	2.44	U	6.09	2.44	1.22
1,2-Dichloroethane	107-06-2	1.22	U	6.09	1.22	0.609
1,1-Dichloroethene	75-35-4	1.22	U	6.09	1.22	0.609
cis-1,2-Dichloroethene	156-59-2	1.22	U	6.09	1.22	0.609

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Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.22	U	6.09	1.22	0.609
1,2-Dichloropropane	78-87-5	1.22	U	6.09	1.22	0.609
1,3-Dichloropropane	142-28-9	1.22	U	6.09	1.22	0.609
2,2-Dichloropropane	594-20-7	1.22	U	6.09	1.22	0.609
cis-1,3-Dichloropropene	10061-01-5	1.22	U	6.09	1.22	0.609
trans-1,3-Dichloropropene	10061-02-6	1.22	U	6.09	1.22	0.609
1,1-Dichloropropene	563-58-6	1.22	U	6.09	1.22	0.609
Ethylbenzene	100-41-4	1.22	U	6.09	1.22	0.609
2-Hexanone	591-78-6	6.08	Q	12.2	6.08	3.04
Hexachlorobutadiene	87-68-3	1.22	U	6.09	1.22	0.609
Isopropylbenzene	98-82-8	1.22	U	6.09	1.22	0.609
p-Isopropyltoluene	99-87-6	1.22	U	6.09	1.22	0.609
4-Methyl-2-pentanone	108-10-1	6.08	Q	12.2	6.08	3.04
Methylene chloride	75-09-2	2.44	U	6.09	2.44	1.22
Naphthalene	91-20-3	1.22	Q	6.09	1.22	0.609
n-Propylbenzene	103-65-1	1.22	U	6.09	1.22	0.609
Styrene	100-42-5	1.22	U	6.09	1.22	0.609
1,1,1,2-Tetrachloroethane	630-20-6	1.22	U	6.09	1.22	0.609
1,1,2,2-Tetrachloroethane	79-34-5	1.22	U	6.09	1.22	0.609
Tetrachloroethene	127-18-4	1.22	U	6.09	1.22	0.609
Toluene	108-88-3	1.22	U	6.09	1.22	0.609
1,2,3-Trichlorobenzene	87-61-6	1.22	U	6.09	1.22	0.609
1,2,4-Trichlorobenzene	120-82-1	1.22	U	6.09	1.22	0.609
1,1,1-Trichloroethane	71-55-6	1.22	U	6.09	1.22	0.609
1,1,2-Trichloroethane	79-00-5	1.22	U	6.09	1.22	0.609
Trichloroethene	79-01-6	1.22	U	6.09	1.22	0.609
Trichlorofluoromethane	75-69-4	2.44	U	6.09	2.44	1.22
1,2,3-Trichloropropane	96-18-4	2.44	U	6.09	2.44	1.22
1,2,4-Trimethylbenzene	95-63-6	1.22	U	6.09	1.22	0.609
1,3,5-Trimethylbenzene	108-67-8	1.22	U	6.09	1.22	0.609
Vinyl chloride	75-01-4	2.44	U	6.09	2.44	1.22
o-Xylene	95-47-6	1.22	U	6.09	1.22	0.609
m-,p-Xylene	179601-23-1	1.22	U	6.09	1.22	0.609

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	80	120	
1,2-Dichloroethane-d4	94.2	80	120	
Toluene-d8	98.8	85	115	
4-Bromofluorobenzene	107	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041582-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW23SW(60-60.5)	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/05/2016 00:30
Collect Date:	04/27/2016 17:35	**Dilution:**	1	**File ID:**	1LM.LM34747
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.34	U	4.69	2.34	1.17

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041582-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW23SW(50-50.5)	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:57
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG567938	**Analyst:**	TMB	**Run Date:**	05/07/2016 20:00
Collect Date:	04/27/2016 17:45	**Dilution:**	1	**File ID:**	6M139131
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	8.65	J	24.8	12.4	6.21
Benzene	71-43-2	1.24	U	6.21	1.24	0.621
Bromobenzene	108-86-1	1.24	U	6.21	1.24	0.621
Bromochloromethane	74-97-5	2.48	U	6.21	2.48	1.24
Bromodichloromethane	75-27-4	1.24	U	6.21	1.24	0.621
Bromoform	75-25-2	1.24	U	6.21	1.24	0.621
Bromomethane	74-83-9	2.48	U	6.21	2.48	1.24
2-Butanone	78-93-3	6.20	U	12.4	6.20	3.10
n-Butylbenzene	104-51-8	1.24	U	6.21	1.24	0.621
sec-Butylbenzene	135-98-8	1.24	U	6.21	1.24	0.621
tert-Butylbenzene	98-06-6	1.24	U	6.21	1.24	0.621
Carbon disulfide	75-15-0	1.24	U	6.21	1.24	0.621
Carbon tetrachloride	56-23-5	1.24	U	6.21	1.24	0.621
Chlorobenzene	108-90-7	1.24	U	6.21	1.24	0.621
Chlorodibromomethane	124-48-1	1.24	U	6.21	1.24	0.621
Chloroethane	75-00-3	2.48	U	6.21	2.48	1.24
Chloroform	67-66-3	1.24	U	6.21	1.24	0.621
Chloromethane	74-87-3	4.96	U	12.4	4.96	2.48
2-Chlorotoluene	95-49-8	1.24	U	6.21	1.24	0.621
4-Chlorotoluene	106-43-4	1.24	U	6.21	1.24	0.621
1,2-Dibromo-3-chloropropane	96-12-8	4.96	Q	12.4	4.96	2.48
1,2-Dibromoethane	106-93-4	1.24	U	6.21	1.24	0.621
Dibromomethane	74-95-3	1.24	U	6.21	1.24	0.621
1,2-Dichlorobenzene	95-50-1	1.24	U	6.21	1.24	0.621
1,3-Dichlorobenzene	541-73-1	1.24	U	6.21	1.24	0.621
1,4-Dichlorobenzene	106-46-7	1.24	U	6.21	1.24	0.621
Dichlorodifluoromethane	75-71-8	2.48	U	6.21	2.48	1.24
1,1-Dichloroethane	75-34-3	2.48	U	6.21	2.48	1.24
1,2-Dichloroethane	107-06-2	1.24	U	6.21	1.24	0.621
1,1-Dichloroethene	75-35-4	1.24	U	6.21	1.24	0.621
cis-1,2-Dichloroethene	156-59-2	1.24	U	6.21	1.24	0.621

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Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.24	U	6.21	1.24	0.621
1,2-Dichloropropane	78-87-5	1.24	U	6.21	1.24	0.621
1,3-Dichloropropane	142-28-9	1.24	U	6.21	1.24	0.621
2,2-Dichloropropane	594-20-7	1.24	U	6.21	1.24	0.621
cis-1,3-Dichloropropene	10061-01-5	1.24	U	6.21	1.24	0.621
trans-1,3-Dichloropropene	10061-02-6	1.24	U	6.21	1.24	0.621
1,1-Dichloropropene	563-58-6	1.24	U	6.21	1.24	0.621
Ethylbenzene	100-41-4	1.24	U	6.21	1.24	0.621
2-Hexanone	591-78-6	6.20	Q	12.4	6.20	3.10
Hexachlorobutadiene	87-68-3	1.24	U	6.21	1.24	0.621
Isopropylbenzene	98-82-8	1.24	U	6.21	1.24	0.621
p-Isopropyltoluene	99-87-6	1.24	U	6.21	1.24	0.621
4-Methyl-2-pentanone	108-10-1	6.20	Q	12.4	6.20	3.10
Methylene chloride	75-09-2	2.48	U	6.21	2.48	1.24
Naphthalene	91-20-3	1.24	Q	6.21	1.24	0.621
n-Propylbenzene	103-65-1	1.24	U	6.21	1.24	0.621
Styrene	100-42-5	1.24	U	6.21	1.24	0.621
1,1,1,2-Tetrachloroethane	630-20-6	1.24	U	6.21	1.24	0.621
1,1,2,2-Tetrachloroethane	79-34-5	1.24	U	6.21	1.24	0.621
Tetrachloroethene	127-18-4	1.24	U	6.21	1.24	0.621
Toluene	108-88-3	1.24	U	6.21	1.24	0.621
1,2,3-Trichlorobenzene	87-61-6	1.24	U	6.21	1.24	0.621
1,2,4-Trichlorobenzene	120-82-1	1.24	U	6.21	1.24	0.621
1,1,1-Trichloroethane	71-55-6	1.24	U	6.21	1.24	0.621
1,1,2-Trichloroethane	79-00-5	1.24	U	6.21	1.24	0.621
Trichloroethene	79-01-6	1.24	U	6.21	1.24	0.621
Trichlorofluoromethane	75-69-4	2.48	U	6.21	2.48	1.24
1,2,3-Trichloropropane	96-18-4	2.48	U	6.21	2.48	1.24
1,2,4-Trimethylbenzene	95-63-6	1.24	U	6.21	1.24	0.621
1,3,5-Trimethylbenzene	108-67-8	1.24	U	6.21	1.24	0.621
Vinyl chloride	75-01-4	2.48	U	6.21	2.48	1.24
o-Xylene	95-47-6	1.24	U	6.21	1.24	0.621
m-,p-Xylene	179601-23-1	1.24	U	6.21	1.24	0.621

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.9	80	120	
1,2-Dichloroethane-d4	90.0	80	120	
Toluene-d8	103	85	115	
4-Bromofluorobenzene	113	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041582-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW23SW(50-50.5)	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/05/2016 00:49
Collect Date:	04/27/2016 17:45	**Dilution:**	1	**File ID:**	1LM.LM34748
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.44	U	4.88	2.44	1.22

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #: L16041582-01 **Client ID:** 18CPTMW23SW(5-5.5) **Matrix:** Soil **Collect Date:** 04/27/2016 14:15

Analyte	Result	Units	Qualifier
Percent Solids	74.6	weight %	

Sample #: L16041582-02 **Client ID:** 18CPTMW23SW(10-10.5) **Matrix:** Soil **Collect Date:** 04/27/2016 14:40

Analyte	Result	Units	Qualifier
Percent Solids	81.8	weight %	

Sample #: L16041582-03 **Client ID:** 18CPTMW23SW(20-20.5) **Matrix:** Soil **Collect Date:** 04/27/2016 14:45

Analyte	Result	Units	Qualifier
Percent Solids	81.8	weight %	

Sample #: L16041582-04 **Client ID:** 18CPTMW23SW(30-30.5) **Matrix:** Soil **Collect Date:** 04/27/2016 14:50

Analyte	Result	Units	Qualifier
Percent Solids	81.0	weight %	

Sample #: L16041582-05 **Client ID:** 18CPTMW23SW(40-40.5) **Matrix:** Soil **Collect Date:** 04/27/2016 16:15

Analyte	Result	Units	Qualifier
Percent Solids	84.8	weight %	

Sample #: L16041582-06 **Client ID:** 18CPTMW23SW(60-60.5) **Matrix:** Soil **Collect Date:** 04/27/2016 17:35

Analyte	Result	Units	Qualifier
Percent Solids	82.2	weight %	

Sample #: L16041582-07 **Client ID:** 18CPTMW23SW(50-50.5) **Matrix:** Soil **Collect Date:** 04/27/2016 17:45

Analyte	Result	Units	Qualifier
Percent Solids	80.4	weight %	

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041582-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW23SW(5-5.5)	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:52
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG567938	**Analyst:**	TMB	**Run Date:**	05/07/2016 16:44
Collect Date:	04/27/2016 14:15	**Dilution:**	1	**File ID:**	6M139125
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	74.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	14.7	U	29.3	14.7	7.33
Benzene	71-43-2	1.47	U	7.33	1.47	0.733
Bromobenzene	108-86-1	1.47	U	7.33	1.47	0.733
Bromochloromethane	74-97-5	2.94	U	7.33	2.94	1.47
Bromodichloromethane	75-27-4	1.47	U	7.33	1.47	0.733
Bromoform	75-25-2	1.47	U	7.33	1.47	0.733
Bromomethane	74-83-9	2.94	U	7.33	2.94	1.47
2-Butanone	78-93-3	7.34	U	14.7	7.34	3.67
n-Butylbenzene	104-51-8	1.47	U	7.33	1.47	0.733
sec-Butylbenzene	135-98-8	1.47	U	7.33	1.47	0.733
tert-Butylbenzene	98-06-6	1.47	U	7.33	1.47	0.733
Carbon disulfide	75-15-0	1.47	U	7.33	1.47	0.733
Carbon tetrachloride	56-23-5	1.47	U	7.33	1.47	0.733
Chlorobenzene	108-90-7	1.47	U	7.33	1.47	0.733
Chlorodibromomethane	124-48-1	1.47	U	7.33	1.47	0.733
Chloroethane	75-00-3	2.94	U	7.33	2.94	1.47
Chloroform	67-66-3	1.47	U	7.33	1.47	0.733
Chloromethane	74-87-3	5.86	U	14.7	5.86	2.93
2-Chlorotoluene	95-49-8	1.47	U	7.33	1.47	0.733
4-Chlorotoluene	106-43-4	1.47	U	7.33	1.47	0.733
1,2-Dibromo-3-chloropropane	96-12-8	5.86	Q	14.7	5.86	2.93
1,2-Dibromoethane	106-93-4	1.47	U	7.33	1.47	0.733
Dibromomethane	74-95-3	1.47	U	7.33	1.47	0.733
1,2-Dichlorobenzene	95-50-1	1.47	U	7.33	1.47	0.733
1,3-Dichlorobenzene	541-73-1	1.47	U	7.33	1.47	0.733
1,4-Dichlorobenzene	106-46-7	1.47	U	7.33	1.47	0.733
Dichlorodifluoromethane	75-71-8	2.94	U	7.33	2.94	1.47
1,1-Dichloroethane	75-34-3	2.94	U	7.33	2.94	1.47
1,2-Dichloroethane	107-06-2	4.13	J	7.33	1.47	0.733
1,1-Dichloroethene	75-35-4	1.47	U	7.33	1.47	0.733
cis-1,2-Dichloroethene	156-59-2	9.99		7.33	1.47	0.733
trans-1,2-Dichloroethene	156-60-5	1.47	U	7.33	1.47	0.733

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Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.47	U	7.33	1.47	0.733
1,3-Dichloropropane	142-28-9	1.47	U	7.33	1.47	0.733
2,2-Dichloropropane	594-20-7	1.47	U	7.33	1.47	0.733
cis-1,3-Dichloropropene	10061-01-5	1.47	U	7.33	1.47	0.733
trans-1,3-Dichloropropene	10061-02-6	1.47	U	7.33	1.47	0.733
1,1-Dichloropropene	563-58-6	1.47	U	7.33	1.47	0.733
Ethylbenzene	100-41-4	1.47	U	7.33	1.47	0.733
2-Hexanone	591-78-6	7.34	Q	14.7	7.34	3.67
Hexachlorobutadiene	87-68-3	1.47	U	7.33	1.47	0.733
Isopropylbenzene	98-82-8	1.47	U	7.33	1.47	0.733
p-Isopropyltoluene	99-87-6	4.51	J	7.33	1.47	0.733
4-Methyl-2-pentanone	108-10-1	7.34	Q	14.7	7.34	3.67
Methylene chloride	75-09-2	2.94	U	7.33	2.94	1.47
Naphthalene	91-20-3	1.47	Q	7.33	1.47	0.733
n-Propylbenzene	103-65-1	1.47	U	7.33	1.47	0.733
Styrene	100-42-5	1.47	U	7.33	1.47	0.733
1,1,1,2-Tetrachloroethane	630-20-6	1.47	U	7.33	1.47	0.733
1,1,2,2-Tetrachloroethane	79-34-5	1.47	U	7.33	1.47	0.733
Tetrachloroethene	127-18-4	1.47	U	7.33	1.47	0.733
Toluene	108-88-3	1.47	U	7.33	1.47	0.733
1,2,3-Trichlorobenzene	87-61-6	1.47	U	7.33	1.47	0.733
1,2,4-Trichlorobenzene	120-82-1	1.47	U	7.33	1.47	0.733
1,1,1-Trichloroethane	71-55-6	1.47	U	7.33	1.47	0.733
1,1,2-Trichloroethane	79-00-5	1.47	U	7.33	1.47	0.733
Trichloroethene	79-01-6	47.6		7.33	1.47	0.733
Trichlorofluoromethane	75-69-4	2.94	U	7.33	2.94	1.47
1,2,3-Trichloropropane	96-18-4	2.94	U	7.33	2.94	1.47
1,2,4-Trimethylbenzene	95-63-6	2.29	J	7.33	1.47	0.733
1,3,5-Trimethylbenzene	108-67-8	1.47	U	7.33	1.47	0.733
Vinyl chloride	75-01-4	2.94	U	7.33	2.94	1.47
o-Xylene	95-47-6	1.47	U	7.33	1.47	0.733
m-,p-Xylene	179601-23-1	1.47	U	7.33	1.47	0.733

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.5	80	120	
1,2-Dichloroethane-d4	86.4	80	120	
Toluene-d8	105	85	115	
4-Bromofluorobenzene	106	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041582-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW23SW(10-10.5)	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:54
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG567938	**Analyst:**	TMB	**Run Date:**	05/07/2016 17:17
Collect Date:	04/27/2016 14:40	**Dilution:**	1	**File ID:**	6M139126
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.4	U	24.8	12.4	6.20
Benzene	71-43-2	1.24	U	6.20	1.24	0.620
Bromobenzene	108-86-1	1.24	U	6.20	1.24	0.620
Bromochloromethane	74-97-5	2.48	U	6.20	2.48	1.24
Bromodichloromethane	75-27-4	1.24	U	6.20	1.24	0.620
Bromoform	75-25-2	1.24	U	6.20	1.24	0.620
Bromomethane	74-83-9	2.48	U	6.20	2.48	1.24
2-Butanone	78-93-3	6.20	U	12.4	6.20	3.10
n-Butylbenzene	104-51-8	1.24	U	6.20	1.24	0.620
sec-Butylbenzene	135-98-8	1.24	U	6.20	1.24	0.620
tert-Butylbenzene	98-06-6	1.24	U	6.20	1.24	0.620
Carbon disulfide	75-15-0	1.24	U	6.20	1.24	0.620
Carbon tetrachloride	56-23-5	1.24	U	6.20	1.24	0.620
Chlorobenzene	108-90-7	1.24	U	6.20	1.24	0.620
Chlorodibromomethane	124-48-1	1.24	U	6.20	1.24	0.620
Chloroethane	75-00-3	2.48	U	6.20	2.48	1.24
Chloroform	67-66-3	1.24	U	6.20	1.24	0.620
Chloromethane	74-87-3	4.96	U	12.4	4.96	2.48
2-Chlorotoluene	95-49-8	1.24	U	6.20	1.24	0.620
4-Chlorotoluene	106-43-4	1.24	U	6.20	1.24	0.620
1,2-Dibromo-3-chloropropane	96-12-8	4.96	Q	12.4	4.96	2.48
1,2-Dibromoethane	106-93-4	1.24	U	6.20	1.24	0.620
Dibromomethane	74-95-3	1.24	U	6.20	1.24	0.620
1,2-Dichlorobenzene	95-50-1	1.24	U	6.20	1.24	0.620
1,3-Dichlorobenzene	541-73-1	1.24	U	6.20	1.24	0.620
1,4-Dichlorobenzene	106-46-7	1.24	U	6.20	1.24	0.620
Dichlorodifluoromethane	75-71-8	2.48	U	6.20	2.48	1.24
1,1-Dichloroethane	75-34-3	2.48	U	6.20	2.48	1.24
1,2-Dichloroethane	107-06-2	26.3		6.20	1.24	0.620
1,1-Dichloroethene	75-35-4	1.24	U	6.20	1.24	0.620
cis-1,2-Dichloroethene	156-59-2	10.9		6.20	1.24	0.620

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.24	U	6.20	1.24	0.620
1,2-Dichloropropane	78-87-5	1.24	U	6.20	1.24	0.620
1,3-Dichloropropane	142-28-9	1.24	U	6.20	1.24	0.620
2,2-Dichloropropane	594-20-7	1.24	U	6.20	1.24	0.620
cis-1,3-Dichloropropene	10061-01-5	1.24	U	6.20	1.24	0.620
trans-1,3-Dichloropropene	10061-02-6	1.24	U	6.20	1.24	0.620
1,1-Dichloropropene	563-58-6	1.24	U	6.20	1.24	0.620
Ethylbenzene	100-41-4	1.24	U	6.20	1.24	0.620
2-Hexanone	591-78-6	6.20	Q	12.4	6.20	3.10
Hexachlorobutadiene	87-68-3	1.24	U	6.20	1.24	0.620
Isopropylbenzene	98-82-8	1.24	U	6.20	1.24	0.620
p-Isopropyltoluene	99-87-6	1.24	U	6.20	1.24	0.620
4-Methyl-2-pentanone	108-10-1	6.20	Q	12.4	6.20	3.10
Methylene chloride	75-09-2	2.48	U	6.20	2.48	1.24
Naphthalene	91-20-3	1.24	Q	6.20	1.24	0.620
n-Propylbenzene	103-65-1	1.24	U	6.20	1.24	0.620
Styrene	100-42-5	1.24	U	6.20	1.24	0.620
1,1,1,2-Tetrachloroethane	630-20-6	1.24	U	6.20	1.24	0.620
1,1,2,2-Tetrachloroethane	79-34-5	1.24	U	6.20	1.24	0.620
Tetrachloroethene	127-18-4	1.24	U	6.20	1.24	0.620
Toluene	108-88-3	1.24	U	6.20	1.24	0.620
1,2,3-Trichlorobenzene	87-61-6	1.24	U	6.20	1.24	0.620
1,2,4-Trichlorobenzene	120-82-1	1.24	U	6.20	1.24	0.620
1,1,1-Trichloroethane	71-55-6	1.24	U	6.20	1.24	0.620
1,1,2-Trichloroethane	79-00-5	1.24	U	6.20	1.24	0.620
Trichloroethene	79-01-6	187		6.20	1.24	0.620
Trichlorofluoromethane	75-69-4	2.48	U	6.20	2.48	1.24
1,2,3-Trichloropropane	96-18-4	2.48	U	6.20	2.48	1.24
1,2,4-Trimethylbenzene	95-63-6	1.24	U	6.20	1.24	0.620
1,3,5-Trimethylbenzene	108-67-8	1.24	U	6.20	1.24	0.620
Vinyl chloride	75-01-4	2.48	U	6.20	2.48	1.24
o-Xylene	95-47-6	1.24	U	6.20	1.24	0.620
m-,p-Xylene	179601-23-1	1.24	U	6.20	1.24	0.620

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.2	80	120	
1,2-Dichloroethane-d4	88.9	80	120	
Toluene-d8	98.7	85	115	
4-Bromofluorobenzene	102	85	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041582-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW23SW(20-20.5)	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:54
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG567938	**Analyst:**	TMB	**Run Date:**	05/07/2016 17:49
Collect Date:	04/27/2016 14:45	**Dilution:**	1	**File ID:**	6M139127
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.1	J	23.7	11.8	5.92
Benzene	71-43-2	1.18	U	5.92	1.18	0.592
Bromobenzene	108-86-1	1.18	U	5.92	1.18	0.592
Bromochloromethane	74-97-5	2.36	U	5.92	2.36	1.18
Bromodichloromethane	75-27-4	1.18	U	5.92	1.18	0.592
Bromoform	75-25-2	1.18	U	5.92	1.18	0.592
Bromomethane	74-83-9	2.36	U	5.92	2.36	1.18
2-Butanone	78-93-3	5.92	U	11.8	5.92	2.96
n-Butylbenzene	104-51-8	1.18	U	5.92	1.18	0.592
sec-Butylbenzene	135-98-8	1.18	U	5.92	1.18	0.592
tert-Butylbenzene	98-06-6	1.18	U	5.92	1.18	0.592
Carbon disulfide	75-15-0	1.18	U	5.92	1.18	0.592
Carbon tetrachloride	56-23-5	1.18	U	5.92	1.18	0.592
Chlorobenzene	108-90-7	1.18	U	5.92	1.18	0.592
Chlorodibromomethane	124-48-1	1.18	U	5.92	1.18	0.592
Chloroethane	75-00-3	2.36	U	5.92	2.36	1.18
Chloroform	67-66-3	1.18	U	5.92	1.18	0.592
Chloromethane	74-87-3	4.74	U	11.8	4.74	2.37
2-Chlorotoluene	95-49-8	1.18	U	5.92	1.18	0.592
4-Chlorotoluene	106-43-4	1.18	U	5.92	1.18	0.592
1,2-Dibromo-3-chloropropane	96-12-8	4.74	Q	11.8	4.74	2.37
1,2-Dibromoethane	106-93-4	1.18	U	5.92	1.18	0.592
Dibromomethane	74-95-3	1.18	U	5.92	1.18	0.592
1,2-Dichlorobenzene	95-50-1	1.18	U	5.92	1.18	0.592
1,3-Dichlorobenzene	541-73-1	1.18	U	5.92	1.18	0.592
1,4-Dichlorobenzene	106-46-7	1.18	U	5.92	1.18	0.592
Dichlorodifluoromethane	75-71-8	2.36	U	5.92	2.36	1.18
1,1-Dichloroethane	75-34-3	2.36	U	5.92	2.36	1.18
1,2-Dichloroethane	107-06-2	1.64	J	5.92	1.18	0.592
1,1-Dichloroethene	75-35-4	1.18	U	5.92	1.18	0.592
cis-1,2-Dichloroethene	156-59-2	1.18	U	5.92	1.18	0.592

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.18	U	5.92	1.18	0.592
1,2-Dichloropropane	78-87-5	1.18	U	5.92	1.18	0.592
1,3-Dichloropropane	142-28-9	1.18	U	5.92	1.18	0.592
2,2-Dichloropropane	594-20-7	1.18	U	5.92	1.18	0.592
cis-1,3-Dichloropropene	10061-01-5	1.18	U	5.92	1.18	0.592
trans-1,3-Dichloropropene	10061-02-6	1.18	U	5.92	1.18	0.592
1,1-Dichloropropene	563-58-6	1.18	U	5.92	1.18	0.592
Ethylbenzene	100-41-4	1.18	U	5.92	1.18	0.592
2-Hexanone	591-78-6	5.92	Q	11.8	5.92	2.96
Hexachlorobutadiene	87-68-3	1.18	U	5.92	1.18	0.592
Isopropylbenzene	98-82-8	1.18	U	5.92	1.18	0.592
p-Isopropyltoluene	99-87-6	1.18	U	5.92	1.18	0.592
4-Methyl-2-pentanone	108-10-1	5.92	Q	11.8	5.92	2.96
Methylene chloride	75-09-2	2.36	U	5.92	2.36	1.18
Naphthalene	91-20-3	1.18	Q	5.92	1.18	0.592
n-Propylbenzene	103-65-1	1.18	U	5.92	1.18	0.592
Styrene	100-42-5	1.18	U	5.92	1.18	0.592
1,1,1,2-Tetrachloroethane	630-20-6	1.18	U	5.92	1.18	0.592
1,1,2,2-Tetrachloroethane	79-34-5	1.18	U	5.92	1.18	0.592
Tetrachloroethene	127-18-4	1.18	U	5.92	1.18	0.592
Toluene	108-88-3	1.18	U	5.92	1.18	0.592
1,2,3-Trichlorobenzene	87-61-6	1.18	U	5.92	1.18	0.592
1,2,4-Trichlorobenzene	120-82-1	1.18	U	5.92	1.18	0.592
1,1,1-Trichloroethane	71-55-6	1.18	U	5.92	1.18	0.592
1,1,2-Trichloroethane	79-00-5	1.18	U	5.92	1.18	0.592
Trichloroethene	79-01-6	11.7		5.92	1.18	0.592
Trichlorofluoromethane	75-69-4	2.36	U	5.92	2.36	1.18
1,2,3-Trichloropropane	96-18-4	2.36	U	5.92	2.36	1.18
1,2,4-Trimethylbenzene	95-63-6	1.18	U	5.92	1.18	0.592
1,3,5-Trimethylbenzene	108-67-8	1.18	U	5.92	1.18	0.592
Vinyl chloride	75-01-4	2.36	U	5.92	2.36	1.18
o-Xylene	95-47-6	1.18	U	5.92	1.18	0.592
m-,p-Xylene	179601-23-1	1.18	U	5.92	1.18	0.592

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.1	80	120	
1,2-Dichloroethane-d4	88.6	80	120	
Toluene-d8	98.9	85	115	
4-Bromofluorobenzene	106	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041582-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW23SW(30-30.5)	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:55
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG567938	**Analyst:**	TMB	**Run Date:**	05/07/2016 18:22
Collect Date:	04/27/2016 14:50	**Dilution:**	1	**File ID:**	6M139128
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	18.9	J	25.9	12.9	6.47
Benzene	71-43-2	1.29	U	6.47	1.29	0.647
Bromobenzene	108-86-1	1.29	U	6.47	1.29	0.647
Bromochloromethane	74-97-5	2.58	U	6.47	2.58	1.29
Bromodichloromethane	75-27-4	1.29	U	6.47	1.29	0.647
Bromoform	75-25-2	1.29	U	6.47	1.29	0.647
Bromomethane	74-83-9	2.58	U	6.47	2.58	1.29
2-Butanone	78-93-3	6.48	U	12.9	6.48	3.24
n-Butylbenzene	104-51-8	1.29	U	6.47	1.29	0.647
sec-Butylbenzene	135-98-8	1.29	U	6.47	1.29	0.647
tert-Butylbenzene	98-06-6	1.29	U	6.47	1.29	0.647
Carbon disulfide	75-15-0	2.62	J	6.47	1.29	0.647
Carbon tetrachloride	56-23-5	1.29	U	6.47	1.29	0.647
Chlorobenzene	108-90-7	1.29	U	6.47	1.29	0.647
Chlorodibromomethane	124-48-1	1.29	U	6.47	1.29	0.647
Chloroethane	75-00-3	2.58	U	6.47	2.58	1.29
Chloroform	67-66-3	1.29	U	6.47	1.29	0.647
Chloromethane	74-87-3	5.18	U	12.9	5.18	2.59
2-Chlorotoluene	95-49-8	1.29	U	6.47	1.29	0.647
4-Chlorotoluene	106-43-4	1.29	U	6.47	1.29	0.647
1,2-Dibromo-3-chloropropane	96-12-8	5.18	Q	12.9	5.18	2.59
1,2-Dibromoethane	106-93-4	1.29	U	6.47	1.29	0.647
Dibromomethane	74-95-3	1.29	U	6.47	1.29	0.647
1,2-Dichlorobenzene	95-50-1	1.29	U	6.47	1.29	0.647
1,3-Dichlorobenzene	541-73-1	1.29	U	6.47	1.29	0.647
1,4-Dichlorobenzene	106-46-7	1.29	U	6.47	1.29	0.647
Dichlorodifluoromethane	75-71-8	2.58	U	6.47	2.58	1.29
1,1-Dichloroethane	75-34-3	2.58	U	6.47	2.58	1.29
1,2-Dichloroethane	107-06-2	1.29	U	6.47	1.29	0.647
1,1-Dichloroethene	75-35-4	1.29	U	6.47	1.29	0.647
cis-1,2-Dichloroethene	156-59-2	1.29	U	6.47	1.29	0.647

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Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.29	U	6.47	1.29	0.647
1,2-Dichloropropane	78-87-5	1.29	U	6.47	1.29	0.647
1,3-Dichloropropane	142-28-9	1.29	U	6.47	1.29	0.647
2,2-Dichloropropane	594-20-7	1.29	U	6.47	1.29	0.647
cis-1,3-Dichloropropene	10061-01-5	1.29	U	6.47	1.29	0.647
trans-1,3-Dichloropropene	10061-02-6	1.29	U	6.47	1.29	0.647
1,1-Dichloropropene	563-58-6	1.29	U	6.47	1.29	0.647
Ethylbenzene	100-41-4	1.29	U	6.47	1.29	0.647
2-Hexanone	591-78-6	6.48	Q	12.9	6.48	3.24
Hexachlorobutadiene	87-68-3	1.29	U	6.47	1.29	0.647
Isopropylbenzene	98-82-8	1.29	U	6.47	1.29	0.647
p-Isopropyltoluene	99-87-6	1.29	U	6.47	1.29	0.647
4-Methyl-2-pentanone	108-10-1	6.48	Q	12.9	6.48	3.24
Methylene chloride	75-09-2	2.58	U	6.47	2.58	1.29
Naphthalene	91-20-3	1.29	Q	6.47	1.29	0.647
n-Propylbenzene	103-65-1	1.29	U	6.47	1.29	0.647
Styrene	100-42-5	1.29	U	6.47	1.29	0.647
1,1,1,2-Tetrachloroethane	630-20-6	1.29	U	6.47	1.29	0.647
1,1,2,2-Tetrachloroethane	79-34-5	1.29	U	6.47	1.29	0.647
Tetrachloroethene	127-18-4	1.29	U	6.47	1.29	0.647
Toluene	108-88-3	1.29	U	6.47	1.29	0.647
1,2,3-Trichlorobenzene	87-61-6	1.29	U	6.47	1.29	0.647
1,2,4-Trichlorobenzene	120-82-1	1.29	U	6.47	1.29	0.647
1,1,1-Trichloroethane	71-55-6	1.29	U	6.47	1.29	0.647
1,1,2-Trichloroethane	79-00-5	1.29	U	6.47	1.29	0.647
Trichloroethene	79-01-6	1.29	U	6.47	1.29	0.647
Trichlorofluoromethane	75-69-4	2.58	U	6.47	2.58	1.29
1,2,3-Trichloropropane	96-18-4	2.58	U	6.47	2.58	1.29
1,2,4-Trimethylbenzene	95-63-6	1.29	U	6.47	1.29	0.647
1,3,5-Trimethylbenzene	108-67-8	1.29	U	6.47	1.29	0.647
Vinyl chloride	75-01-4	2.58	U	6.47	2.58	1.29
o-Xylene	95-47-6	1.29	U	6.47	1.29	0.647
m-,p-Xylene	179601-23-1	1.29	U	6.47	1.29	0.647

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.4	80	120	
1,2-Dichloroethane-d4	89.3	80	120	
Toluene-d8	102	85	115	
4-Bromofluorobenzene	103	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041582-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW23SW(40-40.5)	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:56
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG567938	**Analyst:**	TMB	**Run Date:**	05/07/2016 18:54
Collect Date:	04/27/2016 16:15	**Dilution:**	1	**File ID:**	6M139129
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	15.4	J	24.1	12.1	6.03
Benzene	71-43-2	1.21	U	6.03	1.21	0.603
Bromobenzene	108-86-1	1.21	U	6.03	1.21	0.603
Bromochloromethane	74-97-5	2.42	U	6.03	2.42	1.21
Bromodichloromethane	75-27-4	1.21	U	6.03	1.21	0.603
Bromoform	75-25-2	1.21	U	6.03	1.21	0.603
Bromomethane	74-83-9	2.42	U	6.03	2.42	1.21
2-Butanone	78-93-3	6.02	U	12.1	6.02	3.01
n-Butylbenzene	104-51-8	1.21	U	6.03	1.21	0.603
sec-Butylbenzene	135-98-8	1.21	U	6.03	1.21	0.603
tert-Butylbenzene	98-06-6	1.21	U	6.03	1.21	0.603
Carbon disulfide	75-15-0	1.21	U	6.03	1.21	0.603
Carbon tetrachloride	56-23-5	1.21	U	6.03	1.21	0.603
Chlorobenzene	108-90-7	1.21	U	6.03	1.21	0.603
Chlorodibromomethane	124-48-1	1.21	U	6.03	1.21	0.603
Chloroethane	75-00-3	2.42	U	6.03	2.42	1.21
Chloroform	67-66-3	1.21	U	6.03	1.21	0.603
Chloromethane	74-87-3	4.82	U	12.1	4.82	2.41
2-Chlorotoluene	95-49-8	1.21	U	6.03	1.21	0.603
4-Chlorotoluene	106-43-4	1.21	U	6.03	1.21	0.603
1,2-Dibromo-3-chloropropane	96-12-8	4.82	Q	12.1	4.82	2.41
1,2-Dibromoethane	106-93-4	1.21	U	6.03	1.21	0.603
Dibromomethane	74-95-3	1.21	U	6.03	1.21	0.603
1,2-Dichlorobenzene	95-50-1	1.21	U	6.03	1.21	0.603
1,3-Dichlorobenzene	541-73-1	1.21	U	6.03	1.21	0.603
1,4-Dichlorobenzene	106-46-7	1.21	U	6.03	1.21	0.603
Dichlorodifluoromethane	75-71-8	2.42	U	6.03	2.42	1.21
1,1-Dichloroethane	75-34-3	2.42	U	6.03	2.42	1.21
1,2-Dichloroethane	107-06-2	1.21	U	6.03	1.21	0.603
1,1-Dichloroethene	75-35-4	1.21	U	6.03	1.21	0.603
cis-1,2-Dichloroethene	156-59-2	1.21	U	6.03	1.21	0.603

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Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.21	U	6.03	1.21	0.603
1,2-Dichloropropane	78-87-5	1.21	U	6.03	1.21	0.603
1,3-Dichloropropane	142-28-9	1.21	U	6.03	1.21	0.603
2,2-Dichloropropane	594-20-7	1.21	U	6.03	1.21	0.603
cis-1,3-Dichloropropene	10061-01-5	1.21	U	6.03	1.21	0.603
trans-1,3-Dichloropropene	10061-02-6	1.21	U	6.03	1.21	0.603
1,1-Dichloropropene	563-58-6	1.21	U	6.03	1.21	0.603
Ethylbenzene	100-41-4	1.21	U	6.03	1.21	0.603
2-Hexanone	591-78-6	6.02	Q	12.1	6.02	3.01
Hexachlorobutadiene	87-68-3	1.21	U	6.03	1.21	0.603
Isopropylbenzene	98-82-8	1.21	U	6.03	1.21	0.603
p-Isopropyltoluene	99-87-6	1.21	U	6.03	1.21	0.603
4-Methyl-2-pentanone	108-10-1	6.02	Q	12.1	6.02	3.01
Methylene chloride	75-09-2	2.42	U	6.03	2.42	1.21
Naphthalene	91-20-3	1.21	Q	6.03	1.21	0.603
n-Propylbenzene	103-65-1	1.21	U	6.03	1.21	0.603
Styrene	100-42-5	1.21	U	6.03	1.21	0.603
1,1,1,2-Tetrachloroethane	630-20-6	1.21	U	6.03	1.21	0.603
1,1,2,2-Tetrachloroethane	79-34-5	1.21	U	6.03	1.21	0.603
Tetrachloroethene	127-18-4	1.21	U	6.03	1.21	0.603
Toluene	108-88-3	1.21	U	6.03	1.21	0.603
1,2,3-Trichlorobenzene	87-61-6	1.21	U	6.03	1.21	0.603
1,2,4-Trichlorobenzene	120-82-1	1.21	U	6.03	1.21	0.603
1,1,1-Trichloroethane	71-55-6	1.21	U	6.03	1.21	0.603
1,1,2-Trichloroethane	79-00-5	1.21	U	6.03	1.21	0.603
Trichloroethene	79-01-6	1.21	U	6.03	1.21	0.603
Trichlorofluoromethane	75-69-4	2.42	U	6.03	2.42	1.21
1,2,3-Trichloropropane	96-18-4	2.42	U	6.03	2.42	1.21
1,2,4-Trimethylbenzene	95-63-6	1.21	U	6.03	1.21	0.603
1,3,5-Trimethylbenzene	108-67-8	1.21	U	6.03	1.21	0.603
Vinyl chloride	75-01-4	2.42	U	6.03	2.42	1.21
o-Xylene	95-47-6	1.21	U	6.03	1.21	0.603
m-,p-Xylene	179601-23-1	1.21	U	6.03	1.21	0.603

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	80	120	
1,2-Dichloroethane-d4	91.2	80	120	
Toluene-d8	100	85	115	
4-Bromofluorobenzene	107	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041582-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW23SW(60-60.5)	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:56
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG567938	**Analyst:**	TMB	**Run Date:**	05/07/2016 19:27
Collect Date:	04/27/2016 17:35	**Dilution:**	1	**File ID:**	6M139130
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	9.75	J	24.3	12.2	6.09
Benzene	71-43-2	1.22	U	6.09	1.22	0.609
Bromobenzene	108-86-1	1.22	U	6.09	1.22	0.609
Bromochloromethane	74-97-5	2.44	U	6.09	2.44	1.22
Bromodichloromethane	75-27-4	1.22	U	6.09	1.22	0.609
Bromoform	75-25-2	1.22	U	6.09	1.22	0.609
Bromomethane	74-83-9	2.44	U	6.09	2.44	1.22
2-Butanone	78-93-3	6.08	U	12.2	6.08	3.04
n-Butylbenzene	104-51-8	1.22	U	6.09	1.22	0.609
sec-Butylbenzene	135-98-8	1.22	U	6.09	1.22	0.609
tert-Butylbenzene	98-06-6	1.22	U	6.09	1.22	0.609
Carbon disulfide	75-15-0	1.22	U	6.09	1.22	0.609
Carbon tetrachloride	56-23-5	1.22	U	6.09	1.22	0.609
Chlorobenzene	108-90-7	1.22	U	6.09	1.22	0.609
Chlorodibromomethane	124-48-1	1.22	U	6.09	1.22	0.609
Chloroethane	75-00-3	2.44	U	6.09	2.44	1.22
Chloroform	67-66-3	1.22	U	6.09	1.22	0.609
Chloromethane	74-87-3	4.86	U	12.2	4.86	2.43
2-Chlorotoluene	95-49-8	1.22	U	6.09	1.22	0.609
4-Chlorotoluene	106-43-4	1.22	U	6.09	1.22	0.609
1,2-Dibromo-3-chloropropane	96-12-8	4.86	Q	12.2	4.86	2.43
1,2-Dibromoethane	106-93-4	1.22	U	6.09	1.22	0.609
Dibromomethane	74-95-3	1.22	U	6.09	1.22	0.609
1,2-Dichlorobenzene	95-50-1	1.22	U	6.09	1.22	0.609
1,3-Dichlorobenzene	541-73-1	1.22	U	6.09	1.22	0.609
1,4-Dichlorobenzene	106-46-7	1.22	U	6.09	1.22	0.609
Dichlorodifluoromethane	75-71-8	2.44	U	6.09	2.44	1.22
1,1-Dichloroethane	75-34-3	2.44	U	6.09	2.44	1.22
1,2-Dichloroethane	107-06-2	1.22	U	6.09	1.22	0.609
1,1-Dichloroethene	75-35-4	1.22	U	6.09	1.22	0.609
cis-1,2-Dichloroethene	156-59-2	1.22	U	6.09	1.22	0.609

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.22	U	6.09	1.22	0.609
1,2-Dichloropropane	78-87-5	1.22	U	6.09	1.22	0.609
1,3-Dichloropropane	142-28-9	1.22	U	6.09	1.22	0.609
2,2-Dichloropropane	594-20-7	1.22	U	6.09	1.22	0.609
cis-1,3-Dichloropropene	10061-01-5	1.22	U	6.09	1.22	0.609
trans-1,3-Dichloropropene	10061-02-6	1.22	U	6.09	1.22	0.609
1,1-Dichloropropene	563-58-6	1.22	U	6.09	1.22	0.609
Ethylbenzene	100-41-4	1.22	U	6.09	1.22	0.609
2-Hexanone	591-78-6	6.08	Q	12.2	6.08	3.04
Hexachlorobutadiene	87-68-3	1.22	U	6.09	1.22	0.609
Isopropylbenzene	98-82-8	1.22	U	6.09	1.22	0.609
p-Isopropyltoluene	99-87-6	1.22	U	6.09	1.22	0.609
4-Methyl-2-pentanone	108-10-1	6.08	Q	12.2	6.08	3.04
Methylene chloride	75-09-2	2.44	U	6.09	2.44	1.22
Naphthalene	91-20-3	1.22	Q	6.09	1.22	0.609
n-Propylbenzene	103-65-1	1.22	U	6.09	1.22	0.609
Styrene	100-42-5	1.22	U	6.09	1.22	0.609
1,1,1,2-Tetrachloroethane	630-20-6	1.22	U	6.09	1.22	0.609
1,1,2,2-Tetrachloroethane	79-34-5	1.22	U	6.09	1.22	0.609
Tetrachloroethene	127-18-4	1.22	U	6.09	1.22	0.609
Toluene	108-88-3	1.22	U	6.09	1.22	0.609
1,2,3-Trichlorobenzene	87-61-6	1.22	U	6.09	1.22	0.609
1,2,4-Trichlorobenzene	120-82-1	1.22	U	6.09	1.22	0.609
1,1,1-Trichloroethane	71-55-6	1.22	U	6.09	1.22	0.609
1,1,2-Trichloroethane	79-00-5	1.22	U	6.09	1.22	0.609
Trichloroethene	79-01-6	1.22	U	6.09	1.22	0.609
Trichlorofluoromethane	75-69-4	2.44	U	6.09	2.44	1.22
1,2,3-Trichloropropane	96-18-4	2.44	U	6.09	2.44	1.22
1,2,4-Trimethylbenzene	95-63-6	1.22	U	6.09	1.22	0.609
1,3,5-Trimethylbenzene	108-67-8	1.22	U	6.09	1.22	0.609
Vinyl chloride	75-01-4	2.44	U	6.09	2.44	1.22
o-Xylene	95-47-6	1.22	U	6.09	1.22	0.609
m-,p-Xylene	179601-23-1	1.22	U	6.09	1.22	0.609

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	80	120	
1,2-Dichloroethane-d4	94.2	80	120	
Toluene-d8	98.8	85	115	
4-Bromofluorobenzene	107	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041582-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW23SW(50-50.5)	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:57
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG567938	**Analyst:**	TMB	**Run Date:**	05/07/2016 20:00
Collect Date:	04/27/2016 17:45	**Dilution:**	1	**File ID:**	6M139131
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	8.65	J	24.8	12.4	6.21
Benzene	71-43-2	1.24	U	6.21	1.24	0.621
Bromobenzene	108-86-1	1.24	U	6.21	1.24	0.621
Bromochloromethane	74-97-5	2.48	U	6.21	2.48	1.24
Bromodichloromethane	75-27-4	1.24	U	6.21	1.24	0.621
Bromoform	75-25-2	1.24	U	6.21	1.24	0.621
Bromomethane	74-83-9	2.48	U	6.21	2.48	1.24
2-Butanone	78-93-3	6.20	U	12.4	6.20	3.10
n-Butylbenzene	104-51-8	1.24	U	6.21	1.24	0.621
sec-Butylbenzene	135-98-8	1.24	U	6.21	1.24	0.621
tert-Butylbenzene	98-06-6	1.24	U	6.21	1.24	0.621
Carbon disulfide	75-15-0	1.24	U	6.21	1.24	0.621
Carbon tetrachloride	56-23-5	1.24	U	6.21	1.24	0.621
Chlorobenzene	108-90-7	1.24	U	6.21	1.24	0.621
Chlorodibromomethane	124-48-1	1.24	U	6.21	1.24	0.621
Chloroethane	75-00-3	2.48	U	6.21	2.48	1.24
Chloroform	67-66-3	1.24	U	6.21	1.24	0.621
Chloromethane	74-87-3	4.96	U	12.4	4.96	2.48
2-Chlorotoluene	95-49-8	1.24	U	6.21	1.24	0.621
4-Chlorotoluene	106-43-4	1.24	U	6.21	1.24	0.621
1,2-Dibromo-3-chloropropane	96-12-8	4.96	Q	12.4	4.96	2.48
1,2-Dibromoethane	106-93-4	1.24	U	6.21	1.24	0.621
Dibromomethane	74-95-3	1.24	U	6.21	1.24	0.621
1,2-Dichlorobenzene	95-50-1	1.24	U	6.21	1.24	0.621
1,3-Dichlorobenzene	541-73-1	1.24	U	6.21	1.24	0.621
1,4-Dichlorobenzene	106-46-7	1.24	U	6.21	1.24	0.621
Dichlorodifluoromethane	75-71-8	2.48	U	6.21	2.48	1.24
1,1-Dichloroethane	75-34-3	2.48	U	6.21	2.48	1.24
1,2-Dichloroethane	107-06-2	1.24	U	6.21	1.24	0.621
1,1-Dichloroethene	75-35-4	1.24	U	6.21	1.24	0.621
cis-1,2-Dichloroethene	156-59-2	1.24	U	6.21	1.24	0.621

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.24	U	6.21	1.24	0.621
1,2-Dichloropropane	78-87-5	1.24	U	6.21	1.24	0.621
1,3-Dichloropropane	142-28-9	1.24	U	6.21	1.24	0.621
2,2-Dichloropropane	594-20-7	1.24	U	6.21	1.24	0.621
cis-1,3-Dichloropropene	10061-01-5	1.24	U	6.21	1.24	0.621
trans-1,3-Dichloropropene	10061-02-6	1.24	U	6.21	1.24	0.621
1,1-Dichloropropene	563-58-6	1.24	U	6.21	1.24	0.621
Ethylbenzene	100-41-4	1.24	U	6.21	1.24	0.621
2-Hexanone	591-78-6	6.20	Q	12.4	6.20	3.10
Hexachlorobutadiene	87-68-3	1.24	U	6.21	1.24	0.621
Isopropylbenzene	98-82-8	1.24	U	6.21	1.24	0.621
p-Isopropyltoluene	99-87-6	1.24	U	6.21	1.24	0.621
4-Methyl-2-pentanone	108-10-1	6.20	Q	12.4	6.20	3.10
Methylene chloride	75-09-2	2.48	U	6.21	2.48	1.24
Naphthalene	91-20-3	1.24	Q	6.21	1.24	0.621
n-Propylbenzene	103-65-1	1.24	U	6.21	1.24	0.621
Styrene	100-42-5	1.24	U	6.21	1.24	0.621
1,1,1,2-Tetrachloroethane	630-20-6	1.24	U	6.21	1.24	0.621
1,1,2,2-Tetrachloroethane	79-34-5	1.24	U	6.21	1.24	0.621
Tetrachloroethene	127-18-4	1.24	U	6.21	1.24	0.621
Toluene	108-88-3	1.24	U	6.21	1.24	0.621
1,2,3-Trichlorobenzene	87-61-6	1.24	U	6.21	1.24	0.621
1,2,4-Trichlorobenzene	120-82-1	1.24	U	6.21	1.24	0.621
1,1,1-Trichloroethane	71-55-6	1.24	U	6.21	1.24	0.621
1,1,2-Trichloroethane	79-00-5	1.24	U	6.21	1.24	0.621
Trichloroethene	79-01-6	1.24	U	6.21	1.24	0.621
Trichlorofluoromethane	75-69-4	2.48	U	6.21	2.48	1.24
1,2,3-Trichloropropane	96-18-4	2.48	U	6.21	2.48	1.24
1,2,4-Trimethylbenzene	95-63-6	1.24	U	6.21	1.24	0.621
1,3,5-Trimethylbenzene	108-67-8	1.24	U	6.21	1.24	0.621
Vinyl chloride	75-01-4	2.48	U	6.21	2.48	1.24
o-Xylene	95-47-6	1.24	U	6.21	1.24	0.621
m-,p-Xylene	179601-23-1	1.24	U	6.21	1.24	0.621

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.9	80	120	
1,2-Dichloroethane-d4	90.0	80	120	
Toluene-d8	103	85	115	
4-Bromofluorobenzene	113	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.
VOA Preparation/Preservation/Extraction Log

Batch #: WG567289
Analyst: AWE
Method: 5030B/5030C/5035
Run Date: 05/03/2016 09:42
Product: 826-SPE
Purge and trap methanol COA18540
Purified Lab Sand Lot # COA18552

SAMPLE #	Fraction	Collected	Preserved	PCT-S	Tare Wt	Total Wt	Sample Wt	Water	MeOH	Vt	Comments
L16041580-01	A	04/26/16 09:05	05/03/16 09:42	84.8			4.82	5		5	
L16041580-02	A	04/26/16 10:00	05/03/16 09:42	82.0			4.91	5		5	
L16041580-03	A	04/26/16 10:35	05/03/16 09:44	79.2			4.68	5		5	
L16041580-04	A	04/26/16 11:15	05/03/16 09:44	78.2			4.75	5		5	
L16041580-05	A	04/26/16 11:55	05/03/16 09:45	79.0			5.28	5		5	
L16041580-06	A	04/26/16 14:15	05/03/16 09:45	83.5			5.14	5		5	
L16041580-07	A	04/26/16 14:15	05/03/16 09:46	83.5			5.38	5		5	
L16041580-08	A	04/26/16 14:15	05/03/16 09:47	83.5			5.02	5		5	
L16041580-09	A	04/26/16 15:00	05/03/16 09:48	86.5			4.77	5		5	
L16041580-10	A	04/26/16 15:00	05/03/16 09:48	87.1			4.65	5		5	
L16041580-11	A	04/26/16 15:45	05/03/16 09:49	83.7			4.92	5		5	
L16041580-12	A	04/26/16 16:45	05/03/16 09:50	82.3			4.82	5		5	
L16041580-13	A	04/26/16 17:00	05/03/16 09:51	80.0			4.92	5		5	
L16041582-01	A	04/27/16 14:15	05/03/16 09:52	74.6			4.57	5		5	
L16041582-02	A	04/27/16 14:40	05/03/16 09:54	81.8			4.93	5		5	
L16041582-03	A	04/27/16 14:45	05/03/16 09:54	81.8			5.16	5		5	
L16041582-04	A	04/27/16 14:50	05/03/16 09:55	81.0			4.77	5		5	
L16041582-05	A	04/27/16 16:15	05/03/16 09:56	84.8			4.89	5		5	
L16041582-06	A	04/27/16 17:35	05/03/16 09:56	82.2			5.00	5		5	
L16041582-07	A	04/27/16 17:45	05/03/16 09:57	80.4			5.01	5		5	
L16041606-01	A	04/28/16 08:30	05/03/16 09:57	93.0			5.09	5		5	
WG567289-01	A		05/03/16 09:52	74.6			4.57	5		5	
WG567289-02	A		05/03/16 09:52	74.6			4.80	5		5	
WG567289-03	A		05/03/16 09:53	74.6			4.86	5		5	

Comments:
1 = improperly sealed cap
2 = preserved out of hold
3 = effervesced
4 = preserved with NaHSO4
5 = preserved by freezing
6 = preserved in field

Analyst: Andrew Casey

VOA_EXT - Modified 05/22/2008
PDF ID: 4744440
Report generated: 05/07/2016 13:20

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 022616
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Method: 8260C SOP: MSV01-C Rev: 2
Maintenance Log ID:

Internal Standard: STD74756 Surrogate Standard: STD74756
CCV: STD74897 LCS: STD74755 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG558920

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M137521	RINSE	NA	7	1		02/26/16 12:22
6M137522	WG558920-01 50ng BFB STD 8260	NA	7	1	STD74606	02/26/16 13:16
6M137523	WG558920-02 0.5ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 13:41
6M137524	WG558920-03 1ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 14:13
6M137525	WG558920-04 2ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 14:46
6M137526	WG558920-05 5ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 15:26
6M137527	WG558920-06 10ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 15:58
6M137528	WG558920-07 20ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 16:30
6M137529	WG558920-08 50ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 17:03
6M137530	WG558920-09 100ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 17:35
6M137531	WG558920-10 200ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 18:07
6M137532	WG558920-11 300ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 18:39
6M137533	RINSE	NA	7	1		02/26/16 19:11
6M137534	RINSE	NA	7	1		02/26/16 19:43
6M137535	WG558920-12 50ug/Kg ALT SRC STD 826	NA	7	1	STD74755	02/26/16 20:15
6M137536	RINSE	NA	7	1		02/26/16 20:48

Comments

Seq.	Rerun	Dil.	Reason	Analytes
15				
File ID: 6M137535				
Surrogates are spiked at 25 not 50.				

Approved: March 02, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 050716
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD75822 Surrogate Standard: STD75822
CCV: STD75976 LCS: STD75977 MS/MSD: STD75977

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG567938

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M139116	RINSE	NA	7	1		05/07/16 11:42
6M139117	WG567937-01 50ng BFB STD 8260	NA	7	1	STD76034	05/07/16 12:31
6M139118	WG567937-02 50ug/Kg CCV STD 8260	NA	7	1	STD75976	05/07/16 12:55
6M139119	WG000000-01 100ug/Kg A9 CCV STD 826	NA	7	1	STD75791	05/07/16 13:28
6M139120	WG567938-01 VBLK0507 BLANK STD 826	NA	7	1		05/07/16 14:01
6M139121	WG567938-02 20ug/Kg LCS STD 8260	NA	7	1	STD75977	05/07/16 14:33
6M139122	WG567289-02 MS 1582-01 8260 4.80g	NA	7	1	STD75977	05/07/16 15:06
6M139123	WG567289-03 MSD 1582-01 8260 4.86g	NA	7	1	STD75977	05/07/16 15:38
6M139124	RINSE	NA	7	1		05/07/16 16:12
6M139125	L16041582-01 8260 4.57g	NA	7	1		05/07/16 16:44
6M139126	L16041582-02 8260 4.93g	NA	7	1		05/07/16 17:17
6M139127	L16041582-03 8260 5.16g	NA	7	1		05/07/16 17:49
6M139128	L16041582-04 8260 4.77g	NA	7	1		05/07/16 18:22
6M139129	L16041582-05 8260 4.89g	NA	7	1		05/07/16 18:54
6M139130	L16041582-06 8260 5.00g	NA	7	1		05/07/16 19:27
6M139131	L16041582-07 8260 5.01g	NA	7	1		05/07/16 20:00
6M139132	L16050063-01 8260 5.25g	NA	7	1		05/07/16 20:33
6M139133	L16050063-02 8260 4.74g	NA	7	1		05/07/16 21:05
6M139134	L16050063-03 8260 5.48g	NA	7	1		05/07/16 21:38
6M139135	L16050063-04 8260 5.36g	NA	7	1		05/07/16 22:10
6M139136	L16050063-05 8260 4.95g	NA	7	1		05/07/16 22:43
6M139137	L16050063-06 8260 4.63g	NA	7	1		05/07/16 23:16
6M139138	CCV	NA	7	1		05/07/16 23:48
6M139139	RINSE	NA	7	1		05/08/16 00:20

Comments

Seq.	Rerun	Dil.	Reason	Analytes
4				
File ID: 6M139119				
	Not needed. DNR.			
17	X	5	Over Calibration Range	ACETONE
File ID: 6M139132				
18	X	5	Over Calibration Range	ACETONE

Approved: May 10, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 050716
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD75822 Surrogate Standard: STD75822
CCV: STD75976 LCS: STD75977 MS/MSD: STD75977

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG567938

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
File ID: 6M139133				
19	X	5	Over Calibration Range	ACETONE
File ID: 6M139134				

Approved: May 10, 2016

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 26-FEB-2016
Analyst: TMB
Analyst: NA
Method: 8260B/C
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 73548
Analytical Workgroups: WG558920

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	NA
TCL Hits	NA
Spectra of TCL Hits	NA
Surrogates	NA
Internal Standards Criteria	NA
Library Searches	NA
Calculations & Correct Factors	NA
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
29-FEB-2016
Tiffany Bailey

Secondary Reviewer:
02-MAR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-02-2016 12:31:18

Microbac Laboratories Inc.

Data Checklist

Date: 07-MAY-2016
Analyst: TMB
Analyst: NA
Method: 8260B
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 74976
Analytical Workgroups: WG567938

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
09-MAY-2016
Tiffany Bailey

Secondary Reviewer:
10-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-10-2016 14:57:04

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG567938

Login Number: L16041582

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW23SW(5-5.5)	01	04/27/16					05/03/2016	5.8	14		05/07/16	10.1	14	
18CPTMW23SW(10-10.5)	02	04/27/16					05/03/2016	5.8	14		05/07/16	10.1	14	
18CPTMW23SW(20-20.5)	03	04/27/16					05/03/2016	5.8	14		05/07/16	10.1	14	
18CPTMW23SW(30-30.5)	04	04/27/16					05/03/2016	5.8	14		05/07/16	10.1	14	
18CPTMW23SW(40-40.5)	05	04/27/16					05/03/2016	5.7	14		05/07/16	10.1	14	
18CPTMW23SW(60-60.5)	06	04/27/16					05/03/2016	5.7	14		05/07/16	10.1	14	
18CPTMW23SW(50-50.5)	07	04/27/16					05/03/2016	5.7	14		05/07/16	10.1	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4753298
Report generated 05/11/2016 14:00

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16041582
Instrument Id: HPMS6
Workgroup (AAB#): WG567938

Method: 8260
CAL ID: HPMS6-26-FEB-16
Matrix: Soil

Sample Number	Dilution	Tag	1	2	3	4
L16041582-01	1.00	01	86.4	93.5	106	105
L16041582-02	1.00	01	88.9	98.2	102	98.7
L16041582-03	1.00	01	88.6	95.1	106	98.9
L16041582-04	1.00	01	89.3	93.4	103	102
L16041582-05	1.00	01	91.2	101	107	100
L16041582-06	1.00	01	94.2	100	107	98.8
L16041582-07	1.00	01	90.0	93.9	113	103
WG567938-01	1.00	01	95.5	97.6	103	100
WG567938-02	1.00	01	94.7	97.7	104	102

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	80	-	120
2 - Dibromofluoromethane	80	-	120
3 - 4-Bromofluorobenzene	85	-	120
4 - Toluene-d8	85	-	115

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4753304
Report generated: 05/11/2016 14:00

METHOD BLANK SUMMARY

Login Number: L16041582
Blank File ID: 6M139120
Prep Date: 05/07/16 14:01
Analyzed Date: 05/07/16 14:01
Analyst: TMB

Work Group: WG567938
Blank Sample ID: WG567938-01
Instrument ID: HPMS6
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG567938-02	6M139121	05/07/16 14:33	01
18CPTMW23SW(5-5.5)	L16041582-01	6M139125	05/07/16 16:44	01
18CPTMW23SW(10-10.5)	L16041582-02	6M139126	05/07/16 17:17	01
18CPTMW23SW(20-20.5)	L16041582-03	6M139127	05/07/16 17:49	01
18CPTMW23SW(30-30.5)	L16041582-04	6M139128	05/07/16 18:22	01
18CPTMW23SW(40-40.5)	L16041582-05	6M139129	05/07/16 18:54	01
18CPTMW23SW(60-60.5)	L16041582-06	6M139130	05/07/16 19:27	01
18CPTMW23SW(50-50.5)	L16041582-07	6M139131	05/07/16 20:00	01

Report Name: BLANK_SUMMARY
PDF File ID: 4756961
Report generated 05/11/2016 14:00

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16041582 Prep Date: 05/07/16 14:01 Sample ID: WG567938-01
Instrument ID: HPMS6 Run Date: 05/07/16 14:01 Prep Method: 5030B/5030C/503
File ID: 6M139120 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG567938 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS6-26-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	5.00	20.0	5.00	1	U
Benzene	0.500	5.00	0.500	1	U
Bromobenzene	0.500	5.00	0.500	1	U
Bromochloromethane	1.00	5.00	1.00	1	U
Bromodichloromethane	0.500	5.00	0.500	1	U
Bromoform	0.500	5.00	0.500	1	U
Bromomethane	1.00	5.00	1.00	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.500	5.00	0.500	1	U
sec-Butylbenzene	0.500	5.00	0.500	1	U
tert-Butylbenzene	0.500	5.00	0.500	1	U
Carbon disulfide	0.500	5.00	0.500	1	U
Carbon tetrachloride	0.500	5.00	0.500	1	U
Chlorobenzene	0.500	5.00	0.500	1	U
Chlorodibromomethane	0.500	5.00	0.500	1	U
Chloroethane	1.00	5.00	1.00	1	U
Chloroform	0.500	5.00	0.500	1	U
Chloromethane	2.00	10.0	2.00	1	U
2-Chlorotoluene	0.500	5.00	0.500	1	U
4-Chlorotoluene	0.500	5.00	0.500	1	U
1,2-Dibromo-3-chloropropane	2.00	10.0	2.00	1	U
1,2-Dibromoethane	0.500	5.00	0.500	1	U
Dibromomethane	0.500	5.00	0.500	1	U
1,2-Dichlorobenzene	0.500	5.00	0.500	1	U
1,3-Dichlorobenzene	0.500	5.00	0.500	1	U
1,4-Dichlorobenzene	0.500	5.00	0.500	1	U
Dichlorodifluoromethane	1.00	5.00	1.00	1	U
1,1-Dichloroethane	1.00	5.00	1.00	1	U
1,2-Dichloroethane	0.500	5.00	0.500	1	U
1,1-Dichloroethene	0.500	5.00	0.500	1	U
cis-1,2-Dichloroethene	0.500	5.00	0.500	1	U
trans-1,2-Dichloroethene	0.500	5.00	0.500	1	U
1,2-Dichloropropane	0.500	5.00	0.500	1	U
1,3-Dichloropropane	0.500	5.00	0.500	1	U
2,2-Dichloropropane	0.500	5.00	0.500	1	U
cis-1,3-Dichloropropene	0.500	5.00	0.500	1	U
trans-1,3-Dichloropropene	0.500	5.00	0.500	1	U
1,1-Dichloropropene	0.500	5.00	0.500	1	U
Ethylbenzene	0.500	5.00	0.500	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.500	5.00	0.500	1	U
Isopropylbenzene	0.500	5.00	0.500	1	U

Report Name: BLANK
PDF ID: 4756962
11-MAY-2016 14:00

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16041582 Prep Date: 05/07/16 14:01 Sample ID: WG567938-01
Instrument ID: HPMS6 Run Date: 05/07/16 14:01 Prep Method: 5030B/5030C/503
File ID: 6M139120 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG567938 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS6-26-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.500	5.00	0.500	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	1.00	5.00	1.00	1	U
Naphthalene	0.500	5.00	0.500	1	U
n-Propylbenzene	0.500	5.00	0.500	1	U
Styrene	0.500	5.00	0.500	1	U
1,1,1,2-Tetrachloroethane	0.500	5.00	0.500	1	U
1,1,2,2-Tetrachloroethane	0.500	5.00	0.500	1	U
Tetrachloroethene	0.500	5.00	0.500	1	U
Toluene	0.500	5.00	0.500	1	U
1,2,3-Trichlorobenzene	0.500	5.00	0.500	1	U
1,2,4-Trichlorobenzene	0.500	5.00	0.500	1	U
1,1,1-Trichloroethane	0.500	5.00	0.500	1	U
1,1,2-Trichloroethane	0.500	5.00	0.500	1	U
Trichloroethene	0.500	5.00	0.500	1	U
Trichlorofluoromethane	1.00	5.00	1.00	1	U
1,2,3-Trichloropropane	1.00	5.00	1.00	1	U
1,2,4-Trimethylbenzene	0.500	5.00	0.500	1	U
1,3,5-Trimethylbenzene	0.500	5.00	0.500	1	U
Vinyl chloride	1.00	5.00	1.00	1	U
o-Xylene	0.500	5.00	0.500	1	U
m-,p-Xylene	0.500	5.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	97.6	80 - 120	PASS
1,2-Dichloroethane-d4	95.5	80 - 120	PASS
Toluene-d8	100	85 - 115	PASS
4-Bromofluorobenzene	103	85 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4756962
11-MAY-2016 14:00

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16041582 Run Date: 05/07/2016 Sample ID: WG567938-02
Instrument ID: HPMS6 Run Time: 14:33 Prep Method: 5030B/5030C/503
File ID: 6M139121 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG567938 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD75977 Cal ID: HPMS6-26-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	23.1	116	20 - 160	
Benzene	20.0	19.4	97.2	75 - 125	
Bromobenzene	20.0	19.7	98.3	65 - 120	
Bromochloromethane	20.0	18.9	94.4	70 - 125	
Bromodichloromethane	20.0	19.4	97.1	70 - 130	
Bromoform	20.0	17.3	86.3	55 - 135	
Bromomethane	20.0	20.4	102	30 - 160	
2-Butanone	20.0	22.7	114	30 - 160	
n-Butylbenzene	20.0	19.8	99.2	65 - 140	
sec-Butylbenzene	20.0	21.3	106	65 - 130	
tert-Butylbenzene	20.0	21.2	106	65 - 130	
Carbon disulfide	20.0	19.3	96.6	45 - 160	
Carbon tetrachloride	20.0	20.3	102	65 - 135	
Chlorobenzene	20.0	19.8	99.0	75 - 125	
Chlorodibromomethane	20.0	18.6	92.8	65 - 130	
Chloroethane	20.0	21.7	108	40 - 155	
Chloroform	20.0	19.5	97.5	70 - 125	
Chloromethane	20.0	20.8	104	50 - 130	
2-Chlorotoluene	20.0	20.9	104	70 - 130	
4-Chlorotoluene	20.0	20.8	104	75 - 125	
1,2-Dibromo-3-chloropropane	20.0	20.8	104	40 - 135	
1,2-Dibromoethane	20.0	19.5	97.7	70 - 125	
Dibromomethane	20.0	18.5	92.5	75 - 130	
1,2-Dichlorobenzene	20.0	20.2	101	75 - 120	
1,3-Dichlorobenzene	20.0	20.1	101	70 - 125	
1,4-Dichlorobenzene	20.0	20.0	99.8	70 - 125	
Dichlorodifluoromethane	20.0	21.2	106	35 - 135	
1,1-Dichloroethane	20.0	19.3	96.4	75 - 125	
1,2-Dichloroethane	20.0	19.8	99.0	70 - 135	
1,1-Dichloroethene	20.0	19.8	99.0	65 - 135	
cis-1,2-Dichloroethene	20.0	19.9	99.5	65 - 125	
trans-1,2-Dichloroethene	20.0	20.1	100	65 - 135	
1,2-Dichloropropane	20.0	20.4	102	70 - 120	
1,3-Dichloropropane	20.0	20.6	103	75 - 125	
2,2-Dichloropropane	20.0	21.4	107	65 - 135	
cis-1,3-Dichloropropene	20.0	21.8	109	70 - 125	
trans-1,3-Dichloropropene	20.0	19.6	98.0	65 - 125	
1,1-Dichloropropene	20.0	20.4	102	70 - 135	
Ethylbenzene	20.0	19.6	98.2	75 - 125	
2-Hexanone	20.0	21.7	108	45 - 145	
Hexachlorobutadiene	20.0	22.0	110	55 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4753299
Report generated: 05/11/2016 14:00

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16041582 Run Date: 05/07/2016 Sample ID: WG567938-02
Instrument ID: HPMS6 Run Time: 14:33 Prep Method: 5030B/5030C/503
File ID: 6M139121 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG567938 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD75977 Cal ID: HPMS6-26-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	20.9	104	75 - 130	
p-Isopropyltoluene	20.0	20.8	104	75 - 135	
4-Methyl-2-pentanone	20.0	23.0	115	45 - 145	
Methylene chloride	20.0	19.6	98.2	55 - 140	
Naphthalene	20.0	18.6	93.1	40 - 125	
n-Propylbenzene	20.0	21.4	107	65 - 135	
Styrene	20.0	19.8	99.2	75 - 125	
1,1,1,2-Tetrachloroethane	20.0	18.9	94.7	75 - 125	
1,1,2,2-Tetrachloroethane	20.0	19.9	99.5	55 - 130	
Tetrachloroethene	20.0	19.5	97.4	65 - 140	
Toluene	20.0	19.8	99.2	70 - 125	
1,2,3-Trichlorobenzene	20.0	18.5	92.5	60 - 135	
1,2,4-Trichlorobenzene	20.0	19.6	98.2	65 - 130	
1,1,1-Trichloroethane	20.0	20.7	103	70 - 135	
1,1,2-Trichloroethane	20.0	19.6	98.0	60 - 125	
Trichloroethene	20.0	20.5	102	75 - 125	
Trichlorofluoromethane	20.0	19.5	97.7	25 - 185	
1,2,3-Trichloropropane	20.0	20.7	104	65 - 130	
1,2,4-Trimethylbenzene	20.0	20.6	103	65 - 135	
1,3,5-Trimethylbenzene	20.0	21.3	106	65 - 135	
Vinyl chloride	20.0	18.2	90.9	60 - 125	
o-Xylene	20.0	20.9	105	75 - 125	
m-,p-Xylene	40.0	40.4	101	80 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	97.7	80 - 120	PASS
1,2-Dichloroethane-d4	94.7	80 - 120	PASS
Toluene-d8	102	85 - 115	PASS
4-Bromofluorobenzene	104	85 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4753299
Report generated: 05/11/2016 14:00

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16041582 Cal ID: HPMS6 - Worknum: WG567938
Instrument ID: HPMS6 Contract #: Method: 8260B
Parent ID: WG567289-01 File ID: 6M139125 Dil: 1 Matrix: SOLID
Sample ID: WG567289-02 MS File ID: 6M139122 Dil: 1 Units: ug/kg
Sample ID: WG567289-03 MSD File ID: 6M139123 Dil: 1 Percent Solid: 74.6

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,1,1,2-Tetrachloroethane	ND	27.9	28.6	102	27.6	27.6	100	3.41	75 - 125	30	
1,1,1-Trichloroethane	ND	27.9	30.5	109	27.6	30.3	110	0.762	70 - 135	30	
1,1,2,2-Tetrachloroethane	ND	27.9	25.8	92.3	27.6	29.0	105	11.8	55 - 130	30	
1,1,2-Trichloroethane	ND	27.9	26.8	95.9	27.6	30.2	110	12.1	60 - 125	30	
1,1-Dichloroethane	ND	27.9	29.2	105	27.6	28.0	102	4.15	75 - 125	30	
1,1-Dichloroethene	ND	27.9	29.6	106	27.6	28.7	104	3.18	65 - 135	30	
1,1-Dichloropropene	ND	27.9	30.2	108	27.6	30.2	110	0.0561	70 - 135	30	
1,2,3-Trichlorobenzene	ND	27.9	29.7	106	27.6	26.3	95.4	12.1	60 - 135	30	
1,2,3-Trichloropropane	ND	27.9	26.8	95.9	27.6	29.4	107	9.47	65 - 130	30	
1,2,4-Trichlorobenzene	ND	27.9	30.1	108	27.6	27.4	99.5	9.33	65 - 130	30	
1,2,4-Trimethylbenzene	2.29	27.9	32.4	108	27.6	29.3	97.8	10.2	65 - 135	30	
1,2-Dibromo-3-chloropropane	ND	27.9	28.2	101	27.6	29.2	106	3.43	40 - 135	30	
1,2-Dibromoethane	ND	27.9	28.7	103	27.6	28.9	105	0.361	70 - 125	30	
1,2-Dichlorobenzene	ND	27.9	29.9	107	27.6	29.7	108	0.722	75 - 120	30	
1,2-Dichloroethane	4.13	27.9	32.6	102	27.6	32.1	101	1.47	70 - 135	30	
1,2-Dichloropropane	ND	27.9	30.9	111	27.6	29.5	107	4.84	70 - 120	30	
1,3,5-Trimethylbenzene	ND	27.9	29.4	105	27.6	30.4	110	3.47	65 - 135	30	
1,3-Dichlorobenzene	ND	27.9	30.0	107	27.6	29.6	107	1.16	70 - 125	30	
1,3-Dichloropropane	ND	27.9	27.7	99.3	27.6	29.6	107	6.48	75 - 125	30	
1,4-Dichlorobenzene	ND	27.9	29.7	106	27.6	29.2	106	1.61	70 - 125	30	
2,2-Dichloropropane	ND	27.9	31.9	114	27.6	30.9	112	3.18	65 - 135	30	
2-Butanone	ND	27.9	28.1	101	27.6	28.0	101	0.403	30 - 160	30	
2-Chlorotoluene	ND	27.9	29.4	105	27.6	29.1	105	1.21	70 - 130	30	
2-Hexanone	ND	27.9	24.4	87.4	27.6	26.7	96.8	8.99	45 - 145	30	
4-Chlorotoluene	ND	27.9	28.8	103	27.6	32.1	116	10.9	75 - 125	30	
4-Methyl-2-pentanone	ND	27.9	28.9	104	27.6	29.6	107	2.38	45 - 145	30	
Acetone	ND	27.9	33.0	118	27.6	36.2	131	9.41	20 - 160	30	
Benzene	ND	27.9	29.2	105	27.6	29.3	106	0.256	75 - 125	30	
Bromobenzene	ND	27.9	27.7	99.3	27.6	28.7	104	3.37	65 - 120	30	
Bromochloromethane	ND	27.9	28.1	101	27.6	29.3	106	4.16	70 - 125	30	
Bromodichloromethane	ND	27.9	28.8	103	27.6	28.2	102	1.88	70 - 130	30	
Bromoform	ND	27.9	24.9	89.0	27.6	24.4	88.6	1.70	55 - 135	30	
Bromomethane	ND	27.9	28.9	104	27.6	28.9	105	0.211	30 - 160	30	
Carbon disulfide	ND	27.9	26.8	96.0	27.6	24.9	90.2	7.56	45 - 160	30	
Carbon tetrachloride	ND	27.9	30.2	108	27.6	30.0	109	0.628	65 - 135	30	
Chlorobenzene	ND	27.9	29.9	107	27.6	29.2	106	2.23	75 - 125	30	
Chlorodibromomethane	ND	27.9	28.0	100	27.6	26.7	96.9	4.47	65 - 130	30	
Chloroethane	ND	27.9	31.7	114	27.6	30.2	110	4.86	40 - 155	30	
Chloroform	ND	27.9	30.1	108	27.6	28.3	103	6.07	70 - 125	30	

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4753300
Report generated 05/09/2016 16:13

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16041582 Cal ID: HPMS6 Worknum: WG567938
Instrument ID: HPMS6 Contract #: Method: 8260B
Parent ID: WG567289-01 File ID: 6M139125 Dil: 1 Matrix: SOLID
Sample ID: WG567289-02 MS File ID: 6M139122 Dil: 1 Units: ug/kg
Sample ID: WG567289-03 MSD File ID: 6M139123 Dil: 1 Percent Solid: 74.6

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chloromethane	ND	27.9	31.6	113	27.6	31.2	113	1.17	50 - 130	30	
Dibromomethane	ND	27.9	27.1	97.0	27.6	26.9	97.5	0.753	75 - 130	30	
Dichlorodifluoromethane	ND	27.9	30.9	111	27.6	30.0	109	2.89	35 - 135	30	
Ethylbenzene	ND	27.9	30.0	107	27.6	28.5	103	4.91	75 - 125	30	
Hexachlorobutadiene	ND	27.9	31.6	113	27.6	30.1	109	4.67	55 - 140	30	
Isopropylbenzene	ND	27.9	31.1	111	27.6	29.8	108	4.41	75 - 130	30	
Methylene chloride	ND	27.9	29.8	107	27.6	29.0	105	2.53	55 - 140	30	
Naphthalene	ND	27.9	27.3	97.8	27.6	25.7	93.3	5.92	40 - 125	30	
Styrene	ND	27.9	30.2	108	27.6	30.0	109	0.533	75 - 125	30	
Tetrachloroethene	ND	27.9	30.6	109	27.6	27.9	101	9.17	65 - 140	30	
Toluene	ND	27.9	30.1	108	27.6	30.0	109	0.230	70 - 125	30	
Trichloroethene	47.6	27.9	64.7	61.3	27.6	61.0	48.6	5.89	75 - 125	30	*
Trichlorofluoromethane	ND	27.9	28.6	103	27.6	28.3	103	1.31	25 - 185	30	
Vinyl chloride	ND	27.9	26.8	96.0	27.6	27.0	97.8	0.643	60 - 125	30	
cis-1,2-Dichloroethene	9.99	27.9	38.3	101	27.6	36.4	95.7	5.08	65 - 125	30	
cis-1,3-Dichloropropene	ND	27.9	32.1	115	27.6	32.4	118	0.953	70 - 125	30	
m-,p-Xylene	ND	55.8	61.5	110	55.2	57.7	105	6.49	80 - 125	30	
n-Butylbenzene	ND	27.9	29.2	105	27.6	28.2	102	3.74	65 - 140	30	
n-Propylbenzene	ND	27.9	29.9	107	27.6	31.8	115	6.36	65 - 135	30	
o-Xylene	ND	27.9	32.0	115	27.6	32.0	116	0.132	75 - 125	30	
p-Isopropyltoluene	4.51	27.9	34.1	106	27.6	34.5	109	1.18	75 - 135	30	
sec-Butylbenzene	ND	27.9	31.1	111	27.6	31.1	113	0.101	65 - 130	30	
tert-Butylbenzene	ND	27.9	32.9	118	27.6	30.4	110	7.84	65 - 130	30	
trans-1,2-Dichloroethene	ND	27.9	30.3	109	27.6	29.2	106	3.78	65 - 135	30	
trans-1,3-Dichloropropene	ND	27.9	28.3	101	27.6	28.3	103	0.0292	65 - 125	30	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4753300
Report generated 05/09/2016 16:13

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16041582
Instrument: HPMS6
Analyst: TMB
Workgroup: WG558920

Tune ID: WG558920-01
Run Date: 02/26/2016
Run Time: 13:16
File ID: 6M137522
Cal ID: HPMS6 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	25.4	9030	PASS
75.0	95.0	30.0	60.0	55.4	19666	PASS
95.0	95.0	100	100	100	35512	PASS
96.0	95.0	5.00	9.00	7.25	2576	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	73.2	26011	PASS
175	174	5.00	9.00	7.36	1914	PASS
176	174	95.0	101	96.1	24992	PASS
177	176	5.00	9.00	6.64	1660	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG558920-02	STD-S	01	02/26/2016 13:41	
WG558920-03	STD-S	01	02/26/2016 14:13	
WG558920-04	STD-S	01	02/26/2016 14:46	
WG558920-05	STD-S	01	02/26/2016 15:26	
WG558920-06	STD-S	01	02/26/2016 15:58	
WG558920-07	STD-S	01	02/26/2016 16:30	
WG558920-08	STD-CCV-S	01	02/26/2016 17:03	
WG558920-09	STD-S	01	02/26/2016 17:35	
WG558920-10	STD-S	01	02/26/2016 18:07	
WG558920-11	STD-S	01	02/26/2016 18:39	
WG558920-12	SSCV-S	01	02/26/2016 20:15	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4753302
Report generated 05/11/2016 14:00

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16041582
Instrument: HPMS6
Analyst: TMB
Workgroup: WG567937

Tune ID: WG567937-01
Run Date: 05/07/2016
Run Time: 12:31
File ID: 6M139117
Cal ID: HPMS6 - 26-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.7	8437	PASS
75.0	95.0	30.0	60.0	52.9	20594	PASS
95.0	95.0	100	100	100	38933	PASS
96.0	95.0	5.00	9.00	6.87	2676	PASS
173	174	0	2.00	0.356	109	PASS
174	95.0	50.0	100	78.7	30637	PASS
175	174	5.00	9.00	6.97	2135	PASS
176	174	95.0	101	97.5	29856	PASS
177	176	5.00	9.00	7.40	2208	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG567937-02	CCV-S	01	05/07/2016 12:55	
WG567938-01	BLANK	01	05/07/2016 14:01	
WG567938-02	LCS	01	05/07/2016 14:33	
WG567289-02	MS	01	05/07/2016 15:06	
WG567289-03	MSD	01	05/07/2016 15:38	
L16041582-01	18CPTMW23SW(5-5.5)	01	05/07/2016 16:44	
L16041582-02	18CPTMW23SW(10-10.5)	01	05/07/2016 17:17	
L16041582-03	18CPTMW23SW(20-20.5)	01	05/07/2016 17:49	
L16041582-04	18CPTMW23SW(30-30.5)	01	05/07/2016 18:22	
L16041582-05	18CPTMW23SW(40-40.5)	01	05/07/2016 18:54	
L16041582-06	18CPTMW23SW(60-60.5)	01	05/07/2016 19:27	
L16041582-07	18CPTMW23SW(50-50.5)	01	05/07/2016 20:00	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4753302
Report generated 05/11/2016 14:00

Calibration Table Report
Method: 826_SL.M
Title: 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Calibration: Mon Feb 29 15:59:52 2016
Curve: WG558920
Calibration Files

	Compound	0.5 6M137523.D	1 6M137524.D	2 6M137525.D	5 6M137526.D	10 6M137527.D	20 6M137528.D	50 6M137529.D	100 6M137530.D	200 6M137531.D	300 6M137532.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.386	0.437	0.426	0.515	0.537	0.438	0.464	0.471	0.459	10.647		
P	Chloromethane			0.578	0.509	0.480	0.500	0.503	0.398	0.425	0.436	0.479	11.984		
C	Vinyl Chloride			0.371	0.405	0.376	0.415	0.431	0.353	0.374	0.357	0.385	7.341		
T	1,3-Butadiene				0.369	0.322	0.361	0.344	0.289	0.282	0.277	0.320	11.982		
T	Bromomethane			0.192	0.207	0.206	0.215	0.213	0.184	0.207	0.218	0.205	5.643		
T	Chloroethane			0.199	0.219	0.208	0.232	0.244	0.202	0.219	0.224	0.218	6.941		
T	Trichlorofluoromethane			0.535	0.557	0.513	0.525	0.558	0.462	0.490	0.501	0.518	6.398		
T	Diethyl ether		0.243	0.231	0.234	0.251	0.241	0.233	0.233		0.238	0.238	2.758		
T	Isoprene				0.333	0.322	0.327	0.355	0.334	0.338	0.351	0.337	3.613		
T	Acrolein		0.044	0.045	0.044	0.050	0.045	0.042	0.045		0.047	0.045	5.301		
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.199	0.268	0.248	0.256	0.277	0.230	0.245	0.252	0.247	9.700		
T	Acetone					0.152	0.130	0.112	0.104	0.110	0.106	0.119	15.588	0.999	
C	1,1-Dichloroethene			0.380	0.462	0.424	0.453	0.487	0.410	0.439	0.447	0.438	7.530		
T	Tert-Butyl Alcohol		0.039	0.035	0.040	0.044	0.044	0.040	0.040		0.044	0.041	7.378		
T	Dimethyl Sulfide				0.204	0.210	0.197	0.223	0.210	0.218	0.224	0.212	4.669		
T	Iodomethane				0.056	0.082	0.123	0.197	0.197	0.211	0.207	0.153	42.723	0.998	
T	Methyl acetate				0.309	0.317	0.309	0.308	0.292	0.293	0.300	0.304	3.023		
T	Methylene Chloride			0.256	0.273	0.264	0.268	0.287	0.242	0.257	0.260	0.264	5.015		
T	Carbon Disulfide			0.821	0.880	0.808	0.840	0.872	0.808	0.825	0.844	0.837	3.273		
T	Acrylonitrile		0.108	0.114	0.119	0.133	0.128	0.130	0.129		0.140	0.125	8.391		
T	Methyl Tert Butyl Ether	0.732	0.693	0.663	0.725	0.773	0.787	0.833	0.734	0.785	0.799	0.753	6.930		
T	trans-1,2-Dichloroethene			0.227	0.244	0.240	0.247	0.265	0.226	0.240	0.244	0.242	5.097		
T	n-Hexane			0.407	0.452	0.430	0.435	0.466	0.433	0.438	0.452	0.439	4.050		
T	Diisopropyl ether		1.143	1.120	1.122	1.188	1.168	1.117	1.121		1.127	1.138	2.317		
T	Vinyl Acetate				0.493	0.583	0.630	0.596	0.570	0.626	0.621	0.588	8.090		
P	1,1-Dichloroethane			0.484	0.538	0.522	0.539	0.568	0.484	0.514	0.521	0.521	5.427		
T	Ethyl-Tert-Butyl ether		0.841	0.891	0.897	0.963	0.947	0.909	0.912		0.938	0.912	4.185		
T	2-Butanone				0.186	0.176	0.176	0.169	0.161	0.170	0.172	0.173	4.334		
T	Propionitrile		0.047	0.045	0.045	0.051	0.050	0.048	0.047		0.049	0.048	4.489		
T	2,2-Dichloropropane			0.413	0.427	0.425	0.415	0.454	0.383	0.410	0.420	0.418	4.750		
T	cis-1,2-Dichloroethene			0.265	0.274	0.263	0.275	0.290	0.250	0.269	0.273	0.270	4.259		
C	Chloroform			0.502	0.499	0.475	0.499	0.520	0.443	0.476	0.481	0.487	4.825		
T	1-Bromopropane				0.033	0.034	0.037	0.040	0.037	0.038	0.039	0.037	7.440		
T	Bromochloromethane			0.151	0.148	0.152	0.165	0.176	0.151	0.162	0.164	0.159	6.123		
T	Tetrahydrofuran		0.173	0.111	0.113	0.121	0.123	0.115	0.112		0.116	0.123	16.774	0.998	
S	Dibromofluoromethane			0.280	0.265	0.272	0.276	0.272	0.253	0.265	0.262	0.268	3.189		
T	1,1,1-Trichloroethane			0.412	0.417	0.434	0.435	0.474	0.398	0.430	0.438	0.430	5.218		
T	Cyclohexane			0.396	0.493	0.473	0.495	0.533	0.492	0.499	0.519	0.487	8.433		
T	1,1-Dichloropropene			0.306	0.372	0.338	0.347	0.383	0.324	0.345	0.355	0.346	7.125		
T	Tert-Amyl-Methyl ether		0.664	0.687	0.706	0.759	0.757	0.723	0.732		0.762	0.724	4.986		
T	Carbon Tetrachloride			0.351	0.409	0.4	0.412	0.445	0.378	0.403	0.416	0.4017	6.9015		
S	1,2-Dichloroethane-d4			0.36	0.365	0.337	0.366	0.353	0.329	0.34	0.336	0.3482	4.16		
T	Heptane											0	0		
T	1,2-Dichloroethane			0.387	0.414	0.422	0.43	0.449	0.388	0.415	0.419	0.4154	4.951		
T	Benzene	1.229	1.128	1.036	1.038	1.011	1.023	1.078	0.921	0.973	0.979	1.0416	8.3738		
T	Trichloroethene			0.223	0.257	0.243	0.254	0.268	0.229	0.245	0.249	0.2461	6.0218		
T	Methylcyclohexane			0.321	0.406	0.387	0.403	0.435	0.401	0.406	0.424	0.3978	8.6044		
C	1,2-Dichloropropane			0.249	0.279	0.277	0.29	0.305	0.266	0.286	0.29	0.2802	6.0373		
T	1,4-Dioxane			0.002	0.003	0.003	0.003	0.003	0.003		0.004	0.0031	18.585	0.996	
T	Bromodichloromethane			0.336	0.359	0.35	0.37	0.402	0.352	0.384	0.39	0.3678	6.1125		
T	Dibromomethane			0.145	0.152	0.16	0.169	0.185	0.158	0.171	0.173	0.1639	7.836		
T	2-Chloroethyl Vinyl Ether				0.126	0.141	0.155	0.164	0.161	0.178		0.1541	11.732		
T	4-Methyl-2-Pentanone				0.101	0.11	0.122	0.117	0.113	0.125	0.128	0.1167	8.1948		
T	cis-1,3-Dichloropropene			0.338	0.374	0.39	0.412	0.454	0.396	0.435	0.442	0.4052	9.5304		
T	Dimethyl Disulfide				0.171	0.174	0.192	0.225	0.22	0.245		0.2044	14.756		
I	Chlorobenzene-d5	ISTD													
S	Toluene-d8			1.274	1.278	1.167	1.22	1.21	1.113	1.144	1.105	1.1888	5.6789		
C	Toluene	1.627	1.459	1.33	1.431	1.418	1.424	1.504	1.27	1.35	1.331	1.4144	7.2521		
T	Ethyl Methacrylate			0.326	0.401	0.428	0.461	0.503	0.477	0.511	0.518	0.4532	14.498		
T	Paraldehyde											0	0		
T	trans-1,3-Dichloropropene			0.461	0.507	0.529	0.558	0.603	0.53	0.579	0.582	0.5439	8.4811		
T	1,1,2-Trichloroethane			0.265	0.288	0.302	0.309	0.319	0.28	0.302	0.299	0.2956	5.771		
T	2-Hexanone				0.298	0.324	0.345	0.341	0.328	0.359	0.366	0.3373	6.878		
T	1,3-Dichloropropane			0.488	0.541	0.538	0.558	0.579	0.503	0.54	0.54	0.5358	5.3786		
T	Tetrachloroethene			0.332	0.375	0.358	0.359	0.376	0.318	0.336	0.337	0.3489	6.0417		
T	Dibromochloromethane			0.318	0.369	0.378	0.394	0.425	0.373	0.407	0.41	0.3845	8.6342		
T	1,2-Dibromoethane			0.271	0.289	0.29	0.309	0.332	0.29	0.318	0.32	0.3023	6.7531		
T	1-Chlorohexane			0.358	0.417	0.417	0.441	0.485	0.451	0.47	0.474	0.4392	9.3805		
P	Chlorobenzene			0.915	0.966	0.916	0.927	0.958	0.821	0.89	0.88	0.909	5.1018		
T	1,1,1,2-Tetrachloroethane			0.348	0.343	0.362	0.374	0.393	0.344	0.376	0.38	0.365	5.0679		
C	Ethylbenzene	0.49	0.466	0.473	0.486	0.481	0.497	0.531	0.453	0.494	0.494	0.4864	4.3098		
T	m-,p-Xylene	0.674	0.598	0.537	0.6	0.59	0.605	0.637	0.546	0.585	0.58	0.5952	6.6768		
T	o-Xylene	0.574	0.512	0.494	0.539	0.544	0.588	0.634	0.54	0.59	0.591	0.5606	7.5243		
T	Styrene			0.772	0.876	0.918	0.982	1.071	0.935	1.037	1.041	0.9542	10.466		
P	Bromoform			0.222	0.256	0.259	0.275	0.298	0.261	0.293	0.307	0.2715	10.256		
T	Isopropylbenzene			1.284	1.474	1.498	1.583	1.683	1.433	1.559	1.542	1.507	7.8153		
I	1,4-Dichlorobenzene-d4	ISTD													
P	1,1,2,2-Tetrachloroethane			0.689	0.783	0.798	0.815	0.842	0.74	0.785	0.797	0.7811	6.0053		
S	p-Bromofluorobenzene			0.997	0.956	0.921	0.925	0.941	0.864	0.892	0.852	0.9184	5.2432		

T	1,2,3-Trichloropropane	0.202	0.247	0.251	0.244	0.258	0.225	0.243	0.244	0.2391	7.3405
T	trans-1,4-Dichloro-2-Butene	0.247	0.255	0.285	0.287	0.308	0.295	0.311	0.318	0.2883	8.9009
T	n-Propylbenzene	3.037	3.536	3.508	3.571	3.802	3.207	3.325	3.178	3.3956	7.429
T	Bromobenzene	0.67	0.762	0.744	0.775	0.808	0.694	0.733	0.719	0.7381	6.0417
T	1,3,5-Trimethylbenzene	2.096	2.503	2.443	2.485	2.702	2.295	2.435	2.377	2.417	7.2332
T	2-Chlorotoluene	1.974	2.457	2.366	2.375	2.437	2.106	2.239	2.178	2.2664	7.5835
T	4-Chlorotoluene	2.163	2.182	2.123	2.094	2.235	1.885	1.964	1.933	2.0723	6.208
T	a-Methylstyrene	0.921	1.071	1.127	1.156	1.295	1.234	1.294	1.291	1.1737	11.321
T	tert-Butylbenzene	0.437	0.508	0.504	0.521	0.567	0.48	0.511	0.502	0.5037	7.2697
T	1,2,4-Trimethylbenzene	2.274	2.614	2.634	2.636	2.804	2.386	2.535	2.452	2.5419	6.5668
T	sec-Butylbenzene	2.804	3.169	3.104	3.238	3.474	2.92	3.078	2.976	3.0953	6.6823
T	p-Isopropyltoluene	2.183	2.603	2.54	2.657	2.885	2.449	2.589	2.523	2.5537	7.7414
T	1,3-Dichlorobenzene	1.331	1.516	1.491	1.451	1.537	1.319	1.391	1.389	1.4282	5.8154
T	1,4-Dichlorobenzene	1.528	1.507	1.501	1.476	1.529	1.31	1.39	1.389	1.4537	5.5603
T	n-Butylbenzene	2.282	2.598	2.578	2.654	2.852	2.445	2.576	2.563	2.5684	6.3469
T	1,2-Dichlorobenzene	1.324	1.401	1.407	1.397	1.474	1.278	1.357	1.356	1.3743	4.3244
T	1,2-Dibromo-3-Chloropropane		0.159	0.163	0.176	0.183	0.167	0.179	0.182	0.1728	5.5543
T	1,2,4-Trichlorobenzene	0.968	0.981	1.002	1.008	1.105	0.936	0.963	0.985	0.9935	5.0666
T	Hexachlorobutadiene	0.528	0.583	0.572	0.579	0.635	0.532	0.546	0.571	0.5682	6.0591
T	Naphthalene	1.901	2.081	2.291	2.365	2.601	2.29	2.356	2.387	2.2839	9.2287
T	1,2,3-Trichlorobenzene	0.961	0.977	0.98	0.987	1.094	0.917	0.949	0.961	0.9783	5.2988

Mon Feb 29 16:03:43 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16041582 Run Date: 02/26/2016 Sample ID: WG558920-12
Instrument ID: HPMS6 Run Time: 20:15 Method: 8260B
File ID: 6M137535 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG558920 Cal ID: HPMS6 - 26-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.7	ug/kg	0.494	1.40	20	
1,1-Dichloroethene	CCC	50.0	51.6	ug/kg	0.452	3.30	20	
1,2-Dichloropropane	CCC	50.0	55.0	ug/kg	0.308	10.1	20	
Ethylbenzene	CCC	50.0	52.4	ug/kg	0.510	4.80	20	
Toluene	CCC	50.0	51.4	ug/kg	1.45	2.80	20	
Vinyl Chloride	CCC	50.0	43.3	ug/kg	0.334	13.3	20	
Bromoform	SPCC	50.0	49.2	ug/kg	0.267	1.50	20	
Chlorobenzene	SPCC	50.0	52.9	ug/kg	0.961	5.70	20	
Chloromethane	SPCC	50.0	50.9	ug/kg	0.487	1.80	20	
1,1-Dichloroethane	SPCC	50.0	50.3	ug/kg	0.525	0.700	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	52.1	ug/kg	0.815	4.30	20	
Acetone		50.0	48.7	ug/kg	0.111	2.70	20	
Benzene		50.0	50.4	ug/kg	1.05	0.900	20	
Bromobenzene		50.0	51.8	ug/kg	0.765	3.70	20	
Bromochloromethane		50.0	52.1	ug/kg	0.165	4.20	20	
Bromodichloromethane		50.0	51.6	ug/kg	0.380	3.30	20	
Bromomethane		50.0	58.6	ug/kg	0.240	17.1	20	
2-Butanone		50.0	49.2	ug/kg	0.170	1.50	20	
n-Butylbenzene		50.0	48.8	ug/kg	2.50	2.50	20	
sec-Butylbenzene		50.0	50.7	ug/kg	3.14	1.40	20	
tert-Butylbenzene		50.0	53.2	ug/kg	0.536	6.40	20	
Carbon Disulfide		50.0	44.4	ug/kg	0.743	11.2	20	
Carbon Tetrachloride		50.0	51.2	ug/kg	0.411	2.30	20	
Dibromochloromethane		50.0	51.8	ug/kg	0.399	3.70	20	
Chloroethane		50.0	56.6	ug/kg	0.247	13.2	20	
2-Chlorotoluene		50.0	52.1	ug/kg	2.36	4.20	20	
4-Chlorotoluene		50.0	52.1	ug/kg	2.16	4.10	20	
1,2-Dibromo-3-Chloropropane		50.0	52.1	ug/kg	0.180	4.30	20	
1,2-Dibromoethane		50.0	53.7	ug/kg	0.325	7.30	20	
Dibromomethane		50.0	50.4	ug/kg	0.165	0.800	20	
1,2-Dichlorobenzene		50.0	54.5	ug/kg	1.50	9.00	20	
1,3-Dichlorobenzene		50.0	52.0	ug/kg	1.49	4.00	20	
1,4-Dichlorobenzene		50.0	51.8	ug/kg	1.51	3.60	20	
Dichlorodifluoromethane		50.0	55.5	ug/kg	0.509	10.9	20	
1,2-Dichloroethane		50.0	51.3	ug/kg	0.426	2.50	20	
cis-1,2-Dichloroethene		50.0	54.1	ug/kg	0.292	8.30	20	
trans-1,2-Dichloroethene		50.0	53.7	ug/kg	0.260	7.50	20	
1,3-Dichloropropane		50.0	54.9	ug/kg	0.589	9.80	20	
2,2-Dichloropropane		50.0	53.1	ug/kg	0.444	6.20	20	
cis-1,3-Dichloropropene		50.0	58.8	ug/kg	0.476	17.5	20	
trans-1,3-Dichloropropene		50.0	52.9	ug/kg	0.575	5.70	20	
1,1-Dichloropropene		50.0	52.8	ug/kg	0.365	5.50	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4753301
Report generated 05/11/2016 14:00

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16041582 Run Date: 02/26/2016 Sample ID: WG558920-12
Instrument ID: HPMS6 Run Time: 20:15 Method: 8260B
File ID: 6M137535 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG558920 Cal ID: HPMS6 - 26-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	51.3	ug/kg	0.346	2.60	20	
Hexachlorobutadiene		50.0	47.6	ug/kg	0.541	4.80	20	
Isopropylbenzene		50.0	54.6	ug/kg	1.64	9.10	20	
p-Isopropyltoluene		50.0	50.9	ug/kg	2.60	1.80	20	
4-Methyl-2-Pentanone		50.0	51.3	ug/kg	0.120	2.50	20	
Methylene Chloride		50.0	53.4	ug/kg	0.281	6.80	20	
Naphthalene		50.0	49.8	ug/kg	2.28	0.300	20	
n-Propylbenzene		50.0	52.6	ug/kg	3.57	5.30	20	
Styrene		50.0	55.3	ug/kg	1.06	10.6	20	
1,1,1,2-Tetrachloroethane		50.0	51.8	ug/kg	0.379	3.70	20	
Tetrachloroethene		50.0	51.1	ug/kg	0.357	2.20	20	
1,2,3-Trichlorobenzene		50.0	51.0	ug/kg	0.997	2.00	20	
1,2,4-Trichlorobenzene		50.0	51.0	ug/kg	1.01	2.10	20	
1,1,1-Trichloroethane		50.0	52.0	ug/kg	0.447	4.00	20	
1,1,2-Trichloroethane		50.0	53.2	ug/kg	0.315	6.40	20	
Trichloroethene		50.0	54.7	ug/kg	0.269	9.40	20	
Trichlorofluoromethane		50.0	47.9	ug/kg	0.496	4.20	20	
1,2,3-Trichloropropane		50.0	53.2	ug/kg	0.254	6.30	20	
1,2,4-Trimethylbenzene		50.0	51.1	ug/kg	2.60	2.30	20	
1,3,5-Trimethylbenzene		50.0	52.7	ug/kg	2.55	5.30	20	
o-Xylene		50.0	56.9	ug/kg	0.638	13.8	20	
m-,p-Xylene		100	105	ug/kg	0.626	5.20	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4753301
Report generated 05/11/2016 14:00

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041582 Run Date: 05/07/2016 Sample ID: WG567937-02
Instrument ID: HPMS6 Run Time: 12:55 Method: 8260B
File ID: 6M139118 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG567938 Cal ID: HPMS6 - 26-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	52.6	ug/kg	0.512	5.27	20	
1,1-Dichloroethene	CCC	50.0	55.0	ug/kg	0.481	10.0	20	
1,2-Dichloropropane	CCC	50.0	53.4	ug/kg	0.299	6.77	20	
Ethylbenzene	CCC	50.0	54.8	ug/kg	0.533	9.65	20	
Toluene	CCC	50.0	52.7	ug/kg	1.49	5.38	20	
Vinyl Chloride	CCC	50.0	47.3	ug/kg	0.365	5.34	20	
Bromoform	SPCC	50.0	56.4	ug/kg	0.306	12.8	20	
Chlorobenzene	SPCC	50.0	52.6	ug/kg	0.957	5.26	20	
Chloromethane	SPCC	50.0	47.1	ug/kg	0.451	5.73	20	
1,1-Dichloroethane	SPCC	50.0	53.4	ug/kg	0.557	6.82	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	58.8	ug/kg	0.919	17.7	20	
Xylenes		150	165	ug/kg	0.641	10.1	20	
Acetone		50.0	55.4	ug/kg	0.125	10.8	20	
Benzene		50.0	51.8	ug/kg	1.08	3.56	20	
Bromobenzene		50.0	54.4	ug/kg	0.803	8.77	20	
Bromochloromethane		50.0	53.1	ug/kg	0.168	6.16	20	
Bromodichloromethane		50.0	54.1	ug/kg	0.398	8.15	20	
Bromomethane		50.0	52.5	ug/kg	0.216	4.97	20	
2-Butanone		50.0	57.4	ug/kg	0.198	14.8	20	
n-Butylbenzene		50.0	57.2	ug/kg	2.94	14.5	20	
sec-Butylbenzene		50.0	57.1	ug/kg	3.54	14.2	20	
tert-Butylbenzene		50.0	55.6	ug/kg	0.560	11.2	20	
Carbon Disulfide		50.0	48.8	ug/kg	0.817	2.47	20	
Carbon Tetrachloride		50.0	56.0	ug/kg	0.450	11.9	20	
Dibromochloromethane		50.0	54.5	ug/kg	0.419	9.07	20	
Chloroethane		50.0	52.7	ug/kg	0.230	5.34	20	
2-Chlorotoluene		50.0	55.7	ug/kg	2.53	11.5	20	
4-Chlorotoluene		50.0	55.3	ug/kg	2.29	10.6	20	
1,2-Dibromo-3-Chloropropane		50.0	63.4	ug/kg	0.219	26.9	20	*
1,2-Dibromoethane		50.0	55.5	ug/kg	0.336	11.1	20	
Dibromomethane		50.0	53.9	ug/kg	0.177	7.90	20	
1,2-Dichlorobenzene		50.0	54.3	ug/kg	1.49	8.56	20	
1,3-Dichlorobenzene		50.0	54.6	ug/kg	1.56	9.10	20	
1,4-Dichlorobenzene		50.0	54.0	ug/kg	1.57	8.00	20	
Dichlorodifluoromethane		50.0	47.4	ug/kg	0.435	5.21	20	
1,2-Dichloroethane		50.0	52.9	ug/kg	0.439	5.74	20	
cis-1,2-Dichloroethene		50.0	53.6	ug/kg	0.289	7.19	20	
trans-1,2-Dichloroethene		50.0	54.6	ug/kg	0.264	9.23	20	
1,3-Dichloropropane		50.0	53.4	ug/kg	0.572	6.73	20	
2,2-Dichloropropane		50.0	56.2	ug/kg	0.470	12.4	20	
cis-1,3-Dichloropropene		50.0	56.1	ug/kg	0.454	12.2	20	
trans-1,3-Dichloropropene		50.0	55.8	ug/kg	0.607	11.6	20	

CCV - Modified 03/05/2008
PDF File ID: 4753303
Report generated 05/11/2016 14:00

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041582 Run Date: 05/07/2016 Sample ID: WG567937-02
Instrument ID: HPMS6 Run Time: 12:55 Method: 8260B
File ID: 6M139118 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG567938 Cal ID: HPMS6 - 26-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	56.2	ug/kg	0.390	12.5	20	
2-Hexanone		50.0	62.4	ug/kg	0.421	24.8	20	*
Hexachlorobutadiene		50.0	57.4	ug/kg	0.652	14.8	20	
Isopropylbenzene		50.0	57.1	ug/kg	1.72	14.2	20	
p-Isopropyltoluene		50.0	58.3	ug/kg	2.98	16.5	20	
4-Methyl-2-Pentanone		50.0	64.7	ug/kg	0.151	29.4	20	*
Methylene Chloride		50.0	52.8	ug/kg	0.278	5.64	20	
Naphthalene		50.0	61.9	ug/kg	2.83	23.9	20	*
n-Propylbenzene		50.0	57.1	ug/kg	3.88	14.2	20	
Styrene		50.0	57.1	ug/kg	1.09	14.1	20	
1,1,1,2-Tetrachloroethane		50.0	53.3	ug/kg	0.389	6.69	20	
Tetrachloroethene		50.0	55.0	ug/kg	0.384	9.93	20	
1,2,3-Trichlorobenzene		50.0	55.2	ug/kg	1.08	10.5	20	
1,2,4-Trichlorobenzene		50.0	56.4	ug/kg	1.12	12.8	20	
1,1,1-Trichloroethane		50.0	55.0	ug/kg	0.473	9.93	20	
1,1,2-Trichloroethane		50.0	54.1	ug/kg	0.320	8.30	20	
Trichloroethene		50.0	54.4	ug/kg	0.268	8.79	20	
Trichlorofluoromethane		50.0	51.8	ug/kg	0.536	3.52	20	
1,2,3-Trichloropropane		50.0	59.7	ug/kg	0.285	19.3	20	
1,2,4-Trimethylbenzene		50.0	56.3	ug/kg	2.86	12.6	20	
1,3,5-Trimethylbenzene		50.0	57.2	ug/kg	2.76	14.3	20	
o-Xylene		50.0	56.6	ug/kg	0.635	13.2	20	
m-,p-Xylene		100	109	ug/kg	0.646	8.57	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4753303
Report generated 05/11/2016 14:00

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16041582
Instrument ID: HPMS6
Workgroup (AAB#): WG567938

ICAL CCV Number: WG558920-08
CAL ID: HPMS6-26-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558920-08	NA	NA	237573	439950	607631
Upper Limit	NA	NA	475146	879900	1215262
Lower Limit	NA	NA	118787	219975	303816
L16041582-01	1.00	01	238576	443813	642138
L16041582-02	1.00	01	239440	466587	621498
L16041582-03	1.00	01	222792	460669	637553
L16041582-04	1.00	01	239130	464811	665493
L16041582-05	1.00	01	231486	463590	631906
L16041582-06	1.00	01	241818	472281	655810
L16041582-07	1.00	01	210978	442743	645261
WG567938-01	1.00	01	245657	472074	638259
WG567938-02	1.00	01	252881	473112	639989

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4756963
Report generated 05/11/2016 14:00

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16041582
Instrument ID: HPMS6
Workgroup (AAB#): WG567938

ICAL CCV Number: WG558920-08
CAL ID: HPMS6-26-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558920-08	NA	NA	19.6	16.01	11.51
Upper Limit	NA	NA	20.1	16.51	12.01
Lower Limit	NA	NA	19.1	15.51	11.01
L16041582-01	1.00	01	19.59	16.01	11.51
L16041582-02	1.00	01	19.6	16.01	11.52
L16041582-03	1.00	01	19.59	16.01	11.51
L16041582-04	1.00	01	19.59	16.01	11.52
L16041582-05	1.00	01	19.58	16.01	11.52
L16041582-06	1.00	01	19.59	16.01	11.52
L16041582-07	1.00	01	19.58	16.01	11.52
WG567938-01	1.00	01	19.59	16.01	11.52
WG567938-02	1.00	01	19.58	16.01	11.52

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4756964
Report generated: 05/11/2016 14:00

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050716\6M139125.D Vial: 9
Acq On : 7 May 2016 16:44 Operator: TMB
Sample : L16041582-01 8260 4.57g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 09 08:33:08 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	642138	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	443813	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	238576	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	161019	46.7445 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.48%		
43) 1,2-Dichloroethane-d4	11.06	65	193320	43.2245 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 86.44%		
58) Toluene-d8	13.80	98	554324	52.5334 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 105.06%		
80) p-Bromofluorobenzene	17.79	95	231882	52.9152 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 105.84%		

Target Compounds

					Qvalue
3) Chloromethane	3.89	50	2366	0.3850 ug/L #	60
4) Vinyl Chloride	4.13	62	2326	0.4702 ug/L #	44
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	1597	0.5034 ug/L #	27
13) Acetone	6.60	43	10167	3.1816 ug/L	97
14) 1,1-Dichloroethene	6.85	61	1815	0.3230 ug/L #	24
29) 2-Butanone	9.47	43	797	0.3591 ug/L #	56
32) cis-1,2-Dichloroethene	9.77	96	23624	6.8164 ug/L	96
36) Tetrahydrofuran	10.30	42	3134	Below Cal	87
45) 1,2-Dichloroethane	11.19	62	15034	2.8180 ug/L #	83
47) Trichloroethene	12.09	130	102483	32.4305 ug/L	94
59) Toluene	13.91	91	3727	0.2969 ug/L	90
60) Ethyl Methacrylate	13.80	69	1441	0.3582 ug/L	91
89) tert-Butylbenzene	18.82	134	2859	1.1896 ug/L	80
90) 1,2,4-Trimethylbenzene	18.82	105	18930	1.5608 ug/L #	49
92) p-Isopropyltoluene	19.26	119	37507	3.0782 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M139125.D 826_SL.M Mon May 09 08:33:09 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050716\6M139125.D Vial: 9
Acq On : 7 May 2016 16:44 Operator: TMB
Sample : L16041582-01 8260 4.57g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 9 8:33 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

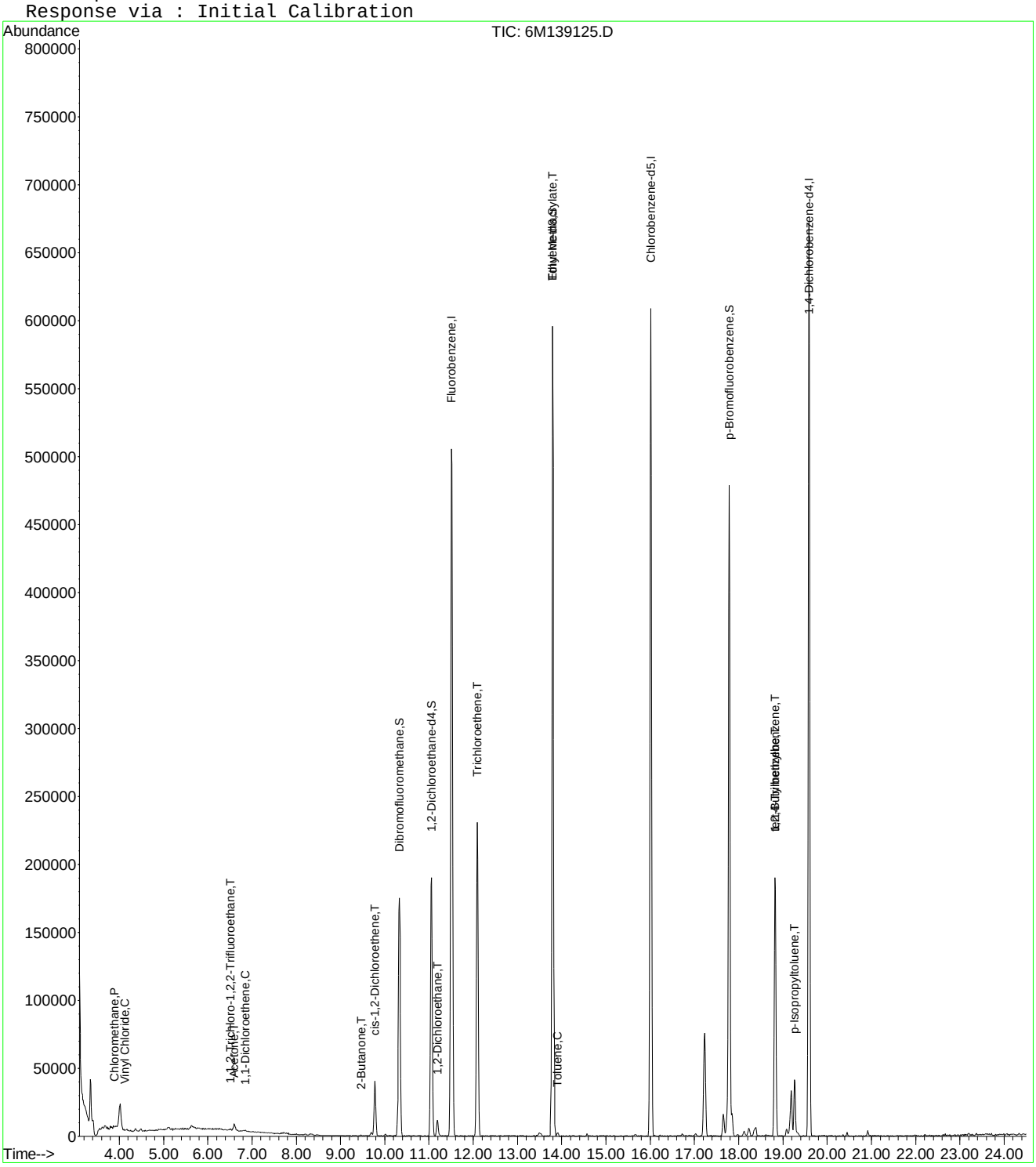

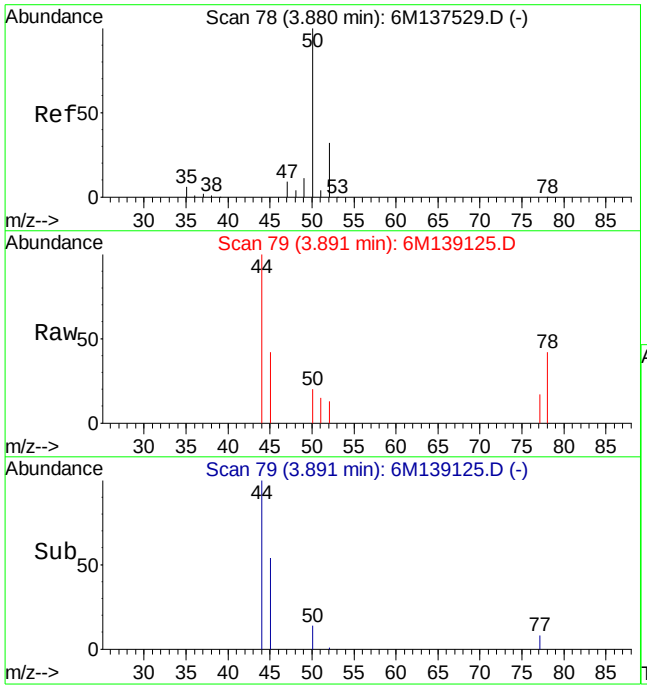

#3
Chloromethane
Concen: 0.38 ug/L
RT: 3.89 min Scan# 79
Delta R.T. 0.01 min
Lab File: 6M139125.D
Acq: 7 May 2016 16:44

Tgt Ion: 50 Resp: 2366

Ion	Ratio	Lower	Upper
50	100		
52	9.3	18.8	44.0#

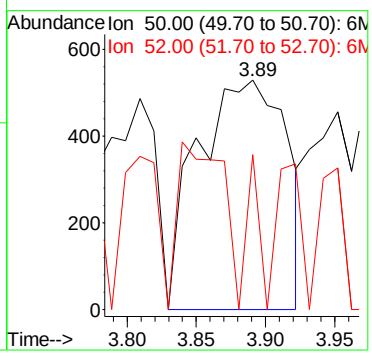

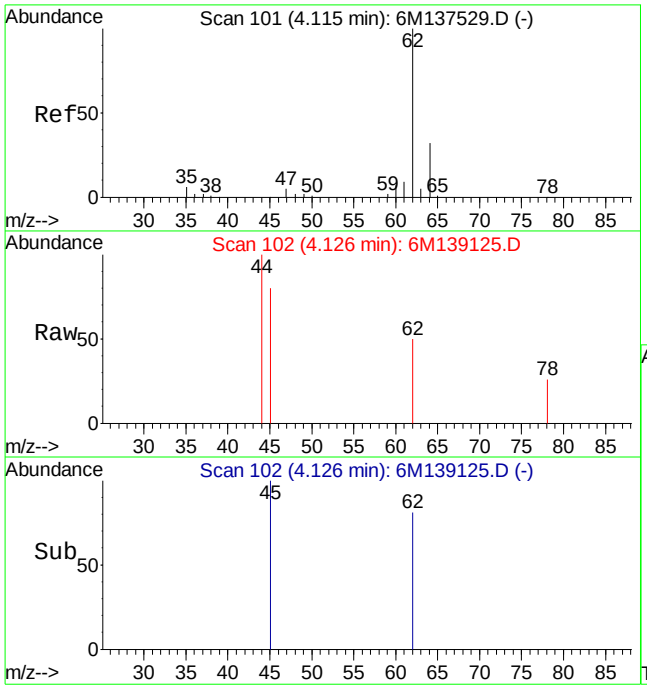

#4
Vinyl Chloride
Concen: 0.47 ug/L
RT: 4.13 min Scan# 102
Delta R.T. 0.01 min
Lab File: 6M139125.D
Acq: 7 May 2016 16:44

Tgt Ion: 62 Resp: 2326

Ion	Ratio	Lower	Upper
62	100		
64	0.0	18.5	43.1#

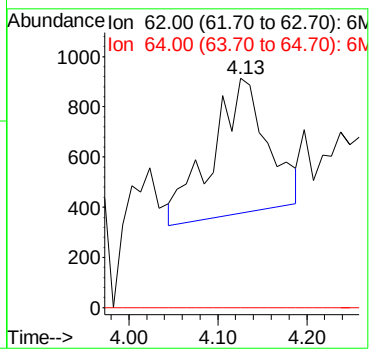

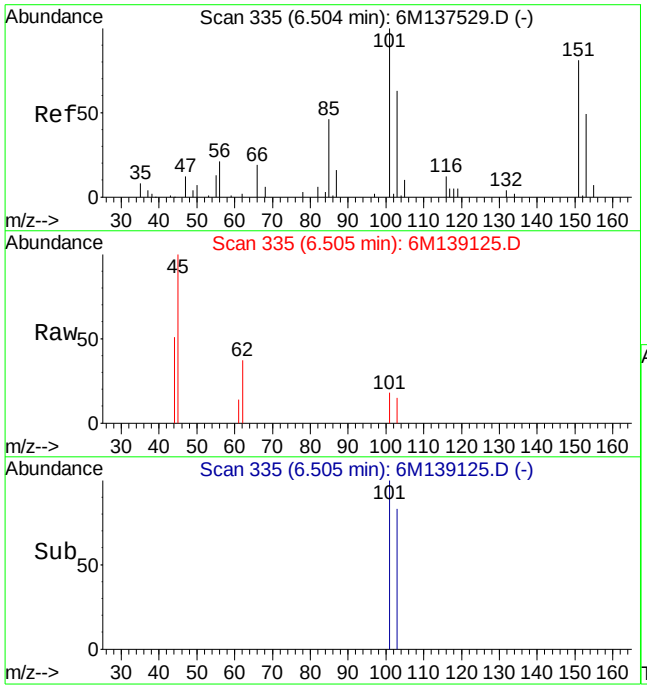

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 0.50 ug/L
RT: 6.51 min Scan# 335
Delta R.T. 0.00 min
Lab File: 6M139125.D
Acq: 7 May 2016 16:44

Tgt Ion:101 Resp: 1597

Ion	Ratio	Lower	Upper
101	100		
151	12.7	51.8	121.0#
103	13.5	38.2	89.0#

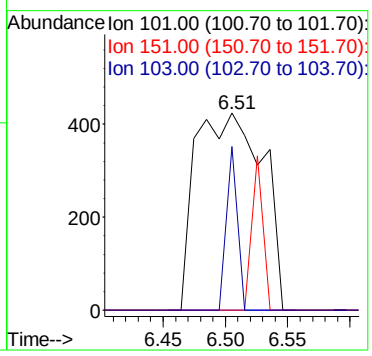

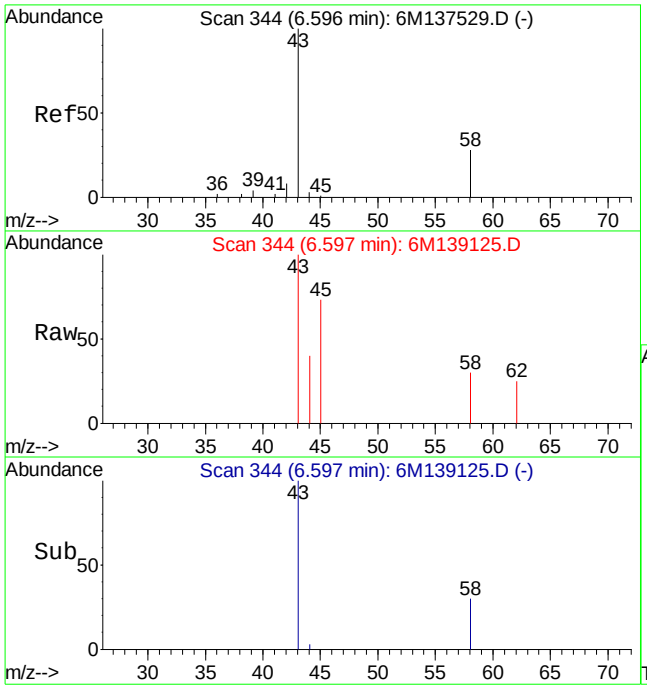

#13
Acetone
Concen: 3.18 ug/L
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M139125.D
Acq: 7 May 2016 16:44

Tgt Ion: 43 Resp: 10167

Ion	Ratio	Lower	Upper
43	100		
58	28.5	16.1	37.7

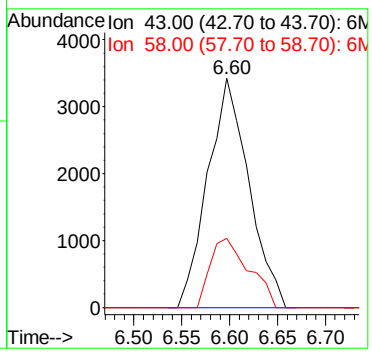

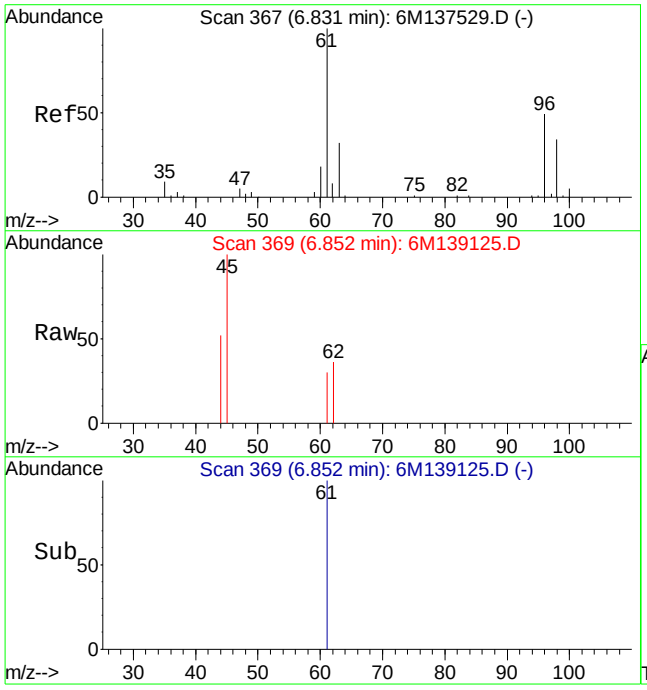

#14
1,1-Dichloroethene
Concen: 0.32 ug/L
RT: 6.85 min Scan# 369
Delta R.T. 0.02 min
Lab File: 6M139125.D
Acq: 7 May 2016 16:44

Tgt Ion: 61 Resp: 1815

Ion	Ratio	Lower	Upper
61	100		
96	0.0	33.3	77.7#

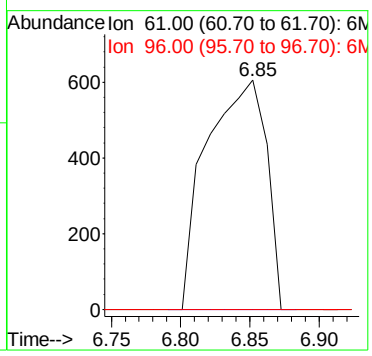

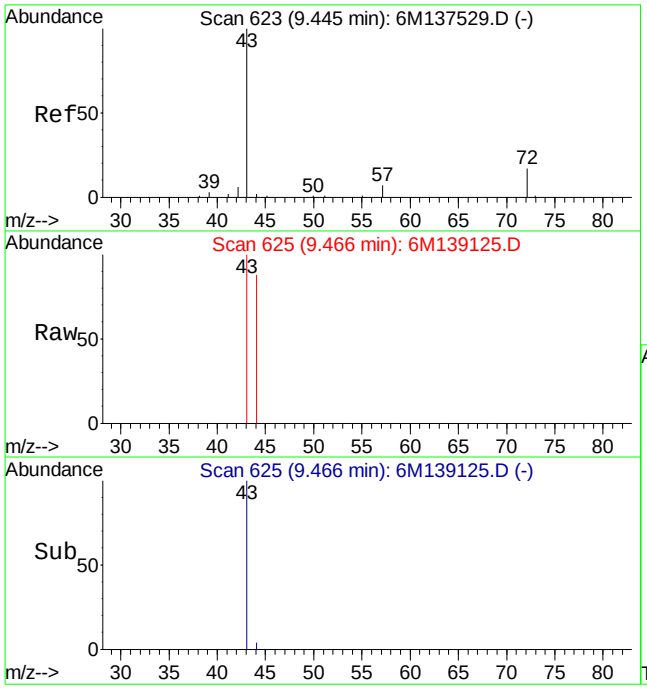

#29
2-Butanone
Concen: 0.36 ug/L
RT: 9.47 min Scan# 625
Delta R.T. 0.02 min
Lab File: 6M139125.D
Acq: 7 May 2016 16:44

Tgt Ion: 43 Resp: 797

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.2	28.4#

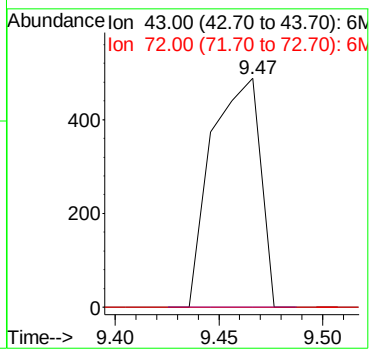

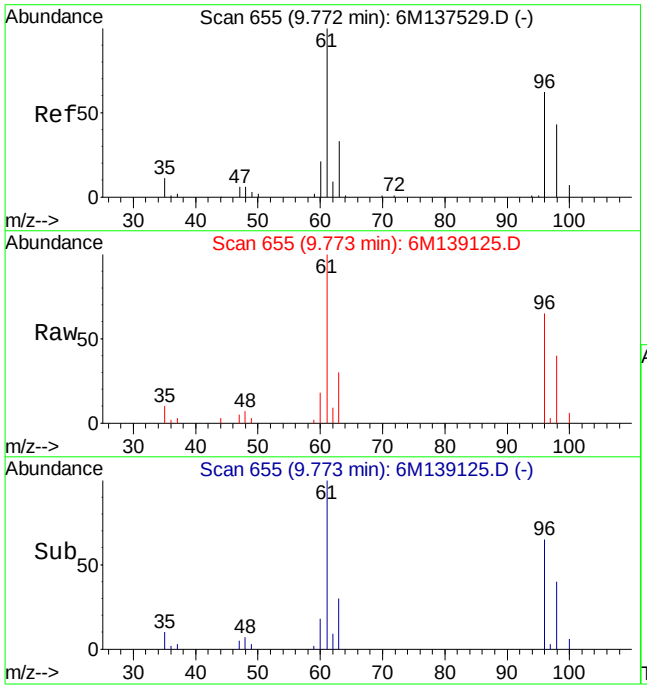

#32
cis-1,2-Dichloroethene
Concen: 6.82 ug/L
RT: 9.77 min Scan# 655
Delta R.T. -0.00 min
Lab File: 6M139125.D
Acq: 7 May 2016 16:44

Tgt Ion: 96 Resp: 23624

Ion	Ratio	Lower	Upper
96	100		
61	155.6	96.7	225.7

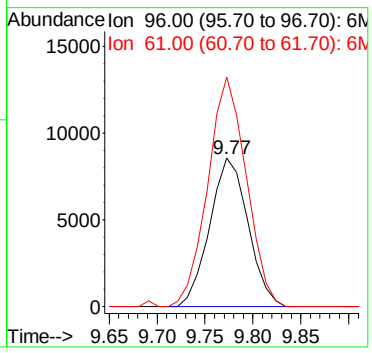

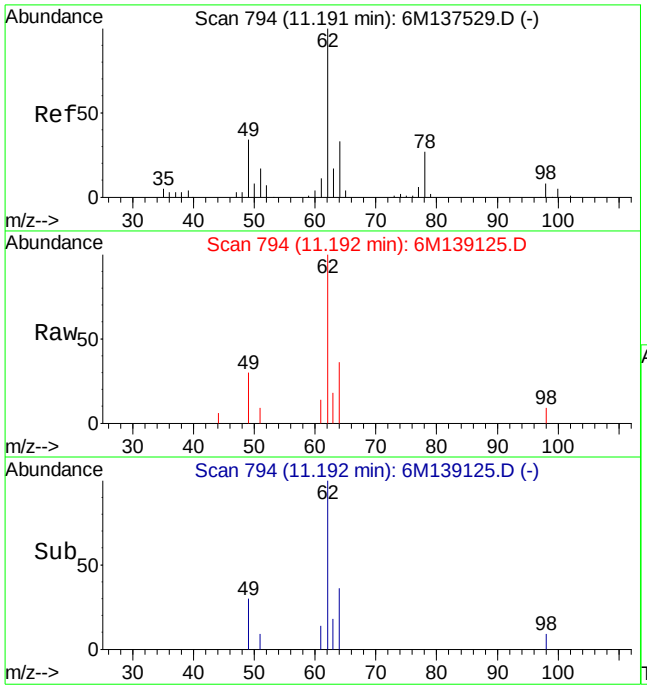

#45
1,2-Dichloroethane
Concen: 2.82 ug/L
RT: 11.19 min Scan# 794
Delta R.T. -0.00 min
Lab File: 6M139125.D
Acq: 7 May 2016 16:44

Tgt Ion: 62 Resp: 15034

Ion	Ratio	Lower	Upper
62	100		
49	27.7	22.9	53.3
98	3.3	4.7	10.9#

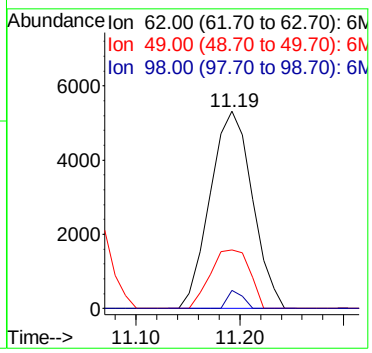

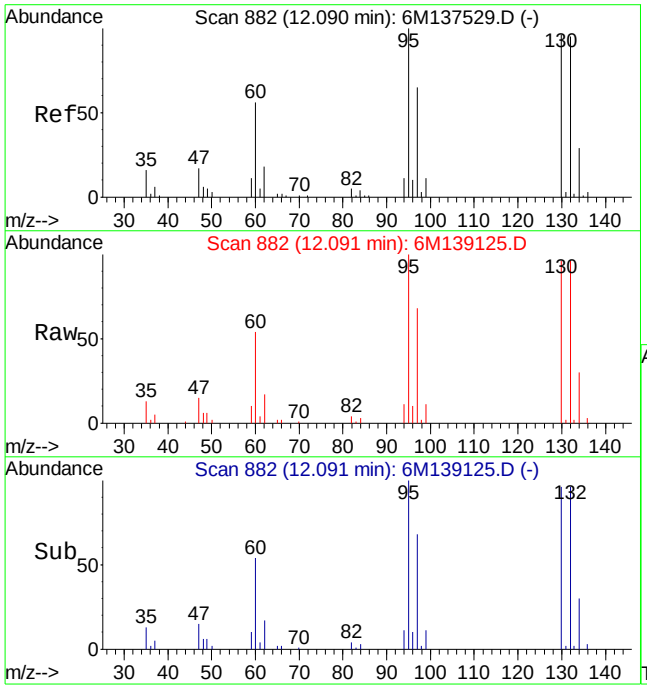

#47
Trichloroethene
Concen: 32.43 ug/L
RT: 12.09 min Scan# 882
Delta R.T. -0.00 min
Lab File: 6M139125.D
Acq: 7 May 2016 16:44

Tgt Ion:130 Resp: 102483

Ion	Ratio	Lower	Upper
130	100		
60	55.9	31.2	72.8

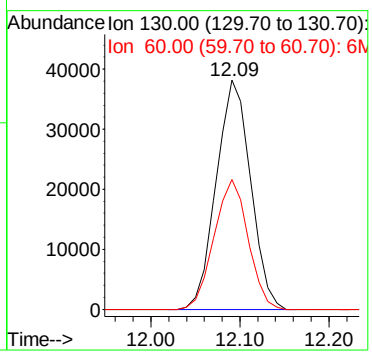

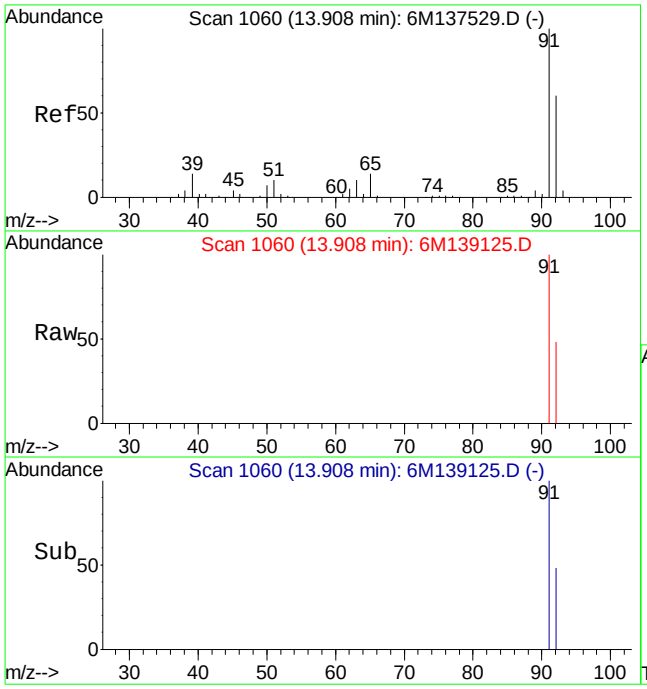

#59
Toluene
Concen: 0.30 ug/L
RT: 13.91 min Scan# 1060
Delta R.T. -0.00 min
Lab File: 6M139125.D
Acq: 7 May 2016 16:44

Tgt Ion: 91 Resp: 3727

Ion	Ratio	Lower	Upper
91	100		
92	51.6	35.5	82.9

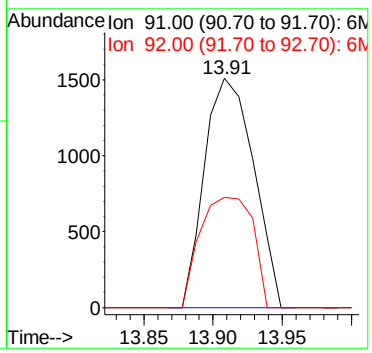

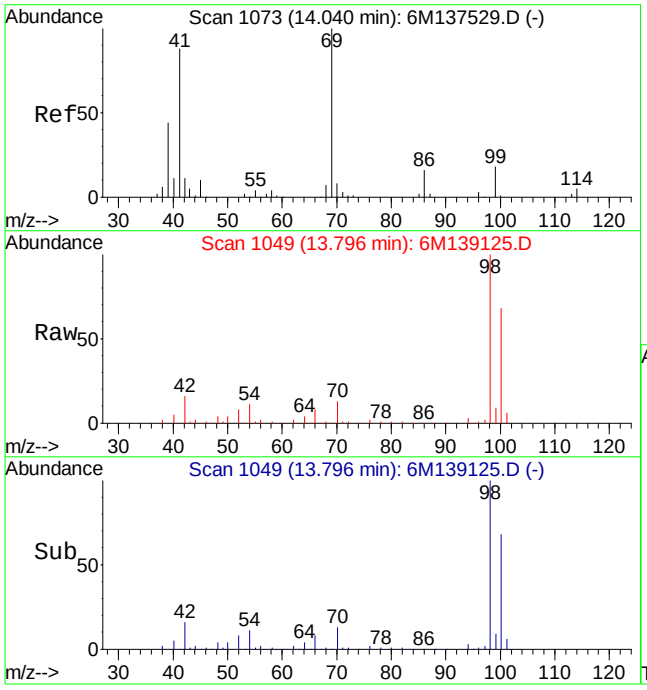

#60
Ethyl Methacrylate
Concen: 0.36 ug/L
RT: 13.80 min Scan# 1049
Delta R.T. -0.24 min
Lab File: 6M139125.D
Acq: 7 May 2016 16:44

Tgt Ion: 69 Resp: 1441

Ion	Ratio	Lower	Upper
69	100		
41	92.9	50.6	118.2

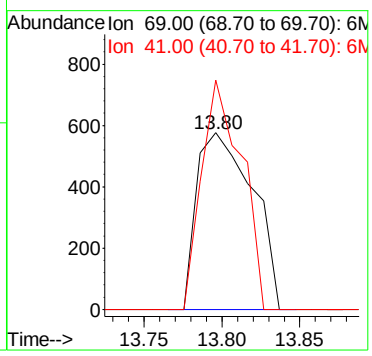

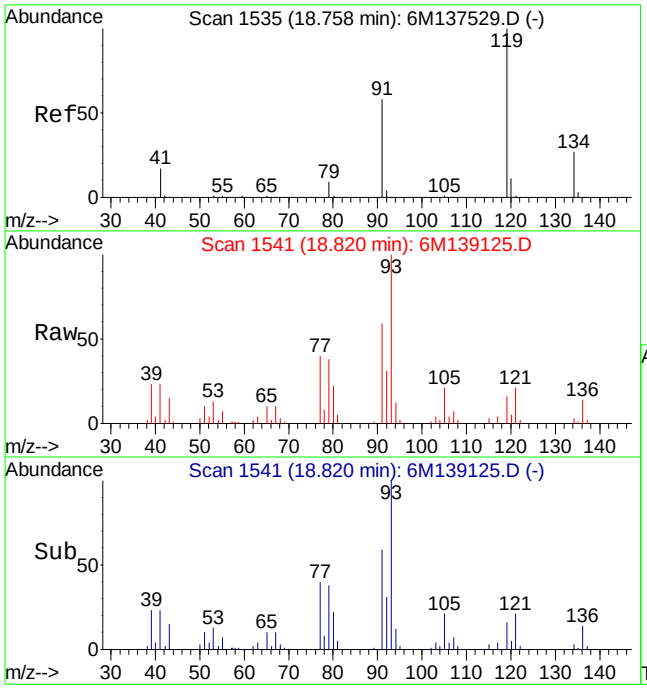

#89
tert-Butylbenzene
Concen: 1.19 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. 0.06 min
Lab File: 6M139125.D
Acq: 7 May 2016 16:44

Tgt Ion:134 Resp: 2859

Ion	Ratio	Lower	Upper
134	100		
119	537.9	290.4	677.6

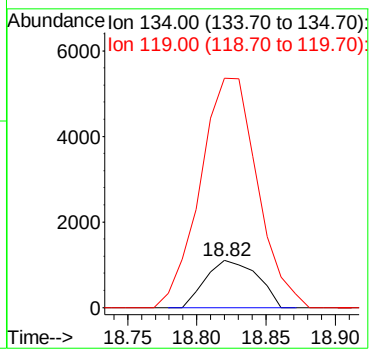

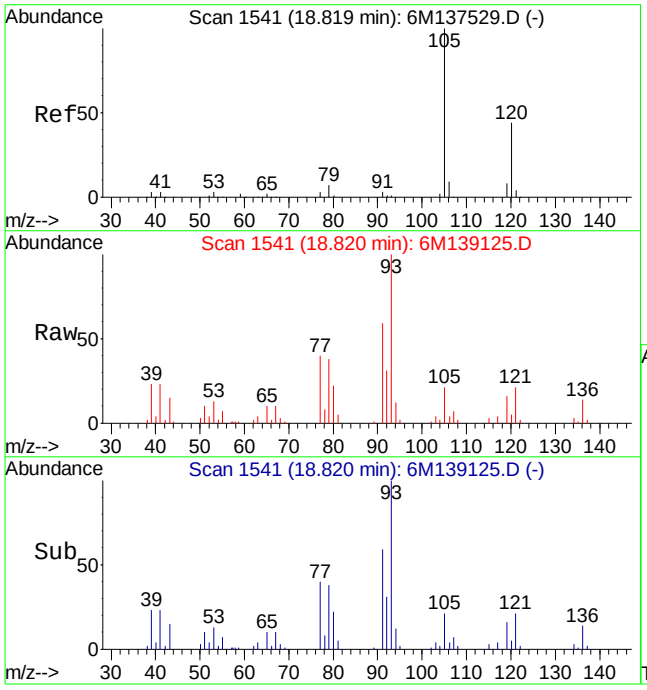

#90
1,2,4-Trimethylbenzene
Concen: 1.56 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. -0.00 min
Lab File: 6M139125.D
Acq: 7 May 2016 16:44

Tgt Ion:105 Resp: 18930

Ion	Ratio	Lower	Upper
105	100		
120	19.5	34.3	79.9#

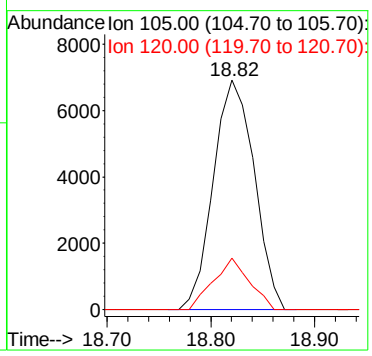

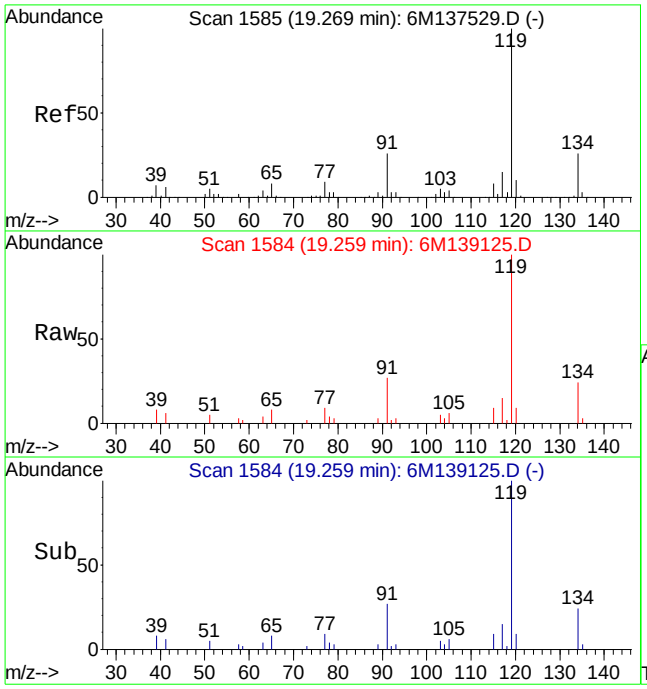

#92
p-Isopropyltoluene
Concen: 3.08 ug/L
RT: 19.26 min Scan# 1584
Delta R.T. -0.00 min
Lab File: 6M139125.D
Acq: 7 May 2016 16:44

Tgt Ion:119 Resp: 37507

Ion	Ratio	Lower	Upper
119	100		
134	26.5	15.6	36.4

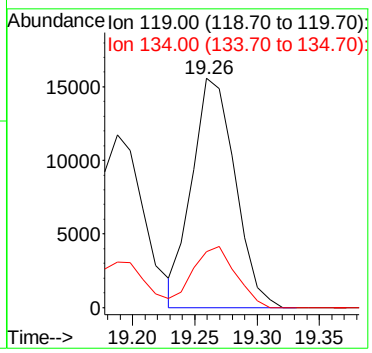

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050716\6M139126.D Vial: 10
Acq On : 7 May 2016 17:17 Operator: TMB
Sample : L16041582-02 8260 4.93g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 09 08:33:10 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	621498	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	466587	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	239440	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	163751	49.1164 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.24%		
43) 1,2-Dichloroethane-d4	11.06	65	192447	44.4584 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 88.92%		
58) Toluene-d8	13.79	98	547536	49.3573 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.72%		
80) p-Bromofluorobenzene	17.79	95	224092	50.9530 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 101.90%		

Target Compounds					Qvalue
3) Chloromethane	3.88	50	1966	0.3305 ug/L	88
4) Vinyl Chloride	4.16	62	1866	0.3898 ug/L #	44
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	2810	0.9151 ug/L	92
13) Acetone	6.61	43	4021	Below Cal	96
32) cis-1,2-Dichloroethene	9.77	96	29575	8.8169 ug/L	97
33) Chloroform	10.02	83	2237	0.3698 ug/L #	83
36) Tetrahydrofuran	10.29	42	3670	0.4290 ug/L	78
45) 1,2-Dichloroethane	11.19	62	109613	21.2283 ug/L	90
47) Trichloroethene	12.09	130	461696	150.9546 ug/L	93
48) Methylcyclohexane	12.09	83	6395	1.2934 ug/L #	1
49) 1,2-Dichloropropane	12.08	63	1556	0.4467 ug/L #	33
90) 1,2,4-Trimethylbenzene	18.82	105	3727	0.3062 ug/L	73

(#) = qualifier out of range (m) = manual integration
6M139126.D 826_SL.M Mon May 09 08:33:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050716\6M139126.D Vial: 10
Acq On : 7 May 2016 17:17 Operator: TMB
Sample : L16041582-02 8260 4.93g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 9 8:33 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

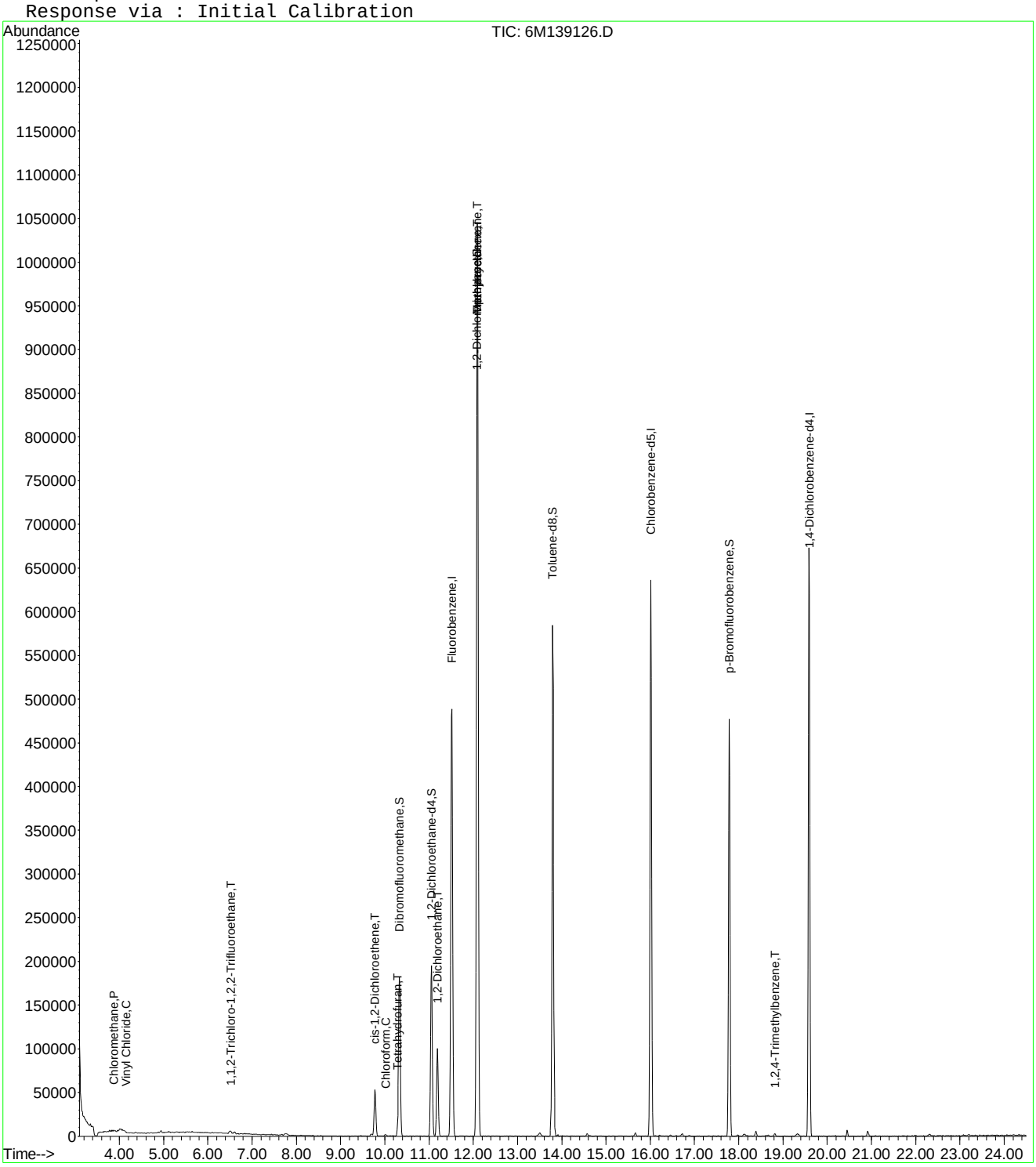

6M139126.D 826_SL.M Mon May 09 08:33:11 2016 Page 2

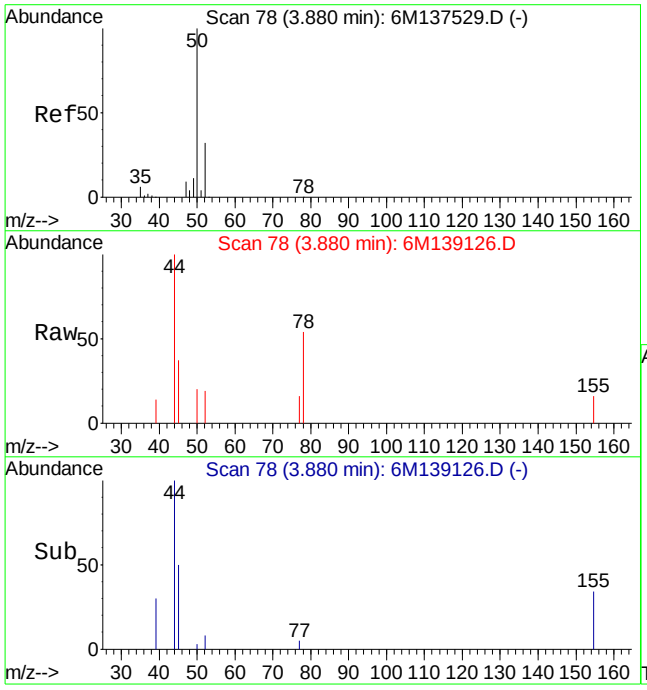

#3
Chloromethane
Concen: 0.33 ug/L
RT: 3.88 min Scan# 78
Delta R.T. -0.00 min
Lab File: 6M139126.D
Acq: 7 May 2016 17:17

Tgt Ion: 50 Resp: 1966

Ion	Ratio	Lower	Upper
50	100		
52	24.6	18.8	44.0

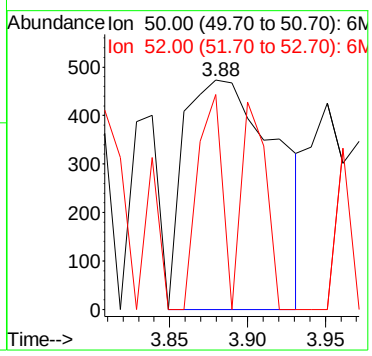

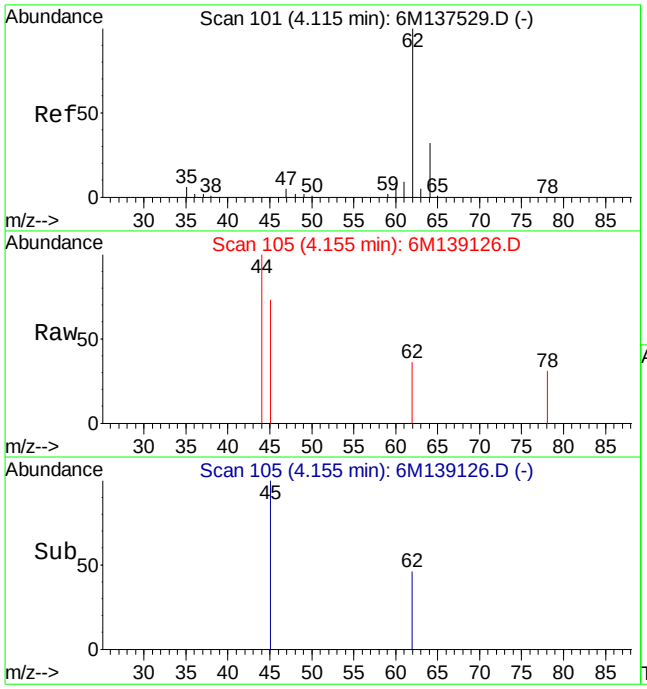

#4
Vinyl Chloride
Concen: 0.39 ug/L
RT: 4.16 min Scan# 105
Delta R.T. 0.04 min
Lab File: 6M139126.D
Acq: 7 May 2016 17:17

Tgt Ion: 62 Resp: 1866

Ion	Ratio	Lower	Upper
62	100		
64	0.0	18.5	43.1#

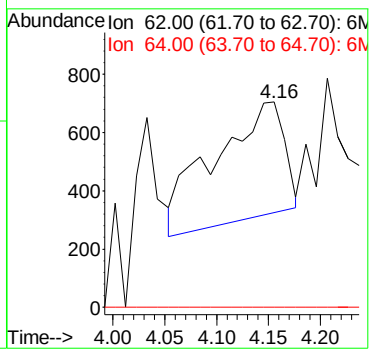

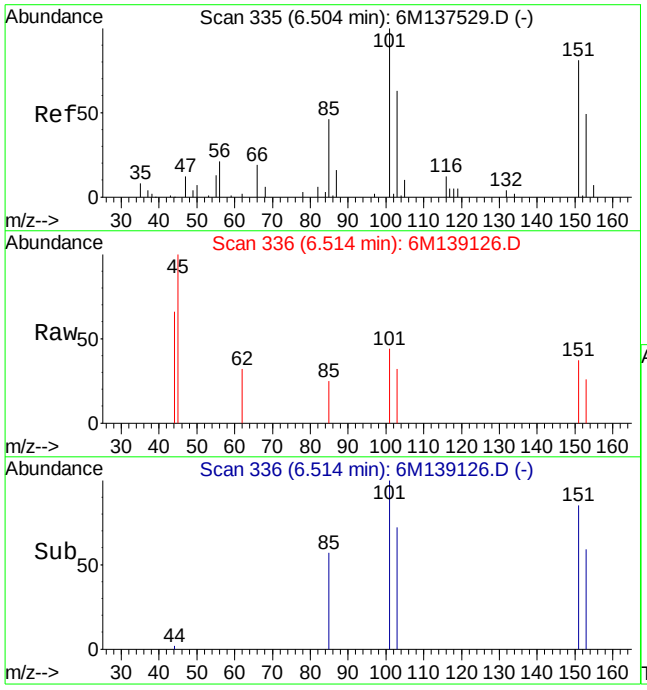

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 0.92 ug/L
RT: 6.51 min Scan# 336
Delta R.T. 0.01 min
Lab File: 6M139126.D
Acq: 7 May 2016 17:17

Tgt Ion:101 Resp: 2810

Ion	Ratio	Lower	Upper
101	100		
151	97.1	51.8	121.0
103	62.0	38.2	89.0

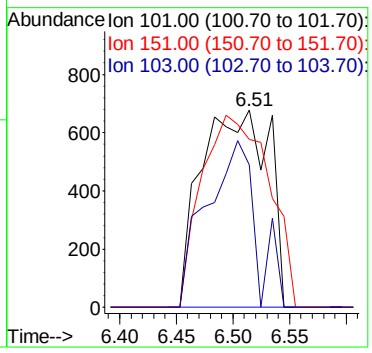

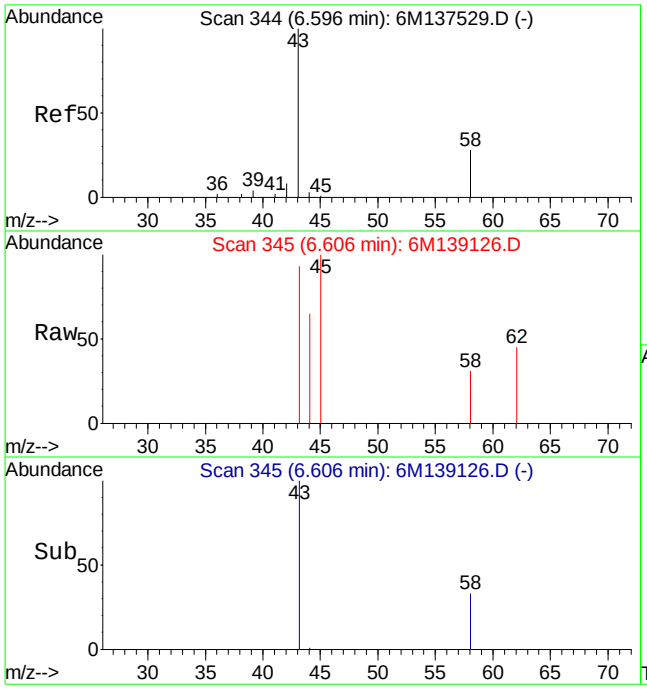

#13
Acetone
Concen: Below Cal
RT: 6.61 min Scan# 345
Delta R.T. 0.02 min
Lab File: 6M139126.D
Acq: 7 May 2016 17:17

Tgt Ion: 43 Resp: 4021

Ion	Ratio	Lower	Upper
43	100		
58	24.7	16.1	37.7

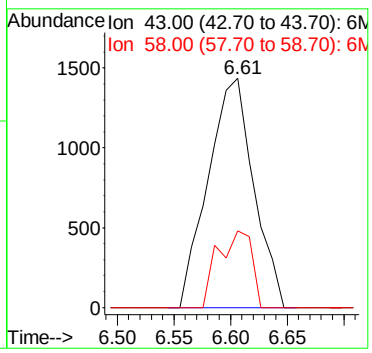

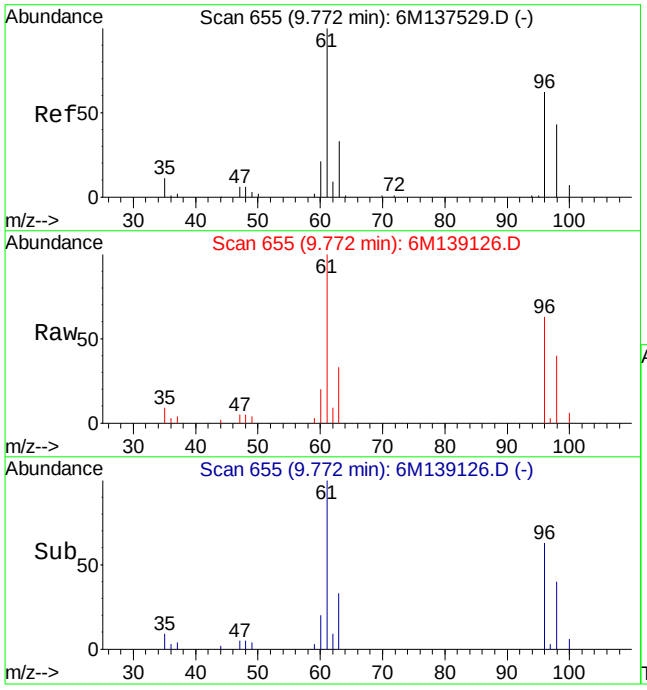

#32
cis-1,2-Dichloroethene
Concen: 8.82 ug/L
RT: 9.77 min Scan# 655
Delta R.T. -0.00 min
Lab File: 6M139126.D
Acq: 7 May 2016 17:17

Tgt Ion: 96 Resp: 29575

Ion	Ratio	Lower	Upper
96	100		
61	164.6	96.7	225.7

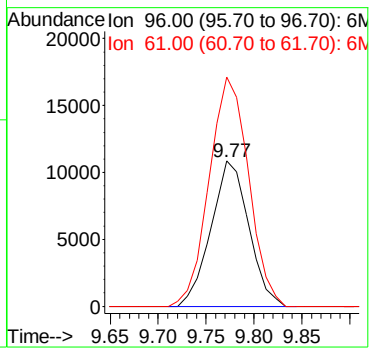

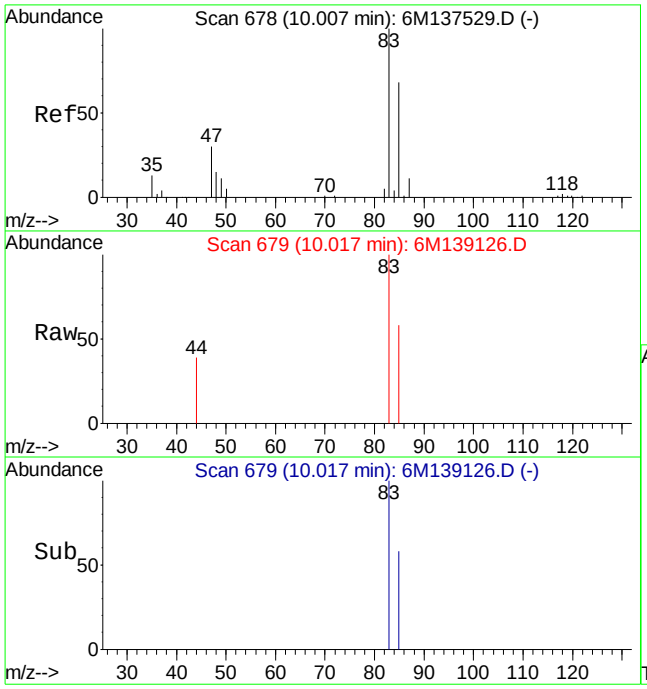

#33
Chloroform
Concen: 0.37 ug/L
RT: 10.02 min Scan# 679
Delta R.T. 0.01 min
Lab File: 6M139126.D
Acq: 7 May 2016 17:17

Tgt Ion: 83 Resp: 2237

Ion	Ratio	Lower	Upper
83	100		
85	63.0	38.4	89.6
47	0.0	16.9	39.5#

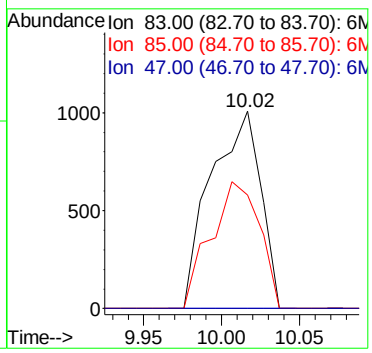

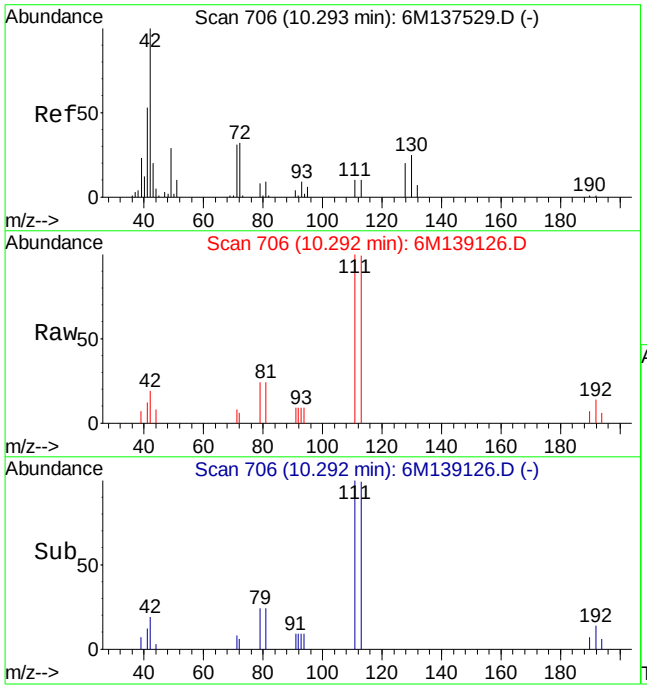

#36
Tetrahydrofuran
Concen: 0.43 ug/L
RT: 10.29 min Scan# 706
Delta R.T. -0.00 min
Lab File: 6M139126.D
Acq: 7 May 2016 17:17

Tgt Ion: 42 Resp: 3670

Ion	Ratio	Lower	Upper
42	100		
72	23.4	21.0	49.0
71	20.7	20.6	48.2

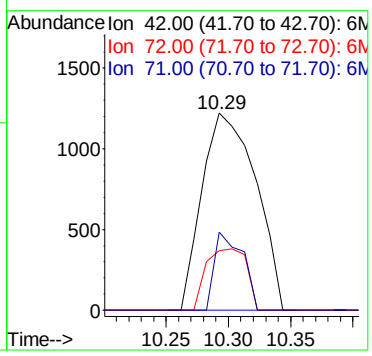

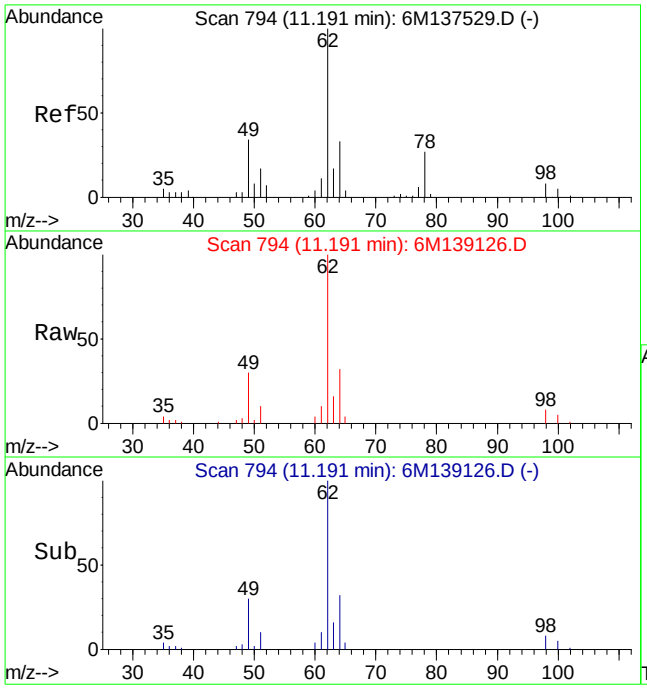

#45
1,2-Dichloroethane
Concen: 21.23 ug/L
RT: 11.19 min Scan# 794
Delta R.T. -0.00 min
Lab File: 6M139126.D
Acq: 7 May 2016 17:17

Tgt Ion: 62 Resp: 109613

Ion	Ratio	Lower	Upper
62	100		
49	30.9	22.9	53.3
98	8.1	4.7	10.9

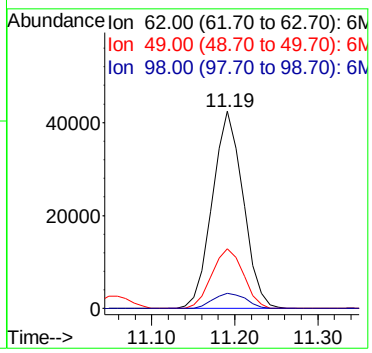

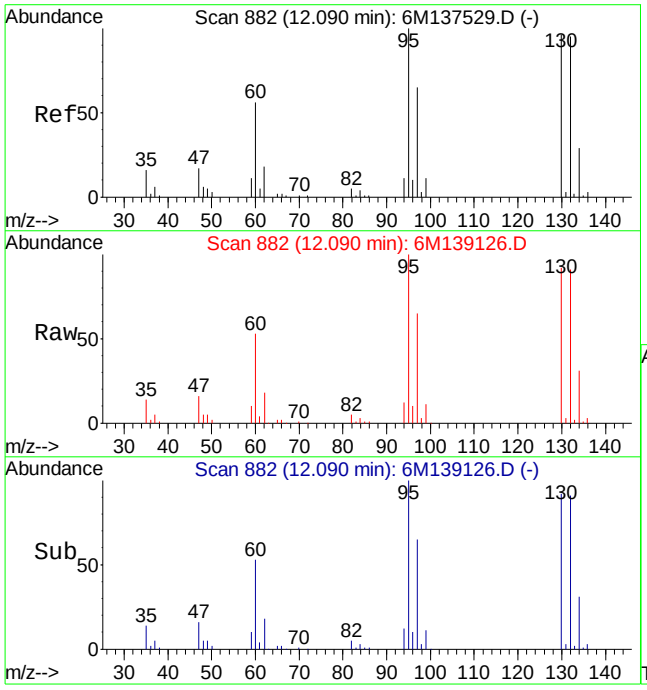

#47
Trichloroethene
Concen: 150.95 ug/L
RT: 12.09 min Scan# 882
Delta R.T. -0.00 min
Lab File: 6M139126.D
Acq: 7 May 2016 17:17

Tgt Ion:130 Resp: 461696

Ion	Ratio	Lower	Upper
130	100		
60	57.1	31.2	72.8

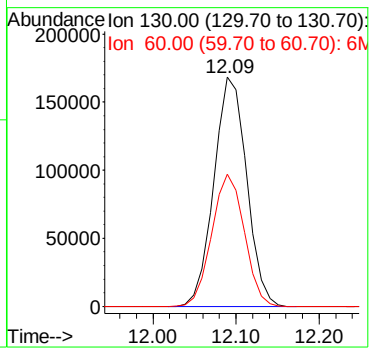

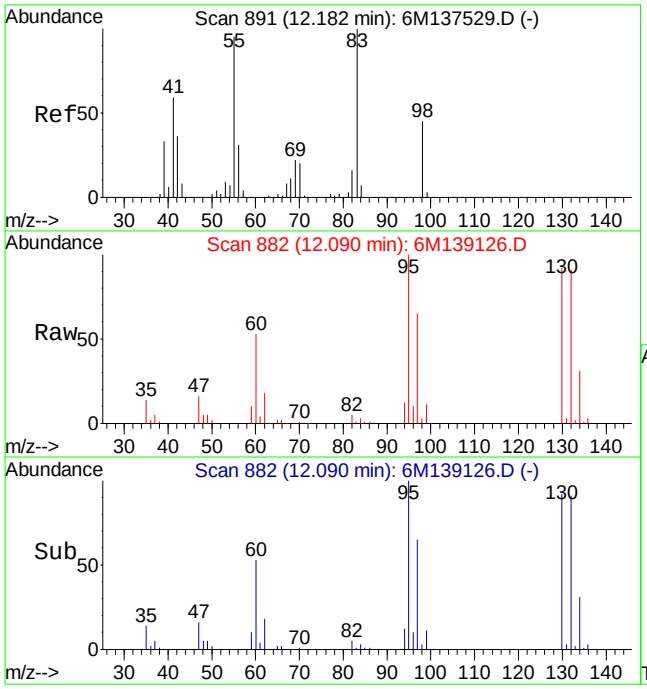

#48
Methylcyclohexane
Concen: 1.29 ug/L
RT: 12.09 min Scan# 882
Delta R.T. -0.09 min
Lab File: 6M139126.D
Acq: 7 May 2016 17:17

Tgt Ion: 83 Resp: 6395

Ion	Ratio	Lower	Upper
83	100		
55	0.0	48.3	112.7#
98	205.6	27.5	64.1#

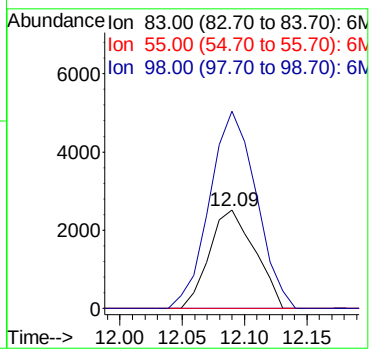

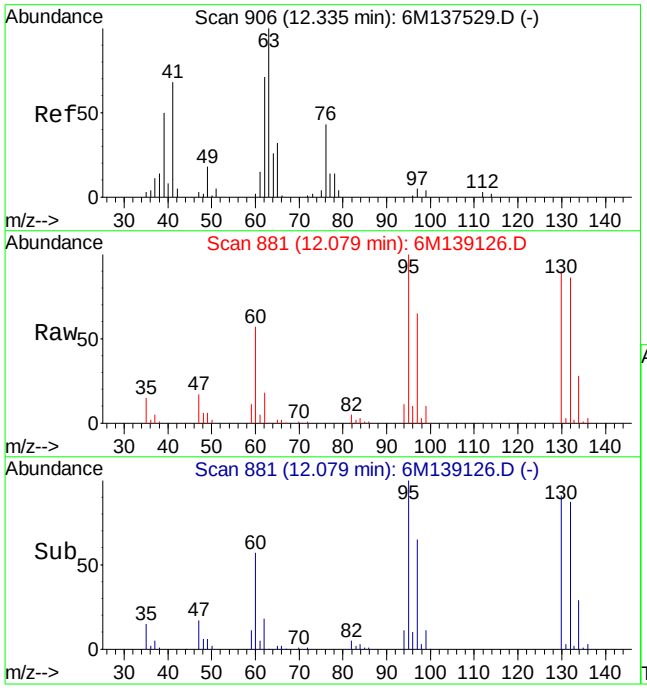

#49
1,2-Dichloropropane
Concen: 0.45 ug/L
RT: 12.08 min Scan# 881
Delta R.T. -0.26 min
Lab File: 6M139126.D
Acq: 7 May 2016 17:17

Tgt Ion: 63 Resp: 1556

Ion	Ratio	Lower	Upper
63	100		
76	0.0	25.9	60.5#

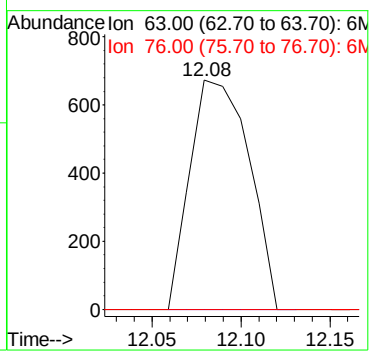

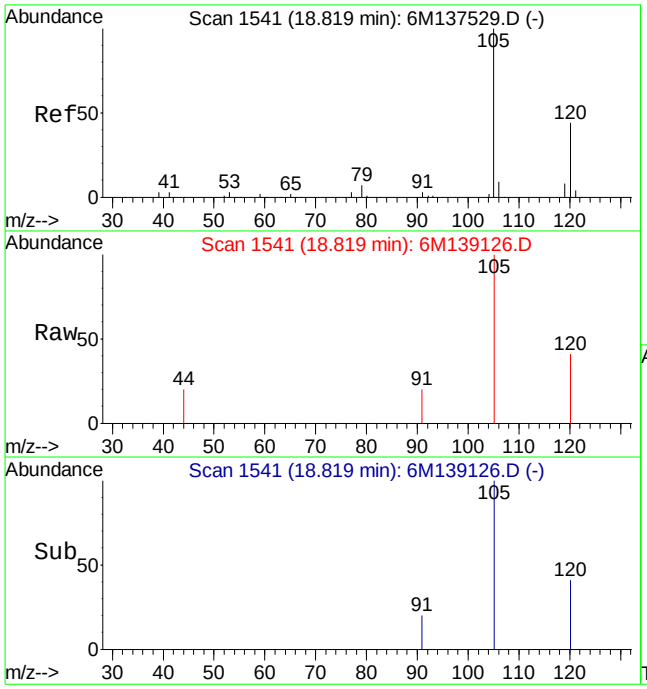

#90
1,2,4-Trimethylbenzene
Concen: 0.31 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. -0.00 min
Lab File: 6M139126.D
Acq: 7 May 2016 17:17

Tgt Ion:105 Resp: 3727

Ion	Ratio	Lower	Upper
105	100		
120	37.4	34.3	79.9

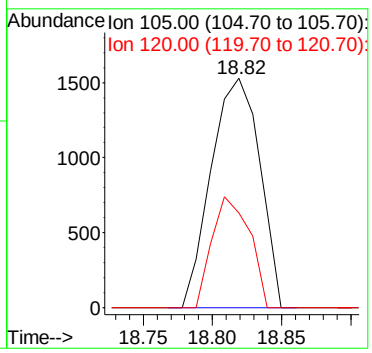

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050716\6M139127.D Vial: 11
Acq On : 7 May 2016 17:49 Operator: TMB
Sample : L16041582-03 8260 5.16g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 09 08:33:12 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	637553	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	460669	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	222792	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	162600	47.5429 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.08%		
43) 1,2-Dichloroethane-d4	11.06	65	196641	44.2833 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 88.56%		
58) Toluene-d8	13.80	98	541496	49.4399 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.88%		
80) p-Bromofluorobenzene	17.79	95	217715	53.2022 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 106.40%		

Target Compounds

					Qvalue
13) Acetone	6.60	43	20566	11.0383 ug/L #	77
16) Dimethyl Sulfide	7.14	62	814	0.3007 ug/L #	1
29) 2-Butanone	9.46	43	3882	1.7615 ug/L #	67
36) Tetrahydrofuran	10.30	42	2839	Below Cal #	60
45) 1,2-Dichloroethane	11.19	62	7314	1.3808 ug/L #	78
47) Trichloroethene	12.09	130	31070	9.9027 ug/L	94
60) Ethyl Methacrylate	13.81	69	1128	0.2702 ug/L #	40
90) 1,2,4-Trimethylbenzene	18.82	105	3022	0.2668 ug/L #	65

(#) = qualifier out of range (m) = manual integration
6M139127.D 826_SL.M Mon May 09 08:33:12 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050716\6M139127.D Vial: 11
Acq On : 7 May 2016 17:49 Operator: TMB
Sample : L16041582-03 8260 5.16g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 9 8:33 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

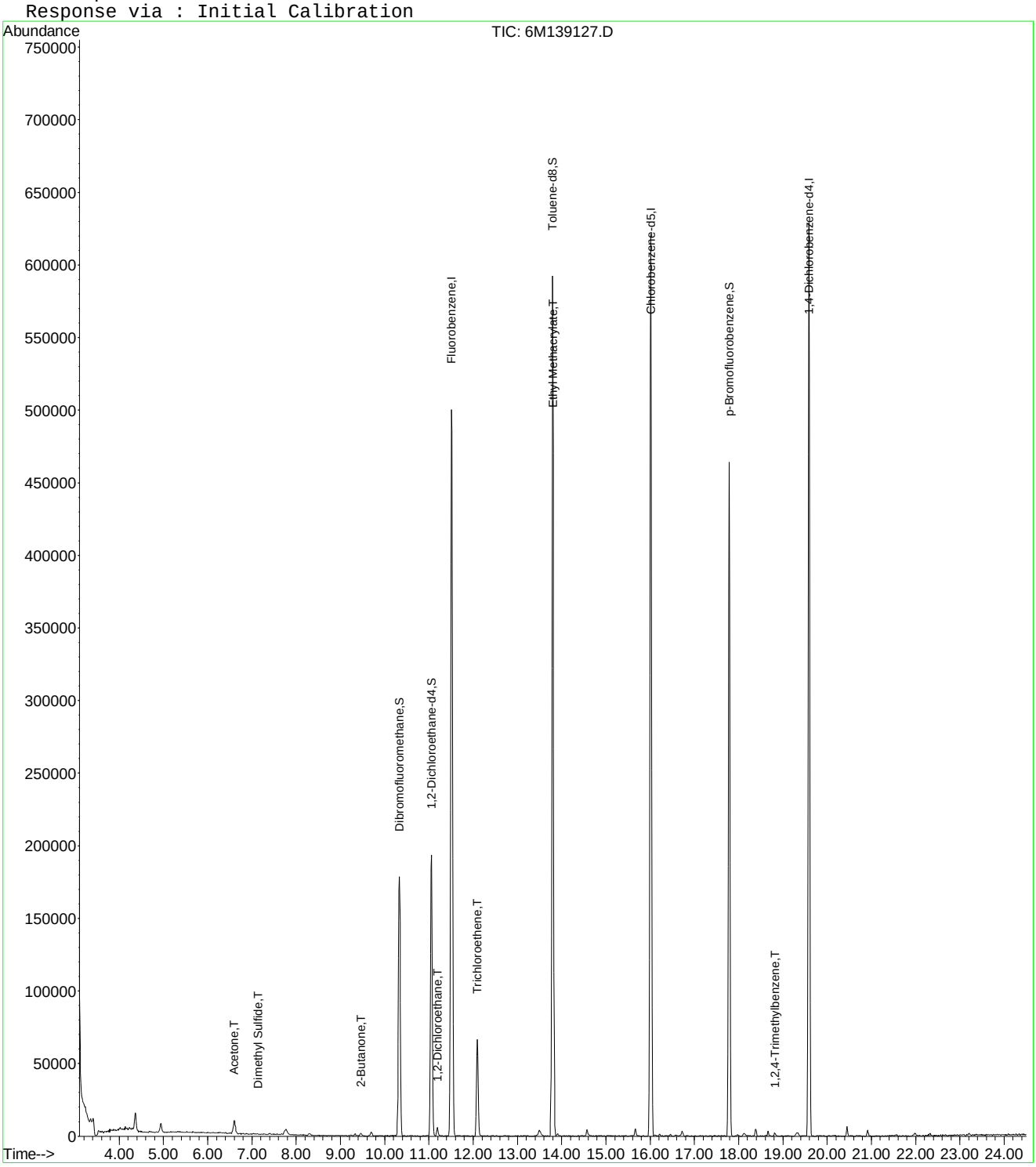

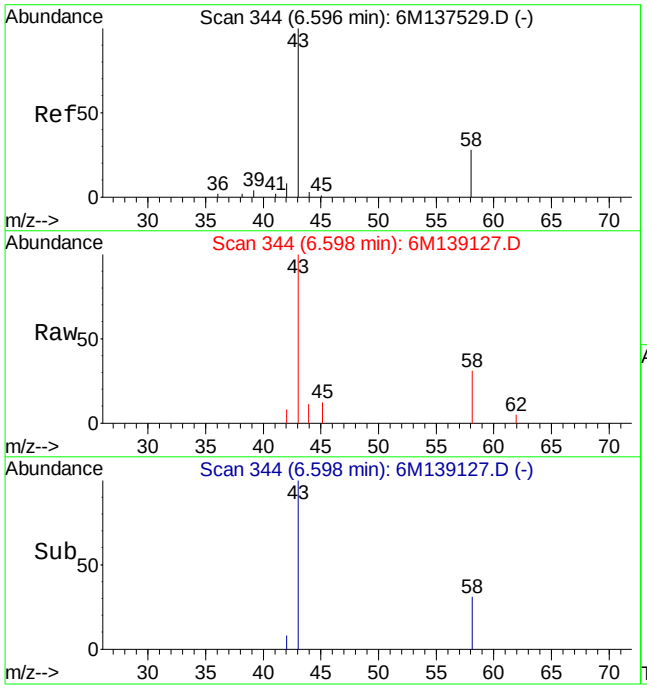

#13
Acetone
Concen: 11.04 ug/L
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M139127.D
Acq: 7 May 2016 17:49

Tgt Ion: 43 Resp: 20566

Ion	Ratio	Lower	Upper
43	100		
58	38.8	16.1	37.7#

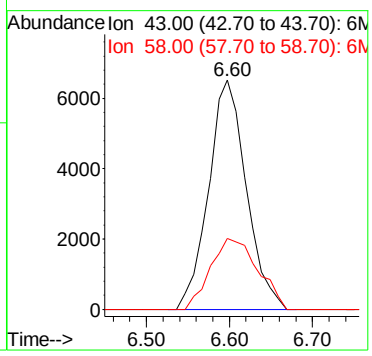

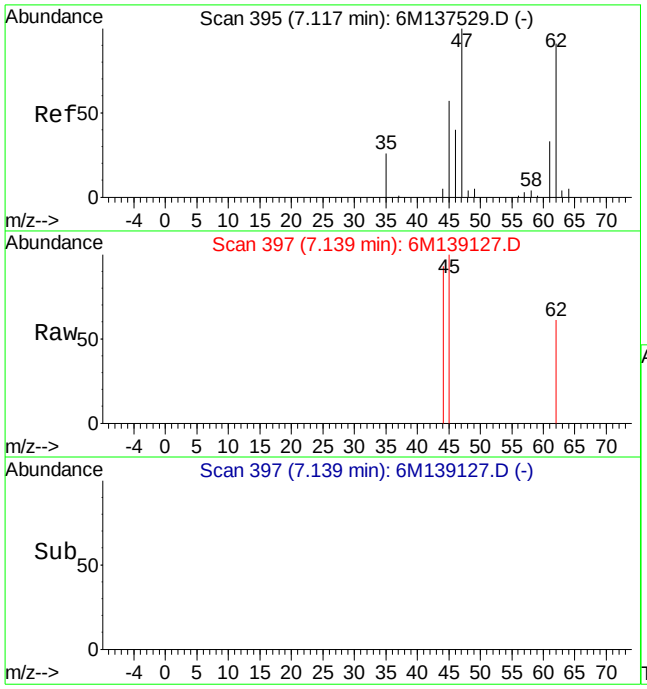

#16
Dimethyl Sulfide
Concen: 0.30 ug/L
RT: 7.14 min Scan# 397
Delta R.T. 0.02 min
Lab File: 6M139127.D
Acq: 7 May 2016 17:49

Tgt Ion: 62 Resp: 814

Ion	Ratio	Lower	Upper
62	100		
47	0.0	62.4	145.6#

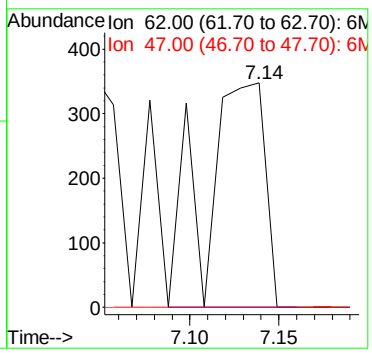

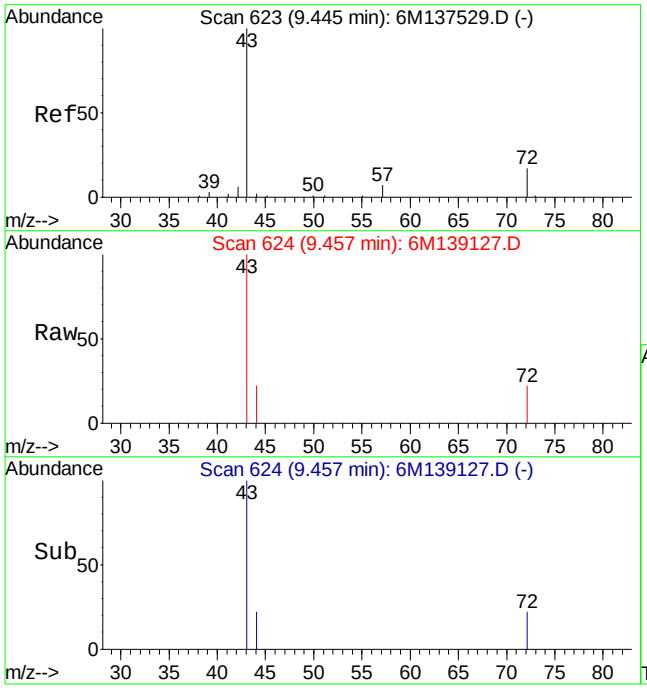

#29
2-Butanone
Concen: 1.76 ug/L
RT: 9.46 min Scan# 624
Delta R.T. 0.01 min
Lab File: 6M139127.D
Acq: 7 May 2016 17:49

Tgt Ion: 43 Resp: 3882

Ion	Ratio	Lower	Upper
43	100		
72	5.0	12.2	28.4#

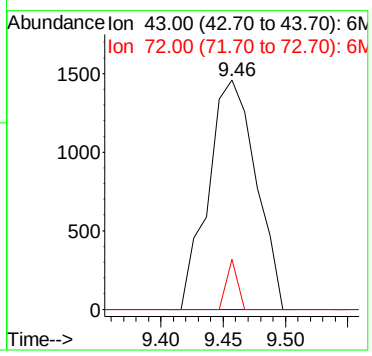

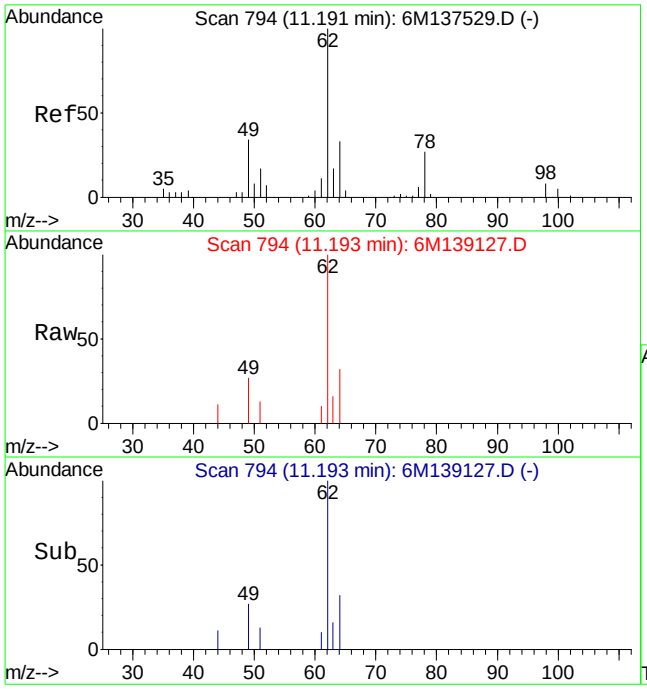

#45
1,2-Dichloroethane
Concen: 1.38 ug/L
RT: 11.19 min Scan# 794
Delta R.T. 0.00 min
Lab File: 6M139127.D
Acq: 7 May 2016 17:49

Tgt Ion: 62 Resp: 7314

Ion	Ratio	Lower	Upper
62	100		
49	25.0	22.9	53.3
98	0.0	4.7	10.9#

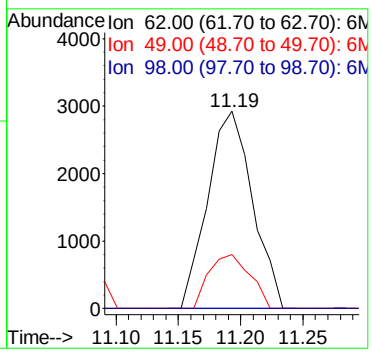

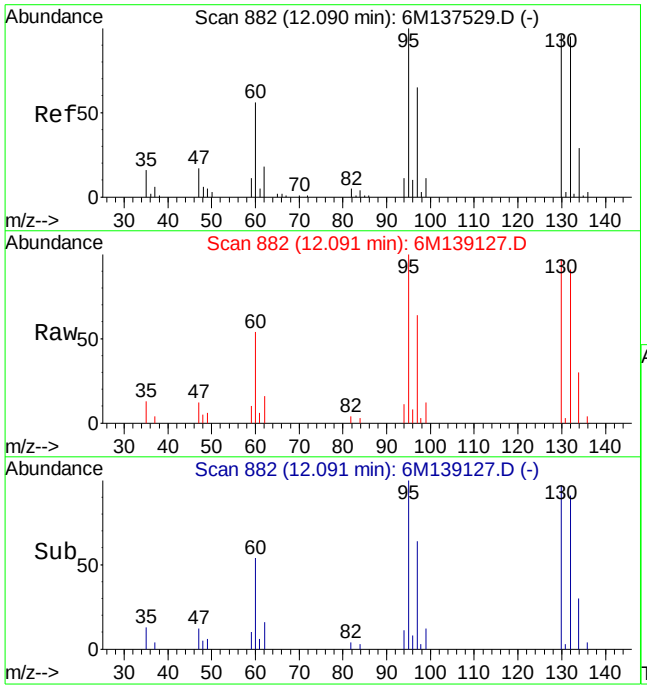

#47
Trichloroethene
Concen: 9.90 ug/L
RT: 12.09 min Scan# 882
Delta R.T. 0.00 min
Lab File: 6M139127.D
Acq: 7 May 2016 17:49

Tgt Ion:130 Resp: 31070

Ion	Ratio	Lower	Upper
130	100		
60	56.0	31.2	72.8

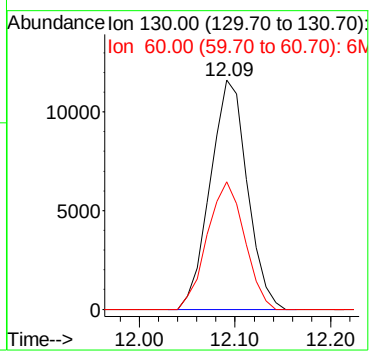

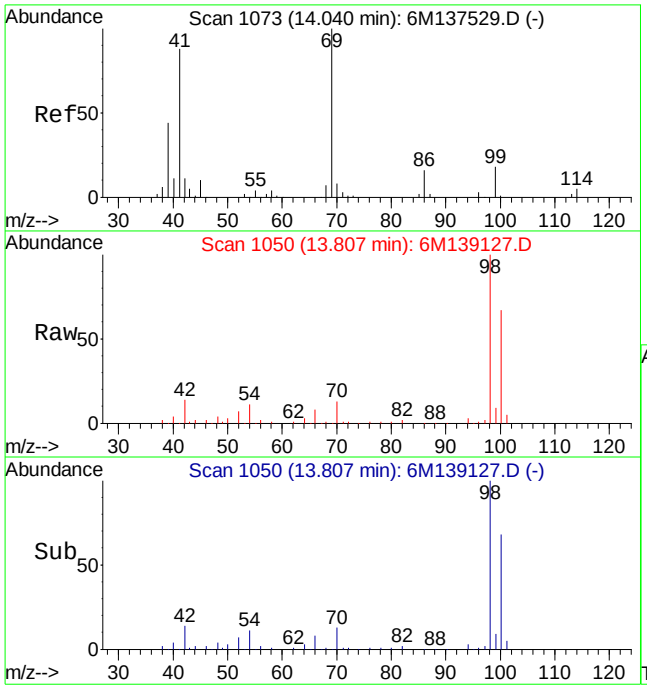

#60
Ethyl Methacrylate
Concen: 0.27 ug/L
RT: 13.81 min Scan# 1050
Delta R.T. -0.22 min
Lab File: 6M139127.D
Acq: 7 May 2016 17:49

Tgt Ion: 69 Resp: 1128

Ion	Ratio	Lower	Upper
69	100		
41	139.0	50.6	118.2#

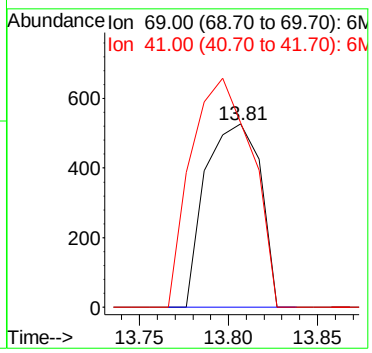

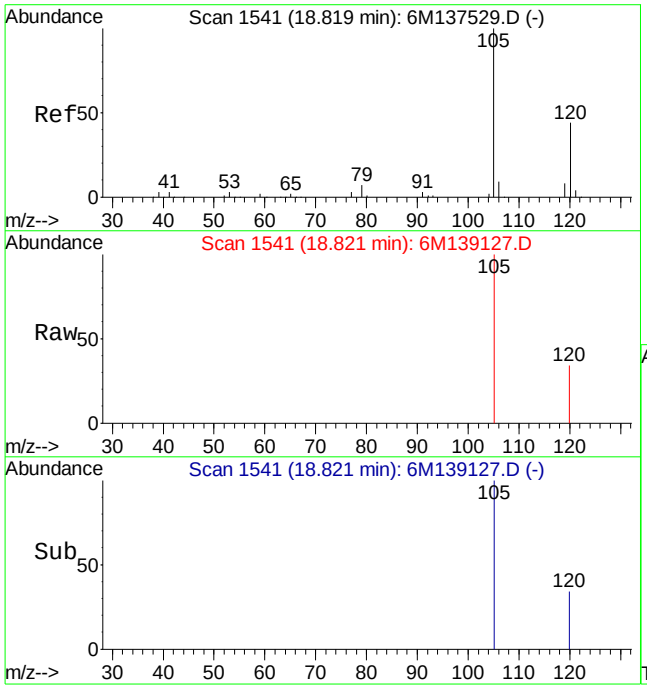

#90
1,2,4-Trimethylbenzene
Concen: 0.27 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. 0.00 min
Lab File: 6M139127.D
Acq: 7 May 2016 17:49

Tgt Ion:105 Resp: 3022

Ion	Ratio	Lower	Upper
105	100		
120	31.1	34.3	79.9#

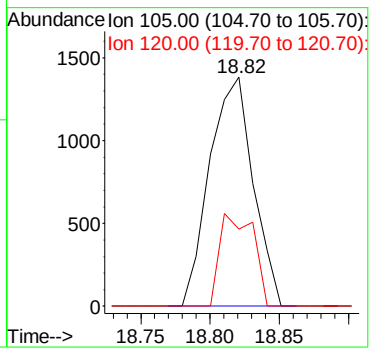

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050716\6M139128.D Vial: 12
Acq On : 7 May 2016 18:22 Operator: TMB
Sample : L16041582-04 8260 4.77g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 09 08:33:13 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	665493	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	464811	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	239130	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	166776	46.7167 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.44%		
43) 1,2-Dichloroethane-d4	11.06	65	206888	44.6348 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 89.26%		
58) Toluene-d8	13.80	98	562305	50.8824 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.76%		
80) p-Bromofluorobenzene	17.79	95	225326	51.3000 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.60%		

Target Compounds					Qvalue
3) Chloromethane	3.90	50	3369	0.5290 ug/L #	43
13) Acetone	6.60	43	26440	14.6127 ug/L #	75
20) Carbon Disulfide	7.72	76	22530	2.0219 ug/L	98
29) 2-Butanone	9.47	43	4571	1.9871 ug/L	87
36) Tetrahydrofuran	10.30	42	3046	Below Cal #	72
60) Ethyl Methacrylate	13.80	69	1193	0.2832 ug/L #	23

(#) = qualifier out of range (m) = manual integration
6M139128.D 826_SL.M Mon May 09 08:33:14 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050716\6M139128.D Vial: 12
Acq On : 7 May 2016 18:22 Operator: TMB
Sample : L16041582-04 8260 4.77g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 9 8:33 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

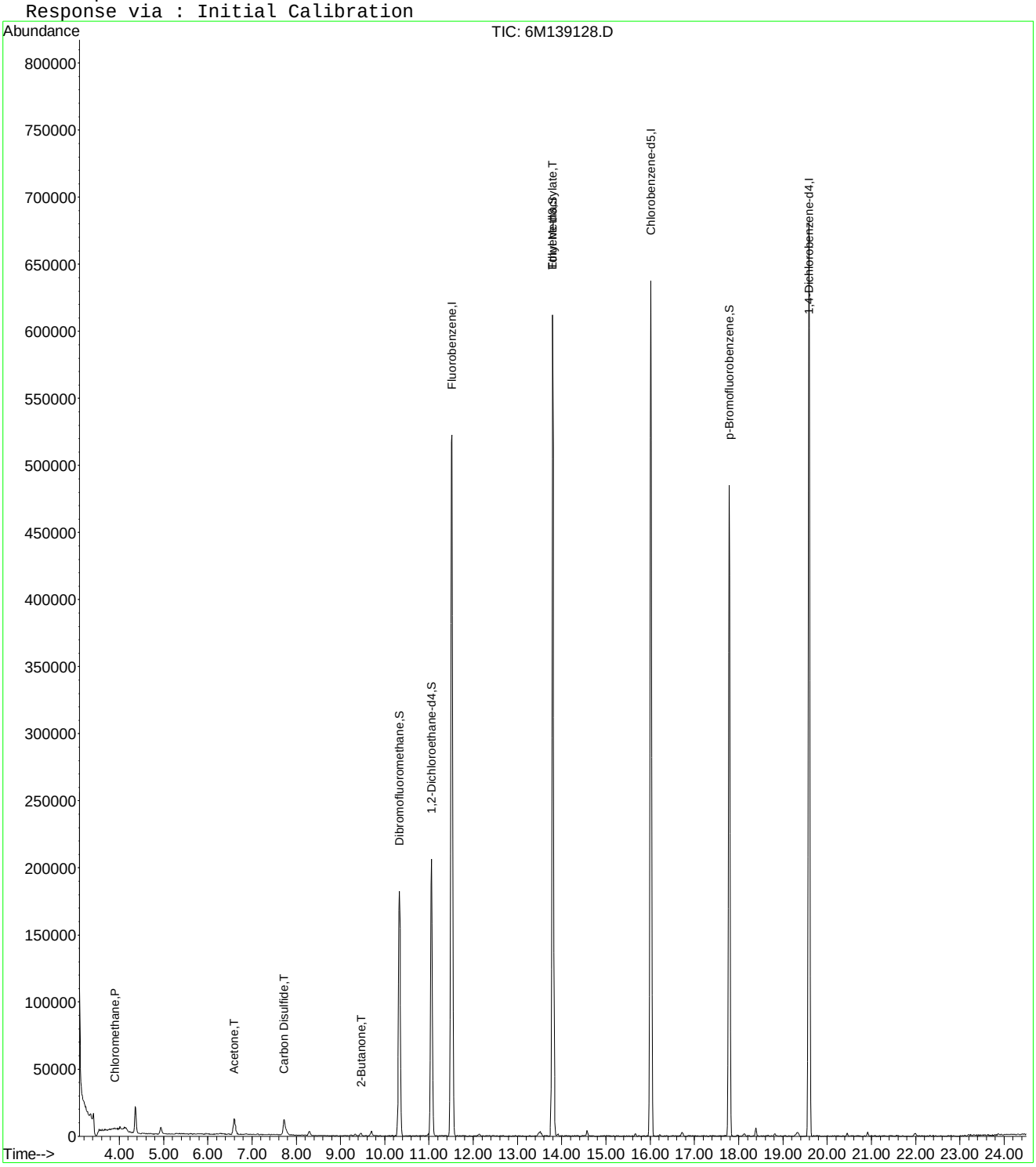

6M139128.D 826_SL.M Mon May 09 08:33:14 2016 Page 2

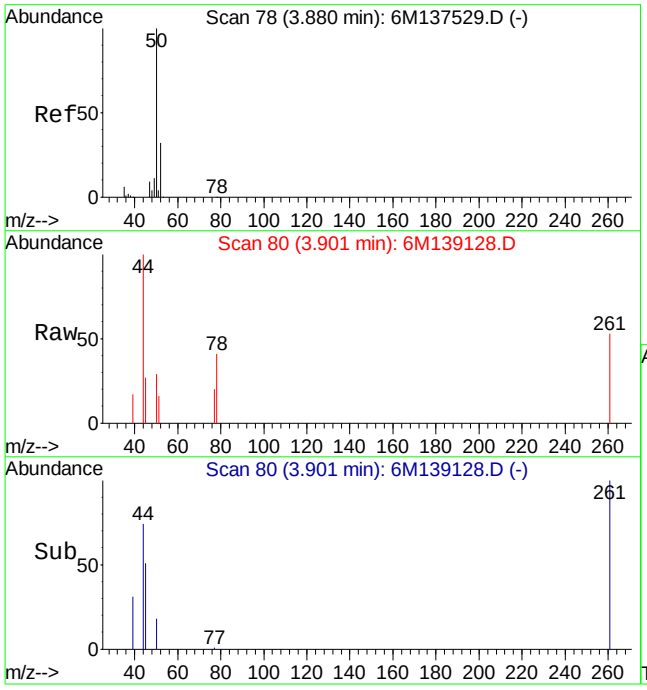

#3
Chloromethane
Concen: 0.53 ug/L
RT: 3.90 min Scan# 80
Delta R.T. 0.02 min
Lab File: 6M139128.D
Acq: 7 May 2016 18:22

Tgt Ion: 50 Resp: 3369

Ion	Ratio	Lower	Upper
50	100		
52	0.0	18.8	44.0#

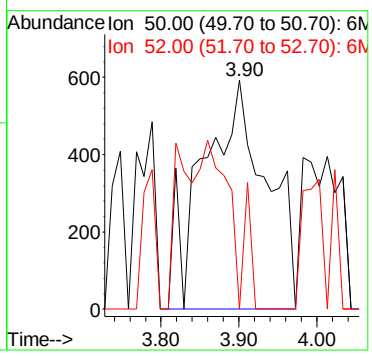

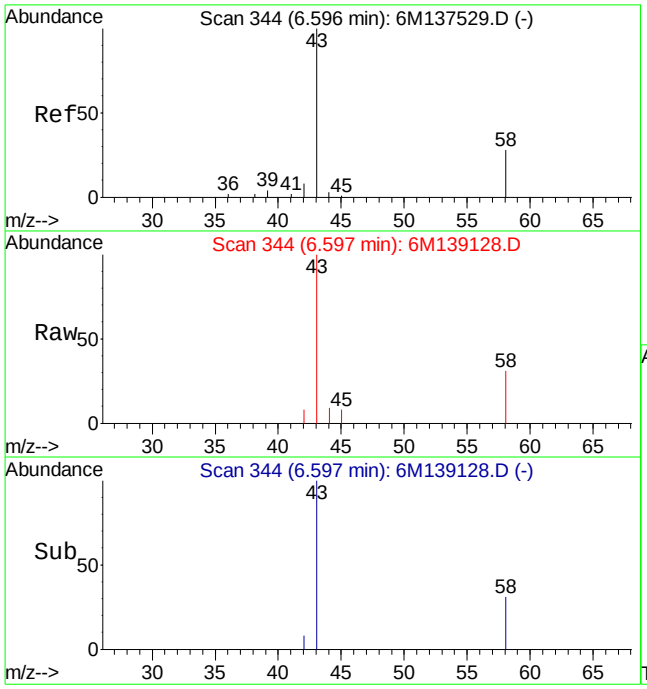

#13
Acetone
Concen: 14.61 ug/L
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M139128.D
Acq: 7 May 2016 18:22

Tgt Ion: 43 Resp: 26440

Ion	Ratio	Lower	Upper
43	100		
58	40.0	16.1	37.7#

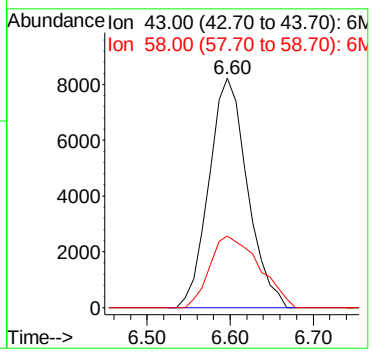

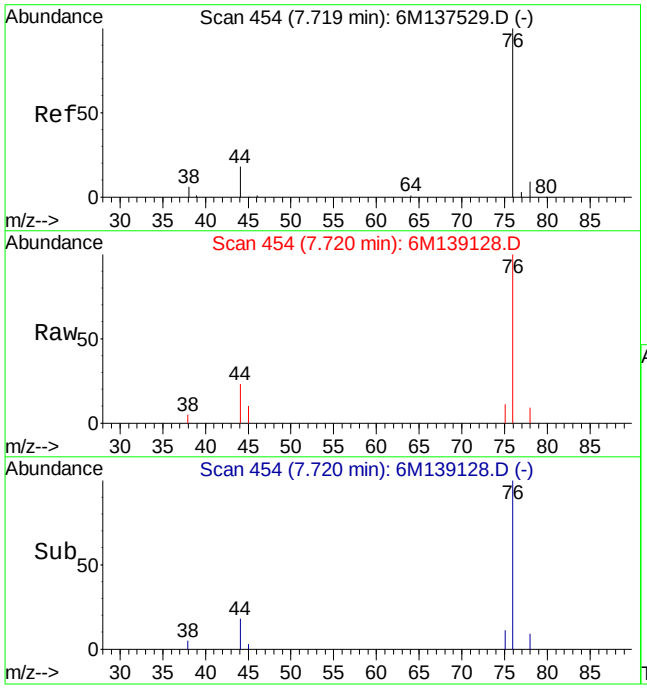

#20
Carbon Disulfide
Concen: 2.02 ug/L
RT: 7.72 min Scan# 454
Delta R.T. -0.00 min
Lab File: 6M139128.D
Acq: 7 May 2016 18:22

Tgt Ion: 76 Resp: 22530

Ion	Ratio	Lower	Upper
76	100		
78	8.2	5.3	12.5

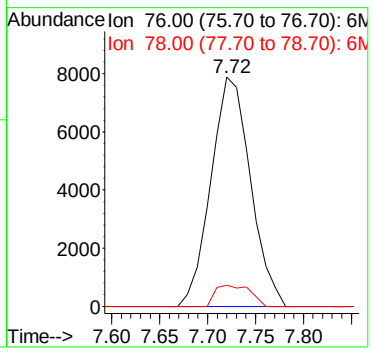

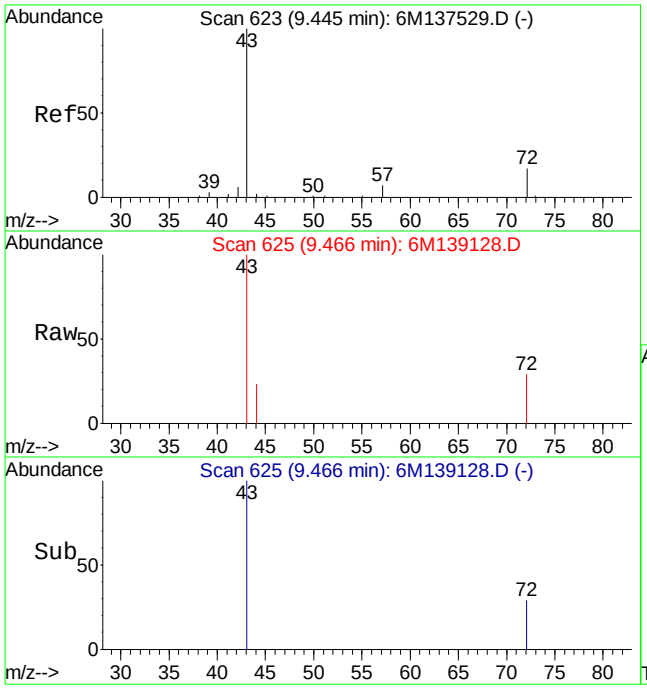

#29
2-Butanone
Concen: 1.99 ug/L
RT: 9.47 min Scan# 625
Delta R.T. 0.02 min
Lab File: 6M139128.D
Acq: 7 May 2016 18:22

Tgt Ion: 43 Resp: 4571

Ion	Ratio	Lower	Upper
43	100		
72	14.5	12.2	28.4

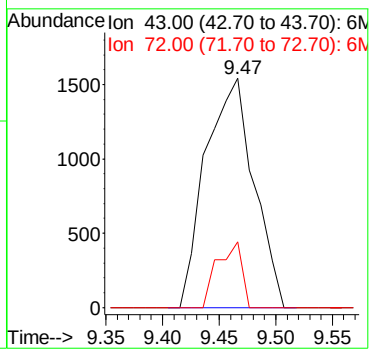

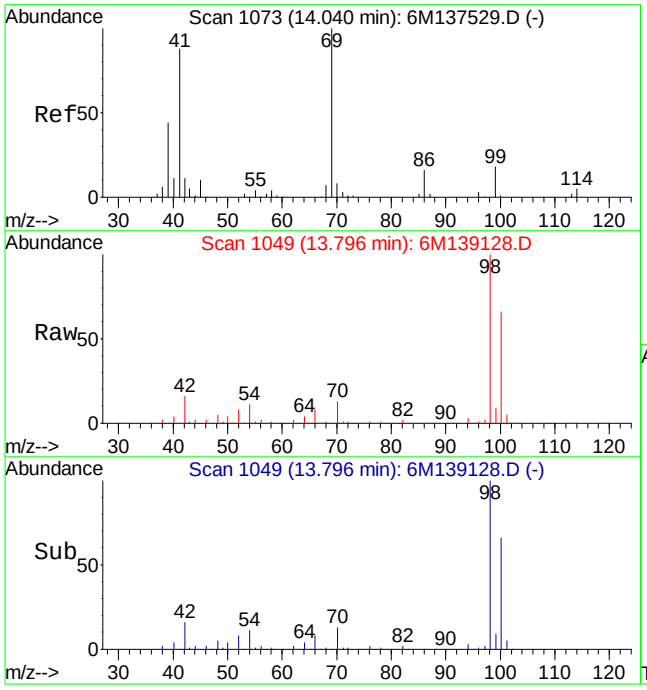

#60
Ethyl Methacrylate
Concen: 0.28 ug/L
RT: 13.80 min Scan# 1049
Delta R.T. -0.24 min
Lab File: 6M139128.D
Acq: 7 May 2016 18:22

Tgt Ion: 69 Resp: 1193

Ion	Ratio	Lower	Upper
69	100		
41	154.2	50.6	118.2#

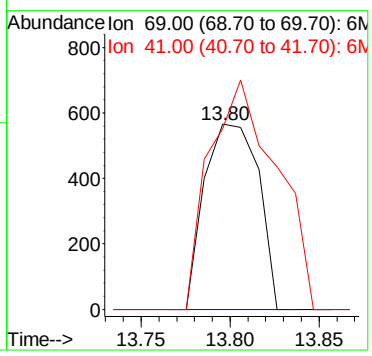

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050716\6M139129.D Vial: 13
Acq On : 7 May 2016 18:54 Operator: TMB
Sample : L16041582-05 8260 4.89g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 09 08:33:14 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	631906	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	463590	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.58	152	231486	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	171028	50.4541 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.90%		
43) 1,2-Dichloroethane-d4	11.06	65	200803	45.6247 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 91.24%		
58) Toluene-d8	13.79	98	552549	50.1312 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 100.26%		
80) p-Bromofluorobenzene	17.79	95	226659	53.3076 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 106.62%		

Target Compounds

					Qvalue
3) Chloromethane	3.89	50	1548	0.2560 ug/L #	65
13) Acetone	6.60	43	22638	12.7447 ug/L	81
15) Tert-Butyl Alcohol	6.95	59	194	0.3760 ug/L #	57
20) Carbon Disulfide	7.73	76	4011	0.3791 ug/L #	75
29) 2-Butanone	9.47	43	2544	1.1647 ug/L #	56
36) Tetrahydrofuran	10.30	42	3658	0.3778 ug/L #	75
60) Ethyl Methacrylate	13.79	69	1441	0.3429 ug/L #	53

(#) = qualifier out of range (m) = manual integration
6M139129.D 826_SL.M Mon May 09 08:33:15 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050716\6M139129.D Vial: 13
Acq On : 7 May 2016 18:54 Operator: TMB
Sample : L16041582-05 8260 4.89g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 9 8:33 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

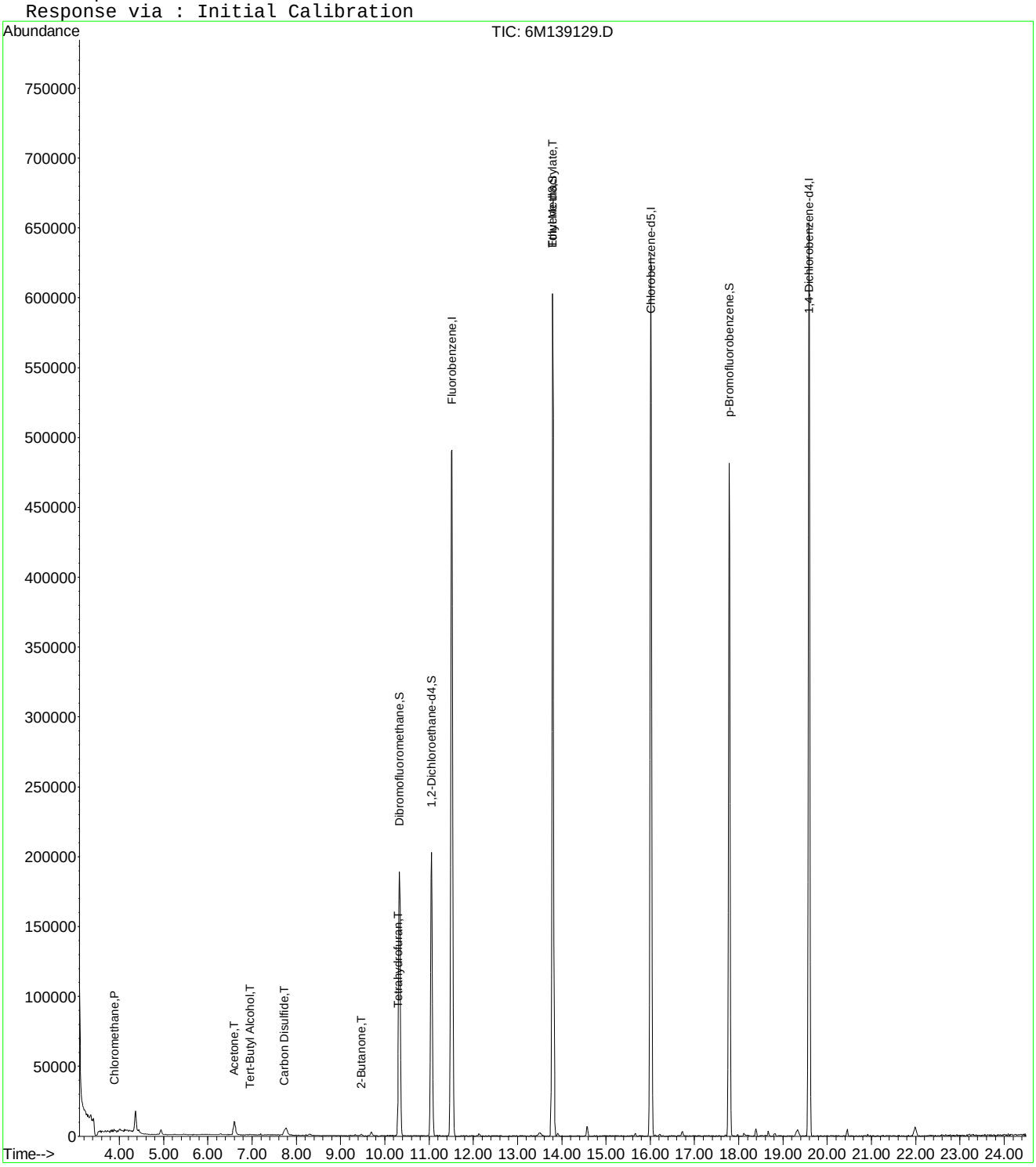

6M139129.D 826_SL.M Mon May 09 08:33:15 2016 Page 2

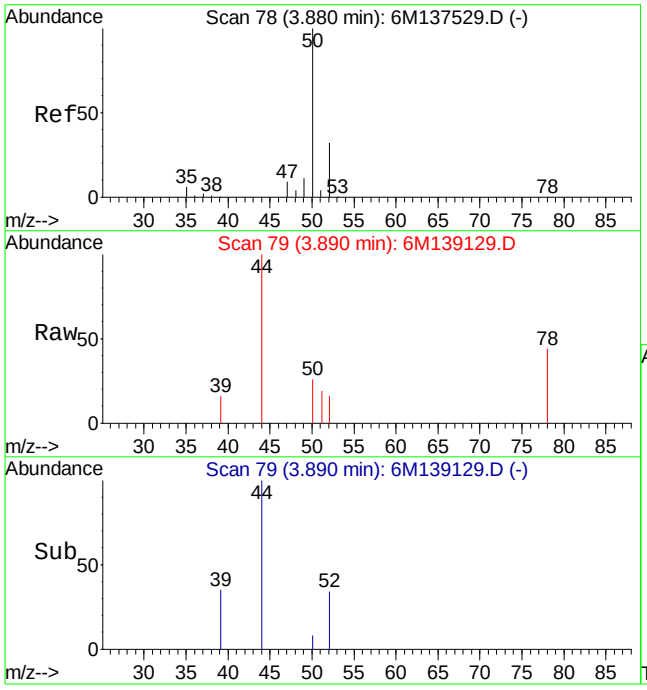

#3
Chloromethane
Concen: 0.26 ug/L
RT: 3.89 min Scan# 79
Delta R.T. 0.01 min
Lab File: 6M139129.D
Acq: 7 May 2016 18:54

Tgt Ion: 50 Resp: 1548

Ion	Ratio	Lower	Upper
50	100		
52	12.0	18.8	44.0#

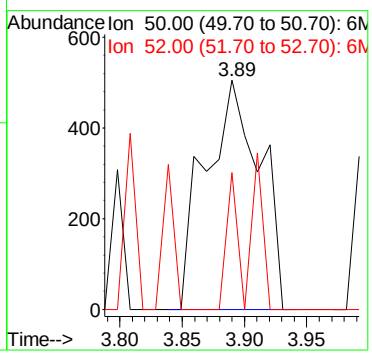

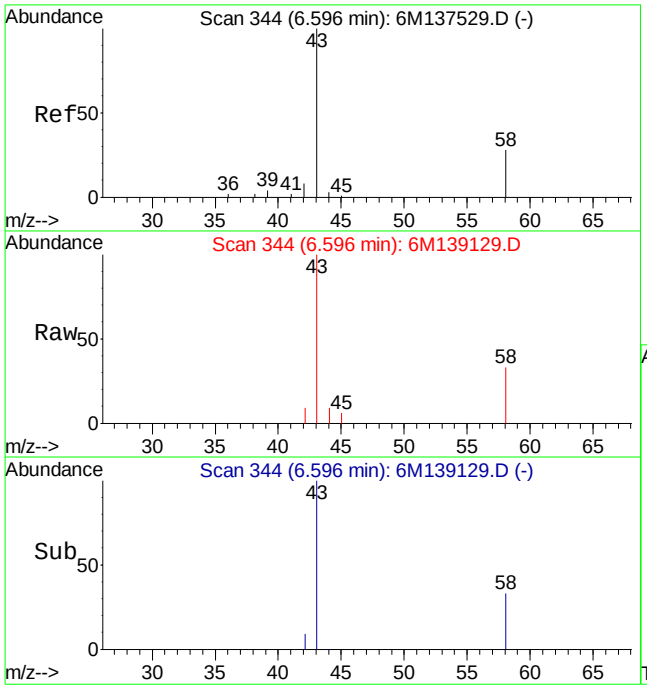

#13
Acetone
Concen: 12.74 ug/L
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M139129.D
Acq: 7 May 2016 18:54

Tgt Ion: 43 Resp: 22638

Ion	Ratio	Lower	Upper
43	100		
58	36.7	16.1	37.7

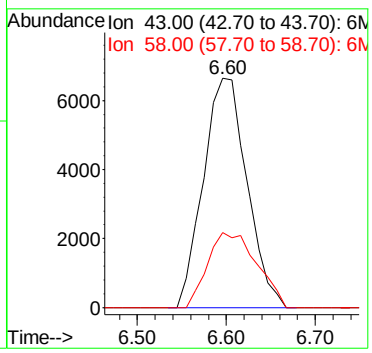

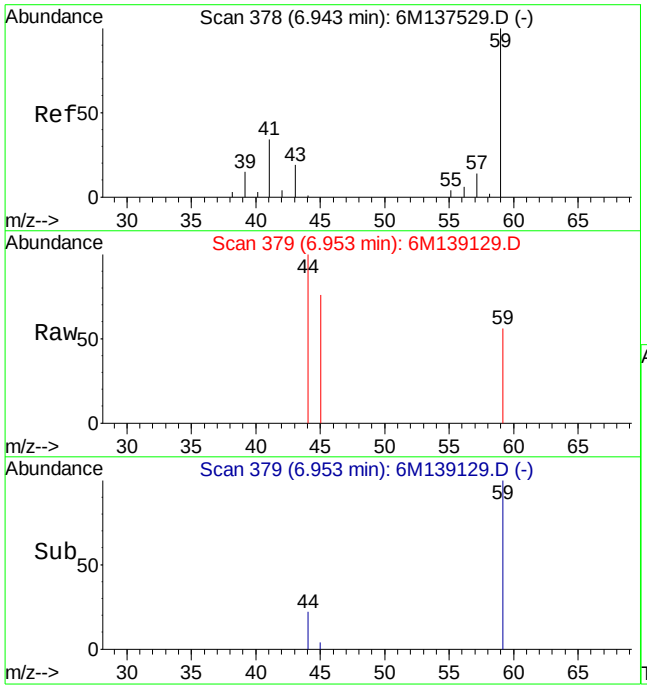

#15
Tert-Butyl Alcohol
Concen: 0.38 ug/L
RT: 6.95 min Scan# 379
Delta R.T. 0.02 min
Lab File: 6M139129.D
Acq: 7 May 2016 18:54

Tgt Ion: 59 Resp: 194

Ion	Ratio	Lower	Upper
59	100		
41	0.0	15.0	35.0#
57	0.0	5.9	13.9#

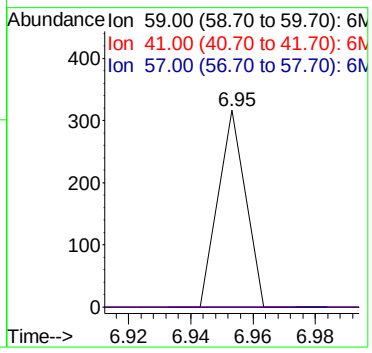

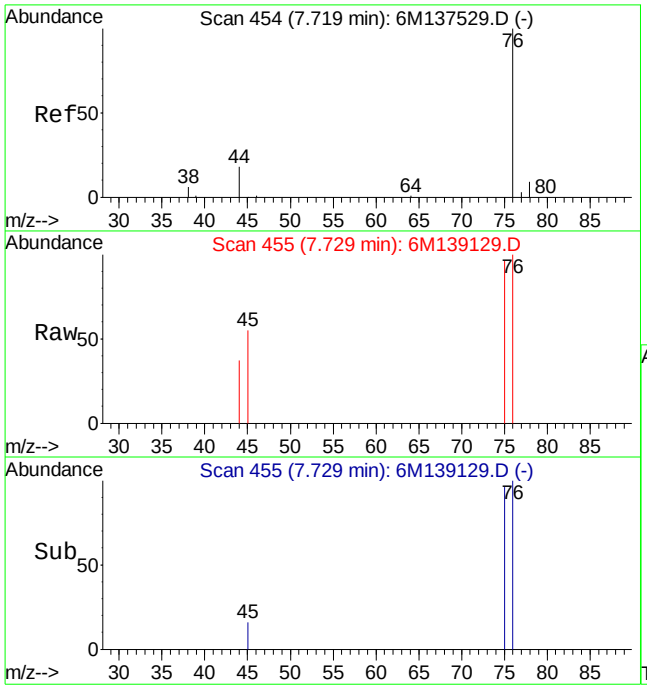

#20
Carbon Disulfide
Concen: 0.38 ug/L
RT: 7.73 min Scan# 455
Delta R.T. 0.01 min
Lab File: 6M139129.D
Acq: 7 May 2016 18:54

Tgt Ion: 76 Resp: 4011

Ion	Ratio	Lower	Upper
76	100		
78	0.0	5.3	12.5#

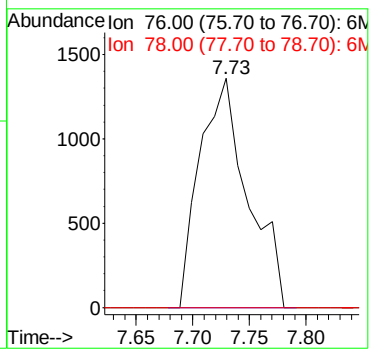

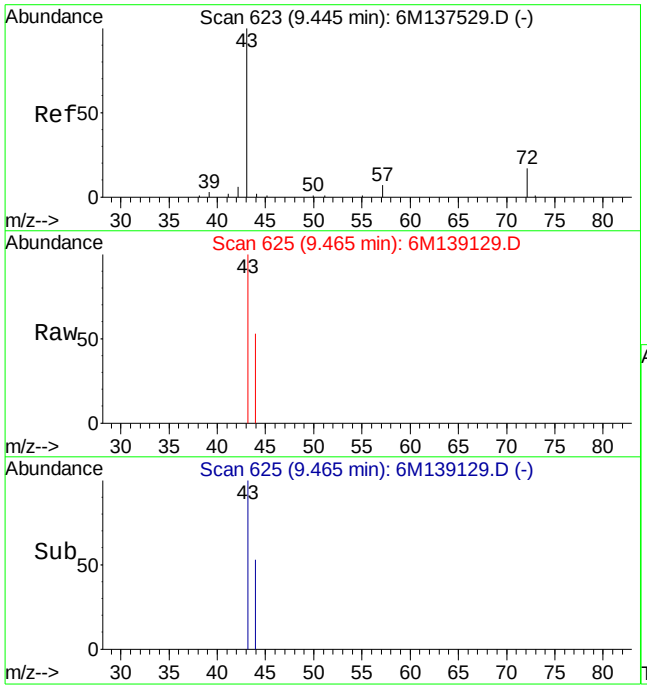

#29
2-Butanone
Concen: 1.16 ug/L
RT: 9.47 min Scan# 625
Delta R.T. 0.02 min
Lab File: 6M139129.D
Acq: 7 May 2016 18:54

Tgt Ion: 43 Resp: 2544

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.2	28.4#

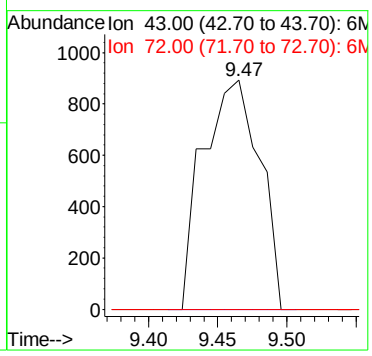

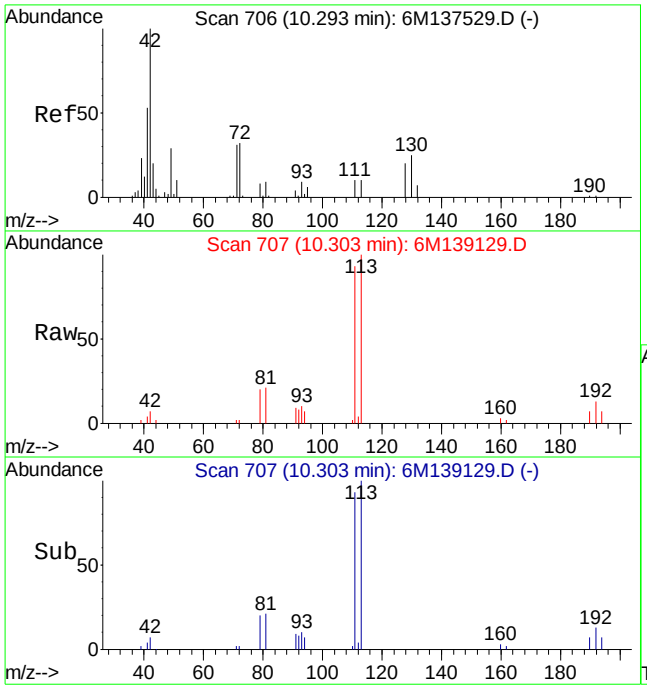

#36
Tetrahydrofuran
Concen: 0.38 ug/L
RT: 10.30 min Scan# 707
Delta R.T. 0.01 min
Lab File: 6M139129.D
Acq: 7 May 2016 18:54

Tgt Ion: 42 Resp: 3658

Ion	Ratio	Lower	Upper
42	100		
72	18.7	21.0	49.0#
71	22.1	20.6	48.2

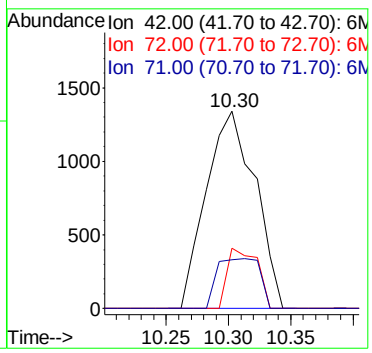

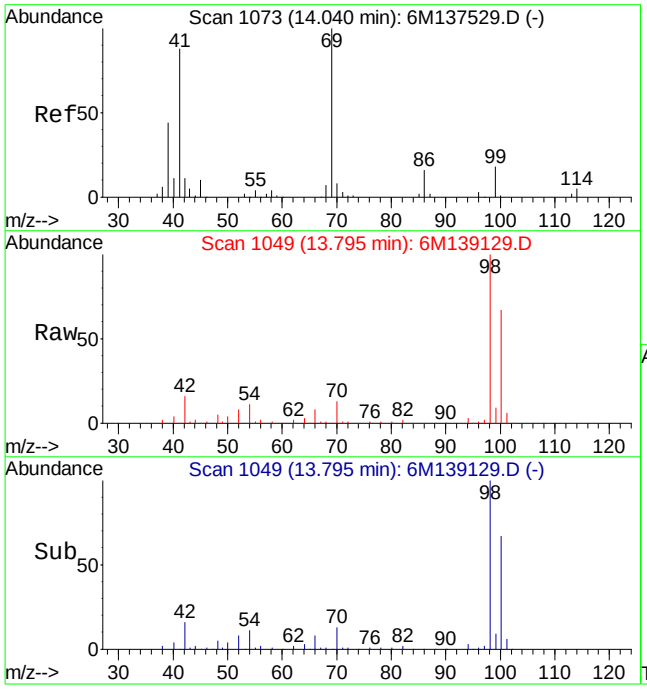

#60
Ethyl Methacrylate
Concen: 0.34 ug/L
RT: 13.79 min Scan# 1049
Delta R.T. -0.24 min
Lab File: 6M139129.D
Acq: 7 May 2016 18:54

Tgt Ion: 69 Resp: 1441

Ion	Ratio	Lower	Upper
69	100		
41	127.6	50.6	118.2#

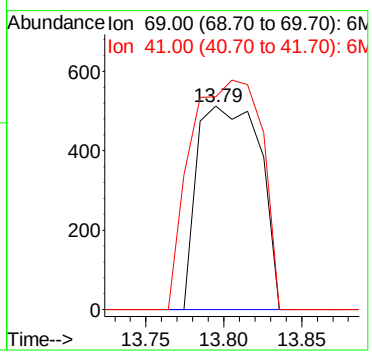

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050716\6M139130.D Vial: 14
Acq On : 7 May 2016 19:27 Operator: TMB
Sample : L16041582-06 8260 5.00g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 09 08:33:16 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	655810	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	472281	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	241818	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	175996	50.0272 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.06%		
43) 1,2-Dichloroethane-d4	11.06	65	215158	47.1044 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.20%		
58) Toluene-d8	13.80	98	554438	49.3769 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.76%		
80) p-Bromofluorobenzene	17.79	95	237968	53.5760 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 107.16%		

Target Compounds					Qvalue
3) Chloromethane	3.90	50	1680	0.2677 ug/L	91
13) Acetone	6.60	43	17004	8.0106 ug/L #	65
15) Tert-Butyl Alcohol	6.93	59	192	0.3585 ug/L #	57
20) Carbon Disulfide	7.72	76	3825	0.3483 ug/L #	75
29) 2-Butanone	9.47	43	4332	1.9110 ug/L #	56
60) Ethyl Methacrylate	13.81	69	1407	0.3287 ug/L #	54

(#) = qualifier out of range (m) = manual integration
6M139130.D 826_SL.M Mon May 09 08:33:16 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050716\6M139130.D Vial: 14
Acq On : 7 May 2016 19:27 Operator: TMB
Sample : L16041582-06 8260 5.00g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 9 8:33 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

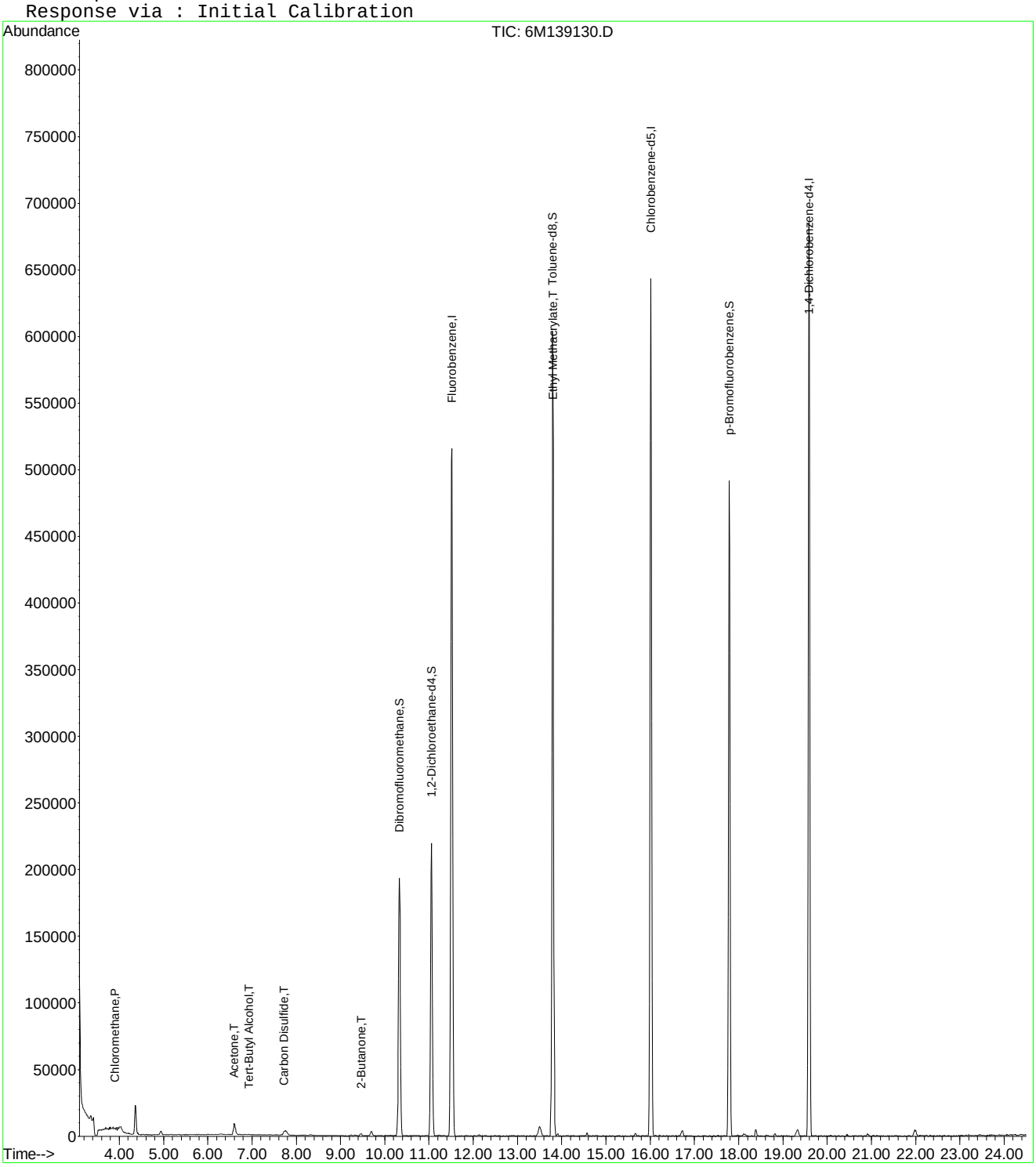

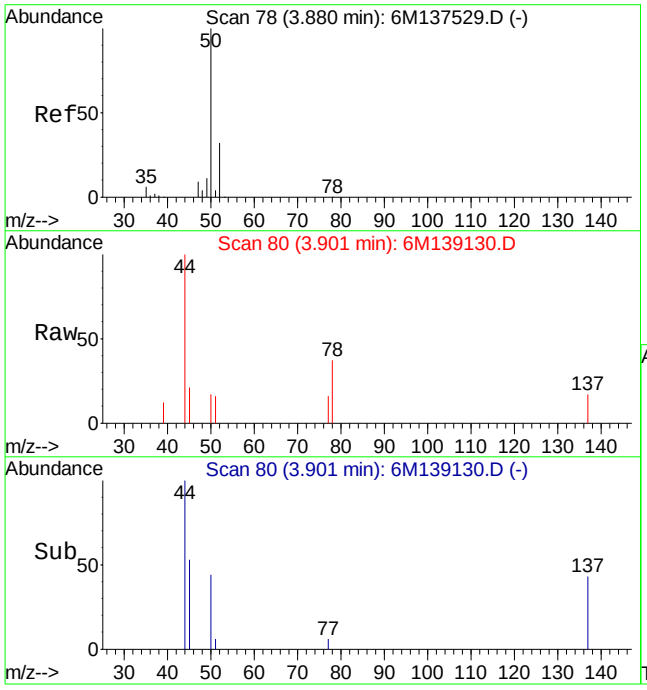

#3
Chloromethane
Concen: 0.27 ug/L
RT: 3.90 min Scan# 80
Delta R.T. 0.02 min
Lab File: 6M139130.D
Acq: 7 May 2016 19:27

Tgt Ion: 50 Resp: 1680

Ion	Ratio	Lower	Upper
50	100		
52	36.4	18.8	44.0

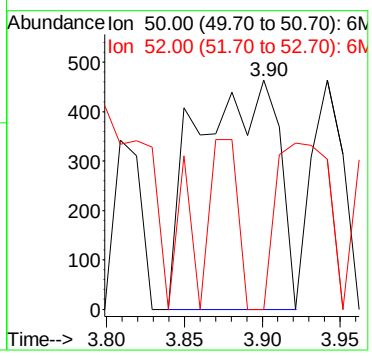

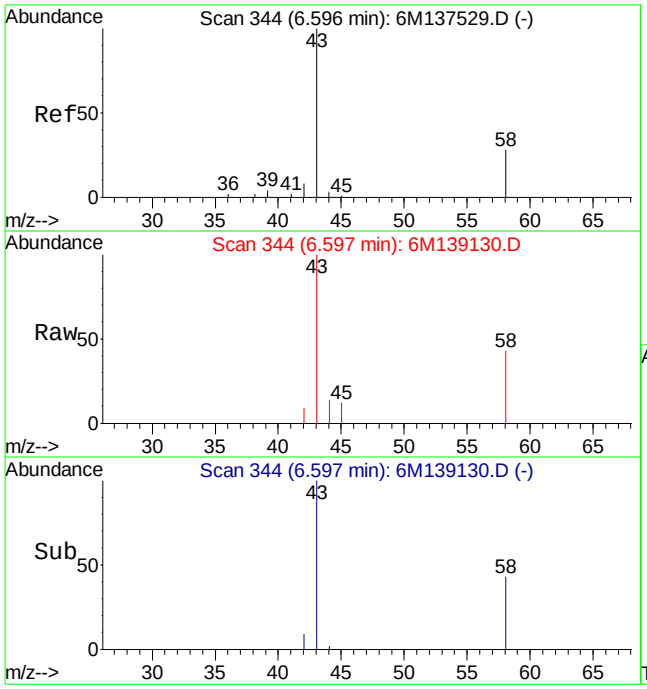

#13
Acetone
Concen: 8.01 ug/L
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M139130.D
Acq: 7 May 2016 19:27

Tgt Ion: 43 Resp: 17004

Ion	Ratio	Lower	Upper
43	100		
58	44.8	16.1	37.7#

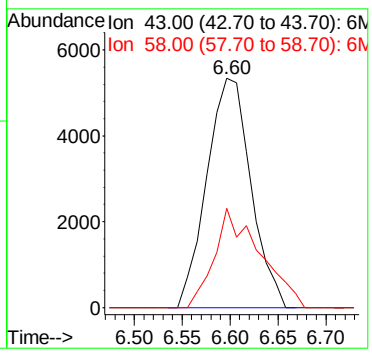

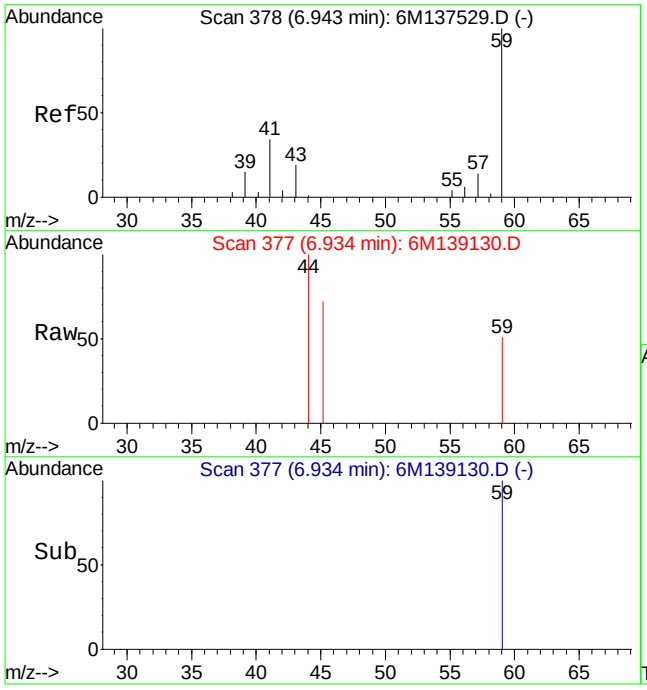

#15
Tert-Butyl Alcohol
Concen: 0.36 ug/L
RT: 6.93 min Scan# 377
Delta R.T. -0.00 min
Lab File: 6M139130.D
Acq: 7 May 2016 19:27

Tgt Ion: 59 Resp: 192

Ion	Ratio	Lower	Upper
59	100		
41	0.0	15.0	35.0#
57	0.0	5.9	13.9#

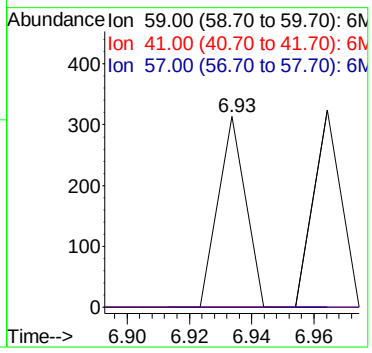

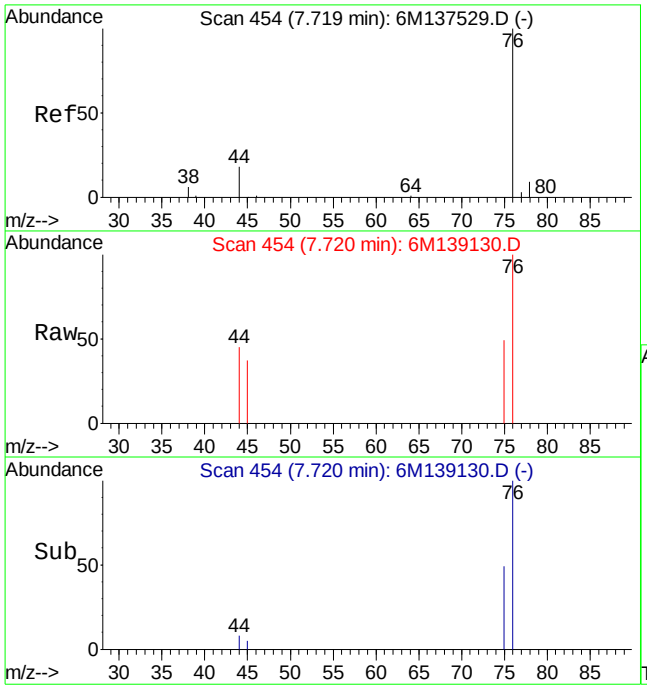

#20
Carbon Disulfide
Concen: 0.35 ug/L
RT: 7.72 min Scan# 454
Delta R.T. -0.00 min
Lab File: 6M139130.D
Acq: 7 May 2016 19:27

Tgt Ion: 76 Resp: 3825

Ion	Ratio	Lower	Upper
76	100		
78	0.0	5.3	12.5#

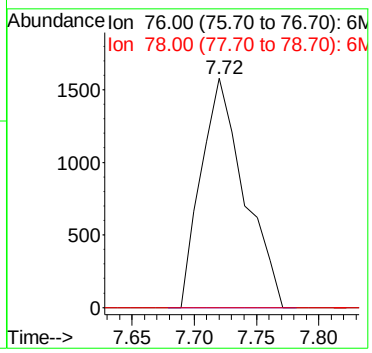

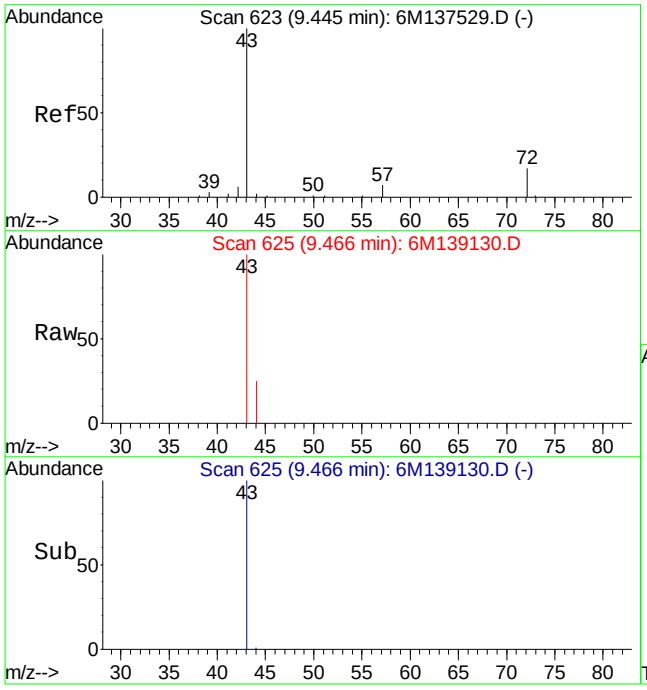

#29
2-Butanone
Concen: 1.91 ug/L
RT: 9.47 min Scan# 625
Delta R.T. 0.02 min
Lab File: 6M139130.D
Acq: 7 May 2016 19:27

Tgt Ion: 43 Resp: 4332

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.2	28.4#

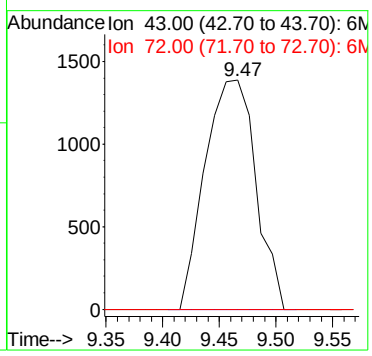

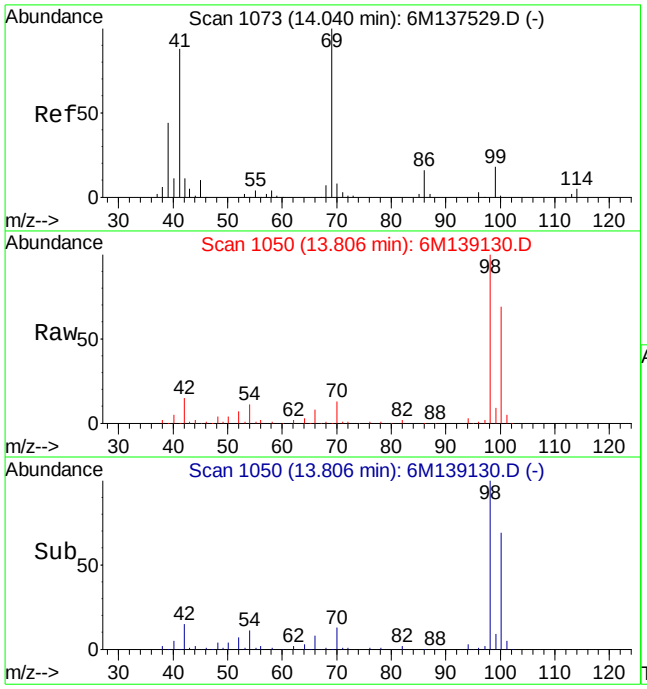

#60
Ethyl Methacrylate
Concen: 0.33 ug/L
RT: 13.81 min Scan# 1050
Delta R.T. -0.23 min
Lab File: 6M139130.D
Acq: 7 May 2016 19:27

Tgt Ion: 69 Resp: 1407

Ion	Ratio	Lower	Upper
69	100		
41	126.1	50.6	118.2#

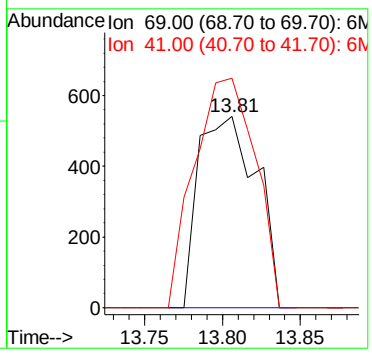

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050716\6M139131.D Vial: 15
Acq On : 7 May 2016 20:00 Operator: TMB
Sample : L16041582-07 8260 5.01g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 09 08:33:17 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	645261	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	442743	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.58	152	210978	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	162558	46.9629 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.92%		
43) 1,2-Dichloroethane-d4	11.06	65	202197	44.9905 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 89.98%		
58) Toluene-d8	13.79	98	543809	51.6614 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 103.32%		
80) p-Bromofluorobenzene	17.79	95	218071	56.2732 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 112.54%		

Target Compounds

					Qvalue
13) Acetone	6.60	43	15322	6.9664 ug/L #	67
20) Carbon Disulfide	7.72	76	4694	0.4345 ug/L #	75
29) 2-Butanone	9.47	43	2687	1.2047 ug/L #	56
36) Tetrahydrofuran	10.29	42	2912	Below Cal #	47
60) Ethyl Methacrylate	13.79	69	1332	0.3319 ug/L	80
90) 1,2,4-Trimethylbenzene	18.82	105	2969	0.2768 ug/L	82

(#) = qualifier out of range (m) = manual integration
6M139131.D 826_SL.M Mon May 09 08:33:17 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050716\6M139131.D Vial: 15
Acq On : 7 May 2016 20:00 Operator: TMB
Sample : L16041582-07 8260 5.01g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 9 8:33 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

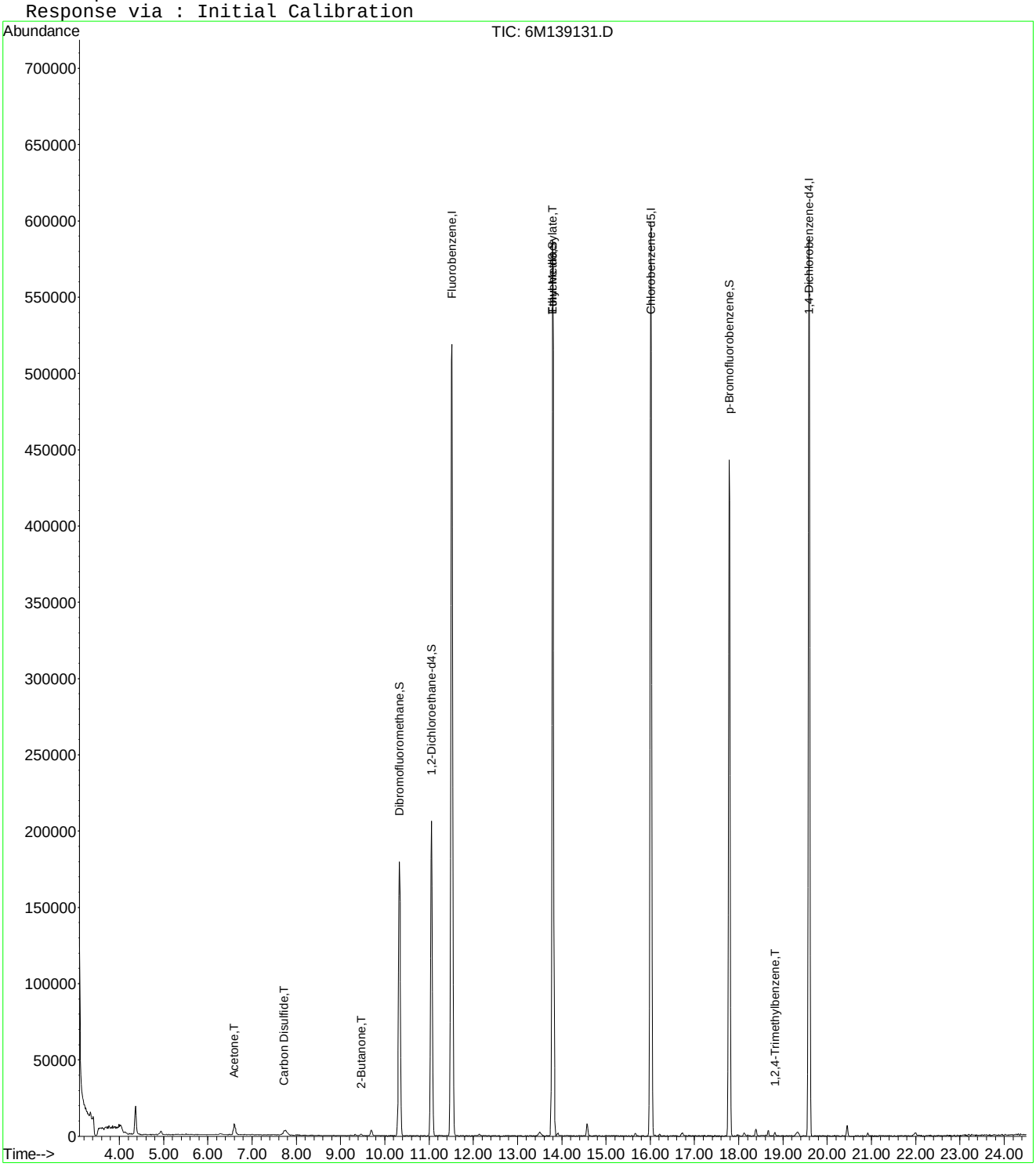

6M139131.D 826_SL.M Mon May 09 08:33:17 2016 Page 2

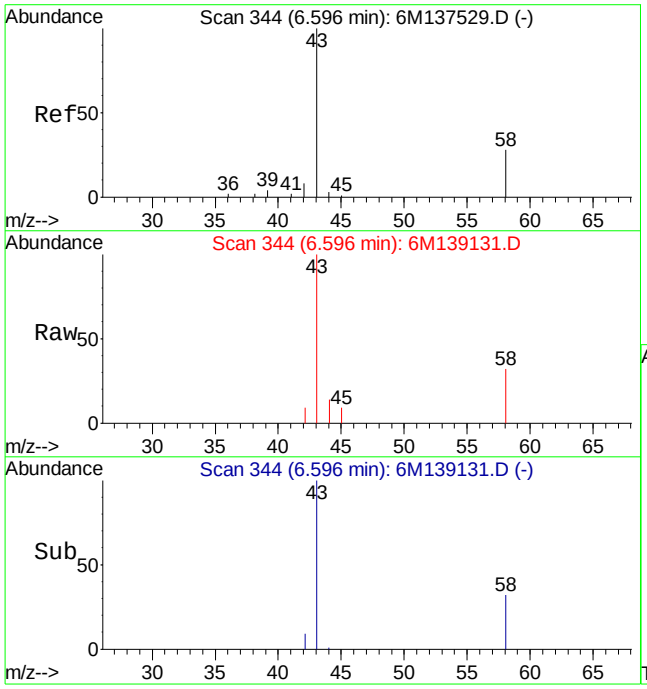

#13
Acetone
Concen: 6.97 ug/L
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M139131.D
Acq: 7 May 2016 20:00

Tgt Ion: 43 Resp: 15322

Ion	Ratio	Lower	Upper
43	100		
58	44.0	16.1	37.7#

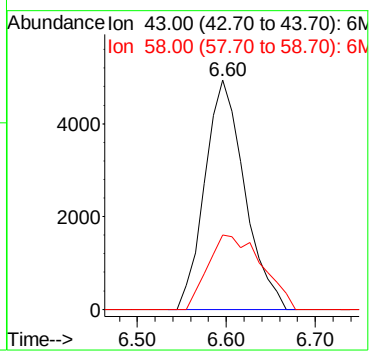

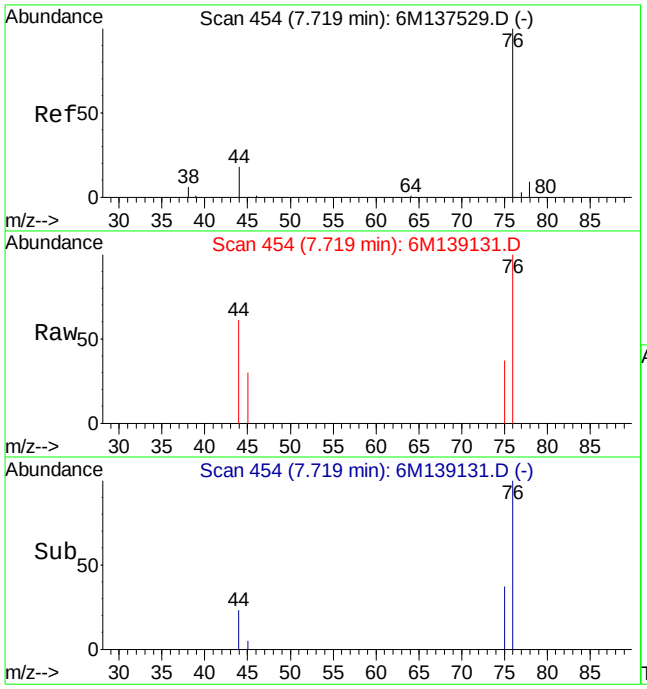

#20
Carbon Disulfide
Concen: 0.43 ug/L
RT: 7.72 min Scan# 454
Delta R.T. -0.00 min
Lab File: 6M139131.D
Acq: 7 May 2016 20:00

Tgt Ion: 76 Resp: 4694

Ion	Ratio	Lower	Upper
76	100		
78	0.0	5.3	12.5#

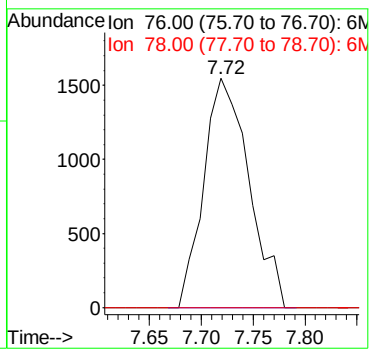

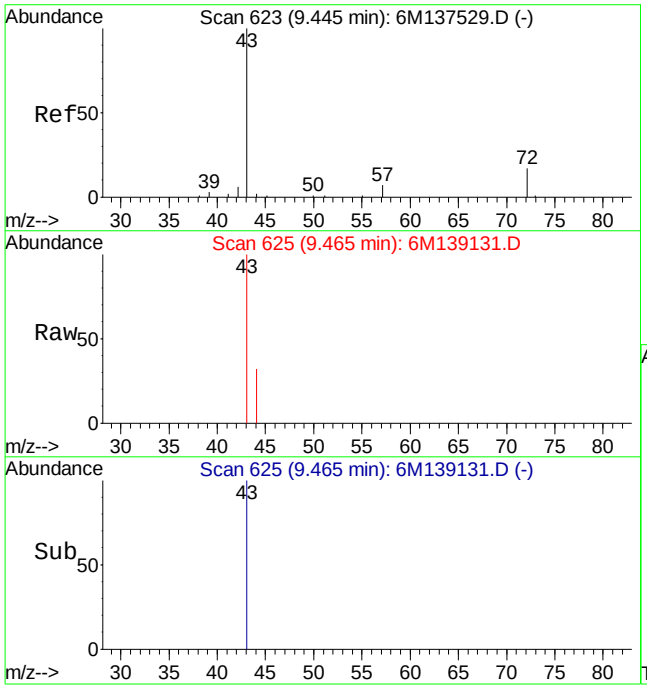

#29
2-Butanone
Concen: 1.20 ug/L
RT: 9.47 min Scan# 625
Delta R.T. 0.02 min
Lab File: 6M139131.D
Acq: 7 May 2016 20:00

Tgt Ion: 43 Resp: 2687

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.2	28.4#

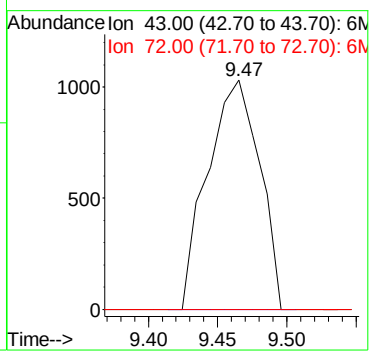

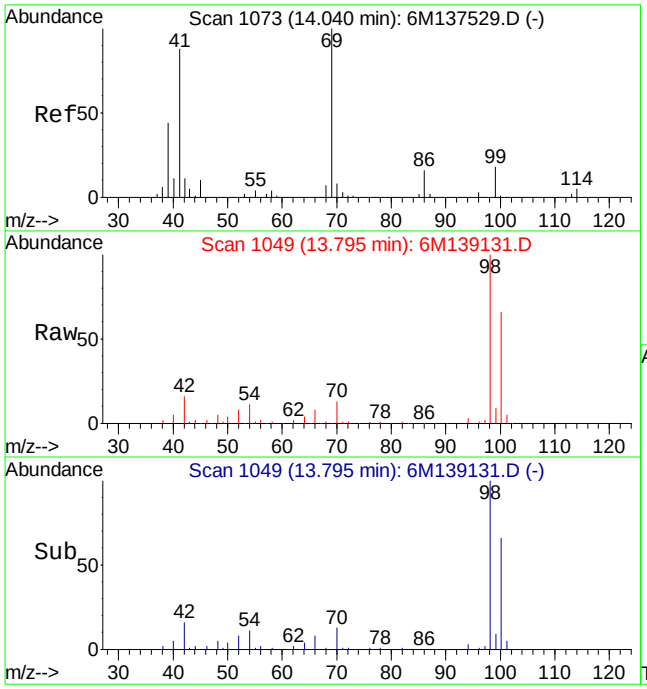

#60
Ethyl Methacrylate
Concen: 0.33 ug/L
RT: 13.79 min Scan# 1049
Delta R.T. -0.24 min
Lab File: 6M139131.D
Acq: 7 May 2016 20:00

Tgt Ion: 69 Resp: 1332

Ion	Ratio	Lower	Upper
69	100		
41	66.3	50.6	118.2

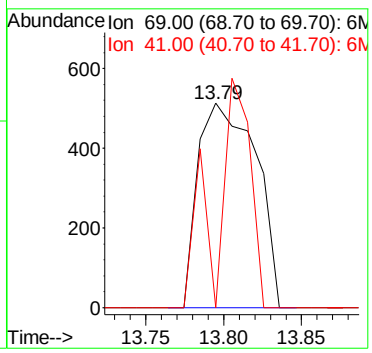

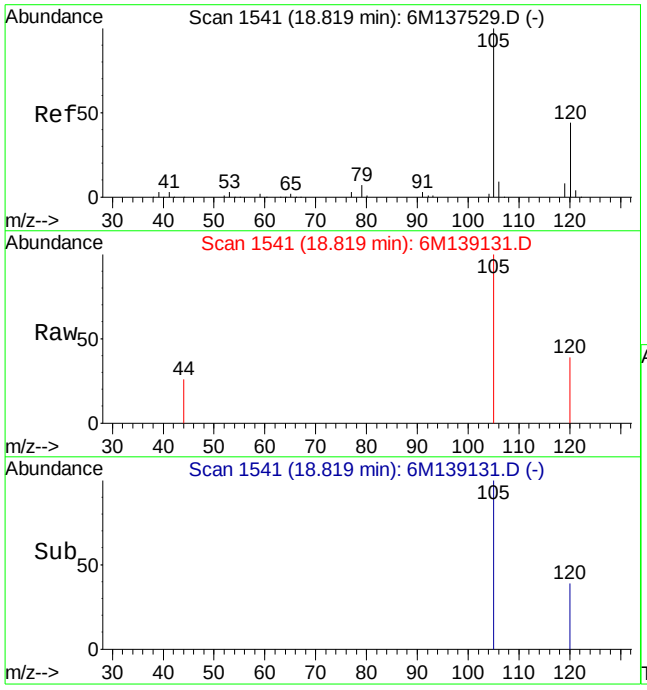

#90
1,2,4-Trimethylbenzene
Concen: 0.28 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. -0.00 min
Lab File: 6M139131.D
Acq: 7 May 2016 20:00

Tgt Ion:105 Resp: 2969

Ion	Ratio	Lower	Upper
105	100		
120	43.8	34.3	79.9

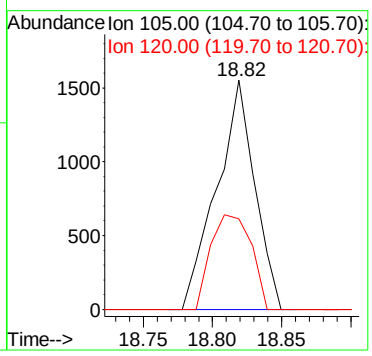

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:35 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:12:24 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	662608	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	467802	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	239669	50.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.32	111	1132	0.3185 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.64%#	
43) 1,2-Dichloroethane-d4	11.05	65	1872	0.4056 ug/L	-0.01
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.82%#	
58) Toluene-d8	13.80	98	5704	0.5128 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	1.02%#	
80) p-Bromofluorobenzene	17.79	95	2210	0.5020 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	1.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	3454	0.5676 ug/L #	66
3) Chloromethane	3.88	50	8579	1.3528 ug/L	90
4) Vinyl Chloride	4.12	62	3760	0.7367 ug/L #	74
5) 1,3-Butadiene	4.18	54	3027	0.7128 ug/L #	61
6) Bromomethane	5.03	94	1550	0.5697 ug/L	88
7) Chloroethane	5.19	64	1482	0.5121 ug/L #	45
8) Trichlorofluoromethane	5.69	101	6717	0.9794 ug/L #	89
10) Isoprene	6.27	67	1888	0.4226 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	1199	0.3663 ug/L #	55
13) Acetone	6.59	43	9375	2.3758 ug/L	94
14) 1,1-Dichloroethene	6.83	61	2956	0.5098 ug/L	84
15) Tert-Butyl Alcohol	6.94	59	200	0.3696 ug/L #	57
18) Methyl acetate	7.39	43	2867	0.7115 ug/L #	64
19) Methylene Chloride	7.67	84	2652	0.7594 ug/L	75
20) Carbon Disulfide	7.72	76	8199	0.7390 ug/L #	82
22) Methyl Tert Butyl Ether	7.88	73	4851	0.4864 ug/L #	63
23) trans-1,2-Dichloroethene	8.16	96	1352	0.4221 ug/L #	10
24) n-Hexane	8.23	57	3942	0.6777 ug/L	92
26) Vinyl Acetate	8.79	43	2062	0.2645 ug/L #	78
27) 1,1-Dichloroethane	8.82	63	3798	0.5499 ug/L #	68
29) 2-Butanone	9.46	43	1832	0.7999 ug/L #	56
31) 2,2-Dichloropropane	9.69	77	2885	0.5204 ug/L	96
32) cis-1,2-Dichloroethene	9.76	96	1812	0.5067 ug/L	93
33) Chloroform	10.01	83	3647	0.5654 ug/L	91
35) Bromochloromethane	10.26	130	694	0.3303 ug/L #	47
36) Tetrahydrofuran	10.29	42	9683	4.2648 ug/L	95
38) 1,1,1-Trichloroethane	10.59	97	2858	0.5017 ug/L	84
39) Cyclohexane	10.62	56	2886	0.4467 ug/L	94
40) 1,1-Dichloropropene	10.82	75	2042	0.4451 ug/L #	76
42) Carbon Tetrachloride	10.99	117	2712	0.5095 ug/L #	85
45) 1,2-Dichloroethane	11.19	62	3101	0.5633 ug/L #	75
46) Benzene	11.23	78	8142	0.5899 ug/L	89
47) Trichloroethene	12.09	130	1950	0.5980 ug/L	81
48) Methylcyclohexane	12.18	83	2990	0.5672 ug/L #	73
49) 1,2-Dichloropropane	12.34	63	1667	0.4489 ug/L #	69
51) Bromodichloromethane	12.68	83	2589	0.5312 ug/L	92
52) Dibromomethane	12.78	93	741	0.3411 ug/L	80
55) cis-1,3-Dichloropropene	13.42	75	2628	0.4894 ug/L #	74
56) Dimethyl Disulfide	13.71	79	853	0.3150 ug/L #	49
59) Toluene	13.92	91	7610	0.5751 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M137523.D 826_SL.M Mon Feb 29 16:01:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:35 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:12:24 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
60)	Ethyl Methacrylate	14.04	69	1764	0.4160 ug/L		85
62)	trans-1,3-Dichloropropene	14.12	75	2064	0.4056 ug/L	#	71
63)	1,1,2-Trichloroethane	14.37	97	1621	0.5861 ug/L	#	75
64)	2-Hexanone	14.32	43	1822	0.5773 ug/L	#	48
65)	1,3-Dichloropropane	14.75	76	2715	0.5416 ug/L		83
66)	Tetrachloroethene	14.86	166	1836	0.5624 ug/L		91
67)	Dibromochloromethane	15.18	129	1663	0.4623 ug/L		94
68)	1,2-Dibromoethane	15.48	107	1262	0.4462 ug/L		99
69)	1-Chlorohexane	15.59	91	2113	0.5142 ug/L		96
70)	Chlorobenzene	16.07	112	4991	0.5869 ug/L		75
71)	1,1,1,2-Tetrachloroethane	16.11	131	1409	0.4126 ug/L	#	79
72)	Ethylbenzene	16.11	106	2290	0.5032 ug/L		61
73)	m-,p-Xylene	16.22	106	6307	1.1326 ug/L		90
74)	o-Xylene	16.88	106	2685	0.5119 ug/L		71
75)	Styrene	16.92	104	4645	0.5203 ug/L		93
76)	Bromoform	17.49	173	756	0.2977 ug/L	#	62
77)	Isopropylbenzene	17.38	105	7047	0.4998 ug/L		82
79)	1,1,2,2-Tetrachloroethane	17.64	83	1948	0.5203 ug/L		84
83)	n-Propylbenzene	17.98	91	9243	0.5679 ug/L	#	92
84)	Bromobenzene	18.13	156	1885	0.5328 ug/L		100
85)	1,3,5-Trimethylbenzene	18.21	105	6007	0.5185 ug/L		90
86)	2-Chlorotoluene	18.29	91	5403	0.4973 ug/L		88
87)	4-Chlorotoluene	18.35	91	5598	0.5635 ug/L	#	83
88)	a-Methylstyrene	18.69	118	3780	0.6719 ug/L		93
89)	tert-Butylbenzene	18.76	134	1072	0.4440 ug/L		84
90)	1,2,4-Trimethylbenzene	18.82	105	7288	0.5982 ug/L		78
91)	sec-Butylbenzene	19.08	105	8207	0.5532 ug/L		85
92)	p-Isopropyltoluene	19.27	119	6156	0.5029 ug/L		99
93)	1,3-Dichlorobenzene	19.48	146	3876	0.5662 ug/L		99
94)	1,4-Dichlorobenzene	19.64	146	4389	0.6299 ug/L	#	36
95)	n-Butylbenzene	19.89	91	6993	0.5680 ug/L		91
96)	1,2-Dichlorobenzene	20.23	146	3739	0.5676 ug/L		89
98)	1,2,4-Trichlorobenzene	22.76	180	2881	0.6050 ug/L		89
99)	Hexachlorobutadiene	22.95	225	1268	0.4656 ug/L		81
100)	Naphthalene	23.20	128	5965	0.5449 ug/L		95
101)	1,2,3-Trichlorobenzene	23.58	180	2914	0.6214 ug/L	#	69

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

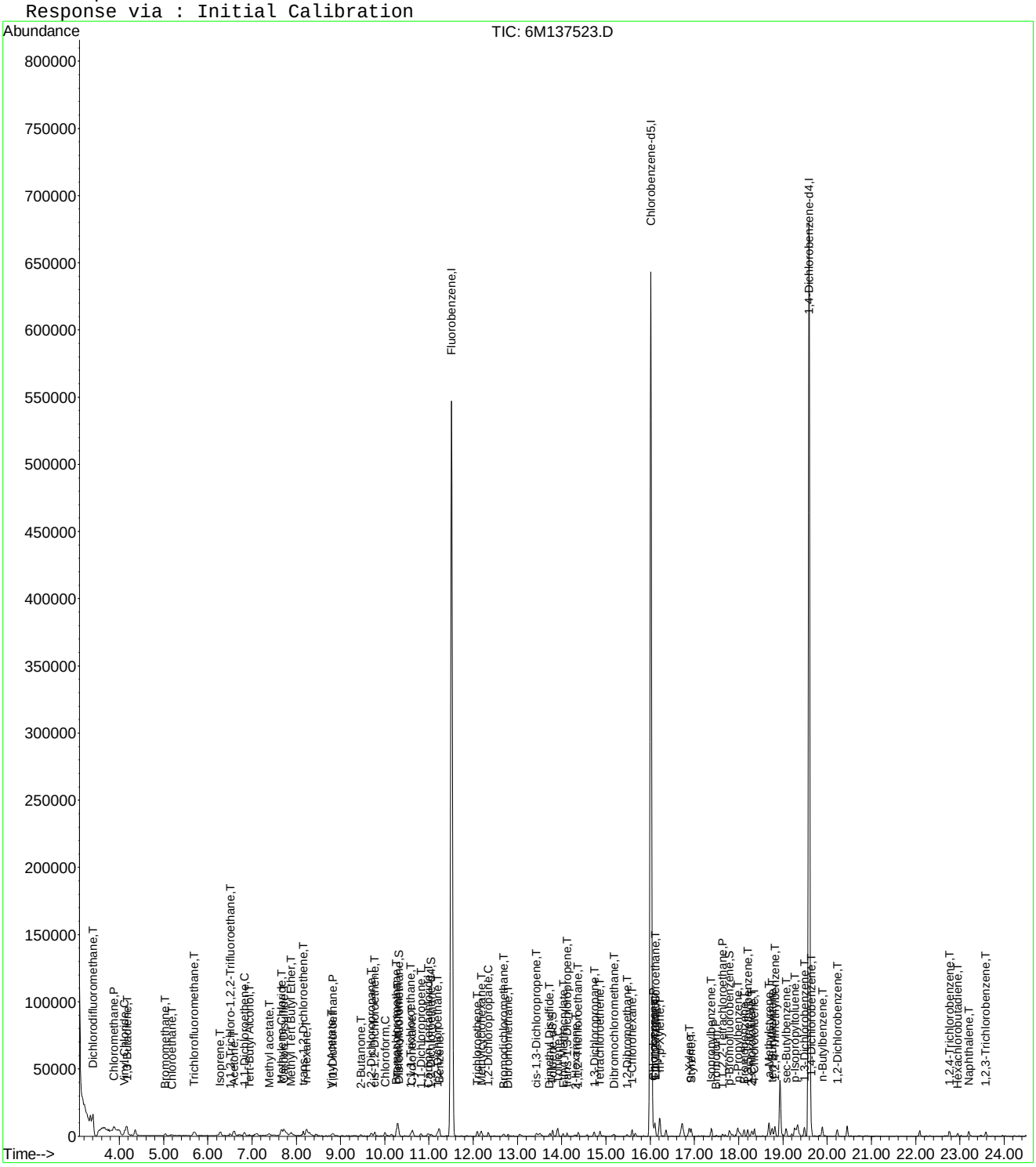

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.5676	0.0	0	0.00
3	P	Chloromethane	-1.0000	1.3528	0.0	0	0.00
4	C	Vinyl Chloride	-1.0000	0.7367	0.0	0	0.00
5	T	1,3-Butadiene	-1.0000	0.7128	0.0	0	0.01
6	T	Bromomethane	-1.0000	0.5697	0.0	0	0.00
7	T	Chloroethane	-1.0000	0.5121	0.0	0	0.00
8	T	Trichlorofluoromethane	-1.0000	0.9794	0.0	0	-0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.24#
10	T	Isoprene	-1.0000	0.4226	0.0	0	-0.01
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.48#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3663	0.0	0	0.00
13	T	Acetone	-1.0000	2.3758	0.0	0	0.00
14	C	1,1-Dichloroethene	-1.0000	0.5098	0.0	0	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.3696	0.0	0	0.00
16	T	Dimethyl Sulfide	-1.0000	0.2328	0.0	0	-0.02
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.38#
18	T	Methyl acetate	-1.0000	0.7115	0.0	0	0.00
19	T	Methylene Chloride	-1.0000	0.7594	0.0	0	0.00
20	T	Carbon Disulfide	-1.0000	0.7390	0.0	0	0.00
21	T	Acrylonitrile	-1.0000	0.1371	0.0	0	0.02
22	T	Methyl Tert Butyl Ether	0.5000	0.4864	2.7	100	-0.01
23	T	trans-1,2-Dichloroethene	-1.0000	0.4221	0.0	0	0.00
24	T	n-Hexane	-1.0000	0.6777	0.0	0	-0.01
25	T	Diisopropyl ether	-1.0000	0.1069	0.0	0	-0.16
26	T	Vinyl Acetate	-1.0000	0.2645	0.0	0	0.00
27	P	1,1-Dichloroethane	-1.0000	0.5499	0.0	0	-0.01
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-9.24#
29	T	2-Butanone	-1.0000	0.7999	0.0	0	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.58#
31	T	2,2-Dichloropropane	-1.0000	0.5204	0.0	0	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.5067	0.0	0	-0.01
33	C	Chloroform	-1.0000	0.5654	0.0	0	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-10.16#
35	T	Bromochloromethane	-1.0000	0.3303	0.0	0	0.00
36	T	Tetrahydrofuran	-1.0000	4.2648	0.0	0	0.00
37	S	Dibromofluoromethane	-1.0000	0.3185	0.0	0	0.00
38	T	1,1,1-Trichloroethane	-1.0000	0.5017	0.0	0	-0.01
39	T	Cyclohexane	-1.0000	0.4467	0.0	0	-0.02
40	T	1,1-Dichloropropene	-1.0000	0.4451	0.0	0	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.94#
42	T	Carbon Tetrachloride	-1.0000	0.5095	0.0	0	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.4056	0.0	0	-0.01
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	-1.0000	0.5633	0.0	0	0.00
46	T	Benzene	0.5000	0.5899	-18.0	100	0.00
47	T	Trichloroethene	-1.0000	0.5980	0.0	0	0.00
48	T	Methylcyclohexane	-1.0000	0.5672	0.0	0	0.00
49	C	1,2-Dichloropropane	-1.0000	0.4489	0.0	0	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-12.67#
51	T	Bromodichloromethane	-1.0000	0.5312	0.0	0	0.00
52	T	Dibromomethane	-1.0000	0.3411	0.0	0	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1346	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-13.07#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.4894	0.0	0	-0.01
56	T	Dimethyl Disulfide	-1.0000	0.3150	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.5128	0.0	0	0.00
59	C	Toluene	0.5000	0.5751	-15.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.4160	0.0	0	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	-1.0000	0.4056	0.0	0	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.5861	0.0	0	0.00
64	T	2-Hexanone	-1.0000	0.5773	0.0	0	0.00
65	T	1,3-Dichloropropane	-1.0000	0.5416	0.0	0	0.00
66	T	Tetrachloroethene	-1.0000	0.5624	0.0	0	-0.01
67	T	Dibromochloromethane	-1.0000	0.4623	0.0	0	0.00
68	T	1,2-Dibromoethane	-1.0000	0.4462	0.0	0	0.00
69	T	1-Chlorohexane	-1.0000	0.5142	0.0	0	0.00
70	P	Chlorobenzene	-1.0000	0.5869	0.0	0	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.4126	0.0	0	0.00
72	C	Ethylbenzene	0.5000	0.5032	-0.6	100	0.00
73	T	m-,p-Xylene	1.0000	1.1326	-13.3	100	0.00
74	T	o-Xylene	0.5000	0.5119	-2.4	100	0.00
75	T	Styrene	-1.0000	0.5203	0.0	0	0.00
76	P	Bromoform	-1.0000	0.2977	0.0	0	0.00
77	T	Isopropylbenzene	-1.0000	0.4998	0.0	0	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.5203	0.0	0	-0.01
80	S	p-Bromofluorobenzene	-1.0000	0.5020	0.0	0	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.1823	0.0	0	0.01
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.1476	0.0	0	0.00
83	T	n-Propylbenzene	-1.0000	0.5679	0.0	0	0.00
84	T	Bromobenzene	-1.0000	0.5328	0.0	0	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.5185	0.0	0	0.00
86	T	2-Chlorotoluene	-1.0000	0.4973	0.0	0	-0.01
87	T	4-Chlorotoluene	-1.0000	0.5635	0.0	0	0.00
88	T	a-Methylstyrene	-1.0000	0.6719	0.0	0	0.00
89	T	tert-Butylbenzene	-1.0000	0.4440	0.0	0	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.5982	0.0	0	0.00
91	T	sec-Butylbenzene	-1.0000	0.5532	0.0	0	0.00
92	T	p-Isopropyltoluene	-1.0000	0.5029	0.0	0	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.5662	0.0	0	0.00
94	T	1,4-Dichlorobenzene	-1.0000	0.6299	0.0	0	0.00
95	T	n-Butylbenzene	-1.0000	0.5680	0.0	0	0.00
96	T	1,2-Dichlorobenzene	-1.0000	0.5676	0.0	0	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-21.41#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.6050	0.0	0	0.00
99	T	Hexachlorobutadiene	-1.0000	0.4656	0.0	0	-0.01
100	T	Naphthalene	-1.0000	0.5449	0.0	0	0.00
101	T	1,2,3-Trichlorobenzene	-1.0000	0.6214	0.0	0	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137523.D 826_SL.M Mon Feb 29 16:01:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:37 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	594307	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	418336	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	217318	50.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.34	111	2084	0.6537 ug/L	0.02
Spiked Amount 50.000	Range 80 - 120		Recovery =	1.30%#	
43) 1,2-Dichloroethane-d4	11.06	65	2834	0.6847 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	1.36%#	
58) Toluene-d8	13.80	98	7503	0.7544 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	1.50%#	
80) p-Bromofluorobenzene	17.79	95	3135	0.7854 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	1.58%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	6025	1.1039 ug/L	88
3) Chloromethane	3.88	50	8942	1.5721 ug/L	80
4) Vinyl Chloride	4.13	62	5159	1.1269 ug/L	96
5) 1,3-Butadiene	4.18	54	4578	1.2019 ug/L #	67
6) Bromomethane	5.03	94	2477	1.0150 ug/L	94
7) Chloroethane	5.20	64	2347	0.9041 ug/L #	77
8) Trichlorofluoromethane	5.70	101	7751	1.2600 ug/L #	92
9) Diethyl ether	6.23	59	14414	5.0935 ug/L	81
10) Isoprene	6.28	67	3598	0.8978 ug/L	94
11) Acrolein	6.48	56	1307	2.4320 ug/L #	51
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	3197	1.0888 ug/L	73
13) Acetone	6.60	43	5933	0.3832 ug/L	97
14) 1,1-Dichloroethene	6.84	61	5455	1.0489 ug/L	83
15) Tert-Butyl Alcohol	6.93	59	4660	9.6025 ug/L #	86
16) Dimethyl Sulfide	7.13	62	2208	0.8750 ug/L	94
18) Methyl acetate	7.40	43	3574	0.9889 ug/L #	64
19) Methylene Chloride	7.66	84	3682	1.1755 ug/L	75
20) Carbon Disulfide	7.72	76	11945	1.2004 ug/L	97
21) Acrylonitrile	7.86	53	3216	2.1651 ug/L	84
22) Methyl Tert Butyl Ether	7.90	73	8242	0.9214 ug/L	91
23) trans-1,2-Dichloroethene	8.17	96	2437	0.8482 ug/L	60
24) n-Hexane	8.23	57	4827	0.9252 ug/L	90
25) Diisopropyl ether	8.62	45	67920	5.0212 ug/L	97
26) Vinyl Acetate	8.80	43	6077	0.8691 ug/L #	78
27) 1,1-Dichloroethane	8.83	63	6295	1.0162 ug/L	88
28) Ethyl-Tert-Butyl ether	9.25	59	49996	4.6114 ug/L	96
29) 2-Butanone	9.47	43	2247	1.0938 ug/L #	56
30) Propionitrile	9.57	54	2816	4.9529 ug/L #	71
31) 2,2-Dichloropropane	9.70	77	5030	1.0116 ug/L	94
32) cis-1,2-Dichloroethene	9.77	96	2740	0.8542 ug/L	83
33) Chloroform	10.00	83	6439	1.1130 ug/L	98
35) Bromochloromethane	10.26	130	1361	0.7221 ug/L	97
36) Tetrahydrofuran	10.29	42	10271	5.4403 ug/L	94
38) 1,1,1-Trichloroethane	10.61	97	5241	1.0257 ug/L	95
39) Cyclohexane	10.63	56	5811	1.0029 ug/L	86
40) 1,1-Dichloropropene	10.82	75	4038	0.9813 ug/L #	89
41) Tert-Amyl-Methyl ether	10.95	73	39464	4.5884 ug/L #	83
42) Carbon Tetrachloride	11.00	117	4871	1.0202 ug/L #	88
45) 1,2-Dichloroethane	11.19	62	4707	0.9533 ug/L #	86
46) Benzene	11.23	78	13412	1.0834 ug/L	93

(#) = qualifier out of range (m) = manual integration
6M137524.D 826_SL.M Mon Feb 29 16:01:38 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:37 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
47)	Trichloroethene	12.09	130	2983	1.0199 ug/L		90
48)	Methylcyclohexane	12.19	83	4295	0.9084 ug/L		77
49)	1,2-Dichloropropane	12.35	63	3111	0.9339 ug/L	#	69
51)	Bromodichloromethane	12.68	83	4337	0.9921 ug/L		97
52)	Dibromomethane	12.77	93	1629	0.8361 ug/L		91
53)	2-Chloroethyl Vinyl Ether	13.04	63	1268	0.6921 ug/L	#	43
54)	4-Methyl-2-Pentanone	13.08	58	633	0.4563 ug/L	#	34
55)	cis-1,3-Dichloropropene	13.43	75	4040	0.8388 ug/L		98
56)	Dimethyl Disulfide	13.72	79	1323	0.5447 ug/L	#	49
59)	Toluene	13.91	91	12207	1.0316 ug/L		97
60)	Ethyl Methacrylate	14.03	69	2818	0.7432 ug/L		100
62)	trans-1,3-Dichloropropene	14.12	75	3878	0.8522 ug/L		100
63)	1,1,2-Trichloroethane	14.38	97	2441	0.9869 ug/L		93
64)	2-Hexanone	14.31	43	2064	0.7313 ug/L		93
65)	1,3-Dichloropropane	14.73	76	4145	0.9246 ug/L		83
66)	Tetrachloroethene	14.87	166	3009	1.0308 ug/L		96
67)	Dibromochloromethane	15.17	129	2840	0.8829 ug/L		96
68)	1,2-Dibromoethane	15.48	107	1912	0.7559 ug/L		85
69)	1-Chlorohexane	15.59	91	3045	0.8286 ug/L	#	59
70)	Chlorobenzene	16.06	112	8053	1.0589 ug/L	#	66
71)	1,1,1,2-Tetrachloroethane	16.11	131	2914	0.9542 ug/L		92
72)	Ethylbenzene	16.10	106	3899	0.9580 ug/L		89
73)	m-,p-Xylene	16.21	106	9999	2.0079 ug/L		90
74)	o-Xylene	16.88	106	4283	0.9131 ug/L		84
75)	Styrene	16.92	104	6414	0.8034 ug/L		92
76)	Bromoform	17.49	173	1706	0.7511 ug/L	#	70
77)	Isopropylbenzene	17.38	105	11886	0.9427 ug/L		95
79)	1,1,2,2-Tetrachloroethane	17.65	83	3500	1.0310 ug/L		95
81)	1,2,3-Trichloropropane	17.87	110	811	0.7802 ug/L	#	55
82)	trans-1,4-Dichloro-2-Buten	17.93	53	959	0.7652 ug/L		70
83)	n-Propylbenzene	17.98	91	14256	0.9660 ug/L	#	91
84)	Bromobenzene	18.13	156	3248	1.0125 ug/L		98
85)	1,3,5-Trimethylbenzene	18.21	105	9438	0.8984 ug/L		95
86)	2-Chlorotoluene	18.30	91	9880	1.0030 ug/L		97
87)	4-Chlorotoluene	18.35	91	8357	0.9278 ug/L		93
88)	a-Methylstyrene	18.68	118	4374	0.8574 ug/L		95
89)	tert-Butylbenzene	18.75	134	1999	0.9131 ug/L		84
90)	1,2,4-Trimethylbenzene	18.82	105	10630	0.9622 ug/L		79
91)	sec-Butylbenzene	19.07	105	13062	0.9709 ug/L		95
92)	p-Isopropyltoluene	19.27	119	10400	0.9370 ug/L		89
93)	1,3-Dichlorobenzene	19.48	146	6397	1.0306 ug/L		97
94)	1,4-Dichlorobenzene	19.64	146	7211	1.1413 ug/L		83
95)	n-Butylbenzene	19.88	91	10811	0.9684 ug/L		88
96)	1,2-Dichlorobenzene	20.22	146	5973	1.0000 ug/L		96
97)	1,2-Dibromo-3-Chloropropan	21.41	75	191	0.2543 ug/L	#	1
98)	1,2,4-Trichlorobenzene	22.76	180	4430	1.0259 ug/L		93
99)	Hexachlorobutadiene	22.94	225	2385	0.9658 ug/L		90
100)	Naphthalene	23.20	128	8770	0.8835 ug/L		92
101)	1,2,3-Trichlorobenzene	23.59	180	4309	1.0134 ug/L		95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

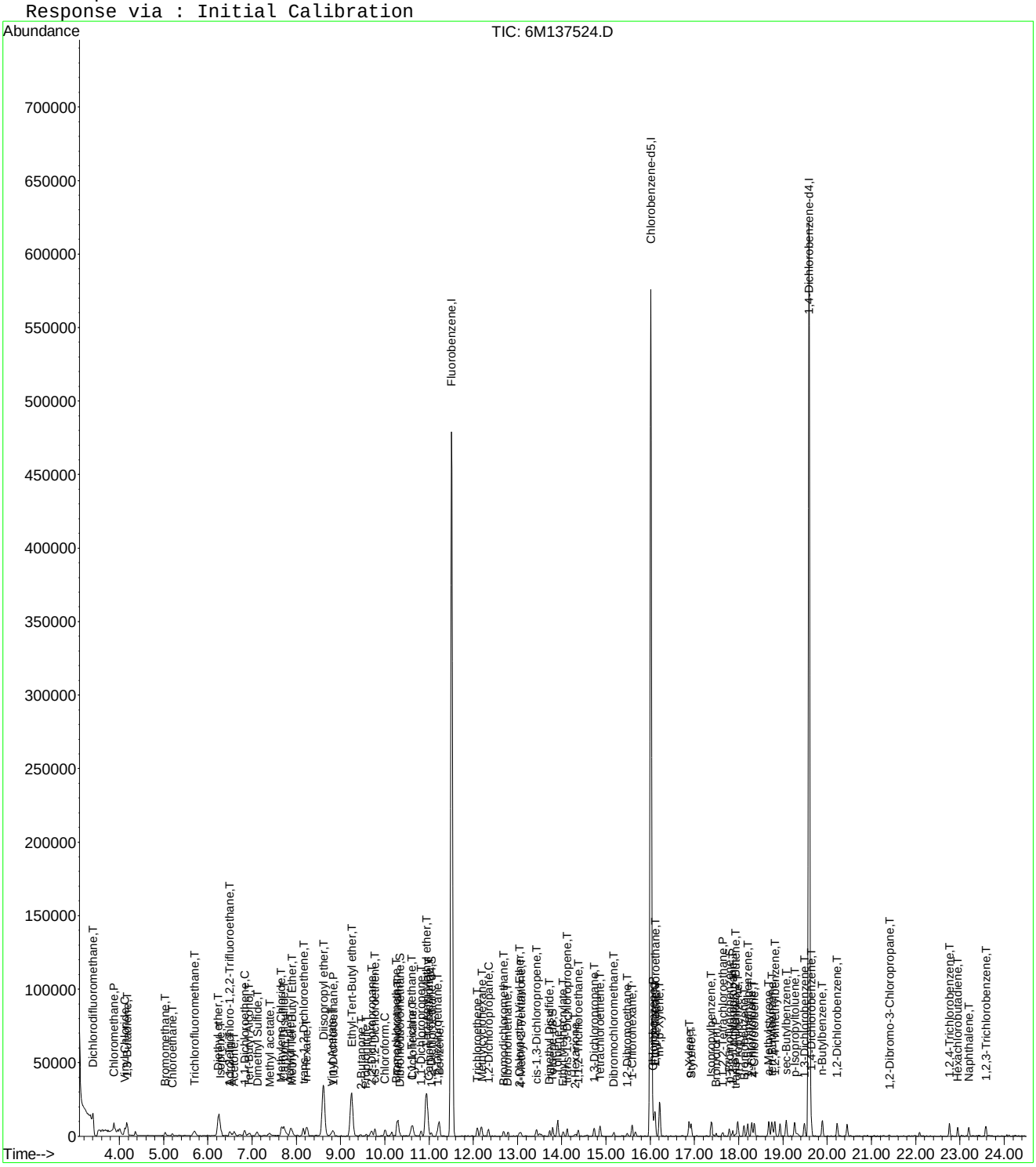

6M137524.D 826_SL.M Mon Feb 29 16:01:38 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	1.1039	0.0	0	0.00
3	P	Chloromethane	-1.0000	1.5721	0.0	0	0.00
4	C	Vinyl Chloride	-1.0000	1.1269	0.0	0	0.01
5	T	1,3-Butadiene	-1.0000	1.2019	0.0	0	0.01
6	T	Bromomethane	-1.0000	1.0150	0.0	0	0.00
7	T	Chloroethane	-1.0000	0.9041	0.0	0	0.00
8	T	Trichlorofluoromethane	-1.0000	1.2600	0.0	0	0.00
9	T	Diethyl ether	5.0000	5.0935	-1.9	100	-0.01
10	T	Isoprene	-1.0000	0.8978	0.0	0	0.00
11	T	Acrolein	2.5000	2.4320	2.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	1.0888	0.0	0	-0.01
13	T	Acetone	-1.0000	0.3832	0.0	0	0.01
14	C	1,1-Dichloroethene	-1.0000	1.0489	0.0	0	0.00
15	T	Tert-Butyl Alcohol	10.0000	9.6025	4.0	100	0.00
16	T	Dimethyl Sulfide	-1.0000	0.8750	0.0	0	0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.38#
18	T	Methyl acetate	-1.0000	0.9889	0.0	0	0.01
19	T	Methylene Chloride	-1.0000	1.1755	0.0	0	-0.01
20	T	Carbon Disulfide	-1.0000	1.2004	0.0	0	0.00
21	T	Acrylonitrile	2.5000	2.1651	13.4	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9214	7.9	100	0.00
23	T	trans-1,2-Dichloroethene	-1.0000	0.8482	0.0	0	0.00
24	T	n-Hexane	-1.0000	0.9252	0.0	0	-0.01
25	T	Diisopropyl ether	5.0000	5.0212	-0.4	100	0.01
26	T	Vinyl Acetate	-1.0000	0.8691	0.0	0	0.00
27	P	1,1-Dichloroethane	-1.0000	1.0162	0.0	0	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.6114	7.8	100	0.01
29	T	2-Butanone	-1.0000	1.0938	0.0	0	0.02
30	T	Propionitrile	5.0000	4.9529	0.9	100	-0.01
31	T	2,2-Dichloropropane	-1.0000	1.0116	0.0	0	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.8542	0.0	0	0.00
33	C	Chloroform	-1.0000	1.1130	0.0	0	-0.01
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-10.16#
35	T	Bromochloromethane	-1.0000	0.7221	0.0	0	0.00
36	T	Tetrahydrofuran	5.0000	5.4403	-8.8	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.6537	0.0	0	0.02
38	T	1,1,1-Trichloroethane	-1.0000	1.0257	0.0	0	0.00
39	T	Cyclohexane	-1.0000	1.0029	0.0	0	-0.01
40	T	1,1-Dichloropropene	-1.0000	0.9813	0.0	0	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	4.5884	8.2	100	0.00
42	T	Carbon Tetrachloride	-1.0000	1.0202	0.0	0	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.6847	0.0	0	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	-1.0000	0.9533	0.0	0	0.00
46	T	Benzene	1.0000	1.0834	-8.3	100	0.00
47	T	Trichloroethene	-1.0000	1.0199	0.0	0	0.00
48	T	Methylcyclohexane	-1.0000	0.9084	0.0	0	0.01
49	C	1,2-Dichloropropane	-1.0000	0.9339	0.0	0	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-12.67#
51	T	Bromodichloromethane	-1.0000	0.9921	0.0	0	0.00
52	T	Dibromomethane	-1.0000	0.8361	0.0	0	-0.01
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.6921	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.4563	0.0	0	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.8388	0.0	0	0.00
56	T	Dimethyl Disulfide	-1.0000	0.5447	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.7544	0.0	0	0.00
59	C	Toluene	1.0000	1.0316	-3.2	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.7432	0.0	0	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	-1.0000	0.8522	0.0	0	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.9869	0.0	0	0.00
64	T	2-Hexanone	-1.0000	0.7313	0.0	0	0.00
65	T	1,3-Dichloropropane	-1.0000	0.9246	0.0	0	0.00
66	T	Tetrachloroethene	-1.0000	1.0308	0.0	0	0.00
67	T	Dibromochloromethane	-1.0000	0.8829	0.0	0	0.00
68	T	1,2-Dibromoethane	-1.0000	0.7559	0.0	0	0.00
69	T	1-Chlorohexane	-1.0000	0.8286	0.0	0	0.00
70	P	Chlorobenzene	-1.0000	1.0589	0.0	0	-0.01
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.9542	0.0	0	0.00
72	C	Ethylbenzene	1.0000	0.9580	4.2	100	0.00
73	T	m-,p-Xylene	2.0000	2.0079	-0.4	100	-0.01
74	T	o-Xylene	1.0000	0.9132	8.7	100	0.00
75	T	Styrene	-1.0000	0.8034	0.0	0	0.00
76	P	Bromoform	-1.0000	0.7511	0.0	0	0.00
77	T	Isopropylbenzene	-1.0000	0.9427	0.0	0	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	1.0310	0.0	0	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.7854	0.0	0	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.7802	0.0	0	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.7652	0.0	0	0.00
83	T	n-Propylbenzene	-1.0000	0.9660	0.0	0	0.00
84	T	Bromobenzene	-1.0000	1.0125	0.0	0	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.8984	0.0	0	0.00
86	T	2-Chlorotoluene	-1.0000	1.0030	0.0	0	0.00
87	T	4-Chlorotoluene	-1.0000	0.9278	0.0	0	0.00
88	T	a-Methylstyrene	-1.0000	0.8574	0.0	0	-0.01
89	T	tert-Butylbenzene	-1.0000	0.9131	0.0	0	-0.01
90	T	1,2,4-Trimethylbenzene	-1.0000	0.9622	0.0	0	0.00
91	T	sec-Butylbenzene	-1.0000	0.9709	0.0	0	0.00
92	T	p-Isopropyltoluene	-1.0000	0.9370	0.0	0	0.00
93	T	1,3-Dichlorobenzene	-1.0000	1.0306	0.0	0	0.00
94	T	1,4-Dichlorobenzene	-1.0000	1.1413	0.0	0	0.00
95	T	n-Butylbenzene	-1.0000	0.9684	0.0	0	-0.01
96	T	1,2-Dichlorobenzene	-1.0000	1.0000	0.0	0	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.2543	0.0	0	0.00
98	T	1,2,4-Trichlorobenzene	-1.0000	1.0259	0.0	0	0.00
99	T	Hexachlorobutadiene	-1.0000	0.9658	0.0	0	-0.01
100	T	Naphthalene	-1.0000	0.8835	0.0	0	0.00
101	T	1,2,3-Trichlorobenzene	-1.0000	1.0134	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137524.D 826_SL.M Mon Feb 29 16:02:09 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:38 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	572212	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	404562	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	206668	50.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.32	111	3202	1.0431 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	2.08%#	
43) 1,2-Dichloroethane-d4	11.05	65	4123	1.0345 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	2.06%#	
58) Toluene-d8	13.80	98	10309	1.0718 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	2.14%#	
80) p-Bromofluorobenzene	17.79	95	4120	1.0853 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	2.18%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	8843	1.6827 ug/L	90
3) Chloromethane	3.88	50	13225	2.4149 ug/L	95
4) Vinyl Chloride	4.12	62	8482	1.9243 ug/L	95
5) 1,3-Butadiene	4.18	54	8044	2.1934 ug/L	77
6) Bromomethane	5.04	94	4396	1.8709 ug/L	94
7) Chloroethane	5.20	64	4555	1.8225 ug/L	99
8) Trichlorofluoromethane	5.70	101	12235	2.0657 ug/L #	96
9) Diethyl ether	6.24	59	66018	24.2296 ug/L	90
10) Isoprene	6.28	67	6318	1.6374 ug/L	84
11) Acrolein	6.49	56	6390	12.3492 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	4561	1.6133 ug/L	91
13) Acetone	6.60	43	7504	1.8809 ug/L	97
14) 1,1-Dichloroethene	6.83	61	8701	1.7376 ug/L	89
15) Tert-Butyl Alcohol	6.94	59	20238	43.3134 ug/L	94
16) Dimethyl Sulfide	7.11	62	4075	1.6773 ug/L	98
17) Iodomethane	7.39	142	581	5.2052 ug/L #	30
18) Methyl acetate	7.39	43	6390	1.8363 ug/L #	70
19) Methylene Chloride	7.67	84	5869	1.9461 ug/L	65
20) Carbon Disulfide	7.71	76	18795	1.9617 ug/L	99
21) Acrylonitrile	7.86	53	16272	11.3775 ug/L	99
22) Methyl Tert Butyl Ether	7.89	73	15172	1.7617 ug/L	96
23) trans-1,2-Dichloroethene	8.16	96	5205	1.8816 ug/L	79
24) n-Hexane	8.23	57	9310	1.8534 ug/L	99
25) Diisopropyl ether	8.61	45	320400	24.6012 ug/L	97
26) Vinyl Acetate	8.80	43	10816	1.6066 ug/L #	78
27) 1,1-Dichloroethane	8.83	63	11076	1.8571 ug/L	98
28) Ethyl-Tert-Butyl ether	9.25	59	254827	24.4116 ug/L	95
29) 2-Butanone	9.45	43	4021	2.0330 ug/L #	56
30) Propionitrile	9.58	54	12821	23.4210 ug/L	98
31) 2,2-Dichloropropane	9.69	77	9442	1.9723 ug/L	95
32) cis-1,2-Dichloroethene	9.77	96	6066	1.9642 ug/L	93
33) Chloroform	10.01	83	11484	2.0618 ug/L	99
34) 1-Bromopropane	10.16	122	398	0.9400 ug/L	97
35) Bromochloromethane	10.27	130	3448	1.9001 ug/L	92
36) Tetrahydrofuran	10.29	42	31678	22.2128 ug/L	93
38) 1,1,1-Trichloroethane	10.60	97	9432	1.9171 ug/L	98
39) Cyclohexane	10.63	56	9073	1.6263 ug/L	92
40) 1,1-Dichloropropene	10.82	75	7003	1.7675 ug/L	93
41) Tert-Amyl-Methyl ether	10.95	73	196452	23.7231 ug/L #	87
42) Carbon Tetrachloride	10.99	117	8034	1.7476 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:38 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45) 1,2-Dichloroethane	11.19	62	8853	1.8622 ug/L #	93
46) Benzene	11.23	78	23723	1.9902 ug/L	97
47) Trichloroethene	12.09	130	5099	1.8107 ug/L	92
48) Methylcyclohexane	12.17	83	7350	1.6146 ug/L	79
49) 1,2-Dichloropropane	12.34	63	5698	1.7766 ug/L	95
50) 1,4-Dioxane	12.67	88	1122	55.6272 ug/L	88
51) Bromodichloromethane	12.68	83	7699	1.8293 ug/L	96
52) Dibromomethane	12.79	93	3316	1.7677 ug/L	91
53) 2-Chloroethyl Vinyl Ether	13.04	63	2386	1.3526 ug/L #	61
54) 4-Methyl-2-Pentanone	13.06	58	1423	1.0653 ug/L #	60
55) cis-1,3-Dichloropropene	13.43	75	7739	1.6689 ug/L	96
56) Dimethyl Disulfide	13.72	79	3072	1.3135 ug/L #	66
59) Toluene	13.91	91	21516	1.8801 ug/L	99
60) Ethyl Methacrylate	14.03	69	5274	1.4383 ug/L	90
62) trans-1,3-Dichloropropene	14.12	75	7466	1.6966 ug/L	95
63) 1,1,2-Trichloroethane	14.37	97	4294	1.7952 ug/L	96
64) 2-Hexanone	14.32	43	4342	1.5908 ug/L	87
65) 1,3-Dichloropropane	14.74	76	7896	1.8213 ug/L	99
66) Tetrachloroethene	14.88	166	5376	1.9043 ug/L	96
67) Dibromochloromethane	15.17	129	5153	1.6564 ug/L	94
68) 1,2-Dibromoethane	15.47	107	4387	1.7934 ug/L	97
69) 1-Chlorohexane	15.58	91	5799	1.6318 ug/L	88
70) Chlorobenzene	16.07	112	14803	2.0127 ug/L	82
71) 1,1,1,2-Tetrachloroethane	16.11	131	5636	1.9085 ug/L	89
72) Ethylbenzene	16.10	106	7654	1.9447 ug/L	97
73) m-,p-Xylene	16.22	106	17383	3.6096 ug/L	95
74) o-Xylene	16.88	106	7997	1.7630 ug/L	95
75) Styrene	16.92	104	12496	1.6186 ug/L	87
76) Bromoform	17.49	173	3589	1.6340 ug/L	95
77) Isopropylbenzene	17.38	105	20776	1.7039 ug/L	96
79) 1,1,2,2-Tetrachloroethane	17.64	83	5699	1.7652 ug/L	97
81) 1,2,3-Trichloropropane	17.86	110	1672	1.6915 ug/L	85
82) trans-1,4-Dichloro-2-Buten	17.93	53	2042	1.7133 ug/L	78
83) n-Propylbenzene	17.98	91	25104	1.7886 ug/L #	95
84) Bromobenzene	18.13	156	5535	1.8143 ug/L	100
85) 1,3,5-Trimethylbenzene	18.21	105	17326	1.7343 ug/L	94
86) 2-Chlorotoluene	18.30	91	16320	1.7421 ug/L	90
87) 4-Chlorotoluene	18.35	91	17884	2.0879 ug/L	93
88) a-Methylstyrene	18.69	118	7613	1.5692 ug/L	95
89) tert-Butylbenzene	18.76	134	3612	1.7349 ug/L	82
90) 1,2,4-Trimethylbenzene	18.82	105	18800	1.7894 ug/L	86
91) sec-Butylbenzene	19.08	105	23176	1.8115 ug/L	95
92) p-Isopropyltoluene	19.26	119	18048	1.7099 ug/L	98
93) 1,3-Dichlorobenzene	19.48	146	10999	1.8633 ug/L	93
94) 1,4-Dichlorobenzene	19.64	146	12629	2.1018 ug/L	96
95) n-Butylbenzene	19.89	91	18864	1.7769 ug/L	98
96) 1,2-Dichlorobenzene	20.23	146	10946	1.9270 ug/L	93
97) 1,2-Dibromo-3-Chloropropan	21.40	75	890	1.2459 ug/L	91
98) 1,2,4-Trichlorobenzene	22.77	180	8004	1.9491 ug/L	94
99) Hexachlorobutadiene	22.95	225	4367	1.8595 ug/L	98
100) Naphthalene	23.20	128	15712	1.6644 ug/L	96
101) 1,2,3-Trichlorobenzene	23.59	180	7942	1.9641 ug/L	93

(#) = qualifier out of range (m) = manual integration
6M137525.D 826_SL.M Mon Feb 29 16:01:38 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

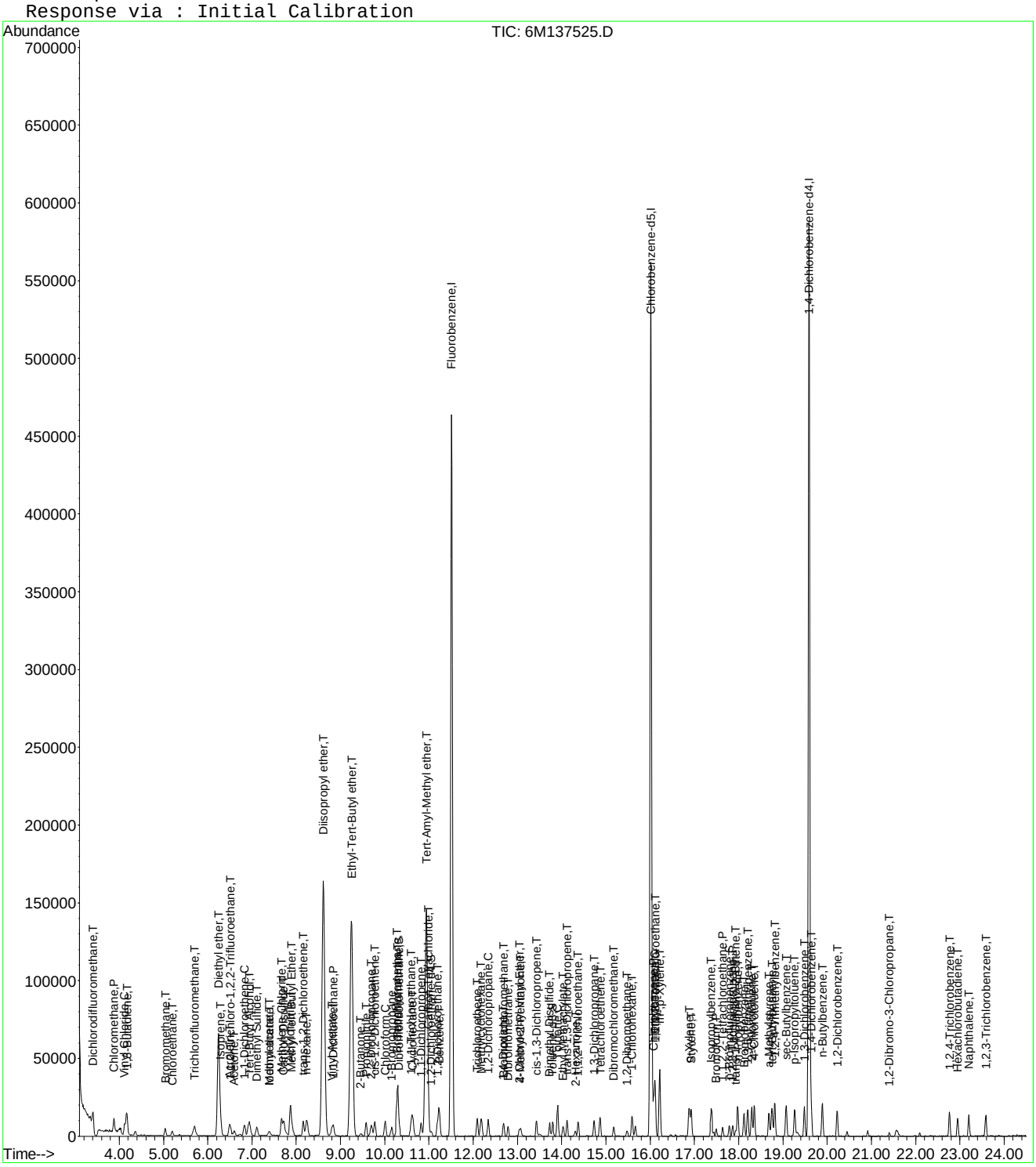

6M137525.D 826_SL.M Mon Feb 29 16:01:39 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.6827	15.9	100	0.00
3	P	Chloromethane	2.0000	2.4150	-20.7	100	0.00
4	C	Vinyl Chloride	2.0000	1.9243	3.8	100	0.00
5	T	1,3-Butadiene	-1.0000	2.1934	0.0	0	0.01
6	T	Bromomethane	2.0000	1.8709	6.5	100	0.01
7	T	Chloroethane	2.0000	1.8225	8.9	100	0.01
8	T	Trichlorofluoromethane	2.0000	2.0658	-3.3	100	0.00
9	T	Diethyl ether	25.0000	24.2296	3.1	100	0.00
10	T	Isoprene	-1.0000	1.6374	0.0	0	0.00
11	T	Acrolein	12.5000	12.3492	1.2	100	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.6134	19.3	100	0.00
13	T	Acetone	-1.0000	1.8809	0.0	0	0.01
14	C	1,1-Dichloroethene	2.0000	1.7376	13.1	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	43.3134	13.4	100	0.01
16	T	Dimethyl Sulfide	-1.0000	1.6773	0.0	0	0.00
17	T	Iodomethane	-1.0000	5.2052	0.0	0	0.01
18	T	Methyl acetate	-1.0000	1.8363	0.0	0	0.00
19	T	Methylene Chloride	2.0000	1.9461	2.7	100	0.00
20	T	Carbon Disulfide	2.0000	1.9617	1.9	100	0.00
21	T	Acrylonitrile	12.5000	11.3775	9.0	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.7617	11.9	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.8816	5.9	100	0.00
24	T	n-Hexane	2.0000	1.8534	7.3	100	-0.01
25	T	Diisopropyl ether	25.0000	24.6012	1.6	100	0.00
26	T	Vinyl Acetate	-1.0000	1.6066	0.0	0	0.00
27	P	1,1-Dichloroethane	2.0000	1.8571	7.1	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	24.4116	2.4	100	0.01
29	T	2-Butanone	-1.0000	2.0330	0.0	0	0.00
30	T	Propionitrile	25.0000	23.4210	6.3	100	0.00
31	T	2,2-Dichloropropane	2.0000	1.9723	1.4	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	1.9642	1.8	100	0.00
33	C	Chloroform	2.0000	2.0618	-3.1	100	0.00
34		1-Bromopropane	-1.0000	0.9400	0.0	0	0.00
35	T	Bromochloromethane	2.0000	1.9001	5.0	100	0.01
36	T	Tetrahydrofuran	25.0000	22.2128	11.1	100	0.00
37	S	Dibromofluoromethane	1.0000	1.0432	-4.3	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.9171	4.1	100	0.00
39	T	Cyclohexane	2.0000	1.6263	18.7	100	-0.01
40	T	1,1-Dichloropropene	2.0000	1.7675	11.6	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	23.7231	5.1	100	0.01
42	T	Carbon Tetrachloride	2.0000	1.7476	12.6	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0345	-3.5	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	2.0000	1.8622	6.9	100	0.00
46	T	Benzene	2.0000	1.9902	0.5	100	0.00
47	T	Trichloroethene	2.0000	1.8108	9.5	100	0.00
48	T	Methylcyclohexane	2.0000	1.6146	19.3	100	0.00
49	C	1,2-Dichloropropane	2.0000	1.7766	11.2	100	0.00
50	T	1,4-Dioxane	50.0000	55.6272	-11.3	100	0.00
51	T	Bromodichloromethane	2.0000	1.8293	8.5	100	0.00
52	T	Dibromomethane	2.0000	1.7677	11.6	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	1.3526	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.0653	0.0	0	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.6689	16.6	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.3135	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	1.0718	-7.2	100	0.00
59	C	Toluene	2.0000	1.8801	6.0	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.4383	28.1#	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	2.0000	1.6966	15.2	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.7952	10.2	100	0.00
64	T	2-Hexanone	-1.0000	1.5908	0.0	0	0.01
65	T	1,3-Dichloropropane	2.0000	1.8213	8.9	100	0.00
66	T	Tetrachloroethene	2.0000	1.9043	4.8	100	0.01
67	T	Dibromochloromethane	2.0000	1.6565	17.2	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.7934	10.3	100	-0.01
69	T	1-Chlorohexane	2.0000	1.6318	18.4	100	-0.01
70	P	Chlorobenzene	2.0000	2.0127	-0.6	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.9085	4.6	100	0.01
72	C	Ethylbenzene	2.0000	1.9447	2.8	100	0.00
73	T	m-,p-Xylene	4.0000	3.6096	9.8	100	0.00
74	T	o-Xylene	2.0000	1.7630	11.8	100	0.00
75	T	Styrene	2.0000	1.6186	19.1	100	0.00
76	P	Bromoform	2.0000	1.6340	18.3	100	0.00
77	T	Isopropylbenzene	2.0000	1.7039	14.8	100	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	1.7653	11.7	100	-0.01
80	S	p-Bromofluorobenzene	1.0000	1.0853	-8.5	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	1.6915	15.4	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	1.7133	14.3	100	0.00
83	T	n-Propylbenzene	2.0000	1.7886	10.6	100	0.00
84	T	Bromobenzene	2.0000	1.8143	9.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	1.7343	13.3	100	0.00
86	T	2-Chlorotoluene	2.0000	1.7421	12.9	100	0.00
87	T	4-Chlorotoluene	2.0000	2.0879	-4.4	100	0.00
88	T	a-Methylstyrene	2.0000	1.5692	21.5	100	0.00
89	T	tert-Butylbenzene	2.0000	1.7349	13.3	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	1.7894	10.5	100	0.00
91	T	sec-Butylbenzene	2.0000	1.8115	9.4	100	0.00
92	T	p-Isopropyltoluene	2.0000	1.7099	14.5	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	1.8633	6.8	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.1018	-5.1	100	0.00
95	T	n-Butylbenzene	2.0000	1.7769	11.2	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	1.9270	3.6	100	0.01
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.2459	0.0	0	-0.01
98	T	1,2,4-Trichlorobenzene	2.0000	1.9491	2.5	100	0.01
99	T	Hexachlorobutadiene	2.0000	1.8596	7.0	100	-0.01
100	T	Naphthalene	2.0000	1.6644	16.8	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9641	1.8	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137525.D 826_SL.M Mon Feb 29 16:02:19 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:39 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	643219	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	454348	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	233655	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.32	111	8526	2.4710 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	4.94%#	
43) 1,2-Dichloroethane-d4	11.06	65	11725	2.6172 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	5.24%#	
58) Toluene-d8	13.80	98	29032	2.6876 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	5.38%#	
80) p-Bromofluorobenzene	17.79	95	11167	2.6020 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	5.20%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	28102	4.7571 ug/L	100
3) Chloromethane	3.88	50	32755	5.3209 ug/L	91
4) Vinyl Chloride	4.12	62	26049	5.2573 ug/L	99
5) 1,3-Butadiene	4.17	54	23717	5.7531 ug/L	82
6) Bromomethane	5.03	94	13346	5.0529 ug/L	95
7) Chloroethane	5.19	64	14096	5.0173 ug/L	95
8) Trichlorofluoromethane	5.70	101	35831	5.3818 ug/L	98
9) Diethyl ether	6.24	59	150730	49.2132 ug/L	93
10) Isoprene	6.28	67	21438	4.9428 ug/L	81
11) Acrolein	6.48	56	14248	24.4956 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	17247	5.4273 ug/L	95
13) Acetone	6.59	43	13051	5.3136 ug/L	94
14) 1,1-Dichloroethene	6.83	61	29698	5.2760 ug/L	91
15) Tert-Butyl Alcohol	6.93	59	51304	97.6795 ug/L	93
16) Dimethyl Sulfide	7.12	62	13140	4.8115 ug/L	98
17) Iodomethane	7.38	142	3580	6.2818 ug/L	92
18) Methyl acetate	7.39	43	19888	5.0842 ug/L	93
19) Methylene Chloride	7.67	84	17567	5.1820 ug/L	73
20) Carbon Disulfide	7.72	76	56579	5.2535 ug/L	99
21) Acrylonitrile	7.86	53	38170	23.7426 ug/L	95
22) Methyl Tert Butyl Ether	7.89	73	46633	4.8170 ug/L	97
23) trans-1,2-Dichloroethene	8.16	96	15681	5.0428 ug/L	87
24) n-Hexane	8.24	57	29042	5.1432 ug/L	92
25) Diisopropyl ether	8.61	45	721466	49.2807 ug/L	97
26) Vinyl Acetate	8.80	43	31741	4.1943 ug/L	93
27) 1,1-Dichloroethane	8.83	63	34581	5.1581 ug/L	100
28) Ethyl-Tert-Butyl ether	9.24	59	576725	49.1494 ug/L	95
29) 2-Butanone	9.45	43	11939	5.3698 ug/L	87
30) Propionitrile	9.58	54	29074	47.2483 ug/L	96
31) 2,2-Dichloropropane	9.69	77	27493	5.1089 ug/L	98
32) cis-1,2-Dichloroethene	9.77	96	17624	5.0766 ug/L	93
33) Chloroform	10.01	83	32075	5.1228 ug/L	96
34) 1-Bromopropane	10.16	122	2123	4.4605 ug/L	82
35) Bromochloromethane	10.26	130	9542	4.6779 ug/L	100
36) Tetrahydrofuran	10.29	42	72518	47.4879 ug/L	94
38) 1,1,1-Trichloroethane	10.60	97	26846	4.8542 ug/L	94
39) Cyclohexane	10.64	56	31697	5.0544 ug/L	89
40) 1,1-Dichloropropene	10.82	75	23898	5.3658 ug/L	97
41) Tert-Amyl-Methyl ether	10.94	73	454105	48.7831 ug/L #	89
42) Carbon Tetrachloride	10.99	117	26296	5.0887 ug/L	96

(#) = qualifier out of range (m) = manual integration
6M137526.D 826_SL.M Mon Feb 29 16:01:39 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:39 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45) 1,2-Dichloroethane	11.19	62	26611	4.9796 ug/L	97
46) Benzene	11.23	78	66739	4.9809 ug/L	93
47) Trichloroethene	12.09	130	16560	5.2316 ug/L	93
48) Methylcyclohexane	12.18	83	26100	5.1005 ug/L	86
49) 1,2-Dichloropropane	12.34	63	17955	4.9803 ug/L	94
50) 1,4-Dioxane	12.67	88	3919	107.9166 ug/L	93
51) Bromodichloromethane	12.68	83	23069	4.8760 ug/L	92
52) Dibromomethane	12.79	93	9757	4.6271 ug/L	97
53) 2-Chloroethyl Vinyl Ether	13.04	63	8133	4.1014 ug/L	99
54) 4-Methyl-2-Pentanone	13.07	58	6484	4.3183 ug/L	81
55) cis-1,3-Dichloropropene	13.43	75	24075	4.6186 ug/L	98
56) Dimethyl Disulfide	13.72	79	10983	4.1777 ug/L	91
59) Toluene	13.91	91	65025	5.0594 ug/L	100
60) Ethyl Methacrylate	14.03	69	18200	4.4195 ug/L	95
62) trans-1,3-Dichloropropene	14.12	75	23055	4.6650 ug/L	96
63) 1,1,2-Trichloroethane	14.37	97	13105	4.8784 ug/L	97
64) 2-Hexanone	14.31	43	13531	4.4142 ug/L	93
65) 1,3-Dichloropropane	14.74	76	24567	5.0457 ug/L	96
66) Tetrachloroethene	14.87	166	17025	5.3699 ug/L	96
67) Dibromochloromethane	15.17	129	16779	4.8026 ug/L	98
68) 1,2-Dibromoethane	15.48	107	13121	4.7760 ug/L	98
69) 1-Chlorohexane	15.59	91	18960	4.7505 ug/L	75
70) Chlorobenzene	16.07	112	43871	5.3112 ug/L #	60
71) 1,1,1,2-Tetrachloroethane	16.10	131	15603	4.7045 ug/L	95
72) Ethylbenzene	16.10	106	22079	4.9950 ug/L	94
73) m-,p-Xylene	16.22	106	54549	10.0858 ug/L	96
74) o-Xylene	16.88	106	24478	4.8051 ug/L	92
75) Styrene	16.92	104	39808	4.5913 ug/L	95
76) Bromoform	17.49	173	11643	4.7199 ug/L	97
77) Isopropylbenzene	17.38	105	66989	4.8919 ug/L	99
79) 1,1,2,2-Tetrachloroethane	17.65	83	18286	5.0098 ug/L	96
81) 1,2,3-Trichloropropane	17.87	110	5764	5.1577 ug/L	93
82) trans-1,4-Dichloro-2-Buten	17.93	53	5968	4.4290 ug/L	92
83) n-Propylbenzene	17.98	91	82621	5.2068 ug/L	98
84) Bromobenzene	18.13	156	17797	5.1598 ug/L	96
85) 1,3,5-Trimethylbenzene	18.21	105	58488	5.1783 ug/L	94
86) 2-Chlorotoluene	18.30	91	57419	5.4213 ug/L	96
87) 4-Chlorotoluene	18.35	91	50976	5.2638 ug/L	97
88) a-Methylstyrene	18.69	118	25024	4.5623 ug/L	100
89) tert-Butylbenzene	18.76	134	11873	5.0441 ug/L	95
90) 1,2,4-Trimethylbenzene	18.82	105	61081	5.1422 ug/L	83
91) sec-Butylbenzene	19.08	105	74051	5.1195 ug/L	98
92) p-Isopropyltoluene	19.26	119	60824	5.0969 ug/L	97
93) 1,3-Dichlorobenzene	19.48	146	35412	5.3060 ug/L	98
94) 1,4-Dichlorobenzene	19.64	146	35211	5.1831 ug/L	83
95) n-Butylbenzene	19.89	91	60714	5.0584 ug/L	95
96) 1,2-Dichlorobenzene	20.22	146	32728	5.0962 ug/L	95
97) 1,2-Dibromo-3-Chloropropan	21.41	75	3714	4.5988 ug/L	88
98) 1,2,4-Trichlorobenzene	22.76	180	22925	4.9379 ug/L	93
99) Hexachlorobutadiene	22.96	225	13612	5.1268 ug/L	94
100) Naphthalene	23.20	128	48617	4.5551 ug/L	99
101) 1,2,3-Trichlorobenzene	23.59	180	22839	4.9959 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

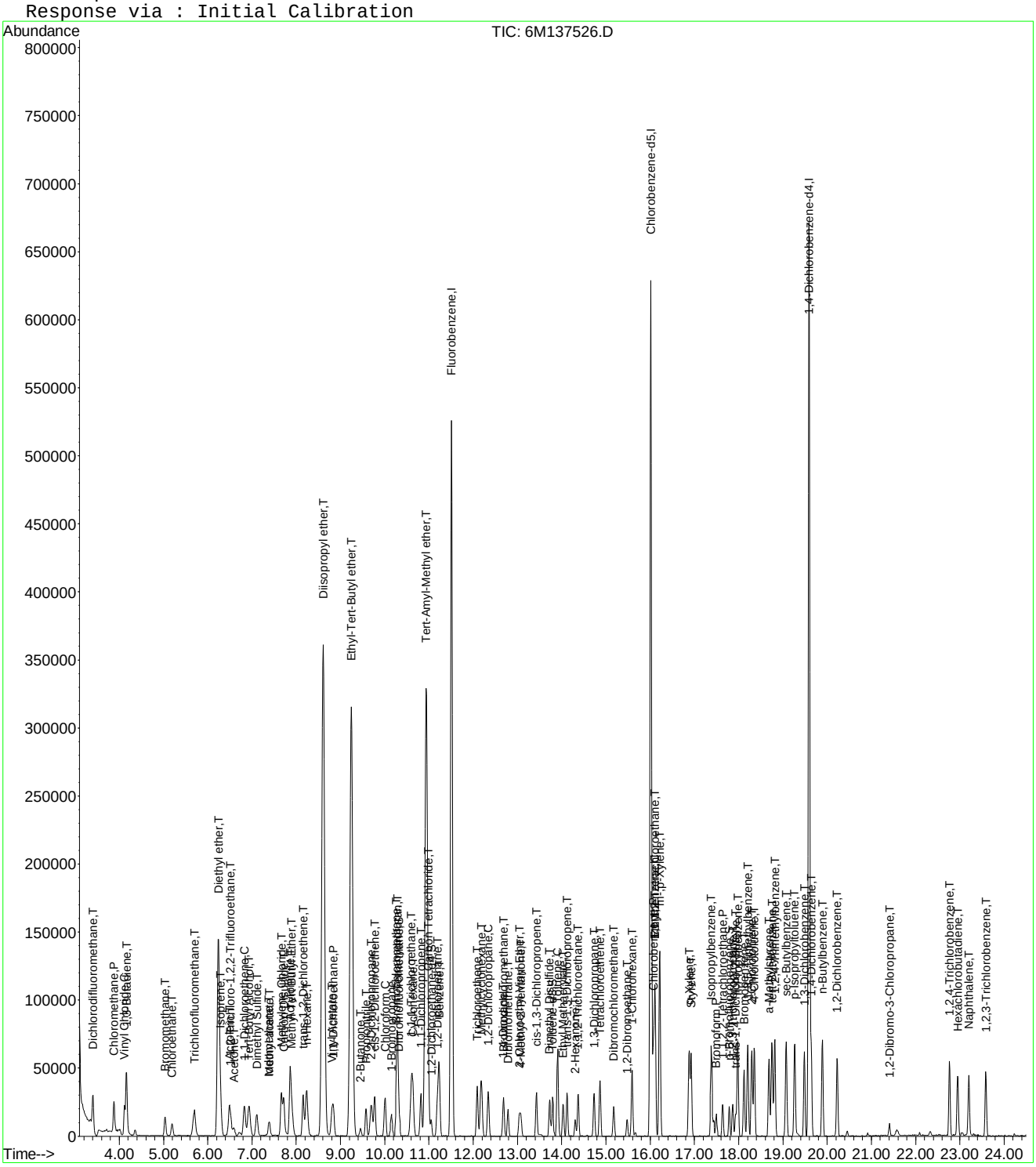

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.7571	4.9	100	0.00
3	P	Chloromethane	5.0000	5.3209	-6.4	100	0.00
4	C	Vinyl Chloride	5.0000	5.2573	-5.1	100	0.00
5	T	1,3-Butadiene	5.0000	5.7531	-15.1	100	0.00
6	T	Bromomethane	5.0000	5.0529	-1.1	100	0.00
7	T	Chloroethane	5.0000	5.0173	-0.3	100	0.00
8	T	Trichlorofluoromethane	5.0000	5.3818	-7.6	100	0.00
9	T	Diethyl ether	50.0000	49.2132	1.6	100	0.00
10	T	Isoprene	5.0000	4.9428	1.1	100	0.00
11	T	Acrolein	25.0000	24.4957	2.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	5.4272	-8.5	100	0.00
13	T	Acetone	-1.0000	5.3136	0.0	0	0.00
14	C	1,1-Dichloroethene	5.0000	5.2760	-5.5	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	97.6795	2.3	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.8115	3.8	100	0.00
17	T	Iodomethane	5.0000	6.2818	-25.6#	100	0.00
18	T	Methyl acetate	5.0000	5.0842	-1.7	100	0.00
19	T	Methylene Chloride	5.0000	5.1820	-3.6	100	0.00
20	T	Carbon Disulfide	5.0000	5.2535	-5.1	100	0.00
21	T	Acrylonitrile	25.0000	23.7426	5.0	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.8170	3.7	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	5.0428	-0.9	100	0.00
24	T	n-Hexane	5.0000	5.1432	-2.9	100	0.00
25	T	Diisopropyl ether	50.0000	49.2807	1.4	100	0.00
26	T	Vinyl Acetate	5.0000	4.1943	16.1	100	0.00
27	P	1,1-Dichloroethane	5.0000	5.1581	-3.2	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	49.1494	1.7	100	0.00
29	T	2-Butanone	5.0000	5.3698	-7.4	100	0.00
30	T	Propionitrile	50.0000	47.2483	5.5	100	0.00
31	T	2,2-Dichloropropane	5.0000	5.1089	-2.2	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	5.0766	-1.5	100	0.00
33	C	Chloroform	5.0000	5.1228	-2.5	100	0.00
34		1-Bromopropane	5.0000	4.4605	10.8	100	0.00
35	T	Bromochloromethane	5.0000	4.6779	6.4	100	0.00
36	T	Tetrahydrofuran	50.0000	47.4879	5.0	100	0.00
37	S	Dibromofluoromethane	2.5000	2.4710	1.2	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.8542	2.9	100	0.00
39	T	Cyclohexane	5.0000	5.0544	-1.1	100	0.00
40	T	1,1-Dichloropropene	5.0000	5.3658	-7.3	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	48.7831	2.4	100	0.00
42	T	Carbon Tetrachloride	5.0000	5.0887	-1.8	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.6172	-4.7	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	5.0000	4.9796	0.4	100	0.00
46	T	Benzene	5.0000	4.9809	0.4	100	0.00
47	T	Trichloroethene	5.0000	5.2316	-4.6	100	0.00
48	T	Methylcyclohexane	5.0000	5.1005	-2.0	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.9803	0.4	100	0.00
50	T	1,4-Dioxane	100.0000	107.9166	-7.9	100	0.00
51	T	Bromodichloromethane	5.0000	4.8760	2.5	100	0.00
52	T	Dibromomethane	5.0000	4.6271	7.5	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.1014	18.0	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.3183	13.6	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.6186	7.6	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.1777	16.4	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.6876	-7.5	100	0.00
59	C	Toluene	5.0000	5.0594	-1.2	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.4195	11.6	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	5.0000	4.6650	6.7	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.8784	2.4	100	0.00
64	T	2-Hexanone	5.0000	4.4142	11.7	100	0.00
65	T	1,3-Dichloropropane	5.0000	5.0457	-0.9	100	0.00
66	T	Tetrachloroethene	5.0000	5.3699	-7.4	100	0.00
67	T	Dibromochloromethane	5.0000	4.8026	3.9	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.7760	4.5	100	0.00
69	T	1-Chlorohexane	5.0000	4.7505	5.0	100	0.00
70	P	Chlorobenzene	5.0000	5.3112	-6.2	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.7045	5.9	100	0.00
72	C	Ethylbenzene	5.0000	4.9950	0.1	100	0.00
73	T	m-,p-Xylene	10.0000	10.0858	-0.9	100	0.00
74	T	o-Xylene	5.0000	4.8051	3.9	100	0.00
75	T	Styrene	5.0000	4.5913	8.2	100	0.00
76	P	Bromoform	5.0000	4.7199	5.6	100	0.00
77	T	Isopropylbenzene	5.0000	4.8919	2.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	5.0098	-0.2	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.6020	-4.1	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.1577	-3.2	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.4290	11.4	100	0.00
83	T	n-Propylbenzene	5.0000	5.2068	-4.1	100	0.00
84	T	Bromobenzene	5.0000	5.1597	-3.2	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	5.1783	-3.6	100	0.00
86	T	2-Chlorotoluene	5.0000	5.4214	-8.4	100	0.00
87	T	4-Chlorotoluene	5.0000	5.2638	-5.3	100	0.00
88	T	a-Methylstyrene	5.0000	4.5623	8.8	100	0.00
89	T	tert-Butylbenzene	5.0000	5.0441	-0.9	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.1422	-2.8	100	0.00
91	T	sec-Butylbenzene	5.0000	5.1195	-2.4	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.0969	-1.9	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	5.3060	-6.1	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	5.1831	-3.7	100	0.00
95	T	n-Butylbenzene	5.0000	5.0584	-1.2	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	5.0962	-1.9	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	4.5988	8.0	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.9379	1.2	100	0.00
99	T	Hexachlorobutadiene	5.0000	5.1268	-2.5	100	0.00
100	T	Naphthalene	5.0000	4.5552	8.9	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.9959	0.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137526.D 826_SL.M Mon Feb 29 16:02:29 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:40 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	607286	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	435504	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	227713	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	16492	5.0625 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 10.12%#		
43) 1,2-Dichloroethane-d4	11.06	65	20491	4.8445 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 9.68%#		
58) Toluene-d8	13.80	98	50808	4.9069 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 9.82%#		
80) p-Bromofluorobenzene	17.79	95	20967	5.0129 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 10.02%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	51684	9.2668 ug/L	100
3) Chloromethane	3.88	50	58275	10.0267 ug/L	97
4) Vinyl Chloride	4.12	62	45684	9.7657 ug/L	98
5) 1,3-Butadiene	4.16	54	39114	10.0495 ug/L	90
6) Bromomethane	5.03	94	25017	10.0321 ug/L	98
7) Chloroethane	5.20	64	25248	9.5185 ug/L	95
8) Trichlorofluoromethane	5.69	101	62268	9.9061 ug/L	98
9) Diethyl ether	6.24	59	197846	68.4186 ug/L	92
10) Isoprene	6.28	67	39072	9.5415 ug/L	91
11) Acrolein	6.48	56	19614	35.7163 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	30114	10.0369 ug/L	94
13) Acetone	6.60	43	18461	10.1493 ug/L	97
14) 1,1-Dichloroethene	6.83	61	51482	9.6871 ug/L	94
15) Tert-Butyl Alcohol	6.93	59	70054	141.2703 ug/L	95
16) Dimethyl Sulfide	7.12	62	25452	9.8712 ug/L	97
17) Iodomethane	7.38	142	9906	8.8243 ug/L	91
18) Methyl acetate	7.39	43	38451	10.4113 ug/L	93
19) Methylene Chloride	7.67	84	32006	10.0000 ug/L	78
20) Carbon Disulfide	7.72	76	98104	9.6481 ug/L	100
21) Acrylonitrile	7.86	53	52450	34.5555 ug/L	97
22) Methyl Tert Butyl Ether	7.89	73	93836	10.2663 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	29186	9.9411 ug/L	85
24) n-Hexane	8.24	57	52226	9.7962 ug/L	99
25) Diisopropyl ether	8.61	45	937664	67.8382 ug/L	97
26) Vinyl Acetate	8.80	43	70808	9.9102 ug/L	96
27) 1,1-Dichloroethane	8.83	63	63440	10.0226 ug/L	98
28) Ethyl-Tert-Butyl ether	9.24	59	760504	68.6462 ug/L	96
29) 2-Butanone	9.45	43	21373	10.1817 ug/L	94
30) Propionitrile	9.58	54	40026	68.8953 ug/L	100
31) 2,2-Dichloropropane	9.69	77	51602	10.1564 ug/L	98
32) cis-1,2-Dichloroethene	9.77	96	31900	9.7326 ug/L	99
33) Chloroform	10.01	83	57702	9.7611 ug/L	96
34) 1-Bromopropane	10.15	122	4101	9.1261 ug/L	96
35) Bromochloromethane	10.26	130	18414	9.5616 ug/L	96
36) Tetrahydrofuran	10.29	42	95905	67.3892 ug/L	94
38) 1,1,1-Trichloroethane	10.60	97	52695	10.0919 ug/L	100
39) Cyclohexane	10.63	56	57419	9.6977 ug/L	90
40) 1,1-Dichloropropene	10.82	75	41095	9.7729 ug/L	98
41) Tert-Amyl-Methyl ether	10.95	73	598972	68.1530 ug/L	90
42) Carbon Tetrachloride	10.99	117	48542	9.9495 ug/L	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:40 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	11.19	62	51284	10.1644	ug/L		99
46)	Benzene	11.23	78	122737	9.7022	ug/L		94
47)	Trichloroethene	12.09	130	29481	9.8646	ug/L		92
48)	Methylcyclohexane	12.18	83	46982	9.7245	ug/L		87
49)	1,2-Dichloropropane	12.34	63	33640	9.8830	ug/L		97
50)	1,4-Dioxane	12.68	88	4932	133.5880	ug/L		83
51)	Bromodichloromethane	12.68	83	42482	9.5106	ug/L		92
52)	Dibromomethane	12.78	93	19421	9.7551	ug/L		99
53)	2-Chloroethyl Vinyl Ether	13.04	63	17139	9.1546	ug/L		98
54)	4-Methyl-2-Pentanone	13.07	58	13343	9.4122	ug/L		90
55)	cis-1,3-Dichloropropene	13.43	75	47323	9.6158	ug/L		96
56)	Dimethyl Disulfide	13.72	79	21113	8.5060	ug/L		97
59)	Toluene	13.91	91	123480	10.0233	ug/L		99
60)	Ethyl Methacrylate	14.04	69	37321	9.4549	ug/L		94
62)	trans-1,3-Dichloropropene	14.12	75	46119	9.7357	ug/L		96
63)	1,1,2-Trichloroethane	14.38	97	26300	10.2139	ug/L		99
64)	2-Hexanone	14.31	43	28213	9.6021	ug/L		99
65)	1,3-Dichloropropane	14.73	76	46832	10.0347	ug/L		94
66)	Tetrachloroethene	14.87	166	31153	10.2512	ug/L		97
67)	Dibromochloromethane	15.18	129	32946	9.8381	ug/L		99
68)	1,2-Dibromoethane	15.48	107	25271	9.5966	ug/L		95
69)	1-Chlorohexane	15.59	91	36355	9.5030	ug/L		82
70)	Chlorobenzene	16.07	112	79785	10.0771	ug/L	#	63
71)	1,1,1,2-Tetrachloroethane	16.11	131	31524	9.9162	ug/L		97
72)	Ethylbenzene	16.10	106	41898	9.8889	ug/L		95
73)	m-,p-Xylene	16.22	106	102847	19.8387	ug/L		96
74)	o-Xylene	16.88	106	47393	9.7060	ug/L		93
75)	Styrene	16.92	104	79997	9.6257	ug/L		97
76)	Bromoform	17.49	173	22569	9.5450	ug/L		99
77)	Isopropylbenzene	17.38	105	130459	9.9391	ug/L		96
79)	1,1,2,2-Tetrachloroethane	17.65	83	36327	10.2123	ug/L		95
81)	1,2,3-Trichloropropane	17.87	110	11417	10.4826	ug/L		96
82)	trans-1,4-Dichloro-2-Buten	17.93	53	12994	9.8948	ug/L		85
83)	n-Propylbenzene	17.98	91	159783	10.3323	ug/L		98
84)	Bromobenzene	18.13	156	33893	10.0828	ug/L		95
85)	1,3,5-Trimethylbenzene	18.21	105	111252	10.1069	ug/L		94
86)	2-Chlorotoluene	18.30	91	107737	10.4377	ug/L		98
87)	4-Chlorotoluene	18.36	91	96695	10.2453	ug/L		95
88)	a-Methylstyrene	18.69	118	51340	9.6043	ug/L		97
89)	tert-Butylbenzene	18.76	134	22949	10.0040	ug/L		90
90)	1,2,4-Trimethylbenzene	18.82	105	119948	10.3616	ug/L		79
91)	sec-Butylbenzene	19.07	105	141383	10.0296	ug/L		97
92)	p-Isopropyltoluene	19.27	119	115695	9.9480	ug/L		99
93)	1,3-Dichlorobenzene	19.48	146	67906	10.4404	ug/L		100
94)	1,4-Dichlorobenzene	19.64	146	68350	10.3238	ug/L		93
95)	n-Butylbenzene	19.89	91	117398	10.0364	ug/L		96
96)	1,2-Dichlorobenzene	20.22	146	64067	10.2365	ug/L		98
97)	1,2-Dibromo-3-Chloropropan	21.40	75	7444	9.4579	ug/L		93
98)	1,2,4-Trichlorobenzene	22.76	180	45615	10.0816	ug/L		99
99)	Hexachlorobutadiene	22.94	225	26046	10.0659	ug/L		100
100)	Naphthalene	23.20	128	104354	10.0325	ug/L		99
101)	1,2,3-Trichlorobenzene	23.59	180	44630	10.0173	ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

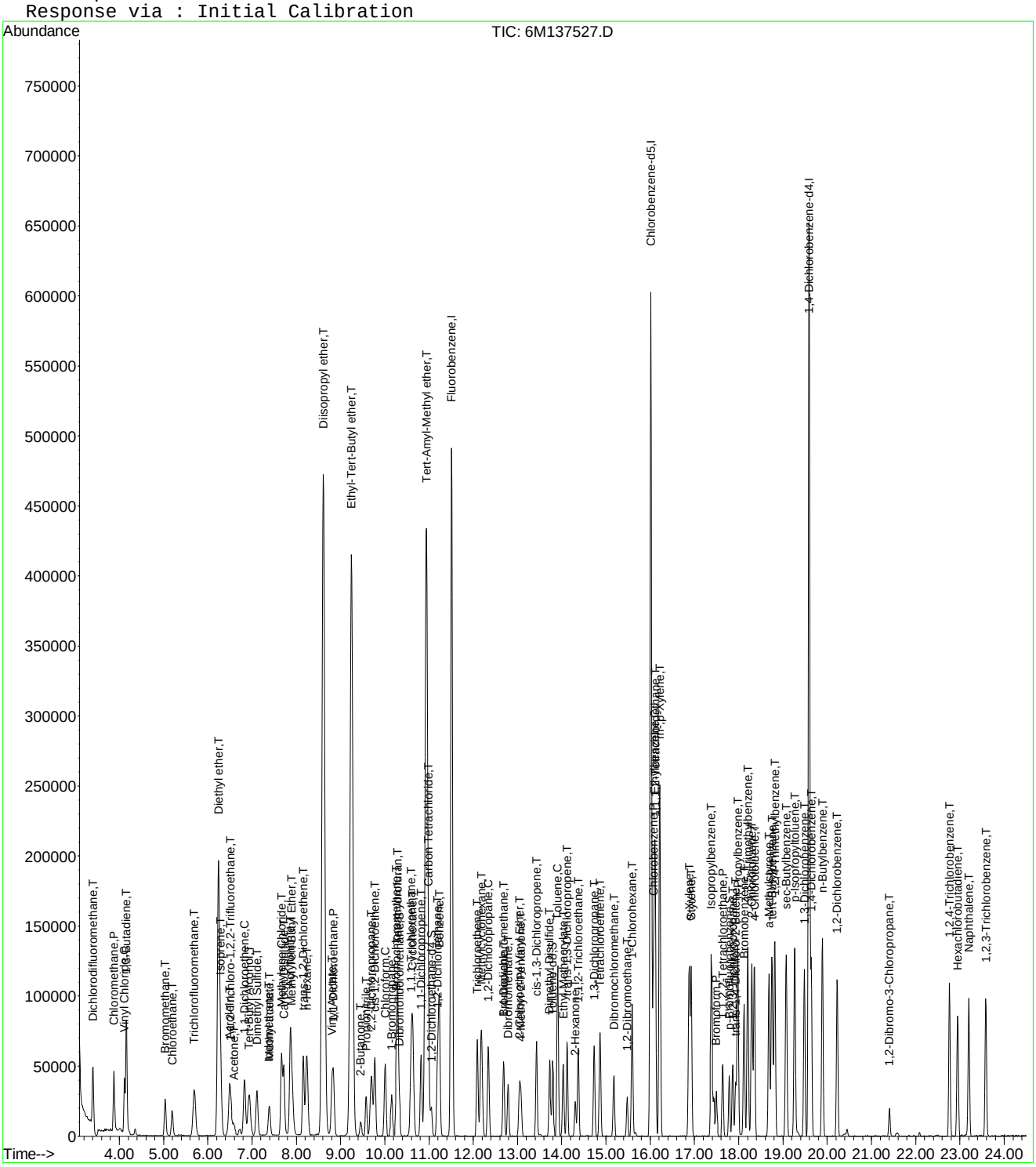

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	10.0000	9.2668	7.3	100	0.00
3	P	Chloromethane	10.0000	10.0267	-0.3	100	0.00
4	C	Vinyl Chloride	10.0000	9.7657	2.3	100	0.00
5	T	1,3-Butadiene	10.0000	10.0495	-0.5	100	-0.01
6	T	Bromomethane	10.0000	10.0321	-0.3	100	0.00
7	T	Chloroethane	10.0000	9.5185	4.8	100	0.00
8	T	Trichlorofluoromethane	10.0000	9.9061	0.9	100	-0.01
9	T	Diethyl ether	65.0000	68.4186	-5.3	100	0.00
10	T	Isoprene	10.0000	9.5415	4.6	100	0.00
11	T	Acrolein	32.5000	35.7163	-9.9	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	10.0000	10.0369	-0.4	100	0.00
13	T	Acetone	10.0000	10.1493	-1.5	100	0.01
14	C	1,1-Dichloroethene	10.0000	9.6871	3.1	100	0.00
15	T	Tert-Butyl Alcohol	130.0000	141.2703	-8.7	100	0.00
16	T	Dimethyl Sulfide	10.0000	9.8712	1.3	100	0.00
17	T	Iodomethane	10.0000	8.8243	11.8	100	0.00
18	T	Methyl acetate	10.0000	10.4113	-4.1	100	0.00
19	T	Methylene Chloride	10.0000	10.0000	0.0	100	0.00
20	T	Carbon Disulfide	10.0000	9.6481	3.5	100	0.00
21	T	Acrylonitrile	32.5000	34.5555	-6.3	100	0.00
22	T	Methyl Tert Butyl Ether	10.0000	10.2663	-2.7	100	0.00
23	T	trans-1,2-Dichloroethene	10.0000	9.9411	0.6	100	0.00
24	T	n-Hexane	10.0000	9.7962	2.0	100	0.00
25	T	Diisopropyl ether	65.0000	67.8382	-4.4	100	0.00
26	T	Vinyl Acetate	10.0000	9.9102	0.9	100	0.00
27	P	1,1-Dichloroethane	10.0000	10.0226	-0.2	100	0.00
28	T	Ethyl-Tert-Butyl ether	65.0000	68.6462	-5.6	100	0.00
29	T	2-Butanone	10.0000	10.1817	-1.8	100	0.00
30	T	Propionitrile	65.0000	68.8953	-6.0	100	0.00
31	T	2,2-Dichloropropane	10.0000	10.1564	-1.6	100	0.00
32	T	cis-1,2-Dichloroethene	10.0000	9.7326	2.7	100	0.00
33	C	Chloroform	10.0000	9.7611	2.4	100	0.00
34		1-Bromopropane	10.0000	9.1261	8.7	100	-0.01
35	T	Bromochloromethane	10.0000	9.5616	4.4	100	0.00
36	T	Tetrahydrofuran	65.0000	67.3892	-3.7	100	0.00
37	S	Dibromofluoromethane	5.0000	5.0625	-1.2	100	0.00
38	T	1,1,1-Trichloroethane	10.0000	10.0919	-0.9	100	0.00
39	T	Cyclohexane	10.0000	9.6977	3.0	100	-0.01
40	T	1,1-Dichloropropene	10.0000	9.7729	2.3	100	0.00
41	T	Tert-Amyl-Methyl ether	65.0000	68.1530	-4.9	100	0.00
42	T	Carbon Tetrachloride	10.0000	9.9495	0.5	100	0.00
43	S	1,2-Dichloroethane-d4	5.0000	4.8445	3.1	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	10.0000	10.1644	-1.6	100	0.00
46	T	Benzene	10.0000	9.7022	3.0	100	0.00
47	T	Trichloroethene	10.0000	9.8646	1.4	100	0.00
48	T	Methylcyclohexane	10.0000	9.7245	2.8	100	0.00
49	C	1,2-Dichloropropane	10.0000	9.8831	1.2	100	0.00
50	T	1,4-Dioxane	130.0000	133.5880	-2.8	100	0.00
51	T	Bromodichloromethane	10.0000	9.5106	4.9	100	0.00
52	T	Dibromomethane	10.0000	9.7551	2.4	100	0.00
53	T	2-Chloroethyl Vinyl Ether	10.0000	9.1546	8.5	100	0.00
54	T	4-Methyl-2-Pentanone	10.0000	9.4122	5.9	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	10.0000	9.6158	3.8	100	0.00
56	T	Dimethyl Disulfide	10.0000	8.5060	14.9	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	5.0000	4.9070	1.9	100	0.00
59	C	Toluene	10.0000	10.0233	-0.2	100	0.00
60	T	Ethyl Methacrylate	10.0000	9.4549	5.5	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	10.0000	9.7357	2.6	100	0.00
63	T	1,1,2-Trichloroethane	10.0000	10.2139	-2.1	100	0.00
64	T	2-Hexanone	10.0000	9.6021	4.0	100	0.00
65	T	1,3-Dichloropropane	10.0000	10.0347	-0.3	100	0.00
66	T	Tetrachloroethene	10.0000	10.2512	-2.5	100	0.00
67	T	Dibromochloromethane	10.0000	9.8381	1.6	100	0.00
68	T	1,2-Dibromoethane	10.0000	9.5966	4.0	100	0.00
69	T	1-Chlorohexane	10.0000	9.5030	5.0	100	0.00
70	P	Chlorobenzene	10.0000	10.0771	-0.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	10.0000	9.9162	0.8	100	0.00
72	C	Ethylbenzene	10.0000	9.8889	1.1	100	0.00
73	T	m-,p-Xylene	20.0000	19.8387	0.8	100	0.00
74	T	o-Xylene	10.0000	9.7060	2.9	100	0.00
75	T	Styrene	10.0000	9.6258	3.7	100	0.00
76	P	Bromoform	10.0000	9.5450	4.6	100	0.00
77	T	Isopropylbenzene	10.0000	9.9391	0.6	100	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	10.0000	10.2123	-2.1	100	0.00
80	S	p-Bromofluorobenzene	5.0000	5.0129	-0.3	100	0.00
81	T	1,2,3-Trichloropropane	10.0000	10.4826	-4.8	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	10.0000	9.8948	1.1	100	0.00
83	T	n-Propylbenzene	10.0000	10.3323	-3.3	100	0.00
84	T	Bromobenzene	10.0000	10.0828	-0.8	100	0.00
85	T	1,3,5-Trimethylbenzene	10.0000	10.1069	-1.1	100	0.00
86	T	2-Chlorotoluene	10.0000	10.4377	-4.4	100	0.00
87	T	4-Chlorotoluene	10.0000	10.2453	-2.5	100	0.00
88	T	a-Methylstyrene	10.0000	9.6043	4.0	100	0.00
89	T	tert-Butylbenzene	10.0000	10.0040	-0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	10.0000	10.3616	-3.6	100	0.00
91	T	sec-Butylbenzene	10.0000	10.0296	-0.3	100	0.00
92	T	p-Isopropyltoluene	10.0000	9.9480	0.5	100	0.00
93	T	1,3-Dichlorobenzene	10.0000	10.4404	-4.4	100	0.00
94	T	1,4-Dichlorobenzene	10.0000	10.3238	-3.2	100	0.00
95	T	n-Butylbenzene	10.0000	10.0364	-0.4	100	0.00
96	T	1,2-Dichlorobenzene	10.0000	10.2365	-2.4	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	10.0000	9.4579	5.4	100	-0.01
98	T	1,2,4-Trichlorobenzene	10.0000	10.0816	-0.8	100	0.00
99	T	Hexachlorobutadiene	10.0000	10.0659	-0.7	100	-0.01
100	T	Naphthalene	10.0000	10.0325	-0.3	100	0.00
101	T	1,2,3-Trichlorobenzene	10.0000	10.0173	-0.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137527.D 826_SL.M Mon Feb 29 16:02:41 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137528.D Vial: 7
Acq On : 26 Feb 2016 16:30 Operator: TMB
Sample : WG558920-07 20ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:40 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	604454	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	432511	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	231578	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	33417	10.3059 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 20.62%#		
43) 1,2-Dichloroethane-d4	11.05	65	44264	10.5140 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 21.02%#		
58) Toluene-d8	13.80	98	105494	10.2589 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 20.52%#		
80) p-Bromofluorobenzene	17.79	95	42856	10.0752 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 20.16%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	124530	22.4325 ug/L	99
3) Chloromethane	3.88	50	120837	20.8884 ug/L	97
4) Vinyl Chloride	4.12	62	100224	21.5249 ug/L	99
5) 1,3-Butadiene	4.17	54	87169	22.5011 ug/L	89
6) Bromomethane	5.03	94	52021	20.9587 ug/L	100
7) Chloroethane	5.20	64	56109	21.2522 ug/L	96
8) Trichlorofluoromethane	5.70	101	126994	20.2979 ug/L	100
9) Diethyl ether	6.24	59	233490	81.1233 ug/L	92
10) Isoprene	6.28	67	78978	19.3770 ug/L	88
11) Acrolein	6.48	56	21732	39.7585 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	61970	20.7512 ug/L	94
13) Acetone	6.60	43	31313	20.3882 ug/L	94
14) 1,1-Dichloroethene	6.83	61	109604	20.7203 ug/L	92
15) Tert-Butyl Alcohol	6.93	59	84577	171.3564 ug/L	95
16) Dimethyl Sulfide	7.12	62	47686	18.5811 ug/L	91
17) Iodomethane	7.38	142	29628	16.5619 ug/L	87
18) Methyl acetate	7.39	43	74780	20.3429 ug/L	95
19) Methylene Chloride	7.67	84	64851	20.3571 ug/L	76
20) Carbon Disulfide	7.72	76	202990	20.0567 ug/L	99
21) Acrylonitrile	7.86	53	61697	40.8381 ug/L	94
22) Methyl Tert Butyl Ether	7.89	73	190370	20.9254 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	59769	20.4535 ug/L	87
24) n-Hexane	8.24	57	105156	19.8169 ug/L	97
25) Diisopropyl ether	8.61	45	1129584	82.1061 ug/L	96
26) Vinyl Acetate	8.80	43	152272	21.4117 ug/L	97
27) 1,1-Dichloroethane	8.83	63	130302	20.6823 ug/L	99
28) Ethyl-Tert-Butyl ether	9.24	59	915394	83.0143 ug/L	96
29) 2-Butanone	9.46	43	42524	20.3527 ug/L	97
30) Propionitrile	9.58	54	48414	83.7237 ug/L	100
31) 2,2-Dichloropropane	9.69	77	100380	19.8495 ug/L	98
32) cis-1,2-Dichloroethene	9.77	96	66403	20.3543 ug/L	100
33) Chloroform	10.01	83	120566	20.4910 ug/L	97
34) 1-Bromopropane	10.15	122	8978	20.0727 ug/L	94
35) Bromochloromethane	10.26	130	39989	20.8618 ug/L	98
36) Tetrahydrofuran	10.29	42	119054	84.5841 ug/L	93
38) 1,1,1-Trichloroethane	10.60	97	105282	20.2577 ug/L	96
39) Cyclohexane	10.63	56	119680	20.3079 ug/L	89
40) 1,1-Dichloropropene	10.82	75	83869	20.0386 ug/L	96
41) Tert-Amyl-Methyl ether	10.94	73	732522	83.7393 ug/L	91
42) Carbon Tetrachloride	10.99	117	99704	20.5318 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137528.D Vial: 7
Acq On : 26 Feb 2016 16:30 Operator: TMB
Sample : WG558920-07 20ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:40 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45) 1,2-Dichloroethane	11.19	62	103881	20.6854 ug/L	99
46) Benzene	11.23	78	247381	19.6467 ug/L	92
47) Trichloroethene	12.09	130	61373	20.6321 ug/L	91
48) Methylcyclohexane	12.18	83	97333	20.2407 ug/L	88
49) 1,2-Dichloropropane	12.34	63	69997	20.6607 ug/L	99
50) 1,4-Dioxane	12.68	88	6222	161.0769 ug/L	84
51) Bromodichloromethane	12.68	83	89367	20.1007 ug/L	96
52) Dibromomethane	12.79	93	40905	20.6426 ug/L	98
53) 2-Chloroethyl Vinyl Ether	13.04	63	37392	20.0660 ug/L	99
54) 4-Methyl-2-Pentanone	13.07	58	29543	20.9375 ug/L	90
55) cis-1,3-Dichloropropene	13.43	75	99671	20.3475 ug/L	97
56) Dimethyl Disulfide	13.72	79	46329	18.7525 ug/L	98
59) Toluene	13.91	91	246419	20.1412 ug/L	99
60) Ethyl Methacrylate	14.04	69	79829	20.3638 ug/L	96
62) trans-1,3-Dichloropropene	14.12	75	96621	20.5377 ug/L	98
63) 1,1,2-Trichloroethane	14.38	97	53425	20.8919 ug/L	97
64) 2-Hexanone	14.31	43	59605	20.4265 ug/L	97
65) 1,3-Dichloropropane	14.74	76	96517	20.8239 ug/L	94
66) Tetrachloroethene	14.87	166	62111	20.5796 ug/L	96
67) Dibromochloromethane	15.17	129	68185	20.5019 ug/L	99
68) 1,2-Dibromoethane	15.48	107	53387	20.4138 ug/L	100
69) 1-Chlorohexane	15.59	91	76216	20.0602 ug/L	83
70) Chlorobenzene	16.07	112	160312	20.3880 ug/L #	66
71) 1,1,1,2-Tetrachloroethane	16.11	131	64649	20.4768 ug/L	97
72) Ethylbenzene	16.10	106	86018	20.4427 ug/L	96
73) m-,p-Xylene	16.22	106	209303	40.6530 ug/L	95
74) o-Xylene	16.87	106	101781	20.9889 ug/L	94
75) Styrene	16.92	104	169811	20.5741 ug/L	94
76) Bromoform	17.49	173	47615	20.2769 ug/L	98
77) Isopropylbenzene	17.38	105	273784	21.0027 ug/L	97
79) 1,1,2,2-Tetrachloroethane	17.65	83	75470	20.8621 ug/L	95
81) 1,2,3-Trichloropropane	17.87	110	22588	20.3932 ug/L	90
82) trans-1,4-Dichloro-2-Buten	17.93	53	26581	19.9034 ug/L	88
83) n-Propylbenzene	17.98	91	330830	21.0359 ug/L	97
84) Bromobenzene	18.13	156	71833	21.0128 ug/L	95
85) 1,3,5-Trimethylbenzene	18.21	105	230218	20.5655 ug/L	96
86) 2-Chlorotoluene	18.30	91	219979	20.9561 ug/L	97
87) 4-Chlorotoluene	18.35	91	193947	20.2066 ug/L	97
88) a-Methylstyrene	18.69	118	107098	19.7008 ug/L	96
89) tert-Butylbenzene	18.75	134	48246	20.6806 ug/L	94
90) 1,2,4-Trimethylbenzene	18.82	105	244152	20.7388 ug/L	84
91) sec-Butylbenzene	19.08	105	299927	20.9214 ug/L	98
92) p-Isopropyltoluene	19.27	119	246088	20.8066 ug/L	100
93) 1,3-Dichlorobenzene	19.48	146	134407	20.3198 ug/L	98
94) 1,4-Dichlorobenzene	19.64	146	136759	20.3118 ug/L	97
95) n-Butylbenzene	19.89	91	245859	20.6677 ug/L	97
96) 1,2-Dichlorobenzene	20.22	146	129420	20.3333 ug/L	96
97) 1,2-Dibromo-3-Chloropropan	21.41	75	16283	20.3429 ug/L	85
98) 1,2,4-Trichlorobenzene	22.76	180	93373	20.2924 ug/L	99
99) Hexachlorobutadiene	22.95	225	53674	20.3969 ug/L	99
100) Naphthalene	23.20	128	219058	20.7086 ug/L	99
101) 1,2,3-Trichlorobenzene	23.58	180	91461	20.1860 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M137528.D 826_SL.M Mon Feb 29 16:01:41 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137528.D Vial: 7
Acq On : 26 Feb 2016 16:30 Operator: TMB
Sample : WG558920-07 20ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

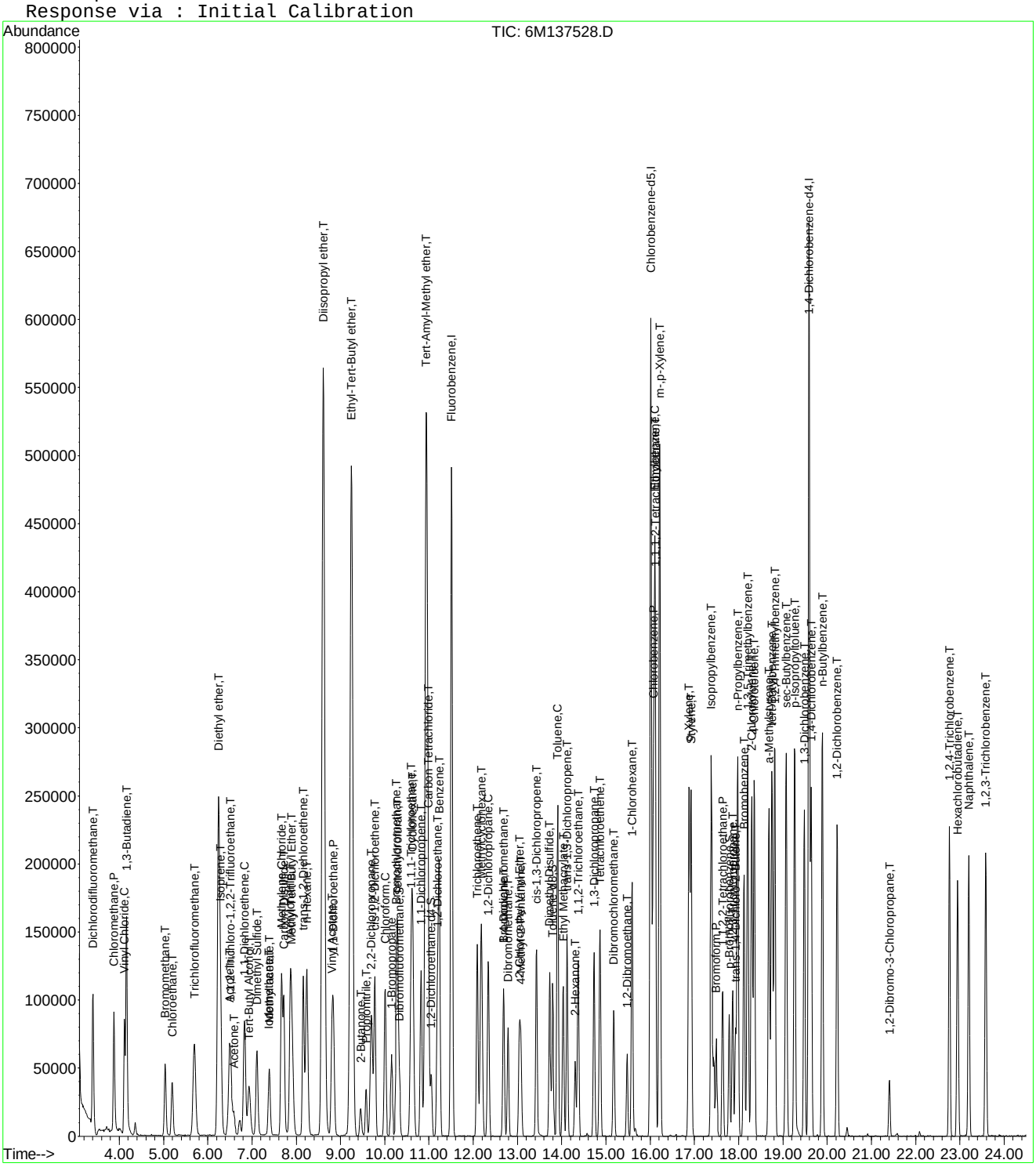

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137529.D Vial: 8
Acq On : 26 Feb 2016 17:03 Operator: TMB
Sample : WG558920-08 50ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:41 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	607631	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	439950	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	237573	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	82729	25.3805 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 50.76%#		
43) 1,2-Dichloroethane-d4	11.06	65	107163	25.3214 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 50.64%#		
58) Toluene-d8	13.80	98	266157	25.4452 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 50.90%#		
80) p-Bromofluorobenzene	17.79	95	111797	25.6197 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 51.24%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	326358	58.4819 ug/L	99
3) Chloromethane	3.88	50	305583	52.5483 ug/L	99
4) Vinyl Chloride	4.11	62	261948	55.9639 ug/L	98
5) 1,3-Butadiene	4.17	54	208973	53.6605 ug/L	91
6) Bromomethane	5.03	94	129157	51.7638 ug/L	100
7) Chloroethane	5.20	64	147959	55.7489 ug/L	95
8) Trichlorofluoromethane	5.70	101	339023	53.9039 ug/L	99
9) Diethyl ether	6.24	59	283385	97.9439 ug/L	93
10) Isoprene	6.28	67	215850	52.6813 ug/L	86
11) Acrolein	6.48	56	25264	45.9786 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	168394	56.0934 ug/L	94
13) Acetone	6.60	43	68176	49.2786 ug/L	100
14) 1,1-Dichloroethene	6.83	61	295734	55.6154 ug/L	92
15) Tert-Butyl Alcohol	6.94	59	97040	195.5789 ug/L	97
16) Dimethyl Sulfide	7.12	62	135657	52.5830 ug/L	94
17) Iodomethane	7.38	142	119726	51.5829 ug/L	91
18) Methyl acetate	7.39	43	187187	50.6554 ug/L	95
19) Methylene Chloride	7.67	84	174497	54.4892 ug/L	80
20) Carbon Disulfide	7.72	76	530150	52.1084 ug/L	98
21) Acrylonitrile	7.86	53	78970	51.9980 ug/L	98
22) Methyl Tert Butyl Ether	7.89	73	506330	55.3647 ug/L	93
23) trans-1,2-Dichloroethene	8.16	96	161116	54.8470 ug/L	86
24) n-Hexane	8.24	57	282956	53.0449 ug/L	98
25) Diisopropyl ether	8.61	45	1357488	98.1559 ug/L	97
26) Vinyl Acetate	8.80	43	361913	50.6243 ug/L	97
27) 1,1-Dichloroethane	8.84	63	345084	54.4873 ug/L	98
28) Ethyl-Tert-Butyl ether	9.24	59	1104598	99.6489 ug/L	96
29) 2-Butanone	9.45	43	102919	49.0011 ug/L	94
30) Propionitrile	9.58	54	57786	99.4084 ug/L	100
31) 2,2-Dichloropropane	9.70	77	275709	54.2347 ug/L	99
32) cis-1,2-Dichloroethene	9.77	96	176368	53.7788 ug/L	98
33) Chloroform	10.01	83	316097	53.4420 ug/L	96
34) 1-Bromopropane	10.16	122	24579	54.6655 ug/L	98
35) Bromochloromethane	10.26	130	106752	55.4000 ug/L	99
36) Tetrahydrofuran	10.29	42	139800	99.1693 ug/L	94
38) 1,1,1-Trichloroethane	10.60	97	287959	55.1175 ug/L	98
39) Cyclohexane	10.63	56	324068	54.7019 ug/L	90
40) 1,1-Dichloropropene	10.82	75	232925	55.3612 ug/L	98
41) Tert-Amyl-Methyl ether	10.95	73	878188	99.8664 ug/L	92
42) Carbon Tetrachloride	10.99	117	270388	55.3891 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137529.D Vial: 8
Acq On : 26 Feb 2016 17:03 Operator: TMB
Sample : WG558920-08 50ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:41 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	11.19	62	272804	54.0384	ug/L		98
46)	Benzene	11.23	78	654918	51.7410	ug/L		91
47)	Trichloroethene	12.09	130	163002	54.5109	ug/L		91
48)	Methylcyclohexane	12.18	83	264045	54.6220	ug/L		88
49)	1,2-Dichloropropane	12.34	63	185139	54.3608	ug/L		99
50)	1,4-Dioxane	12.67	88	7470	186.3872	ug/L		86
51)	Bromodichloromethane	12.68	83	244077	54.6116	ug/L		96
52)	Dibromomethane	12.78	93	112269	56.3600	ug/L		97
53)	2-Chloroethyl Vinyl Ether	13.04	63	99869	53.3134	ug/L		98
54)	4-Methyl-2-Pentanone	13.07	58	71173	50.1774	ug/L		95
55)	cis-1,3-Dichloropropene	13.43	75	275770	56.0032	ug/L		97
56)	Dimethyl Disulfide	13.72	79	136937	55.1380	ug/L		96
59)	Toluene	13.91	91	661797	53.1777	ug/L		100
60)	Ethyl Methacrylate	14.04	69	221335	55.5062	ug/L		94
62)	trans-1,3-Dichloropropene	14.12	75	265281	55.4346	ug/L		99
63)	1,1,2-Trichloroethane	14.38	97	140534	54.0266	ug/L		99
64)	2-Hexanone	14.31	43	150141	50.5831	ug/L		99
65)	1,3-Dichloropropane	14.73	76	254916	54.0691	ug/L		94
66)	Tetrachloroethene	14.87	166	165478	53.9016	ug/L		97
67)	Dibromochloromethane	15.17	129	187125	55.3134	ug/L		98
68)	1,2-Dibromoethane	15.48	107	145905	54.8470	ug/L		99
69)	1-Chlorohexane	15.59	91	213275	55.1854	ug/L		86
70)	Chlorobenzene	16.07	112	421684	52.7217	ug/L	#	68
71)	1,1,1,2-Tetrachloroethane	16.11	131	172886	53.8335	ug/L		98
72)	Ethylbenzene	16.11	106	233514	54.5577	ug/L		98
73)	m-,p-Xylene	16.22	106	560207	106.9693	ug/L		96
74)	o-Xylene	16.88	106	278846	56.5302	ug/L		96
75)	Styrene	16.92	104	471370	56.1451	ug/L		94
76)	Bromoform	17.49	173	131127	54.8964	ug/L		99
77)	Isopropylbenzene	17.38	105	740395	55.8373	ug/L		98
79)	1,1,2,2-Tetrachloroethane	17.65	83	199941	53.8747	ug/L		96
81)	1,2,3-Trichloropropane	17.87	110	61269	53.9200	ug/L		97
82)	trans-1,4-Dichloro-2-Buten	17.93	53	73183	53.4153	ug/L		91
83)	n-Propylbenzene	17.98	91	903295	55.9869	ug/L		98
84)	Bromobenzene	18.12	156	191943	54.7308	ug/L		98
85)	1,3,5-Trimethylbenzene	18.21	105	641908	55.8951	ug/L		95
86)	2-Chlorotoluene	18.30	91	578848	53.7519	ug/L		97
87)	4-Chlorotoluene	18.36	91	530900	53.9168	ug/L		97
88)	a-Methylstyrene	18.69	118	307671	55.1682	ug/L		99
89)	tert-Butylbenzene	18.76	134	134676	56.2719	ug/L		98
90)	1,2,4-Trimethylbenzene	18.82	105	666066	55.1494	ug/L		81
91)	sec-Butylbenzene	19.07	105	825213	56.1103	ug/L		99
92)	p-Isopropyltoluene	19.27	119	685445	56.4914	ug/L		100
93)	1,3-Dichlorobenzene	19.48	146	365219	53.8210	ug/L		96
94)	1,4-Dichlorobenzene	19.64	146	363309	52.5979	ug/L		98
95)	n-Butylbenzene	19.89	91	677494	55.5152	ug/L		98
96)	1,2-Dichlorobenzene	20.23	146	350298	53.6470	ug/L		96
97)	1,2-Dibromo-3-Chloropropan	21.41	75	43537	53.0196	ug/L		90
98)	1,2,4-Trichlorobenzene	22.76	180	262463	55.6006	ug/L		99
99)	Hexachlorobutadiene	22.95	225	150922	55.9053	ug/L		100
100)	Naphthalene	23.20	128	617866	56.9360	ug/L		100
101)	1,2,3-Trichlorobenzene	23.59	180	259953	55.9254	ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137529.D Vial: 8
Acq On : 26 Feb 2016 17:03 Operator: TMB
Sample : WG558920-08 50ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

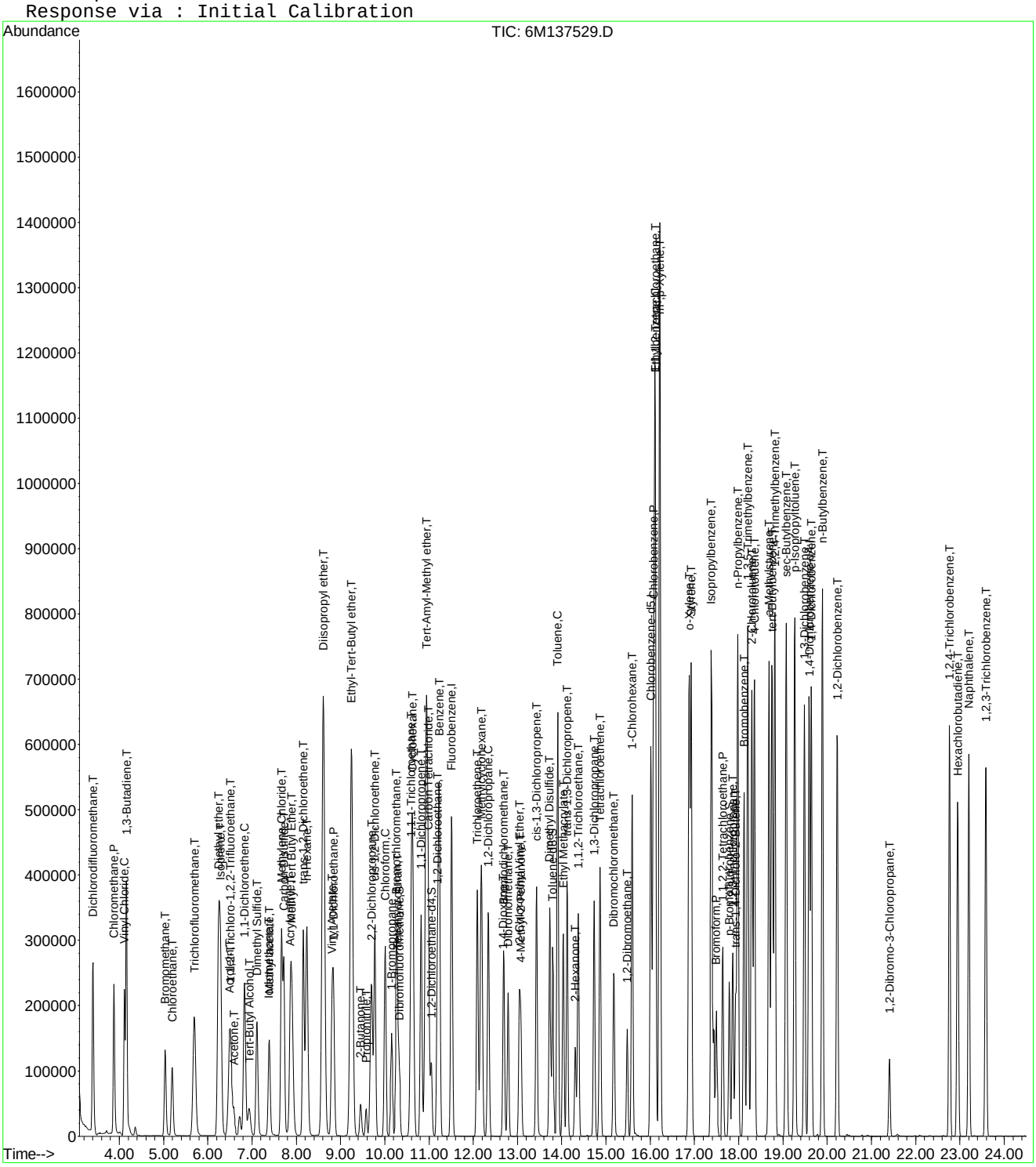

6M137529.D 826_SL.M Mon Feb 29 16:01:42 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137530.D Vial: 9
Acq On : 26 Feb 2016 17:35 Operator: TMB
Sample : WG558920-09 100ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:42 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	642087	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	466249	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	253947	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.32	111	162548	47.1921 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.38%		
43) 1,2-Dichloroethane-d4	11.06	65	210928	47.1653 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.34%		
58) Toluene-d8	13.80	98	518743	46.7957 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 93.60%		
80) p-Bromofluorobenzene	17.79	95	219336	47.0227 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 94.04%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	562397	95.3710 ug/L	99
3) Chloromethane	3.88	50	511342	83.2121 ug/L	98
4) Vinyl Chloride	4.12	62	453722	91.7337 ug/L	97
5) 1,3-Butadiene	4.16	54	371216	90.2064 ug/L	92
6) Bromomethane	5.03	94	236484	89.6925 ug/L	99
7) Chloroethane	5.19	64	259484	92.5233 ug/L	94
8) Trichlorofluoromethane	5.69	101	593589	89.3146 ug/L	99
9) Diethyl ether	6.23	59	599424	196.0563 ug/L	94
10) Isoprene	6.28	67	429478	99.1954 ug/L	86
11) Acrolein	6.48	56	58142	100.1359 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	295880	93.2711 ug/L	94
13) Acetone	6.59	43	134155	95.5525 ug/L	97
14) 1,1-Dichloroethene	6.83	61	525920	93.5964 ug/L	92
15) Tert-Butyl Alcohol	6.94	59	207755	396.2496 ug/L	97
16) Dimethyl Sulfide	7.11	62	269784	98.9613 ug/L	92
17) Iodomethane	7.38	142	252699	98.0787 ug/L	90
18) Methyl acetate	7.39	43	375036	96.0437 ug/L	97
19) Methylene Chloride	7.67	84	311212	91.9654 ug/L	80
20) Carbon Disulfide	7.72	76	1037082	96.4646 ug/L	99
21) Acrylonitrile	7.86	53	165829	103.3311 ug/L	99
22) Methyl Tert Butyl Ether	7.89	73	942489	97.5263 ug/L	93
23) trans-1,2-Dichloroethene	8.16	96	289637	93.3071 ug/L	87
24) n-Hexane	8.23	57	555752	98.5944 ug/L	98
25) Diisopropyl ether	8.61	45	2877959	196.9296 ug/L	96
26) Vinyl Acetate	8.80	43	731541	96.8365 ug/L	99
27) 1,1-Dichloroethane	8.83	63	621539	92.8721 ug/L	98
28) Ethyl-Tert-Butyl ether	9.24	59	2342177	199.9557 ug/L	96
29) 2-Butanone	9.45	43	207126	93.3235 ug/L	95
30) Propionitrile	9.57	54	121992	198.5994 ug/L	98
31) 2,2-Dichloropropane	9.69	77	491609	91.5150 ug/L	98
32) cis-1,2-Dichloroethene	9.77	96	321521	92.7784 ug/L	96
33) Chloroform	10.01	83	568519	90.9606 ug/L	95
34) 1-Bromopropane	10.16	122	47570	100.1217 ug/L	99
35) Bromochloromethane	10.26	130	193434	94.9975 ug/L	100
36) Tetrahydrofuran	10.29	42	287880	195.3143 ug/L	95
38) 1,1,1-Trichloroethane	10.60	97	511473	92.6461 ug/L	98
39) Cyclohexane	10.63	56	631373	100.8552 ug/L	90
40) 1,1-Dichloropropene	10.82	75	416243	93.6230 ug/L	97
41) Tert-Amyl-Methyl ether	10.94	73	1879478	202.2624 ug/L	92
42) Carbon Tetrachloride	10.99	117	485191	94.0581 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137530.D Vial: 9
Acq On : 26 Feb 2016 17:35 Operator: TMB
Sample : WG558920-09 100ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:42 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	498315	93.4118	ug/L	98
46)	Benzene	11.23	78	1182199	88.3862	ug/L	91
47)	Trichloroethene	12.09	130	294176	93.0987	ug/L	90
48)	Methylcyclohexane	12.18	83	515585	100.9337	ug/L	88
49)	1,2-Dichloropropane	12.34	63	342055	95.0452	ug/L	100
50)	1,4-Dioxane	12.67	88	17776	381.1583	ug/L	84
51)	Bromodichloromethane	12.68	83	452280	95.7660	ug/L	97
52)	Dibromomethane	12.79	93	202292	96.1028	ug/L	98
53)	2-Chloroethyl Vinyl Ether	13.04	63	206349	104.2447	ug/L	97
54)	4-Methyl-2-Pentanone	13.07	58	145646	97.1712	ug/L	93
55)	cis-1,3-Dichloropropene	13.43	75	509093	97.8384	ug/L	95
56)	Dimethyl Disulfide	13.72	79	282091	107.4894	ug/L	96
59)	Toluene	13.91	91	1184465	89.8074	ug/L	100
60)	Ethyl Methacrylate	14.04	69	445228	105.3560	ug/L	94
62)	trans-1,3-Dichloropropene	14.12	75	494673	97.5390	ug/L	99
63)	1,1,2-Trichloroethane	14.38	97	261258	94.7723	ug/L	99
64)	2-Hexanone	14.31	43	305856	97.2318	ug/L	100
65)	1,3-Dichloropropane	14.74	76	469121	93.8906	ug/L	93
66)	Tetrachloroethene	14.87	166	296672	91.1851	ug/L	98
67)	Dibromochloromethane	15.17	129	347661	96.9706	ug/L	98
68)	1,2-Dibromoethane	15.48	107	270599	95.9830	ug/L	97
69)	1-Chlorohexane	15.59	91	420885	102.7620	ug/L	86
70)	Chlorobenzene	16.07	112	765249	90.2797	ug/L	69
71)	1,1,1,2-Tetrachloroethane	16.11	131	320669	94.2184	ug/L	97
72)	Ethylbenzene	16.10	106	422350	93.1110	ug/L	97
73)	m-,p-Xylene	16.22	106	1018750	183.5539	ug/L	96
74)	o-Xylene	16.87	106	503867	96.3867	ug/L	94
75)	Styrene	16.92	104	871975	98.0029	ug/L	94
76)	Bromoform	17.49	173	243410	96.1558	ug/L	99
77)	Isopropylbenzene	17.38	105	1335991	95.0715	ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.65	83	376052	94.7950	ug/L	96
81)	1,2,3-Trichloropropane	17.87	110	114333	94.1314	ug/L	95
82)	trans-1,4-Dichloro-2-Buten	17.93	53	150048	102.4566	ug/L	89
83)	n-Propylbenzene	17.98	91	1628674	94.4377	ug/L	98
84)	Bromobenzene	18.13	156	352357	93.9933	ug/L	98
85)	1,3,5-Trimethylbenzene	18.21	105	1165530	94.9464	ug/L	95
86)	2-Chlorotoluene	18.30	91	1069398	92.9015	ug/L	97
87)	4-Chlorotoluene	18.35	91	957337	90.9557	ug/L	97
88)	a-Methylstyrene	18.69	118	626810	105.1459	ug/L	98
89)	tert-Butylbenzene	18.75	134	243763	95.2846	ug/L	87
90)	1,2,4-Trimethylbenzene	18.82	105	1211949	93.8776	ug/L	81
91)	sec-Butylbenzene	19.08	105	1482811	94.3227	ug/L	99
92)	p-Isopropyltoluene	19.27	119	1243718	95.8928	ug/L	100
93)	1,3-Dichlorobenzene	19.48	146	670076	92.3797	ug/L	97
94)	1,4-Dichlorobenzene	19.64	146	665185	90.0925	ug/L	97
95)	n-Butylbenzene	19.89	91	1241772	95.1924	ug/L	98
96)	1,2-Dichlorobenzene	20.22	146	649160	93.0065	ug/L	96
97)	1,2-Dibromo-3-Chloropropan	21.41	75	84975	96.8107	ug/L	89
98)	1,2,4-Trichlorobenzene	22.76	180	475402	94.2164	ug/L	99
99)	Hexachlorobutadiene	22.95	225	270006	93.5681	ug/L	100
100)	Naphthalene	23.20	128	1163220	100.2786	ug/L	100
101)	1,2,3-Trichlorobenzene	23.58	180	465522	93.6933	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137530.D Vial: 9
Acq On : 26 Feb 2016 17:35 Operator: TMB
Sample : WG558920-09 100ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

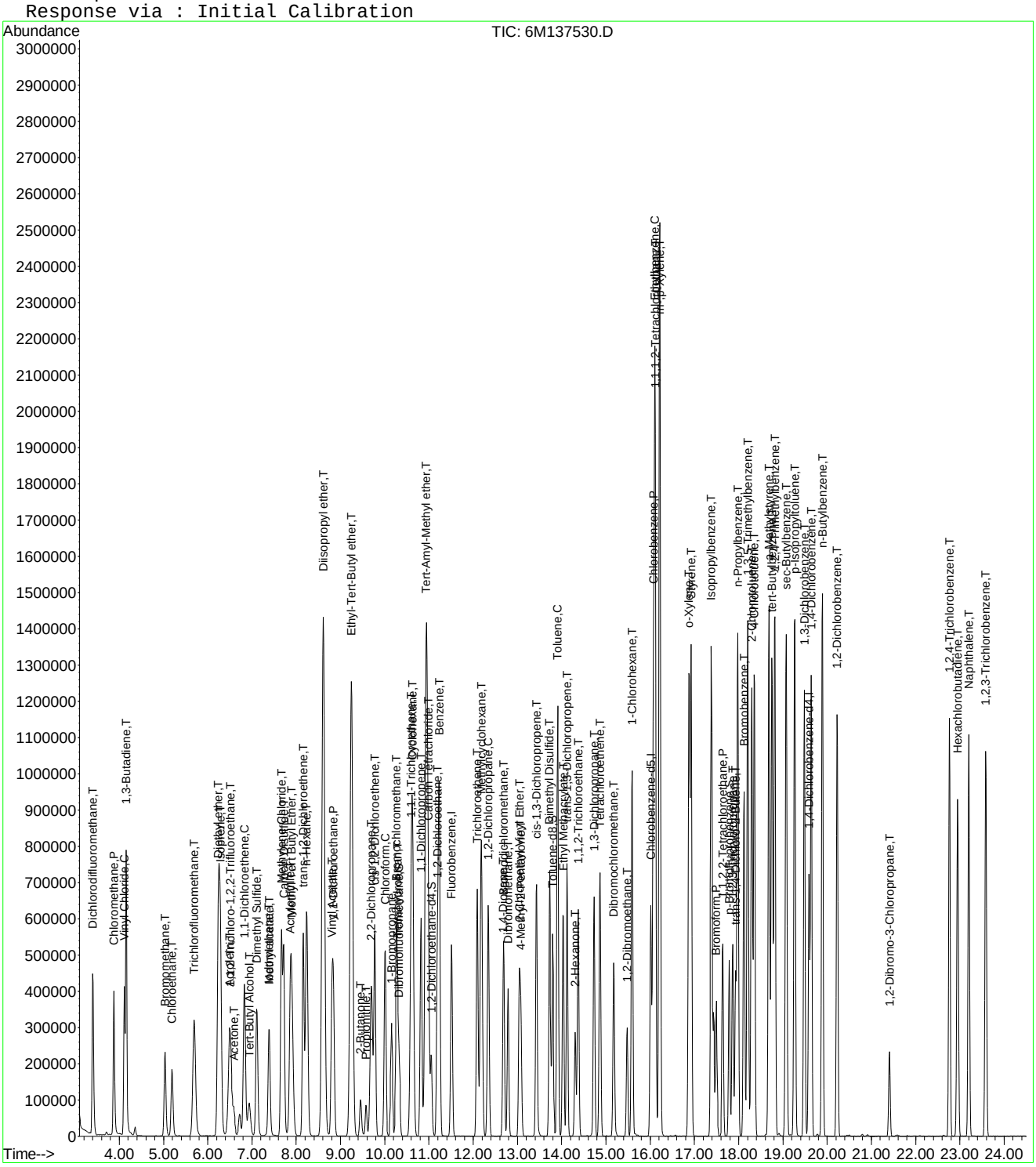

6M137530.D 826_SL.M Mon Feb 29 16:01:43 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137531.D Vial: 10
Acq On : 26 Feb 2016 18:07 Operator: TMB
Sample : WG558920-10 200ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:43 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	661999	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	479329	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	273657	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	351336	98.9344 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 197.86%#		
43) 1,2-Dichloroethane-d4	11.05	65	450300	97.6622 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 195.32%#		
58) Toluene-d8	13.80	98	1096959	96.2561 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 192.52%#		
80) p-Bromofluorobenzene	17.79	95	487968	97.0790 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 194.16%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	1228760	202.1049 ug/L	98
3) Chloromethane	3.88	50	1125279	177.6118 ug/L	98
4) Vinyl Chloride	4.12	62	989076	193.9570 ug/L	97
5) 1,3-Butadiene	4.16	54	745589	175.7303 ug/L	94
6) Bromomethane	5.03	94	548799	201.8852 ug/L	100
7) Chloroethane	5.19	64	579871	200.5435 ug/L	96
8) Trichlorofluoromethane	5.69	101	1297014	189.2858 ug/L	100
9) Diethyl ether	6.23	59	1563	0.4958 ug/L #	49
10) Isoprene	6.27	67	894422	200.3686 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	649915	198.7121 ug/L	93
13) Acetone	6.59	43	290441	205.4763 ug/L	99
14) 1,1-Dichloroethene	6.83	61	1161250	200.4481 ug/L	92
15) Tert-Butyl Alcohol	6.83	59	39858	73.7343 ug/L #	57
16) Dimethyl Sulfide	7.11	62	576142	204.9817 ug/L	92
17) Iodomethane	7.38	142	559892	205.0669 ug/L	91
18) Methyl acetate	7.39	43	775842	192.7107 ug/L	97
19) Methylene Chloride	7.67	84	681801	195.4170 ug/L	78
20) Carbon Disulfide	7.72	76	2184454	197.0763 ug/L	98
21) Acrylonitrile	7.90	53	25391	15.3457 ug/L #	34
22) Methyl Tert Butyl Ether	7.90	73	2079733	208.7322 ug/L	92
23) trans-1,2-Dichloroethene	8.16	96	635434	198.5489 ug/L	86
24) n-Hexane	8.23	57	1159756	199.5603 ug/L	99
25) Diisopropyl ether	8.63	45	8975	0.5957 ug/L #	37
26) Vinyl Acetate	8.80	43	1656751	212.7131 ug/L	98
27) 1,1-Dichloroethane	8.83	63	1360017	197.1051 ug/L	97
28) Ethyl-Tert-Butyl ether	9.23	59	4690	0.3884 ug/L #	76
29) 2-Butanone	9.45	43	450489	196.8688 ug/L	97
30) Propionitrile	9.59	54	193	0.3047 ug/L #	55
31) 2,2-Dichloropropane	9.69	77	1084788	195.8637 ug/L	97
32) cis-1,2-Dichloroethene	9.77	96	711282	199.0746 ug/L	99
33) Chloroform	10.00	83	1259701	195.4845 ug/L	96
34) 1-Bromopropane	10.16	122	101190	206.5710 ug/L	98
35) Bromochloromethane	10.26	130	430294	204.9658 ug/L	100
36) Tetrahydrofuran	10.31	42	4560	0.8620 ug/L #	82
38) 1,1,1-Trichloroethane	10.60	97	1139307	200.1621 ug/L	98
39) Cyclohexane	10.63	56	1322081	204.8363 ug/L	90
40) 1,1-Dichloropropene	10.83	75	913448	199.2765 ug/L	99
41) Tert-Amyl-Methyl ether	10.93	73	3689	0.3851 ug/L #	57
42) Carbon Tetrachloride	10.99	117	1067649	200.7466 ug/L	97
45) 1,2-Dichloroethane	11.19	62	1098127	199.6582 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M137531.D 826_SL.M Mon Feb 29 16:01:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137531.D Vial: 10
Acq On : 26 Feb 2016 18:07 Operator: TMB
Sample : WG558920-10 200ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:43 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	11.23	78	2576436	186.8313 ug/L		90
47)	Trichloroethene	12.09	130	648704	199.1220 ug/L		90
48)	Methylcyclohexane	12.18	83	1075003	204.1184 ug/L		87
49)	1,2-Dichloropropane	12.34	63	757110	204.0468 ug/L		100
50)	1,4-Dioxane	12.68	88	863	47.3107 ug/L	#	17
51)	Bromodichloromethane	12.68	83	1017483	208.9621 ug/L		97
52)	Dibromomethane	12.79	93	451601	208.0889 ug/L		97
53)	2-Chloroethyl Vinyl Ether	13.03	63	470311	230.4481 ug/L		98
54)	4-Methyl-2-Pentanone	13.07	58	332135	214.9265 ug/L		95
55)	cis-1,3-Dichloropropene	13.43	75	1150962	214.5407 ug/L		96
56)	Dimethyl Disulfide	13.73	79	648612	239.7166 ug/L		96
59)	Toluene	13.91	91	2588299	190.8923 ug/L		99
60)	Ethyl Methacrylate	14.03	69	978791	225.2947 ug/L		94
62)	trans-1,3-Dichloropropene	14.12	75	1110336	212.9604 ug/L		98
63)	1,1,2-Trichloroethane	14.38	97	578586	204.1568 ug/L		99
64)	2-Hexanone	14.31	43	689071	213.0784 ug/L		99
65)	1,3-Dichloropropane	14.74	76	1034423	201.3815 ug/L		93
66)	Tetrachloroethene	14.87	166	644718	192.7530 ug/L		97
67)	Dibromochloromethane	15.18	129	780769	211.8317 ug/L		100
68)	1,2-Dibromoethane	15.48	107	610277	210.5616 ug/L		98
69)	1-Chlorohexane	15.59	91	900931	213.9661 ug/L		86
70)	Chlorobenzene	16.07	112	1706160	195.7904 ug/L	#	68
71)	1,1,1,2-Tetrachloroethane	16.11	131	721225	206.1264 ug/L		97
72)	Ethylbenzene	16.11	106	946980	203.0736 ug/L		98
73)	m-,p-Xylene	16.22	106	2242794	393.0696 ug/L		97
74)	o-Xylene	16.87	106	1130903	210.4315 ug/L		95
75)	Styrene	16.92	104	1988734	217.4182 ug/L		93
76)	Bromoform	17.49	173	561872	215.9030 ug/L		99
77)	Isopropylbenzene	17.38	105	2989967	206.9652 ug/L		98
79)	1,1,2,2-Tetrachloroethane	17.64	83	859540	201.0666 ug/L		95
81)	1,2,3-Trichloropropane	17.87	110	265884	203.1382 ug/L		89
82)	trans-1,4-Dichloro-2-Buten	17.93	53	340440	215.7181 ug/L		90
83)	n-Propylbenzene	17.98	91	3639812	195.8513 ug/L		98
84)	Bromobenzene	18.13	156	802539	198.6628 ug/L		99
85)	1,3,5-Trimethylbenzene	18.21	105	2665531	201.5000 ug/L		96
86)	2-Chlorotoluene	18.30	91	2450953	197.5855 ug/L		97
87)	4-Chlorotoluene	18.35	91	2149568	189.5191 ug/L		97
88)	a-Methylstyrene	18.69	118	1416560	220.5099 ug/L		98
89)	tert-Butylbenzene	18.75	134	559469	202.9400 ug/L		85
90)	1,2,4-Trimethylbenzene	18.82	105	2775173	199.4822 ug/L		81
91)	sec-Butylbenzene	19.08	105	3369131	198.8771 ug/L		100
92)	p-Isopropyltoluene	19.26	119	2833911	202.7621 ug/L		99
93)	1,3-Dichlorobenzene	19.49	146	1523154	194.8646 ug/L		95
94)	1,4-Dichlorobenzene	19.64	146	1521474	191.2260 ug/L		97
95)	n-Butylbenzene	19.89	91	2819417	200.5655 ug/L		98
96)	1,2-Dichlorobenzene	20.22	146	1485290	197.4738 ug/L		95
97)	1,2-Dibromo-3-Chloropropan	21.41	75	195547	206.7378 ug/L		89
98)	1,2,4-Trichlorobenzene	22.76	180	1054519	193.9351 ug/L		98
99)	Hexachlorobutadiene	22.95	225	597195	192.0469 ug/L		99
100)	Naphthalene	23.20	128	2579088	206.3237 ug/L		99
101)	1,2,3-Trichlorobenzene	23.58	180	1038439	193.9482 ug/L		99

(#) = qualifier out of range (m) = manual integration
6M137531.D 826_SL.M Mon Feb 29 16:01:43 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137531.D Vial: 10
Acq On : 26 Feb 2016 18:07 Operator: TMB
Sample : WG558920-10 200ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

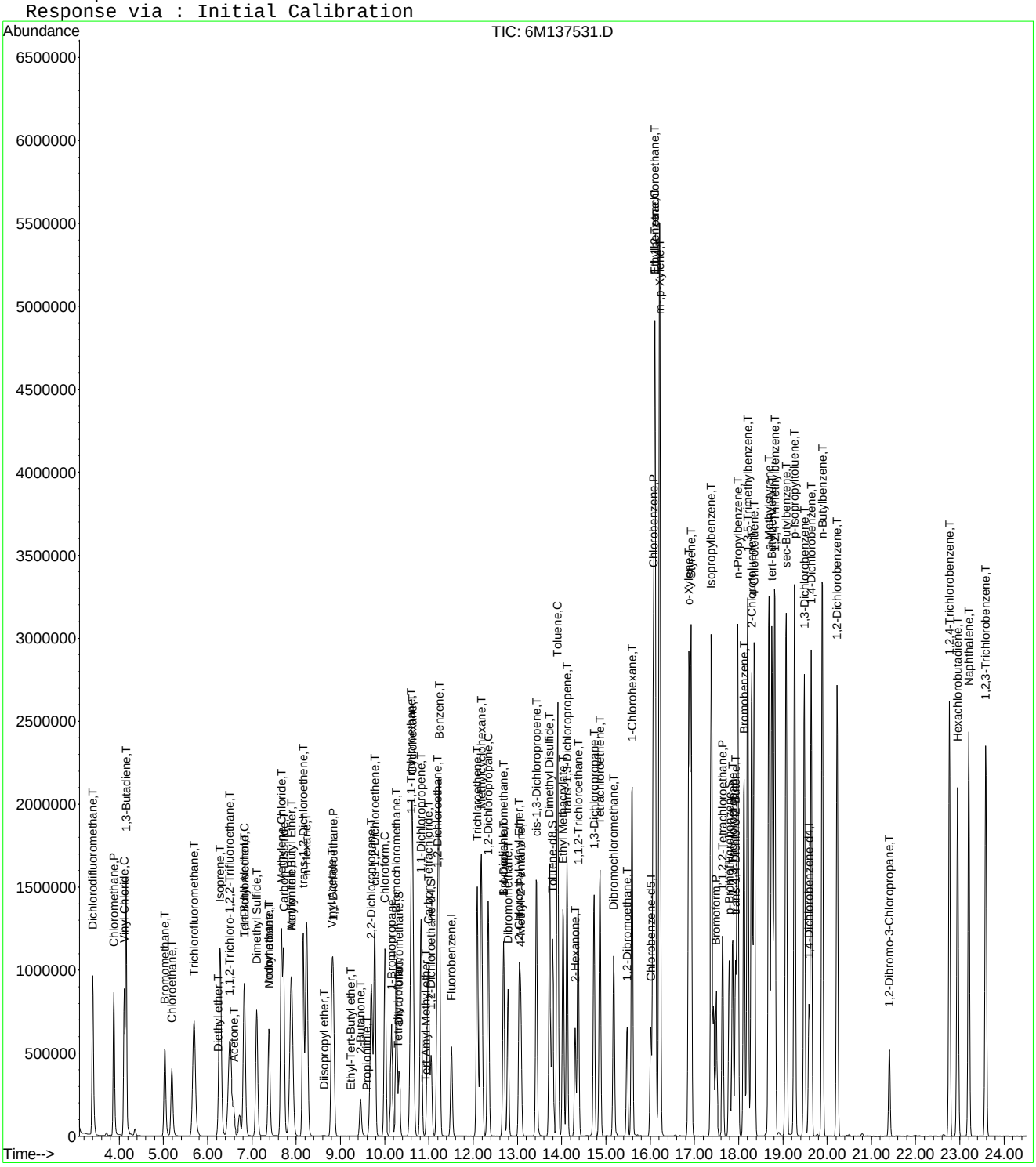

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137532.D Vial: 11
Acq On : 26 Feb 2016 18:39 Operator: TMB
Sample : WG558920-11 300ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:43 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	707233	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	525178	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	308135	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	555974	146.5460 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 293.10%#		
43) 1,2-Dichloroethane-d4	11.05	65	713394	144.8268 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 289.66%#		
58) Toluene-d8	13.80	98	1741152	139.4446 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 278.88%#		
80) p-Bromofluorobenzene	17.79	95	787625	139.1615 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 278.32%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	1997367	307.5122 ug/L	98
3) Chloromethane	3.88	50	1848014	273.0309 ug/L	98
4) Vinyl Chloride	4.11	62	1515327	278.1486 ug/L	97
5) 1,3-Butadiene	4.15	54	1176840	259.6328 ug/L	94
6) Bromomethane	5.03	94	924558	318.3612 ug/L	100
7) Chloroethane	5.18	64	952580	308.3709 ug/L	96
8) Trichlorofluoromethane	5.68	101	2124957	290.2808 ug/L	99
9) Diethyl ether	6.23	59	1011802	300.4509 ug/L	94
10) Isoprene	6.27	67	1489357	312.3064 ug/L	86
11) Acrolein	6.49	56	100305	156.8389 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	1067610	305.5451 ug/L	94
13) Acetone	6.59	43	448789	299.1551 ug/L	99
14) 1,1-Dichloroethene	6.82	61	1895304	306.2315 ug/L	92
15) Tert-Butyl Alcohol	6.95	59	370925	642.2954 ug/L	99
16) Dimethyl Sulfide	7.11	62	950681	316.6032 ug/L	94
17) Iodomethane	7.38	142	877751	298.6036 ug/L	91
18) Methyl acetate	7.40	43	1274555	296.3371 ug/L	98
19) Methylene Chloride	7.66	84	1102725	295.8467 ug/L	79
20) Carbon Disulfide	7.71	76	3583096	302.5832 ug/L	98
21) Acrylonitrile	7.86	53	296066	167.4906 ug/L	98
22) Methyl Tert Butyl Ether	7.90	73	3392519	318.7124 ug/L	92
23) trans-1,2-Dichloroethene	8.16	96	1037130	303.3368 ug/L	86
24) n-Hexane	8.23	57	1917686	308.8729 ug/L	99
25) Diisopropyl ether	8.61	45	4780310	296.9708 ug/L	96
26) Vinyl Acetate	8.80	43	2633859	316.5369 ug/L	99
27) 1,1-Dichloroethane	8.83	63	2210234	299.8379 ug/L	97
28) Ethyl-Tert-Butyl ether	9.24	59	3979837	308.4685 ug/L	96
29) 2-Butanone	9.45	43	727982	297.7887 ug/L	98
30) Propionitrile	9.58	54	209887	310.2156 ug/L	99
31) 2,2-Dichloropropane	9.69	77	1783568	301.4350 ug/L	96
32) cis-1,2-Dichloroethene	9.77	96	1159875	303.8646 ug/L	98
33) Chloroform	10.00	83	2040554	296.4065 ug/L	96
34) 1-Bromopropane	10.15	122	167090	319.2839 ug/L	98
35) Bromochloromethane	10.26	130	694571	309.6903 ug/L	99
36) Tetrahydrofuran	10.30	42	490636	303.4020 ug/L	96
38) 1,1,1-Trichloroethane	10.60	97	1858746	305.6722 ug/L	98
39) Cyclohexane	10.63	56	2201094	319.2142 ug/L	89
40) 1,1-Dichloropropene	10.83	75	1504422	307.2111 ug/L	99
41) Tert-Amyl-Methyl ether	10.94	73	3231746	315.7523 ug/L	93
42) Carbon Tetrachloride	10.99	117	1763858	310.4404 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137532.D Vial: 11
Acq On : 26 Feb 2016 18:39 Operator: TMB
Sample : WG558920-11 300ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:43 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45) 1,2-Dichloroethane	11.19	62	1778788	302.7287 ug/L	98
46) Benzene	11.23	78	4155462	282.0619 ug/L	90
47) Trichloroethene	12.09	130	1058154	304.0300 ug/L	90
48) Methylcyclohexane	12.18	83	1798917	319.7263 ug/L	88
49) 1,2-Dichloropropane	12.34	63	1232481	310.9180 ug/L	100
50) 1,4-Dioxane	12.67	88	32606	614.2458 ug/L	84
51) Bromodichloromethane	12.68	83	1653218	317.8084 ug/L	96
52) Dibromomethane	12.79	93	733410	316.3265 ug/L	98
53) 2-Chloroethyl Vinyl Ether	13.03	63	766489	351.5513 ug/L	97
54) 4-Methyl-2-Pentanone	13.07	58	543988	329.5031 ug/L	95
55) cis-1,3-Dichloropropene	13.42	75	1877090	327.5130 ug/L	95
56) Dimethyl Disulfide	13.73	79	1088350	376.5100 ug/L	96
59) Toluene	13.91	91	4193210	282.2590 ug/L	99
60) Ethyl Methacrylate	14.03	69	1632375	342.9321 ug/L	95
62) trans-1,3-Dichloropropene	14.12	75	1832609	320.8053 ug/L	98
63) 1,1,2-Trichloroethane	14.38	97	942438	303.5120 ug/L	98
64) 2-Hexanone	14.31	43	1154652	325.8770 ug/L	98
65) 1,3-Dichloropropane	14.74	76	1702509	302.5088 ug/L	94
66) Tetrachloroethene	14.87	166	1062175	289.8375 ug/L	97
67) Dibromochloromethane	15.18	129	1292929	320.1624 ug/L	100
68) 1,2-Dibromoethane	15.48	107	1008106	317.4575 ug/L	98
69) 1-Chlorohexane	15.59	91	1494127	323.8681 ug/L	86
70) Chlorobenzene	16.07	112	2773062	290.4413 ug/L #	66
71) 1,1,1,2-Tetrachloroethane	16.11	131	1196001	311.9762 ug/L	97
72) Ethylbenzene	16.11	106	1556732	304.6869 ug/L	100
73) m-,p-Xylene	16.22	106	3653753	584.4488 ug/L	99
74) o-Xylene	16.87	106	1861503	316.1378 ug/L	96
75) Styrene	16.92	104	3280614	327.3419 ug/L	91
76) Bromoform	17.49	173	968059	339.5083 ug/L	100
77) Isopropylbenzene	17.38	105	4859396	307.0014 ug/L	99
79) 1,1,2,2-Tetrachloroethane	17.64	83	1473362	306.0898 ug/L	95
81) 1,2,3-Trichloropropane	17.87	110	450710	305.8173 ug/L	97
82) trans-1,4-Dichloro-2-Buten	17.93	53	587175	330.4298 ug/L	92
83) n-Propylbenzene	17.98	91	5875551	280.7771 ug/L	99
84) Bromobenzene	18.13	156	1329308	292.2413 ug/L	98
85) 1,3,5-Trimethylbenzene	18.21	105	4394146	295.0064 ug/L	96
86) 2-Chlorotoluene	18.30	91	4027318	288.3378 ug/L	97
87) 4-Chlorotoluene	18.35	91	3574535	279.8896 ug/L	97
88) a-Methylstyrene	18.69	118	2387215	330.0275 ug/L	99
89) tert-Butylbenzene	18.75	134	927820	298.8965 ug/L	84
90) 1,2,4-Trimethylbenzene	18.82	105	4532965	289.3756 ug/L	82
91) sec-Butylbenzene	19.08	105	5502198	288.4488 ug/L	100
92) p-Isopropyltoluene	19.27	119	4664534	296.3974 ug/L	98
93) 1,3-Dichlorobenzene	19.49	146	2567994	291.7754 ug/L	95
94) 1,4-Dichlorobenzene	19.64	146	2568075	286.6525 ug/L	96
95) n-Butylbenzene	19.89	91	4738000	299.3349 ug/L	98
96) 1,2-Dichlorobenzene	20.22	146	2506554	295.9653 ug/L	94
97) 1,2-Dibromo-3-Chloropropan	21.41	75	337125	316.5375 ug/L	88
98) 1,2,4-Trichlorobenzene	22.76	180	1820641	297.3664 ug/L	98
99) Hexachlorobutadiene	22.95	225	1055064	301.3252 ug/L	99
100) Naphthalene	23.20	128	4412465	313.4943 ug/L	98
101) 1,2,3-Trichlorobenzene	23.58	180	1777074	294.7650 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M137532.D 826_SL.M Mon Feb 29 16:01:44 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137532.D Vial: 11
Acq On : 26 Feb 2016 18:39 Operator: TMB
Sample : WG558920-11 300ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

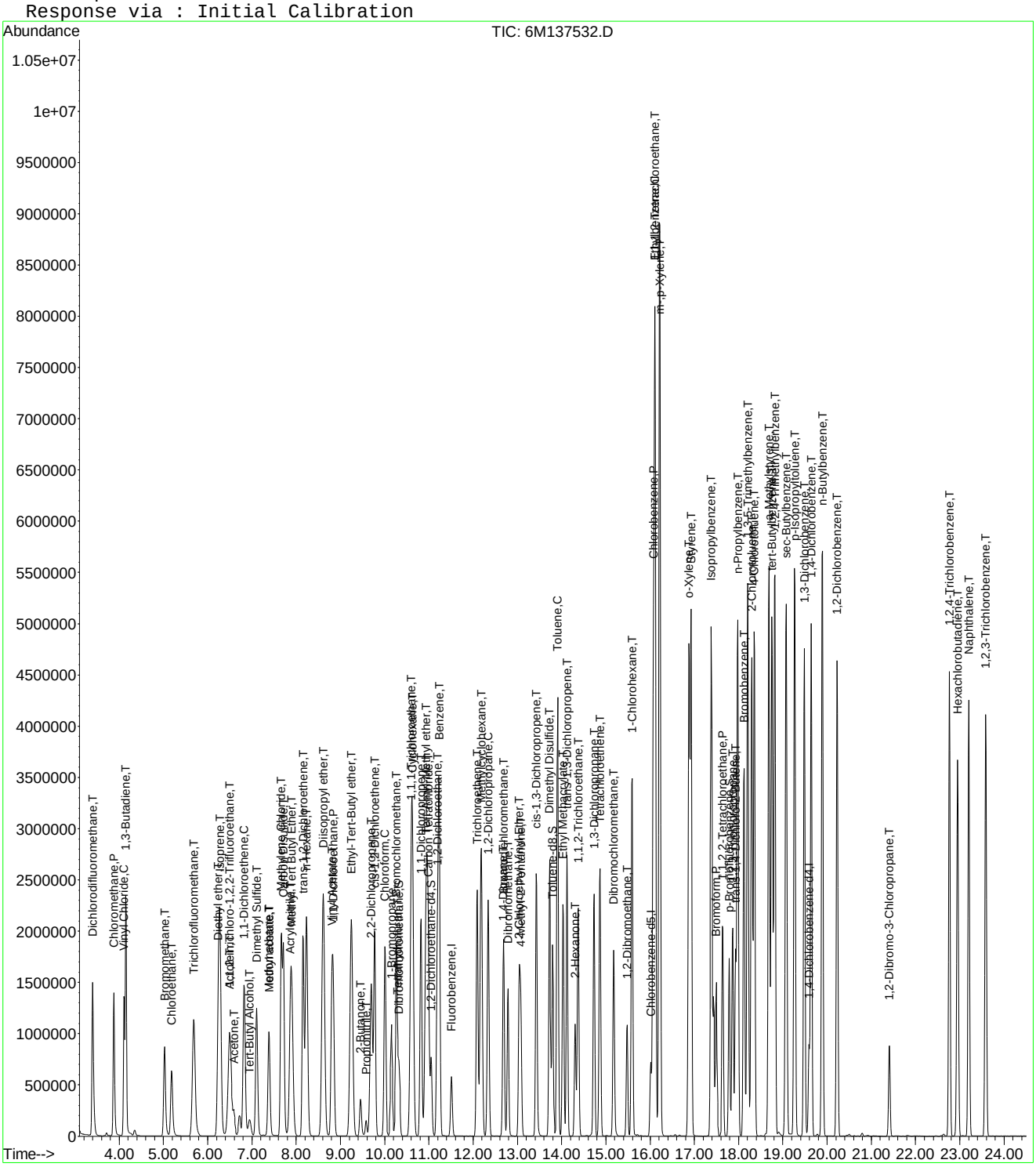

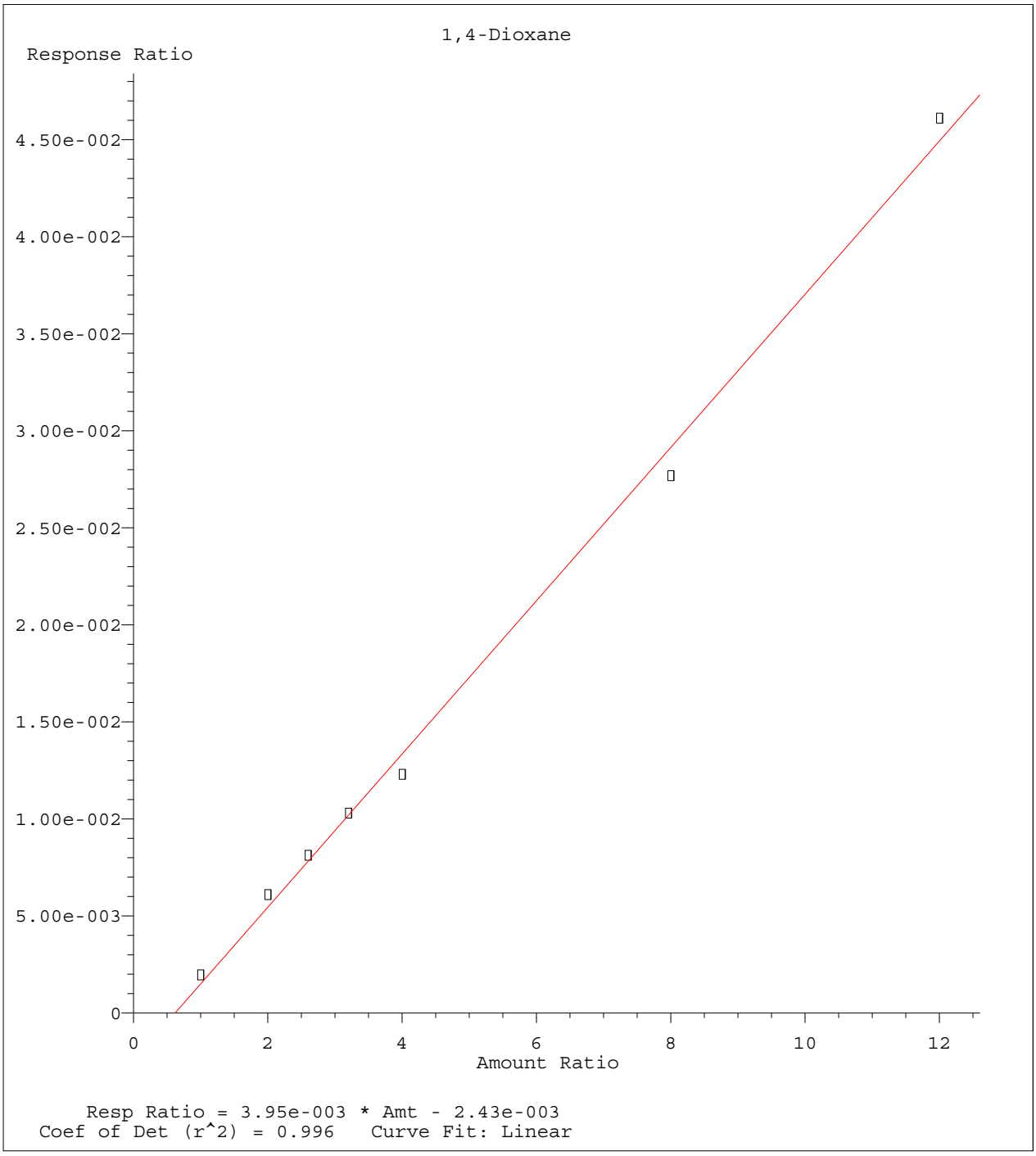

Method Name: C:\MSDCHEM\1\METHODS\826_SL.M
Calibration Table Last Updated: Mon Feb 29 08:51:12 2016

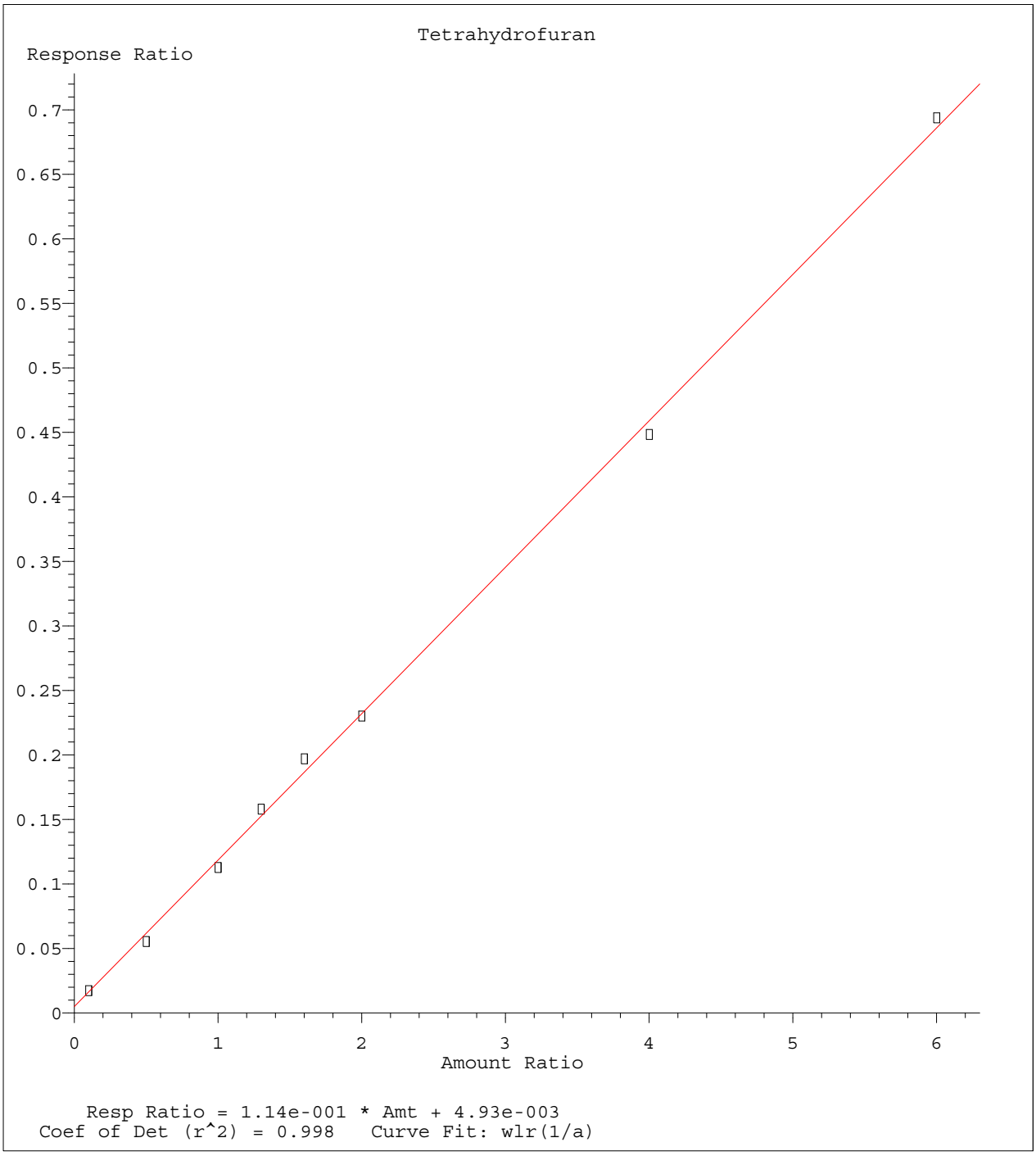

Method Name: C:\MSDCHEM\1\METHODS\826_SL.M
Calibration Table Last Updated: Mon Feb 29 08:51:12 2016

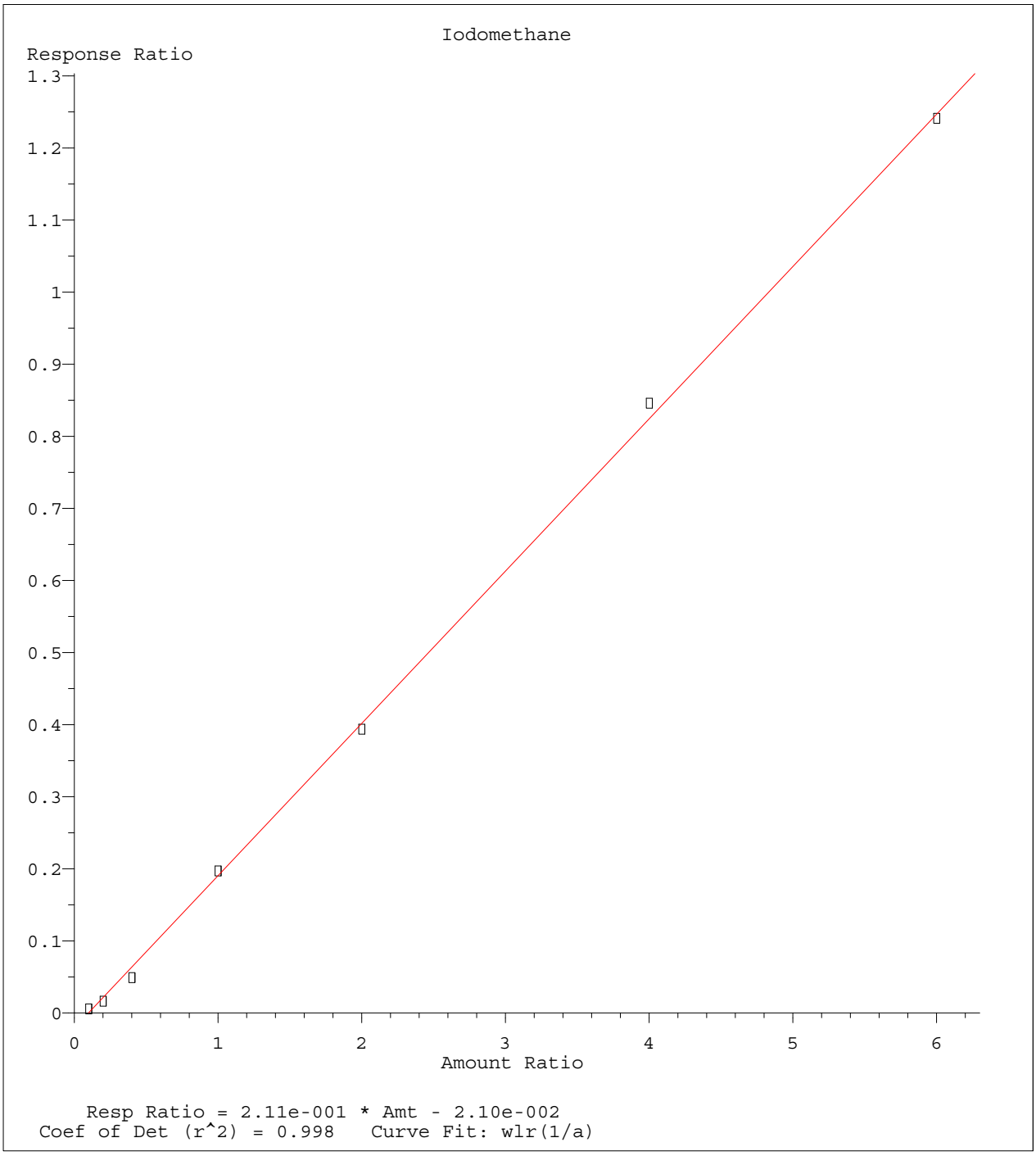

Method Name: C:\MSDCHEM\1\METHODS\826_SL.M
Calibration Table Last Updated: Mon Feb 29 08:51:12 2016

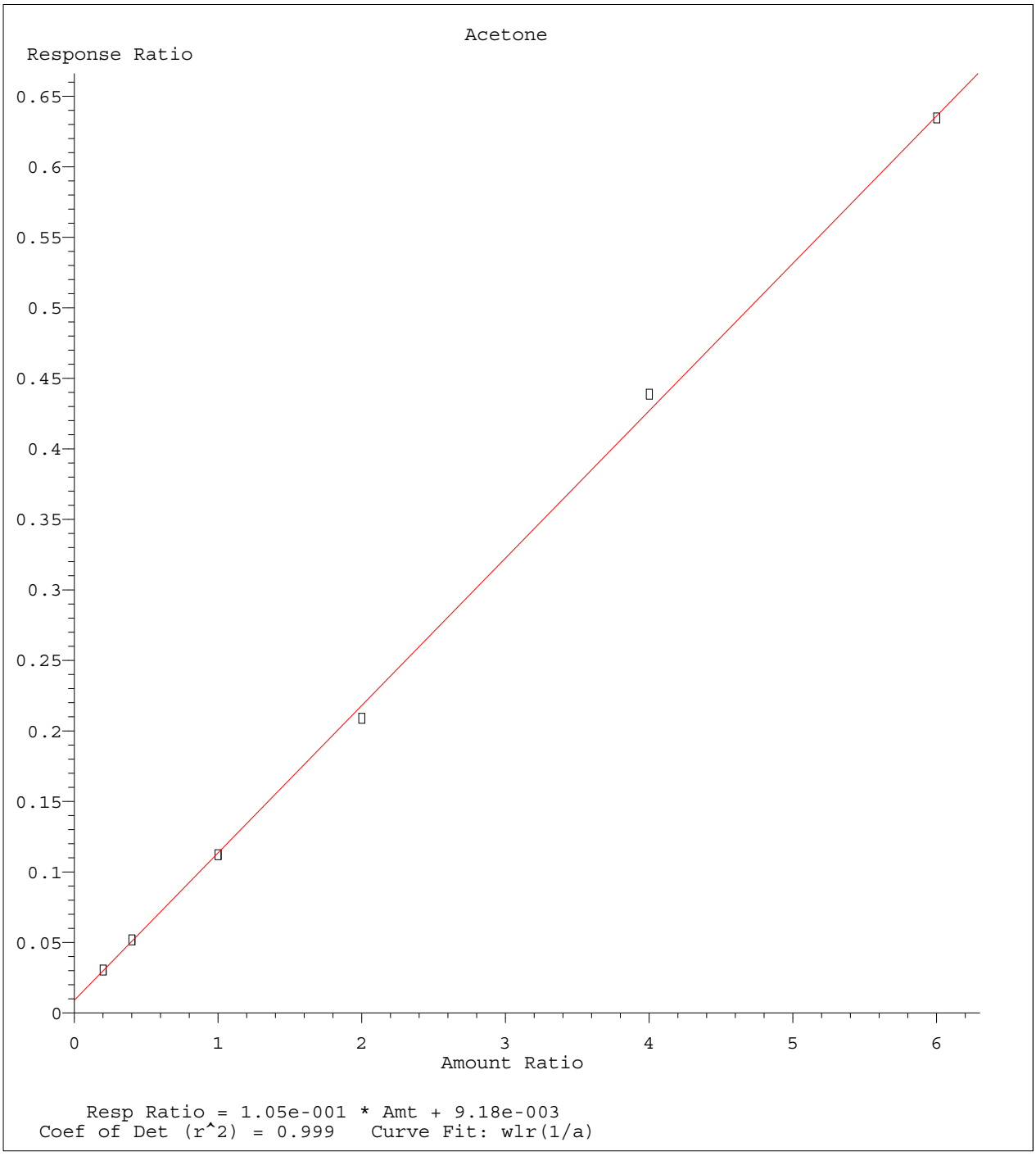

Method Name: C:\MSDCHEM\1\METHODS\826_SL.M
Calibration Table Last Updated: Mon Feb 29 08:51:12 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:44 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	697242	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	504277	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	281494	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.32	111	83790	22.4022 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 44.80%#		
43) 1,2-Dichloroethane-d4	11.05	65	107686	22.1747 ug/L	-0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 44.34%#		
58) Toluene-d8	13.80	98	259069	21.6082 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 43.22%#		
80) p-Bromofluorobenzene	17.79	95	108251	20.9365 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 41.88%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	355154	55.4626 ug/L	99
3) Chloromethane	3.88	50	339693	50.9064 ug/L	98
4) Vinyl Chloride	4.11	62	232790	43.3425 ug/L	98
5) 1,3-Butadiene	4.16	54	191696	42.8977 ug/L	93
6) Bromomethane	5.02	94	167650	58.5556 ug/L	99
7) Chloroethane	5.19	64	172370	56.5995 ug/L	98
8) Trichlorofluoromethane	5.68	101	345771	47.9110 ug/L	99
9) Diethyl ether	6.24	59	244439	73.6254 ug/L	93
10) Isoprene	6.27	67	268171	57.0391 ug/L	88
11) Acrolein	6.48	56	38698	61.3760 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	185858	53.9539 ug/L	94
13) Acetone	6.60	43	77335	48.6644 ug/L	96
14) 1,1-Dichloroethene	6.83	61	315114	51.6437 ug/L	92
15) Tert-Butyl Alcohol	6.95	59	120780	212.1401 ug/L	97
16) Dimethyl Sulfide	7.11	62	234426	79.1891 ug/L	96
17) Iodomethane	7.38	142	96886	37.8412 ug/L	92
18) Methyl acetate	7.39	43	223958	52.8169 ug/L	96
19) Methylene Chloride	7.67	84	196184	53.3878 ug/L	82
20) Carbon Disulfide	7.71	76	518243	44.3914 ug/L	99
21) Acrylonitrile	7.86	53	88595	50.8382 ug/L	99
22) Methyl Tert Butyl Ether	7.89	73	557115	53.0885 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	181115	53.7310 ug/L	84
24) n-Hexane	8.23	57	293885	48.0130 ug/L	99
25) Diisopropyl ether	8.61	45	1440779	90.7892 ug/L	96
26) Vinyl Acetate	8.80	43	309031	37.6715 ug/L	98
27) 1,1-Dichloroethane	8.83	63	365886	50.3469 ug/L	98
28) Ethyl-Tert-Butyl ether	9.25	59	1142199	89.7979 ug/L	96
29) 2-Butanone	9.46	43	118678	49.2421 ug/L	97
30) Propionitrile	9.58	54	62654	93.9303 ug/L	99
31) 2,2-Dichloropropane	9.69	77	309886	53.1233 ug/L	95
32) cis-1,2-Dichloroethene	9.77	96	203750	54.1434 ug/L	96
33) Chloroform	10.01	83	344145	50.7061 ug/L	96
34) 1-Bromopropane	10.15	122	45722	88.6198 ug/L	99
35) Bromochloromethane	10.26	130	115189	52.0956 ug/L	100
36) Tetrahydrofuran	10.29	42	140281	86.4486 ug/L	95
38) 1,1,1-Trichloroethane	10.60	97	311688	51.9918 ug/L	98
39) Cyclohexane	10.63	56	356880	52.4982 ug/L	88
40) 1,1-Dichloropropene	10.82	75	254739	52.7645 ug/L	97
41) Tert-Amyl-Methyl ether	10.95	73	1007162	99.8131 ug/L	93
42) Carbon Tetrachloride	10.99	117	286624	51.1689 ug/L	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:44 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	296979	51.2665 ug/L	98
46)	Benzene	11.23	78	732452	50.4293 ug/L	92
47)	Trichloroethene	12.09	130	187775	54.7248 ug/L	93
48)	Methylcyclohexane	12.18	83	293690	52.9463 ug/L	89
49)	1,2-Dichloropropane	12.33	63	215054	55.0291 ug/L	100
50)	1,4-Dioxane	12.67	88	9692	206.7214 ug/L	86
51)	Bromodichloromethane	12.68	83	264833	51.6400 ug/L	97
52)	Dibromomethane	12.78	93	115173	50.3870 ug/L	97
53)	2-Chloroethyl Vinyl Ether	13.04	63	118032	54.9113 ug/L	99
54)	4-Methyl-2-Pentanone	13.07	58	83435	51.2622 ug/L	92
55)	cis-1,3-Dichloropropene	13.43	75	332086	58.7723 ug/L	97
56)	Dimethyl Disulfide	13.72	79	160314	56.2546 ug/L	97
59)	Toluene	13.91	91	733544	51.4239 ug/L	99
60)	Ethyl Methacrylate	14.04	69	253929	55.5569 ug/L	99
62)	trans-1,3-Dichloropropene	14.12	75	289951	52.8608 ug/L	100
63)	1,1,2-Trichloroethane	14.38	97	158637	53.2065 ug/L	98
64)	2-Hexanone	14.31	43	174540	51.3021 ug/L	98
65)	1,3-Dichloropropane	14.73	76	296777	54.9182 ug/L	95
66)	Tetrachloroethene	14.87	166	179884	51.1197 ug/L	98
67)	Dibromochloromethane	15.17	129	201014	51.8393 ug/L	99
68)	1,2-Dibromoethane	15.48	107	163614	53.6583 ug/L	99
69)	1-Chlorohexane	15.59	91	237869	53.6977 ug/L	87
70)	Chlorobenzene	16.07	112	484642	52.8637 ug/L	70
71)	1,1,1,2-Tetrachloroethane	16.11	131	190856	51.8481 ug/L	98
72)	Ethylbenzene	16.10	106	257103	52.4064 ug/L	97
73)	m-,p-Xylene	16.22	106	631680	105.2305 ug/L	96
74)	o-Xylene	16.88	106	321591	56.8793 ug/L	96
75)	Styrene	16.92	104	532085	55.2923 ug/L	95
76)	Bromoform	17.49	173	134827	49.2451 ug/L	99
77)	Isopropylbenzene	17.38	105	829435	54.5730 ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.64	83	229283	52.1415 ug/L	96
81)	1,2,3-Trichloropropane	17.87	110	71564	53.1534 ug/L	99
82)	trans-1,4-Dichloro-2-Buten	17.93	53	68292	42.0681 ug/L	85
83)	n-Propylbenzene	17.98	91	1006100	52.6291 ug/L	98
84)	Bromobenzene	18.12	156	215387	51.8331 ug/L	99
85)	1,3,5-Trimethylbenzene	18.21	105	716527	52.6576 ug/L	95
86)	2-Chlorotoluene	18.30	91	664750	52.0974 ug/L	96
87)	4-Chlorotoluene	18.36	91	607350	52.0569 ug/L	97
88)	a-Methylstyrene	18.69	118	378204	57.2343 ug/L	98
89)	tert-Butylbenzene	18.76	134	150883	53.2071 ug/L	99
90)	1,2,4-Trimethylbenzene	18.82	105	731933	51.1473 ug/L	81
91)	sec-Butylbenzene	19.07	105	883157	50.6807 ug/L	100
92)	p-Isopropyltoluene	19.27	119	732050	50.9189 ug/L	99
93)	1,3-Dichlorobenzene	19.48	146	418127	52.0038 ug/L	96
94)	1,4-Dichlorobenzene	19.64	146	423834	51.7864 ug/L	98
95)	n-Butylbenzene	19.89	91	705101	48.7625 ug/L	98
96)	1,2-Dichlorobenzene	20.22	146	421505	54.4802 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	21.41	75	50722	52.1318 ug/L	89
98)	1,2,4-Trichlorobenzene	22.76	180	285471	51.0389 ug/L	97
99)	Hexachlorobutadiene	22.94	225	152283	47.6080 ug/L	99
100)	Naphthalene	23.20	128	640676	49.8263 ug/L	100
101)	1,2,3-Trichlorobenzene	23.59	180	280768	50.9788 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M137535.D 826_SL.M Mon Feb 29 16:01:45 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

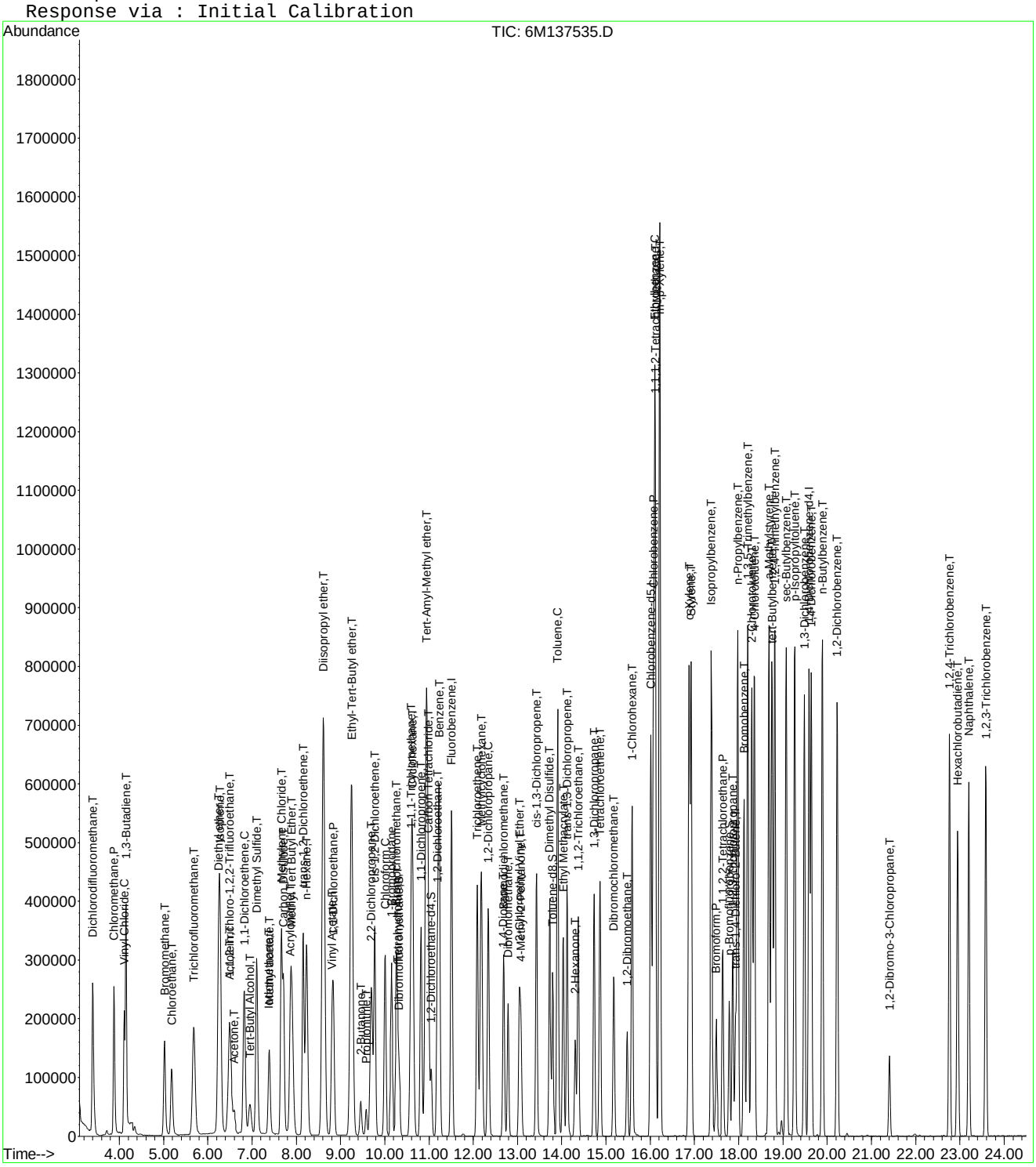

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	115	0.00
2	T	Dichlorodifluoromethane	50.0000	55.4626	-10.9	109	-0.01
3	P	Chloromethane	50.0000	50.9064	-1.8	111	0.00
4	C	Vinyl Chloride	50.0000	43.3425	13.3	89	0.00
5	T	1,3-Butadiene	50.0000	42.8977	14.2	92	-0.01
6	T	Bromomethane	50.0000	58.5556	-17.1	130	-0.01
7	T	Chloroethane	50.0000	56.5995	-13.2	116	0.00
8	T	Trichlorofluoromethane	50.0000	47.9111	4.2	102	-0.02
9	T	Diethyl ether	100.0000	73.6254	26.4#	86	0.00
10	T	Isoprene	50.0000	57.0391	-14.1	124	-0.01
11	T	Acrolein	50.0000	61.3760	-22.8	153	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	53.9539	-7.9	110	-0.01
13	T	Acetone	50.0000	48.6644	2.7	113	0.01
14	C	1,1-Dichloroethene	50.0000	51.6437	-3.3	107	0.00
15	T	Tert-Butyl Alcohol	200.0000	212.1401	-6.1	124	0.02
16	T	Dimethyl Sulfide	50.0000	79.1891	-58.4#	173	-0.01
17	T	Iodomethane	50.0000	37.8412	24.3	81	0.00
18	T	Methyl acetate	50.0000	52.8169	-5.6	120	0.00
19	T	Methylene Chloride	50.0000	53.3878	-6.8	112	0.00
20	T	Carbon Disulfide	50.0000	44.3914	11.2	98	-0.01
21	T	Acrylonitrile	50.0000	50.8382	-1.7	112	0.00
22	T	Methyl Tert Butyl Ether	50.0000	53.0885	-6.2	110	0.00
23	T	trans-1,2-Dichloroethene	50.0000	53.7311	-7.5	112	0.00
24	T	n-Hexane	50.0000	48.0130	4.0	104	-0.01
25	T	Diisopropyl ether	100.0000	90.7892	9.2	106	0.00
26	T	Vinyl Acetate	50.0000	37.6715	24.7	85	0.00
27	P	1,1-Dichloroethane	50.0000	50.3469	-0.7	106	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	89.7979	10.2	103	0.01
29	T	2-Butanone	50.0000	49.2421	1.5	115	0.00
30	T	Propionitrile	100.0000	93.9303	6.1	108	0.00
31	T	2,2-Dichloropropane	50.0000	53.1233	-6.2	112	0.00
32	T	cis-1,2-Dichloroethene	50.0000	54.1434	-8.3	116	0.00
33	C	Chloroform	50.0000	50.7061	-1.4	109	0.00
34		1-Bromopropane	50.0000	88.6198	-77.2#	186	-0.01
35	T	Bromochloromethane	50.0000	52.0956	-4.2	108	0.00
36	T	Tetrahydrofuran	100.0000	86.4486	13.6	100	0.00
37	S	Dibromofluoromethane	25.0000	22.4022	10.4	101	0.00
38	T	1,1,1-Trichloroethane	50.0000	51.9918	-4.0	108	0.00
39	T	Cyclohexane	50.0000	52.4982	-5.0	110	-0.01
40	T	1,1-Dichloropropene	50.0000	52.7645	-5.5	109	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	99.8131	0.2	115	0.00
42	T	Carbon Tetrachloride	50.0000	51.1689	-2.3	106	0.00
43	S	1,2-Dichloroethane-d4	25.0000	22.1747	11.3	100	-0.01
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	50.0000	51.2666	-2.5	109	0.00
46	T	Benzene	50.0000	50.4293	-0.9	112	0.00
47	T	Trichloroethene	50.0000	54.7248	-9.4	115	0.00
48	T	Methylcyclohexane	50.0000	52.9463	-5.9	111	0.00
49	C	1,2-Dichloropropane	50.0000	55.0291	-10.1	116	0.00
50	T	1,4-Dioxane	200.0000	206.7214	-3.4	130	0.00
51	T	Bromodichloromethane	50.0000	51.6400	-3.3	109	0.00
52	T	Dibromomethane	50.0000	50.3870	-0.8	103	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	54.9113	-9.8	118	0.00
54	T	4-Methyl-2-Pentanone	50.0000	51.2622	-2.5	117	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	58.7723	-17.5	120	0.00
56	T	Dimethyl Disulfide	50.0000	56.2546	-12.5	117	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	115	0.00
58	S	Toluene-d8	25.0000	21.6082	13.6	97	0.00
59	C	Toluene	50.0000	51.4239	-2.8	111	0.00
60	T	Ethyl Methacrylate	50.0000	55.5569	-11.1	115	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	50.0000	52.8608	-5.7	109	0.00
63	T	1,1,2-Trichloroethane	50.0000	53.2065	-6.4	113	0.00
64	T	2-Hexanone	50.0000	51.3021	-2.6	116	0.00
65	T	1,3-Dichloropropane	50.0000	54.9182	-9.8	116	0.00
66	T	Tetrachloroethene	50.0000	51.1197	-2.2	109	0.00
67	T	Dibromochloromethane	50.0000	51.8393	-3.7	107	0.00
68	T	1,2-Dibromoethane	50.0000	53.6583	-7.3	112	0.00
69	T	1-Chlorohexane	50.0000	53.6977	-7.4	112	0.00
70	P	Chlorobenzene	50.0000	52.8637	-5.7	115	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	51.8481	-3.7	110	0.00
72	C	Ethylbenzene	50.0000	52.4064	-4.8	110	0.00
73	T	m-,p-Xylene	100.0000	105.2305	-5.2	113	0.00
74	T	o-Xylene	50.0000	56.8792	-13.8	115	0.00
75	T	Styrene	50.0000	55.2923	-10.6	113	0.00
76	P	Bromoform	50.0000	49.2451	1.5	103	0.00
77	T	Isopropylbenzene	50.0000	54.5730	-9.1	112	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	118	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	52.1415	-4.3	115	0.00
80	S	p-Bromofluorobenzene	25.0000	20.9365	16.3	97	0.00
81	T	1,2,3-Trichloropropane	50.0000	53.1534	-6.3	117	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	42.0681	15.9	93	0.00
83	T	n-Propylbenzene	50.0000	52.6291	-5.3	111	0.00
84	T	Bromobenzene	50.0000	51.8331	-3.7	112	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	52.6576	-5.3	112	0.00
86	T	2-Chlorotoluene	50.0000	52.0974	-4.2	115	0.00
87	T	4-Chlorotoluene	50.0000	52.0569	-4.1	114	0.00
88	T	a-Methylstyrene	50.0000	57.2343	-14.5	123	0.00
89	T	tert-Butylbenzene	50.0000	53.2071	-6.4	112	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	51.1473	-2.3	110	0.00
91	T	sec-Butylbenzene	50.0000	50.6807	-1.4	107	0.00
92	T	p-Isopropyltoluene	50.0000	50.9189	-1.8	107	0.00
93	T	1,3-Dichlorobenzene	50.0000	52.0038	-4.0	114	0.00
94	T	1,4-Dichlorobenzene	50.0000	51.7864	-3.6	117	0.00
95	T	n-Butylbenzene	50.0000	48.7625	2.5	104	0.00
96	T	1,2-Dichlorobenzene	50.0000	54.4802	-9.0	120	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	52.1318	-4.3	117	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	51.0389	-2.1	109	0.00
99	T	Hexachlorobutadiene	50.0000	47.6080	4.8	101	-0.01
100	T	Naphthalene	50.0000	49.8263	0.3	104	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	50.9788	-2.0	108	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137535.D 826_SL.M Mon Feb 29 16:03:13 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\050716\6M139118.D Vial: 2
Acq On : 7 May 2016 12:55 Operator: TMB
Sample : WG567937-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75976 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 07 13:22:50 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	714376	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	523600	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	283697	50.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.33	111	187470	48.9200 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.84%		
43) 1,2-Dichloroethane-d4	11.05	65	238636	47.9613 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.92%		
58) Toluene-d8	13.80	98	640907	51.4834 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 102.96%		
80) p-Bromofluorobenzene	17.79	95	267479	51.3305 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.66%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	310951	47.3950 ug/L	99
3) Chloromethane	3.88	50	322262	47.1358 ug/L	96
4) Vinyl Chloride	4.12	62	260456	47.3304 ug/L	98
5) 1,3-Butadiene	4.17	54	147198	32.1499 ug/L	93
6) Bromomethane	5.04	94	153969	52.4874 ug/L	100
7) Chloroethane	5.20	64	164341	52.6688 ug/L	98
8) Trichlorofluoromethane	5.70	101	382716	51.7583 ug/L	99
9) Diethyl ether	6.24	59	363678	106.9130 ug/L	95
10) Isoprene	6.28	67	245883	51.0442 ug/L	89
11) Acrolein	6.49	56	36210	56.0526 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	201749	57.1623 ug/L	95
13) Acetone	6.60	43	89293	55.3990 ug/L	97
14) 1,1-Dichloroethene	6.83	61	343834	54.9991 ug/L	93
15) Tert-Butyl Alcohol	6.94	59	128399	220.1132 ug/L	98
16) Dimethyl Sulfide	7.12	62	136695	45.0680 ug/L	98
17) Iodomethane	7.38	142	108948	41.0475 ug/L	93
18) Methyl acetate	7.39	43	250248	57.6015 ug/L	97
19) Methylene Chloride	7.67	84	198865	52.8194 ug/L	85
20) Carbon Disulfide	7.72	76	583264	48.7626 ug/L	99
21) Acrylonitrile	7.86	53	102086	57.1747 ug/L	100
22) Methyl Tert Butyl Ether	7.89	73	602214	56.0097 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	188623	54.6163 ug/L	87
24) n-Hexane	8.24	57	336896	53.7197 ug/L	99
25) Diisopropyl ether	8.61	45	1529577	94.0729 ug/L	96
26) Vinyl Acetate	8.80	43	400862	47.6939 ug/L	99
27) 1,1-Dichloroethane	8.83	63	397677	53.4090 ug/L	98
28) Ethyl-Tert-Butyl ether	9.24	59	1337188	102.6062 ug/L	95
29) 2-Butanone	9.46	43	141766	57.4110 ug/L	97
30) Propionitrile	9.58	54	72246	105.7128 ug/L	98
31) 2,2-Dichloropropane	9.70	77	335801	56.1852 ug/L	93
32) cis-1,2-Dichloroethene	9.77	96	206635	53.5931 ug/L	96
33) Chloroform	10.01	83	366000	52.6328 ug/L	97
34) 1-Bromopropane	10.16	122	33166	62.7416 ug/L	97
35) Bromochloromethane	10.26	130	120254	53.0819 ug/L	100
36) Tetrahydrofuran	10.29	42	186613	112.8907 ug/L	97
38) 1,1,1-Trichloroethane	10.60	97	337595	54.9626 ug/L	100
39) Cyclohexane	10.63	56	396025	56.8593 ug/L	88
40) 1,1-Dichloropropene	10.82	75	278214	56.2447 ug/L	98
41) Tert-Amyl-Methyl ether	10.95	73	1061481	102.6732 ug/L	91
42) Carbon Tetrachloride	10.99	117	321161	55.9594 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M139118.D 826_SL.M Sat May 07 13:22:58 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\050716\6M139118.D Vial: 2
Acq On : 7 May 2016 12:55 Operator: TMB
Sample : WG567937-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75976 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 07 13:22:50 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	11.19	62	313807	52.8722	ug/L		99
46)	Benzene	11.23	78	770547	51.7797	ug/L		92
47)	Trichloroethene	12.09	130	191228	54.3945	ug/L		93
48)	Methylcyclohexane	12.18	83	336258	59.1664	ug/L		88
49)	1,2-Dichloropropane	12.34	63	213758	53.3855	ug/L		99
50)	1,4-Dioxane	12.68	88	9107	192.1394	ug/L		86
51)	Bromodichloromethane	12.68	83	284147	54.0772	ug/L		96
52)	Dibromomethane	12.79	93	126342	53.9476	ug/L		97
53)	2-Chloroethyl Vinyl Ether	13.04	63	125940	57.1850	ug/L		97
54)	4-Methyl-2-Pentanone	13.07	58	107908	64.7082	ug/L		96
55)	cis-1,3-Dichloropropene	13.43	75	324636	56.0758	ug/L		97
56)	Dimethyl Disulfide	13.72	79	166625	57.0668	ug/L		96
59)	Toluene	13.91	91	780377	52.6881	ug/L		99
60)	Ethyl Methacrylate	14.04	69	287359	60.5508	ug/L		100
62)	trans-1,3-Dichloropropene	14.12	75	317829	55.8049	ug/L		98
63)	1,1,2-Trichloroethane	14.38	97	167629	54.1476	ug/L		99
64)	2-Hexanone	14.31	43	220373	62.3832	ug/L		96
65)	1,3-Dichloropropane	14.74	76	299421	53.3627	ug/L		96
66)	Tetrachloroethene	14.87	166	200835	54.9674	ug/L		98
67)	Dibromochloromethane	15.18	129	219560	54.5325	ug/L		100
68)	1,2-Dibromoethane	15.48	107	175798	55.5265	ug/L		99
69)	1-Chlorohexane	15.59	91	279770	60.8259	ug/L		85
70)	Chlorobenzene	16.07	112	500983	52.6294	ug/L	#	66
71)	1,1,1,2-Tetrachloroethane	16.11	131	203889	53.3446	ug/L		97
72)	Ethylbenzene	16.10	106	279282	54.8264	ug/L		98
73)	m-,p-Xylene	16.22	106	676708	108.5714	ug/L		95
74)	o-Xylene	16.88	106	332373	56.6168	ug/L		94
75)	Styrene	16.92	104	570057	57.0521	ug/L		93
76)	Bromoform	17.49	173	160317	56.3943	ug/L		99
77)	Isopropylbenzene	17.38	105	901034	57.0961	ug/L		98
79)	1,1,2,2-Tetrachloroethane	17.65	83	260798	58.8478	ug/L		95
81)	1,2,3-Trichloropropane	17.87	110	80964	59.6682	ug/L		97
82)	trans-1,4-Dichloro-2-Buten	17.93	53	100528	61.4448	ug/L		90
83)	n-Propylbenzene	17.98	91	1099866	57.0873	ug/L		98
84)	Bromobenzene	18.13	156	227765	54.3863	ug/L		98
85)	1,3,5-Trimethylbenzene	18.21	105	783796	57.1539	ug/L		95
86)	2-Chlorotoluene	18.30	91	716728	55.7348	ug/L		97
87)	4-Chlorotoluene	18.35	91	650018	55.2814	ug/L		96
88)	a-Methylstyrene	18.69	118	397598	59.7020	ug/L		98
89)	tert-Butylbenzene	18.76	134	158945	55.6148	ug/L		90
90)	1,2,4-Trimethylbenzene	18.82	105	812014	56.3027	ug/L		81
91)	sec-Butylbenzene	19.08	105	1003021	57.1122	ug/L		99
92)	p-Isopropyltoluene	19.27	119	844221	58.2651	ug/L		100
93)	1,3-Dichlorobenzene	19.48	146	442049	54.5521	ug/L		95
94)	1,4-Dichlorobenzene	19.64	146	445409	53.9999	ug/L		97
95)	n-Butylbenzene	19.89	91	834285	57.2484	ug/L		98
96)	1,2-Dichlorobenzene	20.23	146	423229	54.2782	ug/L		95
97)	1,2-Dibromo-3-Chloropropan	21.41	75	62212	63.4446	ug/L		82
98)	1,2,4-Trichlorobenzene	22.76	180	317845	56.3857	ug/L		98
99)	Hexachlorobutadiene	22.96	225	185064	57.4070	ug/L		100
100)	Naphthalene	23.20	128	802508	61.9276	ug/L		100
101)	1,2,3-Trichlorobenzene	23.59	180	306567	55.2309	ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\050716\6M139118.D Vial: 2
Acq On : 7 May 2016 12:55 Operator: TMB
Sample : WG567937-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75976 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 7 13:22 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

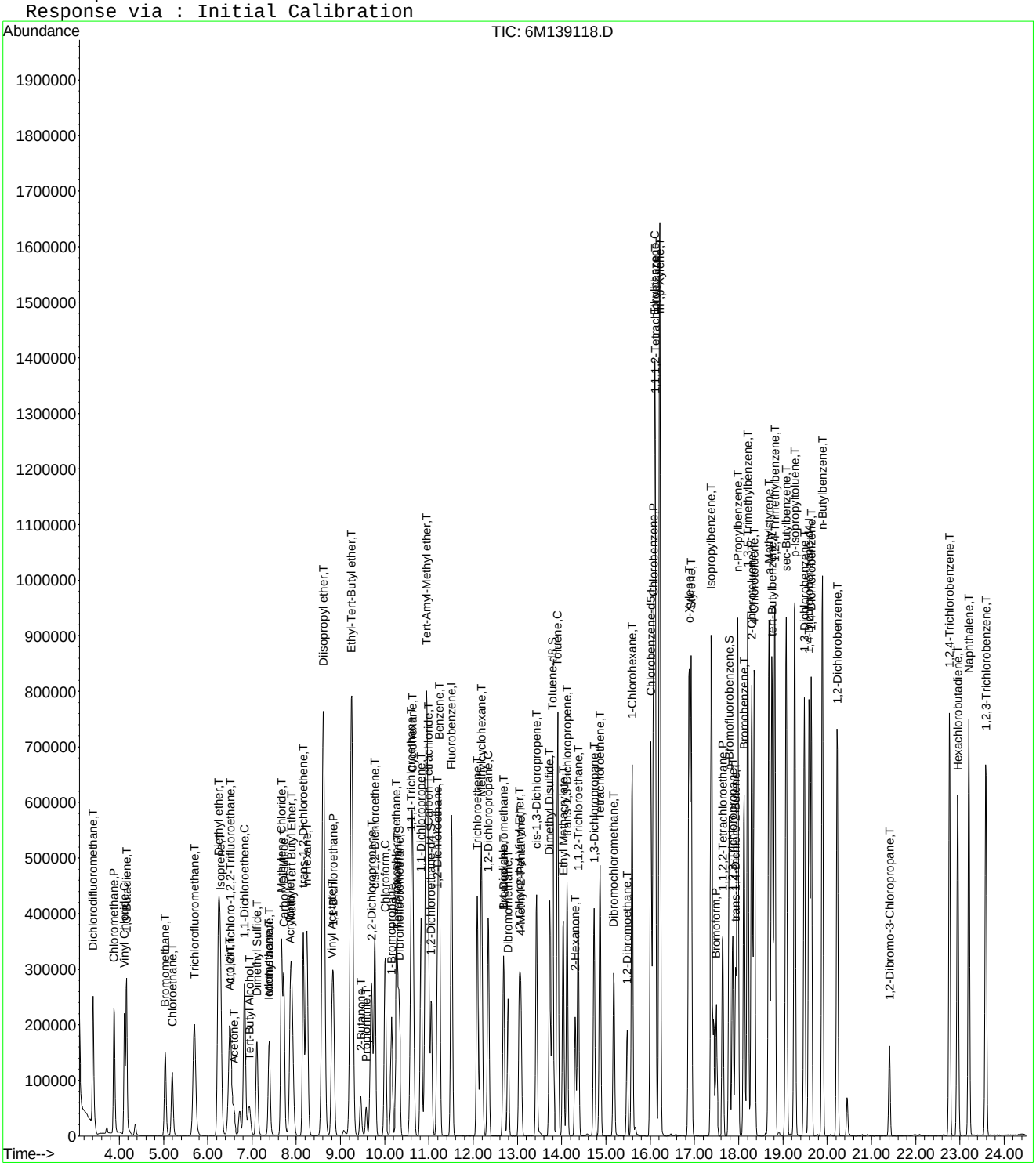

6M139118.D 826_SL.M Sat May 07 13:23:00 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\050716\6M139118.D Vial: 2
Acq On : 7 May 2016 12:55 Operator: TMB
Sample : WG567937-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75976 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	118	0.00
2	T	Dichlorodifluoromethane	0.4592	0.4353	5.2	95	0.00
3	P	Chloromethane	0.4785	0.4511	5.7	105	0.00
4	C	Vinyl Chloride	0.3852	0.3646	5.3	99	0.00
5	T	1,3-Butadiene	0.3205	0.2061	35.7#	70	0.00
6	T	Bromomethane	0.2053	0.2155	-5.0	119	0.00
7	T	Chloroethane	0.2184	0.2301	-5.3	111	0.01
8	T	Trichlorofluoromethane	0.5175	0.5357	-3.5	113	0.00
9	T	Diethyl ether	0.2381	0.2545	-6.9	128	0.00
10	T	Isoprene	0.3372	0.3442	-2.1	114	0.00
11	T	Acrolein	0.0452	0.0507	-12.1	143	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2470	0.2824	-14.3	120	0.00
13	T	Acetone	0.1189	0.1250	-5.1	131	0.01
14	C	1,1-Dichloroethene	0.4376	0.4813	-10.0	116	0.00
15	T	Tert-Butyl Alcohol	0.0408	0.0449	-10.0	132	0.01
16	T	Dimethyl Sulfide	0.2123	0.1913	9.9	101	0.00
17	T	Iodomethane	0.1531	0.1525	0.4	91	0.00
18	T	Methyl acetate	0.3041	0.3503	-15.2	134	0.00
19	T	Methylene Chloride	0.2635	0.2784	-5.6	114	0.00
20	T	Carbon Disulfide	0.8372	0.8165	2.5	110	0.00
21	T	Acrylonitrile	0.1250	0.1429	-14.3	129	0.00
22	T	Methyl Tert Butyl Ether	0.7525	0.8430	-12.0	119	0.00
23	T	trans-1,2-Dichloroethene	0.2417	0.2640	-9.2	117	0.00
24	T	n-Hexane	0.4389	0.4716	-7.4	119	0.00
25	T	Diisopropyl ether	1.1380	1.0706	5.9	113	0.00
26	T	Vinyl Acetate	0.5883	0.5611	4.6	111	0.00
27	P	1,1-Dichloroethane	0.5212	0.5567	-6.8	115	0.00
28	T	Ethyl-Tert-Butyl ether	0.9121	0.9359	-2.6	121	0.00
29	T	2-Butanone	0.1728	0.1984	-14.8	138	0.01
30	T	Propionitrile	0.0478	0.0506	-5.7	125	0.00
31	T	2,2-Dichloropropane	0.4183	0.4701	-12.4	122	0.01
32	T	cis-1,2-Dichloroethene	0.2699	0.2893	-7.2	117	0.00
33	C	Chloroform	0.4867	0.5123	-5.3	116	0.00
34		1-Bromopropane	0.0370	0.0464	-25.5#	135	0.00
35	T	Bromochloromethane	0.1586	0.1683	-6.2	113	0.00
36	T	Tetrahydrofuran	0.1230	0.1306	-6.2	133	0.00
37	S	Dibromofluoromethane	0.2682	0.5249	-95.7#	227#	0.01
38	T	1,1,1-Trichloroethane	0.4299	0.4726	-9.9	117	0.00
39	T	Cyclohexane	0.4875	0.5544	-13.7	122	-0.01
40	T	1,1-Dichloropropene	0.3462	0.3895	-12.5	119	0.00
41	T	Tert-Amyl-Methyl ether	0.7236	0.7429	-2.7	121	0.01
42	T	Carbon Tetrachloride	0.4017	0.4496	-11.9	119	0.00
43	S	1,2-Dichloroethane-d4	0.3483	0.6681	-91.8#	223#	0.00
44		Heptane	0.0000	0.0000	0.0	0#	0.00
45	T	1,2-Dichloroethane	0.4154	0.4393	-5.7	115	0.00
46	T	Benzene	1.0416	1.0786	-3.6	118	0.00
47	T	Trichloroethene	0.2461	0.2677	-8.8	117	0.00
48	T	Methylcyclohexane	0.3978	0.4707	-18.3	127	0.00
49	C	1,2-Dichloropropane	0.2803	0.2992	-6.8	115	0.00
50	T	1,4-Dioxane	0.0031	0.0032	-2.9	122	0.01
51	T	Bromodichloromethane	0.3678	0.3978	-8.2	116	0.00
52	T	Dibromomethane	0.1639	0.1769	-7.9	113	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1541	0.1763	-14.4	126	0.00
54	T	4-Methyl-2-Pentanone	0.1167	0.1510	-29.4#	152#	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\050716\6M139118.D Vial: 2
Acq On : 7 May 2016 12:55 Operator: TMB
Sample : WG567937-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75976 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4052	0.4544	-12.2	118	0.00
56	T	Dimethyl Disulfide	0.2044	0.2333	-14.1	122	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	119	0.00
58	S	Toluene-d8	1.1888	2.4481	-105.9#	241#	0.00
59	C	Toluene	1.4144	1.4904	-5.4	118	0.00
60	T	Ethyl Methacrylate	0.4532	0.5488	-21.1	130	0.01
61		Paraldehyde	0.0000	0.0000	0.0	0#	-15.13#
62	T	trans-1,3-Dichloropropene	0.5439	0.6070	-11.6	120	0.00
63	T	1,1,2-Trichloroethane	0.2956	0.3201	-8.3	119	0.01
64	T	2-Hexanone	0.3373	0.4209	-24.8	147	0.00
65	T	1,3-Dichloropropane	0.5358	0.5718	-6.7	117	0.00
66	T	Tetrachloroethene	0.3489	0.3836	-9.9	121	0.00
67	T	Dibromochloromethane	0.3845	0.4193	-9.1	117	0.00
68	T	1,2-Dibromoethane	0.3023	0.3357	-11.1	120	0.00
69	T	1-Chlorohexane	0.4392	0.5343	-21.7	131	0.00
70	P	Chlorobenzene	0.9090	0.9568	-5.3	119	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3650	0.3894	-6.7	118	0.01
72	C	Ethylbenzene	0.4864	0.5334	-9.7	120	0.00
73	T	m-,p-Xylene	0.5952	0.6462	-8.6	121	0.00
74	T	o-Xylene	0.5606	0.6348	-13.2	119	0.00
75	T	Styrene	0.9542	1.0887	-14.1	121	0.00
76	P	Bromoform	0.2715	0.3062	-12.8	122	0.00
77	T	Isopropylbenzene	1.5070	1.7208	-14.2	122	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	119	0.00
79	P	1,1,2,2-Tetrachloroethane	0.7811	0.9193	-17.7	130	0.00
80	S	p-Bromofluorobenzene	0.9184	1.8857	-105.3#	239#	0.00
81	T	1,2,3-Trichloropropane	0.2392	0.2854	-19.3	132	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.2884	0.3544	-22.9	137	0.00
83	T	n-Propylbenzene	3.3956	3.8769	-14.2	122	0.00
84	T	Bromobenzene	0.7381	0.8028	-8.8	119	0.00
85	T	1,3,5-Trimethylbenzene	2.4170	2.7628	-14.3	122	0.00
86	T	2-Chlorotoluene	2.2664	2.5264	-11.5	124	0.00
87	T	4-Chlorotoluene	2.0723	2.2912	-10.6	122	0.00
88	T	a-Methylstyrene	1.1737	1.4015	-19.4	129	0.00
89	T	tert-Butylbenzene	0.5037	0.5603	-11.2	118	0.00
90	T	1,2,4-Trimethylbenzene	2.5419	2.8623	-12.6	122	0.00
91	T	sec-Butylbenzene	3.0953	3.5355	-14.2	122	0.00
92	T	p-Isopropyltoluene	2.5537	2.9758	-16.5	123	0.01
93	T	1,3-Dichlorobenzene	1.4282	1.5582	-9.1	121	0.00
94	T	1,4-Dichlorobenzene	1.4537	1.5700	-8.0	123	0.00
95	T	n-Butylbenzene	2.5684	2.9408	-14.5	123	0.00
96	T	1,2-Dichlorobenzene	1.3743	1.4918	-8.6	121	0.01
97	T	1,2-Dibromo-3-Chloropropane	0.1728	0.2193	-26.9#	143	0.00
98	T	1,2,4-Trichlorobenzene	0.9935	1.1204	-12.8	121	0.00
99	T	Hexachlorobutadiene	0.5682	0.6523	-14.8	123	0.00
100	T	Naphthalene	2.2839	2.8287	-23.9	130	0.00
101	T	1,2,3-Trichlorobenzene	0.9783	1.0806	-10.5	118	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M139118.D 826_SL.M Sat May 07 13:24:50 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\050716\6M139118.D Vial: 2
Acq On : 7 May 2016 12:55 Operator: TMB
Sample : WG567937-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75976 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	118	0.00
2	T	Dichlorodifluoromethane	50.0000	47.3950	5.2	95	0.00
3	P	Chloromethane	50.0000	47.1358	5.7	105	0.00
4	C	Vinyl Chloride	50.0000	47.3304	5.3	99	0.00
5	T	1,3-Butadiene	50.0000	32.1499	35.7#	70	0.00
6	T	Bromomethane	50.0000	52.4874	-5.0	119	0.00
7	T	Chloroethane	50.0000	52.6688	-5.3	111	0.01
8	T	Trichlorofluoromethane	50.0000	51.7584	-3.5	113	0.00
9	T	Diethyl ether	100.0000	106.9130	-6.9	128	0.00
10	T	Isoprene	50.0000	51.0442	-2.1	114	0.00
11	T	Acrolein	50.0000	56.0526	-12.1	143	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	57.1623	-14.3	120	0.00
13	T	Acetone	50.0000	55.3990	-10.8	131	0.01
14	C	1,1-Dichloroethene	50.0000	54.9991	-10.0	116	0.00
15	T	Tert-Butyl Alcohol	200.0000	220.1132	-10.1	132	0.01
16	T	Dimethyl Sulfide	50.0000	45.0680	9.9	101	0.00
17	T	Iodomethane	50.0000	41.0475	17.9	91	0.00
18	T	Methyl acetate	50.0000	57.6015	-15.2	134	0.00
19	T	Methylene Chloride	50.0000	52.8194	-5.6	114	0.00
20	T	Carbon Disulfide	50.0000	48.7626	2.5	110	0.00
21	T	Acrylonitrile	50.0000	57.1747	-14.3	129	0.00
22	T	Methyl Tert Butyl Ether	50.0000	56.0097	-12.0	119	0.00
23	T	trans-1,2-Dichloroethene	50.0000	54.6163	-9.2	117	0.00
24	T	n-Hexane	50.0000	53.7197	-7.4	119	0.00
25	T	Diisopropyl ether	100.0000	94.0729	5.9	113	0.00
26	T	Vinyl Acetate	50.0000	47.6938	4.6	111	0.00
27	P	1,1-Dichloroethane	50.0000	53.4090	-6.8	115	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	102.6062	-2.6	121	0.00
29	T	2-Butanone	50.0000	57.4110	-14.8	138	0.01
30	T	Propionitrile	100.0000	105.7128	-5.7	125	0.00
31	T	2,2-Dichloropropane	50.0000	56.1852	-12.4	122	0.01
32	T	cis-1,2-Dichloroethene	50.0000	53.5930	-7.2	117	0.00
33	C	Chloroform	50.0000	52.6328	-5.3	116	0.00
34		1-Bromopropane	50.0000	62.7416	-25.5#	135	0.00
35	T	Bromochloromethane	50.0000	53.0819	-6.2	113	0.00
36	T	Tetrahydrofuran	100.0000	112.8906	-12.9	133	0.00
37	S	Dibromofluoromethane	25.0000	48.9200	-95.7#	227	0.01
38	T	1,1,1-Trichloroethane	50.0000	54.9626	-9.9	117	0.00
39	T	Cyclohexane	50.0000	56.8593	-13.7	122	-0.01
40	T	1,1-Dichloropropene	50.0000	56.2447	-12.5	119	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	102.6732	-2.7	121	0.01
42	T	Carbon Tetrachloride	50.0000	55.9594	-11.9	119	0.00
43	S	1,2-Dichloroethane-d4	25.0000	47.9613	-91.8#	223	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	50.0000	52.8722	-5.7	115	0.00
46	T	Benzene	50.0000	51.7798	-3.6	118	0.00
47	T	Trichloroethene	50.0000	54.3945	-8.8	117	0.00
48	T	Methylcyclohexane	50.0000	59.1664	-18.3	127	0.00
49	C	1,2-Dichloropropane	50.0000	53.3855	-6.8	115	0.00
50	T	1,4-Dioxane	200.0000	192.1394	3.9	122	0.01
51	T	Bromodichloromethane	50.0000	54.0772	-8.2	116	0.00
52	T	Dibromomethane	50.0000	53.9476	-7.9	113	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	57.1850	-14.4	126	0.00
54	T	4-Methyl-2-Pentanone	50.0000	64.7082	-29.4#	152	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\050716\6M139118.D Vial: 2
Acq On : 7 May 2016 12:55 Operator: TMB
Sample : WG567937-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75976 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	56.0758	-12.2	118	0.00
56	T	Dimethyl Disulfide	50.0000	57.0668	-14.1	122	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	119	0.00
58	S	Toluene-d8	25.0000	51.4834	-105.9#	241	0.00
59	C	Toluene	50.0000	52.6881	-5.4	118	0.00
60	T	Ethyl Methacrylate	50.0000	60.5508	-21.1	130	0.01
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	50.0000	55.8049	-11.6	120	0.00
63	T	1,1,2-Trichloroethane	50.0000	54.1476	-8.3	119	0.01
64	T	2-Hexanone	50.0000	62.3832	-24.8	147	0.00
65	T	1,3-Dichloropropane	50.0000	53.3627	-6.7	117	0.00
66	T	Tetrachloroethene	50.0000	54.9674	-9.9	121	0.00
67	T	Dibromochloromethane	50.0000	54.5326	-9.1	117	0.00
68	T	1,2-Dibromoethane	50.0000	55.5265	-11.1	120	0.00
69	T	1-Chlorohexane	50.0000	60.8259	-21.7	131	0.00
70	P	Chlorobenzene	50.0000	52.6294	-5.3	119	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	53.3446	-6.7	118	0.01
72	C	Ethylbenzene	50.0000	54.8264	-9.7	120	0.00
73	T	m-,p-Xylene	100.0000	108.5714	-8.6	121	0.00
74	T	o-Xylene	50.0000	56.6168	-13.2	119	0.00
75	T	Styrene	50.0000	57.0521	-14.1	121	0.00
76	P	Bromoform	50.0000	56.3943	-12.8	122	0.00
77	T	Isopropylbenzene	50.0000	57.0961	-14.2	122	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	119	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	58.8478	-17.7	130	0.00
80	S	p-Bromofluorobenzene	25.0000	51.3305	-105.3#	239	0.00
81	T	1,2,3-Trichloropropane	50.0000	59.6682	-19.3	132	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	61.4448	-22.9	137	0.00
83	T	n-Propylbenzene	50.0000	57.0872	-14.2	122	0.00
84	T	Bromobenzene	50.0000	54.3863	-8.8	119	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	57.1540	-14.3	122	0.00
86	T	2-Chlorotoluene	50.0000	55.7348	-11.5	124	0.00
87	T	4-Chlorotoluene	50.0000	55.2814	-10.6	122	0.00
88	T	a-Methylstyrene	50.0000	59.7020	-19.4	129	0.00
89	T	tert-Butylbenzene	50.0000	55.6148	-11.2	118	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	56.3027	-12.6	122	0.00
91	T	sec-Butylbenzene	50.0000	57.1122	-14.2	122	0.00
92	T	p-Isopropyltoluene	50.0000	58.2651	-16.5	123	0.01
93	T	1,3-Dichlorobenzene	50.0000	54.5521	-9.1	121	0.00
94	T	1,4-Dichlorobenzene	50.0000	53.9999	-8.0	123	0.00
95	T	n-Butylbenzene	50.0000	57.2484	-14.5	123	0.00
96	T	1,2-Dichlorobenzene	50.0000	54.2782	-8.6	121	0.01
97	T	1,2-Dibromo-3-Chloropropane	50.0000	63.4446	-26.9#	143	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	56.3857	-12.8	121	0.00
99	T	Hexachlorobutadiene	50.0000	57.4070	-14.8	123	0.00
100	T	Naphthalene	50.0000	61.9276	-23.9	130	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	55.2309	-10.5	118	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M139118.D 826_SL.M Sat May 07 13:24:53 2016 Page 2

2.1.1.5 Raw QC Data

BFB

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Data File : C:\MSDCHEM\1\DATA\022616\6M137522.D          Vial: 1
Acq On    : 26 Feb 2016  13:16                       Operator: TMB
Sample    : WG558920-01 50ng BFB STD 8260            Inst    : HPMS6
Misc      : 7,1 STD74606                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP: OVL MSV01
```

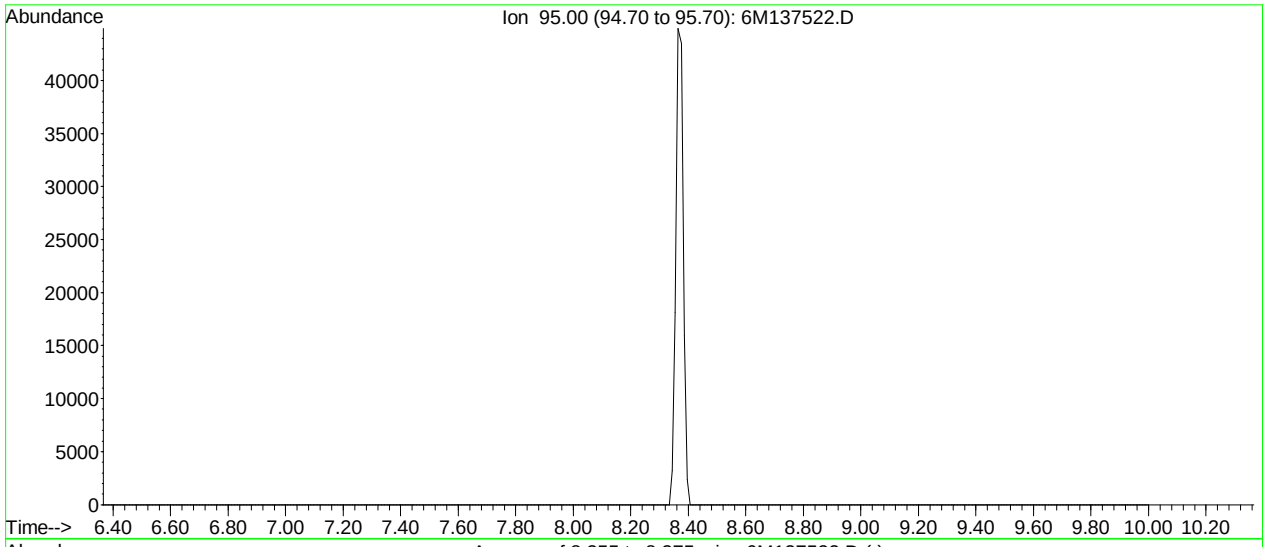

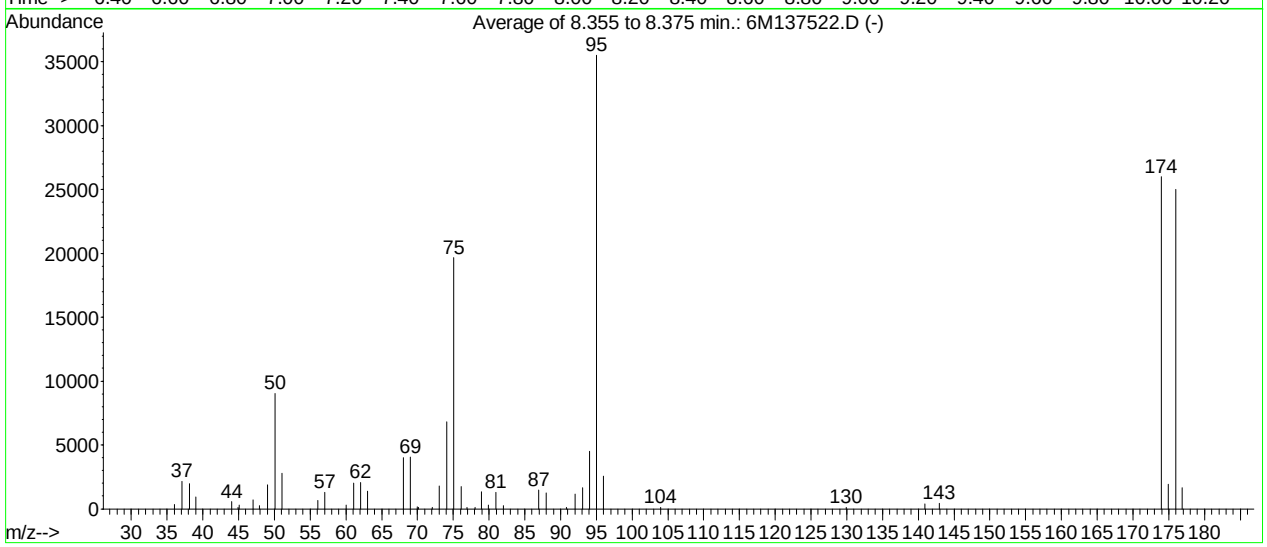

AutoFind: Scans 320, 321, 322; Background Corrected with Scan 316

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	25.4	9030	PASS
75	95	30	60	55.4	19666	PASS
95	95	100	100	100.0	35512	PASS
96	95	5	9	7.3	2576	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	73.2	26011	PASS
175	174	5	9	7.4	1914	PASS
176	174	95	101	96.1	24992	PASS
177	176	5	9	6.6	1660	PASS

6M137522.D BFB.M Fri Feb 26 13:26:46 2016

BFB

Data File : C:\MSDCHEM\1\DATA\050716\6M139117.D Vial: 1
Acq On : 7 May 2016 12:31 Operator: TMB
Sample : WG567937-01 50ng BFB STD 8260 Inst : HPMS6
Misc : 7,1 STD76034 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title : SOP: OVL MSV01

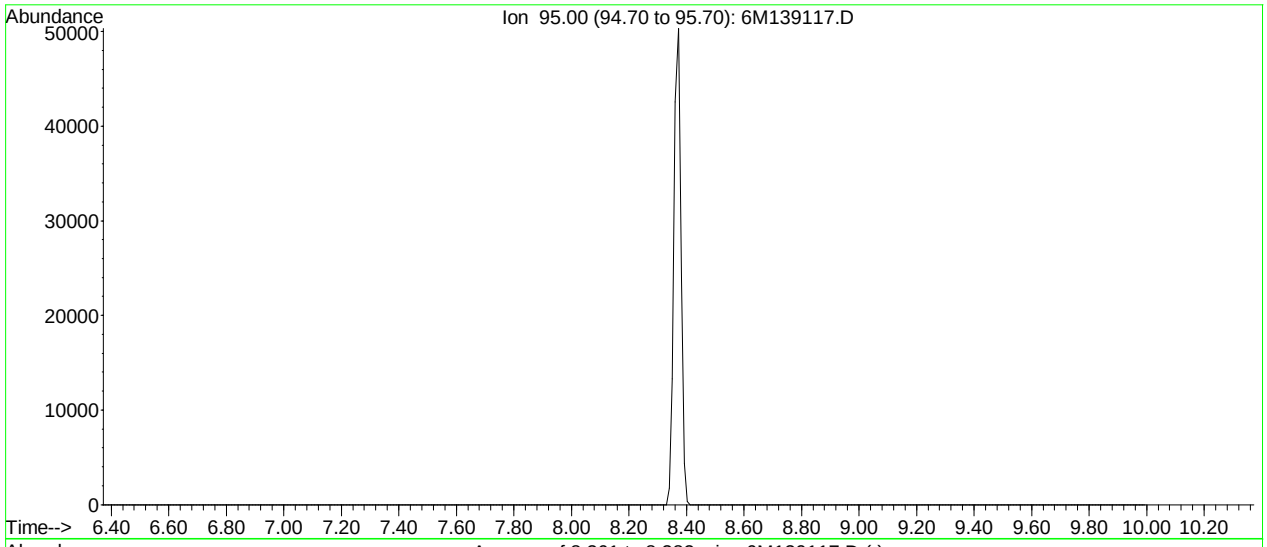

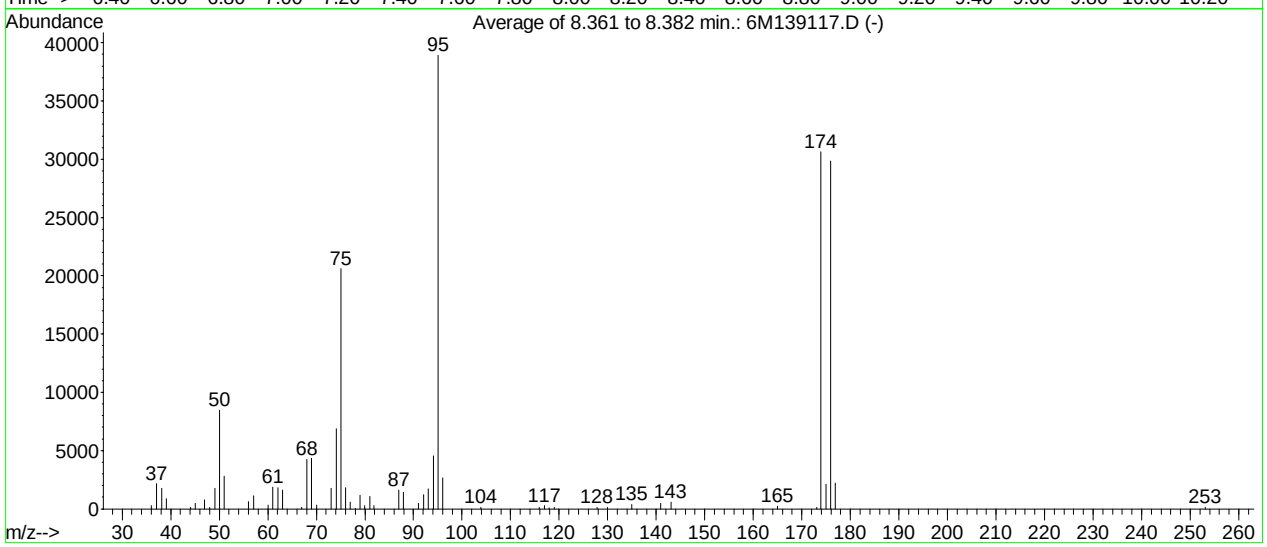

AutoFind: Scans 321, 322, 323; Background Corrected with Scan 316

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.7	8437	PASS
75	95	30	60	52.9	20594	PASS
95	95	100	100	100.0	38933	PASS
96	95	5	9	6.9	2676	PASS
173	174	0.00	2	0.4	109	PASS
174	95	50	100	78.7	30637	PASS
175	174	5	9	7.0	2135	PASS
176	174	95	101	97.5	29856	PASS
177	176	5	9	7.4	2208	PASS

6M139117.D BFB.M Sat May 07 12:43:47 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050716\6M139120.D Vial: 4
Acq On : 7 May 2016 14:01 Operator: TMB
Sample : WG567938-01 VBLK0507 BLANK STD 8260 Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 09 08:33:06 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	638259	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	472074	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	245657	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	167125	48.8120 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.62%		
43) 1,2-Dichloroethane-d4	11.06	65	212175	47.7287 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.46%		
58) Toluene-d8	13.80	98	562383	50.1065 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 100.22%		
80) p-Bromofluorobenzene	17.79	95	232809	51.5954 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 103.20%		

Target Compounds					Qvalue
3) Chloromethane	3.90	50	2447	0.4006 ug/L #	77
13) Acetone	6.60	43	4182	Below Cal #	57
16) Dimethyl Sulfide	7.17	62	2416	0.8915 ug/L #	1
29) 2-Butanone	9.69	43	19542	8.8577 ug/L #	56
36) Tetrahydrofuran	10.29	42	4039	0.6153 ug/L #	71
59) Toluene	13.92	91	3898	0.2919 ug/L	96
60) Ethyl Methacrylate	13.81	69	1253	0.2928 ug/L #	50
90) 1,2,4-Trimethylbenzene	18.82	105	4832	0.3869 ug/L	72
91) sec-Butylbenzene	18.82	105	3807	0.2503 ug/L #	56
100) Naphthalene	23.20	128	4009	0.3573 ug/L #	80

(#) = qualifier out of range (m) = manual integration
6M139120.D 826_SL.M Mon May 09 08:33:07 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050716\6M139120.D Vial: 4
Acq On : 7 May 2016 14:01 Operator: TMB
Sample : WG567938-01 VBLK0507 BLANK STD 8260 Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 9 8:33 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

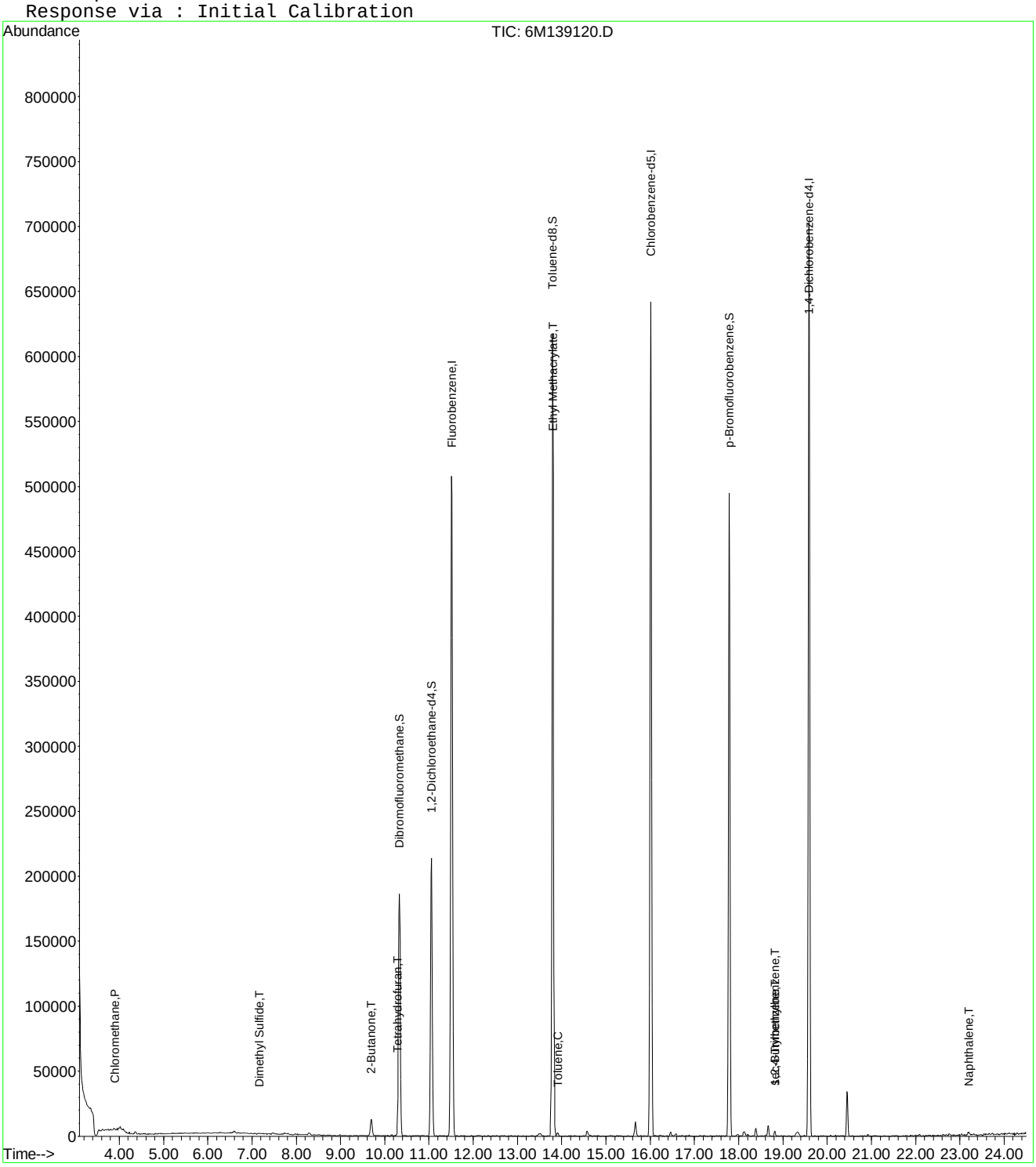

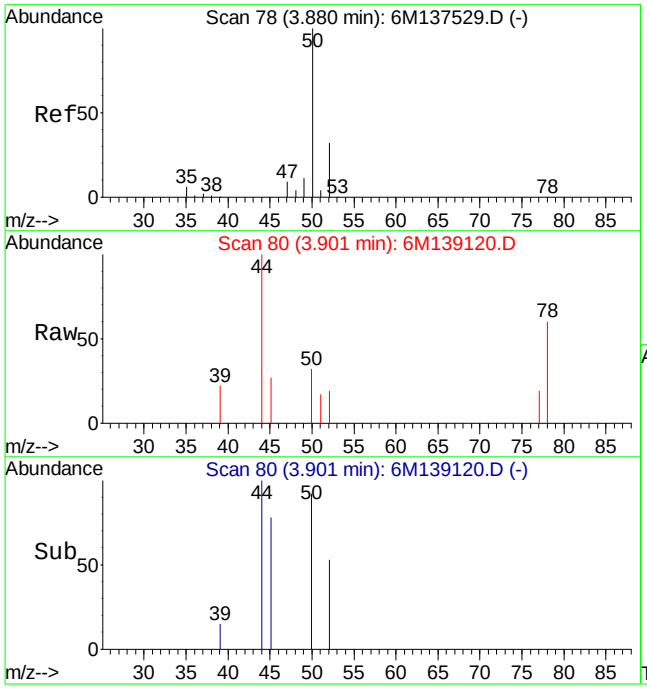

#3
Chloromethane
Concen: 0.40 ug/L
RT: 3.90 min Scan# 80
Delta R.T. 0.02 min
Lab File: 6M139120.D
Acq: 7 May 2016 14:01

Tgt Ion: 50 Resp: 2447

Ion	Ratio	Lower	Upper
50	100		
52	44.3	18.8	44.0#

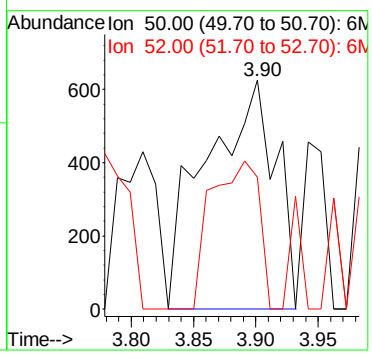

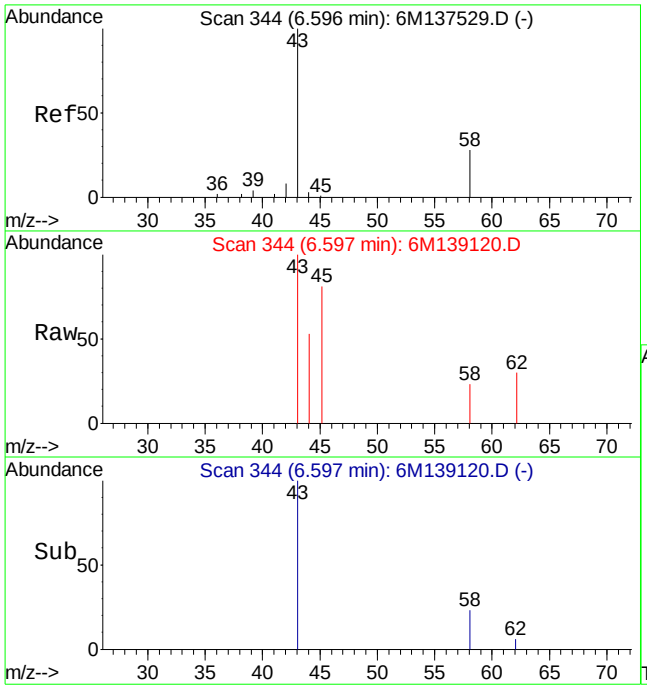

#13
Acetone
Concen: Below Cal
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M139120.D
Acq: 7 May 2016 14:01

Tgt Ion: 43 Resp: 4182

Ion	Ratio	Lower	Upper
43	100		
58	4.9	16.1	37.7#

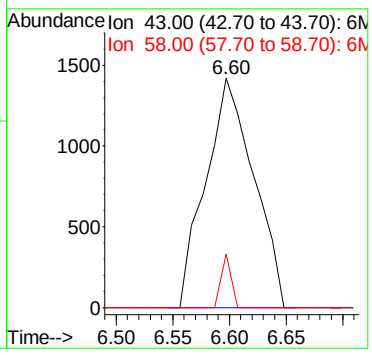

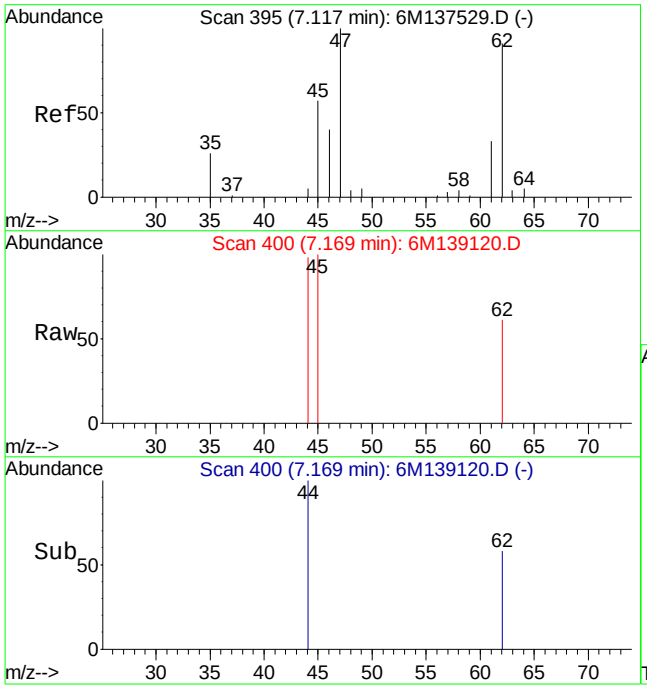

#16
Dimethyl Sulfide
Concen: 0.89 ug/L
RT: 7.17 min Scan# 400
Delta R.T. 0.05 min
Lab File: 6M139120.D
Acq: 7 May 2016 14:01

Tgt Ion: 62 Resp: 2416

Ion	Ratio	Lower	Upper
62	100		
47	0.0	62.4	145.6#

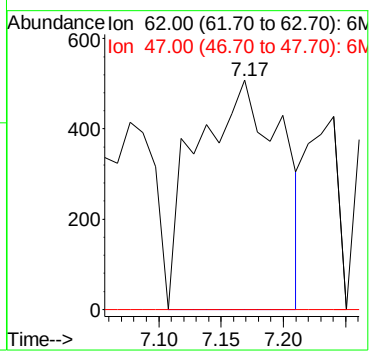

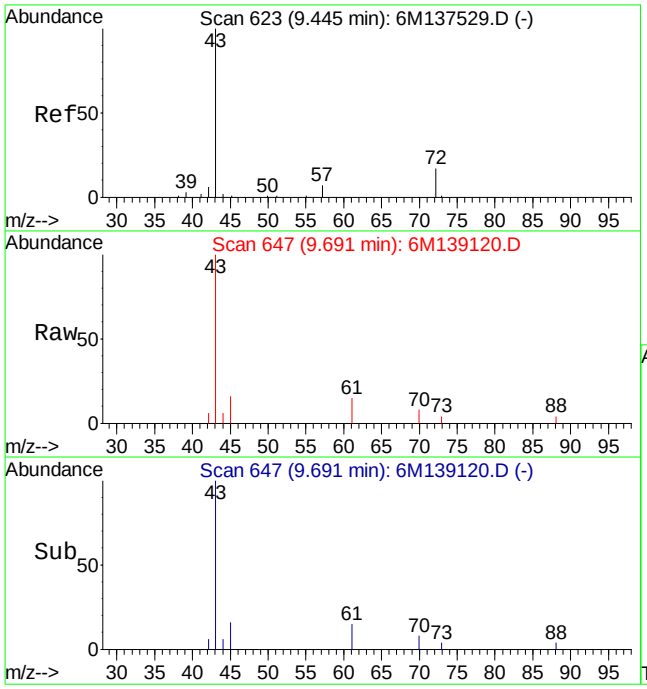

#29
2-Butanone
Concen: 8.86 ug/L
RT: 9.69 min Scan# 647
Delta R.T. 0.24 min
Lab File: 6M139120.D
Acq: 7 May 2016 14:01

Tgt Ion: 43 Resp: 19542

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.2	28.4#

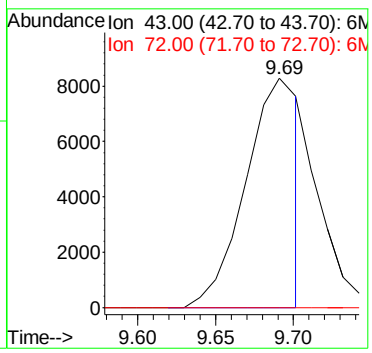

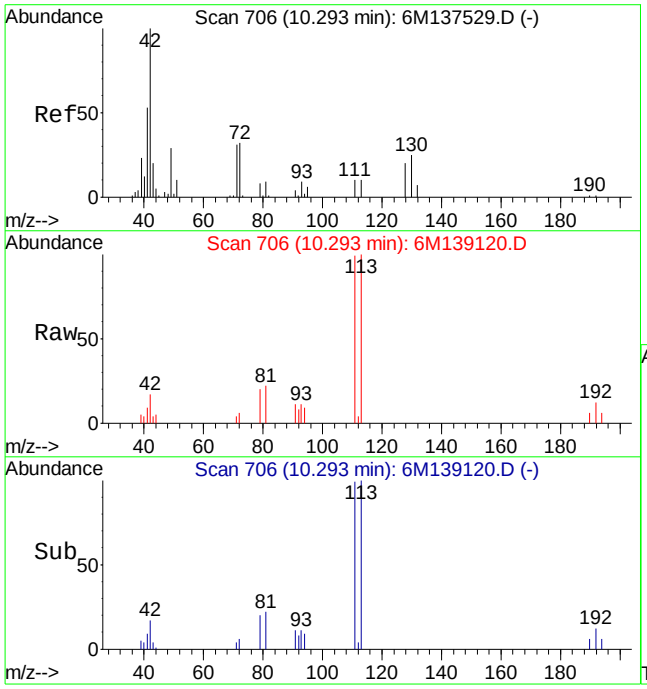

#36
Tetrahydrofuran
Concen: 0.62 ug/L
RT: 10.29 min Scan# 706
Delta R.T. 0.00 min
Lab File: 6M139120.D
Acq: 7 May 2016 14:01

Tgt Ion: 42 Resp: 4039

Ion	Ratio	Lower	Upper
42	100		
72	18.1	21.0	49.0#
71	17.7	20.6	48.2#

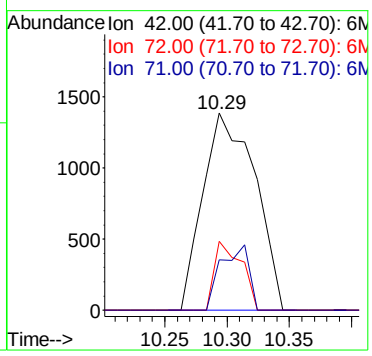

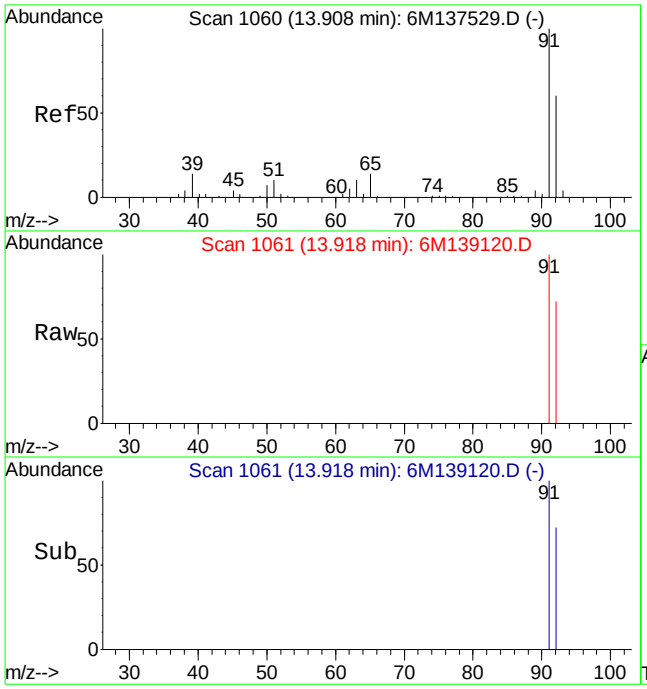

#59
Toluene
Concen: 0.29 ug/L
RT: 13.92 min Scan# 1061
Delta R.T. 0.01 min
Lab File: 6M139120.D
Acq: 7 May 2016 14:01

Tgt Ion: 91 Resp: 3898

Ion	Ratio	Lower	Upper
91	100		
92	56.2	35.5	82.9

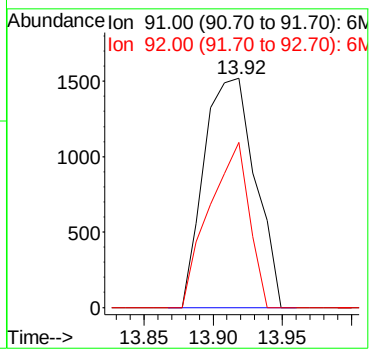

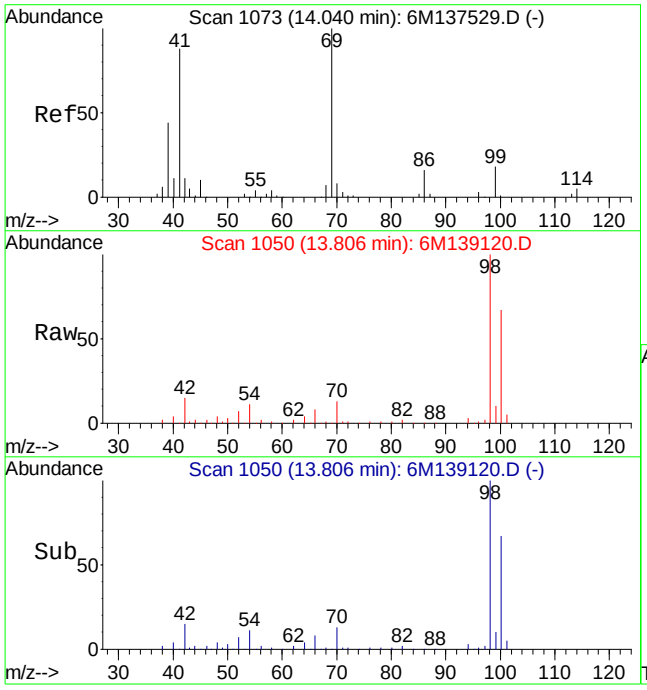

#60
Ethyl Methacrylate
Concen: 0.29 ug/L
RT: 13.81 min Scan# 1050
Delta R.T. -0.22 min
Lab File: 6M139120.D
Acq: 7 May 2016 14:01

Tgt Ion: 69 Resp: 1253

Ion	Ratio	Lower	Upper
69	100		
41	130.0	50.6	118.2#

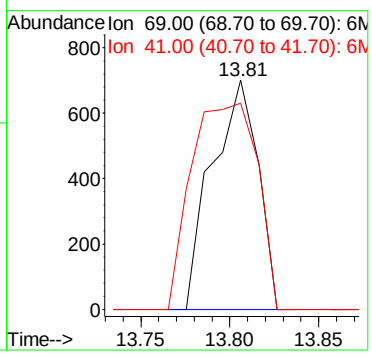

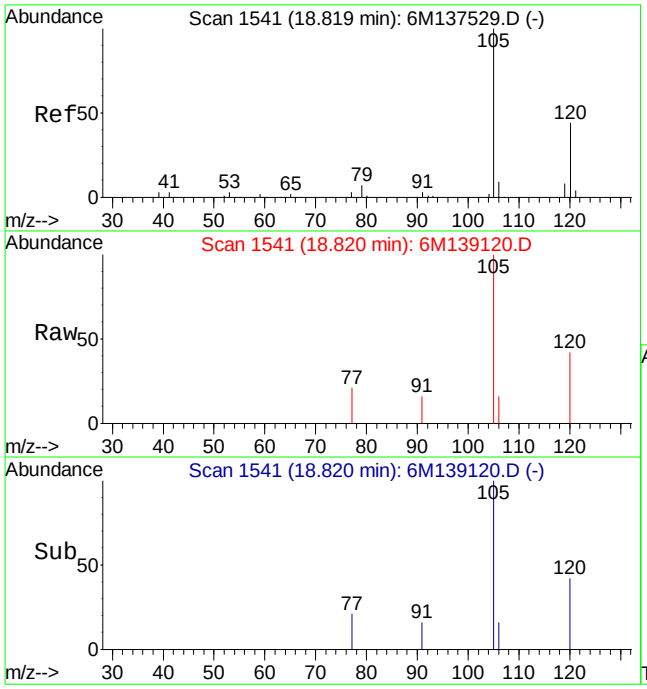

#90
1,2,4-Trimethylbenzene
Concen: 0.39 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. -0.00 min
Lab File: 6M139120.D
Acq: 7 May 2016 14:01

Tgt Ion:105 Resp: 4832

Ion	Ratio	Lower	Upper
105	100		
120	36.7	34.3	79.9

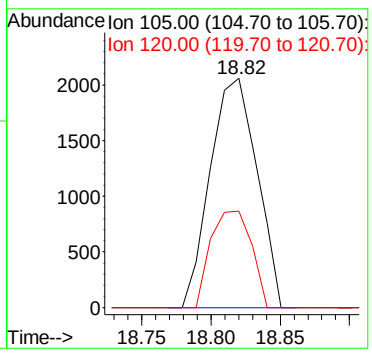

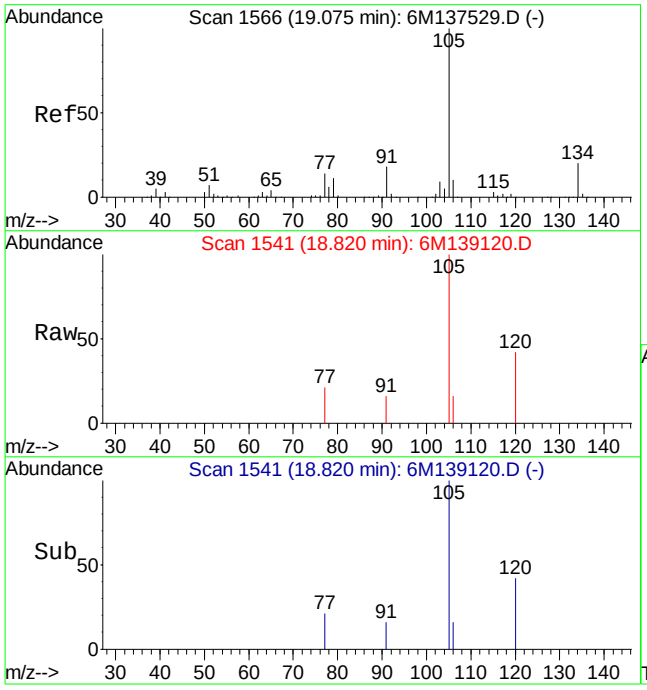

#91
sec-Butylbenzene
Concen: 0.25 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. -0.26 min
Lab File: 6M139120.D
Acq: 7 May 2016 14:01

Tgt Ion:105 Resp: 3807

Ion	Ratio	Lower	Upper
105	100		
134	0.0	12.2	28.6#

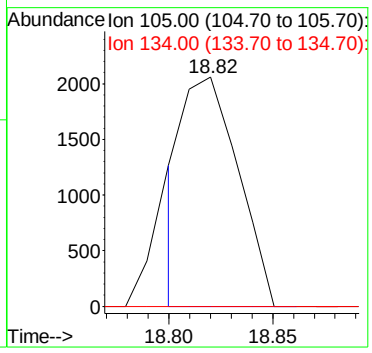

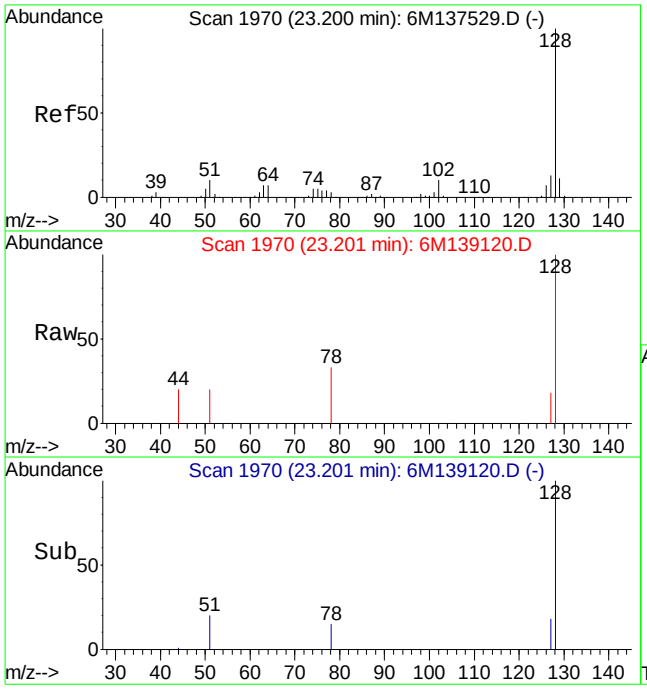

#100
Naphthalene
Concen: 0.36 ug/L
RT: 23.20 min Scan# 1970
Delta R.T. -0.00 min
Lab File: 6M139120.D
Acq: 7 May 2016 14:01

Tgt Ion:128 Resp: 4009

Ion	Ratio	Lower	Upper
128	100		
127	4.8	7.7	18.1#

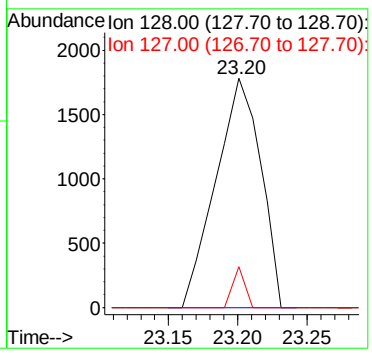

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\050716\6M139121.D Vial: 5
Acq On : 7 May 2016 14:33 Operator: TMB
Sample : WG567938-02 20ug/Kg LCS STD 8260 Inst : HPMS6
Misc : 7,1 STD75977 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 07 14:58:24 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	639989	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	473112	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.58	152	252881	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	167728	48.8557 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.72%		
43) 1,2-Dichloroethane-d4	11.06	65	211004	47.3369 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.68%		
58) Toluene-d8	13.79	98	572106	50.8609 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.72%		
80) p-Bromofluorobenzene	17.79	95	241438	51.9792 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 103.96%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	124876	21.2458 ug/L	98
3) Chloromethane	3.89	50	127303	20.7843 ug/L	98
4) Vinyl Chloride	4.12	62	89674	18.1898 ug/L	98
5) 1,3-Butadiene	4.17	54	529333	129.0509 ug/L	93
6) Bromomethane	5.03	94	53561	20.3810 ug/L	99
7) Chloroethane	5.19	64	60587	21.6741 ug/L	100
8) Trichlorofluoromethane	5.70	101	129461	19.5433 ug/L	99
9) Diethyl ether	6.24	59	342696	112.4545 ug/L	95
10) Isoprene	6.28	67	104421	24.1969 ug/L	89
11) Acrolein	6.49	56	69014	119.2500 ug/L	91
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	67768	21.4327 ug/L	94
13) Acetone	6.60	43	36843	23.1456 ug/L	96
14) 1,1-Dichloroethene	6.83	61	110912	19.8034 ug/L	92
15) Tert-Butyl Alcohol	6.94	59	125105	239.3941 ug/L	97
16) Dimethyl Sulfide	7.12	62	78102	28.7430 ug/L	100
17) Iodomethane	7.39	142	36573	18.4854 ug/L	90
18) Methyl acetate	7.39	43	82079	21.0887 ug/L	98
19) Methylene Chloride	7.67	84	66272	19.6481 ug/L	83
20) Carbon Disulfide	7.72	76	206923	19.3101 ug/L	99
21) Acrylonitrile	7.86	53	36435	22.7777 ug/L	100
22) Methyl Tert Butyl Ether	7.90	73	227298	23.5973 ug/L	93
23) trans-1,2-Dichloroethene	8.16	96	62110	20.0744 ug/L	83
24) n-Hexane	8.24	57	122732	21.8449 ug/L	99
25) Diisopropyl ether	8.61	45	1489542	102.2587 ug/L	96
26) Vinyl Acetate	8.80	43	161173	21.4049 ug/L	98
27) 1,1-Dichloroethane	8.84	63	128642	19.2851 ug/L	98
28) Ethyl-Tert-Butyl ether	9.25	59	1316977	112.8012 ug/L	91
29) 2-Butanone	9.45	43	50321	22.7471 ug/L	97
30) Propionitrile	9.58	54	66491	108.6003 ug/L	97
31) 2,2-Dichloropropane	9.70	77	114626	21.4080 ug/L	93
32) cis-1,2-Dichloroethene	9.77	96	68766	19.9082 ug/L	100
33) Chloroform	10.01	83	121512	19.5051 ug/L	98
34) 1-Bromopropane	10.16	122	16750	35.3697 ug/L	99
35) Bromochloromethane	10.27	130	38316	18.8791 ug/L	100
36) Tetrahydrofuran	10.29	42	155911	105.1339 ug/L	96
38) 1,1,1-Trichloroethane	10.60	97	113776	20.6765 ug/L	100
39) Cyclohexane	10.64	56	145070	23.2494 ug/L	87
40) 1,1-Dichloropropene	10.82	75	90577	20.4397 ug/L	96
41) Tert-Amyl-Methyl ether	10.95	73	1010940	109.1502 ug/L	92
42) Carbon Tetrachloride	10.99	117	104622	20.3483 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M139121.D 826_SL.M Sat May 07 14:58:25 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\050716\6M139121.D Vial: 5
Acq On : 7 May 2016 14:33 Operator: TMB
Sample : WG567938-02 20ug/Kg LCS STD 8260 Inst : HPMS6
Misc : 7,1 STD75977 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 07 14:58:24 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	11.19	62	105241	19.7927 ug/L		98
46)	Benzene	11.23	78	259119	19.4363 ug/L		92
47)	Trichloroethene	12.09	130	64534	20.4902 ug/L		93
48)	Methylcyclohexane	12.18	83	118082	23.1921 ug/L		86
49)	1,2-Dichloropropane	12.33	63	73195	20.4050 ug/L		99
50)	1,4-Dioxane	12.68	88	8894	206.6788 ug/L		81
51)	Bromodichloromethane	12.68	83	91392	19.4148 ug/L		95
52)	Dibromomethane	12.78	93	38803	18.4946 ug/L		99
53)	2-Chloroethyl Vinyl Ether	13.04	63	42552	21.5672 ug/L		97
54)	4-Methyl-2-Pentanone	13.07	58	34393	23.0213 ug/L		97
55)	cis-1,3-Dichloropropene	13.43	75	112933	21.7748 ug/L		98
56)	Dimethyl Disulfide	13.72	79	57223	21.8760 ug/L		95
59)	Toluene	13.91	91	265408	19.8316 ug/L		100
60)	Ethyl Methacrylate	14.04	69	97558	22.7506 ug/L		97
62)	trans-1,3-Dichloropropene	14.12	75	100858	19.5986 ug/L		98
63)	1,1,2-Trichloroethane	14.38	97	54835	19.6030 ug/L		99
64)	2-Hexanone	14.31	43	69221	21.6862 ug/L		97
65)	1,3-Dichloropropane	14.73	76	104217	20.5556 ug/L		98
66)	Tetrachloroethene	14.87	166	64309	19.4793 ug/L		97
67)	Dibromochloromethane	15.17	129	67502	18.5547 ug/L		99
68)	1,2-Dibromoethane	15.48	107	55921	19.5478 ug/L		96
69)	1-Chlorohexane	15.59	91	99016	23.8248 ug/L		85
70)	Chlorobenzene	16.07	112	170377	19.8085 ug/L	#	66
71)	1,1,1,2-Tetrachloroethane	16.11	131	65399	18.9367 ug/L		95
72)	Ethylbenzene	16.10	106	90379	19.6359 ug/L		94
73)	m-,p-Xylene	16.21	106	227386	40.3751 ug/L		96
74)	o-Xylene	16.88	106	110977	20.9213 ug/L		94
75)	Styrene	16.92	104	179034	19.8301 ug/L		93
76)	Bromoform	17.49	173	44338	17.2610 ug/L		99
77)	Isopropylbenzene	17.38	105	297539	20.8663 ug/L		97
79)	1,1,2,2-Tetrachloroethane	17.64	83	78646	19.9086 ug/L		95
81)	1,2,3-Trichloropropane	17.87	110	25096	20.7489 ug/L		90
82)	trans-1,4-Dichloro-2-Buten	17.93	53	25098	17.2098 ug/L		92
83)	n-Propylbenzene	17.98	91	368090	21.4334 ug/L		98
84)	Bromobenzene	18.12	156	73358	19.6512 ug/L		100
85)	1,3,5-Trimethylbenzene	18.21	105	260042	21.2728 ug/L		95
86)	2-Chlorotoluene	18.30	91	239007	20.8507 ug/L		97
87)	4-Chlorotoluene	18.35	91	217632	20.7642 ug/L		96
88)	a-Methylstyrene	18.69	118	145632	24.5324 ug/L		97
89)	tert-Butylbenzene	18.76	134	54063	21.2218 ug/L		92
90)	1,2,4-Trimethylbenzene	18.82	105	265134	20.6239 ug/L		83
91)	sec-Butylbenzene	19.07	105	333071	21.2762 ug/L		98
92)	p-Isopropyltoluene	19.27	119	268585	20.7957 ug/L		100
93)	1,3-Dichlorobenzene	19.48	146	145503	20.1443 ug/L		95
94)	1,4-Dichlorobenzene	19.64	146	146713	19.9545 ug/L		95
95)	n-Butylbenzene	19.89	91	257808	19.8465 ug/L		99
96)	1,2-Dichlorobenzene	20.23	146	140476	20.2111 ug/L		96
97)	1,2-Dibromo-3-Chloropropan	21.41	75	18173	20.7915 ug/L		85
98)	1,2,4-Trichlorobenzene	22.76	180	98659	19.6349 ug/L		98
99)	Hexachlorobutadiene	22.94	225	63121	21.9662 ug/L		99
100)	Naphthalene	23.20	128	215027	18.6151 ug/L		100
101)	1,2,3-Trichlorobenzene	23.59	180	91500	18.4934 ug/L		99

(#) = qualifier out of range (m) = manual integration
6M139121.D 826_SL.M Sat May 07 14:58:25 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\050716\6M139121.D Vial: 5
Acq On : 7 May 2016 14:33 Operator: TMB
Sample : WG567938-02 20ug/Kg LCS STD 8260 Inst : HPMS6
Misc : 7,1 STD75977 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 7 14:58 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

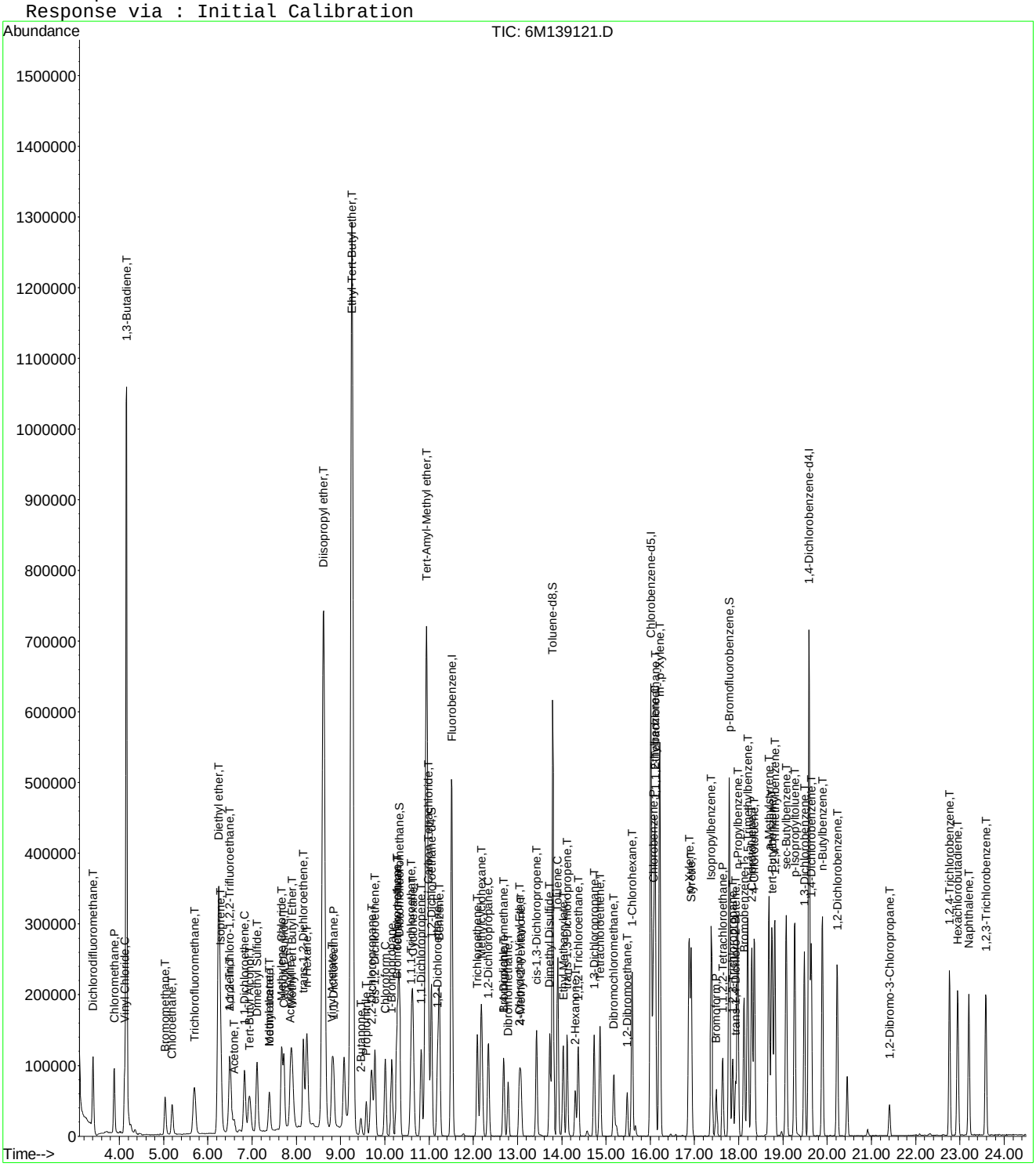

6M139121.D 826_SL.M Sat May 07 14:58:25 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\050716\6M139122.D Vial: 6
Acq On : 7 May 2016 15:06 Operator: TMB
Sample : WG567289-02 MS 1582-01 8260 4.80g Inst : HPMS6
Misc : 7,1 STD75977 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 07 15:31:04 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	637607	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	466978	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	253514	50.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.33	111	168327	49.2133 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.42%		
43) 1,2-Dichloroethane-d4	11.06	65	202119	45.5131 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 91.02%		
58) Toluene-d8	13.80	98	563407	50.7455 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.50%		
80) p-Bromofluorobenzene	17.79	95	229587	49.3044 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 98.60%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	129694	22.1480 ug/L	98
3) Chloromethane	3.89	50	138209	22.6492 ug/L	97
4) Vinyl Chloride	4.13	62	94284	19.1963 ug/L	99
5) 1,3-Butadiene	4.17	54	541266	132.4531 ug/L	93
6) Bromomethane	5.03	94	54264	20.7256 ug/L	99
7) Chloroethane	5.20	64	63325	22.7382 ug/L	98
8) Trichlorofluoromethane	5.70	101	135393	20.5151 ug/L	99
9) Diethyl ether	6.25	59	4677	1.5405 ug/L	78
10) Isoprene	6.28	67	100307	23.3304 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	74552	23.6664 ug/L	94
13) Acetone	6.60	43	37328	23.6123 ug/L	85
14) 1,1-Dichloroethene	6.84	61	118284	21.1986 ug/L	91
15) Tert-Butyl Alcohol	6.95	59	1010	1.9399 ug/L #	57
16) Dimethyl Sulfide	7.12	62	81156	29.9785 ug/L	99
17) Iodomethane	7.39	142	41219	20.2599 ug/L	93
18) Methyl acetate	7.39	43	71032	18.3185 ug/L	99
19) Methylene Chloride	7.67	84	71712	21.3403 ug/L	83
20) Carbon Disulfide	7.72	76	205049	19.2067 ug/L	99
21) Acrylonitrile	7.86	53	31580	19.8163 ug/L	100
22) Methyl Tert Butyl Ether	7.89	73	212456	22.1389 ug/L	93
23) trans-1,2-Dichloroethene	8.16	96	66945	21.7180 ug/L	84
24) n-Hexane	8.24	57	124529	22.2476 ug/L	100
25) Diisopropyl ether	8.62	45	10625	0.7321 ug/L #	79
26) Vinyl Acetate	8.80	43	157667	21.0176 ug/L	99
27) 1,1-Dichloroethane	8.84	63	138987	20.9137 ug/L	99
28) Ethyl-Tert-Butyl ether	9.25	59	97394	8.3731 ug/L #	37
29) 2-Butanone	9.46	43	44316	20.1075 ug/L	98
31) 2,2-Dichloropropane	9.69	77	121988	22.8681 ug/L	94
32) cis-1,2-Dichloroethene	9.77	96	94340	27.4141 ug/L	87
33) Chloroform	10.01	83	133620	21.5288 ug/L	98
34) 1-Bromopropane	10.16	122	16793	35.5930 ug/L	97
35) Bromochloromethane	10.27	130	40674	20.1158 ug/L	96
36) Tetrahydrofuran	10.30	42	5042	1.3111 ug/L	90
38) 1,1,1-Trichloroethane	10.60	97	119896	21.8701 ug/L	99
39) Cyclohexane	10.63	56	141097	22.6971 ug/L	88
40) 1,1-Dichloropropene	10.82	75	95587	21.6509 ug/L	96
41) Tert-Amyl-Methyl ether	10.95	73	3738	0.4051 ug/L #	69
42) Carbon Tetrachloride	10.99	117	110892	21.6483 ug/L	96
45) 1,2-Dichloroethane	11.19	62	123621	23.3362 ug/L	99
46) Benzene	11.23	78	278014	20.9315 ug/L	93

(#) = qualifier out of range (m) = manual integration
6M139122.D 826_SL.M Sat May 07 15:31:05 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\050716\6M139122.D Vial: 6
Acq On : 7 May 2016 15:06 Operator: TMB
Sample : WG567289-02 MS 1582-01 8260 4.80g Inst : HPMS6
Misc : 7,1 STD75977 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 07 15:31:04 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
47)	Trichloroethene	12.09	130	145337	46.3184	ug/L		95
48)	Methylcyclohexane	12.18	83	118117	23.2857	ug/L		86
49)	1,2-Dichloropropane	12.35	63	79156	22.1492	ug/L		100
51)	Bromodichloromethane	12.68	83	96596	20.5970	ug/L		97
52)	Dibromomethane	12.78	93	40561	19.4047	ug/L		97
53)	2-Chloroethyl Vinyl Ether	13.04	63	39869	20.2828	ug/L		97
54)	4-Methyl-2-Pentanone	13.07	58	30862	20.7350	ug/L		95
55)	cis-1,3-Dichloropropene	13.43	75	118931	23.0170	ug/L		98
56)	Dimethyl Disulfide	13.72	79	54379	20.8665	ug/L		97
59)	Toluene	13.91	91	284370	21.5276	ug/L		99
60)	Ethyl Methacrylate	14.04	69	88358	20.8759	ug/L		100
62)	trans-1,3-Dichloropropene	14.12	75	103104	20.2982	ug/L		99
63)	1,1,2-Trichloroethane	14.38	97	52948	19.1771	ug/L		99
64)	2-Hexanone	14.31	43	55051	17.4734	ug/L		99
65)	1,3-Dichloropropane	14.73	76	99399	19.8628	ug/L		96
66)	Tetrachloroethene	14.87	166	71328	21.8891	ug/L		98
67)	Dibromochloromethane	15.18	129	71896	20.0221	ug/L		99
68)	1,2-Dibromoethane	15.48	107	58147	20.5929	ug/L		99
69)	1-Chlorohexane	15.59	91	95610	23.3074	ug/L		83
70)	Chlorobenzene	16.07	112	181668	21.3987	ug/L	#	66
71)	1,1,1,2-Tetrachloroethane	16.11	131	69760	20.4648	ug/L		97
72)	Ethylbenzene	16.10	106	97480	21.4568	ug/L		96
73)	m-,p-Xylene	16.22	106	244989	44.0721	ug/L		96
74)	o-Xylene	16.87	106	119991	22.9177	ug/L		96
75)	Styrene	16.92	104	192833	21.6390	ug/L		92
76)	Bromoform	17.49	173	45145	17.8061	ug/L		97
77)	Isopropylbenzene	17.38	105	313671	22.2865	ug/L		98
79)	1,1,2,2-Tetrachloroethane	17.65	83	73145	18.4698	ug/L		97
81)	1,2,3-Trichloropropane	17.87	110	23265	19.1870	ug/L		88
82)	trans-1,4-Dichloro-2-Buten	17.93	53	21615	14.7845	ug/L		92
83)	n-Propylbenzene	17.98	91	368412	21.3986	ug/L		98
84)	Bromobenzene	18.13	156	74323	19.8600	ug/L		96
85)	1,3,5-Trimethylbenzene	18.21	105	257658	21.0252	ug/L		95
86)	2-Chlorotoluene	18.30	91	242384	21.0925	ug/L		95
87)	4-Chlorotoluene	18.35	91	216515	20.6060	ug/L		96
88)	a-Methylstyrene	18.69	118	146551	24.6256	ug/L		99
89)	tert-Butylbenzene	18.76	134	60098	23.5319	ug/L		86
90)	1,2,4-Trimethylbenzene	18.82	105	299354	23.2276	ug/L		81
91)	sec-Butylbenzene	19.07	105	349531	22.2719	ug/L		98
92)	p-Isopropyltoluene	19.27	119	316063	24.4106	ug/L		100
93)	1,3-Dichlorobenzene	19.48	146	155373	21.4570	ug/L		96
94)	1,4-Dichlorobenzene	19.64	146	156689	21.2582	ug/L		95
95)	n-Butylbenzene	19.89	91	272627	20.9349	ug/L		97
96)	1,2-Dichlorobenzene	20.22	146	149088	21.3966	ug/L		96
97)	1,2-Dibromo-3-Chloropropan	21.41	75	17718	20.2203	ug/L		85
98)	1,2,4-Trichlorobenzene	22.76	180	108684	21.5761	ug/L		99
99)	Hexachlorobutadiene	22.96	225	65164	22.6206	ug/L		99
100)	Naphthalene	23.20	128	226516	19.5608	ug/L		100
101)	1,2,3-Trichlorobenzene	23.59	180	105501	21.2699	ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\050716\6M139122.D Vial: 6
Acq On : 7 May 2016 15:06 Operator: TMB
Sample : WG567289-02 MS 1582-01 8260 4.80g Inst : HPMS6
Misc : 7,1 STD75977 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 7 15:31 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

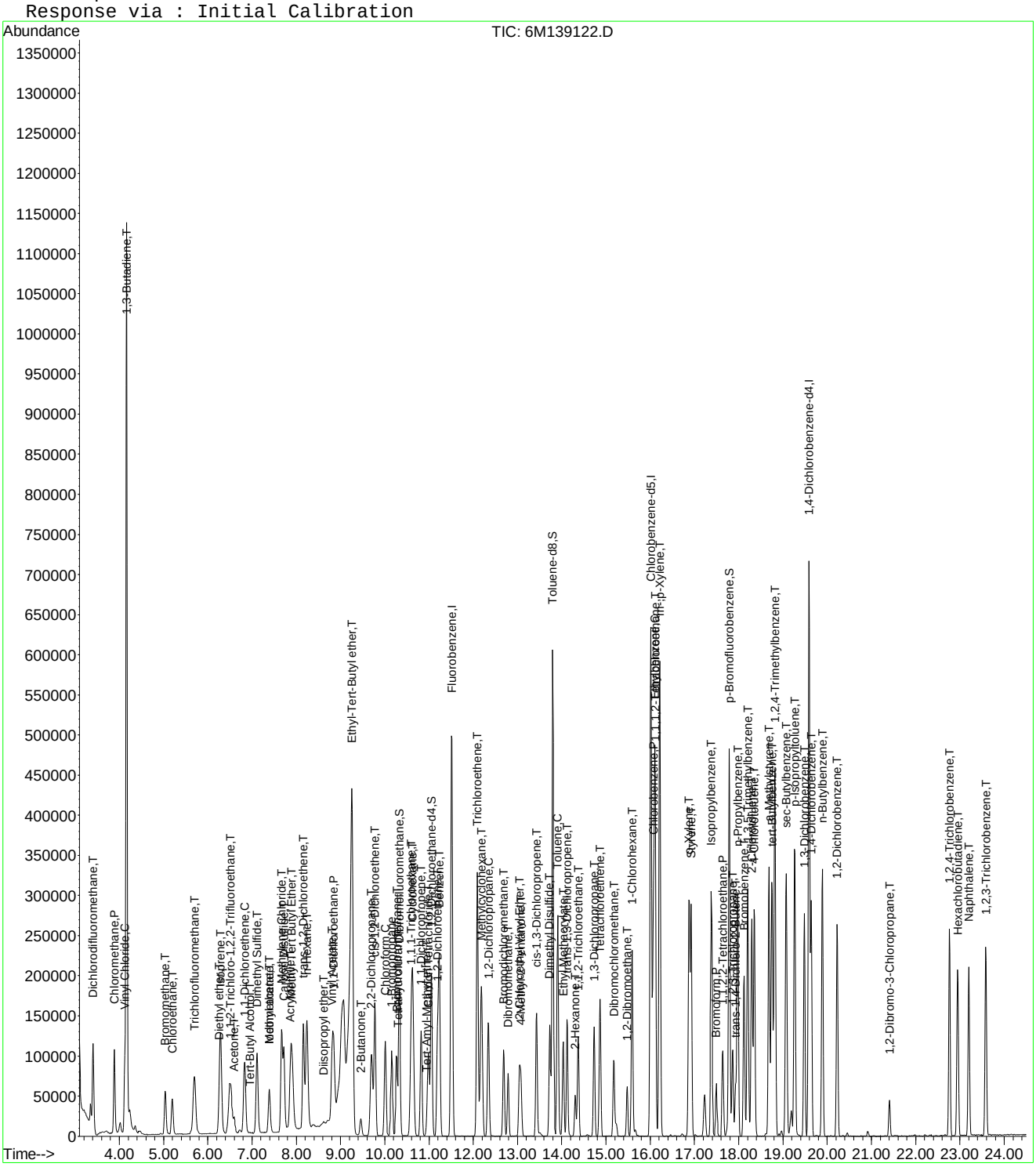

6M139122.D 826_SL.M Sat May 07 15:31:05 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\050716\6M139123.D Vial: 7
Acq On : 7 May 2016 15:38 Operator: TMB
Sample : WG567289-03 MSD 1582-01 8260 4.86g Inst : HPMS6
Misc : 7,1 STD75977 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 07 16:03:29 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	644848	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	471234	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	247043	50.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.34	111	170528	49.2970 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.60%		
43) 1,2-Dichloroethane-d4	11.06	65	208354	46.3902 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 92.78%		
58) Toluene-d8	13.80	98	560888	50.0623 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 100.12%		
80) p-Bromofluorobenzene	17.79	95	241431	53.2060 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 106.42%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	129029	21.7870 ug/L	99
3) Chloromethane	3.89	50	139873	22.6645 ug/L	96
4) Vinyl Chloride	4.13	62	97169	19.5616 ug/L	98
5) 1,3-Butadiene	4.17	54	557245	134.8321 ug/L	94
6) Bromomethane	5.04	94	55449	20.9404 ug/L	98
7) Chloroethane	5.20	64	61771	21.9312 ug/L	98
8) Trichlorofluoromethane	5.70	101	136832	20.5003 ug/L	99
9) Diethyl ether	6.24	59	4118	1.3411 ug/L #	71
10) Isoprene	6.29	67	92584	21.2923 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.52	101	75966	23.8444 ug/L	94
13) Acetone	6.60	43	41331	26.2673 ug/L	81
14) 1,1-Dichloroethene	6.83	61	117335	20.7924 ug/L	91
15) Tert-Butyl Alcohol	6.93	59	335	0.6362 ug/L #	57
16) Dimethyl Sulfide	7.12	62	74708	27.2868 ug/L	97
17) Iodomethane	7.38	142	41488	20.1869 ug/L	94
18) Methyl acetate	7.39	43	73413	18.7200 ug/L #	97
19) Methylene Chloride	7.67	84	71596	21.0666 ug/L	80
20) Carbon Disulfide	7.72	76	194677	18.0304 ug/L	99
21) Acrylonitrile	7.87	53	31713	19.6763 ug/L	99
22) Methyl Tert Butyl Ether	7.89	73	207514	21.3811 ug/L	92
23) trans-1,2-Dichloroethene	8.16	96	66007	21.1732 ug/L	83
24) n-Hexane	8.24	57	118845	20.9937 ug/L	98
26) Vinyl Acetate	8.80	43	155519	20.4984 ug/L	99
27) 1,1-Dichloroethane	8.84	63	136538	20.3145 ug/L	100
28) Ethyl-Tert-Butyl ether	9.25	59	41894	3.5613 ug/L #	38
29) 2-Butanone	9.46	43	45197	20.2769 ug/L	98
31) 2,2-Dichloropropane	9.70	77	121006	22.4293 ug/L	92
32) cis-1,2-Dichloroethene	9.77	96	91814	26.3805 ug/L	100
33) Chloroform	10.01	83	128763	20.5133 ug/L	98
34) 1-Bromopropane	10.15	122	15242	31.9429 ug/L	99
35) Bromochloromethane	10.26	130	43420	21.2327 ug/L	99
36) Tetrahydrofuran	10.29	42	4474	0.8840 ug/L	81
38) 1,1,1-Trichloroethane	10.60	97	121841	21.9753 ug/L	100
39) Cyclohexane	10.63	56	138193	21.9804 ug/L	89
40) 1,1-Dichloropropene	10.83	75	97826	21.9092 ug/L	96
41) Tert-Amyl-Methyl ether	10.83	73	14718	1.5771 ug/L #	55
42) Carbon Tetrachloride	10.99	117	112842	21.7816 ug/L	96
45) 1,2-Dichloroethane	11.19	62	124746	23.2842 ug/L	98
46) Benzene	11.23	78	285416	21.2475 ug/L	92
47) Trichloroethene	12.09	130	140308	44.2135 ug/L	93

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\050716\6M139123.D Vial: 7
Acq On : 7 May 2016 15:38 Operator: TMB
Sample : WG567289-03 MSD 1582-01 8260 4.86g Inst : HPMS6
Misc : 7,1 STD75977 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 07 16:03:29 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
48)	Methylcyclohexane	12.18	83	109445	21.3338 ug/L	85
49)	1,2-Dichloropropane	12.34	63	77222	21.3654 ug/L	100
51)	Bromodichloromethane	12.68	83	97075	20.4667 ug/L	98
52)	Dibromomethane	12.79	93	41223	19.5000 ug/L	98
53)	2-Chloroethyl Vinyl Ether	13.04	63	38090	19.1602 ug/L	98
54)	4-Methyl-2-Pentanone	13.07	58	32364	21.5000 ug/L	93
55)	cis-1,3-Dichloropropene	13.43	75	122951	23.5278 ug/L	98
56)	Dimethyl Disulfide	13.73	79	53128	20.1575 ug/L	98
59)	Toluene	13.91	91	289881	21.7466 ug/L	99
60)	Ethyl Methacrylate	14.04	69	89941	21.0579 ug/L	97
62)	trans-1,3-Dichloropropene	14.12	75	105375	20.5579 ug/L	98
63)	1,1,2-Trichloroethane	14.38	97	61084	21.9240 ug/L	98
64)	2-Hexanone	14.31	43	61541	19.3570 ug/L	96
65)	1,3-Dichloropropane	14.74	76	108360	21.4579 ug/L	97
66)	Tetrachloroethene	14.87	166	66486	20.2190 ug/L	99
67)	Dibromochloromethane	15.18	129	70243	19.3851 ug/L	99
68)	1,2-Dibromoethane	15.48	107	59625	20.9256 ug/L	99
69)	1-Chlorohexane	15.59	91	93398	22.5625 ug/L	86
70)	Chlorobenzene	16.07	112	181513	21.1873 ug/L #	66
71)	1,1,1,2-Tetrachloroethane	16.11	131	68884	20.0253 ug/L	98
72)	Ethylbenzene	16.10	106	94829	20.6848 ug/L	98
73)	m-,p-Xylene	16.22	106	234574	41.8174 ug/L	95
74)	o-Xylene	16.87	106	122760	23.2348 ug/L	96
75)	Styrene	16.92	104	195976	21.7931 ug/L	93
76)	Bromoform	17.49	173	45350	17.7254 ug/L	98
77)	Isopropylbenzene	17.38	105	306657	21.5914 ug/L	97
79)	1,1,2,2-Tetrachloroethane	17.65	83	81230	21.0487 ug/L	96
81)	1,2,3-Trichloropropane	17.87	110	25237	21.3585 ug/L	95
82)	trans-1,4-Dichloro-2-Buten	17.93	53	24549	17.2311 ug/L	84
83)	n-Propylbenzene	17.98	91	387369	23.0891 ug/L	98
84)	Bromobenzene	18.13	156	75848	20.7983 ug/L	96
85)	1,3,5-Trimethylbenzene	18.21	105	263210	22.0408 ug/L	96
86)	2-Chlorotoluene	18.30	91	236266	21.0987 ug/L	97
87)	4-Chlorotoluene	18.35	91	238370	23.2802 ug/L	96
88)	a-Methylstyrene	18.69	118	128687	22.1902 ug/L	98
89)	tert-Butylbenzene	18.75	134	54820	22.0275 ug/L	83
90)	1,2,4-Trimethylbenzene	18.81	105	266586	21.2268 ug/L	78
91)	sec-Butylbenzene	19.08	105	345216	22.5731 ug/L	99
92)	p-Isopropyltoluene	19.26	119	315556	25.0098 ug/L	99
93)	1,3-Dichlorobenzene	19.48	146	151532	21.4747 ug/L	98
94)	1,4-Dichlorobenzene	19.64	146	152122	21.1792 ug/L	96
95)	n-Butylbenzene	19.89	91	259105	20.4177 ug/L	96
96)	1,2-Dichlorobenzene	20.22	146	146041	21.5083 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	21.41	75	18091	21.1868 ug/L	92
98)	1,2,4-Trichlorobenzene	22.76	180	97676	19.8987 ug/L	98
99)	Hexachlorobutadiene	22.95	225	61362	21.8587 ug/L	97
100)	Naphthalene	23.20	128	210642	18.6665 ug/L	99
101)	1,2,3-Trichlorobenzene	23.58	180	92194	19.0740 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\050716\6M139123.D Vial: 7
Acq On : 7 May 2016 15:38 Operator: TMB
Sample : WG567289-03 MSD 1582-01 8260 4.86g Inst : HPMS6
Misc : 7,1 STD75977 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 7 16:03 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

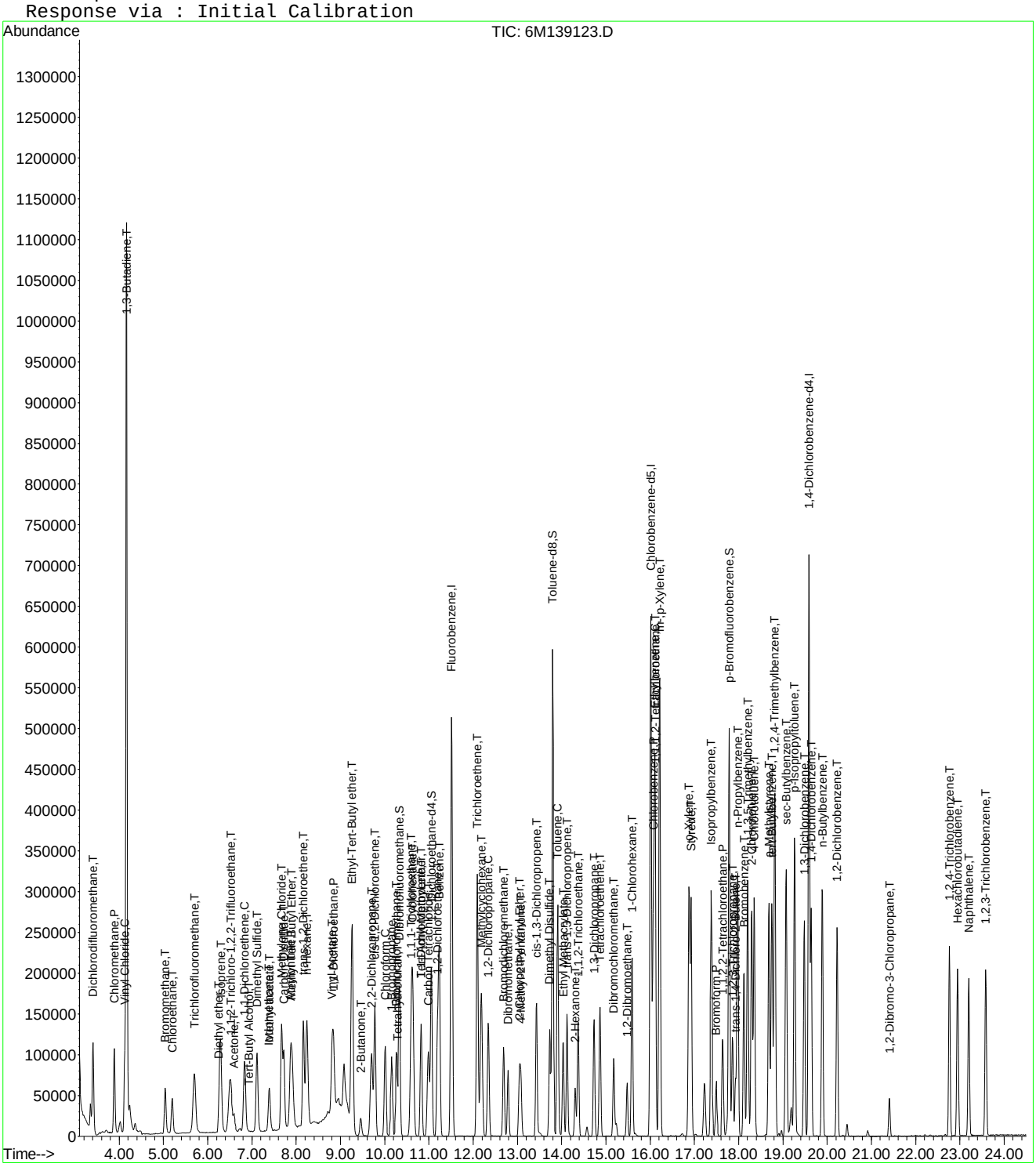

2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041582-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW23SW(5-5.5)	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 21:59
Collect Date:	04/27/2016 14:15	**Dilution:**	1	**File ID:**	1LM.LM34739
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	74.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	19.6		5.16	2.58	1.29

Certificate of Analysis

Sample #:	L16041582-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW23SW(10-10.5)	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/05/2016 14:47
Collect Date:	04/27/2016 14:40	**Dilution:**	100	**File ID:**	1LM.LM34758
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	81.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1920		478	238	119

Certificate of Analysis

Sample #:	L16041582-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW23SW(20-20.5)	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 22:37
Collect Date:	04/27/2016 14:45	**Dilution:**	1	**File ID:**	1LM.LM34741
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	29.3		4.80	2.40	1.20

Certificate of Analysis

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L16041582-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW23SW(30-30.5)	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 22:56
Collect Date:	04/27/2016 14:50	**Dilution:**	1	**File ID:**	1LM.LM34742
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.42	U	4.85	2.42	1.21

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041582-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW23SW(40-40.5)	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/05/2016 00:11
Collect Date:	04/27/2016 16:15	**Dilution:**	1	**File ID:**	1LM.LM34746
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.28	U	4.56	2.28	1.14

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041582-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW23SW(60-60.5)	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/05/2016 00:30
Collect Date:	04/27/2016 17:35	**Dilution:**	1	**File ID:**	1LM.LM34747
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.34	U	4.69	2.34	1.17

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041582-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW23SW(50-50.5)	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/05/2016 00:49
Collect Date:	04/27/2016 17:45	**Dilution:**	1	**File ID:**	1LM.LM34748
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.44	U	4.88	2.44	1.22

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

MICROBAC

Semivolatile Sample Extract Log

Document Control No. 1753 Page: 13 of 100

Parameter: Perchlorate
SOP #: HPLC 06
Analyst: JWR
Spike/Surrogate analyst: JWR
Surrogate #: NA
Spike # A: STD75513
Ext Solvent: DI-H2O
Ext Solvent: NA
Ext Disk: NA

Matrix: Soils
Rev #: 08
Date/Time Extracted: 05/04/16/1200
Witness: EC 5-4-16

Spike # B: NA
Lot #: NA
Lot #: NA
Lot #: NA

Extraction Work Group: WG567220
Analytical Work Group: WG567224
Run ID: R4569641

Pipetter(s): Eppendorf #403
Analytical Balance ID: BAL017
Reagent: Tubes Lot #: RGT34011
Reagent: Sand Lot #: COA18813
Other: IS Lot #: COA18071

Color Code
T = Transparent
C = Colored
O = Opaque

	Sample ID	Test Code	pH	Initial Wt / Vol	JWR ~~Surrogate~~ IS Amount	Amount Spike	Final Volume	Extract Color	Comments
1	WG567220-01	6850		5.009g	0.250ml	1.0ml	50ml		MCT (10,000 us)(2ug/kg)
2	WG567220-02			5.014g		NA			Blank
3	WG567220-03			5.009g		1.0ml			LCS (2ug/kg)
4	L16041580-01			5.031g		NA			
5	-02			5.110g		NA			
6	-03			5.138g		NA			
7	-04			5.094g		NA			
8	-05			5.017g		NA			
9	-06 RS			5.100g		NA			WG567220-04 Ref
10	-07 MS			5.109g		1.0ml			WG567220-05 MS (@2ug/kg)
11	-08 MSD			5.104g		1.0ml			WG567220-06 MSD (@2ug/kg)
12	-09			5.114g		NA			
13	-10			5.131g		NA			
14	-11			5.050g		NA			
15	-12			5.111g		NA			
16	-13			5.137g		NA			
17	L16041582-01			5.191g		NA			
18	-02			5.113g		NA			
19	-03			5.095g		NA			
20	-04			5.097g		NA			
21	-05			5.170g		NA			
22	-06			5.194g		NA			
23	-07			5.102g		NA			
24									

Reviewed by: EC 5-4-16

Analytical WG567224 (soils)

Perchlorate Conductivity Check

(perchlorate1)

Conductivity Probe Calibration Check: 1404 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG567220-01 MCT	9,960.	
WG567220-02 Blank	2.14	
WG567220-03 LCS	3.60	
L16041580-01	4.31	
-02	3.67	
-03	30.4	
-04	25.2	
-05	45.5	
-06 RS	53.4	
-07 MS	56.3	
-08 MSD	56.0	
-09	42.4	
-10	34.4	
-11	32.0	
-12	69.5	
-13	168.7	
L16041582-01	15.72	
-02	14.75	
-03	7.79	
-04	15.01	
-05	11.87	
-06	16.03	
-07	17.28	

Analyst: John Richards

Date/Time: 05/05/16 17:00

DCN#118217

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

Page: 1 Approved: 05-MAY-16

Wadei D

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

Page: 2 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050416_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567224 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: Samples tagged with (NR) had "On Column" results over the calibration range. These samples were reanalyzed on the end of this run at dilutions based on their initial "over-range" results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34717	WG567549-01 CCB	1	1		05/04/16 15:02
2	1LM.LM34718	WG567549-02 CCV (1.0ug/L)	1	1	STD75510	05/04/16 15:21
3	1LM.LM34719	WG567224-07 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 15:40
4	1LM.LM34720	WG567224-01 MCT (2.0ug/kg)	7	1	STD75512	05/04/16 15:59
5	1LM.LM34721	WG567224-02 BLANK	7	1		05/04/16 16:18
6	1LM.LM34722	WG567224-03 LCS (2.0ug/kg)	7	1	STD75512	05/04/16 16:37
7	1LM.LM34723	L16041580-06 RS	7	1		05/04/16 16:56
8	1LM.LM34724	L16041580-07 MS	7	1	STD75512	05/04/16 17:15
9	1LM.LM34725	L16041580-08 MSD	7	1	STD75512	05/04/16 17:34
10	1LM.LM34726	L16041580-01	7	1		05/04/16 17:53
11	1LM.LM34727	L16041580-02	7	1		05/04/16 18:12
12	1LM.LM34728	L16041580-03 (NR)	7	1		05/04/16 18:31
13	1LM.LM34729	L16041580-04 (NR)	7	1		05/04/16 18:50
14	1LM.LM34730	WG567549-03 CCV (1.0ug/L)	1	1	STD75510	05/04/16 19:08
15	1LM.LM34731	WG567224-08 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 19:27
16	1LM.LM34732	WG567549-04 CCB	1	1		05/04/16 19:46
17	1LM.LM34733	L16041580-05 (NR)	7	1		05/04/16 20:05
18	1LM.LM34734	L16041580-09	7	1		05/04/16 20:24
19	1LM.LM34735	L16041580-10	7	1		05/04/16 20:43
20	1LM.LM34736	L16041580-11	7	1		05/04/16 21:02
21	1LM.LM34737	L16041580-12	7	1		05/04/16 21:21
22	1LM.LM34738	L16041580-13	7	1		05/04/16 21:40
23	1LM.LM34739	L16041582-01	7	1		05/04/16 21:59
24	1LM.LM34740	L16041582-02 (NR)	7	1		05/04/16 22:18
25	1LM.LM34741	L16041582-03	7	1		05/04/16 22:37
26	1LM.LM34742	L16041582-04	7	1		05/04/16 22:56
27	1LM.LM34743	WG567549-05 CCV (1.0ug/L)	1	1	STD75510	05/04/16 23:14
28	1LM.LM34744	WG567224-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 23:33
29	1LM.LM34745	WG567549-06 CCB	1	1		05/04/16 23:52
30	1LM.LM34746	L16041582-05	7	1		05/05/16 00:11
31	1LM.LM34747	L16041582-06	7	1		05/05/16 00:30
32	1LM.LM34748	L16041582-07	7	1		05/05/16 00:49
33	1LM.LM34749	WG567549-07 CCV (1.0ug/L)	1	1	STD75510	05/05/16 01:08

Page: 1 Approved: 09-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050416_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567224 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM34750	WG567224-10 MRL (2.0ug/kg)	7	1	STD75510	05/05/16 01:27
35	1LM.LM34751	WG567549-08 CCB	1	1		05/05/16 01:46
36	1LM.LM34752	WG567549-09 CCV (1.0ug/L)	1	1	STD75510	05/05/16 12:54
37	1LM.LM34753	WG567224-11 MRL (2.0ug/kg)	7	1	STD75510	05/05/16 13:13
38	1LM.LM34754	WG567549-10 CCB	1	1		05/05/16 13:32
39	1LM.LM34755	L16041580-03 (RR 200x)	7	200		05/05/16 13:50
40	1LM.LM34756	L16041580-04 (RR 400x)	7	400		05/05/16 14:09
41	1LM.LM34757	L16041580-05 (RR 200x)	7	200		05/05/16 14:28
42	1LM.LM34758	L16041582-02 (RR 100x)	7	100		05/05/16 14:47
43	1LM.LM34759	WG567549-11 CCV (1.0ug/L)	1	1	STD75510	05/05/16 15:06
44	1LM.LM34760	WG567224-12 MRL (2.0ug/kg)	7	1	STD75510	05/05/16 15:25
45	1LM.LM34761	WG567549-12 CCB	1	1		05/05/16 15:44

Comments

Seq.	Rerun	Dil.	Reason	Analytes
8				
	L16041580-07 MS : The MS %Rec is below the advisory limit. This sample's matrix is composed of a very wet, non-homogeneous mixture of grey, brown, and orange colored sand.			
9				
	L16041580-08 MSD : The MSD %Rec is below the advisory limit. This sample's matrix is composed of a very wet, non-homogeneous mixture of grey, brown, and orange colored sand.			

Page: 2 Approved: 09-MAY-16

Wadei D

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
04-MAY-2016
John Richards

Secondary Reviewer:
05-MAY-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 04-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 74947
Analytical Workgroups: L16041580, 1582 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	LOW
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
06-MAY-2016
John Richards

Secondary Reviewer:
09-MAY-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-09-2016 09:51:39

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG567224

Login Number: L16041582

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW23SW(5-5.5)	01	04/27/16					05/04/2016	6.9	28		05/04/16	.4	28	
18CPTMW23SW(10-10.5)	02	04/27/16					05/04/2016	6.9	28		05/05/16	1.1	28	
18CPTMW23SW(20-20.5)	03	04/27/16					05/04/2016	6.9	28		05/04/16	.4	28	
18CPTMW23SW(30-30.5)	04	04/27/16					05/04/2016	6.9	28		05/04/16	.5	28	
18CPTMW23SW(40-40.5)	05	04/27/16					05/04/2016	6.8	28		05/05/16	.5	28	
18CPTMW23SW(60-60.5)	06	04/27/16					05/04/2016	6.8	28		05/05/16	.5	28	
18CPTMW23SW(50-50.5)	07	04/27/16					05/04/2016	6.8	28		05/05/16	.5	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4751011
Report generated 05/10/2016 11:23

METHOD BLANK SUMMARY

Login Number: L16041582
Blank File ID: 1LM.LM34721
Prep Date: 05/04/16 12:00
Analyzed Date: 05/04/16 16:18
Analyst: JWR

Work Group: WG567224
Blank Sample ID: WG567224-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG567224-07	1LM.LM34719	05/04/16 15:40	01
MCT	WG567224-01	1LM.LM34720	05/04/16 15:59	01
LCS	WG567224-03	1LM.LM34722	05/04/16 16:37	01
QCMRL	WG567224-08	1LM.LM34731	05/04/16 19:27	01
18CPTMW23SW(5-5.5)	L16041582-01	1LM.LM34739	05/04/16 21:59	01
18CPTMW23SW(20-20.5)	L16041582-03	1LM.LM34741	05/04/16 22:37	01
18CPTMW23SW(30-30.5)	L16041582-04	1LM.LM34742	05/04/16 22:56	01
QCMRL	WG567224-09	1LM.LM34744	05/04/16 23:33	01
18CPTMW23SW(40-40.5)	L16041582-05	1LM.LM34746	05/05/16 00:11	01
18CPTMW23SW(60-60.5)	L16041582-06	1LM.LM34747	05/05/16 00:30	01
18CPTMW23SW(50-50.5)	L16041582-07	1LM.LM34748	05/05/16 00:49	01
QCMRL	WG567224-10	1LM.LM34750	05/05/16 01:27	01
QCMRL	WG567224-11	1LM.LM34753	05/05/16 13:13	01
18CPTMW23SW(10-10.5)	L16041582-02	1LM.LM34758	05/05/16 14:47	DL01
QCMRL	WG567224-12	1LM.LM34760	05/05/16 15:25	01

Report Name: BLANK_SUMMARY
PDF File ID: 4751012
Report generated 05/10/2016 11:23

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16041582 Prep Date: 05/04/16 12:00 Sample ID: WG567224-02
Instrument ID: LCMS1 Run Date: 05/04/16 16:18 Prep Method: 6850
File ID: 1LM.LM34721 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567224 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.997	3.99	0.997	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4751013
10-MAY-2016 11:23

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16041582 Run Date: 05/04/2016 Sample ID: WG567224-03
Instrument ID: LCMS1 Run Time: 16:37 Prep Method: 6850
File ID: 1LM.LM34722 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567224 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD75512 Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	2.00	1.91	95.5	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4751014
Report generated: 05/10/2016 11:23

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16041582
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4754245
Report generated 05/10/2016 11:23

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16041582

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4754245
Report generated 05/10/2016 11:23

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16041582

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4754245
Report generated 05/10/2016 11:23

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16041582

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008
PDF File ID: 4754245
Report generated 05/10/2016 11:23

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16041582 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4754246
Report generated 05/10/2016 11:23

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16041582
Run Date: 05/04/2016
Sample ID: WG567549-01
Instrument ID: LCMS1
Run Time: 15:02
Method: 6850
File ID: 1LM.LM34717
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG567224
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4751017
Report generated 05/10/2016 11:23

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16041582
Run Date: 05/04/2016
Sample ID: WG567549-04
Instrument ID: LCMS1
Run Time: 19:46
Method: 6850
File ID: 1LM.LM34732
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG567224
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4751017
Report generated 05/10/2016 11:23

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16041582
Run Date: 05/04/2016
Sample ID: WG567549-06
Instrument ID: LCMS1
Run Time: 23:52
Method: 6850
File ID: 1LM.LM34745
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG567224
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4751017
Report generated 05/10/2016 11:23

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16041582
Run Date: 05/05/2016
Sample ID: WG567549-08
Instrument ID: LCMS1
Run Time: 01:46
Method: 6850
File ID: 1LM.LM34751
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG567224
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4751017
Report generated 05/10/2016 11:23

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16041582
Run Date: 05/05/2016
Sample ID: WG567549-10
Instrument ID: LCMS1
Run Time: 13:32
Method: 6850
File ID: 1LM.LM34754
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG567224
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4751017
Report generated 05/10/2016 11:23

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16041582
Run Date: 05/05/2016
Sample ID: WG567549-12
Instrument ID: LCMS1
Run Time: 15:44
Method: 6850
File ID: 1LM.LM34761
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG567224
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4751017
Report generated 05/10/2016 11:23

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041582
Run Date: 05/04/2016
Sample ID: WG567549-02
Instrument ID: LCMS1
Run Time: 15:21
Method: 6850
File ID: 1LM.LM34718
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG567224
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.996	ug/kg	1.68	0.400	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4751016
Report generated 05/10/2016 11:23

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041582
Run Date: 05/04/2016
Sample ID: WG567549-03
Instrument ID: LCMS1
Run Time: 19:08
Method: 6850
File ID: 1LM.LM34730
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG567224
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/kg	1.72	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4751016
Report generated 05/10/2016 11:23

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041582
Run Date: 05/04/2016
Sample ID: WG567549-05
Instrument ID: LCMS1
Run Time: 23:14
Method: 6850
File ID: 1LM.LM34743
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG567224
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/kg	1.71	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4751016
Report generated 05/10/2016 11:23

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041582
Run Date: 05/05/2016
Sample ID: WG567549-07
Instrument ID: LCMS1
Run Time: 01:08
Method: 6850
File ID: 1LM.LM34749
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG567224
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.990	ug/kg	1.67	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4751016
Report generated 05/10/2016 11:23

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041582
Run Date: 05/05/2016
Sample ID: WG567549-09
Instrument ID: LCMS1
Run Time: 12:54
Method: 6850
File ID: 1LM.LM34752
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG567224
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.998	ug/kg	1.68	0.200	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4751016
Report generated 05/10/2016 11:23

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041582
Run Date: 05/05/2016
Sample ID: WG567549-11
Instrument ID: LCMS1
Run Time: 15:06
Method: 6850
File ID: 1LM.LM34759
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG567224
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.00	ug/kg	1.69	0	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4751016
Report generated 05/10/2016 11:23

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16041582 Run Date: 05/04/2016 Sample ID: WG567224-07
Instrument ID: LCMS1 Run Time: 15:40 Prep Method: 6850
File ID: 1LM.LM34719 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567224 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.01	101	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4751015
Report generated 05/10/2016 11:23

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16041582 Run Date: 05/04/2016 Sample ID: WG567224-08
Instrument ID: LCMS1 Run Time: 19:27 Prep Method: 6850
File ID: 1LM.LM34731 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567224 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.10	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4751015
Report generated 05/10/2016 11:23

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16041582 Run Date: 05/04/2016 Sample ID: WG567224-09
Instrument ID: LCMS1 Run Time: 23:33 Prep Method: 6850
File ID: 1LM.LM34744 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567224 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.09	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4751015
Report generated 05/10/2016 11:23

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16041582 Run Date: 05/05/2016 Sample ID: WG567224-10
Instrument ID: LCMS1 Run Time: 01:27 Prep Method: 6850
File ID: 1LM.LM34750 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567224 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.00	100	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4751015
Report generated 05/10/2016 11:23

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16041582 Run Date: 05/05/2016 Sample ID: WG567224-11
Instrument ID: LCMS1 Run Time: 13:13 Prep Method: 6850
File ID: 1LM.LM34753 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567224 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.06	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4751015
Report generated 05/10/2016 11:23

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16041582 Run Date: 05/05/2016 Sample ID: WG567224-12
Instrument ID: LCMS1 Run Time: 15:25 Prep Method: 6850
File ID: 1LM.LM34760 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567224 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.00	100	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4751015
Report generated 05/10/2016 11:23

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16041582
Instrument ID: LCMS1
Workgroup (AAB#): WG567224

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16041582-01	1.00	01	491000
L16041582-02	100	DL01	470000
L16041582-03	1.00	01	524000
L16041582-04	1.00	01	524000
L16041582-05	1.00	01	518000
L16041582-06	1.00	01	520000
L16041582-07	1.00	01	535000
WG567224-02	1.00	01	442000
WG567224-03	1.00	01	442000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4751018
Report generated 05/10/2016 11:24

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**	6850	**Samplenum:**	L16041582-01
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34739
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 21:59	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	252000	82100	3.07	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**	6850	**Samplenum:**	L16041582-02
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34758
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/05/2016 14:47	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	255000	84700	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**	6850	**Samplenum:**	L16041582-03
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34741
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 22:37	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	431000	145000	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**	6850	**Samplenum:**	L16041582-04
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34742
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 22:56	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	5550	2140	2.59	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**	6850	**Samplenum:**	L16041582-05
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34746
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/05/2016 00:11	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**	6850	**Samplenum:**	L16041582-06
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34747
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/05/2016 00:30	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1400	549	2.55	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**	6850	**Samplenum:**	L16041582-07
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34748
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/05/2016 00:49	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	236	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**	6850	**Samplenum:**	WG567224-01
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34720
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 15:59	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	28100	10100	2.78	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**	6850	**Samplenum:**	WG567224-02
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34721
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 16:18	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	2220	592	3.75	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**	6850	**Samplenum:**	WG567224-03
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34722
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 16:37	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	28900	11400	2.54	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**	6850	**Samplenum:**	WG567224-07
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34719
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 15:40	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	29900	10300	2.90	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**	6850	**Samplenum:**	WG567224-08
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34731
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 19:27	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	33400	11300	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**	6850	**Samplenum:**	WG567224-09
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34744
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 23:33	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38400	11700	3.28	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**	6850	**Samplenum:**	WG567224-10
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34750
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/05/2016 01:27	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36200	13800	2.62	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**	6850	**Samplenum:**	WG567224-11
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34753
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/05/2016 13:13	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34200	12500	2.74	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**	6850	**Samplenum:**	WG567224-12
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34760
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/05/2016 15:25	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35500	12900	2.75	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**		**Samplenum:**	WG567549-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34717
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/04/2016 15:02	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**		**Samplenum:**	WG567549-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34718
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/04/2016 15:21	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	143000	47800	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**		**Samplenum:**	WG567549-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34730
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/04/2016 19:08	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	159000	53200	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**		**Samplenum:**	WG567549-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34732
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/04/2016 19:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	604	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**		**Samplenum:**	WG567549-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34743
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/04/2016 23:14	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	178000	58200	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**		**Samplenum:**	WG567549-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34745
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/04/2016 23:52	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**		**Samplenum:**	WG567549-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34749
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/05/2016 01:08	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	177000	59800	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**		**Samplenum:**	WG567549-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34751
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/05/2016 01:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**		**Samplenum:**	WG567549-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34752
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/05/2016 12:54	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	156000	55000	2.84	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**		**Samplenum:**	WG567549-10
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34754
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/05/2016 13:32	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**		**Samplenum:**	WG567549-11
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34759
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/05/2016 15:06	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	174000	59100	2.94	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**		**Samplenum:**	WG567549-12
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34761
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/05/2016 15:44	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	449	0.000	2.3	3.8	*

2.2.1.3 Sample Data

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Printed: 5/6/2016 1:53 PM

Data File	LM34739.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 9:59:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041582-01	**Injection Vial**	20.00
Data File	LM34739.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 9:59:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	L16041582-01	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.910e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.520e+05	9.82	N/A	1.52
Perchlorate conf	8.210e+04	9.82	N/A	1.48

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

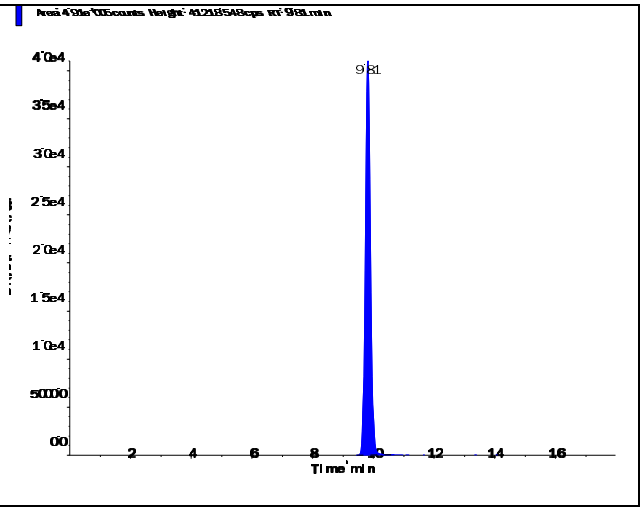

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	1.52 ng/ml
Area Ratio:	0.513
Sample Type:	(Unknown)

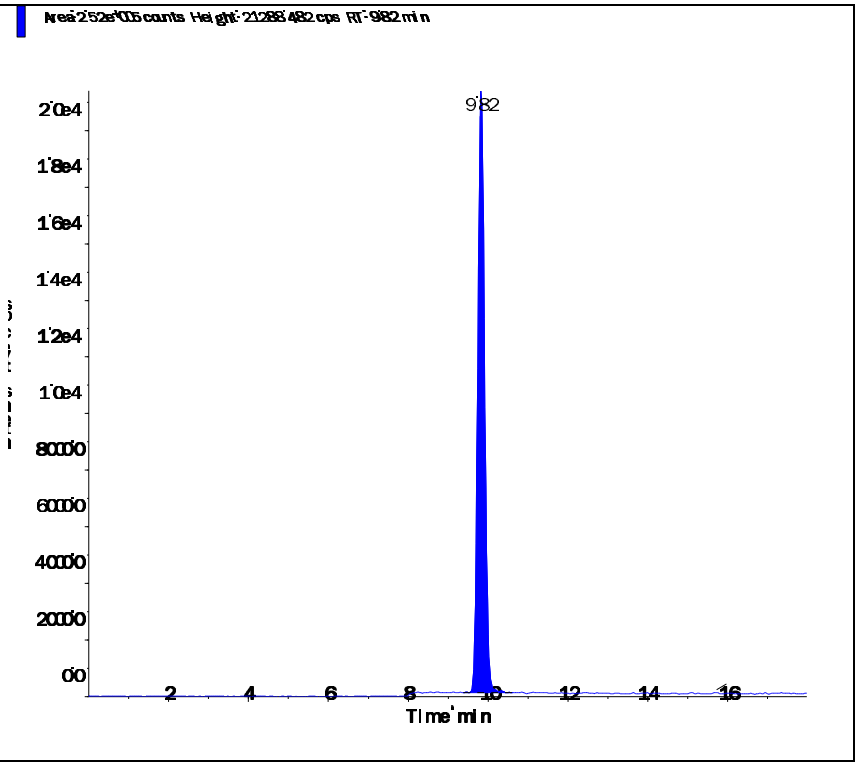

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	1.48 ng/ml
Area Ratio:	0.167
Sample Type:	(Unknown)

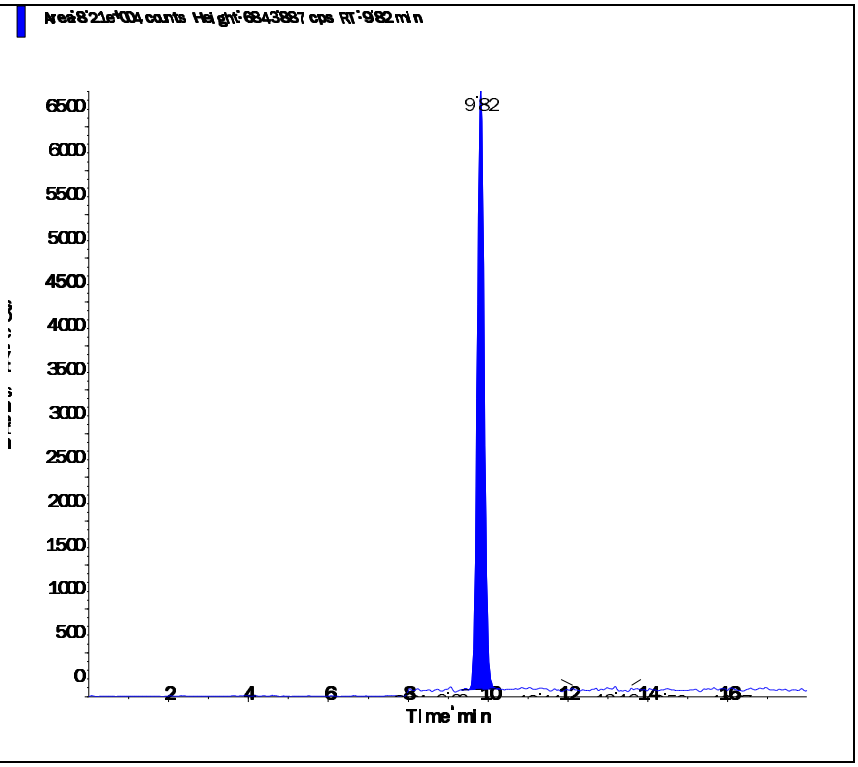

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Printed: 5/6/2016 1:59 PM

Data File	LM34758.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 2:47:47 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041582-02 (RR 100x)	**Injection Vial**	30.00
Data File	LM34758.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 2:47:47 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	L16041582-02	**Dilution Factor**	1.00
Sample Comment	7,100.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.700e+05	9.86	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.550e+05	9.87	N/A	1.61
Perchlorate conf	8.470e+04	9.85	N/A	1.59

O18LP (Internal Standard)

RT (Exp. RT): 9.86(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

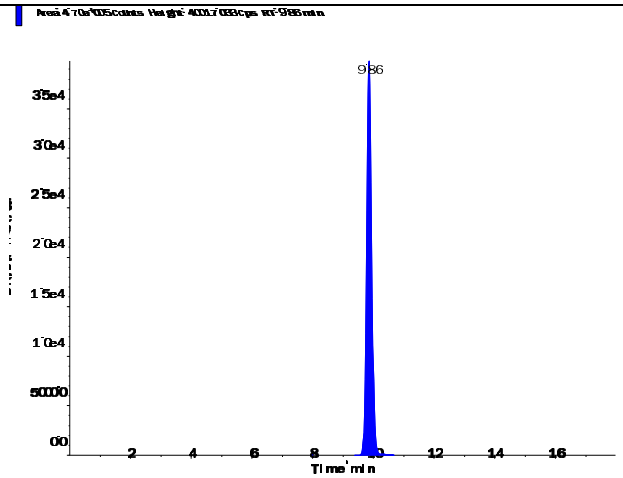

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.87 (9.84) min
Calculated conc:	1.61 ng/ml
Area Ratio:	0.542
Sample Type:	(Unknown)

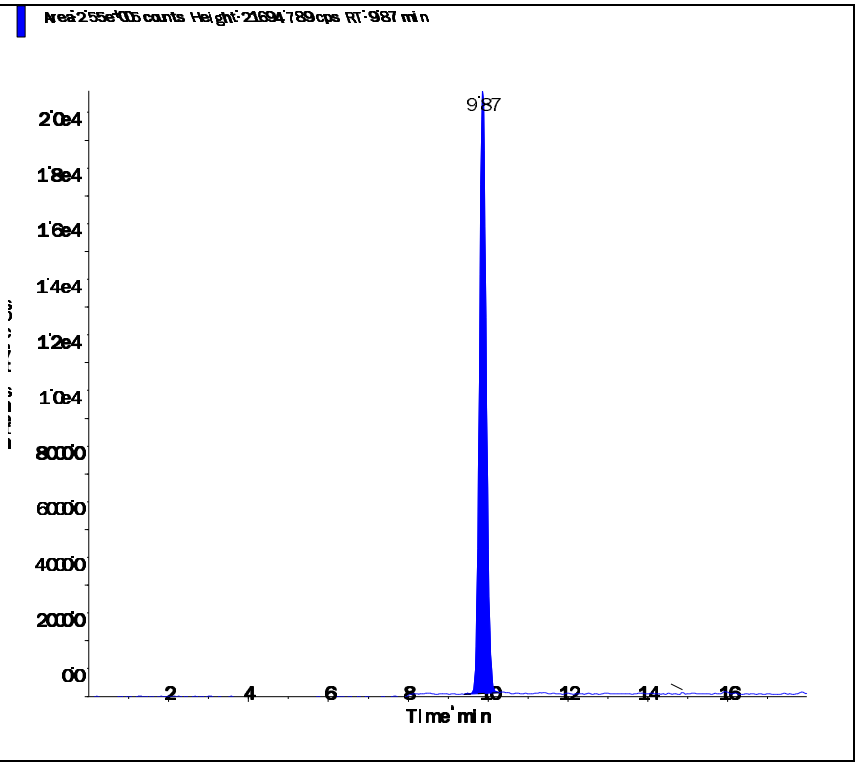

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	1.59 ng/ml
Area Ratio:	0.18
Sample Type:	(Unknown)

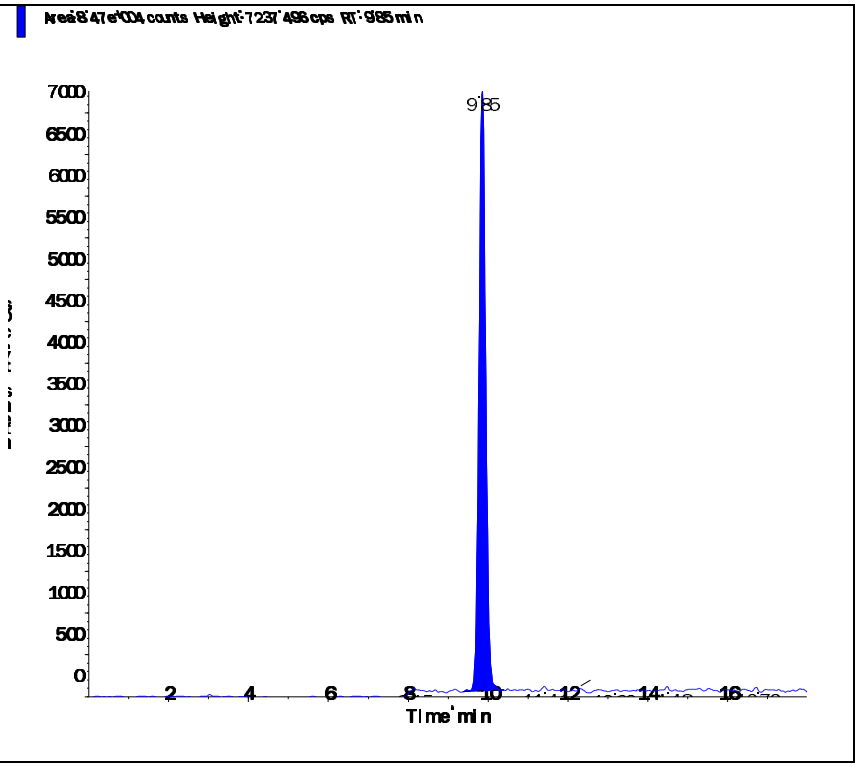

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Printed: 5/6/2016 1:54 PM

Data File	LM34741.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 10:37:07 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041582-03	**Injection Vial**	22.00
Data File	LM34741.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 10:37:07 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	L16041582-03	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.240e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.310e+05	9.84	N/A	2.44
Perchlorate conf	1.450e+05	9.83	N/A	2.46

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

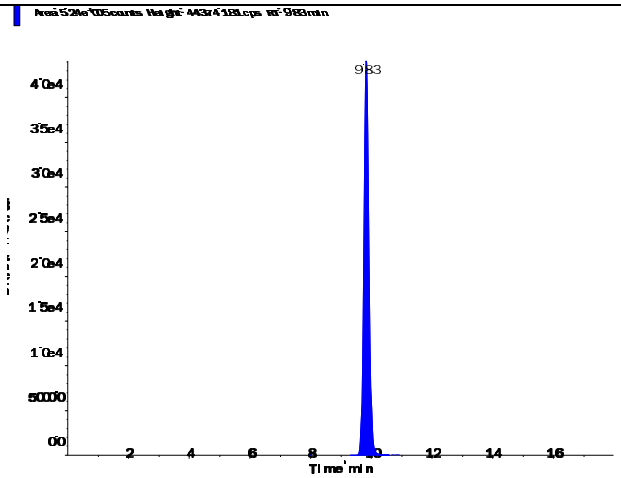

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Printed: 5/6/2016 1:54 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 2.44 ng/ml Area Ratio: 0.821 Sample Type: (Unknown)	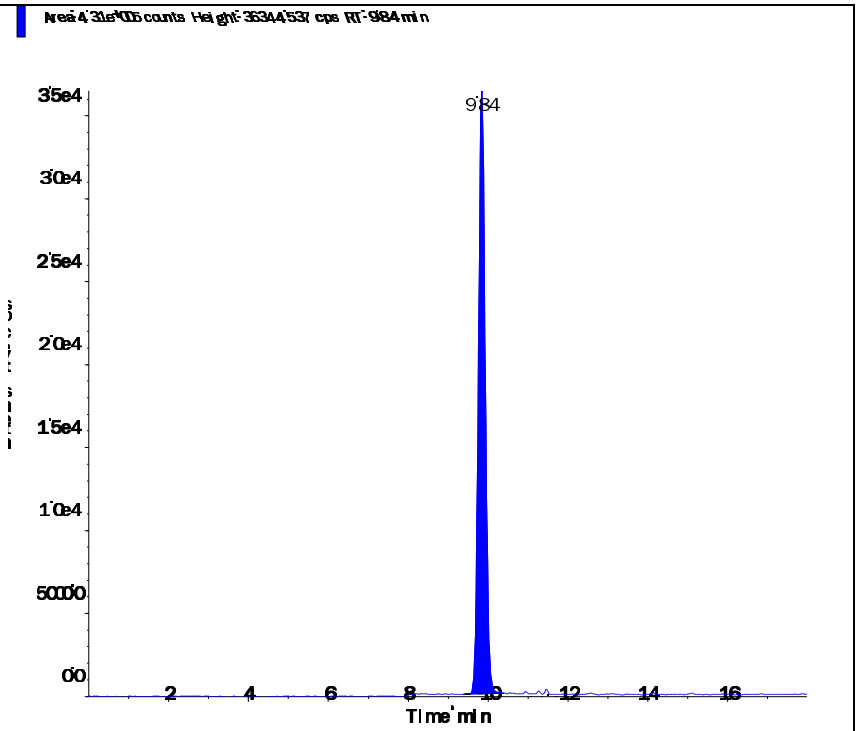
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 2.46 ng/ml Area Ratio: 0.277 Sample Type: (Unknown)	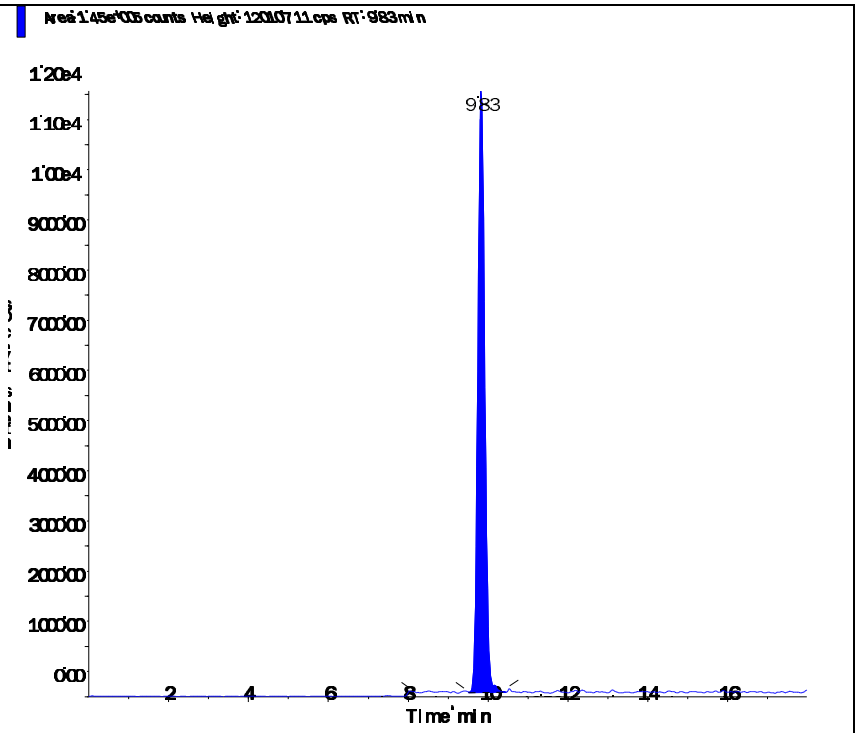

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Data File	LM34742.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 10:56:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041582-04	**Injection Vial**	23.00
Data File	LM34742.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 10:56:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	L16041582-04	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.240e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.550e+03	9.83	N/A	0.0277
Perchlorate conf	2.140e+03	9.83	N/A	0.0162

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

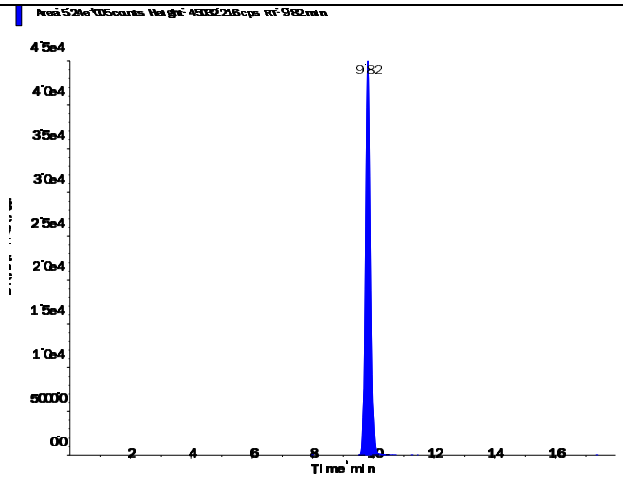

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.0277 ng/ml
Area Ratio:	0.011
Sample Type:	(Unknown)

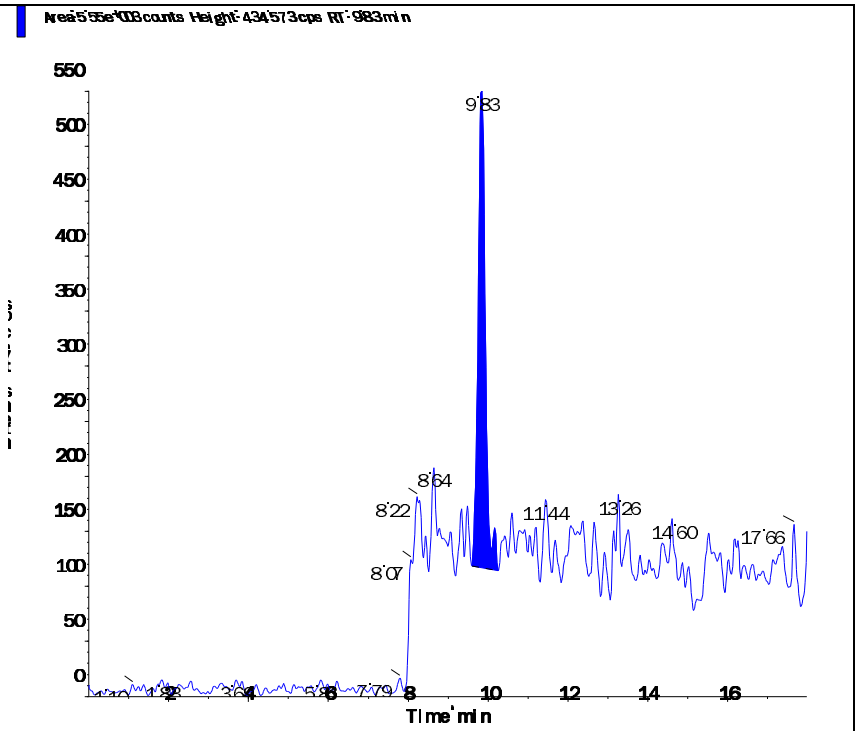

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.0162 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)

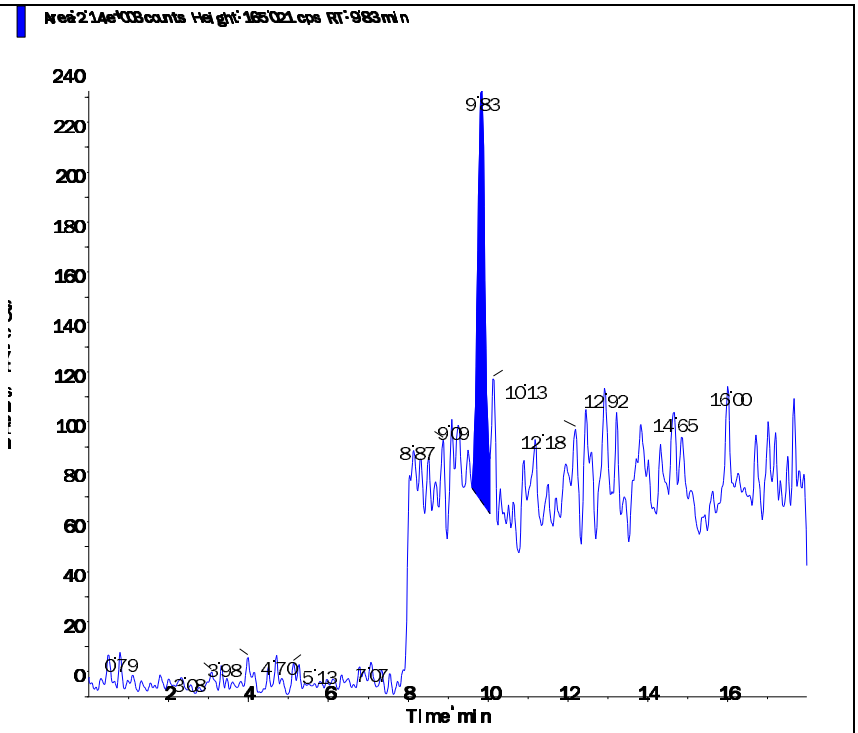

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Data File	LM34746.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 12:11:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041582-05	**Injection Vial**	24.00
Data File	LM34746.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 12:11:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	L16041582-05	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.180e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

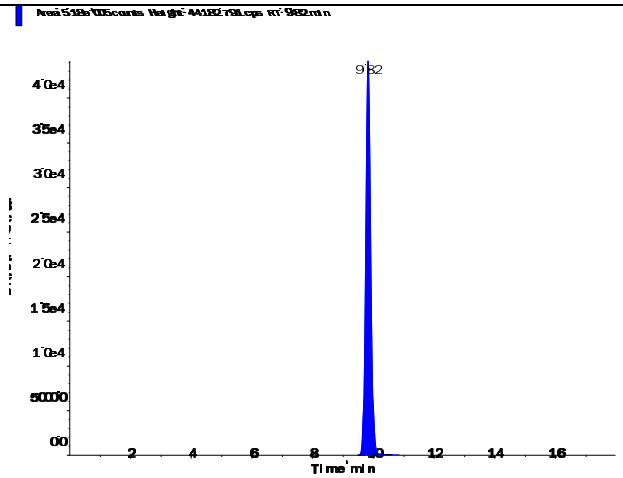

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

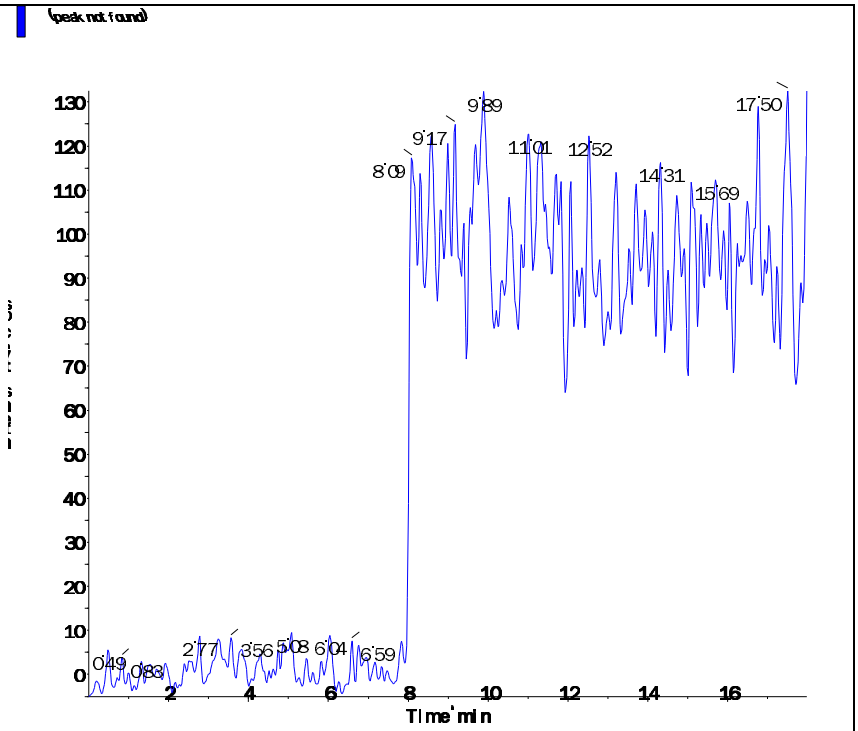

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

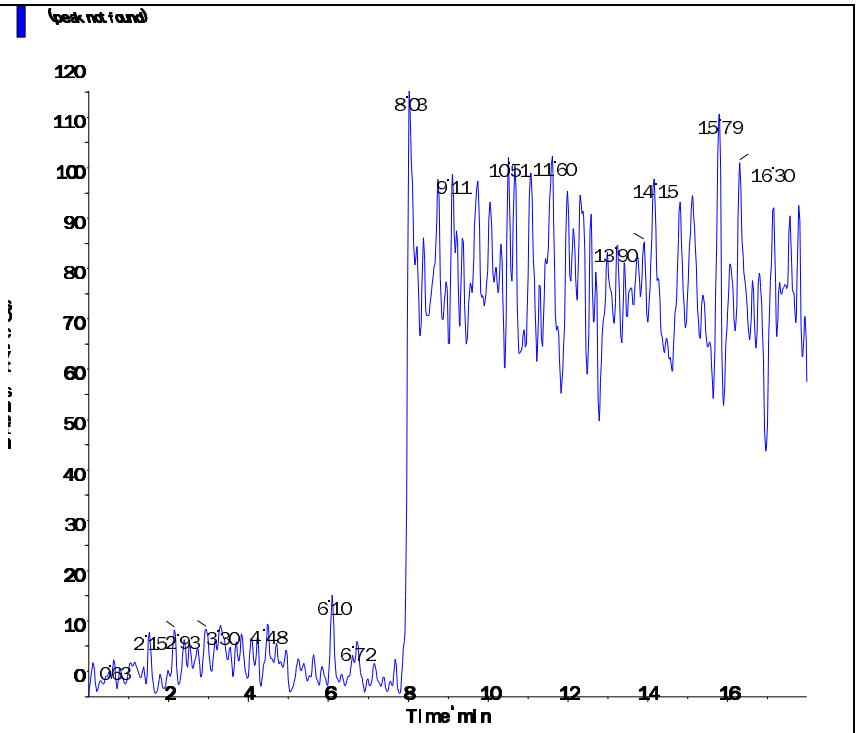

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Data File	LM34747.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 12:30:40 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041582-06	**Injection Vial**	25.00
Data File	LM34747.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 12:30:40 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	L16041582-06	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.200e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.400e+03	9.84	N/A	0.0042
Perchlorate conf	5.490e+02	9.85	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

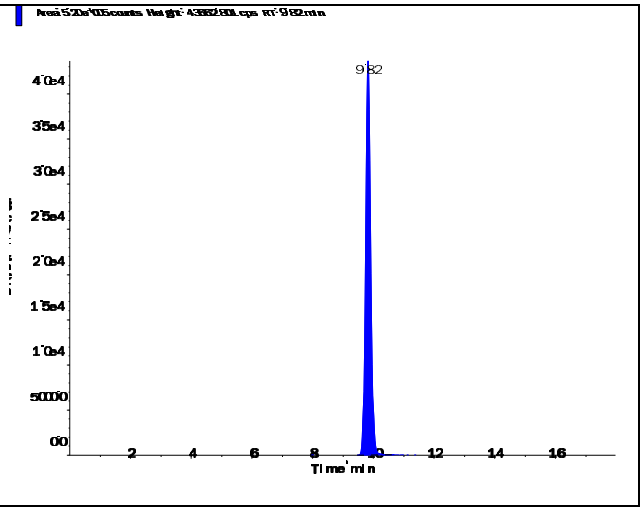

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.0042 ng/ml
Area Ratio:	0.003
Sample Type:	(Unknown)

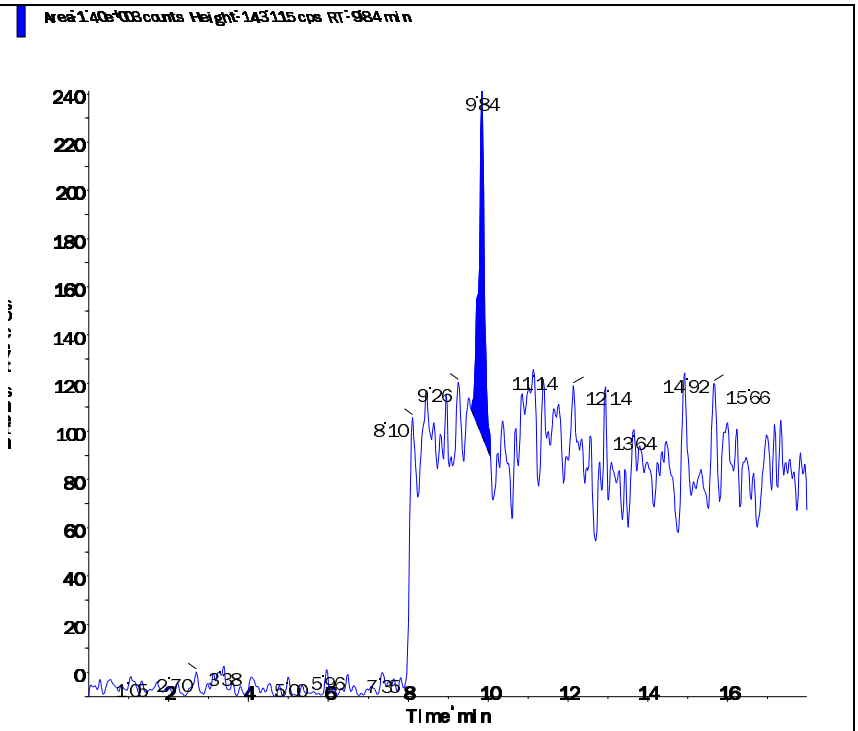

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

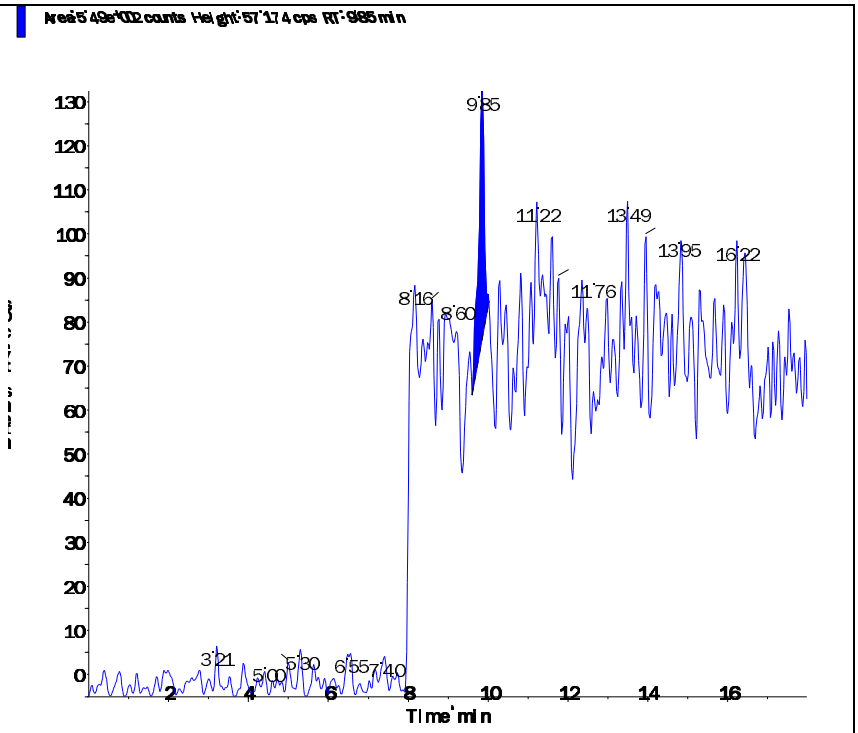

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Data File	LM34748.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 12:49:35 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041582-07	**Injection Vial**	26.00
Data File	LM34748.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 12:49:35 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	L16041582-07	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.350e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	2.360e+02	10.10	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

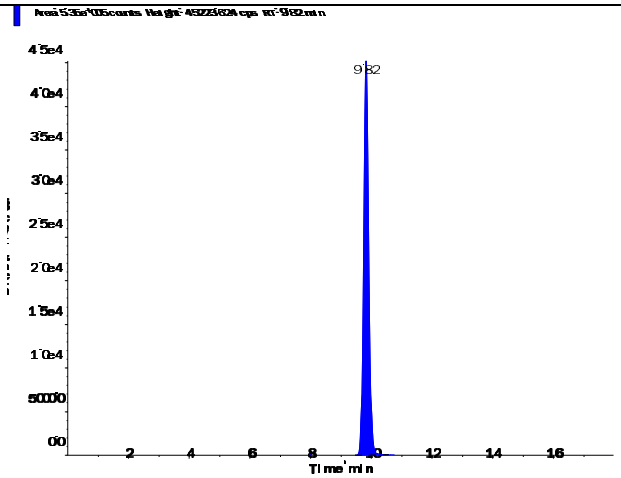

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

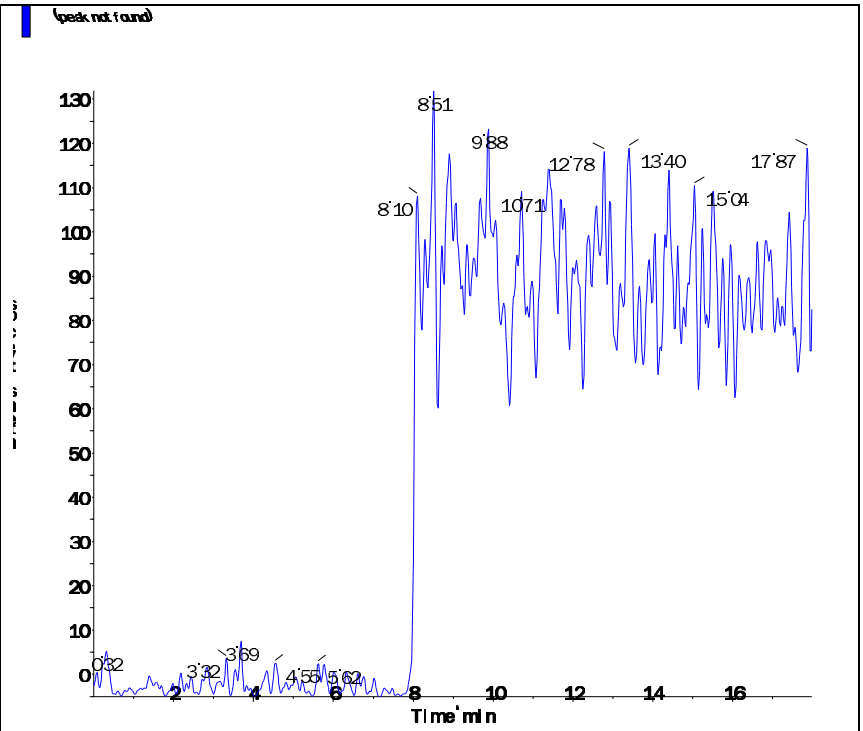

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.10 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

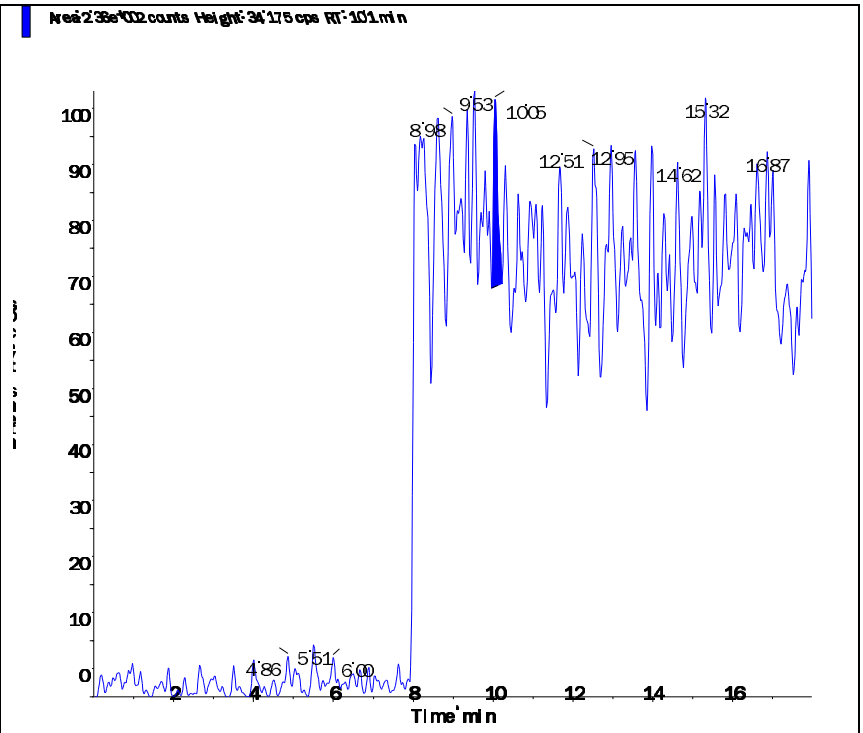

2.2.1.4 Standards Data

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Printed: 5/9/2016 3:31 PM

Data File	LM34686.wiff	**Result Table**	050616_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050616_JWR.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

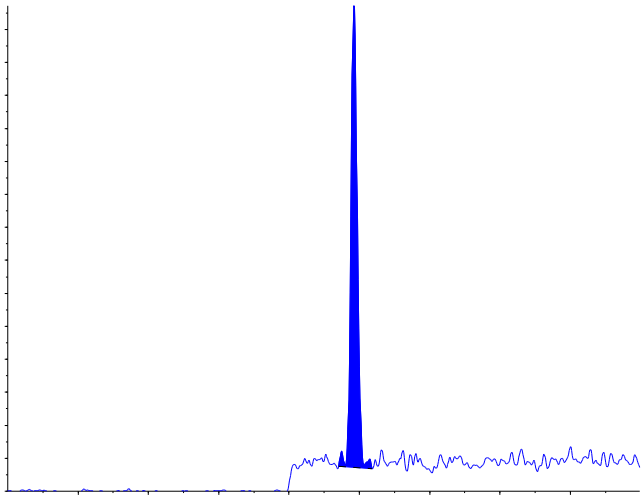

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	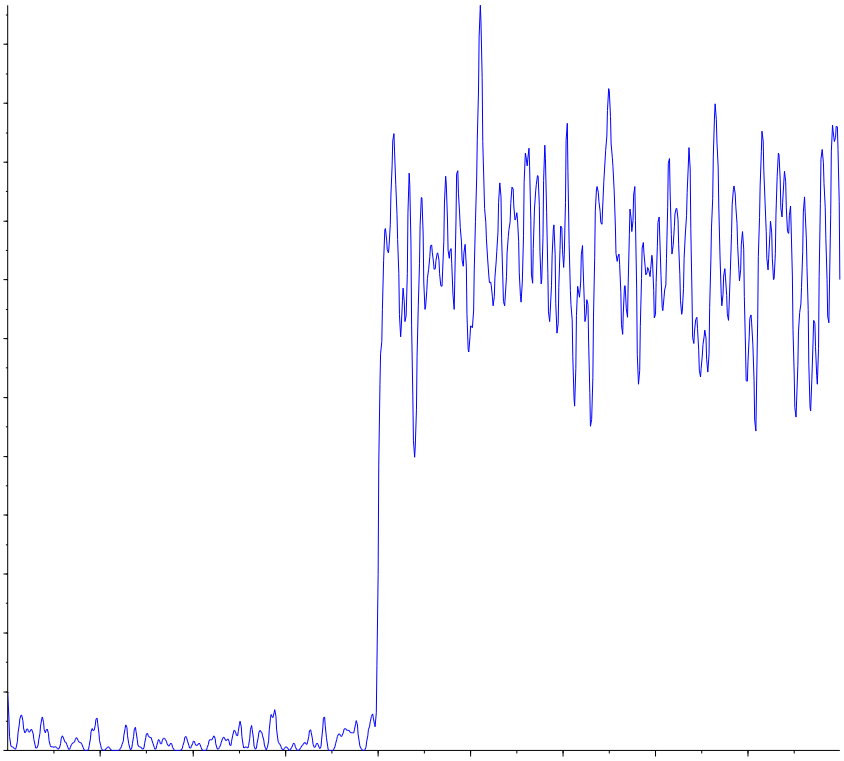
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	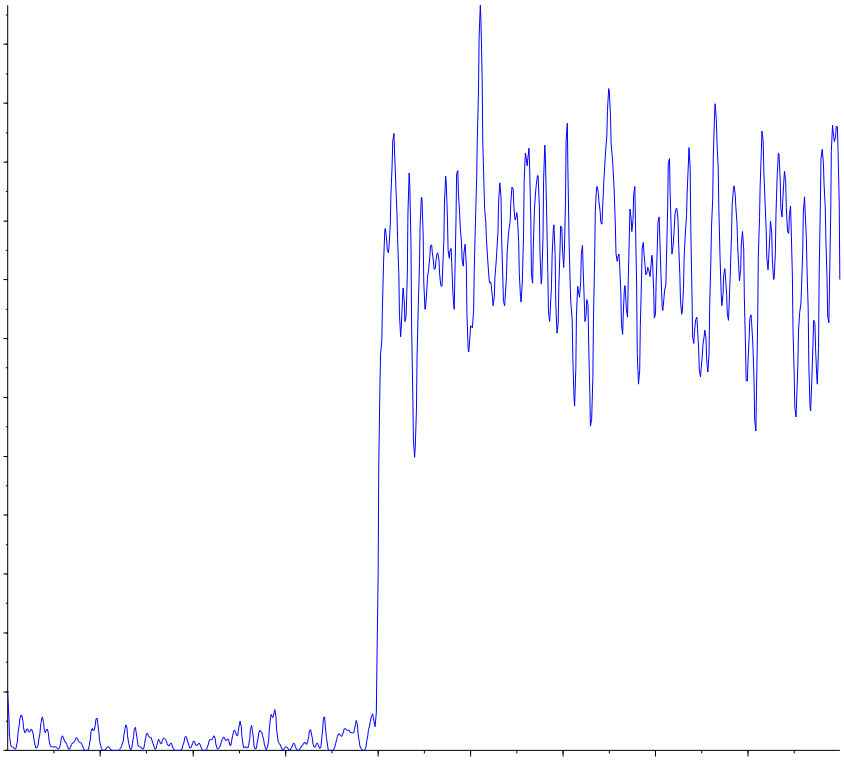

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Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

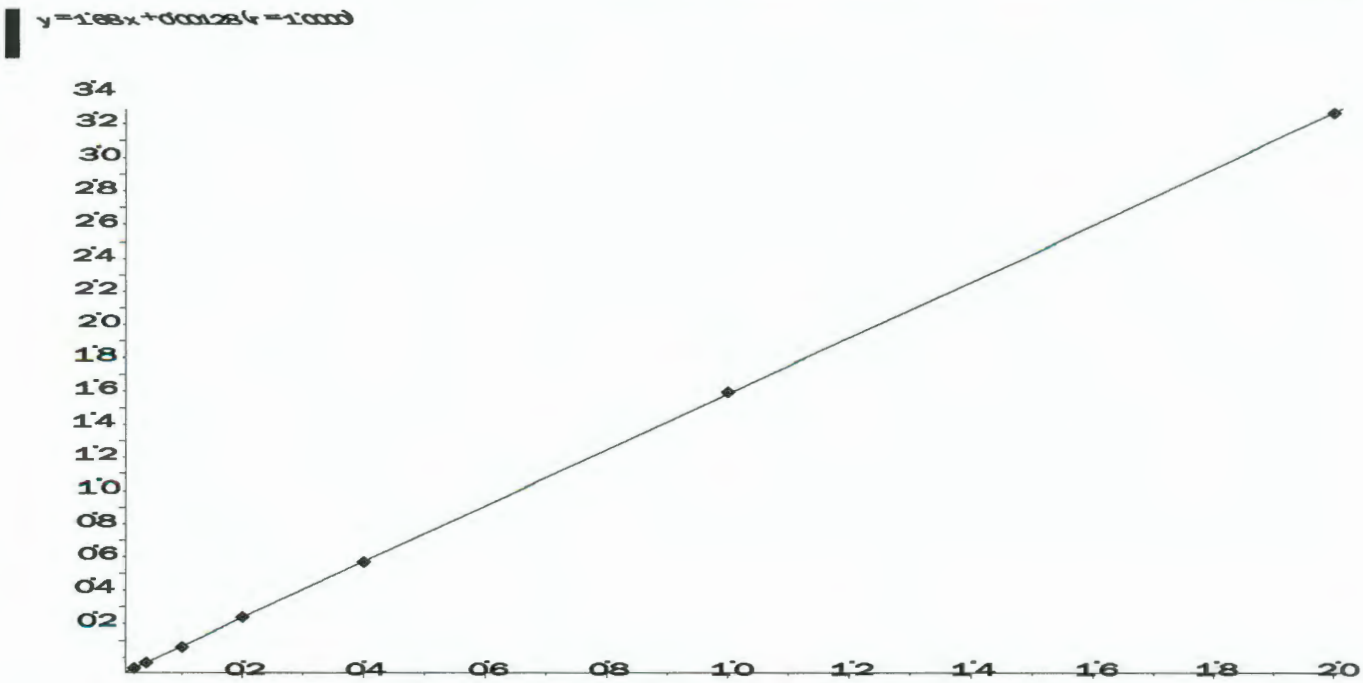

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Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

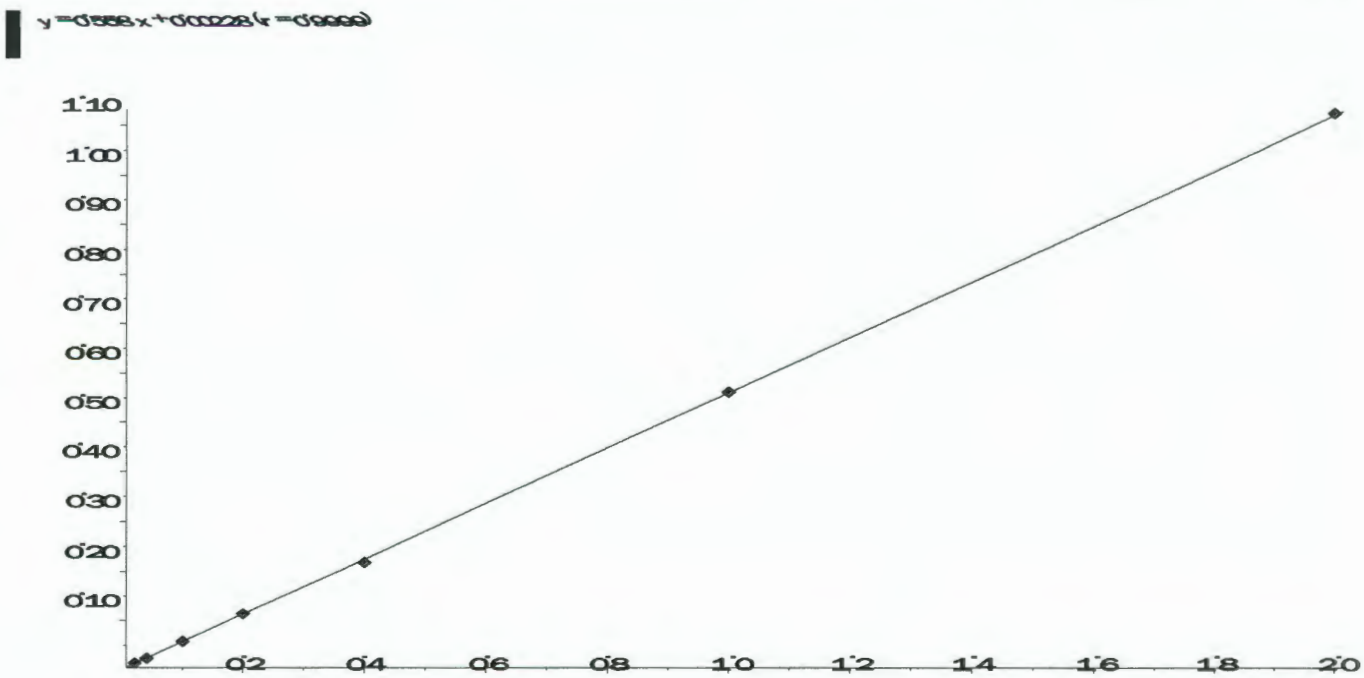

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Data File	LM34687.wiff	**Result Table**	050616_JWR.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050616_JWR.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

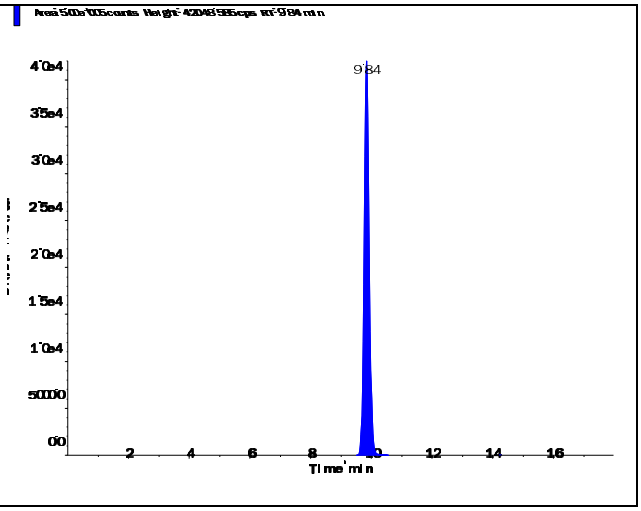

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.103 ng/ml
Area Ratio:	0.036
Sample Type:	(Standard)

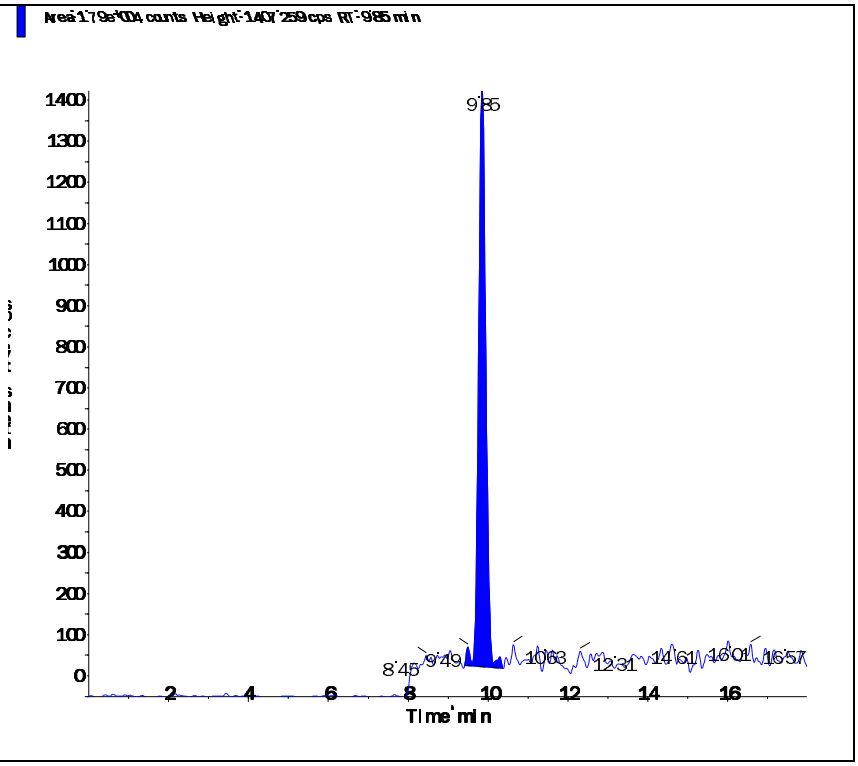

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.104 ng/ml
Area Ratio:	0.014
Sample Type:	(Standard)

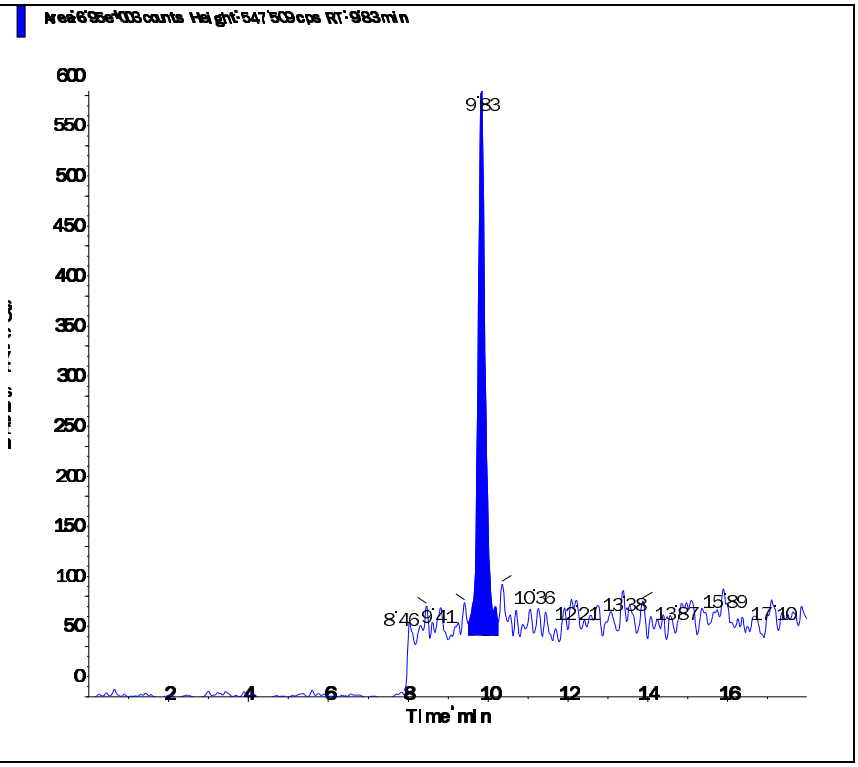

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Data File	LM34688.wiff	**Result Table**	050616_JWR.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050616_JWR.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

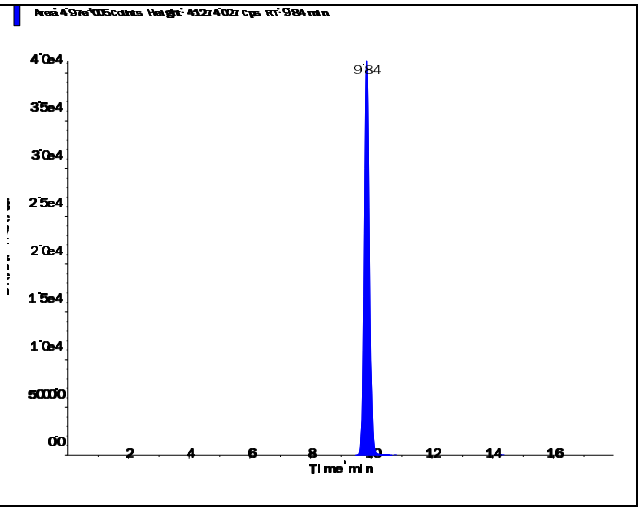

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

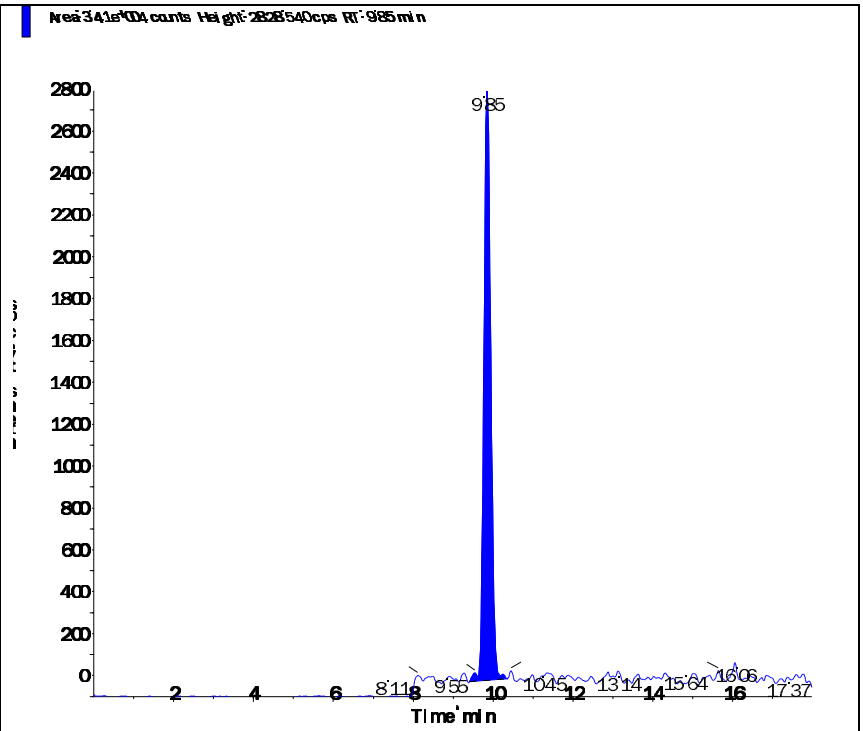

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

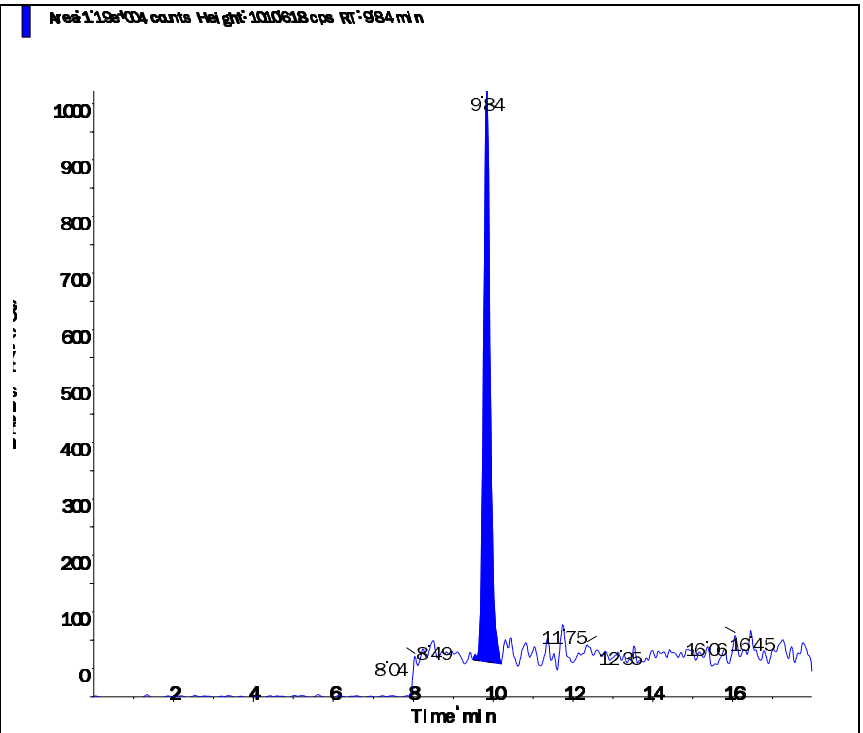

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Data File	LM34689.wiff	**Result Table**	050616_JWR.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050616_JWR.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

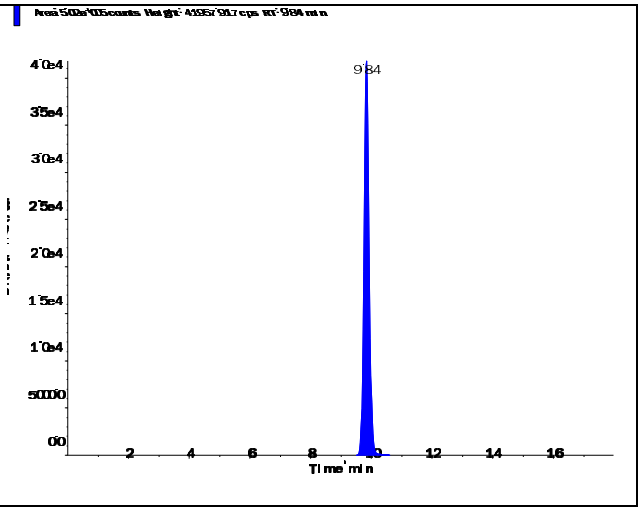

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.483 ng/ml
Area Ratio:	0.164
Sample Type:	(Standard)

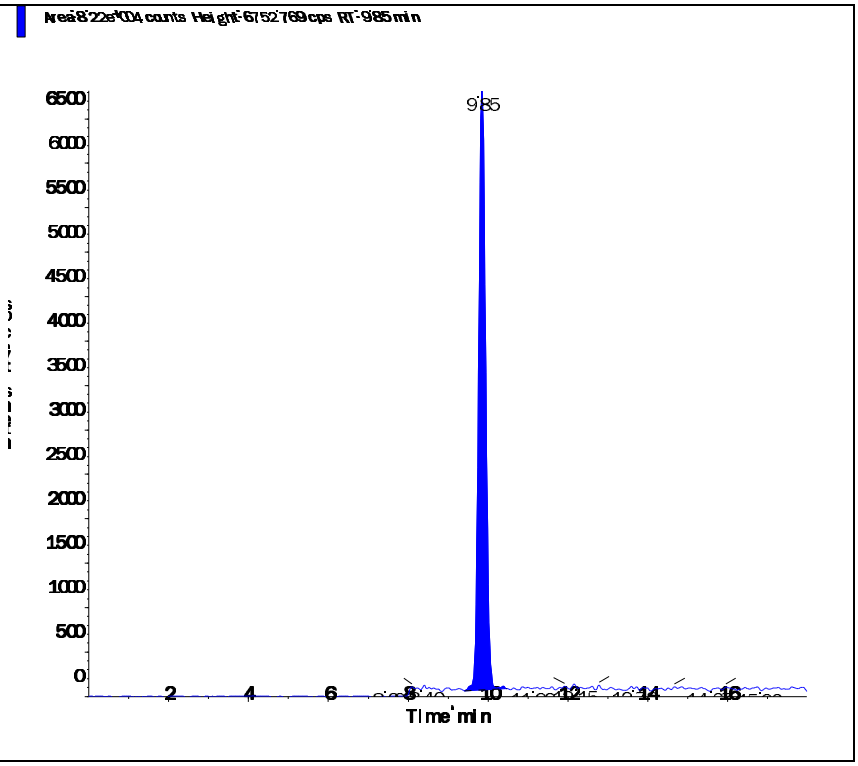

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.503 ng/ml
Area Ratio:	0.058
Sample Type:	(Standard)

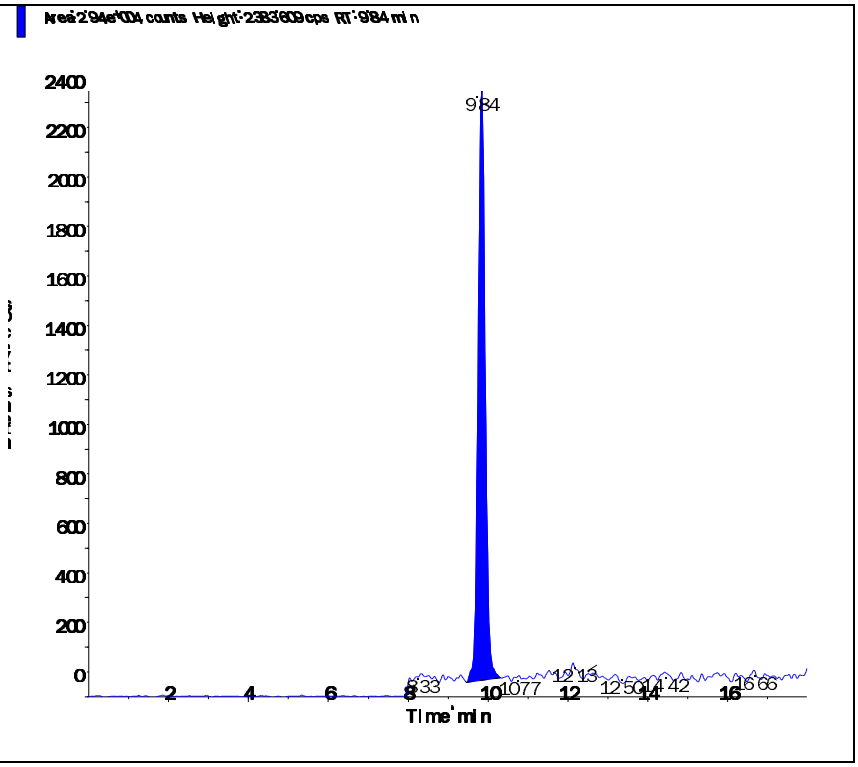

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Data File	LM34690.wiff	**Result Table**	050616_JWR.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050616_JWR.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

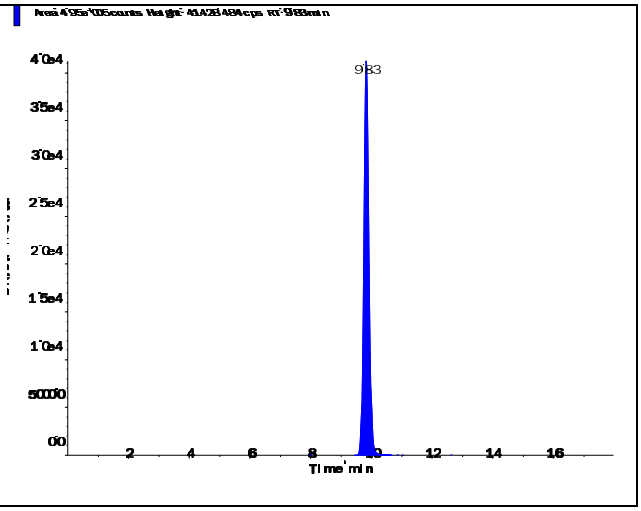

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

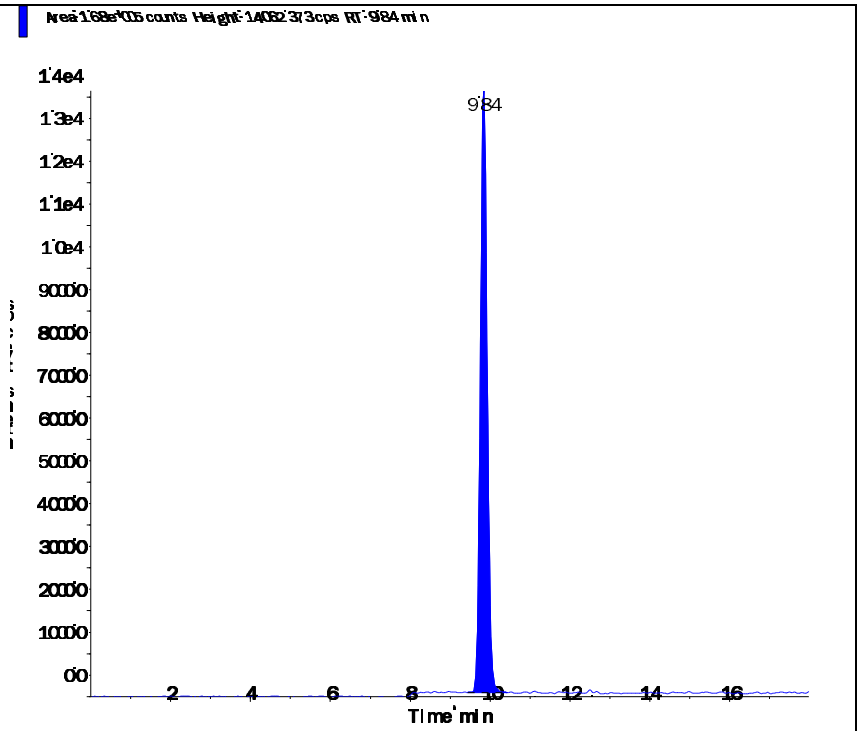

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

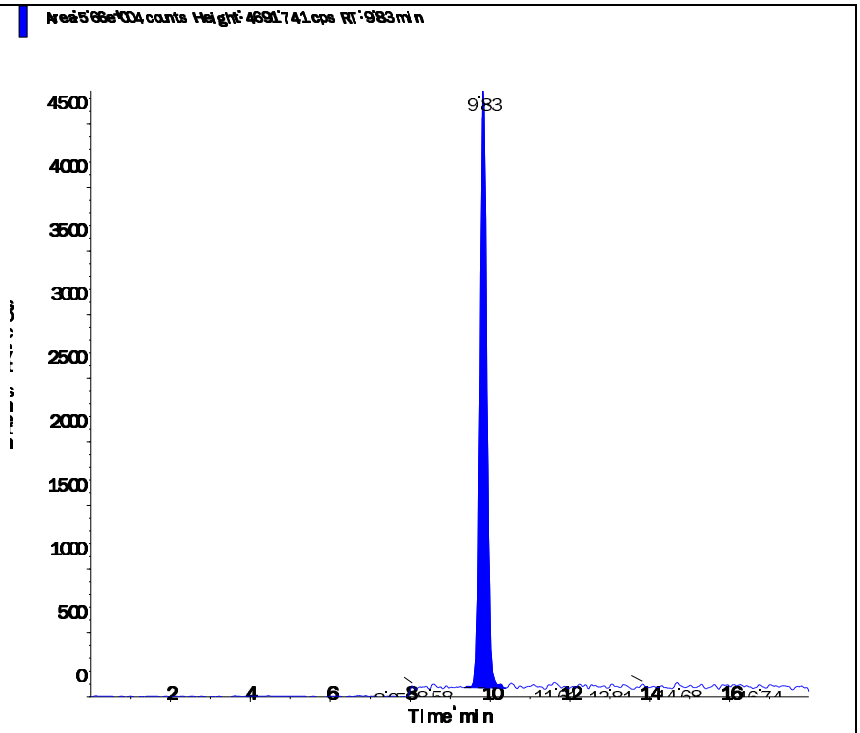

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Data File	LM34691.wiff	**Result Table**	050616_JWR.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050616_JWR.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

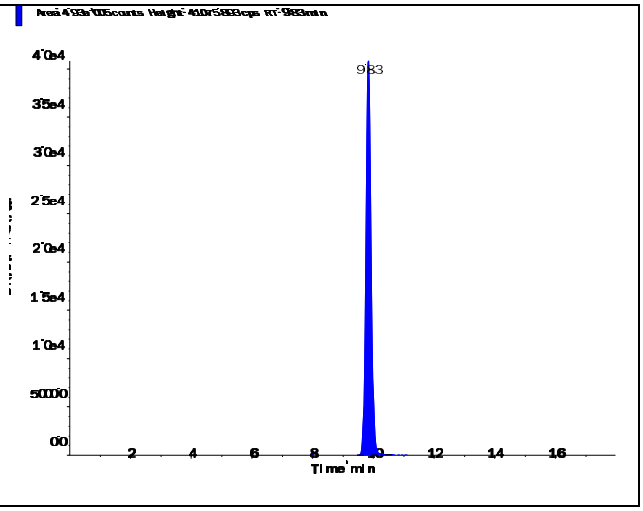

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 1.99 ng/ml Area Ratio: 0.669 Sample Type: (Standard)	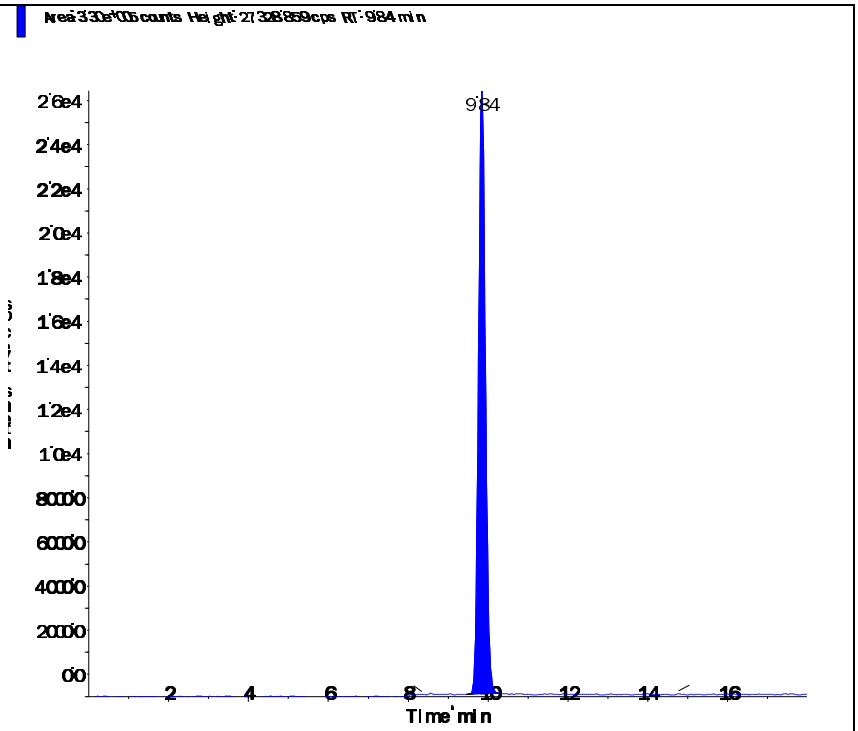
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 1.94 ng/ml Area Ratio: 0.219 Sample Type: (Standard)	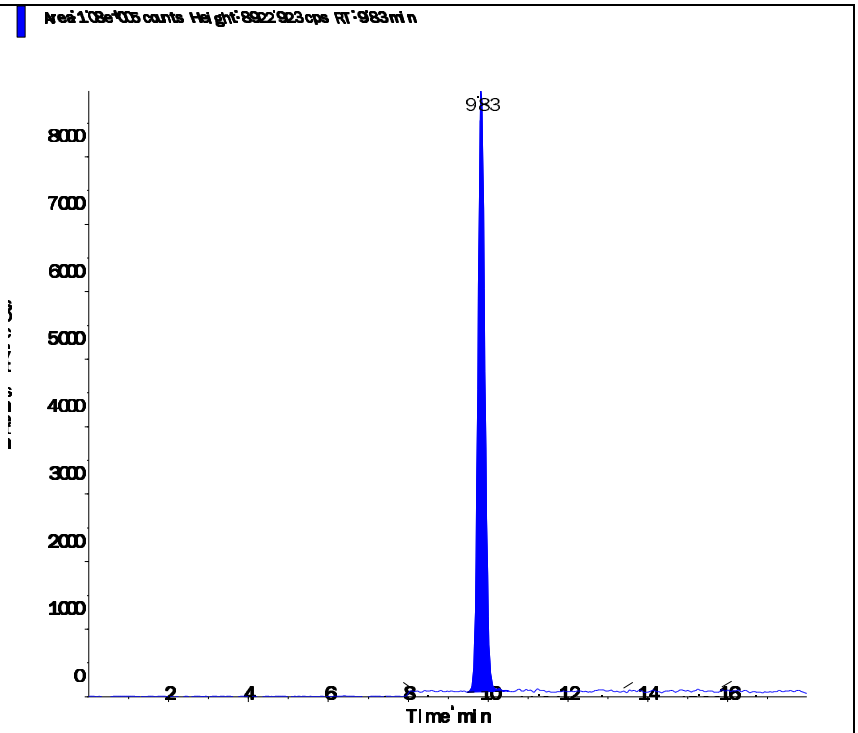

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Data File	LM34692.wiff	**Result Table**	050616_JWR.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050616_JWR.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

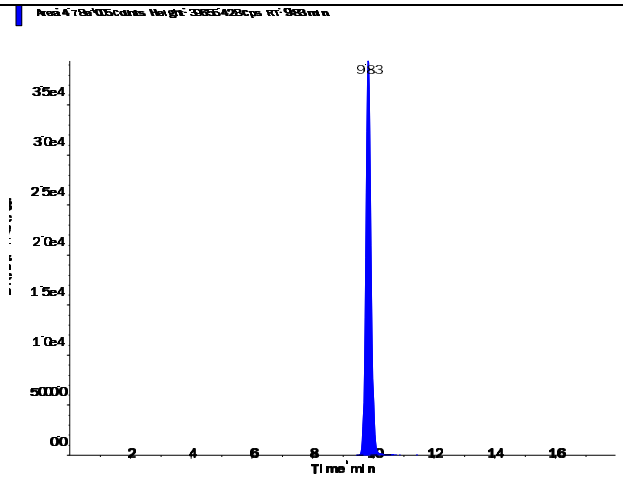

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

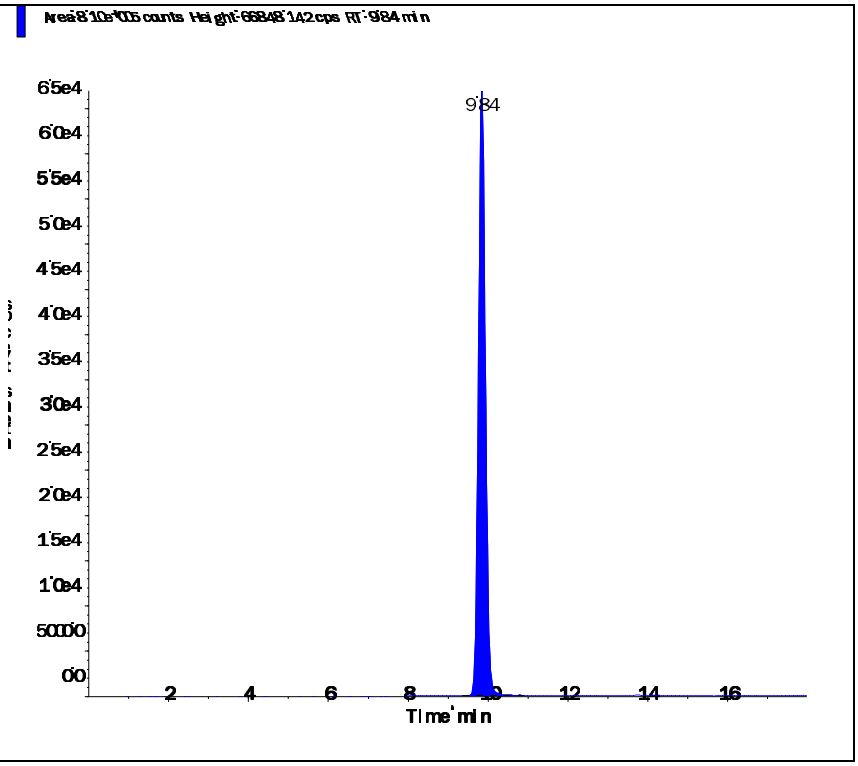

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

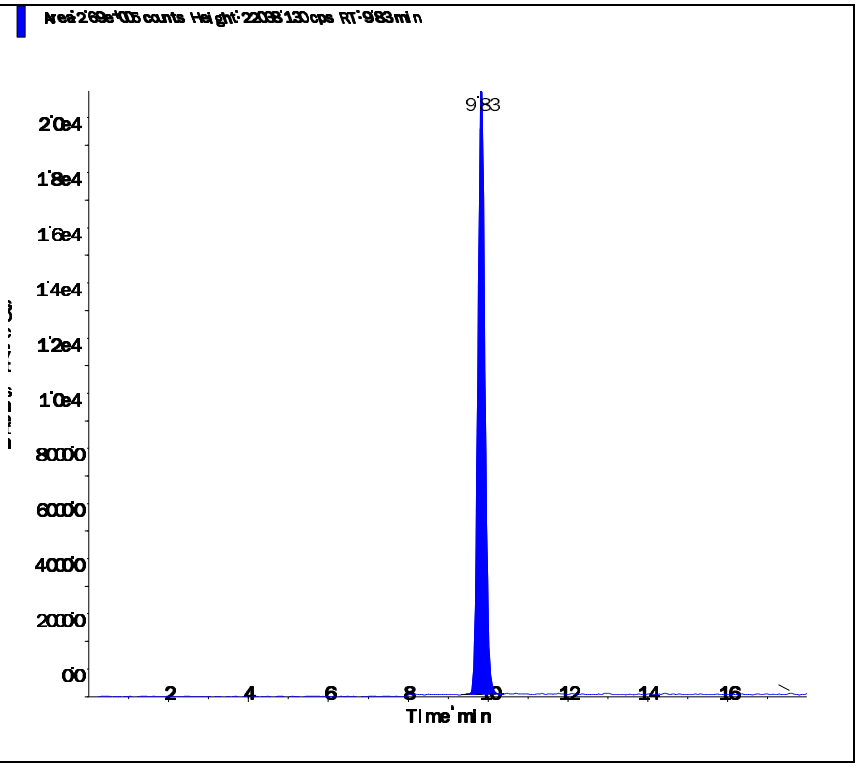

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Data File	LM34693.wiff	**Result Table**	050616_JWR.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050616_JWR.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

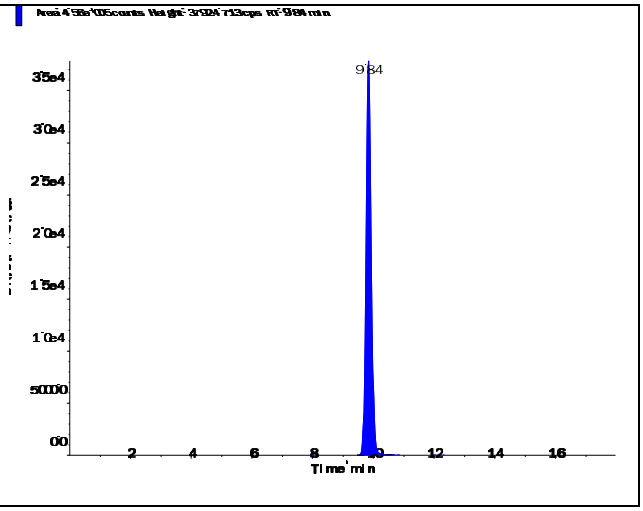

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	9.99 ng/ml
Area Ratio:	3.36
Sample Type:	(Standard)

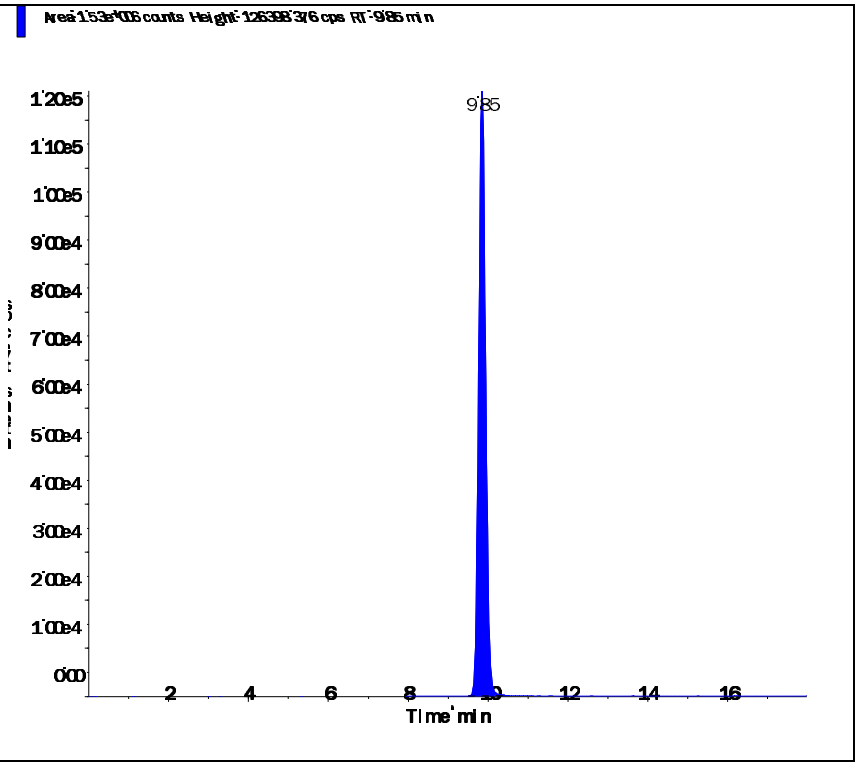

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	10.00 ng/ml
Area Ratio:	1.122
Sample Type:	(Standard)

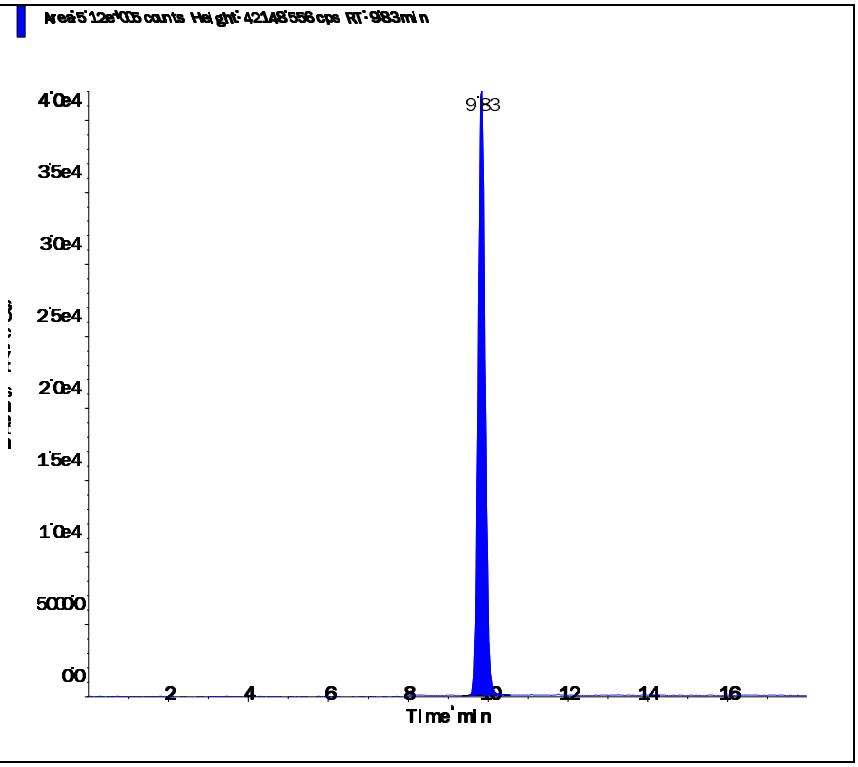

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Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

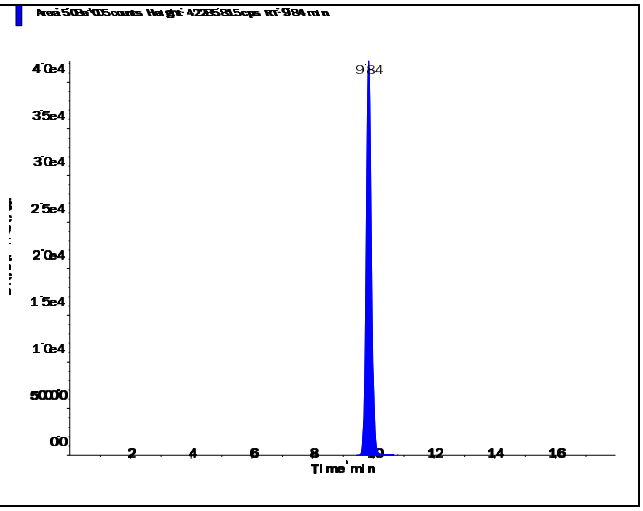

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.332
Sample Type:	(Quality Control)

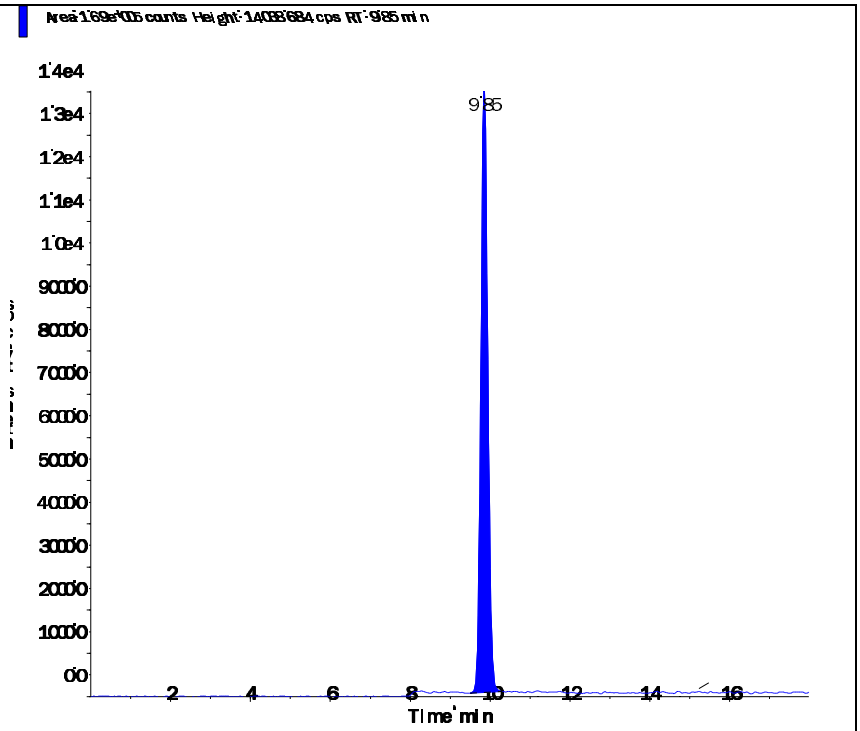

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

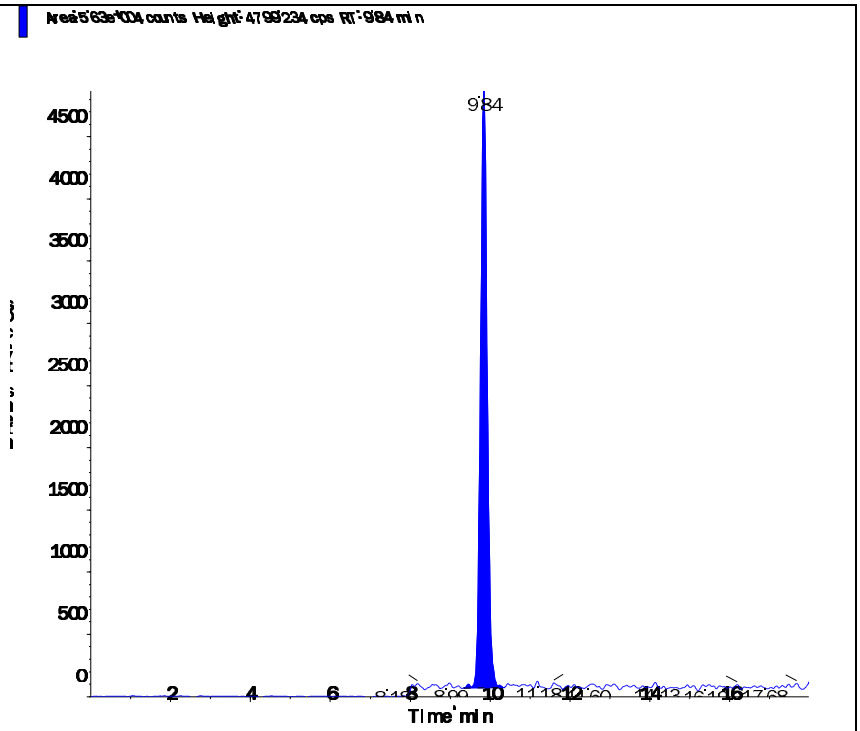

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Data File	LM34718.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 3:21:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567549-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM34718.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 3:21:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567549-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.250e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.430e+05	9.84	1.00	0.996
Perchlorate conf	4.780e+04	9.83	1.00	0.989

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

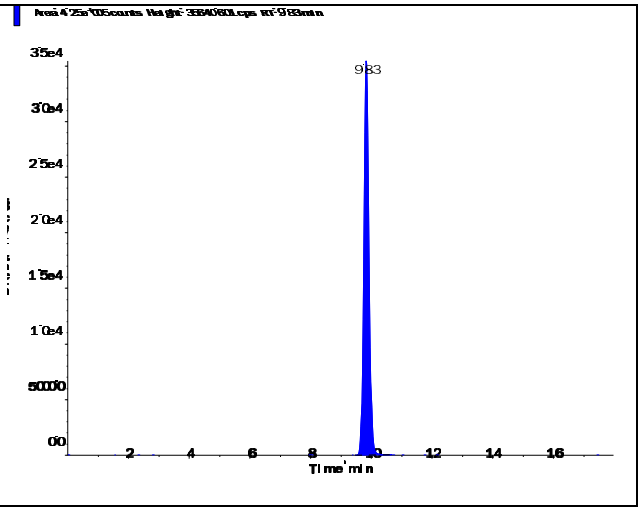

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.996 ng/ml
Area Ratio:	0.336
Sample Type:	(Quality Control)

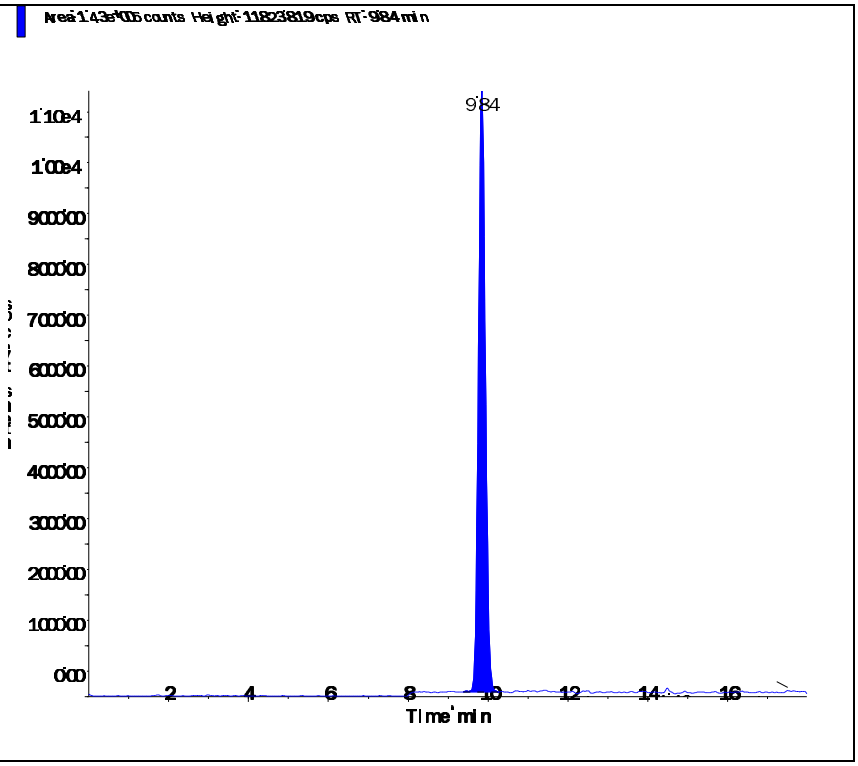

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.989 ng/ml
Area Ratio:	0.113
Sample Type:	(Quality Control)

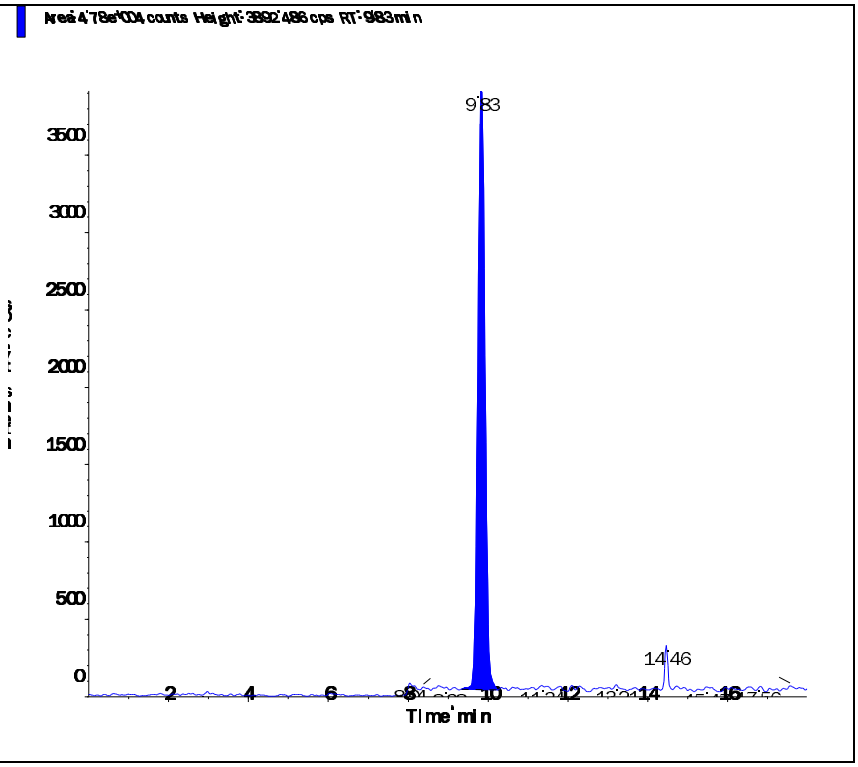

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Data File	LM34730.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 7:08:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567549-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM34730.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 7:08:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567549-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.610e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.590e+05	9.84	1.00	1.02
Perchlorate conf	5.320e+04	9.83	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

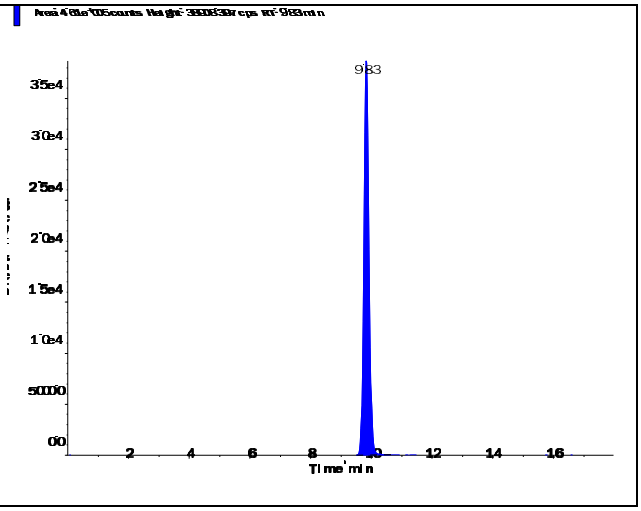

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.344
Sample Type:	(Quality Control)

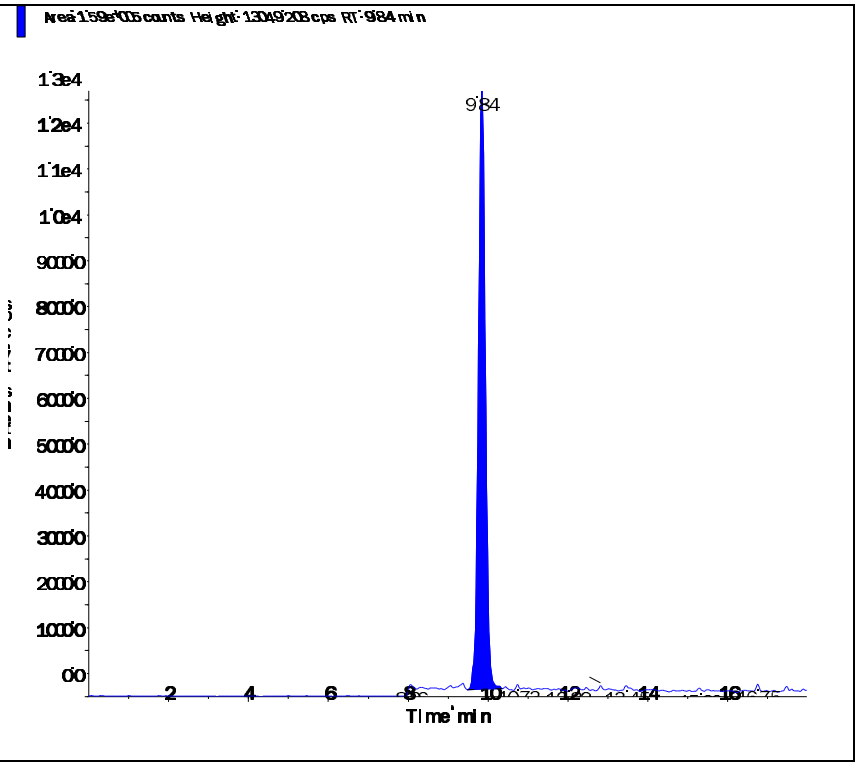

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.115
Sample Type:	(Quality Control)

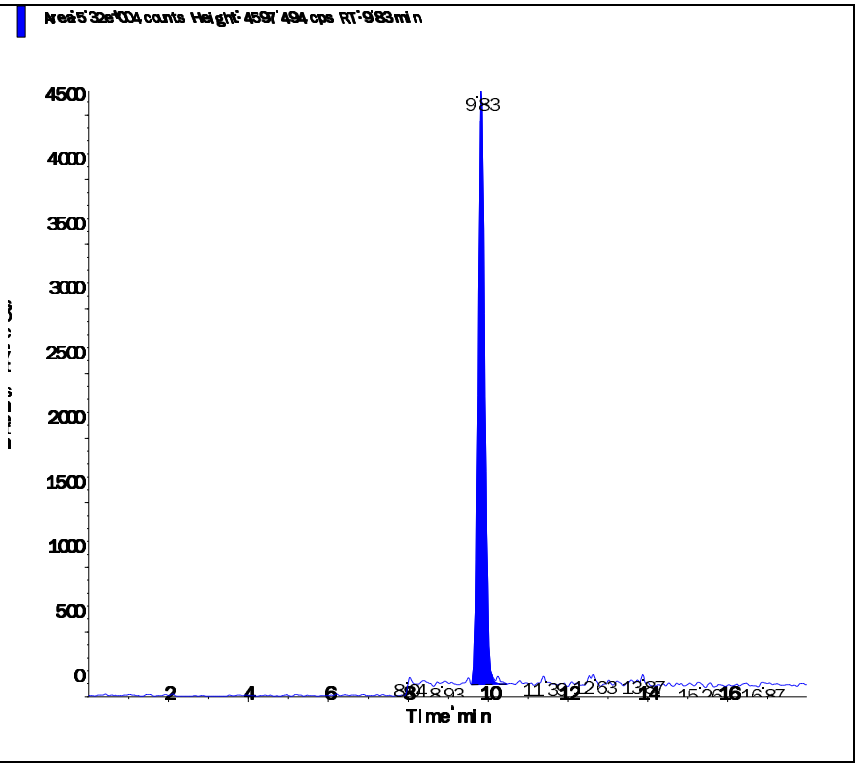

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Data File	LM34743.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 11:14:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567549-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM34743.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 11:14:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567549-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.230e+05	9.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.780e+05	9.82	1.00	1.01
Perchlorate conf	5.820e+04	9.81	1.00	0.977

O18LP (Internal Standard)

RT (Exp. RT): 9.80(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

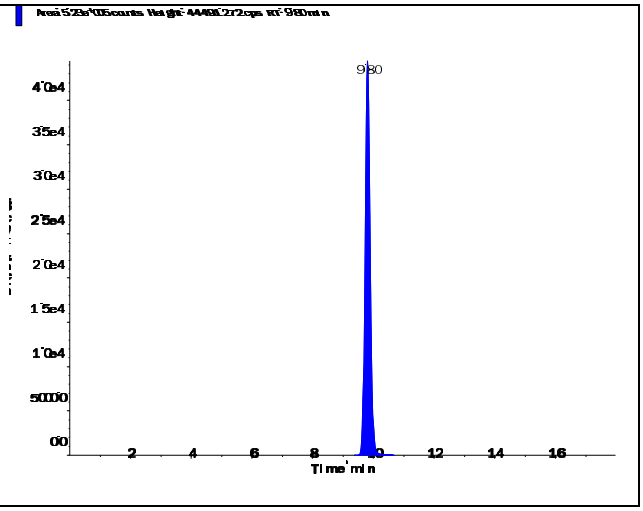

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.341
Sample Type:	(Quality Control)

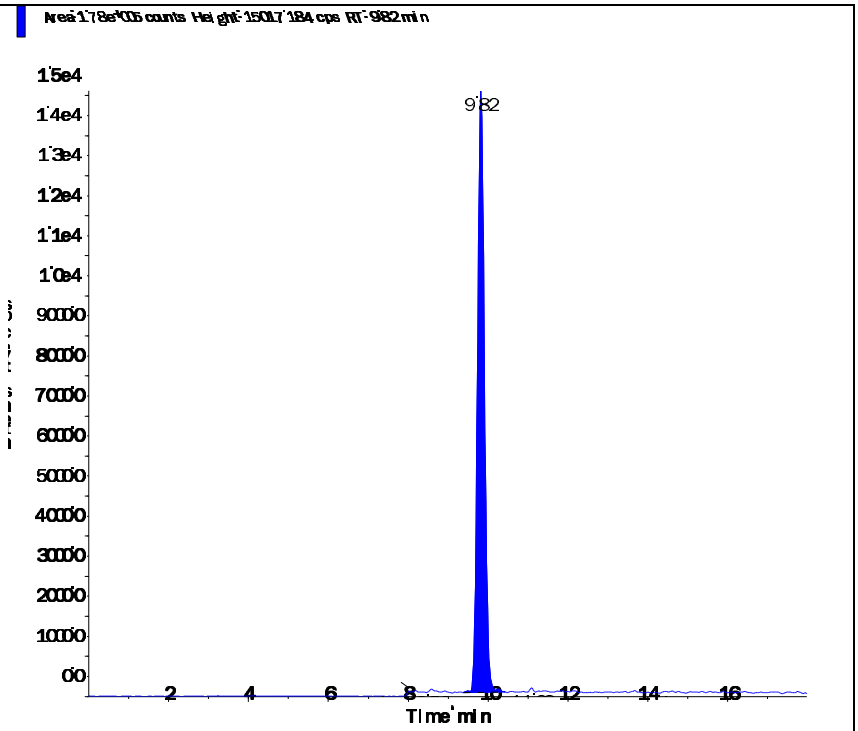

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.81 (9.84) min
Calculated conc:	0.977 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

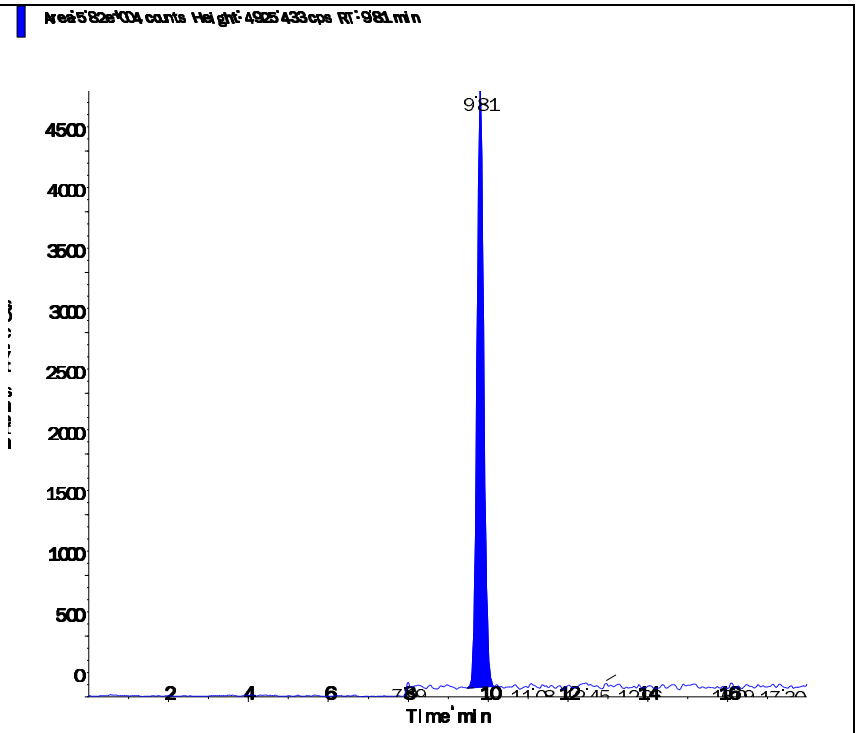

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Data File	LM34749.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 1:08:31 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567549-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM34749.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 1:08:31 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567549-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.280e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.770e+05	9.82	1.00	0.99
Perchlorate conf	5.980e+04	9.81	1.00	0.994

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

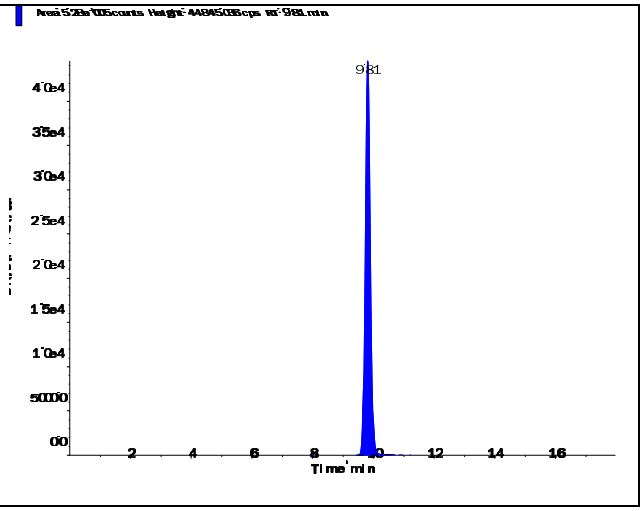

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	0.99 ng/ml
Area Ratio:	0.334
Sample Type:	(Quality Control)

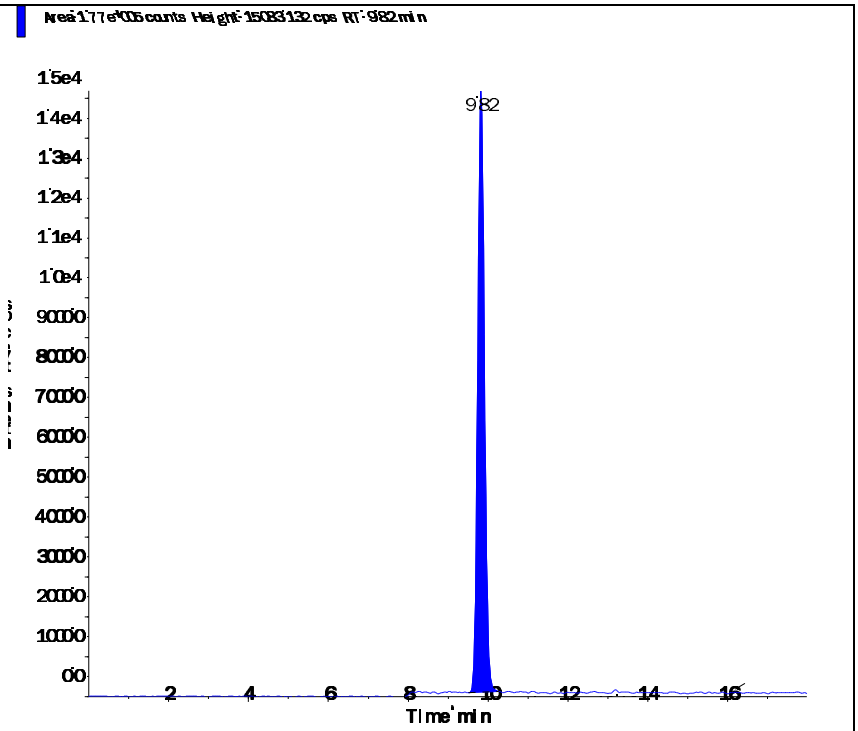

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.81 (9.84) min
Calculated conc:	0.994 ng/ml
Area Ratio:	0.113
Sample Type:	(Quality Control)

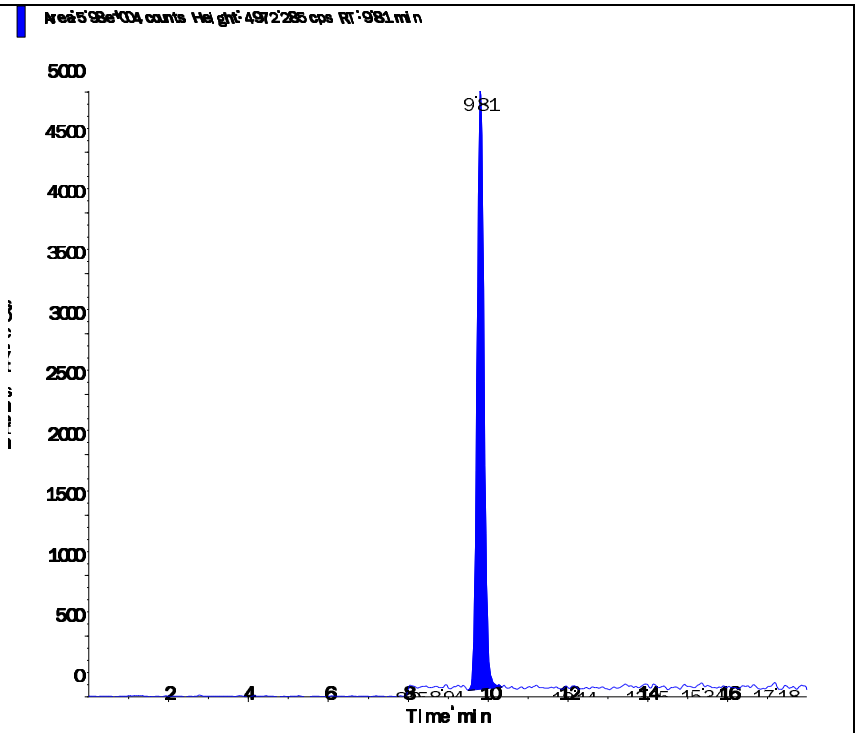

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Data File	LM34752.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 12:54:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567549-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM34752.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 12:54:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567549-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.620e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.560e+05	9.83	1.00	0.998
Perchlorate conf	5.500e+04	9.81	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

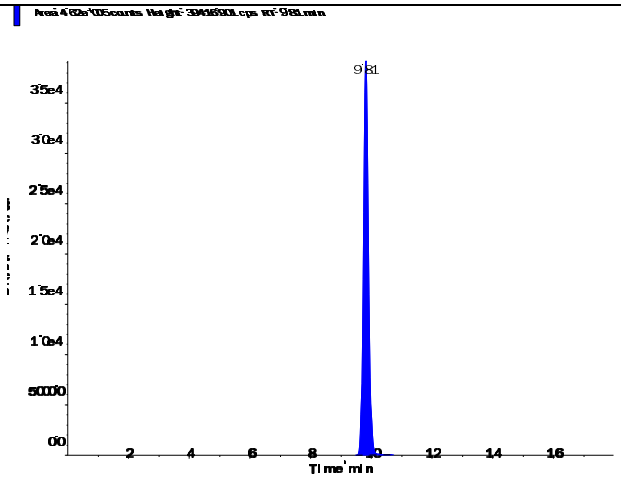

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.998 ng/ml
Area Ratio:	0.337
Sample Type:	(Quality Control)

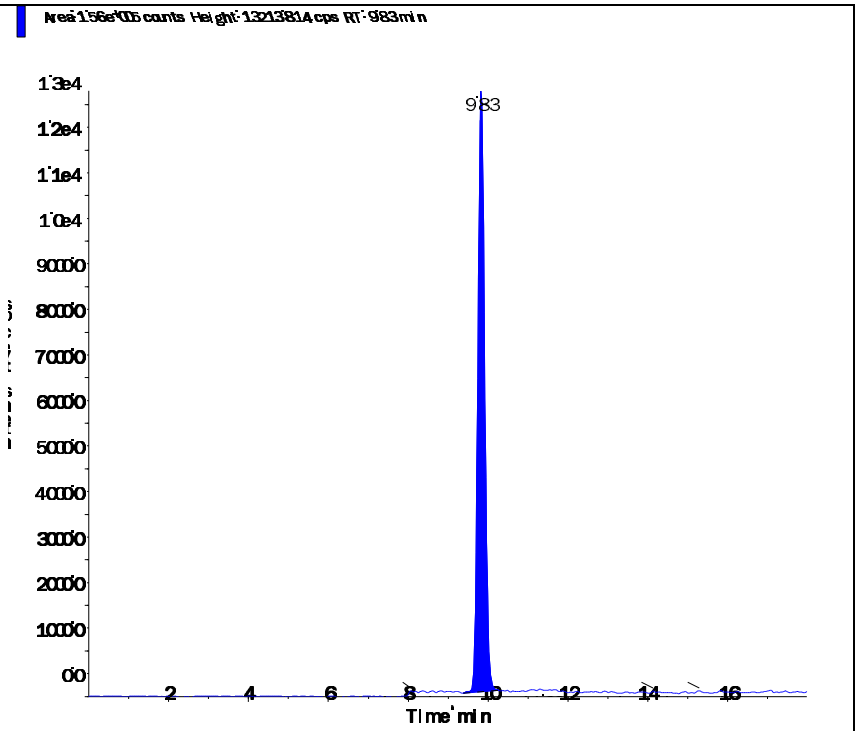

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.81 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

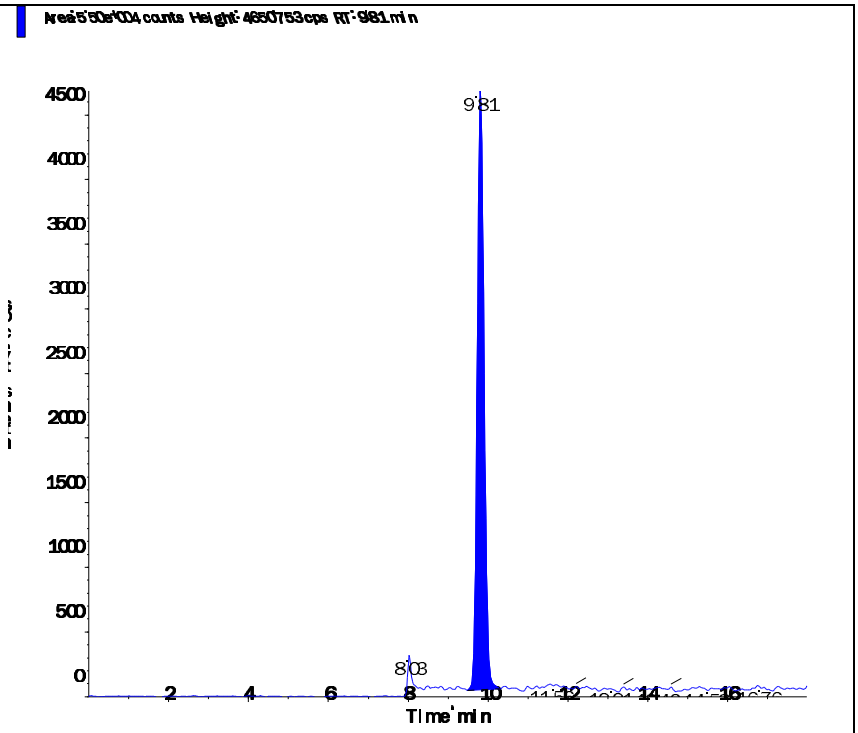

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Data File	LM34759.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 3:06:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567549-11 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM34759.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 3:06:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567549-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.150e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.740e+05	9.83	1.00	1.00
Perchlorate conf	5.910e+04	9.82	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

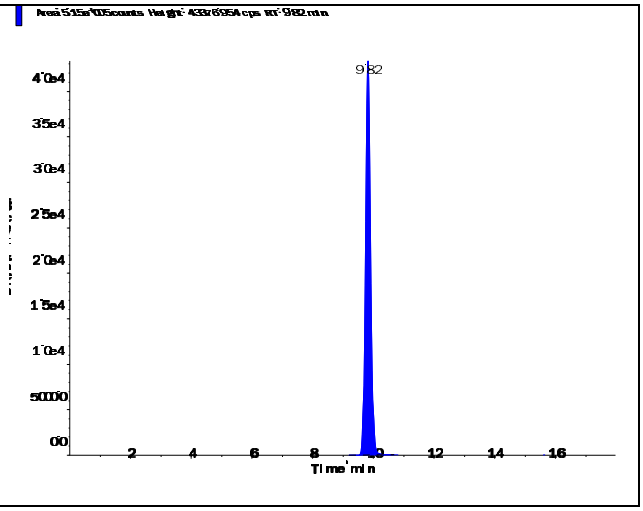

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.339
Sample Type:	(Quality Control)

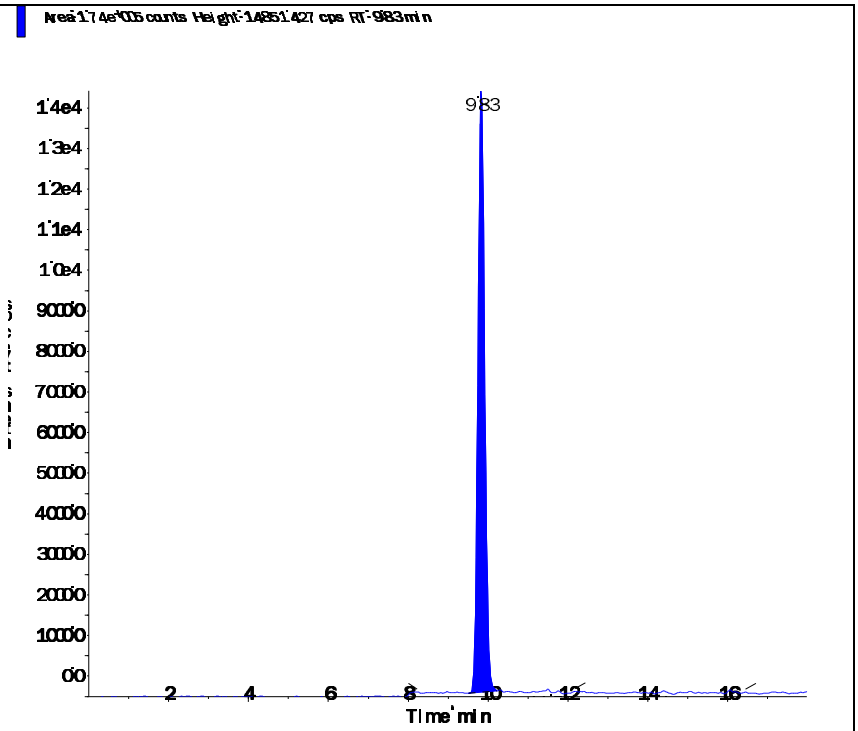

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.115
Sample Type:	(Quality Control)

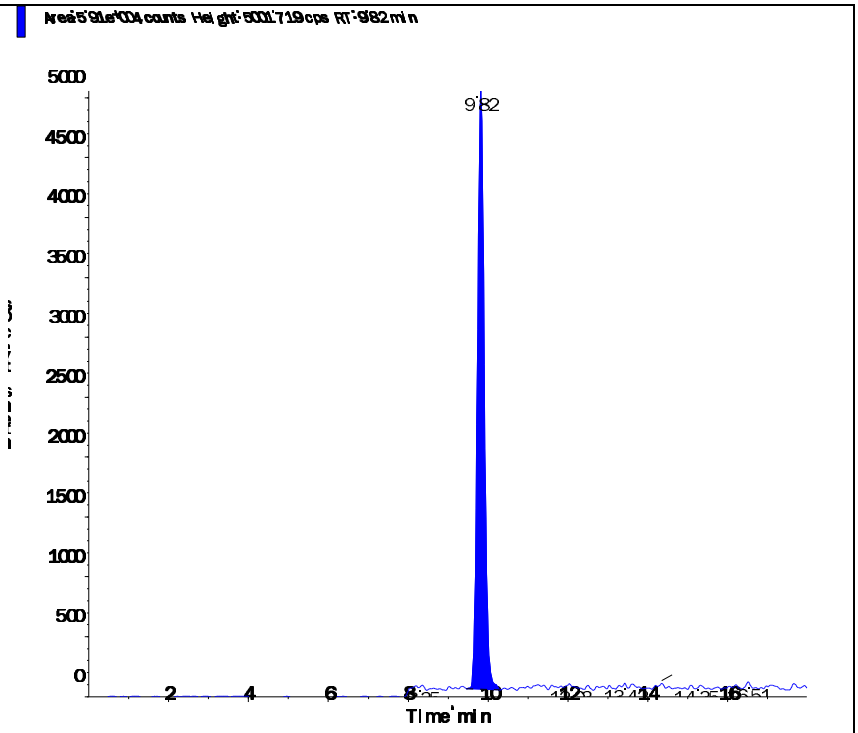

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Data File	LM34719.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 3:40:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567224-07 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM34719.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 3:40:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567224-07	**Dilution Factor**	1.00
Sample Comment	7,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.350e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.990e+04	9.84	N/A	0.201
Perchlorate conf	1.030e+04	9.83	N/A	0.193

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

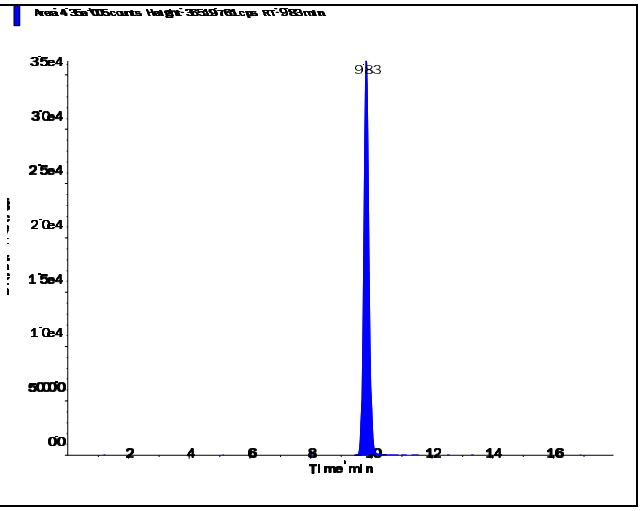

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

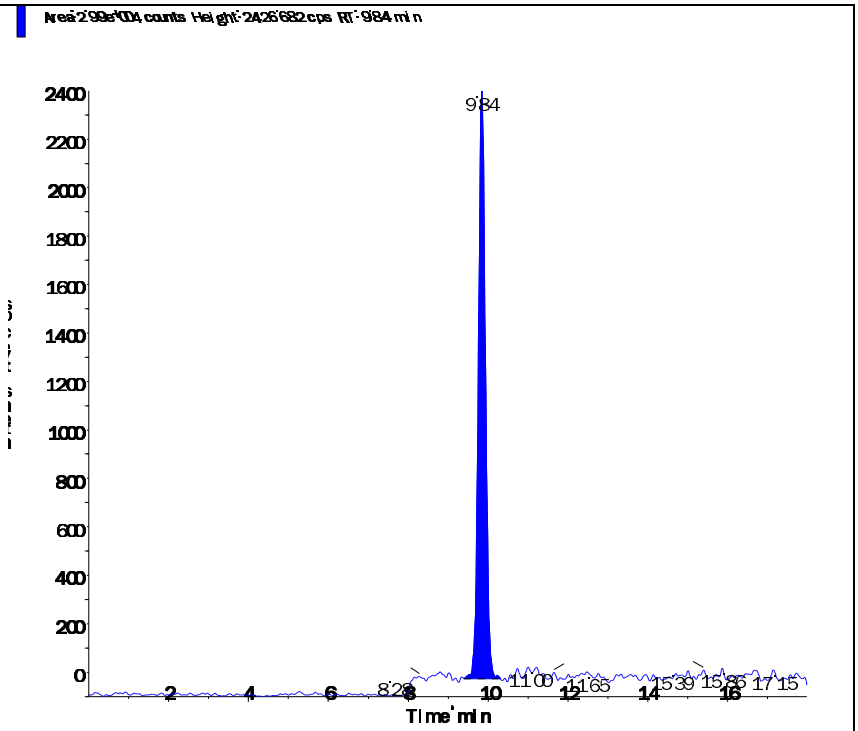

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.193 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

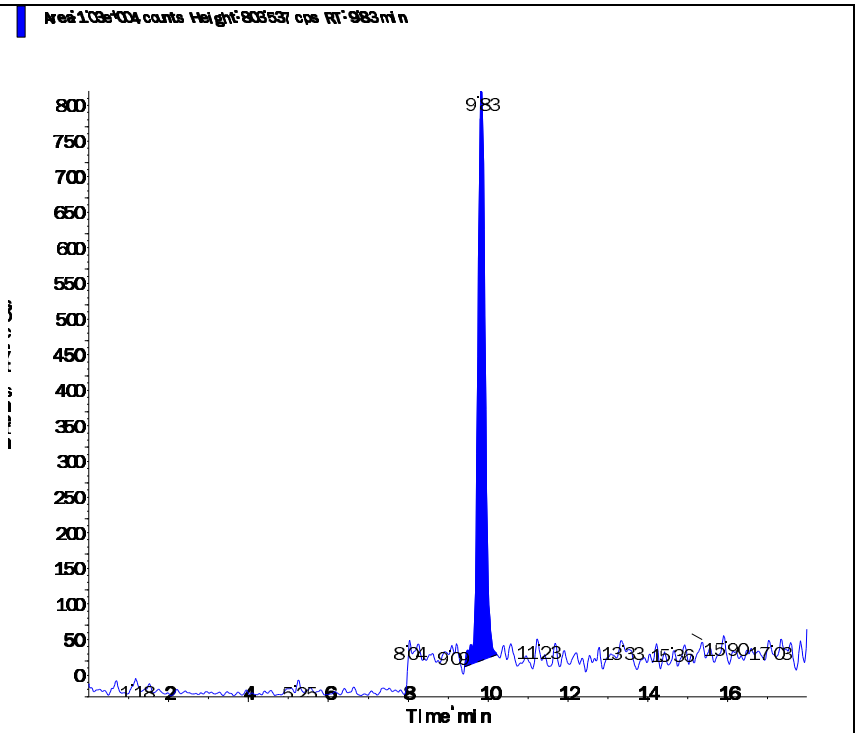

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Data File	LM34731.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 7:27:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567224-08 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM34731.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 7:27:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567224-08	**Dilution Factor**	1.00
Sample Comment	7,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.640e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.340e+04	9.84	N/A	0.21
Perchlorate conf	1.130e+04	9.82	N/A	0.197

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

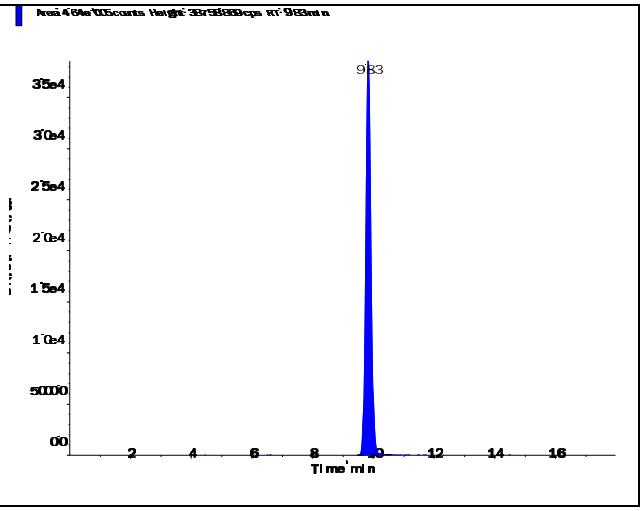

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

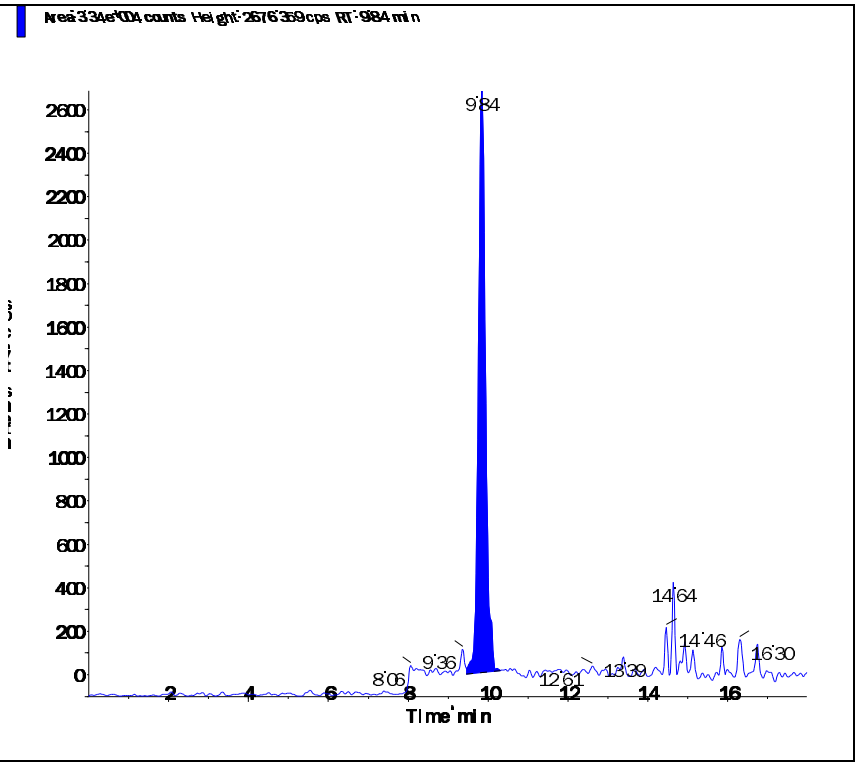

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

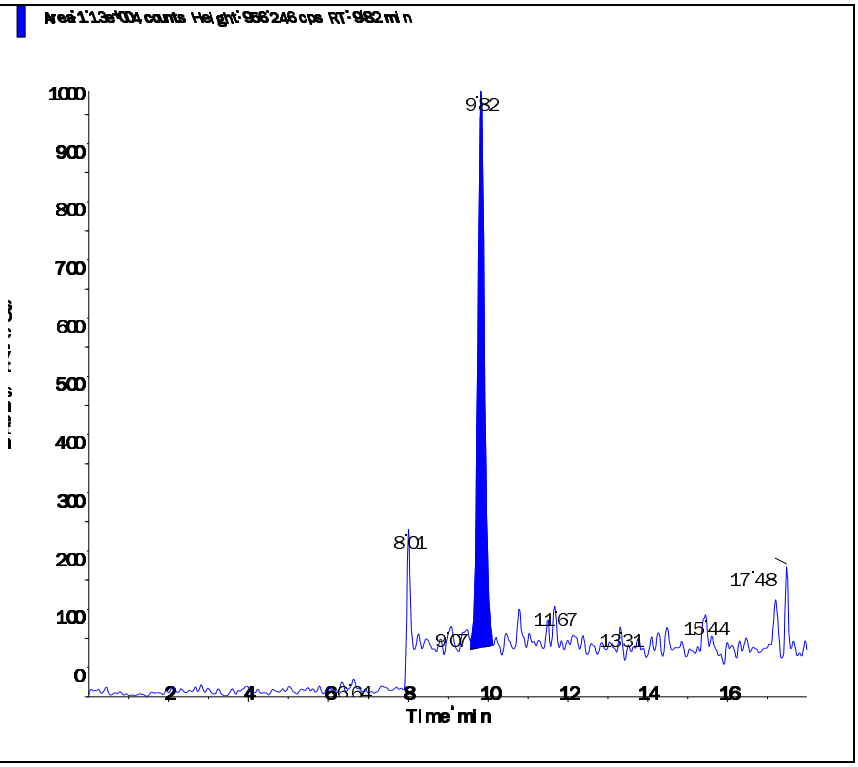

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Data File	LM34744.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 11:33:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567224-09 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM34744.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 11:33:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567224-09	**Dilution Factor**	1.00
Sample Comment	7,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.360e+05	9.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.840e+04	9.82	N/A	0.209
Perchlorate conf	1.170e+04	9.80	N/A	0.176

O18LP (Internal Standard)

RT (Exp. RT): 9.80(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

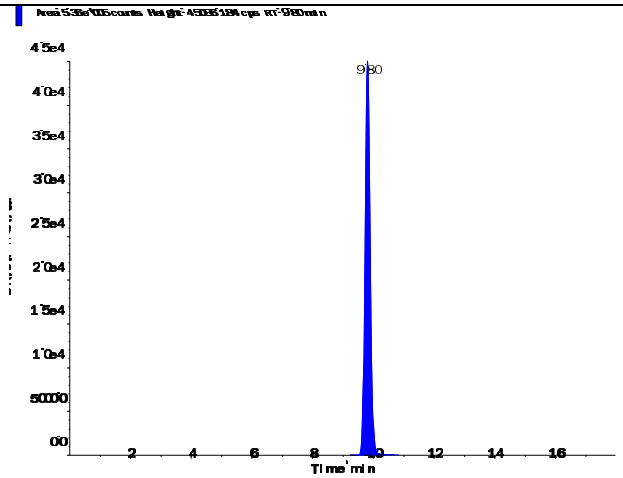

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	0.209 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

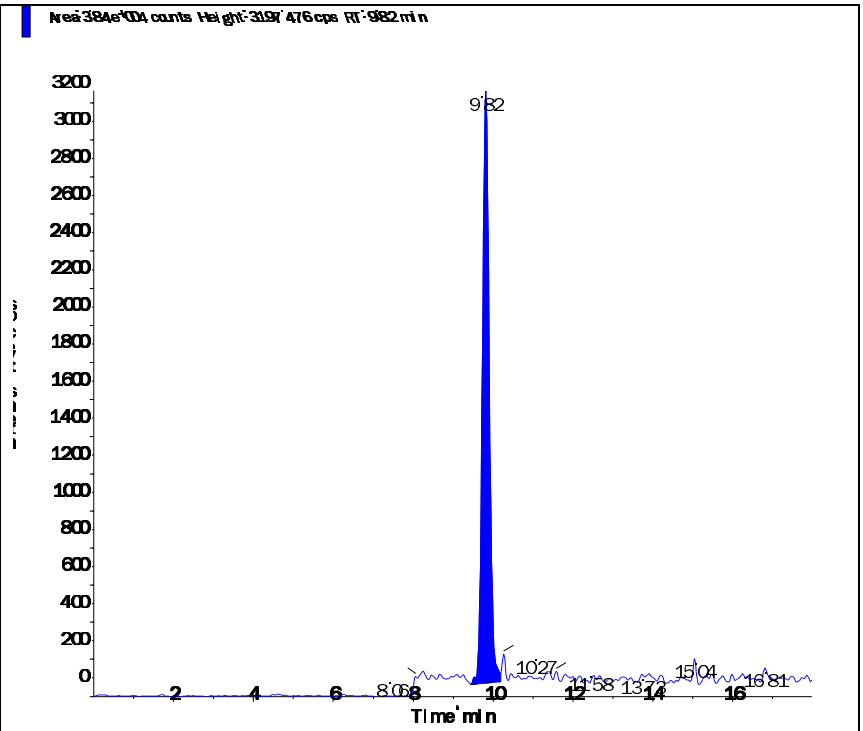

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.80 (9.84) min
Calculated conc:	0.176 ng/ml
Area Ratio:	0.022
Sample Type:	(Unknown)

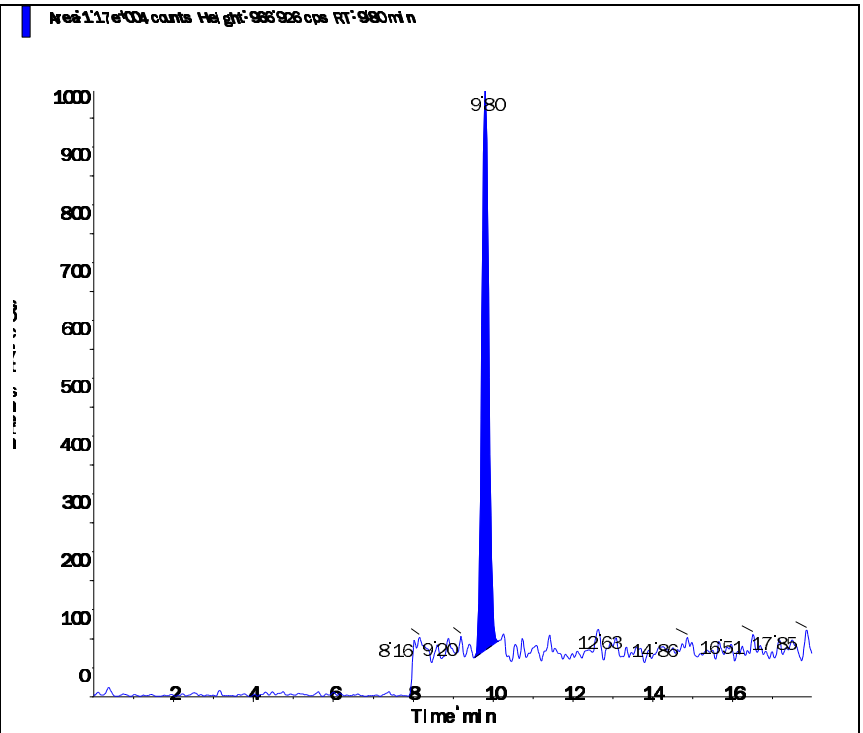

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Data File	LM34750.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 1:27:27 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567224-10 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM34750.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 1:27:27 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567224-10	**Dilution Factor**	1.00
Sample Comment	7,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.280e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.620e+04	9.82	N/A	0.20
Perchlorate conf	1.380e+04	9.81	N/A	0.213

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

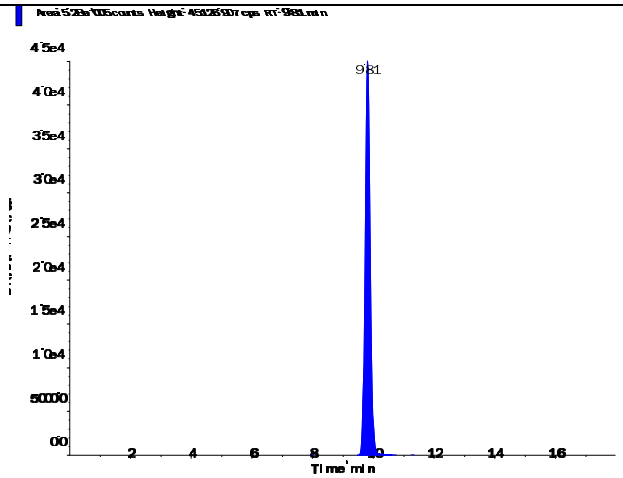

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	0.20 ng/ml
Area Ratio:	0.068
Sample Type:	(Unknown)

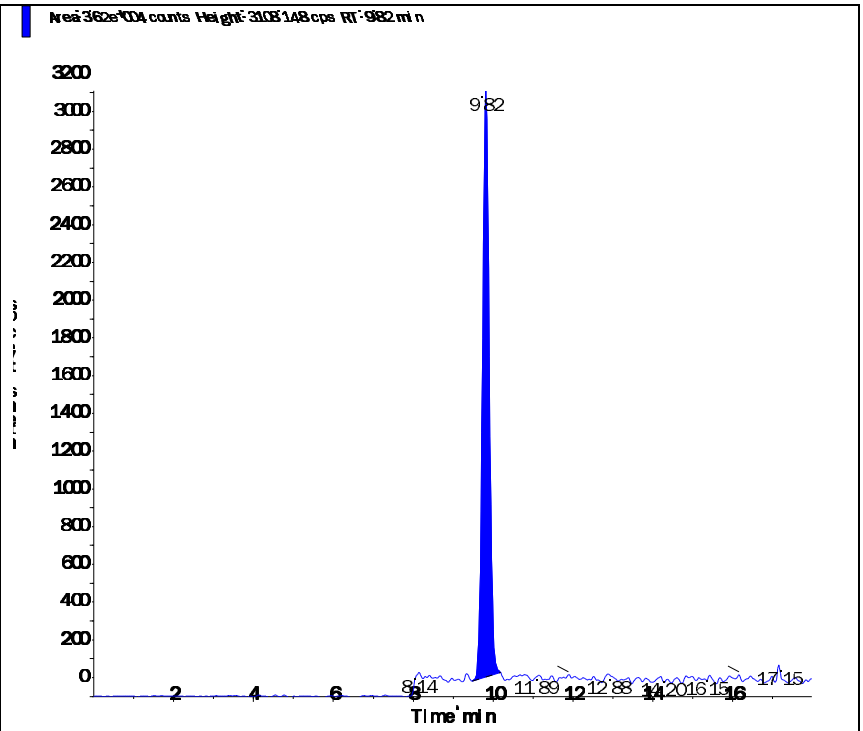

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.81 (9.84) min
Calculated conc:	0.213 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

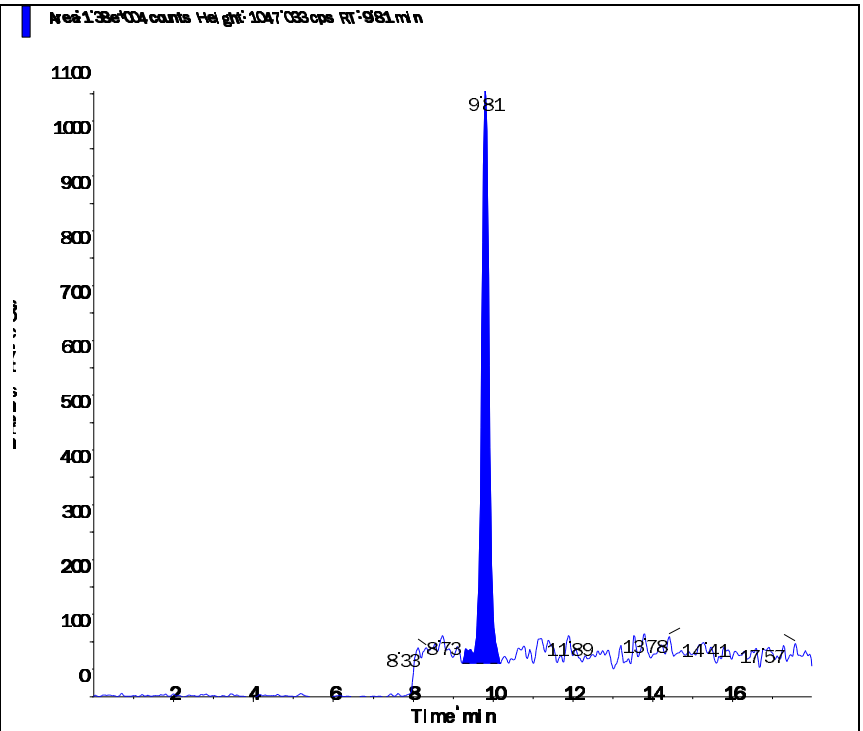

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Data File	LM34753.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 1:13:08 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567224-11 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM34753.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 1:13:08 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567224-11	**Dilution Factor**	1.00
Sample Comment	7,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.840e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.420e+04	9.82	N/A	0.206
Perchlorate conf	1.250e+04	9.80	N/A	0.212

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

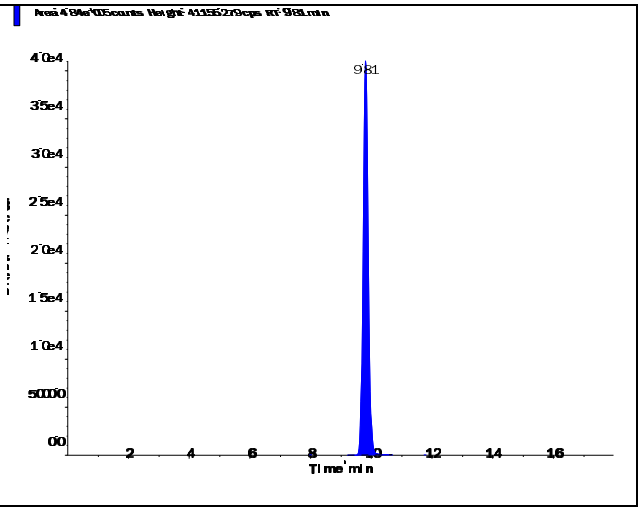

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

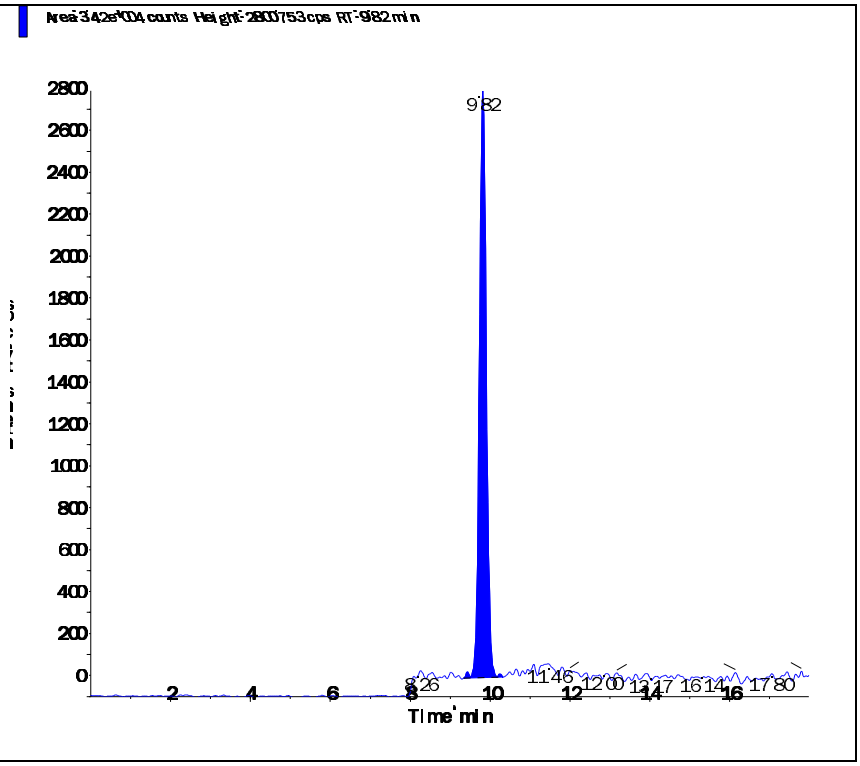

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.80 (9.84) min
Calculated conc:	0.212 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

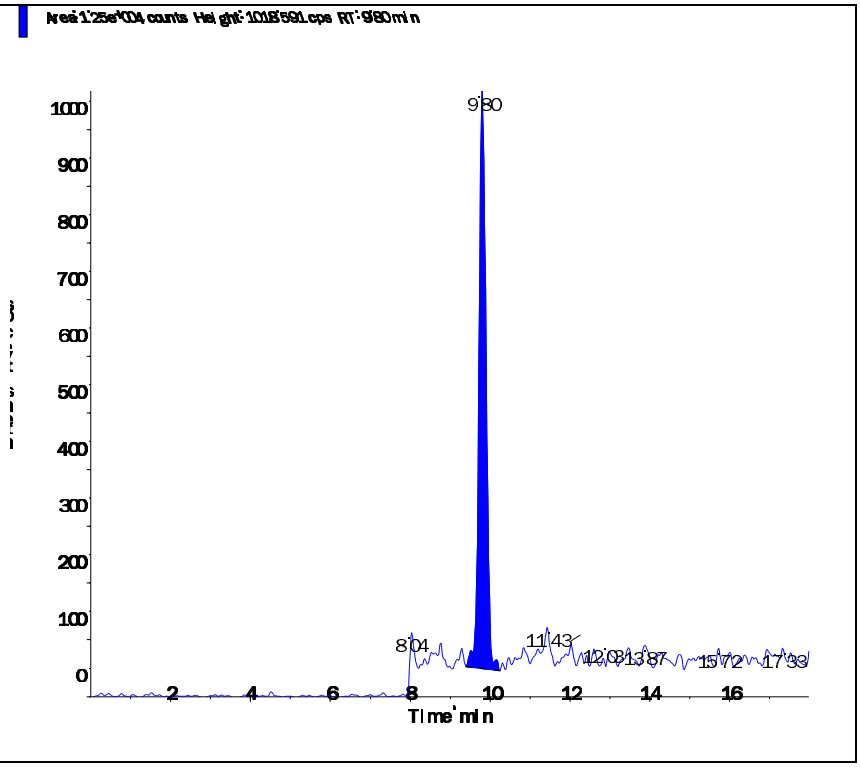

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Data File	LM34760.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 3:25:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567224-12 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM34760.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 3:25:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567224-12	**Dilution Factor**	1.00
Sample Comment	7,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.180e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.550e+04	9.82	N/A	0.20
Perchlorate conf	1.290e+04	9.82	N/A	0.202

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

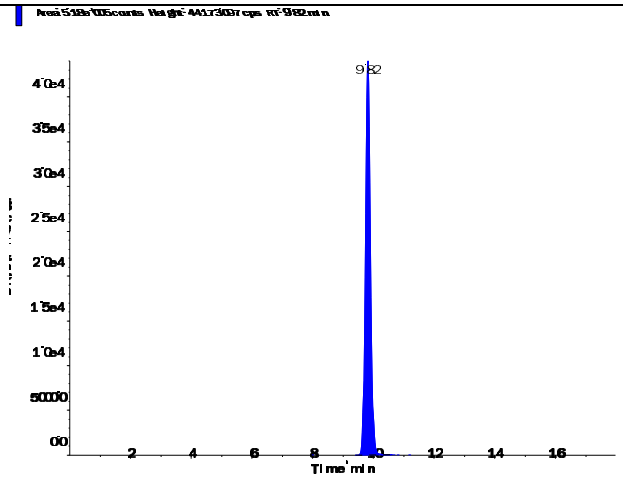

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	0.20 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

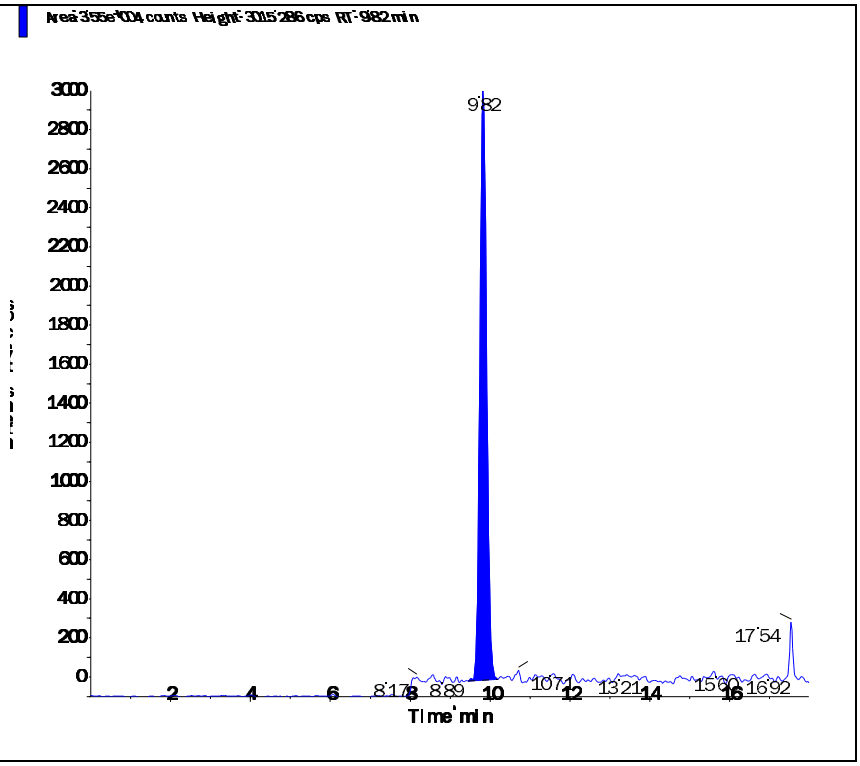

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	0.202 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

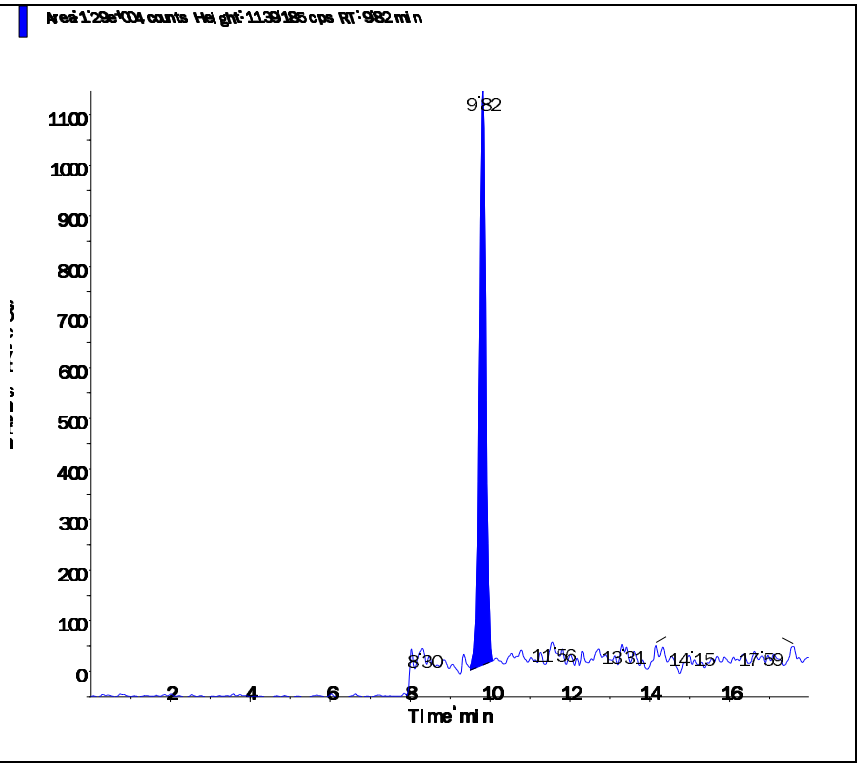

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Data File	LM34717.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 3:02:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567549-01 CCB	**Injection Vial**	1.00
Data File	LM34717.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 3:02:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567549-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.220e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

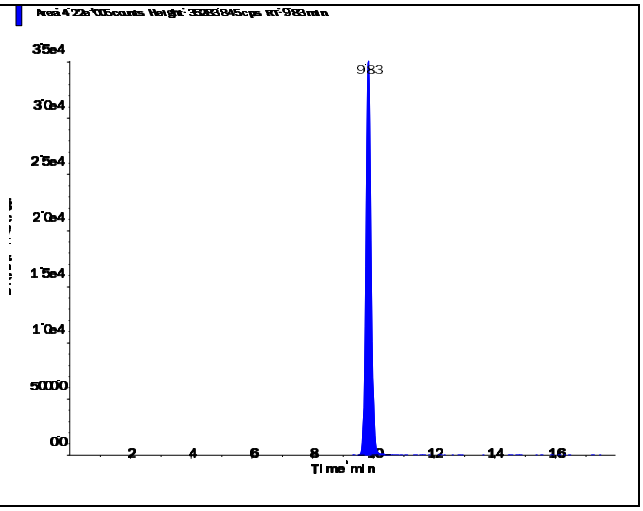

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

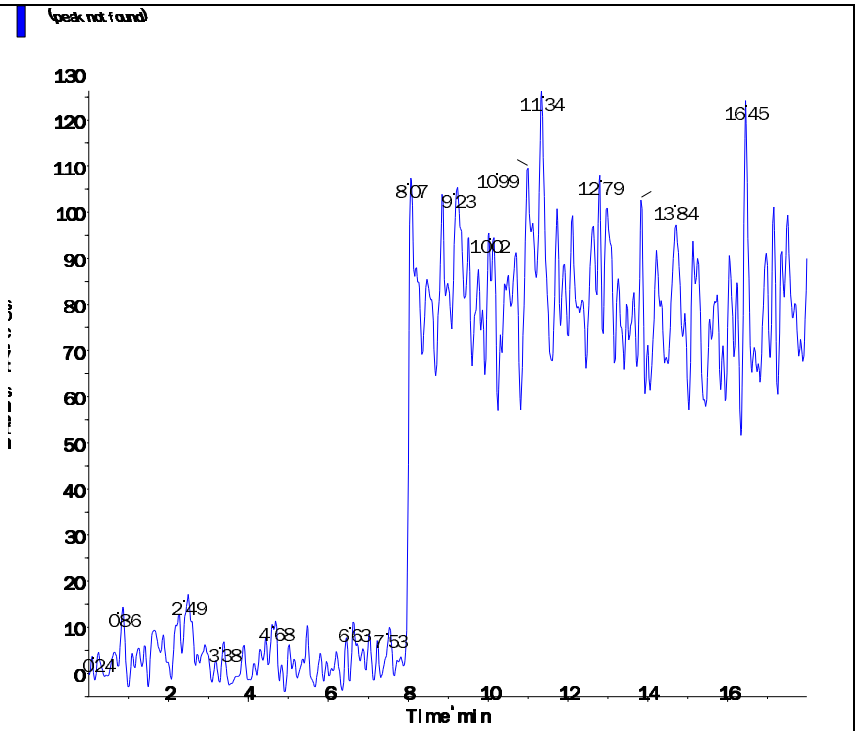

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

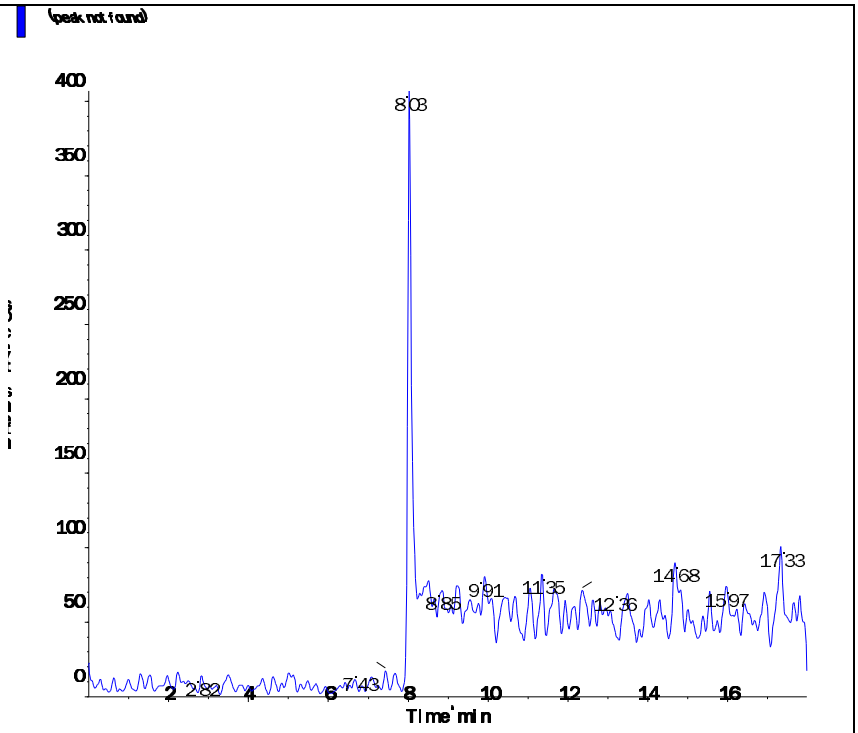

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Data File	LM34732.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 7:46:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567549-04 CCB	**Injection Vial**	1.00
Data File	LM34732.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 7:46:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567549-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.520e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	6.040e+02	9.69	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

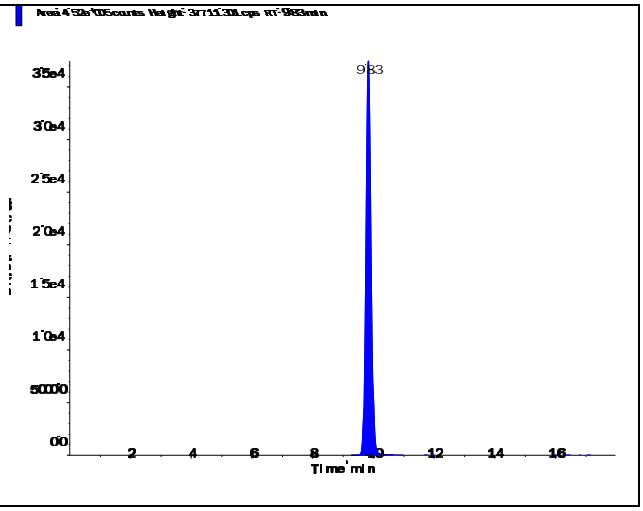

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

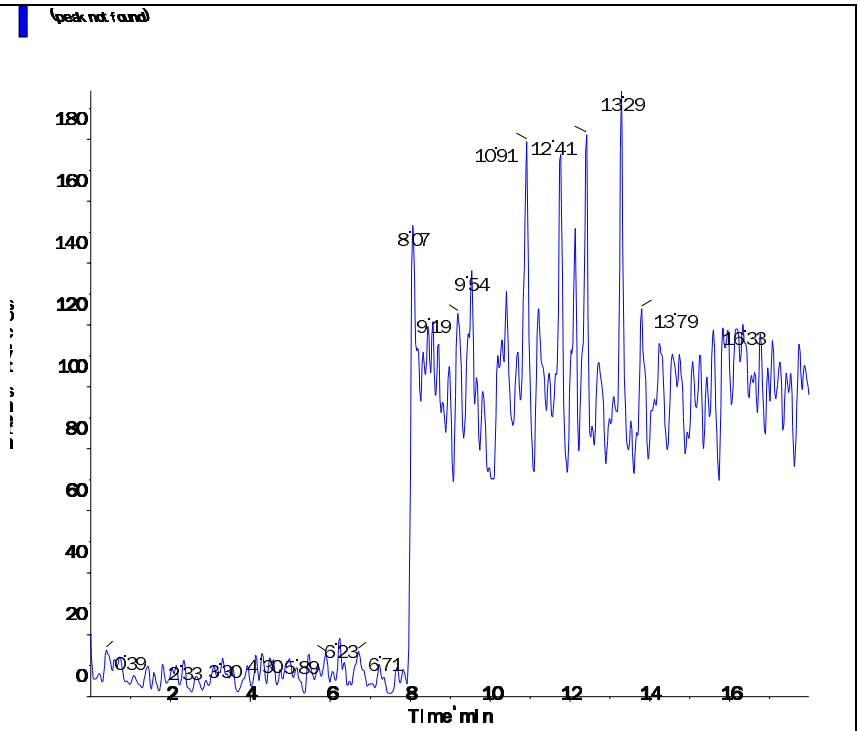

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.69 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

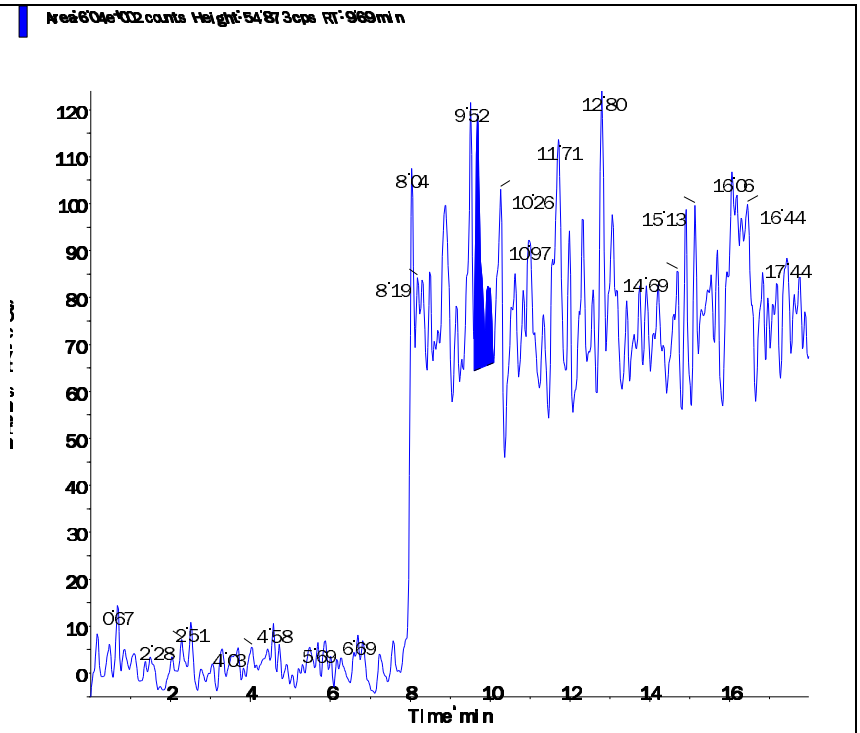

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Created with Analyst Reporter
Printed: 5/6/2016 1:55 PM

Data File	LM34745.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 11:52:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567549-06 CCB	**Injection Vial**	1.00
Data File	LM34745.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 11:52:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567549-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.580e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

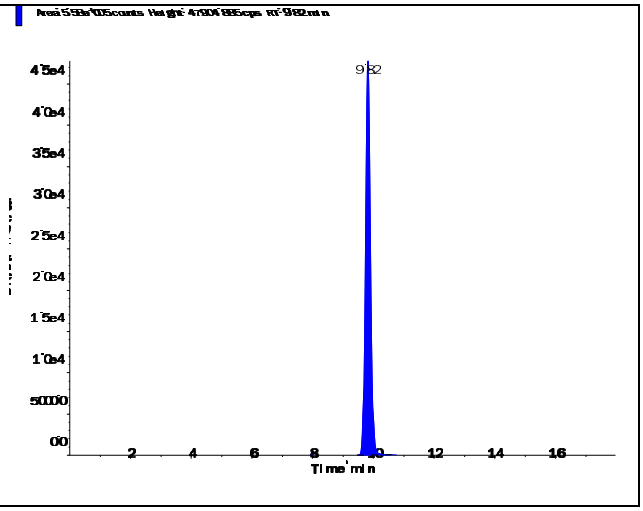

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

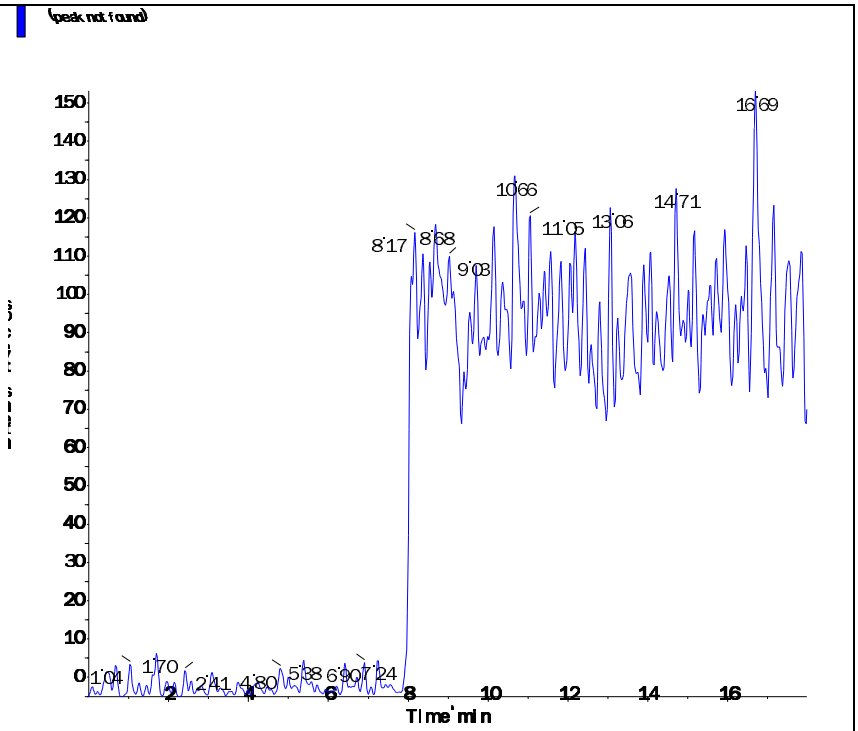

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

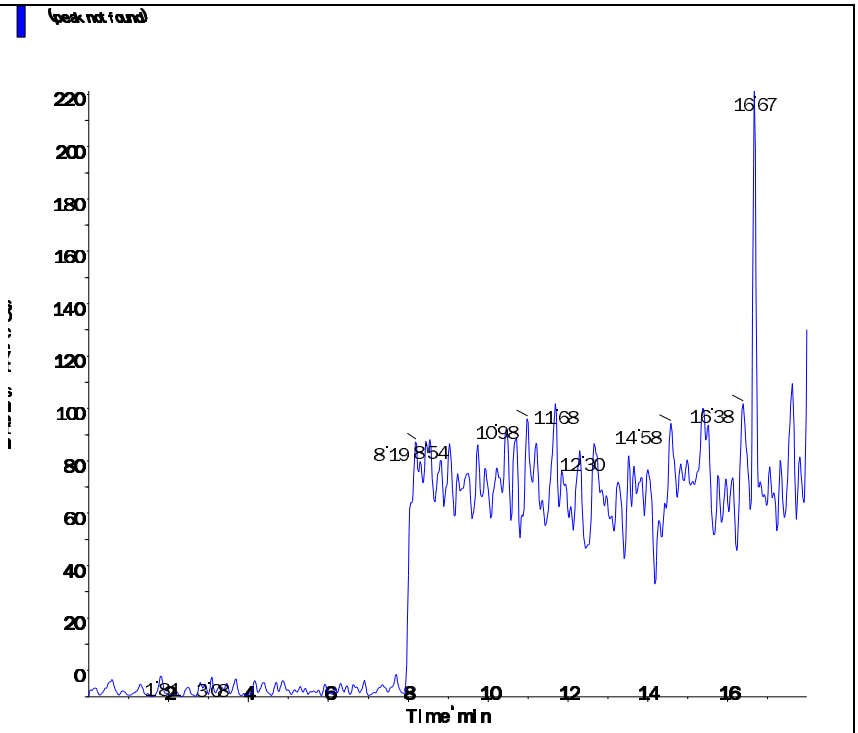

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Printed: 5/6/2016 1:57 PM

Data File	LM34751.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 1:46:23 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567549-08 CCB	**Injection Vial**	1.00
Data File	LM34751.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 1:46:23 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567549-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.530e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

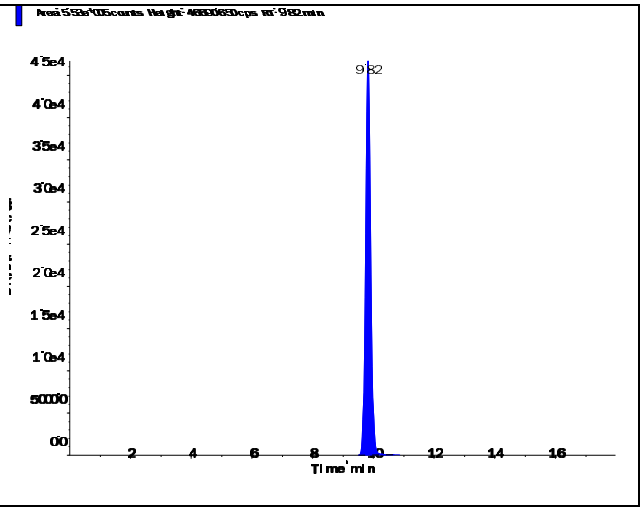

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

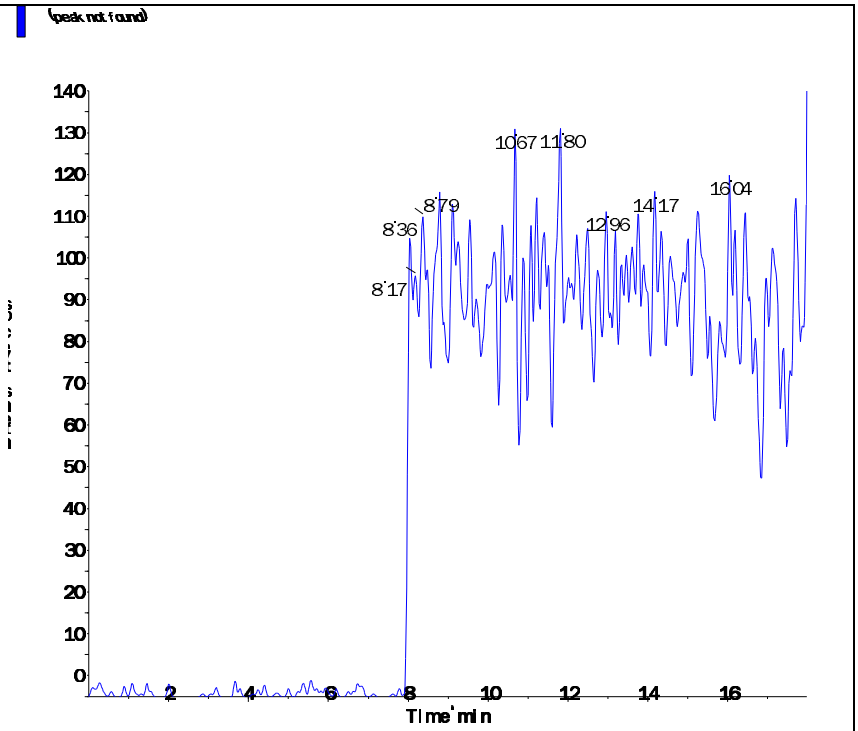

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

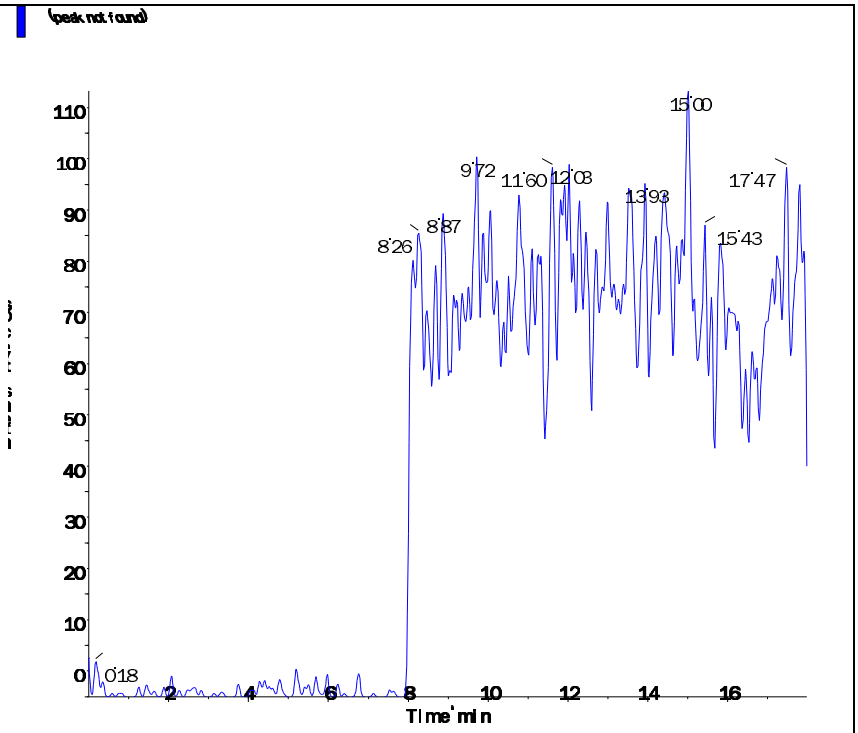

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Data File	LM34754.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 1:32:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567549-10 CCB	**Injection Vial**	1.00
Data File	LM34754.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 1:32:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567549-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.070e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

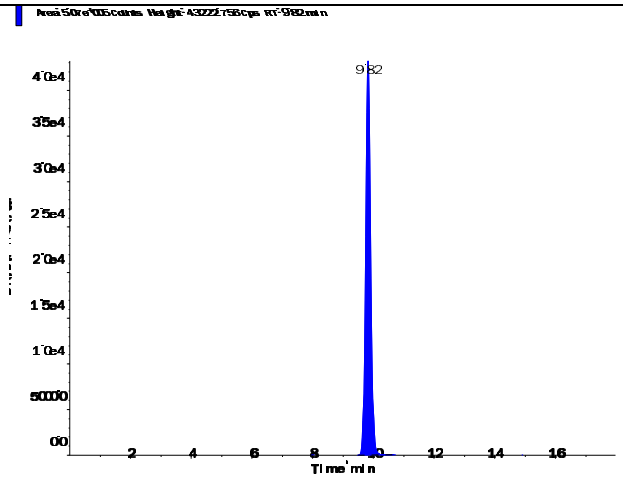

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Printed: 5/6/2016 1:58 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	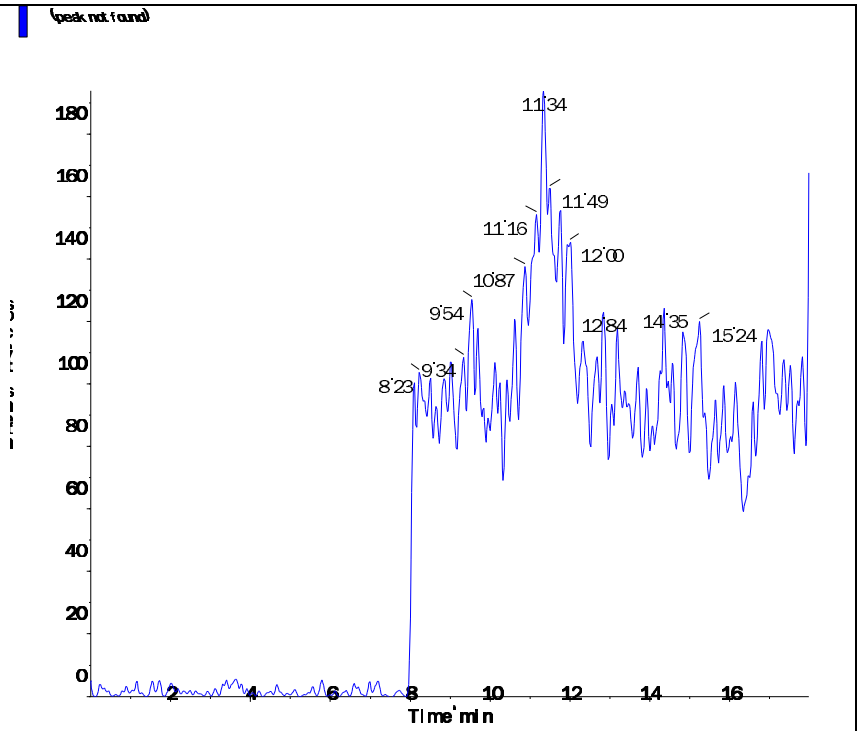
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	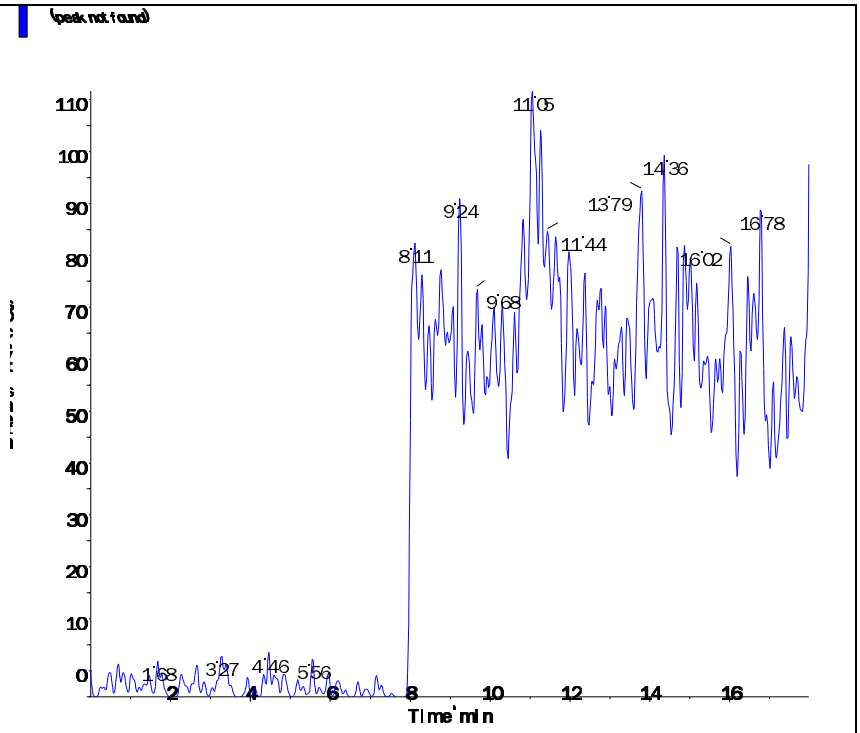

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Printed: 5/6/2016 2:00 PM

Data File	LM34761.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 3:44:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567549-12 CCB	**Injection Vial**	1.00
Data File	LM34761.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 3:44:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567549-12	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.270e+05	9.85	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	4.490e+02	9.89	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.85(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

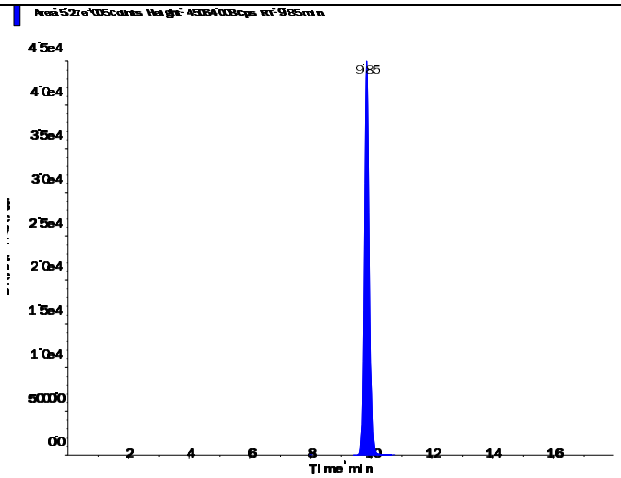

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	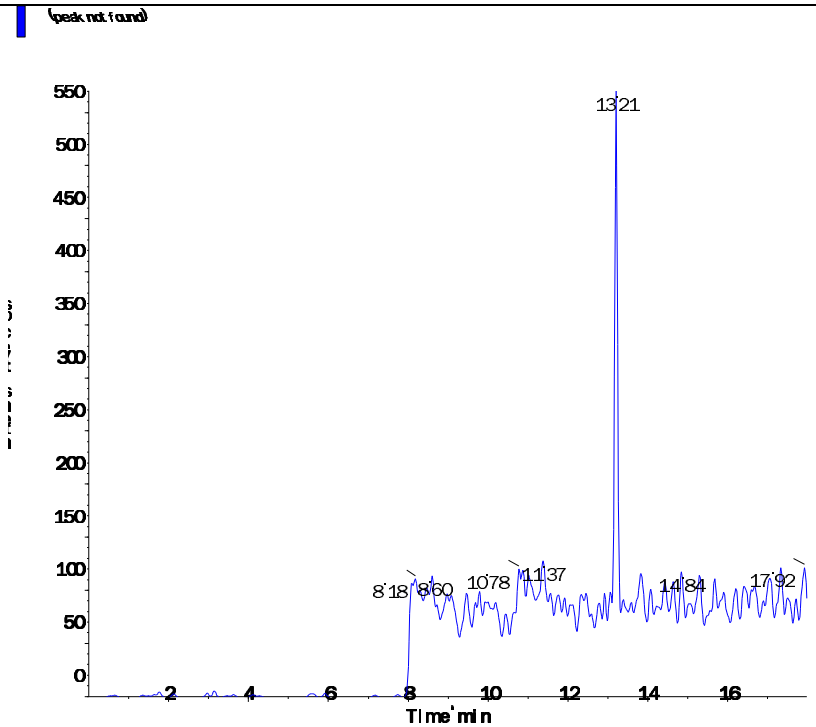
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.89 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	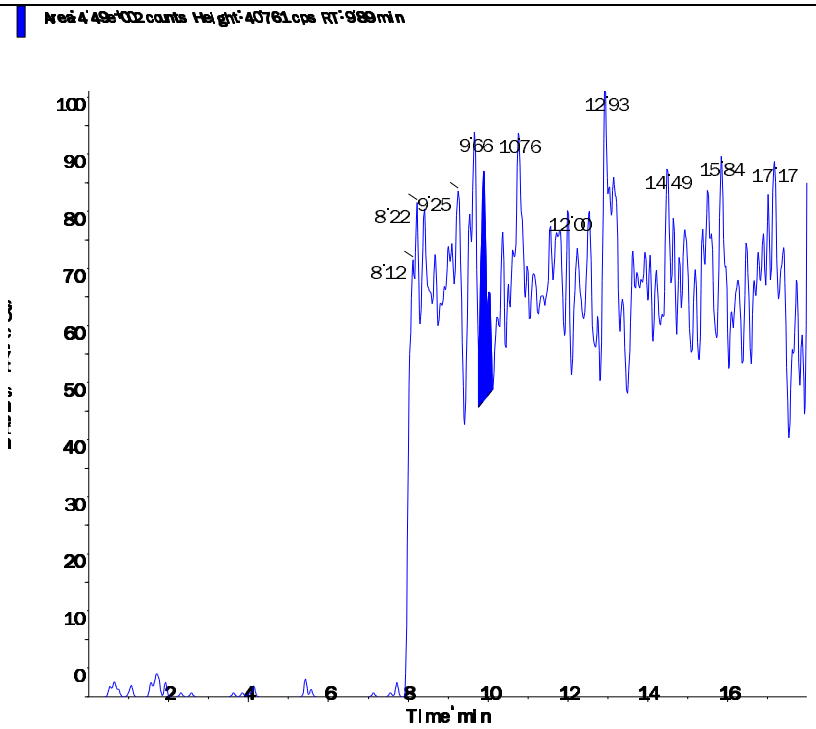

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Data File	LM34720.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 3:59:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567224-01 MCT (2.0ug/kg)	**Injection Vial**	4.00
Data File	LM34720.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 3:59:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567224-01	**Dilution Factor**	1.00
Sample Comment	7,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.200e+05	9.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.810e+04	9.10	N/A	0.195
Perchlorate conf	1.010e+04	9.10	N/A	0.196

O18LP (Internal Standard)

RT (Exp. RT): 9.10(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

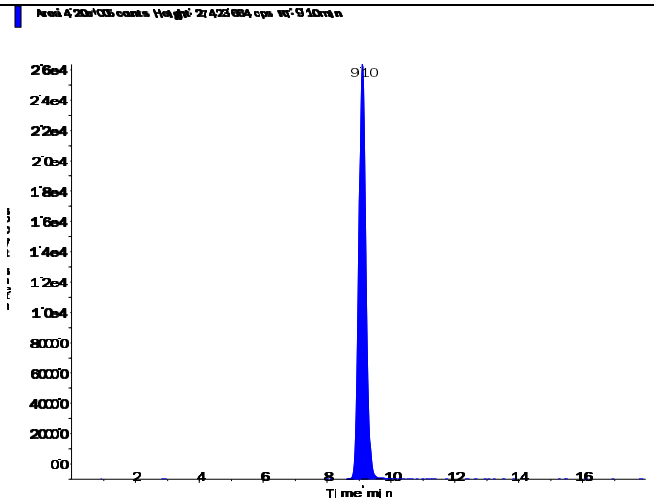

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Printed: 5/6/2016 1:49 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.10 (9.84) min
Calculated conc:	0.195 ng/ml
Area Ratio:	0.067
Sample Type:	(Unknown)

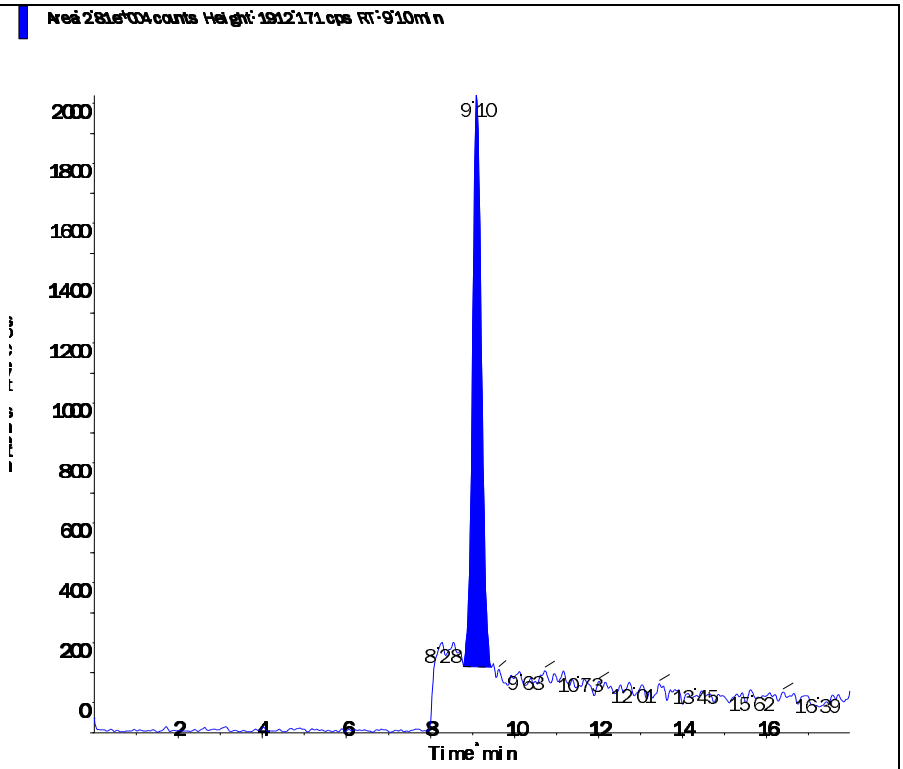

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.10 (9.84) min
Calculated conc:	0.196 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

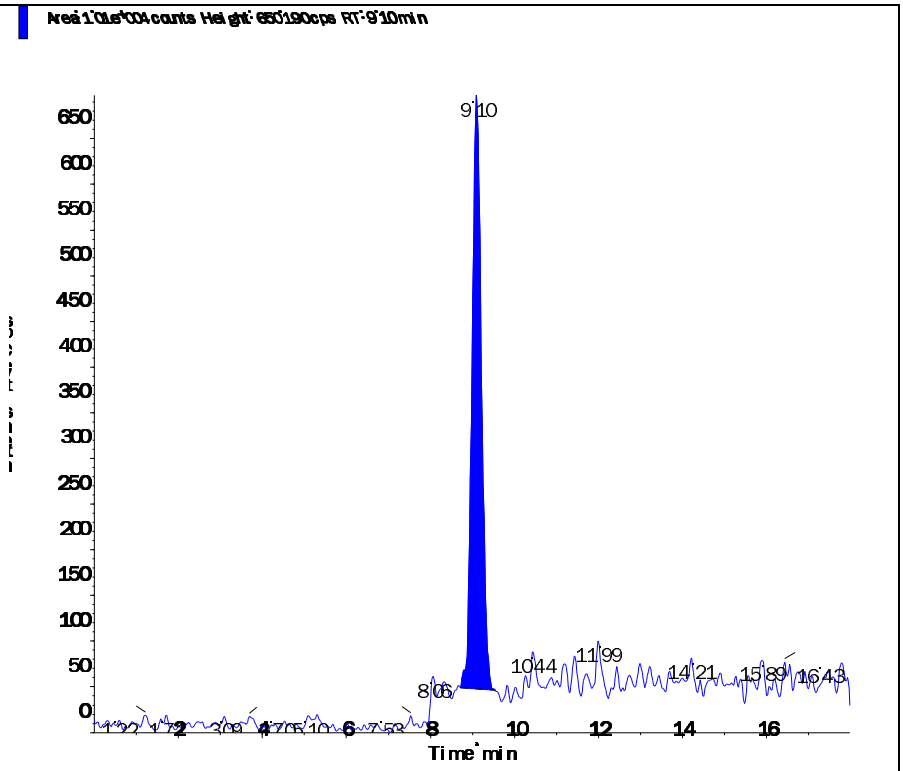

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Printing Time: 4:40:40 PM
Printing Date: Wednesday, May 04, 2016

Sample Name: "WG567224-01 MCT (2.0ug/kg)" Sample ID: "WG567224-01" File: "LM34720.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "7,1 STD75512" Annotation: ""

Sample Index:	1	
Sample Type:	Unknown	
Concentration:	N/A	
Calculated Conc:	0.220	ug/L
Acq. Date:	5/4/2016	
Acq. Time:	3:59:35 PM	
Modified:	No	
Proc. Algorithm:	Analyst Classic	
Punching Factor:	2	
Noise Threshold:	18.48	cps
Area Threshold:	92.40	cps
Num. Smooths:	5	
Sep. Width:	0.20	
Sep. Height:	0.01	
Exp. Peak Ratio:	5.00	
Exp. Adj. Ratio:	4.00	
Exp. Val. Ratio:	3.00	
RT Window:	30.000	sec
Expected RT:	9.84	min
Use Relative RT:	Yes	
Int. Type:	Valley	
Retention Time:	9.10	min
Area:	3.16e+004	counts
Height:	1997.611	cps
Start Time:	8.789	min
End Time:	9.559	min

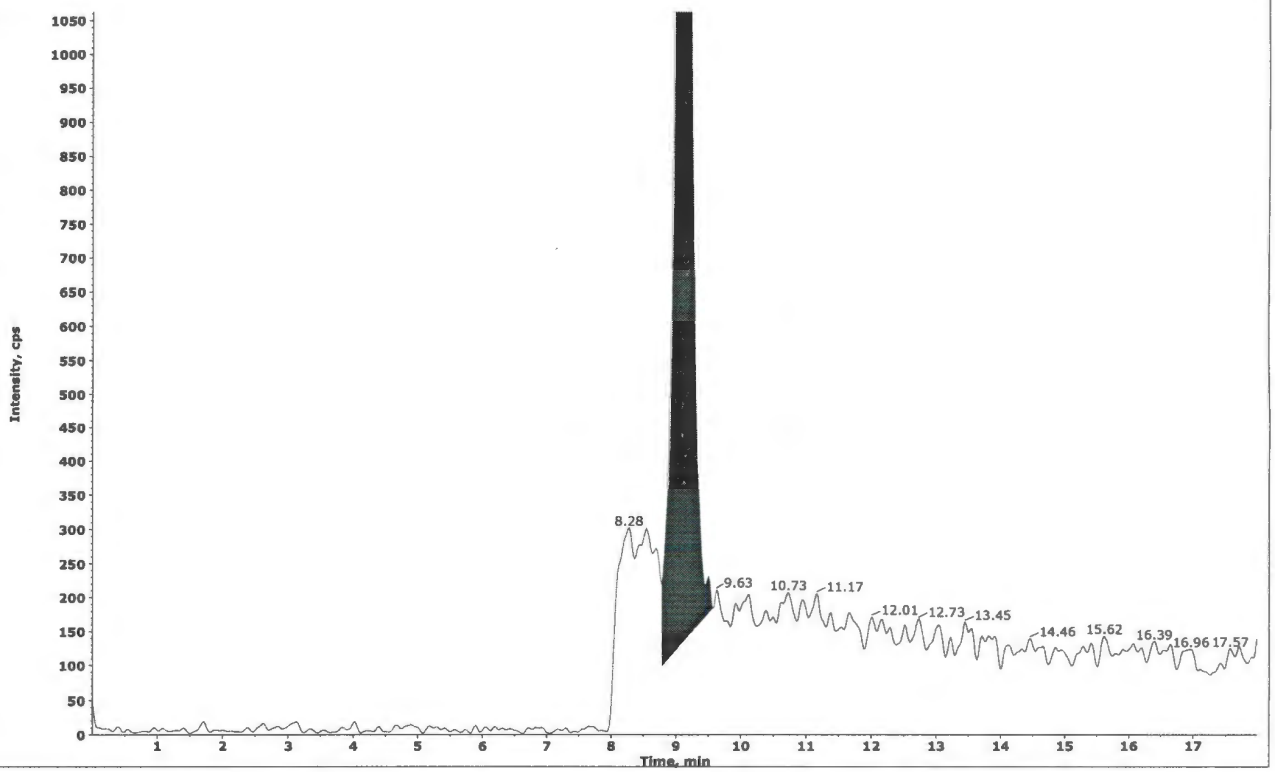

Collected by: N/A
Electronic Signature: no
Operator: lcms1

Printing Time: 4:41:25 PM
Printing Date: Wednesday, May 04, 2016

Sample Name: "WG567224-01 MCT (2.0ug/kg)" Sample ID: "WG567224-01" File: "LM34720.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "7.1 STD75512" Annotation: ""

Sample Index:	1	
Sample Type:	Unknown	
Concentration:	N/A	
Calculated Conc:	0.195	mg/L
Acq. Date:	5/4/2016	
Acq. Time:	3:59:35 PM	
Modified:	Yes	
Proc. Algorithm:	Analyst Classic	
Bunching Factor:	1	
Noise Threshold:	18.48	cps
Area Threshold:	92.40	cps
Num. Smooths:	5	
Sep. Width:	0.20	
Sep. Height:	0.01	
Exp. Peak Ratio:	5.00	
Exp. Adj. Ratio:	4.00	
Exp. Val. Ratio:	3.00	
RT Window:	30.000	sec
Expected RT:	9.84	min
Use Relative RT:	Yes	
Int. Type:	Base To Base	
Retention Time:	9.10	min
Area:	2.81e+004	counts
Height:	1912.171	cps
Start Time:	8.789	min
End Time:	9.457	min

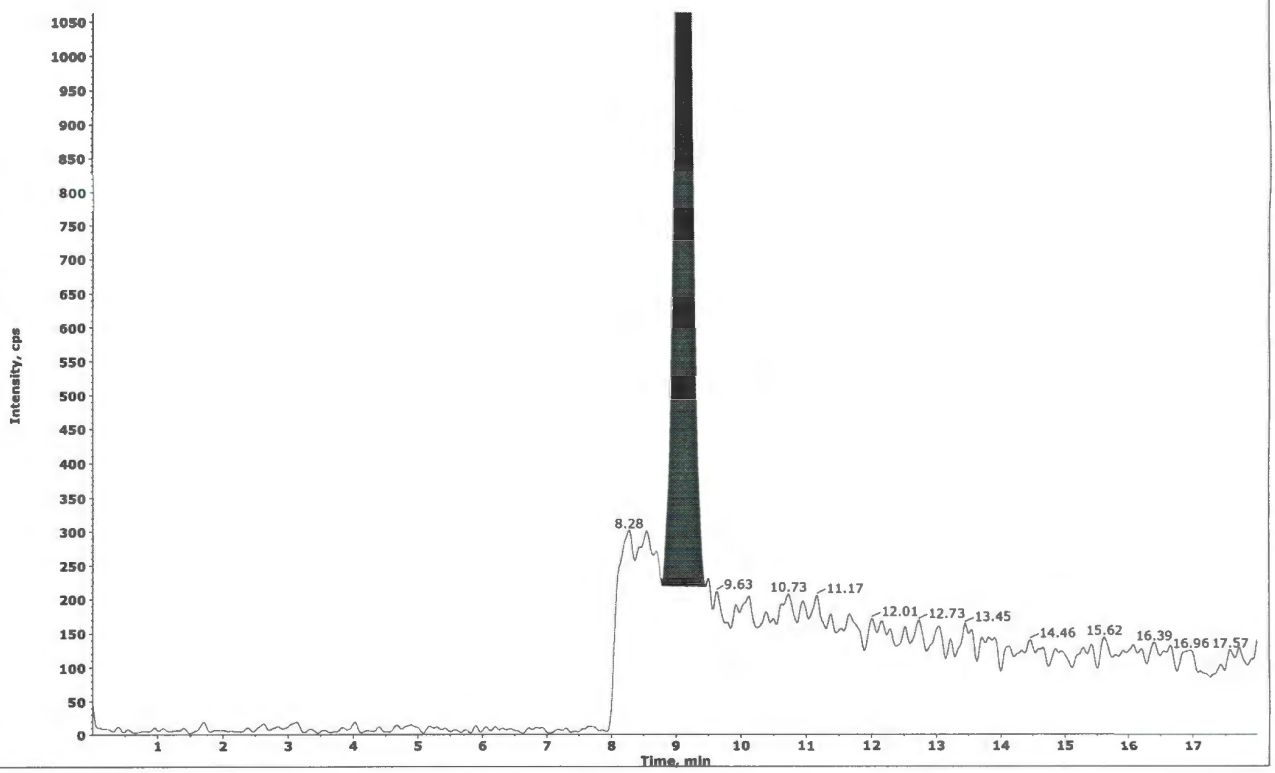

#4
JWR/05/04/16

✓ WD
5-9-16

Collected by: N/A
Electronic Signature: no
Operator: lcms1

2.2.1.5 Raw QC Data

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Data File	LM34721.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 4:18:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567224-02 BLANK	**Injection Vial**	5.00
Data File	LM34721.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 4:18:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567224-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.420e+05	9.86	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.220e+03	9.84	N/A	0.0111
Perchlorate conf	5.920e+02	9.89	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.86(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

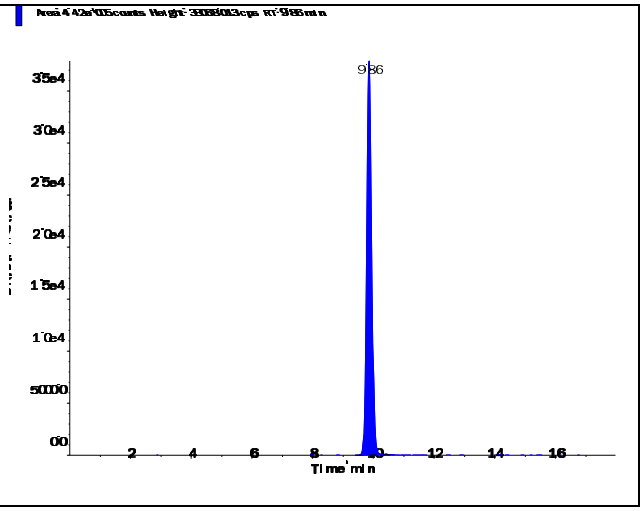

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.0111 ng/ml
Area Ratio:	0.005
Sample Type:	(Unknown)

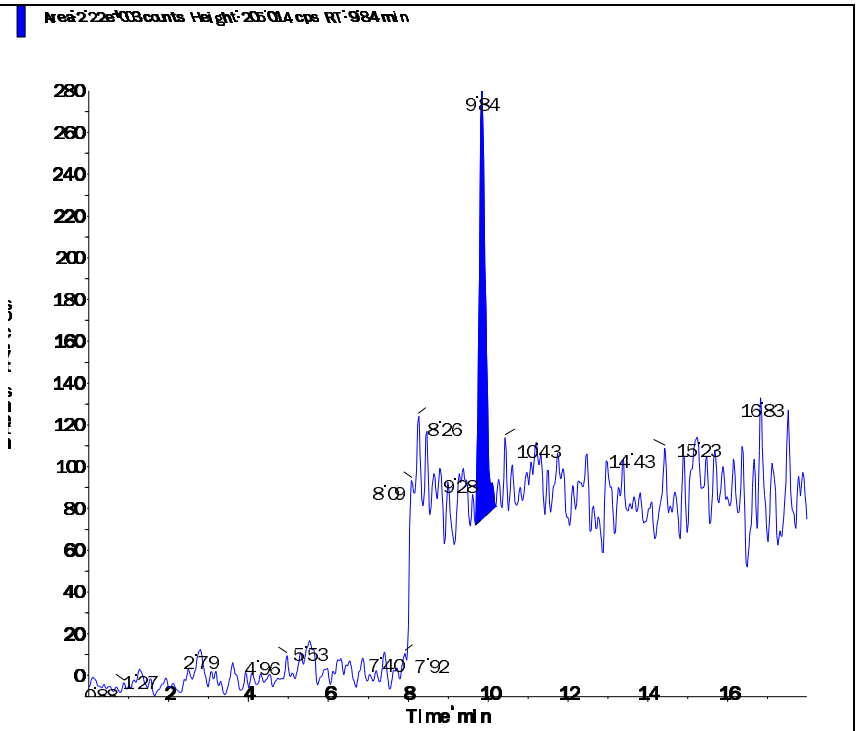

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.89 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

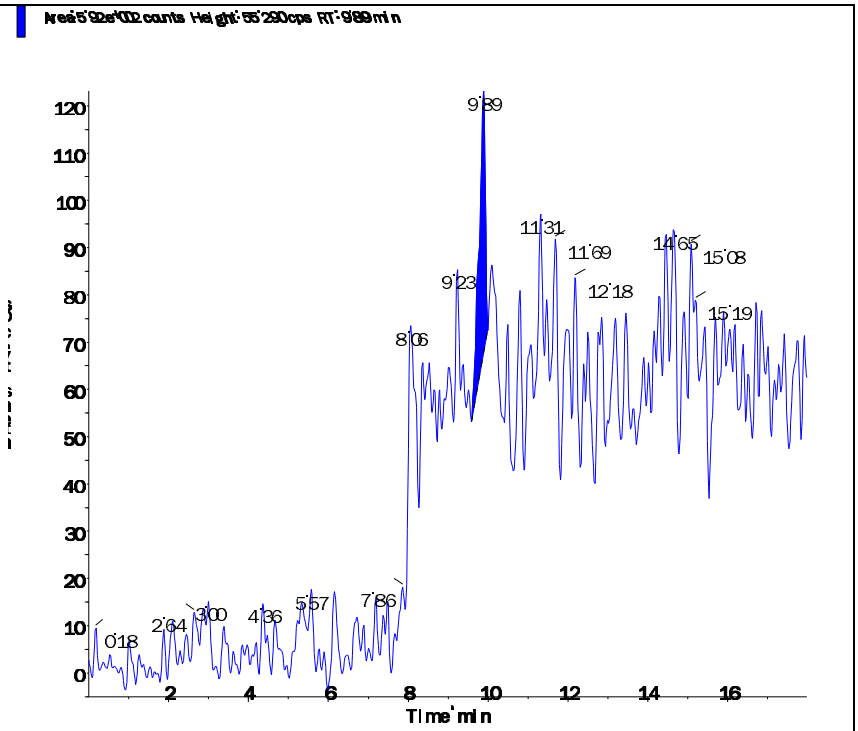

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Data File	LM34722.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 4:37:26 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567224-03 LCS (2.0ug/kg)	**Injection Vial**	6.00
Data File	LM34722.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 4:37:26 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567224-03	**Dilution Factor**	1.00
Sample Comment	7,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.420e+05	9.86	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.890e+04	9.87	N/A	0.191
Perchlorate conf	1.140e+04	9.85	N/A	0.21

O18LP (Internal Standard)

RT (Exp. RT): 9.86(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

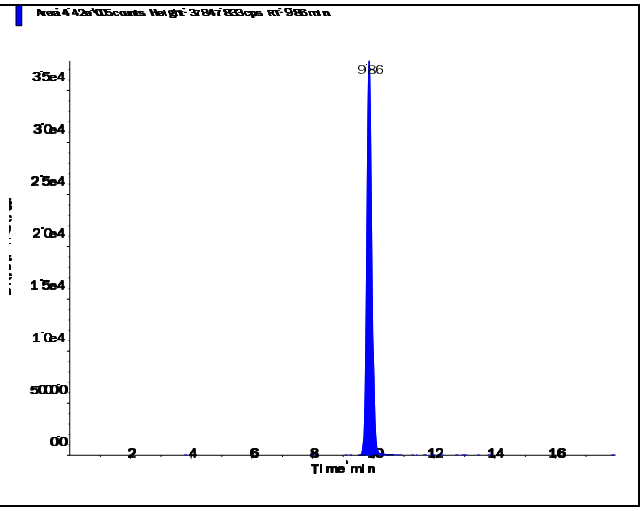

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.87 (9.84) min
Calculated conc:	0.191 ng/ml
Area Ratio:	0.065
Sample Type:	(Unknown)

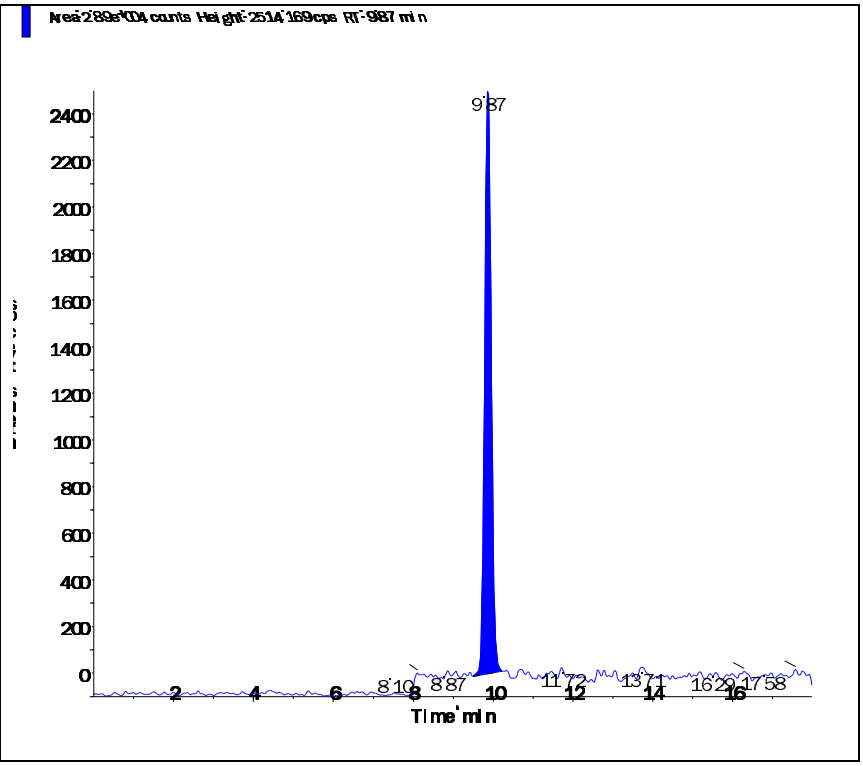

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

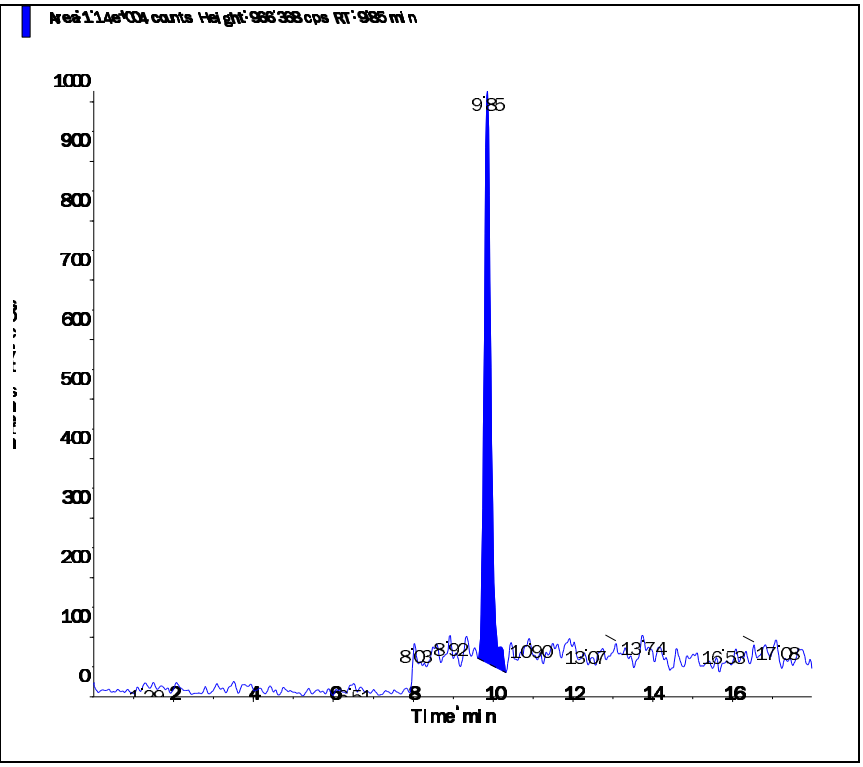

2.3 General Chemistry Data

2.3.1 Percent Solids Data

2.3.1.1 Raw Data

Example Percent Solids Calculations

1.0 Calculating the percent solids of a sample.

$$\%Solids = \frac{WT3 - WT1}{WT2 - WT1} \times F$$

Where:	
WT1 = Weight, in grams, of the empty container	1.30 g
WT2 = Weight, in grams, of the container and wet sample	21.274 g
WT3 = Weight, in grams, of the container and dried sample	5.21 g
F = Factor to get units as percent weight	100
%Solids = Percent solids present in sample.	19.58%

2.0 Calculating the percent moisture of a sample.

% Moisture = 100 - % Solids from 1.0 calculation

Microbac Laboratories Inc.

PERCENT SOLIDS

Workgroup (AAB#): WG567166 Analyst: AC ADT(on): 05/02/2016 13:27
Method: D2216-90 Instrument: BAL021 ADT(off): 05/03/2016 07:46
SOP: K0003 Rev: 14

SAMPLE NUMBER	EMPTY PAN WT 1	WET WT 2	DRY WT 3A	DRY WT 3B	DRY WT 3C	PERCENT SOLID	PERCENT MOISTURE
L16041580-01	1.29	22.615	19.375			84.81	
L16041580-02	1.29	26.3	21.786			81.95	
L16041580-03	1.292	21.625	17.404			79.24	
L16041580-04	1.289	23.096	18.339			78.19	
L16041580-05	1.29	21.915	17.591			79.04	
L16041580-06	1.291	23.333	19.695			83.50	
L16041580-07	1.291	23.333	19.695			83.50	
L16041580-08	1.291	23.333	19.695			83.50	
L16041580-09	1.291	24.126	21.052			86.54	
L16041580-10	1.279	23.631	20.752			87.12	
L16041580-11	1.287	26.575	22.453			83.70	
L16041580-12	1.287	22.289	18.564			82.26	
L16041580-13	1.29	22.339	18.135			80.03	
L16041582-01	1.294	23.384	17.777			74.62	
L16041582-02	1.29	28.32	23.412			81.84	
L16041582-03	1.284	27.318	22.576			81.79	
L16041582-04	1.286	24.705	20.245			80.96	
L16041582-05	1.282	22.281	19.089			84.80	
L16041582-06	1.287	22.079	18.368			82.15	
L16041582-07	1.295	25.736	20.946			80.40	
L16041606-01	1.285	21.833	20.389			92.97	
L16050014-01	1.283	24.256	20.829			85.08	
L16050014-02	1.3	24.953	19.642			77.55	
L16050014-03	1.291	20.806	17.713			84.15	
L16050014-04	1.288	21.983	19.998			90.41	
L16050014-05	1.293	24.293	20.492			83.47	
L16050014-06	1.282	21.966	19.672			88.91	
L16050030-01	1.287	25.15	21.127			83.14	
L16050030-02	1.293	25.733	21.431			82.40	
L16050030-03	1.292	33.629	27.446			80.88	
L16050030-04	1.284	22.714	19.483			84.92	
L16050030-05	1.284	22.779	18.96			82.23	
L16050030-06	1.284	25.307	21.079			82.40	
L16050030-07	1.284	21.993	18.291			82.12	
L16050030-08	1.296	27.13	22.36			81.54	
L16050030-09	1.299	22.008	18.096			81.11	
L16050030-10	1.293	23.646	19.239			80.28	
L16050030-11	1.294	25.085	20.158			79.29	
L16050030-12	1.293	22.244	18.628			82.74	
L16050030-13	1.294	25.484	20.914			81.11	
WG567166-01	1.287	22.079	18.368			82.15	17.85
WG567166-02	1.293	22.244	18.628			82.74	17.26

PERCENT_SOLIDS - Modified 04/24/2008
PDF ID: 4744056
Report generated: 05/03/2016 07:53

Microbac Laboratories Inc.

PERCENT SOLIDS

Workgroup (AAB#): WG567166 Analyst: AC ADT(on): 05/02/2016 13:27
Method: D2216-90 Instrument: BAL021 ADT(off): 05/03/2016 07:46
SOP: K0003 Rev: 14

SAMPLE NUMBER	EMPTY PAN WT 1	WET WT 2	DRY WT 3A	DRY WT 3B	DRY WT 3C	PERCENT SOLID	PERCENT MOISTURE
WG567166-03	1.288	23.865	19.897			82.42	17.58
WG567166-04	1.299	23.081	19.351			82.88	17.12

Analyst: [signature]

PERCENT_SOLIDS - Modified 04/24/2008
PDF ID: 4744056
Report generated: 05/03/2016 07:53

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
May 12, 2016

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001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
May 12, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
May 12, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

COC No. A 49776

158 Starlite Drive
Marietta, OH 45750

MICROBAC®

CHAIN-OF-CUSTODY RECORD

Phone: 740-373-4071
Toll Free: 800-373-4071

Company Name: AECOM

Project Contact: Linda Raabe

Contact Phone #: 210-253-7518

Turn Around Requirements: STANDARD

Location: 18/24

Project ID: 60274185

Sampler (print): KAYLA PALLANES

Signature: Kayla Pallanes

Program: ☐ CWA ☐ RCRA ☐ DOD ☐ AFCEE ☐ Other _____

Sample I.D. No.	Comp	Grab	Date	Time	Matrix*	NUMBER OF CONTAINERS	Hold	VOC 8260	Perchlorate 6850	TOTAL # (LAB USE)	ADDITIONAL REQUIREMENTS
18CPTMW235W(5-5-5)2704116			4/27/16	1415	S	2		X	X		
18CPTMW235W(10-10-5)2704116			4/27/16	1440	S	2		X	X		
18CPTMW235W(20-20-5)2704116			4/27/16	1445	S	2		X	X		
18CPTMW235W(30-30-5)2704116			4/27/16	1450	S	2		X	X		
18CPTMW235W(40-40-5)2704116			4/27/16	1615	S	2	*	X	X		* Dont Hold
18CPTMW235W(60-60-5)2704116			4/27/16	1735	S	2		X	X		
18CPTMW235W(50-50-5)2704116			4/27/16	1745	S	2		X	X		

Relinquished by: (Signature) Kayla Pallanes — Date 4/28/16 — Time 1500 — Received by: (Signature)

Relinquished by: (Signature) — Date — Time — Received by: (Signature)

Relinquished by: — Date — Time — Received by: (Signature)

Remarks:

Microbac OVD
Received: 04/29/2016 09:52
By: BRENDA GREGORY 221000085218
Brenda Gregory

*Water (W), Soil (S), Solid Waste (SD), Unknown (X)

Page _____ of _____

00661288

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041582
Account: 2551
Project: 2551.096
Samples: 7
Due Date: 10-MAY-2016

Samplenum	Container ID	Products
L16041582-01	737085	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-APR-2016 13:06	BRG		
2	ANALYZ	V1	ORG4	29-APR-2016 18:12	AWE	AZH	

Samplenum	Container ID	Products
L16041582-01	737086	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-APR-2016 13:06	BRG		
2	PREP	W1	DIG	02-MAY-2016 13:18	AC	BRG	
3	STORE	DIG	W1	02-MAY-2016 13:57	BRG	AC	
4	ANALYZ	W1	SEM	02-MAY-2016 16:42	JWR	BRG	
5	ANALYZ*	DIG	SEMI	06-MAY-2016 15:22	JWR	AC	
6	STORE	SEM	A1	06-MAY-2016 15:52	CLS	JWR	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041582-02	737087	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-APR-2016 13:06	BRG		
2	ANALYZ	V1	ORG4	29-APR-2016 18:12	AWE	AZH	

Samplenum	Container ID	Products
L16041582-02	737088	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-APR-2016 13:06	BRG		
2	PREP	W1	DIG	02-MAY-2016 13:18	AC	BRG	
3	STORE	DIG	W1	02-MAY-2016 13:57	BRG	AC	
4	ANALYZ	W1	SEM	02-MAY-2016 16:42	JWR	BRG	
5	ANALYZ*	DIG	SEMI	06-MAY-2016 15:22	JWR	AC	
6	STORE	SEM	A1	06-MAY-2016 15:52	CLS	JWR	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041582
Account: 2551
Project: 2551.096
Samples: 7
Due Date: 10-MAY-2016

Samplenum	Container ID	Products
L16041582-03	737089	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-APR-2016 13:06	BRG		
2	ANALYZ	V1	ORG4	29-APR-2016 18:12	AWE	AZH	

Samplenum	Container ID	Products
L16041582-03	737090	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-APR-2016 13:06	BRG		
2	PREP	W1	DIG	02-MAY-2016 13:18	AC	BRG	
3	STORE	DIG	W1	02-MAY-2016 13:57	BRG	AC	
4	ANALYZ	W1	SEM	02-MAY-2016 16:42	JWR	BRG	
5	ANALYZ*	DIG	SEMI	06-MAY-2016 15:22	JWR	AC	
6	STORE	SEM	A1	06-MAY-2016 15:52	CLS	JWR	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041582-04	737091	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-APR-2016 13:06	BRG		
2	ANALYZ	V1	ORG4	29-APR-2016 18:12	AWE	AZH	

Samplenum	Container ID	Products
L16041582-04	737092	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-APR-2016 13:06	BRG		
2	PREP	W1	DIG	02-MAY-2016 13:18	AC	BRG	
3	STORE	DIG	W1	02-MAY-2016 13:57	BRG	AC	
4	ANALYZ	W1	SEM	02-MAY-2016 16:42	JWR	BRG	
5	ANALYZ*	DIG	SEMI	06-MAY-2016 15:22	JWR	AC	
6	STORE	SEM	A1	06-MAY-2016 15:52	CLS	JWR	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041582
Account: 2551
Project: 2551.096
Samples: 7
Due Date: 10-MAY-2016

Samplenum	Container ID	Products
L16041582-05	737093	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-APR-2016 13:06	BRG		

Samplenum	Container ID	Products
L16041582-05	737094	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-APR-2016 13:06	BRG		
2	PREP	W1	DIG	02-MAY-2016 13:18	AC	BRG	
3	STORE	DIG	W1	02-MAY-2016 13:56	BRG	AC	
4	ANALYZ	W1	SEM	02-MAY-2016 16:42	JWR	BRG	
5	ANALYZ*	DIG	SEMI	06-MAY-2016 15:22	JWR	AC	
6	STORE	SEM	A1	06-MAY-2016 15:52	CLS	JWR	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041582-06	737095	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-APR-2016 13:06	BRG		

Samplenum	Container ID	Products
L16041582-06	737096	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-APR-2016 13:06	BRG		
2	PREP	W1	DIG	02-MAY-2016 13:18	AC	BRG	
3	STORE	DIG	W1	02-MAY-2016 13:56	BRG	AC	
4	ANALYZ	W1	SEM	02-MAY-2016 16:42	JWR	BRG	
5	ANALYZ*	DIG	SEMI	06-MAY-2016 15:22	JWR	AC	
6	STORE	SEM	A1	06-MAY-2016 15:52	CLS	JWR	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041582
Account: 2551
Project: 2551.096
Samples: 7
Due Date: 10-MAY-2016

Samplenum	Container ID	Products
L16041582-07	737097	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-APR-2016 13:06	BRG		
2	ANALYZ	V1	ORG4	29-APR-2016 18:12	AWE	AZH	

Samplenum	Container ID	Products
L16041582-07	737098	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-APR-2016 13:06	BRG		
2	PREP	W1	DIG	02-MAY-2016 13:18	AC	BRG	
3	STORE	DIG	W1	02-MAY-2016 13:56	BRG	AC	
4	ANALYZ	W1	SEM	02-MAY-2016 16:42	JWR	BRG	
5	ANALYZ*	DIG	SEMI	06-MAY-2016 15:22	JWR	AC	
6	STORE	SEM	A1	06-MAY-2016 15:52	CLS	JWR	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16060411

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Michelle Taylor – Client Services Specialist
(740) 373-4071
Michelle.Taylor@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on June 23 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00110430	I	5.0		J2317165107	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18CPTMW15T-060716	L16060411-01	06/07/2016 13:15	06/08/2016 09:58
18CPTMW15B-060716	L16060411-02	06/07/2016 13:55	06/08/2016 09:58
AWD4T-060716	L16060411-03	06/07/2016 15:00	06/08/2016 09:58
AWD4B-060716	L16060411-04	06/07/2016 15:30	06/08/2016 09:58
TRIP BLANK	L16060411-05	06/07/2016 00:01	06/08/2016 09:58

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16060411
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.1 Narratives

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	8260
Prep Batch Number(s):	572348	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-14 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2016-06-14 18:03:20

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	8260
Prep Batch Number(s):	572348	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-14 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	8260
Prep Batch Number(s):	572348	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-14 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	8260
Prep Batch Number(s):	572348	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-14 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	8260
Prep Batch Number(s):	572348	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-14 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	8260
Prep Batch Number(s):	572348	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-14 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1)Bromomethane, Carbon Tetrachloride, 2,2-Dichloropropane, and Naphthalene exceeded the UCL in the CCV.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG571956	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-17 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-06-17 20:54:37

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG571956	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-17 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG571956	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-17 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG571956	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-17 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG571956	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-17 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG571956	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-17 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572200	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-06-14 16:43:43

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572200	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572200	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572200	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572200	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572200	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572463	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-23 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-06-23 20:02:20

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572463	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-23 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572463	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-23 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572463	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-23 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572463	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-23 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572463	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-23 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG571964	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-23 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-06-23 19:50:25

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG571964	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-23 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?		X			ER#2
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG571964	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-23 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG571964	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-23 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			ER#1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG571964	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-23 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG571964	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-23 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - A continuing calibration verification on 16-JUN-2016 at 21:45 yielded a marginally high recovery for manganese. All client samples had substantial results for manganese. With permission from the project manager, manganese was reported and no further action was taken.

ER#2 - Client sample 04 required dilution analysis in order to obtain a result for nickel within the calibration range.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG571962	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-23 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-06-23 19:49:25

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG571962	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-23 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG571962	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-23 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG571962	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-23 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG571962	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-23 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG571962	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-23 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW15T-060716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572348	**Analyst:**	FJB	**Run Date:**	06/11/2016 20:19
Collect Date:	06/07/2016 13:15	**Dilution:**	1	**File ID:**	8M412935
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.566	J	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	3.23		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.311	J	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	111	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	101	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW15T-060716	**Prep Method:**	3520C	**Prep Date:**	06/11/2016 13:19
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572361	**Analyst:**	MES	**Run Date:**	06/13/2016 11:04
Collect Date:	06/07/2016 13:15	**Dilution:**	1	**File ID:**	15M18369
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	52.6	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW15T-060716	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/11/2016 12:24
Collect Date:	06/07/2016 13:15	**Dilution:**	500	**File ID:**	1LM.LM35282
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1630		200	100	50.0

Certificate of Analysis

Sample #:	L16060411-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW15B-060716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572348	**Analyst:**	FJB	**Run Date:**	06/11/2016 20:48
Collect Date:	06/07/2016 13:55	**Dilution:**	1	**File ID:**	8M412936
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.532	J	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	3.22		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

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Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.319	J	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	116	70	120	
Toluene-d8	106	85	120	
4-Bromofluorobenzene	101	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW15B-060716	**Prep Method:**	3520C	**Prep Date:**	06/11/2016 13:19
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572361	**Analyst:**	MES	**Run Date:**	06/13/2016 11:27
Collect Date:	06/07/2016 13:55	**Dilution:**	1	**File ID:**	15M18370
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	35.3	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW15B-060716	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/11/2016 12:43
Collect Date:	06/07/2016 13:55	**Dilution:**	100	**File ID:**	1LM.LM35283
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	555		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L16060411-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	AWD4T-060716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572348	**Analyst:**	FJB	**Run Date:**	06/11/2016 21:17
Collect Date:	06/07/2016 15:00	**Dilution:**	1	**File ID:**	8M412937
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.274	J	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	2.21		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

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Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	111	85	115	
1,2-Dichloroethane-d4	112	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	100	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	AWD4T-060716	**Prep Method:**	3520C	**Prep Date:**	06/11/2016 13:19
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572361	**Analyst:**	MES	**Run Date:**	06/13/2016 11:50
Collect Date:	06/07/2016 15:00	**Dilution:**	1	**File ID:**	15M18371
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	75.4	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	AWD4T-060716	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/10/2016 17:24
Collect Date:	06/07/2016 15:00	**Dilution:**	200	**File ID:**	1LM.LM35249
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	712		80.0	40.0	20.0

Certificate of Analysis

Sample #:	L16060411-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	AWD4T-060716	**Prep Method:**	3015	**Prep Date:**	06/13/2016 12:41
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/14/2016 12:52
Workgroup #:	WG572626	**Analyst:**	JYH	**Run Date:**	06/14/2016 16:54
Collect Date:	06/07/2016 15:00	**Dilution:**	1	**File ID:**	T3.061416.165411
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	5.71		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	8.62		0.500	0.250	0.125
Iron, Total	7439-89-6	5.13		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	5.98		1.00	0.500	0.250
Potassium, Total	7440-09-7	1.00	U	2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0161	J	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	70.6		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	AWD4T-060716	**Prep Method:**	3015	**Prep Date:**	06/09/2016 07:45
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572085	**Analyst:**	BKT	**Run Date:**	06/16/2016 22:10
Collect Date:	06/07/2016 15:00	**Dilution:**	1	**File ID:**	NI.061616.221057
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00170	J	0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.205		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.0946		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00650		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00851		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00305		0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.0466		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.230		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000120	J	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.0174		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0348	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-03	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	AWD4T-060716	**Prep Method:**	7470A	**Prep Date:**	06/09/2016 07:15
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/13/2016 10:16
Workgroup #:	WG572241	**Analyst:**	AMA	**Run Date:**	06/13/2016 11:06
Collect Date:	06/07/2016 15:00	**Dilution:**	1	**File ID:**	M7.061316.110655
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	AWD4B-060716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572348	**Analyst:**	FJB	**Run Date:**	06/11/2016 21:46
Collect Date:	06/07/2016 15:30	**Dilution:**	1	**File ID:**	8M412938
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.338	J	1.00	0.500	0.250

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	2.40		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	116	70	120	
Toluene-d8	106	85	120	
4-Bromofluorobenzene	101	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	AWD4B-060716	**Prep Method:**	3520C	**Prep Date:**	06/11/2016 13:19
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572361	**Analyst:**	MES	**Run Date:**	06/13/2016 12:12
Collect Date:	06/07/2016 15:30	**Dilution:**	1	**File ID:**	15M18372
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	50.8	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	AWD4B-060716	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/10/2016 17:43
Collect Date:	06/07/2016 15:30	**Dilution:**	200	**File ID:**	1LM.LM35250
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	726		80.0	40.0	20.0

Certificate of Analysis

Sample #:	L16060411-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	AWD4B-060716	**Prep Method:**	3015	**Prep Date:**	06/13/2016 12:41
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/14/2016 12:52
Workgroup #:	WG572626	**Analyst:**	JYH	**Run Date:**	06/14/2016 16:58
Collect Date:	06/07/2016 15:30	**Dilution:**	1	**File ID:**	T3.061416.165809
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	5.34		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	8.65		0.500	0.250	0.125
Iron, Total	7439-89-6	4.64		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	5.75		1.00	0.500	0.250
Potassium, Total	7440-09-7	1.00	U	2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	J	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	72.0		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	AWD4B-060716	**Prep Method:**	3015	**Prep Date:**	06/09/2016 07:45
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572085	**Analyst:**	BKT	**Run Date:**	06/16/2016 22:14
Collect Date:	06/07/2016 15:30	**Dilution:**	1	**File ID:**	NI.061616.221409
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00124	J	0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.195		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.0892		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00687		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00717		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00258		0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.0529		0.00400	0.00200	0.00100
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.0124		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0260	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	AWD4B-060716	**Prep Method:**	3015	**Prep Date:**	06/09/2016 07:45
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572085	**Analyst:**	BKT	**Run Date:**	06/16/2016 22:20
Collect Date:	06/07/2016 15:30	**Dilution:**	5	**File ID:**	NI.061616.222032
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nickel, Total	7440-02-0	0.283		0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-04	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	AWD4B-060716	**Prep Method:**	7470A	**Prep Date:**	06/09/2016 07:15
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/13/2016 10:16
Workgroup #:	WG572241	**Analyst:**	AMA	**Run Date:**	06/13/2016 11:09
Collect Date:	06/07/2016 15:30	**Dilution:**	1	**File ID:**	M7.061316.110925
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572348	**Analyst:**	FJB	**Run Date:**	06/11/2016 17:54
Collect Date:	06/07/2016 00:01	**Dilution:**	1	**File ID:**	8M412930
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	112	70	120	
Toluene-d8	106	85	120	
4-Bromofluorobenzene	101	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW15T-060716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572348	**Analyst:**	FJB	**Run Date:**	06/11/2016 20:19
Collect Date:	06/07/2016 13:15	**Dilution:**	1	**File ID:**	8M412935
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.566	J	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	3.23		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.311	J	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	111	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	101	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW15B-060716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572348	**Analyst:**	FJB	**Run Date:**	06/11/2016 20:48
Collect Date:	06/07/2016 13:55	**Dilution:**	1	**File ID:**	8M412936
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.532	J	1.00	0.500	0.250

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	3.22		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.319	J	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	116	70	120	
Toluene-d8	106	85	120	
4-Bromofluorobenzene	101	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	AWD4T-060716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572348	**Analyst:**	FJB	**Run Date:**	06/11/2016 21:17
Collect Date:	06/07/2016 15:00	**Dilution:**	1	**File ID:**	8M412937
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.274	J	1.00	0.500	0.250

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	2.21		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	111	85	115	
1,2-Dichloroethane-d4	112	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	100	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	AWD4B-060716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572348	**Analyst:**	FJB	**Run Date:**	06/11/2016 21:46
Collect Date:	06/07/2016 15:30	**Dilution:**	1	**File ID:**	8M412938
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.338	J	1.00	0.500	0.250

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	2.40		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	116	70	120	
Toluene-d8	106	85	120	
4-Bromofluorobenzene	101	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572348	**Analyst:**	FJB	**Run Date:**	06/11/2016 17:54
Collect Date:	06/07/2016 00:01	**Dilution:**	1	**File ID:**	8M412930
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	112	70	120	
Toluene-d8	106	85	120	
4-Bromofluorobenzene	101	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051316
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53752

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG568561

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412209	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 08:38
8M412210	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 08:57
8M412211	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 09:29
8M412212	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 09:56
8M412213	WG568561-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/13/16 10:19
8M412214	WG568561-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/13/16 10:51
8M412215	WG568565-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76072	05/13/16 11:36
8M412216	BFB CHECK	NA	1	1	STD76034	05/13/16 12:04
8M412217	BFB CHECK	NA	1	1	STD76034	05/13/16 12:18
8M412218	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 12:36
8M412219	RINSE	NA	1	1		05/13/16 13:00
8M412220	WG568561-02 0.3ug/L STD 8260	NA	1	1	STD76127	05/13/16 13:29
8M412221	WG568561-03 0.4ug/L STD 8260	NA	1	1	STD76127	05/13/16 13:58
8M412222	WG568561-04 1ug/L STD 8260	NA	1	1	STD76127	05/13/16 14:27
8M412223	WG568561-05 2ug/L STD 8260	NA	1	1	STD76127	05/13/16 14:56
8M412224	WG568561-06 5ug/L STD 8260	NA	1	1	STD76127	05/13/16 15:25
8M412225	WG568561-07 20ug/L STD 8260	NA	1	1	STD76127	05/13/16 15:54
8M412226	WG568561-08 50ug/L STD 8260	NA	1	1	STD76127	05/13/16 16:23
8M412227	WG568561-09 100ug/L STD 8260	NA	1	1	STD76127	05/13/16 16:52
8M412228	WG568561-10 200ug/L STD 8260	NA	1	1	STD76127	05/13/16 17:21
8M412229	WG568561-11 300ug/L STD 8260	NA	1	1	STD76127	05/13/16 17:50
8M412230	RINSE	NA	1	1		05/13/16 18:19
8M412231	RINSE	NA	1	1		05/13/16 18:49
8M412232	WG568561-12 50ug/L ALT SRC STD 8260	NA	1	1	STD76109	05/13/16 19:17
8M412233	RINSE	NA	1	1		05/13/16 19:46

Comments

Seq.	Rerun	Dil.	Reason	Analytes
5	X			
File ID: 8M412213				
	Several compounds were low, DNR.			
6				
File ID: 8M412214				

Approved: May 20, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS8	Dataset:	051316		
Analyst1:	TMB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	23
Method:	624	SOP:	MSV10	Rev:	14
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:	53752				

Internal Standard: STD75899 Surrogate Standard: STD75899

CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG568561

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			Two C compounds failed. DNR. Run a curve.	
7 File ID: 8M412215				
			DNR.	

Approved: May 20, 2016

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051716
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76072; STD76127 LCS: STD76109; STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG569079; WG569083

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412319	WG569084-01 50ng BFB STD 8260	NA	1	1	STD76034	05/17/16 08:53
8M412320	WG569084-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/17/16 09:18
8M412321	WG569079-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76072	05/17/16 09:47
8M412322	WG569079-03 50ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 10:16
8M412323	WG569079-04 20ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 10:44
8M412324	WG569079-05 5ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 11:13
8M412325	WG569079-06 200ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 11:42
8M412326	WG569079-07 300ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 12:40
8M412327	WG569079-08 400ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 13:10
8M412328	WG569079-09 500ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 13:39
8M412329	RINSE	NA	1	1		05/17/16 14:08
8M412330	RINSE	NA	1	1		05/17/16 14:37
8M412331	WG569079-10 100ug/L ALT SRC STD 826	NA	1	1	STD75801	05/17/16 15:06
8M412332	WG569259-01 BFB 50ng 8260	NA	1	1	STD76034	05/17/16 18:27
8M412333	WG569259-02 50ug/L CCV 8260	NA	1	1	STD76034	05/17/16 18:53
8M412334	WG569260-01 100ug/L CCV A9	NA	1	1	STD76072	05/17/16 19:22
8M412335	WG569083-01 VBLK0517 BLANK 8260	NA	1	1		05/17/16 19:51
8M412336	WG569083-02 20ug/L LCS 8260	NA	1	1	STD76109	05/17/16 20:20
8M412337	WG569083-03 20ug/L LCS2 8260	NA	1	1	STD76109	05/17/16 20:49
8M412338	WG569083-04 100ug/L LCS A9	NA	1	1	STD75801	05/17/16 21:18
8M412339	WG569083-05 100ug/L LCS2 A9	NA	1	1	STD75801	05/17/16 21:46
8M412340	L16050844-01 TB A 826-A9-SPE	5	1	1		05/17/16 22:16
8M412341	L16050844-07 EB A 826-A9-SPE	5	1	1		05/17/16 22:45
8M412342	L16050844-11 AB A 826-A9-SPE	5	1	1		05/17/16 23:14
8M412343	L16050844-02 A 826-A9-SPE	6	1	1		05/17/16 23:43
8M412344	L16050844-05 A 826-A9-SPE	6	1	1		05/18/16 00:12
8M412345	L16050844-06 A 826-A9-SPE	6	1	1		05/18/16 00:41
8M412346	L16050844-12 A 826-A9-SPE	6	1	1		05/18/16 01:10
8M412347	L16050840-01 A 826-A9-SPE	7	1	1		05/18/16 01:38
8M412348	L16050844-08 A 826-A9-SPE	7	1	1		05/18/16 02:07
8M412349	L16050844-13 A 826-A9-SPE	7	1	1		05/18/16 02:36
8M412350	L16050844-15 A 826-A9-SPE	7	1	1		05/18/16 03:05
8M412351	L16050839-01 A 826-A9-SPE	7	1	1		05/18/16 03:33
8M412352	L16050844-03 2.5X A 826-A9-SPE	7	1	2.5		05/18/16 04:02

Approved: May 20, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051716
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76072; STD76127 LCS: STD76109; STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG569079; WG569083

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412353	L16050844-04 5X A 826-A9-SPE	7	1	5		05/18/16 04:31
8M412354	L16050844-09 5X A 826-A9-SPE	7	1	5		05/18/16 05:01
8M412355	L16050844-10 5X A 826-A9-SPE	7	1	5		05/18/16 05:30
8M412356	L16050844-14 50X A 826-A9-SPE	7	1	50		05/18/16 05:59
8M412357	RINSE	NA	1	1		05/18/16 06:28

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
File ID: 8M412320				
	DNR. Running an a9/foo curve.			
32	X	10	Over Calibration Range	CIS12-DCE
File ID: 8M412350				
40	X	2.5	Analyzed too dilute	
File ID: 8M412353				
	DNR.			
37	X	25	Over Calibration Range	TCE
File ID: 8M412355				
38	X	20	Analyzed too dilute	
File ID: 8M412356				
	DNR.			

Approved: May 20, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 061116
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD76370 Surrogate Standard: STD76370
CCV: STD76405 LCS: STD76540 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG572348

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412920	WG572347-01 BFB 50ng 8260	NA	1	1	STD76496	06/11/16 13:08
8M412921	WG572347-02 50ug/L CCV 8260	NA	1	1	STD76405	06/11/16 13:34
8M412922	WG572XXX-01 100ug/L CCV A9	NA	1	1	STDXXXXX	06/11/16 14:03
8M412923	WG572348-01 VBLK0611 BLANK 8260	NA	1	1		06/11/16 14:32
8M412924	WG572348-02 20ug/L LCS 8260	NA	1	1	STD76540	06/11/16 15:00
8M412925	WG572348-03 20ug/L LCS2 8260	NA	1	1	STD76540	06/11/16 15:29
8M412926	L16060493-01 A 826-BETX	<2	1	1		06/11/16 15:57
8M412927	L16060493-08 A 826-BETX	<2	1	1		06/11/16 16:26
8M412928	L16060493-19 A 826-BETX	<2	1	1		06/11/16 16:56
8M412929	L16060387-02 A 826-SPE2	<2	1	1		06/11/16 17:25
8M412930	L16060411-05 A 826-LOW	<2	1	1		06/11/16 17:54
8M412931	L16060387-01 A 826-SPE2	<2	1	1		06/11/16 18:23
8M412932	L16060387-03 A 826-SPE2	<2	1	1		06/11/16 18:52
8M412933	L16060387-04 A 826-SPE2	<2	1	1		06/11/16 19:21
8M412934	L16060387-05 A 826-SPE2	<2	1	1		06/11/16 19:50
8M412935	L16060411-01 A 826-LOW	<2	1	1		06/11/16 20:19
8M412936	L16060411-02 A 826-LOW	<2	1	1		06/11/16 20:48
8M412937	L16060411-03 A 826-LOW	<2	1	1		06/11/16 21:17
8M412938	L16060411-04 A 826-LOW	<2	1	1		06/11/16 21:46
8M412939	L16060395-01 A 826-BETX	<2	1	1		06/11/16 22:15
8M412940	L16060395-03 A 826-BETX	<2	1	1		06/11/16 22:44
8M412941	L16060395-05 A 826-BETX	<2	1	1		06/11/16 23:13

Comments

Seq.	Rerun	Dil.	Reason	Analytes
3				
File ID: 8M412922				
	Not needed. DNR.			

Approved: June 14, 2016

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Microbac Laboratories Inc.

Data Checklist

Date: 13-MAY-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75126
Analytical Workgroups: WG568561

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	TMB
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
17-MAY-2016
Tiffany Bailey

Secondary Reviewer:
20-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2016 11:18:36

Microbac Laboratories Inc.

Data Checklist

Date: 17-MAY-2016
Analyst: TMB
Analyst: FJB
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75174
Analytical Workgroups: WG569079; WG569083

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
19-MAY-2016
Tiffany Bailey

Secondary Reviewer:
20-MAY-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2016 11:05:37

Microbac Laboratories Inc.

Data Checklist

Date: 11-JUN-2016
Analyst: FJB
Analyst: NA
Method: 8260B
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75654
Analytical Workgroups: WG572348

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
13-JUN-2016
Tiffany Bailey

Secondary Reviewer:
14-JUN-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-14-2016 13:11:47

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG572348

Login Number: L16060411

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW15T-060716	01	06/07/16					06/11/2016	4.3	14		06/11/16	4.3	14	
18CPTMW15B-060716	02	06/07/16					06/11/2016	4.3	14		06/11/16	4.3	14	
AWD4T-060716	03	06/07/16					06/11/2016	4.3	14		06/11/16	4.3	14	
AWD4B-060716	04	06/07/16					06/11/2016	4.3	14		06/11/16	4.3	14	
TRIP BLANK	05	06/07/16					06/11/2016	4.7	14		06/11/16	4.7	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4804427
Report generated 06/14/2016 13:38

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060411
Instrument Id: HPMS8
Workgroup (AAB#): WG572348

Method: 8260
CAL ID: HPMS8-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16060411-01	1.00	01	111	110	101	105
L16060411-02	1.00	01	116	110	101	106
L16060411-03	1.00	01	112	111	100	105
L16060411-04	1.00	01	116	112	101	106
L16060411-05	1.00	01	112	110	101	106
WG572348-01	1.00	01	116	112	100	105
WG572348-02	1.00	01	112	108	99.6	105
WG572348-03	1.00	01	111	110	98.9	105

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4804433
Report generated: 06/14/2016 13:38

METHOD BLANK SUMMARY

Login Number: L16060411
Blank File ID: 8M412923
Prep Date: 06/11/16 14:32
Analyzed Date: 06/11/16 14:32
Analyst: FJB

Work Group: WG572348
Blank Sample ID: WG572348-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572348-02	8M412924	06/11/16 15:00	01
LCS2	WG572348-03	8M412925	06/11/16 15:29	01
TRIP BLANK	L16060411-05	8M412930	06/11/16 17:54	01
18CPTMW15T-060716	L16060411-01	8M412935	06/11/16 20:19	01
18CPTMW15B-060716	L16060411-02	8M412936	06/11/16 20:48	01
AWD4T-060716	L16060411-03	8M412937	06/11/16 21:17	01
AWD4B-060716	L16060411-04	8M412938	06/11/16 21:46	01

Report Name: BLANK_SUMMARY
PDF File ID: 4807242
Report generated 06/14/2016 13:38

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16060411 Prep Date: 06/11/16 14:32 Sample ID: WG572348-01
Instrument ID: HPMS8 Run Date: 06/11/16 14:32 Prep Method: 5030B/5030C/503
File ID: 8M412923 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG572348 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4804428
14-JUN-2016 13:38

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060411 Prep Date: 06/11/16 14:32 Sample ID: WG572348-01
Instrument ID: HPMS8 Run Date: 06/11/16 14:32 Prep Method: 5030B/5030C/503
File ID: 8M412923 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG572348 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.711	1	*
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	112	85 - 115	PASS
1,2-Dichloroethane-d4	116	70 - 120	PASS
Toluene-d8	105	85 - 120	PASS
4-Bromofluorobenzene	100	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4804428
14-JUN-2016 13:38

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060411 Analyst: FJB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG572348 Units: ug/L
QC Key: DOD4 Lot #: STD76540

Sample ID: WG572348-02 LCS File ID: 8M412924 Run Date: 06/11/2016 15:00
Sample ID: WG572348-03 LCS2 File ID: 8M412925 Run Date: 06/11/2016 15:29

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	20.7	103	20.0	20.2	101	2.30	80 - 130	30	
1,1,1-Trichloroethane	20.0	22.7	113	20.0	21.9	109	3.49	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	17.0	85.1	20.0	17.6	87.8	3.06	65 - 130	30	
1,1,2-Trichloroethane	20.0	18.9	94.3	20.0	18.7	93.5	0.928	75 - 125	30	
1,1-Dichloroethane	20.0	19.9	99.5	20.0	19.2	96.1	3.51	70 - 135	30	
1,1-Dichloroethene	20.0	19.6	98.1	20.0	19.0	95.2	2.99	70 - 130	30	
1,1-Dichloropropene	20.0	20.6	103	20.0	20.1	100	2.34	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	16.9	84.7	20.0	16.9	84.6	0.0959	55 - 140	30	
1,2,3-Trichloropropane	20.0	18.4	92.1	20.0	18.9	94.6	2.67	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	18.4	92.1	20.0	18.2	90.9	1.32	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	19.9	99.7	20.0	19.2	96.0	3.80	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	16.7	83.3	20.0	17.5	87.6	5.09	50 - 130	30	
1,2-Dibromoethane	20.0	19.7	98.7	20.0	19.1	95.6	3.26	80 - 120	30	
1,2-Dichlorobenzene	20.0	19.3	96.4	20.0	19.1	95.4	1.02	70 - 120	30	
1,2-Dichloroethane	20.0	22.7	114	20.0	21.8	109	4.07	70 - 130	30	
1,2-Dichloropropane	20.0	19.7	98.7	20.0	20.2	101	2.38	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	20.7	103	20.0	19.6	98.2	5.11	75 - 130	30	
1,3-Dichlorobenzene	20.0	19.6	97.9	20.0	19.6	98.0	0.0658	75 - 125	30	
1,3-Dichloropropane	20.0	20.7	103	20.0	20.6	103	0.349	75 - 125	30	
1,4-Dichlorobenzene	20.0	20.1	100	20.0	19.5	97.3	3.09	75 - 125	30	
2,2-Dichloropropane	20.0	23.8	119	20.0	22.6	113	5.34	70 - 135	30	
2-Butanone	20.0	18.3	91.6	20.0	19.6	97.9	6.68	30 - 150	30	
2-Chlorotoluene	20.0	20.2	101	20.0	19.6	97.9	3.31	75 - 125	30	
2-Hexanone	20.0	17.1	85.4	20.0	17.4	87.2	2.06	55 - 130	30	
4-Chlorotoluene	20.0	19.6	98.1	20.0	19.7	98.3	0.111	75 - 130	30	
4-Methyl-2-pentanone	20.0	18.1	90.6	20.0	18.8	93.8	3.50	60 - 135	30	
Acetone	20.0	20.3	102	20.0	21.4	107	5.48	40 - 140	30	
Benzene	20.0	20.6	103	20.0	20.1	100	2.39	80 - 120	30	
Bromobenzene	20.0	19.3	96.5	20.0	18.6	93.2	3.42	75 - 125	30	
Bromochloromethane	20.0	20.3	102	20.0	20.3	102	0.0023	65 - 130	30	
Bromodichloromethane	20.0	21.8	109	20.0	21.3	106	2.67	75 - 120	30	
Bromoform	20.0	19.2	95.9	20.0	19.2	95.8	0.114	70 - 130	30	
Bromomethane	20.0	15.4	77.0	20.0	14.6	73.2	5.16	30 - 145	30	
Carbon disulfide	20.0	20.4	102	20.0	19.5	97.6	4.19	35 - 160	30	
Carbon tetrachloride	20.0	23.1	116	20.0	21.9	109	5.40	65 - 140	30	
Chlorobenzene	20.0	20.4	102	20.0	19.9	99.3	2.48	80 - 120	30	
Chloroethane	20.0	22.7	113	20.0	21.0	105	7.69	60 - 135	30	
Chloroform	20.0	21.0	105	20.0	20.7	104	1.28	65 - 135	30	
Chloromethane	20.0	20.7	103	20.0	20.7	104	0.394	40 - 125	30	
cis-1,2-Dichloroethene	20.0	20.4	102	20.0	20.3	102	0.182	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4804429
Report generated: 06/14/2016 13:38

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060411 Analyst: FJB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG572348 Units: ug/L
QC Key: DOD4 Lot #: STD76540

Sample ID: WG572348-02 LCS File ID: 8M412924 Run Date: 06/11/2016 15:00
Sample ID: WG572348-03 LCS2 File ID: 8M412925 Run Date: 06/11/2016 15:29

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	22.5	113	20.0	22.3	111	1.15	70 - 130	30	
Chlorodibromomethane	20.0	19.8	98.9	20.0	19.8	99.2	0.316	60 - 135	30	
Dibromomethane	20.0	18.9	94.5	20.0	18.9	94.7	0.125	75 - 125	30	
Dichlorodifluoromethane	20.0	26.2	131	20.0	25.4	127	3.16	30 - 155	30	
Ethylbenzene	20.0	19.7	98.4	20.0	19.0	95.0	3.52	75 - 125	30	
Hexachlorobutadiene	20.0	21.0	105	20.0	20.2	101	4.09	50 - 140	30	
Isopropylbenzene	20.0	21.6	108	20.0	21.1	106	1.93	75 - 125	30	
m-,p-Xylene	40.0	41.4	103	40.0	40.3	101	2.72	75 - 130	30	
Methylene chloride	20.0	19.4	97.1	20.0	19.1	95.5	1.65	55 - 140	30	
n-Butylbenzene	20.0	19.4	97.0	20.0	19.0	95.0	2.03	70 - 135	30	
n-Propylbenzene	20.0	20.7	104	20.0	19.9	99.6	3.98	70 - 130	30	
Naphthalene	20.0	15.2	75.9	20.0	15.7	78.7	3.61	55 - 140	30	
o-Xylene	20.0	21.1	105	20.0	20.2	101	4.21	80 - 120	30	
p-Isopropyltoluene	20.0	20.3	101	20.0	19.7	98.5	2.81	75 - 130	30	
sec-Butylbenzene	20.0	20.3	101	20.0	19.6	98.0	3.40	70 - 125	30	
Styrene	20.0	20.5	102	20.0	20.1	101	1.68	65 - 135	30	
tert-Butylbenzene	20.0	20.1	100	20.0	19.6	97.8	2.50	70 - 130	30	
Tetrachloroethene	20.0	20.5	102	20.0	19.9	99.5	2.88	45 - 150	30	
Toluene	20.0	19.7	98.5	20.0	19.4	97.2	1.29	75 - 120	30	
trans-1,2-Dichloroethene	20.0	20.1	101	20.0	19.8	99.1	1.48	60 - 140	30	
trans-1,3-Dichloropropene	20.0	20.1	100	20.0	20.0	99.8	0.543	55 - 140	30	
Trichloroethene	20.0	21.6	108	20.0	21.7	109	0.535	70 - 125	30	
Trichlorofluoromethane	20.0	23.4	117	20.0	22.5	113	3.66	60 - 145	30	
Vinyl chloride	20.0	25.0	125	20.0	24.7	124	1.18	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	112	111	70 - 120	PASS
Dibromofluoromethane	108	110	85 - 115	PASS
4-Bromofluorobenzene	99.6	98.9	75 - 120	PASS
Toluene-d8	105	105	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4804429
Report generated: 06/14/2016 13:38

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060411
Instrument: HPMS8
Analyst: TMB
Workgroup: WG568561

Tune ID: WG568561-01
Run Date: 05/13/2016
Run Time: 12:36
File ID: 8M412218
Cal ID: HPMS8 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	16.7	6575	PASS
75.0	95.0	30.0	60.0	51.3	20171	PASS
95.0	95.0	100	100	100	39312	PASS
96.0	95.0	5.00	9.00	6.74	2649	PASS
173	174	0	2.00	0.363	122	PASS
174	95.0	50.0	100	85.5	33616	PASS
175	174	5.00	9.00	8.17	2746	PASS
176	174	95.0	101	99.2	33360	PASS
177	176	5.00	9.00	6.80	2267	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG568561-02	STD	01	05/13/2016 13:29	
WG568561-03	STD	01	05/13/2016 13:58	
WG568561-04	STD	01	05/13/2016 14:27	
WG568561-05	STD	01	05/13/2016 14:56	
WG568561-06	STD	01	05/13/2016 15:25	
WG568561-07	STD	01	05/13/2016 15:54	
WG568561-08	STD-CCV	01	05/13/2016 16:23	
WG568561-09	STD	01	05/13/2016 16:52	
WG568561-10	STD	01	05/13/2016 17:21	
WG568561-11	STD	01	05/13/2016 17:50	
WG568561-12	SSCV	01	05/13/2016 19:17	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4804431
Report generated 06/14/2016 13:38

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060411
Instrument: HPMS8
Analyst: TMB
Workgroup: WG569084

Tune ID: WG569084-01
Run Date: 05/17/2016
Run Time: 08:53
File ID: 8M412319
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.1	6316	PASS
75.0	95.0	30.0	60.0	54.7	18130	PASS
95.0	95.0	100	100	100	33138	PASS
96.0	95.0	5.00	9.00	6.76	2241	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	72.2	23934	PASS
175	174	5.00	9.00	7.88	1886	PASS
176	174	95.0	101	96.8	23159	PASS
177	176	5.00	9.00	7.15	1655	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG569079-01	STD-CCV	01	05/17/2016 09:47	
WG569079-03	STD	01	05/17/2016 10:16	
WG569079-04	STD	01	05/17/2016 10:44	
WG569079-05	STD	01	05/17/2016 11:13	
WG569079-06	STD	01	05/17/2016 11:42	
WG569079-07	STD	01	05/17/2016 12:40	
WG569079-08	STD	01	05/17/2016 13:10	
WG569079-09	STD	01	05/17/2016 13:39	
WG569079-10	SSCV	01	05/17/2016 15:06	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4804431
Report generated 06/14/2016 13:38

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060411
Instrument: HPMS8
Analyst: FJB
Workgroup: WG572347

Tune ID: WG572347-01
Run Date: 06/11/2016
Run Time: 13:08
File ID: 8M412920
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	17.8	8071	PASS
75.0	95.0	30.0	60.0	58.5	26476	PASS
95.0	95.0	100	100	100	45256	PASS
96.0	95.0	5.00	9.00	6.94	3142	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	77.0	34867	PASS
175	174	5.00	9.00	7.00	2439	PASS
176	174	95.0	101	96.0	33456	PASS
177	176	5.00	9.00	6.58	2202	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG572347-02	CCV	01	06/11/2016 13:34	
WG572348-01	BLANK	01	06/11/2016 14:32	
WG572348-02	LCS	01	06/11/2016 15:00	
WG572348-03	LCS2	01	06/11/2016 15:29	
L16060411-05	TRIP BLANK	01	06/11/2016 17:54	
L16060411-01	18CPTMW15T-060716	01	06/11/2016 20:19	
L16060411-02	18CPTMW15B-060716	01	06/11/2016 20:48	
L16060411-03	AWD4T-060716	01	06/11/2016 21:17	
L16060411-04	AWD4B-060716	01	06/11/2016 21:46	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4804431
Report generated 06/14/2016 13:38

Calibration Table Report
Method: 8260WT.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Calibration: Sat May 14 18:08:06 2016
Curve: WG568561
Calibration Files

	Compound	0.3 8M412220.D	0.4 8M412221.D	1 8M412222.D	2 8M412223.D	5 8M412224.D	20 8M412225.D	50 8M412226.D	100 8M412227.D	200 8M412228.D	300 8M412229.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane		0.427	0.390	0.397	0.364	0.468	0.439	0.452	0.427	0.408	0.419	7.751		
P	Chloromethane			0.264	0.257	0.223	0.253	0.240	0.240	0.239	0.241	0.245	5.336		
C	Vinyl Chloride		0.274	0.296	0.297	0.277	0.299	0.292	0.299	0.292	0.288	0.290	3.191		
T	1,3-Butadiene				0.218	0.208	0.242	0.251	0.277	0.254	0.254	0.243	9.644		
T	Bromomethane			0.129	0.133	0.127	0.162	0.167	0.187	0.205	0.212	0.165	20.449		1.000
T	Chloroethane		0.173	0.157	0.153	0.143	0.164	0.157	0.163	0.164	0.164	0.160	5.354		
T	Trichlorofluoromethane		0.544	0.538	0.559	0.506	0.570	0.538	0.551	0.531	0.525	0.540	3.520		
T	Diethyl ether			0.130	0.138	0.123	0.132	0.125	0.128		0.127	0.129	3.866		
T	Isoprene		0.335	0.351	0.334	0.293	0.334	0.320	0.334	0.322	0.329	0.328	4.867		
T	Acrolein				0.012	0.010	0.010	0.011	0.012		0.014	0.012	12.987		
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.256	0.269	0.240	0.260	0.249	0.257	0.251	0.250	0.254	3.397		
T	Acetone					0.023	0.030	0.029	0.030	0.028	0.028	0.028	9.132		
C	1,1-Dichloroethene		0.424	0.407	0.406	0.387	0.416	0.398	0.409	0.400	0.393	0.404	2.830		
T	Tert-Butyl Alcohol				0.010	0.009	0.009	0.009	0.009		0.009	0.009	2.872		
T	Dimethyl Sulfide		0.133	0.142	0.152	0.137	0.145	0.142	0.151	0.147	0.151	0.145	4.534		
T	Iodomethane				0.019	0.024	0.066	0.101	0.129	0.135	0.131	0.087	58.244		0.998
T	Methyl acetate					0.075	0.076	0.074	0.078	0.076	0.078	0.076	2.221		
T	Methylene Chloride			0.274	0.265	0.244	0.263	0.250	0.255	0.254	0.252	0.257	3.686		
T	Carbon Disulfide			0.888	0.922	0.801	0.873	0.816	0.854	0.813	0.802	0.846	5.346		
T	Acrylonitrile			0.027	0.035	0.033	0.038	0.038	0.039		0.044	0.036	14.671		
T	Methyl Tert Butyl Ether			0.534	0.543	0.521	0.586	0.579	0.585	0.560	0.546	0.557	4.455		
T	trans-1,2-Dichloroethene		0.389	0.395	0.364	0.352	0.381	0.367	0.372	0.364	0.358	0.371	3.858		
T	n-Hexane					0.265	0.280	0.270	0.286	0.275	0.279	0.276	2.732		
T	Diisopropyl ether			0.600	0.607	0.548	0.588	0.572	0.571		0.567	0.579	3.559		
T	Vinyl Acetate				0.256	0.243	0.270	0.275	0.266	0.271	0.275	0.265	4.509		
P	1,1-Dichloroethane		0.441	0.463	0.486	0.434	0.488	0.464	0.470	0.459	0.447	0.461	4.012		
T	Ethyl-Tert-Butyl ether			0.616	0.645	0.590	0.641	0.628	0.619		0.603	0.620	3.188		
T	2-Butanone					0.035	0.042	0.043	0.045	0.041	0.043	0.041	8.268		
T	Propionitrile			0.010	0.012	0.012	0.013	0.012	0.013		0.013	0.012	8.354		
T	2,2-Dichloropropane		0.471	0.462	0.520	0.476	0.503	0.494	0.497	0.483	0.470	0.486	3.839		
T	cis-1,2-Dichloroethene		0.299	0.298	0.291	0.267	0.295	0.282	0.289	0.283	0.277	0.287	3.685		
C	Chloroform	0.563	0.567	0.581	0.536	0.509	0.566	0.543	0.546	0.529	0.506	0.545	4.619		
T	1-Bromopropane			0.034	0.040	0.040	0.043	0.041	0.043	0.043	0.044	0.041	7.649		
T	Bromochloromethane		0.131	0.164	0.147	0.137	0.154	0.148	0.151	0.148	0.145	0.147	6.598		
T	Tetrahydrofuran			0.034	0.028	0.025	0.026	0.026	0.026		0.026	0.027	11.724		
S	Dibromofluoromethane			0.249	0.261	0.257	0.280	0.271	0.284	0.271	0.275	0.269	4.465		
T	1,1,1-Trichloroethane		0.492	0.537	0.515	0.496	0.545	0.525	0.533	0.515	0.499	0.517	3.660		
T	Cyclohexane			0.373	0.369	0.335	0.359	0.344	0.366	0.356	0.364	0.358	3.619		
T	1,1-Dichloropropene			0.414	0.399	0.369	0.403	0.395	0.399	0.392	0.382	0.394	3.488		
T	Tert-Amyl-Methyl ether			0.567	0.587	0.534	0.576	0.568	0.561		0.549	0.563	3.077		
T	Carbon Tetrachloride		0.444	0.456	0.462	0.441	0.481	0.465	0.474	0.462	0.448	0.4594	2.92173		
S	1,2-Dichloroethane-d4			0.241	0.309	0.276	0.312	0.295	0.301	0.284	0.286	0.288	7.93644		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.347	0.335	0.354	0.336	0.371	0.36	0.364	0.349	0.338	0.3505	3.65503		
T	Benzene		1.128	1.084	1.071	0.977	1.085	1.033	1.019	0.963	0.883	1.0269	7.39343		
T	Trichloroethene		0.285	0.275	0.276	0.251	0.283	0.273	0.279	0.273	0.27	0.2739	3.66126		
T	Methylcyclohexane					0.396	0.426	0.408	0.429	0.416	0.422	0.4161	2.94153		
C	1,2-Dichloropropane		0.239	0.222	0.233	0.207	0.238	0.226	0.233	0.231	0.229	0.2286	4.30096		
T	Bromodichloromethane		0.369	0.382	0.412	0.385	0.426	0.421	0.417	0.41	0.395	0.4018	4.93305		
T	1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.0011	14.5817		
T	Dibromomethane		0.141	0.13	0.137	0.128	0.141	0.134	0.137	0.136	0.133	0.1353	3.26799		
T	2-Chloroethyl Vinyl Ether				0.1	0.084	0.103	0.104	0.103	0.095	0.098	0.0983	7.09792		
T	4-Methyl-2-Pentanone					0.033	0.042	0.042	0.043	0.04	0.041	0.0401	8.66859		
T	cis-1,3-Dichloropropene		0.391	0.393	0.386	0.398	0.431	0.428	0.428	0.42	0.405	0.409	4.41527		

T	Dimethyl Disulfide					0.182	0.218	0.221	0.23	0.229	0.23	0.2183	8.49419	
I	Chlorobenzene-d5	ISTD												
S	Toluene-d8			1.282	1.295	1.228	1.385	1.333	1.378	1.289	1.278	1.3084	4.07746	
C	Toluene		1.653	1.696	1.678	1.507	1.647	1.554	1.545	1.418	1.27	1.552	8.98325	
T	Ethyl Methacrylate			0.251	0.293	0.268	0.314	0.314	0.327	0.309	0.31	0.2981	8.76897	
T	Paraldehyde											0	0	
T	trans-1,3-Dichloropropene			0.472	0.51	0.466	0.561	0.552	0.553	0.533	0.515	0.5201	7.01006	
T	1,1,2-Trichloroethane		0.261	0.241	0.242	0.222	0.254	0.249	0.252	0.243	0.241	0.2449	4.54209	
T	2-Hexanone					0.042	0.053	0.053	0.056	0.051	0.053	0.0515	9.50479	
T	1,3-Dichloropropane		0.355	0.442	0.465	0.42	0.468	0.454	0.457	0.437	0.428	0.436	7.93348	
T	Tetrachloroethene		0.355	0.337	0.336	0.306	0.333	0.325	0.337	0.334	0.33	0.3325	3.83886	
T	Dibromochloromethane		0.349	0.336	0.338	0.328	0.373	0.372	0.383	0.373	0.367	0.3576	5.60043	
T	1,2-Dibromoethane		0.233	0.234	0.234	0.227	0.259	0.254	0.258	0.251	0.247	0.2441	5.04151	
T	1-Chlorohexane		0.532	0.584	0.505	0.502	0.54	0.52	0.547	0.521	0.516	0.5298	4.7826	
P	Chlorobenzene		1.029	1.173	1.09	1.007	1.099	1.037	1.043	1.002	0.939	1.0466	6.41465	
T	1,1,1,2-Tetrachloroethane		0.392	0.399	0.403	0.357	0.431	0.414	0.424	0.417	0.413	0.4055	5.39495	
C	Ethylbenzene		0.6	0.594	0.59	0.532	0.586	0.559	0.57	0.564	0.558	0.5726	3.7769	
T	m-,p-Xylene		0.744	0.696	0.691	0.643	0.713	0.67	0.673	0.634	0.581	0.6716	7.12586	
T	o-Xylene			0.691	0.651	0.614	0.692	0.658	0.667	0.65	0.63	0.6567	4.11758	
T	Styrene		1.05	1.06	1.096	1.043	1.159	1.124	1.12	1.061	0.98	1.077	4.96781	
P	Bromoform			0.177	0.21	0.181	0.226	0.221	0.232	0.227	0.223	0.2121	10.0546	
T	Isopropylbenzene		1.853	1.891	1.871	1.708	1.897	1.781	1.75	1.573	1.377	1.7444	9.92447	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.426	0.492	0.503	0.486	0.543	0.51	0.527	0.513	0.514	0.5018	6.60291	
S	p-Bromofluorobenzene				1.054	0.976	1.071	1.016	1.053	1.031	1.046	1.0352	3.05136	
T	1,2,3-Trichloropropane			0.119	0.158	0.161	0.162	0.155	0.162	0.16	0.158	0.1545	9.40789	
T	trans-1,4-Dichloro-2-Butene			0.085	0.118	0.12	0.149	0.151	0.16	0.159	0.161	0.1376	19.9543	1.000
T	n-Propylbenzene		4.139	4.239	4.243	4.051	4.241	3.953	3.882	3.419	2.935	3.9003	11.4439	
T	Bromobenzene	0.796	0.708	0.843	0.837	0.778	0.84	0.798	0.817	0.803	0.803	0.8022	4.93253	
T	1,3,5-Trimethylbenzene		2.941	2.93	2.941	2.839	3.053	2.882	2.871	2.689	2.423	2.8411	6.50391	
T	2-Chlorotoluene		2.917	2.935	2.929	2.712	2.861	2.795	2.682	2.533	2.145	2.7231	9.37022	
T	4-Chlorotoluene		2.681	2.596	2.581	2.474	2.625	2.326	2.447	2.286	2.121	2.4597	7.49558	
T	a-Methylstyrene					1.257	1.406	1.34	1.384	1.35	1.351	1.3479	3.77654	
T	tert-Butylbenzene			0.587	0.555	0.53	0.571	0.533	0.552	0.561	0.558	0.5558	3.34508	
T	1,2,4-Trimethylbenzene		2.955	3.168	3.127	2.936	3.12	2.914	2.937	2.709	2.427	2.9214	7.97314	
T	sec-Butylbenzene			3.701	3.536	3.487	3.607	3.34	3.332	3.045	2.69	3.3424	9.93324	
T	p-Isopropyltoluene			3.112	3.062	2.903	2.988	2.813	2.809	2.634	2.382	2.8379	8.45265	
T	1,3-Dichlorobenzene		1.484	1.617	1.627	1.53	1.605	1.531	1.549	1.51	1.45	1.5448	3.95774	
T	1,4-Dichlorobenzene	1.713	1.524	1.672	1.594	1.503	1.6	1.511	1.535	1.49	1.431	1.5574	5.56562	
T	n-Butylbenzene			3.143	2.96	2.895	3.002	2.791	2.792	2.571	2.292	2.8056	9.55812	
T	1,2-Dichlorobenzene	1.59	1.307	1.415	1.41	1.322	1.404	1.333	1.356	1.315	1.286	1.3739	6.4618	
T	1,2-Dibromo-3-Chloropropane				0.085	0.103	0.102	0.103	0.106	0.104	0.103	0.1007	6.86771	
T	1,2,4-Trichlorobenzene		1.074	1.01	1.028	0.982	1.069	1.013	1.036	1.029	1.002	1.0269	2.90829	
T	Hexachlorobutadiene		0.516	0.476	0.483	0.447	0.487	0.459	0.48	0.485	0.485	0.4798	4.00465	
T	Naphthalene		1.594	1.457	1.574	1.455	1.63	1.552	1.564	1.485	1.422	1.5258	4.75891	
T	1,2,3-Trichlorobenzene	0.913	0.934	0.905	0.862	0.805	0.877	0.824	0.862	0.846	0.835	0.8664	4.7474	

Tue May 17 11:49:41 2016

Calibration Table Report
Method: A9FOOWT.M
Title: A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Calibration: Thu May 19 08:54:31 2016
Curve: WG569079
Calibration Files

	Compound	5 8M412324.D	20 8M412323.D	50 8M412322.D	100 8M412321.D	200 8M412325.D	300 8M412326.D	400 8M412327.D	500 8M412328.D	Avg	%RSD
I	Fluorobenzene	ISTD									
T	Acetonitrile		0.009	0.010	0.010	0.010	0.010	0.010	0.010	0.010	2.076
T	3-Chloro-1-propene	0.306	0.330	0.335	0.331	0.324	0.307	0.304	0.304	0.318	4.307
T	2-Chloro-1,3-butadiene	0.368	0.420	0.420	0.419	0.419	0.392	0.389	0.387	0.402	5.022
T	Ethyl Acetate	0.080	0.096	0.097	0.100	0.099	0.098	0.100	0.095	0.096	6.751
T	Methacrylonitrile	0.041	0.054	0.055	0.055	0.055	0.054	0.055	0.052	0.053	9.227
T	Isobutyl Alcohol			0.003	0.003	0.003	0.003	0.003	0.003	0.003	3.599
T	1-Butanol									0.000	0.000
T	Methyl methacrylate	0.089	0.106	0.106	0.105	0.106	0.105	0.107	0.102	0.103	5.868
T	2-Nitropropane		0.041	0.042	0.043	0.046	0.047	0.048	0.046	0.045	5.992
I	Chlorobenzene-d5	ISTD									
I	1,4-Dichlorobenzene-d4	ISTD									
T	Cyclohexanone		0.011	0.010	0.010	0.009	0.010	0.011	0.010	0.010	4.971

Thu May 19 09:04:52 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060411 Run Date: 05/13/2016 Sample ID: WG568561-12
Instrument ID: HPMS8 Run Time: 19:17 Method: 8260B
File ID: 8M412232 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG568561 Cal ID: HPMS8 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.1	ug/L	0.513	5.70	20	
1,1-Dichloroethene	CCC	50.0	46.0	ug/L	0.372	8.10	20	
1,2-Dichloropropane	CCC	50.0	51.0	ug/L	0.233	1.90	20	
Ethylbenzene	CCC	50.0	48.2	ug/L	0.552	3.60	20	
Toluene	CCC	50.0	49.1	ug/L	1.52	1.80	20	
Vinyl Chloride	CCC	50.0	52.4	ug/L	0.304	4.80	20	
Bromoform	SPCC	50.0	48.2	ug/L	0.205	3.60	20	
Chlorobenzene	SPCC	50.0	50.2	ug/L	1.05	0.400	20	
Chloromethane	SPCC	50.0	50.7	ug/L	0.248	1.40	20	
1,1-Dichloroethane	SPCC	50.0	46.7	ug/L	0.431	6.60	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.6	ug/L	0.498	0.800	20	
Acetone		50.0	57.5	ug/L	0.0324	15.1	20	
Benzene		50.0	48.5	ug/L	0.997	3.00	20	
Bromobenzene		50.0	49.5	ug/L	0.794	1.10	20	
Bromochloromethane		50.0	47.5	ug/L	0.140	4.90	20	
Bromodichloromethane		50.0	48.3	ug/L	0.388	3.40	20	
Bromomethane		50.0	46.4	ug/L	0.162	7.20	20	
2-Butanone		50.0	53.0	ug/L	0.0438	6.00	20	
n-Butylbenzene		50.0	49.7	ug/L	2.79	0.700	20	
sec-Butylbenzene		50.0	51.3	ug/L	3.43	2.70	20	
tert-Butylbenzene		50.0	50.9	ug/L	0.566	1.90	20	
Carbon Disulfide		50.0	42.3	ug/L	0.716	15.4	20	
Carbon Tetrachloride		50.0	46.2	ug/L	0.425	7.50	20	
Dibromochloromethane		50.0	49.7	ug/L	0.355	0.700	20	
Chloroethane		50.0	53.3	ug/L	0.170	6.70	20	
2-Chlorotoluene		50.0	51.6	ug/L	2.81	3.10	20	
4-Chlorotoluene		50.0	48.3	ug/L	2.37	3.50	20	
1,2-Dibromo-3-Chloropropane		50.0	48.5	ug/L	0.0977	3.00	20	
1,2-Dibromoethane		50.0	51.1	ug/L	0.250	2.20	20	
Dibromomethane		50.0	45.8	ug/L	0.124	8.40	20	
1,2-Dichlorobenzene		50.0	50.5	ug/L	1.39	1.00	20	
1,3-Dichlorobenzene		50.0	50.9	ug/L	1.57	1.80	20	
1,4-Dichlorobenzene		50.0	50.5	ug/L	1.57	0.900	20	
Dichlorodifluoromethane		50.0	54.2	ug/L	0.455	8.40	20	
1,2-Dichloroethane		50.0	49.0	ug/L	0.344	2.00	20	
cis-1,2-Dichloroethene		50.0	48.9	ug/L	0.281	2.20	20	
trans-1,2-Dichloroethene		50.0	48.1	ug/L	0.357	3.90	20	
1,3-Dichloropropane		50.0	53.7	ug/L	0.468	7.30	20	
2,2-Dichloropropane		50.0	47.9	ug/L	0.466	4.20	20	
cis-1,3-Dichloropropene		50.0	53.9	ug/L	0.441	7.80	20	
trans-1,3-Dichloropropene		50.0	50.7	ug/L	0.527	1.30	20	
1,1-Dichloropropene		50.0	47.5	ug/L	0.374	5.10	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4804430
Report generated 06/14/2016 13:38

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060411 Run Date: 05/13/2016 Sample ID: WG568561-12
Instrument ID: HPMS8 Run Time: 19:17 Method: 8260B
File ID: 8M412232 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG568561 Cal ID: HPMS8 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	53.6	ug/L	0.0552	7.20	20	
Hexachlorobutadiene		50.0	52.1	ug/L	0.500	4.20	20	
Isopropylbenzene		50.0	51.1	ug/L	1.78	2.20	20	
p-Isopropyltoluene		50.0	50.1	ug/L	2.85	0.300	20	
4-Methyl-2-Pentanone		50.0	51.9	ug/L	0.0416	3.70	20	
Methylene Chloride		50.0	48.4	ug/L	0.249	3.10	20	
Naphthalene		50.0	45.8	ug/L	1.40	8.40	20	
n-Propylbenzene		50.0	51.9	ug/L	4.05	3.80	20	
Styrene		50.0	51.5	ug/L	1.11	3.00	20	
1,1,1,2-Tetrachloroethane		50.0	49.4	ug/L	0.400	1.20	20	
Tetrachloroethene		50.0	47.8	ug/L	0.318	4.40	20	
1,2,3-Trichlorobenzene		50.0	47.7	ug/L	0.827	4.50	20	
1,2,4-Trichlorobenzene		50.0	50.1	ug/L	1.03	0.200	20	
1,1,1-Trichloroethane		50.0	47.6	ug/L	0.492	4.80	20	
1,1,2-Trichloroethane		50.0	49.0	ug/L	0.240	1.90	20	
Trichloroethene		50.0	51.1	ug/L	0.280	2.10	20	
Trichlorofluoromethane		50.0	46.9	ug/L	0.507	6.10	20	
1,2,3-Trichloropropane		50.0	50.1	ug/L	0.155	0.200	20	
1,2,4-Trimethylbenzene		50.0	49.7	ug/L	2.90	0.700	20	
1,3,5-Trimethylbenzene		50.0	51.6	ug/L	2.93	3.30	20	
o-Xylene		50.0	50.6	ug/L	0.664	1.10	20	
m-,p-Xylene		100	101	ug/L	0.679	1.10	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4804430
Report generated 06/14/2016 13:38

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060411 Run Date: 06/11/2016 Sample ID: WG572347-02
Instrument ID: HPMS8 Run Time: 13:34 Method: 8260B
File ID: 8M412921 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG572348 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	53.4	ug/L	0.582	6.90	20	
1,1-Dichloroethene	CCC	50.0	54.4	ug/L	0.440	8.76	20	
1,2-Dichloropropane	CCC	50.0	47.8	ug/L	0.219	4.35	20	
Ethylbenzene	CCC	50.0	50.0	ug/L	0.573	0.0186	20	
Toluene	CCC	50.0	50.4	ug/L	1.57	0.899	20	
Vinyl Chloride	CCC	50.0	54.5	ug/L	0.316	9.01	20	
Bromoform	SPCC	50.0	50.3	ug/L	0.213	0.542	20	
Chlorobenzene	SPCC	50.0	49.7	ug/L	1.04	0.521	20	
Chloromethane	SPCC	50.0	46.7	ug/L	0.229	6.54	20	
1,1-Dichloroethane	SPCC	50.0	52.2	ug/L	0.482	4.41	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	40.6	ug/L	0.407	18.8	20	
Xylenes		150	154	ug/L	0.681	2.61	20	
Acetone		50.0	49.1	ug/L	0.0276	1.89	20	
Benzene		50.0	51.5	ug/L	1.06	2.95	20	
Bromobenzene		50.0	48.4	ug/L	0.777	3.10	20	
Bromochloromethane		50.0	50.9	ug/L	0.150	1.87	20	
Bromodichloromethane		50.0	53.7	ug/L	0.431	7.38	20	
Bromomethane		50.0	36.0	ug/L	0.125	28.0	20	*
2-Butanone		50.0	42.5	ug/L	0.0351	15.0	20	
n-Butylbenzene		50.0	50.3	ug/L	2.82	0.574	20	
sec-Butylbenzene		50.0	50.5	ug/L	3.38	1.01	20	
tert-Butylbenzene		50.0	49.4	ug/L	0.549	1.26	20	
Carbon Disulfide		50.0	50.2	ug/L	0.849	0.409	20	
Carbon Tetrachloride		50.0	60.1	ug/L	0.553	20.3	20	*
Dibromochloromethane		50.0	49.7	ug/L	0.355	0.649	20	
Chloroethane		50.0	49.7	ug/L	0.159	0.538	20	
2-Chlorotoluene		50.0	48.8	ug/L	2.66	2.49	20	
4-Chlorotoluene		50.0	48.7	ug/L	2.39	2.67	20	
1,2-Dibromo-3-Chloropropane		50.0	43.1	ug/L	0.0868	13.8	20	
1,2-Dibromoethane		50.0	47.0	ug/L	0.230	5.99	20	
Dibromomethane		50.0	48.1	ug/L	0.130	3.72	20	
1,2-Dichlorobenzene		50.0	46.8	ug/L	1.29	6.34	20	
1,3-Dichlorobenzene		50.0	49.2	ug/L	1.52	1.58	20	
1,4-Dichlorobenzene		50.0	47.6	ug/L	1.48	4.80	20	
Dichlorodifluoromethane		50.0	60.9	ug/L	0.510	21.7	20	*
1,2-Dichloroethane		50.0	54.0	ug/L	0.379	8.02	20	
cis-1,2-Dichloroethene		50.0	51.2	ug/L	0.294	2.45	20	
trans-1,2-Dichloroethene		50.0	52.3	ug/L	0.388	4.56	20	
1,3-Dichloropropane		50.0	46.8	ug/L	0.408	6.41	20	
2,2-Dichloropropane		50.0	61.4	ug/L	0.597	22.8	20	*
cis-1,3-Dichloropropene		50.0	51.8	ug/L	0.424	3.59	20	
trans-1,3-Dichloropropene		50.0	49.9	ug/L	0.519	0.172	20	

CCV - Modified 03/05/2008
PDF File ID: 4804432
Report generated 06/14/2016 13:38

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060411 Run Date: 06/11/2016 Sample ID: WG572347-02
Instrument ID: HPMS8 Run Time: 13:34 Method: 8260B
File ID: 8M412921 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG572348 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	53.9	ug/L	0.425	7.82	20	
2-Hexanone		50.0	40.5	ug/L	0.0417	19.0	20	
Hexachlorobutadiene		50.0	51.9	ug/L	0.498	3.76	20	
Isopropylbenzene		50.0	53.6	ug/L	1.87	7.12	20	
p-Isopropyltoluene		50.0	50.9	ug/L	2.89	1.87	20	
4-Methyl-2-Pentanone		50.0	40.4	ug/L	0.0324	19.2	20	
Methylene Chloride		50.0	48.9	ug/L	0.251	2.27	20	
Naphthalene		50.0	39.9	ug/L	1.22	20.1	20	*
n-Propylbenzene		50.0	50.0	ug/L	3.90	0.0424	20	
Styrene		50.0	51.9	ug/L	1.12	3.84	20	
1,1,1,2-Tetrachloroethane		50.0	51.3	ug/L	0.416	2.66	20	
Tetrachloroethene		50.0	53.6	ug/L	0.356	7.13	20	
1,2,3-Trichlorobenzene		50.0	41.2	ug/L	0.715	17.5	20	
1,2,4-Trichlorobenzene		50.0	45.7	ug/L	0.939	8.61	20	
1,1,1-Trichloroethane		50.0	58.9	ug/L	0.609	17.7	20	
1,1,2-Trichloroethane		50.0	45.9	ug/L	0.225	8.18	20	
Trichloroethene		50.0	54.0	ug/L	0.296	8.02	20	
Trichlorofluoromethane		50.0	60.0	ug/L	0.648	19.9	20	
1,2,3-Trichloropropane		50.0	43.5	ug/L	0.134	13.0	20	
1,2,4-Trimethylbenzene		50.0	50.2	ug/L	2.93	0.450	20	
1,3,5-Trimethylbenzene		50.0	51.1	ug/L	2.90	2.14	20	
o-Xylene		50.0	51.1	ug/L	0.671	2.25	20	
m-,p-Xylene		100	103	ug/L	0.690	2.79	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4804432
Report generated 06/14/2016 13:38

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060411
Instrument ID: HPMS8
Workgroup (AAB#): WG572348

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	288225	539116	778260
Upper Limit	NA	NA	576450	1078232	1556520
Lower Limit	NA	NA	144113	269558	389130
L16060411-01	1.00	01	287339	532126	721432
L16060411-02	1.00	01	285082	519779	699421
L16060411-03	1.00	01	285695	523959	707715
L16060411-04	1.00	01	278231	511939	685801
L16060411-05	1.00	01	288696	528325	714491
WG572348-01	1.00	01	292600	533285	717003
WG572348-02	1.00	01	300500	536970	722554
WG572348-03	1.00	01	313632	552978	748082

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4807243
Report generated 06/14/2016 13:38

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060411
Instrument ID: HPMS8
Workgroup (AAB#): WG572348

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	17.6	14.58	10.71
Upper Limit	NA	NA	18.1	15.08	11.21
Lower Limit	NA	NA	17.1	14.08	10.21
L16060411-01	1.00	01	17.6	14.57	10.71
L16060411-02	1.00	01	17.6	14.57	10.71
L16060411-03	1.00	01	17.6	14.57	10.71
L16060411-04	1.00	01	17.6	14.57	10.71
L16060411-05	1.00	01	17.6	14.57	10.71
WG572348-01	1.00	01	17.6	14.57	10.71
WG572348-02	1.00	01	17.6	14.57	10.71
WG572348-03	1.00	01	17.6	14.57	10.71

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4807244
Report generated: 06/14/2016 13:38

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412935.D Vial: 16
Acq On : 11 Jun 2016 20:19 Operator: FJB
Sample : L16060411-01 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 08:49:10 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	721432	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	532126	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	287339	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	213719	27.5725 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.28%		
43) 1,2-Dichloroethane-d4	10.31	65	230145	27.6910 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 110.76%		
58) Toluene-d8	12.68	98	728925	26.1742 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.68%		
80) p-Bromofluorobenzene	16.07	95	299075	25.1368 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.56%		

Target Compounds					Qvalue
4) Vinyl Chloride	3.85	62	2606	0.3111 ug/L #	72
32) cis-1,2-Dichloroethene	9.17	96	4689	0.5662 ug/L	83
47) Trichloroethene	11.22	130	25538	3.2311 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412935.D 8260WT.M Mon Jun 13 08:49:13 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412935.D Vial: 16
Acq On : 11 Jun 2016 20:19 Operator: FJB
Sample : L16060411-01 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 8:49 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

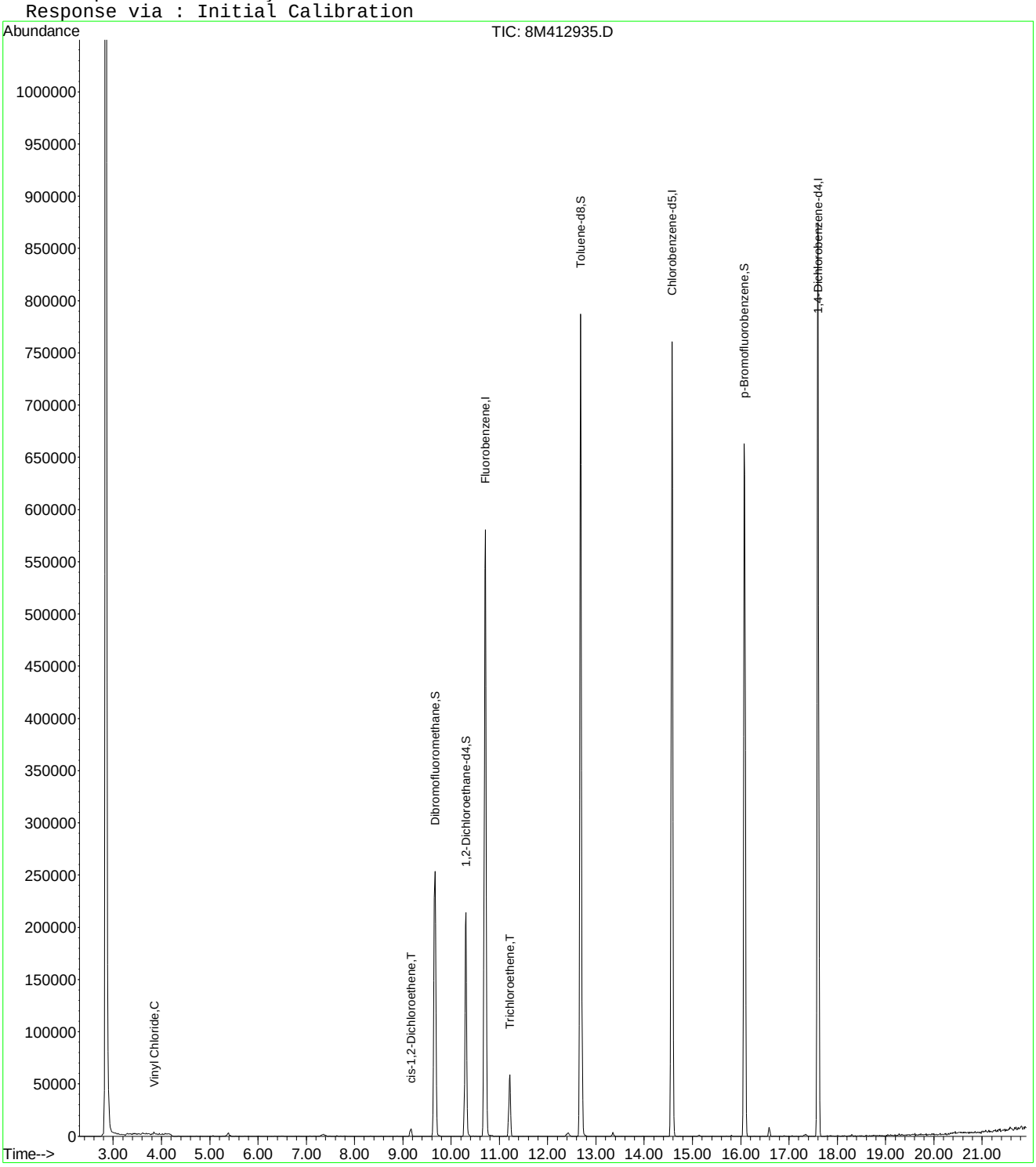

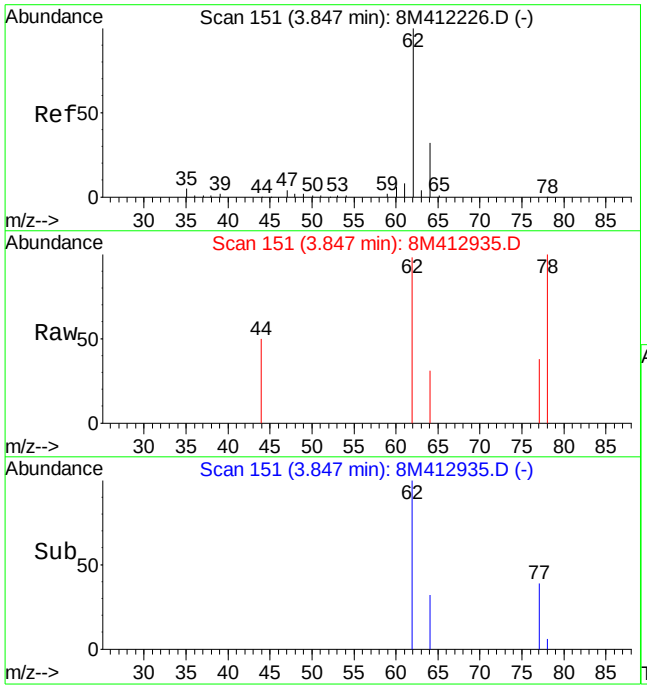

#4
Vinyl Chloride
Concen: 0.31 ug/L
RT: 3.85 min Scan# 151
Delta R.T. -0.00 min
Lab File: 8M412935.D
Acq: 11 Jun 2016 20:19

Tgt Ion: 62 Resp: 2606

Ion	Ratio	Lower	Upper
62	100		
64	16.5	19.3	45.1#

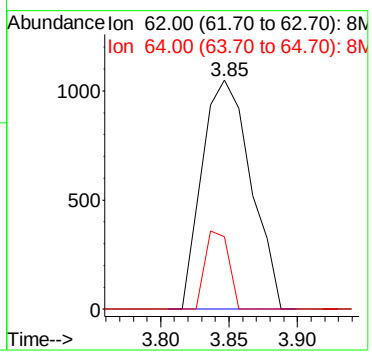

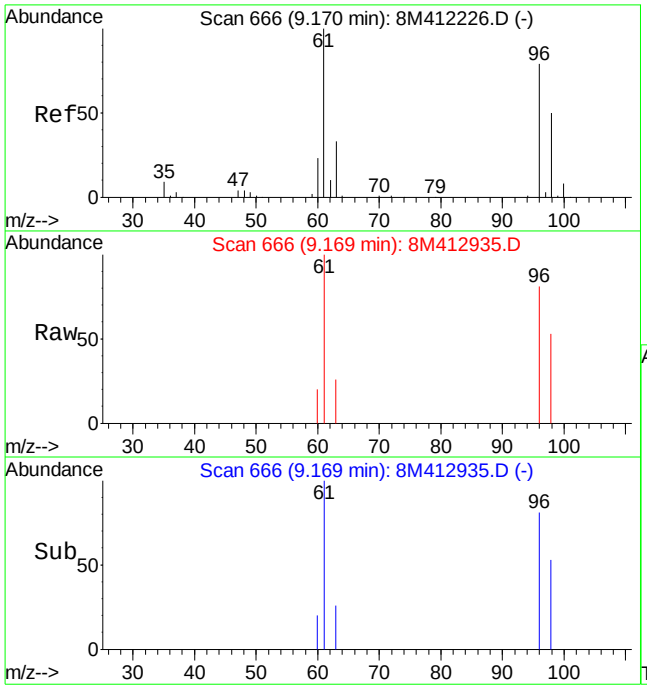

#32
cis-1,2-Dichloroethene
Concen: 0.57 ug/L
RT: 9.17 min Scan# 666
Delta R.T. -0.00 min
Lab File: 8M412935.D
Acq: 11 Jun 2016 20:19

Tgt Ion: 96 Resp: 4689

Ion	Ratio	Lower	Upper
96	100		
61	130.2	91.5	213.5

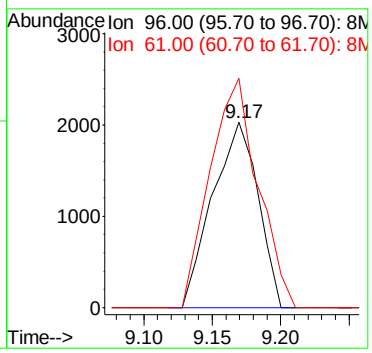

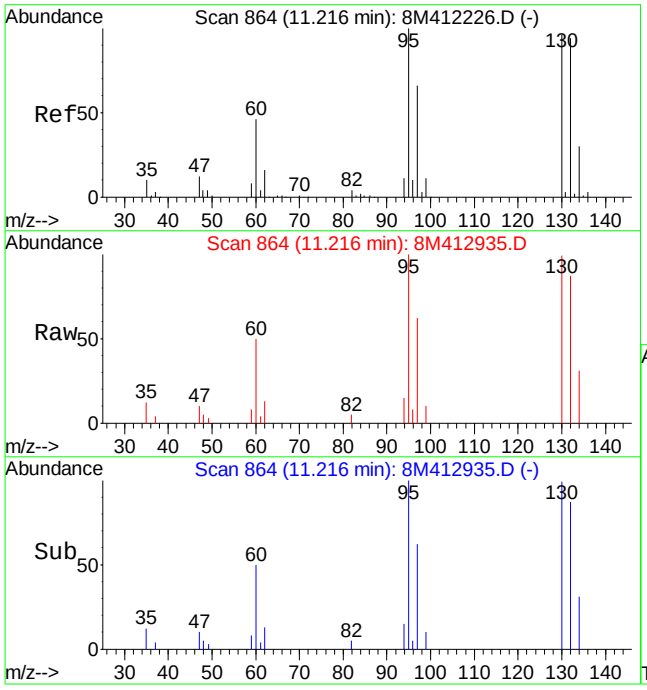

#47
Trichloroethene
Concen: 3.23 ug/L
RT: 11.22 min Scan# 864
Delta R.T. -0.00 min
Lab File: 8M412935.D
Acq: 11 Jun 2016 20:19

Tgt Ion:130 Resp: 25538

Ion	Ratio	Lower	Upper
130	100		
132	93.6	58.0	135.2
95	109.2	64.9	151.5

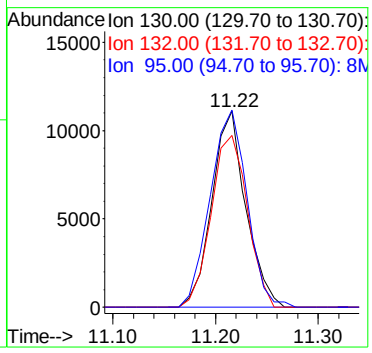

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412936.D Vial: 17
Acq On : 11 Jun 2016 20:48 Operator: FJB
Sample : L16060411-02 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 08:49:16 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	699421	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	519779	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	285082	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	206473	27.4759 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.92%		
43) 1,2-Dichloroethane-d4	10.30	65	232707	28.8804 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 115.52%		
58) Toluene-d8	12.68	98	719239	26.4399 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.76%		
80) p-Bromofluorobenzene	16.08	95	298948	25.3251 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.32%		

Target Compounds					Qvalue
4) Vinyl Chloride	3.84	62	2587	0.3186 ug/L	83
32) cis-1,2-Dichloroethene	9.17	96	4273	0.5322 ug/L	71
47) Trichloroethene	11.21	130	24708	3.2244 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412936.D 8260WT.M Mon Jun 13 08:49:19 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412936.D Vial: 17
Acq On : 11 Jun 2016 20:48 Operator: FJB
Sample : L16060411-02 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 8:49 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

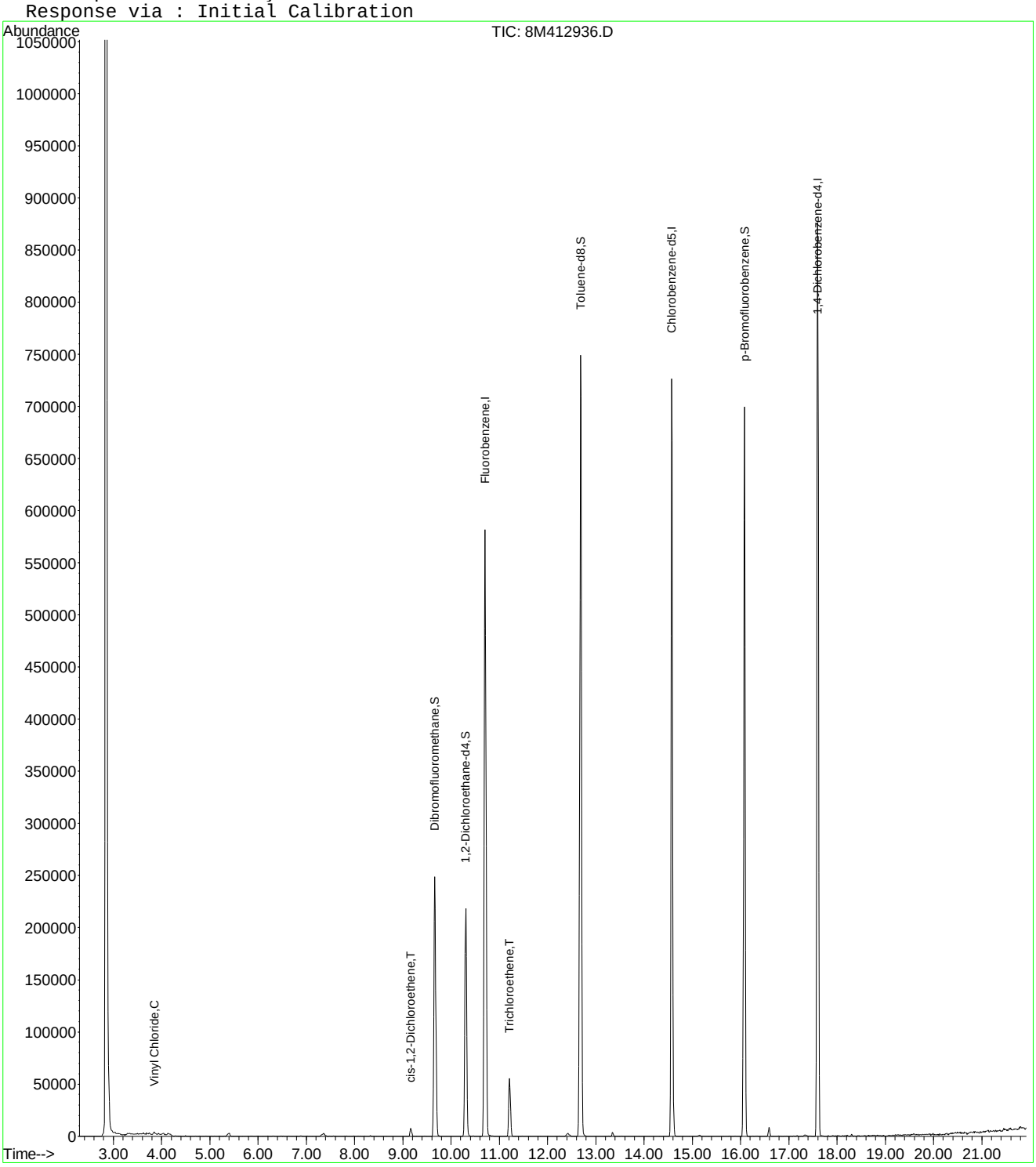

8M412936.D 8260WT.M Mon Jun 13 08:49:19 2016 Page 2

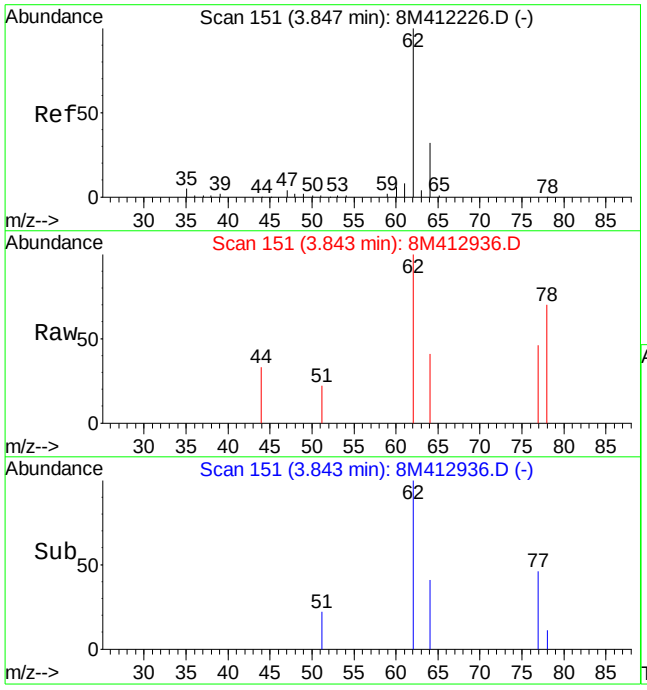

#4
Vinyl Chloride
Concen: 0.32 ug/L
RT: 3.84 min Scan# 151
Delta R.T. -0.00 min
Lab File: 8M412936.D
Acq: 11 Jun 2016 20:48

Tgt Ion: 62 Resp: 2587

Ion	Ratio	Lower	Upper
62	100		
64	22.5	19.3	45.1

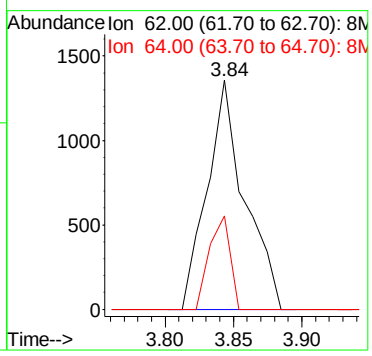

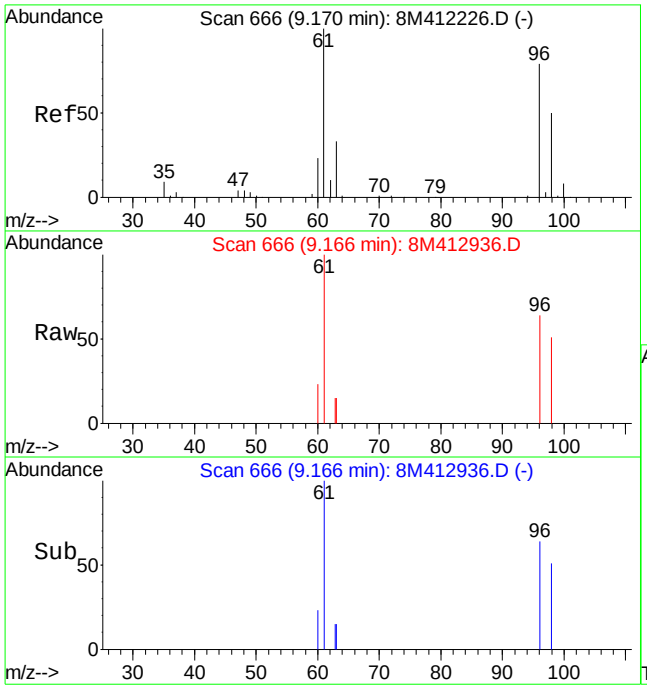

#32
cis-1,2-Dichloroethene
Concen: 0.53 ug/L
RT: 9.17 min Scan# 666
Delta R.T. -0.00 min
Lab File: 8M412936.D
Acq: 11 Jun 2016 20:48

Tgt Ion: 96 Resp: 4273

Ion	Ratio	Lower	Upper
96	100		
61	115.8	91.5	213.5

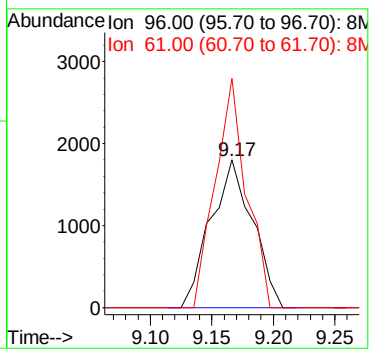

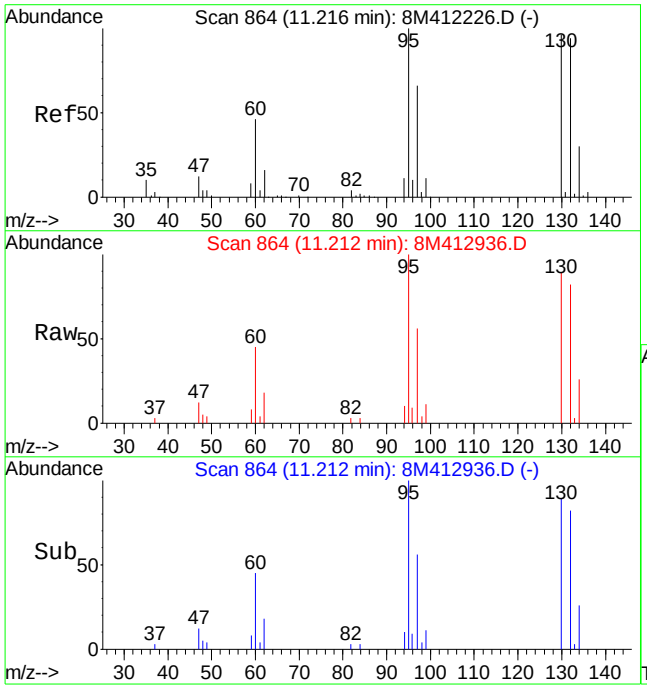

#47
Trichloroethene
Concen: 3.22 ug/L
RT: 11.21 min Scan# 864
Delta R.T. -0.00 min
Lab File: 8M412936.D
Acq: 11 Jun 2016 20:48

Tgt Ion:130 Resp: 24708

Ion	Ratio	Lower	Upper
130	100		
132	97.2	58.0	135.2
95	106.0	64.9	151.5

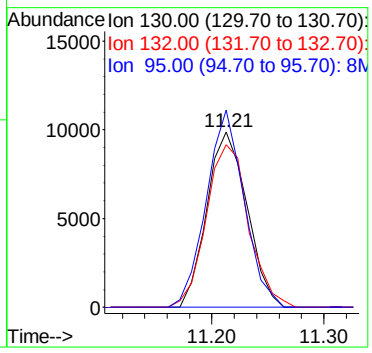

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412937.D Vial: 18
Acq On : 11 Jun 2016 21:17 Operator: FJB
Sample : L16060411-03 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 08:49:22 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	707715	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	523959	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	285695	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	210936	27.7409 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.96%		
43) 1,2-Dichloroethane-d4	10.30	65	229063	28.0950 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.36%		
58) Toluene-d8	12.68	98	717847	26.1782 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.72%		
80) p-Bromofluorobenzene	16.08	95	295762	25.0014 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.00%		
Target Compounds					Qvalue
3) Chloromethane	3.61	50	1449	0.2092 ug/L #	42
32) cis-1,2-Dichloroethene	9.18	96	2226	0.2740 ug/L	72
47) Trichloroethene	11.21	130	17157	2.2128 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412937.D 8260WT.M Mon Jun 13 08:49:25 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412937.D Vial: 18
Acq On : 11 Jun 2016 21:17 Operator: FJB
Sample : L16060411-03 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 8:49 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

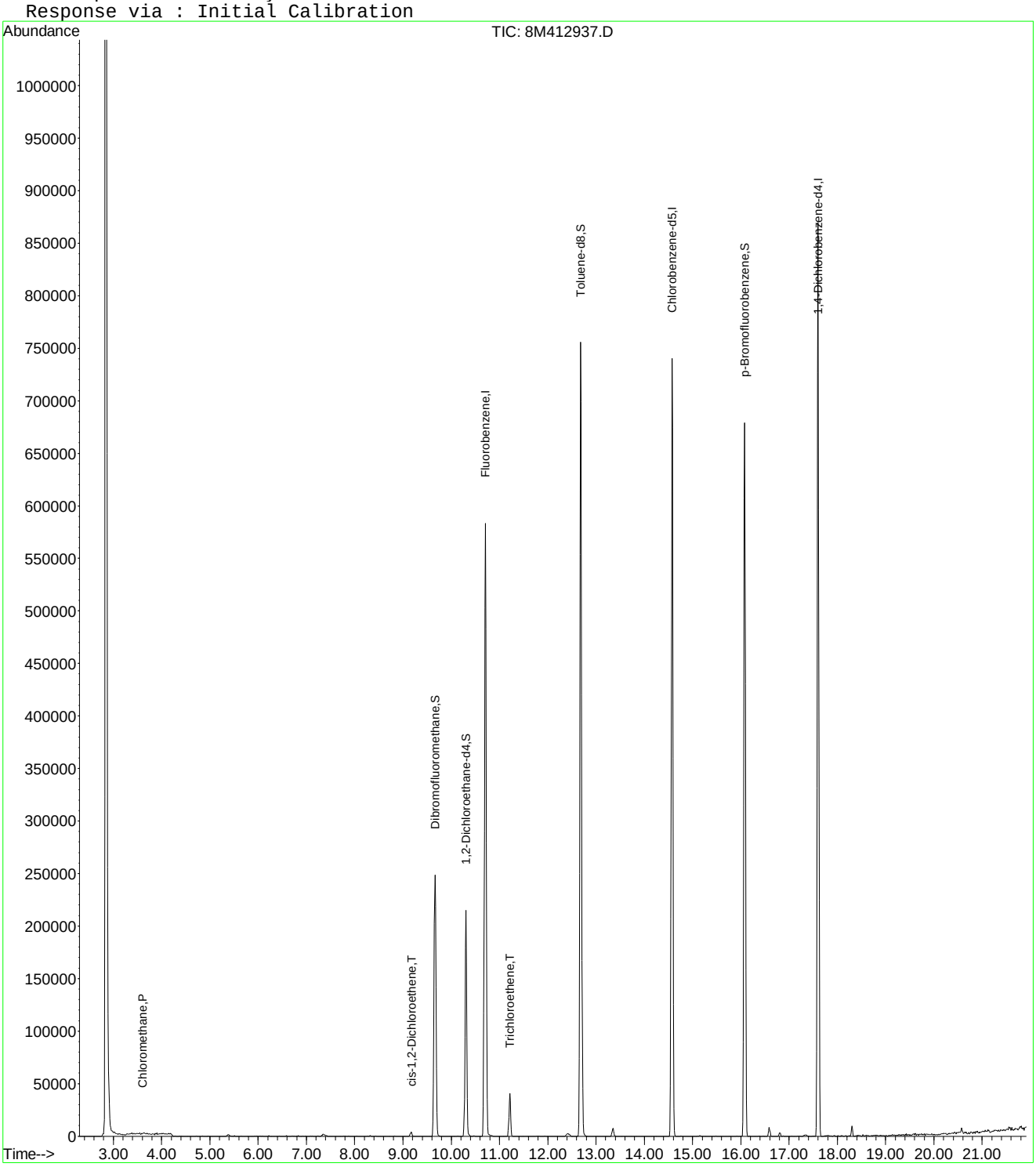

8M412937.D 8260WT.M Mon Jun 13 08:49:26 2016 Page 2

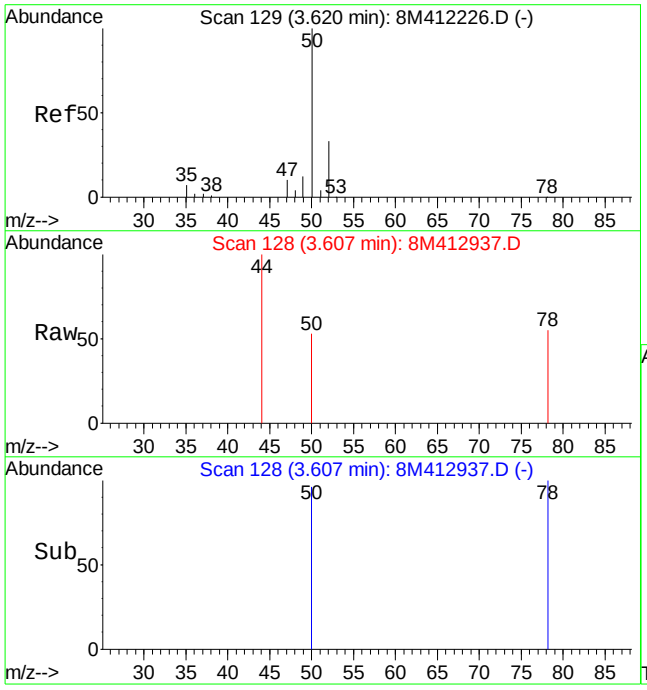

#3
Chloromethane
Concen: 0.21 ug/L
RT: 3.61 min Scan# 128
Delta R.T. -0.01 min
Lab File: 8M412937.D
Acq: 11 Jun 2016 21:17

Tgt Ion: 50 Resp: 1449

Ion	Ratio	Lower	Upper
50	100		
52	0.0	19.9	46.3#

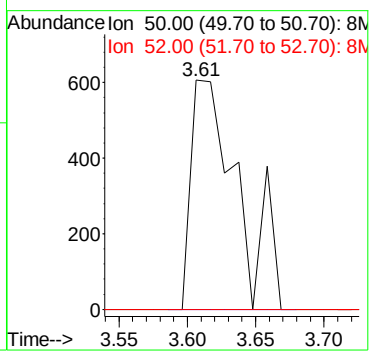

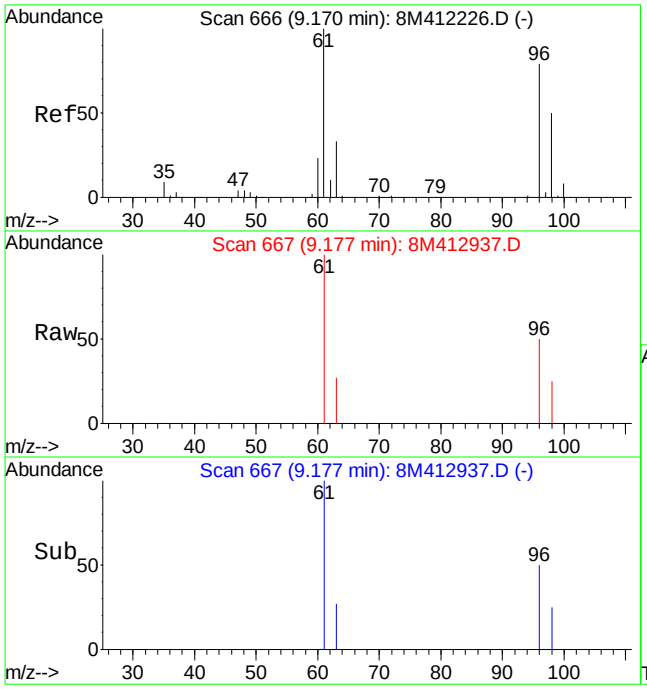

#32
cis-1,2-Dichloroethene
Concen: 0.27 ug/L
RT: 9.18 min Scan# 667
Delta R.T. 0.01 min
Lab File: 8M412937.D
Acq: 11 Jun 2016 21:17

Tgt Ion: 96 Resp: 2226

Ion	Ratio	Lower	Upper
96	100		
61	188.1	91.5	213.5

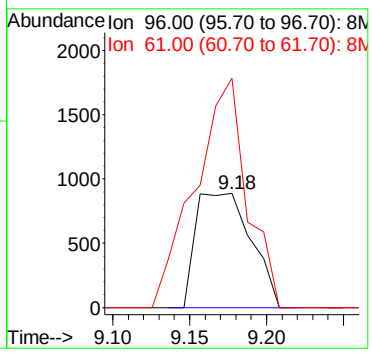

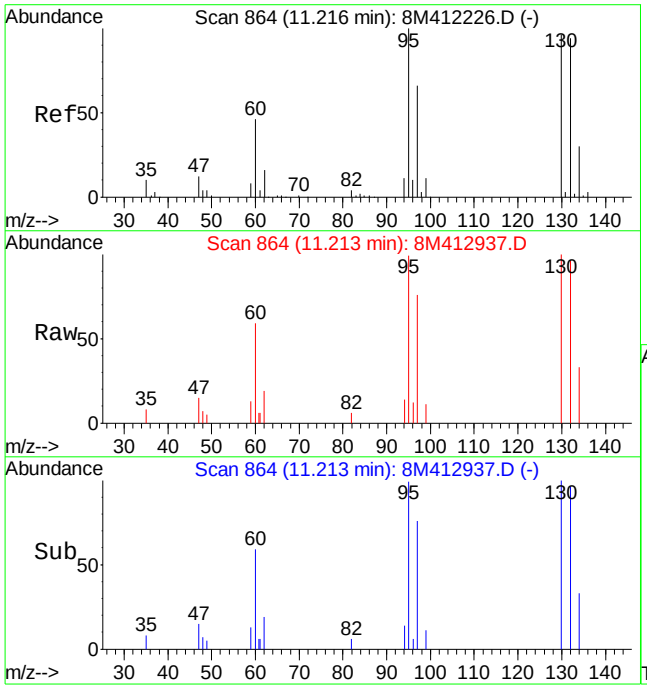

#47
Trichloroethene
Concen: 2.21 ug/L
RT: 11.21 min Scan# 864
Delta R.T. -0.00 min
Lab File: 8M412937.D
Acq: 11 Jun 2016 21:17

Tgt Ion:130 Resp: 17157

Ion	Ratio	Lower	Upper
130	100		
132	98.6	58.0	135.2
95	106.6	64.9	151.5

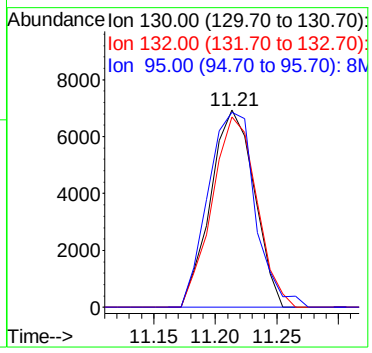

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412938.D Vial: 19
Acq On : 11 Jun 2016 21:46 Operator: FJB
Sample : L16060411-04 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 08:49:28 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	685801	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	511939	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	278231	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	206042	27.9631 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.84%		
43) 1,2-Dichloroethane-d4	10.30	65	229057	28.9920 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 115.96%		
58) Toluene-d8	12.68	98	707601	26.4104 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.64%		
80) p-Bromofluorobenzene	16.08	95	290125	25.1828 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.72%		
Target Compounds					Qvalue
32) cis-1,2-Dichloroethene	9.16	96	2657	0.3375 ug/L	98
47) Trichloroethene	11.21	130	18029	2.3996 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412938.D 8260WT.M Mon Jun 13 08:49:31 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412938.D Vial: 19
Acq On : 11 Jun 2016 21:46 Operator: FJB
Sample : L16060411-04 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 8:49 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

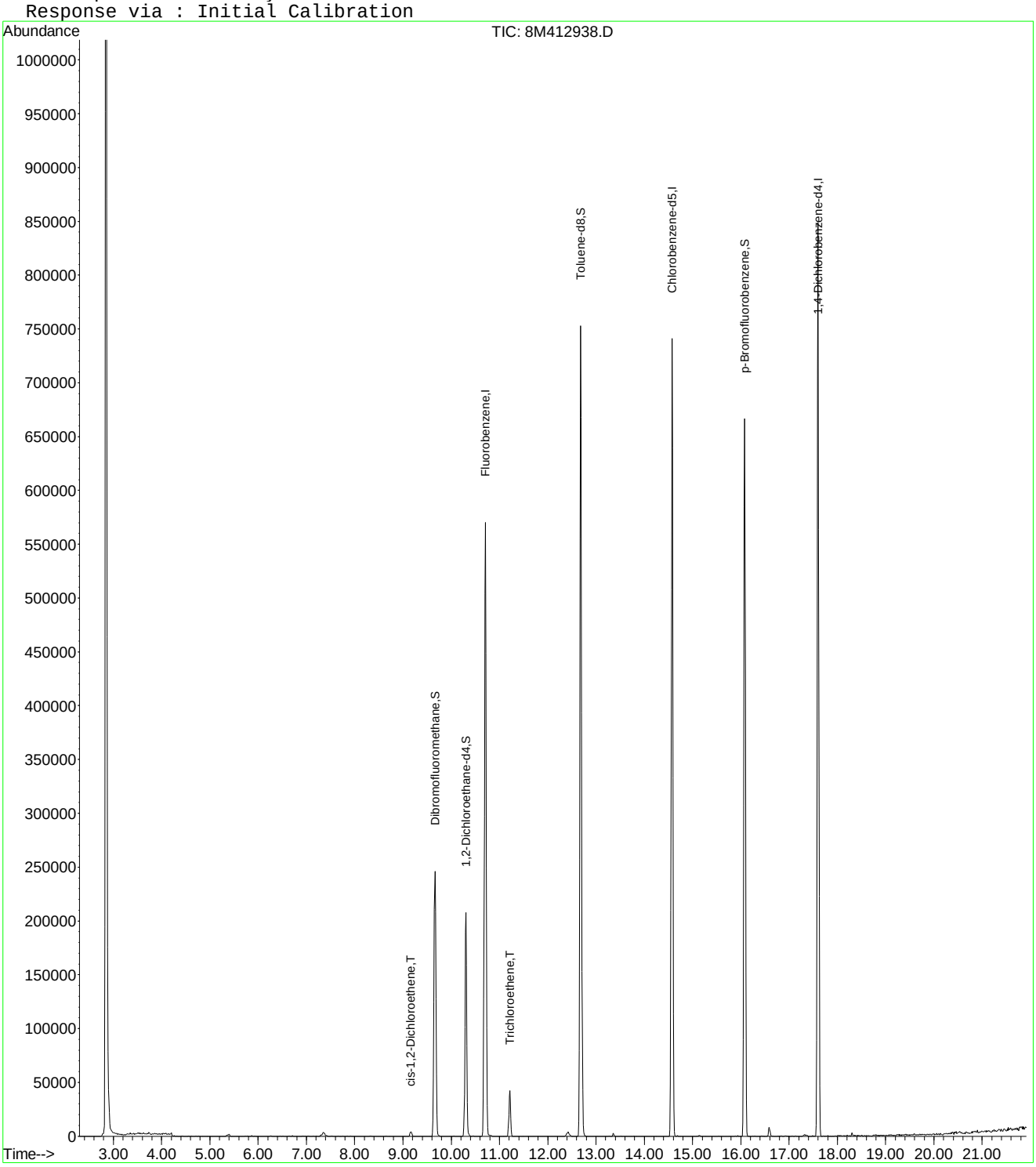

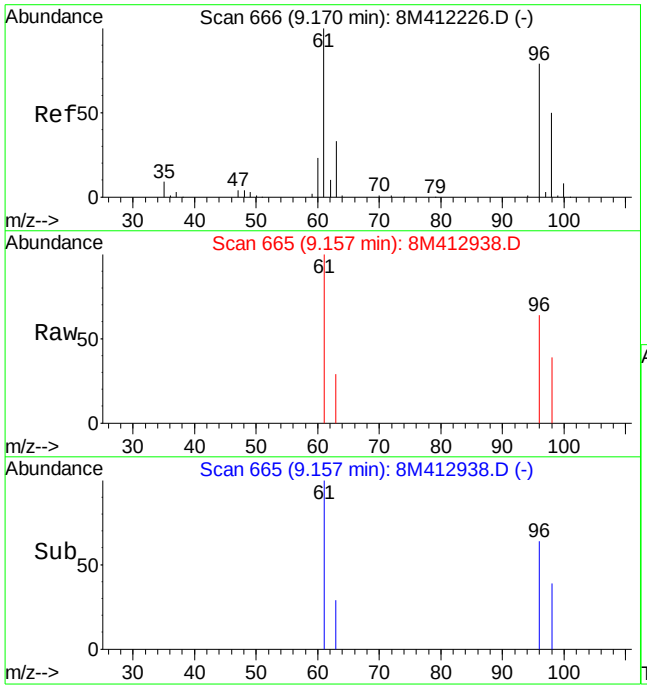

#32
cis-1,2-Dichloroethene
Concen: 0.34 ug/L
RT: 9.16 min Scan# 665
Delta R.T. -0.01 min
Lab File: 8M412938.D
Acq: 11 Jun 2016 21:46

Tgt Ion: 96 Resp: 2657

Ion	Ratio	Lower	Upper
96	100		
61	154.9	91.5	213.5

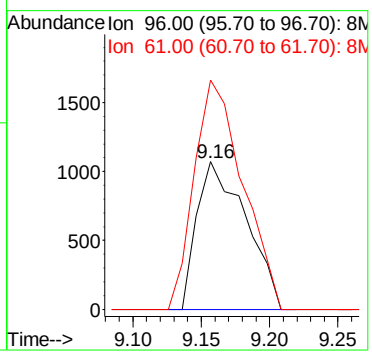

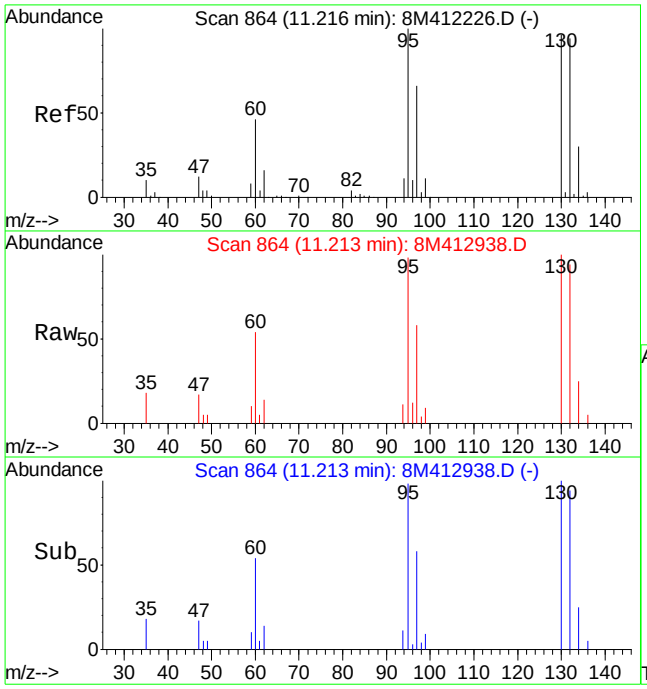

#47
Trichloroethene
Concen: 2.40 ug/L
RT: 11.21 min Scan# 864
Delta R.T. -0.00 min
Lab File: 8M412938.D
Acq: 11 Jun 2016 21:46

Tgt Ion:130 Resp: 18029

Ion	Ratio	Lower	Upper
130	100		
132	96.9	58.0	135.2
95	109.3	64.9	151.5

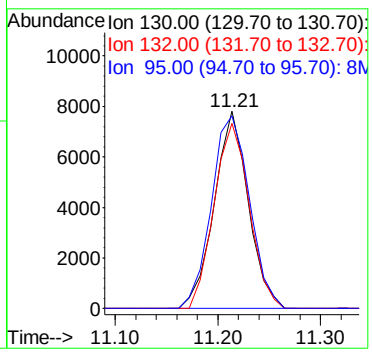

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412930.D Vial: 11
Acq On : 11 Jun 2016 17:54 Operator: FJB
Sample : L16060411-05 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 08:48:37 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	714491	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	528325	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	288696	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	210826	27.4635 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.84%		
43) 1,2-Dichloroethane-d4	10.30	65	230381	27.9887 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.96%		
58) Toluene-d8	12.68	98	731427	26.4530 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.80%		
80) p-Bromofluorobenzene	16.08	95	301278	25.2030 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.80%		

Target Compounds					Qvalue
3) Chloromethane	3.63	50	863	0.1234 ug/L #	42
36) Tetrahydrofuran	9.62	42	528	0.6788 ug/L #	18

(#) = qualifier out of range (m) = manual integration
8M412930.D 8260WT.M Mon Jun 13 08:48:40 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412930.D Vial: 11
Acq On : 11 Jun 2016 17:54 Operator: FJB
Sample : L16060411-05 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 8:48 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

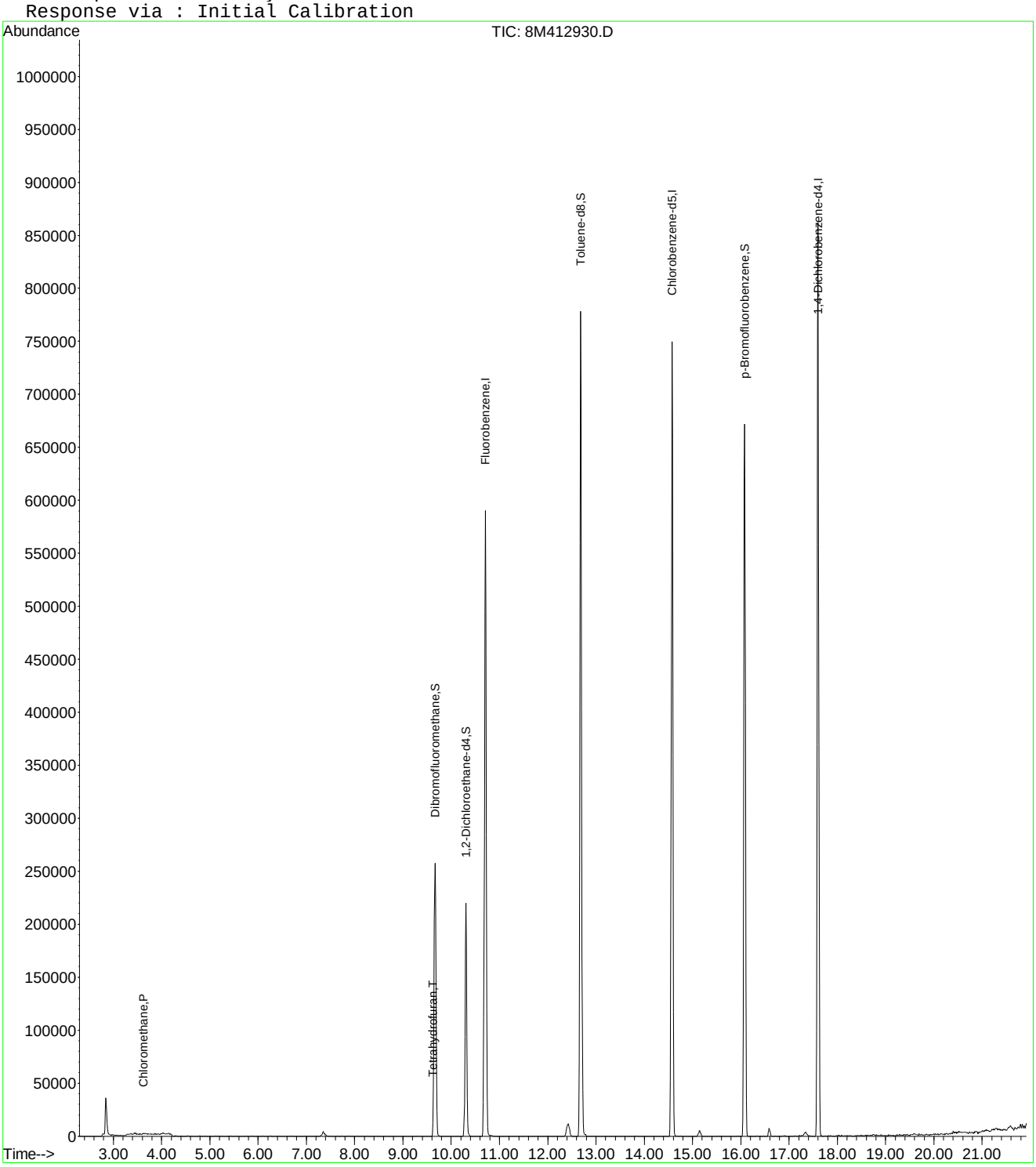

8M412930.D 8260WT.M Mon Jun 13 08:48:41 2016 Page 2

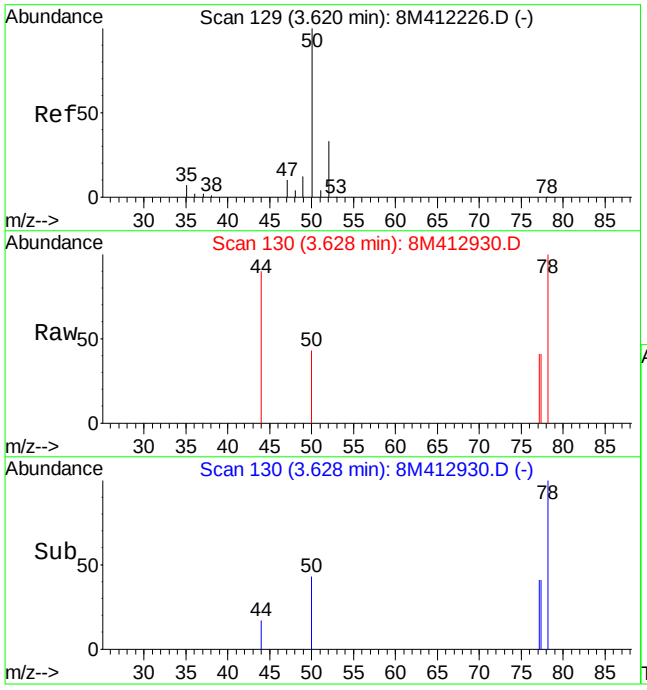

#3
Chloromethane
Concen: 0.12 ug/L
RT: 3.63 min Scan# 130
Delta R.T. 0.01 min
Lab File: 8M412930.D
Acq: 11 Jun 2016 17:54

Tgt Ion: 50 Resp: 863

Ion	Ratio	Lower	Upper
50	100		
52	0.0	19.9	46.3#

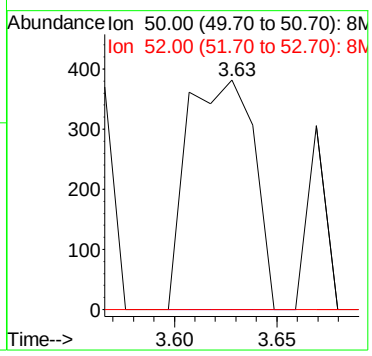

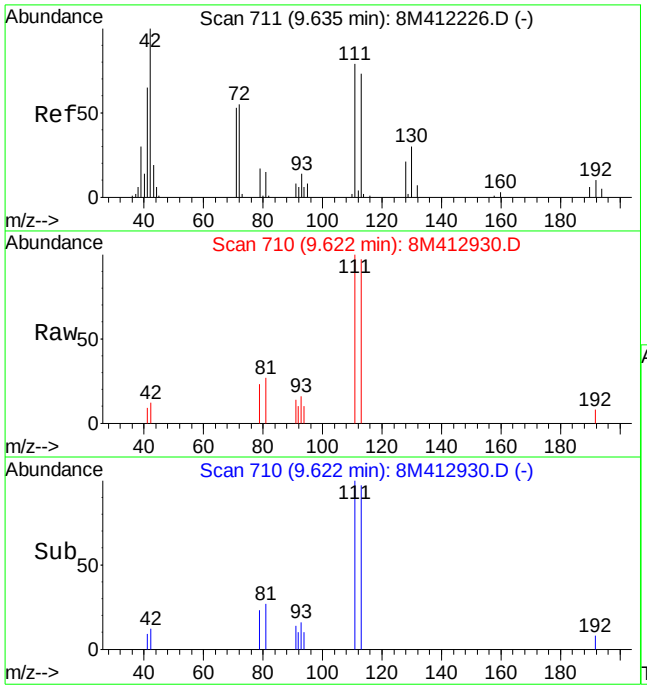

#36
Tetrahydrofuran
Concen: 0.68 ug/L
RT: 9.62 min Scan# 710
Delta R.T. -0.01 min
Lab File: 8M412930.D
Acq: 11 Jun 2016 17:54

Tgt Ion: 42 Resp: 528

Ion	Ratio	Lower	Upper
42	100		
72	0.0	33.8	78.8#
71	115.7	32.0	74.8#

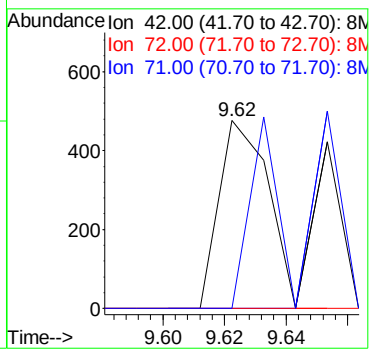

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:40:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	823748	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	571926	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	299321	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	12.68	98	567	0.0189 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.08%#	
80) p-Bromofluorobenzene	16.08	95	313	0.0253 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	3836	0.2778 ug/L	91
3) Chloromethane	3.62	50	3658	0.4537 ug/L	95
4) Vinyl Chloride	3.85	62	2516	0.2630 ug/L #	58
5) 1,3-Butadiene	3.91	54	2079	0.2592 ug/L	71
6) Bromomethane	4.73	94	1152	0.6530 ug/L #	55
7) Chloroethane	4.90	64	1112	0.2113 ug/L #	72
8) Trichlorofluoromethane	5.35	101	2706	0.1520 ug/L #	53
10) Isoprene	5.93	67	2147	0.1987 ug/L	85
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1746	0.2087 ug/L	97
14) 1,1-Dichloroethene	6.48	61	3332	0.2501 ug/L	75
16) Dimethyl Sulfide	6.73	62	1099	0.2308 ug/L	95
19) Methylene Chloride	7.26	84	3414	0.4028 ug/L	88
20) Carbon Disulfide	7.30	76	10739	0.3853 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	4927	0.2686 ug/L #	60
23) trans-1,2-Dichloroethene	7.70	61	3879	0.3170 ug/L	98
24) n-Hexane	7.78	57	2794	0.3075 ug/L	85
26) Vinyl Acetate	8.30	43	1973	0.2259 ug/L #	70
27) 1,1-Dichloroethane	8.33	63	4881	0.3212 ug/L #	88
31) 2,2-Dichloropropane	9.11	77	4966	0.3101 ug/L	89
32) cis-1,2-Dichloroethene	9.17	96	2958	0.3128 ug/L	87
33) Chloroform	9.37	83	5564	0.3101 ug/L	95
34) 1-Bromopropane	9.52	122	210	0.1551 ug/L #	1
35) Bromochloromethane	9.60	130	1386	0.2858 ug/L	76
36) Tetrahydrofuran	9.62	42	1849	2.0617 ug/L #	60
38) 1,1,1-Trichloroethane	9.91	97	4978	0.2921 ug/L	95
39) Cyclohexane	9.93	56	3120	0.2644 ug/L #	85
40) 1,1-Dichloropropene	10.11	75	3779	0.2909 ug/L	97
42) Carbon Tetrachloride	10.24	117	4835	0.3194 ug/L #	74
45) 1,2-Dichloroethane	10.43	62	3295	0.2853 ug/L #	81
46) Benzene	10.46	78	11279	0.3333 ug/L	93
47) Trichloroethene	11.20	130	2410	0.2670 ug/L	97
48) Methylcyclohexane	11.31	83	3936	0.2871 ug/L	84
49) 1,2-Dichloropropane	11.42	63	2136	0.2836 ug/L	88
50) Bromodichloromethane	11.73	83	3767	0.2845 ug/L #	91
52) Dibromomethane	11.82	93	700	0.1570 ug/L #	59
53) 2-Chloroethyl Vinyl Ether	12.02	63	847	0.2616 ug/L #	47
55) cis-1,3-Dichloropropene	12.36	75	4763	0.3535 ug/L	84
56) Dimethyl Disulfide	12.63	79	1647	0.2290 ug/L	82
59) Toluene	12.78	91	11513	0.3243 ug/L	92
60) Ethyl Methacrylate	12.89	69	1631	0.2392 ug/L #	64

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:40:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
62)	trans-1,3-Dichloropropene	12.96	75	3626	0.3047 ug/L		82
63)	1,1,2-Trichloroethane	13.18	97	1409	0.2515 ug/L		98
65)	1,3-Dichloropropane	13.49	76	2584	0.2590 ug/L		93
66)	Tetrachloroethene	13.61	164	2678	0.3520 ug/L	#	75
67)	Dibromochloromethane	13.87	129	2126	0.2599 ug/L		79
68)	1,2-Dibromoethane	14.12	107	1895	0.3394 ug/L		91
69)	1-Chlorohexane	14.21	91	3835	0.3164 ug/L		99
70)	Chlorobenzene	14.62	112	7968	0.3328 ug/L		88
71)	1,1,1,2-Tetrachloroethane	14.67	131	2872	0.3096 ug/L		87
72)	Ethylbenzene	14.64	106	3844	0.2934 ug/L		81
73)	m-,p-Xylene	14.75	106	10447	0.6799 ug/L		96
74)	o-Xylene	15.31	106	4577	0.3047 ug/L		97
75)	Styrene	15.35	104	7545	0.3062 ug/L		95
76)	Bromoform	15.84	173	1301	0.2681 ug/L	#	51
77)	Isopropylbenzene	15.74	105	13119	0.3287 ug/L		90
79)	1,1,2,2-Tetrachloroethane	15.96	83	1714	0.2853 ug/L	#	85
83)	n-Propylbenzene	16.24	91	15676	0.3357 ug/L		92
84)	Bromobenzene	16.38	156	2859	0.2977 ug/L		90
85)	1,3,5-Trimethylbenzene	16.43	105	10873	0.3196 ug/L		99
86)	2-Chlorotoluene	16.52	91	11133	0.3415 ug/L		96
87)	4-Chlorotoluene	16.56	91	10305	0.3499 ug/L		97
88)	a-Methylstyrene	16.83	118	4090	0.2534 ug/L		86
89)	tert-Butylbenzene	16.90	134	1734	0.2606 ug/L		72
90)	1,2,4-Trimethylbenzene	16.95	105	10734	0.3069 ug/L		89
91)	sec-Butylbenzene	17.16	105	13749	0.3436 ug/L		97
92)	p-Isopropyltoluene	17.32	119	10847	0.3192 ug/L		95
93)	1,3-Dichlorobenzene	17.52	146	6023	0.3257 ug/L		99
94)	1,4-Dichlorobenzene	17.65	146	6152	0.3299 ug/L	#	60
95)	n-Butylbenzene	17.85	91	11161	0.3323 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	5711	0.3472 ug/L		92
98)	1,2,4-Trichlorobenzene	20.29	180	4203	0.3418 ug/L		91
99)	Hexachlorobutadiene	20.43	225	1894	0.3297 ug/L		84
100)	Naphthalene	20.65	128	6039	0.3306 ug/L		91
101)	1,2,3-Trichlorobenzene	20.96	180	3279	0.3161 ug/L		86

(#) = qualifier out of range (m) = manual integration

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2778	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.4537	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.2630	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	0.2592	0.0	100	0.03
6	T	Bromomethane	-1.0000	0.9911	0.0	100	0.00
7	T	Chloroethane	-1.0000	0.2113	0.0	100	0.00
8	T	Trichlorofluoromethane	-1.0000	0.1520	0.0	100	-0.02
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.90#
10	T	Isoprene	-1.0000	0.1987	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.13#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2087	0.0	100	0.00
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	-1.0000	0.2501	0.0	100	0.02
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.58#
16	T	Dimethyl Sulfide	-1.0000	0.2308	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.0000	0.0	0	-7.00#
19	T	Methylene Chloride	-1.0000	0.4028	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.3853	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.43#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2686	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	-1.0000	0.3170	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.3075	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.2259	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.3212	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.98#
31	T	2,2-Dichloropropane	-1.0000	0.3101	0.0	100	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.3128	0.0	100	0.00
33	C	Chloroform	0.3000	0.3101	-3.4	100	0.00
34		1-Bromopropane	-1.0000	0.1551	0.0	100	0.00
35	T	Bromochloromethane	-1.0000	0.2858	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	2.0617	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	-1.0000	0.2921	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.2644	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.2909	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	-1.0000	0.3194	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	-1.0000	0.2853	0.0	100	0.00
46	T	Benzene	-1.0000	0.3333	0.0	100	0.00
47	T	Trichloroethene	-1.0000	0.2670	0.0	100	-0.01
48	T	Methylcyclohexane	-1.0000	0.2871	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2836	0.0	100	0.00
50	T	Bromodichloromethane	-1.0000	0.2845	0.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	-1.0000	0.1570	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2616	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.05#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.3535	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2290	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0189	0.0	100	0.00
59	C	Toluene	-1.0000	0.3243	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2392	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3047	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.2515	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	-1.0000	0.2590	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.3520	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.2599	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.3394	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.3164	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.3328	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.3096	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.2934	0.0	100	-0.01
73	T	m-,p-Xylene	-1.0000	0.6799	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.3047	0.0	100	0.00
75	T	Styrene	-1.0000	0.3062	0.0	100	0.00
76	P	Bromoform	-1.0000	0.2681	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.3287	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2853	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0253	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.1103	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	-1.0000	0.3357	0.0	100	0.00
84	T	Bromobenzene	0.3000	0.2977	0.8	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.3196	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.3415	0.0	100	0.00
87	T	4-Chlorotoluene	-1.0000	0.3499	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2534	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.2606	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.3069	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3436	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.3192	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.3257	0.0	100	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.3299	-10.0	100	0.00
95	T	n-Butylbenzene	-1.0000	0.3323	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.3472	-15.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.3418	0.0	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.3297	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.3306	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.3161	-5.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412220.D 8260WT.M Sat May 14 18:03:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	801173	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	557498	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	293108	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.00%#	
80) p-Bromofluorobenzene	16.08	95	343	0.0286 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	5478	0.3262 ug/L	79
3) Chloromethane	3.63	50	3930	0.2484 ug/L	85
4) Vinyl Chloride	3.84	62	3512	0.3288 ug/L	97
5) 1,3-Butadiene	3.90	54	2479	0.2375 ug/L #	75
6) Bromomethane	4.73	94	1343	0.9497 ug/L	85
7) Chloroethane	4.90	64	2219	0.3174 ug/L #	43
8) Trichlorofluoromethane	5.36	101	6974	0.3289 ug/L #	93
10) Isoprene	5.94	67	4288	0.3952 ug/L #	62
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	3168	0.3263 ug/L #	40
14) 1,1-Dichloroethene	6.47	61	5431	0.2882 ug/L	92
16) Dimethyl Sulfide	6.74	62	1708	0.2453 ug/L	64
19) Methylene Chloride	7.24	84	3785	0.4239 ug/L #	43
20) Carbon Disulfide	7.29	76	12437	0.4565 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	6580	0.3336 ug/L #	76
23) trans-1,2-Dichloroethene	7.71	61	4990	0.2928 ug/L	96
24) n-Hexane	7.79	57	3110	0.2011 ug/L	99
26) Vinyl Acetate	8.31	43	2753	0.1566 ug/L	100
27) 1,1-Dichloroethane	8.32	63	5655	0.2774 ug/L #	92
31) 2,2-Dichloropropane	9.10	77	6035	0.3360 ug/L	82
32) cis-1,2-Dichloroethene	9.16	96	3837	0.3762 ug/L	74
33) Chloroform	9.37	83	7267	0.3842 ug/L	100
34) 1-Bromopropane	9.50	122	234	0.1456 ug/L #	1
35) Bromochloromethane	9.60	130	1674	0.3137 ug/L	62
36) Tetrahydrofuran	9.62	42	447	0.2146 ug/L #	41
38) 1,1,1-Trichloroethane	9.91	97	6304	0.3305 ug/L	90
39) Cyclohexane	9.94	56	4658	0.2238 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	5172	0.3768 ug/L	80
42) Carbon Tetrachloride	10.25	117	5692	0.3172 ug/L	95
45) 1,2-Dichloroethane	10.43	62	4443	0.2796 ug/L #	63
46) Benzene	10.46	78	14456	0.4134 ug/L #	77
47) Trichloroethene	11.21	130	3659	0.3626 ug/L	98
48) Methylcyclohexane	11.29	83	5025	0.3562 ug/L	84
49) 1,2-Dichloropropane	11.42	63	3060	0.3007 ug/L	98
50) Bromodichloromethane	11.73	83	4734	0.3343 ug/L #	93
52) Dibromomethane	11.82	93	1805	0.3767 ug/L	84
55) cis-1,3-Dichloropropene	12.36	75	5008	0.3514 ug/L	90
56) Dimethyl Disulfide	12.63	79	1921	0.2573 ug/L	85
59) Toluene	12.78	91	14742	0.4416 ug/L	98
60) Ethyl Methacrylate	12.90	69	2062	0.3292 ug/L	66
62) trans-1,3-Dichloropropene	12.96	75	3693	0.3171 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M412221.D 8260WT.M Fri May 13 14:20:38 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
63)	1,1,2-Trichloroethane	13.18	97	2326	0.4391 ug/L		70
65)	1,3-Dichloropropane	13.49	76	3163	0.3219 ug/L		88
66)	Tetrachloroethene	13.61	164	3164	0.4185 ug/L		93
67)	Dibromochloromethane	13.87	129	3113	0.3727 ug/L		86
68)	1,2-Dibromoethane	14.12	107	2076	0.3760 ug/L		90
69)	1-Chlorohexane	14.21	91	4746	0.4174 ug/L		80
70)	Chlorobenzene	14.62	112	9180	0.3960 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.66	131	3501	0.3876 ug/L		95
72)	Ethylbenzene	14.65	106	5348	0.4066 ug/L		84
73)	m-,p-Xylene	14.75	106	13269	0.8757 ug/L		89
74)	o-Xylene	15.31	106	6019	0.3943 ug/L		97
75)	Styrene	15.35	104	9370	0.3849 ug/L		95
76)	Bromoform	15.83	173	1198	0.2500 ug/L	#	76
77)	Isopropylbenzene	15.73	105	16528	0.4270 ug/L		92
79)	1,1,2,2-Tetrachloroethane	15.96	83	1999	0.3419 ug/L	#	83
83)	n-Propylbenzene	16.25	91	19410	0.4297 ug/L		95
84)	Bromobenzene	16.37	156	3319	0.3524 ug/L		75
85)	1,3,5-Trimethylbenzene	16.42	105	13794	0.4127 ug/L		95
86)	2-Chlorotoluene	16.51	91	13678	0.4729 ug/L		90
87)	4-Chlorotoluene	16.56	91	12572	0.4219 ug/L		98
88)	a-Methylstyrene	16.84	118	5739	0.3485 ug/L		96
89)	tert-Butylbenzene	16.90	134	2254	0.3403 ug/L		55
90)	1,2,4-Trimethylbenzene	16.95	105	13859	0.4051 ug/L		90
91)	sec-Butylbenzene	17.17	105	17612	0.4382 ug/L		90
92)	p-Isopropyltoluene	17.32	119	13616	0.3968 ug/L		90
93)	1,3-Dichlorobenzene	17.52	146	6961	0.3724 ug/L		86
94)	1,4-Dichlorobenzene	17.64	146	7149	0.3832 ug/L	#	1
95)	n-Butylbenzene	17.85	91	15223	0.4664 ug/L		91
96)	1,2-Dichlorobenzene	18.14	146	6129	0.3742 ug/L		92
98)	1,2,4-Trichlorobenzene	20.28	180	5035	0.3969 ug/L		97
99)	Hexachlorobutadiene	20.44	225	2420	0.4122 ug/L		83
100)	Naphthalene	20.65	128	7474	0.3874 ug/L	#	84
101)	1,2,3-Trichlorobenzene	20.96	180	4378	0.4056 ug/L	#	78

(#) = qualifier out of range (m) = manual integration
8M412221.D 8260WT.M Fri May 13 14:20:39 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

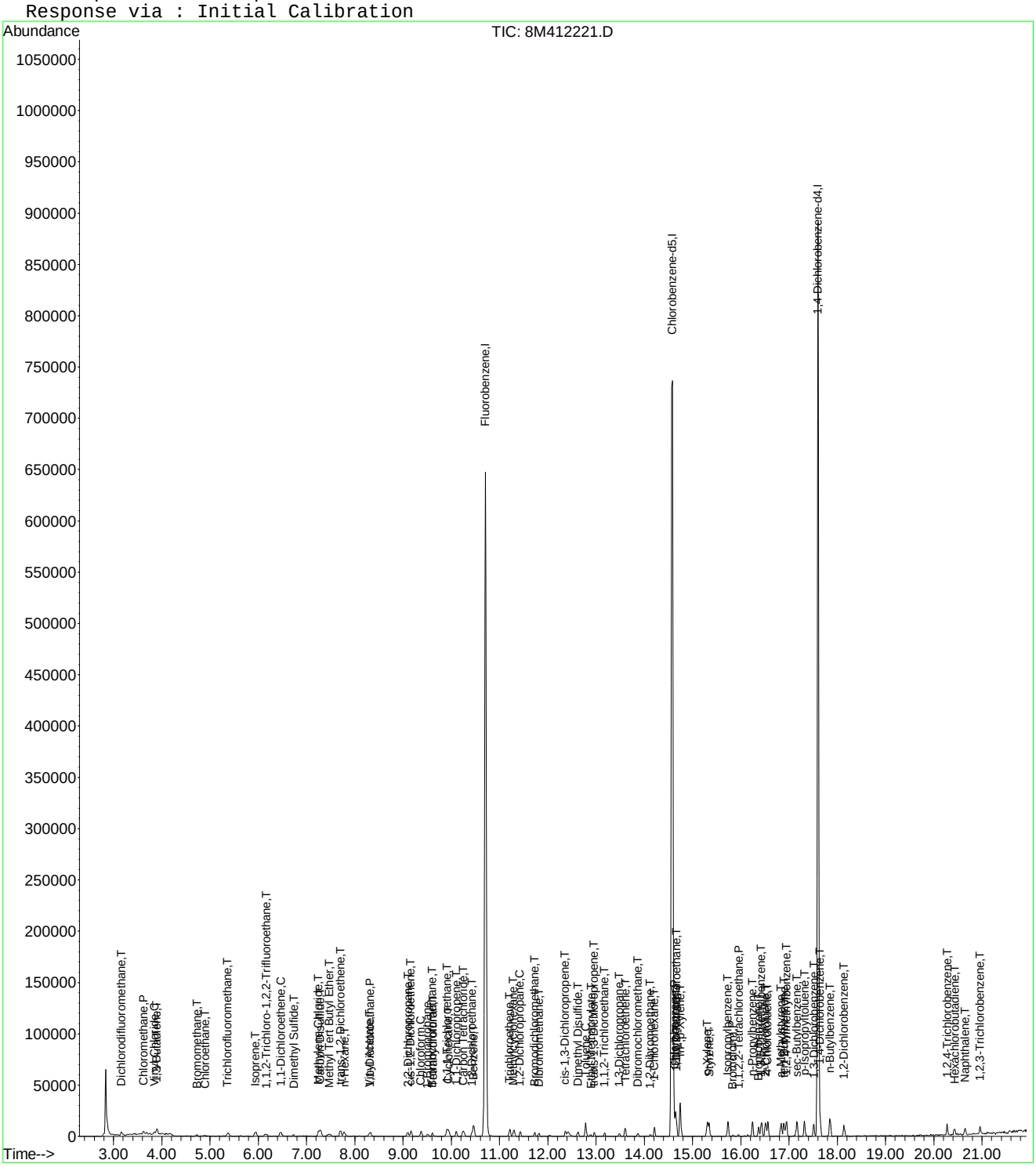

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	0.4000	0.4078	-2.0	100	0.00
3	P	Chloromethane	-1.0000	0.5012	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.3775	5.6	100	0.00
5	T	1,3-Butadiene	-1.0000	0.3178	0.0	100	0.02
6	T	Bromomethane	-1.0000	1.0253	0.0	100	0.00
7	T	Chloroethane	0.4000	0.4335	-8.4	100	0.00
8	T	Trichlorofluoromethane	0.4000	0.4029	-0.7	100	-0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.90#
10	T	Isoprene	0.4000	0.4079	-2.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.13#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3894	0.0	100	0.02
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	0.4000	0.4192	-4.8	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.58#
16	T	Dimethyl Sulfide	0.4000	0.3687	7.8	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.2179	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4591	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4587	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.43#
22	T	Methyl Tert Butyl Ether	-1.0000	0.3688	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.4193	-4.8	100	0.00
24	T	n-Hexane	-1.0000	0.3519	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.3241	0.0	100	0.02
27	P	1,1-Dichloroethane	0.4000	0.3826	4.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.98#
31	T	2,2-Dichloropropane	0.4000	0.3874	3.1	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.4172	-4.3	100	-0.01
33	C	Chloroform	0.4000	0.4164	-4.1	100	0.00
34		1-Bromopropane	-1.0000	0.1776	0.0	100	-0.01
35	T	Bromochloromethane	0.4000	0.3550	11.3	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.5125	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	0.4000	0.3803	4.9	100	0.00
39	T	Cyclohexane	-1.0000	0.4058	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4093	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	0.4000	0.3867	3.3	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	0.4000	0.3955	1.1	100	0.00
46	T	Benzene	0.4000	0.4393	-9.8	100	0.00
47	T	Trichloroethene	0.4000	0.4169	-4.2	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3768	0.0	100	-0.01
49	C	1,2-Dichloropropane	0.4000	0.4177	-4.4	100	0.00
50	T	Bromodichloromethane	0.4000	0.3676	8.1	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	0.4000	0.4162	-4.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1401	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.05#

(#) = Out of Range

8M412221.D 8260WT.M Sat May 14 18:03:54 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3821	4.5	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2746	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0000	0.0	0	-12.68#
59	C	Toluene	0.4000	0.4259	-6.5	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3102	0.0	100	0.02
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3184	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.4259	-6.5	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	0.4000	0.3253	18.7	100	0.00
66	T	Tetrachloroethene	0.4000	0.4267	-6.7	100	0.00
67	T	Dibromochloromethane	0.4000	0.3904	2.4	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.3814	4.6	100	0.00
69	T	1-Chlorohexane	0.4000	0.4017	-0.4	100	0.00
70	P	Chlorobenzene	0.4000	0.3933	1.7	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3872	3.2	100	0.00
72	C	Ethylbenzene	0.4000	0.4188	-4.7	100	0.00
73	T	m-,p-Xylene	0.8000	0.8859	-10.7	100	0.00
74	T	o-Xylene	-1.0000	0.4110	0.0	100	0.00
75	T	Styrene	0.4000	0.3901	2.5	100	0.00
76	P	Bromoform	-1.0000	0.2533	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.4249	-6.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.3398	15.1	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0283	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.14#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	0.4000	0.4245	-6.1	100	0.00
84	T	Bromobenzene	0.4000	0.3529	11.8	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.4141	-3.5	100	0.00
86	T	2-Chlorotoluene	0.4000	0.4284	-7.1	100	0.00
87	T	4-Chlorotoluene	0.4000	0.4359	-9.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.3631	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3459	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	0.4000	0.4046	-1.2	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.4494	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4092	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.3844	3.9	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.3915	2.1	100	0.00
95	T	n-Butylbenzene	-1.0000	0.4628	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.3805	4.9	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	0.4000	0.4182	-4.5	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.4302	-7.5	100	0.00
100	T	Naphthalene	0.4000	0.4178	-4.5	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.4310	-7.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412221.D 8260WT.M Sat May 14 18:03:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	795577	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	547129	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	284579	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.65	111	3962	0.3966 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery	= 1.60%#	
43) 1,2-Dichloroethane-d4	10.31	65	3835	0.3356 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery	= 1.36%#	
58) Toluene-d8	12.68	98	14023	0.4957 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 2.00%#	
80) p-Bromofluorobenzene	16.08	95	6483	0.5565 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery	= 2.24%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	12402	0.7438 ug/L	97
3) Chloromethane	3.62	50	8415	0.5357 ug/L #	75
4) Vinyl Chloride	3.84	62	9412	0.8873 ug/L	89
5) 1,3-Butadiene	3.90	54	6974	0.6729 ug/L	81
6) Bromomethane	4.73	94	4114	1.3123 ug/L	92
7) Chloroethane	4.90	64	4983	0.7178 ug/L #	80
8) Trichlorofluoromethane	5.38	101	17133	0.8136 ug/L #	96
9) Diethyl ether	5.90	59	20707	3.2140 ug/L	84
10) Isoprene	5.94	67	11176	1.0373 ug/L	76
11) Acrolein	6.14	56	246	0.4300 ug/L #	15
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	8135	0.8438 ug/L	96
13) Acetone	6.24	43	413	0.2115 ug/L #	48
14) 1,1-Dichloroethene	6.46	61	12947	0.6919 ug/L	91
15) Tert-Butyl Alcohol	6.59	59	3316	7.3747 ug/L #	55
16) Dimethyl Sulfide	6.72	62	4505	0.6515 ug/L	79
18) Methyl acetate	7.00	43	2119	0.3630 ug/L #	66
19) Methylene Chloride	7.24	84	8723	0.9837 ug/L #	43
20) Carbon Disulfide	7.29	76	28246	1.0441 ug/L	100
21) Acrylonitrile	7.43	53	2164	0.8620 ug/L	76
22) Methyl Tert Butyl Ether	7.47	73	16998	0.8678 ug/L	84
23) trans-1,2-Dichloroethene	7.70	61	12571	0.7427 ug/L	100
24) n-Hexane	7.78	57	9382	0.6109 ug/L	82
25) Diisopropyl ether	8.12	45	95400	2.1939 ug/L #	91
26) Vinyl Acetate	8.30	43	6750	0.3867 ug/L #	89
27) 1,1-Dichloroethane	8.32	63	14721	0.7271 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	97972	3.2102 ug/L	88
29) 2-Butanone	8.88	43	380	0.1215 ug/L #	57
30) Propionitrile	8.99	54	1593	2.0138 ug/L #	56
31) 2,2-Dichloropropane	9.09	77	14691	0.8236 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	9482	0.9362 ug/L	72
33) Chloroform	9.37	83	18494	0.9845 ug/L	94
34) 1-Bromopropane	9.50	122	1092	0.6844 ug/L	80
35) Bromochloromethane	9.61	130	5234	0.9877 ug/L #	55
36) Tetrahydrofuran	9.63	42	5415	2.6185 ug/L #	68
38) 1,1,1-Trichloroethane	9.91	97	17074	0.9016 ug/L	92
39) Cyclohexane	9.94	56	11865	0.5740 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	13172	0.9663 ug/L	87
41) Tert-Amyl-Methyl ether	10.21	73	90255	4.6173 ug/L #	88
42) Carbon Tetrachloride	10.25	117	14515	0.8146 ug/L	95
45) 1,2-Dichloroethane	10.42	62	10675	0.6766 ug/L	85

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	10.47	78	34504	0.9938 ug/L		84
47)	Trichloroethene	11.21	130	8752	0.8735 ug/L		93
48)	Methylcyclohexane	11.30	83	13513	0.9646 ug/L		79
49)	1,2-Dichloropropane	11.43	63	7057	0.6982 ug/L	#	67
50)	Bromodichloromethane	11.73	83	12147	0.8638 ug/L		96
52)	Dibromomethane	11.81	93	4130	0.8681 ug/L		95
53)	2-Chloroethyl Vinyl Ether	12.03	63	2694	0.6366 ug/L		86
54)	4-Methyl-2-Pentanone	12.06	58	848	0.3671 ug/L	#	41
55)	cis-1,3-Dichloropropene	12.36	75	12521	0.8847 ug/L		97
56)	Dimethyl Disulfide	12.63	79	5799	0.7821 ug/L		96
59)	Toluene	12.79	91	37114	1.1328 ug/L		95
60)	Ethyl Methacrylate	12.88	69	5490	0.8930 ug/L		69
62)	trans-1,3-Dichloropropene	12.96	75	10328	0.9035 ug/L		92
63)	1,1,2-Trichloroethane	13.18	97	5274	1.0144 ug/L		93
64)	2-Hexanone	13.10	58	397	0.2127 ug/L	#	1
65)	1,3-Dichloropropane	13.49	76	9673	1.0032 ug/L		73
66)	Tetrachloroethene	13.61	164	7373	0.9937 ug/L		95
67)	Dibromochloromethane	13.87	129	7358	0.8977 ug/L		95
68)	1,2-Dibromoethane	14.13	107	5123	0.9454 ug/L		95
69)	1-Chlorohexane	14.21	91	12790	1.1461 ug/L		79
70)	Chlorobenzene	14.62	112	25662	1.1281 ug/L		89
71)	1,1,1,2-Tetrachloroethane	14.66	131	8722	0.9838 ug/L		94
72)	Ethylbenzene	14.65	106	13009	1.0078 ug/L		87
73)	m-,p-Xylene	14.75	106	30465	2.0486 ug/L		84
74)	o-Xylene	15.31	106	15133	1.0101 ug/L		84
75)	Styrene	15.35	104	23191	0.9707 ug/L		91
76)	Bromoform	15.84	173	3875	0.8240 ug/L		96
77)	Isopropylbenzene	15.74	105	41382	1.0895 ug/L		95
79)	1,1,2,2-Tetrachloroethane	15.95	83	5604	0.9873 ug/L	#	93
81)	1,2,3-Trichloropropane	16.15	110	1355	0.7428 ug/L	#	1
82)	trans-1,4-Dichloro-2-Buten	16.19	53	962	0.3479 ug/L	#	1
83)	n-Propylbenzene	16.25	91	48249	1.1002 ug/L		99
84)	Bromobenzene	16.37	156	9598	1.0497 ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	33355	1.0278 ug/L		96
86)	2-Chlorotoluene	16.51	91	33408	1.1895 ug/L		94
87)	4-Chlorotoluene	16.56	91	29548	1.0213 ug/L		95
88)	a-Methylstyrene	16.84	118	14414	0.9014 ug/L		91
89)	tert-Butylbenzene	16.89	134	6686	1.0398 ug/L		86
90)	1,2,4-Trimethylbenzene	16.95	105	36066	1.0857 ug/L		96
91)	sec-Butylbenzene	17.16	105	42128	1.0796 ug/L		96
92)	p-Isopropyltoluene	17.32	119	35424	1.0633 ug/L		94
93)	1,3-Dichlorobenzene	17.52	146	18409	1.0144 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	19031	1.0506 ug/L	#	62
95)	n-Butylbenzene	17.85	91	35772	1.1288 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	16104	1.0126 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.14	75	1262	1.0152 ug/L	#	53
98)	1,2,4-Trichlorobenzene	20.28	180	11494	0.9331 ug/L		98
99)	Hexachlorobutadiene	20.43	225	5421	0.9510 ug/L		98
100)	Naphthalene	20.65	128	16581	0.8853 ug/L		100
101)	1,2,3-Trichlorobenzene	20.96	180	10306	0.9835 ug/L		94

(#) = qualifier out of range (m) = manual integration
8M412222.D 8260WT.M Fri May 13 14:49:48 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

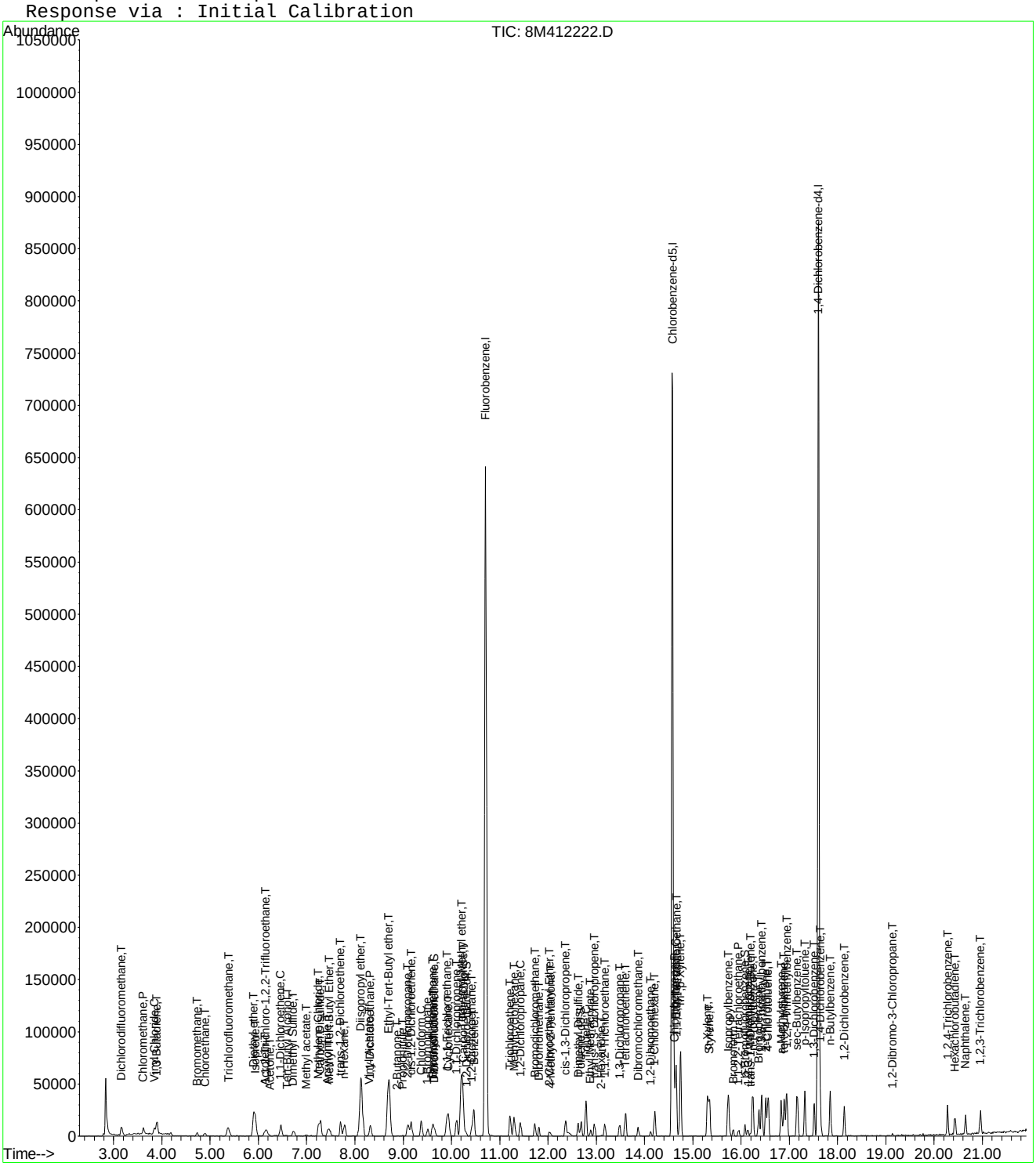

8M412222.D 8260WT.M Fri May 13 14:49:48 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:05:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9298	7.0	100	0.00
3	P	Chloromethane	1.0000	1.0808	-8.1	100	0.00
4	C	Vinyl Chloride	1.0000	1.0189	-1.9	100	0.00
5	T	1,3-Butadiene	-1.0000	0.9002	0.0	100	0.02
6	T	Bromomethane	1.0000	1.2082	-20.8	100	0.00
7	T	Chloroethane	1.0000	0.9803	2.0	100	0.00
8	T	Trichlorofluoromethane	1.0000	0.9968	0.3	100	0.00
9	T	Diethyl ether	5.0000	5.0462	-0.9	100	0.00
10	T	Isoprene	1.0000	1.0707	-7.1	100	0.00
11	T	Acrolein	-1.0000	0.6696	0.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0069	-0.7	100	0.00
13	T	Acetone	-1.0000	0.4614	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	1.0064	-0.6	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	11.5604	0.0	0	0.02
16	T	Dimethyl Sulfide	1.0000	0.9794	2.1	100	-0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.8758	0.0	100	0.00
19	T	Methylene Chloride	1.0000	1.0655	-6.5	100	0.00
20	T	Carbon Disulfide	1.0000	1.0492	-4.9	100	0.00
21	T	Acrylonitrile	2.5000	1.8633	25.5#	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9593	4.1	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	1.0636	-6.4	100	0.00
24	T	n-Hexane	-1.0000	1.0690	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	5.1784	-3.6	100	0.00
26	T	Vinyl Acetate	-1.0000	0.8002	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0029	-0.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.9635	0.7	100	0.00
29	T	2-Butanone	-1.0000	0.2889	0.0	100	0.00
30	T	Propionitrile	5.0000	4.1566	16.9	100	0.00
31	T	2,2-Dichloropropane	1.0000	0.9498	5.0	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	1.0383	-3.8	100	0.00
33	C	Chloroform	1.0000	1.0671	-6.7	100	0.00
34		1-Bromopropane	1.0000	0.8348	16.5	100	-0.01
35	T	Bromochloromethane	1.0000	1.1177	-11.8	100	0.00
36	T	Tetrahydrofuran	5.0000	6.2516	-25.0#	100	0.00
37	S	Dibromofluoromethane	0.5000	0.4635	7.3	100	-0.01
38	T	1,1,1-Trichloroethane	1.0000	1.0372	-3.7	100	0.00
39	T	Cyclohexane	1.0000	1.0411	-4.1	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0498	-5.0	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	5.0344	-0.7	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.9930	0.7	100	0.00
43	S	1,2-Dichloroethane-d4	0.5000	0.4184	16.3	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	1.0000	0.9570	4.3	100	0.00
46	T	Benzene	1.0000	1.0558	-5.6	100	0.00
47	T	Trichloroethene	1.0000	1.0041	-0.4	100	0.00
48	T	Methylcyclohexane	-1.0000	1.0205	0.0	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.9700	3.0	100	0.00
50	T	Bromodichloromethane	1.0000	0.9500	5.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	1.0000	0.9590	4.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.8616	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.6639	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:05:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9621	3.8	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.8348	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	0.5000	0.4897	2.1	100	0.00
59	C	Toluene	1.0000	1.0927	-9.3	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.8416	15.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	1.0000	0.9073	9.3	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.9840	1.6	100	0.00
64	T	2-Hexanone	-1.0000	0.3525	0.0	100	-0.01
65	T	1,3-Dichloropropane	1.0000	1.0137	-1.4	100	0.00
66	T	Tetrachloroethene	1.0000	1.0132	-1.3	100	0.00
67	T	Dibromochloromethane	1.0000	0.9402	6.0	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.9590	4.1	100	0.00
69	T	1-Chlorohexane	1.0000	1.1031	-10.3	100	0.00
70	P	Chlorobenzene	1.0000	1.1204	-12.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.9829	1.7	100	0.00
72	C	Ethylbenzene	1.0000	1.0381	-3.8	100	0.00
73	T	m-,p-Xylene	2.0000	2.0726	-3.6	100	0.00
74	T	o-Xylene	1.0000	1.0530	-5.3	100	0.00
75	T	Styrene	1.0000	0.9839	1.6	100	0.00
76	P	Bromoform	1.0000	0.8348	16.5	100	0.00
77	T	Isopropylbenzene	1.0000	1.0840	-8.4	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	0.9810	1.9	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5502	0.0	100	0.00
81	T	1,2,3-Trichloropropane	1.0000	0.7703	23.0	100	0.02
82	T	trans-1,4-Dichloro-2-Butene	1.0000	1.1443	-14.4	100	0.00
83	T	n-Propylbenzene	1.0000	1.0868	-8.7	100	0.00
84	T	Bromobenzene	1.0000	1.0510	-5.1	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	1.0314	-3.1	100	0.00
86	T	2-Chlorotoluene	1.0000	1.0778	-7.8	100	0.00
87	T	4-Chlorotoluene	1.0000	1.0553	-5.5	100	0.00
88	T	a-Methylstyrene	-1.0000	0.9394	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	1.0567	-5.7	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	1.0845	-8.5	100	0.00
91	T	sec-Butylbenzene	1.0000	1.1073	-10.7	100	0.00
92	T	p-Isopropyltoluene	1.0000	1.0966	-9.7	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0469	-4.7	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	1.0735	-7.3	100	0.00
95	T	n-Butylbenzene	1.0000	1.1201	-12.0	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0297	-3.0	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.1006	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	1.0000	0.9832	1.7	100	0.00
99	T	Hexachlorobutadiene	1.0000	0.9925	0.7	100	0.00
100	T	Naphthalene	1.0000	0.9547	4.5	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	1.0450	-4.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	782460	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.57	117	543252	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	286450	25.00	ug/L	0.01

System Monitoring Compounds						
37) Dibromofluoromethane	9.66	111	8161	0.8307	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.32%#		
43) 1,2-Dichloroethane-d4	10.30	65	9681	0.8613	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.44%#		
58) Toluene-d8	12.68	98	28135	1.0016	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.00%#		
80) p-Bromofluorobenzene	16.08	95	12079	1.0302	ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.12%#		

Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.16	85	24870	1.5166	ug/L	98
3) Chloromethane	3.62	50	16106	1.0425	ug/L	93
4) Vinyl Chloride	3.85	62	18562	1.7792	ug/L	94
5) 1,3-Butadiene	3.90	54	13617	1.3360	ug/L	92
6) Bromomethane	4.73	94	8329	1.8804	ug/L	94
7) Chloroethane	4.90	64	9562	1.4006	ug/L	86
8) Trichlorofluoromethane	5.39	101	34970	1.6885	ug/L	97
9) Diethyl ether	5.90	59	107986	17.0420	ug/L	79
10) Isoprene	5.93	67	20936	1.9757	ug/L	73
11) Acrolein	6.14	56	4864	8.6444	ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	16832	1.7751	ug/L	99
13) Acetone	6.23	43	1519	0.7908	ug/L #	48
14) 1,1-Dichloroethene	6.47	61	25394	1.3798	ug/L	89
15) Tert-Butyl Alcohol	6.58	59	14891	33.6725	ug/L	85
16) Dimethyl Sulfide	6.73	62	9489	1.3953	ug/L	79
17) Iodomethane	6.98	142	1211	1.3472	ug/L #	60
18) Methyl acetate	7.01	43	5064	0.8821	ug/L #	79
19) Methylene Chloride	7.25	84	16579	1.9010	ug/L	52
20) Carbon Disulfide	7.29	76	57693	2.1683	ug/L	98
21) Acrylonitrile	7.43	53	13848	5.6089	ug/L	93
22) Methyl Tert Butyl Ether	7.47	73	33991	1.7644	ug/L	84
23) trans-1,2-Dichloroethene	7.70	61	22786	1.3688	ug/L	88
24) n-Hexane	7.79	57	18282	1.2105	ug/L	84
25) Diisopropyl ether	8.12	45	475271	11.1128	ug/L #	92
26) Vinyl Acetate	8.29	43	15998	0.9318	ug/L	93
27) 1,1-Dichloroethane	8.32	63	30419	1.5277	ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	505010	16.8250	ug/L	89
29) 2-Butanone	8.90	43	2250	0.7313	ug/L #	57
30) Propionitrile	8.99	54	9373	12.0479	ug/L	86
31) 2,2-Dichloropropane	9.10	77	32521	1.8538	ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	18238	1.8309	ug/L	91
33) Chloroform	9.37	83	33543	1.8156	ug/L	99
34) 1-Bromopropane	9.52	122	2513	1.6014	ug/L	88
35) Bromochloromethane	9.60	130	9189	1.7632	ug/L	67
36) Tetrahydrofuran	9.63	42	22074	10.8529	ug/L #	66
38) 1,1,1-Trichloroethane	9.90	97	32268	1.7324	ug/L	96
39) Cyclohexane	9.93	56	23097	1.1362	ug/L #	65
40) 1,1-Dichloropropene	10.10	75	24988	1.8639	ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	459535	23.9029	ug/L	87
42) Carbon Tetrachloride	10.24	117	28935	1.6512	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412223.D 8260WT.M Fri May 13 15:18:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.42	62	22142	1.4270 ug/L #	83
46)	Benzene	10.46	78	67028	1.9629 ug/L	83
47)	Trichloroethene	11.21	130	17287	1.7543 ug/L	96
48)	Methylcyclohexane	11.30	83	26050	1.8907 ug/L	84
49)	1,2-Dichloropropane	11.42	63	14582	1.4670 ug/L	77
50)	Bromodichloromethane	11.73	83	25794	1.8651 ug/L	93
51)	1,4-Dioxane	11.73	88	1282	32.3515 ug/L	74
52)	Dibromomethane	11.81	93	8575	1.8325 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.02	63	6234	1.4979 ug/L	100
54)	4-Methyl-2-Pentanone	12.06	58	2139	0.9416 ug/L	84
55)	cis-1,3-Dichloropropene	12.37	75	24153	1.7353 ug/L	98
56)	Dimethyl Disulfide	12.62	79	12288	1.6851 ug/L	99
59)	Toluene	12.79	91	72944	2.2423 ug/L	95
60)	Ethyl Methacrylate	12.88	69	12716	2.0832 ug/L	71
62)	trans-1,3-Dichloropropene	12.96	75	22163	1.9527 ug/L	100
63)	1,1,2-Trichloroethane	13.18	97	10537	2.0412 ug/L	99
64)	2-Hexanone	13.13	58	2200	1.1873 ug/L #	65
65)	1,3-Dichloropropane	13.49	76	20212	2.1112 ug/L	72
66)	Tetrachloroethene	13.60	164	14595	1.9811 ug/L	90
67)	Dibromochloromethane	13.87	129	14698	1.8061 ug/L	98
68)	1,2-Dibromoethane	14.12	107	10152	1.8869 ug/L	95
69)	1-Chlorohexane	14.21	91	21960	1.9818 ug/L	89
70)	Chlorobenzene	14.62	112	47376	2.0974 ug/L	81
71)	1,1,1,2-Tetrachloroethane	14.66	131	17526	1.9910 ug/L	97
72)	Ethylbenzene	14.66	106	25628	1.9996 ug/L	92
73)	m-,p-Xylene	14.74	106	60087	4.0693 ug/L	84
74)	o-Xylene	15.31	106	28289	1.9017 ug/L	79
75)	Styrene	15.35	104	47644	2.0086 ug/L	92
76)	Bromoform	15.84	173	9145	1.9585 ug/L	95
77)	Isopropylbenzene	15.73	105	81301	2.1557 ug/L	97
79)	1,1,2,2-Tetrachloroethane	15.95	83	11538	2.0194 ug/L	95
81)	1,2,3-Trichloropropane	16.13	110	3630	1.9770 ug/L	94
82)	trans-1,4-Dichloro-2-Buten	16.19	53	2699	0.9698 ug/L #	36
83)	n-Propylbenzene	16.24	91	97233	2.2026 ug/L	96
84)	Bromobenzene	16.37	156	19174	2.0834 ug/L	92
85)	1,3,5-Trimethylbenzene	16.42	105	67395	2.0631 ug/L	97
86)	2-Chlorotoluene	16.51	91	67110	2.3739 ug/L	94
87)	4-Chlorotoluene	16.56	91	59154	2.0313 ug/L	92
88)	a-Methylstyrene	16.84	118	29415	1.8275 ug/L	86
89)	tert-Butylbenzene	16.89	134	12716	1.9647 ug/L	67
90)	1,2,4-Trimethylbenzene	16.95	105	71669	2.1435 ug/L	94
91)	sec-Butylbenzene	17.17	105	81038	2.0632 ug/L	98
92)	p-Isopropyltoluene	17.32	119	70170	2.0924 ug/L	92
93)	1,3-Dichlorobenzene	17.52	146	37289	2.0413 ug/L	93
94)	1,4-Dichlorobenzene	17.64	146	36528	2.0034 ug/L #	73
95)	n-Butylbenzene	17.85	91	67823	2.1262 ug/L	96
96)	1,2-Dichlorobenzene	18.14	146	32322	2.0190 ug/L	92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	1955	1.5624 ug/L	94
98)	1,2,4-Trichlorobenzene	20.28	180	23558	1.9000 ug/L	98
99)	Hexachlorobutadiene	20.43	225	11066	1.9286 ug/L	99
100)	Naphthalene	20.65	128	36066	1.9130 ug/L	99
101)	1,2,3-Trichlorobenzene	20.96	180	19765	1.8738 ug/L	95

(#) = qualifier out of range (m) = manual integration
8M412223.D 8260WT.M Fri May 13 15:18:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

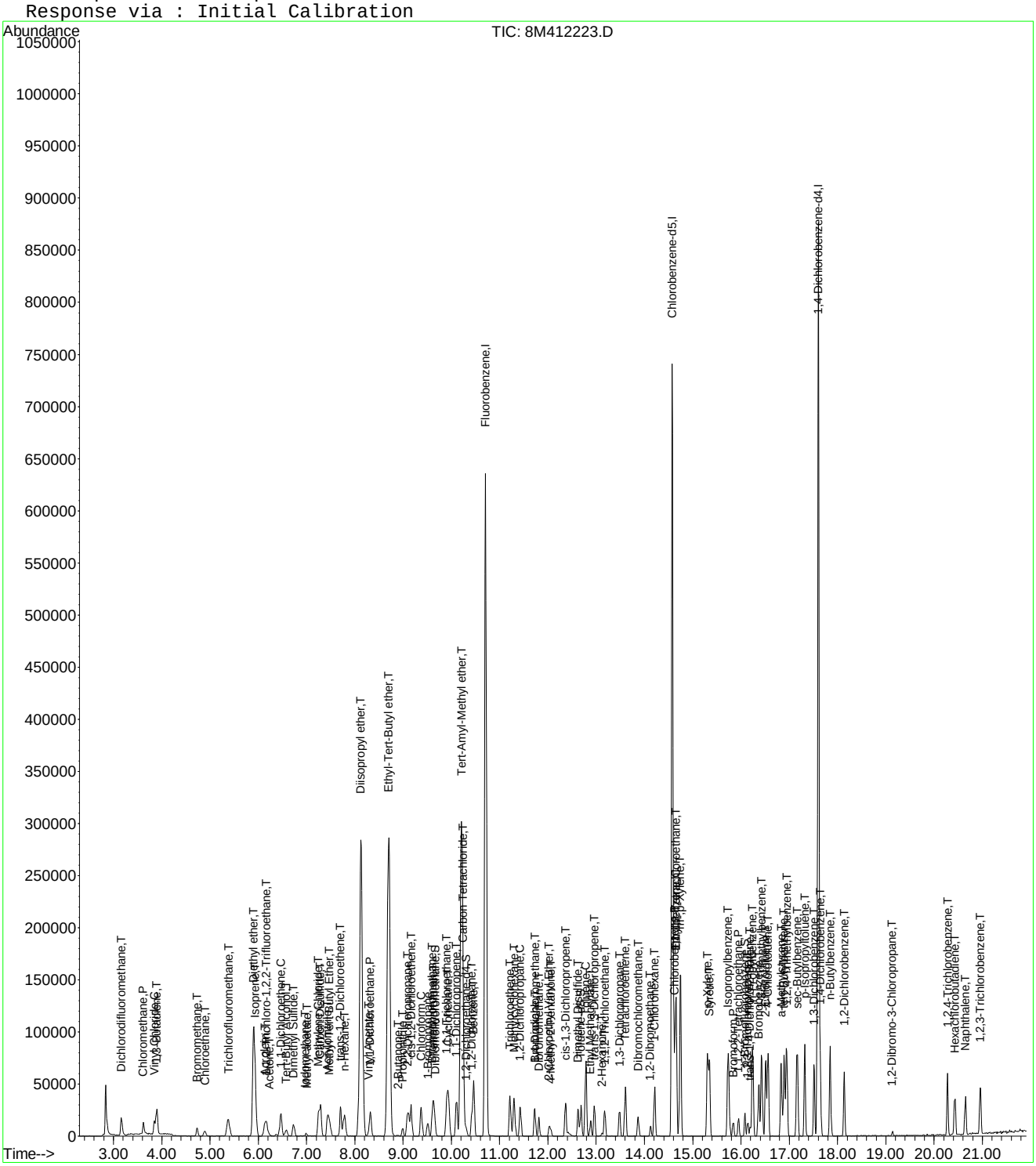

8M412223.D 8260WT.M Fri May 13 15:18:37 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.8958	5.2	100	0.00
3	P	Chloromethane	2.0000	2.1033	-5.2	100	0.00
4	C	Vinyl Chloride	2.0000	2.0431	-2.2	100	0.00
5	T	1,3-Butadiene	2.0000	1.7872	10.6	100	0.02
6	T	Bromomethane	2.0000	2.0126	-0.6	100	0.00
7	T	Chloroethane	2.0000	1.9127	4.4	100	0.00
8	T	Trichlorofluoromethane	2.0000	2.0686	-3.4	100	0.00
9	T	Diethyl ether	25.0000	26.7567	-7.0	100	0.00
10	T	Isoprene	2.0000	2.0394	-2.0	100	0.00
11	T	Acrolein	12.5000	13.4606	-7.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	2.1182	-5.9	100	0.02
13	T	Acetone	-1.0000	1.7255	0.0	100	-0.01
14	C	1,1-Dichloroethene	2.0000	2.0070	-0.4	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	52.7840	-5.6	100	0.00
16	T	Dimethyl Sulfide	2.0000	2.0975	-4.9	100	0.00
17	T	Iodomethane	2.0000	3.0680	-53.4#	100	0.00
18	T	Methyl acetate	-1.0000	2.1281	0.0	100	0.00
19	T	Methylene Chloride	2.0000	2.0590	-3.0	100	0.00
20	T	Carbon Disulfide	2.0000	2.1789	-8.9	100	0.00
21	T	Acrylonitrile	12.5000	12.1237	3.0	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.9505	2.5	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.9603	2.0	100	0.00
24	T	n-Hexane	-1.0000	2.1181	0.0	100	0.00
25	T	Diisopropyl ether	25.0000	26.2305	-4.9	100	0.00
26	T	Vinyl Acetate	2.0000	1.9284	3.6	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.1072	-5.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	26.0139	-4.1	100	0.00
29	T	2-Butanone	-1.0000	1.7396	0.0	100	0.02
30	T	Propionitrile	25.0000	24.8668	0.5	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1378	-6.9	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0306	-1.5	100	0.00
33	C	Chloroform	2.0000	1.9679	1.6	100	0.00
34		1-Bromopropane	2.0000	1.9533	2.3	100	0.00
35	T	Bromochloromethane	2.0000	1.9951	0.2	100	0.00
36	T	Tetrahydrofuran	25.0000	25.9117	-3.6	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9708	2.9	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.9930	0.3	100	0.00
39	T	Cyclohexane	2.0000	2.0605	-3.0	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0248	-1.2	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	26.0627	-4.3	100	0.00
42	T	Carbon Tetrachloride	2.0000	2.0126	-0.6	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0740	-7.4	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	2.0000	2.0183	-0.9	100	0.00
46	T	Benzene	2.0000	2.0854	-4.3	100	0.00
47	T	Trichloroethene	2.0000	2.0166	-0.8	100	0.00
48	T	Methylcyclohexane	-1.0000	2.0003	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0380	-1.9	100	0.00
50	T	Bromodichloromethane	2.0000	2.0511	-2.6	100	0.00
51	T	1,4-Dioxane	-1.0000	35.6688	0.0	100	0.02
52	T	Dibromomethane	2.0000	2.0246	-1.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	2.0271	-1.4	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.7027	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.8869	5.7	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.7986	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	0.9896	1.0	100	0.00
59	C	Toluene	2.0000	2.1628	-8.1	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.9633	1.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	2.0000	1.9609	2.0	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.9800	1.0	100	0.00
64	T	2-Hexanone	-1.0000	1.9672	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.1332	-6.7	100	0.00
66	T	Tetrachloroethene	2.0000	2.0198	-1.0	100	0.00
67	T	Dibromochloromethane	2.0000	1.8915	5.4	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.9141	4.3	100	0.00
69	T	1-Chlorohexane	2.0000	1.9075	4.6	100	0.00
70	P	Chlorobenzene	2.0000	2.0831	-4.2	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.9892	0.5	100	0.00
72	C	Ethylbenzene	2.0000	2.0596	-3.0	100	0.00
73	T	m-,p-Xylene	4.0000	4.1170	-2.9	100	0.00
74	T	o-Xylene	2.0000	1.9825	0.9	100	0.00
75	T	Styrene	2.0000	2.0358	-1.8	100	0.00
76	P	Bromoform	2.0000	1.9841	0.8	100	0.00
77	T	Isopropylbenzene	2.0000	2.1448	-7.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	2.0066	-0.3	100	0.00
80	S	p-Bromofluorobenzene	1.0000	1.0184	-1.8	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	2.0501	-2.5	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	2.0915	-4.6	100	0.00
83	T	n-Propylbenzene	2.0000	2.1757	-8.8	100	0.00
84	T	Bromobenzene	2.0000	2.0859	-4.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.0703	-3.5	100	0.00
86	T	2-Chlorotoluene	2.0000	2.1509	-7.5	100	0.00
87	T	4-Chlorotoluene	2.0000	2.0989	-4.9	100	0.00
88	T	a-Methylstyrene	-1.0000	1.9045	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	1.9967	0.2	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.1411	-7.1	100	0.00
91	T	sec-Butylbenzene	2.0000	2.1161	-5.8	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.1579	-7.9	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.1067	-5.3	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.0470	-2.4	100	0.00
95	T	n-Butylbenzene	2.0000	2.1098	-5.5	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0532	-2.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.6938	15.3	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	2.0021	-0.1	100	0.00
99	T	Hexachlorobutadiene	2.0000	2.0128	-0.6	100	0.00
100	T	Naphthalene	2.0000	2.0630	-3.2	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9910	0.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412223.D 8260WT.M Sat May 14 18:08:14 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	768397	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	534372	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	274234	25.00 ug/L	0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	19775	2.0496 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	8.20%#	
43) 1,2-Dichloroethane-d4	10.30	65	21200	1.9207 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	7.68%#	
58) Toluene-d8	12.68	98	65647	2.3758 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	9.52%#	
80) p-Bromofluorobenzene	16.08	95	26759	2.3838 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	9.52%#	

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.16	85	55961	3.4750 ug/L	99
3) Chloromethane	3.62	50	34194	2.2538 ug/L	100
4) Vinyl Chloride	3.84	62	42506	4.1488 ug/L	99
5) 1,3-Butadiene	3.89	54	32006	3.1976 ug/L	93
6) Bromomethane	4.72	94	19582	3.4204 ug/L	94
7) Chloroethane	4.90	64	22000	3.2814 ug/L	84
8) Trichlorofluoromethane	5.37	101	77715	3.8212 ug/L	96
9) Diethyl ether	5.90	59	188516	30.2955 ug/L	79
10) Isoprene	5.94	67	44975	4.3218 ug/L	78
11) Acrolein	6.15	56	7712	13.9568 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	36867	3.9591 ug/L	99
13) Acetone	6.24	43	3578	1.8967 ug/L	85
14) 1,1-Dichloroethene	6.47	61	59405	3.2870 ug/L	95
15) Tert-Butyl Alcohol	6.58	59	27833	64.0897 ug/L #	82
16) Dimethyl Sulfide	6.73	62	21102	3.1597 ug/L	77
17) Iodomethane	6.99	142	3667	1.8964 ug/L	95
18) Methyl acetate	7.00	43	11500	2.0398 ug/L #	86
19) Methylene Chloride	7.24	84	37533	4.3823 ug/L	52
20) Carbon Disulfide	7.29	76	123060	4.7097 ug/L	100
21) Acrylonitrile	7.43	53	25653	10.5804 ug/L	99
22) Methyl Tert Butyl Ether	7.47	73	80005	4.2289 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	54124	3.3108 ug/L	94
24) n-Hexane	7.78	57	40758	2.7480 ug/L	82
25) Diisopropyl ether	8.12	45	841400	20.0337 ug/L #	91
26) Vinyl Acetate	8.30	43	37284	2.2113 ug/L #	90
27) 1,1-Dichloroethane	8.32	63	66711	3.4116 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	907423	30.7852 ug/L	89
29) 2-Butanone	8.89	43	5359	1.7738 ug/L #	82
30) Propionitrile	8.99	54	17933	23.4726 ug/L	100
31) 2,2-Dichloropropane	9.10	77	73150	4.2462 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	41036	4.1950 ug/L	89
33) Chloroform	9.37	83	78227	4.3116 ug/L	99
34) 1-Bromopropane	9.52	122	6162	3.9986 ug/L	99
35) Bromochloromethane	9.60	130	20988	4.1009 ug/L #	62
36) Tetrahydrofuran	9.62	42	38098	19.0742 ug/L #	62
38) 1,1,1-Trichloroethane	9.91	97	76152	4.1633 ug/L	97
39) Cyclohexane	9.94	56	51439	2.5767 ug/L #	66
40) 1,1-Dichloropropene	10.11	75	56645	4.3027 ug/L	93
41) Tert-Amyl-Methyl ether	10.21	73	821180	43.4958 ug/L	87
42) Carbon Tetrachloride	10.25	117	67831	3.9416 ug/L	96

(#) = qualifier out of range (m) = manual integration
8M412224.D 8260WT.M Fri May 13 15:47:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	51708	3.3934 ug/L		85
46)	Benzene	10.46	78	150204	4.4792 ug/L		86
47)	Trichloroethene	11.21	130	38500	3.9784 ug/L		94
48)	Methylcyclohexane	11.30	83	60897	4.5008 ug/L		81
49)	1,2-Dichloropropane	11.43	63	31773	3.2549 ug/L		77
50)	Bromodichloromethane	11.73	83	59127	4.3535 ug/L		94
51)	1,4-Dioxane	11.71	88	2719	69.8702 ug/L	#	62
52)	Dibromomethane	11.81	93	19711	4.2894 ug/L		96
53)	2-Chloroethyl Vinyl Ether	12.03	63	12946	3.1676 ug/L		98
54)	4-Methyl-2-Pentanone	12.05	58	5129	2.2991 ug/L	#	78
55)	cis-1,3-Dichloropropene	12.36	75	61169	4.4752 ug/L		94
56)	Dimethyl Disulfide	12.62	79	27966	3.9053 ug/L		98
59)	Toluene	12.78	91	161007	5.0316 ug/L		97
60)	Ethyl Methacrylate	12.88	69	28595	4.7624 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	49791	4.4599 ug/L		97
63)	1,1,2-Trichloroethane	13.18	97	23678	4.6631 ug/L		99
64)	2-Hexanone	13.11	58	4499	2.4685 ug/L	#	97
65)	1,3-Dichloropropane	13.49	76	44838	4.7614 ug/L		73
66)	Tetrachloroethene	13.60	164	32715	4.5144 ug/L		97
67)	Dibromochloromethane	13.87	129	35009	4.3734 ug/L		98
68)	1,2-Dibromoethane	14.13	107	24247	4.5815 ug/L		99
69)	1-Chlorohexane	14.21	91	53599	4.9176 ug/L		84
70)	Chlorobenzene	14.62	112	107618	4.8437 ug/L		95
71)	1,1,1,2-Tetrachloroethane	14.65	131	38120	4.4025 ug/L		96
72)	Ethylbenzene	14.65	106	56905	4.5138 ug/L		91
73)	m-,p-Xylene	14.75	106	137390	9.4592 ug/L		86
74)	o-Xylene	15.31	106	65650	4.4866 ug/L		85
75)	Styrene	15.35	104	111433	4.7758 ug/L		91
76)	Bromoform	15.84	173	19346	4.2121 ug/L		97
77)	Isopropylbenzene	15.73	105	182523	4.9200 ug/L		96
79)	1,1,2,2-Tetrachloroethane	15.95	83	26655	4.8730 ug/L		99
81)	1,2,3-Trichloropropane	16.13	110	8840	5.0289 ug/L		81
82)	trans-1,4-Dichloro-2-Buten	16.19	53	6584	2.4712 ug/L	#	51
83)	n-Propylbenzene	16.24	91	222196	5.2576 ug/L		96
84)	Bromobenzene	16.37	156	42665	4.8423 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	155714	4.9790 ug/L		93
86)	2-Chlorotoluene	16.52	91	148764	5.4968 ug/L		94
87)	4-Chlorotoluene	16.56	91	135679	4.8666 ug/L		94
88)	a-Methylstyrene	16.84	118	68945	4.4743 ug/L		91
89)	tert-Butylbenzene	16.89	134	29069	4.6914 ug/L		77
90)	1,2,4-Trimethylbenzene	16.95	105	161016	5.0301 ug/L		94
91)	sec-Butylbenzene	17.17	105	191273	5.0866 ug/L		94
92)	p-Isopropyltoluene	17.32	119	159232	4.9597 ug/L		93
93)	1,3-Dichlorobenzene	17.52	146	83896	4.7972 ug/L		95
94)	1,4-Dichlorobenzene	17.64	146	82462	4.7242 ug/L		86
95)	n-Butylbenzene	17.85	91	158787	5.1996 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	72524	4.7321 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	5629	4.6990 ug/L		76
98)	1,2,4-Trichlorobenzene	20.28	180	53855	4.5369 ug/L		98
99)	Hexachlorobutadiene	20.43	225	24504	4.4608 ug/L		93
100)	Naphthalene	20.65	128	79806	4.4217 ug/L		98
101)	1,2,3-Trichlorobenzene	20.96	180	44150	4.3720 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412224.D 8260WT.M Fri May 13 15:47:44 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

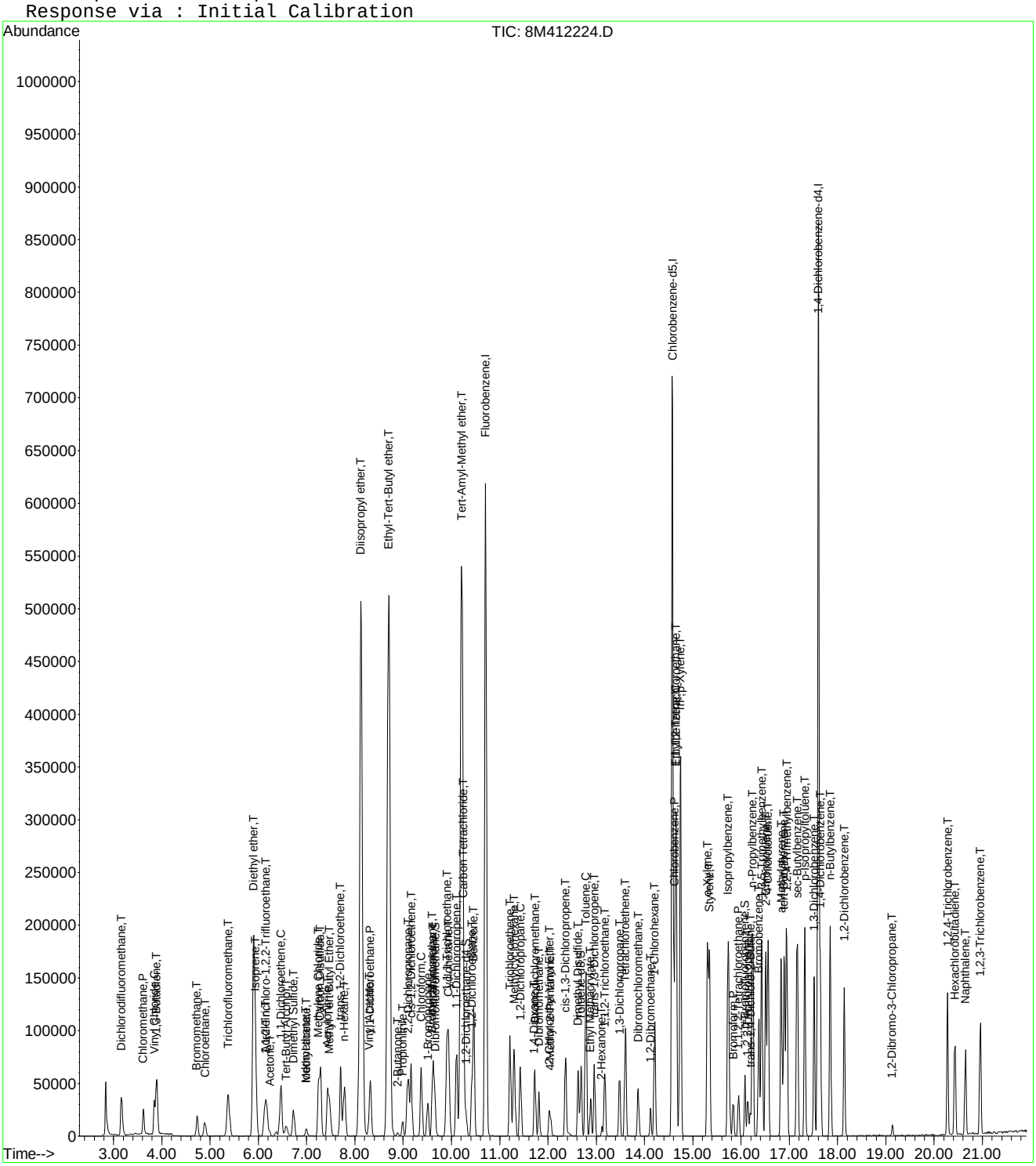

8M412224.D 8260WT.M Fri May 13 15:47:44 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.3438	13.1	100	0.00
3	P	Chloromethane	5.0000	4.5471	9.1	100	0.00
4	C	Vinyl Chloride	5.0000	4.7641	4.7	100	0.00
5	T	1,3-Butadiene	5.0000	4.2777	14.4	100	0.00
6	T	Bromomethane	5.0000	4.1880	16.2	100	-0.01
7	T	Chloroethane	5.0000	4.4813	10.4	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.6812	6.4	100	0.00
9	T	Diethyl ether	50.0000	47.5652	4.9	100	0.00
10	T	Isoprene	5.0000	4.4611	10.8	100	0.00
11	T	Acrolein	25.0000	21.7328	13.1	100	0.02
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.7244	5.5	100	0.00
13	T	Acetone	5.0000	4.1387	17.2	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.7810	4.4	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	100.4650	-0.5	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.7499	5.0	100	0.00
17	T	Iodomethane	5.0000	3.7634	24.7	100	0.00
18	T	Methyl acetate	5.0000	4.9211	1.6	100	0.00
19	T	Methylene Chloride	5.0000	4.7467	5.1	100	0.00
20	T	Carbon Disulfide	5.0000	4.7328	5.3	100	0.00
21	T	Acrylonitrile	25.0000	22.8698	8.5	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.6750	6.5	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.7415	5.2	100	0.00
24	T	n-Hexane	5.0000	4.8084	3.8	100	0.00
25	T	Diisopropyl ether	50.0000	47.2872	5.4	100	0.00
26	T	Vinyl Acetate	5.0000	4.5766	8.5	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.7058	5.9	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	47.5984	4.8	100	0.00
29	T	2-Butanone	5.0000	4.2191	15.6	100	0.00
30	T	Propionitrile	50.0000	48.4475	3.1	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.8965	2.1	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.6525	7.0	100	0.00
33	C	Chloroform	5.0000	4.6735	6.5	100	0.00
34		1-Bromopropane	5.0000	4.8774	2.5	100	0.00
35	T	Bromochloromethane	5.0000	4.6403	7.2	100	0.00
36	T	Tetrahydrofuran	50.0000	45.5400	8.9	100	-0.01
37	S	Dibromofluoromethane	2.5000	2.3953	4.2	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.7896	4.2	100	0.00
39	T	Cyclohexane	5.0000	4.6730	6.5	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.6741	6.5	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	47.6211	4.8	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.8044	3.9	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.3949	4.2	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	5.0000	4.7996	4.0	100	0.00
46	T	Benzene	5.0000	4.7588	4.8	100	0.00
47	T	Trichloroethene	5.0000	4.5733	8.5	100	0.00
48	T	Methylcyclohexane	5.0000	4.7616	4.8	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.5219	9.6	100	0.00
50	T	Bromodichloromethane	5.0000	4.7878	4.2	100	0.00
51	T	1,4-Dioxane	100.0000	77.0346	23.0	100	0.00
52	T	Dibromomethane	5.0000	4.7390	5.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.2867	14.3	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.1576	16.8	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.8662	2.7	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.1683	16.6	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.3473	6.1	100	0.00
59	C	Toluene	5.0000	4.8533	2.9	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.4883	10.2	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	5.0000	4.4786	10.4	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.5231	9.5	100	0.00
64	T	2-Hexanone	5.0000	4.0898	18.2	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.8109	3.8	100	0.00
66	T	Tetrachloroethene	5.0000	4.6028	7.9	100	0.00
67	T	Dibromochloromethane	5.0000	4.5802	8.4	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.6475	7.1	100	0.00
69	T	1-Chlorohexane	5.0000	4.7331	5.3	100	0.00
70	P	Chlorobenzene	5.0000	4.8107	3.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.3984	12.0	100	0.00
72	C	Ethylbenzene	5.0000	4.6492	7.0	100	0.00
73	T	m-,p-Xylene	10.0000	9.5700	4.3	100	0.00
74	T	o-Xylene	5.0000	4.6773	6.5	100	0.00
75	T	Styrene	5.0000	4.8405	3.2	100	0.00
76	P	Bromoform	5.0000	4.2672	14.7	100	0.00
77	T	Isopropylbenzene	5.0000	4.8951	2.1	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	4.8422	3.2	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.3565	5.7	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.2150	-4.3	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.3781	12.4	100	0.00
83	T	n-Propylbenzene	5.0000	5.1935	-3.9	100	0.00
84	T	Bromobenzene	5.0000	4.8483	3.0	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	4.9964	0.1	100	0.00
86	T	2-Chlorotoluene	5.0000	4.9803	0.4	100	0.00
87	T	4-Chlorotoluene	5.0000	5.0286	-0.6	100	0.00
88	T	a-Methylstyrene	5.0000	4.6629	6.7	100	0.00
89	T	tert-Butylbenzene	5.0000	4.7677	4.6	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.0245	-0.5	100	0.00
91	T	sec-Butylbenzene	5.0000	5.2170	-4.3	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.1150	-2.3	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	4.9511	1.0	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	4.8270	3.5	100	0.00
95	T	n-Butylbenzene	5.0000	5.1595	-3.2	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	4.8122	3.8	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	5.0942	-1.9	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.7808	4.4	100	0.00
99	T	Hexachlorobutadiene	5.0000	4.6555	6.9	100	0.00
100	T	Naphthalene	5.0000	4.7684	4.6	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.6455	7.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412224.D 8260WT.M Sat May 14 18:08:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	770027	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	531490	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	283594	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	86295	10.9569 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 43.84%#		
43) 1,2-Dichloroethane-d4	10.30	65	96239	11.3450 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 45.36%#		
58) Toluene-d8	12.68	98	294491	10.9223 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 43.68%#		
80) p-Bromofluorobenzene	16.08	95	121459	10.5490 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 42.20%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	288235	23.7135 ug/L	99
3) Chloromethane	3.62	50	155712	20.3784 ug/L	98
4) Vinyl Chloride	3.84	62	184250	20.9368 ug/L	95
5) 1,3-Butadiene	3.89	54	149348	22.7750 ug/L	96
6) Bromomethane	4.73	94	100098	25.0143 ug/L	99
7) Chloroethane	4.89	64	100876	20.9404 ug/L	91
8) Trichlorofluoromethane	5.37	101	351299	21.2512 ug/L	98
9) Diethyl ether	5.90	59	324317	80.8265 ug/L	78
10) Isoprene	5.94	67	205842	20.3622 ug/L	77
11) Acrolein	6.14	56	12049	34.8201 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	159996	20.3859 ug/L	97
13) Acetone	6.25	43	18459	25.7405 ug/L	98
14) 1,1-Dichloroethene	6.47	61	256241	20.5065 ug/L	92
15) Tert-Butyl Alcohol	6.57	59	43922	153.5712 ug/L	93
16) Dimethyl Sulfide	6.73	62	89456	20.6087 ug/L	83
17) Iodomethane	6.99	142	40622	61.0474 ug/L	93
18) Methyl acetate	7.00	43	46598	20.2171 ug/L #	85
19) Methylene Chloride	7.25	84	161897	20.1338 ug/L	52
20) Carbon Disulfide	7.30	76	538090	20.0802 ug/L	98
21) Acrylonitrile	7.43	53	46305	46.9889 ug/L	100
22) Methyl Tert Butyl Ether	7.47	73	361116	22.0137 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	234754	20.3175 ug/L	90
24) n-Hexane	7.78	57	172498	21.1165 ug/L	84
25) Diisopropyl ether	8.12	45	1447822	80.3755 ug/L #	91
26) Vinyl Acetate	8.30	43	166501	21.7017 ug/L #	88
27) 1,1-Dichloroethane	8.33	63	300321	21.3849 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	1579265	83.0733 ug/L	89
29) 2-Butanone	8.88	43	25681	23.9099 ug/L	87
30) Propionitrile	8.98	54	30953	89.5673 ug/L	94
31) 2,2-Dichloropropane	9.10	77	309575	20.8527 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	181973	20.4488 ug/L	89
33) Chloroform	9.37	83	348925	20.5535 ug/L	96
34) 1-Bromopropane	9.52	122	26723	22.7206 ug/L	96
35) Bromochloromethane	9.61	130	94952	21.3181 ug/L	65
36) Tetrahydrofuran	9.63	42	63066	70.5772 ug/L #	57
38) 1,1,1-Trichloroethane	9.91	97	335486	21.3640 ug/L	99
39) Cyclohexane	9.94	56	221040	19.9984 ug/L #	64
40) 1,1-Dichloropropene	10.11	75	248373	20.4717 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1418183	81.7883 ug/L	88
42) Carbon Tetrachloride	10.25	117	296471	21.3449 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412225.D 8260WT.M Fri May 13 16:16:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	228665	21.6403 ug/L		85
46)	Benzene	10.46	78	668449	20.3769 ug/L		86
47)	Trichloroethene	11.21	130	174107	20.7980 ug/L		96
48)	Methylcyclohexane	11.29	83	262275	21.4887 ug/L		82
49)	1,2-Dichloropropane	11.43	63	146868	21.1883 ug/L	#	72
50)	Bromodichloromethane	11.73	83	262192	21.9986 ug/L		98
51)	1,4-Dioxane	11.71	88	5351	196.3837 ug/L		76
52)	Dibromomethane	11.81	93	86951	21.0734 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	63586	22.4600 ug/L		91
54)	4-Methyl-2-Pentanone	12.05	58	25754	25.0531 ug/L	#	73
55)	cis-1,3-Dichloropropene	12.36	75	265439	21.9841 ug/L		99
56)	Dimethyl Disulfide	12.63	79	134192	23.9412 ug/L		100
59)	Toluene	12.78	91	700473	20.1722 ug/L		99
60)	Ethyl Methacrylate	12.88	69	133361	23.2046 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	238585	23.2548 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	107901	21.0216 ug/L		99
64)	2-Hexanone	13.11	58	22561	25.2093 ug/L	#	85
65)	1,3-Dichloropropane	13.49	76	198804	22.2491 ug/L		74
66)	Tetrachloroethene	13.60	164	141791	20.0055 ug/L		94
67)	Dibromochloromethane	13.87	129	158465	22.0695 ug/L		99
68)	1,2-Dibromoethane	14.13	107	110085	22.3366 ug/L		100
69)	1-Chlorohexane	14.21	91	229753	20.3591 ug/L		83
70)	Chlorobenzene	14.62	112	467492	20.4613 ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.65	131	183079	22.2095 ug/L		96
72)	Ethylbenzene	14.65	106	249016	20.2289 ug/L		90
73)	m-,p-Xylene	14.75	106	606381	41.1308 ug/L		88
74)	o-Xylene	15.30	106	294106	21.2106 ug/L		90
75)	Styrene	15.35	104	492781	21.8207 ug/L		89
76)	Bromoform	15.83	173	95911	23.8070 ug/L		99
77)	Isopropylbenzene	15.73	105	806678	20.7280 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	123253	22.7779 ug/L		95
81)	1,2,3-Trichloropropane	16.14	110	36712	22.1354 ug/L		94
82)	trans-1,4-Dichloro-2-Buten	16.18	53	33702	27.6513 ug/L	#	56
83)	n-Propylbenzene	16.24	91	962196	20.3511 ug/L		97
84)	Bromobenzene	16.37	156	190566	21.2033 ug/L		94
85)	1,3,5-Trimethylbenzene	16.43	105	692633	20.9615 ug/L		94
86)	2-Chlorotoluene	16.51	91	649077	19.9155 ug/L		96
87)	4-Chlorotoluene	16.56	91	595446	20.3225 ug/L		95
88)	a-Methylstyrene	16.83	118	318960	22.3680 ug/L		92
89)	tert-Butylbenzene	16.90	134	129440	20.4705 ug/L		83
90)	1,2,4-Trimethylbenzene	16.95	105	707749	20.4783 ug/L		94
91)	sec-Butylbenzene	17.17	105	818359	20.1802 ug/L		97
92)	p-Isopropyltoluene	17.32	119	677859	19.7492 ug/L		96
93)	1,3-Dichlorobenzene	17.52	146	364065	20.5126 ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	363066	19.9874 ug/L		92
95)	n-Butylbenzene	17.85	91	681055	20.0187 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	318612	19.9358 ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	23070	21.6419 ug/L		93
98)	1,2,4-Trichlorobenzene	20.28	180	242455	20.8863 ug/L		98
99)	Hexachlorobutadiene	20.43	225	110384	20.2523 ug/L		96
100)	Naphthalene	20.65	128	369849	21.4526 ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	198876	19.8356 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M412225.D 8260WT.M Fri May 13 16:16:35 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration

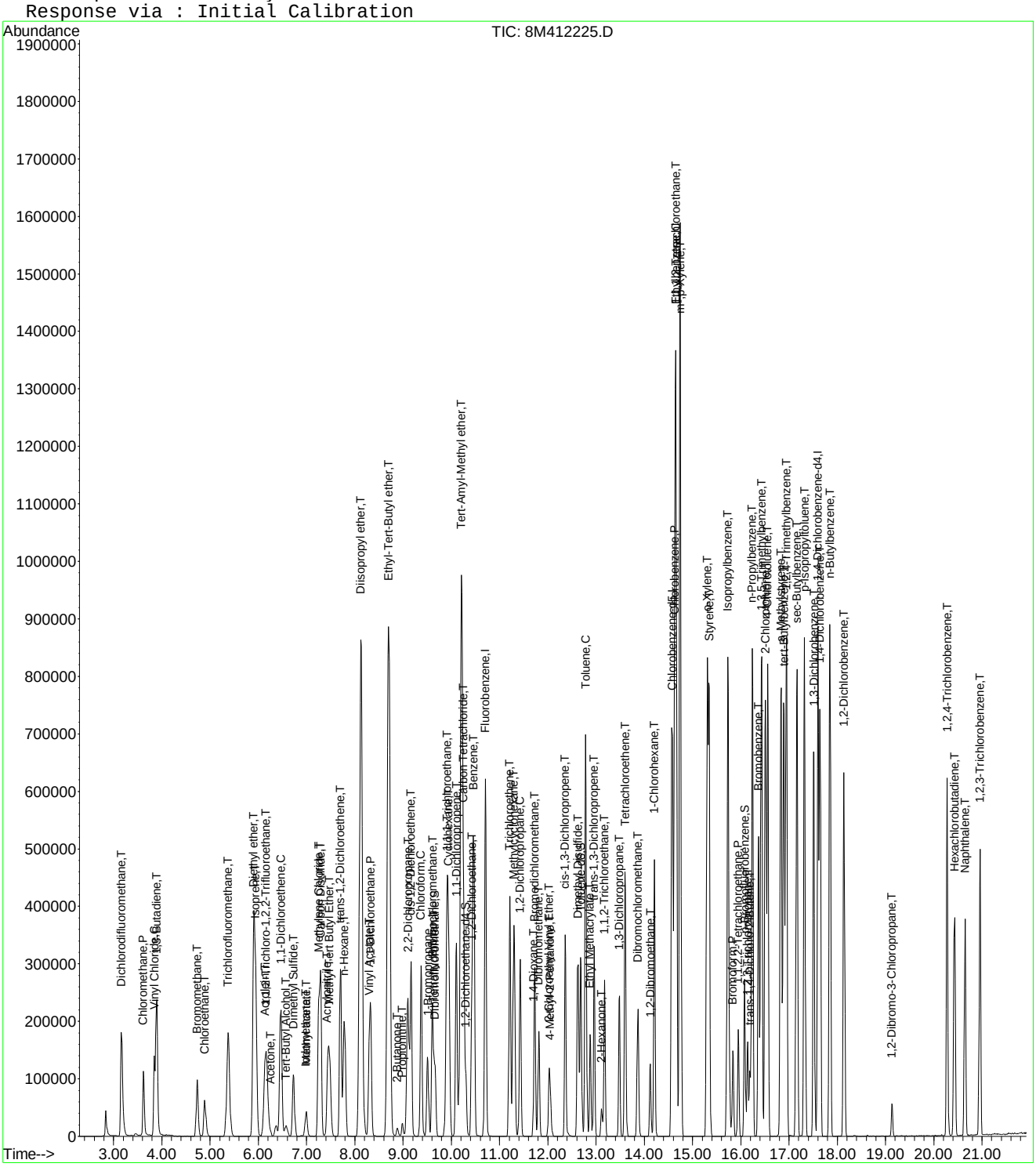

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45:30 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	778260	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	539116	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	288225	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	211053	26.5139 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.04%		
43) 1,2-Dichloroethane-d4	10.31	65	229348	26.7504 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.00%		
58) Toluene-d8	12.68	98	718491	26.2709 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.08%		
80) p-Bromofluorobenzene	16.07	95	292755	25.0180 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.08%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	682745	55.5761 ug/L	100
3) Chloromethane	3.62	50	372858	48.2806 ug/L	98
4) Vinyl Chloride	3.85	62	453905	51.0328 ug/L	96
5) 1,3-Butadiene	3.88	54	390501	58.9199 ug/L	99
6) Bromomethane	4.74	94	260493	64.4080 ug/L	97
7) Chloroethane	4.89	64	244336	50.1840 ug/L	91
8) Trichlorofluoromethane	5.38	101	837676	50.1376 ug/L	99
9) Diethyl ether	5.90	59	389327	96.0019 ug/L	79
10) Isoprene	5.94	67	498060	48.7477 ug/L	76
11) Acrolein	6.13	56	17644	50.4496 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	387643	48.8691 ug/L	97
13) Acetone	6.25	43	45901	63.3305 ug/L	97
14) 1,1-Dichloroethene	6.46	61	619744	49.0724 ug/L	94
15) Tert-Butyl Alcohol	6.58	59	53656	185.6211 ug/L	91
16) Dimethyl Sulfide	6.73	62	221107	50.3993 ug/L	82
17) Iodomethane	6.98	142	157872	234.7428 ug/L	94
18) Methyl acetate	7.00	43	114759	49.2629 ug/L #	81
19) Methylene Chloride	7.25	84	389653	47.9453 ug/L	52
20) Carbon Disulfide	7.29	76	1269941	46.8897 ug/L	99
21) Acrylonitrile	7.43	53	59882	60.1236 ug/L	97
22) Methyl Tert Butyl Ether	7.46	73	901668	54.3843 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	571507	48.9396 ug/L	93
24) n-Hexane	7.79	57	419656	50.8290 ug/L	83
25) Diisopropyl ether	8.13	45	1781012	97.8265 ug/L #	90
26) Vinyl Acetate	8.29	43	428708	55.2866 ug/L #	89
27) 1,1-Dichloroethane	8.32	63	722574	50.9078 ug/L	96
28) Ethyl-Tert-Butyl ether	8.71	59	1955100	101.7552 ug/L	89
29) 2-Butanone	8.88	43	66579	61.3316 ug/L #	82
30) Propionitrile	8.98	54	38235	109.4684 ug/L	95
31) 2,2-Dichloropropane	9.10	77	768496	51.2175 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	439590	48.8754 ug/L	91
33) Chloroform	9.38	83	844564	49.2230 ug/L	97
34) 1-Bromopropane	9.51	122	63442	53.3693 ug/L	99
35) Bromochloromethane	9.60	130	230119	51.1185 ug/L	66
36) Tetrahydrofuran	9.64	42	79437	87.9575 ug/L #	62
38) 1,1,1-Trichloroethane	9.90	97	817606	51.5150 ug/L	99
39) Cyclohexane	9.93	56	535882	47.9707 ug/L #	65
40) 1,1-Dichloropropene	10.10	75	615439	50.1899 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1769381	100.9628 ug/L	88
42) Carbon Tetrachloride	10.24	117	724058	51.5782 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412226.D 8260WT.M Fri May 13 16:45:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45:30 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	561107	52.5401	ug/L		85
46)	Benzene	10.46	78	1607407	48.4816	ug/L		86
47)	Trichloroethene	11.22	130	424998	50.2312	ug/L		96
48)	Methylcyclohexane	11.30	83	635339	51.5040	ug/L		83
49)	1,2-Dichloropropane	11.42	63	351908	50.2320	ug/L	#	71
50)	Bromodichloromethane	11.72	83	654943	54.3701	ug/L		97
51)	1,4-Dioxane	11.71	88	7573	274.9918	ug/L		73
52)	Dibromomethane	11.82	93	209167	50.1574	ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	162319	56.7281	ug/L		93
54)	4-Methyl-2-Pentanone	12.05	58	64928	62.4928	ug/L		80
55)	cis-1,3-Dichloropropene	12.36	75	666861	54.6463	ug/L		98
56)	Dimethyl Disulfide	12.62	79	343446	60.6260	ug/L		96
59)	Toluene	12.79	91	1676069	47.5846	ug/L		100
60)	Ethyl Methacrylate	12.88	69	338996	58.1503	ug/L		69
62)	trans-1,3-Dichloropropene	12.96	75	594749	57.1499	ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	268432	51.5570	ug/L		98
64)	2-Hexanone	13.12	58	56859	62.6347	ug/L	#	83
65)	1,3-Dichloropropane	13.48	76	489226	53.9770	ug/L		75
66)	Tetrachloroethene	13.60	164	350332	48.7296	ug/L		95
67)	Dibromochloromethane	13.86	129	401149	55.0780	ug/L		100
68)	1,2-Dibromoethane	14.12	107	273580	54.7252	ug/L		99
69)	1-Chlorohexane	14.21	91	560883	48.9984	ug/L		82
70)	Chlorobenzene	14.63	112	1117812	48.2326	ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	446892	53.4462	ug/L		99
72)	Ethylbenzene	14.66	106	603074	48.2980	ug/L		91
73)	m-,p-Xylene	14.74	106	1443780	96.5463	ug/L		90
74)	o-Xylene	15.31	106	709244	50.4265	ug/L		90
75)	Styrene	15.34	104	1212099	52.9133	ug/L		91
76)	Bromoform	15.84	173	238354	58.3272	ug/L		100
77)	Isopropylbenzene	15.73	105	1919993	48.6372	ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	294266	53.5083	ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	89279	52.9656	ug/L		93
82)	trans-1,4-Dichloro-2-Buten	16.19	53	86829	70.0956	ug/L	#	53
83)	n-Propylbenzene	16.24	91	2278994	47.4277	ug/L		98
84)	Bromobenzene	16.37	156	459959	50.3549	ug/L		93
85)	1,3,5-Trimethylbenzene	16.43	105	1661486	49.4745	ug/L		95
86)	2-Chlorotoluene	16.51	91	1611031	48.6367	ug/L		97
87)	4-Chlorotoluene	16.56	91	1341051	45.0344	ug/L		95
88)	a-Methylstyrene	16.83	118	772611	53.3111	ug/L		90
89)	tert-Butylbenzene	16.89	134	307503	47.8493	ug/L		81
90)	1,2,4-Trimethylbenzene	16.94	105	1679809	47.8234	ug/L		95
91)	sec-Butylbenzene	17.16	105	1925411	46.7166	ug/L		97
92)	p-Isopropyltoluene	17.32	119	1621383	46.4795	ug/L		95
93)	1,3-Dichlorobenzene	17.51	146	882656	48.9327	ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	871210	47.1909	ug/L		92
95)	n-Butylbenzene	17.85	91	1608832	46.5296	ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	768548	47.3159	ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	59586	54.9992	ug/L		86
98)	1,2,4-Trichlorobenzene	20.28	180	583880	49.4902	ug/L		100
99)	Hexachlorobutadiene	20.44	225	264699	47.7844	ug/L		98
100)	Naphthalene	20.65	128	894629	51.0579	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	475246	46.6387	ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration

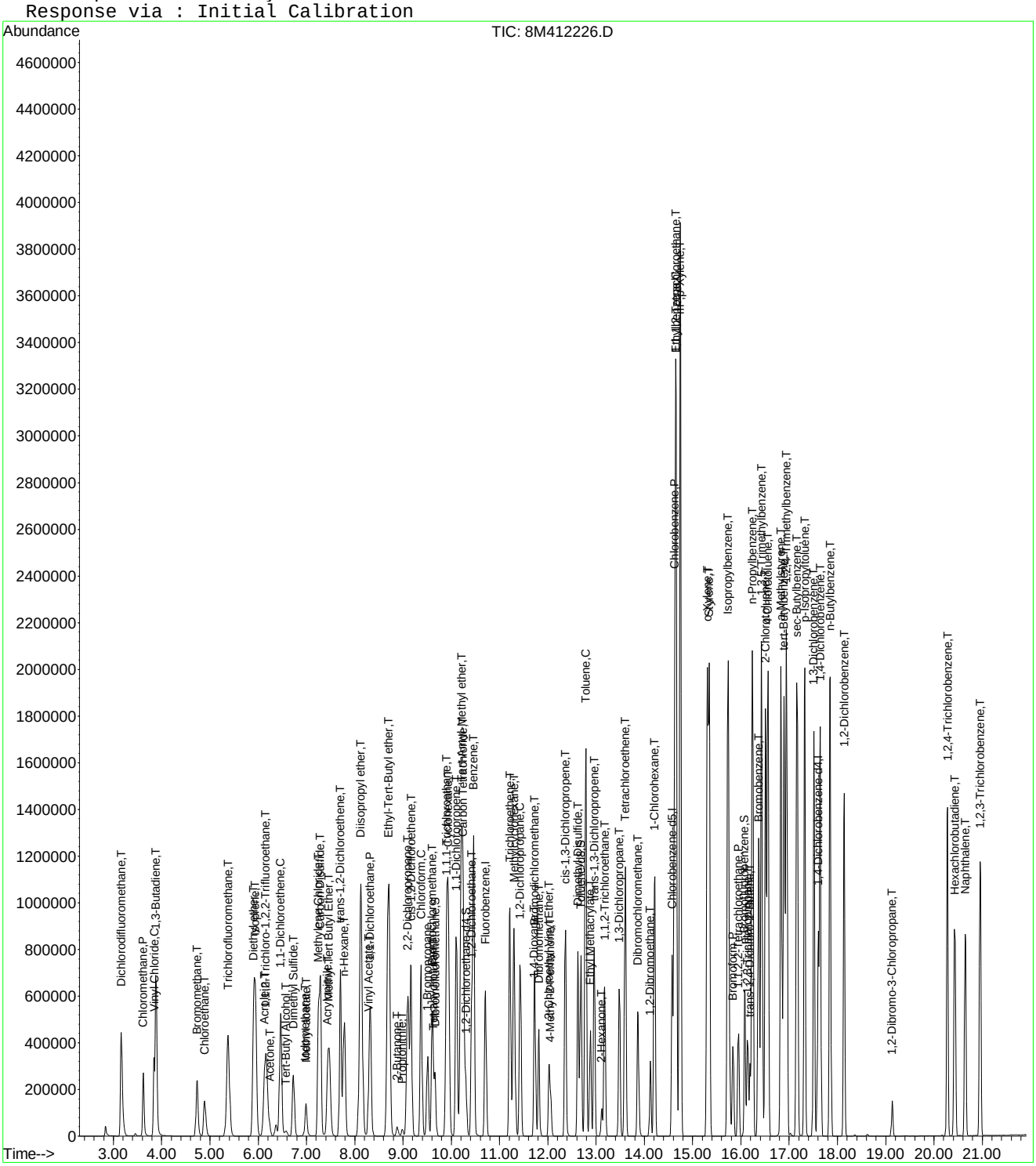

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	809533	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	559075	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	296193	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	460283	53.9056 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 215.64%#		
43) 1,2-Dichloroethane-d4	10.30	65	488116	52.5821 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 210.32%#		
58) Toluene-d8	12.68	98	1540572	52.8075 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 211.24%#		
80) p-Bromofluorobenzene	16.08	95	623735	51.1573 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 204.64%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	1463283	109.1068 ug/L	100
3) Chloromethane	3.62	50	778702	97.2380 ug/L	98
4) Vinyl Chloride	3.84	62	968312	103.4979 ug/L	95
5) 1,3-Butadiene	3.88	54	896569	120.4972 ug/L	95
6) Bromomethane	4.73	94	605228	129.8677 ug/L	99
7) Chloroethane	4.89	64	528153	103.4126 ug/L	90
8) Trichlorofluoromethane	5.37	101	1782726	101.4754 ug/L	99
9) Diethyl ether	5.90	59	828091	197.4770 ug/L	79
10) Isoprene	5.94	67	1080684	101.8037 ug/L	78
11) Acrolein	6.14	56	38655	109.5572 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	833546	101.0906 ug/L	97
13) Acetone	6.24	43	97515	109.1944 ug/L	100
14) 1,1-Dichloroethene	6.46	61	1323999	100.6729 ug/L	93
15) Tert-Butyl Alcohol	6.57	59	114220	387.5328 ug/L	91
16) Dimethyl Sulfide	6.73	62	489571	106.5996 ug/L	82
17) Iodomethane	6.99	142	416890	244.5557 ug/L	97
18) Methyl acetate	7.00	43	252444	104.3161 ug/L #	81
19) Methylene Chloride	7.24	84	827241	98.5346 ug/L	53
20) Carbon Disulfide	7.29	76	2766110	99.3432 ug/L	100
21) Acrylonitrile	7.43	53	126153	113.2272 ug/L	98
22) Methyl Tert Butyl Ether	7.46	73	1894494	105.8643 ug/L	87
23) trans-1,2-Dichloroethene	7.70	61	1203701	99.1822 ug/L	93
24) n-Hexane	7.78	57	926226	105.3097 ug/L	84
25) Diisopropyl ether	8.12	45	3699807	196.0386 ug/L #	90
26) Vinyl Acetate	8.29	43	860820	101.8643 ug/L #	88
27) 1,1-Dichloroethane	8.32	63	1521237	101.5567 ug/L	96
28) Ethyl-Tert-Butyl ether	8.70	59	4005676	198.2271 ug/L	89
29) 2-Butanone	8.88	43	145126	112.6698 ug/L #	81
30) Propionitrile	8.98	54	83038	219.1648 ug/L	97
31) 2,2-Dichloropropane	9.11	77	1610615	102.0557 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	935490	99.9944 ug/L	89
33) Chloroform	9.37	83	1766988	98.8341 ug/L	98
34) 1-Bromopropane	9.51	122	139657	108.5299 ug/L	100
35) Bromochloromethane	9.61	130	488678	102.8480 ug/L	66
36) Tetrahydrofuran	9.63	42	167812	187.5699 ug/L #	61
38) 1,1,1-Trichloroethane	9.91	97	1724504	102.7713 ug/L	100
39) Cyclohexane	9.94	56	1185537	102.8628 ug/L #	66
40) 1,1-Dichloropropene	10.11	75	1293224	100.8377 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	3634806	198.1264 ug/L	88
42) Carbon Tetrachloride	10.25	117	1534696	103.3979 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412227.D 8260WT.M Fri May 13 17:14:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	1177876	103.7352	ug/L		85
46)	Benzene	10.46	78	3298928	95.8405	ug/L		87
47)	Trichloroethene	11.21	130	903490	101.9036	ug/L		97
48)	Methylcyclohexane	11.30	83	1389528	104.6454	ug/L		83
49)	1,2-Dichloropropane	11.43	63	755128	102.5297	ug/L		73
50)	Bromodichloromethane	11.73	83	1351612	104.6036	ug/L		99
51)	1,4-Dioxane	11.72	88	16303	473.9624	ug/L		68
52)	Dibromomethane	11.81	93	445130	101.6543	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.02	63	333977	105.4228	ug/L		92
54)	4-Methyl-2-Pentanone	12.05	58	138980	110.1494	ug/L	#	77
55)	cis-1,3-Dichloropropene	12.36	75	1387475	105.9136	ug/L		100
56)	Dimethyl Disulfide	12.62	79	745504	111.3169	ug/L		97
59)	Toluene	12.78	91	3455614	95.2346	ug/L		99
60)	Ethyl Methacrylate	12.88	69	731009	113.5760	ug/L		70
62)	trans-1,3-Dichloropropene	12.96	75	1236182	107.9445	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	564076	103.0604	ug/L		99
64)	2-Hexanone	13.12	58	126268	114.5366	ug/L	#	79
65)	1,3-Dichloropropane	13.48	76	1021082	105.2672	ug/L		74
66)	Tetrachloroethene	13.60	164	752835	101.4023	ug/L		95
67)	Dibromochloromethane	13.87	129	856499	109.6525	ug/L		100
68)	1,2-Dibromoethane	14.12	107	577701	107.6426	ug/L		98
69)	1-Chlorohexane	14.21	91	1222720	103.0385	ug/L		82
70)	Chlorobenzene	14.62	112	2332247	97.2408	ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	947925	106.1463	ug/L		99
72)	Ethylbenzene	14.66	106	1275519	98.8771	ug/L		97
73)	m-,p-Xylene	14.75	106	3009424	194.2602	ug/L		98
74)	o-Xylene	15.31	106	1490638	100.8068	ug/L		93
75)	Styrene	15.35	104	2503721	102.8373	ug/L		88
76)	Bromoform	15.83	173	517827	114.0520	ug/L		100
77)	Isopropylbenzene	15.73	105	3913141	95.4433	ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	624965	106.8610	ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	192087	107.3268	ug/L		97
82)	trans-1,4-Dichloro-2-Buten	16.18	53	189214	128.4818	ug/L	#	59
83)	n-Propylbenzene	16.24	91	4599057	93.6644	ug/L		100
84)	Bromobenzene	16.37	156	968011	102.1426	ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	3401719	97.9556	ug/L		97
86)	2-Chlorotoluene	16.52	91	3177047	93.8267	ug/L		98
87)	4-Chlorotoluene	16.56	91	2899171	96.0712	ug/L		96
88)	a-Methylstyrene	16.84	118	1639166	103.6811	ug/L		90
89)	tert-Butylbenzene	16.90	134	654025	99.4199	ug/L		85
90)	1,2,4-Trimethylbenzene	16.95	105	3479295	96.7054	ug/L		97
91)	sec-Butylbenzene	17.17	105	3947832	94.2785	ug/L		98
92)	p-Isopropyltoluene	17.32	119	3328450	94.4148	ug/L		97
93)	1,3-Dichlorobenzene	17.52	146	1834740	98.9074	ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	1818309	96.6271	ug/L		92
95)	n-Butylbenzene	17.85	91	3308330	94.4002	ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	1606254	97.0179	ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	125368	107.7020	ug/L		87
98)	1,2,4-Trichlorobenzene	20.28	180	1227926	100.7076	ug/L		99
99)	Hexachlorobutadiene	20.43	225	569213	100.5231	ug/L		97
100)	Naphthalene	20.65	128	1852486	101.2968	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	1021163	98.5794	ug/L		100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration

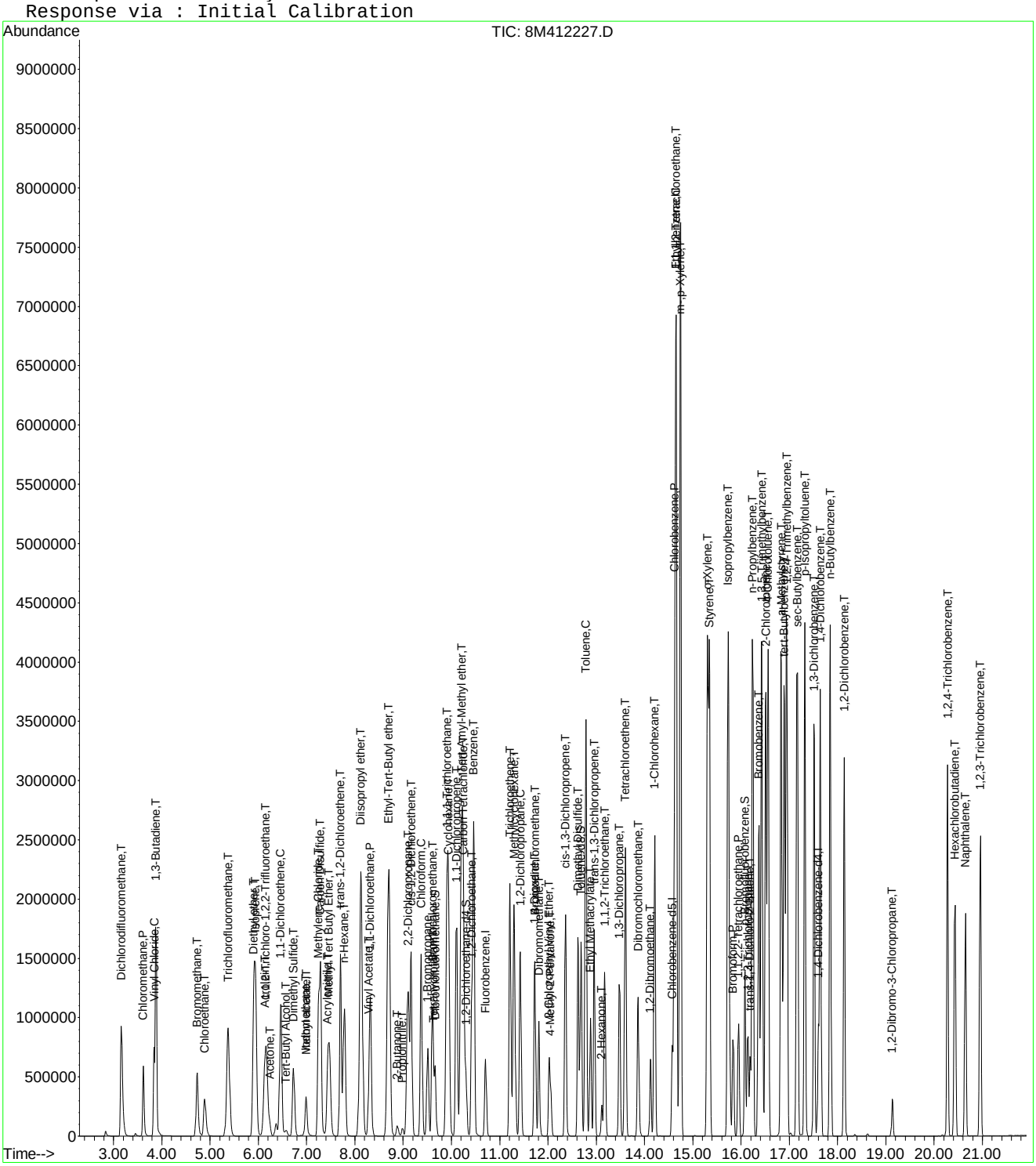

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	828540	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	578848	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	301401	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	898145	101.4517 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 405.80%#		
43) 1,2-Dichloroethane-d4	10.30	65	939848	98.0779 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 392.32%#		
58) Toluene-d8	12.68	98	2984162	97.8805 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 391.52%#		
80) p-Bromofluorobenzene	16.08	95	1242720	99.7023 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 398.80%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	2830517	203.5621 ug/L	98
3) Chloromethane	3.62	50	1586058	194.4056 ug/L	97
4) Vinyl Chloride	3.83	62	1935009	201.0738 ug/L	94
5) 1,3-Butadiene	3.88	54	1684964	212.5477 ug/L	94
6) Bromomethane	4.72	94	1358068	271.2231 ug/L	99
7) Chloroethane	4.89	64	1084803	206.5255 ug/L	90
8) Trichlorofluoromethane	5.37	101	3516760	195.1756 ug/L	99
10) Isoprene	5.94	67	2136665	196.1573 ug/L	78
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1662142	196.5993 ug/L	95
13) Acetone	6.24	43	187748	200.7963 ug/L	97
14) 1,1-Dichloroethene	6.46	61	2649821	196.6732 ug/L	92
15) Tert-Butyl Alcohol	6.58	59	6024	20.0950 ug/L #	87
16) Dimethyl Sulfide	6.73	62	976862	205.8822 ug/L	82
17) Iodomethane	6.99	142	896947	398.7987 ug/L	100
18) Methyl acetate	7.00	43	504293	201.4324 ug/L #	81
19) Methylene Chloride	7.25	84	1684780	196.5546 ug/L	52
20) Carbon Disulfide	7.29	76	5386210	189.2120 ug/L	99
21) Acrylonitrile	7.45	53	30354	26.0447 ug/L #	32
22) Methyl Tert Butyl Ether	7.46	73	3711011	200.6529 ug/L	87
23) trans-1,2-Dichloroethene	7.70	61	2410498	194.2902 ug/L	92
24) n-Hexane	7.78	57	1821777	199.7288 ug/L	84
26) Vinyl Acetate	8.29	43	1796217	206.9060 ug/L #	88
27) 1,1-Dichloroethane	8.32	63	3042055	197.9863 ug/L	95
29) 2-Butanone	8.88	43	271767	199.8193 ug/L #	77
30) Propionitrile	8.90	54	208	0.5280 ug/L #	1
31) 2,2-Dichloropropane	9.11	77	3202633	197.6970 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	1875631	195.8883 ug/L	89
33) Chloroform	9.37	83	3506648	191.9199 ug/L	99
34) 1-Bromopropane	9.51	122	286158	214.2313 ug/L	99
35) Bromochloromethane	9.60	130	980373	200.7807 ug/L	66
36) Tetrahydrofuran	9.62	42	2381	2.6275 ug/L	87
38) 1,1,1-Trichloroethane	9.91	97	3410306	197.7909 ug/L	99
39) Cyclohexane	9.94	56	2357393	198.8974 ug/L #	66
40) 1,1-Dichloropropene	10.10	75	2601175	197.8946 ug/L	96
42) Carbon Tetrachloride	10.25	117	3062767	200.6417 ug/L	99
45) 1,2-Dichloroethane	10.42	62	2313662	198.0324 ug/L	85
46) Benzene	10.46	78	6379817	182.1771 ug/L	89
47) Trichloroethene	11.21	130	1810459	198.9741 ug/L	97
48) Methylcyclohexane	11.30	83	2755373	200.4193 ug/L	83
49) 1,2-Dichloropropane	11.43	63	1528407	202.0331 ug/L	74

(#) = qualifier out of range (m) = manual integration
8M412228.D 8260WT.M Fri May 13 17:43:34 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
50)	Bromodichloromethane	11.73	83	2716764	204.0895 ug/L		99
51)	1,4-Dioxane	11.73	88	3865	104.9352 ug/L	#	18
52)	Dibromomethane	11.81	93	898971	200.1154 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.02	63	631656	192.7236 ug/L		90
54)	4-Methyl-2-Pentanone	12.05	58	262702	198.3957 ug/L	#	75
55)	cis-1,3-Dichloropropene	12.36	75	2784162	205.9153 ug/L		99
56)	Dimethyl Disulfide	12.62	79	1518705	215.4711 ug/L		95
59)	Toluene	12.78	91	6564353	175.9274 ug/L		96
60)	Ethyl Methacrylate	12.88	69	1429837	209.8161 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	2468609	205.4771 ug/L		98
63)	1,1,2-Trichloroethane	13.18	97	1124672	197.6019 ug/L		100
64)	2-Hexanone	13.12	58	237678	200.9290 ug/L	#	81
65)	1,3-Dichloropropane	13.48	76	2023247	199.9545 ug/L		76
66)	Tetrachloroethene	13.60	164	1546618	200.8018 ug/L		97
67)	Dibromochloromethane	13.87	129	1726523	210.5823 ug/L		100
68)	1,2-Dibromoethane	14.12	107	1163160	207.0667 ug/L		99
69)	1-Chlorohexane	14.21	91	2414147	195.6413 ug/L		83
70)	Chlorobenzene	14.62	112	4641169	187.6386 ug/L		94
71)	1,1,1,2-Tetrachloroethane	14.66	131	1929251	206.8372 ug/L		99
72)	Ethylbenzene	14.66	106	2611321	195.8267 ug/L		88
73)	m-,p-Xylene	14.75	106	5876234	367.8657 ug/L		83
74)	o-Xylene	15.31	106	3012318	196.4899 ug/L		98
75)	Styrene	15.35	104	4913204	194.1235 ug/L		86
76)	Bromoform	15.83	173	1052629	218.7989 ug/L		100
77)	Isopropylbenzene	15.73	105	7284624	172.7305 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	1237171	205.8673 ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	386738	209.7906 ug/L	#	54
82)	trans-1,4-Dichloro-2-Buten	16.19	53	382467	243.6526 ug/L		76
83)	n-Propylbenzene	16.24	91	8244387	166.5110 ug/L		93
84)	Bromobenzene	16.37	156	1935166	200.1305 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	6482975	183.9948 ug/L		98
86)	2-Chlorotoluene	16.52	91	6108308	178.8549 ug/L		99
87)	4-Chlorotoluene	16.56	91	5513221	180.5508 ug/L		99
88)	a-Methylstyrene	16.84	118	3255254	200.4995 ug/L		89
89)	tert-Butylbenzene	16.90	134	1351569	202.1005 ug/L		92
90)	1,2,4-Trimethylbenzene	16.95	105	6531416	179.2445 ug/L		97
91)	sec-Butylbenzene	17.17	105	7342730	173.9814 ug/L		97
92)	p-Isopropyltoluene	17.32	119	6352010	178.7315 ug/L		99
93)	1,3-Dichlorobenzene	17.52	146	3640547	193.1654 ug/L		90
94)	1,4-Dichlorobenzene	17.64	146	3593548	188.4603 ug/L		91
95)	n-Butylbenzene	17.85	91	6198060	175.4375 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	3171699	188.9651 ug/L		89
97)	1,2-Dibromo-3-Chloropropan	19.13	75	249646	207.5645 ug/L		88
98)	1,2,4-Trichlorobenzene	20.28	180	2480626	199.7296 ug/L		99
99)	Hexachlorobutadiene	20.43	225	1169411	202.7981 ug/L		98
100)	Naphthalene	20.65	128	3580198	192.0323 ug/L		97
101)	1,2,3-Trichlorobenzene	20.96	180	2040570	193.9298 ug/L		100

(#) = qualifier out of range (m) = manual integration
8M412228.D 8260WT.M Fri May 13 17:43:35 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration

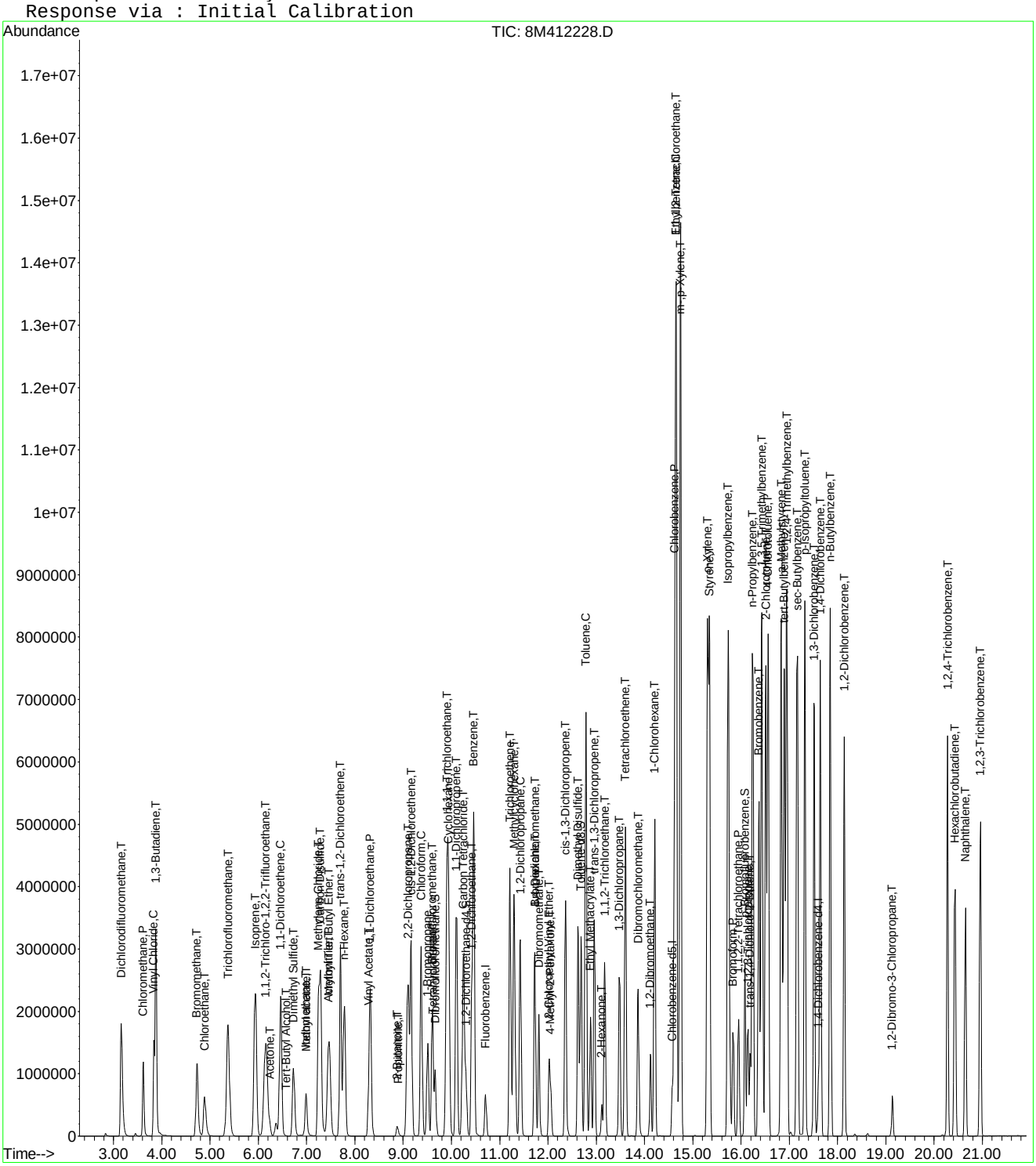

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	855409	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	599314	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	305726	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	1411837	154.4674 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 617.88%#		
43) 1,2-Dichloroethane-d4	10.30	65	1466019	148.1811 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 592.72%#		
58) Toluene-d8	12.69	98	4594713	145.5601 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 582.24%#		
80) p-Bromofluorobenzene	16.08	95	1918996	151.7813 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 607.12%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	4191932	292.0014 ug/L	97
3) Chloromethane	3.62	50	2474035	293.7212 ug/L	97
4) Vinyl Chloride	3.83	62	2956347	297.5552 ug/L	94
5) 1,3-Butadiene	3.87	54	2605506	318.3447 ug/L	94
6) Bromomethane	4.72	94	2177550	421.2239 ug/L	98
7) Chloroethane	4.89	64	1688005	311.2693 ug/L	90
8) Trichlorofluoromethane	5.37	101	5387662	289.6161 ug/L	99
9) Diethyl ether	5.90	59	1306432	295.4610 ug/L	80
10) Isoprene	5.93	67	3377164	300.3032 ug/L	78
11) Acrolein	6.14	56	70572	185.7401 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	2563878	293.7317 ug/L	94
13) Acetone	6.24	43	283185	293.3529 ug/L	90
14) 1,1-Dichloroethene	6.46	61	4031745	289.8421 ug/L	91
15) Tert-Butyl Alcohol	6.58	59	181796	587.3907 ug/L	90
16) Dimethyl Sulfide	6.73	62	1553493	317.1280 ug/L	81
17) Iodomethane	6.99	142	1347307	580.2206 ug/L	98
18) Methyl acetate	7.00	43	800046	309.5287 ug/L #	80
19) Methylene Chloride	7.24	84	2587731	292.4144 ug/L	52
20) Carbon Disulfide	7.29	76	8228181	279.9683 ug/L	98
21) Acrylonitrile	7.43	53	228227	189.6753 ug/L	94
22) Methyl Tert Butyl Ether	7.46	73	5605924	293.5892 ug/L	88
23) trans-1,2-Dichloroethene	7.70	61	3678699	287.1957 ug/L	92
24) n-Hexane	7.78	57	2863434	304.0691 ug/L	86
25) Diisopropyl ether	8.12	45	5819647	292.7898 ug/L #	89
26) Vinyl Acetate	8.30	43	2819503	314.5767 ug/L #	87
27) 1,1-Dichloroethane	8.32	63	4586531	289.1293 ug/L	94
28) Ethyl-Tert-Butyl ether	8.70	59	6190206	290.3321 ug/L	89
29) 2-Butanone	8.88	43	439359	312.8959 ug/L #	76
30) Propionitrile	8.99	54	133197	327.4673 ug/L	95
31) 2,2-Dichloropropane	9.10	77	4821388	288.2735 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	2847005	287.9976 ug/L	89
33) Chloroform	9.37	83	5197860	275.5447 ug/L	100
34) 1-Bromopropane	9.51	122	450012	326.3179 ug/L	100
35) Bromochloromethane	9.61	130	1490221	295.6112 ug/L	66
36) Tetrahydrofuran	9.63	42	271736	290.4491 ug/L #	62
38) 1,1,1-Trichloroethane	9.91	97	5126354	287.9792 ug/L	98
39) Cyclohexane	9.94	56	3733392	305.0987 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	3923871	289.1471 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	5639573	291.3713 ug/L	88
42) Carbon Tetrachloride	10.25	117	4598150	291.7629 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412229.D 8260WT.M Fri May 13 18:12:35 2016 Page 1

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	3468738	287.5726	ug/L		86
46)	Benzene	10.46	78	9065861	250.7462	ug/L		93
47)	Trichloroethene	11.21	130	2772282	295.1106	ug/L		97
48)	Methylcyclohexane	11.30	83	4327357	304.8748	ug/L		84
49)	1,2-Dichloropropane	11.43	63	2350729	300.9718	ug/L		74
50)	Bromodichloromethane	11.73	83	4051493	294.7973	ug/L		99
51)	1,4-Dioxane	11.72	88	26614	699.8767	ug/L		67
52)	Dibromomethane	11.81	93	1369945	295.3776	ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.03	63	1006317	297.3917	ug/L		90
54)	4-Methyl-2-Pentanone	12.06	58	424684	310.6522	ug/L	#	76
55)	cis-1,3-Dichloropropene	12.36	75	4156310	297.7431	ug/L		97
56)	Dimethyl Disulfide	12.63	79	2359825	324.2911	ug/L		94
59)	Toluene	12.78	91	9135213	236.4669	ug/L		90
60)	Ethyl Methacrylate	12.88	69	2228037	315.7801	ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	3700845	297.5240	ug/L		96
63)	1,1,2-Trichloroethane	13.18	97	1730199	293.6104	ug/L		100
64)	2-Hexanone	13.11	58	381967	311.8816	ug/L	#	78
65)	1,3-Dichloropropane	13.49	76	3080177	294.0141	ug/L		76
66)	Tetrachloroethene	13.60	164	2374435	297.7522	ug/L		96
67)	Dibromochloromethane	13.87	129	2638145	310.7838	ug/L		100
68)	1,2-Dibromoethane	14.13	107	1778561	305.8085	ug/L		99
69)	1-Chlorohexane	14.21	91	3712592	290.5924	ug/L		84
70)	Chlorobenzene	14.63	112	6754240	263.7433	ug/L		90
71)	1,1,1,2-Tetrachloroethane	14.65	131	2967650	307.3001	ug/L		100
72)	Ethylbenzene	14.65	106	4014412	290.7661	ug/L		70
73)	m-,p-Xylene	14.75	106	8357822	505.3514	ug/L		70
74)	o-Xylene	15.31	106	4530840	285.4488	ug/L		88
75)	Styrene	15.35	104	7050702	269.0641	ug/L		82
76)	Bromoform	15.84	173	1602587	321.7373	ug/L		99
77)	Isopropylbenzene	15.73	105	9900817	226.7477	ug/L		90
79)	1,1,2,2-Tetrachloroethane	15.95	83	1885953	309.3861	ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	581198	310.8176	ug/L		61
82)	trans-1,4-Dichloro-2-Buten	16.18	53	589705	370.3601	ug/L		82
83)	n-Propylbenzene	16.25	91	10768378	214.4110	ug/L		86
84)	Bromobenzene	16.37	156	2947671	300.5290	ug/L		99
85)	1,3,5-Trimethylbenzene	16.43	105	8890651	248.7580	ug/L		92
86)	2-Chlorotoluene	16.51	91	7868844	227.1449	ug/L		92
87)	4-Chlorotoluene	16.57	91	7782731	251.2687	ug/L		93
88)	a-Methylstyrene	16.84	118	4955768	300.9205	ug/L		86
89)	tert-Butylbenzene	16.90	134	2046401	301.6701	ug/L		95
90)	1,2,4-Trimethylbenzene	16.95	105	8903769	240.8932	ug/L		89
91)	sec-Butylbenzene	17.17	105	9867862	230.5051	ug/L		91
92)	p-Isopropyltoluene	17.32	119	8738927	242.4155	ug/L		94
93)	1,3-Dichlorobenzene	17.52	146	5319954	278.2806	ug/L		87
94)	1,4-Dichlorobenzene	17.64	146	5248511	271.3593	ug/L		88
95)	n-Butylbenzene	17.85	91	8408157	234.6279	ug/L		92
96)	1,2-Dichlorobenzene	18.14	146	4717385	277.0787	ug/L		87
97)	1,2-Dibromo-3-Chloropropan	19.13	75	377070	309.0741	ug/L		91
98)	1,2,4-Trichlorobenzene	20.28	180	3677657	291.9206	ug/L		98
99)	Hexachlorobutadiene	20.43	225	1780695	304.4378	ug/L		96
100)	Naphthalene	20.65	128	5216751	275.8542	ug/L		95
101)	1,2,3-Trichlorobenzene	20.96	180	3064908	287.1593	ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412229.D 8260WT.M Fri May 13 18:12:36 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration

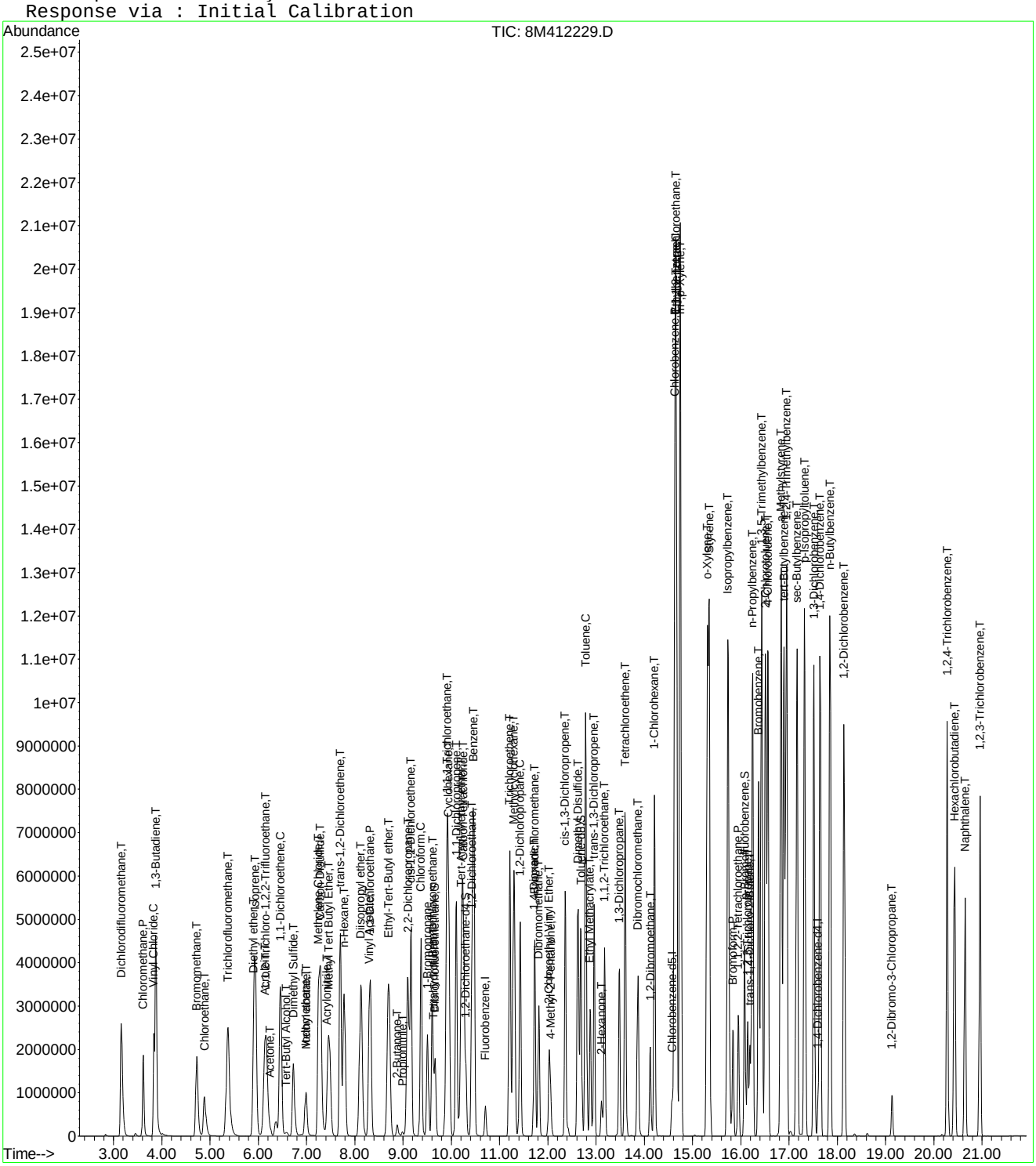

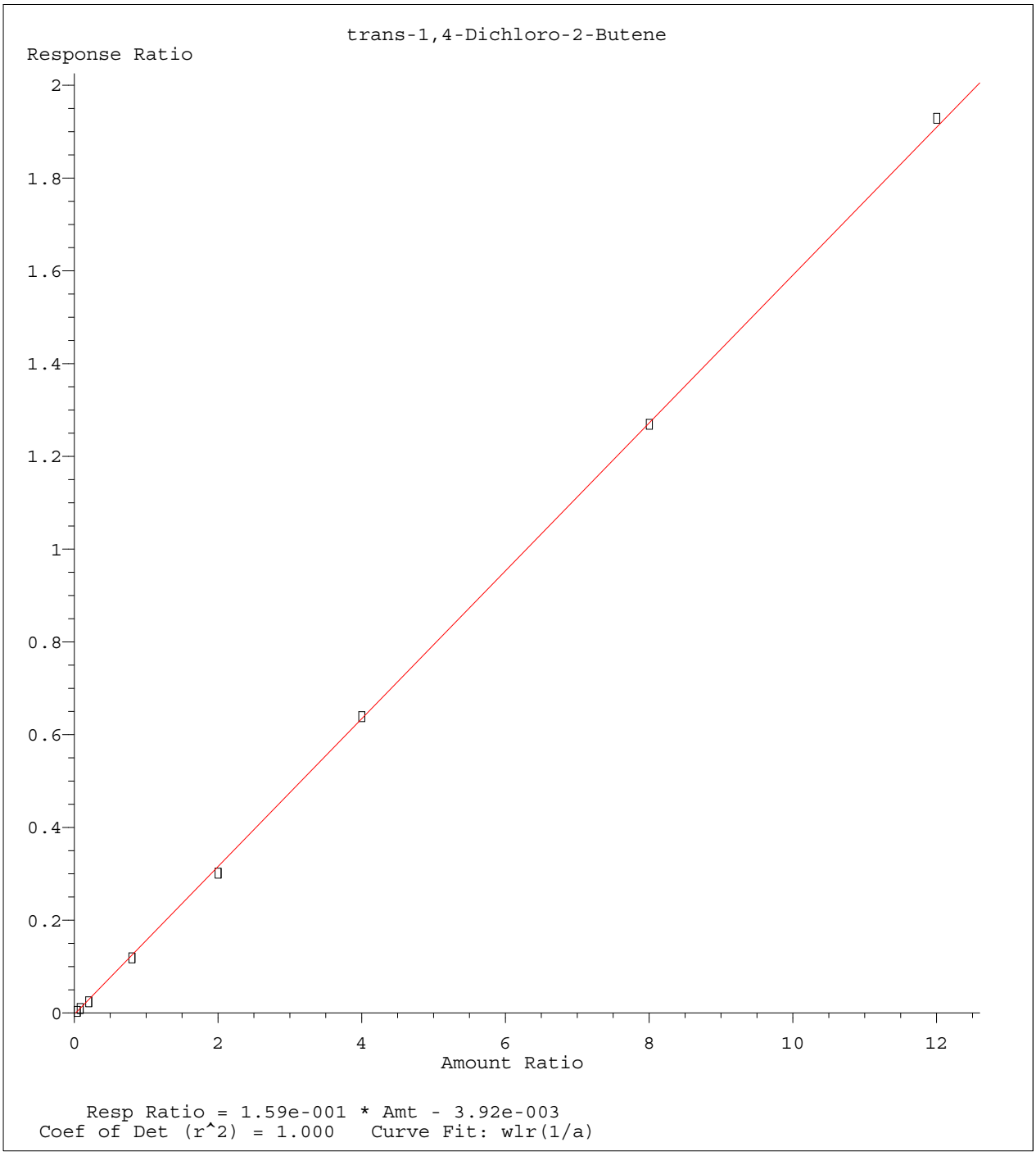

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

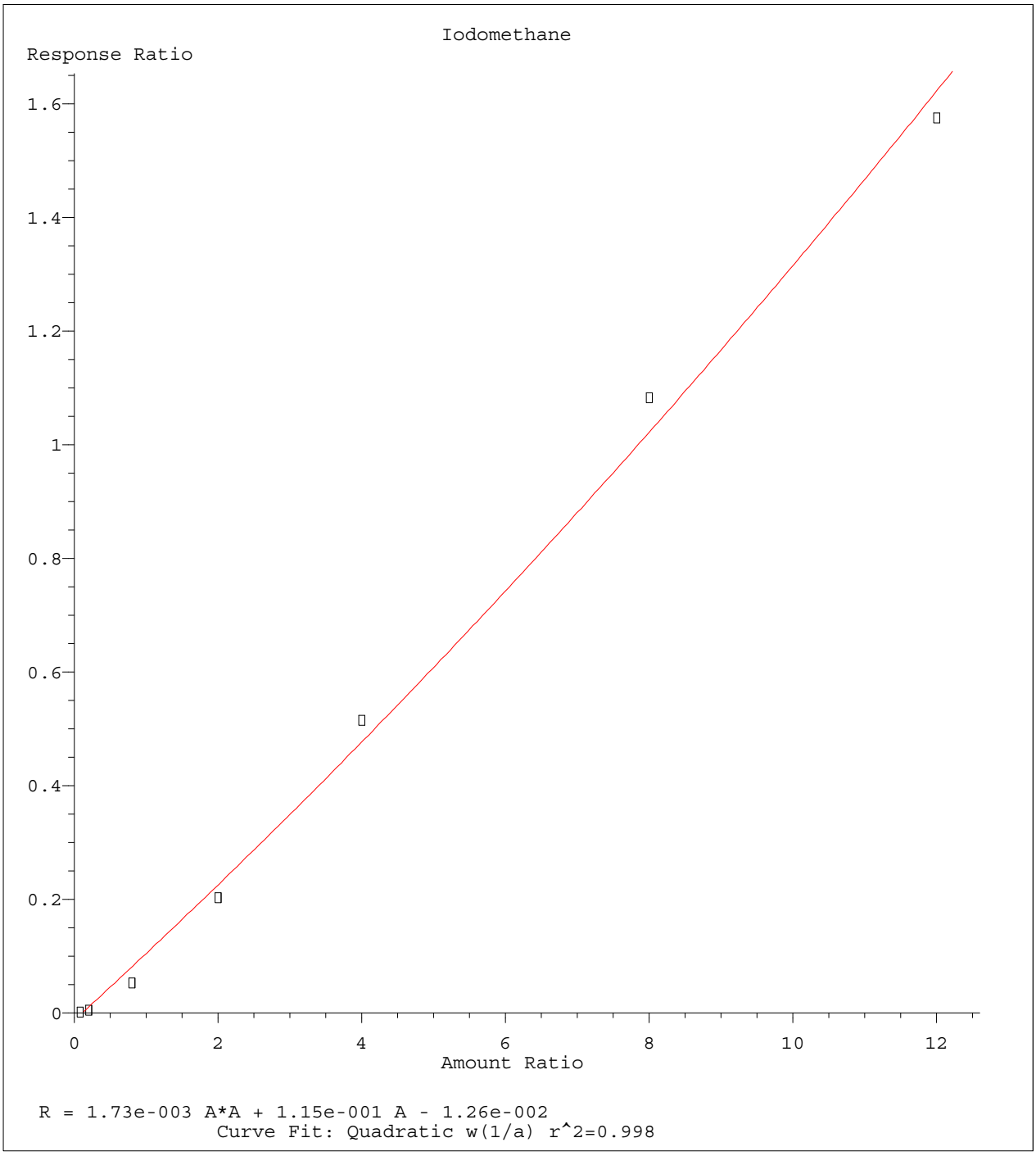

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

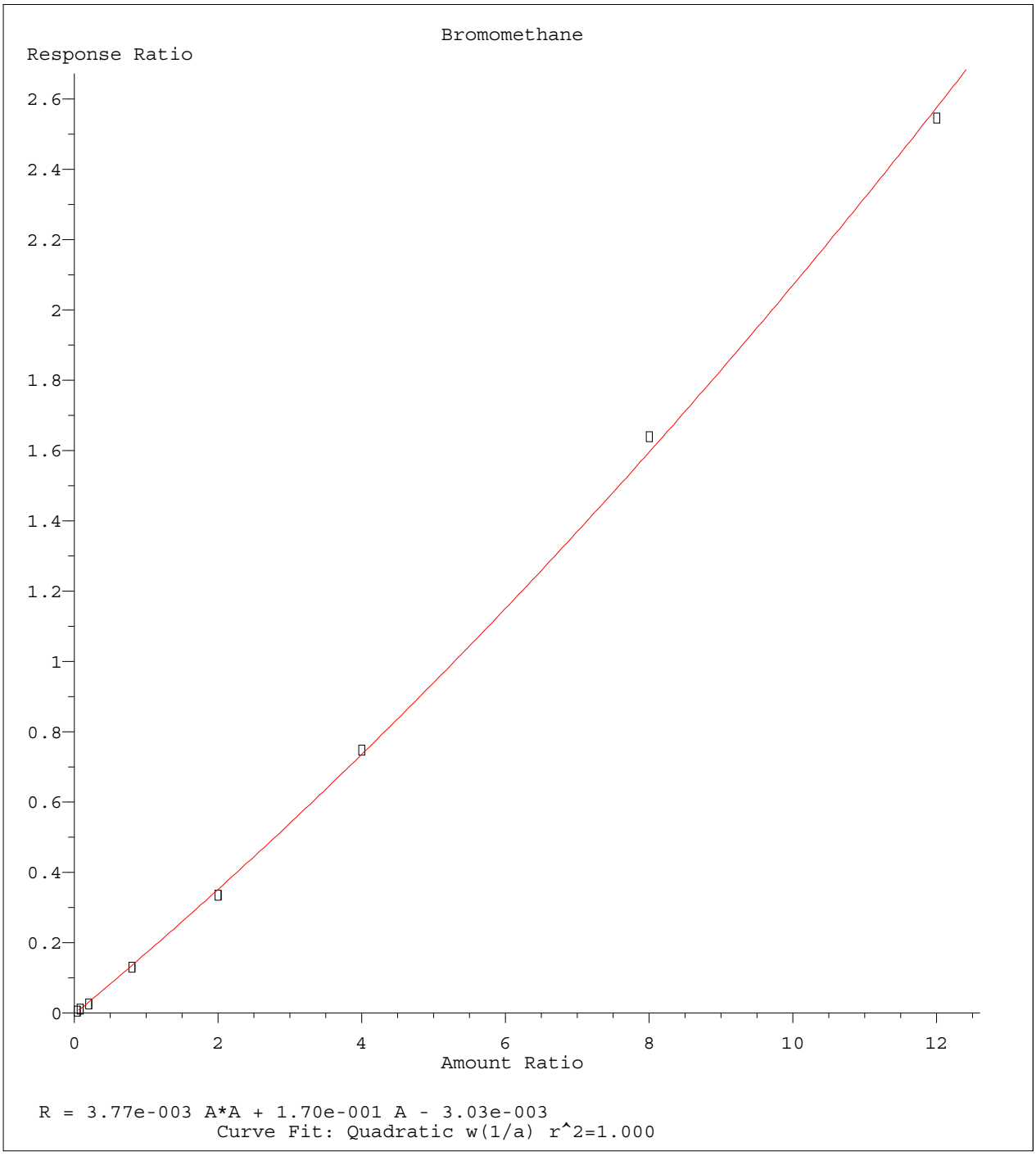

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:44:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Tue May 17 11:43:20 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	837879	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	574720	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	304324	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	229742	25.5204 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.08%		
43) 1,2-Dichloroethane-d4	10.31	65	238672	24.7259 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.92%		
58) Toluene-d8	12.68	98	776362	25.8115 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.24%		
80) p-Bromofluorobenzene	16.07	95	315683	25.0519 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.20%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	761591	54.2141 ug/L	99
3) Chloromethane	3.62	50	415589	50.6814 ug/L	100
4) Vinyl Chloride	3.84	62	509607	52.3810 ug/L	100
5) 1,3-Butadiene	3.88	54	347562	42.6002 ug/L	97
6) Bromomethane	4.73	94	272060	46.3924 ug/L	99
7) Chloroethane	4.88	64	285509	53.3336 ug/L	98
8) Trichlorofluoromethane	5.37	101	849580	46.9313 ug/L	100
9) Diethyl ether	5.90	59	451307	104.4282 ug/L	99
10) Isoprene	5.93	67	582863	53.0208 ug/L	99
11) Acrolein	6.13	56	38877	100.4722 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	419584	49.3091 ug/L	97
13) Acetone	6.23	43	54234	57.5310 ug/L	94
14) 1,1-Dichloroethene	6.46	61	622831	45.9700 ug/L	99
15) Tert-Butyl Alcohol	6.59	59	59797	197.9422 ug/L	97
16) Dimethyl Sulfide	6.73	62	351814	72.6234 ug/L	98
17) Iodomethane	6.99	142	92716	26.2832 ug/L	99
18) Methyl acetate	7.00	43	127540	50.0514 ug/L	98
19) Methylene Chloride	7.25	84	417642	48.4385 ug/L	99
20) Carbon Disulfide	7.29	76	1199899	42.3200 ug/L	100
21) Acrylonitrile	7.43	53	65324	53.4074 ug/L	93
22) Methyl Tert Butyl Ether	7.46	73	949572	50.8859 ug/L	97
23) trans-1,2-Dichloroethene	7.70	61	598296	48.0666 ug/L	99
24) n-Hexane	7.77	57	425106	45.9930 ug/L	99
25) Diisopropyl ether	8.13	45	2040382	105.1615 ug/L	98
26) Vinyl Acetate	8.29	43	415568	46.7802 ug/L	99
27) 1,1-Dichloroethane	8.32	63	721661	46.6846 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	2040020	98.1343 ug/L	99
29) 2-Butanone	8.88	43	73394	52.9905 ug/L	99
30) Propionitrile	8.98	54	42290	104.7756 ug/L	100
31) 2,2-Dichloropropane	9.10	77	780073	47.8861 ug/L	99
32) cis-1,2-Dichloroethene	9.16	96	470465	48.9162 ug/L	98
33) Chloroform	9.38	83	860252	47.1317 ug/L	100
34) 1-Bromopropane	9.51	122	98585	71.5615 ug/L	98
35) Bromochloromethane	9.60	130	234493	47.5456 ug/L	99
36) Tetrahydrofuran	9.62	42	86049	94.3281 ug/L	99
38) 1,1,1-Trichloroethane	9.90	97	825167	47.5949 ug/L	100
39) Cyclohexane	9.93	56	586721	48.8808 ug/L	97
40) 1,1-Dichloropropene	10.10	75	627217	47.4632 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1962875	103.9618 ug/L	99
42) Carbon Tetrachloride	10.24	117	711823	46.2363 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M412232.D 8260WT.M Tue May 17 11:44:38 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	108	0.00
2	T	Dichlorodifluoromethane	50.0000	54.2141	-8.4	112	0.00
3	P	Chloromethane	50.0000	50.6814	-1.4	111	0.00
4	C	Vinyl Chloride	50.0000	52.3811	-4.8	112	-0.01
5	T	1,3-Butadiene	50.0000	42.6002	14.8	89	0.00
6	T	Bromomethane	50.0000	46.3924	7.2	104	-0.01
7	T	Chloroethane	50.0000	53.3336	-6.7	117	-0.01
8	T	Trichlorofluoromethane	50.0000	46.9313	6.1	101	-0.01
9	T	Diethyl ether	100.0000	104.4282	-4.4	116	0.00
10	T	Isoprene	50.0000	53.0208	-6.0	117	0.00
11	T	Acrolein	50.0000	100.4722	-100.9#	220	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	49.3091	1.4	108	0.00
13	T	Acetone	50.0000	57.5310	-15.1	118	-0.01
14	C	1,1-Dichloroethene	50.0000	45.9700	8.1	100	0.00
15	T	Tert-Butyl Alcohol	200.0000	197.9423	1.0	108	0.01
16	T	Dimethyl Sulfide	50.0000	72.6234	-45.2#	159	0.00
17	T	Iodomethane	50.0000	26.2832	47.4#	59	0.01
18	T	Methyl acetate	50.0000	50.0514	-0.1	111	0.00
19	T	Methylene Chloride	50.0000	48.4385	3.1	107	0.00
20	T	Carbon Disulfide	50.0000	42.3200	15.4	94	0.00
21	T	Acrylonitrile	50.0000	53.4074	-6.8	109	0.00
22	T	Methyl Tert Butyl Ether	50.0000	50.8859	-1.8	105	0.00
23	T	trans-1,2-Dichloroethene	50.0000	48.0666	3.9	105	0.00
24	T	n-Hexane	50.0000	45.9930	8.0	101	-0.01
25	T	Diisopropyl ether	100.0000	105.1615	-5.2	115	0.00
26	T	Vinyl Acetate	50.0000	46.7802	6.4	97	0.00
27	P	1,1-Dichloroethane	50.0000	46.6846	6.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.1343	1.9	104	0.00
29	T	2-Butanone	50.0000	52.9905	-6.0	110	0.00
30	T	Propionitrile	100.0000	104.7756	-4.8	111	0.00
31	T	2,2-Dichloropropane	50.0000	47.8861	4.2	102	0.00
32	T	cis-1,2-Dichloroethene	50.0000	48.9162	2.2	107	-0.01
33	C	Chloroform	50.0000	47.1317	5.7	102	0.00
34		1-Bromopropane	50.0000	71.5615	-43.1#	155	0.00
35	T	Bromochloromethane	50.0000	47.5456	4.9	102	0.00
36	T	Tetrahydrofuran	100.0000	94.3281	5.7	108	-0.01
37	S	Dibromofluoromethane	25.0000	25.5204	-2.1	109	0.00
38	T	1,1,1-Trichloroethane	50.0000	47.5949	4.8	101	0.00
39	T	Cyclohexane	50.0000	48.8808	2.2	109	0.00
40	T	1,1-Dichloropropene	50.0000	47.4632	5.1	102	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	103.9618	-4.0	111	0.00
42	T	Carbon Tetrachloride	50.0000	46.2363	7.5	98	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.7259	1.1	104	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	49.0148	2.0	103	0.00
46	T	Benzene	50.0000	48.5232	3.0	104	0.00
47	T	Trichloroethene	50.0000	51.0658	-2.1	110	0.00
48	T	Methylcyclohexane	50.0000	49.8573	0.3	109	0.00
49	C	1,2-Dichloropropane	50.0000	50.9747	-1.9	111	0.00
50	T	Bromodichloromethane	50.0000	48.3053	3.4	99	0.00
51	T	1,4-Dioxane	200.0000	216.9538	-8.5	110	0.01
52	T	Dibromomethane	50.0000	45.8126	8.4	99	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	51.2623	-2.5	104	0.00
54	T	4-Methyl-2-Pentanone	50.0000	51.8715	-3.7	107	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.8979	-7.8	111	0.00
56	T	Dimethyl Disulfide	50.0000	52.2714	-4.5	111	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	107	0.00
58	S	Toluene-d8	25.0000	25.8115	-3.2	108	0.00
59	C	Toluene	50.0000	49.0912	1.8	105	0.00
60	T	Ethyl Methacrylate	50.0000	55.9509	-11.9	113	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	50.6740	-1.3	102	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.0377	1.9	103	0.00
64	T	2-Hexanone	50.0000	53.6057	-7.2	112	0.00
65	T	1,3-Dichloropropane	50.0000	53.6720	-7.3	110	0.00
66	T	Tetrachloroethene	50.0000	47.8053	4.4	104	0.00
67	T	Dibromochloromethane	50.0000	49.6585	0.7	102	0.00
68	T	1,2-Dibromoethane	50.0000	51.1121	-2.2	105	0.00
69	T	1-Chlorohexane	50.0000	51.0611	-2.1	111	0.00
70	P	Chlorobenzene	50.0000	50.1844	-0.4	108	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	49.3793	1.2	103	0.00
72	C	Ethylbenzene	50.0000	48.2013	3.6	105	0.00
73	T	m-,p-Xylene	100.0000	101.1341	-1.1	108	0.00
74	T	o-Xylene	50.0000	50.5675	-1.1	108	0.00
75	T	Styrene	50.0000	51.5086	-3.0	105	0.00
76	P	Bromoform	50.0000	48.2227	3.6	99	0.00
77	T	Isopropylbenzene	50.0000	51.1140	-2.2	107	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	106	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	49.6172	0.8	103	0.00
80	S	p-Bromofluorobenzene	25.0000	25.0519	-0.2	108	0.00
81	T	1,2,3-Trichloropropane	50.0000	50.0849	-0.2	106	0.01
82	T	trans-1,4-Dichloro-2-Butene	50.0000	39.2043	21.6	86	0.00
83	T	n-Propylbenzene	50.0000	51.9237	-3.8	108	0.00
84	T	Bromobenzene	50.0000	49.4648	1.1	105	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	51.6344	-3.3	107	0.00
86	T	2-Chlorotoluene	50.0000	51.5639	-3.1	106	0.00
87	T	4-Chlorotoluene	50.0000	48.2650	3.5	108	0.00
88	T	a-Methylstyrene	50.0000	56.4132	-12.8	120	0.00
89	T	tert-Butylbenzene	50.0000	50.9494	-1.9	112	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	49.6617	0.7	105	0.00
91	T	sec-Butylbenzene	50.0000	51.3386	-2.7	108	0.00
92	T	p-Isopropyltoluene	50.0000	50.1261	-0.3	107	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.8943	-1.8	108	0.00
94	T	1,4-Dichlorobenzene	50.0000	50.4742	-0.9	110	0.00
95	T	n-Butylbenzene	50.0000	49.6520	0.7	105	0.00
96	T	1,2-Dichlorobenzene	50.0000	50.4907	-1.0	110	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	48.4851	3.0	100	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	50.1129	-0.2	107	0.00
99	T	Hexachlorobutadiene	50.0000	52.0919	-4.2	115	0.00
100	T	Naphthalene	50.0000	45.8047	8.4	95	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	47.7353	4.5	106	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412232.D 8260WT.M Sat May 14 18:09:03 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:21 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	709364	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	505399	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	272922	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	27428	100.2132 ug/L	99
3) 3-Chloro-1-propene	7.07	41	940418	104.3259 ug/L	82
4) 2-Chloro-1,3-butadiene	8.45	53	1188994	104.3183 ug/L	86
5) Ethyl Acetate	9.10	43	283167	104.3264 ug/L	95
6) Methacrylonitrile	9.25	67	155775	104.5365 ug/L #	63
7) Isobutyl Alcohol	9.25	43	17893	197.3629 ug/L #	96
9) Methyl methacrylate	11.42	41	298802	102.0346 ug/L	70
10) 2-Nitropropane	11.75	43	121321	95.8263 ug/L	97
13) Cyclohexanone	15.84	55	11401	102.1363 ug/L #	70

(#) = qualifier out of range (m) = manual integration
8M412321.D A9FOOWT.M Thu May 19 09:01:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

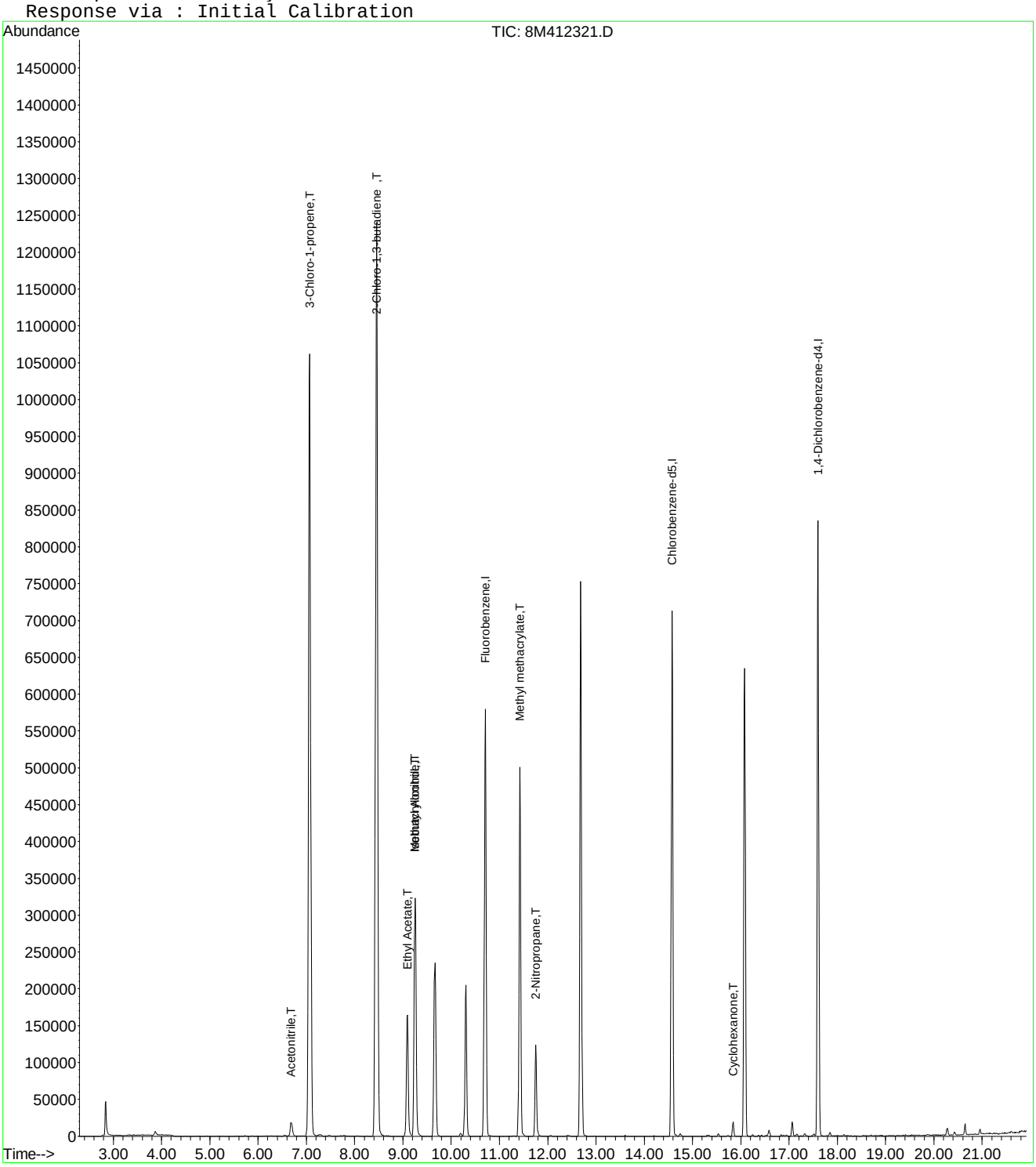

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	100.2132	-0.2	100	0.00
3	T	3-Chloro-1-propene	100.0000	104.3259	-4.3	100	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	104.3183	-4.3	100	0.00
5	T	Ethyl Acetate	100.0000	104.3264	-4.3	100	0.00
6	T	Methacrylonitrile	100.0000	104.5365	-4.5	100	0.00
7	T	Isobutyl Alcohol	200.0000	197.3629	1.3	100	-0.01
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.02
9	T	Methyl methacrylate	100.0000	102.0346	-2.0	100	0.00
10	T	2-Nitropropane	100.0000	95.8263	4.2	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	100.0000	102.1363	-2.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412321.D A9FOOWT.M Thu May 19 09:02:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:20:35 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	677339	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	488377	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	260939	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	13323	50.9795 ug/L	98
3) 3-Chloro-1-propene	7.07	41	453655	52.7060 ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	568765	52.2609 ug/L	87
5) Ethyl Acetate	9.09	43	131636	50.7913 ug/L	97
6) Methacrylonitrile	9.25	67	74064	52.0523 ug/L #	62
7) Isobutyl Alcohol	9.26	43	8483	97.9930 ug/L	95
9) Methyl methacrylate	11.42	41	143892	51.4593 ug/L	70
10) 2-Nitropropane	11.75	43	56559	46.7858 ug/L	95
13) Cyclohexanone	15.84	55	5225	48.9579 ug/L	83

(#) = qualifier out of range (m) = manual integration
8M412322.D A9FOOWT.M Thu May 19 09:20:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:19 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

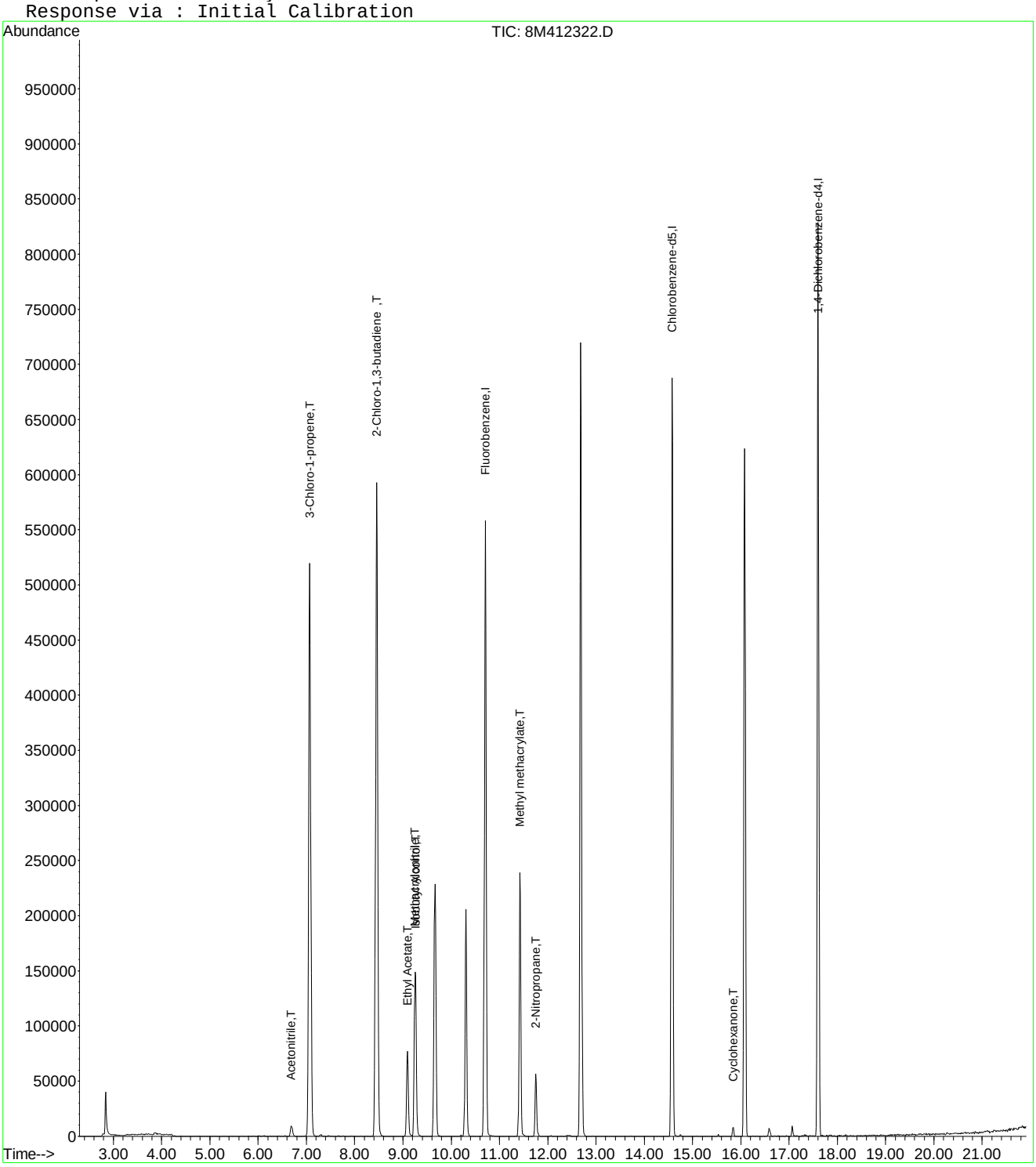

8M412322.D A9FOOWT.M Thu May 19 09:20:36 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	50.9795	-2.0	100	0.00
3	T	3-Chloro-1-propene	50.0000	52.7060	-5.4	100	0.00
4	T	2-Chloro-1,3-butadiene	50.0000	52.2609	-4.5	100	0.00
5	T	Ethyl Acetate	50.0000	50.7913	-1.6	100	0.00
6	T	Methacrylonitrile	50.0000	52.0523	-4.1	100	0.00
7	T	Isobutyl Alcohol	100.0000	97.9929	2.0	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.02
9	T	Methyl methacrylate	50.0000	51.4592	-2.9	100	0.00
10	T	2-Nitropropane	50.0000	46.7858	6.4	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	50.0000	48.9579	2.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412322.D A9FOOWT.M Thu May 19 09:02:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:22:33 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	652985	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	476539	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	256082	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	4873	19.3416 ug/L	80
3) 3-Chloro-1-propene	7.07	41	172467	20.7847 ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	219296	20.9015 ug/L	87
5) Ethyl Acetate	9.09	43	50385	20.1659 ug/L	100
6) Methacrylonitrile	9.26	67	28119	20.4992 ug/L #	63
7) Isobutyl Alcohol	9.27	43	2774	33.2395 ug/L #	8
9) Methyl methacrylate	11.42	41	55309	20.5176 ug/L	73
10) 2-Nitropropane	11.75	43	21584	18.5202 ug/L	99
13) Cyclohexanone	15.84	55	2230	21.2913 ug/L	87

(#) = qualifier out of range (m) = manual integration
8M412323.D A9FOOWT.M Thu May 19 09:22:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:21 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

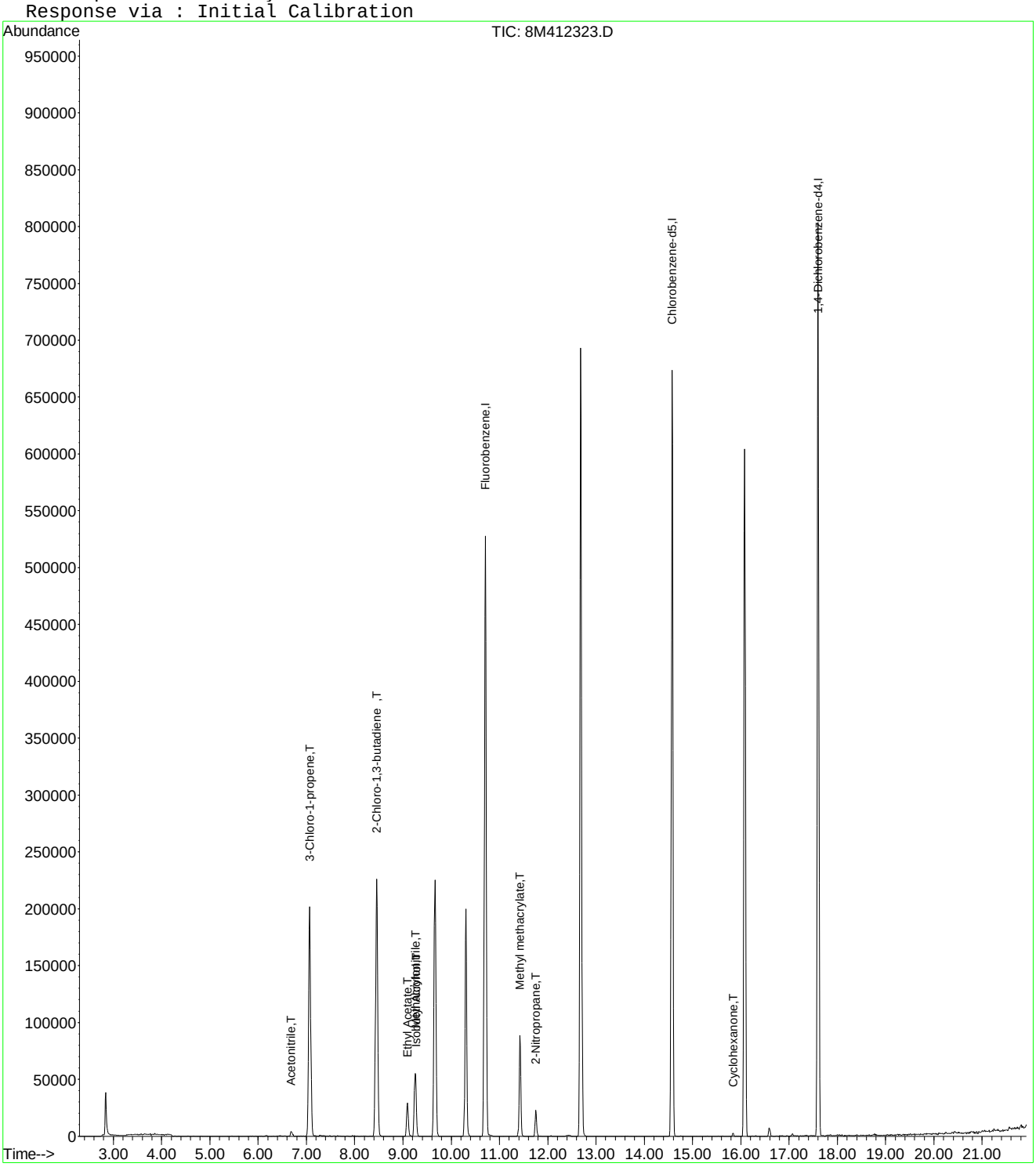

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	19.3416	3.3	100	0.00
3	T	3-Chloro-1-propene	20.0000	20.7847	-3.9	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	20.9015	-4.5	100	0.00
5	T	Ethyl Acetate	20.0000	20.1659	-0.8	100	0.00
6	T	Methacrylonitrile	20.0000	20.4992	-2.5	100	0.00
7	T	Isobutyl Alcohol	-1.0000	33.2395	0.0	0	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.18#
9	T	Methyl methacrylate	20.0000	20.5176	-2.6	100	0.00
10	T	2-Nitropropane	20.0000	18.5203	7.4	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	20.0000	21.2913	-6.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412323.D A9FOOWT.M Thu May 19 09:02:17 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:22:43 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	665645	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	483812	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	257678	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	405	1.5769 ug/L #	23
3) 3-Chloro-1-propene	7.07	41	40699	4.8115 ug/L	84
4) 2-Chloro-1,3-butadiene	8.45	53	48973	4.5789 ug/L	81
5) Ethyl Acetate	9.09	43	10675	4.1913 ug/L	95
6) Methacrylonitrile	9.26	67	5417	3.8740 ug/L #	72
7) Isobutyl Alcohol	9.27	43	441	5.1838 ug/L #	8
9) Methyl methacrylate	11.43	41	11811	4.2981 ug/L	65
10) 2-Nitropropane	11.76	43	4170	3.5100 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412324.D A9FOOWT.M Thu May 19 09:22:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:21 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

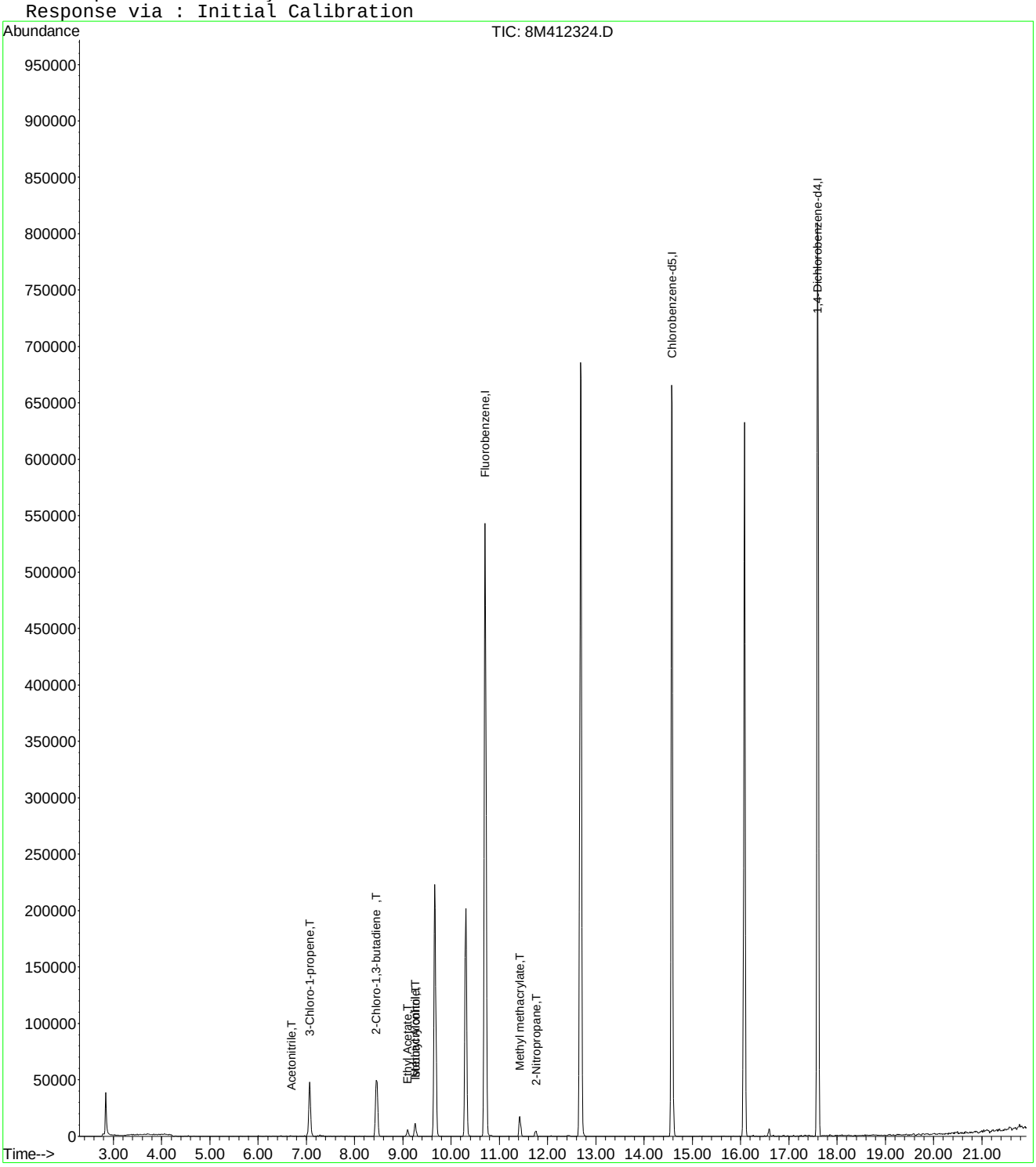

8M412324.D A9FOOWT.M Thu May 19 09:22:43 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	-1.0000	1.5769	0.0	0	0.00
3	T	3-Chloro-1-propene	5.0000	4.8115	3.8	100	0.00
4	T	2-Chloro-1,3-butadiene	5.0000	4.5789	8.4	100	0.00
5	T	Ethyl Acetate	5.0000	4.1913	16.2	100	0.00
6	T	Methacrylonitrile	5.0000	3.8740	22.5	100	0.00
7	T	Isobutyl Alcohol	-1.0000	5.1838	0.0	0	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.18#
9	T	Methyl methacrylate	5.0000	4.2981	14.0	100	0.00
10	T	2-Nitropropane	-1.0000	3.5100	0.0	0	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	0.0000	0.0	0	-15.84#

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412324.D A9FOOWT.M Thu May 19 09:02:03 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412325.D Vial: 7
Acq On : 17 May 2016 11:42 Operator: TMB
Sample : WG569079-06 200ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:27 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	682012	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	491515	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	261877	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.68	41	52022	197.6946 ug/L	97
3) 3-Chloro-1-propene	7.06	41	1768403	204.0468 ug/L	83
4) 2-Chloro-1,3-butadiene	8.46	53	2283706	208.4003 ug/L	87
5) Ethyl Acetate	9.09	43	537585	206.0040 ug/L	94
6) Methacrylonitrile	9.25	67	297408	207.5869 ug/L #	63
7) Isobutyl Alcohol	9.26	43	34441	395.1256 ug/L	95
9) Methyl methacrylate	11.42	41	577612	205.1526 ug/L	72
10) 2-Nitropropane	11.75	43	248395	204.0652 ug/L	95
13) Cyclohexanone	15.85	55	19752	184.4122 ug/L #	59

(#) = qualifier out of range (m) = manual integration
8M412325.D A9FOOWT.M Thu May 19 09:01:28 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412325.D Vial: 7
Acq On : 17 May 2016 11:42 Operator: TMB
Sample : WG569079-06 200ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

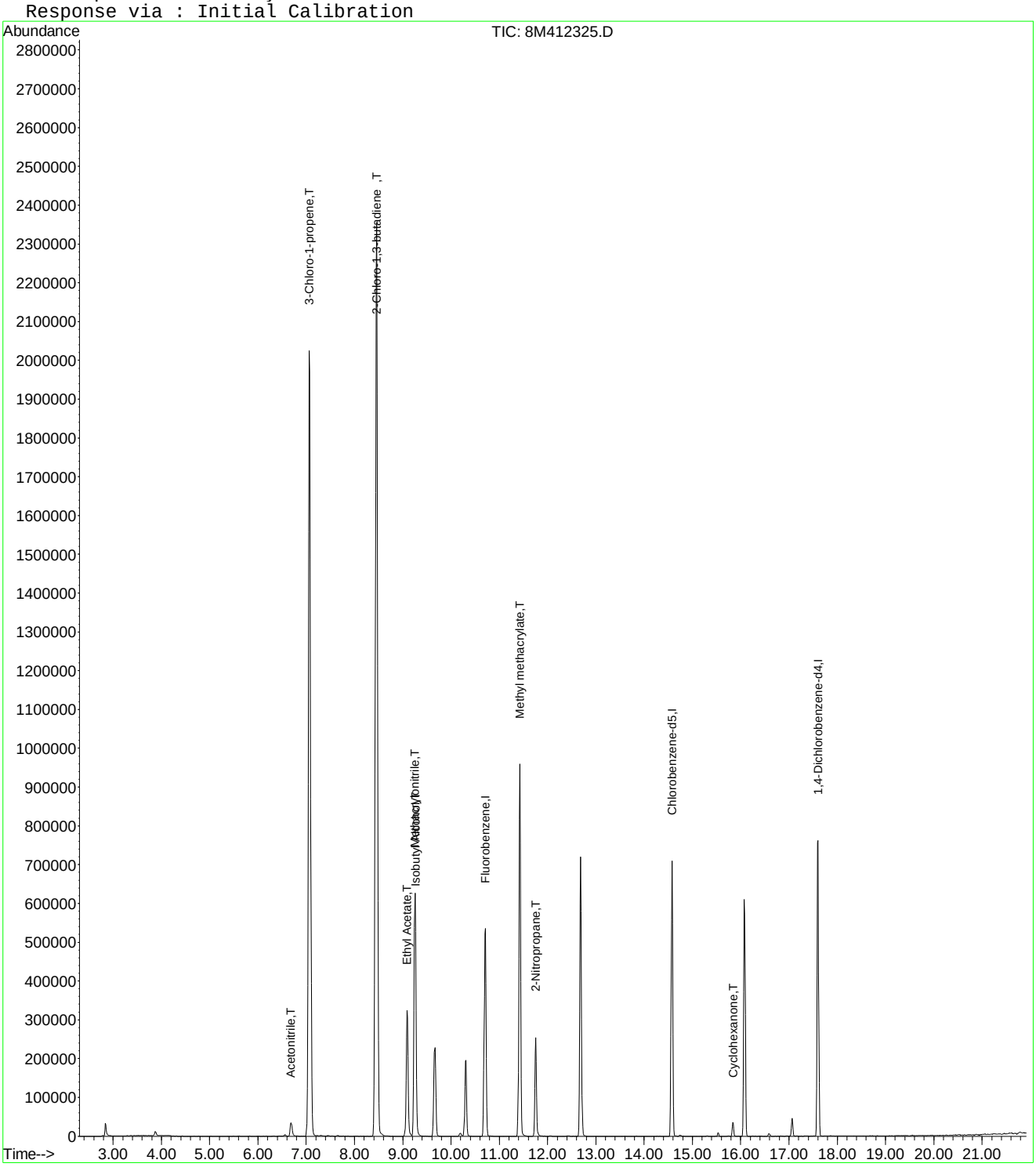

8M412325.D A9FOOWT.M Thu May 19 09:01:28 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412326.D Vial: 8
Acq On : 17 May 2016 12:40 Operator: TMB
Sample : WG569079-07 300ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:29 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	694903	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	496643	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	267309	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.69	41	81471	303.8636	ug/L	98
3) 3-Chloro-1-propene	7.06	41	2563559	290.3084	ug/L	83
4) 2-Chloro-1,3-butadiene	8.46	53	3270971	292.9562	ug/L	86
5) Ethyl Acetate	9.09	43	821184	308.8424	ug/L	95
6) Methacrylonitrile	9.25	67	451708	309.4374	ug/L #	62
7) Isobutyl Alcohol	9.26	43	55071	620.0836	ug/L	94
9) Methyl methacrylate	11.42	41	874430	304.8132	ug/L	70
10) 2-Nitropropane	11.75	43	392965	316.8456	ug/L	94
13) Cyclohexanone	15.84	55	33523	306.6233	ug/L #	61

(#) = qualifier out of range (m) = manual integration
8M412326.D A9FOOWT.M Thu May 19 09:01:29 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412326.D Vial: 8
Acq On : 17 May 2016 12:40 Operator: TMB
Sample : WG569079-07 300ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

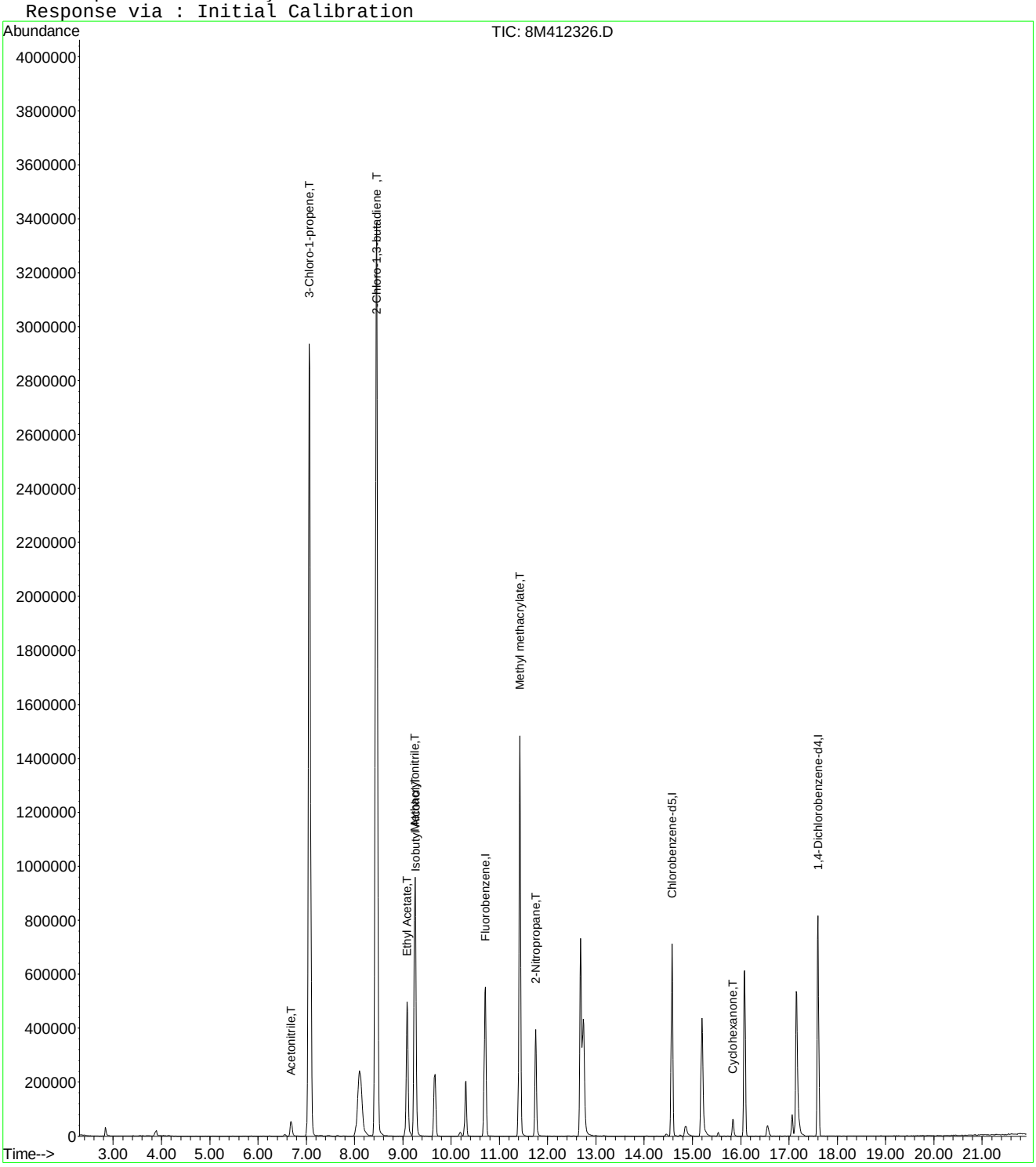

8M412326.D A9FOOWT.M Thu May 19 09:01:29 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412327.D Vial: 9
Acq On : 17 May 2016 13:10 Operator: TMB
Sample : WG569079-08 400ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:30 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	700514	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	502552	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	270883	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	110761	409.7980 ug/L	97
3) 3-Chloro-1-propene	7.07	41	3406131	382.6353 ug/L	82
4) 2-Chloro-1,3-butadiene	8.45	53	4356691	387.0705 ug/L	85
5) Ethyl Acetate	9.09	43	1116818	416.6642 ug/L	94
6) Methacrylonitrile	9.25	67	615482	418.2517 ug/L #	62
7) Isobutyl Alcohol	9.26	43	75472	842.9862 ug/L	97
9) Methyl methacrylate	11.42	41	1199317	414.7153 ug/L	71
10) 2-Nitropropane	11.75	43	538580	430.7760 ug/L	94
13) Cyclohexanone	15.84	55	45874	414.0575 ug/L #	55

(#) = qualifier out of range (m) = manual integration
8M412327.D A9FOOWT.M Thu May 19 09:01:31 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412327.D Vial: 9
Acq On : 17 May 2016 13:10 Operator: TMB
Sample : WG569079-08 400ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

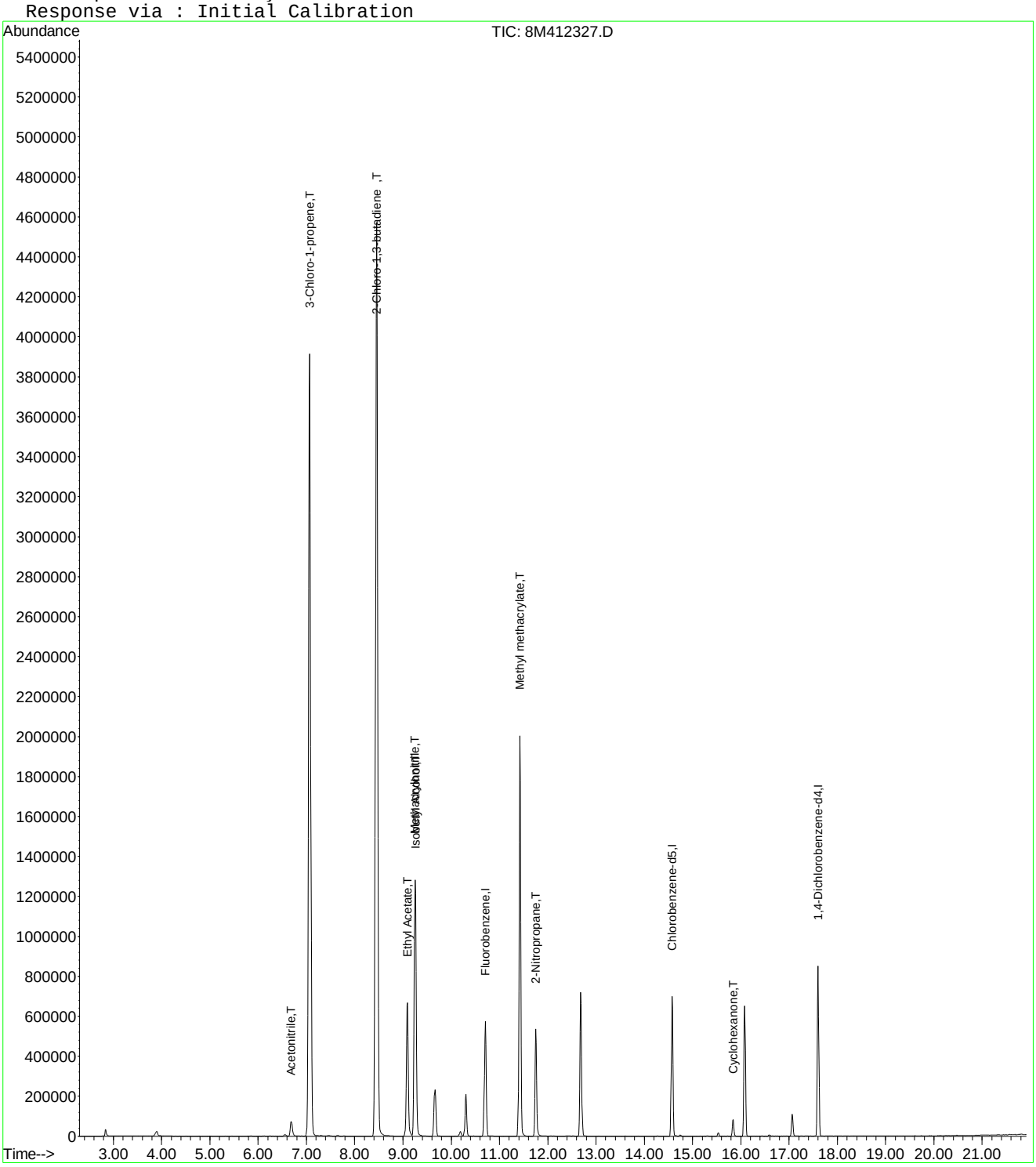

8M412327.D A9FOOWT.M Thu May 19 09:01:31 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412328.D Vial: 10
Acq On : 17 May 2016 13:39 Operator: TMB
Sample : WG569079-09 500ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:31 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	695694	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	495257	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	266442	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	132245	492.6753 ug/L	99
3) 3-Chloro-1-propene	7.06	41	4228273	478.2834 ug/L	82
4) 2-Chloro-1,3-butadiene	8.46	53	5390856	482.2693 ug/L	85
5) Ethyl Acetate	9.09	43	1321922	496.6017 ug/L	95
6) Methacrylonitrile	9.25	67	729852	499.4083 ug/L #	61
7) Isobutyl Alcohol	9.26	43	85200	958.2367 ug/L	96
9) Methyl methacrylate	11.42	41	1416438	493.1877 ug/L	72
10) 2-Nitropropane	11.75	43	637335	513.2956 ug/L	93
13) Cyclohexanone	15.84	55	52070	477.8160 ug/L #	61

(#) = qualifier out of range (m) = manual integration
8M412328.D A9FOOWT.M Thu May 19 09:01:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412328.D Vial: 10
Acq On : 17 May 2016 13:39 Operator: TMB
Sample : WG569079-09 500ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

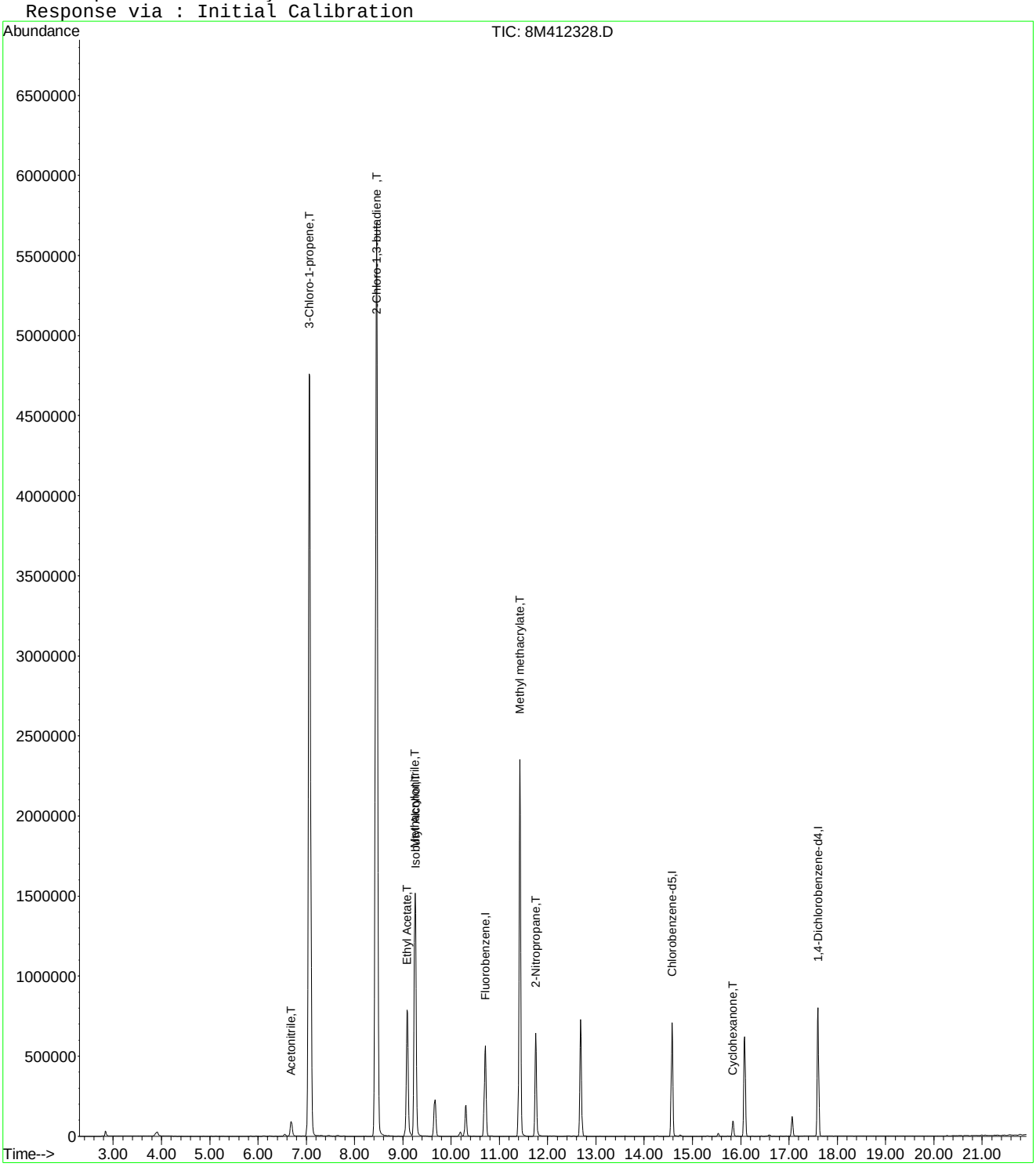

8M412328.D A9FOOWT.M Thu May 19 09:01:32 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:32 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	676765	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	486447	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	263036	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.69	41	29876	114.4154	ug/L	97
3) 3-Chloro-1-propene	7.07	41	858035	99.7718	ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	1224194	112.5803	ug/L	87
5) Ethyl Acetate	9.09	43	295545	114.1317	ug/L	96
6) Methacrylonitrile	9.25	67	161574	113.6509	ug/L #	63
7) Isobutyl Alcohol	9.26	43	19948	230.6285	ug/L	94
9) Methyl methacrylate	11.42	41	326465	116.8508	ug/L	72
10) 2-Nitropropane	11.75	43	131261	108.6716	ug/L	94
13) Cyclohexanone	15.83	55	10459	97.2189	ug/L #	74

(#) = qualifier out of range (m) = manual integration
8M412331.D A9FOOWT.M Thu May 19 09:01:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

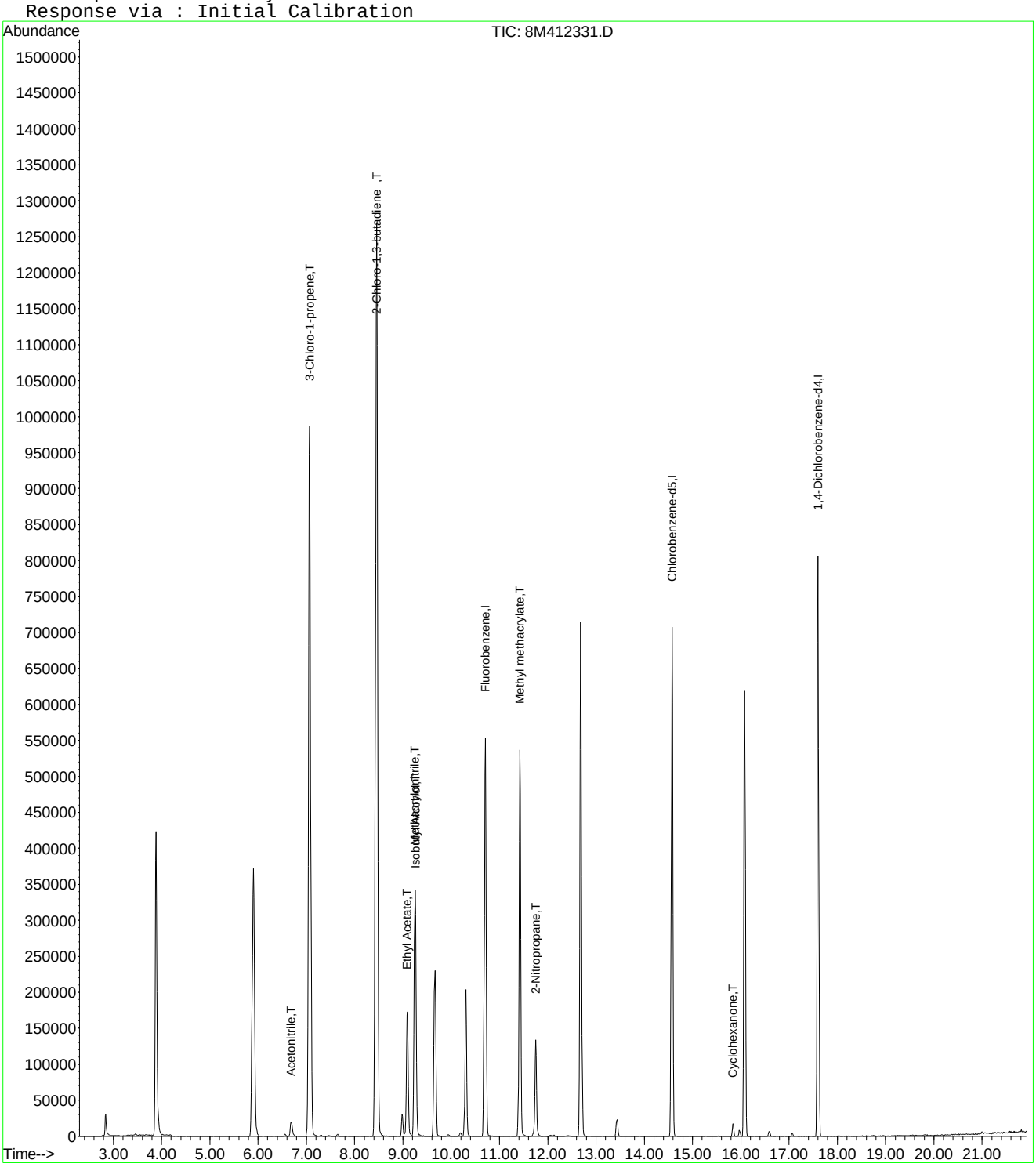

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	95	0.00
2	T	Acetonitrile	100.0000	114.4154	-14.4	109	0.00
3	T	3-Chloro-1-propene	100.0000	99.7718	0.2	91	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	112.5803	-12.6	103	0.00
5	T	Ethyl Acetate	100.0000	114.1317	-14.1	104	0.00
6	T	Methacrylonitrile	100.0000	113.6509	-13.7	104	0.00
7	T	Isobutyl Alcohol	200.0000	230.6285	-15.3	111	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.01
9	T	Methyl methacrylate	100.0000	116.8508	-16.9	109	0.00
10	T	2-Nitropropane	100.0000	108.6716	-8.7	108	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	96	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	96	0.00
13	T	Cyclohexanone	100.0000	97.2189	2.8	92	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412331.D A9FOOWT.M Thu May 19 09:03:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412921.D Vial: 2
Acq On : 11 Jun 2016 13:34 Operator: FJB
Sample : WG572347-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 08:30:26 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	767885	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	556927	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	312691	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	221998	26.9080 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.64%		
43) 1,2-Dichloroethane-d4	10.30	65	238787	26.9927 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.96%		
58) Toluene-d8	12.68	98	763405	26.1916 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.76%		
80) p-Bromofluorobenzene	16.08	95	316687	24.4591 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.84%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	783630	60.8677 ug/L	99
3) Chloromethane	3.62	50	351160	46.7278 ug/L	99
4) Vinyl Chloride	3.84	62	485953	54.5027 ug/L	99
5) 1,3-Butadiene	3.89	54	419214	56.0660 ug/L	96
6) Bromomethane	4.73	94	191226	36.0005 ug/L	100
7) Chloroethane	4.89	64	243985	49.7312 ug/L	98
8) Trichlorofluoromethane	5.37	101	994750	59.9594 ug/L	99
9) Diethyl ether	5.90	59	364028	91.9106 ug/L	98
10) Isoprene	5.94	67	487571	48.3952 ug/L	99
11) Acrolein	6.14	56	15007	42.3187 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	431413	55.3206 ug/L	98
13) Acetone	6.24	43	42382	49.0565 ug/L	99
14) 1,1-Dichloroethene	6.47	61	675252	54.3820 ug/L	98
15) Tert-Butyl Alcohol	6.57	59	50360	181.8988 ug/L	97
16) Dimethyl Sulfide	6.73	62	199668	44.9735 ug/L	99
17) Iodomethane	6.99	142	84211	26.0755 ug/L	95
18) Methyl acetate	7.00	43	109096	46.7158 ug/L	97
19) Methylene Chloride	7.25	84	386107	48.8629 ug/L	98
20) Carbon Disulfide	7.29	76	1304541	50.2046 ug/L	100
21) Acrylonitrile	7.43	53	51363	45.8209 ug/L	100
22) Methyl Tert Butyl Ether	7.46	73	835188	48.8358 ug/L	98
23) trans-1,2-Dichloroethene	7.70	61	596356	52.2779 ug/L	99
24) n-Hexane	7.78	57	431041	50.8860 ug/L	99
25) Diisopropyl ether	8.12	45	1662443	93.4926 ug/L	96
26) Vinyl Acetate	8.29	43	295549	36.3023 ug/L	98
27) 1,1-Dichloroethane	8.32	63	739562	52.2036 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1883130	98.8444 ug/L	98
29) 2-Butanone	8.88	43	53936	42.4914 ug/L	98
30) Propionitrile	8.99	54	32700	88.4006 ug/L	100
31) 2,2-Dichloropropane	9.10	77	916418	61.3836 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	451494	51.2227 ug/L	98
33) Chloroform	9.37	83	894074	53.4498 ug/L	100
34) 1-Bromopropane	9.51	122	68971	54.6286 ug/L	97
35) Bromochloromethane	9.60	130	230220	50.9341 ug/L	96
36) Tetrahydrofuran	9.63	42	85388	102.1356 ug/L	94
38) 1,1,1-Trichloroethane	9.91	97	935070	58.8502 ug/L	99
39) Cyclohexane	9.94	56	525995	47.8160 ug/L	96
40) 1,1-Dichloropropene	10.11	75	652918	53.9117 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1685964	97.4349 ug/L	100
42) Carbon Tetrachloride	10.25	117	848645	60.1482 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412921.D Vial: 2
Acq On : 11 Jun 2016 13:34 Operator: FJB
Sample : WG572347-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 08:30:26 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	581486	54.0099	ug/L		99
46)	Benzene	10.46	78	1623668	51.4752	ug/L		100
47)	Trichloroethene	11.21	130	454369	54.0094	ug/L		100
48)	Methylcyclohexane	11.30	83	655858	51.3169	ug/L		98
49)	1,2-Dichloropropane	11.43	63	335818	47.8254	ug/L		90
50)	Bromodichloromethane	11.73	83	662595	53.6889	ug/L		99
51)	1,4-Dioxane	11.71	88	6154	174.4710	ug/L		100
52)	Dibromomethane	11.81	93	200098	48.1406	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.03	63	124571	41.2757	ug/L		97
54)	4-Methyl-2-Pentanone	12.06	58	49793	40.3896	ug/L		90
55)	cis-1,3-Dichloropropene	12.36	75	650654	51.7963	ug/L		100
56)	Dimethyl Disulfide	12.63	79	322033	48.0310	ug/L		100
59)	Toluene	12.78	91	1744290	50.4495	ug/L		100
60)	Ethyl Methacrylate	12.88	69	289546	43.6065	ug/L		99
62)	trans-1,3-Dichloropropene	12.96	75	578341	49.9142	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	250480	45.9107	ug/L		100
64)	2-Hexanone	13.11	58	46425	40.4931	ug/L	#	98
65)	1,3-Dichloropropane	13.48	76	454542	46.7948	ug/L		98
66)	Tetrachloroethene	13.60	164	396786	53.5643	ug/L		98
67)	Dibromochloromethane	13.87	129	395724	49.6754	ug/L		100
68)	1,2-Dibromoethane	14.13	107	255599	47.0072	ug/L		100
69)	1-Chlorohexane	14.21	91	578156	48.9870	ug/L		99
70)	Chlorobenzene	14.62	112	1159672	49.7395	ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.65	131	463624	51.3284	ug/L		97
72)	Ethylbenzene	14.65	106	637930	50.0093	ug/L		100
73)	m-,p-Xylene	14.75	106	1537933	102.7868	ug/L		99
74)	o-Xylene	15.31	106	747891	51.1263	ug/L		99
75)	Styrene	15.35	104	1245661	51.9183	ug/L		97
76)	Bromoform	15.83	173	237534	50.2711	ug/L		100
77)	Isopropylbenzene	15.73	105	2081353	53.5594	ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	254750	40.5869	ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	84030	43.4753	ug/L		84
82)	trans-1,4-Dichloro-2-Buten	16.18	53	81794	41.6214	ug/L		83
83)	n-Propylbenzene	16.24	91	2440195	50.0212	ug/L		99
84)	Bromobenzene	16.37	156	486149	48.4494	ug/L		96
85)	1,3,5-Trimethylbenzene	16.42	105	1814775	51.0692	ug/L		100
86)	2-Chlorotoluene	16.51	91	1660551	48.7547	ug/L		100
87)	4-Chlorotoluene	16.56	91	1497194	48.6650	ug/L		100
88)	a-Methylstyrene	16.84	118	773891	45.9023	ug/L		100
89)	tert-Butylbenzene	16.89	134	343226	49.3705	ug/L		98
90)	1,2,4-Trimethylbenzene	16.94	105	1835226	50.2251	ug/L		100
91)	sec-Butylbenzene	17.17	105	2111318	50.5038	ug/L		99
92)	p-Isopropyltoluene	17.32	119	1808058	50.9371	ug/L		99
93)	1,3-Dichlorobenzene	17.52	146	950820	49.2112	ug/L		100
94)	1,4-Dichlorobenzene	17.64	146	927258	47.6025	ug/L		99
95)	n-Butylbenzene	17.85	91	1764653	50.2872	ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	804738	46.8302	ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	54275	43.0779	ug/L		99
98)	1,2,4-Trichlorobenzene	20.28	180	586925	45.6941	ug/L		100
99)	Hexachlorobutadiene	20.43	225	311373	51.8824	ug/L		99
100)	Naphthalene	20.65	128	762241	39.9424	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	446875	41.2380	ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412921.D Vial: 2
Acq On : 11 Jun 2016 13:34 Operator: FJB
Sample : WG572347-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 8:30 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

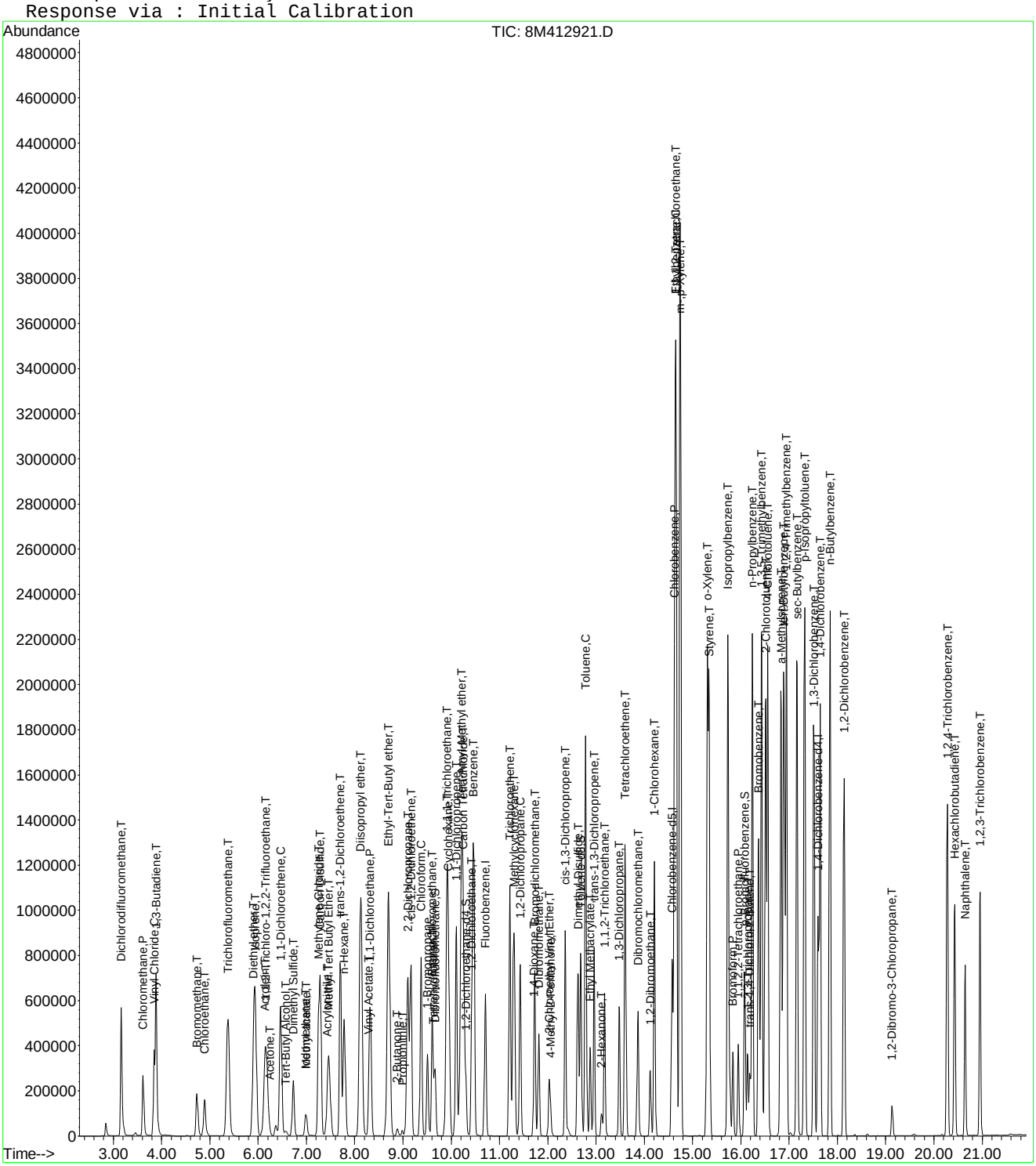

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412921.D Vial: 2
Acq On : 11 Jun 2016 13:34 Operator: FJB
Sample : WG572347-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	99	0.00
2	T	Dichlorodifluoromethane	0.4192	0.5102	-21.7	115	0.00
3	P	Chloromethane	0.2447	0.2286	6.5	94	0.00
4	C	Vinyl Chloride	0.2903	0.3164	-9.0	107	0.00
5	T	1,3-Butadiene	0.2434	0.2730	-12.1	107	0.00
6	T	Bromomethane	0.1654	0.1245	24.7	73	0.00
7	T	Chloroethane	0.1597	0.1589	0.5	100	0.00
8	T	Trichlorofluoromethane	0.5401	0.6477	-19.9	119	0.00
9	T	Diethyl ether	0.1290	0.1185	8.1	94	0.00
10	T	Isoprene	0.3280	0.3175	3.2	98	0.00
11	T	Acrolein	0.0116	0.0098	15.4	85	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2539	0.2809	-10.6	111	0.00
13	T	Acetone	0.0281	0.0276	1.9	92	0.00
14	C	1,1-Dichloroethene	0.4043	0.4397	-8.8	109	0.00
15	T	Tert-Butyl Alcohol	0.0090	0.0082	9.0	91	0.00
16	T	Dimethyl Sulfide	0.1445	0.1300	10.1	90	0.00
17	T	Iodomethane	0.0866	0.0548	36.7#	53	0.00
18	T	Methyl acetate	0.0760	0.0710	6.6	95	0.00
19	T	Methylene Chloride	0.2573	0.2514	2.3	99	0.00
20	T	Carbon Disulfide	0.8460	0.8494	-0.4	103	0.00
21	T	Acrylonitrile	0.0365	0.0334	8.4	86	0.00
22	T	Methyl Tert Butyl Ether	0.5568	0.5438	2.3	93	0.00
23	T	trans-1,2-Dichloroethene	0.3714	0.3883	-4.6	104	0.00
24	T	n-Hexane	0.2758	0.2807	-1.8	103	0.00
25	T	Diisopropyl ether	0.5789	0.5412	6.5	93	0.00
26	T	Vinyl Acetate	0.2651	0.1924	27.4#	69	0.00
27	P	1,1-Dichloroethane	0.4612	0.4816	-4.4	102	0.00
28	T	Ethyl-Tert-Butyl ether	0.6203	0.6131	1.2	96	0.00
29	T	2-Butanone	0.0413	0.0351	15.0	81	0.00
30	T	Propionitrile	0.0120	0.0107	11.5	86	0.00
31	T	2,2-Dichloropropane	0.4860	0.5967	-22.8	119	0.00
32	T	cis-1,2-Dichloroethene	0.2870	0.2940	-2.4	103	0.00
33	C	Chloroform	0.5446	0.5822	-6.9	106	0.00
34		1-Bromopropane	0.0411	0.0449	-9.3	109	0.00
35	T	Bromochloromethane	0.1472	0.1499	-1.9	100	0.00
36	T	Tetrahydrofuran	0.0272	0.0278	-2.1	107	0.00
37	S	Dibromofluoromethane	0.2686	0.2891	-7.6	105	0.00
38	T	1,1,1-Trichloroethane	0.5173	0.6089	-17.7	114	0.00
39	T	Cyclohexane	0.3581	0.3425	4.4	98	0.00
40	T	1,1-Dichloropropene	0.3943	0.4251	-7.8	106	0.00
41	T	Tert-Amyl-Methyl ether	0.5634	0.5489	2.6	95	0.00
42	T	Carbon Tetrachloride	0.4593	0.5526	-20.3	117	0.00
43	S	1,2-Dichloroethane-d4	0.2880	0.3110	-8.0	104	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.3505	0.3786	-8.0	104	0.00
46	T	Benzene	1.0269	1.0572	-3.0	101	0.00
47	T	Trichloroethene	0.2739	0.2959	-8.0	107	0.00
48	T	Methylcyclohexane	0.4161	0.4270	-2.6	103	0.00
49	C	1,2-Dichloropropane	0.2286	0.2187	4.4	95	0.00
50	T	Bromodichloromethane	0.4018	0.4314	-7.4	101	0.00
51	T	1,4-Dioxane	0.0012	0.0010	13.0	81	0.00
52	T	Dibromomethane	0.1353	0.1303	3.7	96	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0983	0.0811	17.5	77	0.00
54	T	4-Methyl-2-Pentanone	0.0401	0.0324	19.2	77	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412921.D Vial: 2
Acq On : 11 Jun 2016 13:34 Operator: FJB
Sample : WG572347-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4090	0.4237	-3.6	98	0.00
56	T	Dimethyl Disulfide	0.2183	0.2097	3.9	94	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	103	0.00
58	S	Toluene-d8	1.3084	1.3707	-4.8	106	0.00
59	C	Toluene	1.5520	1.5660	-0.9	104	0.00
60	T	Ethyl Methacrylate	0.2981	0.2600	12.8	85	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.5201	0.5192	0.2	97	0.00
63	T	1,1,2-Trichloroethane	0.2449	0.2249	8.2	93	0.00
64	T	2-Hexanone	0.0515	0.0417	19.0	82	0.00
65	T	1,3-Dichloropropane	0.4360	0.4081	6.4	93	0.00
66	T	Tetrachloroethene	0.3325	0.3562	-7.1	113	0.00
67	T	Dibromochloromethane	0.3576	0.3553	0.7	99	0.00
68	T	1,2-Dibromoethane	0.2441	0.2295	6.0	93	0.00
69	T	1-Chlorohexane	0.5298	0.5191	2.0	103	0.00
70	P	Chlorobenzene	1.0466	1.0411	0.5	104	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4055	0.4162	-2.7	104	0.00
72	C	Ethylbenzene	0.5726	0.5727	-0.0	106	0.00
73	T	m-,p-Xylene	0.6716	0.6904	-2.8	107	0.00
74	T	o-Xylene	0.6566	0.6714	-2.3	105	0.00
75	T	Styrene	1.0770	1.1183	-3.8	103	0.00
76	P	Bromoform	0.2121	0.2133	-0.5	100	0.00
77	T	Isopropylbenzene	1.7444	1.8686	-7.1	108	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	108	0.00
79	P	1,1,2,2-Tetrachloroethane	0.5018	0.4073	18.8	87	0.00
80	S	p-Bromofluorobenzene	1.0352	1.0128	2.2	108	0.00
81	T	1,2,3-Trichloropropane	0.1545	0.1344	13.0	94	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1376	0.1308	4.9	94	0.00
83	T	n-Propylbenzene	3.9003	3.9019	-0.0	107	0.00
84	T	Bromobenzene	0.8022	0.7774	3.1	106	0.00
85	T	1,3,5-Trimethylbenzene	2.8411	2.9019	-2.1	109	0.00
86	T	2-Chlorotoluene	2.7231	2.6553	2.5	103	0.00
87	T	4-Chlorotoluene	2.4597	2.3941	2.7	112	0.00
88	T	a-Methylstyrene	1.3479	1.2375	8.2	100	0.00
89	T	tert-Butylbenzene	0.5558	0.5488	1.3	112	0.00
90	T	1,2,4-Trimethylbenzene	2.9214	2.9346	-0.5	109	0.00
91	T	sec-Butylbenzene	3.3424	3.3761	-1.0	110	0.00
92	T	p-Isopropyltoluene	2.8379	2.8911	-1.9	112	0.00
93	T	1,3-Dichlorobenzene	1.5448	1.5204	1.6	108	0.00
94	T	1,4-Dichlorobenzene	1.5574	1.4827	4.8	106	0.00
95	T	n-Butylbenzene	2.8056	2.8217	-0.6	110	0.00
96	T	1,2-Dichlorobenzene	1.3739	1.2868	6.3	105	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1007	0.0868	13.8	91	0.00
98	T	1,2,4-Trichlorobenzene	1.0269	0.9385	8.6	101	0.00
99	T	Hexachlorobutadiene	0.4798	0.4979	-3.8	118	0.00
100	T	Naphthalene	1.5257	1.2188	20.1	85	0.00
101	T	1,2,3-Trichlorobenzene	0.8664	0.7146	17.5	94	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412921.D 8260WT.M Mon Jun 13 08:52:17 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412921.D Vial: 2
Acq On : 11 Jun 2016 13:34 Operator: FJB
Sample : WG572347-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	99	0.00
2	T	Dichlorodifluoromethane	50.0000	60.8677	-21.7	115	0.00
3	P	Chloromethane	50.0000	46.7278	6.5	94	0.00
4	C	Vinyl Chloride	50.0000	54.5027	-9.0	107	0.00
5	T	1,3-Butadiene	50.0000	56.0660	-12.1	107	0.00
6	T	Bromomethane	50.0000	36.0005	28.0#	73	0.00
7	T	Chloroethane	50.0000	49.7312	0.5	100	0.00
8	T	Trichlorofluoromethane	50.0000	59.9594	-19.9	119	0.00
9	T	Diethyl ether	100.0000	91.9106	8.1	94	0.00
10	T	Isoprene	50.0000	48.3952	3.2	98	0.00
11	T	Acrolein	50.0000	42.3187	15.4	85	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	55.3206	-10.6	111	0.00
13	T	Acetone	50.0000	49.0565	1.9	92	0.00
14	C	1,1-Dichloroethene	50.0000	54.3820	-8.8	109	0.00
15	T	Tert-Butyl Alcohol	200.0000	181.8989	9.1	91	0.00
16	T	Dimethyl Sulfide	50.0000	44.9735	10.1	90	0.00
17	T	Iodomethane	50.0000	26.0755	47.8#	53	0.00
18	T	Methyl acetate	50.0000	46.7158	6.6	95	0.00
19	T	Methylene Chloride	50.0000	48.8629	2.3	99	0.00
20	T	Carbon Disulfide	50.0000	50.2046	-0.4	103	0.00
21	T	Acrylonitrile	50.0000	45.8209	8.4	86	0.00
22	T	Methyl Tert Butyl Ether	50.0000	48.8359	2.3	93	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.2779	-4.6	104	0.00
24	T	n-Hexane	50.0000	50.8860	-1.8	103	0.00
25	T	Diisopropyl ether	100.0000	93.4926	6.5	93	0.00
26	T	Vinyl Acetate	50.0000	36.3023	27.4#	69	0.00
27	P	1,1-Dichloroethane	50.0000	52.2036	-4.4	102	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.8444	1.2	96	0.00
29	T	2-Butanone	50.0000	42.4914	15.0	81	0.00
30	T	Propionitrile	100.0000	88.4006	11.6	86	0.00
31	T	2,2-Dichloropropane	50.0000	61.3836	-22.8	119	0.00
32	T	cis-1,2-Dichloroethene	50.0000	51.2227	-2.4	103	0.00
33	C	Chloroform	50.0000	53.4498	-6.9	106	0.00
34		1-Bromopropane	50.0000	54.6286	-9.3	109	0.00
35	T	Bromochloromethane	50.0000	50.9341	-1.9	100	0.00
36	T	Tetrahydrofuran	100.0000	102.1356	-2.1	107	0.00
37	S	Dibromofluoromethane	25.0000	26.9080	-7.6	105	0.00
38	T	1,1,1-Trichloroethane	50.0000	58.8502	-17.7	114	0.00
39	T	Cyclohexane	50.0000	47.8160	4.4	98	0.00
40	T	1,1-Dichloropropene	50.0000	53.9117	-7.8	106	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	97.4349	2.6	95	0.00
42	T	Carbon Tetrachloride	50.0000	60.1482	-20.3	117	0.00
43	S	1,2-Dichloroethane-d4	25.0000	26.9927	-8.0	104	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	54.0099	-8.0	104	0.00
46	T	Benzene	50.0000	51.4752	-3.0	101	0.00
47	T	Trichloroethene	50.0000	54.0094	-8.0	107	0.00
48	T	Methylcyclohexane	50.0000	51.3169	-2.6	103	0.00
49	C	1,2-Dichloropropane	50.0000	47.8254	4.3	95	0.00
50	T	Bromodichloromethane	50.0000	53.6889	-7.4	101	0.00
51	T	1,4-Dioxane	200.0000	174.4710	12.8	81	0.00
52	T	Dibromomethane	50.0000	48.1405	3.7	96	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	41.2757	17.4	77	0.00
54	T	4-Methyl-2-Pentanone	50.0000	40.3896	19.2	77	0.00

(#) = Out of Range

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412921.D Vial: 2
Acq On : 11 Jun 2016 13:34 Operator: FJB
Sample : WG572347-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	51.7963	-3.6	98	0.00
56	T	Dimethyl Disulfide	50.0000	48.0310	3.9	94	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	103	0.00
58	S	Toluene-d8	25.0000	26.1916	-4.8	106	0.00
59	C	Toluene	50.0000	50.4495	-0.9	104	0.00
60	T	Ethyl Methacrylate	50.0000	43.6065	12.8	85	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	49.9142	0.2	97	0.00
63	T	1,1,2-Trichloroethane	50.0000	45.9107	8.2	93	0.00
64	T	2-Hexanone	50.0000	40.4931	19.0	82	0.00
65	T	1,3-Dichloropropane	50.0000	46.7948	6.4	93	0.00
66	T	Tetrachloroethene	50.0000	53.5643	-7.1	113	0.00
67	T	Dibromochloromethane	50.0000	49.6754	0.6	99	0.00
68	T	1,2-Dibromoethane	50.0000	47.0072	6.0	93	0.00
69	T	1-Chlorohexane	50.0000	48.9870	2.0	103	0.00
70	P	Chlorobenzene	50.0000	49.7395	0.5	104	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	51.3284	-2.7	104	0.00
72	C	Ethylbenzene	50.0000	50.0093	-0.0	106	0.00
73	T	m-,p-Xylene	100.0000	102.7868	-2.8	107	0.00
74	T	o-Xylene	50.0000	51.1264	-2.3	105	0.00
75	T	Styrene	50.0000	51.9183	-3.8	103	0.00
76	P	Bromoform	50.0000	50.2711	-0.5	100	0.00
77	T	Isopropylbenzene	50.0000	53.5594	-7.1	108	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	108	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	40.5869	18.8	87	0.00
80	S	p-Bromofluorobenzene	25.0000	24.4591	2.2	108	0.00
81	T	1,2,3-Trichloropropane	50.0000	43.4753	13.0	94	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	41.6215	16.8	94	0.00
83	T	n-Propylbenzene	50.0000	50.0212	-0.0	107	0.00
84	T	Bromobenzene	50.0000	48.4494	3.1	106	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	51.0692	-2.1	109	0.00
86	T	2-Chlorotoluene	50.0000	48.7547	2.5	103	0.00
87	T	4-Chlorotoluene	50.0000	48.6650	2.7	112	0.00
88	T	a-Methylstyrene	50.0000	45.9023	8.2	100	0.00
89	T	tert-Butylbenzene	50.0000	49.3705	1.3	112	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	50.2251	-0.5	109	0.00
91	T	sec-Butylbenzene	50.0000	50.5038	-1.0	110	0.00
92	T	p-Isopropyltoluene	50.0000	50.9371	-1.9	112	0.00
93	T	1,3-Dichlorobenzene	50.0000	49.2112	1.6	108	0.00
94	T	1,4-Dichlorobenzene	50.0000	47.6025	4.8	106	0.00
95	T	n-Butylbenzene	50.0000	50.2872	-0.6	110	0.00
96	T	1,2-Dichlorobenzene	50.0000	46.8302	6.3	105	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	43.0779	13.8	91	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	45.6941	8.6	101	0.00
99	T	Hexachlorobutadiene	50.0000	51.8824	-3.8	118	0.00
100	T	Naphthalene	50.0000	39.9424	20.1	85	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	41.2380	17.5	94	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412921.D 8260WT.M Mon Jun 13 08:52:20 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\2\DATA\051316\8M412218.D          Vial: 3
Acq On    : 13 May 2016  12:36                       Operator: TMB
Sample    : WG568561-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD76034                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
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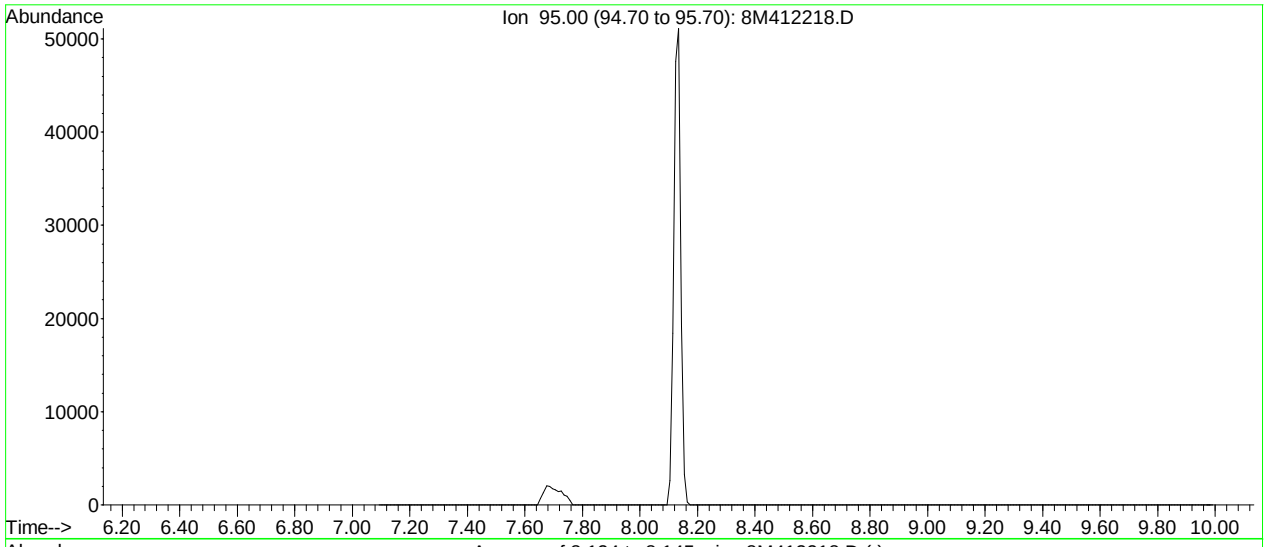

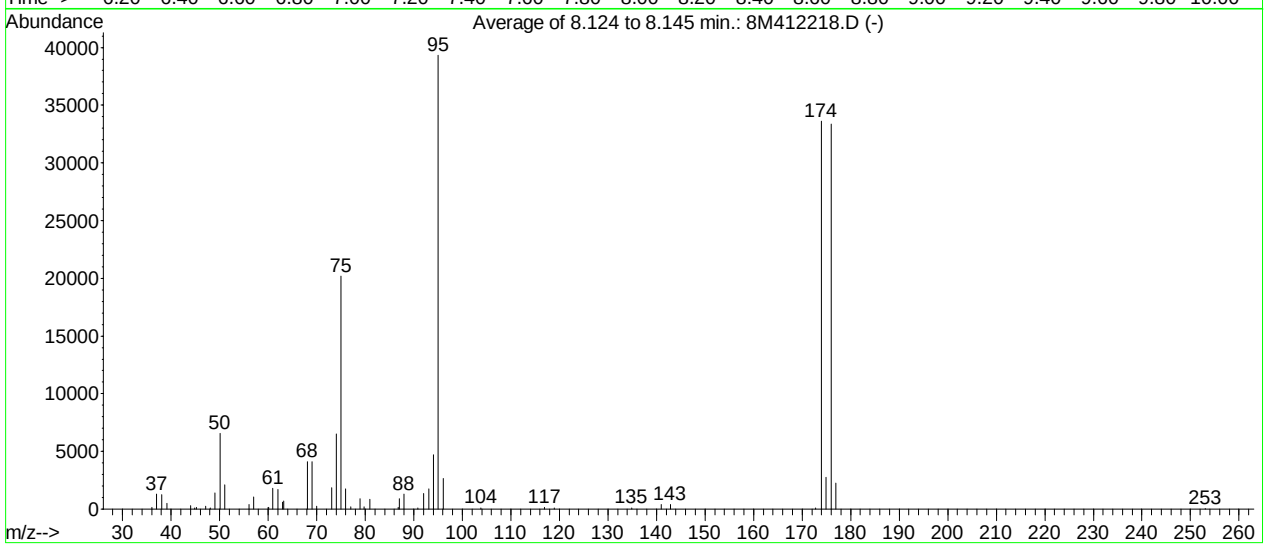

AutoFind: Scans 102, 103, 104; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.7	6575	PASS
75	95	30	60	51.3	20171	PASS
95	95	100	100	100.0	39312	PASS
96	95	5	9	6.7	2649	PASS
173	174	0.00	2	0.4	122	PASS
174	95	50	100	85.5	33616	PASS
175	174	5	9	8.2	2746	PASS
176	174	95	101	99.2	33360	PASS
177	176	5	9	6.8	2267	PASS

8M412218.D BFB.M Fri May 13 12:47:24 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412920.D Vial: 1
Acq On    : 11 Jun 2016  13:08                        Operator: FJB
Sample    : WG572347-01 BFB 50ng 8260                 Inst    : HPMS8
Misc      : 1,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title     : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
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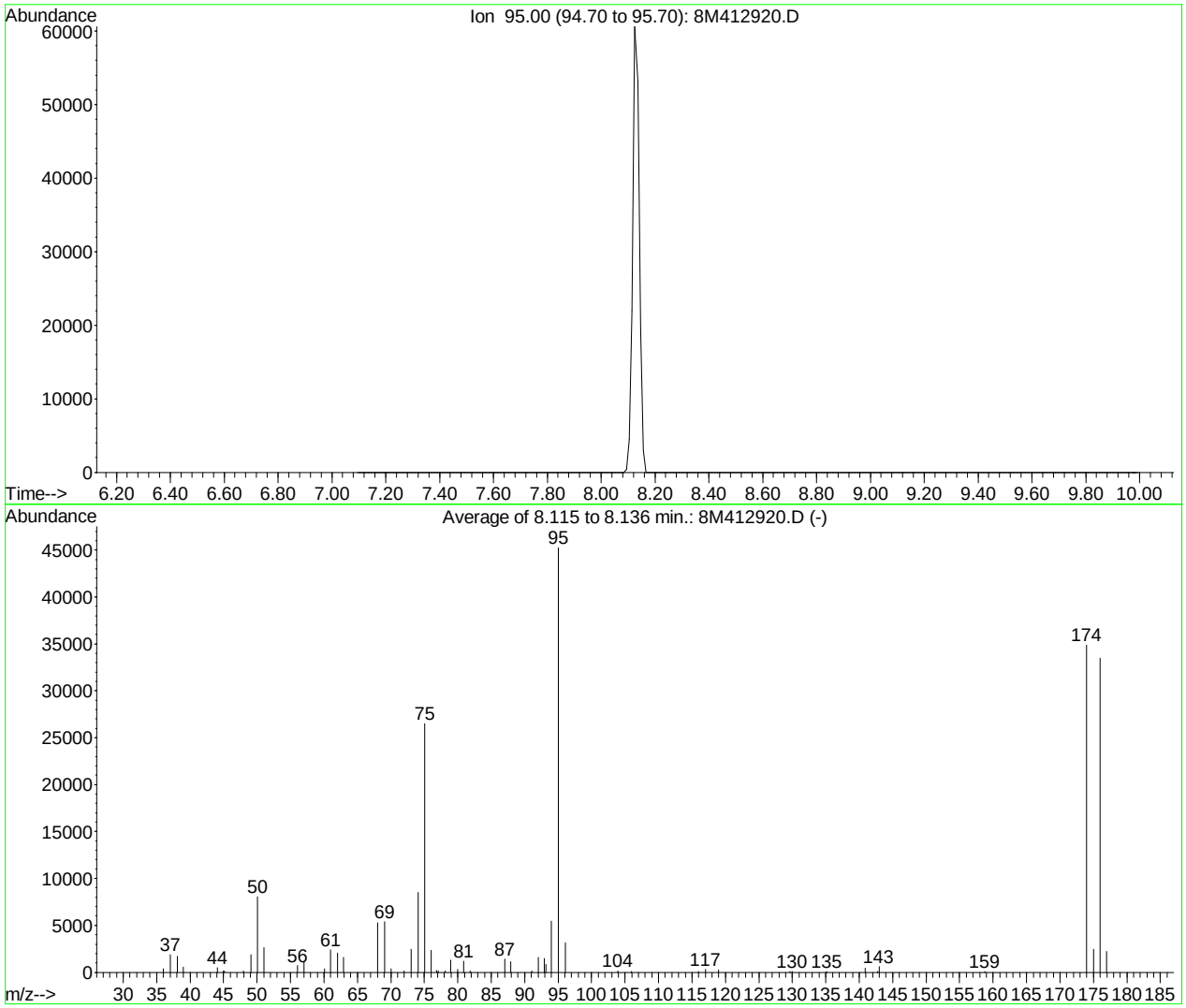

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 96

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.8	8071	PASS
75	95	30	60	58.5	26476	PASS
95	95	100	100	100.0	45256	PASS
96	95	5	9	6.9	3142	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	77.0	34867	PASS
175	174	5	9	7.0	2439	PASS
176	174	95	101	96.0	33456	PASS
177	176	5	9	6.6	2202	PASS

8M412920.D 8260WT.M Mon Jun 13 08:52:07 2016

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412923.D Vial: 4
Acq On : 11 Jun 2016 14:32 Operator: FJB
Sample : WG572348-01 VBLK0611 BLANK 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 08:48:07 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	717003	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	533285	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	292600	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	215990	28.0376 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 112.16%		
43) 1,2-Dichloroethane-d4	10.31	65	238635	28.8899 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 115.56%		
58) Toluene-d8	12.68	98	735549	26.3546 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.40%		
80) p-Bromofluorobenzene	16.07	95	303859	25.0797 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.32%		

Target Compounds					Qvalue
19) Methylene Chloride	7.25	84	5244	0.7107 ug/L	95
36) Tetrahydrofuran	9.63	42	482	0.6175 ug/L #	24

(#) = qualifier out of range (m) = manual integration
8M412923.D 8260WT.M Mon Jun 13 08:48:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412923.D Vial: 4
Acq On : 11 Jun 2016 14:32 Operator: FJB
Sample : WG572348-01 VBLK0611 BLANK 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 8:48 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

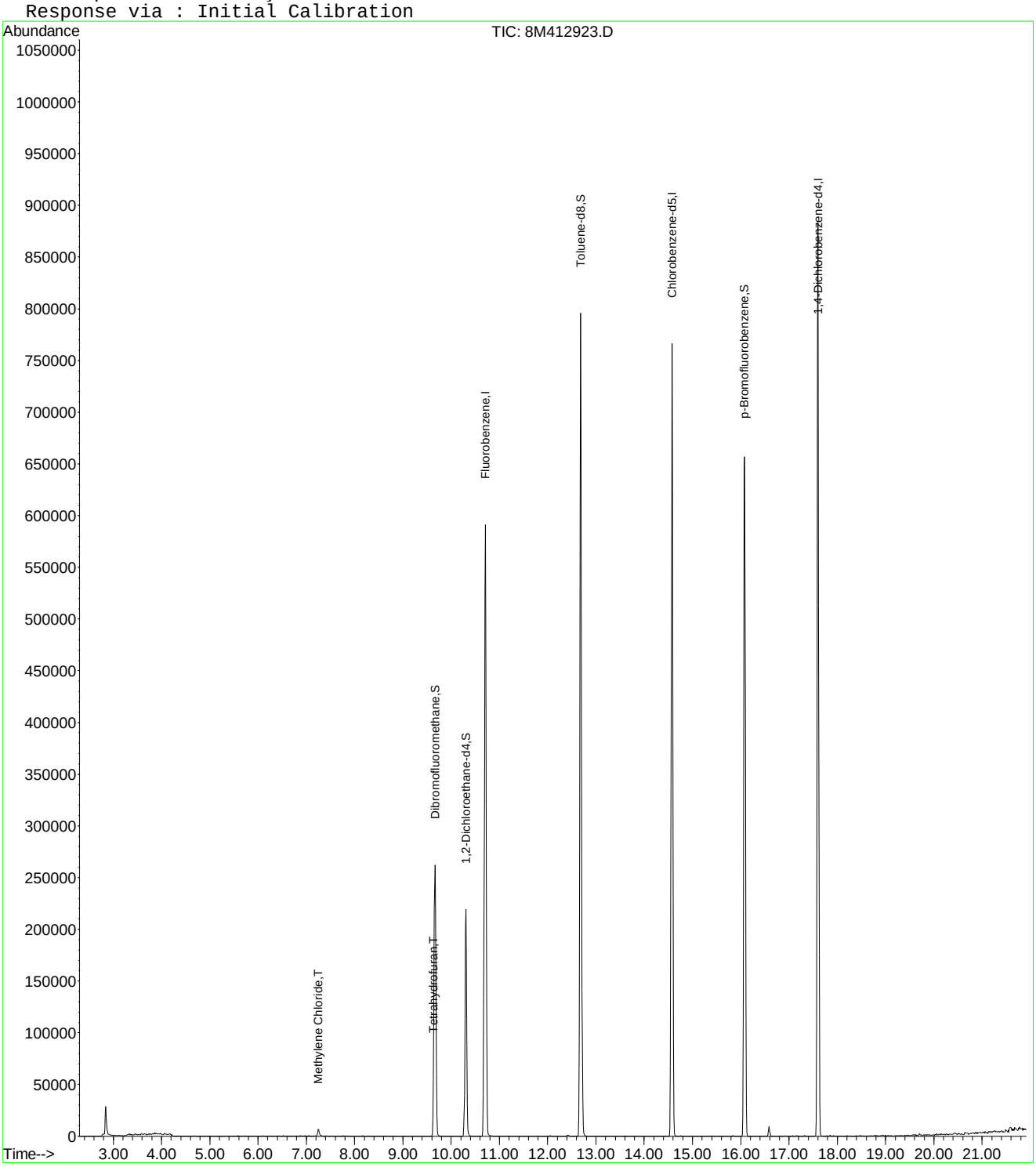

8M412923.D 8260WT.M Mon Jun 13 08:48:10 2016 Page 2

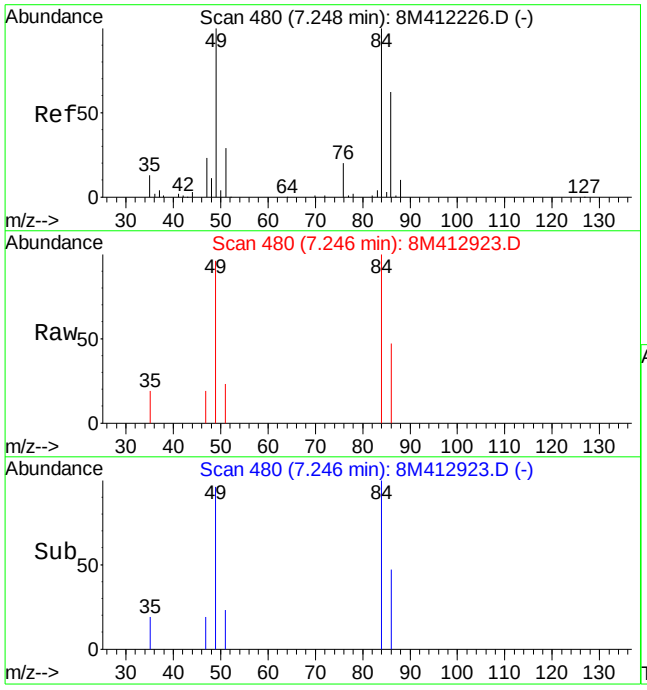

#19
Methylene Chloride
Concen: 0.71 ug/L
RT: 7.25 min Scan# 480
Delta R.T. -0.00 min
Lab File: 8M412923.D
Acq: 11 Jun 2016 14:32

Tgt Ion: 84 Resp: 5244

Ion	Ratio	Lower	Upper
84	100		
49	95.9	60.5	141.3

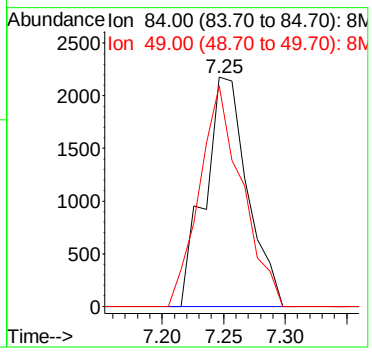

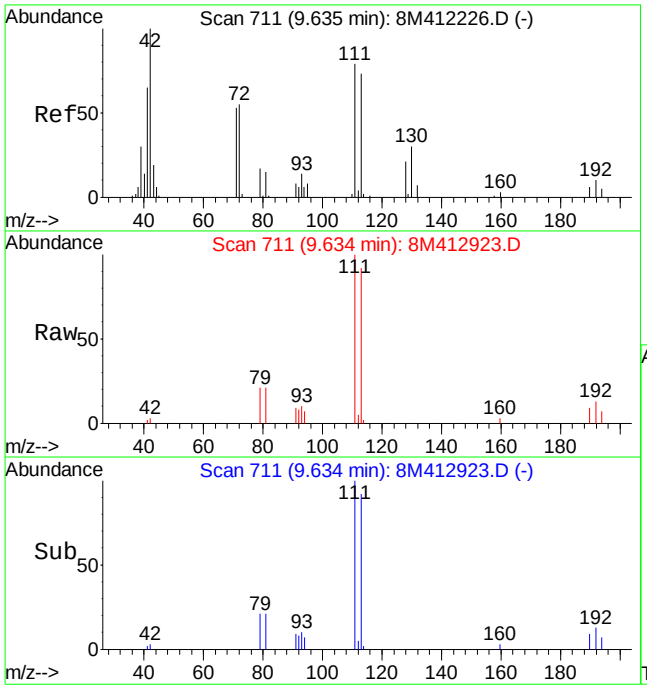

#36
Tetrahydrofuran
Concen: 0.62 ug/L
RT: 9.63 min Scan# 711
Delta R.T. -0.00 min
Lab File: 8M412923.D
Acq: 11 Jun 2016 14:32

Tgt Ion: 42 Resp: 482

Ion	Ratio	Lower	Upper
42	100		
72	0.0	33.8	78.8#
71	0.0	32.0	74.8#

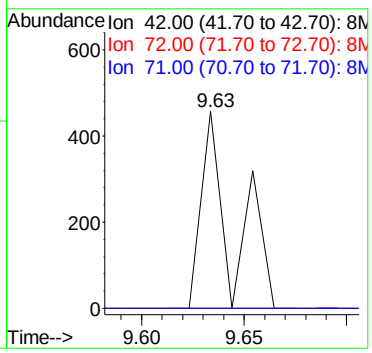

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412924.D Vial: 5
Acq On : 11 Jun 2016 15:00 Operator: FJB
Sample : WG572348-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 08:30:40 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	722554	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	536970	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	300500	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	208874	26.9056 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.64%		
43) 1,2-Dichloroethane-d4	10.30	65	233627	28.0663 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.28%		
58) Toluene-d8	12.68	98	736580	26.2105 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.84%		
80) p-Bromofluorobenzene	16.08	95	309769	24.8954 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.60%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	317051	26.1716 ug/L	99
3) Chloromethane	3.62	50	146042	20.6525 ug/L	100
4) Vinyl Chloride	3.84	62	209953	25.0249 ug/L	99
5) 1,3-Butadiene	3.89	54	58985	8.3836 ug/L	96
6) Bromomethane	4.73	94	74362	15.4056 ug/L	98
7) Chloroethane	4.89	64	104778	22.6967 ug/L	98
8) Trichlorofluoromethane	5.37	101	364574	23.3537 ug/L	100
9) Diethyl ether	5.90	59	171354	45.9781 ug/L	97
10) Isoprene	5.93	67	224501	23.6815 ug/L	98
11) Acrolein	6.14	56	19715	59.0828 ug/L	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	166906	22.7453 ug/L	96
13) Acetone	6.24	43	16507	20.3053 ug/L	92
14) 1,1-Dichloroethene	6.46	61	229178	19.6150 ug/L	98
15) Tert-Butyl Alcohol	6.57	59	40840	156.7674 ug/L	97
16) Dimethyl Sulfide	6.73	62	154843	37.0652 ug/L	100
17) Iodomethane	6.99	142	30383	11.7602 ug/L	94
18) Methyl acetate	7.00	43	41560	18.9128 ug/L	98
19) Methylene Chloride	7.26	84	144385	19.4187 ug/L	99
20) Carbon Disulfide	7.29	76	497894	20.3633 ug/L	100
21) Acrylonitrile	7.43	53	20125	19.0799 ug/L	96
22) Methyl Tert Butyl Ether	7.46	73	352036	21.8760 ug/L	100
23) trans-1,2-Dichloroethene	7.70	61	215962	20.1194 ug/L	97
24) n-Hexane	7.78	57	164799	20.6757 ug/L	98
25) Diisopropyl ether	8.12	45	1381117	82.5443 ug/L	96
26) Vinyl Acetate	8.30	43	134712	17.5848 ug/L	98
27) 1,1-Dichloroethane	8.32	63	265378	19.9075 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	1532763	85.5013 ug/L	98
29) 2-Butanone	8.88	43	21885	18.3229 ug/L	93
30) Propionitrile	8.99	54	30982	89.0108 ug/L	99
31) 2,2-Dichloropropane	9.11	77	334370	23.8019 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	169003	20.3766 ug/L	98
33) Chloroform	9.37	83	330468	20.9956 ug/L	98
34) 1-Bromopropane	9.51	122	34117	28.7177 ug/L	94
35) Bromochloromethane	9.60	130	86412	20.3173 ug/L	96
36) Tetrahydrofuran	9.63	42	55385	70.4041 ug/L	95
38) 1,1,1-Trichloroethane	9.90	97	338939	22.6700 ug/L	100
39) Cyclohexane	9.94	56	213799	20.6549 ug/L	96
40) 1,1-Dichloropropene	10.10	75	234287	20.5588 ug/L	100
41) Tert-Amyl-Methyl ether	10.21	73	1635665	100.4585 ug/L	99
42) Carbon Tetrachloride	10.25	117	306804	23.1091 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412924.D 8260WT.M Mon Jun 13 08:30:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412924.D Vial: 5
Acq On : 11 Jun 2016 15:00 Operator: FJB
Sample : WG572348-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 08:30:40 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	230207	22.7237 ug/L		97
46)	Benzene	10.46	78	610201	20.5589 ug/L		100
47)	Trichloroethene	11.21	130	171102	21.6143 ug/L		98
48)	Methylcyclohexane	11.30	83	260942	21.6980 ug/L		100
49)	1,2-Dichloropropane	11.43	63	130480	19.7481 ug/L		90
50)	Bromodichloromethane	11.73	83	253683	21.8451 ug/L		100
51)	1,4-Dioxane	11.72	88	2818	84.9049 ug/L		86
52)	Dibromomethane	11.81	93	73955	18.9087 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.02	63	55019	19.3738 ug/L		98
54)	4-Methyl-2-Pentanone	12.06	58	21013	18.1140 ug/L		93
55)	cis-1,3-Dichloropropene	12.36	75	266134	22.5151 ug/L		100
56)	Dimethyl Disulfide	12.63	79	132718	21.0367 ug/L		92
59)	Toluene	12.78	91	656829	19.7033 ug/L		99
60)	Ethyl Methacrylate	12.88	69	128874	20.1301 ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	224261	20.0744 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	99246	18.8670 ug/L		99
64)	2-Hexanone	13.13	58	18887	17.0860 ug/L	#	96
65)	1,3-Dichloropropane	13.48	76	193420	20.6525 ug/L		100
66)	Tetrachloroethene	13.60	164	146218	20.4724 ug/L		99
67)	Dibromochloromethane	13.87	129	151926	19.7801 ug/L		99
68)	1,2-Dibromoethane	14.12	107	103515	19.7450 ug/L		96
69)	1-Chlorohexane	14.21	91	235888	20.7295 ug/L		100
70)	Chlorobenzene	14.62	112	457782	20.3645 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.66	131	180241	20.6963 ug/L		99
72)	Ethylbenzene	14.66	106	242005	19.6766 ug/L		100
73)	m-,p-Xylene	14.75	106	597164	41.3944 ug/L		97
74)	o-Xylene	15.31	106	297411	21.0869 ug/L		99
75)	Styrene	15.35	104	473460	20.4669 ug/L		96
76)	Bromoform	15.83	173	87412	19.1872 ug/L		99
77)	Isopropylbenzene	15.73	105	807777	21.5590 ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	102680	17.0227 ug/L		99
81)	1,2,3-Trichloropropane	16.13	110	34201	18.4127 ug/L		76
82)	trans-1,4-Dichloro-2-Buten	16.18	53	29302	15.9008 ug/L		88
83)	n-Propylbenzene	16.24	91	972189	20.7372 ug/L		100
84)	Bromobenzene	16.37	156	186080	19.2970 ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	706189	20.6789 ug/L		99
86)	2-Chlorotoluene	16.51	91	662576	20.2428 ug/L		100
87)	4-Chlorotoluene	16.56	91	580327	19.6283 ug/L		100
88)	a-Methylstyrene	16.83	118	344906	21.2876 ug/L		100
89)	tert-Butylbenzene	16.89	134	133999	20.0567 ug/L		97
90)	1,2,4-Trimethylbenzene	16.94	105	700066	19.9361 ug/L		99
91)	sec-Butylbenzene	17.16	105	815053	20.2874 ug/L		100
92)	p-Isopropyltoluene	17.32	119	690944	20.2552 ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	363614	19.5829 ug/L		99
94)	1,4-Dichlorobenzene	17.64	146	375724	20.0710 ug/L		98
95)	n-Butylbenzene	17.85	91	654054	19.3947 ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	318381	19.2792 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	20169	16.6575 ug/L		92
98)	1,2,4-Trichlorobenzene	20.28	180	227353	18.4183 ug/L		99
99)	Hexachlorobutadiene	20.43	225	121152	21.0059 ug/L		98
100)	Naphthalene	20.65	128	278297	15.1747 ug/L		98
101)	1,2,3-Trichlorobenzene	20.95	180	176442	16.9428 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M412924.D 8260WT.M Mon Jun 13 08:30:43 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412924.D Vial: 5
Acq On : 11 Jun 2016 15:00 Operator: FJB
Sample : WG572348-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 8:30 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

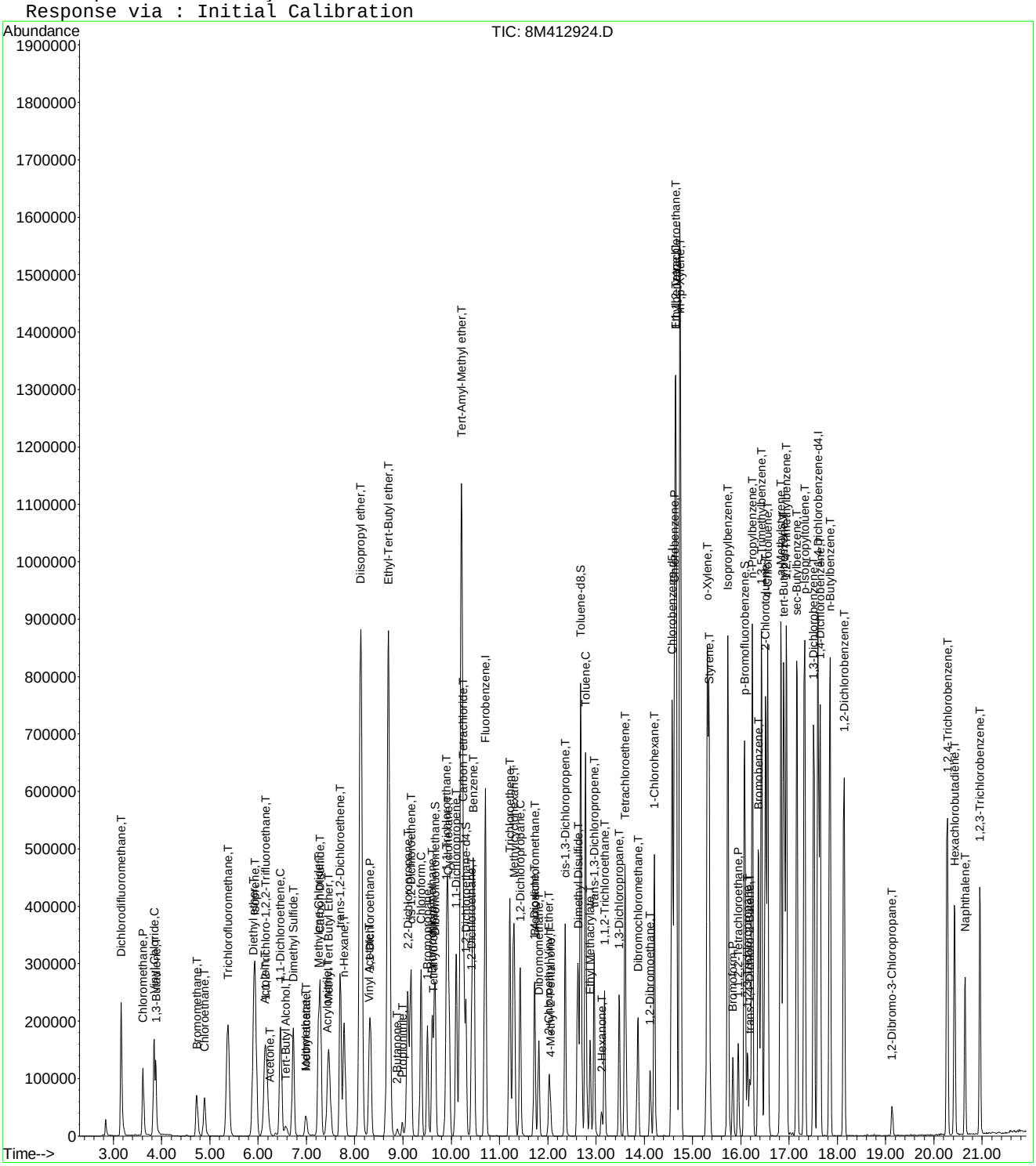

8M412924.D 8260WT.M Mon Jun 13 08:30:44 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412925.D Vial: 6
Acq On : 11 Jun 2016 15:29 Operator: FJB
Sample : WG572348-03 20ug/L LCS2 8260 Inst : HPMS8
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 08:30:45 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	748082	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	552978	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	313632	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	221583	27.5686 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.28%		
43) 1,2-Dichloroethane-d4	10.30	65	238822	27.7113 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 110.84%		
58) Toluene-d8	12.68	98	756269	26.1320 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.52%		
80) p-Bromofluorobenzene	16.08	95	321075	24.7236 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.88%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	318030	25.3566 ug/L	100
3) Chloromethane	3.62	50	151799	20.7341 ug/L	100
4) Vinyl Chloride	3.84	62	214813	24.7304 ug/L	97
5) 1,3-Butadiene	3.89	54	63285	8.6878 ug/L	99
6) Bromomethane	4.73	94	72954	14.6312 ug/L	100
7) Chloroethane	4.89	64	100451	21.0168 ug/L	98
8) Trichlorofluoromethane	5.37	101	363892	22.5145 ug/L	99
9) Diethyl ether	5.90	59	176736	45.8039 ug/L	98
10) Isoprene	5.94	67	221372	22.5546 ug/L	98
11) Acrolein	6.14	56	23793	68.8707 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	163002	21.4552 ug/L	94
13) Acetone	6.24	43	18053	21.4492 ug/L	94
14) 1,1-Dichloroethene	6.47	61	230284	19.0371 ug/L	99
15) Tert-Butyl Alcohol	6.57	59	54049	200.3913 ug/L	98
16) Dimethyl Sulfide	6.73	62	159097	36.7839 ug/L	98
17) Iodomethane	6.99	142	38947	13.8953 ug/L	98
18) Methyl acetate	7.00	43	44884	19.7285 ug/L	98
19) Methylene Chloride	7.25	84	147046	19.1017 ug/L	99
20) Carbon Disulfide	7.29	76	494338	19.5280 ug/L	99
21) Acrylonitrile	7.43	53	21886	20.0413 ug/L	98
22) Methyl Tert Butyl Ether	7.46	73	367911	22.0823 ug/L	100
23) trans-1,2-Dichloroethene	7.70	61	220314	19.8245 ug/L	100
24) n-Hexane	7.78	57	166178	20.1373 ug/L	97
25) Diisopropyl ether	8.12	45	1440803	83.1730 ug/L	97
26) Vinyl Acetate	8.30	43	138362	17.4449 ug/L	100
27) 1,1-Dichloroethane	8.33	63	265287	19.2216 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	1594083	85.8874 ug/L	98
29) 2-Butanone	8.89	43	24225	19.5900 ug/L	95
30) Propionitrile	8.99	54	33220	92.1837 ug/L	97
31) 2,2-Dichloropropane	9.09	77	328166	22.5631 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	174656	20.3395 ug/L	99
33) Chloroform	9.37	83	337779	20.7277 ug/L	99
34) 1-Bromopropane	9.52	122	35374	28.7597 ug/L	96
35) Bromochloromethane	9.61	130	89467	20.3178 ug/L	93
36) Tetrahydrofuran	9.63	42	60803	74.6538 ug/L	95
38) 1,1,1-Trichloroethane	9.90	97	338886	21.8930 ug/L	100
39) Cyclohexane	9.94	56	212395	19.8190 ug/L	96
40) 1,1-Dichloropropene	10.11	75	236953	20.0832 ug/L	100
41) Tert-Amyl-Methyl ether	10.21	73	1712436	101.5845 ug/L	100
42) Carbon Tetrachloride	10.25	117	300947	21.8944 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412925.D Vial: 6
Acq On : 11 Jun 2016 15:29 Operator: FJB
Sample : WG572348-03 20ug/L LCS2 8260 Inst : HPMS8
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 08:30:45 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.42	62	228841	21.8180 ug/L	98
46)	Benzene	10.46	78	616864	20.0742 ug/L	99
47)	Trichloroethene	11.21	130	178098	21.7303 ug/L	97
48)	Methylcyclohexane	11.30	83	265783	21.3464 ug/L	99
49)	1,2-Dichloropropane	11.43	63	138345	20.2239 ug/L	94
50)	Bromodichloromethane	11.73	83	255727	21.2696 ug/L	99
51)	1,4-Dioxane	11.72	88	6120	178.1001 ug/L	99
52)	Dibromomethane	11.81	93	76664	18.9324 ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.02	63	55264	18.7961 ug/L	93
54)	4-Methyl-2-Pentanone	12.06	58	22531	18.7598 ug/L	90
55)	cis-1,3-Dichloropropene	12.36	75	272379	22.2571 ug/L	98
56)	Dimethyl Disulfide	12.63	79	135457	20.7381 ug/L	92
59)	Toluene	12.78	91	667710	19.4499 ug/L	99
60)	Ethyl Methacrylate	12.88	69	133869	20.3050 ug/L	100
62)	trans-1,3-Dichloropropene	12.96	75	229695	19.9656 ug/L	98
63)	1,1,2-Trichloroethane	13.18	97	101261	18.6928 ug/L	97
64)	2-Hexanone	13.11	58	19855	17.4417 ug/L #	93
65)	1,3-Dichloropropane	13.48	76	198493	20.5807 ug/L	99
66)	Tetrachloroethene	13.60	164	146308	19.8920 ug/L	97
67)	Dibromochloromethane	13.87	129	156950	19.8427 ug/L	100
68)	1,2-Dibromoethane	14.12	107	103182	19.1117 ug/L	99
69)	1-Chlorohexane	14.21	91	229945	19.6223 ug/L	99
70)	Chlorobenzene	14.62	112	459892	19.8661 ug/L	99
71)	1,1,1,2-Tetrachloroethane	14.65	131	181401	20.2265 ug/L	100
72)	Ethylbenzene	14.65	106	240593	18.9955 ug/L	97
73)	m-,p-Xylene	14.75	106	598449	40.2826 ug/L	97
74)	o-Xylene	15.31	106	293638	20.2166 ug/L	97
75)	Styrene	15.35	104	479445	20.1257 ug/L	97
76)	Bromoform	15.83	173	89915	19.1653 ug/L	98
77)	Isopropylbenzene	15.73	105	815929	21.1462 ug/L	100
79)	1,1,2,2-Tetrachloroethane	15.95	83	110498	17.5518 ug/L	98
81)	1,2,3-Trichloropropane	16.14	110	36661	18.9107 ug/L	75
82)	trans-1,4-Dichloro-2-Buten	16.18	53	32382	16.8002 ug/L	83
83)	n-Propylbenzene	16.24	91	975045	19.9273 ug/L	100
84)	Bromobenzene	16.37	156	187681	18.6481 ug/L	96
85)	1,3,5-Trimethylbenzene	16.42	105	700357	19.6495 ug/L	99
86)	2-Chlorotoluene	16.51	91	669014	19.5837 ug/L	98
87)	4-Chlorotoluene	16.56	91	606358	19.6500 ug/L	100
88)	a-Methylstyrene	16.84	118	342024	20.2258 ug/L	100
89)	tert-Butylbenzene	16.90	134	136408	19.5624 ug/L	99
90)	1,2,4-Trimethylbenzene	16.94	105	703396	19.1922 ug/L	100
91)	sec-Butylbenzene	17.17	105	822250	19.6096 ug/L	99
92)	p-Isopropyltoluene	17.32	119	701167	19.6942 ug/L	99
93)	1,3-Dichlorobenzene	17.51	146	379754	19.5958 ug/L	100
94)	1,4-Dichlorobenzene	17.64	146	380225	19.4610 ug/L	99
95)	n-Butylbenzene	17.85	91	668937	19.0055 ug/L	100
96)	1,2-Dichlorobenzene	18.14	146	328935	19.0843 ug/L	100
97)	1,2-Dibromo-3-Chloropropan	19.13	75	22150	17.5276 ug/L	92
98)	1,2,4-Trichlorobenzene	20.28	180	234168	18.1761 ug/L	98
99)	Hexachlorobutadiene	20.43	225	121384	20.1649 ug/L	98
100)	Naphthalene	20.65	128	301128	15.7321 ug/L	99
101)	1,2,3-Trichlorobenzene	20.96	180	183976	16.9265 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412925.D 8260WT.M Mon Jun 13 08:30:49 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412925.D Vial: 6
Acq On : 11 Jun 2016 15:29 Operator: FJB
Sample : WG572348-03 20ug/L LCS2 8260 Inst : HPMS8
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 8:30 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

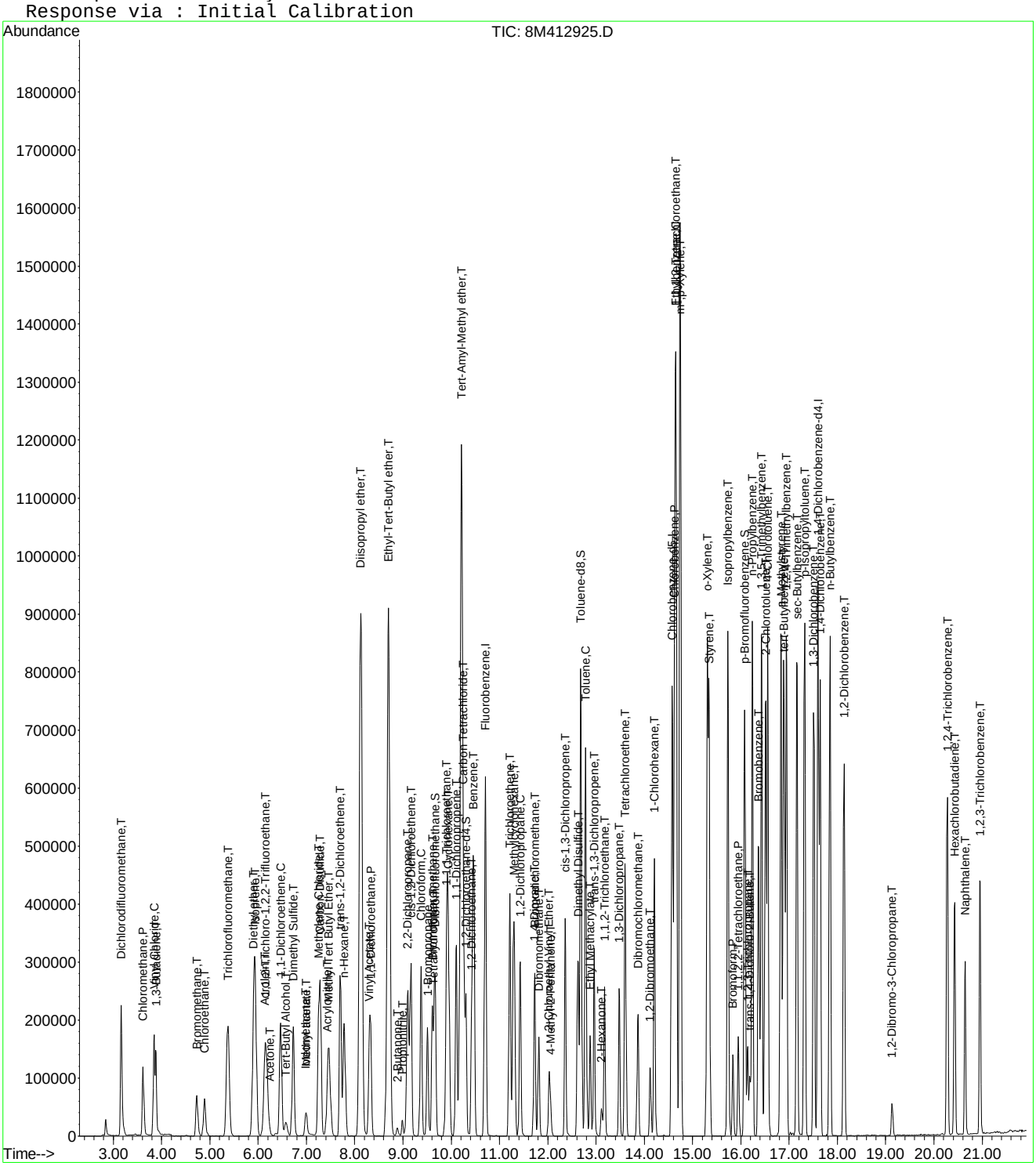

2.2 Semivolatiles Data

2.2.1 Semivolatiles GC/MS Data (Dioxane)

2.2.1.1 Summary Data

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW15T-060716	**Prep Method:**	3520C	**Prep Date:**	06/11/2016 13:19
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572361	**Analyst:**	MES	**Run Date:**	06/13/2016 11:04
Collect Date:	06/07/2016 13:15	**Dilution:**	1	**File ID:**	15M18369
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	52.6	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW15B-060716	**Prep Method:**	3520C	**Prep Date:**	06/11/2016 13:19
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572361	**Analyst:**	MES	**Run Date:**	06/13/2016 11:27
Collect Date:	06/07/2016 13:55	**Dilution:**	1	**File ID:**	15M18370
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	35.3	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	AWD4T-060716	**Prep Method:**	3520C	**Prep Date:**	06/11/2016 13:19
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572361	**Analyst:**	MES	**Run Date:**	06/13/2016 11:50
Collect Date:	06/07/2016 15:00	**Dilution:**	1	**File ID:**	15M18371
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	75.4	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	AWD4B-060716	**Prep Method:**	3520C	**Prep Date:**	06/11/2016 13:19
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572361	**Analyst:**	MES	**Run Date:**	06/13/2016 12:12
Collect Date:	06/07/2016 15:30	**Dilution:**	1	**File ID:**	15M18372
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	50.8	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.2.1.2 QC Summary Data

Example 8270 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:

	Example
Ax = Area of the characteristic ion for the compound being measured:	1261197
Cis = Concentration of the specific internal standard (ug/mL)	40
Ais = Area of the characteristic ion of the specific internal standard	608044
Cx = Concentration of the compound in the standard being measured (ug/mL)	50
RF = Calculated Response Factor	**1.65935**

2.0 Calculating the concentration (C) of a compound in water using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Vi)]

where:

	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Vi = Initial volume of sample extracted from prep log (mL)	1021
Cx = Concentration of the compound in the sample being measured (ug/mL)	0.016947
Cx = Concentration of the compound in the sample being measured (ug/L)	**16.947**

3.0 Calculating the concentration (C) of a compound in soil using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Wi)]

where:

	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Wi = Initial weight of sample extracted (g) from prep log	30
Cx = Concentration of the compound in the sample being measured (ug/g)	0.576763
Cx = Concentration of the compound in the sample being measured (ug/kg)	**576.7627**

Dry weight correction:

Percent solids (PCT_S)	50
Cd = (Cx) (100)/PCT_S	**1153.525** ug/kg

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve plot

b = intercept from curve plot

Step 2: Calculate y from Quantitation Report

y = 16790/784838 = 0.02139

Step 3: Solve for x

x = (y - b)/m = [(0.02139 -(- 0.0435)]/ 0.0783 = 0.829

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.829) = 20.72 ug/L

Example Spreadsheet Calculation:

Slope from curve, m:	0.0783	
Intercept from curve, b:	-0.0435	
Area of analyte, Ax:	16790	
Area of Internal Standard , Ais:	784484	
Concentration of IS, Cis	25.00	ug/L
Response Ratio (y) :	0.021403	
Amount Ratio:	0.828897	
Concentration (Cx):	20.72241	ug/L

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**0.0259**	
Value of B from plot:	**0.0596**	
Value of C from plot:	**-0.0165**	
Area of analyte from quantitation report:	**203233**	
Area of IS from quantiation report:	**1425653**	
Response ratio, y:	**0.142554**	
C - y:	**-0.15905**	
Root 1 - Computed amount ratio , X1:	**-3.88278**	
Root 2 - Computed amount ratio , X2:	**1.581623**	use this solution
Concentration of IS, Cis:	**40.00**	
Concentration of analyte, Cx:	**63.26**	ug/L

Microbac Laboratories Inc.
Continuous Sample Extract Log

Workgroup: WG571956
Analyst: CPD
Spike Analyst: CPD
Method: 3520C
Run Date: 06/11/2016 13:19
SOP: EXB01 Revison 20
Spike Witness: EMW
Surr Solution: STD74051

TIME ON: 16:35 OFF: 10:50 ON: _____ OFF: _____

CH2CL2 Lot #: COA18968
sodium sulfate Lot #: COA18814
1:1 H2SO4 Lot #: RGT36755

	SAMPLE #	Type	Reference	Prod	pH	Init Amnt	Surr Amnt	Spike Amnt	Spike Sol	Final Vol	Color
1	L16051582-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
2	L16060302-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
3	L16060411-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
4	L16060411-02	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
5	L16060411-03	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
6	L16060411-04	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
7	L16060414-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Colored
8	L16060414-02	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Colored
9	L16060414-03	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
10	L16060414-04	SAMP		827-DIOXANE	<2	910 mL	.05 mL			1 mL	Transparent
11	WG571956-01	BLANK		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
12	WG571956-02	LCS		827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD66388	1 mL	Transparent
13	WG571956-03	LCS2		827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD66388	1 mL	Transparent

L16051582-01	RE-EXT OUT OF HOLD

Analyst: Chelsick Davis

Reviewer: Chris Hill

EXTRACT - Modified 01/23/2009
PDF ID: 4803800
Report generated: 06/11/2016 13:21

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 061016
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG571947

Internal STD: STD75471 Surrogate STD: NA Calibration STD
CCV STD: STD74784 LCS STD: STD74214 MS/MSD STD:

Comments: L16051582-01, and L16060024-01,03,05 were already sent for re-extract due to QC contamination. L16060024s are being re-extracted as 827-SPE-DIOX only.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18332	BAKEOUT-IS CHECK	1	1		06/10/16 08:27
2	15M18333	BAKEOUT-IS CHECK	1	1		06/10/16 08:53
3	15M18334	WG571981-01 5PPM DFTPP STD	1	1	STD75016	06/10/16 09:13
4	15M18335	BAKEOUT-IS CHECK	1	1		06/10/16 09:31
5	15M18336	BAKEOUT-IS CHECK	1	1		06/10/16 09:53
6	15M18337	WG572230-01 5PPM DFTPP STD	1	1	STD75016	06/10/16 10:18
7	15M18338	WG572230-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 10:36
8	15M18339	WG572230-03 10 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 11:00
9	15M18340	WG572230-04 7.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 11:22
10	15M18341	WG572230-05 2.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 11:45
11	15M18342	WG572230-06 1 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 12:08
12	15M18343	WG572230-07 0.4 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 12:30
13	15M18344	WG572230-08 5PPM 1,4-DIOXANE ALT SRC	1	1	STD74214	06/10/16 12:52
14	15M18345	WG571410-01 BLANK 6/6	1	1		06/10/16 13:15
15	15M18346	WG571410-02 LCS 6/6	1	1		06/10/16 13:38
16	15M18347	WG571410-03 LCSDUP 6/6	1	1		06/10/16 14:01
17	15M18348	WG571404-01 BLANK 6/2	1	1		06/10/16 14:24
18	15M18349	WG571404-02 LCS 6/2	1	1		06/10/16 14:47
19	15M18350	WG571404-03 LCSDUP 6/2	1	1		06/10/16 15:09
20	15M18351	L16060067-01 827-DIOX	1	1		06/10/16 15:32
21	15M18352	L16051582-01 5X 827-DIOX	1	5		06/10/16 15:55
22	15M18353	L16060024-05 20X 827-DIOX	1	20		06/10/16 16:18
23	15M18354	L16060024-03 20X 827-DIOX	1	20		06/10/16 16:40
24	15M18355	L16060024-01 20,000X 827-DIOX	1	20000		06/10/16 17:03
25	15M18356	L16060067-01 2X 827-DIOX	1	2		06/10/16 17:26
26	15M18357	L16060024-03 100X 827-DIOX	1	100		06/10/16 17:49

Comments

Seq.	Rerun	Dil.	Reason	Analytes
3				
	DFTPP check after installing new source and retuning.			
17				
	WG571404-01 BLANK 6/2 dioxane hit above the RL.			

Page: 1 Approved: 13-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 061016

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG571947

Internal STD: STD75471 Surrogate STD: NA

CCV STD: STD74784 LCS STD: STD74214

Comments

Seq.	Rerun	Dil.	Reason	Analytes
18				
	WG571404-02 LCS 6/2 fails high.			
19				
	WG571404-03 LCSDUP 6/2 fails high.			
20	X	2	Over Calibration Range	
	L16060067-01			
23	X	100	Over Calibration Range	
	L16060024-03 20X DNR			

Page: 2 Approved: 13-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 061316
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG572361

Internal STD: STD75471 Surrogate STD: NA Calibration STD
CCV STD: STD74784 LCS STD: MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18361	BAKEOUT	1	1		06/13/16 08:10
2	15M18362	WG572383-01 5PPM DFTPP STD	1	1	STD75016	06/13/16 08:30
3	15M18363	WG572383-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/13/16 08:48
4	15M18364	WG571956-01 BLANK 6/11	1	1		06/13/16 09:11
5	15M18365	WG571956-02 LCS 6/11	1	1		06/13/16 09:34
6	15M18366	WG571956-03 LCSDUP 6/11	1	1		06/13/16 09:56
7	15M18367	L16051582-01 RE	1	1		06/13/16 10:19
8	15M18368	L16060302-01	1	1		06/13/16 10:42
9	15M18369	L16060411-01	1	1		06/13/16 11:04
10	15M18370	L16060411-02	1	1		06/13/16 11:27
11	15M18371	L16060411-03	1	1		06/13/16 11:50
12	15M18372	L16060411-04	1	1		06/13/16 12:12
13	15M18373	L16060414-01	1	1		06/13/16 12:35
14	15M18374	L16060414-02	1	1		06/13/16 12:58
15	15M18375	L16060414-03	1	1		06/13/16 13:20
16	15M18376	L16060414-04	1	1		06/13/16 13:43
17	15M18377	BAKEOUT	1	1		06/13/16 14:05
18	15M18378	L16051582-01 5X RE	1	5		06/13/16 14:28
19	15M18379	L16060302-01 5X	1	5		06/13/16 14:51
20	15M18380	L16060414-03 50X	1	50		06/13/16 15:14
21	15M18381	L16060414-04 50X	1	50		06/13/16 15:36
22	15M18382	L16060414-01 10X	1	10		06/13/16 15:59
23	15M18383	L16060414-02 10X	1	10		06/13/16 16:22
24	15M18384	L16060414-03 10X	1	10		06/13/16 16:44
25	15M18385	L16060414-04 10X	1	10		06/13/16 17:07
26	15M18386	BAKEOUT	1	1		06/13/16 17:29

Comments

Seq.	Rerun	Dil.	Reason	Analytes
7	X	5	Over Calibration Range	
	L16051582-01 RE			
8	X	5	Over Calibration Range	
	L16060302-01			

Page: 1 Approved: 16-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 061316

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG572361

Internal STD: STD75471 Surrogate STD: NA

CCV STD: STD74784 LCS STD:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
13				
	L16060414-01 surrogate recovery is high due to SMI.			
14				
	L16060414-02 surrogate recovery is high due to SMI.			
15	X	50	Over Calibration Range	
	L16060414-03			
16	X	50	Over Calibration Range	
	L16060414-04			
22				
	L16060414-01 10X DNR			
23				
	L16060414-02 10X DNR			
24				
	L16060414-03 10X DNR			
25				
	L16060414-04 10X DNR			

Page: 2 Approved: 16-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 10-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75640
Analytical Workgroups: L16051582, L16060024, L16060067

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 12-JUN-2016

Secondary Reviewer: 13-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-13-2016 08:34:44

Microbac Laboratories Inc.

Data Checklist

Date: 13-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75685
Analytical Workgroups: L160601582, L16060302, L16060411, L16060414

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer:
14-JUN-2016

Secondary Reviewer:
16-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-16-2016 09:47:19

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8270D

AAB#: WG572361

Login Number: L16060411

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW15T-060716	01	06/07/16					06/11/2016	4	7		06/13/16	1.9	40	
18CPTMW15B-060716	02	06/07/16					06/11/2016	4	7		06/13/16	1.9	40	
AWD4T-060716	03	06/07/16					06/11/2016	3.9	7		06/13/16	1.9	40	
AWD4B-060716	04	06/07/16					06/11/2016	3.9	7		06/13/16	2	40	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4807636
Report generated 06/14/2016 15:28

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060411
Instrument Id: HPMS15
Workgroup (AAB#): WG572361

Method: 827-DIOXANE
CAL ID: HPMS15-10-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1
L16060411-01	1.00	01	52.6
L16060411-02	1.00	01	35.3
L16060411-03	1.00	01	75.4
L16060411-04	1.00	01	50.8
WG571956-01	1.00	01	55.6
WG571956-02	1.00	01	54.8
WG571956-03	1.00	01	61.1

Surrogates	Surrogate Limits		
1 - 1,4-Dioxane-d8	20	-	129

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4807644
Report generated: 06/14/2016 15:28

METHOD BLANK SUMMARY

Login Number: L16060411
Blank File ID: 15M18364
Prep Date: 06/11/16 13:19
Analyzed Date: 06/13/16 09:11
Analyst: MES

Work Group: WG572361
Blank Sample ID: WG571956-01
Instrument ID: HPMS15
Method: 8270D

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG571956-02	15M18365	06/13/16 09:34	01
LCS2	WG571956-03	15M18366	06/13/16 09:56	01
18CPTMW15T-060716	L16060411-01	15M18369	06/13/16 11:04	01
18CPTMW15B-060716	L16060411-02	15M18370	06/13/16 11:27	01
AWD4T-060716	L16060411-03	15M18371	06/13/16 11:50	01
AWD4B-060716	L16060411-04	15M18372	06/13/16 12:12	01

Report Name: BLANK_SUMMARY
PDF File ID: 4811267
Report generated 06/17/2016 08:51

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060411 Prep Date: 06/11/16 13:19 Sample ID: WG571956-01
Instrument ID: HPMS15 Run Date: 06/13/16 09:11 Prep Method: 3520C
File ID: 15M18364 Analyst: MES Method: 8270D
Workgroup (AAB#): WG572361 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS15-10-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
1,4-Dioxane	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	55.6	20 - 129	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4807637
14-JUN-2016 15:28

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060411 Analyst: MES Prep Method: 3520C
Instrument ID: HPMS15 Matrix: Water Method: 8270D
Workgroup (AAB#): WG572361 Units: ug/L
QC Key: DOD4 Lot #: STD66388

Sample ID: WG571956-02 LCS File ID: 15M18365 Run Date: 06/13/2016 09:34
Sample ID: WG571956-03 LCS2 File ID: 15M18366 Run Date: 06/13/2016 09:56

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,4-Dioxane	5.00	2.63	52.6	5.00	2.97	59.4	12.0	30 - 104	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,4-Dioxane-d8	54.8	61.1	20 - 129	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4807638
Report generated: 06/14/2016 15:28

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16060411
Instrument: HPMS15
Analyst: MES
Workgroup: WG572230

Tune ID: WG572230-01
Run Date: 06/10/2016
Run Time: 10:18
File ID: 15M18337
Cal ID: HPMS15 - 10-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	39.5	52157	PASS
68.0	69.0	0	2.00	1.91	1026	PASS
69.0	198	0	100	40.8	53844	PASS
70.0	69.0	0	2.00	0.223	120	PASS
127	198	40.0	60.0	51.4	67853	PASS
197	198	0	1.00	0.383	505	PASS
198	198	100	100	100	131981	PASS
199	198	5.00	9.00	6.72	8869	PASS
275	198	10.0	30.0	26.4	34853	PASS
365	198	1.00	100	3.17	4186	PASS
441	443	0.0100	100	73.9	15632	PASS
442	198	40.0	100	83.4	110112	PASS
443	442	17.0	23.0	19.2	21163	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG572230-02	STD-CCV	01	06/10/2016 10:36	
WG572230-03	STD	01	06/10/2016 11:00	
WG572230-04	STD	01	06/10/2016 11:22	
WG572230-05	STD	01	06/10/2016 11:45	
WG572230-06	STD	01	06/10/2016 12:08	
WG572230-07	STD	01	06/10/2016 12:30	
WG572230-08	SSCV	01	06/10/2016 12:52	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4807641
Report generated 06/14/2016 15:28

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16060411
Instrument: HPMS15
Analyst: MES
Workgroup: WG572383

Tune ID: WG572383-01
Run Date: 06/13/2016
Run Time: 08:30
File ID: 15M18362
Cal ID: HPMS15 - 10-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	41.7	58608	PASS
68.0	69.0	0	2.00	1.47	891	PASS
69.0	198	0	100	43.0	60438	PASS
70.0	69.0	0	2.00	0	0	PASS
127	198	40.0	60.0	52.6	73908	PASS
197	198	0	1.00	0.289	406	PASS
198	198	100	100	100	140616	PASS
199	198	5.00	9.00	6.82	9594	PASS
275	198	10.0	30.0	24.7	34747	PASS
365	198	1.00	100	2.69	3776	PASS
441	443	0.0100	100	72.0	14703	PASS
442	198	40.0	100	75.2	105688	PASS
443	442	17.0	23.0	19.3	20429	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG572383-02	CCV	01	06/13/2016 08:48	
WG571956-01	BLANK	01	06/13/2016 09:11	
WG571956-02	LCS	01	06/13/2016 09:34	
WG571956-03	LCS2	01	06/13/2016 09:56	
L16060411-01	18CPTMW15T-060716	01	06/13/2016 11:04	
L16060411-02	18CPTMW15B-060716	01	06/13/2016 11:27	
L16060411-03	AWD4T-060716	01	06/13/2016 11:50	
L16060411-04	AWD4B-060716	01	06/13/2016 12:12	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4807641
Report generated 06/14/2016 15:28

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060411
Analytical Method: 8270D
ICAL Workgroup: WG572230

Instrument ID: HPMS15
Initial Calibration Date: 10-JUN-16 12:30
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
1,4-Dioxane		0.3253	2.74		

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4807639
Report generated 06/14/2016 15:28

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060411

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 10-JUN-16 12:30

Column ID: F

Analyte	WG572230-02			WG572230-03			WG572230-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	5.00	107215.000	0.3234	10.0	192761.000	0.3420	7.50	146003.000	0.3236

INT_CAL - Modified 03/06/2008
PDF File ID: 4807639
Report generated 06/14/2016 15:28

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060411

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 10-JUN-16 12:30

Column ID: F

Analyte	WG572230-05			WG572230-06			WG572230-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	2.50	36488.0000	0.3190	1.00	18621.0000	0.3169	0.400	6733.00000	0.3266

INT_CAL - Modified 03/06/2008
PDF File ID: 4807639
Report generated 06/14/2016 15:28

Calibration Table Report
Method: DIOXANE_D8.M
Title: OVD MSS01 SIM 1,4-dioxane ICAL 061016
Last Calibration: Fri Jun 10 12:46:00 2016
Curve:WG572230
Calibration Files

Compound	10 15M18339.D	7.5 15M18340.D	5 15M18338.D	2.5 15M18341.D	1 15M18342.D	0.4 15M18343.D	Avg	%RSD	Linear
1,4-Dichlorobenzene-d4	ISTD								
1,4-Dioxane	0.342	0.324	0.324	0.319	0.317	0.327	0.325	2.735	
1,4-Dioxane-d8	0.440	0.415	0.417	0.411	0.409		0.419	2.988	
Nitrobenzene-d5	1.115	1.034	0.970	0.852	0.755	0.697	0.904	18.064	0.994
2-Fluorobiphenyl	2.685	2.595	2.549	2.638	2.570	2.639	2.613	1.934	
p-Terphenyl-d14	2.815	2.671	2.579	2.506	2.382	2.421	2.562	6.338	

Sun Jun 12 19:13:55 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060411 Run Date: 06/10/2016 Sample ID: WG572230-08
Instrument ID: HPMS15 Run Time: 12:52 Method: 8270D
File ID: 15M18344 Analyst: MES QC Key: DOD4
ICal Workgroup: WG572230 Cal ID: HPMS15 - 10-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
1,4-Dioxane		5000	5110	ug/L	0.333	2.30	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4807640
Report generated 06/14/2016 15:28

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060411
Run Date: 06/13/2016
Sample ID: WG572383-02
Instrument ID: HPMS15
Run Time: 08:48
Method: 8270D
File ID: 15M18363
Analyst: MES
QC Key: DOD4
Workgroup (AAB#): WG572361
Cal ID: HPMS15 - 10-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,4-Dioxane		5000	4970	ug/L	0.323	0.622	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4807642
Report generated 06/14/2016 15:28

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060411
Instrument ID: HPMS15
Workgroup (AAB#): WG572361

ICAL CCV Number: WG572230-02
CAL ID: HPMS15-10-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG572230-02	NA	NA	66625
Upper Limit	NA	NA	133250
Lower Limit	NA	NA	33313
L16060411-01	1.00	01	39918
L16060411-02	1.00	01	39865
L16060411-03	1.00	01	46066
L16060411-04	1.00	01	49342
WG571956-01	1.00	01	51747
WG571956-02	1.00	01	51838
WG571956-03	1.00	01	51677

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4807643
Report generated 06/14/2016 15:28

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060411
Instrument ID: HPMS15
Workgroup (AAB#): WG572361

ICAL CCV Number: WG572230-02
CAL ID: HPMS15-10-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG572230-02	NA	NA	6.94
Upper Limit	NA	NA	7.44
Lower Limit	NA	NA	6.44
L16060411-01	1.00	01	6.94
L16060411-02	1.00	01	6.94
L16060411-03	1.00	01	6.94
L16060411-04	1.00	01	6.94
WG571956-01	1.00	01	6.94
WG571956-02	1.00	01	6.94
WG571956-03	1.00	01	6.94

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4811268
Report generated: 06/17/2016 08:52

2.2.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18369.D
Acq On : 13 Jun 2016 11:04
Operator : MES
Sample : L16060411-01
Misc : 1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 13 12:05:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	39918	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.848	96	43938	2.6298	ug/L	-0.01
Spiked Amount 5.000			Recovery	=	52.60%	
4) Nitrobenzene-d5	7.442	82	4371	0.3200	ug/L	0.00
Spiked Amount 5.000			Recovery	=	6.40%	
5) 2-Fluorobiphenyl	8.930	172	103	0.0010	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.166	244	347	0.0034	ug/L	-0.01
Spiked Amount 5.000			Recovery	=	0.00%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18369.D
Acq On : 13 Jun 2016 11:04
Operator : MES
Sample : L16060411-01
Misc : 1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 13 12:05:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

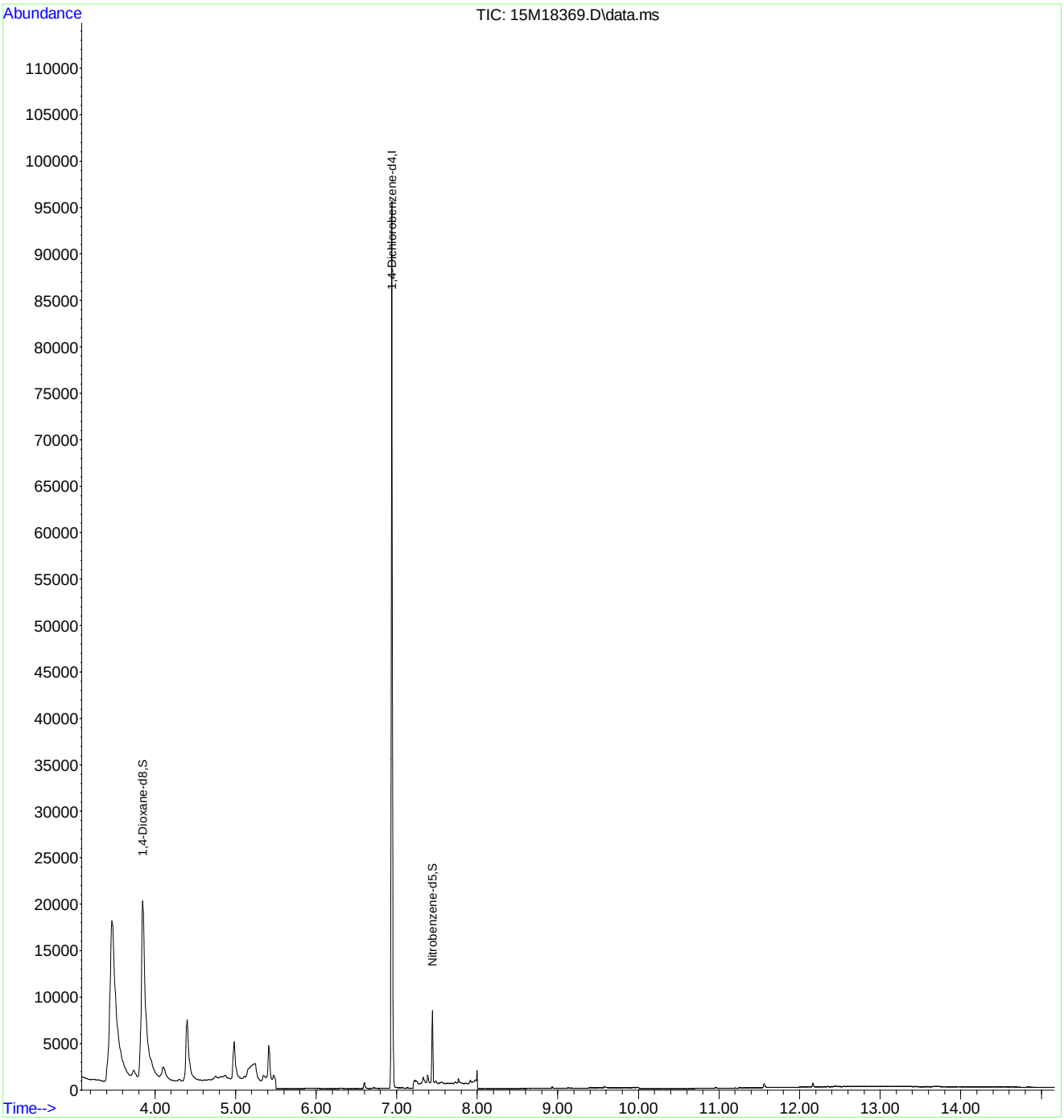

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18370.D
Acq On : 13 Jun 2016 11:27
Operator : MES
Sample : L16060411-02
Misc : 1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 13 12:05:52 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	39865	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.855	96	29452	1.7651	ug/L	0.00
Spiked Amount 5.000			Recovery	=	35.40%	
4) Nitrobenzene-d5	7.442	82	2976	0.2875	ug/L	0.00
Spiked Amount 5.000			Recovery	=	5.80%	
5) 2-Fluorobiphenyl	8.930	172	79	0.0008	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.177	244	188	0.0018	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18370.D
Acq On : 13 Jun 2016 11:27
Operator : MES
Sample : L16060411-02
Misc : 1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 13 12:05:52 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

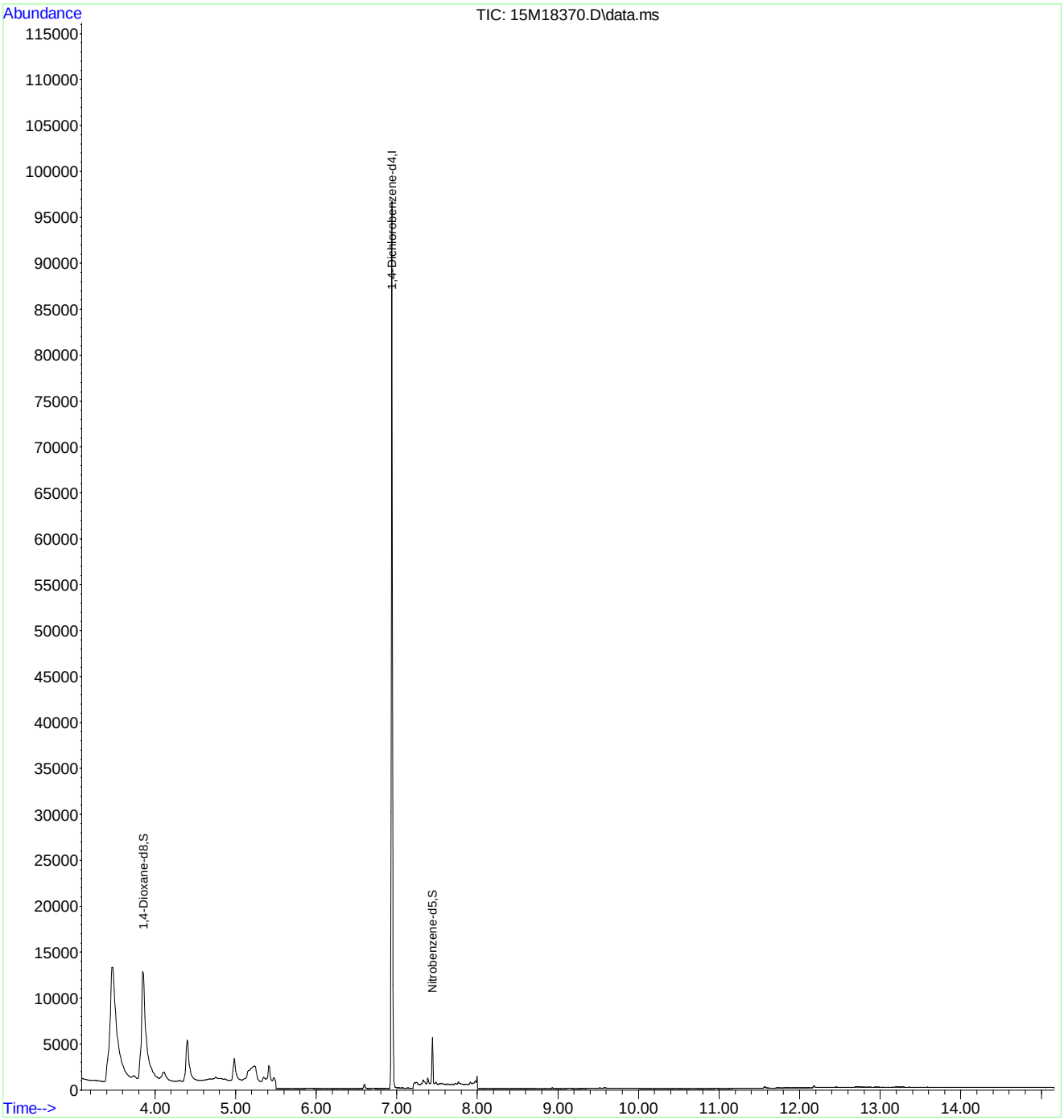

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18371.D
Acq On : 13 Jun 2016 11:50
Operator : MES
Sample : L16060411-03
Misc : 1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 13 12:05:55 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	46066	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.855	96	72680	3.7696	ug/L	0.00
Spiked Amount 5.000			Recovery	=	75.40%	
4) Nitrobenzene-d5	7.442	82	8094	0.3817	ug/L	0.00
Spiked Amount 5.000			Recovery	=	7.60%	
5) 2-Fluorobiphenyl	8.930	172	194	0.0016	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.184	244	5264	0.0446	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.80%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	5298	0.3535	ug/L #	46

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18371.D
Acq On : 13 Jun 2016 11:50
Operator : MES
Sample : L16060411-03
Misc : 1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 13 12:05:55 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

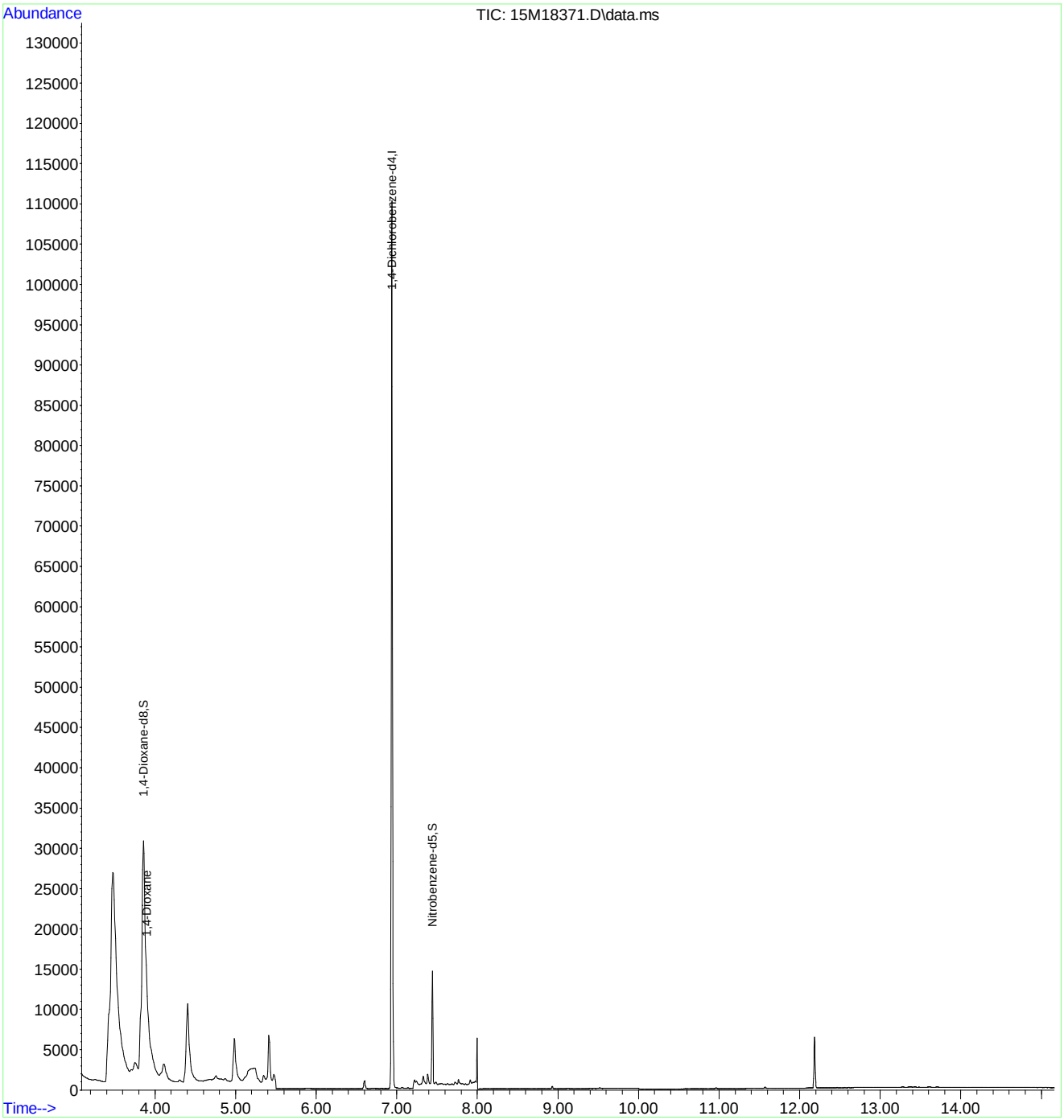

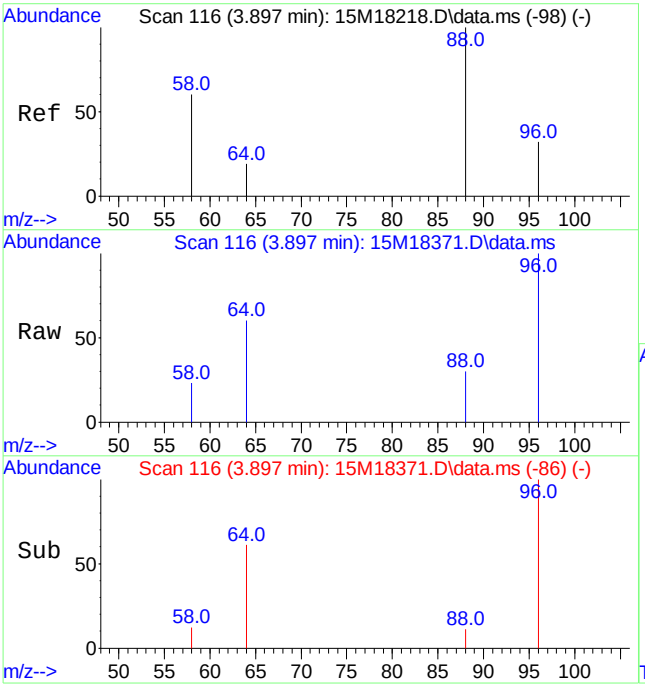

#2
1,4-Dioxane
Concen: 0.35 ug/L
RT: 3.897 min Scan# 116
Delta R.T. 0.000 min
Lab File: 15M18371.D
Acq: 13 Jun 2016 11:50

Tgt Ion: 58 Resp: 5298

Ion	Ratio	Lower	Upper
58	100		
88	97.8	103.1	240.7#

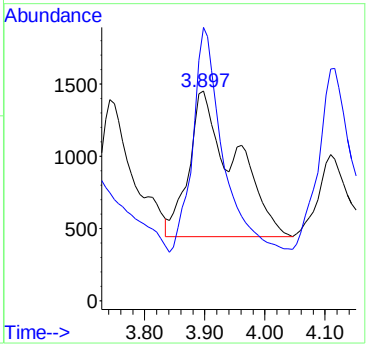

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18372.D
Acq On : 13 Jun 2016 12:12
Operator : MES
Sample : L16060411-04
Misc : 1,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jun 13 12:54:21 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	49342	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	52465	2.5404	ug/L	0.00
Spiked Amount 5.000			Recovery	=	50.80%	
4) Nitrobenzene-d5	7.442	82	4513	0.3032	ug/L	0.00
Spiked Amount 5.000			Recovery	=	6.00%	
5) 2-Fluorobiphenyl	8.930	172	118	0.0009	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.177	244	303	0.0024	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	6654	0.4145	ug/L	63

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18372.D
Acq On : 13 Jun 2016 12:12
Operator : MES
Sample : L16060411-04
Misc : 1,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jun 13 12:54:21 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

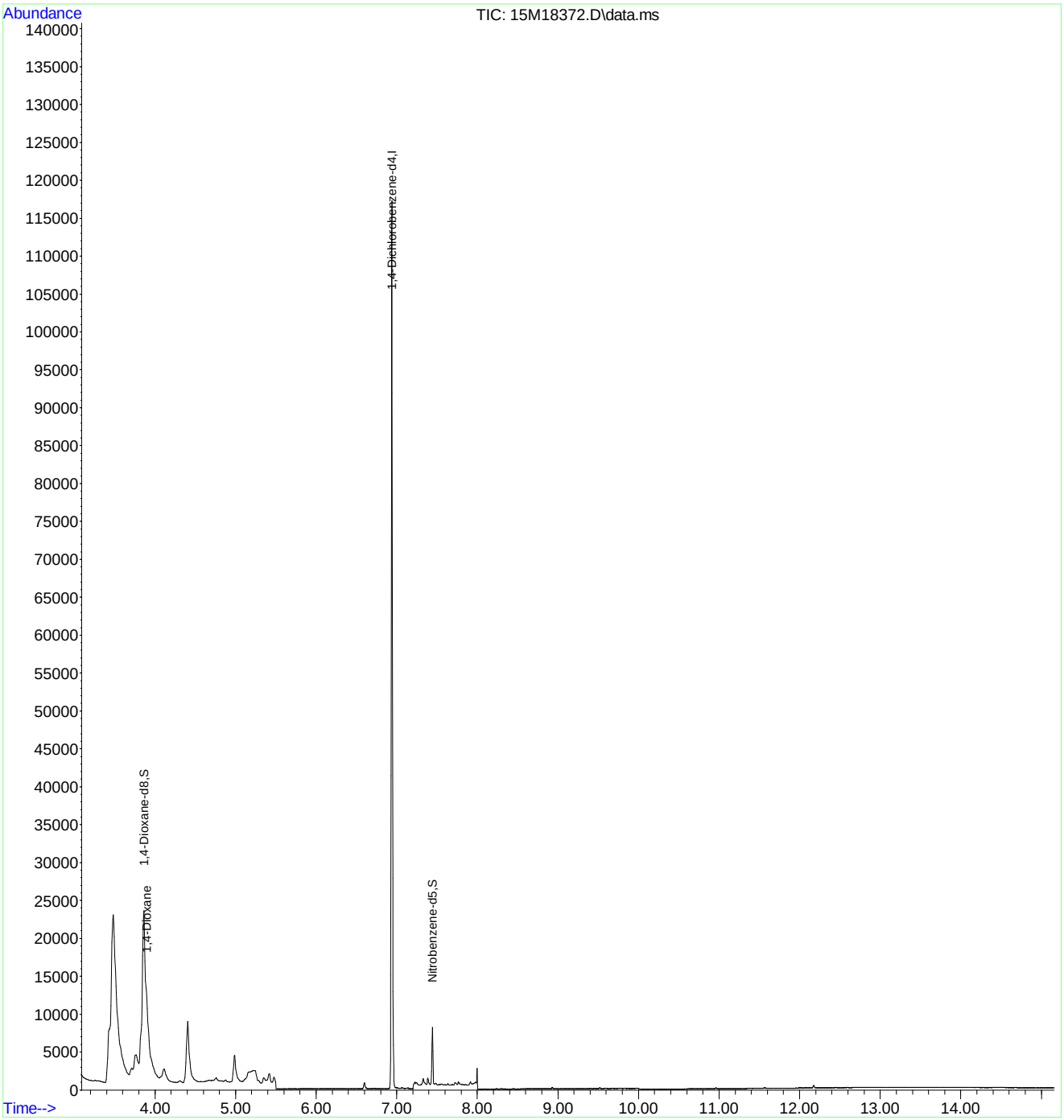

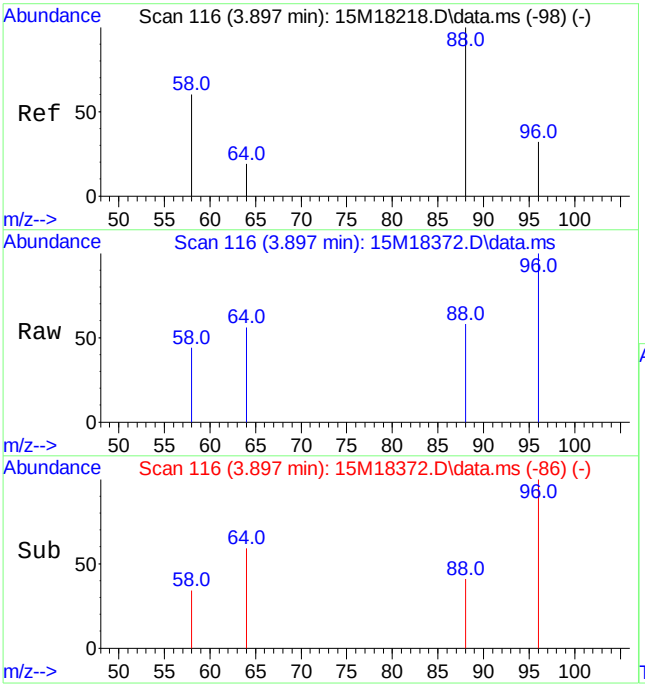

#2
1,4-Dioxane
Concen: 0.41 ug/L
RT: 3.897 min Scan# 116
Delta R.T. 0.000 min
Lab File: 15M18372.D
Acq: 13 Jun 2016 12:12

Tgt Ion: 58 Resp: 6654

Ion	Ratio	Lower	Upper
58	100		
88	120.9	103.1	240.7

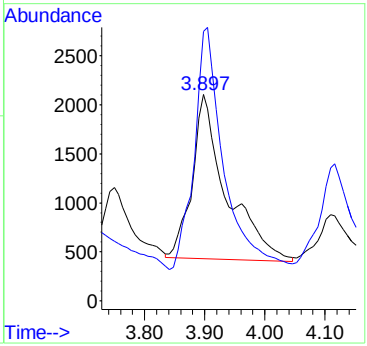

2.2.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18338.D
Acq On : 10 Jun 2016 10:36
Operator : MES
Sample : WG572230-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 10 18:15:30 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.940	152	66625	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.862	96	138302	4.9596 ug/L	0.00
Spiked Amount 5.000			Recovery	= 99.20%	
4) Nitrobenzene-d5	7.436	82	321639	4.7189 ug/L	0.00
Spiked Amount 5.000			Recovery	= 94.40%	
5) 2-Fluorobiphenyl	8.926	172	845013	4.8542 ug/L	0.00
Spiked Amount 5.000			Recovery	= 97.00%	
6) p-Terphenyl-d14	12.181	244	855352	5.0103 ug/L	0.00
Spiked Amount 5.000			Recovery	= 100.20%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.897	58	107215	4.9462 ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18338.D
Acq On : 10 Jun 2016 10:36
Operator : MES
Sample : WG572230-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 10 18:15:30 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

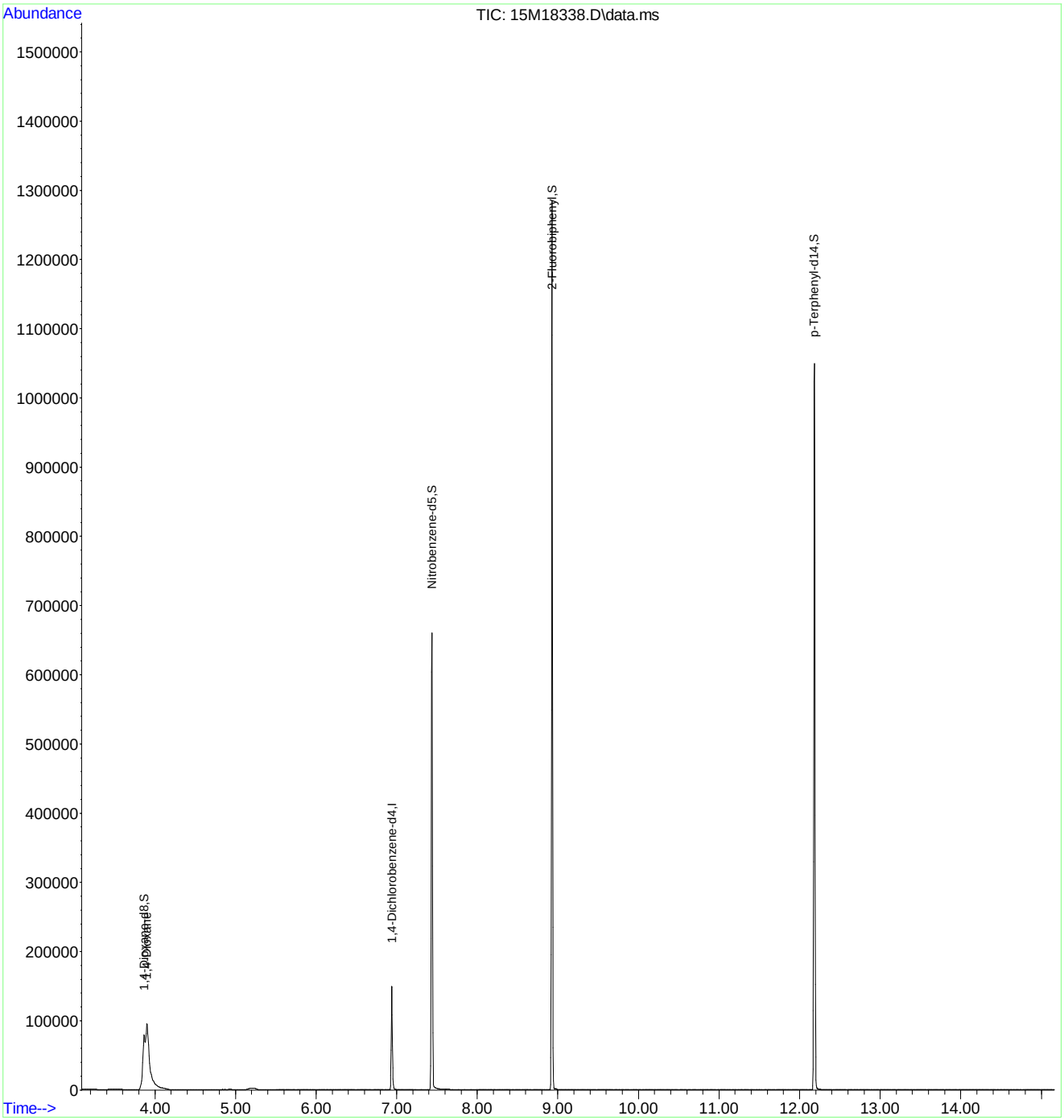

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18339.D
Acq On : 10 Jun 2016 11:00
Operator : MES
Sample : WG572230-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 10 18:15:34 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	56194	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	248072	10.5474	ug/L	0.00
Spiked Amount 5.000			Recovery = 211.00%			
4) Nitrobenzene-d5	7.436	82	628184	10.6403	ug/L	0.00
Spiked Amount 5.000			Recovery = 212.80%			
5) 2-Fluorobiphenyl	8.926	172	1513331	10.3070	ug/L	0.00
Spiked Amount 5.000			Recovery = 206.20%			
6) p-Terphenyl-d14	12.184	244	1587021	11.0217	ug/L	0.00
Spiked Amount 5.000			Recovery = 220.40%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	192761	10.5434	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18339.D
Acq On : 10 Jun 2016 11:00
Operator : MES
Sample : WG572230-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 10 18:15:34 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

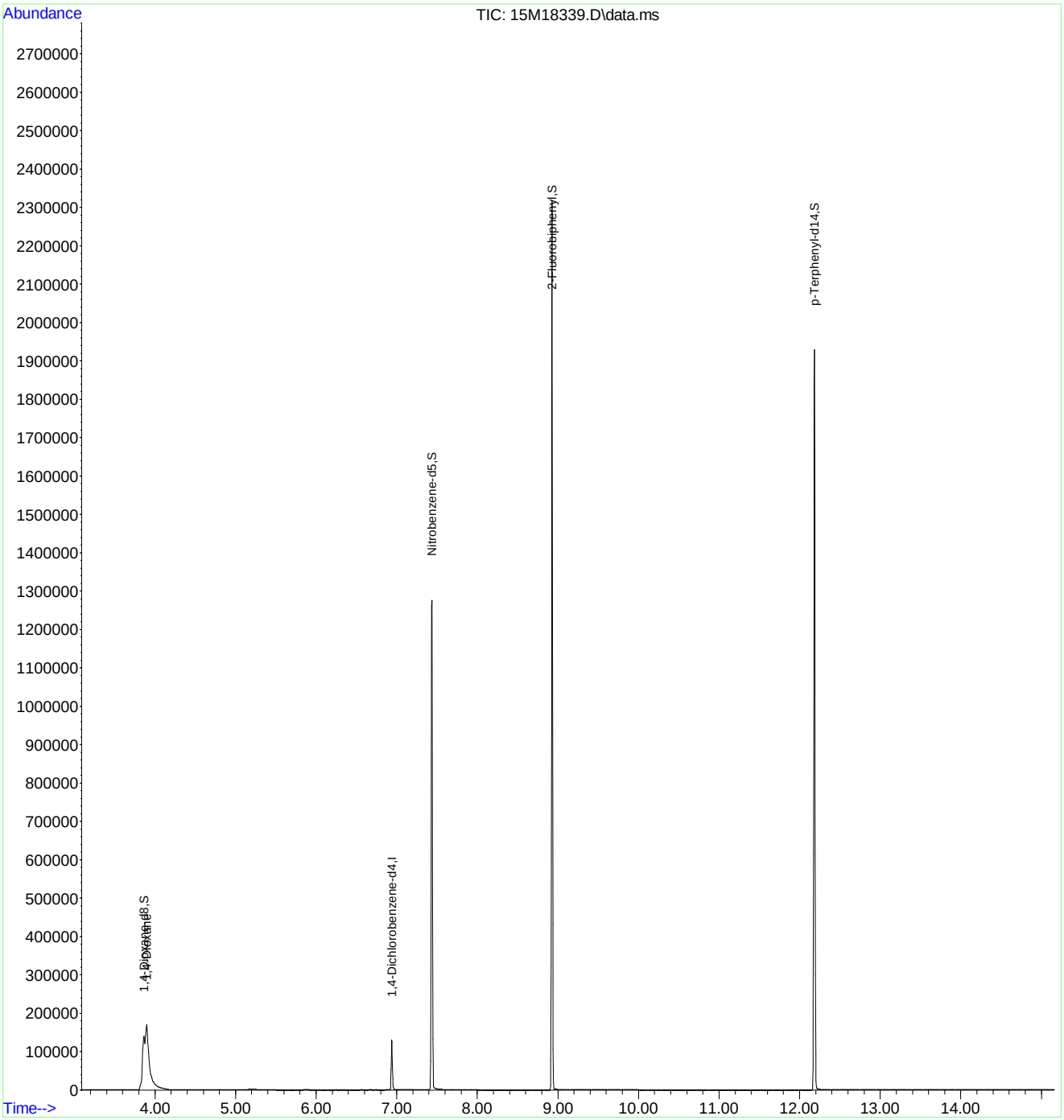

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18340.D
Acq On : 10 Jun 2016 11:22
Operator : MES
Sample : WG572230-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 10 18:15:37 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.940	152	60457	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.862	96	187351	7.4040 ug/L	0.00
Spiked Amount 5.000			Recovery	= 148.00%	
4) Nitrobenzene-d5	7.431	82	466388	7.4103 ug/L	0.00
Spiked Amount 5.000			Recovery	= 148.20%	
5) 2-Fluorobiphenyl	8.926	172	1170859	7.4122 ug/L	0.00
Spiked Amount 5.000			Recovery	= 148.20%	
6) p-Terphenyl-d14	12.192	244	1205938	7.7846 ug/L	0.01
Spiked Amount 5.000			Recovery	= 155.60%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.897	58	146003	7.4228 ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18340.D
Acq On : 10 Jun 2016 11:22
Operator : MES
Sample : WG572230-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 10 18:15:37 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

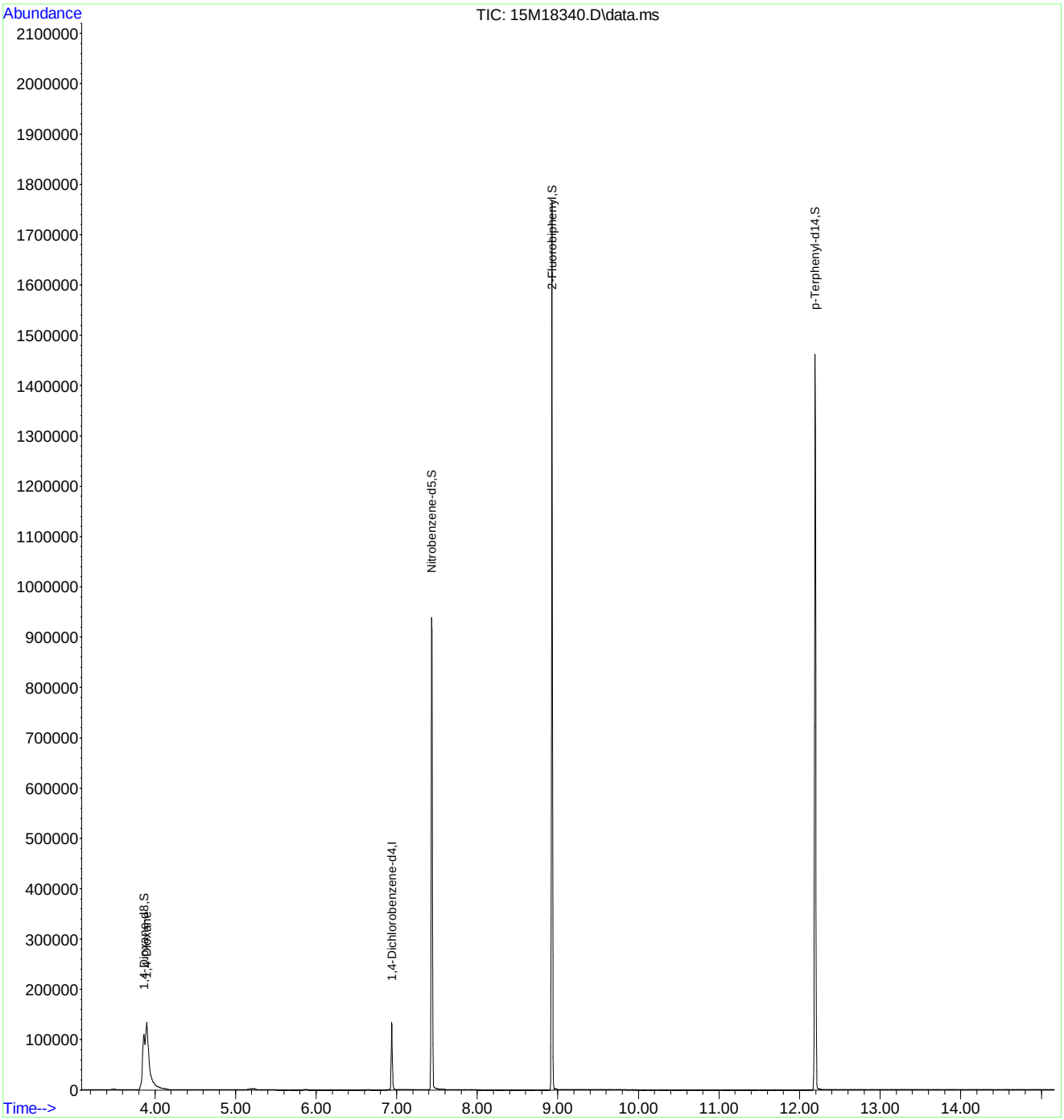

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18341.D
Acq On : 10 Jun 2016 11:45
Operator : MES
Sample : WG572230-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 10 18:15:40 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.940	152	45954	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.848	96	46972	2.4422 ug/L	-0.01
Spiked Amount 5.000			Recovery	= 48.80%	
4) Nitrobenzene-d5	7.436	82	97423	2.1945 ug/L	0.00
Spiked Amount 5.000			Recovery	= 43.80%	
5) 2-Fluorobiphenyl	8.926	172	301696	2.5127 ug/L	0.00
Spiked Amount 5.000			Recovery	= 50.20%	
6) p-Terphenyl-d14	12.188	244	286720	2.4350 ug/L	0.00
Spiked Amount 5.000			Recovery	= 48.60%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.883	58	36488	2.4405 ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18341.D
Acq On : 10 Jun 2016 11:45
Operator : MES
Sample : WG572230-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 10 18:15:40 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

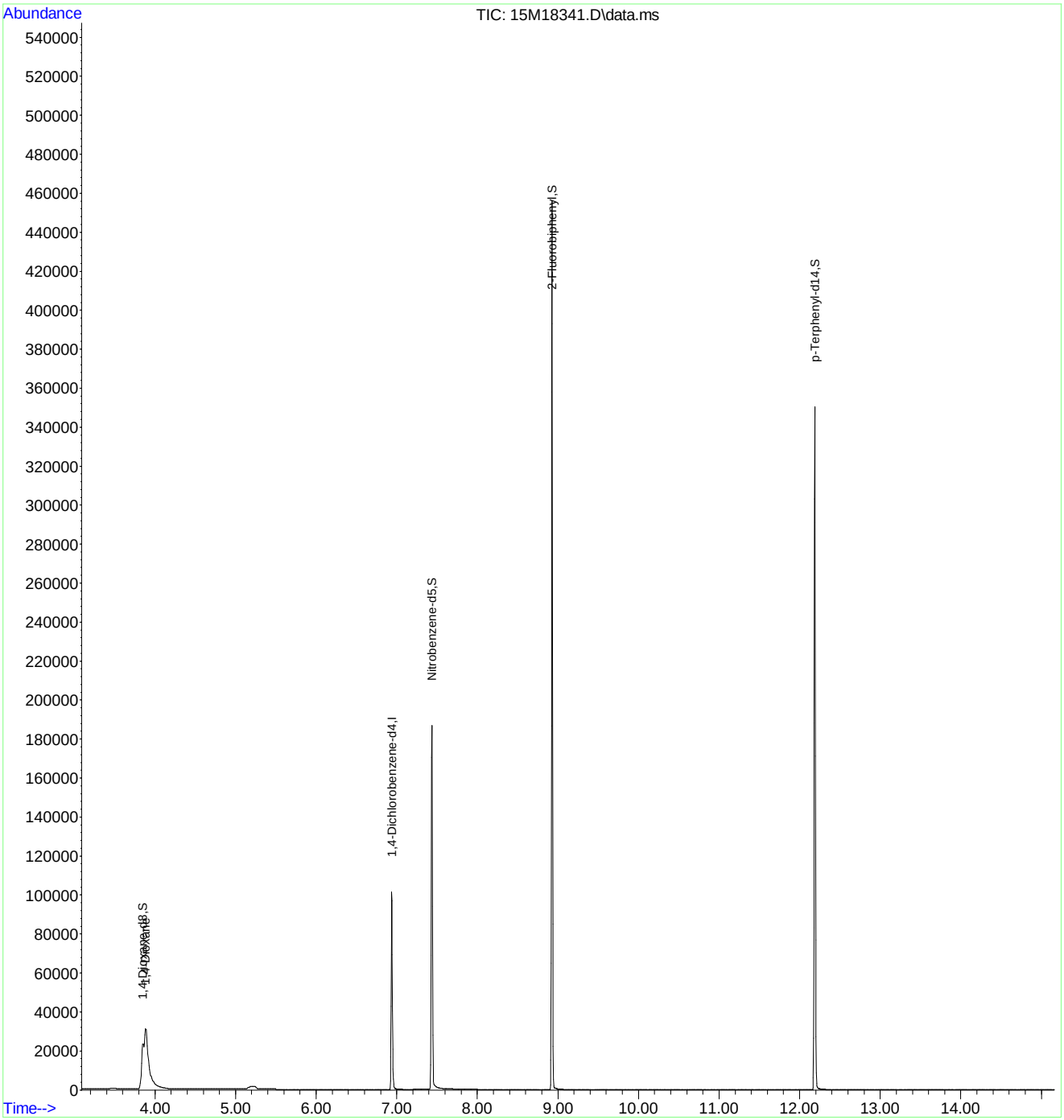

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18342.D
Acq On : 10 Jun 2016 12:08
Operator : MES
Sample : WG572230-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 10 18:15:43 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	59037	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	24054	0.9735	ug/L	0.00
Spiked Amount 5.000			Recovery = 19.40%			
4) Nitrobenzene-d5	7.436	82	44358	0.9184	ug/L	0.00
Spiked Amount 5.000			Recovery = 18.40%			
5) 2-Fluorobiphenyl	8.926	172	151018	0.9790	ug/L	0.00
Spiked Amount 5.000			Recovery = 19.60%			
6) p-Terphenyl-d14	12.199	244	140040	0.9257	ug/L	0.02
Spiked Amount 5.000			Recovery = 18.60%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.904	58	18621	0.9695	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18342.D
Acq On : 10 Jun 2016 12:08
Operator : MES
Sample : WG572230-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 10 18:15:43 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

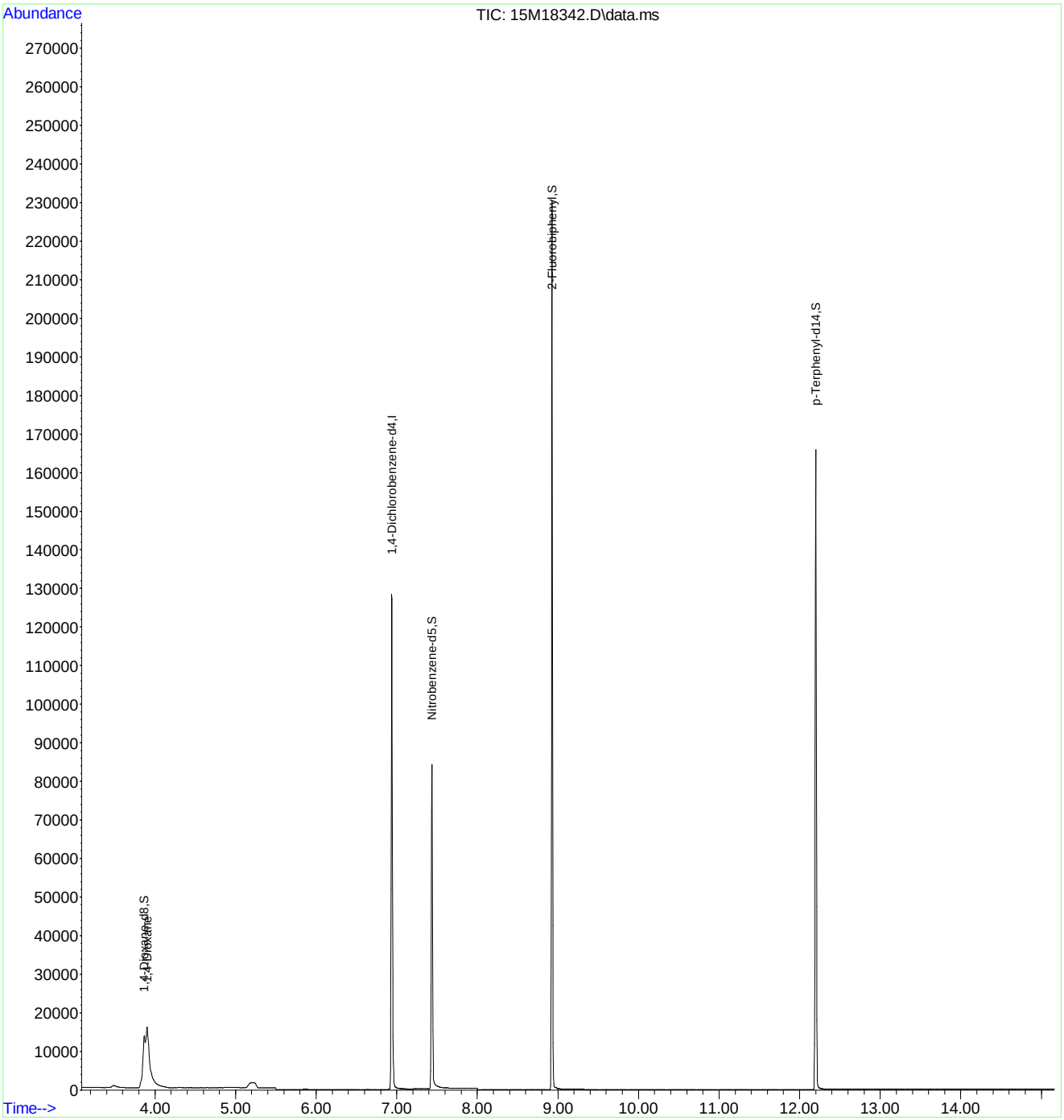

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18343.D
Acq On : 10 Jun 2016 12:30
Operator : MES
Sample : WG572230-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 10 18:15:46 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	51531	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	8760	0.4062	ug/L	0.00
Spiked Amount 5.000			Recovery	=	8.20%	
4) Nitrobenzene-d5	7.436	82	14371	0.4779	ug/L	0.00
Spiked Amount 5.000			Recovery	=	9.60%	
5) 2-Fluorobiphenyl	8.926	172	54404	0.4041	ug/L	0.00
Spiked Amount 5.000			Recovery	=	8.00%	
6) p-Terphenyl-d14	12.203	244	49910	0.3780	ug/L	0.02
Spiked Amount 5.000			Recovery	=	7.60%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	6733	0.4016	ug/L	79

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18343.D
Acq On : 10 Jun 2016 12:30
Operator : MES
Sample : WG572230-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 10 18:15:46 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

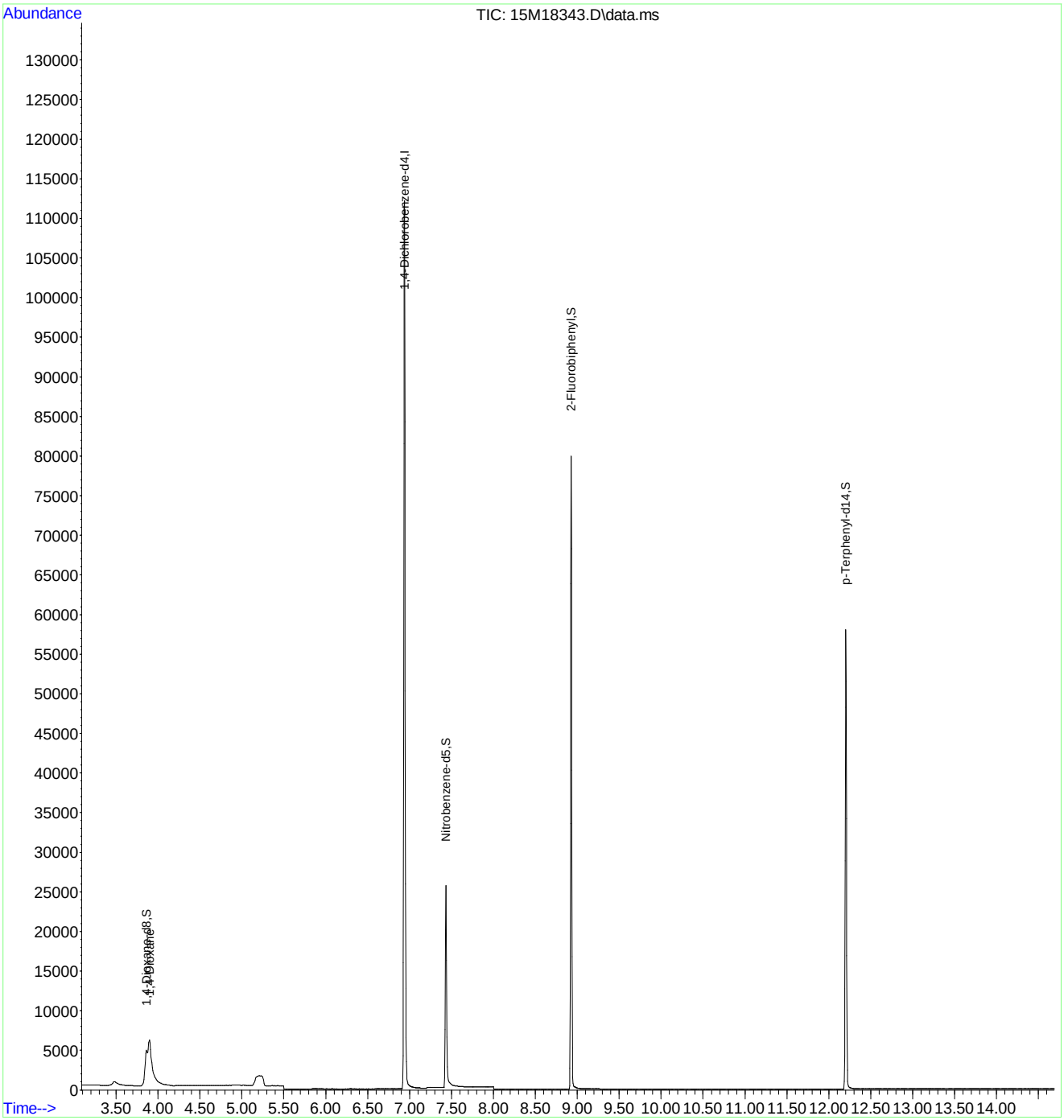

Nitrobenzene-d5

00661580

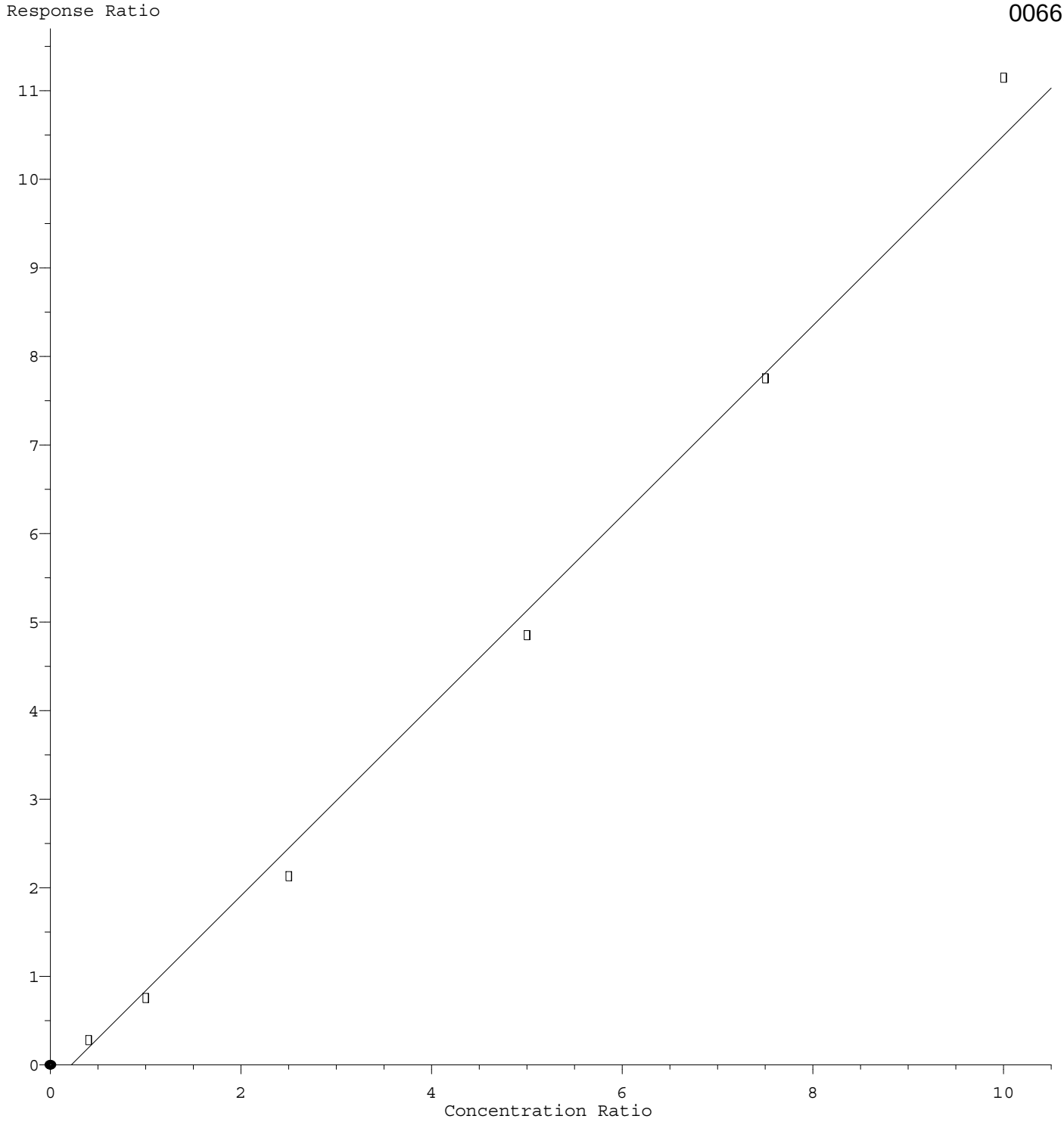

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Coef of Det (r^2) = 0.994 Curve Fit: wlr(1/a)
Method Name: C:\msdchem\1\methods\DIOXANE_D8.M
Calibration Table Last Updated: Fri Jun 10 12:46:00 2016

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18344.D
Acq On : 10 Jun 2016 12:52
Operator : MES
Sample : WG572230-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 10 18:15:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	51498	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.897	96	61	0.0028	ug/L	0.04
Spiked Amount 5.000			Recovery	=	0.00%	
4) Nitrobenzene-d5	7.442	82	61	0.2190	ug/L	0.00
Spiked Amount 5.000			Recovery	=	4.40%	
5) 2-Fluorobiphenyl	8.926	172	23	0.0002	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.214	244	150	0.0011	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	85662	5.1127	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18344.D
Acq On : 10 Jun 2016 12:52
Operator : MES
Sample : WG572230-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 10 18:15:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

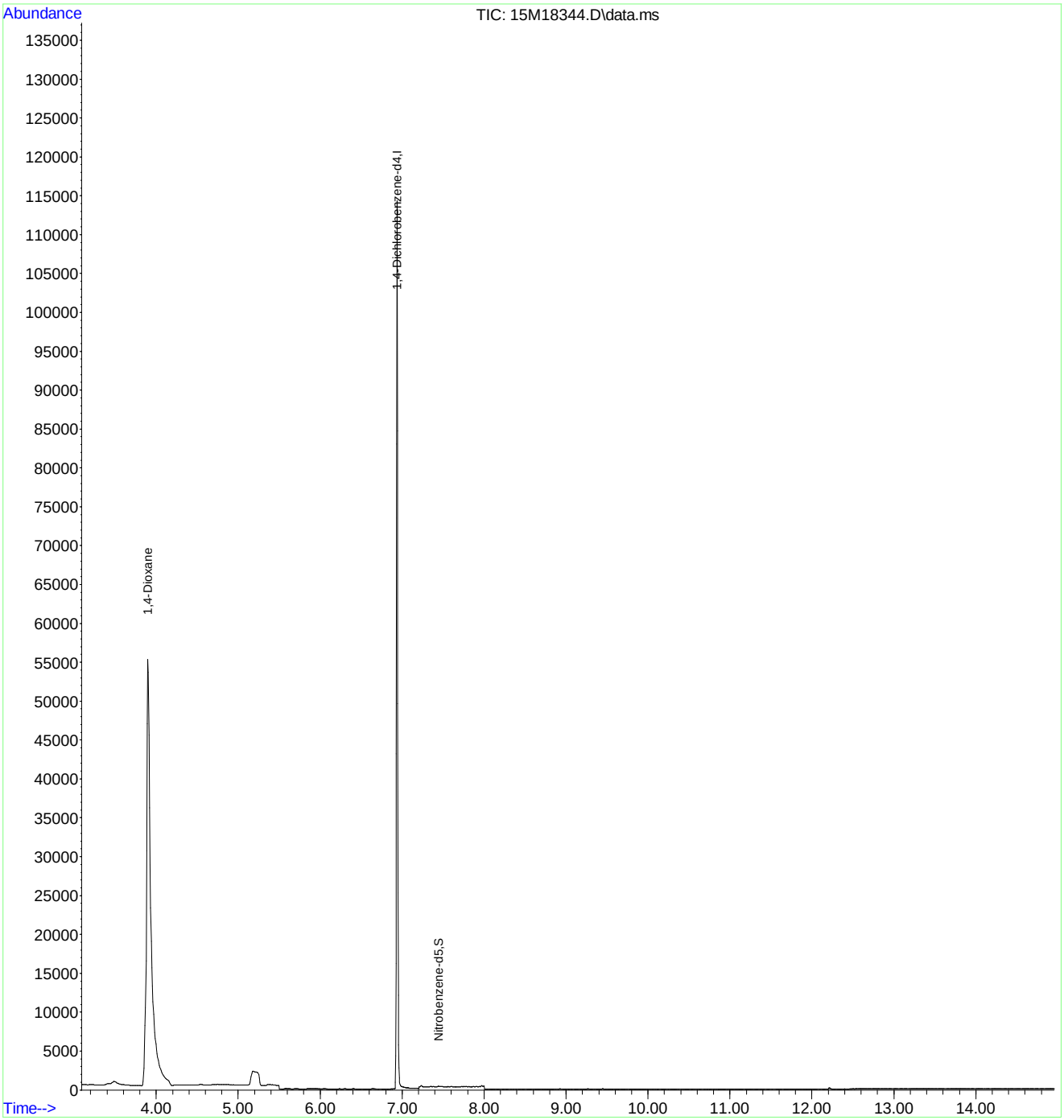

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18344.D
Acq On : 10 Jun 2016 12:52
Operator : MES
Sample : WG572230-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 10 18:15:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	78	0.00
2	1,4-Dioxane	5.000	5.113	-2.3	80	0.00
3 S	1,4-Dioxane-d8	5.000	0.003	99.9#	0	0.04
4 S	Nitrobenzene-d5	5.000	0.219	95.6#	0	0.00
5 S	2-Fluorobiphenyl	5.000	0.000	100.0#	0	0.00
6 S	p-Terphenyl-d14	5.000	0.001	100.0#	0	0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18363.D
Acq On : 13 Jun 2016 8:48
Operator : MES
Sample : WG572383-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 13 09:03:10 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	61399	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.855	96	130273	5.0693	ug/L	0.00
Spiked Amount 5.000			Recovery	= 101.40%		
4) Nitrobenzene-d5	7.436	82	233410	3.7622	ug/L	0.00
Spiked Amount 5.000			Recovery	= 75.20%		
5) 2-Fluorobiphenyl	8.926	172	816071	5.0869	ug/L	0.00
Spiked Amount 5.000			Recovery	= 101.80%		
6) p-Terphenyl-d14	12.162	244	817726	5.1976	ug/L	-0.02
Spiked Amount 5.000			Recovery	= 104.00%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.890	58	99259	4.9689	ug/L	81

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18363.D
Acq On : 13 Jun 2016 8:48
Operator : MES
Sample : WG572383-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 13 09:03:10 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

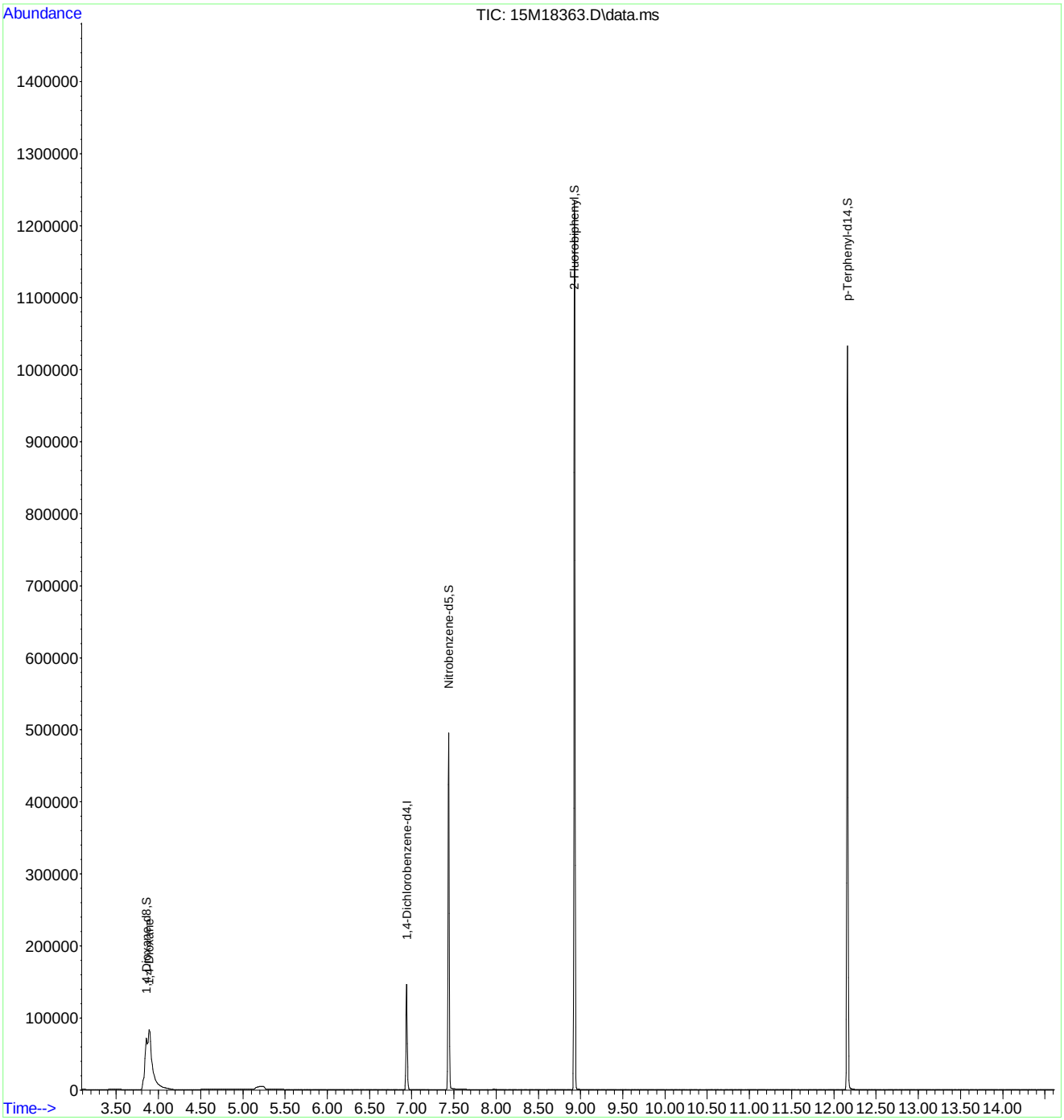

DIOXANE_D8.M Mon Jun 13 09:03:11 2016 Page: 2

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18363.D
Acq On : 13 Jun 2016 8:48
Operator : MES
Sample : WG572383-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 13 09:03:10 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	93	0.00
2	1,4-Dioxane	0.325	0.323	0.6	93	0.00
3 S	1,4-Dioxane-d8	0.419	0.424	-1.2	94	0.00
4 S	Nitrobenzene-d5	0.904	0.760	15.9	73	0.00
5 S	2-Fluorobiphenyl	2.613	2.658	-1.7	97	0.00
6 S	p-Terphenyl-d14	2.562	2.664	-4.0	96	-0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18363.D
Acq On : 13 Jun 2016 8:48
Operator : MES
Sample : WG572383-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 13 09:03:10 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	93	0.00
2	1,4-Dioxane	5.000	4.969	0.6	93	0.00
3 S	1,4-Dioxane-d8	5.000	5.069	-1.4	94	0.00
4 S	Nitrobenzene-d5	5.000	3.762	24.8	73	0.00
5 S	2-Fluorobiphenyl	5.000	5.087	-1.7	97	0.00
6 S	p-Terphenyl-d14	5.000	5.198	-4.0	96	-0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 0

2.2.1.5 Raw QC Data

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18337.D
Acq On : 10 Jun 2016 10:18
Operator : MES
Sample : WG572230-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

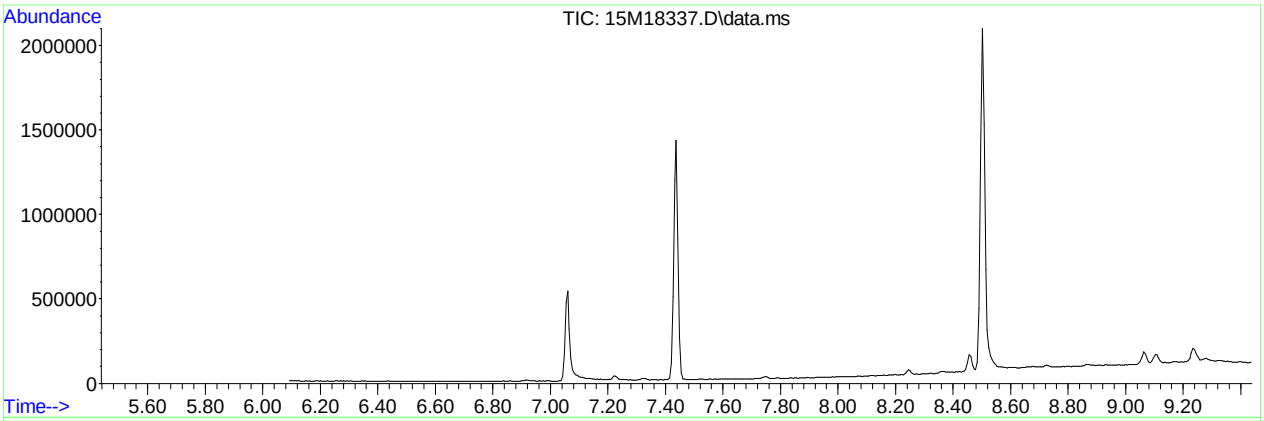

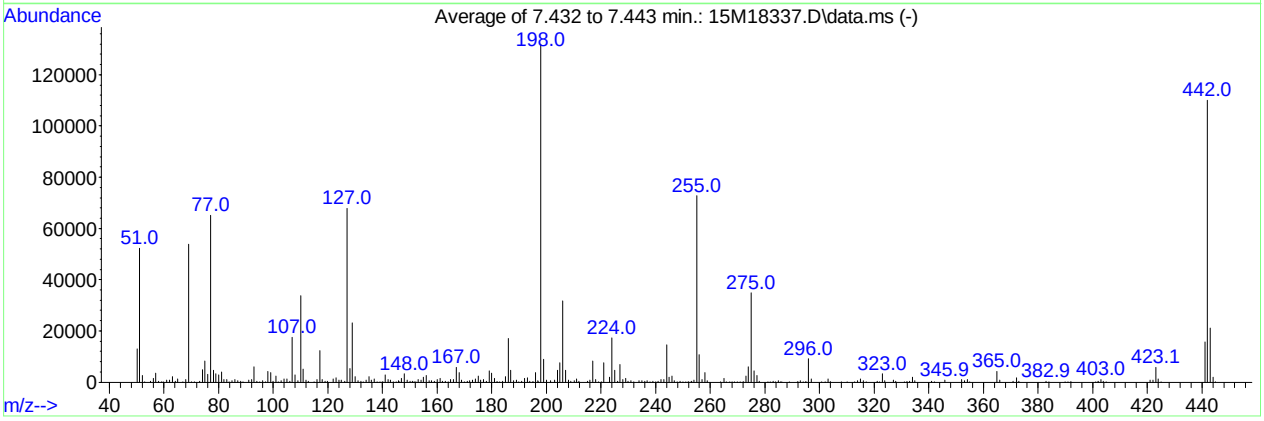

AutoFind: Scans 235, 236, 237; Background Corrected with Scan 229

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	39.5	52157	PASS
68	69	0.00	2	1.9	1026	PASS
69	198	0.00	100	40.8	53844	PASS
70	69	0.00	2	0.2	120	PASS
127	198	40	60	51.4	67853	PASS
197	198	0.00	1	0.4	505	PASS
198	198	100	100	100.0	131981	PASS
199	198	5	9	6.7	8869	PASS
275	198	10	30	26.4	34853	PASS
365	198	1	100	3.2	4186	PASS
441	443	0.01	100	73.9	15632	PASS
442	198	40	100	83.4	110112	PASS
443	442	17	23	19.2	21163	PASS

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18337.D
Acq On : 10 Jun 2016 10:18
Operator : MES
Sample : WG572230-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 10 10:29:37 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

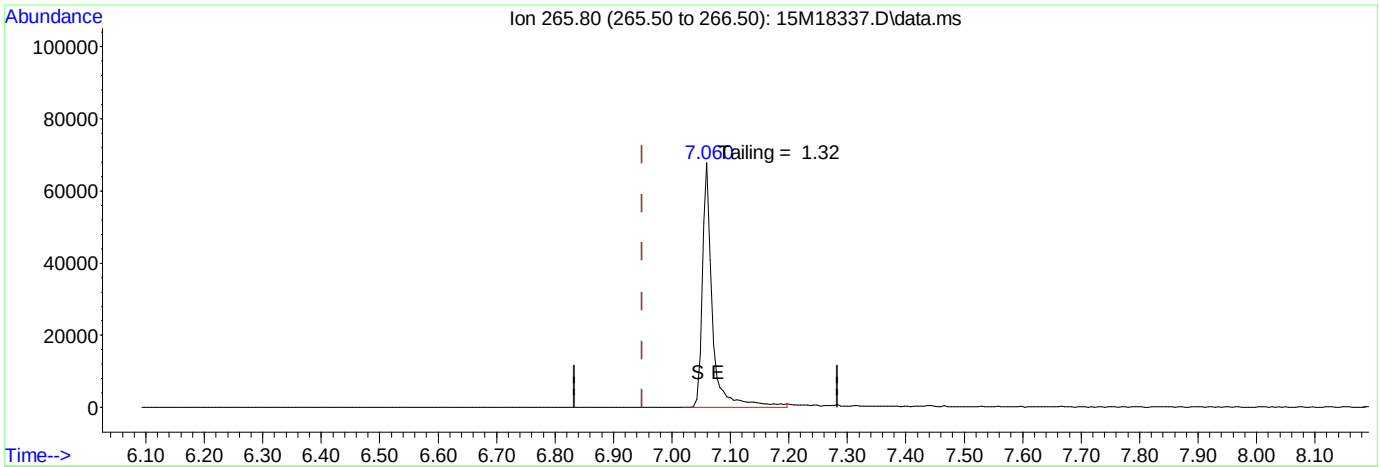

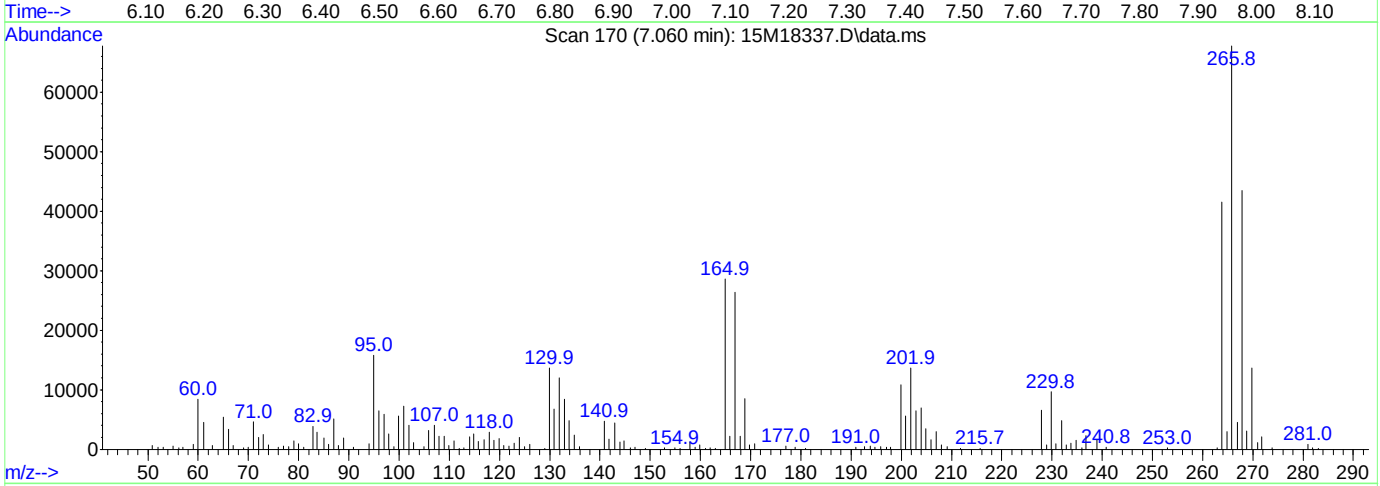

(1) Pentachlorophenol

7.060min (+ 0.111) 0.00 ug/ml

response 82111

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18337.D
Acq On : 10 Jun 2016 10:18
Operator : MES
Sample : WG572230-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 10 10:29:37 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

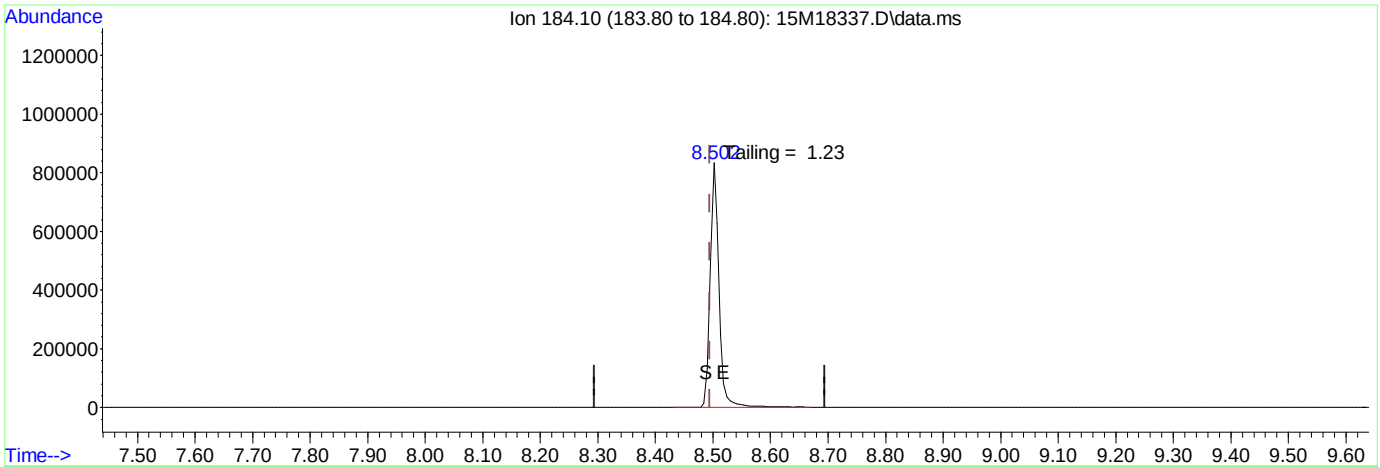

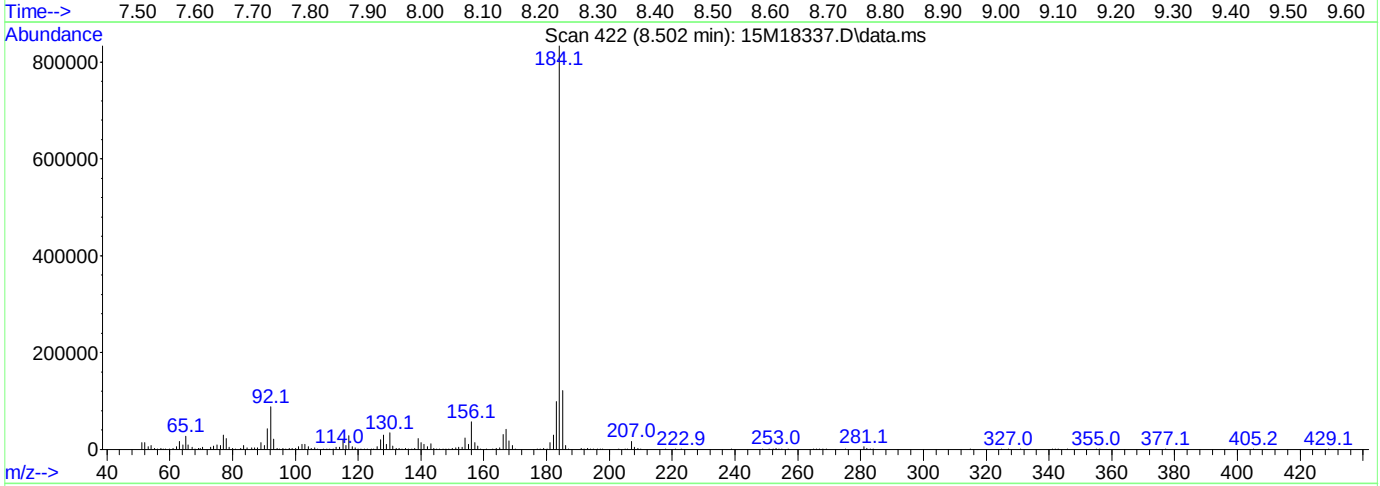

TIC: 15M18337.D\data.ms

(2) Benzidine

8.502min (+ 0.008) 0.00 ug/ml

response 896980

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18337.D
Acq On : 10 Jun 2016 10:18
Operator : MES
Sample : WG572230-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 10 10:29:37 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

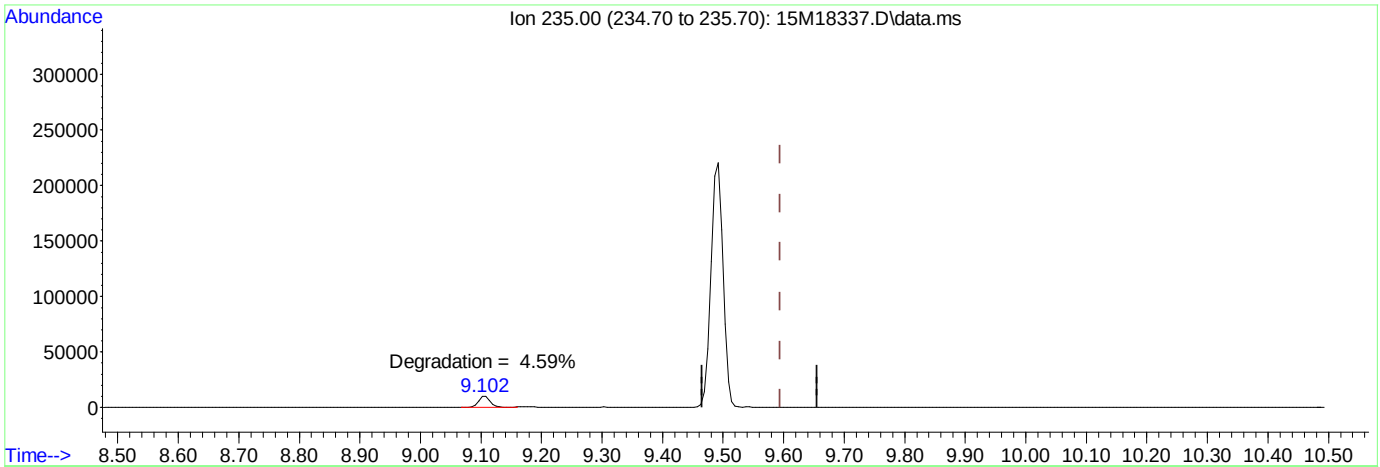

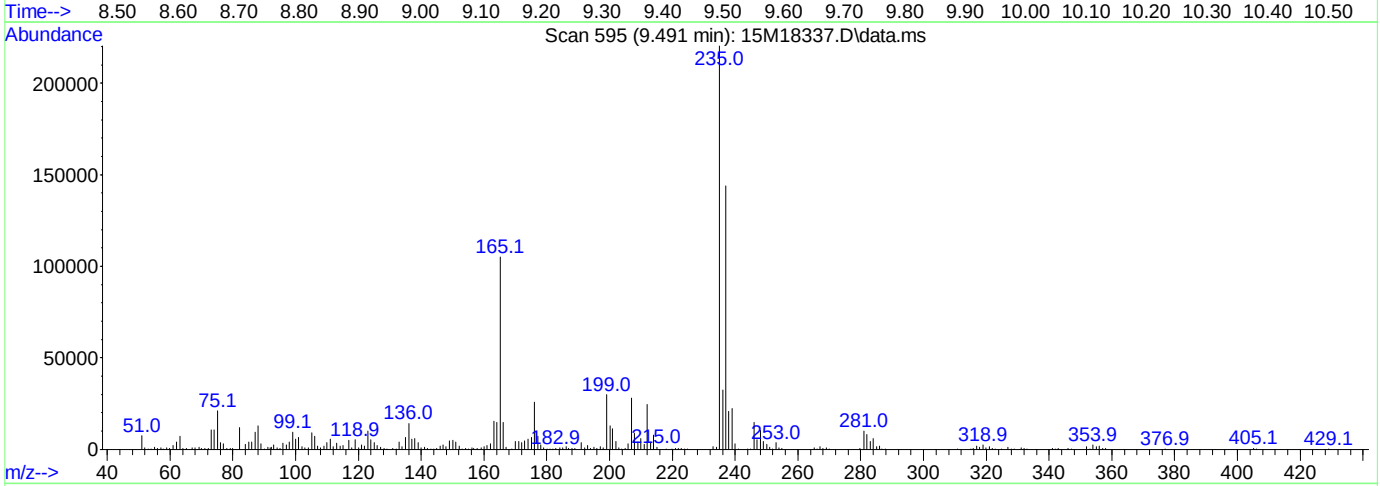

TIC: 15M18337.D\data.ms

(3) DDT

9.491min (-0.103) 0.00 ug/ml

response 283319

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18362.D
Acq On : 13 Jun 2016 8:30
Operator : MES
Sample : WG572383-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

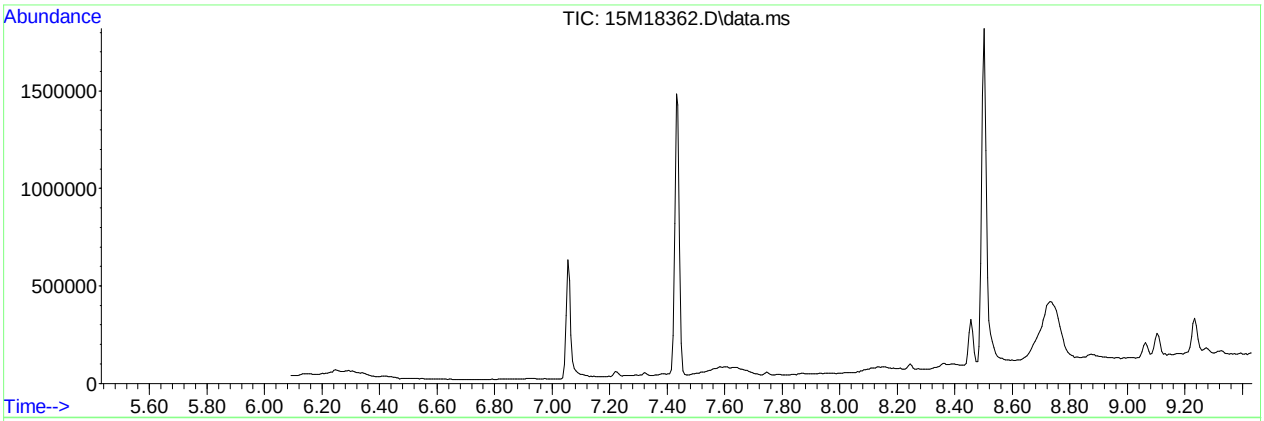

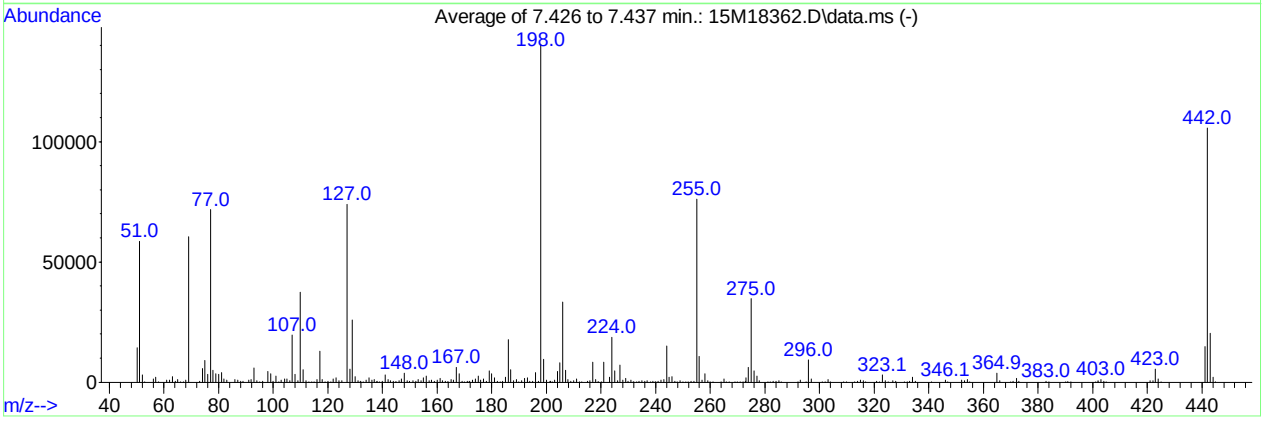

AutoFind: Scans 234, 235, 236; Background Corrected with Scan 228

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	41.7	58608	PASS
68	69	0.00	2	1.5	891	PASS
69	198	0.00	100	43.0	60438	PASS
70	69	0.00	2	0.0	0	PASS
127	198	40	60	52.6	73908	PASS
197	198	0.00	1	0.3	406	PASS
198	198	100	100	100.0	140616	PASS
199	198	5	9	6.8	9594	PASS
275	198	10	30	24.7	34747	PASS
365	198	1	100	2.7	3776	PASS
441	443	0.01	100	72.0	14703	PASS
442	198	40	100	75.2	105688	PASS
443	442	17	23	19.3	20429	PASS

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18362.D
Acq On : 13 Jun 2016 8:30
Operator : MES
Sample : WG572383-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 13 08:43:56 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

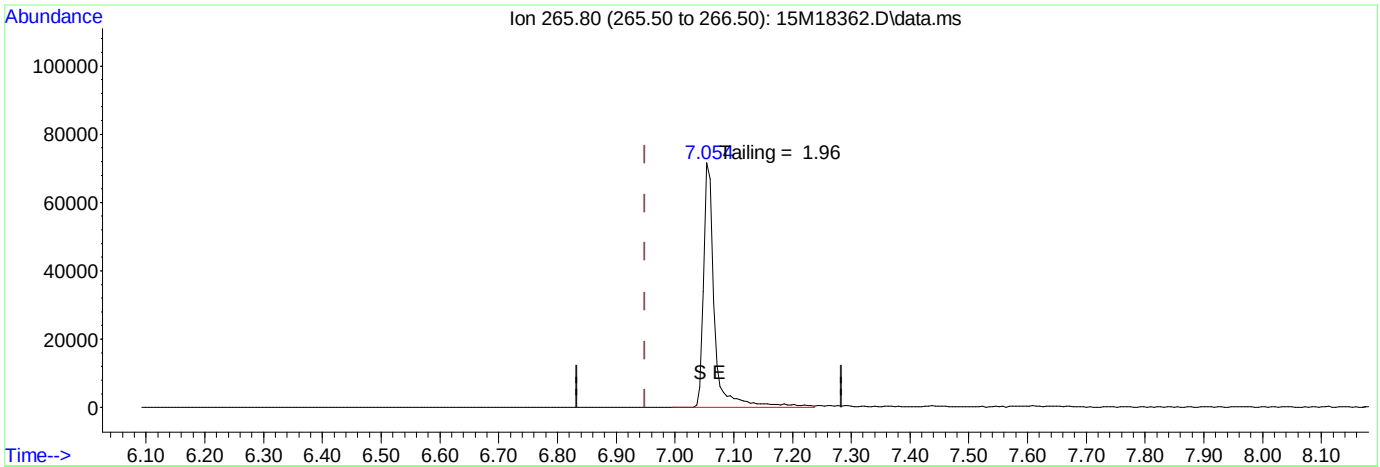

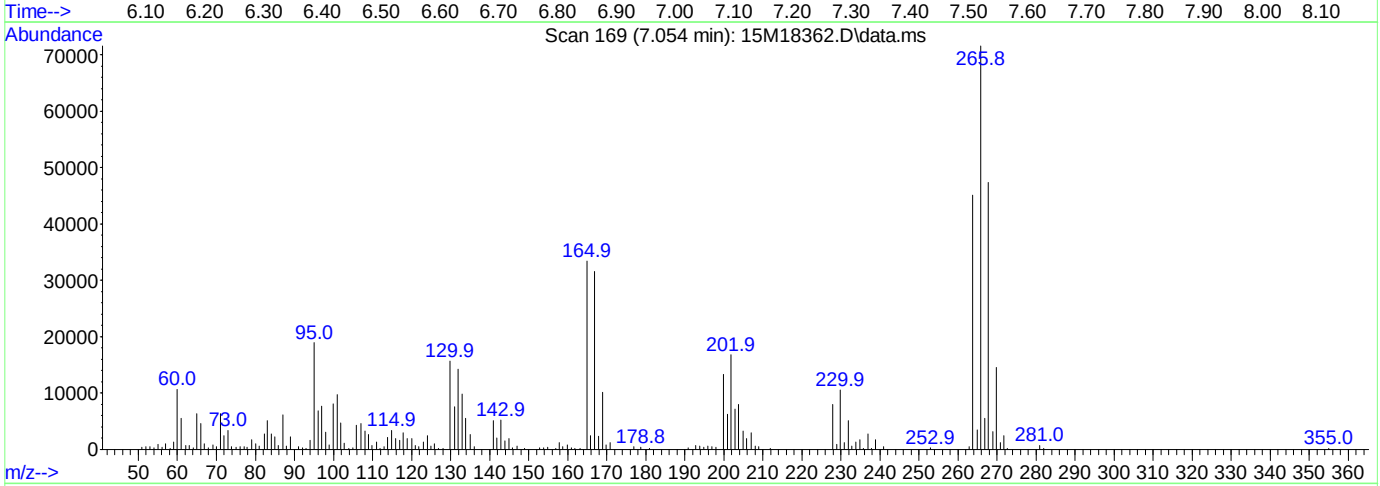

TIC: 15M18362.D\data.ms

(1) Pentachlorophenol

7.054min (+ 0.105) 0.00 ug/ml

response 89487

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18362.D
Acq On : 13 Jun 2016 8:30
Operator : MES
Sample : WG572383-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 13 08:43:56 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

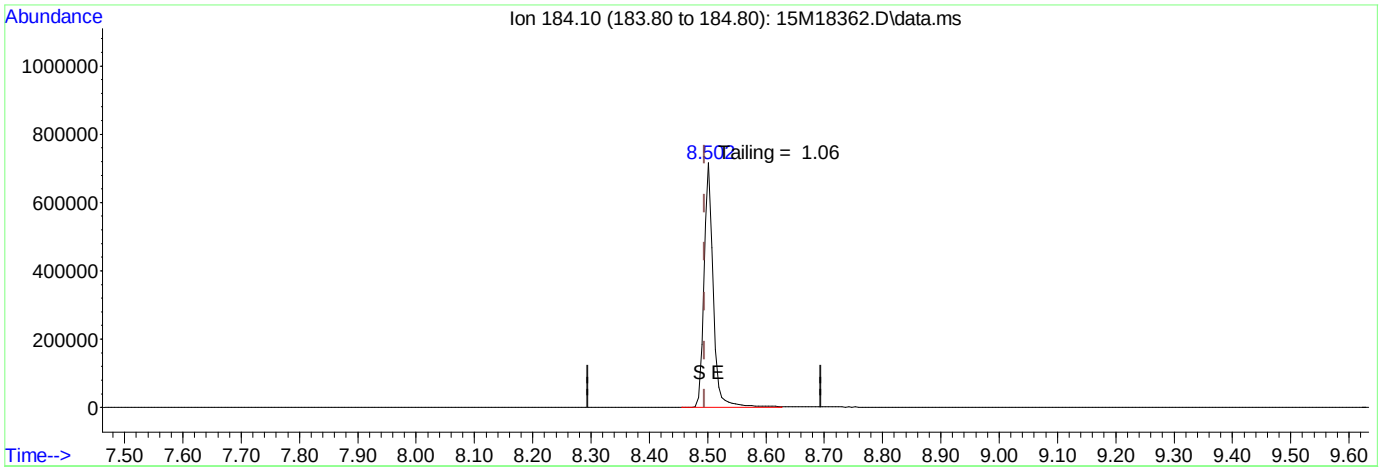

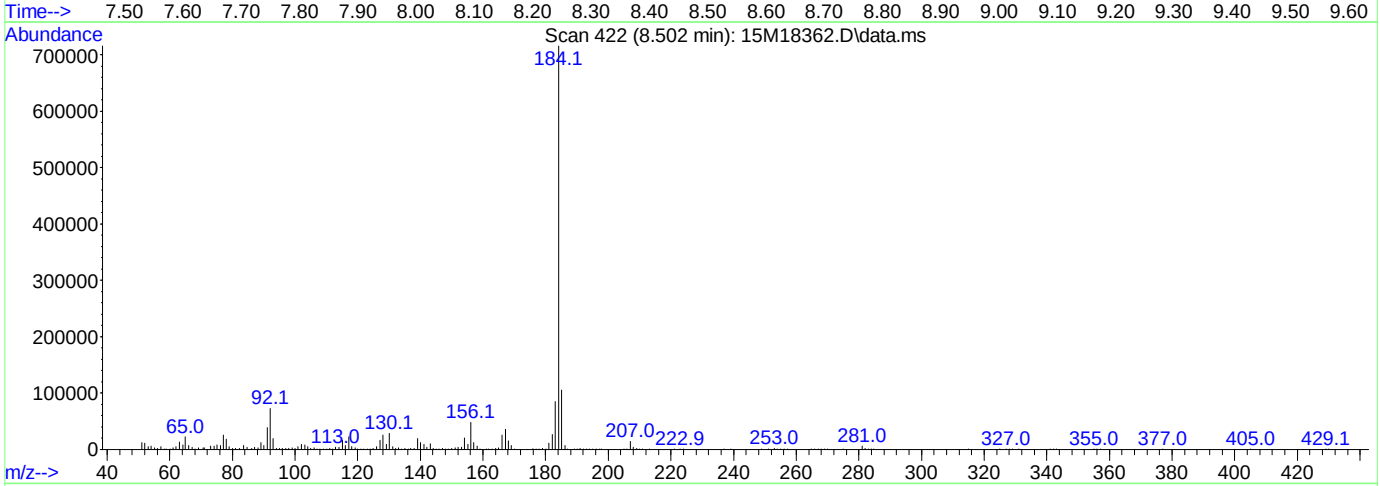

TIC: 15M18362.D\data.ms

(2) Benzidine

8.502min (+ 0.008) 0.00 ug/ml

response 797115

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18362.D
Acq On : 13 Jun 2016 8:30
Operator : MES
Sample : WG572383-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 13 08:43:56 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

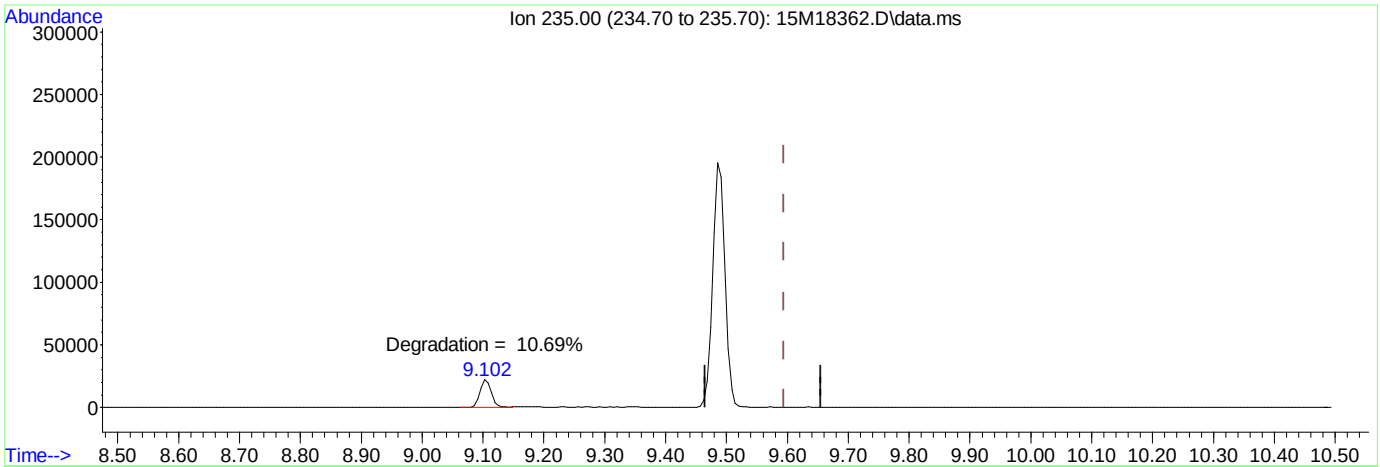

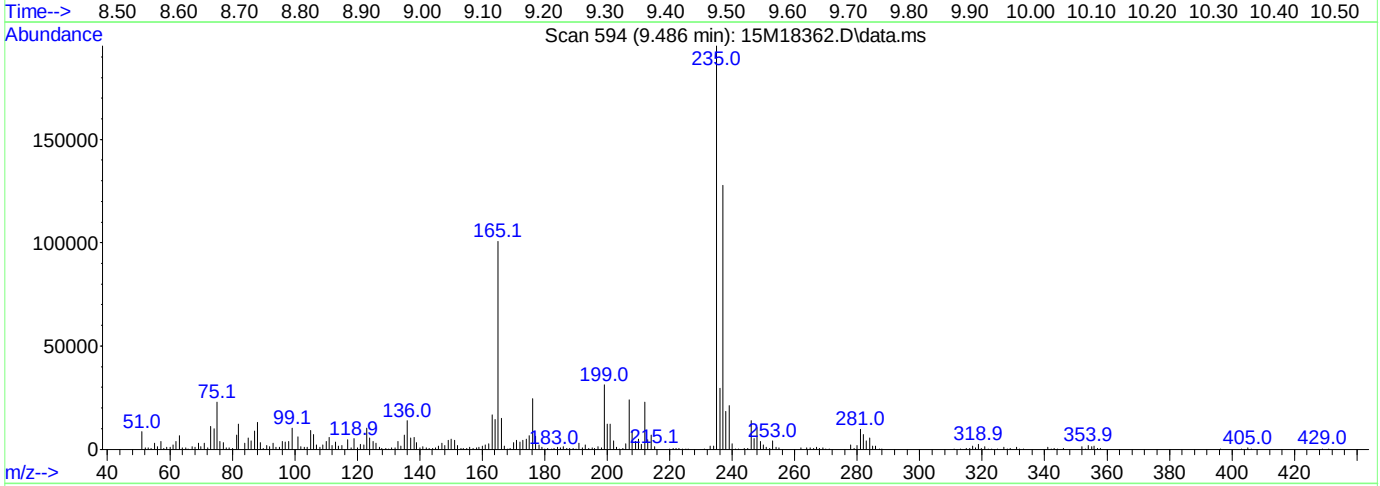

TIC: 15M18362.D\data.ms

(3) DDT

9.486min (-0.108) 0.00 ug/ml

response 240504

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18364.D
Acq On : 13 Jun 2016 9:11
Operator : MES
Sample : WG571956-01 BLANK 6/11
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 13 12:05:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	51747	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	60207	2.7798	ug/L	0.00
Spiked Amount 5.000			Recovery	=	55.60%	
4) Nitrobenzene-d5	7.442	82	3682	0.2843	ug/L	0.00
Spiked Amount 5.000			Recovery	=	5.60%	
5) 2-Fluorobiphenyl	8.930	172	149	0.0011	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.166	244	553	0.0042	ug/L	-0.02
Spiked Amount 5.000			Recovery	=	0.00%	

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18364.D
Acq On : 13 Jun 2016 9:11
Operator : MES
Sample : WG571956-01 BLANK 6/11
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 13 12:05:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

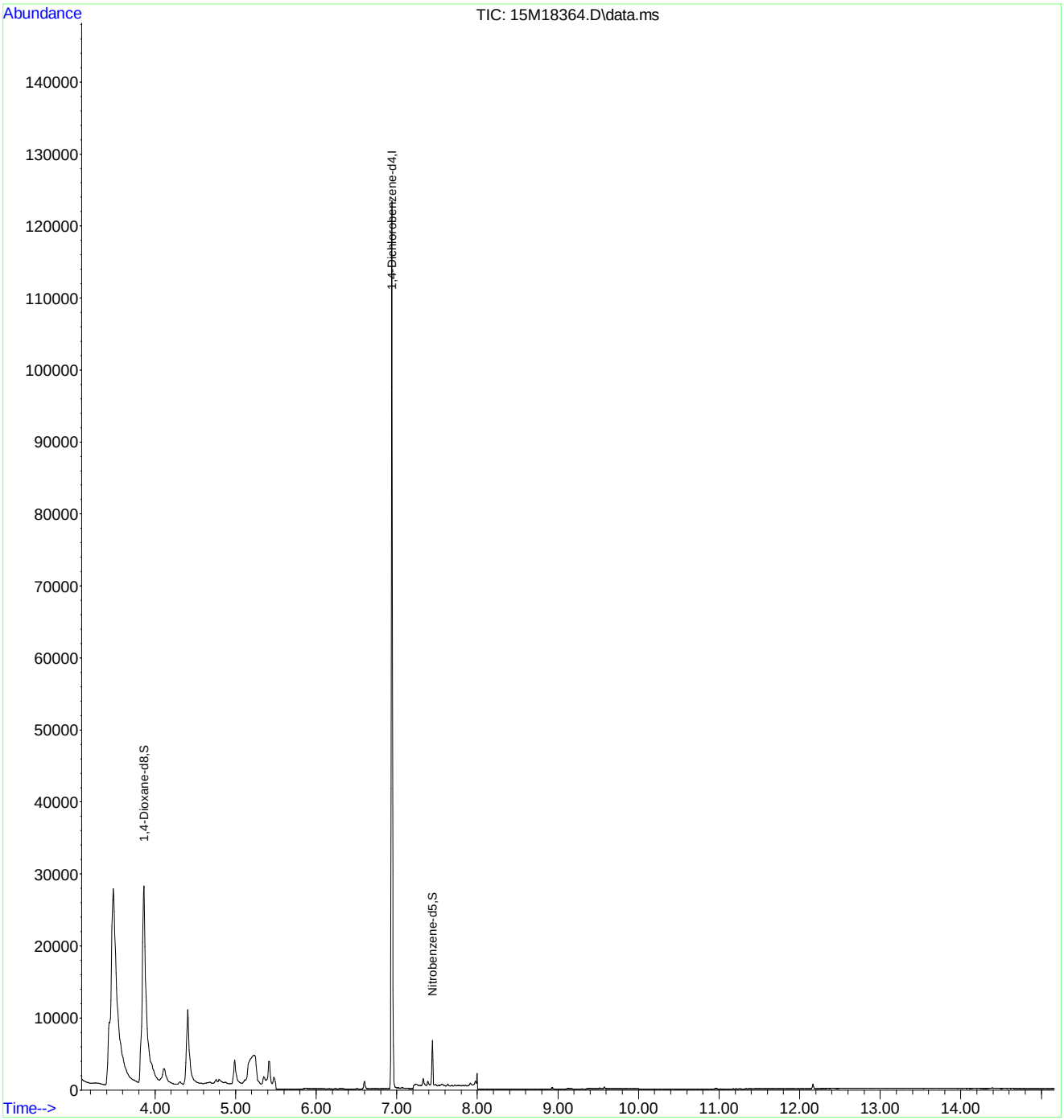

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18365.D
Acq On : 13 Jun 2016 9:34
Operator : MES
Sample : WG571956-02 LCS 6/11
Misc : 1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 13 12:06:05 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	51838	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	59406	2.7380	ug/L	0.00
Spiked Amount 5.000			Recovery	=	54.80%	
4) Nitrobenzene-d5	7.442	82	1957	0.2531	ug/L	0.00
Spiked Amount 5.000			Recovery	=	5.00%	
5) 2-Fluorobiphenyl	8.930	172	134	0.0010	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.162	244	564	0.0042	ug/L	-0.02
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	44373	2.6310	ug/L	75

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18365.D
Acq On : 13 Jun 2016 9:34
Operator : MES
Sample : WG571956-02 LCS 6/11
Misc : 1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 13 12:06:05 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

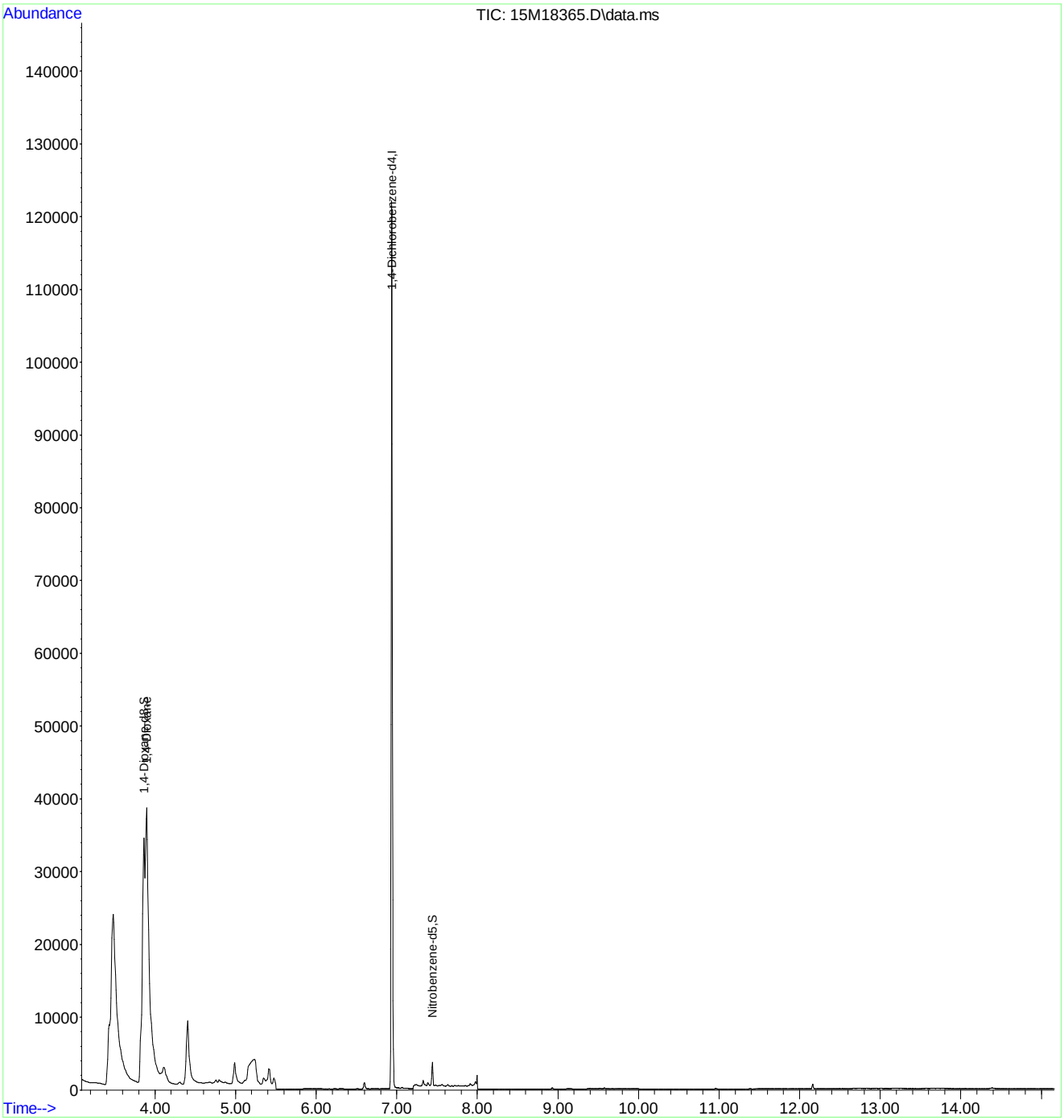

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18366.D
Acq On : 13 Jun 2016 9:56
Operator : MES
Sample : WG571956-03 LCSDUP 6/11
Misc : 1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 13 12:06:08 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	51677	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	66123	3.0571	ug/L	0.00
Spiked Amount 5.000			Recovery	=	61.20%	
4) Nitrobenzene-d5	7.442	82	2977	0.2716	ug/L	0.00
Spiked Amount 5.000			Recovery	=	5.40%	
5) 2-Fluorobiphenyl	8.926	172	132	0.0010	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.162	244	1175	0.0089	ug/L	-0.02
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	49897	2.9678	ug/L	76

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18366.D
Acq On : 13 Jun 2016 9:56
Operator : MES
Sample : WG571956-03 LCSDUP 6/11
Misc : 1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 13 12:06:08 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

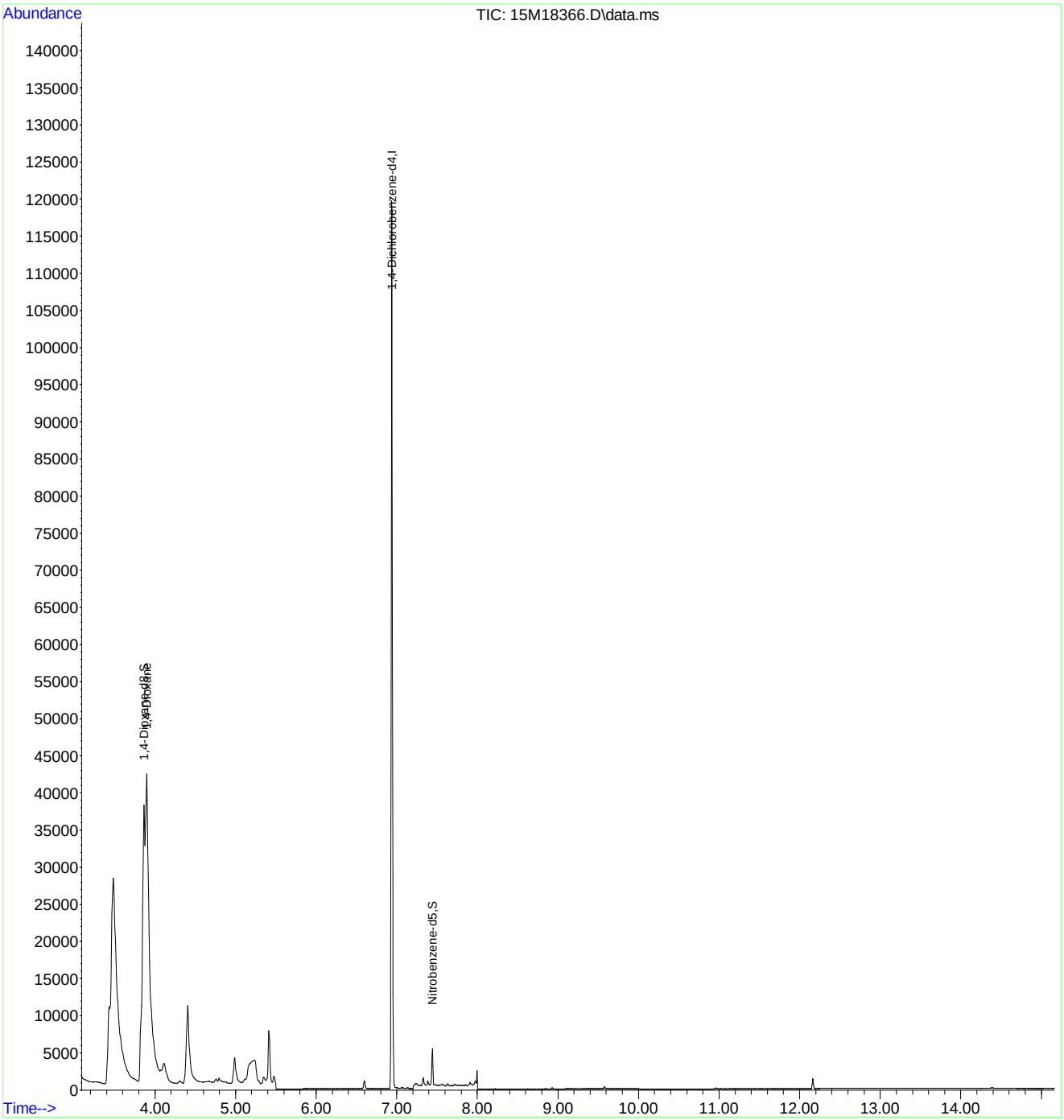

2.2 General Chromatography Data

2.2.2 6850 LC/MS Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW15T-060716	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/11/2016 12:24
Collect Date:	06/07/2016 13:15	**Dilution:**	500	**File ID:**	1LM.LM35282
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1630		200	100	50.0

Certificate of Analysis

Sample #:	L16060411-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW15B-060716	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/11/2016 12:43
Collect Date:	06/07/2016 13:55	**Dilution:**	100	**File ID:**	1LM.LM35283
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	555		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L16060411-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	AWD4T-060716	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/10/2016 17:24
Collect Date:	06/07/2016 15:00	**Dilution:**	200	**File ID:**	1LM.LM35249
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	712		80.0	40.0	20.0

Certificate of Analysis

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Sample #:	L16060411-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	AWD4B-060716	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/10/2016 17:43
Collect Date:	06/07/2016 15:30	**Dilution:**	200	**File ID:**	1LM.LM35250
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	726		80.0	40.0	20.0

2.2.2.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1402 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG572200-01 MCT	9,990	
-02 BLK	0.93	
-03 LCS	1.04	
L16060411-01	1433	
-02	1475	
-03	349	
-04	356	
L16060414-01	327	
-02	319	
-03	3510	
-04	4180	
L16060497-01	1546	
-02	1445	
-03	1450	
-04	2560	
L16060504-01	1254	
-02	853	
-03	938	
-04	2350	
L16060575-01	595	
-02	583	
-03	505	

Analyst: Wade T. Dey

Date/Time: 6-10-16 / 1354

DCN#119023

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061016_WTD.TXT
Analyst1: WTD Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:
Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)
CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35225	WG572198-01 CCB	1	1		06/10/16 09:49
2	1LM.LM35226	WG572198-02 CCV (1.0ug/L)	1	1	STD75510	06/10/16 10:08
3	1LM.LM35227	WG572200-07 MRL (0.2ug/L)	1	1	STD75510	06/10/16 10:27
4	1LM.LM35228	WG572200-01 MCT (0.2ug/L)	1	1	STD75512	06/10/16 10:46
5	1LM.LM35229	WG572200-02 BLANK	1	1		06/10/16 11:05
6	1LM.LM35230	WG572200-03 LCS (0.2ug/L)	1	1	STD75512	06/10/16 11:24
22	1LM.LM35231	L16060497-01	1	1		06/10/16 11:43
23	1LM.LM35232	L16060497-02 MS (0.2ug/L)	1	1	STD75512	06/10/16 12:02
24	1LM.LM35233	L16060497-03 MSD (0.2ug/L)	1	1	STD75512	06/10/16 12:21
10	1LM.LM35234	L16060497-04 50X	1	50		06/10/16 12:40
11	1LM.LM35235	L16060575-01	1	1		06/10/16 12:59
12	1LM.LM35236	L16060575-02	1	1		06/10/16 13:18
13	1LM.LM35237	L16060575-03	1	1		06/10/16 13:37
14	1LM.LM35238	WG572198-03 CCV (1.0ug/L)	1	1	STD75510	06/10/16 13:55
15	1LM.LM35239	WG572200-08 MRL (0.2ug/L)	1	1	STD75510	06/10/16 14:14
16	1LM.LM35240	WG572198-04 CCB	1	1		06/10/16 14:33
17	1LM.LM35241	L16060575-01 100X	1	100		06/10/16 14:52
18	1LM.LM35242	L16060575-02	1	1		06/10/16 15:11
19	1LM.LM35243	L16060575-03	1	1		06/10/16 15:30
20	1LM.LM35244	WG572198-05 CCV (1.0ug/L)	1	1	STD75510	06/10/16 15:49
21	1LM.LM35245	WG572200-09 MRL (0.2ug/L)	1	1	STD75510	06/10/16 16:08
25	1LM.LM35246	WG572198-06 CCB	1	1		06/10/16 16:27
26	1LM.LM35247	L16060411-01 50X	1	50		06/10/16 16:46
27	1LM.LM35248	L16060411-02 50X	1	50		06/10/16 17:05
28	1LM.LM35249	L16060411-03 200X	1	200		06/10/16 17:24
29	1LM.LM35250	L16060411-04 200X	1	200		06/10/16 17:43
30	1LM.LM35251	L16060414-01	1	1		06/10/16 18:02
31	1LM.LM35252	L16060414-02	1	1		06/10/16 18:21
32	1LM.LM35253	L16060414-03 20X	1	20		06/10/16 18:40
33	1LM.LM35254	L16060414-04 20X	1	20		06/10/16 18:59
58	1LM.LM35255	L16060497-01 10X	1	10		06/10/16 19:18
35	1LM.LM35256	L16060497-04 500X	1	500		06/10/16 19:37
36	1LM.LM35257	WG572198-07 CCV (1.0ug/L)	1	1	STD75510	06/10/16 19:56

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061016_WTD.TXT
Analyst1: WTD Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:
Column 1 ID: KP-RPPX250 Column 2 ID: NA
Workgroups:

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)
CCV STD: STD75510 LCS STD: STD75512 NA

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
37	1LM.LM35258	WG572200-10 MRL (0.2ug/L)	1	1	STD75510	06/10/16 20:15
38	1LM.LM35259	WG572198-08 CCB	1	1		06/10/16 20:34
39	1LM.LM35260	L16060504-01 1000X	1	1000		06/10/16 20:53
40	1LM.LM35261	L16060504-02 1000X	1	1000		06/10/16 21:12
41	1LM.LM35262	L16060504-03 1000X	1	1000		06/10/16 21:31
42	1LM.LM35263	L16060504-04 10000X	1	10000		06/10/16 21:50
43	1LM.LM35264	WG572198-09 CCV (1.0ug/L)	1	1	STD75510	06/10/16 22:09
44	1LM.LM35265	WG572200-11 MRL (0.2ug/L)	1	1	STD75510	06/10/16 22:27
45	1LM.LM35266	WG572198-10 CCB	1	1		06/10/16 22:46
46	1LM.LM35267	WG572289-07 MRL (0.2ug/L)	1	1	STD75510	06/10/16 23:05
47	1LM.LM35268	WG572289-01 MCT (0.2ug/l)	1	1	STD75512	06/10/16 23:24
48	1LM.LM35269	WG572289-02 BLANK	1	1		06/10/16 23:43
49	1LM.LM35270	WG572289-03 LCS (0.2ug/L)	1	1	STD75512	06/11/16 00:02
50	1LM.LM35271	L16060582-01 100X	1	100		06/11/16 00:21
51	1LM.LM35272	L16060582-02	1	1		06/11/16 00:40
59	1LM.LM35273	L16060582-03	1	1		06/11/16 00:59
53	1LM.LM35274	L16060582-03 MS (0.2ug/L)	1	1	STD75512	06/11/16 01:18
54	1LM.LM35275	L16060582-03 MSD (0.2ug/L)	1	1	STD75512	06/11/16 01:37
55	1LM.LM35276	WG572198-11 CCV (1.0ug/L)	1	1	STD75510	06/11/16 01:56
56	1LM.LM35277	WG572289-08 MRL (0.2ug/L)	1	1	STD75510	06/11/16 02:15
57	1LM.LM35278	WG572198-12 CCB	1	1		06/11/16 02:34

Comments

Seq.	Rerun	Dil.	Reason	Analytes
22	X	10	Over Calibration Range	
	L16060497-01			
23				
	WG572200-05 - Sample does not appear to be homogenous with Sample 01, the reference and Sample 03, the MSD.			
24				
	WG572200-06 - Sample does not appear to be homogenous with Sample 01, the reference and Sample 02, the MS.			
10	X	500	Over Calibration Range	
	L16060497-04			
11	X	100	Over Calibration Range	
	L16060575-01			
12	X	1	Carry-over contamination	
	L16060575-02			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061016_WTD.TXT

Analyst1: WTD Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 NA

Comments

Seq.	Rerun	Dil.	Reason	Analytes
13	X	1	Carry-over contamination	
	L16060575-03			
26	X	500	Over Calibration Range	
	L16060411-01			
27	X	100	Over Calibration Range	
	L16060411-02			
32	X	10000	Over Calibration Range	
	L16060414-03			
33	X	10000	Over Calibration Range	
	L16060414-04			
39	X	10000	Over Calibration Range	
	L16060504-01			
40	X		Internal standard failure	
	L16060504-02 - No Internal Standard added.			
41	X	10000	Over Calibration Range	
	L16060504-03 - No Internal Standard added.			
42	X	1000	Analyzed too dilute	
	L16060504-04 - No Internal Standard added.			
50				
	L16060582-01 - Analyzed at a dilution based on information from the client.			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061116_WTD.TXT
Analyst1: WTD Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)
CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35279	WG572339-01 CCB	1	1		06/11/16 11:27
2	1LM.LM35280	WG572339-02 CCV (1.0ug/L)	1	1	STD75510	06/11/16 11:46
3	1LM.LM35281	WG572200-12 MRL (0.2ug/L)	1	1	STD75510	06/11/16 12:05
4	1LM.LM35282	L16060411-01 500X	1	500		06/11/16 12:24
5	1LM.LM35283	L16060411-02 100X	1	100		06/11/16 12:43
6	1LM.LM35284	L16060414-03 10000X	1	10000		06/11/16 13:02
7	1LM.LM35285	L16060414-04 10000X	1	10000		06/11/16 13:21
8	1LM.LM35286	L16060504-01 10000X	1	10000		06/11/16 13:40
9	1LM.LM35287	L16060504-02 1000X	1	1000		06/11/16 13:58
10	1LM.LM35288	L16060504-03 10000X	1	10000		06/11/16 14:17
11	1LM.LM35289	L16060504-04 1000X	1	1000		06/11/16 14:36
12	1LM.LM35290	L16060414-03 100000X	1	100000		06/11/16 14:55
13	1LM.LM35291	L16060414-04 100000X	1	100000		06/11/16 15:15
14	1LM.LM35292	WG572339-03 CCV (1.0ug/L)	1	1	STD75510	06/11/16 15:34
15	1LM.LM35293	WG572200-13 MRL (0.2ug/L)	1	1	STD75510	06/11/16 16:41
16	1LM.LM35294	WG572339-04 CCB	1	1		06/11/16 17:00
17	1LM.LM35295	L16060504-04 100X	1	100		06/11/16 17:19
18	1LM.LM35296	WG572339-05 CCV (1.0ug/L)	1	1	STD75510	06/11/16 17:38
19	1LM.LM35297	WG572200-14 MRL (0.2ug/L)	1	1	STD75510	06/11/16 17:57
20	1LM.LM35298	WG572339-06 CCB	1	1		06/11/16 18:16
21	1LM.LM35299	WG572350-05 MRL (0.2ug/L)	1	1	STD75510	06/11/16 18:35
22	1LM.LM35300	WG572350-01 MCT (0.2ug/l)	1	1	STD75512	06/11/16 18:54
23	1LM.LM35301	WG572350-02 BLANK	1	1		06/11/16 19:13
24	1LM.LM35302	WG572350-03 LCS (0.2ug/L)	1	1	STD75512	06/11/16 19:32
25	1LM.LM35303	WG572350-03 LCSD (0.2ug/L)	1	1	STD75512	06/11/16 19:51
26	1LM.LM35304	L16060632-01 100X	1	100		06/11/16 20:10
27	1LM.LM35305	L16060632-02 100X	1	100		06/11/16 20:29
28	1LM.LM35306	L16060632-03 100X	1	100		06/11/16 20:48
29	1LM.LM35307	L16060632-04 100X	1	100		06/11/16 21:07
30	1LM.LM35308	L16060615-01 10000X	1	10000		06/11/16 21:26
31	1LM.LM35309	L16060615-02 100X	1	100		06/11/16 21:44
43	1LM.LM35310	WG572339-07 CCV (1.0ug/L)	1	1	STD75510	06/11/16 22:03
33	1LM.LM35311	WG572350-06 MRL (0.2ug/L)	1	1	STD75510	06/11/16 22:22

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061116_WTD.TXT
Analyst1: WTD Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:
Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)
CCV STD: STD75510 LCS STD: STD75512 NA

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
44	1LM.LM35312	WG572339-08 CCB	1	1		06/11/16 22:41
35	1LM.LM35313	L16060615-03 100X	1	100		06/11/16 23:00
36	1LM.LM35314	L16060615-04 100X	1	100		06/11/16 23:19
37	1LM.LM35315	L16060616-01 10000X	1	10000		06/11/16 23:38
38	1LM.LM35316	L16060616-02 10000X	1	10000		06/11/16 23:57
39	1LM.LM35317	L16060616-03	1	1		06/12/16 00:16
45	1LM.LM35318	WG572339-09 CCV (1.0ug/L)	1	1	STD75510	06/12/16 00:35
41	1LM.LM35319	WG572350-07 MRL (0.2ug/L)	1	1	STD75510	06/12/16 00:54
46	1LM.LM35320	WG572339-10 CCB	1	1		06/12/16 01:13

Comments

Seq.	Rerun	Dil.	Reason	Analytes
6	X	100000	Over Calibration Range	
	L16060414-03			
7	X	100000	Over Calibration Range	
	L16060414-04			
11	X	100	Analyzed too dilute	
	L16060504-04			
26	X	1	Analyzed too dilute	
	L16060632-01			
27	X	1	Analyzed too dilute	
	L16060632-02			
28	X	1	Analyzed too dilute	
	L16060632-03			
29	X	1	Analyzed too dilute	
	L16060632-04			
30	X	1	Analyzed too dilute	
	L16060615-01			
31	X	1	Analyzed too dilute	
	L16060615-02			
35	X	1	Analyzed too dilute	
	L16060615-03			
36	X	10000	Over Calibration Range	
	L16060615-04			
37				
	L16060616-01 Analyzed at a dilution based on historical data			

Page: 2 Approved: 13-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061116_WTD.TXT

Analyst1: WTD Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups:

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 NA

Comments

Seq.	Rerun	Dil.	Reason	Analytes
38	X	100	Analyzed too dilute	
	L16060616-02			

Page: 3 Approved: 13-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
04-MAY-2016
John Richards

Secondary Reviewer:
05-MAY-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 10-JUN-2016
Analyst: WTD
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 75634
Analytical Workgroups: WG572200, WG572289

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	WTD
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MES

Primary Reviewer: 11-JUN-2016

Secondary Reviewer: 13-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-13-2016 11:53:25

Microbac Laboratories Inc.

Data Checklist

Date: 11-JUN-2016
Analyst: WTD
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 75641
Analytical Workgroups: L16060411, L16060414, L16060504, L16060616

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	WTD
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 12-JUN-2016

Secondary Reviewer: 13-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-14-2016 08:50:47

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG572200

Login Number: L16060411

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW15T-060716	01	06/07/16					06/10/2016	2.8	28		06/11/16	1.1	28	
18CPTMW15B-060716	02	06/07/16					06/10/2016	2.8	28		06/11/16	1.2	28	
AWD4T-060716	03	06/07/16					06/10/2016	2.8	28		06/10/16	.4	28	
AWD4B-060716	04	06/07/16					06/10/2016	2.7	28		06/10/16	.4	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4803801
Report generated 06/14/2016 08:39

METHOD BLANK SUMMARY

Login Number: L16060411
Blank File ID: 1LM.LM35229
Prep Date: 06/10/16 09:00
Analyzed Date: 06/10/16 11:05
Analyst: WTD

Work Group: WG572200
Blank Sample ID: WG572200-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG572200-07	1LM.LM35227	06/10/16 10:27	01
MCT	WG572200-01	1LM.LM35228	06/10/16 10:46	01
LCS	WG572200-03	1LM.LM35230	06/10/16 11:24	01
QCMRL	WG572200-08	1LM.LM35239	06/10/16 14:14	01
QCMRL	WG572200-09	1LM.LM35245	06/10/16 16:08	01
AWD4T-060716	L16060411-03	1LM.LM35249	06/10/16 17:24	DL01
AWD4B-060716	L16060411-04	1LM.LM35250	06/10/16 17:43	DL01
QCMRL	WG572200-10	1LM.LM35258	06/10/16 20:15	01
QCMRL	WG572200-11	1LM.LM35265	06/10/16 22:27	01
QCMRL	WG572200-12	1LM.LM35281	06/11/16 12:05	01
18CPTMW15T-060716	L16060411-01	1LM.LM35282	06/11/16 12:24	DL01
18CPTMW15B-060716	L16060411-02	1LM.LM35283	06/11/16 12:43	DL01
QCMRL	WG572200-13	1LM.LM35293	06/11/16 16:41	01
QCMRL	WG572200-14	1LM.LM35297	06/11/16 17:57	01

Report Name: BLANK_SUMMARY
PDF File ID: 4803802
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060411 Prep Date: 06/10/16 09:00 Sample ID: WG572200-02
Instrument ID: LCMS1 Run Date: 06/10/16 11:05 Prep Method: 6850
File ID: 1LM.LM35229 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4803803
14-JUN-2016 08:39

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060411 Run Date: 06/10/2016 Sample ID: WG572200-03
Instrument ID: LCMS1 Run Time: 11:24 Prep Method: 6850
File ID: 1LM.LM35230 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD75512 Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	0.200	0.201	101	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4803804
Report generated: 06/14/2016 08:39

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060411
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4803806
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060411

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4803806
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060411

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4803806
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060411

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008

PDF File ID: 4803806

Report generated 06/14/2016 08:39

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060411 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4803807
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060411
Run Date: 06/10/2016
Sample ID: WG572198-01
Instrument ID: LCMS1
Run Time: 09:49
Method: 6850
File ID: 1LM.LM35225
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4803809
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060411
Run Date: 06/10/2016
Sample ID: WG572198-04
Instrument ID: LCMS1
Run Time: 14:33
Method: 6850
File ID: 1LM.LM35240
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4803809
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060411
Run Date: 06/10/2016
Sample ID: WG572198-06
Instrument ID: LCMS1
Run Time: 16:27
Method: 6850
File ID: 1LM.LM35246
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4803809
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060411
Run Date: 06/10/2016
Sample ID: WG572198-08
Instrument ID: LCMS1
Run Time: 20:34
Method: 6850
File ID: 1LM.LM35259
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4803809
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060411
Run Date: 06/10/2016
Sample ID: WG572198-10
Instrument ID: LCMS1
Run Time: 22:46
Method: 6850
File ID: 1LM.LM35266
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4803809
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060411
Run Date: 06/11/2016
Sample ID: WG572339-01
Instrument ID: LCMS1
Run Time: 11:27
Method: 6850
File ID: 1LM.LM35279
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4803809
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060411
Run Date: 06/11/2016
Sample ID: WG572339-04
Instrument ID: LCMS1
Run Time: 17:00
Method: 6850
File ID: 1LM.LM35294
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4803809
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060411
Run Date: 06/11/2016
Sample ID: WG572339-06
Instrument ID: LCMS1
Run Time: 18:16
Method: 6850
File ID: 1LM.LM35298
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4803809
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060411
Run Date: 06/10/2016
Sample ID: WG572198-02
Instrument ID: LCMS1
Run Time: 10:08
Method: 6850
File ID: 1LM.LM35226
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.70	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4803808
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060411
Run Date: 06/10/2016
Sample ID: WG572198-03
Instrument ID: LCMS1
Run Time: 13:55
Method: 6850
File ID: 1LM.LM35238
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.71	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4803808
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060411
Run Date: 06/10/2016
Sample ID: WG572198-05
Instrument ID: LCMS1
Run Time: 15:49
Method: 6850
File ID: 1LM.LM35244
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.05	ug/L	1.77	5.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4803808
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060411
Run Date: 06/10/2016
Sample ID: WG572198-07
Instrument ID: LCMS1
Run Time: 19:56
Method: 6850
File ID: 1LM.LM35257
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.08	ug/L	1.82	8.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4803808
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060411
Run Date: 06/10/2016
Sample ID: WG572198-09
Instrument ID: LCMS1
Run Time: 22:09
Method: 6850
File ID: 1LM.LM35264
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.74	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4803808
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060411 Run Date: 06/11/2016 Sample ID: WG572198-11
Instrument ID: LCMS1 Run Time: 01:56 Method: 6850
File ID: 1LM.LM35276 Analyst: WTD QC Key: DOD4
Workgroup (AAB#): WG572200 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.74	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4803808
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060411 Run Date: 06/11/2016 Sample ID: WG572339-02
Instrument ID: LCMS1 Run Time: 11:46 Method: 6850
File ID: 1LM.LM35280 Analyst: WTD QC Key: DOD4
Workgroup (AAB#): WG572200 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.75	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4803808
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060411
Run Date: 06/11/2016
Sample ID: WG572339-03
Instrument ID: LCMS1
Run Time: 15:34
Method: 6850
File ID: 1LM.LM35292
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.05	ug/L	1.78	5.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4803808
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060411
Run Date: 06/11/2016
Sample ID: WG572339-05
Instrument ID: LCMS1
Run Time: 17:38
Method: 6850
File ID: 1LM.LM35296
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.73	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4803808
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060411 Run Date: 06/11/2016 Sample ID: WG572339-07
Instrument ID: LCMS1 Run Time: 22:03 Method: 6850
File ID: 1LM.LM35310 Analyst: WTD QC Key: DOD4
Workgroup (AAB#): WG572200 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.06	ug/L	1.79	6.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4803808
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060411 Run Date: 06/10/2016 Sample ID: WG572200-07
Instrument ID: LCMS1 Run Time: 10:27 Prep Method: 6850
File ID: 1LM.LM35227 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.202	101	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4803805
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060411 Run Date: 06/10/2016 Sample ID: WG572200-08
Instrument ID: LCMS1 Run Time: 14:14 Prep Method: 6850
File ID: 1LM.LM35239 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.215	108	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4803805
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060411 Run Date: 06/10/2016 Sample ID: WG572200-09
Instrument ID: LCMS1 Run Time: 16:08 Prep Method: 6850
File ID: 1LM.LM35245 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.210	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4803805
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060411 Run Date: 06/10/2016 Sample ID: WG572200-10
Instrument ID: LCMS1 Run Time: 20:15 Prep Method: 6850
File ID: 1LM.LM35258 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.222	111	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4803805
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060411 Run Date: 06/10/2016 Sample ID: WG572200-11
Instrument ID: LCMS1 Run Time: 22:27 Prep Method: 6850
File ID: 1LM.LM35265 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.216	108	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4803805
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060411 Run Date: 06/11/2016 Sample ID: WG572200-12
Instrument ID: LCMS1 Run Time: 12:05 Prep Method: 6850
File ID: 1LM.LM35281 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4803805
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060411 Run Date: 06/11/2016 Sample ID: WG572200-13
Instrument ID: LCMS1 Run Time: 16:41 Prep Method: 6850
File ID: 1LM.LM35293 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4803805
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060411 Run Date: 06/11/2016 Sample ID: WG572200-14
Instrument ID: LCMS1 Run Time: 17:57 Prep Method: 6850
File ID: 1LM.LM35297 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.215	108	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4803805
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16060411
Instrument ID: LCMS1
Workgroup (AAB#): WG572200

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16060411-01	500	DL01	446000
L16060411-02	100	DL01	441000
L16060411-03	200	DL01	467000
L16060411-04	200	DL01	468000
WG572200-02	1.00	01	441000
WG572200-03	1.00	01	434000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4803810
Report generated 06/14/2016 08:39

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**	6850	**Samplenum:**	L16060411-01
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35282
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 12:24	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	489000	170000	2.88	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**	6850	**Samplenum:**	L16060411-02
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35283
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 12:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	824000	288000	2.86	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**	6850	**Samplenum:**	L16060411-03
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35249
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 17:24	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	560000	196000	2.86	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**	6850	**Samplenum:**	L16060411-04
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35250
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 17:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	573000	195000	2.94	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG572198-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35225
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 09:49	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG572198-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35226
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 10:08	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	151000	53700	2.81	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG572198-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35238
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 13:55	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	172000	59600	2.89	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG572198-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35240
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 14:33	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	3660	1770	2.07	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG572198-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35244
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 15:49	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	179000	63400	2.82	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG572198-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35246
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 16:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	377	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG572198-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35257
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 19:56	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	175000	58000	3.02	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG572198-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35259
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 20:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG572198-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35264
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 22:09	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	57800	2.92	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG572198-10
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35266
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 22:46	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	971	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG572198-11
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35276
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 01:56	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	183000	61800	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**	6850	**Samplenum:**	WG572200-01
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35228
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 10:46	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35200	10400	3.38	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**	6850	**Samplenum:**	WG572200-02
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35229
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 11:05	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	309	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**	6850	**Samplenum:**	WG572200-03
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35230
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 11:24	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	30000	11800	2.54	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**	6850	**Samplenum:**	WG572200-07
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35227
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 10:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	30600	11100	2.76	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**	6850	**Samplenum:**	WG572200-08
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35239
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 14:14	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36500	13800	2.64	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**	6850	**Samplenum:**	WG572200-09
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35245
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 16:08	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36700	12600	2.91	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**	6850	**Samplenum:**	WG572200-10
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35258
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 20:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36200	12400	2.92	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**	6850	**Samplenum:**	WG572200-11
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35265
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 22:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35800	11700	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**	6850	**Samplenum:**	WG572200-12
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35281
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 12:05	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	33000	11900	2.77	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**	6850	**Samplenum:**	WG572200-13
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35293
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 16:41	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	33900	12200	2.78	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**	6850	**Samplenum:**	WG572200-14
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35297
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 17:57	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36500	12700	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG572339-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35279
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 11:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	7310	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG572339-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35280
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 11:46	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	160000	54700	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG572339-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35292
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 15:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	171000	56800	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG572339-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35294
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 17:00	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG572339-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35296
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 17:38	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	172000	59300	2.90	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG572339-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35298
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 18:16	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG572339-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35310
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 22:03	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	180000	60500	2.98	2.3	3.8	

2.2.2.3 Sample Data

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Printed: 6/12/2016 9:37 PM

Data File	LM35282.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 12:24:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060411-01 500X	**Injection Vial**	14.00
Data File	LM35282.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 12:24:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	L16060411-01	**Dilution Factor**	1.00
Sample Comment	1,500.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.460e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.890e+05	9.84	N/A	3.26
Perchlorate conf	1.700e+05	9.82	N/A	3.39

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

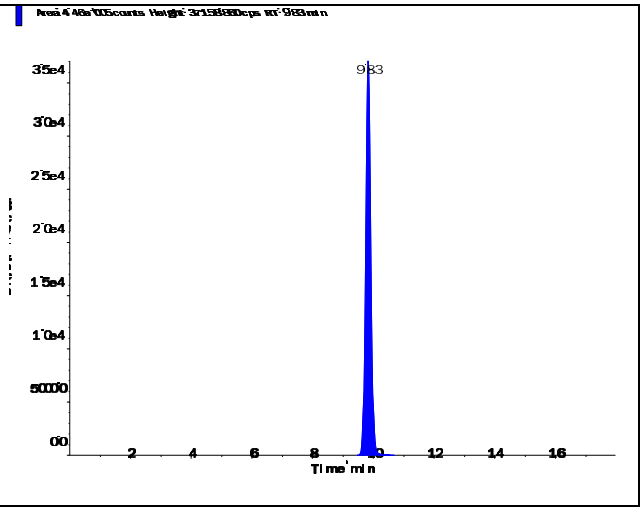

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	3.26 ng/ml
Area Ratio:	1.097
Sample Type:	(Unknown)

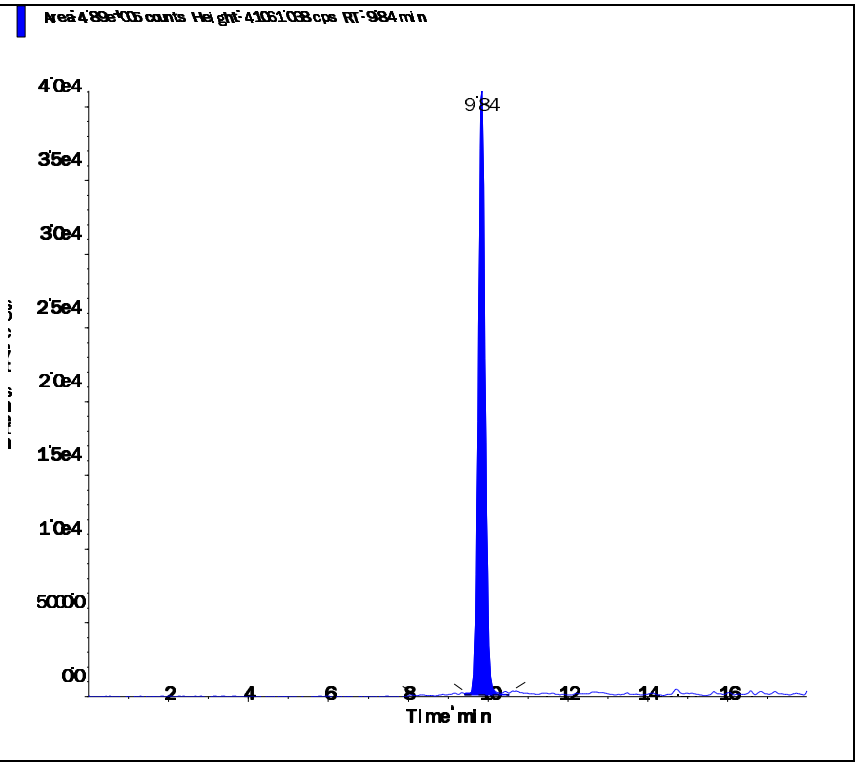

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	3.39 ng/ml
Area Ratio:	0.381
Sample Type:	(Unknown)

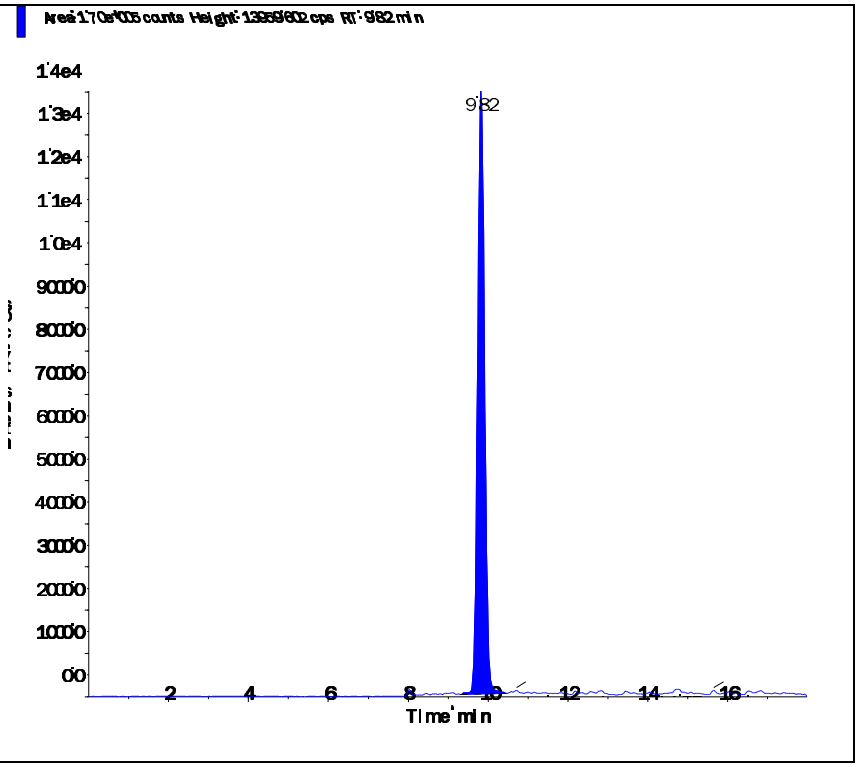

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Printed: 6/12/2016 9:38 PM

Data File	LM35283.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 12:43:12 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060411-02 100X	**Injection Vial**	15.00
Data File	LM35283.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 12:43:12 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	L16060411-02	**Dilution Factor**	1.00
Sample Comment	1,100.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.410e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.240e+05	9.82	N/A	5.55
Perchlorate conf	2.880e+05	9.81	N/A	5.83

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

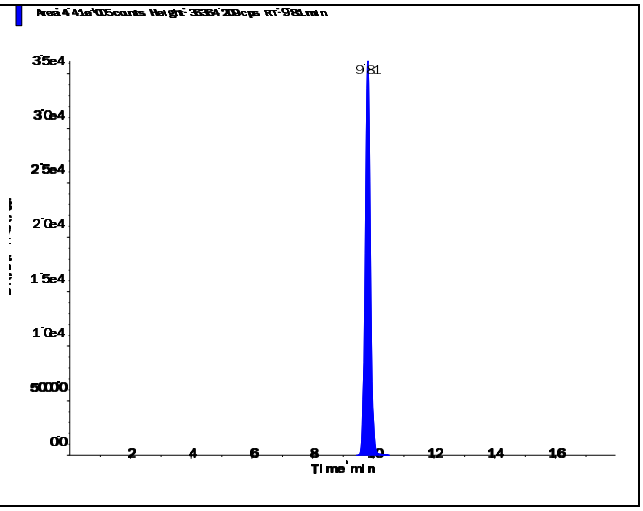

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	5.55 ng/ml
Area Ratio:	1.866
Sample Type:	(Unknown)

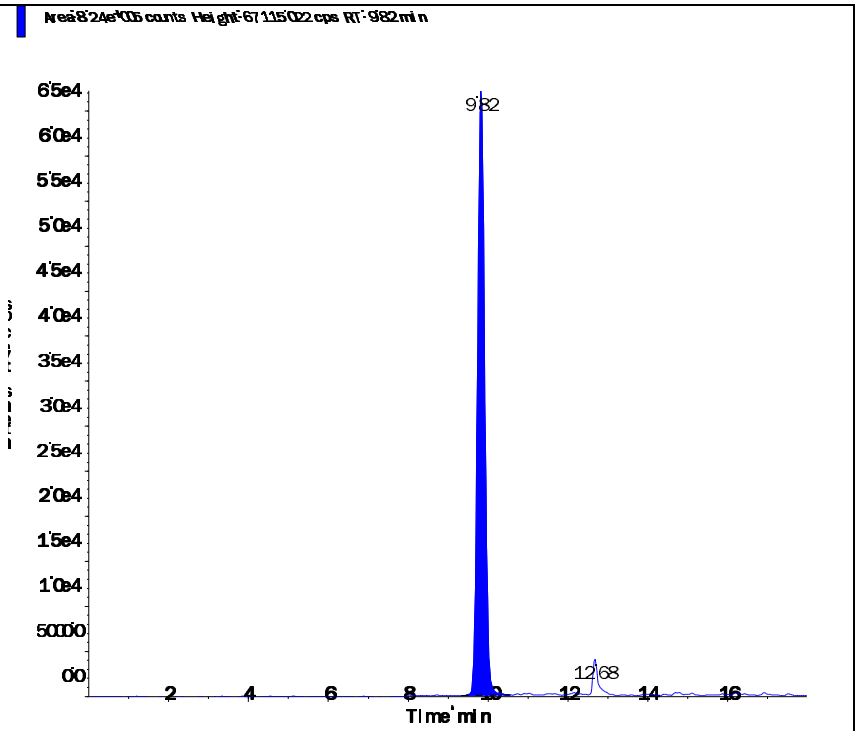

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.81 (9.84) min
Calculated conc:	5.83 ng/ml
Area Ratio:	0.653
Sample Type:	(Unknown)

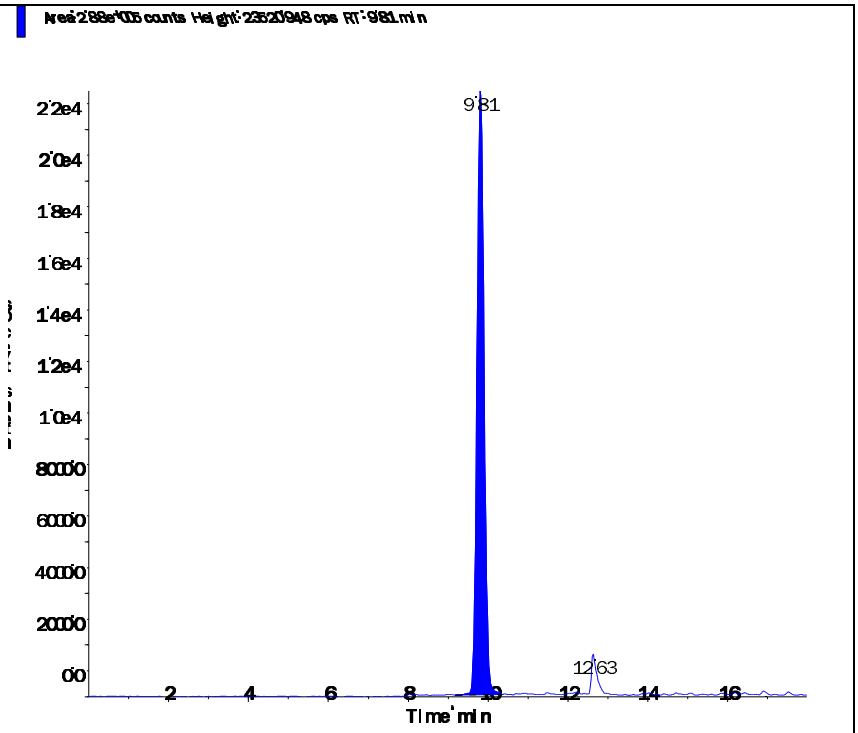

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Printed: 6/11/2016 1:07 PM

Data File	LM35249.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 5:24:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060411-03 200X	**Injection Vial**	16.00
Data File	LM35249.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 5:24:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	L16060411-03	**Dilution Factor**	1.00
Sample Comment	1,200.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.670e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.600e+05	9.85	N/A	3.56
Perchlorate conf	1.960e+05	9.83	N/A	3.74

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

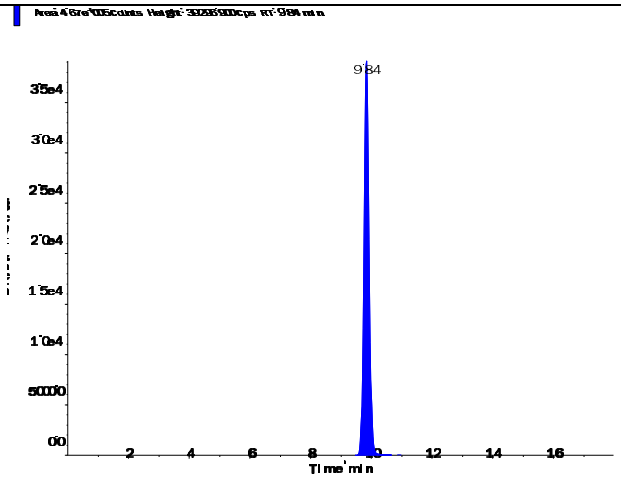

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 3.56 ng/ml Area Ratio: 1.199 Sample Type: (Unknown)	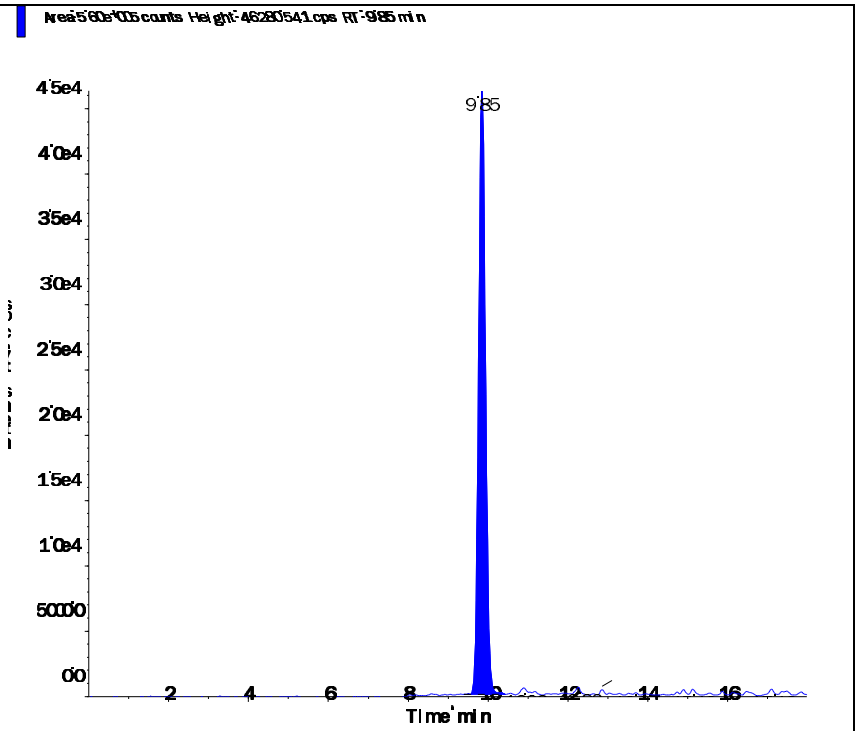
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 3.74 ng/ml Area Ratio: 0.42 Sample Type: (Unknown)	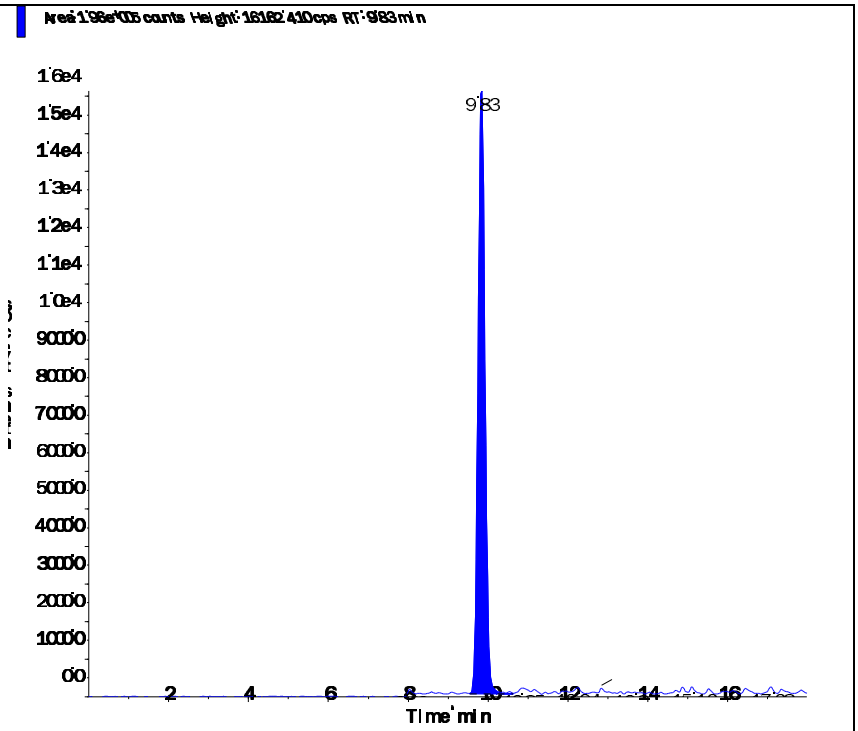

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Printed: 6/11/2016 1:07 PM

Data File	LM35250.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 5:43:47 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060411-04 200X	**Injection Vial**	17.00
Data File	LM35250.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 5:43:47 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	L16060411-04	**Dilution Factor**	1.00
Sample Comment	1,200.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.680e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.730e+05	9.84	N/A	3.63
Perchlorate conf	1.950e+05	9.83	N/A	3.72

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

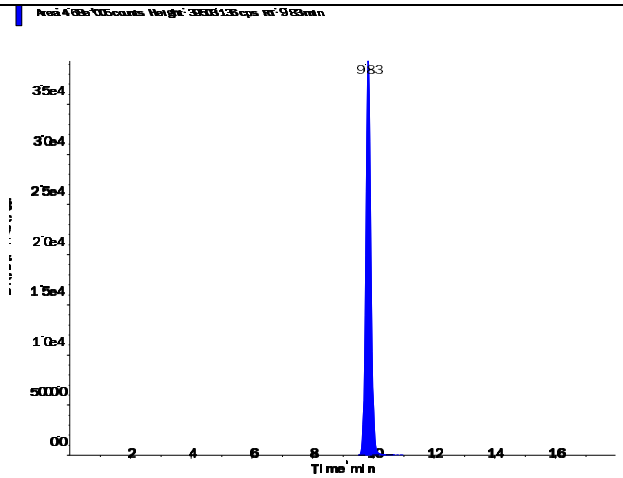

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	3.63 ng/ml
Area Ratio:	1.223
Sample Type:	(Unknown)

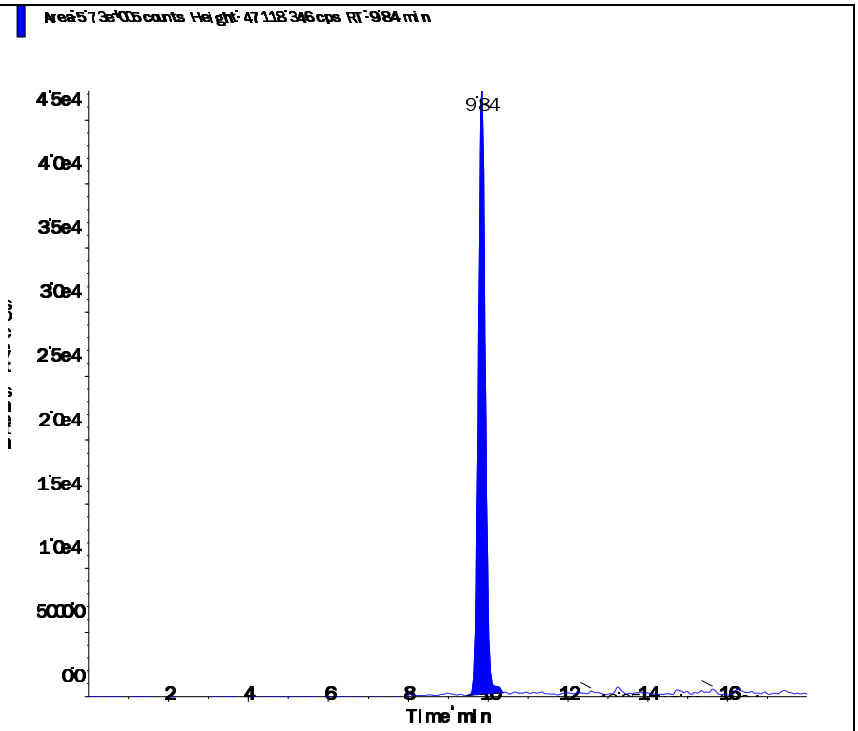

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	3.72 ng/ml
Area Ratio:	0.417
Sample Type:	(Unknown)

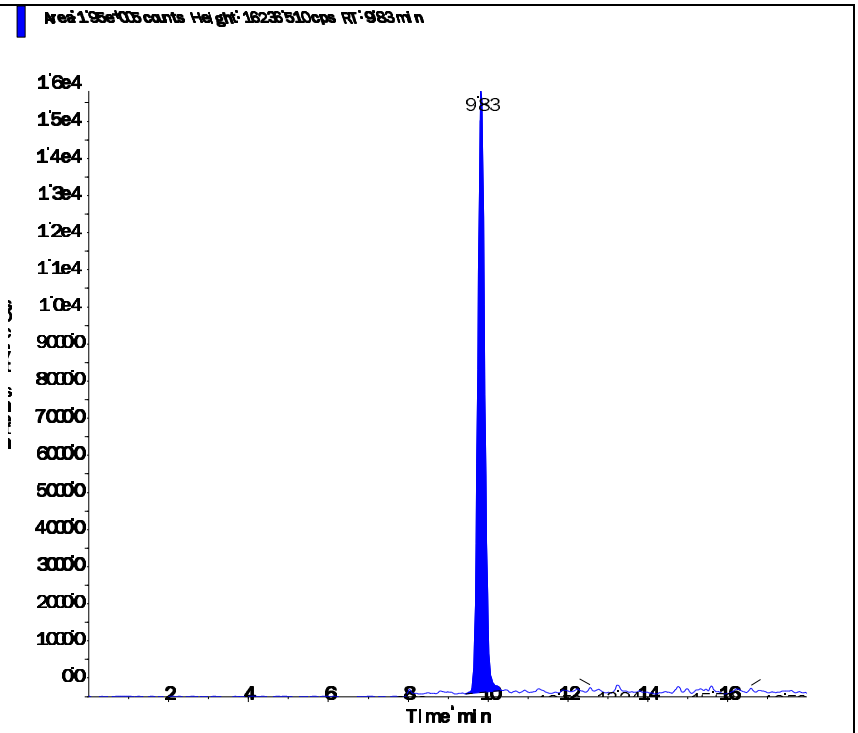

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2.2.2.4 Standards Data

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Printed: 6/13/2016 10:27 AM

Data File	LM34686.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

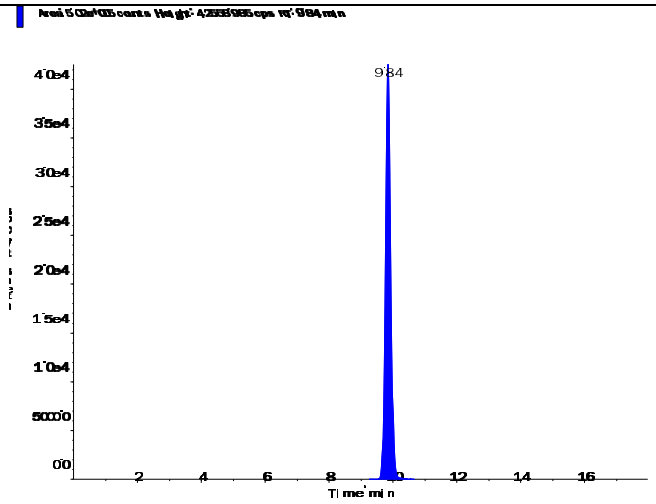

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Printed: 6/13/2016 10:27 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

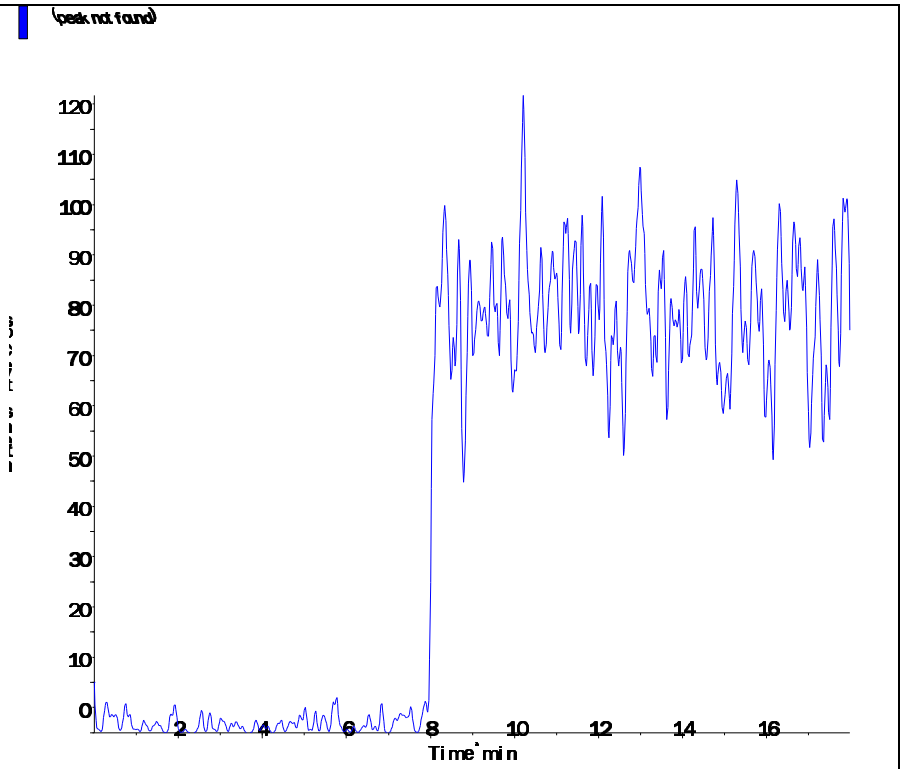

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

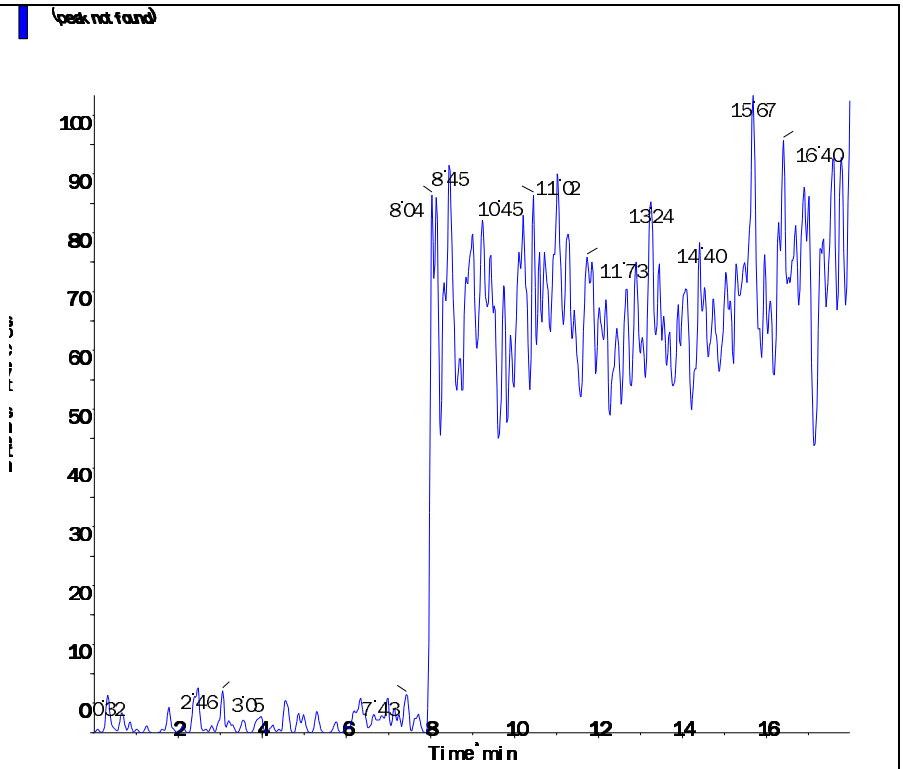

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Created with Analyst Reporter
Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

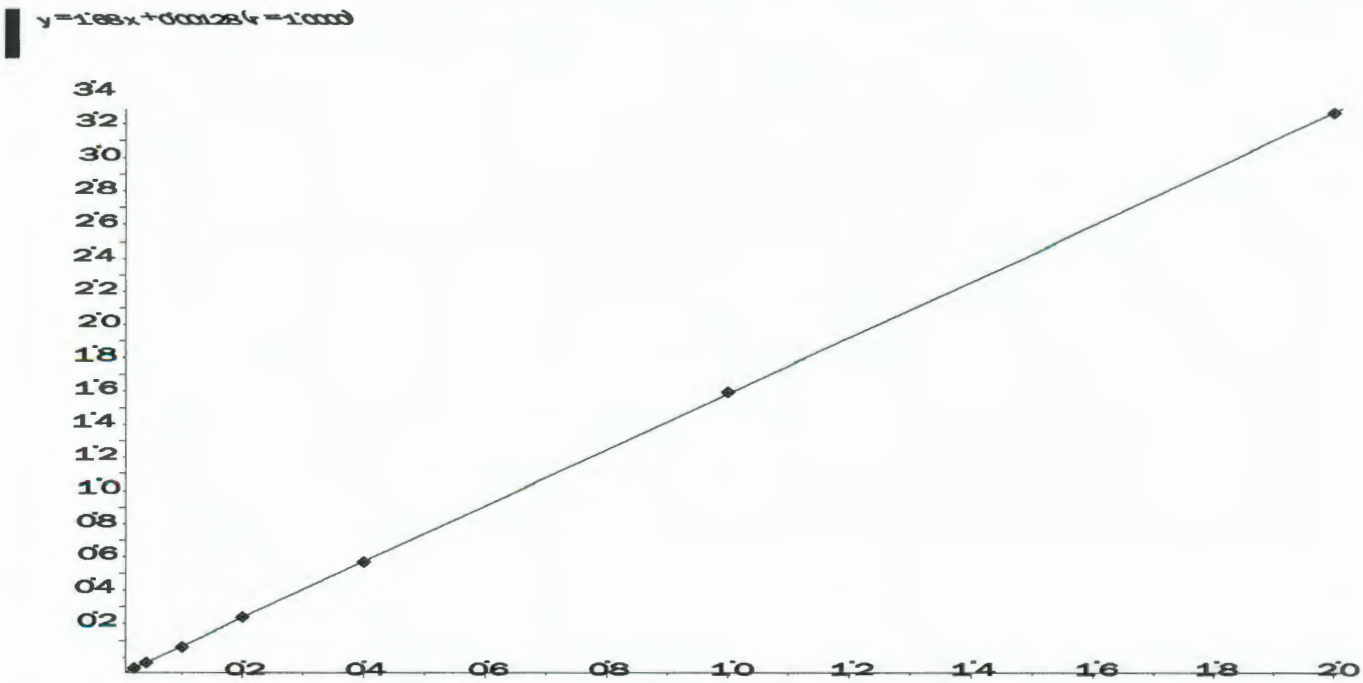

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Created with Analyst Reporter
Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

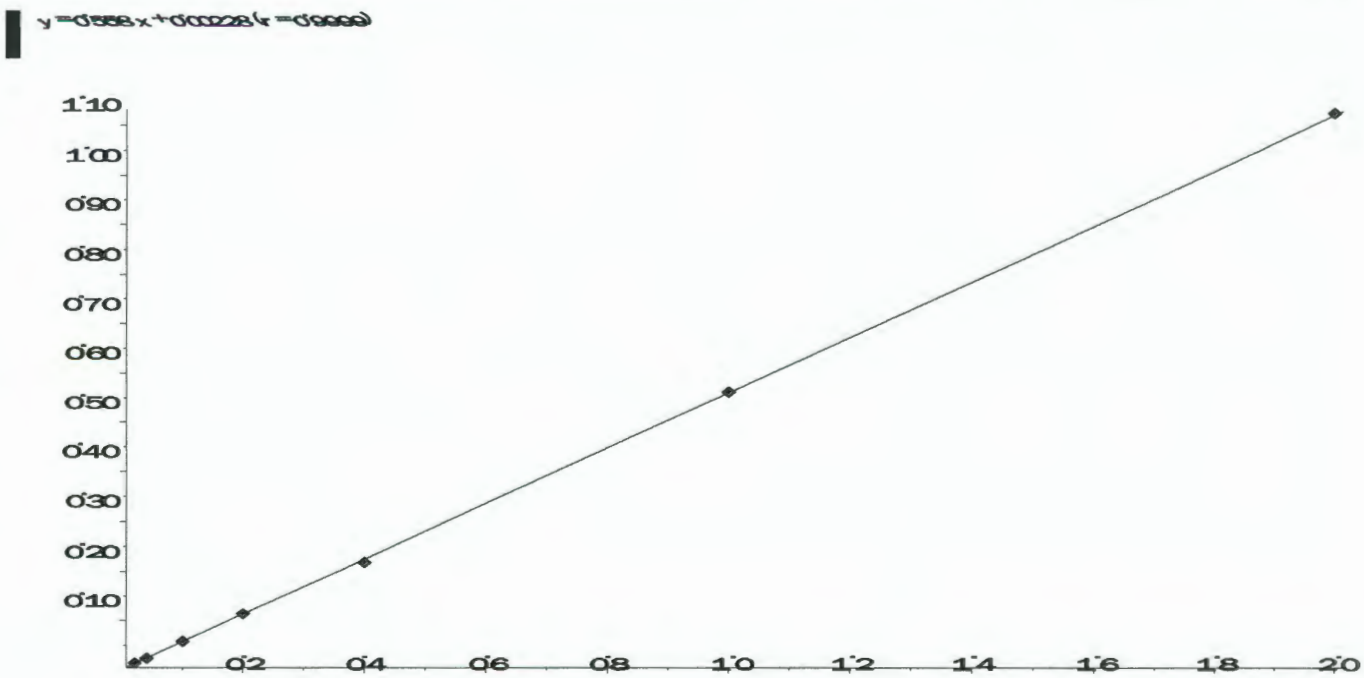

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Data File	LM34687.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

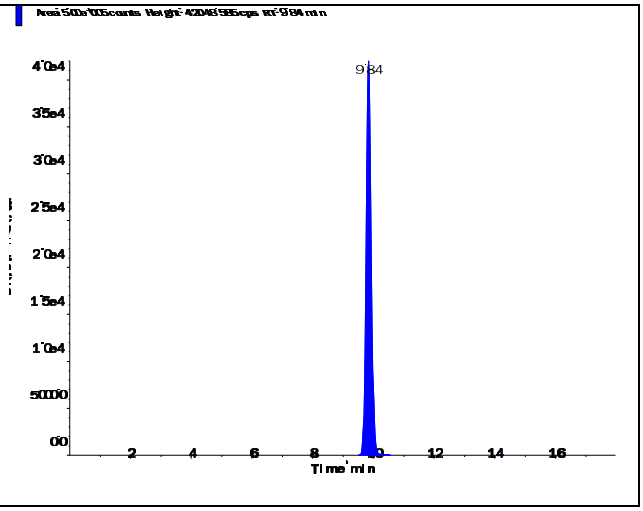

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.103 ng/ml
Area Ratio:	0.036
Sample Type:	(Standard)

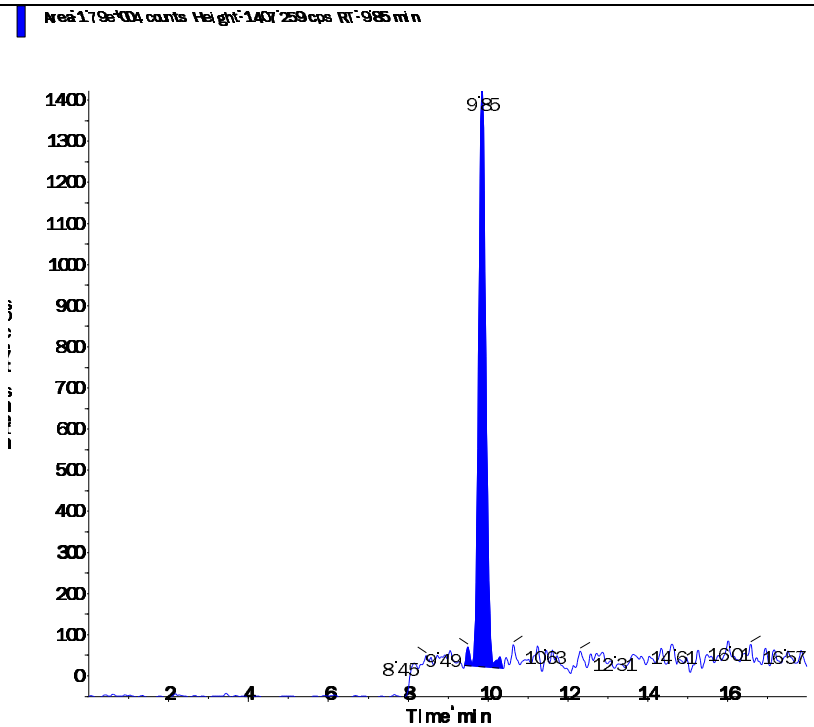

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.104 ng/ml
Area Ratio:	0.014
Sample Type:	(Standard)

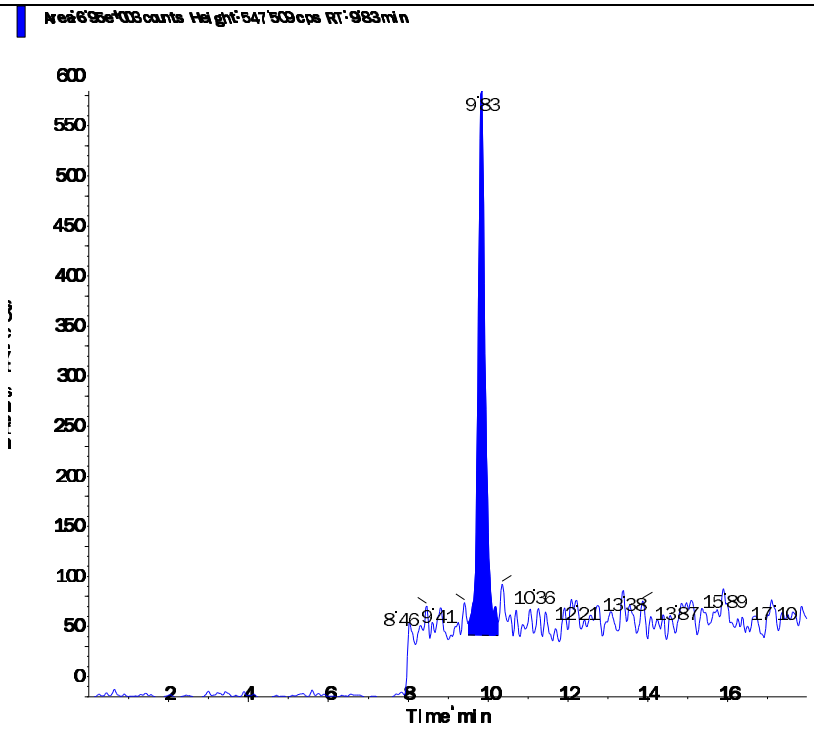

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Data File	LM34688.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

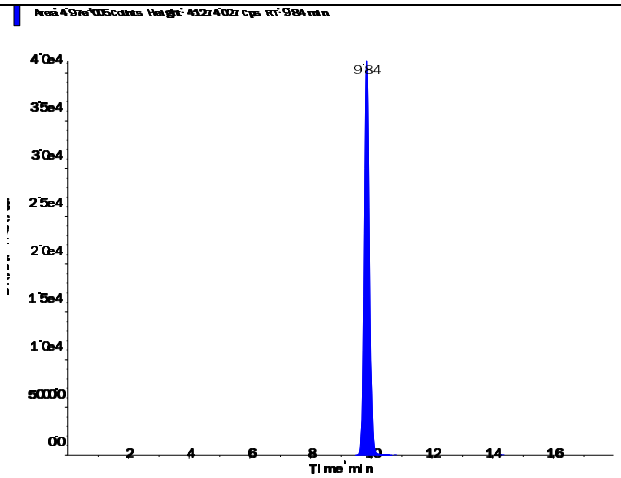

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

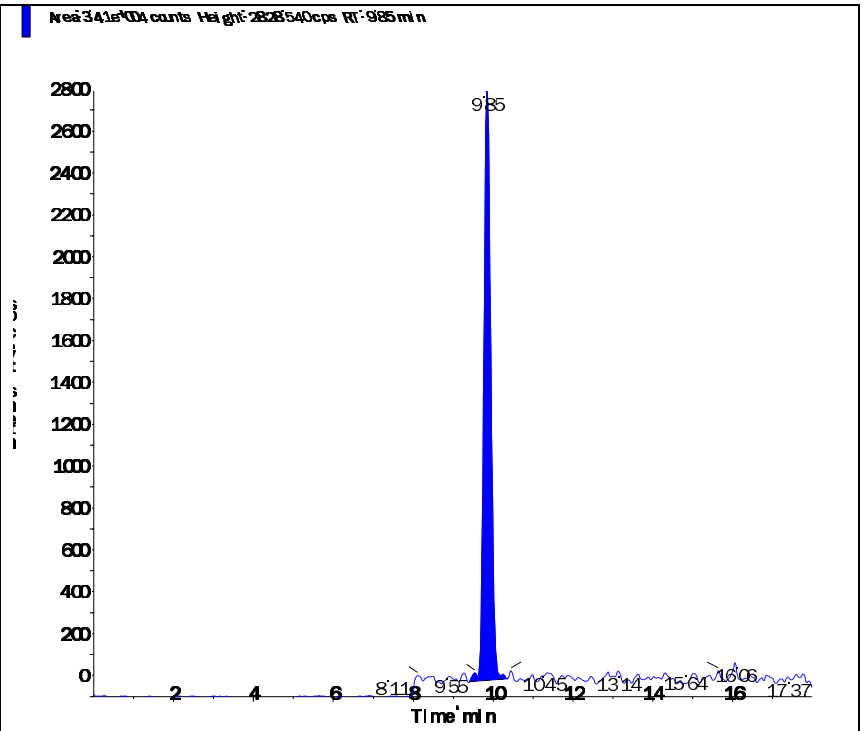

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

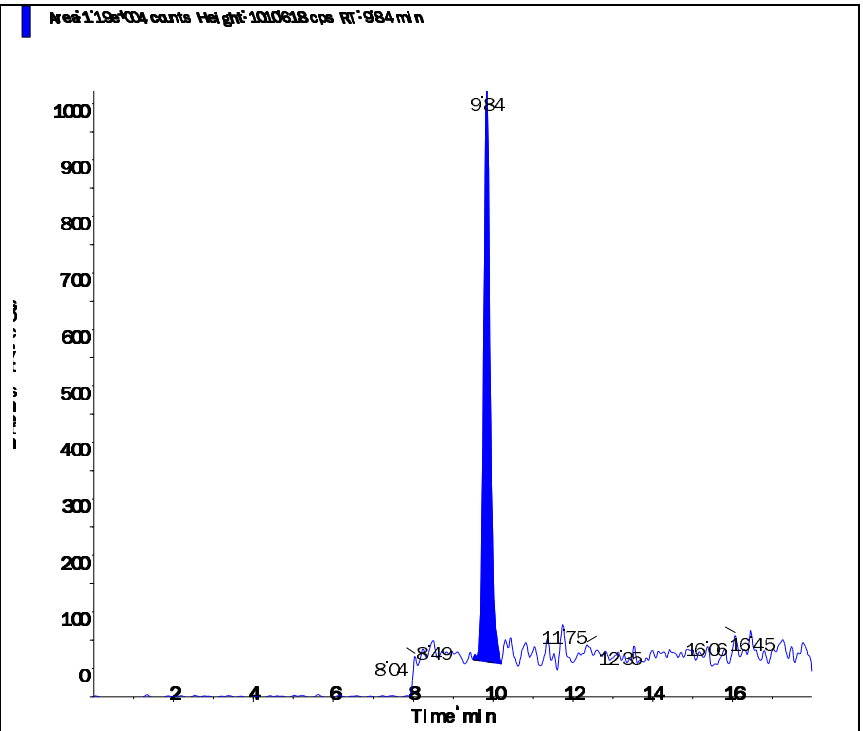

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Data File	LM34689.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

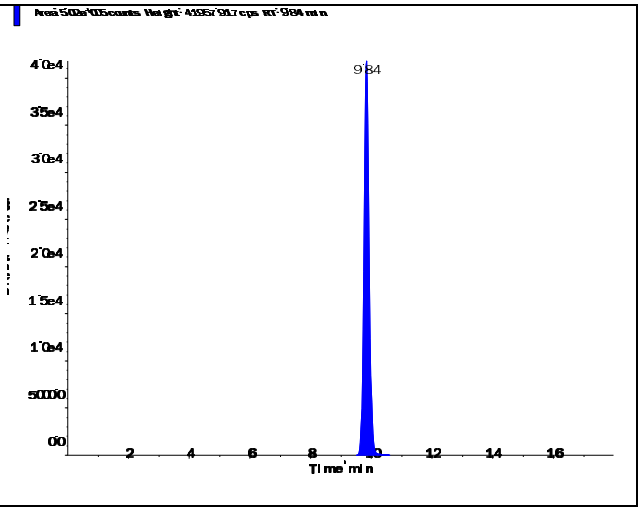

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 0.483 ng/ml Area Ratio: 0.164 Sample Type: (Standard)	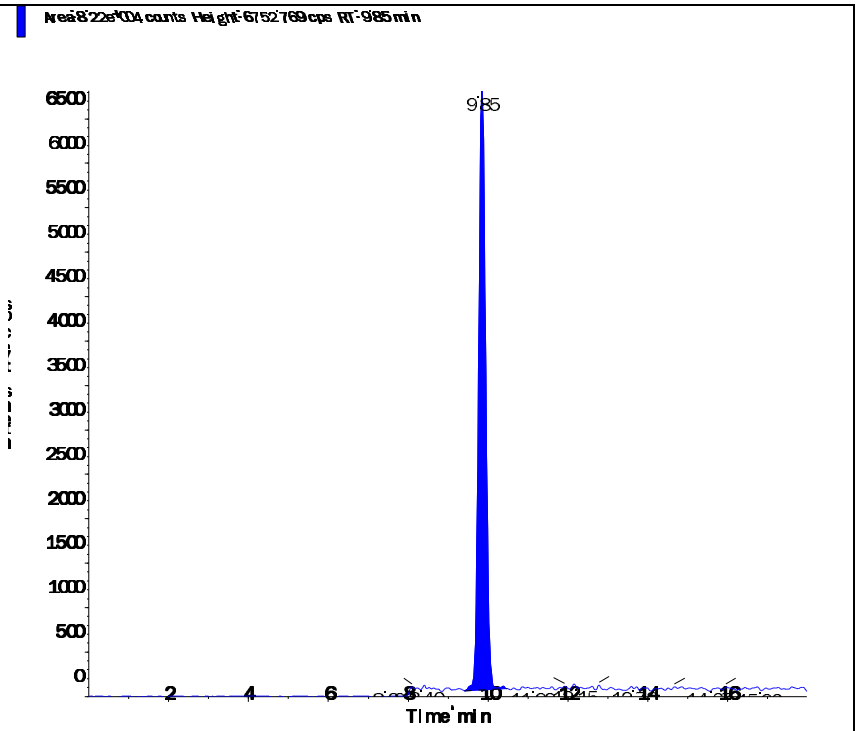
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 0.503 ng/ml Area Ratio: 0.058 Sample Type: (Standard)	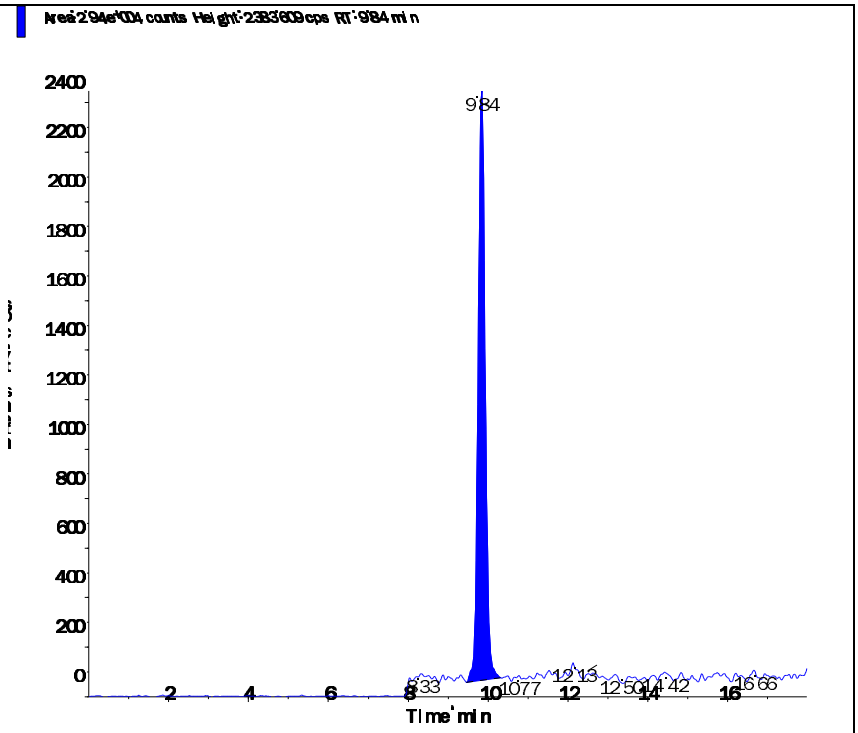

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Data File	LM34690.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

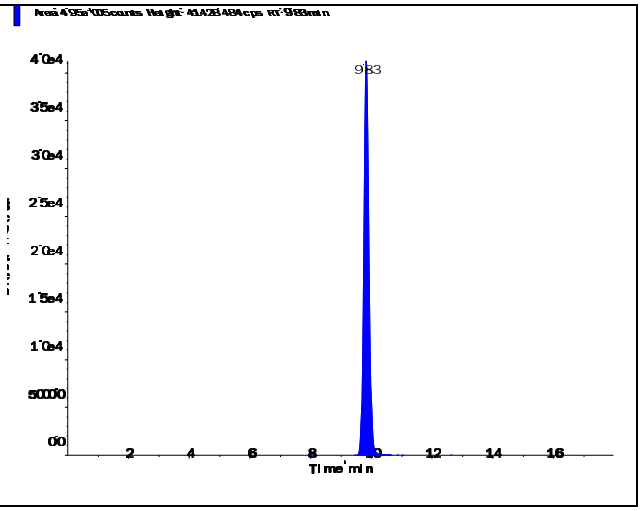

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

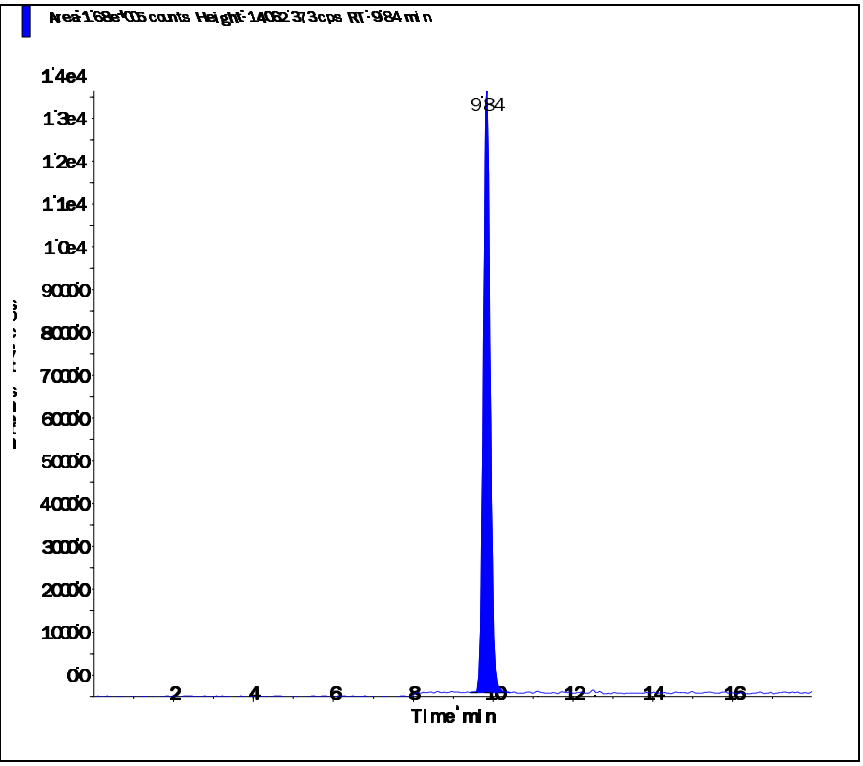

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

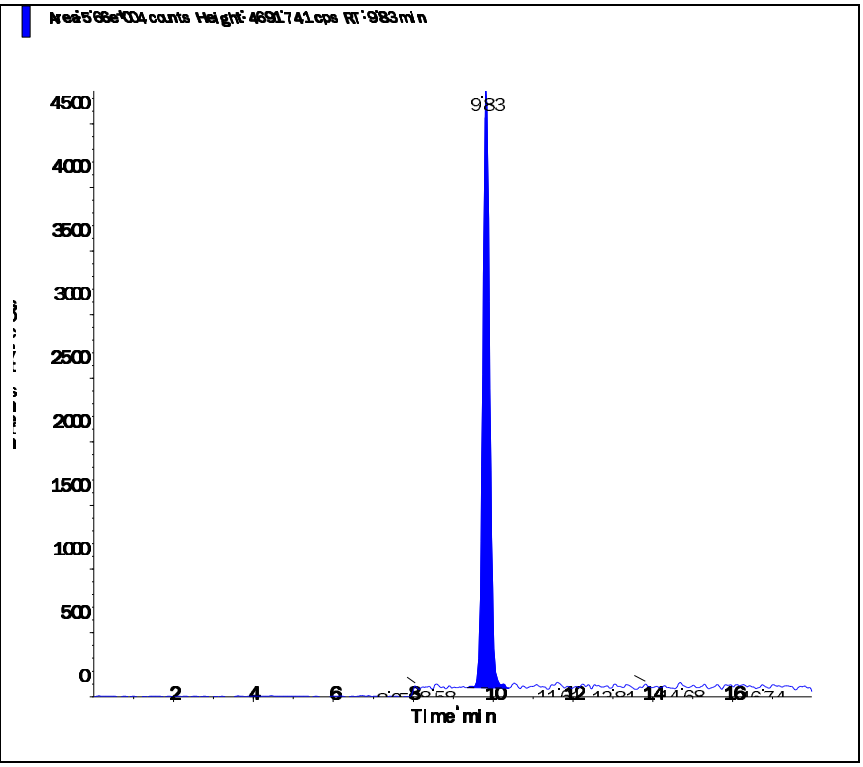

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Data File	LM34691.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

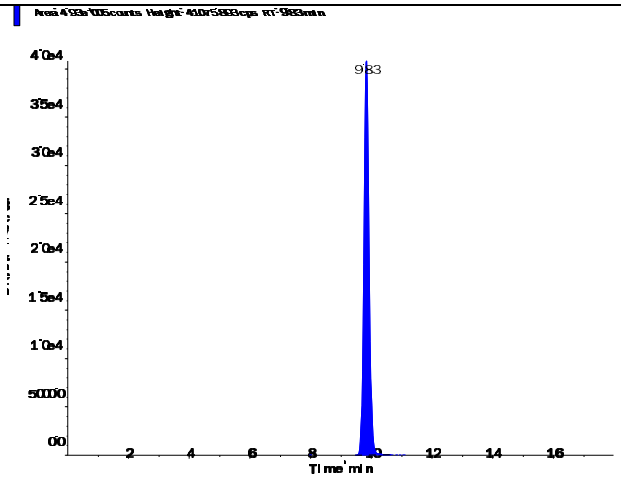

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 1.99 ng/ml Area Ratio: 0.669 Sample Type: (Standard)	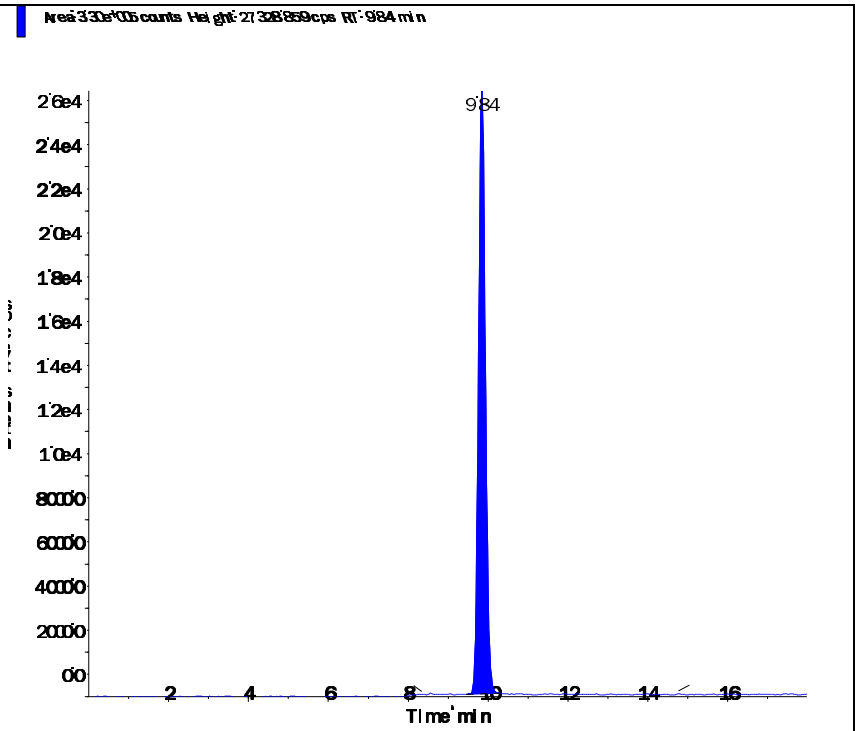
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 1.94 ng/ml Area Ratio: 0.219 Sample Type: (Standard)	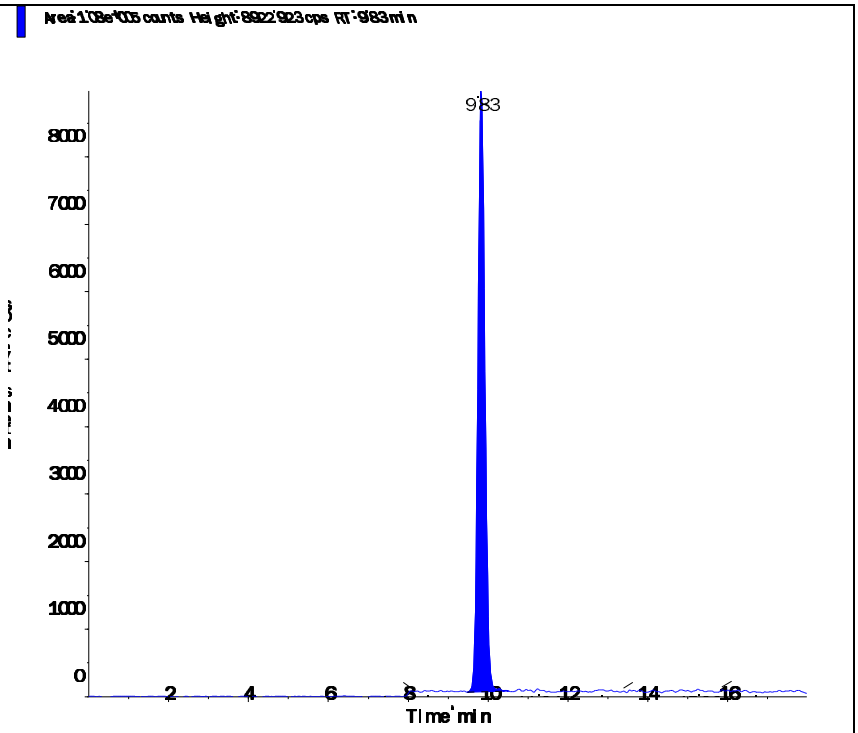

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Data File	LM34692.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

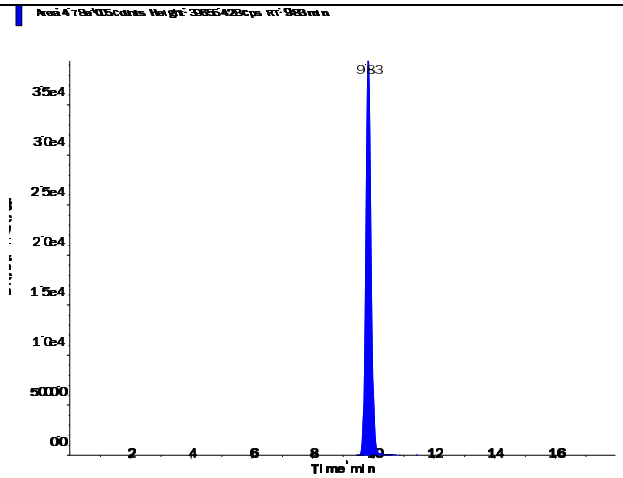

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

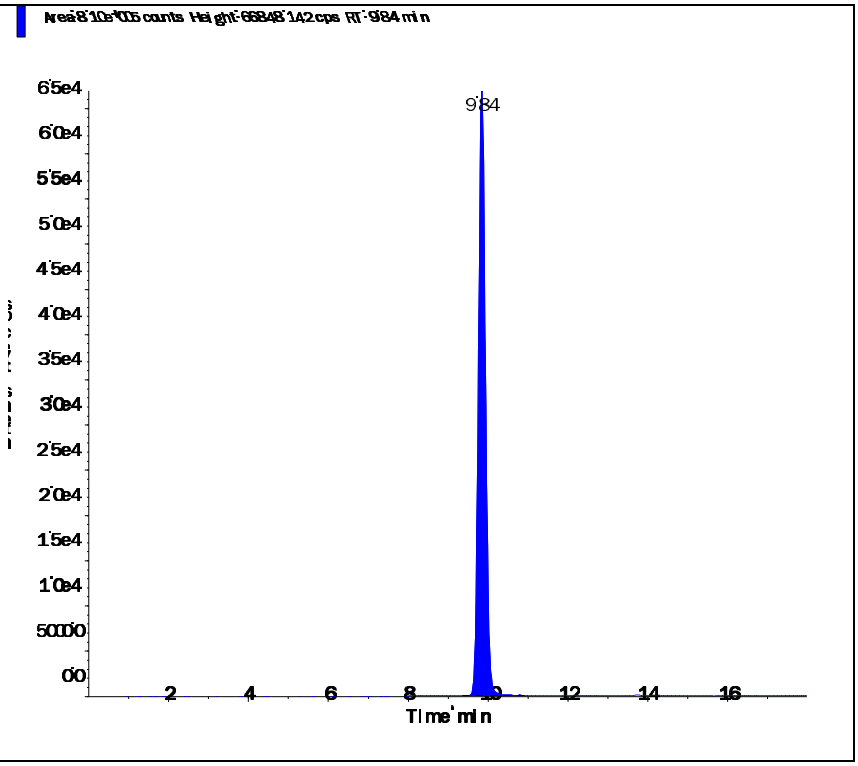

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

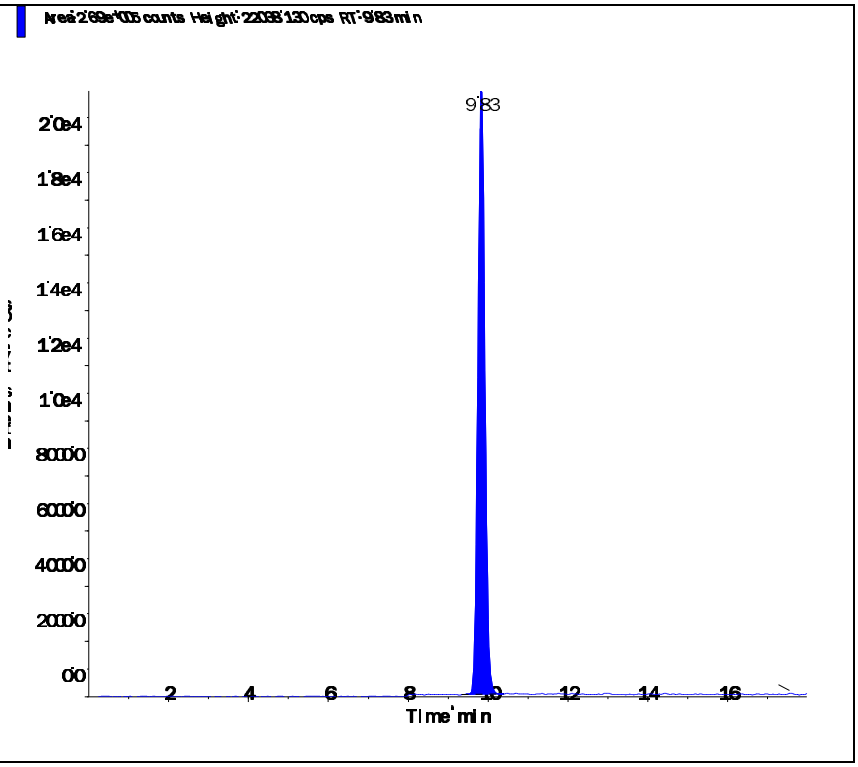

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Data File	LM34693.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

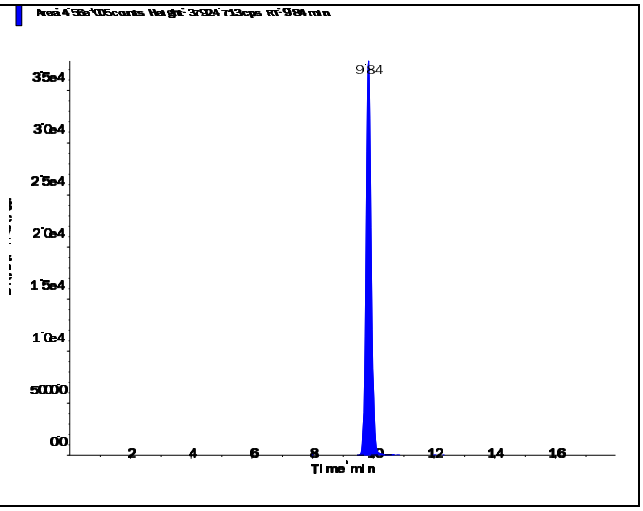

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 9.99 ng/ml Area Ratio: 3.36 Sample Type: (Standard)	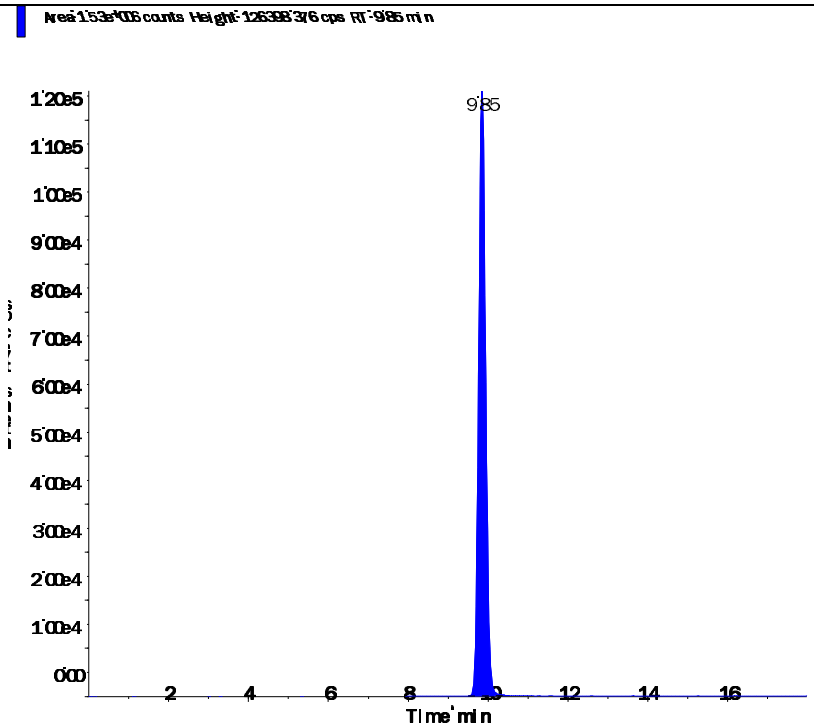
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 10.00 ng/ml Area Ratio: 1.122 Sample Type: (Standard)	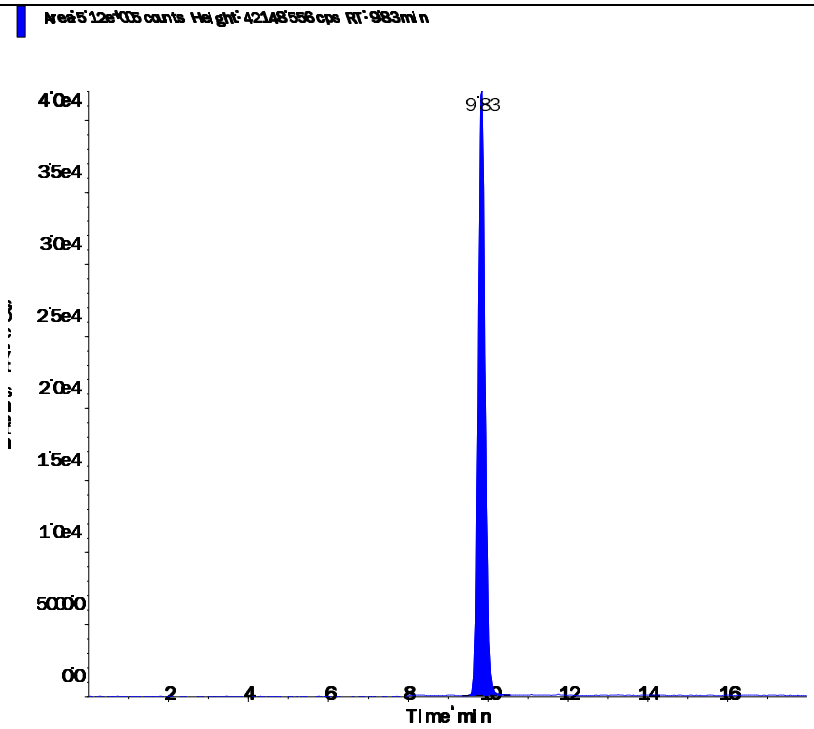

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Printed: 5/4/2016 1:23 PM

Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

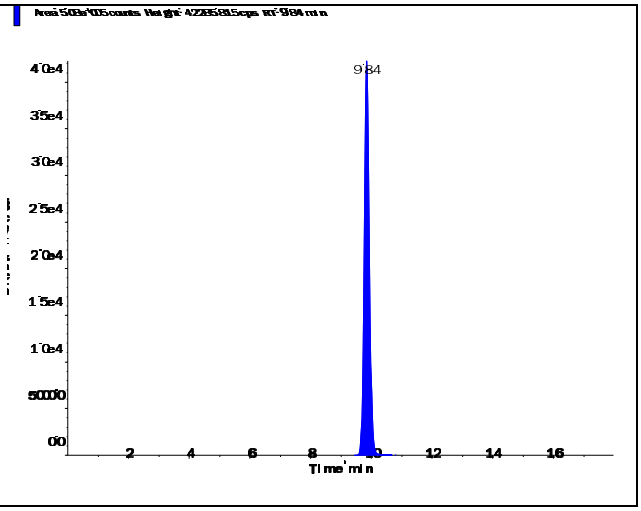

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.332
Sample Type:	(Quality Control)

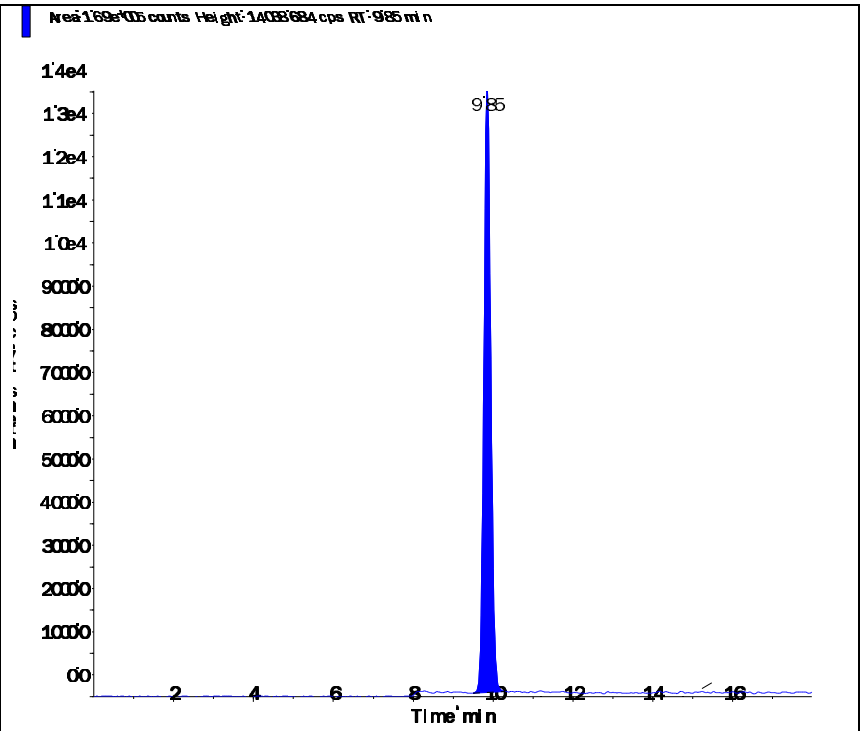

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

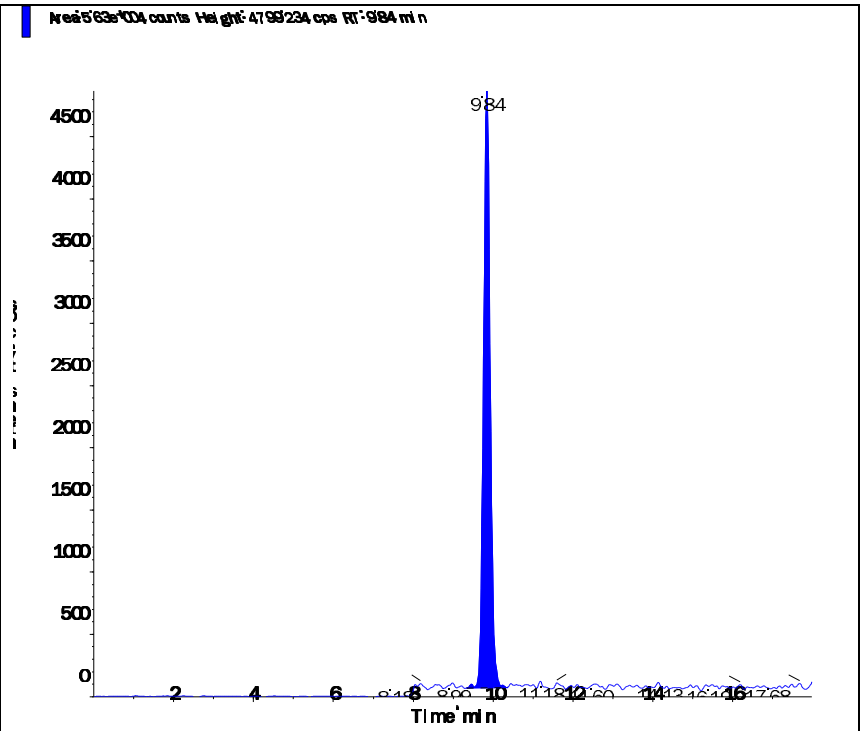

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Created with Analyst Reporter
Printed: 6/11/2016 12:59 PM

Data File	LM35226.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 10:08:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35226.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 10:08:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.430e+05	9.64	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.510e+05	9.65	1.00	1.01
Perchlorate conf	5.370e+04	9.63	1.00	1.06

O18LP (Internal Standard)

RT (Exp. RT): 9.64(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

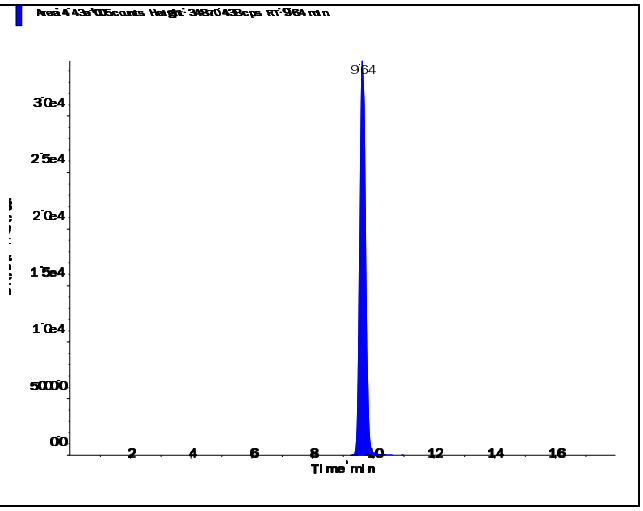

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Printed: 6/11/2016 12:59 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.65 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.34
Sample Type:	(Quality Control)

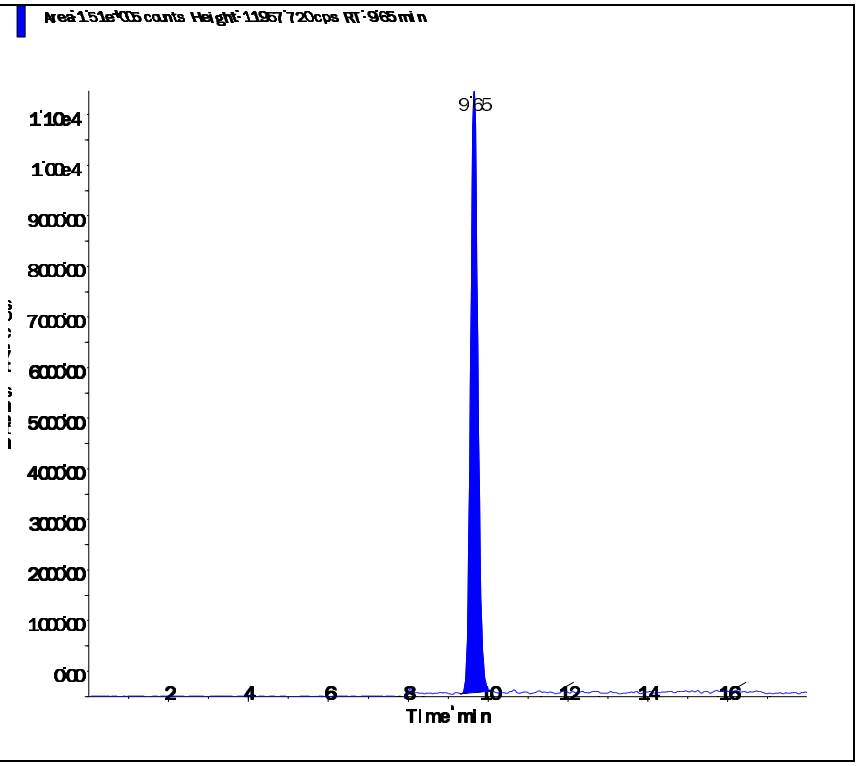

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

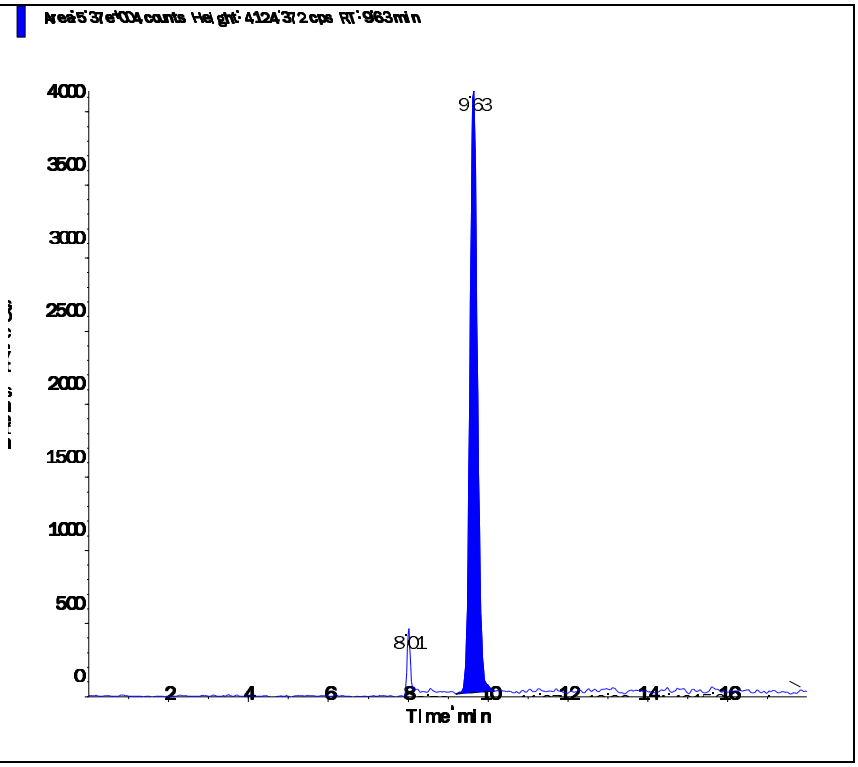

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Printed: 6/11/2016 1:03 PM

Data File	LM35238.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 1:55:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35238.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 1:55:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.720e+05	9.64	1.00	1.01
Perchlorate conf	5.960e+04	9.63	1.00	1.04

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

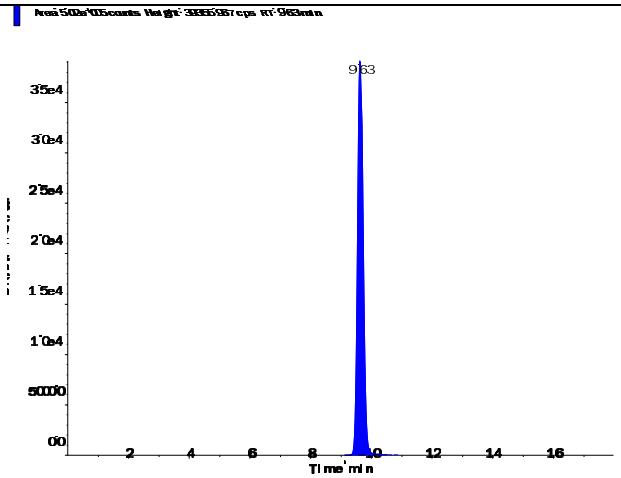

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Printed: 6/11/2016 1:03 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.342
Sample Type:	(Quality Control)

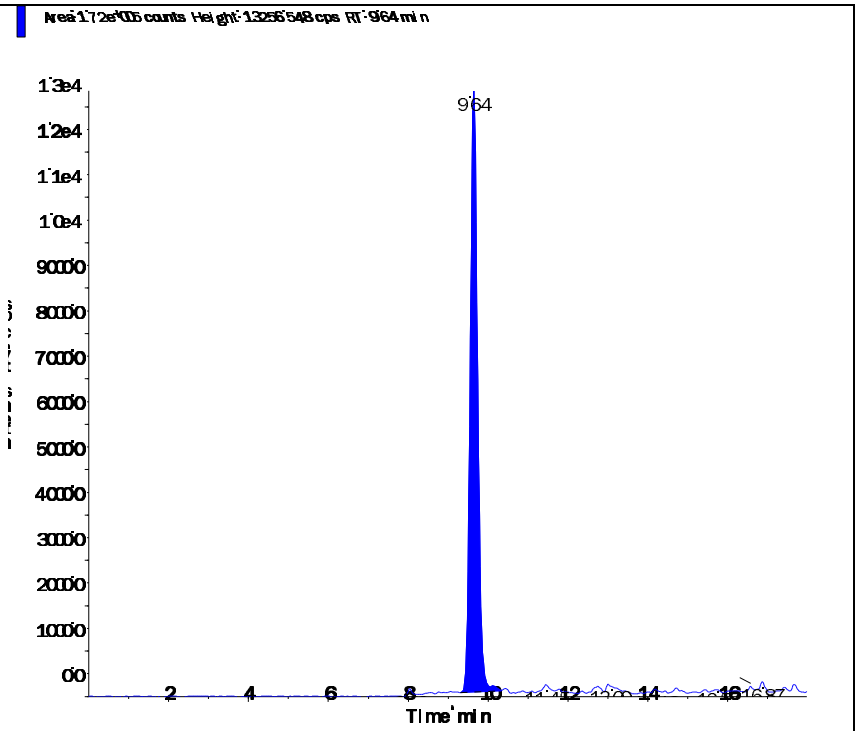

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

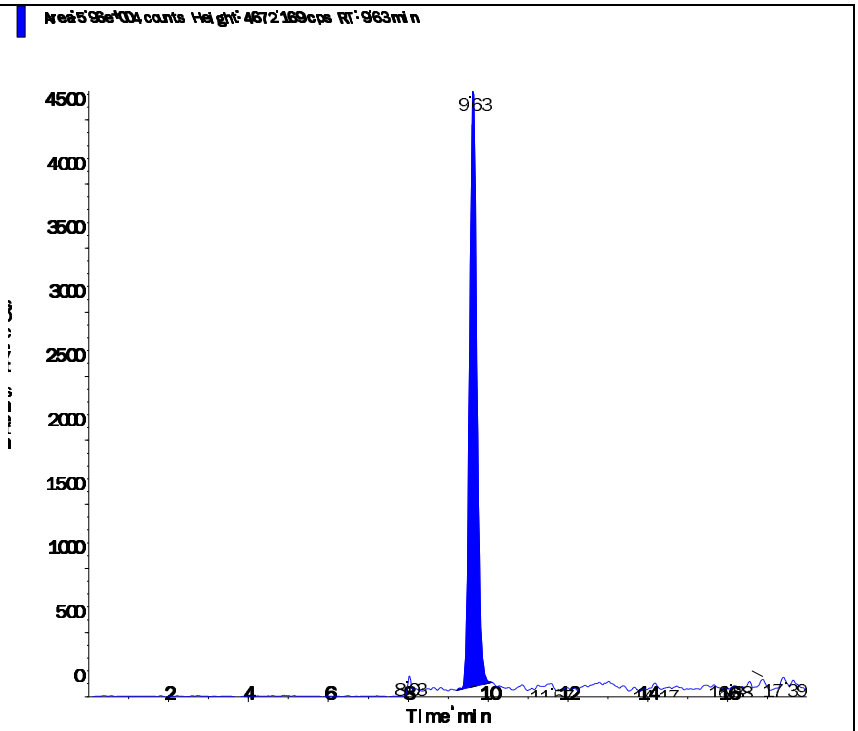

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Printed: 6/11/2016 1:05 PM

Data File	LM35244.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 3:49:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35244.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 3:49:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+05	9.64	1.00	1.05
Perchlorate conf	6.340e+04	9.64	1.00	1.10

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

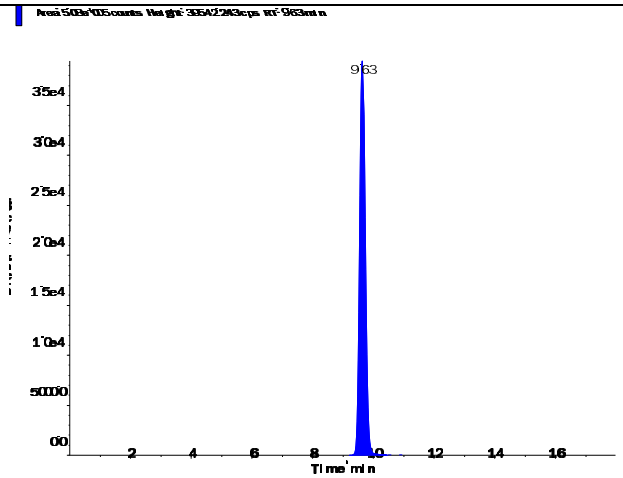

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.353
Sample Type:	(Quality Control)

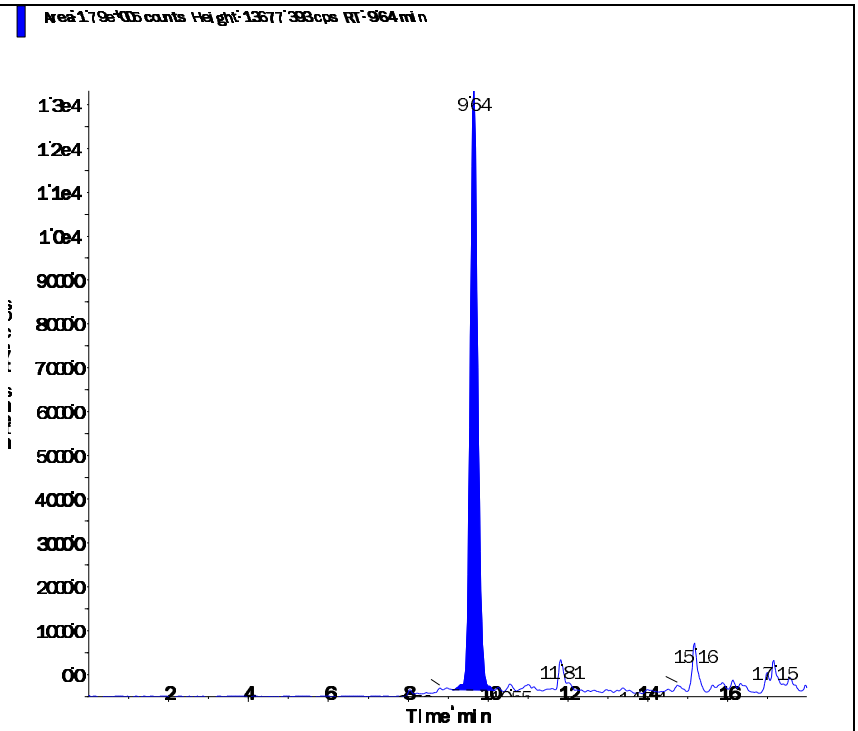

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.10 ng/ml
Area Ratio:	0.125
Sample Type:	(Quality Control)

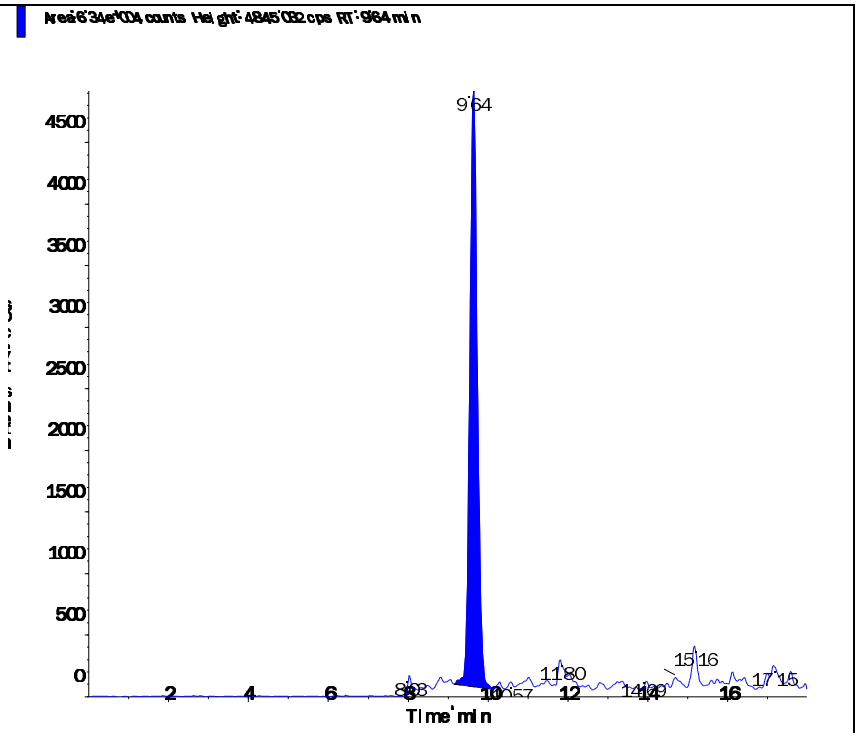

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Printed: 6/11/2016 1:10 PM

Data File	LM35257.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 7:56:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35257.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 7:56:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.810e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.750e+05	9.64	1.00	1.08
Perchlorate conf	5.800e+04	9.62	1.00	1.06

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

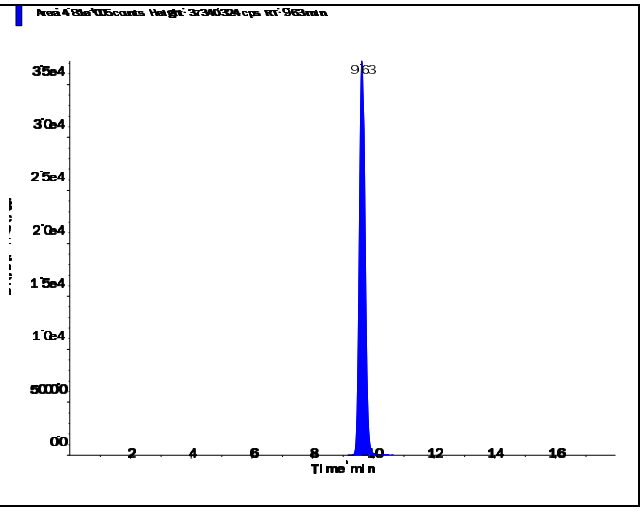

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.08 ng/ml
Area Ratio:	0.363
Sample Type:	(Quality Control)

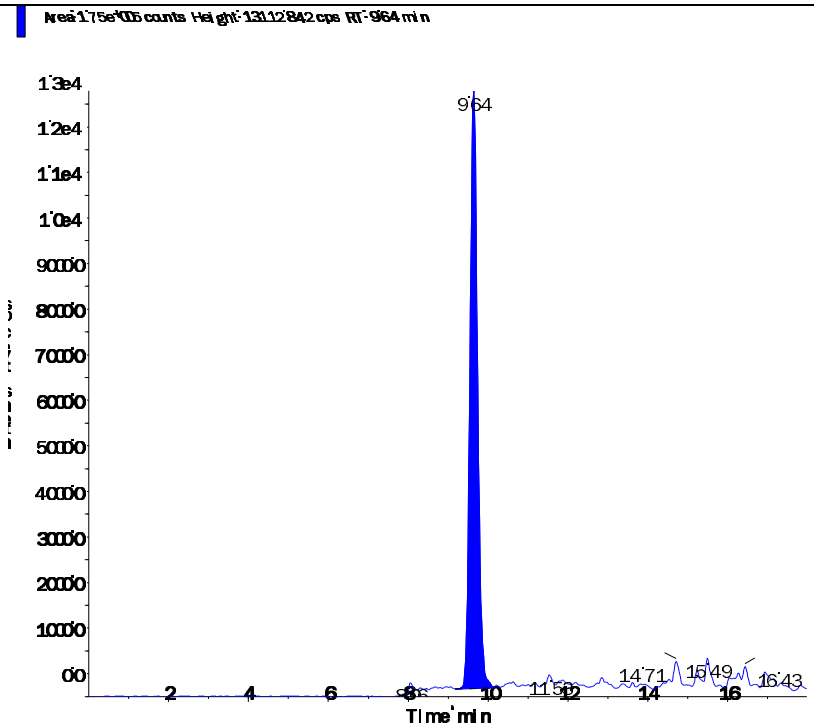

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.62 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

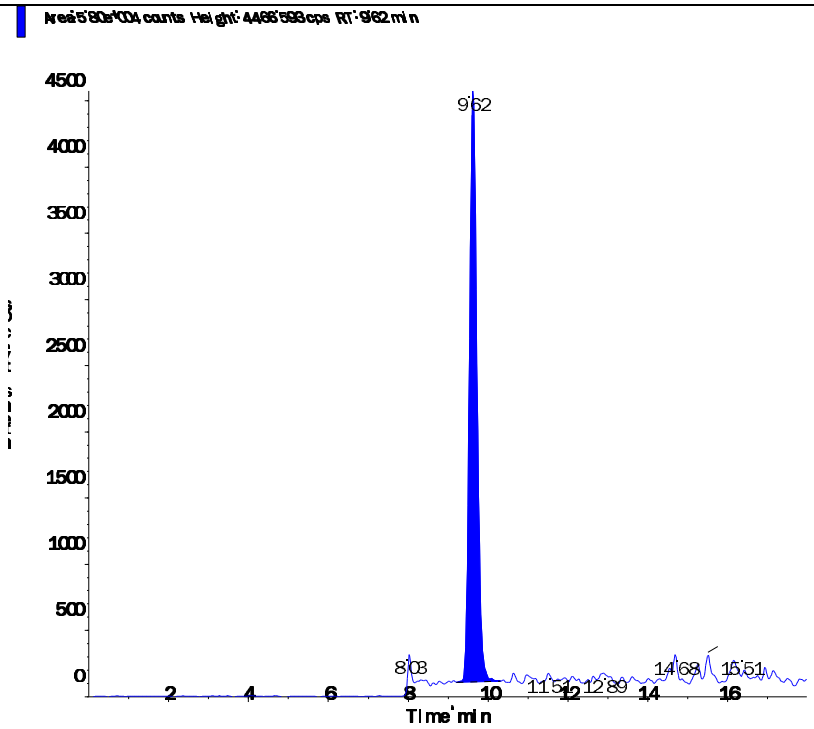

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Data File	LM35264.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 10:09:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35264.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 10:09:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.860e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.64	1.00	1.03
Perchlorate conf	5.780e+04	9.63	1.00	1.04

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

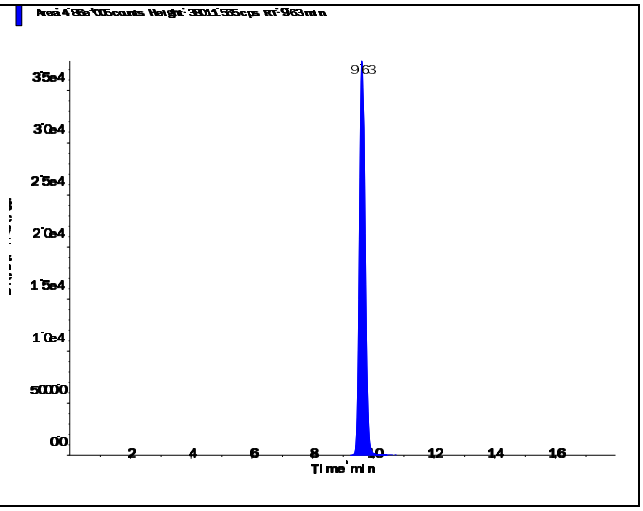

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.348
Sample Type:	(Quality Control)

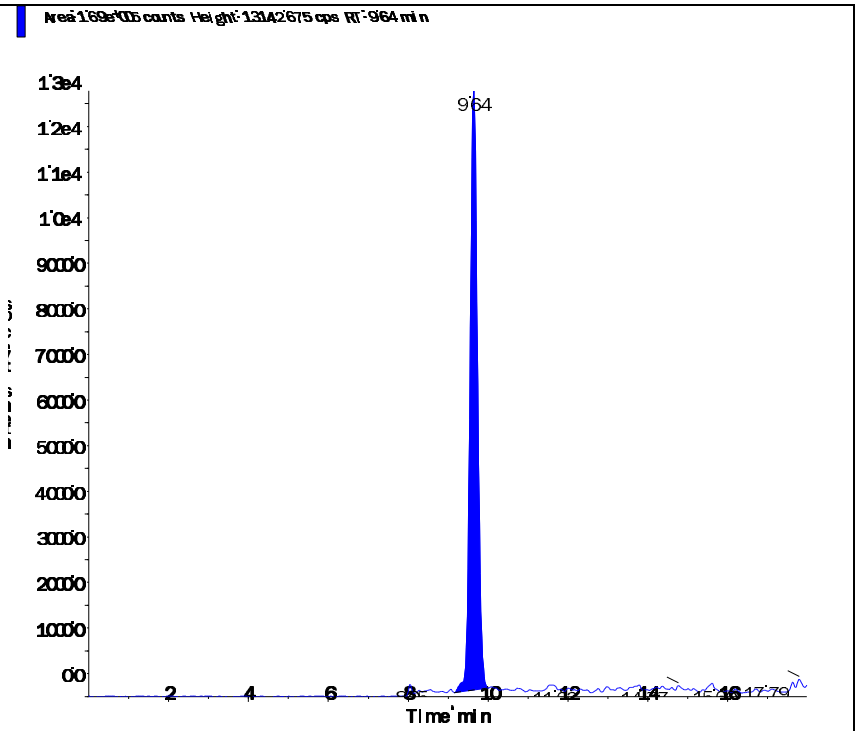

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

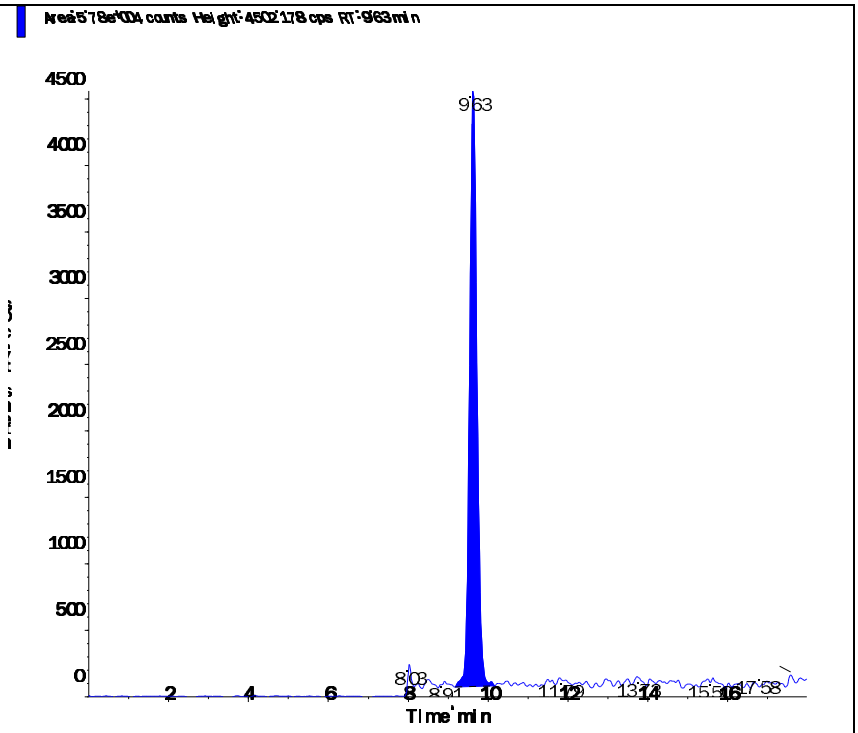

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Data File	LM35276.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/11/2016 1:56:12 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-11 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35276.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 1:56:12 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.260e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.830e+05	9.64	1.00	1.03
Perchlorate conf	6.180e+04	9.62	1.00	1.03

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

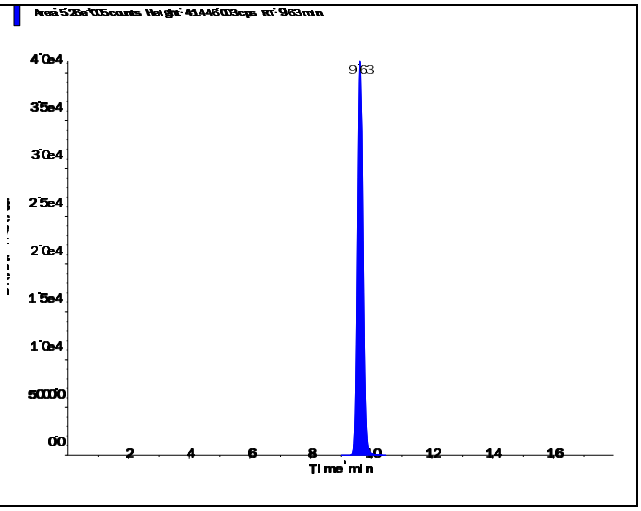

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Printed: 6/11/2016 1:16 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.64 (9.84) min Calculated conc: 1.03 ng/ml Area Ratio: 0.349 Sample Type: (Quality Control)	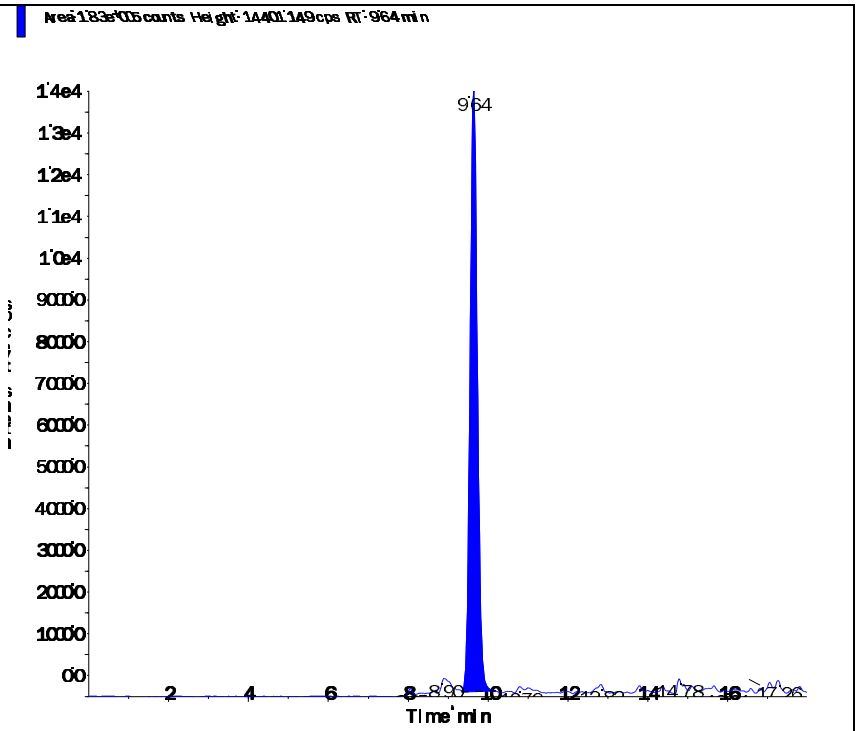
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.62 (9.84) min Calculated conc: 1.03 ng/ml Area Ratio: 0.117 Sample Type: (Quality Control)	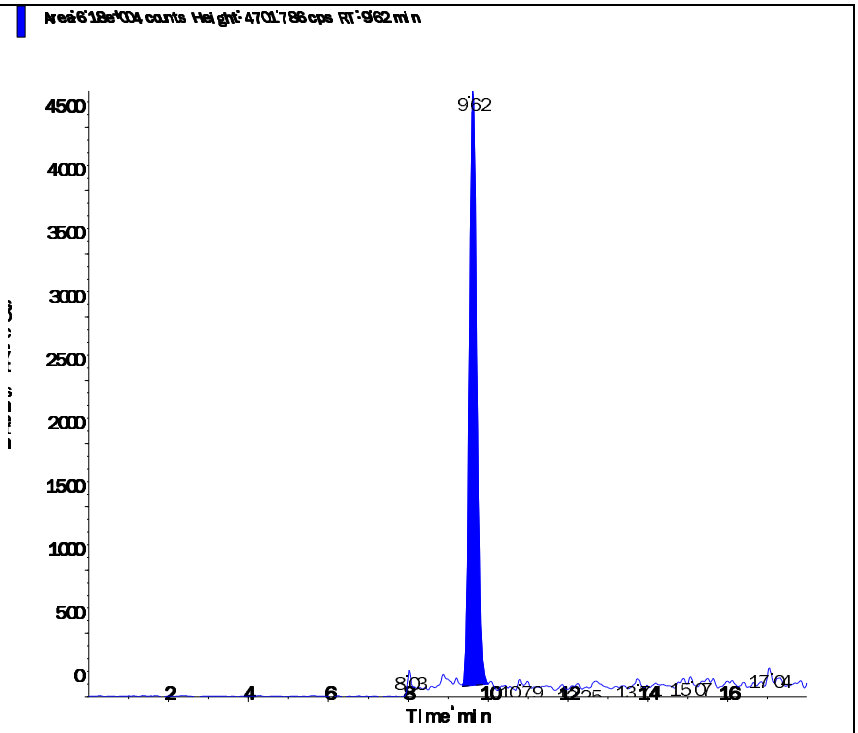

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Data File	LM35280.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 11:46:23 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35280.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 11:46:23 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.580e+05	9.62	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.600e+05	9.63	1.00	1.04
Perchlorate conf	5.470e+04	9.61	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.62(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

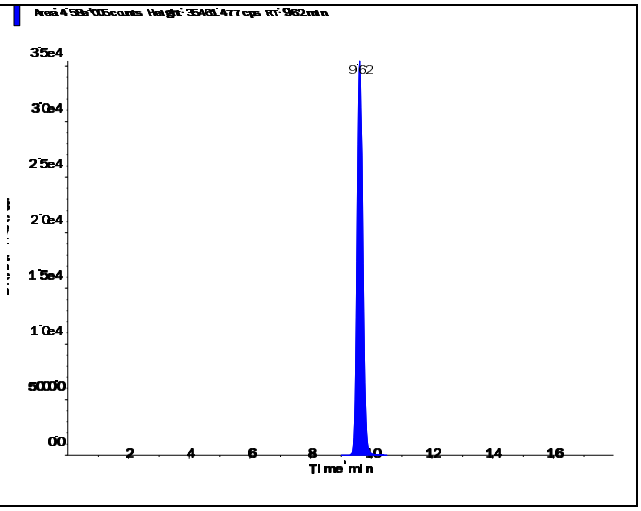

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.35
Sample Type:	(Quality Control)

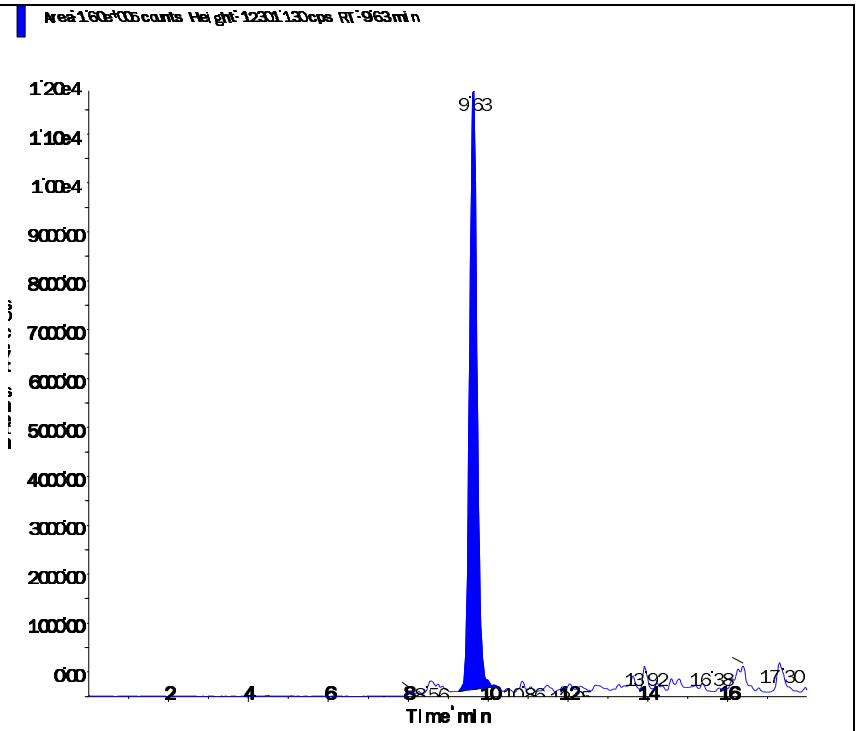

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.61 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

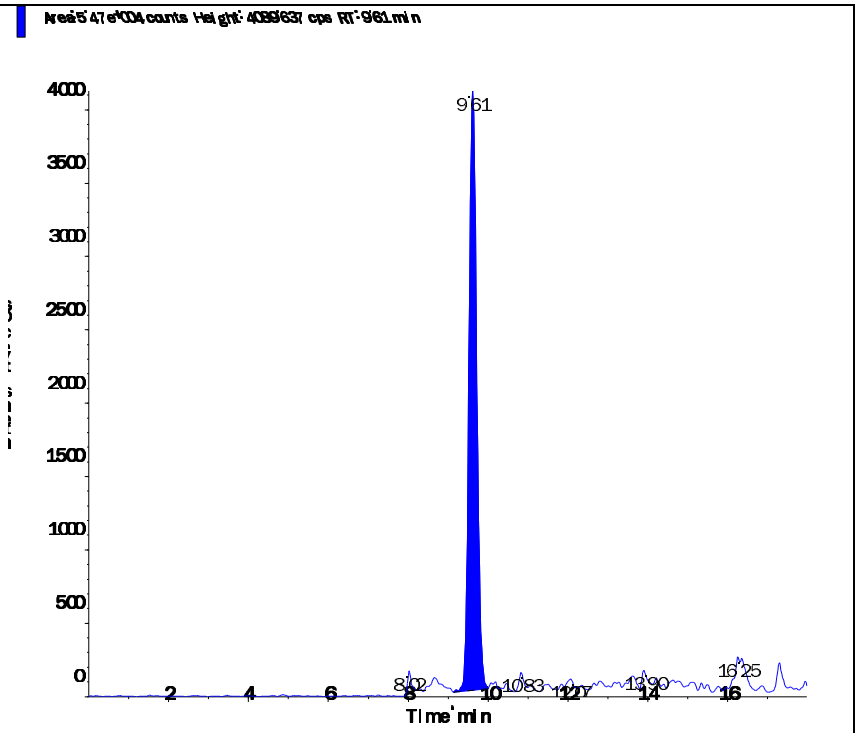

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Data File	LM35292.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 3:34:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35292.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 3:34:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.800e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.710e+05	9.64	1.00	1.05
Perchlorate conf	5.680e+04	9.63	1.00	1.04

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

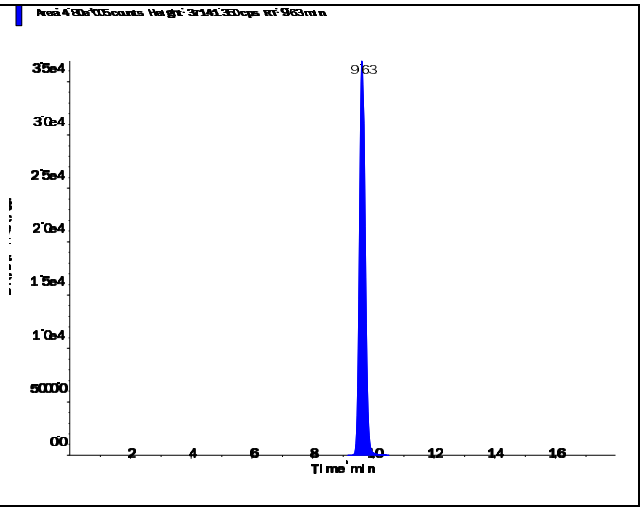

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.355
Sample Type:	(Quality Control)

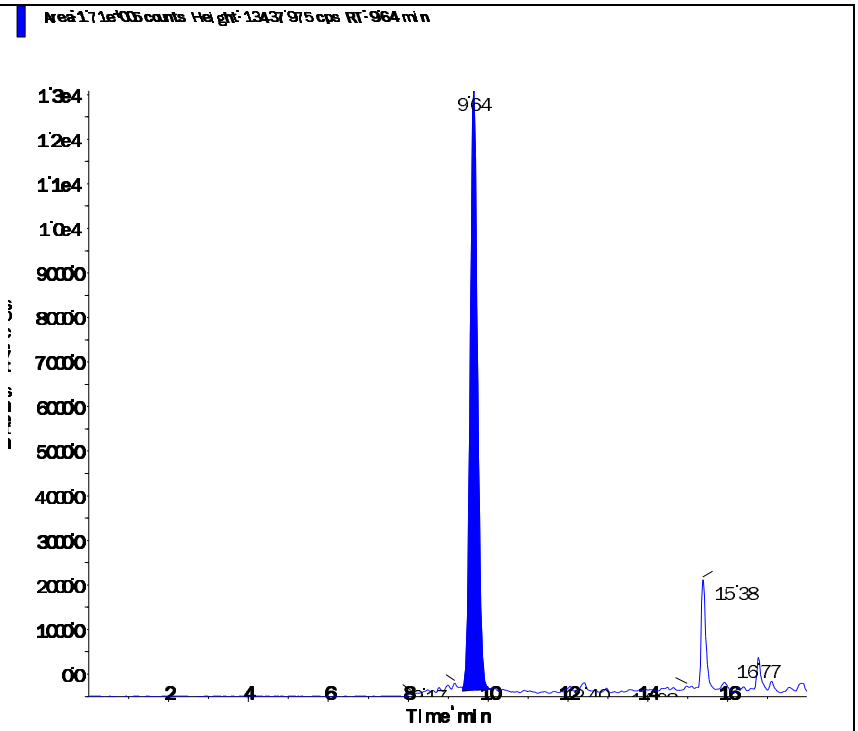

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.118
Sample Type:	(Quality Control)

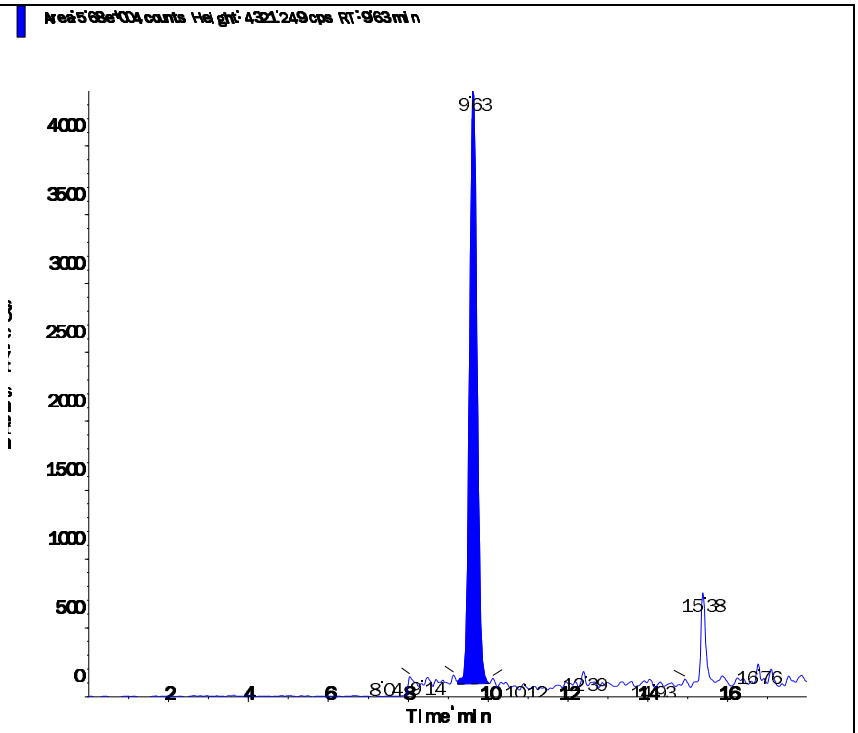

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Data File	LM35296.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 5:38:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35296.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 5:38:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.960e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.720e+05	9.65	1.00	1.03
Perchlorate conf	5.930e+04	9.64	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

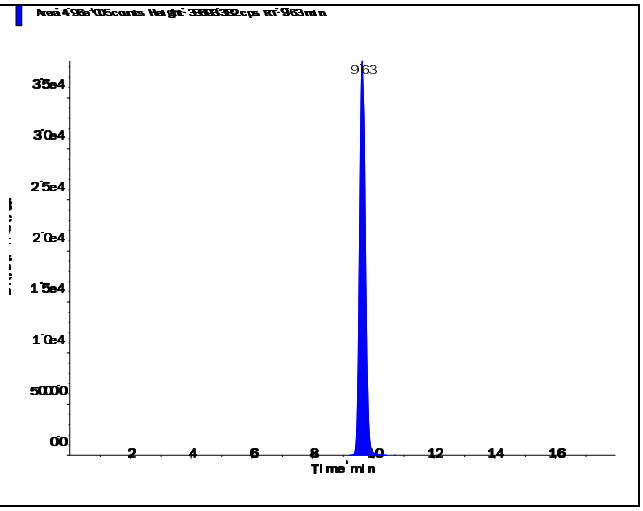

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.65 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.346
Sample Type:	(Quality Control)

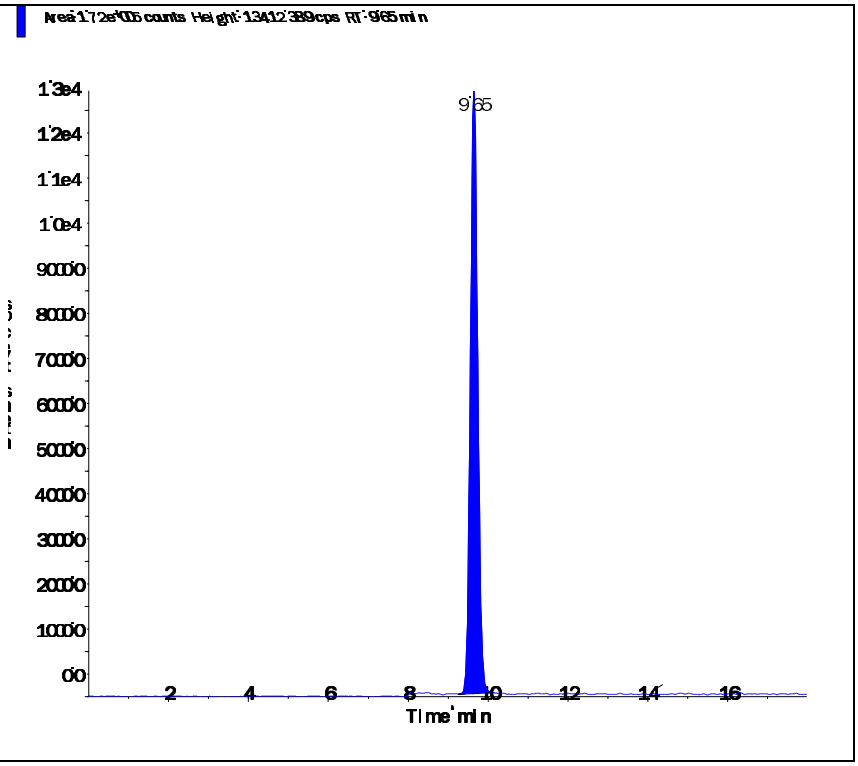

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

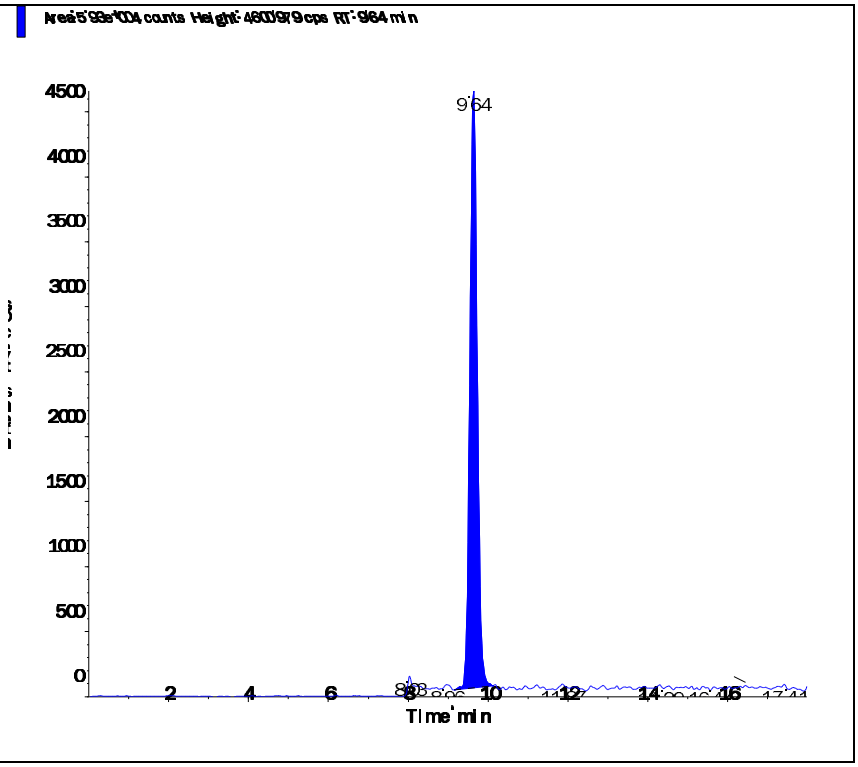

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Data File	LM35310.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 10:03:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35310.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 10:03:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.050e+05	9.62	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.800e+05	9.63	1.00	1.06
Perchlorate conf	6.050e+04	9.62	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.62(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

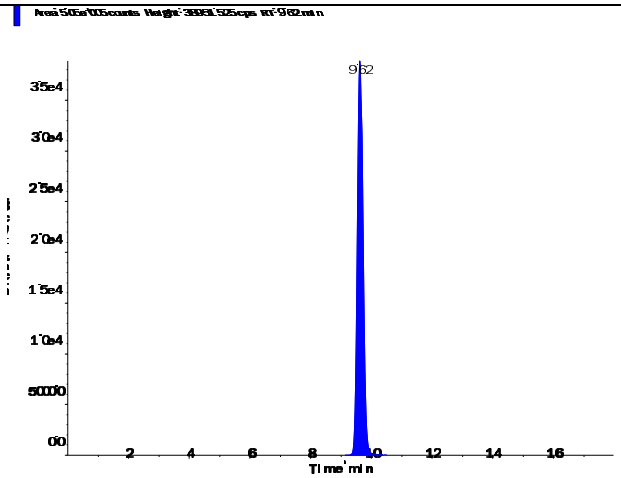

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.357
Sample Type:	(Quality Control)

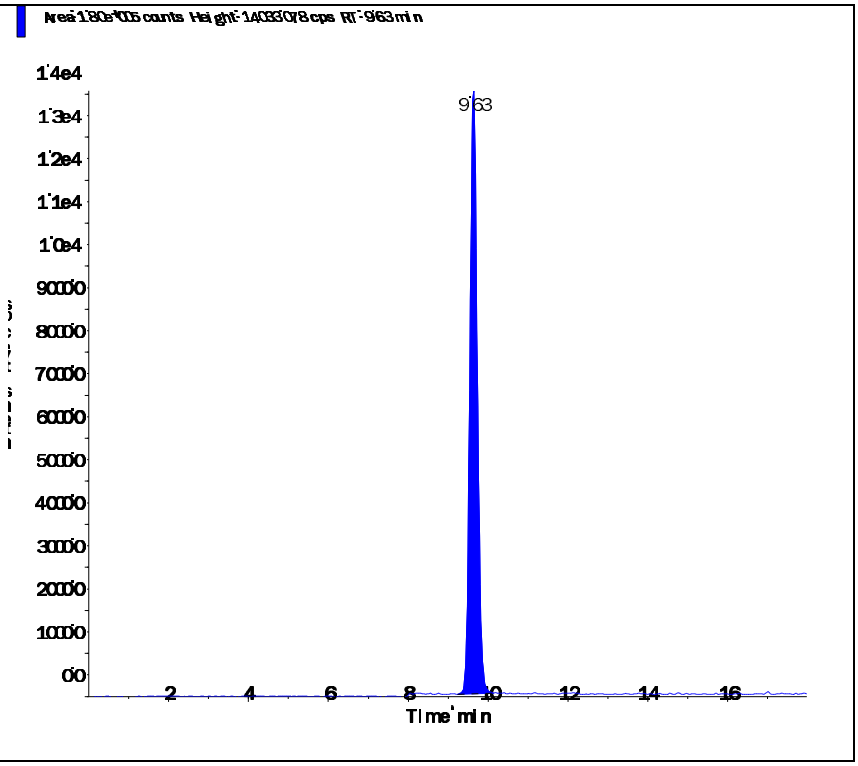

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.62 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.12
Sample Type:	(Quality Control)

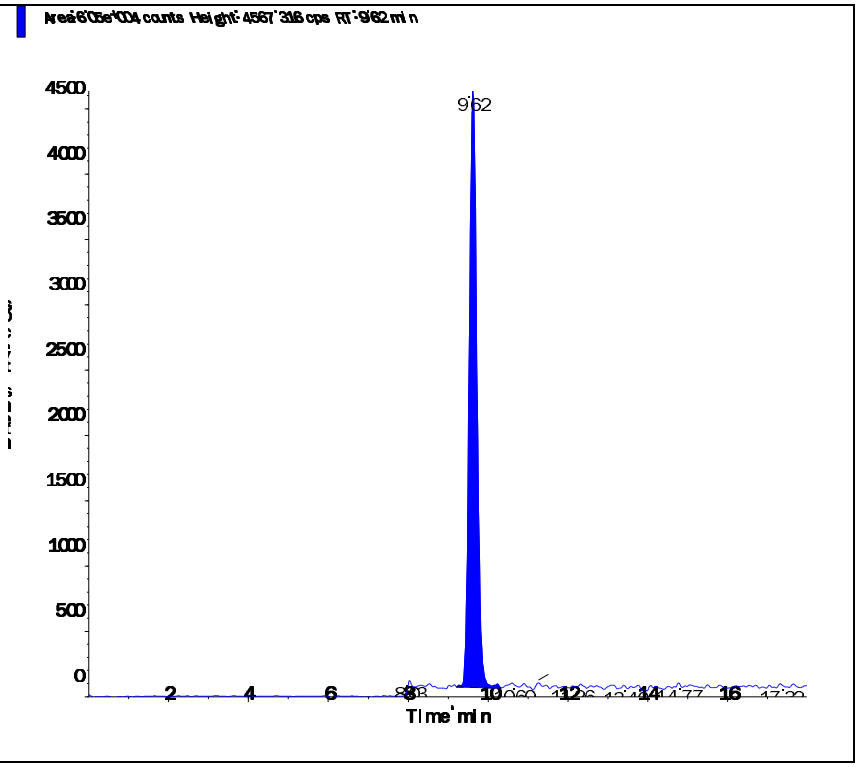

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Printed: 6/11/2016 12:59 PM

Data File	LM35227.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 10:27:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35227.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 10:27:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.430e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.060e+04	9.68	N/A	0.202
Perchlorate conf	1.110e+04	9.67	N/A	0.204

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

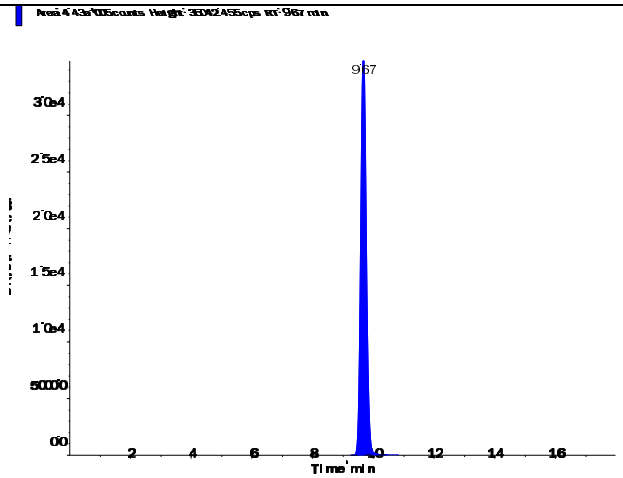

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Printed: 6/11/2016 12:59 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.68 (9.84) min Calculated conc: 0.202 ng/ml Area Ratio: 0.069 Sample Type: (Unknown)	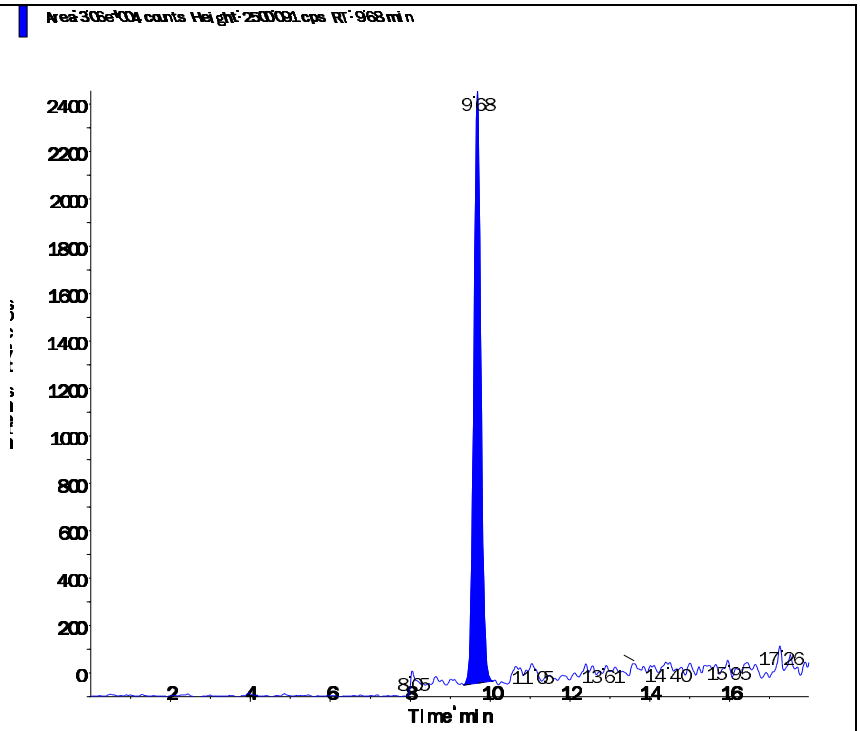
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.67 (9.84) min Calculated conc: 0.204 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	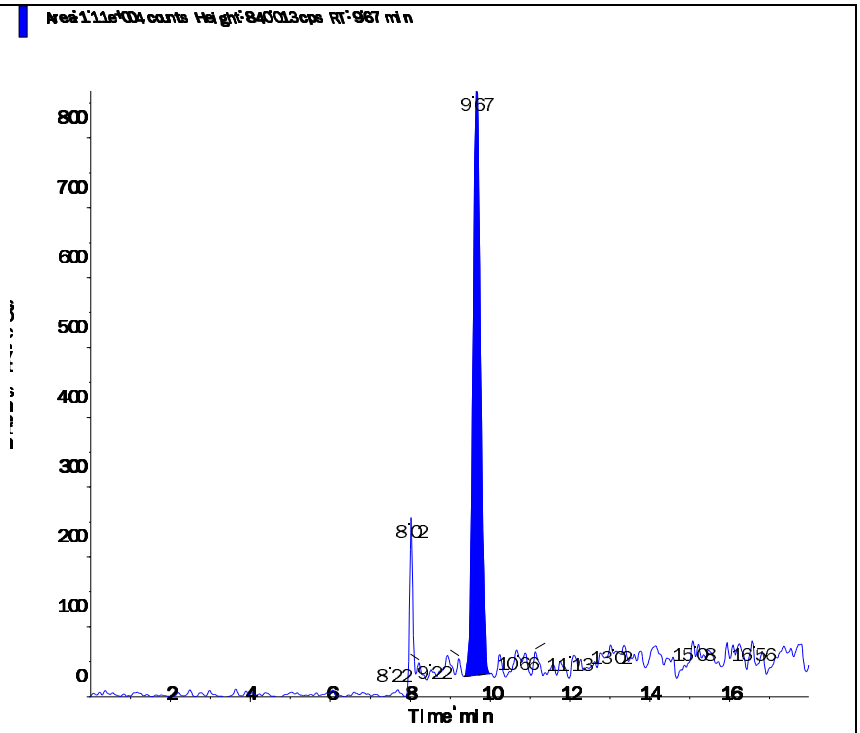

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Data File	LM35239.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 2:14:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-08 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35239.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 2:14:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.960e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.650e+04	9.68	N/A	0.215
Perchlorate conf	1.380e+04	9.66	N/A	0.228

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

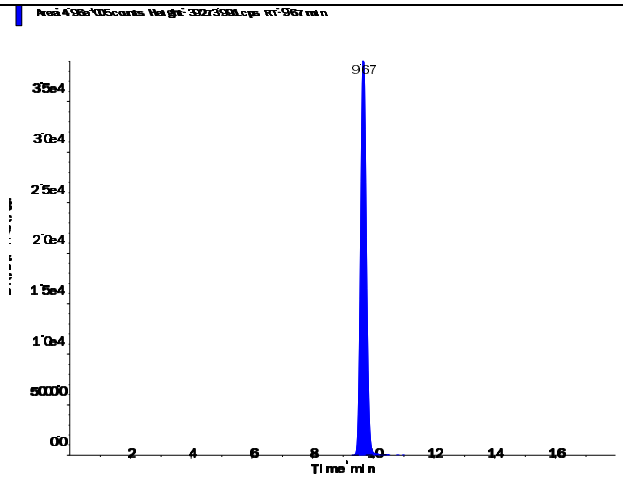

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.68 (9.84) min
Calculated conc:	0.215 ng/ml
Area Ratio:	0.074
Sample Type:	(Unknown)

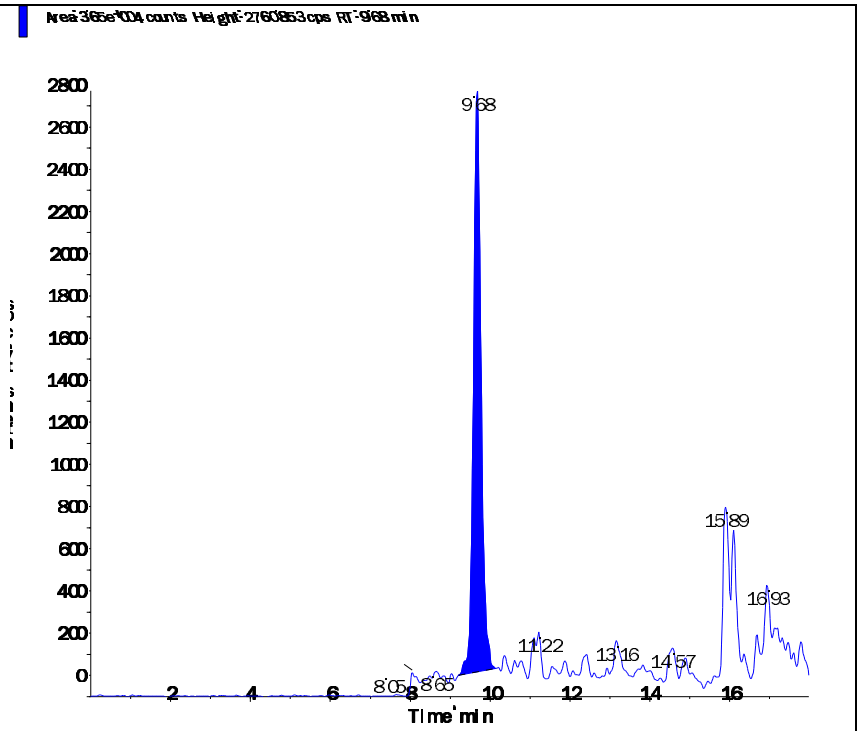

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.228 ng/ml
Area Ratio:	0.028
Sample Type:	(Unknown)

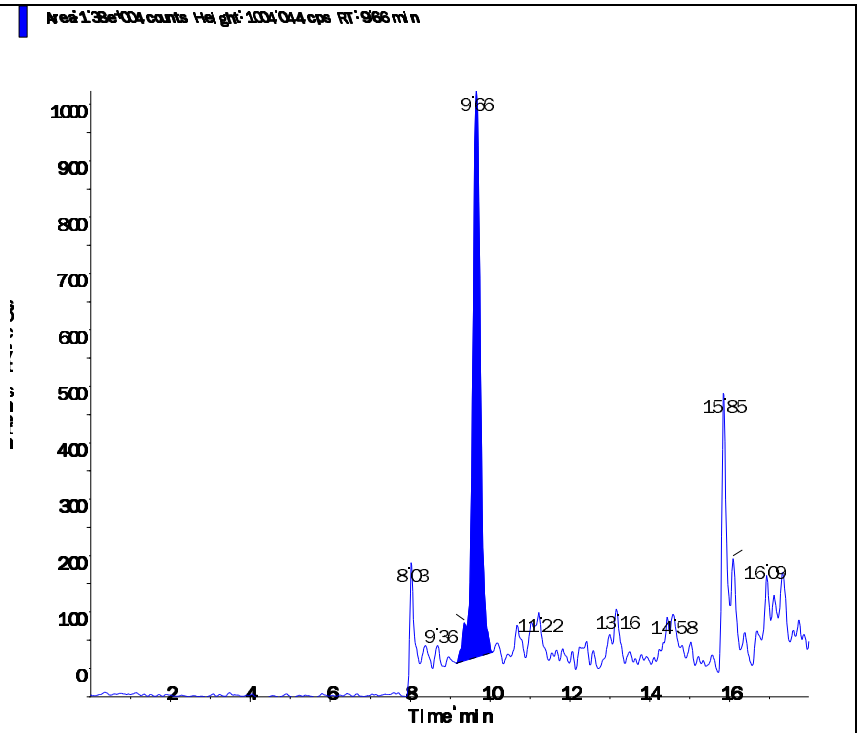

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Data File	LM35245.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 4:08:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-09 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35245.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 4:08:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.670e+04	9.69	N/A	0.21
Perchlorate conf	1.260e+04	9.66	N/A	0.201

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

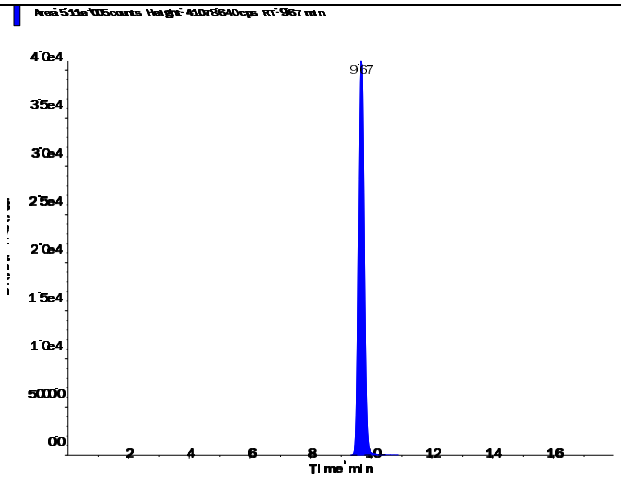

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.69 (9.84) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

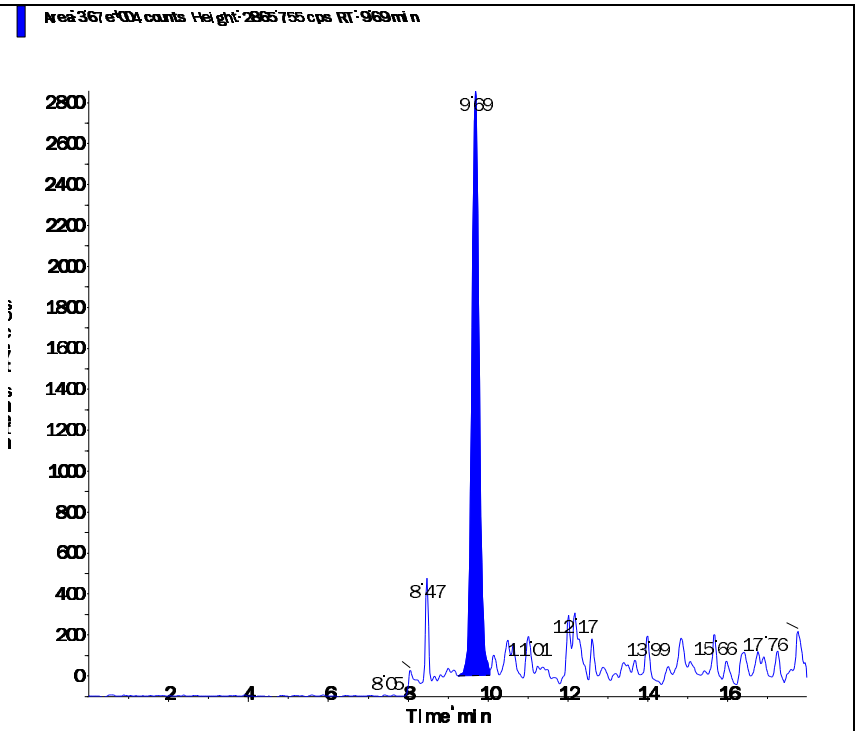

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

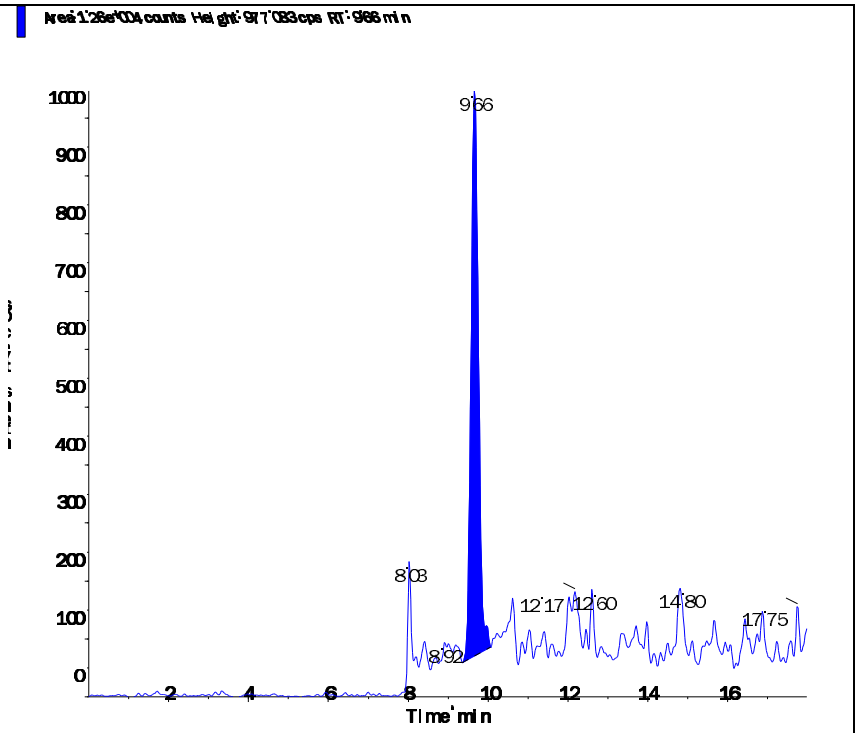

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Data File	LM35258.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 8:15:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-10 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35258.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 8:15:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-10	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.620e+04	9.68	N/A	0.222
Perchlorate conf	1.240e+04	9.66	N/A	0.212

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

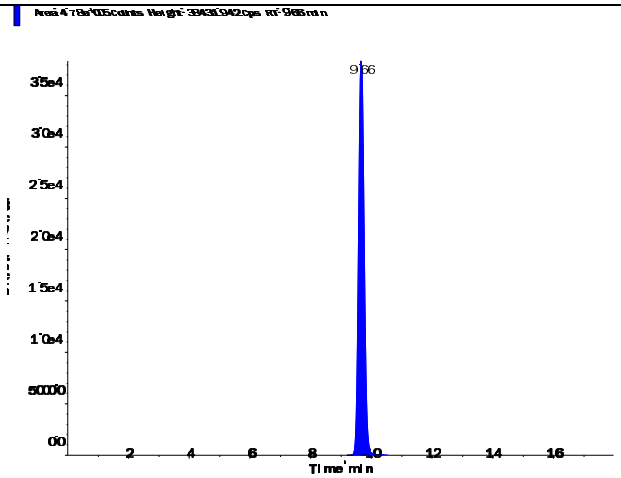

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.68 (9.84) min
Calculated conc:	0.222 ng/ml
Area Ratio:	0.076
Sample Type:	(Unknown)

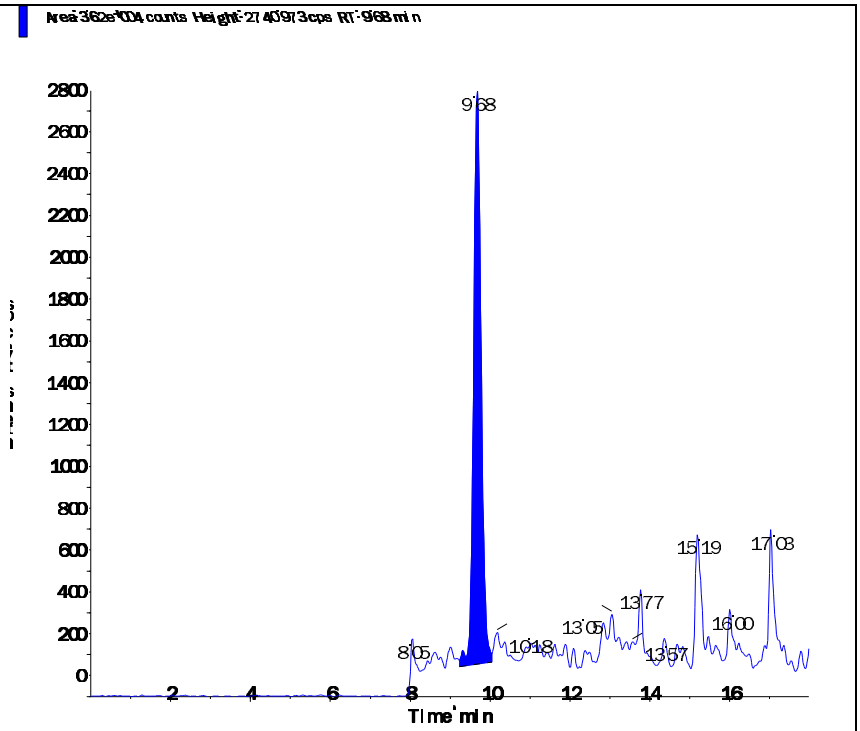

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.212 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

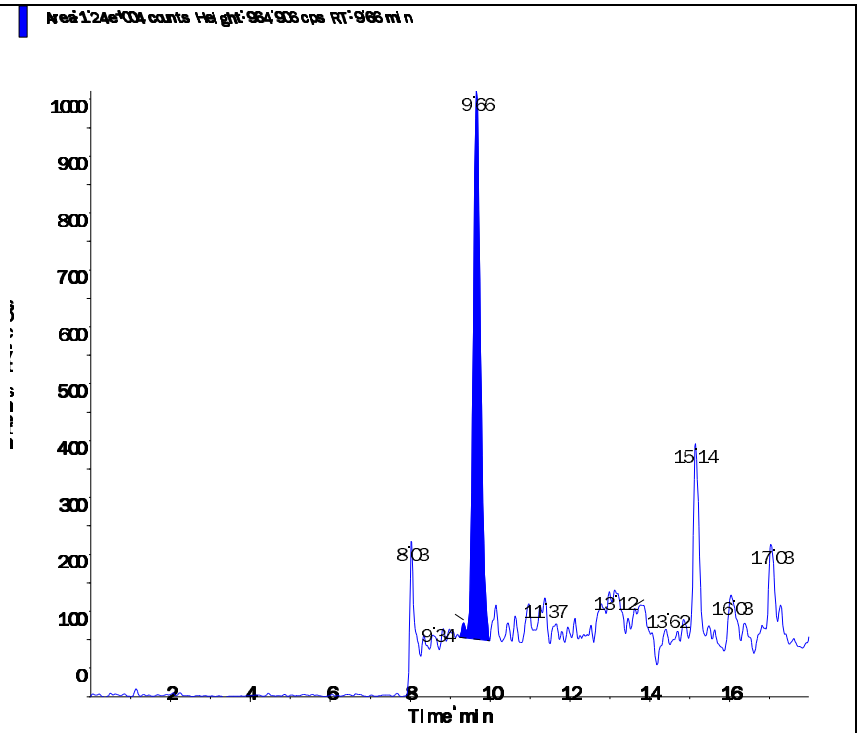

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Data File	LM35265.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 10:27:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-11 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35265.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 10:27:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.850e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.580e+04	9.67	N/A	0.216
Perchlorate conf	1.170e+04	9.66	N/A	0.197

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

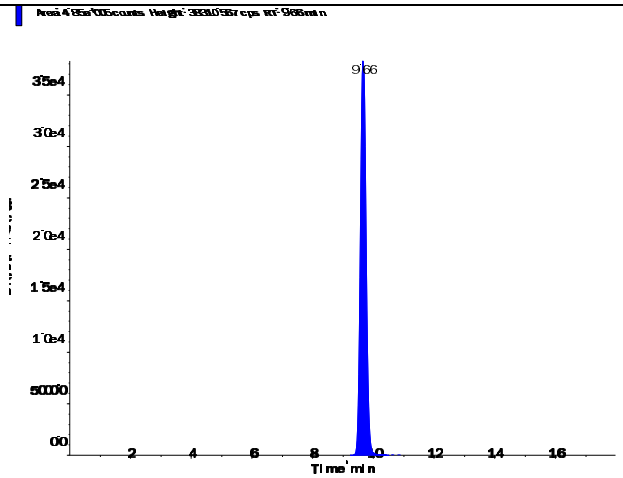

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Printed: 6/11/2016 1:13 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.67 (9.84) min
Calculated conc:	0.216 ng/ml
Area Ratio:	0.074
Sample Type:	(Unknown)

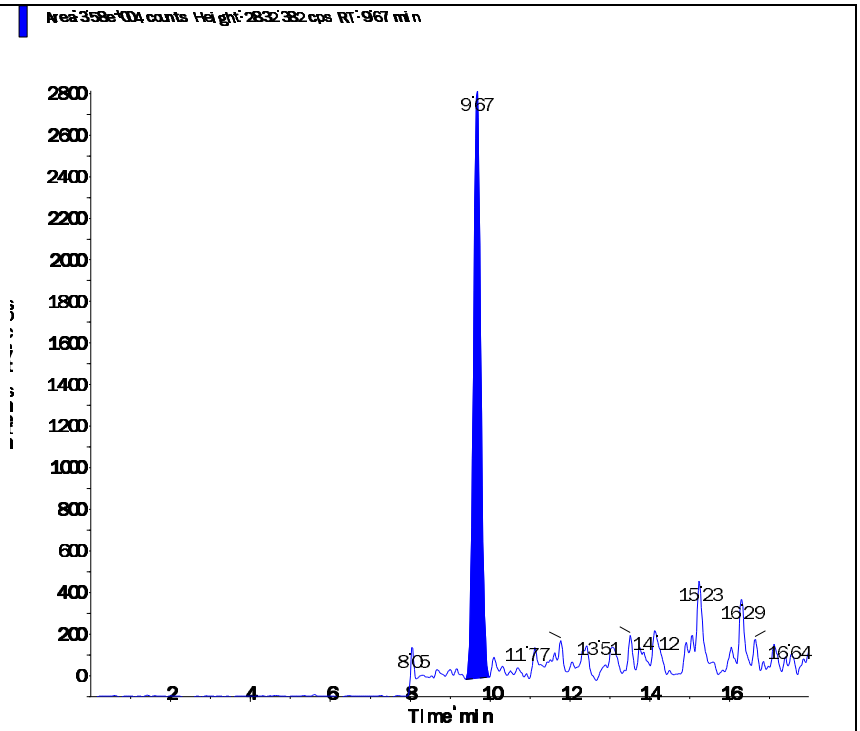

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

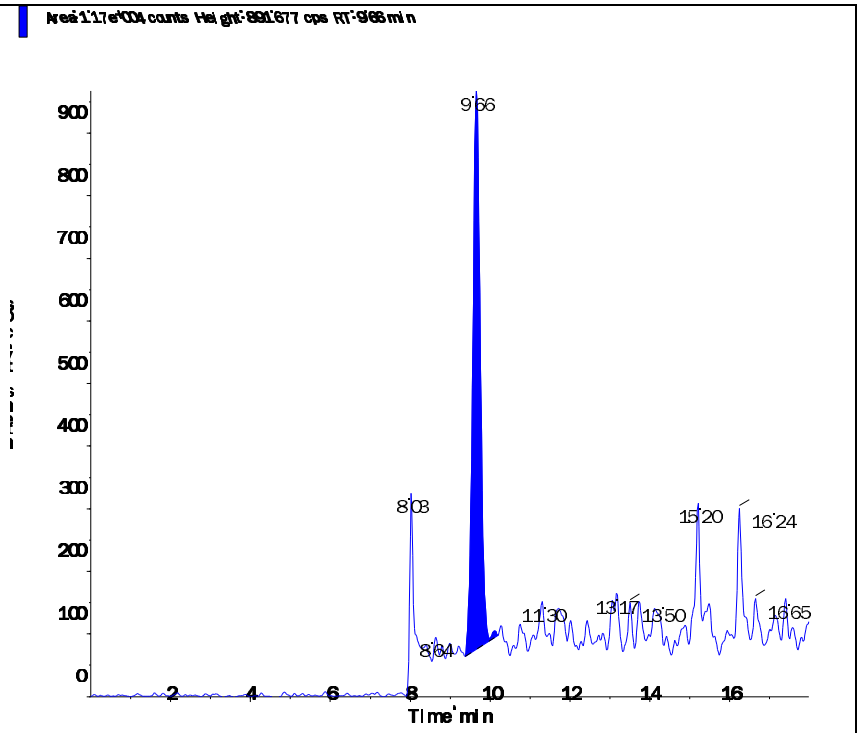

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Printed: 6/12/2016 9:37 PM

Data File	LM35281.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 12:05:19 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-12 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35281.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 12:05:19 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572200-12	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.660e+05	9.65	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+04	9.66	N/A	0.206
Perchlorate conf	1.190e+04	9.65	N/A	0.209

O18LP (Internal Standard)

RT (Exp. RT): 9.65(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

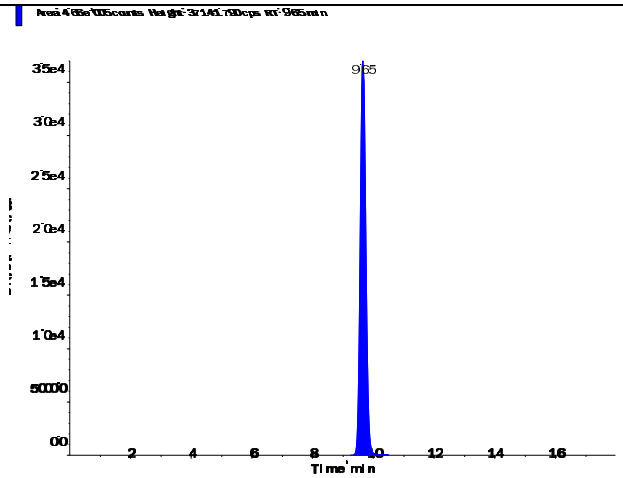

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

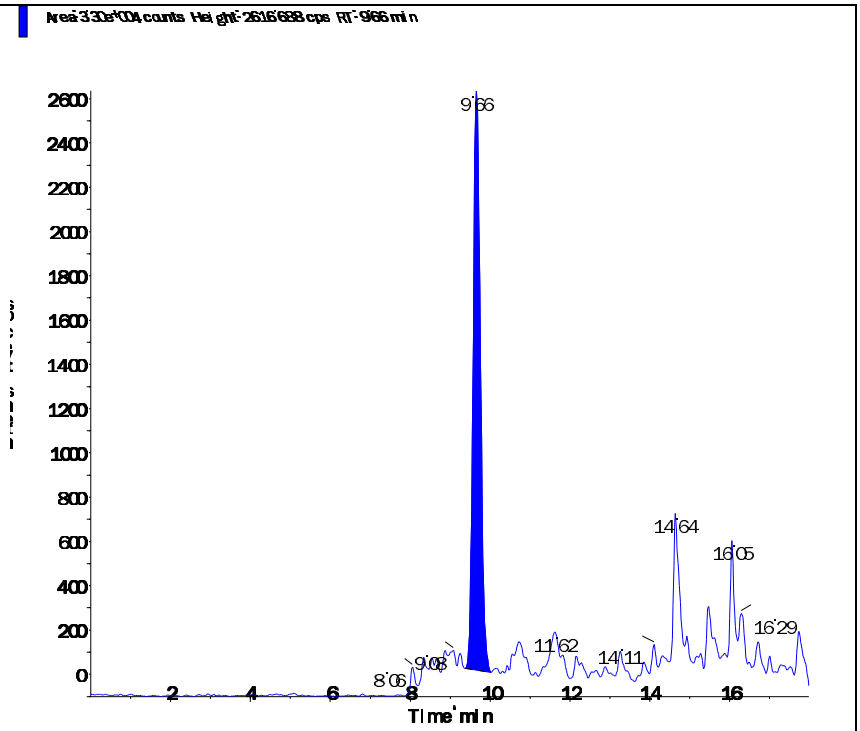

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.65 (9.84) min
Calculated conc:	0.209 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

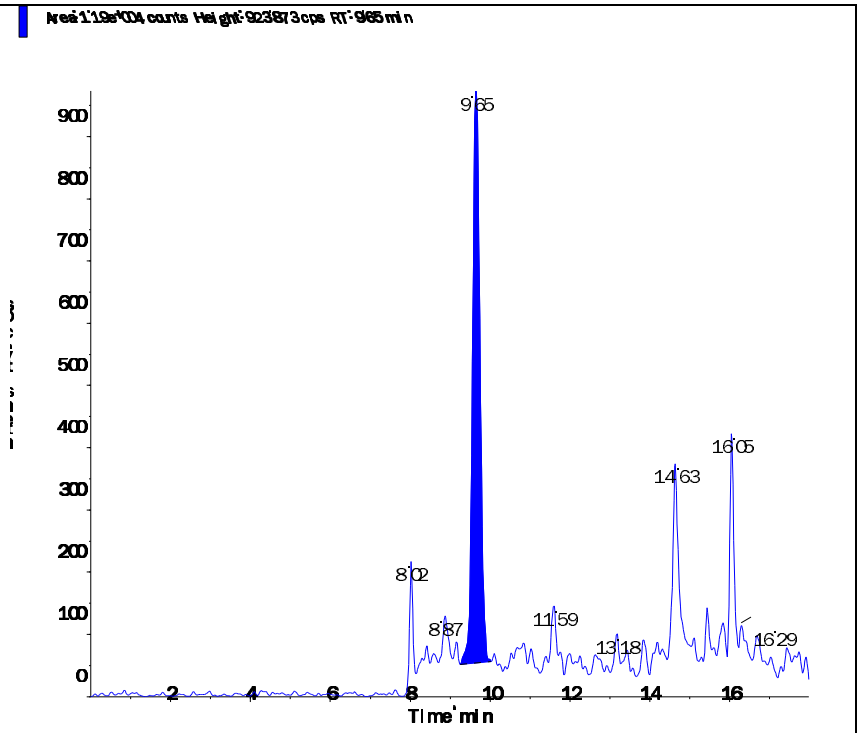

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Data File	LM35293.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 4:41:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-13 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35293.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 4:41:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572200-13	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.800e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.390e+04	9.68	N/A	0.206
Perchlorate conf	1.220e+04	9.66	N/A	0.207

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

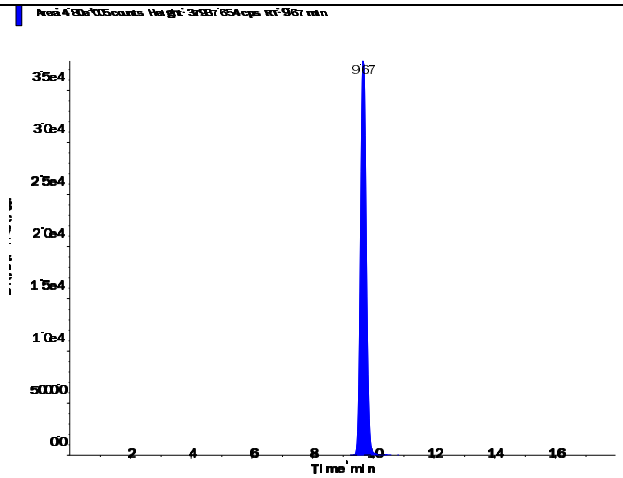

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.68 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

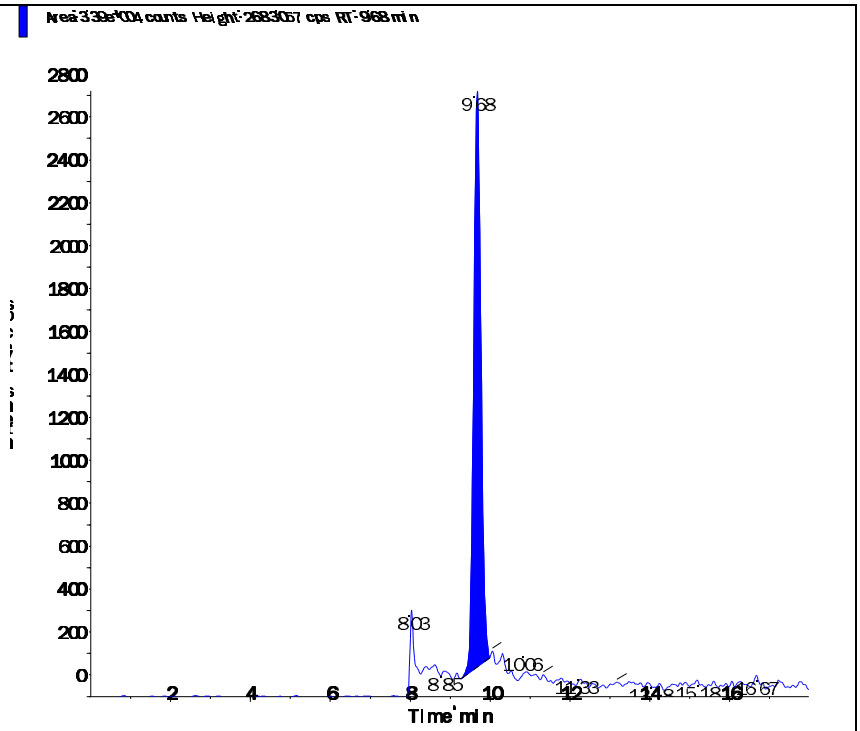

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

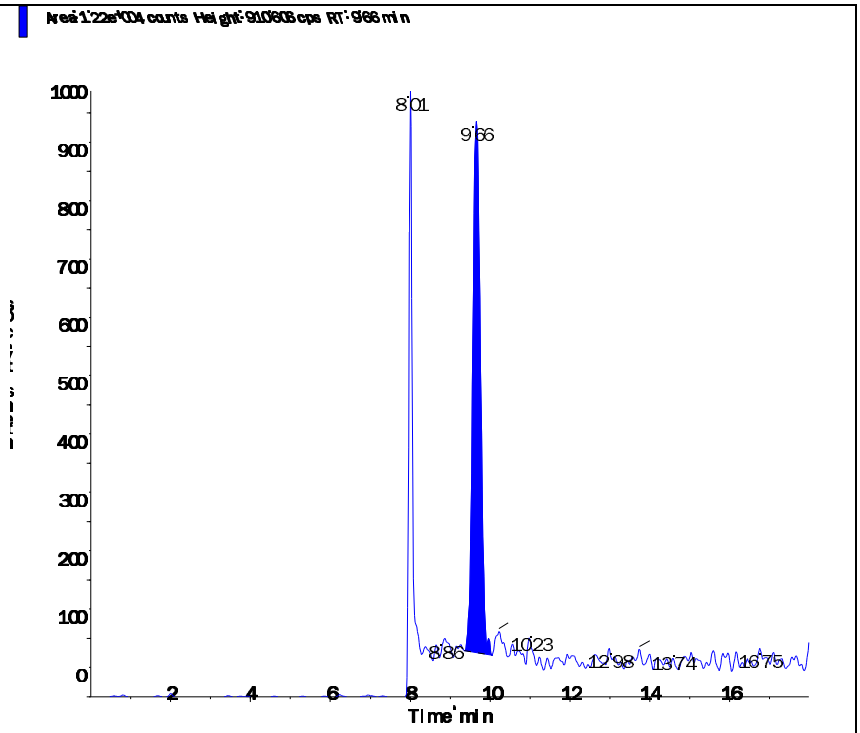

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Data File	LM35297.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 5:57:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-14 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35297.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 5:57:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572200-14	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.980e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.650e+04	9.67	N/A	0.215
Perchlorate conf	1.270e+04	9.66	N/A	0.208

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

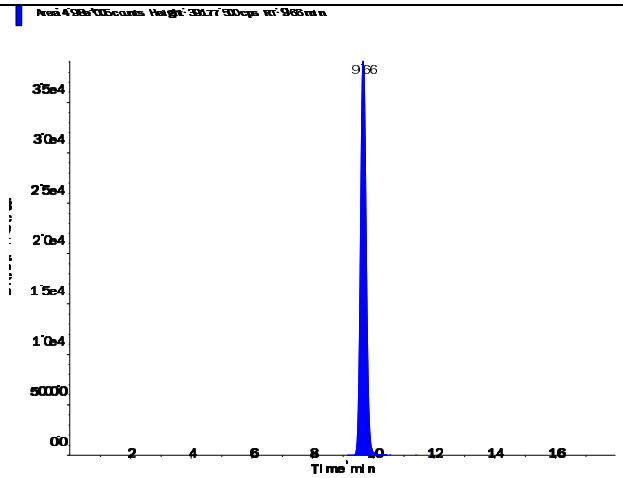

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.67 (9.84) min
Calculated conc:	0.215 ng/ml
Area Ratio:	0.073
Sample Type:	(Unknown)

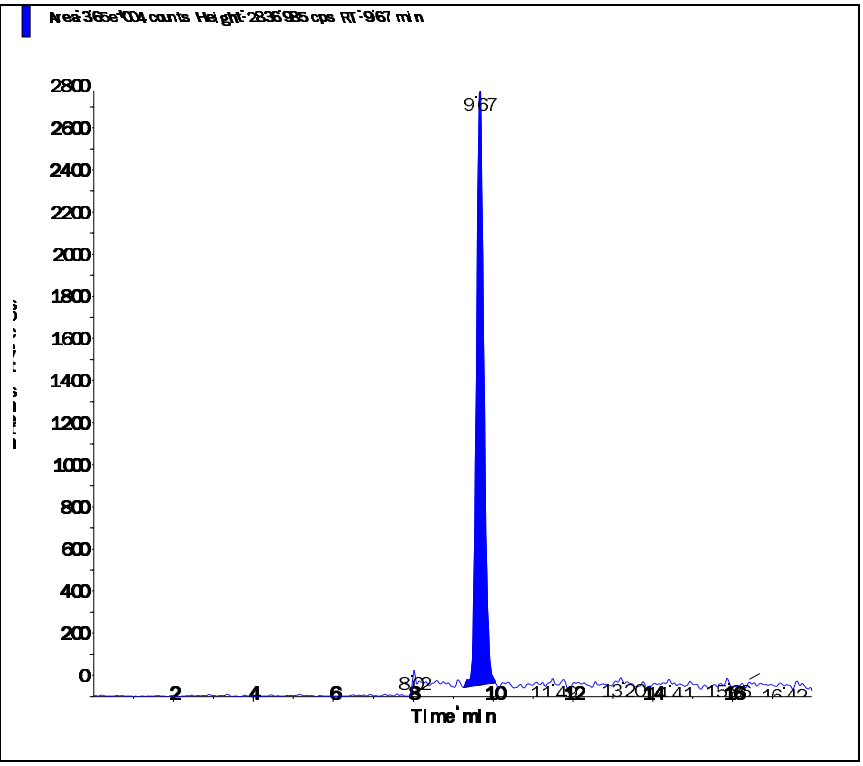

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.208 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

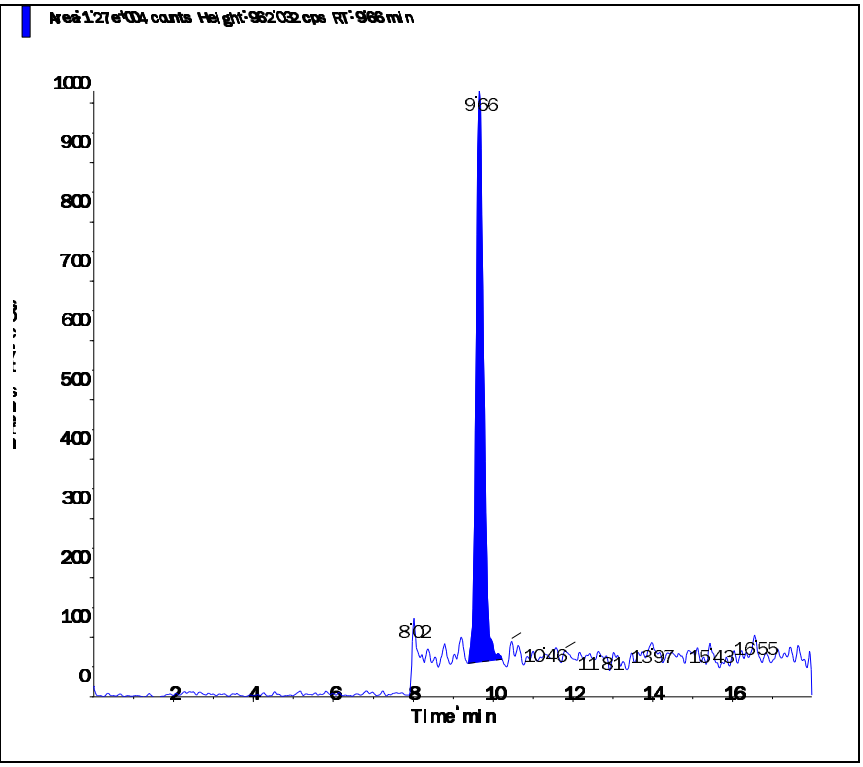

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Data File	LM35225.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 9:49:48 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-01 CCB	**Injection Vial**	1.00
Data File	LM35225.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 9:49:48 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.710e+05	9.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.80(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

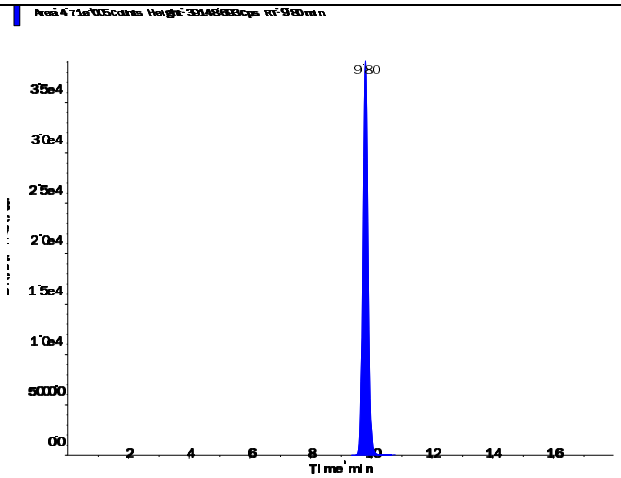

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

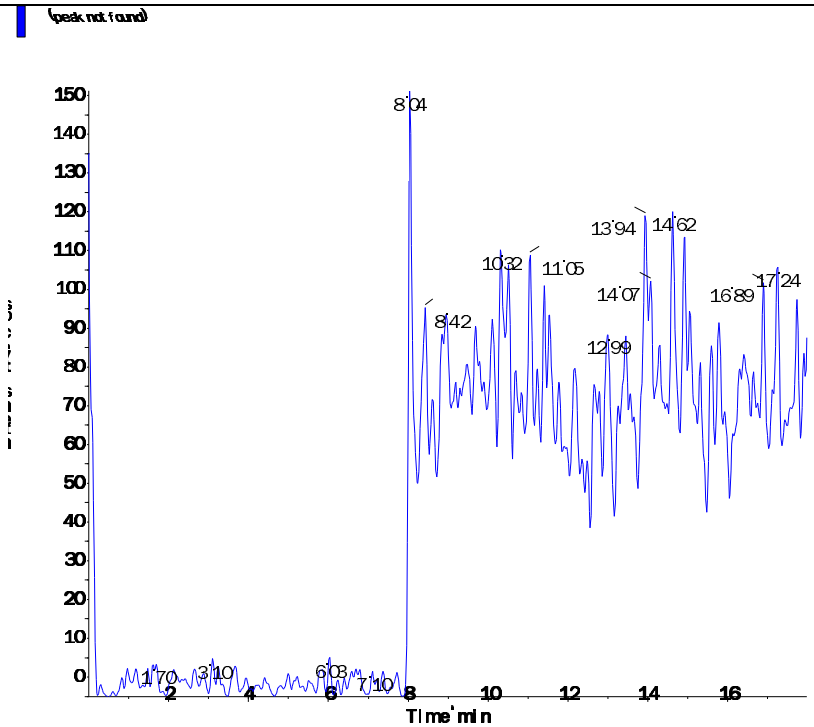

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

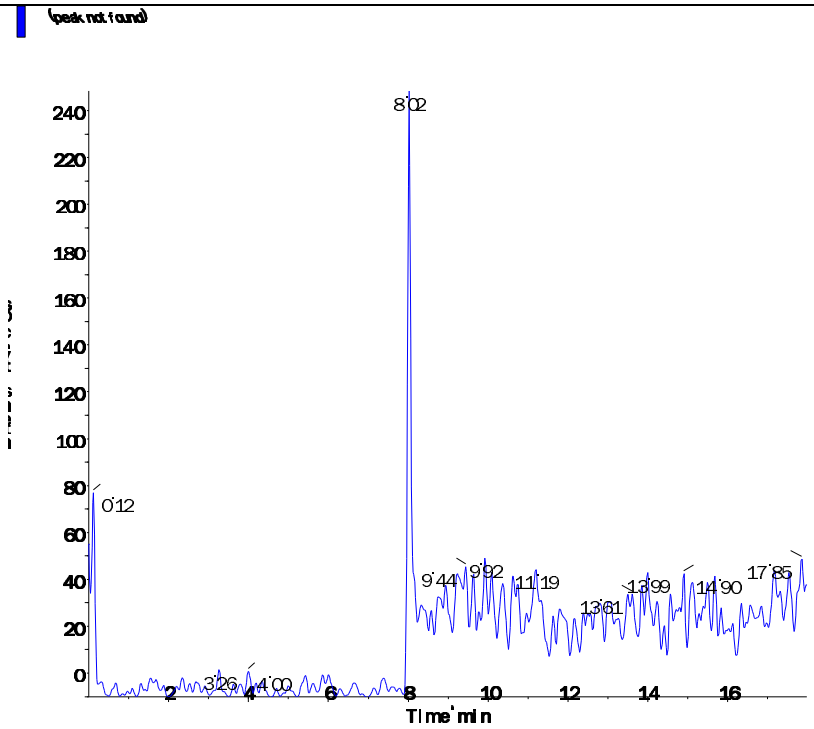

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Data File	LM35240.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 2:33:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-04 CCB	**Injection Vial**	1.00
Data File	LM35240.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 2:33:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.660e+03	10.00	N/A	0.018
Perchlorate conf	1.770e+03	10.00	N/A	0.0114

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

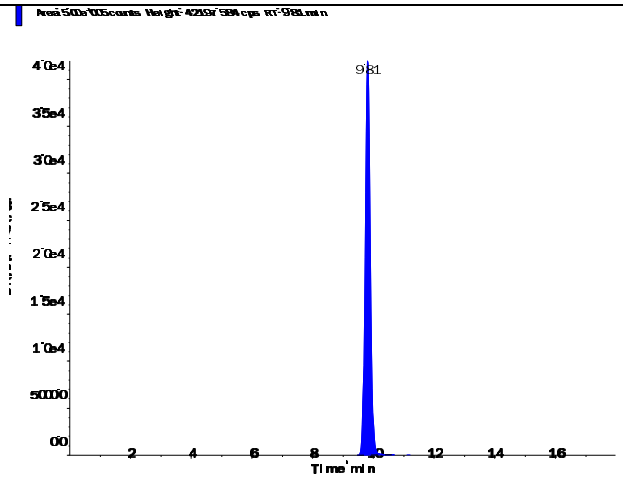

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.00 (9.84) min
Calculated conc:	0.018 ng/ml
Area Ratio:	0.007
Sample Type:	(Unknown)

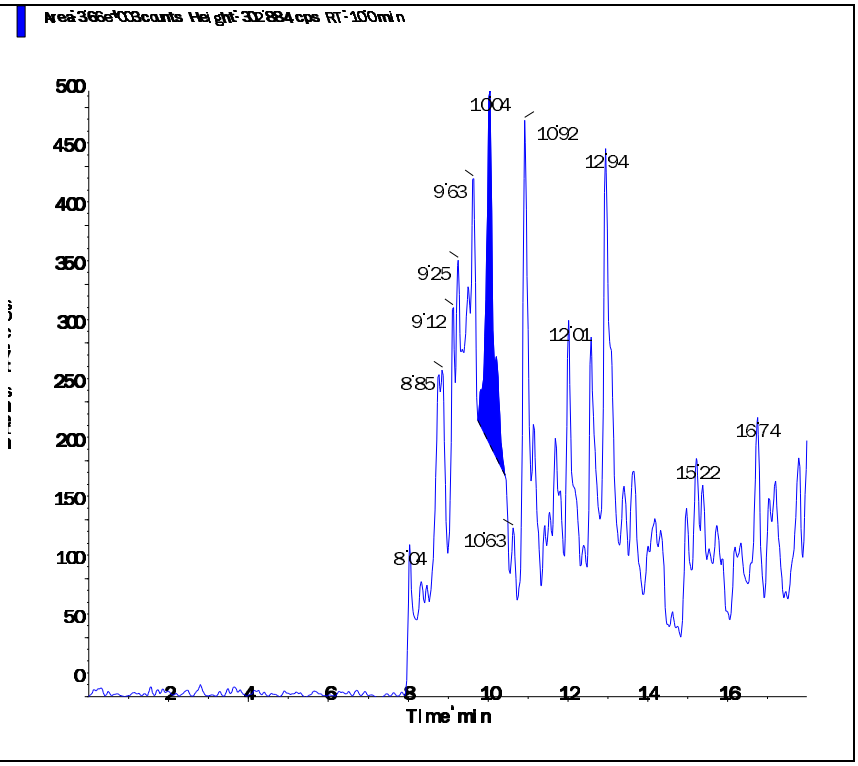

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.00 (9.84) min
Calculated conc:	0.0114 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)

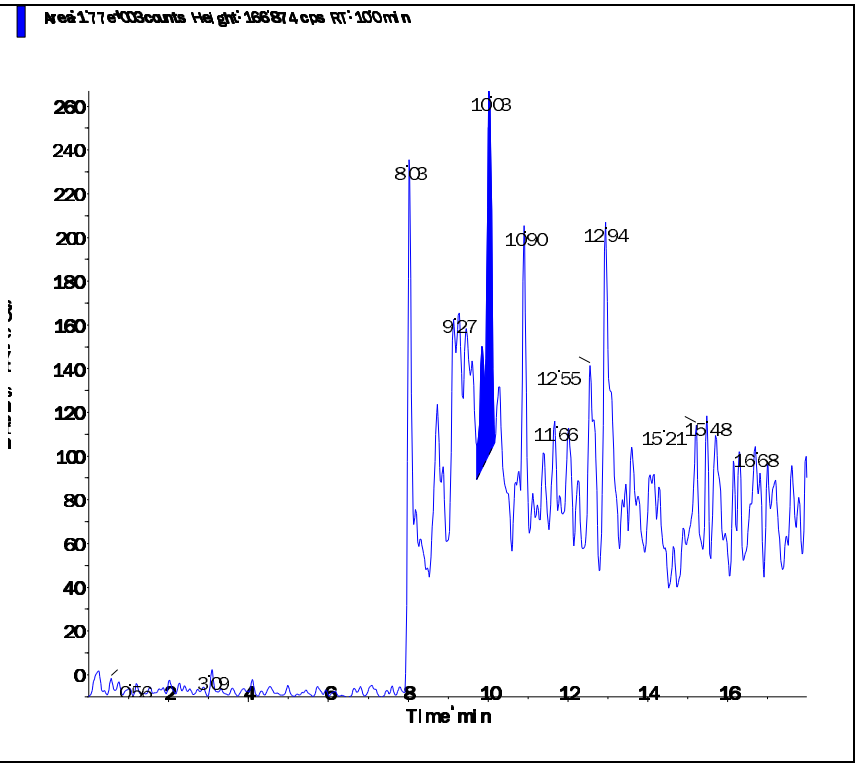

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Data File	LM35246.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 4:27:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-06 CCB	**Injection Vial**	1.00
Data File	LM35246.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 4:27:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.160e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	3.770e+02	9.80	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

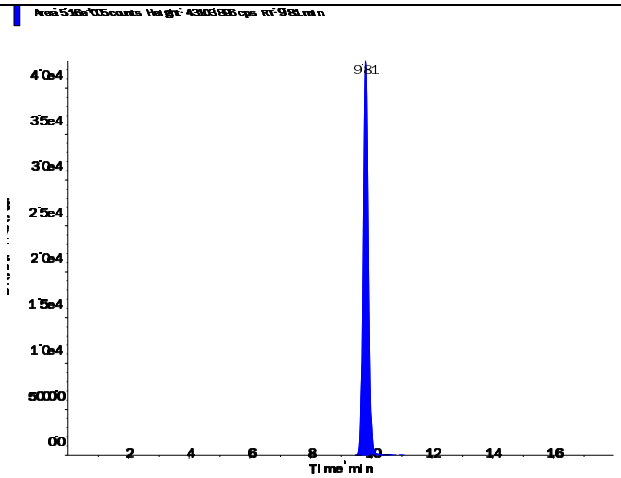

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

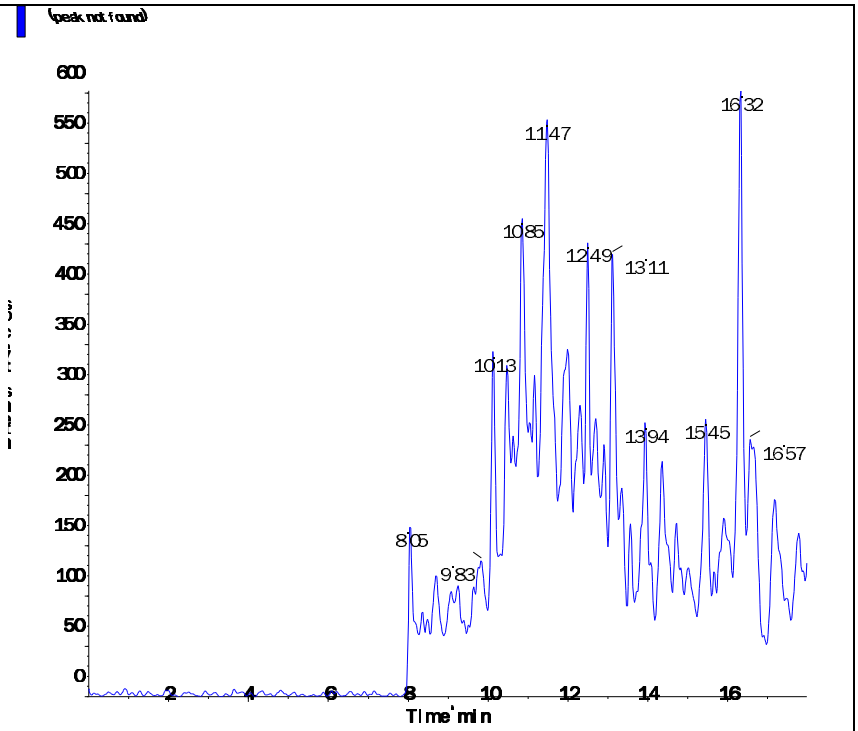

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.80 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

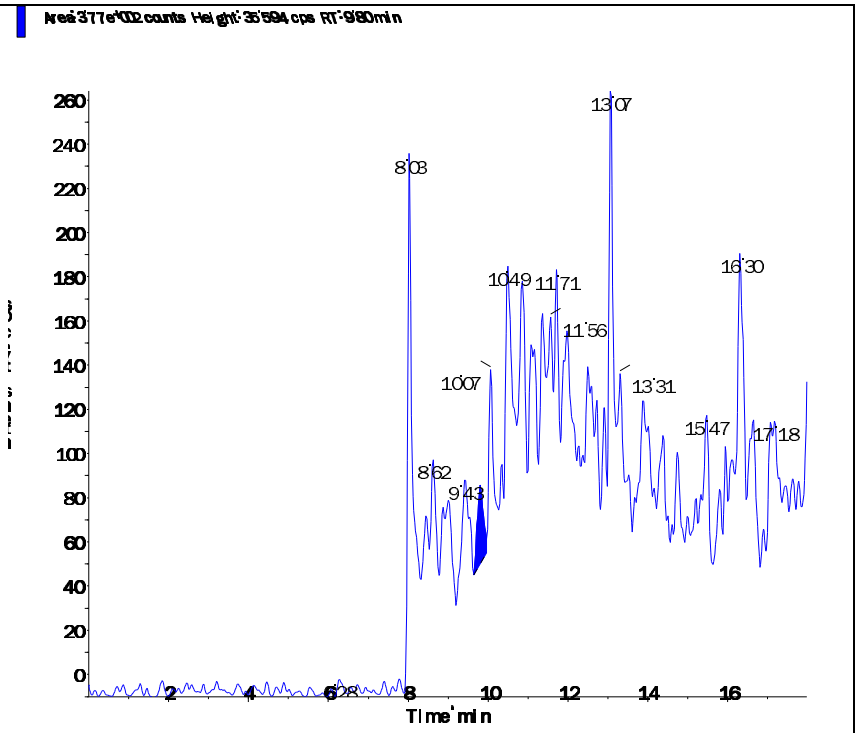

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Data File	LM35259.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 8:34:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-08 CCB	**Injection Vial**	1.00
Data File	LM35259.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 8:34:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.920e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

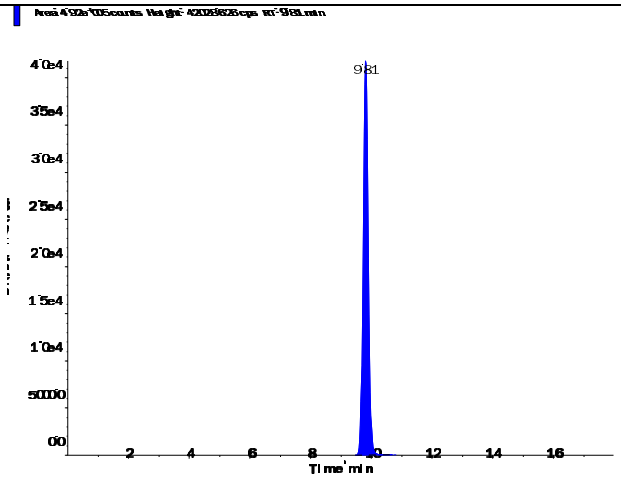

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

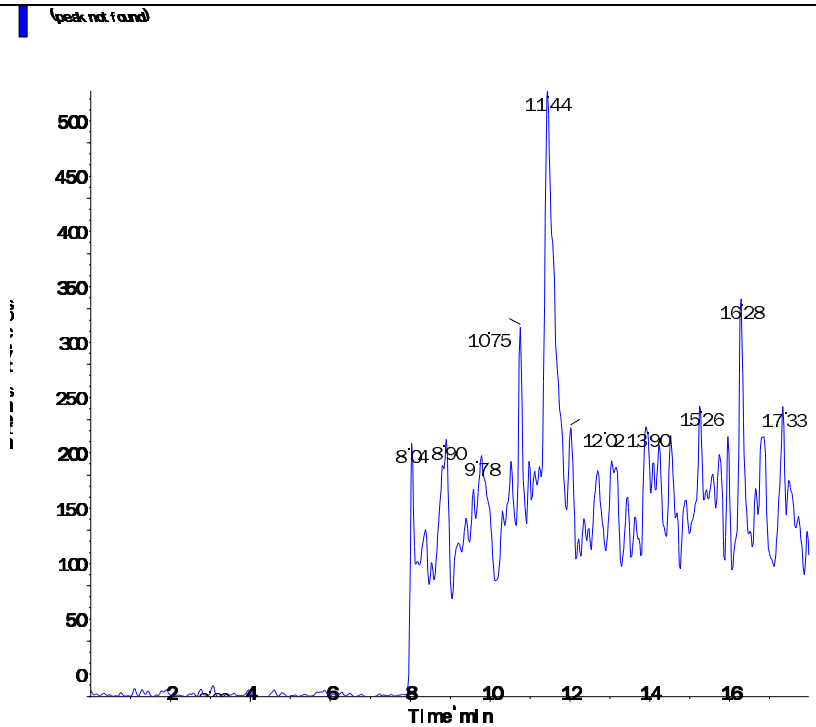

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

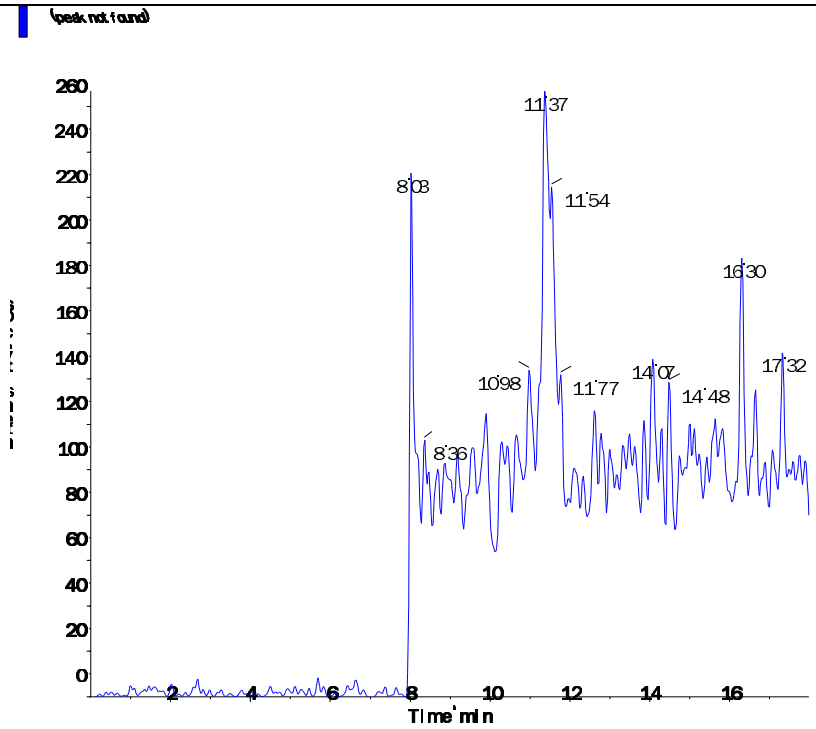

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Data File	LM35266.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 10:46:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-10 CCB	**Injection Vial**	1.00
Data File	LM35266.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 10:46:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.990e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	9.710e+02	9.90	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

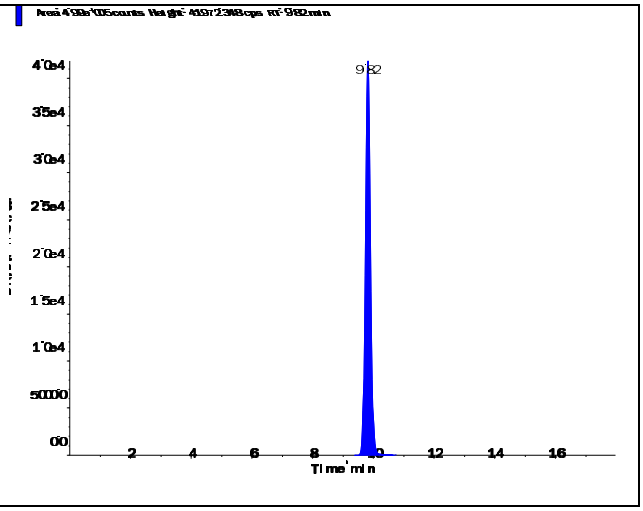

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/11/2016 1:13 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	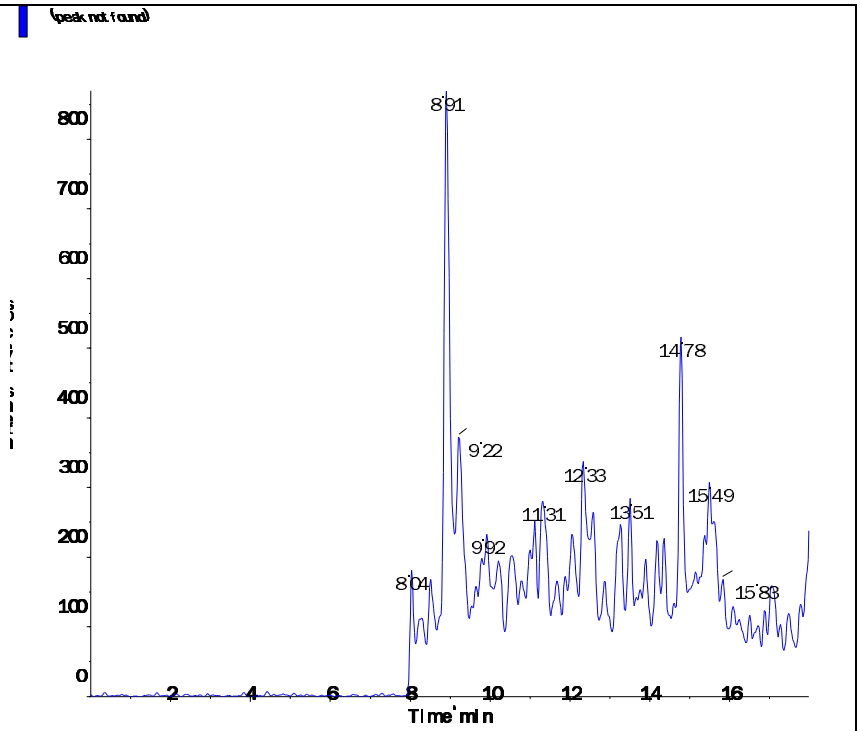
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.90 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	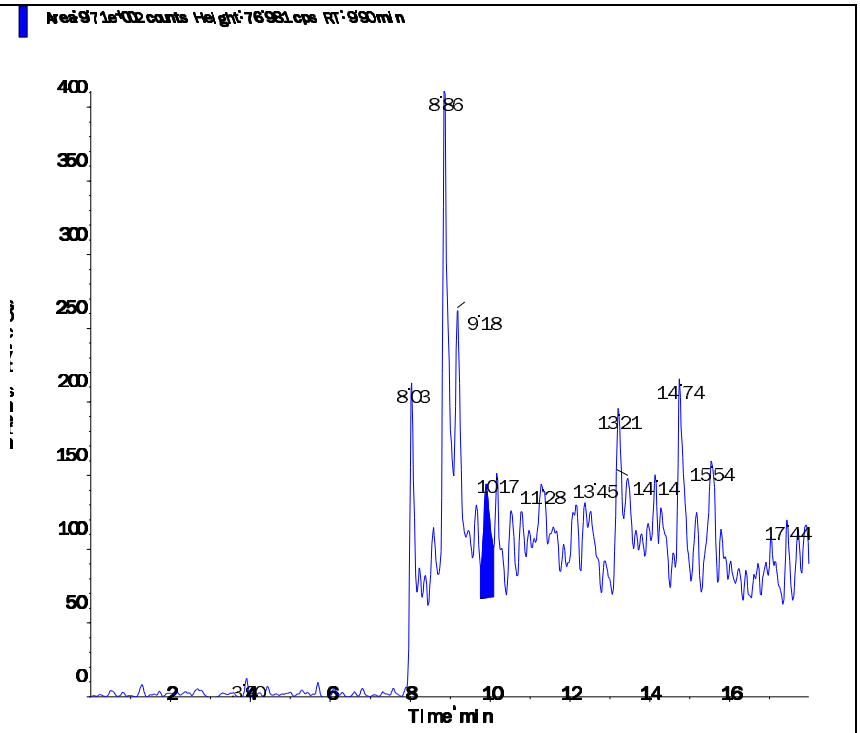

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/12/2016 9:36 PM

Data File	LM35279.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 11:27:29 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-01 CCB	**Injection Vial**	1.00
Data File	LM35279.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 11:27:29 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.540e+05	9.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.310e+03	9.56	N/A	0.0441
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.80(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

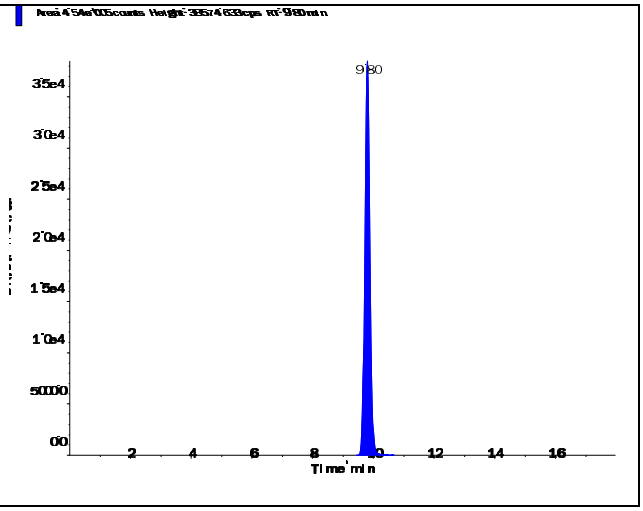

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/12/2016 9:36 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.56 (9.84) min
Calculated conc:	0.0441 ng/ml
Area Ratio:	0.016
Sample Type:	(Unknown)

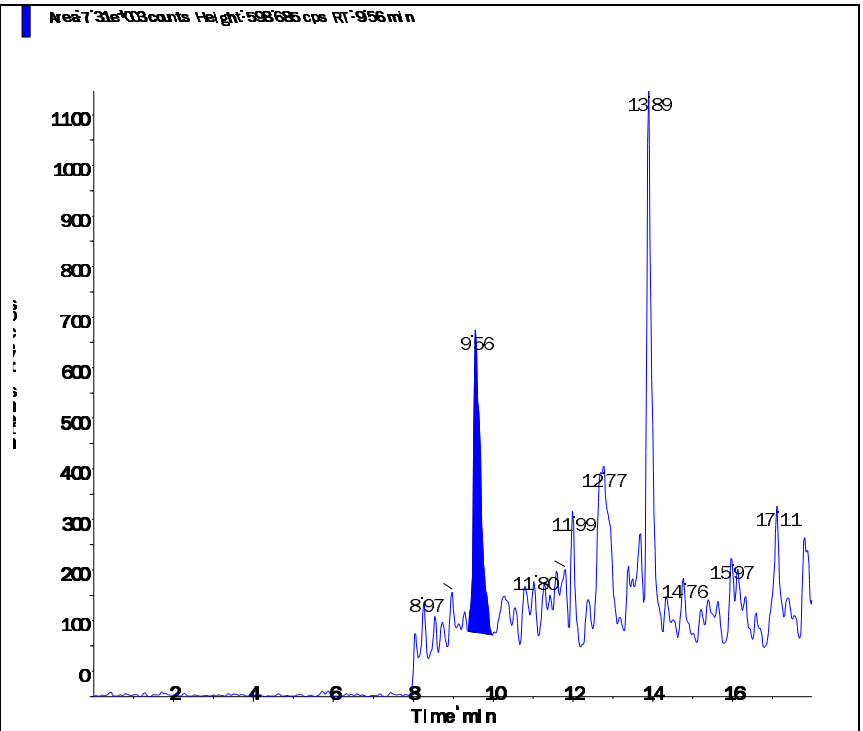

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

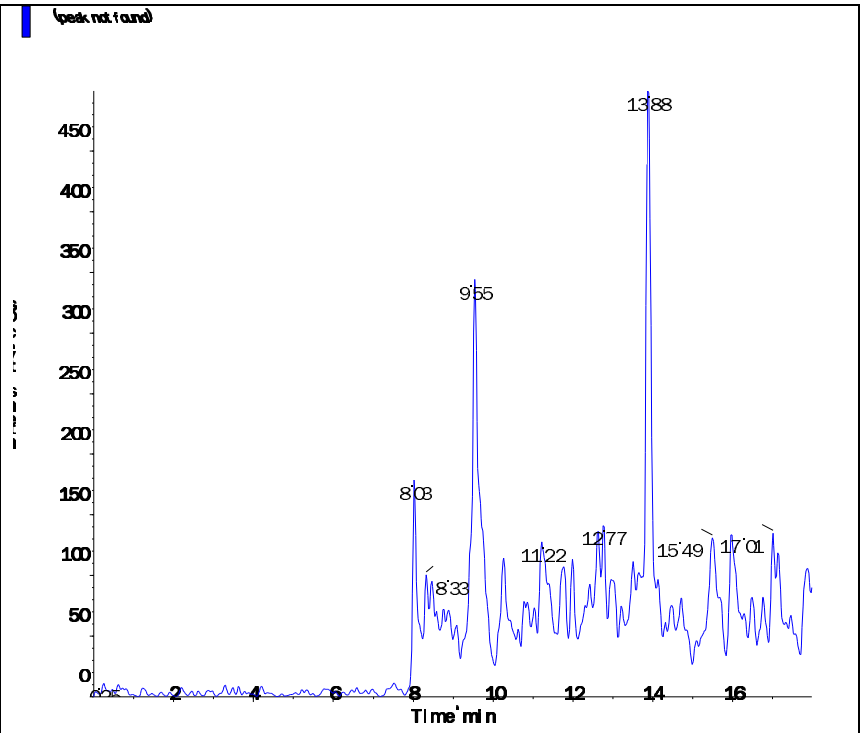

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/12/2016 9:41 PM

Data File	LM35294.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 5:00:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-04 CCB	**Injection Vial**	1.00
Data File	LM35294.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 5:00:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.960e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

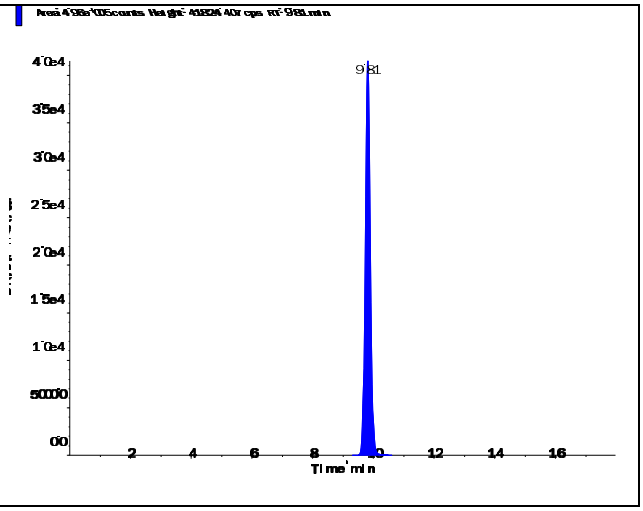

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/12/2016 9:41 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

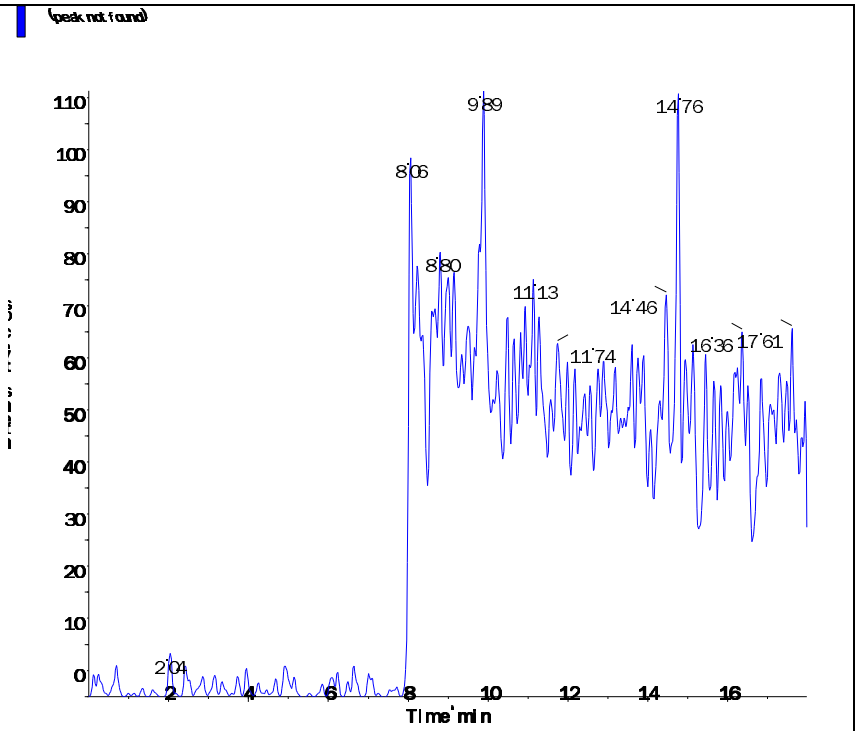

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

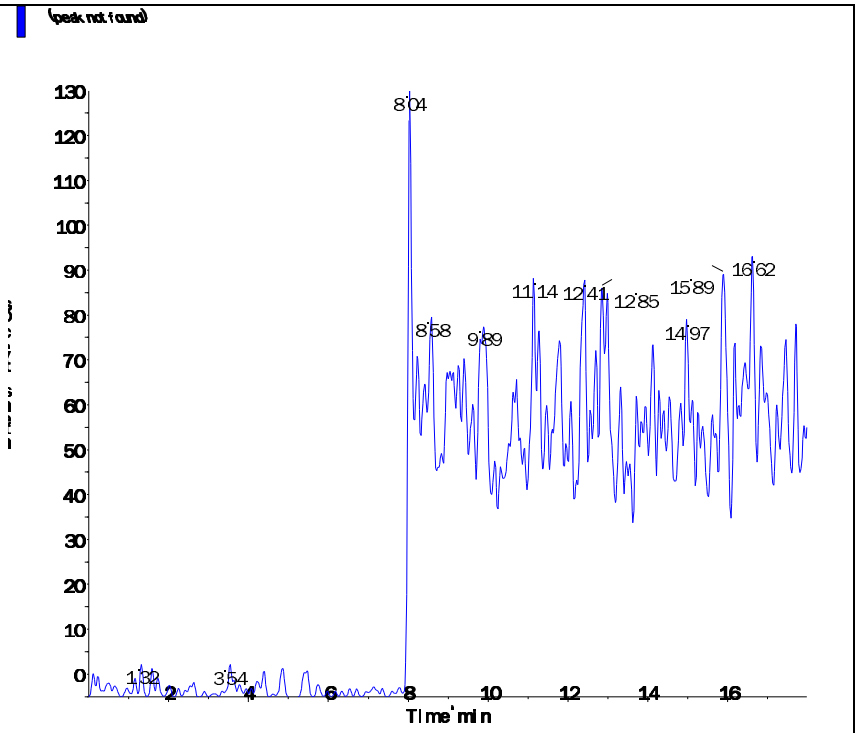

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/12/2016 9:42 PM

Data File	LM35298.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 6:16:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-06 CCB	**Injection Vial**	1.00
Data File	LM35298.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 6:16:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.040e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

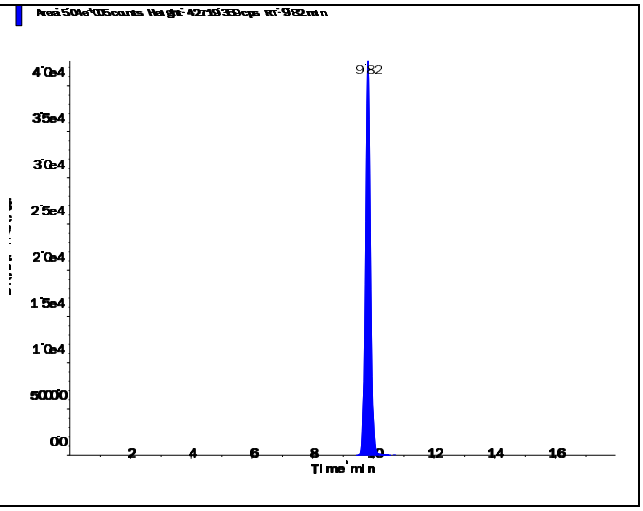

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

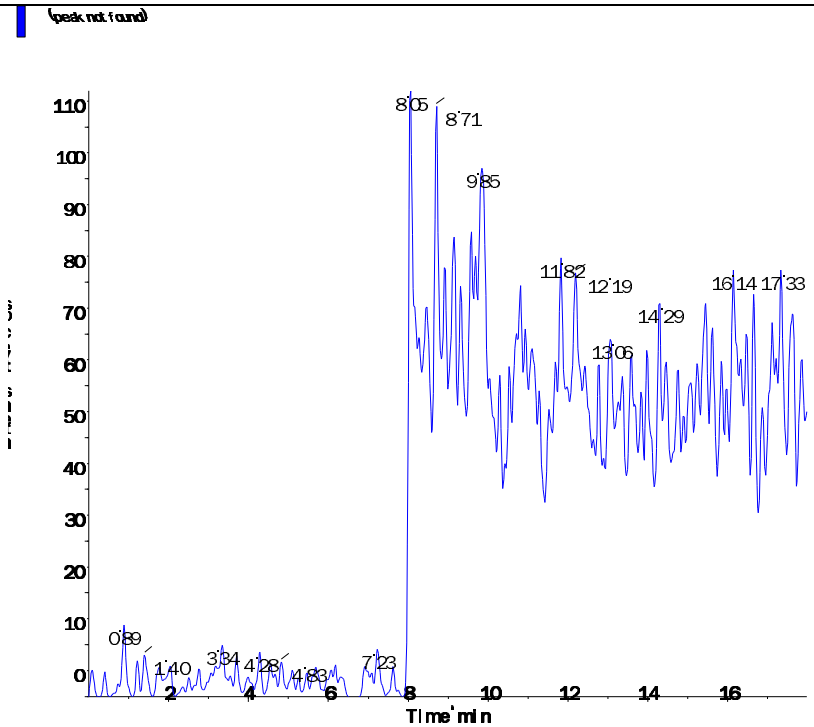

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

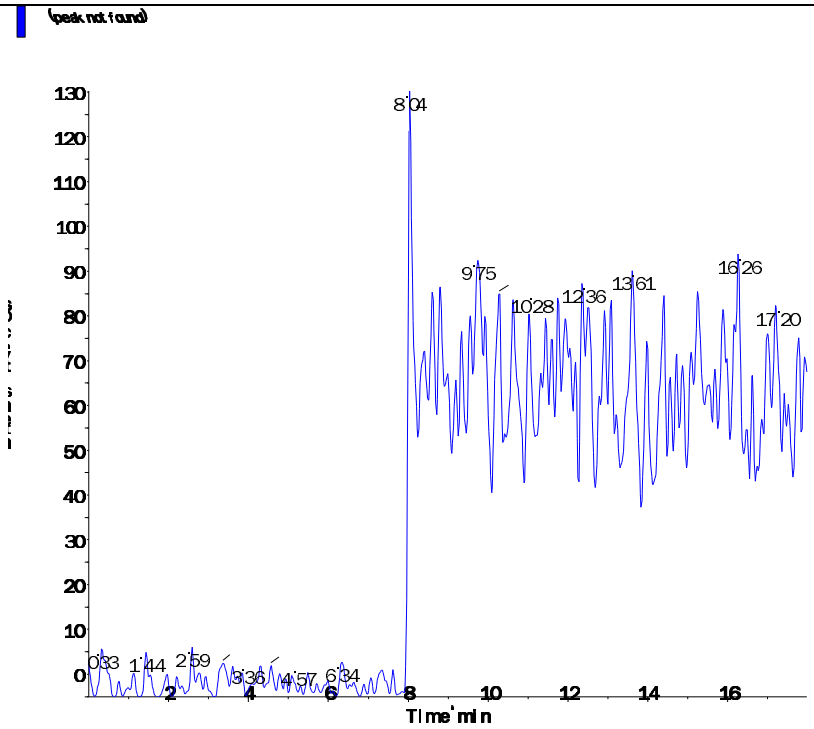

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Created with Analyst Reporter
Printed: 6/11/2016 1:00 PM

Data File	LM35228.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 10:46:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM35228.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 10:46:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.550e+05	9.16	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.520e+04	9.17	N/A	0.226
Perchlorate conf	1.040e+04	9.17	N/A	0.184

O18LP (Internal Standard)

RT (Exp. RT): 9.16(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

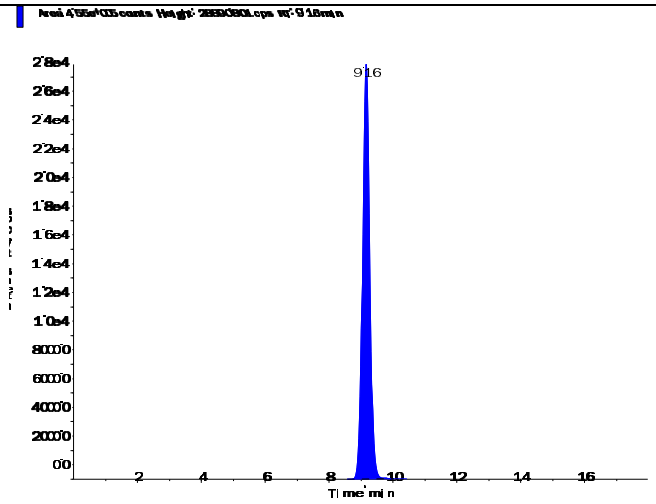

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Created with Analyst Reporter
Printed: 6/11/2016 1:00 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.17 (9.84) min
Calculated conc:	0.226 ng/ml
Area Ratio:	0.077
Sample Type:	(Unknown)

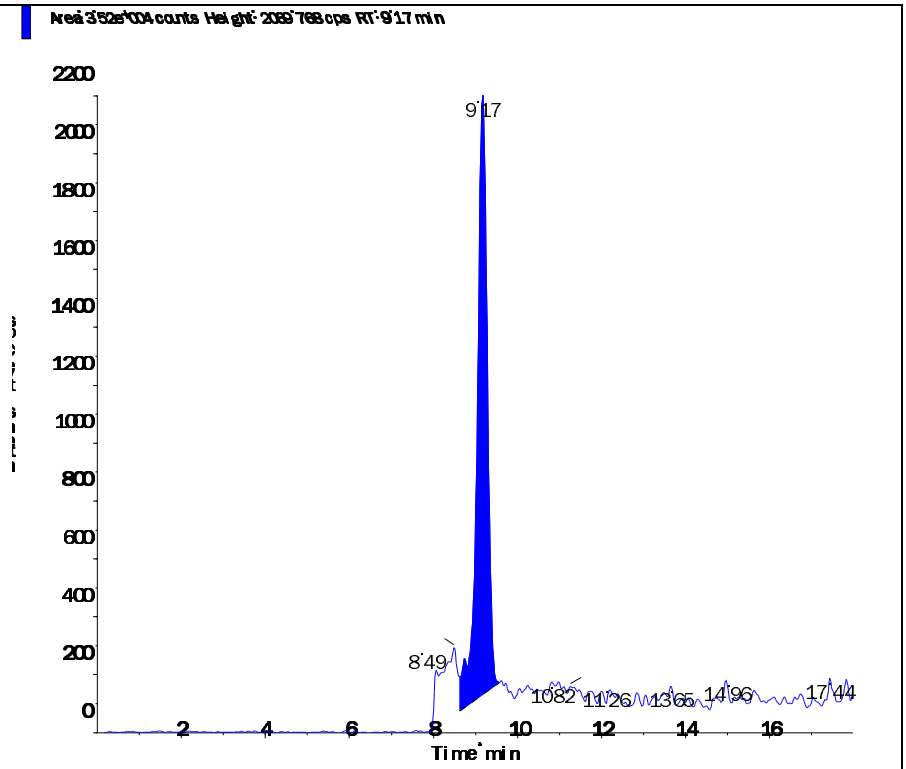

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.17 (9.84) min
Calculated conc:	0.184 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

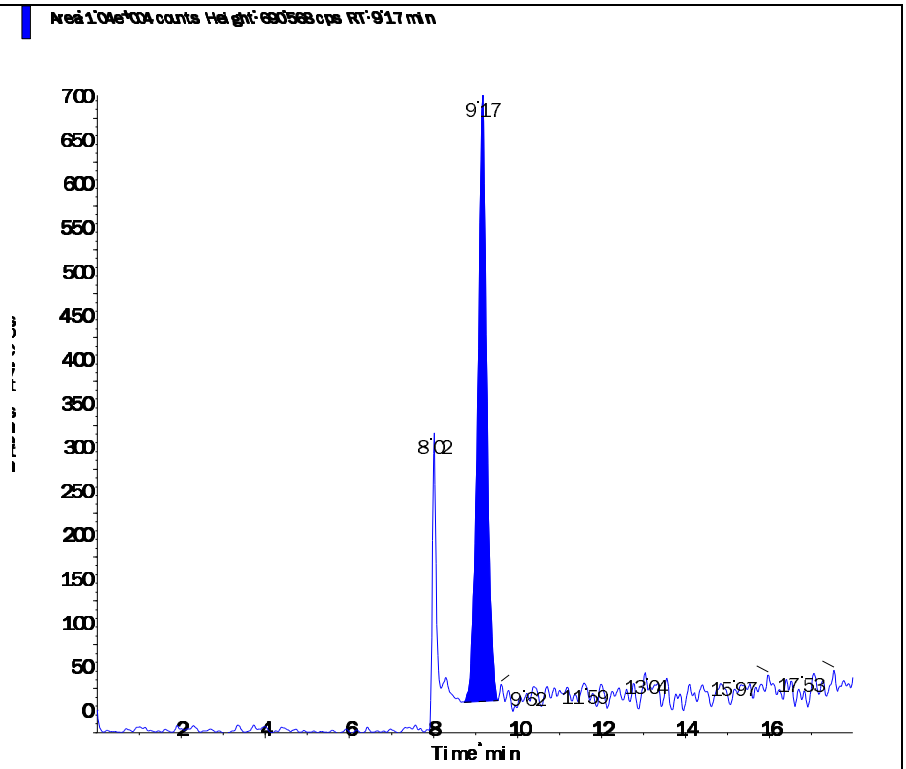

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2.2.2.5 Raw QC Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/11/2016 1:00 PM

Data File	LM35229.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 11:05:30 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-02 BLANK	**Injection Vial**	5.00
Data File	LM35229.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 11:05:30 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.410e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	3.090e+02	9.81	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

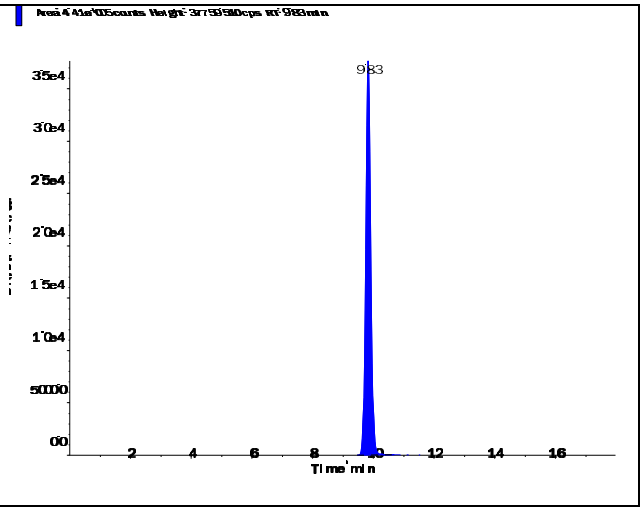

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	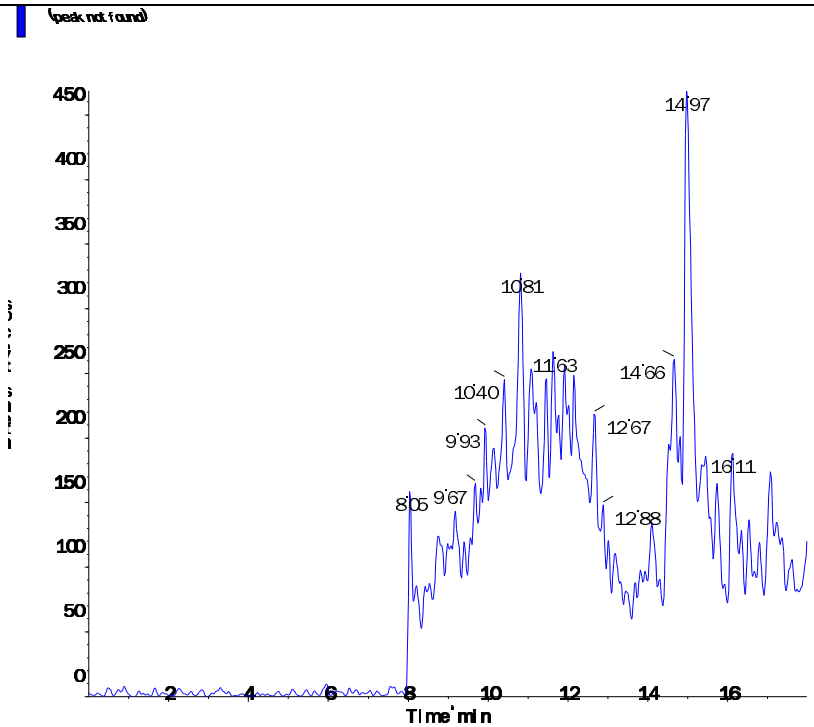
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.81 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	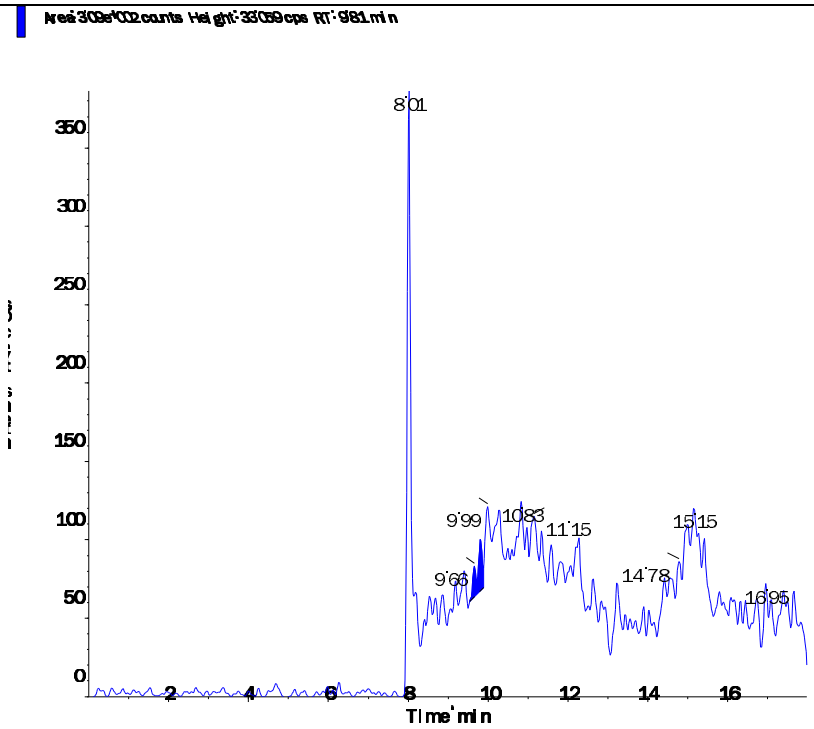

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Printed: 6/11/2016 1:01 PM

Data File	LM35230.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 11:24:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM35230.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 11:24:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.340e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.000e+04	9.83	N/A	0.201
Perchlorate conf	1.180e+04	9.83	N/A	0.223

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

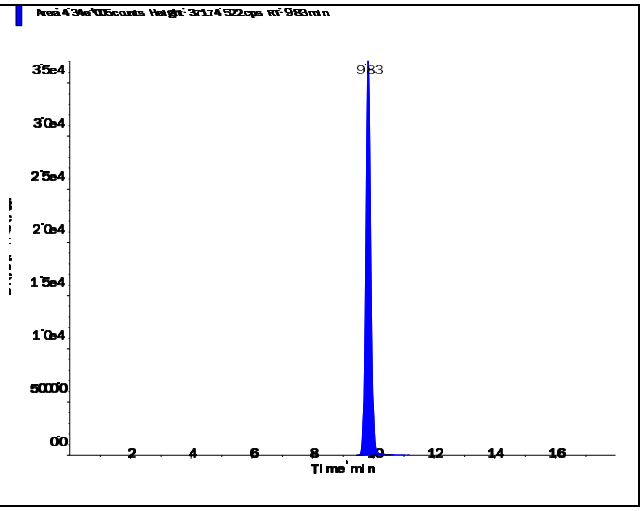

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

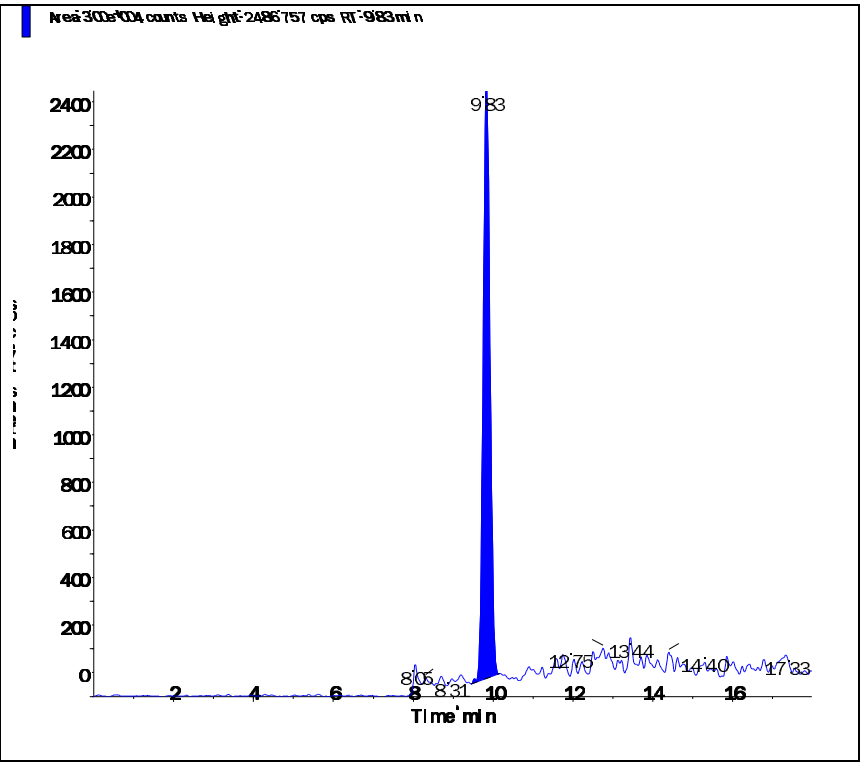

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.223 ng/ml
Area Ratio:	0.027
Sample Type:	(Unknown)

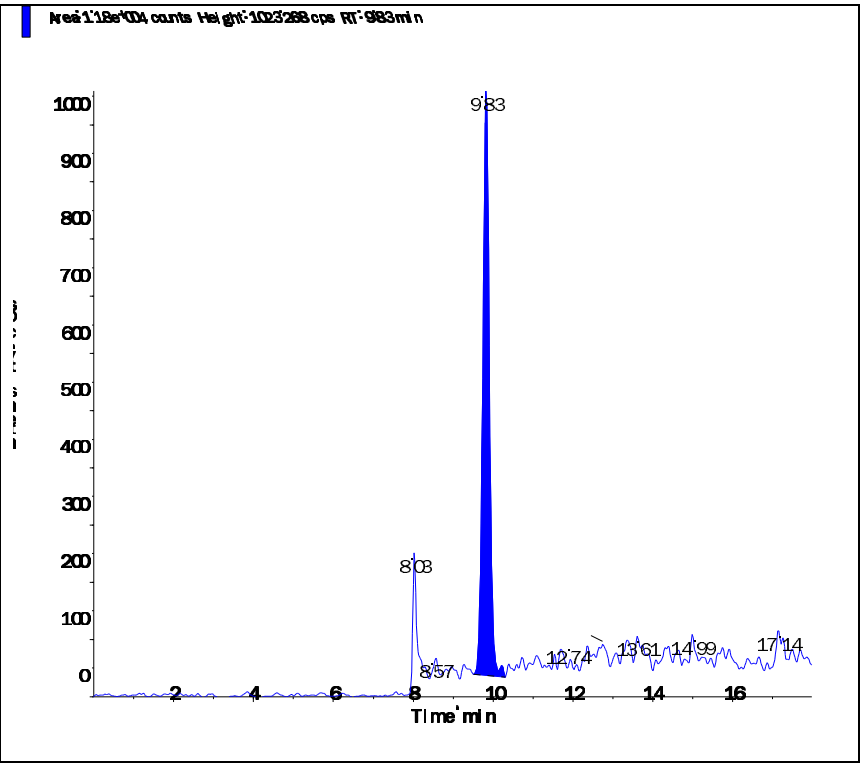

2.3 Metals Data

2.3.1 Metals I C P Data

2.3.1.1 Summary Data

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	AWD4T-060716	**Prep Method:**	3015	**Prep Date:**	06/13/2016 12:41
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/14/2016 12:52
Workgroup #:	WG572626	**Analyst:**	JYH	**Run Date:**	06/14/2016 16:54
Collect Date:	06/07/2016 15:00	**Dilution:**	1	**File ID:**	T3.061416.165411
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	5.71		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	8.62		0.500	0.250	0.125
Iron, Total	7439-89-6	5.13		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	5.98		1.00	0.500	0.250
Potassium, Total	7440-09-7	1.00	U	2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0161	J	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	70.6		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	AWD4B-060716	**Prep Method:**	3015	**Prep Date:**	06/13/2016 12:41
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/14/2016 12:52
Workgroup #:	WG572626	**Analyst:**	JYH	**Run Date:**	06/14/2016 16:58
Collect Date:	06/07/2016 15:30	**Dilution:**	1	**File ID:**	T3.061416.165809
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	5.34		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	8.65		0.500	0.250	0.125
Iron, Total	7439-89-6	4.64		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	5.75		1.00	0.500	0.250
Potassium, Total	7440-09-7	1.00	U	2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	J	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	72.0		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.1.2 QC Summary Data

Example 6010 Calculations
Thermo Scientific iCAP

1.0 Initial Calibration (ICAL) Parameters
For a multi-point calibration, the system performs linear regression from data consisting of a blank and four standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG572463
Analyst: REK
Spike Analyst: REK
Run Date: 06/13/2016 12:41
Method: 3015
Balance: BAL019
Instrument: MW-4
Instrument Start: 06/13/2016 12:49

SOP: ME407 Revison 19
Spike Solution: STD76255
Spike Witness: VC
40 & 50 ML. DIGESTION TU COA18772
HCL Lot #: COA18769
HNO3 Lot #: COA18905
ICP Filters- fisher-Lot# RGT35619

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG572463-02	BLANK	1	40 mL	50 mL	205.386 g	205.358 g		
2	WG572463-04	FLT_BLK	1	40 mL	50 mL	204.898 g	204.891 g		
3	WG572463-03	LCS	1	40 mL	50 mL	211.015 g	211.005 g	5 mL	
4	L16060411-03	SAMP	1	40 mL	50 mL	205.577 g	205.571 g		06/17/16
5	L16060411-04	SAMP	1	40 mL	50 mL	207.508 g	207.504 g		06/17/16
6	L16060485-03	SAMP	1	40 mL	50 mL	205.787 g	205.782 g		06/20/16
7	L16060485-04	SAMP	1	40 mL	50 mL	207.274 g	207.256 g		06/20/16
8	L16060485-05	SAMP	1	40 mL	50 mL	206.268 g	206.265 g		06/20/16
9	L16060485-06	SAMP	1	40 mL	50 mL	206.472 g	206.455 g		06/20/16
10	L16060492-01	SAMP	1	40 mL	50 mL	206.875 g	206.85 g		06/20/16
11	L16060492-02	SAMP	1	40 mL	50 mL	211.523 g	211.526 g		06/20/16
12	WG572463-01	REF	1	40 mL	50 mL	205.617 g	205.601 g		
13	L16060540-06	RS01	1	40 mL	50 mL	205.617 g	205.601 g		06/20/16
14	WG572463-05	MS	1	40 mL	50 mL	212.286 g	212.265 g	5 mL	
15	L16060540-07	MS01	1	40 mL	50 mL	212.286 g	212.265 g	5 mL	06/20/16
16	WG572463-06	MSD	1	40 mL	50 mL	211.012 g	210.994 g	5 mL	
17	L16060540-08	SD01	1	40 mL	50 mL	211.012 g	210.994 g	5 mL	06/20/16
18	L16060540-09	SAMP	1	40 mL	50 mL	204.956 g	204.933 g		06/20/16
19	L16060540-10	SAMP	1	40 mL	50 mL	207.687 g	207.671 g		06/20/16
20	L16060540-11	SAMP	1	40 mL	50 mL	207.697 g	207.667 g		06/20/16
21	L16060540-14	SAMP	1	40 mL	50 mL	205.077 g	205.054 g		06/20/16
22	L16060540-15	SAMP	1	40 mL	50 mL	205.616 g	205.621 g		06/20/16
23	L16060540-16	SAMP	1	40 mL	50 mL	206.317 g	206.293 g		06/20/16
24	L16060645-01	SAMP	1	40 mL	50 mL	207.15 g	207.138 g		06/20/16
25	L16060645-02	SAMP	1	40 mL	50 mL	205.612 g	205.607 g		06/20/16
26	L16060645-03	SAMP	1	40 mL	50 mL	207.496 g	207.483 g		06/20/16

L16060540-10	filtered digestate
L16060540-11	filtered digestate

Analyst: _____

Reviewer: _____

MW_DIG - Modified 09/30/2009
PDF ID: 4805192
Report generated: 06/13/2016 13:58

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 061416T3.2R.TXT

Analyst1: Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 572544, 572626, 572020

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.061416.123628	WG572687-01	Calibration Point		1		06/14/16 12:36
2	T3.061416.124032	WG572687-02	Calibration Point		1		06/14/16 12:40
3	T3.061416.124435	WG572687-03	Calibration Point		1		06/14/16 12:44
4	T3.061416.124840	WG572687-04	Calibration Point		1		06/14/16 12:48
5	T3.061416.125223	WG572687-05	Calibration Point		1		06/14/16 12:52
6	T3.061416.125605	WG572687-06	Initial Calibration Verification		1		06/14/16 12:56
7	T3.061416.125947	WG572687-07	Initial Calib Blank		1		06/14/16 12:59
8	T3.061416.130350	WG572687-08	Low Level Initial Calibration V		1		06/14/16 13:03
9	T3.061416.130753	WG572687-09	Low Level Initial Calibration V		1		06/14/16 13:07
10	T3.061416.131152	WG572687-10	Interference Check		1		06/14/16 13:11
11	T3.061416.131551	WG572687-11	Interference Check		1		06/14/16 13:15
12	T3.061416.131940	WG572687-12	CCV		1		06/14/16 13:19
13	T3.061416.132323	WG572687-13	CCB		1		06/14/16 13:23
14	T3.061416.133305	WG572244-02	Method/Prep Blank	40/50	1		06/14/16 13:33
15	T3.061416.133710	WG572244-03	Laboratory Control S	40/50	1		06/14/16 13:37
16	T3.061416.134058	WG572115-01	Fluid Blank 1		1		06/14/16 13:40
17	T3.061416.134504	WG572115-02	Fluid Blank 2		1		06/14/16 13:45
18	T3.061416.134908	WG572244-01	Reference Sample		1	L16060401-01	06/14/16 13:49
19	T3.061416.135310	WG572244-04	Matrix Spike	40/50	1	L16060401-01	06/14/16 13:53
20	T3.061416.135655	WG572244-05	Matrix Spike Duplica	40/50	1	L16060401-01	06/14/16 13:56
21	T3.061416.140044	L16060360-02	V6F0104-02	5/50	1		06/14/16 14:00
22	T3.061416.140444	L16060403-01	KAISER 12 BAGS 6/6/16	5/50	1		06/14/16 14:04
23	T3.061416.140844	WG572687-14	CCV		1		06/14/16 14:08
24	T3.061416.141227	WG572687-15	CCB		1		06/14/16 14:12
25	T3.061416.141631	L16060438-01	PIT WATER	40/50	1		06/14/16 14:16
26	T3.061416.142028	L16060482-01	13837-SSP0551	5/50	1		06/14/16 14:20
27	T3.061416.142427	L16060504-03	MW5-060816	40/50	1		06/14/16 14:24
28	T3.061416.142829	WG572544-01	Post Digestion Spike		1	L16060504-03	06/14/16 14:28
29	T3.061416.143214	WG572544-02	Serial Dilution		5	L16060504-03	06/14/16 14:32
30	T3.061416.143615	WG572544-02	Serial Dilution		25	L16060504-03	06/14/16 14:36
31	T3.061416.144017	WG572687-16	CCV		1		06/14/16 14:40
32	T3.061416.144359	WG572687-17	CCB		1		06/14/16 14:43
33	T3.061416.144804	WG572687-18	Low Level Continuing Calibra		1		06/14/16 14:48
34	T3.061416.145155	WG572687-19	Low Level Continuing Calibra		1		06/14/16 14:51

Page: 1 Approved: June 14, 2016

Kim H. Rhoden

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 061416T3.2R.TXT
Analyst1: Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 572544, 572626, 572020

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.061416.145555	L16060403-01	KAISER 12 BAGS 6/6/16		1		06/14/16 14:55
36	T3.061416.145955	L16060437-01	0101-151-B	40/50	1		06/14/16 14:59
37	T3.061416.150355	L16060442-01	27-3-25.14 S1	40/50	1		06/14/16 15:03
38	T3.061416.150755	L16060442-02	6-10-15.01 S12	40/50	1		06/14/16 15:07
39	T3.061416.151155	L16060442-03	6-10-15.01 S11		1		06/14/16 15:11
40	T3.061416.151559	L16060442-04	6-10-15.01 S7	40/50	1		06/14/16 15:15
41	T3.061416.152000	L16060442-05	6-10-15.01 S8	40/50	1		06/14/16 15:20
42	T3.061416.152359	L16060442-06	6-10-15.01 S1	40/50	1		06/14/16 15:23
43	T3.061416.152759	WG572687-20	CCV		1		06/14/16 15:27
44	T3.061416.153141	WG572687-21	CCB		1		06/14/16 15:31
45	T3.061416.153545	L16060443-01	45-11-15.02 S2	40/50	1		06/14/16 15:35
46	T3.061416.153934	L16060443-02	45-11-15.02 S1	40/50	1		06/14/16 15:39
47	T3.061416.154331	L16060443-03	1803-126 W1	40/50	1		06/14/16 15:43
48	T3.061416.154727	L16060446-01	1802-116-A W1	40/50	1		06/14/16 15:47
49	T3.061416.155127	L16060447-01	6-7-32 W1	40/50	1		06/14/16 15:51
50	T3.061416.155527	L16060442-03	6-10-15.01 S11	40/50	1		06/14/16 15:55
51	T3.061416.155927	WG572687-22	CCV		1		06/14/16 15:59
52	T3.061416.160309	WG572687-23	CCB		1		06/14/16 16:03
53	T3.061416.160713	WG572463-02	Method/Prep Blank	40/50	1		06/14/16 16:07
54	T3.061416.161106	WG572463-03	Laboratory Control S	40/50	1		06/14/16 16:11
55	T3.061416.161451	WG572463-04	Filter Blank		1		06/14/16 16:14
56	T3.061416.161854	WG572463-01	Reference Sample		1	L16060540-06	06/14/16 16:18
57	T3.061416.162255	WG572463-05	Matrix Spike	40/50	1	L16060540-06	06/14/16 16:22
58	T3.061416.162640	WG572463-06	Matrix Spike Duplica	40/50	1	L16060540-06	06/14/16 16:26
59	T3.061416.163026	L16060645-03	5506-G01-WQ-W0163	40/50	1		06/14/16 16:30
60	T3.061416.163430	WG572626-01	Post Digestion Spike		1	L16060645-03	06/14/16 16:34
61	T3.061416.163816	WG572626-02	Serial Dilution		5	L16060645-03	06/14/16 16:38
62	T3.061416.164220	WG572626-02	Serial Dilution		25	L16060645-03	06/14/16 16:42
63	T3.061416.164625	WG572687-24	CCV		1		06/14/16 16:46
64	T3.061416.165007	WG572687-25	CCB		1		06/14/16 16:50
65	T3.061416.165411	L16060411-03	AWD4T-060716	40/50	1		06/14/16 16:54
66	T3.061416.165809	L16060411-04	AWD4B-060716	40/50	1		06/14/16 16:58
67	T3.061416.170207	L16060485-03	FTB-034-GM-MW16B-06081	40/50	1		06/14/16 17:02
68	T3.061416.170608	L16060485-04	FTB-034-GM-MW08B-06081	40/50	1		06/14/16 17:06

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Kim H. Rhoden

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 061416T3.2R.TXT
Analyst1: Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 572544, 572626, 572020

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.061416.170958	L16060485-05	FTB-034-GM-MW15A-06081	40/50	1		06/14/16 17:09
70	T3.061416.171358	L16060485-06	FTB-034-GM-MW11B-06081	40/50	1		06/14/16 17:13
71	T3.061416.171759	L16060540-09	AG4578	40/50	1		06/14/16 17:17
72	T3.061416.172158	L16060540-10	AG4579	40/50	1		06/14/16 17:21
73	T3.061416.172558	L16060540-11	AG4580	40/50	1		06/14/16 17:25
74	T3.061416.172958	L16060540-14	AG4584	40/50	1		06/14/16 17:29
75	T3.061416.173357	WG572687-26	CCV		1		06/14/16 17:33
76	T3.061416.173740	WG572687-27	CCB		1		06/14/16 17:37
77	T3.061416.174143	L16060492-01	SPW_06082016	40/50	100		06/14/16 17:41
78	T3.061416.174556	L16060492-02	SPW_06082016	40/50	100		06/14/16 17:45
79	T3.061416.175013	L16060540-15	AG4587	40/50	1		06/14/16 17:50
80	T3.061416.175412	L16060540-16	AG4589	40/50	1		06/14/16 17:54
81	T3.061416.175813	L16060645-01	5003-G15-WQ-W0222	40/50	1		06/14/16 17:58
82	T3.061416.180216	L16060645-02	5320-G02-WQ-W0182	40/50	1		06/14/16 18:02
83	T3.061416.180620	L16060411-03	AWD4T-060716		20		06/14/16 18:06
84	T3.061416.181023	WG572687-28	CCV		1		06/14/16 18:10
85	T3.061416.181405	WG572687-29	CCB		1		06/14/16 18:14
86	T3.061416.181809	L16060411-04	AWD4B-060716		20		06/14/16 18:18
87	T3.061416.182210	L16060485-03	FTB-034-GM-MW16B-06081	40/50	20		06/14/16 18:22
88	T3.061416.182614	L16060485-04	FTB-034-GM-MW08B-06081	40/50	20		06/14/16 18:26
89	T3.061416.183019	L16060485-05	FTB-034-GM-MW15A-06081	40/50	20		06/14/16 18:30
90	T3.061416.183422	L16060485-06	FTB-034-GM-MW11B-06081	40/50	20		06/14/16 18:34
91	T3.061416.183825	WG572687-30	CCV		1		06/14/16 18:38
92	T3.061416.184207	WG572687-31	CCB		1		06/14/16 18:42
93	T3.061416.184611	WG572687-32	Low Level Continuing Calibra		1		06/14/16 18:46
94	T3.061416.185013	WG571814-02	Method/Prep Blank	40/50	1		06/14/16 18:50
95	T3.061416.185417	WG571814-03	Laboratory Control S	40/50	1		06/14/16 18:54
96	T3.061416.185803	WG571814-01	Reference Sample		1	L16060308-01	06/14/16 18:58
97	T3.061416.190204	WG571814-04	Matrix Spike	40/50	1	L16060308-01	06/14/16 19:02
98	T3.061416.190549	WG571814-05	Matrix Spike Duplica	40/50	1	L16060308-01	06/14/16 19:05
99	T3.061416.190934	L16060303-01	LH18/24-SP650-6368-GRAB	40/50	1		06/14/16 19:09
100	T3.061416.191335	L16060303-02	LH18/24-SP650-6368-COMP	40/50	1		06/14/16 19:13
101	T3.061416.191734	L16060304-02	LH18/24-SP650-6369-GRAB	40/50	1		06/14/16 19:17
102	T3.061416.192134	WG572020-03	Post Digestion Spike		1	L16060304-02	06/14/16 19:21

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Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 061416T3.2R.TXT

Analyst1: Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 572544, 572626, 572020

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T3.061416.192521	WG572020-04	Serial Dilution		5	L16060304-02	06/14/16 19:25
104	T3.061416.192921	WG572687-33	CCV		1		06/14/16 19:29
105	T3.061416.193304	WG572687-34	CCB		1		06/14/16 19:33
106	T3.061416.193707	WG571974-02	Method/Prep Blank	40/50	1		06/14/16 19:37
107	T3.061416.194111	WG571974-03	Laboratory Control S	40/50	1		06/14/16 19:41
108	T3.061416.194456	L16060395-08	MW-4		1	WG571974-01	06/14/16 19:44
109	T3.061416.194858	WG571974-04	Matrix Spike	40/50	1	L16060395-08	06/14/16 19:48
110	T3.061416.195242	WG571974-05	Matrix Spike Duplica	40/50	1	L16060395-08	06/14/16 19:52
111	T3.061416.195628	L16060376-01	FTB-034-GM-MW12B-06071	40/50	10		06/14/16 19:56
112	T3.061416.200030	L16060376-02	FTB-034-GM-MW1C-060716	40/50	10		06/14/16 20:00
113	T3.061416.200432	L16060376-03	FTB-034-GM-MW07B-06071	40/50	10		06/14/16 20:04
114	T3.061416.200832	WG572145-03	Post Digestion Spike		10	L16060376-03	06/14/16 20:08
115	T3.061416.201218	WG572145-04	Serial Dilution		50	L16060376-03	06/14/16 20:12
116	T3.061416.201622	WG572687-35	CCV		1		06/14/16 20:16
117	T3.061416.202004	WG572687-36	CCB		1		06/14/16 20:20
118	T3.061416.202408	L16060376-04	FTB-034-GM-MW13B-06071	40/50	10		06/14/16 20:24
119	T3.061416.202810	WG572687-37	CCV		1		06/14/16 20:28
120	T3.061416.203152	WG572687-38	CCB		1		06/14/16 20:31
121	T3.061416.203555	WG572687-39	Low Level Continuing Calibra		1		06/14/16 20:35

Page: 4 Approved: June 14, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 14-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 572687
Runlog ID: 75684
Analytical Workgroups: 572544, 572626, 572020

Additional Workgroup	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	
Client Forms	X
Level X	
Level 3	
Level 4	482
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer:

Secondary Reviewer:
14-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-15-2016 10:40:52

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010C

AAB#: WG572626

Login Number: L16060411

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
AWD4T-060716	03	06/07/16					06/13/2016	5.9	180		06/14/16	7.1	180	
AWD4B-060716	04	06/07/16					06/13/2016	5.9	180		06/14/16	7.1	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4807969
Report generated 06/15/2016 08:56

METHOD BLANK SUMMARY

Login Number: L16060411
Blank File ID: T3.061416.160713
Prep Date: 06/13/16 12:41
Analyzed Date: 06/14/16 16:07
Analyst: JYH

Work Group: WG572626
Blank Sample ID: WG572463-02
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572463-03	T3.061416.161106	06/14/16 16:11	01
FLT_BLK	WG572463-04	T3.061416.161451	06/14/16 16:14	01
AWD4T-060716	L16060411-03	T3.061416.165411	06/14/16 16:54	01
AWD4B-060716	L16060411-04	T3.061416.165809	06/14/16 16:58	01

Report Name: BLANK_SUMMARY
PDF File ID: 4807970
Report generated 06/15/2016 09:00

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060411 Prep Date: 06/13/16 12:41 Sample ID: WG572463-02
Instrument ID: ICP-THERMO3 Run Date: 06/14/16 16:07 Prep Method: 3015
File ID: T3.061416.160713 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG572626 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-14-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Aluminum, Total	0.0500	0.200	0.0500	1	U
Beryllium, Total	0.00500	0.0200	0.00500	1	U
Calcium, Total	0.125	0.500	0.125	1	U
Iron, Total	0.0500	0.200	0.0500	1	U
Magnesium, Total	0.250	1.00	0.250	1	U
Potassium, Total	0.500	2.00	0.500	1	U
Selenium, Total	0.00500	0.0200	0.00890	1	J
Sodium, Total	0.250	1.00	0.250	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4807971
15-JUN-2016 09:00

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060411 Run Date: 06/14/2016 Sample ID: WG572463-03
Instrument ID: ICP-THERMO3 Run Time: 16:11 Prep Method: 3015
File ID: T3.061416.161106 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG572626 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76255 Cal ID: ICP-TH-14-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Aluminum, Total	6.25	6.53	104	80 - 120	
Beryllium, Total	0.0313	0.0318	102	80 - 120	
Calcium, Total	6.25	6.53	104	80 - 120	
Iron, Total	2.50	2.60	104	80 - 120	
Magnesium, Total	6.25	6.49	104	80 - 120	
Potassium, Total	31.3	32.0	102	80 - 120	
Selenium, Total	0.250	0.253	101	80 - 120	
Sodium, Total	31.3	32.5	104	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4807972
Report generated: 06/15/2016 09:00

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060411 Cal ID: ICP-THERMO3- Worknum: WG572626
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG572463-01 File ID: T3.061416.161854 Dil: 1 Matrix: WATER
Sample ID: WG572463-05 MS File ID: T3.061416.162255 Dil: 1 Units: mg/L
Sample ID: WG572463-06 MSD File ID: T3.061416.162640 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Aluminum	0.385	6.25	6.90	104	6.25	6.83	103	1.05	80 - 120	20	
Beryllium	ND	0.0313	0.0324	104	0.0313	0.0322	103	0.813	80 - 120	20	
Calcium	14.3	6.25	20.1	91.4	6.25	19.9	89.6	0.556	80 - 120	20	
Iron	1.84	2.50	4.44	104	2.50	4.56	109	2.65	80 - 120	20	
Magnesium	3.73	6.25	9.96	99.6	6.25	9.93	99.2	0.288	80 - 120	20	
Potassium	ND	31.3	32.1	103	31.3	32.0	103	0.0819	80 - 120	20	
Selenium	0.00516	0.250	0.253	99.1	0.250	0.255	99.9	0.748	80 - 120	20	
Sodium	6.30	31.3	36.7	97.3	31.3	36.5	96.6	0.567	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4807973
Report generated 06/15/2016 09:00

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16060411 **Worknum:** WG572626
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG572626-02 **File ID:** T3.061416.163816 **Dil:** 5 **Units:** ug/L
Sample: L16060645-03 **File ID:** T3.061416.163026 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	11.5		ND	U		
Beryllium	0.110		0.400		264.00	E
Calcium	ND	U	57.1		1610.00	
Iron	13.0		ND	U		
Magnesium	4.20	X	173		4020.00	
Potassium	ND	U	ND	U		
Selenium	1.70		40.2		2260.00	E
Sodium	1.93	X	ND	U		

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4807967
06/15/2016 09:00

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060411 **Worknum:** WG572626
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG572626-01 **File ID:** T3.061416.163430 **Dil:** 1 **Units:** ug/L
Sample ID: L16060645-03 **File ID:** T3.061416.163026 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	5120		0	U	5000	102.4	75 - 125	
BERYLLIUM	25.2		0	U	25	100.6	75 - 125	
CALCIUM	5090		0	U	5000	101.8	75 - 125	
IRON	2060		0	U	2000	102.8	75 - 125	
MAGNESIUM	5080		0	U	5000	101.7	75 - 125	
POTASSIUM	25000		0	U	25000	100.1	75 - 125	
SELENIUM	201		0	U	200	100.6	75 - 125	
SODIUM	25500		0	U	25000	102.0	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4807968
Report generated: 06/15/2016 09:00

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16060411	Workgroup (AAB#):	WG572626
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG572687	Initial Calibration Date:	14-JUN-2016 12:52

	WG572687-01		WG572687-02		WG572687-03		WG572687-04		WG572687-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000680	.1	0.00147	.2	0.00211	10	0.0887	20	0.181	.99992	
BERYLLIUM	0	0.000320	.0005	0.000740	.001	0.00120	.05	0.0569	.1	0.114	.999978	
CALCIUM	0	-0.000380	.1	0.00268	.2	0.00754	10	0.461	20	0.895	.999844	
IRON	0	-0.000350	.04	0.000330	.08	0.00108	4	0.0868	8	0.169	.999976	
MAGNESIUM	0	-0.000290	NA	NA	.2	0.000600	10	0.0603	20	0.118	.999915	
POTASSIUM	0	0.00895	.5	0.0284	1	0.0488	50	3.19	100	6.17	.999883	
SELENIUM	0	-0.0000600	NA	NA	.008	0.0000700	.4	0.00607	.8	0.0124	.999714	
SODIUM	0	0.000500	.5	0.0620	1	0.131	50	8.64	100	16.8	.999875	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4807976
Report generated: 15-JUN-2016 08:56

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060411
Run Date: 06/14/2016
Sample ID: WG572687-07
Instrument ID: ICP-THERMO3
Run Time: 12:59
Method: 6010C
File ID: T3.061416.125947
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG572626
Cal ID: ICP-THERI - 14-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	.004	U
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4807978
Report generated 06/15/2016 08:56

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060411
Run Date: 06/14/2016
Sample ID: WG572687-13
Instrument ID: ICP-THERMO3
Run Time: 13:23
Method: 6010C
File ID: T3.061416.132323
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG572626
Cal ID: ICP-TH - 14-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00506	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4807981
Report generated 06/15/2016 08:56

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060411
Run Date: 06/14/2016
Sample ID: WG572687-23
Instrument ID: ICP-THERMO3
Run Time: 16:03
Method: 6010C
File ID: T3.061416.160309
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG572626
Cal ID: ICP-TH - 14-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4807981
Report generated 06/15/2016 08:56

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060411
Run Date: 06/14/2016
Sample ID: WG572687-25
Instrument ID: ICP-THERMO3
Run Time: 16:50
Method: 6010C
File ID: T3.061416.165007
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG572626
Cal ID: ICP-TH - 14-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00409	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4807981
Report generated 06/15/2016 08:56

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060411
Run Date: 06/14/2016
Sample ID: WG572687-27
Instrument ID: ICP-THERMO3
Run Time: 17:37
Method: 6010C
File ID: T3.061416.173740
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG572626
Cal ID: ICP-TH - 14-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4807981
Report generated 06/15/2016 08:56

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060411
Run Date: 06/14/2016
Sample ID: WG572687-06
Instrument ID: ICP-THERMO3
Run Time: 12:56
Method: 6010C
File ID: T3.061416.125605
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG572626
Cal ID: ICP-TH - 14-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	9.66	96.6	90 - 110	
Beryllium		.05	0.0488	97.5	90 - 110	
Calcium		10	9.73	97.3	90 - 110	
Iron		4	3.88	96.9	90 - 110	
Magnesium		10	9.72	97.2	90 - 110	
Potassium		50	49.0	98.0	90 - 110	
Selenium		.4	0.394	98.5	90 - 110	
Sodium		50	48.7	97.3	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4807977
Report generated 06/15/2016 08:56

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060411
Run Date: 06/14/2016
Sample ID: WG572687-12
Instrument ID: ICP-THERMO3
Run Time: 13:19
Method: 6010C
File ID: T3.061416.131940
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG572626
Cal ID: ICP-TH - 14-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.68	mg/L	96.8	90 - 110		
Beryllium		0.0500	0.0485	mg/L	96.9	90 - 110		
Calcium		10.0	9.59	mg/L	95.9	90 - 110		
Iron		4.00	3.86	mg/L	96.4	90 - 110		
Magnesium		10.0	9.62	mg/L	96.2	90 - 110		
Potassium		50.0	48.2	mg/L	96.4	90 - 110		
Selenium		0.400	0.381	mg/L	95.2	90 - 110		
Sodium		50.0	48.1	mg/L	96.1	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4807980
Report generated 06/15/2016 08:56

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060411
Run Date: 06/14/2016
Sample ID: WG572687-22
Instrument ID: ICP-THERMO3
Run Time: 15:59
Method: 6010C
File ID: T3.061416.155927
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG572626
Cal ID: ICP-TH - 14-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.71	mg/L	97.1	90 - 110		
Beryllium		0.0500	0.0485	mg/L	97.0	90 - 110		
Calcium		10.0	9.40	mg/L	94.0	90 - 110		
Iron		4.00	3.82	mg/L	95.6	90 - 110		
Magnesium		10.0	9.47	mg/L	94.7	90 - 110		
Potassium		50.0	47.4	mg/L	94.7	90 - 110		
Selenium		0.400	0.380	mg/L	95.0	90 - 110		
Sodium		50.0	47.6	mg/L	95.3	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4807980
Report generated 06/15/2016 08:56

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060411
Run Date: 06/14/2016
Sample ID: WG572687-24
Instrument ID: ICP-THERMO3
Run Time: 16:46
Method: 6010C
File ID: T3.061416.164625
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG572626
Cal ID: ICP-TH - 14-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.77	mg/L	97.7	90 - 110		
Beryllium		0.0500	0.0487	mg/L	97.5	90 - 110		
Calcium		10.0	9.53	mg/L	95.3	90 - 110		
Iron		4.00	3.89	mg/L	97.2	90 - 110		
Magnesium		10.0	9.52	mg/L	95.2	90 - 110		
Potassium		50.0	48.1	mg/L	96.2	90 - 110		
Selenium		0.400	0.389	mg/L	97.3	90 - 110		
Sodium		50.0	48.5	mg/L	96.9	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4807980
Report generated 06/15/2016 08:56

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060411
Run Date: 06/14/2016
Sample ID: WG572687-26
Instrument ID: ICP-THERMO3
Run Time: 17:33
Method: 6010C
File ID: T3.061416.173357
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG572626
Cal ID: ICP-TH - 14-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.63	mg/L	96.3	90 - 110		
Beryllium		0.0500	0.0482	mg/L	96.4	90 - 110		
Calcium		10.0	9.31	mg/L	93.1	90 - 110		
Iron		4.00	3.84	mg/L	95.9	90 - 110		
Magnesium		10.0	9.40	mg/L	94.0	90 - 110		
Potassium		50.0	47.5	mg/L	94.9	90 - 110		
Selenium		0.400	0.374	mg/L	93.4	90 - 110		
Sodium		50.0	47.8	mg/L	95.6	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4807980
Report generated 06/15/2016 08:56

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060411
Run Date: 06/14/2016
Sample ID: WG572687-08
Instrument ID: ICP-THERMO3
Run Time: 13:03
Method: 6010C
File ID: T3.061416.130350
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG572626
Cal ID: ICP-TH - 14-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.161	mg/L	101	70 - 130		
Beryllium		0.00160	0.00154	mg/L	96.3	70 - 130		
Calcium		0.400	0.398	mg/L	99.5	70 - 130		
Iron		0.0800	0.0751	mg/L	93.8	70 - 130		
Magnesium		0.400	0.282	mg/L	70.5	70 - 130		
Potassium		0.800	0.644	mg/L	80.6	70 - 130		
Selenium		0.0160	0.0176	mg/L	110	70 - 130		
Sodium		0.400	0.385	mg/L	96.2	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4807982
Report generated 06/15/2016 09:00

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060411
Run Date: 06/14/2016
Sample ID: WG572687-18
Instrument ID: ICP-THERMO3
Run Time: 14:48
Method: 6010C
File ID: T3.061416.144804
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG572626
Cal ID: ICP-TH - 14-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.161	mg/L	101	70 - 130		
Beryllium		0.00160	0.00157	mg/L	98.1	70 - 130		
Calcium		0.400	0.383	mg/L	95.8	70 - 130		
Iron		0.0800	0.0806	mg/L	101	70 - 130		
Magnesium		0.400	0.332	mg/L	82.9	70 - 130		
Potassium		0.800	0.679	mg/L	84.8	70 - 130		
Selenium		0.0160	0.0153	mg/L	95.4	70 - 130		
Sodium		0.400	0.382	mg/L	95.5	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4807982
Report generated 06/15/2016 09:00

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060411
Run Date: 06/14/2016
Sample ID: WG572687-32
Instrument ID: ICP-THERMO3
Run Time: 18:46
Method: 6010C
File ID: T3.061416.184611
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG572626
Cal ID: ICP-TH - 14-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.163	mg/L	102	70 - 130		
Beryllium		0.00160	0.00155	mg/L	96.9	70 - 130		
Calcium		0.400	0.377	mg/L	94.4	70 - 130		
Iron		0.0800	0.0844	mg/L	106	70 - 130		
Magnesium		0.400	0.357	mg/L	89.2	70 - 130		
Potassium		0.800	0.613	mg/L	76.6	70 - 130		
Selenium		0.0160	0.0169	mg/L	105	70 - 130		
Sodium		0.400	0.367	mg/L	91.8	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4807982
Report generated 06/15/2016 09:00

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060411
Instrument ID: ICP-THERMO3
Sol. A : WG572687-10 **File ID:** T3.061416.131152
Sol. AB : WG572687-11 **File ID:** T3.061416.131551

Workgroup (AAB#): WG572626
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	263	105	250	265	106	
Beryllium	NS	-0.000100	NS	0.250	0.248	99.2	
Calcium	250	235	94.0	250	238	95.2	
Iron	100	94.4	94.4	100	93.4	93.4	
Magnesium	250	242	96.8	250	238	95.2	
Potassium	NS	-0.0698	NS	5.00	5.06	101	
Selenium	NS	0.00541	NS	0.250	0.256	102	
Sodium	NS	0.0153	NS	5.00	5.12	102	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4807979
Report generated 06/15/2016 08:56

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060411 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	AG	AL	AS	B	BA
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000410	0	0	0
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0.0115	0	-0.0000800
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0.000260	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	-0.000289	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	-0.0000490	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.0000120	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0.0000300	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4807975
Report generated: 06/15/2016 08:56

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060411 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	BE	CA	CD	CO	CR
ALUMINUM	308.20	0	0	0	-0.000820	0
ANTIMONY	206.80	0	0	0	0	0.0200
ARSENIC	189.00	0	0	0	0	-0.00190
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0.00343	0
CADMIUM	228.80	0	0	0	-0.00390	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	-0.000200
COPPER	224.70	0	0	0	0.0000770	-0.00100
IRON	261.10	0	0	0	0	-0.00100
LEAD	220.30	0	0	0	-0.0000130	-0.000132
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.0000500
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	-0.000860	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0.00000500	0	0	0
THALLIUM	190.80	0	0	0	0.00240	0.000276
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	-0.00480
ZINC	206.20	0	0	0	0	-0.00180
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4807975
Report generated: 06/15/2016 08:56

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060411 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	CU	FE	K	LI	MG
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000560	0	0	0
ARSENIC	189.00	0	-0.0000500	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0.000300	0	0	0
CADMIUM	228.80	0	-0.0000190	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000500	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0.00160	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0.000609	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.00000300
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0.0000420	0	0	0
PHOSPHORUS	214.90	-0.323	0.000900	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000270	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000400	0	0	0
VANADIUM	292.40	0	0.00000700	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	-0.0000300	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4807975
Report generated: 06/15/2016 08:56

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060411 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	MN	MO	NA	NI	P
ALUMINUM	308.20	0	0.0163	0	0	0
ANTIMONY	206.80	0	-0.00310	0	-0.00350	0
ARSENIC	189.00	0	0.00120	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	-0.00190	0	0	0
CADMIUM	228.80	0	0.0000320	0	-0.000770	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0.000360	0	0	0	0
COBALT	228.60	0	-0.00200	0	0.000100	0
COPPER	224.70	0	0.00160	0	-0.0123	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	-0.00210	0	0.000110	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	-0.00290	-0.0230	0	0	0
MANGANESE	257.60	0	0.0000300	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0.00710	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0.000600	0.000580	0	0	0
SILICON	212.40	0	0.0187	0	0	0
SILVER	328.00	0	-0.0000430	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0.00100	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000153	0	0	0
VANADIUM	292.40	-0.000200	-0.00830	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4807975
Report generated: 06/15/2016 08:56

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060411 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	PB	SB	SE	SI	SN
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0	0	0	-0.0220
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0.00440	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4807975
Report generated: 06/15/2016 08:56

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060411 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	SR	TI	TL	V	ZN
ALUMINUM	308.20	0	0	0	0.0950	0
ANTIMONY	206.80	0	0.00110	0	-0.00360	0
ARSENIC	189.00	0	0	0	0.000107	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	-0.00000700	0	0.000990	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0.000102	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000550	0	0	0
COBALT	228.60	0	0.00210	0	0.0000200	0
COPPER	224.70	0	0.000269	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	-0.000126	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	-0.00290	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	-0.000110	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	-0.00100	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000720	0	-0.000260	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.000800	0	-0.00490	0
TIN	189.90	0	-0.00190	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0.000820	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4807975
Report generated: 06/15/2016 08:56

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060411 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	ZR
ALUMINUM	308.20	0
ANTIMONY	206.80	0
ARSENIC	189.00	0
BARIUM	455.40	0
BERYLLIUM	313.10	0
BORON	249.60	0
CADMIUM	228.80	0
CALCIUM	422.60	0
CHROMIUM	267.70	0
COBALT	228.60	0
COPPER	224.70	0
IRON	261.10	0
LEAD	220.30	0
LITHIUM	670.70	0
MAGNESIUM	279.00	0
MANGANESE	257.60	0
MOLYBDENUM	202.00	0
NICKEL	231.60	0
PHOSPHORUS	214.90	0
POTASSIUM	766.40	0
SELENIUM	196.00	0
SILICON	212.40	0
SILVER	328.00	0
SODIUM	589.50	0
STRONTIUM	407.70	0
THALLIUM	190.80	0
TIN	189.90	0
TITANIUM	337.20	0
VANADIUM	292.40	0
ZINC	206.20	0
ZIRCONIUM	339.10	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4807975
Report generated: 06/15/2016 08:56

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16060411 **Date:** 04/29/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	900.0
Antimony	20.00	45.0
Arsenic	10.00	45.0
Barium	10.00	45.0
Beryllium	10.00	1.8
Boron	20.00	45.0
Cadmium	20.00	4.5
Calcium	5.00	270.0
Chromium	20.00	36.0
Cobalt	20.00	45.0
Copper	20.00	180.0
Iron	5.00	720.0
Lead	20.00	225.0
Lithium	5.00	36.0
Magnesium	5.00	900.0
Manganese	10.00	36.0
Molybdenum	20.00	27.0
Nickel	20.00	90.0
Phosphorus	20.00	180.0
Potassium	5.00	450.0
Selenium	20.00	90.0
Silicon	20.00	36.0
Silver	10.00	9.0
Sodium	5.00	270.0
Strontium	5.00	9.0
Thallium	20.00	18.0
Tin	20.00	45.0
Titanium	5.00	36.0
Vanadium	20.00	27.0
Zinc	20.00	45.0
Zirconium	10.00	45.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4807974
Report generated: 06/15/2016 08:56

2.3.1.3 Raw Data

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000058	0.054734	0.000000	1.000000
Al 308.215 {109}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.000676	0.008865	0.000000	1.000000
As 189.042 {478}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.000051	0.022803	0.000000	1.000000
B 249.678 {135}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000098	0.021859	0.000000	1.000000
Ba 455.403 { 74}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.003817	2.128212	0.000000	1.000000
Be 313.107 {108}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.000323	1.115211	0.000000	1.000000
Ca 422.673 { 80}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000378	0.045215	0.000000	1.000000
Cd 228.802 {447}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000159	0.571631	0.000000	1.000000
Co 228.616 {447}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000049	0.361318	0.000000	1.000000
Cr 267.716 {126}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.000083	0.065120	0.000000	1.000000
Cu 224.700 {450}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000084	0.124789	0.000000	1.000000
Fe 261.187 {129}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000350	0.021350	0.000000	1.000000
K 766.490 { 44}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.008937	0.062121	0.000000	1.000000
Li 670.784 { 50}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000147	1.592157	0.000000	1.000000
Mg 279.079 {121}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000292	0.005969	0.000000	1.000000
Mn 257.610 {131}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.000124	0.270877	0.000000	1.000000
Mo 202.030 {467}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.000062	0.185810	0.000000	1.000000
Na 589.592 { 57}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.000491	0.169204	0.000000	1.000000
Ni 231.604 {446}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000561	0.135561	0.000000	1.000000
P 214.914 {457}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000073	0.012159	0.000000	1.000000
Pb 220.353 {453}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000166	0.060818	0.000000	1.000000
Sb 206.833 {463}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.000246	0.029184	0.000000	1.000000
Se 196.090 {472}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000062	0.015516	0.000000	1.000000
Si 212.412 {459}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.001290	0.038259	0.000000	1.000000
Sn 189.989 {477}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000057	0.067376	0.000000	1.000000
Sr 407.771 { 83}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.000549	3.551418	0.000000	1.000000
Ti 337.280 {100}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.002165	0.117486	0.000000	1.000000
Tl 190.856 {477}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000146	0.028829	0.000000	1.000000
V 292.402 {115}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000079	0.081335	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.000320	0.361669	0.000000	1.000000
Zr 339.198 { 99}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.002492	2.733046	0.000000	1.000000

Approved: June 15, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999652	0.000004	0.002198	0.007327	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999920	0.000007	0.009539	0.031798	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999693	0.000002	0.003424	0.011414	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999881	0.000002	0.003259	0.010862	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999873	0.000215	0.001054	0.003514	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999978	0.000002	0.000096	0.000321	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999844	0.000051	0.040539	0.135129	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999707	0.000005	0.000276	0.000920	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999981	0.000003	0.000418	0.001394	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999949	0.000002	0.001251	0.004171	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999976	0.000003	0.001417	0.004724	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999883	0.000008	0.022505	0.075016	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999721	0.000465	0.100125	0.333750	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999900	0.000222	0.003661	0.012204	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999915	0.000008	0.087992	0.293308	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999573	0.000025	0.002464	0.008212	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999961	0.000010	0.000428	0.001425	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999875	0.000849	0.031334	0.104447	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999899	0.000006	0.001189	0.003962	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999898	0.000011	0.008173	0.027242	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999271	0.000007	0.003806	0.012688	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999909	0.000003	0.004621	0.015404	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999714	0.000001	0.007217	0.024056	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999985	0.000007	0.002442	0.008140	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999947	0.000004	0.000958	0.003195	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999869	0.000364	0.000427	0.001423	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999565	0.000022	0.006792	0.022640	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999488	0.000004	0.003185	0.010616	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999984	0.000003	0.000968	0.003227	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999970	0.000018	0.000237	0.000790	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.999838	0.000312	0.000590	0.001966	OK.	1.000000	0.000000	1	0

Approved: June 15, 2016

Sample Name: S0 Acquired: 6/14/2016 12:36:28 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00006**	**.00068**	**.00005**	**-.00010**	**.00382**	**.00032**	**-.00038**
Stddev	.00007	.00005	.00006	.00003	.00149	.00008	.00199
%RSD	127.78	6.9540	108.69	28.204	39.007	23.984	527.67
#1	.00002	.00062	.00012	-.00013	.00360	.00023	-.00135
#2	-.00007	.00071	.00002	-.00007	.00244	.00037	.00192
#3	-.00013	.00069	.00001	-.00010	.00540	.00036	-.00170

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00016**	**-.00005**	**.00008**	**-.00008**	**-.00035**	**.00895**	**-.00014**
Stddev	.00018	.00017	.00004	.00010	.00030	.00651	.00294
%RSD	112.42	354.51	53.601	115.31	85.792	72.797	2024.9
#1	-.00036	.00010	.00005	-.00005	-.00062	.00659	-.00183
#2	-.00006	-.00001	.00013	-.00001	-.00003	.00394	-.00185
#3	-.00006	-.00024	.00007	-.00019	-.00040	.01631	.00324

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00029**	**.00012**	**.00006**	**.00050**	**-.00056**	**-.00007**	**-.00017**
Stddev	.00027	.00039	.00003	.00316	.00021	.00004	.00010
%RSD	92.089	311.89	55.494	634.63	37.660	61.525	58.515
#1	-.00011	-.00024	.00008	.00363	-.00076	-.00004	-.00015
#2	-.00060	.00007	.00002	-.00270	-.00058	-.00006	-.00008
#3	-.00017	.00054	.00008	.00056	-.00034	-.00012	-.00027

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00025**	**-.00006**	**.00129**	**-.00006**	**.00055**	**-.00217**	**-.00015**
Stddev	.00005	.00010	.00006	.00001	.00029	.00059	.00010
%RSD	18.752	156.41	4.9051	14.171	52.353	27.408	68.703
#1	.00029	.00005	.00136	-.00006	.00026	-.00176	-.00003
#2	.00020	-.00012	.00125	-.00006	.00083	-.00189	-.00019
#3	.00026	-.00012	.00125	-.00005	.00055	-.00285	-.00022

Approved: June 15, 2016

Sample Name: S0 Acquired: 6/14/2016 12:36:28 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	-.00008	.00032	-.00249
Stddev	.00006	.00004	.00068
%RSD	75.710	11.449	27.236
#1	-.00001	.00031	-.00218
#2	-.00013	.00036	-.00202
#3	-.00010	.00029	-.00326
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8286.5	48489.	3106.1
Stddev	36.0	91.	15.4
%RSD	.43455	.18721	.49564
#1	8272.1	48593.	3092.5
#2	8327.5	48450.	3122.8
#3	8259.9	48424.	3103.0

Approved: June 15, 2016

Sample Name: S1 Acquired: 6/14/2016 12:40:32 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00018**	**.00147**	**.02156**	**.00074**	**.00268**	**.00005**	**.00049**
Stddev	.00004	.00003	.00115	.00006	.00139	.00006	.00025
%RSD	20.982	2.1261	5.3558	8.4884	51.728	121.46	51.031
#1	.00021	.00150	.02122	.00071	.00282	-.00002	.00038
#2	.00014	.00144	.02284	.00070	.00123	.00009	.00032
#3	.00018	.00147	.02061	.00081	.00400	.00008	.00078

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00033**	**.00046**	**.00033**	**.02836**	**.00069**	**.00138**	**.06202**
Stddev	.00003	.00004	.00035	.00810	.00037	.00002	.00264
%RSD	8.6292	9.0648	107.92	28.561	54.643	1.5320	4.2600
#1	.00030	.00041	.00044	.03146	.00104	.00136	.05897
#2	.00036	.00048	.00062	.03445	.00072	.00140	.06342
#3	.00034	.00048	-.00007	.01917	.00029	.00139	.06367

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00004**	**.00089**	**-.00004**	**.00054**	**.00276**	**.00054**	**.02900**
Stddev	.00004	.00010	.00016	.00002	.00003	.00001	.00154
%RSD	97.321	11.053	374.77	3.1119	1.0891	2.3218	5.3103
#1	.00008	.00094	.00001	.00052	.00272	.00053	.02965
#2	-.00000	.00078	.00008	.00054	.00278	.00055	.02724
#3	.00005	.00096	-.00022	.00055	.00277	.00054	.03011

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00081**	**.00057**	**.00313**	**.01677**
Stddev	.00019	.00005	.00008	.00099
%RSD	23.545	9.5839	2.5270	5.9201
#1	-.00102	.00061	.00312	.01792
#2	-.00066	.00060	.00321	.01628
#3	-.00073	.00051	.00305	.01612

Approved: June 15, 2016

Sample Name: S1 Acquired: 6/14/2016 12:40:32 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8265.3**	**47968.**	**3073.4**
Stddev	16.3	320.	22.8
%RSD	.19662	.66685	.74067
#1	8282.0	47602.	3070.6
#2	8249.5	48110.	3097.4
#3	8264.2	48192.	3052.1

Approved: June 15, 2016

Sample Name: S2 Acquired: 6/14/2016 12:44:35 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00038	.00211	.00016	.00005	.03946	.00120	.00754
Stddev	.00002	.00002	.00007	.00008	.00240	.00005	.00038
%RSD	6.4916	.78489	44.539	143.44	6.0801	4.1595	5.0864
#1	.00040	.00213	.00009	.00011	.03998	.00120	.00774
#2	.00037	.00209	.00023	-.00003	.03684	.00115	.00710
#3	.00035	.00211	.00015	.00008	.04156	.00124	.00779

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00019	.00106	.00056	.00091	.00108	.04882	.02325
Stddev	.00016	.00021	.00003	.00002	.00053	.00323	.00105
%RSD	83.759	20.238	6.2018	2.1298	49.185	6.6257	4.5078
#1	.00023	.00102	.00054	.00091	.00080	.04535	.02209
#2	.00032	.00129	.00053	.00093	.00075	.05175	.02414
#3	.00001	.00087	.00060	.00089	.00169	.04936	.02352

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00060	.00203	.00289	.13050	.00070	.00177	.00014
Stddev	.00011	.00036	.00006	.00243	.00011	.00004	.00024
%RSD	17.637	17.923	1.9674	1.8619	15.197	2.3554	174.50
#1	.00055	.00176	.00293	.13247	.00064	.00180	.00015
#2	.00052	.00244	.00291	.13125	.00082	.00179	.00037
#3	.00072	.00189	.00282	.12778	.00063	.00172	-.00011

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00082	.00007	.00427	.00105	.05852	-.00002	.00016
Stddev	.00007	.00004	.00016	.00004	.00110	.00029	.00000
%RSD	8.5855	61.985	3.8021	3.8322	1.8794	1625.3	1.8552
#1	.00090	.00012	.00440	.00108	.05978	-.00024	.00016
#2	.00078	.00005	.00432	.00105	.05774	.00031	.00016
#3	.00078	.00004	.00409	.00100	.05804	-.00012	.00016

Approved: June 15, 2016

Sample Name: S2 Acquired: 6/14/2016 12:44:35 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00120	.00606	.03826
Stddev	.00006	.00019	.00061
%RSD	5.1133	3.1020	1.6008
#1	.00120	.00623	.03831
#2	.00114	.00608	.03762
#3	.00126	.00586	.03884

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8152.7	47552.	3052.8
Stddev	29.5	83.	45.6
%RSD	.36198	.17399	1.4946
#1	8120.4	47457.	3000.7
#2	8159.5	47611.	3071.7
#3	8178.2	47587.	3085.9

Approved: June 15, 2016

Sample Name: S3 Acquired: 6/14/2016 12:48:40 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.02147	.08865	.00894	.01055	2.1778	.05685	.46084	.03067
Stddev	.00019	.00063	.00015	.00006	.1313	.00018	.02607	.00025
%RSD	.87764	.70925	1.7234	.54571	6.0300	.31600	5.6581	.82726
#1	.02141	.08907	.00885	.01049	2.0765	.05670	.44238	.03078
#2	.02168	.08895	.00885	.01060	2.1307	.05705	.44949	.03038
#3	.02132	.08793	.00912	.01055	2.3261	.05680	.49067	.03085

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.07167	.03236	.06180	.08683	3.1858	1.6217	.06028	.13829
Stddev	.00031	.00005	.00012	.00479	.1845	.1048	.00364	.00846
%RSD	.43603	.15877	.20220	5.5215	5.7921	6.4614	6.0324	6.1165
#1	.07151	.03236	.06172	.08385	3.0466	1.5456	.05768	.13209
#2	.07148	.03241	.06173	.08428	3.1156	1.5784	.05872	.13486
#3	.07203	.03230	.06194	.09236	3.3951	1.7412	.06444	.14793

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.18449	8.6426	.06665	.11728	.03029	.03400	.00607	.19214
Stddev	.00031	.5042	.00021	.00051	.00013	.00013	.00011	.00052
%RSD	.16673	5.8344	.31349	.43130	.43664	.38359	1.8578	.27196
#1	.18463	8.2643	.06652	.11714	.03019	.03396	.00620	.19211
#2	.18414	8.4485	.06654	.11685	.03024	.03390	.00601	.19163
#3	.18471	9.2151	.06689	.11784	.03044	.03415	.00600	.19268

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.06636	3.6329	.11746	.01302	.08043	.35793	2.7949
Stddev	.00026	.2154	.00729	.00006	.00052	.00088	.1051
%RSD	.38747	5.9283	6.2067	.44274	.64284	.24518	3.7586
#1	.06627	3.4707	.11175	.01299	.08042	.35722	2.7056
#2	.06616	3.5508	.11496	.01298	.08095	.35767	2.7683
#3	.06665	3.8773	.12567	.01309	.07992	.35891	2.9106

Approved: June 15, 2016

Sample Name: S3 Acquired: 6/14/2016 12:48:40 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8036.1	46688.	2947.0
Stddev	28.9	254.	111.6
%RSD	.35913	.54439	3.7880
#1	8067.6	46396.	3032.5
#2	8030.0	46805.	2987.9
#3	8010.8	46862.	2820.7

Approved: June 15, 2016

Sample Name: S4 Acquired: 6/14/2016 12:52:23 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.04359	.18090	.01840	.02175	4.2122	.11444	.89472	.06280
Stddev	.00016	.00050	.00008	.00005	.0277	.00022	.00335	.00004
%RSD	.37046	.27391	.43894	.21845	.65634	.18788	.37436	.05607
#1	.04362	.18133	.01833	.02178	4.1822	.11456	.89133	.06284
#2	.04373	.18101	.01849	.02170	4.2176	.11456	.89803	.06280
#3	.04341	.18036	.01839	.02178	4.2367	.11419	.89480	.06277

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.14474	.06563	.12514	.16858	6.1655	3.1565	.11778	.26918
Stddev	.00031	.00005	.00063	.00137	.0319	.0155	.00109	.00355
%RSD	.21748	.08337	.50365	.81267	.51675	.48947	.92432	1.3204
#1	.14447	.06565	.12458	.16709	6.1292	3.1387	.11664	.26508
#2	.14509	.06568	.12582	.16887	6.1785	3.1666	.11881	.27137
#3	.14467	.06557	.12502	.16979	6.1887	3.1642	.11789	.27110

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.37331	16.750	.13533	.24176	.06145	.06963	.01242	.38663
Stddev	.00108	.061	.00053	.00064	.00039	.00033	.00010	.00080
%RSD	.29054	.36204	.39317	.26501	.63244	.47878	.81305	.20587
#1	.37363	16.682	.13501	.24117	.06100	.06945	.01248	.38614
#2	.37421	16.774	.13595	.24244	.06166	.07002	.01230	.38755
#3	.37211	16.796	.13504	.24168	.06169	.06943	.01248	.38621

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13518	7.0217	.22950	.02621	.16285	.72726	5.4039
Stddev	.00039	.0367	.00162	.00011	.00027	.00157	.0423
%RSD	.28600	.52243	.70585	.40655	.16349	.21522	.78237
#1	.13481	6.9820	.22778	.02612	.16314	.72583	5.3960
#2	.13558	7.0287	.22975	.02632	.16278	.72893	5.4495
#3	.13516	7.0544	.23099	.02618	.16262	.72701	5.3661

Approved: June 15, 2016

Sample Name: S4 Acquired: 6/14/2016 12:52:23 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7822.2**	**45311.**	**2998.8**
Stddev	28.2	227.	12.6
%RSD	.36089	.50117	.42036
#1	7833.8	45107.	2994.8
#2	7790.0	45556.	2988.6
#3	7842.8	45271.	3012.9

Approved: June 15, 2016

Sample Name: ICV Acquired: 6/14/2016 12:56:05 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38543**	**9.6557**	**.39426**	**.49034**	**.97556**	**.04877**	**9.7251**	**.04918**
Stddev	.01774	.4641	.00050	.02173	.01359	.00226	.1000	.00025
%RSD	4.6025	4.8067	.12759	4.4321	1.3927	4.6241	1.0285	.51776
#1	.40071	10.089	.39484	.51051	.96249	.05089	9.6197	.04929
#2	.36598	9.1661	.39401	.46733	.97460	.04640	9.7368	.04889
#3	.38961	9.7117	.39393	.49318	.98961	.04902	9.8187	.04936
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19716**	**.48666**	**.49480**	**3.8772**	**48.994**	**.97078**	**9.7206**	**.48890**
Stddev	.00029	.02364	.00027	.0845	.688	.01104	.2437	.00666
%RSD	.14939	4.8571	.05481	2.1802	1.4035	1.1376	2.5074	1.3632
#1	.19698	.50898	.49492	3.7928	48.342	.95932	9.4806	.48144
#2	.19750	.46189	.49449	3.8770	48.928	.97166	9.7134	.49100
#3	.19700	.48910	.49499	3.9619	49.713	.98136	9.9679	.49427
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99560**	**48.662**	**.49303**	**9.7939**	**.49546**	**1.1765**	**.39409**	**4.9575**
Stddev	.00075	.610	.00114	.0104	.00196	.0027	.00187	.0084
%RSD	.07581	1.2528	.23061	.10658	.39603	.23247	.47510	.17014
#1	.99520	48.095	.49208	9.7985	.49333	1.1743	.39434	4.9576
#2	.99513	48.583	.49271	9.7819	.49720	1.1758	.39582	4.9490
#3	.99647	49.307	.49429	9.8012	.49585	1.1796	.39210	4.9659
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 15, 2016

Sample Name: ICV Acquired: 6/14/2016 12:56:05 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98209	.97713	.96807	.49283	.97367	.98465	.98282
Stddev	.00262	.01108	.01267	.00210	.04662	.00197	.01299
%RSD	.26629	1.1338	1.3085	.42575	4.7878	.19972	1.3213
#1	.98103	.96733	.95745	.49525	1.0166	.98669	.97922
#2	.98017	.97490	.96467	.49178	.92408	.98276	.97201
#3	.98507	.98915	.98209	.49147	.98034	.98450	.99722
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8082.9	47341.	3031.3
Stddev	21.3	1786.	40.9
%RSD	.26345	3.7721	1.3486
#1	8073.9	45699.	3074.5
#2	8107.2	49242.	3026.3
#3	8067.6	47081.	2993.2

Approved: June 15, 2016

Sample Name: ICB Acquired: 6/14/2016 12:59:47 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00098	.00942	-.00171	.00363	.00011	.00002	.03576	.00005
Stddev	.00078	.00820	.00266	.00212	.00122	.00005	.03492	.00017
%RSD	80.233	87.066	155.97	58.314	1137.9	265.56	97.651	327.57
#1	.00156	.00319	-.00295	.00400	.00074	.00002	-.00424	.00013
#2	.00009	.00635	-.00353	.00554	.00088	.00006	.05135	-.00014
#3	.00129	.01871	.00135	.00135	-.00130	-.00003	.06017	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	.00047	-.00019	.01795	-.08212	.00115	.01184	-.00022
Stddev	.00033	.00091	.00038	.01447	.05829	.00182	.05225	.00316
%RSD	176.47	192.38	202.82	80.618	70.987	158.00	441.14	1423.9
#1	-.00031	.00001	-.00042	.00497	-.04252	.00296	.00562	-.00222
#2	-.00044	-.00011	-.00039	.03356	-.14906	-.00068	.06693	.00343
#3	.00019	.00152	.00025	.01533	-.05477	.00117	-.03701	-.00187
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00248	-.00804	.00009	.00401	-.00201	.00298	.00393	.00114
Stddev	.00043	.02558	.00090	.00372	.00255	.00250	.00519	.00226
%RSD	17.436	318.18	1005.9	92.759	127.12	83.827	132.08	198.39
#1	.00257	.00629	-.00095	.00764	-.00338	.00037	-.00156	.00346
#2	.00201	-.03757	.00062	.00021	.00094	.00534	.00874	.00102
#3	.00286	.00716	.00060	.00416	-.00357	.00323	.00460	-.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: ICB Acquired: 6/14/2016 12:59:47 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00109	.00025	.00491	.00055	-.00068	.00019	.00086
Stddev	.00066	.00022	.00321	.00307	.00056	.00014	.00021
%RSD	60.629	87.512	65.448	554.99	83.490	73.830	23.999
#1	.00179	.00046	.00635	.00132	-.00004	.00032	.00066
#2	.00047	.00027	.00123	.00317	-.00086	.00023	.00107
#3	.00102	.00002	.00715	-.00283	-.00112	.00004	.00085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8272.2	48161.	3104.2
Stddev	22.8	82.	33.4
%RSD	.27532	.16928	1.0772
#1	8279.7	48125.	3070.9
#2	8290.4	48255.	3104.0
#3	8246.7	48104.	3137.8

Approved: June 15, 2016

Sample Name: LLICV Acquired: 6/14/2016 13:03:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00880	.16139	.00761	.07641	.00824	.00154	.39811	.00067
Stddev	.00106	.00724	.00219	.00166	.00029	.00004	.01409	.00009
%RSD	12.035	4.4839	28.794	2.1759	3.5038	2.5652	3.5387	12.844
#1	.00983	.15309	.00858	.07600	.00810	.00156	.40270	.00058
#2	.00772	.16472	.00510	.07500	.00858	.00149	.40932	.00076
#3	.00884	.16636	.00916	.07824	.00805	.00156	.38229	.00068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00405	.00423	.00388	.07505	.64449	.07565	.28195	.00660
Stddev	.00028	.00036	.00040	.00975	.06457	.00211	.06127	.00066
%RSD	6.8288	8.4594	10.205	12.990	10.019	2.7873	21.732	9.9473
#1	.00392	.00459	.00421	.08174	.66926	.07329	.25661	.00708
#2	.00437	.00421	.00399	.07954	.69301	.07734	.23742	.00585
#3	.00387	.00388	.00344	.06386	.57120	.07633	.35183	.00687
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00788	.38497	.01646	.74511	.00759	.07609	.01758	.76337
Stddev	.00018	.01539	.00091	.00508	.00213	.00245	.00573	.00199
%RSD	2.3375	3.9984	5.5065	.68178	28.124	3.2251	32.583	.26020
#1	.00800	.39677	.01652	.74025	.00575	.07875	.01529	.76557
#2	.00766	.39058	.01734	.75039	.00993	.07562	.01335	.76283
#3	.00796	.36756	.01553	.74468	.00709	.07391	.02410	.76171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: LLICV Acquired: 6/14/2016 13:03:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.38632	.03829	.03165	.14530	.00724	.01558	.04231
Stddev	.00287	.00112	.00591	.00348	.00092	.00016	.00124
%RSD	.74389	2.9297	18.689	2.3966	12.749	1.0443	2.9326
#1	.38917	.03700	.03437	.14402	.00619	.01565	.04090
#2	.38636	.03885	.03572	.14925	.00759	.01539	.04279
#3	.38343	.03902	.02486	.14264	.00793	.01569	.04324
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8334.6	48400.	3138.3
Stddev	10.8	361.	29.0
%RSD	.13011	.74658	.92345
#1	8325.4	48694.	3151.1
#2	8331.9	48510.	3158.8
#3	8346.5	47997.	3105.2

Approved: June 15, 2016

Sample Name: LLICV Acquired: 6/14/2016 13:07:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01991	.39026	.01795	.18610	.01975	.00371	.94504	.00202
Stddev	.00019	.01061	.00271	.00129	.00108	.00005	.00570	.00011
%RSD	.96690	2.7190	15.095	.69199	5.4909	1.2610	.60301	5.4056
#1	.01970	.38072	.01988	.18732	.02040	.00366	.94317	.00215
#2	.01999	.40169	.01911	.18476	.02034	.00371	.94051	.00199
#3	.02006	.38838	.01485	.18623	.01849	.00376	.95143	.00194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00962	.00984	.00984	.18756	1.7940	.18739	.94403	.01808
Stddev	.00041	.00070	.00088	.01679	.1044	.00308	.07072	.00340
%RSD	4.2785	7.0637	8.9550	8.9517	5.8207	1.6431	7.4909	18.795
#1	.01008	.00937	.00884	.20458	1.7125	.18652	.86440	.02042
#2	.00928	.01064	.01016	.18710	1.9117	.19081	.96819	.01963
#3	.00952	.00952	.01051	.17101	1.7578	.18484	.99949	.01418
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01794	.93632	.03985	1.8373	.01717	.18868	.03666	1.9003
Stddev	.00031	.01666	.00136	.0085	.00129	.00169	.00731	.0062
%RSD	1.7382	1.7798	3.4162	.46128	7.5186	.89723	19.946	.32625
#1	.01765	.92444	.03991	1.8275	.01733	.18677	.03653	1.8932
#2	.01827	.95537	.04118	1.8425	.01837	.19001	.04404	1.9044
#3	.01791	.92916	.03846	1.8418	.01580	.18925	.02942	1.9034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: LLICV Acquired: 6/14/2016 13:07:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.96121	.09463	.06084	.36358	.01926	.03933	.09673
Stddev	.00258	.00079	.00302	.00212	.00069	.00028	.00035
%RSD	.26849	.83553	4.9712	.58445	3.5652	.71646	.36438
#1	.95841	.09448	.05930	.36237	.01976	.03901	.09667
#2	.96172	.09548	.05889	.36233	.01954	.03942	.09711
#3	.96349	.09392	.06432	.36603	.01848	.03955	.09641
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8214.6	47987.	3082.1
Stddev	36.9	116.	8.8
%RSD	.44975	.24179	.28564
#1	8237.1	48067.	3081.2
#2	8234.7	48041.	3073.8
#3	8172.0	47854.	3091.3

Approved: June 15, 2016

Sample Name: ICSA Acquired: 6/14/2016 13:11:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00253	262.58	.00384	.06070	-.00003	-.00010	235.11	-.00006
Stddev	.00220	.29	.00235	.00160	.00016	.00010	.65	.00032
%RSD	86.930	.11149	61.149	2.6307	621.80	95.355	.27559	534.39
#1	.00504	262.54	.00223	.06238	.00016	-.00005	235.84	.00030
#2	.00091	262.88	.00653	.06054	-.00013	-.00021	234.89	-.00017
#3	.00164	262.30	.00275	.05920	-.00011	-.00005	234.61	-.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00096	-.00132	-.00273	94.416	-.06977	.00355	241.82	-.00121
Stddev	.00023	.00121	.00196	.391	.00708	.00354	.90	.00150
%RSD	23.683	91.662	71.863	.41427	10.151	99.797	.37401	123.89
#1	-.00093	-.00243	-.00356	94.399	-.07486	.00706	242.75	-.00082
#2	-.00120	-.00149	-.00049	94.815	-.06168	-.00003	241.75	.00006
#3	-.00075	-.00003	-.00415	94.033	-.07277	.00362	240.95	-.00287
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00156	.01529	.00217	.06058	.00007	-.00481	.00541	.00486
Stddev	.00020	.00891	.00164	.01011	.00331	.00662	.00382	.00038
%RSD	12.683	58.263	75.524	16.694	4644.1	137.44	70.478	7.8520
#1	-.00145	.00545	.00097	.06875	-.00287	-.01225	.00445	.00474
#2	-.00144	.01760	.00150	.06372	-.00057	-.00261	.00217	.00529
#3	-.00179	.02281	.00404	.04927	.00365	.00042	.00962	.00455
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: ICSA Acquired: 6/14/2016 13:11:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00108	.00006	-.00440	.00243	-.00681	.00109	-.00527
Stddev	.00068	.00007	.00288	.00105	.00090	.00049	.00026
%RSD	63.354	105.93	65.411	43.154	13.237	44.987	4.9047
#1	.00187	.00011	-.00125	.00364	-.00642	.00089	-.00513
#2	.00066	-.00001	-.00506	.00176	-.00784	.00164	-.00556
#3	.00071	.00009	-.00690	.00189	-.00617	.00073	-.00510
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7567.3	43764.	2994.7
Stddev	6.1	135.	18.2
%RSD	.08020	.30953	.60792
#1	7562.8	43847.	2974.9
#2	7574.2	43607.	3010.7
#3	7564.9	43837.	2998.6

Approved: June 15, 2016

Sample Name: ICSAB Acquired: 6/14/2016 13:15:51 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51506	264.64	.25166	.06052	.24591	.24846	238.35	.48785
Stddev	.00145	1.17	.00554	.00533	.00201	.00127	1.23	.00130
%RSD	.28058	.44173	2.2010	8.8082	.81911	.51078	.51598	.26736
#1	.51603	265.66	.25793	.06570	.24823	.24965	239.49	.48677
#2	.51576	264.89	.24746	.05505	.24462	.24861	237.05	.48930
#3	.51340	263.36	.24957	.06080	.24488	.24712	238.52	.48749
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.23689	.24763	.23943	93.425	5.0594	.00409	238.48	.23704
Stddev	.00063	.00124	.00226	.388	.0869	.00160	1.50	.00169
%RSD	.26564	.50095	.94539	.41581	1.7181	39.192	.63072	.71306
#1	.23620	.24900	.23725	93.833	5.1304	.00246	239.93	.23802
#2	.23742	.24732	.24177	93.060	5.0853	.00566	236.93	.23509
#3	.23705	.24658	.23927	93.382	4.9624	.00416	238.57	.23801
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00157	5.1161	.47379	.12146	.48868	.50579	.25646	.01152
Stddev	.00011	.0060	.00276	.01111	.00053	.00493	.01094	.00161
%RSD	7.0318	.11748	.58202	9.1449	.10760	.97382	4.2677	13.950
#1	-.00164	5.1136	.47069	.11309	.48914	.50285	.24427	.01179
#2	-.00163	5.1118	.47470	.13406	.48811	.51148	.26546	.01297
#3	-.00144	5.1230	.47598	.11722	.48881	.50304	.25965	.00979
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: ICSAB Acquired: 6/14/2016 13:15:51 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**.00036**	**-.00226**	**.45396**	**.24570**	**.47320**	**-.00522**
Stddev	.00076	.00033	.00394	.00178	.00158	.00162	.00024
%RSD	717.90	91.178	174.48	.39200	.64430	.34159	4.6419
#1	-.00027	-.00001	-.00171	.45204	.24753	.47141	-.00531
#2	-.00078	.00063	-.00644	.45556	.24483	.47454	-.00495
#3	.00072	.00047	.00138	.45429	.24475	.47365	-.00541
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7513.1**	**43560.**	**2982.5**
Stddev	19.0	244.	20.4
%RSD	.25242	.56027	.68385
#1	7524.1	43280.	2975.5
#2	7491.2	43665.	3005.4
#3	7523.9	43733.	2966.5

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 13:19:40 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38842**	**9.6766**	**.38670**	**.48146**	**.96406**	**.04846**	**9.5852**	**.04848**
Stddev	.00098	.0297	.00253	.00416	.01300	.00044	.1732	.00040
%RSD	.25157	.30735	.65463	.86489	1.3487	.91791	1.8064	.81691
#1	.38857	9.7094	.38712	.48625	.94993	.04897	9.4127	.04850
#2	.38932	9.6689	.38399	.47945	.97553	.04822	9.7589	.04807
#3	.38738	9.6514	.38900	.47868	.96671	.04818	9.5839	.04886
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19459**	**.48546**	**.48652**	**3.8561**	**48.199**	**.96251**	**9.6204**	**.48138**
Stddev	.00098	.00499	.00342	.0607	.641	.00860	.1903	.00688
%RSD	.50162	1.0279	.70275	1.5736	1.3303	.89352	1.9776	1.4298
#1	.19526	.49097	.48987	3.8001	47.506	.95695	9.4044	.47514
#2	.19347	.48417	.48304	3.9206	48.772	.97241	9.6937	.48876
#3	.19505	.48124	.48667	3.8477	48.318	.95816	9.7630	.48022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.97291**	**48.050**	**.48501**	**9.6373**	**.48965**	**1.1590**	**.38093**	**4.8869**
Stddev	.00494	.696	.00161	.0194	.00476	.0037	.00079	.0127
%RSD	.50749	1.4491	.33221	.20096	.97245	.31640	.20650	.26006
#1	.97811	47.304	.48658	9.6588	.49203	1.1568	.38012	4.8994
#2	.96829	48.683	.48336	9.6317	.48417	1.1570	.38169	4.8740
#3	.97234	48.164	.48509	9.6213	.49275	1.1633	.38096	4.8872
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 13:19:40 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.96575	.96428	.95494	.48624	.96823	.97016	.97459
Stddev	.00169	.01391	.02178	.00378	.00985	.00094	.00888
%RSD	.17512	1.4429	2.2804	.77775	1.0173	.09644	.91115
#1	.96675	.94960	.92982	.48816	.97960	.97099	.96517
#2	.96380	.97727	.96856	.48188	.96284	.96915	.98280
#3	.96670	.96597	.96644	.48867	.96226	.97035	.97581
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8121.3	46861.	3044.5
Stddev	6.6	174.	24.7
%RSD	.08169	.37150	.81231
#1	8121.3	46669.	3071.6
#2	8128.0	47009.	3023.3
#3	8114.7	46903.	3038.5

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 13:23:23 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.01018	.00017	.00437	.00045	.00003	-.01350	-.00019
Stddev	.00185	.00088	.00277	.00270	.00058	.00006	.02608	.00008
%RSD	687.15	8.6656	1611.9	61.807	127.00	195.02	193.09	42.189
#1	-.00181	.00930	-.00181	.00585	.00083	-.00004	-.04335	-.00017
#2	.00175	.01106	-.00102	.00125	-.00021	.00006	.00485	-.00012
#3	.00087	.01019	.00334	.00601	.00075	.00008	-.00201	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	-.00032	.00005	.01705	-.09454	-.00109	.03233	-.00144
Stddev	.00008	.00135	.00142	.01744	.11900	.00207	.12089	.00023
%RSD	42.335	421.58	2661.9	102.25	125.86	189.98	373.89	15.988
#1	-.00023	-.00080	.00087	.00263	.03856	.00130	-.10164	-.00165
#2	-.00009	.00121	-.00159	.01210	-.19064	-.00241	.06536	-.00148
#3	-.00023	-.00137	.00088	.03643	-.13154	-.00216	.13328	-.00119
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00166	-.00824	.00052	.00046	-.00300	.00064	.00506	.00065
Stddev	.00017	.02537	.00078	.00248	.00188	.00012	.00386	.00218
%RSD	10.394	307.81	149.96	537.03	62.740	19.075	76.221	337.18
#1	.00151	.01786	.00017	.00314	-.00092	.00074	.00577	-.00182
#2	.00162	-.00978	.00141	-.00002	-.00460	.00069	.00090	.00231
#3	.00185	-.03281	-.00002	-.00174	-.00348	.00050	.00852	.00144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 13:23:23 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00140**	**.00011**	**.00599**	**-.00037**	**.00039**	**-.00005**	**.00046**
Stddev	.00059	.00015	.00636	.00033	.00057	.00017	.00065
%RSD	41.947	133.47	106.18	88.219	144.29	355.84	140.69
#1	.00074	.00028	.00405	-.00062	.00028	-.00025	-.00015
#2	.00185	.00003	.00083	-.00050	.00102	.00008	.00040
#3	.00161	.00002	.01309	-.00000	-.00011	.00002	.00115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8279.0**	**48298.**	**3150.0**
Stddev	18.1	229.	46.0
%RSD	.21838	.47431	1.4612
#1	8279.2	48072.	3107.6
#2	8297.0	48530.	3143.4
#3	8260.9	48293.	3198.9

Approved: June 15, 2016

Sample Name: PBW 46 Acquired: 6/14/2016 13:33:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572244-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00167	.01388	.00104	.00274	-.00034	.00003	.02791	-.00005
Stddev	.00094	.00439	.00157	.00153	.00115	.00004	.01471	.00011
%RSD	56.568	31.644	151.23	55.699	337.19	120.34	52.715	224.25
#1	.00246	.01051	.00181	.00314	-.00124	.00005	.01675	-.00005
#2	.00063	.01885	-.00077	.00403	-.00073	.00006	.04458	.00006
#3	.00192	.01229	.00207	.00106	.00095	-.00001	.02240	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	.00071	-.00014	.02199	-.15165	-.00055	-.04599	-.00023
Stddev	.00014	.00042	.00094	.01014	.08201	.00046	.08242	.00223
%RSD	104.13	59.240	668.69	46.130	54.078	82.275	179.19	983.85
#1	-.00030	.00024	.00010	.02468	-.18048	-.00030	-.05233	.00067
#2	-.00002	.00106	-.00118	.01077	-.21534	-.00028	-.12506	.00141
#3	-.00010	.00084	.00066	.03051	-.05912	-.00108	.03941	-.00276
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	-.00852	.00096	-.00216	.00101	-.00161	-.00102	.00482
Stddev	.00048	.00751	.00028	.00632	.00246	.00429	.00539	.00199
%RSD	190.24	88.124	29.094	292.35	243.46	265.68	526.40	41.278
#1	-.00001	-.00365	.00064	-.00716	-.00098	.00320	.00472	.00347
#2	-.00004	-.01717	.00104	.00494	.00024	-.00304	-.00599	.00387
#3	.00080	-.00474	.00118	-.00427	.00377	-.00501	-.00181	.00710
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: PBW 46 Acquired: 6/14/2016 13:33:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572244-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	.00007	.00408	-.00157	.00006	.00105	.00068
Stddev	.00108	.00022	.00071	.00099	.00060	.00019	.00065
%RSD	179.70	333.32	17.312	63.182	979.98	17.830	96.256
#1	-.00051	.00032	.00382	-.00086	.00057	.00127	.00057
#2	.00164	-.00010	.00487	-.00271	.00022	.00093	.00138
#3	.00067	-.00002	.00354	-.00116	-.00060	.00096	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7863.8	45826.	2967.5
Stddev	15.1	145.	24.8
%RSD	.19230	.31735	.83681
#1	7881.2	45800.	2945.9
#2	7853.7	45695.	2961.9
#3	7856.6	45983.	2994.6

Approved: June 15, 2016

Sample Name: LCSW 46 Acquired: 6/14/2016 13:37:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572244-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19704**	**5.0144**	**.19968**	**.96617**	**.49809**	**.02448**	**5.0003**	**.02463**
Stddev	.00259	.0093	.00495	.00478	.00282	.00006	.0498	.00023
%RSD	1.3127	.18499	2.4785	.49492	.56657	.22489	.99603	.94804
#1	.19426	5.0094	.20392	.97139	.50122	.02453	5.0247	.02488
#2	.19749	5.0251	.20088	.96512	.49731	.02448	4.9430	.02462
#3	.19937	5.0086	.19424	.96200	.49573	.02442	5.0332	.02441
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10135**	**.25165**	**.25303**	**2.0001**	**24.272**	**.49883**	**4.9824**	**.24610**
Stddev	.00031	.00138	.00087	.0308	.137	.00123	.1846	.00466
%RSD	.30274	.54872	.34331	1.5397	.56601	.24576	3.7049	1.8926
#1	.10168	.25187	.25388	2.0040	24.430	.49827	5.0916	.25147
#2	.10131	.25290	.25308	1.9675	24.181	.50023	5.0863	.24355
#3	.10107	.25017	.25214	2.0288	24.205	.49798	4.7692	.24327
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51104**	**24.461**	**.25342**	**4.8383**	**.25092**	**.59123**	**.20401**	**2.5663**
Stddev	.00152	.145	.00050	.0218	.00320	.00037	.00930	.0035
%RSD	.29711	.59146	.19600	.45011	1.2737	.06220	4.5568	.13735
#1	.51249	24.612	.25388	4.8563	.24757	.59085	.19730	2.5675
#2	.50946	24.449	.25289	4.8141	.25394	.59159	.21462	2.5623
#3	.51118	24.323	.25350	4.8444	.25124	.59126	.20010	2.5691
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: LCSW 46 Acquired: 6/14/2016 13:37:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572244-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50211	.50421	.49421	.25176	.50027	.50541	.00451
Stddev	.00113	.00139	.00229	.00210	.00179	.00065	.00081
%RSD	.22533	.27517	.46297	.83466	.35715	.12806	17.975
#1	.50305	.50577	.49685	.25188	.50233	.50544	.00358
#2	.50085	.50376	.49281	.24959	.49917	.50475	.00486
#3	.50242	.50311	.49296	.25379	.49931	.50604	.00508
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7849.3	45516.	2986.3
Stddev	9.1	95.	21.8
%RSD	.11540	.20802	.72880
#1	7848.6	45539.	2971.2
#2	7858.8	45411.	3011.2
#3	7840.7	45596.	2976.5

Approved: June 15, 2016

Sample Name: F BLANK Acquired: 6/14/2016 13:40:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572115-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00185**	**.01400**	**.00026**	**.00476**	**.00092**	**.00004**	**.02957**	**-.00022**
Stddev	.00213	.00374	.00154	.00200	.00091	.00006	.02948	.00014
%RSD	115.20	26.739	594.17	42.124	98.264	149.28	99.713	61.633
#1	-.00056	.01531	-.00127	.00664	.00037	.00010	.04968	-.00022
#2	.00349	.01692	.00024	.00497	.00043	-.00002	-.00428	-.00036
#3	.00261	.00978	.00181	.00265	.00197	.00003	.04330	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00044**	**.00075**	**.00060**	**.02464**	**-.14630**	**-.00035**	**-.03295**	**-.00164**
Stddev	.00031	.00072	.00044	.00914	.06975	.00275	.08765	.00307
%RSD	71.037	96.066	72.661	37.109	47.677	783.39	265.99	187.60
#1	.00014	.00157	.00012	.01419	-.06736	-.00212	-.03307	.00129
#2	.00041	.00025	.00097	.03118	-.19961	-.00174	-.12054	-.00136
#3	.00076	.00043	.00071	.02854	-.17193	.00282	.05475	-.00484
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**160.32**	**.00146**	**-.00184**	**.00085**	**.00136**	**.00519**	**.01119**
Stddev	.00028	.87	.00075	.00269	.00024	.00391	.00753	.00213
%RSD	1943.5	.54401	51.722	145.79	28.371	287.40	145.07	19.075
#1	.00028	160.84	.00174	-.00493	.00110	-.00028	.01066	.01313
#2	-.00006	160.81	.00203	-.00054	.00084	-.00146	.00830	.00891
#3	-.00026	159.31	.00060	-.00005	.00062	.00582	-.00339	.01153
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: F BLANK Acquired: 6/14/2016 13:40:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572115-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00123	.00013	.00803	-.00134	-.00004	.00271	-.00017
Stddev	.00082	.00053	.00222	.00184	.00075	.00010	.00010
%RSD	66.327	398.01	27.614	136.77	1965.9	3.8033	59.138
#1	.00182	-.00043	.00550	.00075	-.00055	.00283	-.00023
#2	.00158	.00021	.00896	-.00267	-.00038	.00264	-.00005
#3	.00030	.00062	.00962	-.00211	.00082	.00267	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7878.8	45526.	3023.1
Stddev	12.8	222.	25.0
%RSD	.16243	.48791	.82843
#1	7864.9	45272.	3021.7
#2	7890.1	45623.	2998.8
#3	7881.3	45683.	3048.9

Approved: June 15, 2016

Sample Name: F BLANK Acquired: 6/14/2016 13:45:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572115-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00136	.00351	-.00192	.00345	.00034	.00001	-.00726	.00006
Stddev	.00252	.00131	.00242	.00488	.00029	.00001	.01582	.00022
%RSD	185.37	37.172	125.83	141.41	84.450	129.93	217.92	362.52
#1	-.00243	.00404	-.00445	.00904	.00006	-.00001	.01088	.00007
#2	.00152	.00447	-.00170	.00003	.00033	.00002	-.01815	.00028
#3	-.00316	.00202	.00038	.00128	.00063	.00002	-.01451	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	.00051	.00038	-.01203	-.15029	-.00189	.02947	-.00004
Stddev	.00020	.00043	.00113	.00493	.04617	.00174	.04121	.00159
%RSD	75.575	84.376	297.20	40.977	30.719	91.879	139.83	3862.3
#1	-.00026	.00086	-.00077	-.00758	-.20186	-.00320	-.00969	.00170
#2	-.00006	.00003	.00149	-.01733	-.13619	.00008	.02564	-.00042
#3	-.00045	.00064	.00042	-.01119	-.11282	-.00257	.07246	-.00141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	3.7215	.00127	-.00241	.00047	-.00102	.00776	.00564
Stddev	.00029	.0188	.00041	.00360	.00187	.00062	.00547	.00068
%RSD	50.759	.50397	32.698	149.11	396.34	60.607	70.470	12.073
#1	-.00054	3.7362	.00093	-.00570	-.00102	-.00094	.00899	.00588
#2	-.00086	3.7004	.00115	.00143	-.00014	-.00168	.01251	.00617
#3	-.00029	3.7280	.00173	-.00296	.00258	-.00045	.00178	.00487
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: F BLANK Acquired: 6/14/2016 13:45:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572115-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00079	.00002	.00524	-.00270	.00012	.00291	-.00032
Stddev	.00031	.00074	.00246	.00052	.00043	.00035	.00023
%RSD	38.972	3192.4	46.992	19.091	363.05	12.182	72.008
#1	.00046	.00082	.00240	-.00329	.00061	.00316	-.00006
#2	.00106	-.00013	.00674	-.00231	-.00014	.00251	-.00040
#3	.00085	-.00062	.00659	-.00251	-.00012	.00308	-.00049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8052.0	47666.	3085.0
Stddev	9.9	193.	21.7
%RSD	.12270	.40467	.70499
#1	8063.3	47469.	3072.0
#2	8045.2	47854.	3073.0
#3	8047.4	47675.	3110.2

Approved: June 15, 2016

Sample Name: L1606040101 Acquired: 6/14/2016 13:49:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572244-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00068**	**.03606**	**-.00019**	**.04592**	**.71433**	**.00002**	F **338.51**
Stddev	.00085	.00748	.00279	.00153	.00631	.00007	2.54
%RSD	125.55	20.735	1478.1	3.3300	.88317	416.14	.75155
#1	-.00019	.02770	-.00292	.04444	.72051	-.00007	341.17
#2	-.00019	.03839	-.00031	.04749	.71457	.00005	338.28
#3	-.00166	.04210	.00266	.04583	.70790	.00007	336.09
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.00063**	**.00091**	**.00356**	**.00913**	**253.60**	**.04717**
Stddev	.00007	.00006	.00098	.00090	.02653	1.92	.00396
%RSD	53.778	9.8659	107.64	25.247	290.55	.75540	8.3932
#1	.00022	.00056	.00027	.00362	.01490	255.61	.05134
#2	.00008	.00065	.00204	.00443	.03230	253.40	.04346
#3	.00011	.00068	.00042	.00263	-.01981	251.79	.04670
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09247**	**-.00210**	**.00670**	F **316.05**	**.00021**	**.07799**	**.01568**
Stddev	.11383	.00121	.00047	2.24	.00017	.00668	.00370
%RSD	123.10	57.721	6.9900	.70779	82.322	8.5685	23.601
#1	.12617	-.00306	.00643	318.39	.00039	.07211	.01702
#2	-.03440	-.00249	.00643	315.83	.00018	.08526	.01852
#3	.18565	-.00074	.00724	313.93	.00005	.07660	.01149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 15, 2016

Sample Name: L1606040101 Acquired: 6/14/2016 13:49:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572244-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00223**	**.02642**	**.27128**	**.00085**	**.42467**	F **-.04716**	**-.00249**
Stddev	.00127	.00543	.00084	.00088	.00237	.00308	.00187
%RSD	56.993	20.546	.30879	103.84	.55858	6.5360	75.050
#1	-.00326	.02629	.27160	.00101	.42711	-.05067	-.00386
#2	-.00081	.02105	.27033	-.00010	.42451	-.04593	-.00036
#3	-.00261	.03191	.27191	.00164	.42238	-.04489	-.00326
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00004**	**.01324**	**-.00006**
Stddev	.00105	.00024	.00018
%RSD	2770.5	1.7772	296.48
#1	-.00033	.01314	.00012
#2	-.00091	.01351	-.00023
#3	.00113	.01308	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7563.1**	**43779.**	**3072.4**
Stddev	12.8	81.	43.0
%RSD	.16968	.18476	1.4009
#1	7562.4	43826.	3025.1
#2	7550.7	43826.	3082.6
#3	7576.3	43686.	3109.4

Approved: June 15, 2016

Sample Name: L1606040101S Acquired: 6/14/2016 13:53:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572244-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19684**	**5.0967**	**.20209**	**1.0293**	**1.2091**	**.02436**	F **348.43**
Stddev	.00072	.0198	.00364	.0035	.0047	.00016	1.04
%RSD	.36586	.38874	1.8037	.33737	.38871	.66177	.29871
#1	.19607	5.0758	.20622	1.0256	1.2140	.02442	349.63
#2	.19749	5.0989	.20070	1.0325	1.2089	.02417	347.79
#3	.19697	5.1153	.19934	1.0298	1.2046	.02448	347.87
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02502**	**.09564**	**.24613**	**.24077**	**1.8978**	**279.57**	**.55292**
Stddev	.00022	.00088	.00145	.00121	.0280	1.03	.00424
%RSD	.87422	.91844	.58870	.50163	1.4759	.36950	.76626
#1	.02481	.09556	.24642	.24212	1.9301	280.64	.55508
#2	.02525	.09656	.24742	.23978	1.8804	279.50	.55564
#3	.02500	.09481	.24456	.24042	1.8828	278.58	.54804
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.7110**	**.23643**	**.50454**	F **342.92**	**.23553**	**5.1054**	**.25383**
Stddev	.1325	.00250	.00285	1.61	.00135	.0181	.00445
%RSD	2.8116	1.0580	.56389	.46928	.57240	.35448	1.7549
#1	4.6985	.23703	.50781	344.77	.23515	5.1263	.25324
#2	4.5853	.23857	.50257	342.04	.23702	5.0944	.25855
#3	4.8493	.23368	.50325	341.93	.23441	5.0955	.24969
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 15, 2016

Sample Name: L1606040101S Acquired: 6/14/2016 13:53:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572244-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.59878	.22037	2.8542	.47468	.90635	.43516	.11372
Stddev	.00379	.00716	.0077	.00230	.00451	.00599	.00231
%RSD	.63362	3.2478	.27084	.48499	.49797	1.3757	2.0338
#1	.59849	.22049	2.8625	.47709	.91125	.44190	.11155
#2	.60271	.21315	2.8471	.47250	.90543	.43315	.11615
#3	.59514	.22747	2.8531	.47444	.90237	.43044	.11345
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.50185	.50996	.00426
Stddev	.00231	.00221	.00033
%RSD	.46044	.43407	7.8538
#1	.50384	.51250	.00388
#2	.50239	.50894	.00438
#3	.49932	.50844	.00452
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7390.0	42543.	2969.4
Stddev	21.9	114.	29.1
%RSD	.29659	.26750	.97982
#1	7365.7	42638.	2958.4
#2	7408.2	42573.	3002.4
#3	7396.1	42417.	2947.5

Approved: June 15, 2016

Sample Name: L1606040101SD Acquired: 6/14/2016 13:56:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572244-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20087**	**5.1294**	**.20614**	**1.0412**	**1.1986**	**.02468**	F **342.25**
Stddev	.00169	.0132	.00305	.0012	.0027	.00015	.37
%RSD	.84103	.25629	1.4807	.11249	.22860	.59405	.10873
#1	.20023	5.1306	.20420	1.0399	1.2013	.02470	342.61
#2	.20279	5.1419	.20966	1.0417	1.1988	.02453	342.26
#3	.19959	5.1157	.20457	1.0421	1.1958	.02482	341.87
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02550**	**.09821**	**.24874**	**.24766**	**1.9147**	**277.25**	**.55479**
Stddev	.00025	.00024	.00049	.00122	.0433	.18	.00297
%RSD	.96207	.23992	.19544	.49076	2.2609	.06416	.53472
#1	.02575	.09796	.24907	.24906	1.8856	277.40	.55786
#2	.02526	.09842	.24897	.24698	1.9644	277.30	.55194
#3	.02547	.09824	.24818	.24694	1.8940	277.05	.55456
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.6163**	**.23816**	**.51974**	F **338.95**	**.24144**	**5.2503**	**.25969**
Stddev	.0907	.00076	.00121	2.46	.00117	.0100	.00390
%RSD	1.9649	.31723	.23234	.72579	.48290	.19104	1.5019
#1	4.5117	.23878	.51963	340.51	.24229	5.2430	.26015
#2	4.6733	.23732	.52100	340.23	.24192	5.2617	.25558
#3	4.6640	.23837	.51859	336.12	.24011	5.2461	.26334
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 15, 2016

Sample Name: L1606040101SD Acquired: 6/14/2016 13:56:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572244-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.60859	.22837	2.9129	.48961	.90083	.44288	.18565
Stddev	.00407	.00257	.0028	.00167	.00054	.00669	.00295
%RSD	.66861	1.1272	.09542	.34067	.05968	1.5113	1.5903
#1	.60971	.22771	2.9148	.49096	.90135	.45032	.18245
#2	.61198	.22619	2.9097	.49014	.90027	.43737	.18625
#3	.60408	.23121	2.9142	.48775	.90088	.44094	.18826
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.50879	.51735	.00053
Stddev	.00181	.00047	.00037
%RSD	.35485	.08989	69.842
#1	.51013	.51755	.00022
#2	.50951	.51769	.00043
#3	.50674	.51682	.00095
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7437.0	42930.	3011.0
Stddev	12.2	77.	22.8
%RSD	.16370	.17893	.75631
#1	7440.7	42873.	2987.5
#2	7423.4	42901.	3012.5
#3	7446.9	43018.	3033.0

Approved: June 15, 2016

Sample Name: L1606036002 Acquired: 6/14/2016 14:00:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.03539	-.00160	.04716	.04338	-.00005	13.438	.00025
Stddev	.00179	.00562	.00262	.00095	.00044	.00006	.139	.00008
%RSD	919.45	15.871	163.58	2.0212	1.0145	118.33	1.0321	31.622
#1	.00208	.02891	-.00460	.04742	.04372	-.00004	13.563	.00026
#2	-.00002	.03830	-.00049	.04795	.04288	-.00000	13.289	.00031
#3	-.00148	.03895	.00028	.04610	.04353	-.00012	13.462	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00084	.00068	.00095	.03898	.90932	-.00296	1.7377	.47740
Stddev	.00022	.00054	.00095	.01689	.06082	.00668	.0489	.00609
%RSD	25.717	79.454	100.28	43.336	6.6885	225.59	2.8148	1.2751
#1	.00067	.00102	.00046	.05629	.95023	.00129	1.7694	.48173
#2	.00078	.00006	.00034	.03810	.83943	-.01066	1.6814	.47044
#3	.00109	.00098	.00204	.02254	.93830	.00049	1.7623	.48003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	142.73	.00267	.13572	-.00105	-.00124	.00664	.78284
Stddev	.00019	1.62	.00011	.00523	.00149	.00318	.00793	.00198
%RSD	40.060	1.1376	4.0493	3.8535	141.40	256.83	119.47	.25278
#1	.00027	144.10	.00258	.13845	-.00164	.00208	-.00008	.78083
#2	.00048	140.93	.00266	.12969	-.00216	-.00427	.01539	.78288
#3	.00064	143.15	.00279	.13901	.00064	-.00152	.00460	.78479
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606036002 Acquired: 6/14/2016 14:00:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00136	.21742	.00701	-.00042	-.00004	.10829	-.00001
Stddev	.00043	.00286	.00337	.00141	.00024	.00008	.00063
%RSD	31.504	1.3143	47.997	338.48	626.59	.07249	4577.5
#1	.00136	.21922	.01043	.00093	.00018	.10824	-.00058
#2	.00180	.21412	.00370	-.00189	-.00029	.10838	.00067
#3	.00094	.21890	.00690	-.00029	.00000	.10826	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7913.7	46461.	3136.3
Stddev	21.5	120.	39.8
%RSD	.27174	.25909	1.2706
#1	7938.5	46580.	3096.1
#2	7902.6	46464.	3175.8
#3	7900.1	46340.	3136.9

Approved: June 15, 2016

Sample Name: L1606040301 Acquired: 6/14/2016 14:04:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.10870**	**.00259**	**.03180**	**.22091**	**-.00009**	F **301.33**
Stddev	.00155	.00247	.00230	.00096	.00055	.00004	.70
%RSD	1520.2	2.2763	89.084	3.0261	.24692	43.359	.23170
#1	.00093	.10812	.00521	.03224	.22056	-.00006	301.23
#2	.00064	.10656	.00090	.03247	.22063	-.00008	300.69
#3	-.00188	.11141	.00164	.03070	.22154	-.00014	302.08
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00006**	**.00053**	**.00168**	**.00808**	**.02703**	**246.44**	**1.0250**
Stddev	.00024	.00051	.00026	.00030	.01540	.42	.0030
%RSD	423.83	95.084	15.494	3.6767	56.974	.16978	.29649
#1	-.00003	.00106	.00191	.00833	.03321	246.48	1.0283
#2	.00033	.00051	.00140	.00776	.00950	246.01	1.0224
#3	-.00013	.00004	.00175	.00817	.03838	246.84	1.0243
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.01867**	**-.00091**	**.00410**	F **290.21**	**.00079**	**.05312**	**.01345**
Stddev	.08012	.00232	.00018	1.00	.00078	.00725	.00471
%RSD	429.05	253.68	4.4741	.34363	98.782	13.654	35.045
#1	-.06132	-.00046	.00413	290.01	-.00011	.06077	.01735
#2	-.06845	-.00342	.00427	289.32	.00131	.04634	.00821
#3	.07375	.00114	.00391	291.29	.00117	.05227	.01479
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 15, 2016

Sample Name: L1606040301 Acquired: 6/14/2016 14:04:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00185	.01201	.14023	.00097	.37299	F -.03665	-.00129
Stddev	.00194	.00714	.00189	.00047	.00184	.00141	.00126
%RSD	104.92	59.445	1.3470	48.573	.49453	3.8444	98.372
#1	.00250	.01999	.14122	.00130	.37392	-.03822	-.00095
#2	.00339	.00625	.14141	.00043	.37087	-.03622	-.00268
#3	-.00033	.00978	.13805	.00118	.37418	-.03551	-.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00027	.17242	.00003
Stddev	.00025	.00091	.00049
%RSD	93.764	.53063	1635.1
#1	-.00031	.17166	-.00053
#2	.00000	.17218	.00022
#3	-.00049	.17344	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7444.8	43321.	3001.6
Stddev	15.4	236.	17.0
%RSD	.20751	.54453	.56728
#1	7462.3	43447.	2995.9
#2	7438.7	43468.	3020.8
#3	7433.3	43049.	2988.2

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 14:08:44 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40287	10.072	.40039	.50197	.99037	.05023	9.8363	.05078
Stddev	.00087	.036	.00475	.00183	.00406	.00019	.0185	.00018
%RSD	.21505	.35972	1.1875	.36411	.40995	.37307	.18826	.36196
#1	.40380	10.096	.40588	.50315	.98913	.05040	9.8176	.05057
#2	.40273	10.090	.39749	.50290	.98708	.05025	9.8546	.05090
#3	.40208	10.031	.39781	.49987	.99491	.05003	9.8367	.05087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20329	.50144	.51034	3.9786	49.552	.99098	9.8437	.49205
Stddev	.00043	.00148	.00280	.0079	.197	.00940	.1177	.00061
%RSD	.21307	.29611	.54897	.19805	.39701	.94882	1.1959	.12430
#1	.20368	.50306	.51307	3.9695	49.492	1.0017	9.7321	.49239
#2	.20335	.50115	.51049	3.9841	49.393	.98432	9.8323	.49242
#3	.20283	.50013	.50747	3.9821	49.772	.98688	9.9667	.49135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0152	49.223	.50945	10.062	.50837	1.2088	.40379	5.1182
Stddev	.0049	.070	.00238	.024	.00034	.0042	.00577	.0128
%RSD	.48067	.14158	.46713	.24339	.06659	.34938	1.4280	.25044
#1	1.0199	49.180	.50995	10.082	.50798	1.2073	.40904	5.1186
#2	1.0155	49.187	.51154	10.069	.50860	1.2135	.40472	5.1308
#3	1.0101	49.304	.50686	10.035	.50852	1.2055	.39762	5.1051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 14:08:44 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0080**	**.98991**	**.97455**	**.50425**	**1.0045**	**1.0128**	**1.0065**
Stddev	.0023	.00126	.00867	.00178	.0013	.0037	.0121
%RSD	.22662	.12763	.88921	.35217	.12434	.36160	1.2030
#1	1.0095	.98913	.96990	.50273	1.0056	1.0154	1.0139
#2	1.0092	.98924	.96921	.50620	1.0032	1.0144	1.0131
#3	1.0054	.99137	.98455	.50381	1.0048	1.0086	.99255
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7855.3**	**45661.**	**2998.7**
Stddev	37.4	35.	28.3
%RSD	.47565	.07626	.94396
#1	7833.8	45698.	2982.9
#2	7833.7	45630.	2981.9
#3	7898.5	45654.	3031.4

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 14:12:27 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00145**	**.01301**	**-.00079**	**-.00040**	**.00054**	**.00007**	**.01269**	**-.00023**
Stddev	.00118	.00272	.00417	.00138	.00097	.00007	.03045	.00008
%RSD	81.520	20.883	524.30	345.41	180.39	104.37	240.01	35.478
#1	-.00270	.01093	.00374	-.00170	.00118	.00013	.04622	-.00026
#2	-.00128	.01609	-.00446	-.00054	-.00058	.00008	-.01323	-.00029
#3	-.00036	.01201	-.00166	.00104	.00101	-.00001	.00506	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00018**	**.00013**	**.00040**	**.01146**	**.06408**	**.00116**	**-.01836**	**.00048**
Stddev	.00004	.00111	.00068	.00923	.12796	.00095	.09556	.00146
%RSD	20.747	871.23	171.02	80.558	199.68	82.263	520.63	301.52
#1	.00022	.00129	.00118	.00158	-.05158	.00029	-.05564	-.00119
#2	.00017	-.00093	.00010	.01987	.04229	.00218	-.08965	.00151
#3	.00015	.00002	-.00009	.01294	.20154	.00102	.09023	.00113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00188**	**.04883**	**.00055**	**.00620**	**-.00235**	**-.00116**	**.00621**	**.00071**
Stddev	.00047	.00950	.00034	.00186	.00127	.00391	.00979	.00029
%RSD	25.115	19.460	62.211	29.933	54.281	337.62	157.71	40.450
#1	.00138	.03930	.00037	.00801	-.00095	-.00325	-.00115	.00092
#2	.00194	.04888	.00095	.00630	-.00266	.00335	.00246	.00082
#3	.00232	.05830	.00033	.00430	-.00344	-.00357	.01732	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 14:12:27 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00108**	**.00026**	**-.00208**	**-.00069**	**-.00014**	**-.00007**	**.00042**
Stddev	.00137	.00012	.00089	.00375	.00011	.00016	.00033
%RSD	127.39	44.068	42.741	546.89	80.729	233.21	78.883
#1	-.00002	.00013	-.00189	.00363	-.00006	-.00022	.00039
#2	.00064	.00033	-.00130	-.00318	-.00026	-.00009	.00010
#3	.00262	.00033	-.00305	-.00250	-.00009	.00010	.00076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8026.3**	**46832.**	**3019.4**
Stddev	38.7	175.	16.9
%RSD	.48212	.37290	.55903
#1	8019.8	46693.	3038.0
#2	8067.9	46775.	3005.0
#3	7991.3	47028.	3015.3

Approved: June 15, 2016

Sample Name: L1606043801 Acquired: 6/14/2016 14:16:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00165**	**18.316**	**.01107**	**.04675**	**.24795**	**.00123**	**34.387**	**.00070**
Stddev	.00207	.005	.00205	.00153	.00128	.00004	.043	.00027
%RSD	126.09	.02538	18.509	3.2756	.51748	3.6422	.12484	38.470
#1	-.00021	18.321	.00872	.04595	.24937	.00120	34.420	.00099
#2	.00388	18.312	.01205	.04578	.24687	.00128	34.339	.00045
#3	.00127	18.317	.01245	.04851	.24761	.00121	34.404	.00068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01989**	**.02761**	**.05076**	**30.488**	**5.6678**	**.02554**	**8.3554**	**1.4174**
Stddev	.00035	.00051	.00115	.151	.0258	.00282	.1122	.0016
%RSD	1.7556	1.8359	2.2696	.49600	.45490	11.029	1.3425	.11480
#1	.02010	.02783	.04943	30.662	5.6387	.02237	8.4726	1.4179
#2	.02008	.02703	.05139	30.383	5.6767	.02773	8.3448	1.4188
#3	.01949	.02797	.05146	30.421	5.6880	.02653	8.2490	1.4156
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01045**	**37.585**	**.04256**	**.60322**	**.06107**	**-.00016**	**.00245**	**23.598**
Stddev	.00003	.051	.00062	.00847	.00290	.00213	.00511	.032
%RSD	.25053	.13511	1.4618	1.4044	4.7555	1293.5	208.89	.13456
#1	.01048	37.637	.04280	.59622	.05778	.00196	.00627	23.564
#2	.01043	37.536	.04185	.60079	.06328	-.00015	.00443	23.603
#3	.01044	37.581	.04303	.61264	.06216	-.00230	-.00336	23.627
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606043801 Acquired: 6/14/2016 14:16:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00637	.22090	.19006	.00477	.03490	.30164	.00430
Stddev	.00082	.00022	.01097	.00202	.00052	.00091	.00035
%RSD	12.836	.10049	5.7697	42.372	1.5013	.30290	8.0336
#1	.00621	.22112	.18150	.00542	.03436	.30069	.00414
#2	.00726	.22090	.18626	.00639	.03541	.30172	.00406
#3	.00565	.22068	.20242	.00251	.03493	.30251	.00469
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7828.9	45876.	3028.8
Stddev	16.2	108.	7.8
%RSD	.20630	.23627	.25736
#1	7844.9	45985.	3029.3
#2	7812.6	45875.	3036.3
#3	7829.1	45768.	3020.7

Approved: June 15, 2016

Sample Name: L1606048201 Acquired: 6/14/2016 14:20:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00085	.07848	.00518	.02726	.06388	-.00011	28.356	.01239
Stddev	.00064	.00608	.00266	.00275	.00096	.00010	.053	.00052
%RSD	75.865	7.7426	51.490	10.105	1.5100	94.103	.18745	4.1888
#1	-.00018	.07727	.00716	.02410	.06442	.00001	28.398	.01182
#2	-.00089	.08507	.00215	.02851	.06445	-.00016	28.296	.01253
#3	-.00146	.07310	.00621	.02916	.06276	-.00018	28.375	.01283
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00044	.00153	.07861	.04250	1.1855	.00277	1.5701	.18421
Stddev	.00011	.00083	.00132	.03136	.1146	.00370	.0638	.00117
%RSD	24.371	53.840	1.6782	73.778	9.6697	133.39	4.0625	.63391
#1	.00049	.00102	.07937	.03282	1.3150	.00132	1.5014	.18286
#2	.00032	.00110	.07937	.07756	1.1447	.00002	1.5812	.18488
#3	.00052	.00249	.07709	.01713	1.0969	.00698	1.6275	.18489
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	145.37	.00618	.18213	.00681	-.00178	-.00056	.77992
Stddev	.00009	.04	.00049	.00367	.00330	.00142	.00695	.00200
%RSD	35.255	.02705	7.9203	2.0166	48.520	79.994	1239.9	.25675
#1	-.00022	145.40	.00568	.18637	.00820	-.00341	-.00102	.78213
#2	-.00038	145.37	.00666	.17994	.00919	-.00110	-.00726	.77824
#3	-.00020	145.33	.00620	.18007	.00304	-.00082	.00660	.77938
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606048201 Acquired: 6/14/2016 14:20:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00209	.11794	-.00157	.00100	.00008	3.4861	.00045
Stddev	.00035	.00088	.00575	.00326	.00054	.0158	.00026
%RSD	16.953	.74517	367.13	327.49	642.94	.45166	57.234
#1	.00248	.11895	-.00570	.00132	-.00035	3.4688	.00064
#2	.00178	.11737	-.00400	.00408	-.00008	3.4900	.00016
#3	.00201	.11748	.00500	-.00241	.00068	3.4996	.00055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7671.0	44631.	2991.1
Stddev	8.3	158.	9.8
%RSD	.10797	.35449	.32775
#1	7677.5	44580.	2982.7
#2	7673.9	44505.	3001.9
#3	7661.7	44809.	2988.8

Approved: June 15, 2016

Sample Name: L1606050403 Acquired: 6/14/2016 14:24:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	.05079	-.00123	.00648	.85105	.00009	19.884	.00060
Stddev	.00104	.00255	.00161	.00149	.00455	.00011	.174	.00017
%RSD	242.60	5.0206	131.10	23.050	.53491	123.44	.87263	28.694
#1	.00162	.05313	-.00181	.00807	.85592	.00012	20.072	.00057
#2	-.00008	.05116	.00059	.00625	.85035	-.00003	19.849	.00079
#3	-.00026	.04807	-.00247	.00511	.84689	.00018	19.731	.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00246	.11916	.00293	.80214	1.9322	.05798	21.538	.08731
Stddev	.00010	.00051	.00104	.02673	.0534	.00348	.052	.00209
%RSD	4.0606	.42953	35.447	3.3319	2.7623	6.0091	.24147	2.3890
#1	.00238	.11862	.00366	.79050	1.9822	.06056	21.593	.08943
#2	.00257	.11963	.00340	.78321	1.8760	.05402	21.533	.08725
#3	.00243	.11923	.00174	.83271	1.9385	.05937	21.489	.08526
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	103.53	.06954	.07095	.00117	-.00111	.00156	27.182
Stddev	.00005	.66	.00176	.00512	.00059	.00188	.00471	.081
%RSD	9.2590	.63559	2.5372	7.2097	49.911	169.06	302.33	.29633
#1	.00061	104.18	.06951	.07437	.00075	.00095	.00637	27.102
#2	.00053	103.56	.07132	.06507	.00184	-.00156	-.00303	27.263
#3	.00052	102.86	.06780	.07342	.00093	-.00273	.00133	27.181
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606050403 Acquired: 6/14/2016 14:24:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00123**	**.51113**	**-.00066**	**.00109**	**.00001**	**.01901**	**.00040**
Stddev	.00015	.00256	.00586	.00237	.00050	.00009	.00049
%RSD	12.178	.50066	889.16	217.32	8878.0	.49488	124.24
#1	.00119	.51387	.00499	.00093	.00019	.01891	.00079
#2	.00140	.51072	-.00025	.00354	.00039	.01903	.00055
#3	.00111	.50881	-.00672	-.00120	-.00057	.01909	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7629.8**	**44279.**	**2952.6**
Stddev	27.8	185.	27.3
%RSD	.36469	.41871	.92453
#1	7651.8	44069.	2923.9
#2	7639.1	44421.	2978.2
#3	7598.5	44348.	2955.6

Approved: June 15, 2016

Sample Name: L1606050403PS Acquired: 6/14/2016 14:28:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572544-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20301**	**5.2332**	**.20434**	**1.0191**	**1.2721**	**.02548**	**22.935**	**.02626**
Stddev	.00168	.0230	.00109	.0066	.0014	.00008	.154	.00007
%RSD	.82639	.43963	.53159	.65216	.11363	.32356	.66937	.28400
#1	.20367	5.2532	.20556	1.0189	1.2738	.02539	22.784	.02630
#2	.20426	5.2384	.20401	1.0259	1.2710	.02555	22.931	.02631
#3	.20111	5.2081	.20346	1.0126	1.2717	.02551	23.091	.02618
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10490**	**.36618**	**.25717**	**2.7294**	**26.890**	**.56771**	**24.122**	**.32859**
Stddev	.00058	.00261	.00314	.0179	.024	.00044	.167	.00185
%RSD	.55188	.71375	1.2227	.65570	.08857	.07694	.69034	.56393
#1	.10537	.36918	.26040	2.7201	26.863	.56752	24.123	.33034
#2	.10426	.36493	.25701	2.7182	26.900	.56739	23.956	.32665
#3	.10509	.36442	.25411	2.7501	26.907	.56821	24.289	.32876
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52374**	**118.31**	**.31687**	**5.0964**	**.25698**	**.61196**	**.20359**	**26.803**
Stddev	.00137	.10	.00202	.0159	.00328	.00379	.00561	.038
%RSD	.26119	.08347	.63803	.31259	1.2746	.61899	2.7532	.14288
#1	.52532	118.25	.31900	5.1130	.25917	.60877	.19721	26.839
#2	.52299	118.27	.31662	5.0813	.25321	.61615	.20585	26.763
#3	.52292	118.43	.31498	5.0948	.25855	.61096	.20771	26.809
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606050403PS Acquired: 6/14/2016 14:28:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572544-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51195**	**.95388**	**.50326**	**.25080**	**.51838**	**.53084**	**.00305**
Stddev	.00047	.00310	.00682	.00349	.00242	.00090	.00062
%RSD	.09277	.32492	1.3555	1.3911	.46705	.17019	20.386
#1	.51249	.95571	.51082	.25310	.51944	.53188	.00234
#2	.51159	.95030	.49756	.25252	.52009	.53041	.00332
#3	.51177	.95563	.50140	.24679	.51561	.53024	.00349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7614.3**	**44074.**	**2952.6**
Stddev	10.9	75.	8.0
%RSD	.14253	.16944	.27154
#1	7623.5	44151.	2960.7
#2	7616.9	44002.	2952.6
#3	7602.3	44068.	2944.6

Approved: June 15, 2016

Sample Name: L1606050403SDL Acquired: 6/14/2016 14:32:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG572544-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00062	.00700	.00023	.00421	.16210	.00006	3.7959	-.00001
Stddev	.00089	.00370	.00210	.00182	.00087	.00014	.0433	.00023
%RSD	143.33	52.855	895.70	43.236	.53705	240.43	1.1397	1571.9
#1	-.00122	.00299	.00233	.00623	.16311	-.00003	3.7819	.00012
#2	-.00106	.01029	.00024	.00369	.16161	.00022	3.8444	-.00028
#3	.00040	.00773	-.00187	.00270	.16159	-.00001	3.7614	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.02231	.00117	.16394	.28556	.00746	4.1825	.01651
Stddev	.00020	.00034	.00099	.01427	.08847	.00125	.1080	.00110
%RSD	41.665	1.5310	85.024	8.7072	30.980	16.695	2.5820	6.6413
#1	.00056	.02230	.00003	.15170	.19046	.00870	4.1005	.01615
#2	.00026	.02197	.00159	.17962	.30082	.00747	4.1422	.01774
#3	.00064	.02265	.00188	.16051	.36540	.00621	4.3049	.01564
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	19.761	.01384	.01190	-.00090	.00033	.00273	5.1779
Stddev	.00042	.075	.00067	.00387	.00193	.00212	.00368	.0337
%RSD	229.98	.37868	4.8657	32.494	212.86	644.73	134.54	.65079
#1	.00053	19.690	.01361	.01305	-.00219	.00272	.00525	5.1686
#2	-.00028	19.839	.01460	.00759	-.00183	-.00130	-.00149	5.2153
#3	.00029	19.753	.01332	.01507	.00131	-.00043	.00444	5.1499
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606050403SDL Acquired: 6/14/2016 14:32:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG572544-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00124**	**.09713**	**.00696**	**.00230**	**.00076**	**.00430**	**-.00038**
Stddev	.00064	.00077	.00455	.00259	.00065	.00012	.00044
%RSD	51.460	.79200	65.353	112.64	85.408	2.8192	115.86
#1	.00072	.09662	.01075	.00054	.00116	.00431	-.00081
#2	.00105	.09801	.00192	.00108	.00110	.00417	-.00041
#3	.00196	.09675	.00821	.00528	.00001	.00441	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8107.0**	**46979.**	**3023.3**
Stddev	27.4	142.	14.8
%RSD	.33816	.30134	.48798
#1	8077.2	46827.	3030.2
#2	8131.1	47107.	3006.4
#3	8112.7	47003.	3033.4

Approved: June 15, 2016

Sample Name: L1606050403SDL Acquired: 6/14/2016 14:36:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG572544-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	-.00070	-.00123	.00078	.03286	.00005	.73716	-.00006
Stddev	.00087	.00243	.00190	.00359	.00141	.00008	.04250	.00018
%RSD	117.38	347.31	155.02	460.34	4.2955	150.55	5.7652	295.61
#1	.00004	.00067	-.00340	.00492	.03133	.00014	.69290	-.00021
#2	.00171	-.00351	-.00038	-.00118	.03411	.00004	.77765	.00015
#3	.00047	.00073	.00011	-.00140	.03314	-.00002	.74092	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	.00544	.00053	.03295	-.00023	.00065	.86507	.00262
Stddev	.00020	.00120	.00089	.00496	.04743	.00164	.03420	.00146
%RSD	1719.1	21.985	168.02	15.056	20796.	251.35	3.9539	55.605
#1	.00013	.00409	-.00049	.03130	-.00117	.00055	.90454	.00148
#2	-.00024	.00587	.00096	.02903	.04767	.00234	.84646	.00426
#3	.00008	.00637	.00112	.03853	-.04718	-.00093	.84420	.00212
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	3.9177	.00340	.01257	-.00178	.00162	-.00304	.97233
Stddev	.00040	.0387	.00093	.00205	.00154	.00458	.00214	.02609
%RSD	103.20	.98745	27.225	16.330	86.252	281.99	70.452	2.6830
#1	.00001	3.8792	.00258	.01425	-.00106	.00668	-.00386	1.0024
#2	-.00038	3.9173	.00323	.01028	-.00355	.00045	-.00465	.95901
#3	-.00079	3.9566	.00440	.01316	-.00074	-.00225	-.00061	.95560
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606050403SDL Acquired: 6/14/2016 14:36:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG572544-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00062	.01898	.00344	.00253	-.00028	.00097	-.00018
Stddev	.00081	.00011	.00184	.00165	.00040	.00018	.00010
%RSD	132.03	.56699	53.424	65.164	141.54	18.829	57.425
#1	.00067	.01897	.00452	.00157	-.00047	.00096	-.00029
#2	.00140	.01888	.00448	.00443	-.00056	.00115	-.00008
#3	-.00022	.01909	.00132	.00159	.00018	.00079	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8471.1	47626.	3070.0
Stddev	143.8	163.	28.6
%RSD	1.6969	.34178	.93160
#1	8308.3	47801.	3098.4
#2	8524.6	47479.	3070.5
#3	8580.5	47598.	3041.2

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 14:40:17 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38909**	**9.6925**	**.37921**	**.48367**	**.94871**	**.04815**	**9.4357**	**.04840**
Stddev	.00150	.0208	.00565	.00297	.00487	.00025	.0808	.00058
%RSD	.38504	.21460	1.4889	.61360	.51314	.52837	.85669	1.1917
#1	.39014	9.6698	.38569	.48326	.95060	.04785	9.4155	.04905
#2	.38738	9.6973	.37533	.48682	.95236	.04830	9.5247	.04821
#3	.38976	9.7106	.37660	.48092	.94318	.04829	9.3668	.04794
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19468**	**.48259**	**.48474**	**3.7712**	**47.215**	**.94232**	**9.3385**	**.47111**
Stddev	.00042	.00173	.00305	.0229	.122	.00410	.0059	.00172
%RSD	.21660	.35788	.62936	.60684	.25821	.43465	.06276	.36550
#1	.19514	.48063	.48724	3.7604	47.310	.94206	9.3397	.47065
#2	.19430	.48329	.48134	3.7975	47.258	.94654	9.3436	.47301
#3	.19461	.48386	.48565	3.7557	47.078	.93837	9.3321	.46966
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.96477**	**47.183**	**.48606**	**9.6057**	**.48725**	**1.1594**	**.37971**	**4.8773**
Stddev	.00630	.258	.00293	.0486	.00226	.0115	.00691	.0230
%RSD	.65277	.54583	.60290	.50597	.46433	.98923	1.8187	.47161
#1	.97196	47.262	.48785	9.6534	.48882	1.1722	.38287	4.9025
#2	.96023	47.392	.48268	9.5562	.48826	1.1500	.38447	4.8575
#3	.96213	46.895	.48766	9.6074	.48465	1.1559	.37179	4.8718
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 14:40:17 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.96127	.94929	.93896	.48362	.96581	.96673	.96510
Stddev	.00529	.00476	.00767	.00467	.00268	.00448	.00130
%RSD	.55082	.50164	.81734	.96621	.27763	.46292	.13436
#1	.96644	.95118	.94655	.48681	.96273	.97185	.96425
#2	.95586	.95281	.93912	.47825	.96768	.96354	.96659
#3	.96151	.94387	.93121	.48579	.96700	.96481	.96446
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8074.8	46641.	3084.8
Stddev	12.8	133.	18.4
%RSD	.15824	.28428	.59486
#1	8061.4	46785.	3088.3
#2	8086.9	46523.	3064.9
#3	8076.2	46615.	3101.1

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 14:43:59 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.00075	.00026	.00206	.00087	.00006	-.00390	-.00007
Stddev	.00156	.00812	.00068	.00160	.00062	.00004	.02599	.00036
%RSD	1035.0	1088.9	258.25	77.620	72.146	75.951	665.62	529.10
#1	.00100	.00596	-.00046	.00365	.00132	.00010	-.03020	.00015
#2	-.00165	.00489	.00037	.00045	.00112	.00002	-.00329	.00014
#3	.00111	-.00861	.00089	.00207	.00015	.00005	.02177	-.00049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00061	.00026	-.00361	-.07520	.00069	.01969	-.00125
Stddev	.00016	.00033	.00088	.00455	.07635	.00199	.00698	.00017
%RSD	124.76	53.924	334.68	126.06	101.53	290.03	35.426	13.319
#1	-.00005	.00082	.00126	-.00811	.01272	-.00150	.02673	-.00138
#2	.00026	.00023	-.00042	-.00369	-.11353	.00238	.01277	-.00130
#3	.00016	.00077	-.00005	.00098	-.12479	.00117	.01957	-.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00166	-.00275	.00037	.00208	-.00144	.00044	.00560	.00117
Stddev	.00029	.02001	.00045	.00113	.00140	.00241	.00185	.00112
%RSD	17.264	727.08	119.88	54.385	97.115	551.63	32.972	95.725
#1	.00136	.01876	.00036	.00297	-.00290	.00006	.00774	.00241
#2	.00169	-.00621	.00083	.00081	-.00133	-.00176	.00455	.00091
#3	.00194	-.02082	-.00007	.00245	-.00010	.00302	.00452	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 14:43:59 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00012**	**.00020**	**.00268**	**.00090**	**-.00002**	**.00007**	**.00079**
Stddev	.00049	.00031	.00608	.00338	.00092	.00007	.00022
%RSD	403.62	153.43	226.69	373.90	5032.9	104.09	27.352
#1	-.00049	.00055	-.00003	.00467	.00008	-.00001	.00054
#2	-.00032	.00013	.00964	-.00187	.00085	.00009	.00093
#3	.00044	-.00007	-.00157	-.00008	-.00099	.00013	.00090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8172.0**	**47648.**	**3078.1**
Stddev	64.9	350.	9.5
%RSD	.79392	.73460	.30987
#1	8101.1	47961.	3087.4
#2	8228.4	47714.	3068.4
#3	8186.4	47270.	3078.7

Approved: June 15, 2016

Sample Name: LLCCV Acquired: 6/14/2016 14:48:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00979	.16139	.00635	.07835	.00792	.00157	.38322	.00073
Stddev	.00179	.00594	.00207	.00088	.00061	.00003	.05584	.00011
%RSD	18.313	3.6833	32.545	1.1236	7.6693	2.1807	14.570	14.738
#1	.01185	.15625	.00826	.07743	.00850	.00157	.31895	.00084
#2	.00863	.16790	.00664	.07918	.00729	.00160	.41981	.00062
#3	.00887	.16001	.00415	.07843	.00796	.00153	.41090	.00074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00370	.00385	.00386	.08058	.67879	.07657	.33166	.00633
Stddev	.00039	.00073	.00103	.01502	.02336	.00300	.05512	.00237
%RSD	10.417	19.063	26.542	18.641	3.4417	3.9149	16.621	37.471
#1	.00414	.00336	.00293	.08770	.68168	.07837	.32433	.00375
#2	.00347	.00349	.00371	.06332	.65412	.07825	.28056	.00681
#3	.00349	.00469	.00496	.09071	.70057	.07311	.39008	.00842
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00736	.38207	.01611	.75146	.00769	.07705	.01527	.76721
Stddev	.00029	.00935	.00057	.01311	.00339	.00101	.00082	.00931
%RSD	3.8806	2.4471	3.5650	1.7447	44.017	1.3142	5.3546	1.2136
#1	.00703	.39162	.01658	.76590	.00507	.07696	.01442	.77085
#2	.00753	.38164	.01628	.74819	.01152	.07608	.01535	.77415
#3	.00751	.37294	.01547	.74030	.00650	.07810	.01605	.75663
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: LLCCV Acquired: 6/14/2016 14:48:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38819**	**.03866**	**.03101**	**.14787**	**.00784**	**.01607**	**.04257**
Stddev	.00667	.00044	.00342	.00413	.00022	.00032	.00135
%RSD	1.7177	1.1337	11.035	2.7928	2.8059	1.9833	3.1768
#1	.39344	.03817	.03295	.14966	.00775	.01637	.04102
#2	.39045	.03879	.02706	.15080	.00810	.01611	.04352
#3	.38069	.03902	.03303	.14314	.00769	.01574	.04317
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8296.2**	**47601.**	**3111.3**
Stddev	90.1	568.	13.6
%RSD	1.0858	1.1931	.43636
#1	8224.2	47445.	3122.5
#2	8267.2	47127.	3096.2
#3	8397.2	48230.	3115.2

Approved: June 15, 2016

Sample Name: LLCCV Acquired: 6/14/2016 14:51:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02082**	**.39736**	**.01945**	**.19110**	**.01962**	**.00387**	**.96551**	**.00167**
Stddev	.00017	.01047	.00274	.00416	.00055	.00004	.03154	.00022
%RSD	.83706	2.6349	14.094	2.1769	2.8156	.99294	3.2670	13.376
#1	.02064	.38704	.01648	.18827	.01923	.00383	.99855	.00181
#2	.02085	.40798	.02189	.18915	.01938	.00389	.93571	.00142
#3	.02098	.39707	.01998	.19587	.02025	.00390	.96228	.00180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00938**	**.00996**	**.01040**	**.19547**	**1.7662**	**.18239**	**.96403**	**.01771**
Stddev	.00030	.00104	.00168	.01682	.0591	.00312	.01940	.00042
%RSD	3.1795	10.411	16.126	8.6059	3.3449	1.7112	2.0125	2.3793
#1	.00910	.01049	.01233	.18962	1.7045	.18589	.95579	.01806
#2	.00969	.01062	.00947	.18236	1.8222	.17990	.95011	.01724
#3	.00936	.00877	.00939	.21444	1.7720	.18138	.98619	.01784
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01760**	**.94036**	**.03831**	**1.7960**	**.01636**	**.18198**	**.03416**	**1.8563**
Stddev	.00047	.01118	.00083	.0228	.00371	.00232	.00543	.0273
%RSD	2.6648	1.1889	2.1625	1.2682	22.677	1.2728	15.891	1.4732
#1	.01714	.92881	.03808	1.7714	.01289	.17976	.03561	1.8275
#2	.01759	.94114	.03923	1.8164	.02027	.18180	.03872	1.8819
#3	.01808	.95113	.03762	1.8002	.01593	.18438	.02816	1.8594
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: LLCCV Acquired: 6/14/2016 14:51:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.93317**	**.09426**	**.05656**	**.35433**	**.01897**	**.03880**	**.09721**
Stddev	.00966	.00085	.00744	.00369	.00021	.00070	.00052
%RSD	1.0356	.90449	13.146	1.0417	1.1135	1.7944	.53191
#1	.92360	.09447	.05025	.35013	.01894	.03800	.09672
#2	.94292	.09332	.05468	.35578	.01878	.03925	.09717
#3	.93298	.09498	.06476	.35707	.01920	.03916	.09775
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8395.4**	**47540.**	**3117.8**
Stddev	101.0	351.	5.0
%RSD	1.2028	.73785	.16055
#1	8511.1	47945.	3121.8
#2	8325.2	47345.	3119.5
#3	8349.9	47331.	3112.2

Approved: June 15, 2016

Sample Name: L1606040301 Acquired: 6/14/2016 14:55:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00044**	**.11669**	**.00278**	**.03288**	**.23711**	**-.00002**	F **320.06**
Stddev	.00109	.00421	.00460	.00346	.00353	.00004	4.65
%RSD	246.41	3.6090	165.31	10.508	1.4879	222.16	1.4526
#1	-.00074	.11285	.00442	.02891	.23351	.00000	314.89
#2	.00140	.11603	.00634	.03458	.24057	-.00006	323.90
#3	.00067	.12119	-.00241	.03516	.23725	.00001	321.38
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.00073**	**.00156**	**.00943**	**.00460**	**259.36**	**1.0897**
Stddev	.00013	.00018	.00069	.00107	.01334	3.30	.0182
%RSD	542.41	24.811	43.871	11.301	290.11	1.2740	1.6702
#1	-.00008	.00089	.00190	.00830	.01810	255.75	1.0703
#2	.00012	.00054	.00077	.01042	.00426	262.24	1.1064
#3	-.00012	.00076	.00201	.00955	-.00857	260.09	1.0924
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.03325**	**.00101**	**.00395**	F **306.28**	**.00090**	**.05246**	**.01346**
Stddev	.05226	.00381	.00023	4.34	.00022	.00477	.00396
%RSD	157.20	378.83	5.8151	1.4154	24.384	9.1005	29.393
#1	-.08555	.00356	.00372	301.61	.00109	.05152	.01000
#2	-.03318	-.00337	.00418	310.18	.00066	.05763	.01778
#3	.01898	.00283	.00395	307.05	.00094	.04822	.01261
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 15, 2016

Sample Name: L1606040301 Acquired: 6/14/2016 14:55:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00314	.01843	.13831	.00117	.39726	F -.04397	.00046
Stddev	.00134	.00502	.00251	.00077	.00693	.00264	.00412
%RSD	42.657	27.220	1.8138	65.252	1.7446	5.9945	905.34
#1	.00159	.02144	.13974	.00041	.38942	-.04171	-.00100
#2	.00386	.02121	.13977	.00194	.40258	-.04687	-.00274
#3	.00396	.01264	.13541	.00118	.39977	-.04332	.00511
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00019	.17944	.00124
Stddev	.00045	.00095	.00012
%RSD	234.31	.52849	10.038
#1	.00014	.17876	.00129
#2	-.00001	.18052	.00109
#3	-.00071	.17903	.00132
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7268.2	42211.	2905.0
Stddev	19.3	805.	36.6
%RSD	.26544	1.9060	1.2612
#1	7285.4	43079.	2937.7
#2	7247.4	41490.	2865.4
#3	7271.8	42066.	2912.0

Approved: June 15, 2016

Sample Name: L1606043701 Acquired: 6/14/2016 14:59:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	.20249	.00014	.01592	.04863	-.00003	46.657	-.00009
Stddev	.00154	.01292	.00087	.00166	.00064	.00002	1.430	.00036
%RSD	258.11	6.3819	607.42	10.410	1.3109	55.475	3.0651	379.11
#1	-.00095	.21556	.00015	.01725	.04934	-.00005	47.944	.00028
#2	.00214	.20218	.00101	.01407	.04811	-.00002	46.909	-.00013
#3	.00060	.18972	-.00073	.01645	.04843	-.00002	45.117	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00094	.00181	.16114	.91914	.00368	8.4800	.00804
Stddev	.00024	.00066	.00033	.01534	.02724	.00649	.1670	.00161
%RSD	432.95	70.175	18.521	9.5207	2.9635	176.31	1.9688	20.032
#1	.00012	.00062	.00144	.17156	.93200	.00684	8.6616	.00898
#2	-.00021	.00169	.00189	.16834	.88785	.00799	8.4452	.00897
#3	.00026	.00050	.00209	.14353	.93757	-.00378	8.3332	.00618
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	3.4956	.00161	.00083	-.00103	-.00270	.00463	4.2291
Stddev	.00022	.1165	.00055	.00923	.00111	.00159	.00420	.0240
%RSD	39.374	3.3333	34.071	1116.8	107.14	58.829	90.524	.56690
#1	-.00049	3.6042	.00154	.00362	-.00120	-.00187	.00870	4.2055
#2	-.00038	3.5101	.00218	-.00948	-.00205	-.00169	.00032	4.2284
#3	-.00080	3.3725	.00109	.00834	.00015	-.00452	.00489	4.2534
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606043701 Acquired: 6/14/2016 14:59:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00142	.12394	.00401	.00187	.00065	.00122	.00068
Stddev	.00118	.00388	.00562	.00191	.00063	.00010	.00038
%RSD	82.618	3.1280	140.20	102.44	97.242	7.9647	55.336
#1	.00044	.12713	.00176	.00132	.00136	.00129	.00025
#2	.00111	.12505	.01040	.00029	.00019	.00111	.00084
#3	.00273	.11962	-.00014	.00400	.00039	.00125	.00096
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7666.9	44676.	2932.8
Stddev	38.9	621.	82.3
%RSD	.50787	1.3906	2.8070
#1	7702.9	43965.	2855.3
#2	7672.3	44948.	2924.0
#3	7625.6	45114.	3019.3

Approved: June 15, 2016

Sample Name: L1606044201 Acquired: 6/14/2016 15:03:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.06775	-.00099	.01077	.03792	-.00001	35.951	-.00002
Stddev	.00142	.00217	.00121	.00116	.00058	.00005	.612	.00015
%RSD	348.65	3.2042	122.65	10.798	1.5279	465.80	1.7012	664.77
#1	.00196	.06598	.00017	.01186	.03726	-.00007	35.720	.00013
#2	.00012	.07017	-.00089	.01091	.03837	.00001	36.644	-.00003
#3	-.00085	.06710	-.00225	.00954	.03812	.00003	35.488	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00012	.00190	.00069	.05905	.42169	.00245	3.0962	.00091
Stddev	.00010	.00056	.00055	.02738	.02928	.00330	.1260	.00190
%RSD	80.494	29.481	79.975	46.366	6.9432	134.62	4.0706	208.96
#1	-.00020	.00126	.00073	.03276	.45069	.00189	2.9539	.00060
#2	-.00014	.00230	.00012	.05700	.42224	-.00053	3.1938	.00294
#3	-.00001	.00214	.00121	.08740	.39214	.00600	3.1408	-.00082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00034	2.0353	.00145	.00938	-.00048	.00198	.00441	3.1225
Stddev	.00019	.0518	.00087	.00904	.00251	.00080	.00294	.0016
%RSD	55.912	2.5449	59.807	96.346	525.99	40.298	66.533	.05125
#1	-.00049	1.9937	.00071	.01109	-.00213	.00290	.00200	3.1219
#2	-.00013	2.0933	.00123	.01744	.00241	.00157	.00768	3.1213
#3	-.00042	2.0188	.00240	-.00039	-.00170	.00147	.00356	3.1243
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606044201 Acquired: 6/14/2016 15:03:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.07580	.00001	-.00149	.00037	.00103	.00011
Stddev	.00073	.00107	.00444	.00076	.00054	.00017	.00074
%RSD	234.83	1.4172	51040.	51.307	145.88	16.090	641.66
#1	-.00003	.07488	-.00391	-.00109	.00088	.00100	-.00028
#2	.00114	.07698	-.00090	-.00101	.00042	.00088	-.00035
#3	-.00019	.07554	.00484	-.00237	-.00019	.00121	.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7655.1	45324.	2926.6
Stddev	29.2	249.	58.7
%RSD	.38133	.55021	2.0066
#1	7676.9	45217.	2926.8
#2	7666.3	45609.	2867.8
#3	7621.9	45147.	2985.2

Approved: June 15, 2016

Sample Name: L1606044202 Acquired: 6/14/2016 15:07:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00071	5.0155	.00085	.01962	.10381	.00031	39.957	.00007
Stddev	.00079	.0624	.00173	.00170	.00182	.00003	.627	.00016
%RSD	111.37	1.2437	203.52	8.6473	1.7492	9.8758	1.5704	222.28
#1	.00002	5.0432	.00250	.02129	.10566	.00030	40.269	-.00011
#2	-.00155	4.9441	.00099	.01968	.10375	.00028	40.367	.00015
#3	-.00061	5.0593	-.00094	.01790	.10203	.00034	39.235	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00219	.00739	.00574	6.1191	1.5761	.00646	7.3380	.11606
Stddev	.00008	.00089	.00034	.0746	.0682	.00451	.0440	.00358
%RSD	3.8501	12.059	6.0032	1.2197	4.3287	69.752	.59930	3.0856
#1	.00228	.00660	.00556	6.1907	1.6008	.00290	7.3655	.11479
#2	.00219	.00836	.00614	6.1247	1.6286	.01153	7.3612	.12010
#3	.00211	.00723	.00552	6.0418	1.4990	.00496	7.2873	.11328
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	3.1686	.00652	.09920	.00355	-.00101	.00107	10.533
Stddev	.00027	.0466	.00088	.00648	.00250	.00236	.00267	.025
%RSD	263.85	1.4714	13.431	6.5323	70.426	232.59	249.65	.24009
#1	.00020	3.2130	.00712	.09543	.00123	-.00323	.00091	10.515
#2	-.00032	3.1727	.00552	.09549	.00620	.00146	-.00152	10.521
#3	-.00019	3.1200	.00693	.10668	.00323	-.00126	.00381	10.562
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606044202 Acquired: 6/14/2016 15:07:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00079	.11398	.05807	.00114	.00826	.03322	.00109
Stddev	.00157	.00167	.00612	.00182	.00050	.00019	.00037
%RSD	199.48	1.4686	10.542	159.45	6.0809	.58566	33.428
#1	.00158	.11525	.05991	.00303	.00851	.03341	.00151
#2	.00179	.11461	.05123	.00098	.00768	.03302	.00096
#3	-.00102	.11208	.06305	-.00059	.00859	.03324	.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7634.9	44727.	2918.7
Stddev	9.8	314.	31.4
%RSD	.12817	.70175	1.0746
#1	7633.5	44505.	2917.5
#2	7645.4	45086.	2887.9
#3	7626.0	44591.	2950.6

Approved: June 15, 2016

Sample Name: L1606044203 Acquired: 6/14/2016 15:11:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	s .00054	s .01992	s .00079	s -.00118	.62846	s .00046
Stddev	.00276	.07964	.00274	.00294	.88673	.00068
%RSD	516.65	399.70	348.55	248.40	141.10	147.45
#1	s .00325	s -.02648	s .00359	s .00146	1.6429	s .00010
#2	.00063	-.02563	.00066	-.00067	.24135	.00003
#3	s -.00228	s .11188	k -.00189	s -.00434	.00111	s .00124
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Elem	Ca4226	Cd2288	Co2286	Cr2677	Cu2247	Fe2611
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -30.820	s .00004	s .00110	s .00140	s -.00014	k 2.7346
Stddev	49.164	.00019	.00135	.00266	.00100	4.0096
%RSD	159.52	483.93	122.55	190.52	710.88	146.62
#1	-87.516	s -.00017	s .00078	s .00078	s -.00118	k 7.3417
#2	-4.9774	.00017	.00259	-.00090	-.00007	.82745
#3	.0328	k .00012	k -.00005	s .00432	k .00082	k .03457
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	270.00					
Low Limit	-.10000					

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	29.752	F -1.7197	k 13.519	k .30236	s -.00125	F -24.342
Stddev	54.733	1.8429	21.494	.55439	.00062	36.570
%RSD	183.96	107.16	158.98	183.36	50.004	150.23
#1	92.919	-3.6653	k 38.307	k .94211	s -.00196	-66.396
#2	-3.5891	-1.4933	2.2059	-.03735	-.00080	-6.6160
#3	-.07354	-.00043	k .04565	k .00232	k -.00098	-.0131
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit		36.000				270.00
Low Limit		-.10000				-.50000

Approved: June 15, 2016

Sample Name: L1606044203 Acquired: 6/14/2016 15:11:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	s **-.00058**	s **-.01024**	sF **-.00505**	s **.00295**	s **.00306**	s **.01376**
Stddev	.00345	.01054	.01028	.00401	.00551	.03196
%RSD	591.14	102.97	203.73	135.92	179.85	232.32
#1	s -.00452	s -.02193	s -.01686	s .00414	s .00942	s .05066
#2	.00083	-.00146	.00190	.00623	-.00002	-.00396
#3	k .00194	k -.00732	k -.00019	k -.00152	k -.00022	k -.00542
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit			225.00			
Low Limit			-.00500			

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	s **-.00050**	F **-.03956**	kF **-6.3621**	s **-.00132**	s **-.00018**	s **-.00031**
Stddev	.00218	.15821	9.6749	.00091	.00194	.00014
%RSD	434.82	399.95	152.07	69.394	1053.7	44.620
#1	s .00030	-.21371	k -17.496	s -.00139	s -.00009	s -.00015
#2	-.00296	.09528	-1.5844	-.00219	.00171	-.00039
#3	k .00116	-.00024	k -.0054	k -.00037	s -.00217	k -.00039
Check ?	Chk Pass	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit		9.0000	36.000			
Low Limit		-.01000	-.03000			

Elem	Zr3391
Units	ppm
Avg	kF **-.27723**
Stddev	.50436
%RSD	181.93
#1	k -.85940
#2	.02775
#3	k -.00005
Check ?	Chk Fail
High Limit	36.000
Low Limit	-.04000

Approved: June 15, 2016

Sample Name: L1606044203 Acquired: 6/14/2016 15:11:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	^ *****	^ *****	939.44
Stddev	-----	-----	1604.6
%RSD	-----	-----	170.80
#1	^ -----	^ -----	2.742
#2	10803.	61946.	23.363
#3	11948.	^ -----	2792.2

Approved: June 15, 2016

Sample Name: L1606044204 Acquired: 6/14/2016 15:15:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00035	.90382	.00126	.01646	.06374	.00013	38.916	-.00008
Stddev	.00097	.00368	.00341	.00103	.00081	.00012	.215	.00023
%RSD	272.85	.40767	270.34	6.2701	1.2688	94.647	.55343	301.83
#1	.00073	.89997	.00520	.01752	.06458	.00025	38.910	.00019
#2	-.00068	.90731	-.00052	.01546	.06370	.00001	38.704	-.00025
#3	-.00111	.90418	-.00089	.01639	.06296	.00012	39.134	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	.00180	.00686	1.3185	.73503	.00102	7.3251	.04660
Stddev	.00032	.00100	.00056	.0217	.01613	.00271	.0264	.00175
%RSD	59.950	55.538	8.1129	1.6466	2.1949	265.70	.36005	3.7497
#1	.00091	.00085	.00634	1.3024	.75359	.00040	7.3547	.04459
#2	.00031	.00171	.00679	1.3100	.72439	-.00132	7.3167	.04767
#3	.00040	.00284	.00745	1.3432	.72711	.00398	7.3040	.04755
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00033	2.8064	.00247	.05513	.00250	.00200	.00793	4.9379
Stddev	.00054	.0316	.00060	.00939	.00208	.00056	.00531	.0407
%RSD	165.02	1.1270	24.108	17.022	83.219	28.057	66.981	.82438
#1	-.00095	2.8419	.00296	.06417	.00327	.00152	.00197	4.9840
#2	.00008	2.7963	.00266	.05580	.00014	.00185	.00964	4.9070
#3	-.00013	2.7812	.00181	.04543	.00407	.00262	.01217	4.9226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606044204 Acquired: 6/14/2016 15:15:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00162	.12336	.00737	-.00004	.00081	.02701	.00020
Stddev	.00073	.00030	.00493	.00400	.00098	.00014	.00044
%RSD	45.314	.24134	66.822	9146.5	121.00	.50285	221.72
#1	.00132	.12370	.00982	.00257	.00193	.02712	.00002
#2	.00245	.12317	.01060	.00195	.00035	.02704	-.00013
#3	.00108	.12320	.00170	-.00465	.00014	.02686	.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7754.1	45315.	2957.6
Stddev	42.8	241.	20.0
%RSD	.55216	.53105	.67617
#1	7707.7	45257.	2940.2
#2	7762.5	45108.	2979.4
#3	7792.1	45579.	2953.2

Approved: June 15, 2016

Sample Name: L1606044205 Acquired: 6/14/2016 15:20:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00049	.67935	.00094	.01451	.11454	.00004	54.607	.00007
Stddev	.00105	.01333	.00197	.00060	.00113	.00009	.192	.00005
%RSD	216.84	1.9628	209.41	4.1071	.98534	237.97	.35243	81.897
#1	-.00062	.68505	-.00069	.01451	.11548	-.00004	54.798	.00007
#2	.00063	.68889	.00039	.01392	.11485	.00001	54.610	.00001
#3	-.00147	.66411	.00312	.01511	.11329	.00014	54.413	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.00260	.00117	.77831	.74549	.00402	7.3643	.03508
Stddev	.00033	.00046	.00160	.03294	.04549	.00151	.0950	.00178
%RSD	210.03	17.659	136.21	4.2323	6.1016	37.607	1.2902	5.0604
#1	.00047	.00253	-.00046	.74129	.75116	.00498	7.2563	.03661
#2	.00019	.00310	.00274	.80440	.78787	.00228	7.4350	.03313
#3	-.00019	.00219	.00124	.78923	.69743	.00481	7.4015	.03549
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	2.8626	.00154	.03129	.00208	-.00346	.00510	5.3358
Stddev	.00020	.0203	.00043	.00486	.00307	.00175	.00021	.0265
%RSD	154.01	.70797	27.735	15.544	147.86	50.678	4.1587	.49572
#1	.00007	2.8660	.00198	.02813	.00046	-.00147	.00487	5.3137
#2	-.00013	2.8810	.00154	.03689	.00562	-.00479	.00529	5.3651
#3	-.00033	2.8409	.00112	.02884	.00015	-.00412	.00514	5.3286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606044205 Acquired: 6/14/2016 15:20:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00152	.17678	.00473	.00077	.00066	.00321	.00048
Stddev	.00030	.00079	.00381	.00153	.00117	.00019	.00029
%RSD	19.441	.44752	80.498	198.57	177.07	5.9449	59.784
#1	.00124	.17746	.00780	-.00013	-.00000	.00326	.00079
#2	.00149	.17696	.00047	.00253	.00200	.00337	.00022
#3	.00183	.17591	.00592	-.00010	-.00003	.00300	.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7713.4	44825.	2930.5
Stddev	21.8	248.	11.9
%RSD	.28287	.55396	.40531
#1	7736.6	44748.	2927.0
#2	7693.3	44625.	2920.8
#3	7710.4	45103.	2943.8

Approved: June 15, 2016

Sample Name: L1606044206 Acquired: 6/14/2016 15:23:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.78971	-.00105	.02039	.07992	.00008	53.195	-.00010
Stddev	.00155	.00820	.00371	.00081	.00125	.00008	.554	.00029
%RSD	508.09	1.0389	353.17	3.9831	1.5583	100.42	1.0419	282.75
#1	.00023	.79790	.00046	.01948	.08059	.00013	53.801	.00022
#2	.00189	.78149	-.00527	.02104	.08069	-.00001	53.072	-.00034
#3	-.00121	.78974	.00167	.02065	.07848	.00013	52.713	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	.00218	.00231	.87911	1.0840	.00272	6.9008	.03949
Stddev	.00019	.00073	.00097	.03512	.2109	.00171	.0985	.00186
%RSD	73.437	33.617	42.108	3.9953	19.456	62.810	1.4280	4.7025
#1	.00043	.00209	.00140	.91957	1.2558	.00097	6.8220	.03940
#2	.00032	.00150	.00333	.85641	.84863	.00437	6.8691	.03768
#3	.00005	.00296	.00220	.86136	1.1476	.00281	7.0113	.04140
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00047	3.2767	.00138	.04207	-.00010	-.00210	.00767	5.0194
Stddev	.00013	.0160	.00064	.00473	.00080	.00565	.00218	.0064
%RSD	28.605	.48933	46.377	11.253	818.94	268.51	28.392	.12725
#1	-.00057	3.2941	.00064	.03682	-.00100	-.00176	.01018	5.0185
#2	-.00051	3.2735	.00166	.04601	.00051	.00336	.00623	5.0262
#3	-.00032	3.2625	.00182	.04339	.00020	-.00792	.00660	5.0135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606044206 Acquired: 6/14/2016 15:23:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00044	.19373	.00199	.00119	.00131	.01675	.00042
Stddev	.00092	.00071	.00447	.00133	.00002	.00007	.00052
%RSD	209.64	.36464	224.35	111.45	1.5482	.40557	125.48
#1	-.00054	.19434	-.00133	.00085	.00129	.01673	.00092
#2	.00058	.19390	.00023	.00266	.00131	.01683	-.00012
#3	.00128	.19296	.00708	.00007	.00133	.01670	.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7704.3	44843.	2915.4
Stddev	16.8	228.	40.0
%RSD	.21830	.50801	1.3718
#1	7717.5	44737.	2891.9
#2	7685.4	44688.	2892.8
#3	7710.1	45105.	2961.6

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 15:27:59 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37019**	**9.2290**	**.36188**	**.46327**	**.90739**	**.04601**	F **8.9539**
Stddev	.00352	.0830	.00051	.00383	.00395	.00055	.0256
%RSD	.95044	.89904	.14152	.82653	.43543	1.1953	.28644
#1	.36957	9.2356	.36242	.46323	.90732	.04595	8.9702
#2	.37398	9.3084	.36182	.46711	.90347	.04659	8.9243
#3	.36703	9.1429	.36140	.45945	.91138	.04550	8.9671
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
Value							10.000
Range							-10.000%

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04629**	**.18621**	**.46236**	**.46486**	**3.6336**	**45.441**	**.90441**
Stddev	.00013	.00071	.00538	.00058	.0480	.162	.00628
%RSD	.27125	.37872	1.1625	.12502	1.3206	.35748	.69435
#1	.04642	.18549	.46097	.46537	3.6051	45.473	.91153
#2	.04626	.18690	.46830	.46500	3.6068	45.265	.89964
#3	.04617	.18624	.45782	.46423	3.6890	45.585	.90207
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **8.9682**	**.45212**	**.92258**	**45.466**	**.46577**	**9.2421**	**.46721**
Stddev	.0196	.00369	.00353	.238	.00181	.0276	.00534
%RSD	.21844	.81578	.38249	.52331	.38795	.29887	1.1433
#1	8.9475	.44813	.92401	45.430	.46725	9.2441	.46738
#2	8.9707	.45281	.92516	45.249	.46631	9.2686	.47247
#3	8.9864	.45541	.91856	45.720	.46376	9.2135	.46179
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	10.000						
Range	-10.000%						

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 15:27:59 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.1065	.36190	4.6690	.92220	.90503	F .89756	.46070
Stddev	.0037	.01232	.0140	.00277	.00456	.00795	.00212
%RSD	.33129	3.4043	.29997	.30051	.50383	.88590	.46092
#1	1.1081	.36969	4.6626	.92337	.90591	.89217	.46276
#2	1.1091	.36831	4.6851	.92420	.90009	.89383	.46083
#3	1.1023	.34769	4.6594	.91904	.90909	.90670	.45852
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
Value						1.0000	
Range						-10.000%	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.92561	.93083	.93804
Stddev	.01088	.00205	.00891
%RSD	1.1754	.22003	.95026
#1	.92367	.92865	.94614
#2	.93733	.93272	.92849
#3	.91583	.93112	.93949
Check ?	Chk Pass	Chk Pass	Chk Pass
Value			
Range			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8391.5	48659.	3170.6
Stddev	26.5	196.	26.9
%RSD	.31626	.40316	.84886
#1	8395.5	48726.	3156.5
#2	8363.2	48438.	3201.6
#3	8415.8	48813.	3153.5

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 15:31:41 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	.00829	-.00086	.00211	.00086	.00005	.00731	-.00017
Stddev	.00171	.00239	.00363	.00085	.00009	.00009	.02393	.00012
%RSD	322.91	28.835	422.57	40.186	10.518	197.52	327.25	66.290
#1	-.00117	.00574	-.00029	.00137	.00093	.00011	-.01856	-.00026
#2	.00225	.01047	-.00474	.00193	.00089	.00008	.02865	-.00022
#3	.00051	.00865	.00245	.00304	.00076	-.00006	.01185	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	-.00053	.00005	.02835	-.14787	.00015	.01936	-.00097
Stddev	.00030	.00040	.00111	.01256	.07615	.00395	.08605	.00385
%RSD	220.00	75.448	2129.9	44.295	51.500	2718.9	444.45	395.98
#1	.00048	-.00061	.00073	.03420	-.23525	.00325	-.07841	-.00207
#2	-.00002	-.00089	-.00123	.03692	-.09564	-.00430	.08356	-.00415
#3	-.00006	-.00010	.00066	.01394	-.11271	.00148	.05293	.00331
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00178	-.01343	.00079	.00419	-.00178	-.00120	.00084	.00142
Stddev	.00043	.01144	.00060	.00347	.00174	.00401	.00240	.00094
%RSD	24.300	85.175	76.408	82.936	98.074	334.16	286.95	66.123
#1	.00130	-.01354	.00009	.00166	-.00282	.00277	.00165	.00060
#2	.00189	-.02481	.00114	.00814	.00024	-.00526	-.00187	.00123
#3	.00214	-.00194	.00113	.00275	-.00275	-.00111	.00273	.00245
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 15:31:41 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00144**	**-.00015**	**.00829**	**.00071**	**.00060**	**-.00027**	**.00048**
Stddev	.00021	.00025	.00385	.00305	.00095	.00032	.00041
%RSD	14.613	163.08	46.437	430.49	160.23	118.65	85.624
#1	.00121	.00009	.00834	.00148	.00103	.00010	.00005
#2	.00162	-.00013	.01212	.00330	-.00050	-.00049	.00086
#3	.00148	-.00041	.00442	-.00265	.00126	-.00042	.00052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8439.4**	**49045.**	**3190.3**
Stddev	36.7	215.	18.8
%RSD	.43529	.43903	.58776
#1	8448.0	49185.	3203.4
#2	8471.1	48797.	3198.8
#3	8399.1	49153.	3168.8

Approved: June 15, 2016

Sample Name: L1606044301 Acquired: 6/14/2016 15:35:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00083	.94483	-.00077	.01655	.05842	.00010	55.517	.00001
Stddev	.00080	.01282	.00471	.00060	.00033	.00009	.209	.00003
%RSD	95.507	1.3568	611.07	3.6218	.57276	90.815	.37579	373.01
#1	-.00007	.95472	-.00053	.01678	.05819	.00014	55.734	.00001
#2	.00144	.94943	.00381	.01699	.05880	-.00000	55.318	-.00003
#3	.00112	.93035	-.00559	.01587	.05826	.00016	55.497	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.00140	.00161	.82585	1.5152	-.00017	11.041	.02198
Stddev	.00008	.00028	.00042	.00767	.0714	.00158	.206	.00163
%RSD	19.490	19.904	26.087	.92853	4.7105	944.41	1.8614	7.4226
#1	.00039	.00135	.00200	.83241	1.4975	-.00085	11.122	.02056
#2	.00034	.00114	.00116	.81742	1.5938	-.00129	10.807	.02377
#3	.00050	.00169	.00167	.82772	1.4544	.00164	11.193	.02162
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	4.2627	.00174	.03928	.00201	-.00196	.00097	5.0783
Stddev	.00019	.0574	.00030	.00947	.00245	.00241	.00332	.0117
%RSD	107.79	1.3460	17.454	24.109	121.41	123.00	340.48	.23054
#1	.00006	4.2825	.00193	.03192	.00032	-.00293	.00301	5.0875
#2	.00007	4.1981	.00139	.03595	.00090	-.00372	.00277	5.0823
#3	.00039	4.3076	.00189	.04996	.00482	.00079	-.00285	5.0652
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606044301 Acquired: 6/14/2016 15:35:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00087	.12664	.01000	-.00067	.00186	.01953	.00143
Stddev	.00045	.00010	.00269	.00183	.00034	.00002	.00023
%RSD	51.898	.07772	26.930	275.48	18.205	.10556	16.329
#1	.00048	.12675	.00833	-.00275	.00147	.01953	.00148
#2	.00077	.12659	.01310	.00071	.00199	.01950	.00118
#3	.00136	.12658	.00856	.00004	.00211	.01954	.00163
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7648.5	44599.	2914.5
Stddev	13.7	198.	16.7
%RSD	.17869	.44313	.57148
#1	7641.1	44599.	2897.3
#2	7664.3	44401.	2915.7
#3	7640.1	44796.	2930.6

Approved: June 15, 2016

Sample Name: L1606044302 Acquired: 6/14/2016 15:39:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	.31425	-.00280	.01501	.05999	.00004	43.485	.00009
Stddev	.00169	.00500	.00193	.00271	.00104	.00007	.260	.00043
%RSD	277.77	1.5906	68.793	18.086	1.7418	172.00	.59711	457.14
#1	.00194	.31017	-.00058	.01188	.05978	.00010	43.752	-.00030
#2	-.00129	.31276	-.00400	.01667	.06112	.00006	43.472	.00054
#3	.00117	.31983	-.00384	.01648	.05906	-.00004	43.233	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00041	.00018	.43885	.23787	.49483	.00015	5.4956	.00096
Stddev	.00027	.00085	.00144	.01500	.03424	.00236	.0245	.00030
%RSD	65.688	471.53	.32740	6.3079	6.9196	1550.7	.44681	31.612
#1	-.00040	.00091	.43984	.24714	.53194	-.00252	5.4992	.00128
#2	-.00014	.00037	.43951	.22056	.48812	.00103	5.4694	.00068
#3	-.00068	-.00075	.43720	.24590	.46445	.00195	5.5182	.00092
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	3.0559	.00190	.12813	.00381	.00193	-.00055	4.9185
Stddev	.00026	.0336	.00040	.01180	.00387	.00142	.00988	.0138
%RSD	68.764	1.1012	20.993	9.2062	101.58	73.572	1785.6	.28151
#1	-.00066	3.0532	.00162	.13002	.00128	.00266	.01043	4.9342
#2	-.00037	3.0909	.00236	.13887	.00826	.00285	-.00870	4.9078
#3	-.00013	3.0238	.00173	.11551	.00188	.00029	-.00340	4.9136
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606044302 Acquired: 6/14/2016 15:39:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.15898	.00558	.00058	.00106	.09812	.00095
Stddev	.00108	.00135	.00502	.00238	.00029	.00040	.00063
%RSD	330.35	.84703	89.858	410.53	26.892	.40424	66.505
#1	.00004	.15983	.00119	.00319	.00098	.09808	.00035
#2	.00152	.15968	.01105	-.00147	.00138	.09853	.00161
#3	-.00058	.15742	.00451	.00002	.00083	.09774	.00089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7669.7	44854.	2899.8
Stddev	24.4	236.	14.7
%RSD	.31765	.52585	.50829
#1	7666.9	44611.	2885.4
#2	7646.9	44869.	2899.1
#3	7695.4	45082.	2914.8

Approved: June 15, 2016

Sample Name: L1606044303 Acquired: 6/14/2016 15:43:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00192	.06868	.00062	.01204	.02592	-.00003	47.125	-.00016
Stddev	.00223	.00330	.00339	.00465	.00096	.00004	.501	.00017
%RSD	115.82	4.7994	550.31	38.640	3.7083	111.70	1.0633	107.83
#1	.00395	.06487	.00075	.00713	.02610	-.00000	47.635	-.00003
#2	.00229	.07073	-.00284	.01639	.02678	-.00002	47.105	-.00010
#3	-.00046	.07042	.00394	.01260	.02488	-.00007	46.634	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.00071	.00154	.05952	.86052	.00487	5.3933	.00488
Stddev	.00031	.00079	.00044	.02152	.11673	.00275	.0232	.00290
%RSD	1753.1	110.70	28.366	36.162	13.565	56.602	.43099	59.379
#1	.00038	.00160	.00178	.04194	.95094	.00788	5.4060	.00389
#2	-.00011	.00009	.00182	.08353	.72874	.00426	5.4074	.00815
#3	-.00021	.00045	.00104	.05310	.90188	.00247	5.3665	.00261
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	3.4088	.00121	.10337	-.00263	.00085	.00133	4.2146
Stddev	.00019	.0392	.00040	.00520	.00140	.00243	.00426	.0129
%RSD	117.75	1.1508	32.874	5.0262	53.377	287.74	320.72	.30560
#1	-.00036	3.4506	.00127	.09962	-.00102	.00363	-.00276	4.2293
#2	-.00015	3.3728	.00079	.10120	-.00360	-.00088	.00100	4.2095
#3	.00002	3.4030	.00158	.10930	-.00327	-.00021	.00574	4.2050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606044303 Acquired: 6/14/2016 15:43:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.13830	-.00843	.00082	-.00023	.00100	.00069
Stddev	.00054	.00099	.00311	.00249	.00049	.00009	.00031
%RSD	249.80	.71918	36.859	303.24	216.47	8.9909	45.504
#1	-.00006	.13944	-.01026	.00312	.00032	.00107	.00070
#2	-.00013	.13790	-.01018	-.00182	-.00036	.00090	.00037
#3	.00084	.13758	-.00484	.00116	-.00064	.00103	.00099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7655.8	45074.	2925.2
Stddev	25.7	330.	40.5
%RSD	.33624	.73106	1.3836
#1	7628.7	44706.	2879.2
#2	7680.0	45173.	2941.2
#3	7658.6	45343.	2955.3

Approved: June 15, 2016

Sample Name: L1606044601 Acquired: 6/14/2016 15:47:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00080	.03283	-.00210	.01285	.08206	.00004	28.822	-.00008
Stddev	.00146	.00667	.00072	.00446	.00077	.00005	.286	.00026
%RSD	182.20	20.307	34.086	34.746	.93723	123.48	.99355	320.10
#1	-.00072	.02516	-.00128	.01161	.08195	.00010	29.141	-.00037
#2	.00062	.03606	-.00244	.00913	.08135	.00003	28.587	-.00001
#3	-.00231	.03726	-.00258	.01780	.08288	-.00000	28.738	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.00140	.05688	.81359	.41082	.00176	5.4125	.36346
Stddev	.00031	.00107	.00111	.01675	.05974	.00276	.1335	.00176
%RSD	2959.0	76.740	1.9535	2.0591	14.541	156.52	2.4660	.48543
#1	.00034	.00232	.05816	.81207	.43404	.00005	5.5071	.36470
#2	-.00004	.00022	.05630	.79765	.34295	.00494	5.2598	.36425
#3	-.00027	.00166	.05619	.83105	.45545	.00029	5.4706	.36144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00060	11.894	.00143	.04483	-.00076	.00045	.00040	5.6474
Stddev	.00054	.103	.00087	.00510	.00348	.00096	.00380	.0084
%RSD	90.785	.86679	61.013	11.379	456.15	215.61	960.82	.14967
#1	-.00099	12.013	.00187	.03900	-.00157	.00108	-.00219	5.6569
#2	-.00083	11.848	.00198	.04848	-.00376	-.00066	.00476	5.6443
#3	.00002	11.823	.00042	.04701	.00305	.00092	-.00138	5.6409
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606044601 Acquired: 6/14/2016 15:47:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00085	.13394	.00143	.00015	-.00060	.02010	.00054
Stddev	.00025	.00125	.00347	.00203	.00054	.00005	.00081
%RSD	29.080	.93161	241.50	1315.7	89.901	.23060	150.64
#1	.00106	.13536	.00534	-.00042	-.00018	.02011	.00065
#2	.00058	.13344	.00022	.00241	-.00041	.02014	-.00032
#3	.00091	.13302	-.00126	-.00152	-.00120	.02005	.00129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7671.8	44661.	2894.4
Stddev	24.4	417.	52.3
%RSD	.31835	.93286	1.8066
#1	7645.6	44196.	2844.2
#2	7675.9	44787.	2890.5
#3	7694.0	45001.	2948.5

Approved: June 15, 2016

Sample Name: L1606044701 Acquired: 6/14/2016 15:51:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00040	.01675	-.00233	.01185	.08080	.00001	107.29	.00013
Stddev	.00263	.00406	.00217	.00379	.00030	.00012	.64	.00027
%RSD	652.02	24.229	93.196	31.979	.37610	2143.5	.59439	211.01
#1	-.00083	.01266	-.00072	.01620	.08068	-.00014	108.02	-.00017
#2	.00241	.02077	-.00480	.01003	.08115	.00008	107.00	.00020
#3	-.00279	.01682	-.00147	.00931	.08058	.00008	106.84	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	.00157	.06676	.02685	1.0096	.00493	8.2299	.00074
Stddev	.00010	.00075	.00043	.01320	.1054	.00459	.0218	.00075
%RSD	62.888	47.612	.65037	49.178	10.443	93.171	.26502	101.69
#1	-.00026	.00177	.06691	.02916	1.1302	.00948	8.2537	.00001
#2	-.00016	.00220	.06709	.01264	.93506	.00029	8.2252	.00069
#3	-.00006	.00074	.06627	.03875	.96343	.00501	8.2108	.00151
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00064	5.5572	.00069	.02575	.00281	-.00010	.00314	4.8264
Stddev	.00034	.0190	.00058	.00140	.00068	.00467	.00191	.0154
%RSD	53.302	.34155	83.998	5.4386	24.061	4744.8	60.793	.31803
#1	-.00101	5.5638	.00047	.02474	.00350	.00031	.00197	4.8287
#2	-.00059	5.5358	.00025	.02517	.00277	.00436	.00212	4.8405
#3	-.00033	5.5720	.00134	.02735	.00215	-.00496	.00535	4.8100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606044701 Acquired: 6/14/2016 15:51:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00126	.28580	-.01963	-.00067	-.00037	.05982	-.00015
Stddev	.00057	.00037	.00570	.00284	.00063	.00030	.00078
%RSD	45.524	.12779	29.018	425.88	170.42	.49562	508.44
#1	.00063	.28566	-.02579	-.00097	.00033	.06010	-.00077
#2	.00139	.28622	-.01455	.00231	-.00055	.05984	-.00043
#3	.00176	.28553	-.01855	-.00334	-.00088	.05951	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7550.7	44078.	2904.1
Stddev	3.5	167.	29.8
%RSD	.04633	.37836	1.0246
#1	7552.5	44215.	2874.7
#2	7553.0	43893.	2903.3
#3	7546.7	44127.	2934.2

Approved: June 15, 2016

Sample Name: L1606044203 Acquired: 6/14/2016 15:55:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00131	11.112	.00161	.02302	.15599	.00065	37.525	.00016
Stddev	.00136	.042	.00103	.00167	.00104	.00010	.057	.00010
%RSD	103.90	.37520	63.879	7.2535	.66564	15.171	.15132	62.036
#1	.00007	11.083	.00155	.02421	.15676	.00056	37.564	.00012
#2	-.00135	11.093	.00061	.02112	.15481	.00075	37.550	.00028
#3	-.00264	11.160	.00266	.02374	.15639	.00063	37.459	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00456	.01455	.01003	12.098	3.0486	.01840	7.6211	.19756
Stddev	.00057	.00205	.00098	.042	.0756	.00083	.0508	.00057
%RSD	12.525	14.093	9.7234	.34548	2.4813	4.5384	.66641	.28648
#1	.00390	.01360	.00937	12.140	3.1033	.01749	7.5668	.19812
#2	.00484	.01691	.01115	12.098	2.9623	.01857	7.6289	.19757
#3	.00492	.01315	.00958	12.056	3.0802	.01914	7.6675	.19699
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	3.0577	.01273	.19586	.00832	-.00305	.00300	18.992
Stddev	.00032	.0079	.00024	.00861	.00057	.00238	.00382	.087
%RSD	247.33	.25810	1.8938	4.3984	6.8097	77.867	127.64	.45862
#1	-.00048	3.0622	.01281	.18736	.00844	-.00539	-.00003	18.908
#2	.00017	3.0624	.01246	.19565	.00771	-.00313	.00172	19.082
#3	-.00008	3.0486	.01292	.20459	.00883	-.00064	.00730	18.988
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606044203 Acquired: 6/14/2016 15:55:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00147	.11444	.12341	.00291	.01817	.08390	.00170
Stddev	.00018	.00085	.00681	.00156	.00050	.00046	.00033
%RSD	12.268	.74678	5.5166	53.415	2.7290	.55383	19.220
#1	.00164	.11399	.12441	.00260	.01804	.08339	.00138
#2	.00149	.11390	.11615	.00460	.01775	.08402	.00204
#3	.00128	.11542	.12966	.00153	.01872	.08429	.00169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7772.8	45486.	2934.4
Stddev	39.2	53.	6.6
%RSD	.50428	.11606	.22468
#1	7810.2	45505.	2928.1
#2	7776.3	45426.	2941.3
#3	7732.0	45526.	2933.7

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 15:59:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.38891	9.7125	.37998	.48822	.95091	.04849	9.4023	.04812
Stddev	.00293	.0408	.00051	.00240	.00479	.00025	.0796	.00022
%RSD	.75420	.42011	.13412	.49100	.50342	.51406	.84648	.46490
#1	.39225	9.7596	.38013	.48582	.94841	.04866	9.3911	.04830
#2	.38673	9.6873	.38039	.49062	.94788	.04860	9.3290	.04820
#3	.38777	9.6907	.37941	.48822	.95643	.04820	9.4870	.04787
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19607	.48779	.48916	3.8239	47.366	.94326	9.4722	.47492
Stddev	.00107	.00373	.00382	.0265	.180	.00342	.0706	.00305
%RSD	.54588	.76387	.78192	.69417	.38084	.36297	.74564	.64195
#1	.19710	.49112	.49085	3.7947	47.206	.94177	9.5253	.47291
#2	.19497	.48850	.48478	3.8467	47.331	.94083	9.4993	.47341
#3	.19614	.48376	.49184	3.8302	47.562	.94718	9.3920	.47843
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.96730	47.630	.49065	9.7031	.49070	1.1679	.37988	4.8920
Stddev	.00778	.255	.00409	.0539	.00399	.0060	.00902	.0247
%RSD	.80397	.53592	.83410	.55504	.81226	.51680	2.3738	.50458
#1	.97622	47.436	.49475	9.7545	.49529	1.1715	.38855	4.9124
#2	.96196	47.534	.48657	9.6471	.48808	1.1714	.37055	4.8645
#3	.96371	47.919	.49064	9.7076	.48873	1.1610	.38052	4.8991
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 15:59:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.96738	.94921	.93495	.48534	.97439	.97833	.98533
Stddev	.00366	.00545	.00103	.00596	.00678	.00607	.00704
%RSD	.37794	.57410	.11058	1.2280	.69586	.62056	.71495
#1	.97078	.94734	.93568	.49181	.97746	.98512	.99347
#2	.96351	.94494	.93377	.48008	.97910	.97344	.98140
#3	.96783	.95535	.93541	.48412	.96662	.97641	.98113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8114.7	46873.	3071.7
Stddev	23.9	188.	13.5
%RSD	.29483	.40094	.43845
#1	8091.4	46745.	3061.4
#2	8113.4	47089.	3086.9
#3	8139.2	46787.	3066.6

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 16:03:09 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00063	.00601	.00010	.00281	.00034	.00004	-.00166	-.00003
Stddev	.00178	.00640	.00377	.00038	.00089	.00005	.02435	.00020
%RSD	283.54	106.40	3764.9	13.448	258.27	122.00	1470.6	590.98
#1	.00005	-.00106	-.00403	.00239	-.00024	-.00002	-.01899	-.00027
#2	-.00265	.00771	.00335	.00313	.00137	.00008	-.01216	.00007
#3	.00071	.01139	.00098	.00291	-.00009	.00007	.02618	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	-.00030	.00036	.01279	-.12005	-.00056	-.05022	-.00285
Stddev	.00069	.00092	.00100	.01697	.07647	.00076	.13069	.00065
%RSD	1776.4	305.09	273.63	132.65	63.699	136.14	260.22	22.979
#1	-.00008	-.00071	.00041	-.00644	-.04591	-.00090	.09093	-.00216
#2	.00067	.00075	.00133	.02567	-.11558	-.00108	-.16704	-.00346
#3	-.00070	-.00095	-.00066	.01914	-.19866	.00031	-.07456	-.00293
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00151	-.03119	.00106	.00584	.00053	-.00247	-.00147	.00152
Stddev	.00042	.04482	.00091	.00766	.00200	.00558	.00067	.00151
%RSD	27.751	143.70	85.600	131.20	380.16	226.39	45.698	99.453
#1	.00118	-.05886	.00070	-.00296	-.00055	.00371	-.00129	-.00015
#2	.00137	.02052	.00210	.01108	.00283	-.00396	-.00221	.00191
#3	.00198	-.05521	.00039	.00940	-.00071	-.00715	-.00091	.00280
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 16:03:09 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00063**	**-.00007**	**-.00042**	**.00031**	**-.00026**	**-.00025**	**.00102**
Stddev	.00062	.00033	.00669	.00104	.00059	.00019	.00019
%RSD	98.839	500.26	1604.2	340.25	230.81	75.967	18.598
#1	.00025	.00024	.00629	-.00042	.00039	-.00003	.00097
#2	.00029	-.00042	-.00045	.00150	-.00037	-.00033	.00085
#3	.00135	-.00002	-.00709	-.00016	-.00078	-.00039	.00122
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8232.4**	**47973.**	**3040.4**
Stddev	31.1	288.	5.5
%RSD	.37775	.60022	.17943
#1	8197.2	47801.	3045.7
#2	8256.1	47812.	3034.8
#3	8243.8	48305.	3040.7

Approved: June 15, 2016

Sample Name: PBW 53 Acquired: 6/14/2016 16:07:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572463-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	.02998	-.00013	.00649	.00094	.00013	.05144	-.00024
Stddev	.00075	.00761	.00099	.00070	.00022	.00013	.02465	.00005
%RSD	87.541	25.370	749.41	10.727	23.200	97.464	47.926	19.015
#1	.00154	.03432	-.00127	.00728	.00076	.00024	.05075	-.00020
#2	.00005	.02120	.00053	.00595	.00087	-.00001	.07644	-.00029
#3	.00099	.03442	.00034	.00625	.00118	.00017	.02714	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00063	.00022	.00749	-.14447	-.00333	-.02923	-.00060
Stddev	.00019	.00169	.00053	.00649	.09010	.00042	.09794	.00285
%RSD	157.60	266.70	244.38	86.675	62.367	12.701	335.06	478.79
#1	-.00004	.00243	-.00037	.00438	-.24851	-.00361	-.00672	.00133
#2	.00033	-.00092	.00035	.00314	-.09178	-.00353	-.13646	-.00387
#3	.00007	.00039	.00067	.01495	-.09312	-.00284	.05549	.00075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	-.02146	.00131	-.00648	.00005	-.00086	.00712	.00204
Stddev	.00058	.01487	.00154	.00488	.00248	.00455	.00238	.00008
%RSD	289.27	69.325	117.54	75.247	5206.9	527.23	33.431	4.1127
#1	-.00045	-.03458	.00024	-.00453	-.00034	-.00258	.00915	.00213
#2	.00040	-.00530	.00307	-.00288	-.00221	.00430	.00450	.00204
#3	.00064	-.02449	.00061	-.01203	.00270	-.00431	.00770	.00196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: PBW 53 Acquired: 6/14/2016 16:07:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572463-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00062	.00116	.00369	-.00074	.00015	.00252	.00083
Stddev	.00084	.00029	.00218	.00268	.00047	.00004	.00047
%RSD	135.67	25.163	59.057	360.86	304.10	1.6265	57.345
#1	.00098	.00117	.00167	-.00163	.00059	.00250	.00034
#2	.00123	.00145	.00600	.00227	.00022	.00249	.00086
#3	-.00034	.00087	.00340	-.00287	-.00034	.00256	.00128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7737.0	45156.	2929.4
Stddev	23.3	249.	37.2
%RSD	.30064	.55160	1.2693
#1	7722.8	44906.	2887.1
#2	7724.4	45159.	2956.6
#3	7763.9	45404.	2944.6

Approved: June 15, 2016

Sample Name: LCSW 53 Acquired: 6/14/2016 16:11:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572463-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20502**	**5.2225**	**.20642**	**1.0182**	**.52227**	**.02545**	**5.2203**	**.02613**
Stddev	.00345	.0454	.00026	.0111	.00382	.00028	.1066	.00035
%RSD	1.6817	.86924	.12803	1.0894	.73163	1.0919	2.0428	1.3502
#1	.20232	5.1729	.20648	1.0055	.52201	.02515	5.1822	.02622
#2	.20383	5.2620	.20665	1.0240	.51859	.02553	5.1380	.02642
#3	.20890	5.2327	.20614	1.0253	.52622	.02568	5.3408	.02573
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10689**	**.26365**	**.26616**	**2.0833**	**25.570**	**.51931**	**5.1932**	**.25849**
Stddev	.00021	.00198	.00196	.0036	.123	.00291	.0839	.00488
%RSD	.19311	.74994	.73506	.17375	.48025	.56062	1.6162	1.8879
#1	.10687	.26146	.26392	2.0818	25.530	.51743	5.2674	.26315
#2	.10669	.26532	.26752	2.0875	25.471	.51784	5.1021	.25342
#3	.10710	.26417	.26704	2.0807	25.707	.52266	5.2099	.25891
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53219**	**25.989**	**.26935**	**5.1157**	**.26583**	**.63140**	**.20253**	**2.6705**
Stddev	.00130	.235	.00082	.0122	.00559	.00279	.00298	.0044
%RSD	.24461	.90267	.30355	.23929	2.1024	.44109	1.4715	.16477
#1	.53069	26.047	.26855	5.1044	.27196	.62820	.20539	2.6654
#2	.53284	25.730	.27018	5.1287	.26102	.63321	.19944	2.6734
#3	.53303	26.188	.26933	5.1141	.26452	.63280	.20277	2.6726
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: LCSW 53 Acquired: 6/14/2016 16:11:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572463-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52854**	**.52944**	**.51750**	**.26366**	**.52365**	**.53202**	**.00444**
Stddev	.00045	.00403	.01055	.00473	.00620	.00114	.00121
%RSD	.08522	.76107	2.0378	1.7945	1.1844	.21430	27.365
#1	.52858	.52895	.50980	.25880	.51649	.53072	.00333
#2	.52808	.52568	.51319	.26393	.52739	.53244	.00425
#3	.52898	.53369	.52952	.26825	.52706	.53288	.00574
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7655.3**	**44877.**	**2918.8**
Stddev	38.0	268.	11.4
%RSD	.49703	.59614	.39040
#1	7663.6	45156.	2915.4
#2	7688.5	44623.	2931.5
#3	7613.8	44852.	2909.5

Approved: June 15, 2016

Sample Name: F BLANK Acquired: 6/14/2016 16:14:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572463-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00054	.01871	.00246	.00331	.00203	.00007	.04530	-.00009
Stddev	.00032	.00452	.00296	.00277	.00084	.00003	.04120	.00028
%RSD	60.483	24.171	120.34	83.684	41.492	43.432	90.942	301.74
#1	-.00027	.01918	.00066	.00234	.00136	.00005	.07727	.00015
#2	-.00090	.01398	.00085	.00116	.00175	.00006	-.00119	-.00040
#3	-.00044	.02299	.00588	.00644	.00297	.00010	.05981	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00038	.00119	.00049	.01827	-.11284	-.00438	-.00184	.00025
Stddev	.00029	.00050	.00054	.02171	.14297	.00156	.07871	.00165
%RSD	75.410	42.227	109.51	118.83	126.70	35.544	4266.6	656.42
#1	-.00071	.00167	.00107	.00623	-.27793	-.00529	-.08921	-.00126
#2	-.00028	.00123	.00000	.00525	-.03024	-.00526	.06355	.00202
#3	-.00016	.00067	.00041	.04333	-.03035	-.00258	.02013	.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.02769	-.00007	-.00504	.00126	-.00282	.00159	.00261
Stddev	.00023	.00982	.00050	.00733	.00168	.00172	.00745	.00041
%RSD	93.807	35.460	706.74	145.25	133.76	60.989	469.40	15.677
#1	.00013	.03872	.00018	.00194	.00302	-.00177	-.00618	.00305
#2	.00009	.02446	.00026	-.01266	.00107	-.00188	.00866	.00253
#3	.00050	.01990	-.00064	-.00441	-.00032	-.00480	.00228	.00224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: F BLANK Acquired: 6/14/2016 16:14:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572463-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00144	.00176	.00556	-.00010	.00021	.00147	-.00001
Stddev	.00066	.00027	.00127	.00137	.00042	.00004	.00018
%RSD	45.684	15.394	22.866	1397.3	202.39	2.9369	1486.2
#1	.00073	.00170	.00582	.00010	.00052	.00145	.00013
#2	.00202	.00206	.00418	-.00156	.00036	.00152	-.00021
#3	.00158	.00153	.00668	.00116	-.00027	.00144	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7758.8	45493.	2929.1
Stddev	5.5	16.	17.7
%RSD	.07131	.03506	.60517
#1	7762.6	45478.	2909.9
#2	7761.3	45509.	2932.6
#3	7752.5	45493.	2944.8

Approved: June 15, 2016

Sample Name: L1606054006 Acquired: 6/14/2016 16:18:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572463-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00053**	**.30826**	**.00245**	**.01619**	**.05438**	**.00073**	**11.475**	**.00026**
Stddev	.00136	.00441	.00152	.00158	.00099	.00006	.079	.00020
%RSD	258.25	1.4316	61.903	9.7770	1.8117	7.9344	.68606	76.539
#1	-.00070	.30354	.00111	.01773	.05549	.00067	11.554	.00003
#2	.00029	.30897	.00410	.01457	.05362	.00073	11.477	.00036
#3	.00199	.31228	.00213	.01628	.05403	.00078	11.396	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00902**	**.00105**	**.00123**	**1.4758**	**.14149**	**-.00240**	**2.9836**	**.02658**
Stddev	.00042	.00100	.00056	.0180	.04944	.00226	.1232	.00106
%RSD	4.6701	95.639	45.460	1.2224	34.938	94.324	4.1278	3.9726
#1	.00875	.00109	.00096	1.4966	.17939	-.00010	3.1192	.02537
#2	.00880	.00202	.00086	1.4659	.08557	-.00462	2.9528	.02701
#3	.00950	.00002	.00188	1.4648	.15952	-.00247	2.8787	.02734
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00065**	**5.0398**	**.01193**	**.00647**	**-.00183**	**.00112**	**.00413**	**3.3850**
Stddev	.00017	.0118	.00141	.00153	.00220	.00096	.00489	.0058
%RSD	26.198	.23311	11.846	23.705	120.34	85.390	118.27	.17205
#1	-.00082	5.0513	.01082	.00824	-.00008	.00125	.00391	3.3852
#2	-.00065	5.0404	.01352	.00545	-.00431	.00011	.00913	3.3791
#3	-.00048	5.0278	.01144	.00573	-.00110	.00201	-.00064	3.3908
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606054006 Acquired: 6/14/2016 16:18:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572463-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00123**	**.13012**	**.00443**	**-.00030**	**.00027**	**.00613**	**.00062**
Stddev	.00021	.00089	.00192	.00093	.00031	.00010	.00062
%RSD	17.414	.68145	43.381	313.26	116.66	1.6216	100.99
#1	.00109	.13111	.00664	.00075	-.00002	.00619	.00001
#2	.00111	.12985	.00313	-.00063	.00059	.00602	.00059
#3	.00147	.12940	.00352	-.00101	.00023	.00618	.00125
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7770.7**	**45610.**	**2938.3**
Stddev	18.6	149.	16.1
%RSD	.23915	.32683	.54842
#1	7763.3	45519.	2921.5
#2	7791.9	45529.	2939.7
#3	7757.0	45782.	2953.6

Approved: June 15, 2016

Sample Name: L1606054007S Acquired: 6/14/2016 16:22:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572463-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20330**	**5.5213**	**.20524**	**1.0135**	**.56339**	**.02595**	**16.043**	**.02570**
Stddev	.00096	.0256	.00256	.0059	.00201	.00005	.066	.00008
%RSD	.47259	.46290	1.2486	.57778	.35592	.18431	.41312	.30634
#1	.20333	5.5162	.20814	1.0181	.56111	.02590	16.012	.02576
#2	.20232	5.5490	.20327	1.0156	.56422	.02598	15.998	.02572
#3	.20424	5.4987	.20430	1.0069	.56485	.02598	16.119	.02561
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.11422**	**.26088**	**.26148**	**3.5507**	**25.657**	**.51757**	**7.9644**	**.28160**
Stddev	.00047	.00130	.00175	.0302	.068	.00476	.0721	.00185
%RSD	.40804	.49953	.66936	.85073	.26578	.91886	.90524	.65681
#1	.11375	.26219	.26264	3.5458	25.676	.51991	7.9460	.28139
#2	.11468	.26087	.26234	3.5232	25.582	.51210	7.9033	.28354
#3	.11422	.25959	.25947	3.5830	25.715	.52070	8.0439	.27986
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52538**	**29.363**	**.27468**	**5.0878**	**.26080**	**.62073**	**.20239**	**6.1089**
Stddev	.00281	.043	.00095	.0171	.00390	.00074	.00306	.0218
%RSD	.53537	.14793	.34666	.33563	1.4947	.11842	1.5136	.35630
#1	.52220	29.318	.27390	5.0724	.26429	.62008	.20077	6.0838
#2	.52757	29.367	.27440	5.0847	.25659	.62153	.20592	6.1224
#3	.52635	29.405	.27574	5.1062	.26151	.62057	.20047	6.1204
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606054007S Acquired: 6/14/2016 16:22:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572463-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52322**	**.59450**	**.51115**	**.26026**	**.52151**	**.52827**	**.00073**
Stddev	.00198	.00101	.00748	.00099	.00031	.00095	.00104
%RSD	.37895	.17036	1.4624	.38160	.05849	.17995	141.87
#1	.52099	.59344	.50369	.25922	.52172	.52745	.00028
#2	.52391	.59458	.51864	.26119	.52165	.52931	-.00000
#3	.52476	.59547	.51114	.26038	.52116	.52804	.00192
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7653.6**	**44760.**	**2920.2**
Stddev	4.3	121.	10.2
%RSD	.05601	.27046	.34770
#1	7658.1	44631.	2929.3
#2	7653.2	44778.	2922.2
#3	7649.6	44871.	2909.3

Approved: June 15, 2016

Sample Name: L1606054008SD Acquired: 6/14/2016 16:26:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572463-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20242**	**5.4639**	**.20654**	**1.0107**	**.55978**	**.02574**	**15.954**	**.02572**
Stddev	.00252	.0625	.00249	.0095	.00367	.00020	.113	.00015
%RSD	1.2442	1.1446	1.2051	.94401	.65617	.76165	.70968	.59265
#1	.20426	5.5118	.20912	1.0195	.56271	.02586	16.050	.02581
#2	.19955	5.3931	.20637	1.0006	.56097	.02551	15.983	.02554
#3	.20344	5.4866	.20415	1.0121	.55566	.02584	15.829	.02580
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.11401**	**.26012**	**.26185**	**3.6461**	**25.636**	**.51350**	**7.9415**	**.27893**
Stddev	.00072	.00244	.00037	.0381	.058	.00572	.1108	.00250
%RSD	.63524	.93979	.14071	1.0446	.22574	1.1148	1.3948	.89454
#1	.11384	.26294	.26226	3.6581	25.703	.51891	8.0651	.28062
#2	.11339	.25860	.26154	3.6767	25.600	.51410	7.8511	.28010
#3	.11481	.25883	.26176	3.6034	25.606	.50750	7.9084	.27606
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52546**	**29.197**	**.27393**	**5.0795**	**.26474**	**.62390**	**.20391**	**6.0710**
Stddev	.00261	.175	.00085	.0176	.00234	.00057	.00447	.0287
%RSD	.49680	.59815	.31129	.34592	.88574	.09073	2.1903	.47293
#1	.52602	29.359	.27402	5.0770	.26366	.62424	.19882	6.0612
#2	.52262	29.221	.27303	5.0632	.26743	.62324	.20719	6.0485
#3	.52775	29.012	.27473	5.0981	.26314	.62421	.20572	6.1034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606054008SD Acquired: 6/14/2016 16:26:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572463-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52265**	**.59843**	**.50614**	**.25658**	**.51560**	**.52711**	**.00017**
Stddev	.00284	.00366	.01422	.00267	.00612	.00167	.00052
%RSD	.54266	.61143	2.8095	1.0391	1.1866	.31640	300.48
#1	.51961	.60253	.52203	.25677	.51933	.52667	-.00042
#2	.52312	.59727	.49461	.25382	.50854	.52571	.00043
#3	.52522	.59549	.50179	.25914	.51894	.52896	.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7649.1**	**44897.**	**2907.9**
Stddev	23.2	331.	9.2
%RSD	.30322	.73616	.31680
#1	7668.9	44526.	2897.3
#2	7654.8	45160.	2913.2
#3	7623.6	45006.	2913.2

Approved: June 15, 2016

Sample Name: L1606064503 Acquired: 6/14/2016 16:30:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00132**	**.01150**	**-.00005**	**.00614**	**.00013**	**.00011**	**-.00379**	**-.00012**
Stddev	.00141	.00180	.00044	.00112	.00120	.00005	.00432	.00020
%RSD	106.66	15.628	824.28	18.242	888.48	45.176	114.24	167.64
#1	.00014	.01228	-.00055	.00735	.00109	.00015	.00106	.00009
#2	-.00267	.01278	.00025	.00593	-.00121	.00012	-.00516	-.00014
#3	-.00143	.00945	.00014	.00514	.00052	.00005	-.00726	-.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00018**	**.00094**	**.00065**	**.01297**	**-.13267**	**-.00173**	**.00420**	**-.00047**
Stddev	.00021	.00056	.00045	.00272	.13746	.00286	.03994	.00122
%RSD	114.11	59.466	69.557	20.939	103.61	164.81	951.59	257.72
#1	.00006	.00066	.00086	.01535	-.16257	-.00096	.02232	.00093
#2	-.00028	.00058	.00097	.01357	.01728	.00066	-.04160	-.00130
#3	-.00032	.00159	.00013	.01001	-.25272	-.00490	.03186	-.00105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00025**	**.00193**	**.00094**	**-.00041**	**-.00413**	**.00133**	**.00170**	**.01392**
Stddev	.00007	.03674	.00025	.00534	.00267	.00167	.00316	.00203
%RSD	26.491	1899.3	26.499	1287.9	64.724	125.33	186.06	14.584
#1	-.00021	-.00807	.00066	.00177	-.00487	-.00052	-.00024	.01511
#2	-.00022	-.02877	.00104	.00348	-.00635	.00271	.00535	.01158
#3	-.00033	.04263	.00112	-.00650	-.00116	.00179	-.00001	.01509
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606064503 Acquired: 6/14/2016 16:30:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00101	.00037	.00505	.00047	-.00013	.00108	.00020
Stddev	.00050	.00023	.00363	.00061	.00029	.00025	.00066
%RSD	48.934	63.513	71.935	128.98	220.01	22.710	326.63
#1	.00136	.00058	.00112	-.00014	-.00043	.00131	.00021
#2	.00045	.00040	.00829	.00108	.00015	.00082	.00086
#3	.00124	.00012	.00572	.00049	-.00012	.00112	-.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7747.7	45488.	2923.1
Stddev	26.9	238.	5.4
%RSD	.34760	.52374	.18486
#1	7725.3	45398.	2926.6
#2	7740.3	45309.	2916.9
#3	7777.6	45759.	2925.8

Approved: June 15, 2016

Sample Name: L1606064503PS Acquired: 6/14/2016 16:34:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572626-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20186**	**5.1173**	**.20038**	**.99917**	**.50876**	**.02515**	**5.0916**	**.02544**
Stddev	.00076	.0138	.00013	.00125	.00454	.00006	.0328	.00044
%RSD	.37426	.26892	.06509	.12559	.89193	.24877	.64438	1.7465
#1	.20226	5.1229	.20028	.99775	.51165	.02521	5.0720	.02536
#2	.20099	5.1016	.20053	.99960	.51110	.02509	5.1295	.02505
#3	.20233	5.1273	.20033	1.0001	.50353	.02514	5.0733	.02592
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10526**	**.26078**	**.26205**	**2.0565**	**25.036**	**.50867**	**5.0830**	**.25411**
Stddev	.00081	.00124	.00224	.0079	.201	.00113	.0500	.00451
%RSD	.77104	.47527	.85303	.38346	.80461	.22161	.98310	1.7748
#1	.10448	.26206	.25978	2.0630	25.045	.50878	5.0640	.25847
#2	.10520	.26070	.26212	2.0477	25.233	.50973	5.1396	.25440
#3	.10610	.25959	.26425	2.0590	24.830	.50749	5.0453	.24946
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52345**	**25.498**	**.26585**	**5.0506**	**.26419**	**.61973**	**.20113**	**2.6205**
Stddev	.00145	.178	.00168	.0320	.00199	.00277	.00142	.0129
%RSD	.27632	.69756	.63256	.63420	.75234	.44634	.70372	.49073
#1	.52224	25.575	.26779	5.0176	.26549	.61676	.20202	2.6121
#2	.52306	25.626	.26480	5.0525	.26517	.62022	.19950	2.6142
#3	.52505	25.295	.26496	5.0816	.26190	.62222	.20187	2.6353
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606064503PS Acquired: 6/14/2016 16:34:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572626-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52056**	**.51391**	**.50709**	**.26014**	**.51580**	**.54913**	**.00073**
Stddev	.00071	.00321	.00384	.00456	.00216	.00206	.00013
%RSD	.13609	.62439	.75822	1.7536	.41917	.37507	18.080
#1	.52095	.51608	.50893	.26540	.51513	.54760	.00058
#2	.51974	.51544	.50268	.25779	.51822	.54832	.00082
#3	.52098	.51023	.50967	.25723	.51405	.55148	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7681.7**	**45046.**	**2903.6**
Stddev	20.7	143.	28.5
%RSD	.26996	.31727	.98236
#1	7658.2	44883.	2888.7
#2	7697.3	45147.	2885.7
#3	7689.7	45108.	2936.5

Approved: June 15, 2016

Sample Name: L1606064503SDL Acquired: 6/14/2016 16:38:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG572626-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	-.00132	-.00064	.00241	.00013	.00008	.01142	-.00008
Stddev	.00280	.00394	.00095	.00099	.00109	.00003	.02207	.00016
%RSD	327.95	298.49	147.02	41.076	838.13	35.092	193.22	201.73
#1	-.00083	-.00566	-.00007	.00185	.00139	.00008	-.00249	.00005
#2	-.00069	-.00032	-.00173	.00356	-.00056	.00011	-.00011	-.00003
#3	.00409	.00202	-.00012	.00184	-.00044	.00005	.03686	-.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.00049	.00070	-.00875	-.12175	-.00307	.03462	-.00139
Stddev	.00039	.00108	.00091	.02446	.05201	.00171	.05768	.00146
%RSD	1001.2	218.09	129.25	279.55	42.715	55.890	166.59	104.91
#1	.00010	.00174	-.00032	-.03097	-.14052	-.00162	.00634	-.00282
#2	.00040	-.00009	.00100	.01745	-.16177	-.00262	-.00345	-.00144
#3	-.00038	-.00017	.00143	-.01273	-.06297	-.00496	.10099	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	-.00631	.00097	.00222	-.00123	.00255	.00803	.00158
Stddev	.00022	.02640	.00060	.00113	.00166	.00209	.00387	.00033
%RSD	38.696	418.14	61.760	50.792	135.23	81.960	48.190	20.922
#1	-.00055	-.02847	.00058	.00247	-.00028	.00347	.00920	.00184
#2	-.00035	-.01337	.00067	.00099	-.00314	.00016	.01117	.00170
#3	-.00079	.02290	.00166	.00321	-.00026	.00403	.00371	.00121
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606064503SDL Acquired: 6/14/2016 16:38:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG572626-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00099	-.00014	.00360	.00074	.00020	.00084	.00037
Stddev	.00066	.00023	.00386	.00062	.00023	.00018	.00045
%RSD	66.595	160.02	107.32	84.512	116.94	21.341	120.74
#1	.00077	-.00041	-.00023	.00028	.00012	.00097	.00071
#2	.00173	.00002	.00353	.00145	.00046	.00091	-.00014
#3	.00047	-.00004	.00750	.00048	.00002	.00064	.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8489.3	49496.	3124.4
Stddev	13.1	124.	7.5
%RSD	.15402	.25143	.23943
#1	8478.8	49391.	3123.6
#2	8504.0	49634.	3132.2
#3	8485.2	49465.	3117.3

Approved: June 15, 2016

Sample Name: L1606064503SDL Acquired: 6/14/2016 16:42:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG572626-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**.00106**	**-.00069**	**.00143**	**.00069**	**.00007**	**-.02519**	**-.00008**
Stddev	.00058	.00443	.00246	.00196	.00020	.00008	.03601	.00012
%RSD	688.48	419.34	353.83	137.46	28.716	112.27	142.96	148.74
#1	-.00063	.00295	-.00034	.00353	.00088	-.00002	-.05078	-.00022
#2	-.00016	-.00400	-.00331	.00110	.00071	.00015	.01599	-.00000
#3	.00053	.00422	.00157	-.00035	.00048	.00009	-.04079	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**.00119**	**.00031**	**-.00661**	**-.17608**	**-.00028**	**.04324**	**-.00129**
Stddev	.00010	.00011	.00090	.02052	.10371	.00267	.04520	.00122
%RSD	67.477	9.0638	288.36	310.21	58.899	939.34	104.53	94.298
#1	.00018	.00126	.00135	-.02862	-.23476	-.00030	.08704	-.00117
#2	.00024	.00106	-.00015	.01200	-.05633	-.00295	.04593	-.00257
#3	.00004	.00124	-.00026	-.00322	-.23714	.00239	-.00324	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00077**	**-.02028**	**.00061**	**.00338**	**.00083**	**-.00143**	**.00178**	**-.00235**
Stddev	.00011	.02046	.00059	.00394	.00282	.00314	.00413	.00203
%RSD	14.613	100.88	95.791	116.47	337.45	220.51	232.12	86.314
#1	-.00079	-.04134	.00128	.00783	-.00163	-.00423	.00078	-.00456
#2	-.00065	-.00048	.00035	.00031	.00023	-.00202	.00632	-.00057
#3	-.00087	-.01901	.00020	.00202	.00391	.00197	-.00176	-.00191
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606064503SDL Acquired: 6/14/2016 16:42:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG572626-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.00014	.00387	.00018	.00007	.00051	-.00004
Stddev	.00026	.00018	.00134	.00191	.00021	.00008	.00100
%RSD	81.755	127.45	34.714	1052.9	284.80	15.405	2464.1
#1	.00030	.00004	.00298	.00138	.00011	.00052	-.00086
#2	.00007	.00004	.00321	.00119	-.00015	.00058	.00107
#3	.00059	.00035	.00541	-.00203	.00026	.00042	-.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8461.6	49123.	3127.6
Stddev	25.4	107.	14.7
%RSD	.30044	.21688	.46882
#1	8482.6	49231.	3128.9
#2	8468.9	49121.	3141.6
#3	8433.4	49018.	3112.4

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 16:46:25 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39081	9.7719	.38242	.49067	.96258	.04873	9.5257	.04896
Stddev	.00243	.0072	.00249	.00509	.00353	.00030	.0605	.00014
%RSD	.62175	.07369	.65224	1.0375	.36707	.62365	.63483	.28628
#1	.39344	9.7714	.38513	.49003	.96243	.04864	9.5913	.04883
#2	.38865	9.7793	.38023	.48594	.95913	.04849	9.5136	.04893
#3	.39035	9.7650	.38189	.49606	.96619	.04907	9.4722	.04911
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19898	.49121	.49478	3.8869	48.124	.95094	9.5171	.47509
Stddev	.00009	.00301	.00133	.0319	.240	.00557	.1776	.00391
%RSD	.04391	.61353	.26810	.82011	.49874	.58621	1.8659	.82349
#1	.19900	.48811	.49412	3.9078	48.372	.95547	9.5166	.47912
#2	.19888	.49140	.49391	3.8502	47.892	.94472	9.6950	.47131
#3	.19905	.49413	.49631	3.9026	48.108	.95265	9.3398	.47483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98127	48.463	.49860	9.8742	.49982	1.1859	.38935	4.9766
Stddev	.00366	.211	.00115	.0300	.00206	.0040	.00201	.0076
%RSD	.37269	.43504	.23027	.30428	.41226	.33810	.51546	.15339
#1	.98440	48.651	.49970	9.8816	.50140	1.1900	.38705	4.9778
#2	.98215	48.235	.49868	9.8999	.50058	1.1820	.39029	4.9836
#3	.97725	48.504	.49741	9.8412	.49749	1.1856	.39072	4.9685
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 16:46:25 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98198	.96216	.94599	.48903	.97974	.99268	.99805
Stddev	.00342	.00368	.00950	.00455	.00391	.00161	.00449
%RSD	.34803	.38298	1.0039	.93033	.39906	.16249	.45023
#1	.98593	.96593	.95555	.48842	.97845	.99445	1.0020
#2	.97999	.95857	.94587	.48481	.97664	.99231	.99316
#3	.98003	.96197	.93656	.49385	.98413	.99128	.99900
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7978.8	46288.	3015.8
Stddev	.5	215.	15.7
%RSD	.00636	.46417	.51920
#1	7979.4	46139.	2998.0
#2	7978.5	46192.	3027.6
#3	7978.5	46535.	3021.8

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 16:50:07 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	.00460	-.00224	.00243	.00122	.00008	.00179	.00001
Stddev	.00065	.00884	.00189	.00187	.00109	.00005	.01725	.00031
%RSD	95.680	192.37	84.306	76.954	88.817	57.942	963.10	4374.3
#1	-.00007	.00642	-.00039	.00452	.00248	.00014	-.01032	.00014
#2	.00107	.01239	-.00416	.00091	.00062	.00007	.02154	.00022
#3	.00103	-.00502	-.00217	.00187	.00057	.00004	-.00584	-.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	-.00012	.00028	.01260	-.15716	-.00016	-.02234	-.00193
Stddev	.00022	.00116	.00085	.01322	.11156	.00233	.09453	.00098
%RSD	226.25	986.00	306.85	104.92	70.985	1472.7	423.09	50.832
#1	-.00010	.00016	.00109	-.00234	-.07470	.00242	.07940	-.00123
#2	.00006	-.00139	-.00060	.01736	-.28409	-.00081	-.03896	-.00151
#3	.00034	.00088	.00034	.02277	-.11267	-.00209	-.10747	-.00306
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00167	.00017	.00101	-.00098	-.00154	-.00057	.00409	.00298
Stddev	.00045	.02520	.00077	.00275	.00418	.00109	.00373	.00206
%RSD	26.941	14627.	76.465	280.19	270.71	191.92	91.120	69.068
#1	.00120	-.01174	.00189	-.00110	.00066	.00058	.00116	.00357
#2	.00169	.02912	.00071	-.00367	-.00636	-.00070	.00829	.00069
#3	.00210	-.01686	.00044	.00182	.00107	-.00158	.00282	.00468
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 16:50:07 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	.00027	.00391	.00022	-.00064	-.00034	.00045
Stddev	.00035	.00043	.00220	.00160	.00020	.00015	.00071
%RSD	46.883	158.52	56.384	723.05	31.461	43.608	159.63
#1	.00041	.00069	.00275	-.00121	-.00059	-.00039	.00018
#2	.00072	.00031	.00645	-.00007	-.00086	-.00017	-.00010
#3	.00111	-.00018	.00253	.00195	-.00046	-.00045	.00126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8070.0	46856.	3017.3
Stddev	36.4	288.	32.9
%RSD	.45120	.61475	1.0900
#1	8041.5	47170.	3017.9
#2	8111.0	46603.	3049.9
#3	8057.5	46794.	2984.1

Approved: June 15, 2016

Sample Name: L1606041103 Acquired: 6/14/2016 16:54:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	4.5647	.00040	.01039	.18545	.00030	6.8971
Stddev	.00094	.0044	.00363	.00249	.00046	.00006	.0258
%RSD	115.39	.09682	902.93	23.992	.25015	21.821	.37378
#1	-.00010	4.5630	-.00316	.01230	.18549	.00022	6.9015
#2	.00076	4.5614	.00410	.00757	.18497	.00033	6.8695
#3	.00178	4.5697	.00026	.01129	.18589	.00034	6.9205
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00411	.07832	.00873	4.1063	.36153	.01555
Stddev	.00014	.00026	.00012	.00103	.0360	.10287	.00115
%RSD	79.888	6.3763	.14901	11.764	.87604	28.454	7.3859
#1	.00034	.00441	.07845	.00769	4.0674	.24610	.01422
#2	.00008	.00398	.07826	.00876	4.1132	.39498	.01620
#3	.00012	.00394	.07824	.00975	4.1384	.44352	.01622
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.7810	.03458	.00201	56.450	.20838	.02547	.00721
Stddev	.0177	.00119	.00033	.069	.00108	.00272	.00260
%RSD	.36954	3.4284	16.570	.12255	.52014	10.671	36.089
#1	4.7797	.03585	.00175	56.529	.20961	.02515	.00459
#2	4.7992	.03351	.00189	56.422	.20757	.02292	.00725
#3	4.7640	.03438	.00239	56.399	.20797	.02833	.00980
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 15, 2016

Sample Name: L1606041103 Acquired: 6/14/2016 16:54:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00083**	**.01289**	F **47.548**	**.00068**	**.14132**	**.03990**	**-.00083**
Stddev	.00358	.00245	.078	.00064	.00012	.00485	.00215
%RSD	430.25	19.002	.16342	94.147	.08329	12.166	258.14
#1	-.00476	.01232	47.596	-.00003	.14118	.03464	.00017
#2	.00002	.01558	47.589	.00085	.14138	.04085	.00063
#3	.00225	.01078	47.458	.00123	.14140	.04421	-.00331
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-1.0000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00701**	**.01622**	**.00206**
Stddev	.00081	.00032	.00036
%RSD	11.554	1.9585	17.664
#1	.00747	.01585	.00248
#2	.00750	.01638	.00188
#3	.00608	.01642	.00183
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7655.9**	**44658.**	**2904.3**
Stddev	5.9	251.	23.1
%RSD	.07647	.56235	.79553
#1	7653.4	44498.	2877.6
#2	7651.7	44528.	2918.1
#3	7662.6	44947.	2917.1

Approved: June 15, 2016

Sample Name: L1606041104 Acquired: 6/14/2016 16:58:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	4.2703	-.00025	.01115	.16700	.00024	6.9209
Stddev	.00085	.0189	.00275	.00378	.00144	.00007	.0649
%RSD	4105.9	.44349	1094.0	33.872	.86054	27.267	.93815
#1	-.00028	4.2629	.00083	.00684	.16681	.00031	6.8710
#2	.00099	4.2563	-.00338	.01274	.16852	.00019	6.9943
#3	-.00064	4.2919	.00180	.01387	.16566	.00022	6.8975
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.00493	.07583	.00744	3.7095	.34502	.01555
Stddev	.00013	.00031	.00042	.00053	.0351	.06596	.00152
%RSD	68.175	6.2644	.55838	7.1285	.94733	19.119	9.7561
#1	.00007	.00525	.07562	.00750	3.7368	.28315	.01384
#2	.00016	.00463	.07632	.00688	3.7219	.41443	.01674
#3	.00033	.00491	.07555	.00793	3.6699	.33746	.01606
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.5990	.03824	.00328	57.589	.24632	.02793	.00685
Stddev	.1291	.00387	.00048	.313	.00195	.00899	.00195
%RSD	2.8071	10.111	14.656	.54293	.79021	32.181	28.417
#1	4.7046	.03390	.00274	57.819	.24856	.02090	.00464
#2	4.4551	.03952	.00344	57.714	.24513	.03806	.00762
#3	4.6373	.04131	.00366	57.233	.24525	.02484	.00830
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 15, 2016

Sample Name: L1606041104 Acquired: 6/14/2016 16:58:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00134	.00802	F 47.724	.00153	.13535	.04339	-.00167
Stddev	.00223	.00215	.137	.00025	.00030	.00514	.00107
%RSD	166.50	26.828	.28606	16.627	.21970	11.845	63.926
#1	-.00315	.00617	47.876	.00125	.13535	.04706	-.00106
#2	-.00201	.01038	47.684	.00161	.13506	.04561	-.00290
#3	.00115	.00750	47.612	.00174	.13565	.03752	-.00105
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-1.0000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00638	.01397	.00198
Stddev	.00029	.00007	.00041
%RSD	4.4695	.50623	20.917
#1	.00650	.01405	.00196
#2	.00606	.01391	.00158
#3	.00659	.01395	.00241
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7657.4	44804.	2917.9
Stddev	9.3	34.	11.3
%RSD	.12094	.07598	.38571
#1	7656.3	44843.	2916.1
#2	7667.1	44790.	2907.6
#3	7648.7	44780.	2929.9

Approved: June 15, 2016

Sample Name: L1606048503 Acquired: 6/14/2016 17:02:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00152	.01061	.00001	.05813	.06331	.00007	72.107	-.00018
Stddev	.00196	.00546	.00231	.00301	.00087	.00008	.445	.00011
%RSD	128.95	51.417	21723.	5.1731	1.3806	103.08	.61711	58.387
#1	-.00309	.01509	-.00178	.05550	.06364	.00008	72.620	-.00007
#2	.00068	.01222	-.00081	.06141	.06396	-.00001	71.870	-.00020
#3	-.00214	.00453	.00262	.05749	.06231	.00014	71.831	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.00069	.00108	.25572	2.0912	.00196	18.924	.29265
Stddev	.00003	.00089	.00204	.02174	.0273	.00392	.228	.00607
%RSD	28.787	128.75	188.42	8.5010	1.3052	199.53	1.2052	2.0751
#1	.00013	.00033	.00268	.25034	2.1093	.00647	19.122	.29908
#2	.00008	.00170	.00177	.23718	2.0598	-.00058	18.975	.28700
#3	.00009	.00004	-.00121	.27965	2.1045	-.00000	18.674	.29188
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	42.483	.00008	.01719	.00025	-.00220	.00591	9.3210
Stddev	.00025	.228	.00112	.00580	.00262	.00462	.00430	.0317
%RSD	34.474	.53784	1380.0	33.727	1047.0	210.40	72.775	.34014
#1	.00046	42.745	-.00035	.01615	-.00139	-.00084	.00094	9.3538
#2	.00076	42.327	-.00076	.02343	-.00114	.00160	.00836	9.3186
#3	.00096	42.377	.00135	.01198	.00327	-.00734	.00842	9.2906
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606048503 Acquired: 6/14/2016 17:02:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00099	.47561	-.01092	.00058	.00034	.00357	.00121
Stddev	.00056	.00310	.00259	.00147	.00106	.00011	.00052
%RSD	56.087	.65238	23.751	253.30	312.19	3.0534	43.100
#1	.00090	.47907	-.01348	.00126	.00105	.00367	.00079
#2	.00159	.47468	-.01098	-.00111	.00085	.00358	.00104
#3	.00049	.47308	-.00830	.00159	-.00088	.00346	.00180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7623.1	44400.	2911.5
Stddev	9.3	312.	23.1
%RSD	.12201	.70181	.79392
#1	7612.8	44046.	2888.8
#2	7631.0	44519.	2935.0
#3	7625.4	44634.	2910.8

Approved: June 15, 2016

Sample Name: L1606048504 Acquired: 6/14/2016 17:06:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00038	.00809	-.00089	.07200	.13789	.00004	73.871	.00005
Stddev	.00109	.01401	.00392	.00141	.00087	.00003	.386	.00014
%RSD	285.56	173.15	439.20	1.9544	.63250	71.483	.52261	261.72
#1	-.00164	-.00354	.00208	.07163	.13777	.00003	74.265	.00009
#2	.00031	.02365	-.00534	.07082	.13708	.00003	73.493	.00016
#3	.00018	.00417	.00058	.07356	.13881	.00008	73.856	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	.00039	.00084	.02766	2.0711	.01202	20.170	.05556
Stddev	.00022	.00029	.00055	.02848	.0287	.00105	.136	.00248
%RSD	156.26	73.397	65.603	102.97	1.3843	8.7239	.67280	4.4606
#1	-.00032	.00022	.00147	.04751	2.1041	.01280	20.323	.05598
#2	-.00019	.00072	.00056	-.00497	2.0516	.01244	20.125	.05781
#3	.00010	.00023	.00048	.04045	2.0578	.01083	20.063	.05290
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00280	34.620	.00007	.00202	-.00033	.00195	.00608	12.532
Stddev	.00034	.214	.00071	.00171	.00108	.00316	.00199	.015
%RSD	12.163	.61684	960.77	84.643	325.44	161.76	32.708	.12208
#1	.00315	34.830	-.00073	.00400	-.00155	.00490	.00755	12.542
#2	.00247	34.403	.00062	.00095	.00004	-.00138	.00382	12.539
#3	.00276	34.625	.00033	.00112	.00052	.00233	.00687	12.514
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606048504 Acquired: 6/14/2016 17:06:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00090	1.0465	-.00796	-.00112	-.00050	.00188	.00125
Stddev	.00082	.0048	.00800	.00102	.00041	.00013	.00046
%RSD	90.993	.46043	100.58	91.021	81.907	7.1181	37.021
#1	.00184	1.0510	-.00792	-.00154	-.00096	.00176	.00090
#2	.00055	1.0414	.00003	.00004	-.00016	.00188	.00108
#3	.00032	1.0470	-.01598	-.00187	-.00039	.00202	.00177
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7632.8	44543.	2912.7
Stddev	9.8	160.	18.7
%RSD	.12845	.36000	.64357
#1	7625.6	44386.	2909.4
#2	7644.0	44536.	2932.9
#3	7628.9	44707.	2895.9

Approved: June 15, 2016

Sample Name: L1606048505 Acquired: 6/14/2016 17:09:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00034	.01879	.04944	.04926	.22831	-.00001	102.09	.00009
Stddev	.00089	.00569	.00246	.00208	.00242	.00006	.53	.00036
%RSD	263.15	30.297	4.9718	4.2151	1.0581	600.25	.52002	405.18
#1	-.00049	.02331	.04743	.04823	.23095	-.00006	102.47	-.00022
#2	-.00114	.01240	.04870	.05165	.22620	.00006	101.48	.00048
#3	.00062	.02068	.05218	.04791	.22778	-.00003	102.31	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00107	.00105	.00285	13.621	.91780	.00699	11.647	1.6925
Stddev	.00038	.00031	.00048	.062	.03718	.00117	.017	.0045
%RSD	35.181	29.478	16.814	.45567	4.0507	16.764	.14949	.26564
#1	.00131	.00140	.00287	13.693	.91341	.00570	11.658	1.6967
#2	.00127	.00093	.00332	13.584	.88302	.00799	11.627	1.6878
#3	.00064	.00082	.00236	13.586	.95698	.00728	11.655	1.6929
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00880	35.195	.00148	.02014	-.00029	-.00276	.01014	10.052
Stddev	.00006	.204	.00087	.01116	.00179	.00420	.00716	.022
%RSD	.73480	.57867	58.755	55.430	626.55	152.01	70.557	.21544
#1	.00886	35.317	.00233	.03297	-.00103	.00025	.01403	10.046
#2	.00879	34.960	.00060	.01272	-.00159	-.00098	.00188	10.035
#3	.00873	35.308	.00150	.01472	.00176	-.00757	.01451	10.076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606048505 Acquired: 6/14/2016 17:09:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00093	.40788	-.00619	-.00136	-.00112	.00233	.00017
Stddev	.00066	.00052	.00468	.00199	.00031	.00029	.00002
%RSD	70.386	.12751	75.605	146.60	27.400	12.617	11.831
#1	.00165	.40754	-.00081	-.00023	-.00133	.00262	.00017
#2	.00076	.40763	-.00847	-.00019	-.00127	.00203	.00015
#3	.00038	.40848	-.00931	-.00365	-.00077	.00233	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7618.3	44475.	2925.7
Stddev	13.0	191.	30.7
%RSD	.17002	.42925	1.0494
#1	7625.7	44377.	2897.2
#2	7603.4	44696.	2958.2
#3	7625.9	44354.	2921.7

Approved: June 15, 2016

Sample Name: L1606048506 Acquired: 6/14/2016 17:13:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.01138	.00024	.03778	.00736	.00004	106.04	.00006
Stddev	.00023	.00375	.00193	.00217	.00076	.00005	1.13	.00030
%RSD	180.26	32.932	818.96	5.7541	10.303	105.02	1.0640	546.35
#1	-.00010	.00982	-.00051	.03571	.00767	.00009	107.11	.00032
#2	.00036	.00867	-.00122	.04005	.00792	.00003	104.86	.00012
#3	.00012	.01566	.00243	.03757	.00650	.00001	106.15	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00089	.00151	.00421	1.0217	.00847	10.023	.10725
Stddev	.00000	.00105	.00061	.01495	.0430	.00400	.113	.00472
%RSD	1.0820	117.63	39.949	355.30	4.2070	47.284	1.1264	4.3971
#1	.00009	.00086	.00151	-.01303	1.0602	.00631	10.129	.11074
#2	.00009	.00195	.00091	.01365	.97531	.01309	9.9045	.10189
#3	.00009	-.00014	.00212	.01201	1.0295	.00601	10.034	.10913
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	21.638	.00000	.01440	-.00287	-.00145	.00559	8.2477
Stddev	.00052	.238	.00066	.00749	.00105	.00489	.00222	.0108
%RSD	197.84	1.1021	44082.	52.014	36.461	337.86	39.709	.13085
#1	-.00042	21.839	-.00044	.00576	-.00211	.00287	.00583	8.2486
#2	.00032	21.374	.00076	.01837	-.00406	-.00045	.00768	8.2580
#3	-.00069	21.701	-.00032	.01906	-.00244	-.00676	.00326	8.2365
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606048506 Acquired: 6/14/2016 17:13:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00134	.40115	-.01349	-.00088	.00037	.01164	.00050
Stddev	.00061	.00470	.00459	.00242	.00086	.00016	.00059
%RSD	45.823	1.1720	34.033	274.17	230.70	1.3342	116.57
#1	.00069	.40585	-.00890	-.00046	.00101	.01179	.00115
#2	.00191	.39645	-.01349	.00130	.00071	.01148	.00000
#3	.00141	.40117	-.01808	-.00348	-.00060	.01165	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7638.1	44699.	2914.0
Stddev	20.7	111.	24.2
%RSD	.27089	.24803	.83147
#1	7627.6	44571.	2886.5
#2	7624.8	44757.	2923.7
#3	7661.9	44769.	2931.9

Approved: June 15, 2016

Sample Name: L1606054009 Acquired: 6/14/2016 17:17:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00111**	**.03943**	**.00779**	**.03258**	**.15787**	**.00002**	**41.513**	**.00028**
Stddev	.00130	.00427	.00101	.00104	.00054	.00010	.055	.00022
%RSD	117.32	10.835	12.972	3.2060	.34408	668.10	.13286	79.532
#1	-.00041	.03453	.00685	.03157	.15758	.00006	41.574	.00012
#2	-.00031	.04241	.00886	.03252	.15754	.00009	41.498	.00053
#3	-.00261	.04133	.00766	.03365	.15850	-.00010	41.466	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00148**	**-.00019**	**.00256**	**24.059**	**73.927**	**.00089**	**4.3234**	**1.9945**
Stddev	.00020	.00070	.00122	.087	.392	.00382	.0764	.0055
%RSD	13.837	359.54	47.717	.36250	.53075	427.61	1.7681	.27412
#1	.00130	-.00048	.00319	24.132	74.358	-.00319	4.3759	2.0004
#2	.00170	.00060	.00333	24.084	73.831	.00147	4.2357	1.9933
#3	.00143	-.00070	.00115	23.962	73.592	.00440	4.3587	1.9897
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**26.005**	**.00333**	**.03353**	**-.00058**	**.00218**	**.00638**	**3.0621**
Stddev	.00037	.076	.00117	.00682	.00205	.00145	.00436	.0032
%RSD	367.07	.29119	34.967	20.331	351.12	66.629	68.369	.10485
#1	-.00021	26.091	.00363	.02576	.00144	.00082	.00868	3.0626
#2	.00001	25.978	.00432	.03850	-.00265	.00200	.00910	3.0650
#3	.00050	25.947	.00205	.03633	-.00054	.00371	.00135	3.0586
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606054009 Acquired: 6/14/2016 17:17:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.25224	.00858	-.00274	-.00072	.00584	-.00049
Stddev	.00024	.00083	.00691	.00074	.00081	.00017	.00026
%RSD	34.529	.32894	80.505	27.008	112.85	2.9778	52.350
#1	.00042	.25172	.01378	-.00359	-.00065	.00603	-.00044
#2	.00078	.25319	.00074	-.00242	.00006	.00583	-.00077
#3	.00088	.25179	.01121	-.00221	-.00156	.00568	-.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7903.6	46315.	3079.0
Stddev	7.7	134.	26.8
%RSD	.09746	.29005	.86994
#1	7912.4	46452.	3048.4
#2	7898.1	46183.	3090.9
#3	7900.2	46311.	3097.8

Approved: June 15, 2016

Sample Name: L1606054010 Acquired: 6/14/2016 17:21:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00068	.52065	.00622	.03095	.07368	.00009	111.16	.00014
Stddev	.00155	.00029	.00578	.00107	.00070	.00004	.16	.00040
%RSD	227.75	.05474	92.951	3.4634	.94507	48.885	.14044	287.60
#1	-.00202	.52086	.00654	.03041	.07448	.00012	111.17	-.00007
#2	.00101	.52033	.00029	.03218	.07321	.00010	111.01	.00060
#3	-.00103	.52077	.01183	.03025	.07336	.00004	111.32	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	.00275	.00284	3.1244	9.8775	.01955	3.4781	.24503
Stddev	.00010	.00086	.00090	.0122	.0402	.00231	.0584	.00219
%RSD	11.831	31.373	31.651	.38957	.40690	11.827	1.6799	.89444
#1	.00100	.00358	.00388	3.1212	9.9088	.02219	3.5227	.24286
#2	.00079	.00282	.00238	3.1378	9.8915	.01789	3.4119	.24498
#3	.00088	.00186	.00227	3.1141	9.8321	.01857	3.4995	.24724
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00296	139.31	.00163	.10512	.00187	-.00071	.00573	9.0899
Stddev	.00030	.13	.00007	.00533	.00224	.00522	.00584	.0241
%RSD	9.9861	.09166	4.5431	5.0677	119.75	731.40	101.80	.26556
#1	.00319	139.45	.00163	.10531	.00197	-.00669	.01044	9.0921
#2	.00263	139.30	.00170	.11035	-.00042	.00161	-.00080	9.1128
#3	.00307	139.19	.00155	.09970	.00406	.00294	.00756	9.0647
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606054010 Acquired: 6/14/2016 17:21:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00128	.52415	-.00141	.00026	.00251	.03824	.00089
Stddev	.00019	.00015	.00263	.00482	.00017	.00012	.00034
%RSD	14.500	.02827	187.00	1865.9	6.5933	.32280	38.664
#1	.00141	.52411	-.00087	-.00414	.00236	.03835	.00087
#2	.00107	.52431	.00091	-.00050	.00249	.03811	.00055
#3	.00138	.52402	-.00426	.00542	.00269	.03827	.00124
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7560.1	43953.	2932.6
Stddev	31.2	87.	3.3
%RSD	.41305	.19687	.11312
#1	7528.5	43862.	2935.6
#2	7560.8	43962.	2929.0
#3	7590.9	44034.	2933.2

Approved: June 15, 2016

Sample Name: L1606054011 Acquired: 6/14/2016 17:25:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.59515**	**.00344**	**.02999**	**.07563**	**.00005**	**115.10**	**.00000**
Stddev	.00078	.00265	.00380	.00089	.00043	.00002	.67	.00016
%RSD	464.25	.44542	110.46	2.9844	.56630	42.594	.58592	7754.2
#1	-.00079	.59669	.00756	.02951	.07514	.00006	115.78	-.00007
#2	-.00044	.59667	.00008	.02943	.07578	.00006	115.07	.00018
#3	.00071	.59209	.00267	.03102	.07596	.00002	114.44	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00106**	**.00229**	**.00148**	**3.2444**	**10.063**	**.01918**	**3.7279**	**.25161**
Stddev	.00025	.00123	.00161	.0362	.046	.00176	.1735	.00137
%RSD	23.474	53.530	108.64	1.1150	.45978	9.1615	4.6546	.54645
#1	.00094	.00127	.00149	3.2072	10.116	.01931	3.9133	.25305
#2	.00089	.00195	.00308	3.2465	10.033	.02087	3.7009	.25145
#3	.00135	.00365	-.00013	3.2795	10.039	.01736	3.5694	.25032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00326**	**143.24**	**.00151**	**.11253**	**.00076**	**.00277**	**.00059**	**9.5696**
Stddev	.00037	.47	.00105	.00442	.00357	.00485	.00570	.0206
%RSD	11.251	.32871	69.691	3.9282	469.50	175.36	962.96	.21480
#1	.00358	143.73	.00087	.11680	-.00197	.00552	-.00589	9.5755
#2	.00335	143.18	.00093	.11283	.00480	.00562	.00485	9.5865
#3	.00286	142.80	.00272	.10797	-.00055	-.00284	.00282	9.5467
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606054011 Acquired: 6/14/2016 17:25:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00112	.54100	-.00388	-.00133	.00210	.03558	.00074
Stddev	.00029	.00204	.00158	.00292	.00047	.00016	.00021
%RSD	26.123	.37736	40.668	218.80	22.534	.45204	28.694
#1	.00145	.54304	-.00563	-.00065	.00220	.03545	.00056
#2	.00102	.54103	-.00342	.00118	.00251	.03576	.00069
#3	.00089	.53895	-.00258	-.00453	.00158	.03553	.00098
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7562.5	43692.	2925.3
Stddev	7.4	94.	21.7
%RSD	.09845	.21575	.74097
#1	7554.0	43714.	2902.1
#2	7567.7	43589.	2928.7
#3	7565.9	43773.	2945.1

Approved: June 15, 2016

Sample Name: L1606054014 Acquired: 6/14/2016 17:29:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	.02147	.02563	.03147	.10443	.00052	44.979	-.00011
Stddev	.00177	.00155	.00230	.00162	.00075	.00003	.156	.00026
%RSD	199.14	7.2106	8.9775	5.1480	.72193	5.1761	.34687	233.98
#1	.00248	.02013	.02523	.03283	.10519	.00055	45.131	-.00040
#2	.00119	.02112	.02811	.02968	.10369	.00052	44.819	.00001
#3	-.00101	.02317	.02356	.03190	.10441	.00050	44.986	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.00065	.00171	11.927	2.8315	.00332	5.0603	4.2095
Stddev	.00032	.00163	.00073	.043	.1122	.00300	.1266	.0225
%RSD	1719.9	252.70	42.747	.35731	3.9615	90.325	2.5015	.53536
#1	.00016	-.00096	.00098	11.976	2.7301	.00471	5.2016	4.2183
#2	-.00035	.00060	.00171	11.903	2.8124	.00537	5.0222	4.1839
#3	.00025	.00230	.00244	11.902	2.9520	-.00012	4.9572	4.2263
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	21.056	.00746	.29297	.00171	.00052	.00342	6.5374
Stddev	.00023	.085	.00023	.00731	.00278	.00281	.00238	.0082
%RSD	182.43	.40320	3.0991	2.4950	162.25	545.40	69.447	.12564
#1	-.00005	21.154	.00721	.28603	.00243	-.00223	.00546	6.5457
#2	.00005	21.000	.00767	.30060	-.00135	.00038	.00400	6.5293
#3	.00039	21.014	.00750	.29228	.00405	.00339	.00081	6.5371
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606054014 Acquired: 6/14/2016 17:29:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	.26905	.00054	-.00104	.00010	.01946	-.00030
Stddev	.00041	.00145	.00327	.00117	.00069	.00024	.00033
%RSD	73.408	.53923	602.21	112.06	703.56	1.2360	108.01
#1	.00057	.27052	-.00004	-.00228	-.00015	.01972	-.00066
#2	.00014	.26761	-.00239	-.00087	.00088	.01941	-.00002
#3	.00095	.26901	.00406	.00003	-.00044	.01925	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7940.0	46251.	3083.1
Stddev	9.7	187.	14.5
%RSD	.12161	.40489	.46939
#1	7929.3	46036.	3071.7
#2	7942.6	46371.	3099.4
#3	7948.1	46347.	3078.2

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 17:33:57 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38498**	**9.6272**	**.37768**	**.48429**	**.94492**	**.04818**	**9.3126**	**.04814**
Stddev	.00131	.0270	.00464	.00312	.00340	.00031	.0767	.00045
%RSD	.34096	.28029	1.2295	.64359	.35938	.63947	.82387	.93562
#1	.38416	9.6046	.38110	.48253	.94654	.04783	9.2598	.04787
#2	.38650	9.6570	.37954	.48789	.94721	.04830	9.4006	.04788
#3	.38429	9.6198	.37239	.48245	.94102	.04841	9.2774	.04866
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19534**	**.48542**	**.48677**	**3.8362**	**47.458**	**.93559**	**9.3954**	**.47377**
Stddev	.00076	.00459	.00292	.0239	.143	.00233	.0588	.00374
%RSD	.38763	.94577	.59982	.62337	.30195	.24913	.62580	.79026
#1	.19614	.48012	.48785	3.8326	47.408	.93568	9.4629	.47387
#2	.19526	.48816	.48900	3.8618	47.620	.93788	9.3675	.47746
#3	.19463	.48798	.48347	3.8143	47.347	.93322	9.3557	.46998
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.96293**	**47.783**	**.49303**	**9.7488**	**.49339**	**1.1697**	**.37378**	**4.9113**
Stddev	.00208	.121	.00182	.0030	.00369	.0094	.00622	.0034
%RSD	.21557	.25352	.36828	.03101	.74785	.80324	1.6639	.06973
#1	.96524	47.741	.49512	9.7514	.49140	1.1747	.37155	4.9082
#2	.96231	47.919	.49215	9.7455	.49113	1.1589	.38080	4.9109
#3	.96123	47.688	.49183	9.7495	.49765	1.1756	.36898	4.9150
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 17:33:57 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.96781	.94451	.93961	.48614	.97117	.98136	.98482
Stddev	.00181	.00385	.00962	.00086	.00421	.00059	.00966
%RSD	.18691	.40778	1.0241	.17744	.43323	.05993	.98123
#1	.96572	.94685	.94895	.48553	.96634	.98200	.97784
#2	.96894	.94662	.92973	.48577	.97403	.98084	.99585
#3	.96877	.94006	.94013	.48713	.97313	.98125	.98076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8106.1	46904.	3053.5
Stddev	14.2	116.	28.0
%RSD	.17535	.24722	.91848
#1	8121.6	46783.	3068.5
#2	8093.5	46913.	3021.2
#3	8103.3	47015.	3070.9

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 17:37:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00093	-.00096	-.00201	.00104	.00066	.00001	.00291	-.00007
Stddev	.00099	.00384	.00191	.00196	.00047	.00000	.02138	.00030
%RSD	105.58	400.76	94.758	188.90	72.011	16.008	735.63	416.90
#1	-.00011	-.00218	-.00126	.00294	.00114	.00001	.02266	.00028
#2	.00184	.00335	-.00418	.00114	.00019	.00001	.00586	-.00026
#3	.00107	-.00405	-.00060	-.00097	.00064	.00001	-.01979	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	.00027	.00078	.02860	-.07775	-.00235	-.08523	-.00011
Stddev	.00030	.00025	.00097	.00867	.03524	.00291	.06296	.00090
%RSD	5543.4	92.384	124.39	30.305	45.320	123.77	73.865	815.20
#1	.00007	-.00001	.00038	.02834	-.06394	.00061	-.12601	-.00105
#2	-.00033	.00033	.00189	.03740	-.11780	-.00246	-.01272	-.00002
#3	.00025	.00047	.00008	.02007	-.05151	-.00521	-.11697	.00074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00172	-.00758	.00067	.00433	-.00180	-.00156	.00163	-.00062
Stddev	.00008	.01278	.00113	.01084	.00201	.00169	.00204	.00304
%RSD	4.5302	168.50	169.28	250.54	111.94	108.44	125.35	492.42
#1	.00171	-.02228	.00050	-.00116	-.00407	-.00172	.00386	.00264
#2	.00180	.00085	-.00037	-.00267	-.00023	-.00317	-.00012	-.00338
#3	.00164	-.00131	.00187	.01681	-.00110	.00020	.00114	-.00111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 17:37:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00084	-.00027	.00695	-.00077	.00062	-.00018	.00097
Stddev	.00053	.00031	.00335	.00191	.00048	.00010	.00019
%RSD	63.218	114.23	48.177	248.77	77.522	56.107	20.049
#1	.00080	-.00012	.01069	-.00296	.00010	-.00019	.00075
#2	.00033	-.00062	.00424	.00015	.00105	-.00007	.00103
#3	.00138	-.00007	.00591	.00051	.00072	-.00027	.00112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8221.5	47984.	3086.2
Stddev	10.2	168.	9.4
%RSD	.12365	.35008	.30370
#1	8233.2	47792.	3094.9
#2	8216.7	48103.	3087.6
#3	8214.6	48058.	3076.3

Approved: June 15, 2016

Sample Name: L1606049201 Acquired: 6/14/2016 17:41:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00215	.02347	-.00090	.87063	2.3677	.00000	156.67
Stddev	.00076	.00683	.00200	.00033	.0092	.00006	.58
%RSD	35.428	29.125	221.66	.03805	.38693	2330.6	.36866
#1	.00177	.03088	-.00085	.87026	2.3679	-.00003	156.49
#2	.00302	.02210	-.00293	.87087	2.3768	.00007	157.32
#3	.00164	.01742	.00107	.87077	2.3585	-.00003	156.21
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00000	.00055	.00120	.00105	.83013	12.176	.50661
Stddev	.00012	.00039	.00010	.00099	.01750	.096	.00296
%RSD	3139.3	70.493	8.6986	93.534	2.1085	.78722	.58363
#1	-.00014	.00046	.00132	.00001	.84409	12.169	.50520
#2	.00005	.00098	.00115	.00117	.81050	12.275	.51000
#3	.00008	.00022	.00114	.00197	.83581	12.084	.50461
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	15.352	.07152	-.00082	F 354.19	-.00034	.00655	-.00109
Stddev	.280	.00339	.00031	3.41	.00046	.00996	.00207
%RSD	1.8248	4.7469	38.053	.96361	134.77	152.05	189.28
#1	15.232	.06772	-.00047	355.31	.00011	.01803	.00022
#2	15.672	.07426	-.00094	356.91	-.00081	.00016	-.00348
#3	15.151	.07257	-.00105	350.36	-.00033	.00147	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 15, 2016

Sample Name: L1606049201 Acquired: 6/14/2016 17:41:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00095	-.00089	.06448	.00014	F 29.923	-.02126	.00098
Stddev	.00435	.00190	.00066	.00042	.450	.00367	.00313
%RSD	459.30	214.91	1.0207	304.06	1.5039	17.247	319.44
#1	-.00507	.00097	.06471	.00049	29.773	-.02328	.00152
#2	.00360	-.00080	.06374	.00026	30.429	-.01702	-.00239
#3	-.00137	-.00283	.06499	-.00033	29.568	-.02346	.00381
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00047	.00109	.00001
Stddev	.00091	.00012	.00069
%RSD	193.35	10.669	5931.7
#1	-.00072	.00111	-.00022
#2	-.00122	.00096	.00078
#3	.00054	.00119	-.00053
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7971.4	46009.	3079.7
Stddev	44.5	243.	45.5
%RSD	.55834	.52921	1.4758
#1	8008.8	45858.	3084.4
#2	7983.2	46289.	3032.1
#3	7922.1	45878.	3122.7

Approved: June 15, 2016

Sample Name: L1606049202 Acquired: 6/14/2016 17:45:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00195**	**.00584**	**.00047**	**1.0255**	**2.6925**	**.00009**	**180.26**
Stddev	.00068	.00645	.00085	.0065	.0203	.00003	1.46
%RSD	34.850	110.34	180.73	.63199	.75419	32.062	.80934
#1	-.00257	-.00080	-.00038	1.0180	2.6710	.00013	178.80
#2	-.00122	.01207	.00047	1.0288	2.6952	.00007	180.25
#3	-.00206	.00626	.00131	1.0297	2.7113	.00009	181.72
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.00079**	**.00206**	**.00117**	**.80917**	**13.992**	**.58500**
Stddev	.00025	.00028	.00050	.00038	.03069	.046	.00087
%RSD	778.47	34.987	24.093	32.200	3.7932	.32920	.14892
#1	-.00025	.00073	.00253	.00152	.83454	13.944	.58447
#2	-.00008	.00055	.00154	.00077	.77505	13.997	.58452
#3	.00023	.00109	.00209	.00123	.81791	14.036	.58600
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**17.741**	**.08635**	**-.00109**	F **400.16**	**-.00018**	**.00481**	**.00113**
Stddev	.218	.00134	.00022	8.06	.00014	.00366	.00227
%RSD	1.2310	1.5470	20.438	2.0149	81.500	76.151	200.09
#1	17.627	.08556	-.00096	391.97	-.00009	.00321	.00263
#2	17.602	.08561	-.00096	408.09	-.00010	.00900	-.00148
#3	17.992	.08789	-.00135	400.41	-.00034	.00222	.00225
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 15, 2016

Sample Name: L1606049202 Acquired: 6/14/2016 17:45:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.00457	.04502	-.00029	F 34.426	F -.03234	.00220
Stddev	.00339	.00346	.00083	.00061	.642	.00135	.00088
%RSD	1434.2	75.822	1.8512	208.45	1.8663	4.1862	39.887
#1	.00407	.00823	.04585	-.00048	33.778	-.03372	.00174
#2	-.00103	.00135	.04418	-.00078	35.063	-.03229	.00322
#3	-.00233	.00413	.04504	.00039	34.438	-.03101	.00165
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Pass
High Limit					9.0000	36.000	
Low Limit					-.01000	-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00070	.00074	-.00023
Stddev	.00078	.00008	.00039
%RSD	111.90	11.119	170.09
#1	.00007	.00083	.00021
#2	-.00068	.00067	-.00051
#3	-.00149	.00072	-.00039
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7566.0	42993.	2923.4
Stddev	67.3	191.	41.8
%RSD	.88952	.44475	1.4309
#1	7497.0	42999.	2969.9
#2	7631.5	42800.	2911.5
#3	7569.4	43182.	2888.8

Approved: June 15, 2016

Sample Name: L1606054015 Acquired: 6/14/2016 17:50:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00064	.05888	.00391	.03129	.16499	.00027	40.028	.00011
Stddev	.00270	.01280	.00389	.00177	.00170	.00005	.239	.00016
%RSD	420.10	21.745	99.359	5.6446	1.0311	18.510	.59756	141.22
#1	.00248	.05199	.00681	.02980	.16350	.00032	40.036	.00006
#2	-.00213	.07366	.00544	.03083	.16461	.00022	39.785	-.00001
#3	-.00228	.05100	-.00051	.03324	.16684	.00027	40.263	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.00069	.03741	4.4993	3.4523	.01652	2.7005	.07158
Stddev	.00032	.00045	.00198	.0435	.1087	.00228	.0240	.00236
%RSD	66.875	65.605	5.2808	.96762	3.1471	13.820	.88807	3.3023
#1	.00057	.00091	.03513	4.5082	3.4758	.01902	2.6975	.06963
#2	.00012	.00017	.03859	4.4520	3.3338	.01601	2.6782	.07421
#3	.00075	.00098	.03852	4.5377	3.5473	.01454	2.7259	.07090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00049	39.854	.00303	.84930	.00486	.00570	.00528	26.027
Stddev	.00017	.187	.00016	.00705	.00313	.00445	.00855	.255
%RSD	35.759	.46881	5.2195	.82978	64.456	78.013	161.81	.97825
#1	-.00032	39.893	.00286	.84246	.00140	.00990	-.00455	25.734
#2	-.00048	39.650	.00317	.84890	.00751	.00104	.00948	26.144
#3	-.00067	40.018	.00308	.85653	.00566	.00617	.01092	26.202
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606054015 Acquired: 6/14/2016 17:50:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.22818	.00295	-.00203	.00146	.12516	.00158
Stddev	.00045	.00177	.00178	.00115	.00067	.00151	.00063
%RSD	65.519	.77458	60.266	56.639	46.052	1.2053	39.886
#1	.00112	.23020	.00164	-.00084	.00155	.12343	.00108
#2	.00072	.22743	.00224	-.00212	.00208	.12584	.00138
#3	.00022	.22691	.00498	-.00314	.00075	.12620	.00229
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7466.8	45349.	3005.3
Stddev	49.7	420.	11.4
%RSD	.66497	.92717	.38026
#1	7515.0	45835.	3008.6
#2	7415.9	45119.	3014.8
#3	7469.6	45094.	2992.6

Approved: June 15, 2016

Sample Name: L1606054016 Acquired: 6/14/2016 17:54:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00142	.04949	.00150	.04448	.03246	.00005	80.331	-.00002
Stddev	.00148	.00818	.00200	.00064	.00080	.00009	.248	.00003
%RSD	104.47	16.534	132.84	1.4344	2.4673	178.94	.30895	121.34
#1	-.00034	.04796	.00298	.04492	.03313	.00010	80.364	-.00004
#2	-.00311	.05834	-.00077	.04375	.03157	.00010	80.560	.00001
#3	-.00081	.04219	.00230	.04477	.03268	-.00005	80.067	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00216	.00326	6.3843	1.8356	.00865	2.6804	.16626
Stddev	.00019	.00076	.00062	.0555	.1457	.00281	.0710	.00030
%RSD	336.57	35.200	19.078	.86908	7.9350	32.493	2.6487	.18110
#1	-.00015	.00299	.00377	6.3295	1.8467	.00688	2.6981	.16642
#2	.00009	.00149	.00257	6.4405	1.9753	.01189	2.7408	.16591
#3	.00022	.00201	.00345	6.3829	1.6847	.00718	2.6022	.16645
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00051	28.673	.01287	1.2137	-.00003	-.00234	.00358	17.085
Stddev	.00059	.126	.00065	.0083	.00374	.00162	.00762	.070
%RSD	116.54	.43795	5.0508	.68200	14167.	68.985	212.89	.40749
#1	-.00093	28.719	.01337	1.2208	-.00418	-.00264	-.00418	17.141
#2	-.00075	28.770	.01214	1.2046	.00103	-.00060	.00387	17.107
#3	.00017	28.531	.01310	1.2156	.00306	-.00379	.01105	17.007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606054016 Acquired: 6/14/2016 17:54:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.36984	-.00618	-.00191	.00059	.01730	.00109
Stddev	.00061	.00119	.00630	.00126	.00147	.00026	.00044
%RSD	225.55	.32169	101.96	66.068	248.31	1.5198	40.069
#1	.00028	.36997	-.00452	-.00184	.00151	.01758	.00072
#2	.00087	.37096	-.00088	-.00068	.00137	.01706	.00098
#3	-.00035	.36859	-.01315	-.00320	-.00110	.01724	.00157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7408.5	43089.	2810.4
Stddev	18.4	120.	10.8
%RSD	.24900	.27807	.38501
#1	7406.7	43207.	2798.0
#2	7391.0	42967.	2815.0
#3	7427.7	43091.	2818.2

Approved: June 15, 2016

Sample Name: L1606064501 Acquired: 6/14/2016 17:58:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00078	.01025	-.00002	-.00000	.00016	.00003	.03499	.00015
Stddev	.00153	.00759	.00189	.00291	.00078	.00004	.03521	.00014
%RSD	195.57	74.093	8696.6	192800.	487.87	169.86	100.63	88.637
#1	.00236	.01552	-.00015	-.00318	.00090	.00005	.06275	.00004
#2	-.00070	.00154	-.00184	.00253	-.00065	.00005	-.00462	.00031
#3	.00068	.01368	.00193	.00064	.00024	-.00002	.04685	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.00099	.00057	-.01457	-.15866	-.00222	.04173	-.00039
Stddev	.00049	.00030	.00097	.02016	.08192	.00402	.07812	.00141
%RSD	291.16	30.575	170.64	138.36	51.630	181.25	187.17	359.52
#1	-.00049	.00109	.00110	-.01251	-.20689	-.00680	.04278	-.00202
#2	.00039	.00124	-.00055	-.03568	-.06408	-.00063	-.03690	.00042
#3	-.00040	.00066	.00116	.00448	-.20501	.00076	.11932	.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00085	.00805	.00038	.00129	-.00172	.00184	.00683	.00181
Stddev	.00052	.03487	.00113	.00101	.00059	.00376	.00256	.00082
%RSD	61.179	433.14	298.55	78.644	34.357	203.67	37.470	45.144
#1	-.00132	-.00592	.00143	.00012	-.00143	.00565	.00716	.00087
#2	-.00029	.04774	.00050	.00190	-.00240	-.00186	.00412	.00235
#3	-.00094	-.01767	-.00081	.00184	-.00133	.00175	.00921	.00220
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606064501 Acquired: 6/14/2016 17:58:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00072	.00202	.00582	-.00226	-.00020	.00124	.00022
Stddev	.00080	.00024	.00162	.00041	.00026	.00024	.00049
%RSD	110.54	11.685	27.792	18.274	127.80	19.136	221.29
#1	.00150	.00201	.00671	-.00192	.00003	.00151	-.00026
#2	-.00010	.00179	.00396	-.00214	-.00048	.00106	.00020
#3	.00078	.00226	.00681	-.00272	-.00015	.00116	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7507.7	44131.	2809.4
Stddev	13.4	94.	31.1
%RSD	.17810	.21357	1.1071
#1	7518.9	44175.	2839.8
#2	7492.9	44022.	2810.9
#3	7511.4	44194.	2777.6

Approved: June 15, 2016

Sample Name: L1606064502 Acquired: 6/14/2016 18:02:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	.01881	.00154	.00007	.00199	.00007	2.0964	.00007
Stddev	.00069	.00654	.00252	.00417	.00148	.00003	.0317	.00012
%RSD	301.82	34.769	163.36	6334.4	74.144	50.420	1.5101	171.99
#1	-.00056	.01507	.00410	.00395	.00029	.00003	2.1239	.00002
#2	.00057	.02637	.00148	-.00433	.00281	.00009	2.0618	.00022
#3	-.00069	.01501	-.00094	.00058	.00289	.00008	2.1035	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00041	.00401	.00151	.14379	-.13332	-.00298	.18185	.00254
Stddev	.00034	.00065	.00128	.01005	.04769	.00094	.05404	.00171
%RSD	81.289	16.084	84.714	6.9902	35.772	31.467	29.716	67.419
#1	-.00074	.00458	.00285	.13275	-.13561	-.00406	.15507	.00267
#2	-.00007	.00331	.00032	.15240	-.08452	-.00244	.24405	.00077
#3	-.00042	.00415	.00135	.14623	-.17982	-.00243	.14643	.00418
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00161	.12292	.00091	.00800	-.00174	-.00264	.00870	.02305
Stddev	.00028	.02001	.00036	.00376	.00146	.00326	.00775	.00248
%RSD	17.696	16.283	39.156	47.061	83.994	123.62	89.101	10.767
#1	.00144	.10059	.00085	.01072	-.00080	.00061	.00585	.02030
#2	.00145	.12894	.00059	.00957	-.00100	-.00261	.00277	.02373
#3	.00194	.13924	.00130	.00370	-.00343	-.00591	.01747	.02512
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606064502 Acquired: 6/14/2016 18:02:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00098	.00416	.00548	.00105	.00104	.01146	.00028
Stddev	.00027	.00051	.00609	.00146	.00110	.00008	.00074
%RSD	27.372	12.269	111.11	139.01	105.08	.68979	269.70
#1	.00067	.00405	.00747	.00173	.00092	.01138	.00113
#2	.00114	.00472	.01034	-.00063	.00001	.01154	-.00018
#3	.00113	.00372	-.00135	.00203	.00219	.01145	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7566.2	43999.	2794.7
Stddev	29.7	263.	11.9
%RSD	.39244	.59722	.42516
#1	7552.8	43697.	2793.1
#2	7545.6	44175.	2807.4
#3	7600.2	44124.	2783.8

Approved: June 15, 2016

Sample Name: L1606041103 Acquired: 6/14/2016 18:06:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	.20230	.00188	.00134	.00804	.00007	.28731	-.00033
Stddev	.00176	.01138	.00080	.00109	.00111	.00003	.00779	.00013
%RSD	767.36	5.6245	42.755	80.910	13.797	45.161	2.7124	39.586
#1	-.00173	.19806	.00276	.00259	.00803	.00006	.29383	-.00044
#2	.00171	.19364	.00169	.00062	.00916	.00011	.27868	-.00019
#3	-.00066	.21518	.00118	.00082	.00694	.00005	.28943	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.00419	.00119	.18721	-.10774	.00140	.17924	-.00033
Stddev	.00046	.00080	.00086	.01977	.11543	.00464	.07879	.00056
%RSD	188.83	19.056	72.501	10.561	107.14	330.49	43.958	168.60
#1	.00034	.00508	.00024	.20924	-.03738	-.00349	.17519	-.00098
#2	-.00026	.00394	.00193	.18138	-.24096	.00197	.10255	.00001
#3	.00064	.00354	.00139	.17101	-.04488	.00573	.25998	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00079	2.5002	.00968	.00687	-.00215	.00170	.00475	2.0899
Stddev	.00039	.0483	.00004	.00785	.00209	.00229	.00239	.0163
%RSD	49.721	1.9311	.44513	114.29	97.277	134.93	50.212	.77799
#1	-.00114	2.5217	.00968	.00211	-.00117	.00162	.00313	2.0989
#2	-.00087	2.5341	.00964	.00257	-.00455	.00403	.00749	2.0997
#3	-.00037	2.4449	.00972	.01593	-.00073	-.00055	.00363	2.0711
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606041103 Acquired: 6/14/2016 18:06:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00076**	**.00576**	**.00895**	**.00105**	**.00066**	**.00138**	**.00045**
Stddev	.00051	.00044	.00280	.00269	.00107	.00008	.00036
%RSD	66.900	7.5966	31.228	257.44	163.17	5.7236	79.319
#1	.00027	.00553	.00573	.00403	-.00051	.00146	.00008
#2	.00128	.00627	.01044	.00033	.00159	.00131	.00048
#3	.00073	.00549	.01069	-.00121	.00089	.00137	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8530.4**	**49451.**	**3121.0**
Stddev	21.2	309.	21.4
%RSD	.24892	.62577	.68619
#1	8525.3	49735.	3096.4
#2	8553.8	49122.	3130.9
#3	8512.3	49497.	3135.7

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 18:10:23 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41032	10.299	.40306	.51555	1.0137	.05157	10.006	.05125
Stddev	.00257	.028	.00072	.00347	.0058	.00042	.020	.00054
%RSD	.62607	.26727	.17928	.67253	.57243	.81202	.19734	1.0553
#1	.41221	10.319	.40315	.51181	1.0080	.05120	9.9914	.05095
#2	.40739	10.310	.40230	.51865	1.0134	.05150	9.9979	.05188
#3	.41135	10.268	.40374	.51620	1.0196	.05203	10.028	.05093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20946	.51928	.52086	4.1267	50.524	1.0038	10.045	.50685
Stddev	.00093	.00422	.00400	.0344	.316	.0040	.110	.00328
%RSD	.44362	.81356	.76862	.83412	.62457	.39440	1.0941	.64805
#1	.20904	.51956	.52195	4.0871	50.168	1.0079	9.9715	.50329
#2	.21053	.51493	.52421	4.1484	50.634	1.0035	9.9918	.50748
#3	.20882	.52336	.51643	4.1448	50.770	1.0000	10.171	.50976
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0294	50.978	.52495	10.362	.52713	1.2490	.39867	5.2281
Stddev	.0067	.288	.00357	.043	.00573	.0091	.00494	.0229
%RSD	.65493	.56404	.68059	.41261	1.0865	.73063	1.2401	.43742
#1	1.0335	50.653	.52609	10.372	.52995	1.2508	.39409	5.2355
#2	1.0331	51.079	.52780	10.399	.53091	1.2571	.40391	5.2463
#3	1.0216	51.201	.52094	10.315	.52054	1.2391	.39801	5.2024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 18:10:23 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0354**	**1.0131**	**1.0079**	**.51623**	**1.0349**	**1.0503**	**1.0615**
Stddev	.0051	.0040	.0032	.00447	.0075	.0036	.0080
%RSD	.49400	.39648	.31784	.86522	.71980	.34332	.75490
#1	1.0358	1.0092	1.0085	.51656	1.0289	1.0498	1.0637
#2	1.0403	1.0129	1.0045	.52053	1.0326	1.0541	1.0526
#3	1.0301	1.0172	1.0109	.51161	1.0432	1.0469	1.0681
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7559.0**	**43649.**	**2831.4**
Stddev	16.5	283.	9.1
%RSD	.21858	.64896	.31973
#1	7539.9	43844.	2838.9
#2	7568.3	43324.	2833.9
#3	7568.7	43779.	2821.3

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 18:14:05 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00113**	**.00778**	**.00082**	**.00237**	**.00115**	**.00017**	**-.00480**	**-.00014**
Stddev	.00080	.00665	.00358	.00224	.00102	.00006	.01651	.00017
%RSD	70.779	85.381	438.45	94.230	88.415	36.371	344.24	119.88
#1	-.00105	.01184	.00405	.00402	.00000	.00021	-.01106	.00005
#2	-.00037	.00011	.00144	.00326	.00194	.00010	-.01725	-.00024
#3	-.00196	.01140	-.00304	-.00017	.00152	.00019	.01393	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**.00075**	**.00023**	**-.00304**	**-.12504**	**-.00263**	**-.02184**	**-.00041**
Stddev	.00011	.00079	.00057	.01464	.02078	.00206	.02081	.00430
%RSD	128.23	105.22	252.89	481.50	16.619	78.140	95.243	1048.0
#1	-.00022	.00165	.00027	-.01353	-.12219	-.00391	-.04166	.00456
#2	-.00004	.00015	-.00037	-.00928	-.10582	-.00373	-.02369	-.00301
#3	-.00001	.00046	.00077	.01369	-.14709	-.00026	-.00018	-.00278
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00184**	**-.00565**	**.00087**	**.00224**	**-.00282**	**.00051**	**.00861**	**.00271**
Stddev	.00047	.02805	.00043	.01179	.00159	.00047	.00687	.00133
%RSD	25.554	496.30	49.363	526.04	56.340	93.444	79.771	48.940
#1	.00146	-.03535	.00131	-.01108	-.00317	.00026	.00279	.00409
#2	.00170	-.00200	.00045	.00648	-.00108	.00105	.01619	.00261
#3	.00237	.02040	.00085	.01132	-.00420	.00021	.00685	.00144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 18:14:05 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00133	.00014	.00722	.00127	-.00037	-.00014	.00108
Stddev	.00068	.00010	.00779	.00275	.00054	.00008	.00055
%RSD	51.355	70.111	107.90	215.96	143.80	59.039	50.667
#1	.00091	.00019	-.00027	.00081	-.00017	-.00015	.00051
#2	.00211	.00020	.00665	.00423	.00003	-.00021	.00160
#3	.00096	.00003	.01529	-.00122	-.00098	-.00005	.00111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7731.7	45144.	2870.4
Stddev	35.6	209.	39.0
%RSD	.46004	.46369	1.3589
#1	7699.2	44902.	2846.8
#2	7726.0	45253.	2848.9
#3	7769.7	45276.	2915.4

Approved: June 15, 2016

Sample Name: L1606041104 Acquired: 6/14/2016 18:18:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00044	.19521	.00109	.00048	.00823	.00005	.30813	-.00016
Stddev	.00144	.00461	.00128	.00292	.00062	.00004	.04735	.00001
%RSD	329.00	2.3633	117.97	606.69	7.5050	75.630	15.366	3.6712
#1	-.00058	.19072	.00245	.00361	.00769	.00006	.28619	-.00016
#2	-.00180	.19497	-.00010	.00001	.00810	.00001	.27574	-.00017
#3	.00107	.19994	.00091	-.00217	.00891	.00009	.36247	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.00350	.00048	.15658	-.10616	.00126	.15753	.00213
Stddev	.00064	.00090	.00102	.01788	.11285	.00341	.02033	.00122
%RSD	189.36	25.626	212.11	11.421	106.31	271.11	12.909	57.205
#1	.00044	.00270	.00145	.13774	-.12677	.00198	.18071	.00218
#2	.00092	.00447	-.00058	.15869	.01558	-.00246	.14269	.00089
#3	-.00035	.00333	.00058	.17331	-.20728	.00425	.14918	.00333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00062	2.5794	.01140	-.00045	-.00159	-.00393	.00168	2.1311
Stddev	.00014	.0085	.00031	.00882	.00310	.00227	.00399	.0073
%RSD	23.379	.32897	2.6775	1942.8	195.12	57.783	237.06	.34468
#1	-.00068	2.5781	.01147	-.00216	.00146	-.00159	.00104	2.1329
#2	-.00072	2.5716	.01107	-.00830	-.00149	-.00613	.00596	2.1373
#3	-.00045	2.5885	.01167	.00910	-.00475	-.00408	-.00195	2.1230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606041104 Acquired: 6/14/2016 18:18:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00111	.00582	.00470	.00111	.00046	.00090	.00056
Stddev	.00105	.00014	.00103	.00138	.00055	.00005	.00037
%RSD	94.390	2.4767	21.984	123.73	117.56	5.1249	65.026
#1	.00230	.00567	.00458	.00265	.00079	.00095	.00082
#2	.00070	.00584	.00373	-.00002	-.00017	.00085	.00014
#3	.00032	.00595	.00578	.00072	.00077	.00090	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8444.9	48946.	3101.3
Stddev	14.8	250.	19.0
%RSD	.17482	.51108	.61358
#1	8461.5	49117.	3121.9
#2	8439.8	48659.	3097.7
#3	8433.3	49061.	3084.3

Approved: June 15, 2016

Sample Name: L1606048503 Acquired: 6/14/2016 18:22:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00058**	**.00254**	**.00128**	**.00221**	**.00376**	**.00014**	**3.2725**	**-.00004**
Stddev	.00202	.00600	.00310	.00076	.00140	.00005	.0107	.00019
%RSD	347.20	236.50	242.50	34.549	37.260	32.373	.32565	498.52
#1	.00095	.00885	.00485	.00300	.00329	.00016	3.2610	-.00024
#2	-.00288	-.00309	-.00054	.00148	.00266	.00009	3.2746	.00013
#3	.00017	.00185	-.00048	.00213	.00534	.00017	3.2819	-.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**-.00031**	**.00023**	**-.00132**	**-.06347**	**-.00035**	**.93682**	**.01121**
Stddev	.00031	.00085	.00040	.00460	.06537	.00299	.07738	.00361
%RSD	159.75	278.32	178.44	349.46	103.00	850.12	8.2594	32.208
#1	-.00016	-.00097	.00061	.00211	.00627	.00041	.90753	.00734
#2	.00042	-.00060	.00026	.00049	-.07332	-.00364	1.0246	.01449
#3	.00032	.00065	-.00019	-.00655	-.12335	.00218	.87837	.01180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00059**	**1.9280**	**.00051**	**.00463**	**-.00199**	**-.00168**	**.00135**	**.41261**
Stddev	.00022	.0235	.00035	.00539	.00139	.00394	.00217	.00375
%RSD	37.233	1.2187	67.504	116.36	69.919	234.73	160.18	.90853
#1	-.00045	1.9122	.00082	.00069	-.00200	.00016	.00019	.40925
#2	-.00084	1.9167	.00014	.01077	-.00338	.00101	.00386	.41665
#3	-.00048	1.9550	.00059	.00243	-.00060	-.00621	.00001	.41192
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606048503 Acquired: 6/14/2016 18:22:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	.02080	.00951	-.00064	.00001	.00086	-.00037
Stddev	.00052	.00028	.00247	.00222	.00064	.00004	.00059
%RSD	132.27	1.3291	25.919	345.32	6624.0	4.6434	160.18
#1	.00063	.02049	.00809	.00085	-.00059	.00086	-.00103
#2	-.00020	.02088	.01236	-.00320	-.00006	.00082	.00010
#3	.00077	.02103	.00808	.00042	.00068	.00090	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8407.4	48756.	3086.6
Stddev	20.9	237.	25.6
%RSD	.24893	.48688	.83029
#1	8431.4	48977.	3089.7
#2	8392.5	48505.	3110.6
#3	8398.4	48785.	3059.6

Approved: June 15, 2016

Sample Name: L1606048504 Acquired: 6/14/2016 18:26:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00045	.00098	.00006	.00218	.00711	.00006	3.3571	.00008
Stddev	.00104	.00627	.00148	.00141	.00106	.00004	.0451	.00027
%RSD	233.10	641.65	2510.0	64.848	14.945	76.439	1.3427	341.24
#1	-.00158	.00274	.00151	.00168	.00590	.00001	3.3096	.00028
#2	.00048	.00618	.00012	.00378	.00754	.00006	3.3992	.00019
#3	-.00024	-.00599	-.00145	.00109	.00788	.00010	3.3627	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	-.00045	-.00053	.00386	-.09403	-.00304	.92898	.00177
Stddev	.00025	.00033	.00105	.00685	.06519	.00159	.09330	.00246
%RSD	123.37	72.868	197.72	177.67	69.332	52.321	10.043	139.40
#1	-.00002	-.00007	-.00175	.00029	-.10545	-.00474	1.0102	-.00098
#2	.00048	-.00068	.00002	.01175	-.15276	-.00280	.94970	.00251
#3	.00015	-.00060	.00013	-.00048	-.02388	-.00158	.82707	.00377
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00084	1.5620	.00088	.00463	-.00211	.00083	.00265	.55044
Stddev	.00013	.0322	.00075	.00429	.00351	.00220	.00452	.00142
%RSD	15.857	2.0638	85.246	92.836	166.39	264.78	170.92	.25850
#1	-.00093	1.5794	.00003	-.00033	-.00225	.00072	.00344	.54956
#2	-.00090	1.5818	.00118	.00699	.00147	.00308	.00672	.54966
#3	-.00068	1.5248	.00143	.00722	-.00555	-.00131	-.00222	.55208
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606048504 Acquired: 6/14/2016 18:26:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.04727	.00667	-.00152	.00023	.00048	.00024
Stddev	.00029	.00090	.00460	.00123	.00062	.00013	.00026
%RSD	81.209	1.8954	69.026	80.601	269.03	25.958	109.58
#1	.00011	.04646	.00207	-.00049	-.00006	.00063	.00008
#2	.00028	.04712	.00666	-.00288	-.00019	.00043	.00054
#3	.00067	.04823	.01128	-.00120	.00094	.00040	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8436.1	48837.	3119.8
Stddev	21.5	146.	17.4
%RSD	.25510	.29970	.55763
#1	8421.4	48972.	3114.2
#2	8460.8	48682.	3139.3
#3	8426.0	48858.	3105.8

Approved: June 15, 2016

Sample Name: L1606048505 Acquired: 6/14/2016 18:30:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00083	.00445	.00078	.00185	.00999	.00013	4.6841	-.00010
Stddev	.00047	.00402	.00268	.00158	.00053	.00002	.0160	.00016
%RSD	56.539	90.453	342.81	85.685	5.3470	16.719	.34123	151.60
#1	.00104	.00859	.00373	.00002	.00938	.00012	4.7026	-.00007
#2	.00029	.00421	-.00151	.00274	.01034	.00011	4.6748	-.00028
#3	.00115	.00055	.00012	.00279	.01026	.00015	4.6751	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00028	.00072	.00057	.61374	-.17492	-.00242	.52461	.07515
Stddev	.00031	.00136	.00070	.00905	.06054	.00423	.00041	.00209
%RSD	112.90	188.34	123.55	1.4744	34.609	174.86	.07910	2.7832
#1	-.00034	.00201	.00064	.62149	-.20814	-.00227	.52429	.07636
#2	.00006	.00086	-.00017	.60380	-.10505	.00173	.52508	.07635
#3	-.00055	-.00070	.00123	.61594	-.21158	-.00672	.52446	.07273
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00041	1.5866	.00067	.00377	-.00126	-.00263	-.00066	.44091
Stddev	.00018	.0273	.00091	.00176	.00360	.00354	.00654	.00084
%RSD	43.607	1.7237	135.54	46.702	285.20	134.77	999.04	.19116
#1	-.00037	1.5869	.00033	.00237	-.00414	-.00582	.00617	.44114
#2	-.00060	1.6139	-.00002	.00319	-.00243	.00118	-.00127	.43997
#3	-.00025	1.5592	.00170	.00574	.00278	-.00324	-.00687	.44161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606048505 Acquired: 6/14/2016 18:30:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.01787	.00933	-.00022	.00072	.00032	.00018
Stddev	.00039	.00008	.00676	.00059	.00102	.00021	.00023
%RSD	56.937	.47570	72.461	262.69	141.06	67.491	130.76
#1	.00086	.01796	.00164	-.00048	-.00023	.00008	.00006
#2	.00098	.01784	.01200	.00045	.00060	.00037	.00044
#3	.00024	.01780	.01435	-.00064	.00179	.00049	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8429.3	48865.	3091.3
Stddev	36.1	178.	8.3
%RSD	.42862	.36515	.26929
#1	8460.6	49064.	3093.3
#2	8437.4	48720.	3082.2
#3	8389.7	48811.	3098.5

Approved: June 15, 2016

Sample Name: L1606048506 Acquired: 6/14/2016 18:34:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00168	-.00820	.00027	-.00185	.00094	.00014	4.7670	-.00010
Stddev	.00273	.00704	.00198	.00190	.00125	.00003	.0185	.00021
%RSD	162.99	85.857	727.08	102.67	132.47	24.575	.38836	220.74
#1	.00382	-.01162	-.00181	-.00148	.00081	.00015	4.7789	-.00031
#2	-.00140	-.00010	.00213	-.00390	.00225	.00010	4.7457	.00012
#3	.00261	-.01288	.00049	-.00016	-.00024	.00016	4.7765	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.00030	.00040	.01260	-.16821	-.00191	.35472	.00380
Stddev	.00010	.00099	.00201	.01751	.09808	.00189	.03415	.00102
%RSD	350.66	332.79	503.89	138.95	58.309	98.734	9.6286	26.773
#1	.00002	.00087	.00082	.00016	-.28006	-.00345	.32173	.00460
#2	-.00014	-.00085	-.00179	.00503	-.12769	.00019	.35251	.00414
#3	.00004	.00087	.00216	.03262	-.09688	-.00247	.38993	.00266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00073	.94385	.00083	.00634	-.00363	-.00009	.00168	.35914
Stddev	.00045	.00809	.00069	.00605	.00329	.00319	.00041	.00237
%RSD	61.788	.85693	82.879	95.403	90.695	3491.7	24.317	.65887
#1	-.00097	.95250	.00009	.01212	-.00683	-.00002	.00161	.35648
#2	-.00102	.94257	.00145	.00005	-.00025	-.00332	.00131	.36099
#3	-.00021	.93648	.00096	.00685	-.00382	.00307	.00212	.35996
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606048506 Acquired: 6/14/2016 18:34:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	.01749	.00512	-.00046	.00036	.00073	.00017
Stddev	.00042	.00027	.00617	.00013	.00047	.00032	.00060
%RSD	90.558	1.5678	120.47	28.235	132.43	43.531	358.82
#1	.00090	.01777	.00844	-.00032	-.00018	.00046	.00063
#2	.00006	.01746	.00891	-.00058	.00070	.00108	.00039
#3	.00043	.01723	-.00200	-.00048	.00054	.00066	-.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8416.3	48869.	3117.6
Stddev	8.4	313.	16.6
%RSD	.09954	.64122	.53141
#1	8422.3	48705.	3134.3
#2	8406.7	48673.	3101.2
#3	8419.9	49231.	3117.5

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 18:38:25 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37274**	**9.3653**	**.36703**	**.47488**	**.92360**	**.04696**	**9.1202**	**.04737**
Stddev	.00134	.0510	.00363	.00362	.00453	.00032	.0773	.00032
%RSD	.35883	.54508	.98905	.76257	.49001	.68764	.84750	.67029
#1	.37191	9.3403	.36303	.47282	.91867	.04664	9.0562	.04772
#2	.37428	9.3317	.36793	.47277	.92757	.04695	9.0983	.04711
#3	.37203	9.4241	.37013	.47906	.92455	.04729	9.2060	.04727
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19201**	**.47216**	**.47977**	**3.7033**	**46.458**	**.91691**	**9.1244**	**.46057**
Stddev	.00050	.00483	.00235	.0236	.146	.00279	.1308	.00329
%RSD	.26014	1.0227	.48972	.63846	.31321	.30386	1.4335	.71400
#1	.19161	.46705	.48075	3.6768	46.328	.92004	8.9963	.45718
#2	.19184	.47278	.47710	3.7223	46.615	.91600	9.2577	.46375
#3	.19257	.47664	.48148	3.7107	46.431	.91469	9.1193	.46079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.94277**	**46.744**	**.48271**	**9.5480**	**.48330**	**1.1424**	**.37235**	**4.8111**
Stddev	.00261	.200	.00239	.0174	.00182	.0059	.00249	.0055
%RSD	.27714	.42770	.49593	.18237	.37693	.51475	.66988	.11352
#1	.94575	46.545	.48067	9.5290	.48146	1.1367	.37126	4.8120
#2	.94086	46.944	.48535	9.5518	.48510	1.1420	.37059	4.8053
#3	.94171	46.742	.48211	9.5631	.48334	1.1485	.37521	4.8161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 18:38:25 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.94699	.91805	.90974	.47244	.94584	.96456	.96527
Stddev	.00181	.00419	.00971	.00132	.00791	.00170	.00518
%RSD	.19122	.45684	1.0672	.27897	.83580	.17614	.53644
#1	.94683	.91342	.90198	.47396	.93770	.96260	.95930
#2	.94888	.92159	.90662	.47164	.94634	.96559	.96855
#3	.94527	.91914	.92063	.47171	.95348	.96549	.96796
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8063.2	47010.	3057.0
Stddev	17.3	244.	17.2
%RSD	.21481	.51893	.56114
#1	8057.6	47116.	3074.7
#2	8049.3	47182.	3040.5
#3	8082.6	46731.	3055.9

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 18:42:07 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.00600	.00009	.00022	.00034	.00006	-.00541	-.00007
Stddev	.00170	.00632	.00131	.00112	.00040	.00005	.02196	.00030
%RSD	1887.5	105.34	1439.3	511.75	114.92	81.633	405.75	420.91
#1	.00187	-.00032	.00114	.00146	.00075	.00009	.01783	-.00042
#2	-.00093	.01233	.00051	-.00072	-.00004	.00000	-.02581	.00013
#3	-.00121	.00600	-.00138	-.00008	.00033	.00008	-.00826	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00032	-.00081	.00003	.02147	-.05580	-.00112	-.02941	-.00024
Stddev	.00042	.00063	.00192	.03470	.08976	.00086	.09497	.00102
%RSD	133.48	77.830	5607.3	161.62	160.86	76.588	322.96	427.33
#1	-.00028	-.00068	-.00212	.00337	-.02672	-.00206	-.01489	.00042
#2	.00008	-.00026	.00155	.06148	.01581	-.00095	.05747	.00028
#3	-.00076	-.00150	.00068	-.00044	-.15649	-.00036	-.13080	-.00142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00147	-.00272	.00046	.00153	-.00219	.00120	.00256	.00126
Stddev	.00037	.01584	.00075	.00616	.00232	.00095	.00265	.00094
%RSD	25.463	583.30	164.17	401.98	106.10	79.560	103.41	74.211
#1	.00108	-.02051	-.00031	-.00397	-.00478	.00090	.00560	.00162
#2	.00150	.00983	.00049	.00819	-.00149	.00226	.00139	.00197
#3	.00183	.00253	.00119	.00038	-.00030	.00043	.00070	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 18:42:07 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00112**	**.00048**	**.00352**	**.00219**	**.00003**	**-.00039**	**.00088**
Stddev	.00016	.00017	.00461	.00227	.00030	.00020	.00017
%RSD	14.068	34.660	130.87	103.84	860.88	51.149	19.189
#1	.00126	.00064	-.00090	-.00016	-.00023	-.00058	.00073
#2	.00095	.00031	.00317	.00438	.00036	-.00018	.00084
#3	.00115	.00048	.00830	.00236	-.00003	-.00043	.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8215.9**	**47868.**	**3055.8**
Stddev	14.8	104.	40.5
%RSD	.18052	.21828	1.3267
#1	8199.4	47752.	3075.6
#2	8228.2	47895.	3009.2
#3	8220.1	47956.	3082.7

Approved: June 15, 2016

Sample Name: LLCCV Acquired: 6/14/2016 18:46:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00798	.16315	.00817	.07319	.00789	.00155	.37749	.00044
Stddev	.00104	.00903	.00056	.00026	.00031	.00006	.05271	.00028
%RSD	13.084	5.5357	6.8744	.35783	3.9768	3.8843	13.962	62.553
#1	.00883	.15394	.00752	.07289	.00765	.00149	.32452	.00019
#2	.00682	.16354	.00842	.07339	.00777	.00157	.37802	.00073
#3	.00830	.17199	.00856	.07328	.00824	.00160	.42993	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00376	.00399	.00500	.08442	.61306	.07166	.35674	.00688
Stddev	.00013	.00040	.00056	.02379	.06630	.00403	.04913	.00129
%RSD	3.3607	10.023	11.105	28.186	10.814	5.6263	13.771	18.728
#1	.00381	.00443	.00545	.08961	.67849	.07614	.33374	.00816
#2	.00361	.00390	.00518	.05845	.54593	.06833	.41314	.00690
#3	.00384	.00364	.00438	.10518	.61477	.07051	.32332	.00558
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00692	.36710	.01663	.73730	.00701	.07462	.01686	.75697
Stddev	.00040	.01092	.00054	.00538	.00158	.00239	.00068	.00168
%RSD	5.7176	2.9739	3.2572	.73035	22.502	3.2073	4.0544	.22256
#1	.00661	.37923	.01601	.73657	.00567	.07678	.01652	.75561
#2	.00737	.35807	.01702	.74301	.00875	.07504	.01764	.75644
#3	.00679	.36399	.01684	.73231	.00661	.07205	.01641	.75886
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: LLCCV Acquired: 6/14/2016 18:46:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38559**	**.03748**	**.02579**	**.14398**	**.00705**	**.01793**	**.04204**
Stddev	.00077	.00025	.00251	.00189	.00087	.00014	.00135
%RSD	.19844	.67853	9.7484	1.3141	12.389	.75305	3.2147
#1	.38633	.03720	.02823	.14595	.00604	.01809	.04084
#2	.38563	.03768	.02594	.14382	.00752	.01785	.04179
#3	.38481	.03757	.02321	.14218	.00758	.01786	.04351
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8291.9**	**48232.**	**3085.5**
Stddev	23.9	66.	36.0
%RSD	.28860	.13642	1.1683
#1	8268.2	48157.	3125.8
#2	8291.5	48276.	3056.3
#3	8316.1	48264.	3074.3

Approved: June 15, 2016

Sample Name: PBW 17 Acquired: 6/14/2016 18:50:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571814-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00051**	**.02468**	**-.00105**	**.00628**	**.00138**	**.00008**	**.05267**	**-.00014**
Stddev	.00170	.00685	.00113	.00072	.00033	.00011	.02410	.00014
%RSD	332.22	27.752	107.87	11.501	24.202	143.89	45.760	96.762
#1	-.00230	.01993	-.00199	.00702	.00176	.00003	.08014	-.00027
#2	.00109	.03253	.00021	.00558	.00126	.00020	.04279	.00000
#3	-.00033	.02158	-.00136	.00624	.00113	.00000	.03507	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.00088**	**.00035**	**.00586**	**-.06296**	**-.00161**	**.03112**	**.00009**
Stddev	.00032	.00025	.00092	.02103	.06670	.00582	.11790	.00293
%RSD	247.63	28.236	260.21	359.08	105.95	362.49	378.92	3187.5
#1	.00023	.00073	.00127	.02986	-.12655	.00438	.09487	.00280
#2	-.00021	.00075	.00036	-.00294	-.06879	-.00196	-.10494	.00049
#3	-.00040	.00117	-.00057	-.00935	.00647	-.00724	.10342	-.00301
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**-.00995**	**.00087**	**-.00250**	**-.00099**	**-.00027**	**-.00549**	**.05286**
Stddev	.00018	.02677	.00021	.00255	.00178	.00185	.00448	.00171
%RSD	135.07	269.16	23.933	101.98	180.81	695.80	81.631	3.2432
#1	.00001	-.04047	.00104	.00028	-.00303	-.00009	-.00853	.05216
#2	-.00008	.00956	.00094	-.00473	.00026	.00149	-.00761	.05160
#3	-.00034	.00107	.00064	-.00307	-.00020	-.00219	-.00034	.05481
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: PBW 17 Acquired: 6/14/2016 18:50:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571814-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**.00153**	**-.00135**	**.00051**	**.00001**	**.00194**	**.00042**
Stddev	.00035	.00029	.00531	.00072	.00074	.00013	.00042
%RSD	244.19	18.664	392.83	141.06	7560.1	6.5013	98.186
#1	.00054	.00183	-.00557	.00084	-.00046	.00208	.00073
#2	-.00012	.00151	.00461	.00100	-.00037	.00184	-.00005
#3	.00001	.00126	-.00309	-.00031	.00086	.00190	.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7689.5**	**44705.**	**2859.4**
Stddev	19.7	153.	14.5
%RSD	.25604	.34284	.50814
#1	7668.2	44541.	2865.8
#2	7707.0	44844.	2869.7
#3	7693.3	44730.	2842.8

Approved: June 15, 2016

Sample Name: LCSW 17 Acquired: 6/14/2016 18:54:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571814-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20598	5.2596	.20344	1.0180	.51982	.02559	5.2299	.02594
Stddev	.00217	.0042	.00146	.0029	.00436	.00008	.0654	.00012
%RSD	1.0543	.07910	.71623	.28485	.83942	.32218	1.2502	.46800
#1	.20357	5.2638	.20502	1.0214	.52484	.02556	5.3022	.02588
#2	.20657	5.2555	.20314	1.0167	.51692	.02553	5.1750	.02608
#3	.20779	5.2595	.20215	1.0161	.51770	.02569	5.2125	.02586
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10708	.26691	.26658	2.1224	25.321	.51860	5.2287	.25794
Stddev	.00020	.00188	.00074	.0070	.161	.00430	.1258	.00478
%RSD	.18536	.70334	.27923	.32977	.63658	.82820	2.4061	1.8538
#1	.10726	.26806	.26682	2.1144	25.507	.51708	5.3686	.25733
#2	.10687	.26794	.26574	2.1277	25.228	.51527	5.1249	.25349
#3	.10712	.26475	.26717	2.1249	25.227	.52345	5.1927	.26300
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53157	25.885	.27151	5.1280	.26913	.62741	.20347	2.9553
Stddev	.00087	.171	.00050	.0064	.00047	.00332	.00208	.0060
%RSD	.16430	.66175	.18488	.12459	.17524	.52993	1.0227	.20402
#1	.53240	26.068	.27106	5.1248	.26954	.62833	.20389	2.9483
#2	.53066	25.728	.27143	5.1238	.26862	.63018	.20531	2.9588
#3	.53166	25.858	.27205	5.1353	.26924	.62372	.20121	2.9587
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: LCSW 17 Acquired: 6/14/2016 18:54:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571814-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52856	.52429	.50473	.26522	.52582	.54577	.00342
Stddev	.00193	.00218	.00065	.00201	.00088	.00103	.00085
%RSD	.36426	.41657	.12903	.75767	.16726	.18839	24.808
#1	.52729	.52629	.50409	.26404	.52588	.54516	.00245
#2	.52761	.52196	.50472	.26754	.52490	.54520	.00400
#3	.53077	.52463	.50540	.26409	.52666	.54696	.00382
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7534.5	43877.	2842.3
Stddev	4.4	144.	42.4
%RSD	.05883	.32754	1.4903
#1	7538.2	44036.	2793.4
#2	7529.6	43838.	2866.1
#3	7535.7	43756.	2867.4

Approved: June 15, 2016

Sample Name: L1606030801 Acquired: 6/14/2016 18:58:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571814-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	.02242	-.00112	.12124	.05938	.00009	76.611	-.00004
Stddev	.00102	.00692	.00177	.00226	.00113	.00005	.443	.00003
%RSD	118.66	30.851	158.69	1.8678	1.9070	58.435	.57770	93.387
#1	.00150	.03002	.00088	.12248	.05998	.00010	77.113	-.00003
#2	-.00032	.02077	-.00173	.11863	.06009	.00003	76.447	-.00001
#3	.00141	.01649	-.00250	.12261	.05808	.00013	76.275	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.00130	.00224	.07656	2.1859	.00686	21.950	.07143
Stddev	.00035	.00084	.00106	.01324	.0107	.00225	.042	.00214
%RSD	786.29	64.466	47.374	17.296	.48943	32.827	.19281	3.0009
#1	-.00034	.00148	.00313	.09114	2.1766	.00856	21.902	.06997
#2	.00012	.00204	.00106	.06527	2.1976	.00772	21.982	.07044
#3	.00035	.00039	.00254	.07327	2.1835	.00431	21.966	.07389
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00283	48.809	.00040	.00276	.00231	.00008	.00141	12.663
Stddev	.00054	.307	.00048	.00468	.00146	.00272	.00154	.023
%RSD	19.130	.62999	120.87	169.96	62.889	3589.5	109.63	.18225
#1	.00220	49.161	.00072	.00816	.00131	.00185	.00204	12.648
#2	.00312	48.668	-.00016	.00026	.00164	.00144	-.00035	12.690
#3	.00316	48.596	.00064	-.00015	.00398	-.00306	.00252	12.652
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606030801 Acquired: 6/14/2016 18:58:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571814-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	.93998	-.00948	.00023	.00065	.00446	.00036
Stddev	.00067	.00533	.00108	.00312	.00045	.00028	.00018
%RSD	94.864	.56733	11.404	1349.8	69.250	6.2130	49.868
#1	.00148	.94604	-.01045	.00085	.00098	.00426	.00047
#2	.00036	.93788	-.00967	.00300	.00083	.00477	.00047
#3	.00028	.93602	-.00831	-.00315	.00014	.00434	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7436.0	43134.	2815.2
Stddev	9.2	251.	18.3
%RSD	.12369	.58076	.65017
#1	7436.6	43022.	2810.5
#2	7444.9	42960.	2835.4
#3	7426.6	43421.	2799.7

Approved: June 15, 2016

Sample Name: L1606030802S Acquired: 6/14/2016 19:02:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571814-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20854**	**5.3073**	**.20999**	**1.1552**	**.57984**	**.02610**	**82.512**	**.02617**
Stddev	.00264	.0137	.00471	.0047	.00507	.00005	.582	.00017
%RSD	1.2660	.25776	2.2453	.40985	.87482	.19170	.70558	.64413
#1	.20615	5.2916	.21457	1.1598	.58409	.02605	83.094	.02636
#2	.21137	5.3161	.20515	1.1554	.58121	.02615	82.512	.02610
#3	.20809	5.3143	.21024	1.1503	.57423	.02609	81.930	.02604
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10496**	**.26631**	**.26067**	**2.1725**	**28.222**	**.53424**	**27.217**	**.33167**
Stddev	.00013	.00188	.00241	.0103	.288	.00453	.379	.00291
%RSD	.12668	.70702	.92492	.47246	1.0218	.84755	1.3929	.87677
#1	.10485	.26413	.26317	2.1714	28.470	.53706	26.970	.33005
#2	.10511	.26742	.25836	2.1628	28.290	.53665	27.653	.33503
#3	.10493	.26737	.26048	2.1832	27.906	.52902	27.027	.32994
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53852**	**75.773**	**.26178**	**5.2904**	**.26538**	**.63873**	**.20557**	**15.610**
Stddev	.00227	.437	.00225	.0146	.00446	.00383	.00649	.030
%RSD	.42221	.57696	.86040	.27651	1.6814	.59966	3.1567	.19182
#1	.53819	76.173	.25962	5.3029	.26910	.63472	.20705	15.604
#2	.53643	75.839	.26159	5.2743	.26661	.63911	.19846	15.583
#3	.54094	75.306	.26412	5.2940	.26043	.64235	.21118	15.642
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606030802S Acquired: 6/14/2016 19:02:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571814-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53213	1.4639	.51003	.25626	.53177	.53841	.00066
Stddev	.00076	.0086	.00891	.00282	.00080	.00145	.00049
%RSD	.14293	.59087	1.7476	1.1007	.14972	.26878	73.735
#1	.53256	1.4719	.51540	.25620	.53127	.53758	.00035
#2	.53125	1.4651	.51496	.25348	.53269	.53756	.00041
#3	.53257	1.4548	.49974	.25912	.53135	.54008	.00122
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7385.7	42973.	2817.7
Stddev	21.3	279.	25.1
%RSD	.28879	.65015	.89148
#1	7362.2	42818.	2794.0
#2	7391.0	42806.	2815.0
#3	7403.9	43296.	2844.0

Approved: June 15, 2016

Sample Name: L1606030803SD Acquired: 6/14/2016 19:05:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571814-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20901**	**5.3769**	**.21028**	**1.1784**	**.58833**	**.02630**	**82.590**	**.02637**
Stddev	.00238	.0105	.00198	.0027	.00473	.00011	.635	.00016
%RSD	1.1372	.19530	.94293	.23229	.80332	.41396	.76911	.60864
#1	.20650	5.3855	.21232	1.1771	.59327	.02624	83.245	.02639
#2	.21123	5.3800	.20836	1.1766	.58788	.02623	82.548	.02620
#3	.20930	5.3652	.21018	1.1816	.58385	.02642	81.976	.02652
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10653**	**.26918**	**.26383**	**2.1850**	**28.541**	**.54186**	**27.103**	**.33541**
Stddev	.00020	.00136	.00151	.0082	.283	.00482	.080	.00300
%RSD	.18373	.50378	.57354	.37464	.99235	.88896	.29601	.89365
#1	.10673	.26845	.26521	2.1887	28.842	.54691	27.195	.33683
#2	.10635	.27075	.26221	2.1906	28.499	.54136	27.063	.33743
#3	.10650	.26835	.26407	2.1756	28.281	.53732	27.051	.33197
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.54505**	**76.360**	**.26744**	**5.3480**	**.26828**	**.64664**	**.21093**	**15.617**
Stddev	.00306	.525	.00178	.0279	.00449	.00524	.00905	.064
%RSD	.56103	.68814	.66643	.52101	1.6739	.81088	4.2925	.40748
#1	.54815	76.957	.26942	5.3783	.26346	.65083	.21309	15.672
#2	.54497	76.158	.26692	5.3419	.27234	.64833	.20099	15.632
#3	.54204	75.966	.26597	5.3236	.26905	.64076	.21871	15.547
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606030803SD Acquired: 6/14/2016 19:05:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571814-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53706**	**1.4729**	**.51688**	**.26207**	**.54027**	**.54531**	**.00066**
Stddev	.00106	.0122	.00615	.00144	.00152	.00105	.00023
%RSD	.19681	.83012	1.1891	.54763	.28146	.19216	34.873
#1	.53809	1.4853	.52389	.26372	.53908	.54650	.00050
#2	.53711	1.4727	.51431	.26109	.54198	.54451	.00056
#3	.53598	1.4608	.51243	.26142	.53976	.54493	.00093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7395.5**	**42933.**	**2822.4**
Stddev	25.4	128.	23.3
%RSD	.34379	.29830	.82376
#1	7367.0	43059.	2796.5
#2	7403.3	42803.	2829.2
#3	7416.0	42936.	2841.4

Approved: June 15, 2016

Sample Name: L1606030301 Acquired: 6/14/2016 19:09:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00094	.02561	.00009	.03370	.27526	.00010	34.425
Stddev	.00066	.00510	.00232	.00082	.00064	.00003	.257
%RSD	70.159	19.896	2451.3	2.4305	.23199	31.215	.74549
#1	-.00046	.02602	.00277	.03407	.27600	.00013	34.711
#2	-.00067	.03049	-.00138	.03276	.27481	.00007	34.215
#3	-.00169	.02032	-.00111	.03426	.27498	.00010	34.348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00024	.00142	.00160	.00078	.12819	1.4329	.02149
Stddev	.00017	.00034	.00081	.00070	.01700	.0736	.00230
%RSD	68.829	23.765	50.457	90.379	13.264	5.1373	10.697
#1	-.00028	.00161	.00159	.00149	.11594	1.3479	.01888
#2	-.00039	.00103	.00241	.00075	.12103	1.4750	.02322
#3	-.00006	.00162	.00080	.00009	.14760	1.4759	.02237
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	39.760	.05630	.00020	F 360.13	.00187	1.7585	-.00211
Stddev	.187	.00172	.00026	2.84	.00129	.0125	.00201
%RSD	.46957	3.0503	130.15	.78947	69.122	.71314	95.240
#1	39.877	.05828	-.00010	363.31	.00066	1.7501	-.00443
#2	39.544	.05536	.00031	357.83	.00324	1.7729	-.00079
#3	39.857	.05525	.00039	359.25	.00172	1.7525	-.00112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 15, 2016

Sample Name: L1606030301 Acquired: 6/14/2016 19:09:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00213	.00476	16.167	.00099	.65002	.00199	-.00095
Stddev	.00167	.00114	.021	.00061	.01290	.00304	.00107
%RSD	78.527	23.879	.13049	60.961	1.9842	152.87	112.66
#1	.00318	.00475	16.190	.00133	.66491	.00322	-.00210
#2	.00300	.00590	16.150	.00029	.64229	-.00147	-.00073
#3	.00020	.00363	16.159	.00136	.64286	.00422	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00086	.00790	.00041
Stddev	.00009	.00015	.00077
%RSD	10.367	1.9145	188.33
#1	-.00096	.00785	.00086
#2	-.00079	.00807	-.00048
#3	-.00082	.00778	.00084
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7267.7	41836.	2822.8
Stddev	45.9	257.	32.4
%RSD	.63161	.61406	1.1475
#1	7235.1	41564.	2786.0
#2	7247.7	41870.	2835.3
#3	7320.2	42074.	2847.0

Approved: June 15, 2016

Sample Name: L1606030302 Acquired: 6/14/2016 19:13:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00044	.03559	-.00044	.03092	.26461	.00001	33.104
Stddev	.00039	.00868	.00188	.00189	.00432	.00006	.395
%RSD	87.497	24.386	426.27	6.1079	1.6328	430.22	1.1935
#1	.00037	.03223	.00157	.03260	.26781	.00007	33.478
#2	.00009	.04545	-.00074	.02887	.26633	-.00005	33.144
#3	.00086	.02909	-.00216	.03129	.25970	.00002	32.691
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00000	.00126	.00205	.00188	.18886	1.4522	.02124
Stddev	.00017	.00026	.00023	.00055	.01820	.0778	.00555
%RSD	3694.4	20.669	11.219	29.409	9.6354	5.3548	26.129
#1	-.00002	.00127	.00179	.00205	.16885	1.5252	.01666
#2	-.00015	.00099	.00215	.00233	.19333	1.4609	.01964
#3	.00019	.00151	.00223	.00126	.20441	1.3704	.02741
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	37.836	.05394	-.00005	F 344.59	.00217	1.7031	.00015
Stddev	.580	.00293	.00018	4.32	.00121	.0153	.00135
%RSD	1.5326	5.4407	365.11	1.2542	55.839	.89731	870.71
#1	38.503	.05731	.00011	349.14	.00185	1.7147	.00169
#2	37.451	.05193	-.00001	344.11	.00115	1.7088	-.00084
#3	37.555	.05258	-.00025	340.54	.00351	1.6858	-.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 15, 2016

Sample Name: L1606030302 Acquired: 6/14/2016 19:13:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00115	.00106	16.148	.00074	.62653	-.00058	.00083
Stddev	.00291	.00135	.033	.00087	.01164	.00393	.00075
%RSD	253.59	128.23	.20357	117.71	1.8572	677.66	90.535
#1	-.00030	.00226	16.176	.00114	.63930	.00147	.00030
#2	-.00439	-.00041	16.155	.00135	.62377	.00190	.00050
#3	.00124	.00132	16.112	-.00026	.61653	-.00511	.00168
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00094	.00970	-.00003
Stddev	.00053	.00009	.00059
%RSD	56.435	.89047	2036.3
#1	-.00151	.00961	-.00070
#2	-.00046	.00975	.00041
#3	-.00084	.00976	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7307.8	41959.	2801.5
Stddev	27.4	342.	55.2
%RSD	.37463	.81610	1.9720
#1	7276.2	41603.	2738.1
#2	7324.2	41986.	2827.3
#3	7323.0	42286.	2839.2

Approved: June 15, 2016

Sample Name: L1606030402 Acquired: 6/14/2016 19:17:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	.03015	.00182	.02867	.25811	.00008	32.990
Stddev	.00138	.00433	.00203	.00122	.00258	.00002	.370
%RSD	204.76	14.351	111.57	4.2535	1.0003	22.938	1.1215
#1	-.00073	.02520	.00242	.02924	.26078	.00006	33.410
#2	.00071	.03323	-.00044	.02727	.25562	.00010	32.710
#3	.00204	.03202	.00347	.02950	.25794	.00009	32.851
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.00156	.00211	.00125	.13755	1.4713	.02050
Stddev	.00033	.00042	.00076	.00007	.01539	.1025	.00201
%RSD	364.38	26.952	36.303	5.4418	11.187	6.9638	9.8081
#1	-.00001	.00171	.00268	.00123	.15504	1.4645	.02268
#2	.00019	.00109	.00240	.00132	.12610	1.5770	.01872
#3	-.00045	.00189	.00124	.00119	.13151	1.3724	.02009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	37.039	.05311	-.00047	F 326.91	.00179	1.5936	.00352
Stddev	.458	.00337	.00019	3.29	.00097	.0060	.00499
%RSD	1.2376	6.3398	40.068	1.0063	54.341	.37596	141.72
#1	37.528	.05457	-.00043	330.71	.00245	1.5990	.00813
#2	36.619	.05551	-.00031	325.05	.00067	1.5947	.00420
#3	36.971	.04926	-.00068	324.97	.00225	1.5872	-.00177
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 15, 2016

Sample Name: L1606030402 Acquired: 6/14/2016 19:17:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00076	16.412	.00060	.62324	-.00001	-.00050
Stddev	.00431	.00409	.031	.00052	.01053	.00329	.00088
%RSD	7156.8	534.50	.18932	86.965	1.6898	26749.	177.90
#1	-.00489	-.00395	16.430	.00075	.63540	-.00370	-.00074
#2	.00300	.00308	16.429	.00104	.61692	.00260	-.00123
#3	.00207	.00317	16.376	.00002	.61741	.00106	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00092	.00784	-.00025
Stddev	.00115	.00012	.00054
%RSD	124.39	1.5091	221.00
#1	-.00003	.00771	-.00083
#2	-.00222	.00790	-.00015
#3	-.00052	.00792	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7323.3	41993.	2789.0
Stddev	20.3	242.	32.0
%RSD	.27717	.57550	1.1470
#1	7299.8	41753.	2754.2
#2	7334.9	41990.	2817.2
#3	7335.0	42236.	2795.7

Approved: June 15, 2016

Sample Name: L1606030402PS Acquired: 6/14/2016 19:21:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572020-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20716**	**5.3118**	**.21056**	**1.0592**	**.75547**	**.02620**	**34.998**
Stddev	.00096	.0185	.00287	.0044	.00700	.00007	.267
%RSD	.46463	.34851	1.3632	.41668	.92721	.27594	.76303
#1	.20679	5.3199	.21217	1.0623	.76212	.02628	35.243
#2	.20644	5.3249	.21226	1.0610	.75614	.02617	35.037
#3	.20825	5.2906	.20724	1.0541	.74816	.02614	34.713
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02582**	**.10585**	**.26541**	**.26089**	**2.2193**	**27.784**	**.54758**
Stddev	.00031	.00006	.00111	.00156	.0087	.323	.00395
%RSD	1.2146	.05795	.41956	.59606	.39191	1.1636	.72175
#1	.02607	.10584	.26597	.25952	2.2246	28.103	.54467
#2	.02547	.10580	.26614	.26057	2.2241	27.792	.54600
#3	.02591	.10592	.26413	.26258	2.2093	27.456	.55208
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**38.334**	**.30344**	**.53016**	F **321.49**	**.26333**	**6.7219**	**.25823**
Stddev	.126	.00480	.00125	2.47	.00106	.0263	.00091
%RSD	.32902	1.5811	.23525	.76926	.40435	.39101	.35323
#1	38.317	.30706	.52968	323.38	.26432	6.6920	.25922
#2	38.467	.30528	.53157	322.41	.26346	6.7414	.25806
#3	38.217	.29800	.52921	318.69	.26221	6.7322	.25742
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 15, 2016

Sample Name: L1606030402PS Acquired: 6/14/2016 19:21:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572020-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.63492**	**.20066**	**17.488**	**.52603**	**1.0714**	**.50816**	**.24861**
Stddev	.00819	.00346	.049	.00105	.0079	.00820	.00198
%RSD	1.2897	1.7225	.28101	.19876	.73529	1.6139	.79641
#1	.62615	.20454	17.431	.52505	1.0792	.50866	.24835
#2	.64237	.19952	17.516	.52713	1.0716	.49972	.25071
#3	.63624	.19792	17.517	.52589	1.0634	.51610	.24678
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.53155**	**.53916**	**-.00020**
Stddev	.00151	.00058	.00011
%RSD	.28468	.10824	55.034
#1	.53133	.53866	-.00028
#2	.53316	.53980	-.00008
#3	.53016	.53903	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7310.5**	**41943.**	**2781.5**
Stddev	15.7	117.	21.1
%RSD	.21455	.27937	.75858
#1	7298.3	41808.	2762.8
#2	7305.1	42003.	2777.5
#3	7328.2	42018.	2804.4

Approved: June 15, 2016

Sample Name: L1606030402SDL Acquired: 6/14/2016 19:25:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG572020-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00117**	**.00571**	**.00101**	**.00740**	**.04361**	**.00014**	**5.4801**	**-.00010**
Stddev	.00135	.01502	.00205	.00306	.00091	.00009	.0698	.00019
%RSD	115.68	263.28	203.68	41.393	2.0835	67.058	1.2739	185.54
#1	-.00268	-.00334	-.00105	.00398	.04270	.00014	5.4292	-.00031
#2	-.00070	-.00258	.00305	.00832	.04451	.00005	5.4515	.00007
#3	-.00011	.02304	.00102	.00990	.04362	.00024	5.5597	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**-.00002**	**.00067**	**.02565**	**.19574**	**.00072**	**6.4219**	**.01051**
Stddev	.00019	.00044	.00168	.01486	.06160	.00039	.0540	.00077
%RSD	2431.7	2734.0	250.33	57.920	31.470	53.959	.84022	7.3661
#1	.00022	-.00010	.00098	.03488	.12863	.00105	6.3675	.01060
#2	-.00007	-.00041	-.00114	.03355	.20886	.00029	6.4754	.01124
#3	-.00013	.00046	.00218	.00851	.24972	.00083	6.4226	.00970
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**54.984**	**.00117**	**.26580**	**-.00313**	**.00179**	**-.00024**	**2.8192**
Stddev	.00017	.237	.00063	.00815	.00250	.00202	.00191	.0036
%RSD	172.16	.43085	54.055	3.0670	79.803	112.95	785.76	.12845
#1	-.00018	54.739	.00164	.26260	-.00034	.00060	-.00074	2.8190
#2	-.00021	55.001	.00142	.27507	-.00390	.00412	.00187	2.8157
#3	.00010	55.212	.00045	.25974	-.00515	.00065	-.00186	2.8229
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606030402SDL Acquired: 6/14/2016 19:25:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG572020-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	.10587	.00245	.00126	.00036	.00177	-.00014
Stddev	.00120	.00085	.00449	.00181	.00063	.00019	.00027
%RSD	196.39	.80757	183.63	143.96	176.29	10.821	188.65
#1	.00094	.10544	-.00149	.00071	.00069	.00183	.00003
#2	-.00072	.10531	.00149	.00327	.00075	.00156	-.00001
#3	.00160	.10685	.00734	-.00022	-.00037	.00193	-.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8270.6	47795.	3071.7
Stddev	13.8	199.	16.2
%RSD	.16681	.41665	.52828
#1	8265.2	47756.	3072.7
#2	8286.2	48011.	3087.4
#3	8260.2	47618.	3055.0

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 19:29:21 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37506**	**9.3974**	**.36909**	**.47805**	**.91683**	**.04727**	**9.0768**	**.04742**
Stddev	.00353	.0191	.00176	.00407	.00871	.00023	.0698	.00007
%RSD	.94038	.20293	.47672	.85179	.95044	.49652	.76959	.13993
#1	.37424	9.3868	.37093	.47559	.90776	.04700	9.0578	.04743
#2	.37202	9.3860	.36743	.47581	.91758	.04742	9.0185	.04747
#3	.37893	9.4194	.36892	.48275	.92514	.04740	9.1542	.04734
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19204**	**.47573**	**.47884**	**3.7028**	**45.974**	**.90927**	**9.1493**	**.45874**
Stddev	.00043	.00308	.00152	.0688	.476	.00799	.0809	.00684
%RSD	.22562	.64671	.31678	1.8587	1.0357	.87897	.88445	1.4913
#1	.19199	.47256	.47714	3.6263	45.629	.90277	9.0946	.45518
#2	.19164	.47592	.47933	3.7224	45.775	.90686	9.1111	.45442
#3	.19250	.47871	.48005	3.7597	46.517	.91819	9.2423	.46663
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.94632**	**46.252**	**.48300**	**9.5302**	**.48341**	**1.1449**	**.37311**	**4.8067**
Stddev	.00098	.486	.00184	.0157	.00293	.0047	.00354	.0064
%RSD	.10325	1.0501	.38123	.16437	.60631	.40947	.94810	.13271
#1	.94744	45.866	.48334	9.5325	.48054	1.1432	.37478	4.8007
#2	.94564	46.093	.48101	9.5135	.48329	1.1413	.36905	4.8060
#3	.94587	46.798	.48464	9.5446	.48640	1.1502	.37550	4.8134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 19:29:21 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.94958	.91521	.91034	.47524	.94987	.96174	.96285
Stddev	.00351	.00813	.01228	.00124	.00696	.00095	.01228
%RSD	.36999	.88803	1.3490	.26100	.73306	.09921	1.2749
#1	.94758	.90751	.90035	.47510	.94196	.96211	.95842
#2	.94753	.91441	.90661	.47655	.95256	.96066	.95341
#3	.95364	.92371	.92405	.47408	.95508	.96246	.97672
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8049.1	46705.	3036.1
Stddev	17.8	43.	35.0
%RSD	.22149	.09260	1.1522
#1	8062.1	46683.	3048.2
#2	8056.3	46754.	3063.4
#3	8028.8	46676.	2996.6

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 19:33:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	.00265	.00141	.00105	.00070	.00009	.03686	-.00034
Stddev	.00076	.00140	.00015	.00068	.00088	.00014	.01834	.00006
%RSD	180.29	52.712	10.480	64.570	126.63	150.66	49.766	17.366
#1	.00032	.00208	.00144	.00153	-.00030	-.00005	.05223	-.00028
#2	-.00028	.00424	.00153	.00028	.00138	.00023	.04180	-.00040
#3	.00123	.00162	.00124	.00135	.00101	.00009	.01655	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00000	.00131	.00087	-.00376	-.14930	-.00253	.00807	-.00216
Stddev	.00014	.00053	.00033	.00841	.01221	.00239	.06261	.00104
%RSD	3001.5	40.686	38.603	223.47	8.1768	94.446	775.94	48.168
#1	.00013	.00129	.00121	-.01248	-.16067	-.00010	.07963	-.00308
#2	-.00015	.00185	.00054	.00431	-.15082	-.00487	-.01882	-.00103
#3	.00001	.00079	.00085	-.00312	-.13640	-.00261	-.03660	-.00238
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00135	-.01983	.00054	.00492	-.00144	.00011	.00275	.00153
Stddev	.00042	.02377	.00102	.00972	.00168	.00122	.00295	.00092
%RSD	31.199	119.85	188.52	197.76	116.62	1092.0	107.10	60.095
#1	.00091	-.03222	.00164	.01574	.00014	.00065	-.00024	.00255
#2	.00141	.00757	.00036	.00206	-.00125	-.00129	.00284	.00124
#3	.00175	-.03486	-.00037	-.00306	-.00320	.00098	.00565	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 19:33:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00111**	**.00015**	**.00516**	**-.00218**	**.00018**	**-.00030**	**.00092**
Stddev	.00064	.00038	.00845	.00060	.00012	.00016	.00036
%RSD	57.434	246.29	163.76	27.548	64.141	52.839	39.305
#1	.00179	.00057	.00693	-.00187	.00006	-.00014	.00128
#2	.00054	.00003	.01258	-.00179	.00028	-.00046	.00056
#3	.00099	-.00015	-.00404	-.00287	.00020	-.00030	.00091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8190.1**	**47609.**	**3025.4**
Stddev	37.2	128.	21.8
%RSD	.45429	.26849	.72140
#1	8150.5	47546.	3050.4
#2	8195.8	47525.	3009.9
#3	8224.2	47756.	3015.9

Approved: June 15, 2016

Sample Name: PBW A7 Acquired: 6/14/2016 19:37:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571974-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.00720	.00087	.00055	.00184	.00007	-.04157	.00003
Stddev	.00147	.01132	.00379	.00049	.00109	.00010	.02939	.00027
%RSD	850.81	157.25	435.32	88.623	59.140	142.26	70.709	882.98
#1	-.00151	-.00477	-.00184	.00110	.00302	.00005	-.05691	.00020
#2	.00081	.01774	.00520	.00041	.00161	.00018	-.00768	-.00028
#3	.00122	.00864	-.00075	.00015	.00088	-.00002	-.06011	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00060	.00032	-.00907	-.12906	-.00203	-.05239	-.00079
Stddev	.00012	.00048	.00152	.01275	.10454	.00262	.03768	.00352
%RSD	185.65	80.493	471.75	140.59	81.000	129.41	71.923	444.81
#1	-.00007	.00062	.00207	.00565	-.00849	.00076	-.03880	-.00259
#2	.00009	.00011	-.00048	-.01609	-.19444	-.00444	-.09497	.00326
#3	.00016	.00107	-.00063	-.01677	-.18426	-.00240	-.02339	-.00304
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	-.00351	.00072	-.00331	-.00074	.00211	.00983	.03320
Stddev	.00058	.02246	.00069	.00245	.00092	.00499	.00752	.00014
%RSD	8665.7	639.87	96.310	74.047	125.62	236.68	76.523	.40960
#1	.00026	-.00652	.00070	-.00254	-.00022	-.00010	.01178	.03310
#2	-.00065	.02031	.00004	-.00134	-.00019	.00782	.00153	.03336
#3	.00041	-.02432	.00142	-.00606	-.00180	-.00139	.01619	.03315
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: PBW A7 Acquired: 6/14/2016 19:37:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571974-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00105	.00030	-.00260	-.00307	.00050	.00077	.00059
Stddev	.00125	.00028	.00409	.00326	.00045	.00005	.00030
%RSD	118.85	94.383	157.60	106.16	89.721	6.3200	50.880
#1	.00120	.00061	-.00166	-.00280	.00084	.00082	.00031
#2	-.00027	.00021	.00094	.00005	-.00001	.00076	.00054
#3	.00222	.00007	-.00707	-.00645	.00066	.00072	.00091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7568.6	43918.	2787.6
Stddev	12.6	145.	19.8
%RSD	.16596	.33103	.71091
#1	7558.8	43910.	2772.6
#2	7582.8	43777.	2780.2
#3	7564.4	44067.	2810.1

Approved: June 15, 2016

Sample Name: LCSW A7 Acquired: 6/14/2016 19:41:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571974-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20807**	**5.2852**	**.20553**	**1.0275**	**.52606**	**.02592**	**5.2718**	**.02606**
Stddev	.00197	.0088	.00236	.0027	.00556	.00005	.0775	.00042
%RSD	.94632	.16701	1.1506	.26298	1.0570	.20552	1.4706	1.6247
#1	.20593	5.2945	.20382	1.0294	.53244	.02586	5.3274	.02575
#2	.20846	5.2769	.20453	1.0244	.52345	.02594	5.3047	.02654
#3	.20981	5.2844	.20823	1.0286	.52228	.02596	5.1832	.02588
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10824**	**.26830**	**.27004**	**2.1237**	**26.008**	**.52386**	**5.2434**	**.26123**
Stddev	.00062	.00227	.00041	.0419	.286	.00256	.0732	.00355
%RSD	.57695	.84641	.15223	1.9746	1.1007	.48924	1.3964	1.3586
#1	.10837	.26744	.27003	2.1466	26.339	.52681	5.2546	.26482
#2	.10756	.26659	.27045	2.1493	25.843	.52264	5.1652	.26114
#3	.10880	.27088	.26963	2.0753	25.842	.52214	5.3104	.25773
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53678**	**26.331**	**.27362**	**5.1611**	**.26830**	**.63319**	**.20684**	**2.8617**
Stddev	.00128	.206	.00065	.0100	.00224	.00177	.00413	.0026
%RSD	.23837	.78206	.23909	.19312	.83363	.27976	1.9964	.09044
#1	.53658	26.569	.27432	5.1519	.26573	.63427	.20414	2.8646
#2	.53562	26.211	.27302	5.1596	.26939	.63416	.21159	2.8595
#3	.53815	26.213	.27352	5.1717	.26978	.63115	.20478	2.8610
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: LCSW A7 Acquired: 6/14/2016 19:41:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571974-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53563	.53378	.51587	.26514	.53250	.53776	.00413
Stddev	.00079	.00412	.00397	.00249	.00160	.00091	.00110
%RSD	.14697	.77145	.77052	.93894	.30052	.16838	26.657
#1	.53525	.53844	.51258	.26507	.53321	.53834	.00316
#2	.53654	.53226	.51474	.26767	.53067	.53672	.00389
#3	.53511	.53064	.52029	.26269	.53362	.53823	.00533
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7498.6	43546.	2803.0
Stddev	15.2	234.	43.1
%RSD	.20258	.53779	1.5362
#1	7484.2	43290.	2753.9
#2	7497.3	43749.	2834.3
#3	7514.5	43599.	2820.8

Approved: June 15, 2016

Sample Name: L1606039508 Acquired: 6/14/2016 19:44:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571974-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**.01639**	**-.00015**	**.01975**	**.08787**	**.00010**	**65.420**	**-.00005**
Stddev	.00150	.00814	.00338	.00291	.00091	.00012	.406	.00018
%RSD	612.46	49.655	2188.6	14.735	1.0393	116.48	.62037	396.50
#1	.00148	.00820	-.00083	.02247	.08892	-.00003	65.887	-.00011
#2	-.00115	.02448	-.00314	.02009	.08724	.00019	65.229	-.00018
#3	-.00107	.01649	.00351	.01668	.08746	.00014	65.146	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.00074**	**.00230**	**.02232**	**1.7167**	**.00758**	**14.923**	**.00195**
Stddev	.00034	.00041	.00127	.01034	.0941	.00477	.058	.00136
%RSD	168.62	55.487	55.388	46.345	5.4830	62.936	.38825	69.665
#1	-.00005	.00080	.00375	.01050	1.7924	.01300	14.981	.00347
#2	.00004	.00112	.00176	.02671	1.7464	.00570	14.865	.00089
#3	-.00059	.00030	.00138	.02974	1.6113	.00403	14.922	.00148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00031**	**9.0544**	**.00111**	**.00635**	**-.00305**	**.00122**	**.00944**	**2.5428**
Stddev	.00032	.0906	.00058	.00660	.00168	.00403	.00806	.0105
%RSD	106.12	1.0011	52.196	103.86	55.043	330.14	85.392	.41368
#1	-.00001	9.1589	.00089	.00496	-.00370	-.00163	.00318	2.5463
#2	.00063	9.0065	.00068	.00056	-.00431	-.00054	.00660	2.5510
#3	.00029	8.9976	.00177	.01353	-.00114	.00583	.01853	2.5309
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606039508 Acquired: 6/14/2016 19:44:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571974-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.27938	-.00328	.00131	-.00043	.00191	.00002
Stddev	.00050	.00187	.00461	.00107	.00085	.00004	.00076
%RSD	272.59	.66811	140.75	81.879	197.81	2.2227	3783.1
#1	.00062	.28132	.00086	.00250	.00013	.00186	-.00086
#2	.00029	.27760	-.00825	.00042	-.00142	.00193	.00053
#3	-.00036	.27921	-.00244	.00101	-.00001	.00193	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7485.5	43573.	2795.9
Stddev	13.6	272.	30.6
%RSD	.18208	.62346	1.0928
#1	7472.5	43651.	2764.9
#2	7484.4	43270.	2796.8
#3	7499.7	43796.	2826.0

Approved: June 15, 2016

Sample Name: L1606039508S Acquired: 6/14/2016 19:48:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571974-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21003**	**5.4004**	**.21220**	**1.0640**	**.62209**	**.02634**	**72.551**	**.02624**
Stddev	.00030	.0056	.00204	.0034	.00216	.00003	.252	.00021
%RSD	.14384	.10280	.96108	.31692	.34720	.11663	.34739	.78334
#1	.21038	5.4068	.21160	1.0605	.62229	.02635	72.803	.02647
#2	.20982	5.3971	.21447	1.0672	.61984	.02636	72.299	.02607
#3	.20989	5.3974	.21052	1.0643	.62414	.02630	72.552	.02618
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10639**	**.27104**	**.26556**	**2.1376**	**28.231**	**.54738**	**20.453**	**.26857**
Stddev	.00050	.00197	.00124	.0222	.164	.00181	.152	.00190
%RSD	.47429	.72857	.46541	1.0369	.58063	.33065	.74273	.70922
#1	.10694	.26925	.26679	2.1241	28.214	.54587	20.371	.26877
#2	.10630	.27316	.26432	2.1632	28.076	.54688	20.628	.26658
#3	.10594	.27072	.26557	2.1256	28.403	.54938	20.360	.27037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.54526**	**35.974**	**.26676**	**5.3429**	**.26913**	**.64798**	**.20364**	**5.3639**
Stddev	.00277	.030	.00217	.0240	.00218	.00065	.00281	.0233
%RSD	.50825	.08384	.81499	.44925	.81078	.09958	1.3807	.43369
#1	.54846	36.002	.26874	5.3705	.27076	.64777	.20569	5.3907
#2	.54359	35.942	.26444	5.3307	.26999	.64747	.20480	5.3492
#3	.54373	35.978	.26712	5.3273	.26665	.64871	.20044	5.3518
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606039508S Acquired: 6/14/2016 19:48:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571974-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53794**	**.80495**	**.51824**	**.26501**	**.54074**	**.53367**	**.00057**
Stddev	.00307	.00129	.00764	.00658	.00171	.00281	.00044
%RSD	.57045	.16062	1.4749	2.4844	.31661	.52634	76.984
#1	.54144	.80478	.52694	.27219	.54058	.53691	.00007
#2	.53662	.80375	.51522	.25925	.54252	.53212	.00075
#3	.53574	.80632	.51257	.26360	.53911	.53197	.00090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7401.9**	**42787.**	**2797.6**
Stddev	43.8	116.	23.0
%RSD	.59240	.27032	.82384
#1	7351.3	42653.	2781.9
#2	7427.5	42857.	2824.0
#3	7427.0	42850.	2786.8

Approved: June 15, 2016

Sample Name: L1606039508SD Acquired: 6/14/2016 19:52:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571974-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20851	5.3665	.20899	1.0619	.62106	.02632	72.427	.02675
Stddev	.00270	.0172	.00276	.0024	.00329	.00009	.229	.00005
%RSD	1.2926	.32056	1.3219	.22839	.52977	.32479	.31647	.18053
#1	.21144	5.3725	.20582	1.0638	.62316	.02641	72.687	.02670
#2	.20613	5.3799	.21027	1.0592	.62275	.02632	72.342	.02678
#3	.20795	5.3471	.21087	1.0628	.61727	.02624	72.252	.02679
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10707	.27170	.26697	2.1111	28.377	.54651	20.400	.26652
Stddev	.00055	.00127	.00075	.0083	.190	.00518	.056	.00292
%RSD	.51616	.46853	.28076	.39356	.66862	.94844	.27536	1.0960
#1	.10753	.27057	.26778	2.1082	28.596	.55190	20.390	.26913
#2	.10723	.27144	.26631	2.1046	28.258	.54605	20.350	.26707
#3	.10646	.27308	.26681	2.1205	28.277	.54156	20.461	.26337
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.54821	36.067	.26714	5.3592	.27142	.64907	.21231	5.3873
Stddev	.00158	.135	.00028	.0095	.00304	.00480	.00566	.0105
%RSD	.28732	.37522	.10369	.17697	1.1192	.73895	2.6662	.19454
#1	.55000	36.161	.26702	5.3680	.27404	.64701	.21853	5.3958
#2	.54703	36.127	.26695	5.3605	.26809	.65456	.20746	5.3905
#3	.54759	35.912	.26746	5.3492	.27213	.64566	.21095	5.3756
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606039508SD Acquired: 6/14/2016 19:52:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571974-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.54066**	**.80474**	**.52622**	**.26649**	**.54208**	**.53669**	**.00046**
Stddev	.00132	.00376	.00890	.00354	.00109	.00110	.00052
%RSD	.24472	.46719	1.6906	1.3276	.20129	.20446	113.12
#1	.54217	.80820	.52425	.26720	.54214	.53737	.00040
#2	.54011	.80527	.53594	.26264	.54097	.53728	-.00003
#3	.53970	.80074	.51848	.26961	.54315	.53543	.00101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7390.9**	**43047.**	**2800.8**
Stddev	17.0	267.	14.1
%RSD	.23008	.62072	.50521
#1	7377.3	42745.	2784.5
#2	7385.6	43142.	2808.9
#3	7410.0	43253.	2809.0

Approved: June 15, 2016

Sample Name: L1606037601 Acquired: 6/14/2016 19:56:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	-.00014	.00094	.00726	.00371	.00011	6.0557	-.00020
Stddev	.00150	.00851	.00054	.00024	.00072	.00003	.0567	.00018
%RSD	205.65	6070.8	57.218	3.3266	19.533	24.154	.93610	88.758
#1	-.00094	.00305	.00033	.00726	.00453	.00010	6.0436	-.00001
#2	.00117	.00632	.00136	.00702	.00317	.00009	6.0061	-.00037
#3	.00197	-.00979	.00114	.00750	.00342	.00014	6.1175	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.00093	.00084	-.00926	-.02341	.00207	1.9740	.00190
Stddev	.00015	.00060	.00062	.01229	.04957	.00216	.0819	.00112
%RSD	450.72	64.373	74.097	132.77	211.75	104.05	4.1494	59.160
#1	-.00008	.00146	.00093	-.02345	-.07749	.00184	2.0682	.00110
#2	-.00002	.00028	.00018	-.00230	-.01263	.00004	1.9191	.00142
#3	.00020	.00104	.00141	-.00203	.01988	.00434	1.9348	.00319
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	2.4390	.00034	.00575	.00036	.00286	.00141	.67438
Stddev	.00011	.0467	.00138	.00687	.00293	.00177	.00067	.00389
%RSD	132.32	1.9138	400.87	119.34	816.88	61.951	47.777	.57680
#1	.00010	2.3999	.00189	.00080	-.00265	.00093	.00120	.67886
#2	.00019	2.4265	-.00077	.00287	.00053	.00322	.00216	.67226
#3	-.00003	2.4907	-.00008	.01359	.00320	.00441	.00086	.67200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606037601 Acquired: 6/14/2016 19:56:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	.12237	.00187	.00147	.00073	.00297	-.00011
Stddev	.00051	.00017	.00895	.00106	.00057	.00007	.00065
%RSD	57.552	.13790	477.52	71.939	77.807	2.3218	566.12
#1	.00092	.12220	.00919	.00035	.00072	.00290	-.00031
#2	.00036	.12237	-.00811	.00245	.00131	.00295	-.00064
#3	.00138	.12254	.00454	.00160	.00017	.00304	.00061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8367.7	48536.	3026.6
Stddev	16.7	329.	33.1
%RSD	.19959	.67740	1.0928
#1	8386.1	48895.	3043.3
#2	8353.5	48464.	3048.0
#3	8363.4	48249.	2988.5

Approved: June 15, 2016

Sample Name: L1606037602 Acquired: 6/14/2016 20:00:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	.00592	-.00091	.00782	.00354	.00007	5.9713	-.00003
Stddev	.00307	.00708	.00202	.00289	.00026	.00005	.0317	.00025
%RSD	344.07	119.69	220.80	36.909	7.4289	70.102	.53161	932.08
#1	-.00256	.00231	.00049	.00694	.00338	.00004	5.9390	-.00032
#2	.00192	.00136	-.00000	.00548	.00385	.00013	6.0025	.00015
#3	.00332	.01408	-.00323	.01105	.00340	.00004	5.9725	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	-.00001	-.00033	.03570	-.05760	-.00271	2.1279	.00219
Stddev	.00021	.00115	.00115	.02041	.01524	.00211	.1105	.00083
%RSD	152.47	15261.	345.69	57.159	26.463	77.893	5.1935	37.762
#1	.00010	.00132	.00072	.01495	-.04001	-.00390	2.1230	.00220
#2	-.00024	-.00059	-.00157	.05574	-.06574	-.00396	2.0199	.00136
#3	-.00028	-.00075	-.00015	.03641	-.06704	-.00027	2.2408	.00302
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	2.3138	.00030	.00544	-.00128	.00145	.00263	.66338
Stddev	.00036	.0343	.00116	.00122	.00220	.00238	.00089	.00341
%RSD	165.63	1.4830	385.02	22.336	172.23	164.18	33.857	.51465
#1	.00005	2.3113	.00164	.00530	-.00359	.00071	.00173	.66405
#2	-.00062	2.3493	-.00028	.00672	-.00102	-.00047	.00351	.66641
#3	-.00007	2.2808	-.00045	.00430	.00078	.00412	.00264	.65968
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606037602 Acquired: 6/14/2016 20:00:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00098	.12589	.00504	.00091	-.00058	.00165	-.00027
Stddev	.00056	.00094	.00194	.00237	.00037	.00026	.00032
%RSD	57.044	.74629	38.505	261.46	64.091	15.772	117.99
#1	.00155	.12485	.00713	.00070	-.00099	.00138	.00004
#2	.00097	.12613	.00330	.00337	-.00027	.00166	-.00059
#3	.00043	.12668	.00470	-.00135	-.00048	.00190	-.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8346.8	48368.	3061.9
Stddev	19.9	133.	44.9
%RSD	.23813	.27530	1.4650
#1	8369.7	48513.	3076.7
#2	8333.5	48250.	3011.5
#3	8337.3	48341.	3097.4

Approved: June 15, 2016

Sample Name: L1606037603 Acquired: 6/14/2016 20:04:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00096	.02968	.00056	.07611	.10444	-.00001	95.727	-.00019
Stddev	.00095	.00304	.00516	.00094	.00195	.00011	.930	.00033
%RSD	98.134	10.231	925.81	1.2340	1.8680	1336.6	.97202	172.21
#1	.00196	.03189	-.00270	.07707	.10649	.00009	96.590	-.00049
#2	.00007	.03093	-.00213	.07607	.10424	-.00012	95.851	.00017
#3	.00086	.02621	.00651	.07519	.10260	.00000	94.741	-.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	.00154	.00136	.22364	2.0989	.00833	50.340	.14855
Stddev	.00015	.00127	.00161	.01700	.0889	.00290	.333	.00193
%RSD	19.058	82.160	119.06	7.6001	4.2342	34.767	.66152	1.3009
#1	.00093	.00012	.00232	.24130	2.1119	.00752	50.603	.14977
#2	.00066	.00255	-.00051	.22222	2.0042	.00593	50.451	.14632
#3	.00071	.00195	.00226	.20739	2.1805	.01154	49.966	.14955
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00304	83.455	.00081	.01036	.00176	-.00253	.00653	9.3352
Stddev	.00024	.785	.00079	.00625	.00391	.00509	.00407	.0339
%RSD	7.9983	.94114	97.320	60.365	222.30	201.08	62.292	.36345
#1	.00312	84.149	.00168	.00802	-.00135	-.00105	.00183	9.3690
#2	.00323	83.613	.00015	.00561	.00614	.00166	.00894	9.3356
#3	.00276	82.603	.00060	.01745	.00048	-.00820	.00883	9.3011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606037603 Acquired: 6/14/2016 20:04:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00078**	**1.4500**	**-.01203**	**-.00400**	**-.00070**	**.00146**	**-.00024**
Stddev	.00069	.0150	.00372	.00078	.00128	.00009	.00044
%RSD	87.683	1.0373	30.925	19.362	183.82	5.8270	185.51
#1	-.00000	1.4640	-.01576	-.00318	-.00201	.00148	.00024
#2	.00107	1.4518	-.00832	-.00410	-.00064	.00153	-.00063
#3	.00128	1.4341	-.01201	-.00473	.00055	.00137	-.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7293.7**	**42511.**	**2808.7**
Stddev	15.6	250.	35.6
%RSD	.21378	.58896	1.2663
#1	7293.7	42569.	2769.0
#2	7278.1	42237.	2819.5
#3	7309.3	42727.	2837.6

Approved: June 15, 2016

Sample Name: L1606037603PS Acquired: 6/14/2016 20:08:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG572145-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.16732**	**4.2412**	**.16944**	**.83702**	**.41439**	**.02074**	**11.579**	**.02115**
Stddev	.00139	.0191	.00055	.00429	.00359	.00011	.063	.00010
%RSD	.82837	.45074	.32693	.51228	.86551	.53973	.54503	.45567
#1	.16603	4.2333	.16930	.84081	.41141	.02062	11.543	.02107
#2	.16878	4.2272	.16896	.83237	.41337	.02076	11.542	.02112
#3	.16714	4.2630	.17004	.83789	.41837	.02084	11.651	.02125
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.08601**	**.21073**	**.21599**	**1.6632**	**20.569**	**.40388**	**8.1236**	**.21564**
Stddev	.00040	.00198	.00122	.0255	.143	.00058	.0942	.00140
%RSD	.46318	.93892	.56504	1.5349	.69709	.14430	1.1594	.65062
#1	.08561	.21093	.21589	1.6338	20.497	.40327	8.1811	.21440
#2	.08601	.21260	.21482	1.6797	20.477	.40444	8.0149	.21535
#3	.08641	.20866	.21726	1.6762	20.735	.40393	8.1747	.21716
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41572**	**27.073**	**.21550**	**4.2521**	**.21524**	**.51017**	**.17452**	**2.8867**
Stddev	.00074	.163	.00156	.0179	.00219	.00226	.00975	.0102
%RSD	.17800	.60189	.72201	.42172	1.0170	.44375	5.5860	.35409
#1	.41638	26.907	.21398	4.2603	.21760	.50995	.16328	2.8804
#2	.41586	27.080	.21541	4.2316	.21327	.51254	.17973	2.8813
#3	.41492	27.233	.21709	4.2645	.21486	.50803	.18056	2.8985
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606037603PS Acquired: 6/14/2016 20:08:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG572145-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.42434**	**.52719**	**.39763**	**.21184**	**.41778**	**.44062**	**.00026**
Stddev	.00079	.00274	.00417	.00138	.00012	.00160	.00018
%RSD	.18688	.51925	1.0479	.65013	.02859	.36335	70.019
#1	.42415	.52439	.39765	.21034	.41792	.43949	.00011
#2	.42367	.52734	.39346	.21213	.41770	.43991	.00046
#3	.42522	.52986	.40179	.21305	.41773	.44245	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8298.7**	**48092.**	**3084.7**
Stddev	12.4	86.	20.2
%RSD	.14907	.17788	.65460
#1	8288.8	48133.	3072.9
#2	8312.6	48150.	3073.2
#3	8294.8	47994.	3108.1

Approved: June 15, 2016

Sample Name: L1606037603SDL Acquired: 6/14/2016 20:12:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 50 Custom ID2: Custom ID3:
Comment: WG572145-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00031	-.00011	-.00097	.00240	.00192	.00011	.87778	.00003
Stddev	.00260	.00534	.00110	.00082	.00097	.00007	.01744	.00017
%RSD	841.71	5015.3	113.10	34.080	50.302	59.901	1.9871	678.48
#1	-.00185	-.00220	-.00008	.00334	.00301	.00004	.85985	.00013
#2	-.00177	.00596	-.00064	.00201	.00115	.00016	.89469	.00011
#3	.00269	-.00408	-.00219	.00185	.00161	.00014	.87880	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	-.00023	.00070	.01828	-.16788	-.00115	.47163	.00013
Stddev	.00048	.00071	.00071	.01664	.04101	.00386	.02394	.00101
%RSD	223.31	310.73	101.23	91.044	24.431	334.03	5.0753	777.31
#1	.00012	-.00097	.00149	.00012	-.14254	.00224	.44631	.00080
#2	-.00077	-.00015	.00010	.02193	-.21520	-.00035	.49389	.00062
#3	.00000	.00044	.00052	.03280	-.14590	-.00535	.47469	-.00103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00111	.72833	.00096	.00426	-.00417	.00129	-.00065	.08029
Stddev	.00041	.02820	.00090	.00142	.00166	.00287	.00232	.00106
%RSD	36.848	3.8712	93.807	33.267	39.811	223.01	360.18	1.3149
#1	.00073	.76071	.00140	.00373	-.00324	-.00167	.00199	.08117
#2	.00105	.71513	-.00008	.00319	-.00609	.00147	-.00150	.08057
#3	.00154	.70916	.00156	.00587	-.00318	.00407	-.00242	.07912
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606037603SDL Acquired: 6/14/2016 20:12:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 50 Custom ID2: Custom ID3:
Comment: WG572145-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00079**	**.01313**	**.01047**	**.00019**	**.00030**	**.00034**	**-.00008**
Stddev	.00037	.00024	.00514	.00188	.00079	.00023	.00040
%RSD	46.789	1.8404	49.142	988.87	263.82	67.672	497.35
#1	.00042	.01340	.00662	.00146	.00115	.00020	-.00004
#2	.00115	.01293	.00847	-.00197	-.00040	.00022	-.00050
#3	.00079	.01307	.01631	.00108	.00015	.00061	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8299.8**	**48423.**	**3040.2**
Stddev	2.4	241.	19.9
%RSD	.02852	.49677	.65448
#1	8300.5	48697.	3022.5
#2	8301.7	48325.	3061.7
#3	8297.1	48246.	3036.3

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 20:16:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37667**	**9.4035**	**.37286**	**.47167**	**.91227**	**.04717**	**9.0153**	**.04733**
Stddev	.00057	.0112	.00507	.00209	.00363	.00052	.0508	.00009
%RSD	.15239	.11915	1.3598	.44295	.39777	1.1056	.56302	.18986
#1	.37679	9.4093	.36870	.47367	.91318	.04776	8.9983	.04732
#2	.37717	9.3906	.37138	.47184	.90827	.04680	8.9752	.04724
#3	.37604	9.4106	.37851	.46950	.91535	.04694	9.0723	.04742
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19138**	**.47412**	**.47768**	**3.6643**	**45.667**	**.90836**	**9.0831**	**.45268**
Stddev	.00014	.00427	.00155	.0187	.193	.01297	.0576	.00104
%RSD	.07565	.89993	.32400	.51025	.42192	1.4277	.63437	.22950
#1	.19134	.47904	.47937	3.6823	45.628	.92071	9.0439	.45192
#2	.19154	.47152	.47633	3.6658	45.497	.89485	9.0561	.45386
#3	.19126	.47178	.47734	3.6449	45.876	.90952	9.1492	.45225
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.94376**	**45.777**	**.47920**	**9.4727**	**.47711**	**1.1407**	**.37357**	**4.7802**
Stddev	.00129	.168	.00165	.0120	.00216	.0020	.00433	.0044
%RSD	.13645	.36596	.34418	.12611	.45245	.17860	1.1581	.09222
#1	.94378	45.655	.47935	9.4621	.47545	1.1412	.37603	4.7810
#2	.94504	45.708	.48076	9.4704	.47634	1.1424	.36858	4.7754
#3	.94246	45.968	.47748	9.4856	.47955	1.1384	.37611	4.7841
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 20:16:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.94598	.91008	.90369	.47410	.94227	.95554	.94155
Stddev	.00185	.00240	.00268	.00143	.00647	.00081	.00205
%RSD	.19513	.26351	.29672	.30197	.68629	.08453	.21754
#1	.94734	.90976	.90113	.47353	.94973	.95463	.94138
#2	.94671	.90785	.90648	.47304	.93835	.95617	.93959
#3	.94388	.91261	.90346	.47573	.93872	.95582	.94367
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7990.7	46358.	3064.5
Stddev	9.5	189.	12.5
%RSD	.11949	.40691	.40645
#1	7986.0	46249.	3065.8
#2	8001.6	46576.	3076.3
#3	7984.4	46249.	3051.5

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 20:20:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00041**	**.00477**	**-.00352**	**.00434**	**.00063**	**.00004**	**.00529**	**-.00028**
Stddev	.00148	.00927	.00260	.00261	.00035	.00005	.02742	.00023
%RSD	358.80	194.45	73.925	60.210	55.103	124.46	518.08	79.970
#1	-.00068	.01259	-.00192	.00391	.00096	.00007	-.02614	-.00007
#2	.00119	-.00547	-.00212	.00713	.00027	-.00002	.01776	-.00052
#3	-.00175	.00717	-.00652	.00197	.00067	.00008	.02427	-.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00027**	**.00049**	**.00115**	**-.01548**	**-.16235**	**-.00338**	**-.10490**	**-.00144**
Stddev	.00043	.00079	.00098	.01032	.08835	.00370	.07013	.00188
%RSD	159.36	160.48	85.441	66.640	54.419	109.36	66.857	130.28
#1	-.00056	.00140	.00228	-.01628	-.26434	-.00613	-.17497	-.00361
#2	-.00048	-.00003	.00064	-.00479	-.11311	-.00484	-.10501	-.00034
#3	.00023	.00010	.00052	-.02537	-.10959	.00082	-.03471	-.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00154**	**-.01137**	**.00094**	**-.00396**	**.00016**	**-.00066**	**.00783**	**.00086**
Stddev	.00031	.00719	.00070	.00432	.00142	.00225	.00680	.00113
%RSD	20.100	63.243	74.541	109.13	914.54	343.13	86.840	131.58
#1	.00122	-.00683	.00175	-.00894	-.00062	.00151	.01483	.00213
#2	.00183	-.00761	.00062	-.00187	.00179	-.00298	.00126	.00044
#3	.00157	-.01965	.00046	-.00108	-.00071	-.00050	.00738	-.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 20:20:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00072**	**-.00001**	**.00377**	**.00009**	**.00009**	**-.00035**	**.00075**
Stddev	.00107	.00035	.00166	.00197	.00007	.00014	.00032
%RSD	147.86	2694.1	44.168	2118.5	76.833	38.859	42.404
#1	.00191	.00026	.00246	-.00218	.00004	-.00049	.00092
#2	-.00014	.00011	.00320	.00136	.00006	-.00036	.00094
#3	.00039	-.00041	.00564	.00110	.00017	-.00021	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8168.3**	**47490.**	**3047.5**
Stddev	10.3	198.	12.7
%RSD	.12556	.41629	.41563
#1	8176.9	47701.	3044.4
#2	8170.9	47308.	3061.5
#3	8156.9	47462.	3036.7

Approved: June 15, 2016

Sample Name: L1606037604 Acquired: 6/14/2016 20:24:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00032**	**.00756**	**-.00185**	**.00469**	**.00404**	**.00007**	**8.7792**	**-.00032**
Stddev	.00019	.00312	.00051	.00180	.00005	.00008	.0398	.00009
%RSD	59.067	41.210	27.877	38.444	1.2193	113.73	.45339	29.604
#1	-.00026	.01101	-.00206	.00275	.00402	-.00001	8.7433	-.00028
#2	-.00016	.00494	-.00222	.00500	.00400	.00015	8.7724	-.00025
#3	-.00053	.00674	-.00126	.00632	.00409	.00008	8.8220	-.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**.00039**	**.00058**	**.00730**	**.00847**	**.00083**	**1.2642**	**.03208**
Stddev	.00038	.00082	.00073	.01936	.04904	.00128	.0199	.00048
%RSD	1319.7	212.15	125.15	265.20	579.15	154.65	1.5728	1.4950
#1	.00046	-.00036	.00116	.02451	-.04789	.00204	1.2658	.03202
#2	-.00026	.00026	.00083	-.01366	.03191	.00097	1.2832	.03164
#3	-.00011	.00126	-.00024	.01105	.04139	-.00052	1.2435	.03259
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00030**	**3.7411**	**.00189**	**.00717**	**-.00387**	**.00020**	**-.00206**	**.76318**
Stddev	.00045	.0143	.00183	.00136	.00242	.00213	.00680	.00111
%RSD	150.40	.38310	96.540	18.952	62.478	1056.0	330.72	.14550
#1	-.00074	3.7570	.00399	.00765	-.00665	-.00221	-.00933	.76446
#2	.00016	3.7370	.00062	.00564	-.00219	.00099	-.00099	.76269
#3	-.00033	3.7292	.00107	.00822	-.00279	.00183	.00414	.76241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606037604 Acquired: 6/14/2016 20:24:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00072**	**.04318**	**-.00014**	**.00075**	**.00033**	**.00145**	**-.00023**
Stddev	.00006	.00011	.00435	.00228	.00014	.00014	.00105
%RSD	8.4337	.25383	3096.5	301.47	43.640	9.5729	452.41
#1	.00074	.04307	.00031	.00337	.00016	.00153	-.00117
#2	.00065	.04319	-.00470	-.00073	.00043	.00129	-.00044
#3	.00077	.04329	.00396	-.00037	.00039	.00153	.00091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8314.4**	**48031.**	**3034.3**
Stddev	12.3	138.	25.7
%RSD	.14819	.28704	.84757
#1	8306.7	47891.	3030.2
#2	8328.6	48034.	3061.8
#3	8307.8	48167.	3010.9

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 20:28:10 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38145**	**9.5297**	**.37179**	**.47895**	**.91835**	**.04744**	**9.0623**	**.04770**
Stddev	.00074	.0208	.00359	.00192	.00362	.00029	.0379	.00014
%RSD	.19353	.21829	.96432	.40042	.39393	.61309	.41775	.28741
#1	.38124	9.5376	.36791	.48097	.91631	.04778	9.0921	.04762
#2	.38228	9.5455	.37246	.47873	.91622	.04725	9.0197	.04763
#3	.38084	9.5061	.37499	.47715	.92253	.04730	9.0750	.04786
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19264**	**.47622**	**.48088**	**3.6771**	**46.027**	**.91668**	**9.1578**	**.46068**
Stddev	.00058	.00219	.00109	.0271	.144	.00757	.0724	.00386
%RSD	.29895	.45902	.22576	.73645	.31279	.82598	.79011	.83793
#1	.19200	.47875	.48020	3.6525	45.914	.92433	9.0875	.45627
#2	.19281	.47502	.48030	3.6728	45.977	.90919	9.2320	.46341
#3	.19311	.47491	.48213	3.7061	46.189	.91650	9.1539	.46237
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.95289**	**46.112**	**.48191**	**9.5513**	**.48065**	**1.1478**	**.37978**	**4.8187**
Stddev	.00288	.222	.00113	.0283	.00473	.0063	.00516	.0172
%RSD	.30192	.48246	.23487	.29588	.98378	.54720	1.3580	.35629
#1	.95113	45.892	.48073	9.5206	.47833	1.1406	.38331	4.8019
#2	.95621	46.107	.48299	9.5571	.47754	1.1507	.38218	4.8362
#3	.95134	46.337	.48202	9.5763	.48609	1.1521	.37386	4.8182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 20:28:10 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.95214**	**.91766**	**.91145**	**.47927**	**.95378**	**.96314**	**.95662**
Stddev	.00224	.00487	.00908	.00249	.00832	.00208	.00950
%RSD	.23556	.53063	.99667	.51969	.87275	.21595	.99290
#1	.95106	.91471	.90663	.47834	.96319	.96092	.95069
#2	.95472	.91500	.90579	.48209	.95078	.96504	.95161
#3	.95064	.92328	.92193	.47737	.94737	.96345	.96758
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8029.3**	**46259.**	**3052.8**
Stddev	40.6	206.	17.4
%RSD	.50537	.44620	.57101
#1	8035.1	46087.	3059.4
#2	7986.2	46203.	3065.9
#3	8066.7	46488.	3033.0

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 20:31:52 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00069	.00437	.00079	.00195	.00089	.00004	.01496	-.00002
Stddev	.00059	.00687	.00511	.00214	.00047	.00006	.03133	.00015
%RSD	85.649	157.29	643.31	109.54	53.013	160.33	209.40	643.65
#1	-.00030	.01102	-.00465	.00409	.00085	.00002	.03337	.00015
#2	-.00137	-.00271	.00548	-.00019	.00044	.00011	-.02121	-.00008
#3	-.00040	.00481	.00156	.00197	.00138	-.00001	.03273	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00047	.00090	.00007	-.00390	-.12491	-.00044	-.03143	-.00151
Stddev	.00024	.00117	.00052	.03152	.11655	.00214	.00810	.00239
%RSD	50.813	129.53	737.64	807.40	93.313	487.54	25.752	158.74
#1	-.00038	-.00041	.00057	.03124	-.24893	.00139	-.02619	.00055
#2	-.00074	.00127	-.00047	-.01327	-.10814	.00008	-.02736	-.00094
#3	-.00028	.00185	.00012	-.02968	-.01764	-.00279	-.04076	-.00413
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00150	-.01020	-.00000	.00303	-.00270	-.00035	.00675	.00182
Stddev	.00038	.02614	.00033	.00543	.00172	.00335	.00318	.00079
%RSD	25.535	256.29	12533.	179.56	63.729	958.50	47.058	43.331
#1	.00106	-.03994	-.00014	-.00311	-.00379	.00159	.00633	.00273
#2	.00165	.00912	-.00024	.00498	-.00072	.00158	.01012	.00140
#3	.00177	.00023	.00037	.00721	-.00359	-.00422	.00381	.00133
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 20:31:52 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	.00014	.00541	.00038	-.00080	-.00014	.00069
Stddev	.00060	.00004	.00437	.00194	.00017	.00017	.00006
%RSD	282.76	31.285	80.645	506.67	20.920	125.59	8.2535
#1	.00049	.00018	.00744	-.00159	-.00096	-.00003	.00066
#2	-.00048	.00014	.00040	.00045	-.00081	-.00005	.00075
#3	.00063	.00009	.00840	.00229	-.00062	-.00034	.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8164.0	47462.	3072.1
Stddev	14.2	179.	18.2
%RSD	.17425	.37672	.59115
#1	8152.7	47258.	3051.6
#2	8159.2	47592.	3078.4
#3	8180.0	47536.	3086.3

Approved: June 15, 2016

Sample Name: LLCCV Acquired: 6/14/2016 20:35:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00796	.15654	.00520	.07362	.00772	.00155	.36450	.00072
Stddev	.00058	.00604	.00233	.00171	.00060	.00003	.00774	.00008
%RSD	7.2560	3.8586	44.788	2.3295	7.7289	1.8142	2.1230	11.177
#1	.00863	.16003	.00770	.07267	.00720	.00156	.35816	.00064
#2	.00766	.14956	.00309	.07259	.00759	.00151	.37312	.00071
#3	.00760	.16002	.00482	.07560	.00837	.00156	.36222	.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00374	.00376	.00416	.08157	.58896	.07087	.34991	.00537
Stddev	.00013	.00055	.00080	.00802	.06552	.00052	.04718	.00220
%RSD	3.4987	14.670	19.296	9.8277	11.124	.73849	13.483	40.929
#1	.00389	.00388	.00409	.08757	.56210	.07050	.40372	.00309
#2	.00367	.00316	.00499	.08467	.54115	.07064	.31562	.00748
#3	.00367	.00425	.00339	.07246	.66364	.07147	.33040	.00555
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00723	.35769	.01538	.72222	.00467	.07288	.01608	.74185
Stddev	.00045	.01580	.00072	.00535	.00062	.00148	.00634	.00241
%RSD	6.2012	4.4166	4.6660	.74030	13.263	2.0373	39.420	.32510
#1	.00671	.37510	.01481	.72802	.00439	.07167	.02340	.74233
#2	.00746	.34427	.01618	.71749	.00424	.07245	.01257	.74399
#3	.00751	.35370	.01514	.72115	.00538	.07454	.01227	.73924
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: LLCCV Acquired: 6/14/2016 20:35:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37476**	**.03636**	**.02406**	**.14149**	**.00689**	**.01529**	**.04153**
Stddev	.00102	.00023	.00222	.00136	.00043	.00012	.00094
%RSD	.27273	.63775	9.2116	.96161	6.2626	.77005	2.2600
#1	.37560	.03610	.02169	.14259	.00666	.01517	.04059
#2	.37506	.03645	.02441	.14192	.00661	.01541	.04153
#3	.37362	.03654	.02608	.13997	.00738	.01529	.04247
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8208.9**	**47722.**	**3044.8**
Stddev	14.5	284.	6.1
%RSD	.17665	.59522	.20194
#1	8214.3	47755.	3047.5
#2	8192.5	47423.	3037.7
#3	8220.0	47989.	3049.0

Approved: June 15, 2016

2.3.2 Metals ICP-MS Data

2.3.2.1 Summary Data

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	AWD4T-060716	**Prep Method:**	3015	**Prep Date:**	06/09/2016 07:45
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572085	**Analyst:**	BKT	**Run Date:**	06/16/2016 22:10
Collect Date:	06/07/2016 15:00	**Dilution:**	1	**File ID:**	NI.061616.221057
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00170	J	0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.205		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.0946		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00650		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00851		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00305		0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.0466		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.230		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000120	J	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.0174		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0348	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	AWD4B-060716	**Prep Method:**	3015	**Prep Date:**	06/09/2016 07:45
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572085	**Analyst:**	BKT	**Run Date:**	06/16/2016 22:14
Collect Date:	06/07/2016 15:30	**Dilution:**	1	**File ID:**	NI.061616.221409
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00124	J	0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.195		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.0892		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00687		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00717		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00258		0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.0529		0.00400	0.00200	0.00100
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.0124		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0260	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	AWD4B-060716	**Prep Method:**	3015	**Prep Date:**	06/09/2016 07:45
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572085	**Analyst:**	BKT	**Run Date:**	06/16/2016 22:20
Collect Date:	06/07/2016 15:30	**Dilution:**	5	**File ID:**	NI.061616.222032
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nickel, Total	7440-02-0	0.283		0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer NexION 300X

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	100
Vi = Initial volume	40
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/L)	0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	200
Vi = Initial volume	0.5
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/kg)	40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	40
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	50

50 ug/kg = 0.050 mg/kg

Perkin Elmer NexION ICP/MS

STANDARDS KEY

QC Std 1 - ICV
QC Std 2 - ICB
QC Std 3 - LLICV
QC Std 4 - ICSA
QC Std 5 - ICSAB
QC Std 6 - CCV
QC Std 7 - CCB
QC Std 8 - LLCCV

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.00005	0.05	0.1
Sb	10	0	0.00005	0.05	0.1
As	10	0	0.00005	0.05	0.1
Ba	10	0	0.00005	0.05	0.1
Be	10	0	0.00005	0.05	0.1
Ca	1000	0	0.005	5	10
Cd	10	0	0.0005	0.05	0.1
Cr	10	0	0.0005	0.05	0.1
Co	10	0	0.0005	0.05	0.1
Cu	10	0	0.0005	0.05	0.1
Fe	1000	0	0.005	5	10
Pb	10	0	0.00005	0.05	0.1
Mg	1000	0	0.005	5	10
Mn	10	0	0.00005	0.05	0.1
Ni	10	0	0.00005	0.05	0.1
K	1000	0	0.005	5	10
Se	10	0	0.00005	0.05	0.1
Ag	10	0	0.00005	0.05	0.1
Na	1000	0	0.005	5	10
Tl	10	0	0.00005	0.05	0.1
V	10	0	0.00005	0.05	0.1
U	1000	0	0.00005	0.05	0.1
Zn	10	0	0.00005	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG571964
Analyst: VC
Spike Analyst: VC
Run Date: 06/09/2016 07:45
Method: 3015
Balance: BAL016
Instrument: MW-3
Instrument Start: 06/09/2016 07:54

SOP: ME407 Revison 19
Spike Solution: STD75998
Spike Witness: ERP
40 & 50 ML. DIGESTION TU COA18772
HNO3 Lot #: COA18905
MS Filters- fisher-Lot#R RGT35621

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG571964-02	BLANK	1	20 mL	50 mL	184.032 g	184.036 g		
2	WG571964-03	LCS	1	20 mL	50 mL	181.351 g	181.339 g	.25 mL	
3	L16060410-01	SAMP	2	20 mL	50 mL	183.076 g	183.051 g		06/16/16
4	L16060410-02	SAMP	2	20 mL	50 mL	180.945 g	180.932 g		06/16/16
5	L16060411-03	SAMP	1	20 mL	50 mL	183.652 g	183.639 g		06/17/16
6	L16060411-04	SAMP	1	20 mL	50 mL	185.692 g	185.682 g		06/17/16
7	L16060416-05	SAMP	2	20 mL	50 mL	182.672 g	182.624 g		06/17/16
8	L16060423-03	SAMP	2	20 mL	50 mL	183.716 g	183.689 g		06/13/16
9	L16060424-01	SAMP	2	20 mL	50 mL	184.132 g	184.119 g		06/13/16
10	WG571964-01	REF	2	20 mL	50 mL	183.332 g	183.318 g		
11	L16060428-01	SAMP	2	20 mL	50 mL	183.332 g	183.318 g		06/15/16
12	L16060430-01	SAMP	2	20 mL	50 mL	181.769 g	181.756 g		06/15/16
13	L16060430-02	SAMP	2	20 mL	50 mL	183.246 g	183.23 g		06/15/16
14	L16060430-03	SAMP	2	20 mL	50 mL	181.199 g	181.176 g		06/15/16
15	L16060430-04	SAMP	2	20 mL	50 mL	182.82 g	182.806 g		06/15/16
16	L16060430-05	SAMP	2	20 mL	50 mL	184.964 g	184.948 g		06/15/16
17	WG571964-04	DUP	1	20 mL	50 mL	181.084 g	181.063 g		
18	WG571964-05	MS	1	20 mL	50 mL	182.397 g	182.373 g	.25 mL	
19	WG571964-06	MSD	1	20 mL	50 mL	182.792 g	182.778 g	.25 mL	

WG571964-04	FILTERED DIGESTATE
WG571964-05	FILTERED DIGESTATE
WG571964-06	FILTERED DIGESTATE
L16060416-05	FILTERED DIGESTATE
L16060428-01	FILTERED DIGESTATE
WG571964-01	FILTERED DIGESTATE

Analyst: Vicki Collins

Reviewer: Erin Potter

MW_DIG - Modified 09/30/2009
PDF ID: 4799472
Report generated: 06/09/2016 08:37

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 061616A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573083,572869,572085,572184

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.061616.153014	Blank	Blank		1		06/16/16 15:30
2	NI.061616.153326	WG573095-01	Calibration Point		1		06/16/16 15:33
3	NI.061616.153637	WG573095-02	Calibration Point		1		06/16/16 15:36
4	NI.061616.153949	WG573095-03	Calibration Point		1		06/16/16 15:39
5	NI.061616.154300	WG573095-04	Calibration Point		1		06/16/16 15:43
6	NI.061616.154613	WG573095-05	ICV		1		06/16/16 15:46
7	NI.061616.154926	WG573095-06	ICB		1		06/16/16 15:49
8	NI.061616.155239	WG573095-07	Low Level Initial Calibration V		1		06/16/16 15:52
9	NI.061616.155746	WG573095-08	Initial Calibration Verification		1		06/16/16 15:57
10	NI.061616.160355	WG573095-09	Initial Calib Blank		1		06/16/16 16:03
11	NI.061616.160740	WG573095-10	Interference Check		1		06/16/16 16:07
12	NI.061616.162201	WG573095-11	Interference Check		1		06/16/16 16:22
13	NI.061616.162516	WG573095-12	CCV		1		06/16/16 16:25
14	NI.061616.163850	WG573095-13	CCB		1		06/16/16 16:38
15	NI.061616.173543	WG572432-04	Method/Prep Blank	20/50	1		06/16/16 17:35
16	NI.061616.173854	WG572432-05	Laboratory Control S	20/50	1		06/16/16 17:38
17	NI.061616.174206	WG572432-01	Reference Sample		1	L16060540-06	06/16/16 17:42
18	NI.061616.174517	WG572432-06	Matrix Spike	20/50	1	L16060540-06	06/16/16 17:45
19	NI.061616.174829	WG572432-07	Matrix Spike Duplica	20/50	1	L16060540-06	06/16/16 17:48
20	NI.061616.175140	L16060533-01	16F0399-01	20/50	1		06/16/16 17:51
21	NI.061616.175452	L16060540-03	AG4573	20/50	1		06/16/16 17:54
22	NI.061616.175803	WG573083-01	Post Digestion Spike		1	L16060540-03	06/16/16 17:58
23	NI.061616.180115	WG573083-02	Serial Dilution		5	L16060540-03	06/16/16 18:01
24	NI.061616.180426	WG573083-02	Serial Dilution		25	L16060540-03	06/16/16 18:04
25	NI.061616.180739	WG573095-14	CCV		1		06/16/16 18:07
26	NI.061616.181051	WG573095-15	CCB		1		06/16/16 18:10
27	NI.061616.181404	L16060540-09	AG4578	20/50	1		06/16/16 18:14
28	NI.061616.181715	L16060540-10	AG4579	20/50	1		06/16/16 18:17
29	NI.061616.182027	L16060540-11	AG4580	20/50	1		06/16/16 18:20
30	NI.061616.182338	L16060540-14	AG4584	20/50	1		06/16/16 18:23
31	NI.061616.182650	L16060540-15	AG4587	20/50	1		06/16/16 18:26
32	NI.061616.183001	L16060540-16	AG4589	20/50	1		06/16/16 18:30
33	NI.061616.183313	L16060549-01	J6F0164-01	20/50	1		06/16/16 18:33
34	NI.061616.183624	L16060614-01	WATER PLANT B/W	20/50	1		06/16/16 18:36

Page: 1 Approved: June 20, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 061616A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573083,572869,572085,572184

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.061616.183936	L16060624-01	16F1312-03	20/50	1		06/16/16 18:39
36	NI.061616.184247	WG572432-03	Reference Sample		1	L16060630-01	06/16/16 18:42
37	NI.061616.184600	WG573095-16	CCV		1		06/16/16 18:46
38	NI.061616.184912	WG573095-17	CCB		1		06/16/16 18:49
39	NI.061616.185225	WG572432-10	Duplicate	20/50	1	L16060630-01	06/16/16 18:52
40	NI.061616.185538	WG573095-18	CCV		1		06/16/16 18:55
41	NI.061616.185850	WG573095-19	CCB		1		06/16/16 18:58
42	NI.061616.190202	WG573095-20	Low Level Continuing Calibra		1		06/16/16 19:02
43	NI.061616.190516	WG572730-03	Method/Prep Blank	20/50	1		06/16/16 19:05
44	NI.061616.190828	WG572730-04	Laboratory Control S	20/50	1		06/16/16 19:08
45	NI.061616.191230	WG572730-01	Reference Sample		1	L16060664-01	06/16/16 19:12
46	NI.061616.191541	WG572730-05	Duplicate	20/50	1	L16060664-01	06/16/16 19:15
47	NI.061616.191852	WG572730-02	Reference Sample		1	L16060729-03	06/16/16 19:18
48	NI.061616.192204	WG572730-06	Matrix Spike	20/50	1	L16060729-03	06/16/16 19:22
49	NI.061616.192515	WG572730-07	Matrix Spike Duplica	20/50	1	L16060729-03	06/16/16 19:25
50	NI.061616.192827	L16060754-01	V6F0103-02	20/50	1		06/16/16 19:28
51	NI.061616.193138	WG572869-01	Post Digestion Spike		1	L16060754-01	06/16/16 19:31
52	NI.061616.193450	L16060754-01	V6F0103-02		5		06/16/16 19:34
53	NI.061616.193803	WG573095-21	CCV		1		06/16/16 19:38
54	NI.061616.194114	WG573095-22	CCB		1		06/16/16 19:41
55	NI.061616.194427	WG572869-02	Serial Dilution		25	L16060754-01	06/16/16 19:44
56	NI.061616.194738	L16060616-01	MW8-060916	20/50	1		06/16/16 19:47
57	NI.061616.195050	L16060616-02	18CPTMW26SW-060916	20/50	1		06/16/16 19:50
58	NI.061616.195401	L16060616-04	MW10F-060916	20/50	1		06/16/16 19:54
59	NI.061616.195713	L16060649-01	V6F0102-02	20/50	1		06/16/16 19:57
60	NI.061616.200024	L16060650-01	MW1-061016	20/50	1		06/16/16 20:00
61	NI.061616.200336	L16060650-02	MW3-061016	20/50	1		06/16/16 20:03
62	NI.061616.200647	L16060650-03	17WW08-061016	20/50	1		06/16/16 20:06
63	NI.061616.201257	L16060650-08	18WW24F-061016	20/50	1		06/16/16 20:12
64	NI.061616.201608	L16060729-01	A09-MW10-Y1S2	20/50	1		06/16/16 20:16
65	NI.061616.201921	WG573095-23	CCV		1		06/16/16 20:19
66	NI.061616.202232	WG573095-24	CCB		1		06/16/16 20:22
67	NI.061616.202638	L16060729-02	A09-MW11-Y1S2	20/50	1		06/16/16 20:26
68	NI.061616.202950	L16060730-01	18CPTMW14-061316	20/50	1		06/16/16 20:29

Page: 2 Approved: June 20, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 061616A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573083,572869,572085,572184

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.061616.204020	L16060730-02	18CPTMW14FD-061316	20/50	1		06/16/16 20:40
70	NI.061616.204331	L16060730-03	18CPTMW24-061316	20/50	1		06/16/16 20:43
71	NI.061616.204643	L16060731-02	60500-SSP0041-SSP0041	20/50	1		06/16/16 20:46
72	NI.061616.204954	L16060731-02	60500-SSP0041-SSP0041	20/50	10		06/16/16 20:49
73	NI.061616.205306	L16060540-09	AG4578	20/50	100		06/16/16 20:53
74	NI.061616.205727	L16060540-10	AG4579	20/50	10		06/16/16 20:57
75	NI.061616.210039	L16060540-11	AG4580	20/50	10		06/16/16 21:00
76	NI.061616.210350	L16060540-14	AG4584	20/50	100		06/16/16 21:03
77	NI.061616.210702	WG573095-25	CCV		1		06/16/16 21:07
78	NI.061616.211014	WG573095-26	CCB		1		06/16/16 21:10
79	NI.061616.211326	L16060616-01	MW8-060916	20/50	10		06/16/16 21:13
80	NI.061616.211638	L16060616-02	18CPTMW26SW-060916	20/50	10		06/16/16 21:16
81	NI.061616.211949	L16060616-04	MW10F-060916	20/50	10		06/16/16 21:19
82	NI.061616.212301	L16060650-01	MW1-061016	20/50	50		06/16/16 21:23
83	NI.061616.212612	L16060650-02	MW3-061016	20/50	10		06/16/16 21:26
84	NI.061616.212923	L16060650-03	17WW08-061016	20/50	10		06/16/16 21:29
85	NI.061616.213235	L16060650-08	18WW24F-061016	20/50	10		06/16/16 21:32
86	NI.061616.213546	L16060730-01	18CPTMW14-061316	20/50	50		06/16/16 21:35
87	NI.061616.213859	L16060730-02	18CPTMW14FD-061316	20/50	50		06/16/16 21:38
88	NI.061616.214210	L16060730-03	18CPTMW24-061316	20/50	50		06/16/16 21:42
89	NI.061616.214523	WG573095-27	CCV		1		06/16/16 21:45
90	NI.061616.214835	WG573095-28	CCB		1		06/16/16 21:48
91	NI.061616.215148	WG573095-29	Low Level Continuing Calibra		1		06/16/16 21:51
92	NI.061616.215500	WG571964-02	Method/Prep Blank	20/50	1		06/16/16 21:55
93	NI.061616.215811	WG571964-03	Laboratory Control S	20/50	1		06/16/16 21:58
94	NI.061616.220123	WG571964-01	Reference Sample		5	L16060428-01	06/16/16 22:01
95	NI.061616.220434	WG571964-05	Matrix Spike	20/50	5	L16060428-01	06/16/16 22:04
96	NI.061616.220746	WG571964-06	Matrix Spike Duplica	20/50	5	L16060428-01	06/16/16 22:07
97	NI.061616.221057	L16060411-03	AWD4T-060716	20/50	1		06/16/16 22:10
98	NI.061616.221409	L16060411-04	AWD4B-060716	20/50	1		06/16/16 22:14
99	NI.061616.221720	WG572085-03	Post Digestion Spike		1	L16060411-04	06/16/16 22:17
100	NI.061616.222032	L16060411-04	AWD4B-060716		5		06/16/16 22:20
101	NI.061616.222343	WG572085-04	Serial Dilution		25	L16060411-04	06/16/16 22:23
102	NI.061616.222656	WG573095-30	CCV		1		06/16/16 22:26

Page: 3 Approved: June 20, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 061616A.REP

Analyst1: BKT Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705

ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607

CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345

Stannous : Hydroxylamine :

Workgroups: 573083,572869,572085,572184

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.061616.223007	WG573095-31	CCB		1		06/16/16 22:30
104	NI.061616.223320	WG571834-02	Method/Prep Blank	20/50	1		06/16/16 22:33
105	NI.061616.223632	WG571834-03	Laboratory Control S	20/50	1		06/16/16 22:36
106	NI.061616.223943	WG571834-01	Reference Sample		1	L16060337-02	06/16/16 22:39
107	NI.061616.224254	WG571834-04	Matrix Spike	20/50	1	L16060337-02	06/16/16 22:42
108	NI.061616.224606	WG571834-05	Matrix Spike Duplica	20/50	1	L16060337-02	06/16/16 22:46
109	NI.061616.224917	L16060303-01	LH18/24-SP650-6368-GRAB	20/50	1		06/16/16 22:49
110	NI.061616.225229	L16060303-02	LH18/24-SP650-6368-COMP	20/50	1		06/16/16 22:52
111	NI.061616.225540	L16060304-02	LH18/24-SP650-6369-GRAB	20/50	1		06/16/16 22:55
112	NI.061616.225852	WG572184-03	Post Digestion Spike		1	L16060304-02	06/16/16 22:58
113	NI.061616.230203	WG572184-04	Serial Dilution		5	L16060304-02	06/16/16 23:02
114	NI.061616.230516	WG573095-32	CCV		1		06/16/16 23:05
115	NI.061616.230827	WG573095-33	CCB		1		06/16/16 23:08
116	NI.061616.231140	WG573095-34	Low Level Continuing Calibra		1		06/16/16 23:11

Page: 4 Approved: June 20, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 16-JUN-2016
Analyst: BKT
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 573095
Runlog ID: 75740
Analytical Workgroups: 573083,572869,572085,572184

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	
Level 4	303,304,411,540,616,650,729,730,731
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BKT
Secondary Reviewer	KHR
Comments	

Primary Reviewer:
20-JUN-2016

Secondary Reviewer:
20-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-20-2016 14:36:34

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG572085

Login Number: L16060411

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
AWD4T-060716	03	06/07/16					06/09/2016	1.7	180		06/16/16	9.3	180	
AWD4B-060716	04	06/07/16					06/09/2016	1.7	180		06/16/16	9.3	180	
AWD4B-060716	04	06/07/16					06/09/2016	1.7	180		06/16/16	9.3	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4812358
Report generated 06/17/2016 14:17

METHOD BLANK SUMMARY

Login Number: L16060411
Blank File ID: NI.061616.215500
Prep Date: 06/09/16 07:45
Analyzed Date: 06/16/16 21:55
Analyst: BKT

Work Group: WG572085
Blank Sample ID: WG571964-02
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG571964-03	NI.060916.160543	06/09/16 16:05	01
DUP	WG571964-04	NI.060916.161206	06/09/16 16:12	01
LCS	WG571964-03	NI.061616.215811	06/16/16 21:58	02
AWD4T-060716	L16060411-03	NI.061616.221057	06/16/16 22:10	01
AWD4B-060716	L16060411-04	NI.061616.221409	06/16/16 22:14	01
AWD4B-060716	L16060411-04	NI.061616.222032	06/16/16 22:20	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4812359
Report generated 06/17/2016 14:17

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060411 Prep Date: 06/09/16 07:45 Sample ID: WG571964-02
Instrument ID: ICP-MS2 Run Date: 06/16/16 21:55 Prep Method: 3015
File ID: NI.061616.215500 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG572085 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-16-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Antimony, Total	0.000500	0.00200	0.000500	1	U
Arsenic, Total	0.000500	0.00200	0.000500	1	U
Barium, Total	0.00150	0.00600	0.00150	1	U
Cadmium, Total	0.000300	0.00120	0.000300	1	U
Chromium, Total	0.00100	0.00400	0.00100	1	U
Cobalt, Total	0.000500	0.00200	0.000500	1	U
Copper, Total	0.00100	0.00400	0.00100	1	U
Lead, Total	0.000500	0.00200	0.000500	1	U
Manganese, Total	0.00100	0.00400	0.00100	1	U
Nickel, Total	0.00200	0.00800	0.00200	1	U
Silver, Total	0.000500	0.00200	0.000500	1	U
Thallium, Total	0.000100	0.000400	0.000100	1	U
Vanadium, Total	0.000500	0.00200	0.000500	1	U
Zinc, Total	0.0125	0.0500	0.0125	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4812360
17-JUN-2016 14:17

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060411 Run Date: 06/16/2016 Sample ID: WG571964-03
Instrument ID: ICP-MS2 Run Time: 21:58 Prep Method: 3015
File ID: NI.061616.215811 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG572085 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD75998 Cal ID: ICP-MS-16-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Antimony, Total	0.125	0.117	93.4	80 - 120	
Arsenic, Total	0.125	0.127	101	80 - 120	
Barium, Total	0.125	0.119	95.5	80 - 120	
Cadmium, Total	0.125	0.122	97.9	80 - 120	
Chromium, Total	0.125	0.129	103	80 - 120	
Cobalt, Total	0.125	0.128	103	80 - 120	
Copper, Total	0.125	0.130	104	80 - 120	
Lead, Total	0.125	0.129	103	80 - 120	
Manganese, Total	0.125	0.141	113	80 - 120	
Nickel, Total	0.125	0.128	102	80 - 120	
Silver, Total	0.125	0.120	95.9	80 - 120	
Thallium, Total	0.125	0.121	96.8	80 - 120	
Vanadium, Total	0.125	0.129	103	80 - 120	
Zinc, Total	0.125	0.129	104	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4812361
Report generated: 06/17/2016 14:17

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060411 Cal ID: ICP-MS2- Worknum: WG572085
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG571964-01 File ID: NI.061616.220123 Dil: 5 Matrix: WATER
Sample ID: WG571964-05 MS File ID: NI.061616.220434 Dil: 5 Units: mg/L
Sample ID: WG571964-06 MSD File ID: NI.061616.220746 Dil: 5

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Antimony	0.00628	0.125	0.126	95.7	0.125	0.126	95.7	0.0119	80 - 120	20	
Arsenic	0.000580	0.125	0.121	96.6	0.125	0.125	99.2	2.65	80 - 120	20	
Barium	0.144	0.125	0.254	87.8	0.125	0.293	120	14.5	80 - 120	20	
Cadmium	ND	0.125	0.121	96.9	0.125	0.121	97.0	0.0866	80 - 120	20	
Chromium	0.00237	0.125	0.121	95.0	0.125	0.128	101	5.95	80 - 120	20	
Cobalt	ND	0.125	0.120	96.1	0.125	0.124	99.4	3.38	80 - 120	20	
Copper	0.496	0.125	0.578	64.9	0.125	0.681	148	16.5	80 - 120	20	*
Lead	0.0892	0.125	0.205	92.6	0.125	0.210	96.9	2.59	80 - 120	20	
Manganese	0.0349	0.125	0.162	101	0.125	0.167	105	2.95	80 - 120	20	
Nickel	0.0736	0.125	0.188	91.9	0.125	0.197	98.9	4.53	80 - 120	20	
Silver	0.00202	0.125	0.120	94.7	0.125	0.122	95.9	1.22	80 - 120	20	
Thallium	0.000228	0.125	0.119	94.9	0.125	0.122	97.1	2.25	80 - 120	20	
Vanadium	0.000571	0.125	0.122	97.3	0.125	0.126	101	3.31	80 - 120	20	
Zinc	0.0743	0.125	0.187	90.3	0.125	0.198	99.3	5.85	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4812362
Report generated 06/17/2016 14:17

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16060411 **Worknum:** WG572085
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG572085-04 **File ID:** NI.061616.222343 **Dil:** 25 **Units:** ug/L
Sample: L16060411-04 **File ID:** NI.061616.222032 **Dil:** 5

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	2.29	F	ND	U		
Arsenic	ND	U	ND	U		
Barium	73.6	X	77.0	X	4.62	
Cadmium	ND	U	ND	U		
Chromium	37.4	X	36.1	F	3.41	
Cobalt	2.81	F	ND	U		
Copper	3.24	F	ND	U		
Lead	ND	U	ND	U		
Manganese	22.0	X	22.0	F	0.03	
Nickel	113	X	112	X	0.70	
Silver	ND	U	ND	U		
Thallium	ND	U	ND	U		
Vanadium	5.21	X	5.04	F	3.31	
Zinc	ND	U	ND	U		

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4812356
06/17/2016 14:17

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16060411 **Worknum:** WG572085
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG572085-04 **File ID:** NI.061616.222032 **Dil:** 5 **Units:** ug/L
Sample: L16060411-04 **File ID:** NI.061616.221409 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	ND	U	2.29	F	2710.00	
Arsenic	0.498	F	ND	U		
Barium	78.1		73.6		5.83	
Cadmium	ND	U	ND	U		
Chromium	35.7	X	37.4	X	4.76	
Cobalt	2.75	X	2.81	F	2.42	
Copper	2.87	X	3.24	F	13.00	
Lead	1.03	X	ND	U		
Manganese	21.1	X	22.0	X	4.01	
Nickel	109		113		4.15	
Silver	ND	U	ND	U		
Thallium	ND	U	ND	U		
Vanadium	4.96	X	5.21	X	5.15	
Zinc	10.4	F	ND	U		

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4812356
06/17/2016 14:17

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060411 **Worknum:** WG572085
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG572085-03 **File ID:** NI.061616.221720 **Dil:** 1 **Units:** ug/L
Sample ID: L16060411-04 **File ID:** NI.061616.221409 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	49.3		0	U	50	98.6	75 - 125	
ARSENIC	49.9		0.498	F	50	98.9	75 - 125	
BARIUM	124		78.1		50	91.4	75 - 125	
CADMIUM	49.2		0	U	50	98.3	75 - 125	
CHROMIUM	85.5		35.7		50	99.6	75 - 125	
COBALT	53.3		2.75		50	101.1	75 - 125	
COPPER	52.1		2.87		50	98.4	75 - 125	
LEAD	50.3		1.03		50	98.5	75 - 125	
MANGANESE	73.6		21.1		50	104.8	75 - 125	
NICKEL	159		109		50	101.2	75 - 125	
SILVER	48.8		0	U	50	97.5	75 - 125	
THALLIUM	47.9		0	U	50	95.9	75 - 125	
VANADIUM	56.1		4.96		50	102.3	75 - 125	
ZINC	60.2		10.4	F	50	99.6	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4812357
Report generated: 06/17/2016 14:17

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16060411	Workgroup (AAB#):	WG572085
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG573095	Initial Calibration Date:	16-JUN-2016 15:43

	WG573095-01		WG573095-02		WG573095-03		WG573095-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	44.3	.4	294	50	219000	100	429000	.999808	
ARSENIC	0	72.1	.4	27.4	50	55400	100	107000	.999975	
BARIUM	0	17.0	.4	202	50	90500	100	179000	.999915	
CADMIUM	0	3.70	.4	107	50	96700	100	192000	.999929	
CHROMIUM	0	2890	.4	7150	50	370000	100	726000	.999966	
COBALT	0	263	.4	583	50	321000	100	621000	.999989	
COPPER	0	79.7	.4	217	50	93700	100	182000	.999999	
LEAD	0	828	.4	1800	50	831000	100	1630000	.999997	
MANGANESE	0	613	.4	1040	50	296000	100	576000	1	
NICKEL	0	108	.4	245	50	96000	100	187000	1	
SILVER	0	82.7	.4	386	50	301000	100	584000	.999738	
THALLIUM	0	10.0	.4	392	50	373000	100	729000	.999991	
VANADIUM	0	581	.4	1540	50	356000	100	688000	.999992	
ZINC	0	145	.4	311	50	55400	100	108000	1	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4812365
Report generated: 17-JUN-2016 14:17

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060411
Instrument ID: ICP-MS2
File ID: NI.061616.160355
Workgroup (AAB#): WG572085
Matrix: WATER

Run Date: 06/16/2016
Run Time: 16:03
Analyst: BKT
Cal ID: ICP-MS2 - 16-JUN-16

Sample ID: WG573095-09
Method: 6020A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
COPPER	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.268	F
THALLIUM	.04	.16	.04	U
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4812367
Report generated 06/17/2016 14:17

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060411
Run Date: 06/16/2016
Sample ID: WG573095-13
Instrument ID: ICP-MS2
Run Time: 16:38
Method: 6020A
File ID: NI.061616.163850
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572085
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812370
Report generated 06/17/2016 14:18

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060411
Run Date: 06/16/2016
Sample ID: WG573095-28
Instrument ID: ICP-MS2
Run Time: 21:48
Method: 6020A
File ID: NI.061616.214835
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572085
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812370
Report generated 06/17/2016 14:18

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060411
Run Date: 06/16/2016
Sample ID: WG573095-31
Instrument ID: ICP-MS2
Run Time: 22:30
Method: 6020A
File ID: NI.061616.223007
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572085
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812370
Report generated 06/17/2016 14:18

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060411 Run Date: 06/16/2016 Sample ID: WG573095-08
Instrument ID: ICP-MS2 Run Time: 15:57 Method: 6020A
File ID: NI.061616.155746 Analyst: BKT Units: ug/L
Workgroup (AAB#): WG572085 Cal ID: ICP-MS - 16-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	46.9	93.8	90 - 110	
Arsenic		50	49.9	99.8	90 - 110	
Barium		50	47.7	95.3	90 - 110	
Cadmium		50	48.1	96.2	90 - 110	
Chromium		50	50.4	101	90 - 110	
Cobalt		50	49.2	98.4	90 - 110	
Copper		50	50.2	100	90 - 110	
Lead		50	48.5	96.9	90 - 110	
Manganese		50	51.6	103	90 - 110	
Nickel		50	50.1	100	90 - 110	
Silver		50	48.2	96.4	90 - 110	
Thallium		50	47.8	95.7	90 - 110	
Vanadium		50	48.7	97.3	90 - 110	
Zinc		50	50.0	100	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4812366
Report generated 06/17/2016 14:17

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060411
Run Date: 06/16/2016
Sample ID: WG573095-12
Instrument ID: ICP-MS2
Run Time: 16:25
Method: 6020A
File ID: NI.061616.162516
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572085
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0492	mg/L	98.4	90 - 110		
Arsenic		0.0500	0.0498	mg/L	99.6	90 - 110		
Barium		0.0500	0.0480	mg/L	96.0	90 - 110		
Cadmium		0.0500	0.0483	mg/L	96.7	90 - 110		
Chromium		0.0500	0.0497	mg/L	99.4	90 - 110		
Cobalt		0.0500	0.0504	mg/L	101	90 - 110		
Copper		0.0500	0.0502	mg/L	100	90 - 110		
Lead		0.0500	0.0490	mg/L	98.0	90 - 110		
Manganese		0.0500	0.0514	mg/L	103	90 - 110		
Nickel		0.0500	0.0501	mg/L	100	90 - 110		
Silver		0.0500	0.0482	mg/L	96.4	90 - 110		
Thallium		0.0500	0.0491	mg/L	98.2	90 - 110		
Vanadium		0.0500	0.0497	mg/L	99.3	90 - 110		
Zinc		0.0500	0.0499	mg/L	99.7	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812369
Report generated 06/17/2016 14:17

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060411
Run Date: 06/16/2016
Sample ID: WG573095-27
Instrument ID: ICP-MS2
Run Time: 21:45
Method: 6020A
File ID: NI.061616.214523
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572085
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0479	mg/L	95.7	90 - 110		
Arsenic		0.0500	0.0498	mg/L	99.7	90 - 110		
Barium		0.0500	0.0478	mg/L	95.6	90 - 110		
Cadmium		0.0500	0.0483	mg/L	96.6	90 - 110		
Chromium		0.0500	0.0507	mg/L	101	90 - 110		
Cobalt		0.0500	0.0512	mg/L	102	90 - 110		
Copper		0.0500	0.0503	mg/L	101	90 - 110		
Lead		0.0500	0.0512	mg/L	102	90 - 110		
Manganese		0.0500	0.0553	mg/L	111	90 - 110		*
Nickel		0.0500	0.0504	mg/L	101	90 - 110		
Silver		0.0500	0.0468	mg/L	93.5	90 - 110		
Thallium		0.0500	0.0492	mg/L	98.4	90 - 110		
Vanadium		0.0500	0.0507	mg/L	101	90 - 110		
Zinc		0.0500	0.0501	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812369
Report generated 06/17/2016 14:17

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060411
Run Date: 06/16/2016
Sample ID: WG573095-30
Instrument ID: ICP-MS2
Run Time: 22:26
Method: 6020A
File ID: NI.061616.222656
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572085
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0490	mg/L	98.1	90 - 110		
Arsenic		0.0500	0.0500	mg/L	99.9	90 - 110		
Barium		0.0500	0.0478	mg/L	95.6	90 - 110		
Cadmium		0.0500	0.0479	mg/L	95.9	90 - 110		
Chromium		0.0500	0.0513	mg/L	103	90 - 110		
Cobalt		0.0500	0.0518	mg/L	104	90 - 110		
Copper		0.0500	0.0509	mg/L	102	90 - 110		
Lead		0.0500	0.0497	mg/L	99.3	90 - 110		
Manganese		0.0500	0.0541	mg/L	108	90 - 110		
Nickel		0.0500	0.0506	mg/L	101	90 - 110		
Silver		0.0500	0.0482	mg/L	96.4	90 - 110		
Thallium		0.0500	0.0491	mg/L	98.2	90 - 110		
Vanadium		0.0500	0.0511	mg/L	102	90 - 110		
Zinc		0.0500	0.0506	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812369
Report generated 06/17/2016 14:17

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060411
Run Date: 06/16/2016
Sample ID: WG573095-07
Instrument ID: ICP-MS2
Run Time: 15:52
Method: 6020A
File ID: NI.061616.155239
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572085
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.437	ug/L	109	70 - 130		
Arsenic		0.400	0.412	ug/L	103	70 - 130		
Barium		0.750	0.670	ug/L	89.4	70 - 130		
Cadmium		0.240	0.237	ug/L	98.6	70 - 130		
Chromium		0.800	0.723	ug/L	90.4	70 - 130		
Cobalt		0.400	0.380	ug/L	95.0	70 - 130		
Copper		0.800	0.790	ug/L	98.7	70 - 130		
Lead		0.200	0.183	ug/L	91.4	70 - 130		
Manganese		0.500	0.452	ug/L	90.4	70 - 130		
Nickel		1.60	1.54	ug/L	96.1	70 - 130		
Silver		0.400	0.386	ug/L	96.6	70 - 130		
Thallium		0.0800	0.0818	ug/L	102	70 - 130		
Vanadium		0.400	0.354	ug/L	88.5	70 - 130		
Zinc		6.25	6.72	ug/L	107	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4812371
Report generated 06/17/2016 14:18

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060411
Run Date: 06/16/2016
Sample ID: WG573095-20
Instrument ID: ICP-MS2
Run Time: 19:02
Method: 6020A
File ID: NI.061616.190202
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572085
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.394	ug/L	98.5	70 - 130		
Arsenic		0.400	0.383	ug/L	95.8	70 - 130		
Barium		0.750	0.633	ug/L	84.4	70 - 130		
Cadmium		0.240	0.238	ug/L	99.0	70 - 130		
Chromium		0.800	0.710	ug/L	88.8	70 - 130		
Cobalt		0.400	0.391	ug/L	97.6	70 - 130		
Copper		0.800	0.779	ug/L	97.4	70 - 130		
Lead		0.200	0.185	ug/L	92.4	70 - 130		
Manganese		0.500	0.600	ug/L	120	70 - 130		
Nickel		1.60	1.49	ug/L	93.1	70 - 130		
Silver		0.400	0.379	ug/L	94.7	70 - 130		
Thallium		0.0800	0.0829	ug/L	104	70 - 130		
Vanadium		0.400	0.360	ug/L	90.1	70 - 130		
Zinc		6.25	6.68	ug/L	107	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4812371
Report generated 06/17/2016 14:18

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060411
Run Date: 06/16/2016
Sample ID: WG573095-29
Instrument ID: ICP-MS2
Run Time: 21:51
Method: 6020A
File ID: NI.061616.215148
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572085
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.379	ug/L	94.7	70 - 130		
Arsenic		0.400	0.373	ug/L	93.3	70 - 130		
Barium		0.750	0.661	ug/L	88.1	70 - 130		
Cadmium		0.240	0.222	ug/L	92.4	70 - 130		
Chromium		0.800	0.719	ug/L	89.8	70 - 130		
Cobalt		0.400	0.364	ug/L	91.0	70 - 130		
Copper		0.800	0.802	ug/L	100	70 - 130		
Lead		0.200	0.176	ug/L	88.2	70 - 130		
Manganese		0.500	0.484	ug/L	96.8	70 - 130		
Nickel		1.60	1.55	ug/L	96.6	70 - 130		
Silver		0.400	0.362	ug/L	90.5	70 - 130		
Thallium		0.0800	0.0736	ug/L	92.0	70 - 130		
Vanadium		0.400	0.363	ug/L	90.7	70 - 130		
Zinc		6.25	6.31	ug/L	101	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4812371
Report generated 06/17/2016 14:18

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060411
Run Date: 06/16/2016
Sample ID: WG573095-34
Instrument ID: ICP-MS2
Run Time: 23:11
Method: 6020A
File ID: NI.061616.231140
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572085
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.389	ug/L	97.4	70 - 130		
Arsenic		0.400	0.373	ug/L	93.3	70 - 130		
Barium		0.750	0.626	ug/L	83.4	70 - 130		
Cadmium		0.240	0.227	ug/L	94.8	70 - 130		
Chromium		0.800	0.712	ug/L	89.0	70 - 130		
Cobalt		0.400	0.394	ug/L	98.4	70 - 130		
Copper		0.800	0.808	ug/L	101	70 - 130		
Lead		0.200	0.190	ug/L	95.2	70 - 130		
Manganese		0.500	0.484	ug/L	96.8	70 - 130		
Nickel		1.60	1.56	ug/L	97.7	70 - 130		
Silver		0.400	0.361	ug/L	90.3	70 - 130		
Thallium		0.0800	0.0805	ug/L	101	70 - 130		
Vanadium		0.400	0.386	ug/L	96.4	70 - 130		
Zinc		6.25	6.49	ug/L	104	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4812371
Report generated 06/17/2016 14:18

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060411
Instrument ID: ICP-MS2
Sol. A : WG573095-10 **File ID:** NI.061616.160740
Sol. AB : WG573095-11 **File ID:** NI.061616.162201

Workgroup (AAB#): WG572085
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.0793	NS	100	94.6	94.6	
Arsenic	NS	-0.0113	NS	100	102	102	
Barium	NS	0.0676	NS	100	94.7	94.7	
Cadmium	NS	-0.0599	NS	100	96.1	96.1	
Chromium	NS	0.0900	NS	100	99.8	99.8	
Cobalt	NS	0.0224	NS	100	104	104	
Copper	NS	0.277	NS	100	99.9	99.9	
Lead	NS	0.0928	NS	100	98.9	98.9	
Manganese	NS	0.0620	NS	100	106	106	
Nickel	NS	0.326	NS	100	99.4	99.4	
Silver	NS	0.0163	NS	100	85.5	85.5	
Thallium	NS	0.113	NS	100	98.0	98.0	
Vanadium	NS	0.00810	NS	100	100	100	
Zinc	NS	1.37	NS	100	102	102	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4812368
Report generated 06/17/2016 14:17

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060411 **Analytical Method:** 6020
Analytical Workgroup: WG572085 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 16-JUN-2016 15:33

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060411-03	SAMP	16-JUN-2016 22:10	98.034	97.491	104.07
L16060411-04	SAMP	16-JUN-2016 22:14	97.281	105.56	103.468
L16060411-04	SAMP	16-JUN-2016 22:20	98.406	97.649	105.403
WG571964-02	BLANK	16-JUN-2016 21:55	99.009	98.66	100.89
WG571964-03	LCS	16-JUN-2016 21:58	98.2	97.5	104.45
WG572085-03	PSPK	16-JUN-2016 22:17	102.245	104.042	104.814
WG572085-04	SERIAL	16-JUN-2016 22:20	98.406	97.649	105.403
WG572085-04	SERIAL	16-JUN-2016 22:23	96.58	98.38	101.533
WG573095-07	LLICV	16-JUN-2016 15:52	96.13	93.157	96.318
WG573095-08	ICV	16-JUN-2016 15:57	97.13	96.114	99.927
WG573095-09	ICB	16-JUN-2016 16:03	97.661	96.107	100.676
WG573095-10	ICS	16-JUN-2016 16:07	96.606	97.591	98.938
WG573095-11	ICS	16-JUN-2016 16:22	96.039	94.231	101.38
WG573095-12	CCV	16-JUN-2016 16:25	96.818	96.058	101.069
WG573095-13	CCB	16-JUN-2016 16:38	95.395	96.878	98.817
WG573095-20	LLCCV	16-JUN-2016 19:02	98.621	96.559	99.934
WG573095-27	CCV	16-JUN-2016 21:45	94.877	96.278	101.991
WG573095-28	CCB	16-JUN-2016 21:48	95.773	98.51	99.349
WG573095-29	LLCCV	16-JUN-2016 21:51	96.58	95.236	98.152
WG573095-30	CCV	16-JUN-2016 22:26	97.687	97.298	103.451
WG573095-31	CCB	16-JUN-2016 22:30	95.592	97.108	101.466
WG573095-34	LLCCV	16-JUN-2016 23:11	98.537	96.177	103.485

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4812375
Report generated: 06/17/2016 14:17

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16060411 **Date:** 04/19/2016
Insturment ID: ICP-MS2 **Method:** 6020A

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Uranium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4812363
Report generated: 06/17/2016 14:17

2.3.2.3 Raw Data

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Thursday, June 16, 2016 14:07:39

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1326	2024	0.708	
Mg	23.985	23.975	4498	2020	0.704	
Co	58.933	58.975	11692	2022	0.692	
In	114.904	114.875	22859	2028	0.691	
U	238.050	238.075	47457	2043	0.702	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	7.436
5.575	8.287
5.625	3.892
5.675	4.802
5.725	2.185
5.775	3.031
5.825	4.638
5.875	2.806
5.925	2.266
5.975	4.757
6.025	3.190
6.075	3.669
6.125	3.622
6.175	3.148
6.225	8.886
6.275	33.166
6.325	46.481
6.375	46.566
6.425	40.745
6.475	56.845
6.525	15.768
6.575	18.835
6.625	3.774
6.675	4.099
6.725	2.150
6.775	4.632
6.825	1.659

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6.875	4.657
6.925	1.715
6.975	2.467
7.025	2.458
7.075	2.433
7.125	2.586
7.175	4.875
7.225	1.268
7.275	2.064
7.325	10.536
7.375	54.398
7.425	60.990
7.475	63.888
7.525	51.618
7.575	39.529
7.625	69.722
7.675	47.507
7.725	16.110
7.775	58.685
7.825	58.330
7.875	66.667
7.925	61.450
7.975	55.902
8.025	102.740
8.075	55.902
8.125	38.401
8.175	63.949
8.225	43.853
8.275	60.858
8.325	45.079
8.375	40.074
8.425	40.074
8.475	54.149
22.525	
22.575	50.619
22.625	33.641
22.675	51.618
22.725	55.902
22.775	25.951
22.825	27.809
22.875	40.946
22.925	49.701
22.975	18.923
23.025	32.442
23.075	23.055
23.125	25.635
23.175	20.888

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23.225	21.374
23.275	25.000
23.325	45.400
23.375	27.285
23.425	30.987
23.475	25.476
23.525	13.045
23.575	6.296
23.625	2.182
23.675	2.995
23.725	2.713
23.775	2.035
23.825	1.176
23.875	0.613
23.925	0.955
23.975	1.904
24.025	1.612
24.075	1.077
24.125	1.787
24.175	1.904
24.225	1.298
24.275	1.635
24.325	13.413
24.375	39.123
24.425	39.529
24.475	21.077
24.525	2.911
24.575	3.152
24.625	1.254
24.675	1.656
24.725	1.429
24.775	1.818
24.825	1.348
24.875	0.955
24.925	1.650
24.975	0.624
25.025	1.148
25.075	1.394
25.125	0.398
25.175	1.878
25.225	3.006
25.275	5.326
25.325	42.950
25.375	30.619
25.425	70.613
25.475	32.723
57.525	12.330

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57.575	7.587
57.625	2.112
57.675	3.255
57.725	2.490
57.775	2.165
57.825	1.108
57.875	2.141
57.925	2.456
57.975	1.875
58.025	3.007
58.075	2.288
58.125	0.909
58.175	2.980
58.225	2.412
58.275	3.761
58.325	25.824
58.375	36.748
58.425	23.570
58.475	18.248
58.525	7.221
58.575	2.071
58.625	1.712
58.675	1.278
58.725	1.414
58.775	1.870
58.825	1.537
58.875	1.904
58.925	2.989
58.975	2.279
59.025	1.504
59.075	1.307
59.125	2.089
59.175	2.055
59.225	1.826
59.275	4.437
59.325	13.359
59.375	41.110
59.425	58.736
59.475	26.307
59.525	11.352
59.575	4.879
59.625	5.862
59.675	3.367
59.725	2.650
59.775	4.079
59.825	1.668
59.875	2.310

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59.925	1.238
59.975	3.774
60.025	3.677
60.075	1.742
60.125	2.822
60.175	4.864
60.225	4.103
60.275	3.750
60.325	18.054
60.375	31.623
60.425	49.739
60.475	56.723
113.525	6.653
113.575	1.927
113.625	2.838
113.675	2.697
113.725	2.195
113.775	4.236
113.825	2.523
113.875	1.968
113.925	2.426
113.975	2.953
114.025	1.676
114.075	1.976
114.125	1.813
114.175	2.440
114.225	7.942
114.275	11.452
114.325	42.061
114.375	20.163
114.425	13.593
114.475	1.983
114.525	1.683
114.575	2.531
114.625	0.874
114.675	1.279
114.725	0.891
114.775	1.779
114.825	1.186
114.875	1.029
114.925	1.564
114.975	0.950
115.025	1.530
115.075	1.114
115.125	2.208
115.175	3.123
115.225	4.486

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115.275	7.177
115.325	14.172
115.375	54.799
115.425	53.420
115.475	16.011
115.525	12.692
115.575	2.883
115.625	6.251
115.675	4.509
115.725	4.245
115.775	1.283
115.825	4.008
115.875	1.211
115.925	2.114
115.975	7.687
116.025	5.271
116.075	5.578
116.125	4.248
116.175	11.979
116.225	16.277
116.275	30.596
116.325	24.845
116.375	28.284
116.425	54.149
116.475	40.000
236.525	
236.575	23.855
236.625	34.401
236.675	27.422
236.725	35.668
236.775	39.989
236.825	18.757
236.875	23.077
236.925	20.761
236.975	14.650
237.025	36.943
237.075	27.109
237.125	25.586
237.175	42.799
237.225	24.325
237.275	21.429
237.325	30.129
237.375	15.267
237.425	4.597
237.475	48.577
237.525	19.963
237.575	13.238

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237.625	6.730
237.675	7.800
237.725	2.904
237.775	1.428
237.825	2.396
237.875	1.255
237.925	0.555
237.975	1.682
238.025	0.745
238.075	0.906
238.125	0.901
238.175	0.264
238.225	0.953
238.275	0.886
238.325	1.395
238.375	2.556
238.425	2.763
238.475	2.183
238.525	12.890
238.575	14.452
238.625	38.797
238.675	16.933
238.725	6.952
238.775	20.328
238.825	29.472
238.875	37.989
238.925	27.140
238.975	18.731
239.025	17.049
239.075	5.454
239.125	29.410
239.175	29.569
239.225	22.608
239.275	13.847
239.325	15.978
239.375	4.980
239.425	11.111
239.475	34.914

Approved: June 20, 2016

SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\ReportOutput\a.swz

Start Time: 6/16/2016 3:04:36 PM
End Time: 6/16/2016 3:07:03 PM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 4248.80
        Obtained Intensity (Mg 23.985): 62852.37
        Obtained Intensity (In 114.904): 59263.95
        Obtained Intensity (U 238.05): 123631.92
        Obtained Intensity (Bkgd 220): 0.53
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.020 (=3505.01 / 175287.61)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.005 (=894.29 / 175287.61)
```


Approved: June 20, 2016

SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\ReportOutput\a.swz

Optimization Status

Start Time: 6/16/2016 3:04:36 PM

Daily Performance Check
        Optimization Settings:
                Method: Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 1
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 4248.80
                Obtained Intensity (Mg 23.985): 62852.37
                Obtained Intensity (In 114.904): 59263.95
                Obtained Intensity (U 238.05): 123631.92
                Obtained Intensity (Bkgd 220): 0.53
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.020 (=3505.01 / 175287.61)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.005 (=894.29 / 175287.61)
[Passed]  Optimum value(s): N/A

End Time: 6/16/2016 3:07:03 PM
```


Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Thursday, June 16, 2016 15:30:14
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51024.1	2.3				ug/L		Standard
	Be	9	6.7	43.3				ug/L		Standard
	Al	27	625.0	8.5				ug/L		Standard
	Sc	45	29647.3	3.2				ug/L		Standard
	Ti	47	57.3	8.1				ug/L		Standard
	V	51	1141.9	1.8				ug/L		Standard
	Cr	52	6628.1	1.7				ug/L		Standard
	Cr	53	430.0	9.1				ug/L		Standard
	Mn	55	603.3	5.5				ug/L		Standard
	Co	59	237.3	7.6				ug/L		Standard
	Ni	60	141.0	3.9				ug/L		Standard
	Cu	65	109.0	10.8				ug/L		Standard
	Zn	66	159.0	8.8				ug/L		Standard
>	**Ge**	72	474053.1	1.2				ug/L		Standard
	As	75	-34.2	89.8				ug/L		Standard
	Se	82	14.4	39.0				ug/L		Standard
	Se-1	77	55.3	3.8				ug/L		Standard
>	**Ga**	71	50.0	36.1				mg/L		Standard
	Rb	85	20.0	43.3				ug/L		Standard
	Y	89	376601.7	1.2				ug/L		Standard
>	**Rh**	103	16.7	69.3				ug/L		Standard
	Mo	98	8.0	17.7				ug/L		Standard
	Ag	107	80.7	16.9				ug/L		Standard
	Cd	111	3.0	0.1				mg/L		Standard
	Cd	114	7.5	153.9				ug/L		Standard
>	**In**	115	524721.8	2.2				ug/L		Standard
	Sn	118	715.0	18.5				ug/L		Standard
	Sb	123	200.9	30.1				ug/L		Standard
	Ba	135	107.7	7.0				ug/L		Standard
	Ce	140	30.0	0.0				ug/L		Standard
>	**Tb**	159	792236.5	1.3				ug/L		Standard
	Ho	165	6.7	43.3				ug/L		Standard
	Tl	203	9.0	50.9				ug/L		Standard
	Tl	205	0.0					ug/L		Standard
	Pb	206	216.0	6.4				ug/L		Standard
	Pb	207	179.7	5.8				ug/L		Standard
	Pb	208	717.3	4.2				ug/L		Standard
	U	238	3.7	15.7				ug/L		Standard
>	**Bi**	209	460342.9	1.5				ug/L		Standard

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	Na	23	0.0		mg/L	Standard
	Mg	24	20.0	50.0	mg/L	Standard
	K	39	21.7	26.6	mg/L	Standard
	Ca	43	46.7	27.0	mg/L	Standard
	Fe	54	151.0	18.9	mg/L	Standard
	Fe	57	195.0	11.2	mg/L	Standard
>	**Sc-1**	45	29647.3	3.2	mg/L	Standard
	Cl	35	154151.6	0.9	ug/L	Standard
	Kr	83	3.3	17.3	ug/L	Standard
	Br	81	1606.8	11.7	ug/L	Standard
	P	31	22752.1	1.8	ug/L	Standard
	S	34	5049.2	1.8	ug/L	Standard
	Sr	88	86.7	6.7	ug/L	Standard
	C	12	46.7	24.7	mg/L	Standard
	N	14	0.0		mg/L	Standard
	Hg	202	0.0		mg/L	Standard
	Dy	164	9.8	99.2	mg/L	Standard
	Ho-1	165	6.7	43.3	mg/L	Standard
	Er	166	3.3	173.2	mg/L	Standard
	I	127	841.7	10.5	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Thursday, June 16, 2016 15:33:26
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61336.5	17.7				ug/L	51024	Standard
	Be	9	5.0	100.0				ug/L	7	Standard
	Al	27	221.7	31.9				ug/L	625	Standard
	Sc	45	28802.5	9.9				ug/L	29647	Standard
	Ti	47	62.3	33.0				ug/L	57	Standard
	V	51	580.8	14.0				ug/L	1142	Standard
	Cr	52	2885.9	3.7				ug/L	6628	Standard
	Cr	53	203.3	7.5				ug/L	430	Standard
	Mn	55	613.3	37.8				ug/L	603	Standard
	Co	59	262.7	10.4				ug/L	237	Standard
	Ni	60	108.3	5.6				ug/L	141	Standard
	Cu	65	79.7	10.1				ug/L	109	Standard
	Zn	66	145.3	10.1				ug/L	159	Standard
>	**Ge**	72	493610.1	8.2				ug/L	474053	Standard
	As	75	72.1	70.6				ug/L	-34	Standard
	Se	82	46.9	37.4				ug/L	14	Standard
	Se-1	77	47.7	12.6				ug/L	55	Standard
>	**Ga**	71	35.0	37.8				mg/L	50	Standard
	Rb	85	20.0	0.0				ug/L	20	Standard
	Y	89	401482.6	6.9				ug/L	376602	Standard
>	**Rh**	103	11.7	107.9				ug/L	17	Standard
	Mo	98	7.8	54.6				ug/L	8	Standard
	Ag	107	82.7	18.8				ug/L	81	Standard
	Cd	111	3.7	15.8				mg/L	3	Standard
	Cd	114	6.4	91.9				ug/L	7	Standard
>	**In**	115	555148.6	6.0				ug/L	524722	Standard
	Sn	118	256.7	2.2				ug/L	715	Standard
	Sb	123	44.3	25.6				ug/L	201	Standard
	Ba	135	17.0	5.9				ug/L	108	Standard
	Ce	140	18.3	15.7				ug/L	30	Standard
>	**Tb**	159	901198.6	13.9				ug/L	792236	Standard
	Ho	165	1.7	173.2				ug/L	7	Standard
	Tl	203	10.0	75.5				ug/L	9	Standard
	Tl	205	8.3	124.9				ug/L	0	Standard
	Pb	206	256.7	23.8				ug/L	216	Standard
	Pb	207	208.0	18.4				ug/L	180	Standard
	Pb	208	827.7	17.4				ug/L	717	Standard
	U	238	2.7	21.7				ug/L	4	Standard
>	**Bi**	209	546132.2	18.5				ug/L	460343	Standard

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	Na	23	0.0		mg/L	0	Standard
	Mg	24	28.3	10.2	mg/L	20	Standard
	K	39	15.0	33.3	mg/L	22	Standard
	Ca	43	50.0	17.3	mg/L	47	Standard
	Fe	54	136.0	58.3	mg/L	151	Standard
	Fe	57	195.0	23.5	mg/L	195	Standard
>	**Sc-1**	45	28802.5	9.9	mg/L	29647	Standard
	Cl	35	67826.3	3.7	ug/L	154152	Standard
	Kr	83	1.7	34.6	ug/L	3	Standard
	Br	81	586.7	16.8	ug/L	1607	Standard
	P	31	15342.0	42.1	ug/L	22752	Standard
	S	34	2116.8	1.5	ug/L	5049	Standard
	Sr	88	106.7	39.0	ug/L	87	Standard
	C	12	23.3	24.7	mg/L	47	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	3.3	173.2	mg/L	0	Standard
	Dy	164	9.5	5.0	mg/L	10	Standard
	Ho-1	165	1.7	173.2	mg/L	7	Standard
	Er	166	10.0	100.0	mg/L	3	Standard
	I	127	316.7	10.7	mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Thursday, June 16, 2016 15:36:37
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48482.4	0.7				ug/L	51024	Standard
	Be	9	56.7	51.7				ug/L	7	Standard
	Al	27	8083.8	2.1				ug/L	625	Standard
	Sc	45	30706.1	1.7				ug/L	29647	Standard
	Ti	47	79.3	15.6				ug/L	57	Standard
	V	51	1543.2	4.3				ug/L	1142	Standard
	Cr	52	7153.0	1.0				ug/L	6628	Standard
	Cr	53	445.0	12.2				ug/L	430	Standard
	Mn	55	1041.0	0.8				ug/L	603	Standard
	Co	59	583.0	7.0				ug/L	237	Standard
	Ni	60	245.0	4.3				ug/L	141	Standard
	Cu	65	217.0	8.3				ug/L	109	Standard
	Zn	66	310.7	2.1				ug/L	159	Standard
>	**Ge**	72	471168.8	0.1				ug/L	474053	Standard
	As	75	27.4	88.1				ug/L	-34	Standard
	Se	82	24.1	10.8				ug/L	14	Standard
	Se-1	77	60.7	6.2				ug/L	55	Standard
>	**Ga**	71	60.0	28.9				mg/L	50	Standard
	Rb	85	21.7	26.6				ug/L	20	Standard
	Y	89	408481.5	2.2				ug/L	376602	Standard
>	**Rh**	103	23.3	24.7				ug/L	17	Standard
	Mo	98	258.4	4.9				ug/L	8	Standard
	Ag	107	385.7	3.9				ug/L	81	Standard
	Cd	111	107.2	4.8				mg/L	3	Standard
	Cd	114	267.5	8.7				ug/L	7	Standard
>	**In**	115	544133.0	1.6				ug/L	524722	Standard
	Sn	118	778.4	8.1				ug/L	715	Standard
	Sb	123	293.5	11.5				ug/L	201	Standard
	Ba	135	202.3	5.5				ug/L	108	Standard
	Ce	140	46.7	80.4				ug/L	30	Standard
>	**Tb**	159	788761.6	1.1				ug/L	792236	Standard
	Ho	165	18.3	56.8				ug/L	7	Standard
	Tl	203	392.3	6.9				ug/L	9	Standard
	Tl	205	366.7	20.5				ug/L	0	Standard
	Pb	206	479.7	4.5				ug/L	216	Standard
	Pb	207	426.3	6.0				ug/L	180	Standard
	Pb	208	1798.4	0.2				ug/L	717	Standard
	U	238	349.3	5.8				ug/L	4	Standard
>	**Bi**	209	449760.6	0.7				ug/L	460343	Standard

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Na	23	3.3	86.6	mg/L	0	Standard
Mg	24	38.3	27.2	mg/L	20	Standard
K	39	31.7	24.1	mg/L	22	Standard
Ca	43	58.3	21.6	mg/L	47	Standard
Fe	54	152.6	18.2	mg/L	151	Standard
Fe	57	218.3	10.3	mg/L	195	Standard
> **Sc-1**	45	30706.1	1.7	mg/L	29647	Standard
Cl	35	159978.9	1.3	ug/L	154152	Standard
Kr	83	1.3	43.3	ug/L	3	Standard
Br	81	1600.1	10.1	ug/L	1607	Standard
P	31	22997.4	1.5	ug/L	22752	Standard
S	34	5302.6	1.3	ug/L	5049	Standard
Sr	88	58.3	27.6	ug/L	87	Standard
C	12	23.3	65.5	mg/L	47	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	0.0		mg/L	0	Standard
Dy	164	2.7	234.8	mg/L	10	Standard
Ho-1	165	18.3	56.8	mg/L	7	Standard
Er	166	13.3	86.6	mg/L	3	Standard
I	127	928.4	11.9	mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Thursday, June 16, 2016 15:39:49
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50565.9	1.8				ug/L	51024	Standard
	Be	9	42044.9	2.0	**50.0000**	1.656	3.3	ug/L	7	Standard
	Al	27	7094492.1	1.7	**50.0000**	0.240	0.5	ug/L	625	Standard
	Sc	45	29363.4	3.4				ug/L	29647	Standard
	Ti	47	29759.2	1.6	**100.0000**	1.722	1.7	ug/L	57	Standard
	V	51	356139.2	0.8	**50.0000**	0.331	0.7	ug/L	1142	Standard
	Cr	52	369550.1	0.3	**50.0000**	0.347	0.7	ug/L	6628	Standard
	Cr	53	46382.6	2.2	**50.0000**	0.884	1.8	ug/L	430	Standard
	Mn	55	295860.1	0.8	**50.0000**	0.768	1.5	ug/L	603	Standard
	Co	59	321303.4	0.4	**50.0000**	0.569	1.1	ug/L	237	Standard
	Ni	60	95975.7	0.7	**50.0000**	0.220	0.4	ug/L	141	Standard
	Cu	65	93739.7	0.2	**50.0000**	0.238	0.5	ug/L	109	Standard
	Zn	66	55396.4	0.5	**50.0000**	0.181	0.4	ug/L	159	Standard
>	**Ge**	72	471316.6	0.7				ug/L	474053	Standard
	As	75	55401.6	1.7	**50.0000**	1.157	2.3	ug/L	-34	Standard
	Se	82	5512.4	2.0	**50.0000**	1.370	2.7	ug/L	14	Standard
	Se-1	77	3915.5	0.9	**50.0000**	0.786	1.6	ug/L	55	Standard
>	**Ga**	71	120.0	8.3				mg/L	50	Standard
	Rb	85	818.4	2.5				ug/L	20	Standard
	Y	89	383423.6	1.9				ug/L	376602	Standard
>	**Rh**	103	26.7	39.0				ug/L	17	Standard
	Mo	98	238525.6	1.7	**100.0000**	2.248	2.2	ug/L	8	Standard
	Ag	107	300586.5	1.0	**50.0000**	0.931	1.9	ug/L	81	Standard
	Cd	111	96734.5	0.7	**50.0000**	0.446	0.9	mg/L	3	Standard
	Cd	114	239222.4	0.8	**50.0000**	0.320	0.6	ug/L	7	Standard
>	**In**	115	516883.8	1.3				ug/L	524722	Standard
	Sn	118	269170.5	1.9	**50.0000**	0.357	0.7	ug/L	715	Standard
	Sb	123	219395.1	0.6	**50.0000**	0.615	1.2	ug/L	201	Standard
	Ba	135	90538.0	0.9	**50.0000**	0.240	0.5	ug/L	108	Standard
	Ce	140	98.3	33.1				ug/L	30	Standard
>	**Tb**	159	780626.5	1.3				ug/L	792236	Standard
	Ho	165	5.0	0.0				ug/L	7	Standard
	Tl	203	372504.5	0.5	**50.0000**	0.339	0.7	ug/L	9	Standard
	Tl	205	316386.0	0.8	**50.0000**	0.414	0.8	ug/L	0	Standard
	Pb	206	225338.3	0.7	**50.0000**	0.467	0.9	ug/L	216	Standard
	Pb	207	205697.6	0.7	**50.0000**	0.491	1.0	ug/L	180	Standard
	Pb	208	831229.4	0.5	**50.0000**	0.375	0.7	ug/L	717	Standard
	U	238	300295.4	0.8	**50.0000**	0.316	0.6	ug/L	4	Standard
>	**Bi**	209	447053.1	1.0				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.0000**	10.302	206.0	mg/L	0	Standard
Mg	24	3705.5	6.1	**5.0000**	0.367	7.3	mg/L	20	Standard
K	39	671.7	7.3	**5.0000**	0.265	5.3	mg/L	22	Standard
Ca	43	63.3	43.5	**5.0000**	18.565	371.3	mg/L	47	Standard
Fe	54	6334.8	3.3	**5.0000**	0.319	6.4	mg/L	151	Standard
Fe	57	1861.8	5.0	**5.0000**	0.466	9.3	mg/L	195	Standard
> **Sc-1**	45	29363.4	3.4				mg/L	29647	Standard
Cl	35	161698.3	1.0				ug/L	154152	Standard
Kr	83	2.7	21.7				ug/L	3	Standard
Br	81	1496.7	10.1				ug/L	1607	Standard
P	31	25361.3	5.9				ug/L	22752	Standard
S	34	5722.8	8.3				ug/L	5049	Standard
Sr	88	76.7	13.6				ug/L	87	Standard
C	12	36.7	41.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.3	126.2				mg/L	10	Standard
Ho-1	165	5.0	0.0				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	6142.9	1.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 3
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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Thursday, June 16, 2016 15:43:00
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	50435.5	1.6				ug/L	51024	Standard
	Be	9	82346.5	1.2	**99.0819**	1.677	1.7	ug/L	7	Standard
	Al	27	13992181.1	1.0	**99.4387**	0.736	0.7	ug/L	625	Standard
	Sc	45	30006.4	2.8				ug/L	29647	Standard
	Ti	47	58505.4	1.0	**200.8925**	5.085	2.5	ug/L	57	Standard
	V	51	687977.3	0.6	**99.6029**	0.871	0.9	ug/L	1142	Standard
	Cr	52	725902.3	0.9	**100.8293**	2.361	2.3	ug/L	6628	Standard
	Cr	53	91049.5	2.4	**100.5343**	1.118	1.1	ug/L	430	Standard
	Mn	55	576461.1	0.2	**100.0121**	1.485	1.5	ug/L	603	Standard
	Co	59	620596.3	0.4	**99.5359**	1.816	1.8	ug/L	237	Standard
	Ni	60	187359.0	1.0	**100.0839**	1.180	1.2	ug/L	141	Standard
	Cu	65	182121.9	1.8	**99.8326**	0.584	0.6	ug/L	109	Standard
	Zn	66	107693.4	1.7	**99.9466**	0.229	0.2	ug/L	159	Standard
>	Ge	72	459665.5	1.5				ug/L	474053	Standard
	As	75	106571.4	0.3	**99.2933**	1.200	1.2	ug/L	-34	Standard
	Se	82	10745.6	0.0	**100.0548**	1.484	1.5	ug/L	14	Standard
	Se-1	77	7418.5	2.3	**98.9131**	3.363	3.4	ug/L	55	Standard
>	Ga	71	103.3	32.2				mg/L	50	Standard
	Rb	85	1393.4	13.3				ug/L	20	Standard
	Y	89	377187.2	0.3				ug/L	376602	Standard
>	Rh	103	38.3	45.8				ug/L	17	Standard
	Mo	98	461069.8	0.9	**194.9574**	1.968	1.0	ug/L	8	Standard
	Ag	107	583703.5	0.6	**97.7109**	0.535	0.5	ug/L	81	Standard
	Cd	111	192033.7	0.5	**98.8117**	0.100	0.1	mg/L	3	Standard
	Cd	114	474593.2	1.8	**98.7794**	1.465	1.5	ug/L	7	Standard
>	In	115	525374.3	0.4				ug/L	524722	Standard
	Sn	118	532965.7	1.1	**98.7299**	1.022	1.0	ug/L	715	Standard
	Sb	123	428817.2	1.1	**98.0404**	1.345	1.4	ug/L	201	Standard
	Ba	135	179232.3	1.1	**98.7001**	1.049	1.1	ug/L	108	Standard
	Ce	140	138.3	11.0				ug/L	30	Standard
>	Tb	159	777561.5	1.7				ug/L	792236	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	728897.3	1.0	**99.5734**	0.952	1.0	ug/L	9	Standard
	Tl	205	620686.4	2.0	**99.7030**	1.645	1.6	ug/L	0	Standard
	Pb	206	440868.6	1.2	**99.5956**	1.751	1.8	ug/L	216	Standard
	Pb	207	400234.3	1.0	**99.3185**	1.537	1.5	ug/L	180	Standard
	Pb	208	1631531.3	1.4	**99.7532**	0.911	0.9	ug/L	717	Standard
	U	238	597917.2	1.3	**100.4447**	0.594	0.6	ug/L	4	Standard
>	Bi	209	441150.8	1.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	7450.2	2.2	**9.9373**	0.220	2.2	mg/L	20	Standard
K	39	1375.1	15.8	**10.1223**	1.524	15.1	mg/L	22	Standard
Ca	43	130.0	15.4	**16.7571**	3.894	23.2	mg/L	47	Standard
Fe	54	12357.9	4.2	**9.8157**	0.430	4.4	mg/L	151	Standard
Fe	57	3355.4	5.1	**9.6321**	0.814	8.4	mg/L	195	Standard
Sc-1	45	30006.4	2.8				mg/L	29647	Standard
Cl	35	163219.8	1.1				ug/L	154152	Standard
Kr	83	2.3	99.0				ug/L	3	Standard
Br	81	1446.7	4.9				ug/L	1607	Standard
P	31	26878.8	3.1				ug/L	22752	Standard
S	34	5969.5	3.7				ug/L	5049	Standard
Sr	88	53.3	21.7				ug/L	87	Standard
C	12	56.7	36.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	16.2	33.1				mg/L	10	Standard
Ho-1	165	8.3	69.3				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	6194.6	1.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998
Corr. Coef.	Ca	43	Correlation coefficient < 0.998

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Thursday, June 16, 2016 15:46:13
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	48900.5	1.4				ug/L	51024	Standard
	Be	9	40029.5	1.7	**49.6695**	1.322	2.7	ug/L	7	Standard
	Al	27	6807595.1	1.1	**49.8931**	0.613	1.2	ug/L	625	Standard
	Sc	45	29859.4	2.2				ug/L	29647	Standard
	Ti	47	30234.8	0.9	**101.5179**	0.557	0.5	ug/L	57	Standard
	V	51	345968.9	0.4	**48.9414**	0.135	0.3	ug/L	1142	Standard
	Cr	52	361268.5	1.4	**48.6339**	0.583	1.2	ug/L	6628	Standard
	Cr	53	44796.1	1.2	**48.2008**	0.799	1.7	ug/L	430	Standard
	Mn	55	290150.7	1.7	**49.2058**	0.854	1.7	ug/L	603	Standard
	Co	59	308353.8	2.9	**48.3820**	1.390	2.9	ug/L	237	Standard
	Ni	60	93264.8	0.6	**48.7266**	0.581	1.2	ug/L	141	Standard
	Cu	65	92121.6	1.1	**49.4021**	0.815	1.6	ug/L	109	Standard
	Zn	66	55388.4	1.1	**50.2077**	0.826	1.6	ug/L	159	Standard
>	Ge	72	469579.4	0.6				ug/L	474053	Standard
	As	75	54025.0	1.0	**49.2819**	0.719	1.5	ug/L	-34	Standard
	Se	82	5305.3	2.4	**48.2613**	1.119	2.3	ug/L	14	Standard
	Se-1	77	3733.1	1.8	**48.3299**	0.600	1.2	ug/L	55	Standard
>	Ga	71	121.7	8.6				mg/L	50	Standard
	Rb	85	516.7	11.5				ug/L	20	Standard
	Y	89	375718.4	2.6				ug/L	376602	Standard
>	Rh	103	33.3	67.6				ug/L	17	Standard
	Mo	98	242646.9	2.2	**104.6905**	2.943	2.8	ug/L	8	Standard
	Ag	107	289971.5	0.6	**49.5201**	0.189	0.4	ug/L	81	Standard
	Cd	111	93046.4	0.5	**48.8483**	0.170	0.3	mg/L	3	Standard
	Cd	114	230715.9	0.2	**48.9961**	0.373	0.8	ug/L	7	Standard
>	In	115	514920.2	0.6				ug/L	524722	Standard
	Sn	118	284710.7	1.9	**53.7768**	1.357	2.5	ug/L	715	Standard
	Sb	123	208688.7	0.3	**48.6728**	0.184	0.4	ug/L	201	Standard
	Ba	135	85799.9	0.5	**48.1785**	0.093	0.2	ug/L	108	Standard
	Ce	140	120.0	21.7				ug/L	30	Standard
>	Tb	159	776088.7	0.5				ug/L	792236	Standard
	Ho	165	16.7	45.8				ug/L	7	Standard
	Tl	203	358537.1	1.1	**48.0462**	0.455	0.9	ug/L	9	Standard
	Tl	205	307552.3	1.7	**48.4612**	0.738	1.5	ug/L	0	Standard
	Pb	206	224129.9	0.7	**49.6400**	0.561	1.1	ug/L	216	Standard
	Pb	207	195303.0	0.4	**47.5147**	0.574	1.2	ug/L	180	Standard
	Pb	208	802915.7	0.1	**48.1309**	0.507	1.1	ug/L	717	Standard
	U	238	288986.2	0.3	**47.6224**	0.342	0.7	ug/L	4	Standard
>	Bi	209	449693.2	1.0				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3802.1	3.0	**5.0768**	0.262	5.2	mg/L	20	Standard
K	39	675.0	17.5	**4.8950**	0.999	20.4	mg/L	22	Standard
Ca	43	53.3	10.8	**-0.7985**	1.553	194.4	mg/L	47	Standard
Fe	54	5993.9	4.1	**4.7227**	0.110	2.3	mg/L	151	Standard
Fe	57	1776.8	6.7	**4.8135**	0.313	6.5	mg/L	195	Standard
Sc-1	45	29859.4	2.2				mg/L	29647	Standard
Cl	35	159749.2	1.5				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	1490.1	3.7				ug/L	1607	Standard
P	31	25977.3	1.4				ug/L	22752	Standard
S	34	5996.2	1.4				ug/L	5049	Standard
Sr	88	60.0	22.0				ug/L	87	Standard
C	12	80.0	66.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	13.3	43.3				mg/L	10	Standard
Ho-1	165	16.7	45.8				mg/L	7	Standard
Er	166	0.0					mg/L	3	Standard
I	127	935.0	3.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	99.339		
Al	27	99.786		
Sc	45			
Ti	47	101.518		
V	51	97.883		
Cr	52	97.268		
Cr	53			
Mn	55	98.412		
Co	59	96.764		
Ni	60	97.453		
Cu	65	98.804		
Zn	66	100.415		
Ge	72		99.056	
As	75	98.564		
Se	82	96.523		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	104.691		
Ag	107	99.040		
Cd	111	97.697		
Cd	114			
In	115		98.132	
Sn	118	107.554		
Sb	123	97.346		
Ba	135	96.357		
Ce	140			
Tb	159			
Ho	165			
Tl	203	96.092		
Tl	205			
Pb	206	99.280		
Pb	207	95.029		
Pb	208	96.262		
U	238	95.245		
Bi	209		97.687	
Na	23	209.044		
Mg	24	101.535		
K	39	97.901		
Ca	43	-15.971		
Fe	54	94.453		
Fe	57	96.269		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	K	39	
QC Std 1	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Thursday, June 16, 2016 15:49:26
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48778.4	0.5				ug/L	51024	Standard
	Be	9	35.0	28.6	**0.0225**	0.013	56.3	ug/L	7	Standard
	Al	27	2908.6	43.3	**0.0116**	0.009	80.6	ug/L	625	Standard
	Sc	45	29670.7	2.3				ug/L	29647	Standard
	Ti	47	66.7	16.0	**0.0643**	0.036	55.5	ug/L	57	Standard
	V	51	1072.6	10.6	**-0.0119**	0.017	142.0	ug/L	1142	Standard
	Cr	52	6126.6	0.6	**-0.0646**	0.004	6.2	ug/L	6628	Standard
	Cr	53	356.7	16.1	**-0.0336**	0.065	194.5	ug/L	430	Standard
	Mn	55	698.3	6.8	**-0.0044**	0.009	209.1	ug/L	603	Standard
	Co	59	364.0	15.3	**0.0175**	0.009	54.1	ug/L	237	Standard
	Ni	60	154.7	17.5	**0.0055**	0.015	280.7	ug/L	141	Standard
	Cu	65	145.3	17.7	**0.0141**	0.015	104.9	ug/L	109	Standard
	Zn	66	148.7	11.8	**-0.0929**	0.016	17.2	ug/L	159	Standard
>	**Ge**	72	457105.8	0.9				ug/L	474053	Standard
	As	75	54.4	52.5	**0.0762**	0.027	35.8	ug/L	-34	Standard
	Se	82	25.8	22.3	**0.0738**	0.056	76.3	ug/L	14	Standard
	Se-1	77	51.3	21.0	**-0.0508**	0.151	296.8	ug/L	55	Standard
>	**Ga**	71	53.3	14.3				mg/L	50	Standard
	Rb	85	23.3	65.5				ug/L	20	Standard
	Y	89	386808.9	0.9				ug/L	376602	Standard
>	**Rh**	103	15.0	88.2				ug/L	17	Standard
	Mo	98	421.2	15.5	**0.1736**	0.026	15.2	ug/L	8	Standard
	Ag	107	183.0	26.0	**0.0185**	0.008	41.8	ug/L	81	Standard
	Cd	111	25.9	54.3	**0.0101**	0.007	70.6	mg/L	3	Standard
	Cd	114	76.1	40.9	**0.0121**	0.006	52.7	ug/L	7	Standard
>	**In**	115	521804.6	1.0				ug/L	524722	Standard
	Sn	118	1013.4	16.6	**0.0999**	0.033	32.7	ug/L	715	Standard
	Sb	123	1969.5	19.3	**0.4392**	0.092	20.9	ug/L	201	Standard
	Ba	135	122.3	18.3	**0.0101**	0.012	117.5	ug/L	108	Standard
	Ce	140	26.7	10.8				ug/L	30	Standard
>	**Tb**	159	767907.3	1.3				ug/L	792236	Standard
	Ho	165	6.7	173.2				ug/L	7	Standard
	Tl	203	152.0	42.0	**0.0183**	0.009	47.5	ug/L	9	Standard
	Tl	205	141.7	44.8	**0.0150**	0.010	67.4	ug/L	0	Standard
	Pb	206	285.3	8.6	**0.0085**	0.005	61.9	ug/L	216	Standard
	Pb	207	228.0	15.9	**0.0031**	0.009	284.7	ug/L	180	Standard
	Pb	208	1006.0	13.7	**0.0040**	0.008	208.4	ug/L	717	Standard
	U	238	107.3	30.4	**0.0105**	0.005	51.5	ug/L	4	Standard
>	**Bi**	209	438481.4	0.6				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	33.3	31.2	**-0.0002**	0.013	6870.4	mg/L	20	Standard
K	39	25.0	20.0	**-0.0379**	0.034	91.0	mg/L	22	Standard
Ca	43	46.7	37.6	**-2.2322**	4.367	195.6	mg/L	47	Standard
Fe	54	197.5	14.9	**0.0458**	0.026	57.7	mg/L	151	Standard
Fe	57	191.7	16.8	**-0.0529**	0.109	205.7	mg/L	195	Standard
Sc-1	45	29670.7	2.3				mg/L	29647	Standard
Cl	35	161750.4	2.1				ug/L	154152	Standard
Kr	83	2.7	21.7				ug/L	3	Standard
Br	81	1533.4	11.2				ug/L	1607	Standard
P	31	25499.8	1.3				ug/L	22752	Standard
S	34	5937.8	4.1				ug/L	5049	Standard
Sr	88	66.7	35.4				ug/L	87	Standard
C	12	33.3	75.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.0	187.0				mg/L	10	Standard
Ho-1	165	6.7	173.2				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	1050.0	3.1				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.425	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.444
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.251
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Na	23	
QC Std 2	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Thursday, June 16, 2016 15:52:39
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	47293.7	2.4				ug/L	51024	Standard
	Be	9	145.0	20.7	**0.1655**	0.042	25.4	ug/L	7	Standard
	Al	27	1435.1	31.2	**0.0012**	0.004	314.1	ug/L	625	Standard
	Sc	45	28264.7	3.0				ug/L	29647	Standard
	Ti	47	62.3	15.2	**0.0569**	0.033	58.3	ug/L	57	Standard
	V	51	3460.4	3.6	**0.3540**	0.018	5.2	ug/L	1142	Standard
	Cr	52	11315.9	0.6	**0.7230**	0.033	4.5	ug/L	6628	Standard
	Cr	53	1030.0	4.2	**0.7573**	0.039	5.1	ug/L	430	Standard
	Mn	55	3199.7	2.3	**0.4520**	0.007	1.5	ug/L	603	Standard
	Co	59	2520.2	3.3	**0.3798**	0.019	5.0	ug/L	237	Standard
	Ni	60	2902.6	0.9	**1.5376**	0.034	2.2	ug/L	141	Standard
	Cu	65	1498.7	1.3	**0.7897**	0.019	2.5	ug/L	109	Standard
	Zn	66	7175.7	0.5	**6.7167**	0.069	1.0	ug/L	159	Standard
>	**Ge**	72	441612.7	1.4				ug/L	474053	Standard
	As	75	399.1	9.4	**0.4120**	0.037	8.9	ug/L	-34	Standard
	Se	82	50.3	13.1	**0.3188**	0.059	18.5	ug/L	14	Standard
	Se-1	77	79.7	18.1	**0.3705**	0.214	57.7	ug/L	55	Standard
>	**Ga**	71	46.7	22.3				mg/L	50	Standard
	Rb	85	16.7	96.4				ug/L	20	Standard
	Y	89	357595.4	2.3				ug/L	376602	Standard
>	**Rh**	103	11.7	49.5				ug/L	17	Standard
	Mo	98	140.4	6.4	**0.0562**	0.004	6.6	ug/L	8	Standard
	Ag	107	2290.2	1.1	**0.3863**	0.009	2.4	ug/L	81	Standard
	Cd	111	448.4	2.4	**0.2366**	0.001	0.5	mg/L	3	Standard
	Cd	114	1122.4	5.7	**0.2391**	0.015	6.2	ug/L	7	Standard
>	**In**	115	505402.5	2.0				ug/L	524722	Standard
	Sn	118	471.7	16.6	**0.0014**	0.014	1036.4	ug/L	715	Standard
	Sb	123	1900.7	8.3	**0.4366**	0.030	6.9	ug/L	201	Standard
	Ba	135	1270.4	2.8	**0.6703**	0.033	4.9	ug/L	108	Standard
	Ce	140	16.7	62.4				ug/L	30	Standard
>	**Tb**	159	761635.7	0.6				ug/L	792236	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	619.3	5.8	**0.0818**	0.004	5.4	ug/L	9	Standard
	Tl	205	548.3	4.7	**0.0800**	0.003	4.2	ug/L	0	Standard
	Pb	206	1103.4	2.4	**0.1922**	0.004	2.3	ug/L	216	Standard
	Pb	207	900.7	2.9	**0.1691**	0.006	3.6	ug/L	180	Standard
	Pb	208	3946.5	2.5	**0.1828**	0.006	3.5	ug/L	717	Standard
	U	238	2295.5	1.9	**0.3769**	0.006	1.5	ug/L	4	Standard
>	**Bi**	209	442529.2	1.0				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	23.3	12.4	**-0.0120**	0.004	34.9	mg/L	20	Standard
K	39	20.0	25.0	**-0.0675**	0.043	63.8	mg/L	22	Standard
Ca	43	46.7	52.9	**-1.7510**	6.062	346.2	mg/L	47	Standard
Fe	54	119.0	25.4	**-0.0137**	0.024	175.0	mg/L	151	Standard
Fe	57	175.0	35.1	**-0.0751**	0.210	280.1	mg/L	195	Standard
Sc-1	45	28264.7	3.0				mg/L	29647	Standard
Cl	35	154177.8	0.4				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	1336.7	4.9				ug/L	1607	Standard
P	31	17880.5	2.1				ug/L	22752	Standard
S	34	5776.1	4.1				ug/L	5049	Standard
Sr	88	76.7	43.4				ug/L	87	Standard
C	12	16.7	69.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.4	191.0				mg/L	10	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	3	Standard
I	127	743.4	2.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	82.727		
Al	27	0.117		
Sc	45			
Ti	47			
V	51	88.501		
Cr	52	90.378		
Cr	53			
Mn	55	90.403		
Co	59	94.938		
Ni	60	96.097		
Cu	65	98.718		
Zn	66	107.467		
Ge	72		93.157	
As	75	103.009		
Se	82	79.699		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	96.587		
Cd	111	98.585		
Cd	114			
> In	115			96.318
Sn	118			
Sb	123	109.162		
Ba	135	89.380		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	102.188		
Tl	205			
Pb	206			
Pb	207			
Pb	208	91.390		
U	238	94.214		
> Bi	209			96.130
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Thursday, June 16, 2016 15:57:46
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	49537.5	0.6				ug/L	51024	Standard
	Be	9	39588.3	1.2	**48.4820**	0.764	1.6	ug/L	7	Standard
	Al	27	6811607.5	1.0	**49.2765**	0.287	0.6	ug/L	625	Standard
	Sc	45	29944.6	0.9				ug/L	29647	Standard
	Ti	47	30600.5	1.8	**105.9033**	0.546	0.5	ug/L	57	Standard
	V	51	333819.4	1.0	**48.6741**	0.557	1.1	ug/L	1142	Standard
	Cr	52	362624.9	0.8	**50.3521**	0.653	1.3	ug/L	6628	Standard
	Cr	53	44669.1	0.6	**49.5578**	1.018	2.1	ug/L	430	Standard
	Mn	55	295010.7	1.9	**51.5679**	0.147	0.3	ug/L	603	Standard
	Co	59	304256.6	2.3	**49.2031**	0.778	1.6	ug/L	237	Standard
	Ni	60	92980.9	2.3	**50.0643**	0.335	0.7	ug/L	141	Standard
	Cu	65	90826.1	1.2	**50.2022**	0.411	0.8	ug/L	109	Standard
	Zn	66	53553.2	3.1	**50.0191**	0.561	1.1	ug/L	159	Standard
>	Ge	72	455630.4	2.0				ug/L	474053	Standard
	As	75	53060.3	1.3	**49.8858**	0.388	0.8	ug/L	-34	Standard
	Se	82	5361.3	1.9	**50.2739**	0.522	1.0	ug/L	14	Standard
	Se-1	77	3719.8	1.8	**49.6698**	1.476	3.0	ug/L	55	Standard
>	Ga	71	106.7	19.5				mg/L	50	Standard
	Rb	85	516.7	9.1				ug/L	20	Standard
	Y	89	378420.4	2.1				ug/L	376602	Standard
>	Rh	103	21.7	74.2				ug/L	17	Standard
	Mo	98	235943.4	1.8	**99.9874**	3.042	3.0	ug/L	8	Standard
	Ag	107	287193.3	1.4	**48.1797**	1.433	3.0	ug/L	81	Standard
	Cd	111	93247.5	0.8	**48.0828**	0.885	1.8	mg/L	3	Standard
	Cd	114	229861.4	1.2	**47.9476**	1.147	2.4	ug/L	7	Standard
>	In	115	524337.5	1.6				ug/L	524722	Standard
	Sn	118	280407.9	1.2	**52.0144**	1.090	2.1	ug/L	715	Standard
	Sb	123	204641.1	2.4	**46.8900**	1.860	4.0	ug/L	201	Standard
	Ba	135	86406.7	0.9	**47.6572**	1.015	2.1	ug/L	108	Standard
	Ce	140	135.0	7.4				ug/L	30	Standard
>	Tb	159	786784.4	0.3				ug/L	792236	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	354843.5	0.6	**47.8254**	0.499	1.0	ug/L	9	Standard
	Tl	205	306407.3	0.5	**48.5592**	0.423	0.9	ug/L	0	Standard
	Pb	206	218264.7	1.4	**48.6127**	0.167	0.3	ug/L	216	Standard
	Pb	207	191093.3	1.2	**46.7522**	0.112	0.2	ug/L	180	Standard
	Pb	208	804010.8	0.5	**48.4716**	0.281	0.6	ug/L	717	Standard
	U	238	288392.8	0.3	**47.7978**	0.457	1.0	ug/L	4	Standard
>	Bi	209	447132.2	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3715.5	2.1	**4.9417**	0.061	1.2	mg/L	20	Standard
K	39	701.7	9.7	**5.0672**	0.500	9.9	mg/L	22	Standard
Ca	43	61.7	24.8	**1.0552**	3.413	323.4	mg/L	47	Standard
Fe	54	6212.5	1.3	**4.8866**	0.105	2.2	mg/L	151	Standard
Fe	57	1778.4	8.4	**4.8076**	0.510	10.6	mg/L	195	Standard
> **Sc-1**	45	29944.6	0.9				mg/L	29647	Standard
Cl	35	161455.3	2.4				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	1416.7	8.8				ug/L	1607	Standard
P	31	25623.3	0.9				ug/L	22752	Standard
S	34	5979.5	3.9				ug/L	5049	Standard
Sr	88	73.3	41.7				ug/L	87	Standard
C	12	33.3	69.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.0	37.7				mg/L	10	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	1055.0	6.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	96.964		
Al	27	98.553		
Sc	45			
Ti	47	105.903		
V	51	97.348		
Cr	52	100.704		
Cr	53			
Mn	55	103.136		
Co	59	98.406		
Ni	60	100.129		
Cu	65	100.404		
Zn	66	100.038		
> Ge	72		96.114	
As	75	99.772		
Se	82	100.548		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	99.987		
Ag	107	96.359		
Cd	111	96.166		
Cd	114			
> In	115		99.927	
Sn	118	104.029		
Sb	123	93.780		
Ba	135	95.314		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	95.651		
Tl	205			
Pb	206	97.225		
Pb	207	93.504		
Pb	208	96.943		
U	238	95.596		
> Bi	209		97.130	
Na	23	209.044		
Mg	24	98.834		
K	39	101.344		
Ca	43	21.103		
Fe	54	97.732		
Fe	57	96.152		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Thursday, June 16, 2016 16:03:55
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48694.8	0.2				ug/L	51024	Standard
	Be	9	11.7	24.7	**-0.0065**	0.004	55.1	ug/L	7	Standard
	Al	27	941.7	10.9	**-0.0028**	0.001	26.9	ug/L	625	Standard
	Sc	45	29877.8	0.9				ug/L	29647	Standard
	Ti	47	54.3	5.3	**0.0224**	0.010	44.8	ug/L	57	Standard
	V	51	957.2	10.4	**-0.0283**	0.014	48.1	ug/L	1142	Standard
	Cr	52	6138.9	3.0	**-0.0600**	0.025	41.4	ug/L	6628	Standard
	Cr	53	340.0	7.8	**-0.0510**	0.030	59.6	ug/L	430	Standard
	Mn	55	634.3	2.6	**-0.0152**	0.003	19.9	ug/L	603	Standard
	Co	59	238.0	8.6	**-0.0027**	0.004	132.9	ug/L	237	Standard
	Ni	60	130.0	7.3	**-0.0077**	0.005	63.8	ug/L	141	Standard
	Cu	65	103.7	15.4	**-0.0087**	0.009	107.0	ug/L	109	Standard
	Zn	66	127.0	5.2	**-0.1127**	0.007	6.0	ug/L	159	Standard
>	**Ge**	72	455597.3	0.8				ug/L	474053	Standard
	As	75	-43.2	74.2	**-0.0157**	0.030	193.2	ug/L	-34	Standard
	Se	82	18.2	18.4	**0.0019**	0.030	1563.3	ug/L	14	Standard
	Se-1	77	53.3	8.5	**-0.0219**	0.067	305.9	ug/L	55	Standard
>	**Ga**	71	65.0	20.4				mg/L	50	Standard
	Rb	85	26.7	39.0				ug/L	20	Standard
	Y	89	385670.5	2.5				ug/L	376602	Standard
>	**Rh**	103	21.7	48.0				ug/L	17	Standard
	Mo	98	109.5	11.0	**0.0404**	0.004	10.6	ug/L	8	Standard
	Ag	107	89.3	19.3	**0.0026**	0.003	126.0	ug/L	81	Standard
	Cd	111	7.4	34.0	**0.0006**	0.001	222.3	mg/L	3	Standard
	Cd	114	19.0	7.1	**0.0001**	0.000	161.5	ug/L	7	Standard
>	**In**	115	528269.6	2.4				ug/L	524722	Standard
	Sn	118	783.4	18.1	**0.0547**	0.023	42.9	ug/L	715	Standard
	Sb	123	1248.5	31.3	**0.2679**	0.083	31.1	ug/L	201	Standard
	Ba	135	101.3	11.9	**-0.0020**	0.008	395.1	ug/L	108	Standard
	Ce	140	18.3	56.8				ug/L	30	Standard
>	**Tb**	159	789316.7	0.7				ug/L	792236	Standard
	Ho	165	3.3	173.2				ug/L	7	Standard
	Tl	203	34.3	9.4	**0.0020**	0.000	19.3	ug/L	9	Standard
	Tl	205	23.3	61.9	**-0.0042**	0.002	53.7	ug/L	0	Standard
	Pb	206	215.0	9.3	**-0.0087**	0.004	50.2	ug/L	216	Standard
	Pb	207	177.7	3.1	**-0.0106**	0.001	10.4	ug/L	180	Standard
	Pb	208	745.3	3.0	**-0.0132**	0.001	9.1	ug/L	717	Standard
	U	238	19.7	20.5	**-0.0043**	0.001	15.7	ug/L	4	Standard
>	**Bi**	209	449575.7	0.9				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	26.7	60.3	**-0.0094**	0.021	228.0	mg/L	20	Standard
K	39	16.7	45.8	**-0.1015**	0.059	58.3	mg/L	22	Standard
Ca	43	35.0	0.0	**-5.0734**	0.077	1.5	mg/L	47	Standard
Fe	54	139.4	7.2	**-0.0024**	0.009	374.1	mg/L	151	Standard
Fe	57	198.3	8.1	**-0.0375**	0.053	141.8	mg/L	195	Standard
> **Sc-1**	45	29877.8	0.9				mg/L	29647	Standard
Cl	35	160882.5	1.9				ug/L	154152	Standard
Kr	83	1.0	0.0				ug/L	3	Standard
Br	81	1510.1	12.6				ug/L	1607	Standard
P	31	25673.4	1.5				ug/L	22752	Standard
S	34	5894.5	3.2				ug/L	5049	Standard
Sr	88	76.7	32.2				ug/L	87	Standard
C	12	23.3	49.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.4	107.5				mg/L	10	Standard
Ho-1	165	3.3	173.2				mg/L	7	Standard
Er	166	13.3	173.2				mg/L	3	Standard
I	127	965.0	3.2				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.107	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.676	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.661	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Na	23	
QC Std 2	K	39	

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QC Std 2	Ca	43

Sample ID: QC Std 2
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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Thursday, June 16, 2016 16:07:40
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55474.7	2.1				ug/L	51024	Standard
	Be	9	18.3	15.7	**-0.0010**	0.003	338.2	ug/L	7	Standard
	Al	27	6905396.8	2.8	**44.6071**	0.703	1.6	ug/L	625	Standard
	Sc	45	29577.2	0.8				ug/L	29647	Standard
	Ti	47	31418.2	1.3	**107.0966**	1.877	1.8	ug/L	57	Standard
	V	51	1222.8	22.4	**0.0081**	0.041	507.7	ug/L	1142	Standard
	Cr	52	7310.1	0.7	**0.0900**	0.007	8.1	ug/L	6628	Standard
	Cr	53	3288.7	9.3	**3.1897**	0.292	9.2	ug/L	430	Standard
	Mn	55	1091.7	3.2	**0.0620**	0.006	9.4	ug/L	603	Standard
	Co	59	399.3	5.7	**0.0224**	0.003	12.6	ug/L	237	Standard
	Ni	60	759.0	2.6	**0.3255**	0.016	4.9	ug/L	141	Standard
	Cu	65	628.7	2.7	**0.2766**	0.010	3.8	ug/L	109	Standard
	Zn	66	1729.4	2.6	**1.3663**	0.021	1.6	ug/L	159	Standard
>	**Ge**	72	462633.9	1.3				ug/L	474053	Standard
	As	75	-39.5	207.4	**-0.0113**	0.076	672.8	ug/L	-34	Standard
	Se	82	21.1	40.5	**0.0261**	0.078	299.6	ug/L	14	Standard
	Se-1	77	277.0	14.2	**2.9476**	0.479	16.2	ug/L	55	Standard
>	**Ga**	71	155.0	16.8				mg/L	50	Standard
	Rb	85	810.0	10.2				ug/L	20	Standard
	Y	89	382532.7	1.4				ug/L	376602	Standard
>	**Rh**	103	13.3	57.3				ug/L	17	Standard
	Mo	98	234826.0	1.7	**100.4857**	2.149	2.1	ug/L	8	Standard
	Ag	107	169.0	8.6	**0.0163**	0.002	15.1	ug/L	81	Standard
	Cd	111	-108.8	6.6	**-0.0599**	0.004	5.9	mg/L	3	Standard
	Cd	114	586.7	17.3	**0.1197**	0.021	17.4	ug/L	7	Standard
>	**In**	115	519149.4	0.5				ug/L	524722	Standard
	Sn	118	681.7	7.9	**0.0385**	0.011	27.7	ug/L	715	Standard
	Sb	123	406.1	34.2	**0.0793**	0.032	41.0	ug/L	201	Standard
	Ba	135	224.7	3.6	**0.0676**	0.005	7.3	ug/L	108	Standard
	Ce	140	145.0	18.2				ug/L	30	Standard
>	**Tb**	159	796726.8	0.9				ug/L	792236	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	851.7	23.5	**0.1131**	0.029	25.4	ug/L	9	Standard
	Tl	205	813.4	19.5	**0.1220**	0.027	21.9	ug/L	0	Standard
	Pb	206	671.0	13.8	**0.0943**	0.023	24.1	ug/L	216	Standard
	Pb	207	610.0	7.6	**0.0965**	0.013	13.8	ug/L	180	Standard
	Pb	208	2481.7	5.9	**0.0928**	0.011	11.7	ug/L	717	Standard
	U	238	11.0	24.1	**-0.0057**	0.000	8.1	ug/L	4	Standard
>	**Bi**	209	444717.2	1.3				ug/L	460343	Standard

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Na	23	1.7	173.2	**4.9320**	9.561	193.9	mg/L	0	Standard
Mg	24	9214.5	2.3	**12.4761**	0.188	1.5	mg/L	20	Standard
K	39	665.0	6.6	**4.8546**	0.351	7.2	mg/L	22	Standard
Ca	43	148.3	13.6	**21.5299**	4.516	21.0	mg/L	47	Standard
Fe	54	14427.7	3.0	**11.6428**	0.306	2.6	mg/L	151	Standard
Fe	57	3798.8	1.5	**11.1428**	0.194	1.7	mg/L	195	Standard
> **Sc-1**	45	29577.2	0.8				mg/L	29647	Standard
Cl	35	176475.5	2.2				ug/L	154152	Standard
Kr	83	2.0	86.6				ug/L	3	Standard
Br	81	1553.4	2.3				ug/L	1607	Standard
P	31	23887.2	3.9				ug/L	22752	Standard
S	34	5340.9	1.7				ug/L	5049	Standard
Sr	88	58.3	9.9				ug/L	87	Standard
C	12	96.7	58.8				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	30.0	0.0				mg/L	0	Standard
Dy	164	2.4	262.3				mg/L	10	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	3	Standard
I	127	1410.1	5.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27	0.892		
Sc	45			
Ti	47	107.097		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.591	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	100.486		
Ag	107			
Cd	111			
Cd	114			
> In	115			98.938
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209			96.606
Na	23	39.456		
Mg	24	249.521		
K	39	97.091		
Ca	43	143.533		
Fe	54	93.142		
Fe	57	89.142		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Tl	203	
QC Std 4	Na	23	

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QC Std 4	Mg	24
QC Std 4	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Thursday, June 16, 2016 16:22:01
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	58477.6	0.2				ug/L	51024	Standard
	Be	9	88548.0	0.3	**91.8774**	0.469	0.5	ug/L	7	Standard
	Al	27	7648485.8	0.8	**46.8715**	0.352	0.8	ug/L	625	Standard
	Sc	45	29133.0	2.0				ug/L	29647	Standard
	Ti	47	33470.3	2.4	**118.1657**	2.723	2.3	ug/L	57	Standard
	V	51	673843.7	0.9	**100.3884**	1.672	1.7	ug/L	1142	Standard
	Cr	52	698679.1	1.4	**99.8305**	1.037	1.0	ug/L	6628	Standard
	Cr	53	90290.0	2.1	**102.5975**	1.386	1.4	ug/L	430	Standard
	Mn	55	596300.3	1.2	**106.4457**	0.466	0.4	ug/L	603	Standard
	Co	59	629938.1	1.8	**103.9511**	1.908	1.8	ug/L	237	Standard
	Ni	60	180922.1	0.3	**99.4431**	0.584	0.6	ug/L	141	Standard
	Cu	65	177067.3	0.6	**99.8815**	0.324	0.3	ug/L	109	Standard
	Zn	66	106852.8	0.0	**102.0554**	0.902	0.9	ug/L	159	Standard
>	Ge	72	446706.3	0.8				ug/L	474053	Standard
	As	75	106615.2	0.2	**102.2086**	1.049	1.0	ug/L	-34	Standard
	Se	82	10642.5	1.1	**101.9658**	1.771	1.7	ug/L	14	Standard
	Se-1	77	7567.2	2.1	**103.8353**	2.380	2.3	ug/L	55	Standard
>	Ga	71	153.3	10.5				mg/L	50	Standard
	Rb	85	808.4	8.9				ug/L	20	Standard
	Y	89	396492.9	1.1				ug/L	376602	Standard
>	Rh	103	48.3	15.8				ug/L	17	Standard
	Mo	98	245151.1	0.7	**102.3761**	1.234	1.2	ug/L	8	Standard
	Ag	107	517251.9	0.7	**85.5144**	0.680	0.8	ug/L	81	Standard
	Cd	111	189019.4	1.2	**96.0637**	1.742	1.8	mg/L	3	Standard
	Cd	114	457330.5	1.6	**94.0204**	2.156	2.3	ug/L	7	Standard
>	In	115	531964.2	0.7				ug/L	524722	Standard
	Sn	118	896.7	15.7	**0.0749**	0.027	35.8	ug/L	715	Standard
	Sb	123	419181.5	1.0	**94.6488**	1.016	1.1	ug/L	201	Standard
	Ba	135	174129.5	0.2	**94.7022**	0.497	0.5	ug/L	108	Standard
	Ce	140	123.3	45.2				ug/L	30	Standard
>	Tb	159	792285.1	1.1				ug/L	792236	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	718957.1	0.3	**98.0117**	1.579	1.6	ug/L	9	Standard
	Tl	205	627537.4	1.6	**100.6124**	3.065	3.0	ug/L	0	Standard
	Pb	206	453228.9	0.3	**102.1662**	1.141	1.1	ug/L	216	Standard
	Pb	207	393799.0	0.5	**97.5071**	0.924	0.9	ug/L	180	Standard
	Pb	208	1620914.8	1.9	**98.9101**	2.956	3.0	ug/L	717	Standard
	U	238	599569.3	0.5	**100.5173**	1.718	1.7	ug/L	4	Standard
>	Bi	209	442109.9	1.4				ug/L	460343	Standard

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Na	23	1.7	173.2	**4.7867**	9.813	205.0	mg/L	0	Standard
Mg	24	10183.4	1.3	**14.0071**	0.241	1.7	mg/L	20	Standard
K	39	573.3	13.1	**4.2150**	0.510	12.1	mg/L	22	Standard
Ca	43	138.3	13.7	**19.6561**	3.893	19.8	mg/L	47	Standard
Fe	54	15280.5	1.4	**12.5337**	0.416	3.3	mg/L	151	Standard
Fe	57	4085.6	2.5	**12.2326**	0.552	4.5	mg/L	195	Standard
> **Sc-1**	45	29133.0	2.0				mg/L	29647	Standard
Cl	35	179327.8	1.3				ug/L	154152	Standard
Kr	83	1.3	114.6				ug/L	3	Standard
Br	81	1623.4	4.9				ug/L	1607	Standard
P	31	23591.7	0.4				ug/L	22752	Standard
S	34	5254.2	2.3				ug/L	5049	Standard
Sr	88	70.0	42.9				ug/L	87	Standard
C	12	133.3	4.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	15.9	94.6				mg/L	10	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	3	Standard
I	127	930.0	5.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	91.877		
Al	27	0.937		
Sc	45			
Ti	47	118.166		
V	51	100.388		
Cr	52	99.830		
Cr	53			
Mn	55	106.446		
Co	59	103.951		
Ni	60	99.443		
Cu	65	99.882		
Zn	66	102.055		
> Ge	72		94.231	
As	75	102.209		
Se	82	101.966		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	102.376		
Ag	107	85.514		
Cd	111	96.064		
Cd	114			
> In	115		101.380	
Sn	118			
Sb	123	94.649		
Ba	135	94.702		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.012		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.910		
U	238	100.517		
> Bi	209		96.039	
Na	23	38.294		
Mg	24	280.142		
K	39	84.299		
Ca	43	131.041		
Fe	54	100.269		
Fe	57	97.861		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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QC Std 5	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 16:25:16
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	55603.6	4.4				ug/L	51024	Standard
	Be	9	43453.9	2.4	**47.4947**	3.006	6.3	ug/L	7	Standard
	Al	27	7054078.0	1.0	**45.5100**	1.586	3.5	ug/L	625	Standard
	Sc	45	29373.5	1.7				ug/L	29647	Standard
	Ti	47	28713.9	1.4	**99.4855**	3.895	3.9	ug/L	57	Standard
	V	51	340364.3	1.3	**49.6680**	0.932	1.9	ug/L	1142	Standard
	Cr	52	357828.9	0.7	**49.7225**	1.608	3.2	ug/L	6628	Standard
	Cr	53	43806.6	0.8	**48.6374**	1.665	3.4	ug/L	430	Standard
	Mn	55	293651.9	1.1	**51.3908**	1.852	3.6	ug/L	603	Standard
	Co	59	311248.9	1.6	**50.3908**	1.771	3.5	ug/L	237	Standard
	Ni	60	92893.9	1.1	**50.0647**	1.079	2.2	ug/L	141	Standard
	Cu	65	90724.2	1.5	**50.1802**	0.633	1.3	ug/L	109	Standard
	Zn	66	53344.1	1.6	**49.8682**	0.504	1.0	ug/L	159	Standard
>	Ge	72	455364.8	2.6				ug/L	474053	Standard
	As	75	52938.3	1.1	**49.8092**	0.820	1.6	ug/L	-34	Standard
	Se	82	5329.6	1.7	**50.0105**	0.490	1.0	ug/L	14	Standard
	Se-1	77	3723.8	2.6	**49.7421**	0.784	1.6	ug/L	55	Standard
>	Ga	71	95.0	22.9				mg/L	50	Standard
	Rb	85	726.7	4.9				ug/L	20	Standard
	Y	89	384472.0	0.6				ug/L	376602	Standard
>	Rh	103	16.7	62.4				ug/L	17	Standard
	Mo	98	232118.8	0.3	**97.2358**	1.022	1.1	ug/L	8	Standard
	Ag	107	290638.3	1.3	**48.1940**	0.630	1.3	ug/L	81	Standard
	Cd	111	94793.4	0.9	**48.3272**	1.004	2.1	mg/L	3	Standard
	Cd	114	234828.4	1.3	**48.4291**	1.209	2.5	ug/L	7	Standard
>	In	115	530331.4	1.3				ug/L	524722	Standard
	Sn	118	263139.7	2.6	**48.2596**	1.845	3.8	ug/L	715	Standard
	Sb	123	217327.7	1.3	**49.2164**	0.579	1.2	ug/L	201	Standard
	Ba	135	88067.5	0.7	**48.0226**	0.952	2.0	ug/L	108	Standard
	Ce	140	81.7	18.7				ug/L	30	Standard
>	Tb	159	794129.5	1.0				ug/L	792236	Standard
	Ho	165	6.7	86.6				ug/L	7	Standard
	Tl	203	362843.1	1.0	**49.0795**	1.497	3.1	ug/L	9	Standard
	Tl	205	310212.2	1.3	**49.3427**	1.712	3.5	ug/L	0	Standard
	Pb	206	222989.0	0.9	**49.8435**	1.206	2.4	ug/L	216	Standard
	Pb	207	201083.3	0.8	**49.3722**	1.064	2.2	ug/L	180	Standard
	Pb	208	809454.4	0.8	**48.9759**	1.413	2.9	ug/L	717	Standard
	U	238	299066.7	0.4	**49.7396**	1.132	2.3	ug/L	4	Standard
>	Bi	209	445696.2	2.2				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3647.1	3.0	**4.9460**	0.155	3.1	mg/L	20	Standard
K	39	621.7	4.7	**4.5576**	0.277	6.1	mg/L	22	Standard
Ca	43	53.3	19.5	**-0.5868**	2.635	449.0	mg/L	47	Standard
Fe	54	5858.9	4.9	**4.6943**	0.261	5.6	mg/L	151	Standard
Fe	57	1763.4	1.3	**4.8648**	0.124	2.5	mg/L	195	Standard
> **Sc-1**	45	29373.5	1.7				mg/L	29647	Standard
Cl	35	157950.4	0.4				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	1363.4	1.1				ug/L	1607	Standard
P	31	23531.6	2.3				ug/L	22752	Standard
S	34	5542.7	3.1				ug/L	5049	Standard
Sr	88	65.0	38.5				ug/L	87	Standard
C	12	56.7	71.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.4	50.3				mg/L	10	Standard
Ho-1	165	6.7	86.6				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	3	Standard
I	127	1150.0	8.7				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	94.989		
	Al	27	91.020		
	Sc	45			
	Ti	47	99.485		
	V	51	99.336		
	Cr	52	99.445		
	Cr	53			
	Mn	55	102.782		
	Co	59	100.782		
	Ni	60	100.129		
	Cu	65	100.360		
	Zn	66	99.736		
>	Ge	72		96.058	
	As	75	99.618		
	Se	82	100.021		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	97.236		
Ag	107	96.388		
Cd	111	96.654		
Cd	114			
In	115			101.069
Sn	118	96.519		
Sb	123	98.433		
Ba	135	96.045		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.159		
Tl	205			
Pb	206			
Pb	207			
Pb	208	97.952		
U	238	99.479		
Bi	209			96.818
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 16:38:50
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52378.7	2.1				ug/L	51024	Standard
	Be	9	15.0	120.2	**-0.0040**	0.020	512.1	ug/L	7	Standard
	Al	27	540.0	3.7	**-0.0061**	0.000	3.2	ug/L	625	Standard
	Sc	45	28712.2	1.8				ug/L	29647	Standard
	Ti	47	44.7	11.0	**-0.0123**	0.017	140.3	ug/L	57	Standard
	V	51	1065.6	4.8	**-0.0136**	0.008	61.5	ug/L	1142	Standard
	Cr	52	6160.3	1.0	**-0.0638**	0.013	21.0	ug/L	6628	Standard
	Cr	53	386.7	19.4	**-0.0026**	0.081	3156.3	ug/L	430	Standard
	Mn	55	621.0	4.1	**-0.0185**	0.004	21.4	ug/L	603	Standard
	Co	59	231.0	6.0	**-0.0042**	0.002	52.0	ug/L	237	Standard
	Ni	60	109.7	8.8	**-0.0191**	0.005	25.2	ug/L	141	Standard
	Cu	65	97.3	15.8	**-0.0127**	0.008	65.1	ug/L	109	Standard
	Zn	66	133.3	9.4	**-0.1078**	0.012	11.3	ug/L	159	Standard
>	**Ge**	72	459252.1	0.6				ug/L	474053	Standard
	As	75	-47.4	46.6	**-0.0192**	0.021	107.9	ug/L	-34	Standard
	Se	82	15.8	37.3	**-0.0216**	0.055	252.4	ug/L	14	Standard
	Se-1	77	46.7	11.0	**-0.1173**	0.072	61.6	ug/L	55	Standard
>	**Ga**	71	35.0	14.3				mg/L	50	Standard
	Rb	85	20.0	43.3				ug/L	20	Standard
	Y	89	388770.9	2.1				ug/L	376602	Standard
>	**Rh**	103	16.7	62.4				ug/L	17	Standard
	Mo	98	68.1	14.3	**0.0237**	0.004	18.9	ug/L	8	Standard
	Ag	107	85.7	13.7	**0.0022**	0.002	97.9	ug/L	81	Standard
	Cd	111	2.9	60.6	**-0.0017**	0.001	51.5	mg/L	3	Standard
	Cd	114	9.5	115.0	**-0.0018**	0.002	124.6	ug/L	7	Standard
>	**In**	115	518516.6	1.3				ug/L	524722	Standard
	Sn	118	641.7	18.0	**0.0313**	0.023	74.8	ug/L	715	Standard
	Sb	123	920.4	35.2	**0.1991**	0.078	39.0	ug/L	201	Standard
	Ba	135	100.7	10.0	**-0.0014**	0.006	433.1	ug/L	108	Standard
	Ce	140	18.3	78.7				ug/L	30	Standard
>	**Tb**	159	769102.4	0.6				ug/L	792236	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	15.7	25.8	**-0.0004**	0.001	125.3	ug/L	9	Standard
	Tl	205	10.0	50.0	**-0.0062**	0.001	13.5	ug/L	0	Standard
	Pb	206	207.3	13.7	**-0.0092**	0.007	79.6	ug/L	216	Standard
	Pb	207	175.3	4.3	**-0.0101**	0.002	22.2	ug/L	180	Standard
	Pb	208	743.7	4.7	**-0.0122**	0.003	22.5	ug/L	717	Standard
	U	238	8.7	35.3	**-0.0061**	0.000	8.0	ug/L	4	Standard
>	**Bi**	209	439141.9	1.8				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	28.3	66.8	**-0.0053**	0.027	522.2	mg/L	20	Standard
K	39	10.0	86.6	**-0.1489**	0.068	45.9	mg/L	22	Standard
Ca	43	36.7	47.9	**-4.3876**	4.095	93.3	mg/L	47	Standard
Fe	54	152.8	18.0	**0.0136**	0.026	187.8	mg/L	151	Standard
Fe	57	166.7	14.2	**-0.1136**	0.080	70.6	mg/L	195	Standard
> **Sc-1**	45	28712.2	1.8				mg/L	29647	Standard
Cl	35	160111.2	2.5				ug/L	154152	Standard
Kr	83	2.3	89.2				ug/L	3	Standard
Br	81	1460.1	8.4				ug/L	1607	Standard
P	31	22964.1	2.3				ug/L	22752	Standard
S	34	5249.2	1.7				ug/L	5049	Standard
Sr	88	68.3	27.7				ug/L	87	Standard
C	12	40.0	66.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	13.0	113.4				mg/L	10	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	3	Standard
I	127	923.4	1.6				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.878	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.817	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	95.395	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW B7 WG572432-04
Sample Date/Time: Thursday, June 16, 2016 17:35:43
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50888.7	1.4				ug/L	51024	Standard
	Be	9	10.0	50.0	**-0.0092**	0.006	65.8	ug/L	7	Standard
	Al	27	7250.1	1.6	**0.0413**	0.001	3.2	ug/L	625	Standard
	Sc	45	27620.2	1.5				ug/L	29647	Standard
	Ti	47	62.3	15.4	**0.0529**	0.035	66.0	ug/L	57	Standard
	V	51	1096.4	11.0	**-0.0060**	0.018	297.3	ug/L	1142	Standard
	Cr	52	7148.7	0.7	**0.0949**	0.009	9.1	ug/L	6628	Standard
	Cr	53	635.0	13.1	**0.2873**	0.091	31.7	ug/L	430	Standard
	Mn	55	19861.3	0.9	**3.3957**	0.050	1.5	ug/L	603	Standard
	Co	59	181.7	9.8	**-0.0115**	0.003	26.7	ug/L	237	Standard
	Ni	60	180.7	8.3	**0.0208**	0.008	36.7	ug/L	141	Standard
	Cu	65	122.3	7.7	**0.0024**	0.006	234.7	ug/L	109	Standard
	Zn	66	1100.0	2.9	**0.8128**	0.032	3.9	ug/L	159	Standard
>	**Ge**	72	450229.5	0.6				ug/L	474053	Standard
	As	75	-42.0	42.9	**-0.0149**	0.017	113.9	ug/L	-34	Standard
	Se	82	9.3	47.0	**-0.0801**	0.042	52.5	ug/L	14	Standard
	Se-1	77	64.0	16.5	**0.1328**	0.147	110.5	ug/L	55	Standard
>	**Ga**	71	50.0	26.5				mg/L	50	Standard
	Rb	85	73.3	20.8				ug/L	20	Standard
	Y	89	383468.8	0.7				ug/L	376602	Standard
>	**Rh**	103	13.3	21.7				ug/L	17	Standard
	Mo	98	675.4	5.9	**0.2913**	0.019	6.7	ug/L	8	Standard
	Ag	107	79.3	11.9	**0.0015**	0.002	113.9	ug/L	81	Standard
	Cd	111	2.4	24.1	**-0.0019**	0.000	15.9	mg/L	3	Standard
	Cd	114	32.5	70.3	**0.0032**	0.005	153.9	ug/L	7	Standard
>	**In**	115	505606.7	0.8				ug/L	524722	Standard
	Sn	118	778.4	13.1	**0.0606**	0.021	34.0	ug/L	715	Standard
	Sb	123	423.2	31.6	**0.0859**	0.032	37.8	ug/L	201	Standard
	Ba	135	197.0	6.6	**0.0551**	0.008	14.5	ug/L	108	Standard
	Ce	140	71.7	20.1				ug/L	30	Standard
>	**Tb**	159	761176.8	0.6				ug/L	792236	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	45.0	11.1	**0.0037**	0.001	19.6	ug/L	9	Standard
	Tl	205	38.3	27.2	**-0.0016**	0.002	107.0	ug/L	0	Standard
	Pb	206	207.0	9.6	**-0.0086**	0.005	56.9	ug/L	216	Standard
	Pb	207	183.0	3.8	**-0.0075**	0.002	22.0	ug/L	180	Standard
	Pb	208	773.7	0.5	**-0.0097**	0.001	6.3	ug/L	717	Standard
	U	238	7.0	14.3	**-0.0064**	0.000	2.5	ug/L	4	Standard
>	**Bi**	209	432877.1	0.8				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	46.7	37.6	**0.0228**	0.026	113.0	mg/L	20	Standard
K	39	25.0	20.0	**-0.0231**	0.042	181.8	mg/L	22	Standard
Ca	43	38.3	19.9	**-3.5551**	2.049	57.6	mg/L	47	Standard
Fe	54	166.0	7.2	**0.0299**	0.009	28.8	mg/L	151	Standard
Fe	57	193.3	5.4	**-0.0042**	0.043	1021.8	mg/L	195	Standard
> **Sc-1**	45	27620.2	1.5				mg/L	29647	Standard
Cl	35	157510.0	2.0				ug/L	154152	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	1796.8	8.2				ug/L	1607	Standard
P	31	21511.9	1.4				ug/L	22752	Standard
S	34	4927.5	1.4				ug/L	5049	Standard
Sr	88	76.7	10.0				ug/L	87	Standard
C	12	53.3	47.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	18.7	50.9				mg/L	10	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	26.7	57.3				mg/L	3	Standard
I	127	1125.0	8.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.734	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.974	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.357
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.034
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW B7 WG572432-05
Sample Date/Time: Thursday, June 16, 2016 17:38:54
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51783.3	1.2				ug/L	51024	Standard
	Be	9	41423.2	1.3	**48.5300**	0.724	1.5	ug/L	7	Standard
	Al	27	8105.5	5.6	**0.0464**	0.004	7.6	ug/L	625	Standard
	Sc	45	29290.0	1.1				ug/L	29647	Standard
	Ti	47	66.0	28.8	**0.0608**	0.069	114.0	ug/L	57	Standard
	V	51	347988.7	1.1	**50.1052**	0.398	0.8	ug/L	1142	Standard
	Cr	52	363767.8	1.3	**49.8723**	1.265	2.5	ug/L	6628	Standard
	Cr	53	46272.2	1.3	**50.7068**	1.549	3.1	ug/L	430	Standard
	Mn	55	322059.4	1.1	**55.6120**	1.299	2.3	ug/L	603	Standard
	Co	59	318198.3	0.5	**50.8192**	0.688	1.4	ug/L	237	Standard
	Ni	60	95145.8	1.0	**50.6010**	1.153	2.3	ug/L	141	Standard
	Cu	65	93949.4	0.3	**51.2847**	1.031	2.0	ug/L	109	Standard
	Zn	66	55650.7	0.4	**51.3490**	0.838	1.6	ug/L	159	Standard
>	**Ge**	72	461424.2	1.8				ug/L	474053	Standard
	As	75	53752.8	0.6	**49.9059**	0.739	1.5	ug/L	-34	Standard
	Se	82	5332.6	1.0	**49.3792**	0.829	1.7	ug/L	14	Standard
	Se-1	77	3747.5	1.7	**49.4072**	1.506	3.0	ug/L	55	Standard
>	**Ga**	71	81.7	30.2				mg/L	50	Standard
	Rb	85	53.3	23.6				ug/L	20	Standard
	Y	89	377535.8	0.4				ug/L	376602	Standard
>	**Rh**	103	36.7	31.5				ug/L	17	Standard
	Mo	98	750.8	4.4	**0.3174**	0.017	5.4	ug/L	8	Standard
	Ag	107	297266.0	1.0	**50.6052**	0.925	1.8	ug/L	81	Standard
	Cd	111	95234.0	1.1	**49.8345**	0.593	1.2	mg/L	3	Standard
	Cd	114	234836.7	1.4	**49.7088**	0.798	1.6	ug/L	7	Standard
>	**In**	115	516621.5	1.2				ug/L	524722	Standard
	Sn	118	736.7	13.8	**0.0494**	0.018	37.2	ug/L	715	Standard
	Sb	123	208987.1	0.3	**48.5849**	0.463	1.0	ug/L	201	Standard
	Ba	135	88485.0	1.6	**49.5270**	0.847	1.7	ug/L	108	Standard
	Ce	140	93.3	22.3				ug/L	30	Standard
>	**Tb**	159	786575.0	1.5				ug/L	792236	Standard
	Ho	165	15.0	120.2				ug/L	7	Standard
	Tl	203	367143.4	1.3	**48.6717**	0.655	1.3	ug/L	9	Standard
	Tl	205	311332.9	0.6	**48.5309**	0.337	0.7	ug/L	0	Standard
	Pb	206	233648.2	1.0	**51.1920**	0.365	0.7	ug/L	216	Standard
	Pb	207	204781.6	0.5	**49.2852**	0.113	0.2	ug/L	180	Standard
	Pb	208	826562.7	0.6	**49.0156**	0.301	0.6	ug/L	717	Standard
	U	238	299484.9	0.7	**48.8217**	0.244	0.5	ug/L	4	Standard
>	**Bi**	209	454561.3	0.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	50.0	17.3	**0.0233**	0.011	48.4	mg/L	20	Standard
K	39	26.7	28.6	**-0.0218**	0.061	278.8	mg/L	22	Standard
Ca	43	35.0	75.6	**-4.9193**	6.254	127.1	mg/L	47	Standard
Fe	54	111.6	12.4	**-0.0232**	0.011	46.2	mg/L	151	Standard
Fe	57	160.0	10.8	**-0.1456**	0.055	37.5	mg/L	195	Standard
Sc-1	45	29290.0	1.1				mg/L	29647	Standard
Cl	35	154390.7	1.3				ug/L	154152	Standard
Kr	83	3.3	45.8				ug/L	3	Standard
Br	81	1633.4	8.8				ug/L	1607	Standard
P	31	21568.7	2.2				ug/L	22752	Standard
S	34	5032.5	1.0				ug/L	5049	Standard
Sr	88	65.0	15.4				ug/L	87	Standard
C	12	66.7	17.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	23.2	25.5				mg/L	10	Standard
Ho-1	165	15.0	120.2				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	1071.7	9.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		101.488	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.336	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.456
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.744
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606054006 WG572432-01
Sample Date/Time: Thursday, June 16, 2016 17:42:06
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52547.6	1.2				ug/L	51024	Standard
	Be	9	281.7	11.8	**0.3044**	0.040	13.2	ug/L	7	Standard
	Al	27	1816487.4	0.8	**12.3812**	0.043	0.4	ug/L	625	Standard
	Sc	45	29675.7	4.3				ug/L	29647	Standard
	Ti	47	527.0	16.5	**1.6748**	0.301	18.0	ug/L	57	Standard
	V	51	3476.6	2.8	**0.3441**	0.007	2.0	ug/L	1142	Standard
	Cr	52	8938.3	3.6	**0.3455**	0.039	11.3	ug/L	6628	Standard
	Cr	53	901.7	9.0	**0.5864**	0.111	18.9	ug/L	430	Standard
	Mn	55	80134.4	1.0	**14.0253**	0.252	1.8	ug/L	603	Standard
	Co	59	25491.1	1.0	**4.1165**	0.049	1.2	ug/L	237	Standard
	Ni	60	8570.8	3.1	**4.5794**	0.092	2.0	ug/L	141	Standard
	Cu	65	650.0	5.0	**0.2962**	0.012	4.0	ug/L	109	Standard
	Zn	66	3464.7	2.4	**3.0444**	0.035	1.2	ug/L	159	Standard
>	**Ge**	72	452166.6	1.8				ug/L	474053	Standard
	As	75	1182.5	5.5	**1.1442**	0.046	4.0	ug/L	-34	Standard
	Se	82	46.0	21.8	**0.2663**	0.087	32.8	ug/L	14	Standard
	Se-1	77	85.7	5.5	**0.4258**	0.086	20.3	ug/L	55	Standard
>	**Ga**	71	278.3	3.7				mg/L	50	Standard
	Rb	85	4193.9	3.2				ug/L	20	Standard
	Y	89	416460.7	2.0				ug/L	376602	Standard
>	**Rh**	103	23.3	12.4				ug/L	17	Standard
	Mo	98	357.6	5.0	**0.1457**	0.008	5.8	ug/L	8	Standard
	Ag	107	158.3	24.9	**0.0142**	0.007	47.6	ug/L	81	Standard
	Cd	111	270.7	5.4	**0.1360**	0.007	5.2	mg/L	3	Standard
	Cd	114	622.1	11.8	**0.1257**	0.017	13.1	ug/L	7	Standard
>	**In**	115	525525.2	1.0				ug/L	524722	Standard
	Sn	118	728.4	8.0	**0.0455**	0.009	20.8	ug/L	715	Standard
	Sb	123	2010.9	21.8	**0.4446**	0.099	22.2	ug/L	201	Standard
	Ba	135	37719.2	0.5	**20.7210**	0.204	1.0	ug/L	108	Standard
	Ce	140	135002.2	1.6				ug/L	30	Standard
>	**Tb**	159	783120.3	1.3				ug/L	792236	Standard
	Ho	165	2456.9	1.5				ug/L	7	Standard
	Tl	203	253.7	10.2	**0.0320**	0.003	10.8	ug/L	9	Standard
	Tl	205	226.7	16.3	**0.0285**	0.006	20.3	ug/L	0	Standard
	Pb	206	765.0	5.7	**0.1161**	0.008	6.7	ug/L	216	Standard
	Pb	207	652.7	5.5	**0.1078**	0.008	7.7	ug/L	180	Standard
	Pb	208	2766.1	3.6	**0.1109**	0.007	6.4	ug/L	717	Standard
	U	238	1954.1	0.9	**0.3200**	0.006	1.9	ug/L	4	Standard
>	**Bi**	209	442196.1	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1238.4	6.5	**1.6323**	0.087	5.4	mg/L	20	Standard
K	39	41.7	36.7	**0.0889**	0.112	125.7	mg/L	22	Standard
Ca	43	68.3	11.2	**2.8122**	2.229	79.3	mg/L	47	Standard
Fe	54	837.8	5.1	**0.5655**	0.012	2.1	mg/L	151	Standard
Fe	57	411.7	13.3	**0.6277**	0.175	27.9	mg/L	195	Standard
> **Sc-1**	45	29675.7	4.3				mg/L	29647	Standard
Cl	35	169997.1	1.0				ug/L	154152	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	5057.5	1.3				ug/L	1607	Standard
P	31	24386.3	0.9				ug/L	22752	Standard
S	34	5092.5	0.4				ug/L	5049	Standard
Sr	88	103.3	7.4				ug/L	87	Standard
C	12	76.7	60.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	3712.9	1.1				mg/L	10	Standard
Ho-1	165	2456.9	1.5				mg/L	7	Standard
Er	166	2246.8	5.2				mg/L	3	Standard
I	127	9703.1	8.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.986	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.383	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.153
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.058
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606054007S WG572432-06
Sample Date/Time: Thursday, June 16, 2016 17:45:17
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53706.7	0.9				ug/L	51024	Standard
	Be	9	43749.7	1.2	**49.4168**	0.266	0.5	ug/L	7	Standard
	Al	27	1932307.9	0.8	**12.8870**	0.144	1.1	ug/L	625	Standard
	Sc	45	29268.3	2.3				ug/L	29647	Standard
	Ti	47	482.3	20.5	**1.5217**	0.334	21.9	ug/L	57	Standard
	V	51	343151.9	1.8	**50.5559**	1.238	2.4	ug/L	1142	Standard
	Cr	52	356598.9	0.1	**50.0133**	0.323	0.6	ug/L	6628	Standard
	Cr	53	44079.0	0.2	**49.3948**	0.256	0.5	ug/L	430	Standard
	Mn	55	413833.9	0.6	**73.1363**	0.045	0.1	ug/L	603	Standard
	Co	59	348825.8	0.4	**56.9989**	0.424	0.7	ug/L	237	Standard
	Ni	60	100519.4	0.8	**54.6907**	0.393	0.7	ug/L	141	Standard
	Cu	65	91430.0	0.8	**51.0559**	0.663	1.3	ug/L	109	Standard
	Zn	66	56968.2	0.3	**53.7844**	0.273	0.5	ug/L	159	Standard
>	**Ge**	72	450975.6	0.7				ug/L	474053	Standard
	As	75	55730.0	0.9	**52.9297**	0.224	0.4	ug/L	-34	Standard
	Se	82	5454.0	1.2	**51.6747**	0.725	1.4	ug/L	14	Standard
	Se-1	77	3763.1	1.1	**50.7665**	0.264	0.5	ug/L	55	Standard
>	**Ga**	71	263.3	20.3				mg/L	50	Standard
	Rb	85	4255.6	2.8				ug/L	20	Standard
	Y	89	417195.5	2.9				ug/L	376602	Standard
>	**Rh**	103	30.0	16.7				ug/L	17	Standard
	Mo	98	249.7	0.8	**0.1017**	0.004	4.1	ug/L	8	Standard
	Ag	107	291868.5	0.9	**49.6480**	2.126	4.3	ug/L	81	Standard
	Cd	111	96723.0	1.0	**50.5615**	1.461	2.9	mg/L	3	Standard
	Cd	114	235539.9	2.1	**49.7930**	0.984	2.0	ug/L	7	Standard
>	**In**	115	517505.1	3.8				ug/L	524722	Standard
	Sn	118	1476.7	5.3	**0.1884**	0.005	2.4	ug/L	715	Standard
	Sb	123	206896.8	0.8	**48.0521**	1.564	3.3	ug/L	201	Standard
	Ba	135	127540.2	0.0	**71.3559**	2.754	3.9	ug/L	108	Standard
	Ce	140	139925.0	2.0				ug/L	30	Standard
>	**Tb**	159	770775.9	3.8				ug/L	792236	Standard
	Ho	165	2476.9	1.1				ug/L	7	Standard
	Tl	203	360327.5	0.9	**50.2317**	2.202	4.4	ug/L	9	Standard
	Tl	205	316813.0	0.1	**51.9255**	1.944	3.7	ug/L	0	Standard
	Pb	206	230620.2	0.3	**53.1250**	1.777	3.3	ug/L	216	Standard
	Pb	207	202090.2	0.6	**51.1482**	2.204	4.3	ug/L	180	Standard
	Pb	208	841767.9	0.1	**52.4861**	1.864	3.6	ug/L	717	Standard
	U	238	302598.3	0.9	**51.8585**	1.621	3.1	ug/L	4	Standard
>	**Bi**	209	432715.9	3.6				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1251.7	2.3	**1.6745**	0.059	3.5	mg/L	20	Standard
K	39	36.7	20.8	**0.0560**	0.065	115.4	mg/L	22	Standard
Ca	43	53.3	32.9	**-0.5302**	4.352	820.7	mg/L	47	Standard
Fe	54	1026.3	1.7	**0.7308**	0.034	4.6	mg/L	151	Standard
Fe	57	418.3	7.7	**0.6667**	0.128	19.3	mg/L	195	Standard
> **Sc-1**	45	29268.3	2.3				mg/L	29647	Standard
Cl	35	169666.9	1.9				ug/L	154152	Standard
Kr	83	2.0	100.0				ug/L	3	Standard
Br	81	2960.3	5.9				ug/L	1607	Standard
P	31	24135.9	2.5				ug/L	22752	Standard
S	34	4849.1	3.1				ug/L	5049	Standard
Sr	88	106.7	33.9				ug/L	87	Standard
C	12	40.0	50.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	0	Standard
Dy	164	3819.4	7.1				mg/L	10	Standard
Ho-1	165	2476.9	1.1				mg/L	7	Standard
Er	166	2390.2	5.9				mg/L	3	Standard
I	127	12700.3	5.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.257	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.132	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.625
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.999
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606054008SD WG572432-07
Sample Date/Time: Thursday, June 16, 2016 17:48:29
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54998.0	2.9				ug/L	51024	Standard
	Be	9	42282.3	1.6	**46.6702**	1.847	4.0	ug/L	7	Standard
	Al	27	1853346.2	1.8	**12.0720**	0.192	1.6	ug/L	625	Standard
	Sc	45	28618.7	1.6				ug/L	29647	Standard
	Ti	47	438.7	18.4	**1.3101**	0.274	20.9	ug/L	57	Standard
	V	51	339071.1	1.2	**47.9811**	0.898	1.9	ug/L	1142	Standard
	Cr	52	348951.5	0.9	**46.9627**	0.693	1.5	ug/L	6628	Standard
	Cr	53	43296.8	2.2	**46.5875**	1.128	2.4	ug/L	430	Standard
	Mn	55	386934.9	1.9	**65.6847**	1.414	2.2	ug/L	603	Standard
	Co	59	342375.5	0.7	**53.7459**	0.809	1.5	ug/L	237	Standard
	Ni	60	97792.2	0.5	**51.1109**	0.332	0.6	ug/L	141	Standard
	Cu	65	89033.2	0.9	**47.7559**	0.143	0.3	ug/L	109	Standard
	Zn	66	55887.9	0.5	**50.6770**	0.331	0.7	ug/L	159	Standard
>	**Ge**	72	469439.2	1.1				ug/L	474053	Standard
	As	75	54484.6	0.9	**49.7143**	0.277	0.6	ug/L	-34	Standard
	Se	82	5325.5	1.9	**48.4642**	1.024	2.1	ug/L	14	Standard
	Se-1	77	3702.8	2.9	**47.9415**	0.927	1.9	ug/L	55	Standard
>	**Ga**	71	271.7	17.7				mg/L	50	Standard
	Rb	85	4088.9	2.2				ug/L	20	Standard
	Y	89	413416.3	1.0				ug/L	376602	Standard
>	**Rh**	103	41.7	30.2				ug/L	17	Standard
	Mo	98	249.2	1.7	**0.1026**	0.001	1.4	ug/L	8	Standard
	Ag	107	286615.9	0.3	**49.2507**	0.777	1.6	ug/L	81	Standard
	Cd	111	93885.9	0.7	**49.5954**	0.904	1.8	mg/L	3	Standard
	Cd	114	226454.5	0.3	**48.3871**	0.650	1.3	ug/L	7	Standard
>	**In**	115	511810.4	1.2				ug/L	524722	Standard
	Sn	118	701.7	6.8	**0.0441**	0.009	19.5	ug/L	715	Standard
	Sb	123	206600.1	0.8	**48.4856**	0.964	2.0	ug/L	201	Standard
	Ba	135	122408.2	0.7	**69.1850**	1.061	1.5	ug/L	108	Standard
	Ce	140	131819.3	0.1				ug/L	30	Standard
>	**Tb**	159	776885.2	2.2				ug/L	792236	Standard
	Ho	165	2331.8	5.4				ug/L	7	Standard
	Tl	203	352123.1	0.6	**47.6812**	0.707	1.5	ug/L	9	Standard
	Tl	205	309331.5	1.9	**49.2466**	0.608	1.2	ug/L	0	Standard
	Pb	206	228474.4	0.6	**51.1335**	0.852	1.7	ug/L	216	Standard
	Pb	207	200368.2	0.3	**49.2580**	0.755	1.5	ug/L	180	Standard
	Pb	208	813075.7	0.6	**49.2521**	0.923	1.9	ug/L	717	Standard
	U	238	295399.0	1.0	**49.1860**	0.564	1.1	ug/L	4	Standard
>	**Bi**	209	445087.6	1.7				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1281.7	3.9	**1.7556**	0.088	5.0	mg/L	20	Standard
K	39	31.7	63.8	**0.0238**	0.162	681.6	mg/L	22	Standard
Ca	43	90.0	29.4	**8.6263**	6.605	76.6	mg/L	47	Standard
Fe	54	882.7	7.0	**0.6290**	0.061	9.7	mg/L	151	Standard
Fe	57	415.0	3.6	**0.6838**	0.030	4.4	mg/L	195	Standard
Sc-1	45	28618.7	1.6				mg/L	29647	Standard
Cl	35	164516.5	1.8				ug/L	154152	Standard
Kr	83	2.7	78.1				ug/L	3	Standard
Br	81	3177.0	4.4				ug/L	1607	Standard
P	31	23216.1	2.6				ug/L	22752	Standard
S	34	4752.4	2.2				ug/L	5049	Standard
Sr	88	88.3	40.2				ug/L	87	Standard
C	12	76.7	30.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	3671.9	4.0				mg/L	10	Standard
Ho-1	165	2331.8	5.4				mg/L	7	Standard
Er	166	2266.8	11.6				mg/L	3	Standard
I	127	12179.9	5.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.788	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.027	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606054008SD WG572432-07
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.539
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.686
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606053301
Sample Date/Time: Thursday, June 16, 2016 17:51:40
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60559.2	3.2				ug/L	51024	Standard
	Be	9	28.3	10.2	**0.0074**	0.004	49.8	ug/L	7	Standard
	Al	27	7003612.2	2.3	**41.4514**	0.476	1.1	ug/L	625	Standard
	Sc	45	30053.2	5.5				ug/L	29647	Standard
	Ti	47	795.7	5.5	**2.5457**	0.146	5.8	ug/L	57	Standard
	V	51	2693.3	6.1	**0.2191**	0.025	11.3	ug/L	1142	Standard
	Cr	52	8930.0	3.3	**0.3138**	0.057	18.2	ug/L	6628	Standard
	Cr	53	2155.2	15.7	**1.9427**	0.407	21.0	ug/L	430	Standard
	Mn	55	115337.0	0.2	**19.7464**	0.327	1.7	ug/L	603	Standard
	Co	59	1383.4	9.3	**0.1788**	0.018	10.2	ug/L	237	Standard
	Ni	60	2905.3	1.7	**1.4630**	0.043	2.9	ug/L	141	Standard
	Cu	65	10476.6	1.4	**5.6346**	0.098	1.7	ug/L	109	Standard
	Zn	66	21460.2	1.0	**19.5697**	0.101	0.5	ug/L	159	Standard
>	**Ge**	72	463434.7	1.4				ug/L	474053	Standard
	As	75	3767.1	1.6	**3.5052**	0.045	1.3	ug/L	-34	Standard
	Se	82	163.8	10.0	**1.3482**	0.174	12.9	ug/L	14	Standard
	Se-1	77	257.3	5.7	**2.6846**	0.227	8.5	ug/L	55	Standard
>	**Ga**	71	133.3	15.6				mg/L	50	Standard
	Rb	85	28246.3	1.8				ug/L	20	Standard
	Y	89	371509.9	1.1				ug/L	376602	Standard
>	**Rh**	103	53.3	54.1				ug/L	17	Standard
	Mo	98	1868.0	0.8	**0.7966**	0.012	1.5	ug/L	8	Standard
	Ag	107	323.0	60.8	**0.0424**	0.033	77.8	ug/L	81	Standard
	Cd	111	115.7	21.0	**0.0572**	0.012	21.6	mg/L	3	Standard
	Cd	114	360.8	28.5	**0.0723**	0.021	29.2	ug/L	7	Standard
>	**In**	115	517402.5	1.9				ug/L	524722	Standard
	Sn	118	1711.8	7.1	**0.2327**	0.020	8.5	ug/L	715	Standard
	Sb	123	4614.0	12.3	**1.0551**	0.113	10.7	ug/L	201	Standard
	Ba	135	35141.4	1.4	**19.6067**	0.326	1.7	ug/L	108	Standard
	Ce	140	703.4	25.4				ug/L	30	Standard
>	**Tb**	159	794129.4	2.7				ug/L	792236	Standard
	Ho	165	41.7	38.6				ug/L	7	Standard
	Tl	203	449.0	60.2	**0.0569**	0.035	62.3	ug/L	9	Standard
	Tl	205	276.7	17.7	**0.0354**	0.008	22.9	ug/L	0	Standard
	Pb	206	1738.1	4.6	**0.3254**	0.021	6.4	ug/L	216	Standard
	Pb	207	1473.7	6.2	**0.3016**	0.022	7.3	ug/L	180	Standard
	Pb	208	5917.1	2.4	**0.2937**	0.008	2.7	ug/L	717	Standard
	U	238	273.7	21.5	**0.0370**	0.009	24.9	ug/L	4	Standard
>	**Bi**	209	454186.9	1.7				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.2936**	8.935	168.8	mg/L	0	Standard
Mg	24	24845.4	1.6	**33.2336**	1.348	4.1	mg/L	20	Standard
K	39	435.0	8.7	**3.0600**	0.462	15.1	mg/L	22	Standard
Ca	43	158.3	13.1	**23.4759**	6.234	26.6	mg/L	47	Standard
Fe	54	199.1	33.0	**0.0465**	0.059	127.4	mg/L	151	Standard
Fe	57	291.7	13.3	**0.2501**	0.172	68.9	mg/L	195	Standard
> **Sc-1**	45	30053.2	5.5				mg/L	29647	Standard
Cl	35	199161.9	1.2				ug/L	154152	Standard
Kr	83	2.3	49.5				ug/L	3	Standard
Br	81	12578.6	3.0				ug/L	1607	Standard
P	31	24539.9	2.1				ug/L	22752	Standard
S	34	5079.2	4.0				ug/L	5049	Standard
Sr	88	208.3	14.7				ug/L	87	Standard
C	12	96.7	36.3				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	0	Standard
Dy	164	61.3	25.3				mg/L	10	Standard
Ho-1	165	41.7	38.6				mg/L	7	Standard
Er	166	43.3	13.3				mg/L	3	Standard
I	127	46957.7	3.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.687	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.760	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.605
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.663
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606054003
Sample Date/Time: Thursday, June 16, 2016 17:54:52
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69060.4	2.1				ug/L	51024	Standard
	Be	9	195.0	15.6	**0.1507**	0.030	20.2	ug/L	7	Standard
	Al	27	5538034.2	2.1	**28.7382**	0.596	2.1	ug/L	625	Standard
	Sc	45	34442.5	3.5				ug/L	29647	Standard
	Ti	47	14518.0	3.2	**50.5821**	0.898	1.8	ug/L	57	Standard
	V	51	33577.2	0.6	**4.7869**	0.070	1.5	ug/L	1142	Standard
	Cr	52	33773.6	0.6	**3.8889**	0.037	1.0	ug/L	6628	Standard
	Cr	53	7016.6	2.1	**7.4876**	0.191	2.6	ug/L	430	Standard
	Mn	55	504059.4	0.9	**88.9661**	0.527	0.6	ug/L	603	Standard
	Co	59	17512.8	1.2	**2.8178**	0.022	0.8	ug/L	237	Standard
	Ni	60	10317.5	0.9	**5.5347**	0.034	0.6	ug/L	141	Standard
	Cu	65	2208.5	1.2	**1.1669**	0.032	2.7	ug/L	109	Standard
	Zn	66	8517.7	1.0	**7.8315**	0.096	1.2	ug/L	159	Standard
>	**Ge**	72	451723.4	1.4				ug/L	474053	Standard
	As	75	12920.2	3.5	**12.2750**	0.581	4.7	ug/L	-34	Standard
	Se	82	2961.0	4.8	**27.9437**	1.699	6.1	ug/L	14	Standard
	Se-1	77	326.3	1.4	**3.7149**	0.003	0.1	ug/L	55	Standard
>	**Ga**	71	2480.2	6.2				mg/L	50	Standard
	Rb	85	38117.9	1.8				ug/L	20	Standard
	Y	89	421962.4	2.5				ug/L	376602	Standard
>	**Rh**	103	78.3	24.2				ug/L	17	Standard
	Mo	98	3944.4	0.7	**1.6261**	0.009	0.6	ug/L	8	Standard
	Ag	107	112.0	6.7	**0.0060**	0.001	21.5	ug/L	81	Standard
	Cd	111	53.6	6.7	**0.0237**	0.002	7.8	mg/L	3	Standard
	Cd	114	133.4	41.0	**0.0233**	0.011	47.5	ug/L	7	Standard
>	**In**	115	537036.3	0.3				ug/L	524722	Standard
	Sn	118	2543.5	1.4	**0.3719**	0.007	2.0	ug/L	715	Standard
	Sb	123	798.0	25.2	**0.1636**	0.044	27.1	ug/L	201	Standard
	Ba	135	340692.9	0.8	**183.5929**	1.953	1.1	ug/L	108	Standard
	Ce	140	164779.7	1.7				ug/L	30	Standard
>	**Tb**	159	813065.5	1.9				ug/L	792236	Standard
	Ho	165	2875.3	7.5				ug/L	7	Standard
	Tl	203	422.0	6.7	**0.0538**	0.003	6.1	ug/L	9	Standard
	Tl	205	353.3	13.4	**0.0477**	0.007	15.2	ug/L	0	Standard
	Pb	206	3737.8	1.9	**0.7699**	0.010	1.3	ug/L	216	Standard
	Pb	207	3100.7	1.2	**0.6991**	0.004	0.6	ug/L	180	Standard
	Pb	208	12994.2	0.7	**0.7197**	0.013	1.8	ug/L	717	Standard
	U	238	1498.4	1.2	**0.2387**	0.006	2.5	ug/L	4	Standard
>	**Bi**	209	451028.7	1.3				ug/L	460343	Standard

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Na	23	6.7	114.6	**-8.8575**	22.422	253.1	mg/L	0	Standard
Mg	24	23361.3	1.7	**27.2407**	1.080	4.0	mg/L	20	Standard
K	39	78.3	19.5	**0.2883**	0.117	40.4	mg/L	22	Standard
Ca	43	363.3	8.7	**59.9201**	6.518	10.9	mg/L	47	Standard
Fe	54	6234.3	4.5	**4.2529**	0.273	6.4	mg/L	151	Standard
Fe	57	2021.8	6.4	**4.7439**	0.351	7.4	mg/L	195	Standard
Sc-1	45	34442.5	3.5				mg/L	29647	Standard
Cl	35	236460.3	1.1				ug/L	154152	Standard
Kr	83	2.0	0.0				ug/L	3	Standard
Br	81	708935.6	4.3				ug/L	1607	Standard
P	31	40141.4	0.8				ug/L	22752	Standard
S	34	5004.2	5.7				ug/L	5049	Standard
Sr	88	448.3	5.6				ug/L	87	Standard
C	12	160.0	16.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	4859.0	3.9				mg/L	10	Standard
Ho-1	165	2875.3	7.5				mg/L	7	Standard
Er	166	2543.5	9.9				mg/L	3	Standard
I	127	141220.9	4.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		135.349	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.290	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.347	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.977	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606054003PS WG573083-01
Sample Date/Time: Thursday, June 16, 2016 17:58:03
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70691.2	0.9				ug/L	51024	Standard
	Be	9	50693.0	1.7	**43.5062**	1.094	2.5	ug/L	7	Standard
	Al	27	5657732.1	0.5	**28.6796**	0.340	1.2	ug/L	625	Standard
	Sc	45	32850.6	4.5				ug/L	29647	Standard
	Ti	47	14458.2	2.7	**49.6930**	1.695	3.4	ug/L	57	Standard
	V	51	385117.2	0.8	**55.8774**	0.585	1.0	ug/L	1142	Standard
	Cr	52	382916.9	0.3	**52.9297**	0.331	0.6	ug/L	6628	Standard
	Cr	53	51097.7	0.4	**56.4380**	0.261	0.5	ug/L	430	Standard
	Mn	55	810895.8	0.8	**141.2253**	1.951	1.4	ug/L	603	Standard
	Co	59	346570.3	0.8	**55.7548**	0.081	0.1	ug/L	237	Standard
	Ni	60	100953.5	0.6	**54.0794**	0.195	0.4	ug/L	141	Standard
	Cu	65	91462.3	1.6	**50.2871**	1.080	2.1	ug/L	109	Standard
	Zn	66	61341.3	0.6	**57.0367**	0.769	1.3	ug/L	159	Standard
>	**Ge**	72	458036.5	0.7				ug/L	474053	Standard
	As	75	68674.9	0.5	**64.2143**	0.182	0.3	ug/L	-34	Standard
	Se	82	8569.6	1.8	**80.0280**	0.981	1.2	ug/L	14	Standard
	Se-1	77	4022.5	4.5	**53.4821**	2.795	5.2	ug/L	55	Standard
>	**Ga**	71	2441.9	7.4				mg/L	50	Standard
	Rb	85	38290.0	2.9				ug/L	20	Standard
	Y	89	428743.2	0.3				ug/L	376602	Standard
>	**Rh**	103	91.7	35.1				ug/L	17	Standard
	Mo	98	3923.8	0.2	**1.6525**	0.023	1.4	ug/L	8	Standard
	Ag	107	276547.4	3.6	**46.2633**	2.008	4.3	ug/L	81	Standard
	Cd	111	96223.0	0.5	**49.4786**	0.725	1.5	mg/L	3	Standard
	Cd	114	238042.9	1.3	**49.5078**	0.331	0.7	ug/L	7	Standard
>	**In**	115	525777.0	1.3				ug/L	524722	Standard
	Sn	118	2560.2	3.5	**0.3851**	0.023	6.0	ug/L	715	Standard
	Sb	123	215296.5	0.5	**49.1839**	0.834	1.7	ug/L	201	Standard
	Ba	135	428635.4	1.2	**235.9452**	0.924	0.4	ug/L	108	Standard
	Ce	140	165650.7	1.3				ug/L	30	Standard
>	**Tb**	159	801648.7	1.5				ug/L	792236	Standard
	Ho	165	2957.0	2.0				ug/L	7	Standard
	Tl	203	362265.3	0.3	**49.7124**	0.432	0.9	ug/L	9	Standard
	Tl	205	324753.6	0.8	**52.4032**	0.722	1.4	ug/L	0	Standard
	Pb	206	240535.6	0.4	**54.5563**	0.254	0.5	ug/L	216	Standard
	Pb	207	210550.9	0.8	**52.4580**	0.578	1.1	ug/L	180	Standard
	Pb	208	845714.1	0.6	**51.9167**	0.481	0.9	ug/L	717	Standard
	U	238	316985.2	0.3	**53.4916**	0.510	1.0	ug/L	4	Standard
>	**Bi**	209	439144.9	0.6				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.2953**	8.932	168.7	mg/L	0	Standard
Mg	24	23556.6	1.1	**28.8162**	1.308	4.5	mg/L	20	Standard
K	39	103.3	22.9	**0.4849**	0.170	35.0	mg/L	22	Standard
Ca	43	350.0	13.1	**60.9958**	12.902	21.2	mg/L	47	Standard
Fe	54	6036.8	1.7	**4.3211**	0.223	5.2	mg/L	151	Standard
Fe	57	2113.5	3.5	**5.2621**	0.189	3.6	mg/L	195	Standard
Sc-1	45	32850.6	4.5				mg/L	29647	Standard
Cl	35	237983.9	1.1				ug/L	154152	Standard
Kr	83	0.0					ug/L	3	Standard
Br	81	723069.8	1.3				ug/L	1607	Standard
P	31	40273.5	4.5				ug/L	22752	Standard
S	34	4915.8	1.6				ug/L	5049	Standard
Sr	88	436.7	3.5				ug/L	87	Standard
C	12	133.3	4.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	4443.9	9.4				mg/L	10	Standard
Ho-1	165	2957.0	2.0				mg/L	7	Standard
Er	166	2646.9	6.4				mg/L	3	Standard
I	127	140910.6	0.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		138.545	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.621	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.201	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	95.395	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606054003PS WG573083-01
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Method 6020 - Summary Report

Sample ID: L1606054003SDL WG573083-02
Sample Date/Time: Thursday, June 16, 2016 18:01:15
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67421.4	2.2				ug/L	51024	Standard
	Be	9	65.0	23.1	**0.0373**	0.012	33.1	ug/L	7	Standard
	Al	27	1133068.0	1.4	**6.0172**	0.214	3.6	ug/L	625	Standard
	Sc	45	29907.8	2.2				ug/L	29647	Standard
	Ti	47	2896.9	2.4	**9.4986**	0.237	2.5	ug/L	57	Standard
	V	51	8118.9	1.6	**0.9749**	0.019	2.0	ug/L	1142	Standard
	Cr	52	11547.7	1.7	**0.6435**	0.029	4.5	ug/L	6628	Standard
	Cr	53	2378.5	3.7	**2.1298**	0.095	4.5	ug/L	430	Standard
	Mn	55	103741.0	1.9	**17.3694**	0.315	1.8	ug/L	603	Standard
	Co	59	3838.8	2.5	**0.5567**	0.015	2.6	ug/L	237	Standard
	Ni	60	2235.5	2.6	**1.0826**	0.031	2.9	ug/L	141	Standard
	Cu	65	647.7	4.8	**0.2788**	0.016	5.8	ug/L	109	Standard
	Zn	66	2803.6	0.9	**2.3005**	0.025	1.1	ug/L	159	Standard
>	**Ge**	72	473393.6	0.2				ug/L	474053	Standard
	As	75	2692.6	2.6	**2.4601**	0.062	2.5	ug/L	-34	Standard
	Se	82	639.2	5.1	**5.6193**	0.300	5.3	ug/L	14	Standard
	Se-1	77	131.7	10.1	**0.9721**	0.173	17.8	ug/L	55	Standard
>	**Ga**	71	563.3	2.9				mg/L	50	Standard
	Rb	85	7626.9	1.4				ug/L	20	Standard
	Y	89	387376.2	0.4				ug/L	376602	Standard
>	**Rh**	103	25.0	34.6				ug/L	17	Standard
	Mo	98	784.5	4.4	**0.3255**	0.017	5.2	ug/L	8	Standard
	Ag	107	1243.4	2.6	**0.1954**	0.006	3.2	ug/L	81	Standard
	Cd	111	29.9	54.1	**0.0121**	0.008	67.3	mg/L	3	Standard
	Cd	114	69.0	67.7	**0.0105**	0.010	91.0	ug/L	7	Standard
>	**In**	115	526626.8	0.9				ug/L	524722	Standard
	Sn	118	845.0	11.0	**0.0669**	0.018	26.5	ug/L	715	Standard
	Sb	123	2277.2	24.6	**0.5055**	0.132	26.2	ug/L	201	Standard
	Ba	135	69797.7	0.8	**38.3133**	0.615	1.6	ug/L	108	Standard
	Ce	140	34238.6	1.3				ug/L	30	Standard
>	**Tb**	159	801692.0	0.8				ug/L	792236	Standard
	Ho	165	618.3	9.3				ug/L	7	Standard
	Tl	203	344.7	8.1	**0.0429**	0.004	8.5	ug/L	9	Standard
	Tl	205	311.7	8.8	**0.0405**	0.004	10.8	ug/L	0	Standard
	Pb	206	1064.0	3.5	**0.1759**	0.009	4.9	ug/L	216	Standard
	Pb	207	867.0	6.7	**0.1540**	0.013	8.6	ug/L	180	Standard
	Pb	208	3581.5	3.9	**0.1537**	0.009	6.2	ug/L	717	Standard
	U	238	339.0	2.5	**0.0474**	0.001	2.9	ug/L	4	Standard
>	**Bi**	209	456914.2	0.6				ug/L	460343	Standard

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Na	23	5.0	173.2	**-5.5106**	27.648	501.7	mg/L	0	Standard
Mg	24	4740.7	2.0	**6.3283**	0.198	3.1	mg/L	20	Standard
K	39	31.7	32.9	**0.0103**	0.074	719.1	mg/L	22	Standard
Ca	43	96.7	10.8	**9.2099**	2.490	27.0	mg/L	47	Standard
Fe	54	1310.9	5.1	**0.9427**	0.077	8.2	mg/L	151	Standard
Fe	57	518.3	4.8	**0.9451**	0.104	11.0	mg/L	195	Standard
> **Sc-1**	45	29907.8	2.2				mg/L	29647	Standard
Cl	35	171537.6	0.9				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	154143.7	2.2				ug/L	1607	Standard
P	31	26042.4	2.9				ug/L	22752	Standard
S	34	4889.1	5.0				ug/L	5049	Standard
Sr	88	148.3	17.0				ug/L	87	Standard
C	12	73.3	47.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	929.7	4.3				mg/L	10	Standard
Ho-1	165	618.3	9.3				mg/L	7	Standard
Er	166	563.3	6.2				mg/L	3	Standard
I	127	30853.1	2.8				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.136	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.861	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.363	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.255	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606054003SDL WG573083-02
Sample Date/Time: Thursday, June 16, 2016 18:04:26
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65921.5	1.7				ug/L	51024	Standard
	Be	9	28.3	10.2	**0.0050**	0.002	49.4	ug/L	7	Standard
	Al	27	234588.9	1.0	**1.2659**	0.010	0.8	ug/L	625	Standard
	Sc	45	29675.7	0.4				ug/L	29647	Standard
	Ti	47	693.0	13.8	**2.1806**	0.270	12.4	ug/L	57	Standard
	V	51	2547.4	1.6	**0.1965**	0.004	2.1	ug/L	1142	Standard
	Cr	52	7577.9	0.6	**0.1209**	0.025	20.3	ug/L	6628	Standard
	Cr	53	1020.0	10.6	**0.6861**	0.125	18.2	ug/L	430	Standard
	Mn	55	22549.8	0.3	**3.7420**	0.091	2.4	ug/L	603	Standard
	Co	59	941.7	6.4	**0.1080**	0.010	9.7	ug/L	237	Standard
	Ni	60	563.3	5.9	**0.2199**	0.025	11.2	ug/L	141	Standard
	Cu	65	269.3	8.9	**0.0800**	0.016	20.5	ug/L	109	Standard
	Zn	66	1451.4	2.3	**1.1019**	0.057	5.2	ug/L	159	Standard
>	**Ge**	72	465567.5	2.4				ug/L	474053	Standard
	As	75	572.2	6.7	**0.5515**	0.039	7.1	ug/L	-34	Standard
	Se	82	153.8	5.1	**1.2486**	0.091	7.3	ug/L	14	Standard
	Se-1	77	80.7	9.5	**0.3264**	0.123	37.8	ug/L	55	Standard
>	**Ga**	71	155.0	27.6				mg/L	50	Standard
	Rb	85	1620.1	5.6				ug/L	20	Standard
	Y	89	390804.2	2.3				ug/L	376602	Standard
>	**Rh**	103	10.0	50.0				ug/L	17	Standard
	Mo	98	177.1	5.2	**0.0674**	0.004	5.5	ug/L	8	Standard
	Ag	107	160.0	23.9	**0.0138**	0.006	46.0	ug/L	81	Standard
	Cd	111	25.4	77.5	**0.0095**	0.010	103.8	mg/L	3	Standard
	Cd	114	52.9	101.2	**0.0069**	0.011	156.6	ug/L	7	Standard
>	**In**	115	539456.4	0.6				ug/L	524722	Standard
	Sn	118	513.3	2.8	**0.0033**	0.003	95.9	ug/L	715	Standard
	Sb	123	668.0	33.5	**0.1338**	0.049	36.9	ug/L	201	Standard
	Ba	135	14458.9	2.3	**7.7012**	0.163	2.1	ug/L	108	Standard
	Ce	140	7036.6	6.6				ug/L	30	Standard
>	**Tb**	159	818023.3	1.0				ug/L	792236	Standard
	Ho	165	115.0	27.2				ug/L	7	Standard
	Tl	203	200.0	22.5	**0.0231**	0.006	25.9	ug/L	9	Standard
	Tl	205	161.7	23.6	**0.0166**	0.006	35.1	ug/L	0	Standard
	Pb	206	434.7	9.5	**0.0360**	0.009	24.6	ug/L	216	Standard
	Pb	207	375.3	3.2	**0.0337**	0.004	10.7	ug/L	180	Standard
	Pb	208	1515.7	5.1	**0.0292**	0.005	17.5	ug/L	717	Standard
	U	238	114.7	29.0	**0.0105**	0.005	51.2	ug/L	4	Standard
>	**Bi**	209	469475.2	1.0				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1023.4	7.3	**1.3409**	0.102	7.6	mg/L	20	Standard
K	39	6.7	43.3	**-0.1772**	0.022	12.3	mg/L	22	Standard
Ca	43	43.3	46.6	**-3.0610**	4.758	155.5	mg/L	47	Standard
Fe	54	379.2	10.8	**0.1931**	0.034	17.8	mg/L	151	Standard
Fe	57	256.7	21.5	**0.1469**	0.171	116.2	mg/L	195	Standard
Sc-1	45	29675.7	0.4				mg/L	29647	Standard
Cl	35	160581.2	1.2				ug/L	154152	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	34599.5	0.7				ug/L	1607	Standard
P	31	23708.5	0.9				ug/L	22752	Standard
S	34	4770.8	0.4				ug/L	5049	Standard
Sr	88	63.3	39.7				ug/L	87	Standard
C	12	46.7	44.6				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	195.8	8.2				mg/L	10	Standard
Ho-1	165	115.0	27.2				mg/L	7	Standard
Er	166	156.7	19.5				mg/L	3	Standard
I	127	7458.5	3.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.197	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.210	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	102.808
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.984
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 18:07:39
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64746.4	0.3				ug/L	51024	Standard
	Be	9	46935.9	0.9	**43.9752**	0.492	1.1	ug/L	7	Standard
	Al	27	7535309.9	1.9	**41.7048**	0.653	1.6	ug/L	625	Standard
	Sc	45	31043.5	4.7				ug/L	29647	Standard
	Ti	47	28772.6	0.9	**96.6294**	1.169	1.2	ug/L	57	Standard
	V	51	348687.3	1.9	**49.3361**	0.535	1.1	ug/L	1142	Standard
	Cr	52	360685.6	0.1	**48.5749**	1.035	2.1	ug/L	6628	Standard
	Cr	53	45317.7	1.7	**48.7728**	0.185	0.4	ug/L	430	Standard
	Mn	55	312229.0	0.7	**52.9756**	0.740	1.4	ug/L	603	Standard
	Co	59	328785.3	1.7	**51.5998**	0.220	0.4	ug/L	237	Standard
	Ni	60	92818.4	0.9	**48.5066**	0.760	1.6	ug/L	141	Standard
	Cu	65	91019.6	1.6	**48.8181**	0.503	1.0	ug/L	109	Standard
	Zn	66	54227.6	1.6	**49.1583**	0.511	1.0	ug/L	159	Standard
>	Ge	72	469521.9	2.1				ug/L	474053	Standard
	As	75	53936.9	1.2	**49.2114**	0.450	0.9	ug/L	-34	Standard
	Se	82	5505.5	2.6	**50.0972**	0.955	1.9	ug/L	14	Standard
	Se-1	77	3726.1	1.9	**48.2480**	0.384	0.8	ug/L	55	Standard
>	Ga	71	78.3	14.7				mg/L	50	Standard
	Rb	85	671.7	4.5				ug/L	20	Standard
	Y	89	383452.4	1.6				ug/L	376602	Standard
>	Rh	103	25.0	0.0				ug/L	17	Standard
	Mo	98	247423.8	2.1	**101.1140**	2.305	2.3	ug/L	8	Standard
	Ag	107	299585.0	1.0	**48.4657**	0.725	1.5	ug/L	81	Standard
	Cd	111	97195.1	1.0	**48.3387**	0.865	1.8	mg/L	3	Standard
	Cd	114	237825.0	2.4	**47.8442**	1.314	2.7	ug/L	7	Standard
>	In	115	543596.8	0.8				ug/L	524722	Standard
	Sn	118	268878.5	1.5	**48.0977**	1.025	2.1	ug/L	715	Standard
	Sb	123	216173.0	0.7	**47.7614**	0.695	1.5	ug/L	201	Standard
	Ba	135	89328.2	0.9	**47.5171**	0.807	1.7	ug/L	108	Standard
	Ce	140	83.3	25.0				ug/L	30	Standard
>	Tb	159	826706.5	0.3				ug/L	792236	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	368647.9	0.4	**47.0636**	0.889	1.9	ug/L	9	Standard
	Tl	205	321431.2	2.0	**48.2447**	0.798	1.7	ug/L	0	Standard
	Pb	206	230222.8	1.5	**48.5740**	1.152	2.4	ug/L	216	Standard
	Pb	207	209229.9	1.3	**48.4917**	1.019	2.1	ug/L	180	Standard
	Pb	208	835767.1	0.5	**47.7236**	0.588	1.2	ug/L	717	Standard
	U	238	311255.6	0.4	**48.8622**	0.739	1.5	ug/L	4	Standard
>	Bi	209	472106.5	1.5				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3973.9	4.2	**5.1144**	0.463	9.1	mg/L	20	Standard
K	39	603.3	5.9	**4.1749**	0.393	9.4	mg/L	22	Standard
Ca	43	58.3	34.6	**-0.2925**	4.036	1380.2	mg/L	47	Standard
Fe	54	5929.6	4.5	**4.5027**	0.427	9.5	mg/L	151	Standard
Fe	57	1646.8	4.1	**4.2259**	0.199	4.7	mg/L	195	Standard
Sc-1	45	31043.5	4.7				mg/L	29647	Standard
Cl	35	162653.1	0.8				ug/L	154152	Standard
Kr	83	1.0	0.0				ug/L	3	Standard
Br	81	4067.2	17.6				ug/L	1607	Standard
P	31	24251.1	1.7				ug/L	22752	Standard
S	34	5482.7	3.7				ug/L	5049	Standard
Sr	88	45.0	33.3				ug/L	87	Standard
C	12	60.0	28.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	22.5	26.8				mg/L	10	Standard
Ho-1	165	8.3	69.3				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	3	Standard
I	127	1428.4	5.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	87.950		
Al	27	83.410		
Sc	45			
Ti	47	96.629		
V	51	98.672		
Cr	52	97.150		
Cr	53			
Mn	55	105.951		
Co	59	103.200		
Ni	60	97.013		
Cu	65	97.636		
Zn	66	98.317		
Ge	72		99.044	
As	75	98.423		
Se	82	100.194		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	101.114		
Ag	107	96.931		
Cd	111	96.677		
Cd	114			
> In	115		103.597	
Sn	118	96.195		
Sb	123	95.523		
Ba	135	95.034		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	94.127		
Tl	205			
Pb	206			
Pb	207			
Pb	208	95.447		
U	238	97.724		
> Bi	209		102.555	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 18:10:51
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61896.2	1.1				ug/L	51024	Standard
	Be	9	18.3	56.8	**-0.0031**	0.010	331.6	ug/L	7	Standard
	Al	27	1523.4	19.5	**-0.0009**	0.002	172.8	ug/L	625	Standard
	Sc	45	30746.2	4.2				ug/L	29647	Standard
	Ti	47	48.7	24.0	**0.0041**	0.040	983.7	ug/L	57	Standard
	V	51	1096.5	7.2	**-0.0066**	0.011	164.7	ug/L	1142	Standard
	Cr	52	6114.9	1.9	**-0.0559**	0.020	35.8	ug/L	6628	Standard
	Cr	53	420.0	14.4	**0.0427**	0.071	166.6	ug/L	430	Standard
	Mn	55	696.3	8.0	**-0.0034**	0.009	280.9	ug/L	603	Standard
	Co	59	257.0	3.7	**0.0007**	0.001	190.7	ug/L	237	Standard
	Ni	60	98.3	19.1	**-0.0243**	0.010	42.2	ug/L	141	Standard
	Cu	65	138.3	15.9	**0.0111**	0.013	114.3	ug/L	109	Standard
	Zn	66	155.0	9.1	**-0.0853**	0.013	14.8	ug/L	159	Standard
>	**Ge**	72	451752.5	0.6				ug/L	474053	Standard
	As	75	-25.7	89.3	**0.0007**	0.022	2895.4	ug/L	-34	Standard
	Se	82	22.8	34.8	**0.0475**	0.075	158.2	ug/L	14	Standard
	Se-1	77	56.0	11.7	**0.0207**	0.094	453.1	ug/L	55	Standard
>	**Ga**	71	41.7	18.3				mg/L	50	Standard
	Rb	85	23.3	32.7				ug/L	20	Standard
	Y	89	396184.8	0.8				ug/L	376602	Standard
>	**Rh**	103	16.7	45.8				ug/L	17	Standard
	Mo	98	276.1	23.5	**0.1082**	0.027	25.2	ug/L	8	Standard
	Ag	107	114.0	9.8	**0.0063**	0.002	31.9	ug/L	81	Standard
	Cd	111	11.2	11.3	**0.0024**	0.001	28.4	mg/L	3	Standard
	Cd	114	27.7	73.8	**0.0018**	0.004	228.8	ug/L	7	Standard
>	**In**	115	539405.0	1.3				ug/L	524722	Standard
	Sn	118	770.0	23.8	**0.0496**	0.033	67.2	ug/L	715	Standard
	Sb	123	621.2	30.2	**0.1235**	0.042	34.0	ug/L	201	Standard
	Ba	135	117.7	23.5	**0.0055**	0.015	275.0	ug/L	108	Standard
	Ce	140	10.0	50.0				ug/L	30	Standard
>	**Tb**	159	804197.7	0.7				ug/L	792236	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	67.0	31.6	**0.0062**	0.003	43.0	ug/L	9	Standard
	Tl	205	75.0	13.3	**0.0038**	0.001	37.5	ug/L	0	Standard
	Pb	206	240.0	10.9	**-0.0040**	0.005	132.8	ug/L	216	Standard
	Pb	207	198.7	7.7	**-0.0062**	0.004	60.3	ug/L	180	Standard
	Pb	208	866.3	5.4	**-0.0067**	0.003	50.1	ug/L	717	Standard
	U	238	48.0	12.7	**0.0002**	0.001	508.3	ug/L	4	Standard
>	**Bi**	209	456732.7	1.5				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	38.3	82.8	**0.0048**	0.041	858.7	mg/L	20	Standard
K	39	21.7	87.4	**-0.0684**	0.138	202.1	mg/L	22	Standard
Ca	43	51.7	45.7	**-1.4837**	5.565	375.1	mg/L	47	Standard
Fe	54	127.7	12.6	**-0.0146**	0.015	100.1	mg/L	151	Standard
Fe	57	163.3	30.7	**-0.1626**	0.130	79.6	mg/L	195	Standard
Sc-1	45	30746.2	4.2				mg/L	29647	Standard
Cl	35	165606.2	1.3				ug/L	154152	Standard
Kr	83	3.0	57.7				ug/L	3	Standard
Br	81	2933.6	13.2				ug/L	1607	Standard
P	31	25216.0	5.8				ug/L	22752	Standard
S	34	5477.7	2.3				ug/L	5049	Standard
Sr	88	56.7	33.4				ug/L	87	Standard
C	12	36.7	41.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.9	86.8				mg/L	10	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	10.0	173.2				mg/L	3	Standard
I	127	1125.0	7.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.296	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.798
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.216
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606054009
Sample Date/Time: Thursday, June 16, 2016 18:14:04
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62868.5	2.1				ug/L	51024	Standard
	Be	9	25.0	40.0	**0.0030**	0.010	320.4	ug/L	7	Standard
	Al	27	3263361.8	1.6	**18.5978**	0.187	1.0	ug/L	625	Standard
	Sc	45	30816.3	0.3				ug/L	29647	Standard
	Ti	47	176.7	8.1	**0.4336**	0.054	12.4	ug/L	57	Standard
	V	51	2352.6	1.3	**0.1685**	0.004	2.6	ug/L	1142	Standard
	Cr	52	8208.2	0.8	**0.2076**	0.006	3.1	ug/L	6628	Standard
	Cr	53	778.4	12.3	**0.4216**	0.115	27.4	ug/L	430	Standard
	Mn	55	6000883.1	1.3	**1028.9465**	25.297	2.5	ug/L	603	Standard
	Co	59	5272.3	0.9	**0.7938**	0.018	2.3	ug/L	237	Standard
	Ni	60	2681.9	0.9	**1.3375**	0.018	1.4	ug/L	141	Standard
	Cu	65	979.4	2.5	**0.4642**	0.012	2.6	ug/L	109	Standard
	Zn	66	3790.8	1.0	**3.2497**	0.077	2.4	ug/L	159	Standard
>	**Ge**	72	465659.8	1.3				ug/L	474053	Standard
	As	75	5887.6	1.1	**5.4382**	0.057	1.1	ug/L	-34	Standard
	Se	82	141.8	7.0	**1.1369**	0.108	9.5	ug/L	14	Standard
	Se-1	77	74.7	2.0	**0.2451**	0.023	9.4	ug/L	55	Standard
>	**Ga**	71	296.7	5.1				mg/L	50	Standard
	Rb	85	53373.9	1.9				ug/L	20	Standard
	Y	89	385477.9	2.9				ug/L	376602	Standard
>	**Rh**	103	46.7	16.4				ug/L	17	Standard
	Mo	98	1798.6	2.7	**0.7471**	0.020	2.7	ug/L	8	Standard
	Ag	107	110.0	13.7	**0.0059**	0.003	44.0	ug/L	81	Standard
	Cd	111	71.5	14.9	**0.0332**	0.006	17.6	mg/L	3	Standard
	Cd	114	137.0	6.5	**0.0244**	0.002	7.2	ug/L	7	Standard
>	**In**	115	530892.7	1.2				ug/L	524722	Standard
	Sn	118	731.7	10.0	**0.0448**	0.013	28.2	ug/L	715	Standard
	Sb	123	625.1	16.6	**0.1265**	0.022	17.3	ug/L	201	Standard
	Ba	135	131604.4	0.3	**71.7085**	0.676	0.9	ug/L	108	Standard
	Ce	140	6654.8	2.0				ug/L	30	Standard
>	**Tb**	159	816377.9	1.5				ug/L	792236	Standard
	Ho	165	238.3	11.6				ug/L	7	Standard
	Tl	203	76.0	23.3	**0.0075**	0.002	32.6	ug/L	9	Standard
	Tl	205	63.3	64.3	**0.0021**	0.006	310.8	ug/L	0	Standard
	Pb	206	386.0	5.1	**0.0283**	0.005	18.8	ug/L	216	Standard
	Pb	207	347.0	4.2	**0.0297**	0.005	15.2	ug/L	180	Standard
	Pb	208	1437.7	3.0	**0.0274**	0.003	12.5	ug/L	717	Standard
	U	238	4379.0	0.5	**0.7057**	0.012	1.8	ug/L	4	Standard
>	**Bi**	209	455069.1	1.2				ug/L	460343	Standard

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Na	23	5.0	100.0	**-5.2765**	15.737	298.3	mg/L	0	Standard
Mg	24	9816.5	6.9	**12.7603**	0.918	7.2	mg/L	20	Standard
K	39	4015.5	6.3	**29.2188**	1.778	6.1	mg/L	22	Standard
Ca	43	165.0	35.7	**23.9101**	13.280	55.5	mg/L	47	Standard
Fe	54	13256.8	2.9	**10.2548**	0.305	3.0	mg/L	151	Standard
Fe	57	3875.5	1.1	**10.8966**	0.106	1.0	mg/L	195	Standard
> **Sc-1**	45	30816.3	0.3				mg/L	29647	Standard
Cl	35	225833.9	0.4				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	25945.6	7.7				ug/L	1607	Standard
P	31	26763.6	2.0				ug/L	22752	Standard
S	34	5200.9	3.2				ug/L	5049	Standard
Sr	88	240.0	9.1				ug/L	87	Standard
C	12	193.3	18.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	262.1	17.3				mg/L	10	Standard
Ho-1	165	238.3	11.6				mg/L	7	Standard
Er	166	303.3	18.2				mg/L	3	Standard
I	127	75002.8	8.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.213	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.229	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	101.176
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.854
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606054010
Sample Date/Time: Thursday, June 16, 2016 18:17:15
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65588.3	0.4				ug/L	51024	Standard
	Be	9	30.0	60.1	**0.0066**	0.017	249.6	ug/L	7	Standard
	Al	27	2526422.5	0.3	**13.7972**	0.064	0.5	ug/L	625	Standard
	Sc	45	30417.2	3.2				ug/L	29647	Standard
	Ti	47	2810.3	3.2	**9.9401**	0.380	3.8	ug/L	57	Standard
	V	51	10857.2	0.9	**1.4795**	0.027	1.9	ug/L	1142	Standard
	Cr	52	13448.6	1.8	**1.0447**	0.048	4.6	ug/L	6628	Standard
	Cr	53	1738.4	6.6	**1.5855**	0.118	7.5	ug/L	430	Standard
	Mn	55	662471.2	0.9	**120.2964**	1.474	1.2	ug/L	603	Standard
	Co	59	2699.2	0.2	**0.4120**	0.004	0.9	ug/L	237	Standard
	Ni	60	3377.4	1.2	**1.8118**	0.036	2.0	ug/L	141	Standard
	Cu	65	1366.7	4.1	**0.7187**	0.039	5.4	ug/L	109	Standard
	Zn	66	9779.2	1.9	**9.2895**	0.243	2.6	ug/L	159	Standard
>	**Ge**	72	439226.0	0.9				ug/L	474053	Standard
	As	75	11053.2	2.0	**10.7998**	0.276	2.6	ug/L	-34	Standard
	Se	82	3723.6	2.4	**36.1764**	1.076	3.0	ug/L	14	Standard
	Se-1	77	120.3	17.9	**0.9478**	0.313	33.0	ug/L	55	Standard
>	**Ga**	71	653.3	7.7				mg/L	50	Standard
	Rb	85	17974.0	0.9				ug/L	20	Standard
	Y	89	392749.3	1.5				ug/L	376602	Standard
>	**Rh**	103	83.3	30.2				ug/L	17	Standard
	Mo	98	4323.3	0.4	**1.8596**	0.045	2.4	ug/L	8	Standard
	Ag	107	99.7	3.2	**0.0047**	0.001	17.3	ug/L	81	Standard
	Cd	111	51.2	16.5	**0.0236**	0.004	17.1	mg/L	3	Standard
	Cd	114	147.6	10.0	**0.0276**	0.004	13.0	ug/L	7	Standard
>	**In**	115	515115.8	2.2				ug/L	524722	Standard
	Sn	118	1333.4	7.7	**0.1626**	0.017	10.4	ug/L	715	Standard
	Sb	123	590.9	5.0	**0.1232**	0.010	8.0	ug/L	201	Standard
	Ba	135	57030.1	1.1	**31.9969**	0.347	1.1	ug/L	108	Standard
	Ce	140	21293.3	3.8				ug/L	30	Standard
>	**Tb**	159	786053.3	2.1				ug/L	792236	Standard
	Ho	165	341.7	14.7				ug/L	7	Standard
	Tl	203	337.7	6.2	**0.0450**	0.003	7.2	ug/L	9	Standard
	Tl	205	321.7	3.2	**0.0455**	0.003	5.8	ug/L	0	Standard
	Pb	206	1862.1	0.7	**0.3774**	0.005	1.2	ug/L	216	Standard
	Pb	207	1577.4	0.7	**0.3498**	0.004	1.2	ug/L	180	Standard
	Pb	208	6669.9	1.5	**0.3627**	0.014	3.8	ug/L	717	Standard
	U	238	10873.6	0.3	**1.8752**	0.033	1.8	ug/L	4	Standard
>	**Bi**	209	428106.7	1.8				ug/L	460343	Standard

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Na	23	6.7	114.6	**-10.3208**	23.457	227.3	mg/L	0	Standard
Mg	24	48188.2	2.0	**63.6943**	3.015	4.7	mg/L	20	Standard
K	39	553.3	6.8	**3.8849**	0.281	7.2	mg/L	22	Standard
Ca	43	321.7	16.0	**60.3557**	13.874	23.0	mg/L	47	Standard
Fe	54	1808.8	3.2	**1.3200**	0.080	6.1	mg/L	151	Standard
Fe	57	981.7	5.4	**2.3180**	0.200	8.6	mg/L	195	Standard
> **Sc-1**	45	30417.2	3.2				mg/L	29647	Standard
Cl	35	209372.7	0.6				ug/L	154152	Standard
Kr	83	0.7	173.2				ug/L	3	Standard
Br	81	933072.6	1.4				ug/L	1607	Standard
P	31	28264.7	0.7				ug/L	22752	Standard
S	34	4879.1	1.2				ug/L	5049	Standard
Sr	88	365.0	15.8				ug/L	87	Standard
C	12	160.0	28.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	522.9	18.7				mg/L	10	Standard
Ho-1	165	341.7	14.7				mg/L	7	Standard
Er	166	356.7	9.8				mg/L	3	Standard
I	127	158946.5	8.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.544	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.653	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.169
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.997
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606054011
Sample Date/Time: Thursday, June 16, 2016 18:20:27
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66415.2	0.8				ug/L	51024	Standard
	Be	9	31.7	92.5	**0.0080**	0.027	339.9	ug/L	7	Standard
	Al	27	2599405.0	0.8	**14.0190**	0.029	0.2	ug/L	625	Standard
	Sc	45	30612.6	1.1				ug/L	29647	Standard
	Ti	47	3388.4	4.8	**11.4676**	0.712	6.2	ug/L	57	Standard
	V	51	11365.4	1.1	**1.4778**	0.020	1.3	ug/L	1142	Standard
	Cr	52	14126.6	0.8	**1.0496**	0.030	2.9	ug/L	6628	Standard
	Cr	53	1888.5	10.3	**1.6589**	0.194	11.7	ug/L	430	Standard
	Mn	55	683276.7	0.4	**118.4238**	2.389	2.0	ug/L	603	Standard
	Co	59	2752.6	2.0	**0.3999**	0.015	3.8	ug/L	237	Standard
	Ni	60	3356.7	1.2	**1.7147**	0.043	2.5	ug/L	141	Standard
	Cu	65	1350.7	3.3	**0.6741**	0.033	5.0	ug/L	109	Standard
	Zn	66	8668.5	0.7	**7.8234**	0.178	2.3	ug/L	159	Standard
>	**Ge**	72	460253.4	1.6				ug/L	474053	Standard
	As	75	11667.3	1.2	**10.8800**	0.252	2.3	ug/L	-34	Standard
	Se	82	3942.6	1.6	**36.5587**	0.912	2.5	ug/L	14	Standard
	Se-1	77	129.7	8.5	**0.9935**	0.130	13.1	ug/L	55	Standard
>	**Ga**	71	686.7	16.0				mg/L	50	Standard
	Rb	85	19050.3	3.1				ug/L	20	Standard
	Y	89	381859.4	1.4				ug/L	376602	Standard
>	**Rh**	103	103.3	43.9				ug/L	17	Standard
	Mo	98	4373.4	1.2	**1.9146**	0.031	1.6	ug/L	8	Standard
	Ag	107	74.0	18.9	**0.0005**	0.002	456.1	ug/L	81	Standard
	Cd	111	45.0	20.2	**0.0208**	0.005	23.5	mg/L	3	Standard
	Cd	114	116.5	10.2	**0.0214**	0.003	12.0	ug/L	7	Standard
>	**In**	115	506011.1	0.4				ug/L	524722	Standard
	Sn	118	1185.0	3.8	**0.1387**	0.010	6.9	ug/L	715	Standard
	Sb	123	571.9	4.2	**0.1210**	0.005	4.2	ug/L	201	Standard
	Ba	135	57088.3	0.4	**32.6025**	0.223	0.7	ug/L	108	Standard
	Ce	140	20652.4	1.0				ug/L	30	Standard
>	**Tb**	159	785323.2	1.2				ug/L	792236	Standard
	Ho	165	306.7	8.0				ug/L	7	Standard
	Tl	203	332.3	7.5	**0.0441**	0.003	7.8	ug/L	9	Standard
	Tl	205	303.3	2.5	**0.0423**	0.001	2.9	ug/L	0	Standard
	Pb	206	1906.8	2.4	**0.3865**	0.007	1.8	ug/L	216	Standard
	Pb	207	1585.1	0.2	**0.3506**	0.006	1.6	ug/L	180	Standard
	Pb	208	6566.9	1.1	**0.3550**	0.006	1.8	ug/L	717	Standard
	U	238	10922.6	1.0	**1.8784**	0.027	1.4	ug/L	4	Standard
>	**Bi**	209	429255.9	1.2				ug/L	460343	Standard

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Na	23	10.0		**-21.2549**	0.358	1.7	mg/L	0	Standard
Mg	24	49766.6	0.9	**65.3028**	0.773	1.2	mg/L	20	Standard
K	39	513.3	10.0	**3.5605**	0.354	9.9	mg/L	22	Standard
Ca	43	375.0	2.3	**71.6613**	1.832	2.6	mg/L	47	Standard
Fe	54	1685.6	3.3	**1.2127**	0.057	4.7	mg/L	151	Standard
Fe	57	868.4	4.3	**1.9576**	0.137	7.0	mg/L	195	Standard
> **Sc-1**	45	30612.6	1.1				mg/L	29647	Standard
Cl	35	212698.7	1.3				ug/L	154152	Standard
Kr	83	1.3	114.6				ug/L	3	Standard
Br	81	930543.4	1.3				ug/L	1607	Standard
P	31	28647.1	1.3				ug/L	22752	Standard
S	34	4877.5	1.7				ug/L	5049	Standard
Sr	88	360.0	7.7				ug/L	87	Standard
C	12	163.3	18.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	0	Standard
Dy	164	512.3	22.5				mg/L	10	Standard
Ho-1	165	306.7	8.0				mg/L	7	Standard
Er	166	300.0	28.9				mg/L	3	Standard
I	127	165895.7	6.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		130.164	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.089	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.434
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.247
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606054014
Sample Date/Time: Thursday, June 16, 2016 18:23:38
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68457.7	1.1				ug/L	51024	Standard
	Be	9	223.3	18.0	**0.1767**	0.033	18.9	ug/L	7	Standard
	Al	27	3707488.9	1.7	**19.4017**	0.122	0.6	ug/L	625	Standard
	Sc	45	30515.7	3.4				ug/L	29647	Standard
	Ti	47	294.7	2.2	**0.8253**	0.029	3.5	ug/L	57	Standard
	V	51	3410.3	2.9	**0.3157**	0.010	3.3	ug/L	1142	Standard
	Cr	52	8854.9	2.4	**0.2871**	0.040	14.1	ug/L	6628	Standard
	Cr	53	1000.0	7.8	**0.6537**	0.075	11.4	ug/L	430	Standard
	Mn	55	12117646.4	0.4	**2060.2552**	13.775	0.7	ug/L	603	Standard
	Co	59	1473.7	1.2	**0.1902**	0.002	1.2	ug/L	237	Standard
	Ni	60	5603.4	1.0	**2.8548**	0.061	2.1	ug/L	141	Standard
	Cu	65	1122.7	1.8	**0.5367**	0.010	1.8	ug/L	109	Standard
	Zn	66	11386.6	1.1	**10.1370**	0.058	0.6	ug/L	159	Standard
>	**Ge**	72	469570.6	1.1				ug/L	474053	Standard
	As	75	14849.9	0.4	**13.5649**	0.144	1.1	ug/L	-34	Standard
	Se	82	356.9	5.3	**3.0899**	0.192	6.2	ug/L	14	Standard
	Se-1	77	81.7	2.5	**0.3287**	0.021	6.5	ug/L	55	Standard
>	**Ga**	71	528.3	9.7				mg/L	50	Standard
	Rb	85	19908.1	1.7				ug/L	20	Standard
	Y	89	397696.3	3.0				ug/L	376602	Standard
>	**Rh**	103	73.3	28.4				ug/L	17	Standard
	Mo	98	1099.6	1.0	**0.4465**	0.011	2.4	ug/L	8	Standard
	Ag	107	113.3	53.3	**0.0062**	0.010	164.1	ug/L	81	Standard
	Cd	111	46.4	117.1	**0.0203**	0.028	137.1	mg/L	3	Standard
	Cd	114	110.7	115.4	**0.0188**	0.026	140.1	ug/L	7	Standard
>	**In**	115	540492.7	1.5				ug/L	524722	Standard
	Sn	118	843.4	3.6	**0.0625**	0.003	5.4	ug/L	715	Standard
	Sb	123	260.9	5.7	**0.0432**	0.004	9.7	ug/L	201	Standard
	Ba	135	85652.2	2.1	**45.8145**	0.326	0.7	ug/L	108	Standard
	Ce	140	2418.5	4.8				ug/L	30	Standard
>	**Tb**	159	825063.1	0.9				ug/L	792236	Standard
	Ho	165	370.0	15.3				ug/L	7	Standard
	Tl	203	165.0	77.7	**0.0187**	0.017	89.0	ug/L	9	Standard
	Tl	205	83.3	48.9	**0.0048**	0.006	129.6	ug/L	0	Standard
	Pb	206	781.7	2.4	**0.1102**	0.005	4.7	ug/L	216	Standard
	Pb	207	661.7	6.1	**0.1011**	0.010	10.0	ug/L	180	Standard
	Pb	208	2756.1	3.9	**0.1010**	0.006	6.3	ug/L	717	Standard
	U	238	69.7	29.4	**0.0035**	0.003	95.7	ug/L	4	Standard
>	**Bi**	209	467941.3	0.6				ug/L	460343	Standard

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Na	23	1.7	173.2	**4.9367**	9.553	193.5	mg/L	0	Standard
Mg	24	7730.3	2.8	**10.1412**	0.303	3.0	mg/L	20	Standard
K	39	158.3	7.9	**0.9473**	0.128	13.5	mg/L	22	Standard
Ca	43	168.3	19.8	**24.8759**	6.392	25.7	mg/L	47	Standard
Fe	54	6384.0	2.9	**4.9326**	0.253	5.1	mg/L	151	Standard
Fe	57	1760.1	6.1	**4.6585**	0.505	10.8	mg/L	195	Standard
Sc-1	45	30515.7	3.4				mg/L	29647	Standard
Cl	35	207881.0	0.4				ug/L	154152	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	77943.4	2.4				ug/L	1607	Standard
P	31	27538.3	2.1				ug/L	22752	Standard
S	34	5344.3	4.3				ug/L	5049	Standard
Sr	88	228.3	5.5				ug/L	87	Standard
C	12	153.3	22.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	364.7	19.0				mg/L	10	Standard
Ho-1	165	370.0	15.3				mg/L	7	Standard
Er	166	390.0	7.7				mg/L	3	Standard
I	127	96865.7	4.2				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		134.167	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.054	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.006
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.651
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606054015
Sample Date/Time: Thursday, June 16, 2016 18:26:50
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70212.3	1.0				ug/L	51024	Standard
	Be	9	93.3	11.2	**0.0596**	0.009	14.8	ug/L	7	Standard
	Al	27	2156794.6	1.5	**11.0022**	0.244	2.2	ug/L	625	Standard
	Sc	45	32787.1	2.8				ug/L	29647	Standard
	Ti	47	872.7	1.5	**2.8741**	0.038	1.3	ug/L	57	Standard
	V	51	4953.3	2.7	**0.5601**	0.025	4.5	ug/L	1142	Standard
	Cr	52	12535.5	0.5	**0.8533**	0.007	0.8	ug/L	6628	Standard
	Cr	53	3772.1	6.1	**3.8114**	0.290	7.6	ug/L	430	Standard
	Mn	55	223713.2	0.6	**39.2731**	0.557	1.4	ug/L	603	Standard
	Co	59	2453.9	1.1	**0.3579**	0.004	1.1	ug/L	237	Standard
	Ni	60	3886.2	1.3	**2.0286**	0.038	1.9	ug/L	141	Standard
	Cu	65	32893.7	0.8	**18.2296**	0.262	1.4	ug/L	109	Standard
	Zn	66	61284.4	0.6	**57.5727**	0.568	1.0	ug/L	159	Standard
>	**Ge**	72	453357.9	0.8				ug/L	474053	Standard
	As	75	5903.1	1.9	**5.6002**	0.148	2.6	ug/L	-34	Standard
	Se	82	1422.0	3.2	**13.2789**	0.537	4.0	ug/L	14	Standard
	Se-1	77	189.7	16.8	**1.8389**	0.442	24.1	ug/L	55	Standard
>	**Ga**	71	225.0	13.5				mg/L	50	Standard
	Rb	85	13973.1	2.8				ug/L	20	Standard
	Y	89	404441.3	1.8				ug/L	376602	Standard
>	**Rh**	103	65.0	38.5				ug/L	17	Standard
	Mo	98	294.7	2.2	**0.1146**	0.002	2.0	ug/L	8	Standard
	Ag	107	105.0	9.1	**0.0046**	0.002	33.3	ug/L	81	Standard
	Cd	111	122.5	4.2	**0.0575**	0.003	4.7	mg/L	3	Standard
	Cd	114	252.7	21.3	**0.0469**	0.011	22.8	ug/L	7	Standard
>	**In**	115	544955.5	0.5				ug/L	524722	Standard
	Sn	118	895.0	4.4	**0.0706**	0.008	11.3	ug/L	715	Standard
	Sb	123	270.4	10.2	**0.0448**	0.006	14.2	ug/L	201	Standard
	Ba	135	146088.3	0.9	**77.5484**	1.011	1.3	ug/L	108	Standard
	Ce	140	17523.5	3.1				ug/L	30	Standard
>	**Tb**	159	819658.6	1.6				ug/L	792236	Standard
	Ho	165	628.3	0.5				ug/L	7	Standard
	Tl	203	235.3	10.6	**0.0288**	0.003	9.6	ug/L	9	Standard
	Tl	205	200.0	25.0	**0.0236**	0.008	34.4	ug/L	0	Standard
	Pb	206	6489.4	1.2	**1.3771**	0.042	3.0	ug/L	216	Standard
	Pb	207	5497.7	0.5	**1.2800**	0.026	2.0	ug/L	180	Standard
	Pb	208	22985.2	1.3	**1.3164**	0.041	3.1	ug/L	717	Standard
	U	238	227.3	4.1	**0.0298**	0.002	7.0	ug/L	4	Standard
>	**Bi**	209	451512.8	1.8				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.4796**	8.613	157.2	mg/L	0	Standard
Mg	24	16031.8	1.4	**19.6235**	0.803	4.1	mg/L	20	Standard
K	39	240.0	3.6	**1.4284**	0.103	7.2	mg/L	22	Standard
Ca	43	188.3	18.1	**26.5601**	6.775	25.5	mg/L	47	Standard
Fe	54	2702.3	1.1	**1.8725**	0.045	2.4	mg/L	151	Standard
Fe	57	970.0	7.1	**2.0665**	0.116	5.6	mg/L	195	Standard
> **Sc-1**	45	32787.1	2.8				mg/L	29647	Standard
Cl	35	187497.7	0.8				ug/L	154152	Standard
Kr	83	2.3	49.5				ug/L	3	Standard
Br	81	349533.5	4.1				ug/L	1607	Standard
P	31	41573.8	6.0				ug/L	22752	Standard
S	34	4967.5	2.6				ug/L	5049	Standard
Sr	88	208.3	5.5				ug/L	87	Standard
C	12	116.7	26.2				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	870.5	12.8				mg/L	10	Standard
Ho-1	165	628.3	0.5				mg/L	7	Standard
Er	166	616.7	28.8				mg/L	3	Standard
I	127	319694.7	6.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		137.606	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.634	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.856	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.082	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606054016
Sample Date/Time: Thursday, June 16, 2016 18:30:01
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68176.4	1.2				ug/L	51024	Standard
	Be	9	21.7	13.3	**-0.0018**	0.003	143.7	ug/L	7	Standard
	Al	27	2075359.9	0.4	**10.9025**	0.136	1.2	ug/L	625	Standard
	Sc	45	31050.1	1.7				ug/L	29647	Standard
	Ti	47	887.4	5.3	**2.8528**	0.151	5.3	ug/L	57	Standard
	V	51	3806.8	2.6	**0.3783**	0.010	2.7	ug/L	1142	Standard
	Cr	52	10637.4	1.5	**0.5485**	0.036	6.6	ug/L	6628	Standard
	Cr	53	1405.1	2.8	**1.1115**	0.040	3.6	ug/L	430	Standard
	Mn	55	486178.5	1.9	**83.5032**	2.235	2.7	ug/L	603	Standard
	Co	59	1054.7	3.8	**0.1263**	0.008	6.2	ug/L	237	Standard
	Ni	60	11529.4	0.9	**6.0257**	0.114	1.9	ug/L	141	Standard
	Cu	65	2707.2	1.0	**1.4044**	0.012	0.8	ug/L	109	Standard
	Zn	66	9083.1	1.3	**8.1357**	0.169	2.1	ug/L	159	Standard
>	**Ge**	72	464207.3	1.0				ug/L	474053	Standard
	As	75	2758.8	3.0	**2.5691**	0.059	2.3	ug/L	-34	Standard
	Se	82	1024.4	2.4	**9.2906**	0.197	2.1	ug/L	14	Standard
	Se-1	77	98.0	6.2	**0.5580**	0.071	12.7	ug/L	55	Standard
>	**Ga**	71	195.0	23.5				mg/L	50	Standard
	Rb	85	7673.6	3.9				ug/L	20	Standard
	Y	89	397515.6	2.3				ug/L	376602	Standard
>	**Rh**	103	68.3	30.5				ug/L	17	Standard
	Mo	98	786.7	1.9	**0.3292**	0.014	4.4	ug/L	8	Standard
	Ag	107	78.0	2.6	**0.0008**	0.000	5.5	ug/L	81	Standard
	Cd	111	30.9	35.5	**0.0127**	0.005	42.9	mg/L	3	Standard
	Cd	114	65.2	1.1	**0.0098**	0.000	2.0	ug/L	7	Standard
>	**In**	115	522465.9	2.4				ug/L	524722	Standard
	Sn	118	738.4	3.7	**0.0483**	0.008	17.1	ug/L	715	Standard
	Sb	123	275.0	16.0	**0.0486**	0.012	23.8	ug/L	201	Standard
	Ba	135	25240.0	1.7	**13.9295**	0.222	1.6	ug/L	108	Standard
	Ce	140	3872.2	6.3				ug/L	30	Standard
>	**Tb**	159	782878.6	0.7				ug/L	792236	Standard
	Ho	165	290.0	15.0				ug/L	7	Standard
	Tl	203	118.7	19.0	**0.0136**	0.003	22.8	ug/L	9	Standard
	Tl	205	133.3	20.7	**0.0136**	0.004	32.8	ug/L	0	Standard
	Pb	206	2356.5	1.5	**0.4750**	0.007	1.6	ug/L	216	Standard
	Pb	207	2055.5	1.9	**0.4553**	0.008	1.8	ug/L	180	Standard
	Pb	208	8501.6	2.4	**0.4610**	0.013	2.9	ug/L	717	Standard
	U	238	331.0	4.1	**0.0479**	0.002	5.0	ug/L	4	Standard
>	**Bi**	209	442159.2	0.2				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.1730**	9.144	176.8	mg/L	0	Standard
Mg	24	10690.4	1.9	**13.7935**	0.084	0.6	mg/L	20	Standard
K	39	96.7	13.0	**0.4748**	0.079	16.7	mg/L	22	Standard
Ca	43	233.3	8.9	**38.9201**	5.419	13.9	mg/L	47	Standard
Fe	54	3334.2	1.9	**2.4739**	0.064	2.6	mg/L	151	Standard
Fe	57	1251.7	5.3	**3.0560**	0.253	8.3	mg/L	195	Standard
> **Sc-1**	45	31050.1	1.7				mg/L	29647	Standard
Cl	35	170093.6	1.6				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	245182.8	3.5				ug/L	1607	Standard
P	31	32394.6	2.5				ug/L	22752	Standard
S	34	5009.2	1.9				ug/L	5049	Standard
Sr	88	261.7	17.8				ug/L	87	Standard
C	12	140.0	12.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	323.0	18.5				mg/L	10	Standard
Ho-1	165	290.0	15.0				mg/L	7	Standard
Er	166	216.7	25.4				mg/L	3	Standard
I	127	55511.6	2.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		133.616	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.923	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.570
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.050
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606054901
Sample Date/Time: Thursday, June 16, 2016 18:33:13
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72709.1	1.6				ug/L	51024	Standard
	Be	9	15.0	88.2	**-0.0087**	0.011	126.1	ug/L	7	Standard
	Al	27	11667015.3	1.5	**57.5082**	0.540	0.9	ug/L	625	Standard
	Sc	45	28668.8	2.1				ug/L	29647	Standard
	Ti	47	148.7	19.1	**0.3823**	0.104	27.3	ug/L	57	Standard
	V	51	2595.6	16.9	**0.2356**	0.067	28.4	ug/L	1142	Standard
	Cr	52	17123.0	0.8	**1.6486**	0.049	3.0	ug/L	6628	Standard
	Cr	53	9336.3	15.0	**10.6848**	1.682	15.7	ug/L	430	Standard
	Mn	55	18549.3	0.3	**3.3327**	0.052	1.6	ug/L	603	Standard
	Co	59	5007.8	1.9	**0.8213**	0.019	2.4	ug/L	237	Standard
	Ni	60	15512.9	1.9	**8.8253**	0.199	2.3	ug/L	141	Standard
	Cu	65	297329.3	1.3	**175.0473**	3.650	2.1	ug/L	109	Standard
	Zn	66	4856.4	2.5	**4.6181**	0.121	2.6	ug/L	159	Standard
>	**Ge**	72	428183.3	1.3				ug/L	474053	Standard
	As	75	2686.3	8.7	**2.7111**	0.235	8.7	ug/L	-34	Standard
	Se	82	880.4	5.1	**8.6464**	0.479	5.5	ug/L	14	Standard
	Se-1	77	1273.7	6.1	**17.6237**	1.226	7.0	ug/L	55	Standard
>	**Ga**	71	535.0	8.9				mg/L	50	Standard
	Rb	85	254257.5	1.2				ug/L	20	Standard
	Y	89	359721.9	0.6				ug/L	376602	Standard
>	**Rh**	103	140.0	9.4				ug/L	17	Standard
	Mo	98	3488.6	3.7	**1.5905**	0.067	4.2	ug/L	8	Standard
	Ag	107	123.7	2.8	**0.0101**	0.001	6.2	ug/L	81	Standard
	Cd	111	15.6	26.6	**0.0055**	0.002	42.5	mg/L	3	Standard
	Cd	114	44.2	40.8	**0.0061**	0.004	65.8	ug/L	7	Standard
>	**In**	115	485628.6	0.5				ug/L	524722	Standard
	Sn	118	1148.4	1.8	**0.1409**	0.005	3.6	ug/L	715	Standard
	Sb	123	1921.7	1.1	**0.4606**	0.007	1.6	ug/L	201	Standard
	Ba	135	96043.1	1.3	**57.1923**	0.511	0.9	ug/L	108	Standard
	Ce	140	93.3	49.8				ug/L	30	Standard
>	**Tb**	159	766976.5	0.2				ug/L	792236	Standard
	Ho	165	5.0	173.2				ug/L	7	Standard
	Tl	203	328.3	20.2	**0.0463**	0.010	21.2	ug/L	9	Standard
	Tl	205	263.3	14.0	**0.0383**	0.006	16.9	ug/L	0	Standard
	Pb	206	413.7	9.2	**0.0455**	0.009	20.2	ug/L	216	Standard
	Pb	207	380.0	6.3	**0.0489**	0.006	12.7	ug/L	180	Standard
	Pb	208	1519.7	11.6	**0.0434**	0.011	26.5	ug/L	717	Standard
	U	238	31.3	49.5	**-0.0018**	0.003	153.2	ug/L	4	Standard
>	**Bi**	209	404872.2	0.7				ug/L	460343	Standard

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Na	23	10.0	86.6	**-23.4566**	29.384	125.3	mg/L	0	Standard
Mg	24	267948.6	0.7	**375.7604**	9.820	2.6	mg/L	20	Standard
K	39	5807.8	3.4	**45.5805**	2.203	4.8	mg/L	22	Standard
Ca	43	638.3	3.5	**141.1529**	8.616	6.1	mg/L	47	Standard
Fe	54	146.9	19.8	**0.0083**	0.022	270.3	mg/L	151	Standard
Fe	57	816.7	4.9	**1.9694**	0.159	8.1	mg/L	195	Standard
> **Sc-1**	45	28668.8	2.1				mg/L	29647	Standard
Cl	35	417643.9	1.4				ug/L	154152	Standard
Kr	83	3.0	57.7				ug/L	3	Standard
Br	81	229759.6	2.4				ug/L	1607	Standard
P	31	23254.5	2.6				ug/L	22752	Standard
S	34	4967.5	4.2				ug/L	5049	Standard
Sr	88	355.0	7.8				ug/L	87	Standard
C	12	183.3	32.0				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	56.7	27.0				mg/L	0	Standard
Dy	164	9.8	2.8				mg/L	10	Standard
Ho-1	165	5.0	173.2				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	1031517.8	6.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		142.499	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.324	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	92.550
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	87.950
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: L1606061401
Sample Date/Time: Thursday, June 16, 2016 18:36:24
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67849.9	1.1				ug/L	51024	Standard
	Be	9	10.0	100.0	**-0.0122**	0.009	72.4	ug/L	7	Standard
	Al	27	7374370.7	1.4	**38.9545**	0.953	2.4	ug/L	625	Standard
	Sc	45	31795.0	3.3				ug/L	29647	Standard
	Ti	47	313.7	6.8	**0.9174**	0.076	8.3	ug/L	57	Standard
	V	51	2621.7	2.2	**0.2138**	0.007	3.4	ug/L	1142	Standard
	Cr	52	11091.1	1.0	**0.6343**	0.009	1.4	ug/L	6628	Standard
	Cr	53	2283.5	15.4	**2.1128**	0.383	18.1	ug/L	430	Standard
	Mn	55	22885192.4	0.4	**3995.0920**	30.113	0.8	ug/L	603	Standard
	Co	59	1232.4	2.0	**0.1575**	0.003	2.1	ug/L	237	Standard
	Ni	60	2098.5	2.4	**1.0496**	0.022	2.1	ug/L	141	Standard
	Cu	65	1216.4	7.2	**0.6044**	0.045	7.4	ug/L	109	Standard
	Zn	66	2288.2	0.5	**1.9075**	0.018	1.0	ug/L	159	Standard
>	**Ge**	72	457333.9	0.5				ug/L	474053	Standard
	As	75	909.5	3.9	**0.8764**	0.032	3.6	ug/L	-34	Standard
	Se	82	87.0	7.9	**0.6466**	0.066	10.1	ug/L	14	Standard
	Se-1	77	157.0	28.6	**1.3726**	0.597	43.5	ug/L	55	Standard
>	**Ga**	71	960.0	12.3				mg/L	50	Standard
	Rb	85	5015.8	1.4				ug/L	20	Standard
	Y	89	394642.7	2.8				ug/L	376602	Standard
>	**Rh**	103	63.3	16.4				ug/L	17	Standard
	Mo	98	105.8	7.3	**0.0386**	0.003	8.5	ug/L	8	Standard
	Ag	107	76.0	8.0	**0.0002**	0.001	446.5	ug/L	81	Standard
	Cd	111	105.5	11.4	**0.0504**	0.007	13.1	mg/L	3	Standard
	Cd	114	217.3	8.1	**0.0408**	0.003	7.9	ug/L	7	Standard
>	**In**	115	532134.8	0.9				ug/L	524722	Standard
	Sn	118	536.7	2.8	**0.0088**	0.003	34.6	ug/L	715	Standard
	Sb	123	277.5	10.8	**0.0479**	0.007	15.3	ug/L	201	Standard
	Ba	135	159442.6	1.1	**86.6865**	1.387	1.6	ug/L	108	Standard
	Ce	140	1033.4	5.7				ug/L	30	Standard
>	**Tb**	159	812600.2	1.7				ug/L	792236	Standard
	Ho	165	136.7	12.8				ug/L	7	Standard
	Tl	203	148.0	12.8	**0.0171**	0.003	14.9	ug/L	9	Standard
	Tl	205	111.7	14.4	**0.0097**	0.003	26.2	ug/L	0	Standard
	Pb	206	315.7	1.6	**0.0132**	0.001	8.8	ug/L	216	Standard
	Pb	207	263.7	2.5	**0.0100**	0.002	15.2	ug/L	180	Standard
	Pb	208	1172.4	3.4	**0.0120**	0.002	19.7	ug/L	717	Standard
	U	238	803.7	2.6	**0.1241**	0.003	2.8	ug/L	4	Standard
>	**Bi**	209	452405.5	0.1				ug/L	460343	Standard

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Na	23	10.0	50.0	**-19.9609**	15.153	75.9	mg/L	0	Standard
Mg	24	11375.9	2.6	**14.3383**	0.138	1.0	mg/L	20	Standard
K	39	516.7	6.4	**3.4516**	0.346	10.0	mg/L	22	Standard
Ca	43	308.3	25.1	**54.1698**	18.153	33.5	mg/L	47	Standard
Fe	54	4619.7	1.0	**3.3894**	0.094	2.8	mg/L	151	Standard
Fe	57	1538.4	4.2	**3.7997**	0.290	7.6	mg/L	195	Standard
> **Sc-1**	45	31795.0	3.3				mg/L	29647	Standard
Cl	35	183919.6	1.0				ug/L	154152	Standard
Kr	83	2.3	89.2				ug/L	3	Standard
Br	81	17553.5	2.0				ug/L	1607	Standard
P	31	29355.1	2.7				ug/L	22752	Standard
S	34	5200.9	1.9				ug/L	5049	Standard
Sr	88	190.0	11.5				ug/L	87	Standard
C	12	103.3	53.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	152.8	48.1				mg/L	10	Standard
Ho-1	165	136.7	12.8				mg/L	7	Standard
Er	166	150.0	34.6				mg/L	3	Standard
I	127	70208.0	15.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.976	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.473	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.413	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.276	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606062401
Sample Date/Time: Thursday, June 16, 2016 18:39:36
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	69110.6	0.2				ug/L	51024	Standard
	Be	9	15.0	33.3	**-0.0079**	0.004	55.0	ug/L	7	Standard
	Al	27	7936210.1	0.6	**41.1512**	0.274	0.7	ug/L	625	Standard
	Sc	45	30823.0	3.2				ug/L	29647	Standard
	Ti	47	221.7	9.7	**0.5979**	0.081	13.6	ug/L	57	Standard
	V	51	218784.0	0.6	**31.6314**	0.474	1.5	ug/L	1142	Standard
	Cr	52	16406.2	1.4	**1.3767**	0.046	3.3	ug/L	6628	Standard
	Cr	53	3238.7	7.2	**3.1676**	0.244	7.7	ug/L	430	Standard
	Mn	55	47582.7	4.0	**8.1574**	0.347	4.3	ug/L	603	Standard
	Co	59	6337.0	0.6	**0.9777**	0.004	0.4	ug/L	237	Standard
	Ni	60	16455.3	0.3	**8.7388**	0.105	1.2	ug/L	141	Standard
	Cu	65	7946.8	1.2	**4.3032**	0.079	1.8	ug/L	109	Standard
	Zn	66	49099.1	1.5	**45.5445**	0.480	1.1	ug/L	159	Standard
>	Ge	72	458635.0	1.0				ug/L	474053	Standard
	As	75	1613.9	2.7	**1.5315**	0.033	2.1	ug/L	-34	Standard
	Se	82	632.2	1.0	**5.7396**	0.015	0.3	ug/L	14	Standard
	Se-1	77	198.0	8.1	**1.9191**	0.191	10.0	ug/L	55	Standard
>	Ga	71	478.3	12.6				mg/L	50	Standard
	Rb	85	15694.8	4.0				ug/L	20	Standard
	Y	89	402857.7	1.3				ug/L	376602	Standard
>	Rh	103	55.0	41.7				ug/L	17	Standard
	Mo	98	250973.6	0.6	**101.4589**	1.305	1.3	ug/L	8	Standard
	Ag	107	107.3	16.2	**0.0049**	0.003	57.8	ug/L	81	Standard
	Cd	111	-120.2	20.3	**-0.0625**	0.013	20.5	mg/L	3	Standard
	Cd	114	568.4	5.3	**0.1093**	0.006	5.7	ug/L	7	Standard
>	In	115	549544.5	1.2				ug/L	524722	Standard
	Sn	118	805.0	7.3	**0.0532**	0.009	16.5	ug/L	715	Standard
	Sb	123	561.0	5.0	**0.1078**	0.005	5.0	ug/L	201	Standard
	Ba	135	33980.1	2.6	**17.8424**	0.439	2.5	ug/L	108	Standard
	Ce	140	471.7	1.2				ug/L	30	Standard
>	Tb	159	820522.7	2.1				ug/L	792236	Standard
	Ho	165	20.0	25.0				ug/L	7	Standard
	Tl	203	251.3	7.2	**0.0306**	0.002	5.8	ug/L	9	Standard
	Tl	205	235.0	7.7	**0.0286**	0.002	7.0	ug/L	0	Standard
	Pb	206	1733.1	4.4	**0.3220**	0.019	5.8	ug/L	216	Standard
	Pb	207	1553.1	3.0	**0.3188**	0.020	6.4	ug/L	180	Standard
	Pb	208	6433.5	1.7	**0.3223**	0.016	4.9	ug/L	717	Standard
	U	238	255.3	11.3	**0.0338**	0.004	11.1	ug/L	4	Standard
>	Bi	209	456920.5	2.4				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.0019**	9.440	188.7	mg/L	0	Standard
Mg	24	19250.6	2.3	**25.0636**	0.292	1.2	mg/L	20	Standard
K	39	168.3	17.4	**1.0102**	0.242	24.0	mg/L	22	Standard
Ca	43	145.0	18.2	**19.2916**	5.015	26.0	mg/L	47	Standard
Fe	54	151.8	11.3	**0.0041**	0.017	409.5	mg/L	151	Standard
Fe	57	315.0	7.3	**0.2903**	0.041	14.1	mg/L	195	Standard
Sc-1	45	30823.0	3.2				mg/L	29647	Standard
Cl	35	228215.4	1.2				ug/L	154152	Standard
Kr	83	1.7	124.9				ug/L	3	Standard
Br	81	147558.5	1.4				ug/L	1607	Standard
P	31	26561.6	1.8				ug/L	22752	Standard
S	34	5117.5	2.5				ug/L	5049	Standard
Sr	88	270.0	14.7				ug/L	87	Standard
C	12	100.0	17.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	70.0	24.7				mg/L	0	Standard
Dy	164	58.9	45.9				mg/L	10	Standard
Ho-1	165	20.0	25.0				mg/L	7	Standard
Er	166	23.3	49.5				mg/L	3	Standard
I	127	16912.8	6.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		135.447	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.748	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.731
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.257
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	

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Method 6020 - Summary Report

Sample ID: L1606063001 WG572432-03
Sample Date/Time: Thursday, June 16, 2016 18:42:47
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69631.3	1.0				ug/L	51024	Standard
	Be	9	8.3	34.6	**-0.0138**	0.003	18.5	ug/L	7	Standard
	Al	27	1739354.1	0.6	**8.9445**	0.105	1.2	ug/L	625	Standard
	Sc	45	30928.2	2.9				ug/L	29647	Standard
	Ti	47	665.7	3.5	**2.0953**	0.107	5.1	ug/L	57	Standard
	V	51	2109.1	2.9	**0.1339**	0.005	3.7	ug/L	1142	Standard
	Cr	52	7651.6	0.5	**0.1320**	0.020	15.0	ug/L	6628	Standard
	Cr	53	2638.6	11.3	**2.4577**	0.289	11.8	ug/L	430	Standard
	Mn	55	27736.7	1.0	**4.6358**	0.114	2.5	ug/L	603	Standard
	Co	59	815.4	0.8	**0.0880**	0.002	1.9	ug/L	237	Standard
	Ni	60	1350.7	2.9	**0.6359**	0.022	3.4	ug/L	141	Standard
	Cu	65	5230.6	1.3	**2.7695**	0.021	0.8	ug/L	109	Standard
	Zn	66	9220.1	0.6	**8.2452**	0.069	0.8	ug/L	159	Standard
>	**Ge**	72	465111.5	1.4				ug/L	474053	Standard
	As	75	269.2	8.8	**0.2730**	0.025	9.0	ug/L	-34	Standard
	Se	82	49.8	13.6	**0.2903**	0.068	23.4	ug/L	14	Standard
	Se-1	77	173.0	5.2	**1.5506**	0.090	5.8	ug/L	55	Standard
>	**Ga**	71	241.7	10.4				mg/L	50	Standard
	Rb	85	36829.7	1.3				ug/L	20	Standard
	Y	89	384374.8	2.5				ug/L	376602	Standard
>	**Rh**	103	41.7	25.0				ug/L	17	Standard
	Mo	98	728.3	12.5	**0.3031**	0.038	12.6	ug/L	8	Standard
	Ag	107	82.0	10.4	**0.0014**	0.002	110.2	ug/L	81	Standard
	Cd	111	14.7	18.3	**0.0044**	0.001	34.2	mg/L	3	Standard
	Cd	114	39.2	43.5	**0.0044**	0.004	82.7	ug/L	7	Standard
>	**In**	115	524227.9	1.2				ug/L	524722	Standard
	Sn	118	960.0	3.9	**0.0890**	0.009	10.3	ug/L	715	Standard
	Sb	123	670.5	6.9	**0.1389**	0.011	8.0	ug/L	201	Standard
	Ba	135	8761.5	1.0	**4.7811**	0.086	1.8	ug/L	108	Standard
	Ce	140	878.4	8.1				ug/L	30	Standard
>	**Tb**	159	793064.4	3.2				ug/L	792236	Standard
	Ho	165	38.3	19.9				ug/L	7	Standard
	Tl	203	150.0	18.8	**0.0177**	0.004	22.6	ug/L	9	Standard
	Tl	205	133.3	15.6	**0.0133**	0.003	25.5	ug/L	0	Standard
	Pb	206	508.3	5.7	**0.0571**	0.007	12.3	ug/L	216	Standard
	Pb	207	414.7	10.5	**0.0477**	0.010	21.1	ug/L	180	Standard
	Pb	208	1771.7	0.4	**0.0490**	0.001	1.6	ug/L	717	Standard
	U	238	19.0	24.1	**-0.0044**	0.001	16.6	ug/L	4	Standard
>	**Bi**	209	447050.8	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	28164.5	1.9	**36.5804**	1.386	3.8	mg/L	20	Standard
K	39	385.0	0.0	**2.5870**	0.080	3.1	mg/L	22	Standard
Ca	43	85.0	20.4	**5.9218**	4.410	74.5	mg/L	47	Standard
Fe	54	182.6	15.8	**0.0273**	0.022	80.2	mg/L	151	Standard
Fe	57	225.0	0.0	**0.0211**	0.019	90.5	mg/L	195	Standard
Sc-1	45	30928.2	2.9				mg/L	29647	Standard
Cl	35	213453.3	1.7				ug/L	154152	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	8942.7	8.2				ug/L	1607	Standard
P	31	31840.1	1.6				ug/L	22752	Standard
S	34	5007.5	0.9				ug/L	5049	Standard
Sr	88	131.7	11.6				ug/L	87	Standard
C	12	73.3	34.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	40.5	49.2				mg/L	10	Standard
Ho-1	165	38.3	19.9				mg/L	7	Standard
Er	166	60.0	33.3				mg/L	3	Standard
I	127	51039.4	6.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		136.467	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.114	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.906
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.113
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 18:46:00
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68225.0	3.2				ug/L	51024	Standard
	Be	9	50708.1	3.5	**45.0847**	0.435	1.0	ug/L	7	Standard
	Al	27	7858332.7	1.5	**41.2907**	0.687	1.7	ug/L	625	Standard
	Sc	45	30560.8	2.3				ug/L	29647	Standard
	Ti	47	29370.1	1.8	**100.7639**	1.653	1.6	ug/L	57	Standard
	V	51	355260.2	0.6	**51.3611**	0.501	1.0	ug/L	1142	Standard
	Cr	52	364134.0	1.1	**50.1157**	0.189	0.4	ug/L	6628	Standard
	Cr	53	45359.5	2.1	**49.8880**	1.306	2.6	ug/L	430	Standard
	Mn	55	315438.4	1.3	**54.6794**	1.132	2.1	ug/L	603	Standard
	Co	59	335779.3	1.2	**53.8409**	0.832	1.5	ug/L	237	Standard
	Ni	60	93086.4	0.8	**49.6929**	0.140	0.3	ug/L	141	Standard
	Cu	65	91127.3	1.4	**49.9327**	0.679	1.4	ug/L	109	Standard
	Zn	66	54195.8	1.1	**50.1944**	0.353	0.7	ug/L	159	Standard
>	Ge	72	459562.3	0.8				ug/L	474053	Standard
	As	75	53571.2	0.7	**49.9335**	0.666	1.3	ug/L	-34	Standard
	Se	82	5527.7	0.4	**51.3922**	0.186	0.4	ug/L	14	Standard
	Se-1	77	3740.1	0.8	**49.4994**	0.726	1.5	ug/L	55	Standard
>	Ga	71	238.3	8.5				mg/L	50	Standard
	Rb	85	728.4	8.0				ug/L	20	Standard
	Y	89	403863.1	2.0				ug/L	376602	Standard
>	Rh	103	30.0	16.7				ug/L	17	Standard
	Mo	98	249432.2	1.4	**100.2684**	1.541	1.5	ug/L	8	Standard
	Ag	107	296071.6	1.7	**47.1134**	0.851	1.8	ug/L	81	Standard
	Cd	111	98641.2	1.4	**48.2538**	0.726	1.5	mg/L	3	Standard
	Cd	114	241419.7	2.8	**47.7722**	1.408	2.9	ug/L	7	Standard
>	In	115	552610.2	0.1				ug/L	524722	Standard
	Sn	118	274943.9	0.8	**48.3767**	0.444	0.9	ug/L	715	Standard
	Sb	123	217314.9	1.3	**47.2274**	0.669	1.4	ug/L	201	Standard
	Ba	135	89302.7	0.5	**46.7236**	0.287	0.6	ug/L	108	Standard
	Ce	140	61.7	32.8				ug/L	30	Standard
>	Tb	159	816119.0	0.8				ug/L	792236	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	369419.3	1.5	**48.6376**	0.510	1.0	ug/L	9	Standard
	Tl	205	333866.9	0.9	**51.6890**	0.388	0.8	ug/L	0	Standard
	Pb	206	232126.7	1.0	**50.5119**	0.450	0.9	ug/L	216	Standard
	Pb	207	210545.8	0.6	**50.3290**	0.336	0.7	ug/L	180	Standard
	Pb	208	855972.8	0.6	**50.4191**	0.795	1.6	ug/L	717	Standard
	U	238	320948.2	1.1	**51.9636**	0.277	0.5	ug/L	4	Standard
>	Bi	209	457695.0	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	4200.6	2.8	**5.4815**	0.198	3.6	mg/L	20	Standard
K	39	558.3	18.4	**3.8970**	0.711	18.2	mg/L	22	Standard
Ca	43	60.0	25.0	**0.3745**	3.188	851.1	mg/L	47	Standard
Fe	54	6005.7	4.5	**4.6268**	0.322	7.0	mg/L	151	Standard
Fe	57	1721.8	7.2	**4.5229**	0.315	7.0	mg/L	195	Standard
> **Sc-1**	45	30560.8	2.3				mg/L	29647	Standard
Cl	35	169117.3	1.2				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	2713.6	7.9				ug/L	1607	Standard
P	31	25114.1	2.9				ug/L	22752	Standard
S	34	5354.3	6.7				ug/L	5049	Standard
Sr	88	73.3	32.2				ug/L	87	Standard
C	12	66.7	67.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	23.0	67.5				mg/L	10	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	3423.7	23.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	90.169		
Al	27	82.581		
Sc	45			
Ti	47	100.764		
V	51	102.722		
Cr	52	100.231		
Cr	53			
Mn	55	109.359		
Co	59	107.682		
Ni	60	99.386		
Cu	65	99.865		
Zn	66	100.389		
> Ge	72		96.943	
As	75	99.867		
Se	82	102.784		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	100.268		
Ag	107	94.227		
Cd	111	96.508		
Cd	114			
In	115		105.315	
Sn	118	96.753		
Sb	123	94.455		
Ba	135	93.447		
Ce	140			
Tb	159			
Ho	165			
Tl	203	97.275		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.838		
U	238	103.927		
Bi	209		99.425	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 18:49:12
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64312.9	1.7				ug/L	51024	Standard
	Be	9	10.0	100.0	**-0.0116**	0.009	81.0	ug/L	7	Standard
	Al	27	1253.4	11.0	**-0.0028**	0.001	25.9	ug/L	625	Standard
	Sc	45	30213.4	2.2				ug/L	29647	Standard
	Ti	47	46.7	13.1	**-0.0109**	0.022	201.6	ug/L	57	Standard
	V	51	1033.9	3.5	**-0.0234**	0.008	34.0	ug/L	1142	Standard
	Cr	52	6122.9	0.9	**-0.0987**	0.025	25.4	ug/L	6628	Standard
	Cr	53	575.0	8.8	**0.1852**	0.063	34.2	ug/L	430	Standard
	Mn	55	1171.4	5.3	**0.0703**	0.014	19.8	ug/L	603	Standard
	Co	59	202.3	7.7	**-0.0099**	0.003	28.8	ug/L	237	Standard
	Ni	60	113.3	11.9	**-0.0193**	0.006	33.6	ug/L	141	Standard
	Cu	65	139.7	5.5	**0.0080**	0.006	71.9	ug/L	109	Standard
	Zn	66	162.0	9.1	**-0.0865**	0.010	11.9	ug/L	159	Standard
>	**Ge**	72	475844.7	2.3				ug/L	474053	Standard
	As	75	5.3	48.7	**0.0299**	0.002	7.8	ug/L	-34	Standard
	Se	82	21.3	16.5	**0.0231**	0.034	148.8	ug/L	14	Standard
	Se-1	77	70.7	7.0	**0.1723**	0.070	40.6	ug/L	55	Standard
>	**Ga**	71	140.0	34.1				mg/L	50	Standard
	Rb	85	38.3	49.4				ug/L	20	Standard
	Y	89	392359.8	3.0				ug/L	376602	Standard
>	**Rh**	103	15.0	57.7				ug/L	17	Standard
	Mo	98	303.5	29.0	**0.1205**	0.035	28.8	ug/L	8	Standard
	Ag	107	88.3	9.9	**0.0022**	0.001	58.2	ug/L	81	Standard
	Cd	111	9.2	17.1	**0.0014**	0.001	58.9	mg/L	3	Standard
	Cd	114	26.1	34.4	**0.0015**	0.002	118.0	ug/L	7	Standard
>	**In**	115	533517.8	1.4				ug/L	524722	Standard
	Sn	118	766.7	17.2	**0.0508**	0.026	51.1	ug/L	715	Standard
	Sb	123	454.0	26.6	**0.0877**	0.028	32.4	ug/L	201	Standard
	Ba	135	106.0	9.4	**-0.0001**	0.006	3944.8	ug/L	108	Standard
	Ce	140	23.3	44.6				ug/L	30	Standard
>	**Tb**	159	792169.2	1.1				ug/L	792236	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	62.3	2.5	**0.0057**	0.000	2.0	ug/L	9	Standard
	Tl	205	51.7	49.7	**0.0003**	0.004	1341.8	ug/L	0	Standard
	Pb	206	226.7	8.4	**-0.0062**	0.005	76.5	ug/L	216	Standard
	Pb	207	203.3	4.0	**-0.0045**	0.002	40.0	ug/L	180	Standard
	Pb	208	845.7	5.1	**-0.0073**	0.002	33.6	ug/L	717	Standard
	U	238	36.0	10.0	**-0.0017**	0.001	31.3	ug/L	4	Standard
>	**Bi**	209	451238.0	1.2				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	41.7	38.6	**0.0104**	0.022	211.4	mg/L	20	Standard
K	39	10.0	50.0	**-0.1532**	0.037	24.4	mg/L	22	Standard
Ca	43	38.3	32.8	**-4.4370**	2.704	60.9	mg/L	47	Standard
Fe	54	137.9	7.6	**-0.0050**	0.006	124.9	mg/L	151	Standard
Fe	57	133.3	7.8	**-0.2416**	0.038	15.5	mg/L	195	Standard
Sc-1	45	30213.4	2.2				mg/L	29647	Standard
Cl	35	167592.0	1.8				ug/L	154152	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	2426.9	7.0				ug/L	1607	Standard
P	31	25579.9	2.0				ug/L	22752	Standard
S	34	5439.3	0.7				ug/L	5049	Standard
Sr	88	61.7	9.4				ug/L	87	Standard
C	12	56.7	56.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.0	93.6				mg/L	10	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	2145.2	8.8				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.378	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.676
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.022
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606063001DP WG572432-10
Sample Date/Time: Thursday, June 16, 2016 18:52:25
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68712.2	2.1				ug/L	51024	Standard
	Be	9	13.3	57.3	**-0.0092**	0.007	74.2	ug/L	7	Standard
	Al	27	1694606.4	2.1	**8.8301**	0.029	0.3	ug/L	625	Standard
	Sc	45	32870.6	1.4				ug/L	29647	Standard
	Ti	47	632.0	2.3	**1.9902**	0.036	1.8	ug/L	57	Standard
	V	51	2183.1	15.2	**0.1462**	0.049	33.7	ug/L	1142	Standard
	Cr	52	8437.7	0.6	**0.2463**	0.014	5.5	ug/L	6628	Standard
	Cr	53	3582.1	45.8	**3.5137**	1.806	51.4	ug/L	430	Standard
	Mn	55	25959.2	3.5	**4.3517**	0.184	4.2	ug/L	603	Standard
	Co	59	780.0	4.2	**0.0830**	0.005	6.3	ug/L	237	Standard
	Ni	60	1265.7	3.1	**0.5941**	0.019	3.2	ug/L	141	Standard
	Cu	65	4964.1	2.1	**2.6377**	0.034	1.3	ug/L	109	Standard
	Zn	66	7744.6	0.4	**6.9226**	0.090	1.3	ug/L	159	Standard
>	**Ge**	72	462903.9	0.9				ug/L	474053	Standard
	As	75	268.6	20.8	**0.2737**	0.054	19.7	ug/L	-34	Standard
	Se	82	41.2	34.5	**0.2137**	0.136	63.4	ug/L	14	Standard
	Se-1	77	155.7	4.3	**1.3316**	0.104	7.8	ug/L	55	Standard
>	**Ga**	71	160.0	9.4				mg/L	50	Standard
	Rb	85	36001.1	1.5				ug/L	20	Standard
	Y	89	387483.8	2.3				ug/L	376602	Standard
>	**Rh**	103	38.3	41.9				ug/L	17	Standard
	Mo	98	602.0	7.2	**0.2407**	0.015	6.4	ug/L	8	Standard
	Ag	107	97.7	12.0	**0.0035**	0.002	49.5	ug/L	81	Standard
	Cd	111	14.9	82.6	**0.0042**	0.006	147.6	mg/L	3	Standard
	Cd	114	54.8	20.5	**0.0072**	0.002	30.8	ug/L	7	Standard
>	**In**	115	542940.9	1.2				ug/L	524722	Standard
	Sn	118	1003.4	7.5	**0.0905**	0.011	12.7	ug/L	715	Standard
	Sb	123	760.6	4.7	**0.1535**	0.006	4.0	ug/L	201	Standard
	Ba	135	8458.7	1.6	**4.4523**	0.053	1.2	ug/L	108	Standard
	Ce	140	761.7	12.9				ug/L	30	Standard
>	**Tb**	159	813941.2	0.6				ug/L	792236	Standard
	Ho	165	46.7	60.9				ug/L	7	Standard
	Tl	203	213.3	5.0	**0.0252**	0.001	4.7	ug/L	9	Standard
	Tl	205	173.3	1.7	**0.0188**	0.000	1.2	ug/L	0	Standard
	Pb	206	486.7	2.6	**0.0486**	0.003	6.9	ug/L	216	Standard
	Pb	207	410.0	4.9	**0.0433**	0.005	11.5	ug/L	180	Standard
	Pb	208	1804.7	2.7	**0.0475**	0.003	5.4	ug/L	717	Standard
	U	238	45.0	13.3	**-0.0004**	0.001	279.8	ug/L	4	Standard
>	**Bi**	209	462206.0	0.8				ug/L	460343	Standard

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Na	23	5.0	100.0	**-4.2590**	14.576	342.2	mg/L	0	Standard
Mg	24	26429.7	2.8	**32.2858**	1.354	4.2	mg/L	20	Standard
K	39	396.7	3.9	**2.4991**	0.082	3.3	mg/L	22	Standard
Ca	43	96.7	7.9	**7.1952**	1.844	25.6	mg/L	47	Standard
Fe	54	180.8	15.4	**0.0178**	0.022	121.6	mg/L	151	Standard
Fe	57	203.3	16.0	**-0.0787**	0.096	122.2	mg/L	195	Standard
> **Sc-1**	45	32870.6	1.4				mg/L	29647	Standard
Cl	35	203581.4	1.3				ug/L	154152	Standard
Kr	83	2.0	0.0				ug/L	3	Standard
Br	81	6207.9	4.2				ug/L	1607	Standard
P	31	32229.2	1.5				ug/L	22752	Standard
S	34	4830.8	4.5				ug/L	5049	Standard
Sr	88	108.3	30.0				ug/L	87	Standard
C	12	86.7	6.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	47.3	42.6				mg/L	10	Standard
Ho-1	165	46.7	60.9				mg/L	7	Standard
Er	166	56.7	81.5				mg/L	3	Standard
I	127	39314.5	7.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		134.666	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.648	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.472
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.405
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 18:55:38
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67264.1	3.2				ug/L	51024	Standard
	Be	9	51087.7	3.5	**46.0740**	0.786	1.7	ug/L	7	Standard
	Al	27	7974693.7	0.5	**42.5107**	1.182	2.8	ug/L	625	Standard
	Sc	45	31289.0	2.9				ug/L	29647	Standard
	Ti	47	29983.3	1.5	**100.8099**	2.621	2.6	ug/L	57	Standard
	V	51	356976.4	1.6	**50.5633**	0.626	1.2	ug/L	1142	Standard
	Cr	52	371000.0	2.2	**50.0293**	1.004	2.0	ug/L	6628	Standard
	Cr	53	45682.1	3.1	**49.2179**	1.406	2.9	ug/L	430	Standard
	Mn	55	318039.5	1.1	**54.0099**	0.158	0.3	ug/L	603	Standard
	Co	59	338391.0	1.1	**53.1626**	0.493	0.9	ug/L	237	Standard
	Ni	60	94145.4	2.5	**49.2417**	1.028	2.1	ug/L	141	Standard
	Cu	65	92379.1	1.4	**49.5948**	0.289	0.6	ug/L	109	Standard
	Zn	66	54668.5	1.5	**49.6081**	0.589	1.2	ug/L	159	Standard
>	**Ge**	72	469038.3	1.3				ug/L	474053	Standard
	As	75	54293.6	1.3	**49.5816**	0.207	0.4	ug/L	-34	Standard
	Se	82	5559.0	0.1	**50.6424**	0.722	1.4	ug/L	14	Standard
	Se-1	77	3786.5	1.3	**49.0965**	0.931	1.9	ug/L	55	Standard
>	**Ga**	71	158.3	25.7				mg/L	50	Standard
	Rb	85	761.7	7.0				ug/L	20	Standard
	Y	89	395591.6	1.3				ug/L	376602	Standard
>	**Rh**	103	25.0	80.0				ug/L	17	Standard
	Mo	98	251383.1	0.4	**103.0718**	1.215	1.2	ug/L	8	Standard
	Ag	107	306968.8	0.5	**49.8241**	0.634	1.3	ug/L	81	Standard
	Cd	111	100215.1	0.7	**50.0041**	0.742	1.5	mg/L	3	Standard
	Cd	114	243336.5	2.3	**49.1181**	1.543	3.1	ug/L	7	Standard
>	**In**	115	541813.2	0.8				ug/L	524722	Standard
	Sn	118	281669.0	0.4	**50.5528**	0.296	0.6	ug/L	715	Standard
	Sb	123	222839.5	0.9	**49.3972**	0.805	1.6	ug/L	201	Standard
	Ba	135	91045.1	0.4	**48.5895**	0.562	1.2	ug/L	108	Standard
	Ce	140	61.7	12.4				ug/L	30	Standard
>	**Tb**	159	817844.5	0.4				ug/L	792236	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	379786.0	0.6	**49.2821**	0.368	0.7	ug/L	9	Standard
	Tl	205	336318.4	0.5	**51.3165**	0.323	0.6	ug/L	0	Standard
	Pb	206	235111.2	1.0	**50.4225**	0.567	1.1	ug/L	216	Standard
	Pb	207	213294.2	0.5	**50.2491**	0.369	0.7	ug/L	180	Standard
	Pb	208	862915.5	0.7	**50.0892**	0.286	0.6	ug/L	717	Standard
	U	238	324915.2	0.1	**51.8469**	0.100	0.2	ug/L	4	Standard
>	**Bi**	209	464391.0	0.2				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	4073.9	4.4	**5.1949**	0.373	7.2	mg/L	20	Standard
K	39	616.7	11.0	**4.2379**	0.622	14.7	mg/L	22	Standard
Ca	43	71.7	38.4	**2.7208**	6.257	230.0	mg/L	47	Standard
Fe	54	6184.7	3.6	**4.6538**	0.266	5.7	mg/L	151	Standard
Fe	57	1603.4	6.3	**4.0588**	0.310	7.6	mg/L	195	Standard
> **Sc-1**	45	31289.0	2.9				mg/L	29647	Standard
Cl	35	168092.6	0.3				ug/L	154152	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	1803.4	11.3				ug/L	1607	Standard
P	31	25418.0	3.0				ug/L	22752	Standard
S	34	5476.0	0.8				ug/L	5049	Standard
Sr	88	68.3	36.1				ug/L	87	Standard
C	12	76.7	30.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.5	122.8				mg/L	10	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	3	Standard
I	127	2120.2	19.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	92.148		
Al	27	85.021		
Sc	45			
Ti	47	100.810		
V	51	101.127		
Cr	52	100.059		
Cr	53			
Mn	55	108.020		
Co	59	106.325		
Ni	60	98.483		
Cu	65	99.190		
Zn	66	99.216		
> Ge	72		98.942	
As	75	99.163		
Se	82	101.285		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	103.072		
Ag	107	99.648		
Cd	111	100.008		
Cd	114			
In	115		103.257	
Sn	118	101.106		
Sb	123	98.794		
Ba	135	97.179		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.564		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.178		
U	238	103.694		
Bi	209		100.879	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 18:58:50
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65086.2	2.0				ug/L	51024	Standard
	Be	9	21.7	58.1	**-0.0010**	0.011	1171.7	ug/L	7	Standard
	Al	27	2008.5	34.3	**0.0013**	0.004	284.1	ug/L	625	Standard
	Sc	45	30751.2	2.4				ug/L	29647	Standard
	Ti	47	41.3	24.7	**-0.0285**	0.034	119.2	ug/L	57	Standard
	V	51	1096.5	3.2	**-0.0144**	0.004	27.7	ug/L	1142	Standard
	Cr	52	6076.9	0.1	**-0.1037**	0.008	7.3	ug/L	6628	Standard
	Cr	53	488.3	13.0	**0.0929**	0.070	75.6	ug/L	430	Standard
	Mn	55	1470.4	24.5	**0.1211**	0.063	51.8	ug/L	603	Standard
	Co	59	206.0	14.6	**-0.0092**	0.005	53.2	ug/L	237	Standard
	Ni	60	120.7	4.2	**-0.0153**	0.002	15.6	ug/L	141	Standard
	Cu	65	142.0	16.7	**0.0093**	0.013	141.3	ug/L	109	Standard
	Zn	66	152.7	7.5	**-0.0944**	0.011	12.1	ug/L	159	Standard
>	**Ge**	72	474934.0	0.8				ug/L	474053	Standard
	As	75	-45.5	82.0	**-0.0158**	0.033	212.2	ug/L	-34	Standard
	Se	82	16.2	50.9	**-0.0227**	0.076	333.7	ug/L	14	Standard
	Se-1	77	66.0	6.9	**0.1132**	0.063	55.7	ug/L	55	Standard
>	**Ga**	71	136.7	9.2				mg/L	50	Standard
	Rb	85	30.0	28.9				ug/L	20	Standard
	Y	89	402114.5	0.5				ug/L	376602	Standard
>	**Rh**	103	21.7	35.3				ug/L	17	Standard
	Mo	98	281.3	33.4	**0.1095**	0.037	34.1	ug/L	8	Standard
	Ag	107	96.3	13.1	**0.0033**	0.002	62.1	ug/L	81	Standard
	Cd	111	10.2	38.2	**0.0019**	0.002	104.1	mg/L	3	Standard
	Cd	114	23.6	19.2	**0.0010**	0.001	99.3	ug/L	7	Standard
>	**In**	115	541583.6	1.8				ug/L	524722	Standard
	Sn	118	860.0	27.1	**0.0652**	0.041	63.3	ug/L	715	Standard
	Sb	123	479.5	22.9	**0.0918**	0.026	27.9	ug/L	201	Standard
	Ba	135	123.3	8.3	**0.0082**	0.005	60.8	ug/L	108	Standard
	Ce	140	23.3	65.5				ug/L	30	Standard
>	**Tb**	159	792193.7	1.1				ug/L	792236	Standard
	Ho	165	13.3	78.1				ug/L	7	Standard
	Tl	203	66.0	21.2	**0.0060**	0.002	29.5	ug/L	9	Standard
	Tl	205	46.7	12.4	**-0.0007**	0.001	132.6	ug/L	0	Standard
	Pb	206	228.3	5.2	**-0.0071**	0.002	32.1	ug/L	216	Standard
	Pb	207	200.3	2.5	**-0.0063**	0.001	19.4	ug/L	180	Standard
	Pb	208	858.7	6.2	**-0.0078**	0.003	36.1	ug/L	717	Standard
	U	238	38.3	37.5	**-0.0014**	0.002	161.1	ug/L	4	Standard
>	**Bi**	209	462016.2	0.6				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	36.7	70.0	**0.0029**	0.034	1195.5	mg/L	20	Standard
K	39	18.3	56.8	**-0.0943**	0.072	76.9	mg/L	22	Standard
Ca	43	45.0	22.2	**-3.0781**	2.040	66.3	mg/L	47	Standard
Fe	54	114.4	7.6	**-0.0252**	0.008	31.9	mg/L	151	Standard
Fe	57	173.3	9.3	**-0.1300**	0.041	31.6	mg/L	195	Standard
Sc-1	45	30751.2	2.4				mg/L	29647	Standard
Cl	35	167486.4	2.8				ug/L	154152	Standard
Kr	83	2.0	86.6				ug/L	3	Standard
Br	81	1856.8	2.2				ug/L	1607	Standard
P	31	26229.4	1.8				ug/L	22752	Standard
S	34	5394.3	3.3				ug/L	5049	Standard
Sr	88	46.7	37.6				ug/L	87	Standard
C	12	50.0	20.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.9	187.9				mg/L	10	Standard
Ho-1	165	13.3	78.1				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	1466.7	5.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.186	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.213
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.363
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, June 16, 2016 19:02:02
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62105.4	2.6				ug/L	51024	Standard
	Be	9	230.0	20.7	**0.2030**	0.041	20.0	ug/L	7	Standard
	Al	27	2411.9	57.3	**0.0040**	0.008	188.2	ug/L	625	Standard
	Sc	45	29320.0	1.0				ug/L	29647	Standard
	Ti	47	44.0	15.9	**-0.0143**	0.023	160.1	ug/L	57	Standard
	V	51	3629.6	1.0	**0.3604**	0.013	3.7	ug/L	1142	Standard
	Cr	52	11639.8	0.7	**0.7104**	0.026	3.6	ug/L	6628	Standard
	Cr	53	1218.4	6.6	**0.9247**	0.069	7.5	ug/L	430	Standard
	Mn	55	4165.6	11.2	**0.6000**	0.079	13.2	ug/L	603	Standard
	Co	59	2679.2	3.3	**0.3905**	0.015	4.0	ug/L	237	Standard
	Ni	60	2918.9	1.9	**1.4896**	0.048	3.2	ug/L	141	Standard
	Cu	65	1533.7	1.1	**0.7788**	0.010	1.3	ug/L	109	Standard
	Zn	66	7393.8	1.4	**6.6758**	0.118	1.8	ug/L	159	Standard
>	**Ge**	72	457738.9	1.6				ug/L	474053	Standard
	As	75	382.8	8.7	**0.3830**	0.030	7.9	ug/L	-34	Standard
	Se	82	57.3	9.5	**0.3683**	0.054	14.6	ug/L	14	Standard
	Se-1	77	79.7	6.9	**0.3297**	0.074	22.6	ug/L	55	Standard
>	**Ga**	71	103.3	23.9				mg/L	50	Standard
	Rb	85	18.3	41.7				ug/L	20	Standard
	Y	89	375631.5	1.4				ug/L	376602	Standard
>	**Rh**	103	10.0	86.6				ug/L	17	Standard
	Mo	98	122.4	54.4	**0.0465**	0.029	61.8	ug/L	8	Standard
	Ag	107	2330.2	1.4	**0.3786**	0.008	2.1	ug/L	81	Standard
	Cd	111	467.2	1.7	**0.2376**	0.006	2.6	mg/L	3	Standard
	Cd	114	1116.8	1.3	**0.2291**	0.004	1.8	ug/L	7	Standard
>	**In**	115	524377.5	1.0				ug/L	524722	Standard
	Sn	118	430.0	17.1	**-0.0096**	0.013	134.4	ug/L	715	Standard
	Sb	123	1783.9	4.5	**0.3940**	0.022	5.6	ug/L	201	Standard
	Ba	135	1250.7	1.9	**0.6328**	0.015	2.4	ug/L	108	Standard
	Ce	140	8.3	91.7				ug/L	30	Standard
>	**Tb**	159	782327.7	0.6				ug/L	792236	Standard
	Ho	165	11.7	107.9				ug/L	7	Standard
	Tl	203	644.0	4.6	**0.0829**	0.005	5.6	ug/L	9	Standard
	Tl	205	603.3	8.3	**0.0864**	0.009	9.9	ug/L	0	Standard
	Pb	206	1176.0	6.8	**0.2020**	0.018	8.8	ug/L	216	Standard
	Pb	207	1021.4	8.8	**0.1927**	0.023	12.1	ug/L	180	Standard
	Pb	208	4081.2	6.5	**0.1848**	0.017	9.4	ug/L	717	Standard
	U	238	2503.2	1.2	**0.4011**	0.007	1.8	ug/L	4	Standard
>	**Bi**	209	453995.6	0.8				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	40.0	25.0	**0.0095**	0.013	138.3	mg/L	20	Standard
K	39	13.3	43.3	**-0.1249**	0.045	36.2	mg/L	22	Standard
Ca	43	35.0	28.6	**-4.9048**	2.432	49.6	mg/L	47	Standard
Fe	54	120.6	31.6	**-0.0158**	0.032	201.6	mg/L	151	Standard
Fe	57	148.3	13.6	**-0.1825**	0.065	35.6	mg/L	195	Standard
Sc-1	45	29320.0	1.0				mg/L	29647	Standard
Cl	35	160593.3	0.6				ug/L	154152	Standard
Kr	83	0.3	173.2				ug/L	3	Standard
Br	81	1753.4	6.3				ug/L	1607	Standard
P	31	18406.2	0.9				ug/L	22752	Standard
S	34	5287.6	2.4				ug/L	5049	Standard
Sr	88	66.7	18.9				ug/L	87	Standard
C	12	56.7	36.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	13.0	46.6				mg/L	10	Standard
Ho-1	165	11.7	107.9				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	3	Standard
I	127	1111.7	9.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	101.480		
Al	27			
Sc	45			
Ti	47			
V	51	90.091		
Cr	52	88.800		
Cr	53			
Mn	55	120.007		
Co	59	97.613		
Ni	60	93.098		
Cu	65	97.350		
Zn	66	106.813		
Ge	72		96.559	
As	75	95.761		
Se	82	92.069		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	94.641		
Cd	111	99.021		
Cd	114			
> In	115			99.934
Sn	118			
Sb	123	98.503		
Ba	135	84.376		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	103.666		
Tl	205			
Pb	206			
Pb	207			
Pb	208	92.383		
U	238	100.273		
> Bi	209			98.621
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW 42 WG572730-03
Sample Date/Time: Thursday, June 16, 2016 19:05:16
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62749.7	0.4				ug/L	51024	Standard
	Be	9	18.3	95.8	**-0.0034**	0.017	498.2	ug/L	7	Standard
	Al	27	45563.5	4.1	**0.2505**	0.010	4.1	ug/L	625	Standard
	Sc	45	30499.0	0.2				ug/L	29647	Standard
	Ti	47	51.3	19.1	**0.0066**	0.033	492.2	ug/L	57	Standard
	V	51	1097.4	4.3	**-0.0126**	0.007	55.7	ug/L	1142	Standard
	Cr	52	7963.4	1.0	**0.1642**	0.013	7.9	ug/L	6628	Standard
	Cr	53	896.7	4.5	**0.5418**	0.048	8.8	ug/L	430	Standard
	Mn	55	2548.5	1.6	**0.3068**	0.006	2.0	ug/L	603	Standard
	Co	59	285.7	3.7	**0.0036**	0.002	42.0	ug/L	237	Standard
	Ni	60	410.7	8.1	**0.1371**	0.018	13.2	ug/L	141	Standard
	Cu	65	253.3	2.8	**0.0699**	0.004	5.6	ug/L	109	Standard
	Zn	66	1271.7	3.2	**0.9258**	0.037	4.0	ug/L	159	Standard
>	**Ge**	72	469694.2	0.4				ug/L	474053	Standard
	As	75	1524.9	4.2	**1.4151**	0.063	4.5	ug/L	-34	Standard
	Se	82	670.0	3.5	**5.9461**	0.237	4.0	ug/L	14	Standard
	Se-1	77	66.0	18.4	**0.1230**	0.163	132.4	ug/L	55	Standard
>	**Ga**	71	123.3	16.4				mg/L	50	Standard
	Rb	85	295.0	3.4				ug/L	20	Standard
	Y	89	394476.0	3.2				ug/L	376602	Standard
>	**Rh**	103	20.0	66.1				ug/L	17	Standard
	Mo	98	84.7	10.3	**0.0293**	0.004	12.7	ug/L	8	Standard
	Ag	107	83.0	7.9	**0.0012**	0.001	88.8	ug/L	81	Standard
	Cd	111	13.9	21.7	**0.0037**	0.001	39.9	mg/L	3	Standard
	Cd	114	54.3	34.3	**0.0072**	0.004	52.7	ug/L	7	Standard
>	**In**	115	540141.2	0.4				ug/L	524722	Standard
	Sn	118	648.3	6.2	**0.0275**	0.007	26.0	ug/L	715	Standard
	Sb	123	144.9	16.0	**0.0174**	0.005	30.4	ug/L	201	Standard
	Ba	135	21260.9	1.4	**11.3366**	0.117	1.0	ug/L	108	Standard
	Ce	140	155.0	8.5				ug/L	30	Standard
>	**Tb**	159	801981.8	0.8				ug/L	792236	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	205.7	5.0	**0.0243**	0.001	5.5	ug/L	9	Standard
	Tl	205	185.0	17.7	**0.0206**	0.005	24.4	ug/L	0	Standard
	Pb	206	277.0	10.2	**0.0035**	0.006	164.3	ug/L	216	Standard
	Pb	207	230.3	3.9	**0.0008**	0.002	210.4	ug/L	180	Standard
	Pb	208	975.0	1.4	**-0.0009**	0.000	49.0	ug/L	717	Standard
	U	238	16.3	25.5	**-0.0050**	0.001	13.9	ug/L	4	Standard
>	**Bi**	209	461335.7	0.7				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	403.3	18.0	**0.4864**	0.096	19.7	mg/L	20	Standard
K	39	18.3	56.8	**-0.0922**	0.077	83.3	mg/L	22	Standard
Ca	43	38.3	27.2	**-4.4783**	2.388	53.3	mg/L	47	Standard
Fe	54	151.1	15.7	**0.0044**	0.018	419.9	mg/L	151	Standard
Fe	57	180.0	9.6	**-0.1053**	0.052	49.8	mg/L	195	Standard
> **Sc-1**	45	30499.0	0.2				mg/L	29647	Standard
Cl	35	167221.1	1.1				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	161399.3	3.9				ug/L	1607	Standard
P	31	23832.1	1.6				ug/L	22752	Standard
S	34	5314.3	4.0				ug/L	5049	Standard
Sr	88	105.0	12.6				ug/L	87	Standard
C	12	53.3	43.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.5	177.6				mg/L	10	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	4855.8	5.9				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		122.980	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.081	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.939
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.216
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: PBW 42 WG572730-03
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Method 6020 - Summary Report

Sample ID: LCSW 42 WG572730-04
Sample Date/Time: Thursday, June 16, 2016 19:08:28
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	62985.7	0.9				ug/L	51024	Standard
	Be	9	48407.2	1.0	**46.6239**	0.599	1.3	ug/L	7	Standard
	Al	27	15242.7	3.1	**0.0770**	0.003	4.2	ug/L	625	Standard
	Sc	45	31167.0	1.6				ug/L	29647	Standard
	Ti	47	51.0	3.9	**0.0042**	0.006	137.2	ug/L	57	Standard
	V	51	362150.1	1.2	**50.8470**	1.498	2.9	ug/L	1142	Standard
	Cr	52	375631.9	0.2	**50.2056**	0.853	1.7	ug/L	6628	Standard
	Cr	53	46496.2	1.5	**49.6449**	0.253	0.5	ug/L	430	Standard
	Mn	55	324366.5	2.3	**54.5814**	0.385	0.7	ug/L	603	Standard
	Co	59	341108.8	1.8	**53.1006**	0.301	0.6	ug/L	237	Standard
	Ni	60	95614.1	1.0	**49.5608**	0.383	0.8	ug/L	141	Standard
	Cu	65	93513.4	0.6	**49.7560**	0.725	1.5	ug/L	109	Standard
	Zn	66	55921.0	0.3	**50.2961**	0.929	1.8	ug/L	159	Standard
>	Ge	72	473336.6	1.7				ug/L	474053	Standard
	As	75	54052.4	0.1	**48.9231**	0.858	1.8	ug/L	-34	Standard
	Se	82	5549.3	0.5	**50.0944**	0.667	1.3	ug/L	14	Standard
	Se-1	77	3851.2	1.4	**49.4942**	1.249	2.5	ug/L	55	Standard
>	Ga	71	148.3	5.1				mg/L	50	Standard
	Rb	85	50.0	45.8				ug/L	20	Standard
	Y	89	393664.1	1.4				ug/L	376602	Standard
>	Rh	103	30.0	66.7				ug/L	17	Standard
	Mo	98	67.7	16.2	**0.0222**	0.004	19.7	ug/L	8	Standard
	Ag	107	9538.7	1.3	**1.5370**	0.009	0.6	ug/L	81	Standard
	Cd	111	98094.4	0.8	**48.9748**	0.877	1.8	mg/L	3	Standard
	Cd	114	242274.5	1.2	**48.9293**	1.051	2.1	ug/L	7	Standard
>	In	115	541531.8	1.4				ug/L	524722	Standard
	Sn	118	718.4	12.9	**0.0399**	0.018	44.4	ug/L	715	Standard
	Sb	123	213208.4	0.4	**47.2901**	0.830	1.8	ug/L	201	Standard
	Ba	135	91061.5	0.2	**48.6273**	0.710	1.5	ug/L	108	Standard
	Ce	140	75.0	30.6				ug/L	30	Standard
>	Tb	159	801949.7	1.3				ug/L	792236	Standard
	Ho	165	15.0	66.7				ug/L	7	Standard
	Tl	203	366890.3	0.3	**47.3558**	0.332	0.7	ug/L	9	Standard
	Tl	205	325136.0	2.3	**49.3487**	1.280	2.6	ug/L	0	Standard
	Pb	206	237911.3	0.3	**50.7518**	0.233	0.5	ug/L	216	Standard
	Pb	207	208877.0	1.0	**48.9436**	0.182	0.4	ug/L	180	Standard
	Pb	208	858938.6	1.3	**49.5964**	0.972	2.0	ug/L	717	Standard
	U	238	311185.8	0.3	**49.3920**	0.274	0.6	ug/L	4	Standard
>	Bi	209	466882.1	0.8				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	43.3	37.1	**0.0108**	0.021	197.0	mg/L	20	Standard
K	39	21.7	26.6	**-0.0712**	0.040	55.8	mg/L	22	Standard
Ca	43	35.0	37.8	**-5.4027**	2.947	54.5	mg/L	47	Standard
Fe	54	122.0	30.6	**-0.0208**	0.028	132.3	mg/L	151	Standard
Fe	57	123.3	18.3	**-0.2836**	0.067	23.8	mg/L	195	Standard
Sc-1	45	31167.0	1.6				mg/L	29647	Standard
Cl	35	163506.3	1.5				ug/L	154152	Standard
Kr	83	0.3	173.2				ug/L	3	Standard
Br	81	5531.1	27.3				ug/L	1607	Standard
P	31	23947.2	1.0				ug/L	22752	Standard
S	34	5137.5	2.8				ug/L	5049	Standard
Sr	88	76.7	46.3				ug/L	87	Standard
C	12	70.0	14.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	13.2	44.9				mg/L	10	Standard
Ho-1	165	15.0	66.7				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	1283.4	6.1				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.443	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.849	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.204
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.421
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606066401 WG572730-01
Sample Date/Time: Thursday, June 16, 2016 19:12:30
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75454.2	2.8				ug/L	51024	Standard
	Be	9	20.0	90.1	**-0.0048**	0.015	318.2	ug/L	7	Standard
	Al	27	11047678.0	1.9	**52.4883**	1.233	2.3	ug/L	625	Standard
	Sc	45	29264.9	1.3				ug/L	29647	Standard
	Ti	47	190.7	4.0	**0.5084**	0.037	7.3	ug/L	57	Standard
	V	51	1712.7	18.3	**0.0872**	0.046	52.6	ug/L	1142	Standard
	Cr	52	16604.1	1.9	**1.4659**	0.021	1.4	ug/L	6628	Standard
	Cr	53	9623.1	1.9	**10.5512**	0.372	3.5	ug/L	430	Standard
	Mn	55	18349.1	1.7	**3.1531**	0.090	2.8	ug/L	603	Standard
	Co	59	837.4	4.2	**0.0969**	0.005	4.7	ug/L	237	Standard
	Ni	60	47686.6	1.9	**26.1478**	0.400	1.5	ug/L	141	Standard
	Cu	65	35936.9	2.3	**20.2125**	0.174	0.9	ug/L	109	Standard
	Zn	66	7845.4	2.5	**7.2754**	0.080	1.1	ug/L	159	Standard
>	**Ge**	72	446804.8	1.5				ug/L	474053	Standard
	As	75	226.8	62.9	**0.2410**	0.135	55.9	ug/L	-34	Standard
	Se	82	88.3	14.1	**0.6770**	0.108	16.0	ug/L	14	Standard
	Se-1	77	1010.0	4.4	**13.2164**	0.770	5.8	ug/L	55	Standard
>	**Ga**	71	121.7	4.7				mg/L	50	Standard
	Rb	85	9374.6	1.9				ug/L	20	Standard
	Y	89	379651.4	1.2				ug/L	376602	Standard
>	**Rh**	103	176.7	43.0				ug/L	17	Standard
	Mo	98	6942.1	1.1	**3.0258**	0.008	0.3	ug/L	8	Standard
	Ag	107	107.7	10.4	**0.0063**	0.002	31.0	ug/L	81	Standard
	Cd	111	16.0	28.8	**0.0053**	0.002	45.3	mg/L	3	Standard
	Cd	114	155.3	55.3	**0.0296**	0.019	62.9	ug/L	7	Standard
>	**In**	115	508746.6	0.9				ug/L	524722	Standard
	Sn	118	32234.3	2.4	**6.0825**	0.133	2.2	ug/L	715	Standard
	Sb	123	2505.0	15.1	**0.5762**	0.084	14.6	ug/L	201	Standard
	Ba	135	56364.3	0.3	**32.0167**	0.382	1.2	ug/L	108	Standard
	Ce	140	273.3	12.5				ug/L	30	Standard
>	**Tb**	159	786168.7	0.3				ug/L	792236	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	162.7	17.5	**0.0211**	0.005	21.6	ug/L	9	Standard
	Tl	205	136.7	17.3	**0.0156**	0.004	27.5	ug/L	0	Standard
	Pb	206	51660.3	0.9	**12.3691**	0.134	1.1	ug/L	216	Standard
	Pb	207	43372.0	1.0	**11.4048**	0.082	0.7	ug/L	180	Standard
	Pb	208	183979.7	0.6	**11.9203**	0.168	1.4	ug/L	717	Standard
	U	238	40.0	22.9	**-0.0004**	0.002	429.9	ug/L	4	Standard
>	**Bi**	209	414575.6	1.7				ug/L	460343	Standard

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Na	23	3.3	173.2	**-0.6680**	19.261	2883.4	mg/L	0	Standard
Mg	24	393015.0	2.1	**539.7437**	8.154	1.5	mg/L	20	Standard
K	39	755.0	20.2	**5.6021**	1.177	21.0	mg/L	22	Standard
Ca	43	273.3	16.4	**51.4216**	9.712	18.9	mg/L	47	Standard
Fe	54	153.2	8.8	**0.0113**	0.013	111.5	mg/L	151	Standard
Fe	57	410.0	9.5	**0.6384**	0.113	17.7	mg/L	195	Standard
> **Sc-1**	45	29264.9	1.3				mg/L	29647	Standard
Cl	35	947330.3	0.6				ug/L	154152	Standard
Kr	83	2.7	86.6				ug/L	3	Standard
Br	81	16345.5	3.0				ug/L	1607	Standard
P	31	24364.6	0.6				ug/L	22752	Standard
S	34	5329.3	1.4				ug/L	5049	Standard
Sr	88	195.0	4.4				ug/L	87	Standard
C	12	283.3	24.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	0	Standard
Dy	164	16.0	130.4				mg/L	10	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	339108.5	7.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		147.879	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.252	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.955
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.058
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606066401DP WG572730-05
Sample Date/Time: Thursday, June 16, 2016 19:15:41
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82599.5	0.8				ug/L	51024	Standard
	Be	9	18.3	31.5	**-0.0076**	0.004	53.8	ug/L	7	Standard
	Al	27	12101738.6	2.4	**52.5022**	0.943	1.8	ug/L	625	Standard
	Sc	45	29381.8	2.9				ug/L	29647	Standard
	Ti	47	224.3	6.3	**0.6337**	0.051	8.1	ug/L	57	Standard
	V	51	1757.9	10.9	**0.0962**	0.030	31.3	ug/L	1142	Standard
	Cr	52	17254.5	0.4	**1.5806**	0.019	1.2	ug/L	6628	Standard
	Cr	53	9484.6	4.9	**10.4776**	0.447	4.3	ug/L	430	Standard
	Mn	55	18275.7	1.8	**3.1668**	0.077	2.4	ug/L	603	Standard
	Co	59	934.4	2.3	**0.1143**	0.005	4.1	ug/L	237	Standard
	Ni	60	50219.4	0.9	**27.7712**	0.300	1.1	ug/L	141	Standard
	Cu	65	38180.1	1.8	**21.6588**	0.226	1.0	ug/L	109	Standard
	Zn	66	9011.3	2.3	**8.4634**	0.126	1.5	ug/L	159	Standard
>	**Ge**	72	443106.2	0.8				ug/L	474053	Standard
	As	75	276.8	42.6	**0.2919**	0.111	38.1	ug/L	-34	Standard
	Se	82	109.2	13.4	**0.8866**	0.132	14.9	ug/L	14	Standard
	Se-1	77	1030.4	1.0	**13.6099**	0.054	0.4	ug/L	55	Standard
>	**Ga**	71	125.0	10.6				mg/L	50	Standard
	Rb	85	9914.9	0.9				ug/L	20	Standard
	Y	89	378132.1	0.5				ug/L	376602	Standard
>	**Rh**	103	276.7	11.8				ug/L	17	Standard
	Mo	98	7350.8	1.1	**3.1941**	0.056	1.8	ug/L	8	Standard
	Ag	107	113.3	9.2	**0.0072**	0.002	27.2	ug/L	81	Standard
	Cd	111	7.2	44.2	**0.0006**	0.002	301.0	mg/L	3	Standard
	Cd	114	112.0	53.6	**0.0203**	0.013	64.2	ug/L	7	Standard
>	**In**	115	510414.8	1.0				ug/L	524722	Standard
	Sn	118	31860.1	0.6	**5.9914**	0.071	1.2	ug/L	715	Standard
	Sb	123	1301.1	10.9	**0.2913**	0.031	10.6	ug/L	201	Standard
	Ba	135	58474.3	1.0	**33.1066**	0.180	0.5	ug/L	108	Standard
	Ce	140	143.3	4.0				ug/L	30	Standard
>	**Tb**	159	793633.3	0.5				ug/L	792236	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	126.3	11.6	**0.0156**	0.002	13.8	ug/L	9	Standard
	Tl	205	108.3	7.1	**0.0105**	0.001	12.1	ug/L	0	Standard
	Pb	206	55773.5	1.1	**13.2134**	0.113	0.9	ug/L	216	Standard
	Pb	207	47080.7	0.8	**12.2506**	0.066	0.5	ug/L	180	Standard
	Pb	208	190215.8	0.7	**12.1921**	0.079	0.7	ug/L	717	Standard
	U	238	29.3	17.2	**-0.0024**	0.001	37.4	ug/L	4	Standard
>	**Bi**	209	419055.7	0.3				ug/L	460343	Standard

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Na	23	10.0	50.0	**-22.7084**	17.142	75.5	mg/L	0	Standard
Mg	24	418232.9	1.5	**572.3635**	15.570	2.7	mg/L	20	Standard
K	39	648.3	17.8	**4.7577**	0.876	18.4	mg/L	22	Standard
Ca	43	226.7	8.4	**40.2176**	3.679	9.1	mg/L	47	Standard
Fe	54	135.1	14.9	**-0.0042**	0.016	368.6	mg/L	151	Standard
Fe	57	428.3	6.4	**0.6912**	0.080	11.6	mg/L	195	Standard
> **Sc-1**	45	29381.8	2.9				mg/L	29647	Standard
Cl	35	974394.4	0.6				ug/L	154152	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	16325.5	4.8				ug/L	1607	Standard
P	31	25179.2	0.8				ug/L	22752	Standard
S	34	5427.6	0.7				ug/L	5049	Standard
Sr	88	171.7	19.8				ug/L	87	Standard
C	12	336.7	27.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	12.9	93.1				mg/L	10	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	345162.2	8.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		161.883	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.472	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.273
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.031
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: L1606066401DP WG572730-05
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Method 6020 - Summary Report

Sample ID: L1606072903 WG572730-02
Sample Date/Time: Thursday, June 16, 2016 19:18:52
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83167.6	0.4				ug/L	51024	Standard
	Be	9	1595.1	11.9	**1.1433**	0.143	12.5	ug/L	7	Standard
	Al	27	12508760.9	0.4	**53.9014**	0.277	0.5	ug/L	625	Standard
	Sc	45	32636.8	2.2				ug/L	29647	Standard
	Ti	47	734.7	25.1	**2.2005**	0.603	27.4	ug/L	57	Standard
	V	51	2647.4	9.7	**0.1914**	0.035	18.3	ug/L	1142	Standard
	Cr	52	10901.3	2.2	**0.5035**	0.035	7.0	ug/L	6628	Standard
	Cr	53	1756.8	5.0	**1.3940**	0.093	6.7	ug/L	430	Standard
	Mn	55	2418538.1	0.3	**393.4562**	2.564	0.7	ug/L	603	Standard
	Co	59	167227.2	1.2	**25.0953**	0.408	1.6	ug/L	237	Standard
	Ni	60	19549.3	0.9	**9.7135**	0.121	1.2	ug/L	141	Standard
	Cu	65	6980.3	2.4	**3.5215**	0.098	2.8	ug/L	109	Standard
	Zn	66	33084.1	0.4	**28.6038**	0.229	0.8	ug/L	159	Standard
>	**Ge**	72	490606.8	0.4				ug/L	474053	Standard
	As	75	126.0	22.9	**0.1350**	0.026	18.9	ug/L	-34	Standard
	Se	82	91.9	23.2	**0.6344**	0.188	29.7	ug/L	14	Standard
	Se-1	77	154.7	9.2	**1.2017**	0.186	15.5	ug/L	55	Standard
>	**Ga**	71	938.4	4.7				mg/L	50	Standard
	Rb	85	17583.5	1.7				ug/L	20	Standard
	Y	89	717044.0	1.5				ug/L	376602	Standard
>	**Rh**	103	161.7	28.1				ug/L	17	Standard
	Mo	98	55.5	8.7	**0.0173**	0.002	11.5	ug/L	8	Standard
	Ag	107	113.0	9.4	**0.0061**	0.002	26.4	ug/L	81	Standard
	Cd	111	309.2	2.3	**0.1520**	0.004	2.4	mg/L	3	Standard
	Cd	114	755.2	14.7	**0.1496**	0.023	15.3	ug/L	7	Standard
>	**In**	115	538550.6	0.6				ug/L	524722	Standard
	Sn	118	861.7	3.5	**0.0664**	0.005	7.2	ug/L	715	Standard
	Sb	123	1408.2	6.3	**0.2992**	0.018	6.0	ug/L	201	Standard
	Ba	135	39659.2	1.6	**21.2618**	0.456	2.1	ug/L	108	Standard
	Ce	140	1381297.9	0.5				ug/L	30	Standard
>	**Tb**	159	851012.3	2.0				ug/L	792236	Standard
	Ho	165	27889.0	1.7				ug/L	7	Standard
	Tl	203	294.7	3.0	**0.0347**	0.002	6.0	ug/L	9	Standard
	Tl	205	265.0	1.9	**0.0316**	0.001	3.8	ug/L	0	Standard
	Pb	206	5868.1	0.6	**1.1726**	0.027	2.3	ug/L	216	Standard
	Pb	207	4864.8	1.2	**1.0656**	0.042	4.0	ug/L	180	Standard
	Pb	208	20514.5	1.0	**1.1052**	0.038	3.5	ug/L	717	Standard
	U	238	2495.2	0.6	**0.3809**	0.010	2.6	ug/L	4	Standard
>	**Bi**	209	476253.4	2.7				ug/L	460343	Standard

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Na	23	11.7	24.7	**-24.3418**	9.212	37.8	mg/L	0	Standard
Mg	24	2530.2	1.8	**3.0712**	0.030	1.0	mg/L	20	Standard
K	39	120.0	8.3	**0.6043**	0.087	14.3	mg/L	22	Standard
Ca	43	210.0	28.9	**31.2136**	11.780	37.7	mg/L	47	Standard
Fe	54	1764.1	4.7	**1.1881**	0.059	5.0	mg/L	151	Standard
Fe	57	758.4	15.5	**1.4817**	0.281	18.9	mg/L	195	Standard
> **Sc-1**	45	32636.8	2.2				mg/L	29647	Standard
Cl	35	300327.3	0.4				ug/L	154152	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	5971.2	0.5				ug/L	1607	Standard
P	31	27339.7	3.0				ug/L	22752	Standard
S	34	4589.0	1.4				ug/L	5049	Standard
Sr	88	426.7	18.4				ug/L	87	Standard
C	12	223.3	9.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	48154.5	2.6				mg/L	10	Standard
Ho-1	165	27889.0	1.7				mg/L	7	Standard
Er	166	24125.9	1.2				mg/L	3	Standard
I	127	233033.3	7.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		162.997	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.492	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	102.635
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.456
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606072903S WG572730-06
Sample Date/Time: Thursday, June 16, 2016 19:22:04
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84593.9	1.7				ug/L	51024	Standard
	Be	9	63747.2	1.4	**45.7285**	1.409	3.1	ug/L	7	Standard
	Al	27	12163442.1	0.7	**51.5412**	1.132	2.2	ug/L	625	Standard
	Sc	45	33602.2	1.6				ug/L	29647	Standard
	Ti	47	659.7	12.0	**2.0785**	0.257	12.4	ug/L	57	Standard
	V	51	353641.1	0.6	**50.6609**	2.238	4.4	ug/L	1142	Standard
	Cr	52	356717.6	1.1	**48.6215**	2.101	4.3	ug/L	6628	Standard
	Cr	53	45185.6	0.4	**49.2470**	2.494	5.1	ug/L	430	Standard
	Mn	55	2601278.5	0.7	**447.6689**	18.661	4.2	ug/L	603	Standard
	Co	59	487177.6	1.1	**77.4106**	2.935	3.8	ug/L	237	Standard
	Ni	60	108783.5	0.6	**57.5580**	2.469	4.3	ug/L	141	Standard
	Cu	65	95167.6	1.2	**51.6700**	2.084	4.0	ug/L	109	Standard
	Zn	66	84097.8	1.1	**77.2971**	3.015	3.9	ug/L	159	Standard
>	**Ge**	72	464397.8	4.8				ug/L	474053	Standard
	As	75	53679.2	1.0	**49.5736**	2.027	4.1	ug/L	-34	Standard
	Se	82	5551.8	0.7	**51.1533**	2.421	4.7	ug/L	14	Standard
	Se-1	77	3791.1	3.4	**49.6831**	1.424	2.9	ug/L	55	Standard
>	**Ga**	71	958.4	5.4				mg/L	50	Standard
	Rb	85	16624.1	3.0				ug/L	20	Standard
	Y	89	707625.8	0.5				ug/L	376602	Standard
>	**Rh**	103	125.0	8.0				ug/L	17	Standard
	Mo	98	62.1	4.6	**0.0194**	0.002	8.1	ug/L	8	Standard
	Ag	107	8913.6	1.8	**1.4061**	0.009	0.7	ug/L	81	Standard
	Cd	111	96671.0	1.6	**47.2862**	1.085	2.3	mg/L	3	Standard
	Cd	114	237983.0	1.9	**47.0816**	0.696	1.5	ug/L	7	Standard
>	**In**	115	552753.1	1.8				ug/L	524722	Standard
	Sn	118	638.3	15.9	**0.0231**	0.018	79.7	ug/L	715	Standard
	Sb	123	215408.0	1.4	**46.8023**	0.239	0.5	ug/L	201	Standard
	Ba	135	124502.1	0.5	**65.1569**	0.974	1.5	ug/L	108	Standard
	Ce	140	1314417.9	1.3				ug/L	30	Standard
>	**Tb**	159	881280.8	1.9				ug/L	792236	Standard
	Ho	165	27413.1	3.0				ug/L	7	Standard
	Tl	203	374882.9	0.8	**46.6863**	0.358	0.8	ug/L	9	Standard
	Tl	205	338218.3	0.5	**49.5337**	0.988	2.0	ug/L	0	Standard
	Pb	206	247963.0	0.9	**51.0419**	0.964	1.9	ug/L	216	Standard
	Pb	207	216265.5	0.6	**48.8980**	0.689	1.4	ug/L	180	Standard
	Pb	208	876968.0	0.5	**48.8596**	0.973	2.0	ug/L	717	Standard
	U	238	329321.5	0.3	**50.4388**	0.916	1.8	ug/L	4	Standard
>	**Bi**	209	483914.0	1.5				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.7187**	8.199	143.4	mg/L	0	Standard
Mg	24	2360.2	1.3	**2.7784**	0.056	2.0	mg/L	20	Standard
K	39	110.0	31.5	**0.5143**	0.242	47.0	mg/L	22	Standard
Ca	43	180.0	27.4	**23.8358**	9.598	40.3	mg/L	47	Standard
Fe	54	1737.6	2.8	**1.1314**	0.022	1.9	mg/L	151	Standard
Fe	57	686.7	6.3	**1.2285**	0.107	8.7	mg/L	195	Standard
Sc-1	45	33602.2	1.6				mg/L	29647	Standard
Cl	35	293323.6	1.0				ug/L	154152	Standard
Kr	83	1.7	124.9				ug/L	3	Standard
Br	81	5094.2	9.2				ug/L	1607	Standard
P	31	27336.3	1.5				ug/L	22752	Standard
S	34	4702.4	5.5				ug/L	5049	Standard
Sr	88	400.0	11.5				ug/L	87	Standard
C	12	270.0	13.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	45484.4	2.9				mg/L	10	Standard
Ho-1	165	27413.1	3.0				mg/L	7	Standard
Er	166	23461.5	1.2				mg/L	3	Standard
I	127	221641.3	5.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		165.792	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.963	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	105.342
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	105.120
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606072903S WG572730-06
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Method 6020 - Summary Report

Sample ID: L1606072903SD WG572730-07
Sample Date/Time: Thursday, June 16, 2016 19:25:15
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86461.0	1.0				ug/L	51024	Standard
	Be	9	64063.5	1.0	**44.9486**	0.413	0.9	ug/L	7	Standard
	Al	27	12456061.3	1.7	**51.6274**	0.457	0.9	ug/L	625	Standard
	Sc	45	32062.2	2.4				ug/L	29647	Standard
	Ti	47	858.4	8.8	**2.9028**	0.272	9.4	ug/L	57	Standard
	V	51	359033.7	1.5	**54.0078**	1.033	1.9	ug/L	1142	Standard
	Cr	52	357394.7	0.2	**51.1915**	0.354	0.7	ug/L	6628	Standard
	Cr	53	45598.6	3.3	**52.1815**	1.498	2.9	ug/L	430	Standard
	Mn	55	2668759.8	1.0	**482.1929**	4.954	1.0	ug/L	603	Standard
	Co	59	502894.6	1.2	**83.9097**	1.409	1.7	ug/L	237	Standard
	Ni	60	107927.8	1.4	**59.9510**	0.489	0.8	ug/L	141	Standard
	Cu	65	93853.1	1.2	**53.5019**	0.490	0.9	ug/L	109	Standard
	Zn	66	83974.7	0.9	**81.0494**	0.217	0.3	ug/L	159	Standard
>	**Ge**	72	441763.7	0.6				ug/L	474053	Standard
	As	75	55613.6	0.2	**53.9212**	0.243	0.5	ug/L	-34	Standard
	Se	82	6086.3	0.3	**58.8898**	0.200	0.3	ug/L	14	Standard
	Se-1	77	3831.8	0.4	**52.8020**	0.183	0.3	ug/L	55	Standard
>	**Ga**	71	981.7	7.0				mg/L	50	Standard
	Rb	85	19140.4	1.5				ug/L	20	Standard
	Y	89	713271.6	1.4				ug/L	376602	Standard
>	**Rh**	103	201.7	43.7				ug/L	17	Standard
	Mo	98	570.8	5.1	**0.2183**	0.009	3.9	ug/L	8	Standard
	Ag	107	9150.1	1.0	**1.4089**	0.031	2.2	ug/L	81	Standard
	Cd	111	99261.8	1.0	**47.3819**	0.778	1.6	mg/L	3	Standard
	Cd	114	244188.0	1.4	**47.1444**	0.226	0.5	ug/L	7	Standard
>	**In**	115	566399.8	1.8				ug/L	524722	Standard
	Sn	118	1108.4	1.6	**0.1012**	0.003	3.2	ug/L	715	Standard
	Sb	123	226221.3	0.0	**47.9756**	0.857	1.8	ug/L	201	Standard
	Ba	135	281949.2	0.1	**144.0743**	2.519	1.7	ug/L	108	Standard
	Ce	140	1344322.7	0.7				ug/L	30	Standard
>	**Tb**	159	856521.4	0.5				ug/L	792236	Standard
	Ho	165	27917.4	1.4				ug/L	7	Standard
	Tl	203	379214.9	0.1	**48.6259**	0.229	0.5	ug/L	9	Standard
	Tl	205	341701.9	0.7	**51.5229**	0.634	1.2	ug/L	0	Standard
	Pb	206	250400.5	0.4	**53.0698**	0.469	0.9	ug/L	216	Standard
	Pb	207	218768.7	0.4	**50.9304**	0.424	0.8	ug/L	180	Standard
	Pb	208	894325.1	0.6	**51.3006**	0.445	0.9	ug/L	717	Standard
	U	238	333573.8	0.7	**52.6006**	0.628	1.2	ug/L	4	Standard
>	**Bi**	209	469954.5	0.6				ug/L	460343	Standard

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Na	23	3.3	173.2	**0.1020**	17.927	17574.6	mg/L	0	Standard
Mg	24	6119.6	7.0	**7.6313**	0.602	7.9	mg/L	20	Standard
K	39	128.3	31.7	**0.6738**	0.269	39.8	mg/L	22	Standard
Ca	43	203.3	13.5	**30.6746**	5.036	16.4	mg/L	47	Standard
Fe	54	1790.2	1.0	**1.2312**	0.019	1.5	mg/L	151	Standard
Fe	57	780.0	10.9	**1.5831**	0.191	12.1	mg/L	195	Standard
Sc-1	45	32062.2	2.4				mg/L	29647	Standard
Cl	35	296539.1	0.3				ug/L	154152	Standard
Kr	83	1.0	0.0				ug/L	3	Standard
Br	81	116096.7	2.9				ug/L	1607	Standard
P	31	27080.9	1.8				ug/L	22752	Standard
S	34	4614.0	1.1				ug/L	5049	Standard
Sr	88	778.4	3.2				ug/L	87	Standard
C	12	196.7	22.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	46630.2	1.4				mg/L	10	Standard
Ho-1	165	27917.4	1.4				mg/L	7	Standard
Er	166	24322.8	2.2				mg/L	3	Standard
I	127	176317.1	2.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		169.451	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.189	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606072903SD WG572730-07
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.943
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.088
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606072903SD WG572730-07
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Method 6020 - Summary Report

Sample ID: L1606075401
Sample Date/Time: Thursday, June 16, 2016 19:28:27
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82366.7	2.1				ug/L	51024	Standard
	Be	9	51.7	14.8	**0.0170**	0.006	32.8	ug/L	7	Standard
	Al	27	17891826.3	2.7	**77.8692**	2.435	3.1	ug/L	625	Standard
	Sc	45	30427.2	1.9				ug/L	29647	Standard
	Ti	47	2820.9	1.0	**9.4421**	0.167	1.8	ug/L	57	Standard
	V	51	13745.3	1.6	**1.8076**	0.041	2.3	ug/L	1142	Standard
	Cr	52	20733.8	0.8	**1.9525**	0.033	1.7	ug/L	6628	Standard
	Cr	53	4984.2	5.0	**5.0448**	0.169	3.3	ug/L	430	Standard
	Mn	55	105692.4	1.8	**18.0774**	0.683	3.8	ug/L	603	Standard
	Co	59	4134.2	4.3	**0.6164**	0.033	5.4	ug/L	237	Standard
	Ni	60	5645.1	0.8	**2.9135**	0.034	1.2	ug/L	141	Standard
	Cu	65	191176.6	0.9	**103.9111**	2.891	2.8	ug/L	109	Standard
	Zn	66	106024.3	0.8	**97.5572**	2.630	2.7	ug/L	159	Standard
>	**Ge**	72	463769.1	2.0				ug/L	474053	Standard
	As	75	301.2	25.5	**0.3039**	0.075	24.6	ug/L	-34	Standard
	Se	82	127.3	9.6	**1.0095**	0.134	13.3	ug/L	14	Standard
	Se-1	77	289.7	4.6	**3.1103**	0.134	4.3	ug/L	55	Standard
>	**Ga**	71	440.0	5.9				mg/L	50	Standard
	Rb	85	66395.2	1.7				ug/L	20	Standard
	Y	89	407745.6	2.4				ug/L	376602	Standard
>	**Rh**	103	96.7	20.9				ug/L	17	Standard
	Mo	98	1561.5	1.4	**0.6398**	0.014	2.1	ug/L	8	Standard
	Ag	107	747.4	3.8	**0.1101**	0.008	7.2	ug/L	81	Standard
	Cd	111	185.0	11.1	**0.0900**	0.013	14.1	mg/L	3	Standard
	Cd	114	453.1	6.4	**0.0885**	0.009	9.7	ug/L	7	Standard
>	**In**	115	537707.7	3.1				ug/L	524722	Standard
	Sn	118	4545.7	5.8	**0.7338**	0.032	4.3	ug/L	715	Standard
	Sb	123	909.7	21.3	**0.1892**	0.048	25.1	ug/L	201	Standard
	Ba	135	39811.9	1.6	**21.3825**	0.338	1.6	ug/L	108	Standard
	Ce	140	8849.3	2.5				ug/L	30	Standard
>	**Tb**	159	810136.1	3.5				ug/L	792236	Standard
	Ho	165	230.0	24.5				ug/L	7	Standard
	Tl	203	286.7	27.5	**0.0315**	0.010	30.7	ug/L	9	Standard
	Tl	205	228.3	32.9	**0.0241**	0.011	44.8	ug/L	0	Standard
	Pb	206	10175.4	0.5	**1.9406**	0.024	1.2	ug/L	216	Standard
	Pb	207	8305.3	0.7	**1.7365**	0.026	1.5	ug/L	180	Standard
	Pb	208	35130.3	0.9	**1.8082**	0.024	1.3	ug/L	717	Standard
	U	238	1915.5	3.0	**0.2719**	0.010	3.6	ug/L	4	Standard
>	**Bi**	209	508087.3	0.9				ug/L	460343	Standard

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Na	23	3.3	86.6	**-0.2885**	9.302	3224.4	mg/L	0	Standard
Mg	24	30961.6	1.7	**40.8617**	0.835	2.0	mg/L	20	Standard
K	39	656.7	18.1	**4.6487**	0.870	18.7	mg/L	22	Standard
Ca	43	158.3	34.8	**22.7292**	12.064	53.1	mg/L	47	Standard
Fe	54	990.1	10.0	**0.6701**	0.088	13.2	mg/L	151	Standard
Fe	57	505.0	3.4	**0.8773**	0.078	8.8	mg/L	195	Standard
Sc-1	45	30427.2	1.9				mg/L	29647	Standard
Cl	35	217230.9	2.7				ug/L	154152	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	12551.9	10.7				ug/L	1607	Standard
P	31	26334.5	1.0				ug/L	22752	Standard
S	34	4555.7	2.6				ug/L	5049	Standard
Sr	88	170.0	8.8				ug/L	87	Standard
C	12	793.4	8.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	96.7	15.8				mg/L	0	Standard
Dy	164	343.6	11.4				mg/L	10	Standard
Ho-1	165	230.0	24.5				mg/L	7	Standard
Er	166	203.3	15.0				mg/L	3	Standard
I	127	19776.3	5.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		161.427	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.831	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	102.475
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	110.371
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: L1606075401PS WG572869-01
Sample Date/Time: Thursday, June 16, 2016 19:31:38
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83402.3	0.7				ug/L	51024	Standard
	Be	9	63124.6	1.4	**45.9169**	0.909	2.0	ug/L	7	Standard
	Al	27	17971744.4	2.8	**77.2382**	2.615	3.4	ug/L	625	Standard
	Sc	45	30682.7	4.2				ug/L	29647	Standard
	Ti	47	2792.9	5.6	**9.1051**	0.451	5.0	ug/L	57	Standard
	V	51	382253.4	0.5	**53.4006**	0.320	0.6	ug/L	1142	Standard
	Cr	52	373919.2	1.3	**49.7147**	0.405	0.8	ug/L	6628	Standard
	Cr	53	49711.5	2.7	**52.8478**	1.467	2.8	ug/L	430	Standard
	Mn	55	406935.5	0.9	**68.1780**	0.090	0.1	ug/L	603	Standard
	Co	59	347435.1	1.8	**53.8207**	0.541	1.0	ug/L	237	Standard
	Ni	60	95683.2	0.8	**49.3519**	0.338	0.7	ug/L	141	Standard
	Cu	65	276145.4	0.3	**146.3258**	0.986	0.7	ug/L	109	Standard
	Zn	66	154951.3	0.2	**139.0713**	0.812	0.6	ug/L	159	Standard
>	**Ge**	72	475646.5	0.8				ug/L	474053	Standard
	As	75	55395.2	0.9	**49.8846**	0.262	0.5	ug/L	-34	Standard
	Se	82	5840.3	1.9	**52.4634**	0.711	1.4	ug/L	14	Standard
	Se-1	77	4138.2	1.9	**52.9629**	0.853	1.6	ug/L	55	Standard
>	**Ga**	71	441.7	10.5				mg/L	50	Standard
	Rb	85	63605.0	2.6				ug/L	20	Standard
	Y	89	384934.5	2.9				ug/L	376602	Standard
>	**Rh**	103	75.0	30.6				ug/L	17	Standard
	Mo	98	1506.0	0.6	**0.6341**	0.012	1.9	ug/L	8	Standard
	Ag	107	301051.6	0.9	**50.6101**	0.914	1.8	ug/L	81	Standard
	Cd	111	98227.5	0.6	**50.7616**	0.701	1.4	mg/L	3	Standard
	Cd	114	243020.5	0.8	**50.8000**	0.654	1.3	ug/L	7	Standard
>	**In**	115	523174.3	1.7				ug/L	524722	Standard
	Sn	118	4532.3	4.2	**0.7549**	0.047	6.3	ug/L	715	Standard
	Sb	123	222938.5	1.8	**51.1866**	1.325	2.6	ug/L	201	Standard
	Ba	135	127885.1	0.6	**70.7164**	1.199	1.7	ug/L	108	Standard
	Ce	140	8752.5	5.4				ug/L	30	Standard
>	**Tb**	159	809108.6	3.0				ug/L	792236	Standard
	Ho	165	236.7	12.0				ug/L	7	Standard
	Tl	203	379894.9	0.9	**44.3716**	1.016	2.3	ug/L	9	Standard
	Tl	205	341979.7	0.7	**46.9709**	1.246	2.7	ug/L	0	Standard
	Pb	206	255943.3	0.4	**49.4070**	1.138	2.3	ug/L	216	Standard
	Pb	207	222866.5	0.7	**47.2585**	1.195	2.5	ug/L	180	Standard
	Pb	208	910678.1	0.7	**47.5815**	1.216	2.6	ug/L	717	Standard
	U	238	341419.2	0.1	**49.0368**	0.922	1.9	ug/L	4	Standard
>	**Bi**	209	516066.4	2.0				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.2328**	9.040	172.8	mg/L	0	Standard
Mg	24	30580.8	0.9	**40.0684**	1.906	4.8	mg/L	20	Standard
K	39	683.3	11.4	**4.8016**	0.478	10.0	mg/L	22	Standard
Ca	43	166.7	18.3	**24.6755**	8.602	34.9	mg/L	47	Standard
Fe	54	991.6	6.4	**0.6639**	0.031	4.7	mg/L	151	Standard
Fe	57	553.3	10.9	**1.0152**	0.249	24.5	mg/L	195	Standard
> **Sc-1**	45	30682.7	4.2				mg/L	29647	Standard
Cl	35	218863.4	0.6				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	11077.4	2.3				ug/L	1607	Standard
P	31	26757.0	3.2				ug/L	22752	Standard
S	34	4704.1	1.5				ug/L	5049	Standard
Sr	88	165.0	10.9				ug/L	87	Standard
C	12	693.3	9.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	90.0	50.9				mg/L	0	Standard
Dy	164	284.7	30.5				mg/L	10	Standard
Ho-1	165	236.7	12.0				mg/L	7	Standard
Er	166	180.0	22.2				mg/L	3	Standard
I	127	17368.3	4.1				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		163.456	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.336	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.705	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	112.105	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1606075401SDL WG572869-02
Sample Date/Time: Thursday, June 16, 2016 19:34:50
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84174.9	1.5				ug/L	51024	Standard
	Be	9	35.0	14.3	**0.0042**	0.004	88.5	ug/L	7	Standard
	Al	27	3660235.8	1.3	**15.5808**	0.435	2.8	ug/L	625	Standard
	Sc	45	32820.5	2.8				ug/L	29647	Standard
	Ti	47	607.7	5.7	**1.8669**	0.107	5.7	ug/L	57	Standard
	V	51	4082.9	1.0	**0.4082**	0.006	1.6	ug/L	1142	Standard
	Cr	52	9894.2	1.7	**0.4222**	0.007	1.6	ug/L	6628	Standard
	Cr	53	1803.4	1.6	**1.5160**	0.013	0.8	ug/L	430	Standard
	Mn	55	21935.9	0.6	**3.5843**	0.077	2.1	ug/L	603	Standard
	Co	59	994.0	3.5	**0.1140**	0.003	2.9	ug/L	237	Standard
	Ni	60	1361.1	4.8	**0.6305**	0.026	4.2	ug/L	141	Standard
	Cu	65	40184.2	0.6	**21.4035**	0.546	2.6	ug/L	109	Standard
	Zn	66	22341.5	1.6	**20.0059**	0.236	1.2	ug/L	159	Standard
>	**Ge**	72	472090.7	2.0				ug/L	474053	Standard
	As	75	70.8	22.3	**0.0894**	0.015	16.6	ug/L	-34	Standard
	Se	82	38.3	18.3	**0.1793**	0.069	38.5	ug/L	14	Standard
	Se-1	77	126.7	16.1	**0.9154**	0.302	33.0	ug/L	55	Standard
>	**Ga**	71	170.0	15.6				mg/L	50	Standard
	Rb	85	13192.4	0.8				ug/L	20	Standard
	Y	89	392636.4	3.5				ug/L	376602	Standard
>	**Rh**	103	25.0	69.3				ug/L	17	Standard
	Mo	98	328.6	6.7	**0.1240**	0.011	8.7	ug/L	8	Standard
	Ag	107	258.3	8.0	**0.0280**	0.003	12.2	ug/L	81	Standard
	Cd	111	44.1	38.1	**0.0179**	0.008	45.4	mg/L	3	Standard
	Cd	114	91.6	47.0	**0.0140**	0.009	61.0	ug/L	7	Standard
>	**In**	115	563812.4	1.7				ug/L	524722	Standard
	Sn	118	1306.7	7.2	**0.1365**	0.020	14.5	ug/L	715	Standard
	Sb	123	2201.6	19.8	**0.4534**	0.085	18.8	ug/L	201	Standard
	Ba	135	8201.6	0.8	**4.1541**	0.077	1.9	ug/L	108	Standard
	Ce	140	1823.4	12.4				ug/L	30	Standard
>	**Tb**	159	855756.3	0.3				ug/L	792236	Standard
	Ho	165	45.0	11.1				ug/L	7	Standard
	Tl	203	135.3	4.5	**0.0137**	0.001	4.2	ug/L	9	Standard
	Tl	205	115.0	7.5	**0.0084**	0.001	13.4	ug/L	0	Standard
	Pb	206	2315.2	1.8	**0.4035**	0.003	0.8	ug/L	216	Standard
	Pb	207	1893.5	0.7	**0.3593**	0.003	0.7	ug/L	180	Standard
	Pb	208	7952.2	1.5	**0.3697**	0.005	1.4	ug/L	717	Standard
	U	238	417.0	3.9	**0.0540**	0.002	3.2	ug/L	4	Standard
>	**Bi**	209	501935.6	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	6119.6	2.2	**7.4516**	0.184	2.5	mg/L	20	Standard
K	39	163.3	26.0	**0.8923**	0.268	30.1	mg/L	22	Standard
Ca	43	58.3	13.1	**-0.8716**	1.621	186.0	mg/L	47	Standard
Fe	54	338.9	14.2	**0.1347**	0.043	31.9	mg/L	151	Standard
Fe	57	201.7	14.9	**-0.0843**	0.069	82.1	mg/L	195	Standard
> **Sc-1**	45	32820.5	2.8				mg/L	29647	Standard
Cl	35	191817.3	0.7				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	3760.5	5.3				ug/L	1607	Standard
P	31	26361.2	0.5				ug/L	22752	Standard
S	34	5075.9	2.0				ug/L	5049	Standard
Sr	88	91.7	22.0				ug/L	87	Standard
C	12	203.3	19.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	124.9				mg/L	0	Standard
Dy	164	57.6	17.4				mg/L	10	Standard
Ho-1	165	45.0	11.1				mg/L	7	Standard
Er	166	50.0	34.6				mg/L	3	Standard
I	127	5225.9	3.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		164.971	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.586	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.450
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.035
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 19:38:03
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75524.5	1.6				ug/L	51024	Standard
	Be	9	58757.1	2.5	**47.1905**	0.427	0.9	ug/L	7	Standard
	Al	27	8592238.6	0.7	**40.7782**	0.896	2.2	ug/L	625	Standard
	Sc	45	30089.9	1.6				ug/L	29647	Standard
	Ti	47	29681.7	0.7	**100.0625**	1.696	1.7	ug/L	57	Standard
	V	51	362295.0	0.1	**51.4700**	1.097	2.1	ug/L	1142	Standard
	Cr	52	362530.7	0.7	**49.0151**	1.305	2.7	ug/L	6628	Standard
	Cr	53	44988.4	1.6	**48.6083**	1.321	2.7	ug/L	430	Standard
	Mn	55	309292.7	1.9	**52.6874**	2.042	3.9	ug/L	603	Standard
	Co	59	348007.0	1.3	**54.8425**	1.822	3.3	ug/L	237	Standard
	Ni	60	92789.3	1.3	**48.6823**	1.578	3.2	ug/L	141	Standard
	Cu	65	90263.4	0.9	**48.6062**	1.434	3.0	ug/L	109	Standard
	Zn	66	54352.7	0.8	**49.4652**	1.123	2.3	ug/L	159	Standard
>	Ge	72	467786.9	2.0				ug/L	474053	Standard
	As	75	53262.0	0.4	**48.7810**	0.849	1.7	ug/L	-34	Standard
	Se	82	5640.4	1.6	**51.5356**	1.525	3.0	ug/L	14	Standard
	Se-1	77	3823.8	0.2	**49.7310**	1.059	2.1	ug/L	55	Standard
>	Ga	71	100.0	10.0				mg/L	50	Standard
	Rb	85	738.4	4.8				ug/L	20	Standard
	Y	89	389211.3	4.2				ug/L	376602	Standard
>	Rh	103	41.7	45.4				ug/L	17	Standard
	Mo	98	258410.6	0.4	**108.3200**	0.551	0.5	ug/L	8	Standard
	Ag	107	305258.5	0.7	**50.6525**	0.191	0.4	ug/L	81	Standard
	Cd	111	98577.0	0.6	**50.2856**	0.543	1.1	mg/L	3	Standard
	Cd	114	240956.8	0.8	**49.7198**	0.544	1.1	ug/L	7	Standard
>	In	115	529955.9	0.8				ug/L	524722	Standard
	Sn	118	279031.2	1.4	**51.1979**	0.292	0.6	ug/L	715	Standard
	Sb	123	225733.2	0.6	**51.1556**	0.269	0.5	ug/L	201	Standard
	Ba	135	88992.9	0.5	**48.5568**	0.564	1.2	ug/L	108	Standard
	Ce	140	98.3	54.8				ug/L	30	Standard
>	Tb	159	792501.9	1.8				ug/L	792236	Standard
	Ho	165	15.0	57.7				ug/L	7	Standard
	Tl	203	380190.8	0.8	**49.9446**	0.519	1.0	ug/L	9	Standard
	Tl	205	340670.7	0.6	**52.6256**	0.733	1.4	ug/L	0	Standard
	Pb	206	240176.7	0.8	**52.1541**	1.146	2.2	ug/L	216	Standard
	Pb	207	218112.4	0.3	**52.0255**	0.882	1.7	ug/L	180	Standard
	Pb	208	878933.8	0.7	**51.6572**	1.015	2.0	ug/L	717	Standard
	U	238	331188.2	0.5	**53.5069**	0.993	1.9	ug/L	4	Standard
>	Bi	209	458755.1	1.5				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	4233.9	2.0	**5.6123**	0.183	3.3	mg/L	20	Standard
K	39	481.7	4.2	**3.3891**	0.102	3.0	mg/L	22	Standard
Ca	43	51.7	40.3	**-1.3433**	4.578	340.8	mg/L	47	Standard
Fe	54	6013.8	2.7	**4.7022**	0.066	1.4	mg/L	151	Standard
Fe	57	1661.8	4.6	**4.4228**	0.232	5.3	mg/L	195	Standard
> **Sc-1**	45	30089.9	1.6				mg/L	29647	Standard
Cl	35	174583.8	2.5				ug/L	154152	Standard
Kr	83	2.7	108.3				ug/L	3	Standard
Br	81	1656.8	6.5				ug/L	1607	Standard
P	31	26137.5	2.6				ug/L	22752	Standard
S	34	5366.0	2.6				ug/L	5049	Standard
Sr	88	61.7	56.9				ug/L	87	Standard
C	12	73.3	56.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.5	105.0				mg/L	10	Standard
Ho-1	165	15.0	57.7				mg/L	7	Standard
Er	166	10.0					mg/L	3	Standard
I	127	1988.5	11.5				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	94.381		
	Al	27	81.556		
	Sc	45			
	Ti	47	100.063		
	V	51	102.940		
	Cr	52	98.030		
	Cr	53			
	Mn	55	105.375		
	Co	59	109.685		
	Ni	60	97.365		
	Cu	65	97.212		
	Zn	66	98.930		
>	Ge	72		98.678	
	As	75	97.562		
	Se	82	103.071		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	108.320		
Ag	107	101.305		
Cd	111	100.571		
Cd	114			
In	115		100.997	
Sn	118	102.396		
Sb	123	102.311		
Ba	135	97.114		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.889		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.314		
U	238	107.014		
Bi	209		99.655	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 19:41:14
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75737.2	0.8				ug/L	51024	Standard
	Be	9	36.7	64.4	**0.0082**	0.019	228.1	ug/L	7	Standard
	Al	27	2361.9	43.7	**0.0014**	0.005	343.6	ug/L	625	Standard
	Sc	45	30985.0	1.8				ug/L	29647	Standard
	Ti	47	35.3	4.3	**-0.0458**	0.006	13.8	ug/L	57	Standard
	V	51	1037.4	10.2	**-0.0196**	0.013	66.8	ug/L	1142	Standard
	Cr	52	6028.9	1.0	**-0.0922**	0.013	14.2	ug/L	6628	Standard
	Cr	53	500.0	1.7	**0.1170**	0.007	5.6	ug/L	430	Standard
	Mn	55	801.0	1.0	**0.0112**	0.003	28.0	ug/L	603	Standard
	Co	59	242.3	16.2	**-0.0028**	0.006	218.5	ug/L	237	Standard
	Ni	60	194.3	2.8	**0.0250**	0.004	15.2	ug/L	141	Standard
	Cu	65	159.3	5.3	**0.0203**	0.005	24.2	ug/L	109	Standard
	Zn	66	178.7	4.3	**-0.0675**	0.009	14.0	ug/L	159	Standard
>	**Ge**	72	464739.5	1.5				ug/L	474053	Standard
	As	75	7.6	225.8	**0.0322**	0.016	48.9	ug/L	-34	Standard
	Se	82	25.4	8.4	**0.0649**	0.020	31.4	ug/L	14	Standard
	Se-1	77	61.7	15.6	**0.0734**	0.117	159.7	ug/L	55	Standard
>	**Ga**	71	83.3	36.7				mg/L	50	Standard
	Rb	85	23.3	44.6				ug/L	20	Standard
	Y	89	383264.6	3.0				ug/L	376602	Standard
>	**Rh**	103	33.3	8.7				ug/L	17	Standard
	Mo	98	271.3	23.3	**0.1065**	0.026	24.6	ug/L	8	Standard
	Ag	107	117.3	15.5	**0.0068**	0.003	41.5	ug/L	81	Standard
	Cd	111	10.2	68.0	**0.0019**	0.003	183.2	mg/L	3	Standard
	Cd	114	44.5	65.5	**0.0053**	0.006	115.1	ug/L	7	Standard
>	**In**	115	537976.2	1.6				ug/L	524722	Standard
	Sn	118	825.0	17.9	**0.0600**	0.027	44.4	ug/L	715	Standard
	Sb	123	661.4	27.1	**0.1329**	0.040	29.8	ug/L	201	Standard
	Ba	135	101.0	9.8	**-0.0033**	0.006	183.9	ug/L	108	Standard
	Ce	140	31.7	79.5				ug/L	30	Standard
>	**Tb**	159	808787.7	0.7				ug/L	792236	Standard
	Ho	165	10.0					ug/L	7	Standard
	Tl	203	70.0	26.5	**0.0063**	0.002	37.5	ug/L	9	Standard
	Tl	205	83.3	42.1	**0.0046**	0.005	114.0	ug/L	0	Standard
	Pb	206	238.3	5.7	**-0.0064**	0.003	45.5	ug/L	216	Standard
	Pb	207	219.3	6.5	**-0.0033**	0.003	100.2	ug/L	180	Standard
	Pb	208	893.7	3.3	**-0.0072**	0.002	24.1	ug/L	717	Standard
	U	238	52.0	44.7	**0.0005**	0.004	686.7	ug/L	4	Standard
>	**Bi**	209	475308.5	0.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	48.3	26.0	**0.0174**	0.016	91.5	mg/L	20	Standard
K	39	13.3	114.6	**-0.1319**	0.110	83.1	mg/L	22	Standard
Ca	43	30.0	33.3	**-6.4628**	2.334	36.1	mg/L	47	Standard
Fe	54	156.0	6.5	**0.0065**	0.010	153.3	mg/L	151	Standard
Fe	57	171.7	23.4	**-0.1375**	0.125	91.1	mg/L	195	Standard
Sc-1	45	30985.0	1.8				mg/L	29647	Standard
Cl	35	175790.7	1.2				ug/L	154152	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	1680.1	2.7				ug/L	1607	Standard
P	31	26980.7	1.7				ug/L	22752	Standard
S	34	5335.9	0.5				ug/L	5049	Standard
Sr	88	53.3	19.5				ug/L	87	Standard
C	12	106.7	44.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.8	173.2				mg/L	10	Standard
Ho-1	165	10.0					mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	1423.4	7.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.035	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.526
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.251
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606075401SDL WG572869-02
Sample Date/Time: Thursday, June 16, 2016 19:44:27
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75285.0	2.4				ug/L	51024	Standard
	Be	9	28.3	27.0	**0.0018**	0.006	349.7	ug/L	7	Standard
	Al	27	678933.6	1.5	**3.2237**	0.074	2.3	ug/L	625	Standard
	Sc	45	30959.9	1.5				ug/L	29647	Standard
	Ti	47	147.0	11.8	**0.3390**	0.053	15.6	ug/L	57	Standard
	V	51	1608.8	3.2	**0.0651**	0.007	11.5	ug/L	1142	Standard
	Cr	52	6858.9	5.4	**0.0335**	0.040	118.0	ug/L	6628	Standard
	Cr	53	711.7	14.1	**0.3581**	0.110	30.8	ug/L	430	Standard
	Mn	55	5081.9	4.1	**0.7566**	0.025	3.3	ug/L	603	Standard
	Co	59	396.3	6.0	**0.0224**	0.003	13.2	ug/L	237	Standard
	Ni	60	495.3	27.9	**0.1866**	0.070	37.6	ug/L	141	Standard
	Cu	65	8119.8	4.3	**4.3896**	0.136	3.1	ug/L	109	Standard
	Zn	66	5396.3	4.5	**4.7897**	0.160	3.3	ug/L	159	Standard
>	**Ge**	72	459379.8	1.3				ug/L	474053	Standard
	As	75	30.4	143.6	**0.0532**	0.040	75.8	ug/L	-34	Standard
	Se	82	25.8	13.6	**0.0723**	0.035	48.4	ug/L	14	Standard
	Se-1	77	72.3	3.5	**0.2270**	0.021	9.3	ug/L	55	Standard
>	**Ga**	71	85.0	20.4				mg/L	50	Standard
	Rb	85	2591.9	3.3				ug/L	20	Standard
	Y	89	395811.5	2.1				ug/L	376602	Standard
>	**Rh**	103	21.7	48.0				ug/L	17	Standard
	Mo	98	145.0	5.9	**0.0524**	0.004	7.4	ug/L	8	Standard
	Ag	107	135.7	35.4	**0.0092**	0.008	85.2	ug/L	81	Standard
	Cd	111	32.4	102.6	**0.0126**	0.016	129.9	mg/L	3	Standard
	Cd	114	75.7	59.7	**0.0111**	0.009	81.1	ug/L	7	Standard
>	**In**	115	555911.8	0.9				ug/L	524722	Standard
	Sn	118	780.0	12.2	**0.0473**	0.018	37.9	ug/L	715	Standard
	Sb	123	369.0	35.2	**0.0651**	0.029	44.3	ug/L	201	Standard
	Ba	135	1717.1	2.7	**0.8366**	0.031	3.7	ug/L	108	Standard
	Ce	140	485.0	42.7				ug/L	30	Standard
>	**Tb**	159	813354.7	3.1				ug/L	792236	Standard
	Ho	165	18.3	87.7				ug/L	7	Standard
	Tl	203	138.7	62.7	**0.0153**	0.011	74.9	ug/L	9	Standard
	Tl	205	61.7	4.7	**0.0015**	0.001	38.9	ug/L	0	Standard
	Pb	206	674.3	7.5	**0.0868**	0.013	15.5	ug/L	216	Standard
	Pb	207	582.7	6.3	**0.0820**	0.010	12.7	ug/L	180	Standard
	Pb	208	2365.1	0.5	**0.0779**	0.003	3.7	ug/L	717	Standard
	U	238	97.7	25.6	**0.0079**	0.004	53.7	ug/L	4	Standard
>	**Bi**	209	470182.7	2.2				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1275.1	3.2	**1.6099**	0.030	1.9	mg/L	20	Standard
K	39	51.7	39.1	**0.1491**	0.148	99.3	mg/L	22	Standard
Ca	43	31.7	9.1	**-6.0988**	0.709	11.6	mg/L	47	Standard
Fe	54	199.5	21.2	**0.0405**	0.034	83.1	mg/L	151	Standard
Fe	57	250.0	6.0	**0.0939**	0.035	37.2	mg/L	195	Standard
> **Sc-1**	45	30959.9	1.5				mg/L	29647	Standard
Cl	35	180506.2	0.5				ug/L	154152	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	1983.5	10.4				ug/L	1607	Standard
P	31	26828.7	3.3				ug/L	22752	Standard
S	34	5309.3	3.4				ug/L	5049	Standard
Sr	88	65.0	13.3				ug/L	87	Standard
C	12	93.3	12.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	25.5	47.4				mg/L	10	Standard
Ho-1	165	18.3	87.7				mg/L	7	Standard
Er	166	23.3	49.5				mg/L	3	Standard
I	127	1906.8	3.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		147.548	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.905	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.944
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.137
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606061601
Sample Date/Time: Thursday, June 16, 2016 19:47:38
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76809.2	0.5				ug/L	51024	Standard
	Be	9	595.0	11.7	**0.4492**	0.056	12.5	ug/L	7	Standard
	Al	27	4369598.1	0.7	**20.3813**	0.060	0.3	ug/L	625	Standard
	Sc	45	31414.2	1.5				ug/L	29647	Standard
	Ti	47	432.0	2.5	**1.3649**	0.030	2.2	ug/L	57	Standard
	V	51	-3320.7	72.4	**-0.6635**	0.356	53.6	ug/L	1142	Standard
	Cr	52	750024.0	0.5	**107.4925**	0.659	0.6	ug/L	6628	Standard
	Cr	53	103144.9	1.1	**117.5491**	0.704	0.6	ug/L	430	Standard
	Mn	55	749735.1	1.9	**134.2073**	3.843	2.9	ug/L	603	Standard
	Co	59	100276.4	1.1	**16.5512**	0.155	0.9	ug/L	237	Standard
	Ni	60	309778.2	0.7	**170.7218**	1.330	0.8	ug/L	141	Standard
	Cu	65	7659.6	1.1	**4.2680**	0.087	2.0	ug/L	109	Standard
	Zn	66	11362.9	1.9	**10.6718**	0.281	2.6	ug/L	159	Standard
>	**Ge**	72	445665.4	0.9				ug/L	474053	Standard
	As	75	686.6	13.7	**0.6845**	0.089	13.0	ug/L	-34	Standard
	Se	82	286.4	5.1	**2.5855**	0.133	5.1	ug/L	14	Standard
	Se-1	77	537.0	3.8	**6.6929**	0.237	3.5	ug/L	55	Standard
>	**Ga**	71	176.7	15.6				mg/L	50	Standard
	Rb	85	2721.9	5.5				ug/L	20	Standard
	Y	89	383236.3	0.5				ug/L	376602	Standard
>	**Rh**	103	50.0	36.1				ug/L	17	Standard
	Mo	98	2500.1	3.0	**1.0779**	0.045	4.2	ug/L	8	Standard
	Ag	107	102.0	12.9	**0.0051**	0.002	37.3	ug/L	81	Standard
	Cd	111	267.3	12.2	**0.1375**	0.014	10.4	mg/L	3	Standard
	Cd	114	603.9	11.8	**0.1249**	0.014	11.6	ug/L	7	Standard
>	**In**	115	512847.6	2.1				ug/L	524722	Standard
	Sn	118	1035.0	6.1	**0.1070**	0.008	7.4	ug/L	715	Standard
	Sb	123	393.5	17.2	**0.0775**	0.017	21.9	ug/L	201	Standard
	Ba	135	97635.9	1.0	**55.0639**	0.765	1.4	ug/L	108	Standard
	Ce	140	12988.9	1.1				ug/L	30	Standard
>	**Tb**	159	771242.3	0.7				ug/L	792236	Standard
	Ho	165	400.0	11.9				ug/L	7	Standard
	Tl	203	321.0	11.6	**0.0421**	0.006	13.3	ug/L	9	Standard
	Tl	205	538.3	98.5	**0.0807**	0.088	108.8	ug/L	0	Standard
	Pb	206	832.7	2.1	**0.1353**	0.003	2.1	ug/L	216	Standard
	Pb	207	700.3	3.6	**0.1232**	0.007	5.6	ug/L	180	Standard
	Pb	208	3407.2	29.9	**0.1547**	0.065	42.3	ug/L	717	Standard
	U	238	614.7	59.9	**0.0979**	0.064	65.5	ug/L	4	Standard
>	**Bi**	209	433217.0	0.9				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.3851**	8.776	163.0	mg/L	0	Standard
Mg	24	53123.0	1.4	**67.9338**	1.263	1.9	mg/L	20	Standard
K	39	26.7	39.0	**-0.0366**	0.073	198.4	mg/L	22	Standard
Ca	43	46.7	27.0	**-2.9236**	2.617	89.5	mg/L	47	Standard
Fe	54	466.9	13.1	**0.2433**	0.047	19.5	mg/L	151	Standard
Fe	57	296.7	18.2	**0.2213**	0.168	75.8	mg/L	195	Standard
Sc-1	45	31414.2	1.5				mg/L	29647	Standard
Cl	35	180426.0	1.3				ug/L	154152	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	63948.0	2.0				ug/L	1607	Standard
P	31	35653.6	1.9				ug/L	22752	Standard
S	34	4944.1	4.8				ug/L	5049	Standard
Sr	88	168.3	28.8				ug/L	87	Standard
C	12	176.7	33.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	644.2	6.3				mg/L	10	Standard
Ho-1	165	400.0	11.9				mg/L	7	Standard
Er	166	330.0	18.9				mg/L	3	Standard
I	127	86114.1	2.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		150.535	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.012	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	97.737	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	94.107	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
V 51 Lower	V	51	
Cr 52 Upper, S, EEE	Cr	52	

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Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Ni 60 Upper, S, EEE	Ni	60

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Method 6020 - Summary Report

Sample ID: L1606061602
Sample Date/Time: Thursday, June 16, 2016 19:50:50
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75748.9	1.4				ug/L	51024	Standard
	Be	9	48.3	39.2	**0.0176**	0.015	86.0	ug/L	7	Standard
	Al	27	19995852.4	2.5	**94.6007**	1.188	1.3	ug/L	625	Standard
	Sc	45	30053.1	1.9				ug/L	29647	Standard
	Ti	47	826.4	6.6	**2.7223**	0.220	8.1	ug/L	57	Standard
	V	51	3891.9	11.8	**0.4057**	0.069	17.0	ug/L	1142	Standard
	Cr	52	13157.7	1.1	**0.9469**	0.019	2.0	ug/L	6628	Standard
	Cr	53	8188.9	18.5	**8.8148**	1.816	20.6	ug/L	430	Standard
	Mn	55	3666201.0	1.1	**647.3586**	10.609	1.6	ug/L	603	Standard
	Co	59	2221.5	3.8	**0.3212**	0.018	5.6	ug/L	237	Standard
	Ni	60	1892.5	1.4	**0.9508**	0.014	1.5	ug/L	141	Standard
	Cu	65	951.0	2.0	**0.4643**	0.013	2.7	ug/L	109	Standard
	Zn	66	2843.9	2.3	**2.4576**	0.033	1.3	ug/L	159	Standard
>	**Ge**	72	452100.4	1.1				ug/L	474053	Standard
	As	75	2291.3	4.3	**2.1952**	0.104	4.7	ug/L	-34	Standard
	Se	82	731.9	2.7	**6.7722**	0.229	3.4	ug/L	14	Standard
	Se-1	77	824.7	4.7	**10.5195**	0.619	5.9	ug/L	55	Standard
>	**Ga**	71	260.0	5.8				mg/L	50	Standard
	Rb	85	20994.5	2.7				ug/L	20	Standard
	Y	89	374644.2	1.4				ug/L	376602	Standard
>	**Rh**	103	175.0	2.9				ug/L	17	Standard
	Mo	98	1524.1	2.8	**0.6737**	0.024	3.5	ug/L	8	Standard
	Ag	107	85.0	16.3	**0.0027**	0.002	93.3	ug/L	81	Standard
	Cd	111	31.4	24.1	**0.0138**	0.004	30.8	mg/L	3	Standard
	Cd	114	85.3	56.7	**0.0150**	0.011	72.0	ug/L	7	Standard
>	**In**	115	498521.0	0.9				ug/L	524722	Standard
	Sn	118	2845.3	2.5	**0.4666**	0.019	4.0	ug/L	715	Standard
	Sb	123	273.4	5.3	**0.0511**	0.003	6.4	ug/L	201	Standard
	Ba	135	433999.4	0.6	**251.9694**	2.189	0.9	ug/L	108	Standard
	Ce	140	9039.4	2.4				ug/L	30	Standard
>	**Tb**	159	767594.4	2.3				ug/L	792236	Standard
	Ho	165	158.3	4.8				ug/L	7	Standard
	Tl	203	240.0	18.3	**0.0311**	0.007	21.8	ug/L	9	Standard
	Tl	205	225.0	23.4	**0.0292**	0.009	30.5	ug/L	0	Standard
	Pb	206	742.7	3.3	**0.1155**	0.009	7.8	ug/L	216	Standard
	Pb	207	635.7	4.8	**0.1077**	0.010	9.0	ug/L	180	Standard
	Pb	208	2598.4	5.5	**0.1049**	0.012	11.7	ug/L	717	Standard
	U	238	474.7	5.4	**0.0741**	0.006	7.6	ug/L	4	Standard
>	**Bi**	209	431218.2	2.1				ug/L	460343	Standard

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Na	23	3.3	86.6	**-0.3991**	9.400	2355.4	mg/L	0	Standard
Mg	24	98133.5	1.2	**131.2521**	3.929	3.0	mg/L	20	Standard
K	39	131.7	7.9	**0.7615**	0.060	7.9	mg/L	22	Standard
Ca	43	168.3	4.5	**25.6161**	1.859	7.3	mg/L	47	Standard
Fe	54	29671.0	1.6	**23.6871**	0.442	1.9	mg/L	151	Standard
Fe	57	7898.7	1.9	**23.4845**	0.677	2.9	mg/L	195	Standard
> **Sc-1**	45	30053.1	1.9				mg/L	29647	Standard
Cl	35	175045.0	2.3				ug/L	154152	Standard
Kr	83	2.7	43.3				ug/L	3	Standard
Br	81	182091.9	3.5				ug/L	1607	Standard
P	31	33082.7	1.0				ug/L	22752	Standard
S	34	5377.6	4.5				ug/L	5049	Standard
Sr	88	866.7	3.5				ug/L	87	Standard
C	12	170.0	42.4				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	258.0	17.6				mg/L	10	Standard
Ho-1	165	158.3	4.8				mg/L	7	Standard
Er	166	180.0	25.5				mg/L	3	Standard
I	127	271715.3	7.5				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		148.457	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.369	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.007
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.673
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606061604
Sample Date/Time: Thursday, June 16, 2016 19:54:01
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73209.8	0.9				ug/L	51024	Standard
	Be	9	28.3	50.9	**0.0025**	0.012	495.3	ug/L	7	Standard
	Al	27	1228067.5	0.3	**6.0032**	0.043	0.7	ug/L	625	Standard
	Sc	45	32386.3	3.3				ug/L	29647	Standard
	Ti	47	334.0	17.6	**0.9832**	0.212	21.6	ug/L	57	Standard
	V	51	1789.1	4.9	**0.0914**	0.018	19.4	ug/L	1142	Standard
	Cr	52	14674.8	1.1	**1.1301**	0.065	5.7	ug/L	6628	Standard
	Cr	53	2643.6	3.1	**2.5012**	0.083	3.3	ug/L	430	Standard
	Mn	55	705467.3	1.0	**122.4541**	1.381	1.1	ug/L	603	Standard
	Co	59	3430.7	0.7	**0.5095**	0.015	2.8	ug/L	237	Standard
	Ni	60	3839.5	0.3	**1.9758**	0.045	2.3	ug/L	141	Standard
	Cu	65	1168.4	5.1	**0.5751**	0.034	5.9	ug/L	109	Standard
	Zn	66	2259.5	2.7	**1.8718**	0.099	5.3	ug/L	159	Standard
>	**Ge**	72	459550.4	2.1				ug/L	474053	Standard
	As	75	131.8	16.1	**0.1477**	0.018	12.1	ug/L	-34	Standard
	Se	82	59.0	11.8	**0.3811**	0.061	16.1	ug/L	14	Standard
	Se-1	77	99.0	11.6	**0.5837**	0.132	22.6	ug/L	55	Standard
>	**Ga**	71	130.0	11.5				mg/L	50	Standard
	Rb	85	9683.1	3.7				ug/L	20	Standard
	Y	89	395829.7	1.7				ug/L	376602	Standard
>	**Rh**	103	50.0	26.5				ug/L	17	Standard
	Mo	98	129.8	4.6	**0.0461**	0.003	6.2	ug/L	8	Standard
	Ag	107	119.7	9.2	**0.0065**	0.002	28.9	ug/L	81	Standard
	Cd	111	317.1	3.2	**0.1502**	0.006	3.9	mg/L	3	Standard
	Cd	114	681.4	6.2	**0.1296**	0.010	7.4	ug/L	7	Standard
>	**In**	115	558854.3	1.4				ug/L	524722	Standard
	Sn	118	820.0	7.6	**0.0535**	0.012	21.9	ug/L	715	Standard
	Sb	123	282.5	7.4	**0.0459**	0.004	9.0	ug/L	201	Standard
	Ba	135	35268.3	1.2	**18.2144**	0.408	2.2	ug/L	108	Standard
	Ce	140	2163.5	3.8				ug/L	30	Standard
>	**Tb**	159	825700.5	0.4				ug/L	792236	Standard
	Ho	165	51.7	14.8				ug/L	7	Standard
	Tl	203	156.7	22.7	**0.0174**	0.005	26.5	ug/L	9	Standard
	Tl	205	173.3	46.6	**0.0182**	0.012	67.6	ug/L	0	Standard
	Pb	206	424.7	5.7	**0.0331**	0.006	16.7	ug/L	216	Standard
	Pb	207	356.0	3.9	**0.0286**	0.004	13.3	ug/L	180	Standard
	Pb	208	1553.0	4.6	**0.0306**	0.005	14.8	ug/L	717	Standard
	U	238	81.0	68.7	**0.0051**	0.009	171.7	ug/L	4	Standard
>	**Bi**	209	473355.3	0.7				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.6238**	8.363	148.7	mg/L	0	Standard
Mg	24	2843.6	1.0	**3.4857**	0.082	2.3	mg/L	20	Standard
K	39	78.3	14.7	**0.3207**	0.096	29.9	mg/L	22	Standard
Ca	43	50.0	20.0	**-2.4661**	2.354	95.5	mg/L	47	Standard
Fe	54	2460.3	3.7	**1.7187**	0.119	6.9	mg/L	151	Standard
Fe	57	721.7	11.5	**1.4022**	0.269	19.2	mg/L	195	Standard
Sc-1	45	32386.3	3.3				mg/L	29647	Standard
Cl	35	167245.3	0.7				ug/L	154152	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	10406.9	6.9				ug/L	1607	Standard
P	31	27868.9	1.7				ug/L	22752	Standard
S	34	4945.8	3.9				ug/L	5049	Standard
Sr	88	151.7	1.9				ug/L	87	Standard
C	12	130.0	26.6				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	93.0	49.2				mg/L	10	Standard
Ho-1	165	51.7	14.8				mg/L	7	Standard
Er	166	76.7	32.8				mg/L	3	Standard
I	127	108192.1	4.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		143.481	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.941	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.505
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.827
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606064901
Sample Date/Time: Thursday, June 16, 2016 19:57:13
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73899.8	1.9				ug/L	51024	Standard
	Be	9	28.3	20.4	**0.0021**	0.004	205.1	ug/L	7	Standard
	Al	27	17068640.1	0.5	**82.8031**	1.944	2.3	ug/L	625	Standard
	Sc	45	31098.6	0.8				ug/L	29647	Standard
	Ti	47	2220.5	15.6	**7.6952**	1.219	15.8	ug/L	57	Standard
	V	51	3330.6	5.2	**0.3294**	0.025	7.6	ug/L	1142	Standard
	Cr	52	12294.7	1.4	**0.8476**	0.021	2.5	ug/L	6628	Standard
	Cr	53	3545.4	12.3	**3.6195**	0.491	13.6	ug/L	430	Standard
	Mn	55	65149.4	0.9	**11.5346**	0.133	1.2	ug/L	603	Standard
	Co	59	1855.8	3.0	**0.2656**	0.010	3.6	ug/L	237	Standard
	Ni	60	2852.6	1.9	**1.4936**	0.030	2.0	ug/L	141	Standard
	Cu	65	55047.8	0.2	**31.0509**	0.094	0.3	ug/L	109	Standard
	Zn	66	20763.6	1.9	**19.6724**	0.380	1.9	ug/L	159	Standard
>	**Ge**	72	446059.8	0.2				ug/L	474053	Standard
	As	75	230.9	30.1	**0.2467**	0.067	27.2	ug/L	-34	Standard
	Se	82	114.1	10.5	**0.9274**	0.115	12.4	ug/L	14	Standard
	Se-1	77	255.7	12.3	**2.7929**	0.427	15.3	ug/L	55	Standard
>	**Ga**	71	203.3	6.2				mg/L	50	Standard
	Rb	85	64731.4	2.1				ug/L	20	Standard
	Y	89	406326.7	3.3				ug/L	376602	Standard
>	**Rh**	103	48.3	21.5				ug/L	17	Standard
	Mo	98	623.5	1.9	**0.2468**	0.013	5.5	ug/L	8	Standard
	Ag	107	134.0	13.8	**0.0091**	0.002	26.2	ug/L	81	Standard
	Cd	111	49.6	6.5	**0.0211**	0.001	3.6	mg/L	3	Standard
	Cd	114	143.2	27.3	**0.0245**	0.007	27.9	ug/L	7	Standard
>	**In**	115	549535.8	3.5				ug/L	524722	Standard
	Sn	118	1373.4	4.5	**0.1543**	0.017	10.8	ug/L	715	Standard
	Sb	123	311.5	9.8	**0.0535**	0.009	17.0	ug/L	201	Standard
	Ba	135	22377.2	0.2	**11.7401**	0.432	3.7	ug/L	108	Standard
	Ce	140	280.0	11.2				ug/L	30	Standard
>	**Tb**	159	815853.8	2.8				ug/L	792236	Standard
	Ho	165	18.3	95.8				ug/L	7	Standard
	Tl	203	193.0	9.7	**0.0237**	0.002	10.2	ug/L	9	Standard
	Tl	205	165.0	24.1	**0.0186**	0.007	36.0	ug/L	0	Standard
	Pb	206	1296.1	2.0	**0.2354**	0.004	1.8	ug/L	216	Standard
	Pb	207	1110.4	3.4	**0.2207**	0.006	2.5	ug/L	180	Standard
	Pb	208	4630.9	2.3	**0.2243**	0.008	3.6	ug/L	717	Standard
	U	238	1289.4	2.5	**0.2082**	0.002	1.1	ug/L	4	Standard
>	**Bi**	209	442943.4	2.1				ug/L	460343	Standard

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Na	23	6.7	86.6	**-10.3108**	17.983	174.4	mg/L	0	Standard
Mg	24	29769.2	2.1	**38.4319**	0.806	2.1	mg/L	20	Standard
K	39	731.7	8.5	**5.0889**	0.443	8.7	mg/L	22	Standard
Ca	43	196.7	13.0	**30.5875**	5.364	17.5	mg/L	47	Standard
Fe	54	365.7	3.5	**0.1685**	0.008	4.7	mg/L	151	Standard
Fe	57	391.7	14.9	**0.5082**	0.163	32.1	mg/L	195	Standard
> **Sc-1**	45	31098.6	0.8				mg/L	29647	Standard
Cl	35	222953.8	0.9				ug/L	154152	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	17977.3	3.7				ug/L	1607	Standard
P	31	27297.9	1.8				ug/L	22752	Standard
S	34	5117.5	2.7				ug/L	5049	Standard
Sr	88	170.0	7.8				ug/L	87	Standard
C	12	300.0	21.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	86.6				mg/L	0	Standard
Dy	164	34.9	61.4				mg/L	10	Standard
Ho-1	165	18.3	95.8				mg/L	7	Standard
Er	166	36.7	41.7				mg/L	3	Standard
I	127	36641.0	3.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		144.833	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.095	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	104.729	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.220	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606065001
Sample Date/Time: Thursday, June 16, 2016 20:00:24
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72946.9	1.0				ug/L	51024	Standard
	Be	9	18.3	31.5	**-0.0058**	0.005	85.0	ug/L	7	Standard
	Al	27	25893242.1	1.3	**127.2227**	1.176	0.9	ug/L	625	Standard
	Sc	45	31297.3	0.7				ug/L	29647	Standard
	Ti	47	363.0	6.9	**1.0820**	0.092	8.5	ug/L	57	Standard
	V	51	26598.7	23.4	**3.6881**	0.888	24.1	ug/L	1142	Standard
	Cr	52	3600275.3	0.7	**503.8543**	2.642	0.5	ug/L	6628	Standard
	Cr	53	441968.5	0.3	**489.9131**	0.755	0.2	ug/L	430	Standard
	Mn	55	3750356.5	0.6	**651.5298**	1.262	0.2	ug/L	603	Standard
	Co	59	140636.7	1.1	**22.5301**	0.278	1.2	ug/L	237	Standard
	Ni	60	1491493.6	1.2	**797.5118**	6.177	0.8	ug/L	141	Standard
	Cu	65	3267.0	3.0	**1.7266**	0.047	2.7	ug/L	109	Standard
	Zn	66	3425.7	1.8	**2.9563**	0.067	2.3	ug/L	159	Standard
>	**Ge**	72	459475.2	0.5				ug/L	474053	Standard
	As	75	556.7	15.6	**0.5440**	0.082	15.1	ug/L	-34	Standard
	Se	82	222.9	6.2	**1.9114**	0.137	7.2	ug/L	14	Standard
	Se-1	77	721.0	7.2	**8.9403**	0.656	7.3	ug/L	55	Standard
>	**Ga**	71	291.7	10.5				mg/L	50	Standard
	Rb	85	7967.1	5.2				ug/L	20	Standard
	Y	89	376366.8	3.1				ug/L	376602	Standard
>	**Rh**	103	188.3	17.7				ug/L	17	Standard
	Mo	98	4038.0	0.7	**1.7616**	0.010	0.6	ug/L	8	Standard
	Ag	107	92.0	19.6	**0.0036**	0.003	90.6	ug/L	81	Standard
	Cd	111	324.1	6.9	**0.1694**	0.013	7.5	mg/L	3	Standard
	Cd	114	819.8	8.2	**0.1728**	0.014	8.3	ug/L	7	Standard
>	**In**	115	507645.2	1.3				ug/L	524722	Standard
	Sn	118	691.7	9.8	**0.0432**	0.012	27.3	ug/L	715	Standard
	Sb	123	362.3	12.4	**0.0710**	0.011	16.1	ug/L	201	Standard
	Ba	135	933624.2	0.5	**532.4126**	8.811	1.7	ug/L	108	Standard
	Ce	140	3360.4	5.9				ug/L	30	Standard
>	**Tb**	159	768822.1	0.7				ug/L	792236	Standard
	Ho	165	56.7	48.6				ug/L	7	Standard
	Tl	203	246.7	11.1	**0.0318**	0.003	11.0	ug/L	9	Standard
	Tl	205	253.3	31.2	**0.0337**	0.013	38.1	ug/L	0	Standard
	Pb	206	530.7	3.2	**0.0660**	0.004	5.7	ug/L	216	Standard
	Pb	207	474.0	4.9	**0.0662**	0.005	7.1	ug/L	180	Standard
	Pb	208	1991.7	8.7	**0.0664**	0.011	16.6	ug/L	717	Standard
	U	238	2713.6	2.5	**0.4575**	0.014	3.0	ug/L	4	Standard
>	**Bi**	209	432460.1	1.2				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.2420**	9.024	172.2	mg/L	0	Standard
Mg	24	90814.7	0.4	**116.5891**	0.672	0.6	mg/L	20	Standard
K	39	136.7	18.8	**0.7598**	0.192	25.3	mg/L	22	Standard
Ca	43	113.3	24.3	**11.8769**	5.966	50.2	mg/L	47	Standard
Fe	54	8598.8	2.1	**6.5077**	0.130	2.0	mg/L	151	Standard
Fe	57	2420.2	4.0	**6.4526**	0.333	5.2	mg/L	195	Standard
> **Sc-1**	45	31297.3	0.7				mg/L	29647	Standard
Cl	35	172318.1	2.4				ug/L	154152	Standard
Kr	83	2.7	43.3				ug/L	3	Standard
Br	81	54798.9	1.9				ug/L	1607	Standard
P	31	33010.9	0.2				ug/L	22752	Standard
S	34	5099.2	1.3				ug/L	5049	Standard
Sr	88	600.0	8.0				ug/L	87	Standard
C	12	176.7	34.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	96.6	30.8				mg/L	10	Standard
Ho-1	165	56.7	48.6				mg/L	7	Standard
Er	166	70.0	14.3				mg/L	3	Standard
I	127	400706.8	6.8				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		142.965	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.925	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.746
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.943
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Cr 52 Upper, S, EEE	Cr	52	

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Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Ni 60 Upper, S, EEE	Ni	60
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606065002
Sample Date/Time: Thursday, June 16, 2016 20:03:36
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74923.1	0.9				ug/L	51024	Standard
	Be	9	10.0	86.6	**-0.0129**	0.007	54.5	ug/L	7	Standard
	Al	27	11445723.9	1.0	**54.7538**	1.040	1.9	ug/L	625	Standard
	Sc	45	33881.2	2.3				ug/L	29647	Standard
	Ti	47	432.3	7.3	**1.3384**	0.080	6.0	ug/L	57	Standard
	V	51	2150.8	34.9	**0.1495**	0.116	77.8	ug/L	1142	Standard
	Cr	52	17737.4	0.6	**1.5921**	0.067	4.2	ug/L	6628	Standard
	Cr	53	10231.8	13.3	**11.0925**	1.758	15.8	ug/L	430	Standard
	Mn	55	1115003.1	1.6	**196.2265**	7.080	3.6	ug/L	603	Standard
	Co	59	2902.3	1.7	**0.4307**	0.009	2.2	ug/L	237	Standard
	Ni	60	3566.1	4.1	**1.8534**	0.037	2.0	ug/L	141	Standard
	Cu	65	1206.0	1.3	**0.6044**	0.011	1.8	ug/L	109	Standard
	Zn	66	2690.2	1.2	**2.3054**	0.087	3.8	ug/L	159	Standard
>	**Ge**	72	453598.8	2.2				ug/L	474053	Standard
	As	75	280.7	13.7	**0.2904**	0.040	13.9	ug/L	-34	Standard
	Se	82	128.1	7.4	**1.0434**	0.112	10.7	ug/L	14	Standard
	Se-1	77	619.3	6.2	**7.6936**	0.694	9.0	ug/L	55	Standard
>	**Ga**	71	105.0	17.2				mg/L	50	Standard
	Rb	85	9451.3	1.9				ug/L	20	Standard
	Y	89	391791.6	1.5				ug/L	376602	Standard
>	**Rh**	103	140.0	6.2				ug/L	17	Standard
	Mo	98	235.6	9.4	**0.0929**	0.011	11.9	ug/L	8	Standard
	Ag	107	90.7	15.8	**0.0026**	0.002	86.9	ug/L	81	Standard
	Cd	111	142.6	5.5	**0.0692**	0.005	7.6	mg/L	3	Standard
	Cd	114	324.8	13.1	**0.0629**	0.009	15.1	ug/L	7	Standard
>	**In**	115	532666.5	2.0				ug/L	524722	Standard
	Sn	118	630.0	6.3	**0.0258**	0.009	33.7	ug/L	715	Standard
	Sb	123	425.3	4.8	**0.0811**	0.005	5.7	ug/L	201	Standard
	Ba	135	317814.3	1.2	**172.6789**	1.361	0.8	ug/L	108	Standard
	Ce	140	4260.6	3.9				ug/L	30	Standard
>	**Tb**	159	822106.7	0.8				ug/L	792236	Standard
	Ho	165	98.3	10.6				ug/L	7	Standard
	Tl	203	236.3	5.5	**0.0291**	0.002	5.8	ug/L	9	Standard
	Tl	205	180.0	7.3	**0.0206**	0.002	9.9	ug/L	0	Standard
	Pb	206	404.0	5.2	**0.0334**	0.005	14.3	ug/L	216	Standard
	Pb	207	342.3	3.2	**0.0297**	0.003	8.7	ug/L	180	Standard
	Pb	208	1396.4	3.4	**0.0260**	0.003	10.6	ug/L	717	Standard
	U	238	1612.4	1.0	**0.2586**	0.003	1.2	ug/L	4	Standard
>	**Bi**	209	449004.5	0.2				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	75132.5	1.7	**89.1275**	2.931	3.3	mg/L	20	Standard
K	39	103.3	14.8	**0.4601**	0.085	18.5	mg/L	22	Standard
Ca	43	118.3	6.5	**11.0359**	2.111	19.1	mg/L	47	Standard
Fe	54	299.8	4.4	**0.0986**	0.014	14.4	mg/L	151	Standard
Fe	57	295.0	19.5	**0.1539**	0.166	108.1	mg/L	195	Standard
Sc-1	45	33881.2	2.3				mg/L	29647	Standard
Cl	35	177255.5	0.3				ug/L	154152	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	27852.3	4.5				ug/L	1607	Standard
P	31	36888.2	1.8				ug/L	22752	Standard
S	34	5134.2	5.6				ug/L	5049	Standard
Sr	88	336.7	12.1				ug/L	87	Standard
C	12	236.7	6.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	125.5	16.3				mg/L	10	Standard
Ho-1	165	98.3	10.6				mg/L	7	Standard
Er	166	93.3	16.4				mg/L	3	Standard
I	127	795775.9	5.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		146.839	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.685	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.514	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.537	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606065002
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Method 6020 - Summary Report

Sample ID: L1606065003
Sample Date/Time: Thursday, June 16, 2016 20:06:47
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73049.1	2.8				ug/L	51024	Standard
	Be	9	56.7	53.2	**0.0258**	0.025	96.4	ug/L	7	Standard
	Al	27	6795723.2	1.7	**33.3429**	0.423	1.3	ug/L	625	Standard
	Sc	45	32349.5	2.7				ug/L	29647	Standard
	Ti	47	1362.4	1.5	**4.5490**	0.135	3.0	ug/L	57	Standard
	V	51	-1621.9	225.1	**-0.4056**	0.530	130.6	ug/L	1142	Standard
	Cr	52	1449129.7	0.3	**203.6270**	3.465	1.7	ug/L	6628	Standard
	Cr	53	186956.4	0.3	**208.3861**	2.811	1.3	ug/L	430	Standard
	Mn	55	969240.4	1.1	**169.4166**	2.152	1.3	ug/L	603	Standard
	Co	59	17799.4	0.3	**2.8346**	0.031	1.1	ug/L	237	Standard
	Ni	60	82918.9	0.7	**44.5655**	0.800	1.8	ug/L	141	Standard
	Cu	65	12426.8	2.2	**6.7981**	0.081	1.2	ug/L	109	Standard
	Zn	66	16815.7	1.7	**15.5225**	0.331	2.1	ug/L	159	Standard
>	Ge	72	456450.5	1.3				ug/L	474053	Standard
	As	75	1966.3	2.2	**1.8692**	0.017	0.9	ug/L	-34	Standard
	Se	82	293.5	2.7	**2.5875**	0.085	3.3	ug/L	14	Standard
	Se-1	77	432.0	3.1	**5.0994**	0.235	4.6	ug/L	55	Standard
>	Ga	71	736.7	9.9				mg/L	50	Standard
	Rb	85	15683.1	2.3				ug/L	20	Standard
	Y	89	407716.2	0.3				ug/L	376602	Standard
>	Rh	103	95.0	13.9				ug/L	17	Standard
	Mo	98	6403.0	2.3	**2.6056**	0.071	2.7	ug/L	8	Standard
	Ag	107	109.7	3.7	**0.0054**	0.001	15.4	ug/L	81	Standard
	Cd	111	1059.3	1.9	**0.5225**	0.015	2.8	mg/L	3	Standard
	Cd	114	2761.6	6.2	**0.5508**	0.040	7.3	ug/L	7	Standard
>	In	115	544816.8	1.1				ug/L	524722	Standard
	Sn	118	1191.7	7.7	**0.1237**	0.018	14.6	ug/L	715	Standard
	Sb	123	304.1	8.3	**0.0523**	0.006	10.7	ug/L	201	Standard
	Ba	135	110831.6	1.3	**58.8309**	0.136	0.2	ug/L	108	Standard
	Ce	140	24424.7	1.3				ug/L	30	Standard
>	Tb	159	809371.8	1.0				ug/L	792236	Standard
	Ho	165	351.7	3.0				ug/L	7	Standard
	Tl	203	219.0	7.6	**0.0268**	0.002	7.8	ug/L	9	Standard
	Tl	205	185.0	24.8	**0.0214**	0.007	34.0	ug/L	0	Standard
	Pb	206	2753.6	3.0	**0.5549**	0.011	2.0	ug/L	216	Standard
	Pb	207	2285.2	1.4	**0.5035**	0.014	2.7	ug/L	180	Standard
	Pb	208	9786.6	1.2	**0.5303**	0.014	2.6	ug/L	717	Standard
	U	238	353.7	1.7	**0.0508**	0.000	0.5	ug/L	4	Standard
>	Bi	209	449128.9	1.4				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	37974.2	2.9	**47.1394**	0.683	1.4	mg/L	20	Standard
K	39	91.7	3.1	**0.4128**	0.025	6.0	mg/L	22	Standard
Ca	43	75.0	26.7	**2.9551**	4.725	159.9	mg/L	47	Standard
Fe	54	5125.4	2.8	**3.7060**	0.149	4.0	mg/L	151	Standard
Fe	57	1555.1	4.8	**3.7648**	0.143	3.8	mg/L	195	Standard
> **Sc-1**	45	32349.5	2.7				mg/L	29647	Standard
Cl	35	176741.0	1.5				ug/L	154152	Standard
Kr	83	1.3	86.6				ug/L	3	Standard
Br	81	69459.0	3.9				ug/L	1607	Standard
P	31	30123.3	2.4				ug/L	22752	Standard
S	34	4967.5	1.4				ug/L	5049	Standard
Sr	88	190.0	9.5				ug/L	87	Standard
C	12	126.7	12.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	637.1	0.5				mg/L	10	Standard
Ho-1	165	351.7	3.0				mg/L	7	Standard
Er	166	340.0	15.3				mg/L	3	Standard
I	127	176369.6	3.2				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		143.166	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.287	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.830
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.564
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
V 51 Lower	V	51	
Cr 52 Upper, S, EEE	Cr	52	

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Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55

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Method 6020 - Summary Report

Sample ID: L1606065008
Sample Date/Time: Thursday, June 16, 2016 20:12:57
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72941.9	1.7				ug/L	51024	Standard
	Be	9	75.0	11.5	**0.0413**	0.007	17.1	ug/L	7	Standard
	Al	27	2553806.5	1.0	**12.5408**	0.102	0.8	ug/L	625	Standard
	Sc	45	32038.9	2.8				ug/L	29647	Standard
	Ti	47	722.7	5.7	**2.2554**	0.110	4.9	ug/L	57	Standard
	V	51	3819.2	3.9	**0.3720**	0.024	6.3	ug/L	1142	Standard
	Cr	52	10926.9	1.1	**0.5663**	0.038	6.8	ug/L	6628	Standard
	Cr	53	5912.8	6.8	**5.9618**	0.341	5.7	ug/L	430	Standard
	Mn	55	1386219.7	0.5	**234.7938**	4.744	2.0	ug/L	603	Standard
	Co	59	5557.7	1.4	**0.8285**	0.006	0.8	ug/L	237	Standard
	Ni	60	17011.5	0.7	**8.7950**	0.195	2.2	ug/L	141	Standard
	Cu	65	1618.4	1.4	**0.8000**	0.013	1.6	ug/L	109	Standard
	Zn	66	33299.6	0.0	**29.9907**	0.453	1.5	ug/L	159	Standard
>	**Ge**	72	471205.0	1.5				ug/L	474053	Standard
	As	75	966.9	5.2	**0.9032**	0.033	3.6	ug/L	-34	Standard
	Se	82	311.0	2.5	**2.6600**	0.029	1.1	ug/L	14	Standard
	Se-1	77	329.3	6.4	**3.5702**	0.277	7.8	ug/L	55	Standard
>	**Ga**	71	258.3	15.5				mg/L	50	Standard
	Rb	85	8330.6	3.2				ug/L	20	Standard
	Y	89	401951.6	2.1				ug/L	376602	Standard
>	**Rh**	103	36.7	43.8				ug/L	17	Standard
	Mo	98	105.4	14.0	**0.0382**	0.006	14.8	ug/L	8	Standard
	Ag	107	90.7	18.0	**0.0026**	0.003	103.7	ug/L	81	Standard
	Cd	111	115.2	13.8	**0.0550**	0.008	14.6	mg/L	3	Standard
	Cd	114	259.1	8.3	**0.0492**	0.005	9.4	ug/L	7	Standard
>	**In**	115	535100.4	1.1				ug/L	524722	Standard
	Sn	118	718.4	7.1	**0.0413**	0.008	20.4	ug/L	715	Standard
	Sb	123	448.1	4.2	**0.0858**	0.005	5.4	ug/L	201	Standard
	Ba	135	68982.0	0.6	**37.2626**	0.244	0.7	ug/L	108	Standard
	Ce	140	25868.7	1.1				ug/L	30	Standard
>	**Tb**	159	806521.0	1.2				ug/L	792236	Standard
	Ho	165	500.0	12.5				ug/L	7	Standard
	Tl	203	215.0	12.2	**0.0260**	0.004	15.1	ug/L	9	Standard
	Tl	205	150.0	6.7	**0.0156**	0.002	10.9	ug/L	0	Standard
	Pb	206	509.0	3.9	**0.0556**	0.003	5.6	ug/L	216	Standard
	Pb	207	432.0	1.7	**0.0505**	0.001	2.1	ug/L	180	Standard
	Pb	208	1819.0	0.9	**0.0504**	0.002	3.5	ug/L	717	Standard
	U	238	230.0	2.3	**0.0300**	0.001	2.2	ug/L	4	Standard
>	**Bi**	209	453449.6	1.5				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	38452.1	0.8	**48.2252**	1.630	3.4	mg/L	20	Standard
K	39	58.3	38.7	**0.1852**	0.162	87.6	mg/L	22	Standard
Ca	43	35.0	51.5	**-5.6048**	3.899	69.6	mg/L	47	Standard
Fe	54	249.0	20.9	**0.0731**	0.044	60.8	mg/L	151	Standard
Fe	57	205.0	6.5	**-0.0599**	0.029	47.9	mg/L	195	Standard
> **Sc-1**	45	32038.9	2.8				mg/L	29647	Standard
Cl	35	205402.9	2.6				ug/L	154152	Standard
Kr	83	2.3	24.7				ug/L	3	Standard
Br	81	66452.1	2.3				ug/L	1607	Standard
P	31	28505.1	1.9				ug/L	22752	Standard
S	34	4827.4	1.0				ug/L	5049	Standard
Sr	88	103.3	7.4				ug/L	87	Standard
C	12	290.0	39.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	843.5	10.6				mg/L	10	Standard
Ho-1	165	500.0	12.5				mg/L	7	Standard
Er	166	483.3	20.9				mg/L	3	Standard
I	127	65771.0	5.3				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		142.956	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.399	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	101.978
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.503
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606072901
Sample Date/Time: Thursday, June 16, 2016 20:16:08
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71451.4	0.2				ug/L	51024	Standard
	Be	9	156.7	13.3	**0.1120**	0.018	15.8	ug/L	7	Standard
	Al	27	1783026.0	1.0	**8.9350**	0.113	1.3	ug/L	625	Standard
	Sc	45	33488.6	0.2				ug/L	29647	Standard
	Ti	47	3847.8	0.7	**12.4804**	0.276	2.2	ug/L	57	Standard
	V	51	20969.4	1.8	**2.7398**	0.019	0.7	ug/L	1142	Standard
	Cr	52	17305.9	0.3	**1.3919**	0.032	2.3	ug/L	6628	Standard
	Cr	53	2988.6	7.9	**2.7405**	0.281	10.3	ug/L	430	Standard
	Mn	55	363989.8	1.4	**60.3519**	1.596	2.6	ug/L	603	Standard
	Co	59	13842.7	0.2	**2.0829**	0.032	1.5	ug/L	237	Standard
	Ni	60	5649.1	2.1	**2.8101**	0.018	0.6	ug/L	141	Standard
	Cu	65	2744.6	2.9	**1.3736**	0.022	1.6	ug/L	109	Standard
	Zn	66	21962.9	1.2	**19.3089**	0.151	0.8	ug/L	159	Standard
>	**Ge**	72	480623.4	1.5				ug/L	474053	Standard
	As	75	604.0	4.6	**0.5630**	0.022	3.9	ug/L	-34	Standard
	Se	82	62.7	5.3	**0.3902**	0.037	9.5	ug/L	14	Standard
	Se-1	77	114.3	16.4	**0.7262**	0.260	35.8	ug/L	55	Standard
>	**Ga**	71	1213.4	6.6				mg/L	50	Standard
	Rb	85	49025.9	0.6				ug/L	20	Standard
	Y	89	427519.3	0.4				ug/L	376602	Standard
>	**Rh**	103	33.3	37.7				ug/L	17	Standard
	Mo	98	183.9	8.3	**0.0677**	0.006	8.8	ug/L	8	Standard
	Ag	107	84.7	15.9	**0.0010**	0.002	216.4	ug/L	81	Standard
	Cd	111	55.6	11.8	**0.0237**	0.003	13.7	mg/L	3	Standard
	Cd	114	123.4	16.9	**0.0204**	0.004	20.0	ug/L	7	Standard
>	**In**	115	557933.4	0.7				ug/L	524722	Standard
	Sn	118	618.3	8.9	**0.0185**	0.009	49.1	ug/L	715	Standard
	Sb	123	180.1	11.3	**0.0240**	0.004	17.3	ug/L	201	Standard
	Ba	135	83499.8	1.0	**43.2656**	0.170	0.4	ug/L	108	Standard
	Ce	140	144607.0	2.1				ug/L	30	Standard
>	**Tb**	159	830815.8	1.2				ug/L	792236	Standard
	Ho	165	2081.8	4.4				ug/L	7	Standard
	Tl	203	322.3	0.4	**0.0385**	0.000	1.0	ug/L	9	Standard
	Tl	205	275.0	3.6	**0.0334**	0.001	4.5	ug/L	0	Standard
	Pb	206	5048.5	0.5	**1.0085**	0.002	0.2	ug/L	216	Standard
	Pb	207	4178.9	1.8	**0.9144**	0.020	2.2	ug/L	180	Standard
	Pb	208	17525.7	1.4	**0.9427**	0.011	1.1	ug/L	717	Standard
	U	238	621.3	3.2	**0.0898**	0.003	3.0	ug/L	4	Standard
>	**Bi**	209	472687.9	0.6				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.6311**	8.350	148.3	mg/L	0	Standard
Mg	24	3158.7	1.3	**3.7460**	0.051	1.3	mg/L	20	Standard
K	39	215.0	8.1	**1.2230**	0.115	9.4	mg/L	22	Standard
Ca	43	38.3	27.2	**-5.2593**	2.154	41.0	mg/L	47	Standard
Fe	54	3415.5	7.7	**2.3435**	0.190	8.1	mg/L	151	Standard
Fe	57	1036.7	4.4	**2.1944**	0.121	5.5	mg/L	195	Standard
Sc-1	45	33488.6	0.2				mg/L	29647	Standard
Cl	35	164707.7	0.4				ug/L	154152	Standard
Kr	83	3.0	33.3				ug/L	3	Standard
Br	81	11457.7	7.7				ug/L	1607	Standard
P	31	28214.6	1.7				ug/L	22752	Standard
S	34	4967.5	1.9				ug/L	5049	Standard
Sr	88	113.3	6.7				ug/L	87	Standard
C	12	80.0	12.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	0	Standard
Dy	164	3722.9	5.4				mg/L	10	Standard
Ho-1	165	2081.8	4.4				mg/L	7	Standard
Er	166	1966.8	4.6				mg/L	3	Standard
I	127	28066.0	3.2				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		140.035	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.386	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.329
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.682
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 20:19:21
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70359.7	1.3				ug/L	51024	Standard
	Be	9	53312.1	5.5	**45.9476**	1.930	4.2	ug/L	7	Standard
	Al	27	8077611.0	1.8	**41.1433**	0.785	1.9	ug/L	625	Standard
	Sc	45	32289.4	1.8				ug/L	29647	Standard
	Ti	47	30321.3	1.6	**100.0769**	1.272	1.3	ug/L	57	Standard
	V	51	360120.0	0.4	**50.0825**	0.106	0.2	ug/L	1142	Standard
	Cr	52	369947.6	1.5	**48.9622**	0.470	1.0	ug/L	6628	Standard
	Cr	53	47002.8	0.4	**49.7282**	0.165	0.3	ug/L	430	Standard
	Mn	55	317711.3	0.7	**52.9755**	0.531	1.0	ug/L	603	Standard
	Co	59	339862.8	0.3	**52.4255**	0.355	0.7	ug/L	237	Standard
	Ni	60	93112.6	1.0	**47.8173**	0.235	0.5	ug/L	141	Standard
	Cu	65	91542.1	0.9	**48.2534**	0.241	0.5	ug/L	109	Standard
	Zn	66	53846.5	0.5	**47.9689**	0.154	0.3	ug/L	159	Standard
>	**Ge**	72	477686.4	0.6				ug/L	474053	Standard
	As	75	53954.1	0.4	**48.3818**	0.469	1.0	ug/L	-34	Standard
	Se	82	5528.9	1.3	**49.4502**	0.921	1.9	ug/L	14	Standard
	Se-1	77	3768.1	3.4	**47.9498**	1.532	3.2	ug/L	55	Standard
>	**Ga**	71	96.7	3.0				mg/L	50	Standard
	Rb	85	860.0	3.6				ug/L	20	Standard
	Y	89	407805.9	2.6				ug/L	376602	Standard
>	**Rh**	103	38.3	19.9				ug/L	17	Standard
	Mo	98	251849.5	0.7	**99.5336**	0.343	0.3	ug/L	8	Standard
	Ag	107	302942.0	0.9	**47.3977**	0.787	1.7	ug/L	81	Standard
	Cd	111	100743.2	0.5	**48.4530**	0.464	1.0	mg/L	3	Standard
	Cd	114	243706.8	2.6	**47.4138**	1.351	2.8	ug/L	7	Standard
>	**In**	115	562084.3	0.9				ug/L	524722	Standard
	Sn	118	283917.6	1.7	**49.1130**	0.500	1.0	ug/L	715	Standard
	Sb	123	223152.0	0.8	**47.6804**	0.566	1.2	ug/L	201	Standard
	Ba	135	90693.3	1.2	**46.6526**	0.606	1.3	ug/L	108	Standard
	Ce	140	95.0	24.1				ug/L	30	Standard
>	**Tb**	159	823567.8	1.3				ug/L	792236	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	373875.5	0.8	**47.8522**	0.141	0.3	ug/L	9	Standard
	Tl	205	338247.8	1.5	**50.9083**	0.885	1.7	ug/L	0	Standard
	Pb	206	233315.4	0.7	**49.3532**	0.331	0.7	ug/L	216	Standard
	Pb	207	211841.0	0.3	**49.2260**	0.469	1.0	ug/L	180	Standard
	Pb	208	876269.3	0.6	**50.1725**	0.549	1.1	ug/L	717	Standard
	U	238	329535.1	0.3	**51.8676**	0.341	0.7	ug/L	4	Standard
>	**Bi**	209	470816.3	0.6				ug/L	460343	Standard

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Na	23	3.3	86.6	**0.5093**	8.613	1691.0	mg/L	0	Standard
Mg	24	4180.6	4.5	**5.1574**	0.149	2.9	mg/L	20	Standard
K	39	543.3	5.4	**3.5784**	0.272	7.6	mg/L	22	Standard
Ca	43	63.3	12.1	**0.3907**	1.523	389.8	mg/L	47	Standard
Fe	54	5922.9	1.4	**4.3077**	0.105	2.4	mg/L	151	Standard
Fe	57	1828.4	2.7	**4.5503**	0.051	1.1	mg/L	195	Standard
> **Sc-1**	45	32289.4	1.8				mg/L	29647	Standard
Cl	35	173385.8	0.9				ug/L	154152	Standard
Kr	83	1.3	114.6				ug/L	3	Standard
Br	81	2136.8	4.6				ug/L	1607	Standard
P	31	26322.9	2.1				ug/L	22752	Standard
S	34	5514.3	2.6				ug/L	5049	Standard
Sr	88	65.0	27.7				ug/L	87	Standard
C	12	70.0	24.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	23.3	89.2				mg/L	10	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	0.0					mg/L	3	Standard
I	127	3703.8	16.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	91.895		
Al	27	82.287		
Sc	45			
Ti	47	100.077		
V	51	100.165		
Cr	52	97.924		
Cr	53			
Mn	55	105.951		
Co	59	104.851		
Ni	60	95.635		
Cu	65	96.507		
Zn	66	95.938		
> Ge	72		100.766	
As	75	96.764		
Se	82	98.900		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	99.534		
Ag	107	94.795		
Cd	111	96.906		
Cd	114			
In	115		107.120	
Sn	118	98.226		
Sb	123	95.361		
Ba	135	93.305		
Ce	140			
Tb	159			
Ho	165			
Tl	203	95.704		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.345		
U	238	103.735		
Bi	209		102.275	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 20:22:32
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67637.3	2.1				ug/L	51024	Standard
	Be	9	18.3	83.3	**-0.0045**	0.014	309.1	ug/L	7	Standard
	Al	27	1391.7	16.0	**-0.0024**	0.001	50.0	ug/L	625	Standard
	Sc	45	30764.5	1.2				ug/L	29647	Standard
	Ti	47	37.3	15.2	**-0.0462**	0.017	37.4	ug/L	57	Standard
	V	51	1089.5	9.5	**-0.0208**	0.013	60.2	ug/L	1142	Standard
	Cr	52	6209.3	0.8	**-0.1150**	0.004	3.7	ug/L	6628	Standard
	Cr	53	621.7	6.5	**0.2124**	0.037	17.6	ug/L	430	Standard
	Mn	55	764.0	5.2	**-0.0024**	0.006	259.9	ug/L	603	Standard
	Co	59	234.0	4.1	**-0.0062**	0.002	27.4	ug/L	237	Standard
	Ni	60	152.7	14.0	**-0.0015**	0.011	728.7	ug/L	141	Standard
	Cu	65	133.0	12.1	**0.0021**	0.009	425.3	ug/L	109	Standard
	Zn	66	146.0	6.6	**-0.1051**	0.009	8.1	ug/L	159	Standard
>	**Ge**	72	492018.2	1.0				ug/L	474053	Standard
	As	75	-9.0	401.0	**0.0170**	0.032	186.2	ug/L	-34	Standard
	Se	82	25.4	15.9	**0.0523**	0.034	65.9	ug/L	14	Standard
	Se-1	77	66.3	19.1	**0.0882**	0.166	188.3	ug/L	55	Standard
>	**Ga**	71	71.7	20.1				mg/L	50	Standard
	Rb	85	26.7	43.3				ug/L	20	Standard
	Y	89	407999.6	2.7				ug/L	376602	Standard
>	**Rh**	103	20.0	50.0				ug/L	17	Standard
	Mo	98	257.9	34.0	**0.0988**	0.034	34.5	ug/L	8	Standard
	Ag	107	107.0	12.6	**0.0049**	0.002	46.8	ug/L	81	Standard
	Cd	111	7.2	23.1	**0.0003**	0.001	264.5	mg/L	3	Standard
	Cd	114	32.4	23.6	**0.0026**	0.001	54.7	ug/L	7	Standard
>	**In**	115	547642.1	1.6				ug/L	524722	Standard
	Sn	118	781.7	18.0	**0.0498**	0.026	53.2	ug/L	715	Standard
	Sb	123	445.8	26.8	**0.0832**	0.027	32.7	ug/L	201	Standard
	Ba	135	126.0	4.8	**0.0089**	0.003	29.7	ug/L	108	Standard
	Ce	140	16.7	34.6				ug/L	30	Standard
>	**Tb**	159	805057.6	1.1				ug/L	792236	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	50.7	17.0	**0.0040**	0.001	27.9	ug/L	9	Standard
	Tl	205	33.3	22.9	**-0.0027**	0.001	41.6	ug/L	0	Standard
	Pb	206	245.3	6.9	**-0.0038**	0.003	90.3	ug/L	216	Standard
	Pb	207	206.3	2.8	**-0.0052**	0.002	29.4	ug/L	180	Standard
	Pb	208	876.0	4.6	**-0.0071**	0.002	32.4	ug/L	717	Standard
	U	238	36.7	27.6	**-0.0017**	0.002	94.5	ug/L	4	Standard
>	**Bi**	209	464955.7	0.5				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.1330**	9.213	179.5	mg/L	0	Standard
Mg	24	40.0	21.7	**0.0070**	0.011	155.9	mg/L	20	Standard
K	39	16.7	69.3	**-0.1055**	0.085	80.5	mg/L	22	Standard
Ca	43	30.0	66.7	**-6.3982**	4.581	71.6	mg/L	47	Standard
Fe	54	159.4	19.4	**0.0098**	0.023	233.9	mg/L	151	Standard
Fe	57	178.3	15.9	**-0.1151**	0.084	72.7	mg/L	195	Standard
> **Sc-1**	45	30764.5	1.2				mg/L	29647	Standard
Cl	35	172678.1	2.2				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	1756.8	6.0				ug/L	1607	Standard
P	31	26713.5	1.7				ug/L	22752	Standard
S	34	5486.0	1.1				ug/L	5049	Standard
Sr	88	68.3	25.7				ug/L	87	Standard
C	12	46.7	12.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	13.0	43.3				mg/L	10	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	2433.5	7.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.790	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.368
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.002
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606072902
Sample Date/Time: Thursday, June 16, 2016 20:26:38
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67597.1	1.4				ug/L	51024	Standard
	Be	9	58.3	13.1	**0.0313**	0.007	23.7	ug/L	7	Standard
	Al	27	1447794.1	2.6	**7.6674**	0.177	2.3	ug/L	625	Standard
	Sc	45	31928.7	4.9				ug/L	29647	Standard
	Ti	47	305.7	12.8	**0.8104**	0.145	17.9	ug/L	57	Standard
	V	51	1674.4	15.6	**0.0568**	0.033	58.1	ug/L	1142	Standard
	Cr	52	9700.4	2.0	**0.3335**	0.001	0.4	ug/L	6628	Standard
	Cr	53	1893.5	6.0	**1.5168**	0.108	7.1	ug/L	430	Standard
	Mn	55	246384.5	0.3	**39.5930**	0.878	2.2	ug/L	603	Standard
	Co	59	7588.2	2.4	**1.0889**	0.047	4.3	ug/L	237	Standard
	Ni	60	3526.1	1.5	**1.6717**	0.049	2.9	ug/L	141	Standard
	Cu	65	954.7	5.5	**0.4196**	0.020	4.8	ug/L	109	Standard
	Zn	66	5586.0	1.4	**4.5915**	0.148	3.2	ug/L	159	Standard
>	**Ge**	72	495383.3	1.9				ug/L	474053	Standard
	As	75	235.4	13.4	**0.2282**	0.025	10.7	ug/L	-34	Standard
	Se	82	130.5	4.3	**0.9599**	0.027	2.8	ug/L	14	Standard
	Se-1	77	93.7	12.4	**0.4210**	0.125	29.6	ug/L	55	Standard
>	**Ga**	71	108.3	13.3				mg/L	50	Standard
	Rb	85	27304.6	1.0				ug/L	20	Standard
	Y	89	392736.9	2.5				ug/L	376602	Standard
>	**Rh**	103	11.7	49.5				ug/L	17	Standard
	Mo	98	87.5	12.2	**0.0306**	0.004	14.1	ug/L	8	Standard
	Ag	107	101.0	6.0	**0.0042**	0.001	22.2	ug/L	81	Standard
	Cd	111	59.5	14.3	**0.0266**	0.004	15.1	mg/L	3	Standard
	Cd	114	114.2	30.2	**0.0194**	0.007	35.4	ug/L	7	Standard
>	**In**	115	538147.1	0.9				ug/L	524722	Standard
	Sn	118	776.7	8.0	**0.0512**	0.012	24.3	ug/L	715	Standard
	Sb	123	200.6	27.1	**0.0300**	0.012	40.3	ug/L	201	Standard
	Ba	135	61289.0	0.7	**32.9142**	0.504	1.5	ug/L	108	Standard
	Ce	140	11052.4	2.4				ug/L	30	Standard
>	**Tb**	159	799876.8	2.9				ug/L	792236	Standard
	Ho	165	190.0	13.9				ug/L	7	Standard
	Tl	203	282.0	7.3	**0.0338**	0.003	8.0	ug/L	9	Standard
	Tl	205	280.0	6.2	**0.0347**	0.004	10.5	ug/L	0	Standard
	Pb	206	401.7	3.5	**0.0294**	0.002	8.2	ug/L	216	Standard
	Pb	207	341.0	0.8	**0.0262**	0.002	6.1	ug/L	180	Standard
	Pb	208	1409.0	1.3	**0.0235**	0.001	4.4	ug/L	717	Standard
	U	238	76.0	25.2	**0.0044**	0.003	61.0	ug/L	4	Standard
>	**Bi**	209	466934.5	2.6				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3003.6	5.4	**3.7365**	0.119	3.2	mg/L	20	Standard
K	39	200.0	11.5	**1.1940**	0.224	18.7	mg/L	22	Standard
Ca	43	26.7	78.1	**-7.2758**	4.881	67.1	mg/L	47	Standard
Fe	54	197.9	11.4	**0.0352**	0.024	69.0	mg/L	151	Standard
Fe	57	201.7	10.0	**-0.0646**	0.087	134.0	mg/L	195	Standard
> **Sc-1**	45	31928.7	4.9				mg/L	29647	Standard
Cl	35	168064.3	0.8				ug/L	154152	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	30467.4	7.1				ug/L	1607	Standard
P	31	27221.1	1.9				ug/L	22752	Standard
S	34	4829.1	7.9				ug/L	5049	Standard
Sr	88	71.7	28.2				ug/L	87	Standard
C	12	70.0	24.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	346.6	23.4				mg/L	10	Standard
Ho-1	165	190.0	13.9				mg/L	7	Standard
Er	166	140.0	21.4				mg/L	3	Standard
I	127	19342.3	3.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.481	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.500	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	102.559
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.432
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606073001
Sample Date/Time: Thursday, June 16, 2016 20:29:50
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77603.4	4.1				ug/L	51024	Standard
	Be	9	23.3	32.7	**-0.0030**	0.005	179.3	ug/L	7	Standard
	Al	27	6597541.3	1.1	**30.4895**	0.983	3.2	ug/L	625	Standard
	Sc	45	30666.0	3.0				ug/L	29647	Standard
	Ti	47	203.3	18.0	**0.5694**	0.126	22.1	ug/L	57	Standard
	V	51	19344.1	1.4	**2.7880**	0.060	2.2	ug/L	1142	Standard
	Cr	52	223704.1	0.9	**32.1116**	0.253	0.8	ug/L	6628	Standard
	Cr	53	32680.2	2.6	**37.7577**	0.692	1.8	ug/L	430	Standard
	Mn	55	14764.2	0.6	**2.5761**	0.037	1.5	ug/L	603	Standard
	Co	59	8421.3	1.4	**1.3825**	0.016	1.2	ug/L	237	Standard
	Ni	60	8389.0	3.1	**4.6470**	0.087	1.9	ug/L	141	Standard
	Cu	65	2908.6	1.9	**1.6151**	0.017	1.1	ug/L	109	Standard
	Zn	66	3204.0	4.7	**2.9081**	0.114	3.9	ug/L	159	Standard
>	**Ge**	72	436204.2	1.2				ug/L	474053	Standard
	As	75	2688.1	1.6	**2.6639**	0.074	2.8	ug/L	-34	Standard
	Se	82	851.2	1.0	**8.1974**	0.187	2.3	ug/L	14	Standard
	Se-1	77	1137.0	6.7	**15.3552**	1.225	8.0	ug/L	55	Standard
>	**Ga**	71	1600.1	10.1				mg/L	50	Standard
	Rb	85	221561.7	1.4				ug/L	20	Standard
	Y	89	371828.3	2.0				ug/L	376602	Standard
>	**Rh**	103	3242.0	4.8				ug/L	17	Standard
	Mo	98	4562.5	2.6	**2.0314**	0.078	3.9	ug/L	8	Standard
	Ag	107	113.7	11.8	**0.0078**	0.003	32.8	ug/L	81	Standard
	Cd	111	55.8	15.1	**0.0271**	0.005	18.3	mg/L	3	Standard
	Cd	114	143.3	18.4	**0.0277**	0.006	20.9	ug/L	7	Standard
>	**In**	115	497749.4	1.4				ug/L	524722	Standard
	Sn	118	1183.4	2.0	**0.1421**	0.001	1.0	ug/L	715	Standard
	Sb	123	552.4	7.7	**0.1185**	0.008	7.1	ug/L	201	Standard
	Ba	135	1629969.1	1.1	**947.9397**	3.697	0.4	ug/L	108	Standard
	Ce	140	661.7	1.6				ug/L	30	Standard
>	**Tb**	159	768724.3	1.9				ug/L	792236	Standard
	Ho	165	30.0	0.0				ug/L	7	Standard
	Tl	203	273.3	11.0	**0.0373**	0.004	11.6	ug/L	9	Standard
	Tl	205	236.7	11.6	**0.0327**	0.005	13.9	ug/L	0	Standard
	Pb	206	593.0	4.8	**0.0867**	0.006	6.8	ug/L	216	Standard
	Pb	207	503.3	3.4	**0.0795**	0.004	4.6	ug/L	180	Standard
	Pb	208	2099.4	1.6	**0.0791**	0.001	1.5	ug/L	717	Standard
	U	238	272.3	8.1	**0.0412**	0.004	8.8	ug/L	4	Standard
>	**Bi**	209	413369.8	0.7				ug/L	460343	Standard

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Na	23	10.0	86.6	**-20.6958**	26.075	126.0	mg/L	0	Standard
Mg	24	97695.6	0.1	**128.0820**	3.805	3.0	mg/L	20	Standard
K	39	1235.1	6.0	**8.8773**	0.558	6.3	mg/L	22	Standard
Ca	43	1178.4	7.9	**253.1572**	23.304	9.2	mg/L	47	Standard
Fe	54	176.5	19.0	**0.0234**	0.022	95.0	mg/L	151	Standard
Fe	57	1151.7	8.5	**2.8063**	0.366	13.0	mg/L	195	Standard
> **Sc-1**	45	30666.0	3.0				mg/L	29647	Standard
Cl	35	183619.3	0.2				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	216976.2	1.6				ug/L	1607	Standard
P	31	27466.6	2.5				ug/L	22752	Standard
S	34	5401.0	3.5				ug/L	5049	Standard
Sr	88	13359.2	2.8				ug/L	87	Standard
C	12	236.7	14.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	16.2	35.8				mg/L	10	Standard
Ho-1	165	30.0	0.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	172255.5	10.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		152.092	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.016	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.860
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	89.796
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606073002
Sample Date/Time: Thursday, June 16, 2016 20:40:20
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72672.3	2.9				ug/L	51024	Standard
	Be	9	10.0	50.0	**-0.0128**	0.004	30.9	ug/L	7	Standard
	Al	27	6776653.7	2.4	**33.4181**	0.221	0.7	ug/L	625	Standard
	Sc	45	30878.1	3.6				ug/L	29647	Standard
	Ti	47	191.7	10.9	**0.5384**	0.079	14.6	ug/L	57	Standard
	V	51	18320.5	2.2	**2.6731**	0.088	3.3	ug/L	1142	Standard
	Cr	52	218082.0	0.6	**31.7558**	0.128	0.4	ug/L	6628	Standard
	Cr	53	32453.1	2.0	**38.0586**	0.990	2.6	ug/L	430	Standard
	Mn	55	14793.6	1.2	**2.6216**	0.060	2.3	ug/L	603	Standard
	Co	59	8007.4	2.3	**1.3327**	0.045	3.4	ug/L	237	Standard
	Ni	60	8064.8	0.9	**4.5323**	0.032	0.7	ug/L	141	Standard
	Cu	65	2976.0	2.0	**1.6794**	0.017	1.0	ug/L	109	Standard
	Zn	66	2008.5	3.5	**1.7659**	0.064	3.6	ug/L	159	Standard
>	**Ge**	72	429862.6	1.0				ug/L	474053	Standard
	As	75	2572.0	0.4	**2.5869**	0.037	1.4	ug/L	-34	Standard
	Se	82	825.8	3.3	**8.0685**	0.355	4.4	ug/L	14	Standard
	Se-1	77	1141.7	4.7	**15.6522**	0.781	5.0	ug/L	55	Standard
>	**Ga**	71	1611.8	8.9				mg/L	50	Standard
	Rb	85	218102.3	2.0				ug/L	20	Standard
	Y	89	377604.2	0.7				ug/L	376602	Standard
>	**Rh**	103	3075.3	2.3				ug/L	17	Standard
	Mo	98	4376.1	1.3	**1.9206**	0.018	0.9	ug/L	8	Standard
	Ag	107	101.3	11.9	**0.0053**	0.002	42.4	ug/L	81	Standard
	Cd	111	44.3	10.0	**0.0205**	0.002	10.6	mg/L	3	Standard
	Cd	114	101.2	2.7	**0.0181**	0.001	4.2	ug/L	7	Standard
>	**In**	115	504775.6	2.2				ug/L	524722	Standard
	Sn	118	1261.7	9.4	**0.1538**	0.018	12.0	ug/L	715	Standard
	Sb	123	527.5	2.2	**0.1107**	0.000	0.3	ug/L	201	Standard
	Ba	135	1636843.5	1.3	**938.7853**	9.854	1.0	ug/L	108	Standard
	Ce	140	583.3	14.6				ug/L	30	Standard
>	**Tb**	159	772745.6	1.2				ug/L	792236	Standard
	Ho	165	13.3	57.3				ug/L	7	Standard
	Tl	203	237.3	15.4	**0.0328**	0.005	15.8	ug/L	9	Standard
	Tl	205	210.0	10.4	**0.0290**	0.003	11.9	ug/L	0	Standard
	Pb	206	512.7	7.1	**0.0701**	0.008	10.9	ug/L	216	Standard
	Pb	207	440.7	8.2	**0.0656**	0.009	13.2	ug/L	180	Standard
	Pb	208	1827.0	4.1	**0.0642**	0.006	9.9	ug/L	717	Standard
	U	238	243.3	3.8	**0.0371**	0.002	4.2	ug/L	4	Standard
>	**Bi**	209	404002.1	1.1				ug/L	460343	Standard

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Na	23	10.0	86.6	**-20.5285**	26.005	126.7	mg/L	0	Standard
Mg	24	96717.8	1.8	**126.0145**	6.791	5.4	mg/L	20	Standard
K	39	1353.4	2.3	**9.6820**	0.217	2.2	mg/L	22	Standard
Ca	43	1160.0	11.2	**246.7324**	22.672	9.2	mg/L	47	Standard
Fe	54	173.0	8.5	**0.0201**	0.009	45.9	mg/L	151	Standard
Fe	57	1218.4	5.2	**2.9735**	0.072	2.4	mg/L	195	Standard
> **Sc-1**	45	30878.1	3.6				mg/L	29647	Standard
Cl	35	185979.3	1.4				ug/L	154152	Standard
Kr	83	2.7	43.3				ug/L	3	Standard
Br	81	209002.2	2.5				ug/L	1607	Standard
P	31	27092.5	3.1				ug/L	22752	Standard
S	34	5509.3	2.9				ug/L	5049	Standard
Sr	88	11921.4	3.3				ug/L	87	Standard
C	12	216.7	14.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	29.4	59.5				mg/L	10	Standard
Ho-1	165	13.3	57.3				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	173148.1	13.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		142.427	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.678	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.199
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.761
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606073003
Sample Date/Time: Thursday, June 16, 2016 20:43:31
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66295.0	5.6				ug/L	51024	Standard
	Be	9	56.7	36.7	**0.0315**	0.022	69.3	ug/L	7	Standard
	Al	27	140324062.6	0.9	**759.9749**	34.895	4.6	ug/L	625	Standard
	Sc	45	30973.3	2.2				ug/L	29647	Standard
	Ti	47	544.3	4.3	**1.8537**	0.066	3.6	ug/L	57	Standard
	V	51	5988.0	12.5	**0.7695**	0.117	15.2	ug/L	1142	Standard
	Cr	52	16952.1	2.7	**1.6378**	0.039	2.4	ug/L	6628	Standard
	Cr	53	39053.8	8.0	**46.3217**	3.179	6.9	ug/L	430	Standard
	Mn	55	1211107.1	0.8	**227.1129**	4.279	1.9	ug/L	603	Standard
	Co	59	15513.3	2.2	**2.6477**	0.097	3.6	ug/L	237	Standard
	Ni	60	11454.7	1.9	**6.5356**	0.059	0.9	ug/L	141	Standard
	Cu	65	2107.5	3.2	**1.1824**	0.030	2.5	ug/L	109	Standard
	Zn	66	3534.1	3.7	**3.3182**	0.082	2.5	ug/L	159	Standard
>	**Ge**	72	425577.5	1.4				ug/L	474053	Standard
	As	75	6875.0	1.9	**6.9431**	0.226	3.3	ug/L	-34	Standard
	Se	82	1838.5	2.4	**18.3557**	0.698	3.8	ug/L	14	Standard
	Se-1	77	5651.1	6.0	**81.1945**	3.892	4.8	ug/L	55	Standard
>	**Ga**	71	298.3	8.3				mg/L	50	Standard
	Rb	85	18603.1	3.0				ug/L	20	Standard
	Y	89	364931.5	1.6				ug/L	376602	Standard
>	**Rh**	103	1093.4	10.5				ug/L	17	Standard
	Mo	98	426.7	6.4	**0.1986**	0.013	6.7	ug/L	8	Standard
	Ag	107	75.7	8.8	**0.0020**	0.001	63.5	ug/L	81	Standard
	Cd	111	101.2	16.3	**0.0557**	0.010	17.5	mg/L	3	Standard
	Cd	114	239.7	20.6	**0.0526**	0.011	21.7	ug/L	7	Standard
>	**In**	115	464316.0	0.4				ug/L	524722	Standard
	Sn	118	820.0	6.0	**0.0826**	0.010	12.0	ug/L	715	Standard
	Sb	123	404.3	9.7	**0.0898**	0.011	11.7	ug/L	201	Standard
	Ba	135	7189623.7	0.9	**4482.5615**	58.524	1.3	ug/L	108	Standard
	Ce	140	11556.1	1.6				ug/L	30	Standard
>	**Tb**	159	738740.3	1.0				ug/L	792236	Standard
	Ho	165	163.3	8.8				ug/L	7	Standard
	Tl	203	154.3	14.2	**0.0220**	0.003	15.0	ug/L	9	Standard
	Tl	205	155.0	9.7	**0.0212**	0.003	13.2	ug/L	0	Standard
	Pb	206	489.3	5.2	**0.0725**	0.006	7.9	ug/L	216	Standard
	Pb	207	420.0	7.6	**0.0677**	0.009	13.2	ug/L	180	Standard
	Pb	208	1652.4	1.4	**0.0599**	0.003	5.3	ug/L	717	Standard
	U	238	9935.9	1.3	**1.9381**	0.028	1.4	ug/L	4	Standard
>	**Bi**	209	378492.4	1.3				ug/L	460343	Standard

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Na	23	20.0	43.3	**-51.8526**	25.479	49.1	mg/L	0	Standard
Mg	24	304205.5	1.3	**394.7766**	3.601	0.9	mg/L	20	Standard
K	39	283.3	22.2	**1.8451**	0.491	26.6	mg/L	22	Standard
Ca	43	1023.4	14.5	**216.1479**	37.325	17.3	mg/L	47	Standard
Fe	54	3507.0	4.8	**2.6133**	0.070	2.7	mg/L	151	Standard
Fe	57	2098.5	3.6	**5.5706**	0.094	1.7	mg/L	195	Standard
> **Sc-1**	45	30973.3	2.2				mg/L	29647	Standard
Cl	35	171200.0	3.8				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	477807.6	1.2				ug/L	1607	Standard
P	31	31030.1	3.4				ug/L	22752	Standard
S	34	5537.7	3.1				ug/L	5049	Standard
Sr	88	3852.2	4.1				ug/L	87	Standard
C	12	250.0	32.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	197.9	47.2				mg/L	10	Standard
Ho-1	165	163.3	8.8				mg/L	7	Standard
Er	166	183.3	6.3				mg/L	3	Standard
I	127	159354.2	8.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.929	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		89.774	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	88.488
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	82.220
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606073102
Sample Date/Time: Thursday, June 16, 2016 20:46:43
Number of Replicates: 3
Autosampler Position: 346
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55473.1	2.7				ug/L	51024	Standard
	Be	9	55.0	36.4	**0.0390**	0.022	55.7	ug/L	7	Standard
	Al	27	942566.4	1.5	**6.0840**	0.204	3.4	ug/L	625	Standard
	Sc	45	34049.9	0.9				ug/L	29647	Standard
	Ti	47	5731.8	2.0	**18.2913**	0.196	1.1	ug/L	57	Standard
	V	51	32065.1	2.5	**4.1901**	0.107	2.6	ug/L	1142	Standard
	Cr	52	17242.5	0.8	**1.3371**	0.009	0.7	ug/L	6628	Standard
	Cr	53	5039.2	15.0	**4.8012**	0.726	15.1	ug/L	430	Standard
	Mn	55	115479.5	1.7	**18.6730**	0.120	0.6	ug/L	603	Standard
	Co	59	2037.1	3.8	**0.2650**	0.009	3.4	ug/L	237	Standard
	Ni	60	2031.8	4.8	**0.9400**	0.039	4.2	ug/L	141	Standard
	Cu	65	266456.7	0.9	**136.9469**	2.046	1.5	ug/L	109	Standard
	Zn	66	37165.9	1.0	**32.1770**	0.480	1.5	ug/L	159	Standard
>	**Ge**	72	490402.9	1.1				ug/L	474053	Standard
	As	75	12459.1	0.9	**10.9020**	0.085	0.8	ug/L	-34	Standard
	Se	82	127.6	3.2	**0.9465**	0.028	3.0	ug/L	14	Standard
	Se-1	77	270.0	15.8	**2.6503**	0.495	18.7	ug/L	55	Standard
>	**Ga**	71	1921.8	2.3				mg/L	50	Standard
	Rb	85	35595.1	1.8				ug/L	20	Standard
	Y	89	404147.8	1.0				ug/L	376602	Standard
>	**Rh**	103	85.0	15.6				ug/L	17	Standard
	Mo	98	4328.7	1.5	**1.8133**	0.020	1.1	ug/L	8	Standard
	Ag	107	869.7	0.1	**0.1324**	0.001	0.5	ug/L	81	Standard
	Cd	111	482.3	7.8	**0.2434**	0.019	8.0	mg/L	3	Standard
	Cd	114	1335.6	3.6	**0.2724**	0.009	3.3	ug/L	7	Standard
>	**In**	115	528691.1	0.6				ug/L	524722	Standard
	Sn	118	4765.7	3.3	**0.7887**	0.031	4.0	ug/L	715	Standard
	Sb	123	3183.9	1.5	**0.7087**	0.011	1.6	ug/L	201	Standard
	Ba	135	17225.1	3.1	**9.3751**	0.336	3.6	ug/L	108	Standard
	Ce	140	48213.3	1.0				ug/L	30	Standard
>	**Tb**	159	793657.4	1.6				ug/L	792236	Standard
	Ho	165	775.0	7.8				ug/L	7	Standard
	Tl	203	260.0	6.4	**0.0318**	0.003	8.6	ug/L	9	Standard
	Tl	205	233.3	20.4	**0.0285**	0.008	27.8	ug/L	0	Standard
	Pb	206	39704.6	1.2	**8.6323**	0.072	0.8	ug/L	216	Standard
	Pb	207	34342.9	1.0	**8.2030**	0.203	2.5	ug/L	180	Standard
	Pb	208	145934.1	1.3	**8.5861**	0.079	0.9	ug/L	717	Standard
	U	238	420.0	4.3	**0.0608**	0.004	7.1	ug/L	4	Standard
>	**Bi**	209	455671.4	2.1				ug/L	460343	Standard

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Na	23	3.3	173.2	**0.8644**	16.607	1921.3	mg/L	0	Standard
Mg	24	12667.0	1.0	**14.9085**	0.215	1.4	mg/L	20	Standard
K	39	335.0	19.1	**1.9967**	0.430	21.5	mg/L	22	Standard
Ca	43	88.3	18.2	**4.8010**	3.416	71.1	mg/L	47	Standard
Fe	54	995.1	5.6	**0.5893**	0.033	5.5	mg/L	151	Standard
Fe	57	445.0	16.6	**0.5516**	0.188	34.0	mg/L	195	Standard
Sc-1	45	34049.9	0.9				mg/L	29647	Standard
Cl	35	173758.3	2.1				ug/L	154152	Standard
Kr	83	3.3	91.7				ug/L	3	Standard
Br	81	6371.4	18.0				ug/L	1607	Standard
P	31	28039.3	2.8				ug/L	22752	Standard
S	34	5270.9	3.8				ug/L	5049	Standard
Sr	88	90.0	5.6				ug/L	87	Standard
C	12	76.7	58.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	56.8				mg/L	0	Standard
Dy	164	1215.7	9.2				mg/L	10	Standard
Ho-1	165	775.0	7.8				mg/L	7	Standard
Er	166	786.7	6.4				mg/L	3	Standard
I	127	21140.1	20.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.719	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.449	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.756
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.985
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: L1606073102
Sample Date/Time: Thursday, June 16, 2016 20:49:54
Number of Replicates: 3
Autosampler Position: 347
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59153.6	1.2				ug/L	51024	Standard
	Be	9	8.3	34.6	**-0.0125**	0.003	23.9	ug/L	7	Standard
	Al	27	100448.6	1.0	**0.5989**	0.007	1.2	ug/L	625	Standard
	Sc	45	33126.2	1.2				ug/L	29647	Standard
	Ti	47	644.7	2.1	**2.0007**	0.071	3.6	ug/L	57	Standard
	V	51	4289.2	6.3	**0.4402**	0.044	10.0	ug/L	1142	Standard
	Cr	52	8064.5	2.5	**0.1771**	0.010	5.7	ug/L	6628	Standard
	Cr	53	1751.8	6.1	**1.4679**	0.099	6.8	ug/L	430	Standard
	Mn	55	12501.5	0.4	**1.9975**	0.048	2.4	ug/L	603	Standard
	Co	59	371.3	7.0	**0.0170**	0.003	18.0	ug/L	237	Standard
	Ni	60	380.0	10.9	**0.1207**	0.019	15.5	ug/L	141	Standard
	Cu	65	26879.2	2.3	**14.3517**	0.162	1.1	ug/L	109	Standard
	Zn	66	5034.5	0.7	**4.3493**	0.122	2.8	ug/L	159	Standard
>	Ge	72	470100.0	2.4				ug/L	474053	Standard
	As	75	1188.6	1.5	**1.1081**	0.042	3.8	ug/L	-34	Standard
	Se	82	31.1	20.0	**0.1142**	0.055	48.5	ug/L	14	Standard
	Se-1	77	110.7	11.2	**0.7077**	0.148	20.9	ug/L	55	Standard
>	Ga	71	223.3	5.6				mg/L	50	Standard
	Rb	85	3760.5	5.0				ug/L	20	Standard
	Y	89	401153.8	1.8				ug/L	376602	Standard
>	Rh	103	35.0	28.6				ug/L	17	Standard
	Mo	98	446.2	5.1	**0.1763**	0.012	6.9	ug/L	8	Standard
	Ag	107	132.3	3.7	**0.0090**	0.001	8.3	ug/L	81	Standard
	Cd	111	53.4	17.3	**0.0233**	0.005	21.5	mg/L	3	Standard
	Cd	114	111.5	28.2	**0.0185**	0.006	33.2	ug/L	7	Standard
>	In	115	545539.1	1.6				ug/L	524722	Standard
	Sn	118	1001.7	15.4	**0.0892**	0.025	28.5	ug/L	715	Standard
	Sb	123	390.2	5.8	**0.0711**	0.004	6.2	ug/L	201	Standard
	Ba	135	2004.1	4.2	**1.0056**	0.035	3.5	ug/L	108	Standard
	Ce	140	4912.5	3.1				ug/L	30	Standard
>	Tb	159	820295.3	0.5				ug/L	792236	Standard
	Ho	165	85.0	35.8				ug/L	7	Standard
	Tl	203	81.3	9.9	**0.0080**	0.001	12.7	ug/L	9	Standard
	Tl	205	81.7	7.1	**0.0047**	0.001	18.7	ug/L	0	Standard
	Pb	206	4339.0	0.8	**0.8817**	0.013	1.4	ug/L	216	Standard
	Pb	207	3847.8	0.9	**0.8599**	0.011	1.3	ug/L	180	Standard
	Pb	208	15987.3	1.8	**0.8776**	0.022	2.5	ug/L	717	Standard
	U	238	37.0	13.5	**-0.0016**	0.001	51.1	ug/L	4	Standard
>	Bi	209	461213.2	0.5				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1265.1	9.3	**1.4911**	0.161	10.8	mg/L	20	Standard
K	39	51.7	11.2	**0.1245**	0.037	30.0	mg/L	22	Standard
Ca	43	36.7	20.8	**-5.5323**	1.502	27.2	mg/L	47	Standard
Fe	54	272.3	11.9	**0.0834**	0.026	30.8	mg/L	151	Standard
Fe	57	213.3	13.3	**-0.0553**	0.084	152.6	mg/L	195	Standard
> **Sc-1**	45	33126.2	1.2				mg/L	29647	Standard
Cl	35	168674.4	1.0				ug/L	154152	Standard
Kr	83	2.7	57.3				ug/L	3	Standard
Br	81	3067.0	8.5				ug/L	1607	Standard
P	31	24656.7	3.1				ug/L	22752	Standard
S	34	5190.9	0.5				ug/L	5049	Standard
Sr	88	70.0	31.1				ug/L	87	Standard
C	12	56.7	40.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	128.2	29.2				mg/L	10	Standard
Ho-1	165	85.0	35.8				mg/L	7	Standard
Er	166	106.7	19.5				mg/L	3	Standard
I	127	4907.5	9.2				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.933	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.166	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.967
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.189
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606054009
Sample Date/Time: Thursday, June 16, 2016 20:53:06
Number of Replicates: 3
Autosampler Position: 348
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57167.7	1.8				ug/L	51024	Standard
	Be	9	16.7	34.6	**-0.0033**	0.006	191.0	ug/L	7	Standard
	Al	27	40703.4	11.7	**0.2452**	0.025	10.3	ug/L	625	Standard
	Sc	45	31935.3	3.8				ug/L	29647	Standard
	Ti	47	33.3	7.5	**-0.0541**	0.007	12.4	ug/L	57	Standard
	V	51	1267.4	7.9	**0.0110**	0.011	98.7	ug/L	1142	Standard
	Cr	52	6813.9	0.7	**0.0049**	0.027	550.7	ug/L	6628	Standard
	Cr	53	1183.4	2.1	**0.8507**	0.047	5.5	ug/L	430	Standard
	Mn	55	63841.2	0.9	**10.7040**	0.156	1.5	ug/L	603	Standard
	Co	59	241.7	8.6	**-0.0034**	0.003	78.7	ug/L	237	Standard
	Ni	60	170.7	5.3	**0.0113**	0.004	35.5	ug/L	141	Standard
	Cu	65	185.7	9.3	**0.0334**	0.011	32.3	ug/L	109	Standard
	Zn	66	1221.7	3.3	**0.8784**	0.051	5.8	ug/L	159	Standard
>	**Ge**	72	470712.9	2.2				ug/L	474053	Standard
	As	75	30.8	16.5	**0.0530**	0.004	7.8	ug/L	-34	Standard
	Se	82	25.1	14.7	**0.0591**	0.030	51.4	ug/L	14	Standard
	Se-1	77	77.3	7.8	**0.2686**	0.059	22.0	ug/L	55	Standard
>	**Ga**	71	51.7	31.1				mg/L	50	Standard
	Rb	85	646.7	20.2				ug/L	20	Standard
	Y	89	396670.0	2.0				ug/L	376602	Standard
>	**Rh**	103	36.7	47.9				ug/L	17	Standard
	Mo	98	41.6	28.6	**0.0117**	0.005	41.7	ug/L	8	Standard
	Ag	107	95.3	39.9	**0.0032**	0.006	177.8	ug/L	81	Standard
	Cd	111	10.6	141.7	**0.0020**	0.007	372.2	mg/L	3	Standard
	Cd	114	31.1	47.0	**0.0025**	0.003	110.7	ug/L	7	Standard
>	**In**	115	535879.5	3.0				ug/L	524722	Standard
	Sn	118	518.3	19.7	**0.0045**	0.016	347.9	ug/L	715	Standard
	Sb	123	86.0	15.9	**0.0044**	0.002	55.3	ug/L	201	Standard
	Ba	135	3179.4	70.5	**1.6371**	1.141	69.7	ug/L	108	Standard
	Ce	140	118.3	56.3				ug/L	30	Standard
>	**Tb**	159	791577.1	1.4				ug/L	792236	Standard
	Ho	165	16.7	62.4				ug/L	7	Standard
	Tl	203	82.0	86.0	**0.0083**	0.009	108.7	ug/L	9	Standard
	Tl	205	38.3	39.8	**-0.0018**	0.002	122.7	ug/L	0	Standard
	Pb	206	276.0	8.2	**0.0051**	0.003	58.8	ug/L	216	Standard
	Pb	207	225.0	9.4	**0.0012**	0.004	310.7	ug/L	180	Standard
	Pb	208	961.3	4.7	**0.0001**	0.001	957.0	ug/L	717	Standard
	U	238	50.7	3.0	**0.0008**	0.000	45.3	ug/L	4	Standard
>	**Bi**	209	447174.4	3.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	178.3	23.3	**0.1782**	0.044	24.8	mg/L	20	Standard
K	39	75.0	0.0	**0.3034**	0.020	6.6	mg/L	22	Standard
Ca	43	26.7	39.0	**-7.4067**	2.216	29.9	mg/L	47	Standard
Fe	54	296.0	2.0	**0.1085**	0.005	4.5	mg/L	151	Standard
Fe	57	203.3	7.1	**-0.0621**	0.045	71.7	mg/L	195	Standard
> **Sc-1**	45	31935.3	3.8				mg/L	29647	Standard
Cl	35	168415.6	1.0				ug/L	154152	Standard
Kr	83	1.0	0.0				ug/L	3	Standard
Br	81	2343.5	14.9				ug/L	1607	Standard
P	31	24079.1	0.8				ug/L	22752	Standard
S	34	5175.9	6.6				ug/L	5049	Standard
Sr	88	91.7	20.7				ug/L	87	Standard
C	12	60.0	28.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	7.9	115.0				mg/L	10	Standard
Ho-1	165	16.7	62.4				mg/L	7	Standard
Er	166	43.3	70.5				mg/L	3	Standard
I	127	3628.8	3.8				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.040	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.295	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.126
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.139
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606054010
Sample Date/Time: Thursday, June 16, 2016 20:57:27
Number of Replicates: 3
Autosampler Position: 349
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56434.9	2.3				ug/L	51024	Standard
	Be	9	8.3	34.6	**-0.0121**	0.003	26.4	ug/L	7	Standard
	Al	27	252906.9	1.5	**1.5971**	0.043	2.7	ug/L	625	Standard
	Sc	45	31920.3	2.1				ug/L	29647	Standard
	Ti	47	312.3	10.2	**0.8821**	0.111	12.6	ug/L	57	Standard
	V	51	2253.7	7.5	**0.1509**	0.028	18.3	ug/L	1142	Standard
	Cr	52	7388.1	1.0	**0.0829**	0.016	19.3	ug/L	6628	Standard
	Cr	53	1196.7	7.3	**0.8649**	0.109	12.6	ug/L	430	Standard
	Mn	55	73740.7	1.7	**12.3802**	0.357	2.9	ug/L	603	Standard
	Co	59	450.0	4.0	**0.0292**	0.003	10.6	ug/L	237	Standard
	Ni	60	555.0	6.8	**0.2120**	0.023	10.8	ug/L	141	Standard
	Cu	65	367.0	6.1	**0.1304**	0.011	8.6	ug/L	109	Standard
	Zn	66	2607.2	1.1	**2.1362**	0.049	2.3	ug/L	159	Standard
>	**Ge**	72	470838.7	1.1				ug/L	474053	Standard
	As	75	1057.7	4.9	**0.9866**	0.037	3.7	ug/L	-34	Standard
	Se	82	371.4	5.2	**3.2111**	0.141	4.4	ug/L	14	Standard
	Se-1	77	82.0	5.3	**0.3308**	0.069	21.0	ug/L	55	Standard
>	**Ga**	71	95.0	21.1				mg/L	50	Standard
	Rb	85	2080.1	6.3				ug/L	20	Standard
	Y	89	394550.0	1.4				ug/L	376602	Standard
>	**Rh**	103	40.0	12.5				ug/L	17	Standard
	Mo	98	432.1	5.5	**0.1778**	0.013	7.4	ug/L	8	Standard
	Ag	107	89.3	6.8	**0.0027**	0.001	34.2	ug/L	81	Standard
	Cd	111	10.8	29.5	**0.0024**	0.002	71.8	mg/L	3	Standard
	Cd	114	7.3	63.1	**-0.0023**	0.001	40.5	ug/L	7	Standard
>	**In**	115	524122.9	2.0				ug/L	524722	Standard
	Sn	118	475.0	16.9	**-0.0012**	0.015	1226.6	ug/L	715	Standard
	Sb	123	126.7	16.7	**0.0143**	0.005	37.6	ug/L	201	Standard
	Ba	135	6164.6	3.3	**3.3481**	0.133	4.0	ug/L	108	Standard
	Ce	140	2293.5	2.9				ug/L	30	Standard
>	**Tb**	159	771498.5	0.9				ug/L	792236	Standard
	Ho	165	40.0	33.1				ug/L	7	Standard
	Tl	203	178.3	6.6	**0.0218**	0.002	7.9	ug/L	9	Standard
	Tl	205	168.3	19.8	**0.0193**	0.006	28.8	ug/L	0	Standard
	Pb	206	424.0	1.9	**0.0396**	0.002	4.6	ug/L	216	Standard
	Pb	207	350.0	3.8	**0.0332**	0.004	10.7	ug/L	180	Standard
	Pb	208	1524.0	3.5	**0.0355**	0.004	11.4	ug/L	717	Standard
	U	238	1126.4	2.3	**0.1820**	0.006	3.2	ug/L	4	Standard
>	**Bi**	209	440459.4	0.9				ug/L	460343	Standard

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Na	23	3.3	86.6	**0.3515**	8.752	2490.2	mg/L	0	Standard
Mg	24	5054.2	1.6	**6.3217**	0.207	3.3	mg/L	20	Standard
K	39	60.0	38.2	**0.1962**	0.161	82.1	mg/L	22	Standard
Ca	43	58.3	27.6	**-0.5341**	3.483	652.1	mg/L	47	Standard
Fe	54	351.0	19.9	**0.1502**	0.054	35.8	mg/L	151	Standard
Fe	57	258.3	13.7	**0.0974**	0.116	119.4	mg/L	195	Standard
> **Sc-1**	45	31920.3	2.1				mg/L	29647	Standard
Cl	35	170598.8	2.4				ug/L	154152	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	89319.4	3.8				ug/L	1607	Standard
P	31	24377.9	0.5				ug/L	22752	Standard
S	34	5239.2	6.6				ug/L	5049	Standard
Sr	88	133.3	15.6				ug/L	87	Standard
C	12	30.0	33.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	52.1	28.7				mg/L	10	Standard
Ho-1	165	40.0	33.1				mg/L	7	Standard
Er	166	26.7	57.3				mg/L	3	Standard
I	127	17059.6	8.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.604	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.322	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.886
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.681
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606054011
Sample Date/Time: Thursday, June 16, 2016 21:00:39
Number of Replicates: 3
Autosampler Position: 350
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58251.8	0.7				ug/L	51024	Standard
	Be	9	10.0	100.0	**-0.0107**	0.010	96.5	ug/L	7	Standard
	Al	27	254779.3	0.3	**1.5580**	0.016	1.0	ug/L	625	Standard
	Sc	45	32790.5	2.0				ug/L	29647	Standard
	Ti	47	354.0	6.1	**1.0202**	0.064	6.3	ug/L	57	Standard
	V	51	2227.5	5.1	**0.1471**	0.023	15.7	ug/L	1142	Standard
	Cr	52	7531.2	1.8	**0.1020**	0.041	40.4	ug/L	6628	Standard
	Cr	53	1105.0	6.8	**0.7629**	0.054	7.1	ug/L	430	Standard
	Mn	55	71367.7	1.1	**11.9661**	0.226	1.9	ug/L	603	Standard
	Co	59	417.3	0.3	**0.0241**	0.001	5.5	ug/L	237	Standard
	Ni	60	538.0	5.0	**0.2029**	0.019	9.2	ug/L	141	Standard
	Cu	65	370.3	6.0	**0.1319**	0.008	6.1	ug/L	109	Standard
	Zn	66	2431.9	0.9	**1.9749**	0.035	1.8	ug/L	159	Standard
>	**Ge**	72	471306.4	2.3				ug/L	474053	Standard
	As	75	1059.1	3.3	**0.9871**	0.024	2.5	ug/L	-34	Standard
	Se	82	374.1	5.5	**3.2332**	0.174	5.4	ug/L	14	Standard
	Se-1	77	74.7	4.7	**0.2331**	0.038	16.2	ug/L	55	Standard
>	**Ga**	71	103.3	15.6				mg/L	50	Standard
	Rb	85	1920.1	7.2				ug/L	20	Standard
	Y	89	383902.2	1.9				ug/L	376602	Standard
>	**Rh**	103	25.0	87.2				ug/L	17	Standard
	Mo	98	436.7	9.1	**0.1748**	0.015	8.7	ug/L	8	Standard
	Ag	107	65.0	9.2	**-0.0017**	0.001	50.8	ug/L	81	Standard
	Cd	111	7.9	14.5	**0.0007**	0.001	83.6	mg/L	3	Standard
	Cd	114	24.6	49.4	**0.0012**	0.002	206.6	ug/L	7	Standard
>	**In**	115	537640.9	1.1				ug/L	524722	Standard
	Sn	118	573.3	39.0	**0.0145**	0.041	281.6	ug/L	715	Standard
	Sb	123	111.2	8.6	**0.0100**	0.002	20.8	ug/L	201	Standard
	Ba	135	6046.2	1.0	**3.1982**	0.060	1.9	ug/L	108	Standard
	Ce	140	2091.8	0.8				ug/L	30	Standard
>	**Tb**	159	809758.8	0.4				ug/L	792236	Standard
	Ho	165	41.7	18.3				ug/L	7	Standard
	Tl	203	180.3	6.1	**0.0211**	0.001	6.1	ug/L	9	Standard
	Tl	205	173.3	24.0	**0.0189**	0.006	33.1	ug/L	0	Standard
	Pb	206	420.3	5.1	**0.0350**	0.005	15.0	ug/L	216	Standard
	Pb	207	374.0	2.6	**0.0354**	0.003	8.0	ug/L	180	Standard
	Pb	208	1541.7	1.3	**0.0327**	0.002	5.1	ug/L	717	Standard
	U	238	1137.0	2.8	**0.1760**	0.006	3.3	ug/L	4	Standard
>	**Bi**	209	459070.7	0.7				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.4041**	8.743	161.8	mg/L	0	Standard
Mg	24	4977.5	2.7	**6.0561**	0.102	1.7	mg/L	20	Standard
K	39	71.7	10.7	**0.2668**	0.063	23.4	mg/L	22	Standard
Ca	43	53.3	10.8	**-1.9274**	1.113	57.7	mg/L	47	Standard
Fe	54	318.9	6.3	**0.1195**	0.015	12.9	mg/L	151	Standard
Fe	57	250.0	29.5	**0.0557**	0.223	399.4	mg/L	195	Standard
> **Sc-1**	45	32790.5	2.0				mg/L	29647	Standard
Cl	35	169793.5	0.8				ug/L	154152	Standard
Kr	83	2.0	0.0				ug/L	3	Standard
Br	81	89396.4	2.9				ug/L	1607	Standard
P	31	24319.5	2.4				ug/L	22752	Standard
S	34	5012.5	5.2				ug/L	5049	Standard
Sr	88	106.7	17.7				ug/L	87	Standard
C	12	46.7	32.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	51.6	38.3				mg/L	10	Standard
Ho-1	165	41.7	18.3				mg/L	7	Standard
Er	166	36.7	63.0				mg/L	3	Standard
I	127	17585.2	6.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.165	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.421	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.462	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.724	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606054014
Sample Date/Time: Thursday, June 16, 2016 21:03:50
Number of Replicates: 3
Autosampler Position: 351
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57943.9	0.3				ug/L	51024	Standard
	Be	9	10.0	50.0	**-0.0106**	0.005	49.0	ug/L	7	Standard
	Al	27	40494.2	7.5	**0.2408**	0.019	8.1	ug/L	625	Standard
	Sc	45	33099.4	0.9				ug/L	29647	Standard
	Ti	47	40.0	11.5	**-0.0319**	0.013	41.5	ug/L	57	Standard
	V	51	1267.4	3.9	**0.0110**	0.004	33.2	ug/L	1142	Standard
	Cr	52	6912.6	1.0	**0.0177**	0.023	132.2	ug/L	6628	Standard
	Cr	53	750.0	9.0	**0.3802**	0.071	18.6	ug/L	430	Standard
	Mn	55	124087.1	1.1	**20.9134**	0.521	2.5	ug/L	603	Standard
	Co	59	211.7	10.1	**-0.0081**	0.004	46.5	ug/L	237	Standard
	Ni	60	248.0	1.5	**0.0516**	0.002	4.7	ug/L	141	Standard
	Cu	65	221.0	10.6	**0.0522**	0.012	22.6	ug/L	109	Standard
	Zn	66	3791.1	1.2	**3.2112**	0.103	3.2	ug/L	159	Standard
>	**Ge**	72	470993.8	1.9				ug/L	474053	Standard
	As	75	110.5	40.9	**0.1251**	0.040	31.9	ug/L	-34	Standard
	Se	82	16.7	56.8	**-0.0174**	0.085	487.8	ug/L	14	Standard
	Se-1	77	66.3	16.1	**0.1259**	0.151	119.8	ug/L	55	Standard
>	**Ga**	71	63.3	27.7				mg/L	50	Standard
	Rb	85	276.7	10.3				ug/L	20	Standard
	Y	89	385833.8	2.0				ug/L	376602	Standard
>	**Rh**	103	31.7	50.8				ug/L	17	Standard
	Mo	98	31.0	14.9	**0.0074**	0.002	27.3	ug/L	8	Standard
	Ag	107	68.0	4.4	**-0.0012**	0.000	32.0	ug/L	81	Standard
	Cd	111	10.9	18.2	**0.0023**	0.001	41.2	mg/L	3	Standard
	Cd	114	35.3	7.7	**0.0034**	0.001	15.7	ug/L	7	Standard
>	**In**	115	534994.4	1.2				ug/L	524722	Standard
	Sn	118	486.7	6.0	**-0.0009**	0.004	488.6	ug/L	715	Standard
	Sb	123	88.5	13.6	**0.0050**	0.002	48.6	ug/L	201	Standard
	Ba	135	1149.4	10.0	**0.5638**	0.054	9.6	ug/L	108	Standard
	Ce	140	73.3	33.6				ug/L	30	Standard
>	**Tb**	159	801412.4	0.6				ug/L	792236	Standard
	Ho	165	16.7	17.3				ug/L	7	Standard
	Tl	203	39.7	22.9	**0.0026**	0.001	46.4	ug/L	9	Standard
	Tl	205	23.3	75.3	**-0.0042**	0.003	64.0	ug/L	0	Standard
	Pb	206	288.7	4.7	**0.0060**	0.003	43.9	ug/L	216	Standard
	Pb	207	232.0	1.6	**0.0012**	0.001	74.1	ug/L	180	Standard
	Pb	208	996.7	1.1	**0.0003**	0.001	274.4	ug/L	717	Standard
	U	238	6.3	48.2	**-0.0066**	0.000	7.5	ug/L	4	Standard
>	**Bi**	209	461918.2	0.5				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.5408**	8.507	153.5	mg/L	0	Standard
Mg	24	155.0	19.6	**0.1428**	0.035	24.6	mg/L	20	Standard
K	39	20.0	75.0	**-0.0919**	0.101	110.1	mg/L	22	Standard
Ca	43	28.3	36.7	**-7.2551**	2.201	30.3	mg/L	47	Standard
Fe	54	217.7	12.7	**0.0436**	0.021	47.7	mg/L	151	Standard
Fe	57	210.0	21.4	**-0.0640**	0.129	201.3	mg/L	195	Standard
> **Sc-1**	45	33099.4	0.9				mg/L	29647	Standard
Cl	35	168257.1	0.3				ug/L	154152	Standard
Kr	83	2.0	86.6				ug/L	3	Standard
Br	81	3430.4	12.2				ug/L	1607	Standard
P	31	24144.2	1.0				ug/L	22752	Standard
S	34	5209.2	2.8				ug/L	5049	Standard
Sr	88	75.0	43.7				ug/L	87	Standard
C	12	36.7	63.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.1	43.3				mg/L	10	Standard
Ho-1	165	16.7	17.3				mg/L	7	Standard
Er	166	26.7	43.3				mg/L	3	Standard
I	127	3078.6	10.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.562	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.355	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.958
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.342
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 21:07:02
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	57216.2	1.8				ug/L	51024	Standard
	Be	9	44266.2	0.8	**46.9448**	1.086	2.3	ug/L	7	Standard
	Al	27	7280291.9	1.0	**45.6137**	1.287	2.8	ug/L	625	Standard
	Sc	45	32309.4	1.7				ug/L	29647	Standard
	Ti	47	30197.4	0.3	**101.5240**	2.598	2.6	ug/L	57	Standard
	V	51	355347.4	0.9	**50.3294**	0.808	1.6	ug/L	1142	Standard
	Cr	52	370024.2	0.4	**49.8980**	1.109	2.2	ug/L	6628	Standard
	Cr	53	45872.7	0.6	**49.4285**	1.135	2.3	ug/L	430	Standard
	Mn	55	314239.7	1.6	**53.3617**	1.128	2.1	ug/L	603	Standard
	Co	59	314388.6	0.3	**49.3919**	1.176	2.4	ug/L	237	Standard
	Ni	60	94820.1	0.2	**49.5997**	1.101	2.2	ug/L	141	Standard
	Cu	65	92383.2	1.4	**49.5924**	0.629	1.3	ug/L	109	Standard
	Zn	66	54761.8	0.6	**49.6923**	0.878	1.8	ug/L	159	Standard
>	Ge	72	469160.5	2.3				ug/L	474053	Standard
	As	75	53380.1	0.9	**48.7528**	1.227	2.5	ug/L	-34	Standard
	Se	82	5320.4	1.7	**48.4684**	1.778	3.7	ug/L	14	Standard
	Se-1	77	3692.8	2.0	**47.8512**	0.716	1.5	ug/L	55	Standard
>	Ga	71	61.7	70.8				mg/L	50	Standard
	Rb	85	808.4	9.3				ug/L	20	Standard
	Y	89	383560.2	1.8				ug/L	376602	Standard
>	Rh	103	35.0	42.9				ug/L	17	Standard
	Mo	98	232242.3	1.1	**96.5061**	2.361	2.4	ug/L	8	Standard
	Ag	107	292582.7	0.8	**48.1206**	0.391	0.8	ug/L	81	Standard
	Cd	111	95603.2	0.1	**48.3402**	0.694	1.4	mg/L	3	Standard
	Cd	114	235634.1	0.2	**48.1942**	0.648	1.3	ug/L	7	Standard
>	In	115	534700.6	1.5				ug/L	524722	Standard
	Sn	118	264473.5	1.3	**48.1050**	1.306	2.7	ug/L	715	Standard
	Sb	123	215670.2	0.6	**48.4479**	0.874	1.8	ug/L	201	Standard
	Ba	135	88155.7	0.1	**47.6769**	0.763	1.6	ug/L	108	Standard
	Ce	140	101.7	19.9				ug/L	30	Standard
>	Tb	159	793079.8	1.0				ug/L	792236	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	358440.3	1.1	**47.4951**	0.142	0.3	ug/L	9	Standard
	Tl	205	312266.9	1.0	**48.6540**	0.130	0.3	ug/L	0	Standard
	Pb	206	224283.0	1.3	**49.1202**	0.907	1.8	ug/L	216	Standard
	Pb	207	204302.6	0.7	**49.1523**	0.806	1.6	ug/L	180	Standard
	Pb	208	833504.1	0.4	**49.4087**	0.646	1.3	ug/L	717	Standard
	U	238	304654.1	0.2	**49.6463**	0.682	1.4	ug/L	4	Standard
>	Bi	209	454777.5	1.2				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.3475**	8.842	165.3	mg/L	0	Standard
Mg	24	4015.5	1.7	**4.9520**	0.163	3.3	mg/L	20	Standard
K	39	633.3	0.9	**4.2037**	0.116	2.8	mg/L	22	Standard
Ca	43	71.7	28.2	**2.1962**	4.389	199.9	mg/L	47	Standard
Fe	54	5816.1	3.6	**4.2263**	0.216	5.1	mg/L	151	Standard
Fe	57	1691.8	3.9	**4.1585**	0.125	3.0	mg/L	195	Standard
> **Sc-1**	45	32309.4	1.7				mg/L	29647	Standard
Cl	35	165447.9	1.5				ug/L	154152	Standard
Kr	83	3.0	33.3				ug/L	3	Standard
Br	81	2063.5	3.6				ug/L	1607	Standard
P	31	25169.2	0.8				ug/L	22752	Standard
S	34	5737.8	0.7				ug/L	5049	Standard
Sr	88	55.0	15.7				ug/L	87	Standard
C	12	53.3	47.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.2	93.3				mg/L	10	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	10.0					mg/L	3	Standard
I	127	1655.1	3.8				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	93.890		
Al	27	91.227		
Sc	45			
Ti	47	101.524		
V	51	100.659		
Cr	52	99.796		
Cr	53			
Mn	55	106.723		
Co	59	98.784		
Ni	60	99.199		
Cu	65	99.185		
Zn	66	99.385		
> Ge	72		98.968	
As	75	97.506		
Se	82	96.937		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	96.506		
Ag	107	96.241		
Cd	111	96.680		
Cd	114			
In	115			101.902
Sn	118	96.210		
Sb	123	96.896		
Ba	135	95.354		
Ce	140			
Tb	159			
Ho	165			
Tl	203	94.990		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.817		
U	238	99.293		
Bi	209			98.791
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Thursday, June 16, 2016 21:09:19
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 21:10:14
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55944.8	2.0				ug/L	51024	Standard
	Be	9	16.7	34.6	**-0.0030**	0.006	212.8	ug/L	7	Standard
	Al	27	1526.8	38.2	**-0.0000**	0.004	16917.9	ug/L	625	Standard
	Sc	45	31897.0	7.4				ug/L	29647	Standard
	Ti	47	31.0	8.5	**-0.0586**	0.008	13.1	ug/L	57	Standard
	V	51	1141.1	6.7	**-0.0015**	0.010	648.2	ug/L	1142	Standard
	Cr	52	6326.0	1.2	**-0.0342**	0.003	8.9	ug/L	6628	Standard
	Cr	53	638.3	5.1	**0.2820**	0.027	9.6	ug/L	430	Standard
	Mn	55	672.3	5.7	**-0.0087**	0.006	71.9	ug/L	603	Standard
	Co	59	229.3	15.7	**-0.0042**	0.005	126.3	ug/L	237	Standard
	Ni	60	153.7	14.0	**0.0051**	0.012	235.2	ug/L	141	Standard
	Cu	65	131.3	12.6	**0.0065**	0.009	132.4	ug/L	109	Standard
	Zn	66	145.0	12.1	**-0.0961**	0.015	15.1	ug/L	159	Standard
>	**Ge**	72	455945.8	1.4				ug/L	474053	Standard
	As	75	-22.0	198.7	**0.0041**	0.041	1009.9	ug/L	-34	Standard
	Se	82	27.4	26.2	**0.0880**	0.066	75.2	ug/L	14	Standard
	Se-1	77	76.0	21.7	**0.2852**	0.231	80.9	ug/L	55	Standard
>	**Ga**	71	41.7	42.1				mg/L	50	Standard
	Rb	85	23.3	75.3				ug/L	20	Standard
	Y	89	400519.5	2.1				ug/L	376602	Standard
>	**Rh**	103	30.0	57.7				ug/L	17	Standard
	Mo	98	251.1	32.5	**0.0955**	0.032	33.2	ug/L	8	Standard
	Ag	107	99.3	31.3	**0.0035**	0.005	136.7	ug/L	81	Standard
	Cd	111	14.1	69.7	**0.0037**	0.005	129.5	mg/L	3	Standard
	Cd	114	31.9	76.8	**0.0025**	0.005	193.5	ug/L	7	Standard
>	**In**	115	550633.2	1.2				ug/L	524722	Standard
	Sn	118	735.0	12.4	**0.0407**	0.017	42.7	ug/L	715	Standard
	Sb	123	412.2	18.4	**0.0753**	0.017	23.2	ug/L	201	Standard
	Ba	135	126.7	6.0	**0.0089**	0.003	36.5	ug/L	108	Standard
	Ce	140	13.3	43.3				ug/L	30	Standard
>	**Tb**	159	804256.0	1.8				ug/L	792236	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	62.7	29.5	**0.0058**	0.002	40.2	ug/L	9	Standard
	Tl	205	55.0	15.7	**0.0008**	0.001	147.2	ug/L	0	Standard
	Pb	206	234.3	12.8	**-0.0047**	0.006	120.1	ug/L	216	Standard
	Pb	207	197.7	8.5	**-0.0059**	0.003	52.6	ug/L	180	Standard
	Pb	208	861.7	7.3	**-0.0064**	0.003	48.7	ug/L	717	Standard
	U	238	32.7	49.0	**-0.0022**	0.003	112.0	ug/L	4	Standard
>	**Bi**	209	451393.6	2.0				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.7600**	8.127	141.1	mg/L	0	Standard
Mg	24	66.7	18.9	**0.0383**	0.010	25.0	mg/L	20	Standard
K	39	15.0	66.7	**-0.1191**	0.074	61.9	mg/L	22	Standard
Ca	43	28.3	36.7	**-7.1219**	1.762	24.7	mg/L	47	Standard
Fe	54	147.9	22.4	**-0.0038**	0.019	492.3	mg/L	151	Standard
Fe	57	200.0	17.5	**-0.0677**	0.127	187.5	mg/L	195	Standard
Sc-1	45	31897.0	7.4				mg/L	29647	Standard
Cl	35	166760.1	1.1				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	1793.4	4.2				ug/L	1607	Standard
P	31	26206.0	1.2				ug/L	22752	Standard
S	34	5832.8	0.3				ug/L	5049	Standard
Sr	88	61.7	26.1				ug/L	87	Standard
C	12	43.3	35.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.9	118.8				mg/L	10	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	10.0					mg/L	3	Standard
I	127	1290.1	6.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.180	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.938
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.056
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606061601
Sample Date/Time: Thursday, June 16, 2016 21:13:26
Number of Replicates: 3
Autosampler Position: 352
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57249.6	1.2				ug/L	51024	Standard
	Be	9	55.0	9.1	**0.0372**	0.006	15.0	ug/L	7	Standard
	Al	27	393587.4	1.7	**2.4548**	0.057	2.3	ug/L	625	Standard
	Sc	45	32406.3	3.0				ug/L	29647	Standard
	Ti	47	74.0	10.7	**0.0892**	0.028	31.0	ug/L	57	Standard
	V	51	636.6	76.8	**-0.0758**	0.071	93.6	ug/L	1142	Standard
	Cr	52	85601.8	0.6	**11.1086**	0.082	0.7	ug/L	6628	Standard
	Cr	53	11320.9	1.4	**12.1647**	0.172	1.4	ug/L	430	Standard
	Mn	55	80985.9	0.3	**13.9862**	0.035	0.3	ug/L	603	Standard
	Co	59	9834.2	0.6	**1.5416**	0.010	0.6	ug/L	237	Standard
	Ni	60	33446.9	0.3	**17.8603**	0.057	0.3	ug/L	141	Standard
	Cu	65	1052.4	3.7	**0.5130**	0.021	4.2	ug/L	109	Standard
	Zn	66	2617.6	1.1	**2.2110**	0.025	1.1	ug/L	159	Standard
>	**Ge**	72	458154.0	0.1				ug/L	474053	Standard
	As	75	49.8	49.2	**0.0716**	0.023	32.0	ug/L	-34	Standard
	Se	82	42.6	32.1	**0.2293**	0.128	56.0	ug/L	14	Standard
	Se-1	77	102.7	16.6	**0.6383**	0.227	35.6	ug/L	55	Standard
>	**Ga**	71	63.3	35.6				mg/L	50	Standard
	Rb	85	306.7	30.8				ug/L	20	Standard
	Y	89	402460.8	1.4				ug/L	376602	Standard
>	**Rh**	103	15.0	0.0				ug/L	17	Standard
	Mo	98	305.2	3.6	**0.1192**	0.004	3.0	ug/L	8	Standard
	Ag	107	82.0	8.5	**0.0009**	0.001	110.4	ug/L	81	Standard
	Cd	111	31.7	1.8	**0.0126**	0.000	1.7	mg/L	3	Standard
	Cd	114	86.0	11.3	**0.0135**	0.002	15.6	ug/L	7	Standard
>	**In**	115	543559.4	0.9				ug/L	524722	Standard
	Sn	118	521.7	5.3	**0.0040**	0.005	126.9	ug/L	715	Standard
	Sb	123	172.0	20.3	**0.0232**	0.008	34.4	ug/L	201	Standard
	Ba	135	10412.6	2.3	**5.4875**	0.099	1.8	ug/L	108	Standard
	Ce	140	1425.1	2.1				ug/L	30	Standard
>	**Tb**	159	802846.0	2.9				ug/L	792236	Standard
	Ho	165	38.3	49.4				ug/L	7	Standard
	Tl	203	181.0	5.8	**0.0217**	0.002	7.1	ug/L	9	Standard
	Tl	205	158.3	6.6	**0.0171**	0.002	12.3	ug/L	0	Standard
	Pb	206	323.7	3.9	**0.0154**	0.001	9.1	ug/L	216	Standard
	Pb	207	297.3	15.5	**0.0184**	0.010	54.3	ug/L	180	Standard
	Pb	208	1247.7	4.4	**0.0169**	0.002	11.0	ug/L	717	Standard
	U	238	59.7	21.2	**0.0022**	0.002	84.4	ug/L	4	Standard
>	**Bi**	209	449878.2	2.0				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	5219.2	4.5	**6.4369**	0.460	7.1	mg/L	20	Standard
K	39	20.0	25.0	**-0.0887**	0.033	37.4	mg/L	22	Standard
Ca	43	31.7	48.2	**-6.3893**	3.387	53.0	mg/L	47	Standard
Fe	54	173.5	30.0	**0.0146**	0.041	283.6	mg/L	151	Standard
Fe	57	193.3	26.5	**-0.1009**	0.133	132.3	mg/L	195	Standard
Sc-1	45	32406.3	3.0				mg/L	29647	Standard
Cl	35	165598.8	1.0				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	7865.4	1.7				ug/L	1607	Standard
P	31	25877.1	1.5				ug/L	22752	Standard
S	34	5332.6	2.3				ug/L	5049	Standard
Sr	88	75.0	53.3				ug/L	87	Standard
C	12	26.7	86.6				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	38.2	28.0				mg/L	10	Standard
Ho-1	165	38.3	49.4				mg/L	7	Standard
Er	166	36.7	41.7				mg/L	3	Standard
I	127	9661.4	1.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		112.201	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.646	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.590	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.727	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606061602
Sample Date/Time: Thursday, June 16, 2016 21:16:38
Number of Replicates: 3
Autosampler Position: 353
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	54740.4	1.6				ug/L	51024	Standard
	Be	9	13.3	78.1	**-0.0064**	0.011	174.7	ug/L	7	Standard
	Al	27	1805152.0	1.4	**11.8114**	0.177	1.5	ug/L	625	Standard
	Sc	45	31105.2	2.7				ug/L	29647	Standard
	Ti	47	145.3	36.9	**0.3297**	0.185	56.3	ug/L	57	Standard
	V	51	1187.4	9.5	**0.0023**	0.015	668.9	ug/L	1142	Standard
	Cr	52	6910.6	1.9	**0.0321**	0.023	70.2	ug/L	6628	Standard
	Cr	53	2121.8	8.3	**1.9016**	0.204	10.7	ug/L	430	Standard
	Mn	55	395363.0	1.6	**67.9452**	1.352	2.0	ug/L	603	Standard
	Co	59	396.7	9.1	**0.0219**	0.006	27.5	ug/L	237	Standard
	Ni	60	325.0	2.7	**0.0944**	0.004	4.0	ug/L	141	Standard
	Cu	65	328.0	3.2	**0.1122**	0.006	5.3	ug/L	109	Standard
	Zn	66	1614.8	2.3	**1.2569**	0.027	2.1	ug/L	159	Standard
>	Ge	72	463730.0	0.5				ug/L	474053	Standard
	As	75	191.5	27.2	**0.2018**	0.048	23.7	ug/L	-34	Standard
	Se	82	80.2	8.7	**0.5721**	0.064	11.1	ug/L	14	Standard
	Se-1	77	154.3	3.1	**1.3098**	0.068	5.2	ug/L	55	Standard
>	Ga	71	83.3	12.5				mg/L	50	Standard
	Rb	85	2255.2	4.8				ug/L	20	Standard
	Y	89	395085.6	4.8				ug/L	376602	Standard
>	Rh	103	30.0	44.1				ug/L	17	Standard
	Mo	98	187.4	6.4	**0.0739**	0.005	6.8	ug/L	8	Standard
	Ag	107	74.0	13.7	**0.0001**	0.002	2155.8	ug/L	81	Standard
	Cd	111	4.7	21.2	**-0.0008**	0.000	58.4	mg/L	3	Standard
	Cd	114	23.6	85.5	**0.0011**	0.004	381.8	ug/L	7	Standard
>	In	115	524300.8	1.8				ug/L	524722	Standard
	Sn	118	675.0	7.1	**0.0361**	0.011	30.7	ug/L	715	Standard
	Sb	123	147.3	26.2	**0.0191**	0.009	49.7	ug/L	201	Standard
	Ba	135	46098.7	0.3	**25.3994**	0.381	1.5	ug/L	108	Standard
	Ce	140	986.7	3.2				ug/L	30	Standard
>	Tb	159	774505.0	2.0				ug/L	792236	Standard
	Ho	165	13.3	94.4				ug/L	7	Standard
	Tl	203	220.3	5.0	**0.0280**	0.002	6.1	ug/L	9	Standard
	Tl	205	203.3	19.9	**0.0253**	0.006	25.4	ug/L	0	Standard
	Pb	206	323.3	2.8	**0.0179**	0.002	12.9	ug/L	216	Standard
	Pb	207	301.7	4.5	**0.0222**	0.003	14.6	ug/L	180	Standard
	Pb	208	1220.4	3.0	**0.0179**	0.003	14.6	ug/L	717	Standard
	U	238	72.3	70.3	**0.0048**	0.009	183.1	ug/L	4	Standard
>	Bi	209	434377.4	0.6				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	9573.0	1.2	**12.3290**	0.229	1.9	mg/L	20	Standard
K	39	33.3	22.9	**0.0143**	0.056	391.5	mg/L	22	Standard
Ca	43	41.7	42.1	**-3.8937**	4.020	103.2	mg/L	47	Standard
Fe	54	3391.5	3.3	**2.5135**	0.063	2.5	mg/L	151	Standard
Fe	57	1036.7	3.7	**2.4151**	0.178	7.4	mg/L	195	Standard
> **Sc-1**	45	31105.2	2.7				mg/L	29647	Standard
Cl	35	163124.3	2.0				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	18861.8	5.5				ug/L	1607	Standard
P	31	25780.2	1.2				ug/L	22752	Standard
S	34	5427.6	1.2				ug/L	5049	Standard
Sr	88	133.3	17.7				ug/L	87	Standard
C	12	63.3	48.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	29.4	2.5				mg/L	10	Standard
Ho-1	165	13.3	94.4				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	3	Standard
I	127	27164.5	9.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.283	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.822	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.920
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.360
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606061604
Sample Date/Time: Thursday, June 16, 2016 21:19:49
Number of Replicates: 3
Autosampler Position: 354
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54814.0	0.5				ug/L	51024	Standard
	Be	9	6.7	86.6	**-0.0137**	0.006	46.5	ug/L	7	Standard
	Al	27	110436.2	2.3	**0.7124**	0.018	2.6	ug/L	625	Standard
	Sc	45	32459.7	0.6				ug/L	29647	Standard
	Ti	47	55.7	9.0	**0.0154**	0.018	115.7	ug/L	57	Standard
	V	51	1190.0	8.3	**-0.0046**	0.017	376.0	ug/L	1142	Standard
	Cr	52	7226.1	2.7	**0.0323**	0.047	144.2	ug/L	6628	Standard
	Cr	53	801.7	5.0	**0.4109**	0.034	8.3	ug/L	430	Standard
	Mn	55	73546.8	1.3	**11.9804**	0.177	1.5	ug/L	603	Standard
	Co	59	487.0	1.6	**0.0328**	0.001	4.1	ug/L	237	Standard
	Ni	60	526.7	1.8	**0.1891**	0.010	5.0	ug/L	141	Standard
	Cu	65	380.0	8.6	**0.1312**	0.013	9.7	ug/L	109	Standard
	Zn	66	2004.8	2.3	**1.5353**	0.023	1.5	ug/L	159	Standard
>	**Ge**	72	485083.0	2.2				ug/L	474053	Standard
	As	75	-27.5	85.1	**0.0005**	0.021	4240.8	ug/L	-34	Standard
	Se	82	14.1	16.8	**-0.0441**	0.023	53.0	ug/L	14	Standard
	Se-1	77	56.3	6.2	**-0.0281**	0.039	138.2	ug/L	55	Standard
>	**Ga**	71	65.0	27.7				mg/L	50	Standard
	Rb	85	975.0	3.7				ug/L	20	Standard
	Y	89	385735.6	1.3				ug/L	376602	Standard
>	**Rh**	103	33.3	48.2				ug/L	17	Standard
	Mo	98	31.0	17.9	**0.0076**	0.002	32.0	ug/L	8	Standard
	Ag	107	69.3	9.6	**-0.0007**	0.001	178.9	ug/L	81	Standard
	Cd	111	35.6	7.1	**0.0152**	0.001	9.3	mg/L	3	Standard
	Cd	114	78.6	33.7	**0.0126**	0.006	43.8	ug/L	7	Standard
>	**In**	115	522479.0	0.6				ug/L	524722	Standard
	Sn	118	488.3	12.5	**0.0016**	0.012	727.2	ug/L	715	Standard
	Sb	123	114.8	19.9	**0.0116**	0.005	46.5	ug/L	201	Standard
	Ba	135	3662.8	1.7	**1.9717**	0.029	1.5	ug/L	108	Standard
	Ce	140	251.7	12.1				ug/L	30	Standard
>	**Tb**	159	792180.5	1.3				ug/L	792236	Standard
	Ho	165	13.3	21.7				ug/L	7	Standard
	Tl	203	47.3	14.4	**0.0036**	0.001	25.0	ug/L	9	Standard
	Tl	205	38.3	27.2	**-0.0019**	0.002	86.2	ug/L	0	Standard
	Pb	206	262.0	5.8	**0.0007**	0.003	518.6	ug/L	216	Standard
	Pb	207	237.7	10.4	**0.0030**	0.006	203.7	ug/L	180	Standard
	Pb	208	979.3	1.2	**-0.0002**	0.001	232.5	ug/L	717	Standard
	U	238	9.3	43.3	**-0.0061**	0.001	10.8	ug/L	4	Standard
>	**Bi**	209	458288.4	0.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	298.3	19.4	**0.3240**	0.070	21.6	mg/L	20	Standard
K	39	26.7	65.8	**-0.0419**	0.123	294.6	mg/L	22	Standard
Ca	43	43.3	52.0	**-3.9540**	4.787	121.1	mg/L	47	Standard
Fe	54	369.3	3.6	**0.1593**	0.010	6.3	mg/L	151	Standard
Fe	57	236.7	13.4	**0.0219**	0.086	394.4	mg/L	195	Standard
Sc-1	45	32459.7	0.6				mg/L	29647	Standard
Cl	35	161744.2	1.3				ug/L	154152	Standard
Kr	83	2.7	78.1				ug/L	3	Standard
Br	81	2450.2	3.6				ug/L	1607	Standard
P	31	25593.3	1.9				ug/L	22752	Standard
S	34	5534.3	4.3				ug/L	5049	Standard
Sr	88	81.7	34.8				ug/L	87	Standard
C	12	56.7	40.8				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.2	113.9				mg/L	10	Standard
Ho-1	165	13.3	21.7				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	3	Standard
I	127	11324.2	2.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.428	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.327	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.573
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.554
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606065001
Sample Date/Time: Thursday, June 16, 2016 21:23:01
Number of Replicates: 3
Autosampler Position: 355
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56128.8	1.5				ug/L	51024	Standard
	Be	9	8.3	34.6	**-0.0121**	0.003	26.6	ug/L	7	Standard
	Al	27	482122.3	0.7	**3.0698**	0.068	2.2	ug/L	625	Standard
	Sc	45	32641.8	1.6				ug/L	29647	Standard
	Ti	47	45.3	15.0	**-0.0118**	0.021	178.3	ug/L	57	Standard
	V	51	499.2	13.7	**-0.0967**	0.009	9.3	ug/L	1142	Standard
	Cr	52	82458.1	0.9	**10.5208**	0.076	0.7	ug/L	6628	Standard
	Cr	53	10431.9	1.2	**11.0318**	0.293	2.7	ug/L	430	Standard
	Mn	55	79305.3	0.7	**13.5203**	0.175	1.3	ug/L	603	Standard
	Co	59	2974.6	1.7	**0.4315**	0.004	1.0	ug/L	237	Standard
	Ni	60	33369.4	1.4	**17.5928**	0.059	0.3	ug/L	141	Standard
	Cu	65	207.3	9.4	**0.0465**	0.009	20.2	ug/L	109	Standard
	Zn	66	1251.4	5.4	**0.9209**	0.049	5.4	ug/L	159	Standard
>	**Ge**	72	464010.1	1.4				ug/L	474053	Standard
	As	75	2.0	650.9	**0.0269**	0.012	45.0	ug/L	-34	Standard
	Se	82	23.1	30.3	**0.0449**	0.067	148.0	ug/L	14	Standard
	Se-1	77	78.7	3.2	**0.3022**	0.048	15.8	ug/L	55	Standard
>	**Ga**	71	63.3	32.9				mg/L	50	Standard
	Rb	85	220.0	4.5				ug/L	20	Standard
	Y	89	399793.1	1.3				ug/L	376602	Standard
>	**Rh**	103	18.3	103.3				ug/L	17	Standard
	Mo	98	108.7	5.3	**0.0384**	0.002	6.3	ug/L	8	Standard
	Ag	107	73.7	11.4	**-0.0005**	0.001	257.8	ug/L	81	Standard
	Cd	111	9.8	27.0	**0.0016**	0.001	82.1	mg/L	3	Standard
	Cd	114	29.3	22.9	**0.0020**	0.001	66.1	ug/L	7	Standard
>	**In**	115	548875.7	0.2				ug/L	524722	Standard
	Sn	118	460.0	8.7	**-0.0078**	0.007	89.3	ug/L	715	Standard
	Sb	123	86.5	15.7	**0.0041**	0.003	71.3	ug/L	201	Standard
	Ba	135	20540.6	0.3	**10.7757**	0.041	0.4	ug/L	108	Standard
	Ce	140	105.0	17.2				ug/L	30	Standard
>	**Tb**	159	820934.6	1.9				ug/L	792236	Standard
	Ho	165	20.0	25.0				ug/L	7	Standard
	Tl	203	96.0	11.0	**0.0101**	0.002	16.2	ug/L	9	Standard
	Tl	205	83.3	24.2	**0.0050**	0.003	58.6	ug/L	0	Standard
	Pb	206	282.0	1.9	**0.0050**	0.002	36.7	ug/L	216	Standard
	Pb	207	225.3	3.3	**-0.0000**	0.001	53500.0	ug/L	180	Standard
	Pb	208	968.3	3.8	**-0.0009**	0.003	322.0	ug/L	717	Standard
	U	238	52.7	14.0	**0.0010**	0.001	142.8	ug/L	4	Standard
>	**Bi**	209	458406.1	1.9				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1866.8	2.0	**2.2543**	0.080	3.6	mg/L	20	Standard
K	39	16.7	96.4	**-0.1137**	0.109	95.5	mg/L	22	Standard
Ca	43	30.0	44.1	**-6.8062**	2.881	42.3	mg/L	47	Standard
Fe	54	329.9	10.2	**0.1288**	0.026	20.3	mg/L	151	Standard
Fe	57	233.3	15.5	**0.0097**	0.106	1102.3	mg/L	195	Standard
> **Sc-1**	45	32641.8	1.6				mg/L	29647	Standard
Cl	35	163083.7	0.8				ug/L	154152	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	2766.9	2.7				ug/L	1607	Standard
P	31	25266.1	2.8				ug/L	22752	Standard
S	34	5369.3	3.4				ug/L	5049	Standard
Sr	88	88.3	8.6				ug/L	87	Standard
C	12	30.0	57.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.9	122.5				mg/L	10	Standard
Ho-1	165	20.0	25.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	9619.7	7.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.004	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.881	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.603
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.579
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606065002
Sample Date/Time: Thursday, June 16, 2016 21:26:12
Number of Replicates: 3
Autosampler Position: 356
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54365.7	1.4				ug/L	51024	Standard
	Be	9	15.0	57.7	**-0.0044**	0.010	217.8	ug/L	7	Standard
	Al	27	1025103.4	0.5	**6.7495**	0.066	1.0	ug/L	625	Standard
	Sc	45	32087.3	3.3				ug/L	29647	Standard
	Ti	47	91.0	58.5	**0.1440**	0.181	125.8	ug/L	57	Standard
	V	51	1237.3	4.1	**0.0097**	0.009	93.5	ug/L	1142	Standard
	Cr	52	7747.0	1.2	**0.1491**	0.005	3.5	ug/L	6628	Standard
	Cr	53	1525.1	10.3	**1.2446**	0.145	11.6	ug/L	430	Standard
	Mn	55	121524.7	0.0	**20.8162**	0.350	1.7	ug/L	603	Standard
	Co	59	489.3	10.2	**0.0367**	0.008	22.6	ug/L	237	Standard
	Ni	60	546.0	2.6	**0.2119**	0.012	5.8	ug/L	141	Standard
	Cu	65	411.0	3.0	**0.1575**	0.006	3.6	ug/L	109	Standard
	Zn	66	2195.8	1.8	**1.7944**	0.008	0.5	ug/L	159	Standard
>	**Ge**	72	463367.3	1.7				ug/L	474053	Standard
	As	75	18.1	195.3	**0.0420**	0.032	77.3	ug/L	-34	Standard
	Se	82	30.0	13.1	**0.1083**	0.035	32.1	ug/L	14	Standard
	Se-1	77	106.3	6.3	**0.6711**	0.066	9.8	ug/L	55	Standard
>	**Ga**	71	40.0	54.5				mg/L	50	Standard
	Rb	85	1018.4	11.8				ug/L	20	Standard
	Y	89	407107.2	1.0				ug/L	376602	Standard
>	**Rh**	103	23.3	12.4				ug/L	17	Standard
	Mo	98	59.9	56.3	**0.0195**	0.014	72.7	ug/L	8	Standard
	Ag	107	115.7	63.4	**0.0068**	0.012	179.6	ug/L	81	Standard
	Cd	111	19.6	16.6	**0.0067**	0.002	24.0	mg/L	3	Standard
	Cd	114	62.3	30.6	**0.0090**	0.004	42.7	ug/L	7	Standard
>	**In**	115	532203.3	2.6				ug/L	524722	Standard
	Sn	118	596.7	23.5	**0.0202**	0.028	136.6	ug/L	715	Standard
	Sb	123	167.7	43.4	**0.0231**	0.017	71.6	ug/L	201	Standard
	Ba	135	32786.1	2.0	**17.7838**	0.579	3.3	ug/L	108	Standard
	Ce	140	491.7	8.2				ug/L	30	Standard
>	**Tb**	159	779044.5	1.2				ug/L	792236	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	239.0	44.6	**0.0304**	0.015	49.0	ug/L	9	Standard
	Tl	205	176.7	20.9	**0.0208**	0.006	27.7	ug/L	0	Standard
	Pb	206	322.7	21.3	**0.0173**	0.016	92.8	ug/L	216	Standard
	Pb	207	291.0	18.0	**0.0192**	0.014	70.8	ug/L	180	Standard
	Pb	208	1188.0	5.2	**0.0154**	0.003	22.6	ug/L	717	Standard
	U	238	183.3	6.3	**0.0235**	0.002	9.7	ug/L	4	Standard
>	**Bi**	209	437003.3	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	7120.0	1.8	**8.8768**	0.151	1.7	mg/L	20	Standard
K	39	41.7	27.7	**0.0654**	0.079	121.4	mg/L	22	Standard
Ca	43	41.7	42.1	**-4.2187**	3.620	85.8	mg/L	47	Standard
Fe	54	137.5	7.6	**-0.0117**	0.005	43.2	mg/L	151	Standard
Fe	57	181.7	19.3	**-0.1275**	0.097	75.8	mg/L	195	Standard
Sc-1	45	32087.3	3.3				mg/L	29647	Standard
Cl	35	166481.1	1.4				ug/L	154152	Standard
Kr	83	1.0	0.0				ug/L	3	Standard
Br	81	4110.6	4.2				ug/L	1607	Standard
P	31	25599.9	1.8				ug/L	22752	Standard
S	34	5374.3	5.2				ug/L	5049	Standard
Sr	88	101.7	24.3				ug/L	87	Standard
C	12	36.7	41.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.4	106.9				mg/L	10	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	76002.0	4.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.549	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.746	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606065002
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.426	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	94.930	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606065003
Sample Date/Time: Thursday, June 16, 2016 21:29:23
Number of Replicates: 3
Autosampler Position: 357
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54541.3	1.2				ug/L	51024	Standard
	Be	9	8.3	124.9	**-0.0119**	0.012	97.1	ug/L	7	Standard
	Al	27	606559.5	1.5	**3.9772**	0.101	2.5	ug/L	625	Standard
	Sc	45	31063.5	1.7				ug/L	29647	Standard
	Ti	47	165.3	5.8	**0.3810**	0.031	8.1	ug/L	57	Standard
	V	51	733.0	77.1	**-0.0659**	0.079	120.2	ug/L	1142	Standard
	Cr	52	157074.9	2.2	**20.2677**	0.514	2.5	ug/L	6628	Standard
	Cr	53	20141.7	1.4	**21.0752**	0.347	1.6	ug/L	430	Standard
	Mn	55	101750.2	1.1	**16.8892**	0.212	1.3	ug/L	603	Standard
	Co	59	1910.5	3.6	**0.2538**	0.010	4.1	ug/L	237	Standard
	Ni	60	8863.6	2.0	**4.4841**	0.097	2.2	ug/L	141	Standard
	Cu	65	1674.4	2.3	**0.8182**	0.022	2.7	ug/L	109	Standard
	Zn	66	2740.2	2.8	**2.2224**	0.074	3.3	ug/L	159	Standard
>	**Ge**	72	477422.4	0.2				ug/L	474053	Standard
	As	75	139.6	40.2	**0.1503**	0.051	33.7	ug/L	-34	Standard
	Se	82	42.3	11.2	**0.2113**	0.043	20.3	ug/L	14	Standard
	Se-1	77	93.0	6.5	**0.4578**	0.081	17.7	ug/L	55	Standard
>	**Ga**	71	101.7	37.2				mg/L	50	Standard
	Rb	85	1565.1	2.0				ug/L	20	Standard
	Y	89	382720.6	3.5				ug/L	376602	Standard
>	**Rh**	103	20.0	66.1				ug/L	17	Standard
	Mo	98	639.1	4.3	**0.2676**	0.013	4.7	ug/L	8	Standard
	Ag	107	90.7	24.5	**0.0030**	0.004	127.1	ug/L	81	Standard
	Cd	111	110.9	7.8	**0.0545**	0.005	9.0	mg/L	3	Standard
	Cd	114	275.8	13.3	**0.0542**	0.008	14.0	ug/L	7	Standard
>	**In**	115	519830.3	1.0				ug/L	524722	Standard
	Sn	118	653.3	27.4	**0.0332**	0.035	105.0	ug/L	715	Standard
	Sb	123	127.7	28.4	**0.0147**	0.009	58.6	ug/L	201	Standard
	Ba	135	11175.1	0.7	**6.1659**	0.078	1.3	ug/L	108	Standard
	Ce	140	2495.2	5.2				ug/L	30	Standard
>	**Tb**	159	780545.7	0.5				ug/L	792236	Standard
	Ho	165	53.3	48.1				ug/L	7	Standard
	Tl	203	163.0	29.4	**0.0195**	0.006	33.3	ug/L	9	Standard
	Tl	205	135.0	9.8	**0.0137**	0.002	15.9	ug/L	0	Standard
	Pb	206	547.3	5.3	**0.0663**	0.008	11.4	ug/L	216	Standard
	Pb	207	444.0	2.8	**0.0555**	0.004	6.9	ug/L	180	Standard
	Pb	208	1903.7	3.0	**0.0576**	0.005	8.4	ug/L	717	Standard
	U	238	51.3	38.7	**0.0010**	0.003	341.9	ug/L	4	Standard
>	**Bi**	209	444975.8	1.2				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3707.1	1.1	**4.7531**	0.132	2.8	mg/L	20	Standard
K	39	33.3	17.3	**0.0146**	0.042	286.2	mg/L	22	Standard
Ca	43	30.0	57.7	**-6.5001**	3.854	59.3	mg/L	47	Standard
Fe	54	681.6	4.0	**0.4140**	0.022	5.2	mg/L	151	Standard
Fe	57	318.3	7.1	**0.2945**	0.082	27.9	mg/L	195	Standard
> **Sc-1**	45	31063.5	1.7				mg/L	29647	Standard
Cl	35	164261.1	1.5				ug/L	154152	Standard
Kr	83	2.0	86.6				ug/L	3	Standard
Br	81	7888.7	5.8				ug/L	1607	Standard
P	31	24920.5	3.3				ug/L	22752	Standard
S	34	5307.6	1.0				ug/L	5049	Standard
Sr	88	88.3	8.6				ug/L	87	Standard
C	12	40.0	25.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	74.8	18.4				mg/L	10	Standard
Ho-1	165	53.3	48.1				mg/L	7	Standard
Er	166	40.0	90.1				mg/L	3	Standard
I	127	17526.8	1.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.893	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.711	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.068
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.662
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606065008
Sample Date/Time: Thursday, June 16, 2016 21:32:35
Number of Replicates: 3
Autosampler Position: 358
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55971.5	1.2				ug/L	51024	Standard
	Be	9	16.7	121.2	**-0.0030**	0.022	732.0	ug/L	7	Standard
	Al	27	227217.9	1.2	**1.4454**	0.014	1.0	ug/L	625	Standard
	Sc	45	33091.1	0.4				ug/L	29647	Standard
	Ti	47	93.0	12.2	**0.1482**	0.035	23.3	ug/L	57	Standard
	V	51	1468.9	10.6	**0.0412**	0.020	48.4	ug/L	1142	Standard
	Cr	52	7242.7	0.8	**0.0709**	0.012	17.1	ug/L	6628	Standard
	Cr	53	1168.4	6.4	**0.8438**	0.086	10.2	ug/L	430	Standard
	Mn	55	143314.1	1.9	**24.3672**	0.286	1.2	ug/L	603	Standard
	Co	59	707.7	4.5	**0.0704**	0.004	5.3	ug/L	237	Standard
	Ni	60	1968.1	3.3	**0.9574**	0.026	2.8	ug/L	141	Standard
	Cu	65	534.7	8.0	**0.2223**	0.018	8.2	ug/L	109	Standard
	Zn	66	4633.0	0.1	**4.0098**	0.079	2.0	ug/L	159	Standard
>	**Ge**	72	467157.4	1.9				ug/L	474053	Standard
	As	75	68.4	19.1	**0.0878**	0.012	13.9	ug/L	-34	Standard
	Se	82	42.7	11.5	**0.2237**	0.049	22.1	ug/L	14	Standard
	Se-1	77	88.3	9.6	**0.4216**	0.095	22.5	ug/L	55	Standard
>	**Ga**	71	53.3	28.6				mg/L	50	Standard
	Rb	85	821.7	8.3				ug/L	20	Standard
	Y	89	390712.9	1.8				ug/L	376602	Standard
>	**Rh**	103	16.7	96.4				ug/L	17	Standard
	Mo	98	26.7	10.2	**0.0055**	0.001	23.5	ug/L	8	Standard
	Ag	107	72.3	16.0	**-0.0005**	0.002	422.0	ug/L	81	Standard
	Cd	111	13.3	4.3	**0.0034**	0.000	6.8	mg/L	3	Standard
	Cd	114	40.2	32.3	**0.0044**	0.003	63.9	ug/L	7	Standard
>	**In**	115	538841.7	2.0				ug/L	524722	Standard
	Sn	118	488.3	14.9	**-0.0013**	0.012	965.6	ug/L	715	Standard
	Sb	123	100.5	11.8	**0.0076**	0.002	30.8	ug/L	201	Standard
	Ba	135	7028.6	0.9	**3.7196**	0.097	2.6	ug/L	108	Standard
	Ce	140	2670.2	3.1				ug/L	30	Standard
>	**Tb**	159	805010.7	0.6				ug/L	792236	Standard
	Ho	165	43.3	40.5				ug/L	7	Standard
	Tl	203	119.0	4.4	**0.0131**	0.001	5.7	ug/L	9	Standard
	Tl	205	95.0	22.9	**0.0069**	0.003	48.8	ug/L	0	Standard
	Pb	206	254.0	2.5	**-0.0008**	0.002	244.2	ug/L	216	Standard
	Pb	207	226.3	9.4	**0.0004**	0.004	982.1	ug/L	180	Standard
	Pb	208	875.0	3.9	**-0.0061**	0.002	39.4	ug/L	717	Standard
	U	238	28.3	19.4	**-0.0030**	0.001	30.6	ug/L	4	Standard
>	**Bi**	209	456325.9	1.4				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3722.1	3.3	**4.4755**	0.132	3.0	mg/L	20	Standard
K	39	21.7	48.0	**-0.0800**	0.071	88.6	mg/L	22	Standard
Ca	43	38.3	49.4	**-5.1655**	3.960	76.7	mg/L	47	Standard
Fe	54	149.3	20.9	**-0.0062**	0.023	370.8	mg/L	151	Standard
Fe	57	191.7	19.2	**-0.1152**	0.104	90.0	mg/L	195	Standard
> **Sc-1**	45	33091.1	0.4				mg/L	29647	Standard
Cl	35	167461.1	1.4				ug/L	154152	Standard
Kr	83	2.3	49.5				ug/L	3	Standard
Br	81	7938.7	3.1				ug/L	1607	Standard
P	31	24910.5	1.2				ug/L	22752	Standard
S	34	5120.9	0.9				ug/L	5049	Standard
Sr	88	83.3	3.5				ug/L	87	Standard
C	12	63.3	48.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	67.9	15.4				mg/L	10	Standard
Ho-1	165	43.3	40.5				mg/L	7	Standard
Er	166	43.3	26.6				mg/L	3	Standard
I	127	7648.6	2.6				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		109.696	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.545	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.691	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.127	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606073001
Sample Date/Time: Thursday, June 16, 2016 21:35:46
Number of Replicates: 3
Autosampler Position: 359
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55371.0	2.2				ug/L	51024	Standard
	Be	9	11.7	65.5	**-0.0084**	0.008	97.7	ug/L	7	Standard
	Al	27	132096.8	1.8	**0.8455**	0.012	1.5	ug/L	625	Standard
	Sc	45	31868.5	4.0				ug/L	29647	Standard
	Ti	47	30.0	17.3	**-0.0614**	0.019	31.4	ug/L	57	Standard
	V	51	1455.6	7.2	**0.0453**	0.013	29.6	ug/L	1142	Standard
	Cr	52	11040.4	2.7	**0.6383**	0.023	3.6	ug/L	6628	Standard
	Cr	53	1623.4	8.3	**1.3902**	0.129	9.3	ug/L	430	Standard
	Mn	55	1201.0	0.7	**0.0848**	0.004	4.7	ug/L	603	Standard
	Co	59	375.7	2.3	**0.0198**	0.001	6.0	ug/L	237	Standard
	Ni	60	312.3	3.4	**0.0912**	0.004	4.7	ug/L	141	Standard
	Cu	65	236.3	2.7	**0.0651**	0.002	3.6	ug/L	109	Standard
	Zn	66	1941.8	2.7	**1.5970**	0.055	3.5	ug/L	159	Standard
>	**Ge**	72	454022.4	1.2				ug/L	474053	Standard
	As	75	11.9	146.3	**0.0364**	0.016	45.2	ug/L	-34	Standard
	Se	82	31.4	12.8	**0.1281**	0.041	32.3	ug/L	14	Standard
	Se-1	77	87.7	5.7	**0.4469**	0.060	13.4	ug/L	55	Standard
>	**Ga**	71	95.0	18.2				mg/L	50	Standard
	Rb	85	4872.5	2.9				ug/L	20	Standard
	Y	89	404770.5	0.6				ug/L	376602	Standard
>	**Rh**	103	80.0	22.5				ug/L	17	Standard
	Mo	98	116.6	2.8	**0.0416**	0.002	4.6	ug/L	8	Standard
	Ag	107	61.3	24.5	**-0.0025**	0.002	96.4	ug/L	81	Standard
	Cd	111	8.1	43.0	**0.0008**	0.002	229.5	mg/L	3	Standard
	Cd	114	29.0	53.2	**0.0020**	0.003	156.6	ug/L	7	Standard
>	**In**	115	550074.8	1.6				ug/L	524722	Standard
	Sn	118	596.7	39.8	**0.0158**	0.040	254.1	ug/L	715	Standard
	Sb	123	117.4	4.2	**0.0108**	0.001	9.0	ug/L	201	Standard
	Ba	135	36971.7	2.1	**19.3982**	0.128	0.7	ug/L	108	Standard
	Ce	140	30.0	16.7				ug/L	30	Standard
>	**Tb**	159	802021.2	1.6				ug/L	792236	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	154.7	7.4	**0.0182**	0.001	7.8	ug/L	9	Standard
	Tl	205	128.3	9.0	**0.0124**	0.002	14.8	ug/L	0	Standard
	Pb	206	255.7	10.1	**0.0005**	0.007	1256.9	ug/L	216	Standard
	Pb	207	236.0	8.3	**0.0037**	0.003	93.0	ug/L	180	Standard
	Pb	208	980.3	1.1	**0.0011**	0.002	149.5	ug/L	717	Standard
	U	238	28.0	18.9	**-0.0030**	0.001	29.7	ug/L	4	Standard
>	**Bi**	209	448836.9	2.3				ug/L	460343	Standard

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Na	23	5.0	100.0	**-5.1594**	15.986	309.8	mg/L	0	Standard
Mg	24	1993.5	3.8	**2.4733**	0.176	7.1	mg/L	20	Standard
K	39	58.3	21.6	**0.1865**	0.091	48.6	mg/L	22	Standard
Ca	43	45.0	19.2	**-3.3710**	2.098	62.2	mg/L	47	Standard
Fe	54	141.5	17.4	**-0.0075**	0.021	284.9	mg/L	151	Standard
Fe	57	231.7	13.9	**0.0185**	0.068	366.5	mg/L	195	Standard
Sc-1	45	31868.5	4.0				mg/L	29647	Standard
Cl	35	162650.5	1.3				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	5611.0	3.8				ug/L	1607	Standard
P	31	25164.2	0.9				ug/L	22752	Standard
S	34	5320.9	2.9				ug/L	5049	Standard
Sr	88	361.7	6.2				ug/L	87	Standard
C	12	50.0	20.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.0	107.3				mg/L	10	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	3	Standard
I	127	5254.2	4.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.519	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.775	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606073001
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.832
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.501
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606073002
Sample Date/Time: Thursday, June 16, 2016 21:38:59
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52860.4	2.3				ug/L	51024	Standard
	Be	9	10.0	50.0	**-0.0095**	0.006	63.2	ug/L	7	Standard
	Al	27	137711.4	1.6	**0.9241**	0.007	0.7	ug/L	625	Standard
	Sc	45	31095.2	1.2				ug/L	29647	Standard
	Ti	47	32.7	23.2	**-0.0560**	0.026	46.7	ug/L	57	Standard
	V	51	1546.7	3.7	**0.0511**	0.010	20.5	ug/L	1142	Standard
	Cr	52	11025.0	1.4	**0.5840**	0.055	9.5	ug/L	6628	Standard
	Cr	53	1463.4	4.0	**1.1555**	0.040	3.5	ug/L	430	Standard
	Mn	55	1410.7	11.5	**0.1137**	0.033	29.0	ug/L	603	Standard
	Co	59	359.7	1.9	**0.0152**	0.002	14.6	ug/L	237	Standard
	Ni	60	319.3	6.2	**0.0894**	0.014	15.7	ug/L	141	Standard
	Cu	65	200.0	1.3	**0.0412**	0.002	3.9	ug/L	109	Standard
	Zn	66	1969.1	2.4	**1.5596**	0.014	0.9	ug/L	159	Standard
>	**Ge**	72	469994.3	2.3				ug/L	474053	Standard
	As	75	0.5	7482.9	**0.0251**	0.035	138.8	ug/L	-34	Standard
	Se	82	28.5	7.3	**0.0908**	0.014	15.4	ug/L	14	Standard
	Se-1	77	88.7	18.3	**0.4207**	0.218	51.8	ug/L	55	Standard
>	**Ga**	71	73.3	28.4				mg/L	50	Standard
	Rb	85	4865.8	1.3				ug/L	20	Standard
	Y	89	399171.5	2.3				ug/L	376602	Standard
>	**Rh**	103	93.3	12.4				ug/L	17	Standard
	Mo	98	101.9	16.6	**0.0370**	0.006	16.6	ug/L	8	Standard
	Ag	107	61.3	18.0	**-0.0021**	0.002	98.0	ug/L	81	Standard
	Cd	111	6.5	18.0	**0.0001**	0.001	960.6	mg/L	3	Standard
	Cd	114	23.1	68.6	**0.0010**	0.003	344.6	ug/L	7	Standard
>	**In**	115	531069.9	2.8				ug/L	524722	Standard
	Sn	118	445.0	10.3	**-0.0078**	0.009	112.2	ug/L	715	Standard
	Sb	123	65.7	14.2	**0.0001**	0.002	2926.8	ug/L	201	Standard
	Ba	135	36371.9	1.1	**19.7762**	0.433	2.2	ug/L	108	Standard
	Ce	140	41.7	50.0				ug/L	30	Standard
>	**Tb**	159	774515.8	2.9				ug/L	792236	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	160.3	8.2	**0.0195**	0.002	8.6	ug/L	9	Standard
	Tl	205	130.0	21.4	**0.0133**	0.005	36.0	ug/L	0	Standard
	Pb	206	254.0	4.2	**0.0016**	0.003	201.3	ug/L	216	Standard
	Pb	207	204.3	4.4	**-0.0027**	0.002	57.9	ug/L	180	Standard
	Pb	208	941.7	3.4	**0.0002**	0.002	1048.9	ug/L	717	Standard
	U	238	8.3	85.1	**-0.0062**	0.001	19.1	ug/L	4	Standard
>	**Bi**	209	437592.9	1.4				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1953.5	4.1	**2.4795**	0.082	3.3	mg/L	20	Standard
K	39	41.7	13.9	**0.0748**	0.041	54.3	mg/L	22	Standard
Ca	43	46.7	6.2	**-2.7971**	0.513	18.3	mg/L	47	Standard
Fe	54	137.1	22.1	**-0.0088**	0.022	251.4	mg/L	151	Standard
Fe	57	218.3	25.5	**-0.0034**	0.160	4703.1	mg/L	195	Standard
> **Sc-1**	45	31095.2	1.2				mg/L	29647	Standard
Cl	35	164376.3	1.5				ug/L	154152	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	5667.7	1.8				ug/L	1607	Standard
P	31	24892.1	1.3				ug/L	22752	Standard
S	34	5330.9	2.9				ug/L	5049	Standard
Sr	88	315.0	7.3				ug/L	87	Standard
C	12	43.3	26.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.7	100.8				mg/L	10	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	5250.9	7.1				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.599	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.144	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.210	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	95.058	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606073003
Sample Date/Time: Thursday, June 16, 2016 21:42:10
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53594.6	1.1				ug/L	51024	Standard
	Be	9	3.3	86.6	**-0.0173**	0.003	18.9	ug/L	7	Standard
	Al	27	2979001.9	0.3	**19.9155**	0.253	1.3	ug/L	625	Standard
	Sc	45	31315.7	0.8				ug/L	29647	Standard
	Ti	47	43.0	24.6	**-0.0251**	0.035	139.3	ug/L	57	Standard
	V	51	1280.4	1.3	**0.0086**	0.002	24.3	ug/L	1142	Standard
	Cr	52	6976.3	2.4	**0.0037**	0.022	588.3	ug/L	6628	Standard
	Cr	53	1470.1	6.4	**1.1220**	0.096	8.5	ug/L	430	Standard
	Mn	55	27960.5	2.4	**4.5016**	0.120	2.7	ug/L	603	Standard
	Co	59	554.3	12.3	**0.0435**	0.010	24.1	ug/L	237	Standard
	Ni	60	395.0	5.1	**0.1235**	0.010	8.4	ug/L	141	Standard
	Cu	65	173.0	8.3	**0.0243**	0.008	31.2	ug/L	109	Standard
	Zn	66	1439.4	0.7	**1.0440**	0.007	0.7	ug/L	159	Standard
>	**Ge**	72	482360.2	0.2				ug/L	474053	Standard
	As	75	84.5	59.0	**0.1001**	0.044	44.2	ug/L	-34	Standard
	Se	82	47.5	19.6	**0.2529**	0.082	32.5	ug/L	14	Standard
	Se-1	77	132.0	7.2	**0.9443**	0.119	12.5	ug/L	55	Standard
>	**Ga**	71	60.0	14.4				mg/L	50	Standard
	Rb	85	475.0	12.1				ug/L	20	Standard
	Y	89	391203.2	1.3				ug/L	376602	Standard
>	**Rh**	103	55.0	9.1				ug/L	17	Standard
	Mo	98	37.9	67.6	**0.0106**	0.011	103.7	ug/L	8	Standard
	Ag	107	71.3	16.2	**-0.0003**	0.002	600.9	ug/L	81	Standard
	Cd	111	5.3	57.7	**-0.0005**	0.002	303.0	mg/L	3	Standard
	Cd	114	27.8	51.3	**0.0020**	0.003	149.5	ug/L	7	Standard
>	**In**	115	521847.0	1.7				ug/L	524722	Standard
	Sn	118	455.0	13.4	**-0.0046**	0.010	225.0	ug/L	715	Standard
	Sb	123	77.8	11.7	**0.0031**	0.002	74.2	ug/L	201	Standard
	Ba	135	148771.2	0.6	**82.4802**	0.932	1.1	ug/L	108	Standard
	Ce	140	300.0	8.7				ug/L	30	Standard
>	**Tb**	159	770703.6	1.1				ug/L	792236	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	215.7	6.2	**0.0270**	0.001	5.4	ug/L	9	Standard
	Tl	205	208.3	27.6	**0.0257**	0.009	34.8	ug/L	0	Standard
	Pb	206	272.0	3.0	**0.0054**	0.003	50.7	ug/L	216	Standard
	Pb	207	232.3	12.8	**0.0041**	0.008	195.9	ug/L	180	Standard
	Pb	208	1012.0	13.3	**0.0042**	0.007	176.0	ug/L	717	Standard
	U	238	232.3	16.7	**0.0315**	0.006	19.1	ug/L	4	Standard
>	**Bi**	209	439553.9	1.5				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	6086.2	1.7	**7.7675**	0.192	2.5	mg/L	20	Standard
K	39	18.3	56.8	**-0.0957**	0.075	77.9	mg/L	22	Standard
Ca	43	40.0	37.5	**-4.3545**	3.269	75.1	mg/L	47	Standard
Fe	54	265.9	15.1	**0.0898**	0.032	35.5	mg/L	151	Standard
Fe	57	201.7	20.0	**-0.0564**	0.115	204.5	mg/L	195	Standard
> **Sc-1**	45	31315.7	0.8				mg/L	29647	Standard
Cl	35	164992.2	0.7				ug/L	154152	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	10840.5	3.2				ug/L	1607	Standard
P	31	25164.2	3.4				ug/L	22752	Standard
S	34	5275.9	3.2				ug/L	5049	Standard
Sr	88	133.3	20.7				ug/L	87	Standard
C	12	53.3	57.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.2	49.6				mg/L	10	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	3	Standard
I	127	4810.8	4.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.038	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.752	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.452
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.484
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 21:45:23
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	52964.1	3.2				ug/L	51024	Standard
	Be	9	42168.6	0.7	**48.3246**	1.216	2.5	ug/L	7	Standard
	Al	27	7159091.1	2.4	**48.4492**	0.473	1.0	ug/L	625	Standard
	Sc	45	31200.4	3.4				ug/L	29647	Standard
	Ti	47	30099.2	0.4	**103.9852**	0.489	0.5	ug/L	57	Standard
	V	51	348173.2	0.9	**50.6797**	0.340	0.7	ug/L	1142	Standard
	Cr	52	366090.7	0.6	**50.7470**	0.566	1.1	ug/L	6628	Standard
	Cr	53	45820.9	1.2	**50.7491**	0.901	1.8	ug/L	430	Standard
	Mn	55	317011.4	2.2	**55.3295**	1.324	2.4	ug/L	603	Standard
	Co	59	316851.8	0.1	**51.1533**	0.313	0.6	ug/L	237	Standard
	Ni	60	93845.8	1.6	**50.4491**	1.080	2.1	ug/L	141	Standard
	Cu	65	91207.1	1.9	**50.3255**	1.210	2.4	ug/L	109	Standard
	Zn	66	53728.8	0.5	**50.1071**	0.516	1.0	ug/L	159	Standard
>	Ge	72	456409.0	0.5				ug/L	474053	Standard
	As	75	53094.6	1.6	**49.8317**	1.034	2.1	ug/L	-34	Standard
	Se	82	5335.2	1.1	**49.9428**	0.782	1.6	ug/L	14	Standard
	Se-1	77	3694.5	1.3	**49.2280**	0.868	1.8	ug/L	55	Standard
>	Ga	71	73.3	28.4				mg/L	50	Standard
	Rb	85	751.7	9.7				ug/L	20	Standard
	Y	89	395355.6	1.3				ug/L	376602	Standard
>	Rh	103	41.7	60.4				ug/L	17	Standard
	Mo	98	229935.7	1.0	**95.4610**	1.901	2.0	ug/L	8	Standard
	Ag	107	284501.2	0.4	**46.7556**	0.793	1.7	ug/L	81	Standard
	Cd	111	95579.3	0.6	**48.2915**	1.096	2.3	mg/L	3	Standard
	Cd	114	235319.3	0.3	**48.0921**	0.943	2.0	ug/L	7	Standard
>	In	115	535171.0	1.8				ug/L	524722	Standard
	Sn	118	268883.3	0.8	**48.8581**	0.478	1.0	ug/L	715	Standard
	Sb	123	213216.9	1.1	**47.8524**	0.650	1.4	ug/L	201	Standard
	Ba	135	88420.6	0.7	**47.7774**	0.620	1.3	ug/L	108	Standard
	Ce	140	60.0	52.0				ug/L	30	Standard
>	Tb	159	778568.6	0.9				ug/L	792236	Standard
	Ho	165	13.3	43.3				ug/L	7	Standard
	Tl	203	356552.0	0.9	**49.1981**	0.525	1.1	ug/L	9	Standard
	Tl	205	312384.5	1.4	**50.6927**	1.380	2.7	ug/L	0	Standard
	Pb	206	221782.7	0.3	**50.5795**	0.697	1.4	ug/L	216	Standard
	Pb	207	201563.9	0.5	**50.4967**	0.774	1.5	ug/L	180	Standard
	Pb	208	829379.7	0.4	**51.1985**	0.900	1.8	ug/L	717	Standard
	U	238	307681.0	0.4	**52.2118**	0.917	1.8	ug/L	4	Standard
>	Bi	209	436760.9	1.5				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.2513**	9.008	171.5	mg/L	0	Standard
Mg	24	3917.2	3.4	**5.0034**	0.184	3.7	mg/L	20	Standard
K	39	655.0	10.8	**4.5166**	0.488	10.8	mg/L	22	Standard
Ca	43	65.0	20.4	**1.3136**	3.422	260.5	mg/L	47	Standard
Fe	54	6192.2	4.0	**4.6769**	0.351	7.5	mg/L	151	Standard
Fe	57	1618.4	6.7	**4.1237**	0.452	11.0	mg/L	195	Standard
Sc-1	45	31200.4	3.4				mg/L	29647	Standard
Cl	35	163997.6	1.9				ug/L	154152	Standard
Kr	83	3.7	15.7				ug/L	3	Standard
Br	81	1766.8	4.0				ug/L	1607	Standard
P	31	25599.9	0.9				ug/L	22752	Standard
S	34	5862.8	2.2				ug/L	5049	Standard
Sr	88	68.3	41.6				ug/L	87	Standard
C	12	33.3	34.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	-1.0	50.0				mg/L	10	Standard
Ho-1	165	13.3	43.3				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	3	Standard
I	127	1488.4	8.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	96.649		
Al	27	96.898		
Sc	45			
Ti	47	103.985		
V	51	101.359		
Cr	52	101.494		
Cr	53			
Mn	55	110.659		
Co	59	102.307		
Ni	60	100.898		
Cu	65	100.651		
Zn	66	100.214		
Ge	72		96.278	
As	75	99.663		
Se	82	99.886		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	95.461		
Ag	107	93.511		
Cd	111	96.583		
Cd	114			
In	115		101.991	
Sn	118	97.716		
Sb	123	95.705		
Ba	135	95.555		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.396		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.397		
U	238	104.424		
Bi	209		94.877	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Mn	55	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 21:48:35
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51738.2	1.1				ug/L	51024	Standard
	Be	9	8.3	91.7	**-0.0112**	0.009	80.5	ug/L	7	Standard
	Al	27	1365.1	16.8	**-0.0003**	0.002	478.2	ug/L	625	Standard
	Sc	45	32252.6	1.6				ug/L	29647	Standard
	Ti	47	29.0	17.2	**-0.0677**	0.018	26.3	ug/L	57	Standard
	V	51	928.8	10.2	**-0.0358**	0.012	34.3	ug/L	1142	Standard
	Cr	52	6199.9	1.6	**-0.0728**	0.006	8.7	ug/L	6628	Standard
	Cr	53	526.7	17.6	**0.1435**	0.102	70.8	ug/L	430	Standard
	Mn	55	679.7	4.7	**-0.0102**	0.006	62.4	ug/L	603	Standard
	Co	59	222.0	2.4	**-0.0062**	0.001	15.3	ug/L	237	Standard
	Ni	60	127.3	4.5	**-0.0108**	0.003	24.1	ug/L	141	Standard
	Cu	65	129.3	11.3	**0.0037**	0.008	218.4	ug/L	109	Standard
	Zn	66	156.3	8.5	**-0.0888**	0.012	14.0	ug/L	159	Standard
>	**Ge**	72	466990.8	0.9				ug/L	474053	Standard
	As	75	-31.2	100.9	**-0.0035**	0.029	815.0	ug/L	-34	Standard
	Se	82	18.5	27.4	**0.0013**	0.046	3640.7	ug/L	14	Standard
	Se-1	77	60.7	5.3	**0.0572**	0.045	77.9	ug/L	55	Standard
>	**Ga**	71	66.7	41.3				mg/L	50	Standard
	Rb	85	25.0	20.0				ug/L	20	Standard
	Y	89	391075.9	3.9				ug/L	376602	Standard
>	**Rh**	103	35.0	49.5				ug/L	17	Standard
	Mo	98	246.2	31.0	**0.0990**	0.031	31.0	ug/L	8	Standard
	Ag	107	92.0	11.3	**0.0032**	0.002	60.7	ug/L	81	Standard
	Cd	111	9.2	30.0	**0.0015**	0.001	89.3	mg/L	3	Standard
	Cd	114	8.4	58.3	**-0.0021**	0.001	50.3	ug/L	7	Standard
>	**In**	115	521304.7	2.1				ug/L	524722	Standard
	Sn	118	806.7	12.6	**0.0616**	0.022	35.5	ug/L	715	Standard
	Sb	123	413.8	23.7	**0.0808**	0.024	30.2	ug/L	201	Standard
	Ba	135	135.0	17.1	**0.0173**	0.012	72.2	ug/L	108	Standard
	Ce	140	18.3	78.7				ug/L	30	Standard
>	**Tb**	159	770403.7	2.0				ug/L	792236	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	53.3	21.7	**0.0047**	0.002	33.8	ug/L	9	Standard
	Tl	205	41.7	25.0	**-0.0011**	0.002	147.7	ug/L	0	Standard
	Pb	206	231.3	3.6	**-0.0040**	0.002	55.2	ug/L	216	Standard
	Pb	207	191.7	4.4	**-0.0062**	0.002	38.0	ug/L	180	Standard
	Pb	208	830.7	1.5	**-0.0071**	0.001	9.5	ug/L	717	Standard
	U	238	32.3	17.6	**-0.0021**	0.001	45.2	ug/L	4	Standard
>	**Bi**	209	440882.3	0.7				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	40.0	45.1	**0.0046**	0.022	483.5	mg/L	20	Standard
K	39	21.7	13.3	**-0.0762**	0.019	24.7	mg/L	22	Standard
Ca	43	16.7	62.4	**-9.5897**	2.277	23.7	mg/L	47	Standard
Fe	54	154.6	3.2	**0.0006**	0.004	679.4	mg/L	151	Standard
Fe	57	181.7	39.0	**-0.1287**	0.205	159.3	mg/L	195	Standard
> **Sc-1**	45	32252.6	1.6				mg/L	29647	Standard
Cl	35	162535.6	2.7				ug/L	154152	Standard
Kr	83	2.0	100.0				ug/L	3	Standard
Br	81	1583.4	15.5				ug/L	1607	Standard
P	31	25920.5	3.4				ug/L	22752	Standard
S	34	5491.0	2.1				ug/L	5049	Standard
Sr	88	78.3	13.3				ug/L	87	Standard
C	12	43.3	13.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	2.9	173.2				mg/L	10	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	10.0	173.2				mg/L	3	Standard
I	127	951.7	4.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.510	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.349
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.773
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, June 16, 2016 21:51:48
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51025.8	1.8				ug/L	51024	Standard
	Be	9	158.3	20.5	**0.1674**	0.039	23.3	ug/L	7	Standard
	Al	27	703.4	27.7	**-0.0048**	0.001	26.9	ug/L	625	Standard
	Sc	45	32324.5	3.0				ug/L	29647	Standard
	Ti	47	27.3	27.7	**-0.0704**	0.026	37.0	ug/L	57	Standard
	V	51	3596.4	1.1	**0.3627**	0.006	1.6	ug/L	1142	Standard
	Cr	52	11538.7	0.6	**0.7185**	0.004	0.5	ug/L	6628	Standard
	Cr	53	1191.7	2.4	**0.9142**	0.036	4.0	ug/L	430	Standard
	Mn	55	3452.4	2.2	**0.4841**	0.013	2.6	ug/L	603	Standard
	Co	59	2481.5	3.2	**0.3641**	0.012	3.2	ug/L	237	Standard
	Ni	60	2983.6	1.9	**1.5460**	0.025	1.6	ug/L	141	Standard
	Cu	65	1554.1	2.2	**0.8018**	0.018	2.3	ug/L	109	Standard
	Zn	66	6904.6	0.5	**6.3076**	0.040	0.6	ug/L	159	Standard
>	**Ge**	72	451469.6	0.4				ug/L	474053	Standard
	As	75	367.1	3.5	**0.3732**	0.012	3.2	ug/L	-34	Standard
	Se	82	52.6	5.1	**0.3307**	0.024	7.1	ug/L	14	Standard
	Se-1	77	86.0	19.2	**0.4314**	0.229	53.1	ug/L	55	Standard
>	**Ga**	71	36.7	56.8				mg/L	50	Standard
	Rb	85	15.0	145.3				ug/L	20	Standard
	Y	89	372929.0	2.6				ug/L	376602	Standard
>	**Rh**	103	21.7	58.1				ug/L	17	Standard
	Mo	98	53.2	25.4	**0.0175**	0.006	35.6	ug/L	8	Standard
	Ag	107	2191.8	2.9	**0.3621**	0.015	4.2	ug/L	81	Standard
	Cd	111	428.6	3.0	**0.2218**	0.010	4.4	mg/L	3	Standard
	Cd	114	1072.7	8.3	**0.2242**	0.022	10.0	ug/L	7	Standard
>	**In**	115	515022.5	1.7				ug/L	524722	Standard
	Sn	118	460.0	21.8	**-0.0026**	0.018	670.4	ug/L	715	Standard
	Sb	123	1687.6	0.2	**0.3789**	0.008	2.0	ug/L	201	Standard
	Ba	135	1278.4	5.4	**0.6611**	0.044	6.7	ug/L	108	Standard
	Ce	140	11.7	89.2				ug/L	30	Standard
>	**Tb**	159	775692.8	2.1				ug/L	792236	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	561.7	1.8	**0.0736**	0.001	1.5	ug/L	9	Standard
	Tl	205	431.7	7.1	**0.0610**	0.005	8.2	ug/L	0	Standard
	Pb	206	1089.0	2.6	**0.1879**	0.008	4.3	ug/L	216	Standard
	Pb	207	883.7	5.5	**0.1638**	0.011	6.9	ug/L	180	Standard
	Pb	208	3859.2	0.5	**0.1764**	0.003	1.5	ug/L	717	Standard
	U	238	2254.8	1.2	**0.3683**	0.007	1.9	ug/L	4	Standard
>	**Bi**	209	444599.6	0.7				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.3150**	8.898	167.4	mg/L	0	Standard
Mg	24	30.0	16.7	**-0.0079**	0.006	76.0	mg/L	20	Standard
K	39	21.7	66.6	**-0.0767**	0.101	131.3	mg/L	22	Standard
Ca	43	30.0	28.9	**-6.7278**	2.028	30.1	mg/L	47	Standard
Fe	54	87.5	4.0	**-0.0496**	0.004	9.0	mg/L	151	Standard
Fe	57	195.0	9.2	**-0.0929**	0.056	60.4	mg/L	195	Standard
Sc-1	45	32324.5	3.0				mg/L	29647	Standard
Cl	35	156288.7	1.2				ug/L	154152	Standard
Kr	83	3.3	17.3				ug/L	3	Standard
Br	81	1266.7	10.3				ug/L	1607	Standard
P	31	17852.2	2.6				ug/L	22752	Standard
S	34	5659.4	1.8				ug/L	5049	Standard
Sr	88	65.0	40.7				ug/L	87	Standard
C	12	20.0	0.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.2	100.1				mg/L	10	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	985.0	8.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	83.676		
Al	27			
Sc	45			
Ti	47			
V	51	90.668		
Cr	52	89.809		
Cr	53			
Mn	55	96.822		
Co	59	91.014		
Ni	60	96.626		
Cu	65	100.227		
Zn	66	100.922		
Ge	72		95.236	
As	75	93.291		
Se	82	82.669		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	90.533		
Cd	111	92.425		
Cd	114			
> In	115			98.152
Sn	118			
Sb	123	94.728		
Ba	135	88.151		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	91.941		
Tl	205			
Pb	206			
Pb	207			
Pb	208	88.177		
U	238	92.081		
> Bi	209			96.580
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW 58 WG571964-02
Sample Date/Time: Thursday, June 16, 2016 21:55:00
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51882.0	0.7				ug/L	51024	Standard
	Be	9	8.3	91.7	**-0.0113**	0.009	79.6	ug/L	7	Standard
	Al	27	7225.1	1.7	**0.0402**	0.001	2.5	ug/L	625	Standard
	Sc	45	32848.9	2.3				ug/L	29647	Standard
	Ti	47	51.0	25.0	**0.0065**	0.044	672.4	ug/L	57	Standard
	V	51	1196.1	1.0	**0.0022**	0.004	185.3	ug/L	1142	Standard
	Cr	52	7726.6	1.1	**0.1365**	0.019	13.7	ug/L	6628	Standard
	Cr	53	648.3	14.3	**0.2747**	0.094	34.1	ug/L	430	Standard
	Mn	55	2688.6	3.0	**0.3326**	0.014	4.1	ug/L	603	Standard
	Co	59	223.3	5.2	**-0.0060**	0.001	19.7	ug/L	237	Standard
	Ni	60	306.7	5.4	**0.0833**	0.005	5.7	ug/L	141	Standard
	Cu	65	369.3	3.4	**0.1332**	0.011	8.3	ug/L	109	Standard
	Zn	66	1524.4	0.8	**1.1625**	0.045	3.9	ug/L	159	Standard
>	**Ge**	72	467701.0	2.5				ug/L	474053	Standard
	As	75	-29.1	18.5	**-0.0015**	0.005	304.8	ug/L	-34	Standard
	Se	82	20.2	33.1	**0.0162**	0.062	379.4	ug/L	14	Standard
	Se-1	77	49.0	28.8	**-0.1009**	0.171	169.5	ug/L	55	Standard
>	**Ga**	71	70.0	25.8				mg/L	50	Standard
	Rb	85	63.3	19.9				ug/L	20	Standard
	Y	89	385228.3	1.7				ug/L	376602	Standard
>	**Rh**	103	13.3	43.3				ug/L	17	Standard
	Mo	98	91.6	20.6	**0.0329**	0.008	25.1	ug/L	8	Standard
	Ag	107	70.0	10.3	**-0.0007**	0.001	169.4	ug/L	81	Standard
	Cd	111	7.2	21.3	**0.0004**	0.001	191.2	mg/L	3	Standard
	Cd	114	8.6	219.6	**-0.0020**	0.004	198.4	ug/L	7	Standard
>	**In**	115	529391.3	2.2				ug/L	524722	Standard
	Sn	118	1728.4	4.6	**0.2287**	0.017	7.5	ug/L	715	Standard
	Sb	123	139.5	23.6	**0.0168**	0.007	40.4	ug/L	201	Standard
	Ba	135	108.3	10.8	**0.0016**	0.007	433.3	ug/L	108	Standard
	Ce	140	70.0	18.9				ug/L	30	Standard
>	**Tb**	159	807450.9	1.8				ug/L	792236	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	22.0	12.0	**0.0003**	0.000	106.9	ug/L	9	Standard
	Tl	205	30.0	28.9	**-0.0032**	0.001	42.5	ug/L	0	Standard
	Pb	206	253.7	10.4	**-0.0009**	0.006	689.0	ug/L	216	Standard
	Pb	207	220.0	2.1	**-0.0010**	0.001	126.8	ug/L	180	Standard
	Pb	208	877.3	3.6	**-0.0060**	0.002	33.1	ug/L	717	Standard
	U	238	8.7	63.5	**-0.0062**	0.001	14.5	ug/L	4	Standard
>	**Bi**	209	455782.1	0.2				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.5393**	8.509	153.6	mg/L	0	Standard
Mg	24	36.7	7.9	**-0.0004**	0.003	710.4	mg/L	20	Standard
K	39	8.3	34.6	**-0.1703**	0.021	12.2	mg/L	22	Standard
Ca	43	33.3	8.7	**-6.1652**	0.476	7.7	mg/L	47	Standard
Fe	54	150.7	24.4	**-0.0047**	0.025	526.5	mg/L	151	Standard
Fe	57	176.7	14.2	**-0.1527**	0.076	49.6	mg/L	195	Standard
> **Sc-1**	45	32848.9	2.3				mg/L	29647	Standard
Cl	35	161385.0	1.1				ug/L	154152	Standard
Kr	83	3.3	34.6				ug/L	3	Standard
Br	81	1680.1	1.8				ug/L	1607	Standard
P	31	24029.0	2.1				ug/L	22752	Standard
S	34	5571.0	3.7				ug/L	5049	Standard
Sr	88	66.7	56.3				ug/L	87	Standard
C	12	53.3	94.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.2	100.1				mg/L	10	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	1201.7	0.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.681	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.660	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.890
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.009
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 58 WG571964-02
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Method 6020 - Summary Report

Sample ID: LCSW 58 WG571964-03
Sample Date/Time: Thursday, June 16, 2016 21:58:11
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53618.1	1.9				ug/L	51024	Standard
	Be	9	43223.2	1.9	**48.9062**	0.701	1.4	ug/L	7	Standard
	Al	27	16045.2	3.1	**0.0975**	0.001	1.5	ug/L	625	Standard
	Sc	45	33034.3	2.7				ug/L	29647	Standard
	Ti	47	54.7	14.9	**0.0208**	0.027	130.9	ug/L	57	Standard
	V	51	357626.2	0.2	**51.4076**	0.356	0.7	ug/L	1142	Standard
	Cr	52	377061.2	0.6	**51.6273**	0.257	0.5	ug/L	6628	Standard
	Cr	53	46803.9	1.6	**51.1933**	1.124	2.2	ug/L	430	Standard
	Mn	55	326931.8	1.1	**56.3462**	0.565	1.0	ug/L	603	Standard
	Co	59	321699.5	0.9	**51.2838**	0.209	0.4	ug/L	237	Standard
	Ni	60	96180.4	1.7	**51.0507**	0.482	0.9	ug/L	141	Standard
	Cu	65	95306.5	1.4	**51.9244**	0.344	0.7	ug/L	109	Standard
	Zn	66	56208.1	0.9	**51.7682**	0.278	0.5	ug/L	159	Standard
>	**Ge**	72	462203.6	0.8				ug/L	474053	Standard
	As	75	54677.4	1.3	**50.6686**	0.319	0.6	ug/L	-34	Standard
	Se	82	5471.8	2.6	**50.5742**	0.951	1.9	ug/L	14	Standard
	Se-1	77	3817.1	0.9	**50.2380**	0.317	0.6	ug/L	55	Standard
>	**Ga**	71	60.0	22.0				mg/L	50	Standard
	Rb	85	115.0	15.7				ug/L	20	Standard
	Y	89	401062.4	1.0				ug/L	376602	Standard
>	**Rh**	103	33.3	37.7				ug/L	17	Standard
	Mo	98	55.7	12.6	**0.0170**	0.003	16.7	ug/L	8	Standard
	Ag	107	298947.0	1.2	**47.9637**	0.316	0.7	ug/L	81	Standard
	Cd	111	99244.6	1.4	**48.9502**	0.549	1.1	mg/L	3	Standard
	Cd	114	239743.2	0.7	**47.8326**	0.248	0.5	ug/L	7	Standard
>	**In**	115	548071.7	0.8				ug/L	524722	Standard
	Sn	118	1466.7	2.8	**0.1712**	0.008	4.6	ug/L	715	Standard
	Sb	123	213065.5	1.1	**46.6859**	0.143	0.3	ug/L	201	Standard
	Ba	135	90504.9	1.1	**47.7484**	0.750	1.6	ug/L	108	Standard
	Ce	140	71.7	4.0				ug/L	30	Standard
>	**Tb**	159	809470.0	2.7				ug/L	792236	Standard
	Ho	165	10.0	100.0				ug/L	7	Standard
	Tl	203	363003.7	1.1	**48.3987**	0.635	1.3	ug/L	9	Standard
	Tl	205	319279.0	0.6	**50.0661**	1.366	2.7	ug/L	0	Standard
	Pb	206	230746.8	0.4	**50.8528**	1.062	2.1	ug/L	216	Standard
	Pb	207	202045.2	0.4	**48.9160**	1.313	2.7	ug/L	180	Standard
	Pb	208	862693.1	0.1	**51.4643**	1.296	2.5	ug/L	717	Standard
	U	238	307882.3	0.1	**50.4881**	1.234	2.4	ug/L	4	Standard
>	**Bi**	209	452058.0	2.3				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.4002**	8.750	162.0	mg/L	0	Standard
Mg	24	33.3	8.7	**-0.0046**	0.004	92.7	mg/L	20	Standard
K	39	38.3	32.8	**0.0349**	0.087	249.1	mg/L	22	Standard
Ca	43	31.7	48.2	**-6.5426**	3.175	48.5	mg/L	47	Standard
Fe	54	129.8	11.6	**-0.0203**	0.010	51.0	mg/L	151	Standard
Fe	57	178.3	5.8	**-0.1508**	0.042	28.0	mg/L	195	Standard
> **Sc-1**	45	33034.3	2.7				mg/L	29647	Standard
Cl	35	160489.1	2.1				ug/L	154152	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	1963.5	7.4				ug/L	1607	Standard
P	31	24446.4	2.0				ug/L	22752	Standard
S	34	5609.4	5.5				ug/L	5049	Standard
Sr	88	61.7	16.9				ug/L	87	Standard
C	12	83.3	59.2				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	16.2	127.9				mg/L	10	Standard
Ho-1	165	10.0	100.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	1580.1	4.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.084	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.500	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.450
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.200
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606042801 WG571964-01
Sample Date/Time: Thursday, June 16, 2016 22:01:23
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53056.1	0.8				ug/L	51024	Standard
	Be	9	15.0	120.2	**-0.0038**	0.021	544.4	ug/L	7	Standard
	Al	27	757403.8	1.6	**5.1075**	0.106	2.1	ug/L	625	Standard
	Sc	45	31754.9	2.5				ug/L	29647	Standard
	Ti	47	165.7	8.9	**0.3896**	0.046	11.7	ug/L	57	Standard
	V	51	1511.6	6.0	**0.0457**	0.014	31.1	ug/L	1142	Standard
	Cr	52	8164.9	0.8	**0.1892**	0.010	5.5	ug/L	6628	Standard
	Cr	53	1656.8	10.3	**1.3626**	0.187	13.8	ug/L	430	Standard
	Mn	55	17190.1	1.5	**2.7889**	0.065	2.3	ug/L	603	Standard
	Co	59	391.7	5.3	**0.0201**	0.004	18.4	ug/L	237	Standard
	Ni	60	11431.6	1.7	**5.8888**	0.134	2.3	ug/L	141	Standard
	Cu	65	74287.3	0.4	**39.7191**	0.286	0.7	ug/L	109	Standard
	Zn	66	6798.2	0.6	**5.9426**	0.080	1.3	ug/L	159	Standard
>	**Ge**	72	470820.2	0.8				ug/L	474053	Standard
	As	75	23.4	122.6	**0.0464**	0.026	56.6	ug/L	-34	Standard
	Se	82	24.3	11.2	**0.0524**	0.025	47.2	ug/L	14	Standard
	Se-1	77	121.0	4.3	**0.8414**	0.059	7.0	ug/L	55	Standard
>	**Ga**	71	111.7	6.8				mg/L	50	Standard
	Rb	85	8439.0	5.7				ug/L	20	Standard
	Y	89	394979.4	1.5				ug/L	376602	Standard
>	**Rh**	103	30.0	0.0				ug/L	17	Standard
	Mo	98	18900.0	0.6	**7.8902**	0.142	1.8	ug/L	8	Standard
	Ag	107	1050.7	1.6	**0.1614**	0.000	0.2	ug/L	81	Standard
	Cd	111	8.7	19.0	**0.0012**	0.001	76.4	mg/L	3	Standard
	Cd	114	173.0	66.1	**0.0315**	0.023	73.0	ug/L	7	Standard
>	**In**	115	531861.1	1.7				ug/L	524722	Standard
	Sn	118	33005.9	1.3	**5.9570**	0.142	2.4	ug/L	715	Standard
	Sb	123	2285.8	18.9	**0.5027**	0.106	21.1	ug/L	201	Standard
	Ba	135	21266.9	0.9	**11.5188**	0.132	1.1	ug/L	108	Standard
	Ce	140	228.3	16.1				ug/L	30	Standard
>	**Tb**	159	787998.7	1.7				ug/L	792236	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	150.7	22.9	**0.0182**	0.005	26.8	ug/L	9	Standard
	Tl	205	115.0	41.5	**0.0108**	0.008	72.2	ug/L	0	Standard
	Pb	206	32589.3	0.1	**7.3677**	0.062	0.8	ug/L	216	Standard
	Pb	207	27351.7	1.3	**6.7905**	0.113	1.7	ug/L	180	Standard
	Pb	208	116700.7	0.9	**7.1377**	0.028	0.4	ug/L	717	Standard
	U	238	60.7	30.6	**0.0027**	0.003	116.1	ug/L	4	Standard
>	**Bi**	209	437691.5	0.7				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.5017**	8.575	155.9	mg/L	0	Standard
Mg	24	12460.1	1.8	**15.7356**	0.595	3.8	mg/L	20	Standard
K	39	611.7	9.8	**4.1225**	0.361	8.8	mg/L	22	Standard
Ca	43	61.7	24.8	**0.2569**	3.325	1294.5	mg/L	47	Standard
Fe	54	123.9	25.0	**-0.0210**	0.023	110.5	mg/L	151	Standard
Fe	57	213.3	11.8	**-0.0300**	0.077	258.2	mg/L	195	Standard
Sc-1	45	31754.9	2.5				mg/L	29647	Standard
Cl	35	194533.7	1.6				ug/L	154152	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	3240.3	4.0				ug/L	1607	Standard
P	31	24090.8	3.3				ug/L	22752	Standard
S	34	5104.2	4.8				ug/L	5049	Standard
Sr	88	81.7	19.7				ug/L	87	Standard
C	12	96.7	6.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.5	179.6				mg/L	10	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	13282.5	4.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		103.982	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.318	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.361
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.079
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606042801S WG571964-05
Sample Date/Time: Thursday, June 16, 2016 22:04:34
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55394.4	1.8				ug/L	51024	Standard
	Be	9	8934.3	3.4	**9.7660**	0.194	2.0	ug/L	7	Standard
	Al	27	748355.5	1.6	**4.8346**	0.168	3.5	ug/L	625	Standard
	Sc	45	32691.9	1.0				ug/L	29647	Standard
	Ti	47	168.3	4.0	**0.3836**	0.024	6.2	ug/L	57	Standard
	V	51	72192.1	1.7	**9.7775**	0.188	1.9	ug/L	1142	Standard
	Cr	52	79707.4	0.5	**9.6848**	0.014	0.1	ug/L	6628	Standard
	Cr	53	10453.6	1.1	**10.5826**	0.158	1.5	ug/L	430	Standard
	Mn	55	79152.9	1.5	**12.9343**	0.146	1.1	ug/L	603	Standard
	Co	59	63320.4	0.7	**9.6094**	0.039	0.4	ug/L	237	Standard
	Ni	60	29840.4	0.9	**15.0769**	0.185	1.2	ug/L	141	Standard
	Cu	65	88796.8	0.4	**46.2088**	0.054	0.1	ug/L	109	Standard
	Zn	66	17201.8	0.7	**14.9707**	0.150	1.0	ug/L	159	Standard
>	**Ge**	72	483837.9	0.4				ug/L	474053	Standard
	As	75	10943.5	1.9	**9.7081**	0.171	1.8	ug/L	-34	Standard
	Se	82	1071.8	4.1	**9.3269**	0.380	4.1	ug/L	14	Standard
	Se-1	77	883.4	1.7	**10.5260**	0.205	1.9	ug/L	55	Standard
>	**Ga**	71	61.7	18.7				mg/L	50	Standard
	Rb	85	8238.9	4.0				ug/L	20	Standard
	Y	89	381877.6	0.5				ug/L	376602	Standard
>	**Rh**	103	51.7	55.9				ug/L	17	Standard
	Mo	98	18040.5	0.2	**7.6113**	0.126	1.7	ug/L	8	Standard
	Ag	107	57677.6	1.0	**9.6285**	0.084	0.9	ug/L	81	Standard
	Cd	111	18876.2	0.3	**9.6948**	0.114	1.2	mg/L	3	Standard
	Cd	114	46340.2	1.4	**9.6280**	0.249	2.6	ug/L	7	Standard
>	**In**	115	526253.2	1.5				ug/L	524722	Standard
	Sn	118	29871.1	0.9	**5.4406**	0.094	1.7	ug/L	715	Standard
	Sb	123	44200.6	1.7	**10.0749**	0.023	0.2	ug/L	201	Standard
	Ba	135	37005.8	1.2	**20.2992**	0.061	0.3	ug/L	108	Standard
	Ce	140	223.3	9.3				ug/L	30	Standard
>	**Tb**	159	800388.6	1.7				ug/L	792236	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	71293.7	0.6	**9.5115**	0.043	0.5	ug/L	9	Standard
	Tl	205	61241.9	1.8	**9.6035**	0.196	2.0	ug/L	0	Standard
	Pb	206	76986.8	0.6	**16.9419**	0.160	0.9	ug/L	216	Standard
	Pb	207	66311.8	0.8	**16.0284**	0.098	0.6	ug/L	180	Standard
	Pb	208	275320.9	0.6	**16.3962**	0.155	0.9	ug/L	717	Standard
	U	238	60579.2	0.6	**9.9347**	0.056	0.6	ug/L	4	Standard
>	**Bi**	209	451597.7	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	12333.4	0.5	**15.1192**	0.089	0.6	mg/L	20	Standard
K	39	615.0	5.3	**4.0231**	0.203	5.0	mg/L	22	Standard
Ca	43	28.3	10.2	**-7.1884**	0.556	7.7	mg/L	47	Standard
Fe	54	187.4	26.5	**0.0230**	0.035	154.6	mg/L	151	Standard
Fe	57	198.3	19.1	**-0.0900**	0.107	118.9	mg/L	195	Standard
> **Sc-1**	45	32691.9	1.0				mg/L	29647	Standard
Cl	35	191462.1	0.2				ug/L	154152	Standard
Kr	83	1.7	124.9				ug/L	3	Standard
Br	81	2590.2	10.5				ug/L	1607	Standard
P	31	24189.3	1.6				ug/L	22752	Standard
S	34	5244.2	0.9				ug/L	5049	Standard
Sr	88	83.3	24.2				ug/L	87	Standard
C	12	146.7	23.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	13.3	114.6				mg/L	10	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	0.0					mg/L	3	Standard
I	127	11335.9	2.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.565	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.064	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.292
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.100
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606042801SD WG571964-06
Sample Date/Time: Thursday, June 16, 2016 22:07:46
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56861.5	1.0				ug/L	51024	Standard
	Be	9	9379.6	0.6	**9.9907**	0.123	1.2	ug/L	7	Standard
	Al	27	791197.5	0.6	**4.9782**	0.076	1.5	ug/L	625	Standard
	Sc	45	33405.1	3.0				ug/L	29647	Standard
	Ti	47	189.0	15.7	**0.4621**	0.100	21.6	ug/L	57	Standard
	V	51	73275.8	0.5	**10.1068**	0.150	1.5	ug/L	1142	Standard
	Cr	52	82693.4	0.6	**10.2789**	0.155	1.5	ug/L	6628	Standard
	Cr	53	11009.0	1.3	**11.3764**	0.331	2.9	ug/L	430	Standard
	Mn	55	80077.1	1.3	**13.3217**	0.087	0.6	ug/L	603	Standard
	Co	59	64342.3	1.0	**9.9396**	0.081	0.8	ug/L	237	Standard
	Ni	60	30668.0	0.6	**15.7751**	0.244	1.5	ug/L	141	Standard
	Cu	65	102903.3	0.9	**54.5140**	0.360	0.7	ug/L	109	Standard
	Zn	66	17903.6	1.4	**15.8728**	0.283	1.8	ug/L	159	Standard
>	**Ge**	72	475415.3	1.6				ug/L	474053	Standard
	As	75	11042.5	1.9	**9.9692**	0.144	1.4	ug/L	-34	Standard
	Se	82	1111.2	2.5	**9.8543**	0.398	4.0	ug/L	14	Standard
	Se-1	77	817.4	1.4	**9.8699**	0.196	2.0	ug/L	55	Standard
>	**Ga**	71	86.7	39.3				mg/L	50	Standard
	Rb	85	8222.2	4.2				ug/L	20	Standard
	Y	89	394850.6	0.8				ug/L	376602	Standard
>	**Rh**	103	35.0	28.6				ug/L	17	Standard
	Mo	98	19398.6	1.2	**8.0048**	0.167	2.1	ug/L	8	Standard
	Ag	107	59697.4	0.4	**9.7470**	0.052	0.5	ug/L	81	Standard
	Cd	111	19317.1	0.2	**9.7032**	0.092	0.9	mg/L	3	Standard
	Cd	114	47826.5	0.6	**9.7171**	0.080	0.8	ug/L	7	Standard
>	**In**	115	538049.7	0.9				ug/L	524722	Standard
	Sn	118	39536.5	1.2	**7.0684**	0.038	0.5	ug/L	715	Standard
	Sb	123	45183.1	0.7	**10.0737**	0.100	1.0	ug/L	201	Standard
	Ba	135	43743.7	0.4	**23.4783**	0.172	0.7	ug/L	108	Standard
	Ce	140	316.7	16.7				ug/L	30	Standard
>	**Tb**	159	823661.0	0.7				ug/L	792236	Standard
	Ho	165	16.7	69.3				ug/L	7	Standard
	Tl	203	73870.7	1.0	**9.7275**	0.120	1.2	ug/L	9	Standard
	Tl	205	62943.8	1.2	**9.7425**	0.171	1.8	ug/L	0	Standard
	Pb	206	79783.5	0.3	**17.3303**	0.067	0.4	ug/L	216	Standard
	Pb	207	68152.3	0.6	**16.2608**	0.196	1.2	ug/L	180	Standard
	Pb	208	286237.0	1.1	**16.8270**	0.286	1.7	ug/L	717	Standard
	U	238	62126.1	0.8	**10.0567**	0.149	1.5	ug/L	4	Standard
>	**Bi**	209	457529.8	0.7				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	13005.6	1.2	**15.6137**	0.541	3.5	mg/L	20	Standard
K	39	631.7	11.7	**4.0527**	0.574	14.2	mg/L	22	Standard
Ca	43	45.0	29.4	**-3.9018**	2.447	62.7	mg/L	47	Standard
Fe	54	151.2	21.8	**-0.0055**	0.026	477.7	mg/L	151	Standard
Fe	57	191.7	21.7	**-0.1180**	0.127	107.5	mg/L	195	Standard
Sc-1	45	33405.1	3.0				mg/L	29647	Standard
Cl	35	198754.5	0.5				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	2900.3	3.8				ug/L	1607	Standard
P	31	24661.7	2.9				ug/L	22752	Standard
S	34	5152.5	2.9				ug/L	5049	Standard
Sr	88	78.3	9.8				ug/L	87	Standard
C	12	96.7	43.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.9	187.9				mg/L	10	Standard
Ho-1	165	16.7	69.3				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	11145.8	3.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.440	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.287	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.540	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.389	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606042801SD WG571964-06
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Method 6020 - Summary Report

Sample ID: L1606041103
Sample Date/Time: Thursday, June 16, 2016 22:10:57
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62574.0	2.3				ug/L	51024	Standard
	Be	9	160.0	11.3	**0.1339**	0.015	11.0	ug/L	7	Standard
	Al	27	3612417.3	0.5	**20.6888**	0.380	1.8	ug/L	625	Standard
	Sc	45	41445.0	4.1				ug/L	29647	Standard
	Ti	47	11430.0	1.2	**38.8931**	0.503	1.3	ug/L	57	Standard
	V	51	49465.6	5.9	**6.9654**	0.407	5.8	ug/L	1142	Standard
	Cr	52	278119.6	1.2	**37.8421**	0.634	1.7	ug/L	6628	Standard
	Cr	53	35835.7	1.3	**39.0973**	0.639	1.6	ug/L	430	Standard
	Mn	55	108739.8	1.1	**18.6585**	0.168	0.9	ug/L	603	Standard
	Co	59	16555.0	2.3	**2.6001**	0.043	1.6	ug/L	237	Standard
	Ni	60	172929.3	0.8	**91.8635**	0.500	0.5	ug/L	141	Standard
	Cu	65	6358.3	3.5	**3.4028**	0.118	3.5	ug/L	109	Standard
	Zn	66	15282.7	1.5	**13.9075**	0.137	1.0	ug/L	159	Standard
>	**Ge**	72	462157.8	0.7				ug/L	474053	Standard
	As	75	708.4	1.9	**0.6813**	0.015	2.2	ug/L	-34	Standard
	Se	82	305.6	0.9	**2.6661**	0.043	1.6	ug/L	14	Standard
	Se-1	77	262.0	4.6	**2.7550**	0.165	6.0	ug/L	55	Standard
>	**Ga**	71	6034.5	4.8				mg/L	50	Standard
	Rb	85	47790.3	0.2				ug/L	20	Standard
	Y	89	408920.9	2.9				ug/L	376602	Standard
>	**Rh**	103	41.7	34.6				ug/L	17	Standard
	Mo	98	2172.6	4.5	**0.8781**	0.030	3.5	ug/L	8	Standard
	Ag	107	219.7	70.0	**0.0229**	0.024	105.6	ug/L	81	Standard
	Cd	111	75.9	34.7	**0.0343**	0.013	36.7	mg/L	3	Standard
	Cd	114	241.8	20.0	**0.0446**	0.009	20.8	ug/L	7	Standard
>	**In**	115	546080.6	1.7				ug/L	524722	Standard
	Sn	118	1300.1	5.7	**0.1424**	0.011	7.6	ug/L	715	Standard
	Sb	123	571.3	25.0	**0.1106**	0.030	26.8	ug/L	201	Standard
	Ba	135	154749.6	0.9	**81.9842**	0.666	0.8	ug/L	108	Standard
	Ce	140	87014.2	1.0				ug/L	30	Standard
>	**Tb**	159	814427.9	0.6				ug/L	792236	Standard
	Ho	165	750.0	9.7				ug/L	7	Standard
	Tl	203	378.3	10.9	**0.0480**	0.006	11.9	ug/L	9	Standard
	Tl	205	368.3	33.6	**0.0501**	0.020	39.4	ug/L	0	Standard
	Pb	206	5985.2	3.5	**1.2661**	0.051	4.1	ug/L	216	Standard
	Pb	207	4992.8	4.4	**1.1580**	0.058	5.0	ug/L	180	Standard
	Pb	208	21391.6	3.3	**1.2214**	0.047	3.9	ug/L	717	Standard
	U	238	1095.4	14.1	**0.1724**	0.026	15.1	ug/L	4	Standard
>	**Bi**	209	451292.0	0.4				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	20841.0	1.9	**20.1926**	1.006	5.0	mg/L	20	Standard
K	39	73.3	37.6	**0.1715**	0.145	84.8	mg/L	22	Standard
Ca	43	58.3	64.9	**-3.6032**	6.066	168.3	mg/L	47	Standard
Fe	54	4110.0	2.2	**2.2769**	0.060	2.6	mg/L	151	Standard
Fe	57	1281.7	3.9	**2.1921**	0.046	2.1	mg/L	195	Standard
> **Sc-1**	45	41445.0	4.1				mg/L	29647	Standard
Cl	35	174319.7	0.6				ug/L	154152	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	22139.5	6.4				ug/L	1607	Standard
P	31	56868.2	1.9				ug/L	22752	Standard
S	34	4735.7	5.8				ug/L	5049	Standard
Sr	88	138.3	8.3				ug/L	87	Standard
C	12	140.0	24.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	71.3				mg/L	0	Standard
Dy	164	1332.7	14.4				mg/L	10	Standard
Ho-1	165	750.0	9.7				mg/L	7	Standard
Er	166	710.0	11.5				mg/L	3	Standard
I	127	202127.9	4.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		122.636	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.491	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.070
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.034
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606041104
Sample Date/Time: Thursday, June 16, 2016 22:14:09
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64240.9	1.6				ug/L	51024	Standard
	Be	9	136.7	22.1	**0.1078**	0.027	24.9	ug/L	7	Standard
	Al	27	3763925.2	1.3	**20.9934**	0.276	1.3	ug/L	625	Standard
	Sc	45	40464.0	1.9				ug/L	29647	Standard
	Ti	47	8699.5	0.7	**27.3016**	0.630	2.3	ug/L	57	Standard
	V	51	38467.6	1.3	**4.9573**	0.087	1.7	ug/L	1142	Standard
	Cr	52	284248.5	0.2	**35.6883**	1.177	3.3	ug/L	6628	Standard
	Cr	53	35927.6	2.1	**36.1893**	1.342	3.7	ug/L	430	Standard
	Mn	55	133272.7	1.8	**21.1444**	0.498	2.4	ug/L	603	Standard
	Co	59	18921.1	3.5	**2.7470**	0.050	1.8	ug/L	237	Standard
	Ni	60	221247.9	1.4	**108.5931**	1.677	1.5	ug/L	141	Standard
	Cu	65	5825.8	2.3	**2.8698**	0.029	1.0	ug/L	109	Standard
	Zn	66	12440.8	1.3	**10.4031**	0.253	2.4	ug/L	159	Standard
>	**Ge**	72	500409.8	2.9				ug/L	474053	Standard
	As	75	551.3	12.2	**0.4975**	0.064	12.9	ug/L	-34	Standard
	Se	82	300.3	5.4	**2.4053**	0.175	7.3	ug/L	14	Standard
	Se-1	77	256.7	3.5	**2.4250**	0.195	8.0	ug/L	55	Standard
>	**Ga**	71	4735.7	2.7				mg/L	50	Standard
	Rb	85	38717.8	2.3				ug/L	20	Standard
	Y	89	413643.0	2.8				ug/L	376602	Standard
>	**Rh**	103	26.7	28.6				ug/L	17	Standard
	Mo	98	7867.7	1.9	**3.2136**	0.028	0.9	ug/L	8	Standard
	Ag	107	99.3	12.1	**0.0038**	0.002	50.7	ug/L	81	Standard
	Cd	111	46.8	16.9	**0.0200**	0.004	18.8	mg/L	3	Standard
	Cd	114	206.0	6.6	**0.0377**	0.003	7.1	ug/L	7	Standard
>	**In**	115	542917.1	1.0				ug/L	524722	Standard
	Sn	118	1081.7	2.4	**0.1046**	0.003	3.0	ug/L	715	Standard
	Sb	123	436.3	12.1	**0.0817**	0.011	13.3	ug/L	201	Standard
	Ba	135	146593.2	1.4	**78.1037**	0.328	0.4	ug/L	108	Standard
	Ce	140	75445.7	1.8				ug/L	30	Standard
>	**Tb**	159	801118.6	3.0				ug/L	792236	Standard
	Ho	165	633.3	15.1				ug/L	7	Standard
	Tl	203	300.0	6.5	**0.0378**	0.003	8.4	ug/L	9	Standard
	Tl	205	321.7	21.6	**0.0433**	0.012	28.2	ug/L	0	Standard
	Pb	206	5087.9	2.5	**1.0767**	0.011	1.0	ug/L	216	Standard
	Pb	207	4144.6	1.8	**0.9603**	0.027	2.8	ug/L	180	Standard
	Pb	208	18065.6	1.4	**1.0314**	0.029	2.8	ug/L	717	Standard
	U	238	874.7	4.0	**0.1374**	0.011	7.8	ug/L	4	Standard
>	**Bi**	209	447824.2	3.4				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	22872.3	0.6	**22.6806**	0.473	2.1	mg/L	20	Standard
K	39	35.0	51.5	**-0.0329**	0.100	305.7	mg/L	22	Standard
Ca	43	48.3	31.6	**-4.9013**	2.699	55.1	mg/L	47	Standard
Fe	54	3361.7	4.8	**1.8885**	0.113	6.0	mg/L	151	Standard
Fe	57	1078.4	5.6	**1.8011**	0.173	9.6	mg/L	195	Standard
Sc-1	45	40464.0	1.9				mg/L	29647	Standard
Cl	35	177669.3	2.1				ug/L	154152	Standard
Kr	83	2.3	24.7				ug/L	3	Standard
Br	81	20991.2	6.6				ug/L	1607	Standard
P	31	55948.1	2.2				ug/L	22752	Standard
S	34	4435.6	2.7				ug/L	5049	Standard
Sr	88	156.7	18.7				ug/L	87	Standard
C	12	160.0	47.2				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	0	Standard
Dy	164	1259.3	5.9				mg/L	10	Standard
Ho-1	165	633.3	15.1				mg/L	7	Standard
Er	166	573.3	7.3				mg/L	3	Standard
I	127	221985.7	5.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		125.903	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.560	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.468	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.281	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ni 60 Upper, S, EEE	Ni	60	

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Method 6020 - Summary Report

Sample ID: L1606041104PS WG572085-03
Sample Date/Time: Thursday, June 16, 2016 22:17:20
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68479.5	2.8				ug/L	51024	Standard
	Be	9	53798.7	2.5	**47.6621**	0.433	0.9	ug/L	7	Standard
	Al	27	3774638.8	2.0	**19.7508**	0.180	0.9	ug/L	625	Standard
	Sc	45	41744.1	0.5				ug/L	29647	Standard
	Ti	47	8543.7	1.2	**27.1926**	0.351	1.3	ug/L	57	Standard
	V	51	416323.5	0.8	**56.1020**	0.898	1.6	ug/L	1142	Standard
	Cr	52	661415.5	1.7	**85.4827**	2.467	2.9	ug/L	6628	Standard
	Cr	53	82886.1	1.6	**85.2548**	2.351	2.8	ug/L	430	Standard
	Mn	55	455226.4	0.8	**73.5653**	0.461	0.6	ug/L	603	Standard
	Co	59	356626.6	0.3	**53.2845**	0.717	1.3	ug/L	237	Standard
	Ni	60	319608.9	1.5	**159.1819**	4.226	2.7	ug/L	141	Standard
	Cu	65	101931.1	1.4	**52.0544**	1.323	2.5	ug/L	109	Standard
	Zn	66	69708.7	0.9	**60.2129**	1.260	2.1	ug/L	159	Standard
>	**Ge**	72	493214.1	1.2				ug/L	474053	Standard
	As	75	57487.0	0.2	**49.9285**	0.540	1.1	ug/L	-34	Standard
	Se	82	5945.0	0.7	**51.5039**	0.559	1.1	ug/L	14	Standard
	Se-1	77	4052.2	2.0	**49.9708**	0.414	0.8	ug/L	55	Standard
>	**Ga**	71	4670.7	3.3				mg/L	50	Standard
	Rb	85	37354.3	0.9				ug/L	20	Standard
	Y	89	401490.0	0.7				ug/L	376602	Standard
>	**Rh**	103	51.7	24.4				ug/L	17	Standard
	Mo	98	7837.2	0.6	**3.1623**	0.111	3.5	ug/L	8	Standard
	Ag	107	304891.6	0.9	**48.7677**	0.989	2.0	ug/L	81	Standard
	Cd	111	99959.3	1.1	**49.1537**	1.231	2.5	mg/L	3	Standard
	Cd	114	244744.0	1.6	**48.6729**	0.677	1.4	ug/L	7	Standard
>	**In**	115	549981.7	2.9				ug/L	524722	Standard
	Sn	118	1156.7	4.0	**0.1154**	0.002	1.9	ug/L	715	Standard
	Sb	123	225529.7	0.1	**49.2752**	1.450	2.9	ug/L	201	Standard
	Ba	135	235280.0	1.6	**123.8168**	1.916	1.5	ug/L	108	Standard
	Ce	140	72287.1	1.8				ug/L	30	Standard
>	**Tb**	159	836927.2	1.6				ug/L	792236	Standard
	Ho	165	618.3	2.8				ug/L	7	Standard
	Tl	203	374508.5	1.3	**47.9478**	0.598	1.2	ug/L	9	Standard
	Tl	205	331693.7	1.7	**49.9323**	0.614	1.2	ug/L	0	Standard
	Pb	206	246855.7	0.5	**52.2356**	0.118	0.2	ug/L	216	Standard
	Pb	207	213815.1	0.2	**49.6985**	0.193	0.4	ug/L	180	Standard
	Pb	208	877795.6	1.2	**50.2714**	0.366	0.7	ug/L	717	Standard
	U	238	322334.9	1.2	**50.7465**	0.349	0.7	ug/L	4	Standard
>	**Bi**	209	470679.1	0.5				ug/L	460343	Standard

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Na	23	3.3	173.2	**2.6916**	13.442	499.4	mg/L	0	Standard
Mg	24	22820.5	2.3	**21.9277**	0.463	2.1	mg/L	20	Standard
K	39	55.0	32.8	**0.0700**	0.098	140.3	mg/L	22	Standard
Ca	43	53.3	28.6	**-4.3313**	2.572	59.4	mg/L	47	Standard
Fe	54	3487.5	4.4	**1.8989**	0.090	4.7	mg/L	151	Standard
Fe	57	1048.4	8.2	**1.6588**	0.199	12.0	mg/L	195	Standard
> **Sc-1**	45	41744.1	0.5				mg/L	29647	Standard
Cl	35	171137.1	0.1				ug/L	154152	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	19926.4	2.2				ug/L	1607	Standard
P	31	55093.4	2.6				ug/L	22752	Standard
S	34	4375.6	3.4				ug/L	5049	Standard
Sr	88	146.7	22.7				ug/L	87	Standard
C	12	130.0	35.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	69.3				mg/L	0	Standard
Dy	164	1135.3	6.0				mg/L	10	Standard
Ho-1	165	618.3	2.8				mg/L	7	Standard
Er	166	516.7	11.3				mg/L	3	Standard
I	127	228888.4	2.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		134.210	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.042	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.814
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.245
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ni 60 Upper, S, EEE	Ni	60	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606041104SDL WG572085-04
Sample Date/Time: Thursday, June 16, 2016 22:20:32
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64080.3	2.7				ug/L	51024	Standard
	Be	9	40.0	12.5	**0.0168**	0.005	27.3	ug/L	7	Standard
	Al	27	710132.3	2.2	**3.9635**	0.097	2.4	ug/L	625	Standard
	Sc	45	34213.6	1.2				ug/L	29647	Standard
	Ti	47	1665.1	3.3	**5.5149**	0.188	3.4	ug/L	57	Standard
	V	51	8406.9	2.7	**1.0425**	0.044	4.3	ug/L	1142	Standard
	Cr	52	60396.1	0.7	**7.4773**	0.032	0.4	ug/L	6628	Standard
	Cr	53	7433.5	0.9	**7.7546**	0.056	0.7	ug/L	430	Standard
	Mn	55	26233.4	1.3	**4.3983**	0.064	1.4	ug/L	603	Standard
	Co	59	3790.1	2.7	**0.5627**	0.022	4.0	ug/L	237	Standard
	Ni	60	42759.9	1.8	**22.6189**	0.287	1.3	ug/L	141	Standard
	Cu	65	1312.1	2.0	**0.6485**	0.012	1.8	ug/L	109	Standard
	Zn	66	4020.5	0.7	**3.4822**	0.054	1.5	ug/L	159	Standard
>	**Ge**	72	462909.1	1.0				ug/L	474053	Standard
	As	75	127.1	1.3	**0.1426**	0.002	1.2	ug/L	-34	Standard
	Se	82	76.1	4.5	**0.5359**	0.031	5.8	ug/L	14	Standard
	Se-1	77	88.7	7.5	**0.4371**	0.078	17.8	ug/L	55	Standard
>	**Ga**	71	933.4	4.3				mg/L	50	Standard
	Rb	85	7380.1	1.8				ug/L	20	Standard
	Y	89	399286.8	1.5				ug/L	376602	Standard
>	**Rh**	103	10.0	50.0				ug/L	17	Standard
	Mo	98	1500.2	2.7	**0.5970**	0.016	2.6	ug/L	8	Standard
	Ag	107	118.7	15.0	**0.0065**	0.003	41.2	ug/L	81	Standard
	Cd	111	28.9	34.9	**0.0109**	0.005	45.1	mg/L	3	Standard
	Cd	114	79.5	41.7	**0.0119**	0.007	55.5	ug/L	7	Standard
>	**In**	115	553072.6	0.8				ug/L	524722	Standard
	Sn	118	576.7	14.8	**0.0122**	0.016	129.0	ug/L	715	Standard
	Sb	123	2178.3	21.1	**0.4589**	0.103	22.5	ug/L	201	Standard
	Ba	135	28213.6	0.4	**14.7104**	0.164	1.1	ug/L	108	Standard
	Ce	140	14325.1	2.6				ug/L	30	Standard
>	**Tb**	159	808125.3	1.3				ug/L	792236	Standard
	Ho	165	128.3	18.0				ug/L	7	Standard
	Tl	203	157.0	14.8	**0.0183**	0.003	16.5	ug/L	9	Standard
	Tl	205	128.3	27.4	**0.0122**	0.005	43.6	ug/L	0	Standard
	Pb	206	1207.7	4.1	**0.2094**	0.008	3.9	ug/L	216	Standard
	Pb	207	969.0	2.2	**0.1805**	0.006	3.4	ug/L	180	Standard
	Pb	208	4243.2	2.0	**0.1949**	0.007	3.7	ug/L	717	Standard
	U	238	239.0	4.0	**0.0315**	0.002	6.6	ug/L	4	Standard
>	**Bi**	209	453005.7	1.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	4389.0	3.6	**5.1101**	0.132	2.6	mg/L	20	Standard
K	39	13.3	78.1	**-0.1402**	0.068	48.2	mg/L	22	Standard
Ca	43	36.7	43.8	**-5.7822**	3.171	54.8	mg/L	47	Standard
Fe	54	812.9	7.6	**0.4581**	0.050	11.0	mg/L	151	Standard
Fe	57	373.3	8.7	**0.3544**	0.083	23.5	mg/L	195	Standard
> **Sc-1**	45	34213.6	1.2				mg/L	29647	Standard
Cl	35	155114.0	1.0				ug/L	154152	Standard
Kr	83	1.3	114.6				ug/L	3	Standard
Br	81	5447.6	5.1				ug/L	1607	Standard
P	31	29535.4	3.0				ug/L	22752	Standard
S	34	4345.6	4.1				ug/L	5049	Standard
Sr	88	98.3	16.3				ug/L	87	Standard
C	12	66.7	69.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	223.5	3.8				mg/L	10	Standard
Ho-1	165	128.3	18.0				mg/L	7	Standard
Er	166	136.7	22.4				mg/L	3	Standard
I	127	47285.3	1.6				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		125.588	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.649	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	105.403
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.406
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606041104SDL WG572085-04
Sample Date/Time: Thursday, June 16, 2016 22:23:43
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60699.7	1.4				ug/L	51024	Standard
	Be	9	26.7	65.8	**0.0056**	0.018	312.0	ug/L	7	Standard
	Al	27	141309.4	1.9	**0.8247**	0.016	2.0	ug/L	625	Standard
	Sc	45	31491.0	2.2				ug/L	29647	Standard
	Ti	47	381.3	5.6	**1.1251**	0.055	4.9	ug/L	57	Standard
	V	51	2585.2	5.7	**0.2016**	0.028	14.1	ug/L	1142	Standard
	Cr	52	17170.4	0.5	**1.4445**	0.049	3.4	ug/L	6628	Standard
	Cr	53	1966.8	5.0	**1.7199**	0.140	8.1	ug/L	430	Standard
	Mn	55	5874.1	1.6	**0.8794**	0.018	2.1	ug/L	603	Standard
	Co	59	918.7	1.3	**0.1040**	0.001	1.4	ug/L	237	Standard
	Ni	60	8671.8	1.0	**4.4921**	0.067	1.5	ug/L	141	Standard
	Cu	65	375.3	1.5	**0.1368**	0.002	1.4	ug/L	109	Standard
	Zn	66	1553.7	2.6	**1.1927**	0.020	1.7	ug/L	159	Standard
>	**Ge**	72	466371.9	2.3				ug/L	474053	Standard
	As	75	-6.1	252.7	**0.0197**	0.014	72.2	ug/L	-34	Standard
	Se	82	31.9	14.9	**0.1250**	0.051	40.6	ug/L	14	Standard
	Se-1	77	67.3	8.6	**0.1479**	0.098	66.2	ug/L	55	Standard
>	**Ga**	71	236.7	12.4				mg/L	50	Standard
	Rb	85	1530.1	6.8				ug/L	20	Standard
	Y	89	398351.9	2.2				ug/L	376602	Standard
>	**Rh**	103	20.0	90.1				ug/L	17	Standard
	Mo	98	309.3	4.7	**0.1235**	0.007	5.8	ug/L	8	Standard
	Ag	107	82.7	3.5	**0.0013**	0.000	30.9	ug/L	81	Standard
	Cd	111	8.8	17.3	**0.0012**	0.001	68.5	mg/L	3	Standard
	Cd	114	33.8	15.5	**0.0031**	0.001	31.5	ug/L	7	Standard
>	**In**	115	532767.1	1.5				ug/L	524722	Standard
	Sn	118	478.3	5.3	**-0.0020**	0.004	179.1	ug/L	715	Standard
	Sb	123	535.3	25.6	**0.1062**	0.033	30.9	ug/L	201	Standard
	Ba	135	5770.1	0.9	**3.0781**	0.059	1.9	ug/L	108	Standard
	Ce	140	2811.9	5.2				ug/L	30	Standard
>	**Tb**	159	784308.2	0.8				ug/L	792236	Standard
	Ho	165	41.7	18.3				ug/L	7	Standard
	Tl	203	52.7	23.4	**0.0046**	0.002	36.5	ug/L	9	Standard
	Tl	205	35.0	14.3	**-0.0022**	0.001	34.5	ug/L	0	Standard
	Pb	206	411.7	5.6	**0.0360**	0.005	12.9	ug/L	216	Standard
	Pb	207	350.0	3.5	**0.0324**	0.003	8.3	ug/L	180	Standard
	Pb	208	1486.7	0.5	**0.0323**	0.001	2.8	ug/L	717	Standard
	U	238	58.7	16.8	**0.0022**	0.002	75.4	ug/L	4	Standard
>	**Bi**	209	444600.9	0.5				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.3313**	8.870	166.4	mg/L	0	Standard
Mg	24	840.0	10.8	**1.0281**	0.127	12.3	mg/L	20	Standard
K	39	15.0	88.2	**-0.1198**	0.096	80.2	mg/L	22	Standard
Ca	43	18.3	83.3	**-9.1765**	3.343	36.4	mg/L	47	Standard
Fe	54	272.4	14.1	**0.0939**	0.032	34.1	mg/L	151	Standard
Fe	57	256.7	4.9	**0.1011**	0.032	31.4	mg/L	195	Standard
> **Sc-1**	45	31491.0	2.2				mg/L	29647	Standard
Cl	35	151247.9	1.3				ug/L	154152	Standard
Kr	83	3.3	69.3				ug/L	3	Standard
Br	81	2453.5	11.0				ug/L	1607	Standard
P	31	23077.6	3.5				ug/L	22752	Standard
S	34	4429.0	4.8				ug/L	5049	Standard
Sr	88	73.3	21.9				ug/L	87	Standard
C	12	63.3	24.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	47.6	24.3				mg/L	10	Standard
Ho-1	165	41.7	18.3				mg/L	7	Standard
Er	166	50.0	91.7				mg/L	3	Standard
I	127	10970.6	2.1				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		118.963	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.380	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.533
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.580
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 22:26:56
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59001.4	3.1				ug/L	51024	Standard
	Be	9	47251.9	1.9	**48.5958**	0.632	1.3	ug/L	7	Standard
	Al	27	7707900.4	0.6	**46.8442**	1.367	2.9	ug/L	625	Standard
	Sc	45	32042.2	2.5				ug/L	29647	Standard
	Ti	47	31108.6	0.8	**106.3533**	1.301	1.2	ug/L	57	Standard
	V	51	354930.5	0.4	**51.1260**	0.515	1.0	ug/L	1142	Standard
	Cr	52	373996.6	0.2	**51.3100**	0.429	0.8	ug/L	6628	Standard
	Cr	53	46528.0	1.9	**50.9890**	0.660	1.3	ug/L	430	Standard
	Mn	55	313560.0	0.4	**54.1496**	0.181	0.3	ug/L	603	Standard
	Co	59	324218.3	1.5	**51.7917**	0.391	0.8	ug/L	237	Standard
	Ni	60	95070.0	1.4	**50.5665**	0.352	0.7	ug/L	141	Standard
	Cu	65	93181.7	1.5	**50.8709**	0.430	0.8	ug/L	109	Standard
	Zn	66	54868.9	1.6	**50.6327**	0.507	1.0	ug/L	159	Standard
>	Ge	72	461242.2	0.7				ug/L	474053	Standard
	As	75	53786.6	0.6	**49.9506**	0.524	1.0	ug/L	-34	Standard
	Se	82	5398.5	1.3	**50.0080**	1.035	2.1	ug/L	14	Standard
	Se-1	77	3763.8	1.7	**49.6296**	0.770	1.6	ug/L	55	Standard
>	Ga	71	83.3	29.6				mg/L	50	Standard
	Rb	85	758.4	8.6				ug/L	20	Standard
	Y	89	392635.2	3.0				ug/L	376602	Standard
>	Rh	103	40.0	45.1				ug/L	17	Standard
	Mo	98	239363.5	0.3	**97.9544**	0.320	0.3	ug/L	8	Standard
	Ag	107	297613.5	1.2	**48.2150**	0.880	1.8	ug/L	81	Standard
	Cd	111	96257.9	0.7	**47.9363**	0.352	0.7	mg/L	3	Standard
	Cd	114	237569.3	0.8	**47.8568**	0.430	0.9	ug/L	7	Standard
>	In	115	542829.4	0.6				ug/L	524722	Standard
	Sn	118	271504.8	1.8	**48.6303**	0.573	1.2	ug/L	715	Standard
	Sb	123	221602.7	1.2	**49.0302**	0.874	1.8	ug/L	201	Standard
	Ba	135	89759.4	0.9	**47.8096**	0.296	0.6	ug/L	108	Standard
	Ce	140	83.3	15.1				ug/L	30	Standard
>	Tb	159	805068.8	1.3				ug/L	792236	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	366179.1	0.5	**49.0753**	0.770	1.6	ug/L	9	Standard
	Tl	205	320780.3	0.9	**50.5527**	0.981	1.9	ug/L	0	Standard
	Pb	206	226792.4	0.6	**50.2313**	0.545	1.1	ug/L	216	Standard
	Pb	207	206205.4	0.5	**50.1728**	0.804	1.6	ug/L	180	Standard
	Pb	208	828355.0	0.6	**49.6609**	0.844	1.7	ug/L	717	Standard
	U	238	311232.5	0.6	**51.2945**	0.952	1.9	ug/L	4	Standard
>	Bi	209	449694.2	1.3				ug/L	460343	Standard

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Na	23	3.3	173.2	**0.2298**	17.706	7704.3	mg/L	0	Standard
Mg	24	4013.9	1.6	**4.9932**	0.201	4.0	mg/L	20	Standard
K	39	691.7	2.2	**4.6523**	0.139	3.0	mg/L	22	Standard
Ca	43	66.7	18.9	**1.1897**	2.387	200.6	mg/L	47	Standard
Fe	54	5963.7	3.1	**4.3749**	0.232	5.3	mg/L	151	Standard
Fe	57	1775.1	6.5	**4.4411**	0.377	8.5	mg/L	195	Standard
Sc-1	45	32042.2	2.5				mg/L	29647	Standard
Cl	35	154194.0	0.8				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	1553.4	2.0				ug/L	1607	Standard
P	31	22800.5	1.3				ug/L	22752	Standard
S	34	4925.8	3.9				ug/L	5049	Standard
Sr	88	71.7	8.1				ug/L	87	Standard
C	12	50.0	40.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.7	108.3				mg/L	10	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	3	Standard
I	127	1866.8	9.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	97.192		
Al	27	93.688		
Sc	45			
Ti	47	106.353		
V	51	102.252		
Cr	52	102.620		
Cr	53			
Mn	55	108.299		
Co	59	103.583		
Ni	60	101.133		
Cu	65	101.742		
Zn	66	101.265		
Ge	72		97.298	
As	75	99.901		
Se	82	100.016		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	97.954		
Ag	107	96.430		
Cd	111	95.873		
Cd	114			
In	115			103.451
Sn	118	97.261		
Sb	123	98.060		
Ba	135	95.619		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.151		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.322		
U	238	102.589		
Bi	209			97.687
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 22:30:07
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57406.9	2.2				ug/L	51024	Standard
	Be	9	13.3	86.6	**-0.0071**	0.012	172.1	ug/L	7	Standard
	Al	27	1425.1	26.0	**-0.0009**	0.002	242.5	ug/L	625	Standard
	Sc	45	31355.8	2.5				ug/L	29647	Standard
	Ti	47	24.7	20.0	**-0.0813**	0.017	20.7	ug/L	57	Standard
	V	51	1120.2	2.3	**-0.0061**	0.006	100.1	ug/L	1142	Standard
	Cr	52	6392.0	0.4	**-0.0333**	0.015	44.8	ug/L	6628	Standard
	Cr	53	548.3	18.8	**0.1770**	0.124	70.1	ug/L	430	Standard
	Mn	55	724.0	4.6	**-0.0007**	0.008	1032.9	ug/L	603	Standard
	Co	59	242.7	2.3	**-0.0024**	0.000	19.9	ug/L	237	Standard
	Ni	60	130.3	12.7	**-0.0081**	0.010	124.4	ug/L	141	Standard
	Cu	65	128.7	7.9	**0.0044**	0.007	154.7	ug/L	109	Standard
	Zn	66	153.3	8.3	**-0.0894**	0.013	14.8	ug/L	159	Standard
>	**Ge**	72	460344.2	1.9				ug/L	474053	Standard
	As	75	-26.8	68.7	**0.0000**	0.017	51664.1	ug/L	-34	Standard
	Se	82	13.1	41.0	**-0.0473**	0.049	102.7	ug/L	14	Standard
	Se-1	77	56.7	10.8	**0.0148**	0.078	525.1	ug/L	55	Standard
>	**Ga**	71	50.0	36.1				mg/L	50	Standard
	Rb	85	33.3	8.7				ug/L	20	Standard
	Y	89	391660.9	0.1				ug/L	376602	Standard
>	**Rh**	103	21.7	58.1				ug/L	17	Standard
	Mo	98	296.5	33.7	**0.1177**	0.040	33.6	ug/L	8	Standard
	Ag	107	114.3	9.9	**0.0065**	0.002	24.1	ug/L	81	Standard
	Cd	111	13.8	22.3	**0.0038**	0.001	39.2	mg/L	3	Standard
	Cd	114	58.6	51.2	**0.0082**	0.006	72.9	ug/L	7	Standard
>	**In**	115	532413.4	1.7				ug/L	524722	Standard
	Sn	118	798.4	13.3	**0.0568**	0.021	36.2	ug/L	715	Standard
	Sb	123	522.7	25.9	**0.1035**	0.032	31.2	ug/L	201	Standard
	Ba	135	112.0	12.3	**0.0031**	0.006	206.8	ug/L	108	Standard
	Ce	140	18.3	63.0				ug/L	30	Standard
>	**Tb**	159	782152.3	0.6				ug/L	792236	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	55.3	28.1	**0.0050**	0.002	40.9	ug/L	9	Standard
	Tl	205	48.3	6.0	**-0.0000**	0.000	944.3	ug/L	0	Standard
	Pb	206	239.7	3.4	**-0.0020**	0.002	107.0	ug/L	216	Standard
	Pb	207	204.0	6.9	**-0.0031**	0.003	92.9	ug/L	180	Standard
	Pb	208	866.0	6.6	**-0.0048**	0.003	59.0	ug/L	717	Standard
	U	238	38.3	34.4	**-0.0011**	0.002	189.9	ug/L	4	Standard
>	**Bi**	209	440050.2	1.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	41.7	6.9	**0.0082**	0.003	39.8	mg/L	20	Standard
K	39	13.3	21.7	**-0.1321**	0.019	14.2	mg/L	22	Standard
Ca	43	21.7	53.3	**-8.4223**	2.469	29.3	mg/L	47	Standard
Fe	54	134.4	12.8	**-0.0117**	0.012	103.5	mg/L	151	Standard
Fe	57	178.3	16.9	**-0.1234**	0.101	82.1	mg/L	195	Standard
Sc-1	45	31355.8	2.5				mg/L	29647	Standard
Cl	35	154796.2	1.9				ug/L	154152	Standard
Kr	83	1.3	86.6				ug/L	3	Standard
Br	81	1420.1	12.0				ug/L	1607	Standard
P	31	23807.0	1.6				ug/L	22752	Standard
S	34	4767.4	2.9				ug/L	5049	Standard
Sr	88	76.7	22.9				ug/L	87	Standard
C	12	50.0	60.0				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	6.5	179.6				mg/L	10	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	1236.7	11.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.108	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.466	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	95.592	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW 41 WG571834-02
Sample Date/Time: Thursday, June 16, 2016 22:33:20
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57729.8	2.4				ug/L	51024	Standard
	Be	9	15.0	66.7	**-0.0052**	0.011	207.3	ug/L	7	Standard
	Al	27	10453.6	1.9	**0.0552**	0.003	5.0	ug/L	625	Standard
	Sc	45	33299.9	2.5				ug/L	29647	Standard
	Ti	47	35.7	25.1	**-0.0492**	0.028	57.5	ug/L	57	Standard
	V	51	1262.4	5.5	**0.0063**	0.008	133.6	ug/L	1142	Standard
	Cr	52	7466.2	1.6	**0.0706**	0.026	36.2	ug/L	6628	Standard
	Cr	53	643.3	12.9	**0.2497**	0.092	36.8	ug/L	430	Standard
	Mn	55	1616.1	2.8	**0.1414**	0.004	2.6	ug/L	603	Standard
	Co	59	253.0	6.6	**-0.0025**	0.002	79.5	ug/L	237	Standard
	Ni	60	378.3	5.2	**0.1151**	0.008	6.8	ug/L	141	Standard
	Cu	65	209.0	6.0	**0.0433**	0.007	15.3	ug/L	109	Standard
	Zn	66	1638.4	1.5	**1.2227**	0.044	3.6	ug/L	159	Standard
>	**Ge**	72	481770.3	1.5				ug/L	474053	Standard
	As	75	-7.3	61.8	**0.0186**	0.004	21.3	ug/L	-34	Standard
	Se	82	21.7	38.5	**0.0252**	0.078	309.4	ug/L	14	Standard
	Se-1	77	49.7	10.3	**-0.1081**	0.069	63.9	ug/L	55	Standard
>	**Ga**	71	81.7	19.7				mg/L	50	Standard
	Rb	85	50.0	17.3				ug/L	20	Standard
	Y	89	391456.0	1.0				ug/L	376602	Standard
>	**Rh**	103	15.0	33.3				ug/L	17	Standard
	Mo	98	98.4	20.8	**0.0355**	0.009	26.7	ug/L	8	Standard
	Ag	107	94.7	3.7	**0.0032**	0.001	16.1	ug/L	81	Standard
	Cd	111	15.5	31.8	**0.0046**	0.003	57.0	mg/L	3	Standard
	Cd	114	31.0	41.6	**0.0025**	0.003	104.4	ug/L	7	Standard
>	**In**	115	534892.9	2.4				ug/L	524722	Standard
	Sn	118	895.0	10.2	**0.0734**	0.014	18.9	ug/L	715	Standard
	Sb	123	243.3	24.4	**0.0397**	0.012	30.7	ug/L	201	Standard
	Ba	135	132.3	7.6	**0.0140**	0.006	42.8	ug/L	108	Standard
	Ce	140	126.7	2.3				ug/L	30	Standard
>	**Tb**	159	808648.5	2.5				ug/L	792236	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	39.3	24.7	**0.0026**	0.001	49.6	ug/L	9	Standard
	Tl	205	40.0	50.0	**-0.0017**	0.003	183.3	ug/L	0	Standard
	Pb	206	250.7	8.4	**-0.0022**	0.005	210.3	ug/L	216	Standard
	Pb	207	220.7	4.6	**-0.0015**	0.003	191.8	ug/L	180	Standard
	Pb	208	931.3	4.0	**-0.0035**	0.003	80.4	ug/L	717	Standard
	U	238	32.0	46.7	**-0.0024**	0.002	99.2	ug/L	4	Standard
>	**Bi**	209	461825.2	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	43.3	46.6	**0.0073**	0.026	347.9	mg/L	20	Standard
K	39	21.7	35.3	**-0.0805**	0.053	65.7	mg/L	22	Standard
Ca	43	33.3	31.2	**-6.2262**	2.322	37.3	mg/L	47	Standard
Fe	54	132.8	30.7	**-0.0183**	0.032	174.0	mg/L	151	Standard
Fe	57	186.7	24.3	**-0.1330**	0.122	92.1	mg/L	195	Standard
Sc-1	45	33299.9	2.5				mg/L	29647	Standard
Cl	35	150658.7	1.1				ug/L	154152	Standard
Kr	83	2.3	24.7				ug/L	3	Standard
Br	81	2026.8	3.8				ug/L	1607	Standard
P	31	21810.7	2.4				ug/L	22752	Standard
S	34	4620.7	1.9				ug/L	5049	Standard
Sr	88	70.0	14.3				ug/L	87	Standard
C	12	86.7	40.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.2	111.3				mg/L	10	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	3	Standard
I	127	2880.3	5.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.142	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.628	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.938
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.322
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: LCSW 41 WG571834-03
Sample Date/Time: Thursday, June 16, 2016 22:36:32
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58134.7	1.4				ug/L	51024	Standard
	Be	9	47481.0	1.2	**49.5549**	1.040	2.1	ug/L	7	Standard
	Al	27	11848.2	29.8	**0.0633**	0.022	34.2	ug/L	625	Standard
	Sc	45	33760.9	2.8				ug/L	29647	Standard
	Ti	47	60.7	19.3	**0.0386**	0.038	99.0	ug/L	57	Standard
	V	51	364743.8	0.9	**51.7833**	1.598	3.1	ug/L	1142	Standard
	Cr	52	384565.8	0.9	**52.0063**	1.376	2.6	ug/L	6628	Standard
	Cr	53	46865.7	2.2	**50.6129**	1.593	3.1	ug/L	430	Standard
	Mn	55	323505.6	0.5	**55.0551**	1.092	2.0	ug/L	603	Standard
	Co	59	330925.6	0.6	**52.1042**	1.547	3.0	ug/L	237	Standard
	Ni	60	98420.3	0.4	**51.5920**	1.168	2.3	ug/L	141	Standard
	Cu	65	96735.2	0.8	**52.0474**	1.195	2.3	ug/L	109	Standard
	Zn	66	60428.3	1.1	**54.9708**	1.052	1.9	ug/L	159	Standard
>	**Ge**	72	468206.5	2.5				ug/L	474053	Standard
	As	75	53251.7	1.1	**48.7274**	0.650	1.3	ug/L	-34	Standard
	Se	82	5558.2	1.1	**50.7386**	1.287	2.5	ug/L	14	Standard
	Se-1	77	3779.1	1.8	**49.0879**	0.350	0.7	ug/L	55	Standard
>	**Ga**	71	95.0	5.3				mg/L	50	Standard
	Rb	85	148.3	20.6				ug/L	20	Standard
	Y	89	410210.7	3.1				ug/L	376602	Standard
>	**Rh**	103	26.7	28.6				ug/L	17	Standard
	Mo	98	76.7	14.4	**0.0250**	0.004	16.4	ug/L	8	Standard
	Ag	107	306600.5	0.9	**48.2949**	0.124	0.3	ug/L	81	Standard
	Cd	111	98706.0	0.5	**47.7973**	0.198	0.4	mg/L	3	Standard
	Cd	114	240379.3	1.1	**47.0837**	0.284	0.6	ug/L	7	Standard
>	**In**	115	558260.1	0.9				ug/L	524722	Standard
	Sn	118	793.4	5.7	**0.0490**	0.008	17.0	ug/L	715	Standard
	Sb	123	217861.1	1.5	**46.8696**	0.887	1.9	ug/L	201	Standard
	Ba	135	91054.1	0.9	**47.1604**	0.551	1.2	ug/L	108	Standard
	Ce	140	330.0	6.6				ug/L	30	Standard
>	**Tb**	159	829912.3	0.8				ug/L	792236	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	372803.8	0.5	**48.2082**	0.596	1.2	ug/L	9	Standard
	Tl	205	323995.9	0.8	**49.2672**	0.912	1.9	ug/L	0	Standard
	Pb	206	236745.0	0.6	**50.5944**	0.255	0.5	ug/L	216	Standard
	Pb	207	206177.7	0.9	**48.4046**	0.929	1.9	ug/L	180	Standard
	Pb	208	859668.8	0.2	**49.7270**	0.479	1.0	ug/L	717	Standard
	U	238	310255.0	0.3	**49.3362**	0.627	1.3	ug/L	4	Standard
>	**Bi**	209	466041.0	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	161.7	12.9	**0.1477**	0.029	19.8	mg/L	20	Standard
K	39	16.7	17.3	**-0.1160**	0.022	19.3	mg/L	22	Standard
Ca	43	33.3	31.2	**-6.3847**	1.928	30.2	mg/L	47	Standard
Fe	54	164.9	14.3	**0.0027**	0.015	570.4	mg/L	151	Standard
Fe	57	196.7	21.3	**-0.1103**	0.128	116.3	mg/L	195	Standard
> **Sc-1**	45	33760.9	2.8				mg/L	29647	Standard
Cl	35	149762.7	1.8				ug/L	154152	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	1560.1	10.1				ug/L	1607	Standard
P	31	22984.1	3.6				ug/L	22752	Standard
S	34	4315.6	2.6				ug/L	5049	Standard
Sr	88	53.3	28.6				ug/L	87	Standard
C	12	83.3	18.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	5.9	86.7				mg/L	10	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	16.7	91.7				mg/L	3	Standard
I	127	1323.4	9.9				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		113.936	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.767	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.392
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.238
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606033702 WG571834-01
Sample Date/Time: Thursday, June 16, 2016 22:39:43
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64441.8	2.3				ug/L	51024	Standard
	Be	9	20.0	25.0	**-0.0022**	0.005	232.0	ug/L	7	Standard
	Al	27	60114.2	4.5	**0.3246**	0.014	4.3	ug/L	625	Standard
	Sc	45	31512.8	4.2				ug/L	29647	Standard
	Ti	47	128.0	6.2	**0.2921**	0.031	10.5	ug/L	57	Standard
	V	51	53503.8	0.8	**7.9103**	0.048	0.6	ug/L	1142	Standard
	Cr	52	15505.3	1.8	**1.3346**	0.030	2.3	ug/L	6628	Standard
	Cr	53	2881.9	1.2	**2.8964**	0.027	0.9	ug/L	430	Standard
	Mn	55	1707.4	4.0	**0.1824**	0.014	7.5	ug/L	603	Standard
	Co	59	1839.8	1.0	**0.2661**	0.003	1.0	ug/L	237	Standard
	Ni	60	5162.5	5.3	**2.7953**	0.140	5.0	ug/L	141	Standard
	Cu	65	169344.1	2.3	**96.6524**	1.757	1.8	ug/L	109	Standard
	Zn	66	2344.5	2.7	**2.0388**	0.050	2.4	ug/L	159	Standard
>	**Ge**	72	441453.2	0.5				ug/L	474053	Standard
	As	75	1218.2	9.1	**1.2061**	0.101	8.4	ug/L	-34	Standard
	Se	82	116.0	12.5	**0.9573**	0.138	14.4	ug/L	14	Standard
	Se-1	77	201.7	7.0	**2.0760**	0.211	10.2	ug/L	55	Standard
>	**Ga**	71	926.7	11.5				mg/L	50	Standard
	Rb	85	12571.9	3.7				ug/L	20	Standard
	Y	89	399117.1	1.0				ug/L	376602	Standard
>	**Rh**	103	173.3	1.7				ug/L	17	Standard
	Mo	98	29352.9	0.6	**12.3636**	0.369	3.0	ug/L	8	Standard
	Ag	107	149.7	54.9	**0.0129**	0.015	112.8	ug/L	81	Standard
	Cd	111	24.8	238.3	**0.0100**	0.031	310.7	mg/L	3	Standard
	Cd	114	161.6	48.9	**0.0300**	0.017	58.2	ug/L	7	Standard
>	**In**	115	527437.4	2.5				ug/L	524722	Standard
	Sn	118	1430.1	3.9	**0.1747**	0.010	5.4	ug/L	715	Standard
	Sb	123	2404.5	19.4	**0.5345**	0.118	22.0	ug/L	201	Standard
	Ba	135	29634.3	0.9	**16.2125**	0.353	2.2	ug/L	108	Standard
	Ce	140	185.0	4.7				ug/L	30	Standard
>	**Tb**	159	786743.9	2.6				ug/L	792236	Standard
	Ho	165	16.7	105.4				ug/L	7	Standard
	Tl	203	226.3	39.8	**0.0295**	0.013	45.5	ug/L	9	Standard
	Tl	205	155.0	25.2	**0.0180**	0.007	37.6	ug/L	0	Standard
	Pb	206	685.3	11.7	**0.1039**	0.021	20.6	ug/L	216	Standard
	Pb	207	574.0	3.7	**0.0935**	0.008	8.7	ug/L	180	Standard
	Pb	208	2394.4	2.6	**0.0935**	0.004	4.7	ug/L	717	Standard
	U	238	81.3	17.9	**0.0066**	0.003	42.7	ug/L	4	Standard
>	**Bi**	209	426956.6	1.8				ug/L	460343	Standard

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Na	23	5.0	100.0	**-4.6650**	15.246	326.8	mg/L	0	Standard
Mg	24	23326.3	4.3	**29.7226**	1.184	4.0	mg/L	20	Standard
K	39	571.7	12.7	**3.8838**	0.629	16.2	mg/L	22	Standard
Ca	43	926.7	6.8	**191.1093**	22.294	11.7	mg/L	47	Standard
Fe	54	142.0	8.4	**-0.0064**	0.005	79.6	mg/L	151	Standard
Fe	57	988.4	6.7	**2.2303**	0.090	4.0	mg/L	195	Standard
> **Sc-1**	45	31512.8	4.2				mg/L	29647	Standard
Cl	35	486390.1	1.5				ug/L	154152	Standard
Kr	83	3.0	33.3				ug/L	3	Standard
Br	81	9422.9	2.9				ug/L	1607	Standard
P	31	23089.2	1.2				ug/L	22752	Standard
S	34	5072.5	3.6				ug/L	5049	Standard
Sr	88	663.3	3.8				ug/L	87	Standard
C	12	73.3	41.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	0	Standard
Dy	164	22.4	24.2				mg/L	10	Standard
Ho-1	165	16.7	105.4				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	3	Standard
I	127	47469.3	4.2				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		126.297	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		93.123	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.518
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	92.748
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606033702S WG571834-04
Sample Date/Time: Thursday, June 16, 2016 22:42:54
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68019.0	1.4				ug/L	51024	Standard
	Be	9	52452.3	2.6	**46.7932**	1.722	3.7	ug/L	7	Standard
	Al	27	59786.1	1.3	**0.3053**	0.006	2.1	ug/L	625	Standard
	Sc	45	30205.1	3.4				ug/L	29647	Standard
	Ti	47	100.0	14.5	**0.1859**	0.054	29.0	ug/L	57	Standard
	V	51	400824.3	1.2	**59.3044**	1.295	2.2	ug/L	1142	Standard
	Cr	52	361100.0	0.4	**50.8503**	0.412	0.8	ug/L	6628	Standard
	Cr	53	45675.4	2.3	**51.3868**	0.642	1.2	ug/L	430	Standard
	Mn	55	307080.3	1.9	**54.4520**	1.620	3.0	ug/L	603	Standard
	Co	59	323604.2	1.1	**53.0793**	1.177	2.2	ug/L	237	Standard
	Ni	60	93445.6	0.1	**51.0299**	0.526	1.0	ug/L	141	Standard
	Cu	65	247263.6	0.1	**138.7095**	1.722	1.2	ug/L	109	Standard
	Zn	66	54519.2	0.7	**51.6612**	0.952	1.8	ug/L	159	Standard
>	**Ge**	72	449299.9	1.1				ug/L	474053	Standard
	As	75	56719.6	0.9	**54.0778**	1.049	1.9	ug/L	-34	Standard
	Se	82	5785.5	2.0	**55.0413**	1.675	3.0	ug/L	14	Standard
	Se-1	77	3927.8	1.2	**53.2304**	1.135	2.1	ug/L	55	Standard
>	**Ga**	71	895.0	4.4				mg/L	50	Standard
	Rb	85	12290.0	5.9				ug/L	20	Standard
	Y	89	386361.5	1.5				ug/L	376602	Standard
>	**Rh**	103	176.7	6.5				ug/L	17	Standard
	Mo	98	28613.4	1.5	**12.4123**	0.434	3.5	ug/L	8	Standard
	Ag	107	279613.9	0.6	**48.0280**	1.230	2.6	ug/L	81	Standard
	Cd	111	93716.1	1.7	**49.4705**	0.238	0.5	mg/L	3	Standard
	Cd	114	229714.0	2.7	**49.0468**	0.741	1.5	ug/L	7	Standard
>	**In**	115	512129.2	2.1				ug/L	524722	Standard
	Sn	118	1266.7	5.0	**0.1514**	0.007	4.6	ug/L	715	Standard
	Sb	123	219270.1	0.1	**51.4357**	1.142	2.2	ug/L	201	Standard
	Ba	135	113634.2	0.4	**64.1909**	1.164	1.8	ug/L	108	Standard
	Ce	140	183.3	35.2				ug/L	30	Standard
>	**Tb**	159	767306.4	2.1				ug/L	792236	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	352266.3	0.4	**50.2886**	0.147	0.3	ug/L	9	Standard
	Tl	205	319230.0	1.5	**53.5879**	0.832	1.6	ug/L	0	Standard
	Pb	206	230082.1	0.2	**54.2895**	0.055	0.1	ug/L	216	Standard
	Pb	207	199935.5	0.5	**51.8202**	0.151	0.3	ug/L	180	Standard
	Pb	208	828887.7	1.4	**52.9349**	0.572	1.1	ug/L	717	Standard
	U	238	314710.8	1.3	**55.2472**	0.560	1.0	ug/L	4	Standard
>	**Bi**	209	422116.6	0.3				ug/L	460343	Standard

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Na	23	8.3	34.6	**-16.4613**	9.729	59.1	mg/L	0	Standard
Mg	24	22338.1	2.7	**29.6923**	0.787	2.7	mg/L	20	Standard
K	39	545.0	6.6	**3.8545**	0.326	8.5	mg/L	22	Standard
Ca	43	843.4	10.1	**180.3649**	20.489	11.4	mg/L	47	Standard
Fe	54	148.7	22.1	**0.0032**	0.023	711.1	mg/L	151	Standard
Fe	57	781.7	6.7	**1.7339**	0.242	13.9	mg/L	195	Standard
> **Sc-1**	45	30205.1	3.4				mg/L	29647	Standard
Cl	35	476373.7	2.1				ug/L	154152	Standard
Kr	83	2.3	89.2				ug/L	3	Standard
Br	81	9679.8	3.3				ug/L	1607	Standard
P	31	23531.6	1.5				ug/L	22752	Standard
S	34	4985.8	2.7				ug/L	5049	Standard
Sr	88	643.3	5.9				ug/L	87	Standard
C	12	83.3	54.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	100.0				mg/L	0	Standard
Dy	164	9.7	103.3				mg/L	10	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	46467.9	3.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		133.308	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.778	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.600
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	91.696
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606033702SD WG571834-05
Sample Date/Time: Thursday, June 16, 2016 22:46:06
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69477.3	1.8				ug/L	51024	Standard
	Be	9	51502.4	2.4	**44.9684**	0.786	1.7	ug/L	7	Standard
	Al	27	70351.3	0.6	**0.3532**	0.005	1.3	ug/L	625	Standard
	Sc	45	29879.4	2.7				ug/L	29647	Standard
	Ti	47	116.3	8.0	**0.2444**	0.037	15.0	ug/L	57	Standard
	V	51	388223.7	1.2	**57.5908**	0.764	1.3	ug/L	1142	Standard
	Cr	52	347952.9	2.2	**49.1031**	1.033	2.1	ug/L	6628	Standard
	Cr	53	43768.2	2.9	**49.3632**	1.152	2.3	ug/L	430	Standard
	Mn	55	286009.9	1.4	**50.8380**	0.394	0.8	ug/L	603	Standard
	Co	59	307889.4	1.2	**50.6347**	0.555	1.1	ug/L	237	Standard
	Ni	60	89481.8	1.5	**48.9952**	0.439	0.9	ug/L	141	Standard
	Cu	65	241814.9	1.2	**136.0209**	1.038	0.8	ug/L	109	Standard
	Zn	66	51913.8	0.8	**49.3151**	0.405	0.8	ug/L	159	Standard
>	**Ge**	72	448036.8	0.9				ug/L	474053	Standard
	As	75	54590.9	0.7	**52.1892**	0.176	0.3	ug/L	-34	Standard
	Se	82	5464.5	2.1	**52.1104**	0.678	1.3	ug/L	14	Standard
	Se-1	77	3736.5	2.4	**50.7332**	0.775	1.5	ug/L	55	Standard
>	**Ga**	71	880.0	7.8				mg/L	50	Standard
	Rb	85	11956.4	0.5				ug/L	20	Standard
	Y	89	354548.8	0.8				ug/L	376602	Standard
>	**Rh**	103	176.7	9.9				ug/L	17	Standard
	Mo	98	28019.9	1.2	**12.5852**	0.199	1.6	ug/L	8	Standard
	Ag	107	268450.3	0.3	**47.7483**	0.458	1.0	ug/L	81	Standard
	Cd	111	88694.5	1.0	**48.4950**	0.379	0.8	mg/L	3	Standard
	Cd	114	219923.4	1.6	**48.6380**	0.413	0.8	ug/L	7	Standard
>	**In**	115	494421.9	1.1				ug/L	524722	Standard
	Sn	118	1316.7	9.7	**0.1699**	0.024	14.2	ug/L	715	Standard
	Sb	123	211754.6	0.6	**51.4377**	0.300	0.6	ug/L	201	Standard
	Ba	135	110652.9	0.5	**64.7326**	0.425	0.7	ug/L	108	Standard
	Ce	140	260.0	20.0				ug/L	30	Standard
>	**Tb**	159	762292.0	2.0				ug/L	792236	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	342694.3	1.4	**48.0097**	0.052	0.1	ug/L	9	Standard
	Tl	205	304091.9	1.8	**50.0920**	0.270	0.5	ug/L	0	Standard
	Pb	206	222070.0	1.1	**51.4209**	0.338	0.7	ug/L	216	Standard
	Pb	207	193776.6	0.8	**49.2893**	0.546	1.1	ug/L	180	Standard
	Pb	208	789689.1	0.4	**49.4955**	0.776	1.6	ug/L	717	Standard
	U	238	302421.4	0.6	**52.1051**	0.540	1.0	ug/L	4	Standard
>	**Bi**	209	430141.1	1.5				ug/L	460343	Standard

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Na	23	11.7	24.7	**-27.5524**	10.035	36.4	mg/L	0	Standard
Mg	24	22465.0	1.9	**30.1800**	0.330	1.1	mg/L	20	Standard
K	39	500.0	5.0	**3.5529**	0.109	3.1	mg/L	22	Standard
Ca	43	825.0	4.8	**178.0126**	5.766	3.2	mg/L	47	Standard
Fe	54	141.0	25.7	**-0.0008**	0.031	4097.7	mg/L	151	Standard
Fe	57	861.7	4.4	**2.0033**	0.182	9.1	mg/L	195	Standard
> **Sc-1**	45	29879.4	2.7				mg/L	29647	Standard
Cl	35	471095.3	0.9				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	9509.7	3.3				ug/L	1607	Standard
P	31	23573.3	1.7				ug/L	22752	Standard
S	34	4992.5	2.6				ug/L	5049	Standard
Sr	88	646.7	10.1				ug/L	87	Standard
C	12	96.7	31.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	41.7				mg/L	0	Standard
Dy	164	15.7	76.3				mg/L	10	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	3	Standard
I	127	49629.6	4.5				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		136.166	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		94.512	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606033702SD WG571834-05
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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.226
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.439
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: L1606030301
Sample Date/Time: Thursday, June 16, 2016 22:49:17
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75542.9	1.1				ug/L	51024	Standard
	Be	9	35.0	14.3	**0.0070**	0.004	53.8	ug/L	7	Standard
	Al	27	29747316.4	1.2	**141.1560**	2.929	2.1	ug/L	625	Standard
	Sc	45	33087.8	1.2				ug/L	29647	Standard
	Ti	47	864.4	0.5	**2.9151**	0.077	2.6	ug/L	57	Standard
	V	51	2646.8	15.2	**0.2300**	0.062	27.0	ug/L	1142	Standard
	Cr	52	10730.1	1.6	**0.6326**	0.065	10.2	ug/L	6628	Standard
	Cr	53	13055.7	9.8	**14.6159**	1.842	12.6	ug/L	430	Standard
	Mn	55	149866.6	1.0	**26.8754**	0.469	1.7	ug/L	603	Standard
	Co	59	3157.0	1.2	**0.4841**	0.012	2.4	ug/L	237	Standard
	Ni	60	2562.6	1.9	**1.3439**	0.063	4.7	ug/L	141	Standard
	Cu	65	1783.1	4.8	**0.9478**	0.026	2.7	ug/L	109	Standard
	Zn	66	4720.1	0.9	**4.3229**	0.088	2.0	ug/L	159	Standard
>	**Ge**	72	443259.0	2.7				ug/L	474053	Standard
	As	75	1196.5	7.5	**1.1797**	0.057	4.8	ug/L	-34	Standard
	Se	82	433.0	3.3	**4.0226**	0.239	5.9	ug/L	14	Standard
	Se-1	77	945.4	12.5	**12.4569**	1.980	15.9	ug/L	55	Standard
>	**Ga**	71	90.0	14.7				mg/L	50	Standard
	Rb	85	8912.6	1.9				ug/L	20	Standard
	Y	89	372910.9	1.8				ug/L	376602	Standard
>	**Rh**	103	138.3	9.1				ug/L	17	Standard
	Mo	98	418.3	6.0	**0.1743**	0.012	6.8	ug/L	8	Standard
	Ag	107	142.7	27.1	**0.0119**	0.006	53.9	ug/L	81	Standard
	Cd	111	58.8	59.4	**0.0275**	0.018	65.5	mg/L	3	Standard
	Cd	114	163.0	53.7	**0.0306**	0.018	59.7	ug/L	7	Standard
>	**In**	115	516818.9	0.6				ug/L	524722	Standard
	Sn	118	633.3	5.7	**0.0299**	0.006	20.2	ug/L	715	Standard
	Sb	123	884.4	13.0	**0.1907**	0.026	13.4	ug/L	201	Standard
	Ba	135	210091.9	0.7	**117.6212**	0.688	0.6	ug/L	108	Standard
	Ce	140	548.3	4.6				ug/L	30	Standard
>	**Tb**	159	797833.7	0.3				ug/L	792236	Standard
	Ho	165	23.3	68.9				ug/L	7	Standard
	Tl	203	225.3	33.3	**0.0286**	0.011	36.9	ug/L	9	Standard
	Tl	205	156.7	26.6	**0.0177**	0.007	39.2	ug/L	0	Standard
	Pb	206	343.3	6.6	**0.0221**	0.005	23.5	ug/L	216	Standard
	Pb	207	295.0	6.1	**0.0203**	0.005	24.8	ug/L	180	Standard
	Pb	208	1172.7	3.5	**0.0147**	0.003	21.3	ug/L	717	Standard
	U	238	2550.2	1.4	**0.4258**	0.006	1.3	ug/L	4	Standard
>	**Bi**	209	436094.8	0.8				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.5341**	8.518	153.9	mg/L	0	Standard
Mg	24	135567.2	1.0	**164.6662**	3.386	2.1	mg/L	20	Standard
K	39	101.7	25.2	**0.4668**	0.178	38.1	mg/L	22	Standard
Ca	43	143.3	8.8	**16.8014**	2.330	13.9	mg/L	47	Standard
Fe	54	210.5	7.2	**0.0385**	0.013	33.1	mg/L	151	Standard
Fe	57	346.7	4.4	**0.3147**	0.041	13.0	mg/L	195	Standard
> **Sc-1**	45	33087.8	1.2				mg/L	29647	Standard
Cl	35	252380.3	1.6				ug/L	154152	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	100794.6	4.5				ug/L	1607	Standard
P	31	32519.9	1.3				ug/L	22752	Standard
S	34	4837.4	4.7				ug/L	5049	Standard
Sr	88	436.7	6.9				ug/L	87	Standard
C	12	223.3	5.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	28.7	92.1				mg/L	10	Standard
Ho-1	165	23.3	68.9				mg/L	7	Standard
Er	166	26.7	57.3				mg/L	3	Standard
I	127	617066.8	8.9				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		148.053	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		93.504	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.494
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.733
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606030302
Sample Date/Time: Thursday, June 16, 2016 22:52:29
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73040.7	1.9				ug/L	51024	Standard
	Be	9	40.0	45.1	**0.0120**	0.014	119.9	ug/L	7	Standard
	Al	27	29071018.9	1.5	**142.6695**	1.976	1.4	ug/L	625	Standard
	Sc	45	31137.0	3.2				ug/L	29647	Standard
	Ti	47	896.0	0.6	**3.1347**	0.013	0.4	ug/L	57	Standard
	V	51	2628.5	16.8	**0.2400**	0.066	27.6	ug/L	1142	Standard
	Cr	52	11569.4	2.8	**0.8104**	0.048	5.9	ug/L	6628	Standard
	Cr	53	14446.9	3.6	**16.7439**	0.524	3.1	ug/L	430	Standard
	Mn	55	152328.9	0.4	**28.2404**	0.204	0.7	ug/L	603	Standard
	Co	59	3172.7	3.4	**0.5045**	0.021	4.1	ug/L	237	Standard
	Ni	60	2824.9	2.2	**1.5411**	0.022	1.4	ug/L	141	Standard
	Cu	65	1634.1	4.2	**0.8948**	0.038	4.3	ug/L	109	Standard
	Zn	66	5209.6	4.4	**4.9636**	0.220	4.4	ug/L	159	Standard
>	**Ge**	72	428745.2	1.0				ug/L	474053	Standard
	As	75	1258.8	1.9	**1.2822**	0.036	2.8	ug/L	-34	Standard
	Se	82	439.1	3.6	**4.2227**	0.199	4.7	ug/L	14	Standard
	Se-1	77	1078.4	5.9	**14.7842**	0.963	6.5	ug/L	55	Standard
>	**Ga**	71	70.0	25.8				mg/L	50	Standard
	Rb	85	9496.3	1.9				ug/L	20	Standard
	Y	89	380626.7	0.4				ug/L	376602	Standard
>	**Rh**	103	98.3	11.7				ug/L	17	Standard
	Mo	98	479.8	3.7	**0.2023**	0.007	3.6	ug/L	8	Standard
	Ag	107	174.0	68.0	**0.0174**	0.020	114.9	ug/L	81	Standard
	Cd	111	83.1	60.8	**0.0404**	0.026	64.8	mg/L	3	Standard
	Cd	114	224.6	76.7	**0.0439**	0.036	82.5	ug/L	7	Standard
>	**In**	115	512708.3	1.5				ug/L	524722	Standard
	Sn	118	761.7	9.5	**0.0552**	0.012	21.8	ug/L	715	Standard
	Sb	123	807.2	10.7	**0.1743**	0.019	11.1	ug/L	201	Standard
	Ba	135	209488.0	1.0	**118.2448**	2.471	2.1	ug/L	108	Standard
	Ce	140	541.7	9.3				ug/L	30	Standard
>	**Tb**	159	775209.0	3.4				ug/L	792236	Standard
	Ho	165	25.0	20.0				ug/L	7	Standard
	Tl	203	254.0	67.1	**0.0340**	0.024	70.2	ug/L	9	Standard
	Tl	205	180.0	38.9	**0.0228**	0.011	49.8	ug/L	0	Standard
	Pb	206	477.0	17.2	**0.0581**	0.017	29.8	ug/L	216	Standard
	Pb	207	417.0	19.6	**0.0560**	0.019	34.6	ug/L	180	Standard
	Pb	208	1674.7	14.6	**0.0509**	0.014	27.2	ug/L	717	Standard
	U	238	2253.2	2.5	**0.3950**	0.010	2.6	ug/L	4	Standard
>	**Bi**	209	414870.7	2.1				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.0844**	9.297	182.9	mg/L	0	Standard
Mg	24	134474.1	0.2	**173.6638**	5.440	3.1	mg/L	20	Standard
K	39	88.3	19.9	**0.4121**	0.119	28.8	mg/L	22	Standard
Ca	43	171.7	13.8	**24.9409**	4.511	18.1	mg/L	47	Standard
Fe	54	188.7	7.0	**0.0310**	0.006	19.6	mg/L	151	Standard
Fe	57	286.7	15.2	**0.1978**	0.124	62.9	mg/L	195	Standard
Sc-1	45	31137.0	3.2				mg/L	29647	Standard
Cl	35	236218.5	0.5				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	103082.9	2.1				ug/L	1607	Standard
P	31	32710.3	0.4				ug/L	22752	Standard
S	34	4897.5	3.2				ug/L	5049	Standard
Sr	88	453.3	14.0				ug/L	87	Standard
C	12	190.0	18.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	21.9	52.8				mg/L	10	Standard
Ho-1	165	25.0	20.0				mg/L	7	Standard
Er	166	30.0	33.3				mg/L	3	Standard
I	127	617957.6	6.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		143.149	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		90.442	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.710
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.122
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606030402
Sample Date/Time: Thursday, June 16, 2016 22:55:40
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71156.7	0.3				ug/L	51024	Standard
	Be	9	20.0	50.0	**-0.0040**	0.009	211.0	ug/L	7	Standard
	Al	27	27285286.1	1.5	**137.4375**	2.316	1.7	ug/L	625	Standard
	Sc	45	31798.3	2.5				ug/L	29647	Standard
	Ti	47	833.7	1.4	**2.8012**	0.055	2.0	ug/L	57	Standard
	V	51	2537.6	8.1	**0.2132**	0.036	16.9	ug/L	1142	Standard
	Cr	52	12018.1	1.3	**0.8169**	0.043	5.3	ug/L	6628	Standard
	Cr	53	14870.6	5.1	**16.6424**	0.566	3.4	ug/L	430	Standard
	Mn	55	153406.0	0.3	**27.4780**	0.629	2.3	ug/L	603	Standard
	Co	59	3042.6	1.6	**0.4644**	0.013	2.9	ug/L	237	Standard
	Ni	60	2834.9	0.9	**1.4924**	0.050	3.3	ug/L	141	Standard
	Cu	65	1512.4	1.9	**0.7934**	0.029	3.7	ug/L	109	Standard
	Zn	66	12243.6	1.2	**11.5661**	0.178	1.5	ug/L	159	Standard
>	**Ge**	72	443839.5	2.3				ug/L	474053	Standard
	As	75	1046.3	4.7	**1.0354**	0.070	6.7	ug/L	-34	Standard
	Se	82	370.0	2.6	**3.4056**	0.089	2.6	ug/L	14	Standard
	Se-1	77	1056.7	5.5	**13.9459**	0.499	3.6	ug/L	55	Standard
>	**Ga**	71	63.3	29.9				mg/L	50	Standard
	Rb	85	8789.2	0.9				ug/L	20	Standard
	Y	89	374101.9	2.2				ug/L	376602	Standard
>	**Rh**	103	100.0	39.7				ug/L	17	Standard
	Mo	98	414.8	3.1	**0.1799**	0.005	3.0	ug/L	8	Standard
	Ag	107	91.0	19.0	**0.0038**	0.003	80.6	ug/L	81	Standard
	Cd	111	38.9	24.2	**0.0179**	0.005	27.8	mg/L	3	Standard
	Cd	114	124.8	37.3	**0.0236**	0.010	41.9	ug/L	7	Standard
>	**In**	115	496787.9	1.5				ug/L	524722	Standard
	Sn	118	751.7	3.4	**0.0580**	0.007	12.3	ug/L	715	Standard
	Sb	123	699.9	9.2	**0.1546**	0.018	11.7	ug/L	201	Standard
	Ba	135	200966.0	0.6	**117.0693**	2.247	1.9	ug/L	108	Standard
	Ce	140	703.3	2.3				ug/L	30	Standard
>	**Tb**	159	757626.8	0.4				ug/L	792236	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	132.7	7.8	**0.0167**	0.001	8.9	ug/L	9	Standard
	Tl	205	95.0	31.6	**0.0084**	0.005	62.5	ug/L	0	Standard
	Pb	206	531.7	2.2	**0.0713**	0.003	3.6	ug/L	216	Standard
	Pb	207	455.3	6.2	**0.0663**	0.009	13.1	ug/L	180	Standard
	Pb	208	1923.0	1.8	**0.0670**	0.003	4.3	ug/L	717	Standard
	U	238	1986.8	1.8	**0.3469**	0.010	2.8	ug/L	4	Standard
>	**Bi**	209	415441.7	1.2				ug/L	460343	Standard

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Na	23	5.0	0.0	**-4.8155**	0.394	8.2	mg/L	0	Standard
Mg	24	122585.6	0.8	**154.9558**	2.818	1.8	mg/L	20	Standard
K	39	68.3	27.7	**0.2568**	0.128	49.9	mg/L	22	Standard
Ca	43	118.3	20.0	**12.5323**	4.646	37.1	mg/L	47	Standard
Fe	54	188.9	8.2	**0.0283**	0.012	41.6	mg/L	151	Standard
Fe	57	303.3	9.9	**0.2303**	0.108	46.9	mg/L	195	Standard
Sc-1	45	31798.3	2.5				mg/L	29647	Standard
Cl	35	229346.8	0.7				ug/L	154152	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	83539.7	2.1				ug/L	1607	Standard
P	31	32606.7	1.9				ug/L	22752	Standard
S	34	4827.4	4.1				ug/L	5049	Standard
Sr	88	453.3	10.5				ug/L	87	Standard
C	12	170.0	0.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	51.9	21.5				mg/L	10	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	30.0	33.3				mg/L	3	Standard
I	127	562279.3	5.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		139.457	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.627	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.676
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	90.246
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606030402PS WG572184-03
Sample Date/Time: Thursday, June 16, 2016 22:58:52
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73075.8	1.3				ug/L	51024	Standard
	Be	9	53890.7	1.6	**44.7456**	1.235	2.8	ug/L	7	Standard
	Al	27	27168938.9	0.8	**133.2737**	2.450	1.8	ug/L	625	Standard
	Sc	45	32783.8	3.0				ug/L	29647	Standard
	Ti	47	859.4	2.1	**2.8540**	0.076	2.7	ug/L	57	Standard
	V	51	356764.3	1.1	**52.7436**	0.694	1.3	ug/L	1142	Standard
	Cr	52	356493.8	0.1	**50.1744**	0.746	1.5	ug/L	6628	Standard
	Cr	53	58201.6	1.0	**65.5911**	1.486	2.3	ug/L	430	Standard
	Mn	55	450920.3	1.1	**79.9871**	1.948	2.4	ug/L	603	Standard
	Co	59	316431.5	0.7	**51.8775**	0.422	0.8	ug/L	237	Standard
	Ni	60	89734.3	1.3	**48.9891**	1.257	2.6	ug/L	141	Standard
	Cu	65	87088.6	0.9	**48.7984**	1.056	2.2	ug/L	109	Standard
	Zn	66	59430.7	0.2	**56.3137**	0.736	1.3	ug/L	159	Standard
>	**Ge**	72	449467.4	1.3				ug/L	474053	Standard
	As	75	54174.2	0.7	**51.6333**	0.928	1.8	ug/L	-34	Standard
	Se	82	5615.8	0.7	**53.3981**	0.963	1.8	ug/L	14	Standard
	Se-1	77	4643.7	1.4	**63.0355**	0.461	0.7	ug/L	55	Standard
>	**Ga**	71	86.7	6.7				mg/L	50	Standard
	Rb	85	8584.1	2.2				ug/L	20	Standard
	Y	89	362129.9	0.6				ug/L	376602	Standard
>	**Rh**	103	126.7	12.1				ug/L	17	Standard
	Mo	98	423.7	5.1	**0.1836**	0.012	6.4	ug/L	8	Standard
	Ag	107	266853.3	1.0	**47.1390**	0.674	1.4	ug/L	81	Standard
	Cd	111	91252.6	1.2	**49.5561**	0.951	1.9	mg/L	3	Standard
	Cd	114	222037.4	0.3	**48.7752**	0.696	1.4	ug/L	7	Standard
>	**In**	115	497860.4	1.7				ug/L	524722	Standard
	Sn	118	795.0	4.5	**0.0661**	0.005	7.0	ug/L	715	Standard
	Sb	123	212175.4	1.5	**51.1854**	0.593	1.2	ug/L	201	Standard
	Ba	135	282462.3	0.7	**164.2013**	1.778	1.1	ug/L	108	Standard
	Ce	140	631.7	10.3				ug/L	30	Standard
>	**Tb**	159	772720.2	0.9				ug/L	792236	Standard
	Ho	165	25.0	72.1				ug/L	7	Standard
	Tl	203	348021.0	0.8	**48.9171**	0.207	0.4	ug/L	9	Standard
	Tl	205	307292.3	1.9	**50.7847**	0.486	1.0	ug/L	0	Standard
	Pb	206	227366.6	0.7	**52.8212**	0.283	0.5	ug/L	216	Standard
	Pb	207	198570.4	0.5	**50.6733**	0.216	0.4	ug/L	180	Standard
	Pb	208	808970.2	1.0	**50.8658**	0.381	0.7	ug/L	717	Standard
	U	238	316899.9	0.9	**54.7755**	0.248	0.5	ug/L	4	Standard
>	**Bi**	209	428726.0	0.9				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.3595**	8.821	164.6	mg/L	0	Standard
Mg	24	124008.8	1.6	**152.0535**	3.346	2.2	mg/L	20	Standard
K	39	85.0	11.8	**0.3592**	0.081	22.7	mg/L	22	Standard
Ca	43	100.0	5.0	**7.9645**	1.532	19.2	mg/L	47	Standard
Fe	54	177.2	11.1	**0.0154**	0.015	95.9	mg/L	151	Standard
Fe	57	351.7	12.7	**0.3402**	0.148	43.6	mg/L	195	Standard
Sc-1	45	32783.8	3.0				mg/L	29647	Standard
Cl	35	226771.8	0.7				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	82051.8	3.7				ug/L	1607	Standard
P	31	32553.3	0.7				ug/L	22752	Standard
S	34	4877.5	2.7				ug/L	5049	Standard
Sr	88	468.3	17.3				ug/L	87	Standard
C	12	143.3	17.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	28.9	106.4				mg/L	10	Standard
Ho-1	165	25.0	72.1				mg/L	7	Standard
Er	166	23.3	65.5				mg/L	3	Standard
I	127	560436.2	7.8				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		143.218	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.814	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.881
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.132
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606030402PS WG572184-03
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Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606030402SDL WG572184-04
Sample Date/Time: Thursday, June 16, 2016 23:02:03
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70743.1	1.8				ug/L	51024	Standard
	Be	9	28.3	50.9	**0.0034**	0.013	384.2	ug/L	7	Standard
	Al	27	5919809.8	1.5	**29.9860**	0.193	0.6	ug/L	625	Standard
	Sc	45	33931.3	4.9				ug/L	29647	Standard
	Ti	47	210.3	4.5	**0.5323**	0.026	4.9	ug/L	57	Standard
	V	51	1736.1	7.7	**0.0751**	0.020	26.8	ug/L	1142	Standard
	Cr	52	8517.7	1.3	**0.2257**	0.018	7.8	ug/L	6628	Standard
	Cr	53	4512.3	4.3	**4.4067**	0.273	6.2	ug/L	430	Standard
	Mn	55	34493.9	0.5	**5.6636**	0.053	0.9	ug/L	603	Standard
	Co	59	857.0	3.0	**0.0916**	0.004	4.4	ug/L	237	Standard
	Ni	60	815.4	3.7	**0.3434**	0.013	3.8	ug/L	141	Standard
	Cu	65	609.0	2.8	**0.2567**	0.008	3.3	ug/L	109	Standard
	Zn	66	2631.2	2.5	**2.1339**	0.077	3.6	ug/L	159	Standard
>	**Ge**	72	475670.8	1.3				ug/L	474053	Standard
	As	75	259.9	19.5	**0.2591**	0.046	17.8	ug/L	-34	Standard
	Se	82	96.9	9.6	**0.7044**	0.090	12.8	ug/L	14	Standard
	Se-1	77	278.3	6.3	**2.8660**	0.190	6.6	ug/L	55	Standard
>	**Ga**	71	100.0	13.2				mg/L	50	Standard
	Rb	85	1971.8	2.2				ug/L	20	Standard
	Y	89	399368.2	0.1				ug/L	376602	Standard
>	**Rh**	103	31.7	55.5				ug/L	17	Standard
	Mo	98	97.2	8.5	**0.0330**	0.003	8.8	ug/L	8	Standard
	Ag	107	194.3	8.7	**0.0182**	0.002	12.0	ug/L	81	Standard
	Cd	111	22.8	26.6	**0.0078**	0.003	35.8	mg/L	3	Standard
	Cd	114	48.7	59.7	**0.0057**	0.006	99.0	ug/L	7	Standard
>	**In**	115	559725.5	1.9				ug/L	524722	Standard
	Sn	118	606.7	7.7	**0.0162**	0.009	56.8	ug/L	715	Standard
	Sb	123	2363.7	19.9	**0.4914**	0.092	18.7	ug/L	201	Standard
	Ba	135	43798.6	2.4	**22.5929**	0.145	0.6	ug/L	108	Standard
	Ce	140	198.3	9.5				ug/L	30	Standard
>	**Tb**	159	842868.7	1.3				ug/L	792236	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	155.3	20.7	**0.0174**	0.004	24.2	ug/L	9	Standard
	Tl	205	138.3	25.4	**0.0131**	0.005	41.5	ug/L	0	Standard
	Pb	206	331.7	5.4	**0.0143**	0.004	25.7	ug/L	216	Standard
	Pb	207	291.7	3.0	**0.0144**	0.002	12.4	ug/L	180	Standard
	Pb	208	1219.7	5.8	**0.0124**	0.004	35.2	ug/L	717	Standard
	U	238	456.0	5.1	**0.0646**	0.005	7.0	ug/L	4	Standard
>	**Bi**	209	468142.9	1.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	26463.1	2.5	**31.3785**	2.343	7.5	mg/L	20	Standard
K	39	26.7	78.1	**-0.0526**	0.134	255.5	mg/L	22	Standard
Ca	43	43.3	17.6	**-4.3735**	1.225	28.0	mg/L	47	Standard
Fe	54	169.2	3.0	**0.0053**	0.003	52.6	mg/L	151	Standard
Fe	57	196.7	11.5	**-0.1160**	0.038	32.8	mg/L	195	Standard
Sc-1	45	33931.3	4.9				mg/L	29647	Standard
Cl	35	196142.1	0.3				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	19616.0	5.5				ug/L	1607	Standard
P	31	27376.4	1.1				ug/L	22752	Standard
S	34	5225.9	4.8				ug/L	5049	Standard
Sr	88	161.7	12.5				ug/L	87	Standard
C	12	53.3	21.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	18.9	105.9				mg/L	10	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	23.3	24.7				mg/L	3	Standard
I	127	136986.5	1.1				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		138.646	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.341	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	106.671
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.694
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 23:05:16
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65141.5	3.2				ug/L	51024	Standard
	Be	9	52703.2	1.3	**49.1153**	1.764	3.6	ug/L	7	Standard
	Al	27	8228815.5	2.2	**45.2824**	0.920	2.0	ug/L	625	Standard
	Sc	45	32498.2	4.1				ug/L	29647	Standard
	Ti	47	31345.1	0.7	**103.5318**	1.343	1.3	ug/L	57	Standard
	V	51	367453.1	0.4	**51.1407**	0.777	1.5	ug/L	1142	Standard
	Cr	52	375913.5	0.3	**49.8070**	1.076	2.2	ug/L	6628	Standard
	Cr	53	47646.5	1.3	**50.4578**	1.488	2.9	ug/L	430	Standard
	Mn	55	329100.4	0.4	**54.9171**	0.971	1.8	ug/L	603	Standard
	Co	59	349269.0	1.0	**53.9203**	1.421	2.6	ug/L	237	Standard
	Ni	60	96531.2	0.8	**49.6170**	1.272	2.6	ug/L	141	Standard
	Cu	65	93924.6	0.9	**49.5504**	1.188	2.4	ug/L	109	Standard
	Zn	66	55518.9	0.1	**49.5011**	0.851	1.7	ug/L	159	Standard
>	Ge	72	477444.4	1.8				ug/L	474053	Standard
	As	75	55141.7	0.8	**49.4767**	0.656	1.3	ug/L	-34	Standard
	Se	82	5701.1	0.6	**51.0288**	1.000	2.0	ug/L	14	Standard
	Se-1	77	3881.8	1.1	**49.4608**	1.267	2.6	ug/L	55	Standard
>	Ga	71	65.0	13.3				mg/L	50	Standard
	Rb	85	788.4	3.5				ug/L	20	Standard
	Y	89	405958.4	2.3				ug/L	376602	Standard
>	Rh	103	46.7	6.2				ug/L	17	Standard
	Mo	98	255980.2	1.6	**104.9334**	3.174	3.0	ug/L	8	Standard
	Ag	107	304085.1	0.1	**49.3379**	0.777	1.6	ug/L	81	Standard
	Cd	111	100650.6	0.4	**50.2032**	0.894	1.8	mg/L	3	Standard
	Cd	114	247889.3	0.9	**50.0095**	0.397	0.8	ug/L	7	Standard
>	In	115	542056.8	1.5				ug/L	524722	Standard
	Sn	118	285272.3	0.9	**51.1841**	0.960	1.9	ug/L	715	Standard
	Sb	123	227314.1	0.8	**50.3702**	0.881	1.7	ug/L	201	Standard
	Ba	135	91208.0	0.4	**48.6598**	0.850	1.7	ug/L	108	Standard
	Ce	140	63.3	32.9				ug/L	30	Standard
>	Tb	159	789070.3	2.3				ug/L	792236	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	377602.8	0.5	**50.2279**	0.920	1.8	ug/L	9	Standard
	Tl	205	337371.9	1.4	**52.7729**	1.437	2.7	ug/L	0	Standard
	Pb	206	238042.0	0.2	**52.3320**	0.779	1.5	ug/L	216	Standard
	Pb	207	215459.6	1.1	**52.0360**	1.192	2.3	ug/L	180	Standard
	Pb	208	891326.9	0.5	**53.0399**	0.951	1.8	ug/L	717	Standard
	U	238	333407.3	1.0	**54.5375**	1.116	2.0	ug/L	4	Standard
>	Bi	209	453096.7	1.3				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.3907**	8.767	162.6	mg/L	0	Standard
Mg	24	4200.6	2.3	**5.1529**	0.111	2.2	mg/L	20	Standard
K	39	616.7	6.8	**4.0727**	0.447	11.0	mg/L	22	Standard
Ca	43	71.7	17.6	**2.1532**	3.105	144.2	mg/L	47	Standard
Fe	54	6037.6	3.3	**4.3664**	0.172	3.9	mg/L	151	Standard
Fe	57	1763.4	0.4	**4.3392**	0.195	4.5	mg/L	195	Standard
Sc-1	45	32498.2	4.1				mg/L	29647	Standard
Cl	35	179833.9	2.1				ug/L	154152	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	2146.8	4.2				ug/L	1607	Standard
P	31	26813.7	2.2				ug/L	22752	Standard
S	34	5724.4	0.6				ug/L	5049	Standard
Sr	88	70.0	14.3				ug/L	87	Standard
C	12	63.3	50.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.0	50.0				mg/L	10	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	3	Standard
I	127	9479.8	26.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	98.231		
Al	27	90.565		
Sc	45			
Ti	47	103.532		
V	51	102.281		
Cr	52	99.614		
Cr	53			
Mn	55	109.834		
Co	59	107.841		
Ni	60	99.234		
Cu	65	99.101		
Zn	66	99.002		
Ge	72		100.715	
As	75	98.953		
Se	82	102.058		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
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Rb	85			
Y	89			
> Rh	103			
Mo	98	104.933		
Ag	107	98.676		
Cd	111	100.406		
Cd	114			
> In	115		103.304	
Sn	118	102.368		
Sb	123	100.740		
Ba	135	97.320		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.456		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.080		
U	238	109.075		
> Bi	209		98.426	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 23:08:27
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65521.4	0.4				ug/L	51024	Standard
	Be	9	23.3	99.0	**0.0005**	0.021	4564.3	ug/L	7	Standard
	Al	27	5681.9	111.4	**0.0212**	0.034	162.2	ug/L	625	Standard
	Sc	45	34061.6	0.4				ug/L	29647	Standard
	Ti	47	31.0	31.1	**-0.0658**	0.030	46.1	ug/L	57	Standard
	V	51	1137.0	4.8	**-0.0132**	0.008	58.0	ug/L	1142	Standard
	Cr	52	6409.0	1.1	**-0.0829**	0.007	8.9	ug/L	6628	Standard
	Cr	53	666.7	9.6	**0.2639**	0.061	23.2	ug/L	430	Standard
	Mn	55	712.4	6.8	**-0.0100**	0.007	70.1	ug/L	603	Standard
	Co	59	233.0	15.5	**-0.0061**	0.005	85.2	ug/L	237	Standard
	Ni	60	159.3	10.8	**0.0024**	0.008	354.6	ug/L	141	Standard
	Cu	65	160.3	16.8	**0.0166**	0.013	81.1	ug/L	109	Standard
	Zn	66	162.7	11.7	**-0.0896**	0.016	17.5	ug/L	159	Standard
>	**Ge**	72	488521.2	0.7				ug/L	474053	Standard
	As	75	-18.2	245.0	**0.0090**	0.039	433.3	ug/L	-34	Standard
	Se	82	22.9	33.5	**0.0317**	0.066	209.0	ug/L	14	Standard
	Se-1	77	61.7	10.8	**0.0347**	0.088	253.1	ug/L	55	Standard
>	**Ga**	71	43.3	6.7				mg/L	50	Standard
	Rb	85	21.7	26.6				ug/L	20	Standard
	Y	89	392497.9	1.5				ug/L	376602	Standard
>	**Rh**	103	15.0	66.7				ug/L	17	Standard
	Mo	98	290.0	34.9	**0.1112**	0.040	35.6	ug/L	8	Standard
	Ag	107	124.3	21.0	**0.0075**	0.004	51.6	ug/L	81	Standard
	Cd	111	11.5	16.4	**0.0024**	0.001	34.9	mg/L	3	Standard
	Cd	114	37.6	64.7	**0.0036**	0.005	130.1	ug/L	7	Standard
>	**In**	115	550836.3	1.7				ug/L	524722	Standard
	Sn	118	835.0	15.5	**0.0583**	0.023	39.6	ug/L	715	Standard
	Sb	123	699.1	30.0	**0.1378**	0.046	33.4	ug/L	201	Standard
	Ba	135	132.0	3.9	**0.0117**	0.003	27.6	ug/L	108	Standard
	Ce	140	11.7	24.7				ug/L	30	Standard
>	**Tb**	159	819426.3	1.1				ug/L	792236	Standard
	Ho	165	6.7	86.6				ug/L	7	Standard
	Tl	203	74.7	34.7	**0.0068**	0.003	47.8	ug/L	9	Standard
	Tl	205	90.0	77.2	**0.0055**	0.010	186.7	ug/L	0	Standard
	Pb	206	270.7	9.3	**0.0000**	0.005	33114.8	ug/L	216	Standard
	Pb	207	219.0	11.0	**-0.0037**	0.006	150.6	ug/L	180	Standard
	Pb	208	961.7	14.2	**-0.0037**	0.008	206.3	ug/L	717	Standard
	U	238	71.3	83.4	**0.0035**	0.009	266.3	ug/L	4	Standard
>	**Bi**	209	478835.9	0.7				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.7236**	8.190	143.1	mg/L	0	Standard
Mg	24	78.3	36.3	**0.0471**	0.033	70.4	mg/L	20	Standard
K	39	20.0	50.0	**-0.0950**	0.067	70.5	mg/L	22	Standard
Ca	43	16.7	62.4	**-9.7998**	2.111	21.5	mg/L	47	Standard
Fe	54	162.8	19.9	**0.0003**	0.023	7301.8	mg/L	151	Standard
Fe	57	211.7	11.2	**-0.0764**	0.066	86.3	mg/L	195	Standard
Sc-1	45	34061.6	0.4				mg/L	29647	Standard
Cl	35	176482.8	2.0				ug/L	154152	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	1700.1	5.3				ug/L	1607	Standard
P	31	27343.0	0.9				ug/L	22752	Standard
S	34	5614.4	3.8				ug/L	5049	Standard
Sr	88	68.3	27.7				ug/L	87	Standard
C	12	56.7	44.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	16.0	95.0				mg/L	10	Standard
Ho-1	165	6.7	86.6				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	4402.3	12.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.052	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.977
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.017
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, June 16, 2016 23:11:40
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62197.5	2.7				ug/L	51024	Standard
	Be	9	238.3	13.6	**0.2121**	0.037	17.6	ug/L	7	Standard
	Al	27	1466.7	24.6	**-0.0013**	0.002	173.1	ug/L	625	Standard
	Sc	45	31464.3	3.4				ug/L	29647	Standard
	Ti	47	25.0	41.8	**-0.0793**	0.036	45.5	ug/L	57	Standard
	V	51	3787.9	2.1	**0.3855**	0.011	2.8	ug/L	1142	Standard
	Cr	52	11607.4	0.4	**0.7122**	0.016	2.2	ug/L	6628	Standard
	Cr	53	1381.7	1.4	**1.1136**	0.035	3.1	ug/L	430	Standard
	Mn	55	3485.4	2.1	**0.4840**	0.015	3.1	ug/L	603	Standard
	Co	59	2688.9	0.3	**0.3937**	0.004	0.9	ug/L	237	Standard
	Ni	60	3045.6	2.3	**1.5635**	0.022	1.4	ug/L	141	Standard
	Cu	65	1580.4	3.3	**0.8079**	0.030	3.7	ug/L	109	Standard
	Zn	66	7167.0	0.7	**6.4903**	0.095	1.5	ug/L	159	Standard
>	**Ge**	72	455928.4	0.9				ug/L	474053	Standard
	As	75	370.6	7.7	**0.3732**	0.030	8.0	ug/L	-34	Standard
	Se	82	61.3	17.8	**0.4078**	0.107	26.4	ug/L	14	Standard
	Se-1	77	90.3	17.8	**0.4781**	0.216	45.1	ug/L	55	Standard
>	**Ga**	71	55.0	24.1				mg/L	50	Standard
	Rb	85	15.0	57.7				ug/L	20	Standard
	Y	89	401919.6	0.8				ug/L	376602	Standard
>	**Rh**	103	13.3	43.3				ug/L	17	Standard
	Mo	98	54.9	10.1	**0.0169**	0.002	11.0	ug/L	8	Standard
	Ag	107	2304.2	2.4	**0.3610**	0.011	3.1	ug/L	81	Standard
	Cd	111	463.2	4.6	**0.2274**	0.011	4.7	mg/L	3	Standard
	Cd	114	1100.0	5.3	**0.2180**	0.017	7.9	ug/L	7	Standard
>	**In**	115	543008.1	2.6				ug/L	524722	Standard
	Sn	118	436.7	6.3	**-0.0111**	0.004	33.6	ug/L	715	Standard
	Sb	123	1825.0	3.3	**0.3894**	0.024	6.1	ug/L	201	Standard
	Ba	135	1282.7	6.8	**0.6257**	0.032	5.1	ug/L	108	Standard
	Ce	140	18.3	41.7				ug/L	30	Standard
>	**Tb**	159	786449.8	2.4				ug/L	792236	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	625.7	5.7	**0.0805**	0.004	5.1	ug/L	9	Standard
	Tl	205	541.7	4.7	**0.0768**	0.002	3.0	ug/L	0	Standard
	Pb	206	1119.4	3.0	**0.1897**	0.004	2.2	ug/L	216	Standard
	Pb	207	980.4	3.9	**0.1828**	0.004	2.1	ug/L	180	Standard
	Pb	208	4169.9	1.1	**0.1903**	0.004	2.3	ug/L	717	Standard
	U	238	2499.2	1.6	**0.4009**	0.009	2.3	ug/L	4	Standard
>	**Bi**	209	453610.3	2.8				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	55.0	15.7	**0.0251**	0.011	43.4	mg/L	20	Standard
K	39	8.3	91.7	**-0.1668**	0.057	33.9	mg/L	22	Standard
Ca	43	21.7	66.6	**-8.4026**	3.204	38.1	mg/L	47	Standard
Fe	54	104.1	4.5	**-0.0352**	0.004	10.9	mg/L	151	Standard
Fe	57	183.3	11.0	**-0.1131**	0.042	36.8	mg/L	195	Standard
Sc-1	45	31464.3	3.4				mg/L	29647	Standard
Cl	35	173373.0	1.2				ug/L	154152	Standard
Kr	83	0.7	173.2				ug/L	3	Standard
Br	81	1516.7	7.1				ug/L	1607	Standard
P	31	19057.0	2.5				ug/L	22752	Standard
S	34	5394.3	1.5				ug/L	5049	Standard
Sr	88	70.0	24.7				ug/L	87	Standard
C	12	66.7	82.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	3.2	173.2				mg/L	10	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	3055.3	5.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	106.050		
Al	27			
Sc	45			
Ti	47			
V	51	96.369		
Cr	52	89.022		
Cr	53			
Mn	55	96.796		
Co	59	98.420		
Ni	60	97.718		
Cu	65	100.991		
Zn	66	103.844		
Ge	72		96.177	
As	75	93.302		
Se	82	101.945		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	90.256		
Cd	111	94.767		
Cd	114			
> In	115			103.485
Sn	118			
Sb	123	97.340		
Ba	135	83.430		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.678		
Tl	205			
Pb	206			
Pb	207			
Pb	208	95.126		
U	238	100.222		
> Bi	209			98.537
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
Report Date/Time: Thursday, June 16, 2016 23:13:57
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2.3.3 Metals CVAA Data (Mercury)

2.3.3.1 Summary Data

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-03	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	AWD4T-060716	**Prep Method:**	7470A	**Prep Date:**	06/09/2016 07:15
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/13/2016 10:16
Workgroup #:	WG572241	**Analyst:**	AMA	**Run Date:**	06/13/2016 11:06
Collect Date:	06/07/2016 15:00	**Dilution:**	1	**File ID:**	M7.061316.110655
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-04	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	AWD4B-060716	**Prep Method:**	7470A	**Prep Date:**	06/09/2016 07:15
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/13/2016 10:16
Workgroup #:	WG572241	**Analyst:**	AMA	**Run Date:**	06/13/2016 11:09
Collect Date:	06/07/2016 15:30	**Dilution:**	1	**File ID:**	M7.061316.110925
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.3.2 QC Summary

Example Cold Vapor Mercury Calculations
Hydra AA Mercury Analyzer / CETAC M-7600 Quick Trace Mercury Analyzer

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and five standards.

2.0 Calculating the concentration (C) of an element in water using data from run log and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to Volume (mL)	40
Vi = Aliquot Volume (mL)	40
D = Manual dilution factor, if required (10X = 10)	1
Cx = Concentration of element in ppb (ug/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Ws} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to volume (mL)	40
Ws = Aliquot weight (g)	0.6
D = Manual dilution factor	1
Cx = Concentration of element in ug/kg	6.67

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

1 Cx = Concentration calculated as received (wet basis)	6.67
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	8.33

8.33 ug/kg = 0.00833 mg/kg

Microbac Laboratories Inc.
Metals Digest Log

Workgroup: WG571962
Analyst: REK
Spike Analyst: REK
Method: 7470A
Run Date: 06/09/2016 07:15
Hotblock Start Temp: 95 @ 07:05
Hotblock End Temp: 95.5 @ 09:05
Instrument: HB7

SOP: ME404 Revison 17
Spike Solution: STD76527
Spike Witness: VC
H2SO4 Lot #: COA18359
40 & 50 ML. DIGESTION TU COA18772
HNO3 Lot #: COA18905
K2S2O8 1:1 Lot #: RGT36713
KMnO4 1:1 Lot #: RGT37006
Mercury Water ICV Lot #: STD76529
HG H2O STDS 10PPM Lot #: STD76535

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Spike Amount	Due Date
1	WG571962-03	BLANK	1	40 mL	40 mL		
2	WG571962-04	LCS	1	40 mL	40 mL	4 mL	
3	L16060002-06	ML06	2	40 mL	40 mL	.1 mL	06/15/16
4	L16060002-07	ML07	2	40 mL	40 mL	.1 mL	06/15/16
5	L16060114-01	SAMP	17	1 mL	40 mL		06/13/16
6	L16060309-01	SAMP	2	40 mL	40 mL		06/13/16
7	L16060321-01	SAMP	2	40 mL	40 mL		06/17/16
8	WG571962-01	REF	2	40 mL	40 mL		
9	L16060321-02	SAMP	2	40 mL	40 mL		06/17/16
10	L16060321-03	SAMP	2	40 mL	40 mL		06/17/16
11	L16060366-01	SAMP	2	40 mL	40 mL		06/14/16
12	L16060411-03	SAMP	1	40 mL	40 mL		06/17/16
13	WG571962-02	REF	1	40 mL	40 mL		
14	L16060411-04	SAMP	1	40 mL	40 mL		06/17/16
15	WG571962-05	DUP	1	40 mL	40 mL		
16	WG571962-06	MS	1	36 mL	40 mL	4 mL	
17	WG571962-07	MSD	1	36 mL	40 mL	4 mL	

L16060114-01	Filtered oil

Analyst: [signature]

Reviewer: [signature]

* All calibration and check standards are prepared and digested with sample batch following the procedures in section 7.0 of SOP ME404/ME405.

HB_DIG - Modified 07/26/2012
PDF ID: 4799990
Report generated: 06/09/2016 10:28

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 061316B.CSV

Analyst1: AMA Analyst2: N/A

Method: 7470A/245.1 SOP: ME404 Rev: 17

Maintenance Log ID:

Calibration Std: STD76535 ICV Std: STD76529 Post Spike: STD76535

ICSA: N/A ICSAB: N/A Int. Std:

CCV: LLCCV: Tuning Sol :

Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 572241

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	M7.061316.100331	WG572511-01	Calibration Point		1		06/13/16 10:03
2	M7.061316.100602	WG572511-02	Calibration Point		1		06/13/16 10:06
3	M7.061316.100834	WG572511-03	Calibration Point		1		06/13/16 10:08
4	M7.061316.101107	WG572511-04	Calibration Point		1		06/13/16 10:11
5	M7.061316.101340	WG572511-05	Calibration Point		1		06/13/16 10:13
6	M7.061316.101614	WG572511-06	Calibration Point		1		06/13/16 10:16
7	M7.061316.101848	WG572511-07	Initial Calibration Verification		1		06/13/16 10:18
8	M7.061316.102118	WG572511-08	Initial Calib Blank		1		06/13/16 10:21
9	M7.061316.102351	WG572511-09	CCV		1		06/13/16 10:23
10	M7.061316.102621	WG572511-10	CCB		1		06/13/16 10:26
11	M7.061316.102852	WG571962-03	Method/Prep Blank	40/40	1		06/13/16 10:28
12	M7.061316.103123	WG571962-04	Laboratory Control S	40/40	1		06/13/16 10:31
13	M7.061316.103355	L16060002-06	MDL-6	40/40	1		06/13/16 10:33
14	M7.061316.103627	L16060002-07	MDL-7	40/40	1		06/13/16 10:36
15	M7.061316.103858	L16060114-01	FPL16022	1/40	1		06/13/16 10:38
16	M7.061316.104131	WG572241-01	Post Digestion Spike		1	L16060114-01	06/13/16 10:41
17	M7.061316.104403	L16060309-01	K6F0115-01	40/40	1		06/13/16 10:44
18	M7.061316.104636	WG572241-02	Post Digestion Spike		1	L16060309-01	06/13/16 10:46
19	M7.061316.104909	L16060321-01	WEST RETENTION POND	40/40	1		06/13/16 10:49
20	M7.061316.105143	WG571962-01	Reference Sample	40/40	1	L16060321-02	06/13/16 10:51
21	M7.061316.105415	WG572511-11	CCV		1		06/13/16 10:54
22	M7.061316.105646	WG572511-12	CCB		1		06/13/16 10:56
23	M7.061316.105920	WG571962-05	Duplicate	40/40	1	L16060321-02	06/13/16 10:59
24	M7.061316.110154	L16060321-03	CATCH BASIN 29	40/40	1		06/13/16 11:01
25	M7.061316.110424	L16060366-01	K6F0188-01	40/40	1		06/13/16 11:04
26	M7.061316.110655	L16060411-03	AWD4T-060716	40/40	1		06/13/16 11:06
27	M7.061316.110925	WG571962-02	Reference Sample	40/40	1	L16060411-04	06/13/16 11:09
28	M7.061316.111157	WG571962-06	Matrix Spike	36/40	1	L16060411-04	06/13/16 11:11
29	M7.061316.111428	WG571962-07	Matrix Spike Duplica	36/40	1	L16060411-04	06/13/16 11:14
30	M7.061316.111700	WG572511-13	CCV		1		06/13/16 11:17
31	M7.061316.111931	WG572511-14	CCB		1		06/13/16 11:19

Page: 1 Approved: June 14, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 13-JUN-2016
Analyst: AMA
Analyst: NA
Method: 7470A/245.1
Instrument: CVAA1
Curve Workgroup: 572511
Runlog ID: 75659
Analytical Workgroups: 572241

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	0002, 0114, 0411
Client Forms	X
Level X	
Level 3	0114
Level 4	0002, 0411
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	AMA
Secondary Reviewer	KHR
Comments	

Primary Reviewer:
13-JUN-2016
Alexandra M. Alfred

Secondary Reviewer:
14-JUN-2016
Kym H. Rhoden

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-14-2016 08:35:42

Microbac Laboratories Inc.

00662492

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 7470A

AAB#: WG572241

Login Number: L16060411

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
AWD4T-060716	03	06/07/16					06/09/2016	1.7	28		06/13/16	5.8	28	
AWD4B-060716	04	06/07/16					06/09/2016	1.7	28		06/13/16	5.8	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4805396
Report generated 06/13/2016 15:05

METHOD BLANK SUMMARY

Login Number: L16060411
Blank File ID: M7.061316.102852
Prep Date: 06/09/16 07:15
Analyzed Date: 06/13/16 10:28
Analyst: AMA

Work Group: WG572241
Blank Sample ID: WG571962-03
Instrument ID: CVAA1
Method: 7470A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG571962-04	M7.061316.103123	06/13/16 10:31	01
DUP	WG571962-05	M7.061316.105920	06/13/16 10:59	01
AWD4T-060716	L16060411-03	M7.061316.110655	06/13/16 11:06	01
AWD4B-060716	L16060411-04	M7.061316.110925	06/13/16 11:09	01

Report Name: BLANK_SUMMARY
PDF File ID: 4805397
Report generated 06/13/2016 15:05

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060411 Prep Date: 06/09/16 07:15 Sample ID: WG571962-03
Instrument ID: CVAA1 Run Date: 06/13/16 10:28 Prep Method: 7470A
File ID: M7.061316.102852 Analyst: AMA Method: 7470A
Workgroup (AAB#): WG572241 Matrix: Water Units: mg/L
Contract #: Cal ID: CVAA1-13-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Mercury	0.000100	0.000400	0.000100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4805398
13-JUN-2016 15:05

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060411 Run Date: 06/13/2016 Sample ID: WG571962-04
Instrument ID: CVAA1 Run Time: 10:31 Prep Method: 7470A
File ID: M7.061316.103123 Analyst: AMA Method: 7470A
Workgroup (AAB#): WG572241 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76527 Cal ID: CVAA1-13-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Mercury	0.00400	0.00442	111	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4805399
Report generated: 06/13/2016 15:05

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060411 Cal ID: CVAA1 - Worknum: WG572241
Instrument ID: CVAA1 Contract #: Method: 7470A
Parent ID: WG571962-02 File ID: M7.061316.110925 Dil: 1 Matrix: WATER
Sample ID: WG571962-06 MS File ID: M7.061316.111157 Dil: 1 Units: mg/L
Sample ID: WG571962-07 MSD File ID: M7.061316.111428 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Mercury	ND	0.00444	0.00469	106	0.00444	0.00470	106	0.0946	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4805400
Report generated 06/13/2016 15:05

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060411 **Worknum:** WG572241
Instrument ID: CVAA1 **Method:** 7470A
Post Spike ID: WG572241-02 **File ID:** M7.061316.104636 **Dil:** 1 **Units:** ug/L
Sample ID: L16060309-01 **File ID:** M7.061316.104403 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MERCURY	1.01		0	U	1	100.9	85 - 115	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4805395
Report generated: 06/13/2016 15:05

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060411
Analytical Method: 7470A
ICAL Worknum: WG572511

Workgroup (AAB#): WG572241
Instrument ID: CVAA1
Initial Calibration Date: 06/13/2016 10:16

Analyte	WG572511-01		WG572511-02		WG572511-03		WG572511-04		WG572511-05		WG572511-06	
	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT
Mercury	0	23.14	0.200	1744	1.00	7639	2.00	15350	5.00	37000	10.0	72200

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4805401
Report generated 06/13/2016 15:05

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060411
Analytical Method: 7470A
ICAL Worknum: WG572511

Workgroup (AAB#): WG572241
Instrument ID: CVAA1
Initial Calibration Date: 06/13/2016 10:16

Analyte	R	Q
Mercury	1.000	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4805401
Report generated 06/13/2016 15:05

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060411
Instrument ID: CVAA1
File ID: M7.061316.102118
Workgroup (AAB#): WG572241
Matrix: WATER

Run Date: 06/13/2016
Run Time: 10:21
Analyst: AMA
Cal ID: CVAA1 - 13-JUN-16

Sample ID: WG572511-08
Method: 7470A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
MERCURY	.1	.4	.1	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4805403
Report generated 06/13/2016 15:05

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060411
Run Date: 06/13/2016
Sample ID: WG572511-10
Instrument ID: CVAA1
Run Time: 10:26
Method: 7470A
File ID: M7.061316.102621
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG572241
Cal ID: CVAA1 - 13-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4805405
Report generated 06/13/2016 15:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060411
Run Date: 06/13/2016
Sample ID: WG572511-12
Instrument ID: CVAA1
Run Time: 10:56
Method: 7470A
File ID: M7.061316.105646
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG572241
Cal ID: CVAA1 - 13-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4805405
Report generated 06/13/2016 15:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060411
Run Date: 06/13/2016
Sample ID: WG572511-14
Instrument ID: CVAA1
Run Time: 11:19
Method: 7470A
File ID: M7.061316.111931
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG572241
Cal ID: CVAA1 - 13-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4805405
Report generated 06/13/2016 15:05

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060411
Run Date: 06/13/2016
Sample ID: WG572511-07
Instrument ID: CVAA1
Run Time: 10:18
Method: 7470A
File ID: M7.061316.101848
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG572241
Cal ID: CVAA1 - 13-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Mercury		2	2.03	102	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4805402
Report generated 06/13/2016 15:05

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060411
Run Date: 06/13/2016
Sample ID: WG572511-09
Instrument ID: CVAA1
Run Time: 10:23
Method: 7470A
File ID: M7.061316.102351
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG572241
Cal ID: CVAA1 - 13-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00209	mg/L	105	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4805404
Report generated 06/13/2016 15:05

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060411
Run Date: 06/13/2016
Sample ID: WG572511-11
Instrument ID: CVAA1
Run Time: 10:54
Method: 7470A
File ID: M7.061316.105415
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG572241
Cal ID: CVAA1 - 13-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00211	mg/L	106	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4805404
Report generated 06/13/2016 15:05

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060411
Run Date: 06/13/2016
Sample ID: WG572511-13
Instrument ID: CVAA1
Run Time: 11:17
Method: 7470A
File ID: M7.061316.111700
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG572241
Cal ID: CVAA1 - 13-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00213	mg/L	106	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4805404
Report generated 06/13/2016 15:05

2.3.3.3 Raw Data

PDM CVAA1 245.1/7470/7471

Report Generated By CETAC QuickTrace
Analyst: VOA
Worksheet file: C:\Program Files (x86)\QuickTrace\Worksheets\061316B.wsz
Date Started: 6/13/2016 10:00:33 AM
Comment:

Results

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
Standard #0					STD	06/13/16 10:03:31 am	0.0000	23	41.92		1.00
Replicates	11.3	26.5	34.3	20.5							
Standard #1 (0.2 ug/L)					STD	06/13/16 10:06:02 am	0.2000	1744	1.16		1.00
Replicates	1755.1	1727.1	1725.8	1766.3							
Standard #2 (1.0 ug/L)					STD	06/13/16 10:08:34 am	1.0000	7639	0.19		1.00
Replicates	7633.6	7634.3	7628.5	7660.3							
Standard #3 (2.0 ug/L)					STD	06/13/16 10:11:07 am	2.0000	15349	0.13		1.00
Replicates	15376.0	15340.7	15328.4	15351.2							
Standard #4 (5.0 ug/L)					STD	06/13/16 10:13:40 am	5.0000	36997	0.12		1.00
Replicates	37048.7	36975.5	36948.7	37015.4							
Standard #5 (10.0 ug/L)					STD	06/13/16 10:16:14 am	10.0000	72204	0.17		1.00
Replicates	72373.9	72205.8	72078.0	72157.5							

Calibration

Equation: A = 462.596 + 7207.707C
R2: 0.99979
SEE: 447.3694
Flags:

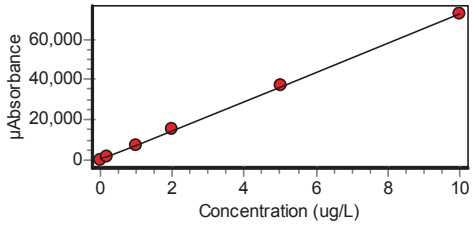

ICV					ICV	06/13/16 10:18:48 am	2.0300	15095	0.14		1.00
Replicates	15116.7	15111.2	15076.5	15076.7							
% Recovery	101.51										

Approved: June 13, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
ICB					ICB	06/13/16 10:21:18 am	-0.0665	-17	115.72		1.00
	Replicates	-19.4	-39.2	8.4	-17.4						
CCV					CCV	06/13/16 10:23:51 am	2.0910	15535	0.16		1.00
	Replicates	15522.3	15520.0	15524.1	15572.8						
	% Recovery	104.56									
CCB					CCB	06/13/16 10:26:21 am	-0.0610	23	51.81		1.00
	Replicates	6.4	22.9	33.4	30.1						
WG571962-03					MB	06/13/16 10:28:52 am	-0.0594	34	41.24		1.00
	Replicates	52.4	18.9	37.3	28.9						
WG571962-04					LCS	06/13/16 10:31:23 am	4.4220	32332	0.52		1.00
	Replicates	32154.1	32250.8	32382.5	32541.0						
	% Recovery	110.54									
L1606000206					UNK	06/13/16 10:33:55 am	0.0406	755	0.96		1.00
	Replicates	759.1	755.9	744.6	760.6						
L1606000207					UNK	06/13/16 10:36:27 am	0.0437	778	1.41		1.00
	Replicates	772.4	765.0	787.1	786.8						
L1606011401					UNK	06/13/16 10:38:58 am	-0.0595	34	45.50		1.00
	Replicates	12.9	43.3	31.8	47.1						
WG572241-01					SPK	06/13/16 10:41:31 am	1.0030	7693	0.16		1.00
	Replicates	7706.7	7696.4	7676.6	7693.4						
	% Recovery	106.27									
L1606030901					UNK	06/13/16 10:44:03 am	-0.0285	257	9.24		1.00
	Replicates	259.2	258.8	283.6	225.8						
WG572241-02					SPK	06/13/16 10:46:36 am	1.0090	7737	0.20		1.00
	Replicates	7715.7	7747.0	7736.5	7749.8						
	% Recovery	103.78									
L1606032101					UNK	06/13/16 10:49:09 am	-0.0639	2	514.55		1.00
	Replicates	13.7	-5.1	-8.7	8.4						

Approved: June 13, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1606032102					UNK	06/13/16 10:51:43 am	-0.0598	32	46.98		1.00
Replicates	20.1	18.7	38.2	49.6							
CCV					CCV	06/13/16 10:54:15 am	2.1110	15675	0.12		1.00
Replicates	15672.9	15671.8	15654.4	15700.4							
% Recovery	105.53										
CCB					CCB	06/13/16 10:56:46 am	-0.0644	-1	799.10		1.00
Replicates	-9.4	-1.6	-9.6	14.9							
WG571962-05					DUP	06/13/16 10:59:20 am	-0.0627	11	136.35		1.00
Replicates	30.0	12.3	4.5	-4.2							
		RPD 0.00									
L1606032103					UNK	06/13/16 11:01:54 am	-0.0605	27	27.52		1.00
Replicates	29.2	33.9	16.6	26.6							
L1606036601					UNK	06/13/16 11:04:24 am	-0.0613	21	100.33		1.00
Replicates	9.2	18.8	51.4	4.8							
L1606041103					UNK	06/13/16 11:06:55 am	-0.0068	414	2.92		1.00
Replicates	406.5	402.6	415.6	429.7							
L1606041104					UNK	06/13/16 11:09:25 am	-0.0216	307	2.13		1.00
Replicates	307.5	314.7	298.7	307.5							
WG571962-06					MSK	06/13/16 11:11:57 am	4.2250	30913	0.58		1.00
Replicates	30726.5	30835.9	30943.9	31146.4							
% Recovery	106.16										
WG571962-07					MSDUP	06/13/16 11:14:28 am	4.2290	30946	0.54		1.00
Replicates	30750.3	30907.6	30973.4	31151.4							
% Recovery	106.27	RPD 0.11									
CCV					CCV	06/13/16 11:17:00 am	2.1270	15791	0.29		1.00
Replicates	15730.1	15783.2	15814.7	15834.4							
% Recovery	106.33										
CCB					CCB	06/13/16 11:19:31 am	-0.0602	29	83.20		1.00
Replicates	23.7	45.2	50.2	-2.8							

Approved: June 13, 2016
Alexandra M. Alfred

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
June 23, 2016

001 - BIO-CHEM TESTING WVDEP 220	002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental	004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES	006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES	008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND	AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER	ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS	ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED	AWE - ANDREW W. ESSIG
AZH - AFTER HOURS	BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE	BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY	CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS	CEB - CHAD E. BARNES
CJQ - Cameron J. Quick	CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD	CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS	CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL	DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE	DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON	DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE	DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR	ECL - ERIC C. LAWSON
EMW - ERIC M. WILKEN	ENY - EMILY N. YOAK
ERP - ERIN R. PORTER	FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY	JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH	JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS	JLD - JESSICA L. DELONG
JLL - JOHN L. LENT	JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON	JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES	JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON	KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH	KEB - KATIE E. BARNES
KHR - KIM H. RHODES	KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON	KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS	LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF	LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA	MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON	MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN	MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE	MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR	MSW - MATT S. WILSON
NPH - Natalie P. Hart	PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE	PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB	QX - QIN XU
RAH - ROY A. HALSTEAD	REK - BOB E. KYER
RLB - BOB BUCHANAN	RM - RAYMOND MALEKE
RNP - RICK N. PETTY	RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG	SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY	SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF	TB - TODD BOYLE
TGF - TIM G. FELTON	TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS	VC - VICKI COLLIER
WJB - WILL J. BEASLEY	WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG	XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
June 23, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
June 23, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Debra Richmann	Mail to:	Linda Raabe
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000		112 East Pecan STE. 400
	Marietta, OH 45750	Sampler (print):	Scott Beesinger		San Antonio, TX 78205
Phone:	1-800-373-4071				210-296-2000
Client:	AECOM	Signature:	Scott Beesinger	Fed Ex Airbill No:	
Address:	112 East Pecan Ste. 400				
	San Antonio, TX 78205	pH:		Program:	
Turn Around Time:	STANDARD				
Project Name/Location:	Longhorn				
Project Number:	60274185.0013BH 1824 MR10				

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Total Metals	1,4 - DIOXANE					SA CODE	Cooler ID	ABLOT	EBLOT	TBLOT
																		ERPIMS REQUIRED FIELDS		LOT CONTROL NUMBERS		
SITE 18/24	18CPTMW15T-060716			6/7/16	1315		✓	W	6	✓	✓		✓									
	18CPTMW15B-060716			6/7/16	1355		✓	W	6	✓	✓		✓									
	AWD4T-060716			6/7/16	1500		✓	W	7	✓	✓	✓	✓									
	AWD4B-060716			6/7/16	1530		✓	W	7	✓	✓	✓	✓									
	TRip Blank			6/7/16			✓	W	2	✓												

Comments: **STANDARD TAT**

Microbac OVD
Received: 06/08/2016 09:58
By: BRENDA GREGORY 221000086877
Brenda Gregory

Relinquished by: (Signature)	Scott Beesinger	Date 6/7/16	Time 1615	Received by: (Signature)			d by: (Signature)
Relinquished by: (Signature)		Date	Time	Received for Laboratory by: (Signature)	Date	Time	Remarks:

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060411
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 17-JUN-2016

Samplenum	Container ID	Products
L16060411-01	756382	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:02	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:02	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:02	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	

Samplenum	Container ID	Products
L16060411-01	756383	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-JUN-2016 15:02	CLS		
2	PREP	W1	EXT	09-JUN-2016 14:52	EMW	CLS	
3	ANALYZ*	EXT	SEMI	12-JUN-2016 10:23	SCB	EMW	
4	SUBBED	EXT	DISP	14-JUN-2016 10:03	BJO	BJO	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		08-JUN-2016 15:02	CLS		

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060411-01	756384	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-JUN-2016 15:02	CLS		
2	ANALYZ	W1	SEM	10-JUN-2016 08:24	WTD	BRG	
3	STORE	SEM	A1	11-JUN-2016 11:57	AZH	WTD	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060411
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 17-JUN-2016

Samplenum	Container ID	Products
L16060411-02	756385	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:02	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	
3	STORE	ORG4	A1	22-JUN-2016 07:32	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:02	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	
3	STORE	ORG4	A1	22-JUN-2016 07:32	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:02	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	
3	STORE	ORG4	A1	22-JUN-2016 07:32	CLS	AWE	

Samplenum	Container ID	Products
L16060411-02	756386	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-JUN-2016 15:02	CLS		
2	PREP	W1	EXT	09-JUN-2016 14:52	EMW	CLS	
3	ANALYZ*	EXT	SEMI	12-JUN-2016 10:23	SCB	EMW	
4	SUBBED	EXT	DISP	14-JUN-2016 10:03	BJO	BJO	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		08-JUN-2016 15:02	CLS		

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060411-02	756387	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-JUN-2016 15:02	CLS		
2	ANALYZ	W1	SEM	10-JUN-2016 08:24	WTD	BRG	
3	STORE	SEM	A1	11-JUN-2016 11:57	AZH	WTD	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060411
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 17-JUN-2016

Samplenum	Container ID	Products
L16060411-03	756388	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:02	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	
3	STORE	ORG4	A1	22-JUN-2016 07:32	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:02	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	
3	STORE	ORG4	A1	22-JUN-2016 07:32	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:02	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	
3	STORE	ORG4	A1	22-JUN-2016 07:32	CLS	AWE	

Samplenum	Container ID	Products
L16060411-03	756389	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-JUN-2016 15:02	CLS		
2	PREP	W1	EXT	09-JUN-2016 14:52	EMW	CLS	
3	ANALYZ*	EXT	SEMI	12-JUN-2016 10:23	SCB	EMW	
4	SUBBED	EXT	DISP	14-JUN-2016 10:03	BJO	BJO	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		08-JUN-2016 15:02	CLS		

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060411-03	756390	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-JUN-2016 15:02	CLS		
2	ANALYZ	W1	SEM	10-JUN-2016 08:24	WTD	BRG	
3	STORE	SEM	A1	11-JUN-2016 11:56	AZH	WTD	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060411
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 17-JUN-2016

Samplenum	Container ID	Products
L16060411-03	756391	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-JUN-2016 15:02	CLS		
2	PREP	W1	DIG	08-JUN-2016 15:21	ERP	CLS	
3	ANALYZ*	DIG	METALS	10-JUN-2016 11:05	AMA	ERP	
4	STORE	DIG	A1	13-JUN-2016 13:14	BRG	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060411-04	756392	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:02	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	
3	STORE	ORG4	A1	22-JUN-2016 07:32	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:02	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	
3	STORE	ORG4	A1	22-JUN-2016 07:32	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:02	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	
3	STORE	ORG4	A1	22-JUN-2016 07:32	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060411
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 17-JUN-2016

Samplenum	Container ID	Products
L16060411-04	756393	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-JUN-2016 15:02	CLS		
2	PREP	W1	EXT	09-JUN-2016 14:52	EMW	CLS	
3	ANALYZ*	EXT	SEMI	12-JUN-2016 10:23	SCB	EMW	
4	SUBBED	EXT	DISP	14-JUN-2016 10:03	BJO	BJO	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		08-JUN-2016 15:02	CLS		

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060411-04	756394	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-JUN-2016 15:02	CLS		
2	ANALYZ	W1	SEM	10-JUN-2016 08:24	WTD	BRG	
3	STORE	SEM	A1	11-JUN-2016 11:56	AZH	WTD	

Samplenum	Container ID	Products
L16060411-04	756395	CO-MS CR-MS CU-MS FE HG K MG MN-MS NA NI-MS PE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-JUN-2016 15:02	CLS		
2	PREP	W1	DIG	08-JUN-2016 15:21	ERP	CLS	
3	ANALYZ*	DIG	METALS	10-JUN-2016 11:05	AMA	ERP	
4	STORE	DIG	A1	13-JUN-2016 13:14	BRG	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060411
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 17-JUN-2016

Samplenum	Container ID	Products
L16060411-05	756396	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:02	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	
3	STORE	ORG4	A1	22-JUN-2016 07:32	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:02	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	
3	STORE	ORG4	A1	22-JUN-2016 07:32	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16060414

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Michelle Taylor – Client Services Specialist
(740) 373-4071
Michelle.Taylor@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on June 20 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00113511	I	5.0		J2317165090	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

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Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
AWD1T-060716	L16060414-01	06/07/2016 07:55	06/08/2016 10:01
AWD1B-060716	L16060414-02	06/07/2016 08:45	06/08/2016 10:01
MW14T-060716	L16060414-03	06/07/2016 10:30	06/08/2016 10:01
MW14B-060716	L16060414-04	06/07/2016 11:20	06/08/2016 10:01
TRIP BLANK	L16060414-05	06/07/2016 00:01	06/08/2016 10:01

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Microbac REPORT L16060414
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.0 Summary Data

1.1 Narratives

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060414
Project Name:		**Method:**	8260
Prep Batch Number(s):	572494,572592	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-16 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2016-06-16 18:34:13

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Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060414
Project Name:		**Method:**	8260
Prep Batch Number(s):	572494,572592	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-16 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060414
Project Name:		**Method:**	8260
Prep Batch Number(s):	572494,572592	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-16 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

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Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060414
Project Name:		**Method:**	8260
Prep Batch Number(s):	572494,572592	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-16 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

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Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060414
Project Name:		**Method:**	8260
Prep Batch Number(s):	572494,572592	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-16 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060414
Project Name:		**Method:**	8260
Prep Batch Number(s):	572494,572592	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-16 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1)Bromomethane exceeded the UCL in the CCV analyzed 06/13/2016 on HPMS8.

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Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060414
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG571956	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-17 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-06-17 20:56:06

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060414
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG571956	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-17 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?		X			1
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060414
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG571956	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-17 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060414
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG571956	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-17 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060414
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG571956	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-17 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060414
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG571956	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-17 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. Samples 01 and 02 yielded recoveries for the surrogate that were above the acceptance range. This was due to sample matrix interference.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060414
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572200	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-06-14 16:46:41

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060414
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572200	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060414
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572200	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060414
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572200	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060414
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572200	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060414
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572200	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

1.2 Certificate of Analysis

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060414-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	AWD1T-060716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572592	**Analyst:**	TMB	**Run Date:**	06/14/2016 19:35
Collect Date:	06/07/2016 07:55	**Dilution:**	100	**File ID:**	8M412992
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	500	U	1000	500	250
Benzene	71-43-2	25.0	U	100	25.0	12.5
Bromobenzene	108-86-1	25.0	U	100	25.0	12.5
Bromochloromethane	74-97-5	40.0	U	100	40.0	20.0
Bromodichloromethane	75-27-4	50.0	U	100	50.0	25.0
Bromoform	75-25-2	100	U	200	100	50.0
Bromomethane	74-83-9	100	U	200	100	50.0
2-Butanone	78-93-3	500	U	1000	500	250
n-Butylbenzene	104-51-8	50.0	U	100	50.0	25.0
sec-Butylbenzene	135-98-8	50.0	U	100	50.0	25.0
tert-Butylbenzene	98-06-6	50.0	U	100	50.0	25.0
Carbon disulfide	75-15-0	100	U	200	100	50.0
Carbon tetrachloride	56-23-5	50.0	U	100	50.0	25.0
Chlorobenzene	108-90-7	25.0	U	100	25.0	12.5
Chlorodibromomethane	124-48-1	50.0	U	100	50.0	25.0
Chloroethane	75-00-3	100	U	200	100	50.0
Chloroform	67-66-3	25.0	U	100	25.0	12.5
Chloromethane	74-87-3	100	U	200	100	50.0
2-Chlorotoluene	95-49-8	25.0	U	100	25.0	12.5
4-Chlorotoluene	106-43-4	50.0	U	100	50.0	25.0
1,2-Dibromo-3-chloropropane	96-12-8	200	U	500	200	100
1,2-Dibromoethane	106-93-4	50.0	U	100	50.0	25.0
Dibromomethane	74-95-3	50.0	U	100	50.0	25.0
1,2-Dichlorobenzene	95-50-1	25.0	U	100	25.0	12.5
1,3-Dichlorobenzene	541-73-1	50.0	U	100	50.0	25.0
1,4-Dichlorobenzene	106-46-7	25.0	U	100	25.0	12.5
Dichlorodifluoromethane	75-71-8	50.0	U	100	50.0	25.0
1,1-Dichloroethane	75-34-3	90.5	J	100	25.0	12.5
1,2-Dichloroethane	107-06-2	143		100	50.0	25.0
1,1-Dichloroethene	75-35-4	114	J	200	100	50.0
cis-1,2-Dichloroethene	156-59-2	12000		100	50.0	25.0
trans-1,2-Dichloroethene	156-60-5	50.0	U	100	50.0	25.0

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	40.0	U	100	40.0	20.0
1,3-Dichloropropane	142-28-9	40.0	U	100	40.0	20.0
2,2-Dichloropropane	594-20-7	50.0	U	100	50.0	25.0
cis-1,3-Dichloropropene	10061-01-5	50.0	U	100	50.0	25.0
trans-1,3-Dichloropropene	10061-02-6	100	U	200	100	50.0
1,1-Dichloropropene	563-58-6	50.0	U	100	50.0	25.0
Ethylbenzene	100-41-4	50.0	U	100	50.0	25.0
2-Hexanone	591-78-6	500	U	1000	500	250
Hexachlorobutadiene	87-68-3	50.0	U	100	50.0	25.0
Isopropylbenzene	98-82-8	50.0	U	100	50.0	25.0
p-Isopropyltoluene	99-87-6	50.0	U	100	50.0	25.0
4-Methyl-2-pentanone	108-10-1	500	U	1000	500	250
Methylene chloride	75-09-2	50.0	U	100	50.0	25.0
Naphthalene	91-20-3	40.0	U	100	40.0	20.0
n-Propylbenzene	103-65-1	25.0	U	100	25.0	12.5
Styrene	100-42-5	25.0	U	100	25.0	12.5
1,1,1,2-Tetrachloroethane	630-20-6	50.0	U	100	50.0	25.0
1,1,2,2-Tetrachloroethane	79-34-5	40.0	U	100	40.0	20.0
Tetrachloroethene	127-18-4	50.0	U	100	50.0	25.0
Toluene	108-88-3	50.0	U	100	50.0	25.0
1,2,3-Trichlorobenzene	87-61-6	30.0	U	100	30.0	15.0
1,2,4-Trichlorobenzene	120-82-1	40.0	U	100	40.0	20.0
1,1,1-Trichloroethane	71-55-6	50.0	U	100	50.0	25.0
1,1,2-Trichloroethane	79-00-5	50.0	U	100	50.0	25.0
Trichloroethene	79-01-6	6300		100	50.0	25.0
Trichlorofluoromethane	75-69-4	50.0	U	100	50.0	25.0
1,2,3-Trichloropropane	96-18-4	100	U	200	100	50.0
1,2,4-Trimethylbenzene	95-63-6	50.0	U	100	50.0	25.0
1,3,5-Trimethylbenzene	108-67-8	50.0	U	100	50.0	25.0
Vinyl chloride	75-01-4	177		100	50.0	25.0
o-Xylene	95-47-6	50.0	U	100	50.0	25.0
m-,p-Xylene	179601-23-1	100	U	200	100	50.0

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	114	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	102	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060414-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	AWD1T-060716	**Prep Method:**	3520C	**Prep Date:**	06/11/2016 13:19
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572361	**Analyst:**	MES	**Run Date:**	06/13/2016 12:35
Collect Date:	06/07/2016 07:55	**Dilution:**	1	**File ID:**	15M18373
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	5.74	J	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	1060	20	129	*

J	The reported result is an estimated value.

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060414-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	AWD1T-060716	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/10/2016 18:02
Collect Date:	06/07/2016 07:55	**Dilution:**	1	**File ID:**	1LM.LM35251
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060414-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	AWD1B-060716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572592	**Analyst:**	TMB	**Run Date:**	06/14/2016 20:05
Collect Date:	06/07/2016 08:45	**Dilution:**	100	**File ID:**	8M412993
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	500	U	1000	500	250
Benzene	71-43-2	25.0	U	100	25.0	12.5
Bromobenzene	108-86-1	25.0	U	100	25.0	12.5
Bromochloromethane	74-97-5	40.0	U	100	40.0	20.0
Bromodichloromethane	75-27-4	50.0	U	100	50.0	25.0
Bromoform	75-25-2	100	U	200	100	50.0
Bromomethane	74-83-9	100	U	200	100	50.0
2-Butanone	78-93-3	500	U	1000	500	250
n-Butylbenzene	104-51-8	50.0	U	100	50.0	25.0
sec-Butylbenzene	135-98-8	50.0	U	100	50.0	25.0
tert-Butylbenzene	98-06-6	50.0	U	100	50.0	25.0
Carbon disulfide	75-15-0	100	U	200	100	50.0
Carbon tetrachloride	56-23-5	50.0	U	100	50.0	25.0
Chlorobenzene	108-90-7	25.0	U	100	25.0	12.5
Chlorodibromomethane	124-48-1	50.0	U	100	50.0	25.0
Chloroethane	75-00-3	100	U	200	100	50.0
Chloroform	67-66-3	25.0	U	100	25.0	12.5
Chloromethane	74-87-3	100	U	200	100	50.0
2-Chlorotoluene	95-49-8	25.0	U	100	25.0	12.5
4-Chlorotoluene	106-43-4	50.0	U	100	50.0	25.0
1,2-Dibromo-3-chloropropane	96-12-8	200	U	500	200	100
1,2-Dibromoethane	106-93-4	50.0	U	100	50.0	25.0
Dibromomethane	74-95-3	50.0	U	100	50.0	25.0
1,2-Dichlorobenzene	95-50-1	25.0	U	100	25.0	12.5
1,3-Dichlorobenzene	541-73-1	50.0	U	100	50.0	25.0
1,4-Dichlorobenzene	106-46-7	25.0	U	100	25.0	12.5
Dichlorodifluoromethane	75-71-8	50.0	U	100	50.0	25.0
1,1-Dichloroethane	75-34-3	113		100	25.0	12.5
1,2-Dichloroethane	107-06-2	158		100	50.0	25.0
1,1-Dichloroethene	75-35-4	158	J	200	100	50.0
cis-1,2-Dichloroethene	156-59-2	14100		100	50.0	25.0

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	50.0	U	100	50.0	25.0
1,2-Dichloropropane	78-87-5	40.0	U	100	40.0	20.0
1,3-Dichloropropane	142-28-9	40.0	U	100	40.0	20.0
2,2-Dichloropropane	594-20-7	50.0	U	100	50.0	25.0
cis-1,3-Dichloropropene	10061-01-5	50.0	U	100	50.0	25.0
trans-1,3-Dichloropropene	10061-02-6	100	U	200	100	50.0
1,1-Dichloropropene	563-58-6	50.0	U	100	50.0	25.0
Ethylbenzene	100-41-4	50.0	U	100	50.0	25.0
2-Hexanone	591-78-6	500	U	1000	500	250
Hexachlorobutadiene	87-68-3	50.0	U	100	50.0	25.0
Isopropylbenzene	98-82-8	50.0	U	100	50.0	25.0
p-Isopropyltoluene	99-87-6	50.0	U	100	50.0	25.0
4-Methyl-2-pentanone	108-10-1	500	U	1000	500	250
Methylene chloride	75-09-2	95.1	J	100	50.0	25.0
Naphthalene	91-20-3	40.0	U	100	40.0	20.0
n-Propylbenzene	103-65-1	25.0	U	100	25.0	12.5
Styrene	100-42-5	25.0	U	100	25.0	12.5
1,1,1,2-Tetrachloroethane	630-20-6	50.0	U	100	50.0	25.0
1,1,2,2-Tetrachloroethane	79-34-5	40.0	U	100	40.0	20.0
Tetrachloroethene	127-18-4	50.0	U	100	50.0	25.0
Toluene	108-88-3	50.0	U	100	50.0	25.0
1,2,3-Trichlorobenzene	87-61-6	30.0	U	100	30.0	15.0
1,2,4-Trichlorobenzene	120-82-1	40.0	U	100	40.0	20.0
1,1,1-Trichloroethane	71-55-6	50.0	U	100	50.0	25.0
1,1,2-Trichloroethane	79-00-5	50.0	U	100	50.0	25.0
Trichloroethene	79-01-6	7120		100	50.0	25.0
Trichlorofluoromethane	75-69-4	50.0	U	100	50.0	25.0
1,2,3-Trichloropropane	96-18-4	100	U	200	100	50.0
1,2,4-Trimethylbenzene	95-63-6	50.0	U	100	50.0	25.0
1,3,5-Trimethylbenzene	108-67-8	50.0	U	100	50.0	25.0
Vinyl chloride	75-01-4	256		100	50.0	25.0
o-Xylene	95-47-6	50.0	U	100	50.0	25.0
m-,p-Xylene	179601-23-1	100	U	200	100	50.0

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	113	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	98.1	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060414-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	AWD1B-060716	**Prep Method:**	3520C	**Prep Date:**	06/11/2016 13:19
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572361	**Analyst:**	MES	**Run Date:**	06/13/2016 12:58
Collect Date:	06/07/2016 08:45	**Dilution:**	1	**File ID:**	15M18374
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	7.14	J	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	1950	20	129	*

J	The reported result is an estimated value.

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060414-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	AWD1B-060716	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/10/2016 18:21
Collect Date:	06/07/2016 08:45	**Dilution:**	1	**File ID:**	1LM.LM35252
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	4.92		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16060414-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW14T-060716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572592	**Analyst:**	TMB	**Run Date:**	06/14/2016 20:34
Collect Date:	06/07/2016 10:30	**Dilution:**	100	**File ID:**	8M412994
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	500	U	1000	500	250
Benzene	71-43-2	25.0	U	100	25.0	12.5
Bromobenzene	108-86-1	25.0	U	100	25.0	12.5
Bromochloromethane	74-97-5	40.0	U	100	40.0	20.0
Bromodichloromethane	75-27-4	50.0	U	100	50.0	25.0
Bromoform	75-25-2	100	U	200	100	50.0
Bromomethane	74-83-9	100	U	200	100	50.0
2-Butanone	78-93-3	500	U	1000	500	250
n-Butylbenzene	104-51-8	50.0	U	100	50.0	25.0
sec-Butylbenzene	135-98-8	50.0	U	100	50.0	25.0
tert-Butylbenzene	98-06-6	50.0	U	100	50.0	25.0
Carbon disulfide	75-15-0	100	U	200	100	50.0
Carbon tetrachloride	56-23-5	50.0	U	100	50.0	25.0
Chlorobenzene	108-90-7	25.0	U	100	25.0	12.5
Chlorodibromomethane	124-48-1	50.0	U	100	50.0	25.0
Chloroethane	75-00-3	100	U	200	100	50.0
Chloroform	67-66-3	25.0	U	100	25.0	12.5
Chloromethane	74-87-3	100	U	200	100	50.0
2-Chlorotoluene	95-49-8	25.0	U	100	25.0	12.5
4-Chlorotoluene	106-43-4	50.0	U	100	50.0	25.0

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Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	200	U	500	200	100
1,2-Dibromoethane	106-93-4	50.0	U	100	50.0	25.0
Dibromomethane	74-95-3	50.0	U	100	50.0	25.0
1,2-Dichlorobenzene	95-50-1	25.0	U	100	25.0	12.5
1,3-Dichlorobenzene	541-73-1	50.0	U	100	50.0	25.0
1,4-Dichlorobenzene	106-46-7	25.0	U	100	25.0	12.5
Dichlorodifluoromethane	75-71-8	50.0	U	100	50.0	25.0
1,1-Dichloroethane	75-34-3	34.7	J	100	25.0	12.5
1,2-Dichloroethane	107-06-2	114		100	50.0	25.0
1,1-Dichloroethene	75-35-4	154	J	200	100	50.0
cis-1,2-Dichloroethene	156-59-2	2600		100	50.0	25.0
trans-1,2-Dichloroethene	156-60-5	50.0	U	100	50.0	25.0
1,2-Dichloropropane	78-87-5	40.0	U	100	40.0	20.0
1,3-Dichloropropane	142-28-9	40.0	U	100	40.0	20.0
2,2-Dichloropropane	594-20-7	50.0	U	100	50.0	25.0
cis-1,3-Dichloropropene	10061-01-5	50.0	U	100	50.0	25.0
trans-1,3-Dichloropropene	10061-02-6	100	U	200	100	50.0
1,1-Dichloropropene	563-58-6	50.0	U	100	50.0	25.0
Ethylbenzene	100-41-4	50.0	U	100	50.0	25.0
2-Hexanone	591-78-6	500	U	1000	500	250
Hexachlorobutadiene	87-68-3	50.0	U	100	50.0	25.0
Isopropylbenzene	98-82-8	50.0	U	100	50.0	25.0
p-Isopropyltoluene	99-87-6	50.0	U	100	50.0	25.0
4-Methyl-2-pentanone	108-10-1	500	U	1000	500	250
Methylene chloride	75-09-2	50.0	U	100	50.0	25.0
Naphthalene	91-20-3	40.0	U	100	40.0	20.0
n-Propylbenzene	103-65-1	25.0	U	100	25.0	12.5
Styrene	100-42-5	25.0	U	100	25.0	12.5
1,1,1,2-Tetrachloroethane	630-20-6	50.0	U	100	50.0	25.0
1,1,2,2-Tetrachloroethane	79-34-5	40.0	U	100	40.0	20.0
Tetrachloroethene	127-18-4	50.0	U	100	50.0	25.0
Toluene	108-88-3	50.0	U	100	50.0	25.0
1,2,3-Trichlorobenzene	87-61-6	30.0	U	100	30.0	15.0
1,2,4-Trichlorobenzene	120-82-1	40.0	U	100	40.0	20.0
1,1,1-Trichloroethane	71-55-6	50.0	U	100	50.0	25.0
1,1,2-Trichloroethane	79-00-5	50.0	U	100	50.0	25.0
Trichloroethene	79-01-6	12700		100	50.0	25.0
Trichlorofluoromethane	75-69-4	50.0	U	100	50.0	25.0
1,2,3-Trichloropropane	96-18-4	100	U	200	100	50.0

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Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	50.0	U	100	50.0	25.0
1,3,5-Trimethylbenzene	108-67-8	50.0	U	100	50.0	25.0
Vinyl chloride	75-01-4	50.0	U	100	50.0	25.0
o-Xylene	95-47-6	50.0	U	100	50.0	25.0
m-,p-Xylene	179601-23-1	100	U	200	100	50.0

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	114	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	100	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060414-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	MW14T-060716	**Prep Method:**	3520C	**Prep Date:**	06/11/2016 13:19
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572361	**Analyst:**	MES	**Run Date:**	06/13/2016 15:14
Collect Date:	06/07/2016 10:30	**Dilution:**	50	**File ID:**	15M18380
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	390		100	50.0	25.0

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	0.000	20	129	*

Certificate of Analysis

Sample #:	L16060414-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW14T-060716	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/11/2016 14:55
Collect Date:	06/07/2016 10:30	**Dilution:**	100000	**File ID:**	1LM.LM35290
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	177000		40000	20000	10000

Certificate of Analysis

Sample #:	L16060414-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW14B-060716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572592	**Analyst:**	TMB	**Run Date:**	06/14/2016 21:03
Collect Date:	06/07/2016 11:20	**Dilution:**	100	**File ID:**	8M412995
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	500	U	1000	500	250
Benzene	71-43-2	25.0	U	100	25.0	12.5
Bromobenzene	108-86-1	25.0	U	100	25.0	12.5
Bromochloromethane	74-97-5	40.0	U	100	40.0	20.0
Bromodichloromethane	75-27-4	50.0	U	100	50.0	25.0
Bromoform	75-25-2	100	U	200	100	50.0
Bromomethane	74-83-9	100	U	200	100	50.0

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Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
2-Butanone	78-93-3	500	U	1000	500	250
n-Butylbenzene	104-51-8	50.0	U	100	50.0	25.0
sec-Butylbenzene	135-98-8	50.0	U	100	50.0	25.0
tert-Butylbenzene	98-06-6	50.0	U	100	50.0	25.0
Carbon disulfide	75-15-0	100	U	200	100	50.0
Carbon tetrachloride	56-23-5	50.0	U	100	50.0	25.0
Chlorobenzene	108-90-7	25.0	U	100	25.0	12.5
Chlorodibromomethane	124-48-1	50.0	U	100	50.0	25.0
Chloroethane	75-00-3	100	U	200	100	50.0
Chloroform	67-66-3	13.2	J	100	25.0	12.5
Chloromethane	74-87-3	100	U	200	100	50.0
2-Chlorotoluene	95-49-8	25.0	U	100	25.0	12.5
4-Chlorotoluene	106-43-4	50.0	U	100	50.0	25.0
1,2-Dibromo-3-chloropropane	96-12-8	200	U	500	200	100
1,2-Dibromoethane	106-93-4	50.0	U	100	50.0	25.0
Dibromomethane	74-95-3	50.0	U	100	50.0	25.0
1,2-Dichlorobenzene	95-50-1	25.0	U	100	25.0	12.5
1,3-Dichlorobenzene	541-73-1	50.0	U	100	50.0	25.0
1,4-Dichlorobenzene	106-46-7	25.0	U	100	25.0	12.5
Dichlorodifluoromethane	75-71-8	50.0	U	100	50.0	25.0
1,1-Dichloroethane	75-34-3	37.3	J	100	25.0	12.5
1,2-Dichloroethane	107-06-2	140		100	50.0	25.0
1,1-Dichloroethene	75-35-4	195	J	200	100	50.0
cis-1,2-Dichloroethene	156-59-2	2550		100	50.0	25.0
trans-1,2-Dichloroethene	156-60-5	50.0	U	100	50.0	25.0
1,2-Dichloropropane	78-87-5	40.0	U	100	40.0	20.0
1,3-Dichloropropane	142-28-9	40.0	U	100	40.0	20.0
2,2-Dichloropropane	594-20-7	50.0	U	100	50.0	25.0
cis-1,3-Dichloropropene	10061-01-5	50.0	U	100	50.0	25.0
trans-1,3-Dichloropropene	10061-02-6	100	U	200	100	50.0
1,1-Dichloropropene	563-58-6	50.0	U	100	50.0	25.0
Ethylbenzene	100-41-4	50.0	U	100	50.0	25.0
2-Hexanone	591-78-6	500	U	1000	500	250
Hexachlorobutadiene	87-68-3	50.0	U	100	50.0	25.0
Isopropylbenzene	98-82-8	50.0	U	100	50.0	25.0
p-Isopropyltoluene	99-87-6	50.0	U	100	50.0	25.0
4-Methyl-2-pentanone	108-10-1	500	U	1000	500	250
Methylene chloride	75-09-2	53.5	J	100	50.0	25.0
Naphthalene	91-20-3	40.0	U	100	40.0	20.0

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Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
n-Propylbenzene	103-65-1	25.0	U	100	25.0	12.5
Styrene	100-42-5	25.0	U	100	25.0	12.5
1,1,1,2-Tetrachloroethane	630-20-6	50.0	U	100	50.0	25.0
1,1,2,2-Tetrachloroethane	79-34-5	40.0	U	100	40.0	20.0
Tetrachloroethene	127-18-4	50.0	U	100	50.0	25.0
Toluene	108-88-3	50.0	U	100	50.0	25.0
1,2,3-Trichlorobenzene	87-61-6	30.0	U	100	30.0	15.0
1,2,4-Trichlorobenzene	120-82-1	40.0	U	100	40.0	20.0
1,1,1-Trichloroethane	71-55-6	50.0	U	100	50.0	25.0
1,1,2-Trichloroethane	79-00-5	50.0	U	100	50.0	25.0
Trichloroethene	79-01-6	15900		100	50.0	25.0
Trichlorofluoromethane	75-69-4	50.0	U	100	50.0	25.0
1,2,3-Trichloropropane	96-18-4	100	U	200	100	50.0
1,2,4-Trimethylbenzene	95-63-6	50.0	U	100	50.0	25.0
1,3,5-Trimethylbenzene	108-67-8	50.0	U	100	50.0	25.0
Vinyl chloride	75-01-4	50.0	U	100	50.0	25.0
o-Xylene	95-47-6	50.0	U	100	50.0	25.0
m-,p-Xylene	179601-23-1	100	U	200	100	50.0

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	115	70	120	
Toluene-d8	106	85	120	
4-Bromofluorobenzene	100	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060414-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	MW14B-060716	**Prep Method:**	3520C	**Prep Date:**	06/11/2016 13:19
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572361	**Analyst:**	MES	**Run Date:**	06/13/2016 15:36
Collect Date:	06/07/2016 11:20	**Dilution:**	50	**File ID:**	15M18381
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	412		110	55.0	27.5

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	0.000	20	129	*

Certificate of Analysis

Sample #:	L16060414-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW14B-060716	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/11/2016 15:15
Collect Date:	06/07/2016 11:20	**Dilution:**	100000	**File ID:**	1LM.LM35291
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	229000		40000	20000	10000

Certificate of Analysis

Sample #:	L16060414-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572494	**Analyst:**	TMB	**Run Date:**	06/13/2016 18:25
Collect Date:	06/07/2016 00:01	**Dilution:**	1	**File ID:**	8M412952
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500

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Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200

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Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	109	85	115	
1,2-Dichloroethane-d4	114	70	120	
Toluene-d8	106	85	120	
4-Bromofluorobenzene	99.6	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060414-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	AWD1T-060716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572592	**Analyst:**	TMB	**Run Date:**	06/14/2016 19:35
Collect Date:	06/07/2016 07:55	**Dilution:**	100	**File ID:**	8M412992
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	500	U	1000	500	250
Benzene	71-43-2	25.0	U	100	25.0	12.5
Bromobenzene	108-86-1	25.0	U	100	25.0	12.5
Bromochloromethane	74-97-5	40.0	U	100	40.0	20.0
Bromodichloromethane	75-27-4	50.0	U	100	50.0	25.0
Bromoform	75-25-2	100	U	200	100	50.0
Bromomethane	74-83-9	100	U	200	100	50.0
2-Butanone	78-93-3	500	U	1000	500	250
n-Butylbenzene	104-51-8	50.0	U	100	50.0	25.0
sec-Butylbenzene	135-98-8	50.0	U	100	50.0	25.0
tert-Butylbenzene	98-06-6	50.0	U	100	50.0	25.0
Carbon disulfide	75-15-0	100	U	200	100	50.0
Carbon tetrachloride	56-23-5	50.0	U	100	50.0	25.0
Chlorobenzene	108-90-7	25.0	U	100	25.0	12.5
Chlorodibromomethane	124-48-1	50.0	U	100	50.0	25.0
Chloroethane	75-00-3	100	U	200	100	50.0
Chloroform	67-66-3	25.0	U	100	25.0	12.5
Chloromethane	74-87-3	100	U	200	100	50.0
2-Chlorotoluene	95-49-8	25.0	U	100	25.0	12.5
4-Chlorotoluene	106-43-4	50.0	U	100	50.0	25.0
1,2-Dibromo-3-chloropropane	96-12-8	200	U	500	200	100
1,2-Dibromoethane	106-93-4	50.0	U	100	50.0	25.0
Dibromomethane	74-95-3	50.0	U	100	50.0	25.0
1,2-Dichlorobenzene	95-50-1	25.0	U	100	25.0	12.5
1,3-Dichlorobenzene	541-73-1	50.0	U	100	50.0	25.0
1,4-Dichlorobenzene	106-46-7	25.0	U	100	25.0	12.5
Dichlorodifluoromethane	75-71-8	50.0	U	100	50.0	25.0
1,1-Dichloroethane	75-34-3	90.5	J	100	25.0	12.5
1,2-Dichloroethane	107-06-2	143		100	50.0	25.0
1,1-Dichloroethene	75-35-4	114	J	200	100	50.0
cis-1,2-Dichloroethene	156-59-2	12000		100	50.0	25.0
trans-1,2-Dichloroethene	156-60-5	50.0	U	100	50.0	25.0

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	40.0	U	100	40.0	20.0
1,3-Dichloropropane	142-28-9	40.0	U	100	40.0	20.0
2,2-Dichloropropane	594-20-7	50.0	U	100	50.0	25.0
cis-1,3-Dichloropropene	10061-01-5	50.0	U	100	50.0	25.0
trans-1,3-Dichloropropene	10061-02-6	100	U	200	100	50.0
1,1-Dichloropropene	563-58-6	50.0	U	100	50.0	25.0
Ethylbenzene	100-41-4	50.0	U	100	50.0	25.0
2-Hexanone	591-78-6	500	U	1000	500	250
Hexachlorobutadiene	87-68-3	50.0	U	100	50.0	25.0
Isopropylbenzene	98-82-8	50.0	U	100	50.0	25.0
p-Isopropyltoluene	99-87-6	50.0	U	100	50.0	25.0
4-Methyl-2-pentanone	108-10-1	500	U	1000	500	250
Methylene chloride	75-09-2	50.0	U	100	50.0	25.0
Naphthalene	91-20-3	40.0	U	100	40.0	20.0
n-Propylbenzene	103-65-1	25.0	U	100	25.0	12.5
Styrene	100-42-5	25.0	U	100	25.0	12.5
1,1,1,2-Tetrachloroethane	630-20-6	50.0	U	100	50.0	25.0
1,1,2,2-Tetrachloroethane	79-34-5	40.0	U	100	40.0	20.0
Tetrachloroethene	127-18-4	50.0	U	100	50.0	25.0
Toluene	108-88-3	50.0	U	100	50.0	25.0
1,2,3-Trichlorobenzene	87-61-6	30.0	U	100	30.0	15.0
1,2,4-Trichlorobenzene	120-82-1	40.0	U	100	40.0	20.0
1,1,1-Trichloroethane	71-55-6	50.0	U	100	50.0	25.0
1,1,2-Trichloroethane	79-00-5	50.0	U	100	50.0	25.0
Trichloroethene	79-01-6	6300		100	50.0	25.0
Trichlorofluoromethane	75-69-4	50.0	U	100	50.0	25.0
1,2,3-Trichloropropane	96-18-4	100	U	200	100	50.0
1,2,4-Trimethylbenzene	95-63-6	50.0	U	100	50.0	25.0
1,3,5-Trimethylbenzene	108-67-8	50.0	U	100	50.0	25.0
Vinyl chloride	75-01-4	177		100	50.0	25.0
o-Xylene	95-47-6	50.0	U	100	50.0	25.0
m-,p-Xylene	179601-23-1	100	U	200	100	50.0

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	114	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	102	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060414-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	AWD1B-060716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572592	**Analyst:**	TMB	**Run Date:**	06/14/2016 20:05
Collect Date:	06/07/2016 08:45	**Dilution:**	100	**File ID:**	8M412993
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	500	U	1000	500	250
Benzene	71-43-2	25.0	U	100	25.0	12.5
Bromobenzene	108-86-1	25.0	U	100	25.0	12.5
Bromochloromethane	74-97-5	40.0	U	100	40.0	20.0
Bromodichloromethane	75-27-4	50.0	U	100	50.0	25.0
Bromoform	75-25-2	100	U	200	100	50.0
Bromomethane	74-83-9	100	U	200	100	50.0
2-Butanone	78-93-3	500	U	1000	500	250
n-Butylbenzene	104-51-8	50.0	U	100	50.0	25.0
sec-Butylbenzene	135-98-8	50.0	U	100	50.0	25.0
tert-Butylbenzene	98-06-6	50.0	U	100	50.0	25.0
Carbon disulfide	75-15-0	100	U	200	100	50.0
Carbon tetrachloride	56-23-5	50.0	U	100	50.0	25.0
Chlorobenzene	108-90-7	25.0	U	100	25.0	12.5
Chlorodibromomethane	124-48-1	50.0	U	100	50.0	25.0
Chloroethane	75-00-3	100	U	200	100	50.0
Chloroform	67-66-3	25.0	U	100	25.0	12.5
Chloromethane	74-87-3	100	U	200	100	50.0
2-Chlorotoluene	95-49-8	25.0	U	100	25.0	12.5
4-Chlorotoluene	106-43-4	50.0	U	100	50.0	25.0
1,2-Dibromo-3-chloropropane	96-12-8	200	U	500	200	100
1,2-Dibromoethane	106-93-4	50.0	U	100	50.0	25.0
Dibromomethane	74-95-3	50.0	U	100	50.0	25.0
1,2-Dichlorobenzene	95-50-1	25.0	U	100	25.0	12.5
1,3-Dichlorobenzene	541-73-1	50.0	U	100	50.0	25.0
1,4-Dichlorobenzene	106-46-7	25.0	U	100	25.0	12.5
Dichlorodifluoromethane	75-71-8	50.0	U	100	50.0	25.0
1,1-Dichloroethane	75-34-3	113		100	25.0	12.5
1,2-Dichloroethane	107-06-2	158		100	50.0	25.0
1,1-Dichloroethene	75-35-4	158	J	200	100	50.0
cis-1,2-Dichloroethene	156-59-2	14100		100	50.0	25.0

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	50.0	U	100	50.0	25.0
1,2-Dichloropropane	78-87-5	40.0	U	100	40.0	20.0
1,3-Dichloropropane	142-28-9	40.0	U	100	40.0	20.0
2,2-Dichloropropane	594-20-7	50.0	U	100	50.0	25.0
cis-1,3-Dichloropropene	10061-01-5	50.0	U	100	50.0	25.0
trans-1,3-Dichloropropene	10061-02-6	100	U	200	100	50.0
1,1-Dichloropropene	563-58-6	50.0	U	100	50.0	25.0
Ethylbenzene	100-41-4	50.0	U	100	50.0	25.0
2-Hexanone	591-78-6	500	U	1000	500	250
Hexachlorobutadiene	87-68-3	50.0	U	100	50.0	25.0
Isopropylbenzene	98-82-8	50.0	U	100	50.0	25.0
p-Isopropyltoluene	99-87-6	50.0	U	100	50.0	25.0
4-Methyl-2-pentanone	108-10-1	500	U	1000	500	250
Methylene chloride	75-09-2	95.1	J	100	50.0	25.0
Naphthalene	91-20-3	40.0	U	100	40.0	20.0
n-Propylbenzene	103-65-1	25.0	U	100	25.0	12.5
Styrene	100-42-5	25.0	U	100	25.0	12.5
1,1,1,2-Tetrachloroethane	630-20-6	50.0	U	100	50.0	25.0
1,1,2,2-Tetrachloroethane	79-34-5	40.0	U	100	40.0	20.0
Tetrachloroethene	127-18-4	50.0	U	100	50.0	25.0
Toluene	108-88-3	50.0	U	100	50.0	25.0
1,2,3-Trichlorobenzene	87-61-6	30.0	U	100	30.0	15.0
1,2,4-Trichlorobenzene	120-82-1	40.0	U	100	40.0	20.0
1,1,1-Trichloroethane	71-55-6	50.0	U	100	50.0	25.0
1,1,2-Trichloroethane	79-00-5	50.0	U	100	50.0	25.0
Trichloroethene	79-01-6	7120		100	50.0	25.0
Trichlorofluoromethane	75-69-4	50.0	U	100	50.0	25.0
1,2,3-Trichloropropane	96-18-4	100	U	200	100	50.0
1,2,4-Trimethylbenzene	95-63-6	50.0	U	100	50.0	25.0
1,3,5-Trimethylbenzene	108-67-8	50.0	U	100	50.0	25.0
Vinyl chloride	75-01-4	256		100	50.0	25.0
o-Xylene	95-47-6	50.0	U	100	50.0	25.0
m-,p-Xylene	179601-23-1	100	U	200	100	50.0

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	113	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	98.1	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060414-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW14T-060716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572592	**Analyst:**	TMB	**Run Date:**	06/14/2016 20:34
Collect Date:	06/07/2016 10:30	**Dilution:**	100	**File ID:**	8M412994
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	500	U	1000	500	250
Benzene	71-43-2	25.0	U	100	25.0	12.5
Bromobenzene	108-86-1	25.0	U	100	25.0	12.5
Bromochloromethane	74-97-5	40.0	U	100	40.0	20.0
Bromodichloromethane	75-27-4	50.0	U	100	50.0	25.0
Bromoform	75-25-2	100	U	200	100	50.0
Bromomethane	74-83-9	100	U	200	100	50.0
2-Butanone	78-93-3	500	U	1000	500	250
n-Butylbenzene	104-51-8	50.0	U	100	50.0	25.0
sec-Butylbenzene	135-98-8	50.0	U	100	50.0	25.0
tert-Butylbenzene	98-06-6	50.0	U	100	50.0	25.0
Carbon disulfide	75-15-0	100	U	200	100	50.0
Carbon tetrachloride	56-23-5	50.0	U	100	50.0	25.0
Chlorobenzene	108-90-7	25.0	U	100	25.0	12.5
Chlorodibromomethane	124-48-1	50.0	U	100	50.0	25.0
Chloroethane	75-00-3	100	U	200	100	50.0
Chloroform	67-66-3	25.0	U	100	25.0	12.5
Chloromethane	74-87-3	100	U	200	100	50.0
2-Chlorotoluene	95-49-8	25.0	U	100	25.0	12.5
4-Chlorotoluene	106-43-4	50.0	U	100	50.0	25.0
1,2-Dibromo-3-chloropropane	96-12-8	200	U	500	200	100
1,2-Dibromoethane	106-93-4	50.0	U	100	50.0	25.0
Dibromomethane	74-95-3	50.0	U	100	50.0	25.0
1,2-Dichlorobenzene	95-50-1	25.0	U	100	25.0	12.5
1,3-Dichlorobenzene	541-73-1	50.0	U	100	50.0	25.0
1,4-Dichlorobenzene	106-46-7	25.0	U	100	25.0	12.5
Dichlorodifluoromethane	75-71-8	50.0	U	100	50.0	25.0
1,1-Dichloroethane	75-34-3	34.7	J	100	25.0	12.5
1,2-Dichloroethane	107-06-2	114		100	50.0	25.0
1,1-Dichloroethene	75-35-4	154	J	200	100	50.0
cis-1,2-Dichloroethene	156-59-2	2600		100	50.0	25.0

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	50.0	U	100	50.0	25.0
1,2-Dichloropropane	78-87-5	40.0	U	100	40.0	20.0
1,3-Dichloropropane	142-28-9	40.0	U	100	40.0	20.0
2,2-Dichloropropane	594-20-7	50.0	U	100	50.0	25.0
cis-1,3-Dichloropropene	10061-01-5	50.0	U	100	50.0	25.0
trans-1,3-Dichloropropene	10061-02-6	100	U	200	100	50.0
1,1-Dichloropropene	563-58-6	50.0	U	100	50.0	25.0
Ethylbenzene	100-41-4	50.0	U	100	50.0	25.0
2-Hexanone	591-78-6	500	U	1000	500	250
Hexachlorobutadiene	87-68-3	50.0	U	100	50.0	25.0
Isopropylbenzene	98-82-8	50.0	U	100	50.0	25.0
p-Isopropyltoluene	99-87-6	50.0	U	100	50.0	25.0
4-Methyl-2-pentanone	108-10-1	500	U	1000	500	250
Methylene chloride	75-09-2	50.0	U	100	50.0	25.0
Naphthalene	91-20-3	40.0	U	100	40.0	20.0
n-Propylbenzene	103-65-1	25.0	U	100	25.0	12.5
Styrene	100-42-5	25.0	U	100	25.0	12.5
1,1,1,2-Tetrachloroethane	630-20-6	50.0	U	100	50.0	25.0
1,1,2,2-Tetrachloroethane	79-34-5	40.0	U	100	40.0	20.0
Tetrachloroethene	127-18-4	50.0	U	100	50.0	25.0
Toluene	108-88-3	50.0	U	100	50.0	25.0
1,2,3-Trichlorobenzene	87-61-6	30.0	U	100	30.0	15.0
1,2,4-Trichlorobenzene	120-82-1	40.0	U	100	40.0	20.0
1,1,1-Trichloroethane	71-55-6	50.0	U	100	50.0	25.0
1,1,2-Trichloroethane	79-00-5	50.0	U	100	50.0	25.0
Trichloroethene	79-01-6	12700		100	50.0	25.0
Trichlorofluoromethane	75-69-4	50.0	U	100	50.0	25.0
1,2,3-Trichloropropane	96-18-4	100	U	200	100	50.0
1,2,4-Trimethylbenzene	95-63-6	50.0	U	100	50.0	25.0
1,3,5-Trimethylbenzene	108-67-8	50.0	U	100	50.0	25.0
Vinyl chloride	75-01-4	50.0	U	100	50.0	25.0
o-Xylene	95-47-6	50.0	U	100	50.0	25.0
m-,p-Xylene	179601-23-1	100	U	200	100	50.0

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	114	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	100	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060414-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW14B-060716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572592	**Analyst:**	TMB	**Run Date:**	06/14/2016 21:03
Collect Date:	06/07/2016 11:20	**Dilution:**	100	**File ID:**	8M412995
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	500	U	1000	500	250
Benzene	71-43-2	25.0	U	100	25.0	12.5
Bromobenzene	108-86-1	25.0	U	100	25.0	12.5
Bromochloromethane	74-97-5	40.0	U	100	40.0	20.0
Bromodichloromethane	75-27-4	50.0	U	100	50.0	25.0
Bromoform	75-25-2	100	U	200	100	50.0
Bromomethane	74-83-9	100	U	200	100	50.0
2-Butanone	78-93-3	500	U	1000	500	250
n-Butylbenzene	104-51-8	50.0	U	100	50.0	25.0
sec-Butylbenzene	135-98-8	50.0	U	100	50.0	25.0
tert-Butylbenzene	98-06-6	50.0	U	100	50.0	25.0
Carbon disulfide	75-15-0	100	U	200	100	50.0
Carbon tetrachloride	56-23-5	50.0	U	100	50.0	25.0
Chlorobenzene	108-90-7	25.0	U	100	25.0	12.5
Chlorodibromomethane	124-48-1	50.0	U	100	50.0	25.0
Chloroethane	75-00-3	100	U	200	100	50.0
Chloroform	67-66-3	13.2	J	100	25.0	12.5
Chloromethane	74-87-3	100	U	200	100	50.0
2-Chlorotoluene	95-49-8	25.0	U	100	25.0	12.5
4-Chlorotoluene	106-43-4	50.0	U	100	50.0	25.0
1,2-Dibromo-3-chloropropane	96-12-8	200	U	500	200	100
1,2-Dibromoethane	106-93-4	50.0	U	100	50.0	25.0
Dibromomethane	74-95-3	50.0	U	100	50.0	25.0
1,2-Dichlorobenzene	95-50-1	25.0	U	100	25.0	12.5
1,3-Dichlorobenzene	541-73-1	50.0	U	100	50.0	25.0
1,4-Dichlorobenzene	106-46-7	25.0	U	100	25.0	12.5
Dichlorodifluoromethane	75-71-8	50.0	U	100	50.0	25.0
1,1-Dichloroethane	75-34-3	37.3	J	100	25.0	12.5
1,2-Dichloroethane	107-06-2	140		100	50.0	25.0
1,1-Dichloroethene	75-35-4	195	J	200	100	50.0
cis-1,2-Dichloroethene	156-59-2	2550		100	50.0	25.0

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	50.0	U	100	50.0	25.0
1,2-Dichloropropane	78-87-5	40.0	U	100	40.0	20.0
1,3-Dichloropropane	142-28-9	40.0	U	100	40.0	20.0
2,2-Dichloropropane	594-20-7	50.0	U	100	50.0	25.0
cis-1,3-Dichloropropene	10061-01-5	50.0	U	100	50.0	25.0
trans-1,3-Dichloropropene	10061-02-6	100	U	200	100	50.0
1,1-Dichloropropene	563-58-6	50.0	U	100	50.0	25.0
Ethylbenzene	100-41-4	50.0	U	100	50.0	25.0
2-Hexanone	591-78-6	500	U	1000	500	250
Hexachlorobutadiene	87-68-3	50.0	U	100	50.0	25.0
Isopropylbenzene	98-82-8	50.0	U	100	50.0	25.0
p-Isopropyltoluene	99-87-6	50.0	U	100	50.0	25.0
4-Methyl-2-pentanone	108-10-1	500	U	1000	500	250
Methylene chloride	75-09-2	53.5	J	100	50.0	25.0
Naphthalene	91-20-3	40.0	U	100	40.0	20.0
n-Propylbenzene	103-65-1	25.0	U	100	25.0	12.5
Styrene	100-42-5	25.0	U	100	25.0	12.5
1,1,1,2-Tetrachloroethane	630-20-6	50.0	U	100	50.0	25.0
1,1,2,2-Tetrachloroethane	79-34-5	40.0	U	100	40.0	20.0
Tetrachloroethene	127-18-4	50.0	U	100	50.0	25.0
Toluene	108-88-3	50.0	U	100	50.0	25.0
1,2,3-Trichlorobenzene	87-61-6	30.0	U	100	30.0	15.0
1,2,4-Trichlorobenzene	120-82-1	40.0	U	100	40.0	20.0
1,1,1-Trichloroethane	71-55-6	50.0	U	100	50.0	25.0
1,1,2-Trichloroethane	79-00-5	50.0	U	100	50.0	25.0
Trichloroethene	79-01-6	15900		100	50.0	25.0
Trichlorofluoromethane	75-69-4	50.0	U	100	50.0	25.0
1,2,3-Trichloropropane	96-18-4	100	U	200	100	50.0
1,2,4-Trimethylbenzene	95-63-6	50.0	U	100	50.0	25.0
1,3,5-Trimethylbenzene	108-67-8	50.0	U	100	50.0	25.0
Vinyl chloride	75-01-4	50.0	U	100	50.0	25.0
o-Xylene	95-47-6	50.0	U	100	50.0	25.0
m-,p-Xylene	179601-23-1	100	U	200	100	50.0

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	115	70	120	
Toluene-d8	106	85	120	
4-Bromofluorobenzene	100	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060414-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572494	**Analyst:**	TMB	**Run Date:**	06/13/2016 18:25
Collect Date:	06/07/2016 00:01	**Dilution:**	1	**File ID:**	8M412952
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	109	85	115	
1,2-Dichloroethane-d4	114	70	120	
Toluene-d8	106	85	120	
4-Bromofluorobenzene	99.6	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

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Instrument Run Log

Instrument: HPMS8 Dataset: 051316
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53752

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG568561

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412209	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 08:38
8M412210	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 08:57
8M412211	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 09:29
8M412212	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 09:56
8M412213	WG568561-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/13/16 10:19
8M412214	WG568561-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/13/16 10:51
8M412215	WG568565-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76072	05/13/16 11:36
8M412216	BFB CHECK	NA	1	1	STD76034	05/13/16 12:04
8M412217	BFB CHECK	NA	1	1	STD76034	05/13/16 12:18
8M412218	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 12:36
8M412219	RINSE	NA	1	1		05/13/16 13:00
8M412220	WG568561-02 0.3ug/L STD 8260	NA	1	1	STD76127	05/13/16 13:29
8M412221	WG568561-03 0.4ug/L STD 8260	NA	1	1	STD76127	05/13/16 13:58
8M412222	WG568561-04 1ug/L STD 8260	NA	1	1	STD76127	05/13/16 14:27
8M412223	WG568561-05 2ug/L STD 8260	NA	1	1	STD76127	05/13/16 14:56
8M412224	WG568561-06 5ug/L STD 8260	NA	1	1	STD76127	05/13/16 15:25
8M412225	WG568561-07 20ug/L STD 8260	NA	1	1	STD76127	05/13/16 15:54
8M412226	WG568561-08 50ug/L STD 8260	NA	1	1	STD76127	05/13/16 16:23
8M412227	WG568561-09 100ug/L STD 8260	NA	1	1	STD76127	05/13/16 16:52
8M412228	WG568561-10 200ug/L STD 8260	NA	1	1	STD76127	05/13/16 17:21
8M412229	WG568561-11 300ug/L STD 8260	NA	1	1	STD76127	05/13/16 17:50
8M412230	RINSE	NA	1	1		05/13/16 18:19
8M412231	RINSE	NA	1	1		05/13/16 18:49
8M412232	WG568561-12 50ug/L ALT SRC STD 8260	NA	1	1	STD76109	05/13/16 19:17
8M412233	RINSE	NA	1	1		05/13/16 19:46

Comments

Seq.	Rerun	Dil.	Reason	Analytes
5	X			
File ID: 8M412213				
	Several compounds were low, DNR.			
6				
File ID: 8M412214				

Approved: May 20, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS8	Dataset:	051316		
Analyst1:	TMB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	23
Method:	624	SOP:	MSV10	Rev:	14
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:	53752				

Internal Standard: STD75899 Surrogate Standard: STD75899

CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG568561

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			Two C compounds failed. DNR. Run a curve.	
7 File ID: 8M412215				
			DNR.	

Approved: May 20, 2016

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051716
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76072; STD76127 LCS: STD76109; STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG569079; WG569083

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412319	WG569084-01 50ng BFB STD 8260	NA	1	1	STD76034	05/17/16 08:53
8M412320	WG569084-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/17/16 09:18
8M412321	WG569079-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76072	05/17/16 09:47
8M412322	WG569079-03 50ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 10:16
8M412323	WG569079-04 20ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 10:44
8M412324	WG569079-05 5ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 11:13
8M412325	WG569079-06 200ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 11:42
8M412326	WG569079-07 300ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 12:40
8M412327	WG569079-08 400ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 13:10
8M412328	WG569079-09 500ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 13:39
8M412329	RINSE	NA	1	1		05/17/16 14:08
8M412330	RINSE	NA	1	1		05/17/16 14:37
8M412331	WG569079-10 100ug/L ALT SRC STD 826	NA	1	1	STD75801	05/17/16 15:06
8M412332	WG569259-01 BFB 50ng 8260	NA	1	1	STD76034	05/17/16 18:27
8M412333	WG569259-02 50ug/L CCV 8260	NA	1	1	STD76034	05/17/16 18:53
8M412334	WG569260-01 100ug/L CCV A9	NA	1	1	STD76072	05/17/16 19:22
8M412335	WG569083-01 VBLK0517 BLANK 8260	NA	1	1		05/17/16 19:51
8M412336	WG569083-02 20ug/L LCS 8260	NA	1	1	STD76109	05/17/16 20:20
8M412337	WG569083-03 20ug/L LCS2 8260	NA	1	1	STD76109	05/17/16 20:49
8M412338	WG569083-04 100ug/L LCS A9	NA	1	1	STD75801	05/17/16 21:18
8M412339	WG569083-05 100ug/L LCS2 A9	NA	1	1	STD75801	05/17/16 21:46
8M412340	L16050844-01 TB A 826-A9-SPE	5	1	1		05/17/16 22:16
8M412341	L16050844-07 EB A 826-A9-SPE	5	1	1		05/17/16 22:45
8M412342	L16050844-11 AB A 826-A9-SPE	5	1	1		05/17/16 23:14
8M412343	L16050844-02 A 826-A9-SPE	6	1	1		05/17/16 23:43
8M412344	L16050844-05 A 826-A9-SPE	6	1	1		05/18/16 00:12
8M412345	L16050844-06 A 826-A9-SPE	6	1	1		05/18/16 00:41
8M412346	L16050844-12 A 826-A9-SPE	6	1	1		05/18/16 01:10
8M412347	L16050840-01 A 826-A9-SPE	7	1	1		05/18/16 01:38
8M412348	L16050844-08 A 826-A9-SPE	7	1	1		05/18/16 02:07
8M412349	L16050844-13 A 826-A9-SPE	7	1	1		05/18/16 02:36
8M412350	L16050844-15 A 826-A9-SPE	7	1	1		05/18/16 03:05
8M412351	L16050839-01 A 826-A9-SPE	7	1	1		05/18/16 03:33
8M412352	L16050844-03 2.5X A 826-A9-SPE	7	1	2.5		05/18/16 04:02

Approved: May 20, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051716
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76072; STD76127 LCS: STD76109; STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG569079; WG569083

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412353	L16050844-04 5X A 826-A9-SPE	7	1	5		05/18/16 04:31
8M412354	L16050844-09 5X A 826-A9-SPE	7	1	5		05/18/16 05:01
8M412355	L16050844-10 5X A 826-A9-SPE	7	1	5		05/18/16 05:30
8M412356	L16050844-14 50X A 826-A9-SPE	7	1	50		05/18/16 05:59
8M412357	RINSE	NA	1	1		05/18/16 06:28

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
File ID: 8M412320				
	DNR. Running an a9/foo curve.			
32	X	10	Over Calibration Range	CIS12-DCE
File ID: 8M412350				
40	X	2.5	Analyzed too dilute	
File ID: 8M412353				
	DNR.			
37	X	25	Over Calibration Range	TCE
File ID: 8M412355				
38	X	20	Analyzed too dilute	
File ID: 8M412356				
	DNR.			

Approved: May 20, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 061316
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Maintenance Log ID:

Internal Standard: STD76370 Surrogate Standard: STD76370
CCV: STD76578 LCS: STD75540 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG572494

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412943	WG572492-01 50ng BFB STD 8260	NA	1	1	STD76496	06/13/16 14:10
8M412944	WG572492-02 50ug/L CCV STD 8260	NA	1	1	STD76578	06/13/16 14:34
8M412945	WG572492-02 50ug/L CCV STD 8260	NA	1	1	STD76578	06/13/16 15:04
8M412946	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76432	06/13/16 15:33
8M412947	WG572494-01 VBLK0613 BLANK STD 826	NA	1	1		06/13/16 16:02
8M412948	WG572494-02 20ug/L LCS STD 8260	NA	1	1	STD76540	06/13/16 16:30
8M412949	WG572494-03 20ug/L LCS2 STD 8260	NA	1	1	STD76540	06/13/16 16:59
8M412950	L16060395-07 A 826-BETX	<2	1	1		06/13/16 17:27
8M412951	L16060376-06 A TB 826-SPE	<2	1	1		06/13/16 17:56
8M412952	L16060414-05 A TB 826-LOW	<2	1	1		06/13/16 18:25
8M412953	L16060669-11 A TB 826-VAP2	<2	1	1		06/13/16 18:54
8M412954	L16060669-10 A BB 826-VAP2	6	1	1		06/13/16 19:23
8M412955	L16060376-05 A 826-SPE	<2	1	1		06/13/16 19:51
8M412956	L16060176-01 B 826-VAP2	6	1	1		06/13/16 20:20
8M412957	L16060176-02 B 826-VAP2	6	1	1		06/13/16 20:49
8M412958	L16060376-02 A 826-SPE	<2	1	1		06/13/16 21:18
8M412959	L16060376-03 A 826-SPE	<2	1	1		06/13/16 21:47
8M412960	L16060376-04 A 826-SPE	<2	1	1		06/13/16 22:16
8M412961	L16060376-01 A 826-SPE	<2	1	1		06/13/16 22:45
8M412962	L16060592-01 A 826-BETX	<2	1	1		06/13/16 23:13
8M412963	L16060669-09 A 826-VAP2	7	1	1		06/13/16 23:42
8M412964	L16060414-01 A 500X 826-LOW	<2	1	500		06/14/16 00:12
8M412965	L16060414-02 A 500X 826-LOW	<2	1	500		06/14/16 00:40
8M412966	L16060414-03 A 500X 826-LOW	<2	1	500		06/14/16 01:09
8M412967	L16060414-04 A 500X 826-LOW	<2	1	500		06/14/16 01:38
8M412968	CCV	NA	1	1		06/14/16 02:07
8M412969	RINSE	NA	1	1		06/14/16 02:37
8M412970	RINSE	NA	1	1		06/14/16 03:05

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 8M412944				

Approved: June 14, 2016

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Microbac

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 061316
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Maintenance Log ID:

Internal Standard: STD76370 Surrogate Standard: STD76370
CCV: STD76578 LCS: STD75540 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG572494

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			Bromomethane was low, DNR.	
4				
File ID: 8M412946				
			Not needed. DNR.	
11	X	1		
File ID: 8M412953				
			Lcsdup outlier.	
12	X	1		
File ID: 8M412954				
			Lcsdup outlier.	
14	X	1		
File ID: 8M412956				
			Lcsdup outlier.	
15	X	1		
File ID: 8M412957				
			Lcsdup outlier.	
21	X	1	Carry-over contamination	
File ID: 8M412963				
22	X	100	Analyzed too dilute	
File ID: 8M412964				
23	X	100	Analyzed too dilute	
File ID: 8M412965				
24	X	100	Analyzed too dilute	
File ID: 8M412966				
25	X	100	Analyzed too dilute	
File ID: 8M412967				

Approved: June 14, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 061416
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53783

Internal Standard: STD75370 Surrogate Standard: STD76370
CCV: STD76578 LCS: STD76597 MS/MSD: STD76597

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG572592

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412971	WG572591-01 50ng BFB STD 8260	NA	1	1	STD76496	06/14/16 09:33
8M412972	WG572591-02 50ug/L CCV STD 8260	NA	1	1	STD76578	06/14/16 09:57
8M412973	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76432	06/14/16 10:25
8M412974	WG572592-01 VBLK0614 BLANK STD 826	NA	1	1		06/14/16 10:54
8M412975	L16060176-01 C 826-VAP2	7	1	1		06/14/16 11:23
8M412976	L16060176-02 C 826-VAP2	7	1	1		06/14/16 11:52
8M412977	WG572592-02 20ug/L LCS STD 8260	NA	1	1	STD76597	06/14/16 12:21
8M412978	L16060540-07 A MS 826-SPE	<2	1	1	STD76597	06/14/16 12:50
8M412979	L16060540-08 A MSD 826-SPE	<2	1	1	STD76597	06/14/16 13:20
8M412980	RINSE	NA	1	1		06/14/16 13:49
8M412981	L16060605-14 B TB 826-SPE	<2	1	1		06/14/16 14:18
8M412982	L16060605-02 B 826-SPE	<2	1	1		06/14/16 14:47
8M412983	L16060605-01 B 826-SPE	<2	1	1		06/14/16 15:16
8M412984	L16060540-06 A REF 826-SPE	<2	1	1		06/14/16 15:45
8M412985	L16060540-10 A 826-SPE	<2	1	1		06/14/16 16:14
8M412986	L16060540-11 A 826-SPE	<2	1	1		06/14/16 16:42
8M412987	L16060540-12 A 826-SPE	<2	1	1		06/14/16 17:11
8M412988	L16060540-13 A 826-SPE	<2	1	1		06/14/16 17:40
8M412989	L16060540-14 A 826-SPE	<2	1	1		06/14/16 18:09
8M412990	L16060540-15 A 826-SPE	<2	1	1		06/14/16 18:38
8M412991	L16060540-16 A 826-SPE	<2	1	1		06/14/16 19:07
8M412992	L16060414-01 B 100X 826-LOW	<2	1	100		06/14/16 19:35
8M412993	L16060414-02 B 100X 826-LOW	<2	1	100		06/14/16 20:05
8M412994	L16060414-03 B 100X 826-LOW	<2	1	100		06/14/16 20:34
8M412995	L16060414-04 B 100X 826-LOW	5	1	100		06/14/16 21:03
8M412996	L16060504-04 B 826-LOW	<2	1	1		06/14/16 21:31
8M412997	CCV	NA	1	1		06/14/16 22:00
8M412998	RINSE	NA	1	1		06/14/16 22:29
8M412999	RINSE	NA	1	1		06/14/16 22:57
8M413000	RINSE	NA	1	1		06/14/16 23:26

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Approved: June 16, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 061416
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53783

Internal Standard: STD75370 Surrogate Standard: STD76370
CCV: STD76578 LCS: STD76597 MS/MSD: STD76597

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG572592

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
3				
File ID: 8M412973				
	Not needed. DNR.			
19	X	10	Over Calibration Range	CIS12-DCE
File ID: 8M412989				
20	X	1	Carry-over contamination	
File ID: 8M412990				

Approved: June 16, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Data Checklist

Date: 13-MAY-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75126
Analytical Workgroups: WG568561

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	TMB
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
17-MAY-2016
Tiffany Bailey

Secondary Reviewer:
20-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2016 11:18:36

Microbac Laboratories Inc.

Data Checklist

Date: 17-MAY-2016
Analyst: TMB
Analyst: FJB
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75174
Analytical Workgroups: WG569079; WG569083

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
19-MAY-2016
Tiffany Bailey

Secondary Reviewer:
20-MAY-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2016 11:05:37

Microbac Laboratories Inc.

Data Checklist

Date: 13-JUN-2016
Analyst: TMB
Analyst: NA
Method: 8260B
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75666
Analytical Workgroups: WG572494

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
14-JUN-2016
Tiffany Bailey

Secondary Reviewer:
14-JUN-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-14-2016 12:31:27

Microbac Laboratories Inc.

Data Checklist

Date: 14-JUN-2016
Analyst: TMB
Analyst: NA
Method: 8260B/OVAP
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75679
Analytical Workgroups: WG572592

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
14-JUN-2016
Tiffany Bailey

Secondary Reviewer:
16-JUN-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-16-2016 12:56:09

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG572494

Login Number: L16060414

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
TRIP BLANK	05	06/07/16					06/13/2016	6.8	14		06/13/16	6.8	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4805787
Report generated 06/16/2016 12:53

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG572592

Login Number: L16060414

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
AWD1T-060716	01	06/07/16					06/14/2016	7.5	14		06/14/16	7.5	14	
AWD1B-060716	02	06/07/16					06/14/2016	7.5	14		06/14/16	7.5	14	
MW14T-060716	03	06/07/16					06/14/2016	7.4	14		06/14/16	7.4	14	
MW14B-060716	04	06/07/16					06/14/2016	7.4	14		06/14/16	7.4	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4805787
Report generated 06/16/2016 12:53

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060414
Instrument Id: HPMS8
Workgroup (AAB#): WG572592

Method: 8260
CAL ID: HPMS8-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16060414-01	100	DL01	114	110	102	105
L16060414-02	100	DL01	113	110	98.1	103
L16060414-03	100	DL01	114	110	100	104
L16060414-04	100	DL01	115	110	100	106
WG572592-01	1.00	01	107	107	98.8	106
WG572592-02	1.00	01	109	108	97.6	106

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4805793
Report generated: 06/16/2016 12:54

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060414
Instrument Id: HPMS8
Workgroup (AAB#): WG572494

Method: 8260
CAL ID: HPMS8-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16060414-05	1.00	01	114	109	99.6	106
WG572494-01	1.00	01	112	109	99.5	104
WG572494-02	1.00	01	110	110	98.1	106
WG572494-03	1.00	01	112	107	100	105

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4805793
Report generated: 06/16/2016 12:54

METHOD BLANK SUMMARY

Login Number: L16060414
Blank File ID: 8M412947
Prep Date: 06/13/16 16:02
Analyzed Date: 06/13/16 16:02
Analyst: TMB

Work Group: WG572494
Blank Sample ID: WG572494-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572494-02	8M412948	06/13/16 16:30	01
LCS2	WG572494-03	8M412949	06/13/16 16:59	01
TRIP BLANK	L16060414-05	8M412952	06/13/16 18:25	01

Report Name: BLANK_SUMMARY
PDF File ID: 4809969
Report generated 06/16/2016 12:53

METHOD BLANK SUMMARY

Login Number: L16060414
Blank File ID: 8M412974
Prep Date: 06/14/16 10:54
Analyzed Date: 06/14/16 10:54
Analyst: TMB

Work Group: WG572592
Blank Sample ID: WG572592-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572592-02	8M412977	06/14/16 12:21	01
AWD1T-060716	L16060414-01	8M412992	06/14/16 19:35	DL01
AWD1B-060716	L16060414-02	8M412993	06/14/16 20:05	DL01
MW14T-060716	L16060414-03	8M412994	06/14/16 20:34	DL01
MW14B-060716	L16060414-04	8M412995	06/14/16 21:03	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4809969
Report generated 06/16/2016 12:53

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16060414 Prep Date: 06/13/16 16:02 Sample ID: WG572494-01
Instrument ID: HPMS8 Run Date: 06/13/16 16:02 Prep Method: 5030B/5030C/503
File ID: 8M412947 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG572494 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4805788
16-JUN-2016 12:54

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060414 Prep Date: 06/13/16 16:02 Sample ID: WG572494-01
Instrument ID: HPMS8 Run Date: 06/13/16 16:02 Prep Method: 5030B/5030C/503
File ID: 8M412947 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG572494 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	109	85 - 115	PASS
1,2-Dichloroethane-d4	112	70 - 120	PASS
Toluene-d8	104	85 - 120	PASS
4-Bromofluorobenzene	99.5	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4805788
16-JUN-2016 12:54

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060414 Prep Date: 06/14/16 10:54 Sample ID: WG572592-01
Instrument ID: HPMS8 Run Date: 06/14/16 10:54 Prep Method: 5030B/5030C/503
File ID: 8M412974 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG572592 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
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Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060414 Prep Date: 06/14/16 10:54 Sample ID: WG572592-01
Instrument ID: HPMS8 Run Date: 06/14/16 10:54 Prep Method: 5030B/5030C/503
File ID: 8M412974 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG572592 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	107	85 - 115	PASS
1,2-Dichloroethane-d4	107	70 - 120	PASS
Toluene-d8	106	85 - 120	PASS
4-Bromofluorobenzene	98.8	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4805788
16-JUN-2016 12:54

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060414 | Run Date: 06/14/2016 | Sample ID: WG572592-02
Instrument ID: HPMS8 | Run Time: 12:21 | Prep Method: 5030B/5030C/503
File ID: 8M412977 | Analyst: TMB | Method: 8260B
Workgroup (AAB#): WG572592 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD76597 | Cal ID: HPMS8-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	24.7	123	40 - 140	
Benzene	20.0	21.1	106	80 - 120	
Bromobenzene	20.0	19.6	97.8	75 - 125	
Bromochloromethane	20.0	21.1	105	65 - 130	
Bromodichloromethane	20.0	22.2	111	75 - 120	
Bromoform	20.0	20.2	101	70 - 130	
Bromomethane	20.0	13.6	68.2	30 - 145	
2-Butanone	20.0	20.8	104	30 - 150	
n-Butylbenzene	20.0	19.2	96.2	70 - 135	
sec-Butylbenzene	20.0	20.3	101	70 - 125	
tert-Butylbenzene	20.0	20.1	100	70 - 130	
Carbon disulfide	20.0	19.2	95.9	35 - 160	
Carbon tetrachloride	20.0	22.2	111	65 - 140	
Chlorobenzene	20.0	20.7	104	80 - 120	
Chlorodibromomethane	20.0	20.5	102	60 - 135	
Chloroethane	20.0	22.0	110	60 - 135	
Chloroform	20.0	21.5	107	65 - 135	
Chloromethane	20.0	21.2	106	40 - 125	
2-Chlorotoluene	20.0	18.4	92.0	75 - 125	
4-Chlorotoluene	20.0	22.2	111	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	19.6	97.8	50 - 130	
1,2-Dibromoethane	20.0	20.0	99.8	80 - 120	
Dibromomethane	20.0	19.8	99.1	75 - 125	
1,2-Dichlorobenzene	20.0	20.2	101	70 - 120	
1,3-Dichlorobenzene	20.0	20.3	101	75 - 125	
1,4-Dichlorobenzene	20.0	20.3	102	75 - 125	
Dichlorodifluoromethane	20.0	22.7	114	30 - 155	
1,1-Dichloroethane	20.0	20.4	102	70 - 135	
1,2-Dichloroethane	20.0	22.8	114	70 - 130	
1,1-Dichloroethene	20.0	20.3	102	70 - 130	
cis-1,2-Dichloroethene	20.0	21.1	105	70 - 125	
trans-1,2-Dichloroethene	20.0	21.1	105	60 - 140	
1,2-Dichloropropane	20.0	21.0	105	75 - 125	
1,3-Dichloropropane	20.0	21.3	107	75 - 125	
2,2-Dichloropropane	20.0	23.0	115	70 - 135	
cis-1,3-Dichloropropene	20.0	23.5	117	70 - 130	
trans-1,3-Dichloropropene	20.0	21.3	106	55 - 140	
1,1-Dichloropropene	20.0	21.1	105	75 - 130	
Ethylbenzene	20.0	19.8	98.8	75 - 125	
2-Hexanone	20.0	20.3	101	55 - 130	
Hexachlorobutadiene	20.0	20.9	104	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4808082
Report generated: 06/16/2016 12:54

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060414 Run Date: 06/14/2016 Sample ID: WG572592-02
Instrument ID: HPMS8 Run Time: 12:21 Prep Method: 5030B/5030C/503
File ID: 8M412977 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG572592 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD76597 Cal ID: HPMS8-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	21.8	109	75 - 125	
p-Isopropyltoluene	20.0	19.9	99.6	75 - 130	
4-Methyl-2-pentanone	20.0	20.4	102	60 - 135	
Methylene chloride	20.0	20.1	100	55 - 140	
Naphthalene	20.0	16.9	84.5	55 - 140	
n-Propylbenzene	20.0	20.6	103	70 - 130	
Styrene	20.0	21.3	106	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	20.9	105	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	17.7	88.7	65 - 130	
Tetrachloroethene	20.0	20.7	103	45 - 150	
Toluene	20.0	20.3	102	75 - 120	
1,2,3-Trichlorobenzene	20.0	18.7	93.3	55 - 140	
1,2,4-Trichlorobenzene	20.0	19.5	97.4	65 - 135	
1,1,1-Trichloroethane	20.0	22.8	114	65 - 130	
1,1,2-Trichloroethane	20.0	20.0	100	75 - 125	
Trichloroethene	20.0	22.7	114	70 - 125	
Trichlorofluoromethane	20.0	22.3	111	60 - 145	
1,2,3-Trichloropropane	20.0	18.8	94.1	75 - 125	
1,2,4-Trimethylbenzene	20.0	20.0	99.9	75 - 130	
1,3,5-Trimethylbenzene	20.0	20.5	103	75 - 130	
Vinyl chloride	20.0	24.6	123	50 - 145	
o-Xylene	20.0	21.5	108	80 - 120	
m-,p-Xylene	40.0	41.6	104	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	108	85 - 115	PASS
1,2-Dichloroethane-d4	109	70 - 120	PASS
Toluene-d8	106	85 - 120	PASS
4-Bromofluorobenzene	97.6	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4808082
Report generated: 06/16/2016 12:54

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060414 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG572494 Units: ug/L
QC Key: DOD4 Lot #: STD76540

Sample ID: WG572494-02 LCS File ID: 8M412948 Run Date: 06/13/2016 16:30
Sample ID: WG572494-03 LCS2 File ID: 8M412949 Run Date: 06/13/2016 16:59

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	20.3	101	20.0	19.7	98.7	2.61	80 - 130	30	
1,1,1-Trichloroethane	20.0	20.6	103	20.0	19.2	96.1	7.12	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	18.3	91.6	20.0	17.9	89.5	2.25	65 - 130	30	
1,1,2-Trichloroethane	20.0	19.3	96.7	20.0	18.8	93.8	3.03	75 - 125	30	
1,1-Dichloroethane	20.0	18.2	91.2	20.0	17.4	87.1	4.57	70 - 135	30	
1,1-Dichloroethene	20.0	16.0	80.0	20.0	14.3	71.4	11.4	70 - 130	30	
1,1-Dichloropropene	20.0	18.7	93.6	20.0	17.7	88.5	5.52	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	18.1	90.6	20.0	18.2	90.9	0.338	55 - 140	30	
1,2,3-Trichloropropane	20.0	19.8	99.1	20.0	19.5	97.7	1.40	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	19.6	97.9	20.0	19.1	95.3	2.69	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	19.4	97.0	20.0	18.7	93.3	3.93	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	19.6	97.9	20.0	19.5	97.6	0.369	50 - 130	30	
1,2-Dibromoethane	20.0	19.8	99.1	20.0	19.0	94.9	4.36	80 - 120	30	
1,2-Dichlorobenzene	20.0	19.5	97.5	20.0	19.0	95.1	2.45	70 - 120	30	
1,2-Dichloroethane	20.0	22.2	111	20.0	20.8	104	6.42	70 - 130	30	
1,2-Dichloropropane	20.0	19.5	97.7	20.0	19.2	95.8	2.00	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	19.7	98.6	20.0	19.4	97.0	1.64	75 - 130	30	
1,3-Dichlorobenzene	20.0	19.7	98.6	20.0	19.3	96.4	2.33	75 - 125	30	
1,3-Dichloropropane	20.0	21.1	106	20.0	20.2	101	4.60	75 - 125	30	
1,4-Dichlorobenzene	20.0	19.6	98.0	20.0	19.3	96.5	1.57	75 - 125	30	
2,2-Dichloropropane	20.0	21.2	106	20.0	20.2	101	4.75	70 - 135	30	
2-Butanone	20.0	19.6	98.0	20.0	21.1	105	7.38	30 - 150	30	
2-Chlorotoluene	20.0	20.7	104	20.0	17.1	85.4	19.2	75 - 125	30	
2-Hexanone	20.0	20.0	100	20.0	19.6	98.1	2.03	55 - 130	30	
4-Chlorotoluene	20.0	18.3	91.3	20.0	21.1	105	14.2	75 - 130	30	
4-Methyl-2-pentanone	20.0	19.7	98.7	20.0	20.3	102	3.02	60 - 135	30	
Acetone	20.0	24.3	122	20.0	22.5	113	7.84	40 - 140	30	
Benzene	20.0	19.3	96.6	20.0	18.3	91.3	5.74	80 - 120	30	
Bromobenzene	20.0	19.3	96.3	20.0	18.7	93.5	3.04	75 - 125	30	
Bromochloromethane	20.0	19.5	97.3	20.0	18.5	92.6	4.97	65 - 130	30	
Bromodichloromethane	20.0	21.0	105	20.0	21.0	105	0.239	75 - 120	30	
Bromoform	20.0	20.8	104	20.0	18.9	94.5	9.47	70 - 130	30	
Bromomethane	20.0	13.9	69.7	20.0	15.0	74.8	7.13	30 - 145	30	
Carbon disulfide	20.0	19.2	96.0	20.0	19.4	97.1	1.16	35 - 160	30	
Carbon tetrachloride	20.0	20.6	103	20.0	19.0	95.2	7.81	65 - 140	30	
Chlorobenzene	20.0	20.3	102	20.0	19.2	96.0	5.60	80 - 120	30	
Chloroethane	20.0	21.1	106	20.0	21.7	108	2.52	60 - 135	30	
Chloroform	20.0	20.3	101	20.0	19.6	97.8	3.66	65 - 135	30	
Chloromethane	20.0	20.7	103	20.0	21.4	107	3.39	40 - 125	30	
cis-1,2-Dichloroethene	20.0	19.8	99.2	20.0	18.5	92.7	6.76	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4805789
Report generated: 06/16/2016 12:54

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060414 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG572494 Units: ug/L
QC Key: DOD4 Lot #: STD76540

Sample ID: WG572494-02 LCS File ID: 8M412948 Run Date: 06/13/2016 16:30
Sample ID: WG572494-03 LCS2 File ID: 8M412949 Run Date: 06/13/2016 16:59

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	22.6	113	20.0	21.8	109	3.72	70 - 130	30	
Chlorodibromomethane	20.0	20.3	102	20.0	19.5	97.6	4.03	60 - 135	30	
Dibromomethane	20.0	18.4	92.1	20.0	18.4	92.0	0.0610	75 - 125	30	
Dichlorodifluoromethane	20.0	23.6	118	20.0	23.3	117	1.03	30 - 155	30	
Ethylbenzene	20.0	19.2	95.8	20.0	18.4	91.8	4.32	75 - 125	30	
Hexachlorobutadiene	20.0	19.5	97.3	20.0	19.6	98.1	0.845	50 - 140	30	
Isopropylbenzene	20.0	21.0	105	20.0	20.0	100	4.75	75 - 125	30	
m-,p-Xylene	40.0	40.3	101	40.0	38.8	97.1	3.64	75 - 130	30	
Methylene chloride	20.0	18.0	90.0	20.0	16.8	83.8	7.06	55 - 140	30	
n-Butylbenzene	20.0	18.2	91.1	20.0	18.1	90.5	0.645	70 - 135	30	
n-Propylbenzene	20.0	19.5	97.5	20.0	19.4	97.2	0.341	70 - 130	30	
Naphthalene	20.0	16.8	83.8	20.0	17.1	85.6	2.19	55 - 140	30	
o-Xylene	20.0	20.4	102	20.0	19.7	98.4	3.75	80 - 120	30	
p-Isopropyltoluene	20.0	19.0	94.8	20.0	18.7	93.3	1.57	75 - 130	30	
sec-Butylbenzene	20.0	19.1	95.6	20.0	18.9	94.6	1.06	70 - 125	30	
Styrene	20.0	20.5	103	20.0	19.5	97.5	5.09	65 - 135	30	
tert-Butylbenzene	20.0	19.2	95.8	20.0	18.8	93.9	2.09	70 - 130	30	
Tetrachloroethene	20.0	19.9	99.3	20.0	18.3	91.5	8.17	45 - 150	30	
Toluene	20.0	19.2	96.2	20.0	18.2	90.9	5.60	75 - 120	30	
trans-1,2-Dichloroethene	20.0	17.7	88.5	20.0	16.6	83.1	6.27	60 - 140	30	
trans-1,3-Dichloropropene	20.0	21.1	106	20.0	20.0	100	5.28	55 - 140	30	
Trichloroethene	20.0	20.4	102	20.0	19.4	97.2	4.86	70 - 125	30	
Trichlorofluoromethane	20.0	21.5	108	20.0	21.9	109	1.62	60 - 145	30	
Vinyl chloride	20.0	24.1	121	20.0	23.8	119	1.28	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	110	112	70 - 120	PASS
Dibromofluoromethane	110	107	85 - 115	PASS
4-Bromofluorobenzene	98.1	100	75 - 120	PASS
Toluene-d8	106	105	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4805789
Report generated: 06/16/2016 12:54

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060414
Instrument: HPMS8
Analyst: TMB
Workgroup: WG568561

Tune ID: WG568561-01
Run Date: 05/13/2016
Run Time: 12:36
File ID: 8M412218
Cal ID: HPMS8 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	16.7	6575	PASS
75.0	95.0	30.0	60.0	51.3	20171	PASS
95.0	95.0	100	100	100	39312	PASS
96.0	95.0	5.00	9.00	6.74	2649	PASS
173	174	0	2.00	0.363	122	PASS
174	95.0	50.0	100	85.5	33616	PASS
175	174	5.00	9.00	8.17	2746	PASS
176	174	95.0	101	99.2	33360	PASS
177	176	5.00	9.00	6.80	2267	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG568561-02	STD	01	05/13/2016 13:29	
WG568561-03	STD	01	05/13/2016 13:58	
WG568561-04	STD	01	05/13/2016 14:27	
WG568561-05	STD	01	05/13/2016 14:56	
WG568561-06	STD	01	05/13/2016 15:25	
WG568561-07	STD	01	05/13/2016 15:54	
WG568561-08	STD-CCV	01	05/13/2016 16:23	
WG568561-09	STD	01	05/13/2016 16:52	
WG568561-10	STD	01	05/13/2016 17:21	
WG568561-11	STD	01	05/13/2016 17:50	
WG568561-12	SSCV	01	05/13/2016 19:17	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4805791
Report generated 06/16/2016 12:54

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060414
Instrument: HPMS8
Analyst: TMB
Workgroup: WG569084

Tune ID: WG569084-01
Run Date: 05/17/2016
Run Time: 08:53
File ID: 8M412319
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.1	6316	PASS
75.0	95.0	30.0	60.0	54.7	18130	PASS
95.0	95.0	100	100	100	33138	PASS
96.0	95.0	5.00	9.00	6.76	2241	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	72.2	23934	PASS
175	174	5.00	9.00	7.88	1886	PASS
176	174	95.0	101	96.8	23159	PASS
177	176	5.00	9.00	7.15	1655	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG569079-01	STD-CCV	01	05/17/2016 09:47	
WG569079-03	STD	01	05/17/2016 10:16	
WG569079-04	STD	01	05/17/2016 10:44	
WG569079-05	STD	01	05/17/2016 11:13	
WG569079-06	STD	01	05/17/2016 11:42	
WG569079-07	STD	01	05/17/2016 12:40	
WG569079-08	STD	01	05/17/2016 13:10	
WG569079-09	STD	01	05/17/2016 13:39	
WG569079-10	SSCV	01	05/17/2016 15:06	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4805791
Report generated 06/16/2016 12:54

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060414
Instrument: HPMS8
Analyst: TMB
Workgroup: WG572492

Tune ID: WG572492-01
Run Date: 06/13/2016
Run Time: 14:10
File ID: 8M412943
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.0	7715	PASS
75.0	95.0	30.0	60.0	56.7	22963	PASS
95.0	95.0	100	100	100	40514	PASS
96.0	95.0	5.00	9.00	6.62	2683	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	77.5	31387	PASS
175	174	5.00	9.00	8.19	2572	PASS
176	174	95.0	101	95.8	30076	PASS
177	176	5.00	9.00	6.13	1845	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG572492-02	CCV	01	06/13/2016 15:04	
WG572494-01	BLANK	01	06/13/2016 16:02	
WG572494-02	LCS	01	06/13/2016 16:30	
WG572494-03	LCS2	01	06/13/2016 16:59	
L16060414-05	TRIP BLANK	01	06/13/2016 18:25	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4805791
Report generated 06/16/2016 12:54

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060414
Instrument: HPMS8
Analyst: TMB
Workgroup: WG572591

Tune ID: WG572591-01
Run Date: 06/14/2016
Run Time: 09:33
File ID: 8M412971
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	17.4	8269	PASS
75.0	95.0	30.0	60.0	53.5	25445	PASS
95.0	95.0	100	100	100	47570	PASS
96.0	95.0	5.00	9.00	6.39	3042	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	90.3	42970	PASS
175	174	5.00	9.00	7.06	3032	PASS
176	174	95.0	101	97.6	41930	PASS
177	176	5.00	9.00	6.54	2744	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG572591-02	CCV	01	06/14/2016 09:57	
WG572592-01	BLANK	01	06/14/2016 10:54	
WG572592-02	LCS	01	06/14/2016 12:21	
L16060414-01	AWD1T-060716	DL01	06/14/2016 19:35	
L16060414-02	AWD1B-060716	DL01	06/14/2016 20:05	
L16060414-03	MW14T-060716	DL01	06/14/2016 20:34	
L16060414-04	MW14B-060716	DL01	06/14/2016 21:03	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4805791
Report generated 06/16/2016 12:54

Calibration Table Report
Method: 8260WT.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Calibration: Sat May 14 18:08:06 2016
Curve: WG568561
Calibration Files

	Compound	0.3 8M412220.D	0.4 8M412221.D	1 8M412222.D	2 8M412223.D	5 8M412224.D	20 8M412225.D	50 8M412226.D	100 8M412227.D	200 8M412228.D	300 8M412229.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane		0.427	0.390	0.397	0.364	0.468	0.439	0.452	0.427	0.408	0.419	7.751		
P	Chloromethane			0.264	0.257	0.223	0.253	0.240	0.240	0.239	0.241	0.245	5.336		
C	Vinyl Chloride		0.274	0.296	0.297	0.277	0.299	0.292	0.299	0.292	0.288	0.290	3.191		
T	1,3-Butadiene				0.218	0.208	0.242	0.251	0.277	0.254	0.254	0.243	9.644		
T	Bromomethane			0.129	0.133	0.127	0.162	0.167	0.187	0.205	0.212	0.165	20.449		1.000
T	Chloroethane		0.173	0.157	0.153	0.143	0.164	0.157	0.163	0.164	0.164	0.160	5.354		
T	Trichlorofluoromethane		0.544	0.538	0.559	0.506	0.570	0.538	0.551	0.531	0.525	0.540	3.520		
T	Diethyl ether			0.130	0.138	0.123	0.132	0.125	0.128		0.127	0.129	3.866		
T	Isoprene		0.335	0.351	0.334	0.293	0.334	0.320	0.334	0.322	0.329	0.328	4.867		
T	Acrolein				0.012	0.010	0.010	0.011	0.012		0.014	0.012	12.987		
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.256	0.269	0.240	0.260	0.249	0.257	0.251	0.250	0.254	3.397		
T	Acetone					0.023	0.030	0.029	0.030	0.028	0.028	0.028	9.132		
C	1,1-Dichloroethene		0.424	0.407	0.406	0.387	0.416	0.398	0.409	0.400	0.393	0.404	2.830		
T	Tert-Butyl Alcohol				0.010	0.009	0.009	0.009	0.009		0.009	0.009	2.872		
T	Dimethyl Sulfide		0.133	0.142	0.152	0.137	0.145	0.142	0.151	0.147	0.151	0.145	4.534		
T	Iodomethane				0.019	0.024	0.066	0.101	0.129	0.135	0.131	0.087	58.244		0.998
T	Methyl acetate					0.075	0.076	0.074	0.078	0.076	0.078	0.076	2.221		
T	Methylene Chloride			0.274	0.265	0.244	0.263	0.250	0.255	0.254	0.252	0.257	3.686		
T	Carbon Disulfide			0.888	0.922	0.801	0.873	0.816	0.854	0.813	0.802	0.846	5.346		
T	Acrylonitrile			0.027	0.035	0.033	0.038	0.038	0.039		0.044	0.036	14.671		
T	Methyl Tert Butyl Ether			0.534	0.543	0.521	0.586	0.579	0.585	0.560	0.546	0.557	4.455		
T	trans-1,2-Dichloroethene		0.389	0.395	0.364	0.352	0.381	0.367	0.372	0.364	0.358	0.371	3.858		
T	n-Hexane					0.265	0.280	0.270	0.286	0.275	0.279	0.276	2.732		
T	Diisopropyl ether			0.600	0.607	0.548	0.588	0.572	0.571		0.567	0.579	3.559		
T	Vinyl Acetate				0.256	0.243	0.270	0.275	0.266	0.271	0.275	0.265	4.509		
P	1,1-Dichloroethane		0.441	0.463	0.486	0.434	0.488	0.464	0.470	0.459	0.447	0.461	4.012		
T	Ethyl-Tert-Butyl ether			0.616	0.645	0.590	0.641	0.628	0.619		0.603	0.620	3.188		
T	2-Butanone					0.035	0.042	0.043	0.045	0.041	0.043	0.041	8.268		
T	Propionitrile			0.010	0.012	0.012	0.013	0.012	0.013		0.013	0.012	8.354		
T	2,2-Dichloropropane		0.471	0.462	0.520	0.476	0.503	0.494	0.497	0.483	0.470	0.486	3.839		
T	cis-1,2-Dichloroethene		0.299	0.298	0.291	0.267	0.295	0.282	0.289	0.283	0.277	0.287	3.685		
C	Chloroform	0.563	0.567	0.581	0.536	0.509	0.566	0.543	0.546	0.529	0.506	0.545	4.619		
T	1-Bromopropane			0.034	0.040	0.040	0.043	0.041	0.043	0.043	0.044	0.041	7.649		
T	Bromochloromethane		0.131	0.164	0.147	0.137	0.154	0.148	0.151	0.148	0.145	0.147	6.598		
T	Tetrahydrofuran			0.034	0.028	0.025	0.026	0.026	0.026		0.026	0.027	11.724		
S	Dibromofluoromethane			0.249	0.261	0.257	0.280	0.271	0.284	0.271	0.275	0.269	4.465		
T	1,1,1-Trichloroethane		0.492	0.537	0.515	0.496	0.545	0.525	0.533	0.515	0.499	0.517	3.660		
T	Cyclohexane			0.373	0.369	0.335	0.359	0.344	0.366	0.356	0.364	0.358	3.619		
T	1,1-Dichloropropene			0.414	0.399	0.369	0.403	0.395	0.399	0.392	0.382	0.394	3.488		
T	Tert-Amyl-Methyl ether			0.567	0.587	0.534	0.576	0.568	0.561		0.549	0.563	3.077		
T	Carbon Tetrachloride		0.444	0.456	0.462	0.441	0.481	0.465	0.474	0.462	0.448	0.4594	2.92173		
S	1,2-Dichloroethane-d4			0.241	0.309	0.276	0.312	0.295	0.301	0.284	0.286	0.288	7.93644		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.347	0.335	0.354	0.336	0.371	0.36	0.364	0.349	0.338	0.3505	3.65503		
T	Benzene		1.128	1.084	1.071	0.977	1.085	1.033	1.019	0.963	0.883	1.0269	7.39343		
T	Trichloroethene		0.285	0.275	0.276	0.251	0.283	0.273	0.279	0.273	0.27	0.2739	3.66126		
T	Methylcyclohexane					0.396	0.426	0.408	0.429	0.416	0.422	0.4161	2.94153		
C	1,2-Dichloropropane		0.239	0.222	0.233	0.207	0.238	0.226	0.233	0.231	0.229	0.2286	4.30096		
T	Bromodichloromethane		0.369	0.382	0.412	0.385	0.426	0.421	0.417	0.41	0.395	0.4018	4.93305		
T	1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.0011	14.5817		
T	Dibromomethane		0.141	0.13	0.137	0.128	0.141	0.134	0.137	0.136	0.133	0.1353	3.26799		
T	2-Chloroethyl Vinyl Ether				0.1	0.084	0.103	0.104	0.103	0.095	0.098	0.0983	7.09792		
T	4-Methyl-2-Pentanone					0.033	0.042	0.042	0.043	0.04	0.041	0.0401	8.66859		
T	cis-1,3-Dichloropropene		0.391	0.393	0.386	0.398	0.431	0.428	0.428	0.42	0.405	0.409	4.41527		

T	Dimethyl Disulfide					0.182	0.218	0.221	0.23	0.229	0.23	0.2183	8.49419	
I	Chlorobenzene-d5	ISTD												
S	Toluene-d8			1.282	1.295	1.228	1.385	1.333	1.378	1.289	1.278	1.3084	4.07746	
C	Toluene		1.653	1.696	1.678	1.507	1.647	1.554	1.545	1.418	1.27	1.552	8.98325	
T	Ethyl Methacrylate			0.251	0.293	0.268	0.314	0.314	0.327	0.309	0.31	0.2981	8.76897	
T	Paraldehyde											0	0	
T	trans-1,3-Dichloropropene			0.472	0.51	0.466	0.561	0.552	0.553	0.533	0.515	0.5201	7.01006	
T	1,1,2-Trichloroethane		0.261	0.241	0.242	0.222	0.254	0.249	0.252	0.243	0.241	0.2449	4.54209	
T	2-Hexanone					0.042	0.053	0.053	0.056	0.051	0.053	0.0515	9.50479	
T	1,3-Dichloropropane		0.355	0.442	0.465	0.42	0.468	0.454	0.457	0.437	0.428	0.436	7.93348	
T	Tetrachloroethene		0.355	0.337	0.336	0.306	0.333	0.325	0.337	0.334	0.33	0.3325	3.83886	
T	Dibromochloromethane		0.349	0.336	0.338	0.328	0.373	0.372	0.383	0.373	0.367	0.3576	5.60043	
T	1,2-Dibromoethane		0.233	0.234	0.234	0.227	0.259	0.254	0.258	0.251	0.247	0.2441	5.04151	
T	1-Chlorohexane		0.532	0.584	0.505	0.502	0.54	0.52	0.547	0.521	0.516	0.5298	4.7826	
P	Chlorobenzene		1.029	1.173	1.09	1.007	1.099	1.037	1.043	1.002	0.939	1.0466	6.41465	
T	1,1,1,2-Tetrachloroethane		0.392	0.399	0.403	0.357	0.431	0.414	0.424	0.417	0.413	0.4055	5.39495	
C	Ethylbenzene		0.6	0.594	0.59	0.532	0.586	0.559	0.57	0.564	0.558	0.5726	3.7769	
T	m-,p-Xylene		0.744	0.696	0.691	0.643	0.713	0.67	0.673	0.634	0.581	0.6716	7.12586	
T	o-Xylene			0.691	0.651	0.614	0.692	0.658	0.667	0.65	0.63	0.6567	4.11758	
T	Styrene		1.05	1.06	1.096	1.043	1.159	1.124	1.12	1.061	0.98	1.077	4.96781	
P	Bromoform			0.177	0.21	0.181	0.226	0.221	0.232	0.227	0.223	0.2121	10.0546	
T	Isopropylbenzene		1.853	1.891	1.871	1.708	1.897	1.781	1.75	1.573	1.377	1.7444	9.92447	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.426	0.492	0.503	0.486	0.543	0.51	0.527	0.513	0.514	0.5018	6.60291	
S	p-Bromofluorobenzene				1.054	0.976	1.071	1.016	1.053	1.031	1.046	1.0352	3.05136	
T	1,2,3-Trichloropropane			0.119	0.158	0.161	0.162	0.155	0.162	0.16	0.158	0.1545	9.40789	
T	trans-1,4-Dichloro-2-Butene			0.085	0.118	0.12	0.149	0.151	0.16	0.159	0.161	0.1376	19.9543	1.000
T	n-Propylbenzene		4.139	4.239	4.243	4.051	4.241	3.953	3.882	3.419	2.935	3.9003	11.4439	
T	Bromobenzene	0.796	0.708	0.843	0.837	0.778	0.84	0.798	0.817	0.803	0.803	0.8022	4.93253	
T	1,3,5-Trimethylbenzene		2.941	2.93	2.941	2.839	3.053	2.882	2.871	2.689	2.423	2.8411	6.50391	
T	2-Chlorotoluene		2.917	2.935	2.929	2.712	2.861	2.795	2.682	2.533	2.145	2.7231	9.37022	
T	4-Chlorotoluene		2.681	2.596	2.581	2.474	2.625	2.326	2.447	2.286	2.121	2.4597	7.49558	
T	a-Methylstyrene					1.257	1.406	1.34	1.384	1.35	1.351	1.3479	3.77654	
T	tert-Butylbenzene			0.587	0.555	0.53	0.571	0.533	0.552	0.561	0.558	0.5558	3.34508	
T	1,2,4-Trimethylbenzene		2.955	3.168	3.127	2.936	3.12	2.914	2.937	2.709	2.427	2.9214	7.97314	
T	sec-Butylbenzene			3.701	3.536	3.487	3.607	3.34	3.332	3.045	2.69	3.3424	9.93324	
T	p-Isopropyltoluene			3.112	3.062	2.903	2.988	2.813	2.809	2.634	2.382	2.8379	8.45265	
T	1,3-Dichlorobenzene		1.484	1.617	1.627	1.53	1.605	1.531	1.549	1.51	1.45	1.5448	3.95774	
T	1,4-Dichlorobenzene	1.713	1.524	1.672	1.594	1.503	1.6	1.511	1.535	1.49	1.431	1.5574	5.56562	
T	n-Butylbenzene			3.143	2.96	2.895	3.002	2.791	2.792	2.571	2.292	2.8056	9.55812	
T	1,2-Dichlorobenzene	1.59	1.307	1.415	1.41	1.322	1.404	1.333	1.356	1.315	1.286	1.3739	6.4618	
T	1,2-Dibromo-3-Chloropropane				0.085	0.103	0.102	0.103	0.106	0.104	0.103	0.1007	6.86771	
T	1,2,4-Trichlorobenzene		1.074	1.01	1.028	0.982	1.069	1.013	1.036	1.029	1.002	1.0269	2.90829	
T	Hexachlorobutadiene		0.516	0.476	0.483	0.447	0.487	0.459	0.48	0.485	0.485	0.4798	4.00465	
T	Naphthalene		1.594	1.457	1.574	1.455	1.63	1.552	1.564	1.485	1.422	1.5258	4.75891	
T	1,2,3-Trichlorobenzene	0.913	0.934	0.905	0.862	0.805	0.877	0.824	0.862	0.846	0.835	0.8664	4.7474	

Tue May 17 11:49:41 2016

Calibration Table Report
Method: A9FOOWT.M
Title: A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Calibration: Thu May 19 08:54:31 2016
Curve: WG569079
Calibration Files

	Compound	5 8M412324.D	20 8M412323.D	50 8M412322.D	100 8M412321.D	200 8M412325.D	300 8M412326.D	400 8M412327.D	500 8M412328.D	Avg	%RSD
I	Fluorobenzene	ISTD									
T	Acetonitrile		0.009	0.010	0.010	0.010	0.010	0.010	0.010	0.010	2.076
T	3-Chloro-1-propene	0.306	0.330	0.335	0.331	0.324	0.307	0.304	0.304	0.318	4.307
T	2-Chloro-1,3-butadiene	0.368	0.420	0.420	0.419	0.419	0.392	0.389	0.387	0.402	5.022
T	Ethyl Acetate	0.080	0.096	0.097	0.100	0.099	0.098	0.100	0.095	0.096	6.751
T	Methacrylonitrile	0.041	0.054	0.055	0.055	0.055	0.054	0.055	0.052	0.053	9.227
T	Isobutyl Alcohol			0.003	0.003	0.003	0.003	0.003	0.003	0.003	3.599
T	1-Butanol									0.000	0.000
T	Methyl methacrylate	0.089	0.106	0.106	0.105	0.106	0.105	0.107	0.102	0.103	5.868
T	2-Nitropropane		0.041	0.042	0.043	0.046	0.047	0.048	0.046	0.045	5.992
I	Chlorobenzene-d5	ISTD									
I	1,4-Dichlorobenzene-d4	ISTD									
T	Cyclohexanone		0.011	0.010	0.010	0.009	0.010	0.011	0.010	0.010	4.971

Thu May 19 09:04:52 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060414 Run Date: 05/13/2016 Sample ID: WG568561-12
Instrument ID: HPMS8 Run Time: 19:17 Method: 8260B
File ID: 8M412232 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG568561 Cal ID: HPMS8 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.1	ug/L	0.513	5.70	20	
1,1-Dichloroethene	CCC	50.0	46.0	ug/L	0.372	8.10	20	
1,2-Dichloropropane	CCC	50.0	51.0	ug/L	0.233	1.90	20	
Ethylbenzene	CCC	50.0	48.2	ug/L	0.552	3.60	20	
Toluene	CCC	50.0	49.1	ug/L	1.52	1.80	20	
Vinyl Chloride	CCC	50.0	52.4	ug/L	0.304	4.80	20	
Bromoform	SPCC	50.0	48.2	ug/L	0.205	3.60	20	
Chlorobenzene	SPCC	50.0	50.2	ug/L	1.05	0.400	20	
Chloromethane	SPCC	50.0	50.7	ug/L	0.248	1.40	20	
1,1-Dichloroethane	SPCC	50.0	46.7	ug/L	0.431	6.60	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.6	ug/L	0.498	0.800	20	
Acetone		50.0	57.5	ug/L	0.0324	15.1	20	
Benzene		50.0	48.5	ug/L	0.997	3.00	20	
Bromobenzene		50.0	49.5	ug/L	0.794	1.10	20	
Bromochloromethane		50.0	47.5	ug/L	0.140	4.90	20	
Bromodichloromethane		50.0	48.3	ug/L	0.388	3.40	20	
Bromomethane		50.0	46.4	ug/L	0.162	7.20	20	
2-Butanone		50.0	53.0	ug/L	0.0438	6.00	20	
n-Butylbenzene		50.0	49.7	ug/L	2.79	0.700	20	
sec-Butylbenzene		50.0	51.3	ug/L	3.43	2.70	20	
tert-Butylbenzene		50.0	50.9	ug/L	0.566	1.90	20	
Carbon Disulfide		50.0	42.3	ug/L	0.716	15.4	20	
Carbon Tetrachloride		50.0	46.2	ug/L	0.425	7.50	20	
Dibromochloromethane		50.0	49.7	ug/L	0.355	0.700	20	
Chloroethane		50.0	53.3	ug/L	0.170	6.70	20	
2-Chlorotoluene		50.0	51.6	ug/L	2.81	3.10	20	
4-Chlorotoluene		50.0	48.3	ug/L	2.37	3.50	20	
1,2-Dibromo-3-Chloropropane		50.0	48.5	ug/L	0.0977	3.00	20	
1,2-Dibromoethane		50.0	51.1	ug/L	0.250	2.20	20	
Dibromomethane		50.0	45.8	ug/L	0.124	8.40	20	
1,2-Dichlorobenzene		50.0	50.5	ug/L	1.39	1.00	20	
1,3-Dichlorobenzene		50.0	50.9	ug/L	1.57	1.80	20	
1,4-Dichlorobenzene		50.0	50.5	ug/L	1.57	0.900	20	
Dichlorodifluoromethane		50.0	54.2	ug/L	0.455	8.40	20	
1,2-Dichloroethane		50.0	49.0	ug/L	0.344	2.00	20	
cis-1,2-Dichloroethene		50.0	48.9	ug/L	0.281	2.20	20	
trans-1,2-Dichloroethene		50.0	48.1	ug/L	0.357	3.90	20	
1,3-Dichloropropane		50.0	53.7	ug/L	0.468	7.30	20	
2,2-Dichloropropane		50.0	47.9	ug/L	0.466	4.20	20	
cis-1,3-Dichloropropene		50.0	53.9	ug/L	0.441	7.80	20	
trans-1,3-Dichloropropene		50.0	50.7	ug/L	0.527	1.30	20	
1,1-Dichloropropene		50.0	47.5	ug/L	0.374	5.10	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4805790
Report generated 06/16/2016 12:54

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060414 Run Date: 05/13/2016 Sample ID: WG568561-12
Instrument ID: HPMS8 Run Time: 19:17 Method: 8260B
File ID: 8M412232 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG568561 Cal ID: HPMS8 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	53.6	ug/L	0.0552	7.20	20	
Hexachlorobutadiene		50.0	52.1	ug/L	0.500	4.20	20	
Isopropylbenzene		50.0	51.1	ug/L	1.78	2.20	20	
p-Isopropyltoluene		50.0	50.1	ug/L	2.85	0.300	20	
4-Methyl-2-Pentanone		50.0	51.9	ug/L	0.0416	3.70	20	
Methylene Chloride		50.0	48.4	ug/L	0.249	3.10	20	
Naphthalene		50.0	45.8	ug/L	1.40	8.40	20	
n-Propylbenzene		50.0	51.9	ug/L	4.05	3.80	20	
Styrene		50.0	51.5	ug/L	1.11	3.00	20	
1,1,1,2-Tetrachloroethane		50.0	49.4	ug/L	0.400	1.20	20	
Tetrachloroethene		50.0	47.8	ug/L	0.318	4.40	20	
1,2,3-Trichlorobenzene		50.0	47.7	ug/L	0.827	4.50	20	
1,2,4-Trichlorobenzene		50.0	50.1	ug/L	1.03	0.200	20	
1,1,1-Trichloroethane		50.0	47.6	ug/L	0.492	4.80	20	
1,1,2-Trichloroethane		50.0	49.0	ug/L	0.240	1.90	20	
Trichloroethene		50.0	51.1	ug/L	0.280	2.10	20	
Trichlorofluoromethane		50.0	46.9	ug/L	0.507	6.10	20	
1,2,3-Trichloropropane		50.0	50.1	ug/L	0.155	0.200	20	
1,2,4-Trimethylbenzene		50.0	49.7	ug/L	2.90	0.700	20	
1,3,5-Trimethylbenzene		50.0	51.6	ug/L	2.93	3.30	20	
o-Xylene		50.0	50.6	ug/L	0.664	1.10	20	
m-,p-Xylene		100	101	ug/L	0.679	1.10	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4805790
Report generated 06/16/2016 12:54

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060414 Run Date: 06/13/2016 Sample ID: WG572492-02
Instrument ID: HPMS8 Run Time: 15:04 Method: 8260B
File ID: 8M412945 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG572494 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	51.2	ug/L	0.558	2.40	20	
1,1-Dichloroethene	CCC	50.0	50.2	ug/L	0.406	0.428	20	
1,2-Dichloropropane	CCC	50.0	47.2	ug/L	0.216	5.68	20	
Ethylbenzene	CCC	50.0	48.4	ug/L	0.554	3.24	20	
Toluene	CCC	50.0	49.5	ug/L	1.54	1.00	20	
Vinyl Chloride	CCC	50.0	52.5	ug/L	0.305	4.96	20	
Bromoform	SPCC	50.0	52.5	ug/L	0.223	4.96	20	
Chlorobenzene	SPCC	50.0	49.3	ug/L	1.03	1.49	20	
Chloromethane	SPCC	50.0	47.2	ug/L	0.231	5.56	20	
1,1-Dichloroethane	SPCC	50.0	49.6	ug/L	0.458	0.715	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	44.0	ug/L	0.442	12.0	20	
Xylenes		150	149	ug/L	0.657	0.895	20	
Acetone		50.0	51.0	ug/L	0.0287	2.07	20	
Benzene		50.0	49.6	ug/L	1.02	0.893	20	
Bromobenzene		50.0	48.8	ug/L	0.783	2.46	20	
Bromochloromethane		50.0	50.6	ug/L	0.149	1.19	20	
Bromodichloromethane		50.0	52.6	ug/L	0.422	5.11	20	
Bromomethane		50.0	35.6	ug/L	0.123	28.8	20	*
2-Butanone		50.0	43.5	ug/L	0.0360	12.9	20	
n-Butylbenzene		50.0	47.3	ug/L	2.65	5.38	20	
sec-Butylbenzene		50.0	48.0	ug/L	3.21	4.07	20	
tert-Butylbenzene		50.0	46.5	ug/L	0.517	6.96	20	
Carbon Disulfide		50.0	50.7	ug/L	0.858	1.47	20	
Carbon Tetrachloride		50.0	55.0	ug/L	0.506	10.1	20	
Dibromochloromethane		50.0	50.9	ug/L	0.364	1.86	20	
Chloroethane		50.0	48.2	ug/L	0.154	3.63	20	
2-Chlorotoluene		50.0	47.6	ug/L	2.59	4.83	20	
4-Chlorotoluene		50.0	47.1	ug/L	2.32	5.84	20	
1,2-Dibromo-3-Chloropropane		50.0	45.8	ug/L	0.0923	8.40	20	
1,2-Dibromoethane		50.0	48.4	ug/L	0.236	3.25	20	
Dibromomethane		50.0	47.5	ug/L	0.129	4.91	20	
1,2-Dichlorobenzene		50.0	47.0	ug/L	1.29	5.92	20	
1,3-Dichlorobenzene		50.0	48.5	ug/L	1.50	2.92	20	
1,4-Dichlorobenzene		50.0	47.4	ug/L	1.48	5.28	20	
Dichlorodifluoromethane		50.0	54.2	ug/L	0.454	8.31	20	
1,2-Dichloroethane		50.0	53.3	ug/L	0.374	6.62	20	
cis-1,2-Dichloroethene		50.0	49.5	ug/L	0.284	0.995	20	
trans-1,2-Dichloroethene		50.0	49.7	ug/L	0.369	0.632	20	
1,3-Dichloropropane		50.0	47.6	ug/L	0.415	4.87	20	
2,2-Dichloropropane		50.0	57.8	ug/L	0.562	15.6	20	
cis-1,3-Dichloropropene		50.0	51.3	ug/L	0.420	2.59	20	
trans-1,3-Dichloropropene		50.0	51.2	ug/L	0.533	2.42	20	

CCV - Modified 03/05/2008
PDF File ID: 4805792
Report generated 06/16/2016 12:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060414 Run Date: 06/13/2016 Sample ID: WG572492-02
Instrument ID: HPMS8 Run Time: 15:04 Method: 8260B
File ID: 8M412945 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG572494 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	50.2	ug/L	0.396	0.303	20	
2-Hexanone		50.0	44.7	ug/L	0.0460	10.5	20	
Hexachlorobutadiene		50.0	49.2	ug/L	0.472	1.67	20	
Isopropylbenzene		50.0	50.9	ug/L	1.78	1.79	20	
p-Isopropyltoluene		50.0	48.3	ug/L	2.74	3.44	20	
4-Methyl-2-Pentanone		50.0	45.4	ug/L	0.0365	9.17	20	
Methylene Chloride		50.0	48.0	ug/L	0.247	4.10	20	
Naphthalene		50.0	45.5	ug/L	1.39	9.06	20	
n-Propylbenzene		50.0	48.1	ug/L	3.76	3.72	20	
Styrene		50.0	51.2	ug/L	1.10	2.41	20	
1,1,1,2-Tetrachloroethane		50.0	51.6	ug/L	0.418	3.11	20	
Tetrachloroethene		50.0	51.9	ug/L	0.345	3.81	20	
1,2,3-Trichlorobenzene		50.0	46.1	ug/L	0.798	7.87	20	
1,2,4-Trichlorobenzene		50.0	48.1	ug/L	0.987	3.86	20	
1,1,1-Trichloroethane		50.0	54.5	ug/L	0.564	9.02	20	
1,1,2-Trichloroethane		50.0	46.8	ug/L	0.229	6.43	20	
Trichloroethene		50.0	51.1	ug/L	0.280	2.13	20	
Trichlorofluoromethane		50.0	54.1	ug/L	0.585	8.27	20	
1,2,3-Trichloropropane		50.0	45.9	ug/L	0.142	8.20	20	
1,2,4-Trimethylbenzene		50.0	48.5	ug/L	2.83	3.06	20	
1,3,5-Trimethylbenzene		50.0	49.0	ug/L	2.78	2.07	20	
o-Xylene		50.0	49.0	ug/L	0.644	1.92	20	
m-,p-Xylene		100	99.6	ug/L	0.669	0.381	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4805792
Report generated 06/16/2016 12:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060414 Run Date: 06/14/2016 Sample ID: WG572591-02
Instrument ID: HPMS8 Run Time: 09:57 Method: 8260B
File ID: 8M412972 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG572592 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	52.7	ug/L	0.574	5.32	20	
1,1-Dichloroethene	CCC	50.0	52.8	ug/L	0.427	5.65	20	
1,2-Dichloropropane	CCC	50.0	48.2	ug/L	0.221	3.50	20	
Ethylbenzene	CCC	50.0	49.5	ug/L	0.567	1.04	20	
Toluene	CCC	50.0	50.4	ug/L	1.57	0.889	20	
Vinyl Chloride	CCC	50.0	55.8	ug/L	0.324	11.6	20	
Bromoform	SPCC	50.0	49.3	ug/L	0.209	1.31	20	
Chlorobenzene	SPCC	50.0	50.1	ug/L	1.05	0.118	20	
Chloromethane	SPCC	50.0	50.8	ug/L	0.248	1.51	20	
1,1-Dichloroethane	SPCC	50.0	51.9	ug/L	0.479	3.87	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	41.8	ug/L	0.419	16.5	20	
Xylenes		150	152	ug/L	0.670	1.10	20	
Acetone		50.0	48.9	ug/L	0.0275	2.30	20	
Benzene		50.0	51.6	ug/L	1.06	3.12	20	
Bromobenzene		50.0	48.3	ug/L	0.775	3.44	20	
Bromochloromethane		50.0	50.5	ug/L	0.149	1.05	20	
Bromodichloromethane		50.0	52.0	ug/L	0.418	4.06	20	
Bromomethane		50.0	40.9	ug/L	0.142	18.2	20	
2-Butanone		50.0	44.9	ug/L	0.0371	10.2	20	
n-Butylbenzene		50.0	48.7	ug/L	2.73	2.58	20	
sec-Butylbenzene		50.0	49.3	ug/L	3.30	1.41	20	
tert-Butylbenzene		50.0	48.9	ug/L	0.544	2.20	20	
Carbon Disulfide		50.0	53.2	ug/L	0.899	6.31	20	
Carbon Tetrachloride		50.0	55.2	ug/L	0.507	10.3	20	
Dibromochloromethane		50.0	49.2	ug/L	0.352	1.69	20	
Chloroethane		50.0	51.5	ug/L	0.164	2.93	20	
2-Chlorotoluene		50.0	44.6	ug/L	2.43	10.8	20	
4-Chlorotoluene		50.0	53.0	ug/L	2.61	6.05	20	
1,2-Dibromo-3-Chloropropane		50.0	41.1	ug/L	0.0829	17.7	20	
1,2-Dibromoethane		50.0	46.1	ug/L	0.225	7.71	20	
Dibromomethane		50.0	46.8	ug/L	0.127	6.47	20	
1,2-Dichlorobenzene		50.0	46.7	ug/L	1.28	6.63	20	
1,3-Dichlorobenzene		50.0	49.2	ug/L	1.52	1.53	20	
1,4-Dichlorobenzene		50.0	47.7	ug/L	1.49	4.51	20	
Dichlorodifluoromethane		50.0	55.3	ug/L	0.463	10.5	20	
1,2-Dichloroethane		50.0	51.2	ug/L	0.359	2.38	20	
cis-1,2-Dichloroethene		50.0	51.3	ug/L	0.294	2.59	20	
trans-1,2-Dichloroethene		50.0	52.1	ug/L	0.387	4.25	20	
1,3-Dichloropropane		50.0	46.0	ug/L	0.401	8.04	20	
2,2-Dichloropropane		50.0	58.5	ug/L	0.569	17.0	20	
cis-1,3-Dichloropropene		50.0	51.6	ug/L	0.422	3.26	20	
trans-1,3-Dichloropropene		50.0	49.1	ug/L	0.511	1.76	20	

CCV - Modified 03/05/2008
PDF File ID: 4805792
Report generated 06/16/2016 12:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060414 Run Date: 06/14/2016 Sample ID: WG572591-02
Instrument ID: HPMS8 Run Time: 09:57 Method: 8260B
File ID: 8M412972 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG572592 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	52.9	ug/L	0.417	5.84	20	
2-Hexanone		50.0	42.8	ug/L	0.0441	14.3	20	
Hexachlorobutadiene		50.0	51.9	ug/L	0.498	3.75	20	
Isopropylbenzene		50.0	51.5	ug/L	1.80	2.92	20	
p-Isopropyltoluene		50.0	49.3	ug/L	2.80	1.43	20	
4-Methyl-2-Pentanone		50.0	42.3	ug/L	0.0340	15.4	20	
Methylene Chloride		50.0	49.3	ug/L	0.254	1.44	20	
Naphthalene		50.0	42.6	ug/L	1.30	14.8	20	
n-Propylbenzene		50.0	49.2	ug/L	3.84	1.56	20	
Styrene		50.0	51.2	ug/L	1.10	2.41	20	
1,1,1,2-Tetrachloroethane		50.0	50.7	ug/L	0.411	1.48	20	
Tetrachloroethene		50.0	52.9	ug/L	0.352	5.89	20	
1,2,3-Trichlorobenzene		50.0	44.9	ug/L	0.777	10.3	20	
1,2,4-Trichlorobenzene		50.0	48.1	ug/L	0.988	3.84	20	
1,1,1-Trichloroethane		50.0	55.1	ug/L	0.570	10.1	20	
1,1,2-Trichloroethane		50.0	45.1	ug/L	0.221	9.88	20	
Trichloroethene		50.0	52.7	ug/L	0.289	5.45	20	
Trichlorofluoromethane		50.0	55.1	ug/L	0.595	10.2	20	
1,2,3-Trichloropropane		50.0	43.2	ug/L	0.134	13.5	20	
1,2,4-Trimethylbenzene		50.0	49.6	ug/L	2.90	0.789	20	
1,3,5-Trimethylbenzene		50.0	50.3	ug/L	2.86	0.509	20	
o-Xylene		50.0	50.0	ug/L	0.657	0.0780	20	
m-,p-Xylene		100	102	ug/L	0.683	1.61	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4805792
Report generated 06/16/2016 12:54

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060414
Instrument ID: HPMS8
Workgroup (AAB#): WG572494

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	288225	539116	778260
Upper Limit	NA	NA	576450	1078232	1556520
Lower Limit	NA	NA	144113	269558	389130
L16060414-05	1.00	01	307310	556979	752636
WG572494-01	1.00	01	308188	570919	749860
WG572494-02	1.00	01	321769	563003	773259
WG572494-03	1.00	01	317199	564940	764855

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4809970
Report generated 06/16/2016 12:54

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060414
Instrument ID: HPMS8
Workgroup (AAB#): WG572592

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	288225	539116	778260
Upper Limit	NA	NA	576450	1078232	1556520
Lower Limit	NA	NA	144113	269558	389130
L16060414-01	100	DL01	308907	561343	750113
L16060414-02	100	DL01	307269	563608	748707
L16060414-03	100	DL01	306527	553493	741315
L16060414-04	100	DL01	305612	547033	740343
WG572592-01	1.00	01	333089	597833	818923
WG572592-02	1.00	01	328956	583790	789634

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4809970
Report generated 06/16/2016 12:54

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060414
Instrument ID: HPMS8
Workgroup (AAB#): WG572494

ICAL CCV Number: WG568561-08
CAL ID: HPMS8-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	17.6	14.58	10.71
Upper Limit	NA	NA	18.1	15.08	11.21
Lower Limit	NA	NA	17.1	14.08	10.21
L16060414-05	1.00	01	17.6	14.57	10.71
WG572494-01	1.00	01	17.6	14.57	10.71
WG572494-02	1.00	01	17.6	14.58	10.71
WG572494-03	1.00	01	17.6	14.57	10.71

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4809971
Report generated: 06/16/2016 12:54

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060414
Instrument ID: HPMS8
Workgroup (AAB#): WG572592

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	17.6	14.58	10.71
Upper Limit	NA	NA	18.1	15.08	11.21
Lower Limit	NA	NA	17.1	14.08	10.21
L16060414-01	100	DL01	17.6	14.57	10.71
L16060414-02	100	DL01	17.6	14.57	10.71
L16060414-03	100	DL01	17.6	14.57	10.71
L16060414-04	100	DL01	17.6	14.57	10.71
WG572592-01	1.00	01	17.6	14.57	10.71
WG572592-02	1.00	01	17.6	14.57	10.71

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4809971
Report generated: 06/16/2016 12:54

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412992.D Vial: 22
Acq On : 14 Jun 2016 19:35 Operator: TMB
Sample : L16060414-01 B 100X 826-LOW Inst : HPMS8
Misc : 1,100 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 08:27:21 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	750113	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	561343	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	308907	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	221126	27.4373 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.76%		
43) 1,2-Dichloroethane-d4	10.30	65	247306	28.6181 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 114.48%		
58) Toluene-d8	12.68	98	773605	26.3327 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.32%		
80) p-Bromofluorobenzene	16.08	95	326708	25.5421 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.16%		

Target Compounds					Qvalue
4) Vinyl Chloride	3.84	62	15380	1.7658 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	212069	27.8381 ug/L	94
13) Acetone	6.16	43	1358	1.6091 ug/L #	50
14) 1,1-Dichloroethene	6.47	61	13843	1.1413 ug/L	94
27) 1,1-Dichloroethane	8.32	63	12523	0.9049 ug/L	94
32) cis-1,2-Dichloroethene	9.17	96	1029674	119.5859 ug/L	83
45) 1,2-Dichloroethane	10.42	62	15087	1.4345 ug/L	92
47) Trichloroethene	11.21	130	517551	62.9771 ug/L	99
48) Methylcyclohexane	11.21	83	6343	0.5081 ug/L #	1

(#) = qualifier out of range (m) = manual integration
8M412992.D 8260WT.M Wed Jun 15 08:27:24 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412992.D Vial: 22
Acq On : 14 Jun 2016 19:35 Operator: TMB
Sample : L16060414-01 B 100X 826-LOW Inst : HPMS8
Misc : 1,100 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 8:27 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

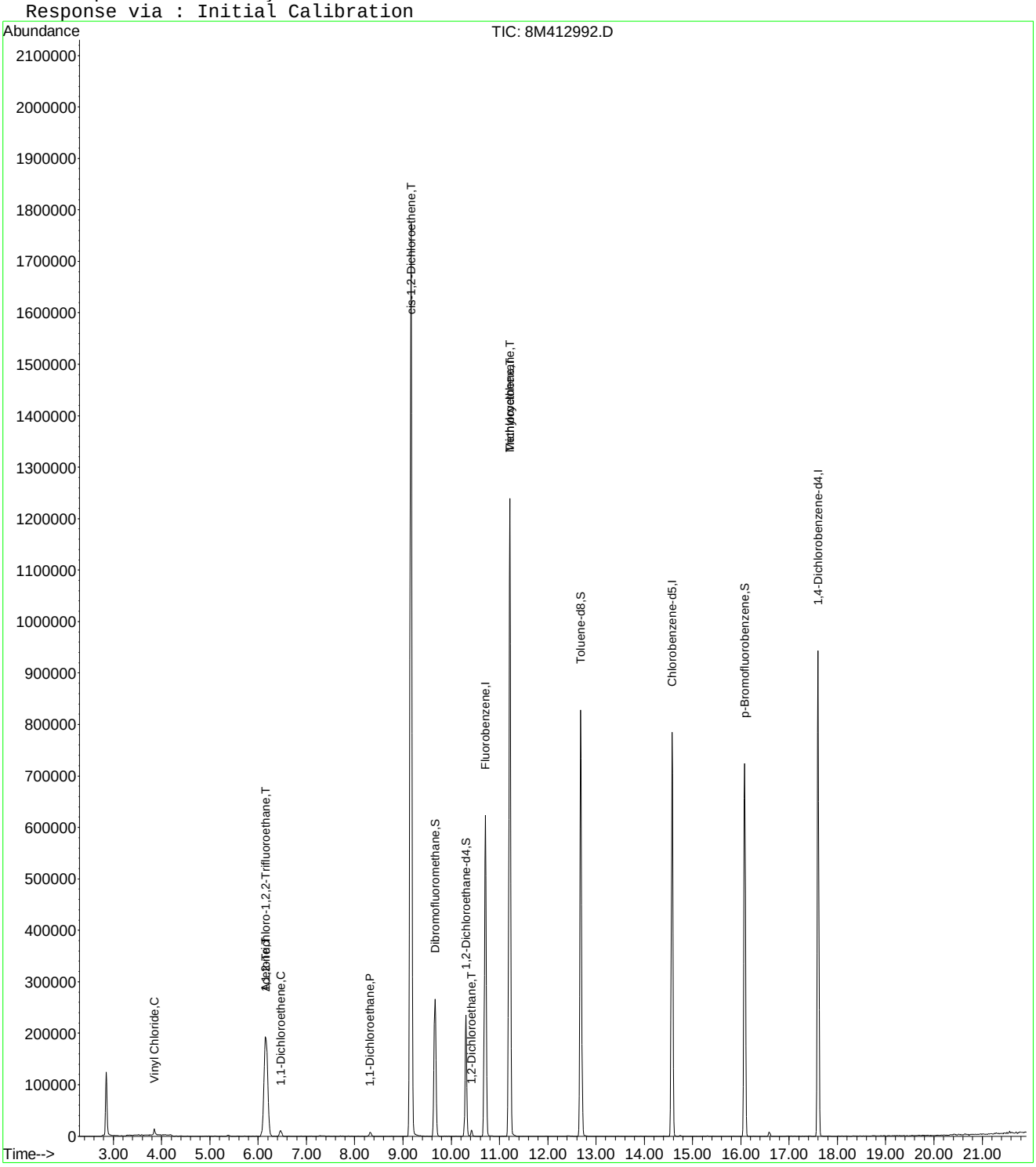

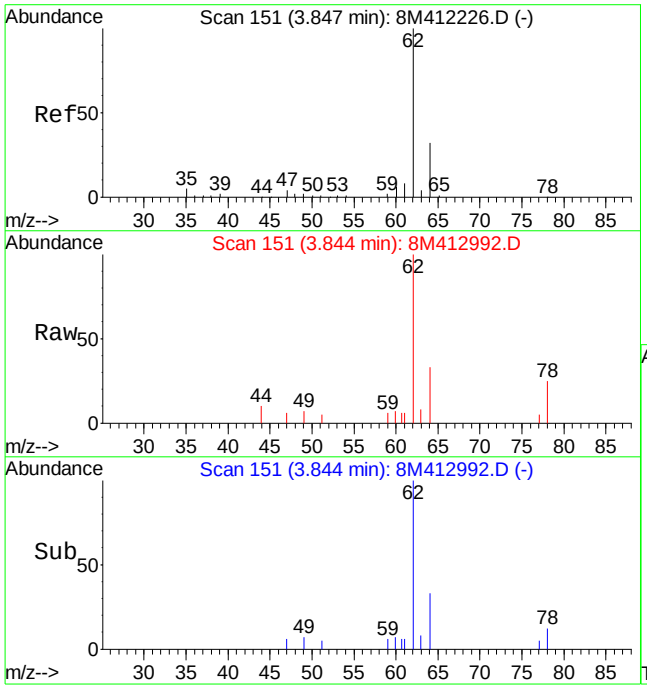

#4
Vinyl Chloride
Concen: 1.77 ug/L
RT: 3.84 min Scan# 151
Delta R.T. -0.00 min
Lab File: 8M412992.D
Acq: 14 Jun 2016 19:35

Tgt Ion: 62 Resp: 15380

Ion	Ratio	Lower	Upper
62	100		
64	30.5	19.3	45.1

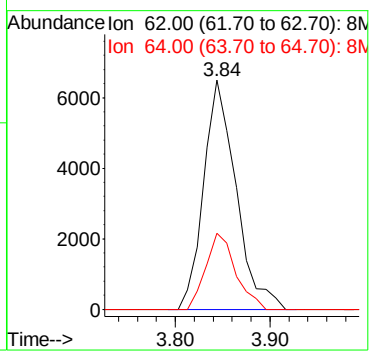

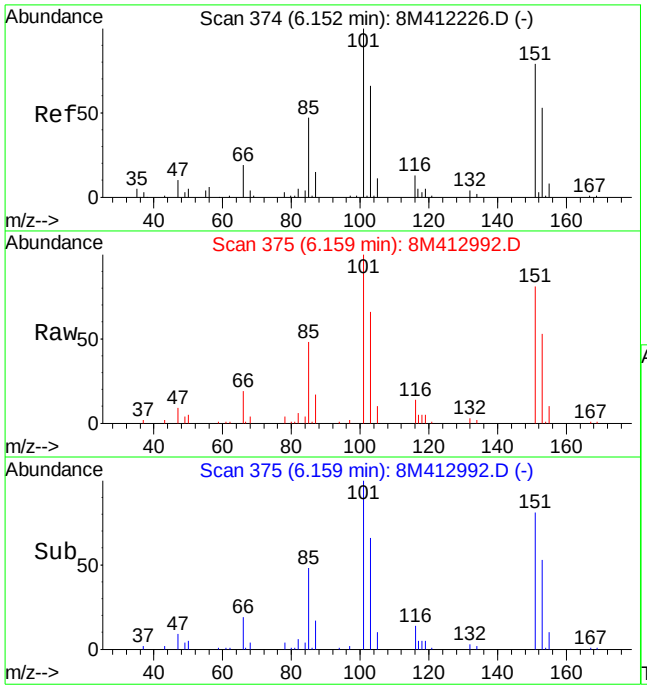

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 27.84 ug/L
RT: 6.16 min Scan# 375
Delta R.T. 0.01 min
Lab File: 8M412992.D
Acq: 14 Jun 2016 19:35

Tgt Ion:101 Resp: 212069

Ion	Ratio	Lower	Upper
101	100		
151	85.2	40.2	120.2

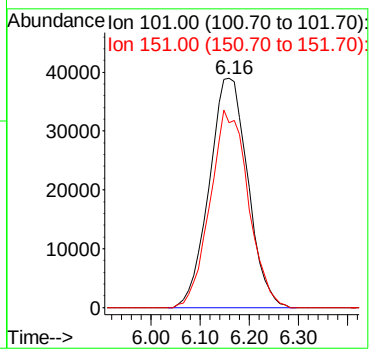

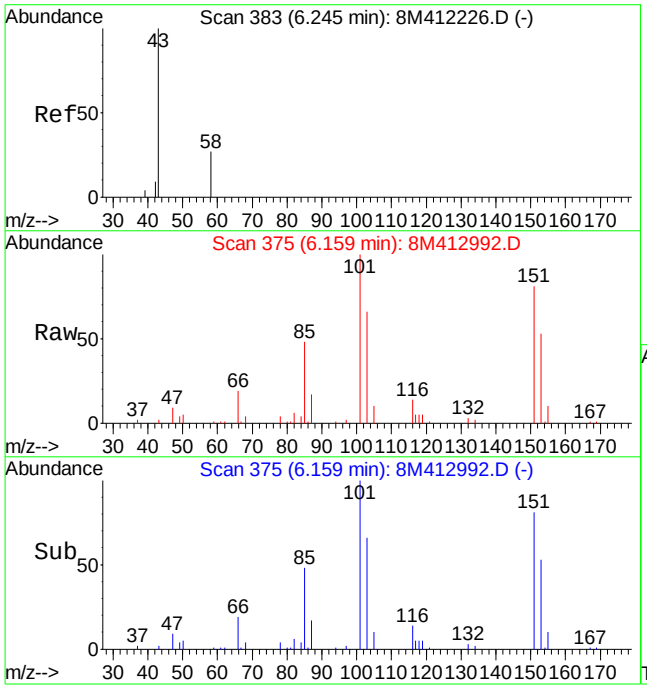

#13
Acetone
Concen: 1.61 ug/L
RT: 6.16 min Scan# 375
Delta R.T. -0.09 min
Lab File: 8M412992.D
Acq: 14 Jun 2016 19:35

Tgt Ion: 43 Resp: 1358

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.2	35.4#

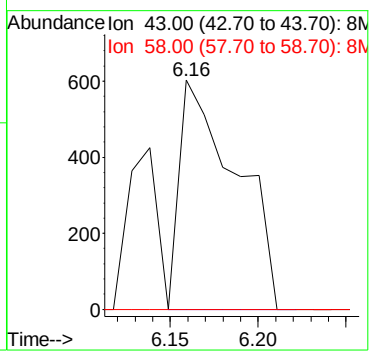

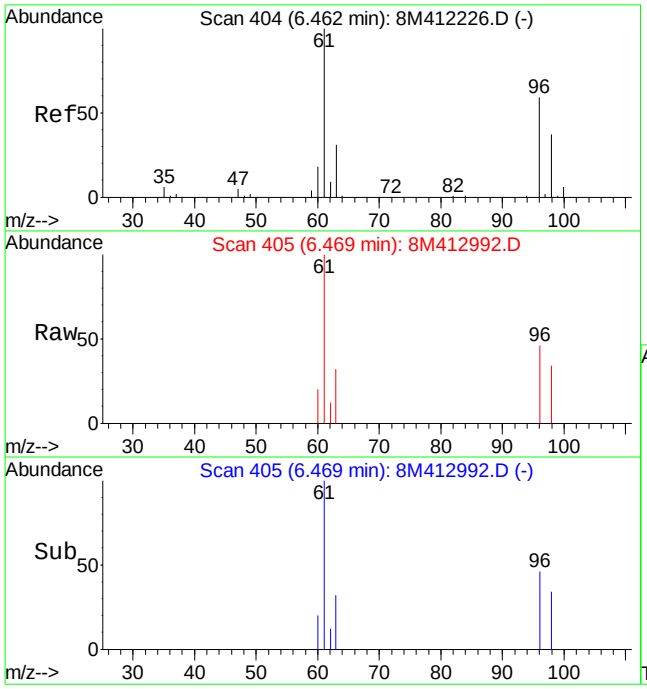

#14
1,1-Dichloroethene
Concen: 1.14 ug/L
RT: 6.47 min Scan# 405
Delta R.T. 0.01 min
Lab File: 8M412992.D
Acq: 14 Jun 2016 19:35

Tgt Ion: 61 Resp: 13843

Ion	Ratio	Lower	Upper
61	100		
96	53.3	34.6	80.8

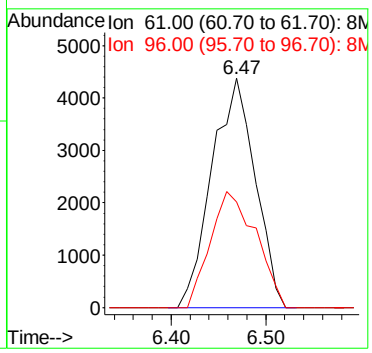

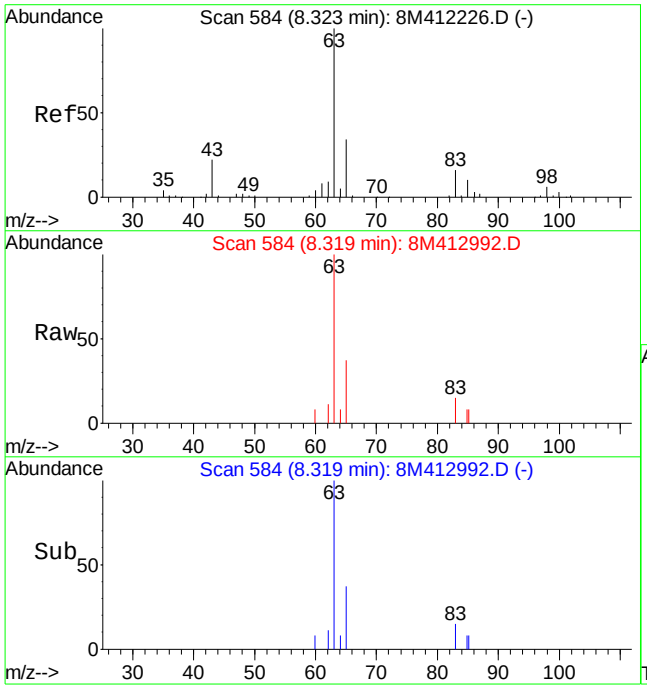

#27
1,1-Dichloroethane
Concen: 0.90 ug/L
RT: 8.32 min Scan# 584
Delta R.T. -0.00 min
Lab File: 8M412992.D
Acq: 14 Jun 2016 19:35

Tgt Ion: 63 Resp: 12523

Ion	Ratio	Lower	Upper
63	100		
65	30.1	20.2	47.0
83	17.2	9.1	21.1

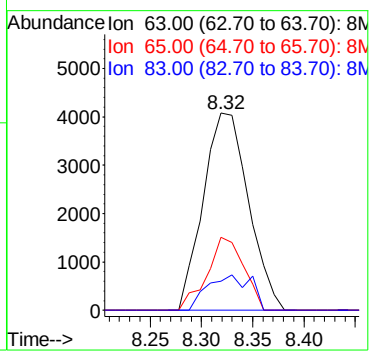

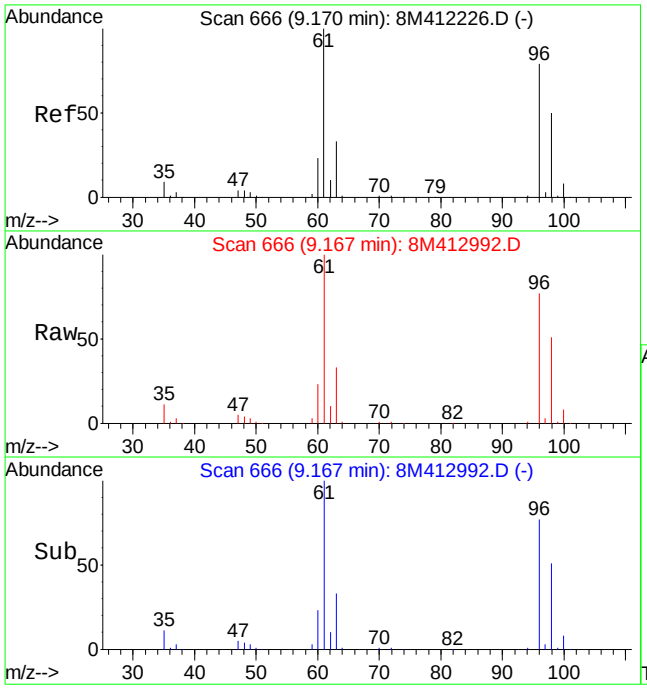

#32
cis-1,2-Dichloroethene
Concen: 119.59 ug/L
RT: 9.17 min Scan# 666
Delta R.T. -0.00 min
Lab File: 8M412992.D
Acq: 14 Jun 2016 19:35

Tgt Ion: 96 Resp: 1029674

Ion	Ratio	Lower	Upper
96	100		
61	130.5	91.5	213.5

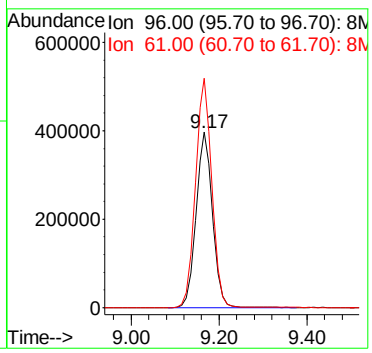

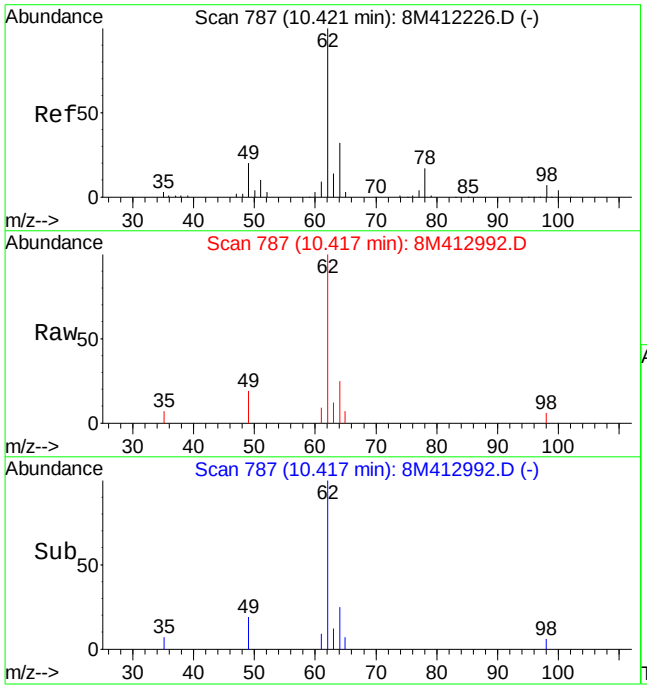

#45
1,2-Dichloroethane
Concen: 1.43 ug/L
RT: 10.42 min Scan# 787
Delta R.T. -0.00 min
Lab File: 8M412992.D
Acq: 14 Jun 2016 19:35

Tgt Ion: 62 Resp: 15087

Ion	Ratio	Lower	Upper
62	100		
64	30.9	19.6	45.6
49	18.3	15.5	36.1

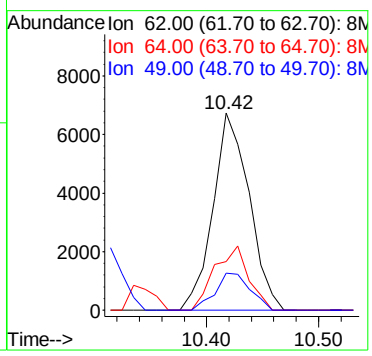

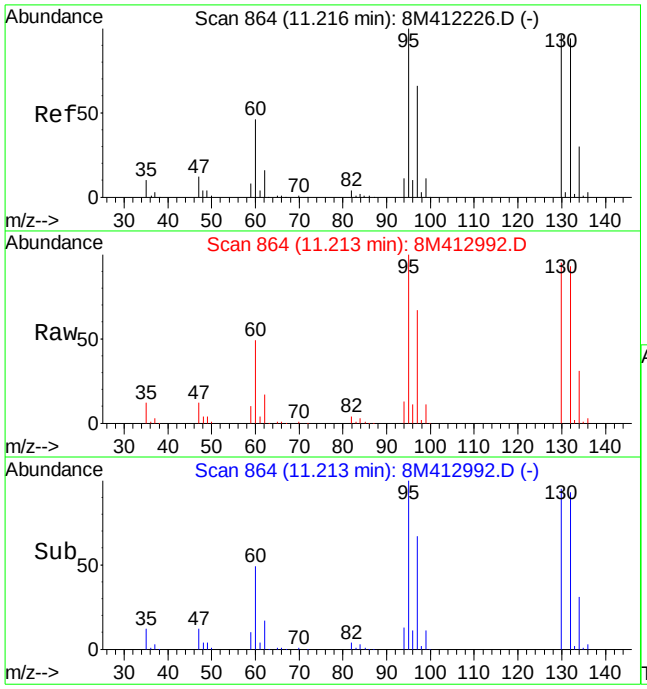

#47
Trichloroethene
Concen: 62.98 ug/L
RT: 11.21 min Scan# 864
Delta R.T. -0.00 min
Lab File: 8M412992.D
Acq: 14 Jun 2016 19:35

Tgt Ion:130 Resp: 517551

Ion	Ratio	Lower	Upper
130	100		
132	97.5	58.0	135.2
95	106.1	64.9	151.5

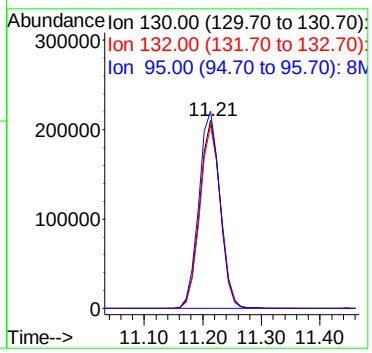

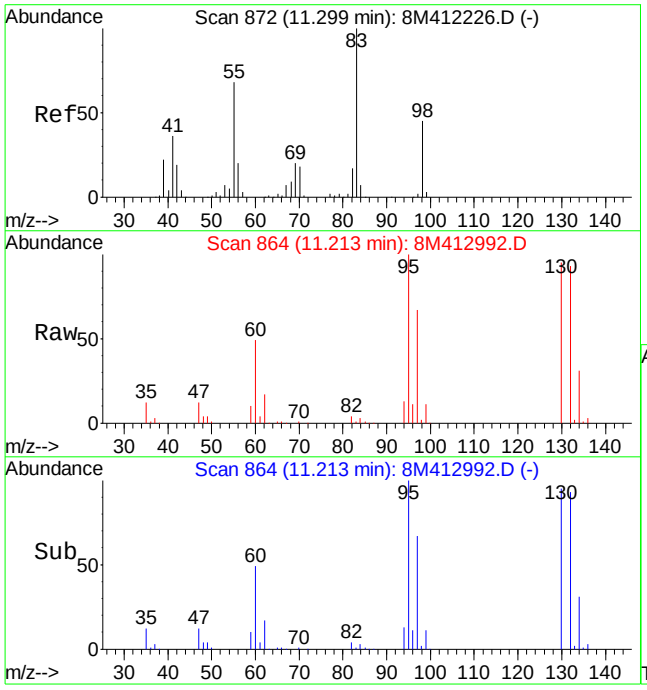

#48
Methylcyclohexane
Concen: 0.51 ug/L
RT: 11.21 min Scan# 864
Delta R.T. -0.09 min
Lab File: 8M412992.D
Acq: 14 Jun 2016 19:35

Tgt Ion: 83 Resp: 6343

Ion	Ratio	Lower	Upper
83	100		
55	0.0	40.9	95.3#
98	230.2	28.1	65.7#

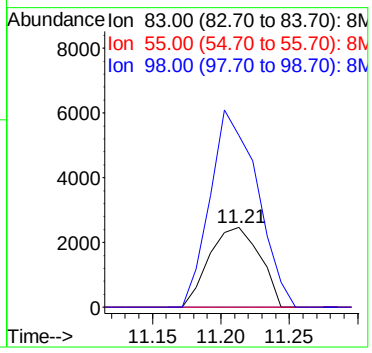

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412993.D Vial: 23
Acq On : 14 Jun 2016 20:05 Operator: TMB
Sample : L16060414-02 B 100X 826-LOW Inst : HPMS8
Misc : 1,100 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 08:27:27 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	748707	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	563608	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	307269	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	221558	27.5425 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.16%		
43) 1,2-Dichloroethane-d4	10.30	65	244371	28.3315 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 113.32%		
58) Toluene-d8	12.68	98	761543	25.8180 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.28%		
80) p-Bromofluorobenzene	16.08	95	312101	24.5302 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.12%		

Target Compounds

					Qvalue
4) Vinyl Chloride	3.84	62	22278	2.5626 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	261753	34.4246 ug/L	97
13) Acetone	6.14	43	2063	2.4491 ug/L #	69
14) 1,1-Dichloroethene	6.47	61	19099	1.5776 ug/L	92
19) Methylene Chloride	7.26	84	7328	0.9511 ug/L	92
20) Carbon Disulfide	7.29	76	3964	0.1565 ug/L #	74
27) 1,1-Dichloroethane	8.32	63	15585	1.1283 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	1213673	141.2202 ug/L	83
45) 1,2-Dichloroethane	10.43	62	16602	1.5815 ug/L	92
47) Trichloroethene	11.21	130	584085	71.2067 ug/L	98
48) Methylcyclohexane	11.21	83	7231	0.5803 ug/L #	1

(#) = qualifier out of range (m) = manual integration
8M412993.D 8260WT.M Wed Jun 15 08:27:30 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412993.D Vial: 23
Acq On : 14 Jun 2016 20:05 Operator: TMB
Sample : L16060414-02 B 100X 826-LOW Inst : HPMS8
Misc : 1,100 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 8:27 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

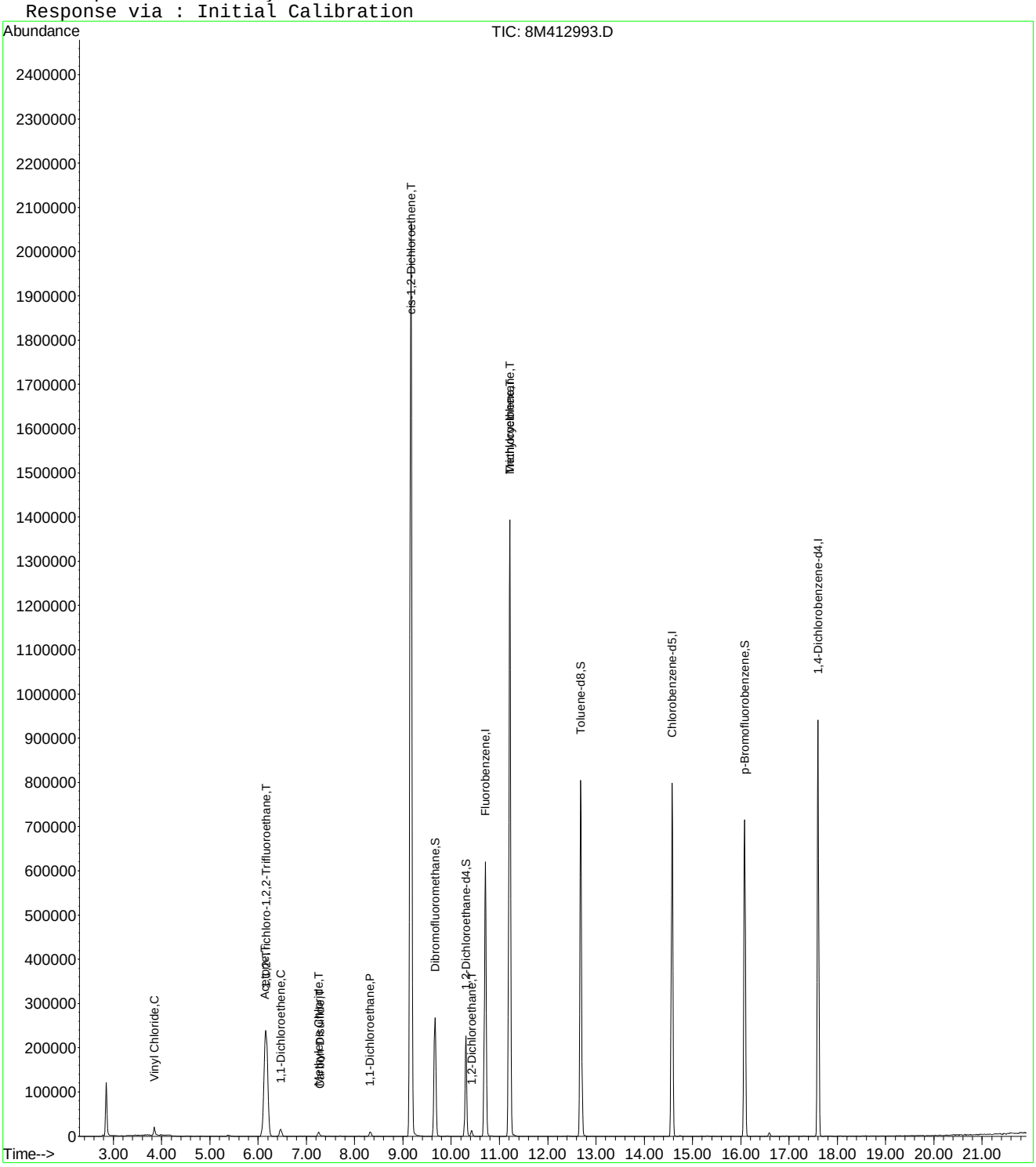

8M412993.D 8260WT.M Wed Jun 15 08:27:31 2016 Page 2

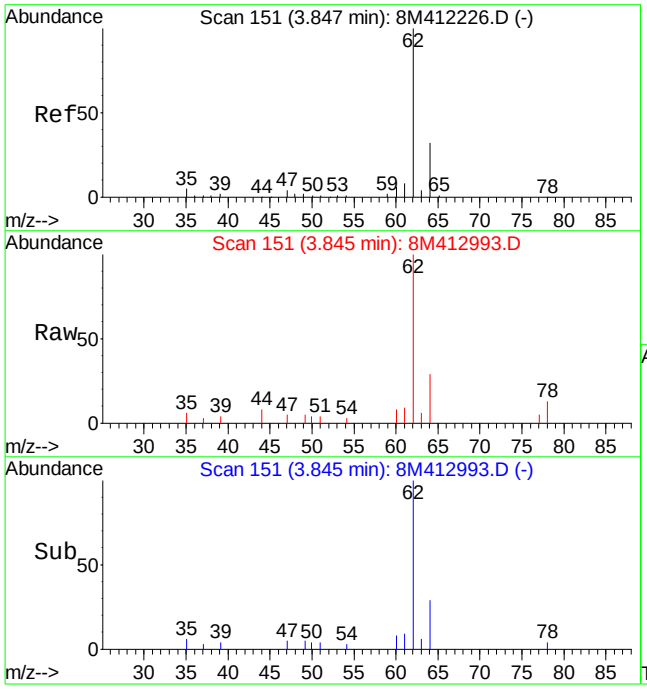

#4
Vinyl Chloride
Concen: 2.56 ug/L
RT: 3.84 min Scan# 151
Delta R.T. -0.00 min
Lab File: 8M412993.D
Acq: 14 Jun 2016 20:05

Tgt Ion: 62 Resp: 22278

Ion	Ratio	Lower	Upper
62	100		
64	32.3	19.3	45.1

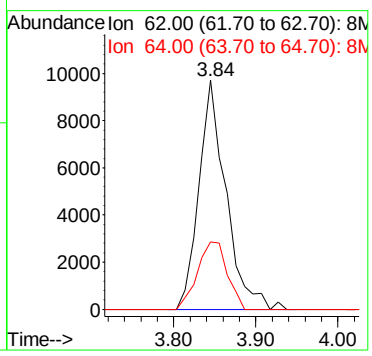

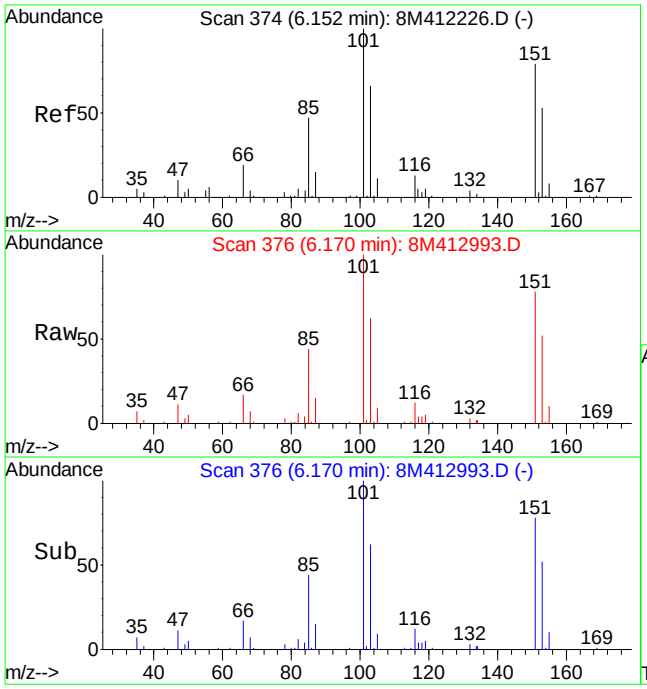

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 34.42 ug/L
RT: 6.17 min Scan# 376
Delta R.T. 0.02 min
Lab File: 8M412993.D
Acq: 14 Jun 2016 20:05

Tgt Ion:101 Resp: 261753

Ion	Ratio	Lower	Upper
101	100		
151	82.5	40.2	120.2

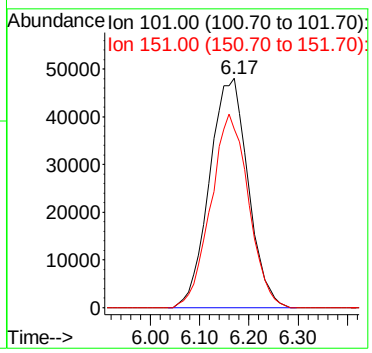

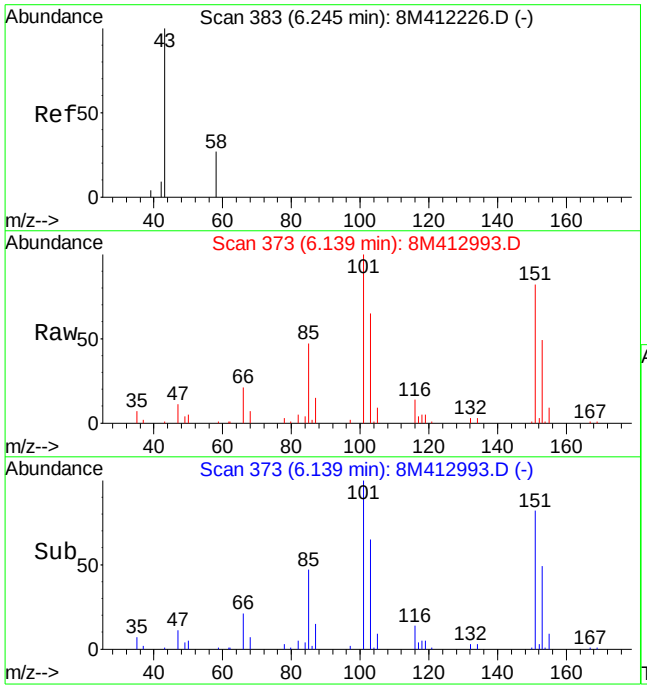

#13
Acetone
Concen: 2.45 ug/L
RT: 6.14 min Scan# 373
Delta R.T. -0.11 min
Lab File: 8M412993.D
Acq: 14 Jun 2016 20:05

Tgt Ion: 43 Resp: 2063

Ion	Ratio	Lower	Upper
43	100		
58	9.9	15.2	35.4#

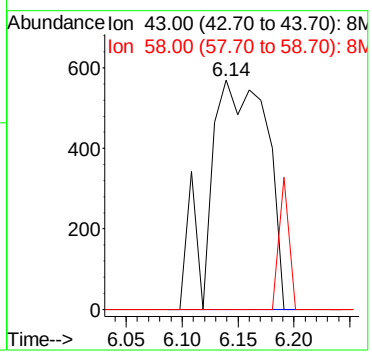

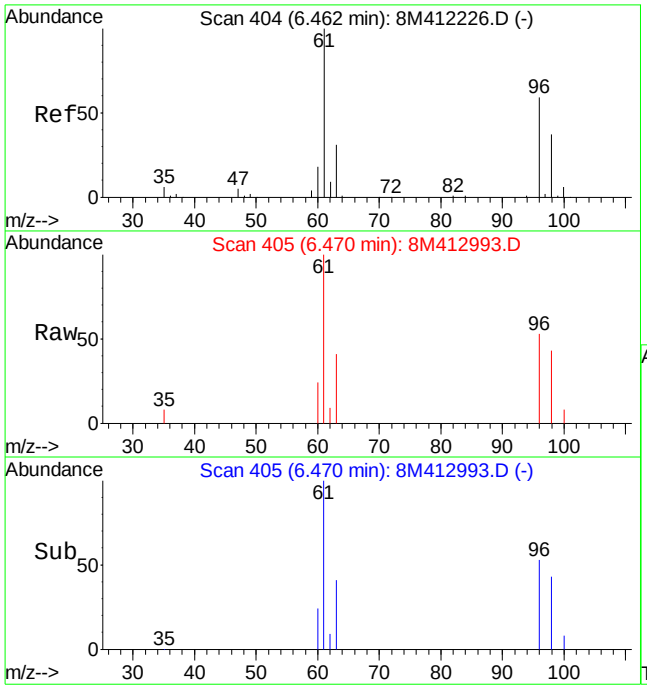

#14
1,1-Dichloroethene
Concen: 1.58 ug/L
RT: 6.47 min Scan# 405
Delta R.T. 0.01 min
Lab File: 8M412993.D
Acq: 14 Jun 2016 20:05

Tgt Ion: 61 Resp: 19099

Ion	Ratio	Lower	Upper
61	100		
96	52.1	34.6	80.8

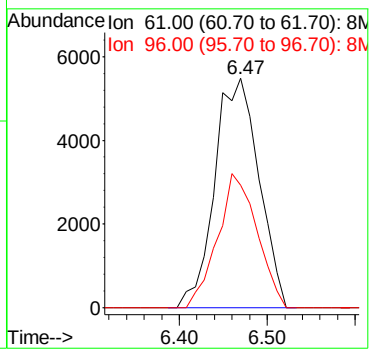

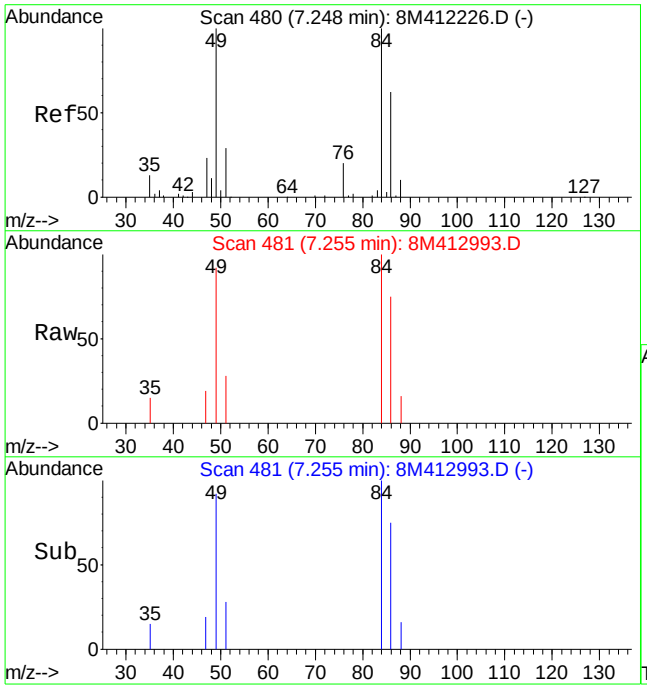

#19
Methylene Chloride
Concen: 0.95 ug/L
RT: 7.26 min Scan# 481
Delta R.T. 0.01 min
Lab File: 8M412993.D
Acq: 14 Jun 2016 20:05

Tgt Ion: 84 Resp: 7328

Ion	Ratio	Lower	Upper
84	100		
49	92.8	60.5	141.3

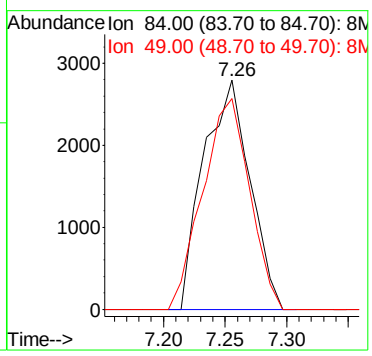

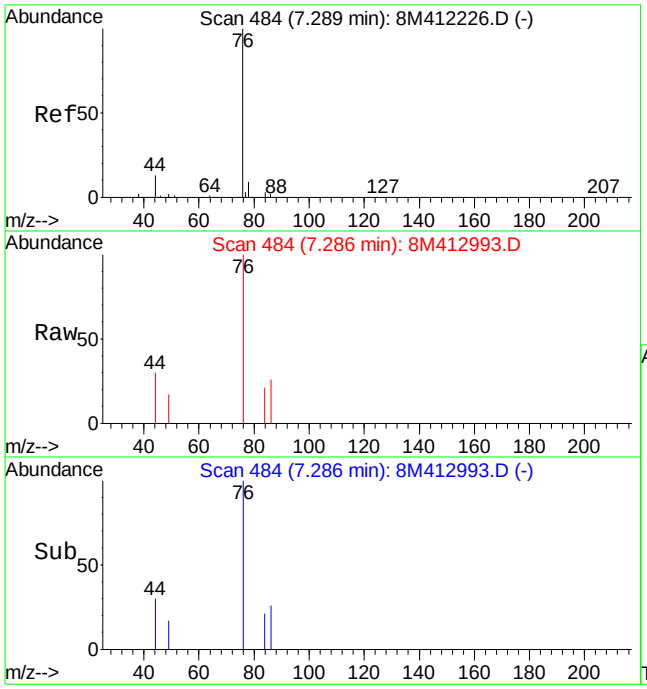

#20
Carbon Disulfide
Concen: 0.16 ug/L
RT: 7.29 min Scan# 484
Delta R.T. -0.00 min
Lab File: 8M412993.D
Acq: 14 Jun 2016 20:05

Tgt Ion: 76 Resp: 3964

Ion	Ratio	Lower	Upper
76	100		
78	0.0	5.6	13.0#

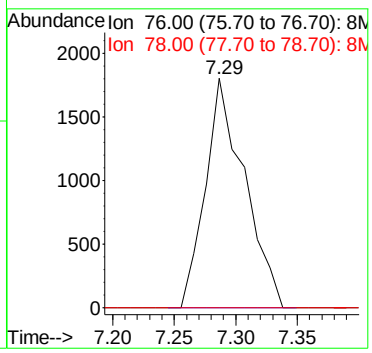

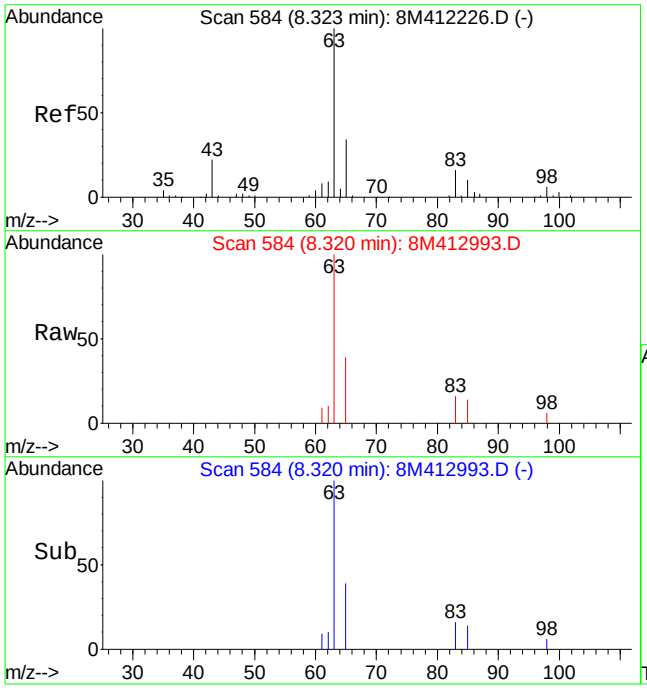

#27
1,1-Dichloroethane
Concen: 1.13 ug/L
RT: 8.32 min Scan# 584
Delta R.T. -0.00 min
Lab File: 8M412993.D
Acq: 14 Jun 2016 20:05

Tgt Ion: 63 Resp: 15585

Ion	Ratio	Lower	Upper
63	100		
65	34.4	20.2	47.0
83	17.1	9.1	21.1

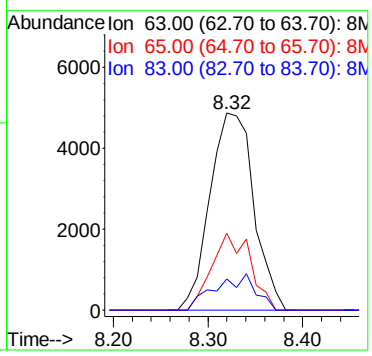

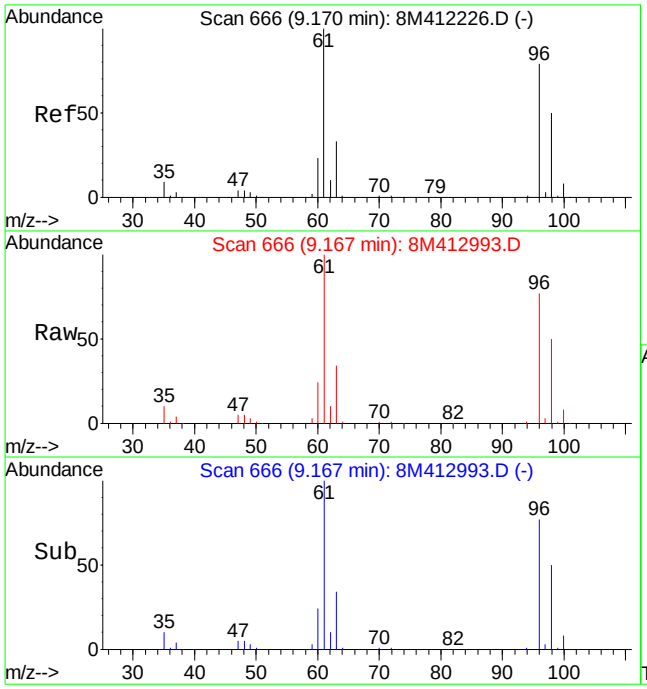

#32
cis-1,2-Dichloroethene
Concen: 141.22 ug/L
RT: 9.17 min Scan# 666
Delta R.T. -0.00 min
Lab File: 8M412993.D
Acq: 14 Jun 2016 20:05

Tgt Ion: 96 Resp: 1213673

Ion	Ratio	Lower	Upper
96	100		
61	130.8	91.5	213.5

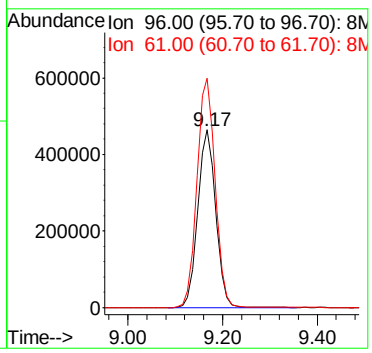

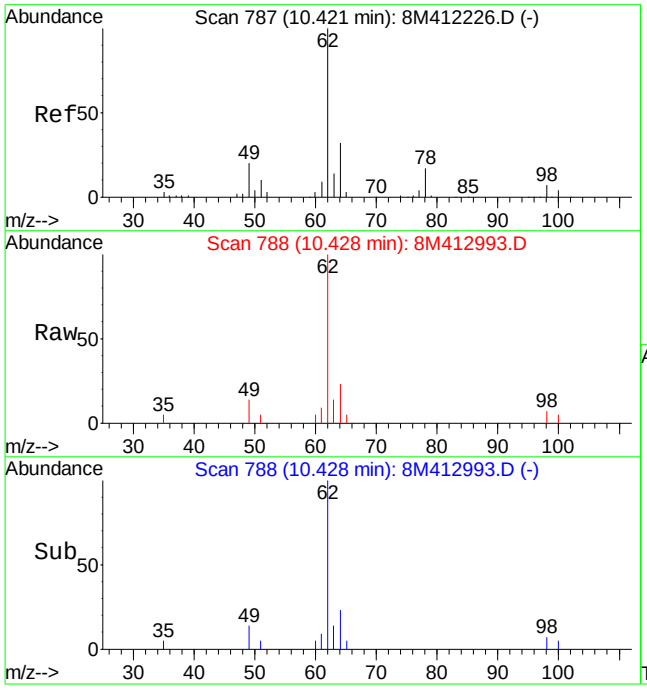

#45
1,2-Dichloroethane
Concen: 1.58 ug/L
RT: 10.43 min Scan# 788
Delta R.T. 0.01 min
Lab File: 8M412993.D
Acq: 14 Jun 2016 20:05

Tgt Ion: 62 Resp: 16602

Ion	Ratio	Lower	Upper
62	100		
64	30.8	19.6	45.6
49	18.4	15.5	36.1

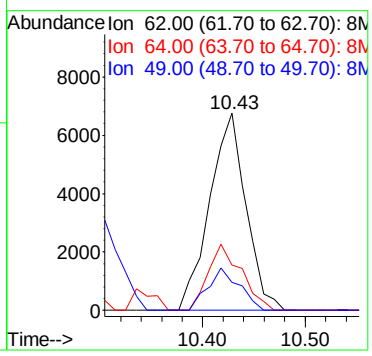

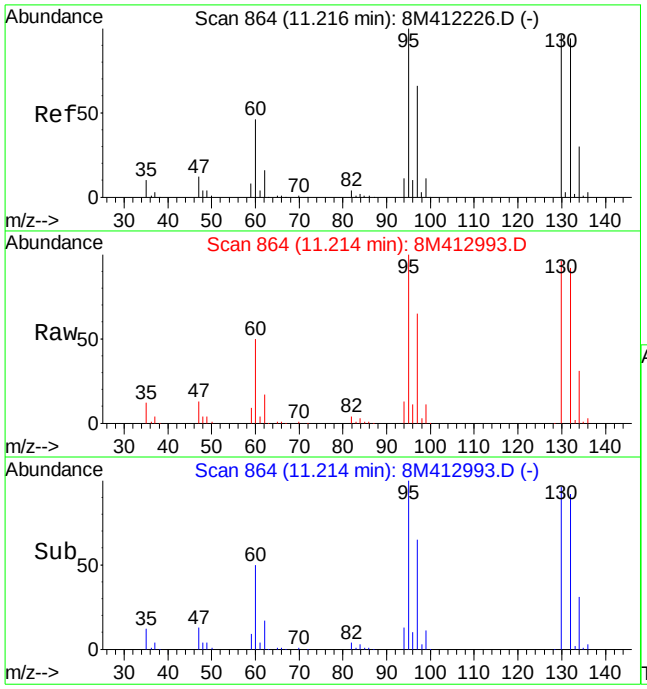

#47
Trichloroethene
Concen: 71.21 ug/L
RT: 11.21 min Scan# 864
Delta R.T. -0.00 min
Lab File: 8M412993.D
Acq: 14 Jun 2016 20:05

Tgt Ion:130 Resp: 584085

Ion	Ratio	Lower	Upper
130	100		
132	96.4	58.0	135.2
95	105.1	64.9	151.5

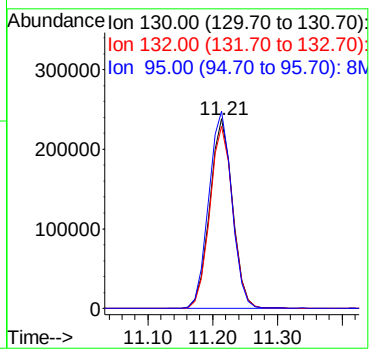

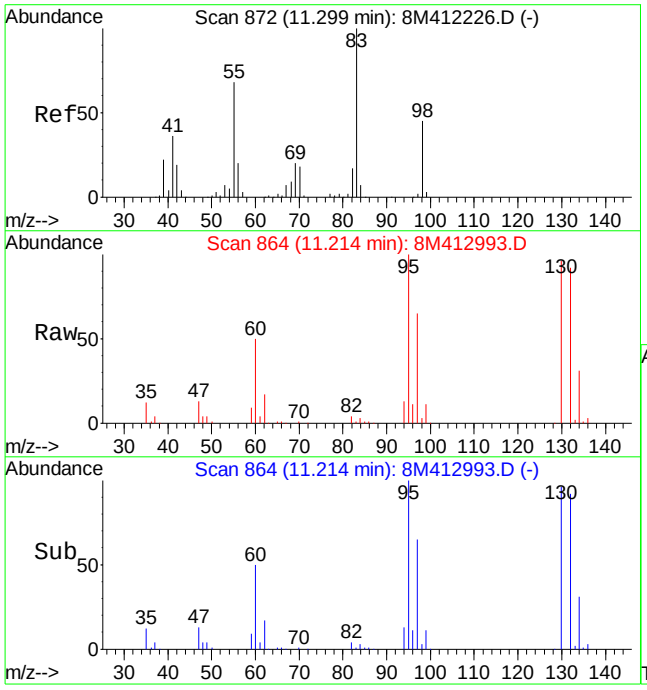

#48
Methylcyclohexane
Concen: 0.58 ug/L
RT: 11.21 min Scan# 864
Delta R.T. -0.09 min
Lab File: 8M412993.D
Acq: 14 Jun 2016 20:05

Tgt Ion: 83 Resp: 7231

Ion	Ratio	Lower	Upper
83	100		
55	0.0	40.9	95.3#
98	238.6	28.1	65.7#

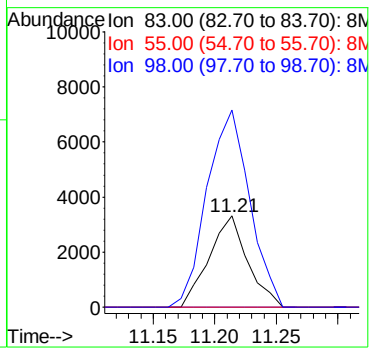

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412994.D Vial: 24
Acq On : 14 Jun 2016 20:34 Operator: TMB
Sample : L16060414-03 B 100X 826-LOW Inst : HPMS8
Misc : 1,100 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 08:27:34 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	741315	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	553493	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	306527	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	219195	27.5205 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.08%		
43) 1,2-Dichloroethane-d4	10.31	65	242676	28.4156 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 113.68%		
58) Toluene-d8	12.68	98	751962	25.9590 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.84%		
80) p-Bromofluorobenzene	16.07	95	317682	25.0293 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.12%		

Target Compounds					Qvalue
14) 1,1-Dichloroethene	6.46	61	18404	1.5353 ug/L	95
23) trans-1,2-Dichloroethene	7.70	61	2316	0.2103 ug/L	68
27) 1,1-Dichloroethane	8.31	63	4747	0.3471 ug/L #	86
32) cis-1,2-Dichloroethene	9.17	96	221633	26.0459 ug/L	82
45) 1,2-Dichloroethane	10.43	62	11798	1.1351 ug/L	91
47) Trichloroethene	11.22	130	1028745	126.6664 ug/L	99
48) Methylcyclohexane	11.21	83	13982	1.1332 ug/L #	1

(#) = qualifier out of range (m) = manual integration
8M412994.D 8260WT.M Wed Jun 15 08:27:37 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412994.D Vial: 24
Acq On : 14 Jun 2016 20:34 Operator: TMB
Sample : L16060414-03 B 100X 826-LOW Inst : HPMS8
Misc : 1,100 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 8:27 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

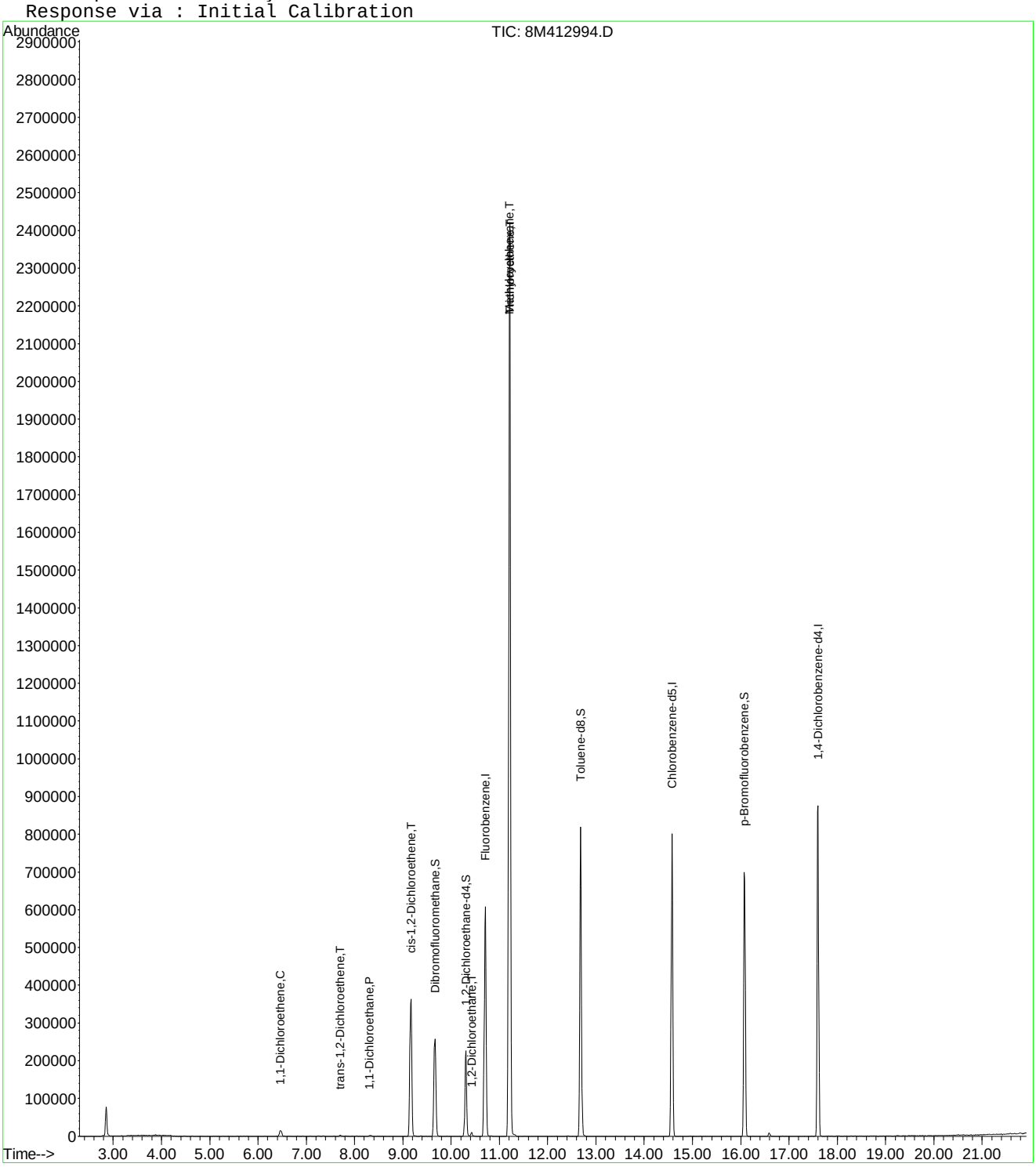

8M412994.D 8260WT.M Wed Jun 15 08:27:37 2016 Page 2

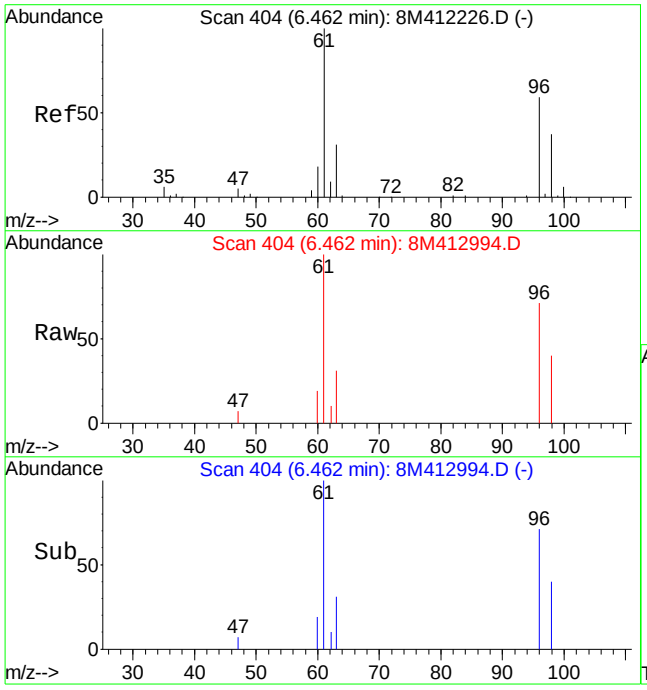

#14
1,1-Dichloroethene
Concen: 1.54 ug/L
RT: 6.46 min Scan# 404
Delta R.T. -0.00 min
Lab File: 8M412994.D
Acq: 14 Jun 2016 20:34

Tgt Ion: 61 Resp: 18404

Ion	Ratio	Lower	Upper
61	100		
96	61.3	34.6	80.8

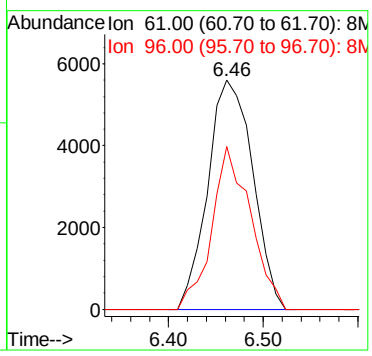

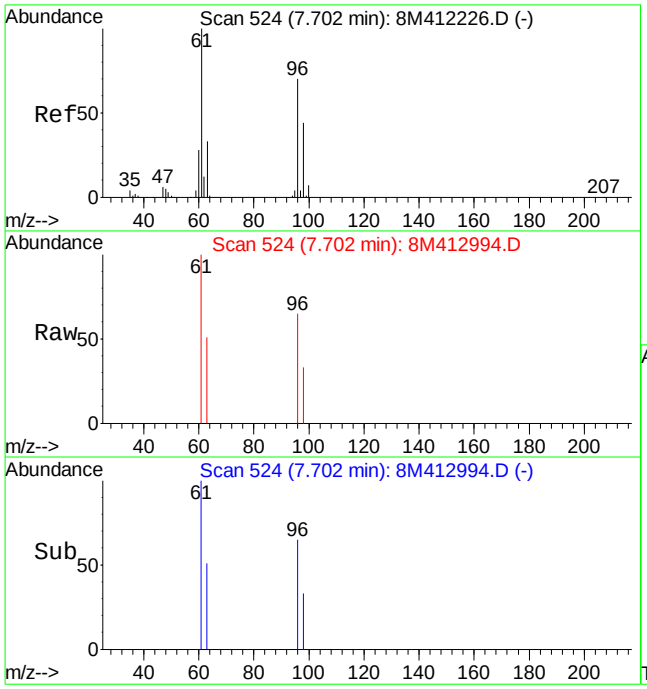

#23
trans-1,2-Dichloroethene
Concen: 0.21 ug/L
RT: 7.70 min Scan# 524
Delta R.T. -0.00 min
Lab File: 8M412994.D
Acq: 14 Jun 2016 20:34

Tgt Ion: 61 Resp: 2316

Ion	Ratio	Lower	Upper
61	100		
96	43.2	41.8	97.4

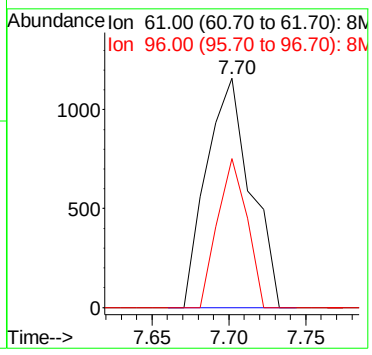

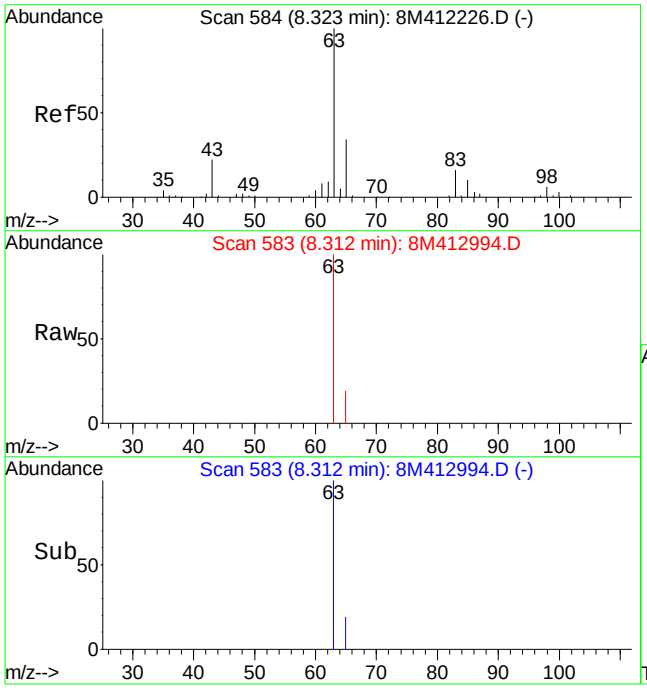

#27
1,1-Dichloroethane
Concen: 0.35 ug/L
RT: 8.31 min Scan# 583
Delta R.T. -0.01 min
Lab File: 8M412994.D
Acq: 14 Jun 2016 20:34

Tgt Ion: 63 Resp: 4747

Ion	Ratio	Lower	Upper
63	100		
65	31.0	20.2	47.0
83	0.0	9.1	21.1#

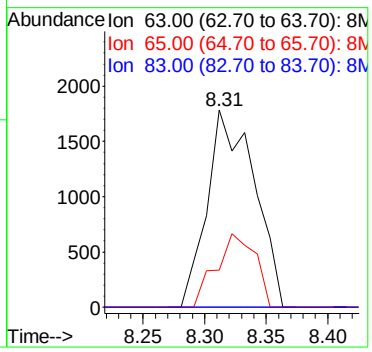

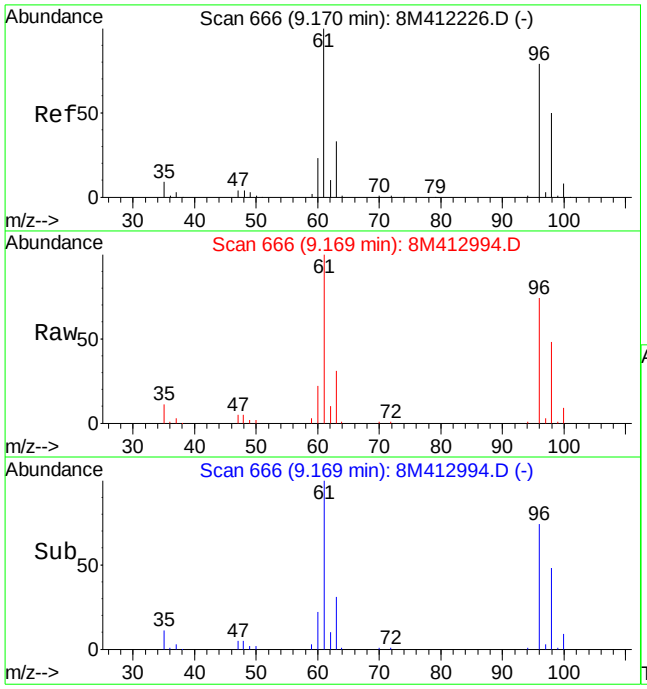

#32
cis-1,2-Dichloroethene
Concen: 26.05 ug/L
RT: 9.17 min Scan# 666
Delta R.T. -0.00 min
Lab File: 8M412994.D
Acq: 14 Jun 2016 20:34

Tgt Ion: 96 Resp: 221633

Ion	Ratio	Lower	Upper
96	100		
61	129.9	91.5	213.5

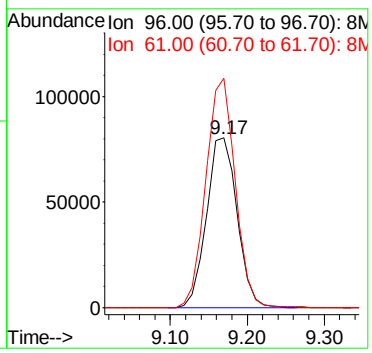

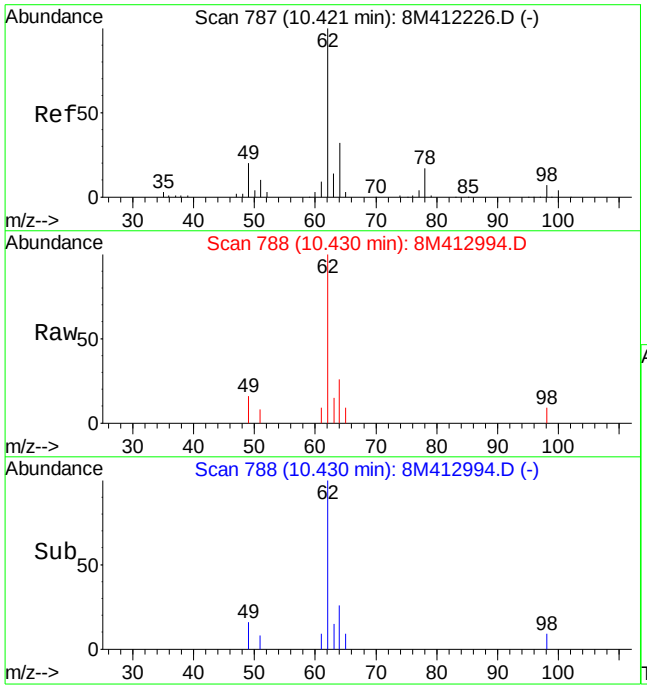

#45
1,2-Dichloroethane
Concen: 1.14 ug/L
RT: 10.43 min Scan# 788
Delta R.T. 0.01 min
Lab File: 8M412994.D
Acq: 14 Jun 2016 20:34

Tgt Ion: 62 Resp: 11798

Ion	Ratio	Lower	Upper
62	100		
64	31.5	19.6	45.6
49	16.9	15.5	36.1

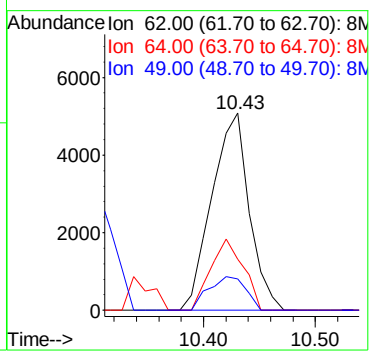

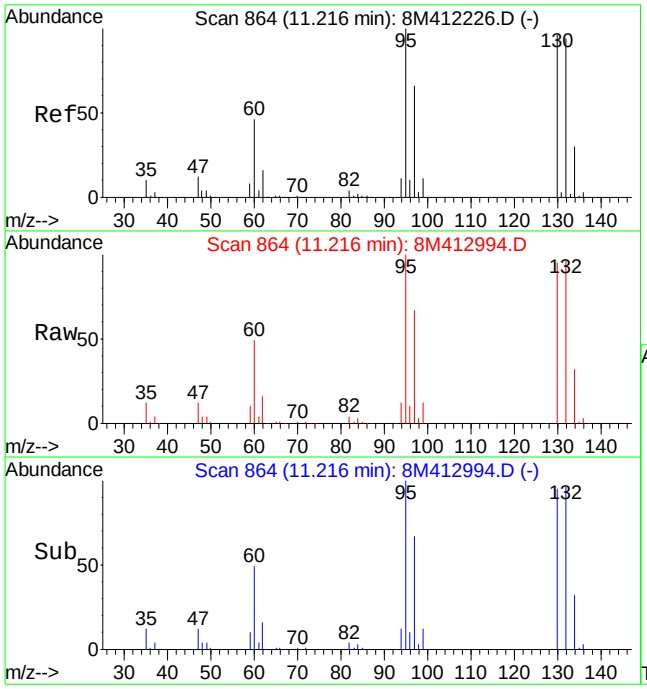

#47
Trichloroethene
Concen: 126.67 ug/L
RT: 11.22 min Scan# 864
Delta R.T. -0.00 min
Lab File: 8M412994.D
Acq: 14 Jun 2016 20:34

Tgt Ion:130 Resp: 1028745

Ion	Ratio	Lower	Upper
130	100		
132	97.9	58.0	135.2
95	107.0	64.9	151.5

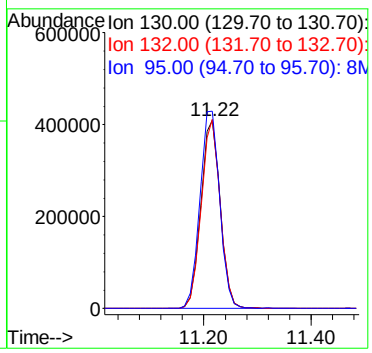

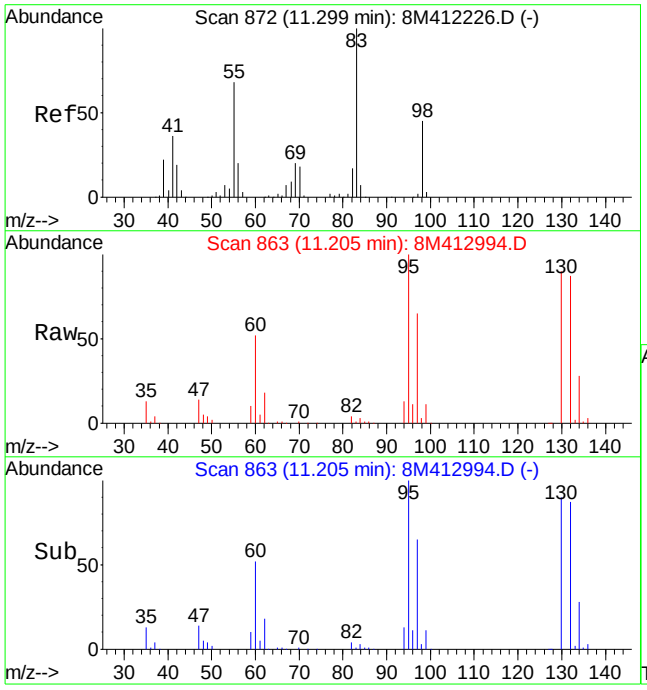

#48
Methylcyclohexane
Concen: 1.13 ug/L
RT: 11.21 min Scan# 863
Delta R.T. -0.09 min
Lab File: 8M412994.D
Acq: 14 Jun 2016 20:34

Tgt Ion: 83 Resp: 13982

Ion	Ratio	Lower	Upper
83	100		
55	0.0	40.9	95.3#
98	219.3	28.1	65.7#

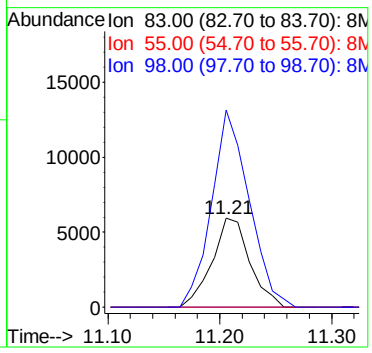

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412995.D Vial: 25
Acq On : 14 Jun 2016 21:03 Operator: TMB
Sample : L16060414-04 B 100X 826-LOW Inst : HPMS8
Misc : 1,100 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 08:27:40 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	740343	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	547033	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	305612	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	218693	27.4935 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.96%		
43) 1,2-Dichloroethane-d4	10.31	65	244998	28.7251 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 114.92%		
58) Toluene-d8	12.68	98	756468	26.4230 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.68%		
80) p-Bromofluorobenzene	16.07	95	316661	25.0236 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.08%		

Target Compounds					Qvalue
4) Vinyl Chloride	3.85	62	1342	0.1561 ug/L #	42
14) 1,1-Dichloroethene	6.46	61	23393	1.9541 ug/L	95
19) Methylene Chloride	7.26	84	4073	0.5346 ug/L	85
23) trans-1,2-Dichloroethene	7.71	61	2537	0.2307 ug/L	93
27) 1,1-Dichloroethane	8.33	63	5092	0.3728 ug/L #	91
32) cis-1,2-Dichloroethene	9.17	96	216946	25.5285 ug/L	81
33) Chloroform	9.39	83	2134	0.1323 ug/L #	67
45) 1,2-Dichloroethane	10.42	62	14490	1.3959 ug/L	93
47) Trichloroethene	11.21	130	1291935	159.2811 ug/L	99
48) Methylcyclohexane	11.21	83	17324	1.4059 ug/L #	1

(#) = qualifier out of range (m) = manual integration
8M412995.D 8260WT.M Wed Jun 15 08:27:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412995.D Vial: 25
Acq On : 14 Jun 2016 21:03 Operator: TMB
Sample : L16060414-04 B 100X 826-LOW Inst : HPMS8
Misc : 1,100 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 8:28 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

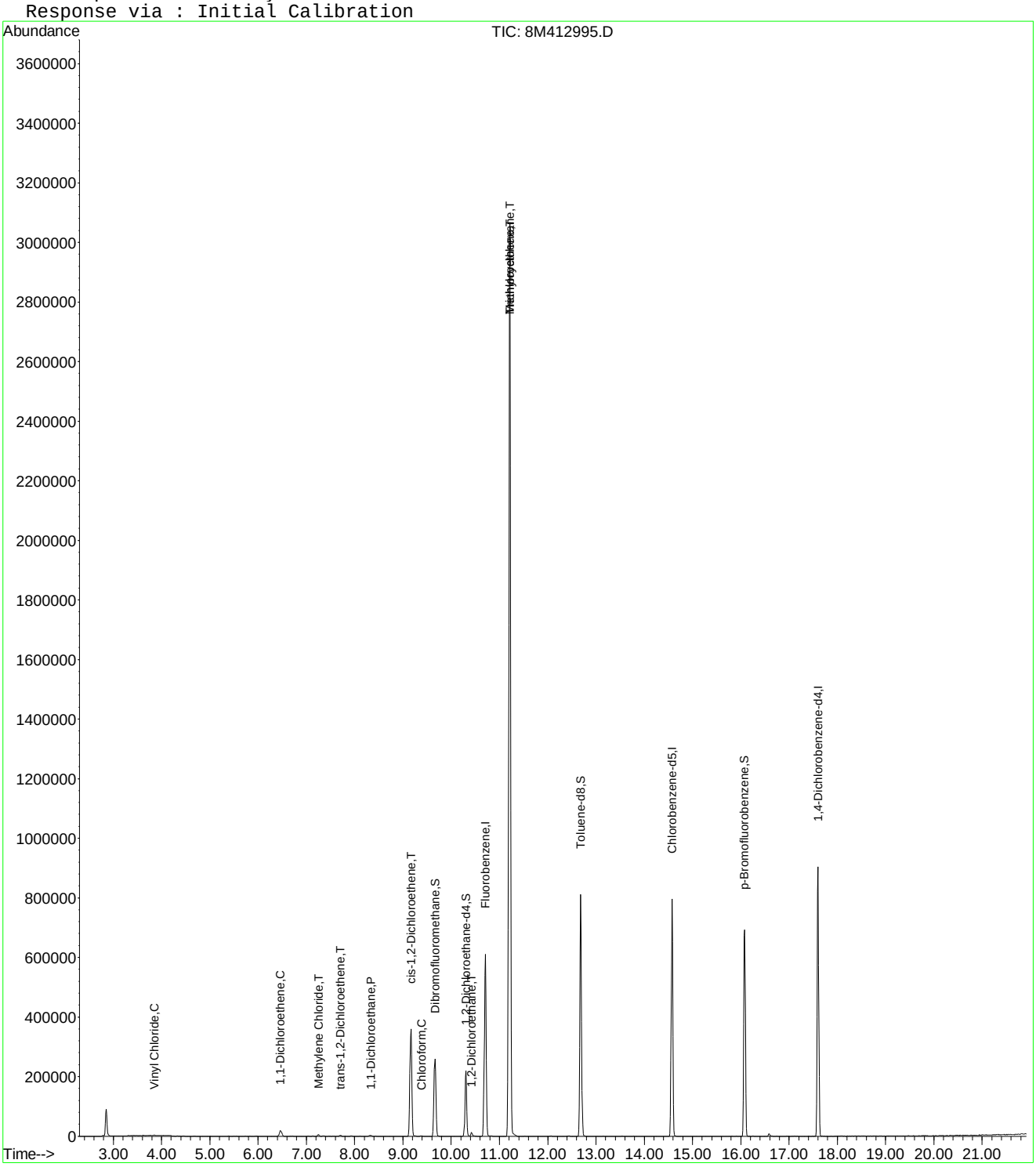

8M412995.D 8260WT.M Wed Jun 15 08:27:43 2016 Page 2

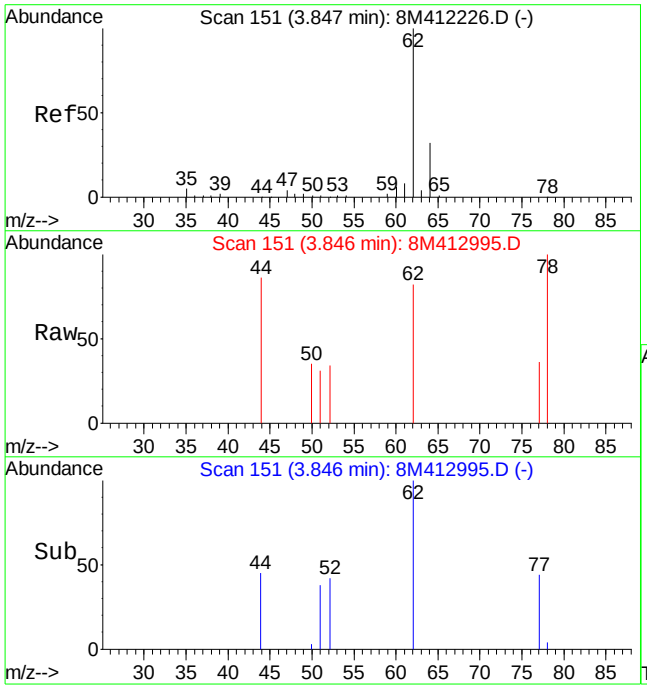

#4
Vinyl Chloride
Concen: 0.16 ug/L
RT: 3.85 min Scan# 151
Delta R.T. -0.00 min
Lab File: 8M412995.D
Acq: 14 Jun 2016 21:03

Tgt Ion: 62 Resp: 1342

Ion	Ratio	Lower	Upper
62	100		
64	0.0	19.3	45.1#

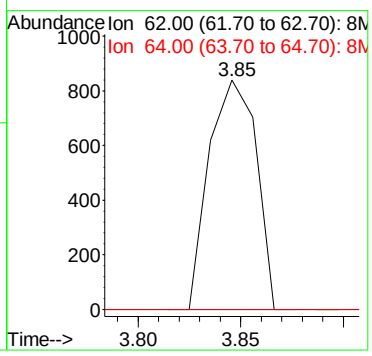

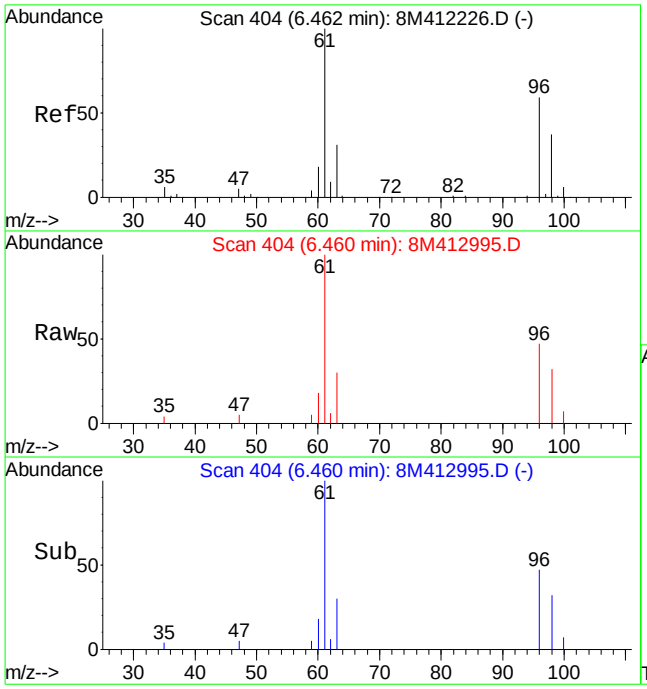

#14
1,1-Dichloroethene
Concen: 1.95 ug/L
RT: 6.46 min Scan# 404
Delta R.T. -0.00 min
Lab File: 8M412995.D
Acq: 14 Jun 2016 21:03

Tgt Ion: 61 Resp: 23393

Ion	Ratio	Lower	Upper
61	100		
96	53.6	34.6	80.8

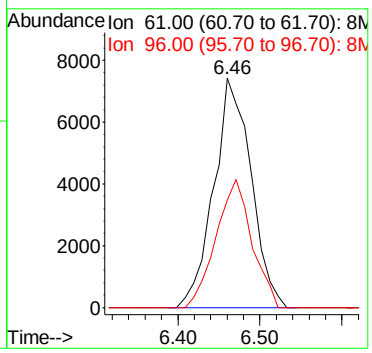

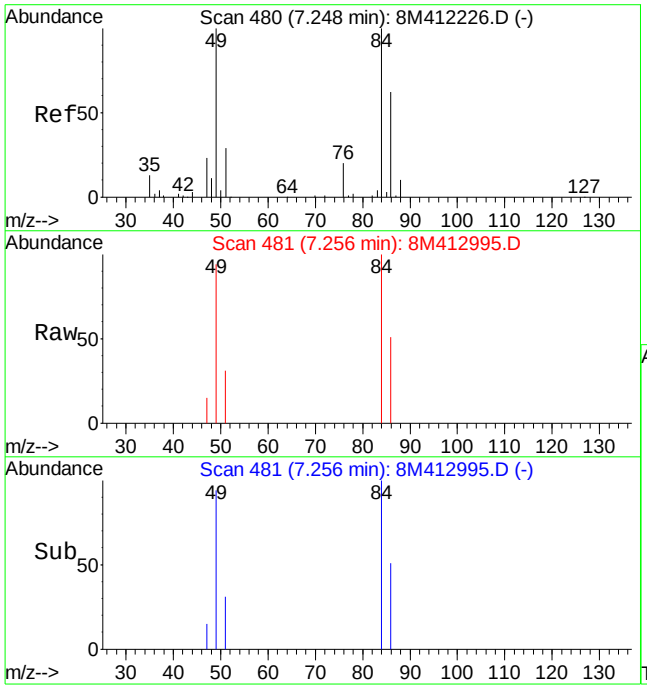

#19
Methylene Chloride
Concen: 0.53 ug/L
RT: 7.26 min Scan# 481
Delta R.T. 0.01 min
Lab File: 8M412995.D
Acq: 14 Jun 2016 21:03

Tgt Ion: 84 Resp: 4073

Ion	Ratio	Lower	Upper
84	100		
49	115.9	60.5	141.3

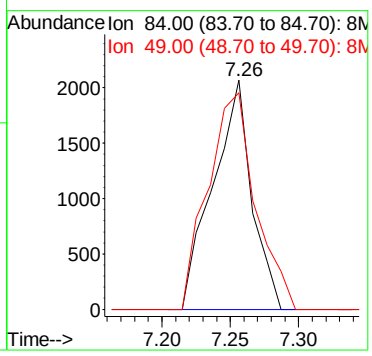

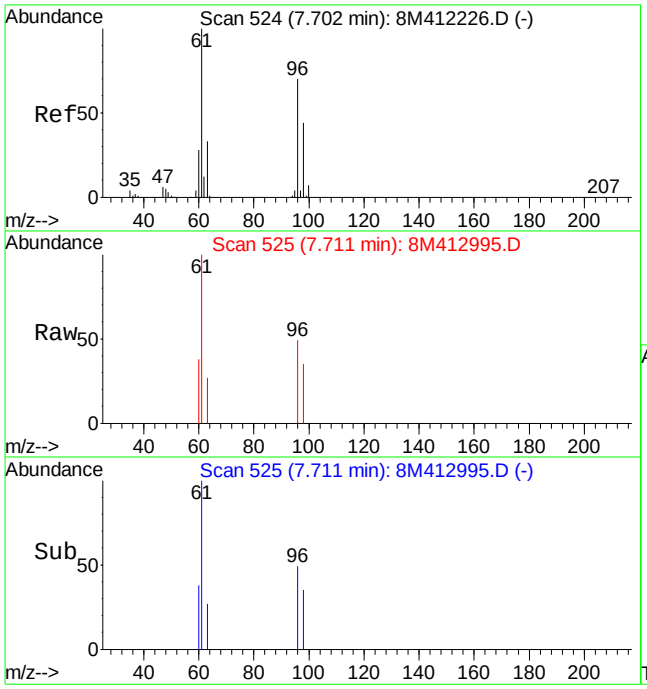

#23
trans-1,2-Dichloroethene
Concen: 0.23 ug/L
RT: 7.71 min Scan# 525
Delta R.T. 0.01 min
Lab File: 8M412995.D
Acq: 14 Jun 2016 21:03

Tgt Ion: 61 Resp: 2537

Ion	Ratio	Lower	Upper
61	100		
96	63.5	41.8	97.4

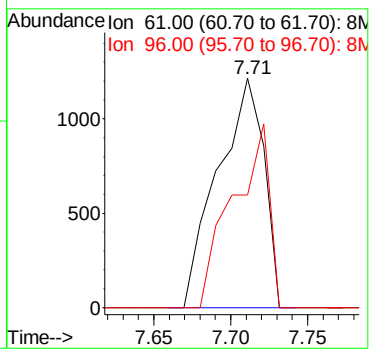

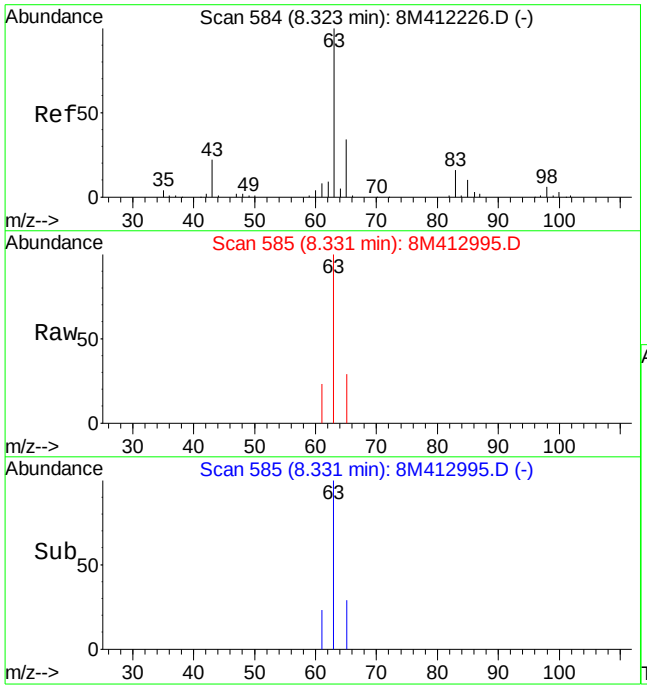

#27
1,1-Dichloroethane
Concen: 0.37 ug/L
RT: 8.33 min Scan# 585
Delta R.T. 0.01 min
Lab File: 8M412995.D
Acq: 14 Jun 2016 21:03

Tgt Ion: 63 Resp: 5092

Ion	Ratio	Lower	Upper
63	100		
65	34.5	20.2	47.0
83	4.0	9.1	21.1#

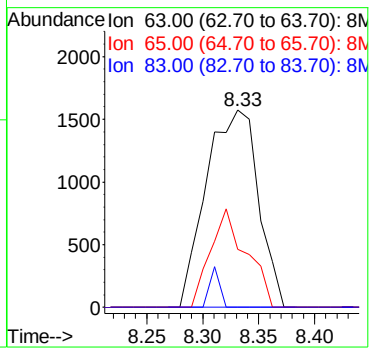

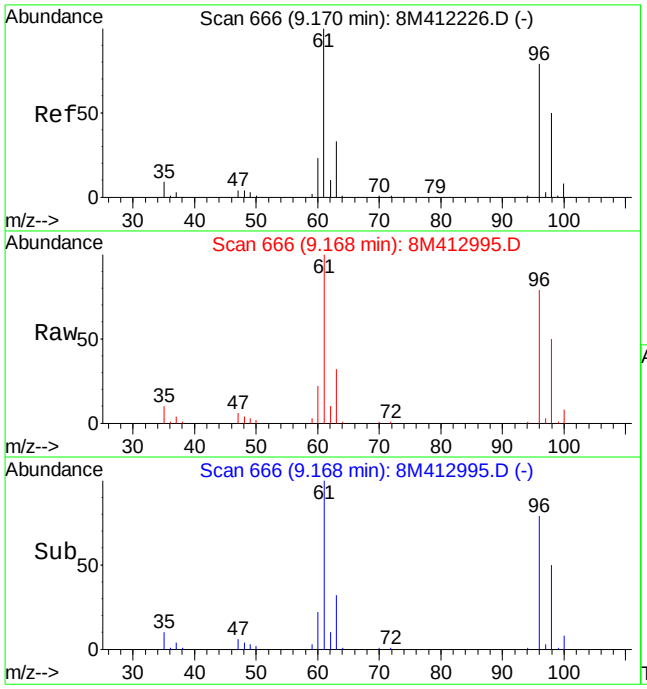

#32
cis-1,2-Dichloroethene
Concen: 25.53 ug/L
RT: 9.17 min Scan# 666
Delta R.T. -0.00 min
Lab File: 8M412995.D
Acq: 14 Jun 2016 21:03

Tgt Ion: 96 Resp: 216946

Ion	Ratio	Lower	Upper
96	100		
61	128.6	91.5	213.5

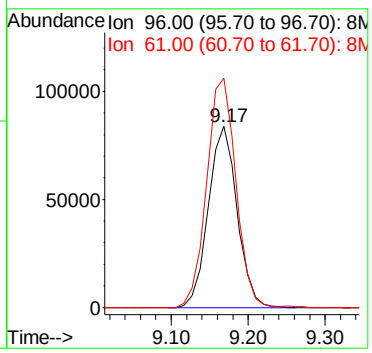

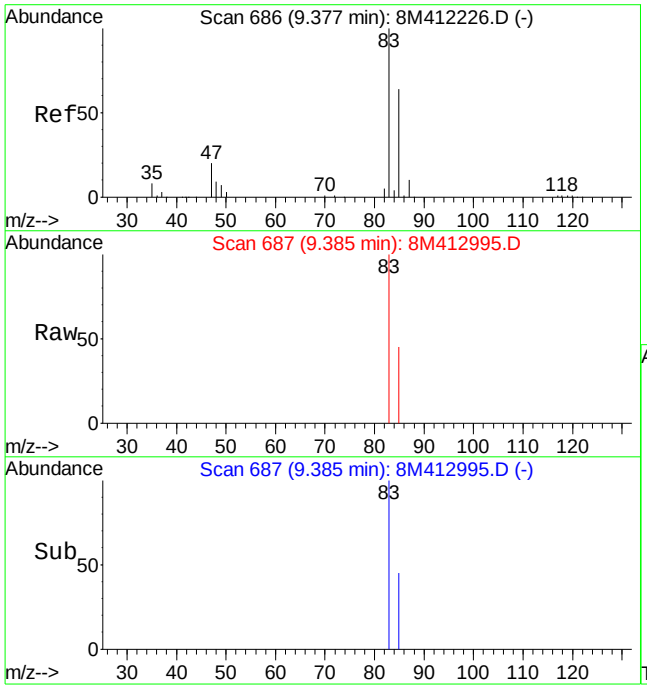

#33
Chloroform
Concen: 0.13 ug/L
RT: 9.39 min Scan# 687
Delta R.T. 0.01 min
Lab File: 8M412995.D
Acq: 14 Jun 2016 21:03

Tgt Ion: 83 Resp: 2134

Ion	Ratio	Lower	Upper
83	100		
85	36.6	37.5	87.5#

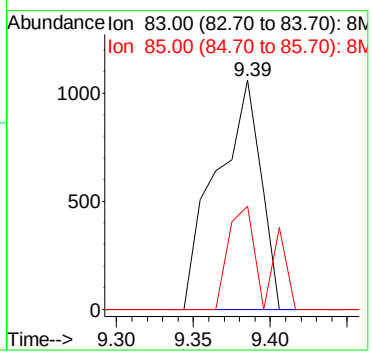

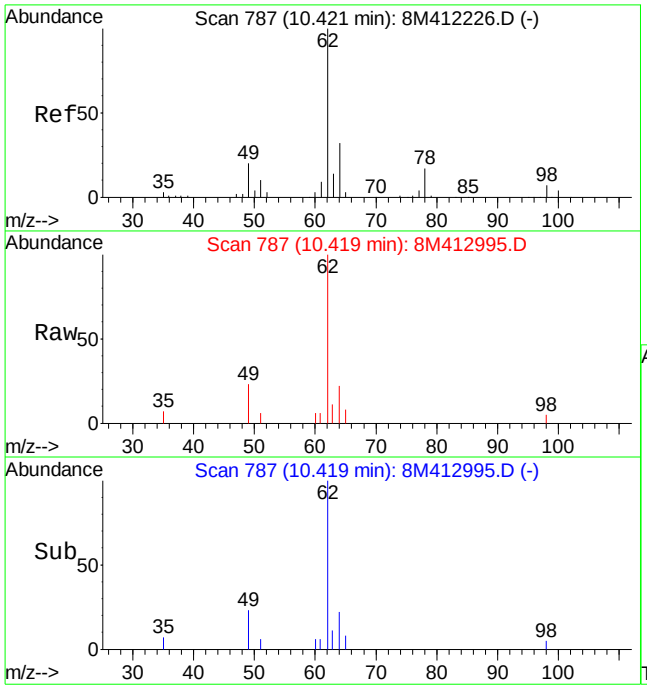

#45
1,2-Dichloroethane
Concen: 1.40 ug/L
RT: 10.42 min Scan# 787
Delta R.T. -0.00 min
Lab File: 8M412995.D
Acq: 14 Jun 2016 21:03

Tgt Ion: 62 Resp: 14490

Ion	Ratio	Lower	Upper
62	100		
64	30.2	19.6	45.6
49	20.1	15.5	36.1

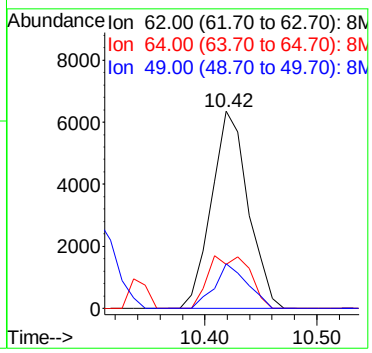

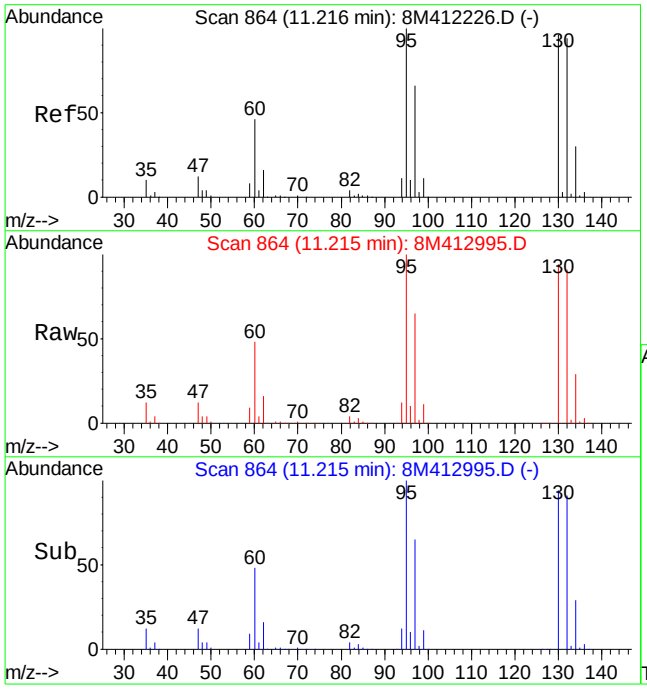

#47
Trichloroethene
Concen: 159.28 ug/L
RT: 11.21 min Scan# 864
Delta R.T. -0.00 min
Lab File: 8M412995.D
Acq: 14 Jun 2016 21:03

Tgt Ion:130 Resp: 1291935

Ion	Ratio	Lower	Upper
130	100		
132	96.8	58.0	135.2
95	106.9	64.9	151.5

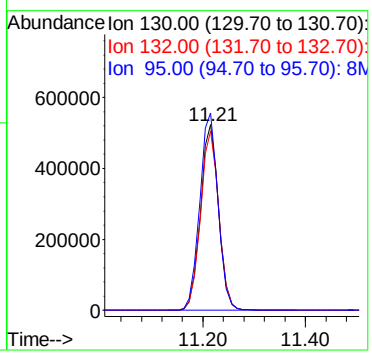

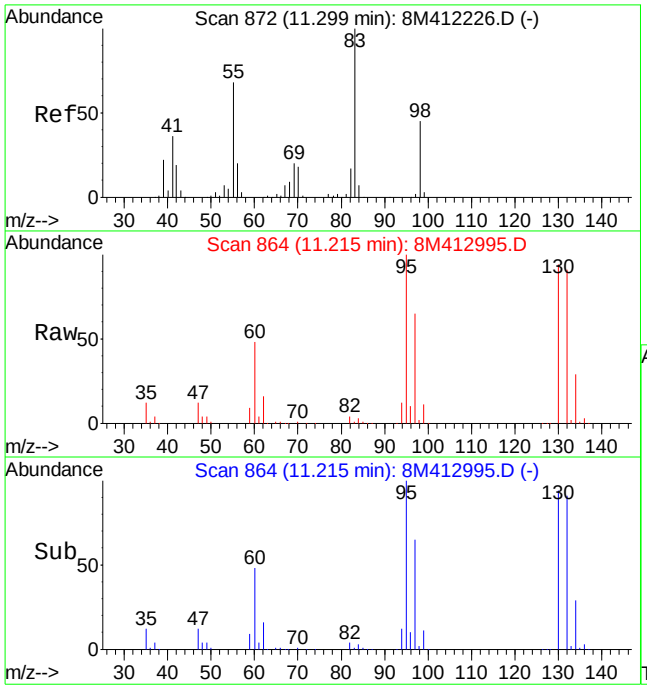

#48
Methylcyclohexane
Concen: 1.41 ug/L
RT: 11.21 min Scan# 864
Delta R.T. -0.08 min
Lab File: 8M412995.D
Acq: 14 Jun 2016 21:03

Tgt Ion: 83 Resp: 17324

Ion	Ratio	Lower	Upper
83	100		
55	0.0	40.9	95.3#
98	212.7	28.1	65.7#

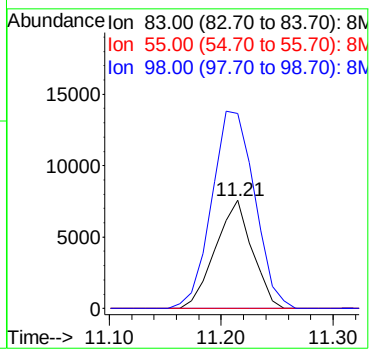

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061316\8M412952.D Vial: 10
Acq On : 13 Jun 2016 18:25 Operator: TMB
Sample : L16060414-05 A TB 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 08:21:12 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	752636	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	556979	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	307310	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	221082	27.3399 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.36%		
43) 1,2-Dichloroethane-d4	10.30	65	247829	28.5824 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 114.32%		
58) Toluene-d8	12.68	98	775467	26.6029 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 106.40%		
80) p-Bromofluorobenzene	16.08	95	316971	24.9097 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.64%		

Target Compounds					Qvalue
13) Acetone	6.25	43	275	0.3248 ug/L #	50
36) Tetrahydrofuran	9.65	42	1086	1.3253 ug/L #	24

(#) = qualifier out of range (m) = manual integration
8M412952.D 8260WT.M Tue Jun 14 08:21:15 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061316\8M412952.D Vial: 10
Acq On : 13 Jun 2016 18:25 Operator: TMB
Sample : L16060414-05 A TB 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 8:21 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

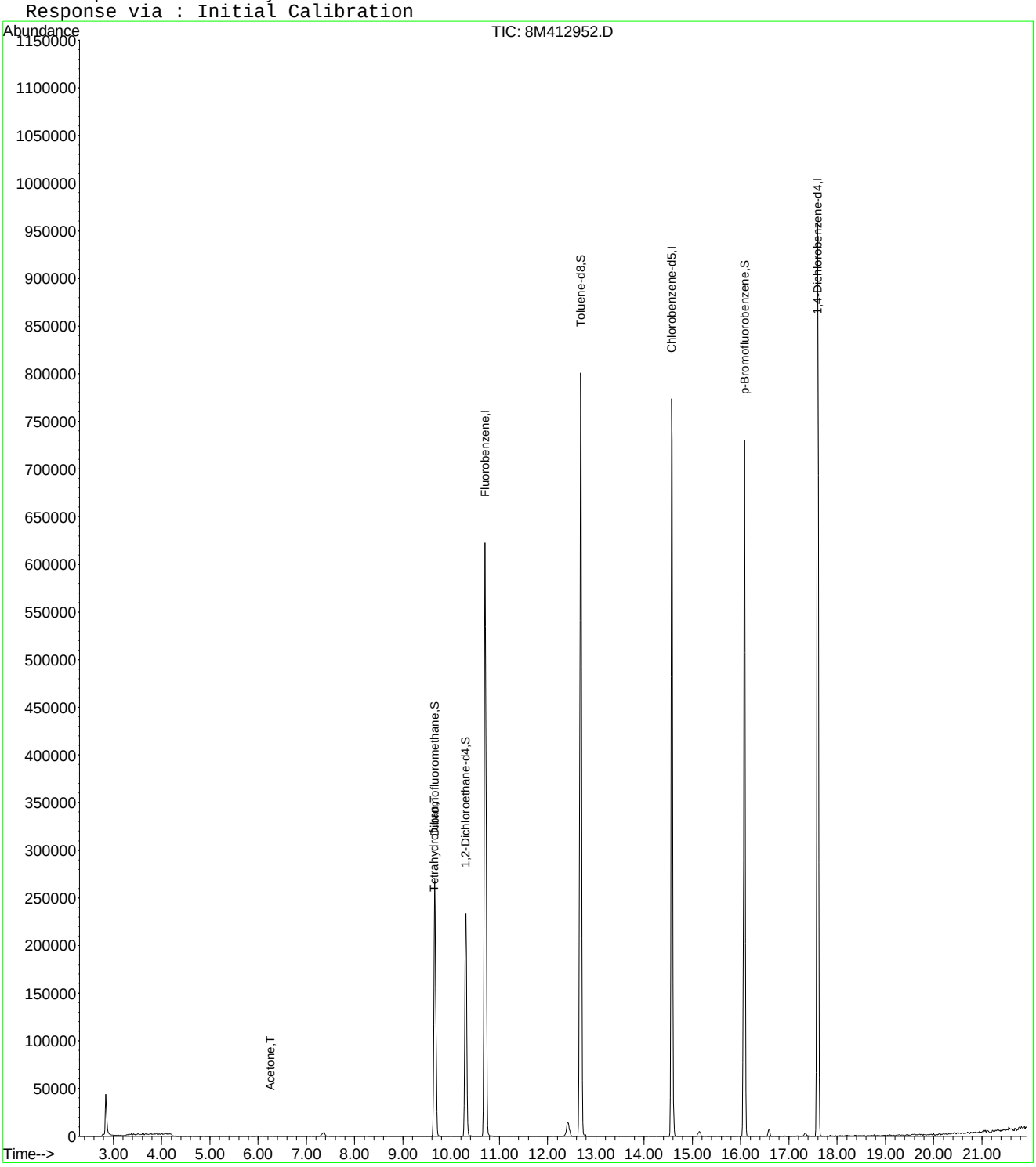

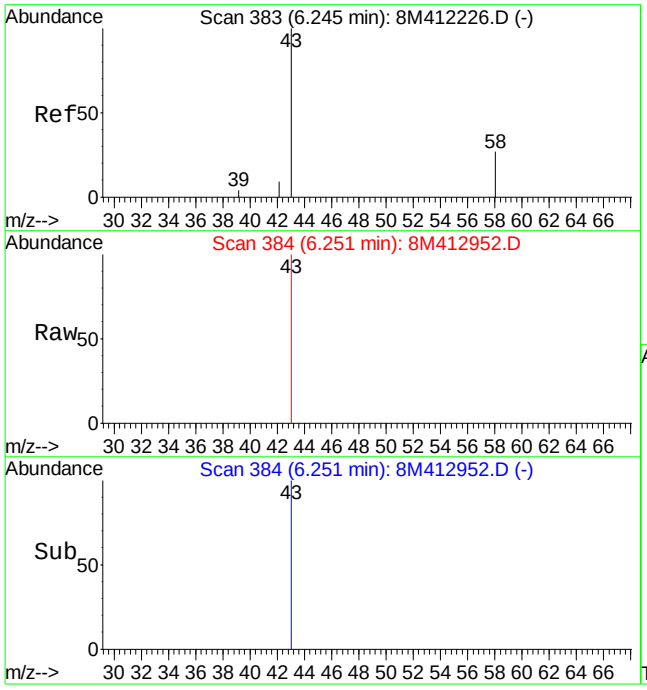

#13
Acetone
Concen: 0.32 ug/L
RT: 6.25 min Scan# 384
Delta R.T. 0.01 min
Lab File: 8M412952.D
Acq: 13 Jun 2016 18:25

Tgt Ion: 43 Resp: 275

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.2	35.4#

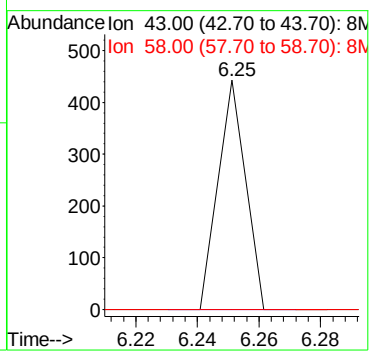

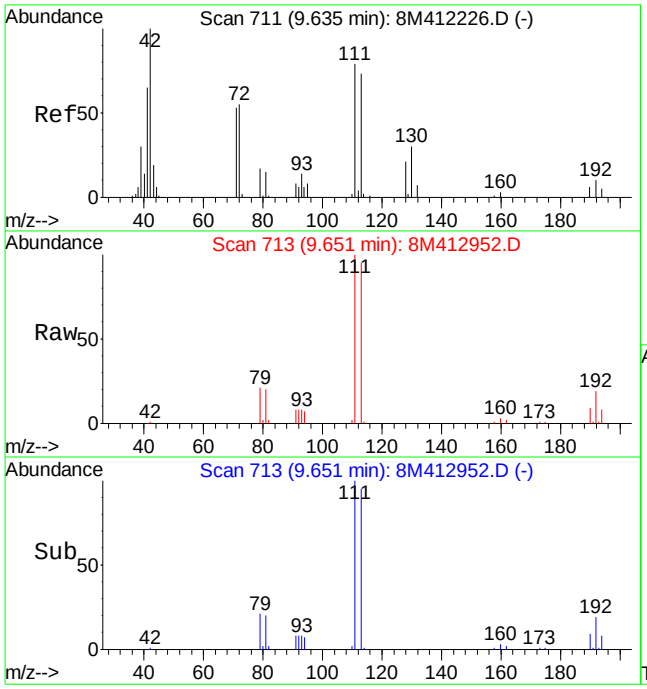

#36
Tetrahydrofuran
Concen: 1.33 ug/L
RT: 9.65 min Scan# 713
Delta R.T. 0.02 min
Lab File: 8M412952.D
Acq: 13 Jun 2016 18:25

Tgt Ion: 42 Resp: 1086

Ion	Ratio	Lower	Upper
42	100		
72	0.0	33.8	78.8#
71	0.0	32.0	74.8#

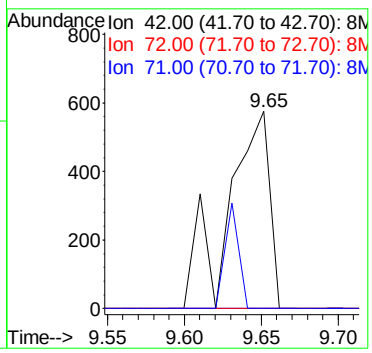

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:40:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	823748	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	571926	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	299321	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	12.68	98	567	0.0189 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.08%#	
80) p-Bromofluorobenzene	16.08	95	313	0.0253 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	3836	0.2778 ug/L	91
3) Chloromethane	3.62	50	3658	0.4537 ug/L	95
4) Vinyl Chloride	3.85	62	2516	0.2630 ug/L #	58
5) 1,3-Butadiene	3.91	54	2079	0.2592 ug/L	71
6) Bromomethane	4.73	94	1152	0.6530 ug/L #	55
7) Chloroethane	4.90	64	1112	0.2113 ug/L #	72
8) Trichlorofluoromethane	5.35	101	2706	0.1520 ug/L #	53
10) Isoprene	5.93	67	2147	0.1987 ug/L	85
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1746	0.2087 ug/L	97
14) 1,1-Dichloroethene	6.48	61	3332	0.2501 ug/L	75
16) Dimethyl Sulfide	6.73	62	1099	0.2308 ug/L	95
19) Methylene Chloride	7.26	84	3414	0.4028 ug/L	88
20) Carbon Disulfide	7.30	76	10739	0.3853 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	4927	0.2686 ug/L #	60
23) trans-1,2-Dichloroethene	7.70	61	3879	0.3170 ug/L	98
24) n-Hexane	7.78	57	2794	0.3075 ug/L	85
26) Vinyl Acetate	8.30	43	1973	0.2259 ug/L #	70
27) 1,1-Dichloroethane	8.33	63	4881	0.3212 ug/L #	88
31) 2,2-Dichloropropane	9.11	77	4966	0.3101 ug/L	89
32) cis-1,2-Dichloroethene	9.17	96	2958	0.3128 ug/L	87
33) Chloroform	9.37	83	5564	0.3101 ug/L	95
34) 1-Bromopropane	9.52	122	210	0.1551 ug/L #	1
35) Bromochloromethane	9.60	130	1386	0.2858 ug/L	76
36) Tetrahydrofuran	9.62	42	1849	2.0617 ug/L #	60
38) 1,1,1-Trichloroethane	9.91	97	4978	0.2921 ug/L	95
39) Cyclohexane	9.93	56	3120	0.2644 ug/L #	85
40) 1,1-Dichloropropene	10.11	75	3779	0.2909 ug/L	97
42) Carbon Tetrachloride	10.24	117	4835	0.3194 ug/L #	74
45) 1,2-Dichloroethane	10.43	62	3295	0.2853 ug/L #	81
46) Benzene	10.46	78	11279	0.3333 ug/L	93
47) Trichloroethene	11.20	130	2410	0.2670 ug/L	97
48) Methylcyclohexane	11.31	83	3936	0.2871 ug/L	84
49) 1,2-Dichloropropane	11.42	63	2136	0.2836 ug/L	88
50) Bromodichloromethane	11.73	83	3767	0.2845 ug/L #	91
52) Dibromomethane	11.82	93	700	0.1570 ug/L #	59
53) 2-Chloroethyl Vinyl Ether	12.02	63	847	0.2616 ug/L #	47
55) cis-1,3-Dichloropropene	12.36	75	4763	0.3535 ug/L	84
56) Dimethyl Disulfide	12.63	79	1647	0.2290 ug/L	82
59) Toluene	12.78	91	11513	0.3243 ug/L	92
60) Ethyl Methacrylate	12.89	69	1631	0.2392 ug/L #	64

(#) = qualifier out of range (m) = manual integration
8M412220.D 8260WT.M Tue May 17 11:40:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:40:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
62)	trans-1,3-Dichloropropene	12.96	75	3626	0.3047 ug/L		82
63)	1,1,2-Trichloroethane	13.18	97	1409	0.2515 ug/L		98
65)	1,3-Dichloropropane	13.49	76	2584	0.2590 ug/L		93
66)	Tetrachloroethene	13.61	164	2678	0.3520 ug/L	#	75
67)	Dibromochloromethane	13.87	129	2126	0.2599 ug/L		79
68)	1,2-Dibromoethane	14.12	107	1895	0.3394 ug/L		91
69)	1-Chlorohexane	14.21	91	3835	0.3164 ug/L		99
70)	Chlorobenzene	14.62	112	7968	0.3328 ug/L		88
71)	1,1,1,2-Tetrachloroethane	14.67	131	2872	0.3096 ug/L		87
72)	Ethylbenzene	14.64	106	3844	0.2934 ug/L		81
73)	m-,p-Xylene	14.75	106	10447	0.6799 ug/L		96
74)	o-Xylene	15.31	106	4577	0.3047 ug/L		97
75)	Styrene	15.35	104	7545	0.3062 ug/L		95
76)	Bromoform	15.84	173	1301	0.2681 ug/L	#	51
77)	Isopropylbenzene	15.74	105	13119	0.3287 ug/L		90
79)	1,1,2,2-Tetrachloroethane	15.96	83	1714	0.2853 ug/L	#	85
83)	n-Propylbenzene	16.24	91	15676	0.3357 ug/L		92
84)	Bromobenzene	16.38	156	2859	0.2977 ug/L		90
85)	1,3,5-Trimethylbenzene	16.43	105	10873	0.3196 ug/L		99
86)	2-Chlorotoluene	16.52	91	11133	0.3415 ug/L		96
87)	4-Chlorotoluene	16.56	91	10305	0.3499 ug/L		97
88)	a-Methylstyrene	16.83	118	4090	0.2534 ug/L		86
89)	tert-Butylbenzene	16.90	134	1734	0.2606 ug/L		72
90)	1,2,4-Trimethylbenzene	16.95	105	10734	0.3069 ug/L		89
91)	sec-Butylbenzene	17.16	105	13749	0.3436 ug/L		97
92)	p-Isopropyltoluene	17.32	119	10847	0.3192 ug/L		95
93)	1,3-Dichlorobenzene	17.52	146	6023	0.3257 ug/L		99
94)	1,4-Dichlorobenzene	17.65	146	6152	0.3299 ug/L	#	60
95)	n-Butylbenzene	17.85	91	11161	0.3323 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	5711	0.3472 ug/L		92
98)	1,2,4-Trichlorobenzene	20.29	180	4203	0.3418 ug/L		91
99)	Hexachlorobutadiene	20.43	225	1894	0.3297 ug/L		84
100)	Naphthalene	20.65	128	6039	0.3306 ug/L		91
101)	1,2,3-Trichlorobenzene	20.96	180	3279	0.3161 ug/L		86

(#) = qualifier out of range (m) = manual integration

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2778	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.4537	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.2630	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	0.2592	0.0	100	0.03
6	T	Bromomethane	-1.0000	0.9911	0.0	100	0.00
7	T	Chloroethane	-1.0000	0.2113	0.0	100	0.00
8	T	Trichlorofluoromethane	-1.0000	0.1520	0.0	100	-0.02
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.90#
10	T	Isoprene	-1.0000	0.1987	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.13#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2087	0.0	100	0.00
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	-1.0000	0.2501	0.0	100	0.02
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.58#
16	T	Dimethyl Sulfide	-1.0000	0.2308	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.0000	0.0	0	-7.00#
19	T	Methylene Chloride	-1.0000	0.4028	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.3853	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.43#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2686	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	-1.0000	0.3170	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.3075	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.2259	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.3212	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.98#
31	T	2,2-Dichloropropane	-1.0000	0.3101	0.0	100	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.3128	0.0	100	0.00
33	C	Chloroform	0.3000	0.3101	-3.4	100	0.00
34		1-Bromopropane	-1.0000	0.1551	0.0	100	0.00
35	T	Bromochloromethane	-1.0000	0.2858	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	2.0617	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	-1.0000	0.2921	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.2644	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.2909	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	-1.0000	0.3194	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	-1.0000	0.2853	0.0	100	0.00
46	T	Benzene	-1.0000	0.3333	0.0	100	0.00
47	T	Trichloroethene	-1.0000	0.2670	0.0	100	-0.01
48	T	Methylcyclohexane	-1.0000	0.2871	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2836	0.0	100	0.00
50	T	Bromodichloromethane	-1.0000	0.2845	0.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	-1.0000	0.1570	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2616	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.05#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.3535	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2290	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0189	0.0	100	0.00
59	C	Toluene	-1.0000	0.3243	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2392	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3047	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.2515	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	-1.0000	0.2590	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.3520	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.2599	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.3394	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.3164	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.3328	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.3096	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.2934	0.0	100	-0.01
73	T	m-,p-Xylene	-1.0000	0.6799	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.3047	0.0	100	0.00
75	T	Styrene	-1.0000	0.3062	0.0	100	0.00
76	P	Bromoform	-1.0000	0.2681	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.3287	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2853	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0253	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.1103	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	-1.0000	0.3357	0.0	100	0.00
84	T	Bromobenzene	0.3000	0.2977	0.8	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.3196	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.3415	0.0	100	0.00
87	T	4-Chlorotoluene	-1.0000	0.3499	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2534	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.2606	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.3069	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3436	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.3192	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.3257	0.0	100	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.3299	-10.0	100	0.00
95	T	n-Butylbenzene	-1.0000	0.3323	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.3472	-15.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.3418	0.0	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.3297	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.3306	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.3161	-5.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412220.D 8260WT.M Sat May 14 18:03:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	801173	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	557498	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	293108	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.00%#	
80) p-Bromofluorobenzene	16.08	95	343	0.0286 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	5478	0.3262 ug/L	79
3) Chloromethane	3.63	50	3930	0.2484 ug/L	85
4) Vinyl Chloride	3.84	62	3512	0.3288 ug/L	97
5) 1,3-Butadiene	3.90	54	2479	0.2375 ug/L #	75
6) Bromomethane	4.73	94	1343	0.9497 ug/L	85
7) Chloroethane	4.90	64	2219	0.3174 ug/L #	43
8) Trichlorofluoromethane	5.36	101	6974	0.3289 ug/L #	93
10) Isoprene	5.94	67	4288	0.3952 ug/L #	62
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	3168	0.3263 ug/L #	40
14) 1,1-Dichloroethene	6.47	61	5431	0.2882 ug/L	92
16) Dimethyl Sulfide	6.74	62	1708	0.2453 ug/L	64
19) Methylene Chloride	7.24	84	3785	0.4239 ug/L #	43
20) Carbon Disulfide	7.29	76	12437	0.4565 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	6580	0.3336 ug/L #	76
23) trans-1,2-Dichloroethene	7.71	61	4990	0.2928 ug/L	96
24) n-Hexane	7.79	57	3110	0.2011 ug/L	99
26) Vinyl Acetate	8.31	43	2753	0.1566 ug/L	100
27) 1,1-Dichloroethane	8.32	63	5655	0.2774 ug/L #	92
31) 2,2-Dichloropropane	9.10	77	6035	0.3360 ug/L	82
32) cis-1,2-Dichloroethene	9.16	96	3837	0.3762 ug/L	74
33) Chloroform	9.37	83	7267	0.3842 ug/L	100
34) 1-Bromopropane	9.50	122	234	0.1456 ug/L #	1
35) Bromochloromethane	9.60	130	1674	0.3137 ug/L	62
36) Tetrahydrofuran	9.62	42	447	0.2146 ug/L #	41
38) 1,1,1-Trichloroethane	9.91	97	6304	0.3305 ug/L	90
39) Cyclohexane	9.94	56	4658	0.2238 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	5172	0.3768 ug/L	80
42) Carbon Tetrachloride	10.25	117	5692	0.3172 ug/L	95
45) 1,2-Dichloroethane	10.43	62	4443	0.2796 ug/L #	63
46) Benzene	10.46	78	14456	0.4134 ug/L #	77
47) Trichloroethene	11.21	130	3659	0.3626 ug/L	98
48) Methylcyclohexane	11.29	83	5025	0.3562 ug/L	84
49) 1,2-Dichloropropane	11.42	63	3060	0.3007 ug/L	98
50) Bromodichloromethane	11.73	83	4734	0.3343 ug/L #	93
52) Dibromomethane	11.82	93	1805	0.3767 ug/L	84
55) cis-1,3-Dichloropropene	12.36	75	5008	0.3514 ug/L	90
56) Dimethyl Disulfide	12.63	79	1921	0.2573 ug/L	85
59) Toluene	12.78	91	14742	0.4416 ug/L	98
60) Ethyl Methacrylate	12.90	69	2062	0.3292 ug/L	66
62) trans-1,3-Dichloropropene	12.96	75	3693	0.3171 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M412221.D 8260WT.M Fri May 13 14:20:38 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
63)	1,1,2-Trichloroethane	13.18	97	2326	0.4391 ug/L		70
65)	1,3-Dichloropropane	13.49	76	3163	0.3219 ug/L		88
66)	Tetrachloroethene	13.61	164	3164	0.4185 ug/L		93
67)	Dibromochloromethane	13.87	129	3113	0.3727 ug/L		86
68)	1,2-Dibromoethane	14.12	107	2076	0.3760 ug/L		90
69)	1-Chlorohexane	14.21	91	4746	0.4174 ug/L		80
70)	Chlorobenzene	14.62	112	9180	0.3960 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.66	131	3501	0.3876 ug/L		95
72)	Ethylbenzene	14.65	106	5348	0.4066 ug/L		84
73)	m-,p-Xylene	14.75	106	13269	0.8757 ug/L		89
74)	o-Xylene	15.31	106	6019	0.3943 ug/L		97
75)	Styrene	15.35	104	9370	0.3849 ug/L		95
76)	Bromoform	15.83	173	1198	0.2500 ug/L	#	76
77)	Isopropylbenzene	15.73	105	16528	0.4270 ug/L		92
79)	1,1,2,2-Tetrachloroethane	15.96	83	1999	0.3419 ug/L	#	83
83)	n-Propylbenzene	16.25	91	19410	0.4297 ug/L		95
84)	Bromobenzene	16.37	156	3319	0.3524 ug/L		75
85)	1,3,5-Trimethylbenzene	16.42	105	13794	0.4127 ug/L		95
86)	2-Chlorotoluene	16.51	91	13678	0.4729 ug/L		90
87)	4-Chlorotoluene	16.56	91	12572	0.4219 ug/L		98
88)	a-Methylstyrene	16.84	118	5739	0.3485 ug/L		96
89)	tert-Butylbenzene	16.90	134	2254	0.3403 ug/L		55
90)	1,2,4-Trimethylbenzene	16.95	105	13859	0.4051 ug/L		90
91)	sec-Butylbenzene	17.17	105	17612	0.4382 ug/L		90
92)	p-Isopropyltoluene	17.32	119	13616	0.3968 ug/L		90
93)	1,3-Dichlorobenzene	17.52	146	6961	0.3724 ug/L		86
94)	1,4-Dichlorobenzene	17.64	146	7149	0.3832 ug/L	#	1
95)	n-Butylbenzene	17.85	91	15223	0.4664 ug/L		91
96)	1,2-Dichlorobenzene	18.14	146	6129	0.3742 ug/L		92
98)	1,2,4-Trichlorobenzene	20.28	180	5035	0.3969 ug/L		97
99)	Hexachlorobutadiene	20.44	225	2420	0.4122 ug/L		83
100)	Naphthalene	20.65	128	7474	0.3874 ug/L	#	84
101)	1,2,3-Trichlorobenzene	20.96	180	4378	0.4056 ug/L	#	78

(#) = qualifier out of range (m) = manual integration
8M412221.D 8260WT.M Fri May 13 14:20:39 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

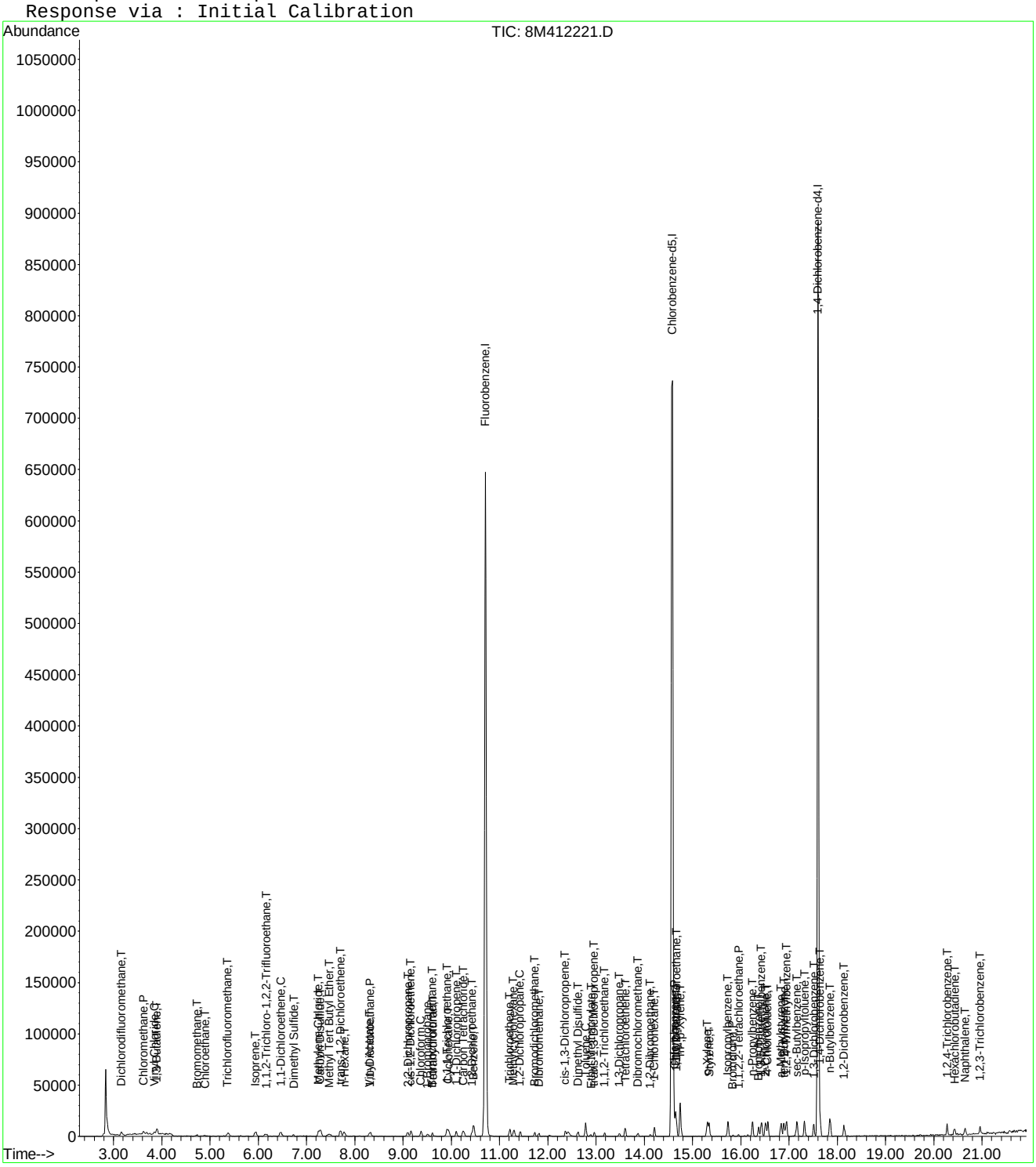

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	0.4000	0.4078	-2.0	100	0.00
3	P	Chloromethane	-1.0000	0.5012	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.3775	5.6	100	0.00
5	T	1,3-Butadiene	-1.0000	0.3178	0.0	100	0.02
6	T	Bromomethane	-1.0000	1.0253	0.0	100	0.00
7	T	Chloroethane	0.4000	0.4335	-8.4	100	0.00
8	T	Trichlorofluoromethane	0.4000	0.4029	-0.7	100	-0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.90#
10	T	Isoprene	0.4000	0.4079	-2.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.13#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3894	0.0	100	0.02
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	0.4000	0.4192	-4.8	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.58#
16	T	Dimethyl Sulfide	0.4000	0.3687	7.8	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.2179	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4591	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4587	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.43#
22	T	Methyl Tert Butyl Ether	-1.0000	0.3688	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.4193	-4.8	100	0.00
24	T	n-Hexane	-1.0000	0.3519	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.3241	0.0	100	0.02
27	P	1,1-Dichloroethane	0.4000	0.3826	4.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.98#
31	T	2,2-Dichloropropane	0.4000	0.3874	3.1	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.4172	-4.3	100	-0.01
33	C	Chloroform	0.4000	0.4164	-4.1	100	0.00
34		1-Bromopropane	-1.0000	0.1776	0.0	100	-0.01
35	T	Bromochloromethane	0.4000	0.3550	11.3	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.5125	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	0.4000	0.3803	4.9	100	0.00
39	T	Cyclohexane	-1.0000	0.4058	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4093	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	0.4000	0.3867	3.3	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	0.4000	0.3955	1.1	100	0.00
46	T	Benzene	0.4000	0.4393	-9.8	100	0.00
47	T	Trichloroethene	0.4000	0.4169	-4.2	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3768	0.0	100	-0.01
49	C	1,2-Dichloropropane	0.4000	0.4177	-4.4	100	0.00
50	T	Bromodichloromethane	0.4000	0.3676	8.1	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	0.4000	0.4162	-4.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1401	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.05#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3821	4.5	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2746	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0000	0.0	0	-12.68#
59	C	Toluene	0.4000	0.4259	-6.5	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3102	0.0	100	0.02
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3184	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.4259	-6.5	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	0.4000	0.3253	18.7	100	0.00
66	T	Tetrachloroethene	0.4000	0.4267	-6.7	100	0.00
67	T	Dibromochloromethane	0.4000	0.3904	2.4	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.3814	4.6	100	0.00
69	T	1-Chlorohexane	0.4000	0.4017	-0.4	100	0.00
70	P	Chlorobenzene	0.4000	0.3933	1.7	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3872	3.2	100	0.00
72	C	Ethylbenzene	0.4000	0.4188	-4.7	100	0.00
73	T	m-,p-Xylene	0.8000	0.8859	-10.7	100	0.00
74	T	o-Xylene	-1.0000	0.4110	0.0	100	0.00
75	T	Styrene	0.4000	0.3901	2.5	100	0.00
76	P	Bromoform	-1.0000	0.2533	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.4249	-6.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.3398	15.1	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0283	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.14#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	0.4000	0.4245	-6.1	100	0.00
84	T	Bromobenzene	0.4000	0.3529	11.8	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.4141	-3.5	100	0.00
86	T	2-Chlorotoluene	0.4000	0.4284	-7.1	100	0.00
87	T	4-Chlorotoluene	0.4000	0.4359	-9.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.3631	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3459	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	0.4000	0.4046	-1.2	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.4494	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4092	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.3844	3.9	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.3915	2.1	100	0.00
95	T	n-Butylbenzene	-1.0000	0.4628	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.3805	4.9	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	0.4000	0.4182	-4.5	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.4302	-7.5	100	0.00
100	T	Naphthalene	0.4000	0.4178	-4.5	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.4310	-7.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412221.D 8260WT.M Sat May 14 18:03:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	795577	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	547129	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	284579	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.65	111	3962	0.3966 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.60%#	
43) 1,2-Dichloroethane-d4	10.31	65	3835	0.3356 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	1.36%#	
58) Toluene-d8	12.68	98	14023	0.4957 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.00%#	
80) p-Bromofluorobenzene	16.08	95	6483	0.5565 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.24%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	12402	0.7438 ug/L	97
3) Chloromethane	3.62	50	8415	0.5357 ug/L #	75
4) Vinyl Chloride	3.84	62	9412	0.8873 ug/L	89
5) 1,3-Butadiene	3.90	54	6974	0.6729 ug/L	81
6) Bromomethane	4.73	94	4114	1.3123 ug/L	92
7) Chloroethane	4.90	64	4983	0.7178 ug/L #	80
8) Trichlorofluoromethane	5.38	101	17133	0.8136 ug/L #	96
9) Diethyl ether	5.90	59	20707	3.2140 ug/L	84
10) Isoprene	5.94	67	11176	1.0373 ug/L	76
11) Acrolein	6.14	56	246	0.4300 ug/L #	15
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	8135	0.8438 ug/L	96
13) Acetone	6.24	43	413	0.2115 ug/L #	48
14) 1,1-Dichloroethene	6.46	61	12947	0.6919 ug/L	91
15) Tert-Butyl Alcohol	6.59	59	3316	7.3747 ug/L #	55
16) Dimethyl Sulfide	6.72	62	4505	0.6515 ug/L	79
18) Methyl acetate	7.00	43	2119	0.3630 ug/L #	66
19) Methylene Chloride	7.24	84	8723	0.9837 ug/L #	43
20) Carbon Disulfide	7.29	76	28246	1.0441 ug/L	100
21) Acrylonitrile	7.43	53	2164	0.8620 ug/L	76
22) Methyl Tert Butyl Ether	7.47	73	16998	0.8678 ug/L	84
23) trans-1,2-Dichloroethene	7.70	61	12571	0.7427 ug/L	100
24) n-Hexane	7.78	57	9382	0.6109 ug/L	82
25) Diisopropyl ether	8.12	45	95400	2.1939 ug/L #	91
26) Vinyl Acetate	8.30	43	6750	0.3867 ug/L #	89
27) 1,1-Dichloroethane	8.32	63	14721	0.7271 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	97972	3.2102 ug/L	88
29) 2-Butanone	8.88	43	380	0.1215 ug/L #	57
30) Propionitrile	8.99	54	1593	2.0138 ug/L #	56
31) 2,2-Dichloropropane	9.09	77	14691	0.8236 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	9482	0.9362 ug/L	72
33) Chloroform	9.37	83	18494	0.9845 ug/L	94
34) 1-Bromopropane	9.50	122	1092	0.6844 ug/L	80
35) Bromochloromethane	9.61	130	5234	0.9877 ug/L #	55
36) Tetrahydrofuran	9.63	42	5415	2.6185 ug/L #	68
38) 1,1,1-Trichloroethane	9.91	97	17074	0.9016 ug/L	92
39) Cyclohexane	9.94	56	11865	0.5740 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	13172	0.9663 ug/L	87
41) Tert-Amyl-Methyl ether	10.21	73	90255	4.6173 ug/L #	88
42) Carbon Tetrachloride	10.25	117	14515	0.8146 ug/L	95
45) 1,2-Dichloroethane	10.42	62	10675	0.6766 ug/L	85

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	10.47	78	34504	0.9938 ug/L		84
47)	Trichloroethene	11.21	130	8752	0.8735 ug/L		93
48)	Methylcyclohexane	11.30	83	13513	0.9646 ug/L		79
49)	1,2-Dichloropropane	11.43	63	7057	0.6982 ug/L	#	67
50)	Bromodichloromethane	11.73	83	12147	0.8638 ug/L		96
52)	Dibromomethane	11.81	93	4130	0.8681 ug/L		95
53)	2-Chloroethyl Vinyl Ether	12.03	63	2694	0.6366 ug/L		86
54)	4-Methyl-2-Pentanone	12.06	58	848	0.3671 ug/L	#	41
55)	cis-1,3-Dichloropropene	12.36	75	12521	0.8847 ug/L		97
56)	Dimethyl Disulfide	12.63	79	5799	0.7821 ug/L		96
59)	Toluene	12.79	91	37114	1.1328 ug/L		95
60)	Ethyl Methacrylate	12.88	69	5490	0.8930 ug/L		69
62)	trans-1,3-Dichloropropene	12.96	75	10328	0.9035 ug/L		92
63)	1,1,2-Trichloroethane	13.18	97	5274	1.0144 ug/L		93
64)	2-Hexanone	13.10	58	397	0.2127 ug/L	#	1
65)	1,3-Dichloropropane	13.49	76	9673	1.0032 ug/L		73
66)	Tetrachloroethene	13.61	164	7373	0.9937 ug/L		95
67)	Dibromochloromethane	13.87	129	7358	0.8977 ug/L		95
68)	1,2-Dibromoethane	14.13	107	5123	0.9454 ug/L		95
69)	1-Chlorohexane	14.21	91	12790	1.1461 ug/L		79
70)	Chlorobenzene	14.62	112	25662	1.1281 ug/L		89
71)	1,1,1,2-Tetrachloroethane	14.66	131	8722	0.9838 ug/L		94
72)	Ethylbenzene	14.65	106	13009	1.0078 ug/L		87
73)	m-,p-Xylene	14.75	106	30465	2.0486 ug/L		84
74)	o-Xylene	15.31	106	15133	1.0101 ug/L		84
75)	Styrene	15.35	104	23191	0.9707 ug/L		91
76)	Bromoform	15.84	173	3875	0.8240 ug/L		96
77)	Isopropylbenzene	15.74	105	41382	1.0895 ug/L		95
79)	1,1,2,2-Tetrachloroethane	15.95	83	5604	0.9873 ug/L	#	93
81)	1,2,3-Trichloropropane	16.15	110	1355	0.7428 ug/L	#	1
82)	trans-1,4-Dichloro-2-Buten	16.19	53	962	0.3479 ug/L	#	1
83)	n-Propylbenzene	16.25	91	48249	1.1002 ug/L		99
84)	Bromobenzene	16.37	156	9598	1.0497 ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	33355	1.0278 ug/L		96
86)	2-Chlorotoluene	16.51	91	33408	1.1895 ug/L		94
87)	4-Chlorotoluene	16.56	91	29548	1.0213 ug/L		95
88)	a-Methylstyrene	16.84	118	14414	0.9014 ug/L		91
89)	tert-Butylbenzene	16.89	134	6686	1.0398 ug/L		86
90)	1,2,4-Trimethylbenzene	16.95	105	36066	1.0857 ug/L		96
91)	sec-Butylbenzene	17.16	105	42128	1.0796 ug/L		96
92)	p-Isopropyltoluene	17.32	119	35424	1.0633 ug/L		94
93)	1,3-Dichlorobenzene	17.52	146	18409	1.0144 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	19031	1.0506 ug/L	#	62
95)	n-Butylbenzene	17.85	91	35772	1.1288 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	16104	1.0126 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.14	75	1262	1.0152 ug/L	#	53
98)	1,2,4-Trichlorobenzene	20.28	180	11494	0.9331 ug/L		98
99)	Hexachlorobutadiene	20.43	225	5421	0.9510 ug/L		98
100)	Naphthalene	20.65	128	16581	0.8853 ug/L		100
101)	1,2,3-Trichlorobenzene	20.96	180	10306	0.9835 ug/L		94

(#) = qualifier out of range (m) = manual integration
8M412222.D 8260WT.M Fri May 13 14:49:48 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

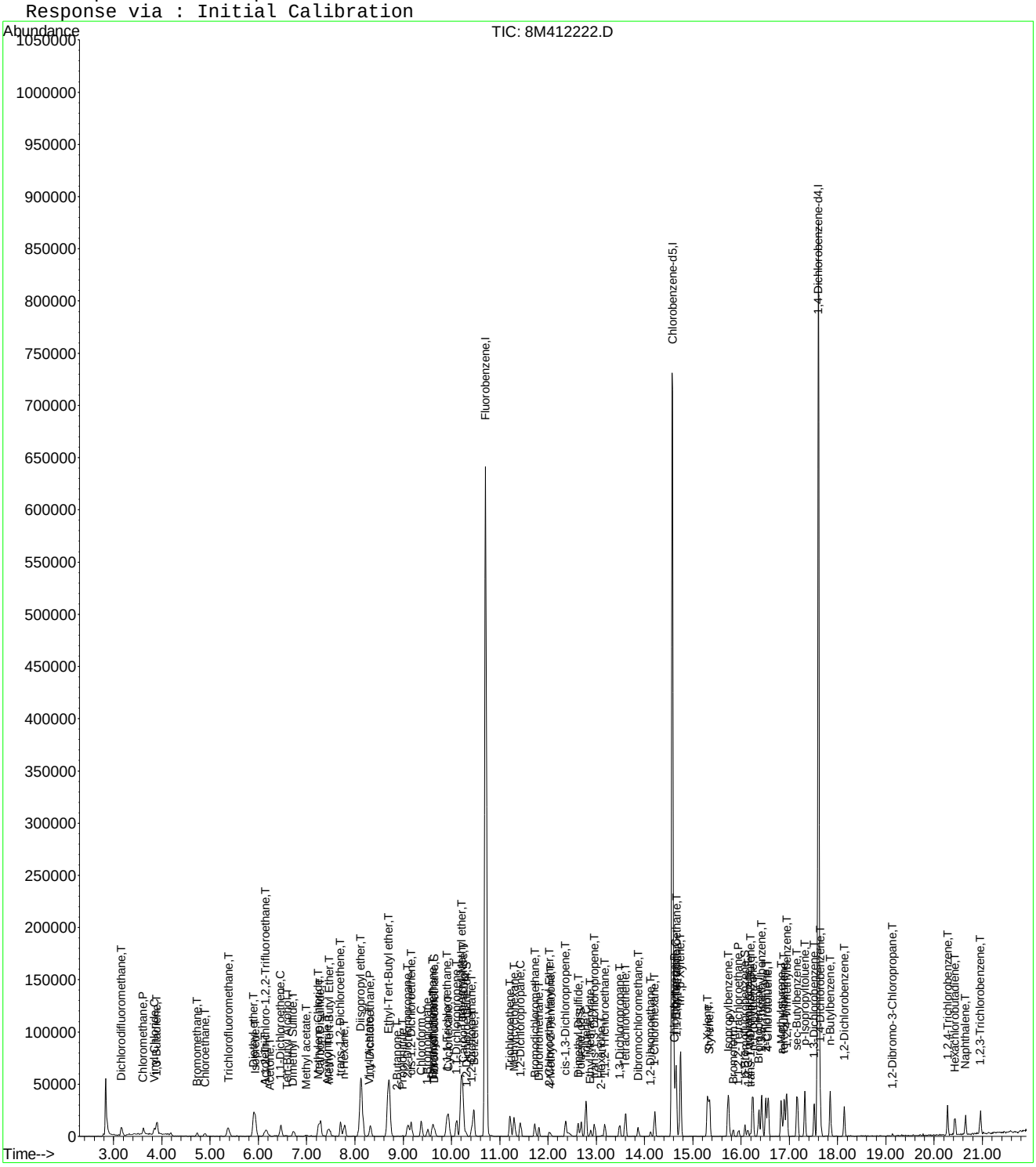

8M412222.D 8260WT.M Fri May 13 14:49:48 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:05:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9298	7.0	100	0.00
3	P	Chloromethane	1.0000	1.0808	-8.1	100	0.00
4	C	Vinyl Chloride	1.0000	1.0189	-1.9	100	0.00
5	T	1,3-Butadiene	-1.0000	0.9002	0.0	100	0.02
6	T	Bromomethane	1.0000	1.2082	-20.8	100	0.00
7	T	Chloroethane	1.0000	0.9803	2.0	100	0.00
8	T	Trichlorofluoromethane	1.0000	0.9968	0.3	100	0.00
9	T	Diethyl ether	5.0000	5.0462	-0.9	100	0.00
10	T	Isoprene	1.0000	1.0707	-7.1	100	0.00
11	T	Acrolein	-1.0000	0.6696	0.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0069	-0.7	100	0.00
13	T	Acetone	-1.0000	0.4614	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	1.0064	-0.6	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	11.5604	0.0	0	0.02
16	T	Dimethyl Sulfide	1.0000	0.9794	2.1	100	-0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.8758	0.0	100	0.00
19	T	Methylene Chloride	1.0000	1.0655	-6.5	100	0.00
20	T	Carbon Disulfide	1.0000	1.0492	-4.9	100	0.00
21	T	Acrylonitrile	2.5000	1.8633	25.5#	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9593	4.1	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	1.0636	-6.4	100	0.00
24	T	n-Hexane	-1.0000	1.0690	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	5.1784	-3.6	100	0.00
26	T	Vinyl Acetate	-1.0000	0.8002	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0029	-0.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.9635	0.7	100	0.00
29	T	2-Butanone	-1.0000	0.2889	0.0	100	0.00
30	T	Propionitrile	5.0000	4.1566	16.9	100	0.00
31	T	2,2-Dichloropropane	1.0000	0.9498	5.0	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	1.0383	-3.8	100	0.00
33	C	Chloroform	1.0000	1.0671	-6.7	100	0.00
34		1-Bromopropane	1.0000	0.8348	16.5	100	-0.01
35	T	Bromochloromethane	1.0000	1.1177	-11.8	100	0.00
36	T	Tetrahydrofuran	5.0000	6.2516	-25.0#	100	0.00
37	S	Dibromofluoromethane	0.5000	0.4635	7.3	100	-0.01
38	T	1,1,1-Trichloroethane	1.0000	1.0372	-3.7	100	0.00
39	T	Cyclohexane	1.0000	1.0411	-4.1	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0498	-5.0	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	5.0344	-0.7	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.9930	0.7	100	0.00
43	S	1,2-Dichloroethane-d4	0.5000	0.4184	16.3	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	1.0000	0.9570	4.3	100	0.00
46	T	Benzene	1.0000	1.0558	-5.6	100	0.00
47	T	Trichloroethene	1.0000	1.0041	-0.4	100	0.00
48	T	Methylcyclohexane	-1.0000	1.0205	0.0	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.9700	3.0	100	0.00
50	T	Bromodichloromethane	1.0000	0.9500	5.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	1.0000	0.9590	4.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.8616	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.6639	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:05:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9621	3.8	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.8348	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	0.5000	0.4897	2.1	100	0.00
59	C	Toluene	1.0000	1.0927	-9.3	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.8416	15.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	1.0000	0.9073	9.3	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.9840	1.6	100	0.00
64	T	2-Hexanone	-1.0000	0.3525	0.0	100	-0.01
65	T	1,3-Dichloropropane	1.0000	1.0137	-1.4	100	0.00
66	T	Tetrachloroethene	1.0000	1.0132	-1.3	100	0.00
67	T	Dibromochloromethane	1.0000	0.9402	6.0	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.9590	4.1	100	0.00
69	T	1-Chlorohexane	1.0000	1.1031	-10.3	100	0.00
70	P	Chlorobenzene	1.0000	1.1204	-12.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.9829	1.7	100	0.00
72	C	Ethylbenzene	1.0000	1.0381	-3.8	100	0.00
73	T	m-,p-Xylene	2.0000	2.0726	-3.6	100	0.00
74	T	o-Xylene	1.0000	1.0530	-5.3	100	0.00
75	T	Styrene	1.0000	0.9839	1.6	100	0.00
76	P	Bromoform	1.0000	0.8348	16.5	100	0.00
77	T	Isopropylbenzene	1.0000	1.0840	-8.4	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	0.9810	1.9	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5502	0.0	100	0.00
81	T	1,2,3-Trichloropropane	1.0000	0.7703	23.0	100	0.02
82	T	trans-1,4-Dichloro-2-Butene	1.0000	1.1443	-14.4	100	0.00
83	T	n-Propylbenzene	1.0000	1.0868	-8.7	100	0.00
84	T	Bromobenzene	1.0000	1.0510	-5.1	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	1.0314	-3.1	100	0.00
86	T	2-Chlorotoluene	1.0000	1.0778	-7.8	100	0.00
87	T	4-Chlorotoluene	1.0000	1.0553	-5.5	100	0.00
88	T	a-Methylstyrene	-1.0000	0.9394	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	1.0567	-5.7	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	1.0845	-8.5	100	0.00
91	T	sec-Butylbenzene	1.0000	1.1073	-10.7	100	0.00
92	T	p-Isopropyltoluene	1.0000	1.0966	-9.7	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0469	-4.7	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	1.0735	-7.3	100	0.00
95	T	n-Butylbenzene	1.0000	1.1201	-12.0	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0297	-3.0	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.1006	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	1.0000	0.9832	1.7	100	0.00
99	T	Hexachlorobutadiene	1.0000	0.9925	0.7	100	0.00
100	T	Naphthalene	1.0000	0.9547	4.5	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	1.0450	-4.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412222.D 8260WT.M Sat May 14 18:05:50 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	782460	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.57	117	543252	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	286450	25.00	ug/L	0.01

System Monitoring Compounds						
37) Dibromofluoromethane	9.66	111	8161	0.8307	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.32%#		
43) 1,2-Dichloroethane-d4	10.30	65	9681	0.8613	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.44%#		
58) Toluene-d8	12.68	98	28135	1.0016	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.00%#		
80) p-Bromofluorobenzene	16.08	95	12079	1.0302	ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.12%#		

Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.16	85	24870	1.5166	ug/L	98
3) Chloromethane	3.62	50	16106	1.0425	ug/L	93
4) Vinyl Chloride	3.85	62	18562	1.7792	ug/L	94
5) 1,3-Butadiene	3.90	54	13617	1.3360	ug/L	92
6) Bromomethane	4.73	94	8329	1.8804	ug/L	94
7) Chloroethane	4.90	64	9562	1.4006	ug/L	86
8) Trichlorofluoromethane	5.39	101	34970	1.6885	ug/L	97
9) Diethyl ether	5.90	59	107986	17.0420	ug/L	79
10) Isoprene	5.93	67	20936	1.9757	ug/L	73
11) Acrolein	6.14	56	4864	8.6444	ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	16832	1.7751	ug/L	99
13) Acetone	6.23	43	1519	0.7908	ug/L #	48
14) 1,1-Dichloroethene	6.47	61	25394	1.3798	ug/L	89
15) Tert-Butyl Alcohol	6.58	59	14891	33.6725	ug/L	85
16) Dimethyl Sulfide	6.73	62	9489	1.3953	ug/L	79
17) Iodomethane	6.98	142	1211	1.3472	ug/L #	60
18) Methyl acetate	7.01	43	5064	0.8821	ug/L #	79
19) Methylene Chloride	7.25	84	16579	1.9010	ug/L	52
20) Carbon Disulfide	7.29	76	57693	2.1683	ug/L	98
21) Acrylonitrile	7.43	53	13848	5.6089	ug/L	93
22) Methyl Tert Butyl Ether	7.47	73	33991	1.7644	ug/L	84
23) trans-1,2-Dichloroethene	7.70	61	22786	1.3688	ug/L	88
24) n-Hexane	7.79	57	18282	1.2105	ug/L	84
25) Diisopropyl ether	8.12	45	475271	11.1128	ug/L #	92
26) Vinyl Acetate	8.29	43	15998	0.9318	ug/L	93
27) 1,1-Dichloroethane	8.32	63	30419	1.5277	ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	505010	16.8250	ug/L	89
29) 2-Butanone	8.90	43	2250	0.7313	ug/L #	57
30) Propionitrile	8.99	54	9373	12.0479	ug/L	86
31) 2,2-Dichloropropane	9.10	77	32521	1.8538	ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	18238	1.8309	ug/L	91
33) Chloroform	9.37	83	33543	1.8156	ug/L	99
34) 1-Bromopropane	9.52	122	2513	1.6014	ug/L	88
35) Bromochloromethane	9.60	130	9189	1.7632	ug/L	67
36) Tetrahydrofuran	9.63	42	22074	10.8529	ug/L #	66
38) 1,1,1-Trichloroethane	9.90	97	32268	1.7324	ug/L	96
39) Cyclohexane	9.93	56	23097	1.1362	ug/L #	65
40) 1,1-Dichloropropene	10.10	75	24988	1.8639	ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	459535	23.9029	ug/L	87
42) Carbon Tetrachloride	10.24	117	28935	1.6512	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412223.D 8260WT.M Fri May 13 15:18:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.42	62	22142	1.4270 ug/L #	83
46)	Benzene	10.46	78	67028	1.9629 ug/L	83
47)	Trichloroethene	11.21	130	17287	1.7543 ug/L	96
48)	Methylcyclohexane	11.30	83	26050	1.8907 ug/L	84
49)	1,2-Dichloropropane	11.42	63	14582	1.4670 ug/L	77
50)	Bromodichloromethane	11.73	83	25794	1.8651 ug/L	93
51)	1,4-Dioxane	11.73	88	1282	32.3515 ug/L	74
52)	Dibromomethane	11.81	93	8575	1.8325 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.02	63	6234	1.4979 ug/L	100
54)	4-Methyl-2-Pentanone	12.06	58	2139	0.9416 ug/L	84
55)	cis-1,3-Dichloropropene	12.37	75	24153	1.7353 ug/L	98
56)	Dimethyl Disulfide	12.62	79	12288	1.6851 ug/L	99
59)	Toluene	12.79	91	72944	2.2423 ug/L	95
60)	Ethyl Methacrylate	12.88	69	12716	2.0832 ug/L	71
62)	trans-1,3-Dichloropropene	12.96	75	22163	1.9527 ug/L	100
63)	1,1,2-Trichloroethane	13.18	97	10537	2.0412 ug/L	99
64)	2-Hexanone	13.13	58	2200	1.1873 ug/L #	65
65)	1,3-Dichloropropane	13.49	76	20212	2.1112 ug/L	72
66)	Tetrachloroethene	13.60	164	14595	1.9811 ug/L	90
67)	Dibromochloromethane	13.87	129	14698	1.8061 ug/L	98
68)	1,2-Dibromoethane	14.12	107	10152	1.8869 ug/L	95
69)	1-Chlorohexane	14.21	91	21960	1.9818 ug/L	89
70)	Chlorobenzene	14.62	112	47376	2.0974 ug/L	81
71)	1,1,1,2-Tetrachloroethane	14.66	131	17526	1.9910 ug/L	97
72)	Ethylbenzene	14.66	106	25628	1.9996 ug/L	92
73)	m-,p-Xylene	14.74	106	60087	4.0693 ug/L	84
74)	o-Xylene	15.31	106	28289	1.9017 ug/L	79
75)	Styrene	15.35	104	47644	2.0086 ug/L	92
76)	Bromoform	15.84	173	9145	1.9585 ug/L	95
77)	Isopropylbenzene	15.73	105	81301	2.1557 ug/L	97
79)	1,1,2,2-Tetrachloroethane	15.95	83	11538	2.0194 ug/L	95
81)	1,2,3-Trichloropropane	16.13	110	3630	1.9770 ug/L	94
82)	trans-1,4-Dichloro-2-Buten	16.19	53	2699	0.9698 ug/L #	36
83)	n-Propylbenzene	16.24	91	97233	2.2026 ug/L	96
84)	Bromobenzene	16.37	156	19174	2.0834 ug/L	92
85)	1,3,5-Trimethylbenzene	16.42	105	67395	2.0631 ug/L	97
86)	2-Chlorotoluene	16.51	91	67110	2.3739 ug/L	94
87)	4-Chlorotoluene	16.56	91	59154	2.0313 ug/L	92
88)	a-Methylstyrene	16.84	118	29415	1.8275 ug/L	86
89)	tert-Butylbenzene	16.89	134	12716	1.9647 ug/L	67
90)	1,2,4-Trimethylbenzene	16.95	105	71669	2.1435 ug/L	94
91)	sec-Butylbenzene	17.17	105	81038	2.0632 ug/L	98
92)	p-Isopropyltoluene	17.32	119	70170	2.0924 ug/L	92
93)	1,3-Dichlorobenzene	17.52	146	37289	2.0413 ug/L	93
94)	1,4-Dichlorobenzene	17.64	146	36528	2.0034 ug/L #	73
95)	n-Butylbenzene	17.85	91	67823	2.1262 ug/L	96
96)	1,2-Dichlorobenzene	18.14	146	32322	2.0190 ug/L	92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	1955	1.5624 ug/L	94
98)	1,2,4-Trichlorobenzene	20.28	180	23558	1.9000 ug/L	98
99)	Hexachlorobutadiene	20.43	225	11066	1.9286 ug/L	99
100)	Naphthalene	20.65	128	36066	1.9130 ug/L	99
101)	1,2,3-Trichlorobenzene	20.96	180	19765	1.8738 ug/L	95

(#) = qualifier out of range (m) = manual integration
8M412223.D 8260WT.M Fri May 13 15:18:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

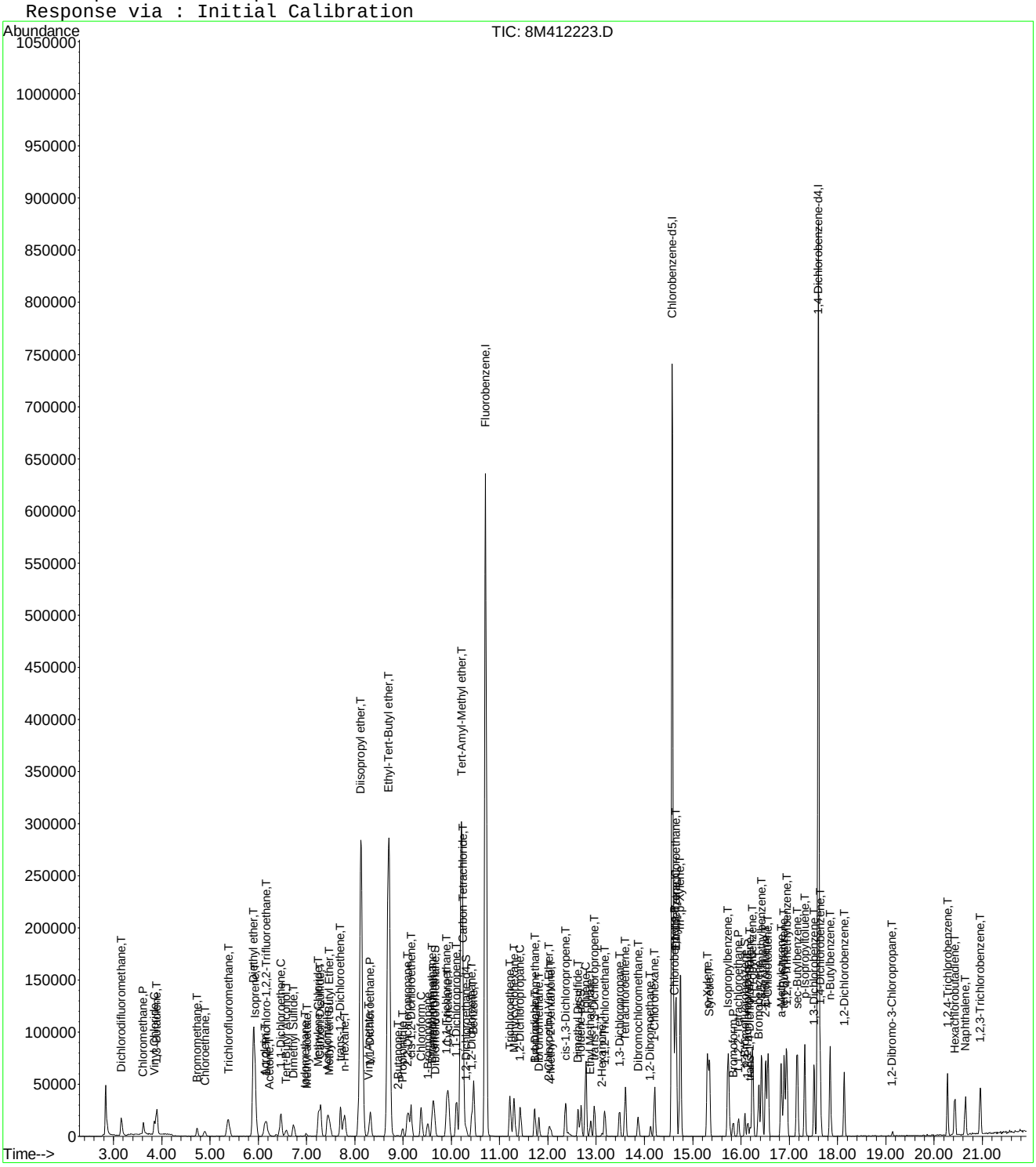

8M412223.D 8260WT.M Fri May 13 15:18:37 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.8958	5.2	100	0.00
3	P	Chloromethane	2.0000	2.1033	-5.2	100	0.00
4	C	Vinyl Chloride	2.0000	2.0431	-2.2	100	0.00
5	T	1,3-Butadiene	2.0000	1.7872	10.6	100	0.02
6	T	Bromomethane	2.0000	2.0126	-0.6	100	0.00
7	T	Chloroethane	2.0000	1.9127	4.4	100	0.00
8	T	Trichlorofluoromethane	2.0000	2.0686	-3.4	100	0.00
9	T	Diethyl ether	25.0000	26.7567	-7.0	100	0.00
10	T	Isoprene	2.0000	2.0394	-2.0	100	0.00
11	T	Acrolein	12.5000	13.4606	-7.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	2.1182	-5.9	100	0.02
13	T	Acetone	-1.0000	1.7255	0.0	100	-0.01
14	C	1,1-Dichloroethene	2.0000	2.0070	-0.4	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	52.7840	-5.6	100	0.00
16	T	Dimethyl Sulfide	2.0000	2.0975	-4.9	100	0.00
17	T	Iodomethane	2.0000	3.0680	-53.4#	100	0.00
18	T	Methyl acetate	-1.0000	2.1281	0.0	100	0.00
19	T	Methylene Chloride	2.0000	2.0590	-3.0	100	0.00
20	T	Carbon Disulfide	2.0000	2.1789	-8.9	100	0.00
21	T	Acrylonitrile	12.5000	12.1237	3.0	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.9505	2.5	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.9603	2.0	100	0.00
24	T	n-Hexane	-1.0000	2.1181	0.0	100	0.00
25	T	Diisopropyl ether	25.0000	26.2305	-4.9	100	0.00
26	T	Vinyl Acetate	2.0000	1.9284	3.6	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.1072	-5.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	26.0139	-4.1	100	0.00
29	T	2-Butanone	-1.0000	1.7396	0.0	100	0.02
30	T	Propionitrile	25.0000	24.8668	0.5	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1378	-6.9	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0306	-1.5	100	0.00
33	C	Chloroform	2.0000	1.9679	1.6	100	0.00
34		1-Bromopropane	2.0000	1.9533	2.3	100	0.00
35	T	Bromochloromethane	2.0000	1.9951	0.2	100	0.00
36	T	Tetrahydrofuran	25.0000	25.9117	-3.6	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9708	2.9	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.9930	0.3	100	0.00
39	T	Cyclohexane	2.0000	2.0605	-3.0	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0248	-1.2	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	26.0627	-4.3	100	0.00
42	T	Carbon Tetrachloride	2.0000	2.0126	-0.6	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0740	-7.4	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	2.0000	2.0183	-0.9	100	0.00
46	T	Benzene	2.0000	2.0854	-4.3	100	0.00
47	T	Trichloroethene	2.0000	2.0166	-0.8	100	0.00
48	T	Methylcyclohexane	-1.0000	2.0003	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0380	-1.9	100	0.00
50	T	Bromodichloromethane	2.0000	2.0511	-2.6	100	0.00
51	T	1,4-Dioxane	-1.0000	35.6688	0.0	100	0.02
52	T	Dibromomethane	2.0000	2.0246	-1.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	2.0271	-1.4	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.7027	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.8869	5.7	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.7986	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	0.9896	1.0	100	0.00
59	C	Toluene	2.0000	2.1628	-8.1	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.9633	1.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	2.0000	1.9609	2.0	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.9800	1.0	100	0.00
64	T	2-Hexanone	-1.0000	1.9672	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.1332	-6.7	100	0.00
66	T	Tetrachloroethene	2.0000	2.0198	-1.0	100	0.00
67	T	Dibromochloromethane	2.0000	1.8915	5.4	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.9141	4.3	100	0.00
69	T	1-Chlorohexane	2.0000	1.9075	4.6	100	0.00
70	P	Chlorobenzene	2.0000	2.0831	-4.2	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.9892	0.5	100	0.00
72	C	Ethylbenzene	2.0000	2.0596	-3.0	100	0.00
73	T	m-,p-Xylene	4.0000	4.1170	-2.9	100	0.00
74	T	o-Xylene	2.0000	1.9825	0.9	100	0.00
75	T	Styrene	2.0000	2.0358	-1.8	100	0.00
76	P	Bromoform	2.0000	1.9841	0.8	100	0.00
77	T	Isopropylbenzene	2.0000	2.1448	-7.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	2.0066	-0.3	100	0.00
80	S	p-Bromofluorobenzene	1.0000	1.0184	-1.8	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	2.0501	-2.5	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	2.0915	-4.6	100	0.00
83	T	n-Propylbenzene	2.0000	2.1757	-8.8	100	0.00
84	T	Bromobenzene	2.0000	2.0859	-4.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.0703	-3.5	100	0.00
86	T	2-Chlorotoluene	2.0000	2.1509	-7.5	100	0.00
87	T	4-Chlorotoluene	2.0000	2.0989	-4.9	100	0.00
88	T	a-Methylstyrene	-1.0000	1.9045	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	1.9967	0.2	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.1411	-7.1	100	0.00
91	T	sec-Butylbenzene	2.0000	2.1161	-5.8	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.1579	-7.9	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.1067	-5.3	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.0470	-2.4	100	0.00
95	T	n-Butylbenzene	2.0000	2.1098	-5.5	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0532	-2.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.6938	15.3	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	2.0021	-0.1	100	0.00
99	T	Hexachlorobutadiene	2.0000	2.0128	-0.6	100	0.00
100	T	Naphthalene	2.0000	2.0630	-3.2	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9910	0.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	768397	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	534372	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	274234	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	19775	2.0496 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	8.20%#	
43) 1,2-Dichloroethane-d4	10.30	65	21200	1.9207 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	7.68%#	
58) Toluene-d8	12.68	98	65647	2.3758 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	9.52%#	
80) p-Bromofluorobenzene	16.08	95	26759	2.3838 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	9.52%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	55961	3.4750 ug/L	99
3) Chloromethane	3.62	50	34194	2.2538 ug/L	100
4) Vinyl Chloride	3.84	62	42506	4.1488 ug/L	99
5) 1,3-Butadiene	3.89	54	32006	3.1976 ug/L	93
6) Bromomethane	4.72	94	19582	3.4204 ug/L	94
7) Chloroethane	4.90	64	22000	3.2814 ug/L	84
8) Trichlorofluoromethane	5.37	101	77715	3.8212 ug/L	96
9) Diethyl ether	5.90	59	188516	30.2955 ug/L	79
10) Isoprene	5.94	67	44975	4.3218 ug/L	78
11) Acrolein	6.15	56	7712	13.9568 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	36867	3.9591 ug/L	99
13) Acetone	6.24	43	3578	1.8967 ug/L	85
14) 1,1-Dichloroethene	6.47	61	59405	3.2870 ug/L	95
15) Tert-Butyl Alcohol	6.58	59	27833	64.0897 ug/L #	82
16) Dimethyl Sulfide	6.73	62	21102	3.1597 ug/L	77
17) Iodomethane	6.99	142	3667	1.8964 ug/L	95
18) Methyl acetate	7.00	43	11500	2.0398 ug/L #	86
19) Methylene Chloride	7.24	84	37533	4.3823 ug/L	52
20) Carbon Disulfide	7.29	76	123060	4.7097 ug/L	100
21) Acrylonitrile	7.43	53	25653	10.5804 ug/L	99
22) Methyl Tert Butyl Ether	7.47	73	80005	4.2289 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	54124	3.3108 ug/L	94
24) n-Hexane	7.78	57	40758	2.7480 ug/L	82
25) Diisopropyl ether	8.12	45	841400	20.0337 ug/L #	91
26) Vinyl Acetate	8.30	43	37284	2.2113 ug/L #	90
27) 1,1-Dichloroethane	8.32	63	66711	3.4116 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	907423	30.7852 ug/L	89
29) 2-Butanone	8.89	43	5359	1.7738 ug/L #	82
30) Propionitrile	8.99	54	17933	23.4726 ug/L	100
31) 2,2-Dichloropropane	9.10	77	73150	4.2462 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	41036	4.1950 ug/L	89
33) Chloroform	9.37	83	78227	4.3116 ug/L	99
34) 1-Bromopropane	9.52	122	6162	3.9986 ug/L	99
35) Bromochloromethane	9.60	130	20988	4.1009 ug/L #	62
36) Tetrahydrofuran	9.62	42	38098	19.0742 ug/L #	62
38) 1,1,1-Trichloroethane	9.91	97	76152	4.1633 ug/L	97
39) Cyclohexane	9.94	56	51439	2.5767 ug/L #	66
40) 1,1-Dichloropropene	10.11	75	56645	4.3027 ug/L	93
41) Tert-Amyl-Methyl ether	10.21	73	821180	43.4958 ug/L	87
42) Carbon Tetrachloride	10.25	117	67831	3.9416 ug/L	96

(#) = qualifier out of range (m) = manual integration
8M412224.D 8260WT.M Fri May 13 15:47:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	51708	3.3934 ug/L		85
46)	Benzene	10.46	78	150204	4.4792 ug/L		86
47)	Trichloroethene	11.21	130	38500	3.9784 ug/L		94
48)	Methylcyclohexane	11.30	83	60897	4.5008 ug/L		81
49)	1,2-Dichloropropane	11.43	63	31773	3.2549 ug/L		77
50)	Bromodichloromethane	11.73	83	59127	4.3535 ug/L		94
51)	1,4-Dioxane	11.71	88	2719	69.8702 ug/L	#	62
52)	Dibromomethane	11.81	93	19711	4.2894 ug/L		96
53)	2-Chloroethyl Vinyl Ether	12.03	63	12946	3.1676 ug/L		98
54)	4-Methyl-2-Pentanone	12.05	58	5129	2.2991 ug/L	#	78
55)	cis-1,3-Dichloropropene	12.36	75	61169	4.4752 ug/L		94
56)	Dimethyl Disulfide	12.62	79	27966	3.9053 ug/L		98
59)	Toluene	12.78	91	161007	5.0316 ug/L		97
60)	Ethyl Methacrylate	12.88	69	28595	4.7624 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	49791	4.4599 ug/L		97
63)	1,1,2-Trichloroethane	13.18	97	23678	4.6631 ug/L		99
64)	2-Hexanone	13.11	58	4499	2.4685 ug/L	#	97
65)	1,3-Dichloropropane	13.49	76	44838	4.7614 ug/L		73
66)	Tetrachloroethene	13.60	164	32715	4.5144 ug/L		97
67)	Dibromochloromethane	13.87	129	35009	4.3734 ug/L		98
68)	1,2-Dibromoethane	14.13	107	24247	4.5815 ug/L		99
69)	1-Chlorohexane	14.21	91	53599	4.9176 ug/L		84
70)	Chlorobenzene	14.62	112	107618	4.8437 ug/L		95
71)	1,1,1,2-Tetrachloroethane	14.65	131	38120	4.4025 ug/L		96
72)	Ethylbenzene	14.65	106	56905	4.5138 ug/L		91
73)	m-,p-Xylene	14.75	106	137390	9.4592 ug/L		86
74)	o-Xylene	15.31	106	65650	4.4866 ug/L		85
75)	Styrene	15.35	104	111433	4.7758 ug/L		91
76)	Bromoform	15.84	173	19346	4.2121 ug/L		97
77)	Isopropylbenzene	15.73	105	182523	4.9200 ug/L		96
79)	1,1,2,2-Tetrachloroethane	15.95	83	26655	4.8730 ug/L		99
81)	1,2,3-Trichloropropane	16.13	110	8840	5.0289 ug/L		81
82)	trans-1,4-Dichloro-2-Buten	16.19	53	6584	2.4712 ug/L	#	51
83)	n-Propylbenzene	16.24	91	222196	5.2576 ug/L		96
84)	Bromobenzene	16.37	156	42665	4.8423 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	155714	4.9790 ug/L		93
86)	2-Chlorotoluene	16.52	91	148764	5.4968 ug/L		94
87)	4-Chlorotoluene	16.56	91	135679	4.8666 ug/L		94
88)	a-Methylstyrene	16.84	118	68945	4.4743 ug/L		91
89)	tert-Butylbenzene	16.89	134	29069	4.6914 ug/L		77
90)	1,2,4-Trimethylbenzene	16.95	105	161016	5.0301 ug/L		94
91)	sec-Butylbenzene	17.17	105	191273	5.0866 ug/L		94
92)	p-Isopropyltoluene	17.32	119	159232	4.9597 ug/L		93
93)	1,3-Dichlorobenzene	17.52	146	83896	4.7972 ug/L		95
94)	1,4-Dichlorobenzene	17.64	146	82462	4.7242 ug/L		86
95)	n-Butylbenzene	17.85	91	158787	5.1996 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	72524	4.7321 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	5629	4.6990 ug/L		76
98)	1,2,4-Trichlorobenzene	20.28	180	53855	4.5369 ug/L		98
99)	Hexachlorobutadiene	20.43	225	24504	4.4608 ug/L		93
100)	Naphthalene	20.65	128	79806	4.4217 ug/L		98
101)	1,2,3-Trichlorobenzene	20.96	180	44150	4.3720 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412224.D 8260WT.M Fri May 13 15:47:44 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

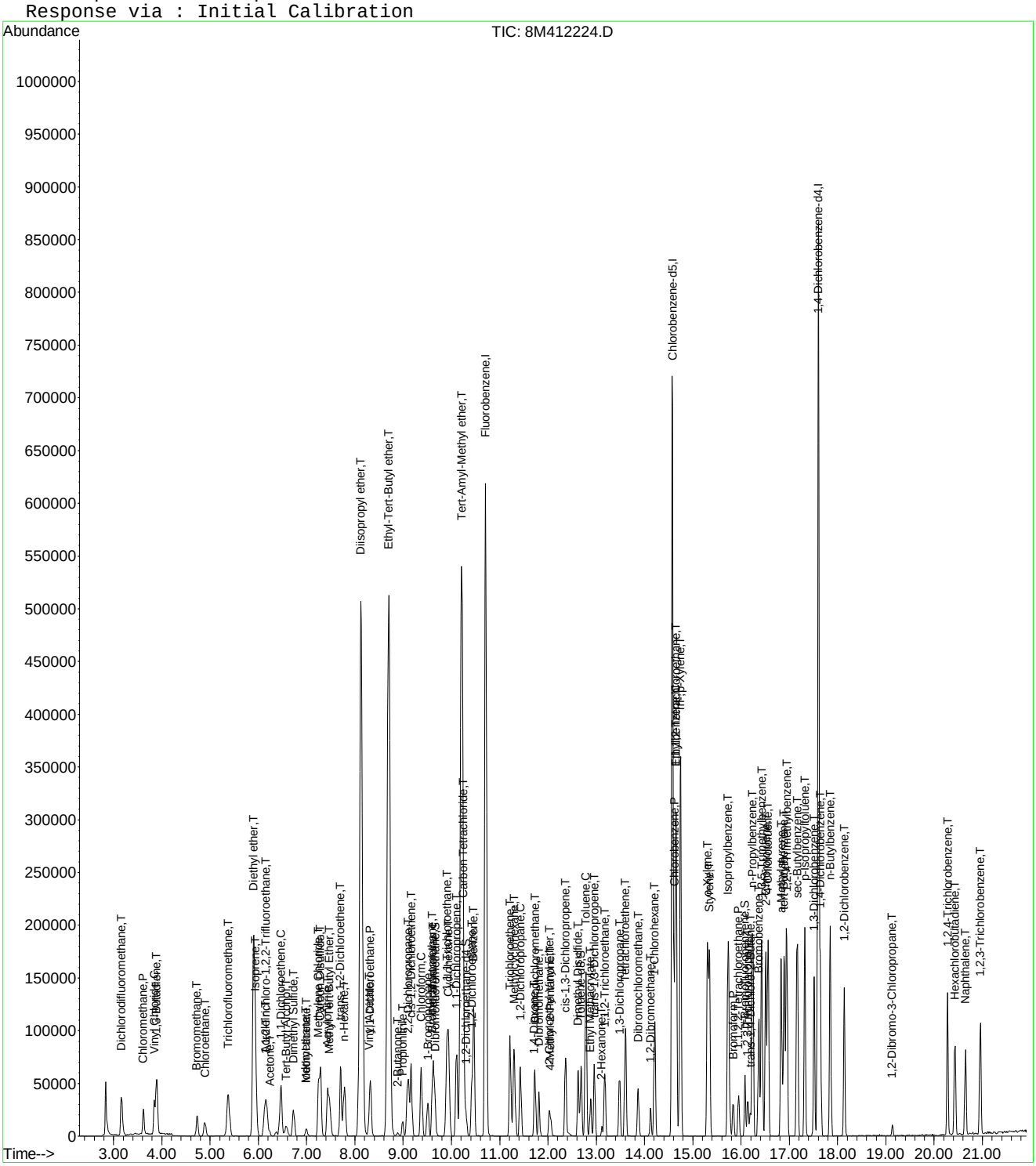

8M412224.D 8260WT.M Fri May 13 15:47:44 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.3438	13.1	100	0.00
3	P	Chloromethane	5.0000	4.5471	9.1	100	0.00
4	C	Vinyl Chloride	5.0000	4.7641	4.7	100	0.00
5	T	1,3-Butadiene	5.0000	4.2777	14.4	100	0.00
6	T	Bromomethane	5.0000	4.1880	16.2	100	-0.01
7	T	Chloroethane	5.0000	4.4813	10.4	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.6812	6.4	100	0.00
9	T	Diethyl ether	50.0000	47.5652	4.9	100	0.00
10	T	Isoprene	5.0000	4.4611	10.8	100	0.00
11	T	Acrolein	25.0000	21.7328	13.1	100	0.02
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.7244	5.5	100	0.00
13	T	Acetone	5.0000	4.1387	17.2	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.7810	4.4	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	100.4650	-0.5	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.7499	5.0	100	0.00
17	T	Iodomethane	5.0000	3.7634	24.7	100	0.00
18	T	Methyl acetate	5.0000	4.9211	1.6	100	0.00
19	T	Methylene Chloride	5.0000	4.7467	5.1	100	0.00
20	T	Carbon Disulfide	5.0000	4.7328	5.3	100	0.00
21	T	Acrylonitrile	25.0000	22.8698	8.5	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.6750	6.5	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.7415	5.2	100	0.00
24	T	n-Hexane	5.0000	4.8084	3.8	100	0.00
25	T	Diisopropyl ether	50.0000	47.2872	5.4	100	0.00
26	T	Vinyl Acetate	5.0000	4.5766	8.5	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.7058	5.9	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	47.5984	4.8	100	0.00
29	T	2-Butanone	5.0000	4.2191	15.6	100	0.00
30	T	Propionitrile	50.0000	48.4475	3.1	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.8965	2.1	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.6525	7.0	100	0.00
33	C	Chloroform	5.0000	4.6735	6.5	100	0.00
34		1-Bromopropane	5.0000	4.8774	2.5	100	0.00
35	T	Bromochloromethane	5.0000	4.6403	7.2	100	0.00
36	T	Tetrahydrofuran	50.0000	45.5400	8.9	100	-0.01
37	S	Dibromofluoromethane	2.5000	2.3953	4.2	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.7896	4.2	100	0.00
39	T	Cyclohexane	5.0000	4.6730	6.5	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.6741	6.5	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	47.6211	4.8	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.8044	3.9	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.3949	4.2	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	5.0000	4.7996	4.0	100	0.00
46	T	Benzene	5.0000	4.7588	4.8	100	0.00
47	T	Trichloroethene	5.0000	4.5733	8.5	100	0.00
48	T	Methylcyclohexane	5.0000	4.7616	4.8	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.5219	9.6	100	0.00
50	T	Bromodichloromethane	5.0000	4.7878	4.2	100	0.00
51	T	1,4-Dioxane	100.0000	77.0346	23.0	100	0.00
52	T	Dibromomethane	5.0000	4.7390	5.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.2867	14.3	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.1576	16.8	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.8662	2.7	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.1683	16.6	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.3473	6.1	100	0.00
59	C	Toluene	5.0000	4.8533	2.9	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.4883	10.2	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	5.0000	4.4786	10.4	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.5231	9.5	100	0.00
64	T	2-Hexanone	5.0000	4.0898	18.2	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.8109	3.8	100	0.00
66	T	Tetrachloroethene	5.0000	4.6028	7.9	100	0.00
67	T	Dibromochloromethane	5.0000	4.5802	8.4	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.6475	7.1	100	0.00
69	T	1-Chlorohexane	5.0000	4.7331	5.3	100	0.00
70	P	Chlorobenzene	5.0000	4.8107	3.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.3984	12.0	100	0.00
72	C	Ethylbenzene	5.0000	4.6492	7.0	100	0.00
73	T	m-,p-Xylene	10.0000	9.5700	4.3	100	0.00
74	T	o-Xylene	5.0000	4.6773	6.5	100	0.00
75	T	Styrene	5.0000	4.8405	3.2	100	0.00
76	P	Bromoform	5.0000	4.2672	14.7	100	0.00
77	T	Isopropylbenzene	5.0000	4.8951	2.1	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	4.8422	3.2	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.3565	5.7	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.2150	-4.3	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.3781	12.4	100	0.00
83	T	n-Propylbenzene	5.0000	5.1935	-3.9	100	0.00
84	T	Bromobenzene	5.0000	4.8483	3.0	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	4.9964	0.1	100	0.00
86	T	2-Chlorotoluene	5.0000	4.9803	0.4	100	0.00
87	T	4-Chlorotoluene	5.0000	5.0286	-0.6	100	0.00
88	T	a-Methylstyrene	5.0000	4.6629	6.7	100	0.00
89	T	tert-Butylbenzene	5.0000	4.7677	4.6	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.0245	-0.5	100	0.00
91	T	sec-Butylbenzene	5.0000	5.2170	-4.3	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.1150	-2.3	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	4.9511	1.0	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	4.8270	3.5	100	0.00
95	T	n-Butylbenzene	5.0000	5.1595	-3.2	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	4.8122	3.8	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	5.0942	-1.9	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.7808	4.4	100	0.00
99	T	Hexachlorobutadiene	5.0000	4.6555	6.9	100	0.00
100	T	Naphthalene	5.0000	4.7684	4.6	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.6455	7.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	770027	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	531490	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	283594	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	86295	10.9569 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 43.84%#		
43) 1,2-Dichloroethane-d4	10.30	65	96239	11.3450 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 45.36%#		
58) Toluene-d8	12.68	98	294491	10.9223 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 43.68%#		
80) p-Bromofluorobenzene	16.08	95	121459	10.5490 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 42.20%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	288235	23.7135 ug/L	99
3) Chloromethane	3.62	50	155712	20.3784 ug/L	98
4) Vinyl Chloride	3.84	62	184250	20.9368 ug/L	95
5) 1,3-Butadiene	3.89	54	149348	22.7750 ug/L	96
6) Bromomethane	4.73	94	100098	25.0143 ug/L	99
7) Chloroethane	4.89	64	100876	20.9404 ug/L	91
8) Trichlorofluoromethane	5.37	101	351299	21.2512 ug/L	98
9) Diethyl ether	5.90	59	324317	80.8265 ug/L	78
10) Isoprene	5.94	67	205842	20.3622 ug/L	77
11) Acrolein	6.14	56	12049	34.8201 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	159996	20.3859 ug/L	97
13) Acetone	6.25	43	18459	25.7405 ug/L	98
14) 1,1-Dichloroethene	6.47	61	256241	20.5065 ug/L	92
15) Tert-Butyl Alcohol	6.57	59	43922	153.5712 ug/L	93
16) Dimethyl Sulfide	6.73	62	89456	20.6087 ug/L	83
17) Iodomethane	6.99	142	40622	61.0474 ug/L	93
18) Methyl acetate	7.00	43	46598	20.2171 ug/L #	85
19) Methylene Chloride	7.25	84	161897	20.1338 ug/L	52
20) Carbon Disulfide	7.30	76	538090	20.0802 ug/L	98
21) Acrylonitrile	7.43	53	46305	46.9889 ug/L	100
22) Methyl Tert Butyl Ether	7.47	73	361116	22.0137 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	234754	20.3175 ug/L	90
24) n-Hexane	7.78	57	172498	21.1165 ug/L	84
25) Diisopropyl ether	8.12	45	1447822	80.3755 ug/L #	91
26) Vinyl Acetate	8.30	43	166501	21.7017 ug/L #	88
27) 1,1-Dichloroethane	8.33	63	300321	21.3849 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	1579265	83.0733 ug/L	89
29) 2-Butanone	8.88	43	25681	23.9099 ug/L	87
30) Propionitrile	8.98	54	30953	89.5673 ug/L	94
31) 2,2-Dichloropropane	9.10	77	309575	20.8527 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	181973	20.4488 ug/L	89
33) Chloroform	9.37	83	348925	20.5535 ug/L	96
34) 1-Bromopropane	9.52	122	26723	22.7206 ug/L	96
35) Bromochloromethane	9.61	130	94952	21.3181 ug/L	65
36) Tetrahydrofuran	9.63	42	63066	70.5772 ug/L #	57
38) 1,1,1-Trichloroethane	9.91	97	335486	21.3640 ug/L	99
39) Cyclohexane	9.94	56	221040	19.9984 ug/L #	64
40) 1,1-Dichloropropene	10.11	75	248373	20.4717 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1418183	81.7883 ug/L	88
42) Carbon Tetrachloride	10.25	117	296471	21.3449 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412225.D 8260WT.M Fri May 13 16:16:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	228665	21.6403	ug/L		85
46)	Benzene	10.46	78	668449	20.3769	ug/L		86
47)	Trichloroethene	11.21	130	174107	20.7980	ug/L		96
48)	Methylcyclohexane	11.29	83	262275	21.4887	ug/L		82
49)	1,2-Dichloropropane	11.43	63	146868	21.1883	ug/L	#	72
50)	Bromodichloromethane	11.73	83	262192	21.9986	ug/L		98
51)	1,4-Dioxane	11.71	88	5351	196.3837	ug/L		76
52)	Dibromomethane	11.81	93	86951	21.0734	ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	63586	22.4600	ug/L		91
54)	4-Methyl-2-Pentanone	12.05	58	25754	25.0531	ug/L	#	73
55)	cis-1,3-Dichloropropene	12.36	75	265439	21.9841	ug/L		99
56)	Dimethyl Disulfide	12.63	79	134192	23.9412	ug/L		100
59)	Toluene	12.78	91	700473	20.1722	ug/L		99
60)	Ethyl Methacrylate	12.88	69	133361	23.2046	ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	238585	23.2548	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	107901	21.0216	ug/L		99
64)	2-Hexanone	13.11	58	22561	25.2093	ug/L	#	85
65)	1,3-Dichloropropane	13.49	76	198804	22.2491	ug/L		74
66)	Tetrachloroethene	13.60	164	141791	20.0055	ug/L		94
67)	Dibromochloromethane	13.87	129	158465	22.0695	ug/L		99
68)	1,2-Dibromoethane	14.13	107	110085	22.3366	ug/L		100
69)	1-Chlorohexane	14.21	91	229753	20.3591	ug/L		83
70)	Chlorobenzene	14.62	112	467492	20.4613	ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.65	131	183079	22.2095	ug/L		96
72)	Ethylbenzene	14.65	106	249016	20.2289	ug/L		90
73)	m-,p-Xylene	14.75	106	606381	41.1308	ug/L		88
74)	o-Xylene	15.30	106	294106	21.2106	ug/L		90
75)	Styrene	15.35	104	492781	21.8207	ug/L		89
76)	Bromoform	15.83	173	95911	23.8070	ug/L		99
77)	Isopropylbenzene	15.73	105	806678	20.7280	ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	123253	22.7779	ug/L		95
81)	1,2,3-Trichloropropane	16.14	110	36712	22.1354	ug/L		94
82)	trans-1,4-Dichloro-2-Buten	16.18	53	33702	27.6513	ug/L	#	56
83)	n-Propylbenzene	16.24	91	962196	20.3511	ug/L		97
84)	Bromobenzene	16.37	156	190566	21.2033	ug/L		94
85)	1,3,5-Trimethylbenzene	16.43	105	692633	20.9615	ug/L		94
86)	2-Chlorotoluene	16.51	91	649077	19.9155	ug/L		96
87)	4-Chlorotoluene	16.56	91	595446	20.3225	ug/L		95
88)	a-Methylstyrene	16.83	118	318960	22.3680	ug/L		92
89)	tert-Butylbenzene	16.90	134	129440	20.4705	ug/L		83
90)	1,2,4-Trimethylbenzene	16.95	105	707749	20.4783	ug/L		94
91)	sec-Butylbenzene	17.17	105	818359	20.1802	ug/L		97
92)	p-Isopropyltoluene	17.32	119	677859	19.7492	ug/L		96
93)	1,3-Dichlorobenzene	17.52	146	364065	20.5126	ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	363066	19.9874	ug/L		92
95)	n-Butylbenzene	17.85	91	681055	20.0187	ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	318612	19.9358	ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	23070	21.6419	ug/L		93
98)	1,2,4-Trichlorobenzene	20.28	180	242455	20.8863	ug/L		98
99)	Hexachlorobutadiene	20.43	225	110384	20.2523	ug/L		96
100)	Naphthalene	20.65	128	369849	21.4526	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	198876	19.8356	ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration

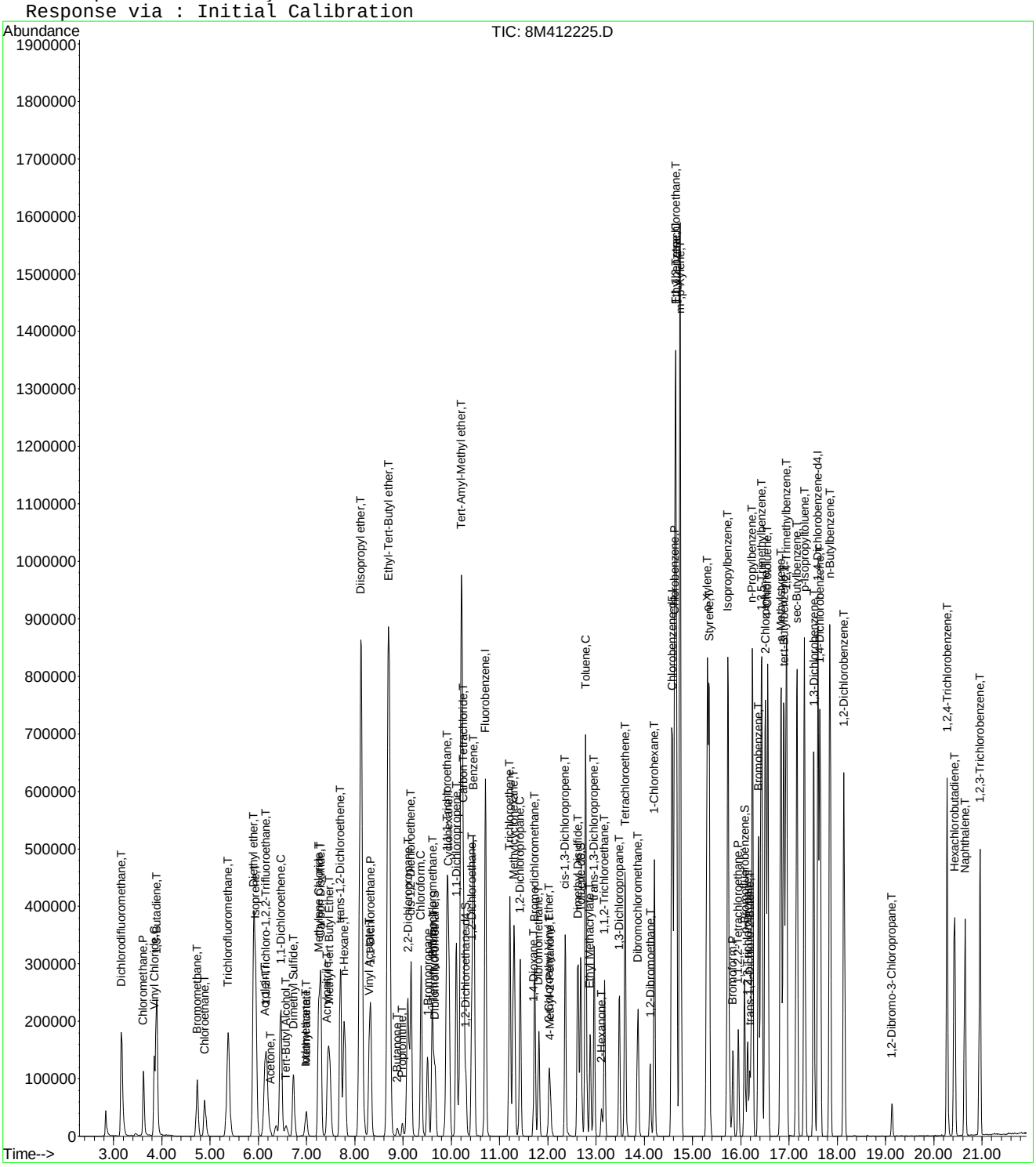

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45:30 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	778260	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	539116	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	288225	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	211053	26.5139 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.04%		
43) 1,2-Dichloroethane-d4	10.31	65	229348	26.7504 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.00%		
58) Toluene-d8	12.68	98	718491	26.2709 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.08%		
80) p-Bromofluorobenzene	16.07	95	292755	25.0180 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.08%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	682745	55.5761 ug/L	100
3) Chloromethane	3.62	50	372858	48.2806 ug/L	98
4) Vinyl Chloride	3.85	62	453905	51.0328 ug/L	96
5) 1,3-Butadiene	3.88	54	390501	58.9199 ug/L	99
6) Bromomethane	4.74	94	260493	64.4080 ug/L	97
7) Chloroethane	4.89	64	244336	50.1840 ug/L	91
8) Trichlorofluoromethane	5.38	101	837676	50.1376 ug/L	99
9) Diethyl ether	5.90	59	389327	96.0019 ug/L	79
10) Isoprene	5.94	67	498060	48.7477 ug/L	76
11) Acrolein	6.13	56	17644	50.4496 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	387643	48.8691 ug/L	97
13) Acetone	6.25	43	45901	63.3305 ug/L	97
14) 1,1-Dichloroethene	6.46	61	619744	49.0724 ug/L	94
15) Tert-Butyl Alcohol	6.58	59	53656	185.6211 ug/L	91
16) Dimethyl Sulfide	6.73	62	221107	50.3993 ug/L	82
17) Iodomethane	6.98	142	157872	234.7428 ug/L	94
18) Methyl acetate	7.00	43	114759	49.2629 ug/L #	81
19) Methylene Chloride	7.25	84	389653	47.9453 ug/L	52
20) Carbon Disulfide	7.29	76	1269941	46.8897 ug/L	99
21) Acrylonitrile	7.43	53	59882	60.1236 ug/L	97
22) Methyl Tert Butyl Ether	7.46	73	901668	54.3843 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	571507	48.9396 ug/L	93
24) n-Hexane	7.79	57	419656	50.8290 ug/L	83
25) Diisopropyl ether	8.13	45	1781012	97.8265 ug/L #	90
26) Vinyl Acetate	8.29	43	428708	55.2866 ug/L #	89
27) 1,1-Dichloroethane	8.32	63	722574	50.9078 ug/L	96
28) Ethyl-Tert-Butyl ether	8.71	59	1955100	101.7552 ug/L	89
29) 2-Butanone	8.88	43	66579	61.3316 ug/L #	82
30) Propionitrile	8.98	54	38235	109.4684 ug/L	95
31) 2,2-Dichloropropane	9.10	77	768496	51.2175 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	439590	48.8754 ug/L	91
33) Chloroform	9.38	83	844564	49.2230 ug/L	97
34) 1-Bromopropane	9.51	122	63442	53.3693 ug/L	99
35) Bromochloromethane	9.60	130	230119	51.1185 ug/L	66
36) Tetrahydrofuran	9.64	42	79437	87.9575 ug/L #	62
38) 1,1,1-Trichloroethane	9.90	97	817606	51.5150 ug/L	99
39) Cyclohexane	9.93	56	535882	47.9707 ug/L #	65
40) 1,1-Dichloropropene	10.10	75	615439	50.1899 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1769381	100.9628 ug/L	88
42) Carbon Tetrachloride	10.24	117	724058	51.5782 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412226.D 8260WT.M Fri May 13 16:45:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45:30 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	561107	52.5401 ug/L		85
46)	Benzene	10.46	78	1607407	48.4816 ug/L		86
47)	Trichloroethene	11.22	130	424998	50.2312 ug/L		96
48)	Methylcyclohexane	11.30	83	635339	51.5040 ug/L		83
49)	1,2-Dichloropropane	11.42	63	351908	50.2320 ug/L	#	71
50)	Bromodichloromethane	11.72	83	654943	54.3701 ug/L		97
51)	1,4-Dioxane	11.71	88	7573	274.9918 ug/L		73
52)	Dibromomethane	11.82	93	209167	50.1574 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	162319	56.7281 ug/L		93
54)	4-Methyl-2-Pentanone	12.05	58	64928	62.4928 ug/L		80
55)	cis-1,3-Dichloropropene	12.36	75	666861	54.6463 ug/L		98
56)	Dimethyl Disulfide	12.62	79	343446	60.6260 ug/L		96
59)	Toluene	12.79	91	1676069	47.5846 ug/L		100
60)	Ethyl Methacrylate	12.88	69	338996	58.1503 ug/L		69
62)	trans-1,3-Dichloropropene	12.96	75	594749	57.1499 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	268432	51.5570 ug/L		98
64)	2-Hexanone	13.12	58	56859	62.6347 ug/L	#	83
65)	1,3-Dichloropropane	13.48	76	489226	53.9770 ug/L		75
66)	Tetrachloroethene	13.60	164	350332	48.7296 ug/L		95
67)	Dibromochloromethane	13.86	129	401149	55.0780 ug/L		100
68)	1,2-Dibromoethane	14.12	107	273580	54.7252 ug/L		99
69)	1-Chlorohexane	14.21	91	560883	48.9984 ug/L		82
70)	Chlorobenzene	14.63	112	1117812	48.2326 ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	446892	53.4462 ug/L		99
72)	Ethylbenzene	14.66	106	603074	48.2980 ug/L		91
73)	m-,p-Xylene	14.74	106	1443780	96.5463 ug/L		90
74)	o-Xylene	15.31	106	709244	50.4265 ug/L		90
75)	Styrene	15.34	104	1212099	52.9133 ug/L		91
76)	Bromoform	15.84	173	238354	58.3272 ug/L		100
77)	Isopropylbenzene	15.73	105	1919993	48.6372 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	294266	53.5083 ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	89279	52.9656 ug/L		93
82)	trans-1,4-Dichloro-2-Buten	16.19	53	86829	70.0956 ug/L	#	53
83)	n-Propylbenzene	16.24	91	2278994	47.4277 ug/L		98
84)	Bromobenzene	16.37	156	459959	50.3549 ug/L		93
85)	1,3,5-Trimethylbenzene	16.43	105	1661486	49.4745 ug/L		95
86)	2-Chlorotoluene	16.51	91	1611031	48.6367 ug/L		97
87)	4-Chlorotoluene	16.56	91	1341051	45.0344 ug/L		95
88)	a-Methylstyrene	16.83	118	772611	53.3111 ug/L		90
89)	tert-Butylbenzene	16.89	134	307503	47.8493 ug/L		81
90)	1,2,4-Trimethylbenzene	16.94	105	1679809	47.8234 ug/L		95
91)	sec-Butylbenzene	17.16	105	1925411	46.7166 ug/L		97
92)	p-Isopropyltoluene	17.32	119	1621383	46.4795 ug/L		95
93)	1,3-Dichlorobenzene	17.51	146	882656	48.9327 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	871210	47.1909 ug/L		92
95)	n-Butylbenzene	17.85	91	1608832	46.5296 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	768548	47.3159 ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	59586	54.9992 ug/L		86
98)	1,2,4-Trichlorobenzene	20.28	180	583880	49.4902 ug/L		100
99)	Hexachlorobutadiene	20.44	225	264699	47.7844 ug/L		98
100)	Naphthalene	20.65	128	894629	51.0579 ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	475246	46.6387 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412226.D 8260WT.M Fri May 13 16:45:33 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration

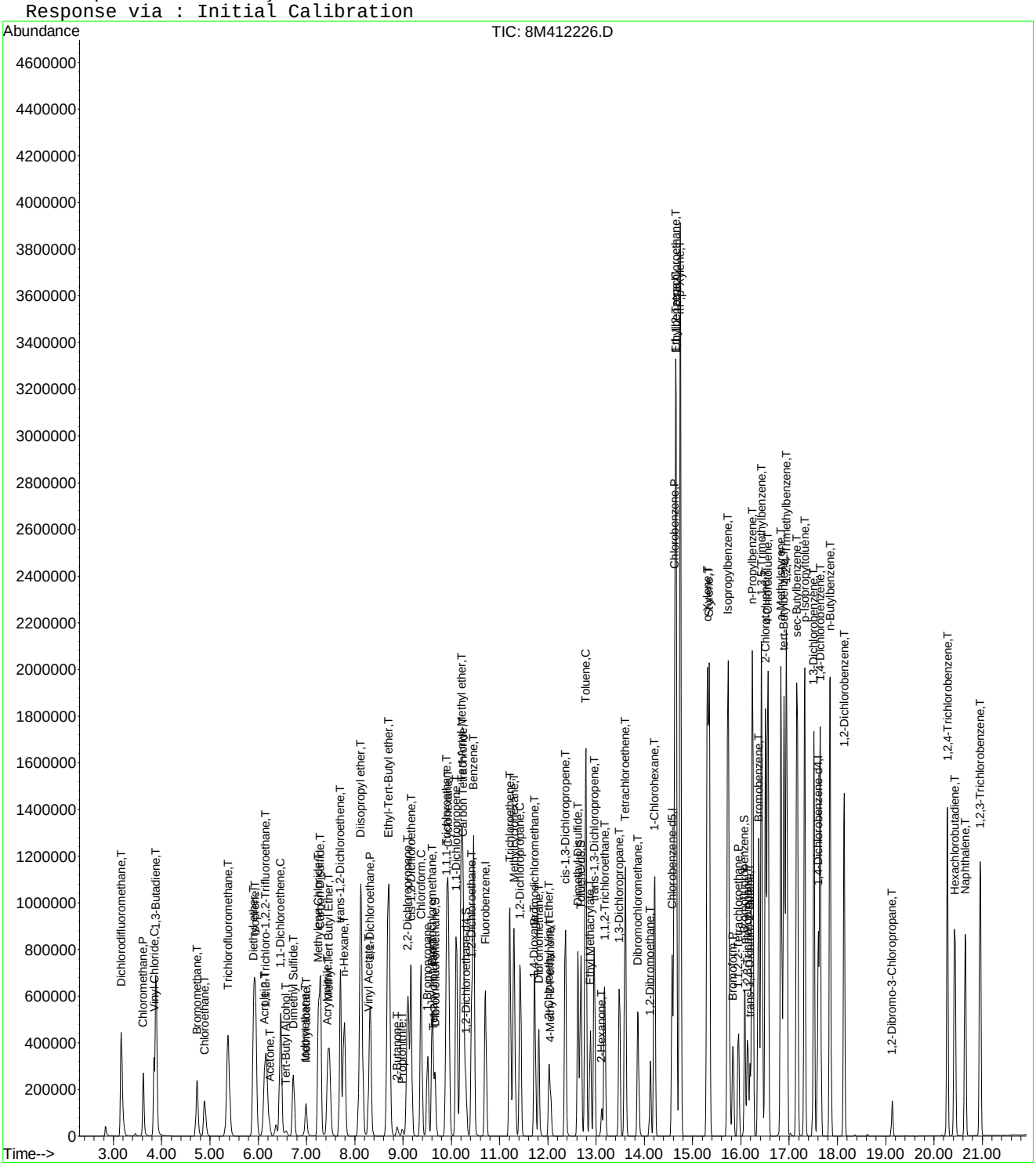

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	809533	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	559075	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	296193	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	460283	53.9056 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 215.64%#		
43) 1,2-Dichloroethane-d4	10.30	65	488116	52.5821 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 210.32%#		
58) Toluene-d8	12.68	98	1540572	52.8075 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 211.24%#		
80) p-Bromofluorobenzene	16.08	95	623735	51.1573 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 204.64%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	1463283	109.1068 ug/L	100
3) Chloromethane	3.62	50	778702	97.2380 ug/L	98
4) Vinyl Chloride	3.84	62	968312	103.4979 ug/L	95
5) 1,3-Butadiene	3.88	54	896569	120.4972 ug/L	95
6) Bromomethane	4.73	94	605228	129.8677 ug/L	99
7) Chloroethane	4.89	64	528153	103.4126 ug/L	90
8) Trichlorofluoromethane	5.37	101	1782726	101.4754 ug/L	99
9) Diethyl ether	5.90	59	828091	197.4770 ug/L	79
10) Isoprene	5.94	67	1080684	101.8037 ug/L	78
11) Acrolein	6.14	56	38655	109.5572 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	833546	101.0906 ug/L	97
13) Acetone	6.24	43	97515	109.1944 ug/L	100
14) 1,1-Dichloroethene	6.46	61	1323999	100.6729 ug/L	93
15) Tert-Butyl Alcohol	6.57	59	114220	387.5328 ug/L	91
16) Dimethyl Sulfide	6.73	62	489571	106.5996 ug/L	82
17) Iodomethane	6.99	142	416890	244.5557 ug/L	97
18) Methyl acetate	7.00	43	252444	104.3161 ug/L #	81
19) Methylene Chloride	7.24	84	827241	98.5346 ug/L	53
20) Carbon Disulfide	7.29	76	2766110	99.3432 ug/L	100
21) Acrylonitrile	7.43	53	126153	113.2272 ug/L	98
22) Methyl Tert Butyl Ether	7.46	73	1894494	105.8643 ug/L	87
23) trans-1,2-Dichloroethene	7.70	61	1203701	99.1822 ug/L	93
24) n-Hexane	7.78	57	926226	105.3097 ug/L	84
25) Diisopropyl ether	8.12	45	3699807	196.0386 ug/L #	90
26) Vinyl Acetate	8.29	43	860820	101.8643 ug/L #	88
27) 1,1-Dichloroethane	8.32	63	1521237	101.5567 ug/L	96
28) Ethyl-Tert-Butyl ether	8.70	59	4005676	198.2271 ug/L	89
29) 2-Butanone	8.88	43	145126	112.6698 ug/L #	81
30) Propionitrile	8.98	54	83038	219.1648 ug/L	97
31) 2,2-Dichloropropane	9.11	77	1610615	102.0557 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	935490	99.9944 ug/L	89
33) Chloroform	9.37	83	1766988	98.8341 ug/L	98
34) 1-Bromopropane	9.51	122	139657	108.5299 ug/L	100
35) Bromochloromethane	9.61	130	488678	102.8480 ug/L	66
36) Tetrahydrofuran	9.63	42	167812	187.5699 ug/L #	61
38) 1,1,1-Trichloroethane	9.91	97	1724504	102.7713 ug/L	100
39) Cyclohexane	9.94	56	1185537	102.8628 ug/L #	66
40) 1,1-Dichloropropene	10.11	75	1293224	100.8377 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	3634806	198.1264 ug/L	88
42) Carbon Tetrachloride	10.25	117	1534696	103.3979 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412227.D 8260WT.M Fri May 13 17:14:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	1177876	103.7352	ug/L		85
46)	Benzene	10.46	78	3298928	95.8405	ug/L		87
47)	Trichloroethene	11.21	130	903490	101.9036	ug/L		97
48)	Methylcyclohexane	11.30	83	1389528	104.6454	ug/L		83
49)	1,2-Dichloropropane	11.43	63	755128	102.5297	ug/L		73
50)	Bromodichloromethane	11.73	83	1351612	104.6036	ug/L		99
51)	1,4-Dioxane	11.72	88	16303	473.9624	ug/L		68
52)	Dibromomethane	11.81	93	445130	101.6543	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.02	63	333977	105.4228	ug/L		92
54)	4-Methyl-2-Pentanone	12.05	58	138980	110.1494	ug/L	#	77
55)	cis-1,3-Dichloropropene	12.36	75	1387475	105.9136	ug/L		100
56)	Dimethyl Disulfide	12.62	79	745504	111.3169	ug/L		97
59)	Toluene	12.78	91	3455614	95.2346	ug/L		99
60)	Ethyl Methacrylate	12.88	69	731009	113.5760	ug/L		70
62)	trans-1,3-Dichloropropene	12.96	75	1236182	107.9445	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	564076	103.0604	ug/L		99
64)	2-Hexanone	13.12	58	126268	114.5366	ug/L	#	79
65)	1,3-Dichloropropane	13.48	76	1021082	105.2672	ug/L		74
66)	Tetrachloroethene	13.60	164	752835	101.4023	ug/L		95
67)	Dibromochloromethane	13.87	129	856499	109.6525	ug/L		100
68)	1,2-Dibromoethane	14.12	107	577701	107.6426	ug/L		98
69)	1-Chlorohexane	14.21	91	1222720	103.0385	ug/L		82
70)	Chlorobenzene	14.62	112	2332247	97.2408	ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	947925	106.1463	ug/L		99
72)	Ethylbenzene	14.66	106	1275519	98.8771	ug/L		97
73)	m-,p-Xylene	14.75	106	3009424	194.2602	ug/L		98
74)	o-Xylene	15.31	106	1490638	100.8068	ug/L		93
75)	Styrene	15.35	104	2503721	102.8373	ug/L		88
76)	Bromoform	15.83	173	517827	114.0520	ug/L		100
77)	Isopropylbenzene	15.73	105	3913141	95.4433	ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	624965	106.8610	ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	192087	107.3268	ug/L		97
82)	trans-1,4-Dichloro-2-Buten	16.18	53	189214	128.4818	ug/L	#	59
83)	n-Propylbenzene	16.24	91	4599057	93.6644	ug/L		100
84)	Bromobenzene	16.37	156	968011	102.1426	ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	3401719	97.9556	ug/L		97
86)	2-Chlorotoluene	16.52	91	3177047	93.8267	ug/L		98
87)	4-Chlorotoluene	16.56	91	2899171	96.0712	ug/L		96
88)	a-Methylstyrene	16.84	118	1639166	103.6811	ug/L		90
89)	tert-Butylbenzene	16.90	134	654025	99.4199	ug/L		85
90)	1,2,4-Trimethylbenzene	16.95	105	3479295	96.7054	ug/L		97
91)	sec-Butylbenzene	17.17	105	3947832	94.2785	ug/L		98
92)	p-Isopropyltoluene	17.32	119	3328450	94.4148	ug/L		97
93)	1,3-Dichlorobenzene	17.52	146	1834740	98.9074	ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	1818309	96.6271	ug/L		92
95)	n-Butylbenzene	17.85	91	3308330	94.4002	ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	1606254	97.0179	ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	125368	107.7020	ug/L		87
98)	1,2,4-Trichlorobenzene	20.28	180	1227926	100.7076	ug/L		99
99)	Hexachlorobutadiene	20.43	225	569213	100.5231	ug/L		97
100)	Naphthalene	20.65	128	1852486	101.2968	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	1021163	98.5794	ug/L		100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration

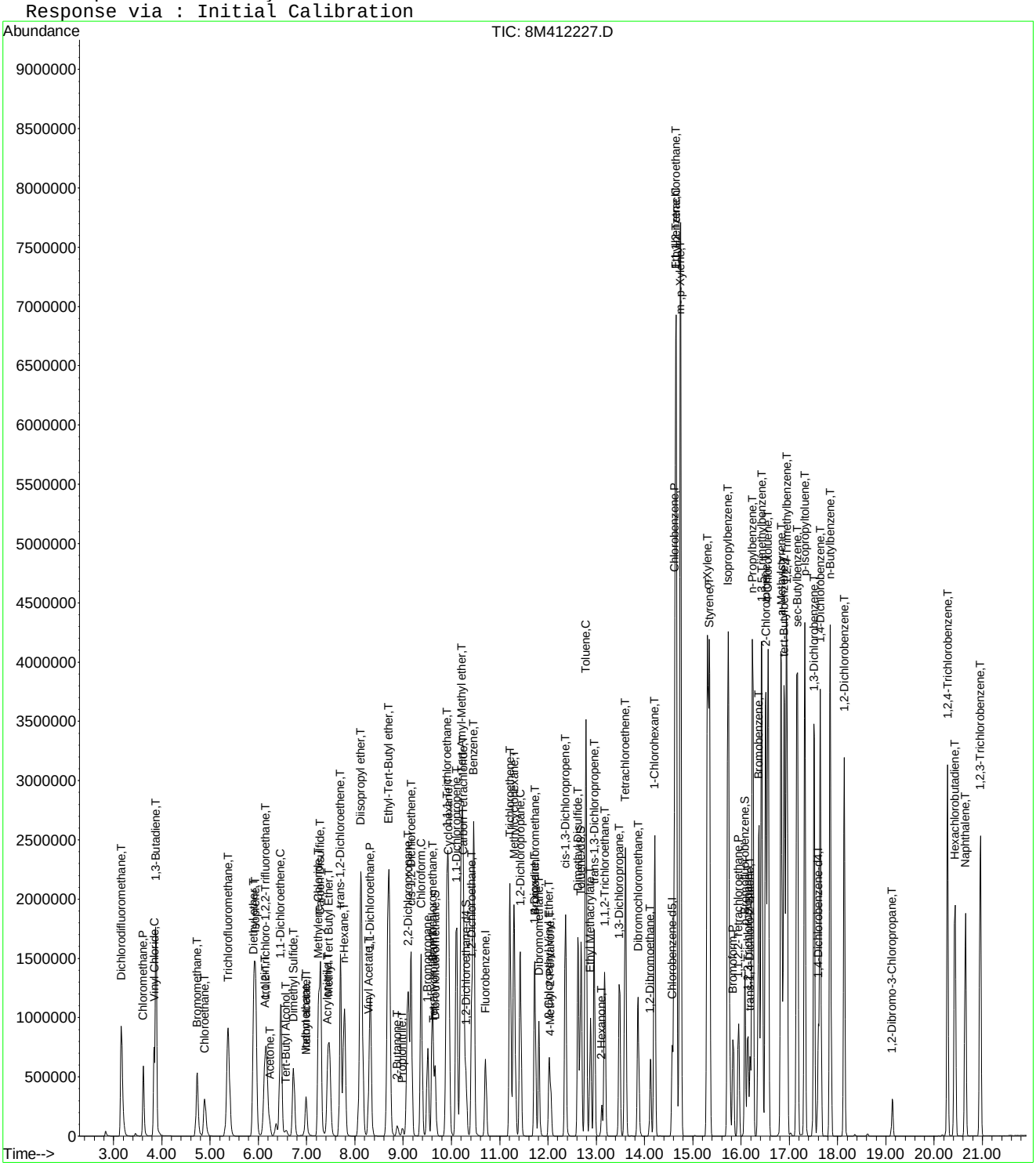

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	828540	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	578848	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	301401	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	898145	101.4517 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 405.80%#		
43) 1,2-Dichloroethane-d4	10.30	65	939848	98.0779 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 392.32%#		
58) Toluene-d8	12.68	98	2984162	97.8805 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 391.52%#		
80) p-Bromofluorobenzene	16.08	95	1242720	99.7023 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 398.80%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	2830517	203.5621 ug/L	98
3) Chloromethane	3.62	50	1586058	194.4056 ug/L	97
4) Vinyl Chloride	3.83	62	1935009	201.0738 ug/L	94
5) 1,3-Butadiene	3.88	54	1684964	212.5477 ug/L	94
6) Bromomethane	4.72	94	1358068	271.2231 ug/L	99
7) Chloroethane	4.89	64	1084803	206.5255 ug/L	90
8) Trichlorofluoromethane	5.37	101	3516760	195.1756 ug/L	99
10) Isoprene	5.94	67	2136665	196.1573 ug/L	78
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1662142	196.5993 ug/L	95
13) Acetone	6.24	43	187748	200.7963 ug/L	97
14) 1,1-Dichloroethene	6.46	61	2649821	196.6732 ug/L	92
15) Tert-Butyl Alcohol	6.58	59	6024	20.0950 ug/L #	87
16) Dimethyl Sulfide	6.73	62	976862	205.8822 ug/L	82
17) Iodomethane	6.99	142	896947	398.7987 ug/L	100
18) Methyl acetate	7.00	43	504293	201.4324 ug/L #	81
19) Methylene Chloride	7.25	84	1684780	196.5546 ug/L	52
20) Carbon Disulfide	7.29	76	5386210	189.2120 ug/L	99
21) Acrylonitrile	7.45	53	30354	26.0447 ug/L #	32
22) Methyl Tert Butyl Ether	7.46	73	3711011	200.6529 ug/L	87
23) trans-1,2-Dichloroethene	7.70	61	2410498	194.2902 ug/L	92
24) n-Hexane	7.78	57	1821777	199.7288 ug/L	84
26) Vinyl Acetate	8.29	43	1796217	206.9060 ug/L #	88
27) 1,1-Dichloroethane	8.32	63	3042055	197.9863 ug/L	95
29) 2-Butanone	8.88	43	271767	199.8193 ug/L #	77
30) Propionitrile	8.90	54	208	0.5280 ug/L #	1
31) 2,2-Dichloropropane	9.11	77	3202633	197.6970 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	1875631	195.8883 ug/L	89
33) Chloroform	9.37	83	3506648	191.9199 ug/L	99
34) 1-Bromopropane	9.51	122	286158	214.2313 ug/L	99
35) Bromochloromethane	9.60	130	980373	200.7807 ug/L	66
36) Tetrahydrofuran	9.62	42	2381	2.6275 ug/L	87
38) 1,1,1-Trichloroethane	9.91	97	3410306	197.7909 ug/L	99
39) Cyclohexane	9.94	56	2357393	198.8974 ug/L #	66
40) 1,1-Dichloropropene	10.10	75	2601175	197.8946 ug/L	96
42) Carbon Tetrachloride	10.25	117	3062767	200.6417 ug/L	99
45) 1,2-Dichloroethane	10.42	62	2313662	198.0324 ug/L	85
46) Benzene	10.46	78	6379817	182.1771 ug/L	89
47) Trichloroethene	11.21	130	1810459	198.9741 ug/L	97
48) Methylcyclohexane	11.30	83	2755373	200.4193 ug/L	83
49) 1,2-Dichloropropane	11.43	63	1528407	202.0331 ug/L	74

(#) = qualifier out of range (m) = manual integration
8M412228.D 8260WT.M Fri May 13 17:43:34 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
50)	Bromodichloromethane	11.73	83	2716764	204.0895 ug/L		99
51)	1,4-Dioxane	11.73	88	3865	104.9352 ug/L	#	18
52)	Dibromomethane	11.81	93	898971	200.1154 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.02	63	631656	192.7236 ug/L		90
54)	4-Methyl-2-Pentanone	12.05	58	262702	198.3957 ug/L	#	75
55)	cis-1,3-Dichloropropene	12.36	75	2784162	205.9153 ug/L		99
56)	Dimethyl Disulfide	12.62	79	1518705	215.4711 ug/L		95
59)	Toluene	12.78	91	6564353	175.9274 ug/L		96
60)	Ethyl Methacrylate	12.88	69	1429837	209.8161 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	2468609	205.4771 ug/L		98
63)	1,1,2-Trichloroethane	13.18	97	1124672	197.6019 ug/L		100
64)	2-Hexanone	13.12	58	237678	200.9290 ug/L	#	81
65)	1,3-Dichloropropane	13.48	76	2023247	199.9545 ug/L		76
66)	Tetrachloroethene	13.60	164	1546618	200.8018 ug/L		97
67)	Dibromochloromethane	13.87	129	1726523	210.5823 ug/L		100
68)	1,2-Dibromoethane	14.12	107	1163160	207.0667 ug/L		99
69)	1-Chlorohexane	14.21	91	2414147	195.6413 ug/L		83
70)	Chlorobenzene	14.62	112	4641169	187.6386 ug/L		94
71)	1,1,1,2-Tetrachloroethane	14.66	131	1929251	206.8372 ug/L		99
72)	Ethylbenzene	14.66	106	2611321	195.8267 ug/L		88
73)	m-,p-Xylene	14.75	106	5876234	367.8657 ug/L		83
74)	o-Xylene	15.31	106	3012318	196.4899 ug/L		98
75)	Styrene	15.35	104	4913204	194.1235 ug/L		86
76)	Bromoform	15.83	173	1052629	218.7989 ug/L		100
77)	Isopropylbenzene	15.73	105	7284624	172.7305 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	1237171	205.8673 ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	386738	209.7906 ug/L	#	54
82)	trans-1,4-Dichloro-2-Buten	16.19	53	382467	243.6526 ug/L		76
83)	n-Propylbenzene	16.24	91	8244387	166.5110 ug/L		93
84)	Bromobenzene	16.37	156	1935166	200.1305 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	6482975	183.9948 ug/L		98
86)	2-Chlorotoluene	16.52	91	6108308	178.8549 ug/L		99
87)	4-Chlorotoluene	16.56	91	5513221	180.5508 ug/L		99
88)	a-Methylstyrene	16.84	118	3255254	200.4995 ug/L		89
89)	tert-Butylbenzene	16.90	134	1351569	202.1005 ug/L		92
90)	1,2,4-Trimethylbenzene	16.95	105	6531416	179.2445 ug/L		97
91)	sec-Butylbenzene	17.17	105	7342730	173.9814 ug/L		97
92)	p-Isopropyltoluene	17.32	119	6352010	178.7315 ug/L		99
93)	1,3-Dichlorobenzene	17.52	146	3640547	193.1654 ug/L		90
94)	1,4-Dichlorobenzene	17.64	146	3593548	188.4603 ug/L		91
95)	n-Butylbenzene	17.85	91	6198060	175.4375 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	3171699	188.9651 ug/L		89
97)	1,2-Dibromo-3-Chloropropan	19.13	75	249646	207.5645 ug/L		88
98)	1,2,4-Trichlorobenzene	20.28	180	2480626	199.7296 ug/L		99
99)	Hexachlorobutadiene	20.43	225	1169411	202.7981 ug/L		98
100)	Naphthalene	20.65	128	3580198	192.0323 ug/L		97
101)	1,2,3-Trichlorobenzene	20.96	180	2040570	193.9298 ug/L		100

(#) = qualifier out of range (m) = manual integration
8M412228.D 8260WT.M Fri May 13 17:43:35 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration

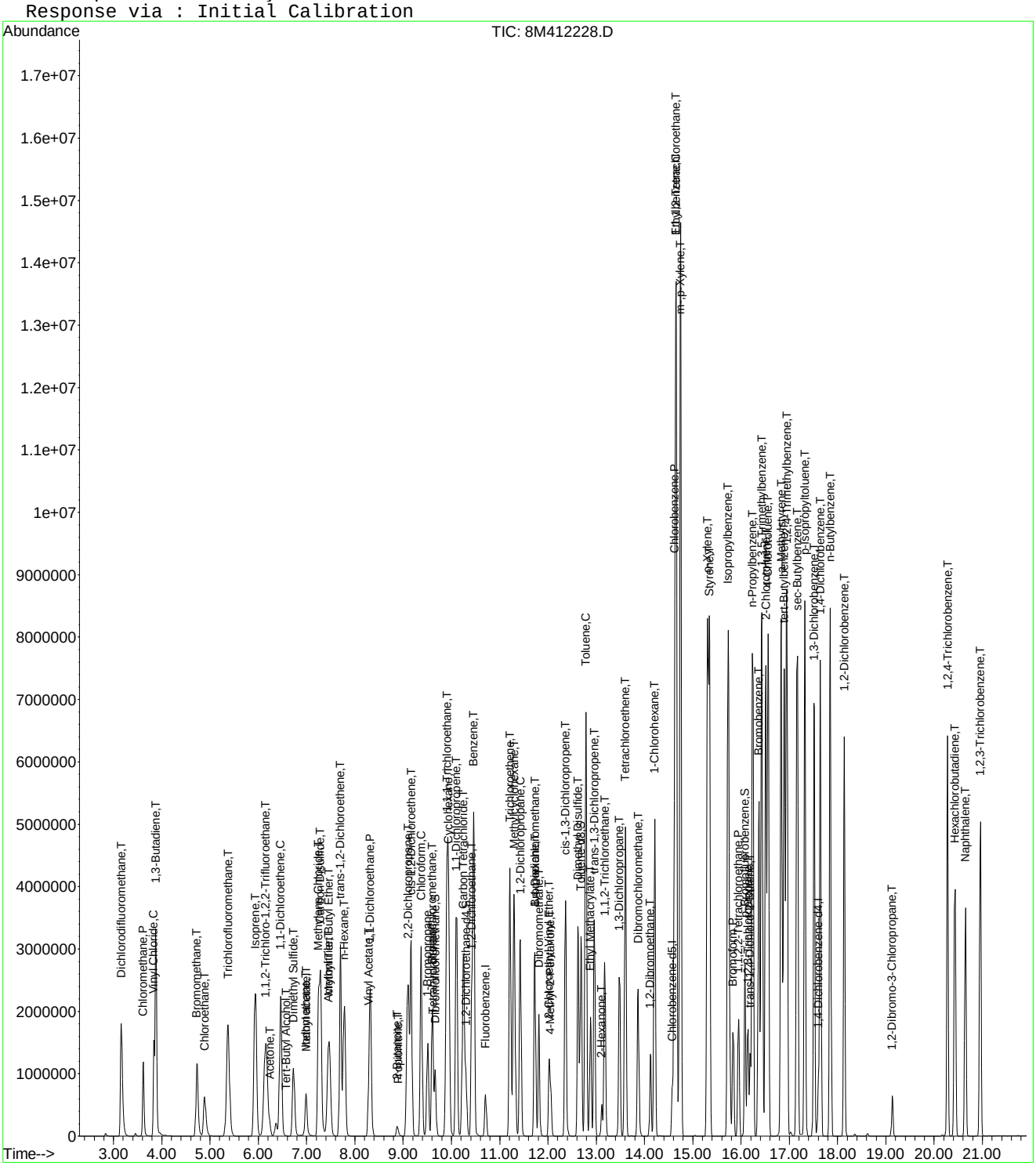

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	855409	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	599314	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	305726	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	1411837	154.4674 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 617.88%#		
43) 1,2-Dichloroethane-d4	10.30	65	1466019	148.1811 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 592.72%#		
58) Toluene-d8	12.69	98	4594713	145.5601 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 582.24%#		
80) p-Bromofluorobenzene	16.08	95	1918996	151.7813 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 607.12%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	4191932	292.0014 ug/L	97
3) Chloromethane	3.62	50	2474035	293.7212 ug/L	97
4) Vinyl Chloride	3.83	62	2956347	297.5552 ug/L	94
5) 1,3-Butadiene	3.87	54	2605506	318.3447 ug/L	94
6) Bromomethane	4.72	94	2177550	421.2239 ug/L	98
7) Chloroethane	4.89	64	1688005	311.2693 ug/L	90
8) Trichlorofluoromethane	5.37	101	5387662	289.6161 ug/L	99
9) Diethyl ether	5.90	59	1306432	295.4610 ug/L	80
10) Isoprene	5.93	67	3377164	300.3032 ug/L	78
11) Acrolein	6.14	56	70572	185.7401 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	2563878	293.7317 ug/L	94
13) Acetone	6.24	43	283185	293.3529 ug/L	90
14) 1,1-Dichloroethene	6.46	61	4031745	289.8421 ug/L	91
15) Tert-Butyl Alcohol	6.58	59	181796	587.3907 ug/L	90
16) Dimethyl Sulfide	6.73	62	1553493	317.1280 ug/L	81
17) Iodomethane	6.99	142	1347307	580.2206 ug/L	98
18) Methyl acetate	7.00	43	800046	309.5287 ug/L #	80
19) Methylene Chloride	7.24	84	2587731	292.4144 ug/L	52
20) Carbon Disulfide	7.29	76	8228181	279.9683 ug/L	98
21) Acrylonitrile	7.43	53	228227	189.6753 ug/L	94
22) Methyl Tert Butyl Ether	7.46	73	5605924	293.5892 ug/L	88
23) trans-1,2-Dichloroethene	7.70	61	3678699	287.1957 ug/L	92
24) n-Hexane	7.78	57	2863434	304.0691 ug/L	86
25) Diisopropyl ether	8.12	45	5819647	292.7898 ug/L #	89
26) Vinyl Acetate	8.30	43	2819503	314.5767 ug/L #	87
27) 1,1-Dichloroethane	8.32	63	4586531	289.1293 ug/L	94
28) Ethyl-Tert-Butyl ether	8.70	59	6190206	290.3321 ug/L	89
29) 2-Butanone	8.88	43	439359	312.8959 ug/L #	76
30) Propionitrile	8.99	54	133197	327.4673 ug/L	95
31) 2,2-Dichloropropane	9.10	77	4821388	288.2735 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	2847005	287.9976 ug/L	89
33) Chloroform	9.37	83	5197860	275.5447 ug/L	100
34) 1-Bromopropane	9.51	122	450012	326.3179 ug/L	100
35) Bromochloromethane	9.61	130	1490221	295.6112 ug/L	66
36) Tetrahydrofuran	9.63	42	271736	290.4491 ug/L #	62
38) 1,1,1-Trichloroethane	9.91	97	5126354	287.9792 ug/L	98
39) Cyclohexane	9.94	56	3733392	305.0987 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	3923871	289.1471 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	5639573	291.3713 ug/L	88
42) Carbon Tetrachloride	10.25	117	4598150	291.7629 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412229.D 8260WT.M Fri May 13 18:12:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.43	62	3468738	287.5726 ug/L	86
46)	Benzene	10.46	78	9065861	250.7462 ug/L	93
47)	Trichloroethene	11.21	130	2772282	295.1106 ug/L	97
48)	Methylcyclohexane	11.30	83	4327357	304.8748 ug/L	84
49)	1,2-Dichloropropane	11.43	63	2350729	300.9718 ug/L	74
50)	Bromodichloromethane	11.73	83	4051493	294.7973 ug/L	99
51)	1,4-Dioxane	11.72	88	26614	699.8767 ug/L	67
52)	Dibromomethane	11.81	93	1369945	295.3776 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.03	63	1006317	297.3917 ug/L	90
54)	4-Methyl-2-Pentanone	12.06	58	424684	310.6522 ug/L #	76
55)	cis-1,3-Dichloropropene	12.36	75	4156310	297.7431 ug/L	97
56)	Dimethyl Disulfide	12.63	79	2359825	324.2911 ug/L	94
59)	Toluene	12.78	91	9135213	236.4669 ug/L	90
60)	Ethyl Methacrylate	12.88	69	2228037	315.7801 ug/L	71
62)	trans-1,3-Dichloropropene	12.96	75	3700845	297.5240 ug/L	96
63)	1,1,2-Trichloroethane	13.18	97	1730199	293.6104 ug/L	100
64)	2-Hexanone	13.11	58	381967	311.8816 ug/L #	78
65)	1,3-Dichloropropane	13.49	76	3080177	294.0141 ug/L	76
66)	Tetrachloroethene	13.60	164	2374435	297.7522 ug/L	96
67)	Dibromochloromethane	13.87	129	2638145	310.7838 ug/L	100
68)	1,2-Dibromoethane	14.13	107	1778561	305.8085 ug/L	99
69)	1-Chlorohexane	14.21	91	3712592	290.5924 ug/L	84
70)	Chlorobenzene	14.63	112	6754240	263.7433 ug/L	90
71)	1,1,1,2-Tetrachloroethane	14.65	131	2967650	307.3001 ug/L	100
72)	Ethylbenzene	14.65	106	4014412	290.7661 ug/L	70
73)	m-,p-Xylene	14.75	106	8357822	505.3514 ug/L	70
74)	o-Xylene	15.31	106	4530840	285.4488 ug/L	88
75)	Styrene	15.35	104	7050702	269.0641 ug/L	82
76)	Bromoform	15.84	173	1602587	321.7373 ug/L	99
77)	Isopropylbenzene	15.73	105	9900817	226.7477 ug/L	90
79)	1,1,2,2-Tetrachloroethane	15.95	83	1885953	309.3861 ug/L	98
81)	1,2,3-Trichloropropane	16.14	110	581198	310.8176 ug/L	61
82)	trans-1,4-Dichloro-2-Buten	16.18	53	589705	370.3601 ug/L	82
83)	n-Propylbenzene	16.25	91	10768378	214.4110 ug/L	86
84)	Bromobenzene	16.37	156	2947671	300.5290 ug/L	99
85)	1,3,5-Trimethylbenzene	16.43	105	8890651	248.7580 ug/L	92
86)	2-Chlorotoluene	16.51	91	7868844	227.1449 ug/L	92
87)	4-Chlorotoluene	16.57	91	7782731	251.2687 ug/L	93
88)	a-Methylstyrene	16.84	118	4955768	300.9205 ug/L	86
89)	tert-Butylbenzene	16.90	134	2046401	301.6701 ug/L	95
90)	1,2,4-Trimethylbenzene	16.95	105	8903769	240.8932 ug/L	89
91)	sec-Butylbenzene	17.17	105	9867862	230.5051 ug/L	91
92)	p-Isopropyltoluene	17.32	119	8738927	242.4155 ug/L	94
93)	1,3-Dichlorobenzene	17.52	146	5319954	278.2806 ug/L	87
94)	1,4-Dichlorobenzene	17.64	146	5248511	271.3593 ug/L	88
95)	n-Butylbenzene	17.85	91	8408157	234.6279 ug/L	92
96)	1,2-Dichlorobenzene	18.14	146	4717385	277.0787 ug/L	87
97)	1,2-Dibromo-3-Chloropropan	19.13	75	377070	309.0741 ug/L	91
98)	1,2,4-Trichlorobenzene	20.28	180	3677657	291.9206 ug/L	98
99)	Hexachlorobutadiene	20.43	225	1780695	304.4378 ug/L	96
100)	Naphthalene	20.65	128	5216751	275.8542 ug/L	95
101)	1,2,3-Trichlorobenzene	20.96	180	3064908	287.1593 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412229.D 8260WT.M Fri May 13 18:12:36 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration

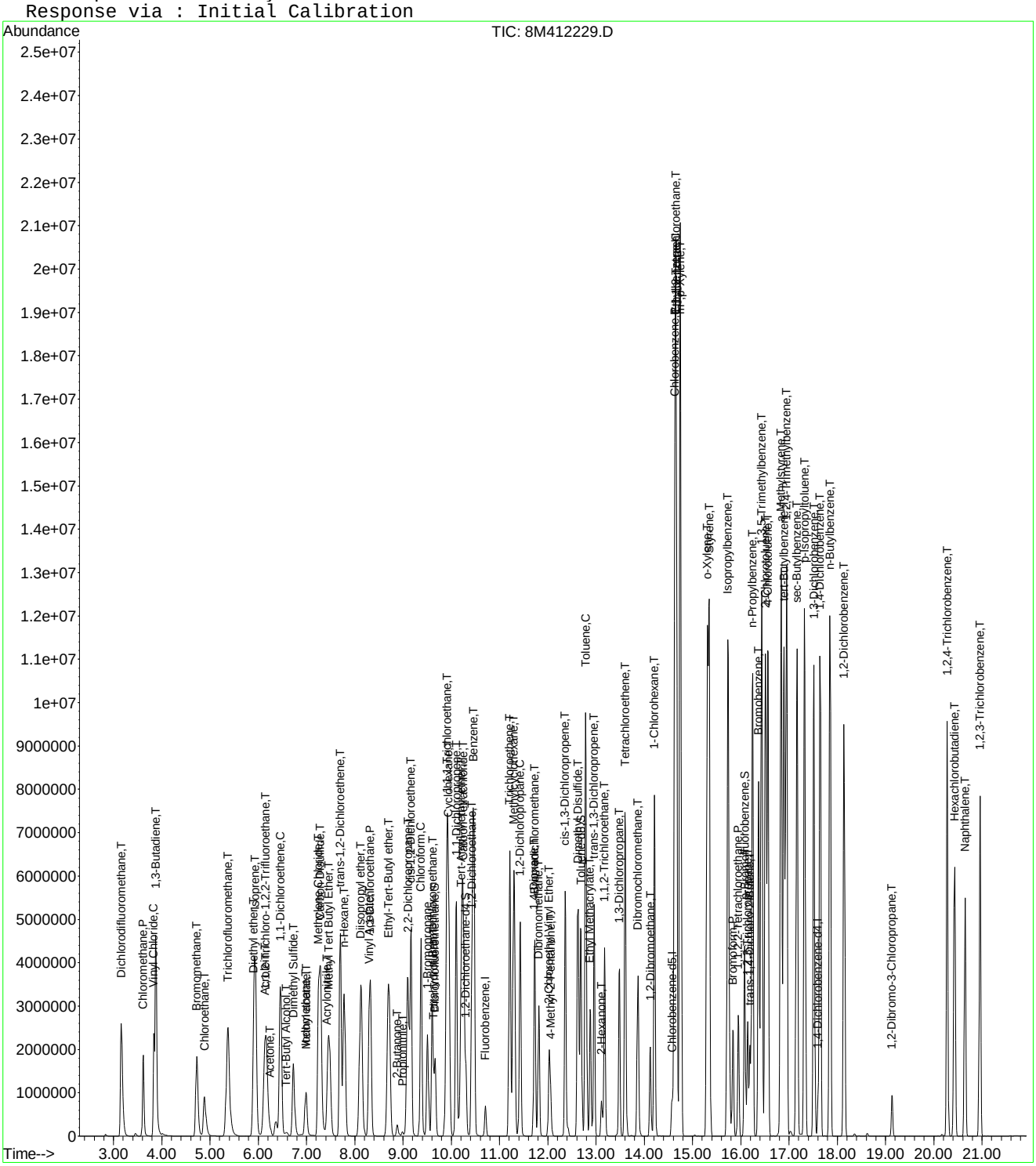

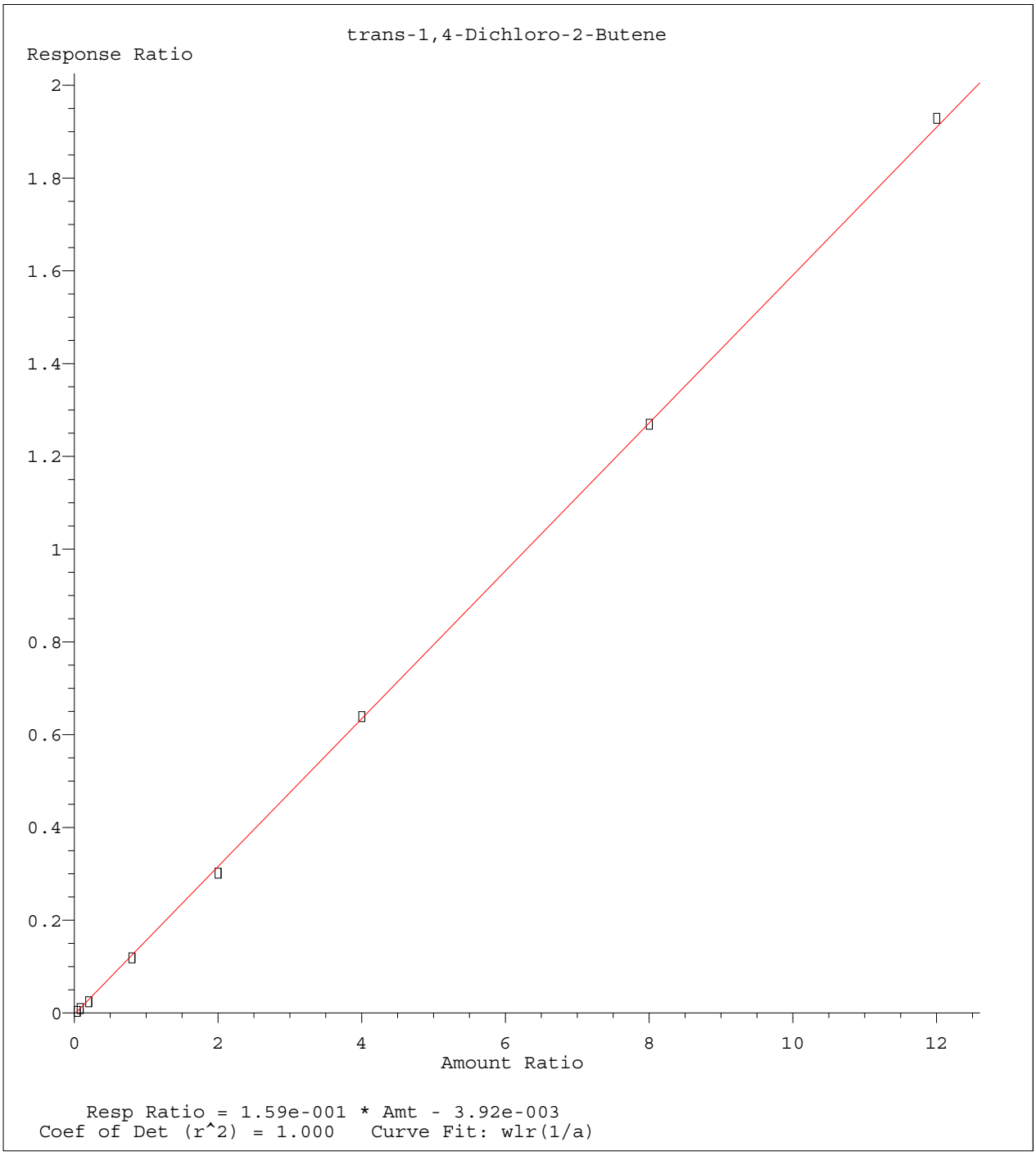

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

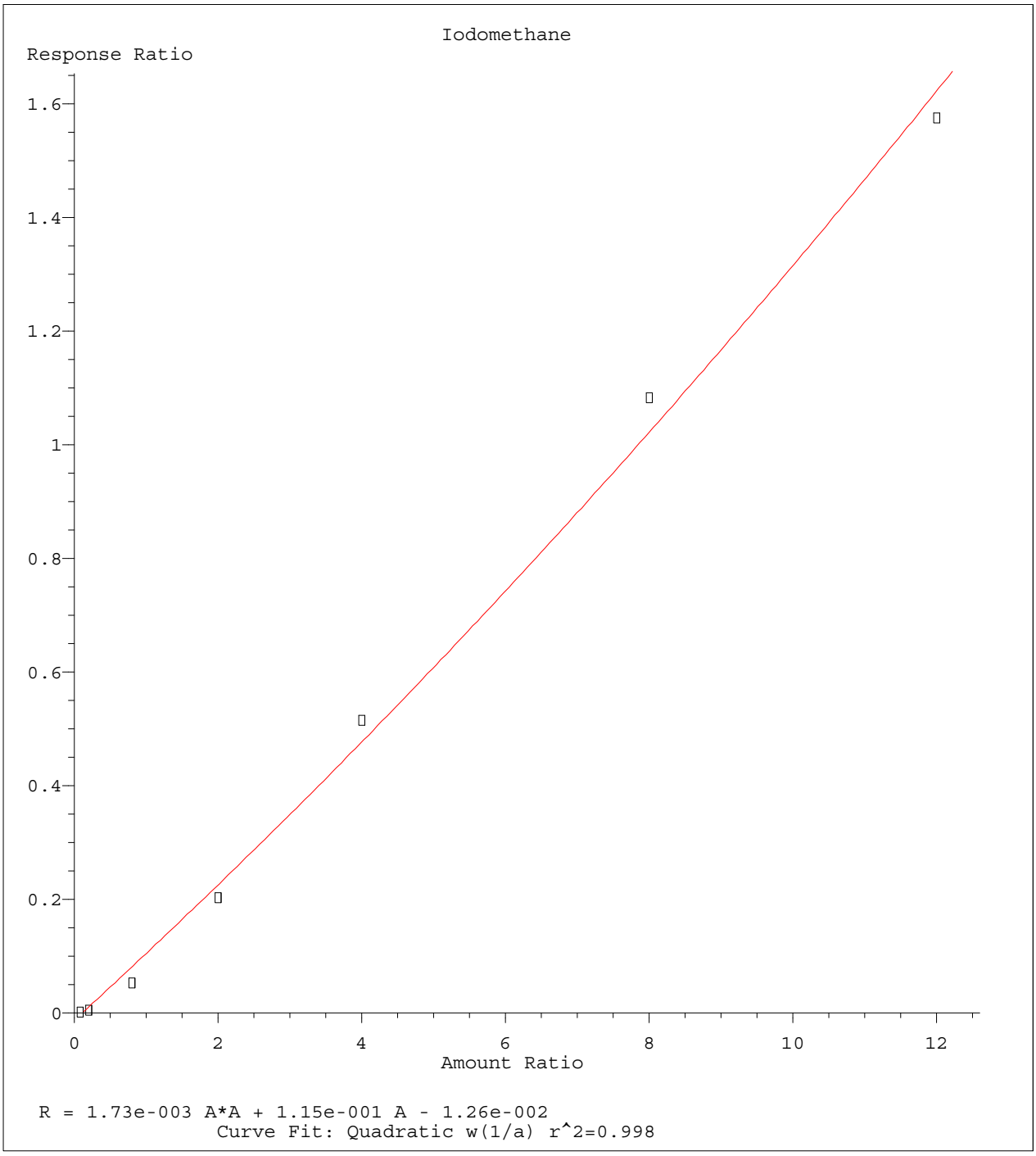

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

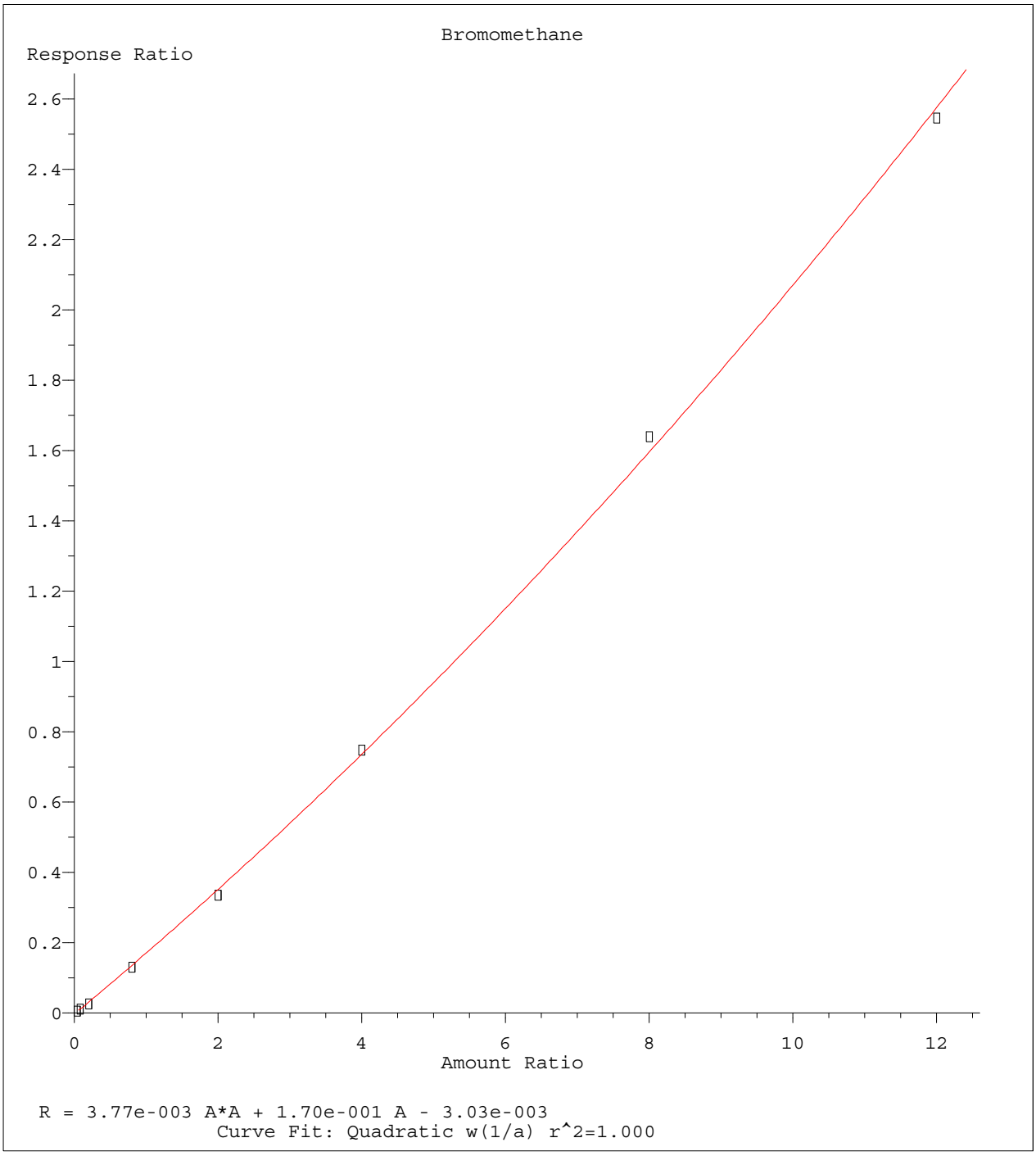

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:44:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Tue May 17 11:43:20 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	837879	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	574720	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	304324	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	229742	25.5204 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.08%		
43) 1,2-Dichloroethane-d4	10.31	65	238672	24.7259 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.92%		
58) Toluene-d8	12.68	98	776362	25.8115 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.24%		
80) p-Bromofluorobenzene	16.07	95	315683	25.0519 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.20%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	761591	54.2141 ug/L	99
3) Chloromethane	3.62	50	415589	50.6814 ug/L	100
4) Vinyl Chloride	3.84	62	509607	52.3810 ug/L	100
5) 1,3-Butadiene	3.88	54	347562	42.6002 ug/L	97
6) Bromomethane	4.73	94	272060	46.3924 ug/L	99
7) Chloroethane	4.88	64	285509	53.3336 ug/L	98
8) Trichlorofluoromethane	5.37	101	849580	46.9313 ug/L	100
9) Diethyl ether	5.90	59	451307	104.4282 ug/L	99
10) Isoprene	5.93	67	582863	53.0208 ug/L	99
11) Acrolein	6.13	56	38877	100.4722 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	419584	49.3091 ug/L	97
13) Acetone	6.23	43	54234	57.5310 ug/L	94
14) 1,1-Dichloroethene	6.46	61	622831	45.9700 ug/L	99
15) Tert-Butyl Alcohol	6.59	59	59797	197.9422 ug/L	97
16) Dimethyl Sulfide	6.73	62	351814	72.6234 ug/L	98
17) Iodomethane	6.99	142	92716	26.2832 ug/L	99
18) Methyl acetate	7.00	43	127540	50.0514 ug/L	98
19) Methylene Chloride	7.25	84	417642	48.4385 ug/L	99
20) Carbon Disulfide	7.29	76	1199899	42.3200 ug/L	100
21) Acrylonitrile	7.43	53	65324	53.4074 ug/L	93
22) Methyl Tert Butyl Ether	7.46	73	949572	50.8859 ug/L	97
23) trans-1,2-Dichloroethene	7.70	61	598296	48.0666 ug/L	99
24) n-Hexane	7.77	57	425106	45.9930 ug/L	99
25) Diisopropyl ether	8.13	45	2040382	105.1615 ug/L	98
26) Vinyl Acetate	8.29	43	415568	46.7802 ug/L	99
27) 1,1-Dichloroethane	8.32	63	721661	46.6846 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	2040020	98.1343 ug/L	99
29) 2-Butanone	8.88	43	73394	52.9905 ug/L	99
30) Propionitrile	8.98	54	42290	104.7756 ug/L	100
31) 2,2-Dichloropropane	9.10	77	780073	47.8861 ug/L	99
32) cis-1,2-Dichloroethene	9.16	96	470465	48.9162 ug/L	98
33) Chloroform	9.38	83	860252	47.1317 ug/L	100
34) 1-Bromopropane	9.51	122	98585	71.5615 ug/L	98
35) Bromochloromethane	9.60	130	234493	47.5456 ug/L	99
36) Tetrahydrofuran	9.62	42	86049	94.3281 ug/L	99
38) 1,1,1-Trichloroethane	9.90	97	825167	47.5949 ug/L	100
39) Cyclohexane	9.93	56	586721	48.8808 ug/L	97
40) 1,1-Dichloropropene	10.10	75	627217	47.4632 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1962875	103.9618 ug/L	99
42) Carbon Tetrachloride	10.24	117	711823	46.2363 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M412232.D 8260WT.M Tue May 17 11:44:38 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	108	0.00
2	T	Dichlorodifluoromethane	50.0000	54.2141	-8.4	112	0.00
3	P	Chloromethane	50.0000	50.6814	-1.4	111	0.00
4	C	Vinyl Chloride	50.0000	52.3811	-4.8	112	-0.01
5	T	1,3-Butadiene	50.0000	42.6002	14.8	89	0.00
6	T	Bromomethane	50.0000	46.3924	7.2	104	-0.01
7	T	Chloroethane	50.0000	53.3336	-6.7	117	-0.01
8	T	Trichlorofluoromethane	50.0000	46.9313	6.1	101	-0.01
9	T	Diethyl ether	100.0000	104.4282	-4.4	116	0.00
10	T	Isoprene	50.0000	53.0208	-6.0	117	0.00
11	T	Acrolein	50.0000	100.4722	-100.9#	220	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	49.3091	1.4	108	0.00
13	T	Acetone	50.0000	57.5310	-15.1	118	-0.01
14	C	1,1-Dichloroethene	50.0000	45.9700	8.1	100	0.00
15	T	Tert-Butyl Alcohol	200.0000	197.9423	1.0	108	0.01
16	T	Dimethyl Sulfide	50.0000	72.6234	-45.2#	159	0.00
17	T	Iodomethane	50.0000	26.2832	47.4#	59	0.01
18	T	Methyl acetate	50.0000	50.0514	-0.1	111	0.00
19	T	Methylene Chloride	50.0000	48.4385	3.1	107	0.00
20	T	Carbon Disulfide	50.0000	42.3200	15.4	94	0.00
21	T	Acrylonitrile	50.0000	53.4074	-6.8	109	0.00
22	T	Methyl Tert Butyl Ether	50.0000	50.8859	-1.8	105	0.00
23	T	trans-1,2-Dichloroethene	50.0000	48.0666	3.9	105	0.00
24	T	n-Hexane	50.0000	45.9930	8.0	101	-0.01
25	T	Diisopropyl ether	100.0000	105.1615	-5.2	115	0.00
26	T	Vinyl Acetate	50.0000	46.7802	6.4	97	0.00
27	P	1,1-Dichloroethane	50.0000	46.6846	6.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.1343	1.9	104	0.00
29	T	2-Butanone	50.0000	52.9905	-6.0	110	0.00
30	T	Propionitrile	100.0000	104.7756	-4.8	111	0.00
31	T	2,2-Dichloropropane	50.0000	47.8861	4.2	102	0.00
32	T	cis-1,2-Dichloroethene	50.0000	48.9162	2.2	107	-0.01
33	C	Chloroform	50.0000	47.1317	5.7	102	0.00
34		1-Bromopropane	50.0000	71.5615	-43.1#	155	0.00
35	T	Bromochloromethane	50.0000	47.5456	4.9	102	0.00
36	T	Tetrahydrofuran	100.0000	94.3281	5.7	108	-0.01
37	S	Dibromofluoromethane	25.0000	25.5204	-2.1	109	0.00
38	T	1,1,1-Trichloroethane	50.0000	47.5949	4.8	101	0.00
39	T	Cyclohexane	50.0000	48.8808	2.2	109	0.00
40	T	1,1-Dichloropropene	50.0000	47.4632	5.1	102	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	103.9618	-4.0	111	0.00
42	T	Carbon Tetrachloride	50.0000	46.2363	7.5	98	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.7259	1.1	104	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	49.0148	2.0	103	0.00
46	T	Benzene	50.0000	48.5232	3.0	104	0.00
47	T	Trichloroethene	50.0000	51.0658	-2.1	110	0.00
48	T	Methylcyclohexane	50.0000	49.8573	0.3	109	0.00
49	C	1,2-Dichloropropane	50.0000	50.9747	-1.9	111	0.00
50	T	Bromodichloromethane	50.0000	48.3053	3.4	99	0.00
51	T	1,4-Dioxane	200.0000	216.9538	-8.5	110	0.01
52	T	Dibromomethane	50.0000	45.8126	8.4	99	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	51.2623	-2.5	104	0.00
54	T	4-Methyl-2-Pentanone	50.0000	51.8715	-3.7	107	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.8979	-7.8	111	0.00
56	T	Dimethyl Disulfide	50.0000	52.2714	-4.5	111	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	107	0.00
58	S	Toluene-d8	25.0000	25.8115	-3.2	108	0.00
59	C	Toluene	50.0000	49.0912	1.8	105	0.00
60	T	Ethyl Methacrylate	50.0000	55.9509	-11.9	113	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	50.6740	-1.3	102	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.0377	1.9	103	0.00
64	T	2-Hexanone	50.0000	53.6057	-7.2	112	0.00
65	T	1,3-Dichloropropane	50.0000	53.6720	-7.3	110	0.00
66	T	Tetrachloroethene	50.0000	47.8053	4.4	104	0.00
67	T	Dibromochloromethane	50.0000	49.6585	0.7	102	0.00
68	T	1,2-Dibromoethane	50.0000	51.1121	-2.2	105	0.00
69	T	1-Chlorohexane	50.0000	51.0611	-2.1	111	0.00
70	P	Chlorobenzene	50.0000	50.1844	-0.4	108	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	49.3793	1.2	103	0.00
72	C	Ethylbenzene	50.0000	48.2013	3.6	105	0.00
73	T	m-,p-Xylene	100.0000	101.1341	-1.1	108	0.00
74	T	o-Xylene	50.0000	50.5675	-1.1	108	0.00
75	T	Styrene	50.0000	51.5086	-3.0	105	0.00
76	P	Bromoform	50.0000	48.2227	3.6	99	0.00
77	T	Isopropylbenzene	50.0000	51.1140	-2.2	107	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	106	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	49.6172	0.8	103	0.00
80	S	p-Bromofluorobenzene	25.0000	25.0519	-0.2	108	0.00
81	T	1,2,3-Trichloropropane	50.0000	50.0849	-0.2	106	0.01
82	T	trans-1,4-Dichloro-2-Butene	50.0000	39.2043	21.6	86	0.00
83	T	n-Propylbenzene	50.0000	51.9237	-3.8	108	0.00
84	T	Bromobenzene	50.0000	49.4648	1.1	105	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	51.6344	-3.3	107	0.00
86	T	2-Chlorotoluene	50.0000	51.5639	-3.1	106	0.00
87	T	4-Chlorotoluene	50.0000	48.2650	3.5	108	0.00
88	T	a-Methylstyrene	50.0000	56.4132	-12.8	120	0.00
89	T	tert-Butylbenzene	50.0000	50.9494	-1.9	112	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	49.6617	0.7	105	0.00
91	T	sec-Butylbenzene	50.0000	51.3386	-2.7	108	0.00
92	T	p-Isopropyltoluene	50.0000	50.1261	-0.3	107	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.8943	-1.8	108	0.00
94	T	1,4-Dichlorobenzene	50.0000	50.4742	-0.9	110	0.00
95	T	n-Butylbenzene	50.0000	49.6520	0.7	105	0.00
96	T	1,2-Dichlorobenzene	50.0000	50.4907	-1.0	110	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	48.4851	3.0	100	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	50.1129	-0.2	107	0.00
99	T	Hexachlorobutadiene	50.0000	52.0919	-4.2	115	0.00
100	T	Naphthalene	50.0000	45.8047	8.4	95	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	47.7353	4.5	106	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412232.D 8260WT.M Sat May 14 18:09:03 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:21 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	709364	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	505399	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	272922	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	27428	100.2132 ug/L	99
3) 3-Chloro-1-propene	7.07	41	940418	104.3259 ug/L	82
4) 2-Chloro-1,3-butadiene	8.45	53	1188994	104.3183 ug/L	86
5) Ethyl Acetate	9.10	43	283167	104.3264 ug/L	95
6) Methacrylonitrile	9.25	67	155775	104.5365 ug/L #	63
7) Isobutyl Alcohol	9.25	43	17893	197.3629 ug/L #	96
9) Methyl methacrylate	11.42	41	298802	102.0346 ug/L	70
10) 2-Nitropropane	11.75	43	121321	95.8263 ug/L	97
13) Cyclohexanone	15.84	55	11401	102.1363 ug/L #	70

(#) = qualifier out of range (m) = manual integration
8M412321.D A9FOOWT.M Thu May 19 09:01:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

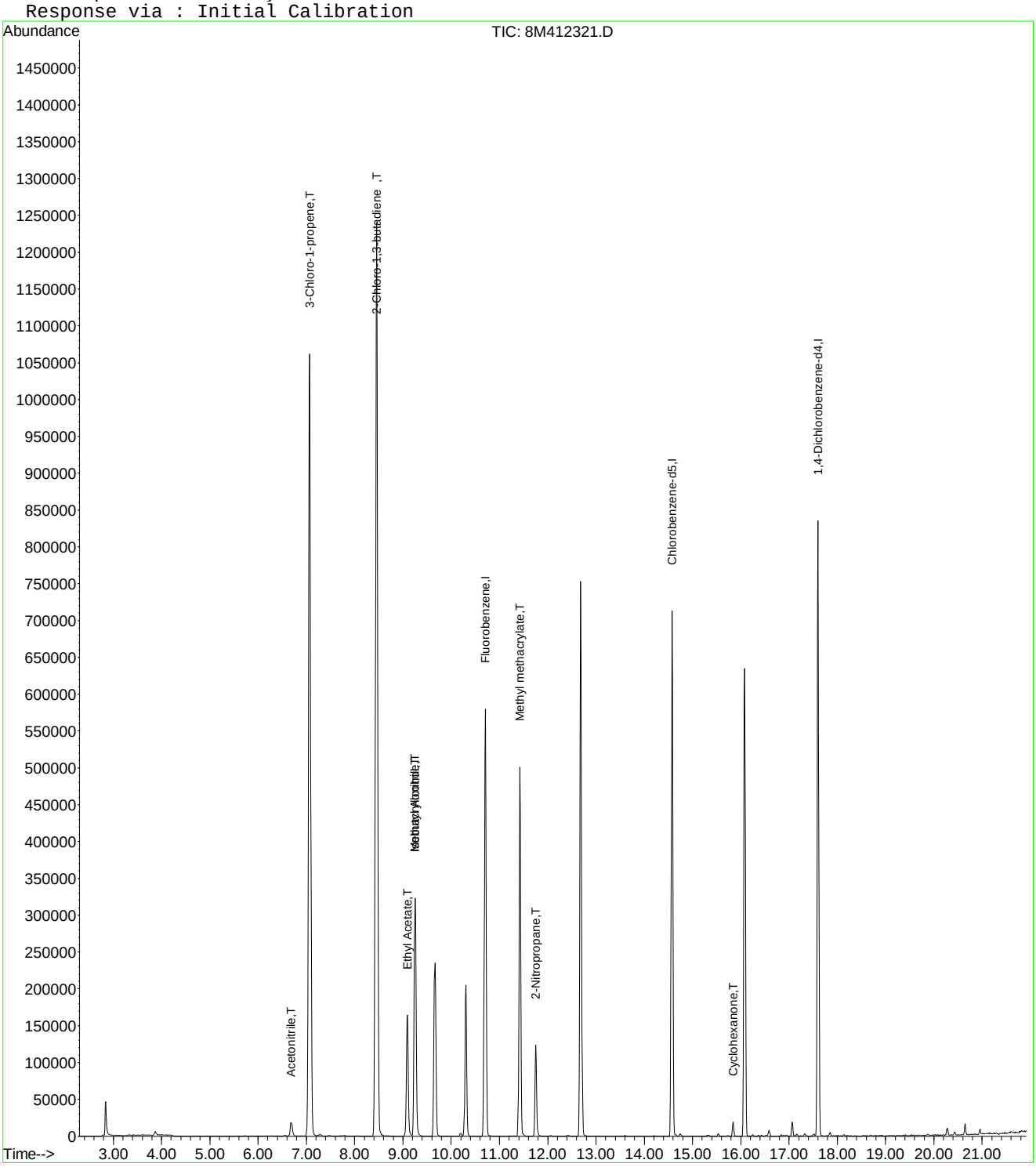

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	100.2132	-0.2	100	0.00
3	T	3-Chloro-1-propene	100.0000	104.3259	-4.3	100	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	104.3183	-4.3	100	0.00
5	T	Ethyl Acetate	100.0000	104.3264	-4.3	100	0.00
6	T	Methacrylonitrile	100.0000	104.5365	-4.5	100	0.00
7	T	Isobutyl Alcohol	200.0000	197.3629	1.3	100	-0.01
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.02
9	T	Methyl methacrylate	100.0000	102.0346	-2.0	100	0.00
10	T	2-Nitropropane	100.0000	95.8263	4.2	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	100.0000	102.1363	-2.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412321.D A9FOOWT.M Thu May 19 09:02:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:20:35 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	677339	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	488377	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	260939	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	13323	50.9795 ug/L	98
3) 3-Chloro-1-propene	7.07	41	453655	52.7060 ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	568765	52.2609 ug/L	87
5) Ethyl Acetate	9.09	43	131636	50.7913 ug/L	97
6) Methacrylonitrile	9.25	67	74064	52.0523 ug/L #	62
7) Isobutyl Alcohol	9.26	43	8483	97.9930 ug/L	95
9) Methyl methacrylate	11.42	41	143892	51.4593 ug/L	70
10) 2-Nitropropane	11.75	43	56559	46.7858 ug/L	95
13) Cyclohexanone	15.84	55	5225	48.9579 ug/L	83

(#) = qualifier out of range (m) = manual integration
8M412322.D A9FOOWT.M Thu May 19 09:20:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:19 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

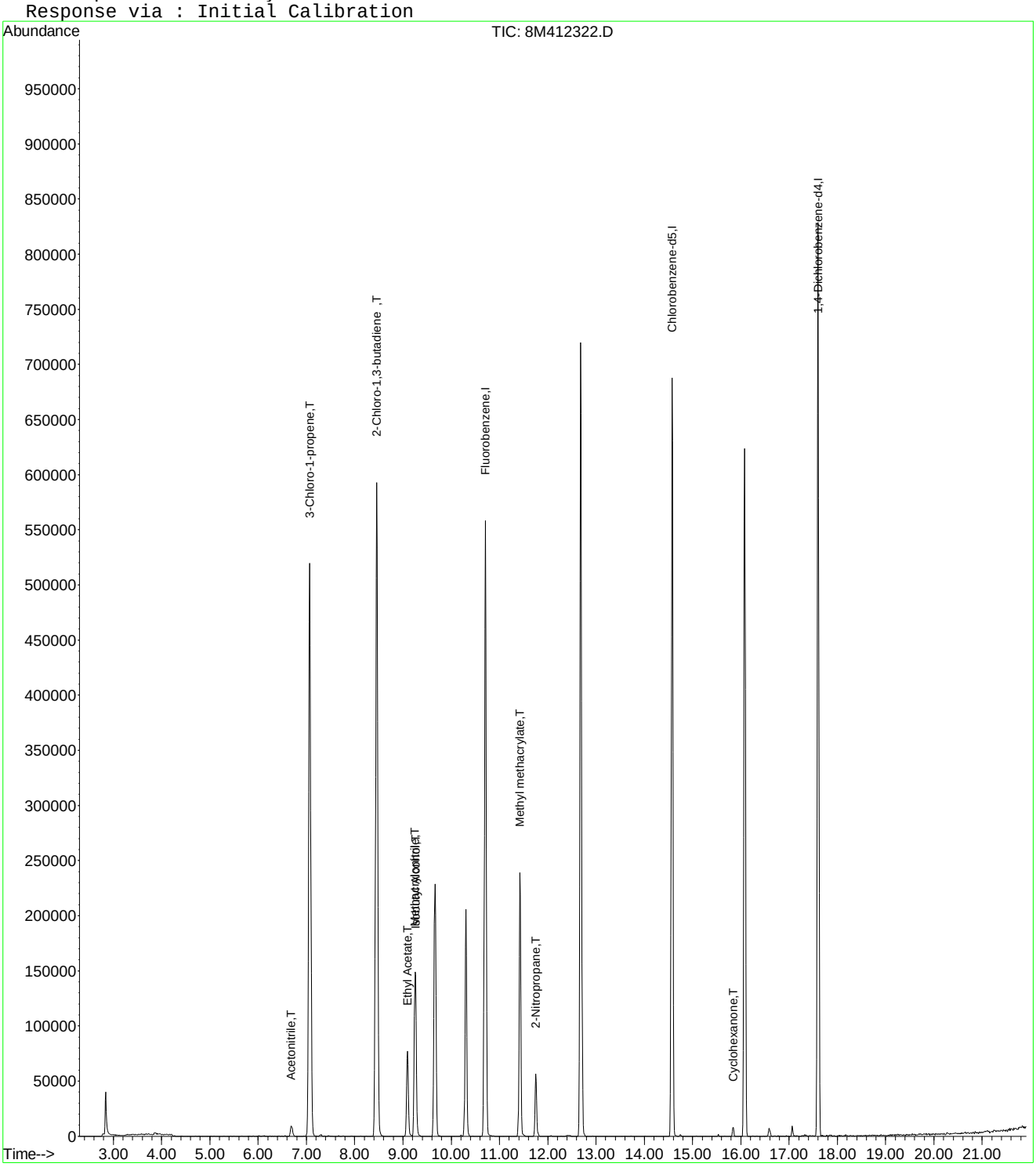

8M412322.D A9FOOWT.M Thu May 19 09:20:36 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	50.9795	-2.0	100	0.00
3	T	3-Chloro-1-propene	50.0000	52.7060	-5.4	100	0.00
4	T	2-Chloro-1,3-butadiene	50.0000	52.2609	-4.5	100	0.00
5	T	Ethyl Acetate	50.0000	50.7913	-1.6	100	0.00
6	T	Methacrylonitrile	50.0000	52.0523	-4.1	100	0.00
7	T	Isobutyl Alcohol	100.0000	97.9929	2.0	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.02
9	T	Methyl methacrylate	50.0000	51.4592	-2.9	100	0.00
10	T	2-Nitropropane	50.0000	46.7858	6.4	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	50.0000	48.9579	2.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412322.D A9FOOWT.M Thu May 19 09:02:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:22:33 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	652985	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	476539	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	256082	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	4873	19.3416 ug/L	80
3) 3-Chloro-1-propene	7.07	41	172467	20.7847 ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	219296	20.9015 ug/L	87
5) Ethyl Acetate	9.09	43	50385	20.1659 ug/L	100
6) Methacrylonitrile	9.26	67	28119	20.4992 ug/L #	63
7) Isobutyl Alcohol	9.27	43	2774	33.2395 ug/L #	8
9) Methyl methacrylate	11.42	41	55309	20.5176 ug/L	73
10) 2-Nitropropane	11.75	43	21584	18.5202 ug/L	99
13) Cyclohexanone	15.84	55	2230	21.2913 ug/L	87

(#) = qualifier out of range (m) = manual integration
8M412323.D A9FOOWT.M Thu May 19 09:22:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:21 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

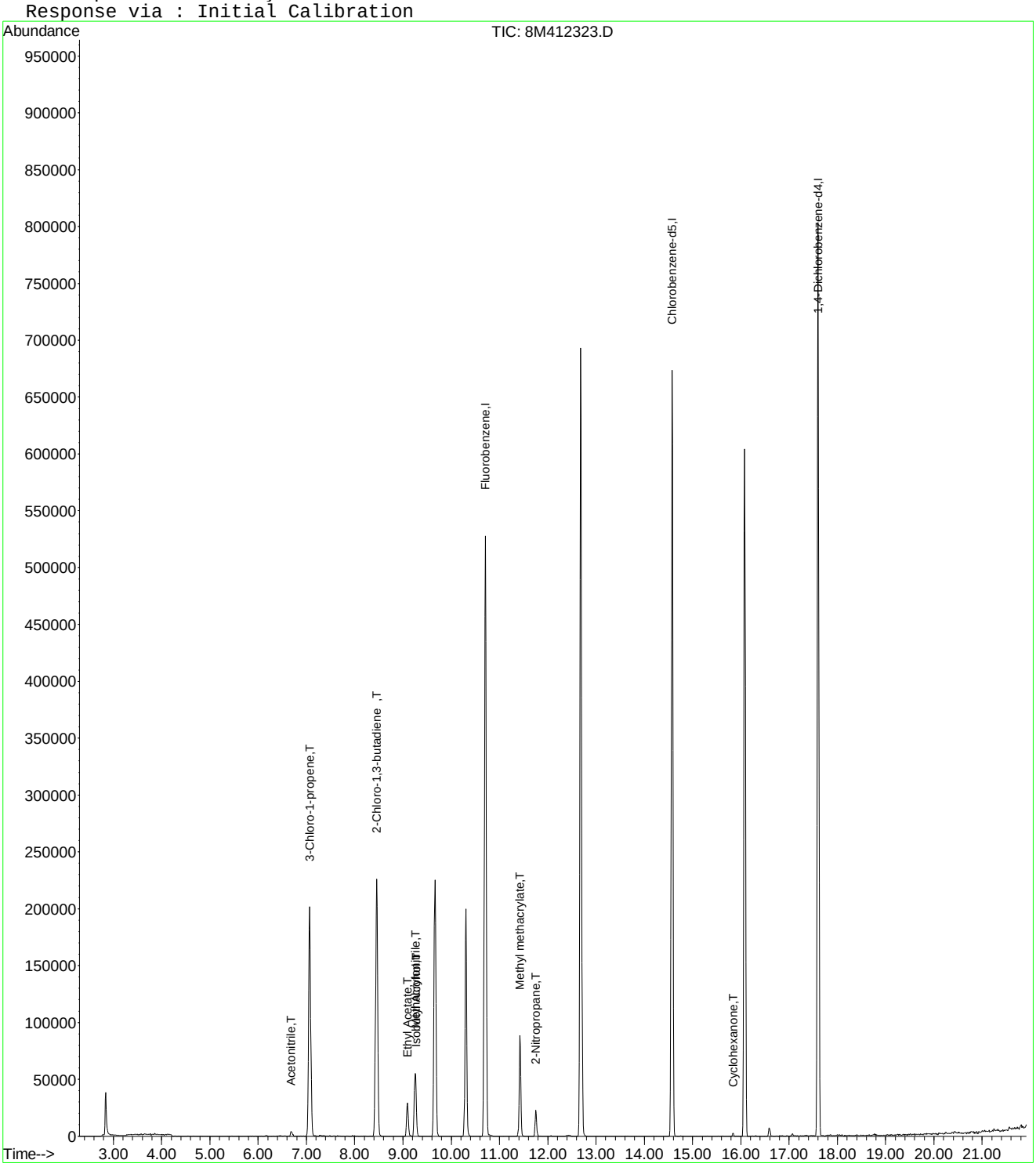

8M412323.D A9FOOWT.M Thu May 19 09:22:34 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	19.3416	3.3	100	0.00
3	T	3-Chloro-1-propene	20.0000	20.7847	-3.9	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	20.9015	-4.5	100	0.00
5	T	Ethyl Acetate	20.0000	20.1659	-0.8	100	0.00
6	T	Methacrylonitrile	20.0000	20.4992	-2.5	100	0.00
7	T	Isobutyl Alcohol	-1.0000	33.2395	0.0	0	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.18#
9	T	Methyl methacrylate	20.0000	20.5176	-2.6	100	0.00
10	T	2-Nitropropane	20.0000	18.5203	7.4	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	20.0000	21.2913	-6.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412323.D A9FOOWT.M Thu May 19 09:02:17 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:22:43 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	665645	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	483812	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	257678	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	405	1.5769 ug/L #	23
3) 3-Chloro-1-propene	7.07	41	40699	4.8115 ug/L	84
4) 2-Chloro-1,3-butadiene	8.45	53	48973	4.5789 ug/L	81
5) Ethyl Acetate	9.09	43	10675	4.1913 ug/L	95
6) Methacrylonitrile	9.26	67	5417	3.8740 ug/L #	72
7) Isobutyl Alcohol	9.27	43	441	5.1838 ug/L #	8
9) Methyl methacrylate	11.43	41	11811	4.2981 ug/L	65
10) 2-Nitropropane	11.76	43	4170	3.5100 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412324.D A9FOOWT.M Thu May 19 09:22:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:21 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

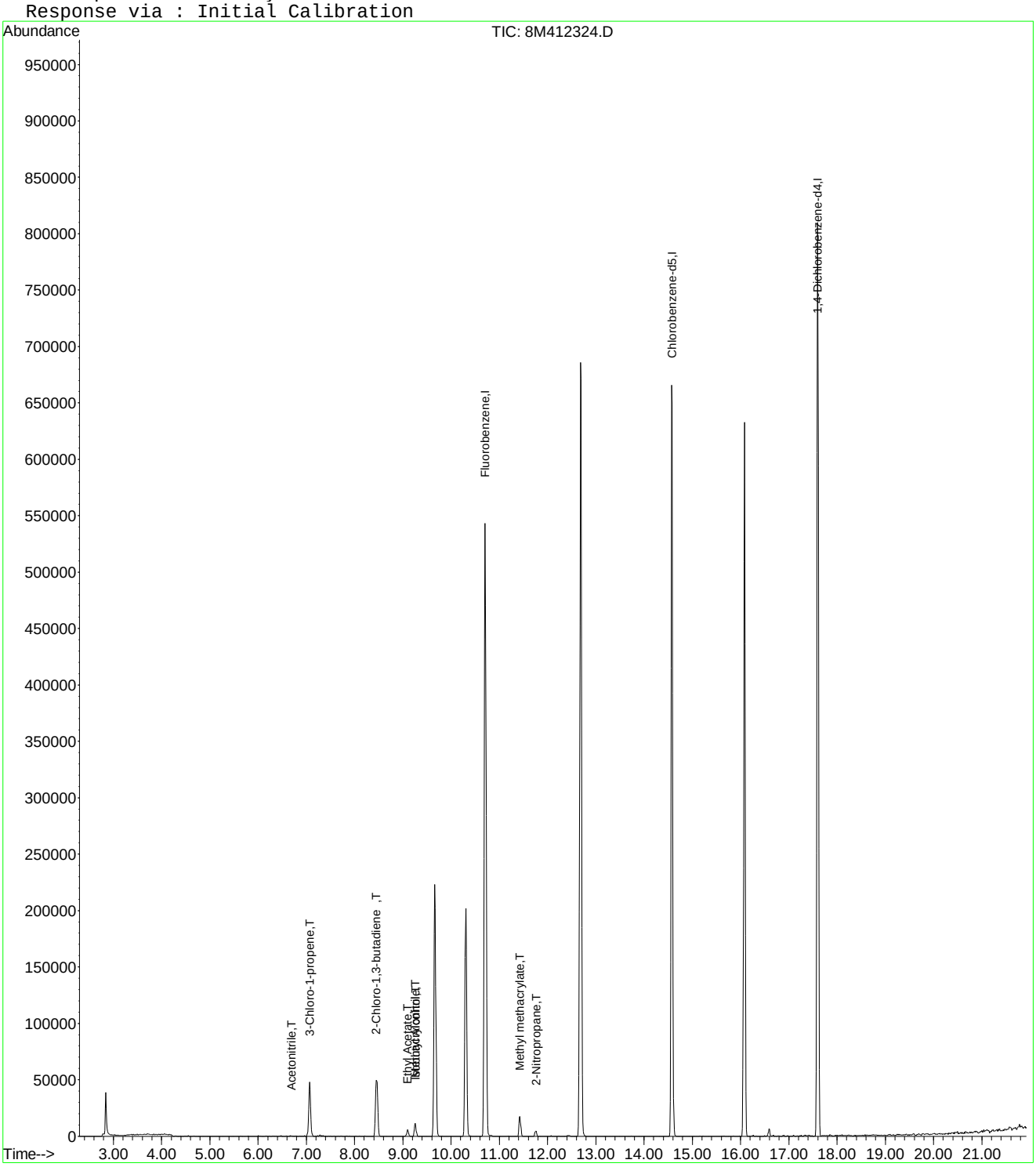

8M412324.D A9FOOWT.M Thu May 19 09:22:43 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	-1.0000	1.5769	0.0	0	0.00
3	T	3-Chloro-1-propene	5.0000	4.8115	3.8	100	0.00
4	T	2-Chloro-1,3-butadiene	5.0000	4.5789	8.4	100	0.00
5	T	Ethyl Acetate	5.0000	4.1913	16.2	100	0.00
6	T	Methacrylonitrile	5.0000	3.8740	22.5	100	0.00
7	T	Isobutyl Alcohol	-1.0000	5.1838	0.0	0	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.18#
9	T	Methyl methacrylate	5.0000	4.2981	14.0	100	0.00
10	T	2-Nitropropane	-1.0000	3.5100	0.0	0	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	0.0000	0.0	0	-15.84#

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412324.D A9FOOWT.M Thu May 19 09:02:03 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412325.D Vial: 7
Acq On : 17 May 2016 11:42 Operator: TMB
Sample : WG569079-06 200ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:27 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	682012	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	491515	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	261877	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.68	41	52022	197.6946 ug/L	97
3) 3-Chloro-1-propene	7.06	41	1768403	204.0468 ug/L	83
4) 2-Chloro-1,3-butadiene	8.46	53	2283706	208.4003 ug/L	87
5) Ethyl Acetate	9.09	43	537585	206.0040 ug/L	94
6) Methacrylonitrile	9.25	67	297408	207.5869 ug/L #	63
7) Isobutyl Alcohol	9.26	43	34441	395.1256 ug/L	95
9) Methyl methacrylate	11.42	41	577612	205.1526 ug/L	72
10) 2-Nitropropane	11.75	43	248395	204.0652 ug/L	95
13) Cyclohexanone	15.85	55	19752	184.4122 ug/L #	59

(#) = qualifier out of range (m) = manual integration
8M412325.D A9FOOWT.M Thu May 19 09:01:28 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412325.D Vial: 7
Acq On : 17 May 2016 11:42 Operator: TMB
Sample : WG569079-06 200ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

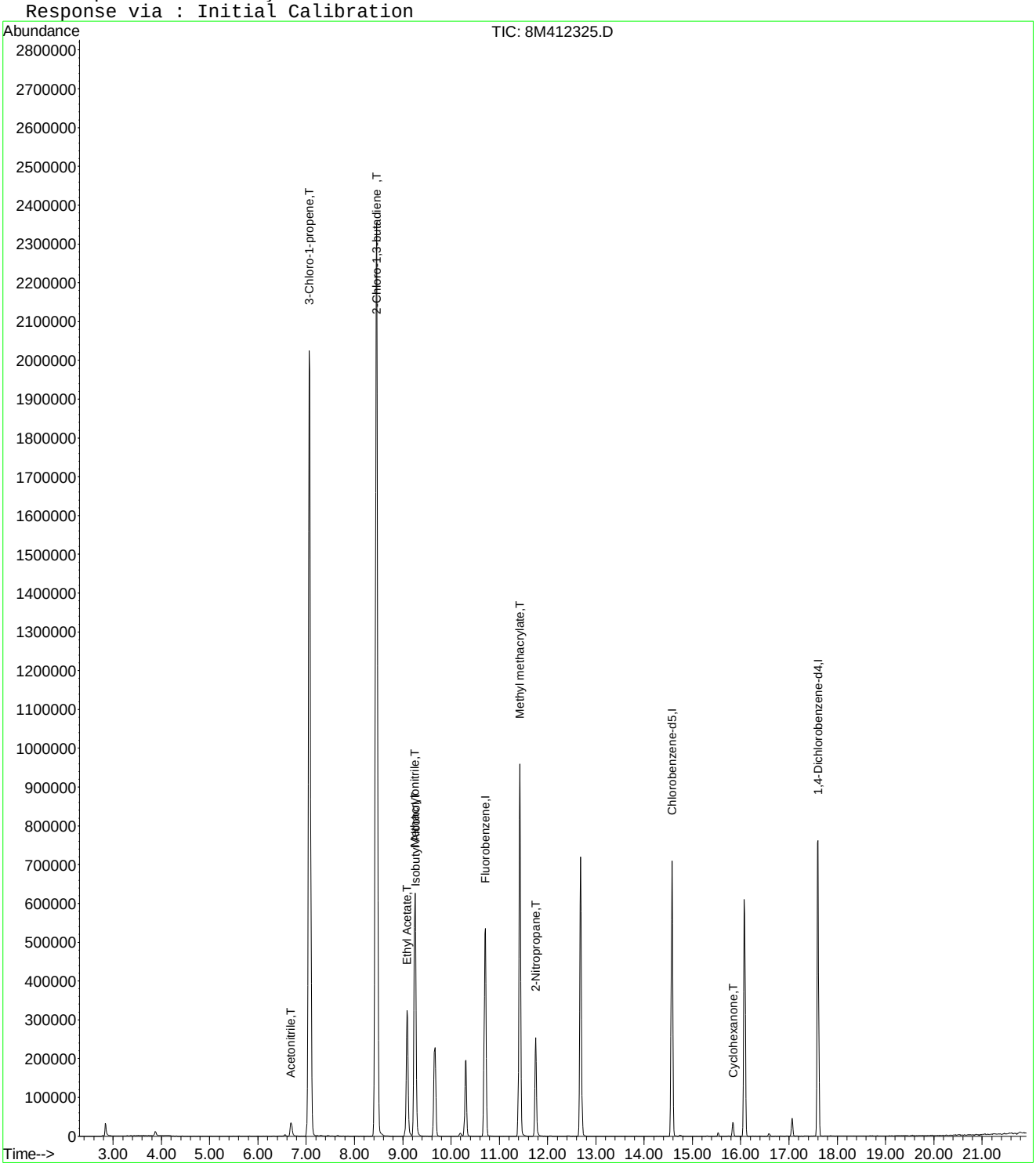

8M412325.D A9FOOWT.M Thu May 19 09:01:28 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412326.D Vial: 8
Acq On : 17 May 2016 12:40 Operator: TMB
Sample : WG569079-07 300ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:29 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	694903	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	496643	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	267309	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.69	41	81471	303.8636	ug/L	98
3) 3-Chloro-1-propene	7.06	41	2563559	290.3084	ug/L	83
4) 2-Chloro-1,3-butadiene	8.46	53	3270971	292.9562	ug/L	86
5) Ethyl Acetate	9.09	43	821184	308.8424	ug/L	95
6) Methacrylonitrile	9.25	67	451708	309.4374	ug/L #	62
7) Isobutyl Alcohol	9.26	43	55071	620.0836	ug/L	94
9) Methyl methacrylate	11.42	41	874430	304.8132	ug/L	70
10) 2-Nitropropane	11.75	43	392965	316.8456	ug/L	94
13) Cyclohexanone	15.84	55	33523	306.6233	ug/L #	61

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412326.D Vial: 8
Acq On : 17 May 2016 12:40 Operator: TMB
Sample : WG569079-07 300ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

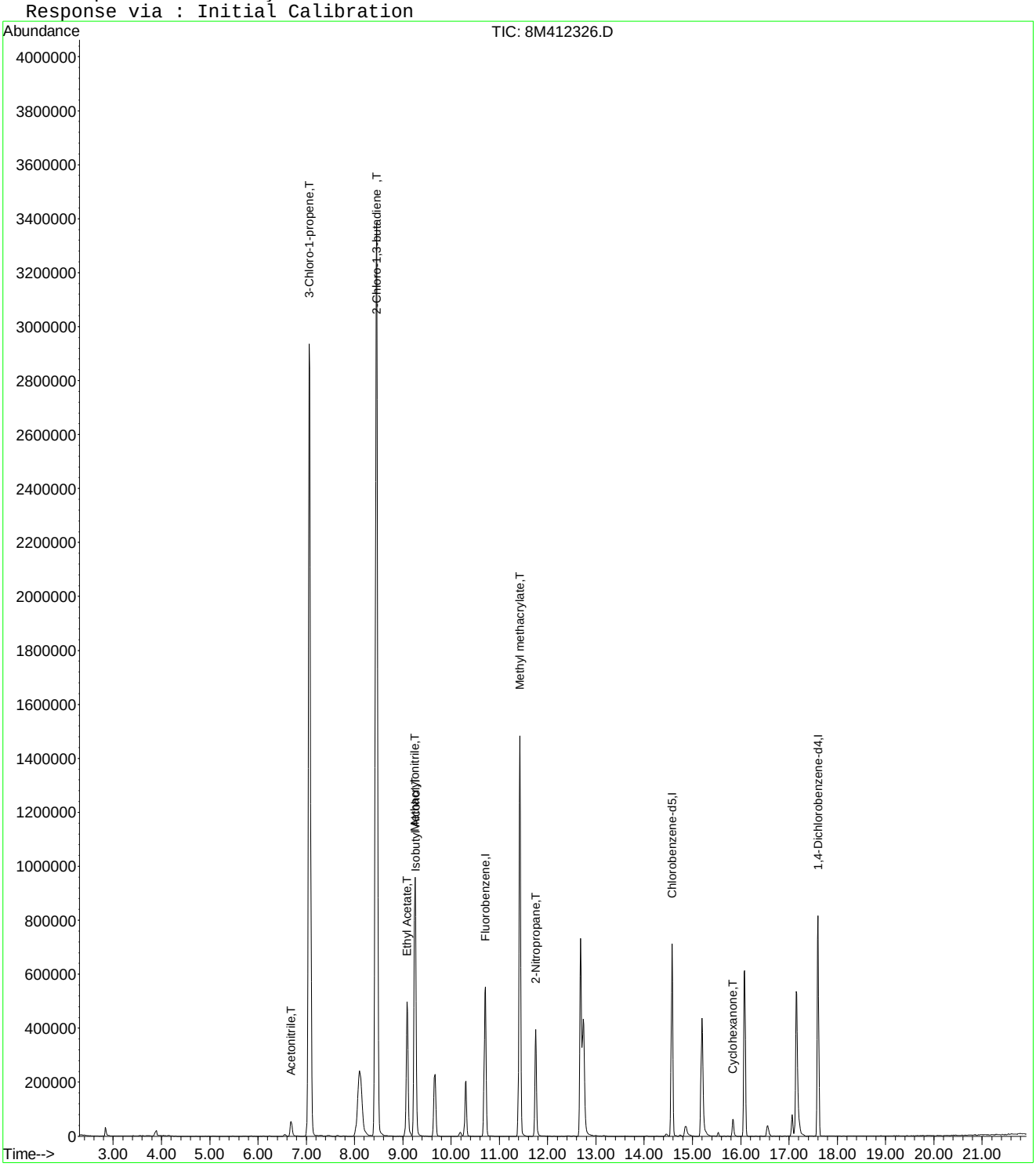

8M412326.D A9FOOWT.M Thu May 19 09:01:29 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412327.D Vial: 9
Acq On : 17 May 2016 13:10 Operator: TMB
Sample : WG569079-08 400ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:30 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	700514	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	502552	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	270883	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	110761	409.7980 ug/L	97
3) 3-Chloro-1-propene	7.07	41	3406131	382.6353 ug/L	82
4) 2-Chloro-1,3-butadiene	8.45	53	4356691	387.0705 ug/L	85
5) Ethyl Acetate	9.09	43	1116818	416.6642 ug/L	94
6) Methacrylonitrile	9.25	67	615482	418.2517 ug/L #	62
7) Isobutyl Alcohol	9.26	43	75472	842.9862 ug/L	97
9) Methyl methacrylate	11.42	41	1199317	414.7153 ug/L	71
10) 2-Nitropropane	11.75	43	538580	430.7760 ug/L	94
13) Cyclohexanone	15.84	55	45874	414.0575 ug/L #	55

(#) = qualifier out of range (m) = manual integration
8M412327.D A9FOOWT.M Thu May 19 09:01:31 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412327.D Vial: 9
Acq On : 17 May 2016 13:10 Operator: TMB
Sample : WG569079-08 400ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

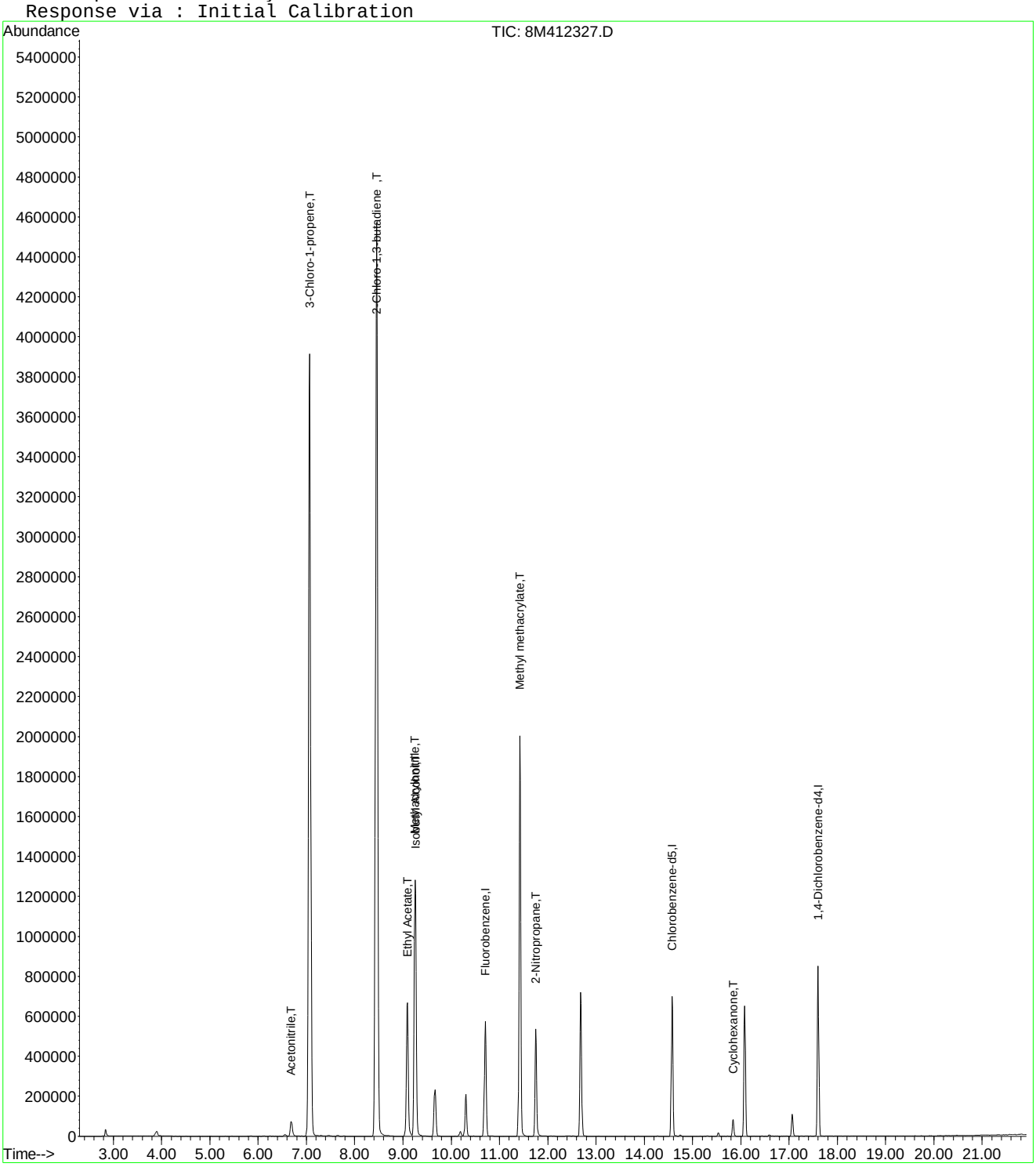

8M412327.D A9FOOWT.M Thu May 19 09:01:31 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412328.D Vial: 10
Acq On : 17 May 2016 13:39 Operator: TMB
Sample : WG569079-09 500ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:31 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	695694	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	495257	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	266442	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	132245	492.6753 ug/L	99
3) 3-Chloro-1-propene	7.06	41	4228273	478.2834 ug/L	82
4) 2-Chloro-1,3-butadiene	8.46	53	5390856	482.2693 ug/L	85
5) Ethyl Acetate	9.09	43	1321922	496.6017 ug/L	95
6) Methacrylonitrile	9.25	67	729852	499.4083 ug/L #	61
7) Isobutyl Alcohol	9.26	43	85200	958.2367 ug/L	96
9) Methyl methacrylate	11.42	41	1416438	493.1877 ug/L	72
10) 2-Nitropropane	11.75	43	637335	513.2956 ug/L	93
13) Cyclohexanone	15.84	55	52070	477.8160 ug/L #	61

(#) = qualifier out of range (m) = manual integration
8M412328.D A9FOOWT.M Thu May 19 09:01:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412328.D Vial: 10
Acq On : 17 May 2016 13:39 Operator: TMB
Sample : WG569079-09 500ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

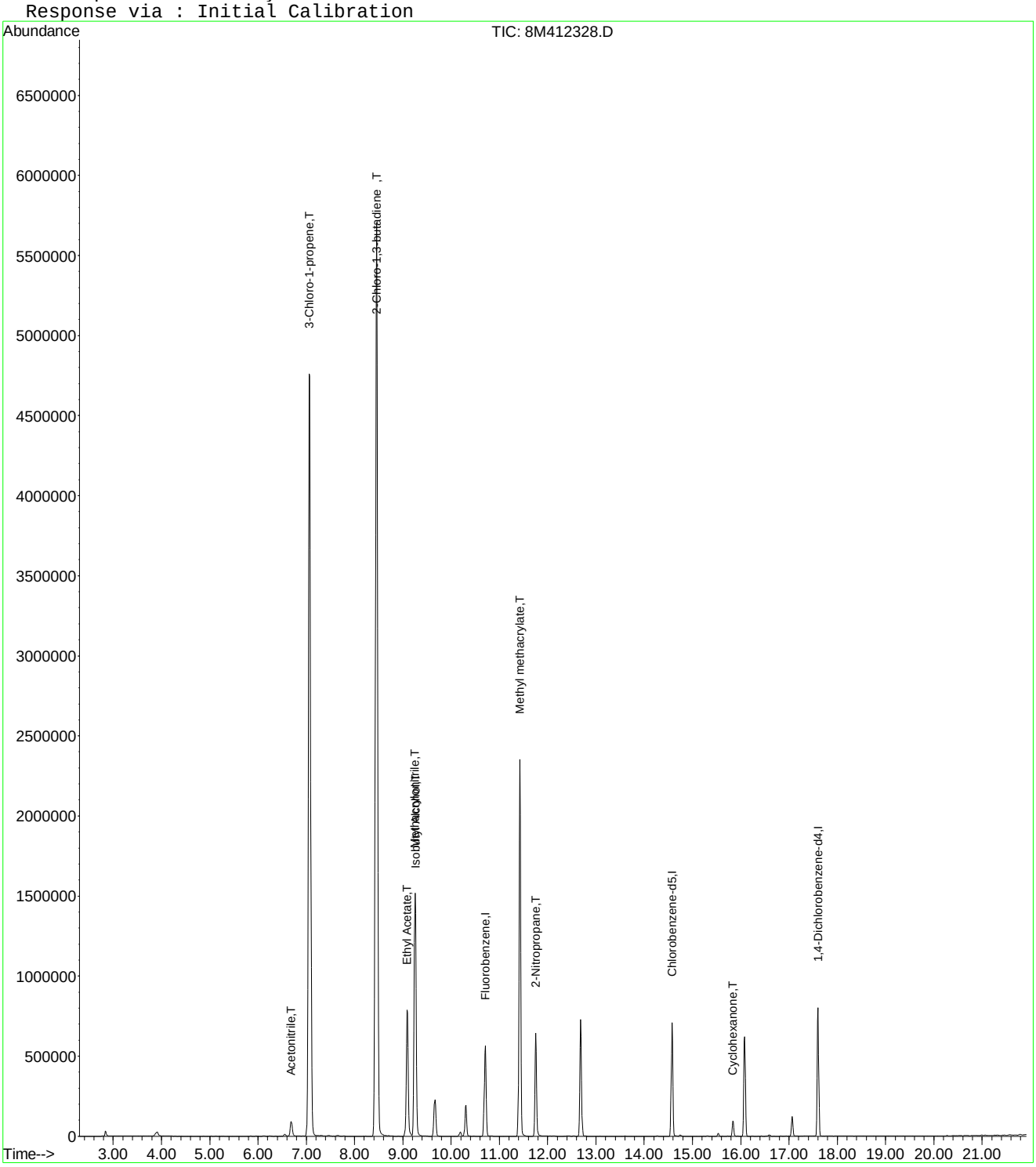

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:32 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	676765	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	486447	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	263036	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.69	41	29876	114.4154	ug/L	97
3) 3-Chloro-1-propene	7.07	41	858035	99.7718	ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	1224194	112.5803	ug/L	87
5) Ethyl Acetate	9.09	43	295545	114.1317	ug/L	96
6) Methacrylonitrile	9.25	67	161574	113.6509	ug/L #	63
7) Isobutyl Alcohol	9.26	43	19948	230.6285	ug/L	94
9) Methyl methacrylate	11.42	41	326465	116.8508	ug/L	72
10) 2-Nitropropane	11.75	43	131261	108.6716	ug/L	94
13) Cyclohexanone	15.83	55	10459	97.2189	ug/L #	74

(#) = qualifier out of range (m) = manual integration
8M412331.D A9FOOWT.M Thu May 19 09:01:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

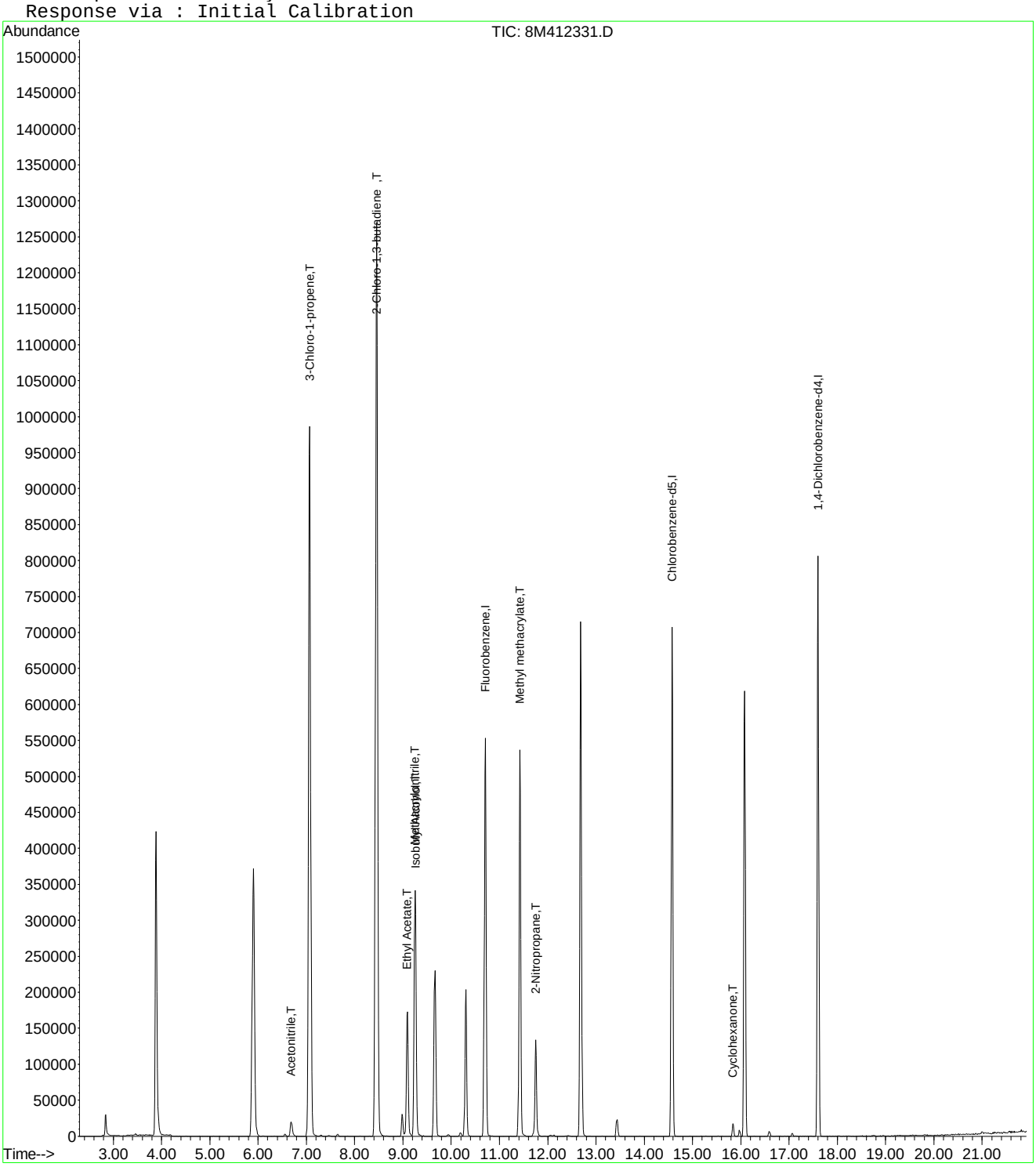

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	95	0.00
2	T	Acetonitrile	100.0000	114.4154	-14.4	109	0.00
3	T	3-Chloro-1-propene	100.0000	99.7718	0.2	91	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	112.5803	-12.6	103	0.00
5	T	Ethyl Acetate	100.0000	114.1317	-14.1	104	0.00
6	T	Methacrylonitrile	100.0000	113.6509	-13.7	104	0.00
7	T	Isobutyl Alcohol	200.0000	230.6285	-15.3	111	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.01
9	T	Methyl methacrylate	100.0000	116.8508	-16.9	109	0.00
10	T	2-Nitropropane	100.0000	108.6716	-8.7	108	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	96	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	96	0.00
13	T	Cyclohexanone	100.0000	97.2189	2.8	92	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412331.D A9FOOWT.M Thu May 19 09:03:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061316\8M412945.D Vial: 3
Acq On : 13 Jun 2016 15:04 Operator: TMB
Sample : WG572492-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 15:50:12 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	813859	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	577329	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	324259	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	230393	26.3480 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 105.40%		
43) 1,2-Dichloroethane-d4	10.30	65	254557	27.1499 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 108.60%		
58) Toluene-d8	12.68	98	799916	26.4744 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.88%		
80) p-Bromofluorobenzene	16.08	95	331649	24.7008 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.80%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	738944	54.1545 ug/L	99
3) Chloromethane	3.62	50	376123	47.2223 ug/L	100
4) Vinyl Chloride	3.84	62	495950	52.4818 ug/L	99
5) 1,3-Butadiene	3.89	54	458601	57.8690 ug/L	96
6) Bromomethane	4.73	94	200387	35.6110 ug/L	100
7) Chloroethane	4.89	64	250557	48.1859 ug/L	99
8) Trichlorofluoromethane	5.37	101	951861	54.1333 ug/L	100
9) Diethyl ether	5.90	59	405285	96.5469 ug/L	98
10) Isoprene	5.94	67	515762	48.3015 ug/L	98
11) Acrolein	6.14	56	18085	48.1176 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	415383	50.2561 ug/L	97
13) Acetone	6.24	43	46731	51.0349 ug/L	99
14) 1,1-Dichloroethene	6.46	61	660831	50.2142 ug/L	99
15) Tert-Butyl Alcohol	6.57	59	59327	202.1825 ug/L	97
16) Dimethyl Sulfide	6.73	62	216052	45.9149 ug/L	99
17) Iodomethane	6.99	142	122090	34.5051 ug/L	99
18) Methyl acetate	7.00	43	106944	43.2075 ug/L	98
19) Methylene Chloride	7.24	84	401589	47.9513 ug/L	99
20) Carbon Disulfide	7.29	76	1397245	50.7347 ug/L	99
21) Acrylonitrile	7.43	53	57977	48.7996 ug/L	97
22) Methyl Tert Butyl Ether	7.46	73	917787	50.6341 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	600701	49.6841 ug/L	100
24) n-Hexane	7.78	57	457022	50.9054 ug/L	99
25) Diisopropyl ether	8.12	45	1811481	96.1195 ug/L	97
26) Vinyl Acetate	8.30	43	449852	52.1341 ug/L	99
27) 1,1-Dichloroethane	8.32	63	745382	49.6423 ug/L	100
28) Ethyl-Tert-Butyl ether	8.70	59	2060245	102.0323 ug/L	98
29) 2-Butanone	8.88	43	58558	43.5267 ug/L	93
30) Propionitrile	8.98	54	36357	92.7348 ug/L	93
31) 2,2-Dichloropropane	9.09	77	914928	57.8220 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	462453	49.5023 ug/L	99
33) Chloroform	9.37	83	907709	51.1995 ug/L	100
34) 1-Bromopropane	9.51	122	73464	54.9004 ug/L	100
35) Bromochloromethane	9.60	130	242390	50.5973 ug/L	95
36) Tetrahydrofuran	9.63	42	75234	84.9066 ug/L	93
38) 1,1,1-Trichloroethane	9.91	97	917945	54.5089 ug/L	99
39) Cyclohexane	9.94	56	564861	48.4485 ug/L	97
40) 1,1-Dichloropropene	10.10	75	643742	50.1514 ug/L	100
41) Tert-Amyl-Methyl ether	10.21	73	1879717	102.4957 ug/L	99
42) Carbon Tetrachloride	10.24	117	822957	55.0326 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061316\8M412945.D Vial: 3
Acq On : 13 Jun 2016 15:04 Operator: TMB
Sample : WG572492-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 15:50:12 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	608324	53.3109	ug/L		99
46)	Benzene	10.46	78	1656626	49.5533	ug/L		99
47)	Trichloroethene	11.21	130	455316	51.0646	ug/L		99
48)	Methylcyclohexane	11.30	83	684650	50.5436	ug/L		100
49)	1,2-Dichloropropane	11.43	63	350964	47.1589	ug/L		92
50)	Bromodichloromethane	11.73	83	687414	52.5535	ug/L		99
51)	1,4-Dioxane	11.72	88	7252	193.9861	ug/L		95
52)	Dibromomethane	11.81	93	209464	47.5472	ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.02	63	137961	43.1301	ug/L		95
54)	4-Methyl-2-Pentanone	12.05	58	59341	45.4154	ug/L		94
55)	cis-1,3-Dichloropropene	12.36	75	682942	51.2955	ug/L		99
56)	Dimethyl Disulfide	12.62	79	366491	51.5741	ug/L		100
59)	Toluene	12.78	91	1774131	49.4993	ug/L		99
60)	Ethyl Methacrylate	12.88	69	343985	49.9744	ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	615120	51.2123	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	264614	46.7874	ug/L		99
64)	2-Hexanone	13.12	58	53163	44.7315	ug/L	#	100
65)	1,3-Dichloropropane	13.48	76	478932	47.5633	ug/L		97
66)	Tetrachloroethene	13.60	164	398580	51.9050	ug/L		96
67)	Dibromochloromethane	13.87	129	420570	50.9287	ug/L		100
68)	1,2-Dibromoethane	14.12	107	272675	48.3755	ug/L		100
69)	1-Chlorohexane	14.21	91	609314	49.8026	ug/L		98
70)	Chlorobenzene	14.62	112	1190464	49.2558	ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.66	131	482708	51.5526	ug/L		100
72)	Ethylbenzene	14.66	106	639751	48.3797	ug/L		100
73)	m-,p-Xylene	14.75	106	1545134	99.6187	ug/L		99
74)	o-Xylene	15.31	106	743634	49.0389	ug/L		97
75)	Styrene	15.35	104	1273543	51.2047	ug/L		97
76)	Bromoform	15.83	173	257044	52.4777	ug/L		98
77)	Isopropylbenzene	15.73	105	2050179	50.8928	ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	286359	43.9952	ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	91994	45.8977	ug/L		87
82)	trans-1,4-Dichloro-2-Buten	16.18	53	94929	46.5088	ug/L		81
83)	n-Propylbenzene	16.24	91	2435384	48.1416	ug/L		99
84)	Bromobenzene	16.37	156	507466	48.7697	ug/L		94
85)	1,3,5-Trimethylbenzene	16.42	105	1804455	48.9672	ug/L		100
86)	2-Chlorotoluene	16.52	91	1680722	47.5864	ug/L		100
87)	4-Chlorotoluene	16.56	91	1501939	47.0776	ug/L		100
88)	a-Methylstyrene	16.83	118	832733	47.6304	ug/L		100
89)	tert-Butylbenzene	16.89	134	335359	46.5179	ug/L		99
90)	1,2,4-Trimethylbenzene	16.94	105	1836549	48.4682	ug/L		99
91)	sec-Butylbenzene	17.16	105	2079405	47.9659	ug/L		99
92)	p-Isopropyltoluene	17.32	119	1777220	48.2822	ug/L		98
93)	1,3-Dichlorobenzene	17.51	146	972506	48.5379	ug/L		100
94)	1,4-Dichlorobenzene	17.64	146	956693	47.3615	ug/L		98
95)	n-Butylbenzene	17.85	91	1721561	47.3090	ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	838237	47.0394	ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.13	75	59842	45.8020	ug/L		97
98)	1,2,4-Trichlorobenzene	20.28	180	640257	48.0679	ug/L		99
99)	Hexachlorobutadiene	20.43	225	305983	49.1654	ug/L		98
100)	Naphthalene	20.65	128	899824	45.4698	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	517648	46.0648	ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061316\8M412945.D Vial: 3
Acq On : 13 Jun 2016 15:04 Operator: TMB
Sample : WG572492-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 15:50 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

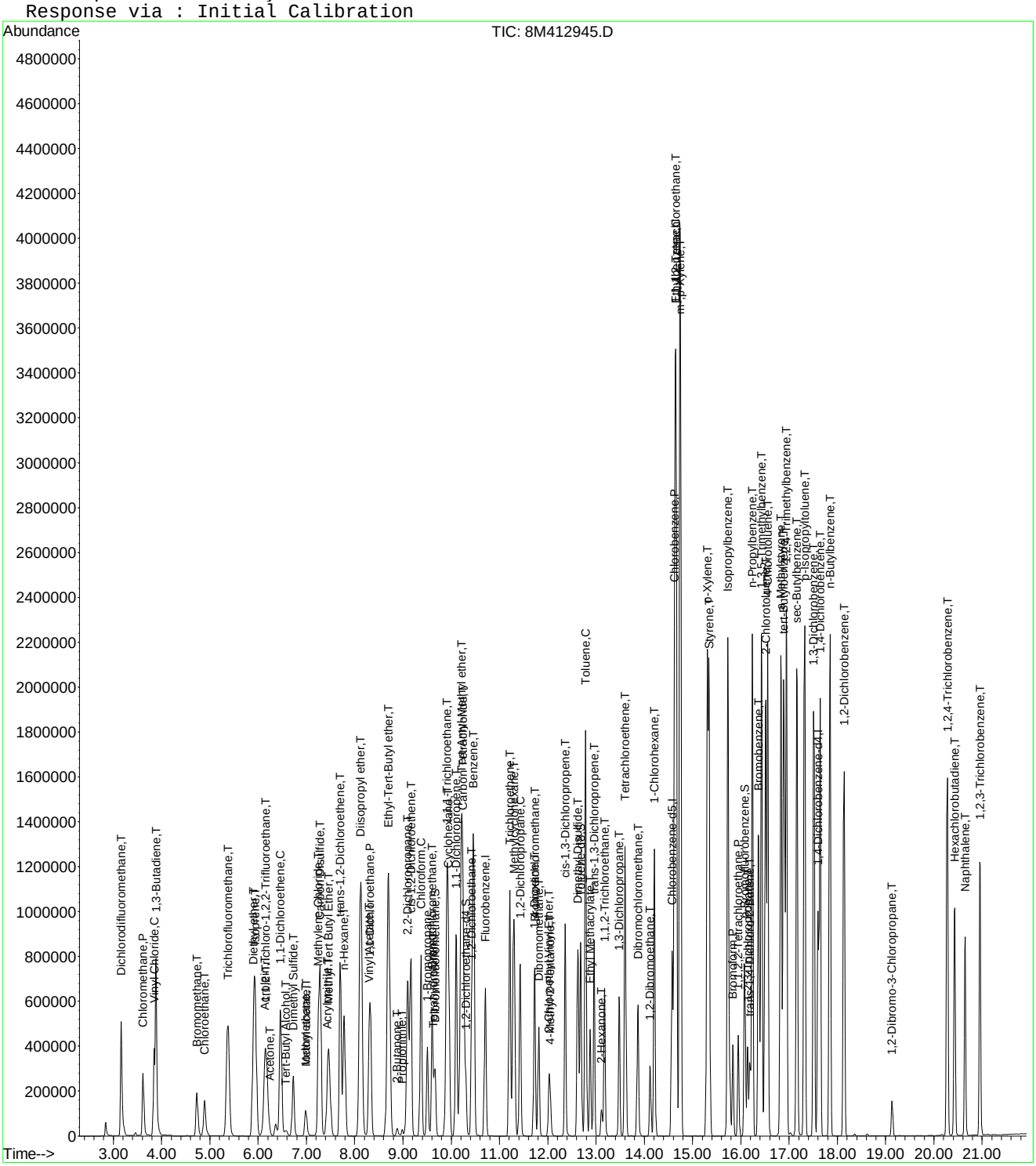

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061316\8M412945.D Vial: 3
Acq On : 13 Jun 2016 15:04 Operator: TMB
Sample : WG572492-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	105	0.00
2	T	Dichlorodifluoromethane	0.4192	0.4540	-8.3	108	0.00
3	P	Chloromethane	0.2447	0.2311	5.6	101	0.00
4	C	Vinyl Chloride	0.2903	0.3047	-5.0	109	0.00
5	T	1,3-Butadiene	0.2434	0.2817	-15.7	117	0.00
6	T	Bromomethane	0.1654	0.1231	25.6#	77	0.00
7	T	Chloroethane	0.1597	0.1539	3.6	103	0.00
8	T	Trichlorofluoromethane	0.5401	0.5848	-8.3	114	0.00
9	T	Diethyl ether	0.1290	0.1245	3.5	104	0.00
10	T	Isoprene	0.3280	0.3169	3.4	104	0.00
11	T	Acrolein	0.0116	0.0111	3.8	102	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2539	0.2552	-0.5	107	0.00
13	T	Acetone	0.0281	0.0287	-2.1	102	0.00
14	C	1,1-Dichloroethene	0.4043	0.4060	-0.4	107	0.00
15	T	Tert-Butyl Alcohol	0.0090	0.0091	-1.1	107	0.00
16	T	Dimethyl Sulfide	0.1445	0.1327	8.2	98	0.00
17	T	Iodomethane	0.0866	0.0750	13.3	77	0.00
18	T	Methyl acetate	0.0760	0.0657	13.6	93	0.00
19	T	Methylene Chloride	0.2573	0.2467	4.1	103	0.00
20	T	Carbon Disulfide	0.8460	0.8584	-1.5	110	0.00
21	T	Acrylonitrile	0.0365	0.0356	2.4	97	0.00
22	T	Methyl Tert Butyl Ether	0.5568	0.5638	-1.3	102	0.00
23	T	trans-1,2-Dichloroethene	0.3714	0.3690	0.6	105	0.00
24	T	n-Hexane	0.2758	0.2808	-1.8	109	0.00
25	T	Diisopropyl ether	0.5789	0.5565	3.9	102	0.00
26	T	Vinyl Acetate	0.2651	0.2764	-4.3	105	0.00
27	P	1,1-Dichloroethane	0.4612	0.4579	0.7	103	0.00
28	T	Ethyl-Tert-Butyl ether	0.6203	0.6329	-2.0	105	0.00
29	T	2-Butanone	0.0413	0.0360	12.9	88	0.00
30	T	Propionitrile	0.0120	0.0112	7.2	95	0.00
31	T	2,2-Dichloropropane	0.4860	0.5621	-15.6	119	0.00
32	T	cis-1,2-Dichloroethene	0.2870	0.2841	1.0	105	0.00
33	C	Chloroform	0.5446	0.5577	-2.4	107	0.00
34		1-Bromopropane	0.0411	0.0451	-9.8	116	0.00
35	T	Bromochloromethane	0.1472	0.1489	-1.2	105	0.00
36	T	Tetrahydrofuran	0.0272	0.0231	15.1	95	0.00
37	S	Dibromofluoromethane	0.2686	0.2831	-5.4	109	0.00
38	T	1,1,1-Trichloroethane	0.5173	0.5639	-9.0	112	0.00
39	T	Cyclohexane	0.3581	0.3470	3.1	105	0.00
40	T	1,1-Dichloropropene	0.3943	0.3955	-0.3	105	0.00
41	T	Tert-Amyl-Methyl ether	0.5634	0.5774	-2.5	106	0.00
42	T	Carbon Tetrachloride	0.4593	0.5056	-10.1	114	0.00
43	S	1,2-Dichloroethane-d4	0.2880	0.3128	-8.6	111	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.3505	0.3737	-6.6	108	0.00
46	T	Benzene	1.0269	1.0178	0.9	103	0.00
47	T	Trichloroethene	0.2739	0.2797	-2.1	107	0.00
48	T	Methylcyclohexane	0.4161	0.4206	-1.1	108	0.00
49	C	1,2-Dichloropropane	0.2286	0.2156	5.7	100	0.00
50	T	Bromodichloromethane	0.4018	0.4223	-5.1	105	0.00
51	T	1,4-Dioxane	0.0012	0.0011	3.5	96	0.00
52	T	Dibromomethane	0.1353	0.1287	4.9	100	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0983	0.0848	13.7	85	0.00
54	T	4-Methyl-2-Pentanone	0.0401	0.0365	9.2	91	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061316\8M412945.D Vial: 3
Acq On : 13 Jun 2016 15:04 Operator: TMB
Sample : WG572492-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4090	0.4196	-2.6	102	0.00
56	T	Dimethyl Disulfide	0.2183	0.2252	-3.2	107	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	107	0.00
58	S	Toluene-d8	1.3084	1.3856	-5.9	111	0.00
59	C	Toluene	1.5520	1.5365	1.0	106	0.00
60	T	Ethyl Methacrylate	0.2981	0.2979	0.1	101	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.5201	0.5327	-2.4	103	0.00
63	T	1,1,2-Trichloroethane	0.2449	0.2292	6.4	99	0.00
64	T	2-Hexanone	0.0515	0.0460	10.5	93	0.00
65	T	1,3-Dichloropropane	0.4360	0.4148	4.9	98	0.00
66	T	Tetrachloroethene	0.3325	0.3452	-3.8	114	0.00
67	T	Dibromochloromethane	0.3576	0.3642	-1.9	105	0.00
68	T	1,2-Dibromoethane	0.2441	0.2362	3.2	100	0.00
69	T	1-Chlorohexane	0.5298	0.5277	0.4	109	0.00
70	P	Chlorobenzene	1.0466	1.0310	1.5	106	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4055	0.4180	-3.1	108	0.00
72	C	Ethylbenzene	0.5726	0.5541	3.2	106	0.00
73	T	m-,p-Xylene	0.6716	0.6691	0.4	107	0.00
74	T	o-Xylene	0.6566	0.6440	1.9	105	0.00
75	T	Styrene	1.0770	1.1030	-2.4	105	0.00
76	P	Bromoform	0.2121	0.2226	-5.0	108	0.00
77	T	Isopropylbenzene	1.7444	1.7756	-1.8	107	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	113	0.00
79	P	1,1,2,2-Tetrachloroethane	0.5018	0.4416	12.0	97	0.00
80	S	p-Bromofluorobenzene	1.0352	1.0228	1.2	113	0.00
81	T	1,2,3-Trichloropropane	0.1545	0.1419	8.2	103	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1376	0.1464	-6.4	109	0.00
83	T	n-Propylbenzene	3.9003	3.7553	3.7	107	0.00
84	T	Bromobenzene	0.8022	0.7825	2.5	110	0.00
85	T	1,3,5-Trimethylbenzene	2.8411	2.7824	2.1	109	0.00
86	T	2-Chlorotoluene	2.7231	2.5916	4.8	104	0.00
87	T	4-Chlorotoluene	2.4597	2.3160	5.8	112	0.00
88	T	a-Methylstyrene	1.3479	1.2841	4.7	108	0.00
89	T	tert-Butylbenzene	0.5558	0.5171	7.0	109	0.00
90	T	1,2,4-Trimethylbenzene	2.9214	2.8319	3.1	109	0.00
91	T	sec-Butylbenzene	3.3424	3.2064	4.1	108	0.00
92	T	p-Isopropyltoluene	2.8379	2.7404	3.4	110	0.00
93	T	1,3-Dichlorobenzene	1.5448	1.4996	2.9	110	0.00
94	T	1,4-Dichlorobenzene	1.5574	1.4752	5.3	110	0.00
95	T	n-Butylbenzene	2.8056	2.6546	5.4	107	0.00
96	T	1,2-Dichlorobenzene	1.3739	1.2925	5.9	109	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1007	0.0923	8.4	100	0.00
98	T	1,2,4-Trichlorobenzene	1.0269	0.9873	3.9	110	0.00
99	T	Hexachlorobutadiene	0.4798	0.4718	1.7	116	0.00
100	T	Naphthalene	1.5257	1.3875	9.1	101	0.00
101	T	1,2,3-Trichlorobenzene	0.8664	0.7982	7.9	109	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412945.D 8260WT.M Mon Jun 13 15:50:26 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061316\8M412945.D Vial: 3
Acq On : 13 Jun 2016 15:04 Operator: TMB
Sample : WG572492-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	105	0.00
2	T	Dichlorodifluoromethane	50.0000	54.1545	-8.3	108	0.00
3	P	Chloromethane	50.0000	47.2223	5.6	101	0.00
4	C	Vinyl Chloride	50.0000	52.4818	-5.0	109	0.00
5	T	1,3-Butadiene	50.0000	57.8690	-15.7	117	0.00
6	T	Bromomethane	50.0000	35.6110	28.8#	77	0.00
7	T	Chloroethane	50.0000	48.1859	3.6	103	0.00
8	T	Trichlorofluoromethane	50.0000	54.1332	-8.3	114	0.00
9	T	Diethyl ether	100.0000	96.5469	3.5	104	0.00
10	T	Isoprene	50.0000	48.3015	3.4	104	0.00
11	T	Acrolein	50.0000	48.1176	3.8	102	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	50.2561	-0.5	107	0.00
13	T	Acetone	50.0000	51.0349	-2.1	102	0.00
14	C	1,1-Dichloroethene	50.0000	50.2142	-0.4	107	0.00
15	T	Tert-Butyl Alcohol	200.0000	202.1825	-1.1	107	0.00
16	T	Dimethyl Sulfide	50.0000	45.9149	8.2	98	0.00
17	T	Iodomethane	50.0000	34.5051	31.0#	77	0.00
18	T	Methyl acetate	50.0000	43.2075	13.6	93	0.00
19	T	Methylene Chloride	50.0000	47.9513	4.1	103	0.00
20	T	Carbon Disulfide	50.0000	50.7347	-1.5	110	0.00
21	T	Acrylonitrile	50.0000	48.7996	2.4	97	0.00
22	T	Methyl Tert Butyl Ether	50.0000	50.6341	-1.3	102	0.00
23	T	trans-1,2-Dichloroethene	50.0000	49.6841	0.6	105	0.00
24	T	n-Hexane	50.0000	50.9054	-1.8	109	0.00
25	T	Diisopropyl ether	100.0000	96.1195	3.9	102	0.00
26	T	Vinyl Acetate	50.0000	52.1341	-4.3	105	0.00
27	P	1,1-Dichloroethane	50.0000	49.6423	0.7	103	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	102.0323	-2.0	105	0.00
29	T	2-Butanone	50.0000	43.5267	12.9	88	0.00
30	T	Propionitrile	100.0000	92.7348	7.3	95	0.00
31	T	2,2-Dichloropropane	50.0000	57.8220	-15.6	119	0.00
32	T	cis-1,2-Dichloroethene	50.0000	49.5023	1.0	105	0.00
33	C	Chloroform	50.0000	51.1996	-2.4	107	0.00
34		1-Bromopropane	50.0000	54.9004	-9.8	116	0.00
35	T	Bromochloromethane	50.0000	50.5973	-1.2	105	0.00
36	T	Tetrahydrofuran	100.0000	84.9066	15.1	95	0.00
37	S	Dibromofluoromethane	25.0000	26.3480	-5.4	109	0.00
38	T	1,1,1-Trichloroethane	50.0000	54.5089	-9.0	112	0.00
39	T	Cyclohexane	50.0000	48.4485	3.1	105	0.00
40	T	1,1-Dichloropropene	50.0000	50.1514	-0.3	105	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	102.4957	-2.5	106	0.00
42	T	Carbon Tetrachloride	50.0000	55.0326	-10.1	114	0.00
43	S	1,2-Dichloroethane-d4	25.0000	27.1499	-8.6	111	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	53.3109	-6.6	108	0.00
46	T	Benzene	50.0000	49.5533	0.9	103	0.00
47	T	Trichloroethene	50.0000	51.0646	-2.1	107	0.00
48	T	Methylcyclohexane	50.0000	50.5436	-1.1	108	0.00
49	C	1,2-Dichloropropane	50.0000	47.1589	5.7	100	0.00
50	T	Bromodichloromethane	50.0000	52.5535	-5.1	105	0.00
51	T	1,4-Dioxane	200.0000	193.9861	3.0	96	0.00
52	T	Dibromomethane	50.0000	47.5472	4.9	100	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	43.1301	13.7	85	0.00
54	T	4-Methyl-2-Pentanone	50.0000	45.4154	9.2	91	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061316\8M412945.D Vial: 3
Acq On : 13 Jun 2016 15:04 Operator: TMB
Sample : WG572492-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	51.2955	-2.6	102	0.00
56	T	Dimethyl Disulfide	50.0000	51.5741	-3.1	107	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	107	0.00
58	S	Toluene-d8	25.0000	26.4744	-5.9	111	0.00
59	C	Toluene	50.0000	49.4993	1.0	106	0.00
60	T	Ethyl Methacrylate	50.0000	49.9744	0.1	101	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	51.2124	-2.4	103	0.00
63	T	1,1,2-Trichloroethane	50.0000	46.7874	6.4	99	0.00
64	T	2-Hexanone	50.0000	44.7315	10.5	93	0.00
65	T	1,3-Dichloropropane	50.0000	47.5633	4.9	98	0.00
66	T	Tetrachloroethene	50.0000	51.9050	-3.8	114	0.00
67	T	Dibromochloromethane	50.0000	50.9286	-1.9	105	0.00
68	T	1,2-Dibromoethane	50.0000	48.3755	3.2	100	0.00
69	T	1-Chlorohexane	50.0000	49.8026	0.4	109	0.00
70	P	Chlorobenzene	50.0000	49.2558	1.5	106	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	51.5526	-3.1	108	0.00
72	C	Ethylbenzene	50.0000	48.3797	3.2	106	0.00
73	T	m-,p-Xylene	100.0000	99.6187	0.4	107	0.00
74	T	o-Xylene	50.0000	49.0389	1.9	105	0.00
75	T	Styrene	50.0000	51.2047	-2.4	105	0.00
76	P	Bromoform	50.0000	52.4777	-5.0	108	0.00
77	T	Isopropylbenzene	50.0000	50.8928	-1.8	107	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	113	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	43.9952	12.0	97	0.00
80	S	p-Bromofluorobenzene	25.0000	24.7008	1.2	113	0.00
81	T	1,2,3-Trichloropropane	50.0000	45.8977	8.2	103	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	46.5088	7.0	109	0.00
83	T	n-Propylbenzene	50.0000	48.1416	3.7	107	0.00
84	T	Bromobenzene	50.0000	48.7697	2.5	110	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	48.9672	2.1	109	0.00
86	T	2-Chlorotoluene	50.0000	47.5864	4.8	104	0.00
87	T	4-Chlorotoluene	50.0000	47.0776	5.8	112	0.00
88	T	a-Methylstyrene	50.0000	47.6304	4.7	108	0.00
89	T	tert-Butylbenzene	50.0000	46.5179	7.0	109	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	48.4682	3.1	109	0.00
91	T	sec-Butylbenzene	50.0000	47.9659	4.1	108	0.00
92	T	p-Isopropyltoluene	50.0000	48.2822	3.4	110	0.00
93	T	1,3-Dichlorobenzene	50.0000	48.5379	2.9	110	0.00
94	T	1,4-Dichlorobenzene	50.0000	47.3614	5.3	110	0.00
95	T	n-Butylbenzene	50.0000	47.3090	5.4	107	0.00
96	T	1,2-Dichlorobenzene	50.0000	47.0393	5.9	109	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	45.8020	8.4	100	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	48.0679	3.9	110	0.00
99	T	Hexachlorobutadiene	50.0000	49.1654	1.7	116	0.00
100	T	Naphthalene	50.0000	45.4698	9.1	101	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	46.0648	7.9	109	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412945.D 8260WT.M Mon Jun 13 15:50:29 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412972.D Vial: 2
Acq On : 14 Jun 2016 9:57 Operator: TMB
Sample : WG572591-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 10:26:09 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	861783	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	616369	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	340859	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	242870	26.2303 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.92%		
43) 1,2-Dichloroethane-d4	10.31	65	251186	25.3005 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.20%		
58) Toluene-d8	12.68	98	847007	26.2574 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.04%		
80) p-Bromofluorobenzene	16.07	95	350285	24.8183 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.28%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	798613	55.2727 ug/L	100
3) Chloromethane	3.62	50	428071	50.7556 ug/L	99
4) Vinyl Chloride	3.84	62	558202	55.7845 ug/L	98
5) 1,3-Butadiene	3.88	54	505989	60.2981 ug/L	98
6) Bromomethane	4.74	94	245244	40.9046 ug/L	98
7) Chloroethane	4.89	64	283366	51.4650 ug/L	98
8) Trichlorofluoromethane	5.38	101	1026292	55.1205 ug/L	100
9) Diethyl ether	5.90	59	414376	93.2231 ug/L	98
10) Isoprene	5.95	67	577409	51.0677 ug/L	97
11) Acrolein	6.14	56	18807	47.2559 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	458778	52.4197 ug/L	97
13) Acetone	6.23	43	47365	48.8507 ug/L	99
14) 1,1-Dichloroethene	6.46	61	736122	52.8248 ug/L	99
15) Tert-Butyl Alcohol	6.57	59	58103	186.9998 ug/L	97
16) Dimethyl Sulfide	6.73	62	239775	48.1228 ug/L	99
17) Iodomethane	6.98	142	145756	38.4711 ug/L	99
18) Methyl acetate	6.99	43	111199	42.4282 ug/L	98
19) Methylene Chloride	7.25	84	437021	49.2801 ug/L	99
20) Carbon Disulfide	7.29	76	1550127	53.1559 ug/L	99
21) Acrylonitrile	7.43	53	58565	46.5533 ug/L	98
22) Methyl Tert Butyl Ether	7.45	73	912498	47.5428 ug/L	100
23) trans-1,2-Dichloroethene	7.70	61	667300	52.1233 ug/L	99
24) n-Hexane	7.79	57	514876	54.1603 ug/L	100
25) Diisopropyl ether	8.13	45	1924583	96.4418 ug/L	98
26) Vinyl Acetate	8.29	43	443221	48.5092 ug/L	99
27) 1,1-Dichloroethane	8.32	63	825688	51.9326 ug/L	100
28) Ethyl-Tert-Butyl ether	8.71	59	2092484	97.8660 ug/L	99
29) 2-Butanone	8.88	43	63966	44.9025 ug/L	94
30) Propionitrile	8.98	54	38422	92.5520 ug/L	97
31) 2,2-Dichloropropane	9.10	77	980311	58.5088 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	507409	51.2941 ug/L	99
33) Chloroform	9.38	83	988608	52.6617 ug/L	100
34) 1-Bromopropane	9.51	122	79530	56.1284 ug/L	99
35) Bromochloromethane	9.60	130	256291	50.5240 ug/L	95
36) Tetrahydrofuran	9.64	42	86242	91.9173 ug/L	98
38) 1,1,1-Trichloroethane	9.90	97	981797	55.0584 ug/L	99
39) Cyclohexane	9.93	56	636037	51.5196 ug/L	99
40) 1,1-Dichloropropene	10.10	75	719276	52.9198 ug/L	100
41) Tert-Amyl-Methyl ether	10.21	73	1851012	95.3177 ug/L	100
42) Carbon Tetrachloride	10.25	117	873387	55.1571 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412972.D Vial: 2
Acq On : 14 Jun 2016 9:57 Operator: TMB
Sample : WG572591-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 10:26:09 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	618514	51.1897	ug/L		100
46)	Benzene	10.46	78	1825183	51.5591	ug/L		100
47)	Trichloroethene	11.22	130	497804	52.7250	ug/L		99
48)	Methylcyclohexane	11.30	83	761741	53.1075	ug/L		100
49)	1,2-Dichloropropane	11.42	63	380220	48.2489	ug/L		94
50)	Bromodichloromethane	11.72	83	720670	52.0320	ug/L		99
51)	1,4-Dioxane	11.71	88	8814	222.6574	ug/L		95
52)	Dibromomethane	11.81	93	218153	46.7657	ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	144000	42.5146	ug/L		99
54)	4-Methyl-2-Pentanone	12.05	58	58549	42.3174	ug/L		90
55)	cis-1,3-Dichloropropene	12.36	75	727888	51.6311	ug/L		99
56)	Dimethyl Disulfide	12.62	79	378256	50.2696	ug/L		98
59)	Toluene	12.79	91	1930265	50.4444	ug/L		100
60)	Ethyl Methacrylate	12.88	69	340395	46.3206	ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	629873	49.1191	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	272077	45.0599	ug/L		98
64)	2-Hexanone	13.11	58	54357	42.8392	ug/L	#	99
65)	1,3-Dichloropropane	13.48	76	494316	45.9818	ug/L		97
66)	Tetrachloroethene	13.60	164	434076	52.9471	ug/L		96
67)	Dibromochloromethane	13.86	129	433382	49.1561	ug/L		99
68)	1,2-Dibromoethane	14.12	107	277686	46.1442	ug/L		99
69)	1-Chlorohexane	14.21	91	680020	52.0613	ug/L		99
70)	Chlorobenzene	14.63	112	1291687	50.0589	ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.66	131	507206	50.7380	ug/L		99
72)	Ethylbenzene	14.66	106	698553	49.4805	ug/L		100
73)	m-,p-Xylene	14.74	106	1682573	101.6088	ug/L		99
74)	o-Xylene	15.31	106	810112	50.0390	ug/L		99
75)	Styrene	15.34	104	1359728	51.2071	ug/L		98
76)	Bromoform	15.84	173	258049	49.3460	ug/L		98
77)	Isopropylbenzene	15.73	105	2213293	51.4619	ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	285787	41.7690	ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	91103	43.2395	ug/L		91
82)	trans-1,4-Dichloro-2-Buten	16.19	53	94527	44.0888	ug/L		84
83)	n-Propylbenzene	16.24	91	2617527	49.2222	ug/L		99
84)	Bromobenzene	16.36	156	528110	48.2819	ug/L		96
85)	1,3,5-Trimethylbenzene	16.43	105	1946688	50.2543	ug/L		100
86)	2-Chlorotoluene	16.51	91	1655446	44.5882	ug/L		91
87)	4-Chlorotoluene	16.56	91	1778320	53.0260	ug/L		93
88)	a-Methylstyrene	16.83	118	891593	48.5135	ug/L		100
89)	tert-Butylbenzene	16.89	134	370571	48.8989	ug/L		97
90)	1,2,4-Trimethylbenzene	16.94	105	1975877	49.6057	ug/L		100
91)	sec-Butylbenzene	17.16	105	2246426	49.2950	ug/L		99
92)	p-Isopropyltoluene	17.32	119	1907014	49.2852	ug/L		98
93)	1,3-Dichlorobenzene	17.51	146	1036948	49.2337	ug/L		98
94)	1,4-Dichlorobenzene	17.65	146	1013800	47.7443	ug/L		98
95)	n-Butylbenzene	17.84	91	1863249	48.7090	ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	874543	46.6867	ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.13	75	56505	41.1417	ug/L		96
98)	1,2,4-Trichlorobenzene	20.28	180	673192	48.0792	ug/L		100
99)	Hexachlorobutadiene	20.43	225	339363	51.8734	ug/L		99
100)	Naphthalene	20.64	128	885979	42.5898	ug/L		99
101)	1,2,3-Trichlorobenzene	20.95	180	529902	44.8588	ug/L		98

(#) = qualifier out of range (m) = manual integration
8M412972.D 8260WT.M Tue Jun 14 10:26:12 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412972.D Vial: 2
Acq On : 14 Jun 2016 9:57 Operator: TMB
Sample : WG572591-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 10:26 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

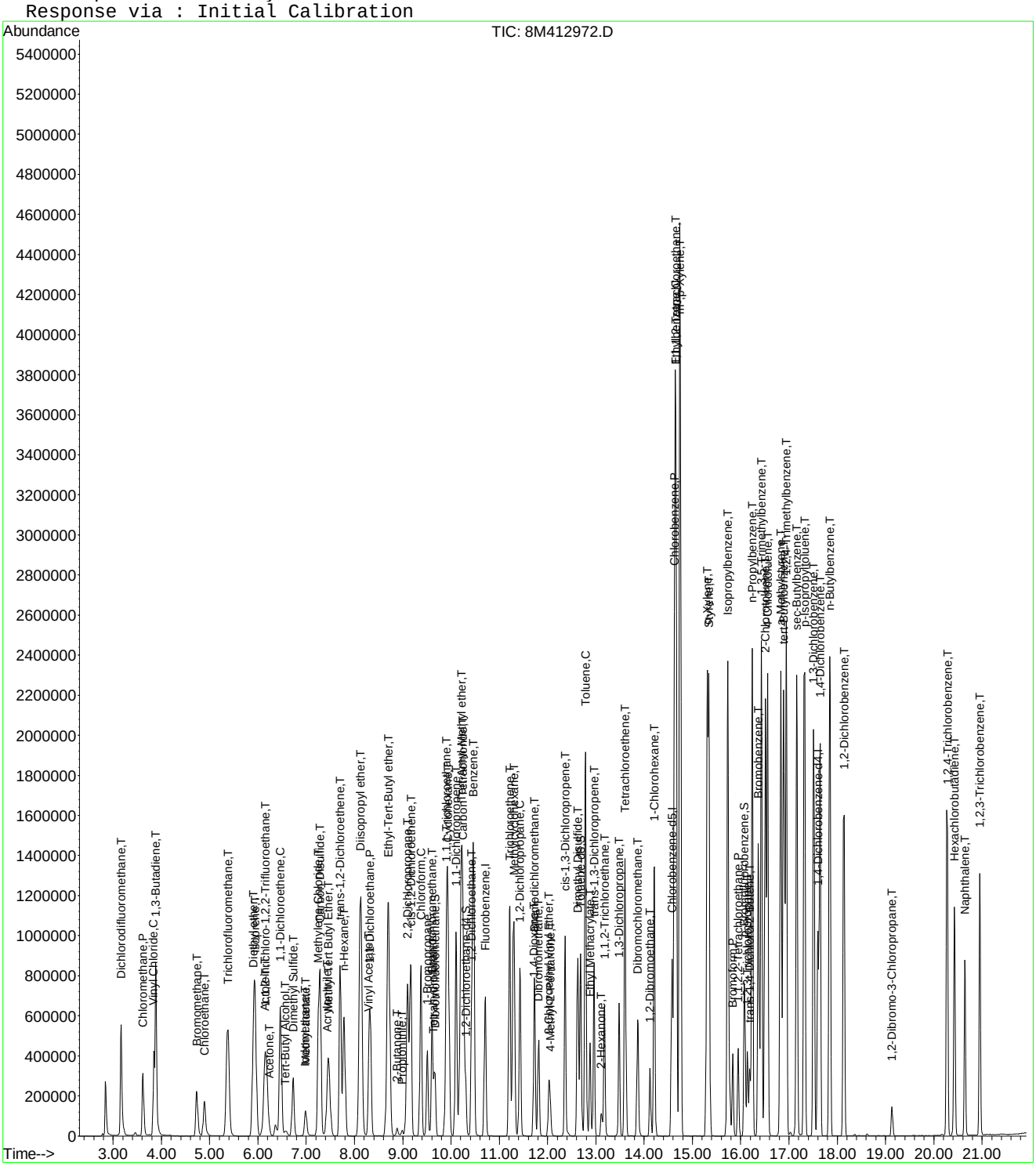

8M412972.D 8260WT.M Tue Jun 14 10:26:13 2016 Page 3

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412972.D Vial: 2
Acq On : 14 Jun 2016 9:57 Operator: TMB
Sample : WG572591-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	111	0.00
2	T	Dichlorodifluoromethane	0.4192	0.4633	-10.5	117	0.00
3	P	Chloromethane	0.2447	0.2484	-1.5	115	0.00
4	C	Vinyl Chloride	0.2903	0.3239	-11.6	123	-0.01
5	T	1,3-Butadiene	0.2434	0.2936	-20.6	130	0.00
6	T	Bromomethane	0.1654	0.1423	14.0	94	0.00
7	T	Chloroethane	0.1597	0.1644	-2.9	116	0.00
8	T	Trichlorofluoromethane	0.5401	0.5955	-10.2	123	0.00
9	T	Diethyl ether	0.1290	0.1202	6.8	106	0.00
10	T	Isoprene	0.3280	0.3350	-2.1	116	0.01
11	T	Acrolein	0.0116	0.0109	5.5	107	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2539	0.2662	-4.8	118	0.00
13	T	Acetone	0.0281	0.0275	2.3	103	-0.01
14	C	1,1-Dichloroethene	0.4043	0.4271	-5.6	119	0.00
15	T	Tert-Butyl Alcohol	0.0090	0.0084	6.4	105	-0.01
16	T	Dimethyl Sulfide	0.1445	0.1391	3.7	108	0.00
17	T	Iodomethane	0.0866	0.0846	2.3	92	0.00
18	T	Methyl acetate	0.0760	0.0645	15.1	97	-0.01
19	T	Methylene Chloride	0.2573	0.2536	1.4	112	0.00
20	T	Carbon Disulfide	0.8460	0.8994	-6.3	122	0.00
21	T	Acrylonitrile	0.0365	0.0340	6.9	98	0.00
22	T	Methyl Tert Butyl Ether	0.5568	0.5294	4.9	101	-0.01
23	T	trans-1,2-Dichloroethene	0.3714	0.3872	-4.2	117	0.00
24	T	n-Hexane	0.2758	0.2987	-8.3	123	0.00
25	T	Diisopropyl ether	0.5789	0.5583	3.6	108	0.00
26	T	Vinyl Acetate	0.2651	0.2571	3.0	103	0.00
27	P	1,1-Dichloroethane	0.4612	0.4791	-3.9	114	0.00
28	T	Ethyl-Tert-Butyl ether	0.6203	0.6070	2.1	107	0.00
29	T	2-Butanone	0.0413	0.0371	10.2	96	0.00
30	T	Propionitrile	0.0120	0.0112	7.4	100	0.00
31	T	2,2-Dichloropropane	0.4860	0.5688	-17.0	128	0.00
32	T	cis-1,2-Dichloroethene	0.2870	0.2944	-2.6	115	0.00
33	C	Chloroform	0.5446	0.5736	-5.3	117	0.00
34		1-Bromopropane	0.0411	0.0461	-12.3	125	0.00
35	T	Bromochloromethane	0.1472	0.1487	-1.0	111	0.00
36	T	Tetrahydrofuran	0.0272	0.0250	8.1	109	0.00
37	S	Dibromofluoromethane	0.2686	0.2818	-4.9	115	0.00
38	T	1,1,1-Trichloroethane	0.5173	0.5696	-10.1	120	0.00
39	T	Cyclohexane	0.3581	0.3690	-3.0	119	0.00
40	T	1,1-Dichloropropene	0.3943	0.4173	-5.8	117	0.00
41	T	Tert-Amyl-Methyl ether	0.5634	0.5370	4.7	105	0.00
42	T	Carbon Tetrachloride	0.4593	0.5067	-10.3	121	0.00
43	S	1,2-Dichloroethane-d4	0.2880	0.2915	-1.2	110	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.3505	0.3589	-2.4	110	0.00
46	T	Benzene	1.0269	1.0590	-3.1	114	0.00
47	T	Trichloroethene	0.2739	0.2888	-5.5	117	0.00
48	T	Methylcyclohexane	0.4161	0.4420	-6.2	120	0.00
49	C	1,2-Dichloropropane	0.2286	0.2206	3.5	108	0.00
50	T	Bromodichloromethane	0.4018	0.4181	-4.1	110	0.00
51	T	1,4-Dioxane	0.0012	0.0013	-11.3	116	0.00
52	T	Dibromomethane	0.1353	0.1266	6.5	104	-0.01
53	T	2-Chloroethyl Vinyl Ether	0.0983	0.0835	15.0	89	0.00
54	T	4-Methyl-2-Pentanone	0.0401	0.0340	15.4	90	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412972.D Vial: 2
Acq On : 14 Jun 2016 9:57 Operator: TMB
Sample : WG572591-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4090	0.4223	-3.3	109	0.00
56	T	Dimethyl Disulfide	0.2183	0.2195	-0.5	110	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	114	0.00
58	S	Toluene-d8	1.3084	1.3742	-5.0	118	0.00
59	C	Toluene	1.5520	1.5658	-0.9	115	0.00
60	T	Ethyl Methacrylate	0.2981	0.2761	7.4	100	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.5201	0.5110	1.8	106	0.00
63	T	1,1,2-Trichloroethane	0.2449	0.2207	9.9	101	0.00
64	T	2-Hexanone	0.0515	0.0441	14.3	96	-0.01
65	T	1,3-Dichloropropane	0.4360	0.4010	8.0	101	0.00
66	T	Tetrachloroethene	0.3325	0.3521	-5.9	124	0.00
67	T	Dibromochloromethane	0.3576	0.3516	1.7	108	0.00
68	T	1,2-Dibromoethane	0.2441	0.2253	7.7	102	0.00
69	T	1-Chlorohexane	0.5298	0.5516	-4.1	121	0.00
70	P	Chlorobenzene	1.0466	1.0478	-0.1	116	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4055	0.4114	-1.5	113	0.00
72	C	Ethylbenzene	0.5726	0.5667	1.0	116	0.00
73	T	m-,p-Xylene	0.6716	0.6825	-1.6	117	0.00
74	T	o-Xylene	0.6566	0.6572	-0.1	114	0.00
75	T	Styrene	1.0770	1.1030	-2.4	112	0.00
76	P	Bromoform	0.2121	0.2093	1.3	108	0.00
77	T	Isopropylbenzene	1.7444	1.7954	-2.9	115	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	118	0.00
79	P	1,1,2,2-Tetrachloroethane	0.5018	0.4192	16.5	97	0.00
80	S	p-Bromofluorobenzene	1.0352	1.0277	0.7	120	0.00
81	T	1,2,3-Trichloropropane	0.1545	0.1336	13.5	102	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1376	0.1387	-0.8	109	0.00
83	T	n-Propylbenzene	3.9003	3.8396	1.6	115	0.00
84	T	Bromobenzene	0.8022	0.7747	3.4	115	-0.01
85	T	1,3,5-Trimethylbenzene	2.8411	2.8556	-0.5	117	0.00
86	T	2-Chlorotoluene	2.7231	2.4283	10.8	103	0.00
87	T	4-Chlorotoluene	2.4597	2.6086	-6.1	133	0.00
88	T	a-Methylstyrene	1.3479	1.3079	3.0	115	0.00
89	T	tert-Butylbenzene	0.5558	0.5436	2.2	121	0.00
90	T	1,2,4-Trimethylbenzene	2.9214	2.8984	0.8	118	0.00
91	T	sec-Butylbenzene	3.3424	3.2952	1.4	117	0.00
92	T	p-Isopropyltoluene	2.8379	2.7974	1.4	118	0.00
93	T	1,3-Dichlorobenzene	1.5448	1.5211	1.5	117	0.00
94	T	1,4-Dichlorobenzene	1.5574	1.4871	4.5	116	0.00
95	T	n-Butylbenzene	2.8056	2.7332	2.6	116	-0.01
96	T	1,2-Dichlorobenzene	1.3739	1.2829	6.6	114	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1007	0.0829	17.7	95	0.00
98	T	1,2,4-Trichlorobenzene	1.0269	0.9875	3.8	115	0.00
99	T	Hexachlorobutadiene	0.4798	0.4978	-3.7	128	-0.01
100	T	Naphthalene	1.5257	1.2996	14.8	99	-0.01
101	T	1,2,3-Trichlorobenzene	0.8664	0.7773	10.3	112	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412972.D 8260WT.M Tue Jun 14 10:26:19 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412972.D Vial: 2
Acq On : 14 Jun 2016 9:57 Operator: TMB
Sample : WG572591-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	111	0.00
2	T	Dichlorodifluoromethane	50.0000	55.2727	-10.5	117	0.00
3	P	Chloromethane	50.0000	50.7556	-1.5	115	0.00
4	C	Vinyl Chloride	50.0000	55.7845	-11.6	123	-0.01
5	T	1,3-Butadiene	50.0000	60.2981	-20.6	130	0.00
6	T	Bromomethane	50.0000	40.9046	18.2	94	0.00
7	T	Chloroethane	50.0000	51.4650	-2.9	116	0.00
8	T	Trichlorofluoromethane	50.0000	55.1205	-10.2	123	0.00
9	T	Diethyl ether	100.0000	93.2231	6.8	106	0.00
10	T	Isoprene	50.0000	51.0677	-2.1	116	0.01
11	T	Acrolein	50.0000	47.2559	5.5	107	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	52.4196	-4.8	118	0.00
13	T	Acetone	50.0000	48.8507	2.3	103	-0.01
14	C	1,1-Dichloroethene	50.0000	52.8248	-5.6	119	0.00
15	T	Tert-Butyl Alcohol	200.0000	186.9998	6.5	105	-0.01
16	T	Dimethyl Sulfide	50.0000	48.1228	3.8	108	0.00
17	T	Iodomethane	50.0000	38.4711	23.1	92	0.00
18	T	Methyl acetate	50.0000	42.4282	15.1	97	-0.01
19	T	Methylene Chloride	50.0000	49.2801	1.4	112	0.00
20	T	Carbon Disulfide	50.0000	53.1559	-6.3	122	0.00
21	T	Acrylonitrile	50.0000	46.5532	6.9	98	0.00
22	T	Methyl Tert Butyl Ether	50.0000	47.5428	4.9	101	-0.01
23	T	trans-1,2-Dichloroethene	50.0000	52.1233	-4.2	117	0.00
24	T	n-Hexane	50.0000	54.1603	-8.3	123	0.00
25	T	Diisopropyl ether	100.0000	96.4418	3.6	108	0.00
26	T	Vinyl Acetate	50.0000	48.5092	3.0	103	0.00
27	P	1,1-Dichloroethane	50.0000	51.9326	-3.9	114	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	97.8660	2.1	107	0.00
29	T	2-Butanone	50.0000	44.9025	10.2	96	0.00
30	T	Propionitrile	100.0000	92.5520	7.4	100	0.00
31	T	2,2-Dichloropropane	50.0000	58.5088	-17.0	128	0.00
32	T	cis-1,2-Dichloroethene	50.0000	51.2941	-2.6	115	0.00
33	C	Chloroform	50.0000	52.6617	-5.3	117	0.00
34		1-Bromopropane	50.0000	56.1284	-12.3	125	0.00
35	T	Bromochloromethane	50.0000	50.5240	-1.0	111	0.00
36	T	Tetrahydrofuran	100.0000	91.9173	8.1	109	0.00
37	S	Dibromofluoromethane	25.0000	26.2303	-4.9	115	0.00
38	T	1,1,1-Trichloroethane	50.0000	55.0584	-10.1	120	0.00
39	T	Cyclohexane	50.0000	51.5196	-3.0	119	0.00
40	T	1,1-Dichloropropene	50.0000	52.9198	-5.8	117	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	95.3178	4.7	105	0.00
42	T	Carbon Tetrachloride	50.0000	55.1571	-10.3	121	0.00
43	S	1,2-Dichloroethane-d4	25.0000	25.3005	-1.2	110	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	51.1897	-2.4	110	0.00
46	T	Benzene	50.0000	51.5591	-3.1	114	0.00
47	T	Trichloroethene	50.0000	52.7250	-5.5	117	0.00
48	T	Methylcyclohexane	50.0000	53.1075	-6.2	120	0.00
49	C	1,2-Dichloropropane	50.0000	48.2489	3.5	108	0.00
50	T	Bromodichloromethane	50.0000	52.0320	-4.1	110	0.00
51	T	1,4-Dioxane	200.0000	222.6574	-11.3	116	0.00
52	T	Dibromomethane	50.0000	46.7657	6.5	104	-0.01
53	T	2-Chloroethyl Vinyl Ether	50.0000	42.5146	15.0	89	0.00
54	T	4-Methyl-2-Pentanone	50.0000	42.3174	15.4	90	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412972.D Vial: 2
Acq On : 14 Jun 2016 9:57 Operator: TMB
Sample : WG572591-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	51.6311	-3.3	109	0.00
56	T	Dimethyl Disulfide	50.0000	50.2696	-0.5	110	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	114	0.00
58	S	Toluene-d8	25.0000	26.2573	-5.0	118	0.00
59	C	Toluene	50.0000	50.4444	-0.9	115	0.00
60	T	Ethyl Methacrylate	50.0000	46.3206	7.4	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	49.1191	1.8	106	0.00
63	T	1,1,2-Trichloroethane	50.0000	45.0599	9.9	101	0.00
64	T	2-Hexanone	50.0000	42.8392	14.3	96	-0.01
65	T	1,3-Dichloropropane	50.0000	45.9818	8.0	101	0.00
66	T	Tetrachloroethene	50.0000	52.9471	-5.9	124	0.00
67	T	Dibromochloromethane	50.0000	49.1561	1.7	108	0.00
68	T	1,2-Dibromoethane	50.0000	46.1442	7.7	102	0.00
69	T	1-Chlorohexane	50.0000	52.0613	-4.1	121	0.00
70	P	Chlorobenzene	50.0000	50.0589	-0.1	116	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	50.7380	-1.5	113	0.00
72	C	Ethylbenzene	50.0000	49.4805	1.0	116	0.00
73	T	m-,p-Xylene	100.0000	101.6088	-1.6	117	0.00
74	T	o-Xylene	50.0000	50.0391	-0.1	114	0.00
75	T	Styrene	50.0000	51.2071	-2.4	112	0.00
76	P	Bromoform	50.0000	49.3460	1.3	108	0.00
77	T	Isopropylbenzene	50.0000	51.4619	-2.9	115	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	118	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	41.7690	16.5	97	0.00
80	S	p-Bromofluorobenzene	25.0000	24.8183	0.7	120	0.00
81	T	1,2,3-Trichloropropane	50.0000	43.2396	13.5	102	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	44.0888	11.8	109	0.00
83	T	n-Propylbenzene	50.0000	49.2222	1.6	115	0.00
84	T	Bromobenzene	50.0000	48.2819	3.4	115	-0.01
85	T	1,3,5-Trimethylbenzene	50.0000	50.2543	-0.5	117	0.00
86	T	2-Chlorotoluene	50.0000	44.5882	10.8	103	0.00
87	T	4-Chlorotoluene	50.0000	53.0260	-6.1	133	0.00
88	T	a-Methylstyrene	50.0000	48.5135	3.0	115	0.00
89	T	tert-Butylbenzene	50.0000	48.8989	2.2	121	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	49.6057	0.8	118	0.00
91	T	sec-Butylbenzene	50.0000	49.2950	1.4	117	0.00
92	T	p-Isopropyltoluene	50.0000	49.2852	1.4	118	0.00
93	T	1,3-Dichlorobenzene	50.0000	49.2338	1.5	117	0.00
94	T	1,4-Dichlorobenzene	50.0000	47.7443	4.5	116	0.00
95	T	n-Butylbenzene	50.0000	48.7090	2.6	116	-0.01
96	T	1,2-Dichlorobenzene	50.0000	46.6867	6.6	114	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	41.1417	17.7	95	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	48.0792	3.8	115	0.00
99	T	Hexachlorobutadiene	50.0000	51.8734	-3.7	128	-0.01
100	T	Naphthalene	50.0000	42.5898	14.8	99	-0.01
101	T	1,2,3-Trichlorobenzene	50.0000	44.8588	10.3	112	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412972.D 8260WT.M Tue Jun 14 10:26:22 2016 Page 2

2.1.1.5 Raw QC Data

BFB

Data File : C:\MSDCHEM\2\DATA\051316\8M412218.D Vial: 3
Acq On : 13 May 2016 12:36 Operator: TMB
Sample : WG568561-01 50ng BFB STD 8260 Inst : HPMS8
Misc : 1,1 STD76034 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title : SOP:OVL MSV01

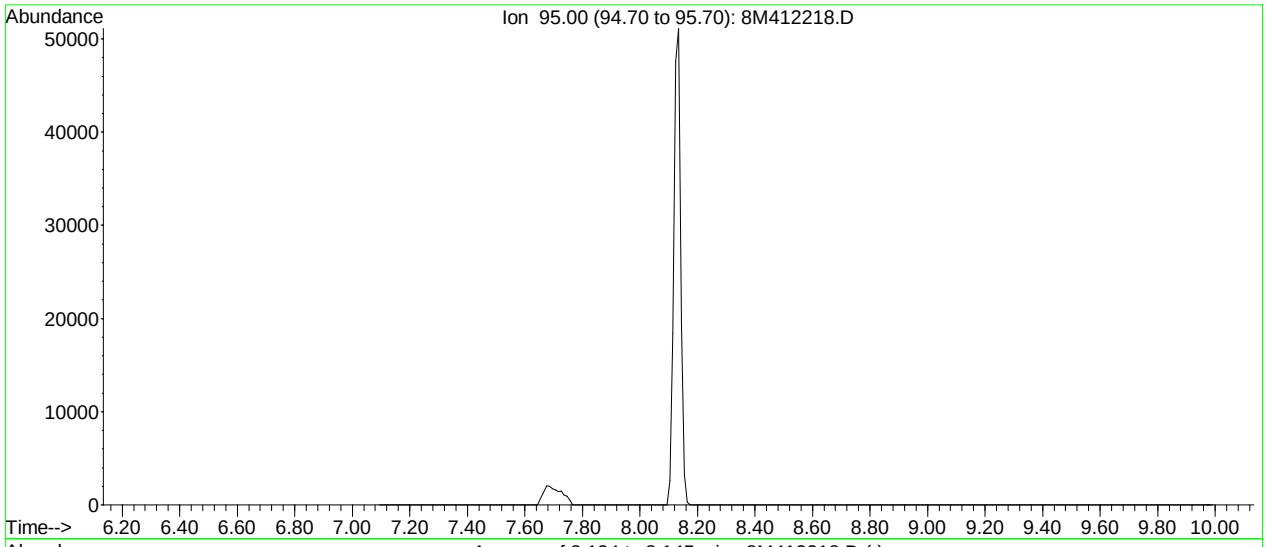

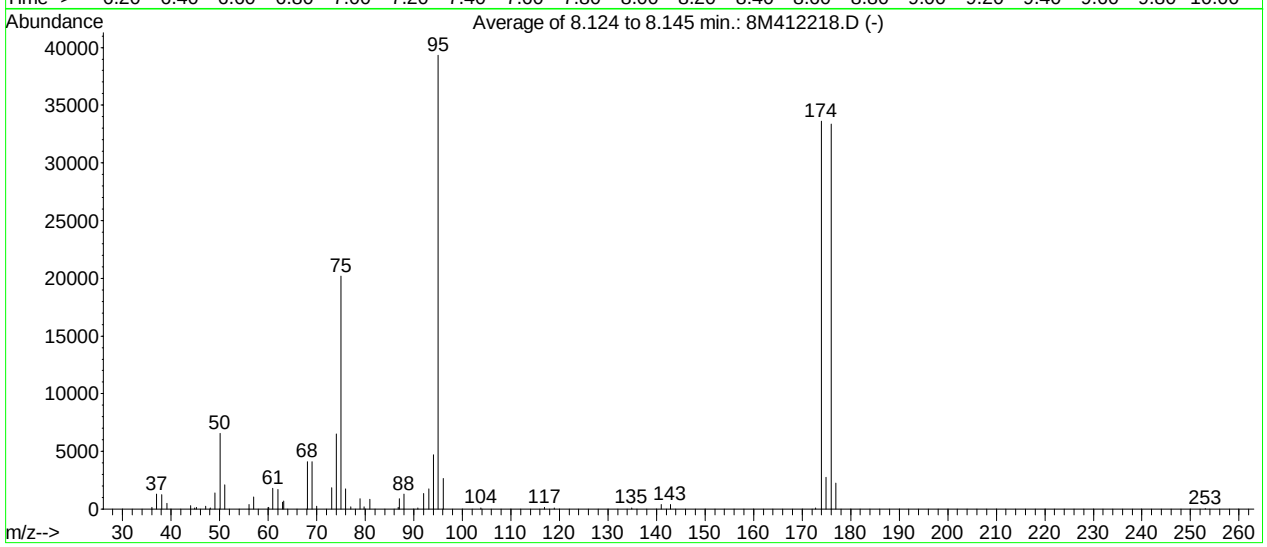

AutoFind: Scans 102, 103, 104; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.7	6575	PASS
75	95	30	60	51.3	20171	PASS
95	95	100	100	100.0	39312	PASS
96	95	5	9	6.7	2649	PASS
173	174	0.00	2	0.4	122	PASS
174	95	50	100	85.5	33616	PASS
175	174	5	9	8.2	2746	PASS
176	174	95	101	99.2	33360	PASS
177	176	5	9	6.8	2267	PASS

8M412218.D BFB.M Fri May 13 12:47:24 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061316\8M412943.D Vial: 1
Acq On    : 13 Jun 2016  14:10                        Operator: TMB
Sample    : WG572492-01 50ng BFB STD 8260             Inst    : HPMS8
Misc      : 1,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title     : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
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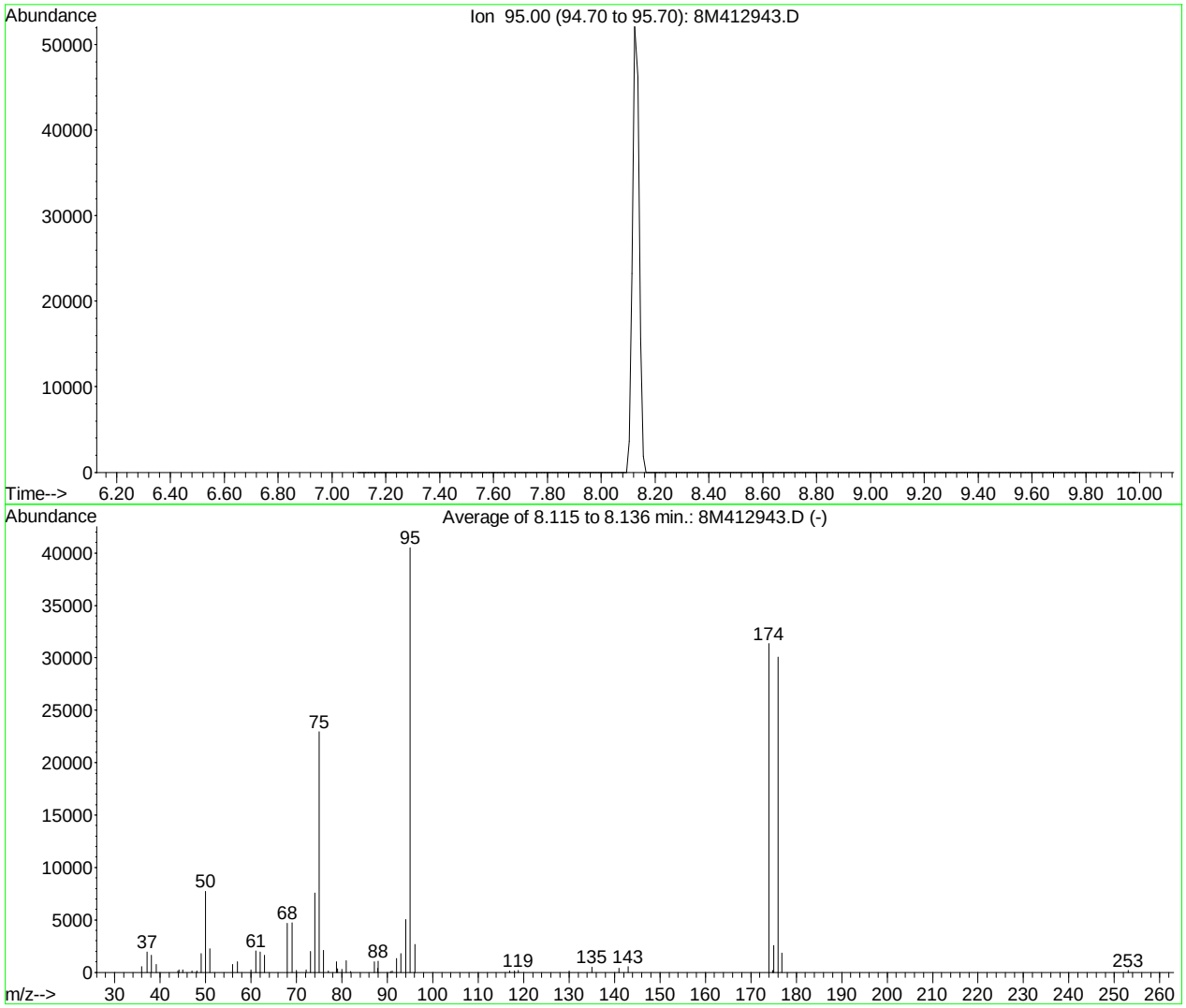

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.0	7715	PASS
75	95	30	60	56.7	22963	PASS
95	95	100	100	100.0	40514	PASS
96	95	5	9	6.6	2683	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	77.5	31387	PASS
175	174	5	9	8.2	2572	PASS
176	174	95	101	95.8	30076	PASS
177	176	5	9	6.1	1845	PASS

8M412943.D 8260WT.M Mon Jun 13 15:49:51 2016

BFB

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Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412971.D Vial: 1
Acq On    : 14 Jun 2016   9:33                        Operator: TMB
Sample    : WG572591-01 50ng BFB STD 8260             Inst    : HPMS8
Misc      : 1,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title     : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
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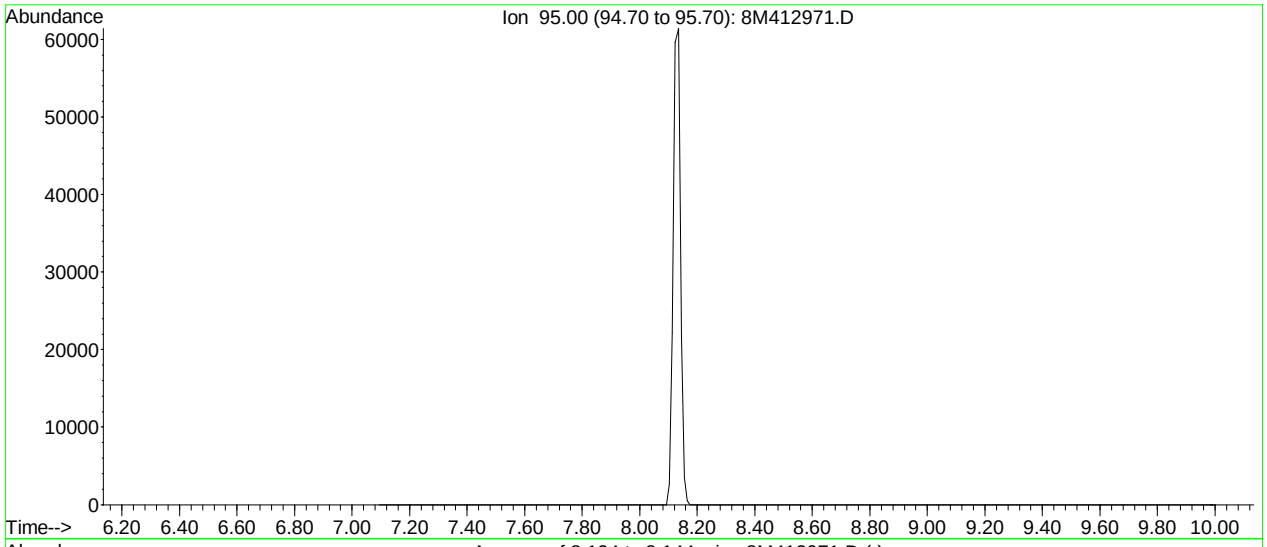

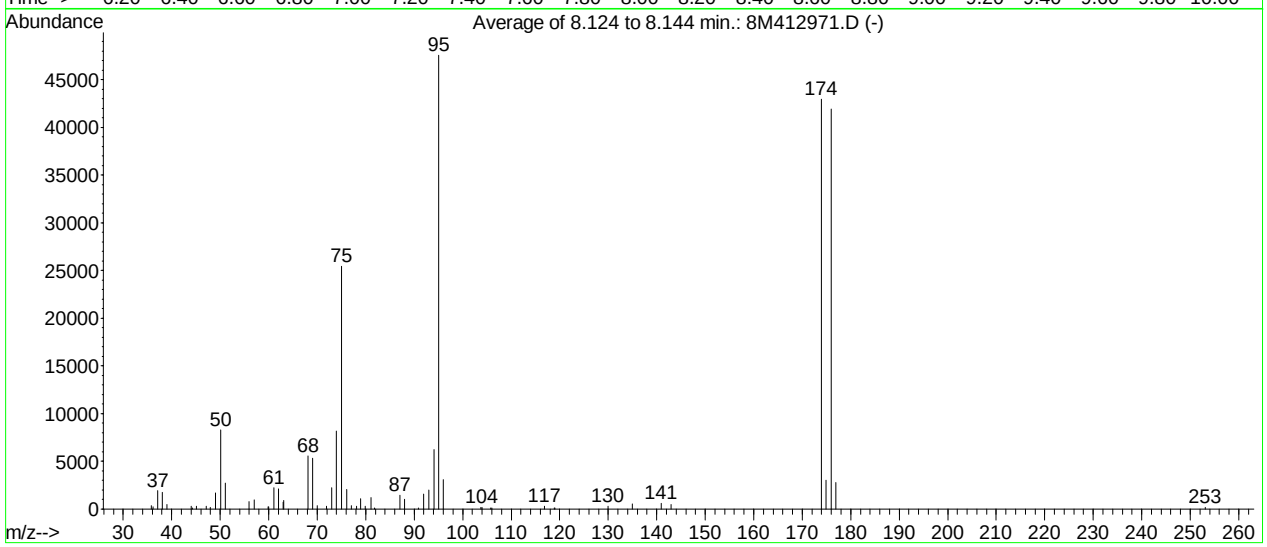

AutoFind: Scans 102, 103, 104; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.4	8269	PASS
75	95	30	60	53.5	25445	PASS
95	95	100	100	100.0	47570	PASS
96	95	5	9	6.4	3042	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	90.3	42970	PASS
175	174	5	9	7.1	3032	PASS
176	174	95	101	97.6	41930	PASS
177	176	5	9	6.5	2744	PASS

8M412971.D 8260WT.M Tue Jun 14 10:25:59 2016

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061316\8M412947.D Vial: 5
Acq On : 13 Jun 2016 16:02 Operator: TMB
Sample : WG572494-01 VBLK0613 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 08:20:56 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	749860	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	570919	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	308188	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	218773	27.1545 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 108.60%		
43) 1,2-Dichloroethane-d4	10.30	65	241856	27.9968 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.00%		
58) Toluene-d8	12.68	98	776943	26.0028 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.00%		
80) p-Bromofluorobenzene	16.08	95	317573	24.8859 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.56%		

Target Compounds					Qvalue
36) Tetrahydrofuran	9.63	42	566	0.6933 ug/L #	39

(#) = qualifier out of range (m) = manual integration
8M412947.D 8260WT.M Tue Jun 14 08:20:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061316\8M412947.D Vial: 5
Acq On : 13 Jun 2016 16:02 Operator: TMB
Sample : WG572494-01 VBLK0613 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 8:21 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

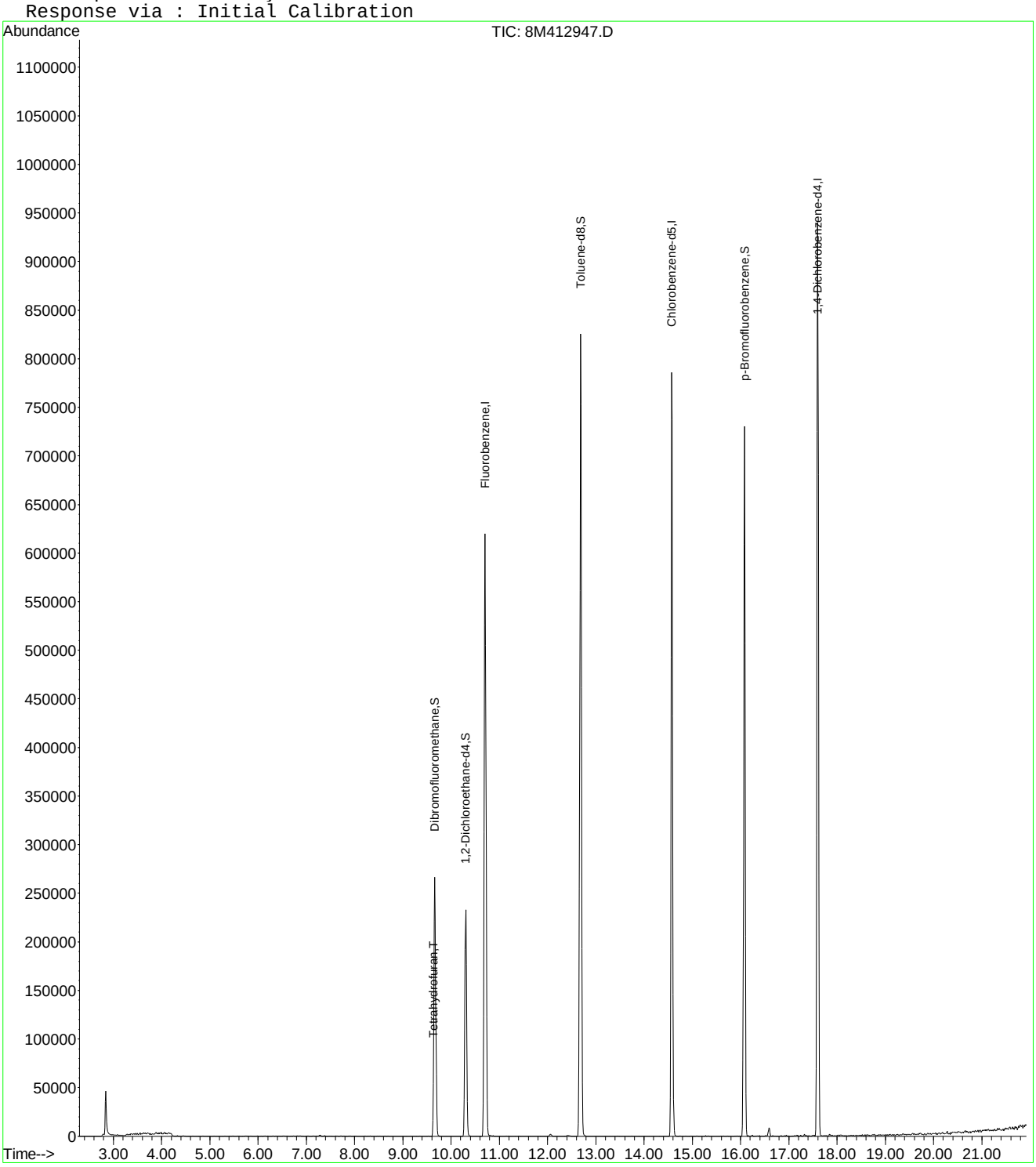

8M412947.D 8260WT.M Tue Jun 14 08:20:59 2016 Page 2

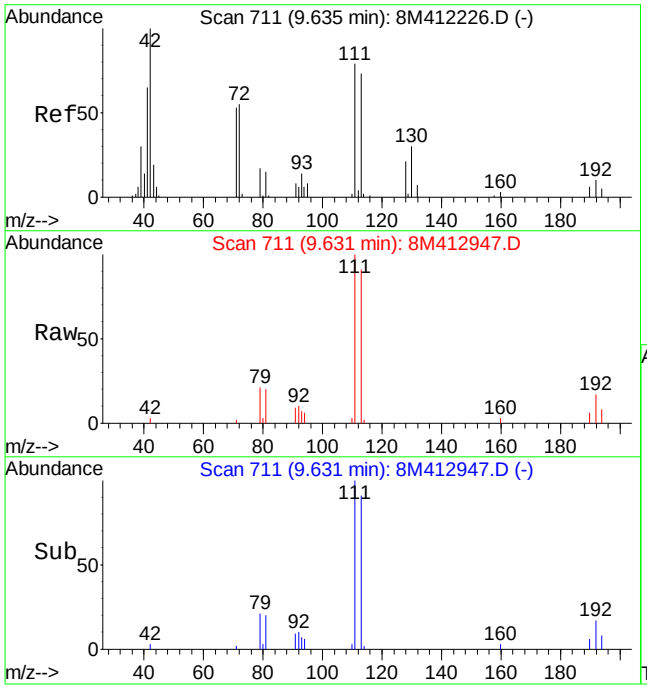

#36
Tetrahydrofuran
Concen: 0.69 ug/L
RT: 9.63 min Scan# 711
Delta R.T. -0.00 min
Lab File: 8M412947.D
Acq: 13 Jun 2016 16:02

Tgt Ion: 42 Resp: 566

Ion	Ratio	Lower	Upper
42	100		
72	37.5	33.8	78.8
71	123.3	32.0	74.8#

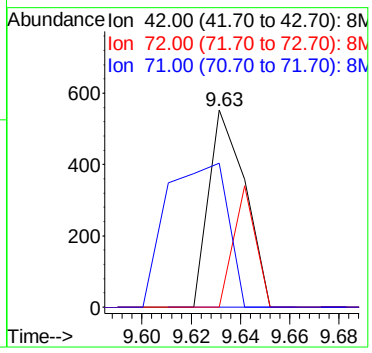

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412974.D Vial: 4
Acq On : 14 Jun 2016 10:54 Operator: TMB
Sample : WG572592-01 VBLK0614 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 12:48:03 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	818923	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	597833	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	333089	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	235191	26.7304 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.92%		
43) 1,2-Dichloroethane-d4	10.30	65	251220	26.6283 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 106.52%		
58) Toluene-d8	12.68	98	827015	26.4325 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.72%		
80) p-Bromofluorobenzene	16.08	95	340654	24.6989 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.80%		

Target Compounds					Qvalue
36) Tetrahydrofuran	9.63	42	238	0.2669 ug/L #	28

(#) = qualifier out of range (m) = manual integration
8M412974.D 8260WT.M Tue Jun 14 12:48:06 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412974.D Vial: 4
Acq On : 14 Jun 2016 10:54 Operator: TMB
Sample : WG572592-01 VBLK0614 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 12:48 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

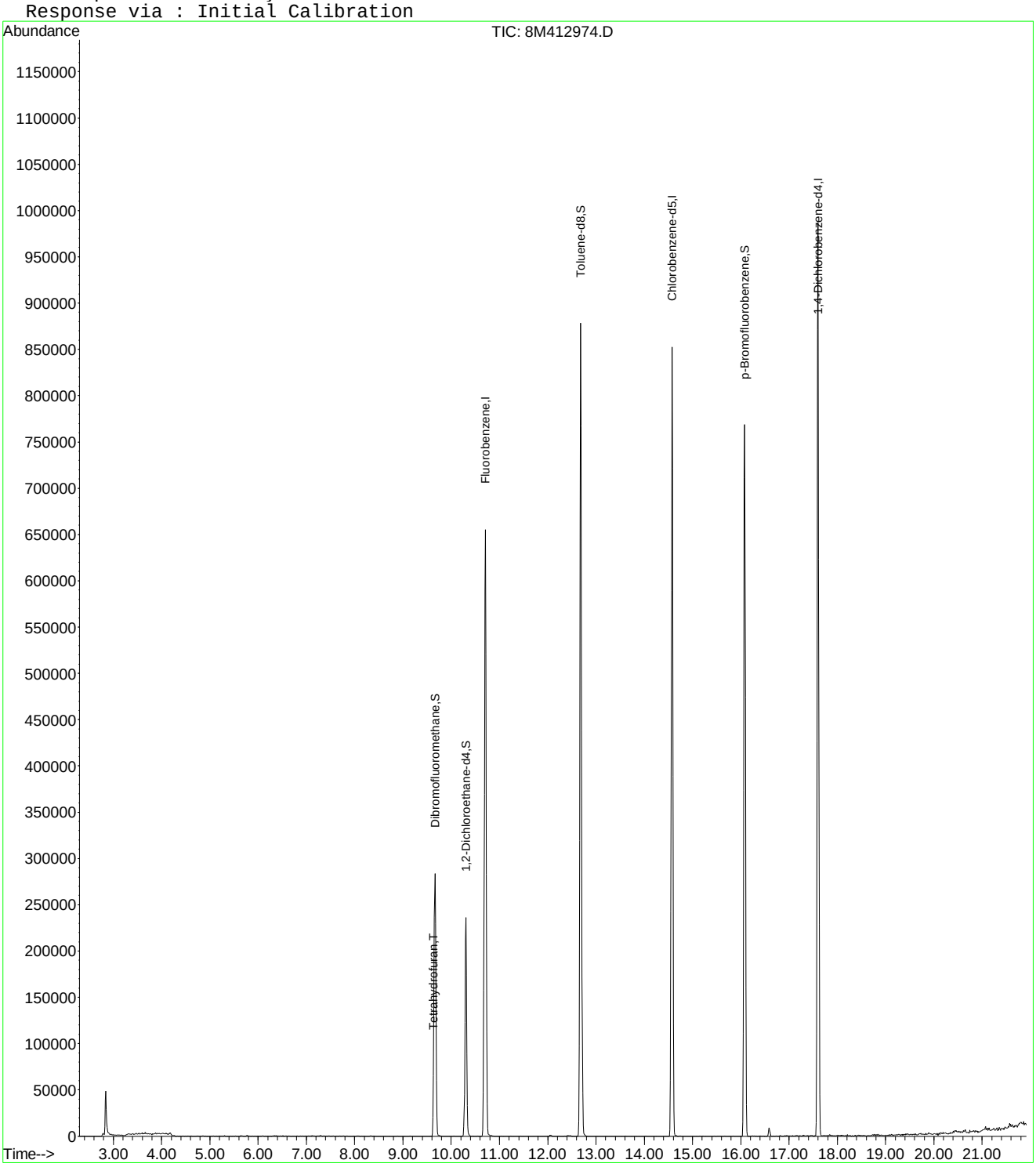

8M412974.D 8260WT.M Tue Jun 14 12:48:07 2016 Page 2

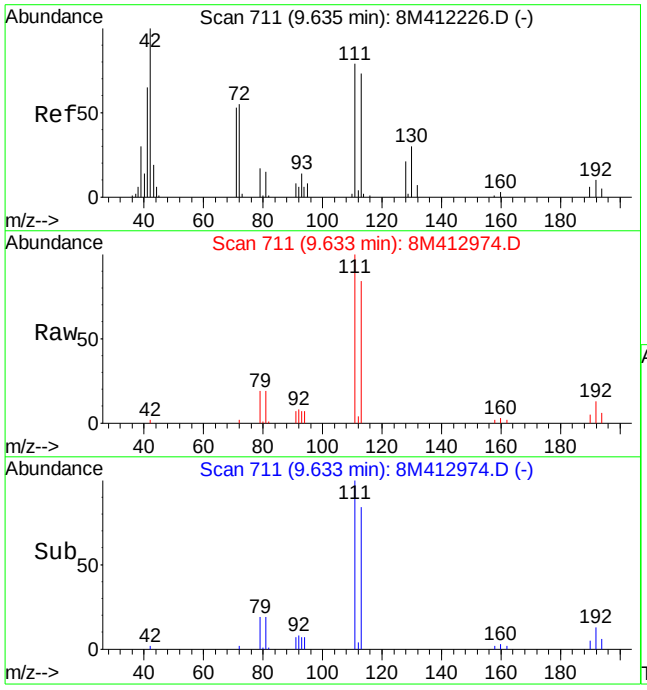

#36
Tetrahydrofuran
Concen: 0.27 ug/L
RT: 9.63 min Scan# 711
Delta R.T. -0.00 min
Lab File: 8M412974.D
Acq: 14 Jun 2016 10:54

Tgt Ion: 42 Resp: 238

Ion	Ratio	Lower	Upper
42	100		
72	127.7	33.8	78.8#
71	86.1	32.0	74.8#

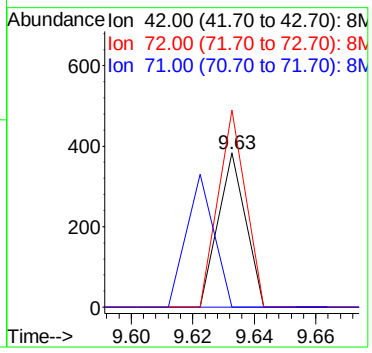

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061316\8M412948.D Vial: 6
Acq On : 13 Jun 2016 16:30 Operator: TMB
Sample : WG572494-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 08:09:42 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	773259	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	563003	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	321769	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	228427	27.4948 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.96%		
43) 1,2-Dichloroethane-d4	10.30	65	245644	27.5749 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 110.28%		
58) Toluene-d8	12.68	98	783046	26.5755 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 106.32%		
80) p-Bromofluorobenzene	16.07	95	326681	24.5191 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.08%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	305490	23.5637 ug/L	97
3) Chloromethane	3.62	50	156585	20.6915 ug/L	99
4) Vinyl Chloride	3.84	62	216401	24.1021 ug/L	99
5) 1,3-Butadiene	3.88	54	46559	6.1836 ug/L	97
6) Bromomethane	4.73	94	71675	13.9371 ug/L	96
7) Chloroethane	4.89	64	104331	21.1179 ug/L	98
8) Trichlorofluoromethane	5.37	101	359455	21.5159 ug/L	100
9) Diethyl ether	5.90	59	418245	104.8655 ug/L	97
10) Isoprene	5.93	67	221290	21.8121 ug/L	96
11) Acrolein	6.13	56	38105	106.7066 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.14	101	158836	20.2262 ug/L	93
13) Acetone	6.25	43	21176	24.3406 ug/L	95
14) 1,1-Dichloroethene	6.46	61	200165	16.0084 ug/L	100
15) Tert-Butyl Alcohol	6.58	59	64035	229.6851 ug/L	97
16) Dimethyl Sulfide	6.73	62	165044	36.9164 ug/L	97
17) Iodomethane	6.98	142	39795	13.7679 ug/L	97
18) Methyl acetate	6.99	43	46514	19.7793 ug/L	97
19) Methylene Chloride	7.25	84	143198	17.9961 ug/L	98
20) Carbon Disulfide	7.29	76	502246	19.1943 ug/L	99
21) Acrylonitrile	7.43	53	23727	21.0198 ug/L	93
22) Methyl Tert Butyl Ether	7.46	73	386866	22.4640 ug/L	98
23) trans-1,2-Dichloroethene	7.70	61	203385	17.7053 ug/L	96
24) n-Hexane	7.79	57	159332	18.6790 ug/L	98
25) Diisopropyl ether	8.13	45	1861115	103.9382 ug/L	96
26) Vinyl Acetate	8.29	43	141042	17.2038 ug/L	100
27) 1,1-Dichloroethane	8.32	63	260085	18.2311 ug/L	98
28) Ethyl-Tert-Butyl ether	8.69	59	2030350	105.8312 ug/L	98
29) 2-Butanone	8.88	43	25042	19.5913 ug/L	95
30) Propionitrile	8.98	54	39796	106.8361 ug/L	98
31) 2,2-Dichloropropane	9.10	77	319157	21.2292 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	176087	19.8385 ug/L	99
33) Chloroform	9.38	83	341742	20.2881 ug/L	99
34) 1-Bromopropane	9.51	122	33611	26.4366 ug/L	97
35) Bromochloromethane	9.60	130	88551	19.4550 ug/L	96
36) Tetrahydrofuran	9.62	42	76815	91.2426 ug/L	94
38) 1,1,1-Trichloroethane	9.90	97	330147	20.6339 ug/L	97
39) Cyclohexane	9.93	56	208687	18.8390 ug/L	96
40) 1,1-Dichloropropene	10.10	75	228200	18.7116 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1962473	112.6267 ug/L	99
42) Carbon Tetrachloride	10.24	117	292540	20.5898 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412948.D 8260WT.M Tue Jun 14 08:09:45 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061316\8M412948.D Vial: 6
Acq On : 13 Jun 2016 16:30 Operator: TMB
Sample : WG572494-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 08:09:42 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	240578	22.1902 ug/L		97
46)	Benzene	10.46	78	613956	19.3290 ug/L		99
47)	Trichloroethene	11.22	130	172963	20.4167 ug/L		99
48)	Methylcyclohexane	11.30	83	257375	19.9981 ug/L		100
49)	1,2-Dichloropropane	11.42	63	138208	19.5460 ug/L		92
50)	Bromodichloromethane	11.72	83	261407	21.0341 ug/L		99
51)	1,4-Dioxane	11.72	88	6838	192.5157 ug/L		92
52)	Dibromomethane	11.81	93	77059	18.4104 ug/L		94
53)	2-Chloroethyl Vinyl Ether	12.02	63	60712	19.9767 ug/L		100
54)	4-Methyl-2-Pentanone	12.05	58	24509	19.7423 ug/L		94
55)	cis-1,3-Dichloropropene	12.36	75	285583	22.5763 ug/L		99
56)	Dimethyl Disulfide	12.62	79	145585	21.5630 ug/L		95
59)	Toluene	12.79	91	672318	19.2354 ug/L		100
60)	Ethyl Methacrylate	12.88	69	142123	21.1731 ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	247434	21.1245 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	106641	19.3354 ug/L		96
64)	2-Hexanone	13.12	58	23201	20.0181 ug/L	#	96
65)	1,3-Dichloropropane	13.48	76	207470	21.1284 ug/L		97
66)	Tetrachloroethene	13.60	164	148774	19.8671 ug/L		97
67)	Dibromochloromethane	13.86	129	163670	20.3238 ug/L		98
68)	1,2-Dibromoethane	14.12	107	108952	19.8211 ug/L		99
69)	1-Chlorohexane	14.21	91	227659	19.0813 ug/L		97
70)	Chlorobenzene	14.63	112	478727	20.3115 ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.66	131	184951	20.2552 ug/L		97
72)	Ethylbenzene	14.66	106	247188	19.1687 ug/L		98
73)	m-,p-Xylene	14.74	106	609033	40.2651 ug/L		96
74)	o-Xylene	15.31	106	302250	20.4390 ug/L		98
75)	Styrene	15.34	104	497708	20.5203 ug/L		97
76)	Bromoform	15.84	173	99247	20.7777 ug/L		98
77)	Isopropylbenzene	15.73	105	825666	21.0175 ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	118307	18.3169 ug/L		100
81)	1,2,3-Trichloropropane	16.14	110	39417	19.8181 ug/L		68
82)	trans-1,4-Dichloro-2-Buten	16.19	53	32636	16.5147 ug/L		84
83)	n-Propylbenzene	16.24	91	979153	19.5052 ug/L		100
84)	Bromobenzene	16.37	156	198971	19.2699 ug/L		97
85)	1,3,5-Trimethylbenzene	16.43	105	721269	19.7244 ug/L		99
86)	2-Chlorotoluene	16.51	91	725722	20.7064 ug/L		98
87)	4-Chlorotoluene	16.56	91	578312	18.2672 ug/L		100
88)	a-Methylstyrene	16.83	118	349952	20.1713 ug/L		98
89)	tert-Butylbenzene	16.89	134	137121	19.1674 ug/L		99
90)	1,2,4-Trimethylbenzene	16.94	105	729341	19.3969 ug/L		99
91)	sec-Butylbenzene	17.16	105	822248	19.1137 ug/L		99
92)	p-Isopropyltoluene	17.32	119	692305	18.9536 ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	392177	19.7251 ug/L		98
94)	1,4-Dichlorobenzene	17.64	146	392868	19.5996 ug/L		100
95)	n-Butylbenzene	17.84	91	658179	18.2269 ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	344739	19.4954 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	25398	19.5896 ug/L		96
98)	1,2,4-Trichlorobenzene	20.28	180	258831	19.5824 ug/L		98
99)	Hexachlorobutadiene	20.44	225	120138	19.4532 ug/L		98
100)	Naphthalene	20.65	128	328941	16.7506 ug/L		99
101)	1,2,3-Trichlorobenzene	20.95	180	202099	18.1237 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412948.D 8260WT.M Tue Jun 14 08:09:45 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061316\8M412948.D Vial: 6
Acq On : 13 Jun 2016 16:30 Operator: TMB
Sample : WG572494-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 8:10 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

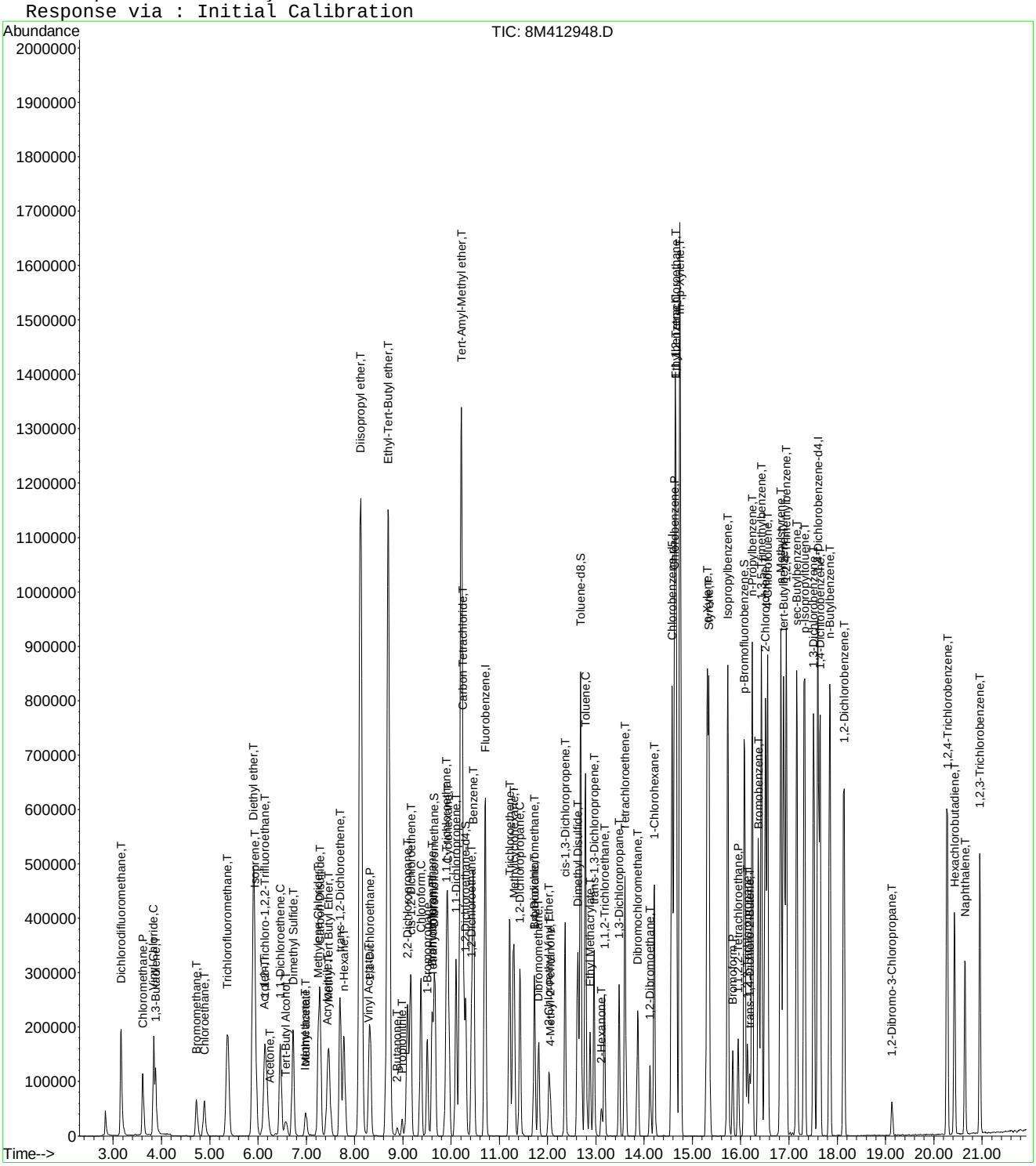

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412977.D Vial: 7
Acq On : 14 Jun 2016 12:21 Operator: TMB
Sample : WG572592-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 12:48:43 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	789634	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	583790	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	328956	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	228147	26.8916 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.56%		
43) 1,2-Dichloroethane-d4	10.31	65	248944	27.3658 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 109.48%		
58) Toluene-d8	12.68	98	808917	26.4760 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.92%		
80) p-Bromofluorobenzene	16.07	95	332263	24.3932 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.56%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	300808	22.7214 ug/L	99
3) Chloromethane	3.61	50	164125	21.2381 ug/L	99
4) Vinyl Chloride	3.84	62	225832	24.6309 ug/L	99
5) 1,3-Butadiene	3.88	54	43045	5.5983 ug/L	97
6) Bromomethane	4.73	94	71561	13.6397 ug/L	96
7) Chloroethane	4.88	64	111225	22.0465 ug/L	99
8) Trichlorofluoromethane	5.37	101	379953	22.2712 ug/L	99
9) Diethyl ether	5.90	59	425634	104.5051 ug/L	98
10) Isoprene	5.93	67	233154	22.5049 ug/L	98
11) Acrolein	6.13	56	37981	104.1537 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.14	101	175380	21.8697 ug/L	92
13) Acetone	6.23	43	21940	24.6958 ug/L	91
14) 1,1-Dichloroethene	6.46	61	259784	20.3457 ug/L	98
15) Tert-Butyl Alcohol	6.58	59	59624	209.4284 ug/L	97
16) Dimethyl Sulfide	6.72	62	174226	38.1621 ug/L	99
17) Iodomethane	6.98	142	65943	20.5666 ug/L	100
18) Methyl acetate	7.00	43	48265	20.0982 ug/L	98
19) Methylene Chloride	7.25	84	163093	20.0714 ug/L	99
20) Carbon Disulfide	7.29	76	512380	19.1756 ug/L	100
21) Acrylonitrile	7.43	53	23781	20.6307 ug/L	94
22) Methyl Tert Butyl Ether	7.46	73	397722	22.6154 ug/L	100
23) trans-1,2-Dichloroethene	7.70	61	246939	21.0510 ug/L	99
24) n-Hexane	7.78	57	169650	19.4762 ug/L	97
25) Diisopropyl ether	8.13	45	1927712	105.4249 ug/L	97
26) Vinyl Acetate	8.29	43	133626	15.9612 ug/L	100
27) 1,1-Dichloroethane	8.32	63	296874	20.3783 ug/L	100
28) Ethyl-Tert-Butyl ether	8.69	59	2048889	104.5828 ug/L	98
29) 2-Butanone	8.88	43	27097	20.7594 ug/L	100
30) Propionitrile	8.99	54	41312	108.6061 ug/L	100
31) 2,2-Dichloropropane	9.10	77	352699	22.9738 ug/L	99
32) cis-1,2-Dichloroethene	9.16	96	191196	21.0941 ug/L	100
33) Chloroform	9.38	83	369726	21.4943 ug/L	100
34) 1-Bromopropane	9.51	122	40738	31.3779 ug/L	97
35) Bromochloromethane	9.60	130	97863	21.0550 ug/L	95
36) Tetrahydrofuran	9.62	42	79612	92.6039 ug/L	98
38) 1,1,1-Trichloroethane	9.91	97	371800	22.7553 ug/L	100
39) Cyclohexane	9.93	56	229989	20.3315 ug/L	96
40) 1,1-Dichloropropene	10.10	75	262245	21.0573 ug/L	99
41) Tert-Amyl-Methyl ether	10.20	73	1956280	109.9430 ug/L	99
42) Carbon Tetrachloride	10.24	117	322240	22.2099 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412977.D Vial: 7
Acq On : 14 Jun 2016 12:21 Operator: TMB
Sample : WG572592-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 12:48:43 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.42	62	252836	22.8372 ug/L	97
46)	Benzene	10.46	78	684839	21.1135 ug/L	100
47)	Trichloroethene	11.22	130	196590	22.7244 ug/L	98
48)	Methylcyclohexane	11.30	83	281836	21.4446 ug/L	99
49)	1,2-Dichloropropane	11.42	63	151922	21.0400 ug/L	93
50)	Bromodichloromethane	11.72	83	282235	22.2391 ug/L	100
51)	1,4-Dioxane	11.72	88	7558	208.3738 ug/L	94
52)	Dibromomethane	11.81	93	84703	19.8170 ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.02	63	64236	20.6979 ug/L	94
54)	4-Methyl-2-Pentanone	12.05	58	25847	20.3883 ug/L	91
55)	cis-1,3-Dichloropropene	12.36	75	303145	23.4676 ug/L	98
56)	Dimethyl Disulfide	12.62	79	153043	22.1976 ug/L	91
59)	Toluene	12.79	91	737048	20.3365 ug/L	100
60)	Ethyl Methacrylate	12.88	69	148536	21.3406 ug/L	99
62)	trans-1,3-Dichloropropene	12.96	75	258189	21.2578 ug/L	99
63)	1,1,2-Trichloroethane	13.17	97	114373	19.9989 ug/L	98
64)	2-Hexanone	13.12	58	24370	20.2780 ug/L #	95
65)	1,3-Dichloropropane	13.48	76	217003	21.3123 ug/L	99
66)	Tetrachloroethene	13.60	164	160734	20.6999 ug/L	96
67)	Dibromochloromethane	13.86	129	171176	20.4990 ug/L	100
68)	1,2-Dibromoethane	14.12	107	113723	19.9524 ug/L	98
69)	1-Chlorohexane	14.21	91	256011	20.6936 ug/L	99
70)	Chlorobenzene	14.63	112	506153	20.7105 ug/L	99
71)	1,1,1,2-Tetrachloroethane	14.66	131	198120	20.9248 ug/L	100
72)	Ethylbenzene	14.66	106	264089	19.7501 ug/L	96
73)	m-,p-Xylene	14.74	106	653046	41.6376 ug/L	96
74)	o-Xylene	15.31	106	330056	21.5246 ug/L	100
75)	Styrene	15.34	104	535687	21.2997 ug/L	98
76)	Bromoform	15.84	173	100112	20.2125 ug/L	98
77)	Isopropylbenzene	15.73	105	887039	21.7758 ug/L	99
79)	1,1,2,2-Tetrachloroethane	15.95	83	117162	17.7434 ug/L	100
81)	1,2,3-Trichloropropane	16.15	110	38260	18.8161 ug/L	82
82)	trans-1,4-Dichloro-2-Buten	16.19	53	34037	16.8349 ug/L	92
83)	n-Propylbenzene	16.24	91	1056135	20.5791 ug/L	100
84)	Bromobenzene	16.36	156	206447	19.5572 ug/L	97
85)	1,3,5-Trimethylbenzene	16.42	105	767927	20.5416 ug/L	100
86)	2-Chlorotoluene	16.51	91	659331	18.4012 ug/L	92
87)	4-Chlorotoluene	16.56	91	717563	22.1705 ug/L	91
88)	a-Methylstyrene	16.83	118	386327	21.7815 ug/L	99
89)	tert-Butylbenzene	16.89	134	146756	20.0660 ug/L	99
90)	1,2,4-Trimethylbenzene	16.94	105	768345	19.9878 ug/L	100
91)	sec-Butylbenzene	17.16	105	891437	20.2693 ug/L	99
92)	p-Isopropyltoluene	17.32	119	743909	19.9214 ug/L	100
93)	1,3-Dichlorobenzene	17.51	146	412440	20.2910 ug/L	99
94)	1,4-Dichlorobenzene	17.64	146	416220	20.3109 ug/L	100
95)	n-Butylbenzene	17.84	91	710572	19.2479 ug/L	98
96)	1,2-Dichlorobenzene	18.14	146	365176	20.2000 ug/L	98
97)	1,2-Dibromo-3-Chloropropan	19.13	75	25929	19.5622 ug/L	100
98)	1,2,4-Trichlorobenzene	20.28	180	263147	19.4739 ug/L	99
99)	Hexachlorobutadiene	20.42	225	131850	20.8832 ug/L	98
100)	Naphthalene	20.64	128	339159	16.8936 ug/L	100
101)	1,2,3-Trichlorobenzene	20.95	180	212625	18.6510 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412977.D Vial: 7
Acq On : 14 Jun 2016 12:21 Operator: TMB
Sample : WG572592-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 12:48 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

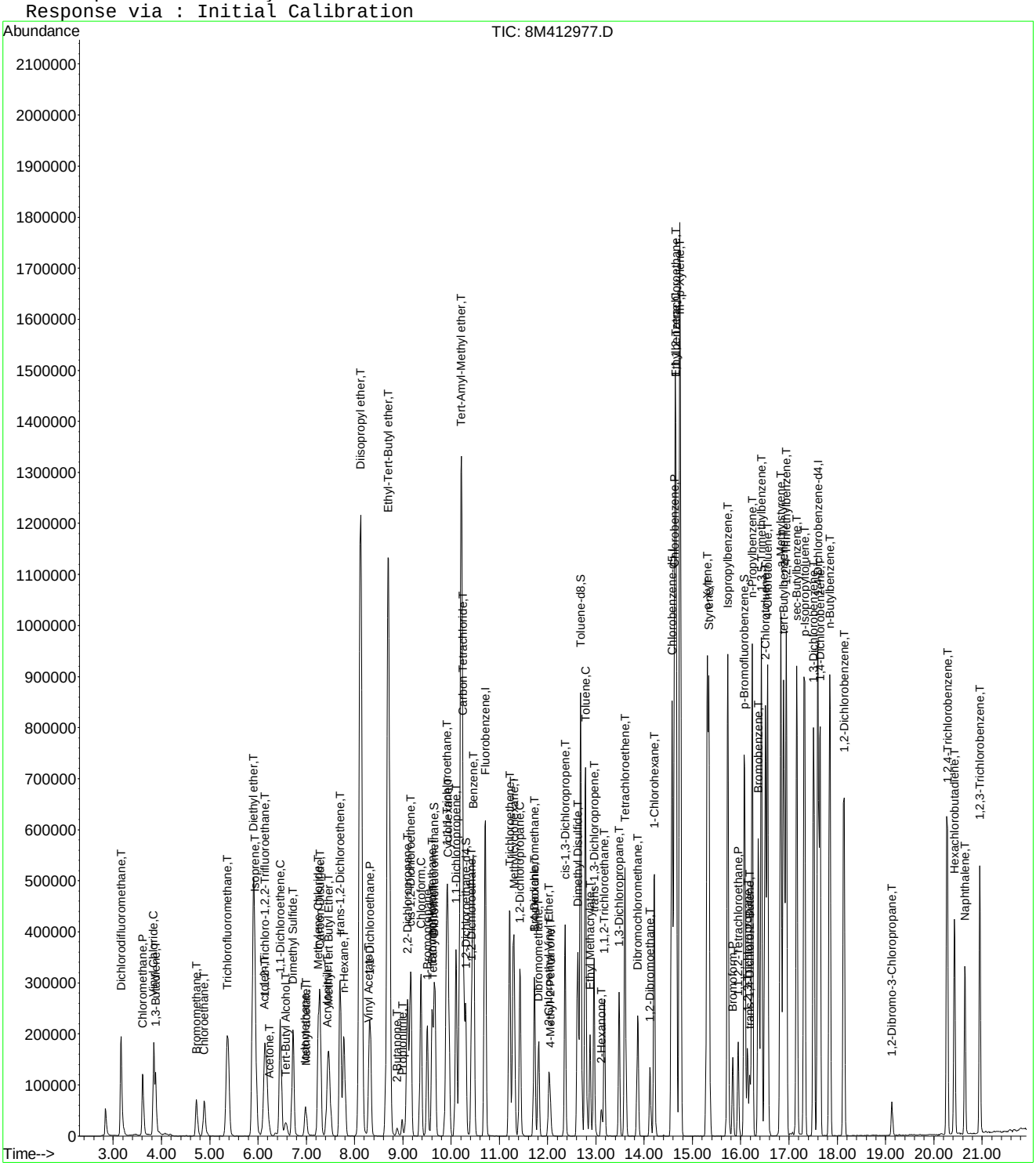

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061316\8M412949.D Vial: 7
Acq On : 13 Jun 2016 16:59 Operator: TMB
Sample : WG572494-03 20ug/L LCS2 STD 8260 Inst : HPMS8
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 08:09:48 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	764855	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	564940	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	317199	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	220681	26.8543 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.40%		
43) 1,2-Dichloroethane-d4	10.31	65	246631	27.9899 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.96%		
58) Toluene-d8	12.68	98	773078	26.1472 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.60%		
80) p-Bromofluorobenzene	16.07	95	329257	25.0685 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.28%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	299074	23.3223 ug/L	99
3) Chloromethane	3.62	50	160225	21.4051 ug/L	99
4) Vinyl Chloride	3.84	62	211321	23.7949 ug/L	100
5) 1,3-Butadiene	3.88	54	47553	6.3850 ug/L	98
6) Bromomethane	4.73	94	76378	14.9670 ug/L	97
7) Chloroethane	4.89	64	105828	21.6563 ug/L	99
8) Trichlorofluoromethane	5.38	101	361352	21.8671 ug/L	100
9) Diethyl ether	5.90	59	417429	105.8109 ug/L	97
10) Isoprene	5.93	67	222735	22.1958 ug/L	97
11) Acrolein	6.14	56	38776	109.7787 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	162758	20.9533 ug/L	94
13) Acetone	6.24	43	19365	22.5035 ug/L	96
14) 1,1-Dichloroethene	6.46	61	176670	14.2846 ug/L	96
15) Tert-Butyl Alcohol	6.58	59	65557	237.7280 ug/L	98
16) Dimethyl Sulfide	6.73	62	167021	37.7691 ug/L	99
17) Iodomethane	6.98	142	56601	18.5550 ug/L	99
18) Methyl acetate	7.00	43	47794	20.5469 ug/L	98
19) Methylene Chloride	7.25	84	131988	16.7696 ug/L	100
20) Carbon Disulfide	7.29	76	502573	19.4179 ug/L	100
21) Acrylonitrile	7.43	53	22427	20.0864 ug/L	98
22) Methyl Tert Butyl Ether	7.45	73	385274	22.6173 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	188952	16.6296 ug/L	99
24) n-Hexane	7.77	57	166245	19.7036 ug/L	100
25) Diisopropyl ether	8.13	45	1866184	105.3664 ug/L	97
26) Vinyl Acetate	8.29	43	146735	18.0949 ug/L	98
27) 1,1-Dichloroethane	8.32	63	245771	17.4170 ug/L	100
28) Ethyl-Tert-Butyl ether	8.69	59	2030657	107.0102 ug/L	98
29) 2-Butanone	8.88	43	26667	21.0918 ug/L	99
30) Propionitrile	8.98	54	38877	105.5158 ug/L	99
31) 2,2-Dichloropropane	9.10	77	301044	20.2445 ug/L	99
32) cis-1,2-Dichloroethene	9.16	96	162791	18.5421 ug/L	99
33) Chloroform	9.38	83	325885	19.5593 ug/L	99
34) 1-Bromopropane	9.51	122	31019	24.6660 ug/L	94
35) Bromochloromethane	9.60	130	83340	18.5113 ug/L	95
36) Tetrahydrofuran	9.62	42	77198	92.7050 ug/L	95
38) 1,1,1-Trichloroethane	9.90	97	304117	19.2159 ug/L	99
39) Cyclohexane	9.94	56	217525	19.8526 ug/L	97
40) 1,1-Dichloropropene	10.10	75	213586	17.7058 ug/L	98
41) Tert-Amyl-Methyl ether	10.20	73	1951067	113.2024 ug/L	99
42) Carbon Tetrachloride	10.24	117	267619	19.0428 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412949.D 8260WT.M Tue Jun 14 08:09:50 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061316\8M412949.D Vial: 7
Acq On : 13 Jun 2016 16:59 Operator: TMB
Sample : WG572494-03 20ug/L LCS2 STD 8260 Inst : HPMS8
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 08:09:48 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	223152	20.8090	ug/L		99
46)	Benzene	10.46	78	573410	18.2509	ug/L		99
47)	Trichloroethene	11.22	130	162965	19.4479	ug/L		99
48)	Methylcyclohexane	11.30	83	261894	20.5728	ug/L		100
49)	1,2-Dichloropropane	11.42	63	133998	19.1589	ug/L		94
50)	Bromodichloromethane	11.72	83	257948	20.9839	ug/L		98
51)	1,4-Dioxane	11.71	88	7448	211.9935	ug/L		99
52)	Dibromomethane	11.82	93	76175	18.3992	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.02	63	60184	20.0205	ug/L		94
54)	4-Methyl-2-Pentanone	12.05	58	24985	20.3469	ug/L		88
55)	cis-1,3-Dichloropropene	12.36	75	272170	21.7523	ug/L		98
56)	Dimethyl Disulfide	12.62	79	144091	21.5762	ug/L		91
59)	Toluene	12.79	91	637852	18.1867	ug/L		100
60)	Ethyl Methacrylate	12.88	69	142753	21.1941	ug/L		100
62)	trans-1,3-Dichloropropene	12.96	75	235524	20.0388	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	103814	18.7583	ug/L		100
64)	2-Hexanone	13.12	58	22814	19.6167	ug/L	#	96
65)	1,3-Dichloropropane	13.48	76	198821	20.1782	ug/L		97
66)	Tetrachloroethene	13.60	164	137566	18.3074	ug/L		98
67)	Dibromochloromethane	13.87	129	157740	19.5203	ug/L		98
68)	1,2-Dibromoethane	14.12	107	104665	18.9759	ug/L		99
69)	1-Chlorohexane	14.21	91	238204	19.8967	ug/L		99
70)	Chlorobenzene	14.63	112	454194	19.2045	ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.66	131	180808	19.7335	ug/L		100
72)	Ethylbenzene	14.66	106	237538	18.3572	ug/L		98
73)	m-,p-Xylene	14.74	106	589255	38.8239	ug/L		97
74)	o-Xylene	15.31	106	292123	19.6865	ug/L		99
75)	Styrene	15.34	104	474654	19.5027	ug/L		98
76)	Bromoform	15.84	173	90585	18.8993	ug/L		97
77)	Isopropylbenzene	15.73	105	790044	20.0418	ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	114028	17.9088	ug/L		96
81)	1,2,3-Trichloropropane	16.14	110	38316	19.5421	ug/L		73
82)	trans-1,4-Dichloro-2-Buten	16.19	53	33212	17.0284	ug/L		86
83)	n-Propylbenzene	16.24	91	961959	19.4388	ug/L		100
84)	Bromobenzene	16.36	156	190274	18.6931	ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	699443	19.4031	ug/L		98
86)	2-Chlorotoluene	16.51	91	589923	17.0743	ug/L		91
87)	4-Chlorotoluene	16.56	91	656990	21.0514	ug/L		91
88)	a-Methylstyrene	16.83	118	358081	20.9373	ug/L		100
89)	tert-Butylbenzene	16.89	134	132381	18.7714	ug/L		99
90)	1,2,4-Trimethylbenzene	16.94	105	691303	18.6502	ug/L		99
91)	sec-Butylbenzene	17.16	105	801998	18.9115	ug/L		99
92)	p-Isopropyltoluene	17.32	119	671825	18.6579	ug/L		100
93)	1,3-Dichlorobenzene	17.51	146	377702	19.2707	ug/L		99
94)	1,4-Dichlorobenzene	17.64	146	381254	19.2942	ug/L		97
95)	n-Butylbenzene	17.84	91	644659	18.1097	ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	331623	19.0239	ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	24945	19.5174	ug/L		99
98)	1,2,4-Trichlorobenzene	20.28	180	248383	19.0626	ug/L		99
99)	Hexachlorobutadiene	20.43	225	119437	19.6183	ug/L		99
100)	Naphthalene	20.64	128	331455	17.1218	ug/L		100
101)	1,2,3-Trichlorobenzene	20.95	180	199903	18.1850	ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061316\8M412949.D Vial: 7
Acq On : 13 Jun 2016 16:59 Operator: TMB
Sample : WG572494-03 20ug/L LCS2 STD 8260 Inst : HPMS8
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 8:10 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

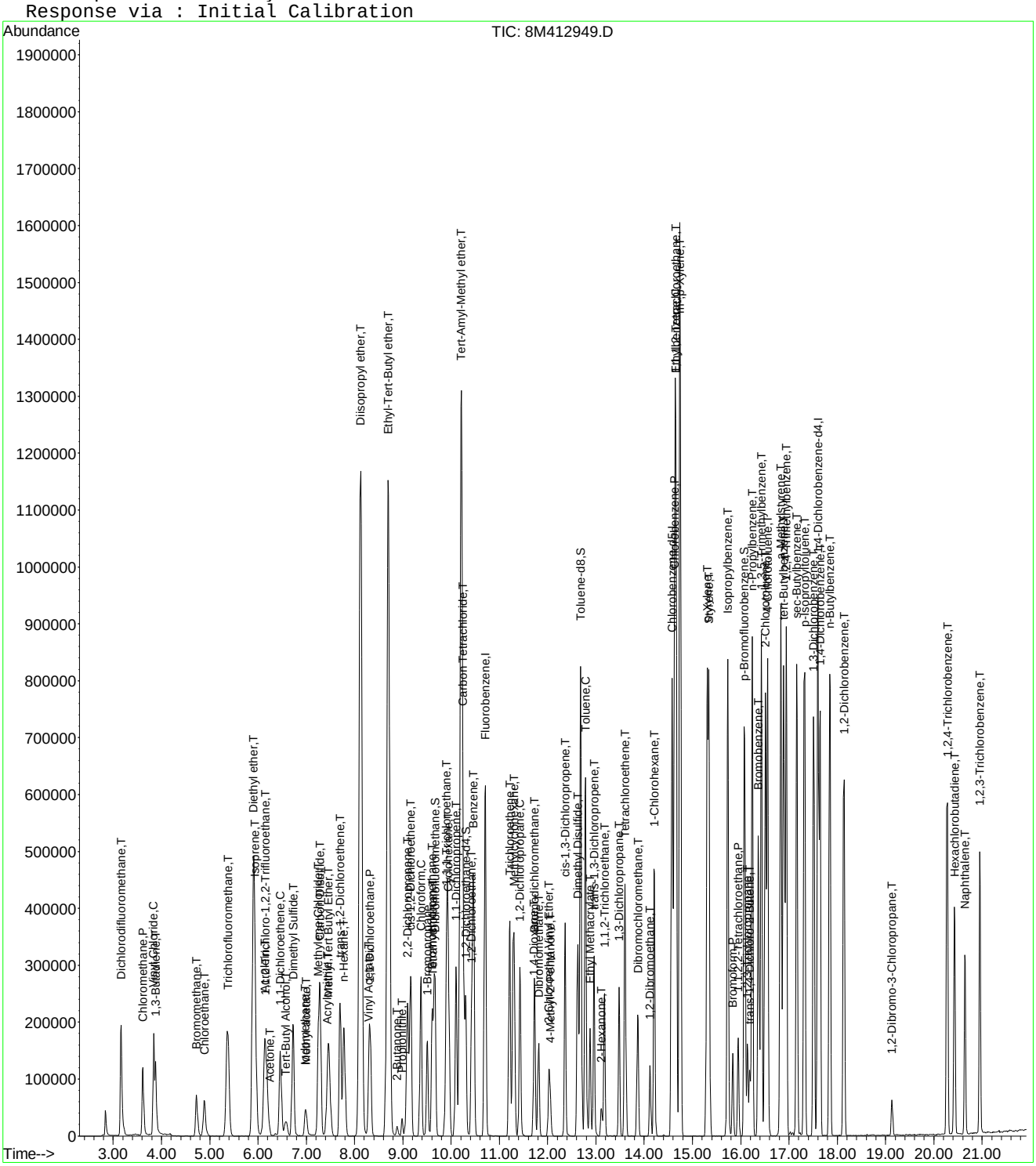

2.2 Semivolatiles Data

2.2.1 Semivolatiles GC/MS Data (Dioxane)

2.2.1.1 Summary Data

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060414-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	AWD1T-060716	**Prep Method:**	3520C	**Prep Date:**	06/11/2016 13:19
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572361	**Analyst:**	MES	**Run Date:**	06/13/2016 12:35
Collect Date:	06/07/2016 07:55	**Dilution:**	1	**File ID:**	15M18373
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	5.74	J	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	1060	20	129	*

J	The reported result is an estimated value.

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060414-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	AWD1B-060716	**Prep Method:**	3520C	**Prep Date:**	06/11/2016 13:19
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572361	**Analyst:**	MES	**Run Date:**	06/13/2016 12:58
Collect Date:	06/07/2016 08:45	**Dilution:**	1	**File ID:**	15M18374
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	7.14	J	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	1950	20	129	*

J	The reported result is an estimated value.

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060414-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	MW14T-060716	**Prep Method:**	3520C	**Prep Date:**	06/11/2016 13:19
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572361	**Analyst:**	MES	**Run Date:**	06/13/2016 15:14
Collect Date:	06/07/2016 10:30	**Dilution:**	50	**File ID:**	15M18380
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	390		100	50.0	25.0

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	0.000	20	129	*

Certificate of Analysis

Sample #:	L16060414-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	MW14B-060716	**Prep Method:**	3520C	**Prep Date:**	06/11/2016 13:19
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572361	**Analyst:**	MES	**Run Date:**	06/13/2016 15:36
Collect Date:	06/07/2016 11:20	**Dilution:**	50	**File ID:**	15M18381
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	412		110	55.0	27.5

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	0.000	20	129	*

2.2.1.2 QC Summary Data

Example 8270 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	1261197
Cis = Concentration of the specific internal standard (ug/mL)	40
Ais = Area of the characteristic ion of the specific internal standard	608044
Cx = Concentration of the compound in the standard being measured (ug/mL)	50
RF = Calculated Response Factor	**1.65935**

2.0 Calculating the concentration (C) of a compound in water using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Vi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Vi = Initial volume of sample extracted from prep log (mL)	1021
Cx = Concentration of the compound in the sample being measured (ug/mL)	0.016947
Cx = Concentration of the compound in the sample being measured (ug/L)	**16.947**

3.0 Calculating the concentration (C) of a compound in soil using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Wi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Wi = Initial weight of sample extracted (g) from prep log	30
Cx = Concentration of the compound in the sample being measured (ug/g)	0.576763
Cx = Concentration of the compound in the sample being measured (ug/kg)	**576.7627**

Dry weight correction:

Percent solids (PCT_S)	50
Cd = (Cx) (100)/PCT_S	**1153.525** ug/kg

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve plot

b = intercept from curve plot

Step 2: Calculate y from Quantitation Report

y = 16790/784838 = 0.02139

Step 3: Solve for x

x = (y - b)/m = [(0.02139 -(- 0.0435)]/ 0.0783 = 0.829

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.829) = 20.72 ug/L

Example Spreadsheet Calculation:

Slope from curve, m:	0.0783	
Intercept from curve, b:	-0.0435	
Area of analyte, Ax:	16790	
Area of Internal Standard , Ais:	784484	
Concentration of IS, Cis	25.00	ug/L
Response Ratio (y) :	0.021403	
Amount Ratio:	0.828897	
Concentration (Cx):	20.72241	ug/L

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**0.0259**	
Value of B from plot:	**0.0596**	
Value of C from plot:	**-0.0165**	
Area of analyte from quantitation report:	**203233**	
Area of IS from quantiation report:	**1425653**	
Response ratio, y:	**0.142554**	
C - y:	**-0.15905**	
Root 1 - Computed amount ratio , X1:	**-3.88278**	
Root 2 - Computed amount ratio , X2:	**1.581623**	use this solution
Concentration of IS, Cis:	**40.00**	
Concentration of analyte, Cx:	**63.26**	ug/L

Microbac Laboratories Inc.
Continuous Sample Extract Log

Workgroup: WG571956
Analyst: CPD
Spike Analyst: CPD
Method: 3520C
Run Date: 06/11/2016 13:19
SOP: EXB01 Revison 20
Spike Witness: EMW
Surr Solution: STD74051

TIME ON: 16:35 OFF: 10:50 ON: _____ OFF: _____

CH2CL2 Lot #: COA18968
sodium sulfate Lot #: COA18814
1:1 H2SO4 Lot #: RGT36755

	SAMPLE #	Type	Reference	Prod	pH	Init Amnt	Surr Amnt	Spike Amnt	Spike Sol	Final Vol	Color
1	L16051582-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
2	L16060302-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
3	L16060411-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
4	L16060411-02	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
5	L16060411-03	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
6	L16060411-04	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
7	L16060414-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Colored
8	L16060414-02	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Colored
9	L16060414-03	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
10	L16060414-04	SAMP		827-DIOXANE	<2	910 mL	.05 mL			1 mL	Transparent
11	WG571956-01	BLANK		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
12	WG571956-02	LCS		827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD66388	1 mL	Transparent
13	WG571956-03	LCS2		827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD66388	1 mL	Transparent

L16051582-01	RE-EXT OUT OF HOLD

Analyst: Chelsick Davis

Reviewer: Chris Hill

EXTRACT - Modified 01/23/2009
PDF ID: 4803798
Report generated: 06/11/2016 13:21

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 061016
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG571947

Internal STD: STD75471 Surrogate STD: NA Calibration STD
CCV STD: STD74784 LCS STD: STD74214 MS/MSD STD:

Comments: L16051582-01, and L16060024-01,03,05 were already sent for re-extract due to QC contamination. L16060024s are being re-extracted as 827-SPE-DIOX only.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18332	BAKEOUT-IS CHECK	1	1		06/10/16 08:27
2	15M18333	BAKEOUT-IS CHECK	1	1		06/10/16 08:53
3	15M18334	WG571981-01 5PPM DFTPP STD	1	1	STD75016	06/10/16 09:13
4	15M18335	BAKEOUT-IS CHECK	1	1		06/10/16 09:31
5	15M18336	BAKEOUT-IS CHECK	1	1		06/10/16 09:53
6	15M18337	WG572230-01 5PPM DFTPP STD	1	1	STD75016	06/10/16 10:18
7	15M18338	WG572230-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 10:36
8	15M18339	WG572230-03 10 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 11:00
9	15M18340	WG572230-04 7.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 11:22
10	15M18341	WG572230-05 2.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 11:45
11	15M18342	WG572230-06 1 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 12:08
12	15M18343	WG572230-07 0.4 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 12:30
13	15M18344	WG572230-08 5PPM 1,4-DIOXANE ALT SRC	1	1	STD74214	06/10/16 12:52
14	15M18345	WG571410-01 BLANK 6/6	1	1		06/10/16 13:15
15	15M18346	WG571410-02 LCS 6/6	1	1		06/10/16 13:38
16	15M18347	WG571410-03 LCSDUP 6/6	1	1		06/10/16 14:01
17	15M18348	WG571404-01 BLANK 6/2	1	1		06/10/16 14:24
18	15M18349	WG571404-02 LCS 6/2	1	1		06/10/16 14:47
19	15M18350	WG571404-03 LCSDUP 6/2	1	1		06/10/16 15:09
20	15M18351	L16060067-01 827-DIOX	1	1		06/10/16 15:32
21	15M18352	L16051582-01 5X 827-DIOX	1	5		06/10/16 15:55
22	15M18353	L16060024-05 20X 827-DIOX	1	20		06/10/16 16:18
23	15M18354	L16060024-03 20X 827-DIOX	1	20		06/10/16 16:40
24	15M18355	L16060024-01 20,000X 827-DIOX	1	20000		06/10/16 17:03
25	15M18356	L16060067-01 2X 827-DIOX	1	2		06/10/16 17:26
26	15M18357	L16060024-03 100X 827-DIOX	1	100		06/10/16 17:49

Comments

Seq.	Rerun	Dil.	Reason	Analytes
3				
	DFTPP check after installing new source and retuning.			
17				
	WG571404-01 BLANK 6/2 dioxane hit above the RL.			

Page: 1 Approved: 13-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 061016

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG571947

Internal STD: STD75471 Surrogate STD: NA

CCV STD: STD74784 LCS STD: STD74214

Comments

Seq.	Rerun	Dil.	Reason	Analytes
18				
	WG571404-02 LCS 6/2 fails high.			
19				
	WG571404-03 LCSDUP 6/2 fails high.			
20	X	2	Over Calibration Range	
	L16060067-01			
23	X	100	Over Calibration Range	
	L16060024-03 20X DNR			

Page: 2 Approved: 13-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 061316

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG572361

Internal STD: STD75471 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18361	BAKEOUT	1	1		06/13/16 08:10
2	15M18362	WG572383-01 5PPM DFTPP STD	1	1	STD75016	06/13/16 08:30
3	15M18363	WG572383-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/13/16 08:48
4	15M18364	WG571956-01 BLANK 6/11	1	1		06/13/16 09:11
5	15M18365	WG571956-02 LCS 6/11	1	1		06/13/16 09:34
6	15M18366	WG571956-03 LCSDUP 6/11	1	1		06/13/16 09:56
7	15M18367	L16051582-01 RE	1	1		06/13/16 10:19
8	15M18368	L16060302-01	1	1		06/13/16 10:42
9	15M18369	L16060411-01	1	1		06/13/16 11:04
10	15M18370	L16060411-02	1	1		06/13/16 11:27
11	15M18371	L16060411-03	1	1		06/13/16 11:50
12	15M18372	L16060411-04	1	1		06/13/16 12:12
13	15M18373	L16060414-01	1	1		06/13/16 12:35
14	15M18374	L16060414-02	1	1		06/13/16 12:58
15	15M18375	L16060414-03	1	1		06/13/16 13:20
16	15M18376	L16060414-04	1	1		06/13/16 13:43
17	15M18377	BAKEOUT	1	1		06/13/16 14:05
18	15M18378	L16051582-01 5X RE	1	5		06/13/16 14:28
19	15M18379	L16060302-01 5X	1	5		06/13/16 14:51
20	15M18380	L16060414-03 50X	1	50		06/13/16 15:14
21	15M18381	L16060414-04 50X	1	50		06/13/16 15:36
22	15M18382	L16060414-01 10X	1	10		06/13/16 15:59
23	15M18383	L16060414-02 10X	1	10		06/13/16 16:22
24	15M18384	L16060414-03 10X	1	10		06/13/16 16:44
25	15M18385	L16060414-04 10X	1	10		06/13/16 17:07
26	15M18386	BAKEOUT	1	1		06/13/16 17:29

Comments

Seq.	Rerun	Dil.	Reason	Analytes
7	X	5	Over Calibration Range	
	L16051582-01 RE			
8	X	5	Over Calibration Range	
	L16060302-01			

Page: 1 Approved: 16-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 061316

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG572361

Internal STD: STD75471 Surrogate STD: NA

CCV STD: STD74784 LCS STD:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
13				
	L16060414-01 surrogate recovery is high due to SMI.			
14				
	L16060414-02 surrogate recovery is high due to SMI.			
15	X	50	Over Calibration Range	
	L16060414-03			
16	X	50	Over Calibration Range	
	L16060414-04			
22				
	L16060414-01 10X DNR			
23				
	L16060414-02 10X DNR			
24				
	L16060414-03 10X DNR			
25				
	L16060414-04 10X DNR			

Page: 2 Approved: 16-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 10-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75640
Analytical Workgroups: L16051582, L16060024, L16060067

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 12-JUN-2016

Secondary Reviewer: 13-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-13-2016 08:34:44

Microbac Laboratories Inc.

Data Checklist

Date: 13-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75685
Analytical Workgroups: L160601582, L16060302, L16060411, L16060414

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 14-JUN-2016

Secondary Reviewer: 16-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-16-2016 09:47:19

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8270D

AAB#: WG572361

Login Number: L16060414

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
AWD1T-060716	01	06/07/16					06/11/2016	4.2	7		06/13/16	2	40	
AWD1B-060716	02	06/07/16					06/11/2016	4.2	7		06/13/16	2	40	
MW14T-060716	03	06/07/16					06/11/2016	4.1	7		06/13/16	2.1	40	
MW14B-060716	04	06/07/16					06/11/2016	4.1	7		06/13/16	2.1	40	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4807645
Report generated 06/14/2016 15:29

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060414
Instrument Id: HPMS15
Workgroup (AAB#): WG572361

Method: 827-DIOXANE
CAL ID: HPMS15-10-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1
L16060414-01	1.00	01	1060
L16060414-02	1.00	01	1950
L16060414-03	50.0	DL01	DL
L16060414-04	50.0	DL01	DL
WG571956-01	1.00	01	55.6
WG571956-02	1.00	01	54.8
WG571956-03	1.00	01	61.1

Surrogates	Surrogate Limits
1 - 1,4-Dioxane-d8	20 - 129

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4807653
Report generated: 06/14/2016 15:29

METHOD BLANK SUMMARY

Login Number: L16060414
Blank File ID: 15M18364
Prep Date: 06/11/16 13:19
Analyzed Date: 06/13/16 09:11
Analyst: MES

Work Group: WG572361
Blank Sample ID: WG571956-01
Instrument ID: HPMS15
Method: 8270D

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG571956-02	15M18365	06/13/16 09:34	01
LCS2	WG571956-03	15M18366	06/13/16 09:56	01
AWD1T-060716	L16060414-01	15M18373	06/13/16 12:35	01
AWD1B-060716	L16060414-02	15M18374	06/13/16 12:58	01
MW14T-060716	L16060414-03	15M18380	06/13/16 15:14	DL01
MW14B-060716	L16060414-04	15M18381	06/13/16 15:36	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4811269
Report generated 06/17/2016 08:52

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060414 Prep Date: 06/11/16 13:19 Sample ID: WG571956-01
Instrument ID: HPMS15 Run Date: 06/13/16 09:11 Prep Method: 3520C
File ID: 15M18364 Analyst: MES Method: 8270D
Workgroup (AAB#): WG572361 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS15-10-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
1,4-Dioxane	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	55.6	20 - 129	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4807646
14-JUN-2016 15:29

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060414 Analyst: MES Prep Method: 3520C
Instrument ID: HPMS15 Matrix: Water Method: 8270D
Workgroup (AAB#): WG572361 Units: ug/L
QC Key: DOD4 Lot #: STD66388

Sample ID: WG571956-02 LCS File ID: 15M18365 Run Date: 06/13/2016 09:34
Sample ID: WG571956-03 LCS2 File ID: 15M18366 Run Date: 06/13/2016 09:56

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,4-Dioxane	5.00	2.63	52.6	5.00	2.97	59.4	12.0	30 - 104	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,4-Dioxane-d8	54.8	61.1	20 - 129	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4807647
Report generated: 06/14/2016 15:29

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16060414
Instrument: HPMS15
Analyst: MES
Workgroup: WG572230

Tune ID: WG572230-01
Run Date: 06/10/2016
Run Time: 10:18
File ID: 15M18337
Cal ID: HPMS15 - 10-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	39.5	52157	PASS
68.0	69.0	0	2.00	1.91	1026	PASS
69.0	198	0	100	40.8	53844	PASS
70.0	69.0	0	2.00	0.223	120	PASS
127	198	40.0	60.0	51.4	67853	PASS
197	198	0	1.00	0.383	505	PASS
198	198	100	100	100	131981	PASS
199	198	5.00	9.00	6.72	8869	PASS
275	198	10.0	30.0	26.4	34853	PASS
365	198	1.00	100	3.17	4186	PASS
441	443	0.0100	100	73.9	15632	PASS
442	198	40.0	100	83.4	110112	PASS
443	442	17.0	23.0	19.2	21163	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG572230-02	STD-CCV	01	06/10/2016 10:36	
WG572230-03	STD	01	06/10/2016 11:00	
WG572230-04	STD	01	06/10/2016 11:22	
WG572230-05	STD	01	06/10/2016 11:45	
WG572230-06	STD	01	06/10/2016 12:08	
WG572230-07	STD	01	06/10/2016 12:30	
WG572230-08	SSCV	01	06/10/2016 12:52	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4807650
Report generated 06/14/2016 15:29

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16060414
Instrument: HPMS15
Analyst: MES
Workgroup: WG572383

Tune ID: WG572383-01
Run Date: 06/13/2016
Run Time: 08:30
File ID: 15M18362
Cal ID: HPMS15 - 10-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	41.7	58608	PASS
68.0	69.0	0	2.00	1.47	891	PASS
69.0	198	0	100	43.0	60438	PASS
70.0	69.0	0	2.00	0	0	PASS
127	198	40.0	60.0	52.6	73908	PASS
197	198	0	1.00	0.289	406	PASS
198	198	100	100	100	140616	PASS
199	198	5.00	9.00	6.82	9594	PASS
275	198	10.0	30.0	24.7	34747	PASS
365	198	1.00	100	2.69	3776	PASS
441	443	0.0100	100	72.0	14703	PASS
442	198	40.0	100	75.2	105688	PASS
443	442	17.0	23.0	19.3	20429	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG572383-02	CCV	01	06/13/2016 08:48	
WG571956-01	BLANK	01	06/13/2016 09:11	
WG571956-02	LCS	01	06/13/2016 09:34	
WG571956-03	LCS2	01	06/13/2016 09:56	
L16060414-01	AWD1T-060716	01	06/13/2016 12:35	
L16060414-02	AWD1B-060716	01	06/13/2016 12:58	
L16060414-03	MW14T-060716	DL01	06/13/2016 15:14	
L16060414-04	MW14B-060716	DL01	06/13/2016 15:36	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4807650
Report generated 06/14/2016 15:29

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060414
Analytical Method: 8270D
ICAL Workgroup: WG572230

Instrument ID: HPMS15
Initial Calibration Date: 10-JUN-16 12:30
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
1,4-Dioxane		0.3253	2.74		

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4807648
Report generated 06/14/2016 15:29

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060414

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 10-JUN-16 12:30

Column ID: F

Analyte	WG572230-02			WG572230-03			WG572230-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	5.00	107215.000	0.3234	10.0	192761.000	0.3420	7.50	146003.000	0.3236

INT_CAL - Modified 03/06/2008
PDF File ID: 4807648
Report generated 06/14/2016 15:29

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060414

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 10-JUN-16 12:30

Column ID: F

Analyte	WG572230-05			WG572230-06			WG572230-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	2.50	36488.0000	0.3190	1.00	18621.0000	0.3169	0.400	6733.00000	0.3266

INT_CAL - Modified 03/06/2008
PDF File ID: 4807648
Report generated 06/14/2016 15:29

Calibration Table Report
Method: DIOXANE_D8.M
Title: OVD MSS01 SIM 1,4-dioxane ICAL 061016
Last Calibration: Fri Jun 10 12:46:00 2016
Curve:WG572230
Calibration Files

Compound	10 15M18339.D	7.5 15M18340.D	5 15M18338.D	2.5 15M18341.D	1 15M18342.D	0.4 15M18343.D	Avg	%RSD	Linear
1,4-Dichlorobenzene-d4	ISTD								
1,4-Dioxane	0.342	0.324	0.324	0.319	0.317	0.327	0.325	2.735	
1,4-Dioxane-d8	0.440	0.415	0.417	0.411	0.409		0.419	2.988	
Nitrobenzene-d5	1.115	1.034	0.970	0.852	0.755	0.697	0.904	18.064	0.994
2-Fluorobiphenyl	2.685	2.595	2.549	2.638	2.570	2.639	2.613	1.934	
p-Terphenyl-d14	2.815	2.671	2.579	2.506	2.382	2.421	2.562	6.338	

Sun Jun 12 19:13:55 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060414 Run Date: 06/10/2016 Sample ID: WG572230-08
Instrument ID: HPMS15 Run Time: 12:52 Method: 8270D
File ID: 15M18344 Analyst: MES QC Key: DOD4
ICal Workgroup: WG572230 Cal ID: HPMS15 - 10-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
1,4-Dioxane		5000	5110	ug/L	0.333	2.30	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4807649
Report generated 06/14/2016 15:29

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060414
Run Date: 06/13/2016
Sample ID: WG572383-02
Instrument ID: HPMS15
Run Time: 08:48
Method: 8270D
File ID: 15M18363
Analyst: MES
QC Key: DOD4
Workgroup (AAB#): WG572361
Cal ID: HPMS15 - 10-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,4-Dioxane		5000	4970	ug/L	0.323	0.622	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4807651
Report generated 06/14/2016 15:29

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060414
Instrument ID: HPMS15
Workgroup (AAB#): WG572361

ICAL CCV Number: WG572230-02
CAL ID: HPMS15-10-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG572230-02	NA	NA	66625
Upper Limit	NA	NA	133250
Lower Limit	NA	NA	33313
L16060414-01	1.00	01	51516
L16060414-02	1.00	01	50069
L16060414-03	50.0	DL01	38368
L16060414-04	50.0	DL01	45572
WG571956-01	1.00	01	51747
WG571956-02	1.00	01	51838
WG571956-03	1.00	01	51677

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4807652
Report generated 06/14/2016 15:29

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060414
Instrument ID: HPMS15
Workgroup (AAB#): WG572361

ICAL CCV Number: WG572230-02
CAL ID: HPMS15-10-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG572230-02	NA	NA	6.94
Upper Limit	NA	NA	7.44
Lower Limit	NA	NA	6.44
L16060414-01	1.00	01	6.94
L16060414-02	1.00	01	6.94
L16060414-03	50.0	DL01	6.944
L16060414-04	50.0	DL01	6.944
WG571956-01	1.00	01	6.94
WG571956-02	1.00	01	6.94
WG571956-03	1.00	01	6.94

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4811270
Report generated: 06/17/2016 08:52

2.2.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18373.D
Acq On : 13 Jun 2016 12:35
Operator : MES
Sample : L16060414-01
Misc : 1,1
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jun 13 12:54:34 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	51516	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.771	96	1145450	53.1240	ug/L	-0.09
Spiked Amount 5.000			Recovery	= 1062.40%		
4) Nitrobenzene-d5	7.442	82	6236	0.3308	ug/L	0.00
Spiked Amount 5.000			Recovery	= 6.60%		
5) 2-Fluorobiphenyl	8.930	172	44	0.0003	ug/L	0.00
Spiked Amount 5.000			Recovery	= 0.00%		
6) p-Terphenyl-d14	12.188	244	1313	0.0099	ug/L	0.00
Spiked Amount 5.000			Recovery	= 0.20%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	96147	5.7365	ug/L	89

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18373.D
Acq On : 13 Jun 2016 12:35
Operator : MES
Sample : L16060414-01
Misc : 1,1
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jun 13 12:54:34 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

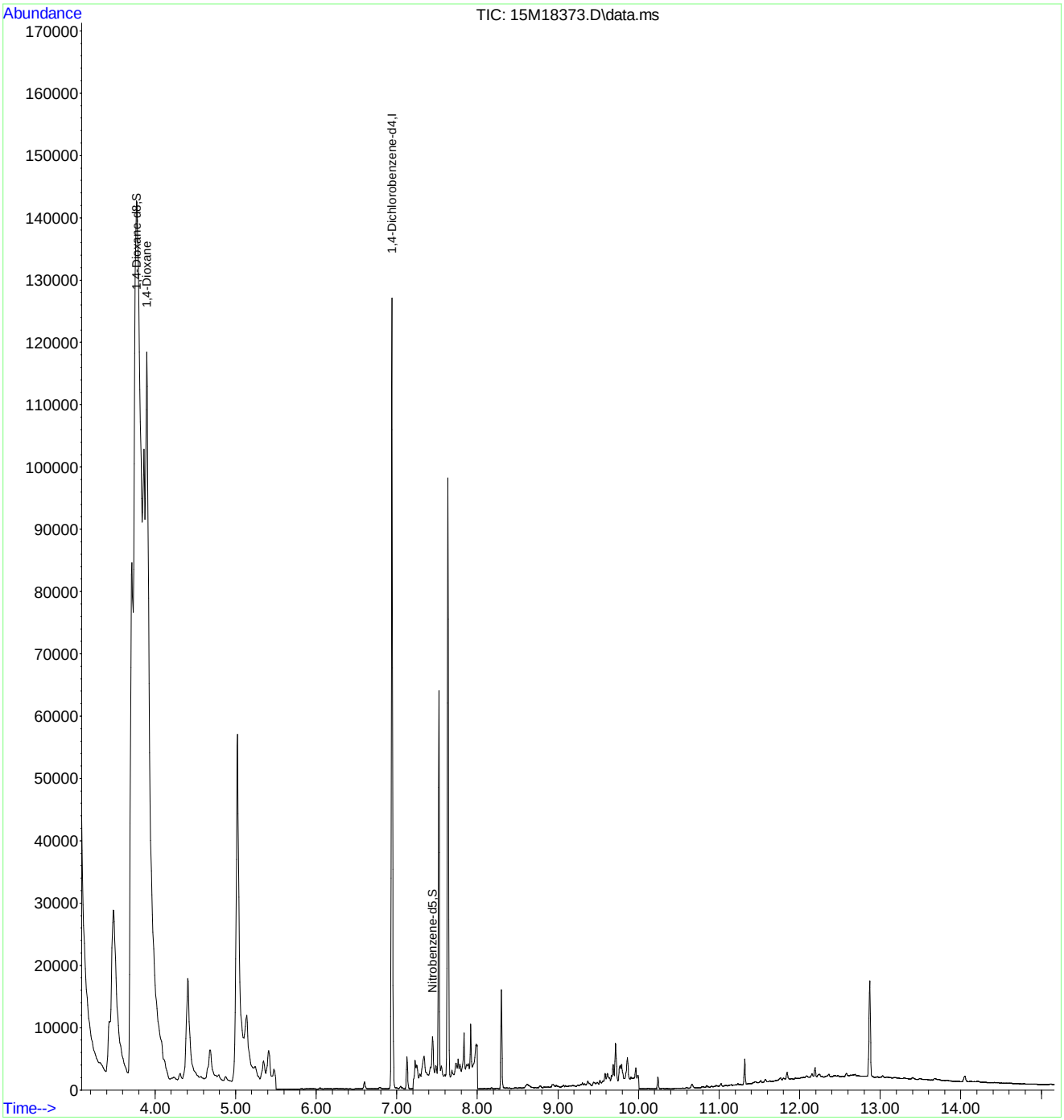

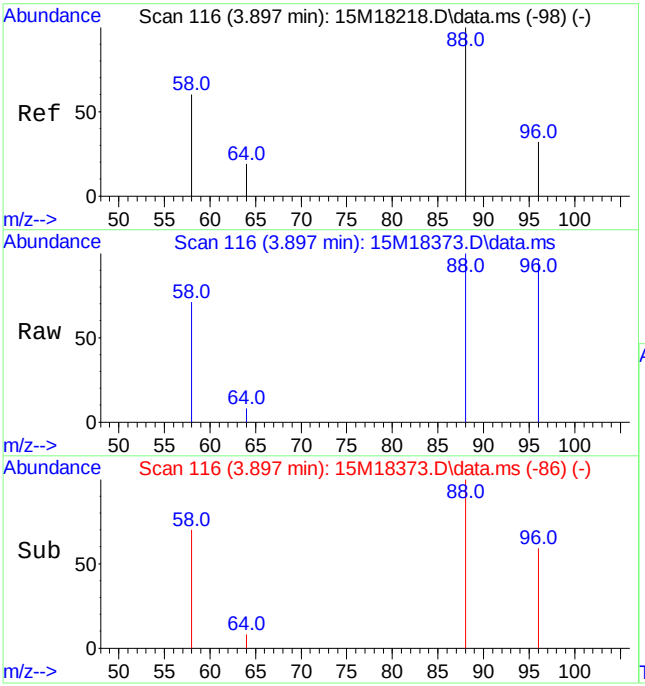

#2
1,4-Dioxane
Concen: 5.74 ug/L
RT: 3.897 min Scan# 116
Delta R.T. 0.000 min
Lab File: 15M18373.D
Acq: 13 Jun 2016 12:35

Tgt Ion: 58 Resp: 96147

Ion	Ratio	Lower	Upper
58	100		
88	157.4	103.1	240.7

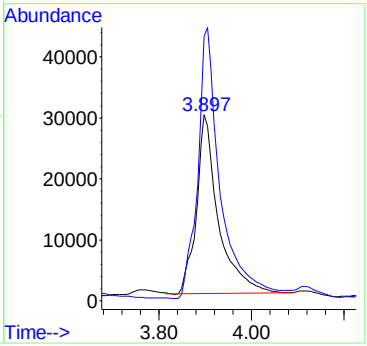

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18374.D
Acq On : 13 Jun 2016 12:58
Operator : MES
Sample : L16060414-02
Misc : 1,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jun 13 13:36:56 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	50069	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.770	96	2044817	97.5759	ug/L	-0.09
Spiked Amount 5.000			Recovery	= 1951.60%		
4) Nitrobenzene-d5	7.442	82	7828	0.3637	ug/L	0.00
Spiked Amount 5.000			Recovery	= 7.20%		
5) 2-Fluorobiphenyl	8.948	172	232	0.0018	ug/L	0.02
Spiked Amount 5.000			Recovery	= 0.00%		
6) p-Terphenyl-d14	11.952	244	266	0.0021	ug/L	-0.23
Spiked Amount 5.000			Recovery	= 0.00%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	116349	7.1424	ug/L	95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18374.D
Acq On : 13 Jun 2016 12:58
Operator : MES
Sample : L16060414-02
Misc : 1,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jun 13 13:36:56 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

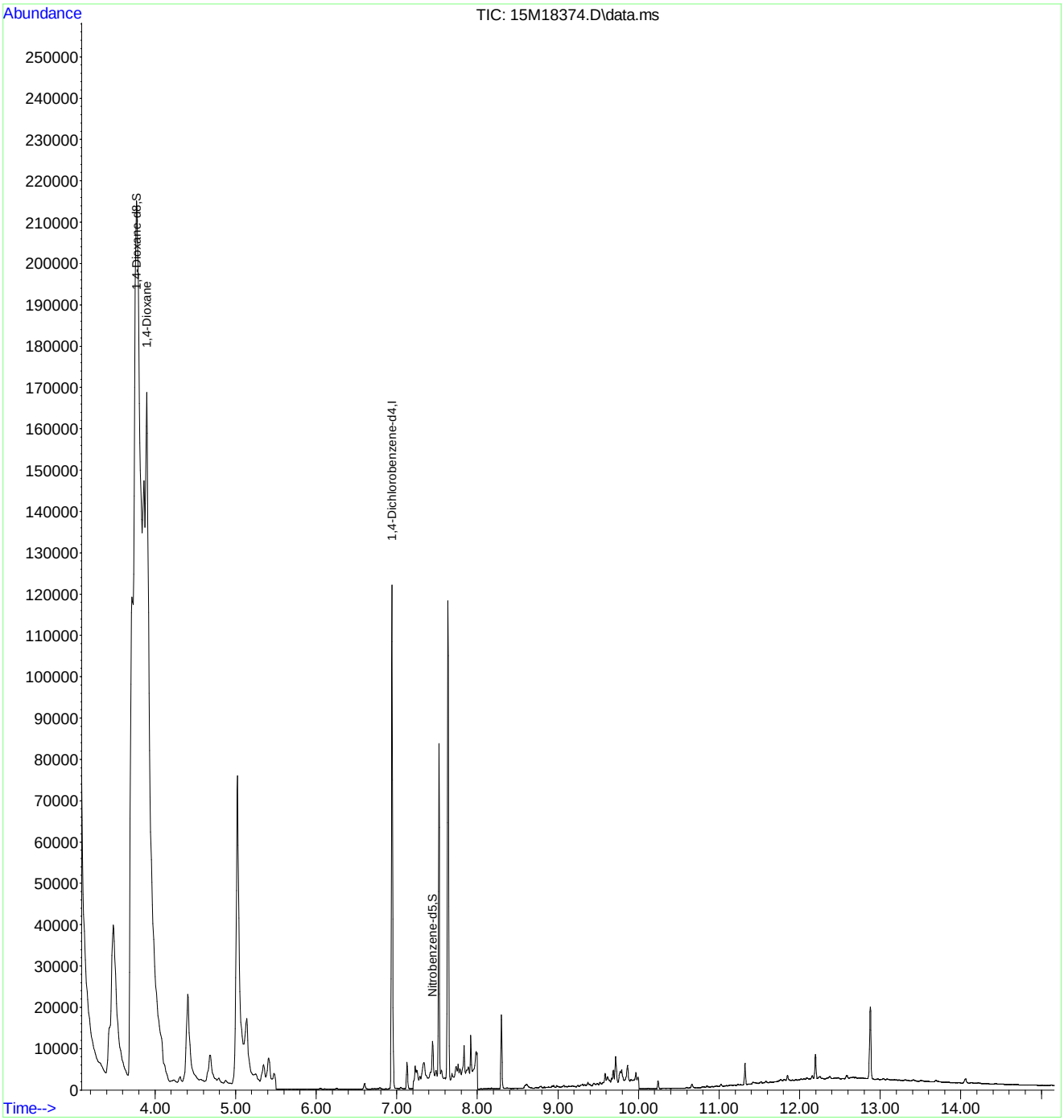

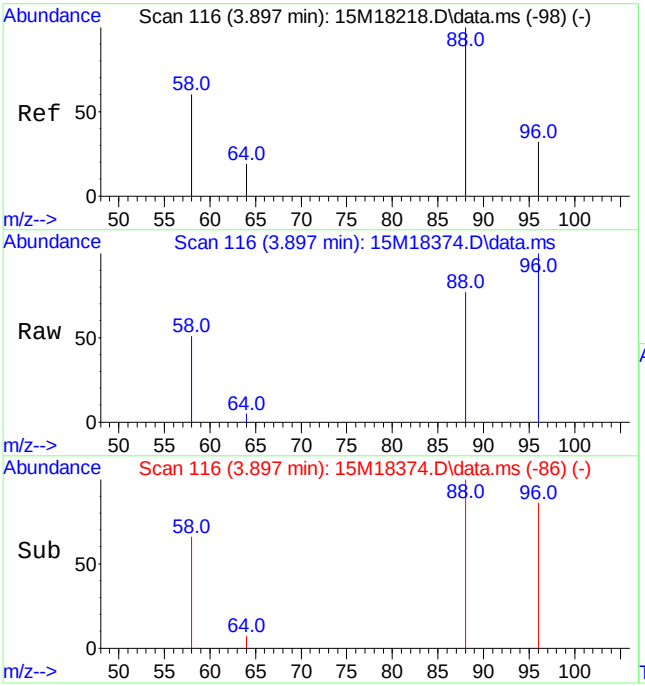

#2
1,4-Dioxane
Concen: 7.14 ug/L
RT: 3.897 min Scan# 116
Delta R.T. 0.000 min
Lab File: 15M18374.D
Acq: 13 Jun 2016 12:58

Tgt Ion: 58 Resp: 116349

Ion	Ratio	Lower	Upper
58	100		
88	164.7	103.1	240.7

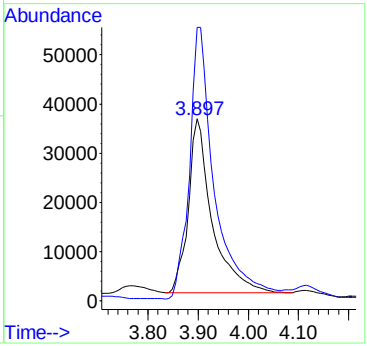

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18380.D
Acq On : 13 Jun 2016 15:14
Operator : MES
Sample : L16060414-03 50X
Misc : 1,50
ALS Vial : 18 Sample Multiplier: 50

Quant Time: Jun 13 15:31:14 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.944	152	38368	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.763	96	64333	200.3049	ug/L	-0.10
Spiked Amount 5.000			Recovery = 4006.00%			
4) Nitrobenzene-d5	7.442	82	99	11.0164	ug/L	0.00
Spiked Amount 5.000			Recovery = 220.40%			
5) 2-Fluorobiphenyl	8.934	172	19	0.0095	ug/L	0.00
Spiked Amount 5.000			Recovery = 0.20%			
6) p-Terphenyl-d14	12.199	244	43	0.0219	ug/L	0.02
Spiked Amount 5.000			Recovery = 0.40%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.890	58	97426	7.8047	ug/L	81

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18380.D
Acq On : 13 Jun 2016 15:14
Operator : MES
Sample : L16060414-03 50X
Misc : 1,50
ALS Vial : 18 Sample Multiplier: 50

Quant Time: Jun 13 15:31:14 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

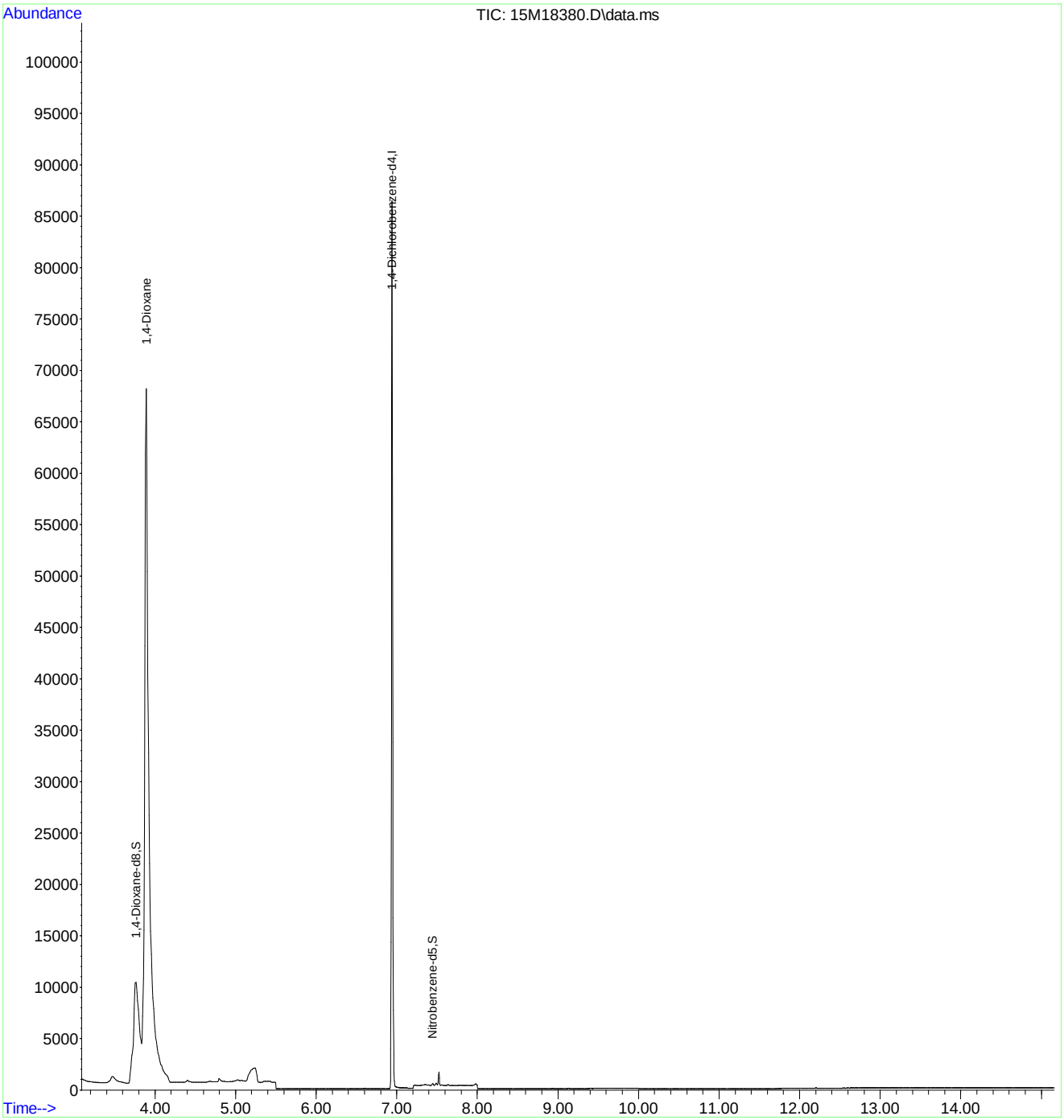

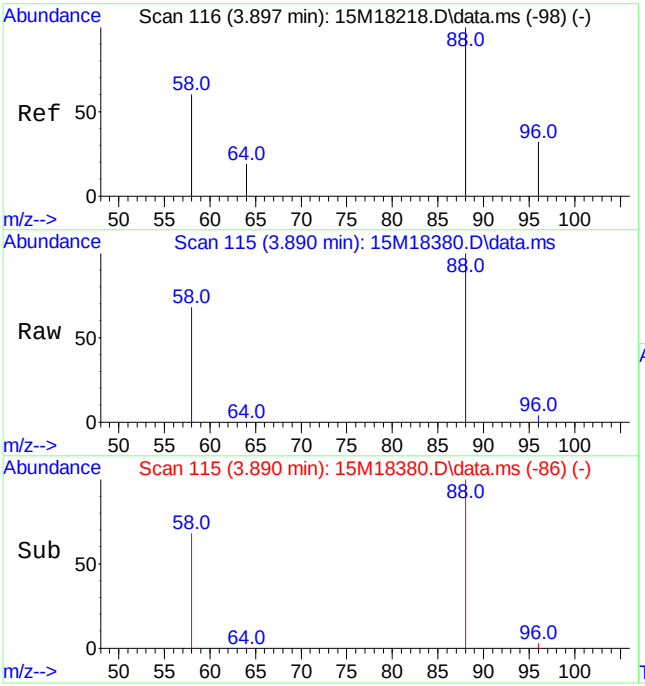

#2
1,4-Dioxane
Concen: 7.80 ug/L
RT: 3.890 min Scan# 115
Delta R.T. -0.007 min
Lab File: 15M18380.D
Acq: 13 Jun 2016 15:14

Tgt Ion: 58 Resp: 97426

Ion	Ratio	Lower	Upper
58	100		
88	146.0	103.1	240.7

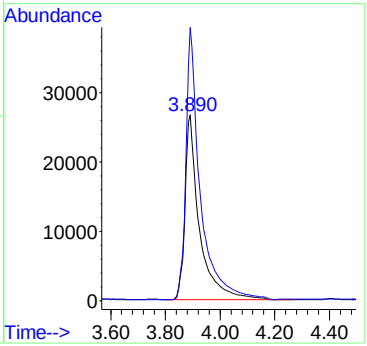

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18381.D
Acq On : 13 Jun 2016 15:36
Operator : MES
Sample : L16060414-04 50X
Misc : 1,50
ALS Vial : 19 Sample Multiplier: 50

Quant Time: Jun 13 15:53:05 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.944	152	45572	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.785	96	68589	179.7974	ug/L	-0.08
Spiked Amount 5.000			Recovery	= 3596.00%		
4) Nitrobenzene-d5	7.447	82	115	11.0138	ug/L	0.01
Spiked Amount 5.000			Recovery	= 220.20%		
5) 2-Fluorobiphenyl	8.930	172	15	0.0063	ug/L	0.00
Spiked Amount 5.000			Recovery	= 0.20%		
6) p-Terphenyl-d14	12.199	244	68	0.0291	ug/L	0.02
Spiked Amount 5.000			Recovery	= 0.60%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.904	58	111175	7.4983	ug/L	81

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18381.D
Acq On : 13 Jun 2016 15:36
Operator : MES
Sample : L16060414-04 50X
Misc : 1,50
ALS Vial : 19 Sample Multiplier: 50

Quant Time: Jun 13 15:53:05 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

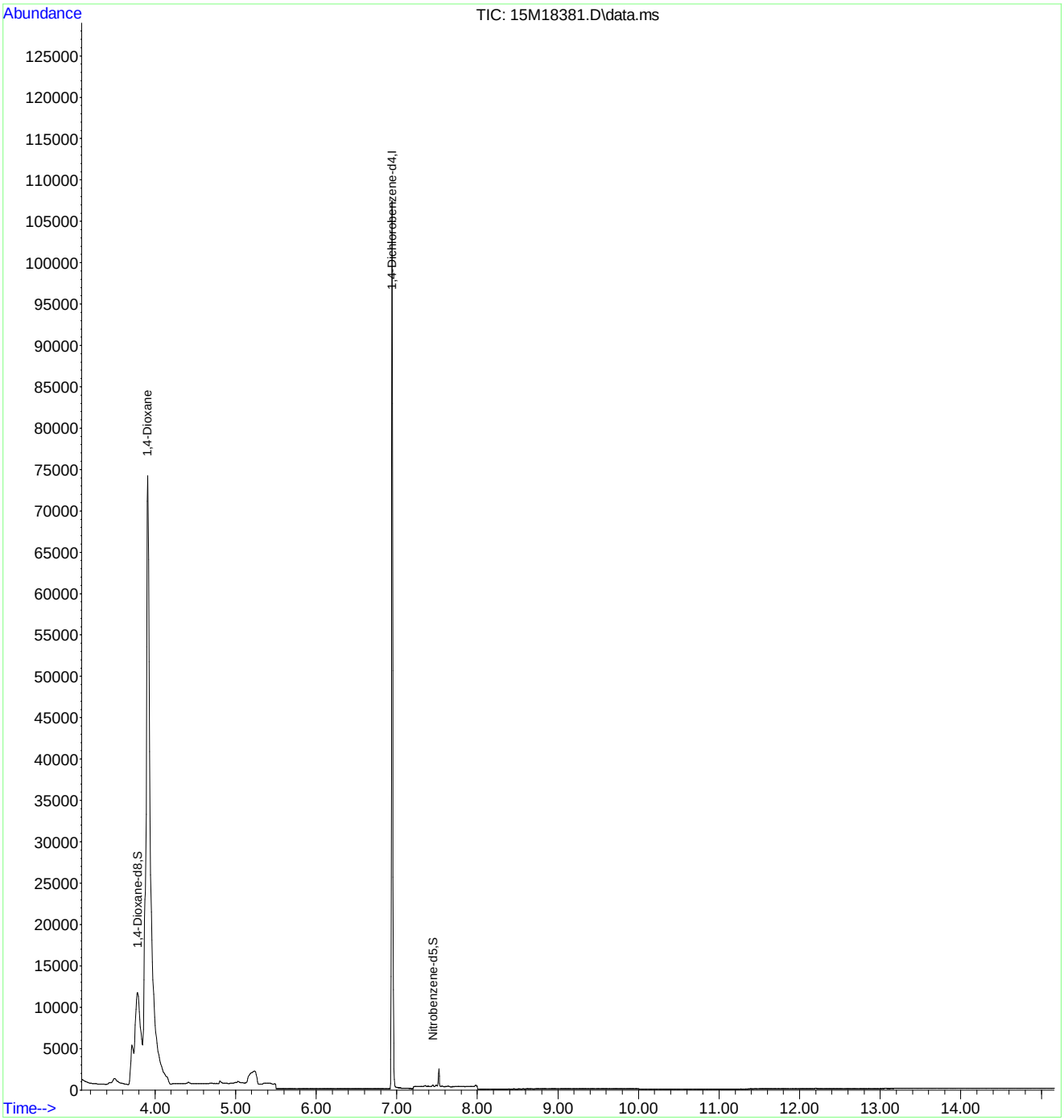

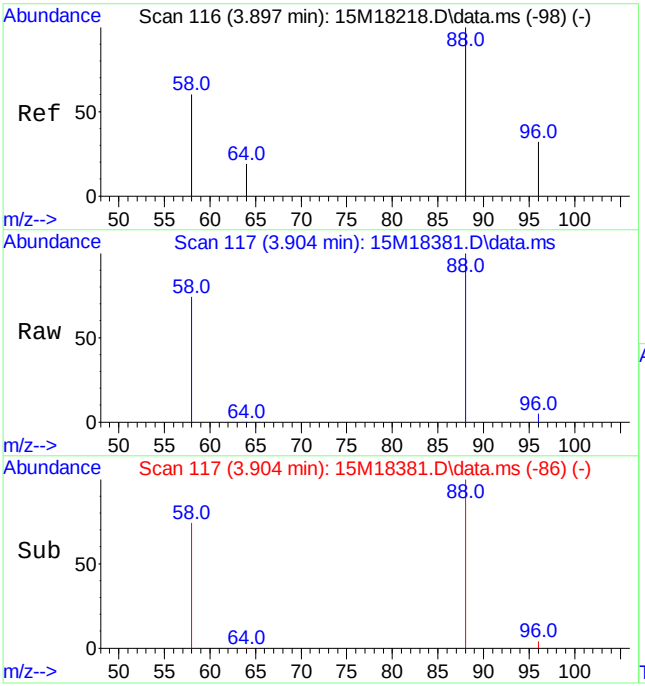

#2
1,4-Dioxane
Concen: 7.50 ug/L
RT: 3.904 min Scan# 117
Delta R.T. 0.007 min
Lab File: 15M18381.D
Acq: 13 Jun 2016 15:36

Tgt Ion: 58 Resp: 111175

Ion	Ratio	Lower	Upper
58	100		
88	145.6	103.1	240.7

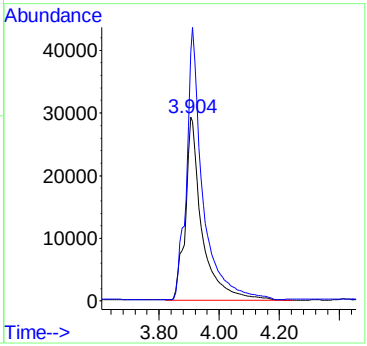

2.2.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18338.D
Acq On : 10 Jun 2016 10:36
Operator : MES
Sample : WG572230-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 10 18:15:30 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	66625	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	138302	4.9596	ug/L	0.00
Spiked Amount 5.000			Recovery	=	99.20%	
4) Nitrobenzene-d5	7.436	82	321639	4.7189	ug/L	0.00
Spiked Amount 5.000			Recovery	=	94.40%	
5) 2-Fluorobiphenyl	8.926	172	845013	4.8542	ug/L	0.00
Spiked Amount 5.000			Recovery	=	97.00%	
6) p-Terphenyl-d14	12.181	244	855352	5.0103	ug/L	0.00
Spiked Amount 5.000			Recovery	=	100.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	107215	4.9462	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18338.D
Acq On : 10 Jun 2016 10:36
Operator : MES
Sample : WG572230-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 10 18:15:30 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

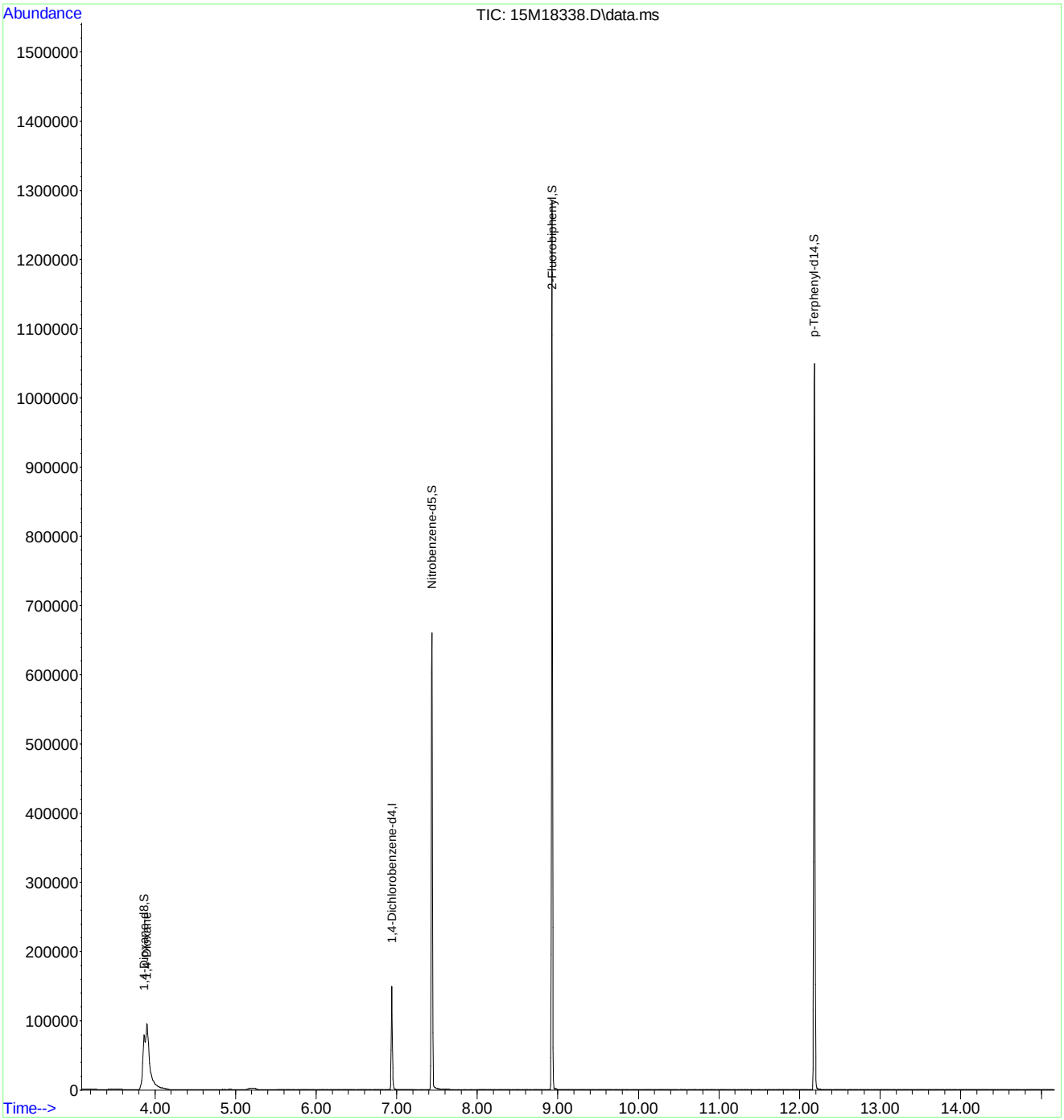

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18339.D
Acq On : 10 Jun 2016 11:00
Operator : MES
Sample : WG572230-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 10 18:15:34 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	56194	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	248072	10.5474	ug/L	0.00
Spiked Amount 5.000			Recovery = 211.00%			
4) Nitrobenzene-d5	7.436	82	628184	10.6403	ug/L	0.00
Spiked Amount 5.000			Recovery = 212.80%			
5) 2-Fluorobiphenyl	8.926	172	1513331	10.3070	ug/L	0.00
Spiked Amount 5.000			Recovery = 206.20%			
6) p-Terphenyl-d14	12.184	244	1587021	11.0217	ug/L	0.00
Spiked Amount 5.000			Recovery = 220.40%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	192761	10.5434	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18339.D
Acq On : 10 Jun 2016 11:00
Operator : MES
Sample : WG572230-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 10 18:15:34 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

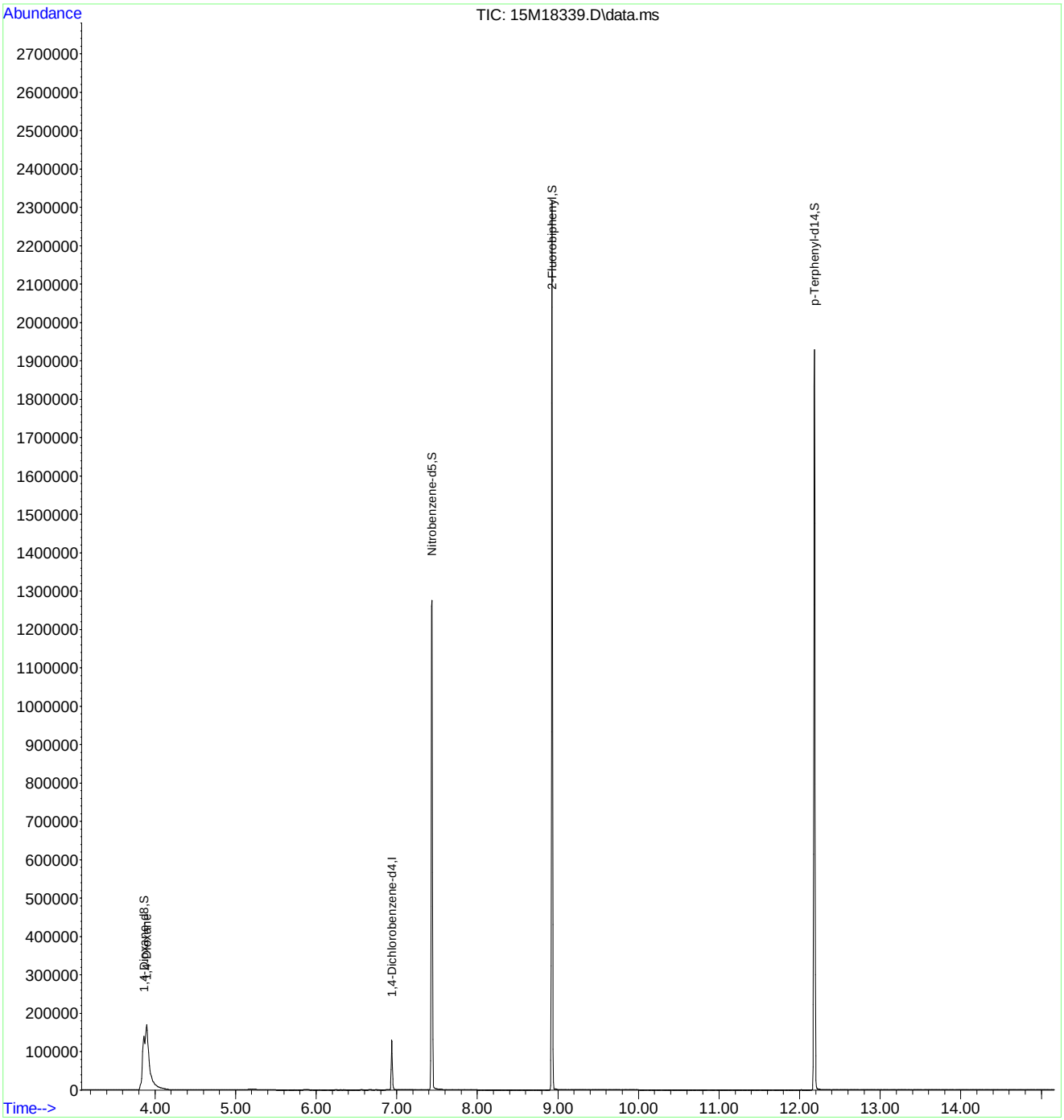

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18340.D
Acq On : 10 Jun 2016 11:22
Operator : MES
Sample : WG572230-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 10 18:15:37 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	60457	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	187351	7.4040	ug/L	0.00
Spiked Amount 5.000			Recovery	= 148.00%		
4) Nitrobenzene-d5	7.431	82	466388	7.4103	ug/L	0.00
Spiked Amount 5.000			Recovery	= 148.20%		
5) 2-Fluorobiphenyl	8.926	172	1170859	7.4122	ug/L	0.00
Spiked Amount 5.000			Recovery	= 148.20%		
6) p-Terphenyl-d14	12.192	244	1205938	7.7846	ug/L	0.01
Spiked Amount 5.000			Recovery	= 155.60%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	146003	7.4228	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18340.D
Acq On : 10 Jun 2016 11:22
Operator : MES
Sample : WG572230-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 10 18:15:37 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

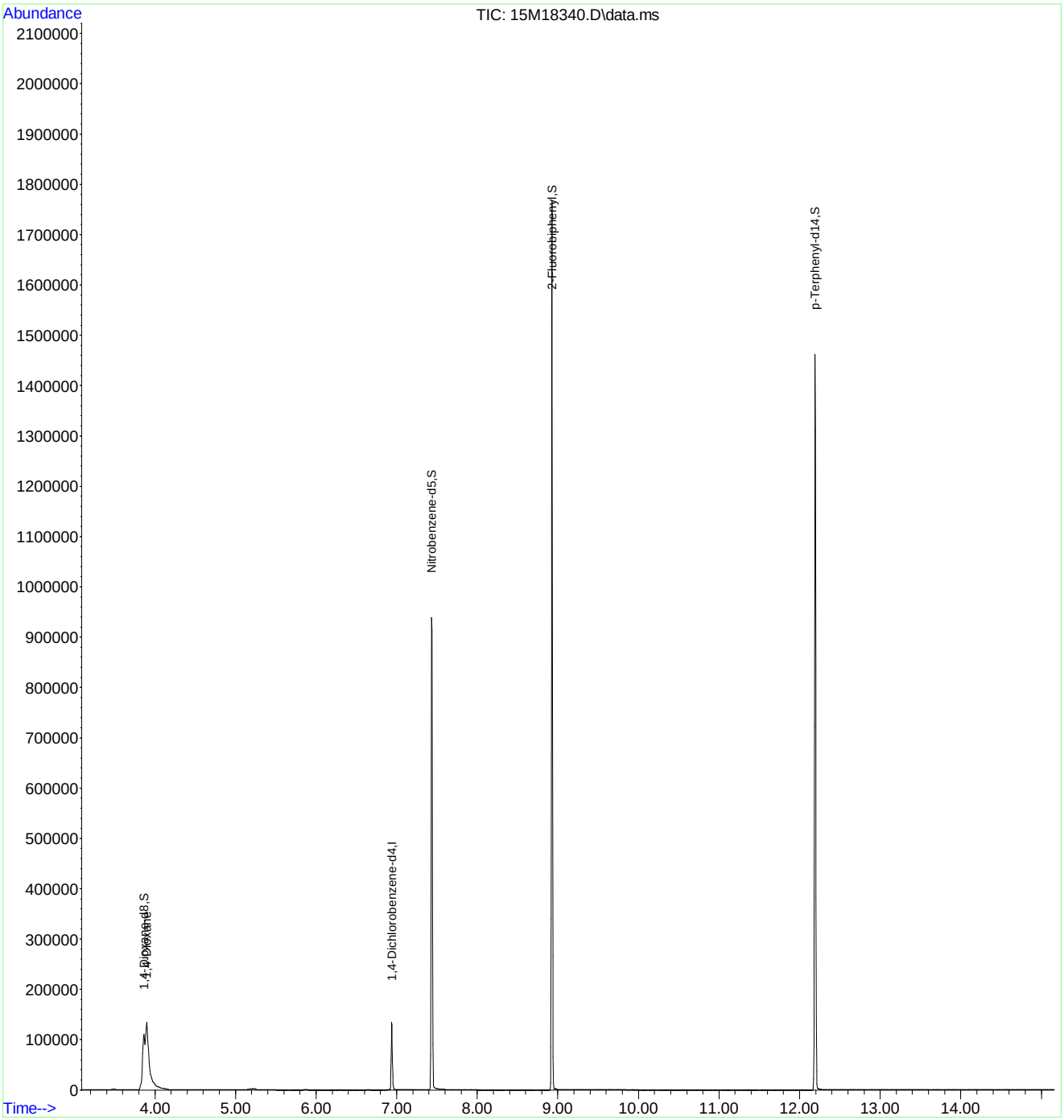

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18341.D
Acq On : 10 Jun 2016 11:45
Operator : MES
Sample : WG572230-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 10 18:15:40 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	45954	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.848	96	46972	2.4422	ug/L	-0.01
Spiked Amount 5.000			Recovery	=	48.80%	
4) Nitrobenzene-d5	7.436	82	97423	2.1945	ug/L	0.00
Spiked Amount 5.000			Recovery	=	43.80%	
5) 2-Fluorobiphenyl	8.926	172	301696	2.5127	ug/L	0.00
Spiked Amount 5.000			Recovery	=	50.20%	
6) p-Terphenyl-d14	12.188	244	286720	2.4350	ug/L	0.00
Spiked Amount 5.000			Recovery	=	48.60%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.883	58	36488	2.4405	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18341.D
Acq On : 10 Jun 2016 11:45
Operator : MES
Sample : WG572230-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 10 18:15:40 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

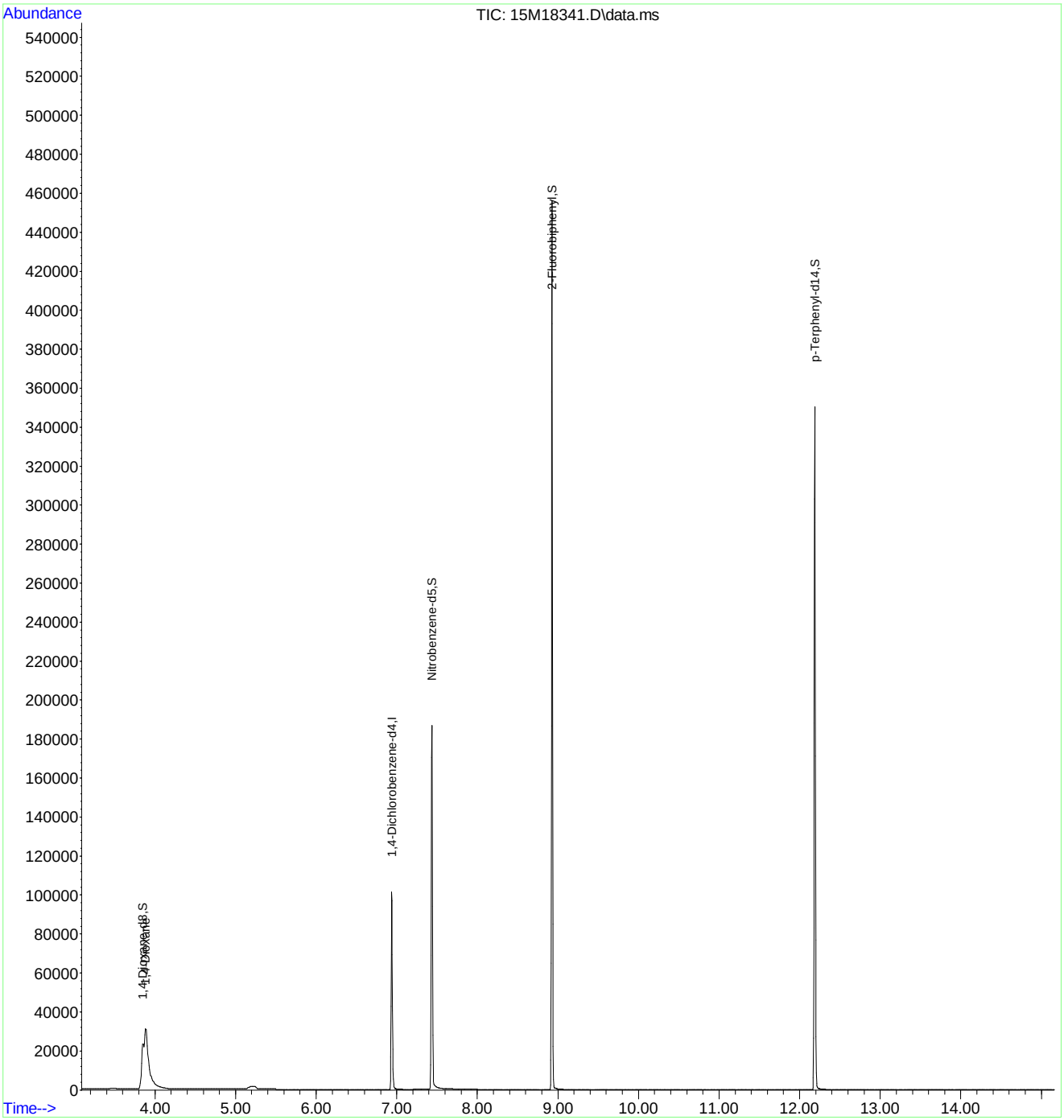

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18342.D
Acq On : 10 Jun 2016 12:08
Operator : MES
Sample : WG572230-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 10 18:15:43 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	59037	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	24054	0.9735	ug/L	0.00
Spiked Amount 5.000			Recovery = 19.40%			
4) Nitrobenzene-d5	7.436	82	44358	0.9184	ug/L	0.00
Spiked Amount 5.000			Recovery = 18.40%			
5) 2-Fluorobiphenyl	8.926	172	151018	0.9790	ug/L	0.00
Spiked Amount 5.000			Recovery = 19.60%			
6) p-Terphenyl-d14	12.199	244	140040	0.9257	ug/L	0.02
Spiked Amount 5.000			Recovery = 18.60%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.904	58	18621	0.9695	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18342.D
Acq On : 10 Jun 2016 12:08
Operator : MES
Sample : WG572230-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 10 18:15:43 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

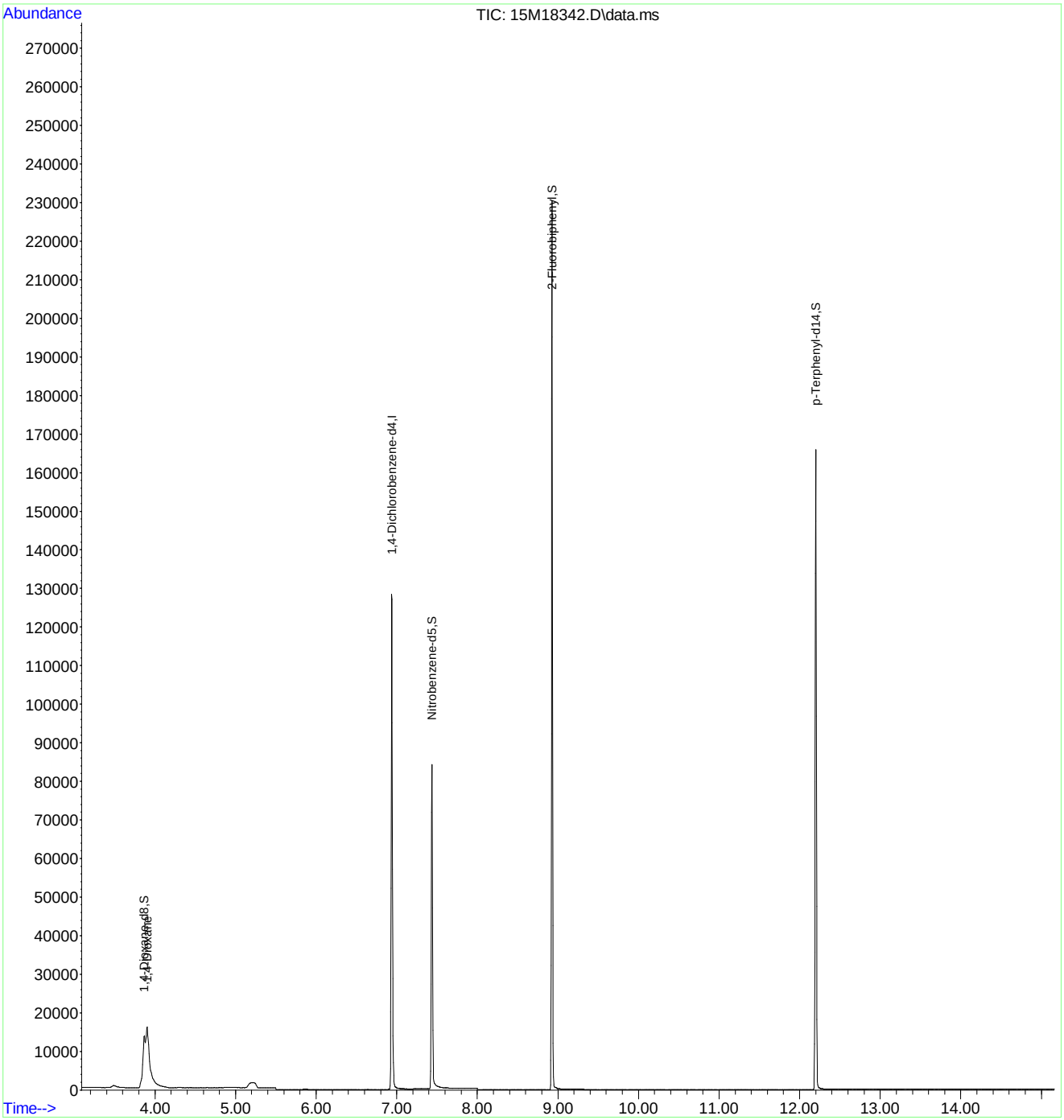

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18343.D
Acq On : 10 Jun 2016 12:30
Operator : MES
Sample : WG572230-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 10 18:15:46 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	51531	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	8760	0.4062	ug/L	0.00
Spiked Amount 5.000			Recovery	=	8.20%	
4) Nitrobenzene-d5	7.436	82	14371	0.4779	ug/L	0.00
Spiked Amount 5.000			Recovery	=	9.60%	
5) 2-Fluorobiphenyl	8.926	172	54404	0.4041	ug/L	0.00
Spiked Amount 5.000			Recovery	=	8.00%	
6) p-Terphenyl-d14	12.203	244	49910	0.3780	ug/L	0.02
Spiked Amount 5.000			Recovery	=	7.60%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	6733	0.4016	ug/L	79

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18343.D
Acq On : 10 Jun 2016 12:30
Operator : MES
Sample : WG572230-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 10 18:15:46 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

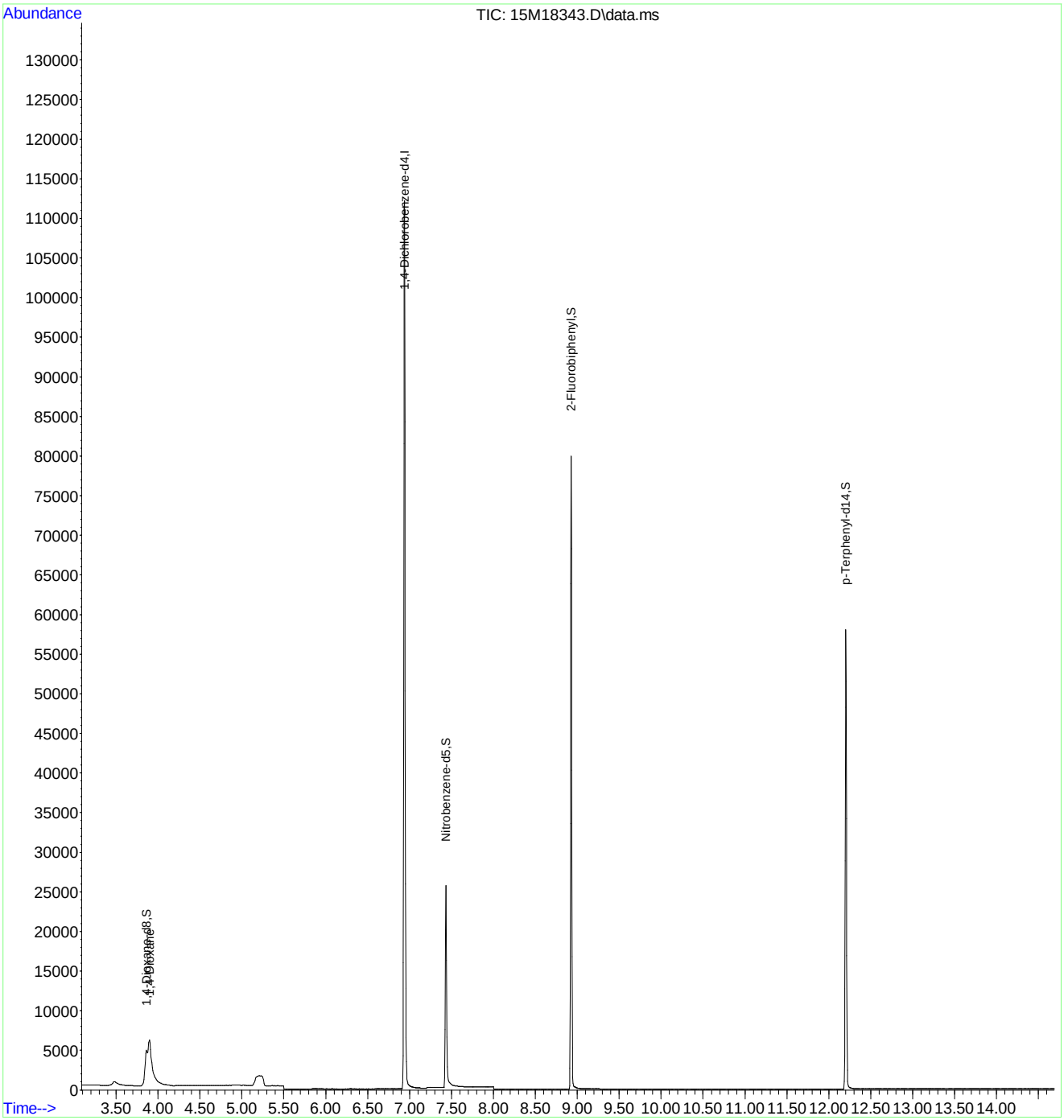

Nitrobenzene-d5

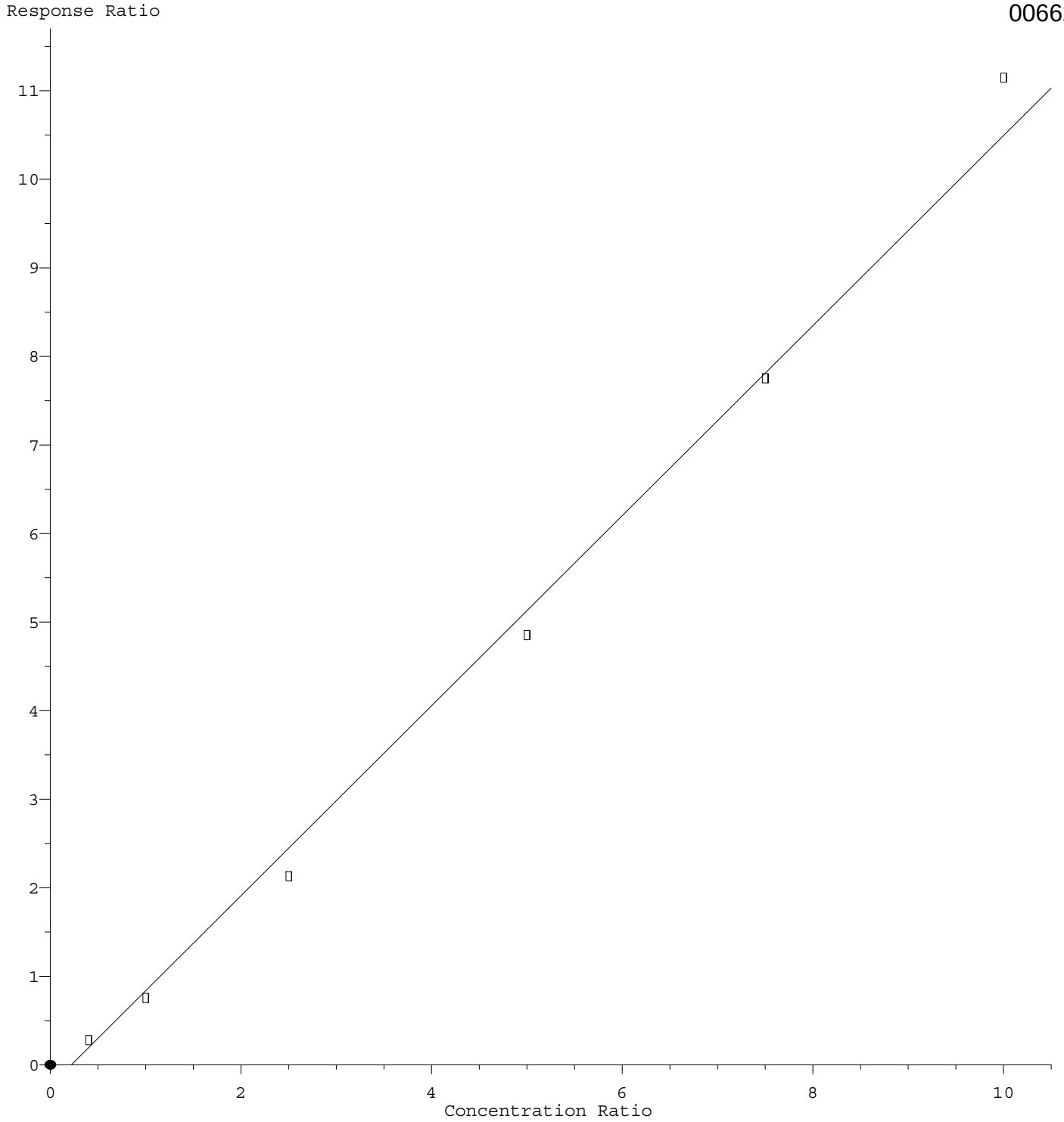

Response = 1.07e+000 * Amt - 2.34e-001
Coef of Det (r^2) = 0.994 Curve Fit: wlr(1/a)
Method Name: C:\msdchem\1\methods\DIOXANE_D8.M
Calibration Table Last Updated: Fri Jun 10 12:46:00 2016

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18344.D
Acq On : 10 Jun 2016 12:52
Operator : MES
Sample : WG572230-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 10 18:15:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	51498	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.897	96	61	0.0028	ug/L	0.04
Spiked Amount 5.000			Recovery	=	0.00%	
4) Nitrobenzene-d5	7.442	82	61	0.2190	ug/L	0.00
Spiked Amount 5.000			Recovery	=	4.40%	
5) 2-Fluorobiphenyl	8.926	172	23	0.0002	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.214	244	150	0.0011	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	85662	5.1127	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18344.D
Acq On : 10 Jun 2016 12:52
Operator : MES
Sample : WG572230-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 10 18:15:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

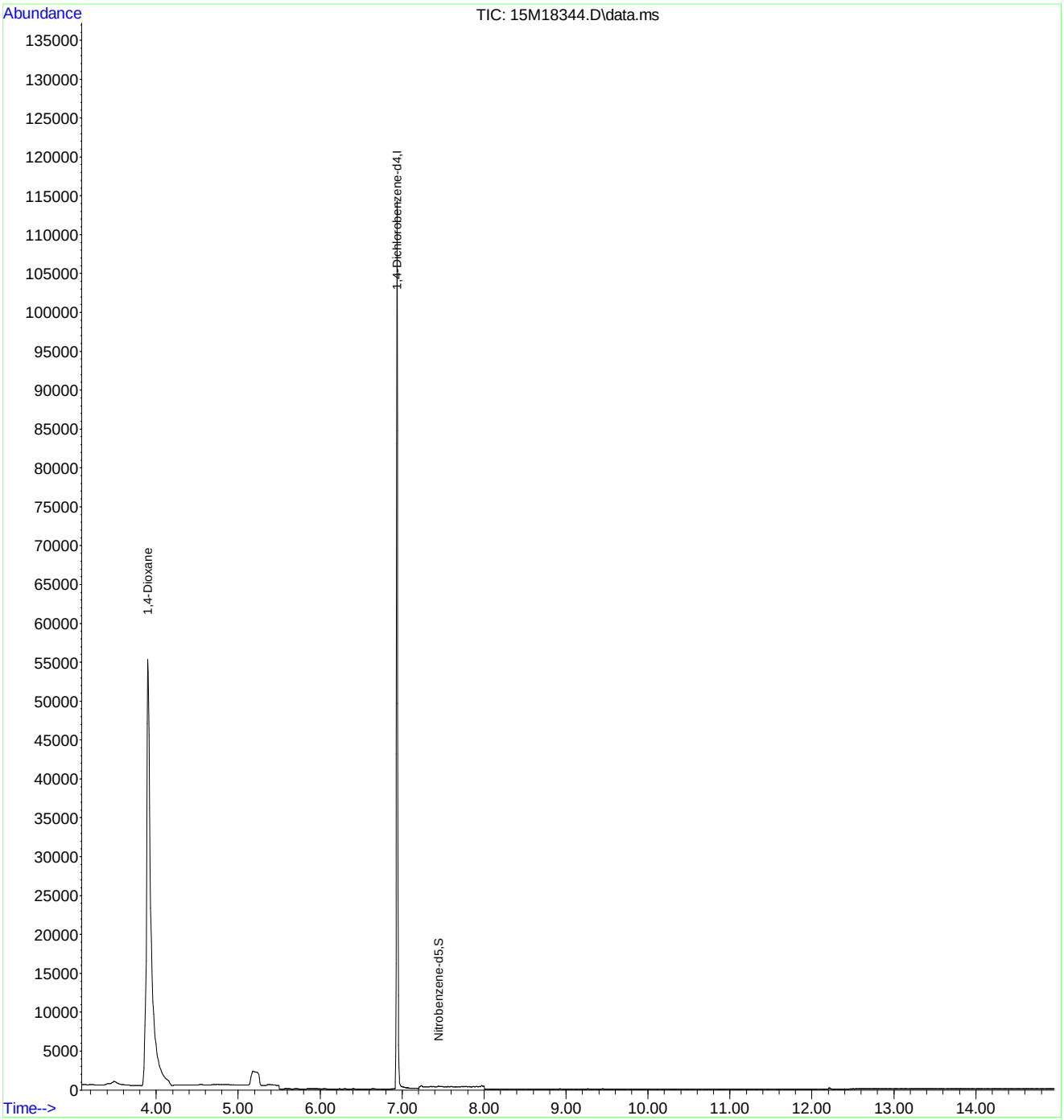

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18344.D
Acq On : 10 Jun 2016 12:52
Operator : MES
Sample : WG572230-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 10 18:15:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	78	0.00
2	1,4-Dioxane	5.000	5.113	-2.3	80	0.00
3 S	1,4-Dioxane-d8	5.000	0.003	99.9#	0	0.04
4 S	Nitrobenzene-d5	5.000	0.219	95.6#	0	0.00
5 S	2-Fluorobiphenyl	5.000	0.000	100.0#	0	0.00
6 S	p-Terphenyl-d14	5.000	0.001	100.0#	0	0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18363.D
Acq On : 13 Jun 2016 8:48
Operator : MES
Sample : WG572383-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 13 09:03:10 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	61399	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.855	96	130273	5.0693	ug/L	0.00
Spiked Amount 5.000			Recovery	= 101.40%		
4) Nitrobenzene-d5	7.436	82	233410	3.7622	ug/L	0.00
Spiked Amount 5.000			Recovery	= 75.20%		
5) 2-Fluorobiphenyl	8.926	172	816071	5.0869	ug/L	0.00
Spiked Amount 5.000			Recovery	= 101.80%		
6) p-Terphenyl-d14	12.162	244	817726	5.1976	ug/L	-0.02
Spiked Amount 5.000			Recovery	= 104.00%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.890	58	99259	4.9689	ug/L	81

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18363.D
Acq On : 13 Jun 2016 8:48
Operator : MES
Sample : WG572383-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 13 09:03:10 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

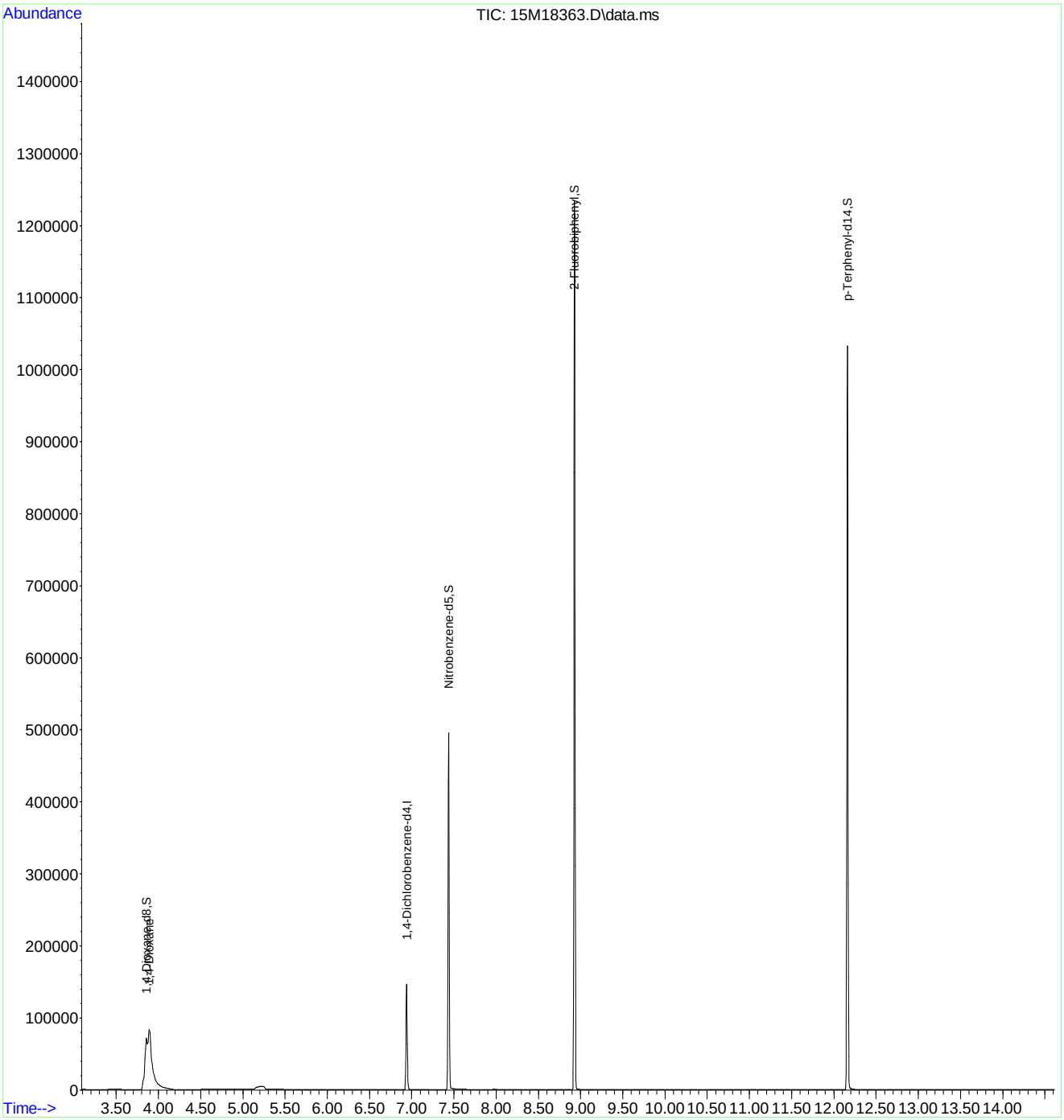

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18363.D
Acq On : 13 Jun 2016 8:48
Operator : MES
Sample : WG572383-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 13 09:03:10 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	93	0.00
2	1,4-Dioxane	0.325	0.323	0.6	93	0.00
3 S	1,4-Dioxane-d8	0.419	0.424	-1.2	94	0.00
4 S	Nitrobenzene-d5	0.904	0.760	15.9	73	0.00
5 S	2-Fluorobiphenyl	2.613	2.658	-1.7	97	0.00
6 S	p-Terphenyl-d14	2.562	2.664	-4.0	96	-0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18363.D
Acq On : 13 Jun 2016 8:48
Operator : MES
Sample : WG572383-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 13 09:03:10 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	93	0.00
2	1,4-Dioxane	5.000	4.969	0.6	93	0.00
3 S	1,4-Dioxane-d8	5.000	5.069	-1.4	94	0.00
4 S	Nitrobenzene-d5	5.000	3.762	24.8	73	0.00
5 S	2-Fluorobiphenyl	5.000	5.087	-1.7	97	0.00
6 S	p-Terphenyl-d14	5.000	5.198	-4.0	96	-0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 0

2.2.1.5 Raw QC Data

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18337.D
Acq On : 10 Jun 2016 10:18
Operator : MES
Sample : WG572230-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

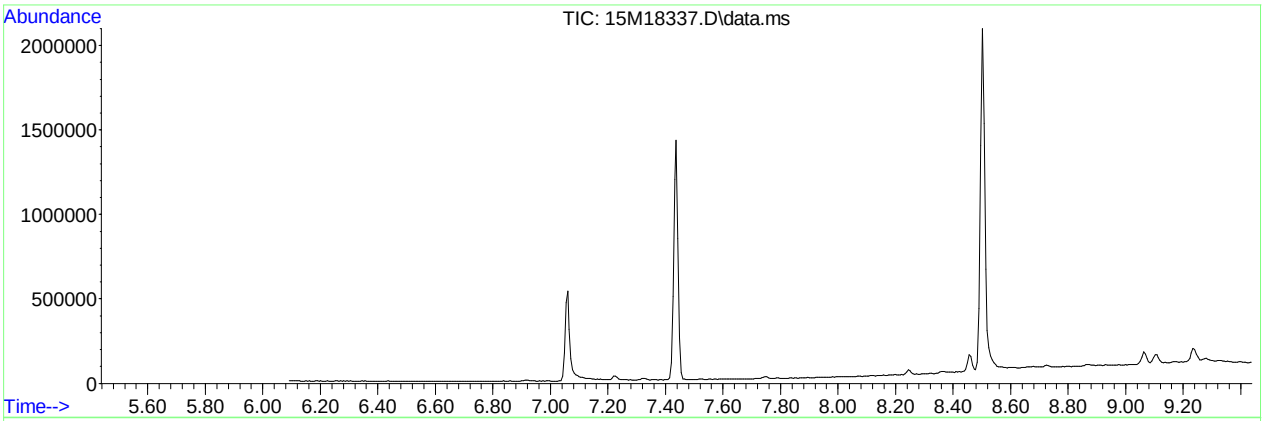

AutoFind: Scans 235, 236, 237; Background Corrected with Scan 229

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	39.5	52157	PASS
68	69	0.00	2	1.9	1026	PASS
69	198	0.00	100	40.8	53844	PASS
70	69	0.00	2	0.2	120	PASS
127	198	40	60	51.4	67853	PASS
197	198	0.00	1	0.4	505	PASS
198	198	100	100	100.0	131981	PASS
199	198	5	9	6.7	8869	PASS
275	198	10	30	26.4	34853	PASS
365	198	1	100	3.2	4186	PASS
441	443	0.01	100	73.9	15632	PASS
442	198	40	100	83.4	110112	PASS
443	442	17	23	19.2	21163	PASS

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18337.D
Acq On : 10 Jun 2016 10:18
Operator : MES
Sample : WG572230-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 10 10:29:37 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

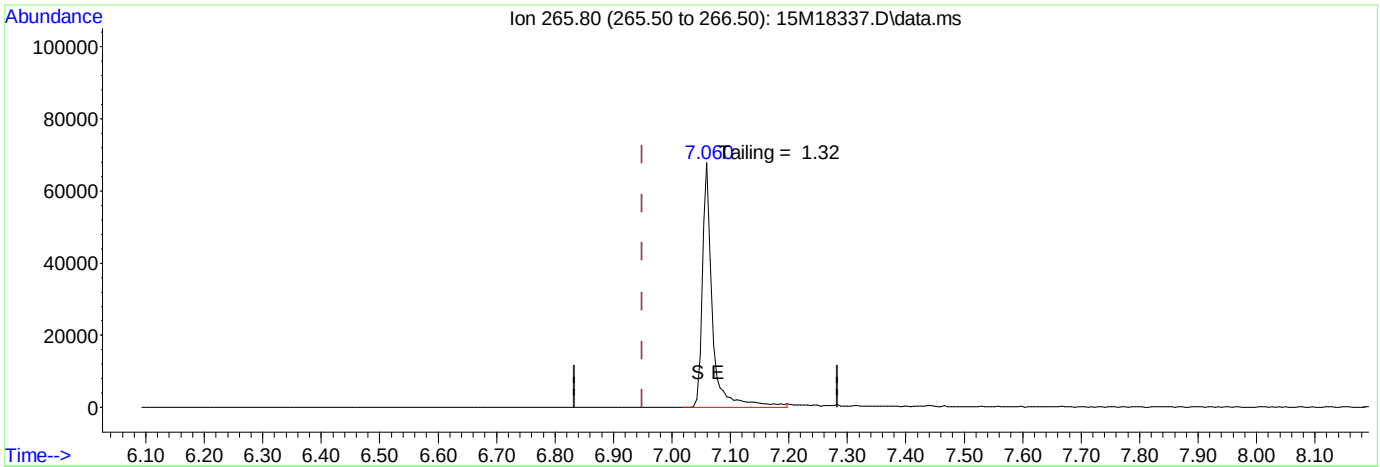

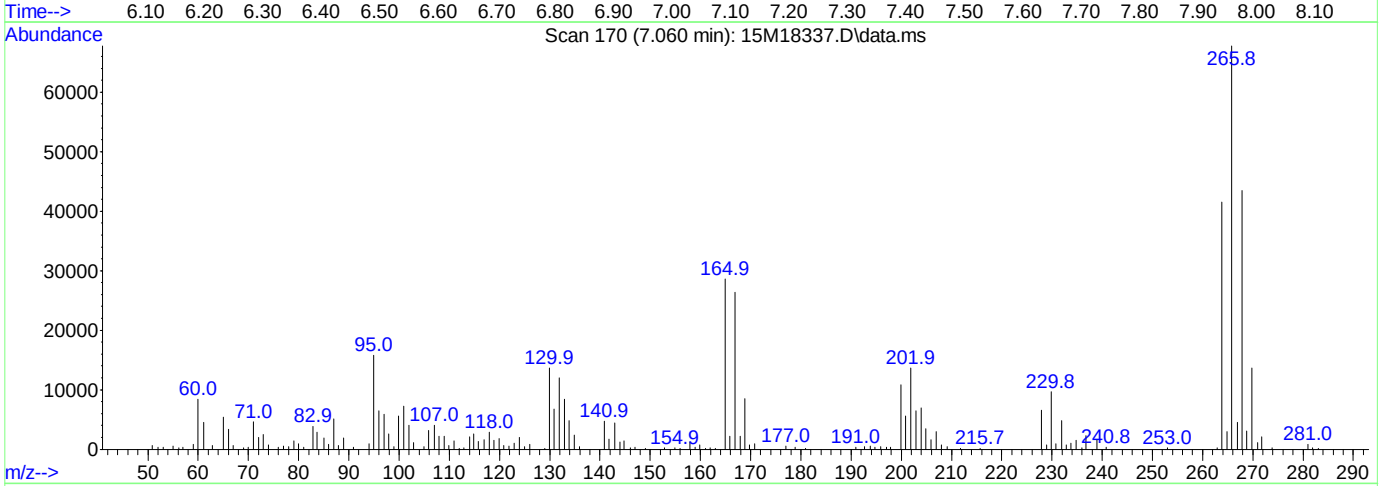

(1) Pentachlorophenol

7.060min (+ 0.111) 0.00 ug/ml

response 82111

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18337.D
Acq On : 10 Jun 2016 10:18
Operator : MES
Sample : WG572230-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 10 10:29:37 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

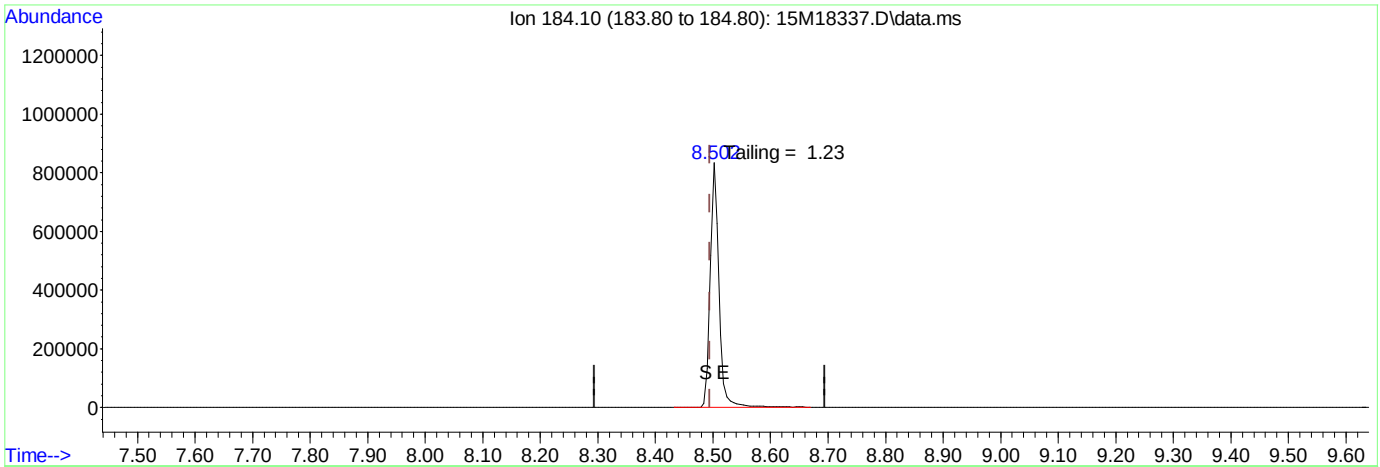

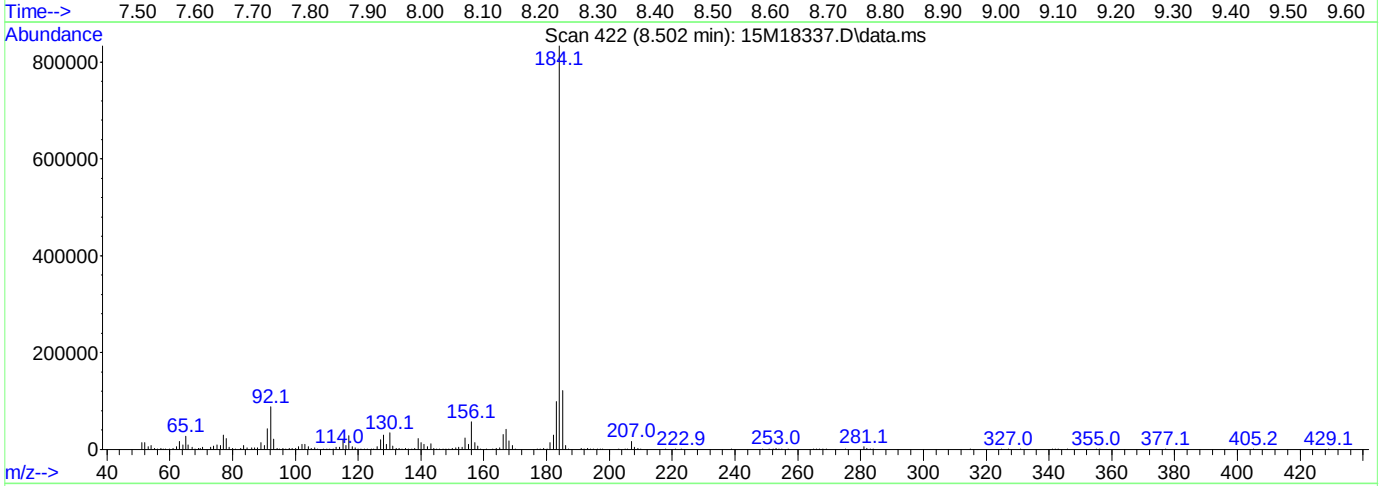

TIC: 15M18337.D\data.ms

(2) Benzidine

8.502min (+ 0.008) 0.00 ug/ml

response 896980

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18337.D
Acq On : 10 Jun 2016 10:18
Operator : MES
Sample : WG572230-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 10 10:29:37 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

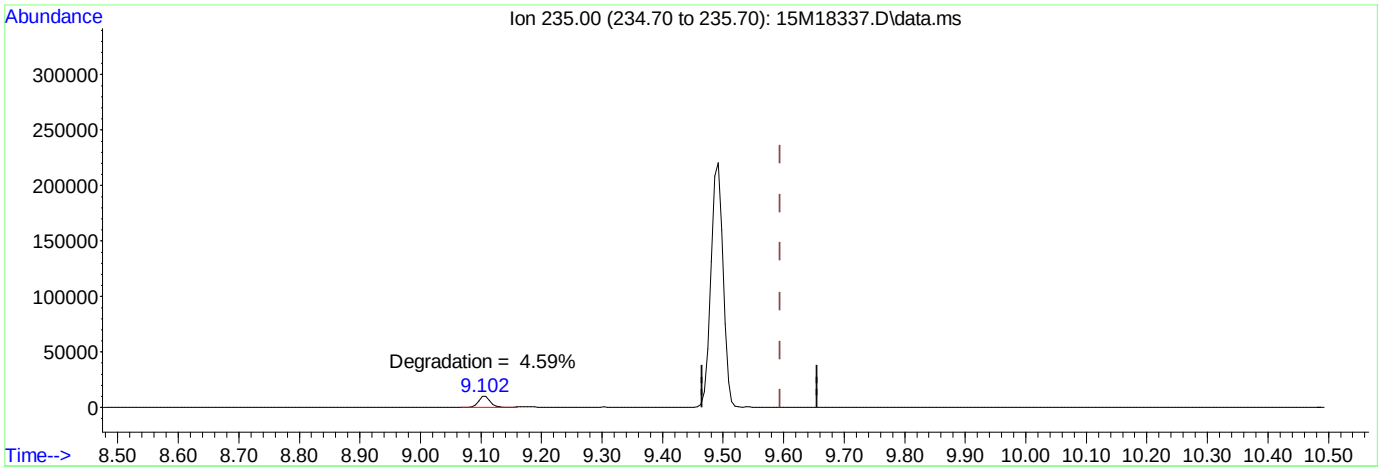

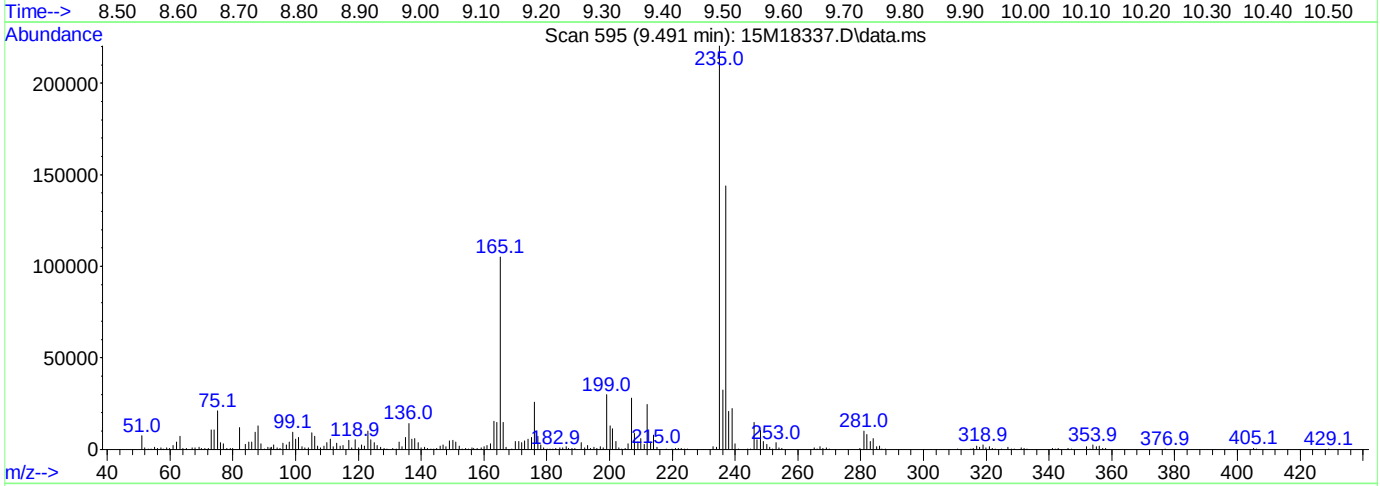

TIC: 15M18337.D\data.ms

(3) DDT

9.491min (-0.103) 0.00 ug/ml

response 283319

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18362.D
Acq On : 13 Jun 2016 8:30
Operator : MES
Sample : WG572383-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

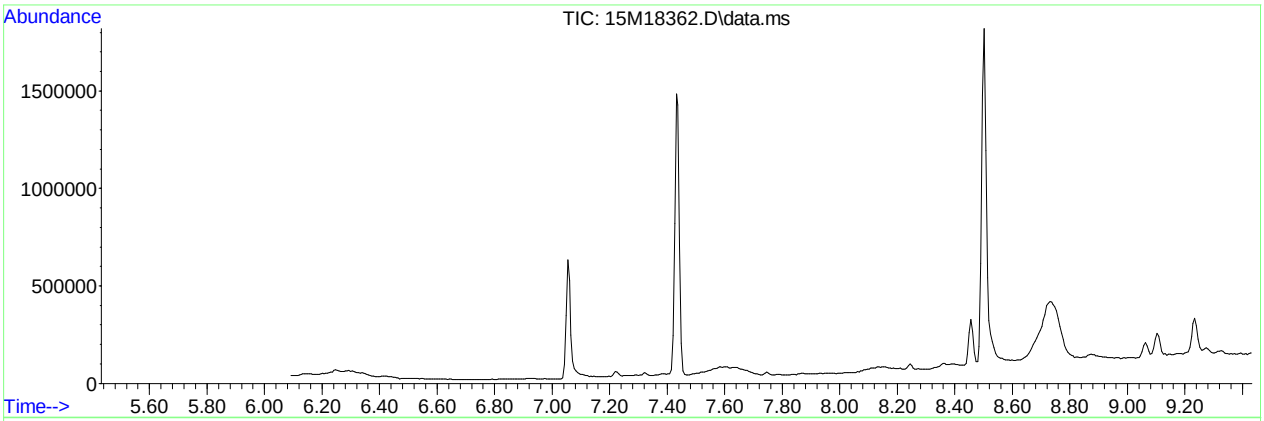

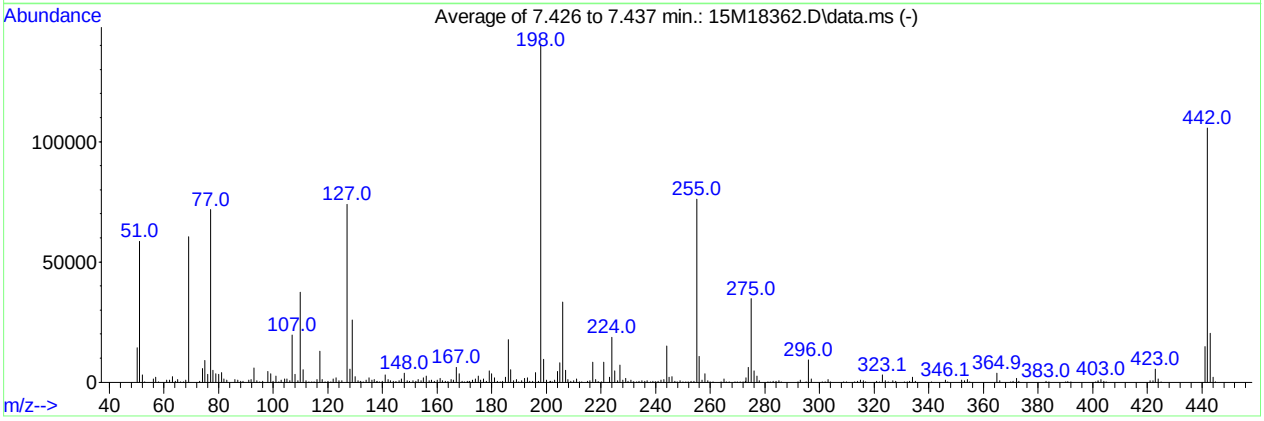

AutoFind: Scans 234, 235, 236; Background Corrected with Scan 228

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	41.7	58608	PASS
68	69	0.00	2	1.5	891	PASS
69	198	0.00	100	43.0	60438	PASS
70	69	0.00	2	0.0	0	PASS
127	198	40	60	52.6	73908	PASS
197	198	0.00	1	0.3	406	PASS
198	198	100	100	100.0	140616	PASS
199	198	5	9	6.8	9594	PASS
275	198	10	30	24.7	34747	PASS
365	198	1	100	2.7	3776	PASS
441	443	0.01	100	72.0	14703	PASS
442	198	40	100	75.2	105688	PASS
443	442	17	23	19.3	20429	PASS

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18362.D
Acq On : 13 Jun 2016 8:30
Operator : MES
Sample : WG572383-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 13 08:43:56 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

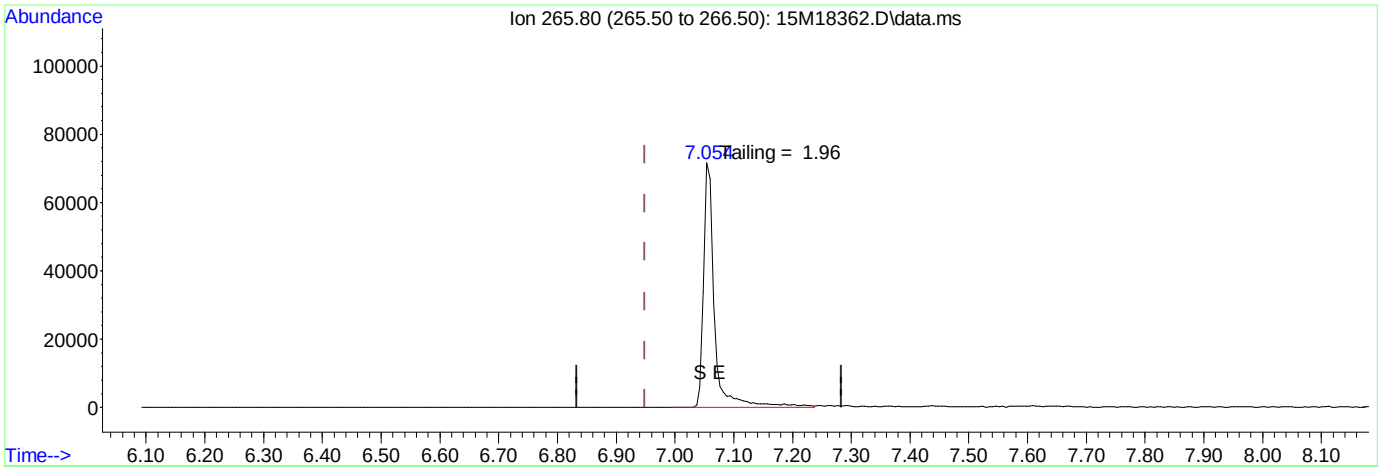

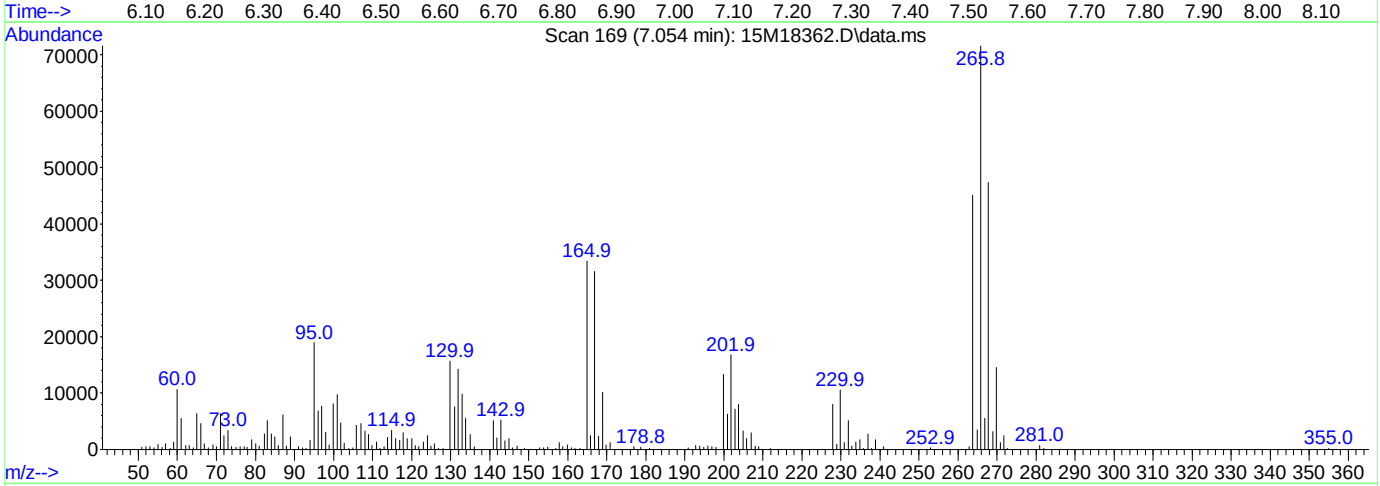

TIC: 15M18362.D\data.ms

(1) Pentachlorophenol

7.054min (+ 0.105) 0.00 ug/ml

response 89487

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18362.D
Acq On : 13 Jun 2016 8:30
Operator : MES
Sample : WG572383-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 13 08:43:56 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

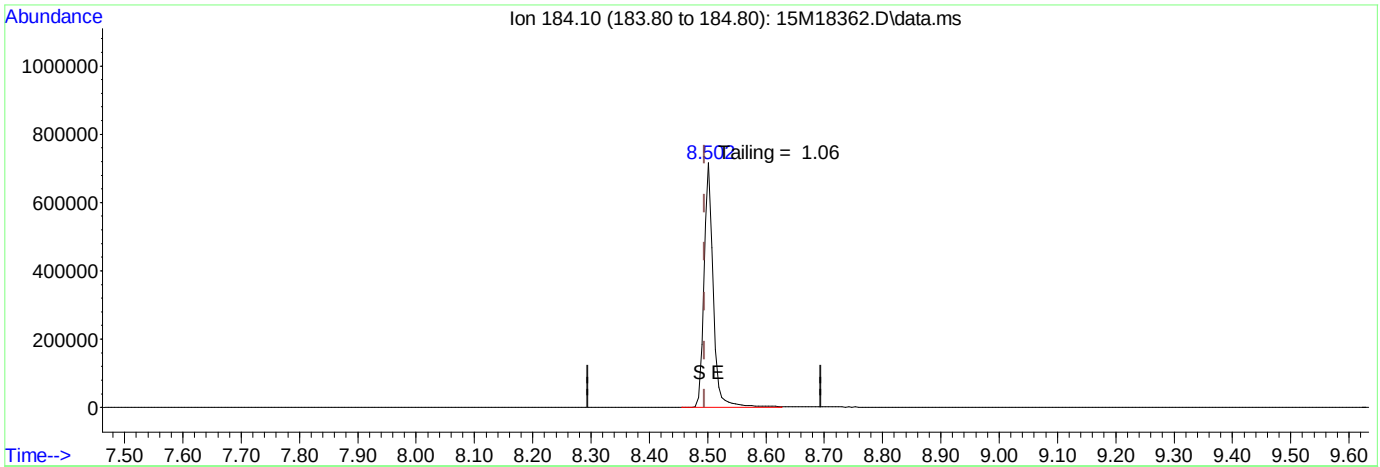

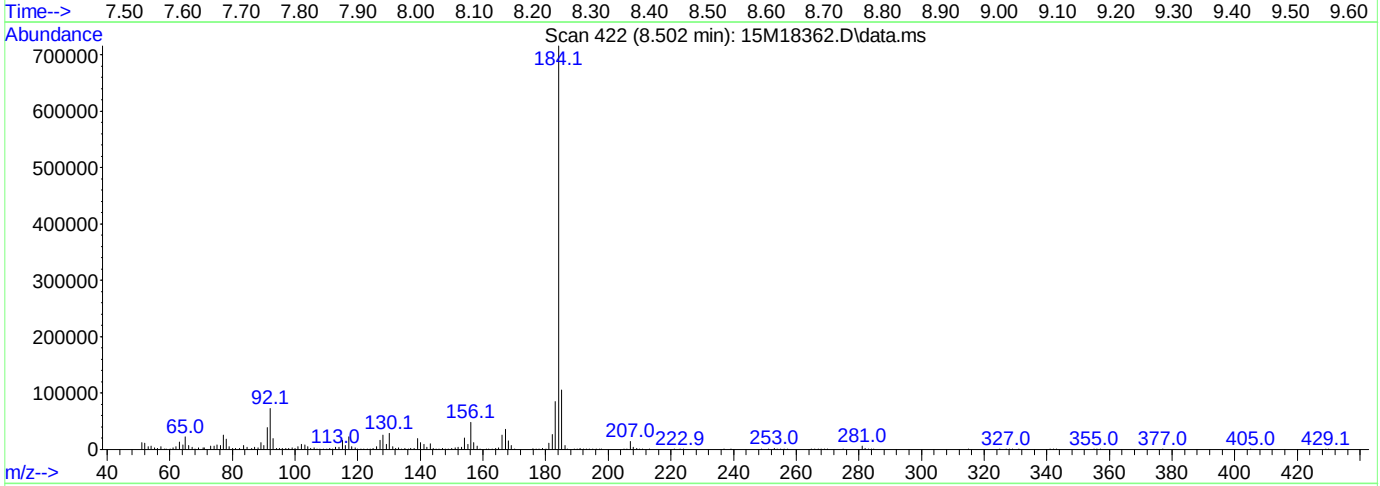

TIC: 15M18362.D\data.ms

(2) Benzidine

8.502min (+ 0.008) 0.00 ug/ml

response 797115

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18362.D
Acq On : 13 Jun 2016 8:30
Operator : MES
Sample : WG572383-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 13 08:43:56 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

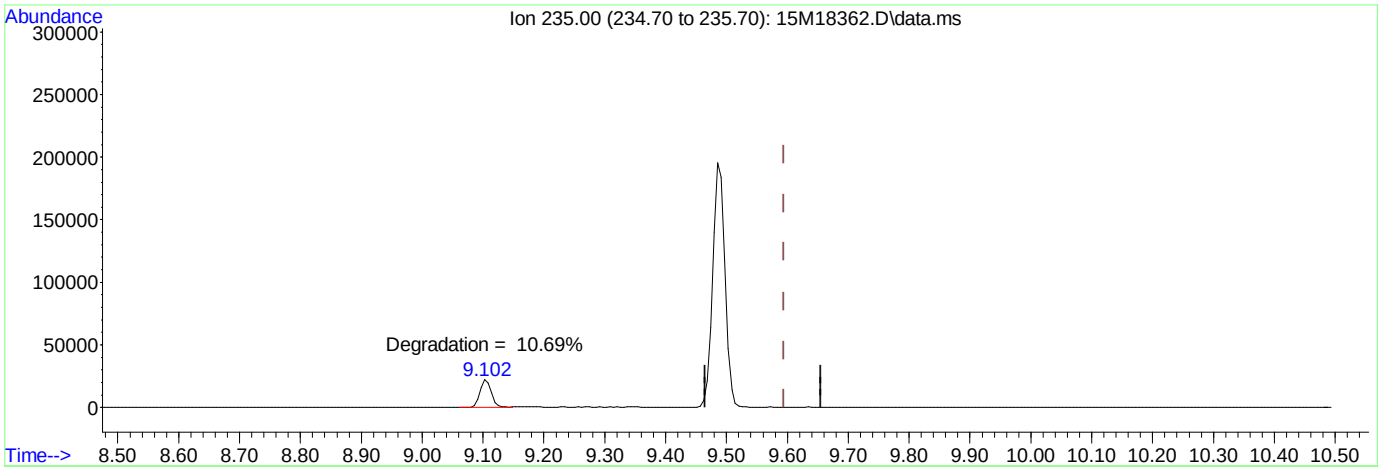

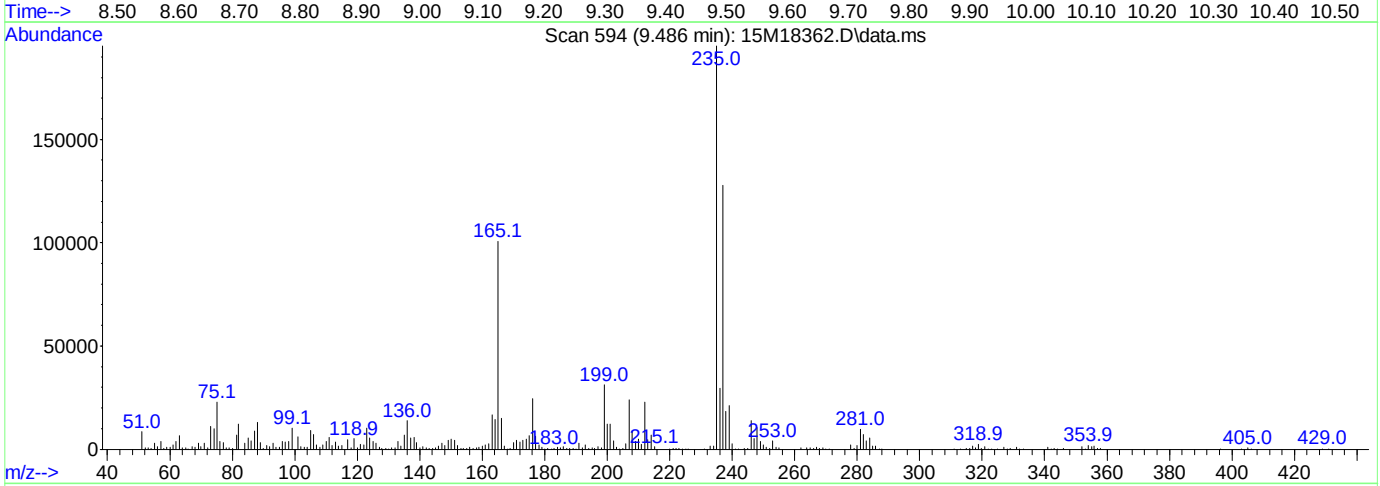

TIC: 15M18362.D\data.ms

(3) DDT

9.486min (-0.108) 0.00 ug/ml

response 240504

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18364.D
Acq On : 13 Jun 2016 9:11
Operator : MES
Sample : WG571956-01 BLANK 6/11
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 13 12:05:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	51747	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	60207	2.7798	ug/L	0.00
Spiked Amount 5.000			Recovery	=	55.60%	
4) Nitrobenzene-d5	7.442	82	3682	0.2843	ug/L	0.00
Spiked Amount 5.000			Recovery	=	5.60%	
5) 2-Fluorobiphenyl	8.930	172	149	0.0011	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.166	244	553	0.0042	ug/L	-0.02
Spiked Amount 5.000			Recovery	=	0.00%	

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18364.D
Acq On : 13 Jun 2016 9:11
Operator : MES
Sample : WG571956-01 BLANK 6/11
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 13 12:05:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

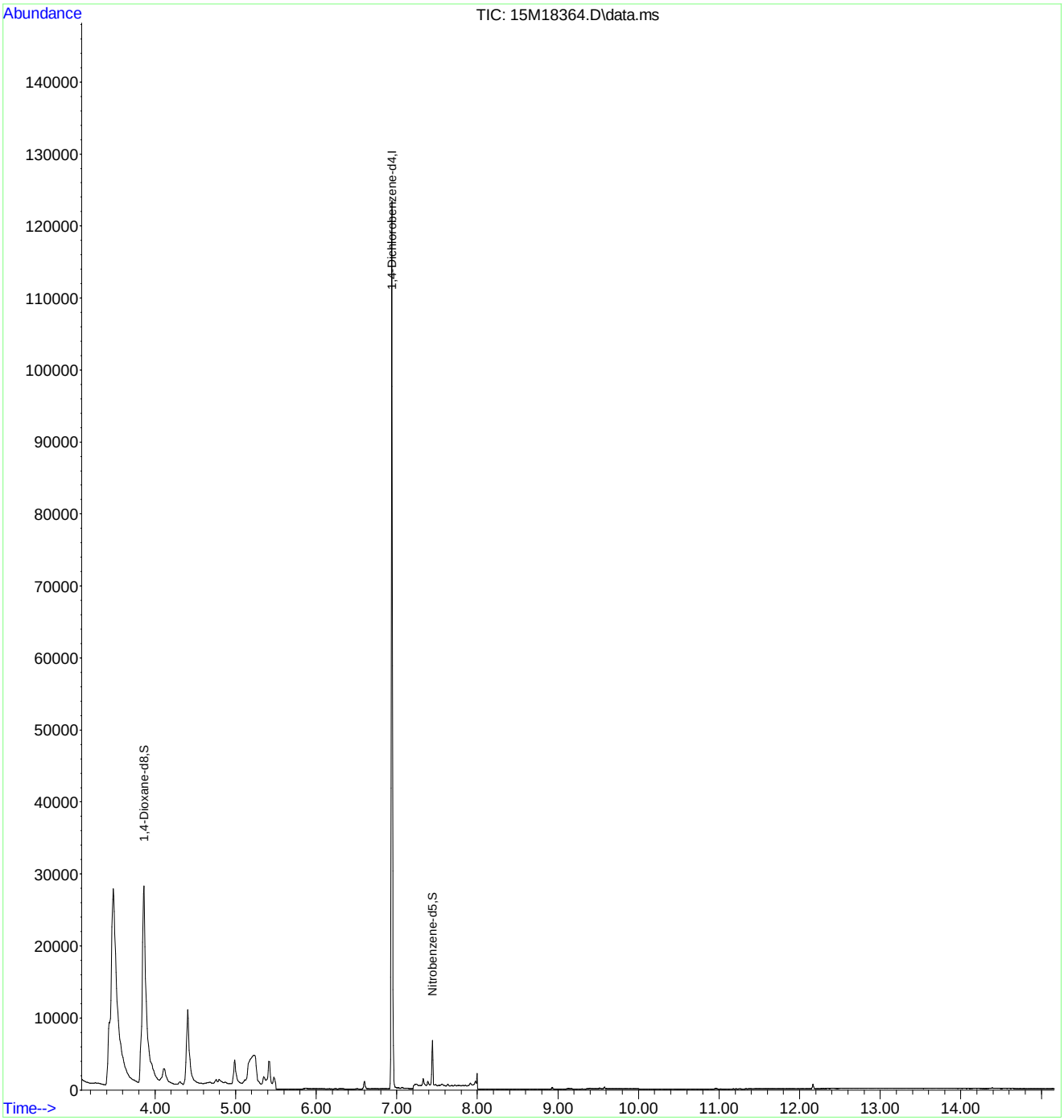

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18365.D
Acq On : 13 Jun 2016 9:34
Operator : MES
Sample : WG571956-02 LCS 6/11
Misc : 1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 13 12:06:05 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	51838	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	59406	2.7380	ug/L	0.00
Spiked Amount 5.000			Recovery	=	54.80%	
4) Nitrobenzene-d5	7.442	82	1957	0.2531	ug/L	0.00
Spiked Amount 5.000			Recovery	=	5.00%	
5) 2-Fluorobiphenyl	8.930	172	134	0.0010	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.162	244	564	0.0042	ug/L	-0.02
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	44373	2.6310	ug/L	75

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18365.D
Acq On : 13 Jun 2016 9:34
Operator : MES
Sample : WG571956-02 LCS 6/11
Misc : 1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 13 12:06:05 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

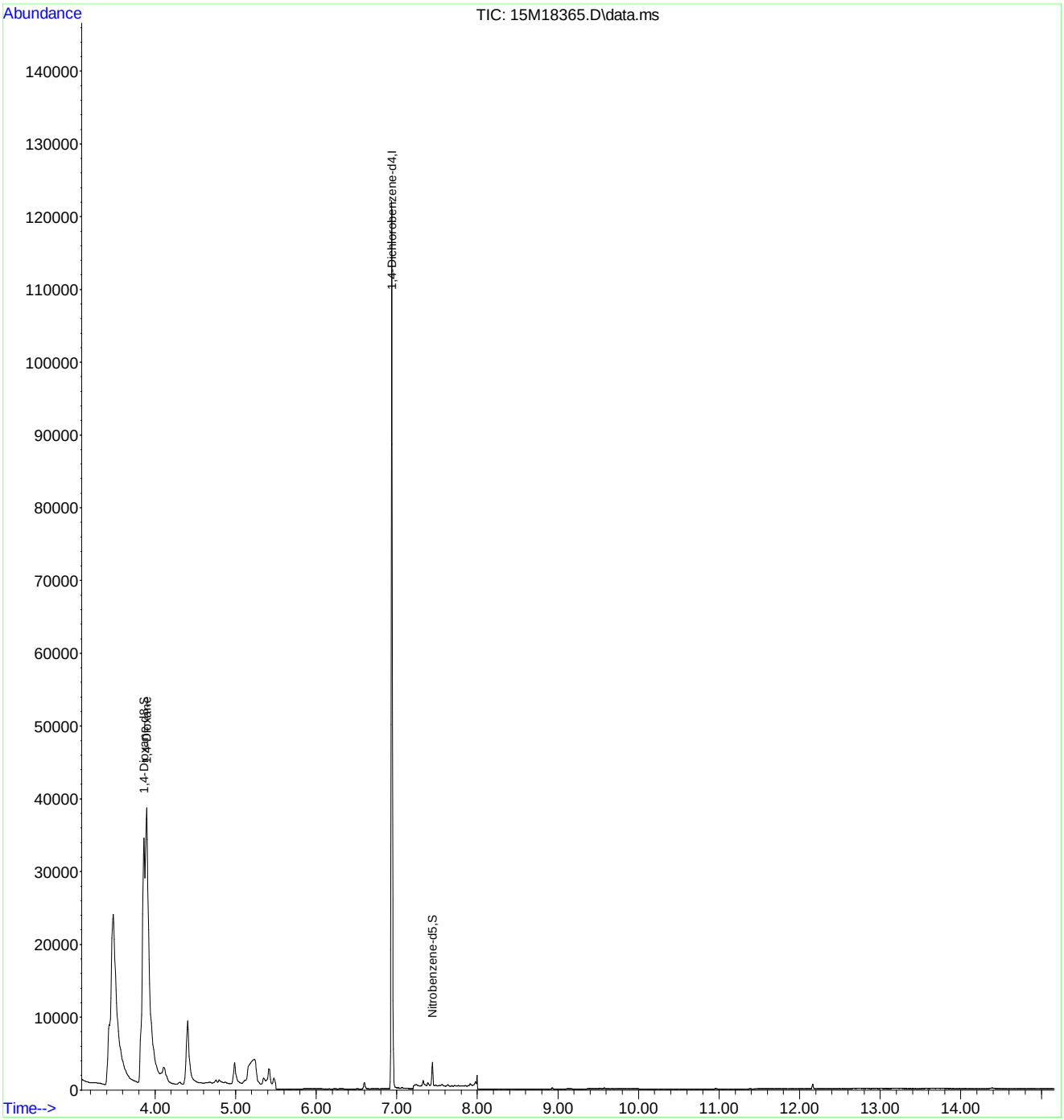

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18366.D
Acq On : 13 Jun 2016 9:56
Operator : MES
Sample : WG571956-03 LCSDUP 6/11
Misc : 1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 13 12:06:08 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	51677	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	66123	3.0571	ug/L	0.00
Spiked Amount 5.000			Recovery	=	61.20%	
4) Nitrobenzene-d5	7.442	82	2977	0.2716	ug/L	0.00
Spiked Amount 5.000			Recovery	=	5.40%	
5) 2-Fluorobiphenyl	8.926	172	132	0.0010	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.162	244	1175	0.0089	ug/L	-0.02
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	49897	2.9678	ug/L	76

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18366.D
Acq On : 13 Jun 2016 9:56
Operator : MES
Sample : WG571956-03 LCSDUP 6/11
Misc : 1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 13 12:06:08 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

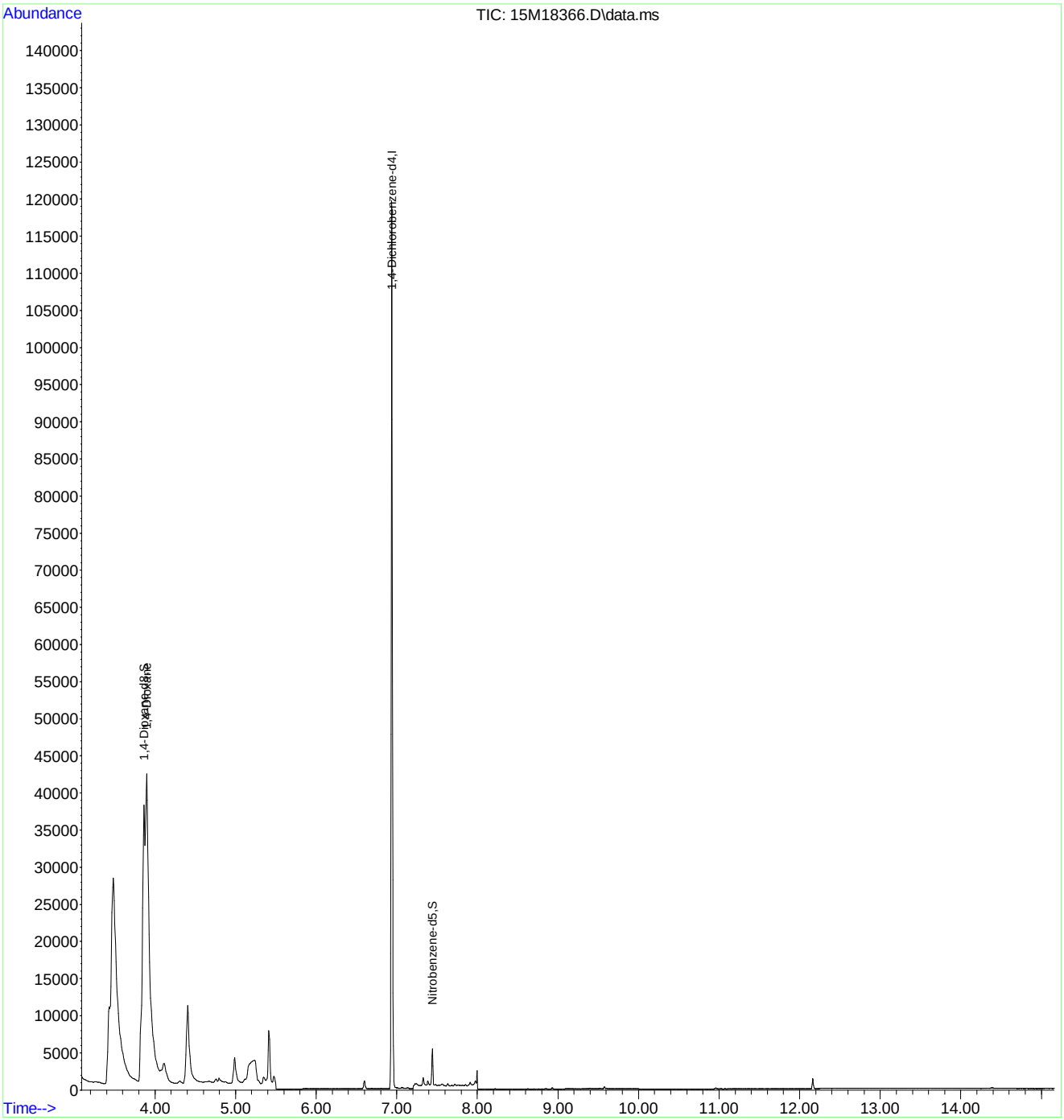

2.2 General Chromatography Data

2.2.2 6850 LC/MS Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060414-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	AWD1T-060716	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/10/2016 18:02
Collect Date:	06/07/2016 07:55	**Dilution:**	1	**File ID:**	1LM.LM35251
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060414-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	AWD1B-060716	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/10/2016 18:21
Collect Date:	06/07/2016 08:45	**Dilution:**	1	**File ID:**	1LM.LM35252
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	4.92		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16060414-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW14T-060716	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/11/2016 14:55
Collect Date:	06/07/2016 10:30	**Dilution:**	100000	**File ID:**	1LM.LM35290
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	177000		40000	20000	10000

Certificate of Analysis

Sample #:	L16060414-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW14B-060716	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/11/2016 15:15
Collect Date:	06/07/2016 11:20	**Dilution:**	100000	**File ID:**	1LM.LM35291
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	229000		40000	20000	10000

2.2.2.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1402 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG572200-01 MCT	9,990	
-02 BLK	0.93	
-03 LCS	1.04	
L16060411-01	1433	
-02	1475	
-03	349	
-04	356	
L16060414-01	327	
-02	319	
-03	3510	
-04	4180	
L16060497-01	1546	
-02	1445	
-03	1450	
-04	2560	
L16060504-01	1254	
-02	853	
-03	938	
-04	2350	
L16060575-01	595	
-02	583	
-03	505	

Analyst: Wade T. Dey

Date/Time: 6-10-16 / 1354

DCN#119023

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

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Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061016_WTD.TXT
Analyst1: WTD Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)
CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35225	WG572198-01 CCB	1	1		06/10/16 09:49
2	1LM.LM35226	WG572198-02 CCV (1.0ug/L)	1	1	STD75510	06/10/16 10:08
3	1LM.LM35227	WG572200-07 MRL (0.2ug/L)	1	1	STD75510	06/10/16 10:27
4	1LM.LM35228	WG572200-01 MCT (0.2ug/L)	1	1	STD75512	06/10/16 10:46
5	1LM.LM35229	WG572200-02 BLANK	1	1		06/10/16 11:05
6	1LM.LM35230	WG572200-03 LCS (0.2ug/L)	1	1	STD75512	06/10/16 11:24
22	1LM.LM35231	L16060497-01	1	1		06/10/16 11:43
23	1LM.LM35232	L16060497-02 MS (0.2ug/L)	1	1	STD75512	06/10/16 12:02
24	1LM.LM35233	L16060497-03 MSD (0.2ug/L)	1	1	STD75512	06/10/16 12:21
10	1LM.LM35234	L16060497-04 50X	1	50		06/10/16 12:40
11	1LM.LM35235	L16060575-01	1	1		06/10/16 12:59
12	1LM.LM35236	L16060575-02	1	1		06/10/16 13:18
13	1LM.LM35237	L16060575-03	1	1		06/10/16 13:37
14	1LM.LM35238	WG572198-03 CCV (1.0ug/L)	1	1	STD75510	06/10/16 13:55
15	1LM.LM35239	WG572200-08 MRL (0.2ug/L)	1	1	STD75510	06/10/16 14:14
16	1LM.LM35240	WG572198-04 CCB	1	1		06/10/16 14:33
17	1LM.LM35241	L16060575-01 100X	1	100		06/10/16 14:52
18	1LM.LM35242	L16060575-02	1	1		06/10/16 15:11
19	1LM.LM35243	L16060575-03	1	1		06/10/16 15:30
20	1LM.LM35244	WG572198-05 CCV (1.0ug/L)	1	1	STD75510	06/10/16 15:49
21	1LM.LM35245	WG572200-09 MRL (0.2ug/L)	1	1	STD75510	06/10/16 16:08
25	1LM.LM35246	WG572198-06 CCB	1	1		06/10/16 16:27
26	1LM.LM35247	L16060411-01 50X	1	50		06/10/16 16:46
27	1LM.LM35248	L16060411-02 50X	1	50		06/10/16 17:05
28	1LM.LM35249	L16060411-03 200X	1	200		06/10/16 17:24
29	1LM.LM35250	L16060411-04 200X	1	200		06/10/16 17:43
30	1LM.LM35251	L16060414-01	1	1		06/10/16 18:02
31	1LM.LM35252	L16060414-02	1	1		06/10/16 18:21
32	1LM.LM35253	L16060414-03 20X	1	20		06/10/16 18:40
33	1LM.LM35254	L16060414-04 20X	1	20		06/10/16 18:59
58	1LM.LM35255	L16060497-01 10X	1	10		06/10/16 19:18
35	1LM.LM35256	L16060497-04 500X	1	500		06/10/16 19:37
36	1LM.LM35257	WG572198-07 CCV (1.0ug/L)	1	1	STD75510	06/10/16 19:56

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Instrument Run Log

Instrument: LCMS1 Dataset: 061016_WTD.TXT
Analyst1: WTD Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:
Column 1 ID: KP-RPPX250 Column 2 ID: NA
Workgroups:

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)
CCV STD: STD75510 LCS STD: STD75512 NA

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
37	1LM.LM35258	WG572200-10 MRL (0.2ug/L)	1	1	STD75510	06/10/16 20:15
38	1LM.LM35259	WG572198-08 CCB	1	1		06/10/16 20:34
39	1LM.LM35260	L16060504-01 1000X	1	1000		06/10/16 20:53
40	1LM.LM35261	L16060504-02 1000X	1	1000		06/10/16 21:12
41	1LM.LM35262	L16060504-03 1000X	1	1000		06/10/16 21:31
42	1LM.LM35263	L16060504-04 10000X	1	10000		06/10/16 21:50
43	1LM.LM35264	WG572198-09 CCV (1.0ug/L)	1	1	STD75510	06/10/16 22:09
44	1LM.LM35265	WG572200-11 MRL (0.2ug/L)	1	1	STD75510	06/10/16 22:27
45	1LM.LM35266	WG572198-10 CCB	1	1		06/10/16 22:46
46	1LM.LM35267	WG572289-07 MRL (0.2ug/L)	1	1	STD75510	06/10/16 23:05
47	1LM.LM35268	WG572289-01 MCT (0.2ug/l)	1	1	STD75512	06/10/16 23:24
48	1LM.LM35269	WG572289-02 BLANK	1	1		06/10/16 23:43
49	1LM.LM35270	WG572289-03 LCS (0.2ug/L)	1	1	STD75512	06/11/16 00:02
50	1LM.LM35271	L16060582-01 100X	1	100		06/11/16 00:21
51	1LM.LM35272	L16060582-02	1	1		06/11/16 00:40
59	1LM.LM35273	L16060582-03	1	1		06/11/16 00:59
53	1LM.LM35274	L16060582-03 MS (0.2ug/L)	1	1	STD75512	06/11/16 01:18
54	1LM.LM35275	L16060582-03 MSD (0.2ug/L)	1	1	STD75512	06/11/16 01:37
55	1LM.LM35276	WG572198-11 CCV (1.0ug/L)	1	1	STD75510	06/11/16 01:56
56	1LM.LM35277	WG572289-08 MRL (0.2ug/L)	1	1	STD75510	06/11/16 02:15
57	1LM.LM35278	WG572198-12 CCB	1	1		06/11/16 02:34

Comments

Seq.	Rerun	Dil.	Reason	Analytes
22	X	10	Over Calibration Range	
	L16060497-01			
23				
	WG572200-05 - Sample does not appear to be homogenous with Sample 01, the reference and Sample 03, the MSD.			
24				
	WG572200-06 - Sample does not appear to be homogenous with Sample 01, the reference and Sample 02, the MS.			
10	X	500	Over Calibration Range	
	L16060497-04			
11	X	100	Over Calibration Range	
	L16060575-01			
12	X	1	Carry-over contamination	
	L16060575-02			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061016_WTD.TXT

Analyst1: WTD Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 NA

Comments

Seq.	Rerun	Dil.	Reason	Analytes
13	X	1	Carry-over contamination	
	L16060575-03			
26	X	500	Over Calibration Range	
	L16060411-01			
27	X	100	Over Calibration Range	
	L16060411-02			
32	X	10000	Over Calibration Range	
	L16060414-03			
33	X	10000	Over Calibration Range	
	L16060414-04			
39	X	10000	Over Calibration Range	
	L16060504-01			
40	X		Internal standard failure	
	L16060504-02 - No Internal Standard added.			
41	X	10000	Over Calibration Range	
	L16060504-03 - No Internal Standard added.			
42	X	1000	Analyzed too dilute	
	L16060504-04 - No Internal Standard added.			
50				
	L16060582-01 - Analyzed at a dilution based on information from the client.			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061116_WTD.TXT
Analyst1: WTD Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)
CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35279	WG572339-01 CCB	1	1		06/11/16 11:27
2	1LM.LM35280	WG572339-02 CCV (1.0ug/L)	1	1	STD75510	06/11/16 11:46
3	1LM.LM35281	WG572200-12 MRL (0.2ug/L)	1	1	STD75510	06/11/16 12:05
4	1LM.LM35282	L16060411-01 500X	1	500		06/11/16 12:24
5	1LM.LM35283	L16060411-02 100X	1	100		06/11/16 12:43
6	1LM.LM35284	L16060414-03 10000X	1	10000		06/11/16 13:02
7	1LM.LM35285	L16060414-04 10000X	1	10000		06/11/16 13:21
8	1LM.LM35286	L16060504-01 10000X	1	10000		06/11/16 13:40
9	1LM.LM35287	L16060504-02 1000X	1	1000		06/11/16 13:58
10	1LM.LM35288	L16060504-03 10000X	1	10000		06/11/16 14:17
11	1LM.LM35289	L16060504-04 1000X	1	1000		06/11/16 14:36
12	1LM.LM35290	L16060414-03 100000X	1	100000		06/11/16 14:55
13	1LM.LM35291	L16060414-04 100000X	1	100000		06/11/16 15:15
14	1LM.LM35292	WG572339-03 CCV (1.0ug/L)	1	1	STD75510	06/11/16 15:34
15	1LM.LM35293	WG572200-13 MRL (0.2ug/L)	1	1	STD75510	06/11/16 16:41
16	1LM.LM35294	WG572339-04 CCB	1	1		06/11/16 17:00
17	1LM.LM35295	L16060504-04 100X	1	100		06/11/16 17:19
18	1LM.LM35296	WG572339-05 CCV (1.0ug/L)	1	1	STD75510	06/11/16 17:38
19	1LM.LM35297	WG572200-14 MRL (0.2ug/L)	1	1	STD75510	06/11/16 17:57
20	1LM.LM35298	WG572339-06 CCB	1	1		06/11/16 18:16
21	1LM.LM35299	WG572350-05 MRL (0.2ug/L)	1	1	STD75510	06/11/16 18:35
22	1LM.LM35300	WG572350-01 MCT (0.2ug/l)	1	1	STD75512	06/11/16 18:54
23	1LM.LM35301	WG572350-02 BLANK	1	1		06/11/16 19:13
24	1LM.LM35302	WG572350-03 LCS (0.2ug/L)	1	1	STD75512	06/11/16 19:32
25	1LM.LM35303	WG572350-03 LCSD (0.2ug/L)	1	1	STD75512	06/11/16 19:51
26	1LM.LM35304	L16060632-01 100X	1	100		06/11/16 20:10
27	1LM.LM35305	L16060632-02 100X	1	100		06/11/16 20:29
28	1LM.LM35306	L16060632-03 100X	1	100		06/11/16 20:48
29	1LM.LM35307	L16060632-04 100X	1	100		06/11/16 21:07
30	1LM.LM35308	L16060615-01 10000X	1	10000		06/11/16 21:26
31	1LM.LM35309	L16060615-02 100X	1	100		06/11/16 21:44
43	1LM.LM35310	WG572339-07 CCV (1.0ug/L)	1	1	STD75510	06/11/16 22:03
33	1LM.LM35311	WG572350-06 MRL (0.2ug/L)	1	1	STD75510	06/11/16 22:22

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Instrument Run Log

Instrument: LCMS1 Dataset: 061116_WTD.TXT
Analyst1: WTD Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:
Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)
CCV STD: STD75510 LCS STD: STD75512 NA

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
44	1LM.LM35312	WG572339-08 CCB	1	1		06/11/16 22:41
35	1LM.LM35313	L16060615-03 100X	1	100		06/11/16 23:00
36	1LM.LM35314	L16060615-04 100X	1	100		06/11/16 23:19
37	1LM.LM35315	L16060616-01 10000X	1	10000		06/11/16 23:38
38	1LM.LM35316	L16060616-02 10000X	1	10000		06/11/16 23:57
39	1LM.LM35317	L16060616-03	1	1		06/12/16 00:16
45	1LM.LM35318	WG572339-09 CCV (1.0ug/L)	1	1	STD75510	06/12/16 00:35
41	1LM.LM35319	WG572350-07 MRL (0.2ug/L)	1	1	STD75510	06/12/16 00:54
46	1LM.LM35320	WG572339-10 CCB	1	1		06/12/16 01:13

Comments

Seq.	Rerun	Dil.	Reason	Analytes
6	X	100000	Over Calibration Range	
	L16060414-03			
7	X	100000	Over Calibration Range	
	L16060414-04			
11	X	100	Analyzed too dilute	
	L16060504-04			
26	X	1	Analyzed too dilute	
	L16060632-01			
27	X	1	Analyzed too dilute	
	L16060632-02			
28	X	1	Analyzed too dilute	
	L16060632-03			
29	X	1	Analyzed too dilute	
	L16060632-04			
30	X	1	Analyzed too dilute	
	L16060615-01			
31	X	1	Analyzed too dilute	
	L16060615-02			
35	X	1	Analyzed too dilute	
	L16060615-03			
36	X	10000	Over Calibration Range	
	L16060615-04			
37				
	L16060616-01 Analyzed at a dilution based on historical data			

Page: 2 Approved: 13-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061116_WTD.TXT

Analyst1: WTD Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups:

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 NA

Comments

Seq.	Rerun	Dil.	Reason	Analytes
38	X	100	Analyzed too dilute	
	L16060616-02			

Page: 3 Approved: 13-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
04-MAY-2016
John Richards

Secondary Reviewer:
05-MAY-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 10-JUN-2016
Analyst: WTD
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 75634
Analytical Workgroups: WG572200, WG572289

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	WTD
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MES

Primary Reviewer: 11-JUN-2016

Secondary Reviewer: 13-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-13-2016 11:53:25

Microbac Laboratories Inc.

Data Checklist

Date: 11-JUN-2016
Analyst: WTD
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 75641
Analytical Workgroups: L16060411, L16060414, L16060504, L16060616

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	WTD
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 12-JUN-2016

Secondary Reviewer: 13-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-14-2016 08:50:47

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG572200

Login Number: L16060414

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
AWD1T-060716	01	06/07/16					06/10/2016	3	28		06/10/16	.4	28	
AWD1B-060716	02	06/07/16					06/10/2016	3	28		06/10/16	.4	28	
MW14T-060716	03	06/07/16					06/10/2016	2.9	28		06/11/16	1.2	28	
MW14B-060716	04	06/07/16					06/10/2016	2.9	28		06/11/16	1.3	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4803811
Report generated 06/14/2016 08:33

METHOD BLANK SUMMARY

Login Number: L16060414
Blank File ID: 1LM.LM35229
Prep Date: 06/10/16 09:00
Analyzed Date: 06/10/16 11:05
Analyst: WTD

Work Group: WG572200
Blank Sample ID: WG572200-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG572200-07	1LM.LM35227	06/10/16 10:27	01
MCT	WG572200-01	1LM.LM35228	06/10/16 10:46	01
LCS	WG572200-03	1LM.LM35230	06/10/16 11:24	01
QCMRL	WG572200-08	1LM.LM35239	06/10/16 14:14	01
QCMRL	WG572200-09	1LM.LM35245	06/10/16 16:08	01
AWD1T-060716	L16060414-01	1LM.LM35251	06/10/16 18:02	01
AWD1B-060716	L16060414-02	1LM.LM35252	06/10/16 18:21	01
QCMRL	WG572200-10	1LM.LM35258	06/10/16 20:15	01
QCMRL	WG572200-11	1LM.LM35265	06/10/16 22:27	01
QCMRL	WG572200-12	1LM.LM35281	06/11/16 12:05	01
MW14T-060716	L16060414-03	1LM.LM35290	06/11/16 14:55	DL01
MW14B-060716	L16060414-04	1LM.LM35291	06/11/16 15:15	DL01
QCMRL	WG572200-13	1LM.LM35293	06/11/16 16:41	01
QCMRL	WG572200-14	1LM.LM35297	06/11/16 17:57	01

Report Name: BLANK_SUMMARY
PDF File ID: 4803812
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060414 Prep Date: 06/10/16 09:00 Sample ID: WG572200-02
Instrument ID: LCMS1 Run Date: 06/10/16 11:05 Prep Method: 6850
File ID: 1LM.LM35229 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4803813
14-JUN-2016 08:33

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060414 Run Date: 06/10/2016 Sample ID: WG572200-03
Instrument ID: LCMS1 Run Time: 11:24 Prep Method: 6850
File ID: 1LM.LM35230 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD75512 Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	0.200	0.201	101	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4803814
Report generated: 06/14/2016 08:33

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060414
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4803816
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060414

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4803816
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060414

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4803816
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060414

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008

PDF File ID: 4803816

Report generated 06/14/2016 08:33

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060414 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4803817
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060414
Run Date: 06/10/2016
Sample ID: WG572198-01
Instrument ID: LCMS1
Run Time: 09:49
Method: 6850
File ID: 1LM.LM35225
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4803819
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060414
Run Date: 06/10/2016
Sample ID: WG572198-04
Instrument ID: LCMS1
Run Time: 14:33
Method: 6850
File ID: 1LM.LM35240
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4803819
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060414
Run Date: 06/10/2016
Sample ID: WG572198-06
Instrument ID: LCMS1
Run Time: 16:27
Method: 6850
File ID: 1LM.LM35246
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4803819
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060414
Run Date: 06/10/2016
Sample ID: WG572198-08
Instrument ID: LCMS1
Run Time: 20:34
Method: 6850
File ID: 1LM.LM35259
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4803819
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060414
Run Date: 06/10/2016
Sample ID: WG572198-10
Instrument ID: LCMS1
Run Time: 22:46
Method: 6850
File ID: 1LM.LM35266
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4803819
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060414
Run Date: 06/11/2016
Sample ID: WG572339-01
Instrument ID: LCMS1
Run Time: 11:27
Method: 6850
File ID: 1LM.LM35279
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4803819
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060414
Run Date: 06/11/2016
Sample ID: WG572339-04
Instrument ID: LCMS1
Run Time: 17:00
Method: 6850
File ID: 1LM.LM35294
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4803819
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060414
Run Date: 06/11/2016
Sample ID: WG572339-06
Instrument ID: LCMS1
Run Time: 18:16
Method: 6850
File ID: 1LM.LM35298
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4803819
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060414
Run Date: 06/10/2016
Sample ID: WG572198-02
Instrument ID: LCMS1
Run Time: 10:08
Method: 6850
File ID: 1LM.LM35226
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.70	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4803818
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060414
Run Date: 06/10/2016
Sample ID: WG572198-03
Instrument ID: LCMS1
Run Time: 13:55
Method: 6850
File ID: 1LM.LM35238
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.71	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4803818
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060414
Run Date: 06/10/2016
Sample ID: WG572198-05
Instrument ID: LCMS1
Run Time: 15:49
Method: 6850
File ID: 1LM.LM35244
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.05	ug/L	1.77	5.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4803818
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060414 Run Date: 06/10/2016 Sample ID: WG572198-07
Instrument ID: LCMS1 Run Time: 19:56 Method: 6850
File ID: 1LM.LM35257 Analyst: WTD QC Key: DOD4
Workgroup (AAB#): WG572200 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.08	ug/L	1.82	8.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4803818
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060414 Run Date: 06/10/2016 Sample ID: WG572198-09
Instrument ID: LCMS1 Run Time: 22:09 Method: 6850
File ID: 1LM.LM35264 Analyst: WTD QC Key: DOD4
Workgroup (AAB#): WG572200 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.74	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4803818
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060414 Run Date: 06/11/2016 Sample ID: WG572198-11
Instrument ID: LCMS1 Run Time: 01:56 Method: 6850
File ID: 1LM.LM35276 Analyst: WTD QC Key: DOD4
Workgroup (AAB#): WG572200 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.74	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4803818
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060414 Run Date: 06/11/2016 Sample ID: WG572339-02
Instrument ID: LCMS1 Run Time: 11:46 Method: 6850
File ID: 1LM.LM35280 Analyst: WTD QC Key: DOD4
Workgroup (AAB#): WG572200 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.75	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4803818
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060414
Run Date: 06/11/2016
Sample ID: WG572339-03
Instrument ID: LCMS1
Run Time: 15:34
Method: 6850
File ID: 1LM.LM35292
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.05	ug/L	1.78	5.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4803818
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060414
Run Date: 06/11/2016
Sample ID: WG572339-05
Instrument ID: LCMS1
Run Time: 17:38
Method: 6850
File ID: 1LM.LM35296
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.73	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4803818
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060414 Run Date: 06/11/2016 Sample ID: WG572339-07
Instrument ID: LCMS1 Run Time: 22:03 Method: 6850
File ID: 1LM.LM35310 Analyst: WTD QC Key: DOD4
Workgroup (AAB#): WG572200 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.06	ug/L	1.79	6.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4803818
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060414 Run Date: 06/10/2016 Sample ID: WG572200-07
Instrument ID: LCMS1 Run Time: 10:27 Prep Method: 6850
File ID: 1LM.LM35227 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.202	101	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4803815
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060414 Run Date: 06/10/2016 Sample ID: WG572200-08
Instrument ID: LCMS1 Run Time: 14:14 Prep Method: 6850
File ID: 1LM.LM35239 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.215	108	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4803815
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060414 Run Date: 06/10/2016 Sample ID: WG572200-09
Instrument ID: LCMS1 Run Time: 16:08 Prep Method: 6850
File ID: 1LM.LM35245 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.210	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4803815
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060414 Run Date: 06/10/2016 Sample ID: WG572200-10
Instrument ID: LCMS1 Run Time: 20:15 Prep Method: 6850
File ID: 1LM.LM35258 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.222	111	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4803815
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060414 Run Date: 06/10/2016 Sample ID: WG572200-11
Instrument ID: LCMS1 Run Time: 22:27 Prep Method: 6850
File ID: 1LM.LM35265 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.216	108	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4803815
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060414 Run Date: 06/11/2016 Sample ID: WG572200-12
Instrument ID: LCMS1 Run Time: 12:05 Prep Method: 6850
File ID: 1LM.LM35281 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4803815
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060414 Run Date: 06/11/2016 Sample ID: WG572200-13
Instrument ID: LCMS1 Run Time: 16:41 Prep Method: 6850
File ID: 1LM.LM35293 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4803815
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060414 Run Date: 06/11/2016 Sample ID: WG572200-14
Instrument ID: LCMS1 Run Time: 17:57 Prep Method: 6850
File ID: 1LM.LM35297 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.215	108	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4803815
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16060414
Instrument ID: LCMS1
Workgroup (AAB#): WG572200

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16060414-01	1.00	01	469000
L16060414-02	1.00	01	449000
L16060414-03	100000	DL01	464000
L16060414-04	100000	DL01	463000
WG572200-02	1.00	01	441000
WG572200-03	1.00	01	434000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4803820
Report generated 06/14/2016 08:33

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**	6850	**Samplenum:**	L16060414-01
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35251
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 18:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	8900	5750	1.55	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**	6850	**Samplenum:**	L16060414-02
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35252
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 18:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	743000	256000	2.90	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**	6850	**Samplenum:**	L16060414-03
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35290
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 14:55	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	277000	95400	2.90	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**	6850	**Samplenum:**	L16060414-04
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35291
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 15:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	358000	123000	2.91	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG572198-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35225
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 09:49	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG572198-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35226
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 10:08	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	151000	53700	2.81	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG572198-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35238
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 13:55	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	172000	59600	2.89	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG572198-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35240
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 14:33	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	3660	1770	2.07	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG572198-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35244
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 15:49	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	179000	63400	2.82	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG572198-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35246
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 16:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	377	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG572198-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35257
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 19:56	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	175000	58000	3.02	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG572198-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35259
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 20:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG572198-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35264
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 22:09	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	57800	2.92	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG572198-10
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35266
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 22:46	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	971	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG572198-11
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35276
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 01:56	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	183000	61800	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**	6850	**Samplenum:**	WG572200-01
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35228
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 10:46	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35200	10400	3.38	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**	6850	**Samplenum:**	WG572200-02
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35229
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 11:05	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	309	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**	6850	**Samplenum:**	WG572200-03
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35230
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 11:24	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	30000	11800	2.54	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**	6850	**Samplenum:**	WG572200-07
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35227
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 10:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	30600	11100	2.76	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**	6850	**Samplenum:**	WG572200-08
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35239
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 14:14	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36500	13800	2.64	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**	6850	**Samplenum:**	WG572200-09
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35245
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 16:08	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36700	12600	2.91	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**	6850	**Samplenum:**	WG572200-10
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35258
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 20:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36200	12400	2.92	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**	6850	**Samplenum:**	WG572200-11
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35265
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 22:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35800	11700	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**	6850	**Samplenum:**	WG572200-12
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35281
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 12:05	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	33000	11900	2.77	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**	6850	**Samplenum:**	WG572200-13
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35293
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 16:41	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	33900	12200	2.78	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**	6850	**Samplenum:**	WG572200-14
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35297
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 17:57	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36500	12700	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG572339-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35279
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 11:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	7310	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG572339-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35280
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 11:46	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	160000	54700	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG572339-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35292
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 15:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	171000	56800	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG572339-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35294
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 17:00	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG572339-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35296
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 17:38	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	172000	59300	2.90	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG572339-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35298
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 18:16	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG572339-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35310
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 22:03	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	180000	60500	2.98	2.3	3.8	

2.2.2.3 Sample Data

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Data File	LM35251.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 6:02:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060414-01	**Injection Vial**	18.00
Data File	LM35251.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 6:02:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	L16060414-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.690e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.900e+03	9.67	N/A	0.0527
Perchlorate conf	5.750e+03	9.65	N/A	0.0895

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

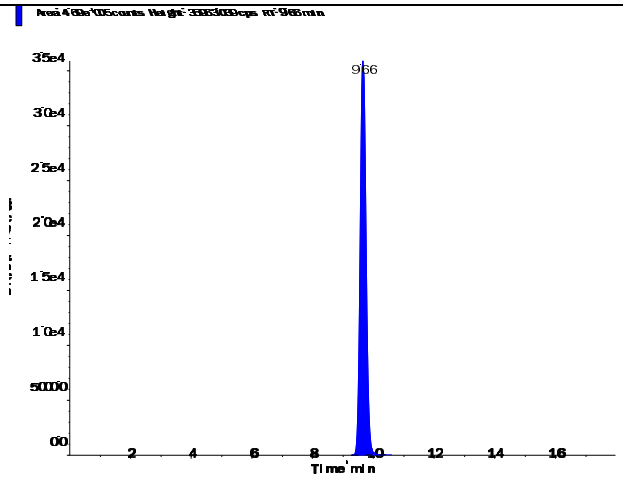

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.67 (9.84) min
Calculated conc:	0.0527 ng/ml
Area Ratio:	0.019
Sample Type:	(Unknown)

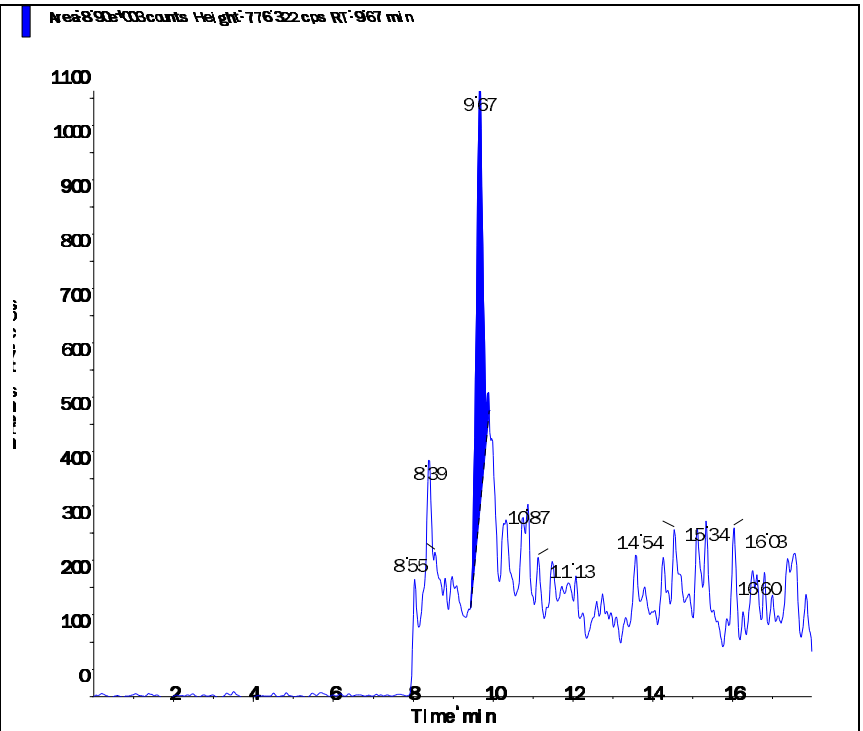

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.65 (9.84) min
Calculated conc:	0.0895 ng/ml
Area Ratio:	0.012
Sample Type:	(Unknown)

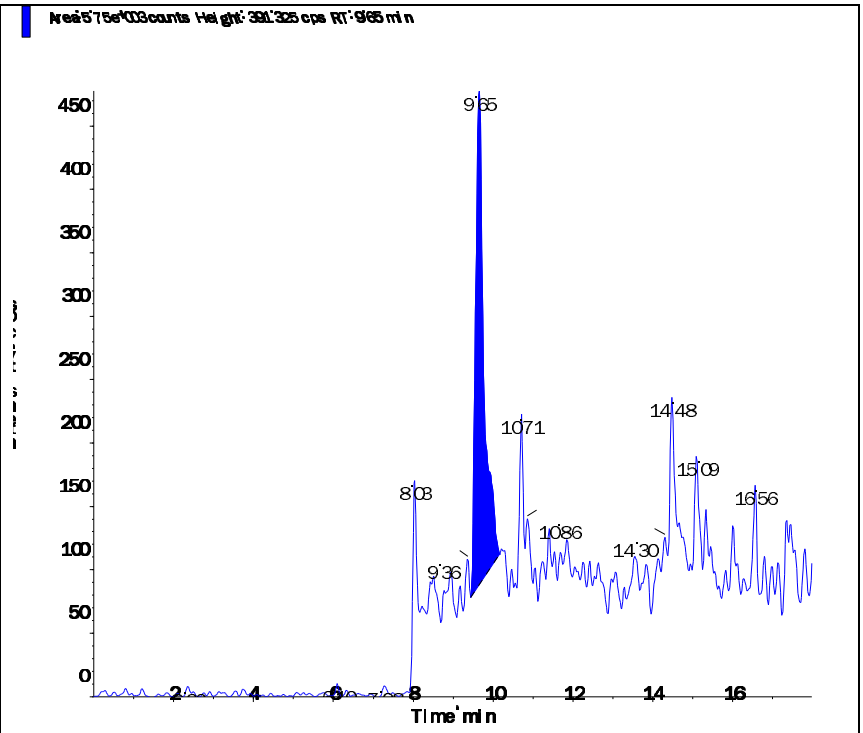

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Data File	LM35252.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 6:21:41 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060414-02	**Injection Vial**	19.00
Data File	LM35252.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 6:21:41 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	L16060414-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.490e+05	9.65	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.430e+05	9.67	N/A	4.92
Perchlorate conf	2.560e+05	9.65	N/A	5.09

O18LP (Internal Standard)

RT (Exp. RT): 9.65(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

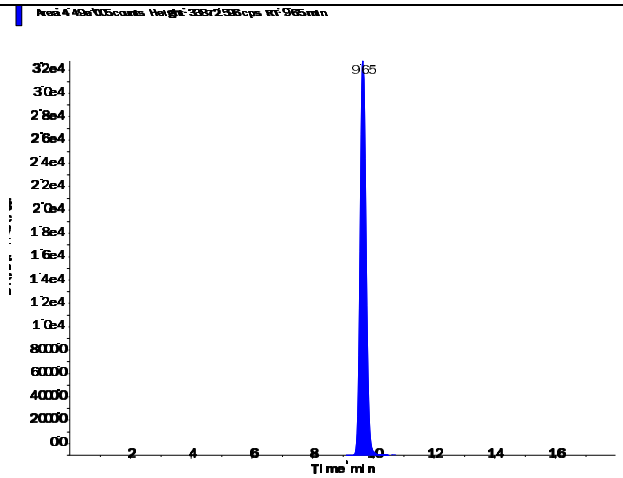

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.67 (9.84) min
Calculated conc:	4.92 ng/ml
Area Ratio:	1.655
Sample Type:	(Unknown)

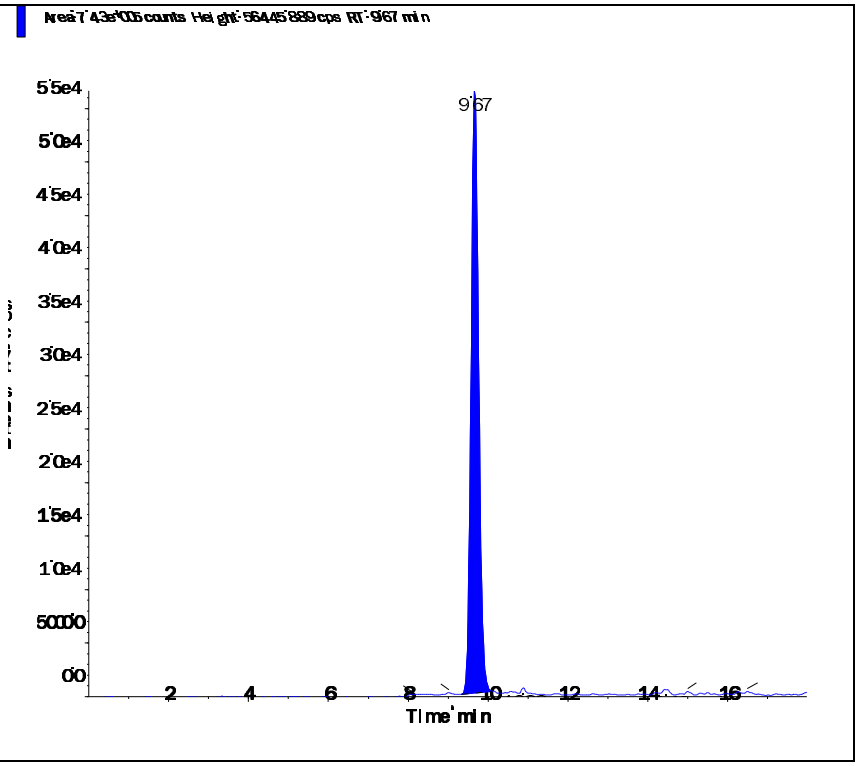

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.65 (9.84) min
Calculated conc:	5.09 ng/ml
Area Ratio:	0.571
Sample Type:	(Unknown)

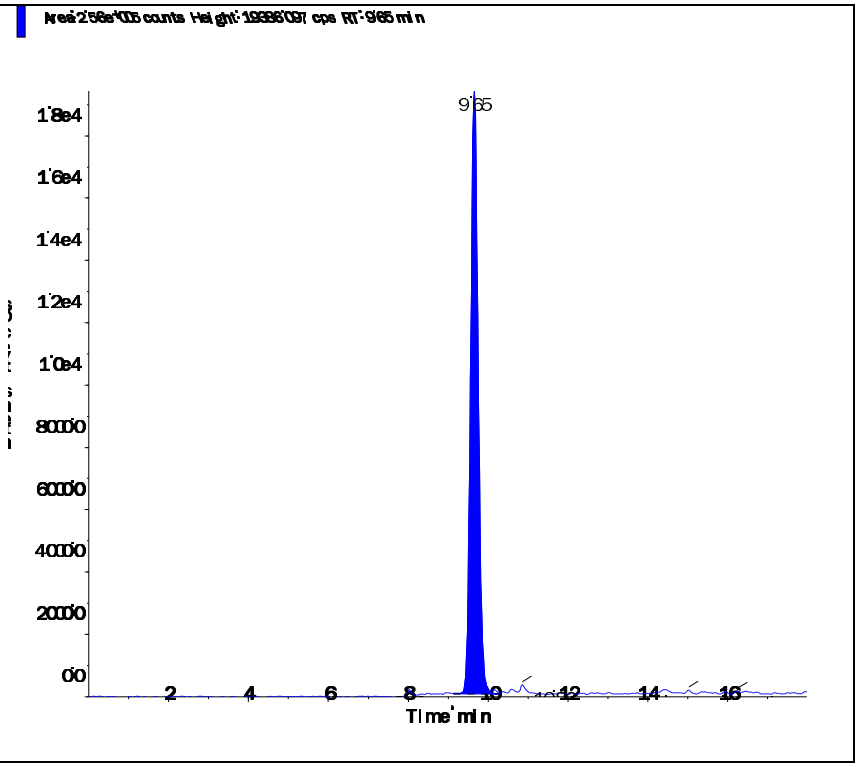

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Printed: 6/12/2016 9:39 PM

Data File	LM35290.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 2:55:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060414-03 100000X	**Injection Vial**	20.00
Data File	LM35290.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 2:55:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	L16060414-03	**Dilution Factor**	1.00
Sample Comment	1,100,000.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.640e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.770e+05	9.84	N/A	1.77
Perchlorate conf	9.540e+04	9.83	N/A	1.82

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

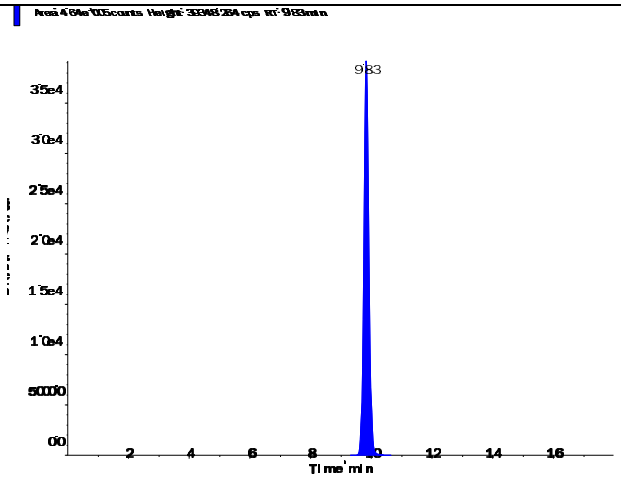

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Printed: 6/12/2016 9:39 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.77 ng/ml
Area Ratio:	0.598
Sample Type:	(Unknown)

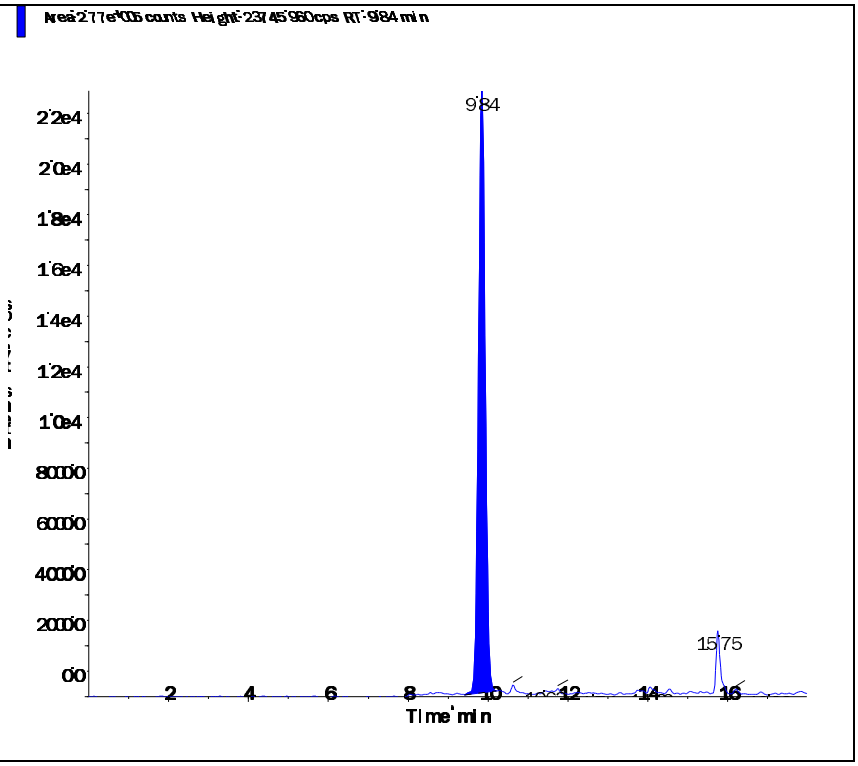

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.82 ng/ml
Area Ratio:	0.206
Sample Type:	(Unknown)

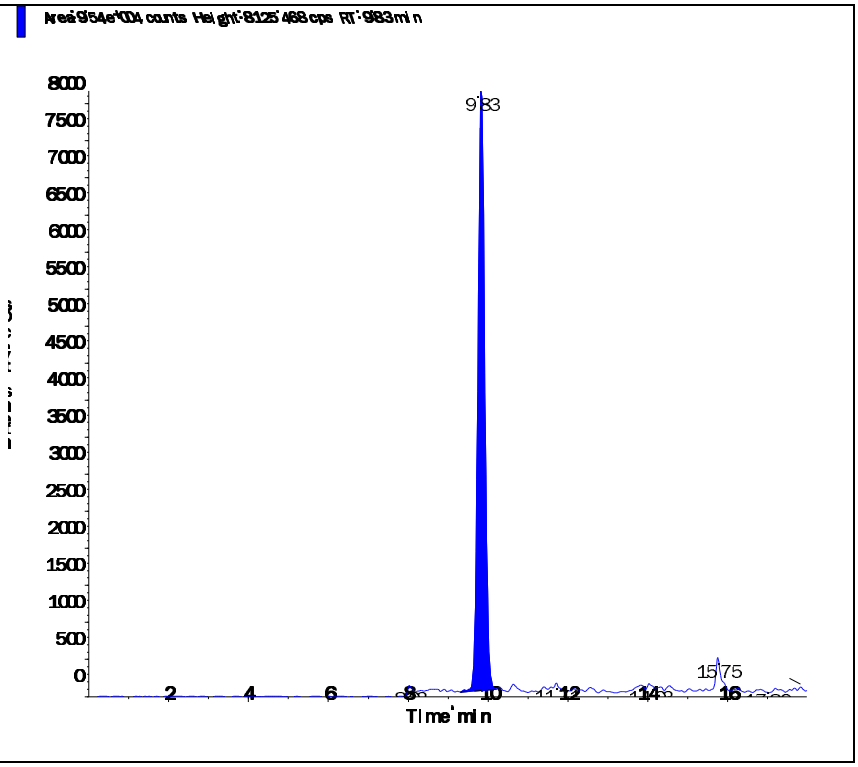

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Data File	LM35291.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 3:15:44 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060414-04 100000X	**Injection Vial**	21.00
Data File	LM35291.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 3:15:44 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	L16060414-04	**Dilution Factor**	1.00
Sample Comment	1,100,000.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.630e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.580e+05	9.84	N/A	2.29
Perchlorate conf	1.230e+05	9.83	N/A	2.36

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

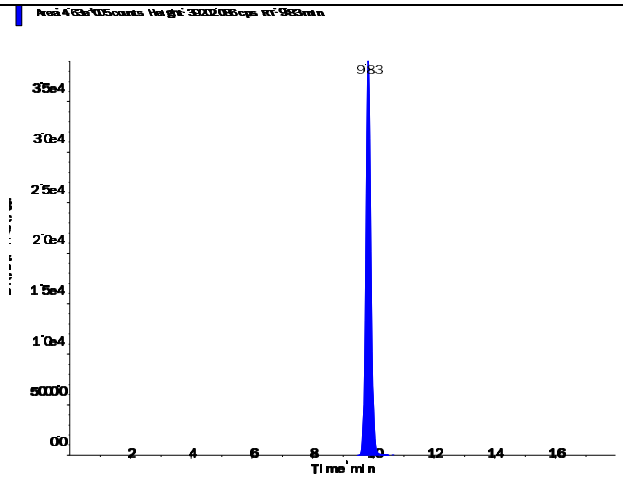

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Printed: 6/12/2016 9:40 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 2.29 ng/ml Area Ratio: 0.773 Sample Type: (Unknown)	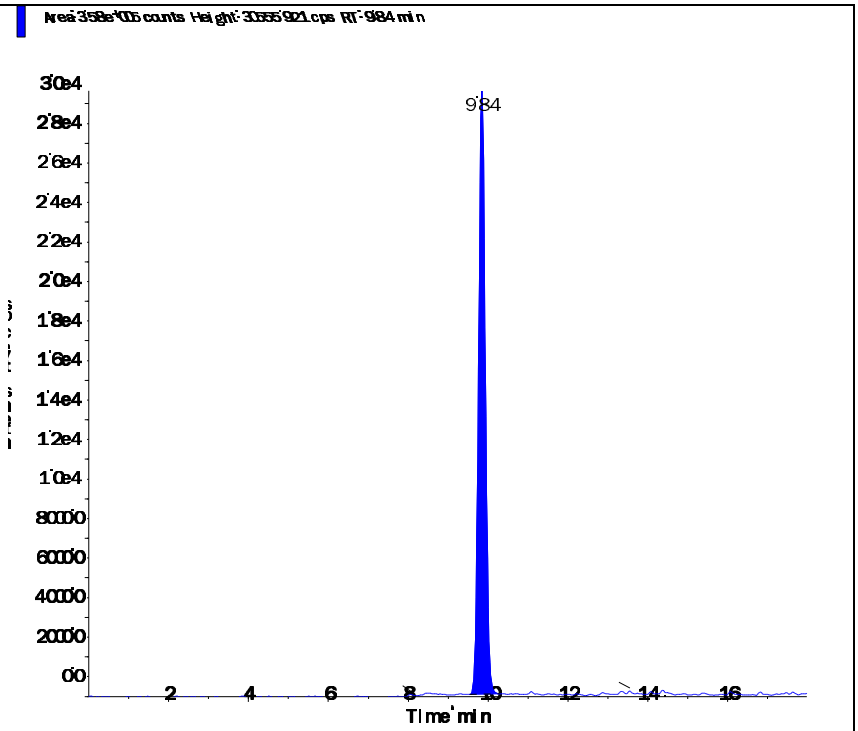
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 2.36 ng/ml Area Ratio: 0.265 Sample Type: (Unknown)	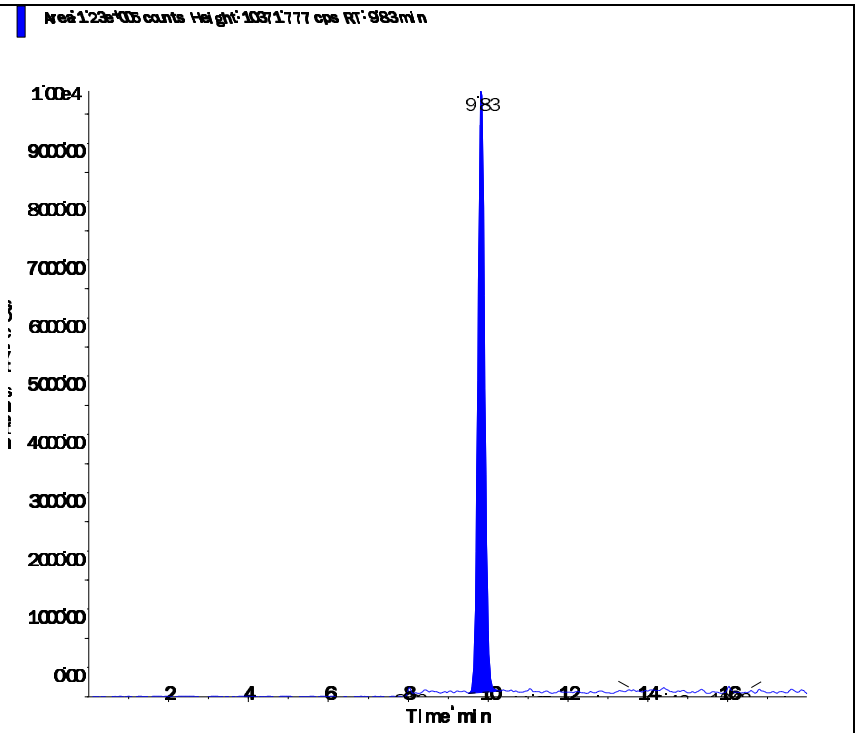

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2.2.2.4 Standards Data

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Data File	LM34686.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

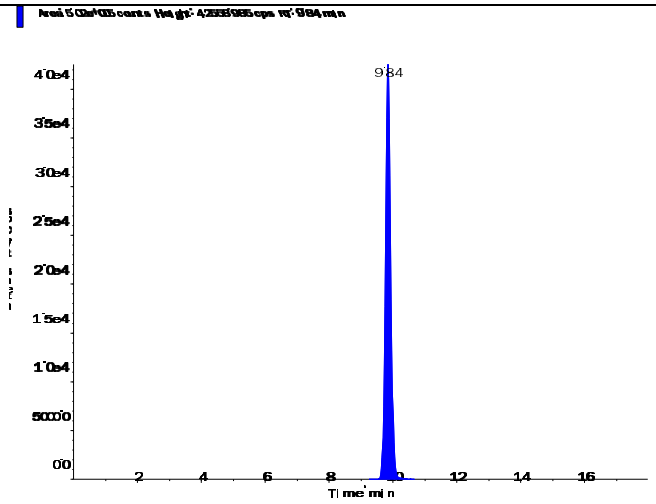

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Created with Analyst Reporter
Printed: 6/13/2016 10:27 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

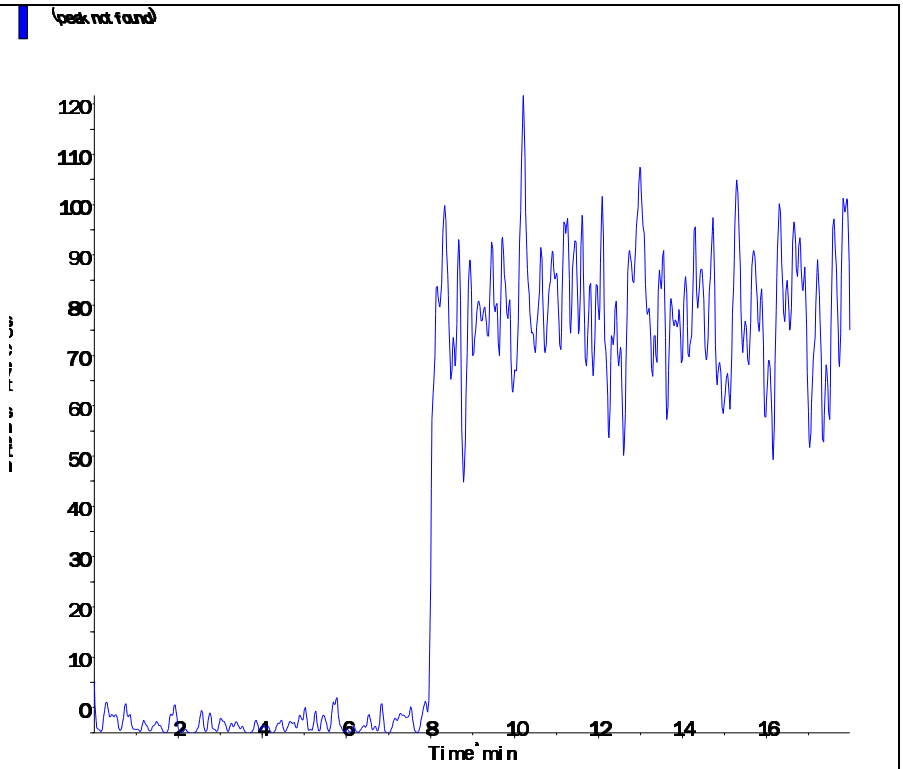

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

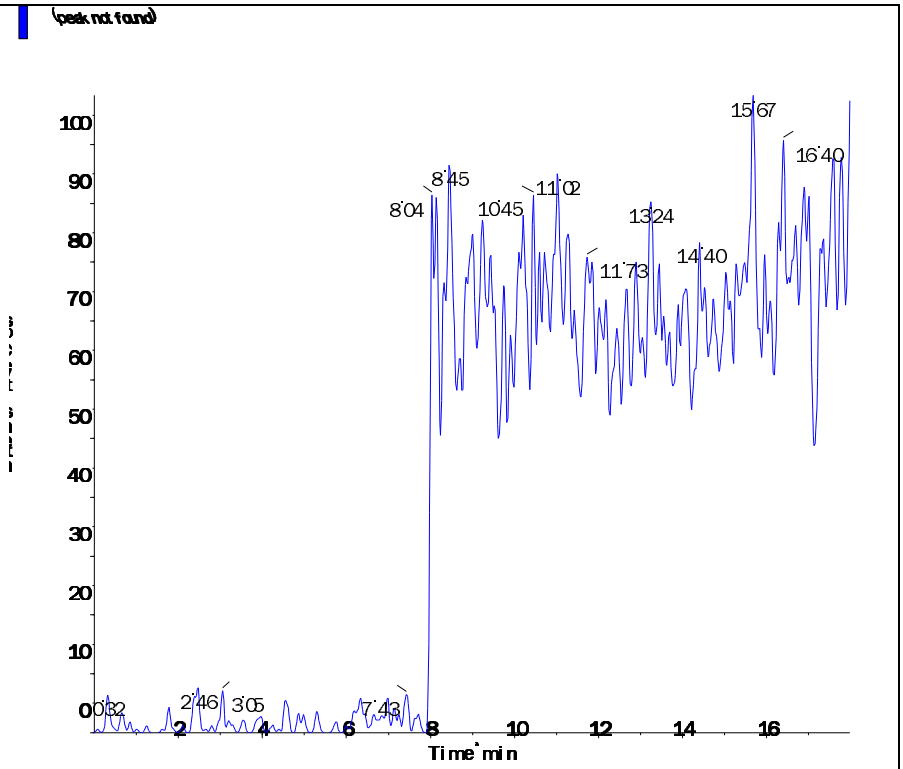

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Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

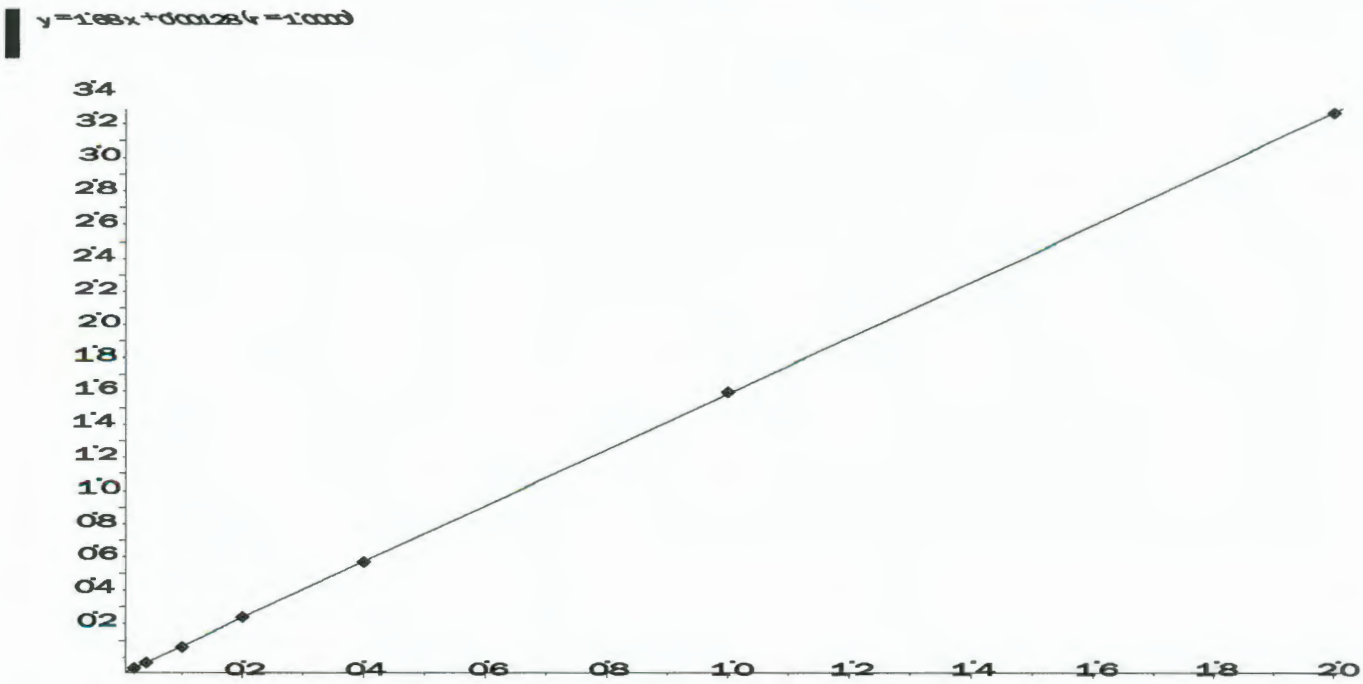

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Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

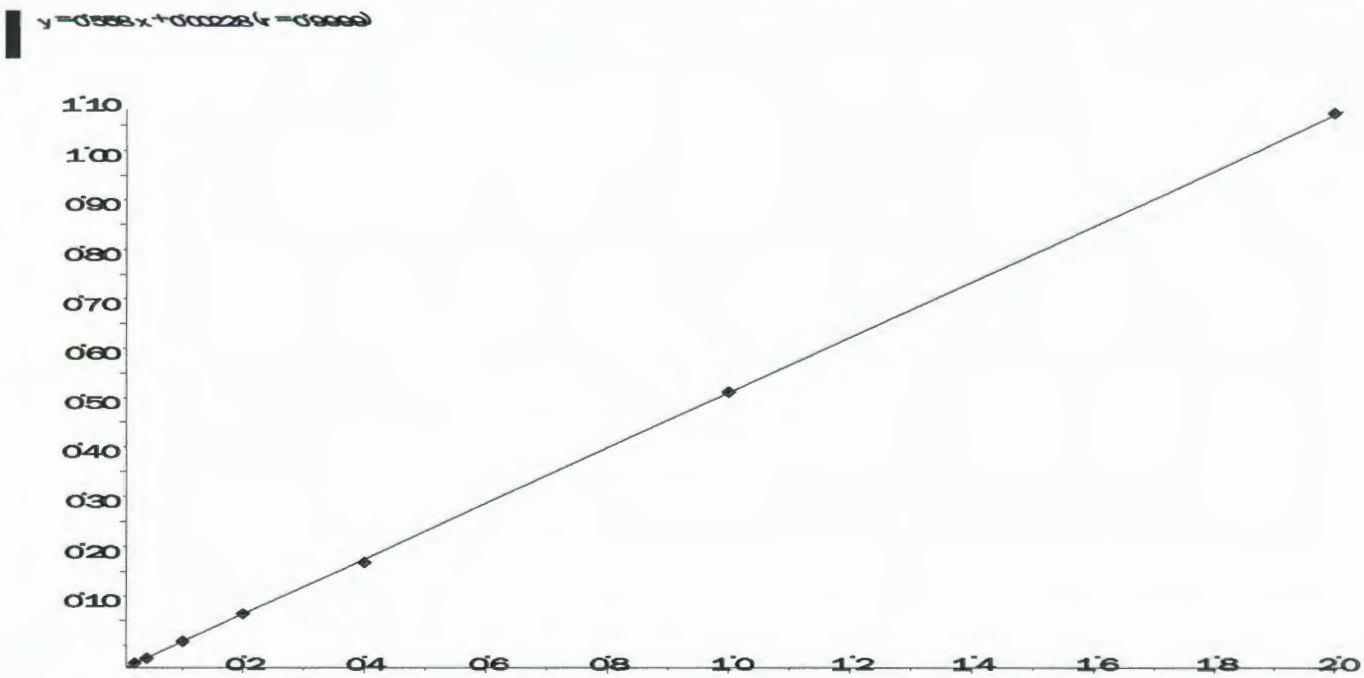

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Data File	LM34687.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

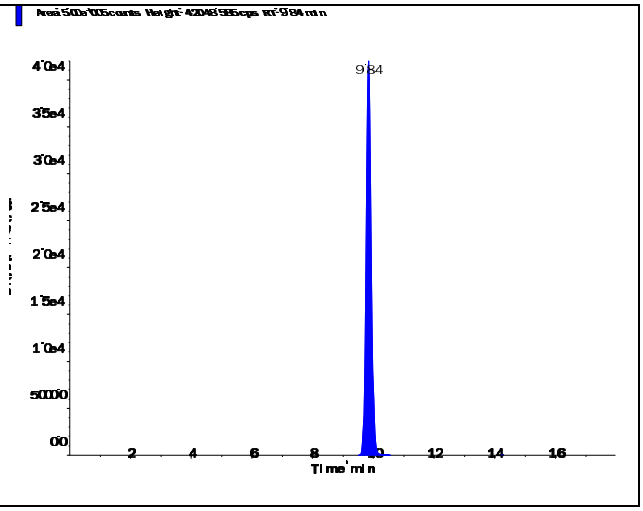

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.103 ng/ml
Area Ratio:	0.036
Sample Type:	(Standard)

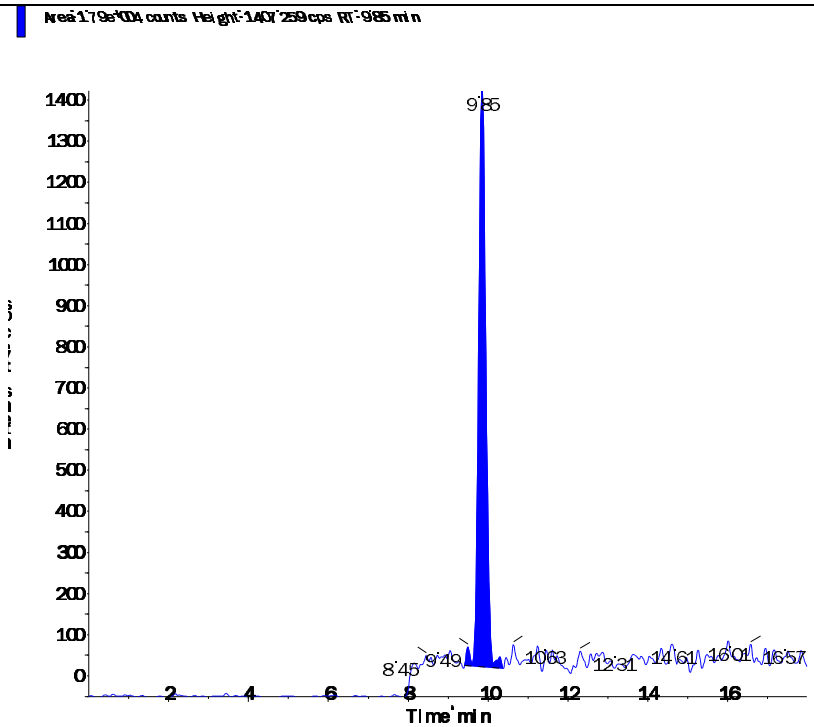

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.104 ng/ml
Area Ratio:	0.014
Sample Type:	(Standard)

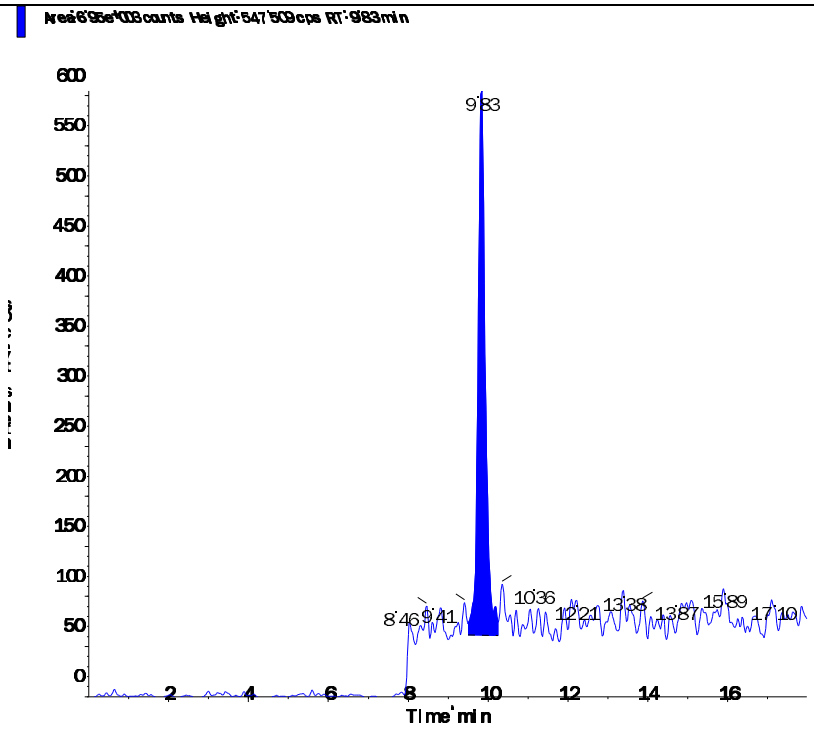

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Data File	LM34688.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

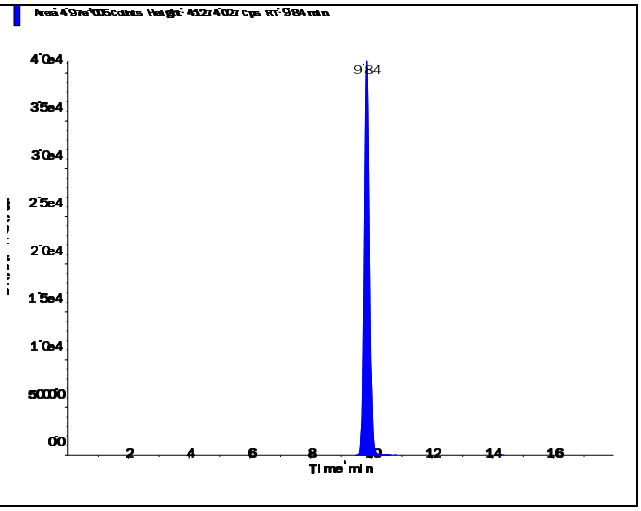

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

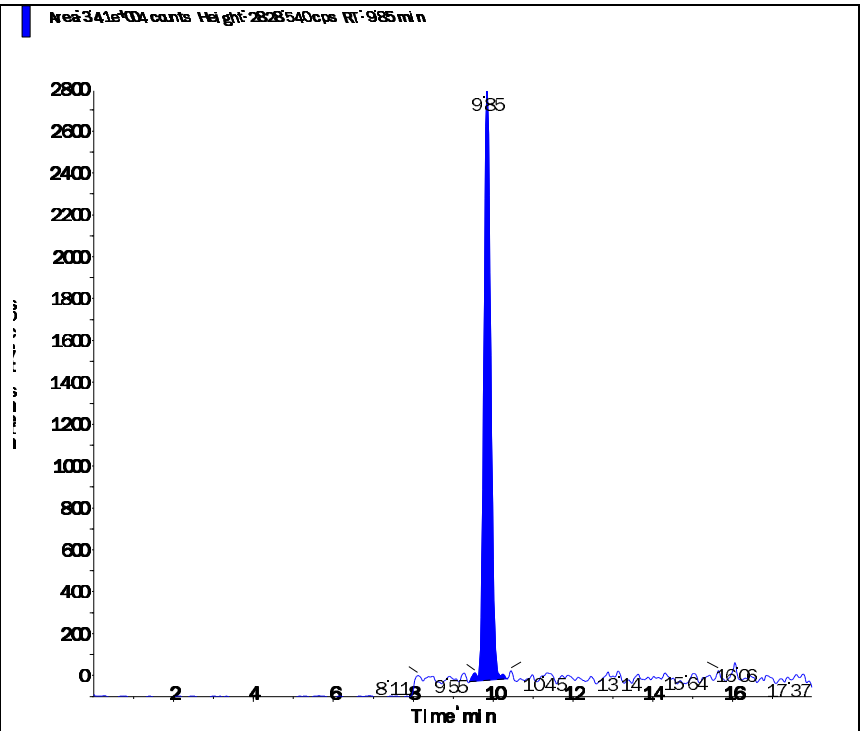

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

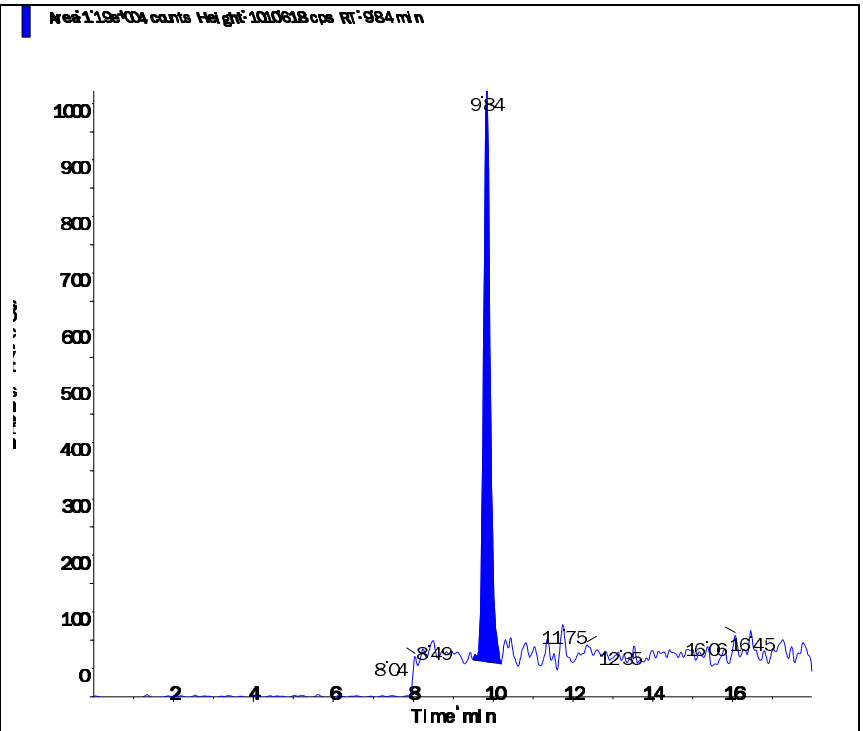

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Data File	LM34689.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

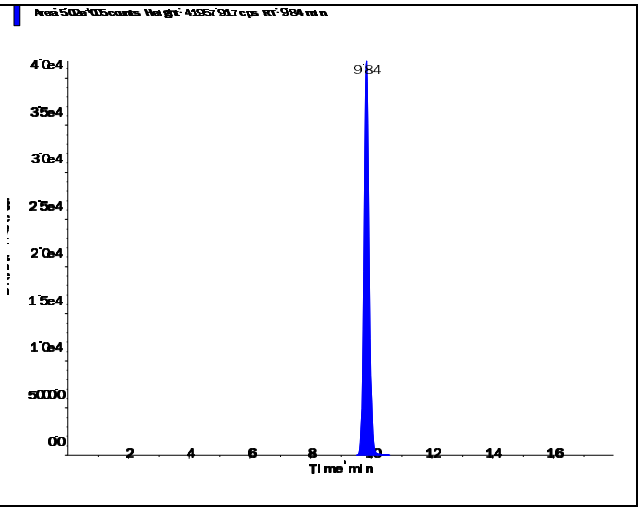

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.483 ng/ml
Area Ratio:	0.164
Sample Type:	(Standard)

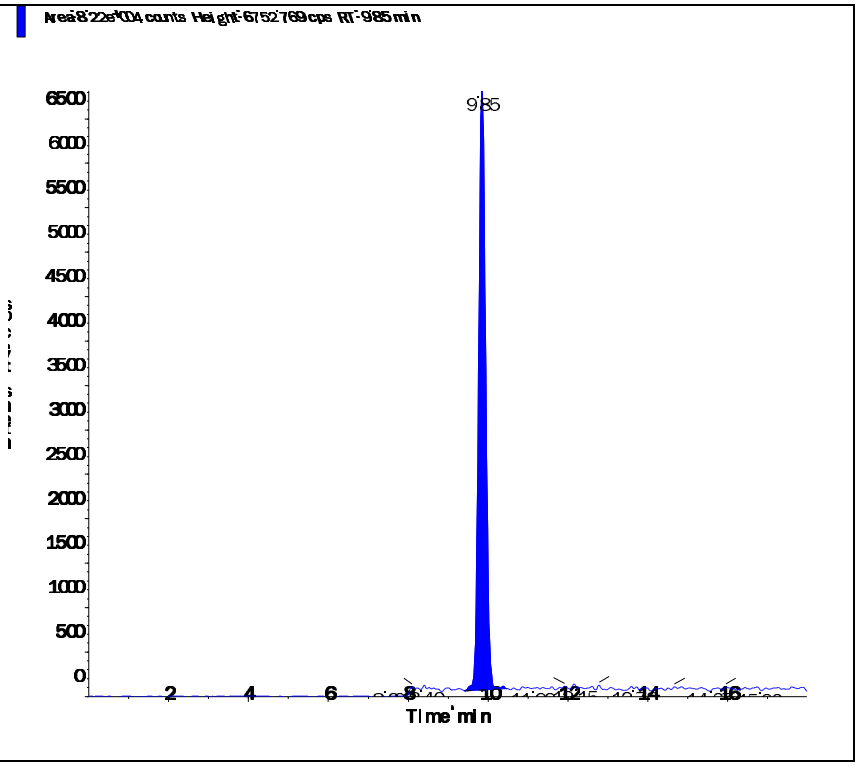

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.503 ng/ml
Area Ratio:	0.058
Sample Type:	(Standard)

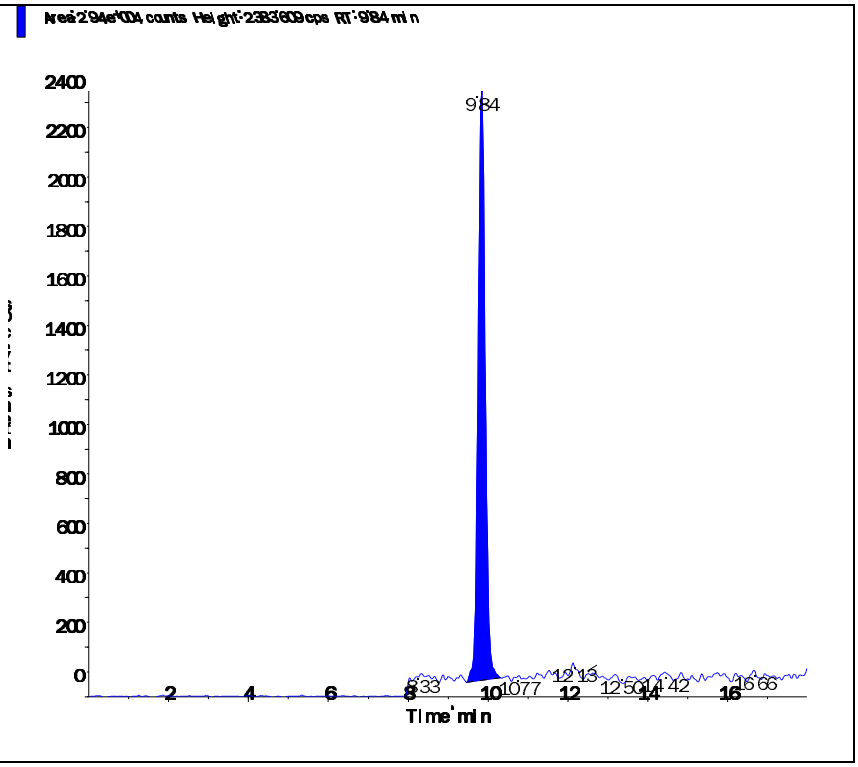

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Data File	LM34690.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

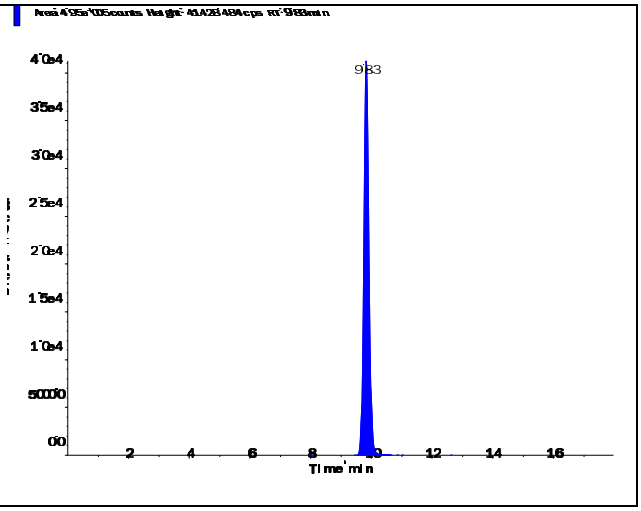

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

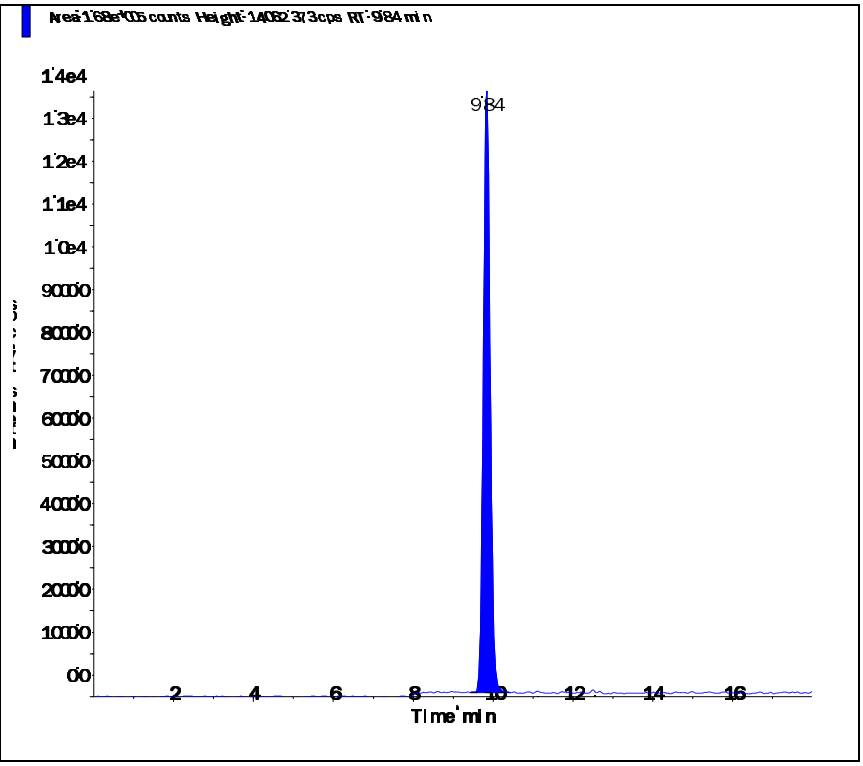

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

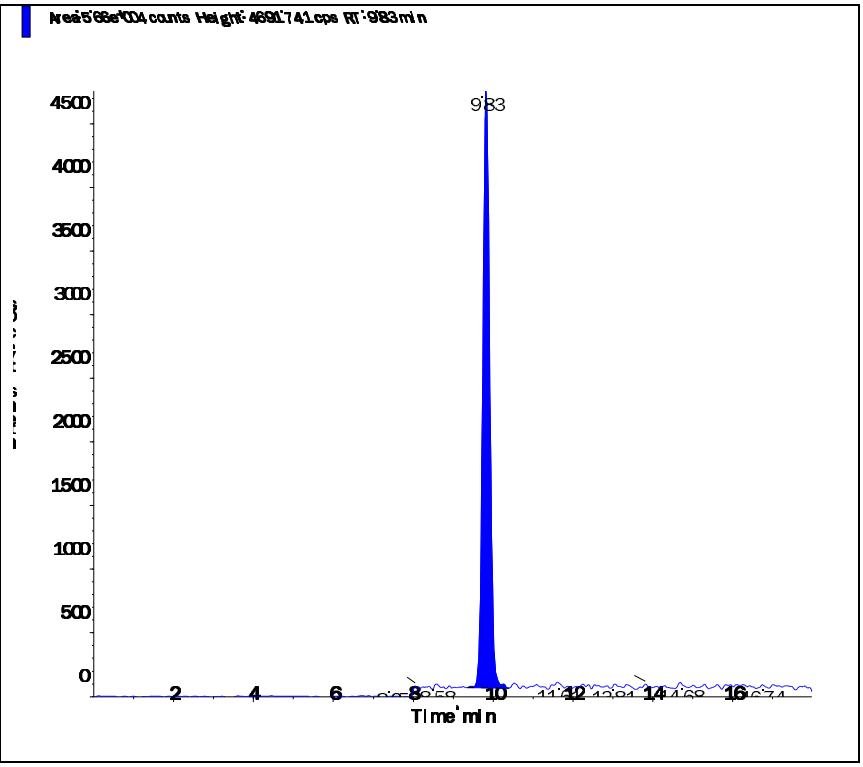

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Data File	LM34691.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

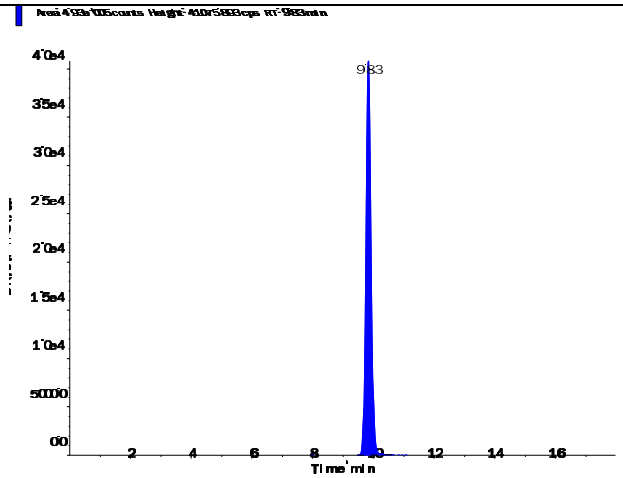

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 1.99 ng/ml Area Ratio: 0.669 Sample Type: (Standard)	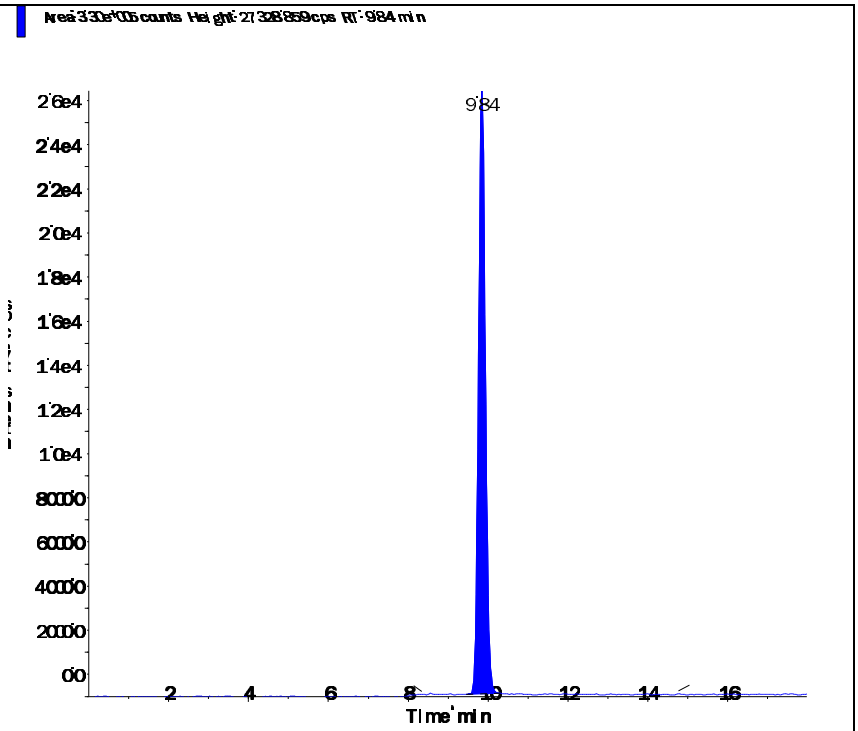
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 1.94 ng/ml Area Ratio: 0.219 Sample Type: (Standard)	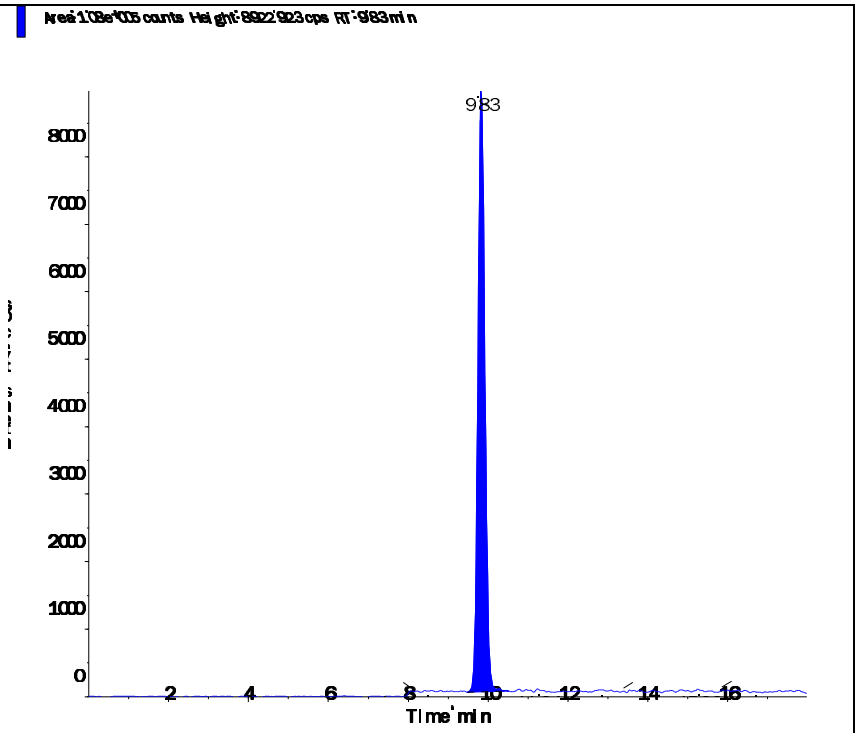

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Data File	LM34692.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

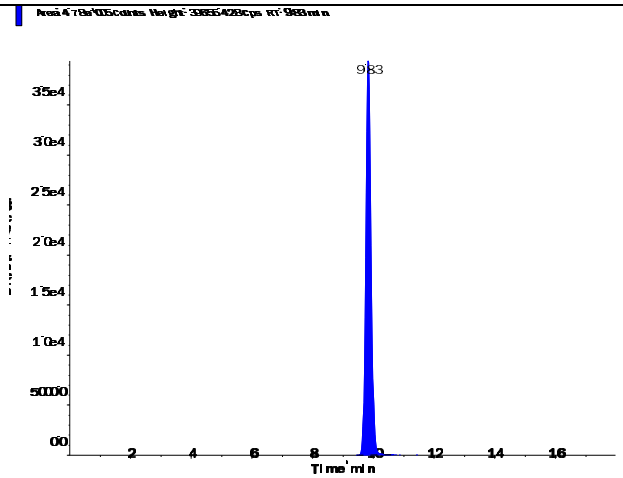

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

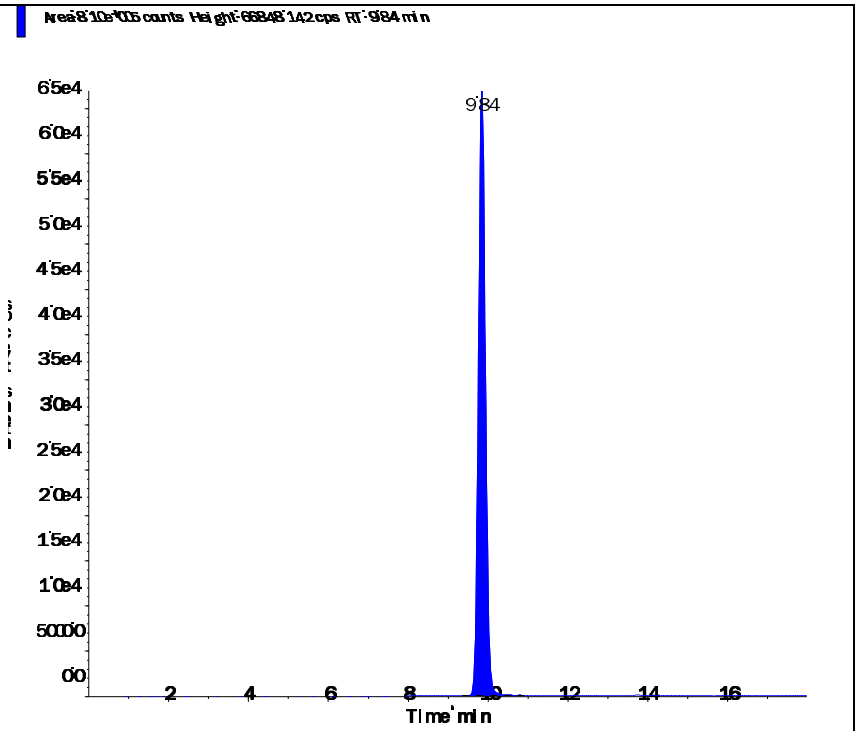

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

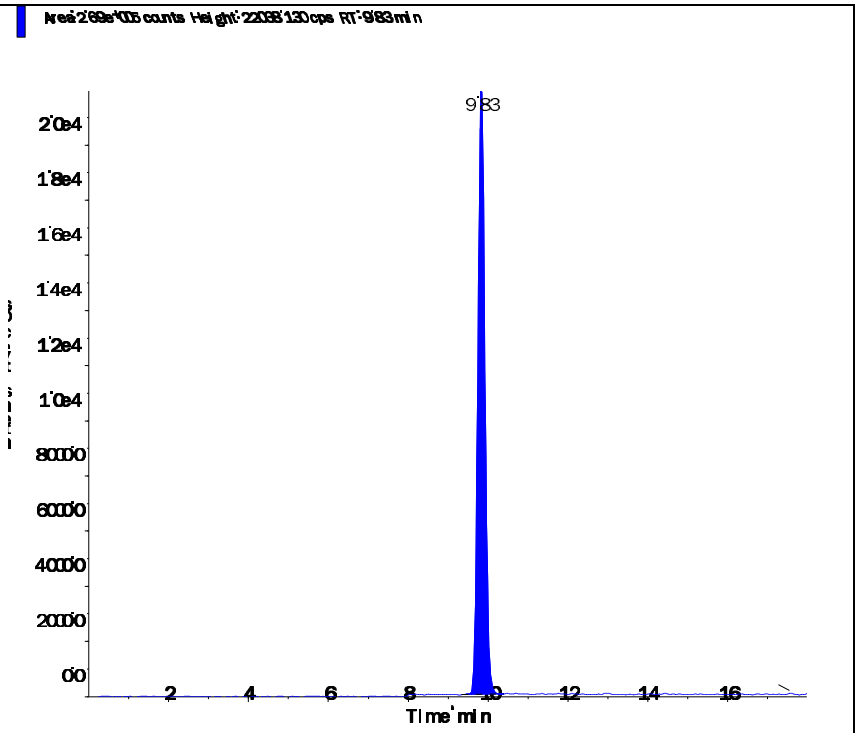

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Data File	LM34693.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

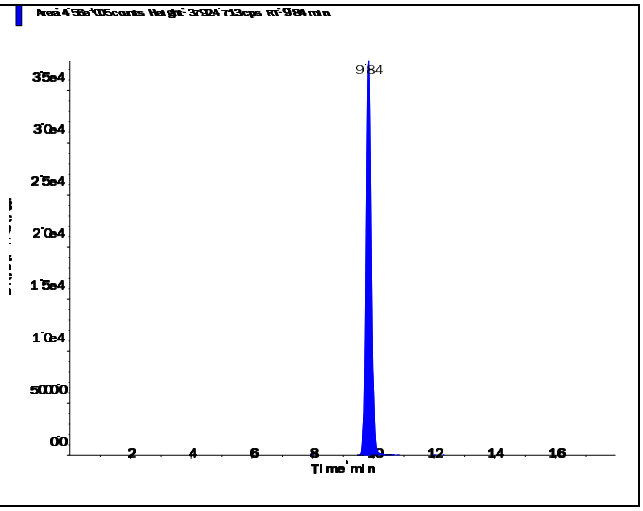

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	9.99 ng/ml
Area Ratio:	3.36
Sample Type:	(Standard)

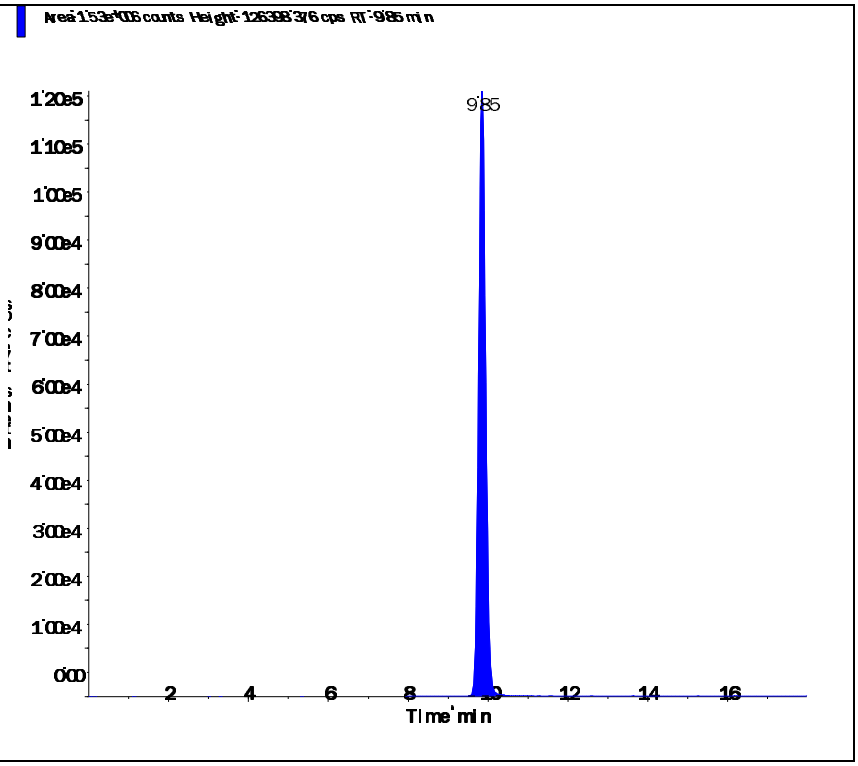

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	10.00 ng/ml
Area Ratio:	1.122
Sample Type:	(Standard)

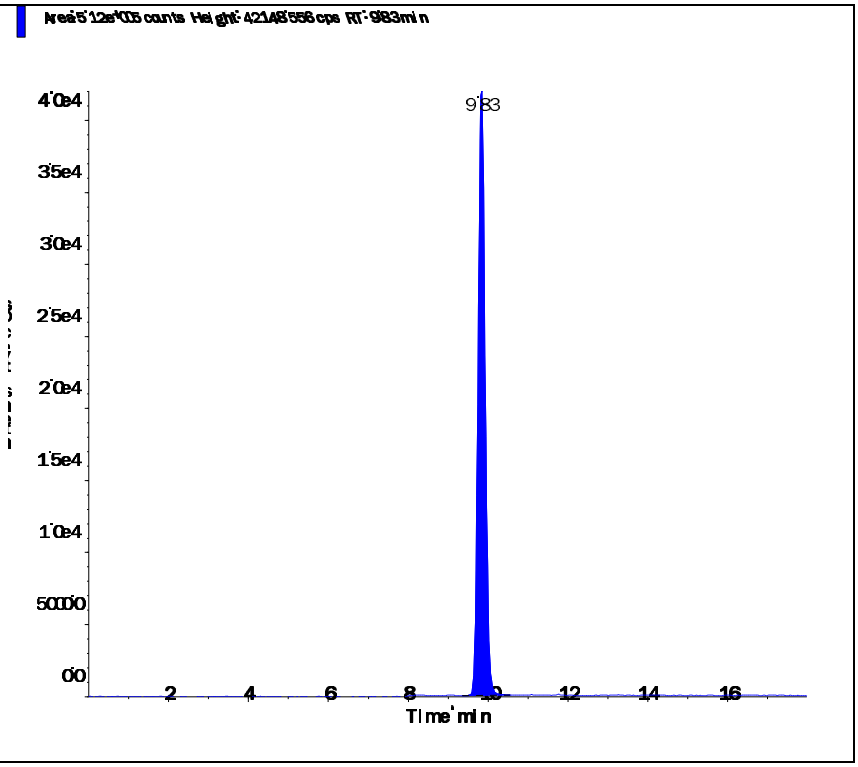

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Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

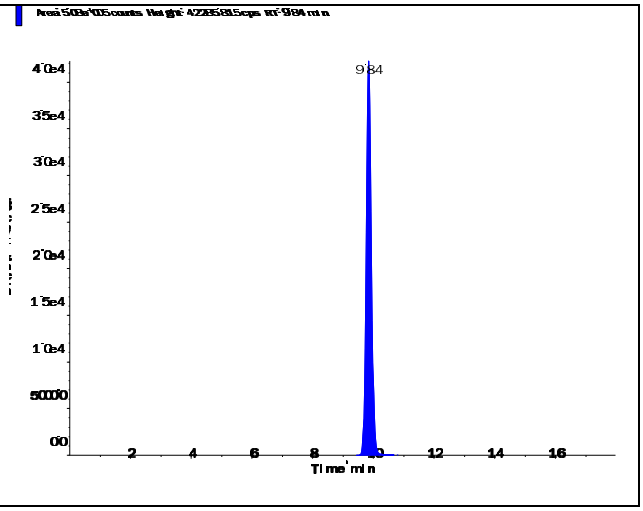

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.332
Sample Type:	(Quality Control)

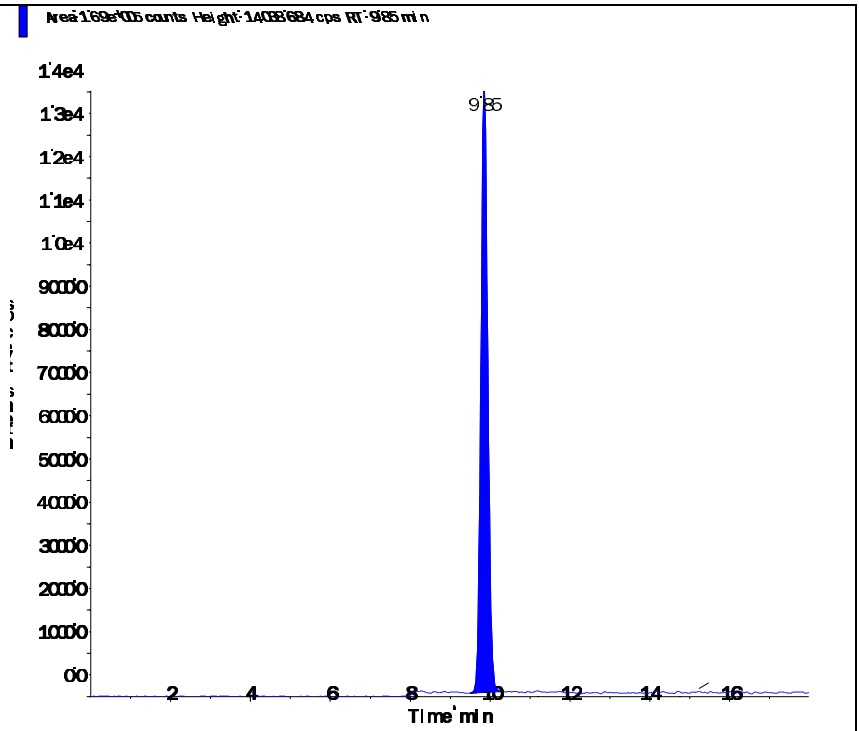

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

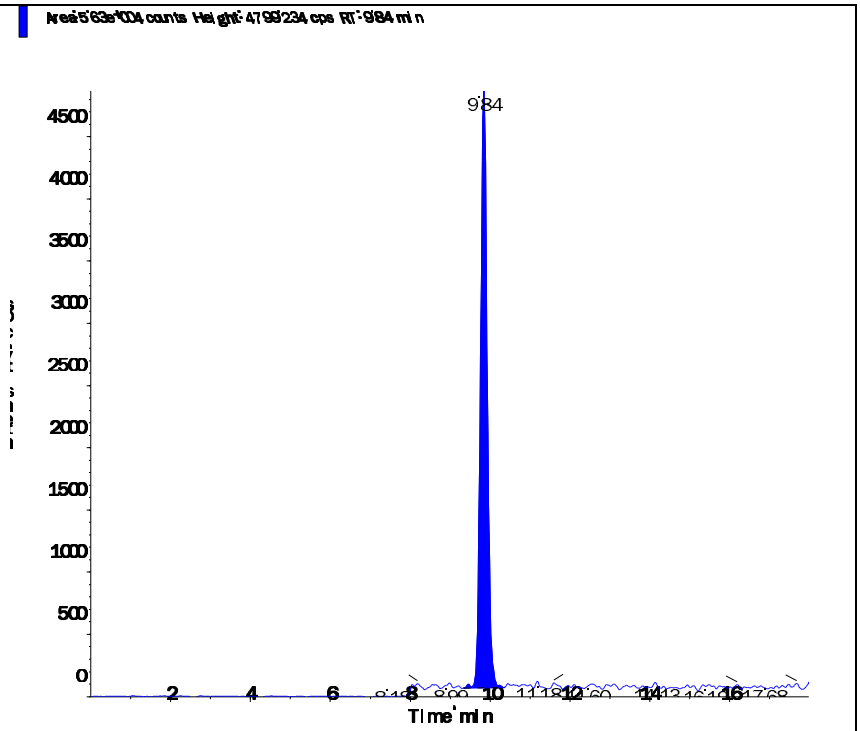

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Printed: 6/11/2016 12:59 PM

Data File	LM35226.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 10:08:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35226.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 10:08:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.430e+05	9.64	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.510e+05	9.65	1.00	1.01
Perchlorate conf	5.370e+04	9.63	1.00	1.06

O18LP (Internal Standard)

RT (Exp. RT): 9.64(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

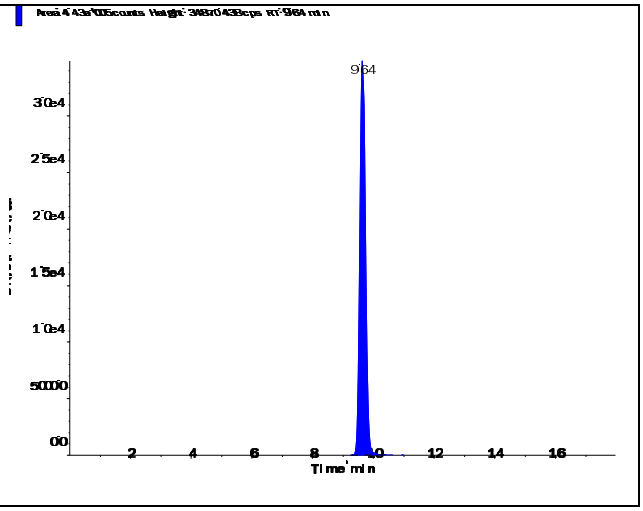

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.65 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.34
Sample Type:	(Quality Control)

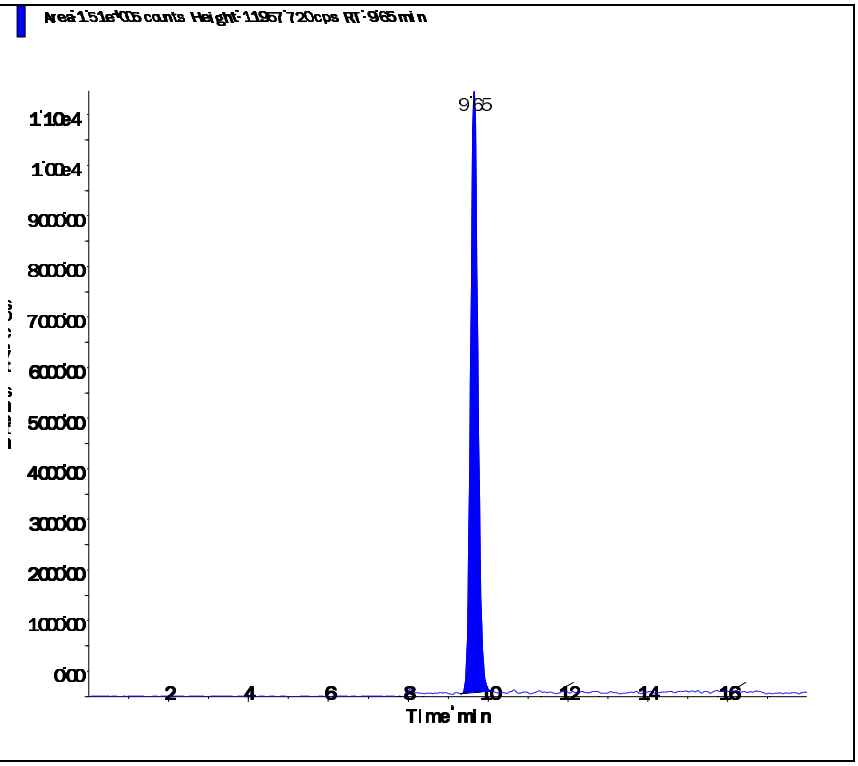

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

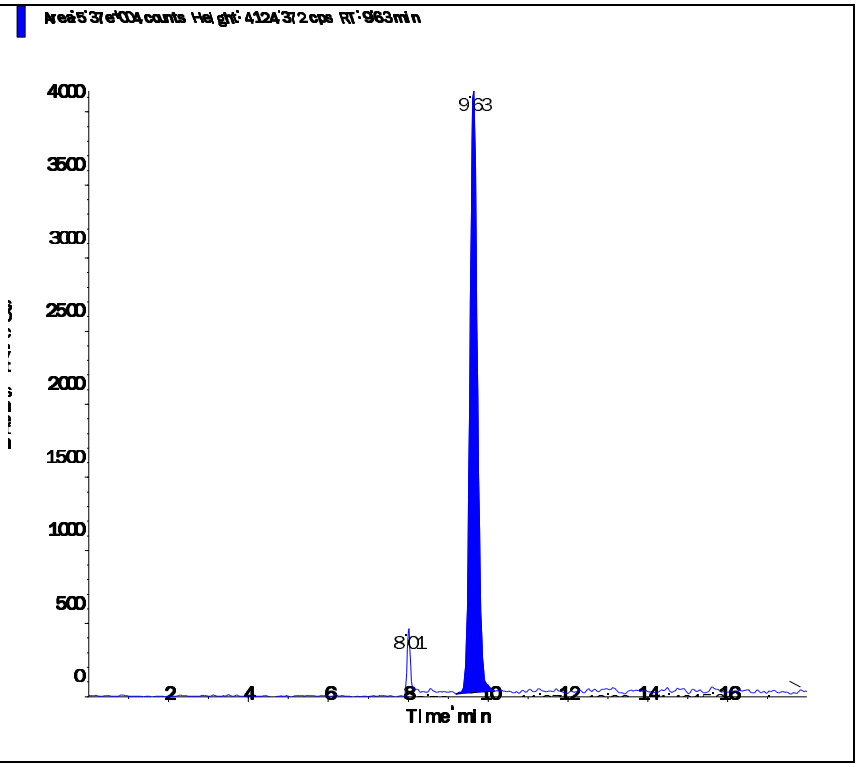

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Printed: 6/11/2016 1:03 PM

Data File	LM35238.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 1:55:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35238.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 1:55:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.720e+05	9.64	1.00	1.01
Perchlorate conf	5.960e+04	9.63	1.00	1.04

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

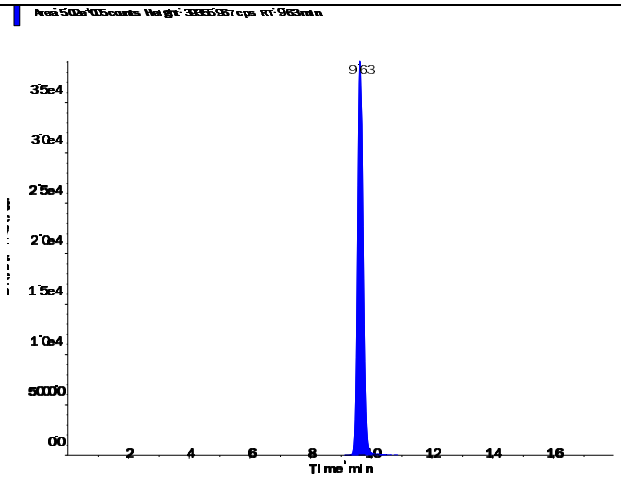

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.342
Sample Type:	(Quality Control)

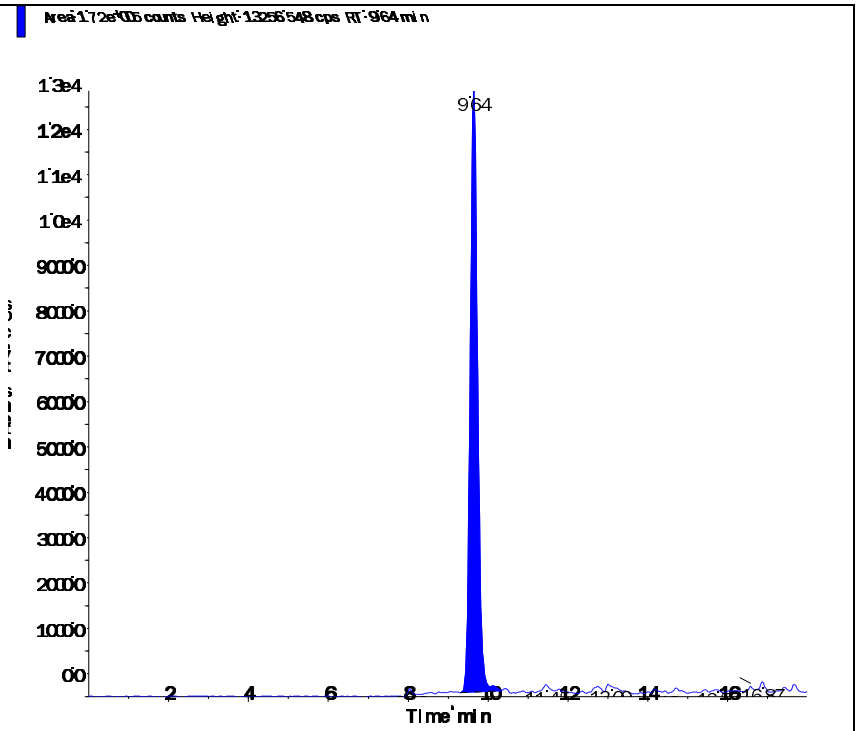

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

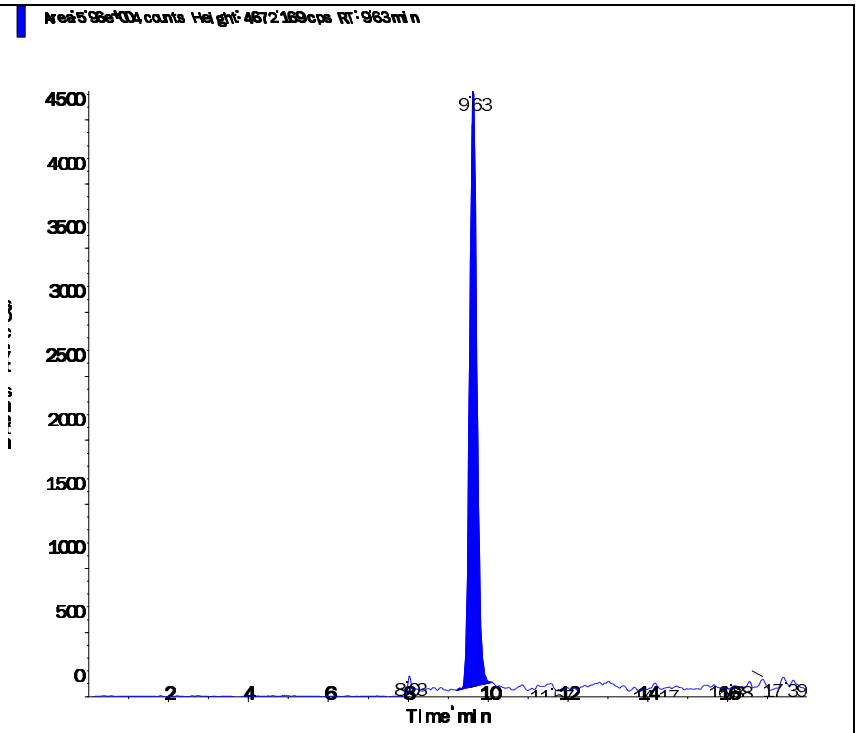

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Data File	LM35244.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 3:49:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35244.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 3:49:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+05	9.64	1.00	1.05
Perchlorate conf	6.340e+04	9.64	1.00	1.10

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

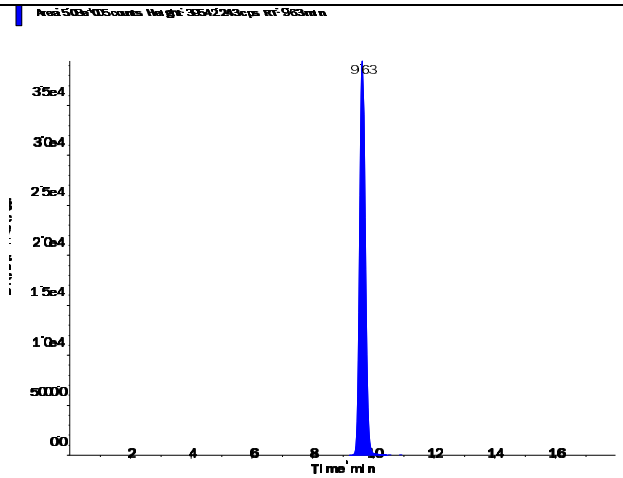

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.353
Sample Type:	(Quality Control)

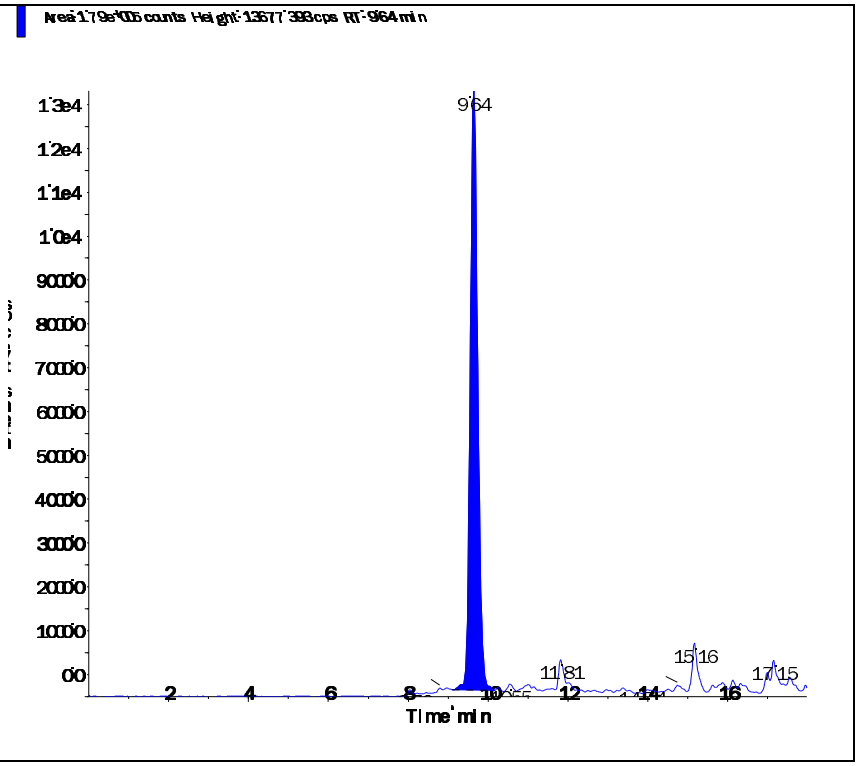

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.10 ng/ml
Area Ratio:	0.125
Sample Type:	(Quality Control)

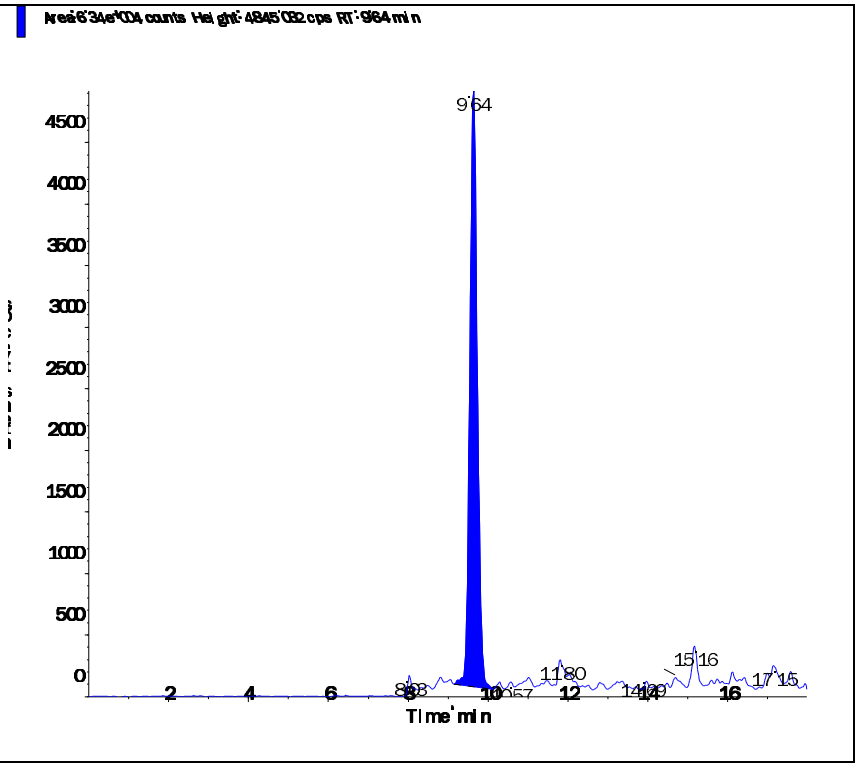

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Data File	LM35257.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 7:56:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35257.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 7:56:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.810e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.750e+05	9.64	1.00	1.08
Perchlorate conf	5.800e+04	9.62	1.00	1.06

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

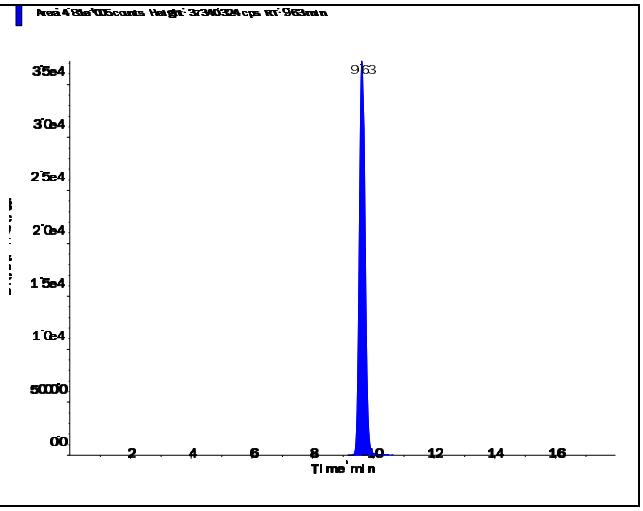

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.08 ng/ml
Area Ratio:	0.363
Sample Type:	(Quality Control)

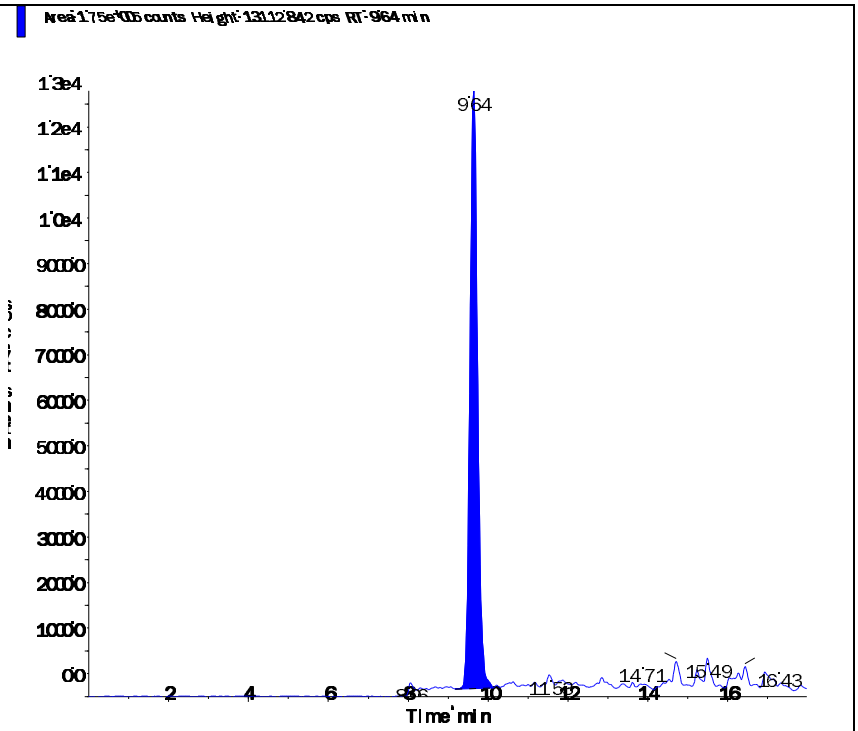

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.62 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

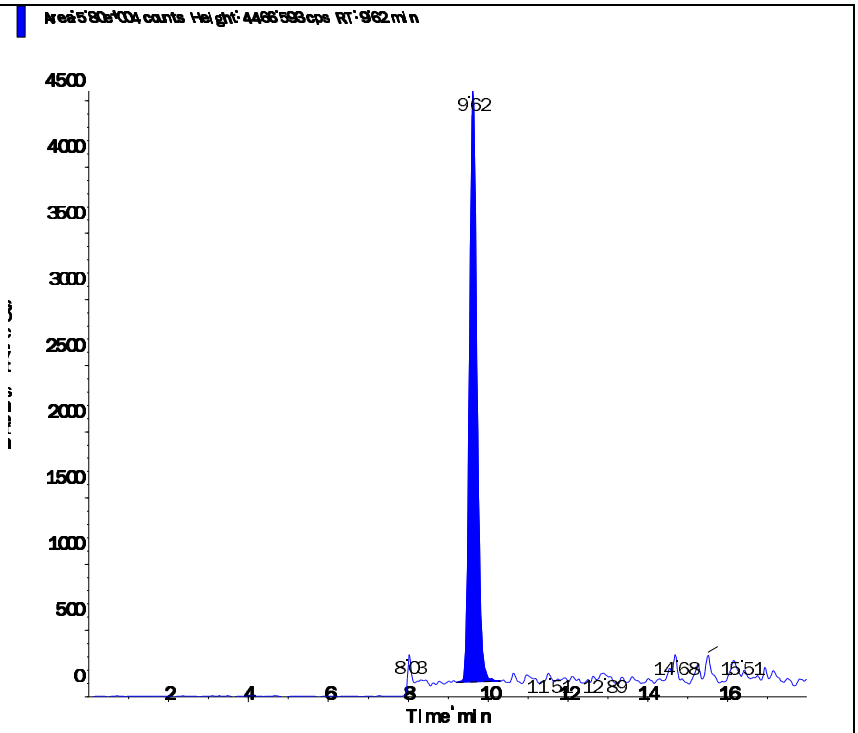

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Data File	LM35264.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 10:09:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35264.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 10:09:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.860e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.64	1.00	1.03
Perchlorate conf	5.780e+04	9.63	1.00	1.04

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

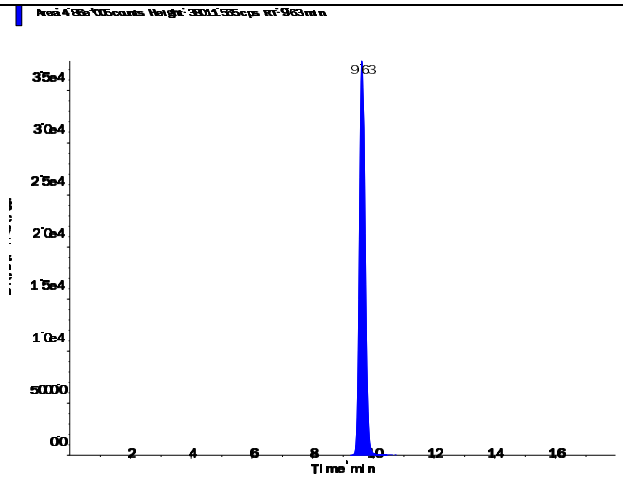

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.348
Sample Type:	(Quality Control)

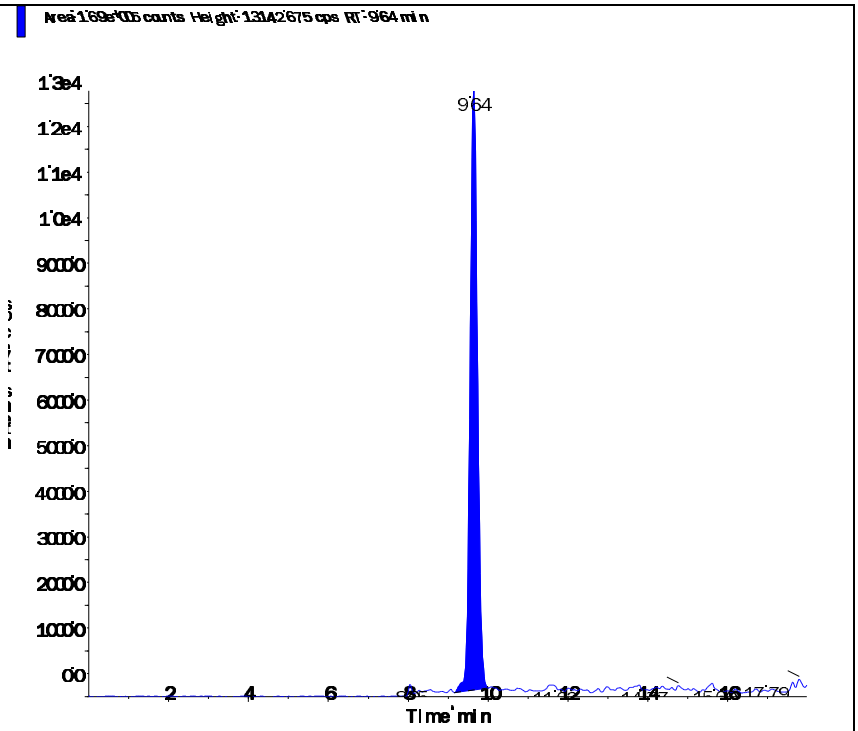

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

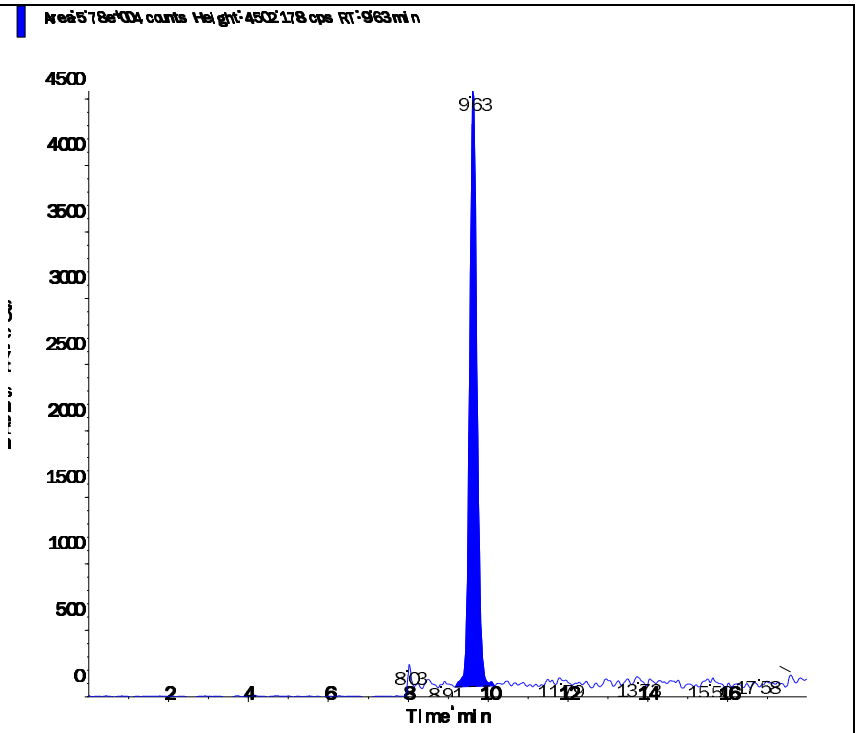

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Data File	LM35276.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/11/2016 1:56:12 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-11 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35276.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 1:56:12 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.260e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.830e+05	9.64	1.00	1.03
Perchlorate conf	6.180e+04	9.62	1.00	1.03

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

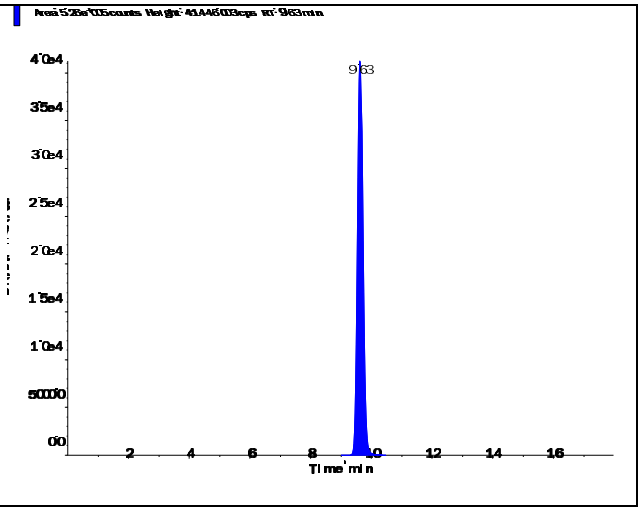

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.349
Sample Type:	(Quality Control)

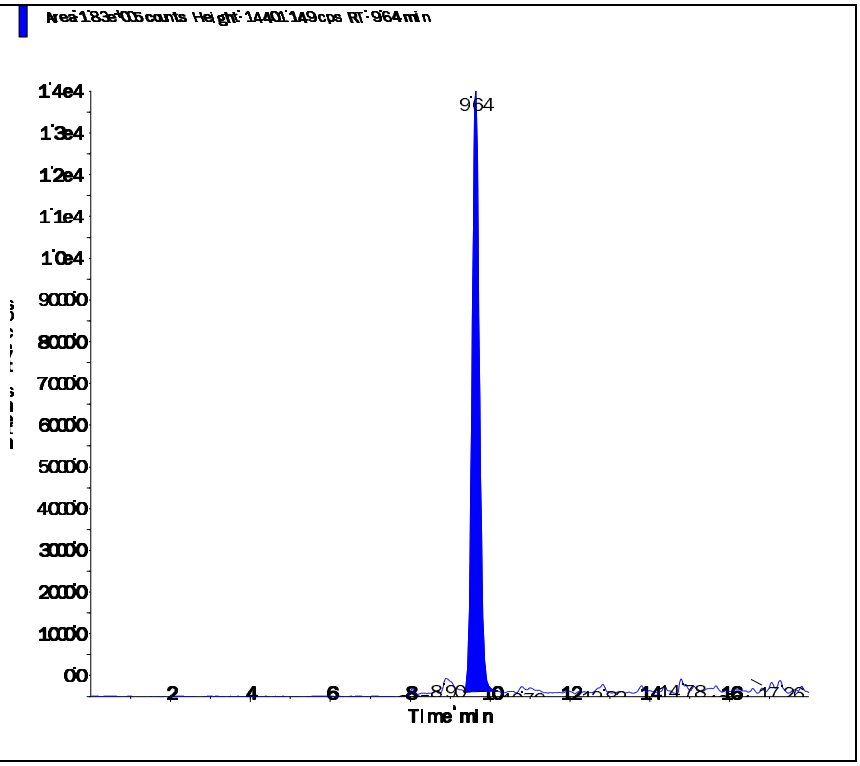

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.62 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.117
Sample Type:	(Quality Control)

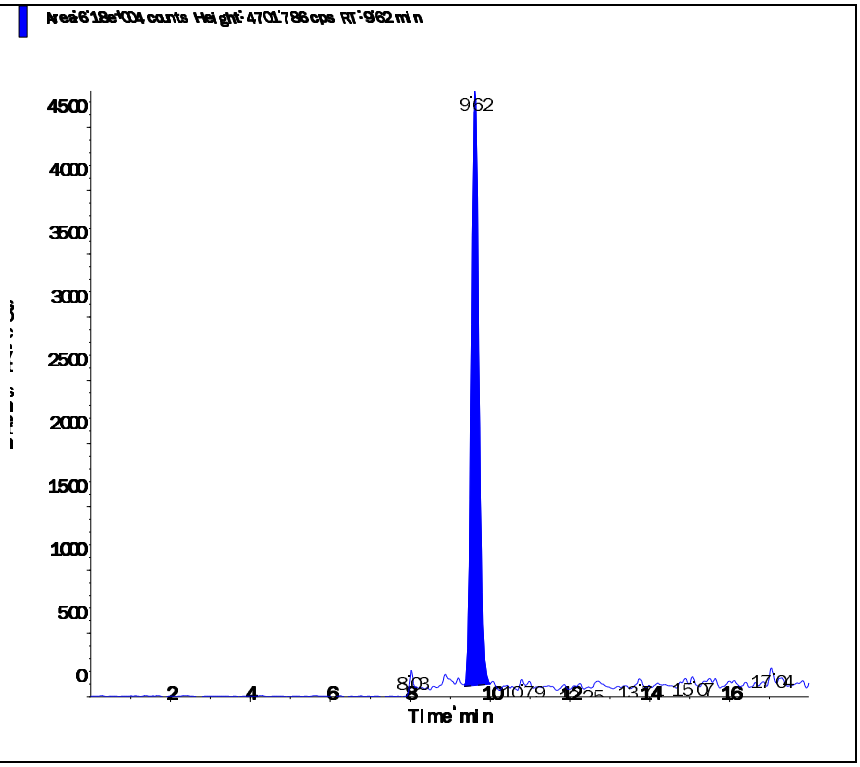

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Data File	LM35280.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 11:46:23 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35280.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 11:46:23 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.580e+05	9.62	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.600e+05	9.63	1.00	1.04
Perchlorate conf	5.470e+04	9.61	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.62(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

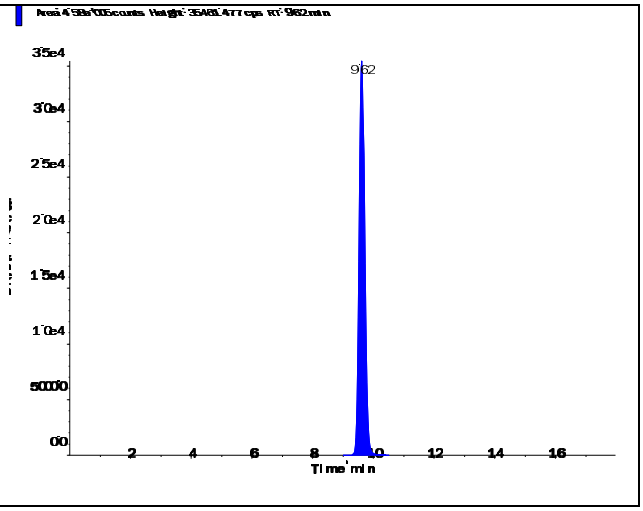

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.35
Sample Type:	(Quality Control)

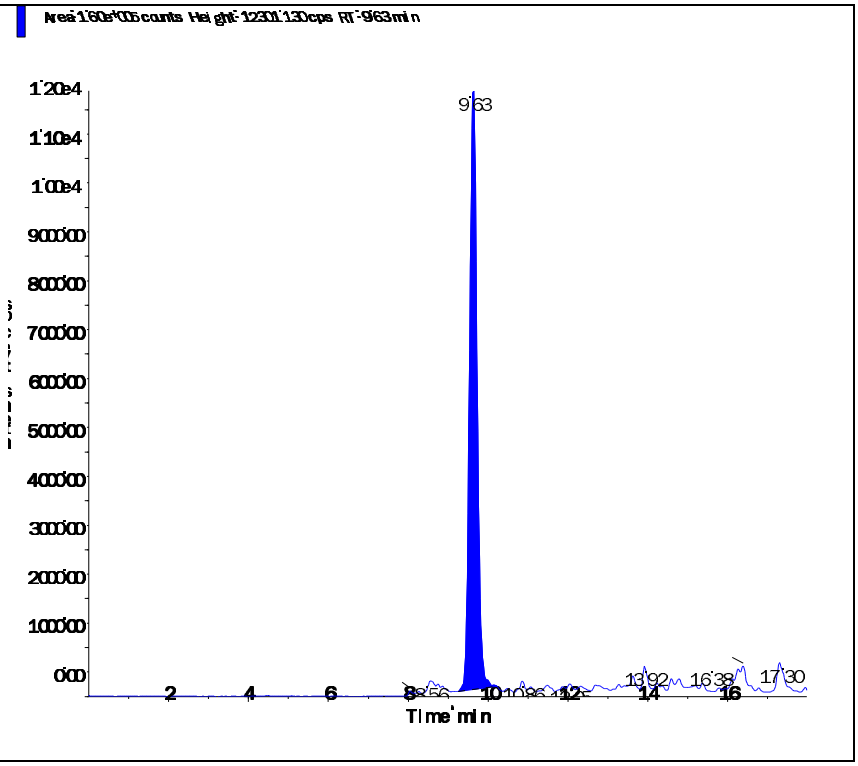

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.61 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

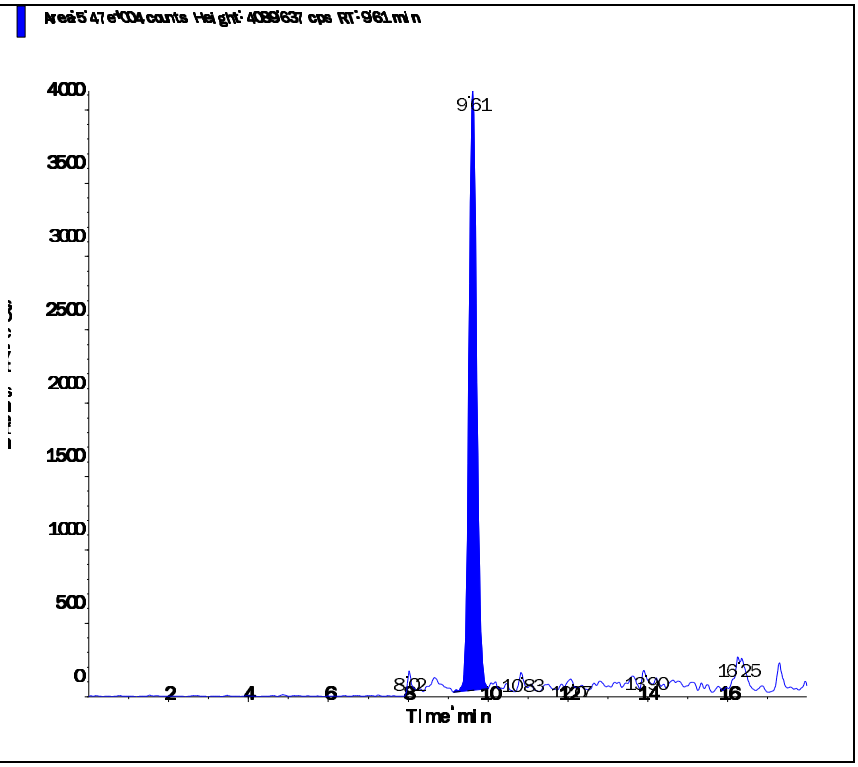

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Data File	LM35292.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 3:34:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35292.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 3:34:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.800e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.710e+05	9.64	1.00	1.05
Perchlorate conf	5.680e+04	9.63	1.00	1.04

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

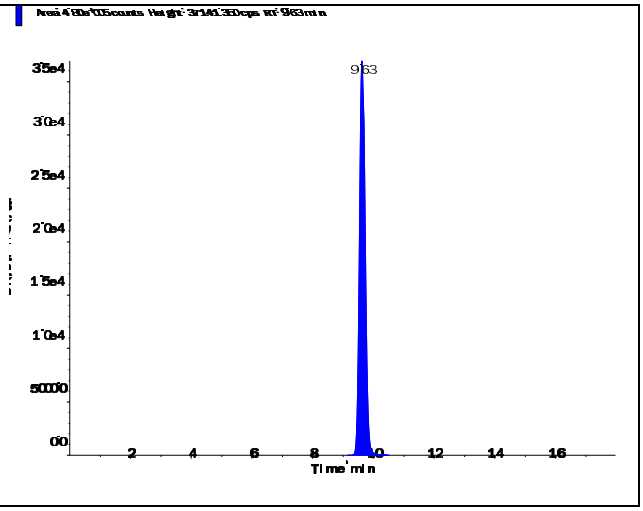

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.355
Sample Type:	(Quality Control)

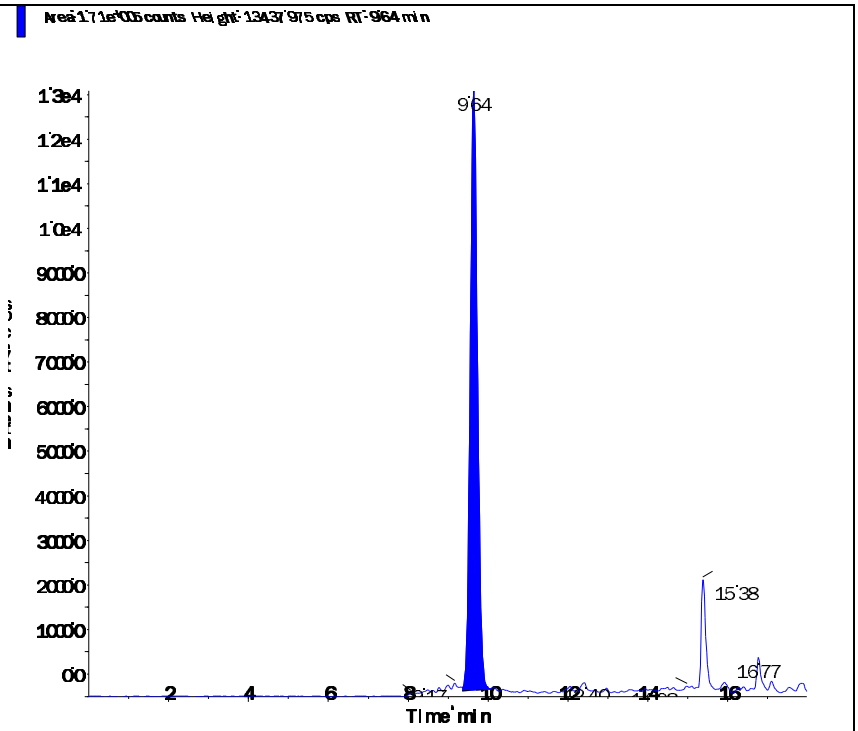

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.118
Sample Type:	(Quality Control)

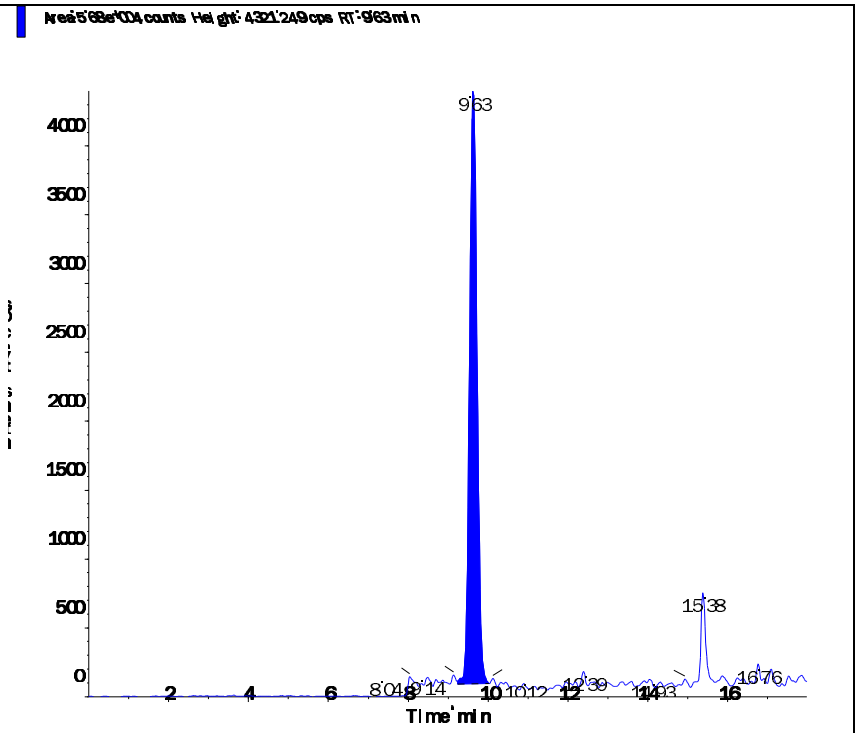

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Data File	LM35296.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 5:38:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35296.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 5:38:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.960e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.720e+05	9.65	1.00	1.03
Perchlorate conf	5.930e+04	9.64	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

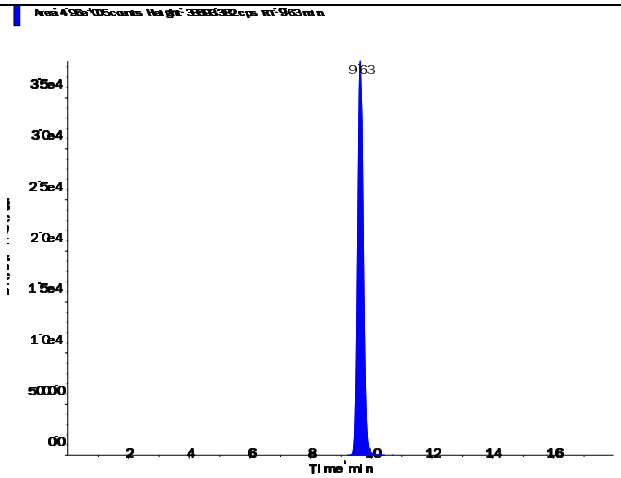

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.65 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.346
Sample Type:	(Quality Control)

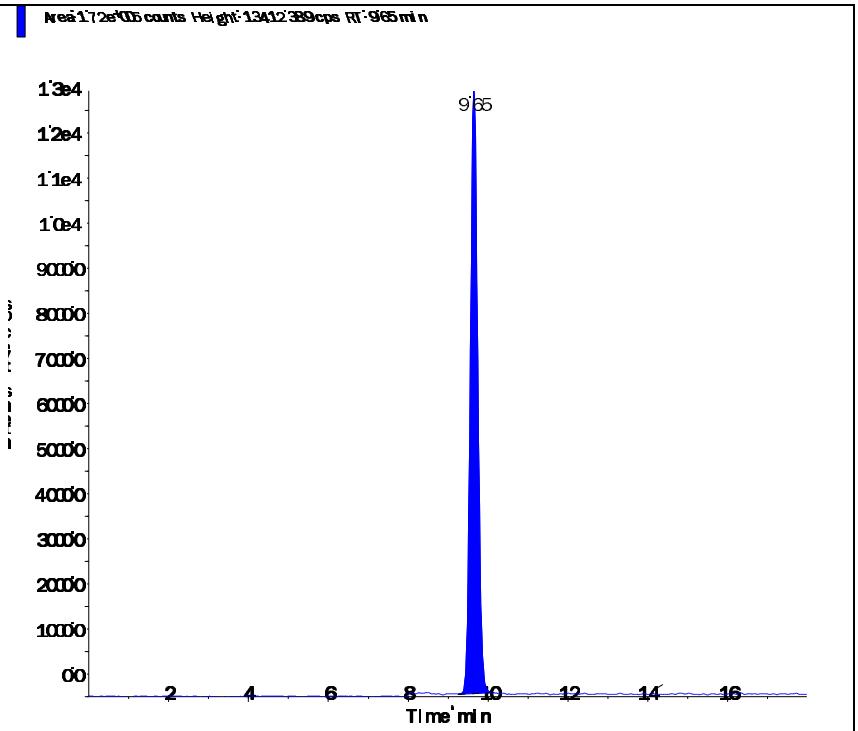

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

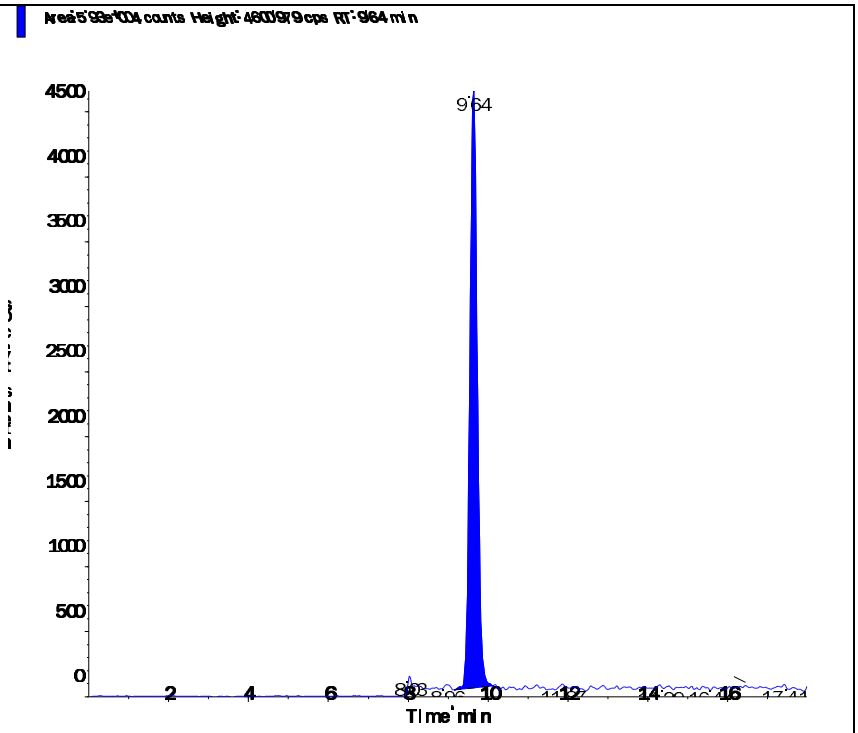

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Data File	LM35310.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 10:03:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35310.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 10:03:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.050e+05	9.62	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.800e+05	9.63	1.00	1.06
Perchlorate conf	6.050e+04	9.62	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.62(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

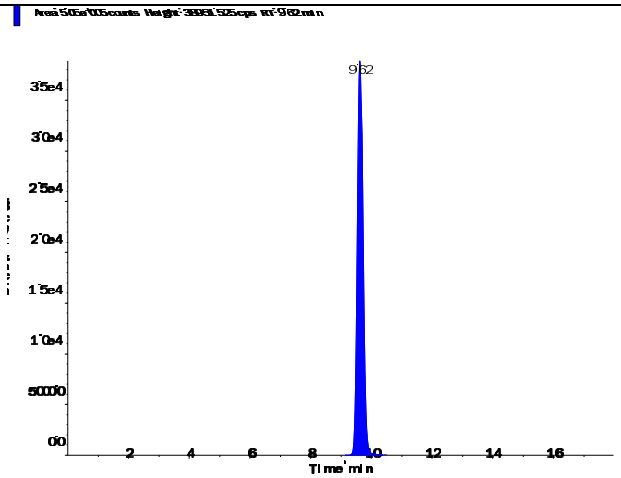

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.357
Sample Type:	(Quality Control)

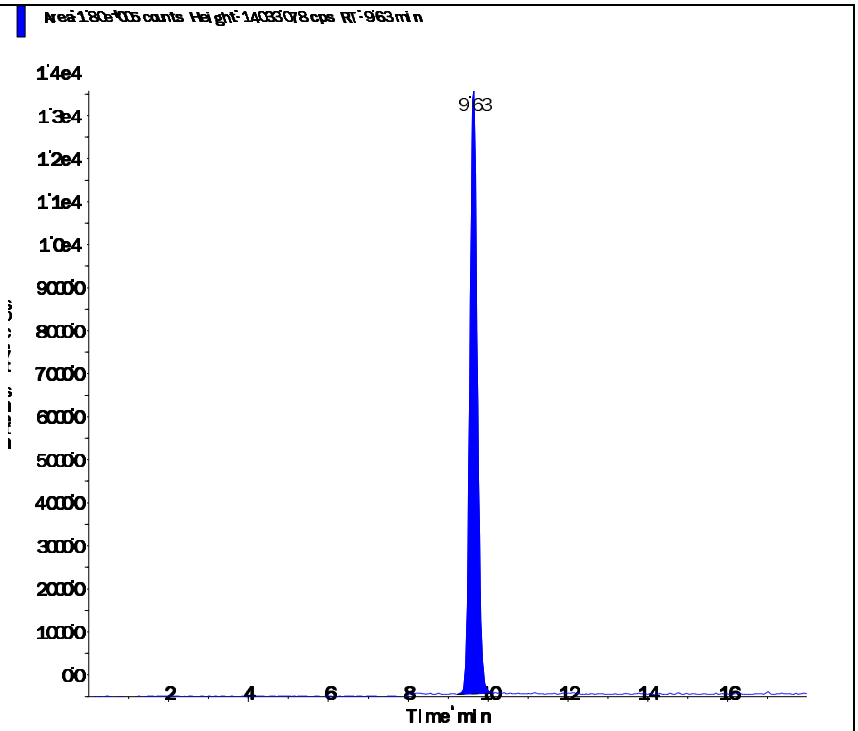

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.62 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.12
Sample Type:	(Quality Control)

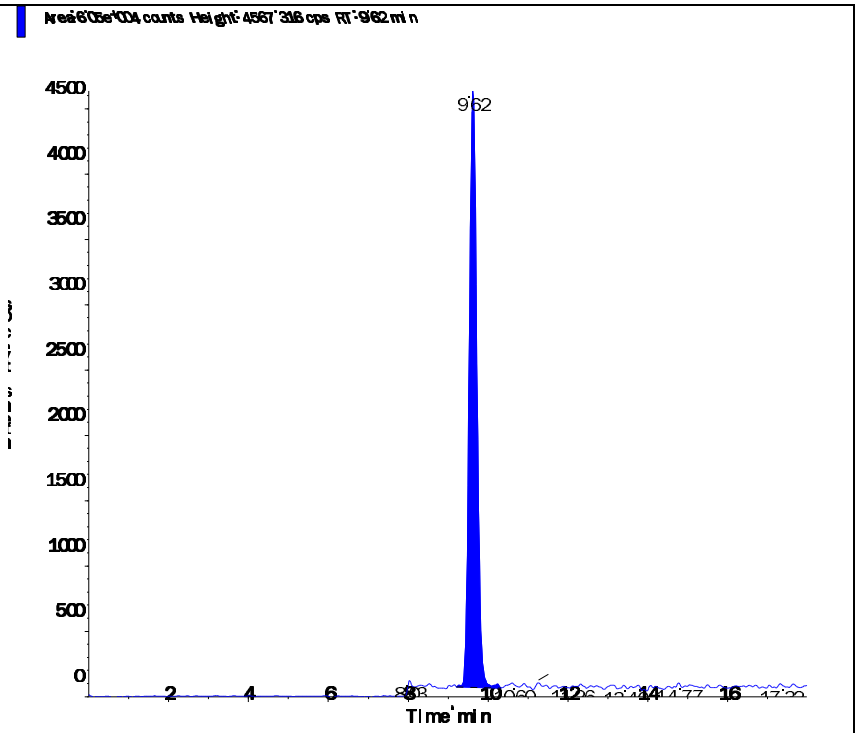

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Data File	LM35227.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 10:27:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35227.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 10:27:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.430e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.060e+04	9.68	N/A	0.202
Perchlorate conf	1.110e+04	9.67	N/A	0.204

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

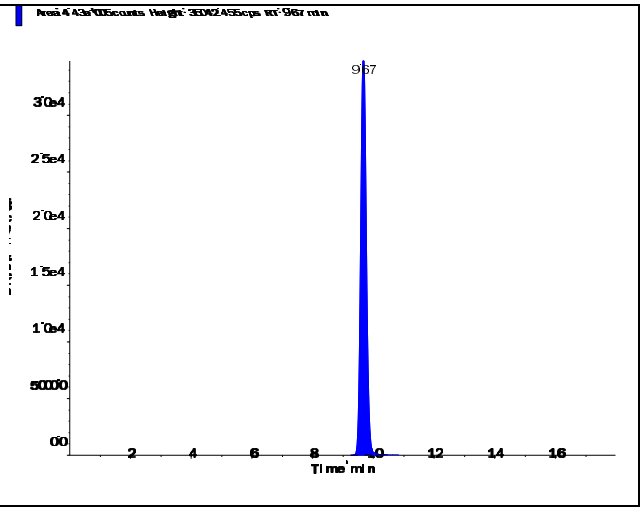

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.68 (9.84) min
Calculated conc:	0.202 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

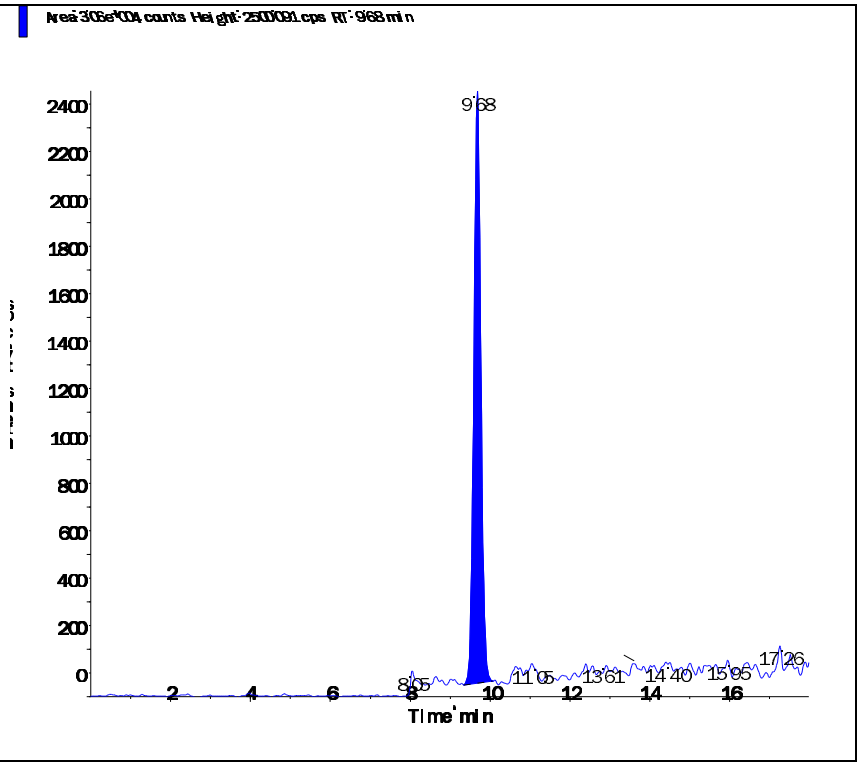

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.67 (9.84) min
Calculated conc:	0.204 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

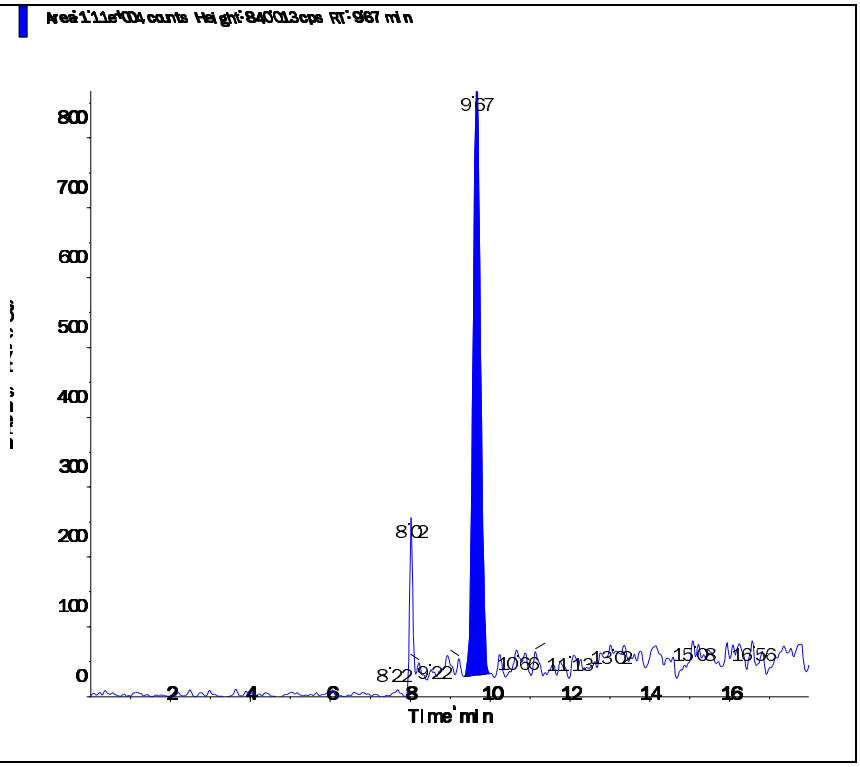

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Data File	LM35239.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 2:14:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-08 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35239.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 2:14:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.960e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.650e+04	9.68	N/A	0.215
Perchlorate conf	1.380e+04	9.66	N/A	0.228

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

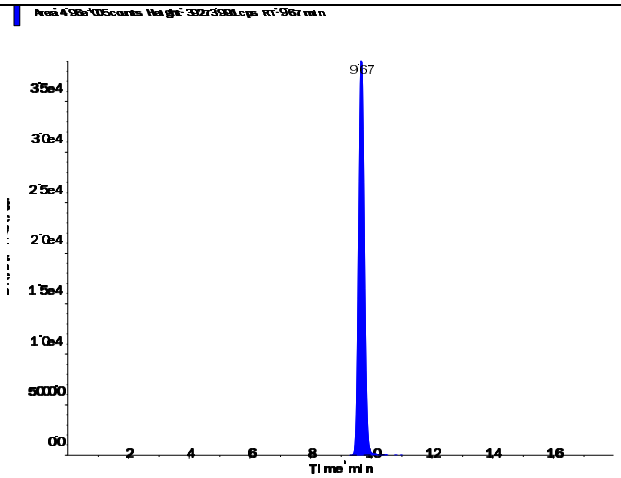

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.68 (9.84) min
Calculated conc:	0.215 ng/ml
Area Ratio:	0.074
Sample Type:	(Unknown)

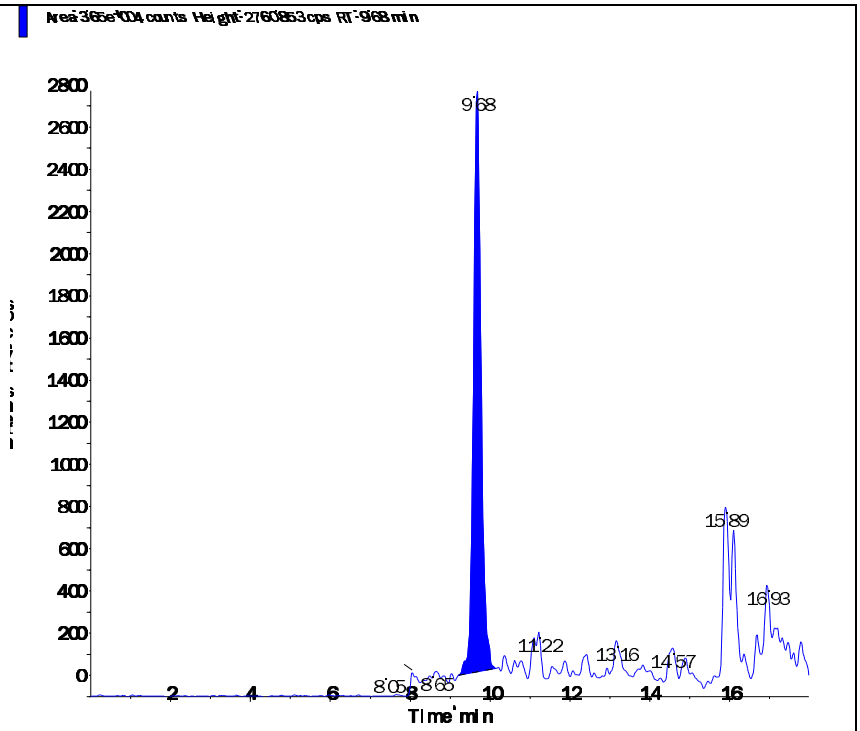

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.228 ng/ml
Area Ratio:	0.028
Sample Type:	(Unknown)

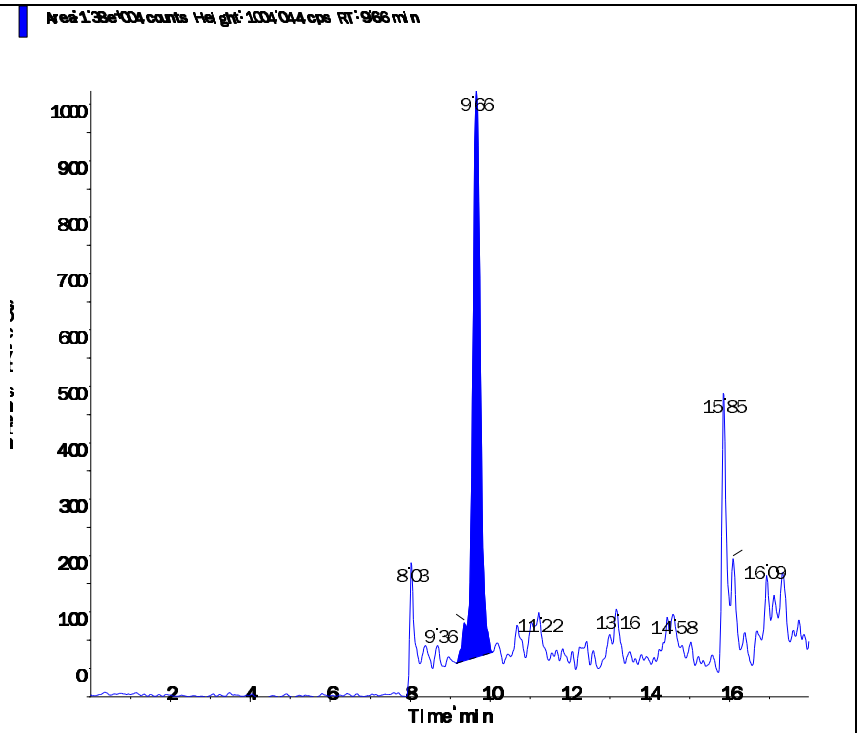

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Data File	LM35245.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 4:08:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-09 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35245.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 4:08:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.670e+04	9.69	N/A	0.21
Perchlorate conf	1.260e+04	9.66	N/A	0.201

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

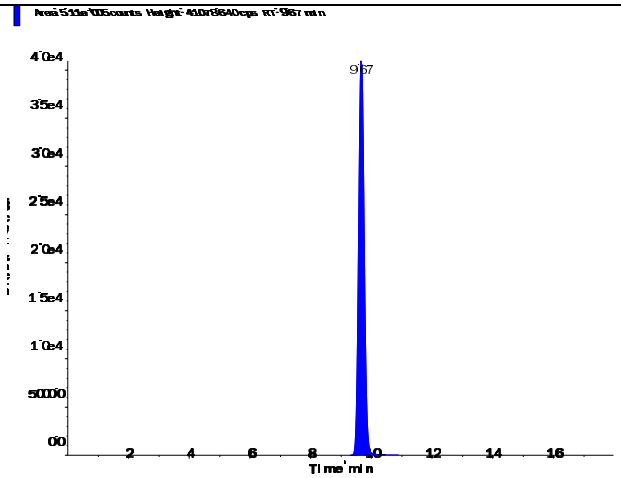

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.69 (9.84) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

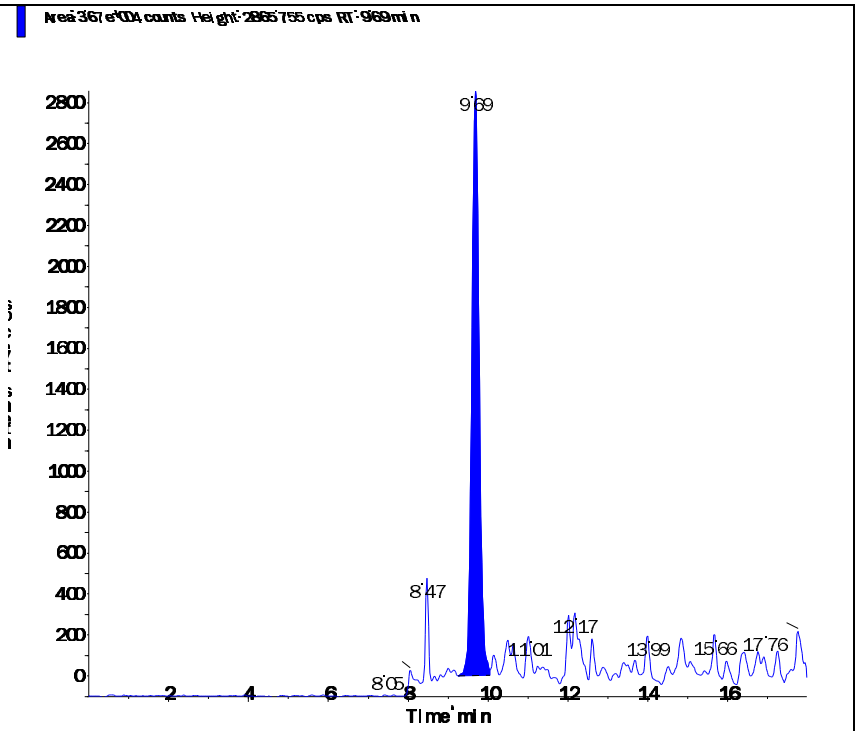

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

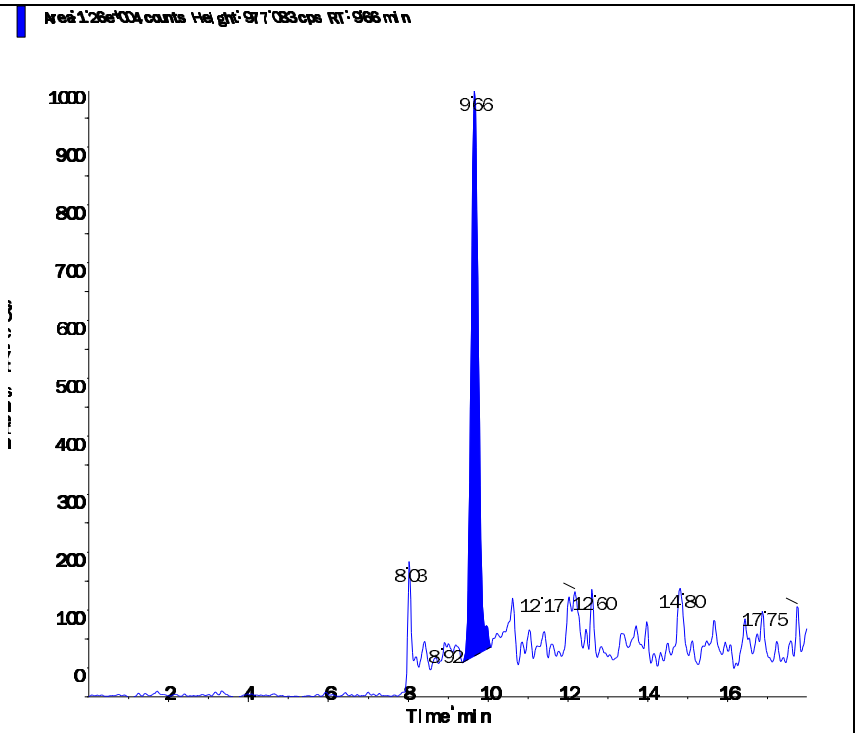

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Data File	LM35258.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 8:15:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-10 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35258.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 8:15:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-10	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.620e+04	9.68	N/A	0.222
Perchlorate conf	1.240e+04	9.66	N/A	0.212

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

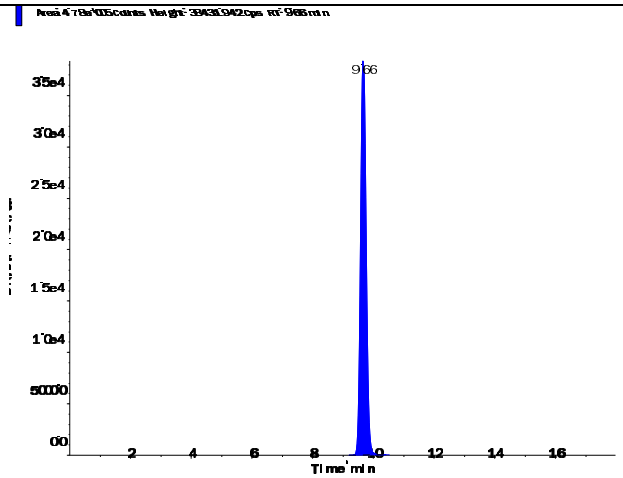

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.68 (9.84) min
Calculated conc:	0.222 ng/ml
Area Ratio:	0.076
Sample Type:	(Unknown)

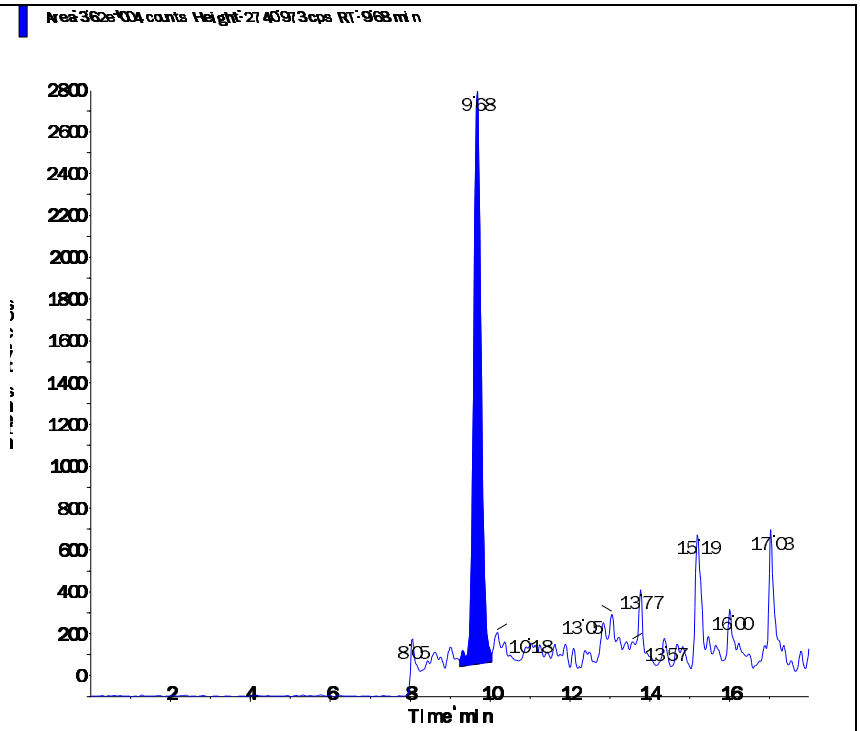

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.212 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

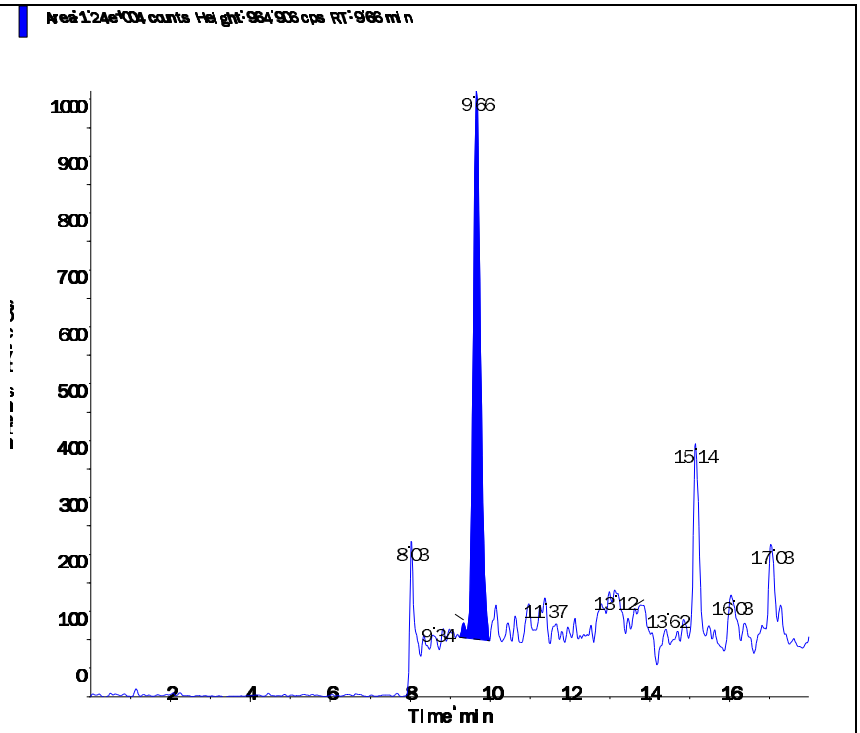

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Data File	LM35265.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 10:27:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-11 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35265.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 10:27:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.850e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.580e+04	9.67	N/A	0.216
Perchlorate conf	1.170e+04	9.66	N/A	0.197

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

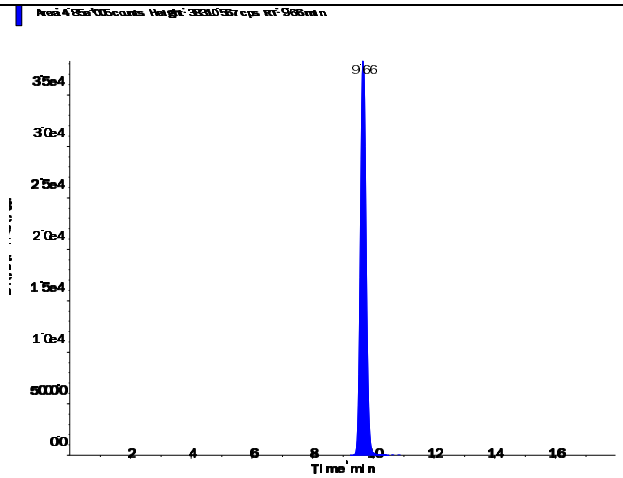

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.67 (9.84) min
Calculated conc:	0.216 ng/ml
Area Ratio:	0.074
Sample Type:	(Unknown)

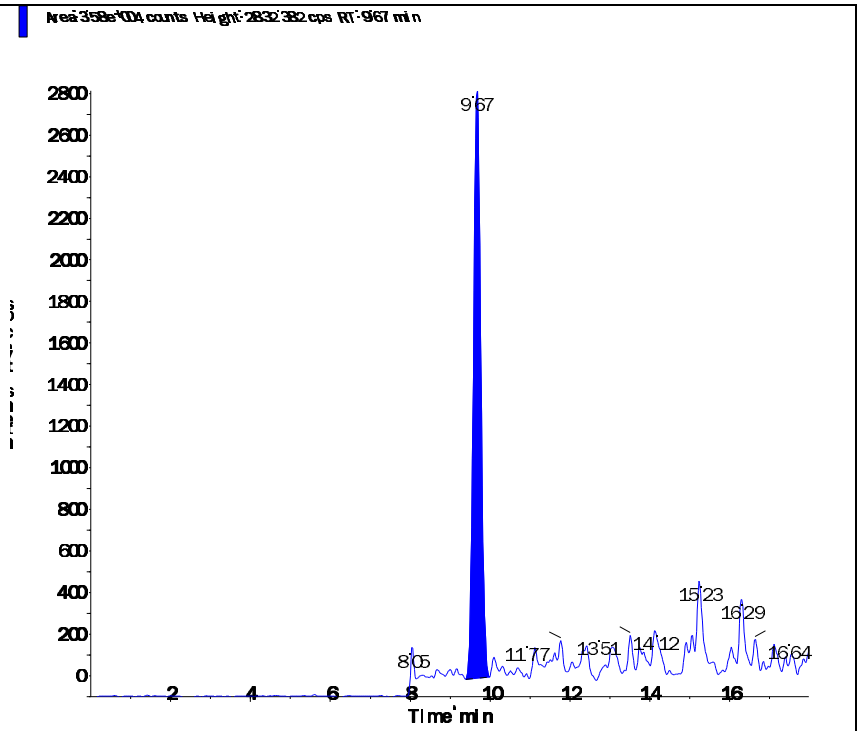

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

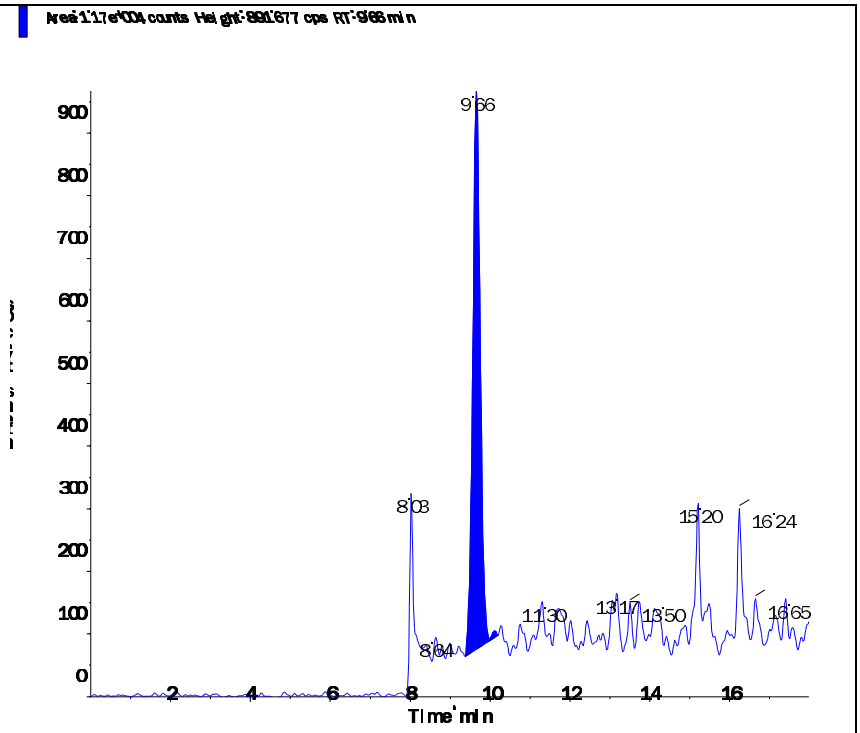

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Data File	LM35281.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 12:05:19 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-12 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35281.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 12:05:19 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572200-12	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.660e+05	9.65	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+04	9.66	N/A	0.206
Perchlorate conf	1.190e+04	9.65	N/A	0.209

O18LP (Internal Standard)

RT (Exp. RT): 9.65(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

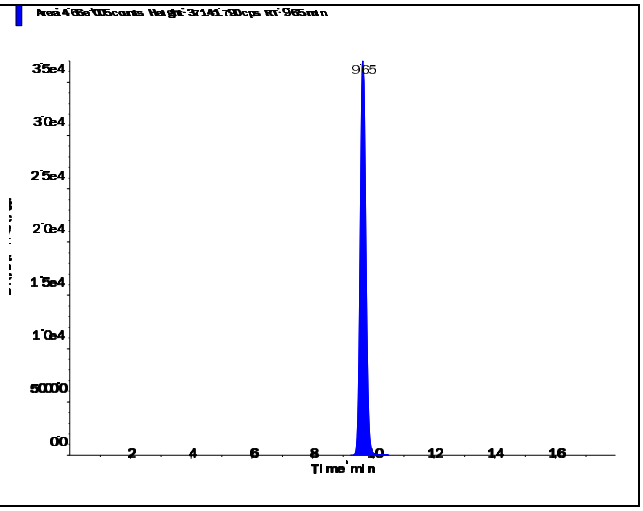

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Printed: 6/12/2016 9:37 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

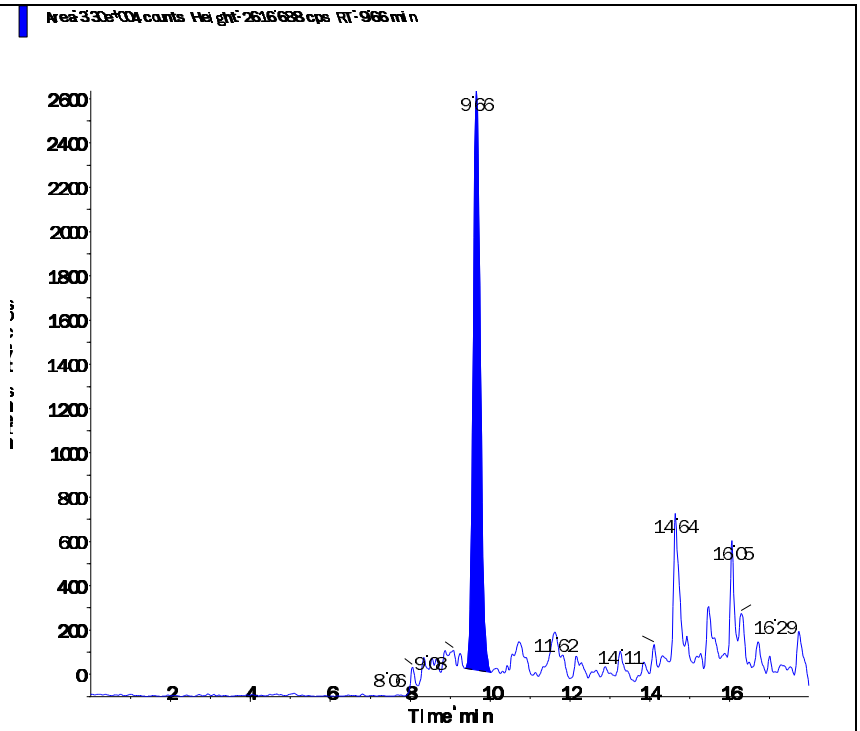

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.65 (9.84) min
Calculated conc:	0.209 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

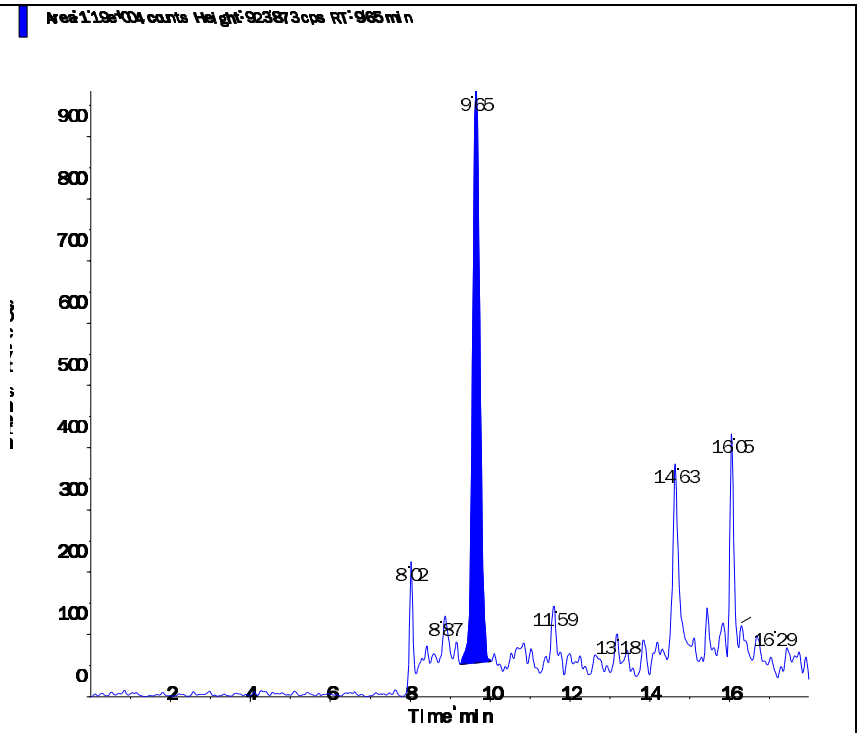

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Printed: 6/12/2016 9:41 PM

Data File	LM35293.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 4:41:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-13 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35293.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 4:41:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572200-13	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.800e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.390e+04	9.68	N/A	0.206
Perchlorate conf	1.220e+04	9.66	N/A	0.207

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

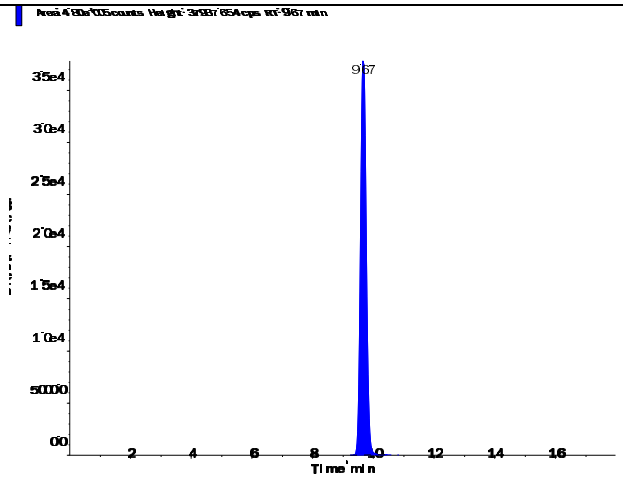

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.68 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

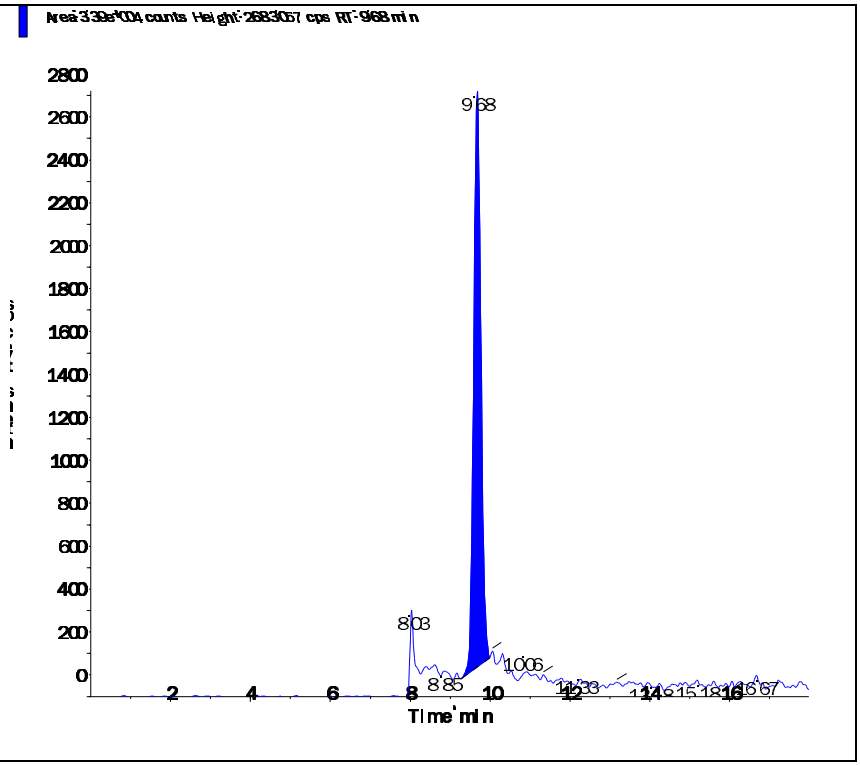

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

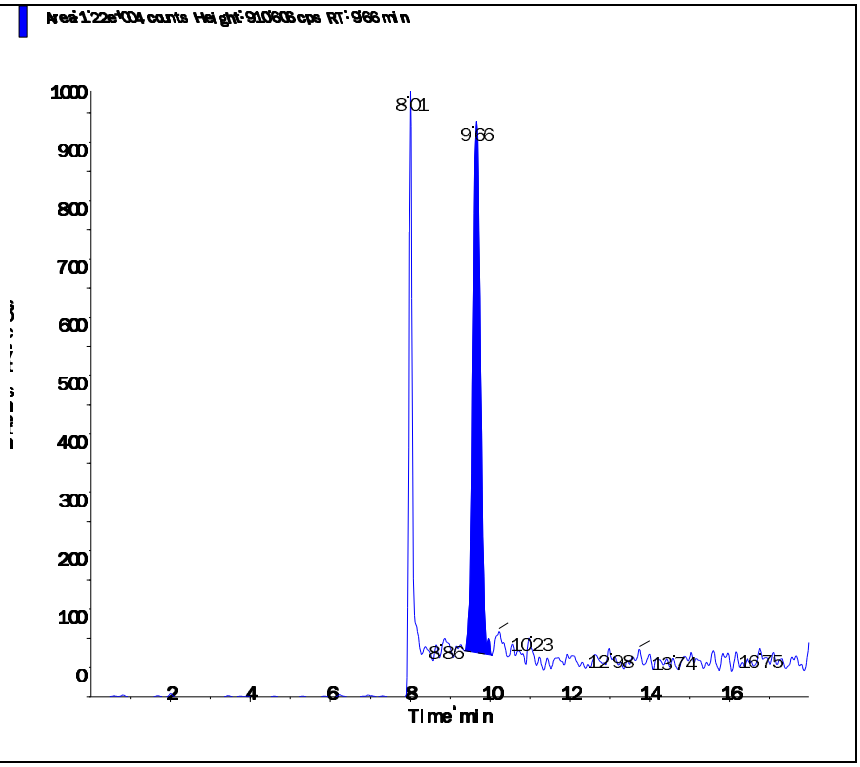

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Data File	LM35297.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 5:57:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-14 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35297.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 5:57:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572200-14	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.980e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.650e+04	9.67	N/A	0.215
Perchlorate conf	1.270e+04	9.66	N/A	0.208

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

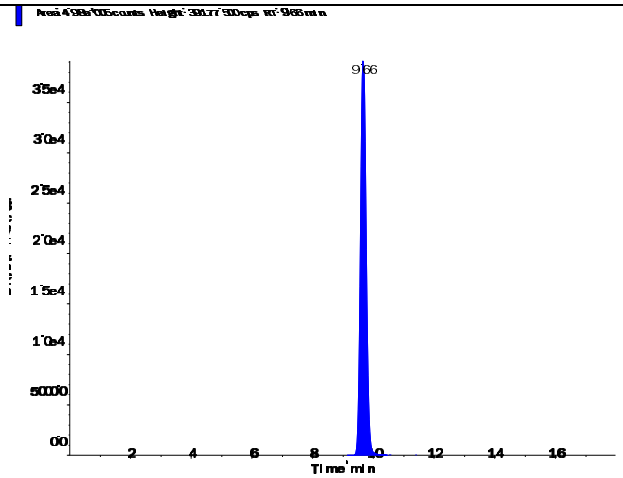

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.67 (9.84) min
Calculated conc:	0.215 ng/ml
Area Ratio:	0.073
Sample Type:	(Unknown)

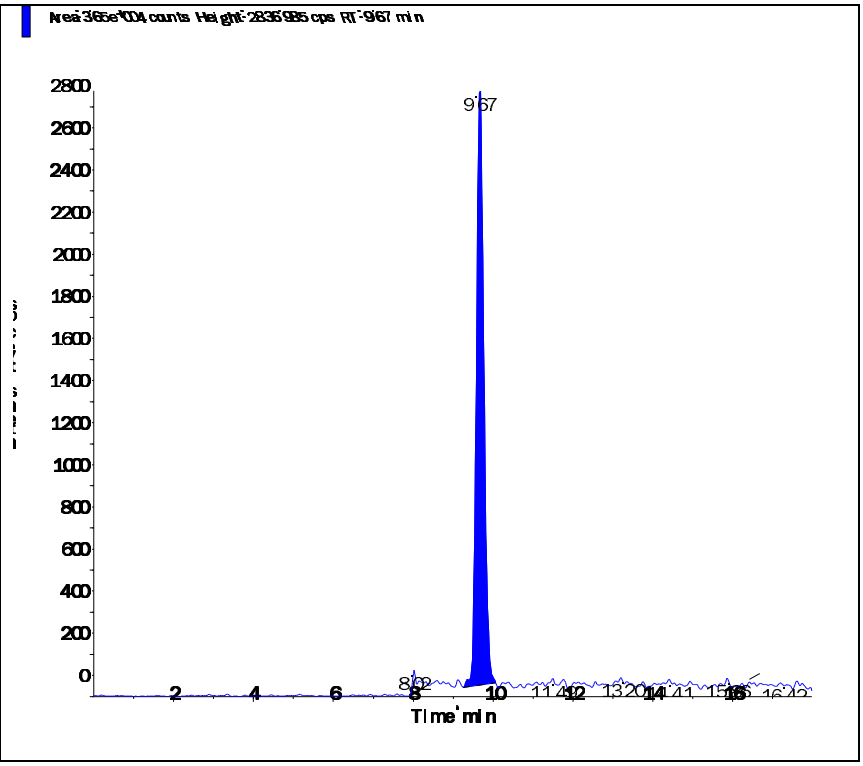

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.208 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

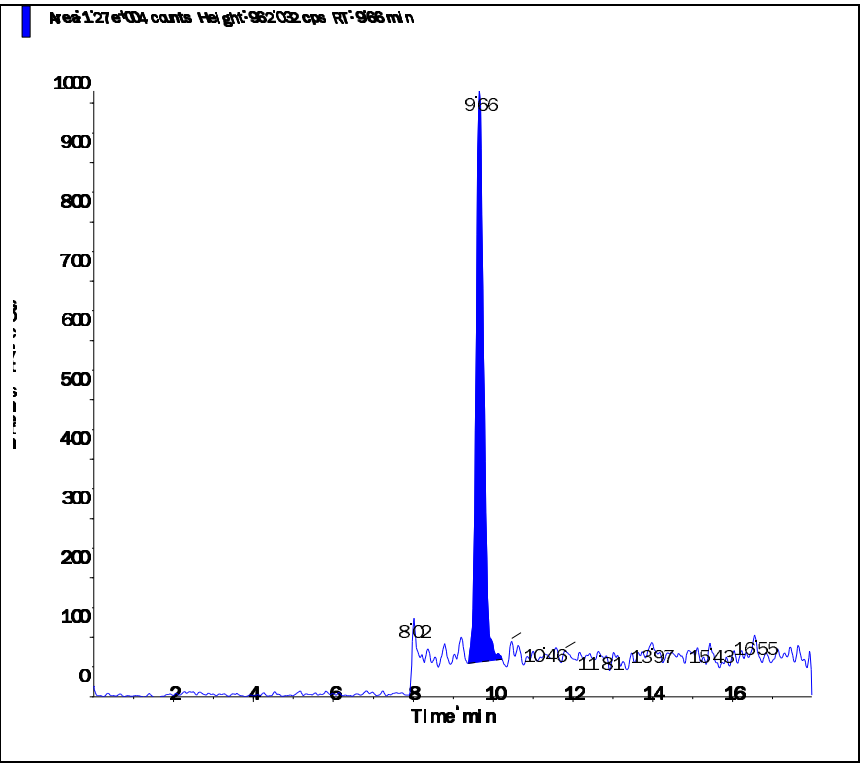

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Data File	LM35225.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 9:49:48 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-01 CCB	**Injection Vial**	1.00
Data File	LM35225.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 9:49:48 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.710e+05	9.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.80(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

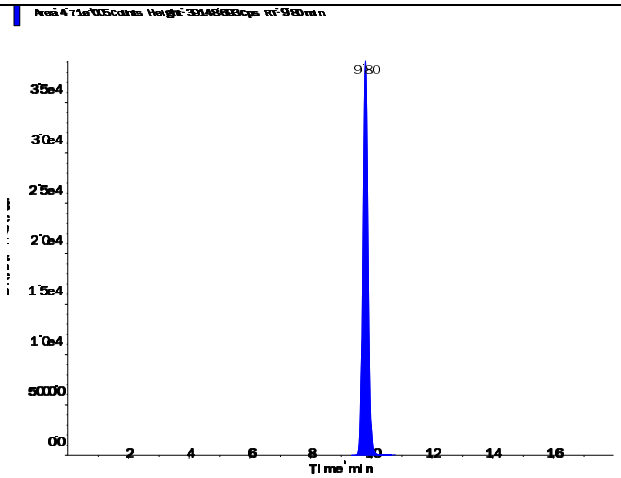

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Printed: 6/11/2016 12:59 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

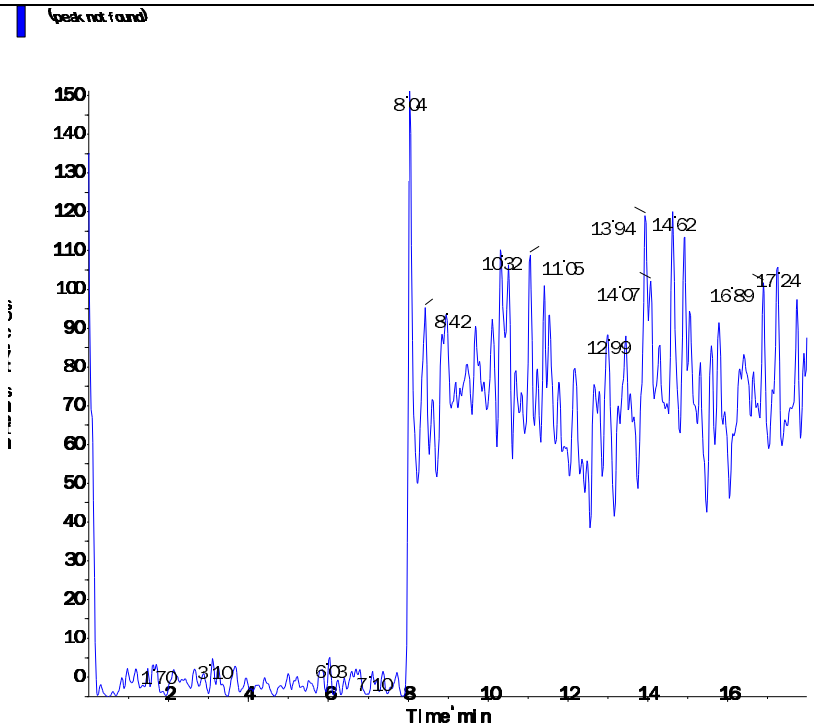

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

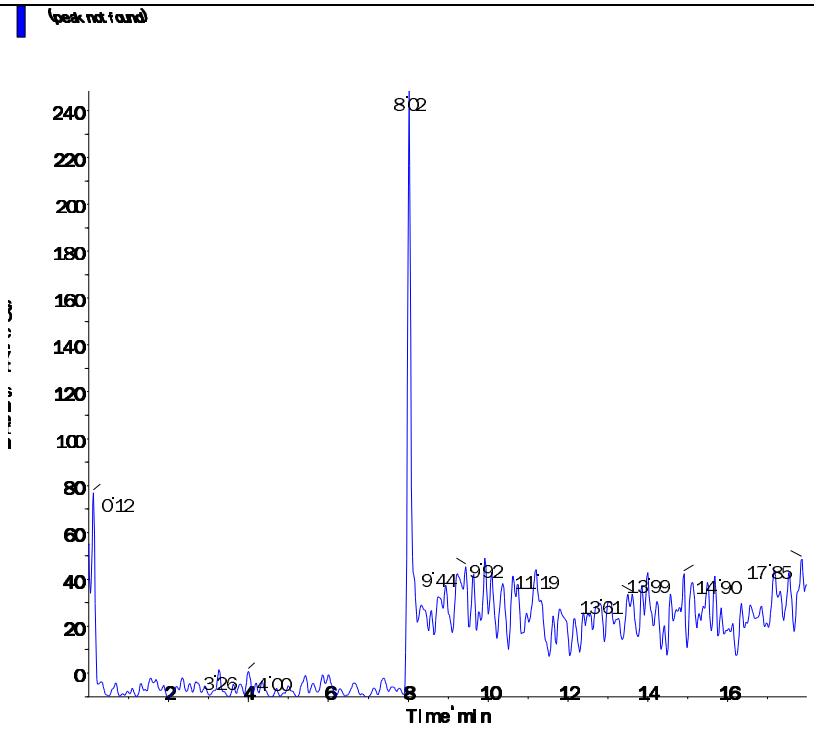

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Data File	LM35240.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 2:33:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-04 CCB	**Injection Vial**	1.00
Data File	LM35240.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 2:33:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.660e+03	10.00	N/A	0.018
Perchlorate conf	1.770e+03	10.00	N/A	0.0114

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

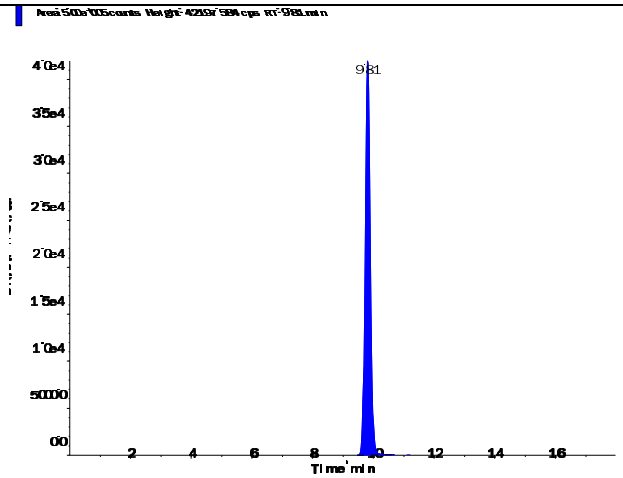

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.00 (9.84) min
Calculated conc:	0.018 ng/ml
Area Ratio:	0.007
Sample Type:	(Unknown)

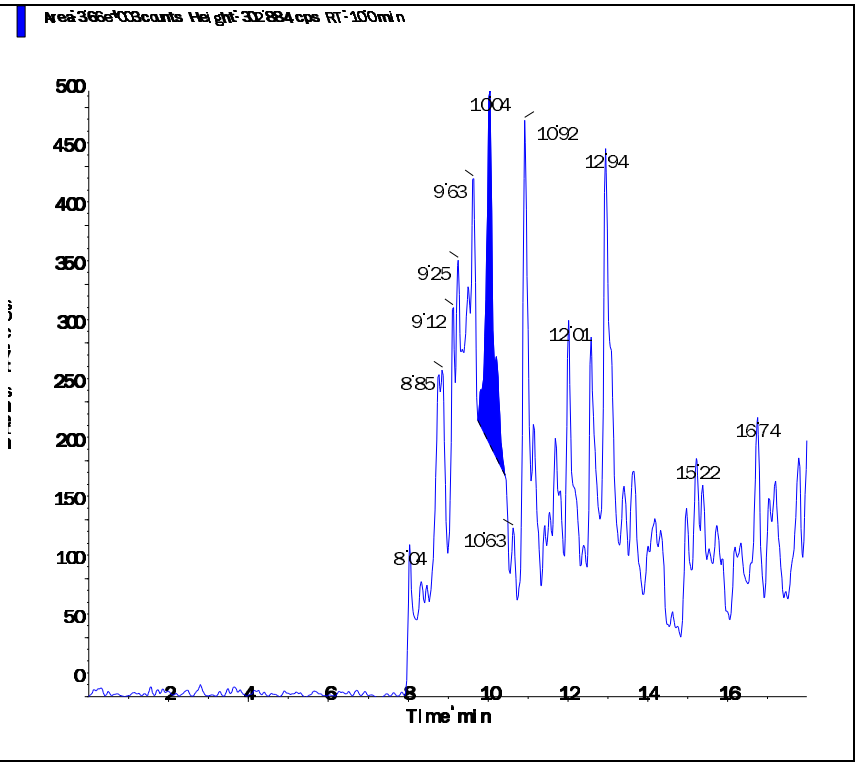

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.00 (9.84) min
Calculated conc:	0.0114 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)

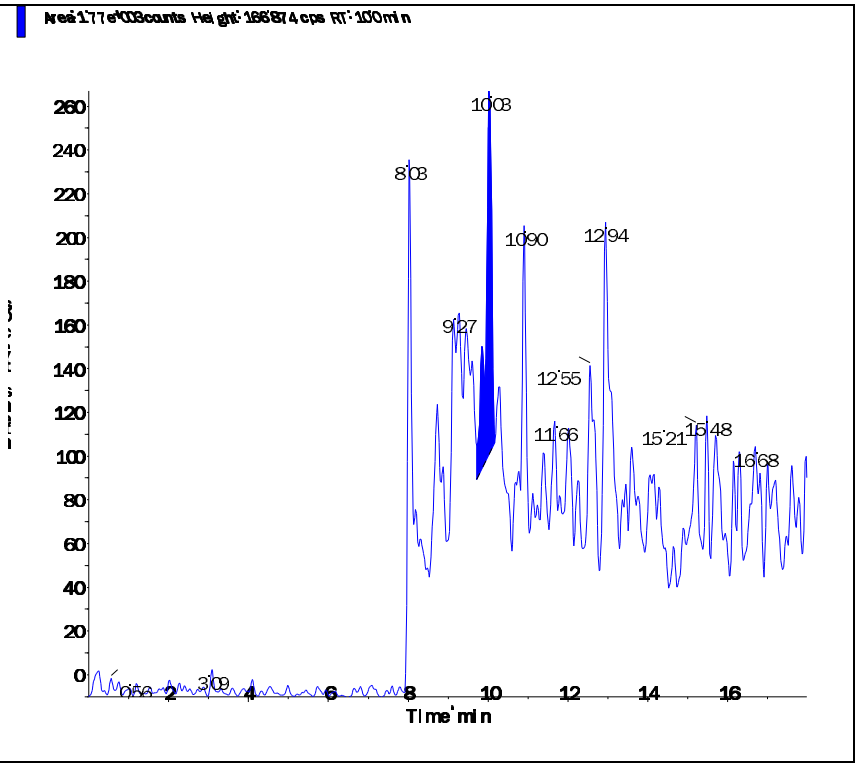

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Data File	LM35246.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 4:27:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-06 CCB	**Injection Vial**	1.00
Data File	LM35246.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 4:27:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.160e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	3.770e+02	9.80	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

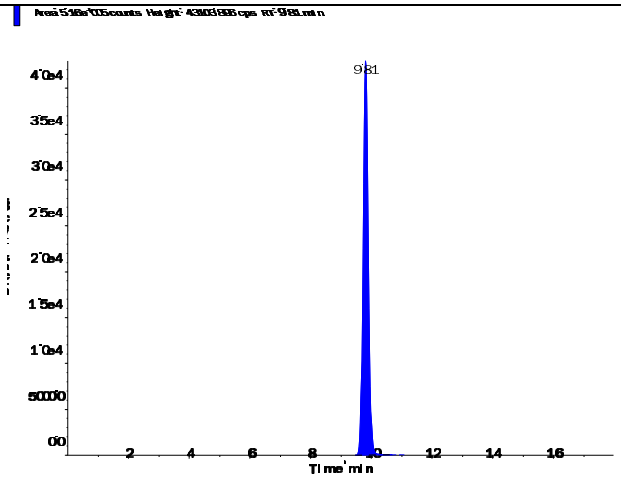

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

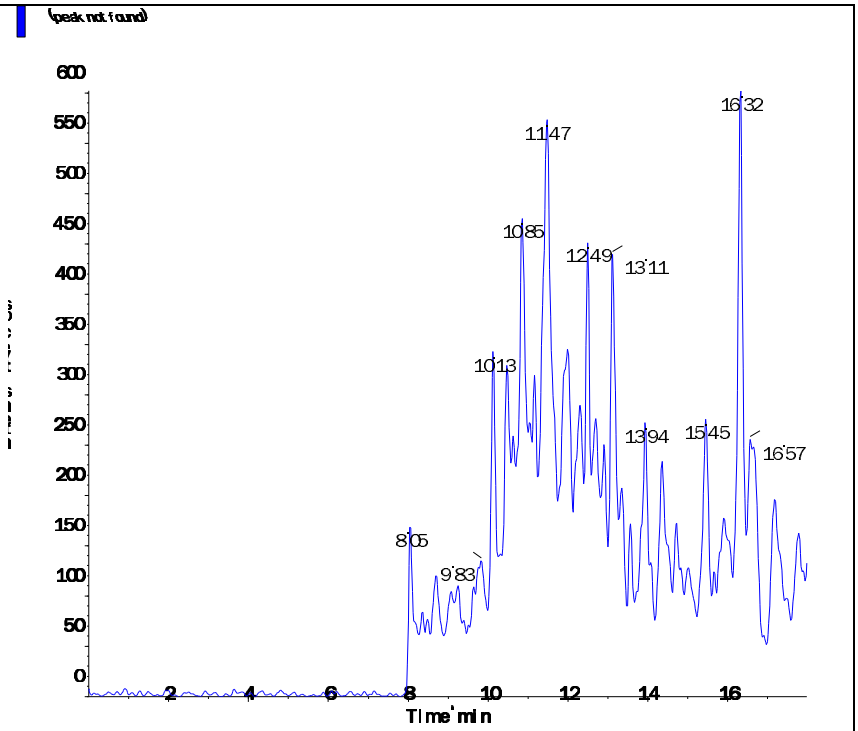

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.80 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

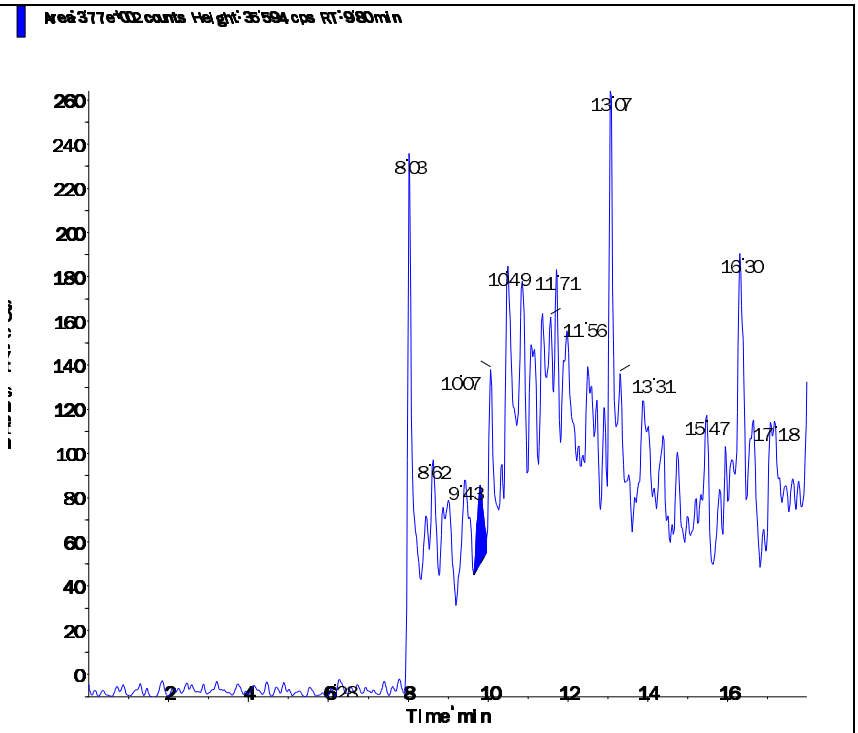

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Data File	LM35259.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 8:34:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-08 CCB	**Injection Vial**	1.00
Data File	LM35259.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 8:34:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.920e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

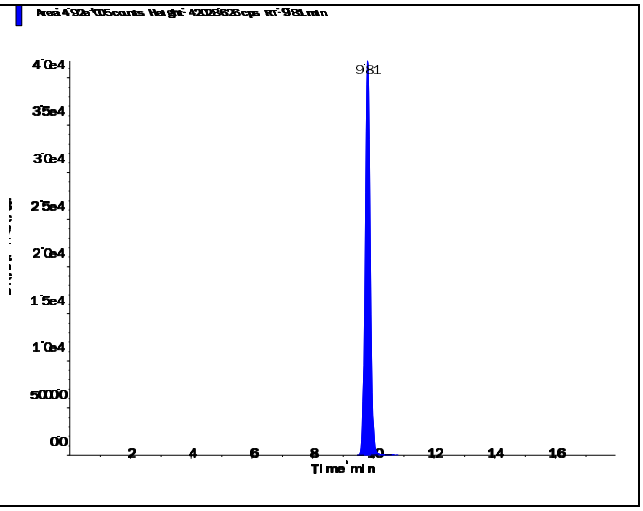

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Printed: 6/11/2016 1:11 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

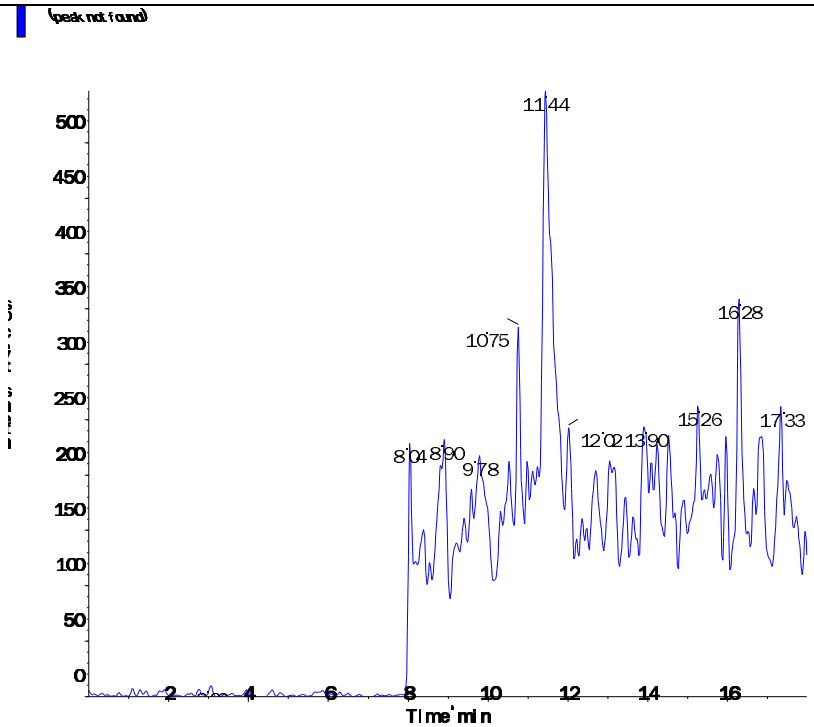

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

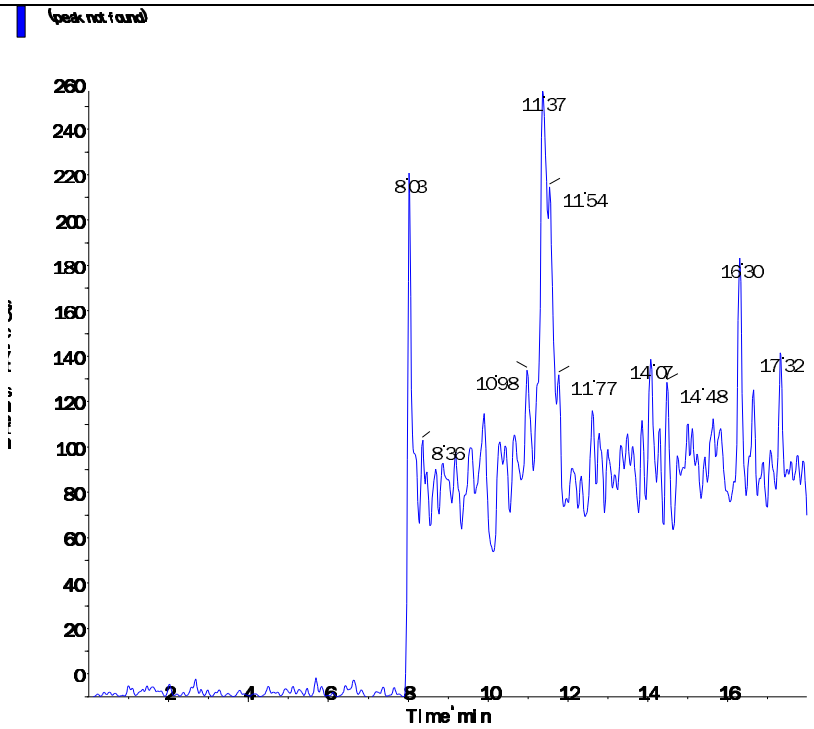

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Created with Analyst Reporter
Printed: 6/11/2016 1:13 PM

Data File	LM35266.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 10:46:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-10 CCB	**Injection Vial**	1.00
Data File	LM35266.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 10:46:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.990e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	9.710e+02	9.90	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

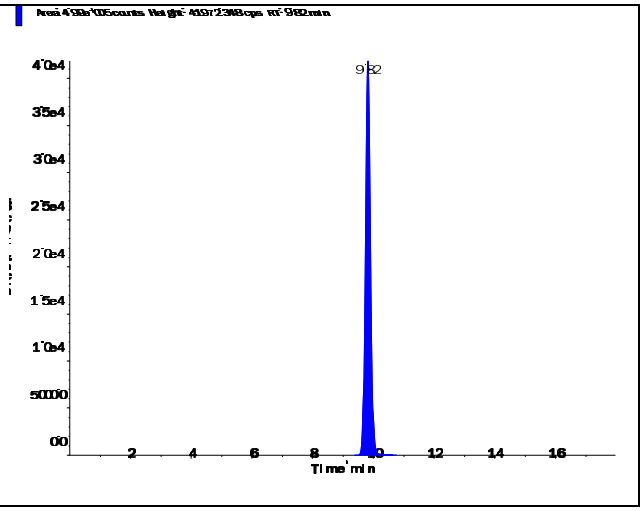

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	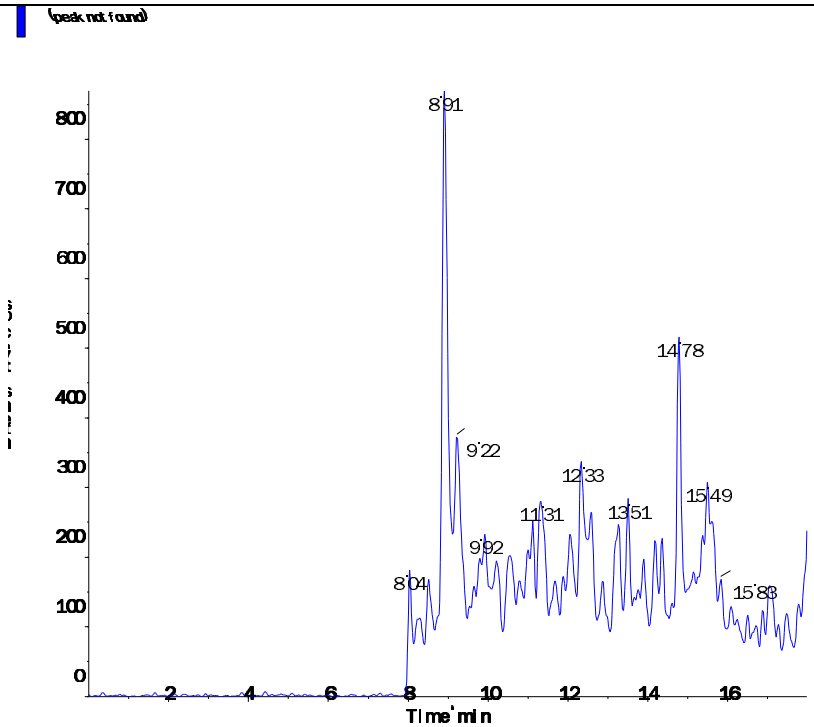
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.90 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	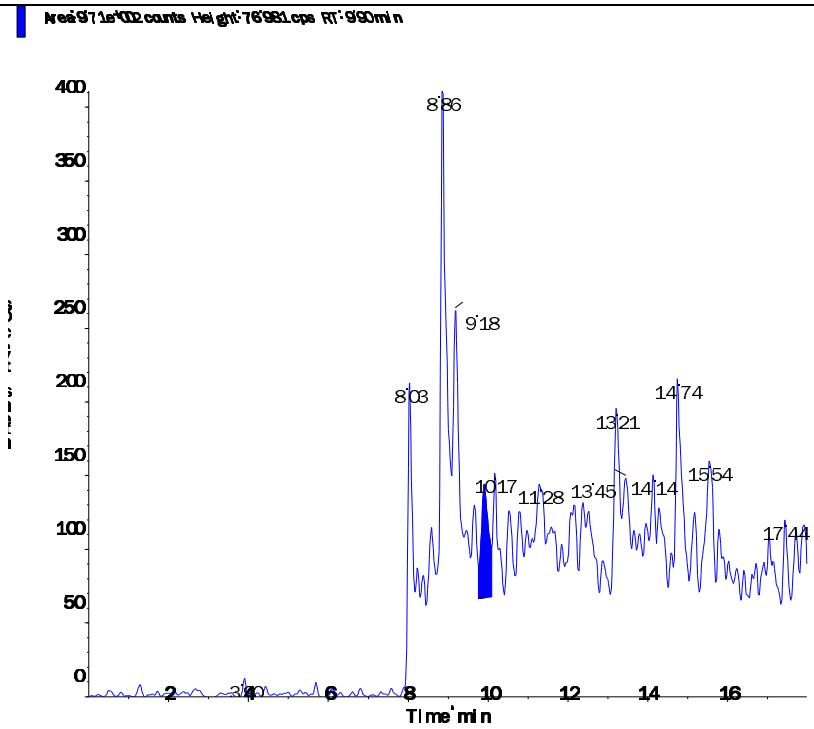

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Printed: 6/12/2016 9:36 PM

Data File	LM35279.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 11:27:29 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-01 CCB	**Injection Vial**	1.00
Data File	LM35279.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 11:27:29 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.540e+05	9.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.310e+03	9.56	N/A	0.0441
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.80(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

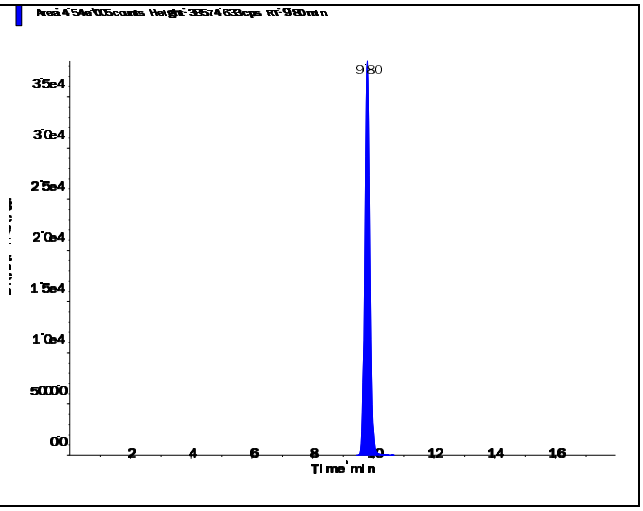

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.56 (9.84) min
Calculated conc:	0.0441 ng/ml
Area Ratio:	0.016
Sample Type:	(Unknown)

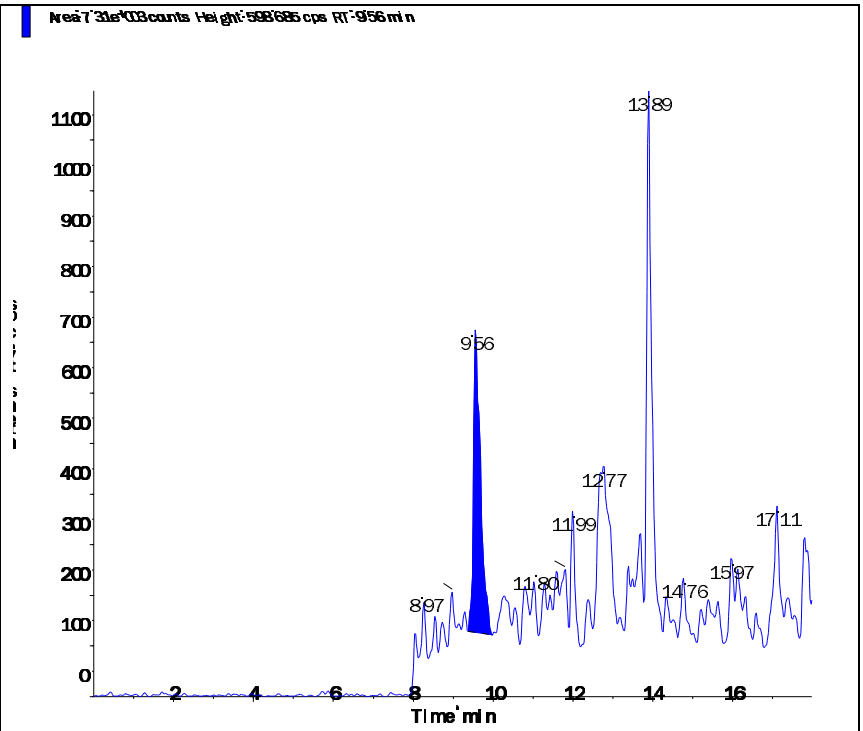

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

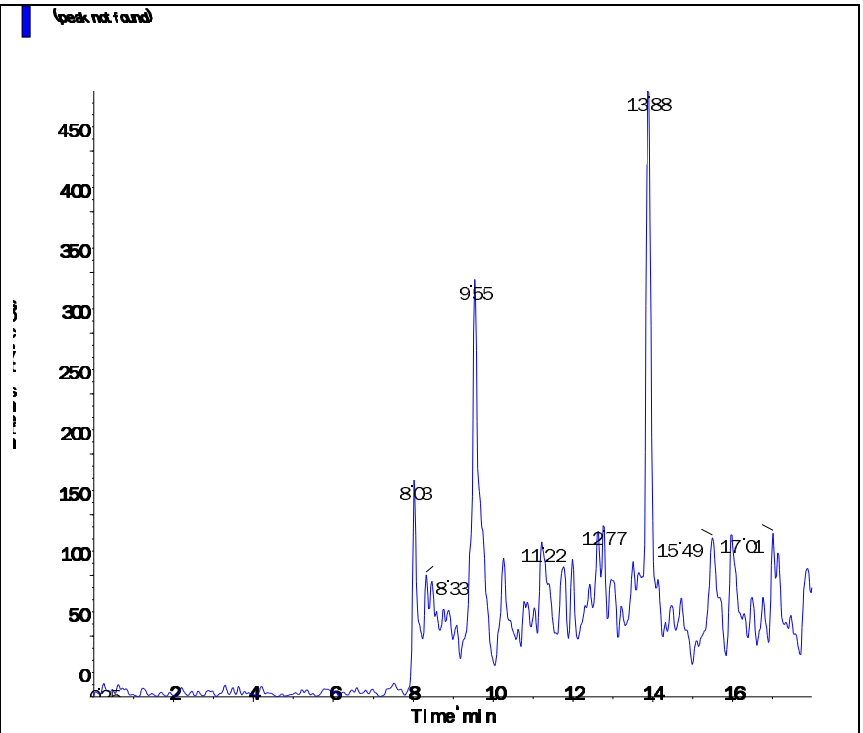

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Printed: 6/12/2016 9:41 PM

Data File	LM35294.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 5:00:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-04 CCB	**Injection Vial**	1.00
Data File	LM35294.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 5:00:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.960e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

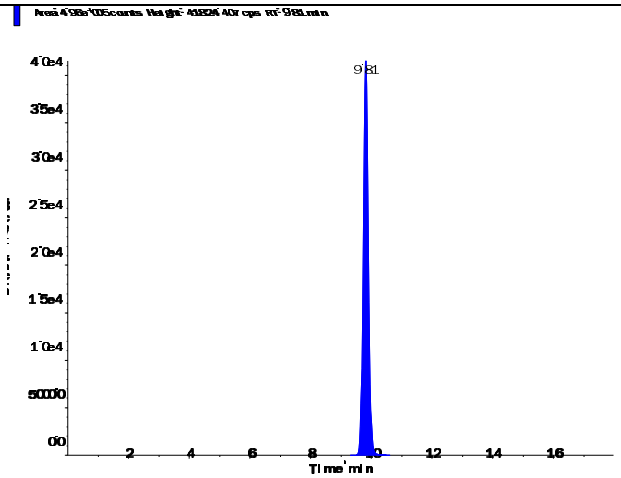

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

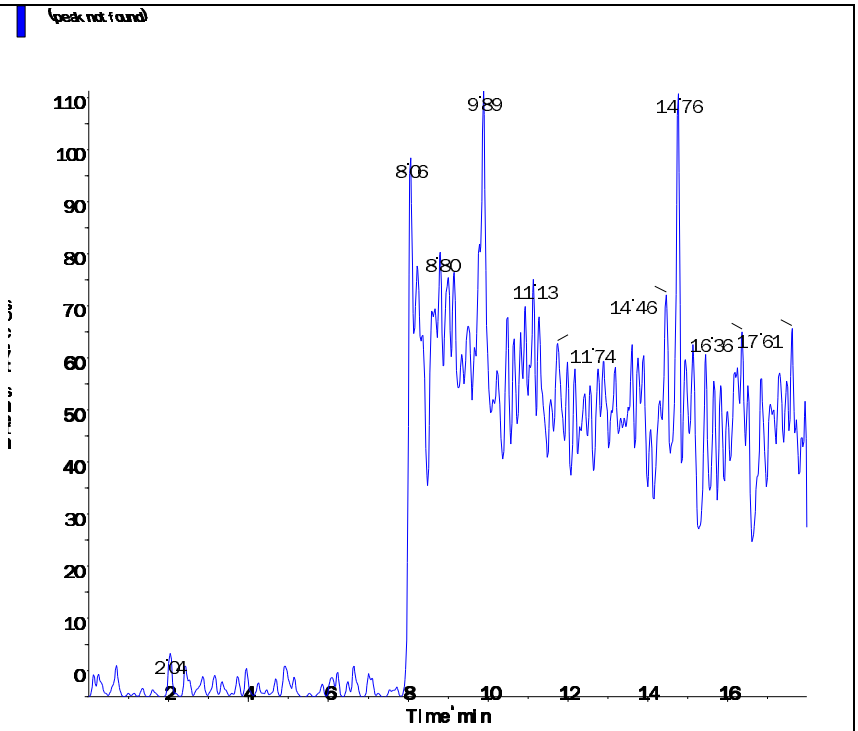

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

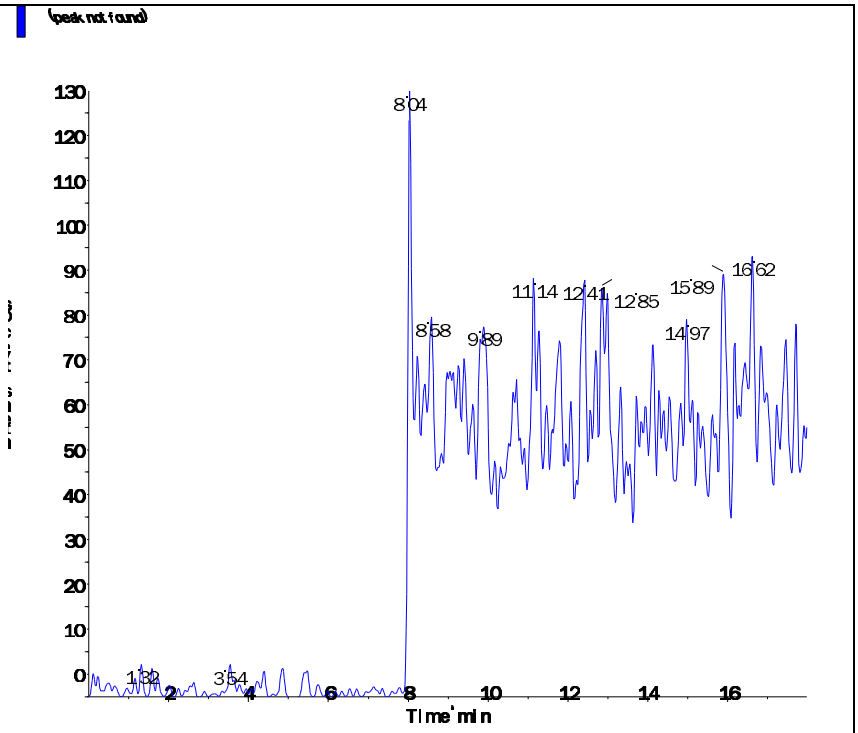

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Data File	LM35298.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 6:16:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-06 CCB	**Injection Vial**	1.00
Data File	LM35298.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 6:16:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.040e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

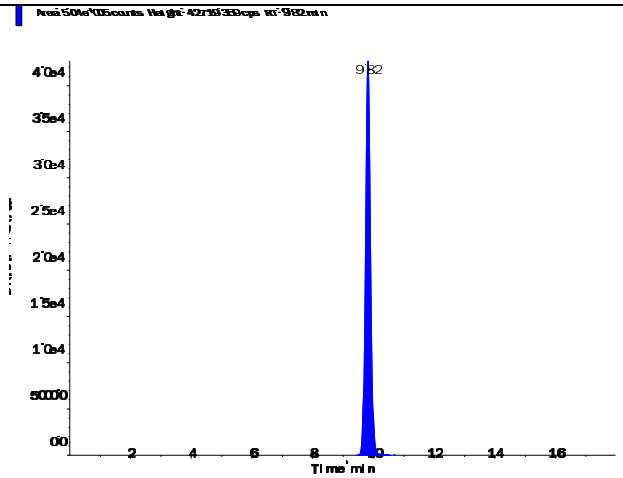

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

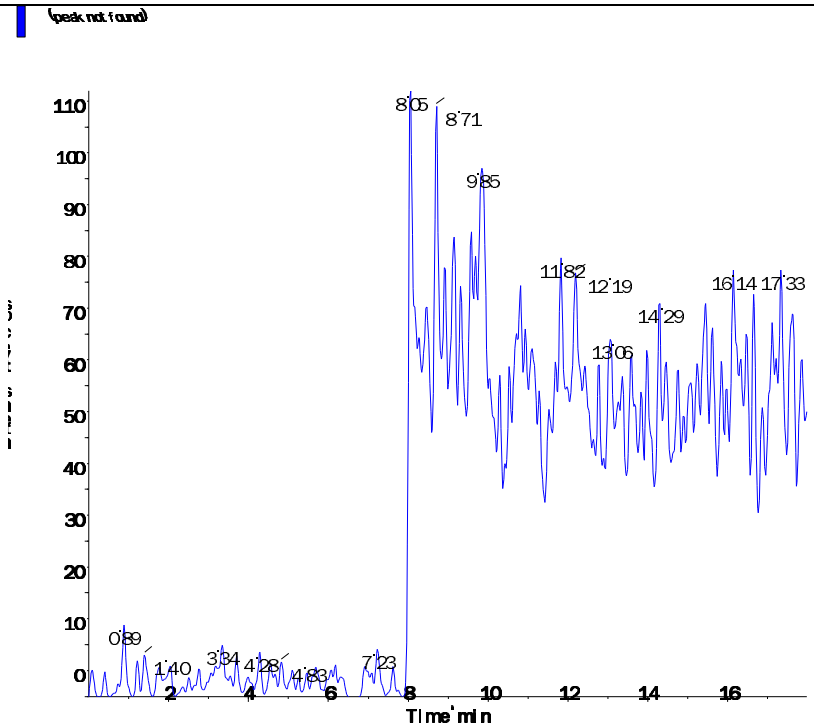

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

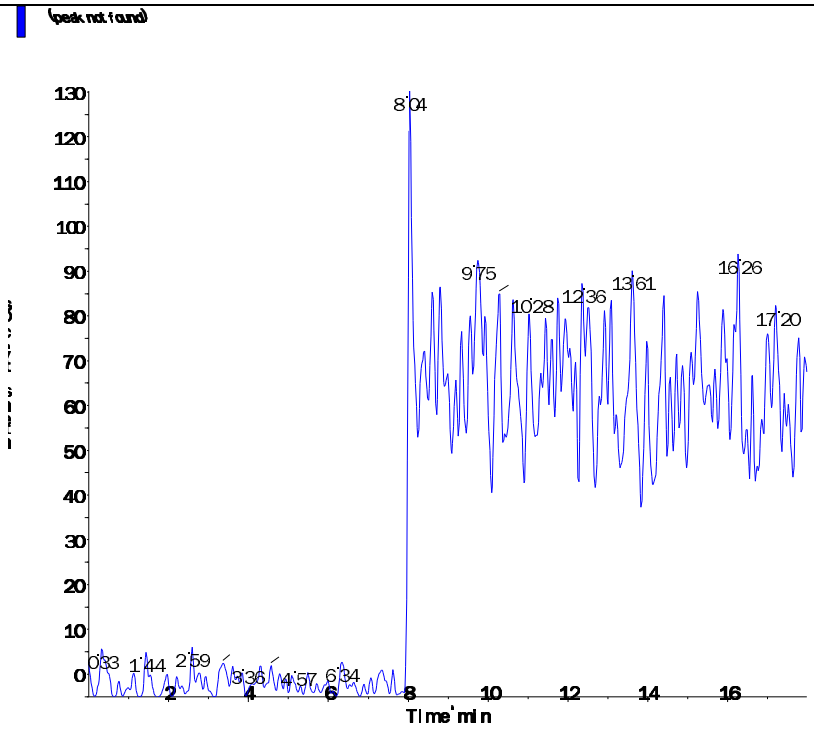

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Printed: 6/11/2016 1:00 PM

Data File	LM35228.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 10:46:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM35228.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 10:46:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.550e+05	9.16	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.520e+04	9.17	N/A	0.226
Perchlorate conf	1.040e+04	9.17	N/A	0.184

O18LP (Internal Standard)

RT (Exp. RT): 9.16(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

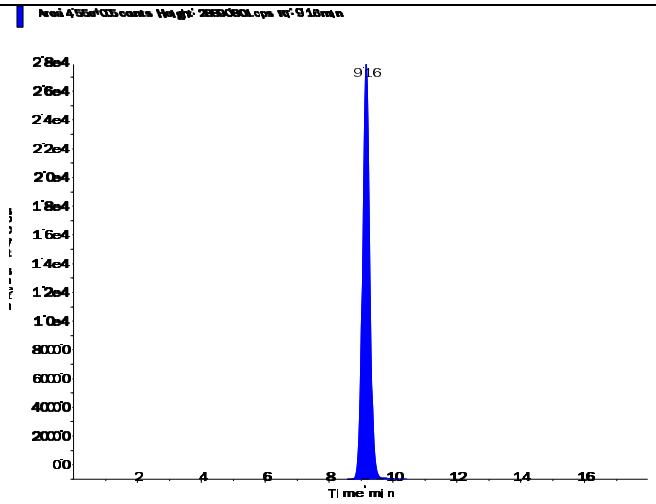

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Printed: 6/11/2016 1:00 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.17 (9.84) min
Calculated conc:	0.226 ng/ml
Area Ratio:	0.077
Sample Type:	(Unknown)

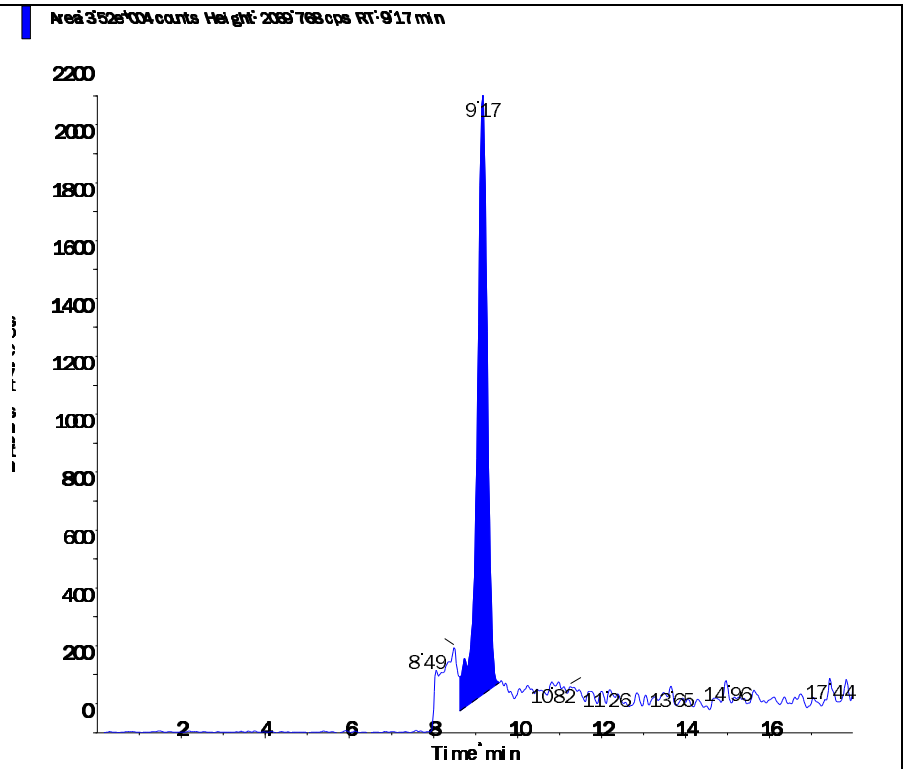

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.17 (9.84) min
Calculated conc:	0.184 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

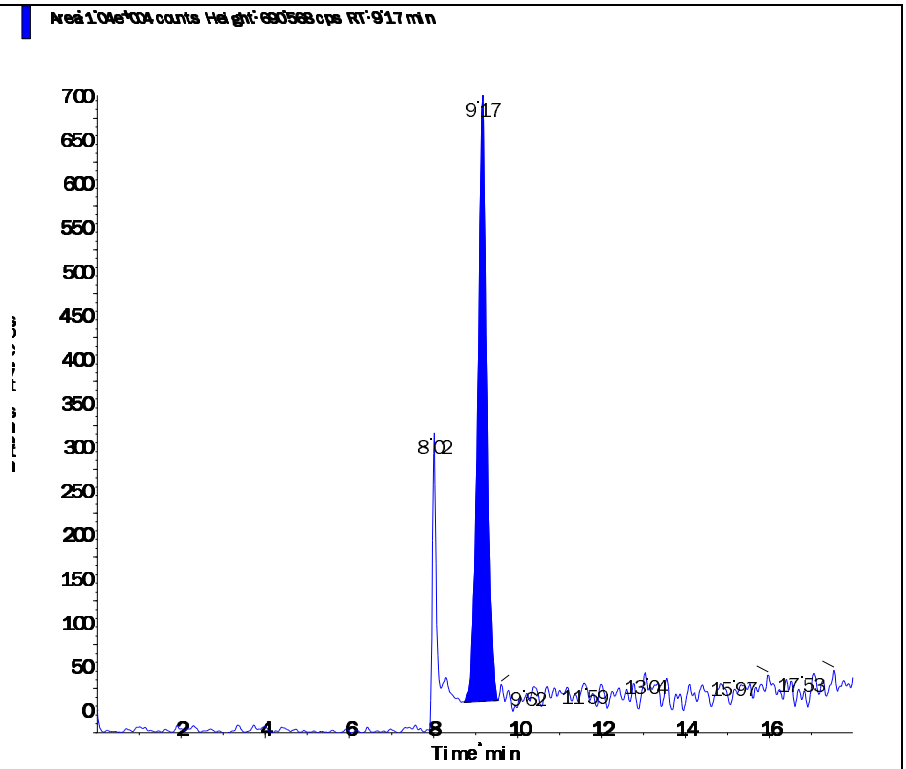

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2.2.2.5 Raw QC Data

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Data File	LM35229.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 11:05:30 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-02 BLANK	**Injection Vial**	5.00
Data File	LM35229.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 11:05:30 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.410e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	3.090e+02	9.81	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

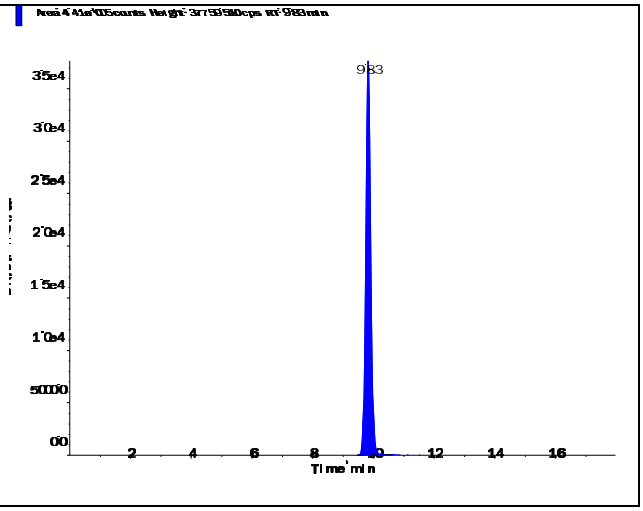

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	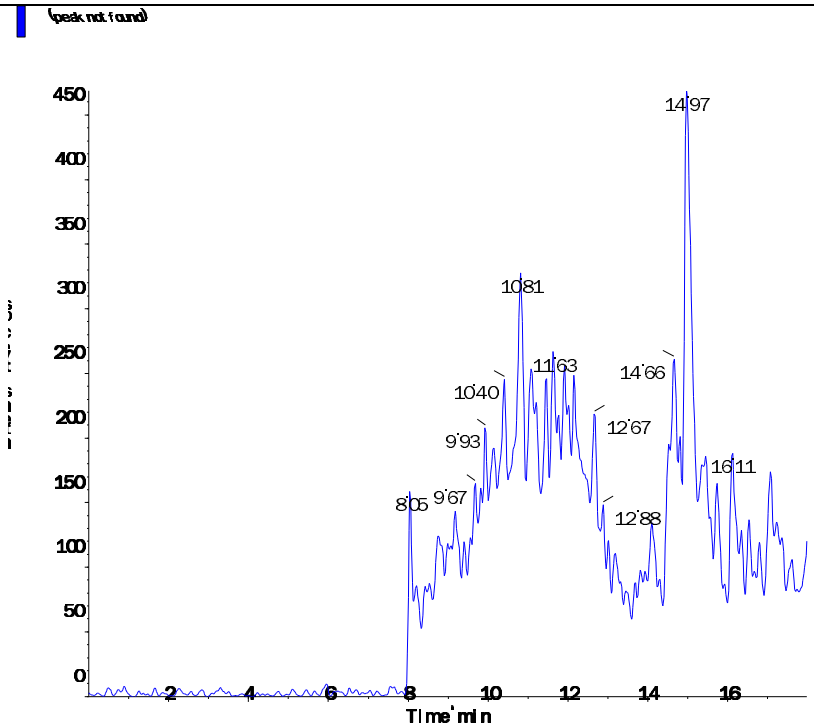
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.81 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	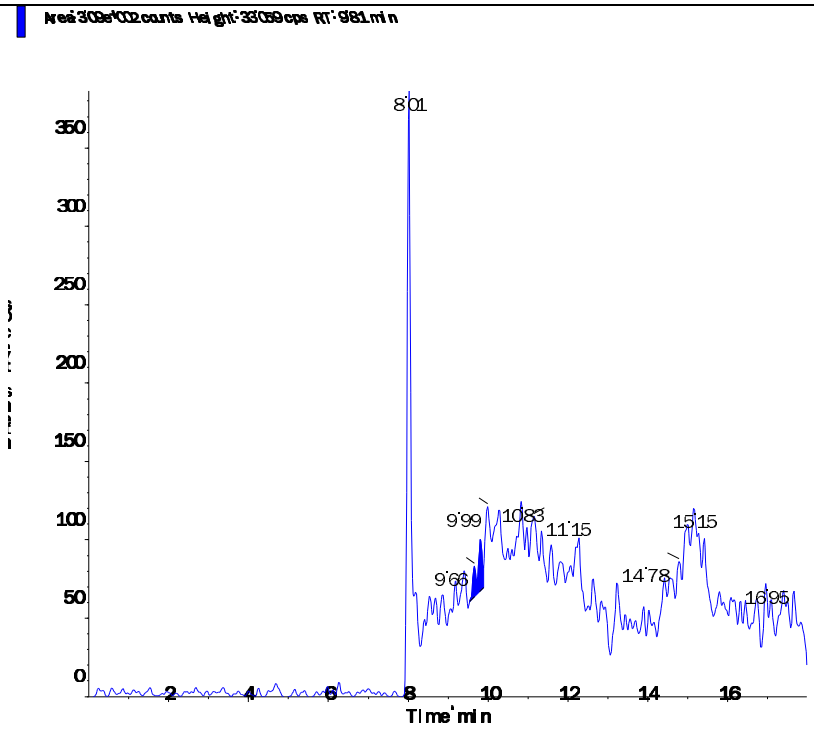

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Data File	LM35230.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 11:24:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM35230.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 11:24:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.340e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.000e+04	9.83	N/A	0.201
Perchlorate conf	1.180e+04	9.83	N/A	0.223

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

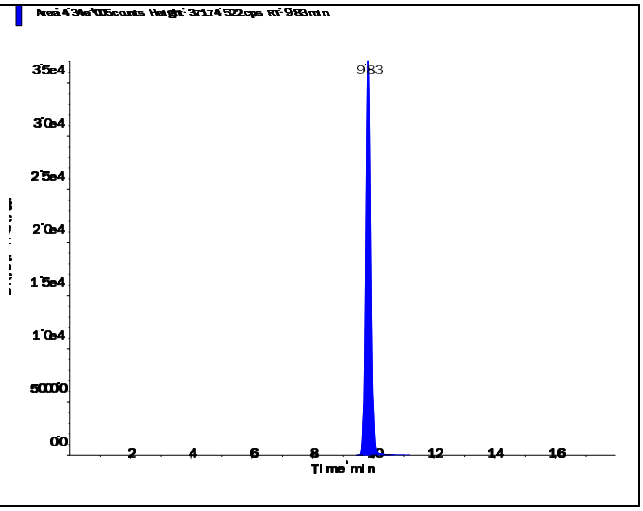

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

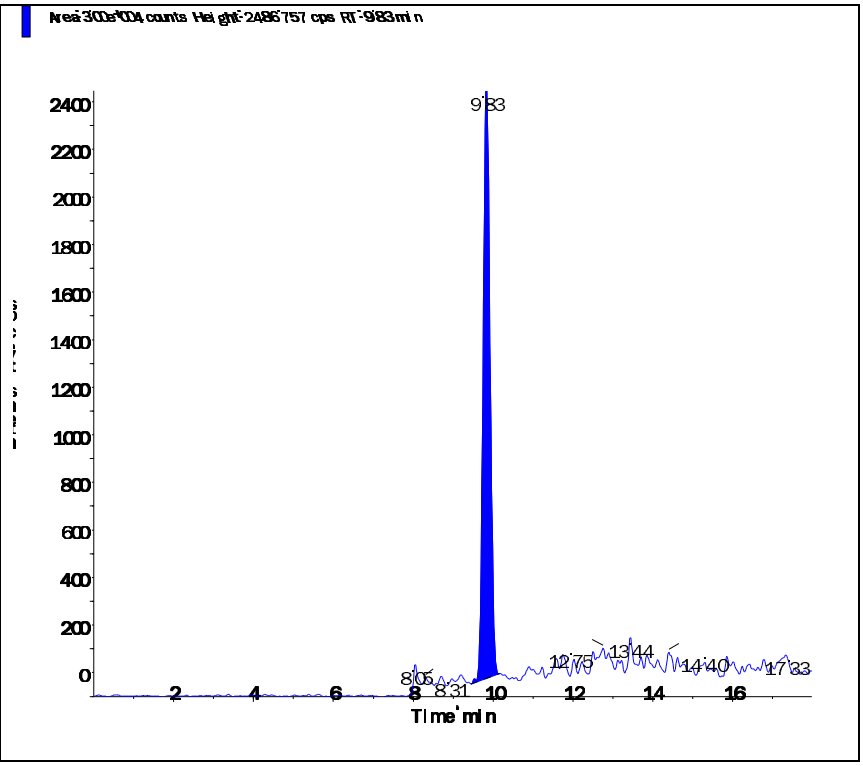

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.223 ng/ml
Area Ratio:	0.027
Sample Type:	(Unknown)

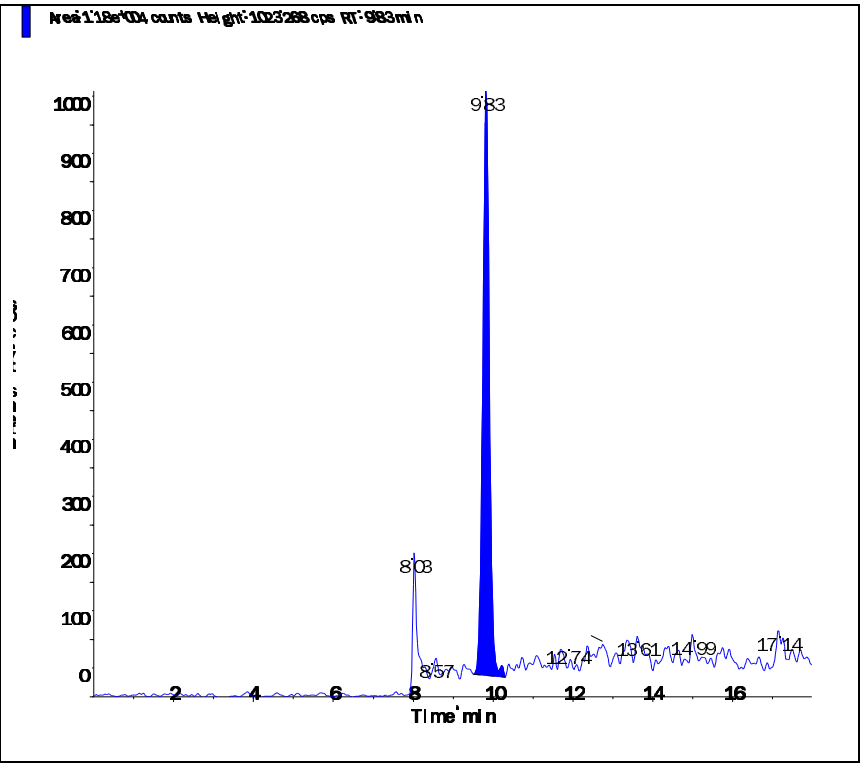

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
June 20, 2016

001 - BIO-CHEM TESTING WVDEP 220	002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental	004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES	006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES	008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND	AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER	ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS	ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED	AWE - ANDREW W. ESSIG
AZH - AFTER HOURS	BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE	BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY	CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS	CEB - CHAD E. BARNES
CJQ - Cameron J. Quick	CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD	CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS	CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL	DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE	DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON	DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE	DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR	ECL - ERIC C. LAWSON
EMW - ERIC M. WILKEN	ENY - EMILY N. YOAK
ERP - ERIN R. PORTER	FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY	JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH	JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS	JLD - JESSICA L. DELONG
JLL - JOHN L. LENT	JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON	JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES	JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON	KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH	KEB - KATIE E. BARNES
KHR - KIM H. RHODES	KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON	KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS	LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF	LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA	MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON	MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN	MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE	MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR	MSW - MATT S. WILSON
NPH - Natalie P. Hart	PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE	PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB	QX - QIN XU
RAH - ROY A. HALSTEAD	REK - BOB E. KYER
RLB - BOB BUCHANAN	RM - RAYMOND MALEKE
RNP - RICK N. PETTY	RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG	SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY	SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF	TB - TODD BOYLE
TGF - TIM G. FELTON	TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS	VC - VICKI COLLIER
WJB - WILL J. BEASLEY	WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG	XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
June 20, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
June 20, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Debra Richmann	Mail to:	Linda Raabe
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000		112 East Pecan STE. 400
	Marietta, OH 45750	Sampler (print):	Scott Beesinger		San Antonio, TX 78205
Phone:	1-800-373-4071				210-296-2000
Client:	AECOM	Signature:	Scott Beesinger	Fed Ex Airbill No:	
Address:	112 East Pecan Ste. 400				
	San Antonio, TX 78205	pH:		Program:	
Turn Around Time:	STANDARD				
Project Name/Location:	Longhorn				
Project Number:	60274185.0013BH 1824 MR10				

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Total Metals	1,4 - DIOXANE					ERPIMS REQUIRED FIELDS: SA CODE	Cooler ID	LOT CONTROL NUMBERS: ABLOT	EBLOT	TBLOT
SITE 18/24	AWD1T-060716			6/7/16	0755		✓	W	6	✓	✓		✓									
	AWD1B-060716			6/7/16	0845		✓	W	6	✓	✓		✓									
	MW14T-060716			6/7/16	1030		✓	W	6	✓	✓		✓									
	MW14B-060716			6/7/16	1120		✓	W	6	✓	✓		✓									
	TRIP BLANK			6/7/16			✓	W	2	✓												

Comments: **STANDARD TAT**

Microbac OVD
Received: 06/08/2016 10:01
By: BRENDA GREGORY 221000086878
Brenda Gregory

Relinquished by: (Signature) Scott Beesinger	Date 6/7/16	Time 1615	Received by: (Signature)			by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time	Remarks:

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060414
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 17-JUN-2016

Samplenum	Container ID	Products
L16060414-01	756402	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:06	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:06	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:06	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	

Samplenum	Container ID	Products
L16060414-01	756403	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-JUN-2016 15:06	CLS		
2	PREP	W1	EXT	09-JUN-2016 14:52	EMW	CLS	
3	ANALYZ*	EXT	SEMI	12-JUN-2016 10:23	SCB	EMW	
4	SUBBED	EXT	DISP	14-JUN-2016 10:03	BJO	BJO	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		08-JUN-2016 15:06	CLS		

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060414-01	756404	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-JUN-2016 15:06	CLS		
2	ANALYZ	W1	SEM	10-JUN-2016 08:23	WTD	BRG	
3	STORE	SEM	A1	11-JUN-2016 11:57	AZH	WTD	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060414
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 17-JUN-2016

Samplenum	Container ID	Products
L16060414-02	756405	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:06	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:06	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:06	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	

Samplenum	Container ID	Products
L16060414-02	756406	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-JUN-2016 15:06	CLS		
2	PREP	W1	EXT	09-JUN-2016 14:52	EMW	CLS	
3	ANALYZ*	EXT	SEMI	12-JUN-2016 10:23	SCB	EMW	
4	SUBBED	EXT	DISP	14-JUN-2016 10:03	BJO	BJO	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		08-JUN-2016 15:06	CLS		

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060414-02	756407	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-JUN-2016 15:06	CLS		
2	ANALYZ	W1	SEM	10-JUN-2016 08:23	WTD	BRG	
3	STORE	SEM	A1	11-JUN-2016 11:56	AZH	WTD	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060414
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 17-JUN-2016

Samplenum	Container ID	Products
L16060414-03	756408	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:06	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:06	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:06	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	

Samplenum	Container ID	Products
L16060414-03	756409	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-JUN-2016 15:06	CLS		
2	PREP	W1	EXT	09-JUN-2016 14:52	EMW	CLS	
3	ANALYZ*	EXT	SEMI	12-JUN-2016 10:23	SCB	EMW	
4	SUBBED	EXT	DISP	14-JUN-2016 10:01	BJO	BJO	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		08-JUN-2016 15:06	CLS		

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060414-03	756410	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-JUN-2016 15:06	CLS		
2	ANALYZ	W1	SEM	10-JUN-2016 08:23	WTD	BRG	
3	STORE	SEM	A1	11-JUN-2016 11:56	AZH	WTD	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060414
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 17-JUN-2016

Samplenum	Container ID	Products
L16060414-04	756411	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:06	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:06	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:06	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	

Samplenum	Container ID	Products
L16060414-04	756412	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-JUN-2016 15:06	CLS		
2	PREP	W1	EXT	09-JUN-2016 14:52	EMW	CLS	
3	ANALYZ*	EXT	SEMI	12-JUN-2016 10:23	SCB	EMW	
4	SUBBED	EXT	DISP	14-JUN-2016 10:02	BJO	BJO	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		08-JUN-2016 15:06	CLS		

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060414-04	756413	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-JUN-2016 15:06	CLS		
2	ANALYZ	W1	SEM	10-JUN-2016 08:23	WTD	BRG	
3	STORE	SEM	A1	11-JUN-2016 11:56	AZH	WTD	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060414
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 17-JUN-2016

Samplenum	Container ID	Products
L16060414-05	756414	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:06	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:06	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16060497

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Michelle Taylor – Client Services Specialist
(740) 373-4071
Michelle.Taylor@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on June 22 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00113762	I	3.0		J2317165072	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18CPTMW06-060816	L16060497-01	06/08/2016 13:30	06/09/2016 10:34
18CPTMW06MS-060816	L16060497-02	06/08/2016 13:30	06/09/2016 10:34
18CPTMW06MSD-060816	L16060497-03	06/08/2016 13:30	06/09/2016 10:34
MW22-060816	L16060497-04	06/08/2016 14:55	06/09/2016 10:34
TRIP BLANK	L16060497-05	06/08/2016 00:01	06/09/2016 10:34

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16060497
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060497
Project Name:		**Method:**	8260
Prep Batch Number(s):	572625	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-16 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2016-06-16 18:39:39

RG-366/TRRP-13 May 2010 **ID:** 7379

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060497
Project Name:		**Method:**	8260
Prep Batch Number(s):	572625	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-16 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060497
Project Name:		**Method:**	8260
Prep Batch Number(s):	572625	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-16 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060497
Project Name:		**Method:**	8260
Prep Batch Number(s):	572625	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-16 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060497
Project Name:		**Method:**	8260
Prep Batch Number(s):	572625	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-16 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060497
Project Name:		**Method:**	8260
Prep Batch Number(s):	572625	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-16 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060497
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572341	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-21 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-06-21 18:29:38

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060497
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572341	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-21 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060497
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572341	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-21 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060497
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572341	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-21 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060497
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572341	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-21 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060497
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572341	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-21 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060497
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572200	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-13 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-06-13 18:53:31

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060497
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572200	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-13 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060497
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572200	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-13 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			1
Were MS/MSD RPDs within laboratory QC limits?		X			1
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060497
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572200	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-13 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060497
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572200	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-13 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060497
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572200	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-13 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. The MS/MSD recoveries and RPD were out of the acceptance limits due to the presence of a large amount of perchlorate in the reference sample.

1.2 Certificate of Analysis

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060497-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW06-060816	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/01/2016 17:19
Workgroup #:	WG572625	**Analyst:**	TMB	**Run Date:**	06/14/2016 20:06
Collect Date:	06/08/2016 13:30	**Dilution:**	1	**File ID:**	6M140065
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	2.04		1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	1.02		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	105	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060497-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW06-060816	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 11:08
Collect Date:	06/08/2016 13:30	**Dilution:**	1	**File ID:**	15M18403
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	62.4	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060497-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW06-060816	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/10/2016 19:18
Collect Date:	06/08/2016 13:30	**Dilution:**	10	**File ID:**	1LM.LM35255
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	30.3		4.00	2.00	1.00

Certificate of Analysis

Sample #:	L16060497-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW06MS-060816	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/01/2016 17:19
Workgroup #:	WG572625	**Analyst:**	TMB	**Run Date:**	06/14/2016 16:53
Collect Date:	06/08/2016 13:30	**Dilution:**	1	**File ID:**	6M140059
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	18.9		10.0	5.00	2.50
Benzene	71-43-2	20.6		1.00	0.250	0.125
Bromobenzene	108-86-1	20.1		1.00	0.250	0.125
Bromochloromethane	74-97-5	20.3		1.00	0.400	0.200
Bromodichloromethane	75-27-4	21.4		1.00	0.500	0.250
Bromoform	75-25-2	19.3		2.00	1.00	0.500
Bromomethane	74-83-9	16.8		2.00	1.00	0.500
2-Butanone	78-93-3	20.7		10.0	5.00	2.50
n-Butylbenzene	104-51-8	21.9		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	22.0		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	21.3		1.00	0.500	0.250
Carbon disulfide	75-15-0	18.8		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	20.9		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.7		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	21.0		1.00	0.500	0.250
Chloroethane	75-00-3	18.2		2.00	1.00	0.500
Chloroform	67-66-3	20.7		1.00	0.250	0.125
Chloromethane	74-87-3	17.0		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	21.4		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	21.9		1.00	0.500	0.250

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Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	22.7		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	21.0		1.00	0.500	0.250
Dibromomethane	74-95-3	20.1		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	21.3		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	20.7		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	22.2		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	19.4		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	19.7		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	21.3		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	19.8		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	21.1		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	20.1		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	22.0		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	22.2		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	22.1		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	24.0		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	21.5		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	20.3		1.00	0.500	0.250
Ethylbenzene	100-41-4	20.4		1.00	0.500	0.250
2-Hexanone	591-78-6	20.4		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	22.3		1.00	0.500	0.250
Isopropylbenzene	98-82-8	21.8		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	22.1		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	20.0		10.0	5.00	2.50
Methylene chloride	75-09-2	21.8		1.00	0.500	0.250
Naphthalene	91-20-3	20.4		1.00	0.400	0.200
n-Propylbenzene	103-65-1	22.6		1.00	0.250	0.125
Styrene	100-42-5	21.9		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	20.9		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	21.4		1.00	0.400	0.200
Tetrachloroethene	127-18-4	19.4		1.00	0.500	0.250
Toluene	108-88-3	20.6		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	21.0		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	21.9		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	20.7		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	21.2		1.00	0.500	0.250
Trichloroethene	79-01-6	21.4		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	20.9		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	21.4		2.00	1.00	0.500

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	21.5		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	22.0		1.00	0.500	0.250
Vinyl chloride	75-01-4	18.7		1.00	0.500	0.250
o-Xylene	95-47-6	21.7		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	42.4		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	102	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	104	75	120	

Certificate of Analysis

Sample #:	L16060497-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW06MS-060816	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 11:31
Collect Date:	06/08/2016 13:30	**Dilution:**	1	**File ID:**	15M18404
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	2.46		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	49.8	20	129	

Certificate of Analysis

Sample #:	L16060497-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW06MS-060816	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/10/2016 12:02
Collect Date:	06/08/2016 13:30	**Dilution:**	1	**File ID:**	1LM.LM35232
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	7.05		0.400	0.200	0.100

Certificate of Analysis

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Sample #:	L16060497-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW06MSD-060816	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/01/2016 17:19
Workgroup #:	WG572625	**Analyst:**	TMB	**Run Date:**	06/14/2016 17:25
Collect Date:	06/08/2016 13:30	**Dilution:**	1	**File ID:**	6M140060
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	21.3		10.0	5.00	2.50
Benzene	71-43-2	20.3		1.00	0.250	0.125
Bromobenzene	108-86-1	20.0		1.00	0.250	0.125
Bromochloromethane	74-97-5	20.5		1.00	0.400	0.200
Bromodichloromethane	75-27-4	21.5		1.00	0.500	0.250
Bromoform	75-25-2	19.4		2.00	1.00	0.500
Bromomethane	74-83-9	16.3		2.00	1.00	0.500
2-Butanone	78-93-3	21.2		10.0	5.00	2.50
n-Butylbenzene	104-51-8	21.4		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	21.5		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	20.9		1.00	0.500	0.250
Carbon disulfide	75-15-0	18.8		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	20.5		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.5		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	20.8		1.00	0.500	0.250
Chloroethane	75-00-3	18.2		2.00	1.00	0.500
Chloroform	67-66-3	20.7		1.00	0.250	0.125
Chloromethane	74-87-3	17.2		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	21.8		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	20.9		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	22.6		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	21.0		1.00	0.500	0.250
Dibromomethane	74-95-3	20.4		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	21.1		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	20.5		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	22.0		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	19.2		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	19.9		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	21.4		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	19.6		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	21.2		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	20.4		1.00	0.500	0.250

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	21.8		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	22.2		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	21.8		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	24.1		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	21.7		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	20.1		1.00	0.500	0.250
Ethylbenzene	100-41-4	20.5		1.00	0.500	0.250
2-Hexanone	591-78-6	20.4		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	22.0		1.00	0.500	0.250
Isopropylbenzene	98-82-8	21.5		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	21.4		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	20.7		10.0	5.00	2.50
Methylene chloride	75-09-2	22.2		1.00	0.500	0.250
Naphthalene	91-20-3	20.2		1.00	0.400	0.200
n-Propylbenzene	103-65-1	22.3		1.00	0.250	0.125
Styrene	100-42-5	21.6		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	21.1		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	21.2		1.00	0.400	0.200
Tetrachloroethene	127-18-4	19.2		1.00	0.500	0.250
Toluene	108-88-3	20.5		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	20.5		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	21.3		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	20.6		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	21.1		1.00	0.500	0.250
Trichloroethene	79-01-6	21.2		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	20.9		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	21.3		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	21.2		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	21.6		1.00	0.500	0.250
Vinyl chloride	75-01-4	19.0		1.00	0.500	0.250
o-Xylene	95-47-6	21.6		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	42.2		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	103	75	120	

Certificate of Analysis

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Sample #:	L16060497-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW06MSD-060816	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 11:54
Collect Date:	06/08/2016 13:30	**Dilution:**	1	**File ID:**	15M18405
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	2.35		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	47.3	20	129	

Certificate of Analysis

Sample #:	L16060497-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW06MSD-060816	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/10/2016 12:21
Collect Date:	06/08/2016 13:30	**Dilution:**	1	**File ID:**	1LM.LM35233
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.39		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16060497-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	MW22-060816	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/01/2016 17:19
Workgroup #:	WG572625	**Analyst:**	TMB	**Run Date:**	06/14/2016 20:38
Collect Date:	06/08/2016 14:55	**Dilution:**	2.5	**File ID:**	6M140066
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	25.0	12.5	6.25
Benzene	71-43-2	2.51		2.50	0.626	0.313
Bromobenzene	108-86-1	0.626	U	2.50	0.626	0.313
Bromochloromethane	74-97-5	1.00	U	2.50	1.00	0.500
Bromodichloromethane	75-27-4	1.25	U	2.50	1.25	0.625
Bromoform	75-25-2	2.50	U	5.00	2.50	1.25
Bromomethane	74-83-9	2.50	U	5.00	2.50	1.25
2-Butanone	78-93-3	12.5	U	25.0	12.5	6.25
n-Butylbenzene	104-51-8	1.25	U	2.50	1.25	0.625

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Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
sec-Butylbenzene	135-98-8	1.25	U	2.50	1.25	0.625
tert-Butylbenzene	98-06-6	1.25	U	2.50	1.25	0.625
Carbon disulfide	75-15-0	2.50	U	5.00	2.50	1.25
Carbon tetrachloride	56-23-5	1.25	U	2.50	1.25	0.625
Chlorobenzene	108-90-7	0.626	U	2.50	0.626	0.313
Chlorodibromomethane	124-48-1	1.25	U	2.50	1.25	0.625
Chloroethane	75-00-3	2.50	U	5.00	2.50	1.25
Chloroform	67-66-3	4.77		2.50	0.626	0.313
Chloromethane	74-87-3	2.50	U	5.00	2.50	1.25
2-Chlorotoluene	95-49-8	0.626	U	2.50	0.626	0.313
4-Chlorotoluene	106-43-4	1.25	U	2.50	1.25	0.625
1,2-Dibromo-3-chloropropane	96-12-8	5.00	U	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	2.50	1.25	0.625
Dibromomethane	74-95-3	1.25	U	2.50	1.25	0.625
1,2-Dichlorobenzene	95-50-1	0.626	U	2.50	0.626	0.313
1,3-Dichlorobenzene	541-73-1	1.25	U	2.50	1.25	0.625
1,4-Dichlorobenzene	106-46-7	0.626	U	2.50	0.626	0.313
Dichlorodifluoromethane	75-71-8	1.25	U	2.50	1.25	0.625
1,1-Dichloroethane	75-34-3	0.626	U	2.50	0.626	0.313
1,2-Dichloroethane	107-06-2	5.50		2.50	1.25	0.625
1,1-Dichloroethene	75-35-4	1.37	J	5.00	2.50	1.25
cis-1,2-Dichloroethene	156-59-2	5.70		2.50	1.25	0.625
trans-1,2-Dichloroethene	156-60-5	1.25	U	2.50	1.25	0.625
1,2-Dichloropropane	78-87-5	1.00	U	2.50	1.00	0.500
1,3-Dichloropropane	142-28-9	1.00	U	2.50	1.00	0.500
2,2-Dichloropropane	594-20-7	1.25	U	2.50	1.25	0.625
cis-1,3-Dichloropropene	10061-01-5	1.25	U	2.50	1.25	0.625
trans-1,3-Dichloropropene	10061-02-6	2.50	U	5.00	2.50	1.25
1,1-Dichloropropene	563-58-6	1.25	U	2.50	1.25	0.625
Ethylbenzene	100-41-4	1.25	U	2.50	1.25	0.625
2-Hexanone	591-78-6	12.5	U	25.0	12.5	6.25
Hexachlorobutadiene	87-68-3	1.25	U	2.50	1.25	0.625
Isopropylbenzene	98-82-8	1.25	U	2.50	1.25	0.625
p-Isopropyltoluene	99-87-6	1.25	U	2.50	1.25	0.625
4-Methyl-2-pentanone	108-10-1	12.5	U	25.0	12.5	6.25
Methylene chloride	75-09-2	1.25	U	2.50	1.25	0.625
Naphthalene	91-20-3	1.00	U	2.50	1.00	0.500
n-Propylbenzene	103-65-1	0.626	U	2.50	0.626	0.313
Styrene	100-42-5	0.626	U	2.50	0.626	0.313

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Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	2.50	1.25	0.625
1,1,2,2-Tetrachloroethane	79-34-5	1.00	U	2.50	1.00	0.500
Tetrachloroethene	127-18-4	1.25	U	2.50	1.25	0.625
Toluene	108-88-3	1.25	U	2.50	1.25	0.625
1,2,3-Trichlorobenzene	87-61-6	0.750	U	2.50	0.750	0.375
1,2,4-Trichlorobenzene	120-82-1	1.00	U	2.50	1.00	0.500
1,1,1-Trichloroethane	71-55-6	1.25	U	2.50	1.25	0.625
1,1,2-Trichloroethane	79-00-5	1.25	U	2.50	1.25	0.625
Trichloroethene	79-01-6	488		2.50	1.25	0.625
Trichlorofluoromethane	75-69-4	1.25	U	2.50	1.25	0.625
1,2,3-Trichloropropane	96-18-4	2.50	U	5.00	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	2.50	1.25	0.625
1,3,5-Trimethylbenzene	108-67-8	1.25	U	2.50	1.25	0.625
Vinyl chloride	75-01-4	1.25	U	2.50	1.25	0.625
o-Xylene	95-47-6	1.25	U	2.50	1.25	0.625
m-,p-Xylene	179601-23-1	2.50	U	5.00	2.50	1.25

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	105	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060497-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW22-060816	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/10/2016 19:37
Collect Date:	06/08/2016 14:55	**Dilution:**	500	**File ID:**	1LM.LM35256
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	615		200	100	50.0

Certificate of Analysis

Sample #:	L16060497-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/01/2016 17:19
Workgroup #:	WG572625	**Analyst:**	TMB	**Run Date:**	06/14/2016 19:34
Collect Date:	06/08/2016 00:01	**Dilution:**	1	**File ID:**	6M140064
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

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Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

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Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	102	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	106	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060497-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW06-060816	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/01/2016 17:19
Workgroup #:	WG572625	**Analyst:**	TMB	**Run Date:**	06/14/2016 20:06
Collect Date:	06/08/2016 13:30	**Dilution:**	1	**File ID:**	6M140065
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	2.04		1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	1.02		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	105	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060497-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW06MS-060816	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/01/2016 17:19
Workgroup #:	WG572625	**Analyst:**	TMB	**Run Date:**	06/14/2016 16:53
Collect Date:	06/08/2016 13:30	**Dilution:**	1	**File ID:**	6M140059
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	18.9		10.0	5.00	2.50
Benzene	71-43-2	20.6		1.00	0.250	0.125
Bromobenzene	108-86-1	20.1		1.00	0.250	0.125
Bromochloromethane	74-97-5	20.3		1.00	0.400	0.200
Bromodichloromethane	75-27-4	21.4		1.00	0.500	0.250
Bromoform	75-25-2	19.3		2.00	1.00	0.500
Bromomethane	74-83-9	16.8		2.00	1.00	0.500
2-Butanone	78-93-3	20.7		10.0	5.00	2.50
n-Butylbenzene	104-51-8	21.9		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	22.0		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	21.3		1.00	0.500	0.250
Carbon disulfide	75-15-0	18.8		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	20.9		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.7		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	21.0		1.00	0.500	0.250
Chloroethane	75-00-3	18.2		2.00	1.00	0.500
Chloroform	67-66-3	20.7		1.00	0.250	0.125
Chloromethane	74-87-3	17.0		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	21.4		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	21.9		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	22.7		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	21.0		1.00	0.500	0.250
Dibromomethane	74-95-3	20.1		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	21.3		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	20.7		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	22.2		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	19.4		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	19.7		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	21.3		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	19.8		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	21.1		1.00	0.500	0.250

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	20.1		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	22.0		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	22.2		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	22.1		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	24.0		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	21.5		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	20.3		1.00	0.500	0.250
Ethylbenzene	100-41-4	20.4		1.00	0.500	0.250
2-Hexanone	591-78-6	20.4		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	22.3		1.00	0.500	0.250
Isopropylbenzene	98-82-8	21.8		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	22.1		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	20.0		10.0	5.00	2.50
Methylene chloride	75-09-2	21.8		1.00	0.500	0.250
Naphthalene	91-20-3	20.4		1.00	0.400	0.200
n-Propylbenzene	103-65-1	22.6		1.00	0.250	0.125
Styrene	100-42-5	21.9		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	20.9		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	21.4		1.00	0.400	0.200
Tetrachloroethene	127-18-4	19.4		1.00	0.500	0.250
Toluene	108-88-3	20.6		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	21.0		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	21.9		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	20.7		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	21.2		1.00	0.500	0.250
Trichloroethene	79-01-6	21.4		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	20.9		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	21.4		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	21.5		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	22.0		1.00	0.500	0.250
Vinyl chloride	75-01-4	18.7		1.00	0.500	0.250
o-Xylene	95-47-6	21.7		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	42.4		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	102	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	104	75	120	

Certificate of Analysis

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Sample #:	L16060497-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW06MSD-060816	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/01/2016 17:19
Workgroup #:	WG572625	**Analyst:**	TMB	**Run Date:**	06/14/2016 17:25
Collect Date:	06/08/2016 13:30	**Dilution:**	1	**File ID:**	6M140060
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	21.3		10.0	5.00	2.50
Benzene	71-43-2	20.3		1.00	0.250	0.125
Bromobenzene	108-86-1	20.0		1.00	0.250	0.125
Bromochloromethane	74-97-5	20.5		1.00	0.400	0.200
Bromodichloromethane	75-27-4	21.5		1.00	0.500	0.250
Bromoform	75-25-2	19.4		2.00	1.00	0.500
Bromomethane	74-83-9	16.3		2.00	1.00	0.500
2-Butanone	78-93-3	21.2		10.0	5.00	2.50
n-Butylbenzene	104-51-8	21.4		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	21.5		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	20.9		1.00	0.500	0.250
Carbon disulfide	75-15-0	18.8		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	20.5		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.5		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	20.8		1.00	0.500	0.250
Chloroethane	75-00-3	18.2		2.00	1.00	0.500
Chloroform	67-66-3	20.7		1.00	0.250	0.125
Chloromethane	74-87-3	17.2		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	21.8		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	20.9		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	22.6		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	21.0		1.00	0.500	0.250
Dibromomethane	74-95-3	20.4		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	21.1		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	20.5		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	22.0		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	19.2		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	19.9		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	21.4		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	19.6		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	21.2		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	20.4		1.00	0.500	0.250

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Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	21.8		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	22.2		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	21.8		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	24.1		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	21.7		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	20.1		1.00	0.500	0.250
Ethylbenzene	100-41-4	20.5		1.00	0.500	0.250
2-Hexanone	591-78-6	20.4		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	22.0		1.00	0.500	0.250
Isopropylbenzene	98-82-8	21.5		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	21.4		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	20.7		10.0	5.00	2.50
Methylene chloride	75-09-2	22.2		1.00	0.500	0.250
Naphthalene	91-20-3	20.2		1.00	0.400	0.200
n-Propylbenzene	103-65-1	22.3		1.00	0.250	0.125
Styrene	100-42-5	21.6		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	21.1		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	21.2		1.00	0.400	0.200
Tetrachloroethene	127-18-4	19.2		1.00	0.500	0.250
Toluene	108-88-3	20.5		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	20.5		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	21.3		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	20.6		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	21.1		1.00	0.500	0.250
Trichloroethene	79-01-6	21.2		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	20.9		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	21.3		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	21.2		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	21.6		1.00	0.500	0.250
Vinyl chloride	75-01-4	19.0		1.00	0.500	0.250
o-Xylene	95-47-6	21.6		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	42.2		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	103	75	120	

Certificate of Analysis

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Sample #:	L16060497-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	MW22-060816	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/01/2016 17:19
Workgroup #:	WG572625	**Analyst:**	TMB	**Run Date:**	06/14/2016 20:38
Collect Date:	06/08/2016 14:55	**Dilution:**	2.5	**File ID:**	6M140066
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	25.0	12.5	6.25
Benzene	71-43-2	2.51		2.50	0.626	0.313
Bromobenzene	108-86-1	0.626	U	2.50	0.626	0.313
Bromochloromethane	74-97-5	1.00	U	2.50	1.00	0.500
Bromodichloromethane	75-27-4	1.25	U	2.50	1.25	0.625
Bromoform	75-25-2	2.50	U	5.00	2.50	1.25
Bromomethane	74-83-9	2.50	U	5.00	2.50	1.25
2-Butanone	78-93-3	12.5	U	25.0	12.5	6.25
n-Butylbenzene	104-51-8	1.25	U	2.50	1.25	0.625
sec-Butylbenzene	135-98-8	1.25	U	2.50	1.25	0.625
tert-Butylbenzene	98-06-6	1.25	U	2.50	1.25	0.625
Carbon disulfide	75-15-0	2.50	U	5.00	2.50	1.25
Carbon tetrachloride	56-23-5	1.25	U	2.50	1.25	0.625
Chlorobenzene	108-90-7	0.626	U	2.50	0.626	0.313
Chlorodibromomethane	124-48-1	1.25	U	2.50	1.25	0.625
Chloroethane	75-00-3	2.50	U	5.00	2.50	1.25
Chloroform	67-66-3	4.77		2.50	0.626	0.313
Chloromethane	74-87-3	2.50	U	5.00	2.50	1.25
2-Chlorotoluene	95-49-8	0.626	U	2.50	0.626	0.313
4-Chlorotoluene	106-43-4	1.25	U	2.50	1.25	0.625
1,2-Dibromo-3-chloropropane	96-12-8	5.00	U	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	2.50	1.25	0.625
Dibromomethane	74-95-3	1.25	U	2.50	1.25	0.625
1,2-Dichlorobenzene	95-50-1	0.626	U	2.50	0.626	0.313
1,3-Dichlorobenzene	541-73-1	1.25	U	2.50	1.25	0.625
1,4-Dichlorobenzene	106-46-7	0.626	U	2.50	0.626	0.313
Dichlorodifluoromethane	75-71-8	1.25	U	2.50	1.25	0.625
1,1-Dichloroethane	75-34-3	0.626	U	2.50	0.626	0.313
1,2-Dichloroethane	107-06-2	5.50		2.50	1.25	0.625
1,1-Dichloroethene	75-35-4	1.37	J	5.00	2.50	1.25
cis-1,2-Dichloroethene	156-59-2	5.70		2.50	1.25	0.625
trans-1,2-Dichloroethene	156-60-5	1.25	U	2.50	1.25	0.625

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.00	U	2.50	1.00	0.500
1,3-Dichloropropane	142-28-9	1.00	U	2.50	1.00	0.500
2,2-Dichloropropane	594-20-7	1.25	U	2.50	1.25	0.625
cis-1,3-Dichloropropene	10061-01-5	1.25	U	2.50	1.25	0.625
trans-1,3-Dichloropropene	10061-02-6	2.50	U	5.00	2.50	1.25
1,1-Dichloropropene	563-58-6	1.25	U	2.50	1.25	0.625
Ethylbenzene	100-41-4	1.25	U	2.50	1.25	0.625
2-Hexanone	591-78-6	12.5	U	25.0	12.5	6.25
Hexachlorobutadiene	87-68-3	1.25	U	2.50	1.25	0.625
Isopropylbenzene	98-82-8	1.25	U	2.50	1.25	0.625
p-Isopropyltoluene	99-87-6	1.25	U	2.50	1.25	0.625
4-Methyl-2-pentanone	108-10-1	12.5	U	25.0	12.5	6.25
Methylene chloride	75-09-2	1.25	U	2.50	1.25	0.625
Naphthalene	91-20-3	1.00	U	2.50	1.00	0.500
n-Propylbenzene	103-65-1	0.626	U	2.50	0.626	0.313
Styrene	100-42-5	0.626	U	2.50	0.626	0.313
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	2.50	1.25	0.625
1,1,2,2-Tetrachloroethane	79-34-5	1.00	U	2.50	1.00	0.500
Tetrachloroethene	127-18-4	1.25	U	2.50	1.25	0.625
Toluene	108-88-3	1.25	U	2.50	1.25	0.625
1,2,3-Trichlorobenzene	87-61-6	0.750	U	2.50	0.750	0.375
1,2,4-Trichlorobenzene	120-82-1	1.00	U	2.50	1.00	0.500
1,1,1-Trichloroethane	71-55-6	1.25	U	2.50	1.25	0.625
1,1,2-Trichloroethane	79-00-5	1.25	U	2.50	1.25	0.625
Trichloroethene	79-01-6	488		2.50	1.25	0.625
Trichlorofluoromethane	75-69-4	1.25	U	2.50	1.25	0.625
1,2,3-Trichloropropane	96-18-4	2.50	U	5.00	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	2.50	1.25	0.625
1,3,5-Trimethylbenzene	108-67-8	1.25	U	2.50	1.25	0.625
Vinyl chloride	75-01-4	1.25	U	2.50	1.25	0.625
o-Xylene	95-47-6	1.25	U	2.50	1.25	0.625
m-,p-Xylene	179601-23-1	2.50	U	5.00	2.50	1.25

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	105	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060497-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/01/2016 17:19
Workgroup #:	WG572625	**Analyst:**	TMB	**Run Date:**	06/14/2016 19:34
Collect Date:	06/08/2016 00:01	**Dilution:**	1	**File ID:**	6M140064
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	102	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	106	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

MICROBAC®

TCLP Volatile

Analyst(s): AMA
Date: 06/13/2016
Filter Lot #: 96976007

Agitator Speed 30 ± 2 rpm ☑

Analyst / Date		Analyst / Date	
AMA	6/13/16	CPD	6/14/16
Time On	Temp On °C	Time Off	Temp Off °C
1430	23.2	0817	21.9

ZHE	Sample #	Pressure √	PSI ON	PSI OFF	Method	Fluid #	Matrix*	%Solid	Size Reduction Yes	Size Reduction No	Int. Wt. (g)	Fluid Vol. (mL)
A												
B												
C												
D												
E												
F												
G												
H												
✓ I	06-0550-01	✓	10	10	1311	FI-180	S	100		✓	25.01	500
J												
K												
L												
M												
✓ N	06-0620-01	✓	10	10	1311	FI-180	S	100		✓	25.00	500
✓ O	06-0620-02	✓	10	10	1311	FI-180	S	100		✓	25.01	500
P												
Q												
R												
S												
NA	06-0535-01	NA	NA	NA	1311	FIL	W	<0.5	NA	NA	40	40
NA	06-0537-01	NA	1	1	1	1	O	<0.5	1	1	1	1
NA	FBIH1	NA	NA	NA	1311	FI-180	NA	NA	NA	NA	40	40

CPD 6/13/16

*Matrix Code = (S-solid) (SS-sand, soil or sludge) (P-paint) (O-organic) (W-water or waste)

Comments: Sx 06-0537-01 strong volatile odor, and 06-0535-01 soap odor.

Peer Review By: [signature]

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 042416
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75498 Surrogate Standard: STD75498
CCV: STD75791 LCS: STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG566155

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M138749	RINSE	NA	1	1		04/24/16 16:05
6M138750	WG566155-01 50ng BFB 826-A9	NA	1	1	STD75485	04/24/16 16:33
6M138751	WG566155-02 5ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 16:59
6M138752	WG566155-03 20ug/L STD 826-A	NA	1	1	STD75791	04/24/16 17:31
6M138753	WG566155-04 50ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 18:03
6M138754	WG566155-05 100ug/L STD 826-A	NA	1	1	STD75791	04/24/16 18:36
6M138755	WG566155-06 200ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 19:08
6M138756	WG566155-07 300ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 19:40
6M138757	WG566155-08 400ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 20:12
6M138758	WG566155-09 500ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 20:44
6M138759	RINSE	NA	1	1		04/24/16 21:16
6M138760	RINSE	NA	1	1		04/24/16 21:49
6M138761	WG566155-10 100ug/L ALT SRC	NA	1	1	STD75801	04/24/16 22:21
6M138762	RINSE	NA	1	1		04/24/16 22:53
6M138763	RINSE	NA	1	1		04/24/16 23:25

Approved: April 29, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 060116
Analyst1: TMB Analyst2: NA
Method: 8260B/OVAP SOP: MSV01 Rev: 23/0
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A/OVAP SOP: PAT01 Rev: 18/0
Maintenance Log ID: 53768

Internal Standard: STD76146 Surrogate Standard: STD76146
CCV: STD76405 LCS: STD76401 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG570915; WG570966

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M139735	WG570915-01 50ng BFB STD 8260	NA	1	1	STD76034	06/01/16 12:04
6M139736	WG570915-02 0.3ug/L STD 8260	NA	1	1	STD76405	06/01/16 12:30
6M139737	WG570915-03 0.4ug/L STD 8260	NA	1	1	STD76405	06/01/16 13:01
6M139738	WG570915-04 1ug/L STD 8260	NA	1	1	STD76405	06/01/16 13:33
6M139739	WG570915-05 2ug/L STD 8260	NA	1	1	STD76405	06/01/16 14:06
6M139740	WG570915-06 5ug/L STD 8260	NA	1	1	STD76405	06/01/16 14:38
6M139741	WG570915-07 20ug/L STD 8260	NA	1	1	STD76405	06/01/16 15:10
6M139742	WG570915-08 50ug/L STD 8260	NA	1	1	STD76405	06/01/16 15:43
6M139743	WG570915-09 100ug/L STD 8260	NA	1	1	STD76405	06/01/16 16:15
6M139744	WG570915-10 200ug/L STD 8260	NA	1	1	STD76405	06/01/16 16:47
6M139745	WG570915-11 300ug/L STD 8260	NA	1	1	STD76405	06/01/16 17:19
6M139746	RINSE	NA	1	1		06/01/16 17:52
6M139747	RINSE	NA	1	1		06/01/16 18:24
6M139748	WG570915-12 50ug/L ALT SRC STD 8260	NA	1	1	STD76401	06/01/16 18:56
6M139749	WG570966-01 VBLK0601 BLANK STD 826	NA	1	1		06/01/16 19:28
6M139750	L16010006-01 MDL-A 826-SPE	NA	1	1	STD76411	06/01/16 20:00
6M139751	L16010006-02 MDL-A 826-SPE	NA	1	1	STD76411	06/01/16 20:33
6M139752	L16010006-03 MDL-A 826-SPE	NA	1	1	STD76411	06/01/16 21:05
6M139753	L16010006-04 MDL-A 826-SPE	NA	1	1	STD76411	06/01/16 21:37
6M139754	L16010006-05 MDL-A 826-SPE	NA	1	1	STD76411	06/01/16 22:09
6M139755	L16010006-06 MDL-A 826-SPE	NA	1	1	STD76411	06/01/16 22:41
6M139756	L16010006-07 MDL-A 826-SPE	NA	1	1	STD76411	06/01/16 23:13

Approved: June 02, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 061416
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 16
Method: 5030B/5030X/5035A SOP: MSV10 Rev: 141

Maintenance Log ID:

Internal Standard: STD76454 Surrogate Standard: STD76454
CCV: STD76405 LCS: STD76597 MS/MSD: STD76597

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG572925

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M140053	WG572624-01 50ng BFB STD 8260	NA	1	1	STD76496	06/14/16 13:47
6M140054	WG572624-02 50ug/L CCV STD 8260	NA	1	1	STD76405	06/14/16 14:11
6M140055	WG572624-02 50ug/L CCV STD 8260	NA	1	1	STD76405	06/14/16 14:44
6M140056	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76432	06/14/16 15:16
6M140057	WG572625-01 VBLK0614 BLANK STD 826	NA	1	1		06/14/16 15:48
6M140058	WG572625-02 20ug/L LCS STD 8260	NA	1	1	STD76597	06/14/16 16:21
6M140059	L16060497-02 A MS 826-LOW	<2	1	1	STD76597	06/14/16 16:53
6M140060	L16060497-03 A MSD 826-LOW	<2	1	1	STD76597	06/14/16 17:25
6M140061	L16060620-01 A 10X 826-TC	<2	17	10		06/14/16 17:57
6M140062	L16060620-02 A 10X 826-TC	<2	17	10		06/14/16 18:29
6M140063	L16060415-01 A TB 826-LOW	<2	1	1		06/14/16 19:01
6M140064	L16060497-05 A TB 826-LOW	<2	1	1		06/14/16 19:34
6M140065	L16060497-01 A REF 826-LOW	<2	1	1		06/14/16 20:06
6M140066	L16060497-04 A 2.5X 826-LOW	<2	1	2.5		06/14/16 20:38
6M140067	L16060415-09 A 826-LOW	<2	1	1		06/14/16 21:10
6M140068	L16060415-10 A 826-LOW	<2	1	1		06/14/16 21:42
6M140069	L16060415-03 A 826-LOW	<2	1	1		06/14/16 22:14
6M140070	L16060415-07 A 826-LOW	<2	1	1		06/14/16 22:46
6M140071	L16060415-06 A 826-LOW	<2	1	1		06/14/16 23:18
6M140072	L16060415-05 A 826-LOW	<2	1	1		06/14/16 23:50
6M140073	L16060415-04 A 826-LOW	<2	1	1		06/15/16 00:22
6M140074	L16060415-02 A 826-LOW	<2	1	1		06/15/16 00:54
6M140075	L16060415-08 A 826-LOW	<2	1	1		06/15/16 01:26
6M140076	RINSE	NA	1	1		06/15/16 01:59
6M140077	WG572625-06 VBLK0614 BLANK STD 624	NA	2	1		06/15/16 02:31
6M140078	L16060625-05 B 5X 624-SPE1 D1	<2	2	5		06/15/16 03:03
6M140079	CCV	NA	1	1		06/15/16 03:35
6M140080	RINSE	NA	1	1		06/15/16 04:07
6M140081	RINSE	NA	1	1		06/15/16 04:39
6M140082	WG572425-01 A 10X 826-TC	NA	17	10		06/15/16 05:11

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Approved: June 16, 2016

Sarah Vandenberg

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 061416
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 16
Method: 5030B/5030X/5035A SOP: MSV10 Rev: 141

Maintenance Log ID:

Internal Standard: STD76454 Surrogate Standard: STD76454
CCV: STD76405 LCS: STD76597 MS/MSD: STD76597

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG572925

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 6M140054				
	A few of the gases were low. DNR.			
4				
File ID: 6M140056				
	Not needed. DNR.			

Approved: June 16, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Data Checklist

Date: 24-APR-2016
Analyst: JDS
Analyst: NA
Method: 8260B/624
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 74754
Analytical Workgroups: WG566155

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
27-APR-2016
Tiffany Bailey

Secondary Reviewer:
29-APR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: APR-29-2016 12:29:57

Microbac Laboratories Inc.

Data Checklist

Date: 01-JUN-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 75441
Analytical Workgroups: WG570915; WG570966

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
02-JUN-2016
Tiffany Bailey

Secondary Reviewer:
02-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-02-2016 17:16:55

Microbac Laboratories Inc.

Data Checklist

Date: 14-JUN-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 75703
Analytical Workgroups: WG572625

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
15-JUN-2016
Tiffany Bailey

Secondary Reviewer:
16-JUN-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-16-2016 13:23:10

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG572625

Login Number: L16060497

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW06-060816	01	06/08/16					06/14/2016	6.3	14		06/14/16	6.3	14	
18CPTMW06MS-060816	02	06/08/16					06/14/2016	6.1	14		06/14/16	6.1	14	
18CPTMW06MSD-060816	03	06/08/16					06/14/2016	6.2	14		06/14/16	6.2	14	
MW22-060816	04	06/08/16					06/14/2016	6.2	14		06/14/16	6.2	14	
TRIP BLANK	05	06/08/16					06/14/2016	6.8	14		06/14/16	6.8	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4808689
Report generated 06/16/2016 13:20

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060497
Instrument Id: HPMS6
Workgroup (AAB#): WG572625

Method: 8260
CAL ID: HPMS6-01-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16060497-01	1.00	01	103	101	105	100
L16060497-02	1.00	01	102	101	104	101
L16060497-03	1.00	01	103	101	103	100
L16060497-04	2.50	DL01	103	101	105	100
L16060497-05	1.00	01	102	101	106	100
WG572625-01	1.00	01	103	100	106	99.8
WG572625-02	1.00	01	103	101	103	99.7
WG572625-06	1.00	01	105	102	105	100

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4808696
Report generated: 06/16/2016 13:21

METHOD BLANK SUMMARY

Login Number: L16060497
Blank File ID: 6M140057
Prep Date: 06/14/16 15:48
Analyzed Date: 06/14/16 15:48
Analyst: TMB

Work Group: WG572625
Blank Sample ID: WG572625-01
Instrument ID: HPMS6
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572625-02	6M140058	06/14/16 16:21	01
18CPTMW06MS-060816	L16060497-02	6M140059	06/14/16 16:53	01
18CPTMW06MSD-060816	L16060497-03	6M140060	06/14/16 17:25	01
TRIP BLANK	L16060497-05	6M140064	06/14/16 19:34	01
18CPTMW06-060816	L16060497-01	6M140065	06/14/16 20:06	01
MW22-060816	L16060497-04	6M140066	06/14/16 20:38	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4810058
Report generated 06/16/2016 13:20

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16060497 Prep Date: 06/14/16 15:48 Sample ID: WG572625-01
Instrument ID: HPMS6 Run Date: 06/14/16 15:48 Prep Method: 5030B/5030C/503
File ID: 6M140057 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG572625 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS6-01-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4808690
16-JUN-2016 13:20

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060497 Prep Date: 06/14/16 15:48 Sample ID: WG572625-01
Instrument ID: HPMS6 Run Date: 06/14/16 15:48 Prep Method: 5030B/5030C/503
File ID: 6M140057 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG572625 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS6-01-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	100	85 - 115	PASS
1,2-Dichloroethane-d4	103	70 - 120	PASS
Toluene-d8	99.8	85 - 120	PASS
4-Bromofluorobenzene	106	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4808690
16-JUN-2016 13:20

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060497 Run Date: 06/14/2016 Sample ID: WG572625-02
Instrument ID: HPMS6 Run Time: 16:21 Prep Method: 5030B/5030C/503
File ID: 6M140058 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG572625 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD76597 Cal ID: HPMS6-01-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	21.4	107	40 - 140	
Benzene	20.0	20.9	105	80 - 120	
Bromobenzene	20.0	20.4	102	75 - 125	
Bromochloromethane	20.0	21.2	106	65 - 130	
Bromodichloromethane	20.0	21.6	108	75 - 120	
Bromoform	20.0	20.1	100	70 - 130	
Bromomethane	20.0	17.5	87.3	30 - 145	
2-Butanone	20.0	21.7	109	30 - 150	
n-Butylbenzene	20.0	21.8	109	70 - 135	
sec-Butylbenzene	20.0	22.0	110	70 - 125	
tert-Butylbenzene	20.0	21.8	109	70 - 130	
Carbon disulfide	20.0	19.3	96.7	35 - 160	
Carbon tetrachloride	20.0	21.4	107	65 - 140	
Chlorobenzene	20.0	21.4	107	80 - 120	
Chlorodibromomethane	20.0	21.5	107	60 - 135	
Chloroethane	20.0	18.9	94.4	60 - 135	
Chloroform	20.0	21.2	106	65 - 135	
Chloromethane	20.0	17.5	87.3	40 - 125	
2-Chlorotoluene	20.0	21.7	108	75 - 125	
4-Chlorotoluene	20.0	22.0	110	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	23.0	115	50 - 130	
1,2-Dibromoethane	20.0	21.5	107	80 - 120	
Dibromomethane	20.0	20.6	103	75 - 125	
1,2-Dichlorobenzene	20.0	21.4	107	70 - 120	
1,3-Dichlorobenzene	20.0	21.0	105	75 - 125	
1,4-Dichlorobenzene	20.0	22.3	112	75 - 125	
Dichlorodifluoromethane	20.0	19.9	99.6	30 - 155	
1,1-Dichloroethane	20.0	20.5	103	70 - 135	
1,2-Dichloroethane	20.0	22.0	110	70 - 130	
1,1-Dichloroethene	20.0	20.6	103	70 - 130	
cis-1,2-Dichloroethene	20.0	21.5	108	70 - 125	
trans-1,2-Dichloroethene	20.0	21.2	106	60 - 140	
1,2-Dichloropropane	20.0	22.4	112	75 - 125	
1,3-Dichloropropane	20.0	22.8	114	75 - 125	
2,2-Dichloropropane	20.0	21.6	108	70 - 135	
cis-1,3-Dichloropropene	20.0	24.2	121	70 - 130	
trans-1,3-Dichloropropene	20.0	22.1	110	55 - 140	
1,1-Dichloropropene	20.0	20.8	104	75 - 130	
Ethylbenzene	20.0	20.9	104	75 - 125	
2-Hexanone	20.0	20.7	104	55 - 130	
Hexachlorobutadiene	20.0	22.1	111	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4808691
Report generated: 06/16/2016 13:21

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060497 Run Date: 06/14/2016 Sample ID: WG572625-02
Instrument ID: HPMS6 Run Time: 16:21 Prep Method: 5030B/5030C/503
File ID: 6M140058 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG572625 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD76597 Cal ID: HPMS6-01-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	22.4	112	75 - 125	
p-Isopropyltoluene	20.0	21.9	110	75 - 130	
4-Methyl-2-pentanone	20.0	20.8	104	60 - 135	
Methylene chloride	20.0	20.6	103	55 - 140	
Naphthalene	20.0	20.5	103	55 - 140	
n-Propylbenzene	20.0	22.8	114	70 - 130	
Styrene	20.0	22.4	112	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	21.3	107	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	20.9	105	65 - 130	
Tetrachloroethene	20.0	19.9	99.7	45 - 150	
Toluene	20.0	21.2	106	75 - 120	
1,2,3-Trichlorobenzene	20.0	21.2	106	55 - 140	
1,2,4-Trichlorobenzene	20.0	21.9	110	65 - 135	
1,1,1-Trichloroethane	20.0	21.1	106	65 - 130	
1,1,2-Trichloroethane	20.0	21.3	107	75 - 125	
Trichloroethene	20.0	21.5	107	70 - 125	
Trichlorofluoromethane	20.0	21.3	106	60 - 145	
1,2,3-Trichloropropane	20.0	21.8	109	75 - 125	
1,2,4-Trimethylbenzene	20.0	21.5	108	75 - 130	
1,3,5-Trimethylbenzene	20.0	22.2	111	75 - 130	
Vinyl chloride	20.0	19.7	98.3	50 - 145	
o-Xylene	20.0	22.3	111	80 - 120	
m-,p-Xylene	40.0	43.6	109	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	101	85 - 115	PASS
1,2-Dichloroethane-d4	103	70 - 120	PASS
Toluene-d8	99.7	85 - 120	PASS
4-Bromofluorobenzene	103	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4808691
Report generated: 06/16/2016 13:21

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16060497 Cal ID: HPMS6- 01-JUN-16 Worknum: WG572625

Instrument ID: HPMS6 Contract #: Prep Method: 5030B/5030C/

Parent ID: L16060497-01 File ID: 6M140065 Dil: 1 Method: 5035A

Sample ID: L16060497-02 MS File ID: 6M140059 Dil: 1 Matrix: 8260B

Sample ID: L16060497-03 MSD File ID: 6M140060 Dil: 1 Units: Water ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,1,1,2-Tetrachloroethane	U	20.0	20.9	105	20.0	21.1	105	0.708	80 - 130	30	
1,1,1-Trichloroethane	U	20.0	20.7	103	20.0	20.6	103	0.247	65 - 130	30	
1,1,2,2-Tetrachloroethane	U	20.0	21.4	107	20.0	21.2	106	1.22	65 - 130	30	
1,1,2-Trichloroethane	U	20.0	21.2	106	20.0	21.1	106	0.430	75 - 125	30	
1,1-Dichloroethane	U	20.0	19.7	98.6	20.0	19.9	99.3	0.691	70 - 135	30	
1,1-Dichloroethene	U	20.0	19.8	99.1	20.0	19.6	97.9	1.26	70 - 130	30	
1,1-Dichloropropene	U	20.0	20.3	101	20.0	20.1	100	1.01	75 - 130	30	
1,2,3-Trichlorobenzene	U	20.0	21.0	105	20.0	20.5	102	2.78	55 - 140	30	
1,2,3-Trichloropropane	U	20.0	21.4	107	20.0	21.3	107	0.227	75 - 125	30	
1,2,4-Trichlorobenzene	U	20.0	21.9	109	20.0	21.3	106	2.78	65 - 135	30	
1,2,4-Trimethylbenzene	U	20.0	21.5	107	20.0	21.2	106	1.25	75 - 130	30	
1,2-Dibromo-3-chloropropane	U	20.0	22.7	114	20.0	22.6	113	0.583	50 - 130	30	
1,2-Dibromoethane	U	20.0	21.0	105	20.0	21.0	105	0.0108	80 - 120	30	
1,2-Dichlorobenzene	U	20.0	21.3	107	20.0	21.1	106	0.931	70 - 120	30	
1,2-Dichloroethane	U	20.0	21.3	107	20.0	21.4	107	0.553	70 - 130	30	
1,2-Dichloropropane	U	20.0	22.0	110	20.0	21.8	109	0.635	75 - 125	30	
1,3,5-Trimethylbenzene	U	20.0	22.0	110	20.0	21.6	108	1.63	75 - 130	30	
1,3-Dichlorobenzene	U	20.0	20.7	104	20.0	20.5	103	1.05	75 - 125	30	
1,3-Dichloropropane	U	20.0	22.2	111	20.0	22.2	111	0.207	75 - 125	30	
1,4-Dichlorobenzene	U	20.0	22.2	111	20.0	22.0	110	0.966	75 - 125	30	
2,2-Dichloropropane	U	20.0	22.1	111	20.0	21.8	109	1.33	70 - 135	30	
2-Butanone	U	20.0	20.7	103	20.0	21.2	106	2.44	30 - 150	30	
2-Chlorotoluene	U	20.0	21.4	107	20.0	21.8	109	1.93	75 - 125	30	
2-Hexanone	U	20.0	20.4	102	20.0	20.4	102	0.0737	55 - 130	30	
4-Chlorotoluene	U	20.0	21.9	110	20.0	20.9	104	5.06	75 - 130	30	
4-Methyl-2-pentanone	U	20.0	20.0	99.8	20.0	20.7	103	3.42	60 - 135	30	
Acetone	U	20.0	18.9	94.3	20.0	21.3	107	12.4	40 - 140	30	
Benzene	U	20.0	20.6	103	20.0	20.3	102	1.25	80 - 120	30	
Bromobenzene	U	20.0	20.1	100	20.0	20.0	100	0.428	75 - 125	30	
Bromochloromethane	U	20.0	20.3	101	20.0	20.5	102	0.872	65 - 130	30	
Bromodichloromethane	U	20.0	21.4	107	20.0	21.5	107	0.441	75 - 120	30	
Bromoform	U	20.0	19.3	96.5	20.0	19.4	96.9	0.388	70 - 130	30	
Bromomethane	U	20.0	16.8	84.2	20.0	16.3	81.6	3.13	30 - 145	30	
Carbon disulfide	U	20.0	18.8	94.1	20.0	18.8	93.9	0.152	35 - 160	30	
Carbon tetrachloride	U	20.0	20.9	104	20.0	20.5	103	1.57	65 - 140	30	
Chlorobenzene	U	20.0	20.7	103	20.0	20.5	103	0.579	80 - 120	30	
Chloroethane	U	20.0	18.2	91	20.0	18.2	91	0.0524	60 - 135	30	
Chloroform	U	20.0	20.7	103	20.0	20.7	104	0.267	65 - 135	30	
Chloromethane	U	20.0	17.0	85.1	20.0	17.2	86.1	1.17	40 - 125	30	
cis-1,2-Dichloroethene	U	20.0	21.1	105	20.0	21.2	106	0.382	70 - 125	30	
cis-1,3-Dichloropropene	U	20.0	24.0	120	20.0	24.1	120	0.247	70 - 130	30	

MS_MSD - Modified 03/06/2008
PDF File ID: 4808692
Report generated 06/16/2016 13:21

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16060497 Cal ID: HPMS6 01-JUN-16 Worknum: WG572625

Instrument ID: HPMS6 Contract #: Prep Method: 5030B/5030C/

Parent ID: L16060497-01 File ID: 6M140065 Dil: 1 Method: 5035A

Sample ID: L16060497-02 MS File ID: 6M140059 Dil: 1 Matrix: 8260B

Sample ID: L16060497-03 MSD File ID: 6M140060 Dil: 1 Units: Water ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chlorodibromomethane	U	20.0	21.0	105	20.0	20.8	104	1.08	60 - 135	30	
Dibromomethane	U	20.0	20.1	101	20.0	20.4	102	1.29	75 - 125	30	
Dichlorodifluoromethane	U	20.0	19.4	96.8	20.0	19.2	95.8	1.07	30 - 155	30	
Ethylbenzene	U	20.0	20.4	102	20.0	20.5	102	0.282	75 - 125	30	
Hexachlorobutadiene	U	20.0	22.3	112	20.0	22.0	110	1.44	50 - 140	30	
Isopropylbenzene	U	20.0	21.8	109	20.0	21.5	108	1.26	75 - 125	30	
m-,p-Xylene	U	40.0	42.4	106	40.0	42.2	106	0.486	75 - 130	30	
Methylene chloride	2.04	20.0	21.8	99	20.0	22.2	101	1.75	55 - 140	30	
n-Butylbenzene	U	20.0	21.9	110	20.0	21.4	107	2.43	70 - 135	30	
n-Propylbenzene	U	20.0	22.6	113	20.0	22.3	111	1.29	70 - 130	30	
Naphthalene	U	20.0	20.4	102	20.0	20.2	101	0.806	55 - 140	30	
o-Xylene	U	20.0	21.7	108	20.0	21.6	108	0.484	80 - 120	30	
p-Isopropyltoluene	U	20.0	22.1	110	20.0	21.4	107	3.26	75 - 130	30	
sec-Butylbenzene	U	20.0	22.0	110	20.0	21.5	107	2.30	70 - 125	30	
Styrene	U	20.0	21.9	109	20.0	21.6	108	1.21	65 - 135	30	
tert-Butylbenzene	U	20.0	21.3	106	20.0	20.9	104	2.05	70 - 130	30	
Tetrachloroethene	U	20.0	19.4	97.2	20.0	19.2	95.9	1.37	45 - 150	30	
Toluene	U	20.0	20.6	103	20.0	20.5	102	0.545	75 - 120	30	
trans-1,2-Dichloroethene	U	20.0	20.1	100	20.0	20.4	102	1.45	60 - 140	30	
trans-1,3-Dichloropropene	U	20.0	21.5	107	20.0	21.7	108	0.799	55 - 140	30	
Trichloroethene	1.02	20.0	21.4	102	20.0	21.2	101	0.787	70 - 125	30	
Trichlorofluoromethane	U	20.0	20.9	105	20.0	20.9	105	0.167	60 - 145	30	
Vinyl chloride	U	20.0	18.7	93.6	20.0	19.0	95.1	1.54	50 - 145	30	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4808692
Report generated 06/16/2016 13:21

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060497
Instrument: HPMS6
Analyst: JDS
Workgroup: WG566155

Tune ID: WG566155-01
Run Date: 04/24/2016
Run Time: 16:33
File ID: 6M138750
Cal ID: HPMS6 - 24-APR-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.5	10010	PASS
75.0	95.0	30.0	60.0	52.0	23152	PASS
95.0	95.0	100	100	100	44552	PASS
96.0	95.0	5.00	9.00	6.92	3085	PASS
173	174	0	2.00	0.346	113	PASS
174	95.0	50.0	100	73.2	32632	PASS
175	174	5.00	9.00	7.16	2336	PASS
176	174	95.0	101	99.2	32384	PASS
177	176	5.00	9.00	6.95	2251	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG566155-02	STD	01	04/24/2016 16:59	
WG566155-03	STD	01	04/24/2016 17:31	
WG566155-04	STD	01	04/24/2016 18:03	
WG566155-05	STD-CCV	01	04/24/2016 18:36	
WG566155-06	STD	01	04/24/2016 19:08	
WG566155-07	STD	01	04/24/2016 19:40	
WG566155-08	STD	01	04/24/2016 20:12	
WG566155-09	STD	01	04/24/2016 20:44	
WG566155-10	SSCV	01	04/24/2016 22:21	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4808694
Report generated 06/16/2016 13:21

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060497
Instrument: HPMS6
Analyst: TMB
Workgroup: WG570915

Tune ID: WG570915-01
Run Date: 06/01/2016
Run Time: 12:04
File ID: 6M139735
Cal ID: HPMS6 - 01-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.0	10283	PASS
75.0	95.0	30.0	60.0	48.7	22744	PASS
95.0	95.0	100	100	100	46704	PASS
96.0	95.0	5.00	9.00	7.26	3392	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	79.6	37192	PASS
175	174	5.00	9.00	7.41	2756	PASS
176	174	95.0	101	97.2	36149	PASS
177	176	5.00	9.00	6.58	2378	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG570915-02	STD	01	06/01/2016 12:30	
WG570915-03	STD	01	06/01/2016 13:01	
WG570915-04	STD	01	06/01/2016 13:33	
WG570915-05	STD	01	06/01/2016 14:06	
WG570915-06	STD	01	06/01/2016 14:38	
WG570915-07	STD	01	06/01/2016 15:10	
WG570915-08	STD-CCV	01	06/01/2016 15:43	
WG570915-09	STD	01	06/01/2016 16:15	
WG570915-10	STD	01	06/01/2016 16:47	
WG570915-11	STD	01	06/01/2016 17:19	
WG570915-12	SSCV	01	06/01/2016 18:56	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4808694
Report generated 06/16/2016 13:21

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060497
Instrument: HPMS6
Analyst: TMB
Workgroup: WG572624

Tune ID: WG572624-01
Run Date: 06/14/2016
Run Time: 13:47
File ID: 6M140053
Cal ID: HPMS6 - 01-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.7	9633	PASS
75.0	95.0	30.0	60.0	50.0	22220	PASS
95.0	95.0	100	100	100	44434	PASS
96.0	95.0	5.00	9.00	6.85	3044	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	76.8	34120	PASS
175	174	5.00	9.00	7.54	2571	PASS
176	174	95.0	101	98.6	33634	PASS
177	176	5.00	9.00	7.32	2461	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG572624-02	CCV	01	06/14/2016 14:44	
WG572625-01	BLANK	01	06/14/2016 15:48	
WG572625-02	LCS	01	06/14/2016 16:21	
L16060497-02	18CPTMW06MS-060816	01	06/14/2016 16:53	
L16060497-03	18CPTMW06MSD-060816	01	06/14/2016 17:25	
L16060497-05	TRIP BLANK	01	06/14/2016 19:34	
L16060497-01	18CPTMW06-060816	01	06/14/2016 20:06	
L16060497-04	MW22-060816	DL01	06/14/2016 20:38	
WG572625-06	BLANK2	01	06/15/2016 02:31	*
WG572425-01	FBLK1	DL01	06/15/2016 05:11	*

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4808694
Report generated 06/16/2016 13:21

Calibration Table Report
Method: A9FOOWT.M
Title: A9-FOO Water - IC: 042416 - HPMS6
Last Calibration: Wed Apr 27 16:03:33 2016
Curve: WG566155
Calibration Files

	Compound	5 6M138751.D	20 6M138752.D	50 6M138753.D	100 6M138754.D	200 6M138755.D	300 6M138756.D	400 6M138757.D	500 6M138758.D	Avg	%RSD
I	Fluorobenzene	ISTD									
T	Acetonitrile	0.036	0.037	0.039	0.038	0.038	0.038	0.038	0.036	0.037	2.606
T	3-Chloro-1-propene	0.567	0.621	0.656	0.672	0.635	0.622	0.617	0.603	0.624	5.157
T	2-Chloro-1,3-butadiene	0.415	0.507	0.558	0.590	0.558	0.553	0.556	0.548	0.535	10.001
T	Ethyl Acetate	0.229	0.259	0.279	0.281	0.277	0.272	0.279	0.268	0.268	6.419
T	Methacrylonitrile	0.071	0.089	0.099	0.099	0.097	0.095	0.096	0.093	0.092	9.852
T	Isobutyl Alcohol		0.008	0.008	0.007	0.007	0.008	0.010	0.010	0.009	13.654
T	1-Butanol									0.000	0.000
T	Methyl methacrylate	0.159	0.200	0.231	0.244	0.244	0.241	0.246	0.236	0.225	13.591
T	2-Nitropropane			0.079	0.082	0.085	0.085	0.088	0.084	0.084	3.643
I	Chlorobenzene-d5	ISTD									
I	1,4-Dichlorobenzene-d4	ISTD									
T	Cyclohexanone			0.026	0.027	0.032	0.034	0.035	0.033	0.031	12.127

Wed Apr 27 16:05:59 2016

Calibration Table Report
Method: 8260WT.M
Title: 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Calibration: Thu Jun 02 12:19:33 2016
Curve: WG570915
Calibration Files

	Compound	0.3 6M139736.D	0.4 6M139737.D	1 6M139738.D	2 6M139739.D	5 6M139740.D	20 6M139741.D	50 6M139742.D	100 6M139743.D	200 6M139744.D	300 6M139745.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.368	0.389	0.360	0.417	0.428	0.427	0.416	0.361	0.396	7.472		
P	Chloromethane			0.508	0.532	0.486	0.500	0.497	0.488	0.465	0.385	0.482	9.076		
C	Vinyl Chloride		0.401	0.350	0.343	0.312	0.323	0.317	0.315	0.304	0.262	0.325	11.731		
T	1,3-Butadiene					0.284	0.265	0.185	0.182	0.173	0.159	0.208	25.270	0.993	
T	Bromomethane			0.159	0.168	0.144	0.137	0.153	0.170	0.184	0.167	0.160	9.429		
T	Chloroethane			0.212	0.219	0.210	0.206	0.204	0.204	0.204	0.186	0.206	4.708		
T	Trichlorofluoromethane		0.437	0.445	0.470	0.433	0.436	0.435	0.434	0.431	0.399	0.436	4.163		
T	Diethyl ether			0.220	0.247	0.237	0.230	0.236	0.237		0.232	0.234	3.554		
T	Isoprene					0.355	0.373	0.369	0.380	0.375	0.368	0.370	2.297		
T	Acrolein				0.038	0.040	0.038	0.039	0.041		0.040	0.040	2.934		
T	1,1,2-Trichloro-1,2,2-Trifluoroet			0.237	0.269	0.247	0.245	0.249	0.250	0.252	0.241	0.249	3.880		
T	Acetone					0.103	0.074	0.075	0.074	0.072	0.067	0.078	16.625	0.999	
C	1,1-Dichloroethene		0.464	0.431	0.455	0.435	0.429	0.438	0.440	0.447	0.425	0.441	2.860		
T	Tert-Butyl Alcohol			0.019	0.021	0.022	0.022	0.023	0.024		0.021	0.022	7.217		
T	Dimethyl Sulfide					0.191	0.206	0.203	0.205	0.206	0.203	0.202	2.776		
T	Iodomethane				0.048	0.105	0.188	0.192	0.194	0.191	0.176	0.156	36.677	0.997	
T	Methyl acetate					0.225	0.218	0.215	0.216	0.212	0.208	0.216	2.557		
T	Methylene Chloride			0.290	0.301	0.275	0.263	0.262	0.260	0.267	0.256	0.272	5.900		
T	Carbon Disulfide			0.869	0.917	0.858	0.877	0.860	0.869	0.852	0.792	0.862	3.999		
T	Acrylonitrile			0.088	0.092	0.090	0.093	0.101	0.100		0.102	0.095	5.996		
T	Methyl Tert Butyl Ether			0.638	0.686	0.655	0.655	0.669	0.668	0.678	0.655	0.663	2.281		
T	trans-1,2-Dichloroethene		0.254	0.252	0.269	0.253	0.255	0.257	0.257	0.262	0.253	0.257	2.039		
T	n-Hexane					0.407	0.403	0.398	0.405	0.399	0.387	0.400	1.831		
T	Diisopropyl ether			1.043	1.114	1.089	1.056	1.078	1.065		1.007	1.064	3.213		
T	Vinyl Acetate					0.421	0.424	0.454	0.438	0.497	0.478	0.452	6.758		
P	1,1-Dichloroethane		0.527	0.521	0.544	0.508	0.506	0.505	0.507	0.516	0.499	0.515	2.718		
T	Ethyl-Tert-Butyl ether			0.841	0.896	0.884	0.864	0.890	0.881		0.843	0.871	2.557		
T	2-Butanone					0.121	0.109	0.114	0.115	0.113	0.104	0.113	5.044		
T	Propionitrile			0.028	0.032	0.031	0.032	0.033	0.033		0.029	0.031	6.795		
T	2,2-Dichloropropane		0.374	0.389	0.411	0.378	0.356	0.362	0.369	0.376	0.361	0.375	4.479		
T	cis-1,2-Dichloroethene		0.263	0.280	0.292	0.281	0.276	0.282	0.280	0.288	0.277	0.280	2.886		
C	Chloroform	0.482	0.449	0.447	0.491	0.459	0.450	0.452	0.451	0.460	0.442	0.458	3.416		
T	1-Bromopropane			0.026	0.043	0.048	0.046	0.046	0.047	0.047	0.046	0.044	16.515	1.000	
T	Bromochloromethane		0.151	0.151	0.167	0.159	0.160	0.161	0.161	0.164	0.157	0.159	3.527		
T	Tetrahydrofuran			0.095	0.078	0.075	0.074	0.077	0.076		0.070	0.078	10.111		
S	Dibromofluoromethane				0.257	0.255	0.269	0.262	0.256	0.260	0.253	0.259	2.029		
T	1,1,1-Trichloroethane		0.436	0.383	0.433	0.400	0.393	0.404	0.408	0.419	0.403	0.409	4.334		
T	Cyclohexane			0.487	0.535	0.494	0.516	0.511	0.523	0.524	0.509	0.512	3.081		
T	1,1-Dichloropropene			0.340	0.358	0.349	0.344	0.350	0.355	0.361	0.346	0.350	2.036		
T	Tert-Amyl-Methyl ether			0.641	0.688	0.677	0.666	0.686	0.691		0.671	0.674	2.592		
T	Carbon Tetrachloride		0.358	0.347	0.378	0.35	0.356	0.37	0.377	0.379	0.367	0.36473	3.3573		
S	1,2-Dichloroethane-d4				0.29	0.283	0.299	0.288	0.282	0.282	0.272	0.28519	2.87577		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.365	0.344	0.373	0.347	0.343	0.35	0.349	0.356	0.342	0.35222	3.02016		
T	Benzene		1.124	1.064	1.107	1.037	1.005	1.01	1.002	0.995	0.9	1.02701	6.51675		
T	Trichloroethene		0.258	0.271	0.275	0.256	0.259	0.262	0.264	0.265	0.251	0.2623	2.78541		
T	Methylcyclohexane					0.394	0.401	0.396	0.405	0.402	0.388	0.39768	1.59426		
C	1,2-Dichloropropane		0.277	0.281	0.294	0.283	0.278	0.284	0.285	0.292	0.28	0.28367	2.04718		
T	1,4-Dioxane					0.002	0.002	0.002	0.002		0.002	0.00202	8.64372		
T	Bromodichloromethane		0.332	0.346	0.359	0.34	0.343	0.355	0.355	0.363	0.346	0.34886	2.85717		
T	Dibromomethane		0.14	0.142	0.148	0.145	0.146	0.15	0.149	0.153	0.145	0.14638	2.73027		
T	2-Chloroethyl Vinyl Ether				0.12	0.118	0.133	0.141	0.138	0.134	0.122	0.12947	7.05634		
T	4-Methyl-2-Pentanone					0.077	0.085	0.091	0.091	0.091	0.083	0.08617	6.68181		
T	cis-1,3-Dichloropropene		0.354	0.356	0.398	0.395	0.399	0.413	0.415	0.425	0.4	0.39484	6.23009		
T	Dimethyl Disulfide					0.183	0.218	0.231	0.241	0.249	0.243	0.22747	10.8008		
I	Chlorobenzene-d5	ISTD													
S	Toluene-d8				1.251	1.228	1.225	1.176	1.161	1.169	1.189	1.19981	2.90775		
C	Toluene		1.473	1.426	1.524	1.458	1.418	1.408	1.402	1.382	1.285	1.41964	4.6754		
T	Ethyl Methacrylate			0.306	0.362	0.365	0.398	0.411	0.421	0.426	0.424	0.38902	10.8195		
T	Paraldehyde											0	0		
T	trans-1,3-Dichloropropene			0.421	0.476	0.468	0.478	0.498	0.501	0.517	0.51	0.4835	6.35458		
T	1,1,2-Trichloroethane		0.272	0.252	0.282	0.268	0.269	0.273	0.271	0.276	0.269	0.27029	3.02397		
T	2-Hexanone					0.221	0.217	0.233	0.237	0.24	0.227	0.22936	3.87639		
T	1,3-Dichloropropane		0.467	0.467	0.498	0.469	0.473	0.479	0.475	0.481	0.466	0.47522	2.15067		
T	Tetrachloroethene		0.377	0.386	0.393	0.377	0.362	0.364	0.362	0.366	0.364	0.37239	3.0474		
T	Dibromochloromethane		0.334	0.328	0.341	0.335	0.34	0.354	0.356	0.362	0.349	0.3444	3.3424		
T	1,2-Dibromoethane		0.256	0.24	0.267	0.254	0.263	0.268	0.269	0.271	0.262	0.26125	3.70682		
T	1-Chlorohexane		0.42	0.416	0.457	0.451	0.472	0.482	0.487	0.486	0.478	0.46097	5.97256		
P	Chlorobenzene		0.984	0.972	1.04	0.972	0.93	0.933	0.926	0.927	0.865	0.9499	5.17962		
T	1,1,1,2-Tetrachloroethane		0.333	0.322	0.341	0.342	0.344	0.353	0.356	0.365	0.346	0.34453	3.65039		
C	Ethylbenzene		0.485	0.495	0.519	0.505	0.492	0.508	0.508	0.524	0.498	0.50384	2.47296		
T	m-,p-Xylene		0.627	0.587	0.625	0.612	0.603	0.606	0.606	0.592	0.53	0.59856	4.81039		
T	o-Xylene			0.554	0.6	0.592	0.595	0.603	0.604	0.613	0.571	0.59151	3.29999		
T	Styrene		0.817	0.867	0.983	0.988	1.024	1.054	1.069	1.071	0.967	0.98236	9.03093		
P	Bromoform			0.191	0.199	0.198	0.213	0.228	0.239	0.248	0.233	0.21851	9.8506		
T	Isopropylbenzene		1.479	1.461	1.525	1.509	1.513	1.549	1.55	1.495	1.282	1.48477	5.4827		
I	1,4-Dichlorobenzene-d4	ISTD													
P	1,1,2,2-Tetrachloroethane		0.587	0.595	0.639	0.592	0.581	0.6	0.6	0.623	0.608	0.60275	3.02728		
S	p-Bromofluorobenzene				0.883	0.881	0.916	0.873	0.863	0.883	0.881	0.88281	1.83022		

T	1,2,3-Trichloropropane			0.168	0.192	0.163	0.17	0.176	0.176	0.178	0.175	0.17451	4.94444	
T	trans-1,4-Dichloro-2-Butene			0.107	0.15	0.163	0.191	0.205	0.217	0.219	0.221	0.18403	22.2298	0.999
T	n-Propylbenzene		3.439	3.272	3.551	3.406	3.322	3.313	3.215	3.027	2.616	3.2401	8.53408	
T	Bromobenzene	0.84	0.754	0.764	0.805	0.762	0.737	0.736	0.727	0.748	0.73	0.76031	4.726	
T	1,3,5-Trimethylbenzene		2.174	2.282	2.426	2.351	2.342	2.342	2.317	2.311	2.086	2.29253	4.46771	
T	2-Chlorotoluene		2.453	2.255	2.502	2.26	2.177	2.144	2.165	2.112	1.907	2.21937	8.06439	
T	4-Chlorotoluene		1.999	2.118	2.186	2.154	2.046	2.063	1.99	2.054	1.936	2.06065	3.92778	
T	a-Methylstyrene					1.193	1.289	1.293	1.32	1.315	1.279	1.28165	3.60789	
T	tert-Butylbenzene			0.467	0.527	0.516	0.503	0.508	0.509	0.518	0.496	0.50542	3.60353	
T	1,2,4-Trimethylbenzene			2.289	2.555	2.468	2.45	2.451	2.435	2.403	2.149	2.39988	5.22721	
T	sec-Butylbenzene			2.845	3.007	2.916	2.875	2.877	2.866	2.757	2.424	2.82101	6.19277	
T	p-Isopropyltoluene			2.3	2.503	2.467	2.445	2.488	2.483	2.404	2.142	2.404	5.1767	
T	1,3-Dichlorobenzene		1.665	1.484	1.562	1.493	1.45	1.441	1.447	1.439	1.363	1.48259	5.84022	
T	1,4-Dichlorobenzene	2.703	1.755	1.595	1.633	1.463	1.435	1.445	1.445	1.434	1.353	1.62614	24.4079	0.999
T	n-Butylbenzene			2.15	2.352	2.307	2.306	2.359	2.37	2.304	2.055	2.27543	4.95243	
T	1,2-Dichlorobenzene	1.542	1.39	1.334	1.501	1.383	1.346	1.359	1.355	1.342	1.264	1.3816	5.91958	
T	1,2-Dibromo-3-Chloropropane				0.09	0.105	0.102	0.115	0.116	0.117	0.112	0.10824	9.10771	
T	1,2,4-Trichlorobenzene		0.991	0.897	0.97	0.944	0.955	0.967	0.967	0.977	0.928	0.95524	2.96669	
T	Hexachlorobutadiene		0.41	0.42	0.407	0.413	0.385	0.389	0.387	0.384	0.372	0.39643	4.16165	
T	Naphthalene		1.837	1.729	1.844	1.857	1.956	2.027	2.008	1.956	1.781	1.88827	5.46689	
T	1,2,3-Trichlorobenzene	0.981	0.939	0.873	0.921	0.896	0.892	0.903	0.895	0.893	0.847	0.90398	4.0381	

Thu Jun 02 14:04:26 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060497 Run Date: 06/01/2016 Sample ID: WG570915-12
Instrument ID: HPMS6 Run Time: 18:56 Method: 8260B
File ID: 6M139748 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG570915 Cal ID: HPMS6 - 01-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	49.5	ug/L	0.453	1.10	20	
1,1-Dichloroethene	CCC	50.0	48.1	ug/L	0.424	3.80	20	
1,2-Dichloropropane	CCC	50.0	52.4	ug/L	0.297	4.80	20	
Ethylbenzene	CCC	50.0	51.3	ug/L	0.517	2.60	20	
Toluene	CCC	50.0	51.7	ug/L	1.47	3.40	20	
Vinyl Chloride	CCC	50.0	48.8	ug/L	0.317	2.50	20	
Bromoform	SPCC	50.0	48.3	ug/L	0.211	3.50	20	
Chlorobenzene	SPCC	50.0	51.3	ug/L	0.974	2.50	20	
Chloromethane	SPCC	50.0	47.6	ug/L	0.460	4.70	20	
1,1-Dichloroethane	SPCC	50.0	48.0	ug/L	0.494	3.90	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	51.7	ug/L	0.623	3.40	20	
Acetone		50.0	50.0	ug/L	0.0727	0.100	20	
Benzene		50.0	50.0	ug/L	1.03	0	20	
Bromobenzene		50.0	50.0	ug/L	0.760	0	20	
Bromochloromethane		50.0	50.2	ug/L	0.160	0.400	20	
Bromodichloromethane		50.0	51.1	ug/L	0.356	2.10	20	
Bromomethane		50.0	45.5	ug/L	0.146	9.00	20	
2-Butanone		50.0	48.8	ug/L	0.110	2.40	20	
n-Butylbenzene		50.0	52.4	ug/L	2.39	4.80	20	
sec-Butylbenzene		50.0	53.8	ug/L	3.03	7.60	20	
tert-Butylbenzene		50.0	53.4	ug/L	0.540	6.80	20	
Carbon Disulfide		50.0	48.3	ug/L	0.833	3.40	20	
Carbon Tetrachloride		50.0	50.4	ug/L	0.367	0.700	20	
Dibromochloromethane		50.0	51.4	ug/L	0.354	2.80	20	
Chloroethane		50.0	51.4	ug/L	0.211	2.70	20	
2-Chlorotoluene		50.0	52.0	ug/L	2.31	4.00	20	
4-Chlorotoluene		50.0	53.6	ug/L	2.21	7.30	20	
1,2-Dibromo-3-Chloropropane		50.0	53.9	ug/L	0.117	7.80	20	
1,2-Dibromoethane		50.0	52.4	ug/L	0.274	4.80	20	
Dibromomethane		50.0	49.4	ug/L	0.145	1.20	20	
1,2-Dichlorobenzene		50.0	51.9	ug/L	1.43	3.80	20	
1,3-Dichlorobenzene		50.0	50.4	ug/L	1.49	0.800	20	
1,4-Dichlorobenzene		50.0	54.3	ug/L	1.52	8.50	20	
Dichlorodifluoromethane		50.0	54.6	ug/L	0.432	9.20	20	
1,2-Dichloroethane		50.0	50.5	ug/L	0.356	1.00	20	
cis-1,2-Dichloroethene		50.0	51.7	ug/L	0.289	3.50	20	
trans-1,2-Dichloroethene		50.0	50.9	ug/L	0.262	1.90	20	
1,3-Dichloropropane		50.0	54.6	ug/L	0.519	9.30	20	
2,2-Dichloropropane		50.0	48.0	ug/L	0.360	4.00	20	
cis-1,3-Dichloropropene		50.0	57.2	ug/L	0.452	14.4	20	
trans-1,3-Dichloropropene		50.0	52.9	ug/L	0.511	5.70	20	
1,1-Dichloropropene		50.0	49.7	ug/L	0.348	0.600	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4808693
Report generated 06/16/2016 13:21

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060497 Run Date: 06/01/2016 Sample ID: WG570915-12
Instrument ID: HPMS6 Run Time: 18:56 Method: 8260B
File ID: 6M139748 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG570915 Cal ID: HPMS6 - 01-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	48.5	ug/L	0.223	3.00	20	
Hexachlorobutadiene		50.0	53.5	ug/L	0.424	6.90	20	
Isopropylbenzene		50.0	53.4	ug/L	1.58	6.70	20	
p-Isopropyltoluene		50.0	53.2	ug/L	2.56	6.30	20	
4-Methyl-2-Pentanone		50.0	50.1	ug/L	0.0863	0.200	20	
Methylene Chloride		50.0	49.1	ug/L	0.267	1.90	20	
Naphthalene		50.0	48.9	ug/L	1.85	2.20	20	
n-Propylbenzene		50.0	55.1	ug/L	3.57	10.2	20	
Styrene		50.0	54.2	ug/L	1.07	8.40	20	
1,1,1,2-Tetrachloroethane		50.0	52.5	ug/L	0.362	5.10	20	
Tetrachloroethene		50.0	49.1	ug/L	0.365	1.90	20	
1,2,3-Trichlorobenzene		50.0	50.0	ug/L	0.905	0.100	20	
1,2,4-Trichlorobenzene		50.0	52.1	ug/L	0.996	4.30	20	
1,1,1-Trichloroethane		50.0	49.8	ug/L	0.407	0.400	20	
1,1,2-Trichloroethane		50.0	51.8	ug/L	0.280	3.50	20	
Trichloroethene		50.0	51.8	ug/L	0.272	3.60	20	
Trichlorofluoromethane		50.0	47.5	ug/L	0.414	5.00	20	
1,2,3-Trichloropropane		50.0	52.7	ug/L	0.184	5.50	20	
1,2,4-Trimethylbenzene		50.0	52.0	ug/L	2.50	4.10	20	
1,3,5-Trimethylbenzene		50.0	54.2	ug/L	2.48	8.40	20	
o-Xylene		50.0	53.6	ug/L	0.634	7.20	20	
m-,p-Xylene		100	106	ug/L	0.632	5.60	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4808693
Report generated 06/16/2016 13:21

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060497 Run Date: 06/14/2016 Sample ID: WG572624-02
Instrument ID: HPMS6 Run Time: 14:44 Method: 8260B
File ID: 6M140055 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG572625 Cal ID: HPMS6 - 01-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	51.5	ug/L	0.473	3.10	20	
1,1-Dichloroethene	CCC	50.0	51.9	ug/L	0.458	3.86	20	
1,2-Dichloropropane	CCC	50.0	51.7	ug/L	0.293	3.41	20	
Ethylbenzene	CCC	50.0	49.1	ug/L	0.495	1.80	20	
Toluene	CCC	50.0	49.9	ug/L	1.42	0.189	20	
Vinyl Chloride	CCC	50.0	44.6	ug/L	0.290	10.7	20	
Bromoform	SPCC	50.0	50.8	ug/L	0.222	1.69	20	
Chlorobenzene	SPCC	50.0	48.6	ug/L	0.923	2.88	20	
Chloromethane	SPCC	50.0	41.4	ug/L	0.400	17.2	20	
1,1-Dichloroethane	SPCC	50.0	51.0	ug/L	0.525	2.10	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.8	ug/L	0.600	0.429	20	
Xylenes		150	150	ug/L	0.595	0.0994	20	
Acetone		50.0	49.2	ug/L	0.0715	1.65	20	
Benzene		50.0	50.4	ug/L	1.04	0.822	20	
Bromobenzene		50.0	48.6	ug/L	0.740	2.71	20	
Bromochloromethane		50.0	51.1	ug/L	0.163	2.27	20	
Bromodichloromethane		50.0	52.5	ug/L	0.366	5.00	20	
Bromomethane		50.0	41.6	ug/L	0.133	16.7	20	
2-Butanone		50.0	50.4	ug/L	0.114	0.758	20	
n-Butylbenzene		50.0	51.9	ug/L	2.36	3.71	20	
sec-Butylbenzene		50.0	50.0	ug/L	2.82	0.00400	20	
tert-Butylbenzene		50.0	48.6	ug/L	0.491	2.86	20	
Carbon Disulfide		50.0	51.6	ug/L	0.890	3.24	20	
Carbon Tetrachloride		50.0	52.9	ug/L	0.386	5.76	20	
Dibromochloromethane		50.0	51.4	ug/L	0.354	2.79	20	
Chloroethane		50.0	42.3	ug/L	0.174	15.4	20	
2-Chlorotoluene		50.0	49.4	ug/L	2.19	1.18	20	
4-Chlorotoluene		50.0	50.4	ug/L	2.08	0.765	20	
1,2-Dibromo-3-Chloropropane		50.0	52.5	ug/L	0.114	4.93	20	
1,2-Dibromoethane		50.0	50.4	ug/L	0.263	0.808	20	
Dibromomethane		50.0	51.3	ug/L	0.150	2.68	20	
1,2-Dichlorobenzene		50.0	48.6	ug/L	1.34	2.76	20	
1,3-Dichlorobenzene		50.0	48.5	ug/L	1.44	3.04	20	
1,4-Dichlorobenzene		50.0	51.2	ug/L	1.44	2.33	20	
Dichlorodifluoromethane		50.0	49.0	ug/L	0.388	1.96	20	
1,2-Dichloroethane		50.0	51.2	ug/L	0.361	2.44	20	
cis-1,2-Dichloroethene		50.0	50.9	ug/L	0.285	1.82	20	
trans-1,2-Dichloroethene		50.0	51.1	ug/L	0.262	2.13	20	
1,3-Dichloropropane		50.0	50.2	ug/L	0.477	0.385	20	
2,2-Dichloropropane		50.0	55.4	ug/L	0.416	10.9	20	
cis-1,3-Dichloropropene		50.0	54.5	ug/L	0.431	9.07	20	
trans-1,3-Dichloropropene		50.0	53.0	ug/L	0.513	6.09	20	

CCV - Modified 03/05/2008
PDF File ID: 4808695
Report generated 06/16/2016 13:21

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060497 Run Date: 06/14/2016 Sample ID: WG572624-02
Instrument ID: HPMS6 Run Time: 14:44 Method: 8260B
File ID: 6M140055 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG572625 Cal ID: HPMS6 - 01-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	52.0	ug/L	0.364	3.92	20	
2-Hexanone		50.0	49.1	ug/L	0.225	1.78	20	
Hexachlorobutadiene		50.0	51.7	ug/L	0.410	3.34	20	
Isopropylbenzene		50.0	50.9	ug/L	1.51	1.73	20	
p-Isopropyltoluene		50.0	50.9	ug/L	2.45	1.81	20	
4-Methyl-2-Pentanone		50.0	51.0	ug/L	0.0879	1.96	20	
Methylene Chloride		50.0	49.0	ug/L	0.266	2.02	20	
Naphthalene		50.0	52.8	ug/L	1.99	5.50	20	
n-Propylbenzene		50.0	51.4	ug/L	3.33	2.71	20	
Styrene		50.0	52.4	ug/L	1.03	4.71	20	
1,1,1,2-Tetrachloroethane		50.0	50.7	ug/L	0.350	1.48	20	
Tetrachloroethene		50.0	47.7	ug/L	0.355	4.67	20	
1,2,3-Trichlorobenzene		50.0	48.6	ug/L	0.878	2.87	20	
1,2,4-Trichlorobenzene		50.0	50.3	ug/L	0.962	0.669	20	
1,1,1-Trichloroethane		50.0	51.8	ug/L	0.423	3.55	20	
1,1,2-Trichloroethane		50.0	49.8	ug/L	0.269	0.453	20	
Trichloroethene		50.0	50.0	ug/L	0.263	0.0606	20	
Trichlorofluoromethane		50.0	53.8	ug/L	0.469	7.62	20	
1,2,3-Trichloropropane		50.0	49.5	ug/L	0.173	1.08	20	
1,2,4-Trimethylbenzene		50.0	50.5	ug/L	2.42	0.967	20	
1,3,5-Trimethylbenzene		50.0	51.2	ug/L	2.35	2.31	20	
o-Xylene		50.0	50.1	ug/L	0.593	0.228	20	
m-,p-Xylene		100	99.7	ug/L	0.597	0.263	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4808695
Report generated 06/16/2016 13:21

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060497
Instrument ID: HPMS6
Workgroup (AAB#): WG572625

ICAL CCV Number: WG570915-08
CAL ID: HPMS6 - 01-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG570915-08	NA	NA	314779	551471	743292
Upper Limit	NA	NA	629558	1102942	1486584
Lower Limit	NA	NA	157390	275736	371646
L16060497-01	1.00	01	237696	447494	609930
L16060497-02	1.00	01	260112	472703	634384
L16060497-03	1.00	01	262401	473094	632876
L16060497-04	2.50	DL01	235659	441336	598584
L16060497-05	1.00	01	236035	449953	606851
WG572625-01	1.00	01	241553	461734	624517
WG572625-02	1.00	01	259174	461241	620315

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4810059
Report generated 06/16/2016 13:21

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060497
Instrument ID: HPMS6
Workgroup (AAB#): WG572625

ICAL CCV Number: WG570915-08
CAL ID: HPMS6 - 01-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG570915-08	NA	NA	19.65	16.06	11.57
Upper Limit	NA	NA	20.15	16.56	12.07
Lower Limit	NA	NA	19.15	15.56	11.07
L16060497-01	1.00	01	19.65	16.06	11.57
L16060497-02	1.00	01	19.65	16.06	11.56
L16060497-03	1.00	01	19.64	16.07	11.56
L16060497-04	2.50	DL01	19.65	16.06	11.57
L16060497-05	1.00	01	19.65	16.06	11.57
WG572625-01	1.00	01	19.65	16.06	11.57
WG572625-02	1.00	01	19.65	16.06	11.56

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4810060
Report generated: 06/16/2016 13:21

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140065.D Vial: 13
Acq On : 14 Jun 2016 20:06 Operator: TMB
Sample : L16060497-01 A REF 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 08:15:47 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	609930	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.06	117	447494	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	19.65	152	237696	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.38	111	159254	25.2286 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.92%		
43) 1,2-Dichloroethane-d4	11.11	65	179023	25.7302 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.92%		
58) Toluene-d8	13.85	98	538994	25.0972 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.40%		
80) p-Bromofluorobenzene	17.84	95	220078	26.2196 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.88%		

Target Compounds					Qvalue
3) Chloromethane	3.92	50	1578	0.1341 ug/L #	42
4) Vinyl Chloride	4.17	62	2337	0.2945 ug/L #	42
12) 1,1,2-Trichloro-1,2,2-Trif	6.55	101	12950	2.1335 ug/L	98
13) Acetone	6.66	43	2209	Below Cal #	48
16) Dimethyl Sulfide	7.30	62	1791	0.3630 ug/L #	1
19) Methylene Chloride	7.72	84	13509	2.0379 ug/L	96
26) Vinyl Acetate	9.03	43	1612	0.1462 ug/L #	78
47) Trichloroethene	12.15	130	6554	1.0242 ug/L	89
55) cis-1,3-Dichloropropene	13.55	75	1937	0.2011 ug/L #	46
60) Ethyl Methacrylate	13.86	69	1168	0.1677 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M140065.D 8260WT.M Wed Jun 15 08:15:50 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140065.D Vial: 13
Acq On : 14 Jun 2016 20:06 Operator: TMB
Sample : L16060497-01 A REF 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 8:16 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration

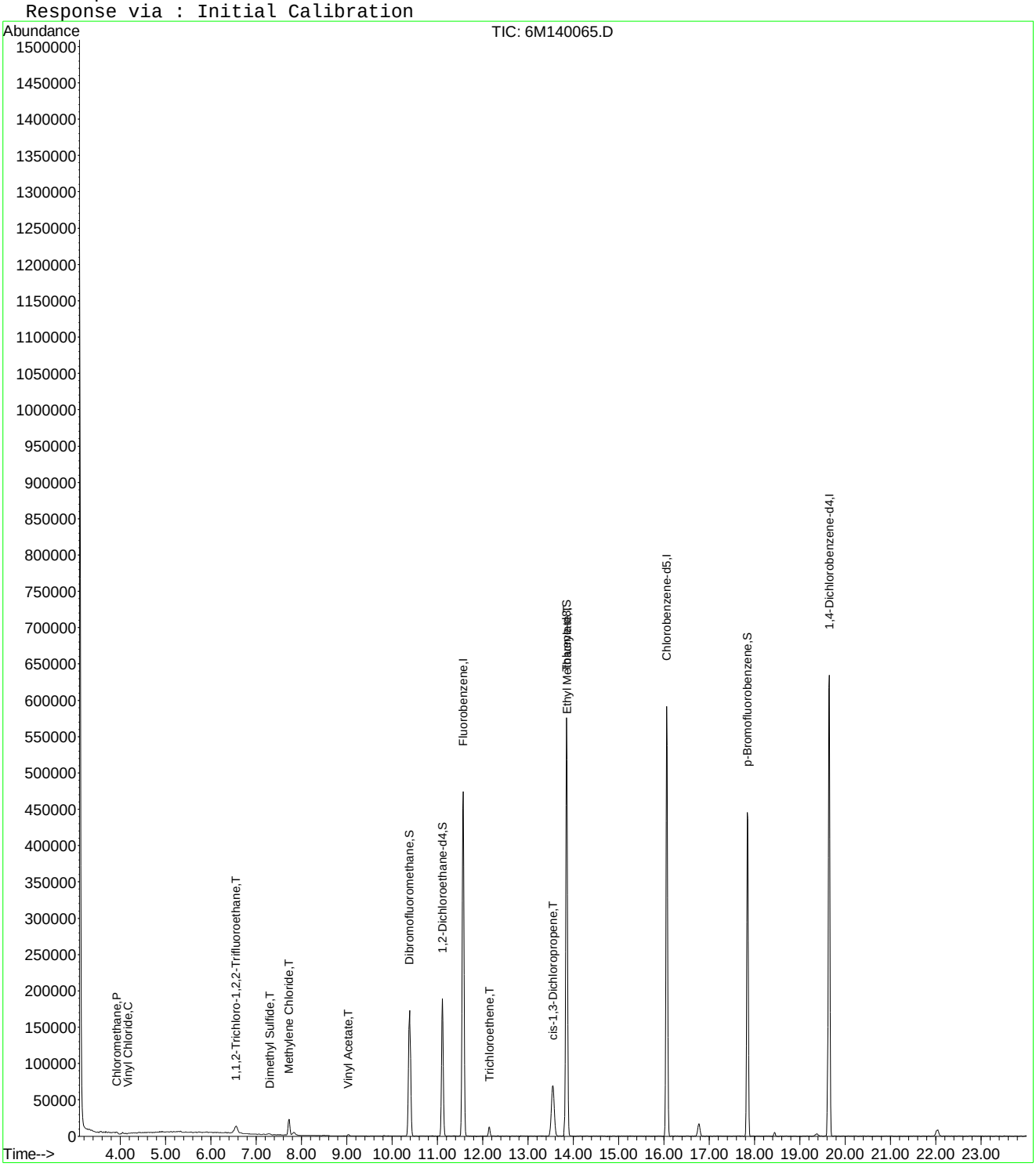

6M140065.D 8260WT.M Wed Jun 15 08:15:50 2016 Page 2

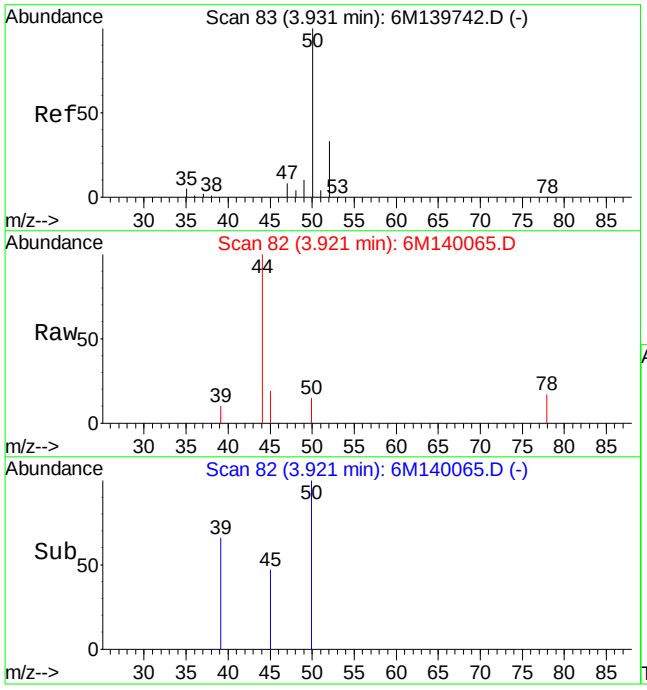

#3
Chloromethane
Concen: 0.13 ug/L
RT: 3.92 min Scan# 82
Delta R.T. -0.01 min
Lab File: 6M140065.D
Acq: 14 Jun 2016 20:06

Tgt Ion: 50 Resp: 1578

Ion	Ratio	Lower	Upper
50	100		
52	0.0	19.8	46.2#

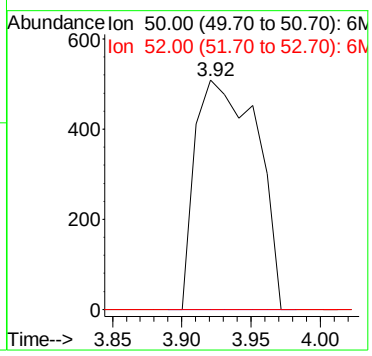

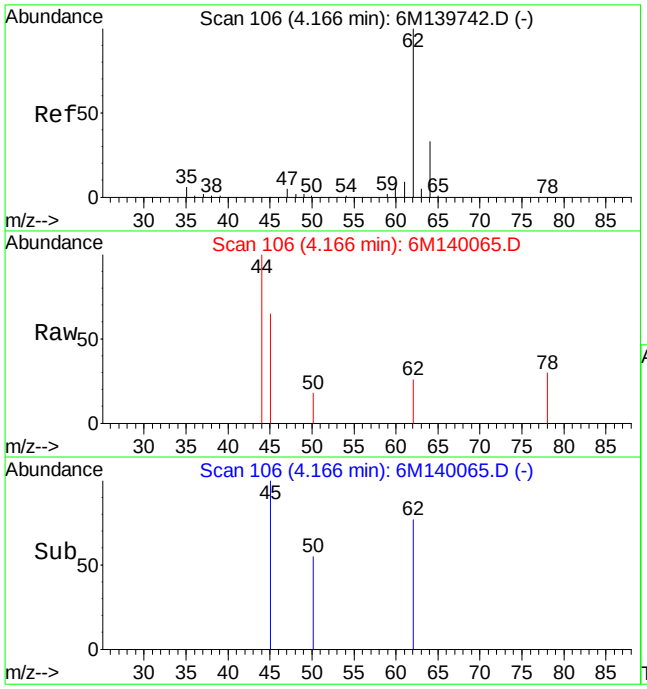

#4
Vinyl Chloride
Concen: 0.29 ug/L
RT: 4.17 min Scan# 106
Delta R.T. 0.01 min
Lab File: 6M140065.D
Acq: 14 Jun 2016 20:06

Tgt Ion: 62 Resp: 2337

Ion	Ratio	Lower	Upper
62	100		
64	0.0	19.3	45.1#

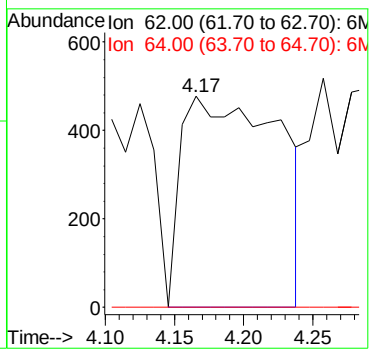

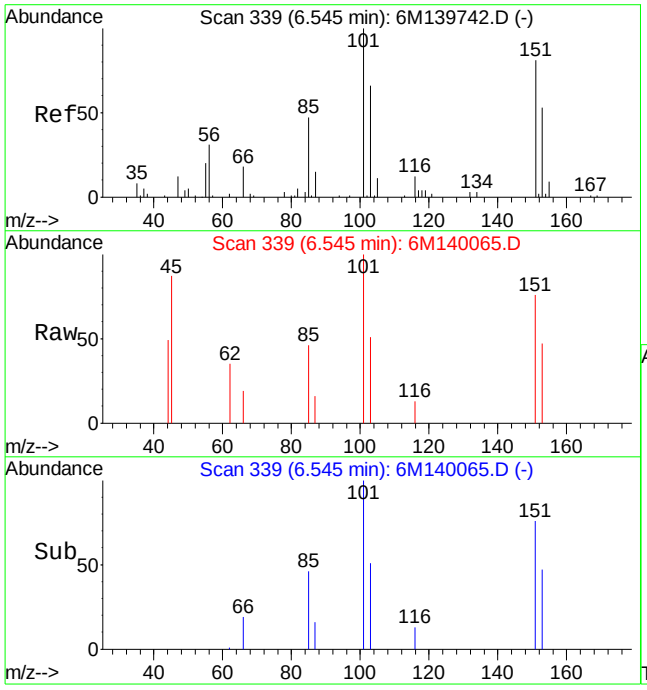

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 2.13 ug/L
RT: 6.55 min Scan# 339
Delta R.T. 0.00 min
Lab File: 6M140065.D
Acq: 14 Jun 2016 20:06

Tgt Ion:101 Resp: 12950

Ion	Ratio	Lower	Upper
101	100		
151	82.3	49.4	115.2
103	60.4	38.8	90.4

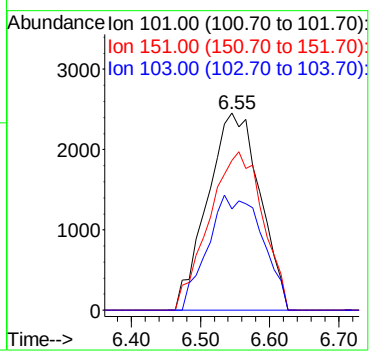

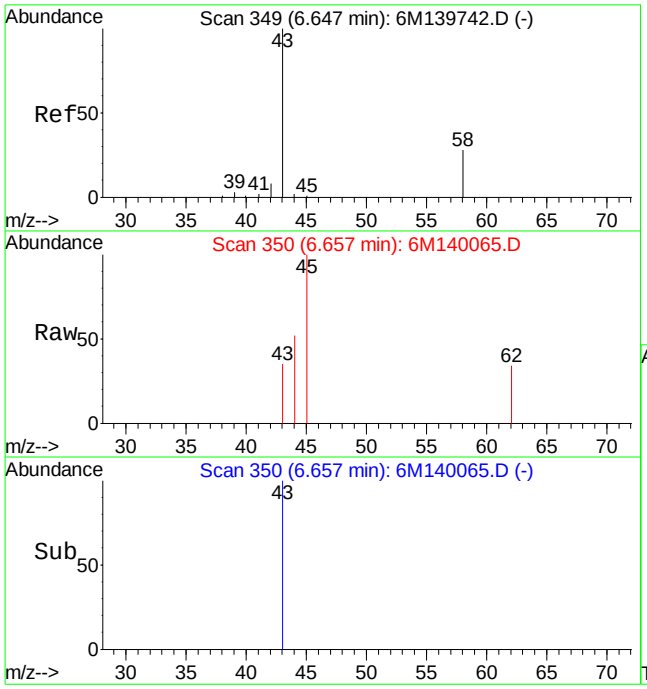

#13
Acetone
Concen: Below Cal
RT: 6.66 min Scan# 350
Delta R.T. 0.00 min
Lab File: 6M140065.D
Acq: 14 Jun 2016 20:06

Tgt Ion: 43 Resp: 2209

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

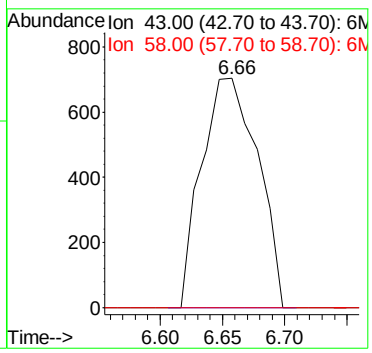

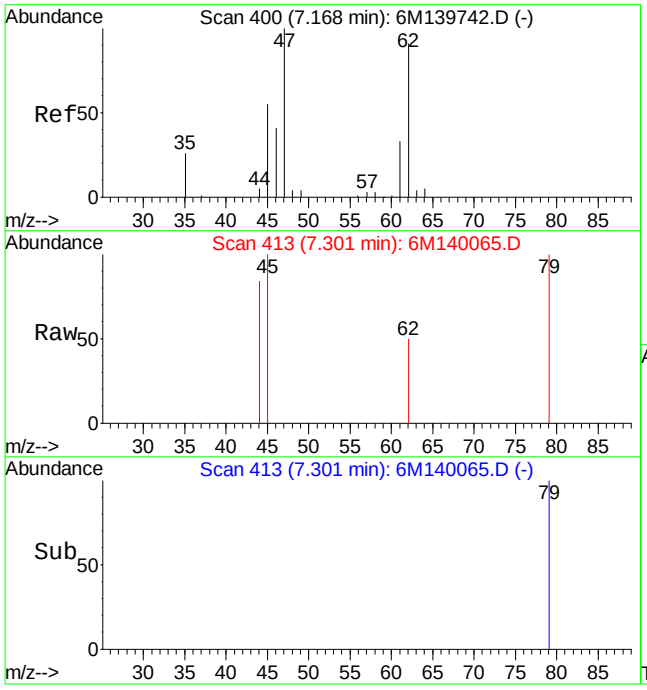

#16
Dimethyl Sulfide
Concen: 0.36 ug/L
RT: 7.30 min Scan# 413
Delta R.T. 0.14 min
Lab File: 6M140065.D
Acq: 14 Jun 2016 20:06

Tgt Ion: 62 Resp: 1791

Ion	Ratio	Lower	Upper
62	100		
47	0.0	64.7	151.1#

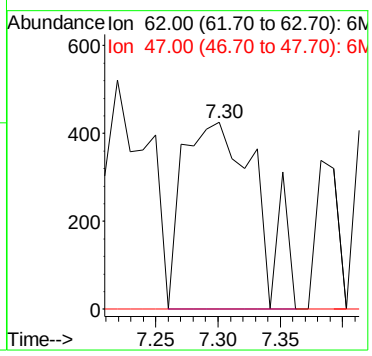

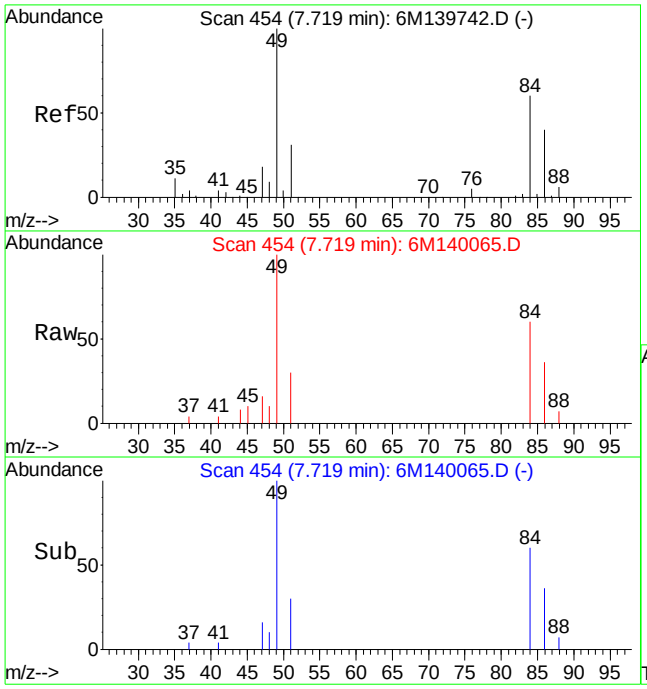

#19
Methylene Chloride
Concen: 2.04 ug/L
RT: 7.72 min Scan# 454
Delta R.T. 0.00 min
Lab File: 6M140065.D
Acq: 14 Jun 2016 20:06

Tgt Ion: 84 Resp: 13509

Ion	Ratio	Lower	Upper
84	100		
49	171.2	99.3	231.7

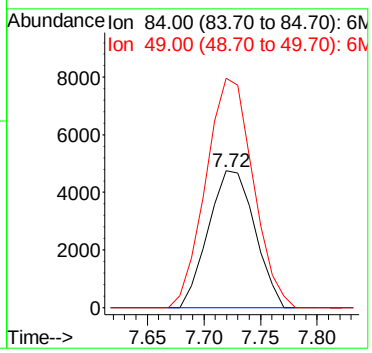

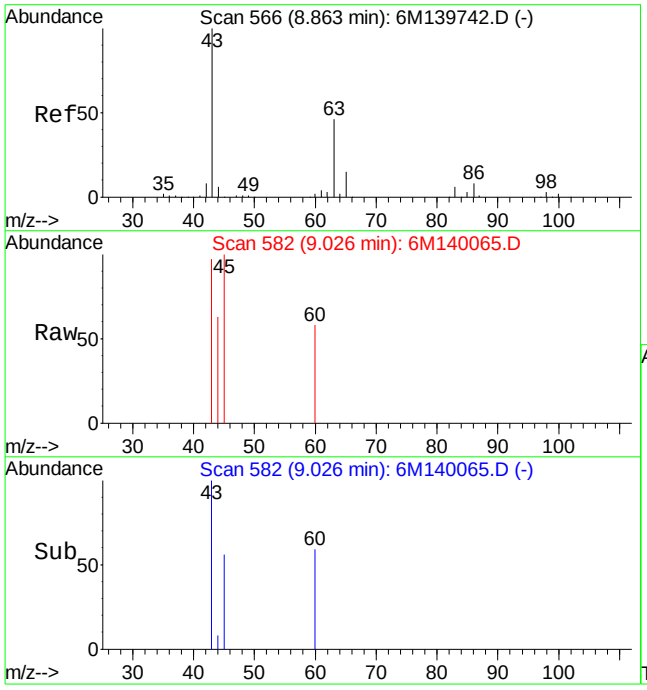

#26
Vinyl Acetate
Concen: 0.15 ug/L
RT: 9.03 min Scan# 582
Delta R.T. 0.16 min
Lab File: 6M140065.D
Acq: 14 Jun 2016 20:06

Tgt Ion: 43 Resp: 1612

Ion	Ratio	Lower	Upper
43	100		
86	0.0	4.5	10.5#

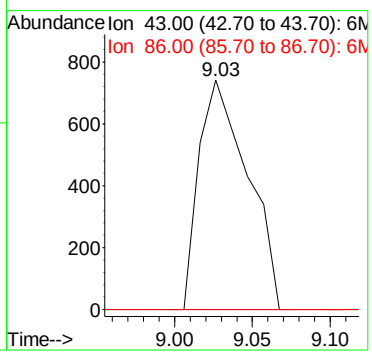

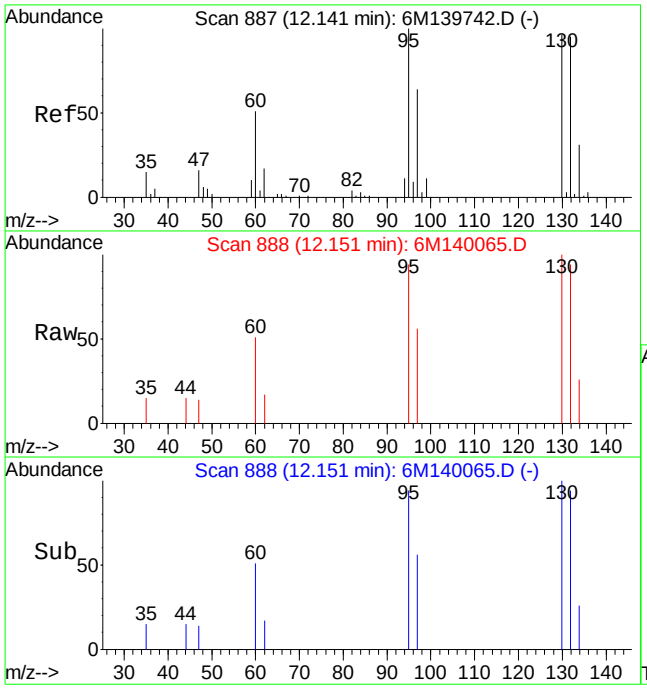

#47
Trichloroethene
Concen: 1.02 ug/L
RT: 12.15 min Scan# 888
Delta R.T. 0.00 min
Lab File: 6M140065.D
Acq: 14 Jun 2016 20:06

Tgt Ion:130 Resp: 6554

Ion	Ratio	Lower	Upper
130	100		
60	45.7	32.0	74.6

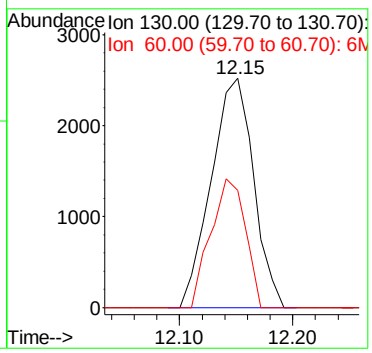

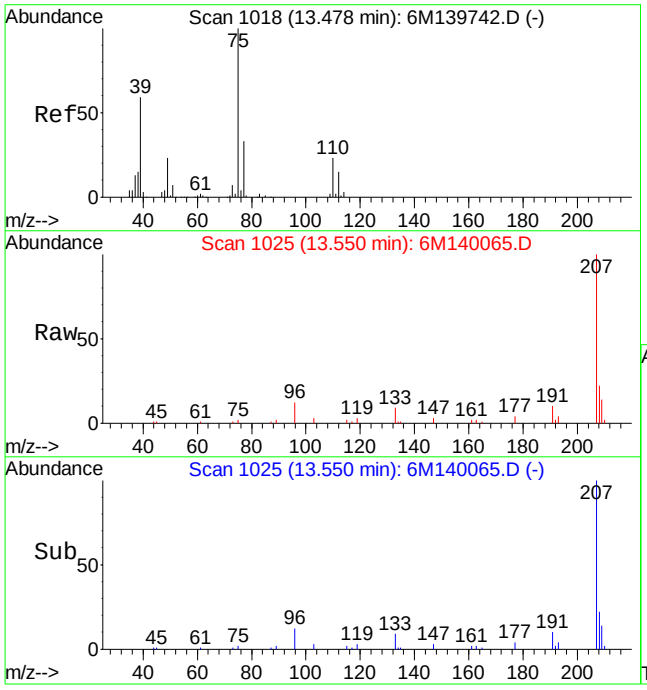

#55
cis-1,3-Dichloropropene
Concen: 0.20 ug/L
RT: 13.55 min Scan# 1025
Delta R.T. 0.07 min
Lab File: 6M140065.D
Acq: 14 Jun 2016 20:06

Tgt Ion: 75 Resp: 1937

Ion	Ratio	Lower	Upper
75	100		
77	0.0	19.5	45.5#
49	0.0	14.1	32.9#

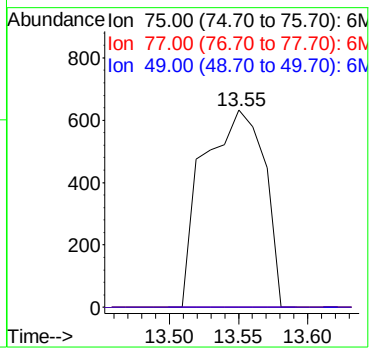

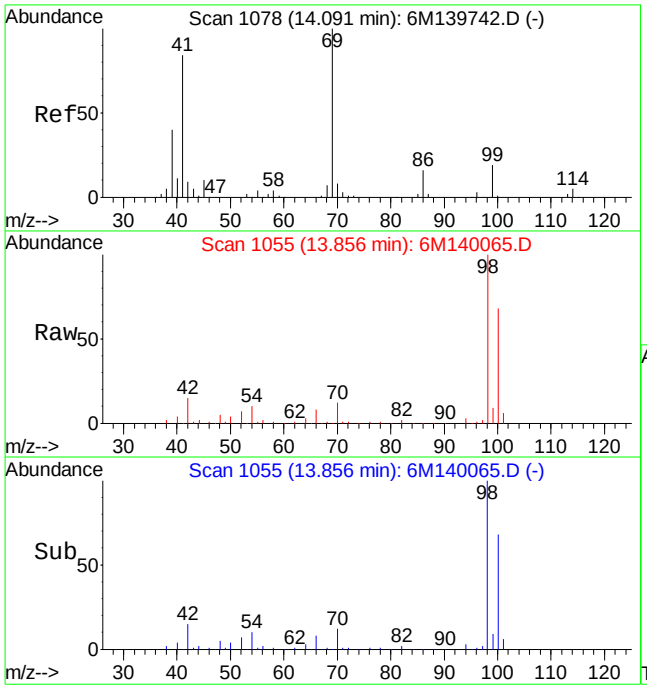

#60
Ethyl Methacrylate
Concen: 0.17 ug/L
RT: 13.86 min Scan# 1055
Delta R.T. -0.23 min
Lab File: 6M140065.D
Acq: 14 Jun 2016 20:06

Tgt Ion: 69 Resp: 1168

Ion	Ratio	Lower	Upper
69	100		
41	83.6	51.4	120.0

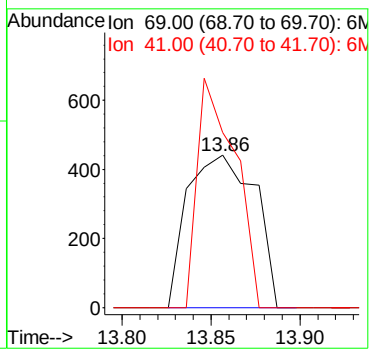

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140059.D Vial: 7
Acq On : 14 Jun 2016 16:53 Operator: TMB
Sample : L16060497-02 A MS 826-LOW Inst : HPMS6
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 07:50:32 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.56	96	634384	25.00 ug/L	-0.01
57) Chlorobenzene-d5	16.06	117	472703	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	19.65	152	260112	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.38	111	166393	25.3434 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.36%		
43) 1,2-Dichloroethane-d4	11.11	65	184900	25.5504 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.20%		
58) Toluene-d8	13.85	98	570867	25.1637 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.64%		
80) p-Bromofluorobenzene	17.84	95	237964	25.9073 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.64%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.44	85	194454	19.3648 ug/L	99
3) Chloromethane	3.93	50	208274	17.0123 ug/L	99
4) Vinyl Chloride	4.16	62	154505	18.7227 ug/L	100
5) 1,3-Butadiene	4.20	54	974	Below Cal #	1
6) Bromomethane	5.06	94	68439	16.8359 ug/L	98
7) Chloroethane	5.23	64	94904	18.1944 ug/L	96
8) Trichlorofluoromethane	5.73	101	230992	20.9016 ug/L	99
9) Diethyl ether	6.29	59	3304	0.5560 ug/L	82
10) Isoprene	6.32	67	203704	21.6806 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.53	101	143560	22.7395 ug/L	98
13) Acetone	6.66	43	37569	18.8612 ug/L	82
14) 1,1-Dichloroethene	6.87	61	221622	19.8223 ug/L	98
15) Tert-Butyl Alcohol	7.00	59	5428	9.8922 ug/L #	57
16) Dimethyl Sulfide	7.16	62	193716	37.7534 ug/L	96
17) Iodomethane	7.43	142	108243	24.2952 ug/L	96
18) Methyl acetate	7.45	43	125628	22.9596 ug/L	98
19) Methylene Chloride	7.72	84	150542	21.8348 ug/L	95
20) Carbon Disulfide	7.77	76	411517	18.8125 ug/L	100
21) Acrylonitrile	7.92	53	51032	21.1618 ug/L	99
22) Methyl Tert Butyl Ether	7.95	73	372569	22.1470 ug/L	99
23) trans-1,2-Dichloroethene	8.21	96	130928	20.0901 ug/L	94
24) n-Hexane	8.28	57	213329	21.0219 ug/L	98
25) Diisopropyl ether	8.65	45	4953	0.1834 ug/L #	38
26) Vinyl Acetate	8.85	43	193278	16.8521 ug/L	98
27) 1,1-Dichloroethane	8.88	63	257616	19.7286 ug/L	99
29) 2-Butanone	9.51	43	59251	20.6824 ug/L	98
31) 2,2-Dichloropropane	9.75	77	210664	22.1293 ug/L	98
32) cis-1,2-Dichloroethene	9.82	96	149704	21.0856 ug/L	81
33) Chloroform	10.06	83	240441	20.6748 ug/L	99
34) 1-Bromopropane	10.21	122	32626	27.8857 ug/L	100
35) Bromochloromethane	10.32	130	81789	20.2859 ug/L	100
36) Tetrahydrofuran	10.21	42	29871	15.1461 ug/L #	41
38) 1,1,1-Trichloroethane	10.65	97	214391	20.6654 ug/L	99
39) Cyclohexane	10.69	56	271398	20.8713 ug/L	98
40) 1,1-Dichloropropene	10.87	75	180385	20.2880 ug/L	97
41) Tert-Amyl-Methyl ether	10.87	73	26027	1.5207 ug/L #	54
42) Carbon Tetrachloride	11.04	117	193179	20.8728 ug/L	100
45) 1,2-Dichloroethane	11.24	62	190517	21.3160 ug/L	100
46) Benzene	11.28	78	536530	20.5877 ug/L	100
47) Trichloroethene	12.14	130	142126	21.3531 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140059.D Vial: 7
Acq On : 14 Jun 2016 16:53 Operator: TMB
Sample : L16060497-02 A MS 826-LOW Inst : HPMS6
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 07:50:32 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
48)	Methylcyclohexane	12.23	83	211890	20.9975 ug/L		98
49)	1,2-Dichloropropane	12.40	63	158020	21.9523 ug/L		99
50)	1,4-Dioxane	12.72	88	1094	21.3325 ug/L		75
51)	Bromodichloromethane	12.74	83	189147	21.3669 ug/L		99
52)	Dibromomethane	12.84	93	74682	20.1055 ug/L		100
53)	2-Chloroethyl Vinyl Ether	13.09	63	1286	0.3914 ug/L	#	41
54)	4-Methyl-2-Pentanone	13.12	58	43645	19.9610 ug/L		99
55)	cis-1,3-Dichloropropene	13.48	75	240390	23.9927 ug/L		99
56)	Dimethyl Disulfide	13.77	79	121621	21.0704 ug/L		100
59)	Toluene	13.96	91	552098	20.5679 ug/L		100
60)	Ethyl Methacrylate	14.09	69	164174	22.3193 ug/L		100
62)	trans-1,3-Dichloropropene	14.17	75	196354	21.4779 ug/L		99
63)	1,1,2-Trichloroethane	14.43	97	108514	21.2327 ug/L		99
64)	2-Hexanone	14.36	43	88680	20.4487 ug/L		97
65)	1,3-Dichloropropane	14.79	76	199881	22.2447 ug/L		99
66)	Tetrachloroethene	14.92	166	136888	19.4413 ug/L		98
67)	Dibromochloromethane	15.23	129	136812	21.0091 ug/L		99
68)	1,2-Dibromoethane	15.53	107	103705	20.9942 ug/L		100
69)	1-Chlorohexane	15.64	91	186828	21.4350 ug/L		95
70)	Chlorobenzene	16.12	112	371097	20.6615 ug/L		97
71)	1,1,1,2-Tetrachloroethane	16.16	131	136451	20.9458 ug/L		100
72)	Ethylbenzene	16.15	106	194283	20.3937 ug/L		97
73)	m-,p-Xylene	16.27	106	480325	42.4402 ug/L		99
74)	o-Xylene	16.93	106	242451	21.6777 ug/L		98
75)	Styrene	16.97	104	406178	21.8675 ug/L		98
76)	Bromoform	17.55	173	79756	19.3040 ug/L		99
77)	Isopropylbenzene	17.43	105	611958	21.7979 ug/L		99
79)	1,1,2,2-Tetrachloroethane	17.70	83	134367	21.4259 ug/L		99
81)	1,2,3-Trichloropropane	17.92	110	38829	21.3860 ug/L		82
82)	trans-1,4-Dichloro-2-Buten	17.98	53	41148	18.7814 ug/L		95
83)	n-Propylbenzene	18.03	91	760350	22.5546 ug/L		99
84)	Bromobenzene	18.18	156	158995	20.0989 ug/L		96
85)	1,3,5-Trimethylbenzene	18.26	105	523657	21.9539 ug/L		99
86)	2-Chlorotoluene	18.35	91	494075	21.3965 ug/L		98
87)	4-Chlorotoluene	18.41	91	470442	21.9423 ug/L		99
88)	a-Methylstyrene	18.74	118	297911	22.3408 ug/L		99
89)	tert-Butylbenzene	18.81	134	112008	21.2997 ug/L		75
90)	1,2,4-Trimethylbenzene	18.87	105	535919	21.4629 ug/L		99
91)	sec-Butylbenzene	19.13	105	645454	21.9907 ug/L		99
92)	p-Isopropyltoluene	19.32	119	551999	22.0690 ug/L		98
93)	1,3-Dichlorobenzene	19.53	146	319994	20.7444 ug/L		99
94)	1,4-Dichlorobenzene	19.70	146	325548	22.1672 ug/L		97
95)	n-Butylbenzene	19.94	91	518619	21.9061 ug/L		98
96)	1,2-Dichlorobenzene	20.28	146	306864	21.3473 ug/L		98
97)	1,2-Dibromo-3-Chloropropan	21.46	75	25579	22.7134 ug/L		94
98)	1,2,4-Trichlorobenzene	22.82	180	217369	21.8709 ug/L		99
99)	Hexachlorobutadiene	23.02	225	92045	22.3157 ug/L		99
100)	Naphthalene	23.28	128	400909	20.4062 ug/L		100
101)	1,2,3-Trichlorobenzene	23.69	180	197917	21.0429 ug/L		99

(#) = qualifier out of range (m) = manual integration
6M140059.D 8260WT.M Wed Jun 15 07:50:35 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140059.D Vial: 7
Acq On : 14 Jun 2016 16:53 Operator: TMB
Sample : L16060497-02 A MS 826-LOW Inst : HPMS6
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 7:50 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration

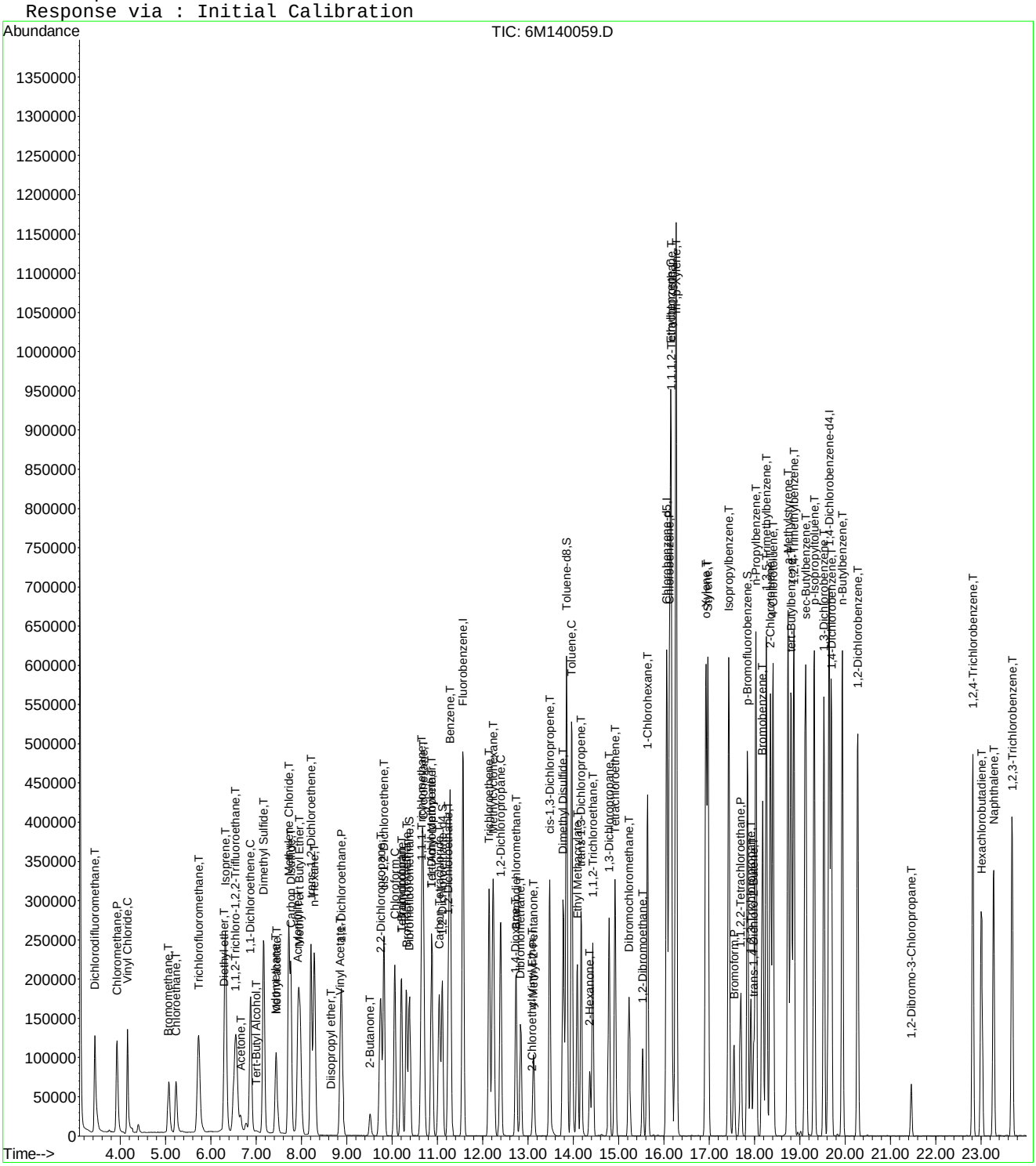

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140060.D Vial: 8
Acq On : 14 Jun 2016 17:25 Operator: TMB
Sample : L16060497-03 A MSD 826-LOW Inst : HPMS6
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 07:50:37 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.56	96	632876	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	473094	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.64	152	262401	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.39	111	165546	25.2745 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.08%		
43) 1,2-Dichloroethane-d4	11.10	65	185015	25.6273 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.52%		
58) Toluene-d8	13.85	98	568952	25.0586 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.24%		
80) p-Bromofluorobenzene	17.84	95	238468	25.7357 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.96%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	191932	19.1592 ug/L	98
3) Chloromethane	3.92	50	210233	17.2132 ug/L	98
4) Vinyl Chloride	4.16	62	156527	19.0129 ug/L	100
5) 1,3-Butadiene	4.20	54	1131	Below Cal #	43
6) Bromomethane	5.07	94	66174	16.3175 ug/L	99
7) Chloroethane	5.23	64	94728	18.2039 ug/L	96
8) Trichlorofluoromethane	5.73	101	230829	20.9366 ug/L	100
9) Diethyl ether	6.30	59	2842	0.4794 ug/L #	37
10) Isoprene	6.32	67	201518	21.4991 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.54	101	142304	22.5943 ug/L	99
13) Acetone	6.66	43	41830	21.3499 ug/L	81
14) 1,1-Dichloroethene	6.88	61	218332	19.5745 ug/L	99
15) Tert-Butyl Alcohol	7.03	59	1230	2.2469 ug/L #	57
16) Dimethyl Sulfide	7.16	62	197540	38.5904 ug/L	98
17) Iodomethane	7.44	142	132188	29.4176 ug/L	96
18) Methyl acetate	7.45	43	126169	23.1134 ug/L	98
19) Methylene Chloride	7.72	84	152836	22.2203 ug/L	97
20) Carbon Disulfide	7.76	76	409917	18.7840 ug/L	99
21) Acrylonitrile	7.93	53	51268	21.3103 ug/L	98
22) Methyl Tert Butyl Ether	7.96	73	377911	22.5181 ug/L	99
23) trans-1,2-Dichloroethene	8.21	96	132518	20.3825 ug/L	96
24) n-Hexane	8.28	57	207295	20.4760 ug/L	97
26) Vinyl Acetate	8.86	43	192087	16.7882 ug/L	99
27) 1,1-Dichloroethane	8.89	63	258785	19.8654 ug/L	100
29) 2-Butanone	9.51	43	60573	21.1942 ug/L	97
31) 2,2-Dichloropropane	9.74	77	207382	21.8364 ug/L	97
32) cis-1,2-Dichloroethene	9.83	96	149919	21.1662 ug/L	98
33) Chloroform	10.06	83	240510	20.7300 ug/L	99
34) 1-Bromopropane	10.21	122	32228	27.6140 ug/L	99
35) Bromochloromethane	10.32	130	82309	20.4636 ug/L	98
36) Tetrahydrofuran	10.20	42	29506	14.9967 ug/L #	41
38) 1,1,1-Trichloroethane	10.65	97	213353	20.6144 ug/L	99
39) Cyclohexane	10.68	56	268610	20.7061 ug/L	98
40) 1,1-Dichloropropene	10.88	75	178143	20.0835 ug/L	98
41) Tert-Amyl-Methyl ether	10.88	73	26692	1.5633 ug/L #	53
42) Carbon Tetrachloride	11.04	117	189721	20.5480 ug/L	99
45) 1,2-Dichloroethane	11.25	62	191118	21.4342 ug/L	100
46) Benzene	11.29	78	528631	20.3329 ug/L	99
47) Trichloroethene	12.14	130	140676	21.1856 ug/L	99
48) Methylcyclohexane	12.24	83	209344	20.7947 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M140060.D 8260WT.M Wed Jun 15 07:50:39 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140060.D Vial: 8
Acq On : 14 Jun 2016 17:25 Operator: TMB
Sample : L16060497-03 A MSD 826-LOW Inst : HPMS6
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 07:50:37 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
49)	1,2-Dichloropropane	12.39	63	156646	21.8133 ug/L	100
51)	Bromodichloromethane	12.74	83	189532	21.4614 ug/L	99
52)	Dibromomethane	12.84	93	75471	20.3663 ug/L	100
54)	4-Methyl-2-Pentanone	13.12	58	45055	20.6550 ug/L	98
55)	cis-1,3-Dichloropropene	13.48	75	240412	24.0520 ug/L	99
56)	Dimethyl Disulfide	13.78	79	123347	21.4203 ug/L	100
59)	Toluene	13.96	91	549550	20.4561 ug/L	100
60)	Ethyl Methacrylate	14.08	69	166118	22.5649 ug/L	100
62)	trans-1,3-Dichloropropene	14.18	75	198093	21.6502 ug/L	98
63)	1,1,2-Trichloroethane	14.43	97	108138	21.1416 ug/L	99
64)	2-Hexanone	14.36	43	88688	20.4336 ug/L	100
65)	1,3-Dichloropropane	14.79	76	199633	22.1987 ug/L	98
66)	Tetrachloroethene	14.92	166	135140	19.1771 ug/L	98
67)	Dibromochloromethane	15.23	129	135454	20.7834 ug/L	100
68)	1,2-Dibromoethane	15.53	107	103802	20.9964 ug/L	99
69)	1-Chlorohexane	15.65	91	186824	21.4168 ug/L	96
70)	Chlorobenzene	16.13	112	369259	20.5422 ug/L	97
71)	1,1,1,2-Tetrachloroethane	16.17	131	137534	21.0946 ug/L	98
72)	Ethylbenzene	16.16	106	194993	20.4513 ug/L	98
73)	m-,p-Xylene	16.27	106	478390	42.2343 ug/L	99
74)	o-Xylene	16.92	106	241480	21.5730 ug/L	98
75)	Styrene	16.97	104	401630	21.6048 ug/L	97
76)	Bromoform	17.55	173	80132	19.3790 ug/L	98
77)	Isopropylbenzene	17.43	105	604781	21.5244 ug/L	100
79)	1,1,2,2-Tetrachloroethane	17.69	83	133907	21.1663 ug/L	99
81)	1,2,3-Trichloropropane	17.92	110	39082	21.3376 ug/L	92
82)	trans-1,4-Dichloro-2-Buten	17.99	53	40611	18.3900 ug/L	96
83)	n-Propylbenzene	18.04	91	757228	22.2661 ug/L	99
84)	Bromobenzene	18.18	156	159709	20.0130 ug/L	97
85)	1,3,5-Trimethylbenzene	18.26	105	519715	21.5986 ug/L	99
86)	2-Chlorotoluene	18.35	91	508130	21.8132 ug/L	99
87)	4-Chlorotoluene	18.40	91	451139	20.8584 ug/L	98
88)	a-Methylstyrene	18.74	118	297963	22.1498 ug/L	99
89)	tert-Butylbenzene	18.80	134	110697	20.8668 ug/L	93
90)	1,2,4-Trimethylbenzene	18.86	105	533922	21.1964 ug/L	100
91)	sec-Butylbenzene	19.13	105	636346	21.4913 ug/L	99
92)	p-Isopropyltoluene	19.31	119	539006	21.3616 ug/L	99
93)	1,3-Dichlorobenzene	19.54	146	319451	20.5285 ug/L	98
94)	1,4-Dichlorobenzene	19.69	146	325287	21.9542 ug/L	98
95)	n-Butylbenzene	19.94	91	510605	21.3795 ug/L	99
96)	1,2-Dichlorobenzene	20.27	146	306695	21.1494 ug/L	98
97)	1,2-Dibromo-3-Chloropropan	21.46	75	25654	22.5813 ug/L	91
98)	1,2,4-Trichlorobenzene	22.83	180	213268	21.2711 ug/L	99
99)	Hexachlorobutadiene	23.01	225	91530	21.9973 ug/L	99
100)	Naphthalene	23.27	128	401189	20.2423 ug/L	100
101)	1,2,3-Trichlorobenzene	23.68	180	194178	20.4653 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140060.D 8260WT.M Wed Jun 15 07:50:40 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140060.D Vial: 8
Acq On : 14 Jun 2016 17:25 Operator: TMB
Sample : L16060497-03 A MSD 826-LOW Inst : HPMS6
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 7:50 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration

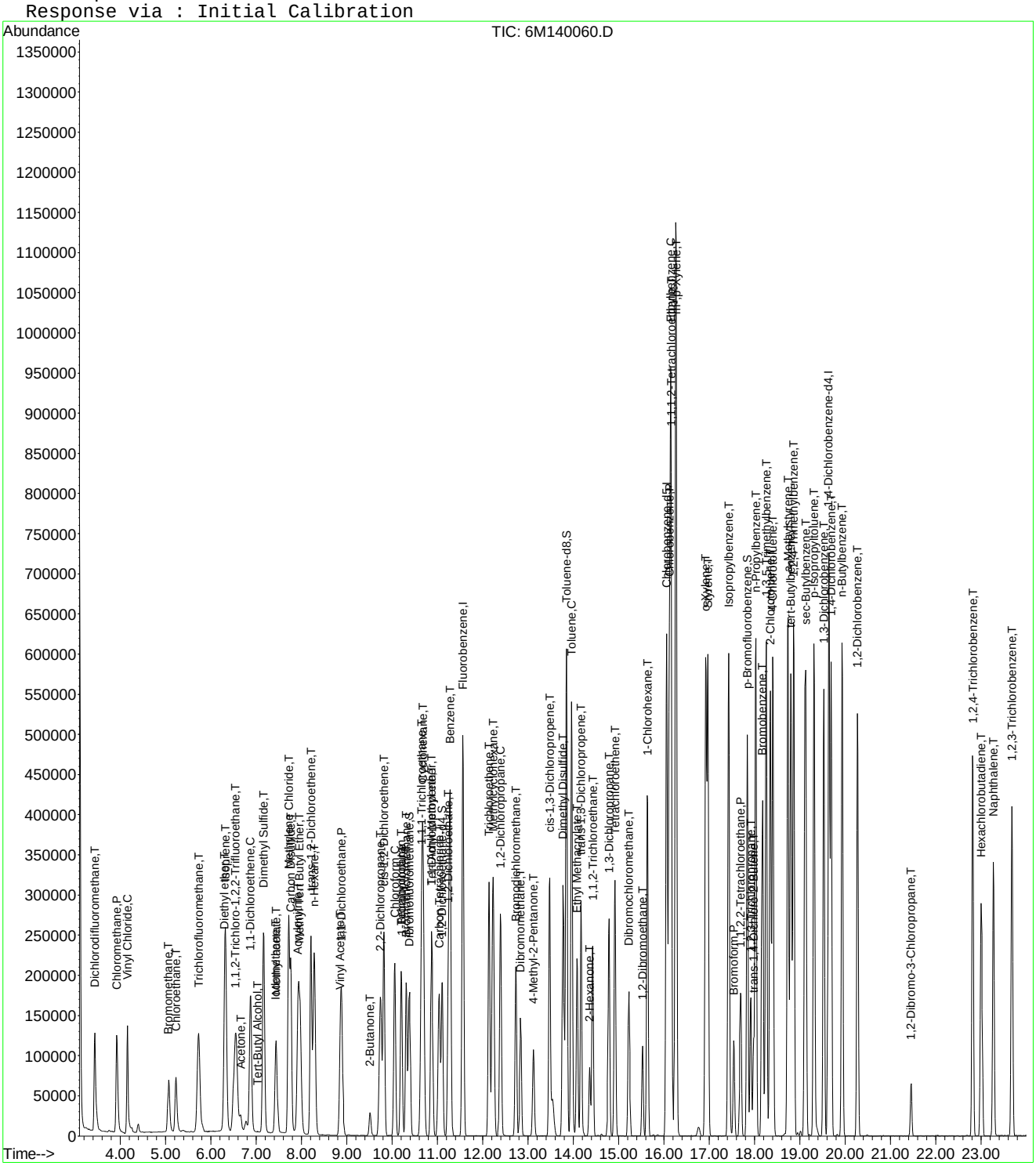

6M140060.D 8260WT.M Wed Jun 15 07:50:41 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140066.D Vial: 14
Acq On : 14 Jun 2016 20:38 Operator: TMB
Sample : L16060497-04 A 2.5X 826-LOW Inst : HPMS6
Misc : 1,2.5 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 08:15:53 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	598584	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.06	117	441336	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	235659	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	156977	25.3392 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.36%		
43) 1,2-Dichloroethane-d4	11.11	65	176151	25.7973 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.20%		
58) Toluene-d8	13.85	98	532037	25.1189 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.48%		
80) p-Bromofluorobenzene	17.84	95	218498	26.2563 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.04%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.36	85	2173	0.2293 ug/L #	78
4) Vinyl Chloride	4.17	62	3777	0.4851 ug/L #	42
9) Diethyl ether	6.55	59	26654	4.7533 ug/L #	15
10) Isoprene	6.55	67	15775	1.7794 ug/L #	10
12) 1,1,2-Trichloro-1,2,2-Trif	6.55	101	2686520	450.9879 ug/L	98
13) Acetone	6.55	43	36420	19.4486 ug/L	89
14) 1,1-Dichloroethene	6.88	61	5769	0.5468 ug/L	83
19) Methylene Chloride	7.72	84	1130	0.1737 ug/L	59
32) cis-1,2-Dichloroethene	9.82	96	15263	2.2783 ug/L	98
33) Chloroform	10.06	83	20952	1.9093 ug/L	98
36) Tetrahydrofuran	10.35	42	1983	1.0656 ug/L #	41
45) 1,2-Dichloroethane	11.24	62	18564	2.2013 ug/L	91
46) Benzene	11.28	78	24715	1.0051 ug/L	99
47) Trichloroethene	12.14	130	1226170	195.2382 ug/L	95
48) Methylcyclohexane	12.14	83	16776	1.7619 ug/L #	1
49) 1,2-Dichloropropane	12.14	63	3792	0.5583 ug/L #	35
55) cis-1,3-Dichloropropene	13.53	75	1248	0.1320 ug/L #	46
66) Tetrachloroethene	14.92	166	1602	0.2437 ug/L #	71

(#) = qualifier out of range (m) = manual integration
6M140066.D 8260WT.M Wed Jun 15 08:15:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140066.D Vial: 14
Acq On : 14 Jun 2016 20:38 Operator: TMB
Sample : L16060497-04 A 2.5X 826-LOW Inst : HPMS6
Misc : 1,2.5 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 8:16 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration

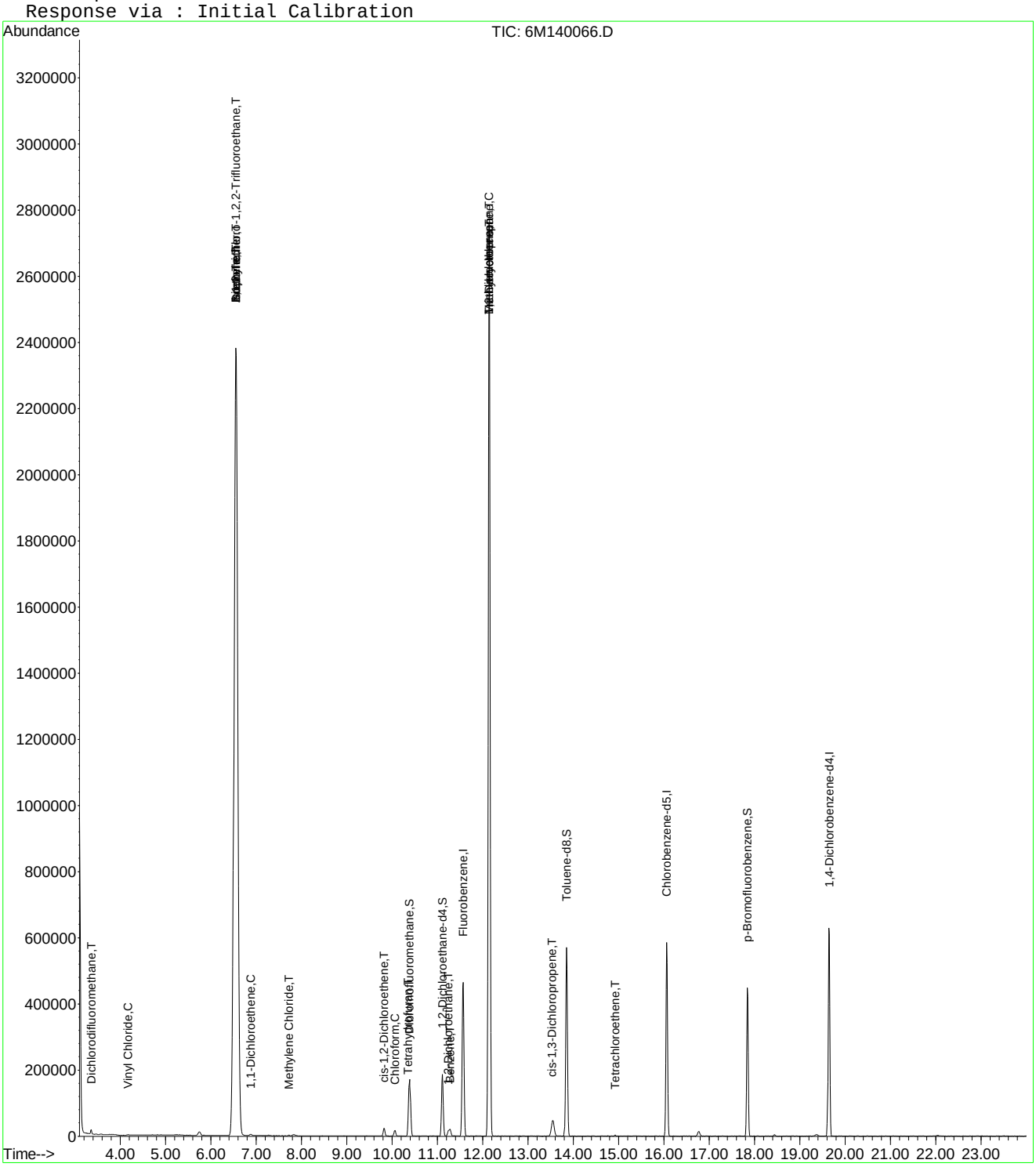

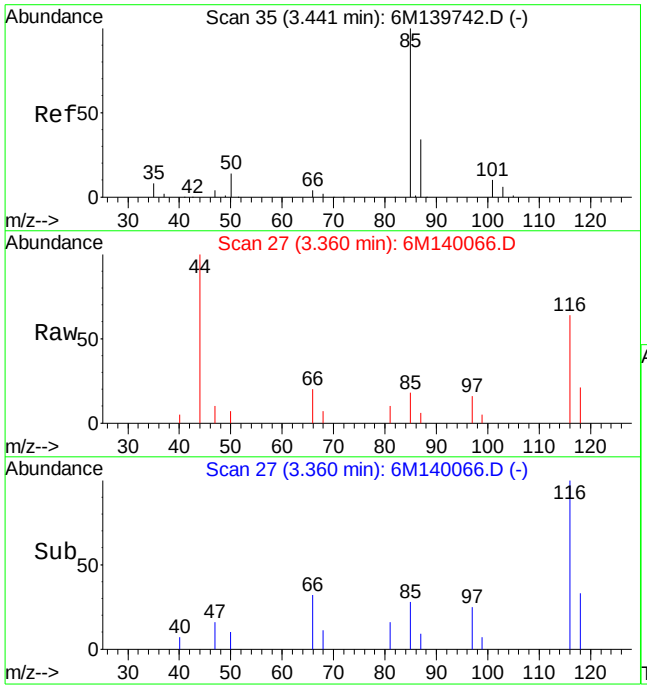

#2
Dichlorodifluoromethane
Concen: 0.23 ug/L
RT: 3.36 min Scan# 27
Delta R.T. -0.08 min
Lab File: 6M140066.D
Acq: 14 Jun 2016 20:38

Tgt Ion: 85 Resp: 2173

Ion	Ratio	Lower	Upper
85	100		
50	24.4	9.1	21.1#

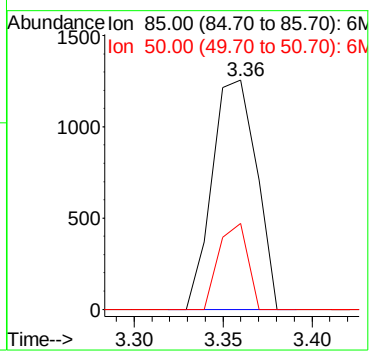

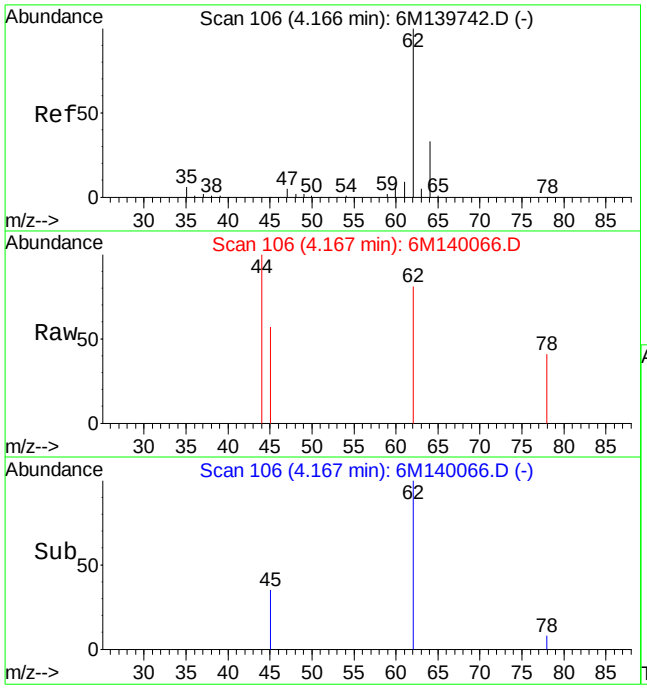

#4
Vinyl Chloride
Concen: 0.49 ug/L
RT: 4.17 min Scan# 106
Delta R.T. 0.01 min
Lab File: 6M140066.D
Acq: 14 Jun 2016 20:38

Tgt Ion: 62 Resp: 3777

Ion	Ratio	Lower	Upper
62	100		
64	0.0	19.3	45.1#

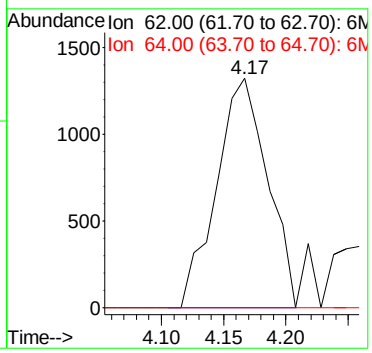

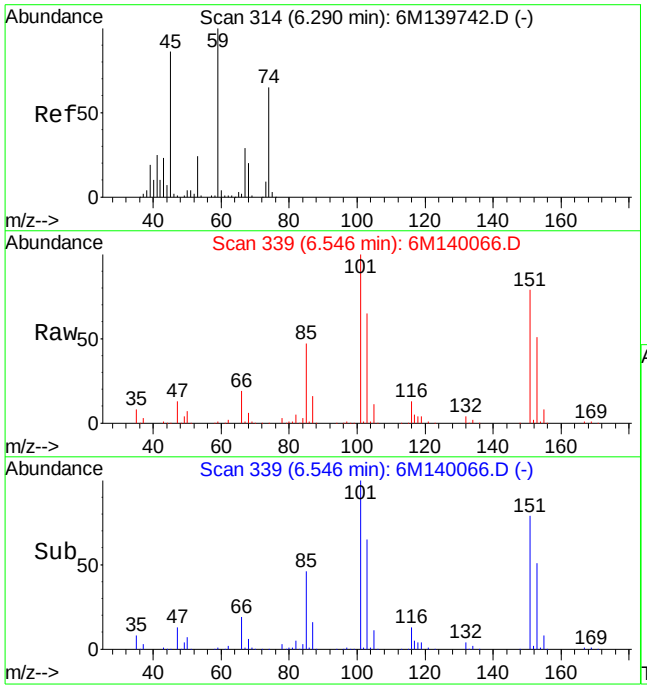

#9
Diethyl ether
Concen: 4.75 ug/L
RT: 6.55 min Scan# 339
Delta R.T. 0.26 min
Lab File: 6M140066.D
Acq: 14 Jun 2016 20:38

Tgt Ion: 59 Resp: 26654

Ion	Ratio	Lower	Upper
59	100		
45	2.4	51.5	120.3#
74	4.6	38.5	89.7#

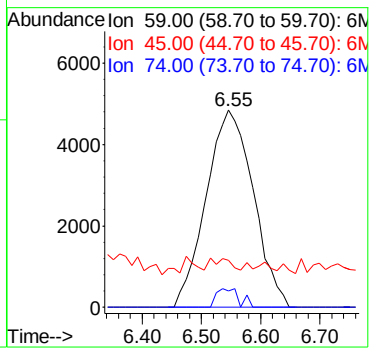

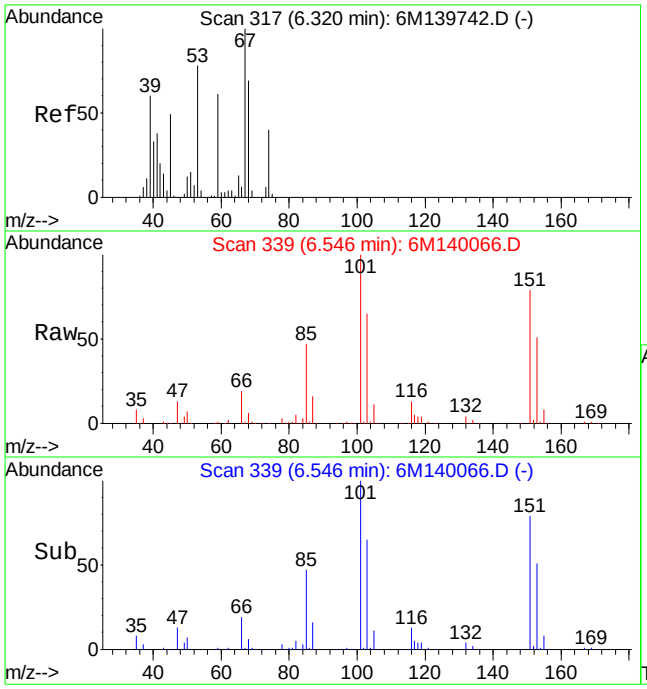

#10
Isoprene
Concen: 1.78 ug/L
RT: 6.55 min Scan# 339
Delta R.T. 0.23 min
Lab File: 6M140066.D
Acq: 14 Jun 2016 20:38

Tgt Ion: 67 Resp: 15775

Ion	Ratio	Lower	Upper
67	100		
53	0.0	47.4	110.6#

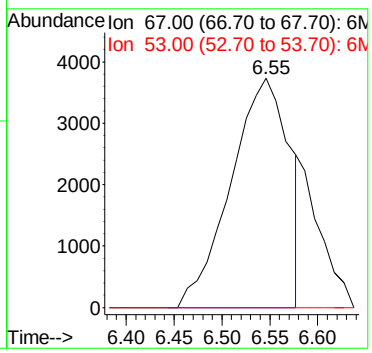

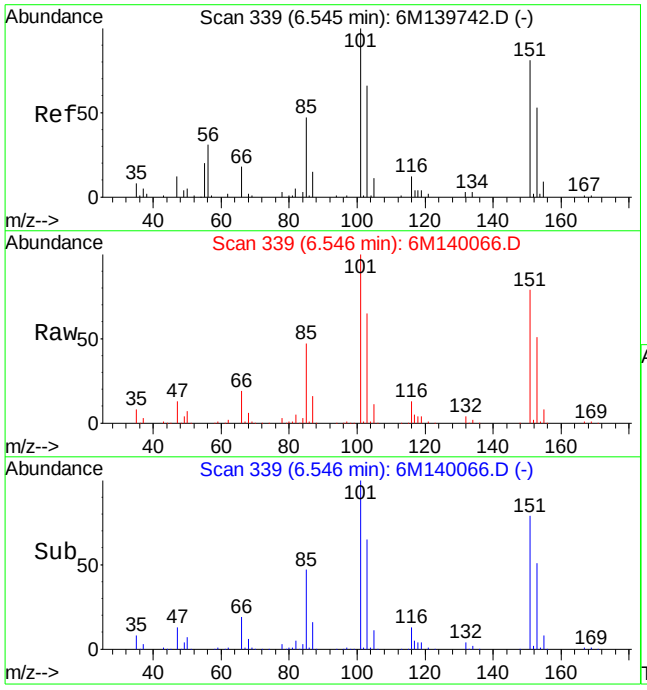

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 450.99 ug/L
RT: 6.55 min Scan# 339
Delta R.T. 0.00 min
Lab File: 6M140066.D
Acq: 14 Jun 2016 20:38

Tgt Ion:101 Resp: 2686520

Ion	Ratio	Lower	Upper
101	100		
151	79.9	49.4	115.2
103	65.0	38.8	90.4

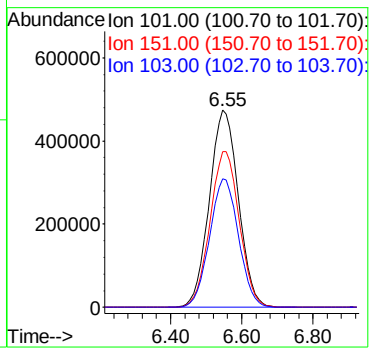

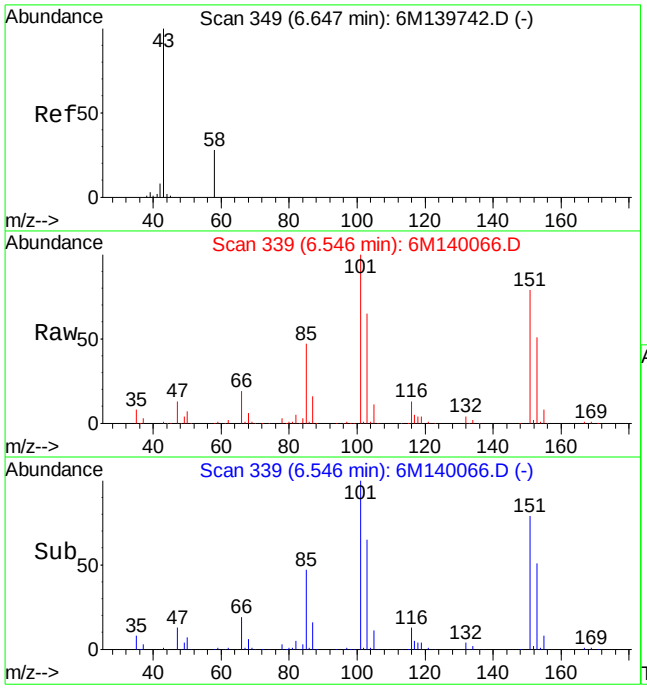

#13
Acetone
Concen: 19.45 ug/L
RT: 6.55 min Scan# 339
Delta R.T. -0.11 min
Lab File: 6M140066.D
Acq: 14 Jun 2016 20:38

Tgt Ion: 43 Resp: 36420

Ion	Ratio	Lower	Upper
43	100		
58	21.7	16.4	38.2

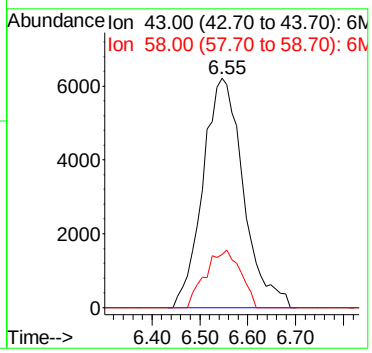

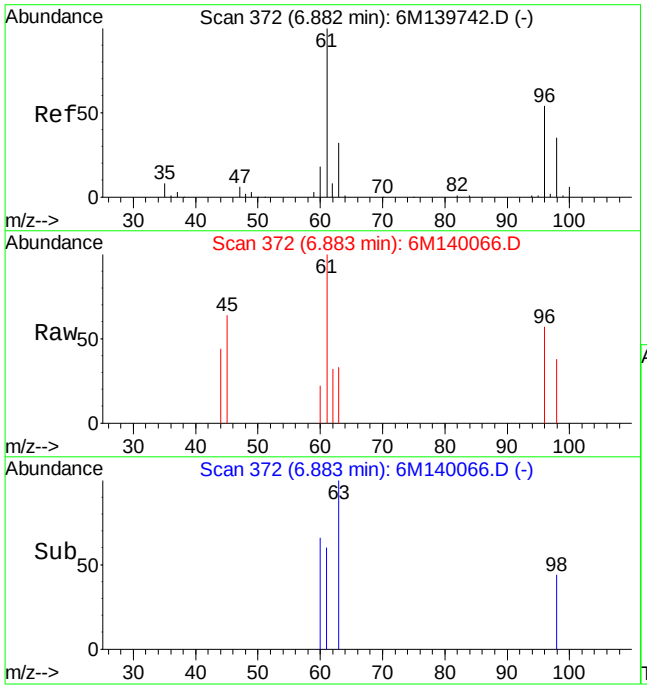

#14
1,1-Dichloroethene
Concen: 0.55 ug/L
RT: 6.88 min Scan# 372
Delta R.T. 0.01 min
Lab File: 6M140066.D
Acq: 14 Jun 2016 20:38

Tgt Ion: 61 Resp: 5769

Ion	Ratio	Lower	Upper
61	100		
96	41.0	32.0	74.6

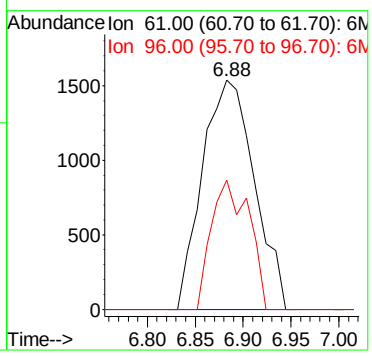

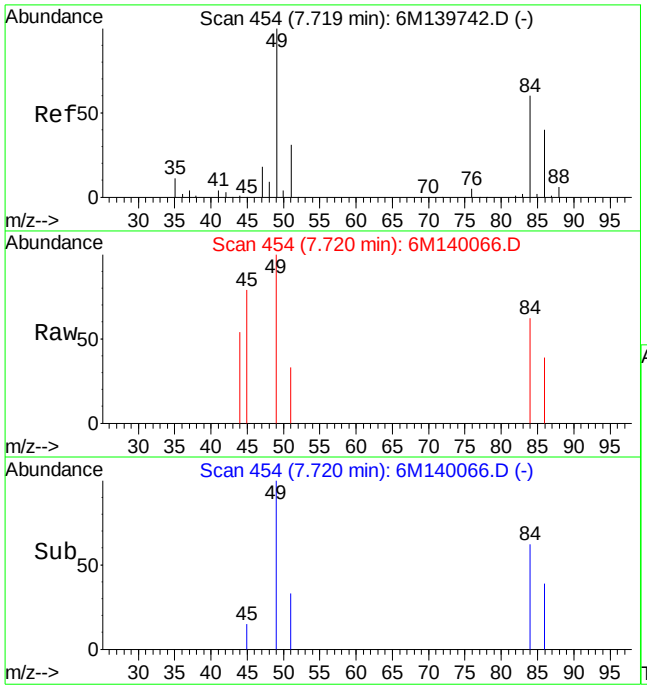

#19
Methylene Chloride
Concen: 0.17 ug/L
RT: 7.72 min Scan# 454
Delta R.T. 0.00 min
Lab File: 6M140066.D
Acq: 14 Jun 2016 20:38

Tgt Ion: 84 Resp: 1130

Ion	Ratio	Lower	Upper
84	100		
49	220.8	99.3	231.7

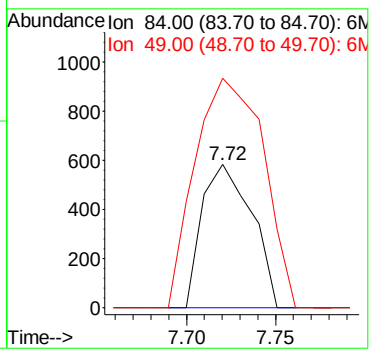

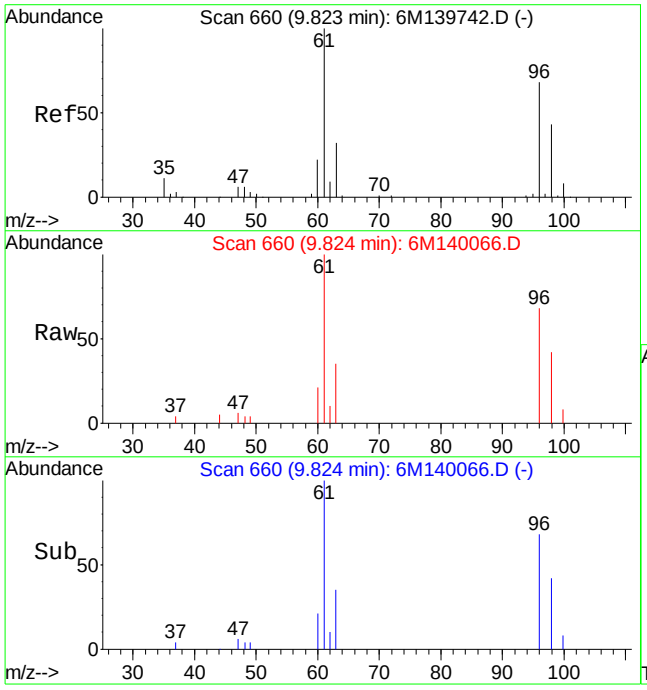

#32
cis-1,2-Dichloroethene
Concen: 2.28 ug/L
RT: 9.82 min Scan# 660
Delta R.T. 0.00 min
Lab File: 6M140066.D
Acq: 14 Jun 2016 20:38

Tgt Ion: 96 Resp: 15263

Ion	Ratio	Lower	Upper
96	100		
61	146.2	89.2	208.2

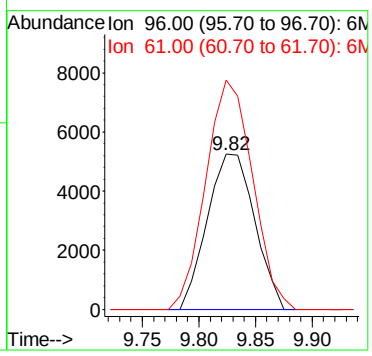

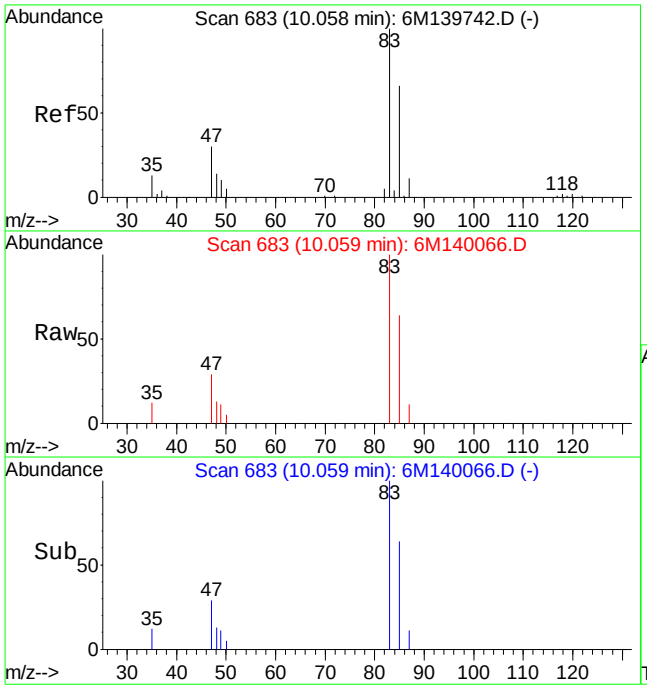

#33
Chloroform
Concen: 1.91 ug/L
RT: 10.06 min Scan# 683
Delta R.T. 0.00 min
Lab File: 6M140066.D
Acq: 14 Jun 2016 20:38

Tgt Ion: 83 Resp: 20952

Ion	Ratio	Lower	Upper
83	100		
85	63.5	39.0	91.0
47	29.3	18.5	43.1

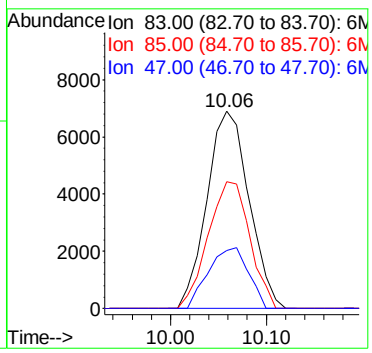

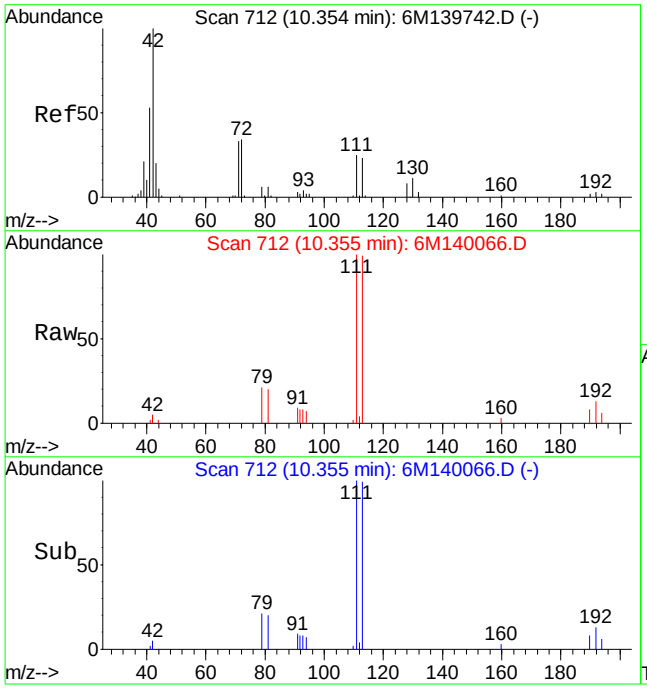

#36
Tetrahydrofuran
Concen: 1.07 ug/L
RT: 10.35 min Scan# 712
Delta R.T. 0.00 min
Lab File: 6M140066.D
Acq: 14 Jun 2016 20:38

Tgt Ion: 42 Resp: 1983

Ion	Ratio	Lower	Upper
42	100		
72	0.0	20.8	48.4#
71	0.0	19.9	46.5#

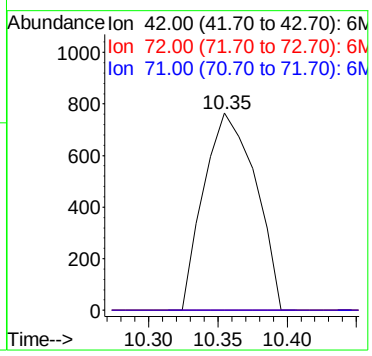

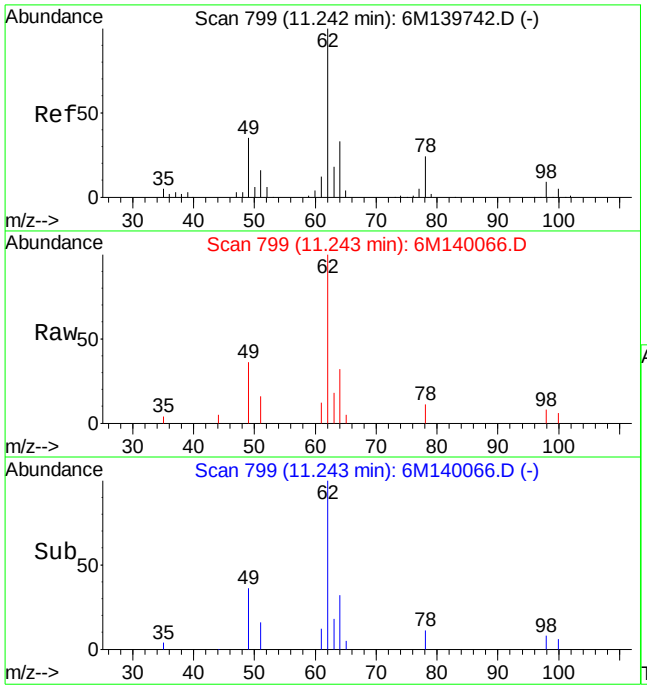

#45
1,2-Dichloroethane
Concen: 2.20 ug/L
RT: 11.24 min Scan# 799
Delta R.T. 0.00 min
Lab File: 6M140066.D
Acq: 14 Jun 2016 20:38

Tgt Ion: 62 Resp: 18564

Ion	Ratio	Lower	Upper
62	100		
49	35.6	25.1	58.5
98	7.2	5.2	12.0

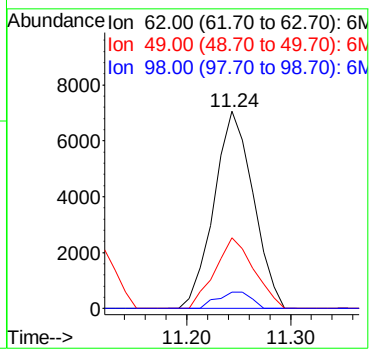

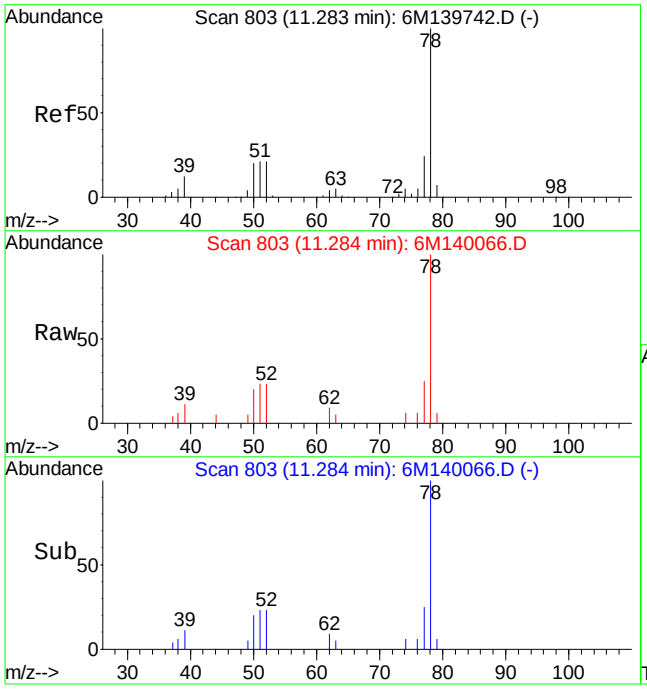

#46
Benzene
Concen: 1.01 ug/L
RT: 11.28 min Scan# 803
Delta R.T. 0.00 min
Lab File: 6M140066.D
Acq: 14 Jun 2016 20:38

Tgt Ion: 78 Resp: 24715

Ion	Ratio	Lower	Upper
78	100		
52	20.4	12.4	29.0

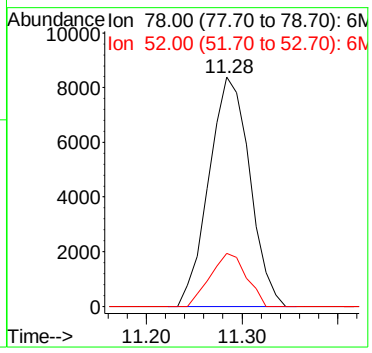

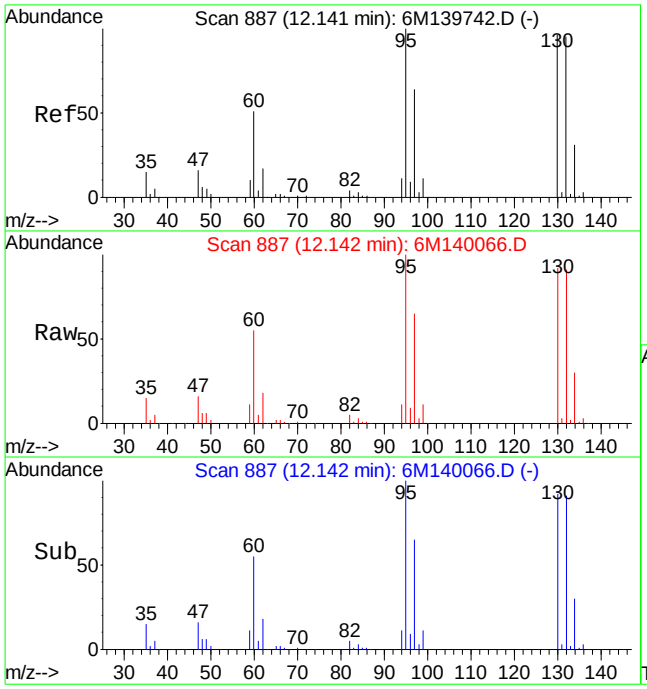

#47
Trichloroethene
Concen: 195.24 ug/L
RT: 12.14 min Scan# 887
Delta R.T. -0.01 min
Lab File: 6M140066.D
Acq: 14 Jun 2016 20:38

Tgt Ion:130 Resp: 1226170

Ion	Ratio	Lower	Upper
130	100		
60	56.6	32.0	74.6

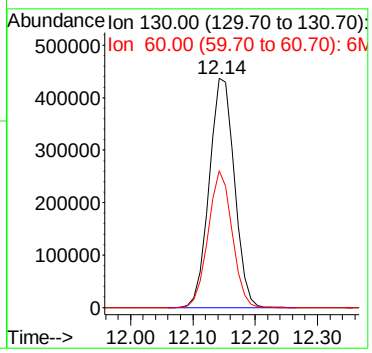

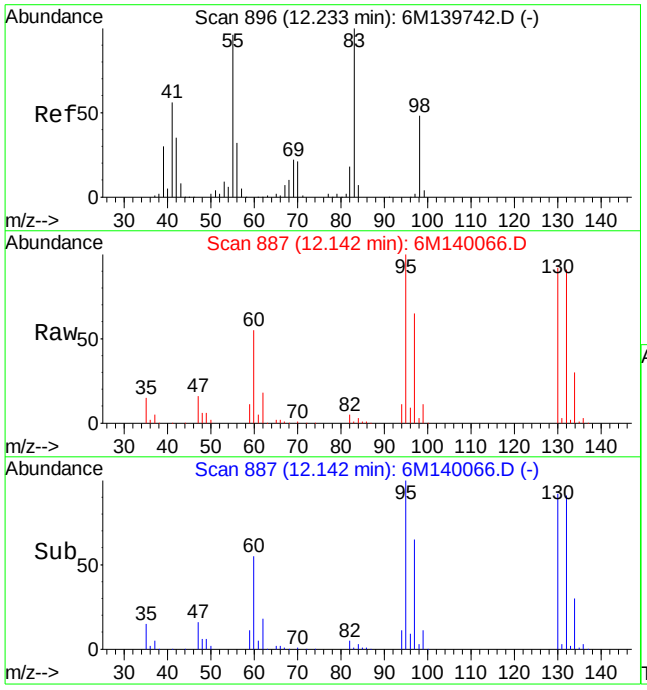

#48
Methylcyclohexane
Concen: 1.76 ug/L
RT: 12.14 min Scan# 887
Delta R.T. -0.09 min
Lab File: 6M140066.D
Acq: 14 Jun 2016 20:38

Tgt Ion: 83 Resp: 16776

Ion	Ratio	Lower	Upper
83	100		
55	0.0	56.3	131.3#
98	205.6	28.4	66.4#

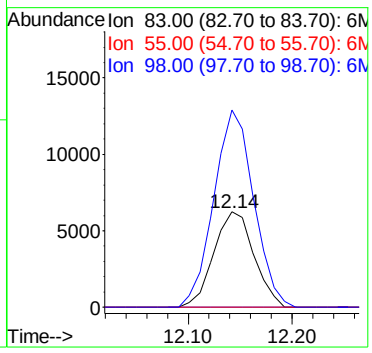

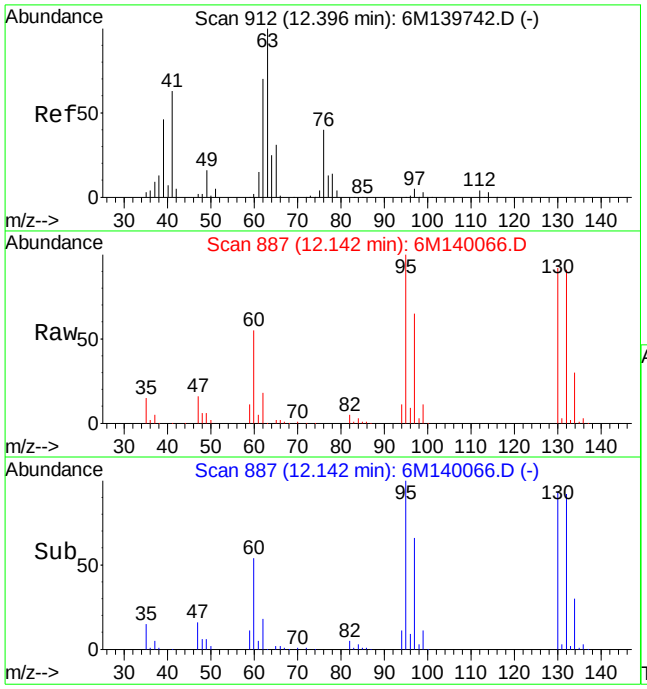

#49
1,2-Dichloropropane
Concen: 0.56 ug/L
RT: 12.14 min Scan# 887
Delta R.T. -0.25 min
Lab File: 6M140066.D
Acq: 14 Jun 2016 20:38

Tgt Ion: 63 Resp: 3792

Ion	Ratio	Lower	Upper
63	100		
76	0.0	24.2	56.4#

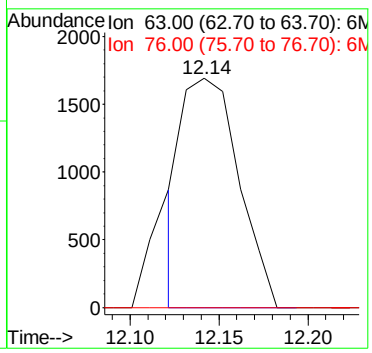

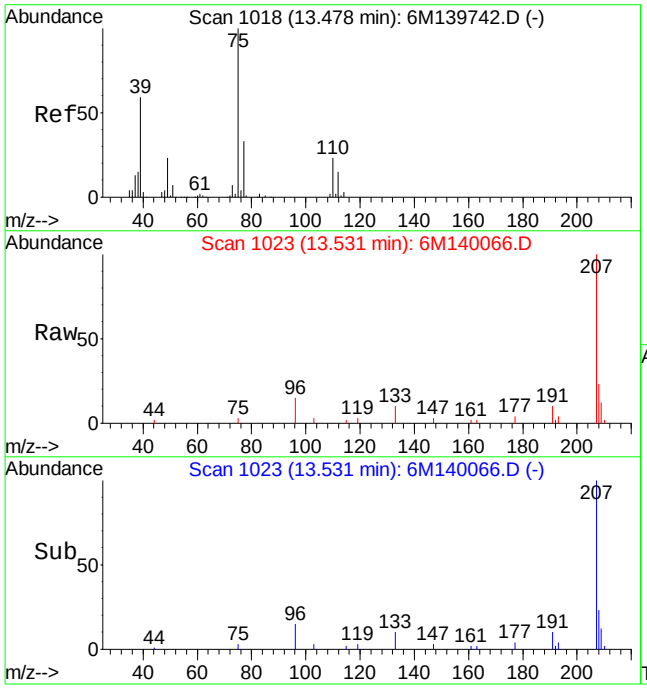

#55
cis-1,3-Dichloropropene
Concen: 0.13 ug/L
RT: 13.53 min Scan# 1023
Delta R.T. 0.05 min
Lab File: 6M140066.D
Acq: 14 Jun 2016 20:38

Tgt Ion: 75 Resp: 1248

Ion	Ratio	Lower	Upper
75	100		
77	0.0	19.5	45.5#
49	0.0	14.1	32.9#

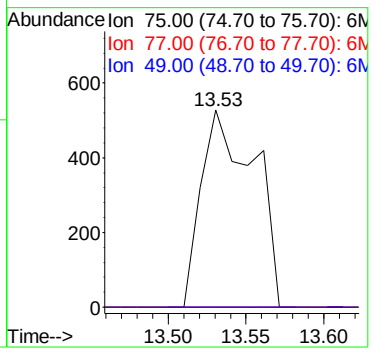

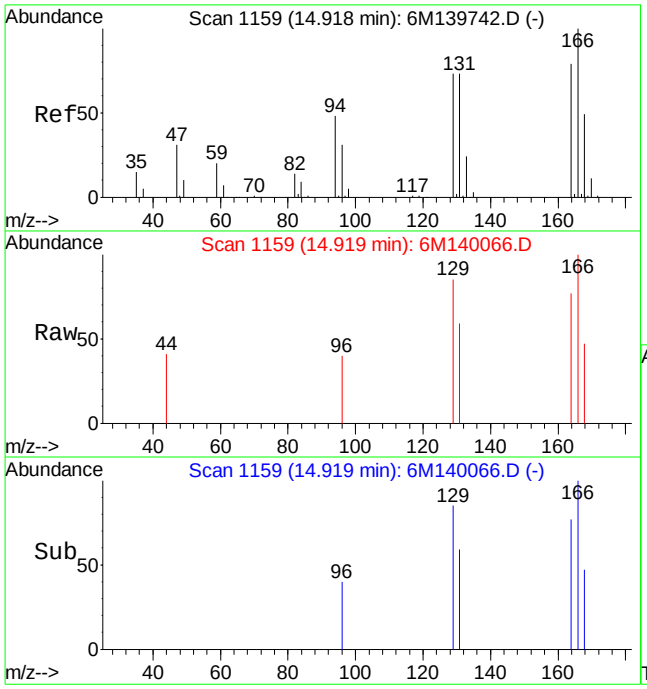

#66
Tetrachloroethene
Concen: 0.24 ug/L
RT: 14.92 min Scan# 1159
Delta R.T. -0.01 min
Lab File: 6M140066.D
Acq: 14 Jun 2016 20:38

Tgt Ion:166 Resp: 1602

Ion	Ratio	Lower	Upper
166	100		
129	70.6	43.5	101.5
94	0.0	27.8	64.8#

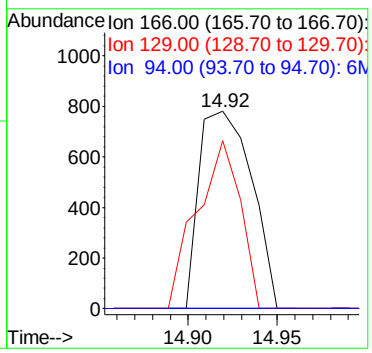

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140064.D Vial: 12
Acq On : 14 Jun 2016 19:34 Operator: TMB
Sample : L16060497-05 A TB 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 08:15:41 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	606851	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.06	117	449953	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	236035	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	158913	25.3023 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.20%		
43) 1,2-Dichloroethane-d4	11.11	65	177335	25.6169 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.48%		
58) Toluene-d8	13.85	98	539641	24.9900 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.96%		
80) p-Bromofluorobenzene	17.84	95	221328	26.5540 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 106.20%		

Target Compounds

					Qvalue
13) Acetone	6.66	43	2300	Below Cal #	48
26) Vinyl Acetate	9.03	43	4676	0.4262 ug/L #	78
36) Tetrahydrofuran	10.36	42	3650	1.9347 ug/L #	72
60) Ethyl Methacrylate	13.85	69	1006	0.1437 ug/L #	48

(#) = qualifier out of range (m) = manual integration
6M140064.D 8260WT.M Wed Jun 15 08:15:44 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140064.D Vial: 12
Acq On : 14 Jun 2016 19:34 Operator: TMB
Sample : L16060497-05 A TB 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 8:16 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration

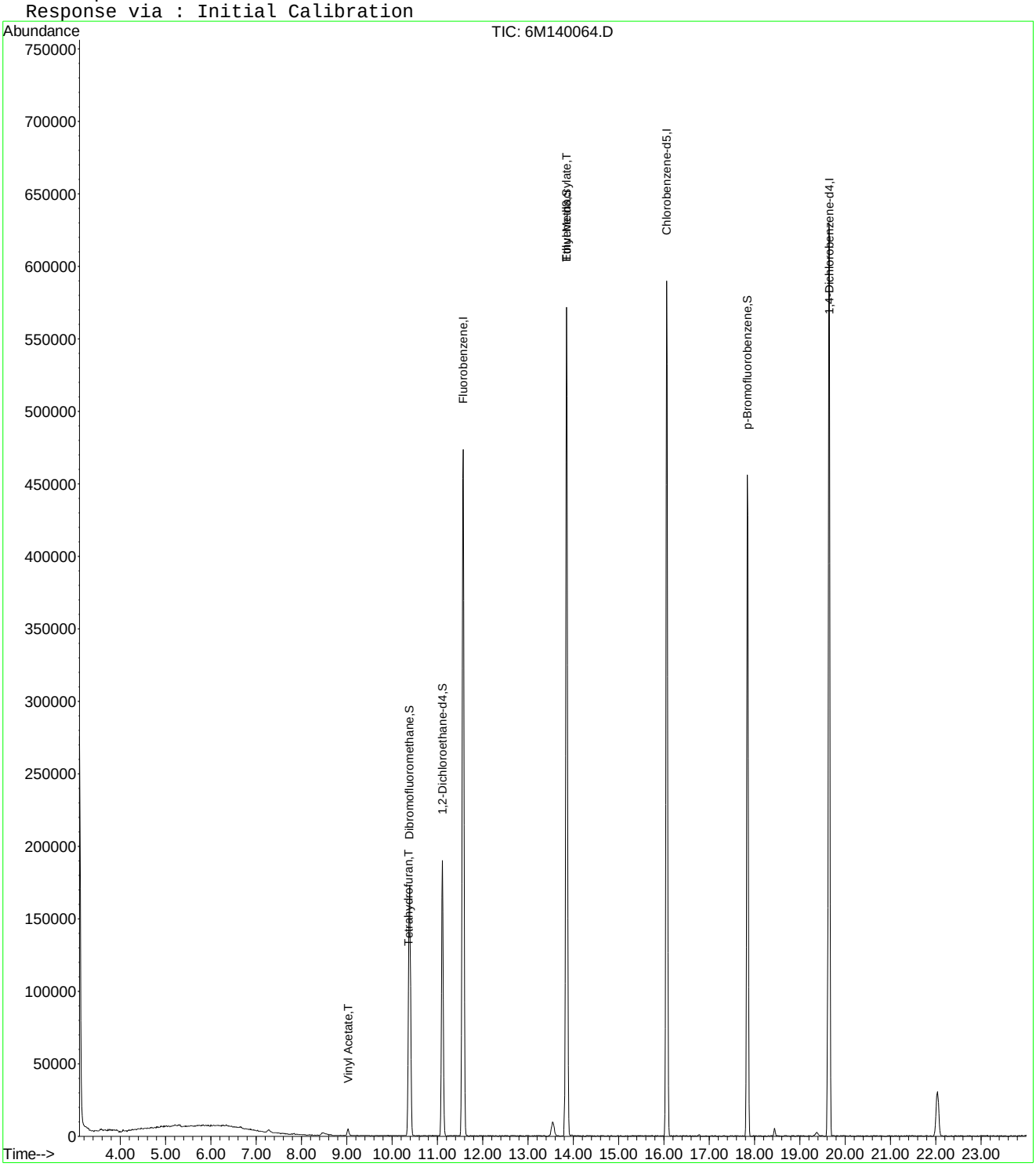

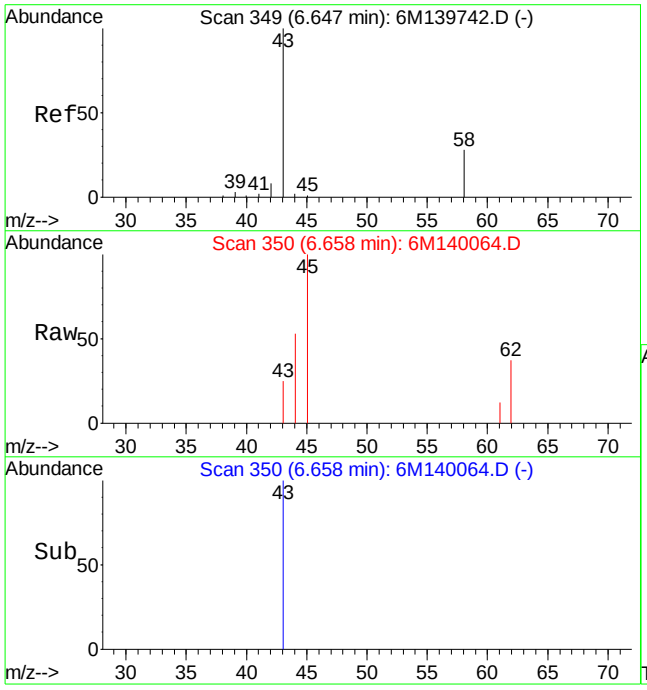

#13
Acetone
Concen: Below Cal
RT: 6.66 min Scan# 350
Delta R.T. 0.00 min
Lab File: 6M140064.D
Acq: 14 Jun 2016 19:34

Tgt Ion: 43 Resp: 2300

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

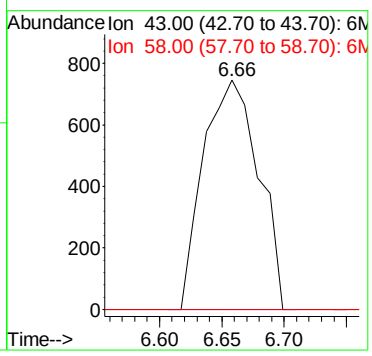

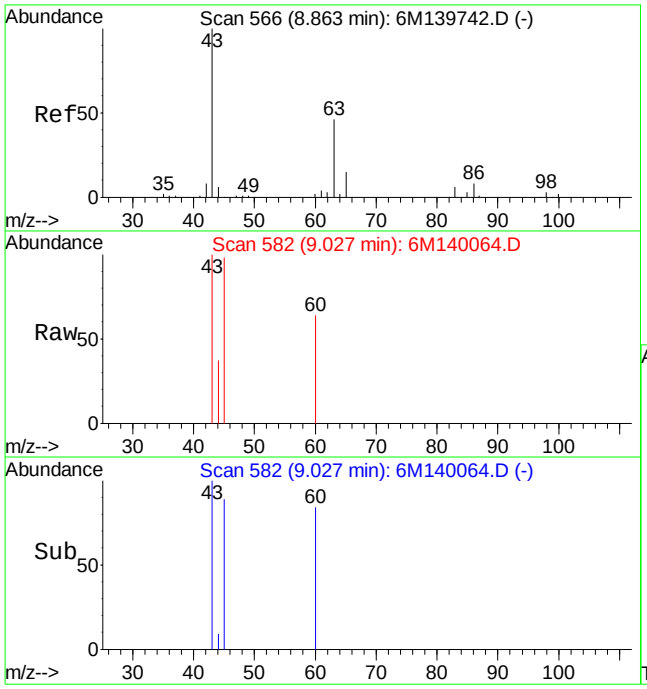

#26
Vinyl Acetate
Concen: 0.43 ug/L
RT: 9.03 min Scan# 582
Delta R.T. 0.16 min
Lab File: 6M140064.D
Acq: 14 Jun 2016 19:34

Tgt Ion: 43 Resp: 4676

Ion	Ratio	Lower	Upper
43	100		
86	0.0	4.5	10.5#

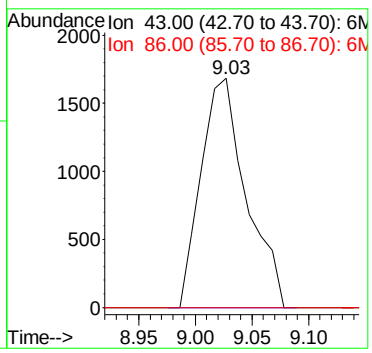

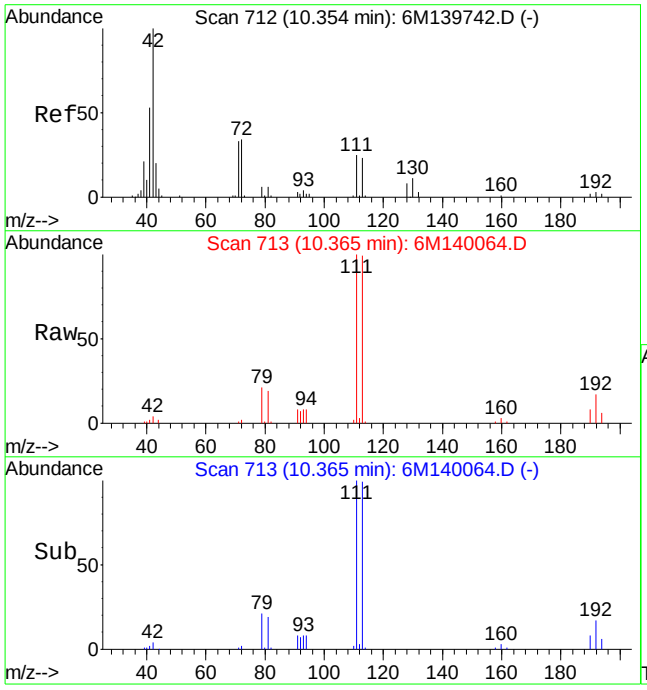

#36
Tetrahydrofuran
Concen: 1.93 ug/L
RT: 10.36 min Scan# 713
Delta R.T. 0.01 min
Lab File: 6M140064.D
Acq: 14 Jun 2016 19:34

Tgt Ion: 42 Resp: 3650

Ion	Ratio	Lower	Upper
42	100		
72	14.3	20.8	48.4#
71	22.1	19.9	46.5

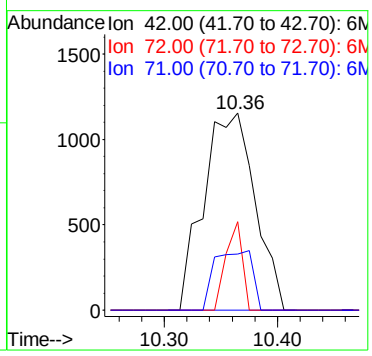

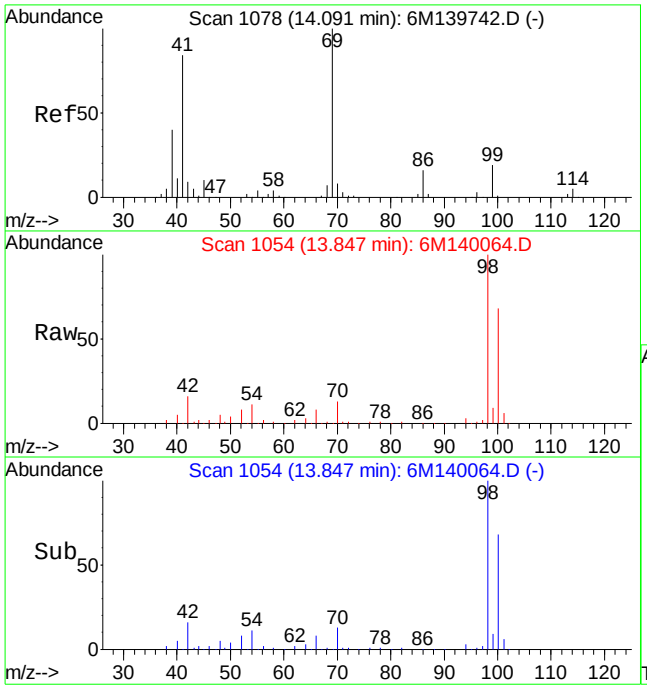

#60
Ethyl Methacrylate
Concen: 0.14 ug/L
RT: 13.85 min Scan# 1054
Delta R.T. -0.24 min
Lab File: 6M140064.D
Acq: 14 Jun 2016 19:34

Tgt Ion: 69 Resp: 1006

Ion	Ratio	Lower	Upper
69	100		
41	133.3	51.4	120.0#

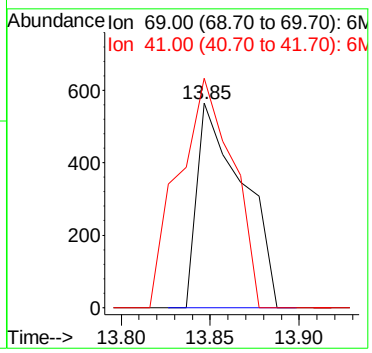

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:46 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	611118	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	473080	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	253718	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.40	111	173671	27.7488 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.00%		
43) 1,2-Dichloroethane-d4	11.12	65	203570	26.8000 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.20%		
58) Toluene-d8	13.86	98	554047	26.0139 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.04%		
80) p-Bromofluorobenzene	17.85	95	229998	27.1525 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 108.60%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	1325	0.6992 ug/L #	46
20) Carbon Disulfide	7.54	76	18747	0.9622 ug/L #	39
29) 2-Butanone	9.31	43	1188	0.4247 ug/L #	1
36) Tetrahydrofuran	10.36	42	2769	1.5196 ug/L #	58
60) Ethyl Methacrylate	13.87	69	899	0.1270 ug/L #	1

(#) = qualifier out of range (m) = manual integration
6M138751.D 8260WTR.M Mon Apr 25 09:22:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

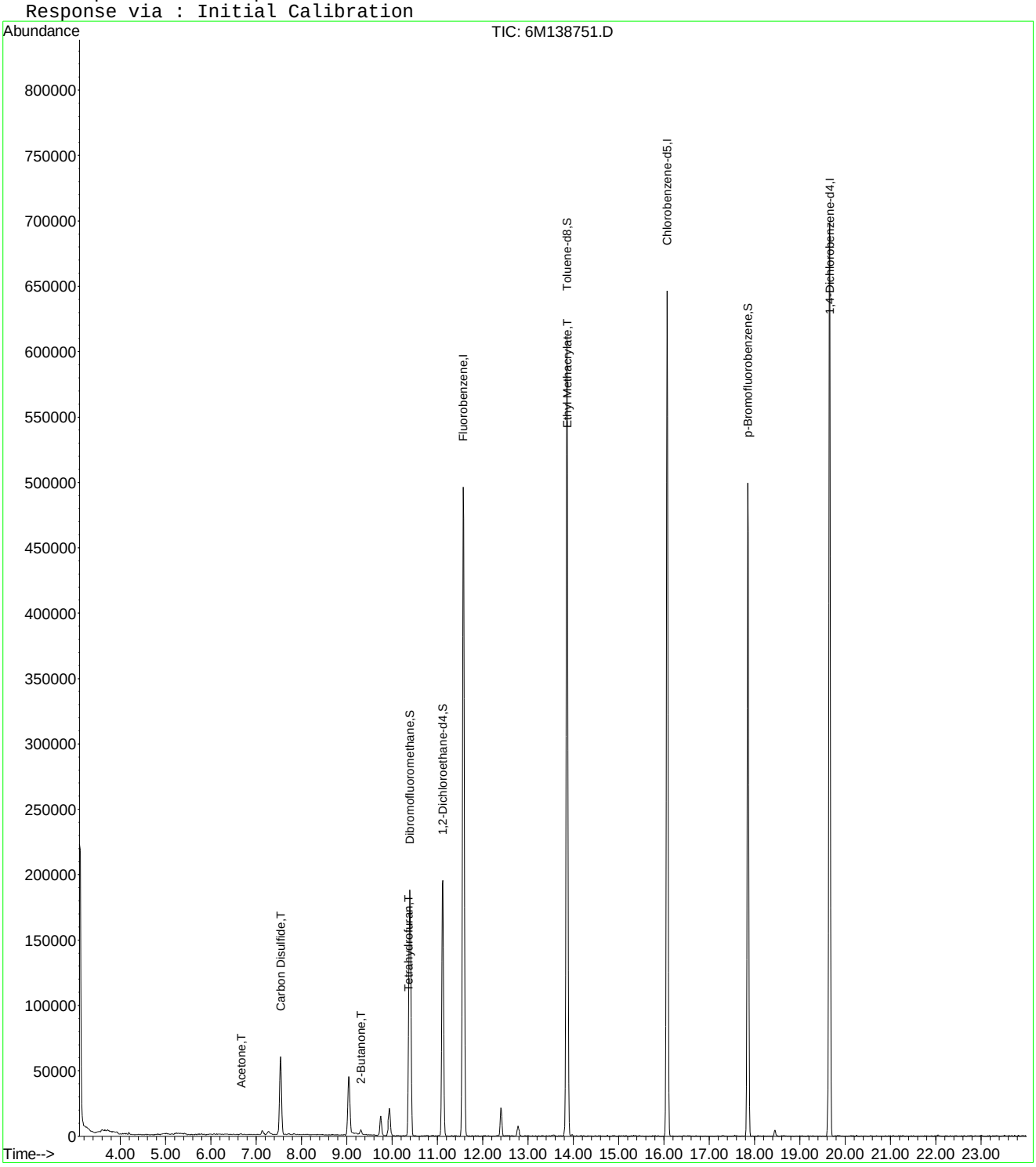

6M138751.D 8260WTR.M Mon Apr 25 09:22:46 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:52 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	611118	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	473080	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	253718	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.13	41	4366	3.7209 ug/L	76
3) 3-Chloro-1-propene	7.54	41	69268	4.2301 ug/L	92
4) 2-Chloro-1,3-butadiene	9.04	53	50753	3.6002 ug/L	85
5) Ethyl Acetate	9.75	43	28042	4.3499 ug/L #	90
6) Methacrylonitrile	9.94	67	8721	3.5173 ug/L #	55
7) Isobutyl Alcohol	9.94	43	1233	3.4767 ug/L #	85
9) Methyl methacrylate	12.40	41	19474	3.0338 ug/L	79
10) 2-Nitropropane	12.78	43	7076	3.7392 ug/L	93
13) Cyclohexanone	17.57	55	447	0.5159 ug/L #	25

(#) = qualifier out of range (m) = manual integration
6M138751.D A9FOOWT.M Mon Apr 25 15:45:52 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

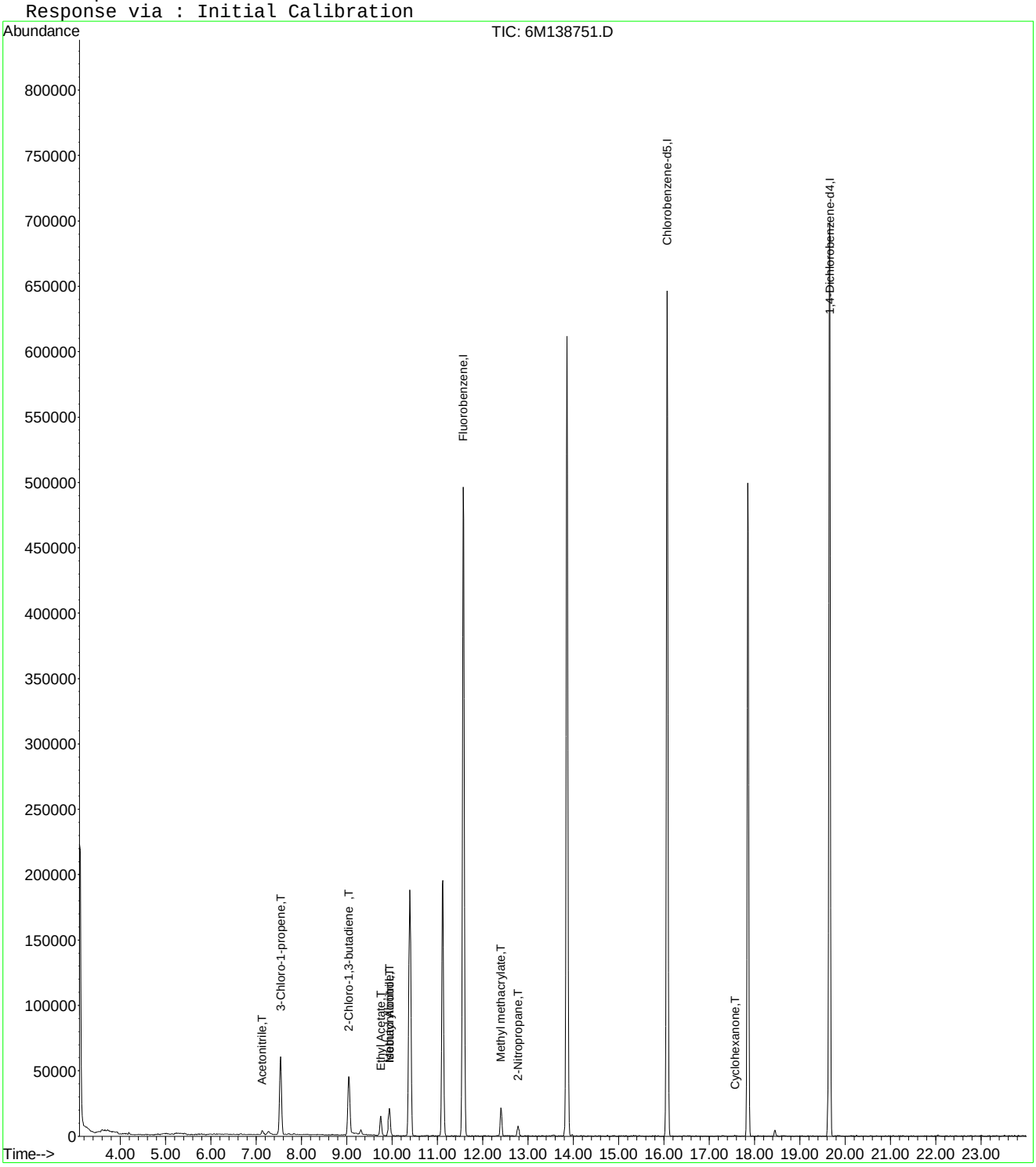

6M138751.D A9FOOWT.M Mon Apr 25 15:45:53 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:56 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	611118	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	473080	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	253718	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.13	41	4366	4.7698 ug/L	76
3) 3-Chloro-1-propene	7.54	41	69268	4.5408 ug/L	92
4) 2-Chloro-1,3-butadiene	9.04	53	50753	3.8775 ug/L	85
5) Ethyl Acetate	9.75	43	28042	4.2792 ug/L #	90
6) Methacrylonitrile	9.94	67	8721	3.8601 ug/L #	55
7) Isobutyl Alcohol	9.94	43	1233	5.9076 ug/L #	85
9) Methyl methacrylate	12.40	41	19474	3.5356 ug/L	79
10) 2-Nitropropane	12.78	43	7076	3.4543 ug/L	93
13) Cyclohexanone	17.57	55	447	1.4133 ug/L #	25

(#) = qualifier out of range (m) = manual integration
6M138751.D A9FOOWT.M Wed Apr 27 16:04:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

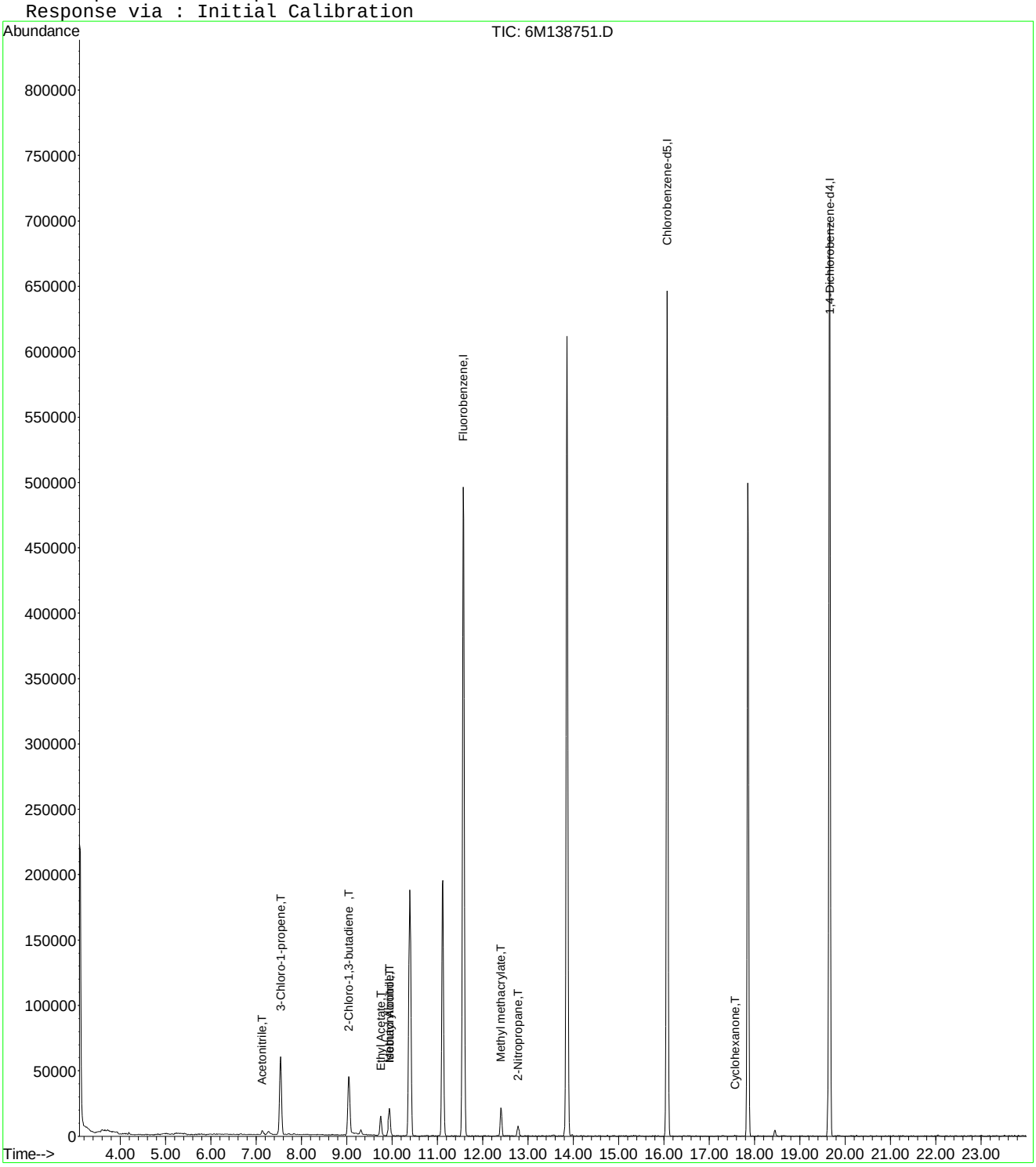

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	5.0000	4.7698	4.6	100	0.00
3	T	3-Chloro-1-propene	5.0000	4.5408	9.2	100	0.00
4	T	2-Chloro-1,3-butadiene	5.0000	3.8775	22.5	100	0.00
5	T	Ethyl Acetate	5.0000	4.2792	14.4	100	0.00
6	T	Methacrylonitrile	5.0000	3.8601	22.8	100	0.00
7	T	Isobutyl Alcohol	-1.0000	5.9076	0.0	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.99#
9	T	Methyl methacrylate	5.0000	3.5356	29.3	100	0.00
10	T	2-Nitropropane	-1.0000	3.4543	0.0	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	1.4133	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138751.D A9FOOWT.M Wed Apr 27 16:04:12 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:48 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	599043	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	463005	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	248475	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	171577	27.9669 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.88%		
43) 1,2-Dichloroethane-d4	11.12	65	207390	27.8532 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.40%		
58) Toluene-d8	13.86	98	547786	26.2796 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.12%		
80) p-Bromofluorobenzene	17.85	95	228171	27.5052 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 110.04%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	2739	1.4745 ug/L #	59
20) Carbon Disulfide	7.54	76	81493	4.2668 ug/L #	36
27) 1,1-Dichloroethane	9.05	63	3411	0.2688 ug/L #	42
29) 2-Butanone	9.31	43	3879	1.4148 ug/L #	1
36) Tetrahydrofuran	10.37	42	3350	1.8754 ug/L #	62
60) Ethyl Methacrylate	13.86	69	1183	0.1708 ug/L #	27

(#) = qualifier out of range (m) = manual integration
6M138752.D 8260WTR.M Mon Apr 25 09:22:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

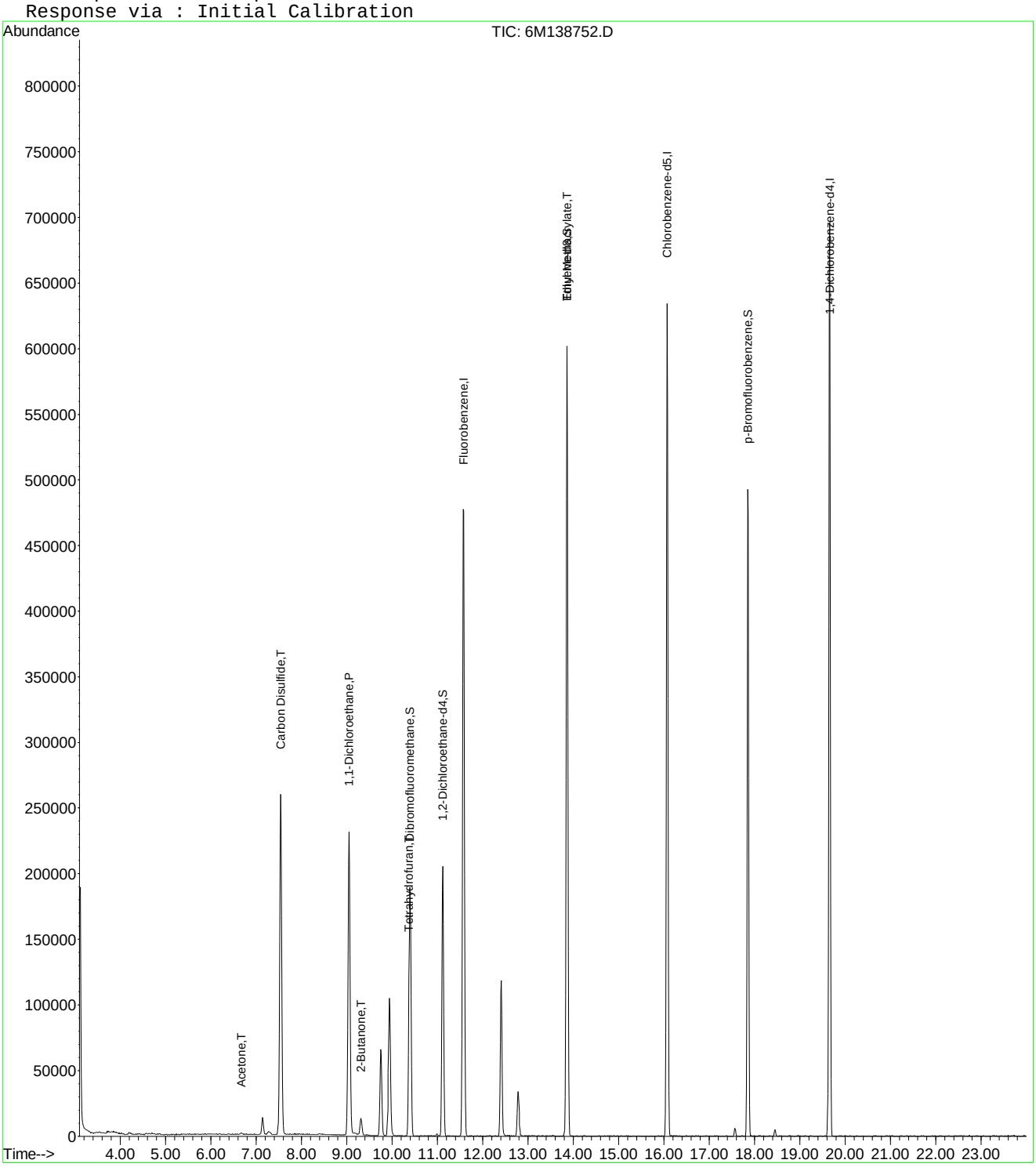

6M138752.D 8260WTR.M Mon Apr 25 09:22:48 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:54 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	599043	25.00 ug/L	-0.02
11) Chlorobenzene-d5	16.07	117	463005	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	248475	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	17741	15.4242 ug/L	95
3) 3-Chloro-1-propene	7.54	41	297686	18.5457 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	242962	17.5823 ug/L	84
5) Ethyl Acetate	9.75	43	124111	19.6403 ug/L	93
6) Methacrylonitrile	9.93	67	42708	17.5719 ug/L #	59
7) Isobutyl Alcohol	9.95	43	7968	22.9203 ug/L #	85
8) 1-Butanol	10.98	41	982	6.5662 ug/L #	52
9) Methyl methacrylate	12.41	41	95824	15.2291 ug/L	81
10) 2-Nitropropane	12.78	43	34207	18.4403 ug/L	92
13) Cyclohexanone	17.57	55	4053	4.7763 ug/L	81

(#) = qualifier out of range (m) = manual integration
6M138752.D A9FOOWT.M Mon Apr 25 15:45:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

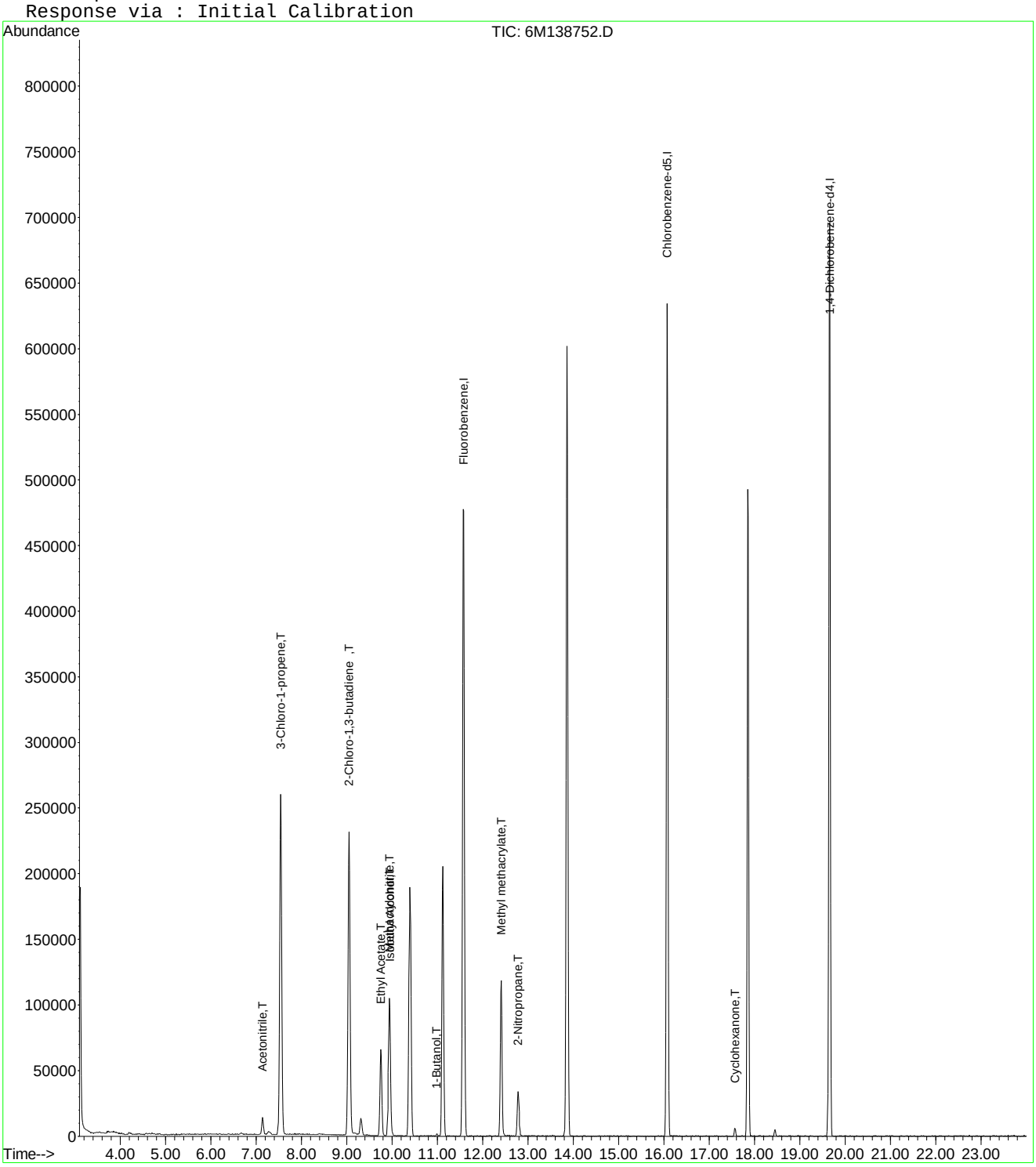

6M138752.D A9FOOWT.M Mon Apr 25 15:45:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:58 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	599043	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	463005	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	248475	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	17741	19.7725 ug/L	95
3) 3-Chloro-1-propene	7.54	41	297686	19.9080 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	242962	18.9362 ug/L	84
5) Ethyl Acetate	9.75	43	124111	19.3209 ug/L	93
6) Methacrylonitrile	9.93	67	42708	19.2846 ug/L #	59
7) Isobutyl Alcohol	9.95	43	7968	38.9462 ug/L #	85
9) Methyl methacrylate	12.41	41	95824	17.7480 ug/L	81
10) 2-Nitropropane	12.78	43	34207	17.0355 ug/L	92
13) Cyclohexanone	17.57	55	4053	13.0852 ug/L	81

(#) = qualifier out of range (m) = manual integration
6M138752.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

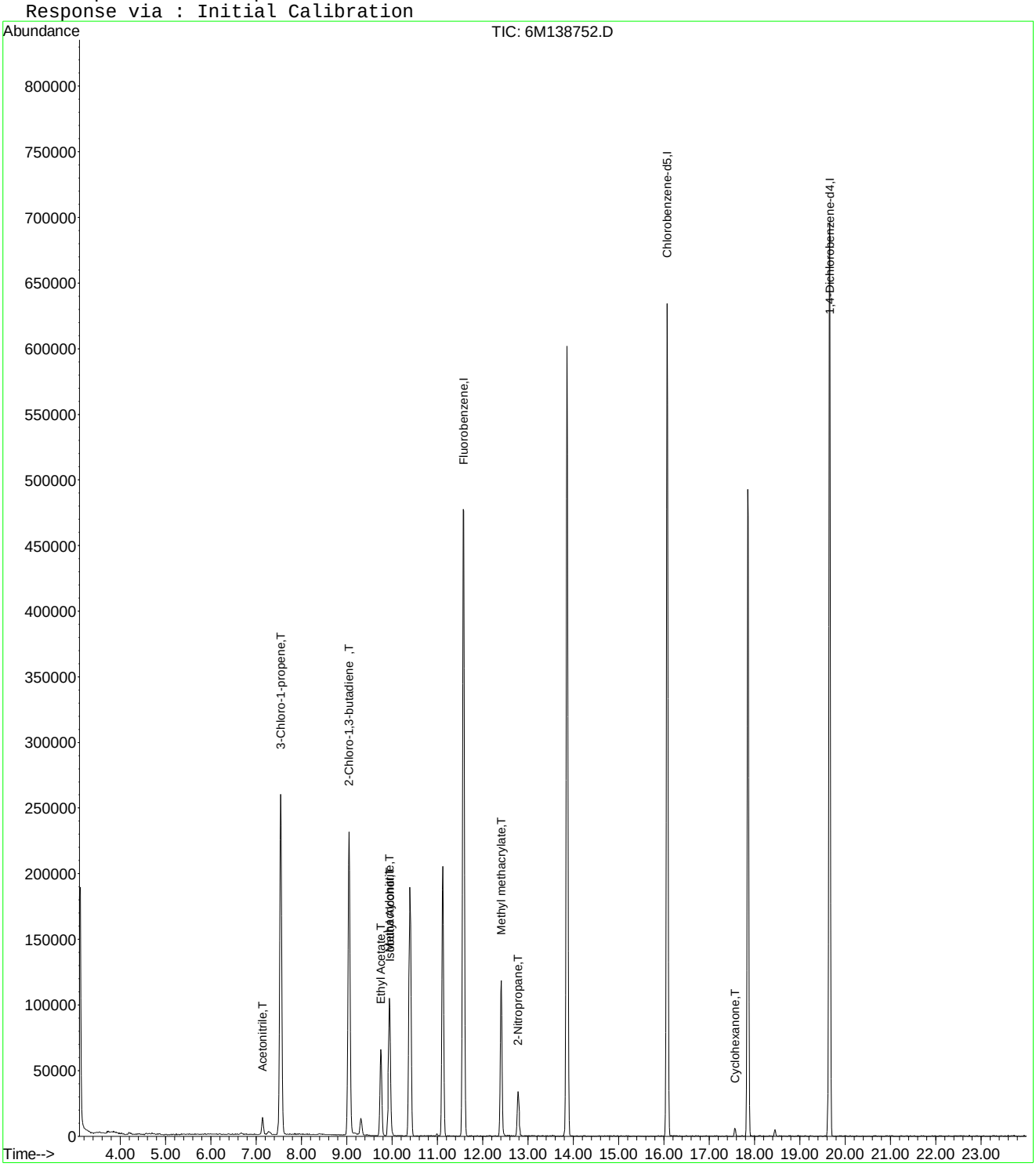

6M138752.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	19.7724	1.1	100	0.00
3	T	3-Chloro-1-propene	20.0000	19.9080	0.5	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	18.9362	5.3	100	0.00
5	T	Ethyl Acetate	20.0000	19.3209	3.4	100	0.00
6	T	Methacrylonitrile	20.0000	19.2846	3.6	100	0.00
7	T	Isobutyl Alcohol	40.0000	38.9462	2.6	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	20.0000	17.7480	11.3	100	0.00
10	T	2-Nitropropane	-1.0000	17.0355	0.0	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	13.0852	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138752.D A9FOOWT.M Wed Apr 27 16:04:26 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:48 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	604736	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	468574	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	254472	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.40	111	172256	27.8132 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.24%		
43) 1,2-Dichloroethane-d4	11.12	65	208744	27.7711 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.08%		
58) Toluene-d8	13.86	98	553191	26.2235 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.88%		
80) p-Bromofluorobenzene	17.85	95	239542	28.1954 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 112.80%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	3732	1.9901 ug/L #	57
20) Carbon Disulfide	7.54	76	220780	11.4508 ug/L #	36
26) Vinyl Acetate	9.04	43	2704	0.2791 ug/L #	8
27) 1,1-Dichloroethane	9.05	63	9803	0.7652 ug/L #	42
28) Ethyl-Tert-Butyl ether	9.31	59	152978	7.3579 ug/L #	39
29) 2-Butanone	9.53	43	660	0.2385 ug/L #	52
36) Tetrahydrofuran	10.37	42	3746	2.0774 ug/L #	62
60) Ethyl Methacrylate	13.86	69	1423	0.2030 ug/L #	9

(#) = qualifier out of range (m) = manual integration
6M138753.D 8260WTR.M Mon Apr 25 09:22:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

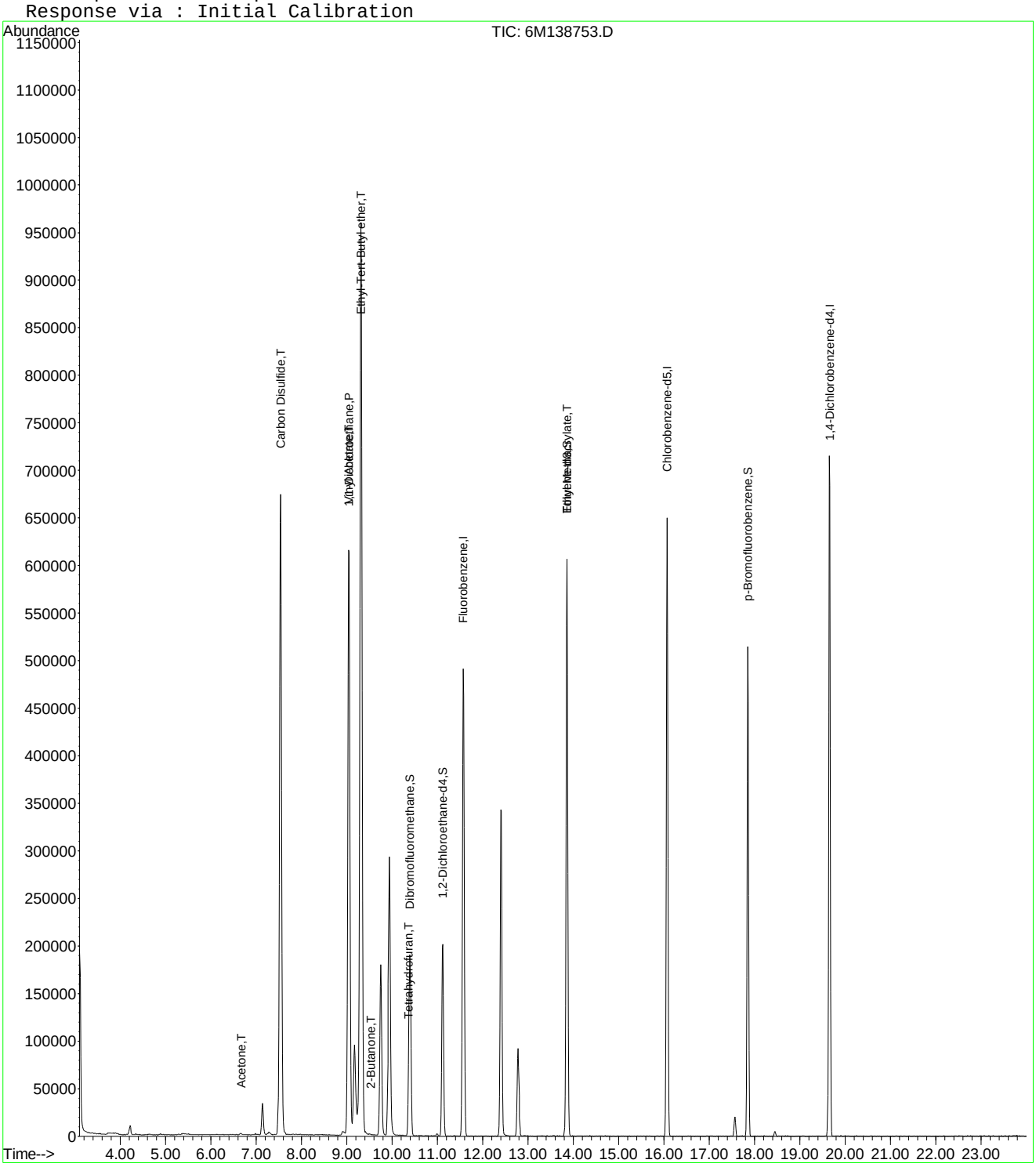

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:55 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	604736	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	468574	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	254472	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	46802	40.3072 ug/L	94
3) 3-Chloro-1-propene	7.54	41	793114	48.9454 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	674471	48.3496 ug/L	83
5) Ethyl Acetate	9.75	43	336975	52.8234 ug/L	93
6) Methacrylonitrile	9.94	67	119267	48.6097 ug/L #	62
7) Isobutyl Alcohol	9.95	43	20135	57.3741 ug/L #	99
8) 1-Butanol	10.98	41	1474	9.7632 ug/L	77
9) Methyl methacrylate	12.40	41	279157	43.9482 ug/L	81
10) 2-Nitropropane	12.79	43	95327	50.9052 ug/L	94
13) Cyclohexanone	17.56	55	13241	15.2363 ug/L	91

(#) = qualifier out of range (m) = manual integration
6M138753.D A9FOOWT.M Mon Apr 25 15:45:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

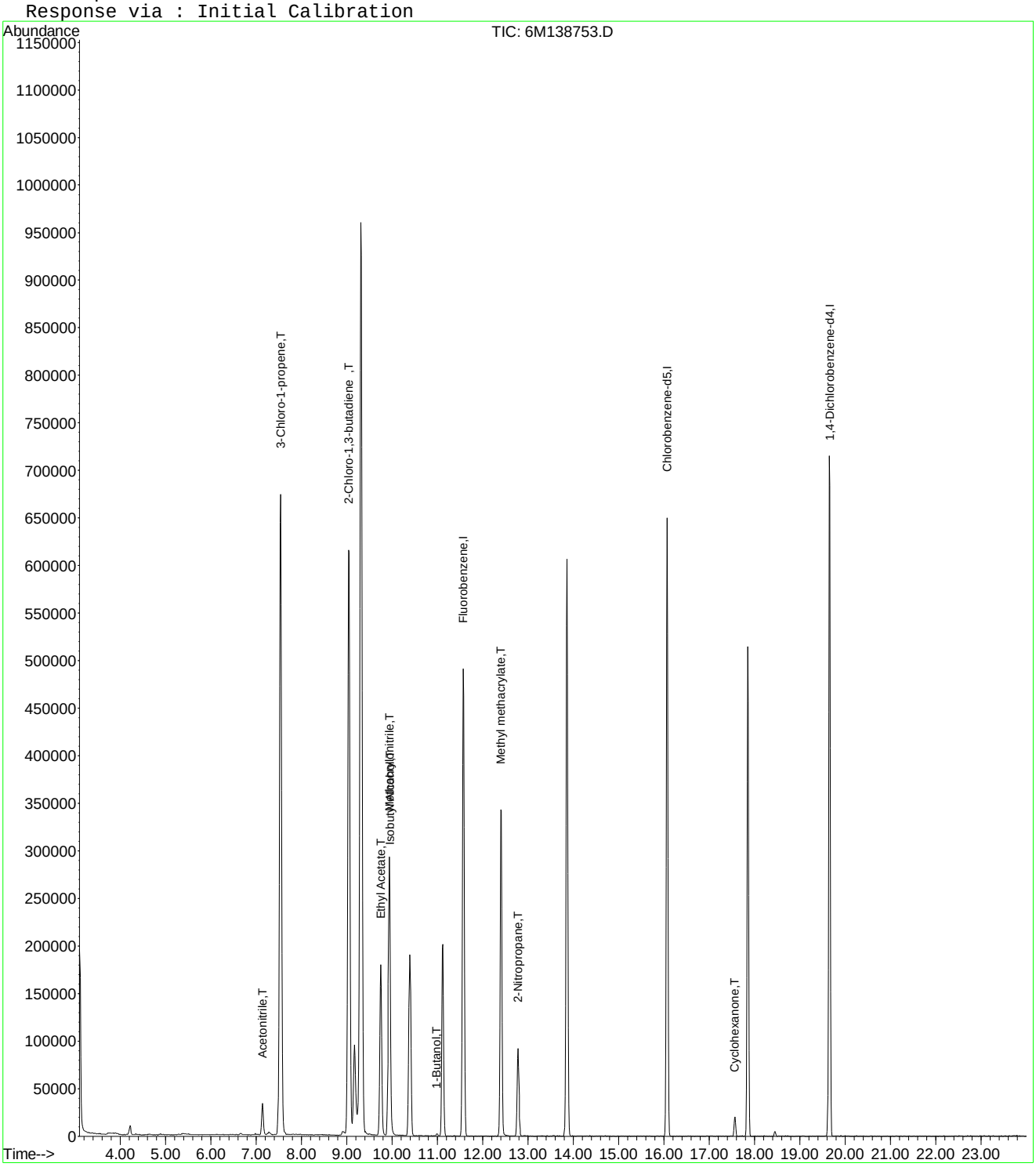

6M138753.D A9FOOWT.M Mon Apr 25 15:45:57 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:59 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	604736	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	468574	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	254472	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	46802	51.6701 ug/L	94
3) 3-Chloro-1-propene	7.54	41	793114	52.5409 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	674471	52.0726 ug/L	83
5) Ethyl Acetate	9.75	43	336975	51.9646 ug/L	93
6) Methacrylonitrile	9.94	67	119267	53.3476 ug/L #	62
7) Isobutyl Alcohol	9.95	43	20135	97.4900 ug/L #	99
9) Methyl methacrylate	12.40	41	279157	51.2171 ug/L	81
10) 2-Nitropropane	12.79	43	95327	47.0270 ug/L	94
13) Cyclohexanone	17.56	55	13241	41.7415 ug/L	91

(#) = qualifier out of range (m) = manual integration
6M138753.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

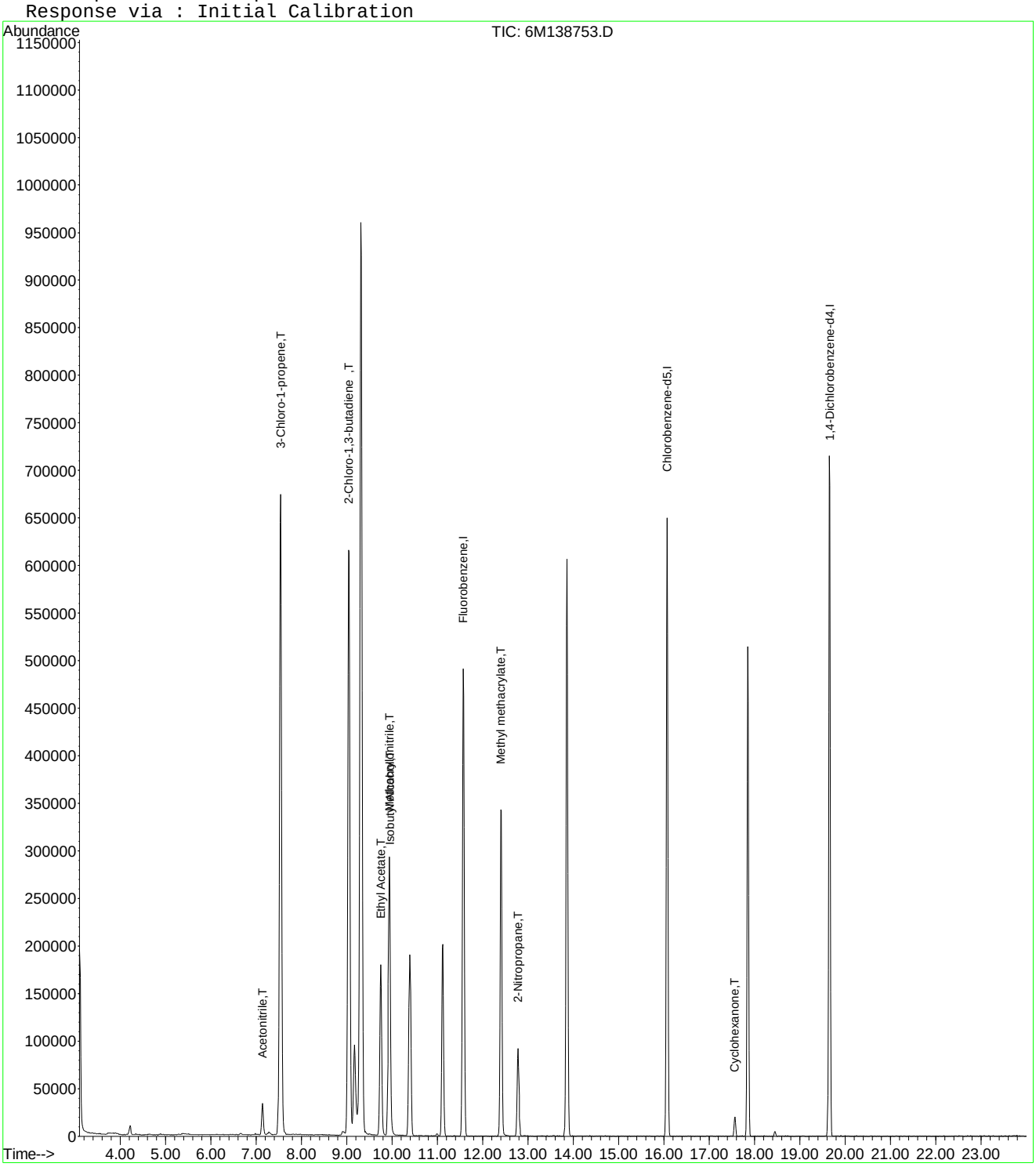

6M138753.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	51.6701	-3.3	100	0.00
3	T	3-Chloro-1-propene	50.0000	52.5409	-5.1	100	0.00
4	T	2-Chloro-1,3-butadiene	50.0000	52.0726	-4.1	100	0.00
5	T	Ethyl Acetate	50.0000	51.9646	-3.9	100	0.00
6	T	Methacrylonitrile	50.0000	53.3476	-6.7	100	0.00
7	T	Isobutyl Alcohol	100.0000	97.4900	2.5	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	50.0000	51.2171	-2.4	100	0.00
10	T	2-Nitropropane	50.0000	47.0270	5.9	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	50.0000	41.7415	16.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138753.D A9FOOWT.M Wed Apr 27 16:04:38 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:49 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	599121	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	467316	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	255798	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	169577	27.6373 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.56%		
43) 1,2-Dichloroethane-d4	11.12	65	210119	28.2161 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.88%		
58) Toluene-d8	13.86	98	550953	26.1877 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.76%		
80) p-Bromofluorobenzene	17.85	95	239480	28.0420 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 112.16%		

Target Compounds					Qvalue
13) Acetone	6.66	43	6960	3.7463 ug/L	82
16) Dimethyl Sulfide	7.15	62	732	0.1448 ug/L #	1
18) Methyl acetate	7.53	43	1419	0.2750 ug/L #	1
22) Methyl Tert Butyl Ether	7.96	73	2141	0.1320 ug/L #	72
27) 1,1-Dichloroethane	9.05	63	20725	1.6328 ug/L #	42
28) Ethyl-Tert-Butyl ether	9.31	59	76666	3.7220 ug/L #	39
29) 2-Butanone	9.53	43	1176	0.4289 ug/L #	52
34) 1-Bromopropane	10.00	122	702	0.6817 ug/L #	1
36) Tetrahydrofuran	10.35	42	4425	2.4769 ug/L #	60
48) Methylcyclohexane	12.41	83	1461	0.1681 ug/L #	1
60) Ethyl Methacrylate	13.87	69	1083	0.1549 ug/L #	1
79) 1,1,2,2-Tetrachloroethane	17.57	83	1910	0.3066 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138754.D 8260WTR.M Mon Apr 25 09:22:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

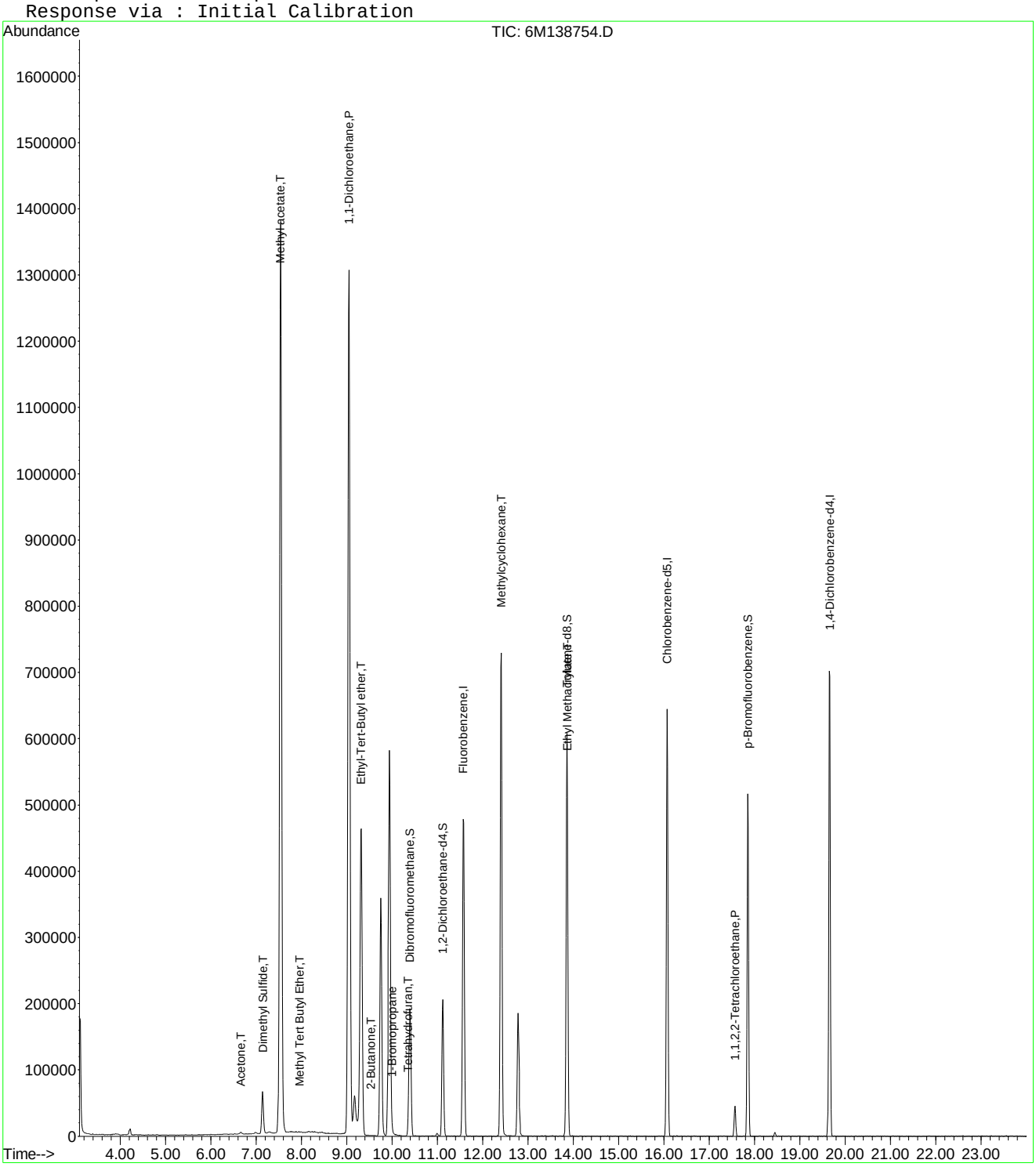

6M138754.D 8260WTR.M Mon Apr 25 09:22:50 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:57 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	599121	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	467316	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	255798	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	90880	79.0019 ug/L	95
3) 3-Chloro-1-propene	7.54	41	1610716	100.3335 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	1413663	102.2884 ug/L	83
5) Ethyl Acetate	9.75	43	673221	106.5217 ug/L	93
6) Methacrylonitrile	9.94	67	237219	97.5895 ug/L #	62
7) Isobutyl Alcohol	9.95	43	33897	97.4937 ug/L #	85
8) 1-Butanol	11.00	41	2978	19.9099 ug/L #	64
9) Methyl methacrylate	12.41	41	585839	93.0942 ug/L	80
10) 2-Nitropropane	12.78	43	197598	106.5074 ug/L	97
13) Cyclohexanone	17.57	55	27547	31.5338 ug/L	88

(#) = qualifier out of range (m) = manual integration
6M138754.D A9FOOWT.M Mon Apr 25 15:45:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

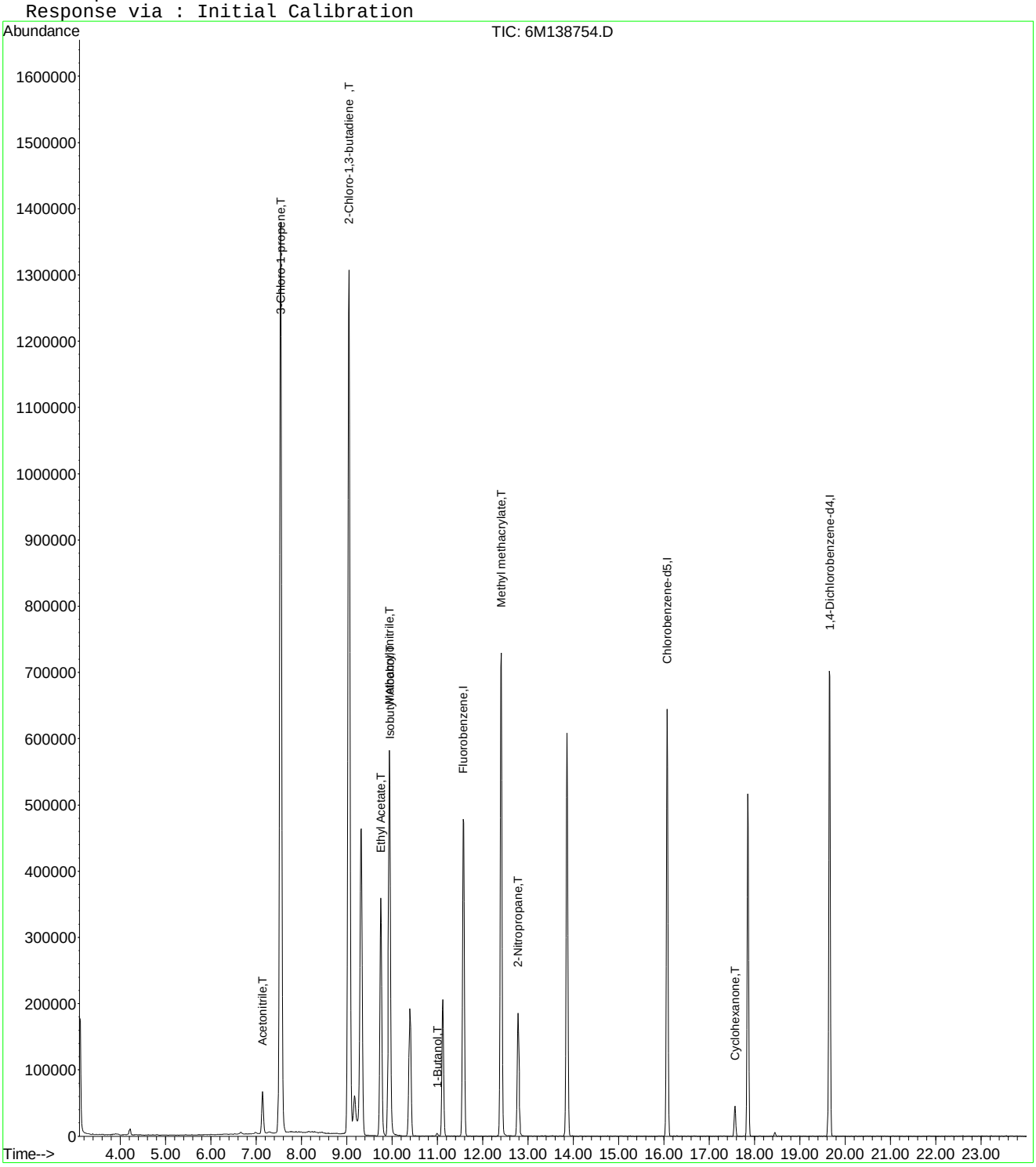

6M138754.D A9FOOWT.M Mon Apr 25 15:45:58 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:59 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	599121	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	467316	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	255798	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	90880	101.2731 ug/L	95
3) 3-Chloro-1-propene	7.54	41	1610716	107.7041 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	1413663	110.1648 ug/L	83
5) Ethyl Acetate	9.75	43	673221	104.7898 ug/L	93
6) Methacrylonitrile	9.94	67	237219	107.1014 ug/L #	62
7) Isobutyl Alcohol	9.95	43	33897	165.6613 ug/L #	85
9) Methyl methacrylate	12.41	41	585839	108.4917 ug/L	80
10) 2-Nitropropane	12.78	43	197598	98.3932 ug/L	97
13) Cyclohexanone	17.57	55	27547	86.3902 ug/L	88

(#) = qualifier out of range (m) = manual integration
6M138754.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

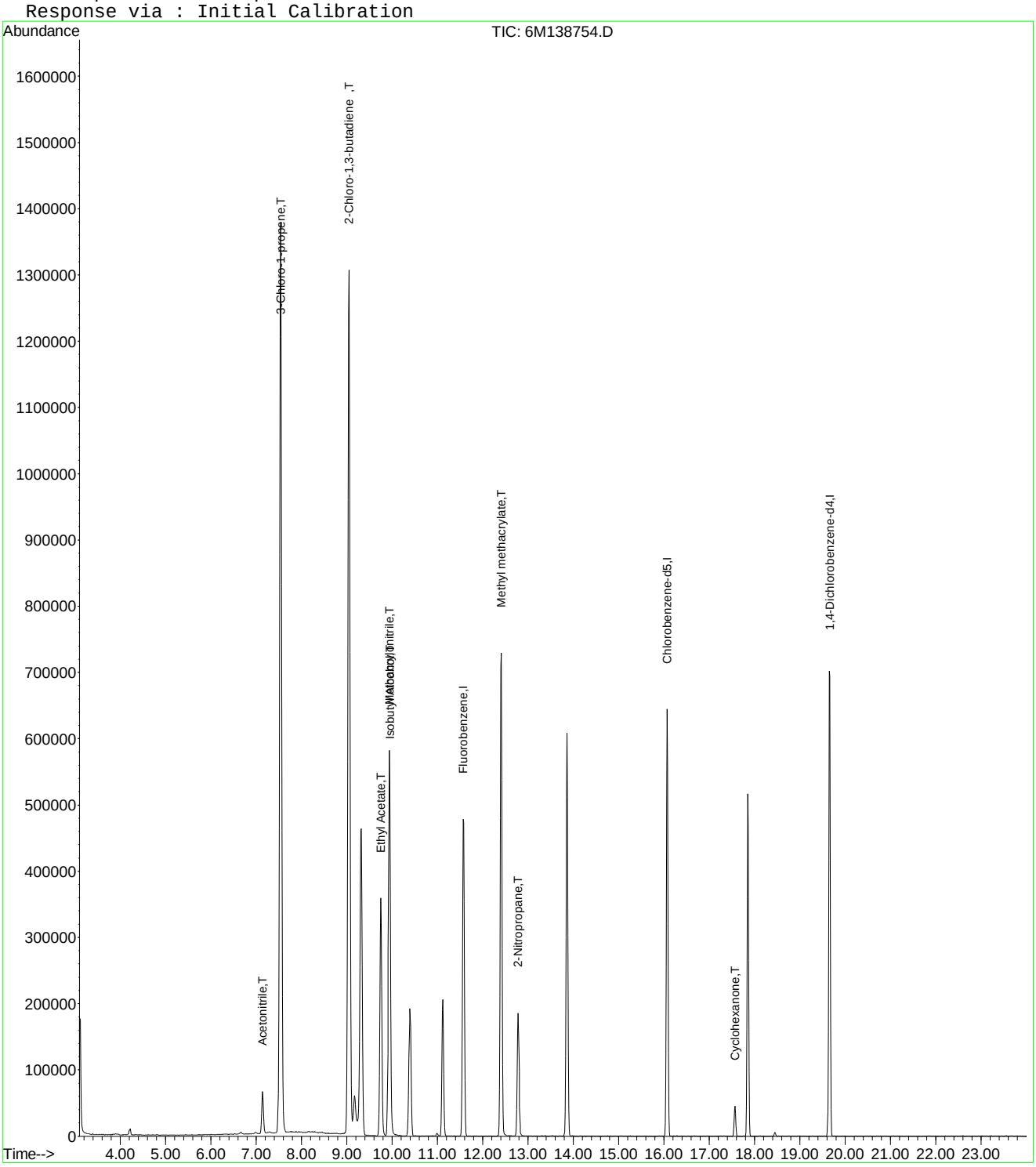

6M138754.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:50 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	607157	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	473187	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	259046	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.40	111	172341	27.7160 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.88%		
43) 1,2-Dichloroethane-d4	11.12	65	211249	27.9923 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.96%		
58) Toluene-d8	13.86	98	552831	25.9510 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.80%		
80) p-Bromofluorobenzene	17.85	95	247709	28.6419 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 114.56%		

Target Compounds

					Qvalue
9) Diethyl ether	6.31	59	653	0.1225 ug/L #	12
13) Acetone	6.66	43	9406	4.9959 ug/L #	64
15) Tert-Butyl Alcohol	6.98	59	449	0.8301 ug/L #	1
16) Dimethyl Sulfide	7.16	62	680	0.1328 ug/L #	1
22) Methyl Tert Butyl Ether	7.96	73	3926	0.2388 ug/L	83
24) n-Hexane	8.30	57	1777	0.2040 ug/L	87
27) 1,1-Dichloroethane	9.05	63	41640	3.2372 ug/L #	47
28) Ethyl-Tert-Butyl ether	9.31	59	272648	13.0615 ug/L #	38
29) 2-Butanone	9.51	43	2992	1.0767 ug/L #	67
30) Propionitrile	9.93	54	258	0.3232 ug/L #	57
34) 1-Bromopropane	9.99	122	1417	1.3579 ug/L #	1
36) Tetrahydrofuran	10.37	42	4839	2.6728 ug/L #	62
48) Methylcyclohexane	12.40	83	2976	0.3378 ug/L #	1
60) Ethyl Methacrylate	13.87	69	1202	0.1698 ug/L #	1
79) 1,1,2,2-Tetrachloroethane	17.57	83	5192	0.8231 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138755.D 8260WTR.M Mon Apr 25 09:22:50 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

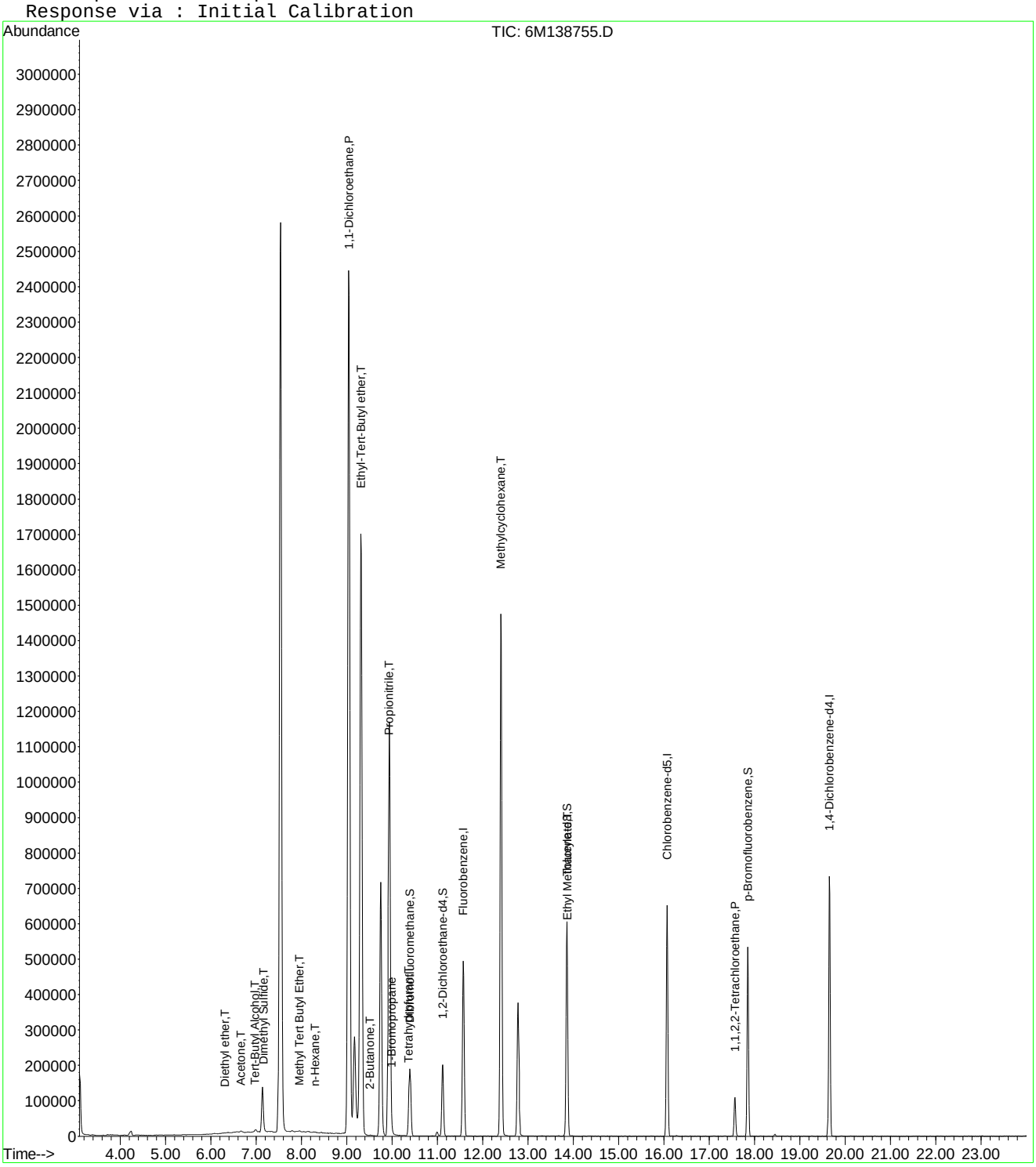

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:58 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	607157	25.00	ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	473187	25.00	ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.65	152	259046	25.00	ug/L	-0.03

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	183628	157.5150	ug/L	93
3) 3-Chloro-1-propene	7.54	41	3085939	189.6828	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	2709180	193.4336	ug/L	83
5) Ethyl Acetate	9.75	43	1346541	210.2391	ug/L	94
6) Methacrylonitrile	9.94	67	471538	191.4186	ug/L #	64
7) Isobutyl Alcohol	9.95	43	72755	206.4864	ug/L #	92
8) 1-Butanol	10.99	41	8815	58.1542	ug/L #	64
9) Methyl methacrylate	12.40	41	1186381	186.0295	ug/L	80
10) 2-Nitropropane	12.79	43	410702	218.4428	ug/L	99
13) Cyclohexanone	17.57	55	67080	75.8254	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138755.D A9FOOWT.M Mon Apr 25 15:45:58 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

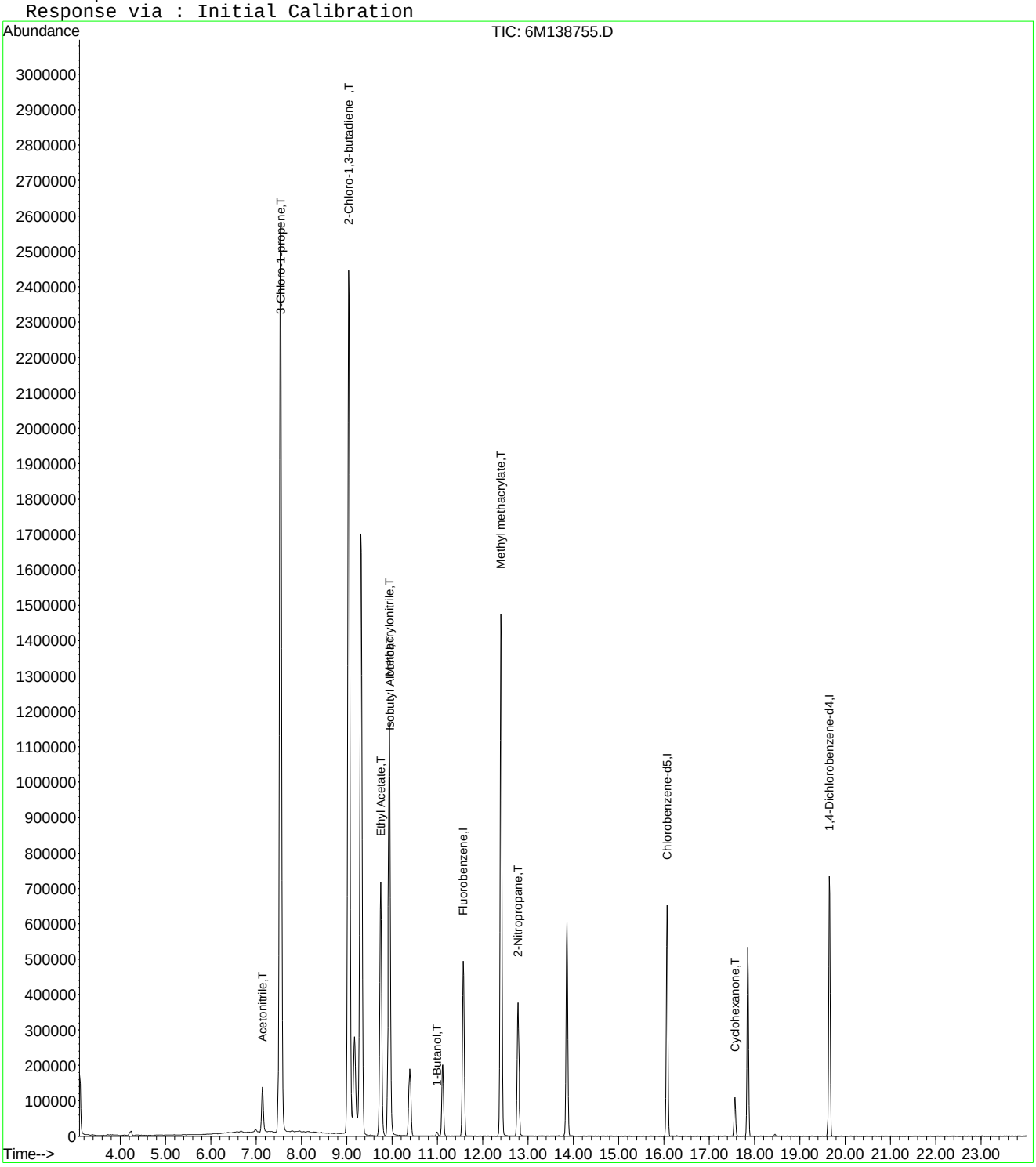

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	607157	25.00	ug/L	0.00
11) Chlorobenzene-d5	16.07	117	473187	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.65	152	259046	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	183628	201.9195	ug/L	93
3) 3-Chloro-1-propene	7.54	41	3085939	203.6170	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	2709180	208.3284	ug/L	83
5) Ethyl Acetate	9.75	43	1346541	206.8209	ug/L	94
6) Methacrylonitrile	9.94	67	471538	210.0757	ug/L #	64
7) Isobutyl Alcohol	9.95	43	72755	350.8618	ug/L #	92
9) Methyl methacrylate	12.40	41	1186381	216.7982	ug/L	80
10) 2-Nitropropane	12.79	43	410702	201.8008	ug/L	99
13) Cyclohexanone	17.57	55	67080	207.7320	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138755.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

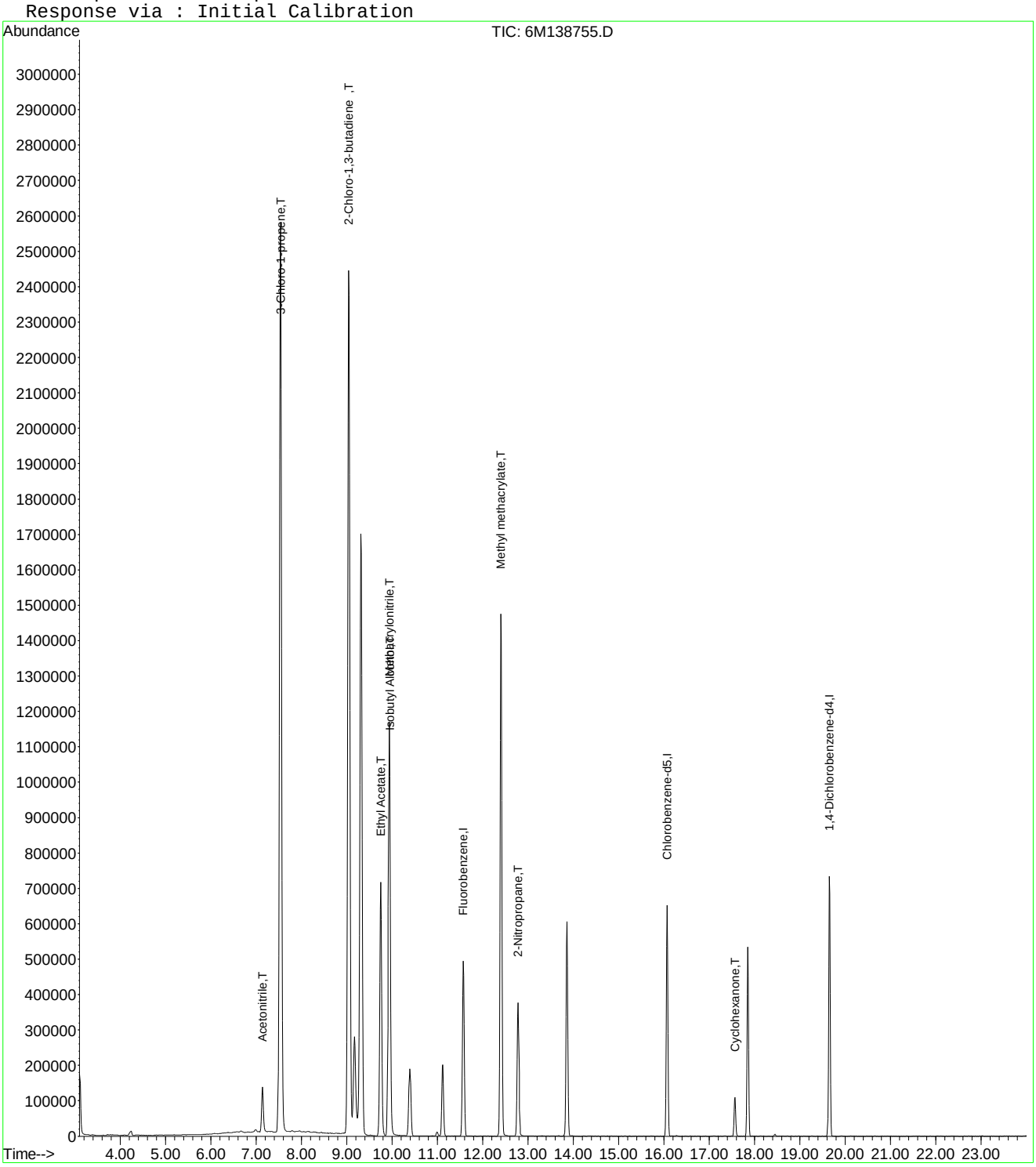

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:50 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	602356	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	472685	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	264650	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	169983	27.5546 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.20%		
43) 1,2-Dichloroethane-d4	11.12	65	207199	27.6745 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 110.68%		
58) Toluene-d8	13.86	98	553023	25.9875 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.96%		
80) p-Bromofluorobenzene	17.85	95	247939	28.0615 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 112.24%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	13666	7.3164 ug/L #	77
15) Tert-Butyl Alcohol	7.06	59	467	0.8703 ug/L #	59
16) Dimethyl Sulfide	7.14	62	668	0.1315 ug/L #	1
18) Methyl acetate	7.54	43	3262	0.6289 ug/L #	1
22) Methyl Tert Butyl Ether	7.97	73	10591	0.6492 ug/L #	53
24) n-Hexane	8.28	57	3576	0.4138 ug/L #	56
27) 1,1-Dichloroethane	9.04	63	60743	4.7600 ug/L #	48
28) Ethyl-Tert-Butyl ether	9.31	59	155796	7.5231 ug/L #	39
29) 2-Butanone	9.52	43	4002	1.4516 ug/L	97
30) Propionitrile	9.95	54	1113	1.4052 ug/L #	1
34) 1-Bromopropane	9.99	122	1450	1.4006 ug/L #	1
36) Tetrahydrofuran	10.36	42	4902	2.7292 ug/L #	61
48) Methylcyclohexane	12.41	83	4626	0.5293 ug/L #	1
60) Ethyl Methacrylate	13.88	69	1599	0.2261 ug/L #	1
72) Ethylbenzene	16.28	106	1349	0.1427 ug/L	56
73) m-,p-Xylene	16.28	106	1349	0.1203 ug/L	81
79) 1,1,2,2-Tetrachloroethane	17.57	83	8744	1.3569 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138756.D 8260WTR.M Mon Apr 25 09:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

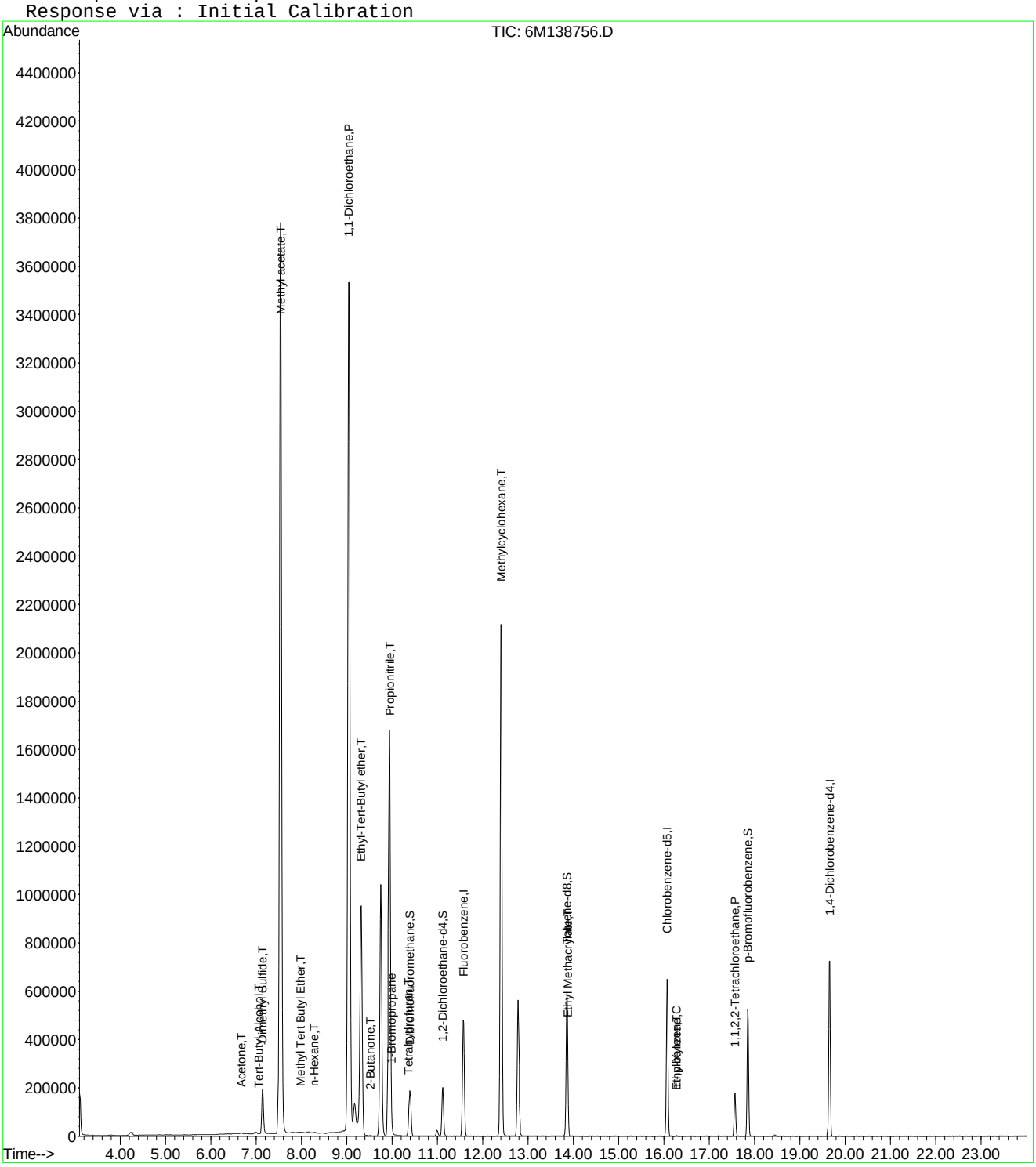

6M138756.D 8260WTR.M Mon Apr 25 09:22:51 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:59 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.58	96	602356	25.00	ug/L	-0.02
11) Chlorobenzene-d5	16.07	117	472685	25.00	ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	264650	25.00	ug/L	-0.02

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	273003	236.0468	ug/L	93
3) 3-Chloro-1-propene	7.54	41	4493022	278.3729	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	3994938	287.5093	ug/L	83
5) Ethyl Acetate	9.75	43	1967613	309.6573	ug/L	94
6) Methacrylonitrile	9.94	67	686612	280.9484	ug/L #	63
7) Isobutyl Alcohol	9.95	43	121480	347.5212	ug/L #	90
8) 1-Butanol	10.99	41	18116	120.4672	ug/L	69
9) Methyl methacrylate	12.40	41	1742413	275.3954	ug/L	81
10) 2-Nitropropane	12.78	43	613081	328.6824	ug/L	99
13) Cyclohexanone	17.57	55	106618	117.9661	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138756.D A9FOOWT.M Mon Apr 25 15:45:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

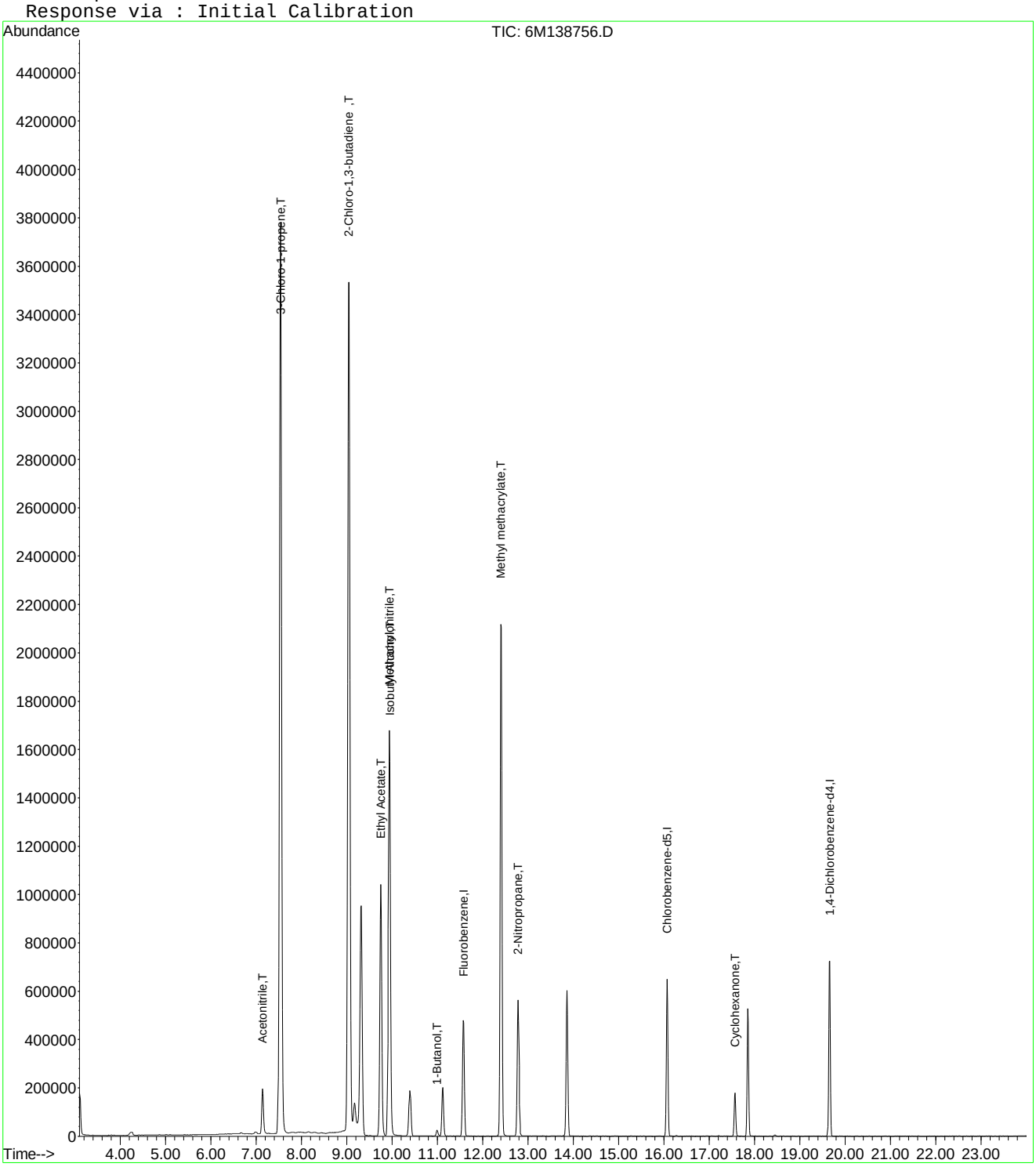

6M138756.D A9FOOWT.M Mon Apr 25 15:45:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.58	96	602356	25.00	ug/L	0.01
11) Chlorobenzene-d5	16.07	117	472685	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	264650	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	273003	302.5900	ug/L	93
3) 3-Chloro-1-propene	7.54	41	4493022	298.8224	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	3994938	309.6481	ug/L	83
5) Ethyl Acetate	9.75	43	1967613	304.6228	ug/L	94
6) Methacrylonitrile	9.94	67	686612	308.3318	ug/L #	63
7) Isobutyl Alcohol	9.95	43	121480	590.5081	ug/L #	90
9) Methyl methacrylate	12.40	41	1742413	320.9449	ug/L	81
10) 2-Nitropropane	12.78	43	613081	303.6419	ug/L	99
13) Cyclohexanone	17.57	55	106618	323.1811	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138756.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

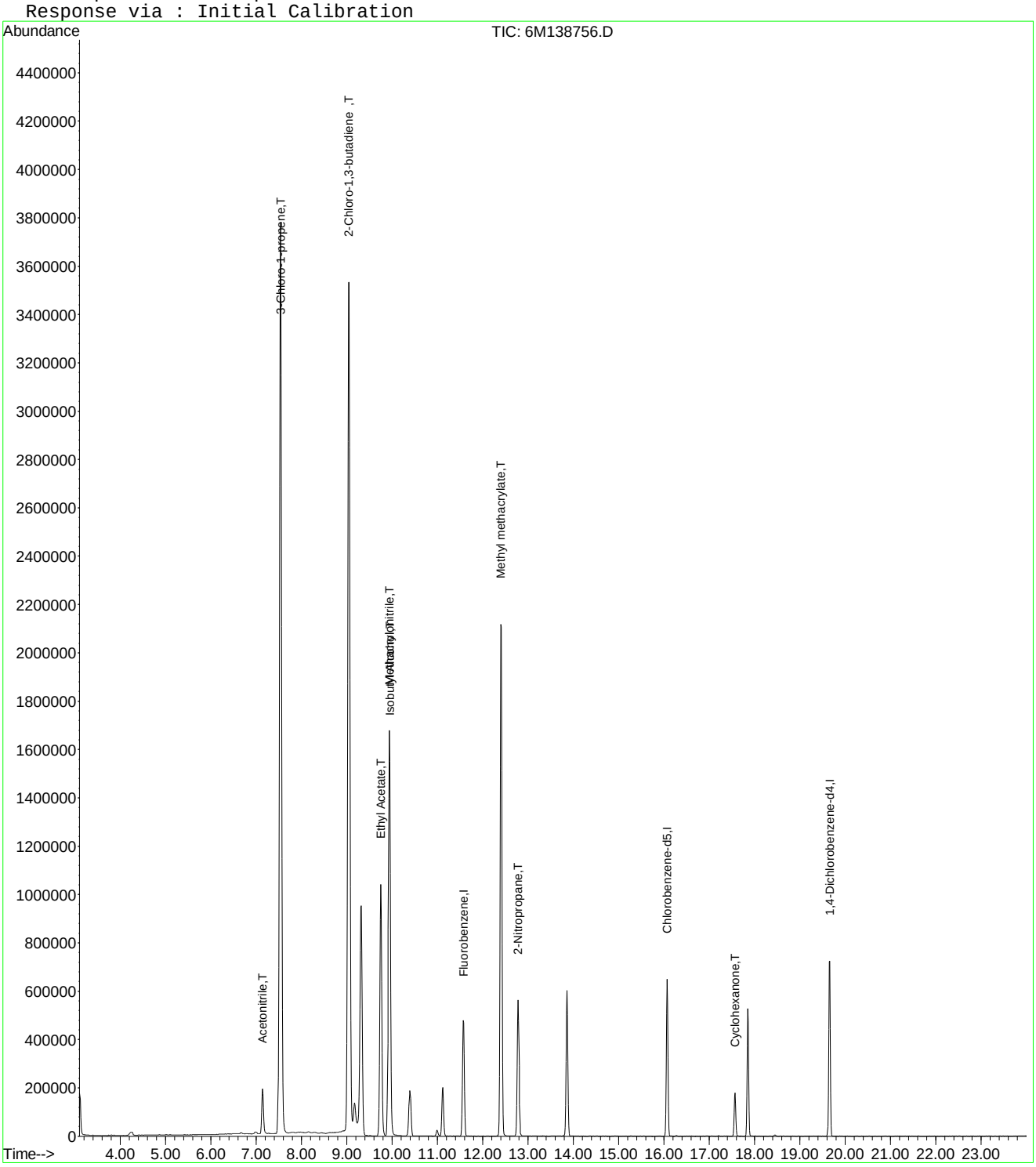

6M138756.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:51 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602625	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.08	117	475117	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	264739	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	170708	27.6598 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.64%		
43) 1,2-Dichloroethane-d4	11.11	65	208757	27.8702 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.48%		
58) Toluene-d8	13.86	98	554316	25.9150 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.64%		
80) p-Bromofluorobenzene	17.85	95	246698	27.9116 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 111.64%		

Target Compounds

					Qvalue
13) Acetone	6.66	43	14063	7.5256 ug/L	99
15) Tert-Butyl Alcohol	7.05	59	807	1.5033 ug/L #	59
16) Dimethyl Sulfide	7.16	62	1034	0.2034 ug/L #	1
18) Methyl acetate	7.48	43	1103	0.2125 ug/L #	60
19) Methylene Chloride	7.73	84	1123	0.1699 ug/L #	40
22) Methyl Tert Butyl Ether	7.97	73	18318	1.1224 ug/L #	53
24) n-Hexane	8.28	57	5609	0.6488 ug/L	75
27) 1,1-Dichloroethane	9.04	63	82912	6.4943 ug/L #	48
28) Ethyl-Tert-Butyl ether	9.32	59	139043	6.7111 ug/L #	38
29) 2-Butanone	9.53	43	4129	1.4970 ug/L	86
30) Propionitrile	9.72	54	202	0.2549 ug/L #	1
34) 1-Bromopropane	9.99	122	1978	1.9098 ug/L #	1
36) Tetrahydrofuran	10.37	42	5444	3.0296 ug/L #	63
48) Methylcyclohexane	12.40	83	6593	0.7540 ug/L #	1
60) Ethyl Methacrylate	13.85	69	1165	0.1639 ug/L #	1
73) m-,p-Xylene	16.28	106	1795	0.1593 ug/L	72
79) 1,1,2,2-Tetrachloroethane	17.57	83	12875	1.9973 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138757.D 8260WTR.M Mon Apr 25 09:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

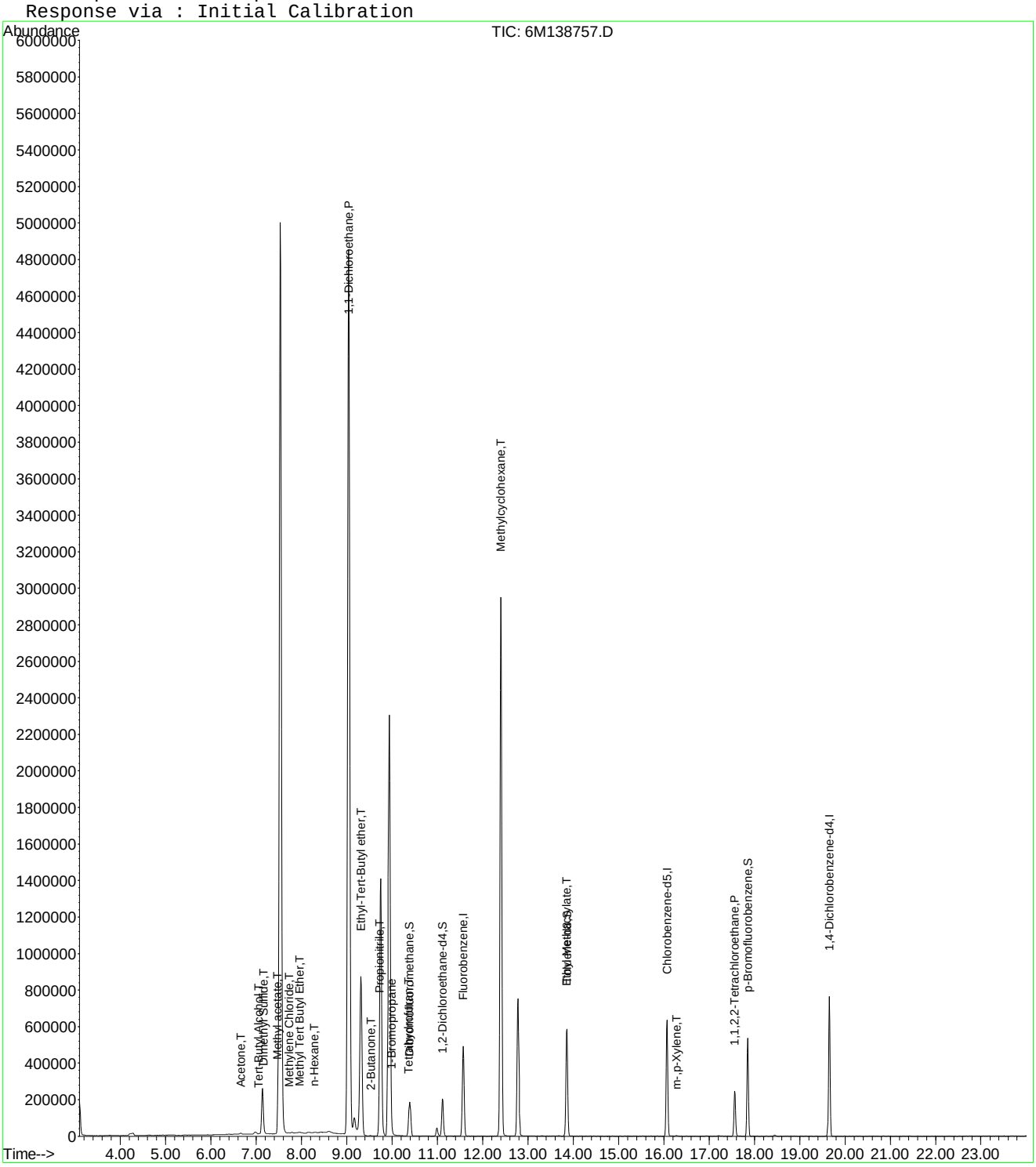

6M138757.D 8260WTR.M Mon Apr 25 09:22:52 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	602625	25.00	ug/L	-0.03
11) Chlorobenzene-d5	16.08	117	475117	25.00	ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.65	152	264739	25.00	ug/L	-0.03

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	368012	318.0524	ug/L	93
3) 3-Chloro-1-propene	7.53	41	5948883	368.4088	ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	5359203	385.5211	ug/L	83
5) Ethyl Acetate	9.76	43	2690267	423.1975	ug/L	94
6) Methacrylonitrile	9.94	67	929265	380.0675	ug/L #	62
7) Isobutyl Alcohol	9.95	43	192560	550.6158	ug/L #	89
8) 1-Butanol	10.99	41	29815	198.1744	ug/L	75
9) Methyl methacrylate	12.40	41	2375132	375.2316	ug/L	81
10) 2-Nitropropane	12.79	43	849210	455.0717	ug/L	98
13) Cyclohexanone	17.57	55	149420	165.2683	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138757.D A9FOOWT.M Mon Apr 25 15:46:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

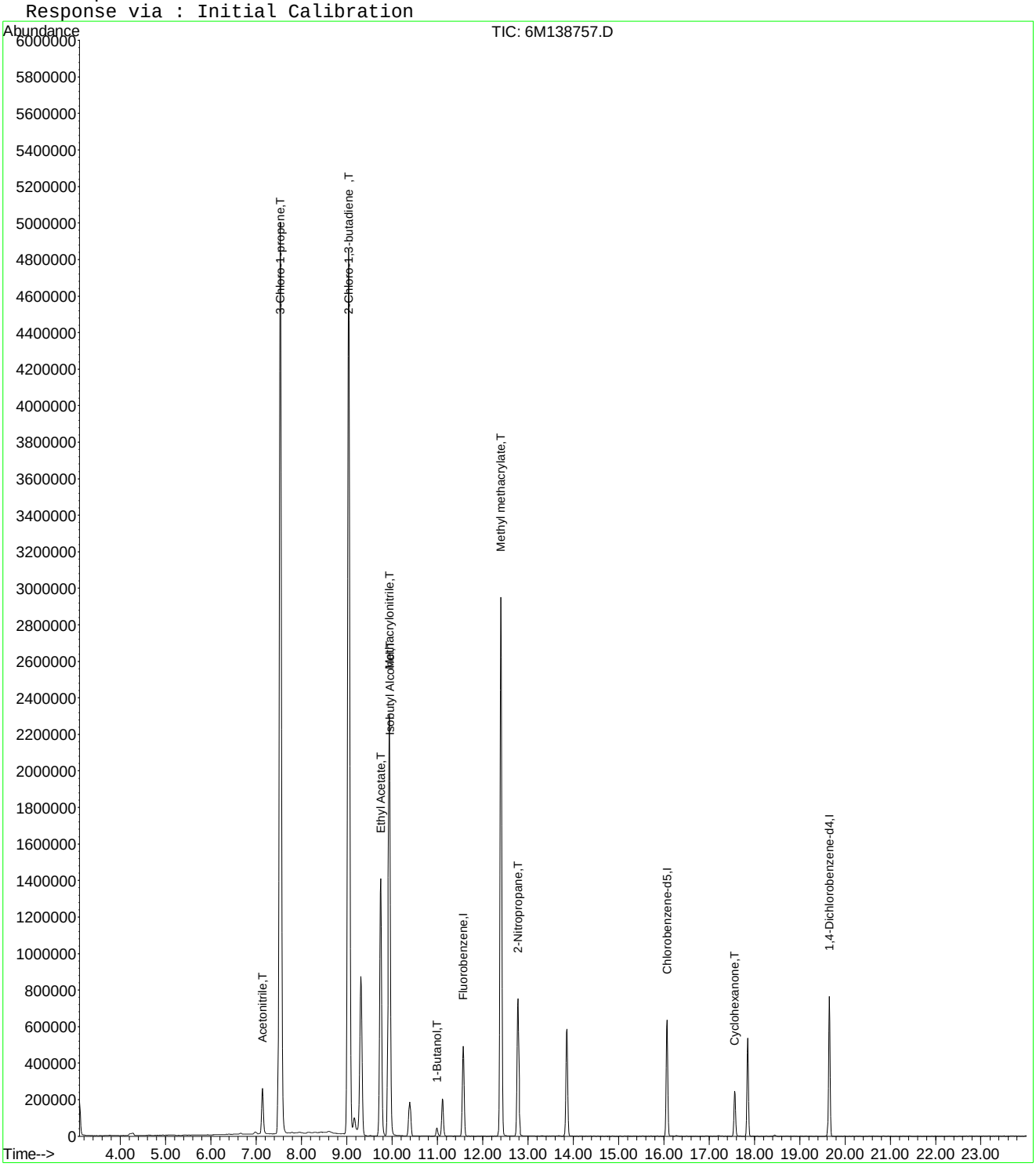

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:01 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602625	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.08	117	475117	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.65	152	264739	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	368012	407.7137 ug/L	93
3) 3-Chloro-1-propene	7.53	41	5948883	395.4723 ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	5359203	415.2070 ug/L	83
5) Ethyl Acetate	9.76	43	2690267	416.3170 ug/L	94
6) Methacrylonitrile	9.94	67	929265	417.1119 ug/L #	62
7) Isobutyl Alcohol	9.95	43	192560	935.6065 ug/L #	89
9) Methyl methacrylate	12.40	41	2375132	437.2937 ug/L	81
10) 2-Nitropropane	12.79	43	849210	420.4022 ug/L	98
13) Cyclohexanone	17.57	55	149420	452.7705 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138757.D A9FOOWT.M Wed Apr 27 16:05:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

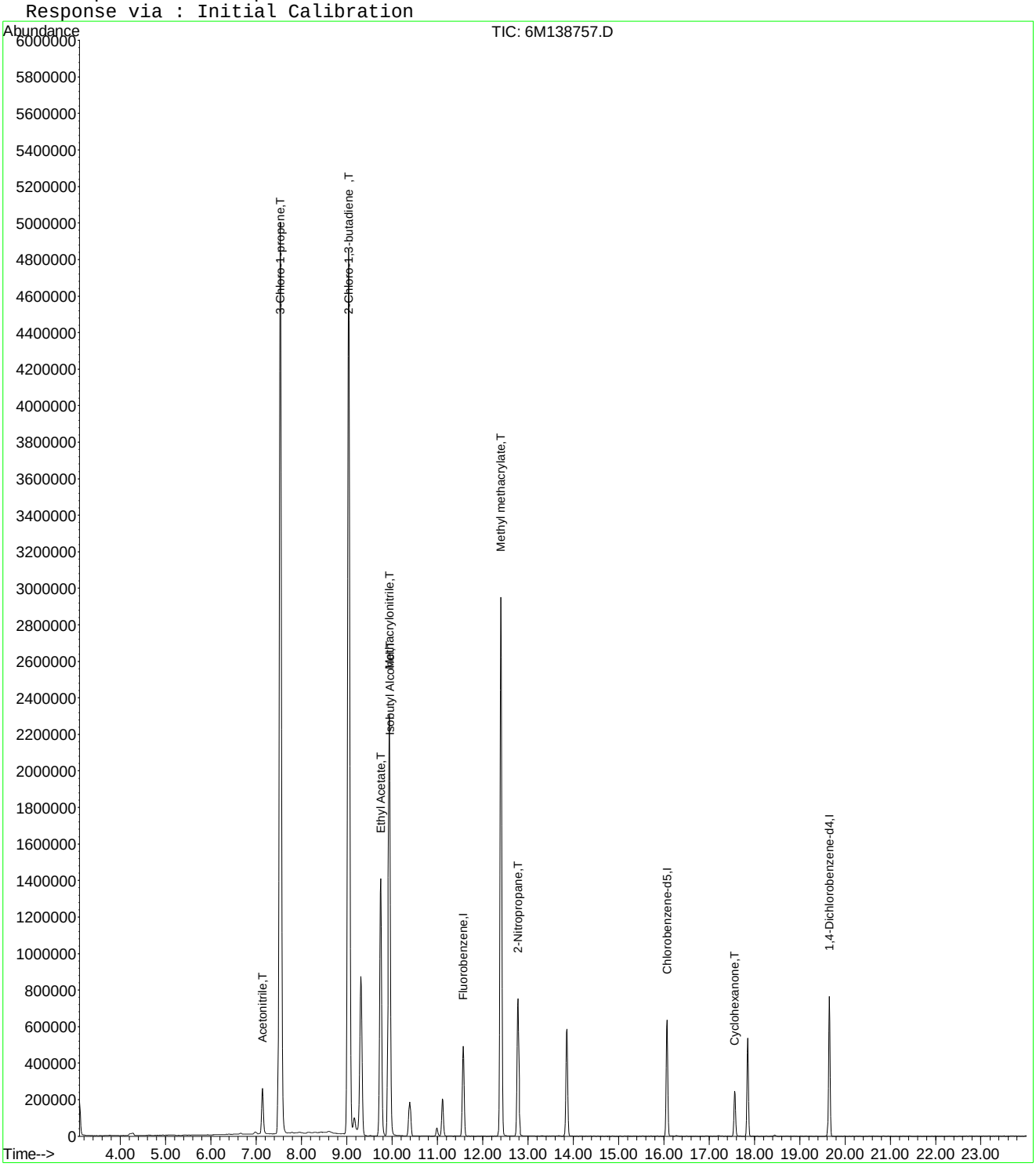

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:52 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	616486	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	485048	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	268890	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	175239	27.7556 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.04%		
43) 1,2-Dichloroethane-d4	11.12	65	210644	27.4898 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 109.96%		
58) Toluene-d8	13.86	98	563297	25.7957 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.20%		
80) p-Bromofluorobenzene	17.85	95	249406	27.7824 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 111.12%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	15233	7.9684 ug/L	89
15) Tert-Butyl Alcohol	7.06	59	370	0.6737 ug/L #	59
18) Methyl acetate	7.46	43	1079	0.2032 ug/L #	34
19) Methylene Chloride	7.73	84	1471	0.2176 ug/L	66
20) Carbon Disulfide	7.78	76	2765	0.1407 ug/L #	74
22) Methyl Tert Butyl Ether	7.96	73	25284	1.5144 ug/L #	53
24) n-Hexane	8.28	57	5266	0.5954 ug/L	97
27) 1,1-Dichloroethane	9.05	63	105121	8.0488 ug/L #	48
28) Ethyl-Tert-Butyl ether	9.31	59	124099	5.8551 ug/L #	39
29) 2-Butanone	9.52	43	4475	1.5860 ug/L #	72
30) Propionitrile	9.71	54	473	0.5835 ug/L #	1
34) 1-Bromopropane	10.00	122	2117	1.9980 ug/L #	1
36) Tetrahydrofuran	10.36	42	5652	3.0747 ug/L #	54
48) Methylcyclohexane	12.40	83	8011	0.8956 ug/L #	1
59) Toluene	13.98	91	3373	0.1249 ug/L	84
60) Ethyl Methacrylate	13.87	69	1585	0.2184 ug/L #	1
73) m-,p-Xylene	16.28	106	2521	0.2191 ug/L	79
79) 1,1,2,2-Tetrachloroethane	17.57	83	14350	2.1917 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138758.D 8260WTR.M Mon Apr 25 09:22:52 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

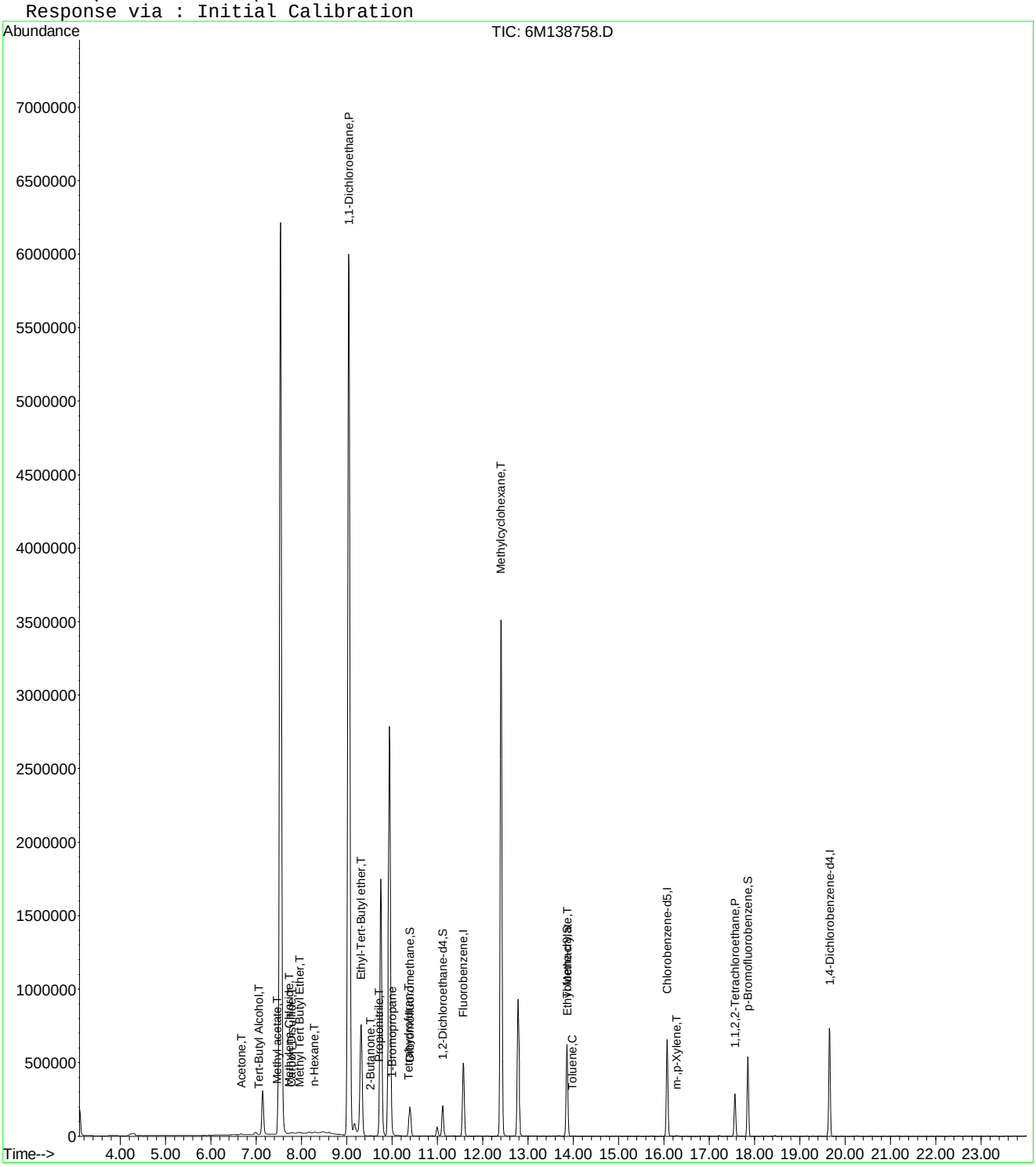

6M138758.D 8260WTR.M Mon Apr 25 09:22:52 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	616486	25.00	ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	485048	25.00	ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	268890	25.00	ug/L	-0.02

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	449583	379.8136	ug/L	92
3) 3-Chloro-1-propene	7.54	41	7430577	449.8223	ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	6752476	474.8265	ug/L	84
5) Ethyl Acetate	9.75	43	3307403	508.5794	ug/L	94
6) Methacrylonitrile	9.94	67	1145073	457.8027	ug/L #	63
7) Isobutyl Alcohol	9.95	43	251034	701.6799	ug/L #	90
8) 1-Butanol	10.99	41	42236	274.4224	ug/L	75
9) Methyl methacrylate	12.40	41	2914815	450.1389	ug/L	81
10) 2-Nitropropane	12.78	43	1036720	543.0629	ug/L	99
13) Cyclohexanone	17.57	55	176545	192.2558	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138758.D A9FOOWT.M Mon Apr 25 15:46:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

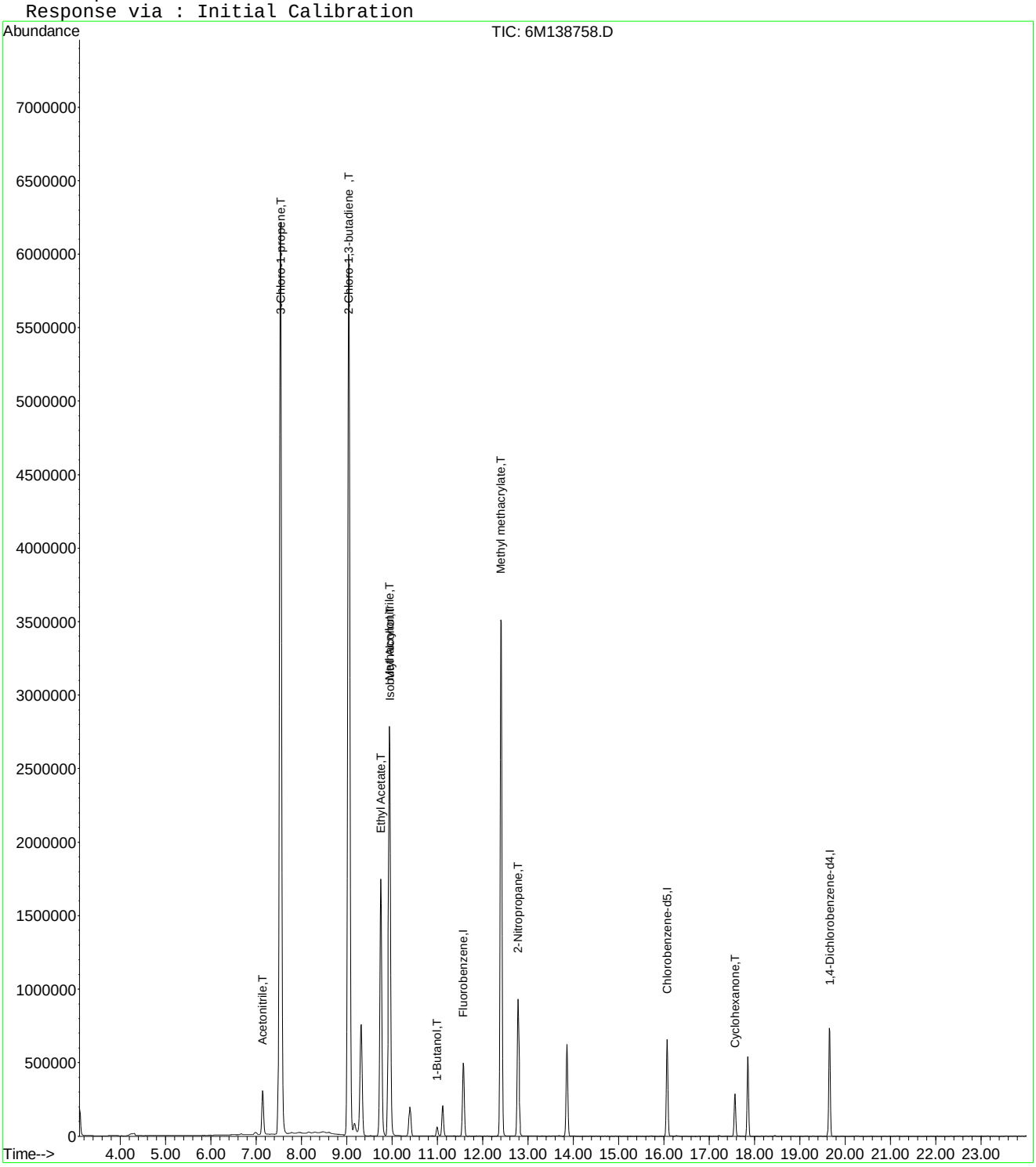

6M138758.D A9FOOWT.M Mon Apr 25 15:46:01 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:01 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	616486	25.00	ug/L	0.00
11) Chlorobenzene-d5	16.07	117	485048	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	268890	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	449583	486.8858	ug/L	92
3) 3-Chloro-1-propene	7.54	41	7430577	482.8665	ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	6752476	511.3891	ug/L	84
5) Ethyl Acetate	9.75	43	3307403	500.3107	ug/L	94
6) Methacrylonitrile	9.94	67	1145073	502.4237	ug/L #	63
7) Isobutyl Alcohol	9.95	43	251034	1192.2947	ug/L #	90
9) Methyl methacrylate	12.40	41	2914815	524.5904	ug/L	81
10) 2-Nitropropane	12.78	43	1036720	501.6898	ug/L	99
13) Cyclohexanone	17.57	55	176545	526.7057	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138758.D A9FOOWT.M Wed Apr 27 16:05:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

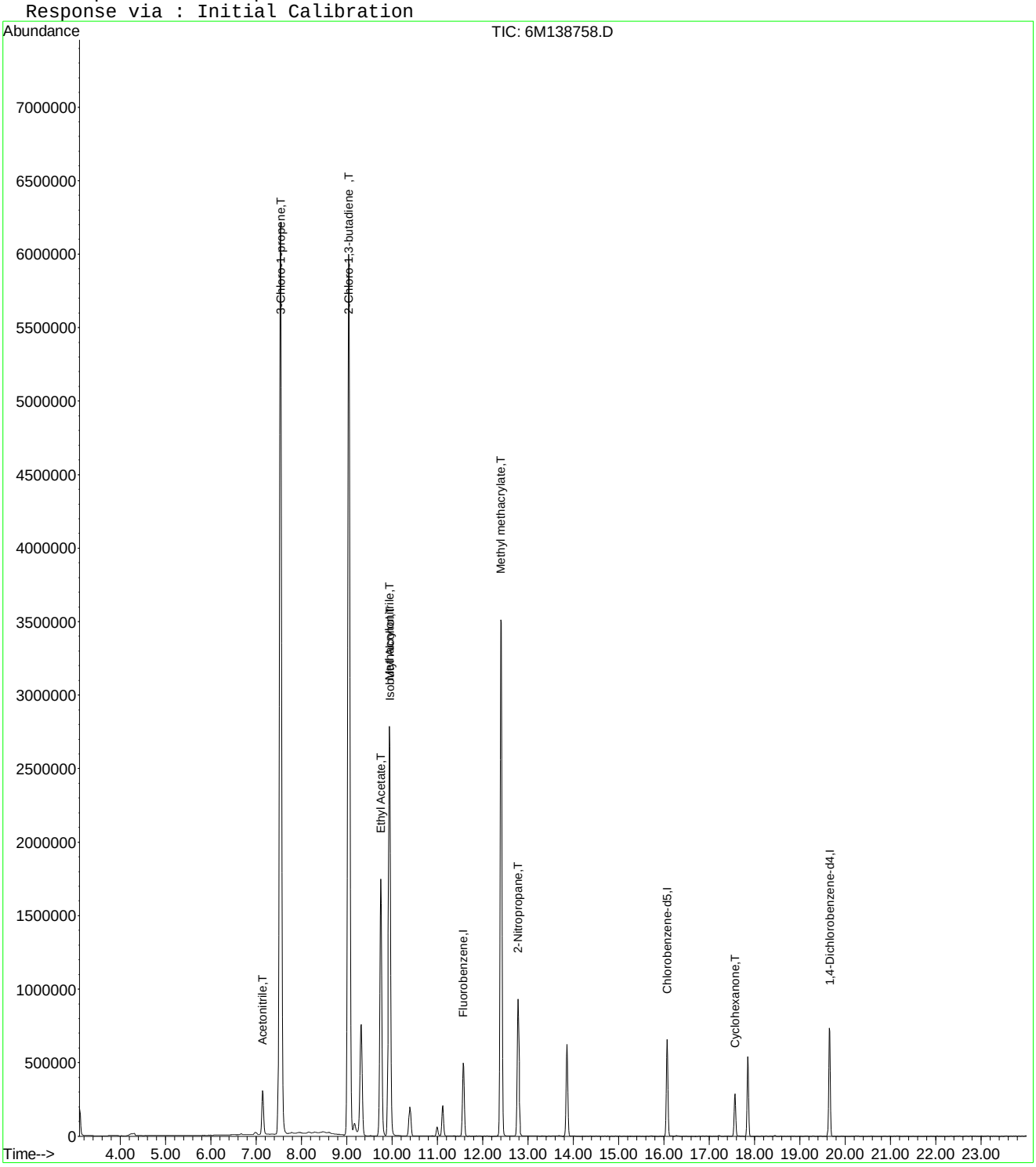

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:54 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602884	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	471639	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	256885	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.40	111	171708	27.8099 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.24%		
43) 1,2-Dichloroethane-d4	11.12	65	210067	28.0330 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.12%		
58) Toluene-d8	13.86	98	553825	26.0829 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.32%		
80) p-Bromofluorobenzene	17.85	95	243088	28.3441 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 113.36%		

Target Compounds					Qvalue
5) 1,3-Butadiene	4.21	54	367749	92.2302 ug/L	88
9) Diethyl ether	6.30	59	700386	132.3612 ug/L	92
13) Acetone	6.67	43	6570	3.5143 ug/L	81
16) Dimethyl Sulfide	7.14	62	2726	0.5361 ug/L #	1
20) Carbon Disulfide	7.54	76	432674	22.5096 ug/L #	36
22) Methyl Tert Butyl Ether	7.97	73	2916	0.1786 ug/L #	53
26) Vinyl Acetate	9.05	43	5230	0.5414 ug/L #	1
27) 1,1-Dichloroethane	9.04	63	22472	1.7594 ug/L #	42
28) Ethyl-Tert-Butyl ether	9.32	59	4063	0.1960 ug/L #	35
29) 2-Butanone	9.52	43	6076	2.2019 ug/L #	66
30) Propionitrile	9.64	54	91341	115.2239 ug/L	96
36) Tetrahydrofuran	10.36	42	4030	2.2418 ug/L #	52
39) Cyclohexane	10.69	56	2387	0.2138 ug/L	79
48) Methylcyclohexane	12.40	83	1353	0.1547 ug/L #	1
50) 1,4-Dioxane	12.73	88	9231	177.0935 ug/L	71
60) Ethyl Methacrylate	13.86	69	1222	0.1732 ug/L #	1
79) 1,1,2,2-Tetrachloroethane	17.57	83	1146	0.1832 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138761.D 8260WTR.M Mon Apr 25 09:22:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

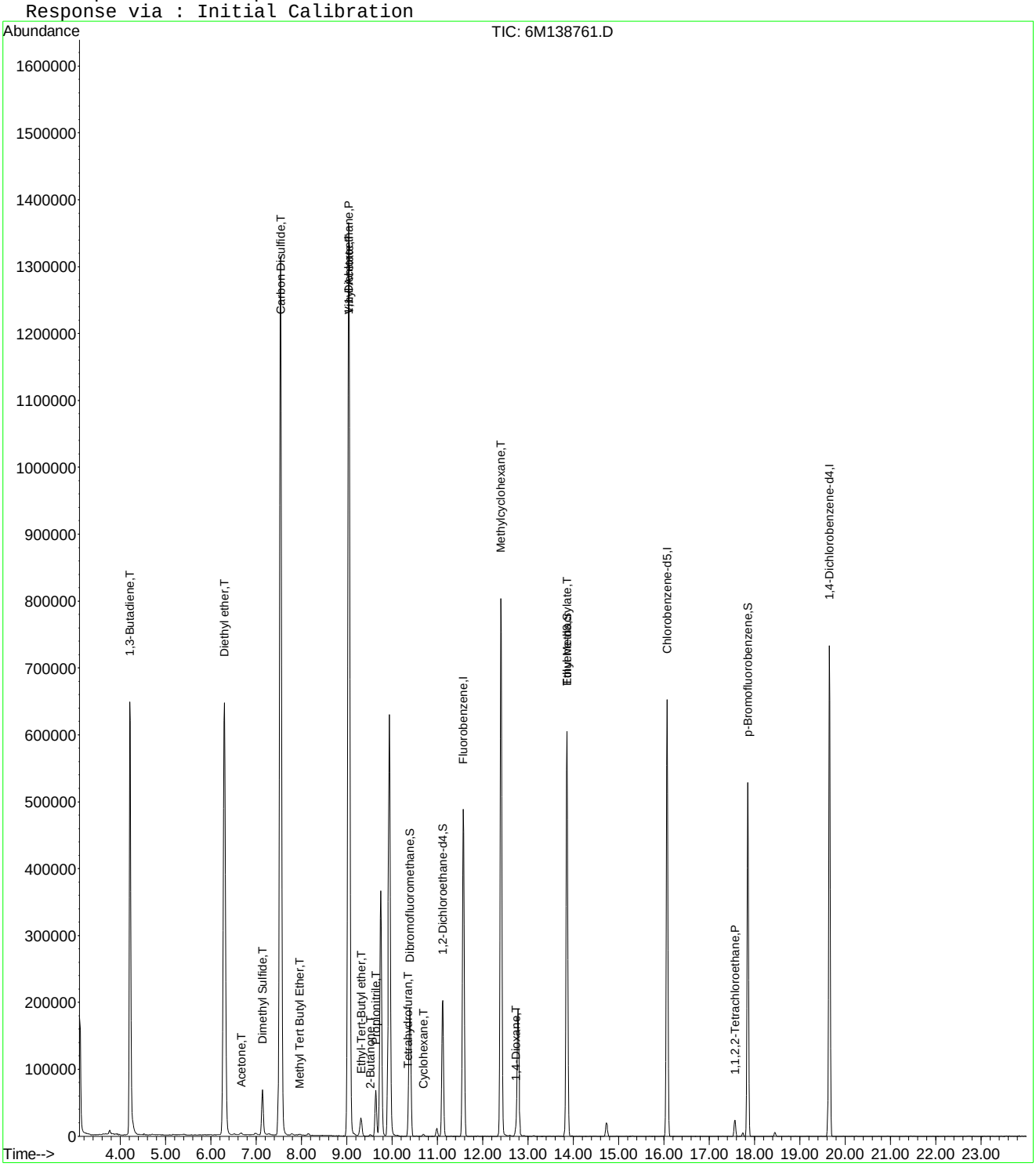

6M138761.D 8260WTR.M Mon Apr 25 09:22:54 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46:01 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602884	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	471639	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.65	152	256885	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	96564	83.4191 ug/L	96
3) 3-Chloro-1-propene	7.54	41	1552115	96.0797 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	1512761	108.7756 ug/L	83
5) Ethyl Acetate	9.75	43	691566	108.7414 ug/L	93
6) Methacrylonitrile	9.94	67	252030	103.0355 ug/L #	63
7) Isobutyl Alcohol	9.95	43	51165	146.2409 ug/L #	93
8) 1-Butanol	10.99	41	7584	50.3877 ug/L	72
9) Methyl methacrylate	12.40	41	635574	100.3670 ug/L	81
10) 2-Nitropropane	12.79	43	211020	113.0321 ug/L	98
13) Cyclohexanone	17.57	55	15491	17.6579 ug/L	85

(#) = qualifier out of range (m) = manual integration
6M138761.D A9FOOWT.M Mon Apr 25 15:46:02 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

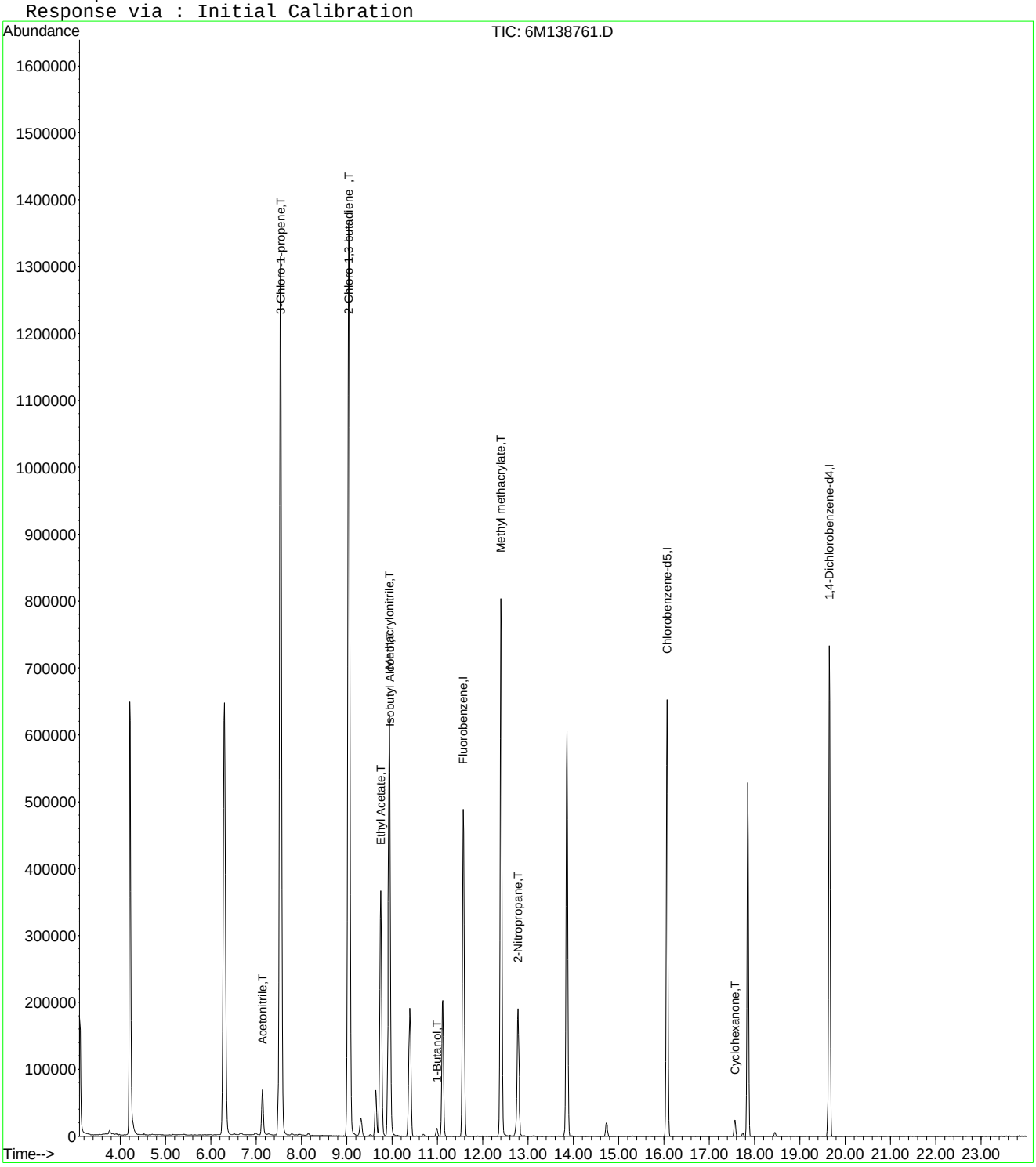

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:02 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	602884	25.00	ug/L	0.00
11) Chlorobenzene-d5	16.07	117	471639	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.65	152	256885	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	96564	106.9355	ug/L	96
3) 3-Chloro-1-propene	7.54	41	1552115	103.1378	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	1512761	117.1516	ug/L	83
5) Ethyl Acetate	9.75	43	691566	106.9734	ug/L	93
6) Methacrylonitrile	9.94	67	252030	113.0781	ug/L #	63
7) Isobutyl Alcohol	9.95	43	51165	248.4926	ug/L #	93
9) Methyl methacrylate	12.40	41	635574	116.9674	ug/L	81
10) 2-Nitropropane	12.79	43	211020	104.4208	ug/L	98
13) Cyclohexanone	17.57	55	15491	48.3758	ug/L	85

(#) = qualifier out of range (m) = manual integration
6M138761.D A9FOOWT.M Wed Apr 27 16:05:02 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

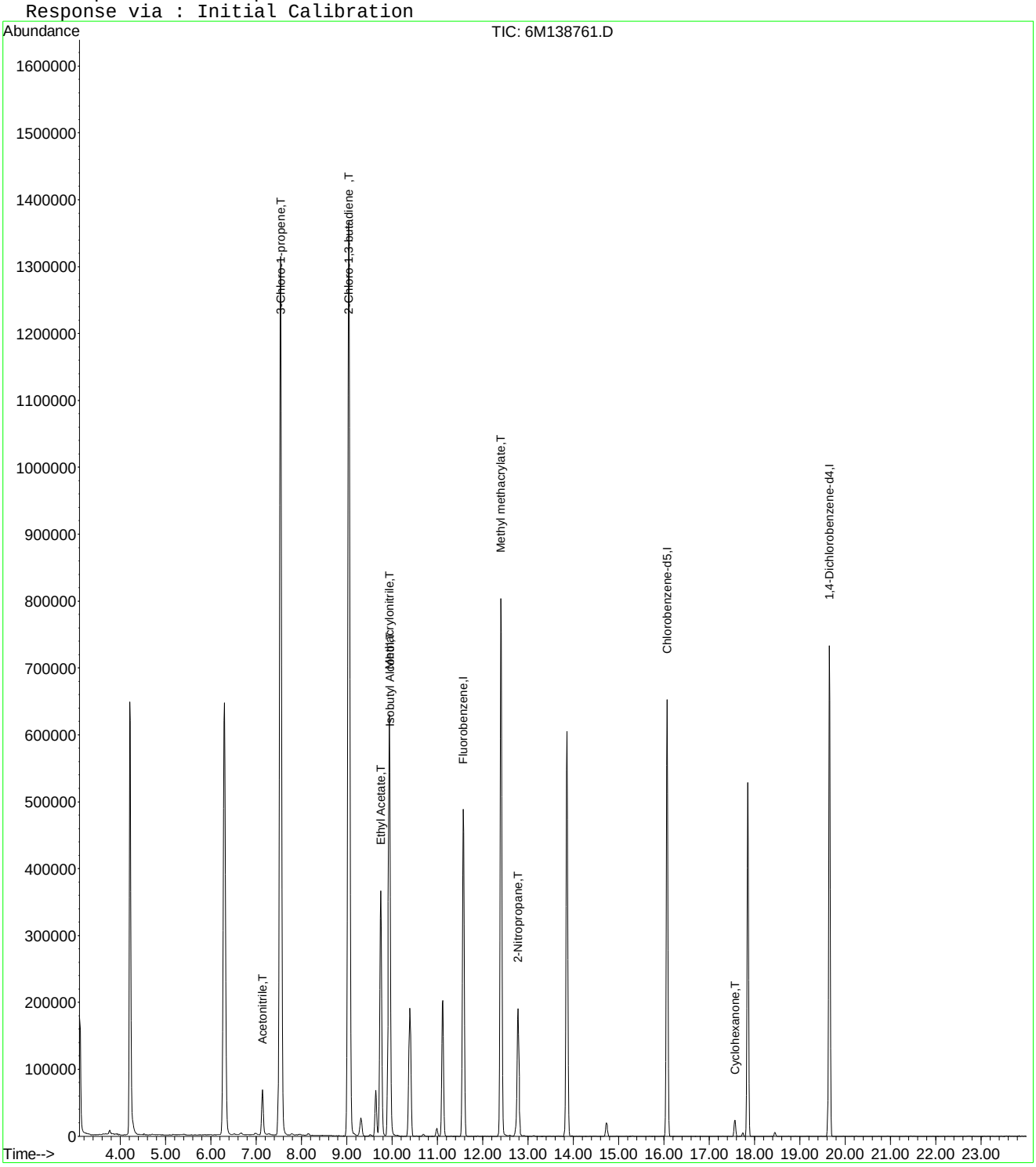

6M138761.D A9FOOWT.M Wed Apr 27 16:05:02 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	101	0.00
2	T	Acetonitrile	100.0000	106.9355	-6.9	106	0.00
3	T	3-Chloro-1-propene	100.0000	103.1378	-3.1	96	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	117.1516	-17.2	107	0.00
5	T	Ethyl Acetate	100.0000	106.9734	-7.0	103	0.00
6	T	Methacrylonitrile	100.0000	113.0781	-13.1	106	0.00
7	T	Isobutyl Alcohol	200.0000	248.4926	-24.2	151	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	100.0000	116.9674	-17.0	108	0.00
10	T	2-Nitropropane	100.0000	104.4208	-4.4	107	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	101	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	100.0000	48.3758	51.6	56	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138761.D A9FOOWT.M Wed Apr 27 16:05:40 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139736.D Vial: 2
Acq On : 1 Jun 2016 12:30 Operator: TMB
Sample : WG570915-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:16 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.56	96	813215	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.06	117	577965	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.64	152	301716	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.38	111	4283	0.5089 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	2.04%#	
43) 1,2-Dichloroethane-d4	11.10	65	4854	0.5232 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	2.08%#	
58) Toluene-d8	13.85	98	12480	0.4499 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	1.80%#	
80) p-Bromofluorobenzene	17.84	95	4709	0.4420 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	1.76%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	4144	0.3219 ug/L #	64
3) Chloromethane	3.94	50	8154	0.5196 ug/L	89
4) Vinyl Chloride	4.17	62	4049	0.3828 ug/L	83
5) 1,3-Butadiene	4.23	54	3789	Below Cal	82
6) Bromomethane	5.09	94	2017	0.3871 ug/L	67
7) Chloroethane	5.24	64	1907	0.2852 ug/L	78
8) Trichlorofluoromethane	5.74	101	5609	0.3959 ug/L #	90
10) Isoprene	6.32	67	4333	0.3598 ug/L	85
12) 1,1,2-Trichloro-1,2,2-Trif	6.53	101	2492	0.3079 ug/L #	51
13) Acetone	6.65	43	8781	1.3297 ug/L	95
14) 1,1-Dichloroethene	6.88	61	5302	0.3699 ug/L	94
16) Dimethyl Sulfide	7.16	62	1556	0.2366 ug/L	90
18) Methyl acetate	7.45	43	2371	0.3380 ug/L #	66
19) Methylene Chloride	7.72	84	3850	0.4356 ug/L	96
20) Carbon Disulfide	7.76	76	13710	0.4889 ug/L	97
22) Methyl Tert Butyl Ether	7.96	73	5876	0.2725 ug/L #	57
23) trans-1,2-Dichloroethene	8.21	96	2912	0.3486 ug/L	79
24) n-Hexane	8.27	57	6111	0.4698 ug/L	95
26) Vinyl Acetate	8.85	43	3338	0.2270 ug/L #	78
27) 1,1-Dichloroethane	8.90	63	5337	0.3188 ug/L	90
29) 2-Butanone	9.52	43	1477	0.4022 ug/L #	57
31) 2,2-Dichloropropane	9.75	77	3421	0.2803 ug/L	93
32) cis-1,2-Dichloroethene	9.82	96	3404	0.3740 ug/L	96
33) Chloroform	10.06	83	4699	0.3152 ug/L	89
35) Bromochloromethane	10.33	130	1415	0.2738 ug/L	97
36) Tetrahydrofuran	10.35	42	3272	1.2942 ug/L #	65
38) 1,1,1-Trichloroethane	10.65	97	3984	0.2996 ug/L	88
39) Cyclohexane	10.69	56	5836	0.3501 ug/L	89
40) 1,1-Dichloropropene	10.89	75	3675	0.3224 ug/L	88
42) Carbon Tetrachloride	11.04	117	3635	0.3064 ug/L #	88
45) 1,2-Dichloroethane	11.24	62	3851	0.3361 ug/L #	84
46) Benzene	11.29	78	13082	0.3916 ug/L	94
47) Trichloroethene	12.15	130	3379	0.3960 ug/L	90
48) Methylcyclohexane	12.23	83	4088	0.3160 ug/L	89
49) 1,2-Dichloropropane	12.39	63	2852	0.3091 ug/L	92
51) Bromodichloromethane	12.74	83	3241	0.2856 ug/L	93
52) Dibromomethane	12.84	93	1404	0.2949 ug/L	85
53) 2-Chloroethyl Vinyl Ether	13.09	63	565	0.1342 ug/L #	41
54) 4-Methyl-2-Pentanone	13.13	58	397	0.1416 ug/L #	38
55) cis-1,3-Dichloropropene	13.48	75	4146	0.3228 ug/L #	86

(#) = qualifier out of range (m) = manual integration
6M139736.D 8260WT.M Thu Jun 02 12:18:18 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139736.D Vial: 2
Acq On : 1 Jun 2016 12:30 Operator: TMB
Sample : WG570915-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:16 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
56)	Dimethyl Disulfide	13.79	79	1395	0.1885 ug/L #	47
59)	Toluene	13.96	91	12731	0.3879 ug/L	97
60)	Ethyl Methacrylate	14.08	69	2174	0.2417 ug/L	85
62)	trans-1,3-Dichloropropene	14.17	75	3169	0.2835 ug/L #	66
63)	1,1,2-Trichloroethane	14.43	97	1621	0.2594 ug/L	96
64)	2-Hexanone	14.36	43	1082	0.2041 ug/L #	28
65)	1,3-Dichloropropane	14.79	76	3110	0.2831 ug/L	83
66)	Tetrachloroethene	14.92	166	3177	0.3690 ug/L	86
67)	Dibromochloromethane	15.23	129	2098	0.2635 ug/L	96
68)	1,2-Dibromoethane	15.53	107	1937	0.3207 ug/L	77
69)	1-Chlorohexane	15.65	91	3354	0.3147 ug/L	92
70)	Chlorobenzene	16.13	112	8026	0.3655 ug/L	95
71)	1,1,1,2-Tetrachloroethane	16.17	131	2302	0.2890 ug/L	94
72)	Ethylbenzene	16.16	106	3722	0.3195 ug/L	74
73)	m-,p-Xylene	16.27	106	10149	0.7334 ug/L	99
74)	o-Xylene	16.92	106	4124	0.3016 ug/L	92
75)	Styrene	16.97	104	6703	0.2951 ug/L	96
76)	Bromoform	17.55	173	1095	0.2168 ug/L #	52
77)	Isopropylbenzene	17.43	105	10818	0.3152 ug/L	99
79)	1,1,2,2-Tetrachloroethane	17.70	83	1648	0.2266 ug/L	89
83)	n-Propylbenzene	18.03	91	15389	0.3935 ug/L #	95
84)	Bromobenzene	18.18	156	3040	0.3313 ug/L	88
85)	1,3,5-Trimethylbenzene	18.26	105	8430	0.3047 ug/L	95
86)	2-Chlorotoluene	18.35	91	9550	0.3565 ug/L	89
87)	4-Chlorotoluene	18.41	91	8247	0.3316 ug/L	98
88)	a-Methylstyrene	18.74	118	3516	0.2273 ug/L	85
89)	tert-Butylbenzene	18.80	134	1775	0.2910 ug/L	94
90)	1,2,4-Trimethylbenzene	18.86	105	8937	0.3086 ug/L	99
91)	sec-Butylbenzene	19.12	105	10994	0.3229 ug/L	94
92)	p-Isopropyltoluene	19.32	119	9119	0.3143 ug/L	92
93)	1,3-Dichlorobenzene	19.54	146	7014	0.3920 ug/L	92
94)	1,4-Dichlorobenzene	19.69	146	9787	0.3660 ug/L	92
95)	n-Butylbenzene	19.94	91	9532	0.3471 ug/L	97
96)	1,2-Dichlorobenzene	20.27	146	5584	0.3349 ug/L	92
98)	1,2,4-Trichlorobenzene	22.82	180	4377	0.3797 ug/L	96
99)	Hexachlorobutadiene	23.01	225	1664	0.3478 ug/L #	77
100)	Naphthalene	23.27	128	8470	0.3717 ug/L #	86
101)	1,2,3-Trichlorobenzene	23.69	180	3552	0.3256 ug/L	89

(#) = qualifier out of range (m) = manual integration
6M139736.D 8260WT.M Thu Jun 02 12:18:18 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139736.D Vial: 2
Acq On : 1 Jun 2016 12:30 Operator: TMB
Sample : WG570915-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 2 12:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration

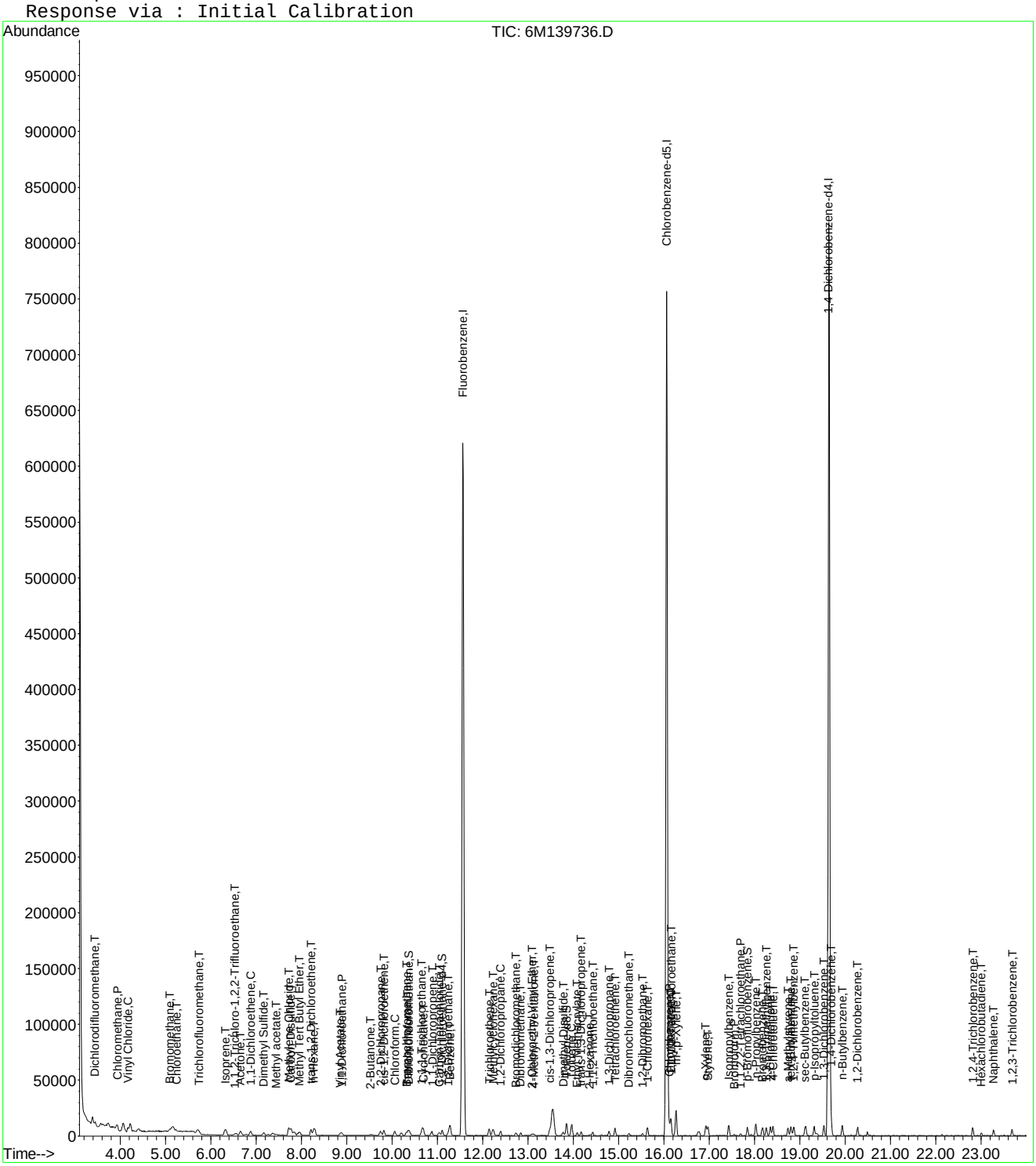

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\060116\6M139736.D Vial: 2
Acq On : 1 Jun 2016 12:30 Operator: TMB
Sample : WG570915-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.3219	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.5196	0.0	100	0.01
4	C	Vinyl Chloride	-1.0000	0.3828	0.0	100	0.01
5	T	1,3-Butadiene	-1.0000	-4.7832	0.0	0	0.03
6	T	Bromomethane	-1.0000	0.3871	0.0	100	0.02
7	T	Chloroethane	-1.0000	0.2852	0.0	100	0.01
8	T	Trichlorofluoromethane	-1.0000	0.3959	0.0	100	0.02
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.29#
10	T	Isoprene	-1.0000	0.3598	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.54#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3079	0.0	100	-0.02
13	T	Acetone	-1.0000	1.3297	0.0	0	0.00
14	C	1,1-Dichloroethene	-1.0000	0.3699	0.0	100	0.01
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-7.05#
16	T	Dimethyl Sulfide	-1.0000	0.2366	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.43#
18	T	Methyl acetate	-1.0000	0.3380	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4356	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4889	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.92#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2725	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	-1.0000	0.3486	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.4698	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.67#
26	T	Vinyl Acetate	-1.0000	0.2270	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.3188	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-9.30#
29	T	2-Butanone	-1.0000	0.4022	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.64#
31	T	2,2-Dichloropropane	-1.0000	0.2803	0.0	100	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.3740	0.0	100	0.00
33	C	Chloroform	0.3000	0.3152	-5.1	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-10.21#
35	T	Bromochloromethane	-1.0000	0.2738	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	1.2942	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.5089	0.0	100	0.00
38	T	1,1,1-Trichloroethane	-1.0000	0.2996	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.3501	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.3224	0.0	100	0.01
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-11.01#
42	T	Carbon Tetrachloride	-1.0000	0.3064	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.5232	0.0	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-11.01#
45	T	1,2-Dichloroethane	-1.0000	0.3361	0.0	100	0.00
46	T	Benzene	-1.0000	0.3916	0.0	100	0.00
47	T	Trichloroethene	-1.0000	0.3960	0.0	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3160	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.3091	0.0	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-12.74#
51	T	Bromodichloromethane	-1.0000	0.2856	0.0	100	0.00
52	T	Dibromomethane	-1.0000	0.2949	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1342	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.1416	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\060116\6M139736.D Vial: 2
Acq On : 1 Jun 2016 12:30 Operator: TMB
Sample : WG570915-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.3228	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.1885	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.4499	0.0	100	0.00
59	C	Toluene	-1.0000	0.3879	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2417	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.97#
62	T	trans-1,3-Dichloropropene	-1.0000	0.2835	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.2594	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.2041	0.0	100	0.00
65	T	1,3-Dichloropropane	-1.0000	0.2831	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.3690	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.2635	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.3207	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.3147	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.3655	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.2890	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.3195	0.0	100	0.00
73	T	m-,p-Xylene	-1.0000	0.7334	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.3016	0.0	100	0.00
75	T	Styrene	-1.0000	0.2951	0.0	100	0.00
76	P	Bromoform	-1.0000	0.2168	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.3152	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2266	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.4420	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-17.92#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-17.98#
83	T	n-Propylbenzene	-1.0000	0.3935	0.0	100	0.00
84	T	Bromobenzene	0.3000	0.3313	-10.4	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.3047	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.3565	0.0	100	0.00
87	T	4-Chlorotoluene	-1.0000	0.3316	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2273	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.2910	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.3086	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3229	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.3143	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.3920	0.0	100	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.3660	-22.0#	100	0.00
95	T	n-Butylbenzene	-1.0000	0.3471	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.3349	-11.6	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-21.46#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.3797	0.0	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.3478	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.3717	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.3256	-8.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M139736.D 8260WT.M Thu Jun 02 12:18:44 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139737.D Vial: 3
Acq On : 1 Jun 2016 13:01 Operator: TMB
Sample : WG570915-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:19 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.56	96	762881	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	549597	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.64	152	286787	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	13.85	98	1770	0.0671 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.28%#	
80) p-Bromofluorobenzene	17.83	95	697	0.0688 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	4460	0.3693 ug/L #	75
3) Chloromethane	3.93	50	7549	0.5128 ug/L	89
4) Vinyl Chloride	4.17	62	4900	0.4938 ug/L	79
5) 1,3-Butadiene	4.23	54	5430	Below Cal #	74
6) Bromomethane	5.08	94	1638	0.3351 ug/L	89
7) Chloroethane	5.24	64	2312	0.3686 ug/L #	72
8) Trichlorofluoromethane	5.73	101	5332	0.4012 ug/L #	89
10) Isoprene	6.33	67	4504	0.3986 ug/L	91
12) 1,1,2-Trichloro-1,2,2-Trif	6.55	101	2583	0.3402 ug/L	86
13) Acetone	6.66	43	2630	Below Cal #	48
14) 1,1-Dichloroethene	6.89	61	5658	0.4208 ug/L	91
16) Dimethyl Sulfide	7.17	62	2447	0.3966 ug/L	84
18) Methyl acetate	7.46	43	2637	0.4008 ug/L #	66
19) Methylene Chloride	7.72	84	3896	0.4699 ug/L	95
20) Carbon Disulfide	7.77	76	11879	0.4516 ug/L	90
22) Methyl Tert Butyl Ether	7.96	73	7778	0.3845 ug/L	88
23) trans-1,2-Dichloroethene	8.21	96	3104	0.3961 ug/L	95
24) n-Hexane	8.29	57	5504	0.4510 ug/L	100
26) Vinyl Acetate	8.86	43	4070	0.2951 ug/L #	78
27) 1,1-Dichloroethane	8.90	63	6427	0.4093 ug/L	93
29) 2-Butanone	9.51	43	1191	0.3457 ug/L #	57
31) 2,2-Dichloropropane	9.76	77	4571	0.3993 ug/L	92
32) cis-1,2-Dichloroethene	9.83	96	3207	0.3756 ug/L	85
33) Chloroform	10.06	83	5486	0.3923 ug/L	94
35) Bromochloromethane	10.33	130	1840	0.3795 ug/L	81
36) Tetrahydrofuran	10.36	42	3761	1.5858 ug/L	79
38) 1,1,1-Trichloroethane	10.65	97	5324	0.4267 ug/L	82
39) Cyclohexane	10.68	56	6403	0.4095 ug/L	90
40) 1,1-Dichloropropene	10.88	75	4176	0.3906 ug/L	95
42) Carbon Tetrachloride	11.04	117	4371	0.3927 ug/L #	92
45) 1,2-Dichloroethane	11.25	62	4453	0.4143 ug/L #	79
46) Benzene	11.29	78	13721	0.4378 ug/L	96
47) Trichloroethene	12.14	130	3152	0.3938 ug/L	99
48) Methylcyclohexane	12.23	83	4741	0.3907 ug/L	91
49) 1,2-Dichloropropane	12.39	63	3378	0.3902 ug/L	91
51) Bromodichloromethane	12.74	83	4050	0.3804 ug/L	98
52) Dibromomethane	12.84	93	1706	0.3819 ug/L	85
53) 2-Chloroethyl Vinyl Ether	13.08	63	1091	0.2761 ug/L #	41
55) cis-1,3-Dichloropropene	13.48	75	4324	0.3589 ug/L	91
56) Dimethyl Disulfide	13.78	79	1868	0.2691 ug/L #	47

(#) = qualifier out of range (m) = manual integration
6M139737.D 8260WT.M Thu Jun 02 12:18:19 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139737.D Vial: 3
Acq On : 1 Jun 2016 13:01 Operator: TMB
Sample : WG570915-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:19 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
59)	Toluene	13.96	91	12953	0.4150 ug/L		98
60)	Ethyl Methacrylate	14.10	69	2921	0.3415 ug/L		94
62)	trans-1,3-Dichloropropene	14.18	75	3597	0.3384 ug/L		88
63)	1,1,2-Trichloroethane	14.43	97	2395	0.4031 ug/L		98
64)	2-Hexanone	14.36	43	1748	0.3467 ug/L	#	68
65)	1,3-Dichloropropane	14.79	76	4110	0.3934 ug/L		93
66)	Tetrachloroethene	14.92	166	3316	0.4051 ug/L		95
67)	Dibromochloromethane	15.23	129	2940	0.3883 ug/L		88
68)	1,2-Dibromoethane	15.53	107	2255	0.3926 ug/L		97
69)	1-Chlorohexane	15.64	91	3691	0.3642 ug/L		89
70)	Chlorobenzene	16.13	112	8656	0.4145 ug/L		90
71)	1,1,1,2-Tetrachloroethane	16.16	131	2926	0.3863 ug/L		91
72)	Ethylbenzene	16.16	106	4269	0.3854 ug/L		86
73)	m-,p-Xylene	16.26	106	11025	0.8378 ug/L		99
74)	o-Xylene	16.93	106	4600	0.3537 ug/L		86
75)	Styrene	16.97	104	7188	0.3328 ug/L		90
76)	Bromoform	17.55	173	1259	0.2621 ug/L	#	68
77)	Isopropylbenzene	17.43	105	13008	0.3985 ug/L		93
79)	1,1,2,2-Tetrachloroethane	17.70	83	2694	0.3896 ug/L		90
81)	1,2,3-Trichloropropane	17.91	110	393	0.1963 ug/L	#	1
83)	n-Propylbenzene	18.04	91	15780	0.4246 ug/L	#	92
84)	Bromobenzene	18.18	156	3461	0.3968 ug/L		93
85)	1,3,5-Trimethylbenzene	18.26	105	9975	0.3793 ug/L		99
86)	2-Chlorotoluene	18.35	91	11254	0.4420 ug/L		95
87)	4-Chlorotoluene	18.41	91	9173	0.3881 ug/L		93
88)	a-Methylstyrene	18.74	118	4377	0.2977 ug/L		97
89)	tert-Butylbenzene	18.80	134	2203	0.3800 ug/L		87
90)	1,2,4-Trimethylbenzene	18.86	105	10590	0.3847 ug/L		99
91)	sec-Butylbenzene	19.13	105	12756	0.3942 ug/L		90
92)	p-Isopropyltoluene	19.32	119	10579	0.3836 ug/L		93
93)	1,3-Dichlorobenzene	19.54	146	7639	0.4492 ug/L		93
94)	1,4-Dichlorobenzene	19.69	146	8053	0.2880 ug/L		91
95)	n-Butylbenzene	19.94	91	10201	0.3908 ug/L		97
96)	1,2-Dichlorobenzene	20.28	146	6377	0.4024 ug/L		98
98)	1,2,4-Trichlorobenzene	22.83	180	4547	0.4149 ug/L		97
99)	Hexachlorobutadiene	23.01	225	1883	0.4141 ug/L		86
100)	Naphthalene	23.28	128	8429	0.3891 ug/L	#	82
101)	1,2,3-Trichlorobenzene	23.67	180	4307	0.4153 ug/L		94

(#) = qualifier out of range (m) = manual integration
6M139737.D 8260WT.M Thu Jun 02 12:18:19 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139737.D Vial: 3
Acq On : 1 Jun 2016 13:01 Operator: TMB
Sample : WG570915-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 2 12:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration

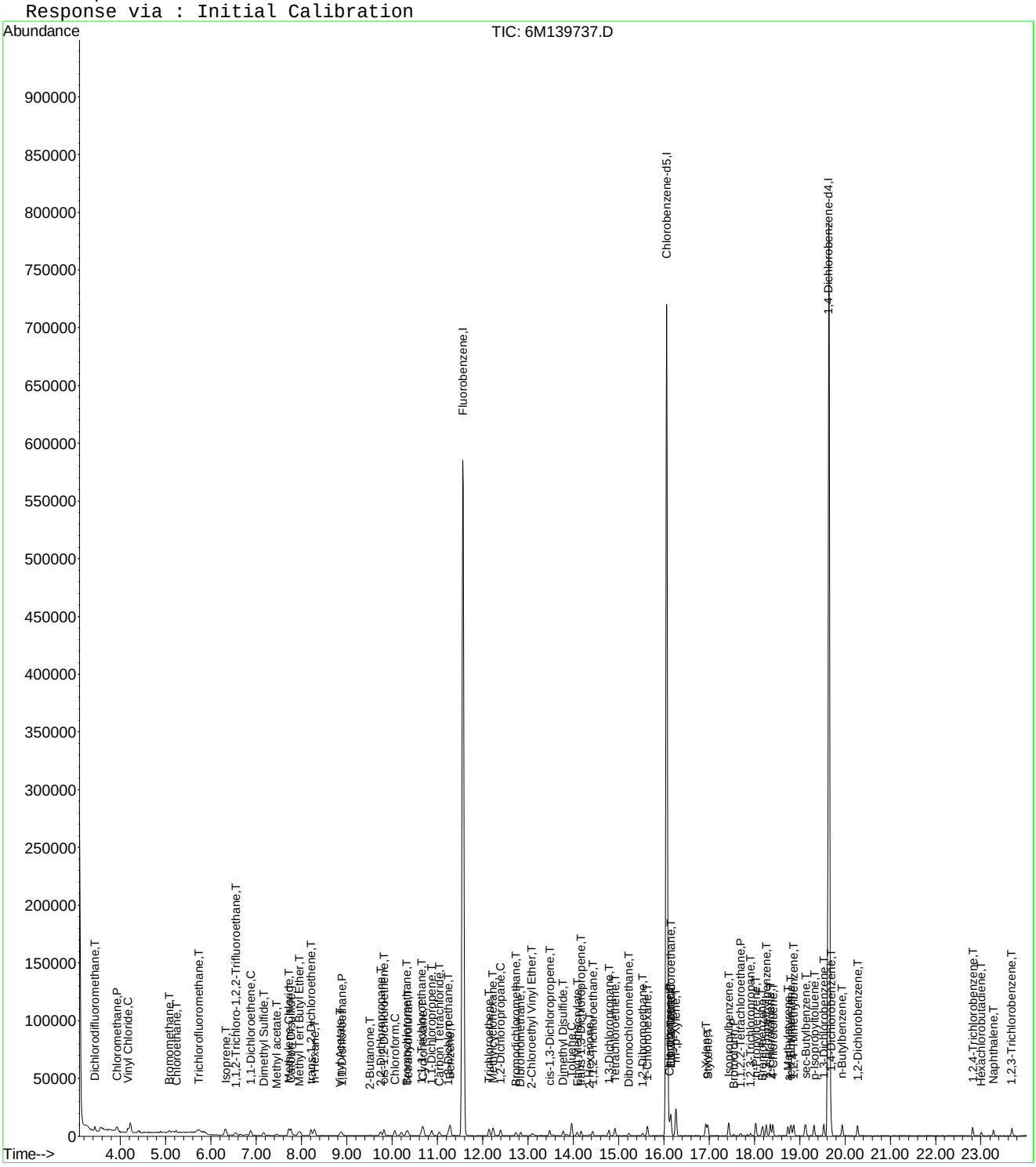

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\060116\6M139737.D Vial: 3
Acq On : 1 Jun 2016 13:01 Operator: TMB
Sample : WG570915-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.3693	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.5128	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.4938	-23.4#	100	0.01
5	T	1,3-Butadiene	-1.0000	-4.4099	0.0	0	0.03
6	T	Bromomethane	-1.0000	0.3351	0.0	100	0.01
7	T	Chloroethane	-1.0000	0.3686	0.0	100	0.01
8	T	Trichlorofluoromethane	0.4000	0.4012	-0.3	100	0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.29#
10	T	Isoprene	-1.0000	0.3986	0.0	100	0.01
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.54#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3402	0.0	100	0.00
13	T	Acetone	-1.0000	-1.3315	0.0	0	0.00
14	C	1,1-Dichloroethene	0.4000	0.4208	-5.2	100	0.01
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-7.05#
16	T	Dimethyl Sulfide	-1.0000	0.3966	0.0	100	0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.43#
18	T	Methyl acetate	-1.0000	0.4008	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4699	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4516	0.0	100	0.01
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.92#
22	T	Methyl Tert Butyl Ether	-1.0000	0.3845	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.3961	1.0	100	0.00
24	T	n-Hexane	-1.0000	0.4510	0.0	100	0.01
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.67#
26	T	Vinyl Acetate	-1.0000	0.2951	0.0	100	0.00
27	P	1,1-Dichloroethane	0.4000	0.4093	-2.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-9.30#
29	T	2-Butanone	-1.0000	0.3457	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.64#
31	T	2,2-Dichloropropane	0.4000	0.3993	0.2	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.3756	6.1	100	0.00
33	C	Chloroform	0.4000	0.3923	1.9	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-10.21#
35	T	Bromochloromethane	0.4000	0.3795	5.1	100	0.00
36	T	Tetrahydrofuran	-1.0000	1.5858	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-10.38#
38	T	1,1,1-Trichloroethane	0.4000	0.4268	-6.7	100	0.00
39	T	Cyclohexane	-1.0000	0.4095	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.3906	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-11.01#
42	T	Carbon Tetrachloride	0.4000	0.3927	1.8	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-11.11#
44		Heptane	-1.0000	0.0000	0.0	0	-11.01#
45	T	1,2-Dichloroethane	0.4000	0.4143	-3.6	100	0.00
46	T	Benzene	0.4000	0.4378	-9.5	100	0.00
47	T	Trichloroethene	0.4000	0.3938	1.6	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3907	0.0	100	0.00
49	C	1,2-Dichloropropane	0.4000	0.3902	2.4	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-12.74#
51	T	Bromodichloromethane	0.4000	0.3804	4.9	100	0.00
52	T	Dibromomethane	0.4000	0.3819	4.5	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2761	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0913	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\060116\6M139737.D Vial: 3
Acq On : 1 Jun 2016 13:01 Operator: TMB
Sample : WG570915-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3589	10.3	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2691	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0671	0.0	100	0.00
59	C	Toluene	0.4000	0.4150	-3.8	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3415	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.97#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3384	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.4031	-0.8	100	0.00
64	T	2-Hexanone	-1.0000	0.3467	0.0	100	0.00
65	T	1,3-Dichloropropane	0.4000	0.3934	1.6	100	0.00
66	T	Tetrachloroethene	0.4000	0.4051	-1.3	100	0.00
67	T	Dibromochloromethane	0.4000	0.3883	2.9	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.3926	1.8	100	0.00
69	T	1-Chlorohexane	0.4000	0.3642	8.9	100	0.00
70	P	Chlorobenzene	0.4000	0.4145	-3.6	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3863	3.4	100	0.00
72	C	Ethylbenzene	0.4000	0.3854	3.6	100	0.00
73	T	m-,p-Xylene	0.8000	0.8378	-4.7	100	0.00
74	T	o-Xylene	-1.0000	0.3537	0.0	100	0.00
75	T	Styrene	0.4000	0.3328	16.8	100	0.00
76	P	Bromoform	-1.0000	0.2621	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.3985	0.4	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.3896	2.6	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0688	0.0	100	-0.02
81	T	1,2,3-Trichloropropane	-1.0000	0.1963	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-17.98#
83	T	n-Propylbenzene	0.4000	0.4245	-6.1	100	0.00
84	T	Bromobenzene	0.4000	0.3968	0.8	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.3793	5.2	100	0.00
86	T	2-Chlorotoluene	0.4000	0.4420	-10.5	100	0.00
87	T	4-Chlorotoluene	0.4000	0.3881	3.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2977	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3800	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.3847	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3942	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.3836	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.4491	-12.3	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.2880	28.0#	100	0.00
95	T	n-Butylbenzene	-1.0000	0.3908	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.4024	-0.6	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-21.46#
98	T	1,2,4-Trichlorobenzene	0.4000	0.4149	-3.7	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.4141	-3.5	100	0.00
100	T	Naphthalene	0.4000	0.3891	2.7	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.4153	-3.8	100	-0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 1
6M139737.D 8260WT.M Thu Jun 02 12:18:53 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139738.D Vial: 4
Acq On : 1 Jun 2016 13:33 Operator: TMB
Sample : WG570915-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:19 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	735945	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.06	117	535564	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	279249	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.38	111	4107	0.5392 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	2.16%#	
43) 1,2-Dichloroethane-d4	11.11	65	4822	0.5744 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	2.28%#	
58) Toluene-d8	13.85	98	13936	0.5422 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.16%#	
80) p-Bromofluorobenzene	17.84	95	5325	0.5400 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.16%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	10837	0.9303 ug/L	94
3) Chloromethane	3.93	50	14951	1.0527 ug/L	95
4) Vinyl Chloride	4.17	62	10315	1.0775 ug/L	98
5) 1,3-Butadiene	4.23	54	11501	Below Cal #	71
6) Bromomethane	5.09	94	4678	0.9920 ug/L	91
7) Chloroethane	5.24	64	6242	1.0315 ug/L	93
8) Trichlorofluoromethane	5.74	101	13112	1.0227 ug/L	98
9) Diethyl ether	6.29	59	32367	4.6948 ug/L	95
10) Isoprene	6.32	67	10603	0.9728 ug/L	96
11) Acrolein	6.55	56	2886	2.4811 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.55	101	6983	0.9534 ug/L	99
13) Acetone	6.65	43	4248	Below Cal	88
14) 1,1-Dichloroethene	6.88	61	12693	0.9786 ug/L	95
15) Tert-Butyl Alcohol	7.01	59	5638	8.8569 ug/L #	91
16) Dimethyl Sulfide	7.16	62	5494	0.9230 ug/L	95
17) Iodomethane	7.44	142	206	1.4776 ug/L #	32
18) Methyl acetate	7.45	43	6108	0.9622 ug/L #	84
19) Methylene Chloride	7.72	84	8543	1.0681 ug/L	99
20) Carbon Disulfide	7.77	76	25589	1.0084 ug/L	97
21) Acrylonitrile	7.92	53	6481	2.3166 ug/L	99
22) Methyl Tert Butyl Ether	7.96	73	18778	0.9622 ug/L	98
23) trans-1,2-Dichloroethene	8.21	96	7417	0.9810 ug/L	94
24) n-Hexane	8.29	57	11426	0.9706 ug/L	99
25) Diisopropyl ether	8.67	45	153480	4.8980 ug/L	98
26) Vinyl Acetate	8.85	43	9400	0.7065 ug/L #	84
27) 1,1-Dichloroethane	8.89	63	15342	1.0128 ug/L	97
28) Ethyl-Tert-Butyl ether	9.30	59	123806	4.8277 ug/L	99
29) 2-Butanone	9.52	43	3323	0.9999 ug/L #	57
30) Propionitrile	9.63	54	4078	4.4461 ug/L #	67
31) 2,2-Dichloropropane	9.75	77	11462	1.0379 ug/L	97
32) cis-1,2-Dichloroethene	9.82	96	8252	1.0019 ug/L	100
33) Chloroform	10.06	83	13163	0.9757 ug/L	96
34) 1-Bromopropane	10.22	122	767	0.8504 ug/L	95
35) Bromochloromethane	10.32	130	4431	0.9473 ug/L	98
36) Tetrahydrofuran	10.35	42	13920	6.0841 ug/L	96
38) 1,1,1-Trichloroethane	10.66	97	11268	0.9363 ug/L	97
39) Cyclohexane	10.68	56	14333	0.9501 ug/L	97
40) 1,1-Dichloropropene	10.87	75	10019	0.9713 ug/L	98
41) Tert-Amyl-Methyl ether	11.00	73	94333	4.7510 ug/L	95
42) Carbon Tetrachloride	11.05	117	10227	0.9525 ug/L	96

(#) = qualifier out of range (m) = manual integration
6M139738.D 8260WT.M Thu Jun 02 12:18:20 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139738.D Vial: 4
Acq On : 1 Jun 2016 13:33 Operator: TMB
Sample : WG570915-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:19 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.24	62	10141	0.9780 ug/L	97
46)	Benzene	11.28	78	31309	1.0356 ug/L	97
47)	Trichloroethene	12.14	130	7967	1.0318 ug/L	92
48)	Methylcyclohexane	12.24	83	11289	0.9643 ug/L	96
49)	1,2-Dichloropropane	12.40	63	8268	0.9901 ug/L	94
51)	Bromodichloromethane	12.73	83	10186	0.9919 ug/L	93
52)	Dibromomethane	12.84	93	4177	0.9693 ug/L	96
53)	2-Chloroethyl Vinyl Ether	13.09	63	3010	0.7897 ug/L	83
54)	4-Methyl-2-Pentanone	13.12	58	1877	0.7400 ug/L #	55
55)	cis-1,3-Dichloropropene	13.48	75	10469	0.9007 ug/L	96
56)	Dimethyl Disulfide	13.79	79	4425	0.6608 ug/L	95
59)	Toluene	13.97	91	30558	1.0048 ug/L	98
60)	Ethyl Methacrylate	14.09	69	6558	0.7869 ug/L	93
62)	trans-1,3-Dichloropropene	14.18	75	9010	0.8699 ug/L	96
63)	1,1,2-Trichloroethane	14.43	97	5393	0.9314 ug/L	94
64)	2-Hexanone	14.36	43	4275	0.8701 ug/L	96
65)	1,3-Dichloropropane	14.79	76	10006	0.9829 ug/L	98
66)	Tetrachloroethene	14.92	166	8268	1.0364 ug/L	93
67)	Dibromochloromethane	15.24	129	7033	0.9532 ug/L	94
68)	1,2-Dibromoethane	15.53	107	5148	0.9198 ug/L	98
69)	1-Chlorohexane	15.64	91	8904	0.9017 ug/L	90
70)	Chlorobenzene	16.12	112	20831	1.0237 ug/L	95
71)	1,1,1,2-Tetrachloroethane	16.16	131	6905	0.9355 ug/L	97
72)	Ethylbenzene	16.15	106	10603	0.9824 ug/L	97
73)	m-,p-Xylene	16.27	106	25147	1.9611 ug/L	97
74)	o-Xylene	16.93	106	11865	0.9363 ug/L	96
75)	Styrene	16.97	104	18579	0.8828 ug/L	99
76)	Bromoform	17.55	173	4082	0.8720 ug/L	84
77)	Isopropylbenzene	17.43	105	31300	0.9840 ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.70	83	6643	0.9867 ug/L	93
81)	1,2,3-Trichloropropane	17.92	110	1876	0.9624 ug/L	74
82)	trans-1,4-Dichloro-2-Buten	17.99	53	1194	1.2005 ug/L	94
83)	n-Propylbenzene	18.03	91	36550	1.0099 ug/L	97
84)	Bromobenzene	18.18	156	8529	1.0043 ug/L	98
85)	1,3,5-Trimethylbenzene	18.26	105	25491	0.9955 ug/L	96
86)	2-Chlorotoluene	18.35	91	25187	1.0160 ug/L	97
87)	4-Chlorotoluene	18.41	91	23659	1.0279 ug/L	98
88)	a-Methylstyrene	18.74	118	11586	0.8093 ug/L	95
89)	tert-Butylbenzene	18.81	134	5217	0.9241 ug/L	78
90)	1,2,4-Trimethylbenzene	18.87	105	25567	0.9538 ug/L	98
91)	sec-Butylbenzene	19.13	105	31783	1.0086 ug/L	97
92)	p-Isopropyltoluene	19.32	119	25687	0.9566 ug/L	98
93)	1,3-Dichlorobenzene	19.53	146	16574	1.0008 ug/L	100
94)	1,4-Dichlorobenzene	19.69	146	17812	0.9265 ug/L	92
95)	n-Butylbenzene	19.94	91	24011	0.9447 ug/L	95
96)	1,2-Dichlorobenzene	20.28	146	14898	0.9654 ug/L	99
97)	1,2-Dibromo-3-Chloropropan	21.46	75	675	0.5583 ug/L	92
98)	1,2,4-Trichlorobenzene	22.82	180	10025	0.9396 ug/L	98
99)	Hexachlorobutadiene	23.01	225	4690	1.0591 ug/L	94
100)	Naphthalene	23.28	128	19311	0.9156 ug/L	98
101)	1,2,3-Trichlorobenzene	23.68	180	9754	0.9660 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M139738.D 8260WT.M Thu Jun 02 12:18:20 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139738.D Vial: 4
Acq On : 1 Jun 2016 13:33 Operator: TMB
Sample : WG570915-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 2 12:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration

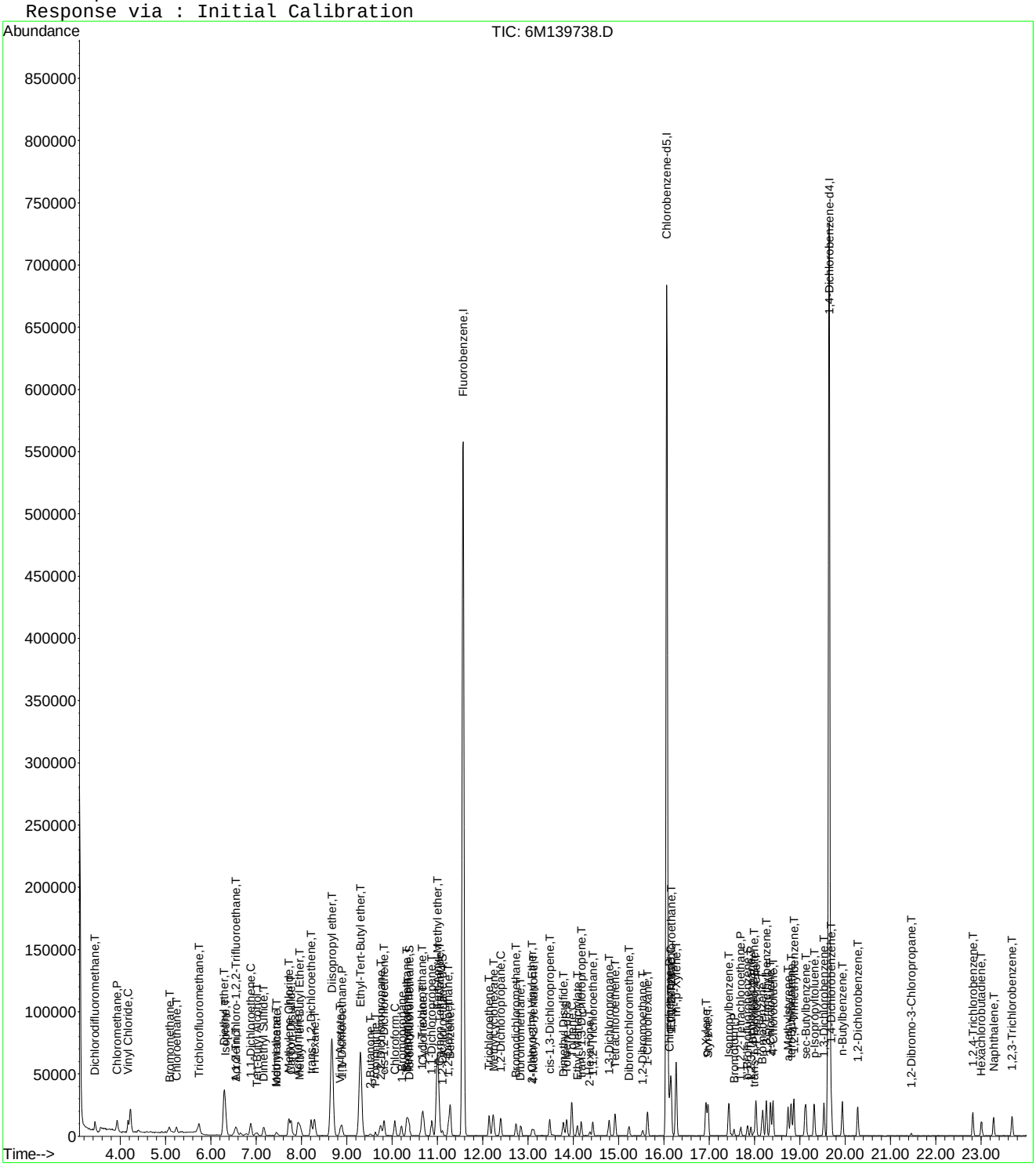

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\060116\6M139738.D Vial: 4
Acq On : 1 Jun 2016 13:33 Operator: TMB
Sample : WG570915-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9303	7.0	100	0.00
3	P	Chloromethane	1.0000	1.0527	-5.3	100	0.00
4	C	Vinyl Chloride	1.0000	1.0775	-7.7	100	0.01
5	T	1,3-Butadiene	-1.0000	-3.1177	0.0	0	0.03
6	T	Bromomethane	1.0000	0.9920	0.8	100	0.02
7	T	Chloroethane	1.0000	1.0315	-3.2	100	0.01
8	T	Trichlorofluoromethane	1.0000	1.0227	-2.3	100	0.02
9	T	Diethyl ether	5.0000	4.6948	6.1	100	0.00
10	T	Isoprene	-1.0000	0.9728	0.0	100	0.00
11	T	Acrolein	-1.0000	2.4811	0.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	0.9535	4.7	100	0.00
13	T	Acetone	-1.0000	-0.4899	0.0	0	0.00
14	C	1,1-Dichloroethene	1.0000	0.9786	2.1	100	0.01
15	T	Tert-Butyl Alcohol	10.0000	8.8569	11.4	100	-0.03
16	T	Dimethyl Sulfide	-1.0000	0.9230	0.0	100	0.00
17	T	Iodomethane	-1.0000	1.4776	0.0	0	0.01
18	T	Methyl acetate	-1.0000	0.9622	0.0	100	0.00
19	T	Methylene Chloride	1.0000	1.0681	-6.8	100	0.00
20	T	Carbon Disulfide	1.0000	1.0084	-0.8	100	0.01
21	T	Acrylonitrile	2.5000	2.3166	7.3	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9622	3.8	100	0.01
23	T	trans-1,2-Dichloroethene	1.0000	0.9810	1.9	100	0.00
24	T	n-Hexane	-1.0000	0.9706	0.0	100	0.01
25	T	Diisopropyl ether	5.0000	4.8979	2.0	100	0.00
26	T	Vinyl Acetate	-1.0000	0.7065	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0128	-1.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.8277	3.4	100	0.00
29	T	2-Butanone	-1.0000	0.9999	0.0	100	0.00
30	T	Propionitrile	5.0000	4.4461	11.1	100	0.00
31	T	2,2-Dichloropropane	1.0000	1.0379	-3.8	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	1.0019	-0.2	100	0.00
33	C	Chloroform	1.0000	0.9757	2.4	100	0.00
34		1-Bromopropane	1.0000	0.8504	15.0	100	0.01
35	T	Bromochloromethane	1.0000	0.9474	5.3	100	0.00
36	T	Tetrahydrofuran	5.0000	6.0841	-21.7#	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.5392	0.0	100	0.00
38	T	1,1,1-Trichloroethane	1.0000	0.9363	6.4	100	0.00
39	T	Cyclohexane	1.0000	0.9501	5.0	100	0.00
40	T	1,1-Dichloropropene	1.0000	0.9713	2.9	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	4.7510	5.0	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.9525	4.7	100	0.01
43	S	1,2-Dichloroethane-d4	-1.0000	0.5744	0.0	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	T	1,2-Dichloroethane	1.0000	0.9780	2.2	100	0.00
46	T	Benzene	1.0000	1.0356	-3.6	100	0.00
47	T	Trichloroethene	1.0000	1.0318	-3.2	100	0.00
48	T	Methylcyclohexane	-1.0000	0.9643	0.0	100	0.01
49	C	1,2-Dichloropropane	1.0000	0.9901	1.0	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-12.74#
51	T	Bromodichloromethane	1.0000	0.9919	0.8	100	0.00
52	T	Dibromomethane	1.0000	0.9693	3.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.7897	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.7400	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\060116\6M139738.D Vial: 4
Acq On : 1 Jun 2016 13:33 Operator: TMB
Sample : WG570915-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9007	9.9	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.6608	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.5422	0.0	100	0.00
59	C	Toluene	1.0000	1.0048	-0.5	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.7869	21.3#	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	1.0000	0.8699	13.0	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.9314	6.9	100	0.00
64	T	2-Hexanone	-1.0000	0.8701	0.0	100	0.00
65	T	1,3-Dichloropropane	1.0000	0.9829	1.7	100	0.00
66	T	Tetrachloroethene	1.0000	1.0364	-3.6	100	0.00
67	T	Dibromochloromethane	1.0000	0.9532	4.7	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.9198	8.0	100	0.00
69	T	1-Chlorohexane	1.0000	0.9017	9.8	100	0.00
70	P	Chlorobenzene	1.0000	1.0237	-2.4	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.9355	6.4	100	0.00
72	C	Ethylbenzene	1.0000	0.9823	1.8	100	0.00
73	T	m-,p-Xylene	2.0000	1.9611	1.9	100	0.00
74	T	o-Xylene	1.0000	0.9363	6.4	100	0.00
75	T	Styrene	1.0000	0.8828	11.7	100	0.00
76	P	Bromoform	1.0000	0.8720	12.8	100	0.00
77	T	Isopropylbenzene	1.0000	0.9840	1.6	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	0.9867	1.3	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5400	0.0	100	0.00
81	T	1,2,3-Trichloropropane	1.0000	0.9624	3.8	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	1.0000	1.2005	-20.1#	100	0.01
83	T	n-Propylbenzene	1.0000	1.0099	-1.0	100	0.00
84	T	Bromobenzene	1.0000	1.0043	-0.4	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	0.9954	0.5	100	0.00
86	T	2-Chlorotoluene	1.0000	1.0160	-1.6	100	0.00
87	T	4-Chlorotoluene	1.0000	1.0279	-2.8	100	0.00
88	T	a-Methylstyrene	-1.0000	0.8093	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	0.9241	7.6	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	0.9538	4.6	100	0.00
91	T	sec-Butylbenzene	1.0000	1.0086	-0.9	100	0.00
92	T	p-Isopropyltoluene	1.0000	0.9566	4.3	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0008	-0.1	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	0.9265	7.3	100	0.00
95	T	n-Butylbenzene	1.0000	0.9447	5.5	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	0.9654	3.5	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.5583	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	1.0000	0.9396	6.0	100	0.00
99	T	Hexachlorobutadiene	1.0000	1.0591	-5.9	100	0.00
100	T	Naphthalene	1.0000	0.9156	8.4	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	0.9660	3.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M139738.D 8260WT.M Thu Jun 02 12:19:02 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139739.D Vial: 5
Acq On : 1 Jun 2016 14:06 Operator: TMB
Sample : WG570915-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:20 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.56	96	742943	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	538524	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.64	152	285481	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.39	111	7626	0.9918 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.96%#	
43) 1,2-Dichloroethane-d4	11.11	65	8619	1.0170 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	4.08%#	
58) Toluene-d8	13.85	98	26951	1.0428 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.16%#	
80) p-Bromofluorobenzene	17.84	95	10079	0.9998 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	23119	1.9659 ug/L	97
3) Chloromethane	3.93	50	31601	2.2041 ug/L	99
4) Vinyl Chloride	4.17	62	20397	2.1105 ug/L	99
5) 1,3-Butadiene	4.22	54	23740	Below Cal	95
6) Bromomethane	5.09	94	9969	2.0940 ug/L	95
7) Chloroethane	5.24	64	13031	2.1332 ug/L	97
8) Trichlorofluoromethane	5.74	101	27906	2.1561 ug/L	100
9) Diethyl ether	6.29	59	183827	26.4128 ug/L	99
10) Isoprene	6.32	67	22261	2.0231 ug/L	100
11) Acrolein	6.55	56	14289	12.1687 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.54	101	16014	2.1659 ug/L	99
13) Acetone	6.65	43	7448	1.0499 ug/L	98
14) 1,1-Dichloroethene	6.88	61	27057	2.0664 ug/L	98
15) Tert-Butyl Alcohol	7.01	59	31691	49.3156 ug/L	95
16) Dimethyl Sulfide	7.16	62	11867	1.9748 ug/L	97
17) Iodomethane	7.43	142	2857	1.9552 ug/L	84
18) Methyl acetate	7.45	43	14589	2.2767 ug/L #	88
19) Methylene Chloride	7.72	84	17881	2.2145 ug/L	97
20) Carbon Disulfide	7.77	76	54515	2.1280 ug/L	99
21) Acrylonitrile	7.93	53	34183	12.1037 ug/L	95
22) Methyl Tert Butyl Ether	7.96	73	40745	2.0681 ug/L	98
23) trans-1,2-Dichloroethene	8.21	96	15961	2.0912 ug/L	98
24) n-Hexane	8.28	57	25065	2.1090 ug/L	97
25) Diisopropyl ether	8.67	45	827327	26.1535 ug/L	99
26) Vinyl Acetate	8.86	43	23762	1.7691 ug/L	96
27) 1,1-Dichloroethane	8.89	63	32311	2.1129 ug/L	99
28) Ethyl-Tert-Butyl ether	9.31	59	665309	25.6988 ug/L	100
29) 2-Butanone	9.51	43	7490	2.2325 ug/L	86
30) Propionitrile	9.63	54	24032	25.9544 ug/L	98
31) 2,2-Dichloropropane	9.75	77	24405	2.1890 ug/L	98
32) cis-1,2-Dichloroethene	9.83	96	17351	2.0868 ug/L	95
33) Chloroform	10.06	83	29158	2.1409 ug/L	99
34) 1-Bromopropane	10.21	122	2575	2.1509 ug/L	86
35) Bromochloromethane	10.32	130	9943	2.1058 ug/L	98
36) Tetrahydrofuran	10.36	42	57713	24.9874 ug/L	97
38) 1,1,1-Trichloroethane	10.65	97	25747	2.1191 ug/L	96
39) Cyclohexane	10.68	56	31781	2.0869 ug/L	97
40) 1,1-Dichloropropene	10.88	75	21286	2.0442 ug/L	99
41) Tert-Amyl-Methyl ether	11.00	73	511503	25.5189 ug/L	97
42) Carbon Tetrachloride	11.03	117	22465	2.0726 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M139739.D 8260WT.M Thu Jun 02 12:18:20 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139739.D Vial: 5
Acq On : 1 Jun 2016 14:06 Operator: TMB
Sample : WG570915-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:20 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.25	62	22181	2.1191 ug/L	95
46)	Benzene	11.29	78	65773	2.1550 ug/L	99
47)	Trichloroethene	12.14	130	16332	2.0952 ug/L	97
48)	Methylcyclohexane	12.24	83	23681	2.0038 ug/L	98
49)	1,2-Dichloropropane	12.40	63	17445	2.0694 ug/L	98
50)	1,4-Dioxane	12.74	88	2396	39.8941 ug/L	93
51)	Bromodichloromethane	12.74	83	21332	2.0576 ug/L	100
52)	Dibromomethane	12.84	93	8776	2.0174 ug/L	97
53)	2-Chloroethyl Vinyl Ether	13.08	63	7129	1.8528 ug/L	92
54)	4-Methyl-2-Pentanone	13.12	58	4367	1.7054 ug/L	90
55)	cis-1,3-Dichloropropene	13.48	75	23627	2.0136 ug/L	97
56)	Dimethyl Disulfide	13.78	79	10612	1.5698 ug/L	92
59)	Toluene	13.96	91	65655	2.1470 ug/L	100
60)	Ethyl Methacrylate	14.08	69	15579	1.8591 ug/L	100
62)	trans-1,3-Dichloropropene	14.18	75	20491	1.9674 ug/L	100
63)	1,1,2-Trichloroethane	14.43	97	12151	2.0870 ug/L	98
64)	2-Hexanone	14.36	43	9676	1.9585 ug/L	91
65)	1,3-Dichloropropane	14.79	76	21467	2.0971 ug/L	97
66)	Tetrachloroethene	14.92	166	16914	2.1086 ug/L	97
67)	Dibromochloromethane	15.23	129	14673	1.9778 ug/L	97
68)	1,2-Dibromoethane	15.53	107	11510	2.0453 ug/L	97
69)	1-Chlorohexane	15.65	91	19668	1.9807 ug/L	95
70)	Chlorobenzene	16.13	112	44821	2.1905 ug/L	99
71)	1,1,1,2-Tetrachloroethane	16.16	131	14676	1.9775 ug/L	98
72)	Ethylbenzene	16.16	106	22360	2.0602 ug/L	99
73)	m-,p-Xylene	16.27	106	53821	4.1742 ug/L	96
74)	o-Xylene	16.93	106	25852	2.0289 ug/L	99
75)	Styrene	16.97	104	42355	2.0016 ug/L	99
76)	Bromoform	17.55	173	8554	1.8173 ug/L	98
77)	Isopropylbenzene	17.43	105	65691	2.0539 ug/L	99
79)	1,1,2,2-Tetrachloroethane	17.69	83	14598	2.1209 ug/L	98
81)	1,2,3-Trichloropropane	17.92	110	4381	2.1985 ug/L	91
82)	trans-1,4-Dichloro-2-Buten	17.98	53	3430	2.0845 ug/L	81
83)	n-Propylbenzene	18.04	91	81094	2.1918 ug/L	98
84)	Bromobenzene	18.18	156	18389	2.1180 ug/L	97
85)	1,3,5-Trimethylbenzene	18.26	105	55405	2.1164 ug/L	97
86)	2-Chlorotoluene	18.35	91	57133	2.2543 ug/L	98
87)	4-Chlorotoluene	18.40	91	49926	2.1217 ug/L	99
88)	a-Methylstyrene	18.74	118	25561	1.7465 ug/L	95
89)	tert-Butylbenzene	18.80	134	12038	2.0858 ug/L	71
90)	1,2,4-Trimethylbenzene	18.87	105	58343	2.1289 ug/L	100
91)	sec-Butylbenzene	19.13	105	68680	2.1320 ug/L	99
92)	p-Isopropyltoluene	19.31	119	57167	2.0824 ug/L	98
93)	1,3-Dichlorobenzene	19.54	146	35679	2.1074 ug/L	99
94)	1,4-Dichlorobenzene	19.69	146	37305	2.1227 ug/L	89
95)	n-Butylbenzene	19.94	91	53712	2.0671 ug/L	99
96)	1,2-Dichlorobenzene	20.27	146	34278	2.1727 ug/L	98
97)	1,2-Dibromo-3-Chloropropan	21.46	75	2052	1.6602 ug/L	93
98)	1,2,4-Trichlorobenzene	22.82	180	22161	2.0316 ug/L	100
99)	Hexachlorobutadiene	23.02	225	9292	2.0526 ug/L	97
100)	Naphthalene	23.27	128	42114	1.9531 ug/L	97
101)	1,2,3-Trichlorobenzene	23.68	180	21030	2.0373 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M139739.D 8260WT.M Thu Jun 02 12:18:20 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139739.D Vial: 5
Acq On : 1 Jun 2016 14:06 Operator: TMB
Sample : WG570915-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 2 12:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration

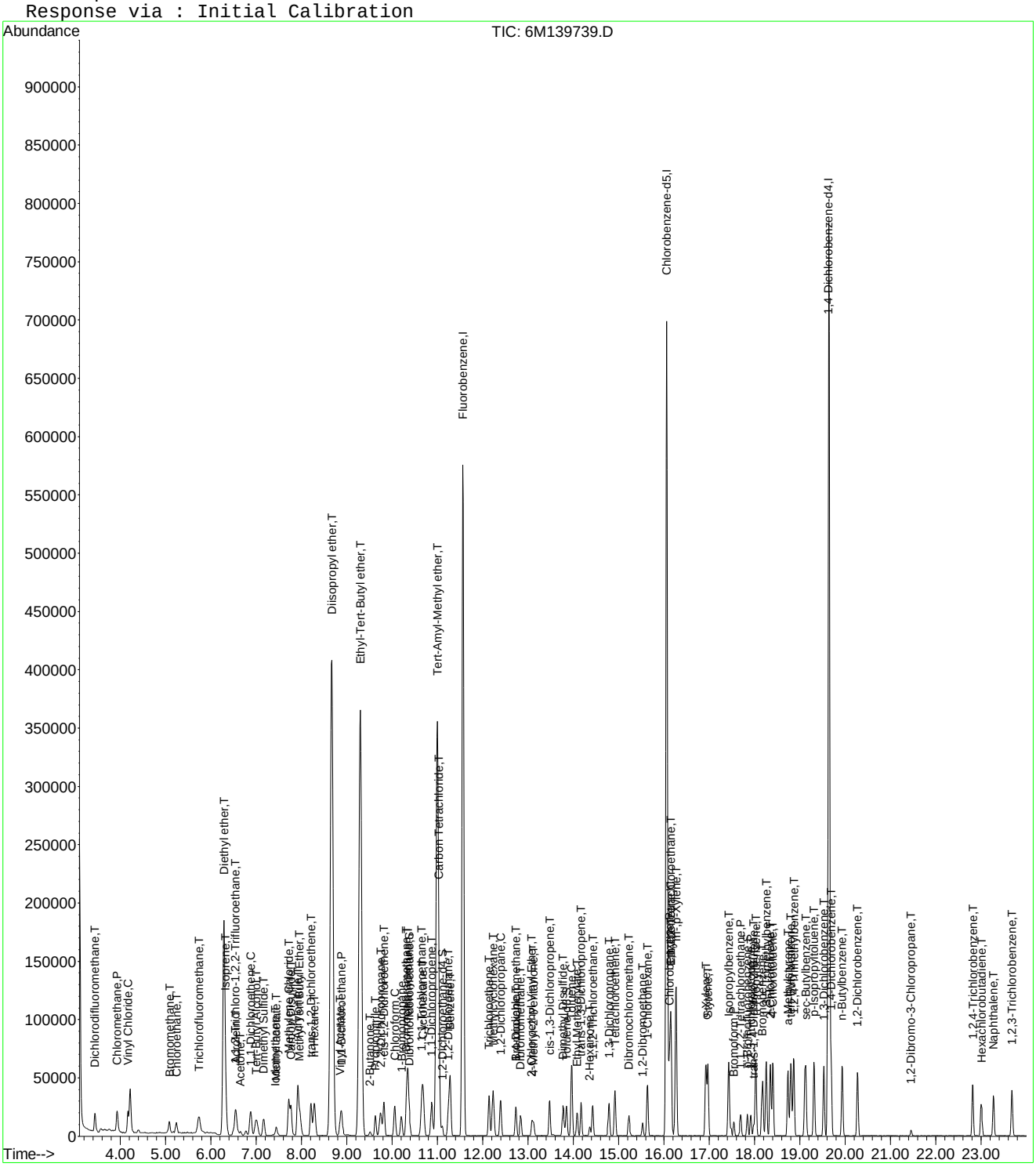

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\060116\6M139739.D Vial: 5
Acq On : 1 Jun 2016 14:06 Operator: TMB
Sample : WG570915-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.9659	1.7	100	0.00
3	P	Chloromethane	2.0000	2.2041	-10.2	100	0.00
4	C	Vinyl Chloride	2.0000	2.1105	-5.5	100	0.01
5	T	1,3-Butadiene	-1.0000	-0.6386	0.0	0	0.02
6	T	Bromomethane	2.0000	2.0940	-4.7	100	0.02
7	T	Chloroethane	2.0000	2.1332	-6.7	100	0.01
8	T	Trichlorofluoromethane	2.0000	2.1561	-7.8	100	0.02
9	T	Diethyl ether	25.0000	26.4128	-5.7	100	0.00
10	T	Isoprene	-1.0000	2.0231	0.0	100	0.00
11	T	Acrolein	12.5000	12.1687	2.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	2.1659	-8.3	100	0.00
13	T	Acetone	-1.0000	1.0499	0.0	0	0.00
14	C	1,1-Dichloroethene	2.0000	2.0664	-3.3	100	0.01
15	T	Tert-Butyl Alcohol	50.0000	49.3156	1.4	100	-0.04
16	T	Dimethyl Sulfide	-1.0000	1.9748	0.0	100	0.00
17	T	Iodomethane	2.0000	1.9552	2.2	100	0.00
18	T	Methyl acetate	-1.0000	2.2767	0.0	100	0.00
19	T	Methylene Chloride	2.0000	2.2145	-10.7	100	0.00
20	T	Carbon Disulfide	2.0000	2.1280	-6.4	100	0.01
21	T	Acrylonitrile	12.5000	12.1037	3.2	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	2.0681	-3.4	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	2.0913	-4.6	100	0.00
24	T	n-Hexane	-1.0000	2.1090	0.0	100	0.00
25	T	Diisopropyl ether	25.0000	26.1535	-4.6	100	0.00
26	T	Vinyl Acetate	-1.0000	1.7691	0.0	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.1129	-5.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	25.6988	-2.8	100	0.00
29	T	2-Butanone	-1.0000	2.2325	0.0	100	0.00
30	T	Propionitrile	25.0000	25.9544	-3.8	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1890	-9.5	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0868	-4.3	100	0.00
33	C	Chloroform	2.0000	2.1408	-7.0	100	0.00
34		1-Bromopropane	2.0000	2.1509	-7.5	100	0.00
35	T	Bromochloromethane	2.0000	2.1058	-5.3	100	0.00
36	T	Tetrahydrofuran	25.0000	24.9874	0.1	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9918	0.8	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	2.1191	-6.0	100	0.00
39	T	Cyclohexane	2.0000	2.0869	-4.3	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0442	-2.2	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	25.5189	-2.1	100	0.00
42	T	Carbon Tetrachloride	2.0000	2.0726	-3.6	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0170	-1.7	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	T	1,2-Dichloroethane	2.0000	2.1191	-6.0	100	0.00
46	T	Benzene	2.0000	2.1551	-7.8	100	0.00
47	T	Trichloroethene	2.0000	2.0952	-4.8	100	0.00
48	T	Methylcyclohexane	-1.0000	2.0038	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0694	-3.5	100	0.00
50	T	1,4-Dioxane	-1.0000	39.8941	0.0	100	0.00
51	T	Bromodichloromethane	2.0000	2.0576	-2.9	100	0.00
52	T	Dibromomethane	2.0000	2.0174	-0.9	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	1.8528	7.4	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.7054	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\060116\6M139739.D Vial: 5
Acq On : 1 Jun 2016 14:06 Operator: TMB
Sample : WG570915-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	2.0136	-0.7	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.5698	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	1.0428	-4.3	100	0.00
59	C	Toluene	2.0000	2.1470	-7.3	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.8591	7.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	2.0000	1.9674	1.6	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	2.0870	-4.3	100	0.00
64	T	2-Hexanone	-1.0000	1.9585	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.0970	-4.9	100	0.00
66	T	Tetrachloroethene	2.0000	2.1086	-5.4	100	0.00
67	T	Dibromochloromethane	2.0000	1.9778	1.1	100	0.00
68	T	1,2-Dibromoethane	2.0000	2.0453	-2.3	100	0.00
69	T	1-Chlorohexane	2.0000	1.9807	1.0	100	0.00
70	P	Chlorobenzene	2.0000	2.1905	-9.5	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.9775	1.1	100	0.00
72	C	Ethylbenzene	2.0000	2.0602	-3.0	100	0.00
73	T	m-,p-Xylene	4.0000	4.1742	-4.4	100	0.00
74	T	o-Xylene	2.0000	2.0289	-1.4	100	0.00
75	T	Styrene	2.0000	2.0016	-0.1	100	0.00
76	P	Bromoform	2.0000	1.8173	9.1	100	0.00
77	T	Isopropylbenzene	2.0000	2.0539	-2.7	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	2.1209	-6.0	100	0.00
80	S	p-Bromofluorobenzene	1.0000	0.9998	0.0	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	2.1985	-9.9	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	2.0845	-4.2	100	0.00
83	T	n-Propylbenzene	2.0000	2.1918	-9.6	100	0.00
84	T	Bromobenzene	2.0000	2.1180	-5.9	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.1164	-5.8	100	0.00
86	T	2-Chlorotoluene	2.0000	2.2543	-12.7	100	0.00
87	T	4-Chlorotoluene	2.0000	2.1217	-6.1	100	0.00
88	T	a-Methylstyrene	-1.0000	1.7465	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	2.0858	-4.3	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.1289	-6.4	100	0.00
91	T	sec-Butylbenzene	2.0000	2.1320	-6.6	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.0825	-4.1	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.1074	-5.4	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.1227	-6.1	100	0.00
95	T	n-Butylbenzene	2.0000	2.0671	-3.4	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.1727	-8.6	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.6602	17.0	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	2.0316	-1.6	100	0.00
99	T	Hexachlorobutadiene	2.0000	2.0526	-2.6	100	0.00
100	T	Naphthalene	2.0000	1.9531	2.3	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	2.0372	-1.9	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M139739.D 8260WT.M Thu Jun 02 12:19:13 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139740.D Vial: 6
Acq On : 1 Jun 2016 14:38 Operator: TMB
Sample : WG570915-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:21 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	739555	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.06	117	536758	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	19.65	152	288515	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.38	111	18845	2.4621 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	9.84%#	
43) 1,2-Dichloroethane-d4	11.11	65	20951	2.4834 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	9.92%#	
58) Toluene-d8	13.85	98	65932	2.5594 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	10.24%#	
80) p-Bromofluorobenzene	17.84	95	25405	2.4936 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	9.96%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	53233	4.5473 ug/L	97
3) Chloromethane	3.93	50	71846	5.0340 ug/L	100
4) Vinyl Chloride	4.17	62	46089	4.7908 ug/L	99
5) 1,3-Butadiene	4.21	54	42049	3.1429 ug/L	91
6) Bromomethane	5.08	94	21334	4.5018 ug/L	98
7) Chloroethane	5.24	64	31006	5.0990 ug/L	98
8) Trichlorofluoromethane	5.74	101	64044	4.9710 ug/L	100
9) Diethyl ether	6.29	59	349877	50.5016 ug/L	100
10) Isoprene	6.32	67	52571	4.7995 ug/L	99
11) Acrolein	6.54	56	29717	25.4233 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.55	101	36494	4.9585 ug/L	98
13) Acetone	6.65	43	15281	4.9011 ug/L	98
14) 1,1-Dichloroethene	6.88	61	64405	4.9413 ug/L	100
15) Tert-Butyl Alcohol	7.00	59	63946	99.9648 ug/L	98
16) Dimethyl Sulfide	7.17	62	28254	4.7234 ug/L	98
17) Iodomethane	7.43	142	15471	4.2422 ug/L	97
18) Methyl acetate	7.45	43	33236	5.2104 ug/L	95
19) Methylene Chloride	7.72	84	40736	5.0682 ug/L	99
20) Carbon Disulfide	7.77	76	126979	4.9794 ug/L	100
21) Acrylonitrile	7.92	53	66289	23.5794 ug/L	94
22) Methyl Tert Butyl Ether	7.95	73	96916	4.9418 ug/L	99
23) trans-1,2-Dichloroethene	8.21	96	37460	4.9306 ug/L	97
24) n-Hexane	8.29	57	60246	5.0925 ug/L	99
25) Diisopropyl ether	8.67	45	1610342	51.1394 ug/L	100
26) Vinyl Acetate	8.85	43	62309	4.6602 ug/L	97
27) 1,1-Dichloroethane	8.89	63	75144	4.9363 ug/L	99
28) Ethyl-Tert-Butyl ether	9.30	59	1306947	50.7146 ug/L	99
29) 2-Butanone	9.52	43	17941	5.3720 ug/L	96
30) Propionitrile	9.63	54	46508	50.4584 ug/L	100
31) 2,2-Dichloropropane	9.75	77	55908	5.0377 ug/L	98
32) cis-1,2-Dichloroethene	9.83	96	41514	5.0157 ug/L	100
33) Chloroform	10.06	83	67873	5.0062 ug/L	98
34) 1-Bromopropane	10.20	122	7077	5.4256 ug/L	95
35) Bromochloromethane	10.32	130	23487	4.9970 ug/L	97
36) Tetrahydrofuran	10.35	42	111625	48.5506 ug/L	97
38) 1,1,1-Trichloroethane	10.66	97	59147	4.8905 ug/L	100
39) Cyclohexane	10.69	56	73130	4.8241 ug/L	99
40) 1,1-Dichloropropene	10.87	75	51586	4.9768 ug/L	98
41) Tert-Amyl-Methyl ether	11.00	73	1001616	50.1996 ug/L	98
42) Carbon Tetrachloride	11.04	117	51776	4.7988 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M139740.D 8260WT.M Thu Jun 02 12:18:21 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139740.D Vial: 6
Acq On : 1 Jun 2016 14:38 Operator: TMB
Sample : WG570915-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:21 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	11.24	62	51329	4.9263	ug/L	99
46)	Benzene	11.28	78	153403	5.0493	ug/L	99
47)	Trichloroethene	12.14	130	37892	4.8833	ug/L	100
48)	Methylcyclohexane	12.23	83	58249	4.9514	ug/L	99
49)	1,2-Dichloropropane	12.40	63	41911	4.9943	ug/L	99
50)	1,4-Dioxane	12.73	88	5253	87.8647	ug/L	94
51)	Bromodichloromethane	12.74	83	50357	4.8796	ug/L	100
52)	Dibromomethane	12.83	93	21481	4.9606	ug/L	99
53)	2-Chloroethyl Vinyl Ether	13.09	63	17503	4.5699	ug/L	99
54)	4-Methyl-2-Pentanone	13.13	58	11365	4.4586	ug/L	94
55)	cis-1,3-Dichloropropene	13.48	75	58485	5.0071	ug/L	97
56)	Dimethyl Disulfide	13.78	79	27006	4.0133	ug/L	98
59)	Toluene	13.97	91	156506	5.1347	ug/L	100
60)	Ethyl Methacrylate	14.09	69	39144	4.6865	ug/L	98
62)	trans-1,3-Dichloropropene	14.17	75	50230	4.8387	ug/L	98
63)	1,1,2-Trichloroethane	14.43	97	28765	4.9567	ug/L	99
64)	2-Hexanone	14.36	43	23751	4.8232	ug/L	98
65)	1,3-Dichloropropane	14.79	76	50356	4.9353	ug/L	97
66)	Tetrachloroethene	14.92	166	40511	5.0669	ug/L	99
67)	Dibromochloromethane	15.23	129	35926	4.8585	ug/L	97
68)	1,2-Dibromoethane	15.53	107	27314	4.8696	ug/L	98
69)	1-Chlorohexane	15.64	91	48413	4.8916	ug/L	97
70)	Chlorobenzene	16.12	112	104312	5.1147	ug/L	97
71)	1,1,1,2-Tetrachloroethane	16.16	131	36730	4.9654	ug/L	99
72)	Ethylbenzene	16.16	106	54248	5.0148	ug/L	98
73)	m-,p-Xylene	16.27	106	131323	10.2186	ug/L	100
74)	o-Xylene	16.93	106	63554	5.0043	ug/L	100
75)	Styrene	16.97	104	106058	5.0285	ug/L	100
76)	Bromoform	17.55	173	21214	4.5219	ug/L	98
77)	Isopropylbenzene	17.43	105	162047	5.0833	ug/L	99
79)	1,1,2,2-Tetrachloroethane	17.70	83	34171	4.9124	ug/L	99
81)	1,2,3-Trichloropropane	17.92	110	9377	4.6562	ug/L	72
82)	trans-1,4-Dichloro-2-Buten	17.98	53	9378	4.4249	ug/L	93
83)	n-Propylbenzene	18.03	91	196536	5.2560	ug/L	98
84)	Bromobenzene	18.18	156	43947	5.0085	ug/L	98
85)	1,3,5-Trimethylbenzene	18.26	105	135685	5.1285	ug/L	99
86)	2-Chlorotoluene	18.35	91	130402	5.0913	ug/L	99
87)	4-Chlorotoluene	18.41	91	124301	5.2269	ug/L	98
88)	a-Methylstyrene	18.74	118	68837	4.6540	ug/L	97
89)	tert-Butylbenzene	18.81	134	29765	5.1030	ug/L	98
90)	1,2,4-Trimethylbenzene	18.87	105	142438	5.1429	ug/L	100
91)	sec-Butylbenzene	19.13	105	168272	5.1687	ug/L	100
92)	p-Isopropyltoluene	19.32	119	142353	5.1310	ug/L	98
93)	1,3-Dichlorobenzene	19.53	146	86160	5.0357	ug/L	99
94)	1,4-Dichlorobenzene	19.70	146	84427	5.0188	ug/L	93
95)	n-Butylbenzene	19.94	91	133112	5.0690	ug/L	98
96)	1,2-Dichlorobenzene	20.28	146	79776	5.0034	ug/L	99
97)	1,2-Dibromo-3-Chloropropan	21.46	75	6079	4.8666	ug/L	92
98)	1,2,4-Trichlorobenzene	22.82	180	54492	4.9430	ug/L	100
99)	Hexachlorobutadiene	23.01	225	23856	5.2144	ug/L	97
100)	Naphthalene	23.28	128	107168	4.9178	ug/L	98
101)	1,2,3-Trichlorobenzene	23.69	180	51676	4.9534	ug/L	99

(#) = qualifier out of range (m) = manual integration
6M139740.D 8260WT.M Thu Jun 02 12:18:21 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139740.D Vial: 6
Acq On : 1 Jun 2016 14:38 Operator: TMB
Sample : WG570915-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 2 12:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration

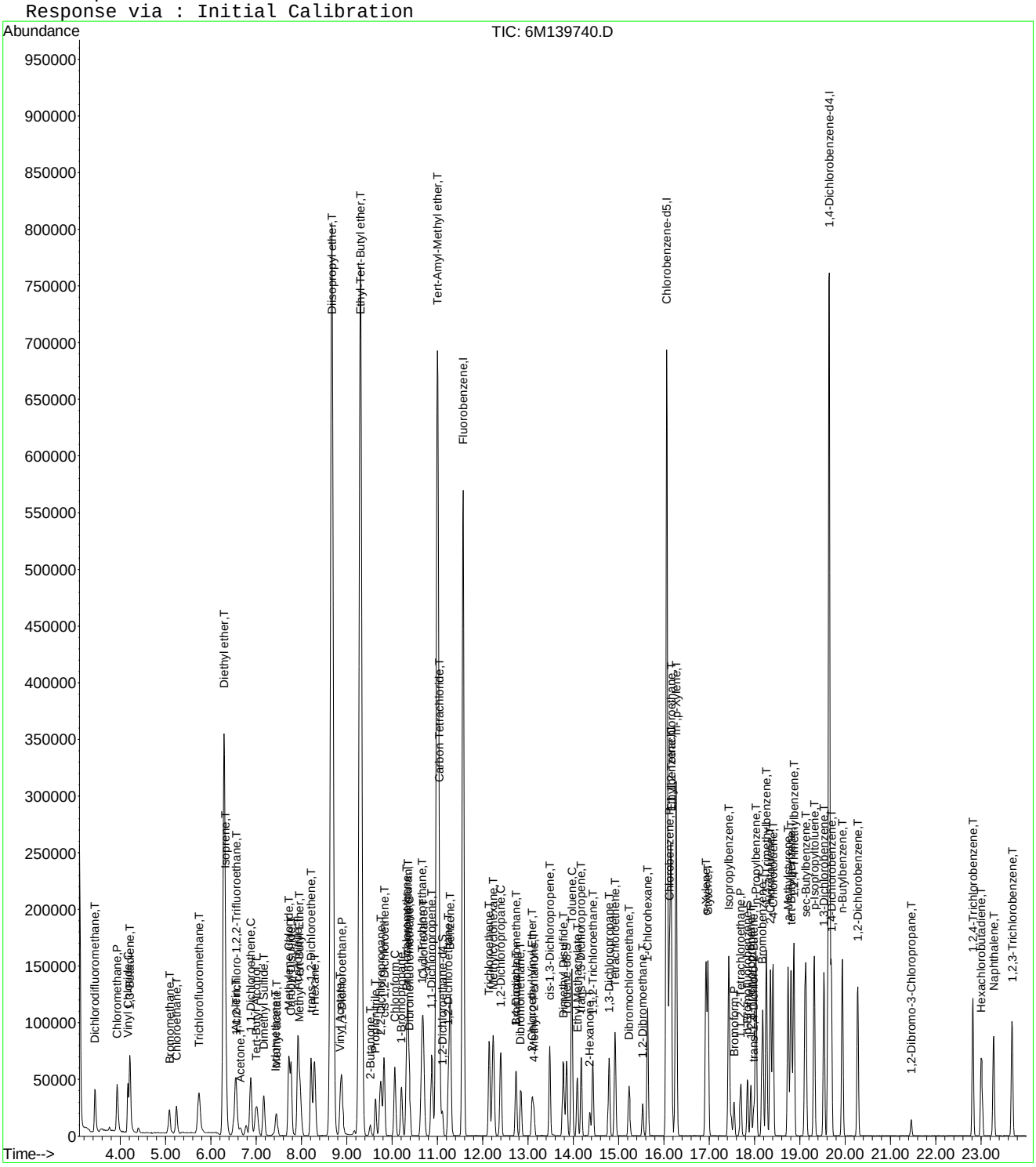

6M139740.D 8260WT.M Thu Jun 02 12:18:21 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\060116\6M139740.D Vial: 6
Acq On : 1 Jun 2016 14:38 Operator: TMB
Sample : WG570915-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.5473	9.1	100	0.00
3	P	Chloromethane	5.0000	5.0340	-0.7	100	0.00
4	C	Vinyl Chloride	5.0000	4.7908	4.2	100	0.00
5	T	1,3-Butadiene	5.0000	3.1429	37.1#	100	0.01
6	T	Bromomethane	5.0000	4.5018	10.0	100	0.02
7	T	Chloroethane	5.0000	5.0990	-2.0	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.9710	0.6	100	0.02
9	T	Diethyl ether	50.0000	50.5016	-1.0	100	0.00
10	T	Isoprene	5.0000	4.7995	4.0	100	0.00
11	T	Acrolein	25.0000	25.4233	-1.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.9585	0.8	100	0.00
13	T	Acetone	5.0000	4.9011	2.0	100	-0.01
14	C	1,1-Dichloroethene	5.0000	4.9413	1.2	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	99.9648	0.0	100	-0.04
16	T	Dimethyl Sulfide	5.0000	4.7234	5.5	100	0.00
17	T	Iodomethane	5.0000	4.2422	15.2	100	0.00
18	T	Methyl acetate	5.0000	5.2104	-4.2	100	0.00
19	T	Methylene Chloride	5.0000	5.0682	-1.4	100	0.00
20	T	Carbon Disulfide	5.0000	4.9794	0.4	100	0.00
21	T	Acrylonitrile	25.0000	23.5794	5.7	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.9418	1.2	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.9306	1.4	100	0.00
24	T	n-Hexane	5.0000	5.0925	-1.9	100	0.00
25	T	Diisopropyl ether	50.0000	51.1394	-2.3	100	0.00
26	T	Vinyl Acetate	5.0000	4.6602	6.8	100	-0.01
27	P	1,1-Dichloroethane	5.0000	4.9363	1.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	50.7146	-1.4	100	0.00
29	T	2-Butanone	5.0000	5.3720	-7.4	100	0.00
30	T	Propionitrile	50.0000	50.4584	-0.9	100	-0.01
31	T	2,2-Dichloropropane	5.0000	5.0377	-0.8	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	5.0157	-0.3	100	0.00
33	C	Chloroform	5.0000	5.0062	-0.1	100	0.00
34		1-Bromopropane	5.0000	5.4256	-8.5	100	0.00
35	T	Bromochloromethane	5.0000	4.9970	0.1	100	0.00
36	T	Tetrahydrofuran	50.0000	48.5506	2.9	100	0.00
37	S	Dibromofluoromethane	2.5000	2.4621	1.5	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.8905	2.2	100	0.00
39	T	Cyclohexane	5.0000	4.8242	3.5	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.9768	0.5	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	50.1996	-0.4	100	-0.01
42	T	Carbon Tetrachloride	5.0000	4.7988	4.0	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.4834	0.7	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	-0.01
45	T	1,2-Dichloroethane	5.0000	4.9262	1.5	100	0.00
46	T	Benzene	5.0000	5.0493	-1.0	100	0.00
47	T	Trichloroethene	5.0000	4.8833	2.3	100	-0.01
48	T	Methylcyclohexane	5.0000	4.9514	1.0	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.9943	0.1	100	0.00
50	T	1,4-Dioxane	100.0000	87.8647	12.1	100	-0.01
51	T	Bromodichloromethane	5.0000	4.8796	2.4	100	0.00
52	T	Dibromomethane	5.0000	4.9606	0.8	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.5699	8.6	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.4586	10.8	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\060116\6M139740.D Vial: 6
Acq On : 1 Jun 2016 14:38 Operator: TMB
Sample : WG570915-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	5.0071	-0.1	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.0133	19.7	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	-0.01
58	S	Toluene-d8	2.5000	2.5594	-2.4	100	0.00
59	C	Toluene	5.0000	5.1347	-2.7	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.6865	6.3	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	5.0000	4.8387	3.2	100	-0.01
63	T	1,1,2-Trichloroethane	5.0000	4.9567	0.9	100	0.00
64	T	2-Hexanone	5.0000	4.8232	3.5	100	-0.01
65	T	1,3-Dichloropropane	5.0000	4.9353	1.3	100	0.00
66	T	Tetrachloroethene	5.0000	5.0669	-1.3	100	-0.01
67	T	Dibromochloromethane	5.0000	4.8585	2.8	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.8696	2.6	100	0.00
69	T	1-Chlorohexane	5.0000	4.8916	2.2	100	0.00
70	P	Chlorobenzene	5.0000	5.1147	-2.3	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.9654	0.7	100	0.00
72	C	Ethylbenzene	5.0000	5.0148	-0.3	100	0.00
73	T	m-,p-Xylene	10.0000	10.2186	-2.2	100	0.00
74	T	o-Xylene	5.0000	5.0043	-0.1	100	0.00
75	T	Styrene	5.0000	5.0285	-0.6	100	-0.01
76	P	Bromoform	5.0000	4.5218	9.6	100	0.00
77	T	Isopropylbenzene	5.0000	5.0833	-1.7	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	4.9124	1.8	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.4936	0.3	100	-0.01
81	T	1,2,3-Trichloropropane	5.0000	4.6562	6.9	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.4249	11.5	100	0.00
83	T	n-Propylbenzene	5.0000	5.2560	-5.1	100	0.00
84	T	Bromobenzene	5.0000	5.0085	-0.2	100	-0.01
85	T	1,3,5-Trimethylbenzene	5.0000	5.1285	-2.6	100	-0.01
86	T	2-Chlorotoluene	5.0000	5.0913	-1.8	100	0.00
87	T	4-Chlorotoluene	5.0000	5.2269	-4.5	100	0.00
88	T	a-Methylstyrene	5.0000	4.6540	6.9	100	0.00
89	T	tert-Butylbenzene	5.0000	5.1030	-2.1	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.1429	-2.9	100	0.00
91	T	sec-Butylbenzene	5.0000	5.1687	-3.4	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.1310	-2.6	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	5.0357	-0.7	100	-0.01
94	T	1,4-Dichlorobenzene	5.0000	5.0188	-0.4	100	0.00
95	T	n-Butylbenzene	5.0000	5.0690	-1.4	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	5.0034	-0.1	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	4.8666	2.7	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.9430	1.1	100	0.00
99	T	Hexachlorobutadiene	5.0000	5.2143	-4.3	100	-0.01
100	T	Naphthalene	5.0000	4.9178	1.6	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.9534	0.9	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M139740.D 8260WT.M Thu Jun 02 12:19:24 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139741.D Vial: 7
Acq On : 1 Jun 2016 15:10 Operator: TMB
Sample : WG570915-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:22 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	741749	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.06	117	542308	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	300008	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.38	111	79708	10.3831 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 41.52%#		
43) 1,2-Dichloroethane-d4	11.11	65	88573	10.4679 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 41.88%#		
58) Toluene-d8	13.85	98	265815	10.2132 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 40.84%#		
80) p-Bromofluorobenzene	17.84	95	109890	10.3728 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 41.48%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	247381	21.0696 ug/L	98
3) Chloromethane	3.93	50	296797	20.7339 ug/L	99
4) Vinyl Chloride	4.17	62	191392	19.8356 ug/L	99
5) 1,3-Butadiene	4.21	54	157053	26.6603 ug/L	98
6) Bromomethane	5.09	94	81508	17.1486 ug/L	97
7) Chloroethane	5.24	64	122316	20.0554 ug/L	99
8) Trichlorofluoromethane	5.74	101	258878	20.0342 ug/L	99
9) Diethyl ether	6.29	59	547075	78.7318 ug/L	99
10) Isoprene	6.32	67	221464	20.1591 ug/L	99
11) Acrolein	6.55	56	44949	38.3408 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.55	101	145375	19.6939 ug/L	99
13) Acetone	6.65	43	44156	18.9729 ug/L	99
14) 1,1-Dichloroethene	6.88	61	254854	19.4952 ug/L	99
15) Tert-Butyl Alcohol	7.00	59	102719	160.1025 ug/L	98
16) Dimethyl Sulfide	7.17	62	122102	20.3521 ug/L	99
17) Iodomethane	7.43	142	111720	21.6149 ug/L	99
18) Methyl acetate	7.45	43	129311	20.2119 ug/L	99
19) Methylene Chloride	7.72	84	155771	19.3229 ug/L	100
20) Carbon Disulfide	7.77	76	520481	20.3498 ug/L	100
21) Acrylonitrile	7.92	53	110335	39.1307 ug/L	96
22) Methyl Tert Butyl Ether	7.95	73	388723	19.7626 ug/L	100
23) trans-1,2-Dichloroethene	8.21	96	151236	19.8472 ug/L	99
24) n-Hexane	8.29	57	239236	20.1625 ug/L	100
25) Diisopropyl ether	8.67	45	2507424	79.3924 ug/L	100
26) Vinyl Acetate	8.85	43	251396	18.7467 ug/L	99
27) 1,1-Dichloroethane	8.89	63	300042	19.6518 ug/L	100
28) Ethyl-Tert-Butyl ether	9.30	59	2050757	79.3419 ug/L	99
29) 2-Butanone	9.51	43	64868	19.3656 ug/L	99
30) Propionitrile	9.63	54	74857	80.9752 ug/L	100
31) 2,2-Dichloropropane	9.75	77	211176	18.9721 ug/L	99
32) cis-1,2-Dichloroethene	9.82	96	163903	19.7440 ug/L	100
33) Chloroform	10.06	83	267226	19.6520 ug/L	99
34) 1-Bromopropane	10.21	122	27047	19.8559 ug/L	99
35) Bromochloromethane	10.32	130	94683	20.0848 ug/L	99
36) Tetrahydrofuran	10.35	42	174854	75.8267 ug/L	98
38) 1,1,1-Trichloroethane	10.65	97	233161	19.2216 ug/L	100
39) Cyclohexane	10.69	56	306471	20.1571 ug/L	99
40) 1,1-Dichloropropene	10.88	75	204304	19.6521 ug/L	98
41) Tert-Amyl-Methyl ether	11.00	73	1581113	79.0088 ug/L	98
42) Carbon Tetrachloride	11.04	117	211271	19.5234 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139741.D Vial: 7
Acq On : 1 Jun 2016 15:10 Operator: TMB
Sample : WG570915-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:22 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.24	62	203687	19.4909 ug/L	99
46)	Benzene	11.28	78	596288	19.5688 ug/L	100
47)	Trichloroethene	12.14	130	153787	19.7607 ug/L	99
48)	Methylcyclohexane	12.23	83	238202	20.1882 ug/L	99
49)	1,2-Dichloropropane	12.40	63	164832	19.5842 ug/L	99
50)	1,4-Dioxane	12.73	88	9239	154.0797 ug/L	96
51)	Bromodichloromethane	12.74	83	203755	19.6854 ug/L	99
52)	Dibromomethane	12.84	93	86662	19.9537 ug/L	100
53)	2-Chloroethyl Vinyl Ether	13.09	63	78877	20.5333 ug/L	98
54)	4-Methyl-2-Pentanone	13.12	58	50584	19.7859 ug/L	99
55)	cis-1,3-Dichloropropene	13.48	75	236552	20.1922 ug/L	100
56)	Dimethyl Disulfide	13.78	79	129245	19.1502 ug/L	99
59)	Toluene	13.97	91	615093	19.9736 ug/L	99
60)	Ethyl Methacrylate	14.09	69	172598	20.4528 ug/L	100
62)	trans-1,3-Dichloropropene	14.17	75	207562	19.7898 ug/L	100
63)	1,1,2-Trichloroethane	14.43	97	116786	19.9183 ug/L	99
64)	2-Hexanone	14.36	43	94360	18.9657 ug/L	98
65)	1,3-Dichloropropane	14.79	76	205188	19.9044 ug/L	98
66)	Tetrachloroethene	14.92	166	156971	19.4321 ug/L	100
67)	Dibromochloromethane	15.24	129	147629	19.7605 ug/L	100
68)	1,2-Dibromoethane	15.53	107	114125	20.1383 ug/L	99
69)	1-Chlorohexane	15.64	91	204931	20.4942 ug/L	98
70)	Chlorobenzene	16.12	112	403304	19.5727 ug/L	98
71)	1,1,1,2-Tetrachloroethane	16.16	131	149046	19.9427 ug/L	99
72)	Ethylbenzene	16.16	106	213615	19.5450 ug/L	97
73)	m-,p-Xylene	16.27	106	522902	40.2721 ug/L	99
74)	o-Xylene	16.93	106	258312	20.1315 ug/L	99
75)	Styrene	16.97	104	444118	20.8412 ug/L	100
76)	Bromoform	17.55	173	92368	19.4871 ug/L	99
77)	Isopropylbenzene	17.43	105	656228	20.3746 ug/L	100
79)	1,1,2,2-Tetrachloroethane	17.70	83	139457	19.2803 ug/L	99
81)	1,2,3-Trichloropropane	17.92	110	40786	19.4765 ug/L	80
82)	trans-1,4-Dichloro-2-Buten	17.98	53	45829	18.1607 ug/L	96
83)	n-Propylbenzene	18.03	91	797340	20.5066 ug/L	100
84)	Bromobenzene	18.18	156	176971	19.3962 ug/L	98
85)	1,3,5-Trimethylbenzene	18.26	105	562167	20.4342 ug/L	100
86)	2-Chlorotoluene	18.35	91	522498	19.6183 ug/L	99
87)	4-Chlorotoluene	18.41	91	491019	19.8565 ug/L	99
88)	a-Methylstyrene	18.74	118	309473	20.1216 ug/L	99
89)	tert-Butylbenzene	18.81	134	120609	19.8853 ug/L	97
90)	1,2,4-Trimethylbenzene	18.87	105	587977	20.4163 ug/L	100
91)	sec-Butylbenzene	19.13	105	690021	20.3828 ug/L	99
92)	p-Isopropyltoluene	19.32	119	586819	20.3412 ug/L	100
93)	1,3-Dichlorobenzene	19.53	146	347927	19.5557 ug/L	100
94)	1,4-Dichlorobenzene	19.69	146	344416	20.3156 ug/L	98
95)	n-Butylbenzene	19.94	91	553574	20.2731 ug/L	99
96)	1,2-Dichlorobenzene	20.28	146	323149	19.4907 ug/L	99
97)	1,2-Dibromo-3-Chloropropan	21.46	75	24521	18.8784 ug/L	100
98)	1,2,4-Trichlorobenzene	22.82	180	229322	20.0052 ug/L	99
99)	Hexachlorobutadiene	23.02	225	92359	19.4141 ug/L	99
100)	Naphthalene	23.28	128	469355	20.7131 ug/L	99
101)	1,2,3-Trichlorobenzene	23.68	180	214161	19.7420 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M139741.D 8260WT.M Thu Jun 02 12:18:22 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139741.D Vial: 7
Acq On : 1 Jun 2016 15:10 Operator: TMB
Sample : WG570915-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 2 12:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration

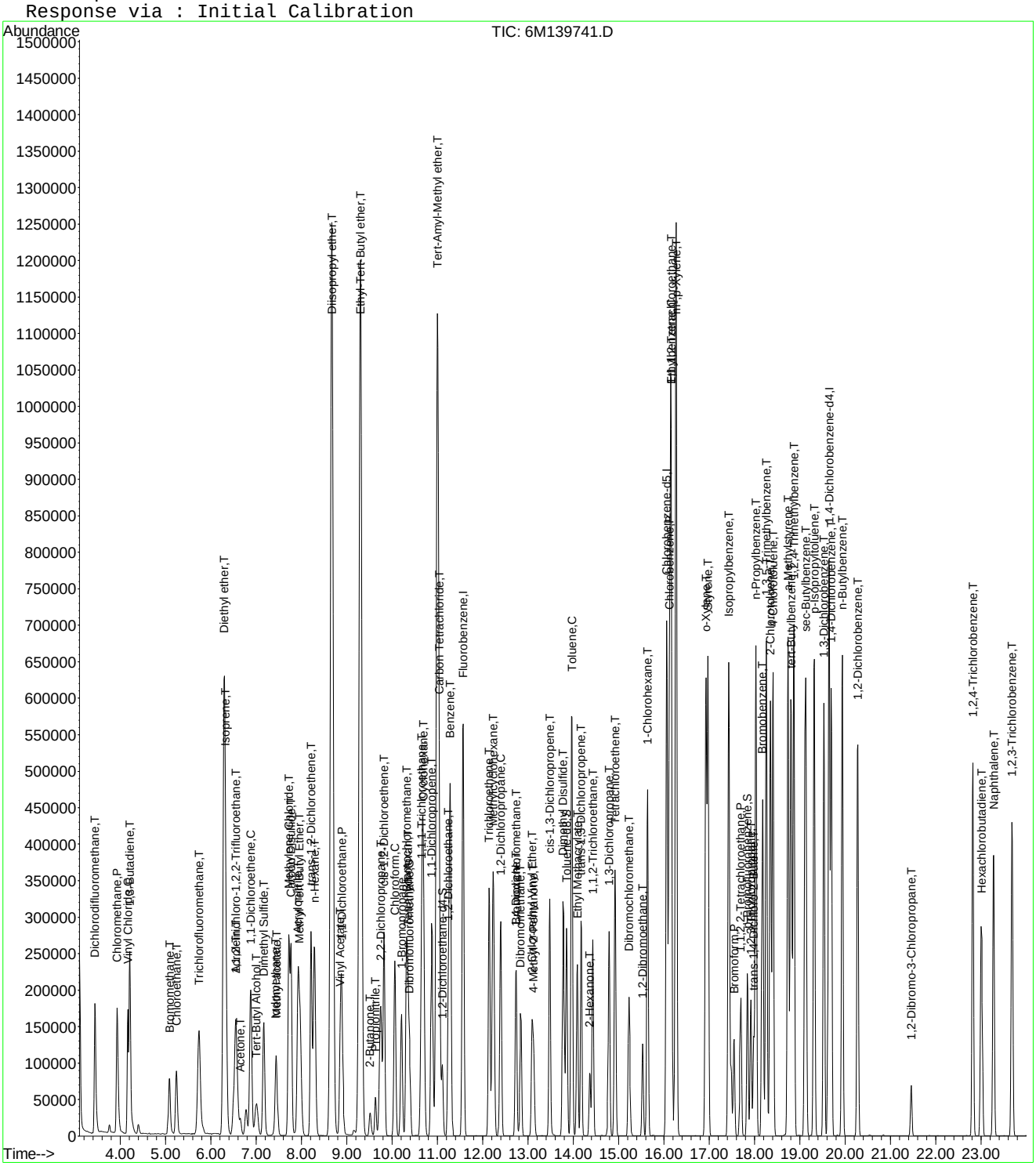

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139742.D Vial: 8
Acq On : 1 Jun 2016 15:43 Operator: TMB
Sample : WG570915-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:22 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	743292	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.06	117	551471	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	19.65	152	314779	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.38	111	194703	25.3102 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.24%		
43) 1,2-Dichloroethane-d4	11.11	65	214016	25.2407 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.96%		
58) Toluene-d8	13.85	98	648440	24.5005 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.00%		
80) p-Bromofluorobenzene	17.84	95	274770	24.7192 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.88%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	636760	54.1207 ug/L	98
3) Chloromethane	3.93	50	738547	51.4870 ug/L	100
4) Vinyl Chloride	4.17	62	471300	48.7435 ug/L	100
5) 1,3-Butadiene	4.21	54	275105	50.7103 ug/L	99
6) Bromomethane	5.07	94	226755	47.6082 ug/L	100
7) Chloroethane	5.24	64	303648	49.6840 ug/L	99
8) Trichlorofluoromethane	5.74	101	645944	49.8850 ug/L	100
9) Diethyl ether	6.29	59	702021	100.8209 ug/L	99
10) Isoprene	6.32	67	548707	49.8431 ug/L	100
11) Acrolein	6.54	56	58598	49.8794 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.54	101	369548	49.9587 ug/L	99
13) Acetone	6.65	43	111738	51.8463 ug/L	99
14) 1,1-Dichloroethene	6.88	61	651451	49.7296 ug/L	99
15) Tert-Butyl Alcohol	7.00	59	138578	215.5456 ug/L	99
16) Dimethyl Sulfide	7.17	62	302459	50.3095 ug/L	99
17) Iodomethane	7.43	142	285920	52.9654 ug/L	98
18) Methyl acetate	7.45	43	319270	49.7999 ug/L	100
19) Methylene Chloride	7.72	84	389825	48.2562 ug/L	100
20) Carbon Disulfide	7.77	76	1278901	49.8987 ug/L	100
21) Acrylonitrile	7.92	53	149508	52.9135 ug/L	99
22) Methyl Tert Butyl Ether	7.95	73	994073	50.4335 ug/L	100
23) trans-1,2-Dichloroethene	8.21	96	381485	49.9596 ug/L	99
24) n-Hexane	8.29	57	591079	49.7119 ug/L	99
25) Diisopropyl ether	8.67	45	3204444	101.2514 ug/L	99
26) Vinyl Acetate	8.86	43	674502	50.1936 ug/L	100
27) 1,1-Dichloroethane	8.89	63	750842	49.0756 ug/L	100
28) Ethyl-Tert-Butyl ether	9.30	59	2645854	102.1531 ug/L	99
29) 2-Butanone	9.51	43	169396	50.4663 ug/L	100
30) Propionitrile	9.63	54	99277	107.1681 ug/L	99
31) 2,2-Dichloropropane	9.75	77	537506	48.1895 ug/L	98
32) cis-1,2-Dichloroethene	9.82	96	418745	50.3378 ug/L	98
33) Chloroform	10.06	83	671266	49.2629 ug/L	99
34) 1-Bromopropane	10.21	122	68097	49.4474 ug/L	100
35) Bromochloromethane	10.32	130	239411	50.6801 ug/L	100
36) Tetrahydrofuran	10.35	42	229400	99.2745 ug/L	98
38) 1,1,1-Trichloroethane	10.65	97	600672	49.4161 ug/L	99
39) Cyclohexane	10.69	56	759332	49.8388 ug/L	98
40) 1,1-Dichloropropene	10.87	75	519993	49.9147 ug/L	98
41) Tert-Amyl-Methyl ether	11.00	73	2040976	101.7767 ug/L	99
42) Carbon Tetrachloride	11.04	117	549979	50.7176 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M139742.D 8260WT.M Thu Jun 02 12:18:23 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139742.D Vial: 8
Acq On : 1 Jun 2016 15:43 Operator: TMB
Sample : WG570915-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:22 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45) 1,2-Dichloroethane	11.24	62	520403	49.6941 ug/L	100
46) Benzene	11.28	78	1501660	49.1787 ug/L	100
47) Trichloroethene	12.14	130	389158	49.9006 ug/L	100
48) Methylcyclohexane	12.23	83	588750	49.7945 ug/L	100
49) 1,2-Dichloropropane	12.40	63	421731	50.0030 ug/L	99
50) 1,4-Dioxane	12.73	88	13033	216.9015 ug/L	96
51) Bromodichloromethane	12.74	83	527662	50.8733 ug/L	100
52) Dibromomethane	12.84	93	222406	51.1020 ug/L	100
53) 2-Chloroethyl Vinyl Ether	13.09	63	209173	54.3390 ug/L	100
54) 4-Methyl-2-Pentanone	13.12	58	135553	52.9115 ug/L	100
55) cis-1,3-Dichloropropene	13.48	75	613925	52.2962 ug/L	100
56) Dimethyl Disulfide	13.77	79	343367	50.7709 ug/L	99
59) Toluene	13.97	91	1553020	49.5926 ug/L	99
60) Ethyl Methacrylate	14.09	69	453009	52.7895 ug/L	99
62) trans-1,3-Dichloropropene	14.18	75	548907	51.4655 ug/L	100
63) 1,1,2-Trichloroethane	14.43	97	301382	50.5477 ug/L	100
64) 2-Hexanone	14.36	43	257451	50.8862 ug/L	100
65) 1,3-Dichloropropane	14.79	76	528668	50.4317 ug/L	98
66) Tetrachloroethene	14.92	166	401722	48.9046 ug/L	99
67) Dibromochloromethane	15.23	129	390196	51.3609 ug/L	100
68) 1,2-Dibromoethane	15.53	107	295388	51.2575 ug/L	99
69) 1-Chlorohexane	15.64	91	531557	52.2752 ug/L	100
70) Chlorobenzene	16.12	112	1028906	49.1040 ug/L	99
71) 1,1,1,2-Tetrachloroethane	16.16	131	389576	51.2600 ug/L	99
72) Ethylbenzene	16.16	106	560484	50.4301 ug/L	100
73) m-,p-Xylene	16.27	106	1337468	101.2957 ug/L	100
74) o-Xylene	16.93	106	664993	50.9649 ug/L	100
75) Styrene	16.97	104	1162477	53.6454 ug/L	99
76) Bromoform	17.55	173	251758	52.2316 ug/L	99
77) Isopropylbenzene	17.43	105	1708173	52.1543 ug/L	100
79) 1,1,2,2-Tetrachloroethane	17.70	83	377511	49.7428 ug/L	100
81) 1,2,3-Trichloropropane	17.92	110	110787	50.4216 ug/L	85
82) trans-1,4-Dichloro-2-Buten	17.98	53	128776	47.4405 ug/L	99
83) n-Propylbenzene	18.03	91	2085439	51.1180 ug/L	99
84) Bromobenzene	18.18	156	463664	48.4335 ug/L	99
85) 1,3,5-Trimethylbenzene	18.26	105	1474739	51.0898 ug/L	100
86) 2-Chlorotoluene	18.35	91	1349618	48.2965 ug/L	99
87) 4-Chlorotoluene	18.41	91	1298591	50.0499 ug/L	100
88) a-Methylstyrene	18.74	118	813708	50.4237 ug/L	100
89) tert-Butylbenzene	18.81	134	320084	50.2972 ug/L	81
90) 1,2,4-Trimethylbenzene	18.87	105	1542733	51.0547 ug/L	100
91) sec-Butylbenzene	19.13	105	1811256	50.9928 ug/L	100
92) p-Isopropyltoluene	19.32	119	1566478	51.7517 ug/L	100
93) 1,3-Dichlorobenzene	19.53	146	907226	48.5991 ug/L	98
94) 1,4-Dichlorobenzene	19.70	146	909939	51.4796 ug/L	99
95) n-Butylbenzene	19.94	91	1484817	51.8256 ug/L	99
96) 1,2-Dichlorobenzene	20.28	146	855774	49.1938 ug/L	99
97) 1,2-Dibromo-3-Chloropropan	21.46	75	72400	53.1242 ug/L	97
98) 1,2,4-Trichlorobenzene	22.82	180	608734	50.6118 ug/L	99
99) Hexachlorobutadiene	23.02	225	245206	49.1243 ug/L	100
100) Naphthalene	23.28	128	1276187	53.6766 ug/L	100
101) 1,2,3-Trichlorobenzene	23.69	180	568536	49.9499 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M139742.D 8260WT.M Thu Jun 02 12:18:23 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139742.D Vial: 8
Acq On : 1 Jun 2016 15:43 Operator: TMB
Sample : WG570915-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 2 12:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration

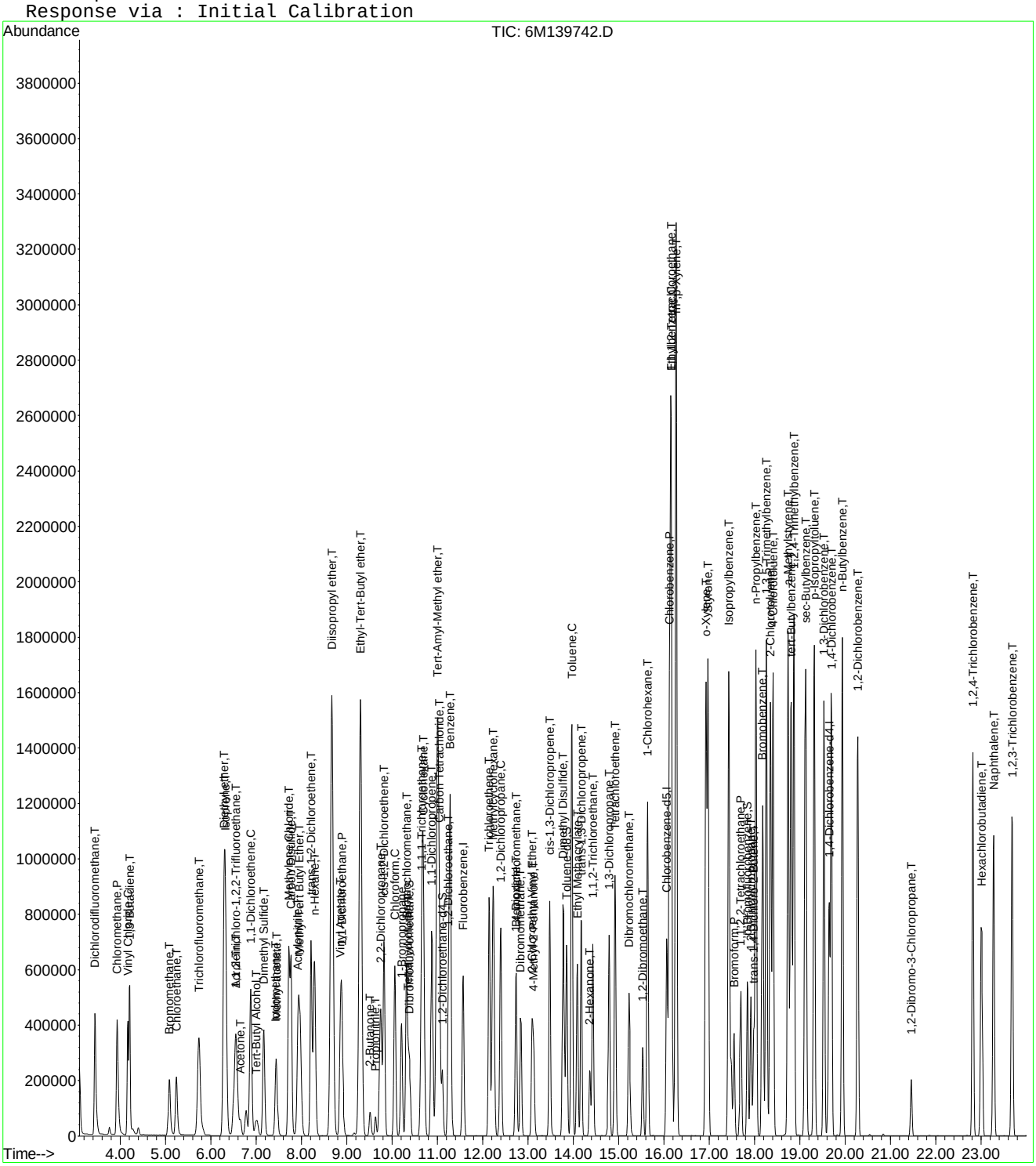

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139743.D Vial: 9
Acq On : 1 Jun 2016 16:15 Operator: TMB
Sample : WG570915-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:23 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.56	96	745219	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	553231	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.64	152	324979	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	381593	49.4765 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 197.92%#		
43) 1,2-Dichloroethane-d4	11.11	65	420324	49.4441 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 197.76%#		
58) Toluene-d8	13.85	98	1284388	48.3746 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 193.48%#		
80) p-Bromofluorobenzene	17.84	95	561184	48.9013 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 195.60%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	1271545	107.7942 ug/L	99
3) Chloromethane	3.93	50	1453604	101.0744 ug/L	99
4) Vinyl Chloride	4.16	62	940309	96.9986 ug/L	100
5) 1,3-Butadiene	4.20	54	543605	105.2748 ug/L	98
6) Bromomethane	5.08	94	507202	106.2139 ug/L	100
7) Chloroethane	5.23	64	607096	99.0784 ug/L	98
8) Trichlorofluoromethane	5.73	101	1293807	99.6599 ug/L	100
9) Diethyl ether	6.29	59	1412947	202.3960 ug/L	100
10) Isoprene	6.32	67	1134177	102.7593 ug/L	100
11) Acrolein	6.54	56	121987	103.5684 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.54	101	746025	100.5934 ug/L	99
13) Acetone	6.65	43	219673	104.1433 ug/L	97
14) 1,1-Dichloroethene	6.88	61	1312919	99.9646 ug/L	99
15) Tert-Butyl Alcohol	7.02	59	283142	439.2630 ug/L	100
16) Dimethyl Sulfide	7.16	62	610247	101.2429 ug/L	99
17) Iodomethane	7.44	142	578425	105.4079 ug/L	99
18) Methyl acetate	7.45	43	643020	100.0391 ug/L	99
19) Methylene Chloride	7.72	84	774654	95.6460 ug/L	100
20) Carbon Disulfide	7.76	76	2590427	100.8089 ug/L	100
21) Acrylonitrile	7.93	53	297985	105.1894 ug/L	99
22) Methyl Tert Butyl Ether	7.95	73	1991839	100.7930 ug/L	99
23) trans-1,2-Dichloroethene	8.21	96	766532	100.1262 ug/L	99
24) n-Hexane	8.28	57	1207948	101.3301 ug/L	99
25) Diisopropyl ether	8.67	45	6349652	200.1124 ug/L	100
26) Vinyl Acetate	8.86	43	1305411	96.8920 ug/L	100
27) 1,1-Dichloroethane	8.89	63	1510299	98.4590 ug/L	99
28) Ethyl-Tert-Butyl ether	9.31	59	5254811	202.3571 ug/L	99
29) 2-Butanone	9.51	43	343748	102.1442 ug/L	99
30) Propionitrile	9.63	54	195891	210.9148 ug/L	99
31) 2,2-Dichloropropane	9.74	77	1100861	98.4413 ug/L	97
32) cis-1,2-Dichloroethene	9.83	96	833939	99.9895 ug/L	98
33) Chloroform	10.06	83	1345458	98.4852 ug/L	99
34) 1-Bromopropane	10.20	122	139415	100.6685 ug/L	99
35) Bromochloromethane	10.32	130	481146	101.5887 ug/L	100
36) Tetrahydrofuran	10.35	42	450185	194.3170 ug/L	99
38) 1,1,1-Trichloroethane	10.65	97	1216226	99.7977 ug/L	99
39) Cyclohexane	10.68	56	1560090	102.1318 ug/L	98
40) 1,1-Dichloropropene	10.88	75	1059287	101.4191 ug/L	97
41) Tert-Amyl-Methyl ether	11.00	73	4120411	204.9398 ug/L	99
42) Carbon Tetrachloride	11.04	117	1123233	103.3138 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M139743.D 8260WT.M Thu Jun 02 12:18:24 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139743.D Vial: 9
Acq On : 1 Jun 2016 16:15 Operator: TMB
Sample : WG570915-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:23 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	11.25	62	1041653	99.2119	ug/L	99
46)	Benzene	11.29	78	2987728	97.5938	ug/L	100
47)	Trichloroethene	12.14	130	787643	100.7360	ug/L	100
48)	Methylcyclohexane	12.24	83	1207654	101.8752	ug/L	100
49)	1,2-Dichloropropane	12.39	63	848936	100.3948	ug/L	99
50)	1,4-Dioxane	12.73	88	26054	432.4820	ug/L	91
51)	Bromodichloromethane	12.74	83	1058042	101.7449	ug/L	99
52)	Dibromomethane	12.84	93	445604	102.1212	ug/L	100
53)	2-Chloroethyl Vinyl Ether	13.08	63	410765	106.4326	ug/L	100
54)	4-Methyl-2-Pentanone	13.12	58	270288	105.2308	ug/L	99
55)	cis-1,3-Dichloropropene	13.48	75	1235593	104.9798	ug/L	100
56)	Dimethyl Disulfide	13.78	79	719355	106.0902	ug/L	100
59)	Toluene	13.96	91	3103522	98.7895	ug/L	99
60)	Ethyl Methacrylate	14.08	69	931022	108.1477	ug/L	99
62)	trans-1,3-Dichloropropene	14.18	75	1108920	103.6415	ug/L	100
63)	1,1,2-Trichloroethane	14.43	97	600453	100.3874	ug/L	100
64)	2-Hexanone	14.36	43	525162	103.4700	ug/L	100
65)	1,3-Dichloropropane	14.79	76	1051661	100.0029	ug/L	98
66)	Tetrachloroethene	14.92	166	801128	97.2171	ug/L	99
67)	Dibromochloromethane	15.23	129	788751	103.4917	ug/L	100
68)	1,2-Dibromoethane	15.53	107	594770	102.8797	ug/L	100
69)	1-Chlorohexane	15.65	91	1078462	105.7225	ug/L	100
70)	Chlorobenzene	16.13	112	2048564	97.4556	ug/L	98
71)	1,1,1,2-Tetrachloroethane	16.17	131	787668	103.3109	ug/L	99
72)	Ethylbenzene	16.16	106	1123449	100.7619	ug/L	100
73)	m-,p-Xylene	16.27	106	2682669	202.5308	ug/L	98
74)	o-Xylene	16.93	106	1337407	102.1724	ug/L	100
75)	Styrene	16.97	104	2366159	108.8450	ug/L	98
76)	Bromoform	17.55	173	529470	109.4983	ug/L	99
77)	Isopropylbenzene	17.43	105	3429724	104.3838	ug/L	100
79)	1,1,2,2-Tetrachloroethane	17.70	83	780189	99.5752	ug/L	100
81)	1,2,3-Trichloropropane	17.92	110	228360	100.6695	ug/L	89
82)	trans-1,4-Dichloro-2-Buten	17.99	53	281575	99.6791	ug/L	90
83)	n-Propylbenzene	18.04	91	4178754	99.2142	ug/L	100
84)	Bromobenzene	18.18	156	945550	95.6704	ug/L	98
85)	1,3,5-Trimethylbenzene	18.26	105	3012486	101.0869	ug/L	100
86)	2-Chlorotoluene	18.35	91	2814456	97.5550	ug/L	100
87)	4-Chlorotoluene	18.41	91	2586619	96.5636	ug/L	100
88)	a-Methylstyrene	18.74	118	1716308	103.0177	ug/L	100
89)	tert-Butylbenzene	18.81	134	661932	100.7497	ug/L	99
90)	1,2,4-Trimethylbenzene	18.87	105	3165014	101.4544	ug/L	100
91)	sec-Butylbenzene	19.13	105	3724940	101.5778	ug/L	100
92)	p-Isopropyltoluene	19.31	119	3227971	103.2952	ug/L	100
93)	1,3-Dichlorobenzene	19.54	146	1880510	97.5751	ug/L	98
94)	1,4-Dichlorobenzene	19.69	146	1878131	103.1339	ug/L	98
95)	n-Butylbenzene	19.95	91	3081384	104.1760	ug/L	100
96)	1,2-Dichlorobenzene	20.27	146	1761523	98.0823	ug/L	98
97)	1,2-Dibromo-3-Chloropropan	21.46	75	150529	106.9853	ug/L	99
98)	1,2,4-Trichlorobenzene	22.83	180	1257020	101.2317	ug/L	99
99)	Hexachlorobutadiene	23.01	225	503637	97.7313	ug/L	100
100)	Naphthalene	23.27	128	2610257	106.3420	ug/L	100
101)	1,2,3-Trichlorobenzene	23.68	180	1163258	98.9927	ug/L	99

(#) = qualifier out of range (m) = manual integration
6M139743.D 8260WT.M Thu Jun 02 12:18:24 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139743.D Vial: 9
Acq On : 1 Jun 2016 16:15 Operator: TMB
Sample : WG570915-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 2 12:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration

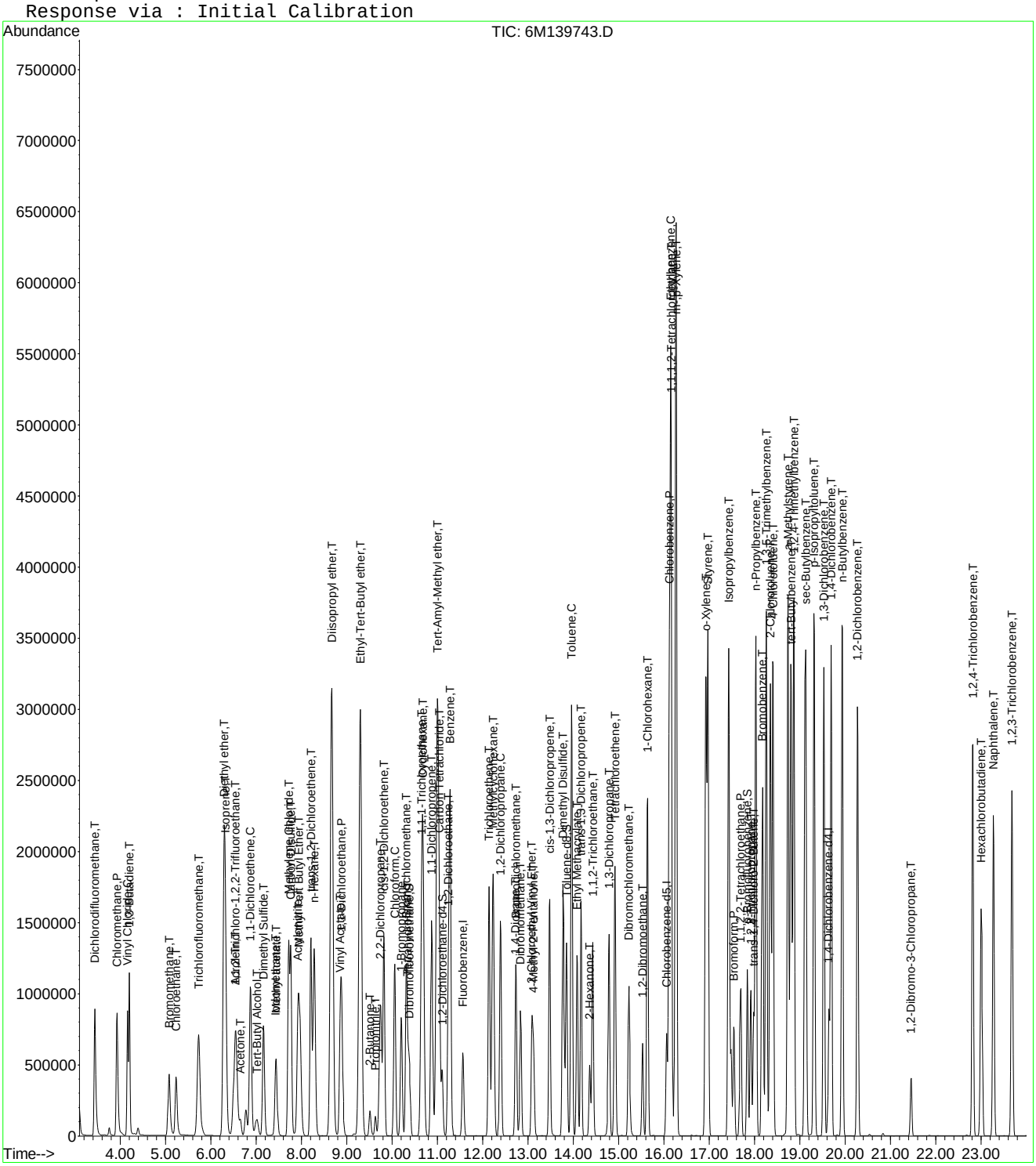

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139744.D Vial: 10
Acq On : 1 Jun 2016 16:47 Operator: TMB
Sample : WG570915-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:24 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	776064	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.06	117	573619	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	333724	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	806214	100.3772 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 401.52%#		
43) 1,2-Dichloroethane-d4	11.11	65	876933	99.0564 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 396.24%#		
58) Toluene-d8	13.85	98	2681218	97.3950 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 389.56%#		
80) p-Bromofluorobenzene	17.84	95	1179267	100.0680 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 400.28%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	2579822	210.0099 ug/L	99
3) Chloromethane	3.93	50	2884749	192.6148 ug/L	100
4) Vinyl Chloride	4.16	62	1885735	186.7936 ug/L	99
5) 1,3-Butadiene	4.20	54	1072988	204.4528 ug/L	98
6) Bromomethane	5.08	94	1138500	228.9390 ug/L	100
7) Chloroethane	5.23	64	1266416	198.4652 ug/L	99
8) Trichlorofluoromethane	5.73	101	2677396	198.0386 ug/L	100
9) Diethyl ether	6.30	59	2847	0.3916 ug/L #	47
10) Isoprene	6.32	67	2328586	202.5904 ug/L	100
11) Acrolein	6.55	56	4274	3.4845 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.55	101	1565121	202.6517 ug/L	99
13) Acetone	6.66	43	445796	205.3917 ug/L	97
14) 1,1-Dichloroethene	6.87	61	2774888	202.8805 ug/L	99
15) Tert-Butyl Alcohol	7.04	59	15311	22.8092 ug/L #	58
16) Dimethyl Sulfide	7.16	62	1276573	203.3718 ug/L	100
17) Iodomethane	7.43	142	1184276	205.8450 ug/L	97
18) Methyl acetate	7.46	43	1318166	196.9255 ug/L	98
19) Methylene Chloride	7.72	84	1656713	196.4233 ug/L	98
20) Carbon Disulfide	7.77	76	5292625	197.7812 ug/L	99
21) Acrylonitrile	7.95	53	52128	17.6699 ug/L #	39
22) Methyl Tert Butyl Ether	7.96	73	4208038	204.4759 ug/L	99
23) trans-1,2-Dichloroethene	8.21	96	1623775	203.6712 ug/L	100
24) n-Hexane	8.28	57	2478699	199.6643 ug/L	100
25) Diisopropyl ether	8.66	45	5024	0.1520 ug/L #	53
26) Vinyl Acetate	8.85	43	3085472	219.9118 ug/L	99
27) 1,1-Dichloroethane	8.88	63	3203758	200.5574 ug/L	99
28) Ethyl-Tert-Butyl ether	9.31	59	31362	1.1597 ug/L #	45
29) 2-Butanone	9.51	43	702047	200.3209 ug/L	100
30) Propionitrile	9.64	54	5995	6.1982 ug/L	92
31) 2,2-Dichloropropane	9.75	77	2335468	200.5419 ug/L	96
32) cis-1,2-Dichloroethene	9.82	96	1785062	205.5228 ug/L	99
33) Chloroform	10.06	83	2856444	200.7766 ug/L	99
34) 1-Bromopropane	10.21	122	290511	201.1427 ug/L	100
35) Bromochloromethane	10.32	130	1018815	206.5620 ug/L	100
36) Tetrahydrofuran	10.36	42	13533	5.6092 ug/L	97
38) 1,1,1-Trichloroethane	10.65	97	2601990	205.0210 ug/L	99
39) Cyclohexane	10.68	56	3250515	204.3384 ug/L	98
40) 1,1-Dichloropropene	10.88	75	2239923	205.9328 ug/L	97
41) Tert-Amyl-Methyl ether	11.01	73	4521	0.2159 ug/L	95
42) Carbon Tetrachloride	11.04	117	2354561	207.9624 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139744.D Vial: 10
Acq On : 1 Jun 2016 16:47 Operator: TMB
Sample : WG570915-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:24 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.24	62	2210694	202.1881 ug/L	99
46)	Benzene	11.28	78	6174905	193.6858 ug/L	98
47)	Trichloroethene	12.14	130	1643481	201.8396 ug/L	99
48)	Methylcyclohexane	12.23	83	2494638	202.0783 ug/L	100
49)	1,2-Dichloropropane	12.40	63	1813017	205.8849 ug/L	99
50)	1,4-Dioxane	12.73	88	4051	64.5717 ug/L #	42
51)	Bromodichloromethane	12.73	83	2256070	208.3284 ug/L	99
52)	Dibromomethane	12.84	93	947659	208.5476 ug/L	100
53)	2-Chloroethyl Vinyl Ether	13.09	63	834725	207.6879 ug/L	100
54)	4-Methyl-2-Pentanone	13.12	58	562095	210.1417 ug/L	99
55)	cis-1,3-Dichloropropene	13.48	75	2636809	215.1272 ug/L	100
56)	Dimethyl Disulfide	13.78	79	1544098	218.6720 ug/L	100
59)	Toluene	13.97	91	6343599	194.7487 ug/L	97
60)	Ethyl Methacrylate	14.09	69	1956368	219.1749 ug/L	99
62)	trans-1,3-Dichloropropene	14.17	75	2372003	213.8118 ug/L	100
63)	1,1,2-Trichloroethane	14.43	97	1265411	204.0398 ug/L	99
64)	2-Hexanone	14.36	43	1099274	208.8865 ug/L	99
65)	1,3-Dichloropropane	14.79	76	2208806	202.5711 ug/L	98
66)	Tetrachloroethene	14.92	166	1679955	196.6171 ug/L	97
67)	Dibromochloromethane	15.24	129	1662430	210.3740 ug/L	99
68)	1,2-Dibromoethane	15.53	107	1245613	207.8007 ug/L	100
69)	1-Chlorohexane	15.64	91	2230493	210.8853 ug/L	99
70)	Chlorobenzene	16.12	112	4254241	195.1921 ug/L	94
71)	1,1,1,2-Tetrachloroethane	16.17	131	1673381	211.6804 ug/L	98
72)	Ethylbenzene	16.17	106	2403044	207.8680 ug/L	91
73)	m-,p-Xylene	16.27	106	5429587	395.3427 ug/L	84
74)	o-Xylene	16.93	106	2810875	207.1070 ug/L	97
75)	Styrene	16.97	104	4915148	218.0641 ug/L	95
76)	Bromoform	17.55	173	1136738	226.7302 ug/L	99
77)	Isopropylbenzene	17.43	105	6859790	201.3575 ug/L	97
79)	1,1,2,2-Tetrachloroethane	17.70	83	1662819	206.6637 ug/L	99
81)	1,2,3-Trichloropropane	17.92	110	474236	203.5824 ug/L	82
82)	trans-1,4-Dichloro-2-Buten	17.98	53	585581	201.1368 ug/L	96
83)	n-Propylbenzene	18.03	91	8082495	186.8702 ug/L	96
84)	Bromobenzene	18.18	156	1996554	196.7170 ug/L	97
85)	1,3,5-Trimethylbenzene	18.26	105	6169530	201.5996 ug/L	98
86)	2-Chlorotoluene	18.35	91	5638837	190.3323 ug/L	99
87)	4-Chlorotoluene	18.41	91	5484270	199.3736 ug/L	98
88)	a-Methylstyrene	18.74	118	3512028	205.2781 ug/L	100
89)	tert-Butylbenzene	18.81	134	1381654	204.7847 ug/L	83
90)	1,2,4-Trimethylbenzene	18.87	105	6415254	200.2520 ug/L	97
91)	sec-Butylbenzene	19.13	105	7361358	195.4813 ug/L	97
92)	p-Isopropyltoluene	19.32	119	6417848	199.9897 ug/L	97
93)	1,3-Dichlorobenzene	19.54	146	3842248	194.1406 ug/L	96
94)	1,4-Dichlorobenzene	19.70	146	3828208	204.9208 ug/L	96
95)	n-Butylbenzene	19.94	91	6152441	202.5523 ug/L	98
96)	1,2-Dichlorobenzene	20.28	146	3581931	194.2170 ug/L	96
97)	1,2-Dibromo-3-Chloropropan	21.47	75	312895	216.5561 ug/L	99
98)	1,2,4-Trichlorobenzene	22.82	180	2607210	204.4647 ug/L	98
99)	Hexachlorobutadiene	23.02	225	1025399	193.7656 ug/L	99
100)	Naphthalene	23.28	128	5221771	207.1606 ug/L	98
101)	1,2,3-Trichlorobenzene	23.69	180	2383834	197.5473 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M139744.D 8260WT.M Thu Jun 02 12:18:24 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139744.D Vial: 10
Acq On : 1 Jun 2016 16:47 Operator: TMB
Sample : WG570915-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 2 12:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration

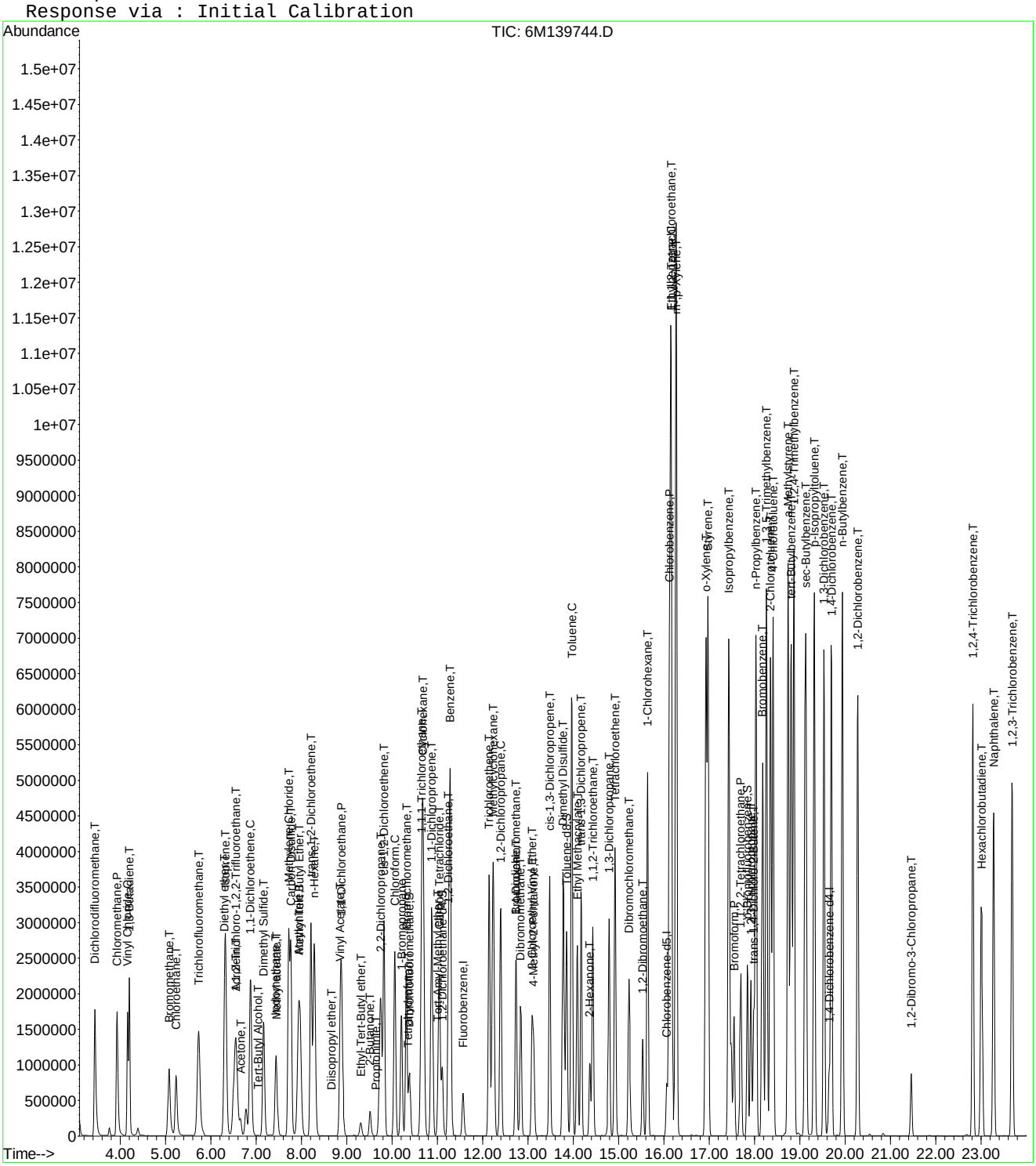

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139745.D Vial: 11
Acq On : 1 Jun 2016 17:19 Operator: TMB
Sample : WG570915-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:25 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	874785	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	603118	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	334735	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.38	111	1329975	146.9008 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 587.60%#		
43) 1,2-Dichloroethane-d4	11.11	65	1427686	143.0689 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 572.28%#		
58) Toluene-d8	13.85	98	4301159	148.5974 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 594.40%#		
80) p-Bromofluorobenzene	17.85	95	1769546	149.7033 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 598.80%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	3794421	274.0259 ug/L	99
3) Chloromethane	3.93	50	4042633	239.4651 ug/L	100
4) Vinyl Chloride	4.16	62	2745108	241.2331 ug/L	98
5) 1,3-Butadiene	4.20	54	1672121	284.7589 ug/L	99
6) Bromomethane	5.06	94	1745686	311.4219 ug/L	100
7) Chloroethane	5.23	64	1947490	270.7569 ug/L	99
8) Trichlorofluoromethane	5.72	101	4186804	274.7363 ug/L	100
9) Diethyl ether	6.29	59	2434269	297.0484 ug/L	99
10) Isoprene	6.32	67	3866380	298.4196 ug/L	100
11) Acrolein	6.54	56	211081	152.6671 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.54	101	2530270	290.6468 ug/L	99
13) Acetone	6.66	43	706320	289.7447 ug/L	95
14) 1,1-Dichloroethene	6.87	61	4460855	289.3404 ug/L	98
15) Tert-Butyl Alcohol	7.05	59	432972	572.2196 ug/L	99
16) Dimethyl Sulfide	7.16	62	2127423	300.6735 ug/L	99
17) Iodomethane	7.43	142	1850962	284.8611 ug/L	98
18) Methyl acetate	7.45	43	2187319	289.8946 ug/L	98
19) Methylene Chloride	7.72	84	2684397	282.3505 ug/L	98
20) Carbon Disulfide	7.76	76	8318935	275.7895 ug/L	97
21) Acrylonitrile	7.92	53	535439	161.0165 ug/L	97
22) Methyl Tert Butyl Ether	7.95	73	6877613	296.4807 ug/L	99
23) trans-1,2-Dichloroethene	8.21	96	2657970	295.7672 ug/L	100
24) n-Hexane	8.28	57	4061677	290.2540 ug/L	100
25) Diisopropyl ether	8.67	45	10570767	283.8005 ug/L	98
26) Vinyl Acetate	8.86	43	5021055	317.4813 ug/L	99
27) 1,1-Dichloroethane	8.89	63	5233579	290.6524 ug/L	98
28) Ethyl-Tert-Butyl ether	9.30	59	8844197	290.1365 ug/L	98
29) 2-Butanone	9.52	43	1096187	277.4859 ug/L	99
30) Propionitrile	9.64	54	302541	277.4977 ug/L	99
31) 2,2-Dichloropropane	9.75	77	3789844	288.7014 ug/L	96
32) cis-1,2-Dichloroethene	9.82	96	2910936	297.3278 ug/L	99
33) Chloroform	10.06	83	4641408	289.4232 ug/L	99
34) 1-Bromopropane	10.21	122	486129	298.4586 ug/L	99
35) Bromochloromethane	10.32	130	1642991	295.5197 ug/L	99
36) Tetrahydrofuran	10.35	42	734691	270.1512 ug/L	100
38) 1,1,1-Trichloroethane	10.66	97	4234747	296.0169 ug/L	100
39) Cyclohexane	10.69	56	5346656	298.1784 ug/L	98
40) 1,1-Dichloropropene	10.87	75	3628282	295.9305 ug/L	96
41) Tert-Amyl-Methyl ether	11.01	73	7044691	298.4904 ug/L	99
42) Carbon Tetrachloride	11.04	117	3852044	301.8300 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M139745.D 8260WT.M Thu Jun 02 12:18:25 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139745.D Vial: 11
Acq On : 1 Jun 2016 17:19 Operator: TMB
Sample : WG570915-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:25 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.24	62	3586153	290.9725 ug/L	98
46)	Benzene	11.28	78	9445205	262.8302 ug/L	94
47)	Trichloroethene	12.15	130	2634728	287.0606 ug/L	98
48)	Methylcyclohexane	12.23	83	4071369	292.5829 ug/L	99
49)	1,2-Dichloropropane	12.40	63	2942534	296.4424 ug/L	100
50)	1,4-Dioxane	12.74	88	42118	595.5853 ug/L	96
51)	Bromodichloromethane	12.74	83	3630814	297.4378 ug/L	99
52)	Dibromomethane	12.84	93	1523394	297.4141 ug/L	99
53)	2-Chloroethyl Vinyl Ether	13.09	63	1282176	283.0164 ug/L	100
54)	4-Methyl-2-Pentanone	13.13	58	866300	287.3208 ug/L	99
55)	cis-1,3-Dichloropropene	13.48	75	4198516	303.8845 ug/L	99
56)	Dimethyl Disulfide	13.78	79	2555342	321.0433 ug/L	99
59)	Toluene	13.97	91	9298621	271.5055 ug/L	92
60)	Ethyl Methacrylate	14.09	69	3070235	327.1395 ug/L	98
62)	trans-1,3-Dichloropropene	14.18	75	3689732	316.3243 ug/L	100
63)	1,1,2-Trichloroethane	14.43	97	1946854	298.5644 ug/L	99
64)	2-Hexanone	14.37	43	1643728	297.0678 ug/L	98
65)	1,3-Dichloropropane	14.79	76	3375035	294.3875 ug/L	98
66)	Tetrachloroethene	14.93	166	2636661	293.4940 ug/L	96
67)	Dibromochloromethane	15.23	129	2525879	304.0063 ug/L	98
68)	1,2-Dibromoethane	15.53	107	1894786	300.6389 ug/L	100
69)	1-Chlorohexane	15.64	91	3460425	311.1688 ug/L	98
70)	Chlorobenzene	16.12	112	6260439	273.1908 ug/L	89
71)	1,1,1,2-Tetrachloroethane	16.16	131	2501054	300.9055 ug/L	97
72)	Ethylbenzene	16.16	106	3603522	296.4656 ug/L	77
73)	m-,p-Xylene	16.27	106	7675830	531.5614 ug/L	72
74)	o-Xylene	16.93	106	4132097	289.5642 ug/L	91
75)	Styrene	16.98	104	7001942	295.4523 ug/L	90
76)	Bromoform	17.55	173	1687864	320.1900 ug/L	98
77)	Isopropylbenzene	17.43	105	9280334	259.0848 ug/L	93
79)	1,1,2,2-Tetrachloroethane	17.70	83	2441380	302.5109 ug/L	100
81)	1,2,3-Trichloropropane	17.92	110	701095	300.0606 ug/L	84
82)	trans-1,4-Dichloro-2-Buten	17.98	53	888429	303.8730 ug/L	92
83)	n-Propylbenzene	18.03	91	10509002	242.2381 ug/L	91
84)	Bromobenzene	18.19	156	2931431	287.9565 ug/L	97
85)	1,3,5-Trimethylbenzene	18.27	105	8380264	273.0120 ug/L	94
86)	2-Chlorotoluene	18.35	91	7661586	257.8267 ug/L	96
87)	4-Chlorotoluene	18.41	91	7776019	281.8333 ug/L	94
88)	a-Methylstyrene	18.74	118	5138258	299.4242 ug/L	98
89)	tert-Butylbenzene	18.81	134	1991224	294.2420 ug/L	95
90)	1,2,4-Trimethylbenzene	18.87	105	8632335	268.6443 ug/L	93
91)	sec-Butylbenzene	19.13	105	9738776	257.8326 ug/L	93
92)	p-Isopropyltoluene	19.32	119	8603731	267.2953 ug/L	93
93)	1,3-Dichlorobenzene	19.54	146	5474292	275.7689 ug/L	93
94)	1,4-Dichlorobenzene	19.70	146	5434751	290.1280 ug/L	93
95)	n-Butylbenzene	19.94	91	8255399	270.9656 ug/L	95
96)	1,2-Dichlorobenzene	20.28	146	5078448	274.5284 ug/L	93
97)	1,2-Dibromo-3-Chloropropan	21.46	75	451100	311.2655 ug/L	99
98)	1,2,4-Trichlorobenzene	22.82	180	3727725	291.4556 ug/L	97
99)	Hexachlorobutadiene	23.02	225	1492415	281.1640 ug/L	99
100)	Naphthalene	23.28	128	7153107	282.9244 ug/L	96
101)	1,2,3-Trichlorobenzene	23.69	180	3403591	281.2023 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M139745.D 8260WT.M Thu Jun 02 12:18:25 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139745.D Vial: 11
Acq On : 1 Jun 2016 17:19 Operator: TMB
Sample : WG570915-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 2 12:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration

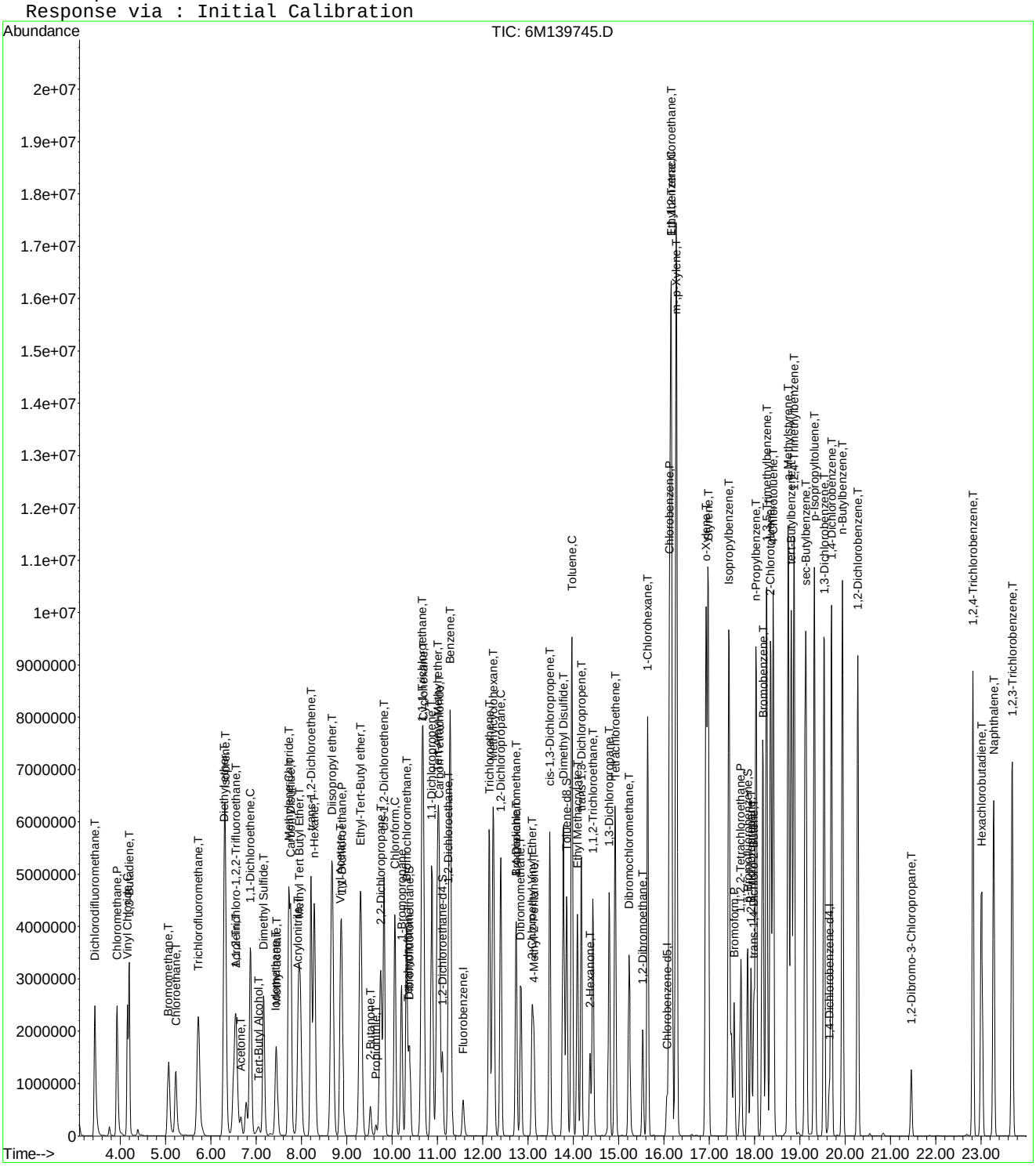

6M139745.D 8260WT.M Thu Jun 02 12:18:25 2016 Page 3

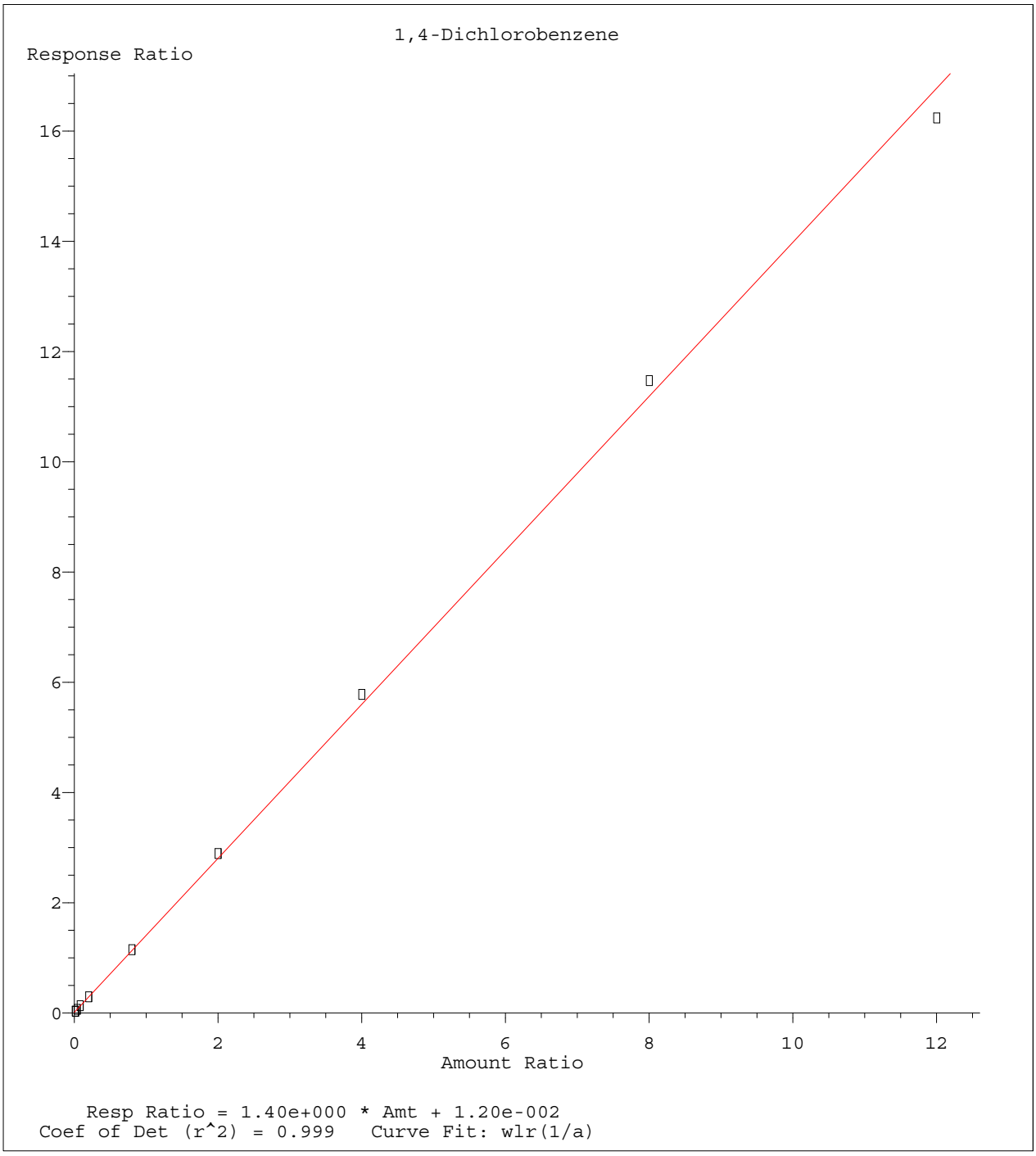

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Thu Jun 02 12:19:33 2016

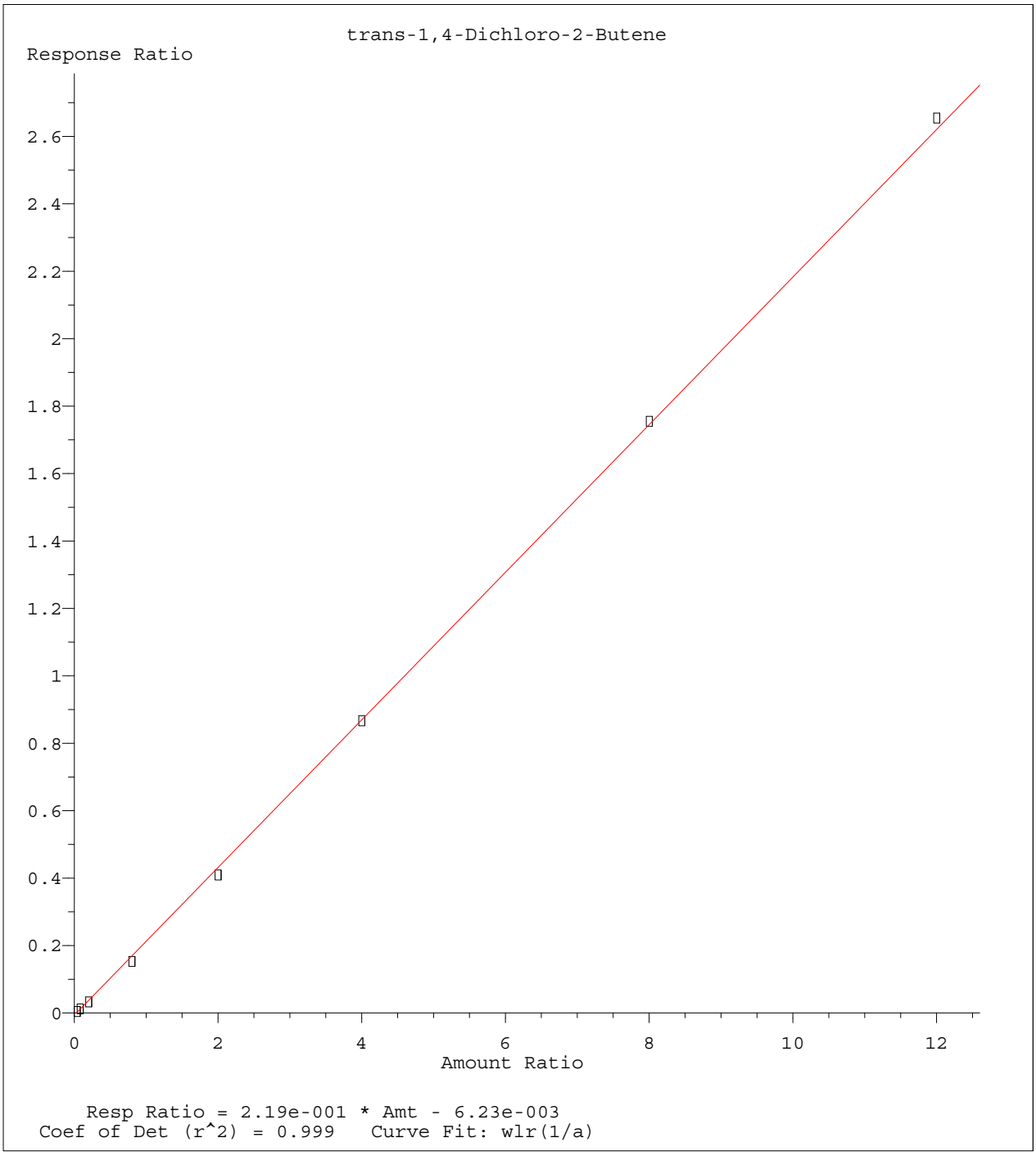

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Thu Jun 02 12:19:33 2016

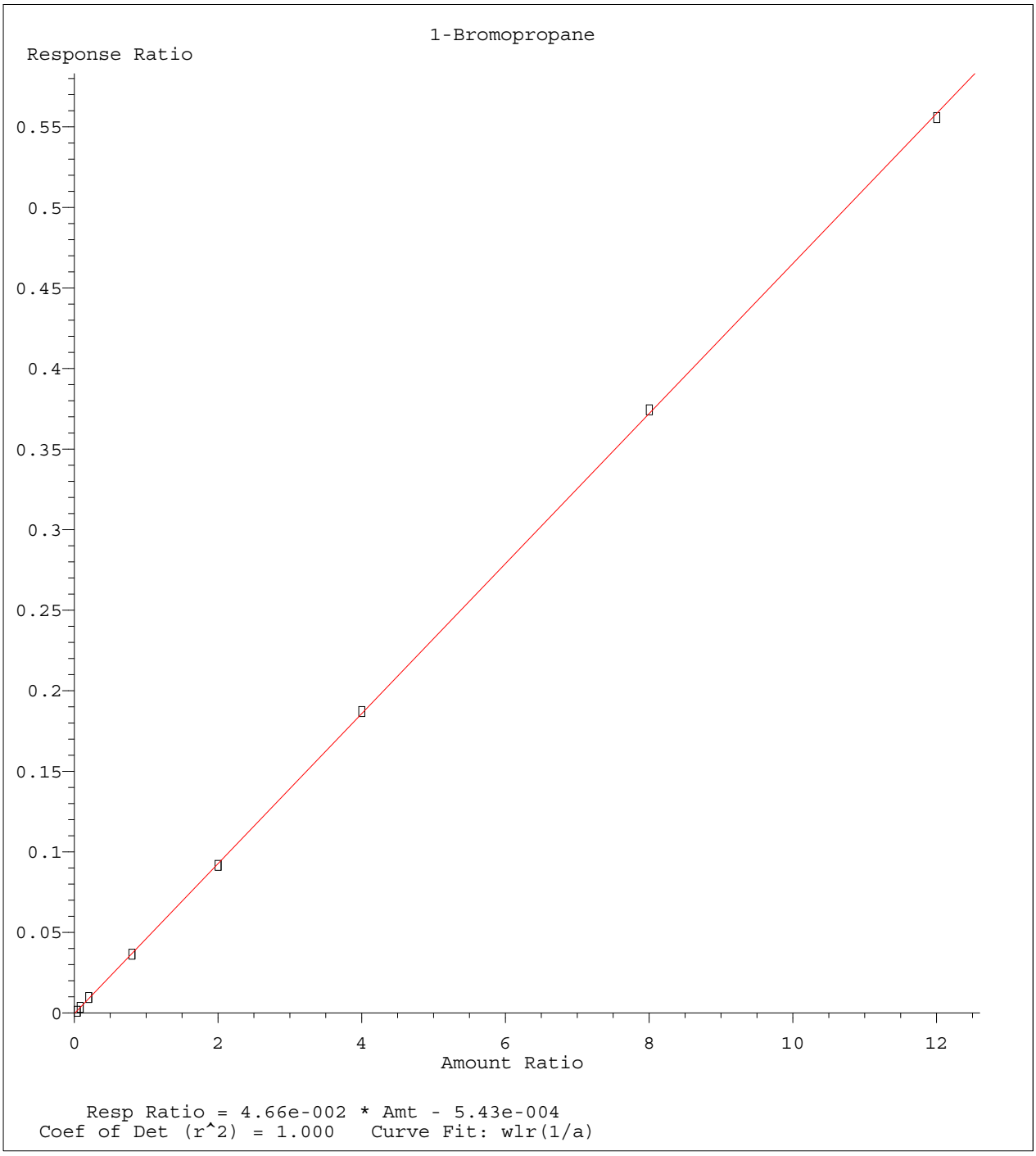

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Thu Jun 02 12:19:33 2016

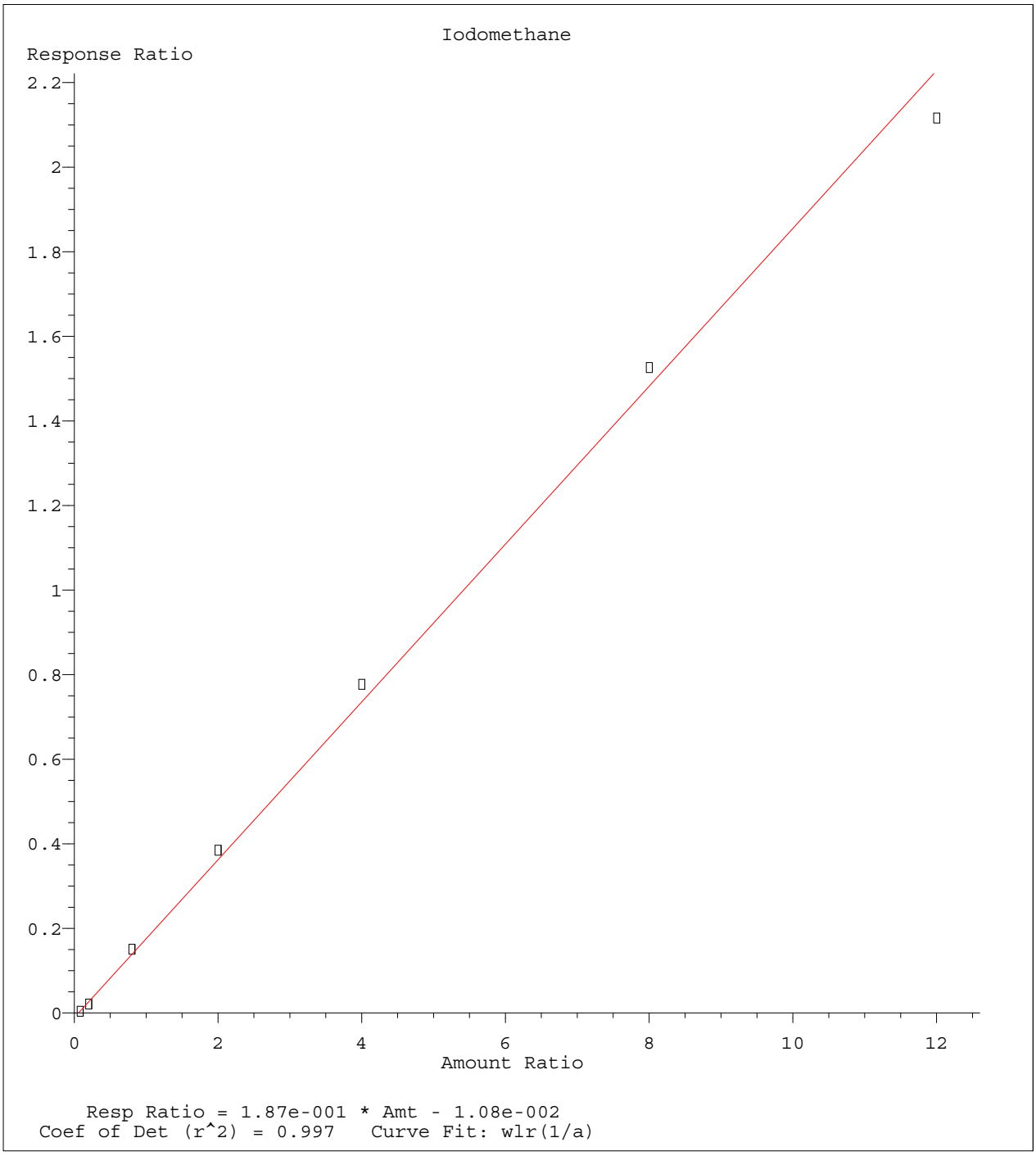

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Thu Jun 02 12:19:33 2016

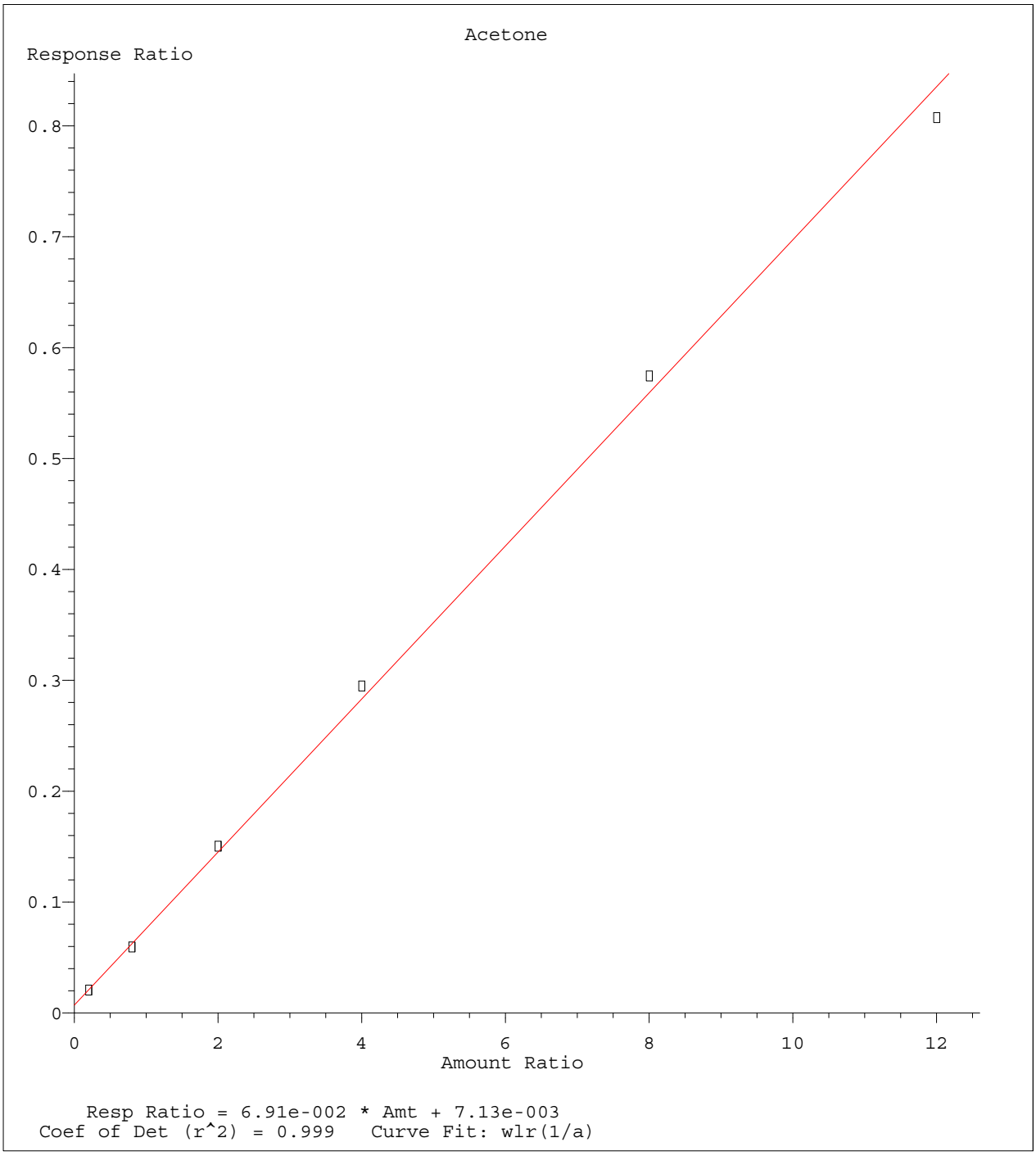

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Thu Jun 02 12:19:33 2016

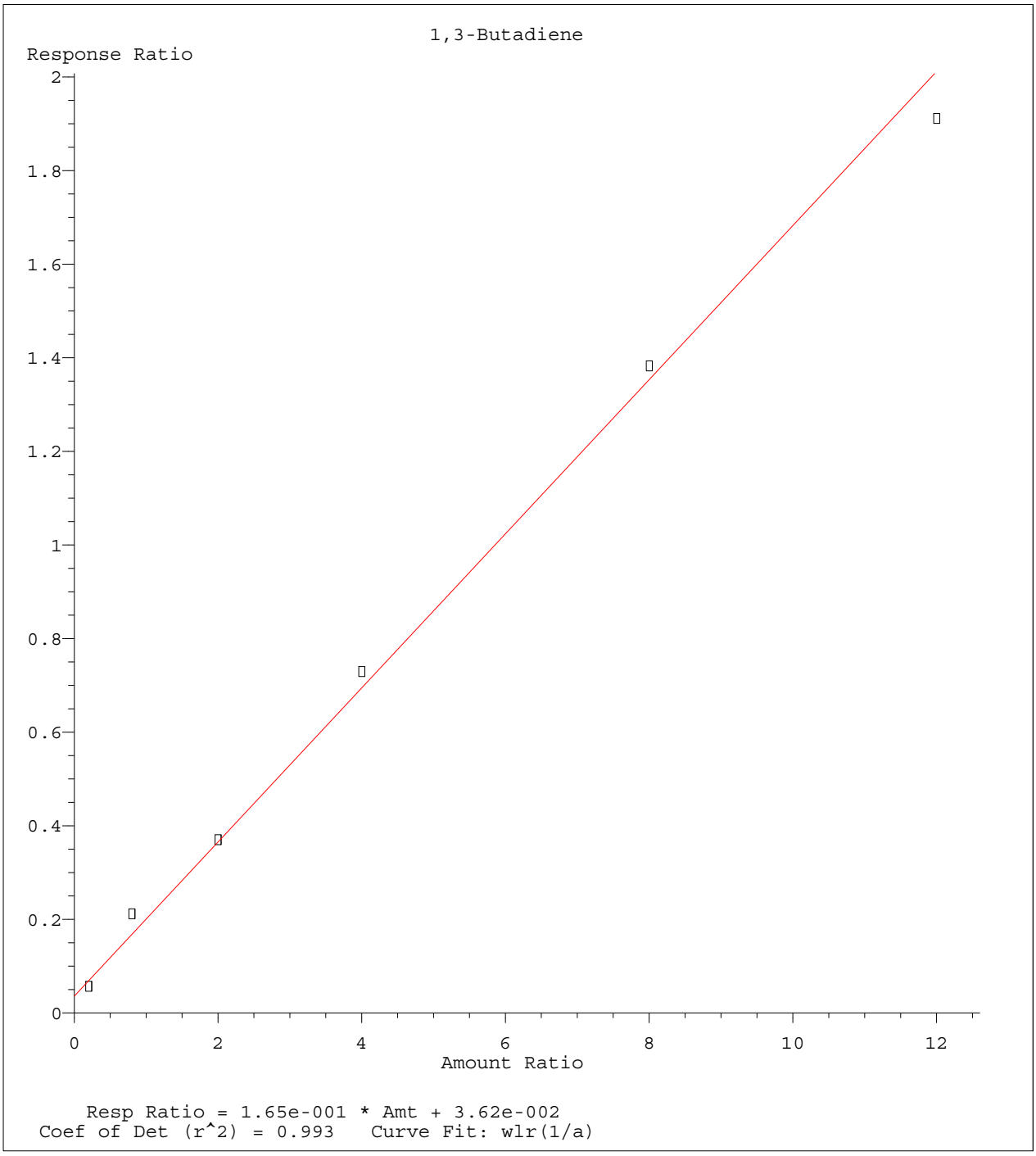

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Thu Jun 02 12:19:33 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139748.D Vial: 14
Acq On : 1 Jun 2016 18:56 Operator: TMB
Sample : WG570915-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76401 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:26 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	813057	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.06	117	589773	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	316393	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	199426	23.6997 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.80%		
43) 1,2-Dichloroethane-d4	11.11	65	218159	23.5215 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.08%		
58) Toluene-d8	13.85	98	670292	23.6814 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 94.72%		
80) p-Bromofluorobenzene	17.84	95	273340	24.4651 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.88%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	702608	54.5933 ug/L	98
3) Chloromethane	3.93	50	747480	47.6385 ug/L	99
4) Vinyl Chloride	4.16	62	515858	48.7740 ug/L	100
5) 1,3-Butadiene	4.20	54	214643	34.5960 ug/L	98
6) Bromomethane	5.07	94	237144	45.5172 ug/L	98
7) Chloroethane	5.23	64	343302	51.3524 ug/L	100
8) Trichlorofluoromethane	5.72	101	672942	47.5107 ug/L	100
9) Diethyl ether	6.29	59	786242	103.2275 ug/L	99
10) Isoprene	6.31	67	678234	56.3226 ug/L	100
11) Acrolein	6.55	56	140853	109.6081 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.54	101	414439	51.2200 ug/L	100
13) Acetone	6.66	43	118151	50.0319 ug/L	97
14) 1,1-Dichloroethene	6.87	61	689534	48.1202 ug/L	99
15) Tert-Butyl Alcohol	7.03	59	143024	203.3725 ug/L	99
16) Dimethyl Sulfide	7.16	62	615770	93.6354 ug/L	99
17) Iodomethane	7.43	142	452025	75.9094 ug/L	98
18) Methyl acetate	7.45	43	332389	47.3975 ug/L	98
19) Methylene Chloride	7.72	84	433555	49.0644 ug/L	99
20) Carbon Disulfide	7.76	76	1354672	48.3197 ug/L	100
21) Acrylonitrile	7.92	53	153905	49.7959 ug/L	99
22) Methyl Tert Butyl Ether	7.95	73	1128767	52.3532 ug/L	100
23) trans-1,2-Dichloroethene	8.21	96	425561	50.9498 ug/L	100
24) n-Hexane	8.28	57	642177	49.3751 ug/L	99
25) Diisopropyl ether	8.67	45	3642506	105.2173 ug/L	99
26) Vinyl Acetate	8.85	43	788393	53.6348 ug/L	99
27) 1,1-Dichloroethane	8.88	63	804025	48.0424 ug/L	100
28) Ethyl-Tert-Butyl ether	9.30	59	2815001	99.3580 ug/L	100
29) 2-Butanone	9.52	43	179165	48.7966 ug/L	100
30) Propionitrile	9.64	54	100730	99.4064 ug/L	99
31) 2,2-Dichloropropane	9.75	77	585369	47.9775 ug/L	97
32) cis-1,2-Dichloroethene	9.82	96	470672	51.7251 ug/L	99
33) Chloroform	10.06	83	737298	49.4660 ug/L	99
34) 1-Bromopropane	10.21	122	102822	68.1452 ug/L	100
35) Bromochloromethane	10.32	130	259428	50.2052 ug/L	100
36) Tetrahydrofuran	10.35	42	229614	90.8408 ug/L	99
38) 1,1,1-Trichloroethane	10.65	97	662124	49.7976 ug/L	99
39) Cyclohexane	10.68	56	844891	50.6962 ug/L	98
40) 1,1-Dichloropropene	10.88	75	566607	49.7223 ug/L	97
41) Tert-Amyl-Methyl ether	11.00	73	2310471	105.3293 ug/L	99
42) Carbon Tetrachloride	11.04	117	597488	50.3710 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M139748.D 8260WT.M Thu Jun 02 12:18:26 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139748.D Vial: 14
Acq On : 1 Jun 2016 18:56 Operator: TMB
Sample : WG570915-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76401 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:26 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	11.24	62	578724	50.5214	ug/L	100
46)	Benzene	11.28	78	1669568	49.9860	ug/L	100
47)	Trichloroethene	12.14	130	441901	51.8016	ug/L	100
48)	Methylcyclohexane	12.23	83	663944	51.3358	ug/L	99
49)	1,2-Dichloropropane	12.39	63	483336	52.3900	ug/L	100
50)	1,4-Dioxane	12.73	88	13070	198.8530	ug/L	92
51)	Bromodichloromethane	12.73	83	579293	51.0588	ug/L	99
52)	Dibromomethane	12.84	93	235154	49.3949	ug/L	100
53)	2-Chloroethyl Vinyl Ether	13.09	63	227071	53.9270	ug/L	99
54)	4-Methyl-2-Pentanone	13.12	58	140404	50.1024	ug/L	99
55)	cis-1,3-Dichloropropene	13.48	75	734218	57.1766	ug/L	100
56)	Dimethyl Disulfide	13.78	79	393408	53.1787	ug/L	99
59)	Toluene	13.96	91	1732060	51.7178	ug/L	100
60)	Ethyl Methacrylate	14.09	69	507926	55.3451	ug/L	96
62)	trans-1,3-Dichloropropene	14.17	75	602953	52.8614	ug/L	99
63)	1,1,2-Trichloroethane	14.43	97	330025	51.7570	ug/L	99
64)	2-Hexanone	14.36	43	262407	48.4974	ug/L	100
65)	1,3-Dichloropropane	14.79	76	612537	54.6375	ug/L	98
66)	Tetrachloroethene	14.92	166	430915	49.0517	ug/L	99
67)	Dibromochloromethane	15.24	129	417665	51.4062	ug/L	100
68)	1,2-Dibromoethane	15.53	107	322862	52.3865	ug/L	100
69)	1-Chlorohexane	15.64	91	575164	52.8903	ug/L	100
70)	Chlorobenzene	16.12	112	1148834	51.2668	ug/L	99
71)	1,1,1,2-Tetrachloroethane	16.16	131	427082	52.5455	ug/L	100
72)	Ethylbenzene	16.15	106	609992	51.3202	ug/L	99
73)	m-,p-Xylene	16.27	106	1491756	105.6436	ug/L	100
74)	o-Xylene	16.93	106	747716	53.5832	ug/L	100
75)	Styrene	16.97	104	1256580	54.2221	ug/L	99
76)	Bromoform	17.55	173	248794	48.2645	ug/L	99
77)	Isopropylbenzene	17.43	105	1869415	53.3705	ug/L	100
79)	1,1,2,2-Tetrachloroethane	17.70	83	394192	51.6759	ug/L	99
81)	1,2,3-Trichloropropane	17.92	110	116497	52.7498	ug/L	82
82)	trans-1,4-Dichloro-2-Buten	17.98	53	119870	43.9870	ug/L	99
83)	n-Propylbenzene	18.03	91	2259617	55.1049	ug/L	100
84)	Bromobenzene	18.18	156	480958	49.9837	ug/L	97
85)	1,3,5-Trimethylbenzene	18.26	105	1571815	54.1751	ug/L	100
86)	2-Chlorotoluene	18.35	91	1460482	51.9972	ug/L	99
87)	4-Chlorotoluene	18.41	91	1398653	53.6314	ug/L	100
88)	a-Methylstyrene	18.74	118	896576	55.2755	ug/L	100
89)	tert-Butylbenzene	18.81	134	341672	53.4156	ug/L	80
90)	1,2,4-Trimethylbenzene	18.87	105	1580583	52.0404	ug/L	100
91)	sec-Butylbenzene	19.13	105	1920297	53.7869	ug/L	99
92)	p-Isopropyltoluene	19.32	119	1617808	53.1748	ug/L	100
93)	1,3-Dichlorobenzene	19.53	146	945910	50.4129	ug/L	99
94)	1,4-Dichlorobenzene	19.70	146	963948	54.2685	ug/L	99
95)	n-Butylbenzene	19.94	91	1509669	52.4242	ug/L	99
96)	1,2-Dichlorobenzene	20.28	146	907052	51.8756	ug/L	98
97)	1,2-Dibromo-3-Chloropropan	21.46	75	73844	53.9073	ug/L	98
98)	1,2,4-Trichlorobenzene	22.82	180	630356	52.1421	ug/L	99
99)	Hexachlorobutadiene	23.02	225	268285	53.4738	ug/L	100
100)	Naphthalene	23.28	128	1168133	48.8812	ug/L	100
101)	1,2,3-Trichlorobenzene	23.69	180	572367	50.0300	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139748.D Vial: 14
Acq On : 1 Jun 2016 18:56 Operator: TMB
Sample : WG570915-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76401 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 2 12:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration

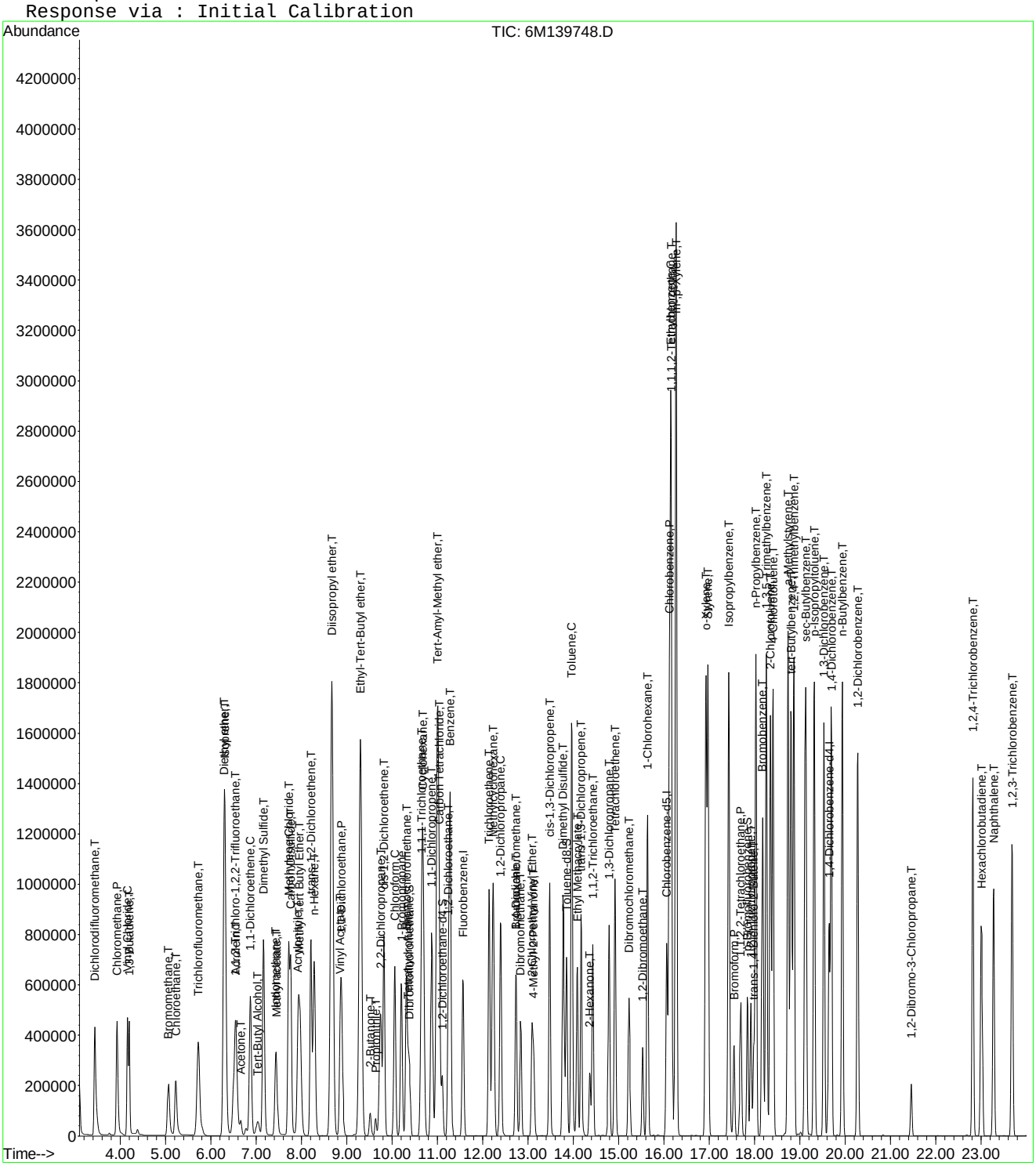

6M139748.D 8260WT.M Thu Jun 02 12:18:26 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\060116\6M139748.D Vial: 14
Acq On : 1 Jun 2016 18:56 Operator: TMB
Sample : WG570915-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76401 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	109	0.00
2	T	Dichlorodifluoromethane	50.0000	54.5933	-9.2	110	0.00
3	P	Chloromethane	50.0000	47.6385	4.7	101	0.00
4	C	Vinyl Chloride	50.0000	48.7740	2.5	109	0.00
5	T	1,3-Butadiene	50.0000	34.5960	30.8#	78	0.00
6	T	Bromomethane	50.0000	45.5172	9.0	105	0.00
7	T	Chloroethane	50.0000	51.3524	-2.7	113	0.00
8	T	Trichlorofluoromethane	50.0000	47.5107	5.0	104	0.00
9	T	Diethyl ether	100.0000	103.2275	-3.2	112	0.00
10	T	Isoprene	50.0000	56.3226	-12.6	124	0.00
11	T	Acrolein	50.0000	109.6081	-119.2#	240	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	51.2200	-2.4	112	0.00
13	T	Acetone	50.0000	50.0319	-0.1	106	0.00
14	C	1,1-Dichloroethene	50.0000	48.1202	3.8	106	0.00
15	T	Tert-Butyl Alcohol	200.0000	203.3725	-1.7	103	-0.02
16	T	Dimethyl Sulfide	50.0000	93.6354	-87.3#	204	0.00
17	T	Iodomethane	50.0000	75.9094	-51.8#	158	0.00
18	T	Methyl acetate	50.0000	47.3975	5.2	104	0.00
19	T	Methylene Chloride	50.0000	49.0644	1.9	111	0.00
20	T	Carbon Disulfide	50.0000	48.3197	3.4	106	0.00
21	T	Acrylonitrile	50.0000	49.7959	0.4	103	0.00
22	T	Methyl Tert Butyl Ether	50.0000	52.3532	-4.7	114	0.00
23	T	trans-1,2-Dichloroethene	50.0000	50.9498	-1.9	112	0.00
24	T	n-Hexane	50.0000	49.3751	1.2	109	0.00
25	T	Diisopropyl ether	100.0000	105.2173	-5.2	114	0.00
26	T	Vinyl Acetate	50.0000	53.6347	-7.3	117	0.00
27	P	1,1-Dichloroethane	50.0000	48.0424	3.9	107	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	99.3580	0.6	106	0.00
29	T	2-Butanone	50.0000	48.7966	2.4	106	0.00
30	T	Propionitrile	100.0000	99.4064	0.6	101	0.00
31	T	2,2-Dichloropropane	50.0000	47.9775	4.0	109	0.00
32	T	cis-1,2-Dichloroethene	50.0000	51.7251	-3.5	112	0.00
33	C	Chloroform	50.0000	49.4660	1.1	110	0.00
34		1-Bromopropane	50.0000	68.1452	-36.3#	151	0.00
35	T	Bromochloromethane	50.0000	50.2052	-0.4	108	0.00
36	T	Tetrahydrofuran	100.0000	90.8408	9.2	100	0.00
37	S	Dibromofluoromethane	25.0000	23.6997	5.2	102	0.00
38	T	1,1,1-Trichloroethane	50.0000	49.7976	0.4	110	0.00
39	T	Cyclohexane	50.0000	50.6962	-1.4	111	0.00
40	T	1,1-Dichloropropene	50.0000	49.7223	0.6	109	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	105.3293	-5.3	113	0.00
42	T	Carbon Tetrachloride	50.0000	50.3710	-0.7	109	0.00
43	S	1,2-Dichloroethane-d4	25.0000	23.5216	5.9	102	0.00
44		Heptane	-1.0000	0.0000	0.0	115	0.00
45	T	1,2-Dichloroethane	50.0000	50.5213	-1.0	111	0.00
46	T	Benzene	50.0000	49.9860	0.0	111	0.00
47	T	Trichloroethene	50.0000	51.8016	-3.6	114	0.00
48	T	Methylcyclohexane	50.0000	51.3358	-2.7	113	0.00
49	C	1,2-Dichloropropane	50.0000	52.3900	-4.8	115	0.00
50	T	1,4-Dioxane	200.0000	198.8530	0.6	100	0.00
51	T	Bromodichloromethane	50.0000	51.0588	-2.1	110	0.00
52	T	Dibromomethane	50.0000	49.3949	1.2	106	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	53.9270	-7.9	109	0.00
54	T	4-Methyl-2-Pentanone	50.0000	50.1024	-0.2	104	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\060116\6M139748.D Vial: 14
Acq On : 1 Jun 2016 18:56 Operator: TMB
Sample : WG570915-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76401 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	57.1766	-14.4	120	0.00
56	T	Dimethyl Disulfide	50.0000	53.1787	-6.4	115	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	107	0.00
58	S	Toluene-d8	25.0000	23.6814	5.3	103	0.00
59	C	Toluene	50.0000	51.7178	-3.4	112	0.00
60	T	Ethyl Methacrylate	50.0000	55.3451	-10.7	112	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	112	0.00
62	T	trans-1,3-Dichloropropene	50.0000	52.8614	-5.7	110	0.00
63	T	1,1,2-Trichloroethane	50.0000	51.7570	-3.5	110	0.00
64	T	2-Hexanone	50.0000	48.4974	3.0	102	0.00
65	T	1,3-Dichloropropane	50.0000	54.6375	-9.3	116	0.00
66	T	Tetrachloroethene	50.0000	49.0517	1.9	107	0.00
67	T	Dibromochloromethane	50.0000	51.4062	-2.8	107	0.00
68	T	1,2-Dibromoethane	50.0000	52.3865	-4.8	109	0.00
69	T	1-Chlorohexane	50.0000	52.8903	-5.8	108	0.00
70	P	Chlorobenzene	50.0000	51.2668	-2.5	112	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	52.5455	-5.1	110	0.00
72	C	Ethylbenzene	50.0000	51.3202	-2.6	109	0.00
73	T	m-,p-Xylene	100.0000	105.6436	-5.6	112	0.00
74	T	o-Xylene	50.0000	53.5832	-7.2	112	0.00
75	T	Styrene	50.0000	54.2221	-8.4	108	0.00
76	P	Bromoform	50.0000	48.2645	3.5	99	0.00
77	T	Isopropylbenzene	50.0000	53.3705	-6.7	109	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	101	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	51.6759	-3.4	104	0.00
80	S	p-Bromofluorobenzene	25.0000	24.4651	2.1	99	0.00
81	T	1,2,3-Trichloropropane	50.0000	52.7498	-5.5	105	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	43.9870	12.0	93	0.00
83	T	n-Propylbenzene	50.0000	55.1049	-10.2	108	0.00
84	T	Bromobenzene	50.0000	49.9837	0.0	104	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	54.1751	-8.4	107	0.00
86	T	2-Chlorotoluene	50.0000	51.9972	-4.0	108	0.00
87	T	4-Chlorotoluene	50.0000	53.6314	-7.3	108	0.00
88	T	a-Methylstyrene	50.0000	55.2754	-10.6	110	0.00
89	T	tert-Butylbenzene	50.0000	53.4156	-6.8	107	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	52.0404	-4.1	102	0.00
91	T	sec-Butylbenzene	50.0000	53.7869	-7.6	106	0.00
92	T	p-Isopropyltoluene	50.0000	53.1748	-6.3	103	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.4129	-0.8	104	0.00
94	T	1,4-Dichlorobenzene	50.0000	54.2685	-8.5	106	0.00
95	T	n-Butylbenzene	50.0000	52.4242	-4.8	102	0.00
96	T	1,2-Dichlorobenzene	50.0000	51.8756	-3.8	106	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	53.9073	-7.8	102	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	52.1421	-4.3	104	0.00
99	T	Hexachlorobutadiene	50.0000	53.4738	-6.9	109	0.00
100	T	Naphthalene	50.0000	48.8812	2.2	92	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	50.0300	-0.1	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140055.D Vial: 3
Acq On : 14 Jun 2016 14:44 Operator: TMB
Sample : WG572624-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 15:44:48 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	656171	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.06	117	493313	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	274239	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.38	111	172382	25.3838 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.52%		
43) 1,2-Dichloroethane-d4	11.11	65	188252	25.1499 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.60%		
58) Toluene-d8	13.85	98	589134	24.8840 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.52%		
80) p-Bromofluorobenzene	17.84	95	250819	25.9001 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.60%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	509144	49.0197 ug/L	99
3) Chloromethane	3.93	50	524408	41.4125 ug/L	100
4) Vinyl Chloride	4.16	62	380918	44.6265 ug/L	99
5) 1,3-Butadiene	4.20	54	274992	58.1461 ug/L	98
6) Bromomethane	5.08	94	175064	41.6355 ug/L	99
7) Chloroethane	5.23	64	228122	42.2820 ug/L	96
8) Trichlorofluoromethane	5.73	101	615071	53.8075 ug/L	99
9) Diethyl ether	6.29	59	612607	99.6609 ug/L	98
10) Isoprene	6.32	67	479679	49.3580 ug/L	98
11) Acrolein	6.55	56	47207	45.5184 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.55	101	326615	50.0172 ug/L	99
13) Acetone	6.66	43	93804	49.1774 ug/L	98
14) 1,1-Dichloroethene	6.88	61	600531	51.9291 ug/L	99
15) Tert-Butyl Alcohol	7.02	59	107840	190.0059 ug/L	99
16) Dimethyl Sulfide	7.17	62	258614	48.7279 ug/L	98
17) Iodomethane	7.43	142	240670	50.5694 ug/L	98
18) Methyl acetate	7.45	43	316369	55.8993 ug/L	99
19) Methylene Chloride	7.72	84	349353	48.9881 ug/L	97
20) Carbon Disulfide	7.77	76	1167926	51.6190 ug/L	100
21) Acrylonitrile	7.92	53	129667	51.9845 ug/L	99
22) Methyl Tert Butyl Ether	7.95	73	889627	51.1271 ug/L	100
23) trans-1,2-Dichloroethene	8.21	96	344207	51.0627 ug/L	97
24) n-Hexane	8.29	57	551977	52.5870 ug/L	99
25) Diisopropyl ether	8.67	45	2907988	104.0839 ug/L	98
26) Vinyl Acetate	8.85	43	585946	49.3930 ug/L	99
27) 1,1-Dichloroethane	8.89	63	689488	51.0489 ug/L	99
28) Ethyl-Tert-Butyl ether	9.30	59	2315595	101.2724 ug/L	100
29) 2-Butanone	9.51	43	149283	50.3792 ug/L	97
30) Propionitrile	9.63	54	82688	101.1118 ug/L	100
31) 2,2-Dichloropropane	9.75	77	545751	55.4251 ug/L	97
32) cis-1,2-Dichloroethene	9.82	96	373882	50.9122 ug/L	99
33) Chloroform	10.06	83	620090	51.5493 ug/L	99
34) 1-Bromopropane	10.21	122	61737	50.7734 ug/L	99
35) Bromochloromethane	10.32	130	213248	51.1353 ug/L	100
36) Tetrahydrofuran	10.35	42	195203	95.6914 ug/L	98
38) 1,1,1-Trichloroethane	10.65	97	555574	51.7744 ug/L	100
39) Cyclohexane	10.69	56	696775	51.8049 ug/L	97
40) 1,1-Dichloropropene	10.88	75	477859	51.9604 ug/L	97
41) Tert-Amyl-Methyl ether	11.00	73	1774884	100.2588 ug/L	98
42) Carbon Tetrachloride	11.04	117	506232	52.8817 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140055.D 8260WT.M Tue Jun 14 15:44:52 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140055.D Vial: 3
Acq On : 14 Jun 2016 14:44 Operator: TMB
Sample : WG572624-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 15:44:48 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.24	62	473514	51.2201 ug/L	99
46)	Benzene	11.28	78	1358872	50.4112 ug/L	99
47)	Trichloroethene	12.14	130	344438	50.0303 ug/L	99
48)	Methylcyclohexane	12.23	83	524127	50.2145 ug/L	98
49)	1,2-Dichloropropane	12.40	63	384970	51.7047 ug/L	100
50)	1,4-Dioxane	12.72	88	9789	184.5435 ug/L	96
51)	Bromodichloromethane	12.73	83	480692	52.4981 ug/L	99
52)	Dibromomethane	12.84	93	197249	51.3391 ug/L	99
53)	2-Chloroethyl Vinyl Ether	13.09	63	185902	54.7057 ug/L	99
54)	4-Methyl-2-Pentanone	13.12	58	115293	50.9784 ug/L	99
55)	cis-1,3-Dichloropropene	13.48	75	565168	54.5349 ug/L	100
56)	Dimethyl Disulfide	13.78	79	305906	51.2374 ug/L	100
59)	Toluene	13.97	91	1398009	49.9057 ug/L	100
60)	Ethyl Methacrylate	14.09	69	403741	52.5949 ug/L	99
62)	trans-1,3-Dichloropropene	14.17	75	506088	53.0449 ug/L	99
63)	1,1,2-Trichloroethane	14.43	97	265470	49.7737 ug/L	99
64)	2-Hexanone	14.36	43	222271	49.1121 ug/L	98
65)	1,3-Dichloropropane	14.79	76	470671	50.1924 ug/L	99
66)	Tetrachloroethene	14.92	166	350260	47.6667 ug/L	98
67)	Dibromochloromethane	15.24	129	349286	51.3962 ug/L	100
68)	1,2-Dibromoethane	15.53	107	259837	50.4041 ug/L	99
69)	1-Chlorohexane	15.64	91	474896	52.2089 ug/L	97
70)	Chlorobenzene	16.12	112	910239	48.5620 ug/L	98
71)	1,1,1,2-Tetrachloroethane	16.16	131	344940	50.7377 ug/L	99
72)	Ethylbenzene	16.16	106	488152	49.1000 ug/L	97
73)	m-,p-Xylene	16.27	106	1178009	99.7370 ug/L	99
74)	o-Xylene	16.93	106	584930	50.1139 ug/L	98
75)	Styrene	16.97	104	1014907	52.3570 ug/L	97
76)	Bromoform	17.55	173	219219	50.8426 ug/L	100
77)	Isopropylbenzene	17.43	105	1490231	50.8641 ug/L	100
79)	1,1,2,2-Tetrachloroethane	17.70	83	329173	49.7854 ug/L	100
81)	1,2,3-Trichloropropane	17.92	110	94682	49.4620 ug/L	87
82)	trans-1,4-Dichloro-2-Buten	17.98	53	116720	49.3268 ug/L	92
83)	n-Propylbenzene	18.03	91	1825328	51.3563 ug/L	99
84)	Bromobenzene	18.18	156	405700	48.6434 ug/L	97
85)	1,3,5-Trimethylbenzene	18.26	105	1286394	51.1529 ug/L	99
86)	2-Chlorotoluene	18.35	91	1202852	49.4076 ug/L	99
87)	4-Chlorotoluene	18.41	91	1138861	50.3823 ug/L	99
88)	a-Methylstyrene	18.74	118	690466	49.1117 ug/L	99
89)	tert-Butylbenzene	18.81	134	269272	48.5677 ug/L	78
90)	1,2,4-Trimethylbenzene	18.87	105	1329011	50.4835 ug/L	99
91)	sec-Butylbenzene	19.13	105	1547204	49.9980 ug/L	99
92)	p-Isopropyltoluene	19.32	119	1342344	50.9026 ug/L	99
93)	1,3-Dichlorobenzene	19.53	146	788443	48.4797 ug/L	98
94)	1,4-Dichlorobenzene	19.70	146	787910	51.1641 ug/L	98
95)	n-Butylbenzene	19.94	91	1294336	51.8555 ug/L	99
96)	1,2-Dichlorobenzene	20.28	146	736896	48.6222 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	21.46	75	62293	52.4650 ug/L	95
98)	1,2,4-Trichlorobenzene	22.82	180	527429	50.3344 ug/L	99
99)	Hexachlorobutadiene	23.02	225	224697	51.6701 ug/L	99
100)	Naphthalene	23.28	128	1092678	52.7521 ug/L	100
101)	1,2,3-Trichlorobenzene	23.69	180	481586	48.5654 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140055.D 8260WT.M Tue Jun 14 15:44:52 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140055.D Vial: 3
Acq On : 14 Jun 2016 14:44 Operator: TMB
Sample : WG572624-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 15:44 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration

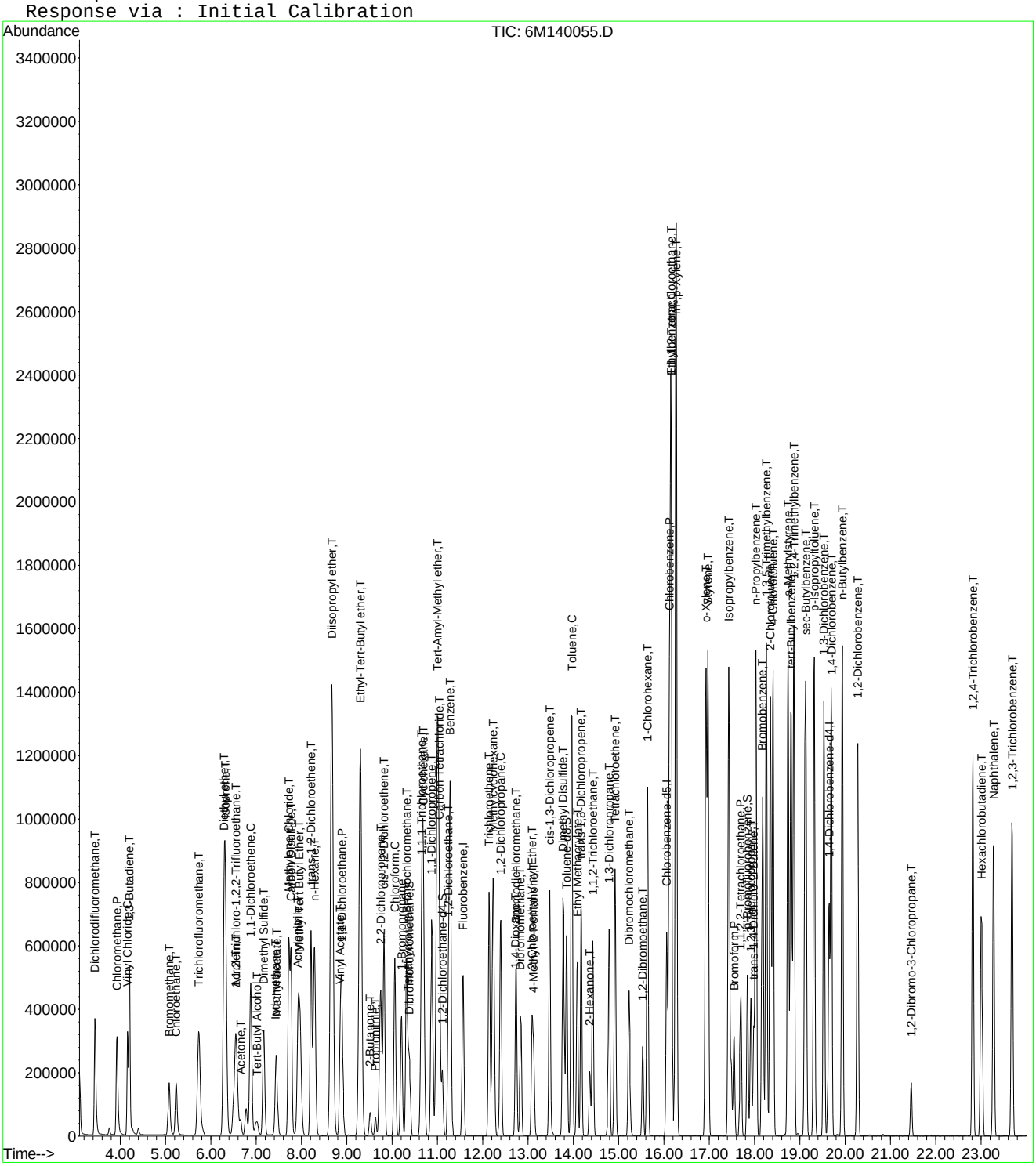

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140055.D Vial: 3
Acq On : 14 Jun 2016 14:44 Operator: TMB
Sample : WG572624-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	88	0.00
2	T	Dichlorodifluoromethane	0.3957	0.3880	2.0	80	0.00
3	P	Chloromethane	0.4825	0.3996	17.2	71	0.00
4	C	Vinyl Chloride	0.3252	0.2903	10.7	81	0.00
5	T	1,3-Butadiene	0.2081	0.2095	-0.7	100	0.00
6	T	Bromomethane	0.1602	0.1334	16.7	77	0.01
7	T	Chloroethane	0.2056	0.1738	15.4	75	0.00
8	T	Trichlorofluoromethane	0.4355	0.4687	-7.6	95	0.01
9	T	Diethyl ether	0.2342	0.2334	0.3	87	0.00
10	T	Isoprene	0.3703	0.3655	1.3	87	0.00
11	T	Acrolein	0.0395	0.0360	9.0	81	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2488	0.2489	-0.0	88	0.00
13	T	Acetone	0.0776	0.0715	7.9	84	0.00
14	C	1,1-Dichloroethene	0.4406	0.4576	-3.9	92	0.01
15	T	Tert-Butyl Alcohol	0.0216	0.0205	5.0	78	-0.03
16	T	Dimethyl Sulfide	0.2022	0.1971	2.5	86	0.01
17	T	Iodomethane	0.1564	0.1834	-17.3	84	0.00
18	T	Methyl acetate	0.2156	0.2411	-11.8	99	0.00
19	T	Methylene Chloride	0.2717	0.2662	2.0	90	0.00
20	T	Carbon Disulfide	0.8620	0.8900	-3.2	91	0.01
21	T	Acrylonitrile	0.0950	0.0988	-4.0	87	0.00
22	T	Methyl Tert Butyl Ether	0.6630	0.6779	-2.3	89	0.00
23	T	trans-1,2-Dichloroethene	0.2568	0.2623	-2.1	90	0.00
24	T	n-Hexane	0.3999	0.4206	-5.2	93	0.01
25	T	Diisopropyl ether	1.0645	1.1079	-4.1	91	0.00
26	T	Vinyl Acetate	0.4520	0.4465	1.2	87	0.00
27	P	1,1-Dichloroethane	0.5146	0.5254	-2.1	92	0.00
28	T	Ethyl-Tert-Butyl ether	0.8711	0.8822	-1.3	88	0.00
29	T	2-Butanone	0.1129	0.1138	-0.8	88	0.00
30	T	Propionitrile	0.0312	0.0315	-1.1	83	0.00
31	T	2,2-Dichloropropane	0.3752	0.4159	-10.8	102	0.00
32	T	cis-1,2-Dichloroethene	0.2798	0.2849	-1.8	89	0.00
33	C	Chloroform	0.4583	0.4725	-3.1	92	0.00
34		1-Bromopropane	0.0436	0.0470	-8.0	91	0.00
35	T	Bromochloromethane	0.1589	0.1625	-2.3	89	0.00
36	T	Tetrahydrofuran	0.0777	0.0744	4.3	85	0.00
37	S	Dibromofluoromethane	0.2587	0.2627	-1.5	89	0.00
38	T	1,1,1-Trichloroethane	0.4088	0.4234	-3.5	92	0.00
39	T	Cyclohexane	0.5124	0.5309	-3.6	92	0.00
40	T	1,1-Dichloropropene	0.3504	0.3641	-3.9	92	0.00
41	T	Tert-Amyl-Methyl ether	0.6745	0.6762	-0.3	87	0.00
42	T	Carbon Tetrachloride	0.3647	0.3857	-5.8	92	0.00
43	S	1,2-Dichloroethane-d4	0.2852	0.2869	-0.6	88	0.00
44		Heptane	0.0000	0.0000	0.0	87	0.00
45	T	1,2-Dichloroethane	0.3522	0.3608	-2.4	91	0.00
46	T	Benzene	1.0270	1.0355	-0.8	90	0.00
47	T	Trichloroethene	0.2623	0.2625	-0.1	89	0.00
48	T	Methylcyclohexane	0.3977	0.3994	-0.4	89	0.00
49	C	1,2-Dichloropropane	0.2837	0.2934	-3.4	91	0.00
50	T	1,4-Dioxane	0.0020	0.0019	7.9	75	-0.02
51	T	Bromodichloromethane	0.3489	0.3663	-5.0	91	0.00
52	T	Dibromomethane	0.1464	0.1503	-2.7	89	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1295	0.1417	-9.4	89	0.00
54	T	4-Methyl-2-Pentanone	0.0862	0.0878	-1.9	85	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140055.D Vial: 3
Acq On : 14 Jun 2016 14:44 Operator: TMB
Sample : WG572624-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.3948	0.4307	-9.1	92	0.00
56	T	Dimethyl Disulfide	0.2275	0.2331	-2.5	89	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	89	0.00
58	S	Toluene-d8	1.1998	1.1942	0.5	91	0.00
59	C	Toluene	1.4196	1.4170	0.2	90	0.00
60	T	Ethyl Methacrylate	0.3890	0.4092	-5.2	89	0.00
61		Paraldehyde	0.0000	0.0000	0.0	90	0.00
62	T	trans-1,3-Dichloropropene	0.4835	0.5130	-6.1	92	0.00
63	T	1,1,2-Trichloroethane	0.2703	0.2691	0.5	88	0.00
64	T	2-Hexanone	0.2294	0.2253	1.8	86	0.00
65	T	1,3-Dichloropropane	0.4752	0.4770	-0.4	89	0.00
66	T	Tetrachloroethene	0.3724	0.3550	4.7	87	0.00
67	T	Dibromochloromethane	0.3444	0.3540	-2.8	90	0.00
68	T	1,2-Dibromoethane	0.2612	0.2634	-0.8	88	0.00
69	T	1-Chlorohexane	0.4610	0.4813	-4.4	89	0.00
70	P	Chlorobenzene	0.9499	0.9226	2.9	88	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3445	0.3496	-1.5	89	0.00
72	C	Ethylbenzene	0.5038	0.4948	1.8	87	0.00
73	T	m-,p-Xylene	0.5986	0.5970	0.3	88	0.00
74	T	o-Xylene	0.5915	0.5929	-0.2	88	0.00
75	T	Styrene	0.9824	1.0287	-4.7	87	0.00
76	P	Bromoform	0.2185	0.2222	-1.7	87	0.00
77	T	Isopropylbenzene	1.4848	1.5104	-1.7	87	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	87	0.00
79	P	1,1,2,2-Tetrachloroethane	0.6027	0.6002	0.4	87	0.00
80	S	p-Bromofluorobenzene	0.8828	0.9146	-3.6	91	0.00
81	T	1,2,3-Trichloropropane	0.1745	0.1726	1.1	85	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1840	0.2128	-15.6	91	0.00
83	T	n-Propylbenzene	3.2401	3.3280	-2.7	88	0.00
84	T	Bromobenzene	0.7603	0.7397	2.7	87	0.00
85	T	1,3,5-Trimethylbenzene	2.2925	2.3454	-2.3	87	0.00
86	T	2-Chlorotoluene	2.2194	2.1931	1.2	89	0.00
87	T	4-Chlorotoluene	2.0606	2.0764	-0.8	88	0.00
88	T	a-Methylstyrene	1.2817	1.2589	1.8	85	0.00
89	T	tert-Butylbenzene	0.5054	0.4909	2.9	84	0.00
90	T	1,2,4-Trimethylbenzene	2.3999	2.4231	-1.0	86	0.00
91	T	sec-Butylbenzene	2.8210	2.8209	0.0	85	0.00
92	T	p-Isopropyltoluene	2.4040	2.4474	-1.8	86	0.00
93	T	1,3-Dichlorobenzene	1.4826	1.4375	3.0	87	0.00
94	T	1,4-Dichlorobenzene	1.6261	1.4365	11.7	87	0.00
95	T	n-Butylbenzene	2.2754	2.3599	-3.7	87	0.00
96	T	1,2-Dichlorobenzene	1.3816	1.3435	2.8	86	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1082	0.1136	-4.9	86	0.00
98	T	1,2,4-Trichlorobenzene	0.9552	0.9616	-0.7	87	0.00
99	T	Hexachlorobutadiene	0.3964	0.4097	-3.3	92	0.00
100	T	Naphthalene	1.8883	1.9922	-5.5	86	0.00
101	T	1,2,3-Trichlorobenzene	0.9040	0.8780	2.9	85	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140055.D 8260WT.M Tue Jun 14 15:44:59 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140055.D Vial: 3
Acq On : 14 Jun 2016 14:44 Operator: TMB
Sample : WG572624-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	88	0.00
2	T	Dichlorodifluoromethane	50.0000	49.0198	2.0	80	0.00
3	P	Chloromethane	50.0000	41.4125	17.2	71	0.00
4	C	Vinyl Chloride	50.0000	44.6266	10.7	81	0.00
5	T	1,3-Butadiene	50.0000	58.1461	-16.3	100	0.00
6	T	Bromomethane	50.0000	41.6355	16.7	77	0.01
7	T	Chloroethane	50.0000	42.2820	15.4	75	0.00
8	T	Trichlorofluoromethane	50.0000	53.8075	-7.6	95	0.01
9	T	Diethyl ether	100.0000	99.6609	0.3	87	0.00
10	T	Isoprene	50.0000	49.3580	1.3	87	0.00
11	T	Acrolein	50.0000	45.5184	9.0	81	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	50.0172	-0.0	88	0.00
13	T	Acetone	50.0000	49.1774	1.6	84	0.00
14	C	1,1-Dichloroethene	50.0000	51.9291	-3.9	92	0.01
15	T	Tert-Butyl Alcohol	200.0000	190.0059	5.0	78	-0.03
16	T	Dimethyl Sulfide	50.0000	48.7279	2.5	86	0.01
17	T	Iodomethane	50.0000	50.5694	-1.1	84	0.00
18	T	Methyl acetate	50.0000	55.8993	-11.8	99	0.00
19	T	Methylene Chloride	50.0000	48.9881	2.0	90	0.00
20	T	Carbon Disulfide	50.0000	51.6190	-3.2	91	0.01
21	T	Acrylonitrile	50.0000	51.9845	-4.0	87	0.00
22	T	Methyl Tert Butyl Ether	50.0000	51.1271	-2.3	89	0.00
23	T	trans-1,2-Dichloroethene	50.0000	51.0627	-2.1	90	0.00
24	T	n-Hexane	50.0000	52.5870	-5.2	93	0.01
25	T	Diisopropyl ether	100.0000	104.0839	-4.1	91	0.00
26	T	Vinyl Acetate	50.0000	49.3930	1.2	87	0.00
27	P	1,1-Dichloroethane	50.0000	51.0489	-2.1	92	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	101.2724	-1.3	88	0.00
29	T	2-Butanone	50.0000	50.3792	-0.8	88	0.00
30	T	Propionitrile	100.0000	101.1118	-1.1	83	0.00
31	T	2,2-Dichloropropane	50.0000	55.4251	-10.9	102	0.00
32	T	cis-1,2-Dichloroethene	50.0000	50.9122	-1.8	89	0.00
33	C	Chloroform	50.0000	51.5493	-3.1	92	0.00
34		1-Bromopropane	50.0000	50.7734	-1.5	91	0.00
35	T	Bromochloromethane	50.0000	51.1353	-2.3	89	0.00
36	T	Tetrahydrofuran	100.0000	95.6914	4.3	85	0.00
37	S	Dibromofluoromethane	25.0000	25.3838	-1.5	89	0.00
38	T	1,1,1-Trichloroethane	50.0000	51.7744	-3.5	92	0.00
39	T	Cyclohexane	50.0000	51.8049	-3.6	92	0.00
40	T	1,1-Dichloropropene	50.0000	51.9604	-3.9	92	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	100.2588	-0.3	87	0.00
42	T	Carbon Tetrachloride	50.0000	52.8817	-5.8	92	0.00
43	S	1,2-Dichloroethane-d4	25.0000	25.1499	-0.6	88	0.00
44		Heptane	-1.0000	0.0000	0.0	87	0.00
45	T	1,2-Dichloroethane	50.0000	51.2201	-2.4	91	0.00
46	T	Benzene	50.0000	50.4112	-0.8	90	0.00
47	T	Trichloroethene	50.0000	50.0303	-0.1	89	0.00
48	T	Methylcyclohexane	50.0000	50.2145	-0.4	89	0.00
49	C	1,2-Dichloropropane	50.0000	51.7047	-3.4	91	0.00
50	T	1,4-Dioxane	200.0000	184.5435	7.7	75	-0.02
51	T	Bromodichloromethane	50.0000	52.4981	-5.0	91	0.00
52	T	Dibromomethane	50.0000	51.3391	-2.7	89	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	54.7057	-9.4	89	0.00
54	T	4-Methyl-2-Pentanone	50.0000	50.9784	-2.0	85	0.00

(#) = Out of Range
6M140055.D 8260WT.M Tue Jun 14 15:45:01 2016 Page 1

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140055.D Vial: 3
Acq On : 14 Jun 2016 14:44 Operator: TMB
Sample : WG572624-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	54.5349	-9.1	92	0.00
56	T	Dimethyl Disulfide	50.0000	51.2374	-2.5	89	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	89	0.00
58	S	Toluene-d8	25.0000	24.8840	0.5	91	0.00
59	C	Toluene	50.0000	49.9057	0.2	90	0.00
60	T	Ethyl Methacrylate	50.0000	52.5949	-5.2	89	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	90	0.00
62	T	trans-1,3-Dichloropropene	50.0000	53.0449	-6.1	92	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.7737	0.5	88	0.00
64	T	2-Hexanone	50.0000	49.1121	1.8	86	0.00
65	T	1,3-Dichloropropane	50.0000	50.1924	-0.4	89	0.00
66	T	Tetrachloroethene	50.0000	47.6667	4.7	87	0.00
67	T	Dibromochloromethane	50.0000	51.3962	-2.8	90	0.00
68	T	1,2-Dibromoethane	50.0000	50.4041	-0.8	88	0.00
69	T	1-Chlorohexane	50.0000	52.2089	-4.4	89	0.00
70	P	Chlorobenzene	50.0000	48.5620	2.9	88	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	50.7377	-1.5	89	0.00
72	C	Ethylbenzene	50.0000	49.1000	1.8	87	0.00
73	T	m-,p-Xylene	100.0000	99.7370	0.3	88	0.00
74	T	o-Xylene	50.0000	50.1139	-0.2	88	0.00
75	T	Styrene	50.0000	52.3570	-4.7	87	0.00
76	P	Bromoform	50.0000	50.8426	-1.7	87	0.00
77	T	Isopropylbenzene	50.0000	50.8641	-1.7	87	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	87	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	49.7854	0.4	87	0.00
80	S	p-Bromofluorobenzene	25.0000	25.9001	-3.6	91	0.00
81	T	1,2,3-Trichloropropane	50.0000	49.4620	1.1	85	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	49.3268	1.3	91	0.00
83	T	n-Propylbenzene	50.0000	51.3563	-2.7	88	0.00
84	T	Bromobenzene	50.0000	48.6434	2.7	87	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	51.1529	-2.3	87	0.00
86	T	2-Chlorotoluene	50.0000	49.4076	1.2	89	0.00
87	T	4-Chlorotoluene	50.0000	50.3823	-0.8	88	0.00
88	T	a-Methylstyrene	50.0000	49.1117	1.8	85	0.00
89	T	tert-Butylbenzene	50.0000	48.5677	2.9	84	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	50.4835	-1.0	86	0.00
91	T	sec-Butylbenzene	50.0000	49.9980	0.0	85	0.00
92	T	p-Isopropyltoluene	50.0000	50.9026	-1.8	86	0.00
93	T	1,3-Dichlorobenzene	50.0000	48.4797	3.0	87	0.00
94	T	1,4-Dichlorobenzene	50.0000	51.1641	-2.3	87	0.00
95	T	n-Butylbenzene	50.0000	51.8555	-3.7	87	0.00
96	T	1,2-Dichlorobenzene	50.0000	48.6222	2.8	86	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	52.4650	-4.9	86	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	50.3344	-0.7	87	0.00
99	T	Hexachlorobutadiene	50.0000	51.6701	-3.3	92	0.00
100	T	Naphthalene	50.0000	52.7521	-5.5	86	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	48.5654	2.9	85	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140055.D 8260WT.M Tue Jun 14 15:45:02 2016 Page 2

2.1.1.5 Raw QC Data

BFB

Data File : C:\MSDCHEM\1\DATA\042416\6M138750.D Vial: 1
Acq On : 24 Apr 2016 16:33 Operator: JDS
Sample : WG566155-01 50ng BFB 826-A9 Inst : HPMS6
Misc : 1,1 STD75485 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title : SOP: OVL MSV01

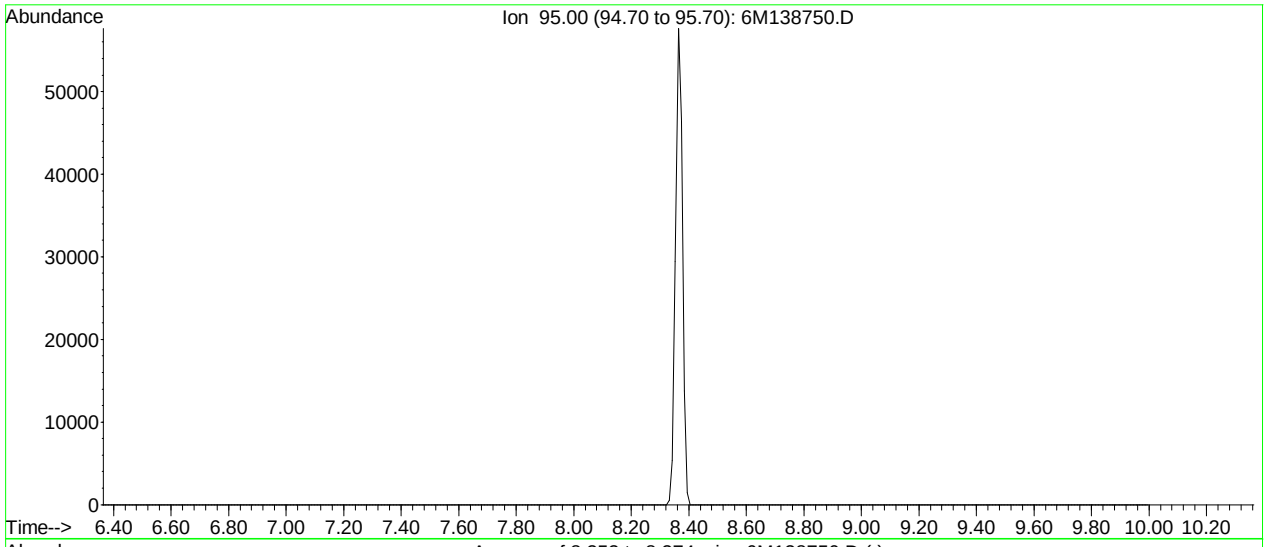

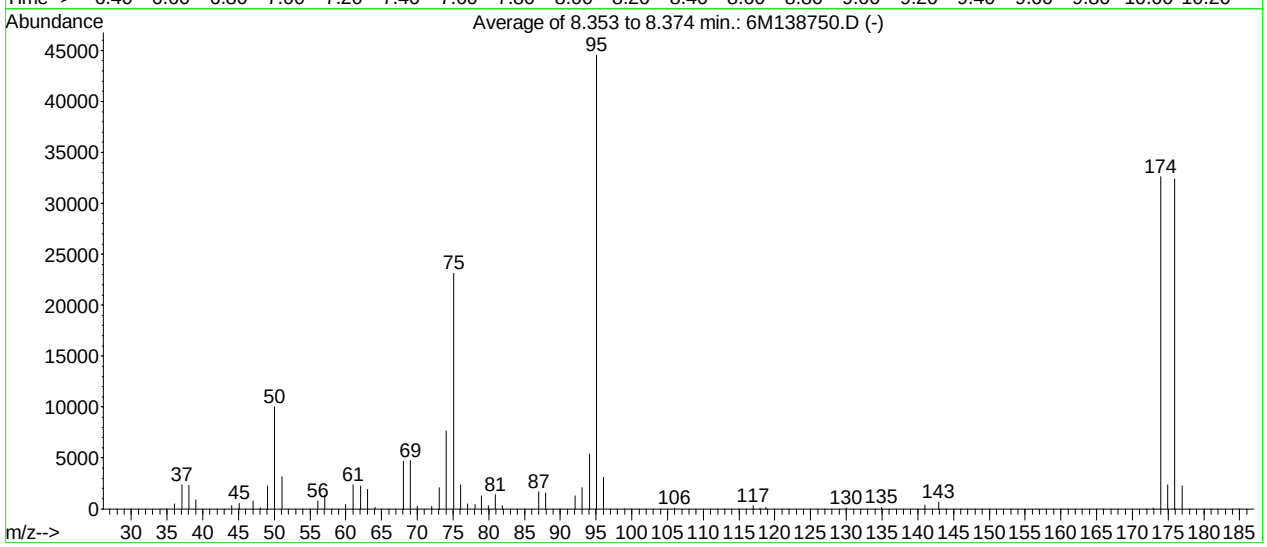

AutoFind: Scans 320, 321, 322; Background Corrected with Scan 315

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.5	10010	PASS
75	95	30	60	52.0	23152	PASS
95	95	100	100	100.0	44552	PASS
96	95	5	9	6.9	3085	PASS
173	174	0.00	2	0.3	113	PASS
174	95	50	100	73.2	32632	PASS
175	174	5	9	7.2	2336	PASS
176	174	95	101	99.2	32384	PASS
177	176	5	9	7.0	2251	PASS

6M138750.D BFB.M Mon Apr 25 09:21:54 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\060116\6M139735.D          Vial: 1
Acq On    :  1 Jun 2016  12:04                       Operator: TMB
Sample    : WG570915-01 50ng BFB STD 8260            Inst    : HPMS6
Misc      : 1,1 STD76034                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP: OVL MSV01
```

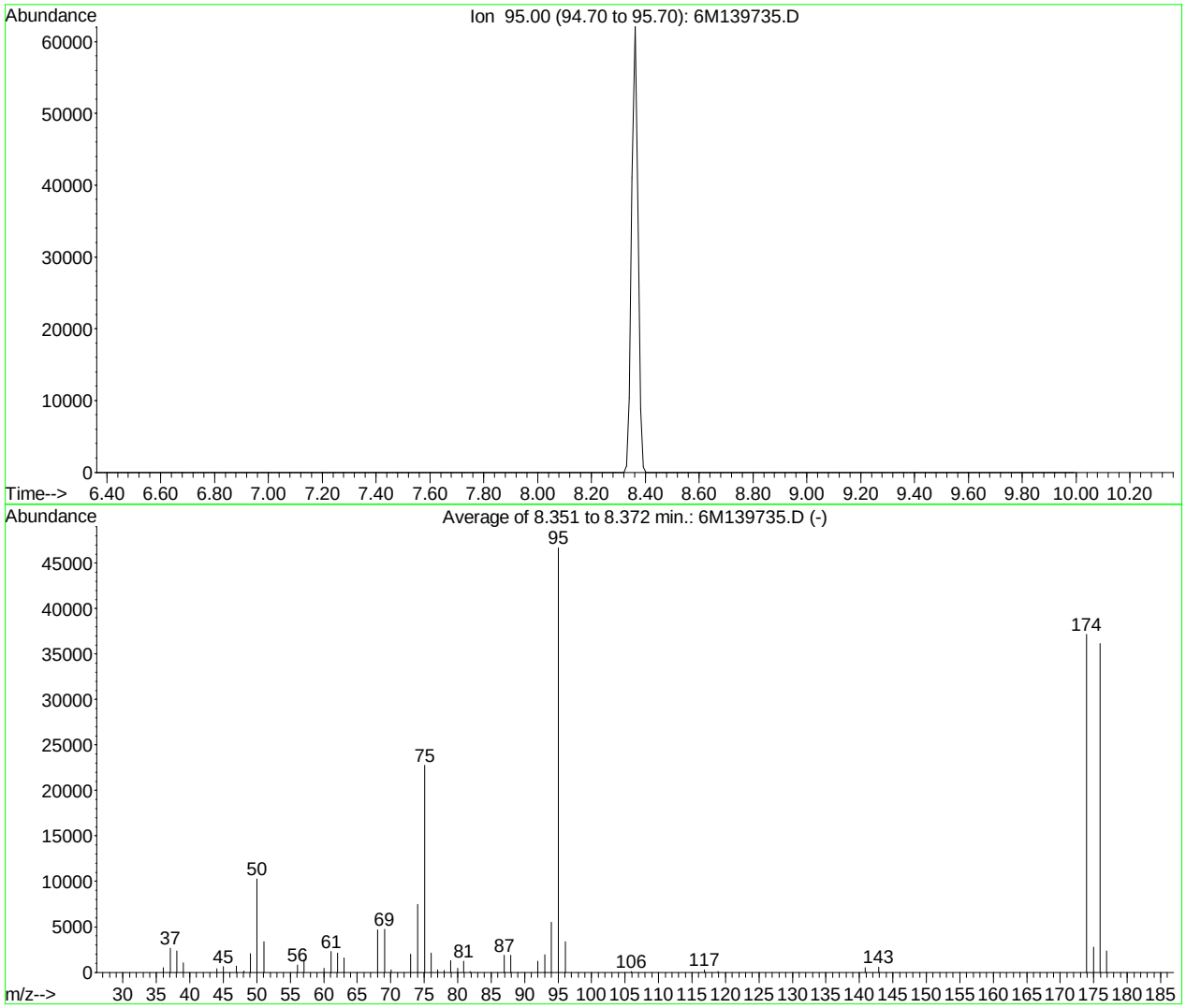

AutoFind: Scans 320, 321, 322; Background Corrected with Scan 315

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.0	10283	PASS
75	95	30	60	48.7	22744	PASS
95	95	100	100	100.0	46704	PASS
96	95	5	9	7.3	3392	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	79.6	37192	PASS
175	174	5	9	7.4	2756	PASS
176	174	95	101	97.2	36149	PASS
177	176	5	9	6.6	2378	PASS

6M139735.D BFB.M Wed Jun 01 12:15:03 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140053.D Vial: 1
Acq On    : 14 Jun 2016  13:47                        Operator: TMB
Sample    : WG572624-01 50ng BFB STD 8260             Inst    : HPMS6
Misc      : 1,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title     : 8260B/624_WATER SOP:MSV01  06-01-16 - HPMS6
```

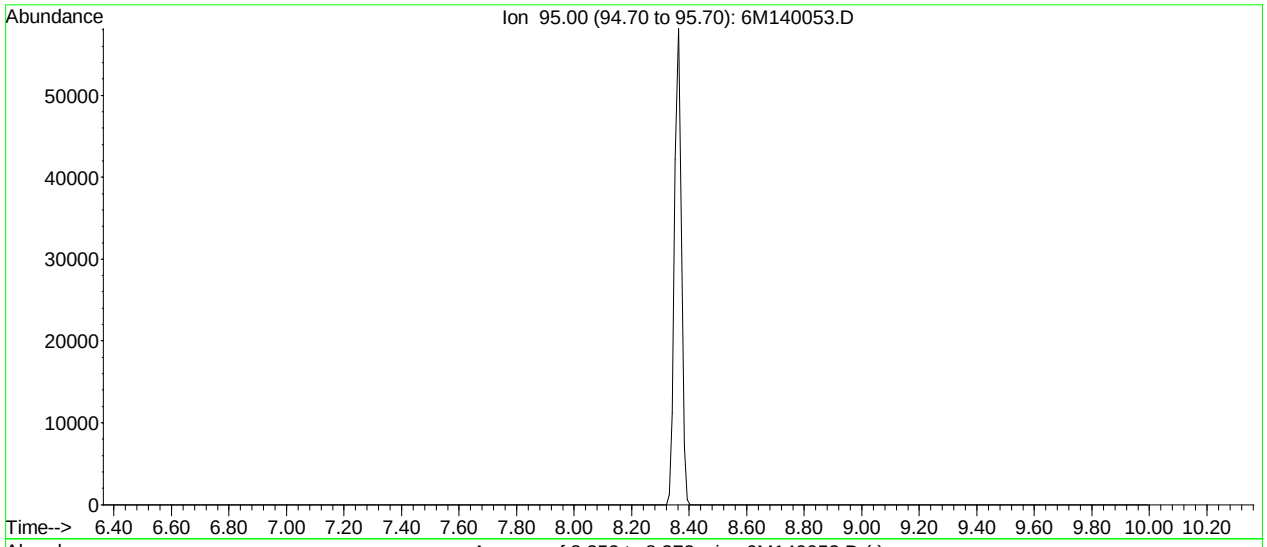

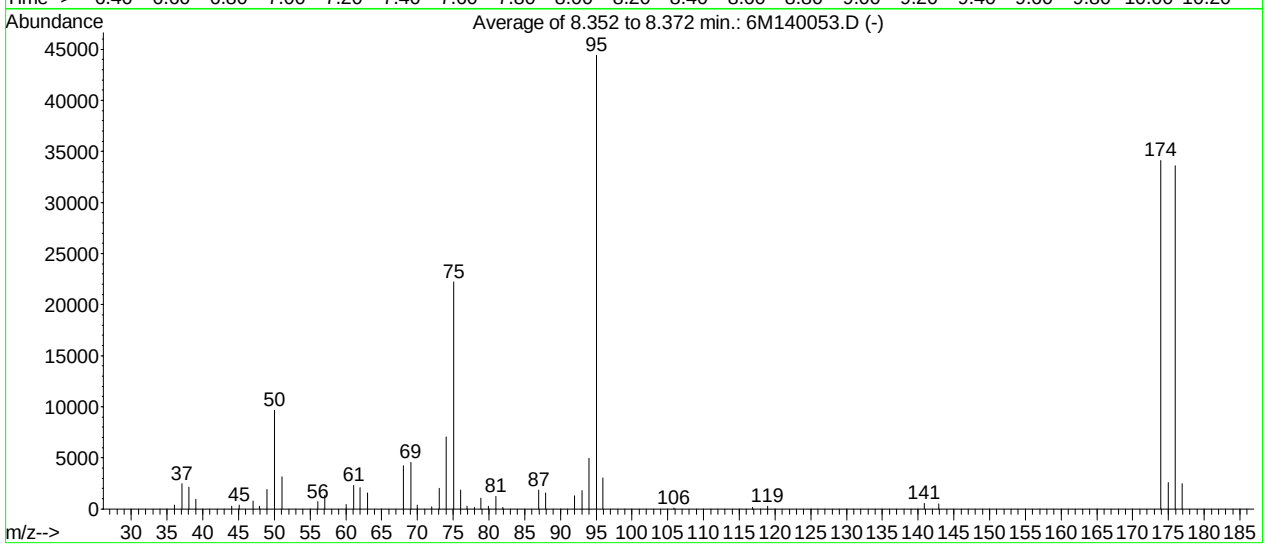

AutoFind: Scans 320, 321, 322; Background Corrected with Scan 315

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.7	9633	PASS
75	95	30	60	50.0	22220	PASS
95	95	100	100	100.0	44434	PASS
96	95	5	9	6.9	3044	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	76.8	34120	PASS
175	174	5	9	7.5	2571	PASS
176	174	95	101	98.6	33634	PASS
177	176	5	9	7.3	2461	PASS

6M140053.D 8260WT.M Tue Jun 14 15:01:54 2016

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140057.D Vial: 5
Acq On : 14 Jun 2016 15:48 Operator: TMB
Sample : WG572625-01 VBLK0614 BLANK STD 8260 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 08:15:16 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	624517	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.06	117	461734	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	241553	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.39	111	161558	24.9958 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.00%		
43) 1,2-Dichloroethane-d4	11.11	65	183617	25.7740 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.08%		
58) Toluene-d8	13.85	98	552988	24.9547 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.80%		
80) p-Bromofluorobenzene	17.84	95	226025	26.4981 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 106.00%		
Target Compounds					Qvalue
13) Acetone	6.67	43	723	Below Cal	# 48
36) Tetrahydrofuran	10.36	42	2636	1.3577 ug/L	# 69
94) 1,4-Dichlorobenzene	19.70	146	502	Below Cal	# 36

(#) = qualifier out of range (m) = manual integration
6M140057.D 8260WT.M Wed Jun 15 08:15:18 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140057.D Vial: 5
Acq On : 14 Jun 2016 15:48 Operator: TMB
Sample : WG572625-01 VBLK0614 BLANK STD 8260 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 8:15 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration

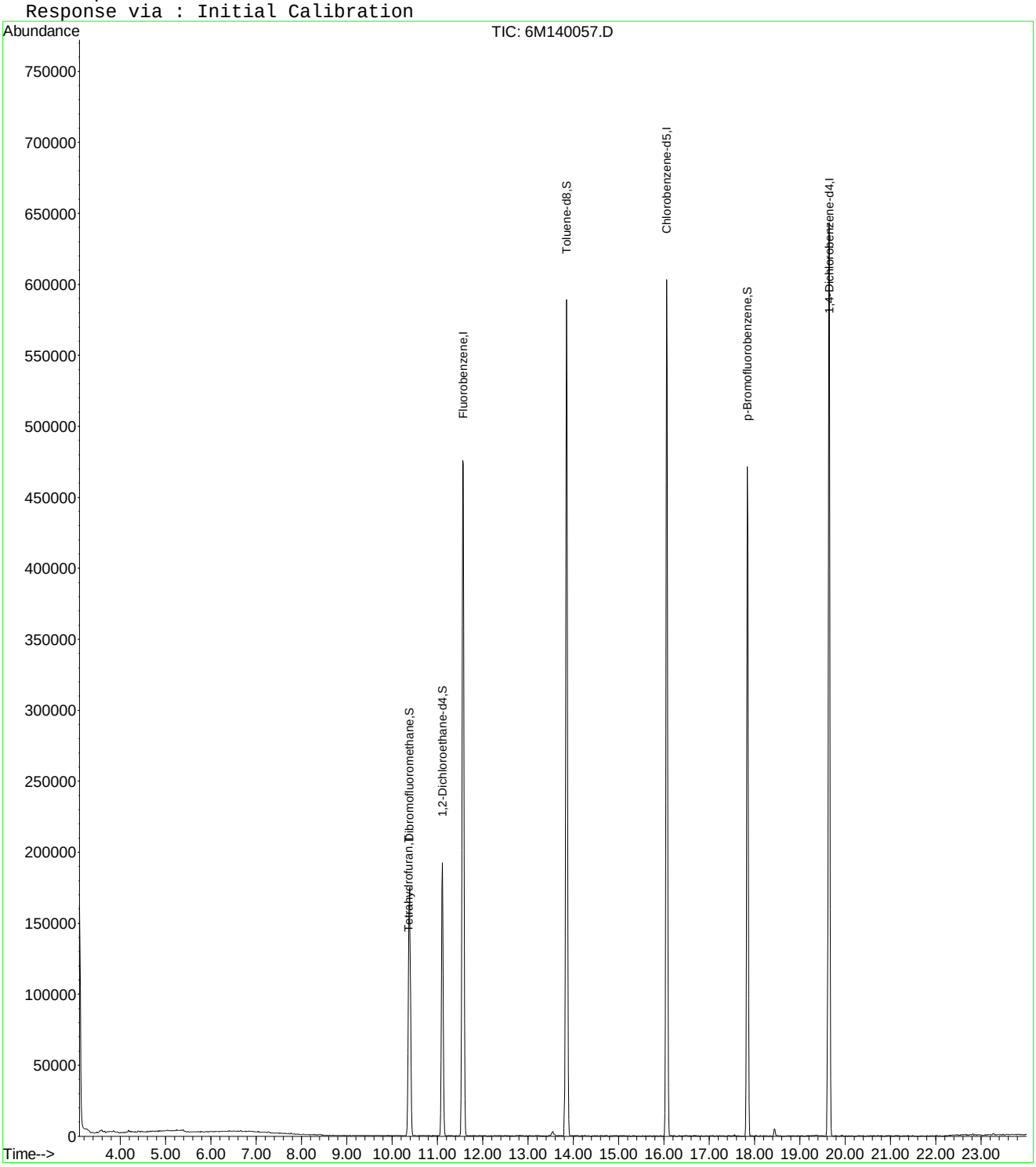

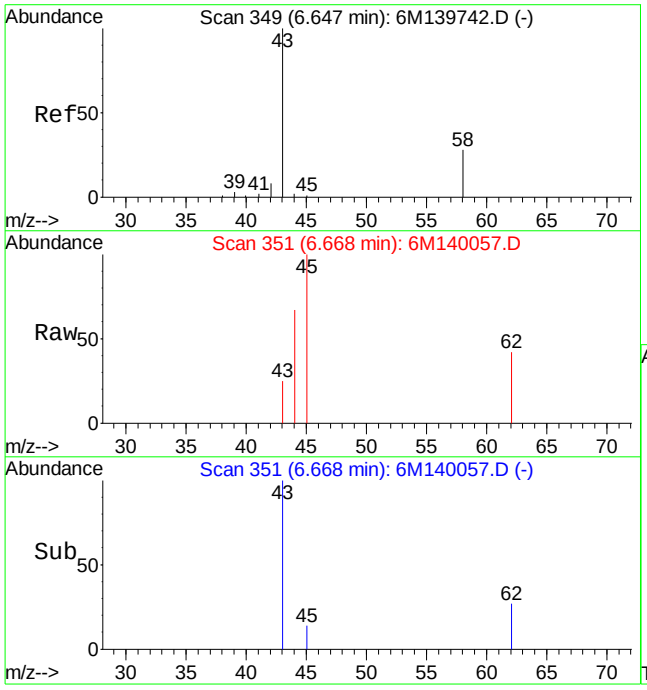

#13
Acetone
Concen: Below Cal
RT: 6.67 min Scan# 351
Delta R.T. 0.01 min
Lab File: 6M140057.D
Acq: 14 Jun 2016 15:48

Tgt Ion: 43 Resp: 723

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

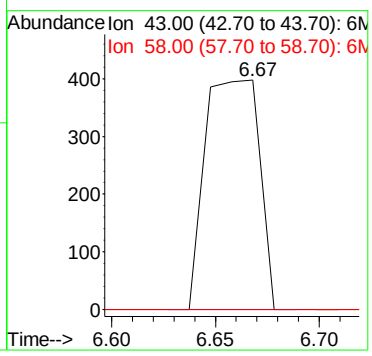

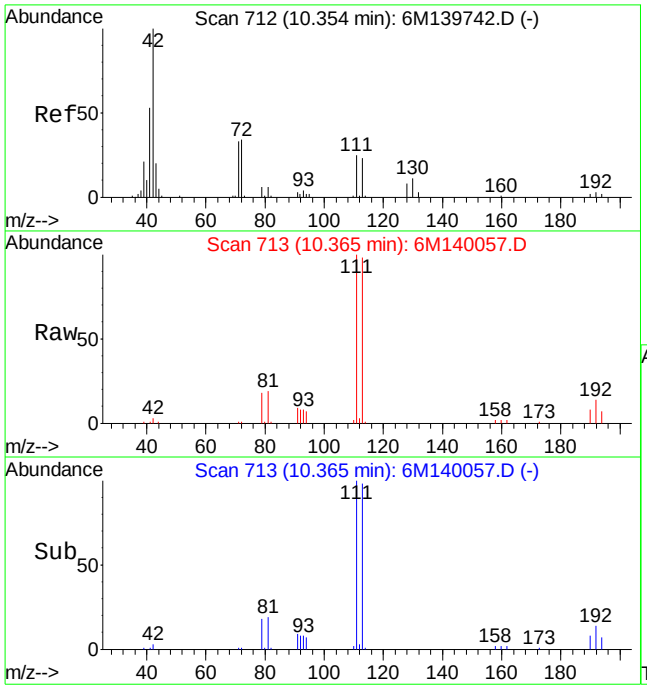

#36
Tetrahydrofuran
Concen: 1.36 ug/L
RT: 10.36 min Scan# 713
Delta R.T. 0.01 min
Lab File: 6M140057.D
Acq: 14 Jun 2016 15:48

Tgt Ion: 42 Resp: 2636

Ion	Ratio	Lower	Upper
42	100		
72	23.3	20.8	48.4
71	8.9	19.9	46.5#

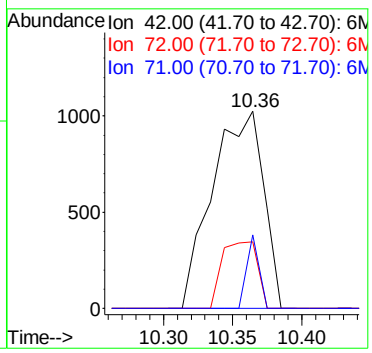

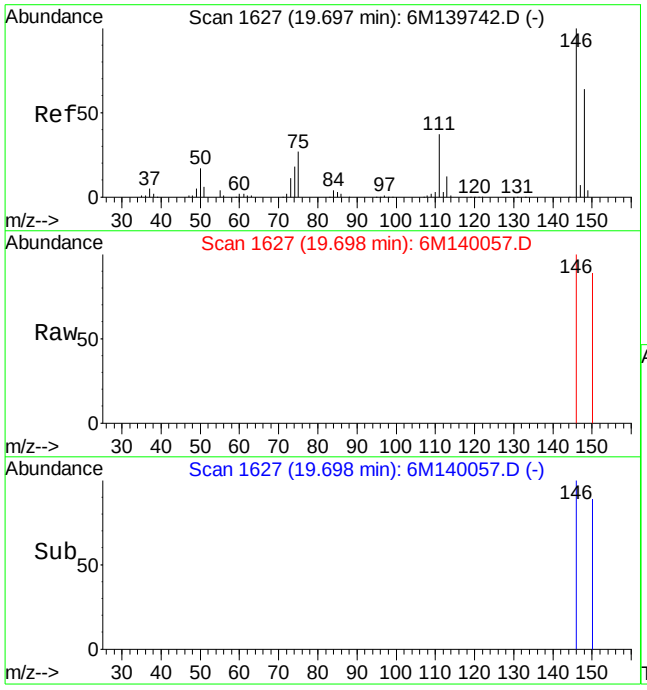

#94
1,4-Dichlorobenzene
Concen: Below Cal
RT: 19.70 min Scan# 1627
Delta R.T. 0.00 min
Lab File: 6M140057.D
Acq: 14 Jun 2016 15:48

Tgt Ion:146 Resp: 502

Ion	Ratio	Lower	Upper
146	100		
111	0.0	23.5	54.9#

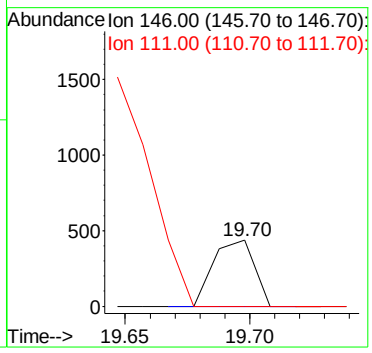

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140077.D Vial: 25
Acq On : 15 Jun 2016 2:31 Operator: TMB
Sample : WG572624-06 VBLK0614 BLANK STD 624 Inst : HPMS6
Misc : 2,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 08:17:04 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	558067	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.06	117	412531	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	19.65	152	219752	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.38	111	147262	25.4968 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.00%		
43) 1,2-Dichloroethane-d4	11.11	65	166978	26.2293 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 104.92%		
58) Toluene-d8	13.85	98	495254	25.0149 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.04%		
80) p-Bromofluorobenzene	17.84	95	203027	26.1632 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.64%		

Target Compounds					Qvalue
36) Tetrahydrofuran	10.35	42	2506	1.4444 ug/L #	41
60) Ethyl Methacrylate	13.86	69	951	0.1481 ug/L	64

(#) = qualifier out of range (m) = manual integration
6M140077.D 8260WT.M Wed Jun 15 08:17:07 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140077.D Vial: 25
Acq On : 15 Jun 2016 2:31 Operator: TMB
Sample : WG572624-06 VBLK0614 BLANK STD 624 Inst : HPMS6
Misc : 2,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 8:17 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration

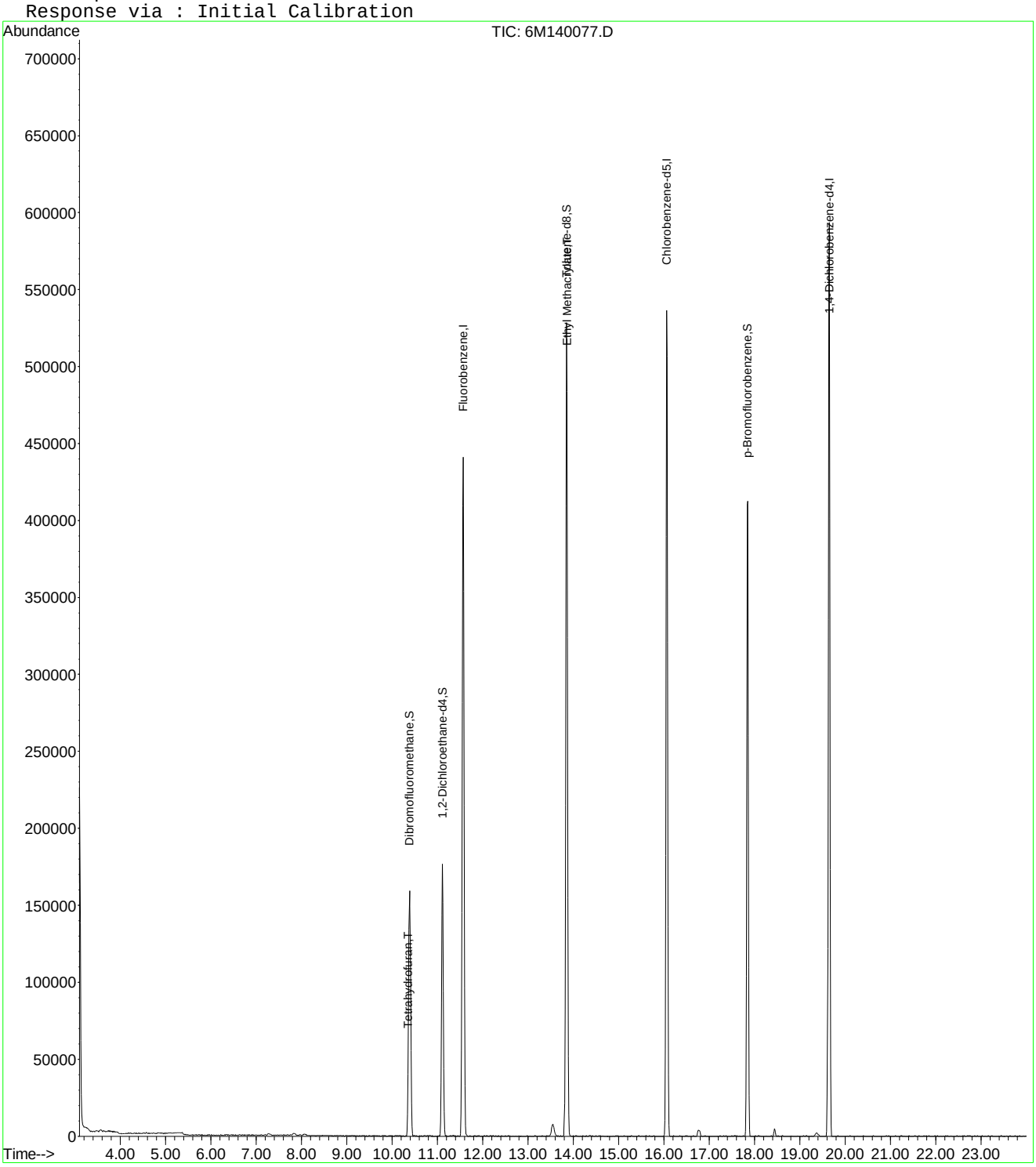

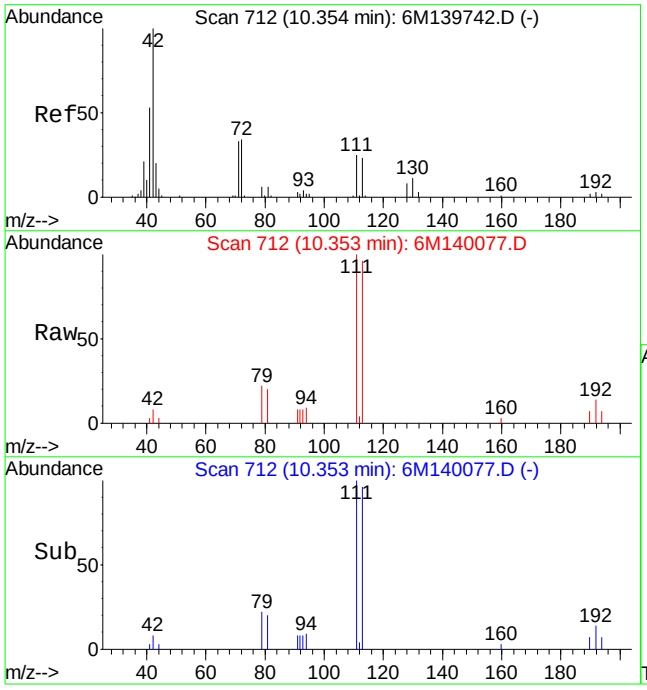

#36
Tetrahydrofuran
Concen: 1.44 ug/L
RT: 10.35 min Scan# 712
Delta R.T. -0.00 min
Lab File: 6M140077.D
Acq: 15 Jun 2016 2:31

Tgt Ion: 42 Resp: 2506

Ion	Ratio	Lower	Upper
42	100		
72	0.0	20.8	48.4#
71	0.0	19.9	46.5#

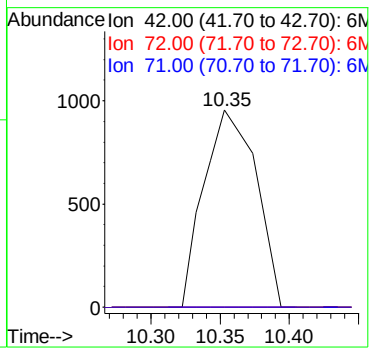

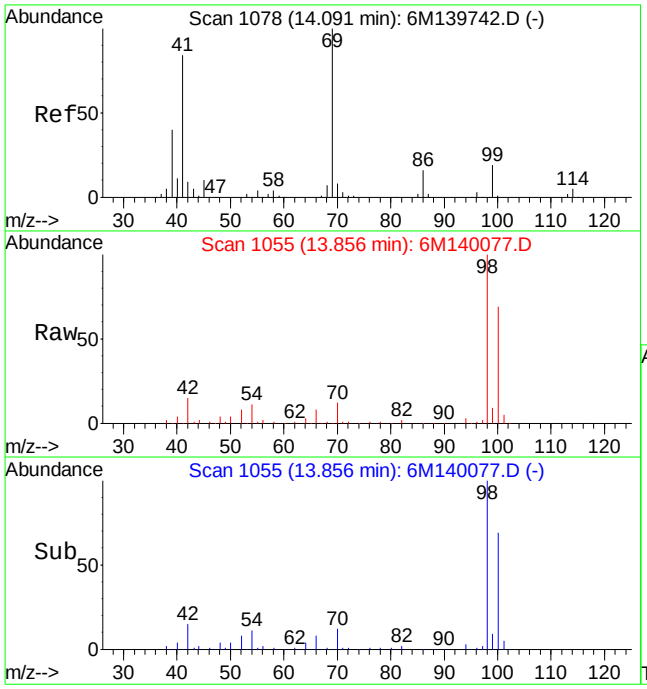

#60
Ethyl Methacrylate
Concen: 0.15 ug/L
RT: 13.86 min Scan# 1055
Delta R.T. -0.24 min
Lab File: 6M140077.D
Acq: 15 Jun 2016 2:31

Tgt Ion: 69 Resp: 951

Ion	Ratio	Lower	Upper
69	100		
41	118.9	51.4	120.0

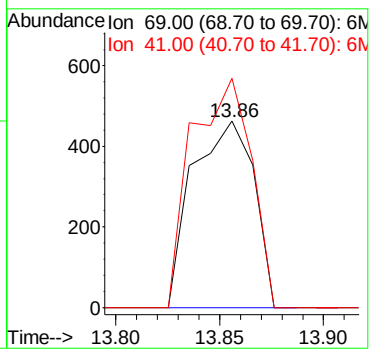

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140058.D Vial: 6
Acq On : 14 Jun 2016 16:21 Operator: TMB
Sample : WG572625-02 20ug/L LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 07:50:10 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.56	96	620315	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.06	117	461241	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	259174	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.39	111	161577	25.1680 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.68%		
43) 1,2-Dichloroethane-d4	11.11	65	181413	25.6372 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.56%		
58) Toluene-d8	13.85	98	551846	24.9297 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.72%		
80) p-Bromofluorobenzene	17.84	95	235081	25.6860 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.76%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	195659	19.9267 ug/L	98
3) Chloromethane	3.92	50	209116	17.4684 ug/L	99
4) Vinyl Chloride	4.16	62	158579	19.6522 ug/L	99
5) 1,3-Butadiene	4.20	54	21633	Below Cal	92
6) Bromomethane	5.06	94	69396	17.4585 ug/L	100
7) Chloroethane	5.23	64	96343	18.8892 ug/L	96
8) Trichlorofluoromethane	5.73	101	230092	21.2924 ug/L	99
9) Diethyl ether	6.29	59	608341	104.6875 ug/L	98
10) Isoprene	6.32	67	205606	22.3794 ug/L	99
11) Acrolein	6.55	56	96097	98.0156 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.54	101	128115	20.7533 ug/L	100
13) Acetone	6.66	43	41101	21.4090 ug/L	94
14) 1,1-Dichloroethene	6.87	61	225619	20.6374 ug/L	98
15) Tert-Butyl Alcohol	7.02	59	106418	198.3385 ug/L	99
16) Dimethyl Sulfide	7.16	62	194612	38.7882 ug/L	97
17) Iodomethane	7.43	142	115495	26.3795 ug/L	97
18) Methyl acetate	7.44	43	122998	22.9887 ug/L	99
19) Methylene Chloride	7.72	84	138729	20.5778 ug/L	95
20) Carbon Disulfide	7.76	76	413522	19.3329 ug/L	99
21) Acrylonitrile	7.92	53	51732	21.9386 ug/L	100
22) Methyl Tert Butyl Ether	7.95	73	370968	22.5520 ug/L	100
23) trans-1,2-Dichloroethene	8.21	96	134940	21.1753 ug/L	97
24) n-Hexane	8.28	57	198627	20.0171 ug/L	99
25) Diisopropyl ether	8.67	45	2905123	109.9918 ug/L	98
26) Vinyl Acetate	8.85	43	220654	19.6754 ug/L	98
27) 1,1-Dichloroethane	8.88	63	261917	20.5129 ug/L	99
28) Ethyl-Tert-Butyl ether	9.30	59	2166242	100.2167 ug/L	99
29) 2-Butanone	9.51	43	60859	21.7255 ug/L	97
30) Propionitrile	9.63	54	81970	106.0277 ug/L	99
31) 2,2-Dichloropropane	9.75	77	201521	21.6490 ug/L	97
32) cis-1,2-Dichloroethene	9.82	96	149442	21.5261 ug/L	96
33) Chloroform	10.06	83	241554	21.2416 ug/L	99
34) 1-Bromopropane	10.21	122	32959	28.7996 ug/L	99
35) Bromochloromethane	10.32	130	83515	21.1838 ug/L	98
36) Tetrahydrofuran	10.35	42	185496	96.1891 ug/L	96
38) 1,1,1-Trichloroethane	10.65	97	214515	21.1464 ug/L	99
39) Cyclohexane	10.68	56	264472	20.8000 ug/L	98
40) 1,1-Dichloropropene	10.88	75	180669	20.7808 ug/L	97
41) Tert-Amyl-Methyl ether	11.00	73	1748469	104.4757 ug/L	98
42) Carbon Tetrachloride	11.04	117	193223	21.3510 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140058.D 8260WT.M Wed Jun 15 07:50:19 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140058.D Vial: 6
Acq On : 14 Jun 2016 16:21 Operator: TMB
Sample : WG572625-02 20ug/L LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 07:50:10 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.24	62	192262	21.9991 ug/L	100
46)	Benzene	11.28	78	533846	20.9493 ug/L	99
47)	Trichloroethene	12.14	130	139763	21.4743 ug/L	98
48)	Methylcyclohexane	12.23	83	203703	20.6440 ug/L	98
49)	1,2-Dichloropropane	12.39	63	157641	22.3963 ug/L	98
50)	1,4-Dioxane	12.72	88	8082	161.1700 ug/L	93
51)	Bromodichloromethane	12.73	83	187043	21.6084 ug/L	98
52)	Dibromomethane	12.84	93	74961	20.6383 ug/L	99
53)	2-Chloroethyl Vinyl Ether	13.09	63	71534	22.2672 ug/L	100
54)	4-Methyl-2-Pentanone	13.12	58	44546	20.8351 ug/L	100
55)	cis-1,3-Dichloropropene	13.48	75	237052	24.1961 ug/L	99
56)	Dimethyl Disulfide	13.78	79	122976	21.7883 ug/L	99
59)	Toluene	13.96	91	555996	21.2279 ug/L	100
60)	Ethyl Methacrylate	14.09	69	161287	22.4717 ug/L	99
62)	trans-1,3-Dichloropropene	14.17	75	196865	22.0689 ug/L	98
63)	1,1,2-Trichloroethane	14.43	97	106462	21.3488 ug/L	99
64)	2-Hexanone	14.36	43	87754	20.7380 ug/L	98
65)	1,3-Dichloropropane	14.79	76	200202	22.8341 ug/L	99
66)	Tetrachloroethene	14.92	166	137039	19.9464 ug/L	99
67)	Dibromochloromethane	15.24	129	136589	21.4961 ug/L	100
68)	1,2-Dibromoethane	15.53	107	103624	21.4991 ug/L	99
69)	1-Chlorohexane	15.64	91	184736	21.7216 ug/L	96
70)	Chlorobenzene	16.12	112	374901	21.3920 ug/L	99
71)	1,1,1,2-Tetrachloroethane	16.16	131	135666	21.3429 ug/L	99
72)	Ethylbenzene	16.15	106	193891	20.8583 ug/L	97
73)	m-,p-Xylene	16.27	106	481295	43.5827 ug/L	98
74)	o-Xylene	16.93	106	242968	22.2637 ug/L	98
75)	Styrene	16.97	104	406288	22.4170 ug/L	97
76)	Bromoform	17.55	173	80995	20.0911 ug/L	100
77)	Isopropylbenzene	17.43	105	613580	22.3988 ug/L	99
79)	1,1,2,2-Tetrachloroethane	17.70	83	130872	20.9441 ug/L	99
81)	1,2,3-Trichloropropane	17.92	110	39462	21.8133 ug/L	88
82)	trans-1,4-Dichloro-2-Buten	17.98	53	39617	18.1720 ug/L	94
83)	n-Propylbenzene	18.03	91	764228	22.7517 ug/L	99
84)	Bromobenzene	18.18	156	160638	20.3800 ug/L	97
85)	1,3,5-Trimethylbenzene	18.26	105	528035	22.2176 ug/L	98
86)	2-Chlorotoluene	18.35	91	498288	21.6571 ug/L	99
87)	4-Chlorotoluene	18.41	91	470596	22.0289 ug/L	98
88)	a-Methylstyrene	18.74	118	301092	22.6610 ug/L	98
89)	tert-Butylbenzene	18.81	134	113978	21.7528 ug/L	79
90)	1,2,4-Trimethylbenzene	18.87	105	535782	21.5351 ug/L	99
91)	sec-Butylbenzene	19.13	105	642809	21.9799 ug/L	99
92)	p-Isopropyltoluene	19.32	119	546266	21.9189 ug/L	99
93)	1,3-Dichlorobenzene	19.53	146	322822	21.0034 ug/L	99
94)	1,4-Dichlorobenzene	19.70	146	326534	22.3163 ug/L	98
95)	n-Butylbenzene	19.94	91	515042	21.8338 ug/L	99
96)	1,2-Dichlorobenzene	20.28	146	306564	21.4036 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	21.46	75	25828	23.0175 ug/L	94
98)	1,2,4-Trichlorobenzene	22.82	180	216957	21.9085 ug/L	99
99)	Hexachlorobutadiene	23.02	225	91029	22.1493 ug/L	99
100)	Naphthalene	23.28	128	401329	20.5015 ug/L	99
101)	1,2,3-Trichlorobenzene	23.69	180	198640	21.1962 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140058.D 8260WT.M Wed Jun 15 07:50:24 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140058.D Vial: 6
Acq On : 14 Jun 2016 16:21 Operator: TMB
Sample : WG572625-02 20ug/L LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 7:50 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration

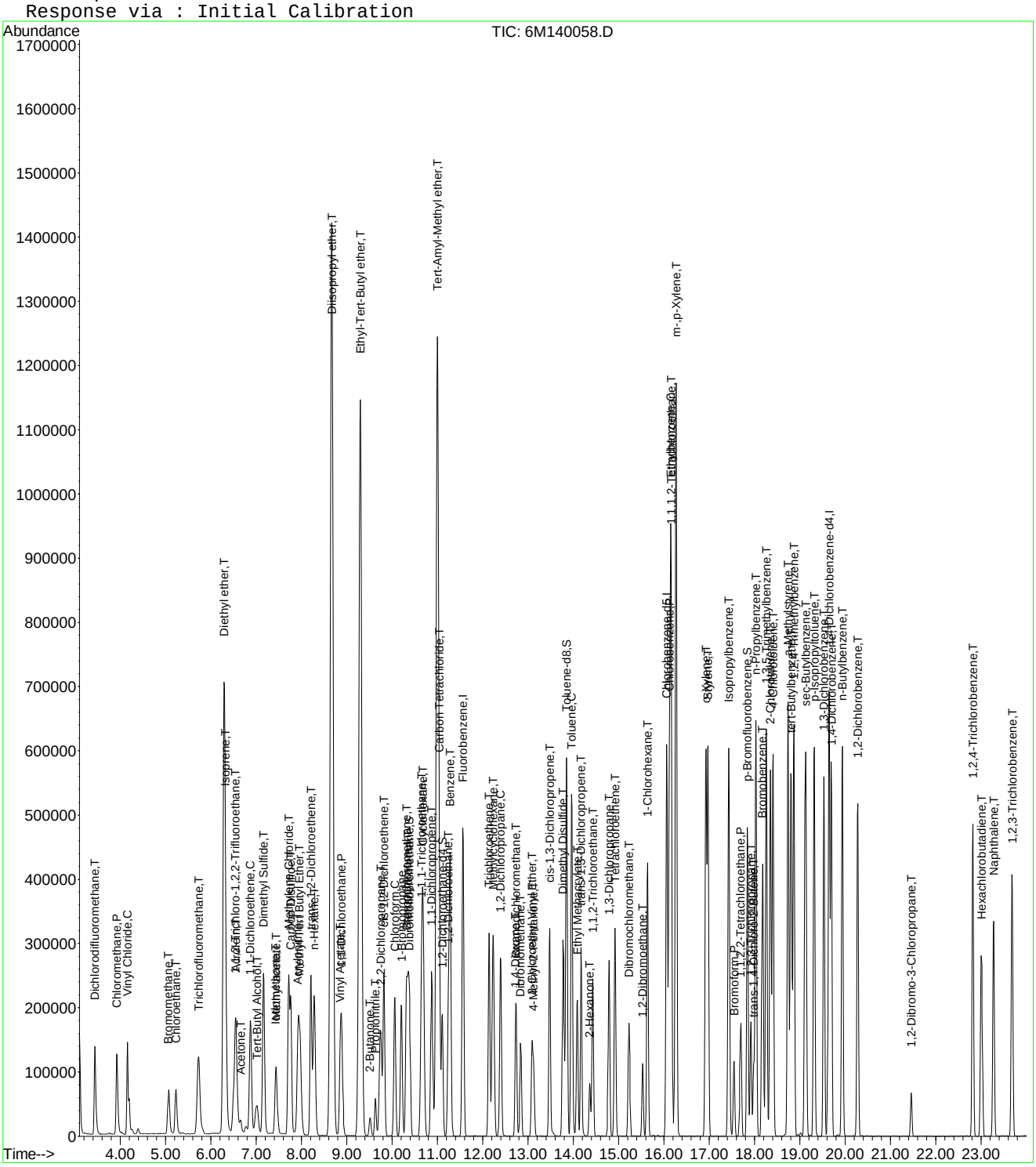

6M140058.D 8260WT.M Wed Jun 15 07:50:30 2016 Page 3

2.2 Semivolatiles Data

2.2.1 Semivolatiles GC/MS Data (Dioxane)

2.2.1.1 Summary Data

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060497-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW06-060816	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 11:08
Collect Date:	06/08/2016 13:30	**Dilution:**	1	**File ID:**	15M18403
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	62.4	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060497-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW06MS-060816	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 11:31
Collect Date:	06/08/2016 13:30	**Dilution:**	1	**File ID:**	15M18404
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	2.46		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	49.8	20	129	

Certificate of Analysis

Sample #:	L16060497-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW06MSD-060816	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 11:54
Collect Date:	06/08/2016 13:30	**Dilution:**	1	**File ID:**	15M18405
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	2.35		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	47.3	20	129	

2.2.1.2 QC Summary Data

Example 8270 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:

	Example
Ax = Area of the characteristic ion for the compound being measured:	1261197
Cis = Concentration of the specific internal standard (ug/mL)	40
Ais = Area of the characteristic ion of the specific internal standard	608044
Cx = Concentration of the compound in the standard being measured (ug/mL)	50
RF = Calculated Response Factor	**1.65935**

2.0 Calculating the concentration (C) of a compound in water using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Vi)]

where:

	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Vi = Initial volume of sample extracted from prep log (mL)	1021
Cx = Concentration of the compound in the sample being measured (ug/mL)	0.016947
Cx = Concentration of the compound in the sample being measured (ug/L)	**16.947**

3.0 Calculating the concentration (C) of a compound in soil using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Wi)]

where:

	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Wi = Initial weight of sample extracted (g) from prep log	30
Cx = Concentration of the compound in the sample being measured (ug/g)	0.576763
Cx = Concentration of the compound in the sample being measured (ug/kg)	**576.7627**

Dry weight correction:

Percent solids (PCT_S)	50
Cd = (Cx) (100)/PCT_S	**1153.525** ug/kg

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve plot

b = intercept from curve plot

Step 2: Calculate y from Quantitation Report

y = 16790/784838 = 0.02139

Step 3: Solve for x

x = (y - b)/m = [(0.02139 -(- 0.0435)]/ 0.0783 = 0.829

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.829) = 20.72 ug/L

Example Spreadsheet Calculation:

Slope from curve, m:	0.0783	
Intercept from curve, b:	-0.0435	
Area of analyte, Ax:	16790	
Area of Internal Standard , Ais:	784484	
Concentration of IS, Cis	25.00	ug/L
Response Ratio (y) :	0.021403	
Amount Ratio:	0.828897	
Concentration (Cx):	20.72241	ug/L

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**0.0259**	
Value of B from plot:	**0.0596**	
Value of C from plot:	**-0.0165**	
Area of analyte from quantitation report:	**203233**	
Area of IS from quantiation report:	**1425653**	
Response ratio, y:	**0.142554**	
C - y:	**-0.15905**	
Root 1 - Computed amount ratio , X1:	**-3.88278**	
Root 2 - Computed amount ratio , X2:	**1.581623**	use this solution
Concentration of IS, Cis:	**40.00**	
Concentration of analyte, Cx:	**63.26**	ug/L

Microbac Laboratories Inc.
Continuous Sample Extract Log

Workgroup: WG572341
Analyst: CPD
Spike Analyst: CPD
Method: 3520C
Run Date: 06/13/2016 16:16
SOP: EXB01 Revison 20
Spike Witness: AED
Surr Solution: STD74051

TIME ON: 16:55 OFF: 12:40 ON: 15:20 OFF: 11:00

CH2CL2 Lot #: COA18982
sodium sulfate Lot #: COA18814
1:1 H2SO4 Lot #: RGT36755

	SAMPLE #	Type	Reference	Prod	pH	Init Amnt	Surr Amnt	Spike Amnt	Spike Sol	Final Vol	Color
1	L16060497-01	RS01		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
2	L16060497-02	MS01	L16060497-01	827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD66388	1 mL	Transparent
3	L16060497-03	SD01	L16060497-01	827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD66388	1 mL	Transparent
4	L16060504-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
5	L16060504-02	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
6	L16060504-03	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
7	L16060504-04	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
8	L16060615-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
9	L16060615-02	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
10	L16060615-03	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
11	L16060615-04	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
12	L16060616-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
13	L16060616-02	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
14	L16060616-03	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
15	L16060637-03	SAMP		827-DIOX	<2	1000 mL	.05 mL			1 mL	Transparent
16	WG572341-01	BLANK		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
17	WG572341-02	LCS		827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD66388	1 mL	Transparent
18	WG572341-03	REF	L16060497-01	827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
19	WG572341-04	MS	L16060497-01	827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD66388	1 mL	Transparent
20	WG572341-05	MSD	L16060497-01	827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD66388	1 mL	Transparent

Analyst: Chelsea Davis

Reviewer: Justin Hesson

EXTRACT - Modified 01/23/2009
PDF ID: 4809357
Report generated: 06/16/2016 08:25

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 061016
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG571947

Internal STD: STD75471 Surrogate STD: NA Calibration STD
CCV STD: STD74784 LCS STD: STD74214 MS/MSD STD:

Comments: L16051582-01, and L16060024-01,03,05 were already sent for re-extract due to QC contamination. L16060024s are being re-extracted as 827-SPE-DIOX only.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18332	BAKEOUT-IS CHECK	1	1		06/10/16 08:27
2	15M18333	BAKEOUT-IS CHECK	1	1		06/10/16 08:53
3	15M18334	WG571981-01 5PPM DFTPP STD	1	1	STD75016	06/10/16 09:13
4	15M18335	BAKEOUT-IS CHECK	1	1		06/10/16 09:31
5	15M18336	BAKEOUT-IS CHECK	1	1		06/10/16 09:53
6	15M18337	WG572230-01 5PPM DFTPP STD	1	1	STD75016	06/10/16 10:18
7	15M18338	WG572230-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 10:36
8	15M18339	WG572230-03 10 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 11:00
9	15M18340	WG572230-04 7.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 11:22
10	15M18341	WG572230-05 2.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 11:45
11	15M18342	WG572230-06 1 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 12:08
12	15M18343	WG572230-07 0.4 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 12:30
13	15M18344	WG572230-08 5PPM 1,4-DIOXANE ALT SRC	1	1	STD74214	06/10/16 12:52
14	15M18345	WG571410-01 BLANK 6/6	1	1		06/10/16 13:15
15	15M18346	WG571410-02 LCS 6/6	1	1		06/10/16 13:38
16	15M18347	WG571410-03 LCSDUP 6/6	1	1		06/10/16 14:01
17	15M18348	WG571404-01 BLANK 6/2	1	1		06/10/16 14:24
18	15M18349	WG571404-02 LCS 6/2	1	1		06/10/16 14:47
19	15M18350	WG571404-03 LCSDUP 6/2	1	1		06/10/16 15:09
20	15M18351	L16060067-01 827-DIOX	1	1		06/10/16 15:32
21	15M18352	L16051582-01 5X 827-DIOX	1	5		06/10/16 15:55
22	15M18353	L16060024-05 20X 827-DIOX	1	20		06/10/16 16:18
23	15M18354	L16060024-03 20X 827-DIOX	1	20		06/10/16 16:40
24	15M18355	L16060024-01 20,000X 827-DIOX	1	20000		06/10/16 17:03
25	15M18356	L16060067-01 2X 827-DIOX	1	2		06/10/16 17:26
26	15M18357	L16060024-03 100X 827-DIOX	1	100		06/10/16 17:49

Comments

Seq.	Rerun	Dil.	Reason	Analytes
3				
	DFTPP check after installing new source and retuning.			
17				
	WG571404-01 BLANK 6/2 dioxane hit above the RL.			

Page: 1 Approved: 13-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 061016

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG571947

Internal STD: STD75471 Surrogate STD: NA

CCV STD: STD74784 LCS STD: STD74214

Comments

Seq.	Rerun	Dil.	Reason	Analytes
18				
	WG571404-02 LCS 6/2 fails high.			
19				
	WG571404-03 LCSDUP 6/2 fails high.			
20	X	2	Over Calibration Range	
	L16060067-01			
23	X	100	Over Calibration Range	
	L16060024-03 20X DNR			

Page: 2 Approved: 13-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 061616

Analyst1: SCB Analyst2: MES

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG572971

Internal STD: STD75471, 76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18399	WG572958-01 5PPM DFTPP STD	1	1	STD75016	06/16/16 09:38
2	15M18400	WG572958-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/16/16 10:00
3	15M18401	WG572341-01 BLANK 6/13	1	1		06/16/16 10:23
4	15M18402	WG572341-02 LCS 6/13	1	1		06/16/16 10:46
5	15M18403	L16060497-01 REF 827-DIOX	1	1		06/16/16 11:08
6	15M18404	L16060497-02 MS 827-DIOX	1	1		06/16/16 11:31
7	15M18405	L16060497-03 MSD 827-DIOX	1	1		06/16/16 11:54
8	15M18406	L16060504-01 827-DIOX	1	1		06/16/16 12:17
9	15M18407	L16060504-02 827-DIOX	1	1		06/16/16 12:39
10	15M18408	L16060504-03 827-DIOX	1	1		06/16/16 13:02
11	15M18409	L16060504-04 827-DIOX	1	1		06/16/16 13:25
12	15M18410	L16060615-01 827-DIOX	1	1		06/16/16 13:48
13	15M18411	L16060615-02 827-DIOX	1	1		06/16/16 14:11
14	15M18412	L16060615-03 827-DIOX	1	1		06/16/16 14:33
15	15M18413	L16060615-04 827-DIOX	1	1		06/16/16 14:56
16	15M18414	L16060616-01 827-DIOX	1	1		06/16/16 15:19
17	15M18415	L16060616-02 827-DIOX	1	1		06/16/16 15:42
18	15M18416	L16060616-03 827-DIOX	1	1		06/16/16 16:04
19	15M18417	L16060637-03 827-DIOX	1	1		06/16/16 16:27

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 20-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 10-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75640
Analytical Workgroups: L16051582, L16060024, L16060067

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 12-JUN-2016

Secondary Reviewer: 13-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-13-2016 08:34:44

Microbac Laboratories Inc.

Data Checklist

Date: 16-JUN-2016
Analyst: SCB
Analyst: MES
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75783
Analytical Workgroups: L16060497, L16060504, L16060615, L16060616, L16060637

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	SCB
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 20-JUN-2016 Sarah Bogolin

Secondary Reviewer: 20-JUN-2016 Eric C. Zum

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-20-2016 16:55:27

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8270D

AAB#: WG572971

Login Number: L16060497

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW06-060816	01	06/08/16					06/13/2016	5.1	7		06/16/16	2.8	40	
18CPTMW06MS-060816	02	06/08/16					06/13/2016	5.1	7		06/16/16	2.8	40	
18CPTMW06MSD-060816	03	06/08/16					06/13/2016	5.1	7		06/16/16	2.8	40	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4814442
Report generated 06/21/2016 08:50

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060497
Instrument Id: HPMS15
Workgroup (AAB#): WG572971

Method: 827-DIOXANE
CAL ID: HPMS15-10-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1
L16060497-01	1.00	01	62.4
L16060497-02	1.00	01	49.8
L16060497-03	1.00	01	47.3
WG572341-01	1.00	01	29.4
WG572341-02	1.00	01	35.7

Surrogates	Surrogate Limits		
1 - 1,4-Dioxane-d8	20	-	129

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4814452
Report generated: 06/21/2016 08:50

METHOD BLANK SUMMARY

Login Number: L16060497
Blank File ID: 15M18401
Prep Date: 06/13/16 16:16
Analyzed Date: 06/16/16 10:23
Analyst: MES

Work Group: WG572971
Blank Sample ID: WG572341-01
Instrument ID: HPMS15
Method: 8270D

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572341-02	15M18402	06/16/16 10:46	01
18CPTMW06-060816	L16060497-01	15M18403	06/16/16 11:08	01
18CPTMW06MS-060816	L16060497-02	15M18404	06/16/16 11:31	01
18CPTMW06MSD-060816	L16060497-03	15M18405	06/16/16 11:54	01

Report Name: BLANK_SUMMARY
PDF File ID: 4814443
Report generated 06/21/2016 08:50

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060497 Prep Date: 06/13/16 16:16 Sample ID: WG572341-01
Instrument ID: HPMS15 Run Date: 06/16/16 10:23 Prep Method: 3520C
File ID: 15M18401 Analyst: MES Method: 8270D
Workgroup (AAB#): WG572971 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS15-10-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
1,4-Dioxane	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	29.4	20 - 129	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4814444
21-JUN-2016 08:50

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060497 Run Date: 06/16/2016 Sample ID: WG572341-02
Instrument ID: HPMS15 Run Time: 10:46 Prep Method: 3520C
File ID: 15M18402 Analyst: MES Method: 8270D
Workgroup (AAB#): WG572971 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD66388 Cal ID: HPMS15-10-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
1,4-Dioxane	5.00	1.67	33.3	30 - 104	

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	35.7	20 - 129	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4814445
Report generated: 06/21/2016 08:50

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16060497 Cal ID: HPMS15- 10-JUN-16 Worknum: WG572971
Instrument ID: HPMS15 Contract #: Prep Method: 3520C
Parent ID: L16060497-01 File ID: 15M18403 Dil: 1 Method: 8270C
Sample ID: L16060497-02 MS File ID: 15M18404 Dil: 1 Matrix: Water
Sample ID: L16060497-03 MSD File ID: 15M18405 Dil: 1 Units: ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,4-Dioxane	U	5.00	2.46	49.1	5.00	2.35	47.1	4.25	30 - 104	30	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4814446
Report generated 06/21/2016 08:50

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16060497
Instrument: HPMS15
Analyst: MES
Workgroup: WG572230

Tune ID: WG572230-01
Run Date: 06/10/2016
Run Time: 10:18
File ID: 15M18337
Cal ID: HPMS15 - 10-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	39.5	52157	PASS
68.0	69.0	0	2.00	1.91	1026	PASS
69.0	198	0	100	40.8	53844	PASS
70.0	69.0	0	2.00	0.223	120	PASS
127	198	40.0	60.0	51.4	67853	PASS
197	198	0	1.00	0.383	505	PASS
198	198	100	100	100	131981	PASS
199	198	5.00	9.00	6.72	8869	PASS
275	198	10.0	30.0	26.4	34853	PASS
365	198	1.00	100	3.17	4186	PASS
441	443	0.0100	100	73.9	15632	PASS
442	198	40.0	100	83.4	110112	PASS
443	442	17.0	23.0	19.2	21163	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG572230-02	STD-CCV	01	06/10/2016 10:36	
WG572230-03	STD	01	06/10/2016 11:00	
WG572230-04	STD	01	06/10/2016 11:22	
WG572230-05	STD	01	06/10/2016 11:45	
WG572230-06	STD	01	06/10/2016 12:08	
WG572230-07	STD	01	06/10/2016 12:30	
WG572230-08	SSCV	01	06/10/2016 12:52	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4814449
Report generated 06/21/2016 08:50

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16060497
Instrument: HPMS15
Analyst: MES
Workgroup: WG572958

Tune ID: WG572958-01
Run Date: 06/16/2016
Run Time: 09:38
File ID: 15M18399
Cal ID: HPMS15 - 10-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	39.7	42335	PASS
68.0	69.0	0	2.00	1.65	714	PASS
69.0	198	0	100	40.7	43391	PASS
70.0	69.0	0	2.00	0.643	279	PASS
127	198	40.0	60.0	52.1	55592	PASS
197	198	0	1.00	0.0637	68	PASS
198	198	100	100	100	106736	PASS
199	198	5.00	9.00	6.72	7172	PASS
275	198	10.0	30.0	25.9	27632	PASS
365	198	1.00	100	3.04	3241	PASS
441	443	0.0100	100	76.2	12912	PASS
442	198	40.0	100	81.0	86427	PASS
443	442	17.0	23.0	19.6	16937	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG572958-02	CCV	01	06/16/2016 10:00	
WG572341-01	BLANK	01	06/16/2016 10:23	
WG572341-02	LCS	01	06/16/2016 10:46	
L16060497-01	18CPTMW06-060816	01	06/16/2016 11:08	
L16060497-02	18CPTMW06MS-060816	01	06/16/2016 11:31	
L16060497-03	18CPTMW06MSD-060816	01	06/16/2016 11:54	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4814449
Report generated 06/21/2016 08:50

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060497
Analytical Method: 8270D
ICAL Workgroup: WG572230

Instrument ID: HPMS15
Initial Calibration Date: 10-JUN-16 12:30
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
1,4-Dioxane		0.3253	2.74		

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4814447
Report generated 06/21/2016 08:50

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060497

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 10-JUN-16 12:30

Column ID: F

Analyte	WG572230-02			WG572230-03			WG572230-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	5.00	107215.000	0.3234	10.0	192761.000	0.3420	7.50	146003.000	0.3236

INT_CAL - Modified 03/06/2008
PDF File ID: 4814447
Report generated 06/21/2016 08:50

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060497

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 10-JUN-16 12:30

Column ID: F

Analyte	WG572230-05			WG572230-06			WG572230-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	2.50	36488.0000	0.3190	1.00	18621.0000	0.3169	0.400	6733.00000	0.3266

INT_CAL - Modified 03/06/2008
PDF File ID: 4814447
Report generated 06/21/2016 08:50

Calibration Table Report
Method: DIOXANE_D8.M
Title: OVD MSS01 SIM 1,4-dioxane ICAL 061016
Last Calibration: Fri Jun 10 12:46:00 2016
Curve:WG572230
Calibration Files

Compound	10 15M18339.D	7.5 15M18340.D	5 15M18338.D	2.5 15M18341.D	1 15M18342.D	0.4 15M18343.D	Avg	%RSD	Linear
1,4-Dichlorobenzene-d4	ISTD								
1,4-Dioxane	0.342	0.324	0.324	0.319	0.317	0.327	0.325	2.735	
1,4-Dioxane-d8	0.440	0.415	0.417	0.411	0.409		0.419	2.988	
Nitrobenzene-d5	1.115	1.034	0.970	0.852	0.755	0.697	0.904	18.064	0.994
2-Fluorobiphenyl	2.685	2.595	2.549	2.638	2.570	2.639	2.613	1.934	
p-Terphenyl-d14	2.815	2.671	2.579	2.506	2.382	2.421	2.562	6.338	

Sun Jun 12 19:13:55 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060497 Run Date: 06/10/2016 Sample ID: WG572230-08
Instrument ID: HPMS15 Run Time: 12:52 Method: 8270D
File ID: 15M18344 Analyst: MES QC Key: DOD4
ICal Workgroup: WG572230 Cal ID: HPMS15 - 10-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
1,4-Dioxane		5000	5110	ug/L	0.333	2.30	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4814448
Report generated 06/21/2016 08:50

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060497
Run Date: 06/16/2016
Sample ID: WG572958-02
Instrument ID: HPMS15
Run Time: 10:00
Method: 8270D
File ID: 15M18400
Analyst: MES
QC Key: DOD4
Workgroup (AAB#): WG572971
Cal ID: HPMS15 - 10-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,4-Dioxane		5000	5080	ug/L	0.331	1.65	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4814450
Report generated 06/21/2016 08:50

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060497
Instrument ID: HPMS15
Workgroup (AAB#): WG572971

ICAL CCV Number: WG572230-02
CAL ID: HPMS15-10-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG572230-02	NA	NA	66625
Upper Limit	NA	NA	133250
Lower Limit	NA	NA	33313
L16060497-01	1.00	01	54062
L16060497-02	1.00	01	43274
L16060497-03	1.00	01	51528
WG572341-01	1.00	01	57712
WG572341-02	1.00	01	54087

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4814451
Report generated 06/21/2016 08:50

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060497
Instrument ID: HPMS15
Workgroup (AAB#): WG572971

ICAL CCV Number: WG572230-02
CAL ID: HPMS15-10-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG572230-02	NA	NA	6.94
Upper Limit	NA	NA	7.44
Lower Limit	NA	NA	6.44
L16060497-01	1.00	01	6.951
L16060497-02	1.00	01	6.951
L16060497-03	1.00	01	6.951
WG572341-01	1.00	01	6.948
WG572341-02	1.00	01	6.951

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4814453
Report generated: 06/21/2016 08:50

2.2.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18403.D
Acq On : 16 Jun 2016 11:08
Operator : MES
Sample : L16060497-01 REF 827-DIOX
Misc : 1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 16 12:53:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.951	152	54062	1.0000	ug/mL	# 0.01
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.876	96	70571	3.1188	ug/L	0.01
Spiked Amount 5.000			Recovery	=	62.40%	
4) Nitrobenzene-d5	7.447	82	9009	0.3733	ug/L	0.01
Spiked Amount 5.000			Recovery	=	7.40%	
5) 2-Fluorobiphenyl	8.937	172	3874	0.0274	ug/L	0.01
Spiked Amount 5.000			Recovery	=	0.60%	
6) p-Terphenyl-d14	12.240	244	4065	0.0293	ug/L	0.06
Spiked Amount 5.000			Recovery	=	0.60%	

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18403.D
Acq On : 16 Jun 2016 11:08
Operator : MES
Sample : L16060497-01 REF 827-DIOX
Misc : 1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 16 12:53:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

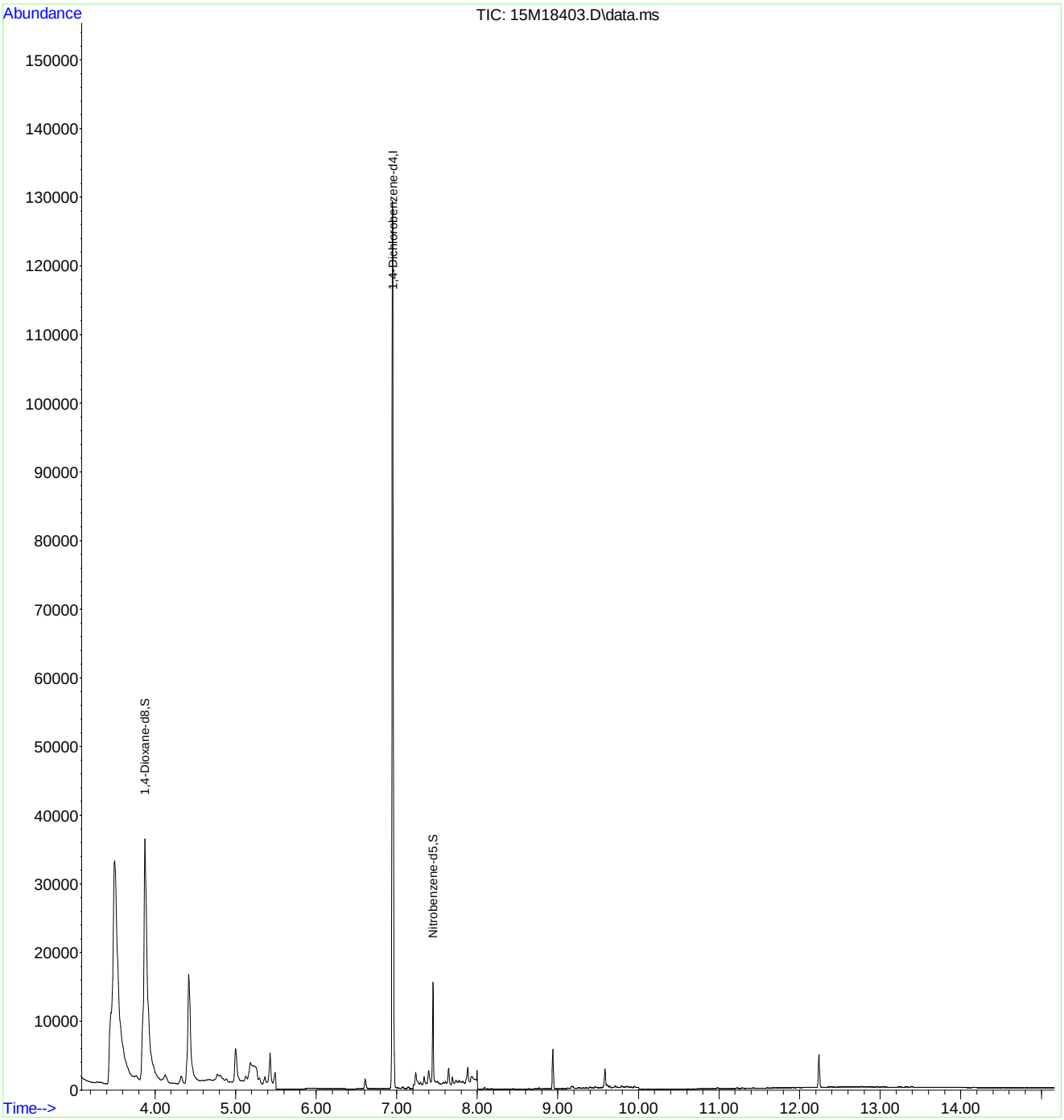

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18404.D
Acq On : 16 Jun 2016 11:31
Operator : MES
Sample : L16060497-02 MS 827-DIOX
Misc : 1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 16 12:54:08 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.951	152	43274	1.0000	ug/mL	# 0.01
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.869	96	45064	2.4881	ug/L	0.00
Spiked Amount 5.000			Recovery = 49.80%			
4) Nitrobenzene-d5	7.452	82	3805	0.2999	ug/L	0.02
Spiked Amount 5.000			Recovery = 6.00%			
5) 2-Fluorobiphenyl	8.937	172	1909	0.0169	ug/L	0.01
Spiked Amount 5.000			Recovery = 0.40%			
6) p-Terphenyl-d14	12.225	244	2831	0.0255	ug/L	0.04
Spiked Amount 5.000			Recovery = 0.60%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.904	58	34569	2.4553	ug/L	73

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18404.D
Acq On : 16 Jun 2016 11:31
Operator : MES
Sample : L16060497-02 MS 827-DIOX
Misc : 1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 16 12:54:08 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

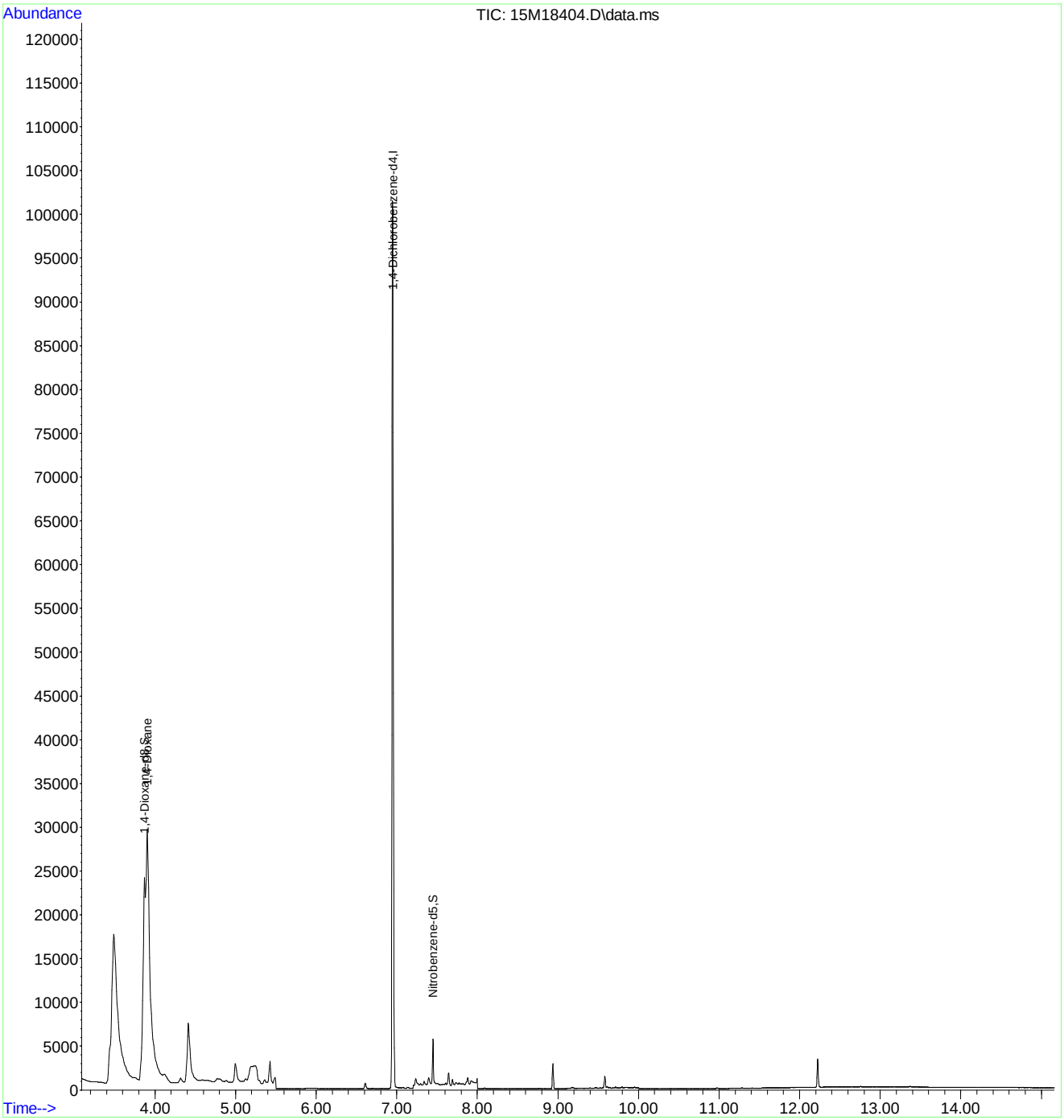

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18405.D
Acq On : 16 Jun 2016 11:54
Operator : MES
Sample : L16060497-03 MSD 827-DIOX
Misc : 1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 16 12:54:11 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.951	152	51528	1.0000	ug/mL	# 0.01
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.876	96	50953	2.3626	ug/L	0.01
Spiked Amount 5.000			Recovery	=	47.20%	
4) Nitrobenzene-d5	7.452	82	3755	0.2859	ug/L	0.02
Spiked Amount 5.000			Recovery	=	5.80%	
5) 2-Fluorobiphenyl	8.937	172	443	0.0033	ug/L	0.01
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.243	244	1635	0.0124	ug/L	0.06
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.911	58	39448	2.3531	ug/L	74

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18405.D
Acq On : 16 Jun 2016 11:54
Operator : MES
Sample : L16060497-03 MSD 827-DIOX
Misc : 1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 16 12:54:11 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

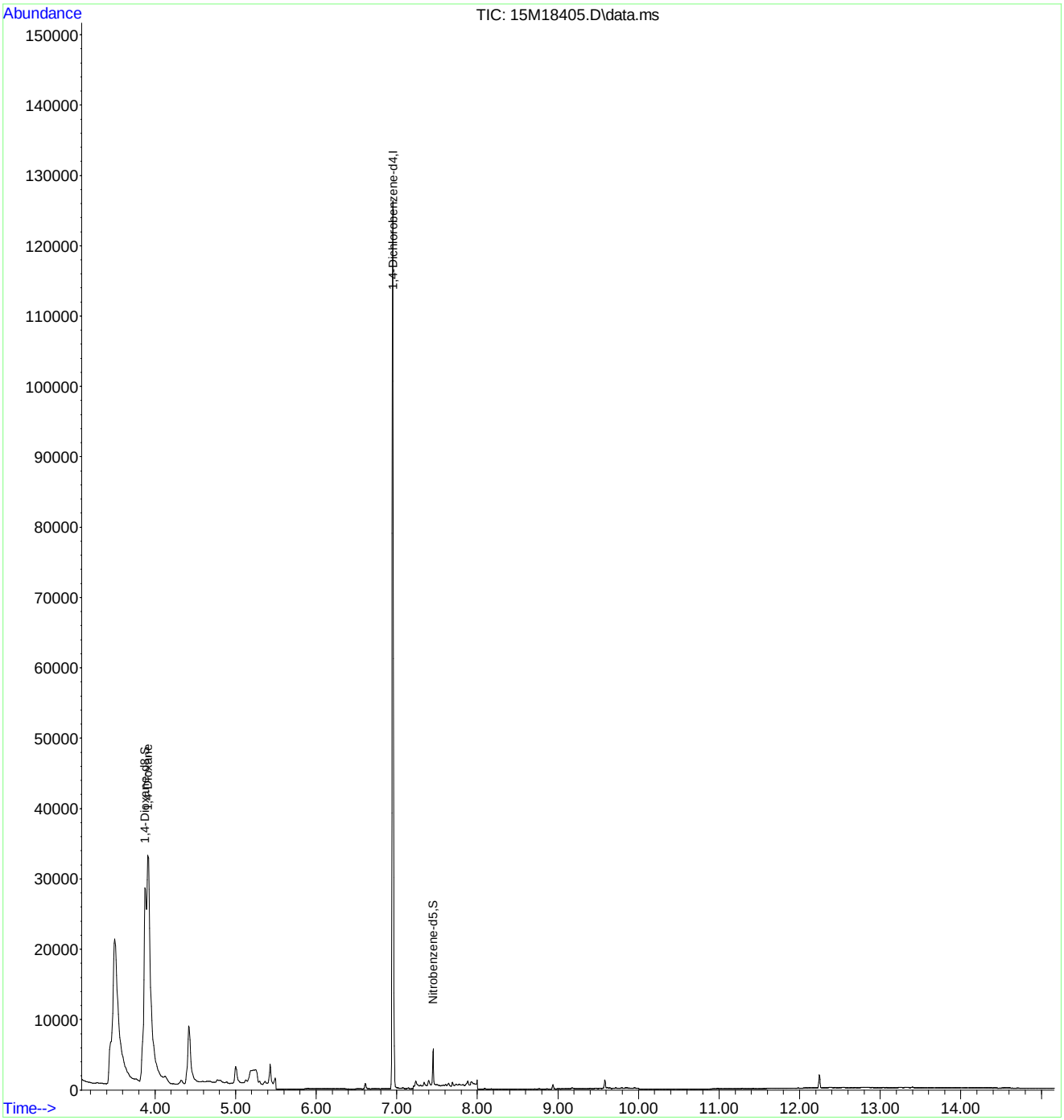

2.2.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18338.D
Acq On : 10 Jun 2016 10:36
Operator : MES
Sample : WG572230-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 10 18:15:30 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	66625	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	138302	4.9596	ug/L	0.00
Spiked Amount 5.000			Recovery	=	99.20%	
4) Nitrobenzene-d5	7.436	82	321639	4.7189	ug/L	0.00
Spiked Amount 5.000			Recovery	=	94.40%	
5) 2-Fluorobiphenyl	8.926	172	845013	4.8542	ug/L	0.00
Spiked Amount 5.000			Recovery	=	97.00%	
6) p-Terphenyl-d14	12.181	244	855352	5.0103	ug/L	0.00
Spiked Amount 5.000			Recovery	=	100.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	107215	4.9462	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18338.D
Acq On : 10 Jun 2016 10:36
Operator : MES
Sample : WG572230-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 10 18:15:30 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

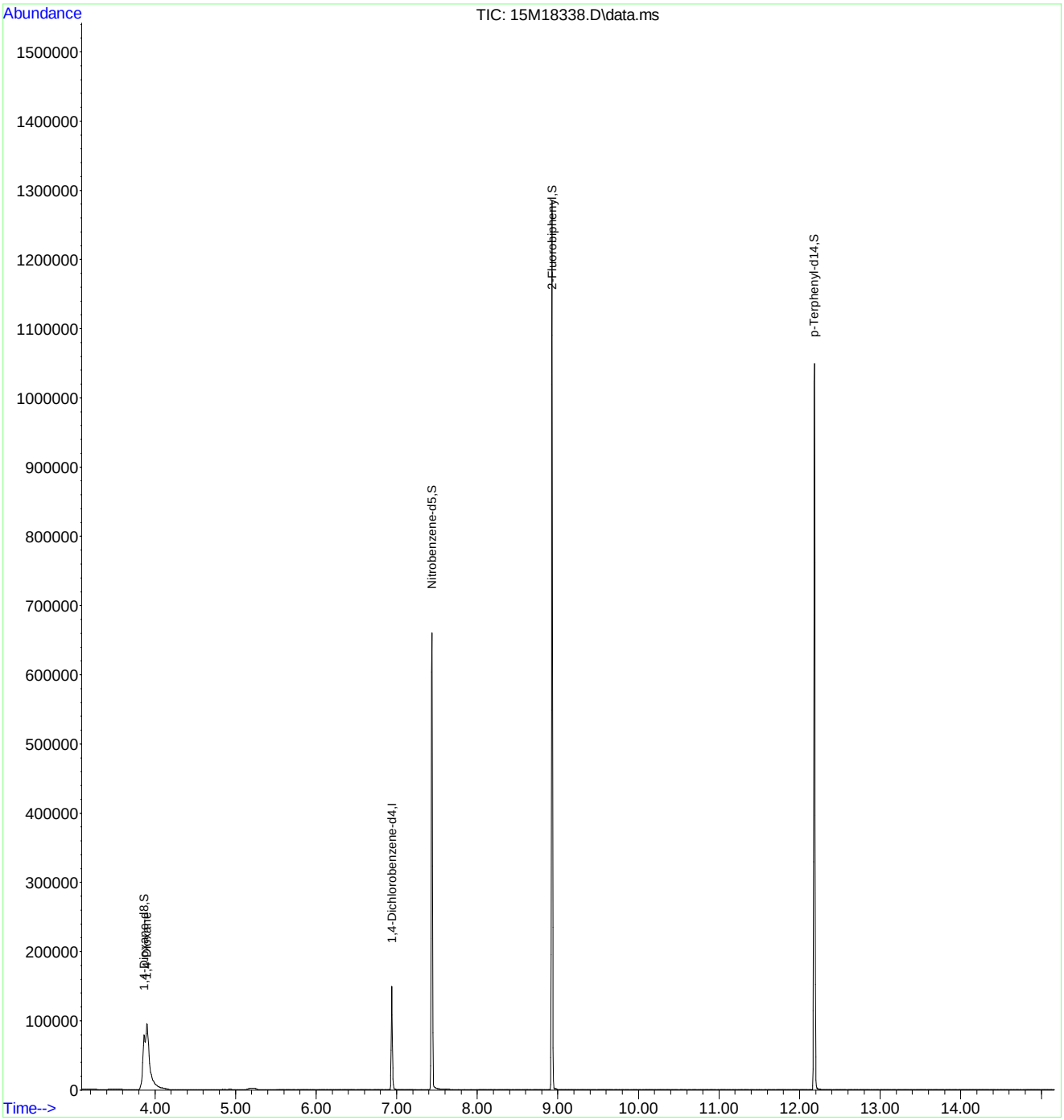

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18339.D
Acq On : 10 Jun 2016 11:00
Operator : MES
Sample : WG572230-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 10 18:15:34 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	56194	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	248072	10.5474	ug/L	0.00
Spiked Amount 5.000			Recovery = 211.00%			
4) Nitrobenzene-d5	7.436	82	628184	10.6403	ug/L	0.00
Spiked Amount 5.000			Recovery = 212.80%			
5) 2-Fluorobiphenyl	8.926	172	1513331	10.3070	ug/L	0.00
Spiked Amount 5.000			Recovery = 206.20%			
6) p-Terphenyl-d14	12.184	244	1587021	11.0217	ug/L	0.00
Spiked Amount 5.000			Recovery = 220.40%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	192761	10.5434	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18339.D
Acq On : 10 Jun 2016 11:00
Operator : MES
Sample : WG572230-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 10 18:15:34 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

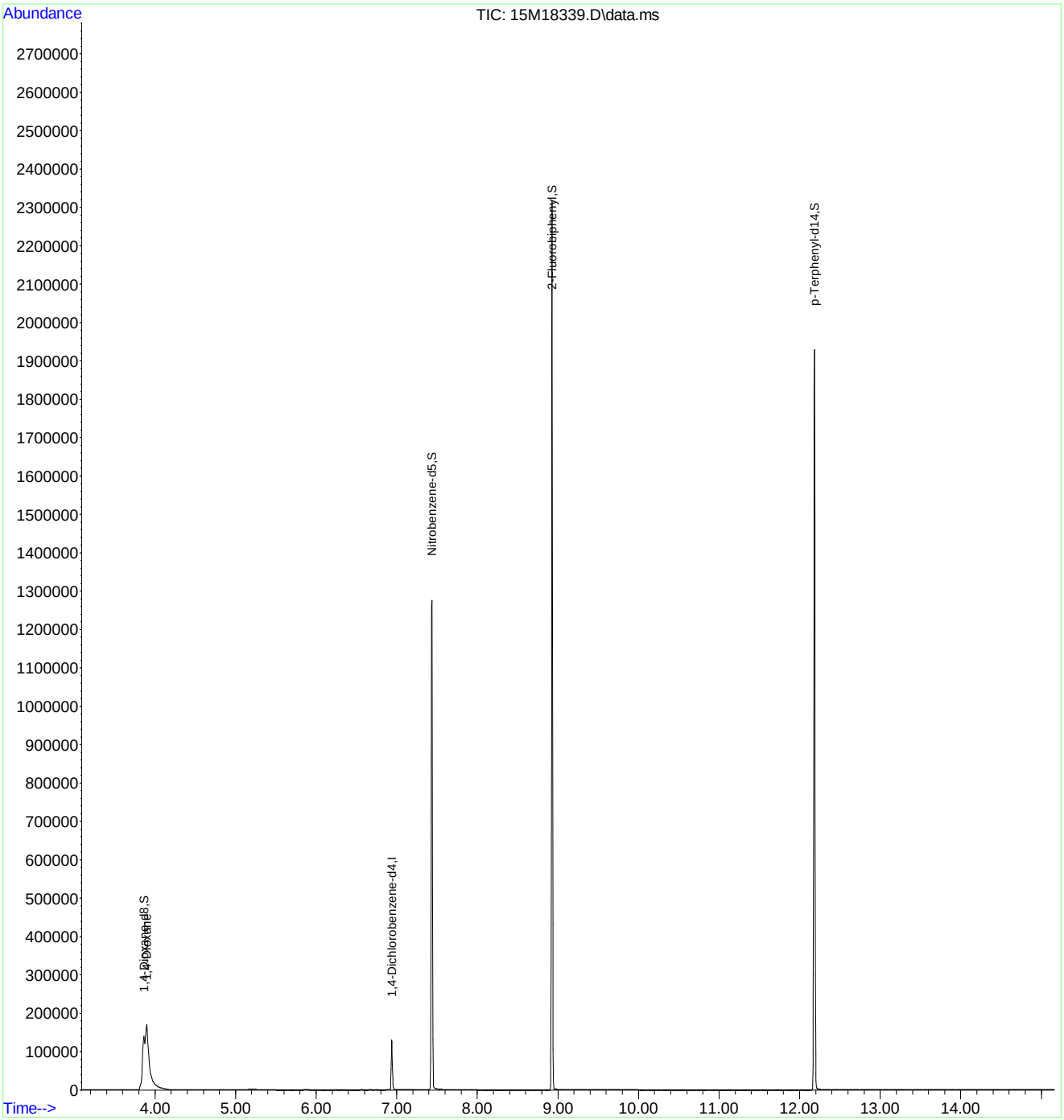

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18340.D
Acq On : 10 Jun 2016 11:22
Operator : MES
Sample : WG572230-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 10 18:15:37 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.940	152	60457	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.862	96	187351	7.4040 ug/L	0.00
Spiked Amount 5.000			Recovery	= 148.00%	
4) Nitrobenzene-d5	7.431	82	466388	7.4103 ug/L	0.00
Spiked Amount 5.000			Recovery	= 148.20%	
5) 2-Fluorobiphenyl	8.926	172	1170859	7.4122 ug/L	0.00
Spiked Amount 5.000			Recovery	= 148.20%	
6) p-Terphenyl-d14	12.192	244	1205938	7.7846 ug/L	0.01
Spiked Amount 5.000			Recovery	= 155.60%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.897	58	146003	7.4228 ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18340.D
Acq On : 10 Jun 2016 11:22
Operator : MES
Sample : WG572230-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 10 18:15:37 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

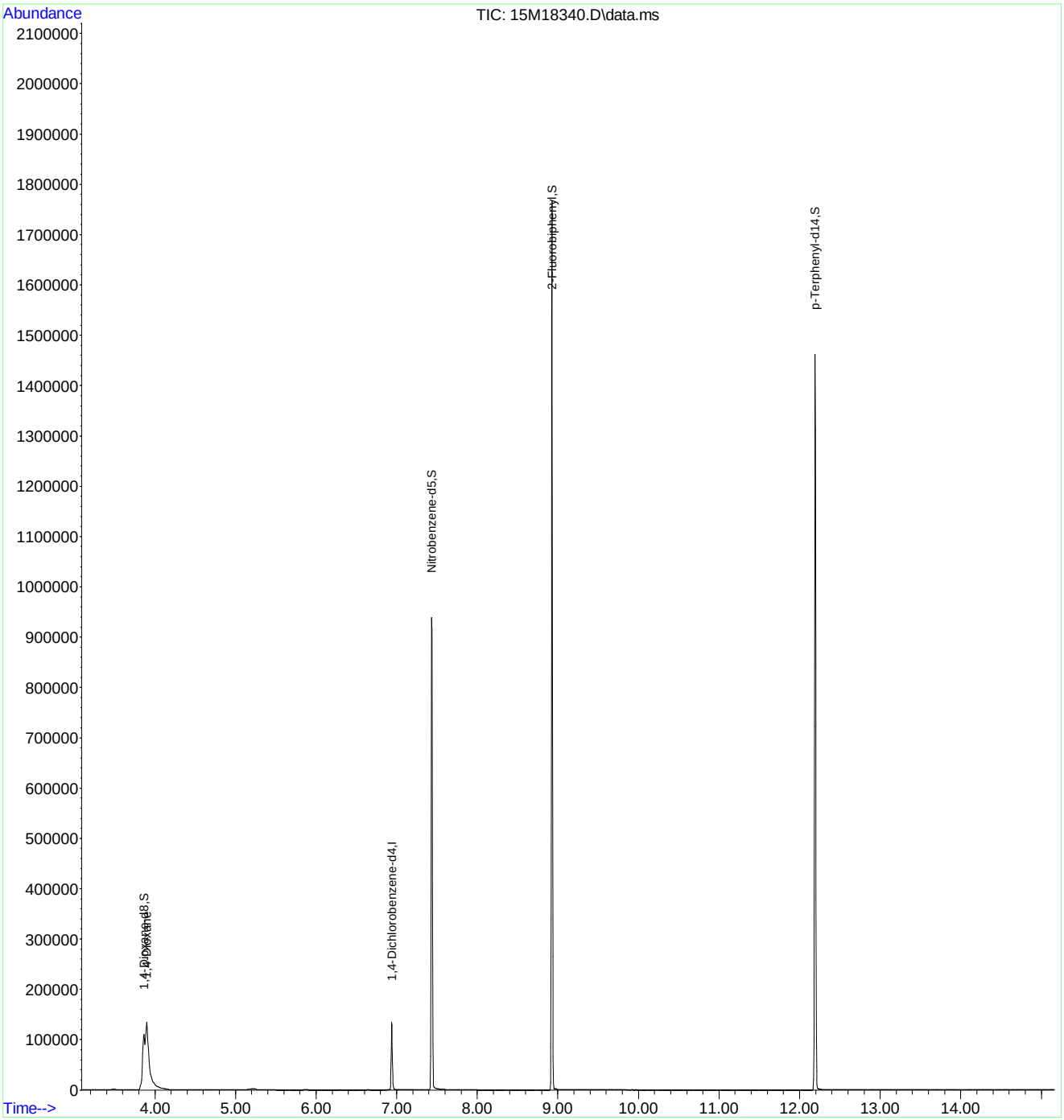

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18341.D
Acq On : 10 Jun 2016 11:45
Operator : MES
Sample : WG572230-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 10 18:15:40 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.940	152	45954	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.848	96	46972	2.4422 ug/L	-0.01
Spiked Amount 5.000			Recovery	= 48.80%	
4) Nitrobenzene-d5	7.436	82	97423	2.1945 ug/L	0.00
Spiked Amount 5.000			Recovery	= 43.80%	
5) 2-Fluorobiphenyl	8.926	172	301696	2.5127 ug/L	0.00
Spiked Amount 5.000			Recovery	= 50.20%	
6) p-Terphenyl-d14	12.188	244	286720	2.4350 ug/L	0.00
Spiked Amount 5.000			Recovery	= 48.60%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.883	58	36488	2.4405 ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18341.D
Acq On : 10 Jun 2016 11:45
Operator : MES
Sample : WG572230-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 10 18:15:40 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

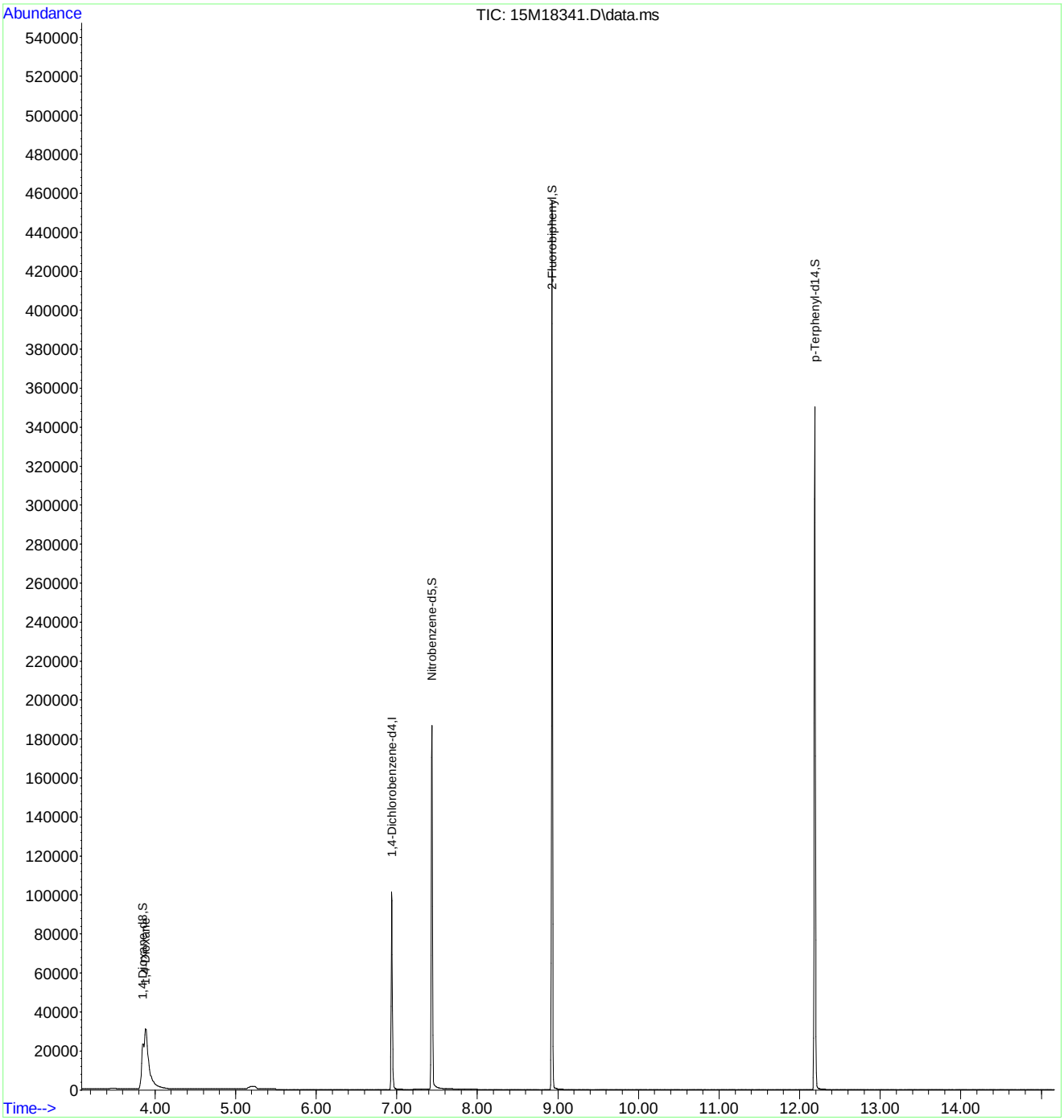

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18342.D
Acq On : 10 Jun 2016 12:08
Operator : MES
Sample : WG572230-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 10 18:15:43 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	59037	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	24054	0.9735	ug/L	0.00
Spiked Amount 5.000			Recovery = 19.40%			
4) Nitrobenzene-d5	7.436	82	44358	0.9184	ug/L	0.00
Spiked Amount 5.000			Recovery = 18.40%			
5) 2-Fluorobiphenyl	8.926	172	151018	0.9790	ug/L	0.00
Spiked Amount 5.000			Recovery = 19.60%			
6) p-Terphenyl-d14	12.199	244	140040	0.9257	ug/L	0.02
Spiked Amount 5.000			Recovery = 18.60%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.904	58	18621	0.9695	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18342.D
Acq On : 10 Jun 2016 12:08
Operator : MES
Sample : WG572230-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 10 18:15:43 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

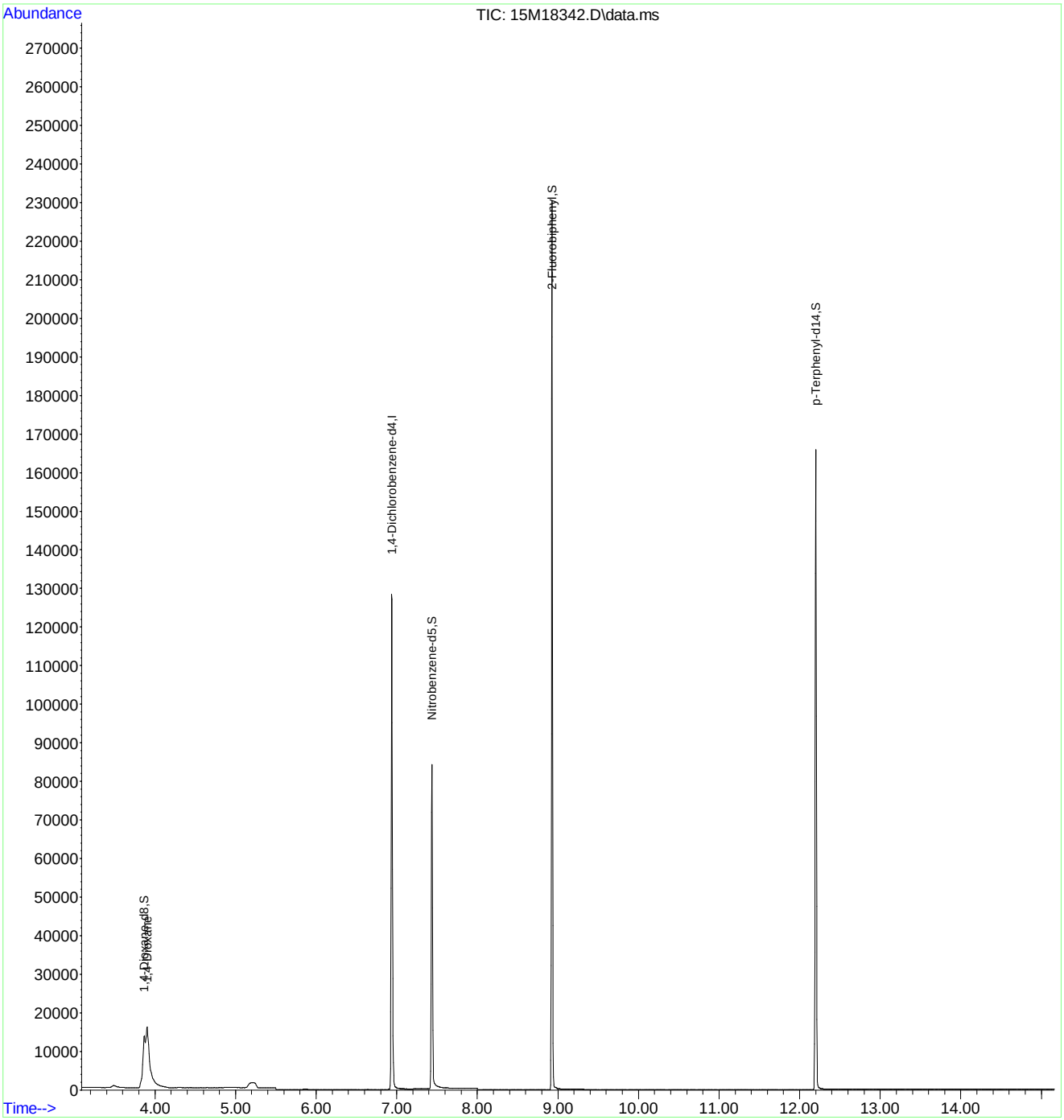

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18343.D
Acq On : 10 Jun 2016 12:30
Operator : MES
Sample : WG572230-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 10 18:15:46 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	51531	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	8760	0.4062	ug/L	0.00
Spiked Amount 5.000			Recovery	=	8.20%	
4) Nitrobenzene-d5	7.436	82	14371	0.4779	ug/L	0.00
Spiked Amount 5.000			Recovery	=	9.60%	
5) 2-Fluorobiphenyl	8.926	172	54404	0.4041	ug/L	0.00
Spiked Amount 5.000			Recovery	=	8.00%	
6) p-Terphenyl-d14	12.203	244	49910	0.3780	ug/L	0.02
Spiked Amount 5.000			Recovery	=	7.60%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	6733	0.4016	ug/L	79

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18343.D
Acq On : 10 Jun 2016 12:30
Operator : MES
Sample : WG572230-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 10 18:15:46 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

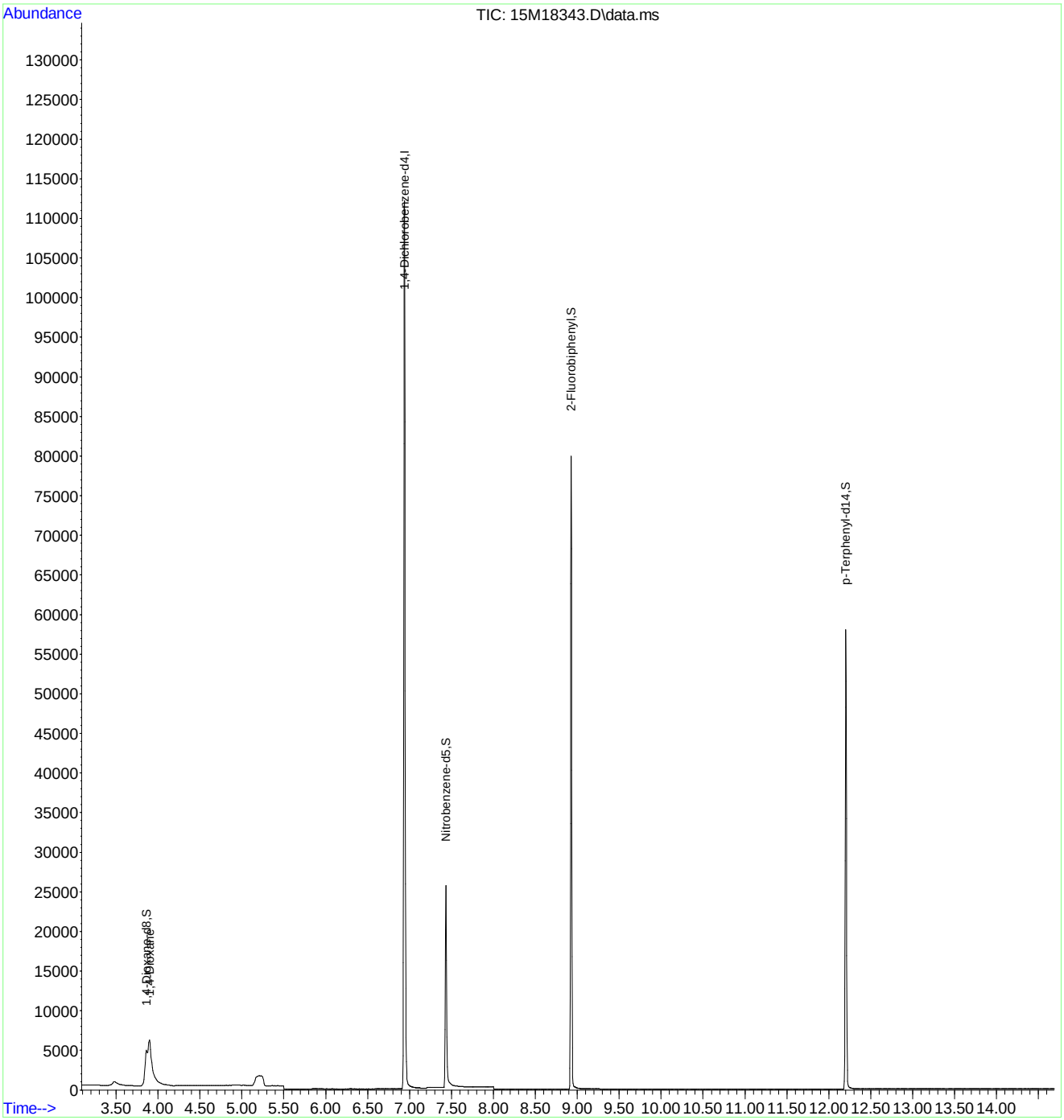

Nitrobenzene-d5

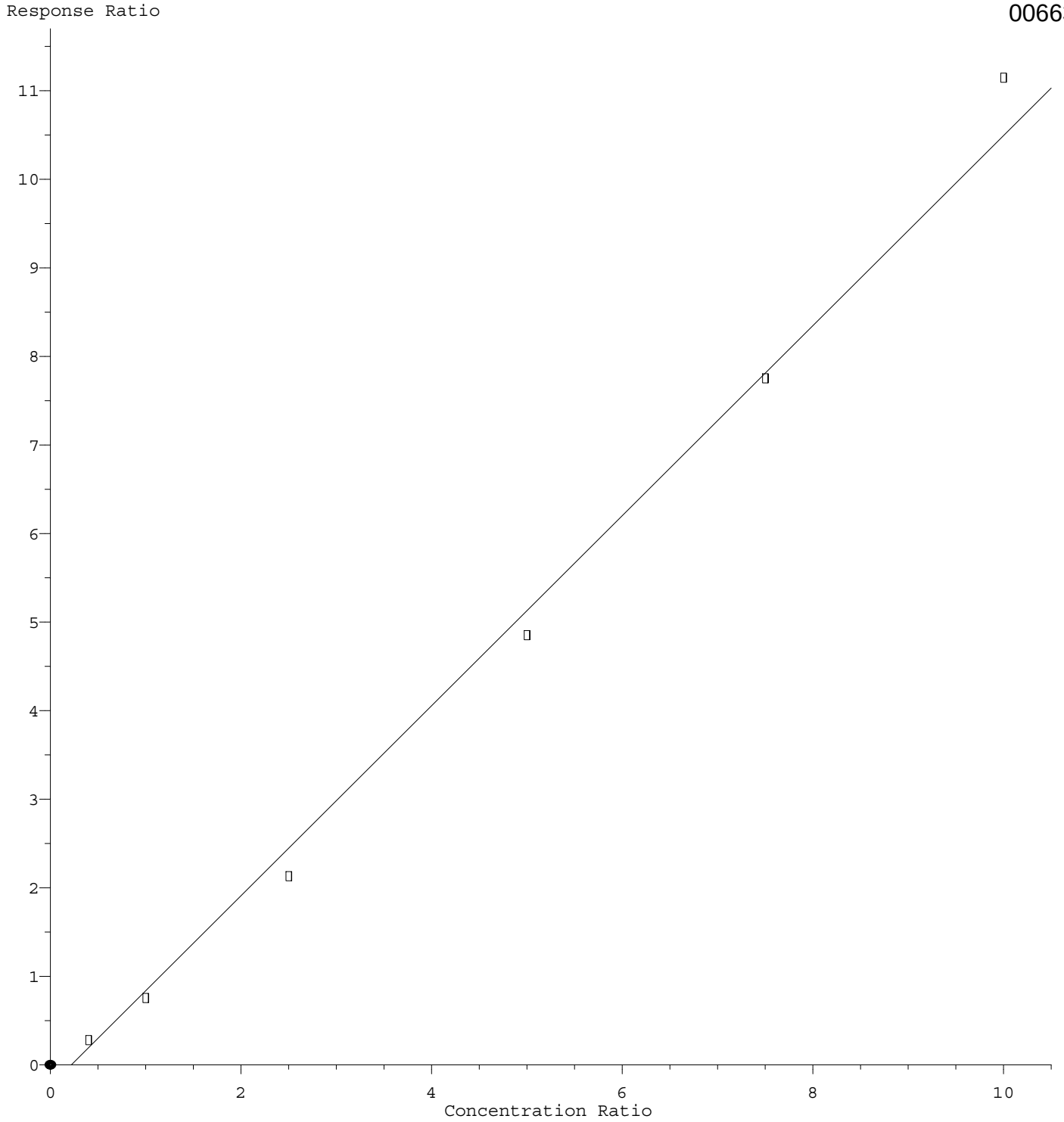

Response = 1.07e+000 * Amt - 2.34e-001
Coef of Det (r^2) = 0.994 Curve Fit: wlr(1/a)
Method Name: C:\msdchem\1\methods\DIOXANE_D8.M
Calibration Table Last Updated: Fri Jun 10 12:46:00 2016

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18344.D
Acq On : 10 Jun 2016 12:52
Operator : MES
Sample : WG572230-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 10 18:15:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	51498	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.897	96	61	0.0028	ug/L	0.04
Spiked Amount 5.000			Recovery	=	0.00%	
4) Nitrobenzene-d5	7.442	82	61	0.2190	ug/L	0.00
Spiked Amount 5.000			Recovery	=	4.40%	
5) 2-Fluorobiphenyl	8.926	172	23	0.0002	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.214	244	150	0.0011	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	85662	5.1127	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18344.D
Acq On : 10 Jun 2016 12:52
Operator : MES
Sample : WG572230-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 10 18:15:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

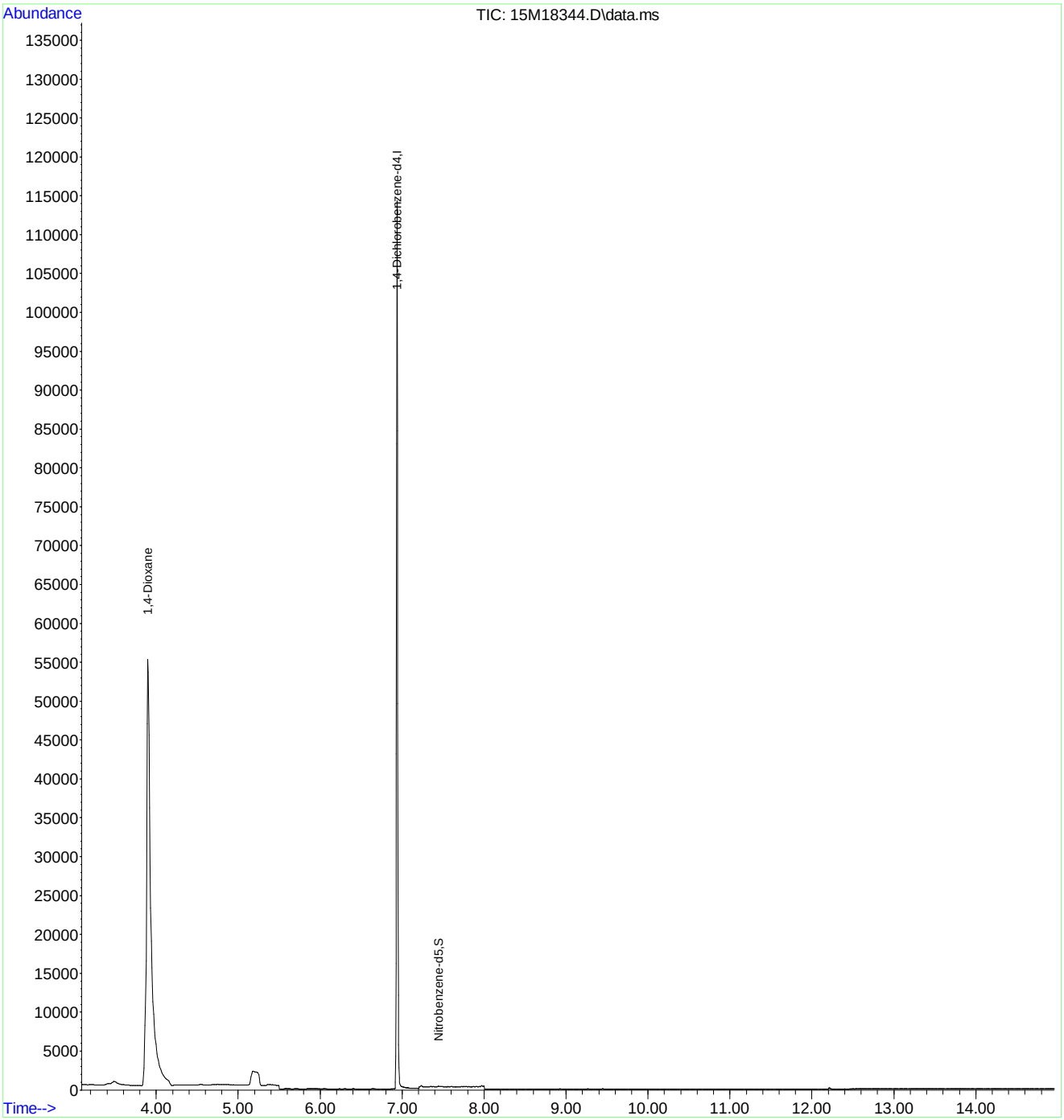

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18344.D
Acq On : 10 Jun 2016 12:52
Operator : MES
Sample : WG572230-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 10 18:15:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	78	0.00
2	1,4-Dioxane	5.000	5.113	-2.3	80	0.00
3 S	1,4-Dioxane-d8	5.000	0.003	99.9#	0	0.04
4 S	Nitrobenzene-d5	5.000	0.219	95.6#	0	0.00
5 S	2-Fluorobiphenyl	5.000	0.000	100.0#	0	0.00
6 S	p-Terphenyl-d14	5.000	0.001	100.0#	0	0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18400.D
Acq On : 16 Jun 2016 10:00
Operator : MES
Sample : WG572958-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 16 10:16:14 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.951	152	63702	1.0000	ug/mL	# 0.01
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.876	96	138261	5.1857	ug/L	0.01
Spiked Amount 5.000			Recovery	= 103.80%		
4) Nitrobenzene-d5	7.447	82	239213	3.7190	ug/L	0.01
Spiked Amount 5.000			Recovery	= 74.40%		
5) 2-Fluorobiphenyl	8.937	172	842255	5.0603	ug/L	0.01
Spiked Amount 5.000			Recovery	= 101.20%		
6) p-Terphenyl-d14	12.228	244	851642	5.2175	ug/L	0.05
Spiked Amount 5.000			Recovery	= 104.40%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.918	58	105339	5.0826	ug/L	81

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18400.D
Acq On : 16 Jun 2016 10:00
Operator : MES
Sample : WG572958-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 16 10:16:14 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

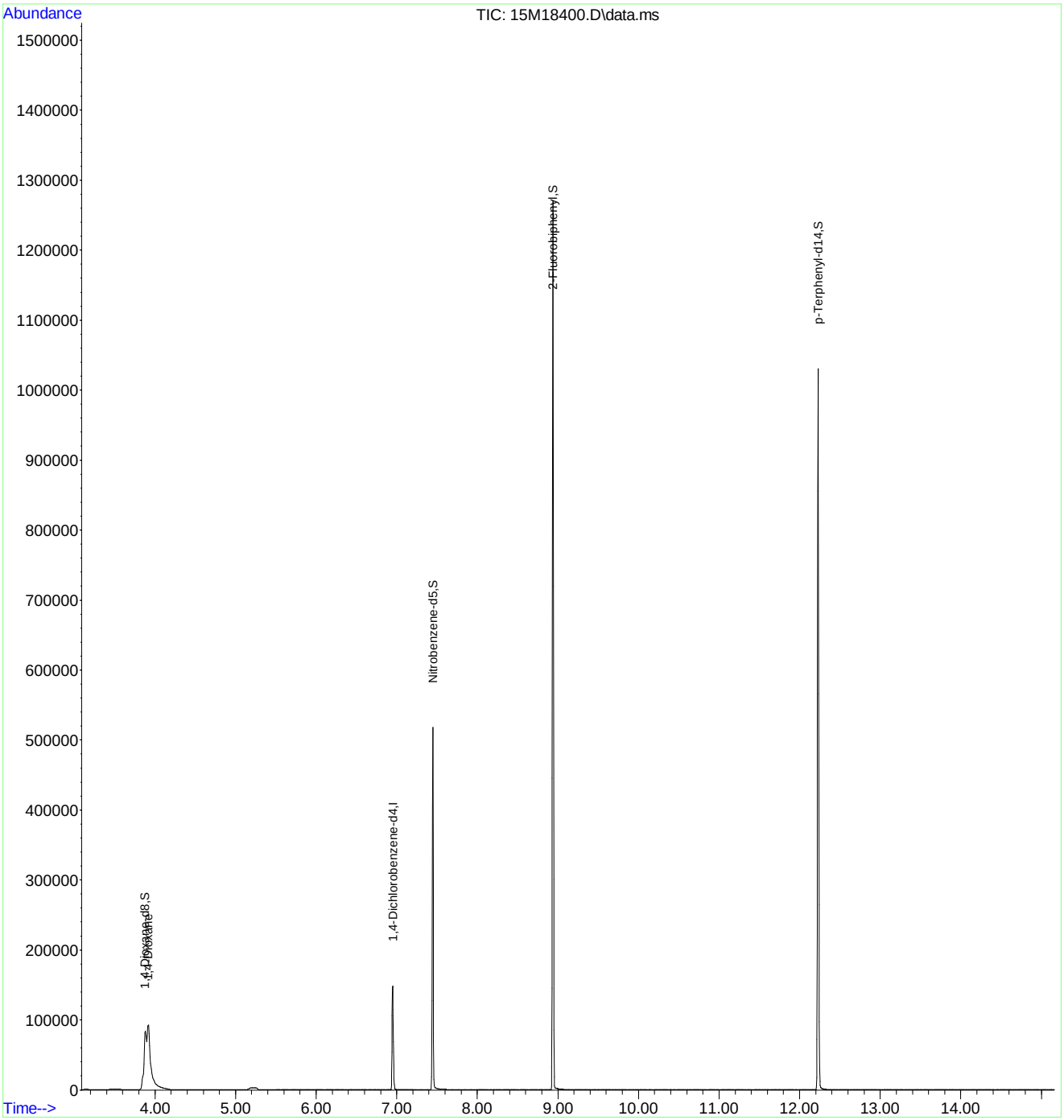

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18400.D
Acq On : 16 Jun 2016 10:00
Operator : MES
Sample : WG572958-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 16 10:16:14 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	96	0.01
2		1,4-Dioxane	5.000	5.083	-1.7	98	0.02
3	S	1,4-Dioxane-d8	5.000	5.186	-3.7	100	0.01
4	S	Nitrobenzene-d5	5.000	3.719	25.6#	74	0.01
5	S	2-Fluorobiphenyl	5.000	5.060	-1.2	100	0.01
6	S	p-Terphenyl-d14	5.000	5.217	-4.3	100	0.05

(#) = Out of Range SPCC's out = 0 CCC's out = 0

2.2.1.5 Raw QC Data

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18337.D
Acq On : 10 Jun 2016 10:18
Operator : MES
Sample : WG572230-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

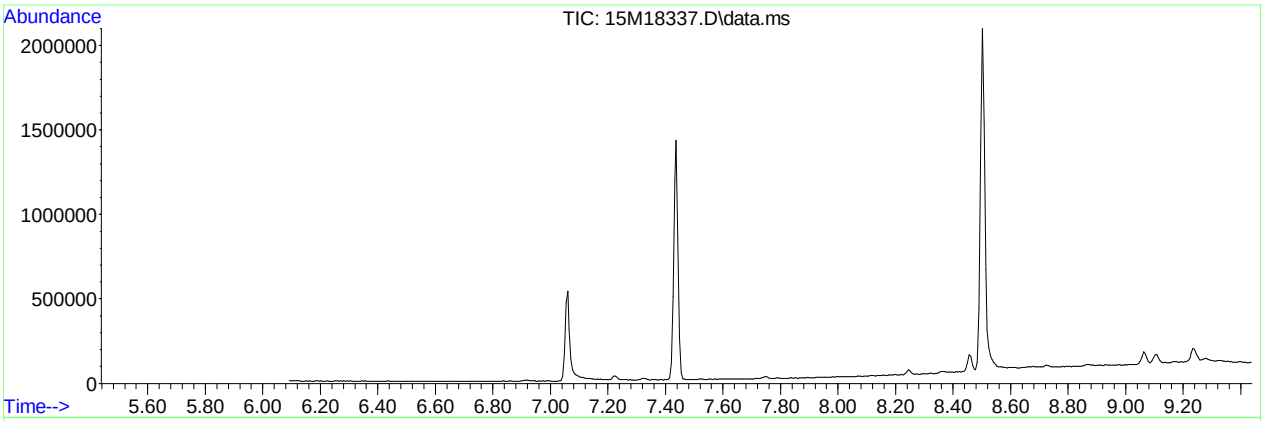

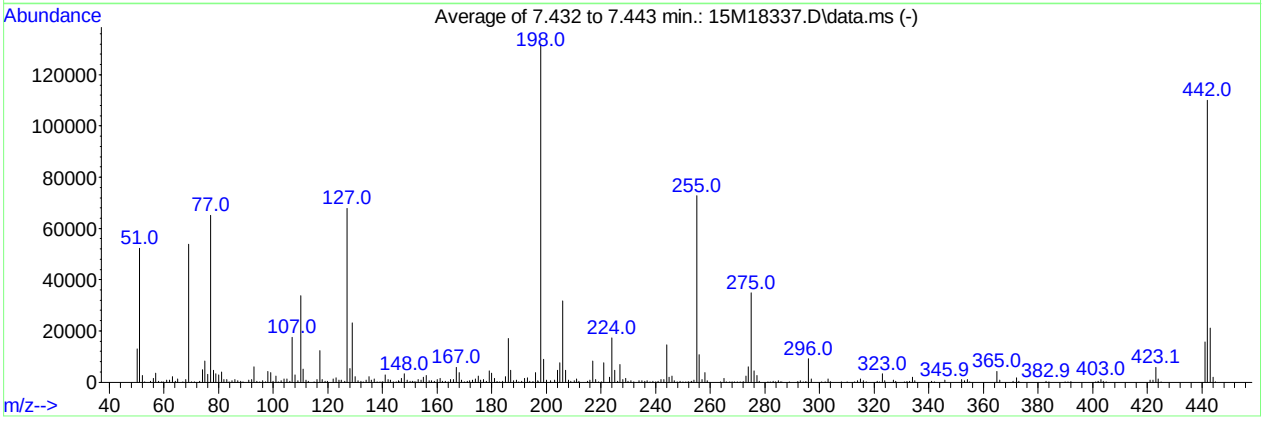

AutoFind: Scans 235, 236, 237; Background Corrected with Scan 229

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	39.5	52157	PASS
68	69	0.00	2	1.9	1026	PASS
69	198	0.00	100	40.8	53844	PASS
70	69	0.00	2	0.2	120	PASS
127	198	40	60	51.4	67853	PASS
197	198	0.00	1	0.4	505	PASS
198	198	100	100	100.0	131981	PASS
199	198	5	9	6.7	8869	PASS
275	198	10	30	26.4	34853	PASS
365	198	1	100	3.2	4186	PASS
441	443	0.01	100	73.9	15632	PASS
442	198	40	100	83.4	110112	PASS
443	442	17	23	19.2	21163	PASS

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18337.D
Acq On : 10 Jun 2016 10:18
Operator : MES
Sample : WG572230-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 10 10:29:37 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

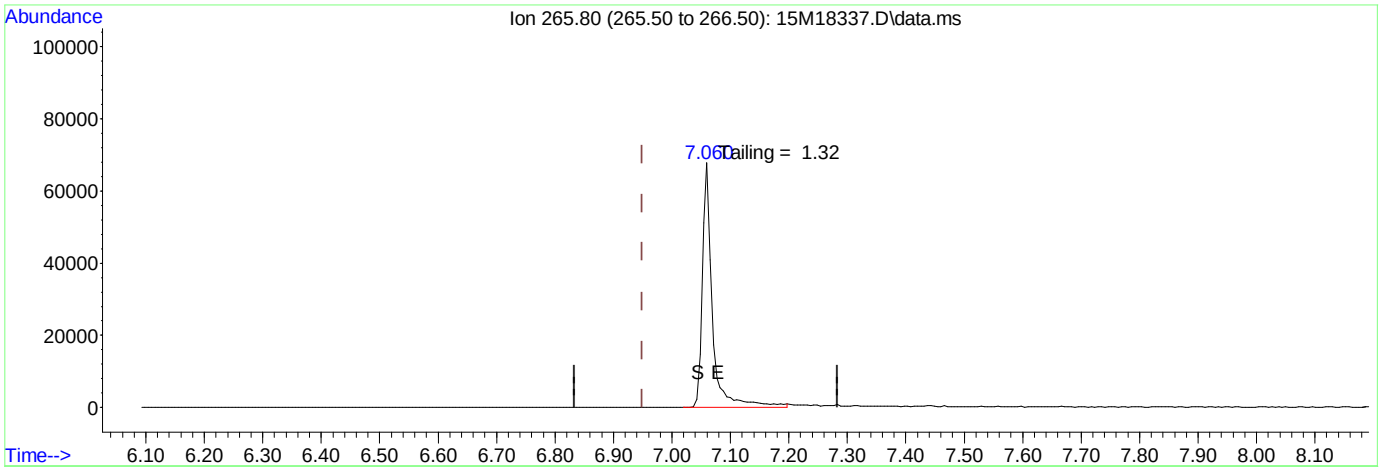

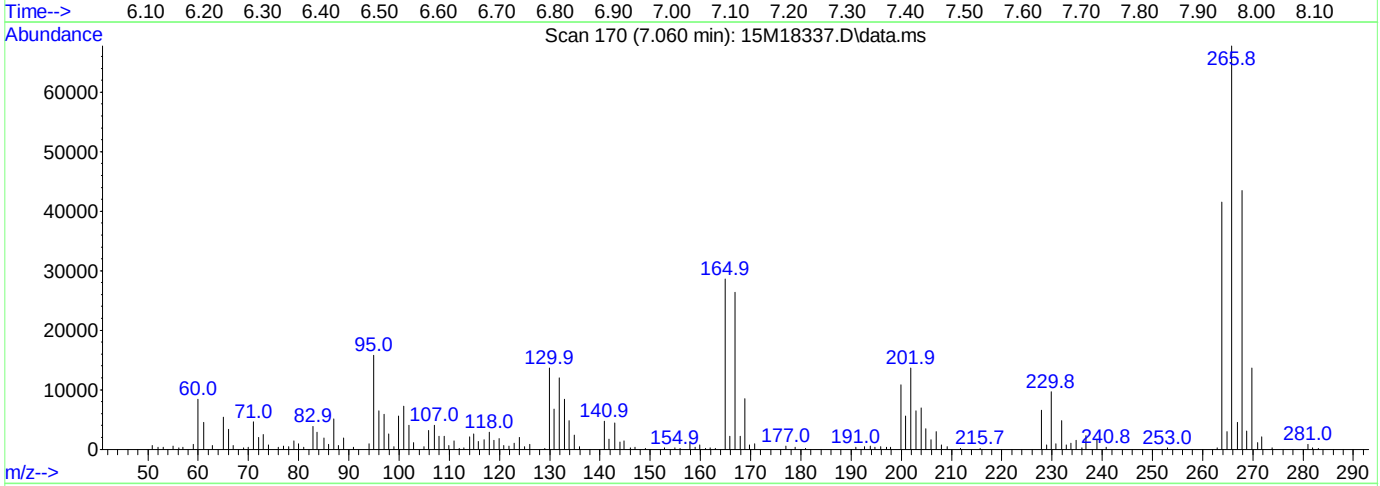

(1) Pentachlorophenol

7.060min (+ 0.111) 0.00 ug/ml

response 82111

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18337.D
Acq On : 10 Jun 2016 10:18
Operator : MES
Sample : WG572230-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 10 10:29:37 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

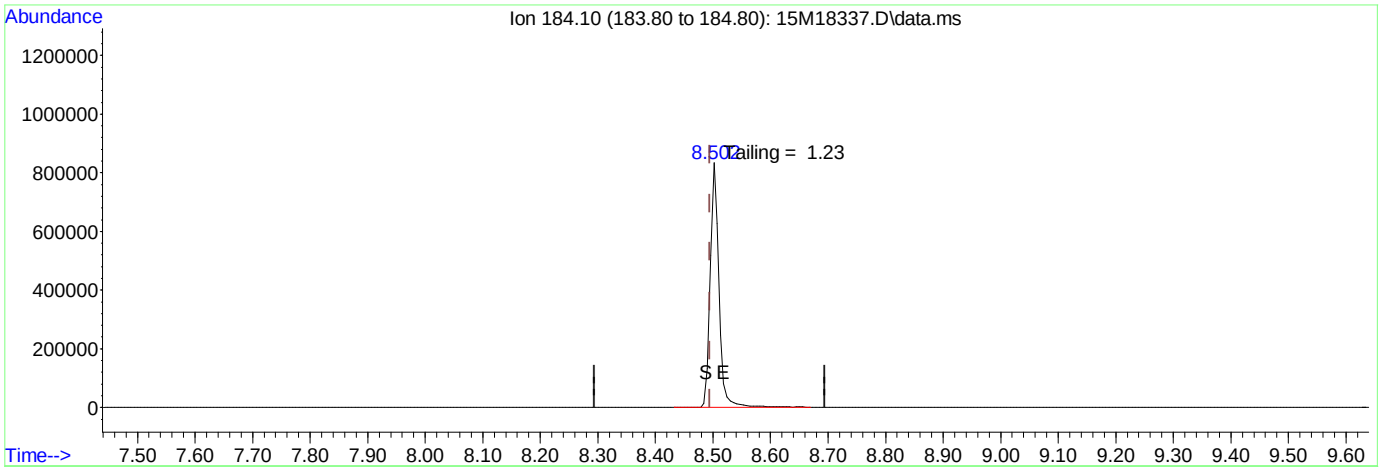

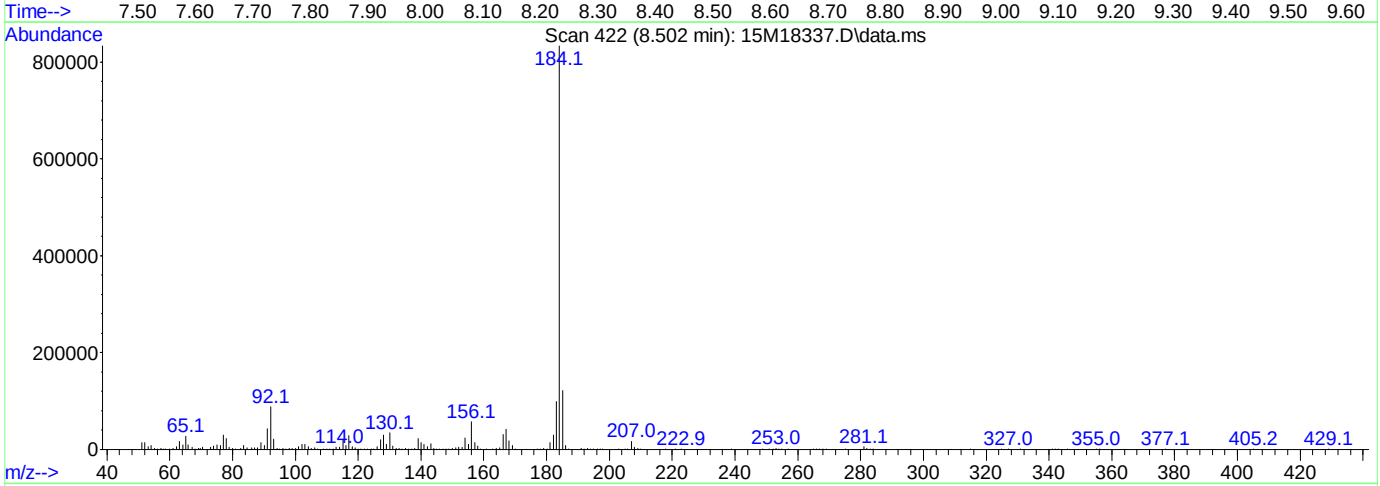

TIC: 15M18337.D\data.ms

(2) Benzidine

8.502min (+ 0.008) 0.00 ug/ml

response 896980

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18337.D
Acq On : 10 Jun 2016 10:18
Operator : MES
Sample : WG572230-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 10 10:29:37 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

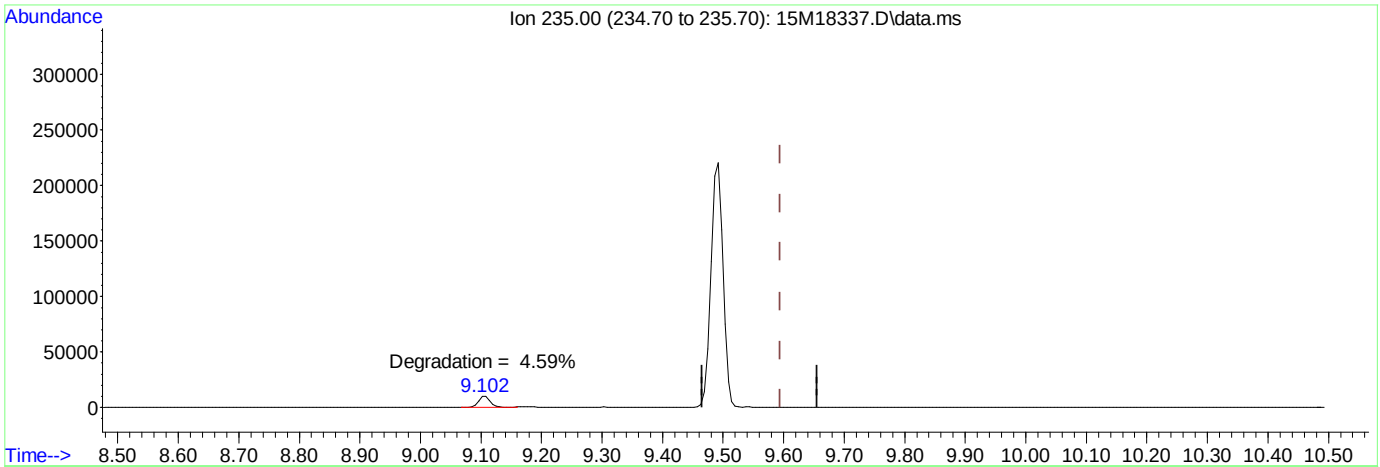

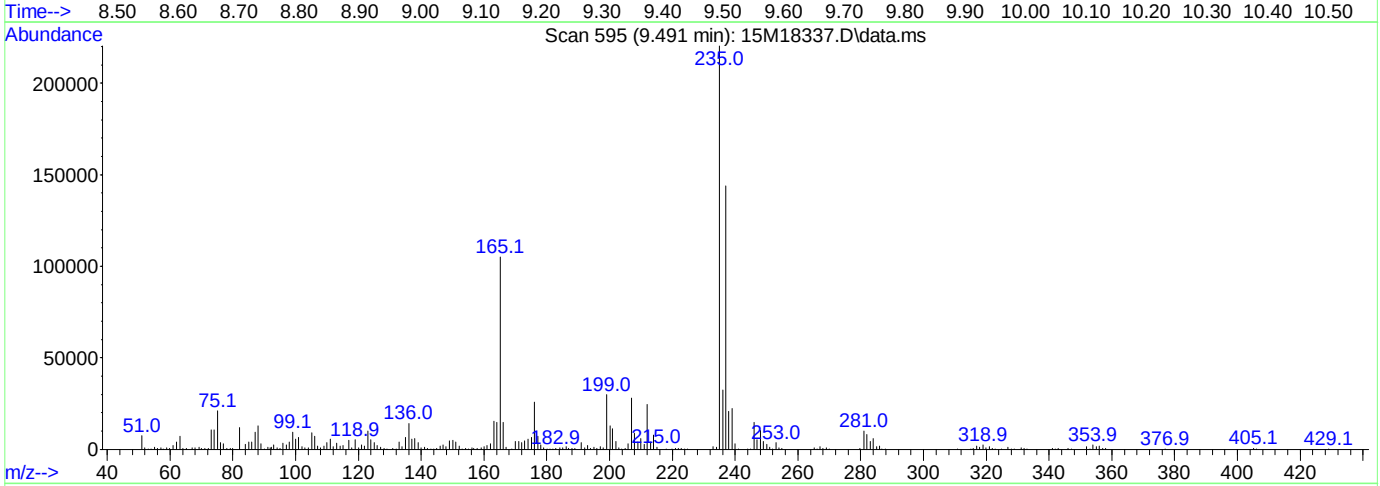

TIC: 15M18337.D\data.ms

(3) DDT

9.491min (-0.103) 0.00 ug/ml

response 283319

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18399.D
Acq On : 16 Jun 2016 9:38
Operator : MES
Sample : WG572958-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

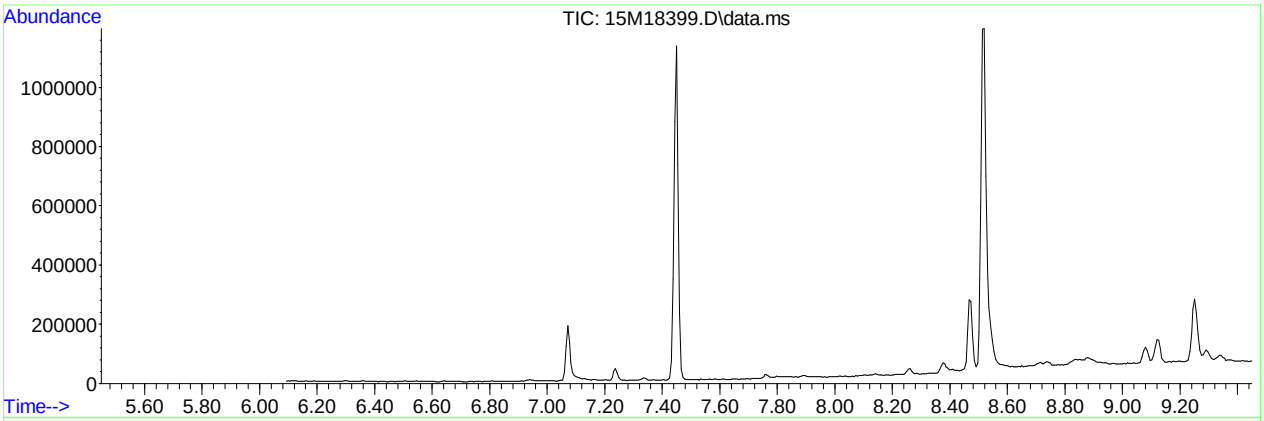

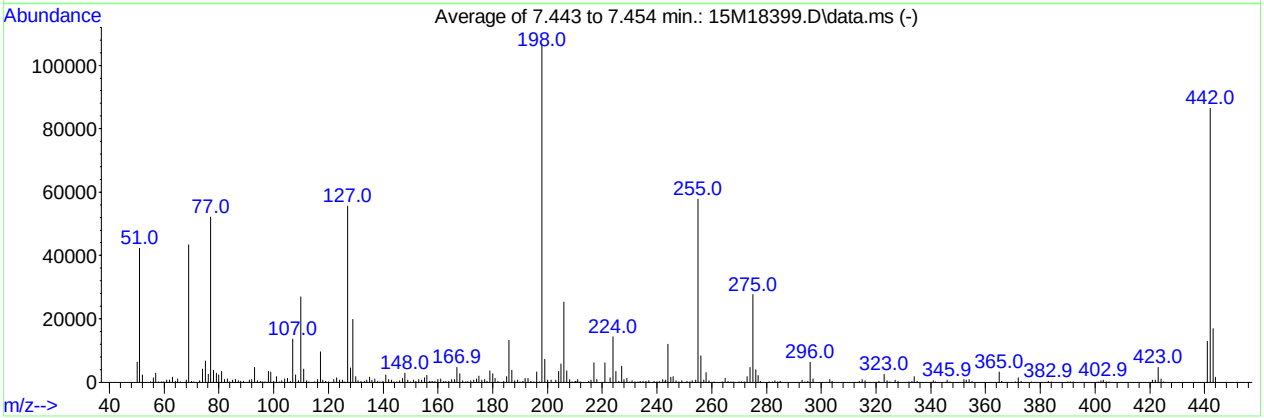

AutoFind: Scans 237, 238, 239; Background Corrected with Scan 231

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	39.7	42335	PASS
68	69	0.00	2	1.6	714	PASS
69	198	0.00	100	40.7	43391	PASS
70	69	0.00	2	0.6	279	PASS
127	198	40	60	52.1	55592	PASS
197	198	0.00	1	0.1	68	PASS
198	198	100	100	100.0	106736	PASS
199	198	5	9	6.7	7172	PASS
275	198	10	30	25.9	27632	PASS
365	198	1	100	3.0	3241	PASS
441	443	0.01	100	76.2	12912	PASS
442	198	40	100	81.0	86427	PASS
443	442	17	23	19.6	16937	PASS

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18399.D
Acq On : 16 Jun 2016 9:38
Operator : MES
Sample : WG572958-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 16 09:56:45 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

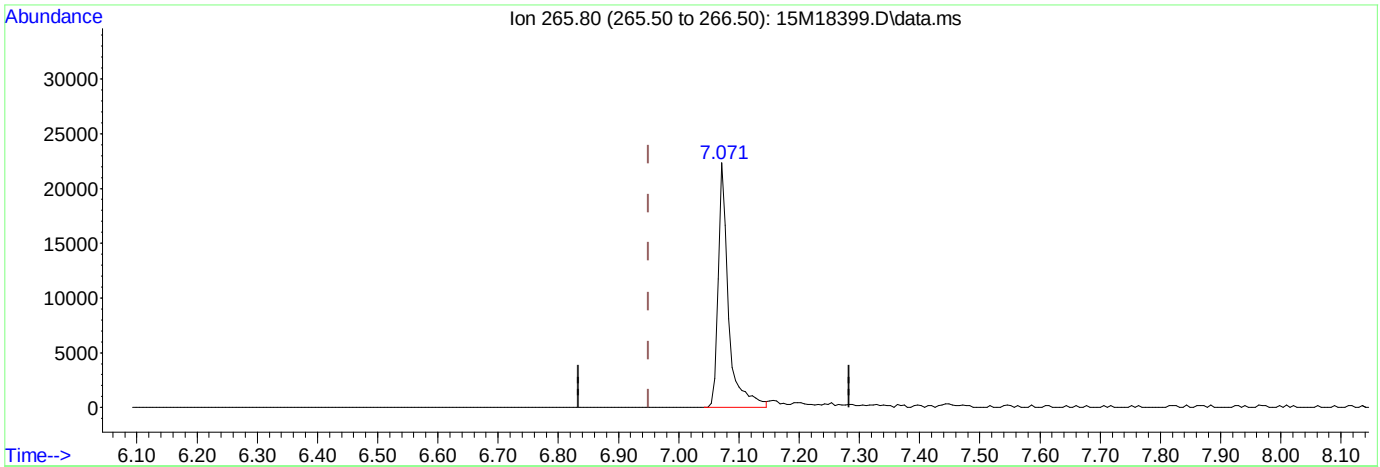

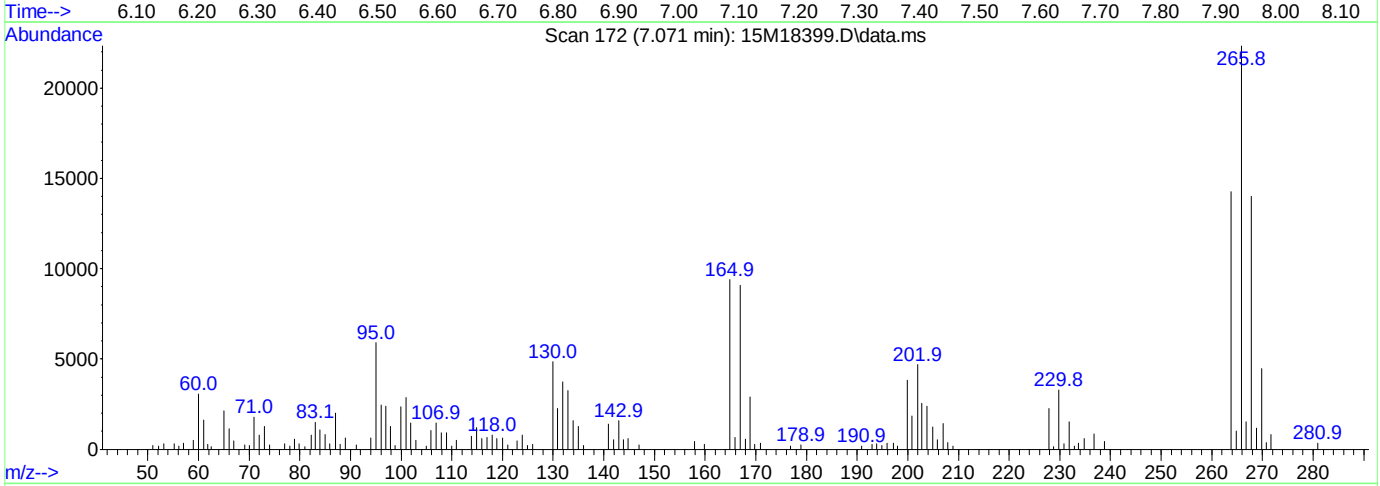

TIC: 15M18399.D\data.ms

(1) Pentachlorophenol

7.071min (+ 0.122) 0.00 ug/ml

response 26601

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18399.D
Acq On : 16 Jun 2016 9:38
Operator : MES
Sample : WG572958-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 16 09:56:45 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

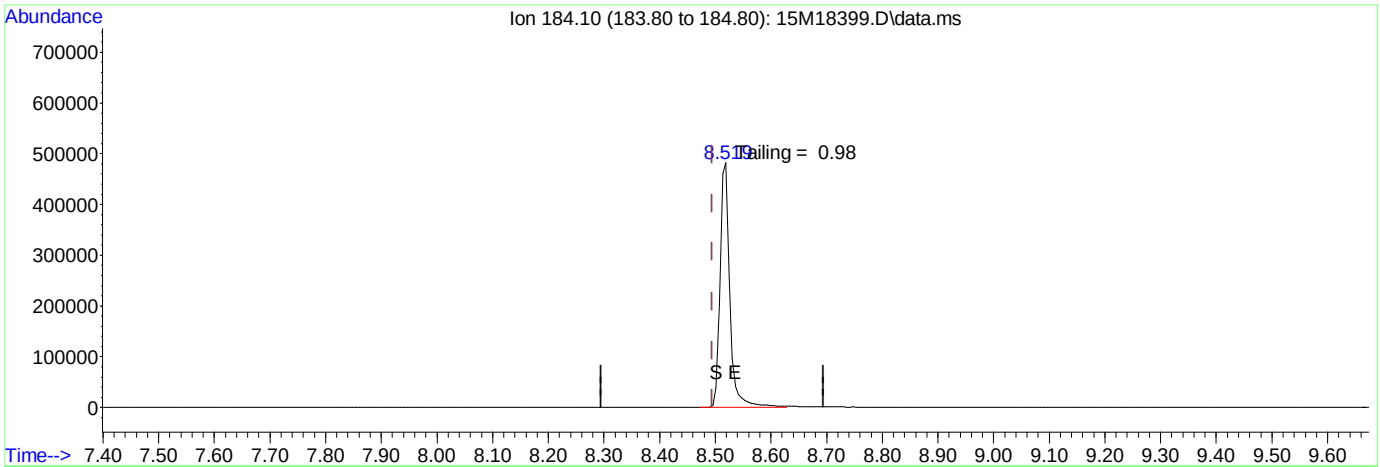

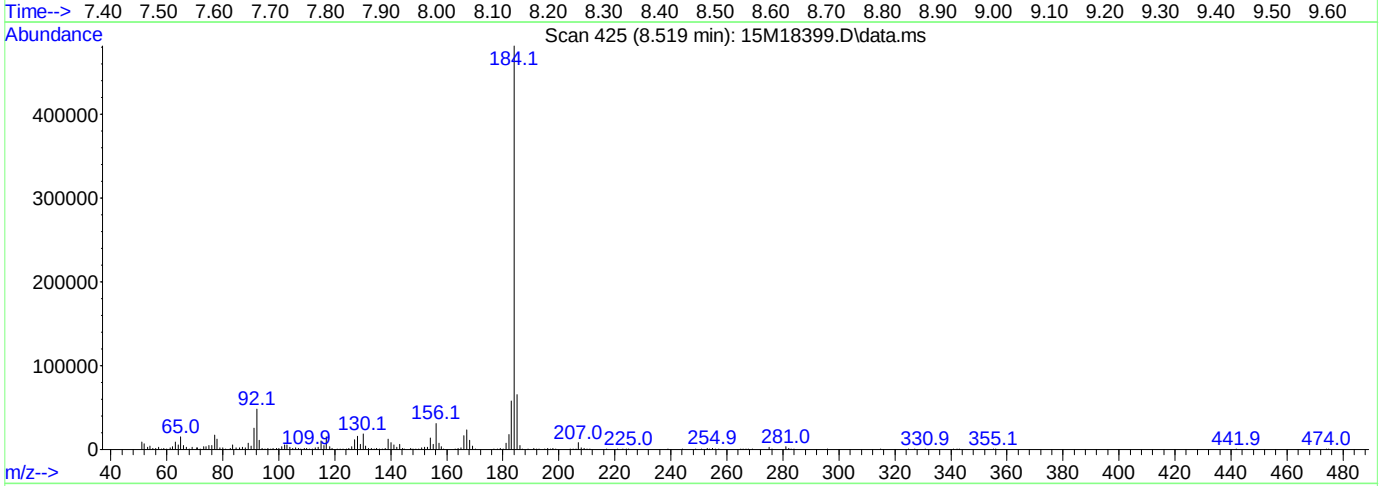

(2) Benzidine

8.519min (+ 0.025) 0.00 ug/ml

response 591309

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18399.D
Acq On : 16 Jun 2016 9:38
Operator : MES
Sample : WG572958-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 16 09:56:45 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

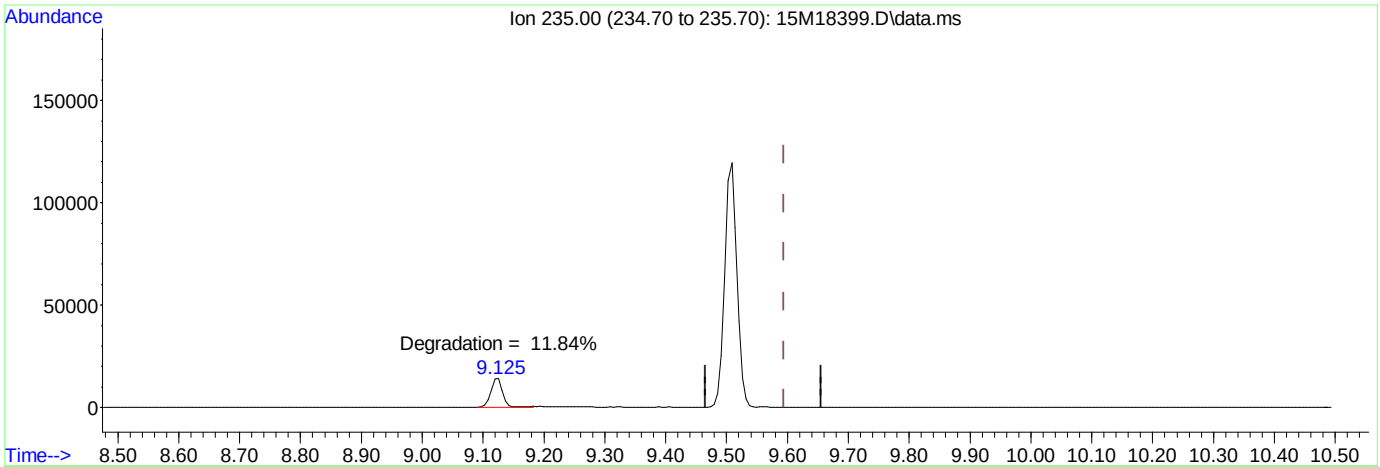

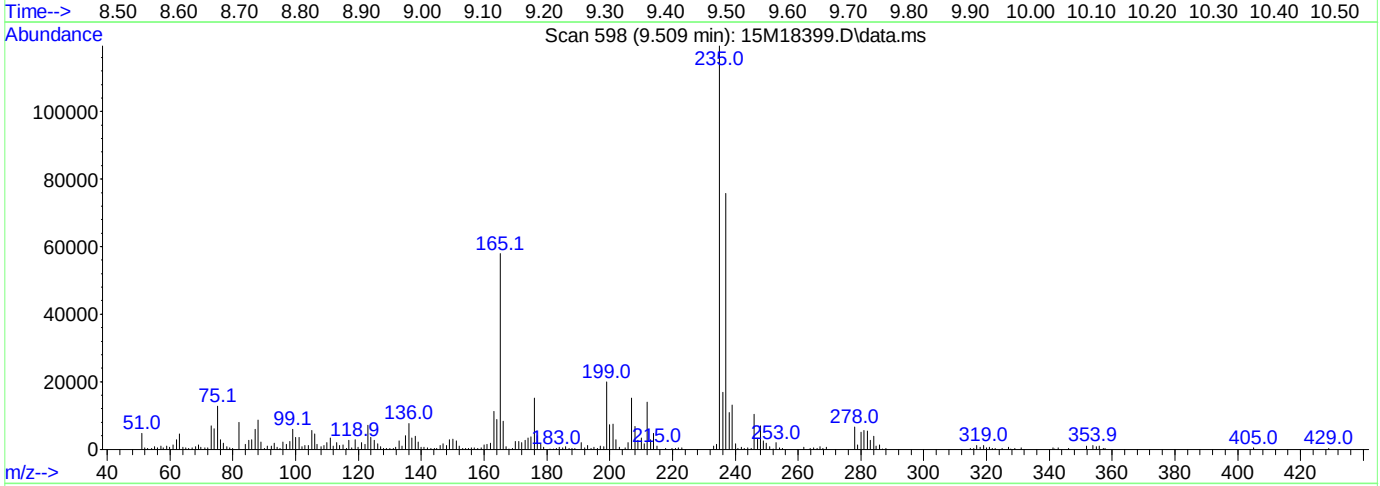

(3) DDT

9.509min (-0.085) 0.00 ug/ml

response 162825

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18401.D
Acq On : 16 Jun 2016 10:23
Operator : MES
Sample : WG572341-01 BLANK 6/13
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 16 12:53:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.948	152	57712	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.876	96	35450	1.4676	ug/L	0.01
Spiked Amount 5.000			Recovery = 29.40%			
4) Nitrobenzene-d5	7.442	82	935690	15.3339	ug/L	0.00
Spiked Amount 5.000			Recovery = 306.60%			
5) 2-Fluorobiphenyl	8.937	172	2176930	14.4366	ug/L	0.01
Spiked Amount 5.000			Recovery = 288.80%			
6) p-Terphenyl-d14	12.221	244	5289384	35.7680	ug/L	0.04
Spiked Amount 5.000			Recovery = 715.40%			

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18401.D
Acq On : 16 Jun 2016 10:23
Operator : MES
Sample : WG572341-01 BLANK 6/13
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 16 12:53:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

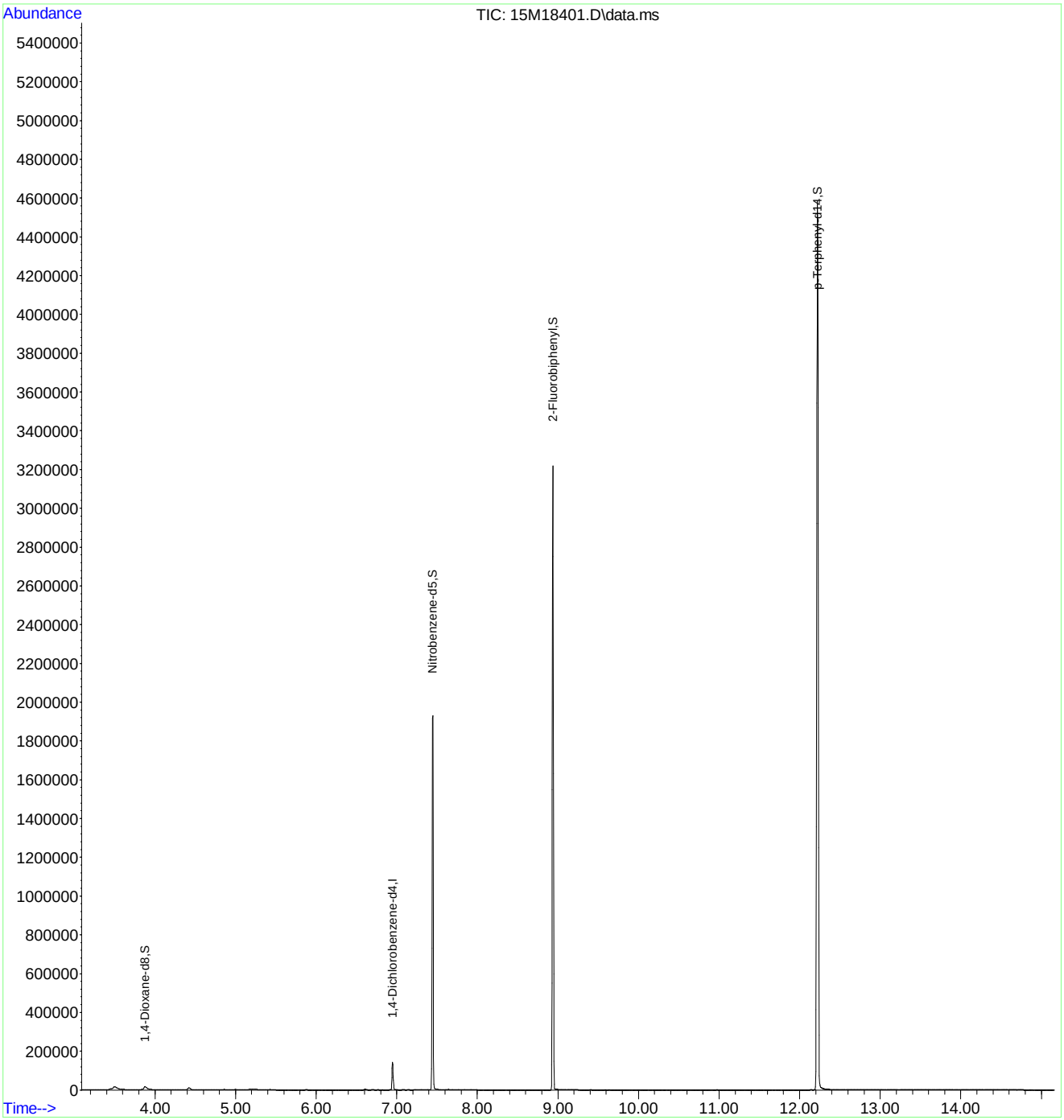

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18402.D
Acq On : 16 Jun 2016 10:46
Operator : MES
Sample : WG572341-02 LCS 6/13
Misc : 1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 16 12:54:04 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.951	152	54087	1.0000	ug/mL	# 0.01
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.883	96	40383	1.7839	ug/L	0.02
Spiked Amount 5.000			Recovery	=	35.60%	
4) Nitrobenzene-d5	7.447	82	8192	0.3591	ug/L	0.01
Spiked Amount 5.000			Recovery	=	7.20%	
5) 2-Fluorobiphenyl	8.937	172	5120	0.0362	ug/L	0.01
Spiked Amount 5.000			Recovery	=	0.80%	
6) p-Terphenyl-d14	12.228	244	1871	0.0135	ug/L	0.05
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.918	58	29330	1.6668	ug/L	82

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18402.D
Acq On : 16 Jun 2016 10:46
Operator : MES
Sample : WG572341-02 LCS 6/13
Misc : 1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 16 12:54:04 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

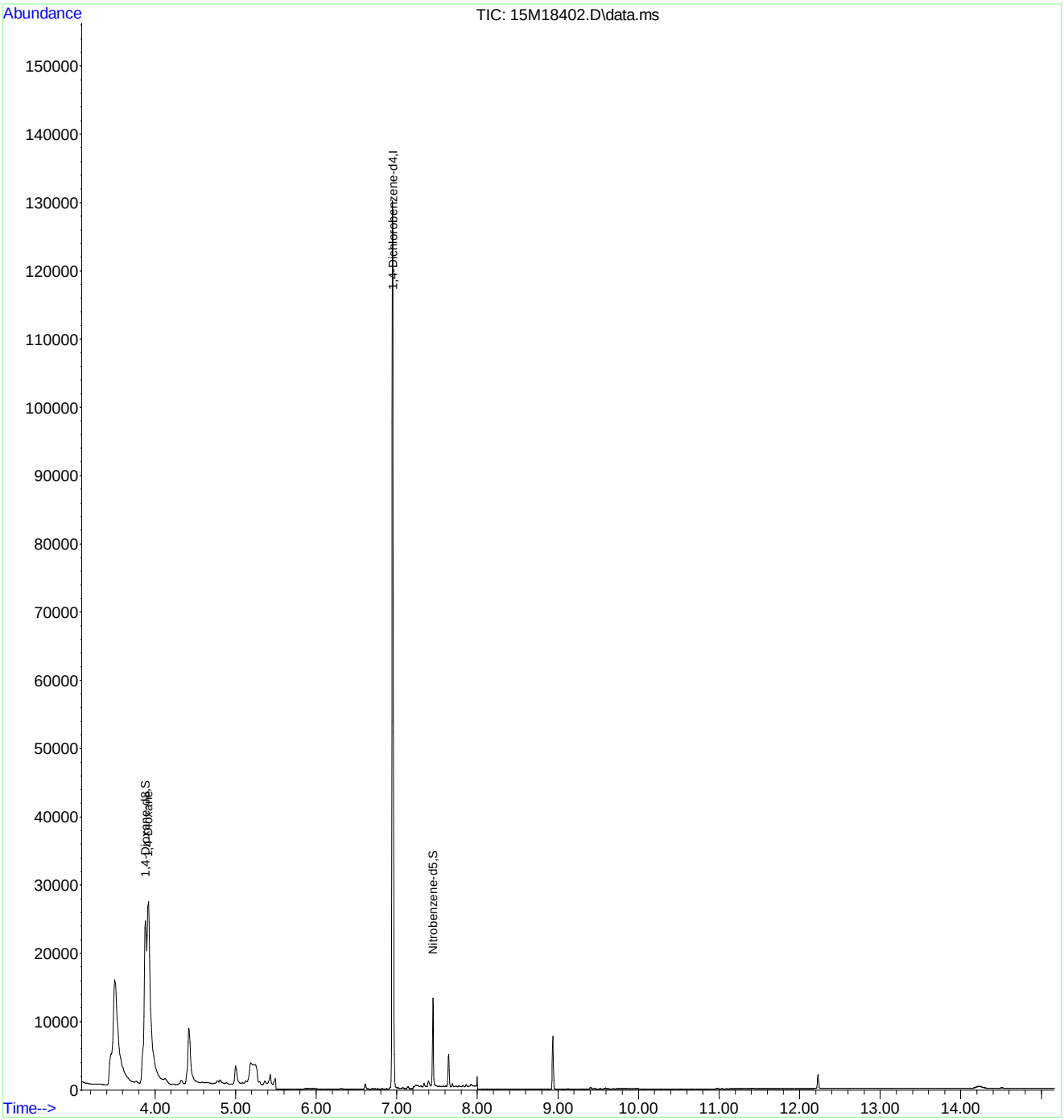

2.2 General Chromatography Data

2.2.2 6850 LC/MS Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060497-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW06-060816	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/10/2016 19:18
Collect Date:	06/08/2016 13:30	**Dilution:**	10	**File ID:**	1LM.LM35255
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	30.3		4.00	2.00	1.00

Certificate of Analysis

Sample #:	L16060497-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW06MS-060816	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/10/2016 12:02
Collect Date:	06/08/2016 13:30	**Dilution:**	1	**File ID:**	1LM.LM35232
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	7.05		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16060497-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW06MSD-060816	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/10/2016 12:21
Collect Date:	06/08/2016 13:30	**Dilution:**	1	**File ID:**	1LM.LM35233
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.39		0.400	0.200	0.100

Certificate of Analysis

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Sample #:	L16060497-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW22-060816	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/10/2016 19:37
Collect Date:	06/08/2016 14:55	**Dilution:**	500	**File ID:**	1LM.LM35256
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	615		200	100	50.0

2.2.2.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1402 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG572200-01 MCT	9,990	
-02 BLK	0.93	
-03 LCS	1.04	
L16060411-01	1433	
-02	1475	
-03	349	
-04	356	
L16060414-01	327	
-02	319	
-03	3510	
-04	4180	
L16060497-01	1546	
-02	1445	
-03	1450	
-04	2560	
L16060504-01	1254	
-02	853	
-03	938	
-04	2350	
L16060575-01	595	
-02	583	
-03	505	

Analyst: Wade T. De[illegible]

Date/Time: 6-10-16 / 1354

DCN#119023

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

Page: 1 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061016_WTD.TXT
Analyst1: WTD Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)
CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35225	WG572198-01 CCB	1	1		06/10/16 09:49
2	1LM.LM35226	WG572198-02 CCV (1.0ug/L)	1	1	STD75510	06/10/16 10:08
3	1LM.LM35227	WG572200-07 MRL (0.2ug/L)	1	1	STD75510	06/10/16 10:27
4	1LM.LM35228	WG572200-01 MCT (0.2ug/L)	1	1	STD75512	06/10/16 10:46
5	1LM.LM35229	WG572200-02 BLANK	1	1		06/10/16 11:05
6	1LM.LM35230	WG572200-03 LCS (0.2ug/L)	1	1	STD75512	06/10/16 11:24
22	1LM.LM35231	L16060497-01	1	1		06/10/16 11:43
23	1LM.LM35232	L16060497-02 MS (0.2ug/L)	1	1	STD75512	06/10/16 12:02
24	1LM.LM35233	L16060497-03 MSD (0.2ug/L)	1	1	STD75512	06/10/16 12:21
10	1LM.LM35234	L16060497-04 50X	1	50		06/10/16 12:40
11	1LM.LM35235	L16060575-01	1	1		06/10/16 12:59
12	1LM.LM35236	L16060575-02	1	1		06/10/16 13:18
13	1LM.LM35237	L16060575-03	1	1		06/10/16 13:37
14	1LM.LM35238	WG572198-03 CCV (1.0ug/L)	1	1	STD75510	06/10/16 13:55
15	1LM.LM35239	WG572200-08 MRL (0.2ug/L)	1	1	STD75510	06/10/16 14:14
16	1LM.LM35240	WG572198-04 CCB	1	1		06/10/16 14:33
17	1LM.LM35241	L16060575-01 100X	1	100		06/10/16 14:52
18	1LM.LM35242	L16060575-02	1	1		06/10/16 15:11
19	1LM.LM35243	L16060575-03	1	1		06/10/16 15:30
20	1LM.LM35244	WG572198-05 CCV (1.0ug/L)	1	1	STD75510	06/10/16 15:49
21	1LM.LM35245	WG572200-09 MRL (0.2ug/L)	1	1	STD75510	06/10/16 16:08
25	1LM.LM35246	WG572198-06 CCB	1	1		06/10/16 16:27
26	1LM.LM35247	L16060411-01 50X	1	50		06/10/16 16:46
27	1LM.LM35248	L16060411-02 50X	1	50		06/10/16 17:05
28	1LM.LM35249	L16060411-03 200X	1	200		06/10/16 17:24
29	1LM.LM35250	L16060411-04 200X	1	200		06/10/16 17:43
30	1LM.LM35251	L16060414-01	1	1		06/10/16 18:02
31	1LM.LM35252	L16060414-02	1	1		06/10/16 18:21
32	1LM.LM35253	L16060414-03 20X	1	20		06/10/16 18:40
33	1LM.LM35254	L16060414-04 20X	1	20		06/10/16 18:59
58	1LM.LM35255	L16060497-01 10X	1	10		06/10/16 19:18
35	1LM.LM35256	L16060497-04 500X	1	500		06/10/16 19:37
36	1LM.LM35257	WG572198-07 CCV (1.0ug/L)	1	1	STD75510	06/10/16 19:56

Page: 1 Approved: 13-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061016_WTD.TXT
Analyst1: WTD Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:
Column 1 ID: KP-RPPX250 Column 2 ID: NA
Workgroups:

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)
CCV STD: STD75510 LCS STD: STD75512 NA

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
37	1LM.LM35258	WG572200-10 MRL (0.2ug/L)	1	1	STD75510	06/10/16 20:15
38	1LM.LM35259	WG572198-08 CCB	1	1		06/10/16 20:34
39	1LM.LM35260	L16060504-01 1000X	1	1000		06/10/16 20:53
40	1LM.LM35261	L16060504-02 1000X	1	1000		06/10/16 21:12
41	1LM.LM35262	L16060504-03 1000X	1	1000		06/10/16 21:31
42	1LM.LM35263	L16060504-04 10000X	1	10000		06/10/16 21:50
43	1LM.LM35264	WG572198-09 CCV (1.0ug/L)	1	1	STD75510	06/10/16 22:09
44	1LM.LM35265	WG572200-11 MRL (0.2ug/L)	1	1	STD75510	06/10/16 22:27
45	1LM.LM35266	WG572198-10 CCB	1	1		06/10/16 22:46
46	1LM.LM35267	WG572289-07 MRL (0.2ug/L)	1	1	STD75510	06/10/16 23:05
47	1LM.LM35268	WG572289-01 MCT (0.2ug/l)	1	1	STD75512	06/10/16 23:24
48	1LM.LM35269	WG572289-02 BLANK	1	1		06/10/16 23:43
49	1LM.LM35270	WG572289-03 LCS (0.2ug/L)	1	1	STD75512	06/11/16 00:02
50	1LM.LM35271	L16060582-01 100X	1	100		06/11/16 00:21
51	1LM.LM35272	L16060582-02	1	1		06/11/16 00:40
59	1LM.LM35273	L16060582-03	1	1		06/11/16 00:59
53	1LM.LM35274	L16060582-03 MS (0.2ug/L)	1	1	STD75512	06/11/16 01:18
54	1LM.LM35275	L16060582-03 MSD (0.2ug/L)	1	1	STD75512	06/11/16 01:37
55	1LM.LM35276	WG572198-11 CCV (1.0ug/L)	1	1	STD75510	06/11/16 01:56
56	1LM.LM35277	WG572289-08 MRL (0.2ug/L)	1	1	STD75510	06/11/16 02:15
57	1LM.LM35278	WG572198-12 CCB	1	1		06/11/16 02:34

Comments

Seq.	Rerun	Dil.	Reason	Analytes
22	X	10	Over Calibration Range	
	L16060497-01			
23				
	WG572200-05 - Sample does not appear to be homogenous with Sample 01, the reference and Sample 03, the MSD.			
24				
	WG572200-06 - Sample does not appear to be homogenous with Sample 01, the reference and Sample 02, the MS.			
10	X	500	Over Calibration Range	
	L16060497-04			
11	X	100	Over Calibration Range	
	L16060575-01			
12	X	1	Carry-over contamination	
	L16060575-02			

Page: 2 Approved: 13-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061016_WTD.TXT

Analyst1: WTD Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 NA

Comments

Seq.	Rerun	Dil.	Reason	Analytes
13	X	1	Carry-over contamination	
	L16060575-03			
26	X	500	Over Calibration Range	
	L16060411-01			
27	X	100	Over Calibration Range	
	L16060411-02			
32	X	10000	Over Calibration Range	
	L16060414-03			
33	X	10000	Over Calibration Range	
	L16060414-04			
39	X	10000	Over Calibration Range	
	L16060504-01			
40	X		Internal standard failure	
	L16060504-02 - No Internal Standard added.			
41	X	10000	Over Calibration Range	
	L16060504-03 - No Internal Standard added.			
42	X	1000	Analyzed too dilute	
	L16060504-04 - No Internal Standard added.			
50				
	L16060582-01 - Analyzed at a dilution based on information from the client.			

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Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
04-MAY-2016
John Richards

Secondary Reviewer:
05-MAY-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 10-JUN-2016
Analyst: WTD
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 75634
Analytical Workgroups: WG572200, WG572289

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	WTD
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MES

Primary Reviewer: 11-JUN-2016

Secondary Reviewer: 13-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-13-2016 11:53:25

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG572200

Login Number: L16060497

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW06-060816	01	06/08/16					06/10/2016	1.8	28		06/10/16	.4	28	
18CPTMW06MS-060816	02	06/08/16					06/10/2016	1.8	28		06/10/16	.1	28	
18CPTMW06MSD-060816	03	06/08/16					06/10/2016	1.8	28		06/10/16	.1	28	
MW22-060816	04	06/08/16					06/10/2016	1.8	28		06/10/16	.4	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4803821
Report generated 06/13/2016 13:25

METHOD BLANK SUMMARY

Login Number: L16060497
Blank File ID: 1LM.LM35229
Prep Date: 06/10/16 09:00
Analyzed Date: 06/10/16 11:05
Analyst: WTD

Work Group: WG572200
Blank Sample ID: WG572200-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG572200-07	1LM.LM35227	06/10/16 10:27	01
MCT	WG572200-01	1LM.LM35228	06/10/16 10:46	01
LCS	WG572200-03	1LM.LM35230	06/10/16 11:24	01
18CPTMW06MS-060816	L16060497-02	1LM.LM35232	06/10/16 12:02	01
18CPTMW06MSD-060816	L16060497-03	1LM.LM35233	06/10/16 12:21	01
QCMRL	WG572200-08	1LM.LM35239	06/10/16 14:14	01
QCMRL	WG572200-09	1LM.LM35245	06/10/16 16:08	01
18CPTMW06-060816	L16060497-01	1LM.LM35255	06/10/16 19:18	DL01
MW22-060816	L16060497-04	1LM.LM35256	06/10/16 19:37	DL01
QCMRL	WG572200-10	1LM.LM35258	06/10/16 20:15	01
QCMRL	WG572200-11	1LM.LM35265	06/10/16 22:27	01
QCMRL	WG572200-12	1LM.LM35281	06/11/16 12:05	01
QCMRL	WG572200-13	1LM.LM35293	06/11/16 16:41	01
QCMRL	WG572200-14	1LM.LM35297	06/11/16 17:57	01

Report Name: BLANK_SUMMARY
PDF File ID: 4803822
Report generated 06/13/2016 13:25

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060497 Prep Date: 06/10/16 09:00 Sample ID: WG572200-02
Instrument ID: LCMS1 Run Date: 06/10/16 11:05 Prep Method: 6850
File ID: 1LM.LM35229 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4803823
13-JUN-2016 13:25

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060497 Run Date: 06/10/2016 Sample ID: WG572200-03
Instrument ID: LCMS1 Run Time: 11:24 Prep Method: 6850
File ID: 1LM.LM35230 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD75512 Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	0.200	0.201	101	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4803824
Report generated: 06/13/2016 13:25

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16060497 Cal ID: LCMS1- 03-MAY-16 Worknum: WG572200
Instrument ID: LCMS1 Contract #: Prep Method: 6850
Parent ID: L16060497-01 File ID: 1LM.LM35231 Dil: 1 Method: 6850
Sample ID: L16060497-02 MS File ID: 1LM.LM35232 Dil: 1 Matrix: Water
Sample ID: L16060497-03 MSD File ID: 1LM.LM35233 Dil: 1 Units: ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Perchlorate	30.2	0.200	7.05	-11600	0.200	2.39	-13900	98.7	80 - 120	15	*#

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4803825
Report generated 06/13/2016 13:25

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060497
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4803827
Report generated 06/13/2016 13:25

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060497

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4803827
Report generated 06/13/2016 13:25

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060497

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4803827
Report generated 06/13/2016 13:25

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060497

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008

PDF File ID: 4803827

Report generated 06/13/2016 13:25

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060497 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4803828
Report generated 06/13/2016 13:25

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060497
Run Date: 06/10/2016
Sample ID: WG572198-01
Instrument ID: LCMS1
Run Time: 09:49
Method: 6850
File ID: 1LM.LM35225
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4803830
Report generated 06/13/2016 13:25

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060497
Run Date: 06/10/2016
Sample ID: WG572198-04
Instrument ID: LCMS1
Run Time: 14:33
Method: 6850
File ID: 1LM.LM35240
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4803830
Report generated 06/13/2016 13:25

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060497
Run Date: 06/10/2016
Sample ID: WG572198-06
Instrument ID: LCMS1
Run Time: 16:27
Method: 6850
File ID: 1LM.LM35246
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4803830
Report generated 06/13/2016 13:25

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060497
Run Date: 06/10/2016
Sample ID: WG572198-08
Instrument ID: LCMS1
Run Time: 20:34
Method: 6850
File ID: 1LM.LM35259
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4803830
Report generated 06/13/2016 13:25

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060497
Run Date: 06/10/2016
Sample ID: WG572198-02
Instrument ID: LCMS1
Run Time: 10:08
Method: 6850
File ID: 1LM.LM35226
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.70	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4803829
Report generated 06/13/2016 13:25

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060497
Run Date: 06/10/2016
Sample ID: WG572198-03
Instrument ID: LCMS1
Run Time: 13:55
Method: 6850
File ID: 1LM.LM35238
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.71	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4803829
Report generated 06/13/2016 13:25

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060497
Run Date: 06/10/2016
Sample ID: WG572198-05
Instrument ID: LCMS1
Run Time: 15:49
Method: 6850
File ID: 1LM.LM35244
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.05	ug/L	1.77	5.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4803829
Report generated 06/13/2016 13:25

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060497
Run Date: 06/10/2016
Sample ID: WG572198-07
Instrument ID: LCMS1
Run Time: 19:56
Method: 6850
File ID: 1LM.LM35257
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.08	ug/L	1.82	8.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4803829
Report generated 06/13/2016 13:25

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060497 Run Date: 06/10/2016 Sample ID: WG572200-07
Instrument ID: LCMS1 Run Time: 10:27 Prep Method: 6850
File ID: 1LM.LM35227 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.202	101	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4803826
Report generated 06/13/2016 13:25

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060497 Run Date: 06/10/2016 Sample ID: WG572200-08
Instrument ID: LCMS1 Run Time: 14:14 Prep Method: 6850
File ID: 1LM.LM35239 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.215	108	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4803826
Report generated 06/13/2016 13:25

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060497 Run Date: 06/10/2016 Sample ID: WG572200-09
Instrument ID: LCMS1 Run Time: 16:08 Prep Method: 6850
File ID: 1LM.LM35245 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.210	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4803826
Report generated 06/13/2016 13:25

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060497 Run Date: 06/10/2016 Sample ID: WG572200-10
Instrument ID: LCMS1 Run Time: 20:15 Prep Method: 6850
File ID: 1LM.LM35258 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.222	111	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4803826
Report generated 06/13/2016 13:25

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16060497
Instrument ID: LCMS1
Workgroup (AAB#): WG572200

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16060497-01	10.0	DL01	450000
L16060497-02	1.00	01	357000
L16060497-03	1.00	01	422000
L16060497-04	500	DL01	464000
WG572200-02	1.00	01	441000
WG572200-03	1.00	01	434000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4803831
Report generated 06/13/2016 13:25

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**	6850	**Samplenum:**	L16060497-01
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35255
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 19:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	460000	158000	2.91	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**	6850	**Samplenum:**	L16060497-02
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35232
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 12:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	847000	297000	2.85	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**	6850	**Samplenum:**	L16060497-03
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35233
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 12:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	339000	116000	2.92	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**	6850	**Samplenum:**	L16060497-04
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35256
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 19:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	193000	66500	2.90	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**		**Samplenum:**	WG572198-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35225
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 09:49	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**		**Samplenum:**	WG572198-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35226
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 10:08	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	151000	53700	2.81	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**		**Samplenum:**	WG572198-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35238
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 13:55	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	172000	59600	2.89	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**		**Samplenum:**	WG572198-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35240
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 14:33	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	3660	1770	2.07	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**		**Samplenum:**	WG572198-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35244
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 15:49	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	179000	63400	2.82	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**		**Samplenum:**	WG572198-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35246
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 16:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	377	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**		**Samplenum:**	WG572198-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35257
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 19:56	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	175000	58000	3.02	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**		**Samplenum:**	WG572198-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35259
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 20:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**	6850	**Samplenum:**	WG572200-01
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35228
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 10:46	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35200	10400	3.38	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**	6850	**Samplenum:**	WG572200-02
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35229
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 11:05	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	309	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**	6850	**Samplenum:**	WG572200-03
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35230
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 11:24	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	30000	11800	2.54	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**	6850	**Samplenum:**	WG572200-07
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35227
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 10:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	30600	11100	2.76	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**	6850	**Samplenum:**	WG572200-08
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35239
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 14:14	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36500	13800	2.64	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**	6850	**Samplenum:**	WG572200-09
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35245
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 16:08	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36700	12600	2.91	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**	6850	**Samplenum:**	WG572200-10
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35258
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 20:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36200	12400	2.92	2.3	3.8	

2.2.2.3 Sample Data

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Data File	LM35255.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 7:18:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060497-01 10X	**Injection Vial**	22.00
Data File	LM35255.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 7:18:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	L16060497-01	**Dilution Factor**	1.00
Sample Comment	110.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.500e+05	9.75	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.600e+05	9.76	N/A	3.03
Perchlorate conf	1.580e+05	9.75	N/A	3.12

O18LP (Internal Standard)

RT (Exp. RT): 9.75(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

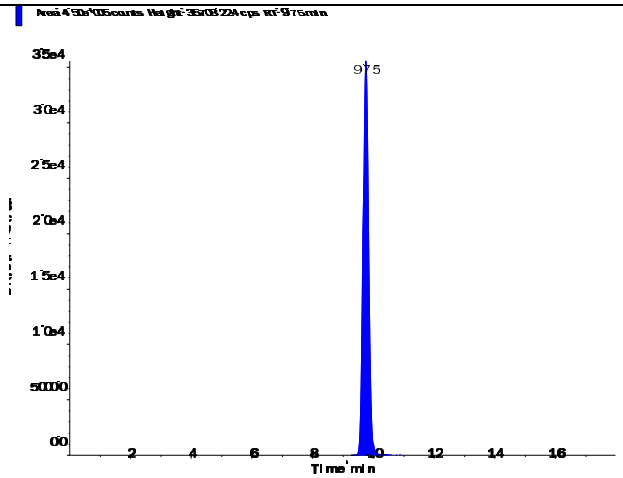

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.76 (9.84) min Calculated conc: 3.03 ng/ml Area Ratio: 1.02 Sample Type: (Unknown)	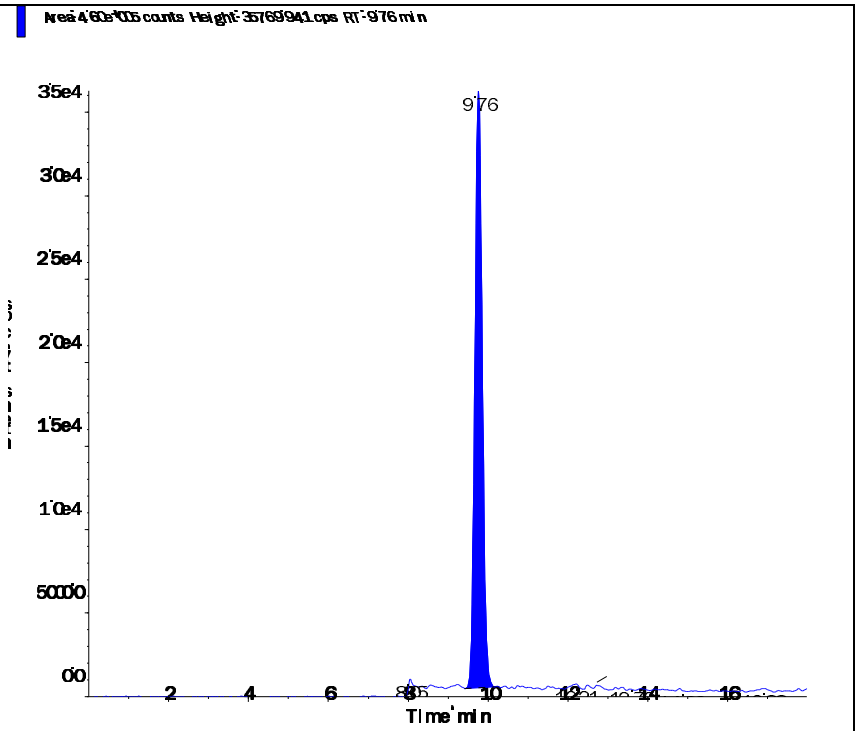
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.75 (9.84) min Calculated conc: 3.12 ng/ml Area Ratio: 0.35 Sample Type: (Unknown)	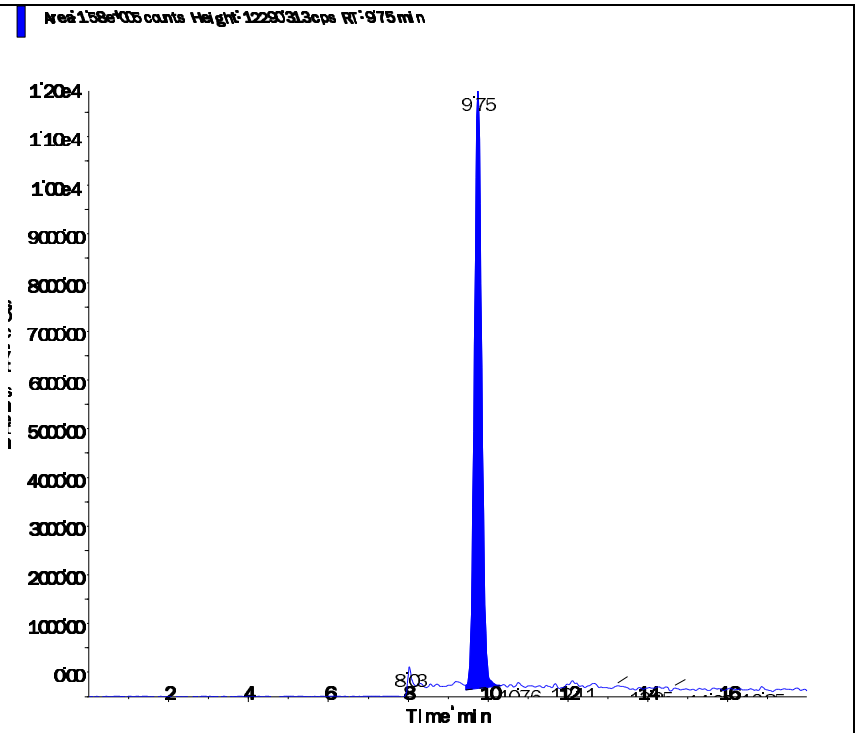

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Data File	LM35232.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 12:02:19 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060497-02 MS (0.2ug/L)	**Injection Vial**	8.00
Data File	LM35232.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 12:02:19 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.570e+05	9.45	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.470e+05	9.46	N/A	7.05
Perchlorate conf	2.970e+05	9.45	N/A	7.42

O18LP (Internal Standard)

RT (Exp. RT): 9.45(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

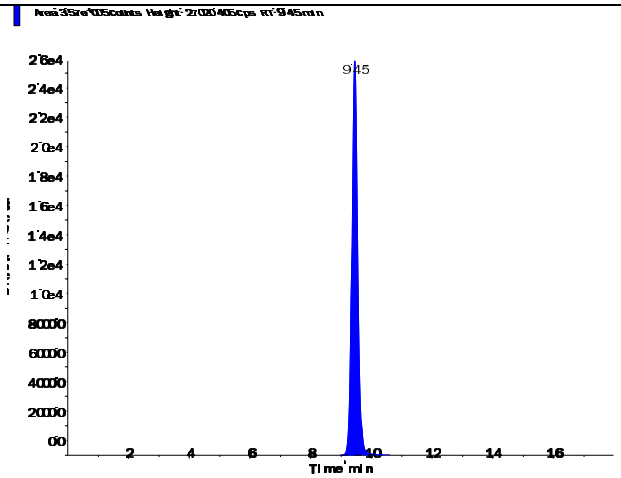

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.46 (9.84) min Calculated conc: 7.05 ng/ml Area Ratio: 2.374 Sample Type: (Unknown)	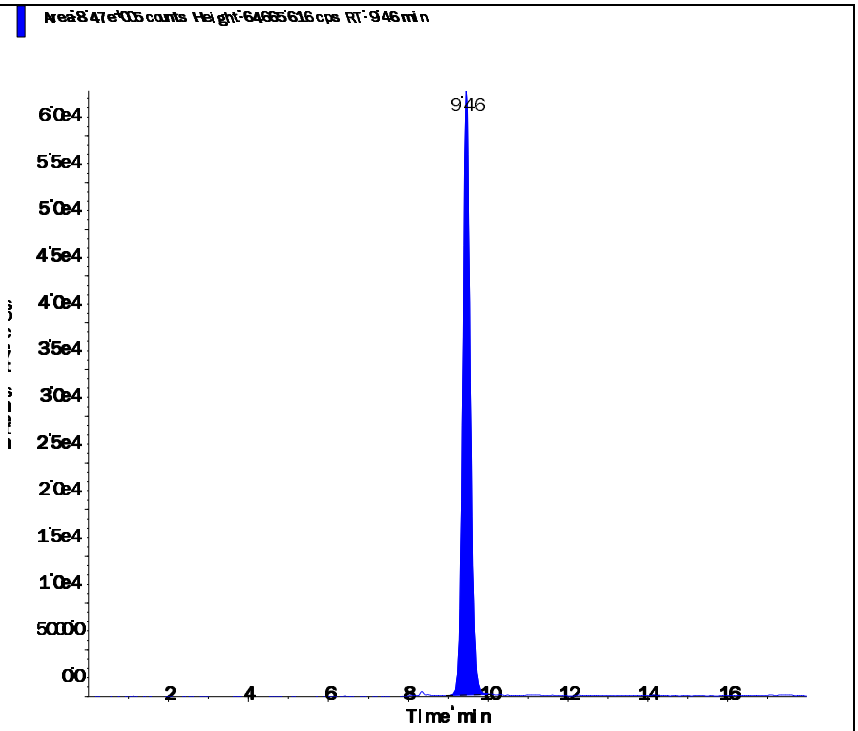
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.45 (9.84) min Calculated conc: 7.42 ng/ml Area Ratio: 0.831 Sample Type: (Unknown)	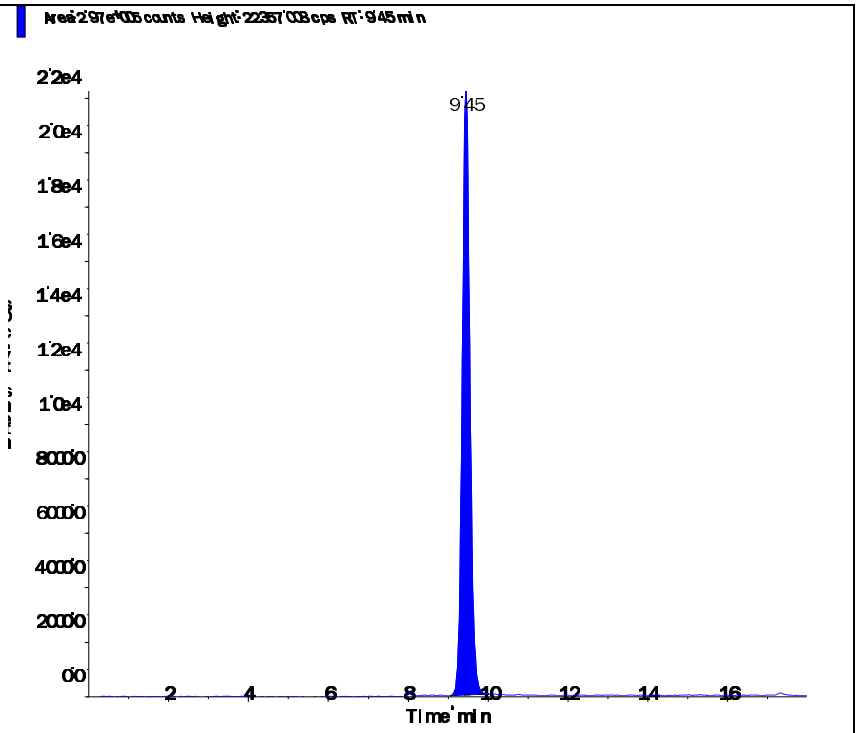

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Data File	LM35233.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 12:21:15 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060497-03 MSD (0.2ug/L)	**Injection Vial**	9.00
Data File	LM35233.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 12:21:15 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.220e+05	9.44	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.390e+05	9.46	N/A	2.39
Perchlorate conf	1.160e+05	9.44	N/A	2.46

O18LP (Internal Standard)

RT (Exp. RT): 9.44(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

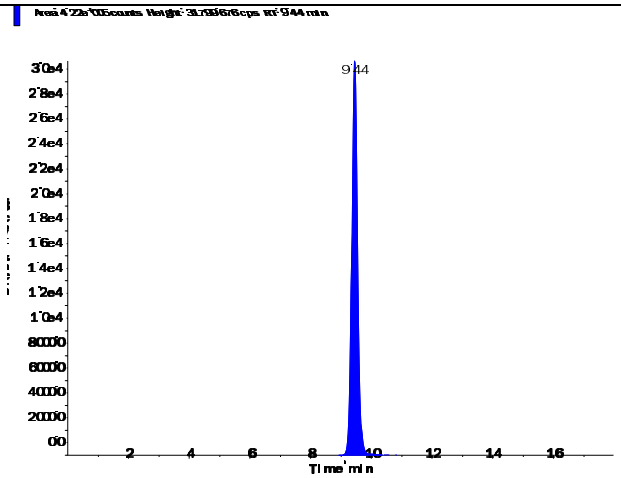

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.46 (9.84) min Calculated conc: 2.39 ng/ml Area Ratio: 0.804 Sample Type: (Unknown)	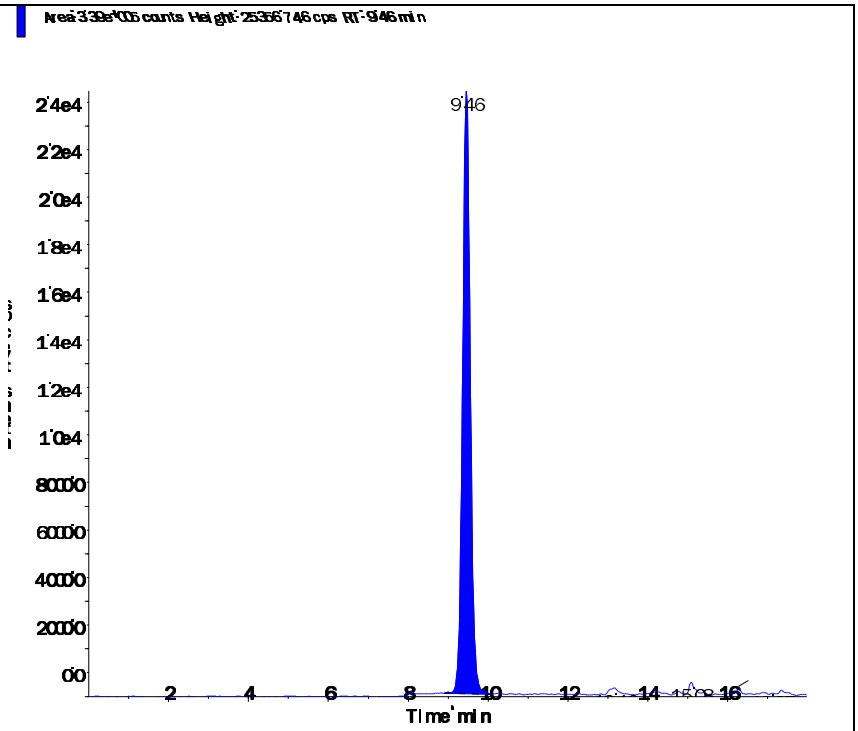
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.44 (9.84) min Calculated conc: 2.46 ng/ml Area Ratio: 0.276 Sample Type: (Unknown)	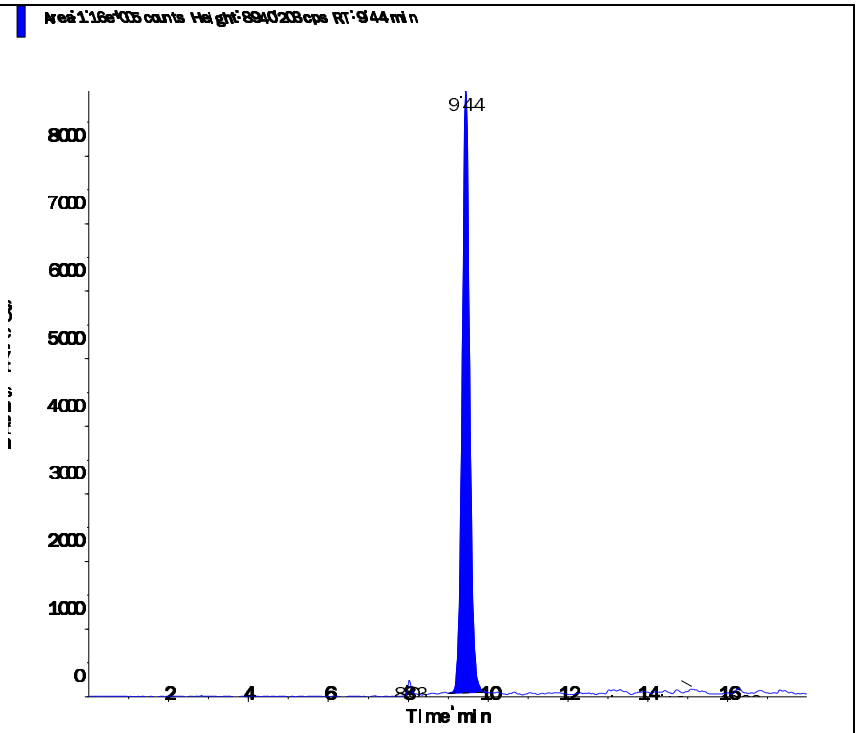

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Data File	LM35256.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 7:37:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060497-04 500X	**Injection Vial**	23.00
Data File	LM35256.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 7:37:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	L16060497-04	**Dilution Factor**	1.00
Sample Comment	1,500.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.640e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.930e+05	9.84	N/A	1.23
Perchlorate conf	6.650e+04	9.82	N/A	1.26

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

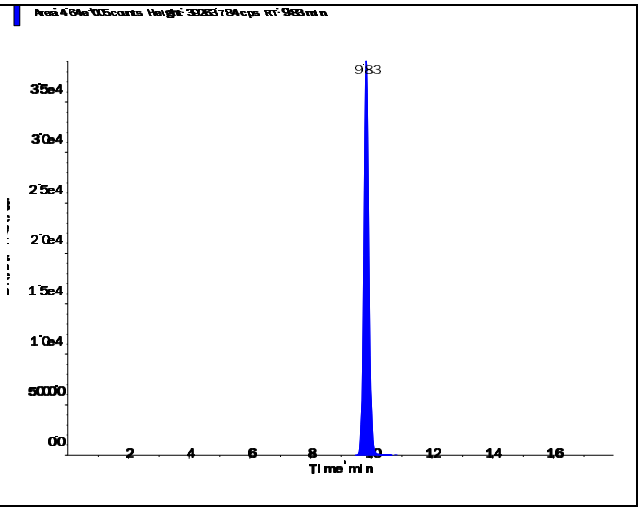

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.23 ng/ml
Area Ratio:	0.415
Sample Type:	(Unknown)

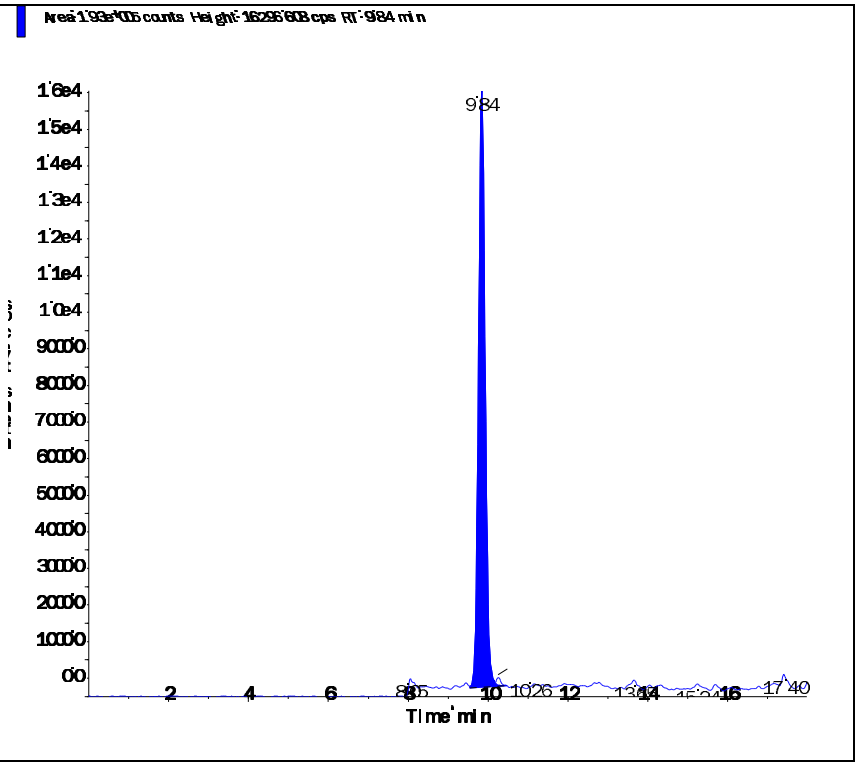

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	1.26 ng/ml
Area Ratio:	0.143
Sample Type:	(Unknown)

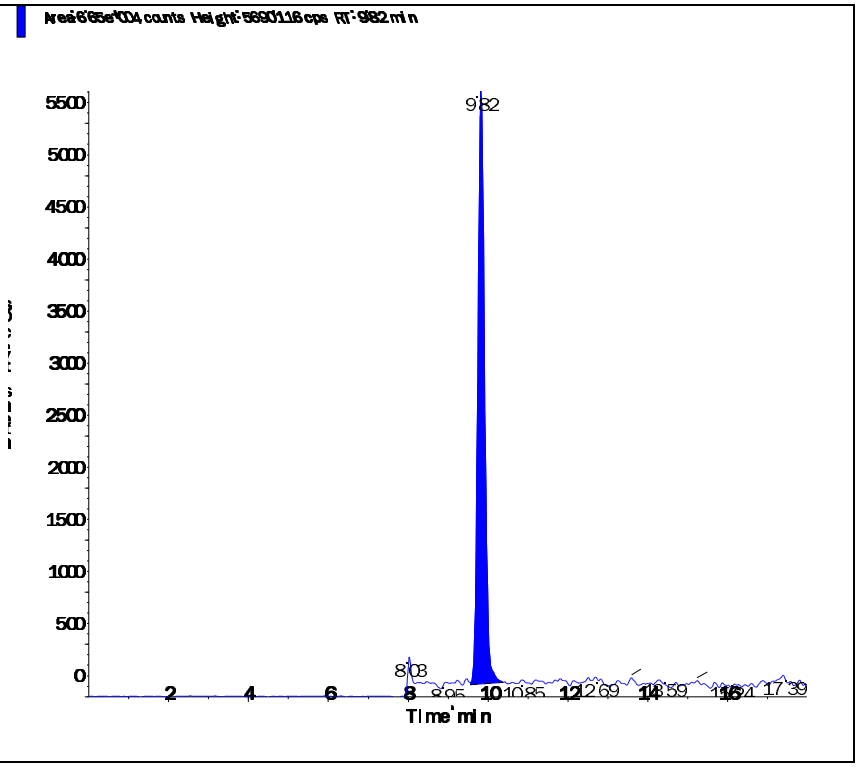

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2.2.2.4 Standards Data

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Data File	LM34686.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

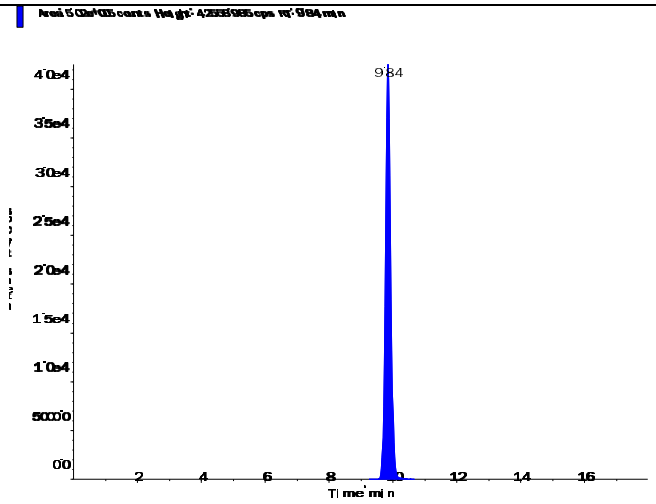

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Created with Analyst Reporter
Printed: 6/13/2016 10:27 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

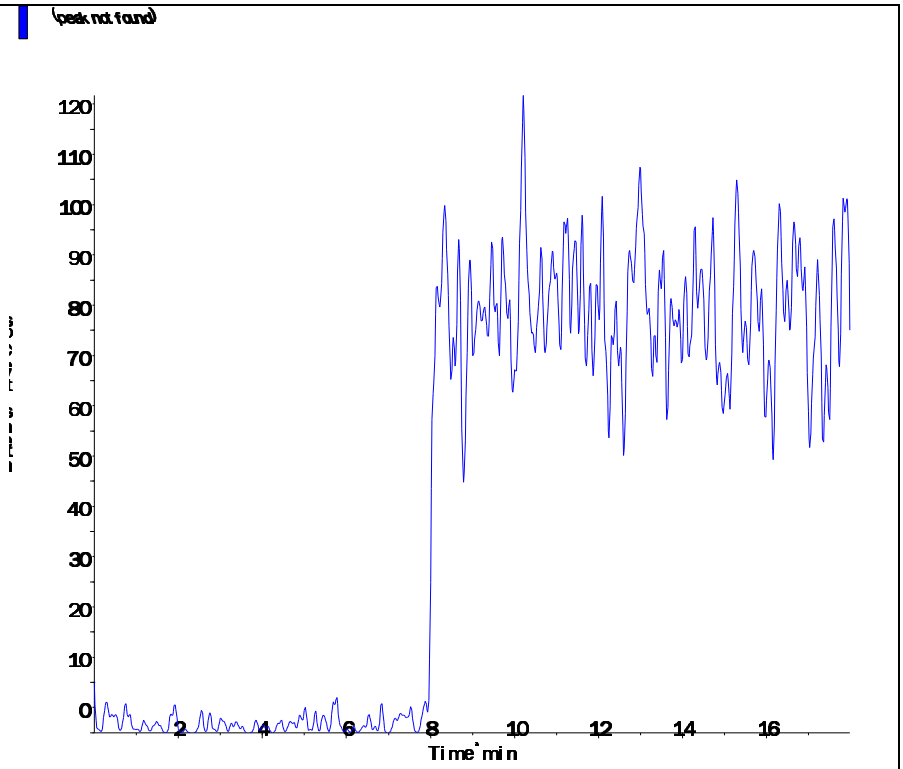

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

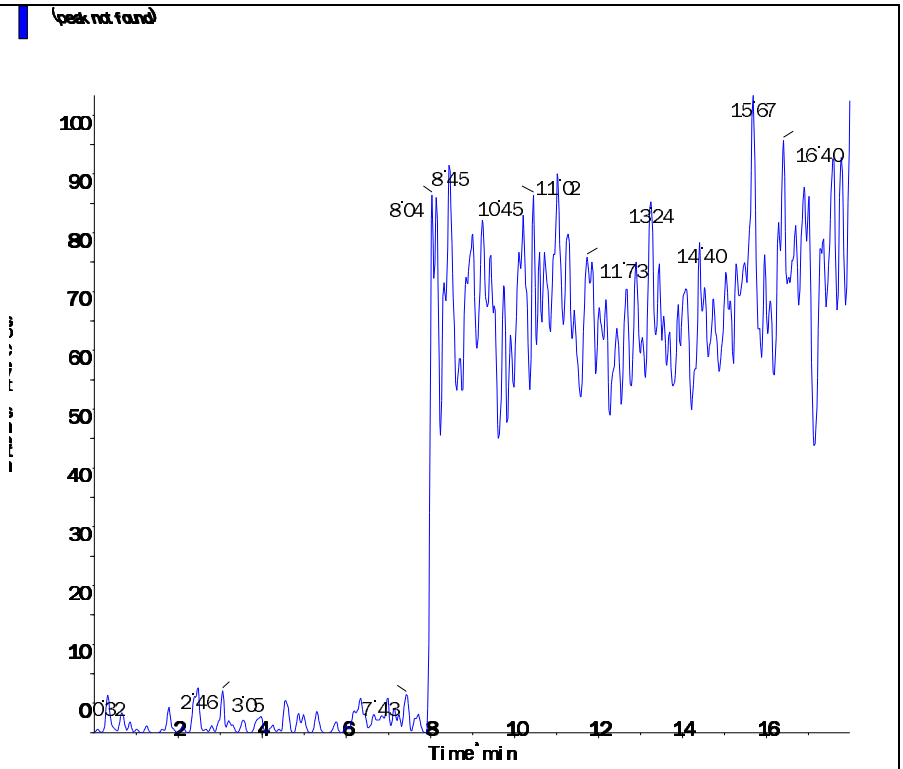

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Created with Analyst Reporter
Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

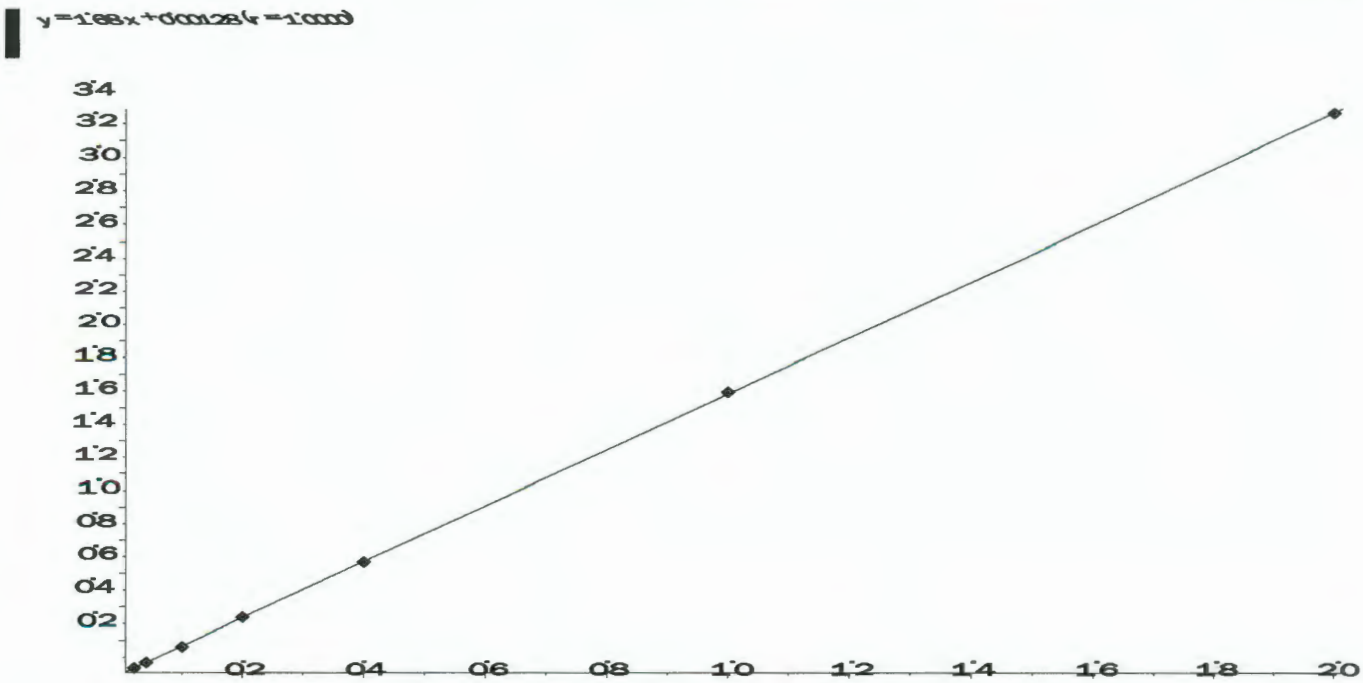

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Created with Analyst Reporter
Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

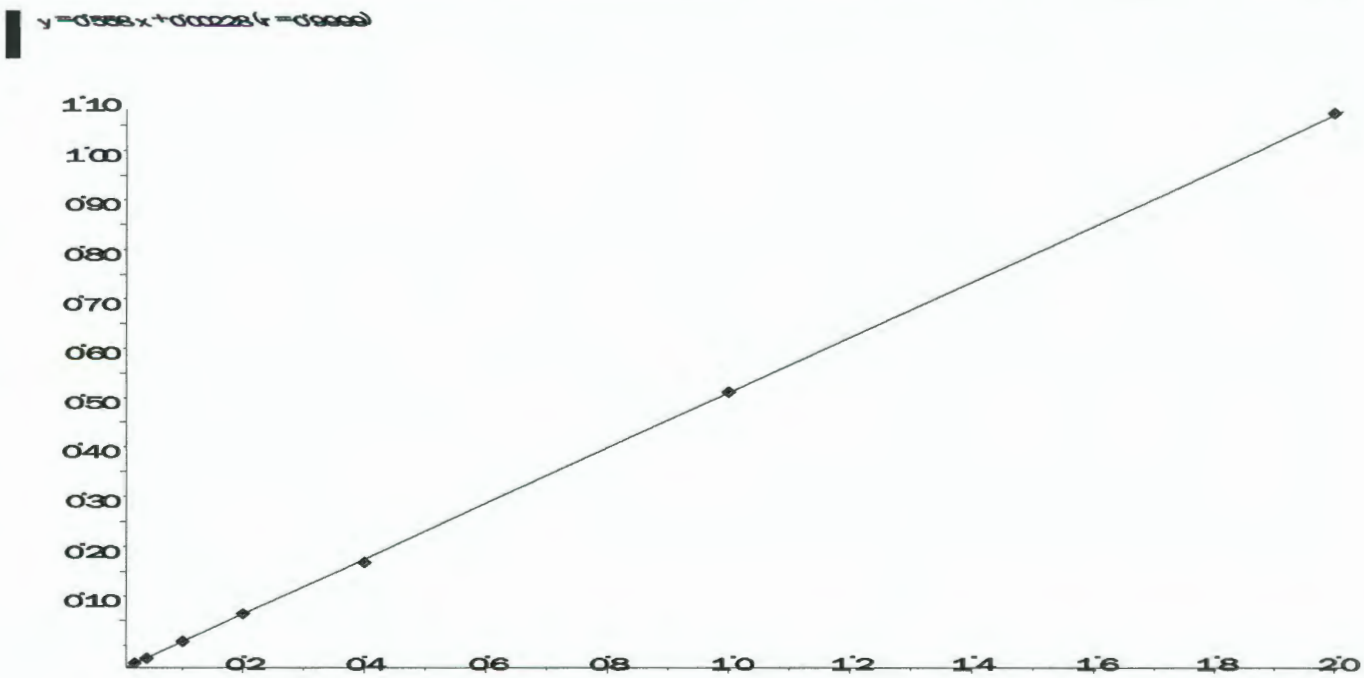

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Printed: 6/13/2016 10:28 AM

Data File	LM34687.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

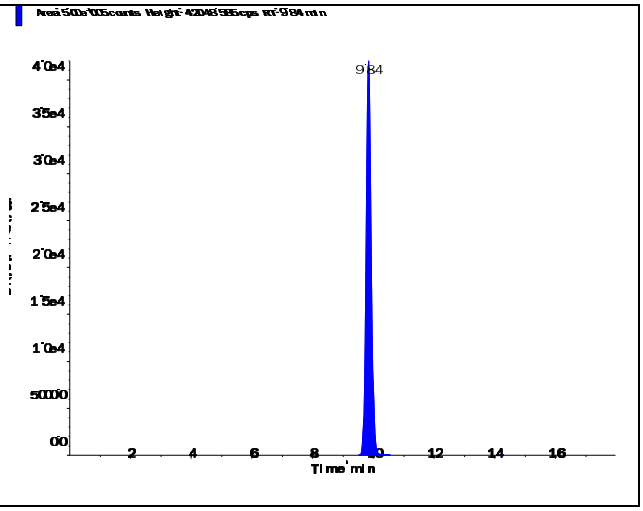

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 0.103 ng/ml Area Ratio: 0.036 Sample Type: (Standard)	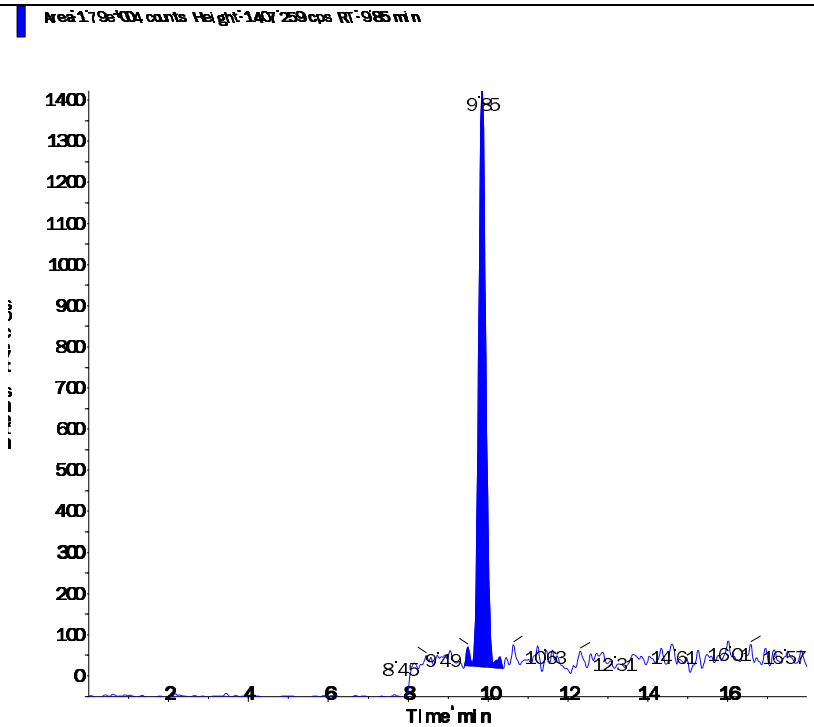
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 0.104 ng/ml Area Ratio: 0.014 Sample Type: (Standard)	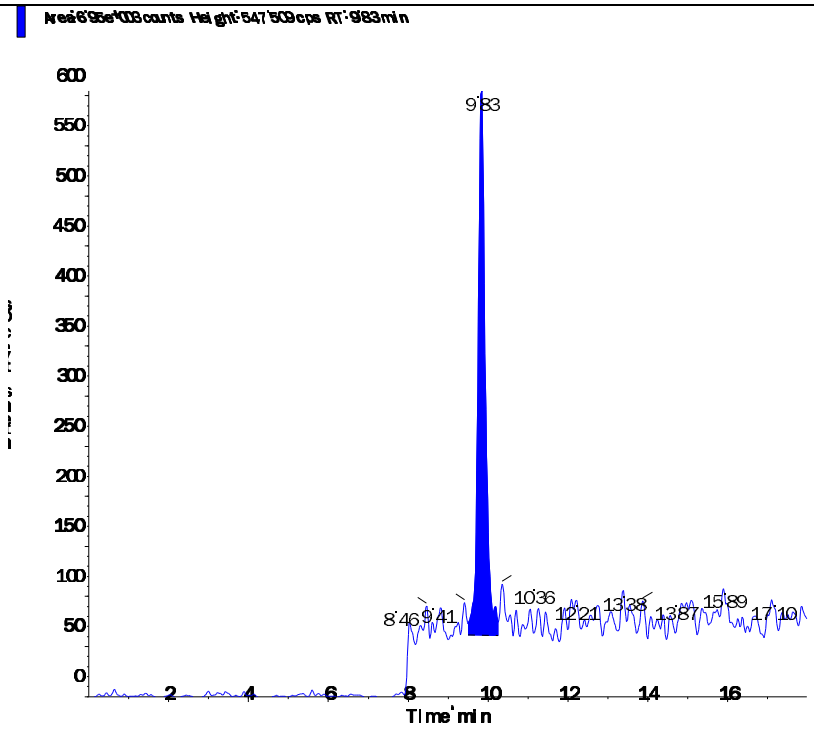

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Data File	LM34688.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

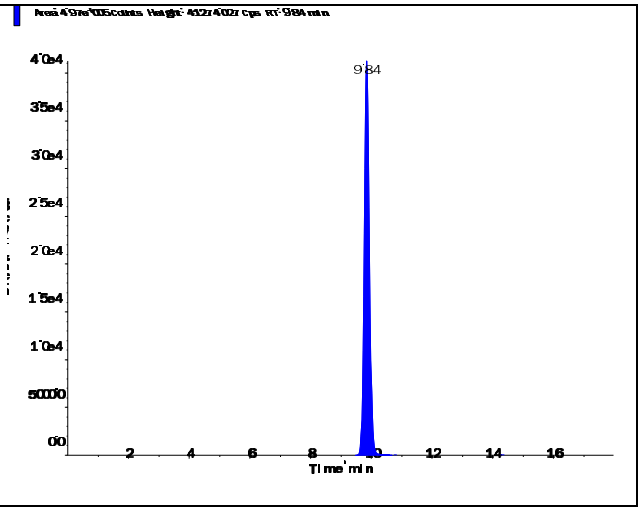

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

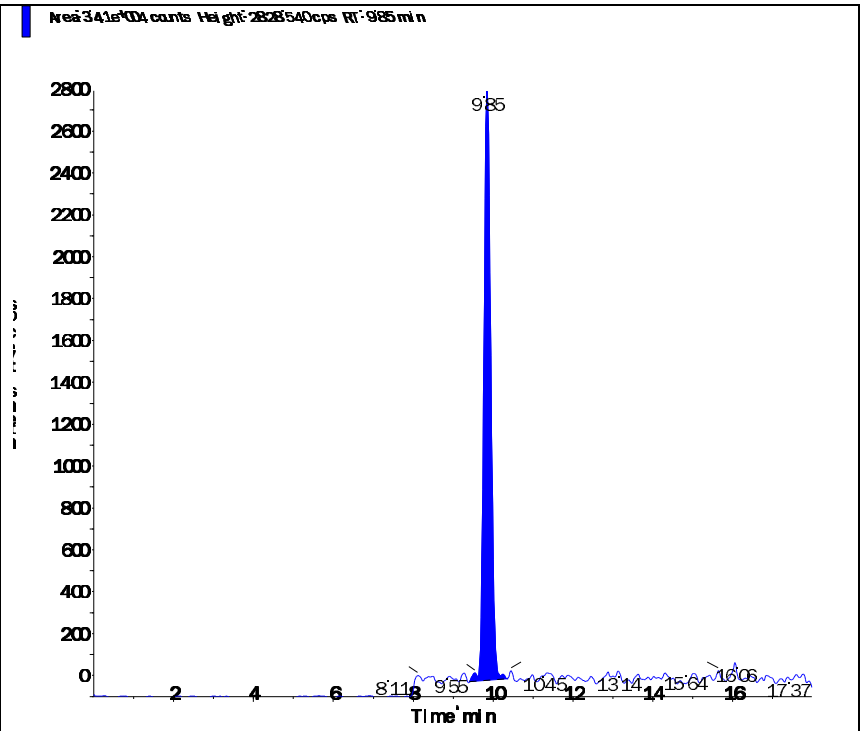

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

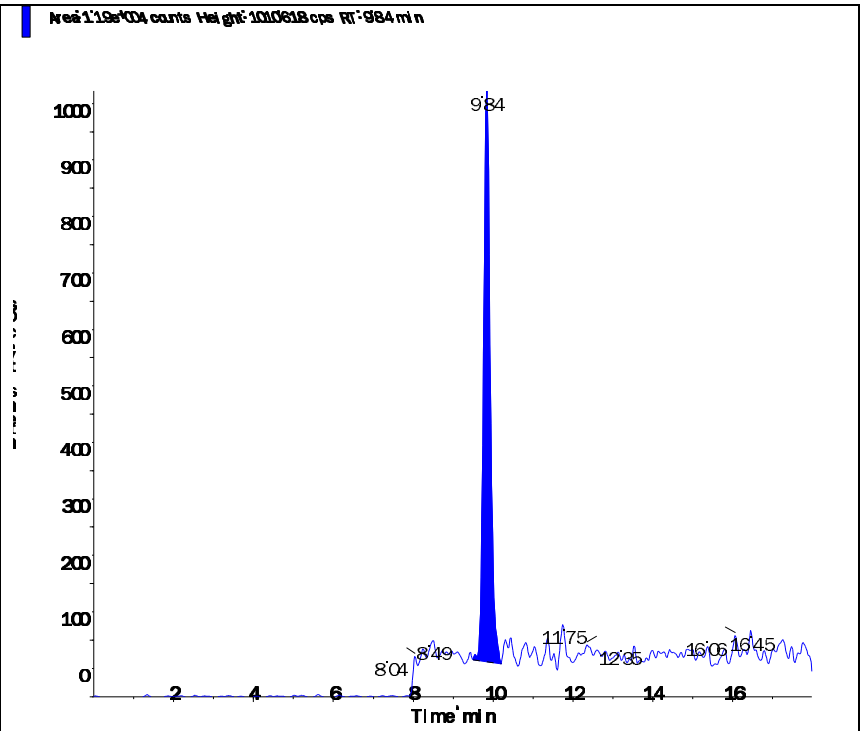

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Data File	LM34689.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

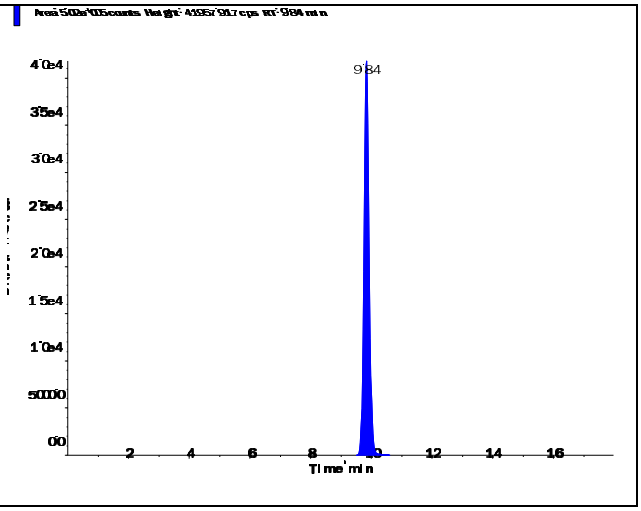

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.483 ng/ml
Area Ratio:	0.164
Sample Type:	(Standard)

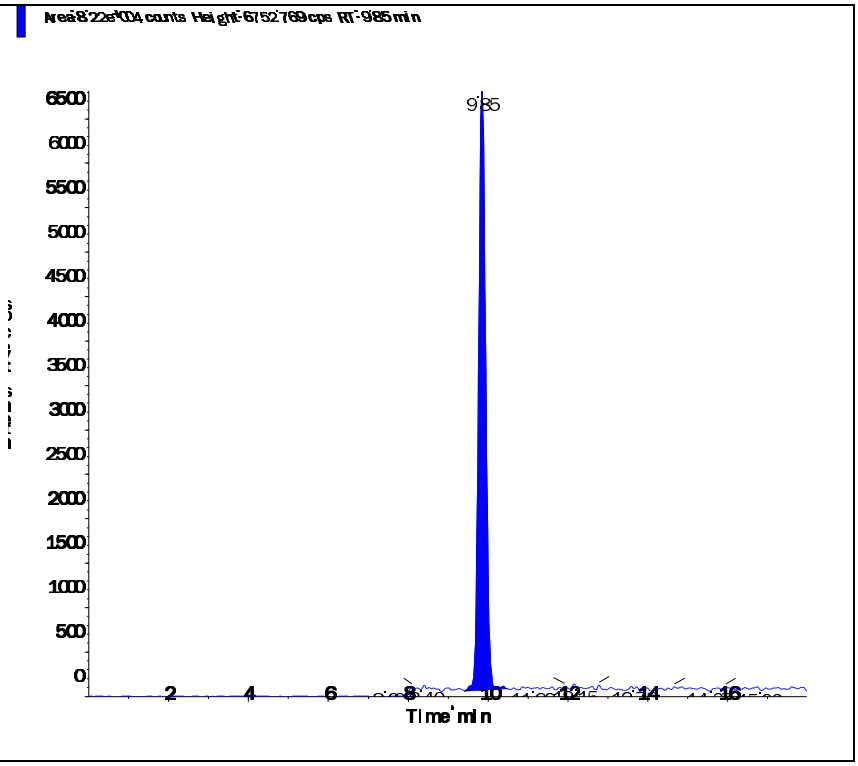

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.503 ng/ml
Area Ratio:	0.058
Sample Type:	(Standard)

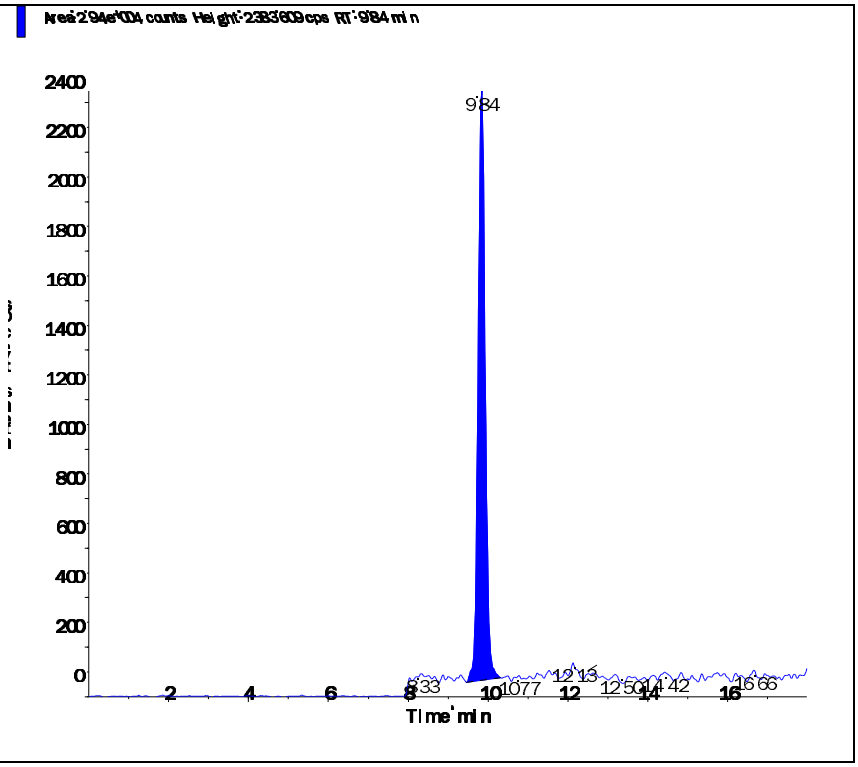

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Data File	LM34690.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

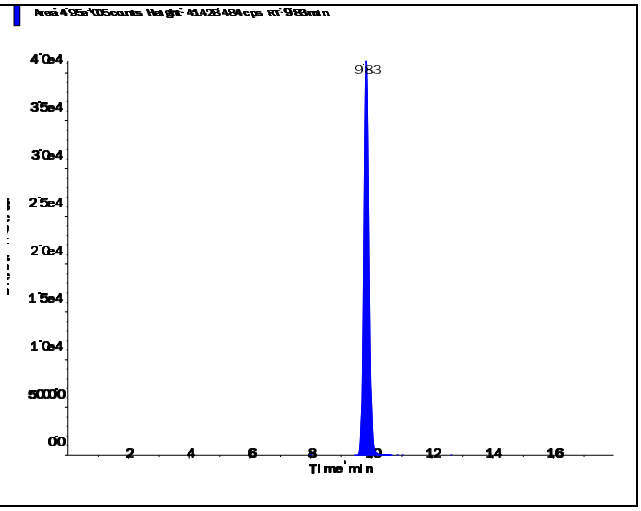

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

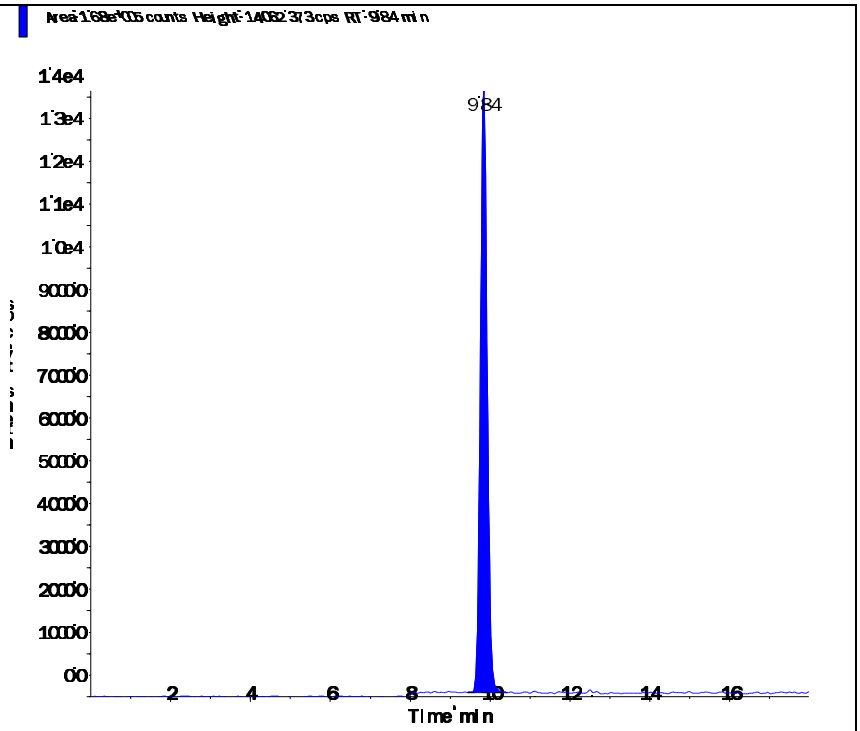

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

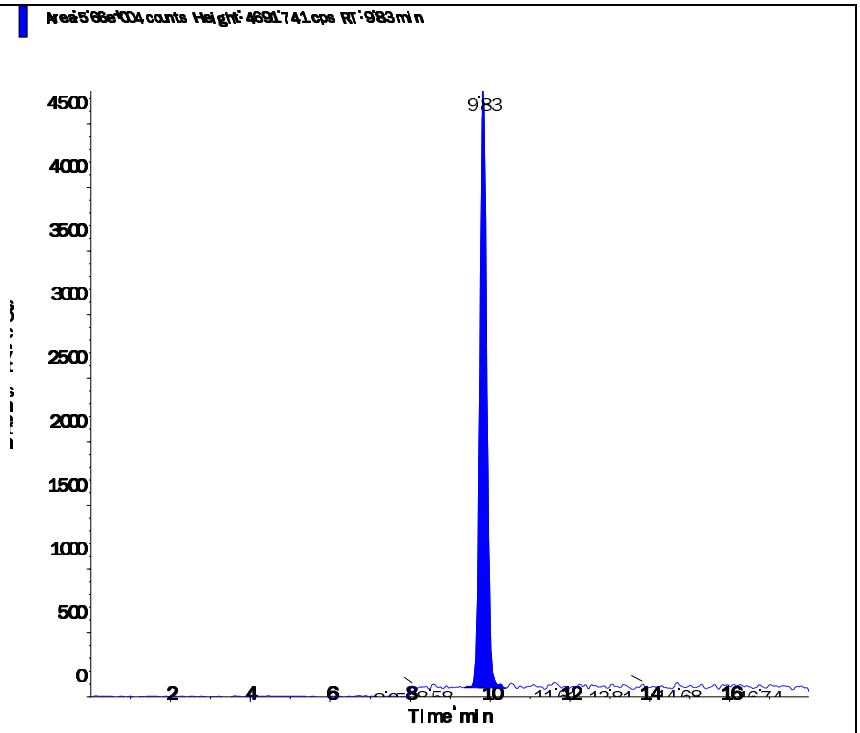

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Data File	LM34691.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

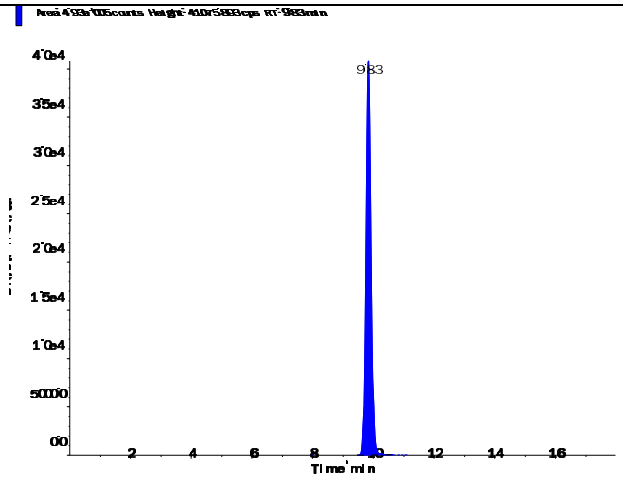

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.99 ng/ml
Area Ratio:	0.669
Sample Type:	(Standard)

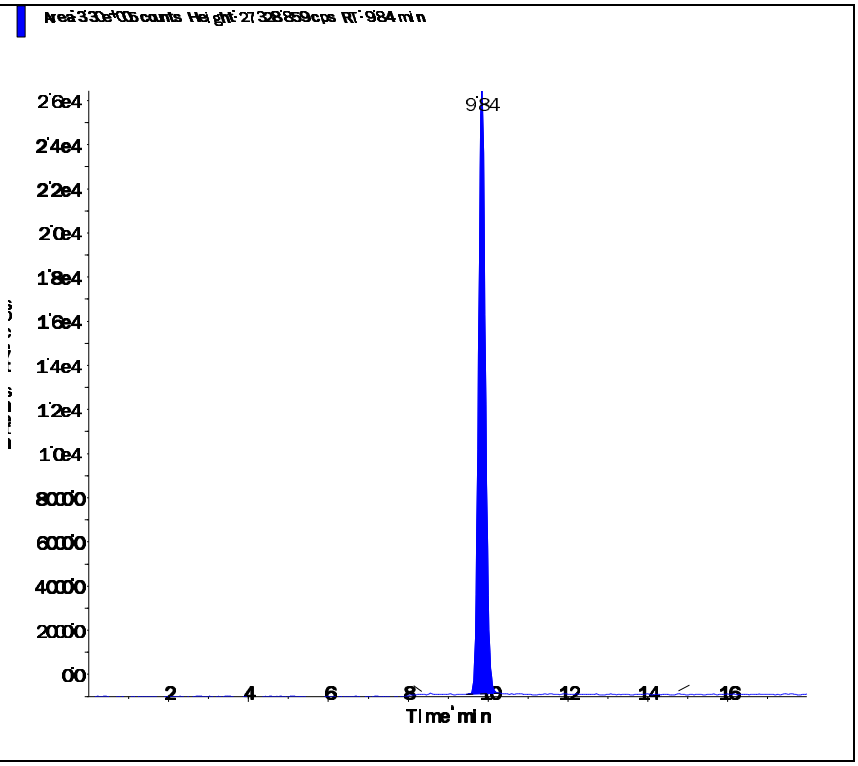

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.94 ng/ml
Area Ratio:	0.219
Sample Type:	(Standard)

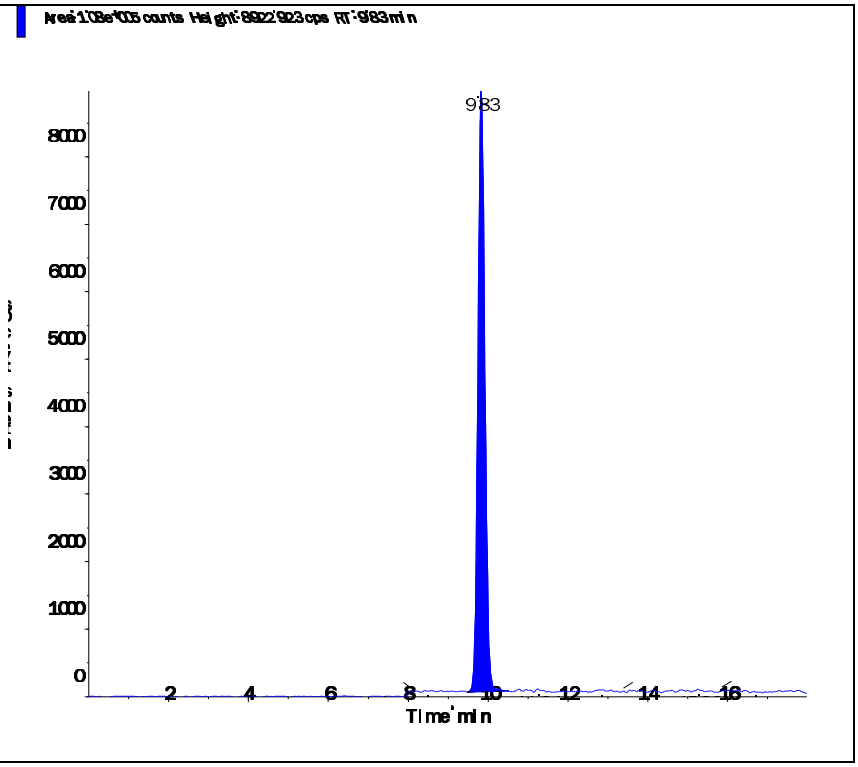

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Data File	LM34692.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

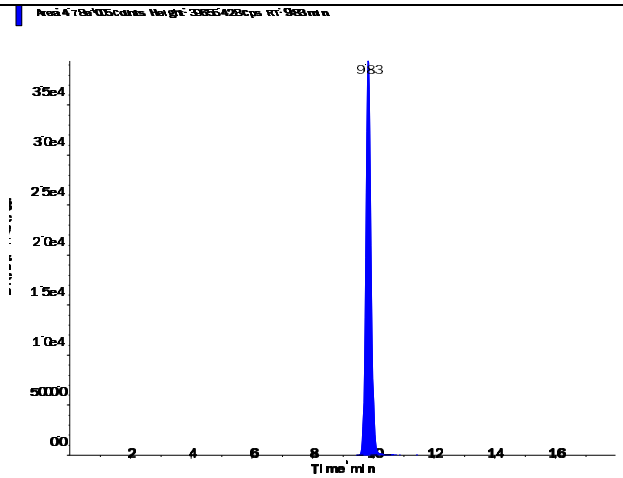

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

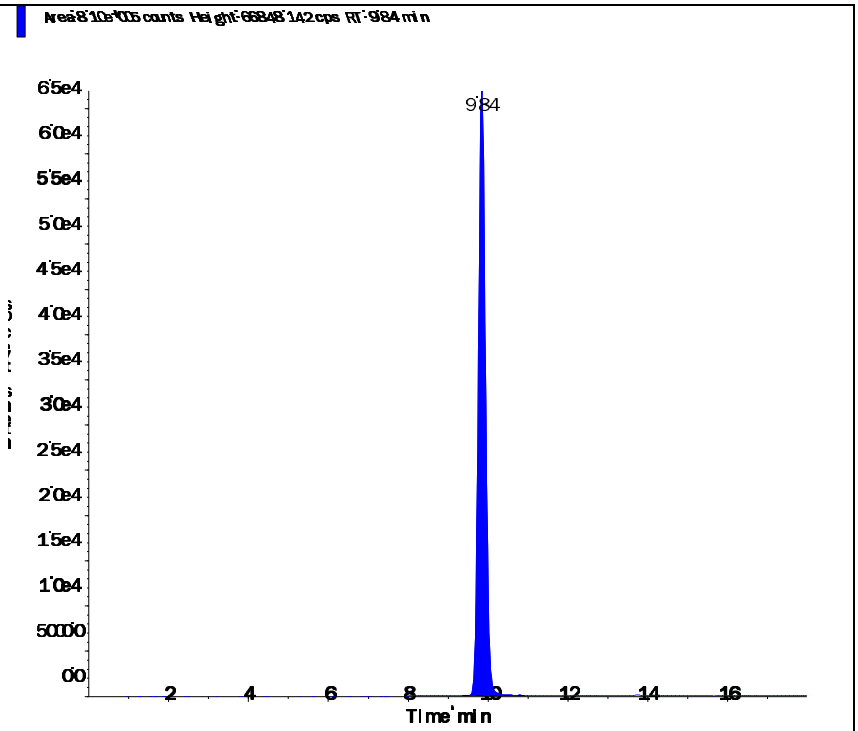

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

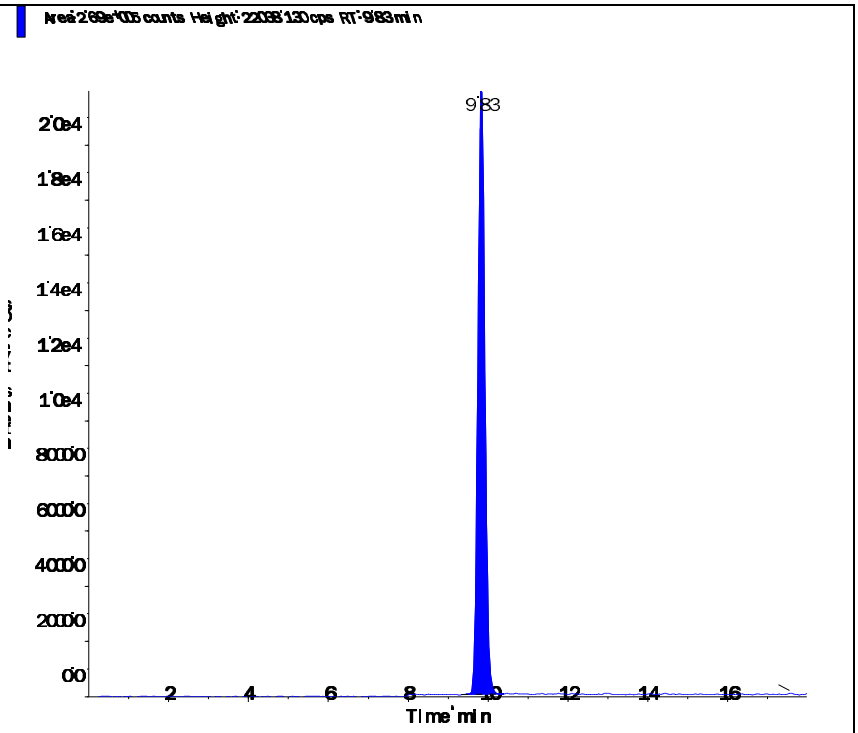

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Printed: 6/13/2016 10:30 AM

Data File	LM34693.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

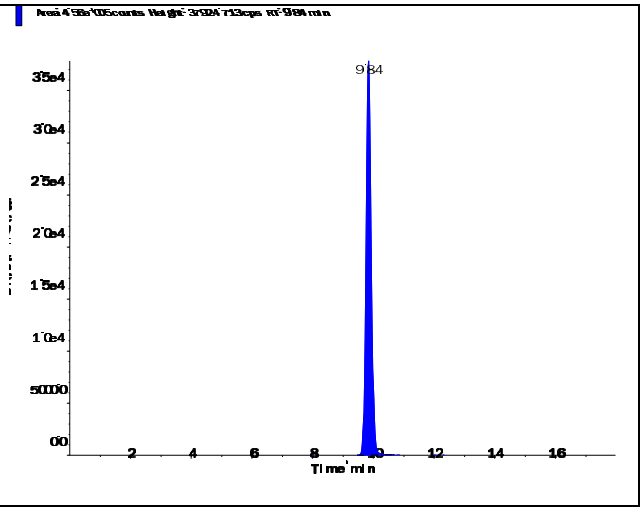

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Printed: 6/13/2016 10:30 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 9.99 ng/ml Area Ratio: 3.36 Sample Type: (Standard)	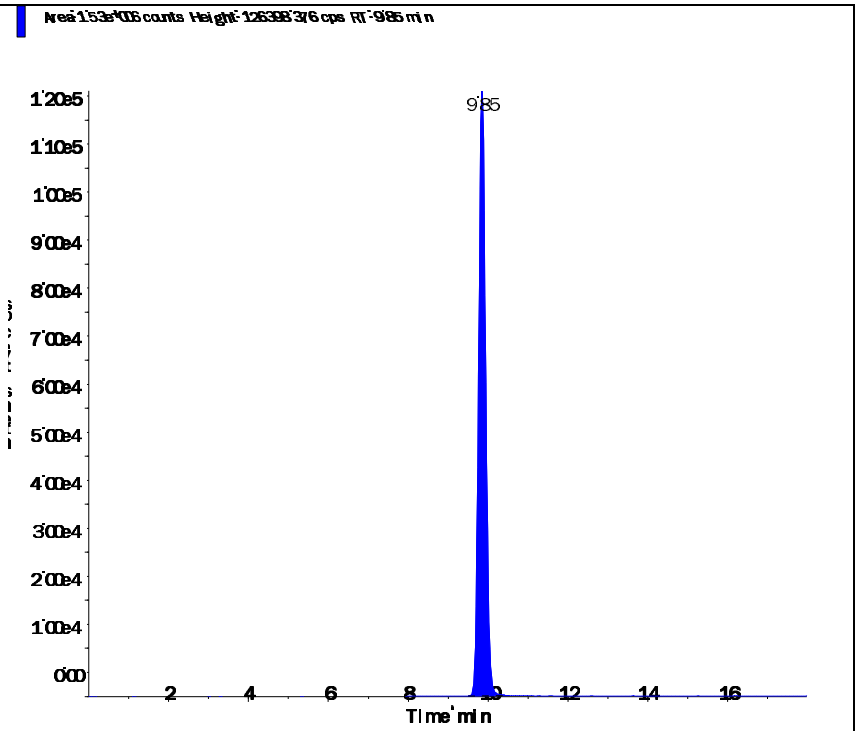
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 10.00 ng/ml Area Ratio: 1.122 Sample Type: (Standard)	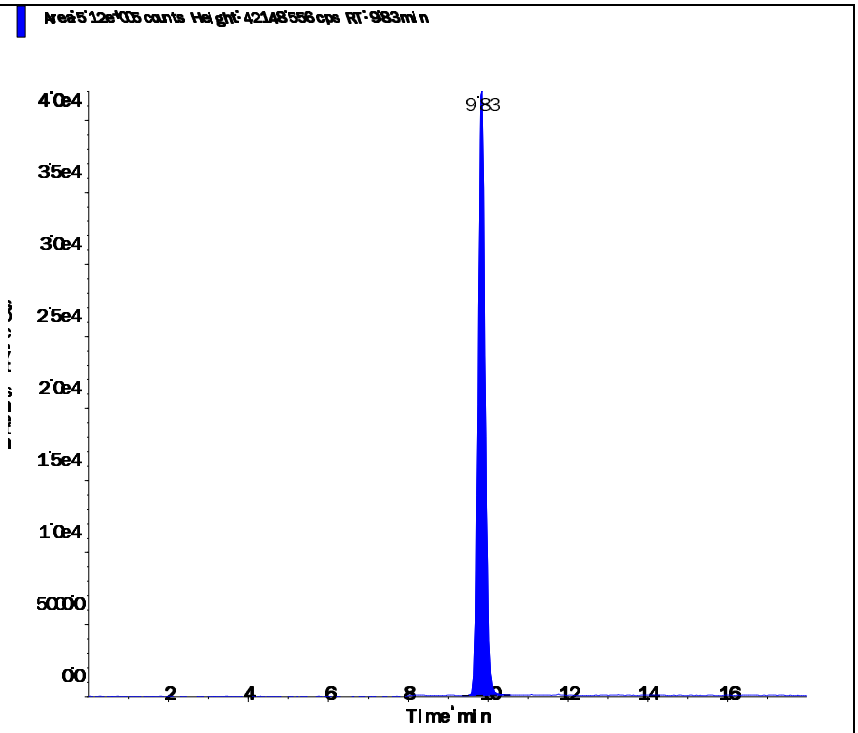

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Printed: 5/4/2016 1:23 PM

Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

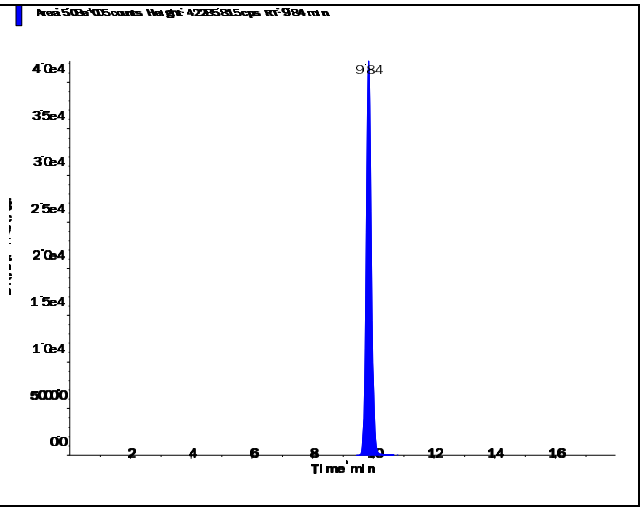

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.332
Sample Type:	(Quality Control)

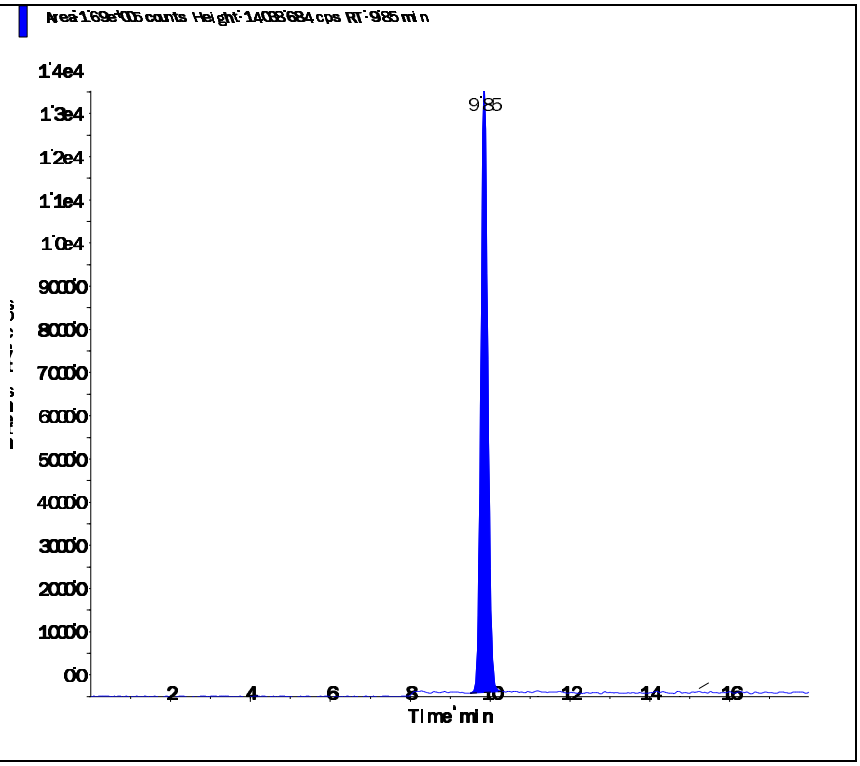

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

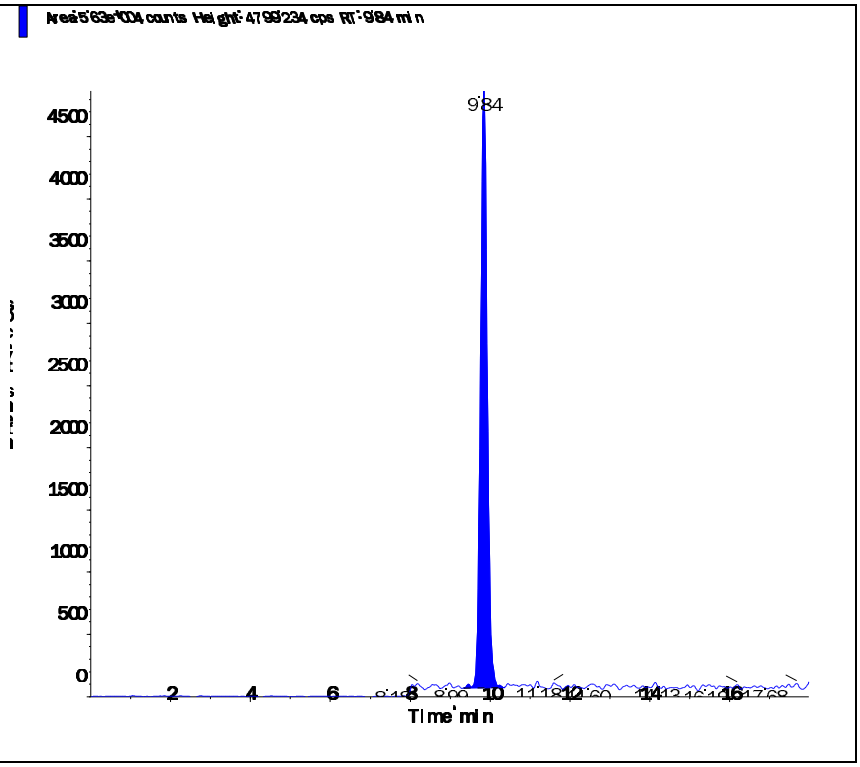

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Printed: 6/11/2016 12:59 PM

Data File	LM35226.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 10:08:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35226.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 10:08:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.430e+05	9.64	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.510e+05	9.65	1.00	1.01
Perchlorate conf	5.370e+04	9.63	1.00	1.06

O18LP (Internal Standard)

RT (Exp. RT): 9.64(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

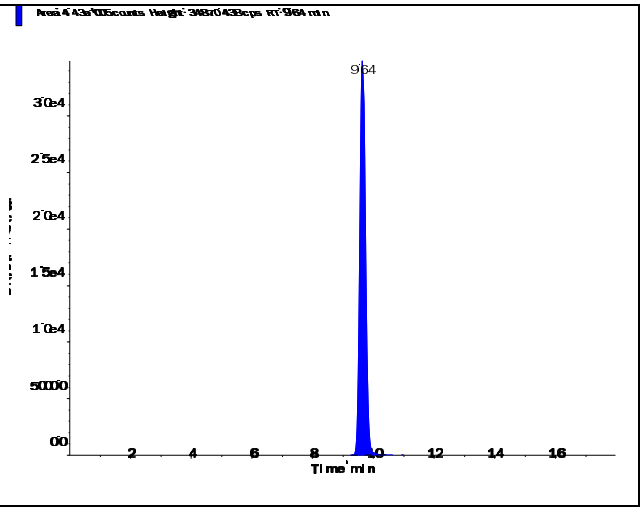

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.65 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.34
Sample Type:	(Quality Control)

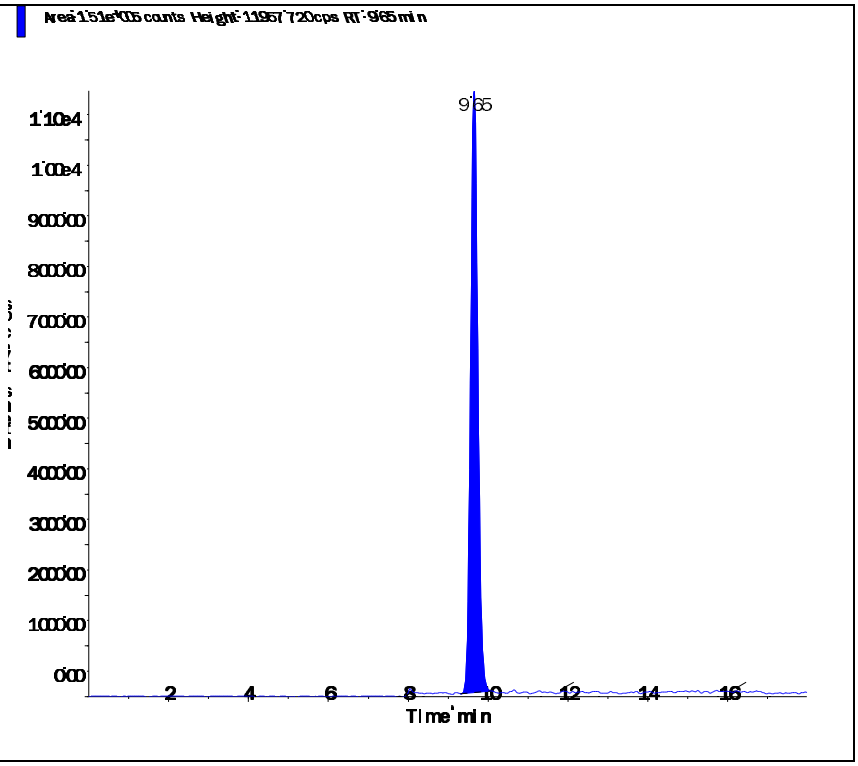

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

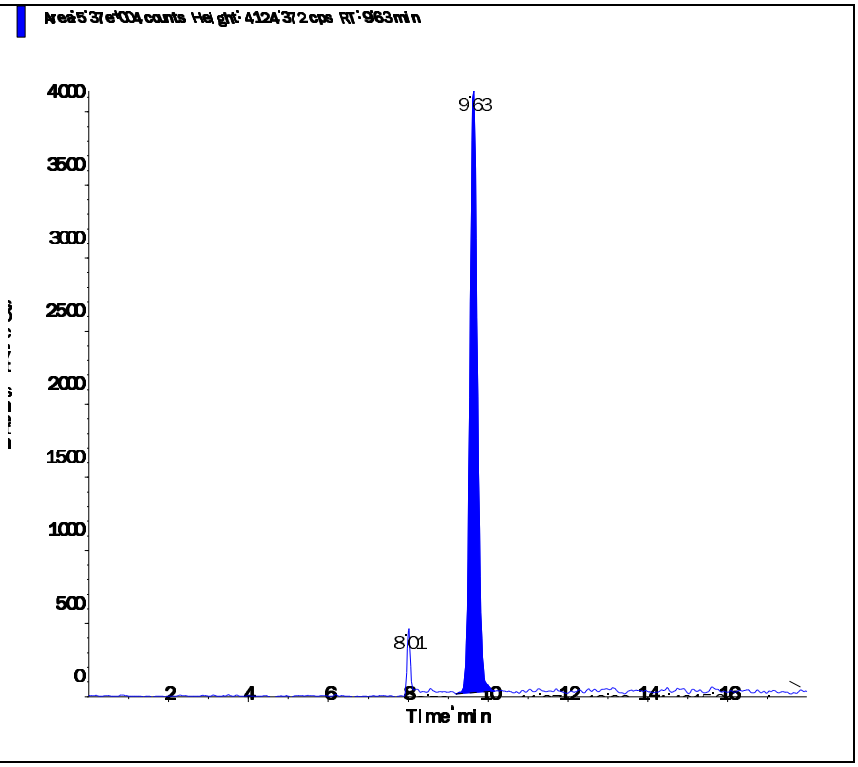

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Data File	LM35238.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 1:55:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35238.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 1:55:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.720e+05	9.64	1.00	1.01
Perchlorate conf	5.960e+04	9.63	1.00	1.04

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

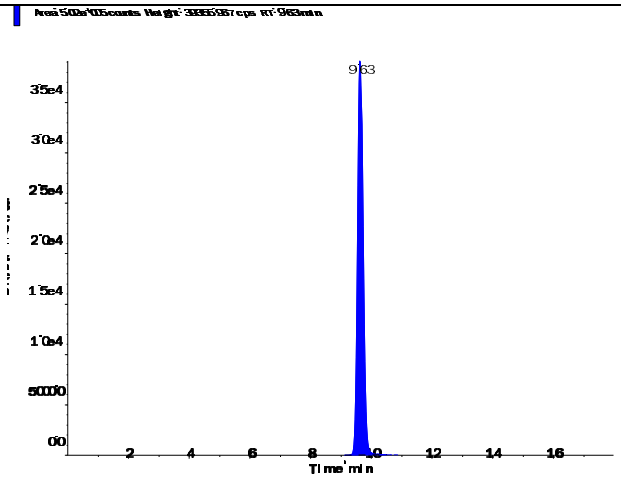

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.342
Sample Type:	(Quality Control)

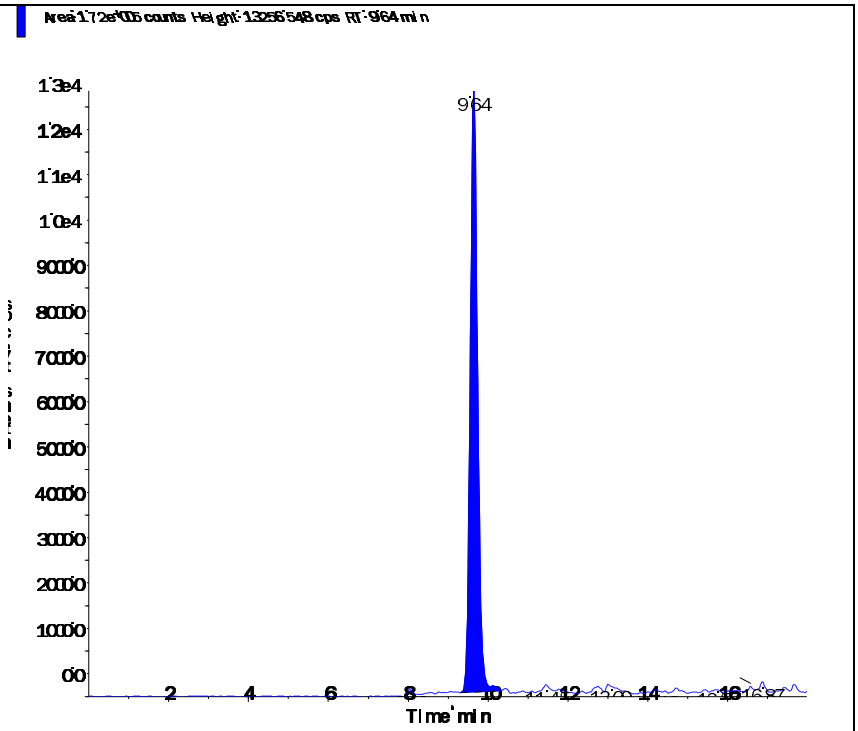

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

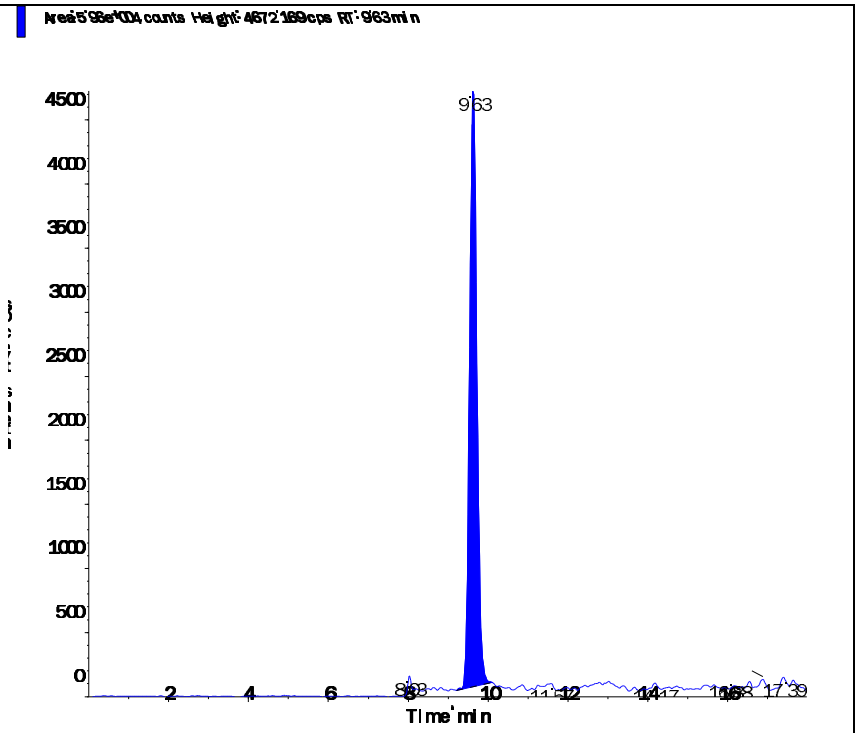

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Data File	LM35244.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 3:49:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35244.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 3:49:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+05	9.64	1.00	1.05
Perchlorate conf	6.340e+04	9.64	1.00	1.10

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

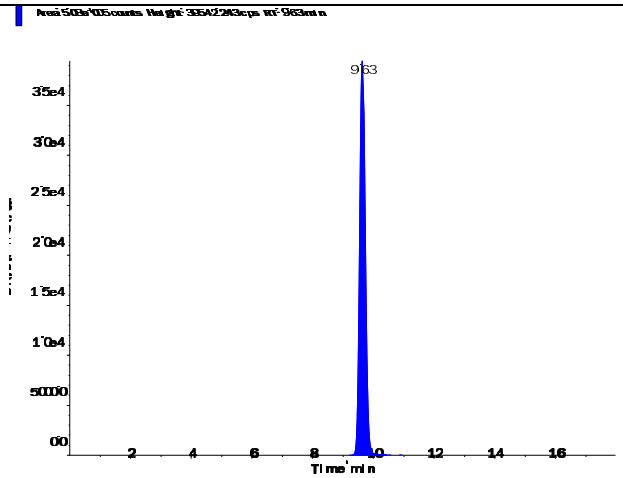

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.353
Sample Type:	(Quality Control)

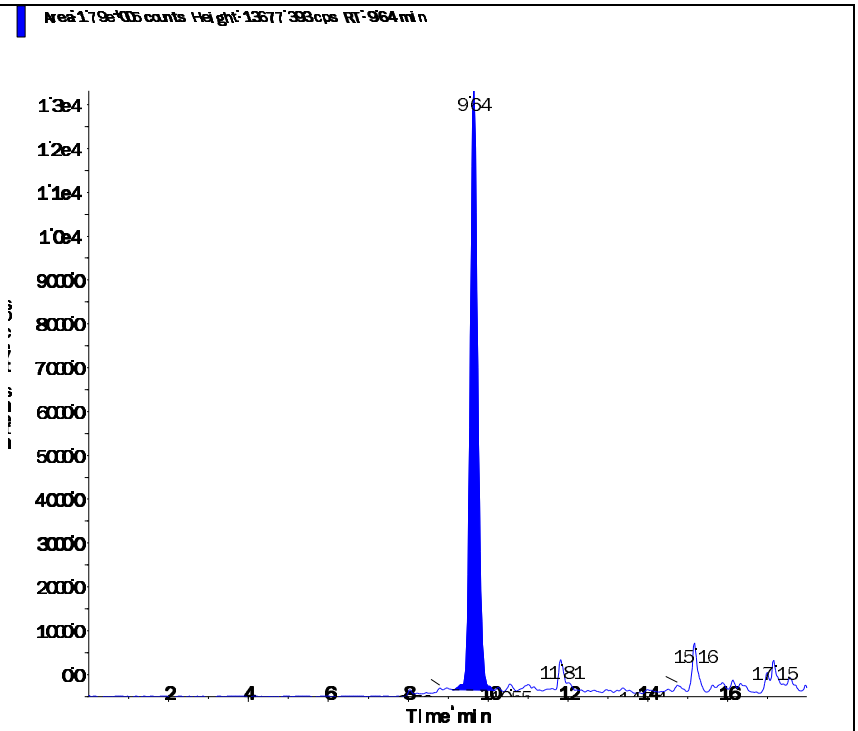

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.10 ng/ml
Area Ratio:	0.125
Sample Type:	(Quality Control)

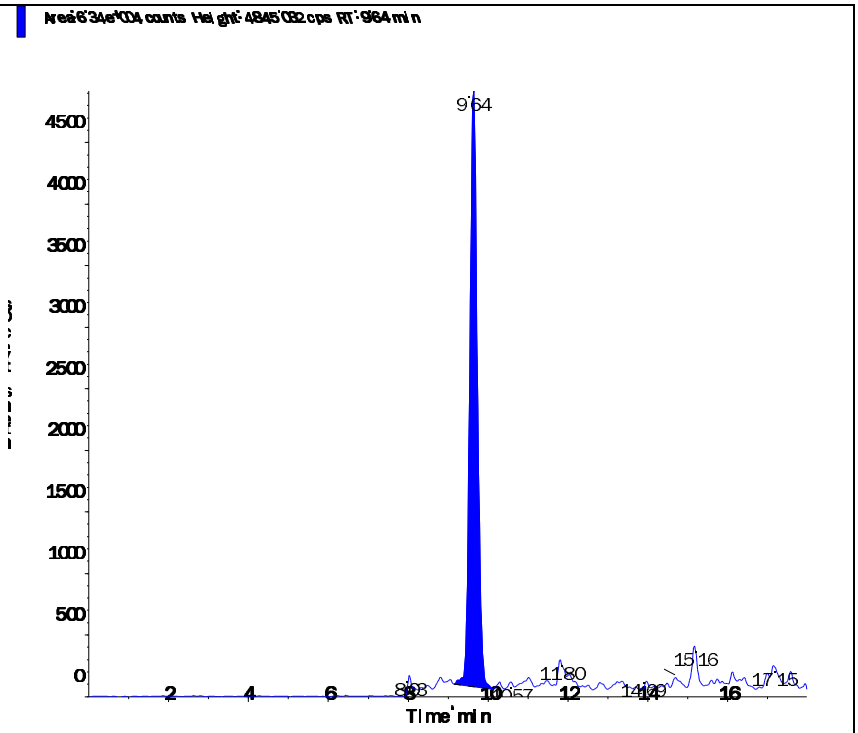

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Data File	LM35257.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 7:56:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35257.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 7:56:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.810e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.750e+05	9.64	1.00	1.08
Perchlorate conf	5.800e+04	9.62	1.00	1.06

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

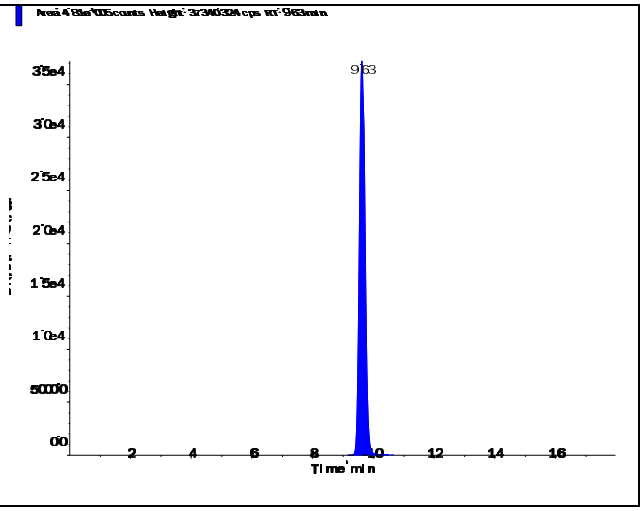

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.08 ng/ml
Area Ratio:	0.363
Sample Type:	(Quality Control)

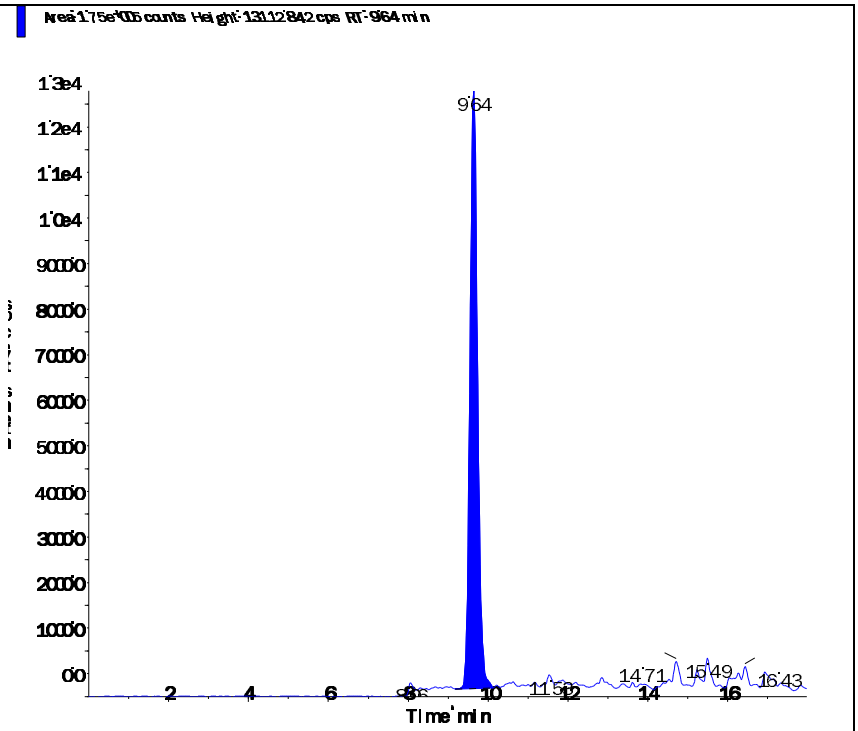

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.62 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

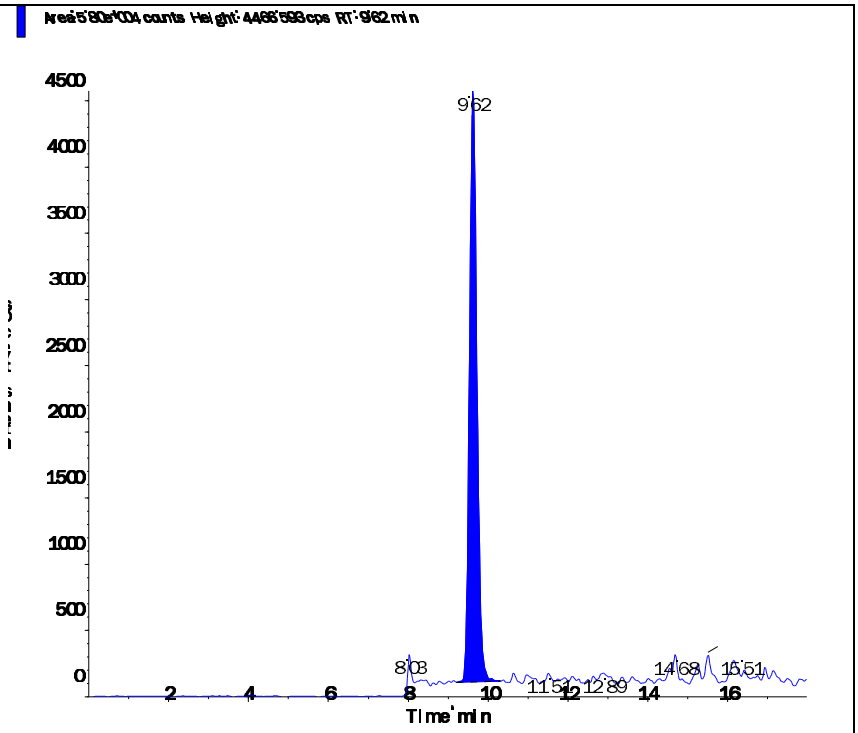

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Data File	LM35227.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 10:27:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35227.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 10:27:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.430e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.060e+04	9.68	N/A	0.202
Perchlorate conf	1.110e+04	9.67	N/A	0.204

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

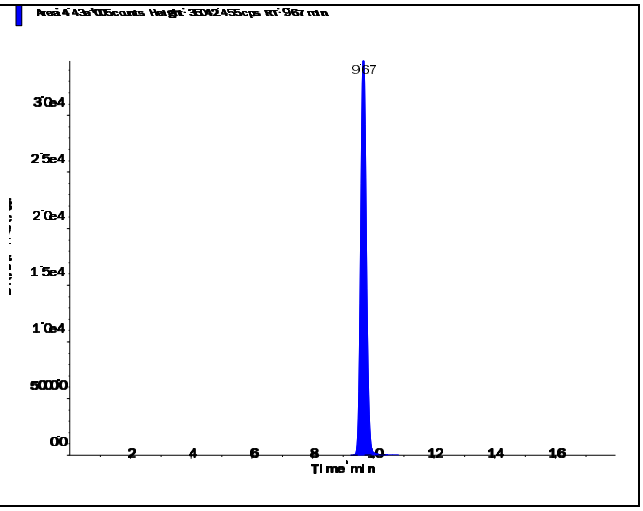

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.68 (9.84) min
Calculated conc:	0.202 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

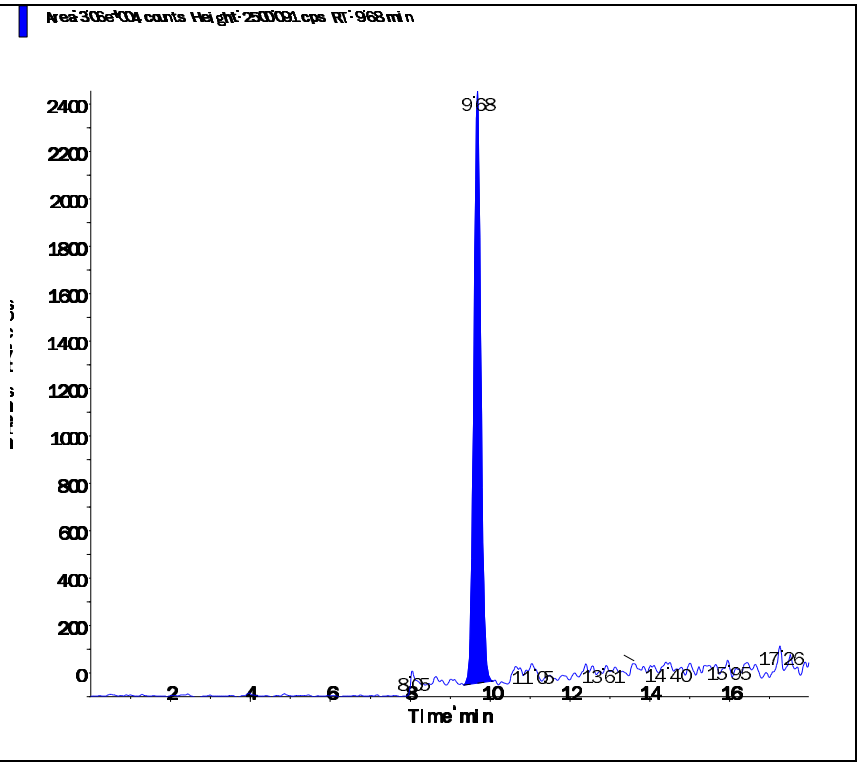

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.67 (9.84) min
Calculated conc:	0.204 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

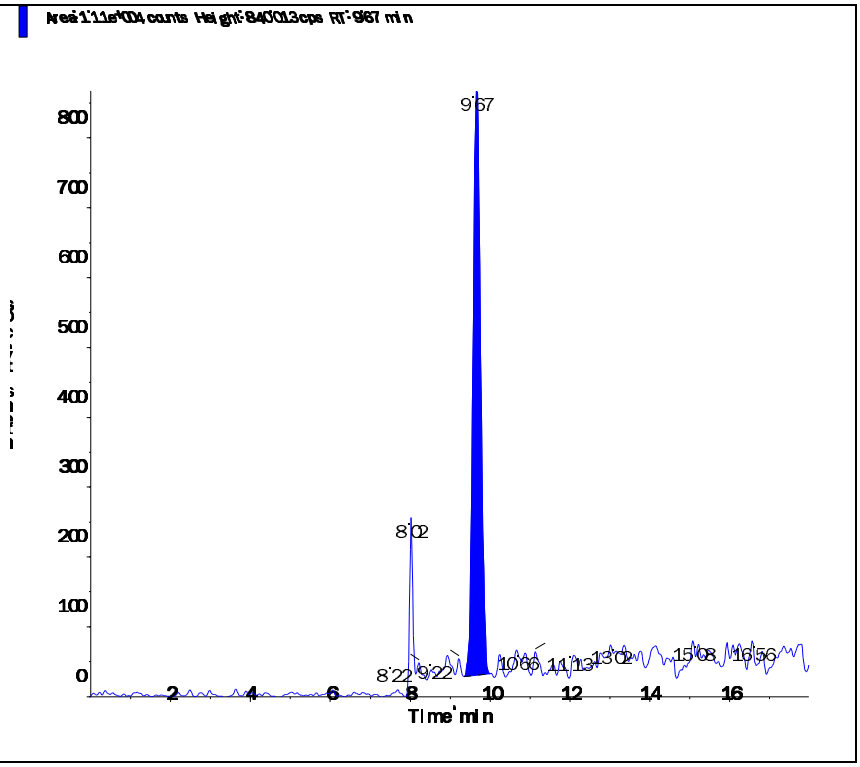

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Data File	LM35239.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 2:14:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-08 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35239.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 2:14:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.960e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.650e+04	9.68	N/A	0.215
Perchlorate conf	1.380e+04	9.66	N/A	0.228

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

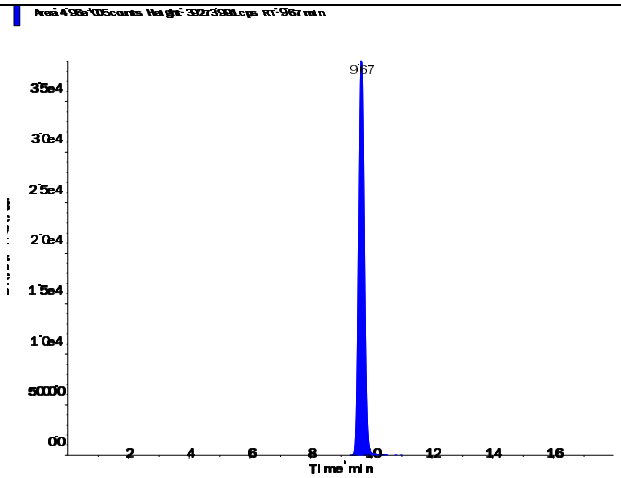

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.68 (9.84) min
Calculated conc:	0.215 ng/ml
Area Ratio:	0.074
Sample Type:	(Unknown)

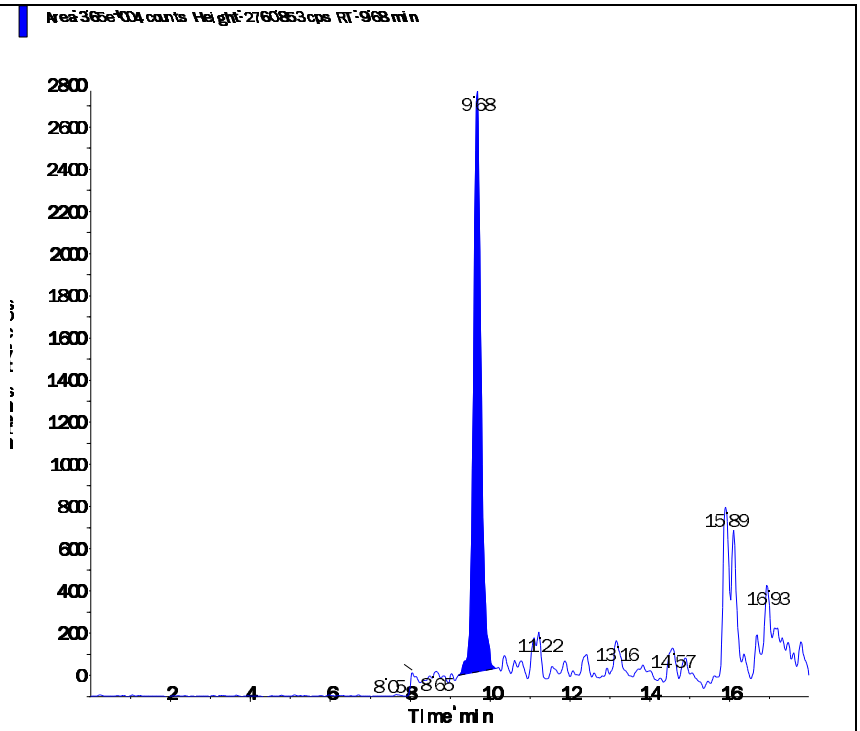

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.228 ng/ml
Area Ratio:	0.028
Sample Type:	(Unknown)

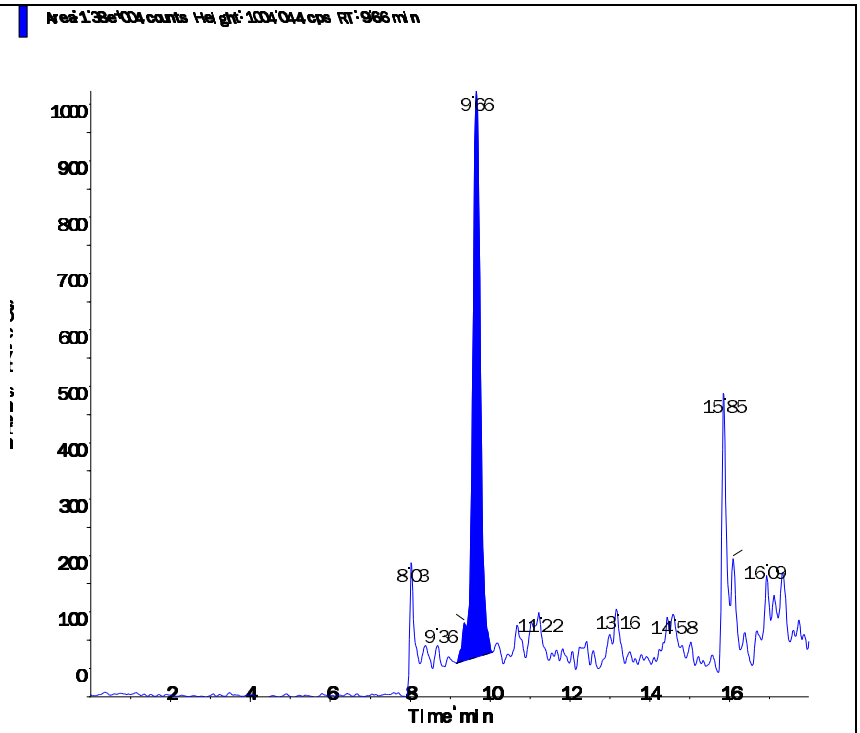

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Data File	LM35245.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 4:08:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-09 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35245.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 4:08:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.670e+04	9.69	N/A	0.21
Perchlorate conf	1.260e+04	9.66	N/A	0.201

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

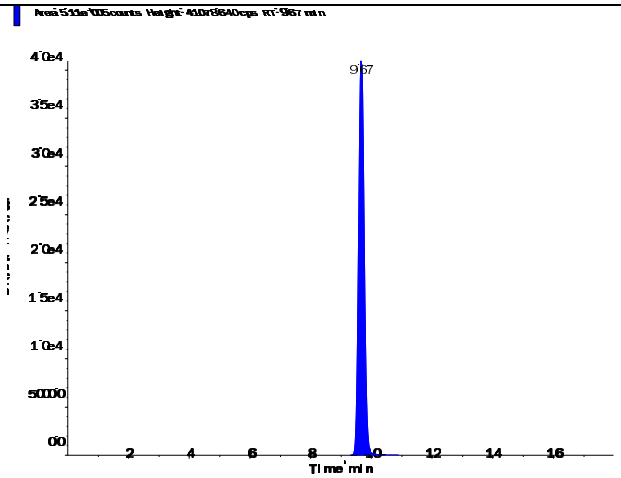

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.69 (9.84) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

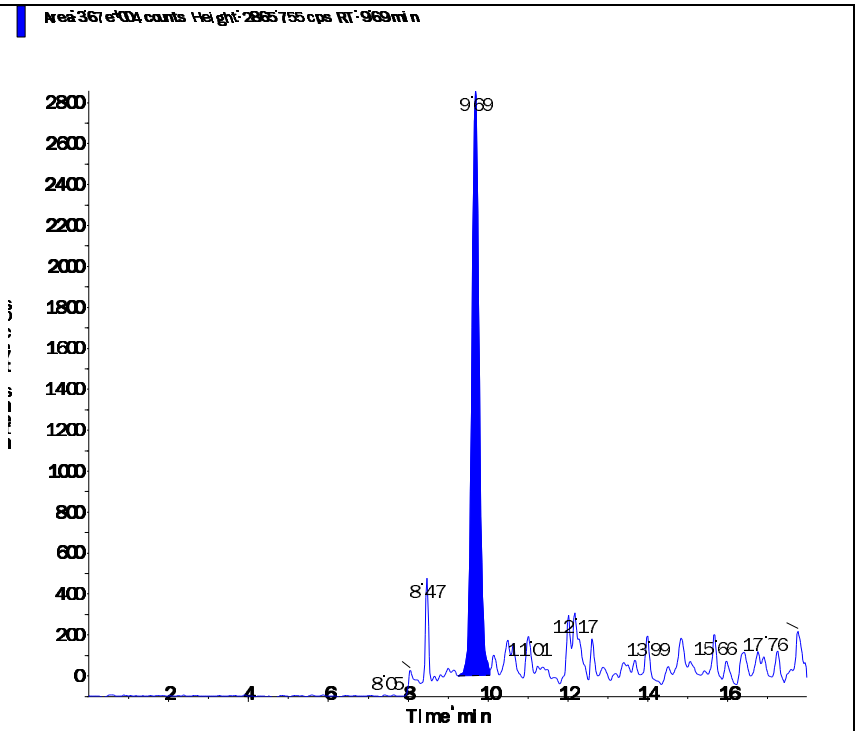

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

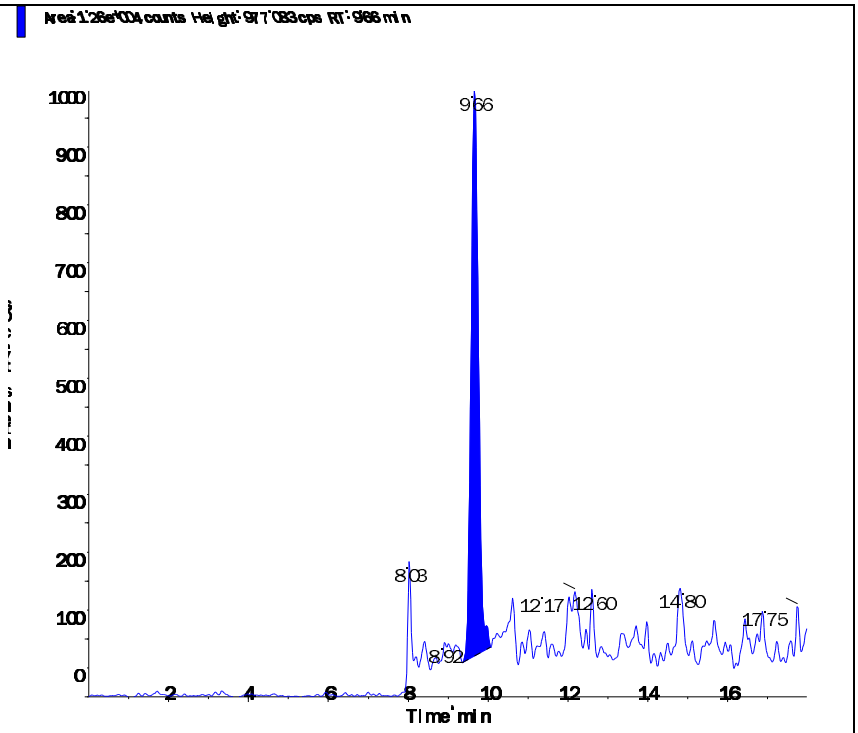

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Data File	LM35258.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 8:15:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-10 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35258.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 8:15:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-10	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.620e+04	9.68	N/A	0.222
Perchlorate conf	1.240e+04	9.66	N/A	0.212

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

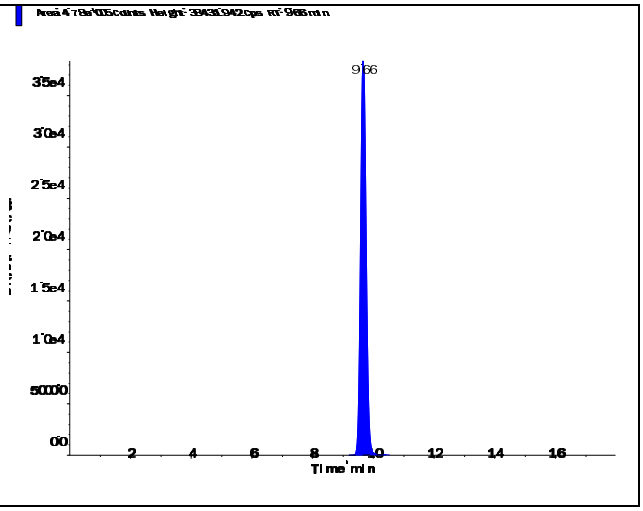

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.68 (9.84) min
Calculated conc:	0.222 ng/ml
Area Ratio:	0.076
Sample Type:	(Unknown)

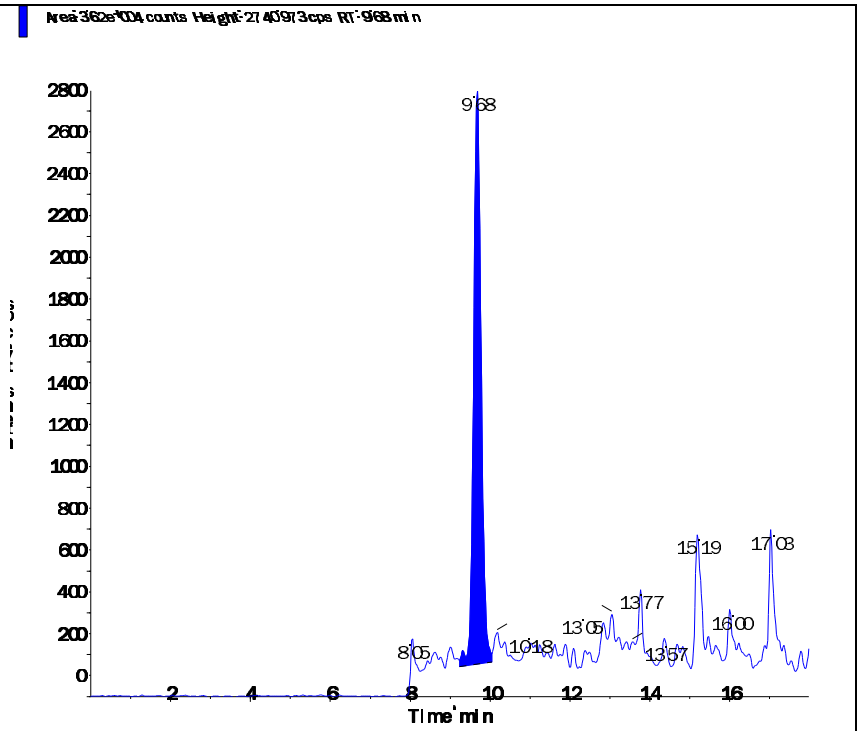

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.212 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

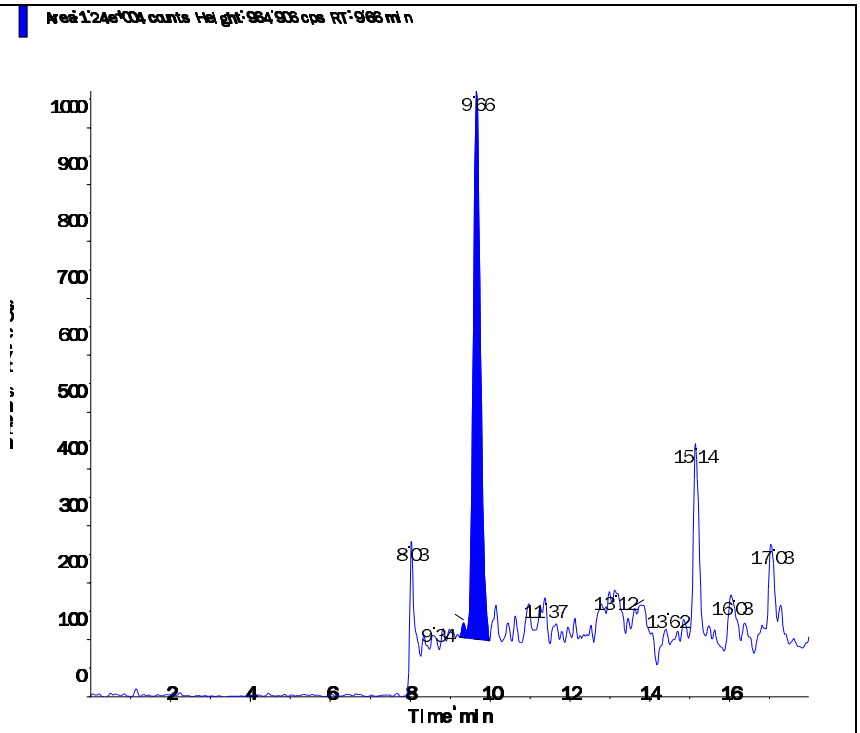

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Printed: 6/11/2016 12:59 PM

Data File	LM35225.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 9:49:48 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-01 CCB	**Injection Vial**	1.00
Data File	LM35225.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 9:49:48 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.710e+05	9.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.80(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

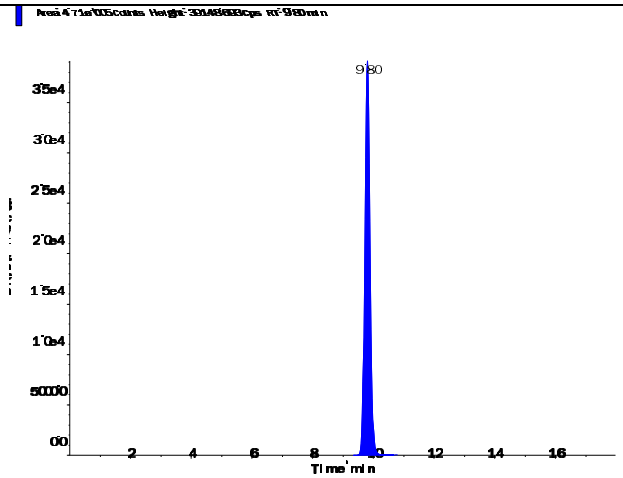

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

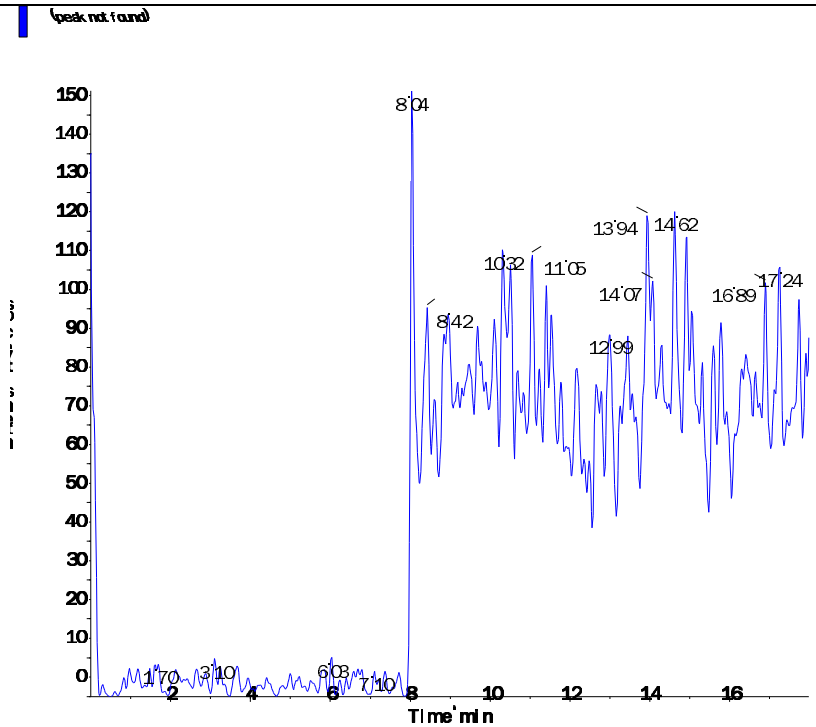

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

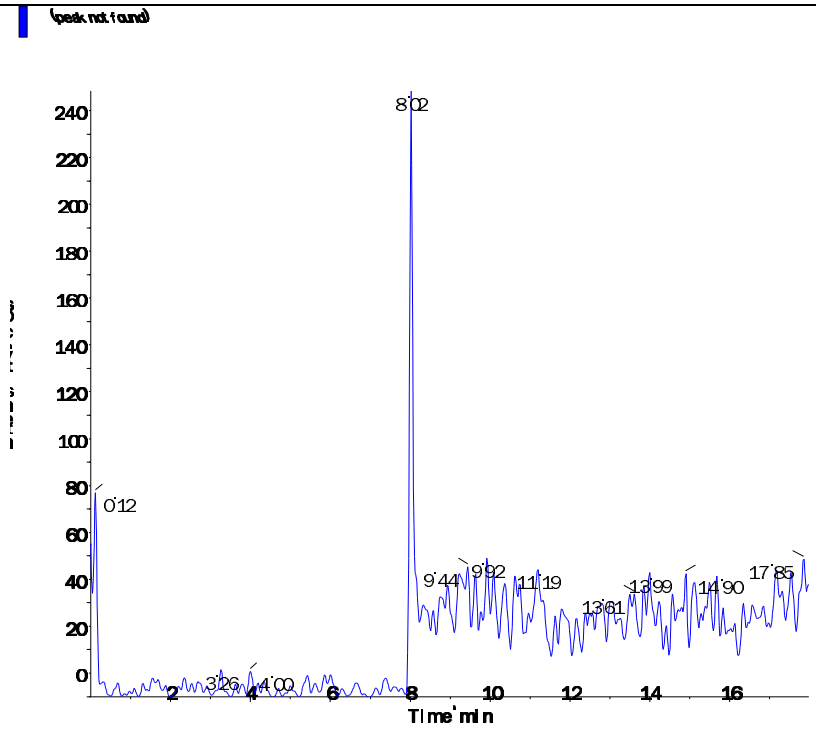

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Printed: 6/11/2016 1:04 PM

Data File	LM35240.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 2:33:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-04 CCB	**Injection Vial**	1.00
Data File	LM35240.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 2:33:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.660e+03	10.00	N/A	0.018
Perchlorate conf	1.770e+03	10.00	N/A	0.0114

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

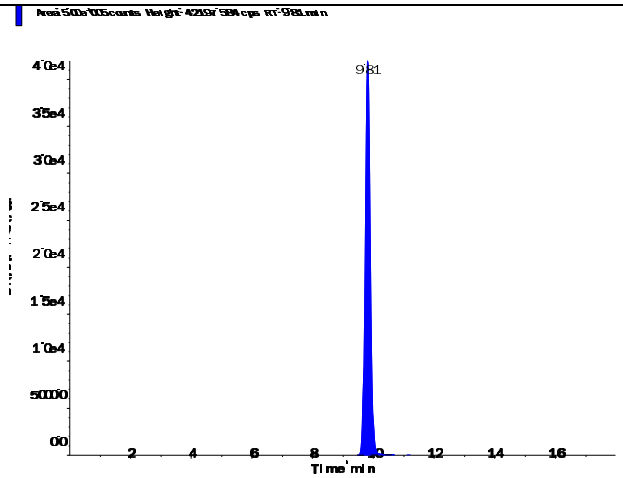

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.00 (9.84) min
Calculated conc:	0.018 ng/ml
Area Ratio:	0.007
Sample Type:	(Unknown)

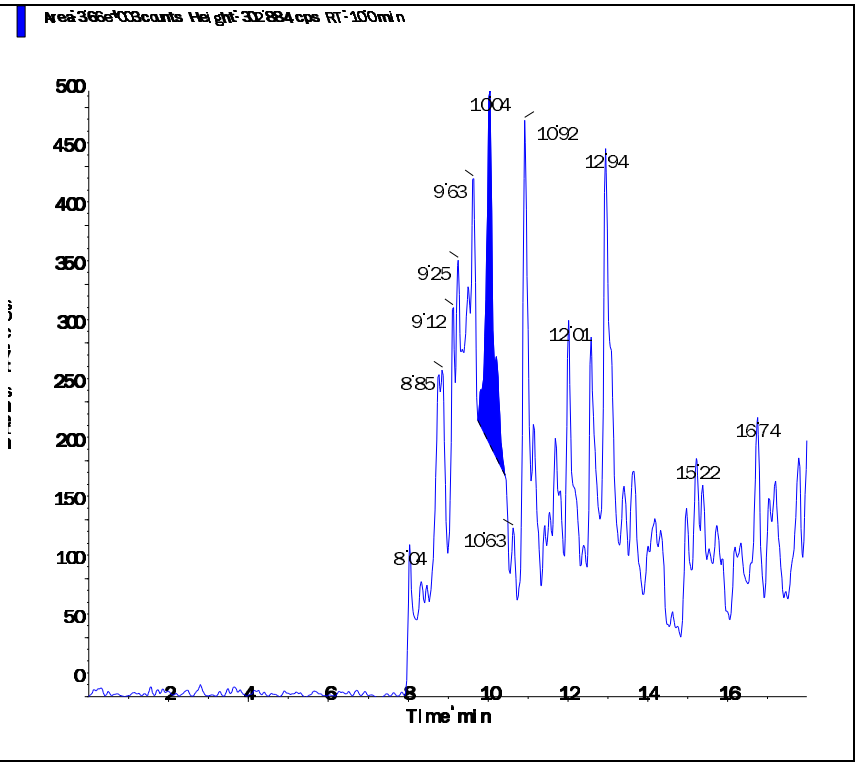

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.00 (9.84) min
Calculated conc:	0.0114 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)

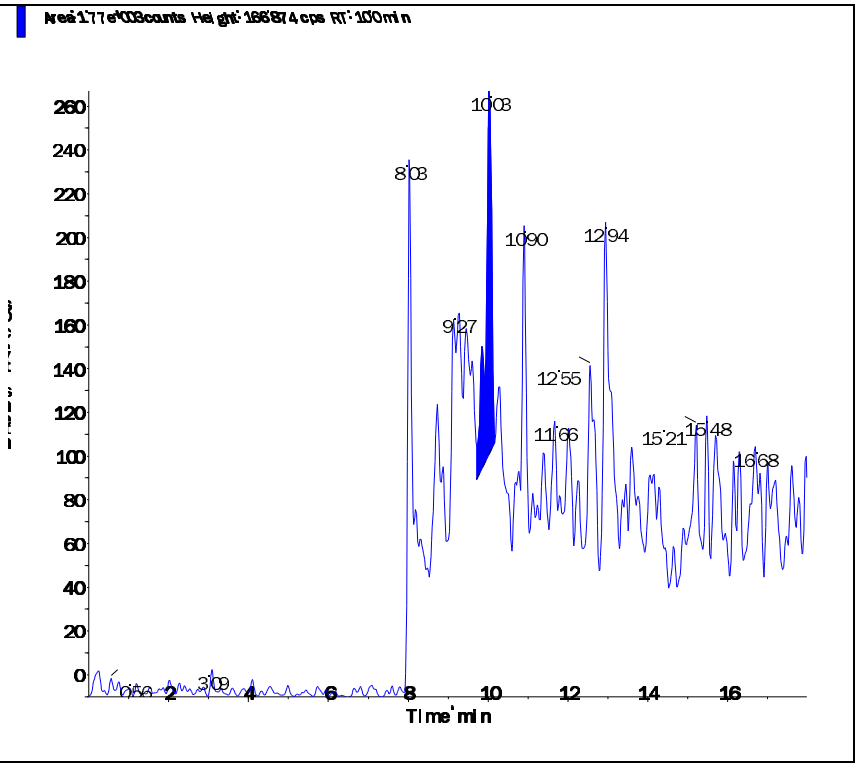

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Data File	LM35246.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 4:27:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-06 CCB	**Injection Vial**	1.00
Data File	LM35246.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 4:27:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.160e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	3.770e+02	9.80	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

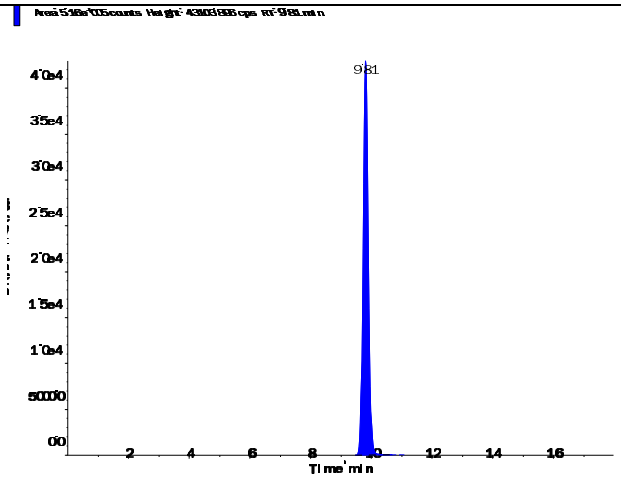

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

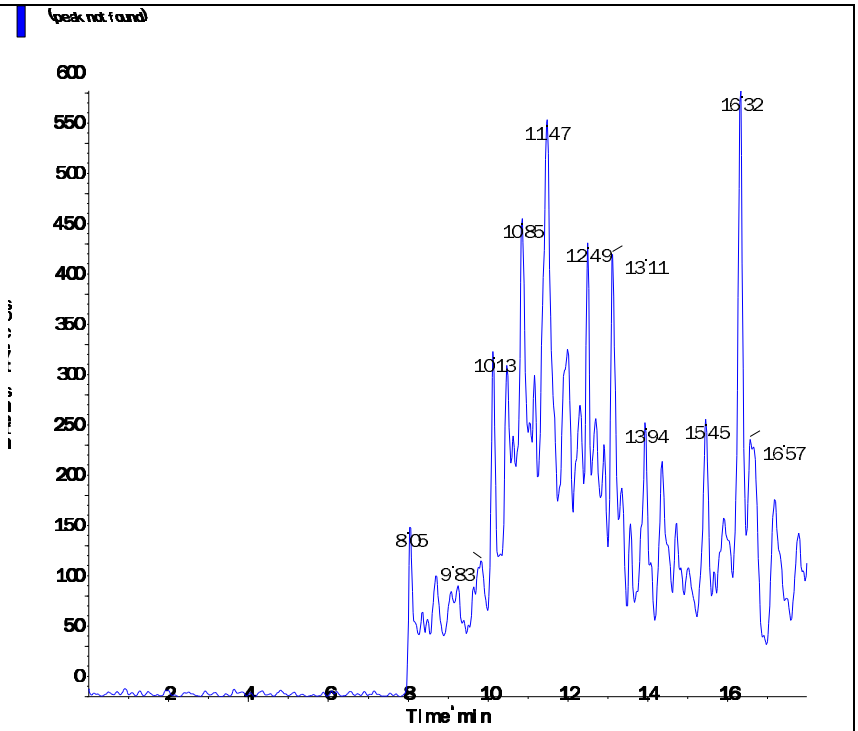

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.80 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

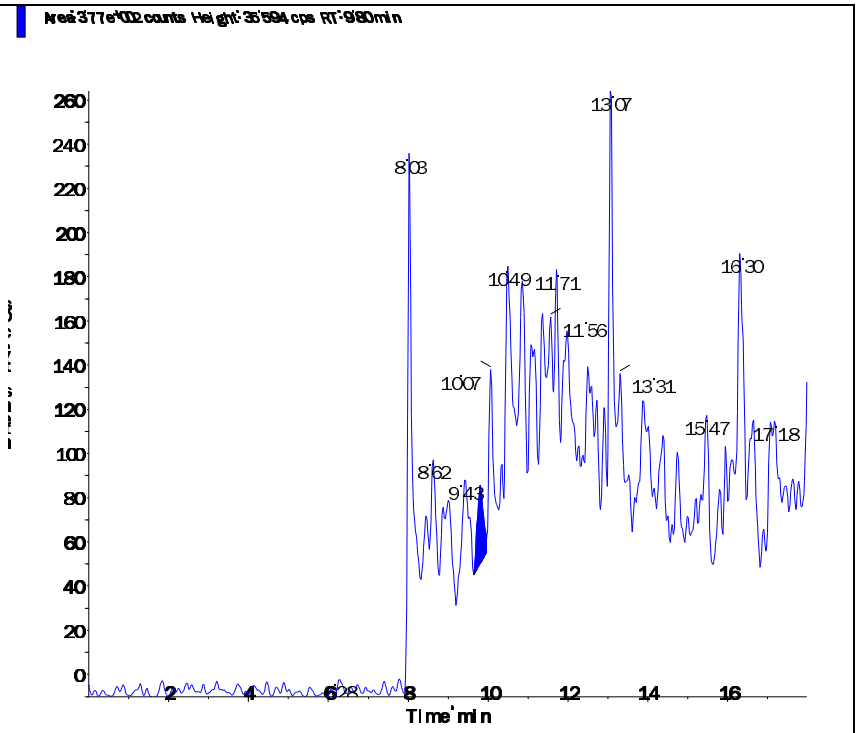

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Data File	LM35259.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 8:34:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-08 CCB	**Injection Vial**	1.00
Data File	LM35259.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 8:34:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.920e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

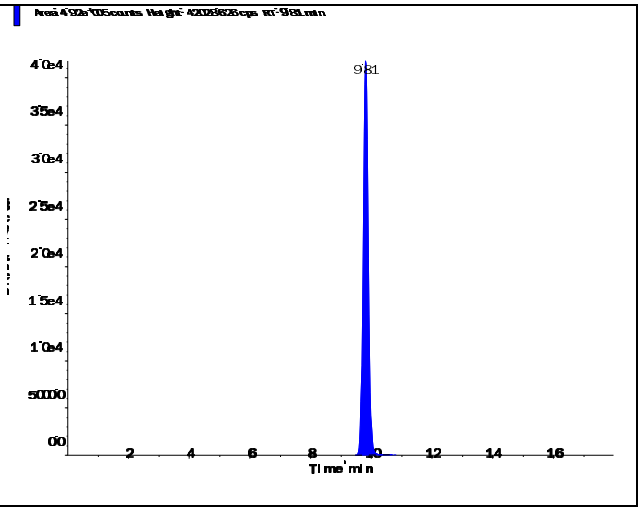

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Printed: 6/11/2016 1:11 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

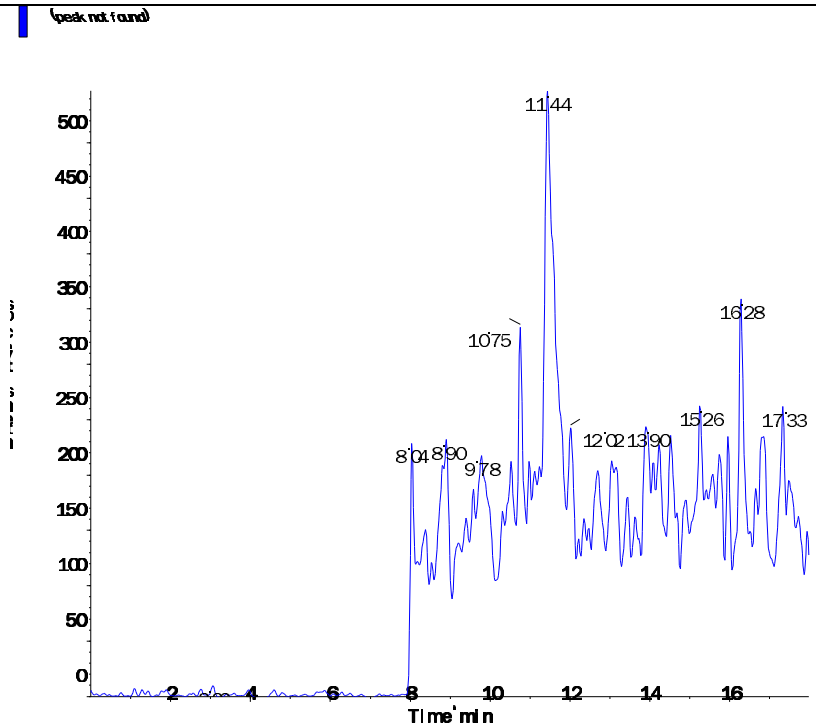

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

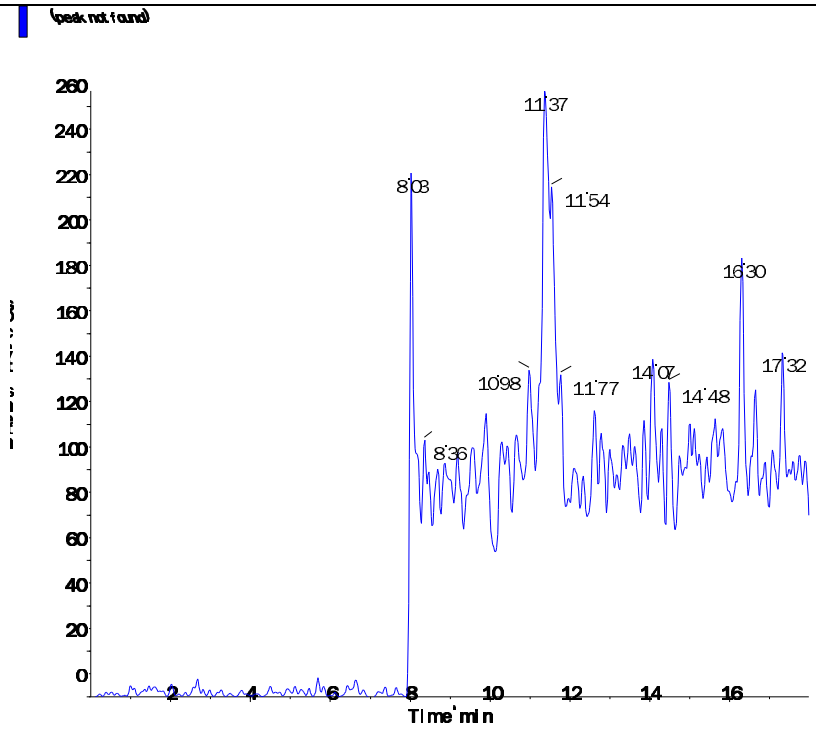

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Printed: 6/11/2016 1:00 PM

Data File	LM35228.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 10:46:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM35228.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 10:46:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.550e+05	9.16	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.520e+04	9.17	N/A	0.226
Perchlorate conf	1.040e+04	9.17	N/A	0.184

O18LP (Internal Standard)

RT (Exp. RT): 9.16(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

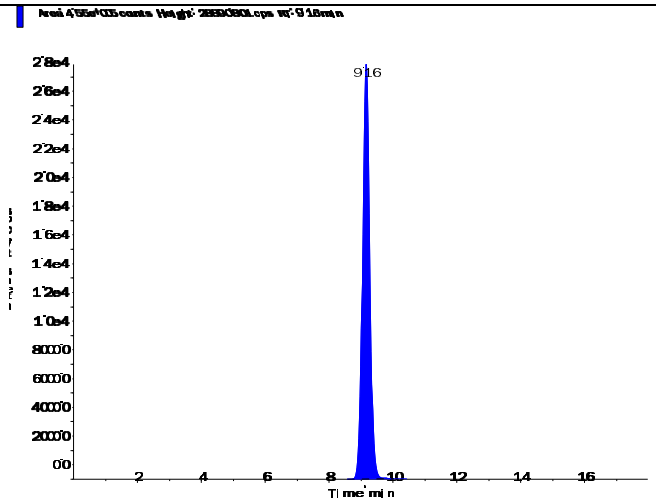

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Printed: 6/11/2016 1:00 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.17 (9.84) min
Calculated conc:	0.226 ng/ml
Area Ratio:	0.077
Sample Type:	(Unknown)

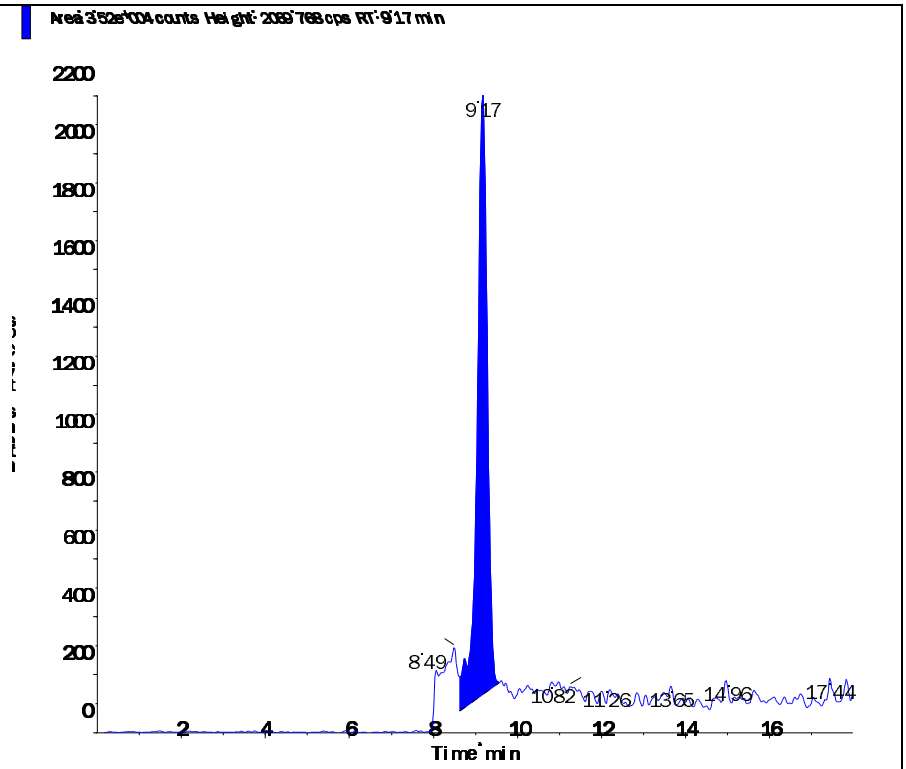

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.17 (9.84) min
Calculated conc:	0.184 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

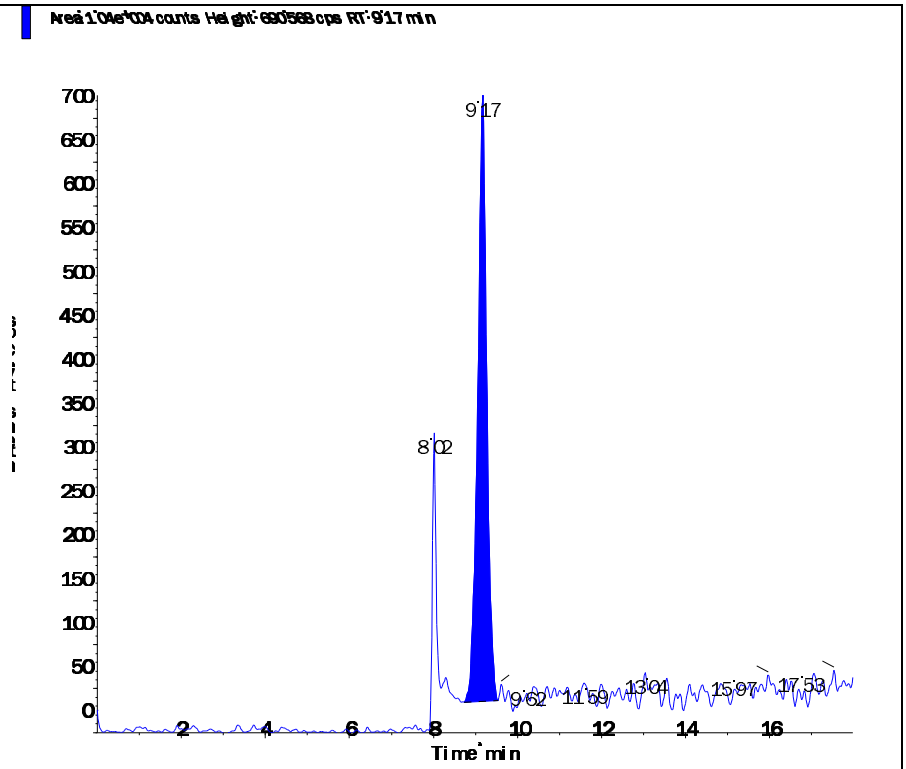

2.2.2.5 Raw QC Data

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Created with Analyst Reporter
Printed: 6/11/2016 1:00 PM

Data File	LM35229.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 11:05:30 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-02 BLANK	**Injection Vial**	5.00
Data File	LM35229.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 11:05:30 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.410e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	3.090e+02	9.81	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

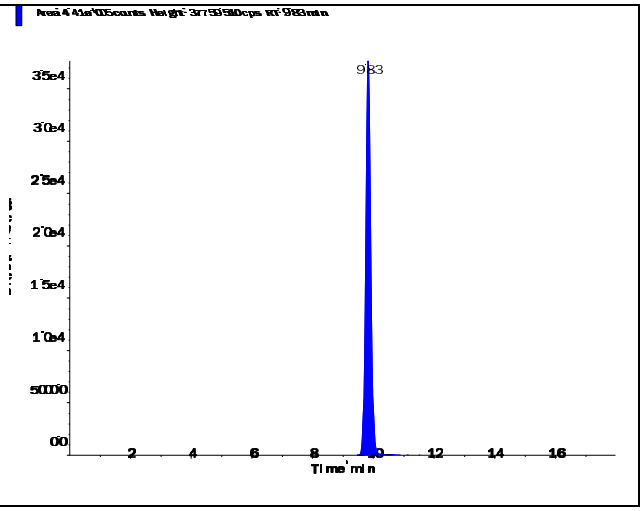

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

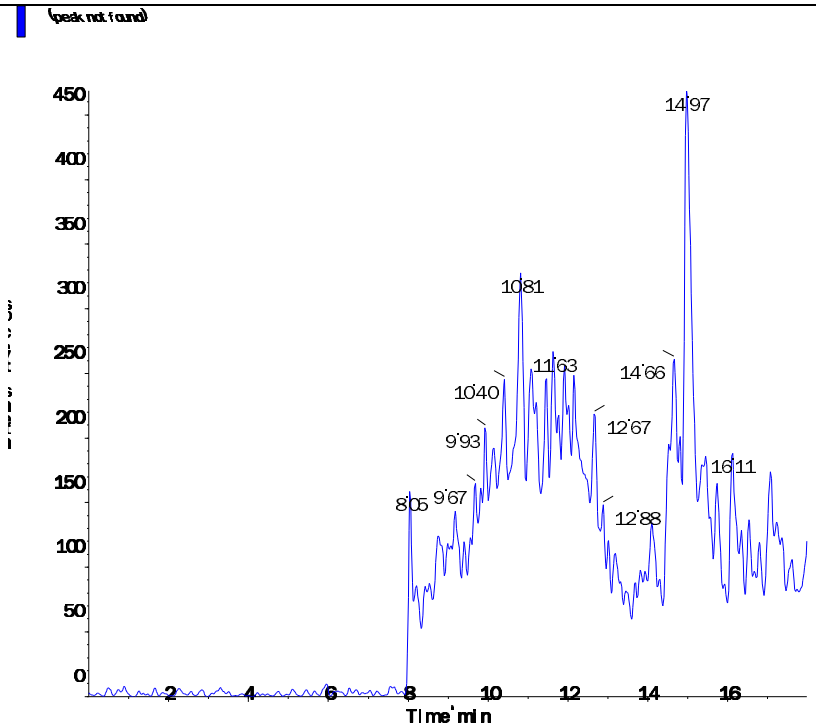

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.81 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

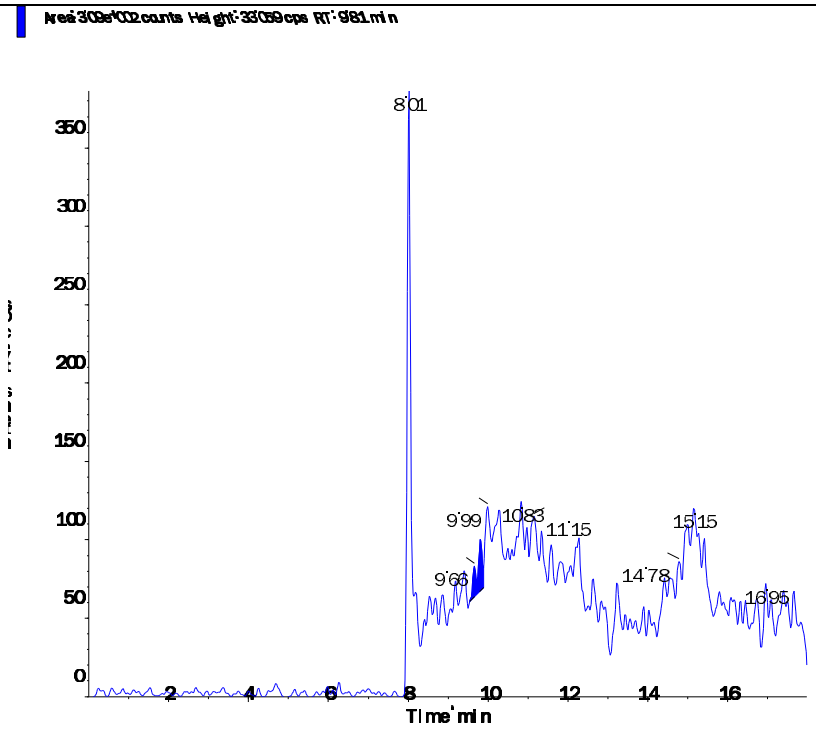

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/11/2016 1:01 PM

Data File	LM35230.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 11:24:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM35230.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 11:24:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.340e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.000e+04	9.83	N/A	0.201
Perchlorate conf	1.180e+04	9.83	N/A	0.223

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

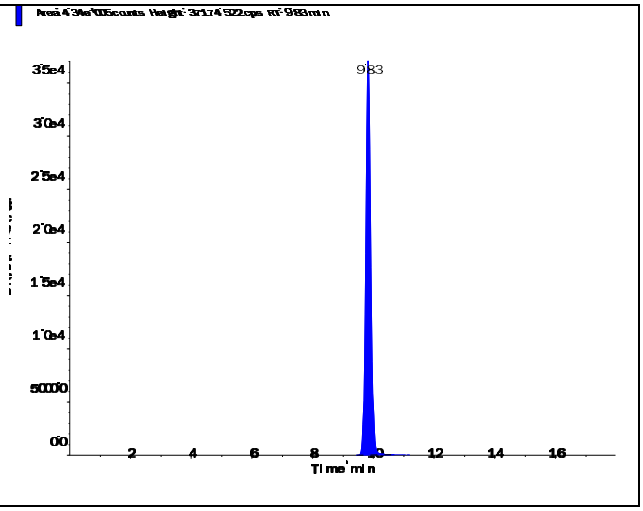

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

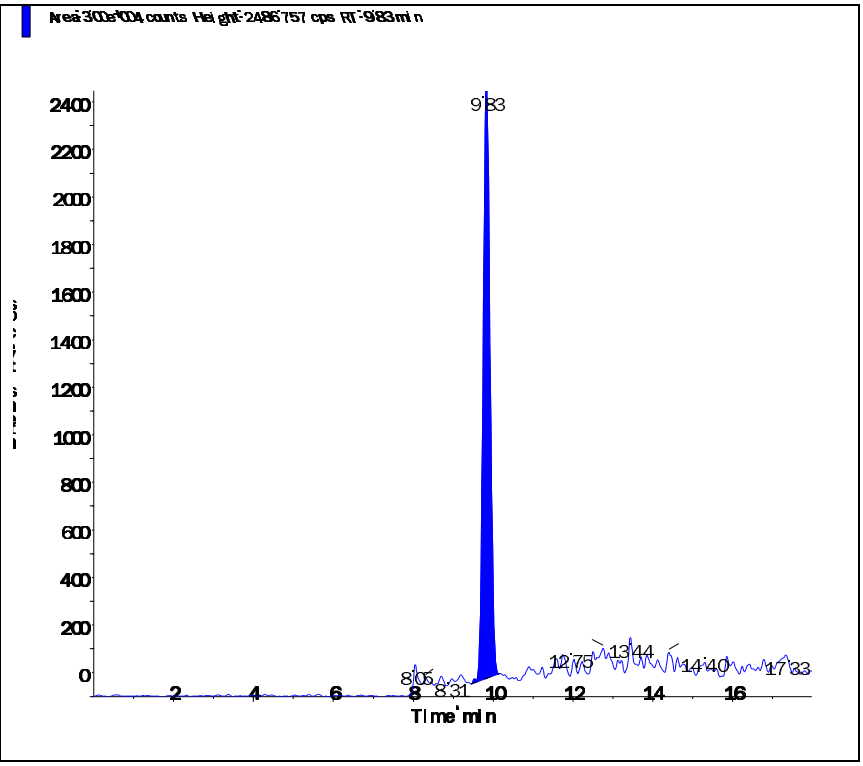

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.223 ng/ml
Area Ratio:	0.027
Sample Type:	(Unknown)

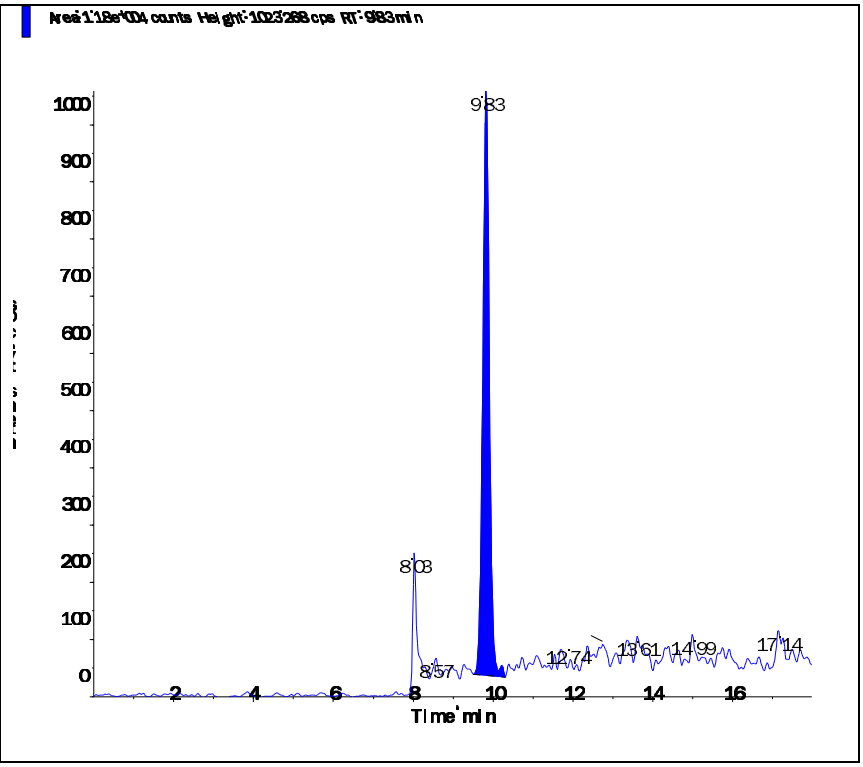

s.dataFile Page 2 of 2

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
June 22, 2016

001 - BIO-CHEM TESTING WVDEP 220	002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental	004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES	006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES	008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND	AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER	ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS	ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED	AWE - ANDREW W. ESSIG
AZH - AFTER HOURS	BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE	BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY	CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS	CEB - CHAD E. BARNES
CJQ - Cameron J. Quick	CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD	CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS	CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL	DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE	DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON	DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE	DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR	ECL - ERIC C. LAWSON
EMW - ERIC M. WILKEN	ENY - EMILY N. YOAK
ERP - ERIN R. PORTER	FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY	JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH	JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS	JLD - JESSICA L. DELONG
JLL - JOHN L. LENT	JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON	JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES	JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON	KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH	KEB - KATIE E. BARNES
KHR - KIM H. RHODES	KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON	KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS	LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF	LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA	MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON	MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN	MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE	MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR	MSW - MATT S. WILSON
NPH - Natalie P. Hart	PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE	PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB	QX - QIN XU
RAH - ROY A. HALSTEAD	REK - BOB E. KYER
RLB - BOB BUCHANAN	RM - RAYMOND MALEKE
RNP - RICK N. PETTY	RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG	SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY	SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF	TB - TODD BOYLE
TGF - TIM G. FELTON	TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS	VC - VICKI COLLIER
WJB - WILL J. BEASLEY	WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG	XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
June 22, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
June 22, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Stephanie Mossburg	Project Manager: Debra Richmann	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): Scott Beesinger	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205			
Turn Around Time: STANDARD	pH:	Program:	
Project Name/Location: Longhorn			
Project Number: 60274185.0013BH 1824 MR10			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp-	Grab	Matrix	Number of Containers	VOC	Perchlorate	Total Metals	1,4 - DIOXANE					SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 18/24	18CPTMW06-060816			6/8/16	1330		✓	W	6	✓	✓		✓									
	18CPTMW06MS-060816			6/8/16	1330		✓	W	6	✓	✓		✓									
	18CPTMW06MSD-060816			6/8/16	1330		✓	W	6	✓	✓		✓									
	MW22-060816			6/8/16	1455		✓	W	4	✓	✓											
	TRIP BLANK			6/8/16			✓	W	2	✓												

Comments: **STANDARD TAT**

Relinquished by: (Signature) Scott Beesinger	Date 6/8/16	Time 1545	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory (Signature)				arks:

Microbac OVD
Received: 06/09/2016 10:34
By: BRENDA GREGORY
221000086978

Brenda Gregory

•Homogenize all composite samples prior to analysis

Dis

C Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060497
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 20-JUN-2016

Samplenum	Container ID	Products
L16060497-01	757164	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:25	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:46	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:25	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:46	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:25	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:46	AWE	CLS	

Samplenum	Container ID	Products
L16060497-01	757165	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	09-JUN-2016 14:25	CLS		
2	PREP	W1	EXT	13-JUN-2016 15:30	CPD	BRG	
3	SUBBED	EXT	DISP	14-JUN-2016 10:04	BJO	BJO	
4	ANALYZ*	EXT	SEMI	20-JUN-2016 12:17	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		09-JUN-2016 14:25	CLS		

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060497-01	757166	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	09-JUN-2016 14:25	CLS		
2	ANALYZ	W1	SEM	10-JUN-2016 08:23	WTD	BRG	
3	STORE	SEM	A1	11-JUN-2016 11:57	AZH	WTD	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060497
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 20-JUN-2016

Samplenum	Container ID	Products
L16060497-02	757167	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:25	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:46	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:25	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:46	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:25	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:46	AWE	CLS	

Samplenum	Container ID	Products
L16060497-02	757168	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	09-JUN-2016 14:25	CLS		
2	PREP	W1	EXT	13-JUN-2016 15:30	CPD	BRG	
3	SUBBED	EXT	DISP	14-JUN-2016 10:04	BJO	BJO	
4	ANALYZ*	EXT	SEMI	20-JUN-2016 12:17	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		09-JUN-2016 14:25	CLS		

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060497-02	757169	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	09-JUN-2016 14:25	CLS		
2	ANALYZ	W1	SEM	10-JUN-2016 08:23	WTD	BRG	
3	STORE	SEM	A1	11-JUN-2016 11:56	AZH	WTD	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060497
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 20-JUN-2016

Samplenum	Container ID	Products
L16060497-03	757170	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:25	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:46	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:25	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:46	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:25	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:46	AWE	CLS	

Samplenum	Container ID	Products
L16060497-03	757171	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	09-JUN-2016 14:25	CLS		
2	PREP	W1	EXT	13-JUN-2016 15:30	CPD	BRG	
3	SUBBED	EXT	DISP	14-JUN-2016 10:04	BJO	BJO	
4	ANALYZ*	EXT	SEMI	20-JUN-2016 12:17	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		09-JUN-2016 14:25	CLS		

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060497-03	757172	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	09-JUN-2016 14:25	CLS		
2	ANALYZ	W1	SEM	10-JUN-2016 08:24	WTD	BRG	
3	STORE	SEM	A1	11-JUN-2016 11:56	AZH	WTD	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060497
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 20-JUN-2016

Samplenum	Container ID	Products
L16060497-04	757173	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:25	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:46	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:25	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:45	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:25	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:45	AWE	CLS	

Samplenum	Container ID	Products
L16060497-04	757174	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		09-JUN-2016 14:25	CLS		

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		09-JUN-2016 14:25	CLS		

Samplenum	Container ID	Products
L16060497-04	757175	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	09-JUN-2016 14:25	CLS		
2	ANALYZ	W1	SEM	10-JUN-2016 08:24	WTD	BRG	
3	STORE	SEM	A1	11-JUN-2016 11:56	AZH	WTD	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060497
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 20-JUN-2016

Samplenum	Container ID	Products
L16060497-05	757176	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:25	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:46	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:25	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:46	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16060504

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Michelle Taylor – Client Services Specialist
(740) 373-4071
Michelle.Taylor@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on July 01 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00113323	I	5.0		J2317165081	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18CPTMW08SW-060816	L16060504-01	06/08/2016 08:00	06/09/2016 10:30
18CPTMW08DW-060816	L16060504-02	06/08/2016 09:05	06/09/2016 10:30
MW5-060816	L16060504-03	06/08/2016 10:10	06/09/2016 10:30
18CPTMW03SW-060816	L16060504-04	06/08/2016 11:20	06/09/2016 10:30
TRIP BLANK	L16060504-05	06/08/2016 00:01	06/09/2016 10:30

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16060504
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

1.0 Summary Data ..... ??
1.1 Narratives ..... ??
1.2 Certificate of Analysis ..... ??
2.0 Full Sample Data Package ..... ??
2.1 Volatiles Data ..... ??
2.1.1 Volatiles GCMS Data (8260) ..... ??
2.1.1.1 Summary Data ..... ??
2.1.1.2 QC Summary Data ..... ??
2.1.1.3 Sample Data ..... ??
2.1.1.4 Standards Data ..... ??
2.1.1.5 Raw QC Data ..... ??
2.2 Semivolatiles Data ..... ??
2.2.1 Semivolatiles GC/MS Data (Dioxane) ..... ??
2.2.1.1 Summary Data ..... ??
2.2.1.2 QC Summary Data ..... ??
2.2.1.3 Sample Data ..... ??
2.2.1.4 Standards Data ..... ??
2.2.1.5 Raw QC Data ..... ??
2.2 General Chromatography Data ..... ??
2.2.2 6850 LC/MS Data ..... ??
2.2.2.1 Summary Data ..... ??
2.2.2.2 QC Summary Data ..... ??
2.2.2.3 Sample Data ..... ??
2.2.2.4 Standards Data ..... ??
2.2.2.5 Raw QC Data ..... ??
2.3 Metals Data ..... ??
2.3.1 Metals I C P Data ..... ??
2.3.1.1 Summary Data ..... ??
2.3.1.2 QC Summary Data ..... ??
2.3.1.3 Raw Data ..... ??
2.3.2 Metals ICP-MS Data ..... ??
2.3.2.1 Summary Data ..... ??
2.3.2.2 QC Summary Data ..... ??
2.3.2.3 Raw Data ..... ??
2.3.3 Metals CVAA Data (Mercury) ..... ??
2.3.3.1 Summary Data ..... ??
2.3.3.2 QC Summary ..... ??
2.3.3.3 Raw Data ..... ??
3.0 Attachments ..... ??

1.0 Summary Data

1.1 Narratives

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	8260
Prep Batch Number(s):	572509,572592	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-29 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2016-06-29 17:48:43

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	8260
Prep Batch Number(s):	572509,572592	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-29 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	8260
Prep Batch Number(s):	572509,572592	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-29 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	8260
Prep Batch Number(s):	572509,572592	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-29 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	8260
Prep Batch Number(s):	572509,572592	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-29 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	8260
Prep Batch Number(s):	572509,572592	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-29 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1)Acetone, 2-Butanone, 1,2-Dibromo-3-Chloropropane and 2-Hexanone exceeded the UCL in the CCV analyzed 06/13/2016 om HPMS11.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572341	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-21 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-06-21 18:31:30

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572341	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-21 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572341	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-21 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572341	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-21 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572341	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-21 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572341	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-21 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572200	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-06-14 16:48:12

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572200	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572200	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572200	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572200	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572200	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572544	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-07-01 00:00:54

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572544	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?		X			ER#1
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572544	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572544	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572544	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572544	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - Client sample 03 required dilution analysis in order to obtain results for magnesium and sodium within the calibration range.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG572187	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-30 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-06-30 23:55:58

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG572187	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-30 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?		X			ER#3
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?		X			ER#1
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG572187	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-30 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG572187	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-30 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			ER#2
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG572187	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-30 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG572187	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-30 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - The initial calibration blank on 13-JUN-2016 at 12:02 yielded a result for antimony that was greater than the LOD and less than the LOQ. However, client sample 03 was nondetect for antimony. Antimony was reported and no further action was taken. The continuing calibration blank on 13-JUN-2016 at 14:20 yielded a result for manganese that was greater than the LOD and less than the LOQ. However, client sample 03 had a result for manganese greater than ten times that of the CCB. Manganese was reported and no further action was taken.

ER#2 - Due to continuing calibration verification failure for cobalt on 13-JUN-2016 at 14:17, client sample 03 was reanalyzed on a later calibration for cobalt.

ER#3 - Client sample 03 required dilution analysis in order to obtain a result for barium within the calibration range.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572231	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-30 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-06-30 23:54:01

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572231	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-30 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572231	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-30 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572231	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-30 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572231	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-30 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572231	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-30 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	18CPTMW08SW-060816	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG572509	**Analyst:**	JDS	**Run Date:**	06/14/2016 02:36
Collect Date:	06/08/2016 08:00	**Dilution:**	1	**File ID:**	11M12611
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.173	J	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.508	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.491	J	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	4.43		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	0.989	J	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	17.4		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.347	J	1.00	0.500	0.250

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.290	J	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	74.2		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	8.97		1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.4	85	115	
1,2-Dichloroethane-d4	89.1	70	120	
Toluene-d8	97.5	85	120	
4-Bromofluorobenzene	100	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW08SW-060816	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 12:17
Collect Date:	06/08/2016 08:00	**Dilution:**	1	**File ID:**	15M18406
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.39	J	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	50.1	20	129	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW08SW-060816	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/11/2016 13:40
Collect Date:	06/08/2016 08:00	**Dilution:**	10000	**File ID:**	1LM.LM35286
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	35000		4000	2000	1000

Certificate of Analysis

Sample #:	L16060504-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW08DW-060816	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 12:39
Collect Date:	06/08/2016 09:05	**Dilution:**	1	**File ID:**	15M18407
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	69.6	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW08DW-060816	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/11/2016 13:58
Collect Date:	06/08/2016 09:05	**Dilution:**	1000	**File ID:**	1LM.LM35287
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	672		400	200	100

Certificate of Analysis

Sample #:	L16060504-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	MW5-060816	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG572509	**Analyst:**	JDS	**Run Date:**	06/14/2016 03:08
Collect Date:	06/08/2016 10:10	**Dilution:**	1	**File ID:**	11M12612
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.430	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

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Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.565	J	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	3.44		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.01	J	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	13.4		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.254	J	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	53.7		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

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Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	4.91		1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.8	85	115	
1,2-Dichloroethane-d4	87.3	70	120	
Toluene-d8	98.3	85	120	
4-Bromofluorobenzene	103	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	MW5-060816	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 13:02
Collect Date:	06/08/2016 10:10	**Dilution:**	1	**File ID:**	15M18408
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	0.819	J	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	38.5	20	129	

J	Estimated value ; the analyte concentration was less than the LOQ.

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Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW5-060816	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/11/2016 14:17
Collect Date:	06/08/2016 10:10	**Dilution:**	10000	**File ID:**	1LM.LM35288
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	31300		4000	2000	1000

Certificate of Analysis

Sample #:	L16060504-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW5-060816	**Prep Method:**	3015	**Prep Date:**	06/10/2016 11:21
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/14/2016 12:52
Workgroup #:	WG572544	**Analyst:**	JYH	**Run Date:**	06/14/2016 14:24
Collect Date:	06/08/2016 10:10	**Dilution:**	1	**File ID:**	T3.061416.142427
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.0635	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	24.9		0.500	0.250	0.125
Iron, Total	7439-89-6	1.00		0.200	0.100	0.0500
Potassium, Total	7440-09-7	2.42		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW5-060816	**Prep Method:**	3015	**Prep Date:**	06/10/2016 11:21
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/14/2016 12:52
Workgroup #:	WG572544	**Analyst:**	JYH	**Run Date:**	06/14/2016 14:32
Collect Date:	06/08/2016 10:10	**Dilution:**	5	**File ID:**	T3.061416.143214
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Magnesium, Total	7439-95-4	26.1		5.00	2.50	1.25
Sodium, Total	7440-23-5	124		5.00	2.50	1.25

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW5-060816	**Prep Method:**	3015	**Prep Date:**	06/10/2016 07:51
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/13/2016 11:56
Workgroup #:	WG572444	**Analyst:**	BKT	**Run Date:**	06/13/2016 14:36
Collect Date:	06/08/2016 10:10	**Dilution:**	1	**File ID:**	NI.061316.143618
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00122	J	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000758	J	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.126		0.00400	0.00200	0.00100
Copper, Total	7440-50-8	0.00218	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.102		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.0777		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00158	J	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0231	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW5-060816	**Prep Method:**	3015	**Prep Date:**	06/10/2016 07:51
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/15/2016 12:43
Workgroup #:	WG572444	**Analyst:**	BKT	**Run Date:**	06/15/2016 14:46
Collect Date:	06/08/2016 10:10	**Dilution:**	1	**File ID:**	NI.061516.144612
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Cobalt, Total	7440-48-4	0.00267		0.00200	0.00100	0.000500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW5-060816	**Prep Method:**	3015	**Prep Date:**	06/10/2016 07:51
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/15/2016 12:43
Workgroup #:	WG572444	**Analyst:**	BKT	**Run Date:**	06/15/2016 14:49
Collect Date:	06/08/2016 10:10	**Dilution:**	10	**File ID:**	NI.061516.144923
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.960		0.0600	0.0300	0.0150

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-03	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW5-060816	**Prep Method:**	7470A	**Prep Date:**	06/10/2016 10:23
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/13/2016 15:11
Workgroup #:	WG572285	**Analyst:**	AMA	**Run Date:**	06/13/2016 16:05
Collect Date:	06/08/2016 10:10	**Dilution:**	1	**File ID:**	M7.061316.160504
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW03SW-060816	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572592	**Analyst:**	TMB	**Run Date:**	06/14/2016 21:31
Collect Date:	06/08/2016 11:20	**Dilution:**	1	**File ID:**	8M412996
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	7.30	J	10.0	5.00	2.50
Benzene	71-43-2	6.13		1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.304	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	13.0		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	19.4		1.00	0.500	0.250

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	4.50		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	1.83		1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.457	J	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	153		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	1.12		1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	114	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	100	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW03SW-060816	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 13:25
Collect Date:	06/08/2016 11:20	**Dilution:**	1	**File ID:**	15M18409
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.15	J	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	48.1	20	129	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW03SW-060816	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/11/2016 17:19
Collect Date:	06/08/2016 11:20	**Dilution:**	100	**File ID:**	1LM.LM35295
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	260		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L16060504-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG572509	**Analyst:**	JDS	**Run Date:**	06/13/2016 22:53
Collect Date:	06/08/2016 00:01	**Dilution:**	1	**File ID:**	11M12604
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	89.7	85	115	
1,2-Dichloroethane-d4	86.5	70	120	
Toluene-d8	99.3	85	120	
4-Bromofluorobenzene	104	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	18CPTMW08SW-060816	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG572509	**Analyst:**	JDS	**Run Date:**	06/14/2016 02:36
Collect Date:	06/08/2016 08:00	**Dilution:**	1	**File ID:**	11M12611
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.173	J	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.508	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.491	J	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	4.43		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	0.989	J	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	17.4		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.347	J	1.00	0.500	0.250

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.290	J	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	74.2		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	8.97		1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.4	85	115	
1,2-Dichloroethane-d4	89.1	70	120	
Toluene-d8	97.5	85	120	
4-Bromofluorobenzene	100	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	MW5-060816	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG572509	**Analyst:**	JDS	**Run Date:**	06/14/2016 03:08
Collect Date:	06/08/2016 10:10	**Dilution:**	1	**File ID:**	11M12612
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.430	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.565	J	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	3.44		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.01	J	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	13.4		1.00	0.500	0.250

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.254	J	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	53.7		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	4.91		1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.8	85	115	
1,2-Dichloroethane-d4	87.3	70	120	
Toluene-d8	98.3	85	120	
4-Bromofluorobenzene	103	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW03SW-060816	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572592	**Analyst:**	TMB	**Run Date:**	06/14/2016 21:31
Collect Date:	06/08/2016 11:20	**Dilution:**	1	**File ID:**	8M412996
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	7.30	J	10.0	5.00	2.50
Benzene	71-43-2	6.13		1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.304	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	13.0		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	19.4		1.00	0.500	0.250

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	4.50		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	1.83		1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.457	J	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	153		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	1.12		1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	114	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	100	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG572509	**Analyst:**	JDS	**Run Date:**	06/13/2016 22:53
Collect Date:	06/08/2016 00:01	**Dilution:**	1	**File ID:**	11M12604
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	89.7	85	115	
1,2-Dichloroethane-d4	86.5	70	120	
Toluene-d8	99.3	85	120	
4-Bromofluorobenzene	104	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

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Instrument Run Log

Instrument: HPMS11 Dataset: 061415
Analyst1: TMB Analyst2: DLW
Method: 8260B SOP: MSV01 Rev: 22
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD70890 Surrogate Standard: STD70872
CCV: STD70883 LCS: STD70514 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG527475

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M08234	WG527475-01 50ng BFB STD	NA	1	1	STD70707	06/14/15 09:34
11M08235	WG527475-02 5ug/L STD8260	NA	1	1	STD70883	06/14/15 09:58
11M08236	WG527475-03 20ug/L STD8260	NA	1	1	STD70883	06/14/15 10:30
11M08237	WG527475-04 50ug/L STD8260	NA	1	1	STD70883	06/14/15 11:02
11M08238	WG527475-05 100ug/L STD8260	NA	1	1	STD70883	06/14/15 11:34
11M08239	WG527475-06 200ug/L STD8260	NA	1	1	STD70883	06/14/15 12:06
11M08240	WG527475-07 300ug/L STD8260	NA	1	1	STD70883	06/14/15 12:38
11M08241	WG527475-08 400ug/L STD8260	NA	1	1	STD70883	06/14/15 13:10
11M08242	WG527475-09 500ug/L STD8260	NA	1	1	STD70883	06/14/15 13:42
11M08243	RINSE	NA	1	1		06/14/15 14:14
11M08244	RINSE	NA	1	1		06/14/15 14:46
11M08245	WG527475-10 100ug/L ALT STD8260	NA	1	1	STD70514	06/14/15 15:18

Approved: September 15, 2015

Page: 1

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Instrument Run Log

Instrument: HPMS8 Dataset: 051316
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53752

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG568561

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412209	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 08:38
8M412210	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 08:57
8M412211	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 09:29
8M412212	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 09:56
8M412213	WG568561-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/13/16 10:19
8M412214	WG568561-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/13/16 10:51
8M412215	WG568565-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76072	05/13/16 11:36
8M412216	BFB CHECK	NA	1	1	STD76034	05/13/16 12:04
8M412217	BFB CHECK	NA	1	1	STD76034	05/13/16 12:18
8M412218	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 12:36
8M412219	RINSE	NA	1	1		05/13/16 13:00
8M412220	WG568561-02 0.3ug/L STD 8260	NA	1	1	STD76127	05/13/16 13:29
8M412221	WG568561-03 0.4ug/L STD 8260	NA	1	1	STD76127	05/13/16 13:58
8M412222	WG568561-04 1ug/L STD 8260	NA	1	1	STD76127	05/13/16 14:27
8M412223	WG568561-05 2ug/L STD 8260	NA	1	1	STD76127	05/13/16 14:56
8M412224	WG568561-06 5ug/L STD 8260	NA	1	1	STD76127	05/13/16 15:25
8M412225	WG568561-07 20ug/L STD 8260	NA	1	1	STD76127	05/13/16 15:54
8M412226	WG568561-08 50ug/L STD 8260	NA	1	1	STD76127	05/13/16 16:23
8M412227	WG568561-09 100ug/L STD 8260	NA	1	1	STD76127	05/13/16 16:52
8M412228	WG568561-10 200ug/L STD 8260	NA	1	1	STD76127	05/13/16 17:21
8M412229	WG568561-11 300ug/L STD 8260	NA	1	1	STD76127	05/13/16 17:50
8M412230	RINSE	NA	1	1		05/13/16 18:19
8M412231	RINSE	NA	1	1		05/13/16 18:49
8M412232	WG568561-12 50ug/L ALT SRC STD 8260	NA	1	1	STD76109	05/13/16 19:17
8M412233	RINSE	NA	1	1		05/13/16 19:46

Comments

Seq.	Rerun	Dil.	Reason	Analytes
5	X			
File ID: 8M412213				
	Several compounds were low, DNR.			
6				
File ID: 8M412214				

Approved: May 20, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS8	Dataset:	051316		
Analyst1:	TMB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	23
Method:	624	SOP:	MSV10	Rev:	14
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:	53752				

Internal Standard: STD75899 Surrogate Standard: STD75899

CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG568561

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			Two C compounds failed. DNR. Run a curve.	
7 File ID: 8M412215				
			DNR.	

Approved: May 20, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 051316
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 / OVAP MSV01 Rev: 23 / 0
Method: 5030B/5030C/5035A SOP: PAT01 / OVAP PAT01 Rev: 18 / 0
Method: 624 SOP: MSV10 Rev: 14
Maintenance Log ID:

Internal Standard: STD76110 Surrogate Standard: STD75929
CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG568769

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M11835	RINSE	NA	1	1		05/13/16 11:59
11M11836	WG568769-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 14:15
11M11837	WG568769-02 0.3ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 14:40
11M11838	WG568769-03 0.4ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 15:12
11M11839	WG568769-04 1.0ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 15:43
11M11840	WG568769-05 2.0ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 16:15
11M11841	WG568769-06 5.0ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 16:47
11M11842	WG568769-07 20ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 17:19
11M11843	WG568769-08 50ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 17:51
11M11844	WG568769-09 100ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 18:22
11M11845	WG568769-10 200ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 18:54
11M11846	WG568769-11 300ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 19:26
11M11847	RINSE	NA	1	1		05/13/16 19:58
11M11848	WG568769-12 50ug/L ALT SRC STD 8260	NA	1	1	STD76109	05/13/16 20:30
11M11849	RINSE	NA	1	1		05/13/16 21:02
11M11850	RINSE	NA	1	1		05/13/16 21:34

Approved: May 23, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051716
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76072; STD76127 LCS: STD76109; STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG569079; WG569083

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412319	WG569084-01 50ng BFB STD 8260	NA	1	1	STD76034	05/17/16 08:53
8M412320	WG569084-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/17/16 09:18
8M412321	WG569079-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76072	05/17/16 09:47
8M412322	WG569079-03 50ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 10:16
8M412323	WG569079-04 20ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 10:44
8M412324	WG569079-05 5ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 11:13
8M412325	WG569079-06 200ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 11:42
8M412326	WG569079-07 300ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 12:40
8M412327	WG569079-08 400ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 13:10
8M412328	WG569079-09 500ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 13:39
8M412329	RINSE	NA	1	1		05/17/16 14:08
8M412330	RINSE	NA	1	1		05/17/16 14:37
8M412331	WG569079-10 100ug/L ALT SRC STD 826	NA	1	1	STD75801	05/17/16 15:06
8M412332	WG569259-01 BFB 50ng 8260	NA	1	1	STD76034	05/17/16 18:27
8M412333	WG569259-02 50ug/L CCV 8260	NA	1	1	STD76034	05/17/16 18:53
8M412334	WG569260-01 100ug/L CCV A9	NA	1	1	STD76072	05/17/16 19:22
8M412335	WG569083-01 VBLK0517 BLANK 8260	NA	1	1		05/17/16 19:51
8M412336	WG569083-02 20ug/L LCS 8260	NA	1	1	STD76109	05/17/16 20:20
8M412337	WG569083-03 20ug/L LCS2 8260	NA	1	1	STD76109	05/17/16 20:49
8M412338	WG569083-04 100ug/L LCS A9	NA	1	1	STD75801	05/17/16 21:18
8M412339	WG569083-05 100ug/L LCS2 A9	NA	1	1	STD75801	05/17/16 21:46
8M412340	L16050844-01 TB A 826-A9-SPE	5	1	1		05/17/16 22:16
8M412341	L16050844-07 EB A 826-A9-SPE	5	1	1		05/17/16 22:45
8M412342	L16050844-11 AB A 826-A9-SPE	5	1	1		05/17/16 23:14
8M412343	L16050844-02 A 826-A9-SPE	6	1	1		05/17/16 23:43
8M412344	L16050844-05 A 826-A9-SPE	6	1	1		05/18/16 00:12
8M412345	L16050844-06 A 826-A9-SPE	6	1	1		05/18/16 00:41
8M412346	L16050844-12 A 826-A9-SPE	6	1	1		05/18/16 01:10
8M412347	L16050840-01 A 826-A9-SPE	7	1	1		05/18/16 01:38
8M412348	L16050844-08 A 826-A9-SPE	7	1	1		05/18/16 02:07
8M412349	L16050844-13 A 826-A9-SPE	7	1	1		05/18/16 02:36
8M412350	L16050844-15 A 826-A9-SPE	7	1	1		05/18/16 03:05
8M412351	L16050839-01 A 826-A9-SPE	7	1	1		05/18/16 03:33
8M412352	L16050844-03 2.5X A 826-A9-SPE	7	1	2.5		05/18/16 04:02

Approved: May 20, 2016

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Instrument Run Log

Instrument: HPMS8 Dataset: 051716
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76072; STD76127 LCS: STD76109; STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG569079; WG569083

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412353	L16050844-04 5X A 826-A9-SPE	7	1	5		05/18/16 04:31
8M412354	L16050844-09 5X A 826-A9-SPE	7	1	5		05/18/16 05:01
8M412355	L16050844-10 5X A 826-A9-SPE	7	1	5		05/18/16 05:30
8M412356	L16050844-14 50X A 826-A9-SPE	7	1	50		05/18/16 05:59
8M412357	RINSE	NA	1	1		05/18/16 06:28

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
File ID: 8M412320				
	DNR. Running an a9/foo curve.			
32	X	10	Over Calibration Range	CIS12-DCE
File ID: 8M412350				
40	X	2.5	Analyzed too dilute	
File ID: 8M412353				
	DNR.			
37	X	25	Over Calibration Range	TCE
File ID: 8M412355				
38	X	20	Analyzed too dilute	
File ID: 8M412356				
	DNR.			

Approved: May 20, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 061316
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 24
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID: 53781

Internal Standard: STD76580 Surrogate Standard: STD76383
CCV: STD76405 LCS: STD76540 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG572509

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M12590	WG572507-02 50ug/L CCV STD 8260	NA	1	1	STD76405	06/13/16 15:27
11M12591	WG572507-02 50ug/L CCV STD 8260	NA	1	1	STD76405	06/13/16 15:59
11M12592	WG572507-01 50ng BFB STD 8260	NA	1	1	STD76496	06/13/16 16:33
11M12593	WG572507-02 50ug/L CCV STD 8260	NA	1	1	STD76405	06/13/16 17:01
11M12594	WGXXXXXX-01 100ug/L A9-CCV STD 826	NA	1	1	STDXXXXX	06/13/16 17:33
11M12595	WG572509-01 BLANK STD 8260	NA	1	1		06/13/16 18:05
11M12596	WG572509-02 20ug/L LCS STD 8260	NA	1	1	STD76540	06/13/16 18:37
11M12597	WG572509-03 20ug/L LCS2 STD 8260	NA	1	1	STD76540	06/13/16 19:09
11M12598	L16060611-01 A 826-BETX	<2	1	1		06/13/16 19:41
11M12599	L16060611-02 A 826-BETX	<2	1	1		06/13/16 20:13
11M12600	L16060611-21 A 826-BETX	<2	1	1		06/13/16 20:45
11M12601	L16060611-22 A 826-BETX	<2	1	1		06/13/16 21:17
11M12602	L16060485-01 A 826-SPE	<2	1	1		06/13/16 21:49
11M12603	L16060485-02 A 826-SPE	<2	1	1		06/13/16 22:21
11M12604	L16060504-05 A 826-LOW	<2	1	1		06/13/16 22:53
11M12605	L16060661-23 A 826-SPE	<2	1	1		06/13/16 23:25
11M12606	L16060661-24 A 826-SPE	<2	1	1		06/13/16 23:56
11M12607	L16060485-03 A 826-SPE	<2	1	1		06/14/16 00:28
11M12608	L16060485-04 A 826-SPE	<2	1	1		06/14/16 01:00
11M12609	L16060485-05 A 826-SPE	<2	1	1		06/14/16 01:32
11M12610	L16060485-06 A 826-SPE	<2	1	1		06/14/16 02:04
11M12611	L16060504-01 A 826-SPE	<2	1	1		06/14/16 02:36
11M12612	L16060504-03 A 826-SPE	<2	1	1		06/14/16 03:08
11M12613	L16060513-01 A 826-SPE1	<2	1	1		06/14/16 03:39
11M12614	L16060504-04 2.5X A 826-SPE	<2	1	2.5		06/14/16 04:11
11M12615	CCV	NA	1	1		06/14/16 04:43
11M12616	RINSE	NA	1	1		06/14/16 05:15
11M12617	RINSE	NA	1	1		06/14/16 05:46

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 11M12591				

Approved: June 20, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 061316

Analyst1: JDS Analyst2: NA

Method: 8260B SOP: MSV01 Rev: 24

Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID: 53781

Internal Standard: STD76580 Surrogate Standard: STD76383

CCV: STD76405 LCS: STD76540 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG572509

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			L16060504-04 first internal response over 200\% higher than internal response in ICAL mid-point. Decrease voltage and RR tune.	
25	X	1	Analyzed too dilute	
File ID: 11M12614				
	L16060504-04			

Approved: June 20, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 061416
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53783

Internal Standard: STD75370 Surrogate Standard: STD76370
CCV: STD76578 LCS: STD76597 MS/MSD: STD76597

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG572592

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412971	WG572591-01 50ng BFB STD 8260	NA	1	1	STD76496	06/14/16 09:33
8M412972	WG572591-02 50ug/L CCV STD 8260	NA	1	1	STD76578	06/14/16 09:57
8M412973	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76432	06/14/16 10:25
8M412974	WG572592-01 VBLK0614 BLANK STD 826	NA	1	1		06/14/16 10:54
8M412975	L16060176-01 C 826-VAP2	7	1	1		06/14/16 11:23
8M412976	L16060176-02 C 826-VAP2	7	1	1		06/14/16 11:52
8M412977	WG572592-02 20ug/L LCS STD 8260	NA	1	1	STD76597	06/14/16 12:21
8M412978	L16060540-07 A MS 826-SPE	<2	1	1	STD76597	06/14/16 12:50
8M412979	L16060540-08 A MSD 826-SPE	<2	1	1	STD76597	06/14/16 13:20
8M412980	RINSE	NA	1	1		06/14/16 13:49
8M412981	L16060605-14 B TB 826-SPE	<2	1	1		06/14/16 14:18
8M412982	L16060605-02 B 826-SPE	<2	1	1		06/14/16 14:47
8M412983	L16060605-01 B 826-SPE	<2	1	1		06/14/16 15:16
8M412984	L16060540-06 A REF 826-SPE	<2	1	1		06/14/16 15:45
8M412985	L16060540-10 A 826-SPE	<2	1	1		06/14/16 16:14
8M412986	L16060540-11 A 826-SPE	<2	1	1		06/14/16 16:42
8M412987	L16060540-12 A 826-SPE	<2	1	1		06/14/16 17:11
8M412988	L16060540-13 A 826-SPE	<2	1	1		06/14/16 17:40
8M412989	L16060540-14 A 826-SPE	<2	1	1		06/14/16 18:09
8M412990	L16060540-15 A 826-SPE	<2	1	1		06/14/16 18:38
8M412991	L16060540-16 A 826-SPE	<2	1	1		06/14/16 19:07
8M412992	L16060414-01 B 100X 826-LOW	<2	1	100		06/14/16 19:35
8M412993	L16060414-02 B 100X 826-LOW	<2	1	100		06/14/16 20:05
8M412994	L16060414-03 B 100X 826-LOW	<2	1	100		06/14/16 20:34
8M412995	L16060414-04 B 100X 826-LOW	5	1	100		06/14/16 21:03
8M412996	L16060504-04 B 826-LOW	<2	1	1		06/14/16 21:31
8M412997	CCV	NA	1	1		06/14/16 22:00
8M412998	RINSE	NA	1	1		06/14/16 22:29
8M412999	RINSE	NA	1	1		06/14/16 22:57
8M413000	RINSE	NA	1	1		06/14/16 23:26

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Approved: June 16, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 061416
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53783

Internal Standard: STD75370 Surrogate Standard: STD76370
CCV: STD76578 LCS: STD76597 MS/MSD: STD76597

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG572592

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
3				
File ID: 8M412973				
	Not needed. DNR.			
19	X	10	Over Calibration Range	CIS12-DCE
File ID: 8M412989				
20	X	1	Carry-over contamination	
File ID: 8M412990				

Approved: June 16, 2016

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Microbac Laboratories Inc.

Data Checklist

Date: 14-JUN-2015
Analyst: TMB
Analyst: DLW
Method: 8260B/624
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 69930
Analytical Workgroups: WG527475

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
20-AUG-2015
Tiffany Bailey

Secondary Reviewer:
15-SEP-2015

CHECKLIST1 - Modified 03/05/2008
Generated: SEP-15-2015 14:33:53

Microbac Laboratories Inc.

Data Checklist

Date: 13-MAY-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75126
Analytical Workgroups: WG568561

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	TMB
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
17-MAY-2016
Tiffany Bailey

Secondary Reviewer:
20-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2016 11:18:36

Microbac Laboratories Inc.

Data Checklist

Date: 13-MAY-2016
Analyst: JDS
Analyst: NA
Method: 8260B
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 75133
Analytical Workgroups: WG568769

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	X
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
23-MAY-2016

Secondary Reviewer:
23-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-23-2016 15:39:32

Microbac Laboratories Inc.

Data Checklist

Date: 17-MAY-2016
Analyst: TMB
Analyst: FJB
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75174
Analytical Workgroups: WG569079; WG569083

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
19-MAY-2016
Tiffany Bailey

Secondary Reviewer:
20-MAY-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2016 11:05:37

Microbac Laboratories Inc.

Data Checklist

Date: 13-JUN-2016
Analyst: JDS
Analyst: NA
Method: 8260B
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 75758
Analytical Workgroups: WG572509

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	JDS
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
20-JUN-2016

Secondary Reviewer:
20-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-20-2016 15:00:38

Microbac Laboratories Inc.

Data Checklist

Date: 14-JUN-2016
Analyst: TMB
Analyst: NA
Method: 8260B/OVAP
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75679
Analytical Workgroups: WG572592

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
14-JUN-2016
Tiffany Bailey

Secondary Reviewer:
16-JUN-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-16-2016 12:56:09

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG572509

Login Number: L16060504

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW08SW-060816	01	06/08/16					06/14/2016	5.8	14		06/14/16	5.8	14	
MW5-060816	03	06/08/16					06/14/2016	5.7	14		06/14/16	5.7	14	
TRIP BLANK	05	06/08/16					06/13/2016	6	14		06/13/16	6	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4808084
Report generated 06/29/2016 13:45

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG572592

Login Number: L16060504

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW03SW-060816	04	06/08/16					06/14/2016	6.4	14		06/14/16	6.4	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4808084
Report generated 06/29/2016 13:45

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060504
Instrument Id: HPMS8
Workgroup (AAB#): WG572592

Method: 8260
CAL ID: HPMS8-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16060504-04	1.00	01	114	110	100	105
WG572592-01	1.00	01	107	107	98.8	106
WG572592-02	1.00	01	109	108	97.6	106

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4808090
Report generated: 06/29/2016 13:45

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060504
Instrument Id: HPMS11
Workgroup (AAB#): WG572509

Method: 8260
CAL ID: HPMS11-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16060504-01	1.00	01	89.1	93.4	100	97.5
L16060504-03	1.00	01	87.3	91.8	103	98.3
L16060504-05	1.00	01	86.5	89.7	104	99.3
WG572509-01	1.00	01	80.5	88.1	105	99.9
WG572509-02	1.00	01	81.0	90.7	105	98.8
WG572509-03	1.00	01	81.4	91.6	103	99.0

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4808090
Report generated: 06/29/2016 13:45

METHOD BLANK SUMMARY

Login Number: L16060504
Blank File ID: 11M12595
Prep Date: 06/13/16 18:05
Analyzed Date: 06/13/16 18:05
Analyst: JDS

Work Group: WG572509
Blank Sample ID: WG572509-01
Instrument ID: HPMS11
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572509-02	11M12596	06/13/16 18:37	01
LCS2	WG572509-03	11M12597	06/13/16 19:09	01
TRIP BLANK	L16060504-05	11M12604	06/13/16 22:53	01
18CPTMW08SW-060816	L16060504-01	11M12611	06/14/16 02:36	01
MW5-060816	L16060504-03	11M12612	06/14/16 03:08	01

Report Name: BLANK_SUMMARY
PDF File ID: 4809972
Report generated 06/29/2016 13:45

METHOD BLANK SUMMARY

Login Number: L16060504
Blank File ID: 8M412974
Prep Date: 06/14/16 10:54
Analyzed Date: 06/14/16 10:54
Analyst: TMB

Work Group: WG572592
Blank Sample ID: WG572592-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572592-02	8M412977	06/14/16 12:21	01
18CPTMW03SW-060816	L16060504-04	8M412996	06/14/16 21:31	01

Report Name: BLANK_SUMMARY
PDF File ID: 4809972
Report generated 06/29/2016 13:45

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060504 Prep Date: 06/13/16 18:05 Sample ID: WG572509-01
Instrument ID: HPMS11 Run Date: 06/13/16 18:05 Prep Method: 5030B/5030C/503
File ID: 11M12595 Analyst: JDS Method: 8260B
Workgroup (AAB#): WG572509 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.289	1	J
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4808085
29-JUN-2016 13:45

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060504 Prep Date: 06/13/16 18:05 Sample ID: WG572509-01
Instrument ID: HPMS11 Run Date: 06/13/16 18:05 Prep Method: 5030B/5030C/503
File ID: 11M12595 Analyst: JDS Method: 8260B
Workgroup (AAB#): WG572509 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	88.1	85 - 115	PASS
1,2-Dichloroethane-d4	80.5	70 - 120	PASS
Toluene-d8	99.9	85 - 120	PASS
4-Bromofluorobenzene	105	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4808085
29-JUN-2016 13:45

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16060504 Prep Date: 06/14/16 10:54 Sample ID: WG572592-01
Instrument ID: HPMS8 Run Date: 06/14/16 10:54 Prep Method: 5030B/5030C/503
File ID: 8M412974 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG572592 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 4808085
29-JUN-2016 13:45

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060504 Prep Date: 06/14/16 10:54 Sample ID: WG572592-01
Instrument ID: HPMS8 Run Date: 06/14/16 10:54 Prep Method: 5030B/5030C/503
File ID: 8M412974 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG572592 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	107	85 - 115	PASS
1,2-Dichloroethane-d4	107	70 - 120	PASS
Toluene-d8	106	85 - 120	PASS
4-Bromofluorobenzene	98.8	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4808085
29-JUN-2016 13:45

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060504 Run Date: 06/14/2016 Sample ID: WG572592-02
Instrument ID: HPMS8 Run Time: 12:21 Prep Method: 5030B/5030C/503
File ID: 8M412977 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG572592 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD76597 Cal ID: HPMS8-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	24.7	123	40 - 140	
Benzene	20.0	21.1	106	80 - 120	
Bromobenzene	20.0	19.6	97.8	75 - 125	
Bromochloromethane	20.0	21.1	105	65 - 130	
Bromodichloromethane	20.0	22.2	111	75 - 120	
Bromoform	20.0	20.2	101	70 - 130	
Bromomethane	20.0	13.6	68.2	30 - 145	
2-Butanone	20.0	20.8	104	30 - 150	
n-Butylbenzene	20.0	19.2	96.2	70 - 135	
sec-Butylbenzene	20.0	20.3	101	70 - 125	
tert-Butylbenzene	20.0	20.1	100	70 - 130	
Carbon disulfide	20.0	19.2	95.9	35 - 160	
Carbon tetrachloride	20.0	22.2	111	65 - 140	
Chlorobenzene	20.0	20.7	104	80 - 120	
Chlorodibromomethane	20.0	20.5	102	60 - 135	
Chloroethane	20.0	22.0	110	60 - 135	
Chloroform	20.0	21.5	107	65 - 135	
Chloromethane	20.0	21.2	106	40 - 125	
2-Chlorotoluene	20.0	18.4	92.0	75 - 125	
4-Chlorotoluene	20.0	22.2	111	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	19.6	97.8	50 - 130	
1,2-Dibromoethane	20.0	20.0	99.8	80 - 120	
Dibromomethane	20.0	19.8	99.1	75 - 125	
1,2-Dichlorobenzene	20.0	20.2	101	70 - 120	
1,3-Dichlorobenzene	20.0	20.3	101	75 - 125	
1,4-Dichlorobenzene	20.0	20.3	102	75 - 125	
Dichlorodifluoromethane	20.0	22.7	114	30 - 155	
1,1-Dichloroethane	20.0	20.4	102	70 - 135	
1,2-Dichloroethane	20.0	22.8	114	70 - 130	
1,1-Dichloroethene	20.0	20.3	102	70 - 130	
cis-1,2-Dichloroethene	20.0	21.1	105	70 - 125	
trans-1,2-Dichloroethene	20.0	21.1	105	60 - 140	
1,2-Dichloropropane	20.0	21.0	105	75 - 125	
1,3-Dichloropropane	20.0	21.3	107	75 - 125	
2,2-Dichloropropane	20.0	23.0	115	70 - 135	
cis-1,3-Dichloropropene	20.0	23.5	117	70 - 130	
trans-1,3-Dichloropropene	20.0	21.3	106	55 - 140	
1,1-Dichloropropene	20.0	21.1	105	75 - 130	
Ethylbenzene	20.0	19.8	98.8	75 - 125	
2-Hexanone	20.0	20.3	101	55 - 130	
Hexachlorobutadiene	20.0	20.9	104	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4808086
Report generated: 06/29/2016 13:45

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060504 Run Date: 06/14/2016 Sample ID: WG572592-02
Instrument ID: HPMS8 Run Time: 12:21 Prep Method: 5030B/5030C/503
File ID: 8M412977 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG572592 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD76597 Cal ID: HPMS8-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	21.8	109	75 - 125	
p-Isopropyltoluene	20.0	19.9	99.6	75 - 130	
4-Methyl-2-pentanone	20.0	20.4	102	60 - 135	
Methylene chloride	20.0	20.1	100	55 - 140	
Naphthalene	20.0	16.9	84.5	55 - 140	
n-Propylbenzene	20.0	20.6	103	70 - 130	
Styrene	20.0	21.3	106	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	20.9	105	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	17.7	88.7	65 - 130	
Tetrachloroethene	20.0	20.7	103	45 - 150	
Toluene	20.0	20.3	102	75 - 120	
1,2,3-Trichlorobenzene	20.0	18.7	93.3	55 - 140	
1,2,4-Trichlorobenzene	20.0	19.5	97.4	65 - 135	
1,1,1-Trichloroethane	20.0	22.8	114	65 - 130	
1,1,2-Trichloroethane	20.0	20.0	100	75 - 125	
Trichloroethene	20.0	22.7	114	70 - 125	
Trichlorofluoromethane	20.0	22.3	111	60 - 145	
1,2,3-Trichloropropane	20.0	18.8	94.1	75 - 125	
1,2,4-Trimethylbenzene	20.0	20.0	99.9	75 - 130	
1,3,5-Trimethylbenzene	20.0	20.5	103	75 - 130	
Vinyl chloride	20.0	24.6	123	50 - 145	
o-Xylene	20.0	21.5	108	80 - 120	
m-,p-Xylene	40.0	41.6	104	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	108	85 - 115	PASS
1,2-Dichloroethane-d4	109	70 - 120	PASS
Toluene-d8	106	85 - 120	PASS
4-Bromofluorobenzene	97.6	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4808086
Report generated: 06/29/2016 13:45

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060504 Analyst: JDS Prep Method: 5030B/5030C/503
Instrument ID: HPMS11 Matrix: Water Method: 8260B
Workgroup (AAB#): WG572509 Units: ug/L
QC Key: DOD4 Lot #: STD76540

Sample ID: WG572509-02 LCS File ID: 11M12596 Run Date: 06/13/2016 18:37
Sample ID: WG572509-03 LCS2 File ID: 11M12597 Run Date: 06/13/2016 19:09

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	20.1	100	20.0	19.8	98.8	1.57	80 - 130	30	
1,1,1-Trichloroethane	20.0	18.7	93.4	20.0	18.7	93.4	0.0331	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	18.0	90.2	20.0	17.5	87.4	3.18	65 - 130	30	
1,1,2-Trichloroethane	20.0	20.3	102	20.0	20.3	102	0.0282	75 - 125	30	
1,1-Dichloroethane	20.0	17.7	88.4	20.0	17.6	88.0	0.496	70 - 135	30	
1,1-Dichloroethene	20.0	17.1	85.5	20.0	17.4	86.9	1.73	70 - 130	30	
1,1-Dichloropropene	20.0	18.9	94.7	20.0	19.1	95.3	0.645	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	19.0	94.9	20.0	18.8	93.8	1.20	55 - 140	30	
1,2,3-Trichloropropane	20.0	19.7	98.6	20.0	19.6	98.0	0.611	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	20.2	101	20.0	19.7	98.4	2.83	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	21.0	105	20.0	20.7	103	1.79	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	13.6	68.0	20.0	14.2	70.9	4.22	50 - 130	30	
1,2-Dibromoethane	20.0	20.7	103	20.0	20.6	103	0.556	80 - 120	30	
1,2-Dichlorobenzene	20.0	21.3	106	20.0	20.9	105	1.85	70 - 120	30	
1,2-Dichloroethane	20.0	17.9	89.4	20.0	18.0	90.1	0.692	70 - 130	30	
1,2-Dichloropropane	20.0	19.1	95.4	20.0	19.4	96.9	1.56	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	21.5	107	20.0	21.0	105	2.05	75 - 130	30	
1,3-Dichlorobenzene	20.0	21.2	106	20.0	20.9	105	1.17	75 - 125	30	
1,3-Dichloropropane	20.0	22.2	111	20.0	21.5	107	3.27	75 - 125	30	
1,4-Dichlorobenzene	20.0	21.5	108	20.0	20.8	104	3.24	75 - 125	30	
2,2-Dichloropropane	20.0	18.2	90.8	20.0	18.5	92.7	2.13	70 - 135	30	
2-Butanone	20.0	14.3	71.6	20.0	14.9	74.4	3.76	30 - 150	30	
2-Chlorotoluene	20.0	21.2	106	20.0	20.9	105	1.31	75 - 125	30	
2-Hexanone	20.0	14.2	71.2	20.0	14.6	72.8	2.16	55 - 130	30	
4-Chlorotoluene	20.0	20.9	104	20.0	20.5	102	1.95	75 - 130	30	
4-Methyl-2-pentanone	20.0	16.7	83.5	20.0	17.0	84.9	1.70	60 - 135	30	
Acetone	20.0	14.0	70.2	20.0	14.1	70.7	0.732	40 - 140	30	
Benzene	20.0	19.4	96.9	20.0	19.5	97.5	0.616	80 - 120	30	
Bromobenzene	20.0	21.2	106	20.0	20.9	104	1.68	75 - 125	30	
Bromochloromethane	20.0	20.5	103	20.0	20.9	104	1.93	65 - 130	30	
Bromodichloromethane	20.0	18.9	94.3	20.0	19.3	96.3	2.07	75 - 120	30	
Bromoform	20.0	19.2	96.2	20.0	19.3	96.3	0.0792	70 - 130	30	
Bromomethane	20.0	19.2	96.0	20.0	19.3	96.4	0.432	30 - 145	30	
Carbon disulfide	20.0	17.6	88.0	20.0	17.9	89.6	1.71	35 - 160	30	
Carbon tetrachloride	20.0	18.2	91.1	20.0	18.5	92.7	1.63	65 - 140	30	
Chlorobenzene	20.0	21.3	106	20.0	21.2	106	0.440	80 - 120	30	
Chloroethane	20.0	20.7	104	20.0	19.9	99.4	4.17	60 - 135	30	
Chloroform	20.0	18.2	91.2	20.0	18.1	90.5	0.814	65 - 135	30	
Chloromethane	20.0	17.9	89.3	20.0	17.8	89.2	0.146	40 - 125	30	
cis-1,2-Dichloroethene	20.0	20.4	102	20.0	20.2	101	0.807	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4814711
Report generated: 06/29/2016 13:45

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060504 Analyst: JDS Prep Method: 5030B/5030C/503
Instrument ID: HPMS11 Matrix: Water Method: 8260B
Workgroup (AAB#): WG572509 Units: ug/L
QC Key: DOD4 Lot #: STD76540

Sample ID: WG572509-02 LCS File ID: 11M12596 Run Date: 06/13/2016 18:37
Sample ID: WG572509-03 LCS2 File ID: 11M12597 Run Date: 06/13/2016 19:09

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	21.5	107	20.0	21.9	109	1.91	70 - 130	30	
Chlorodibromomethane	20.0	20.2	101	20.0	20.4	102	0.806	60 - 135	30	
Dibromomethane	20.0	18.6	93.1	20.0	18.8	93.8	0.770	75 - 125	30	
Dichlorodifluoromethane	20.0	18.3	91.3	20.0	18.6	92.8	1.60	30 - 155	30	
Ethylbenzene	20.0	20.8	104	20.0	20.9	105	0.509	75 - 125	30	
Hexachlorobutadiene	20.0	18.5	92.4	20.0	18.3	91.4	1.07	50 - 140	30	
Isopropylbenzene	20.0	21.1	106	20.0	21.0	105	0.386	75 - 125	30	
m-,p-Xylene	40.0	42.5	106	40.0	42.3	106	0.541	75 - 130	30	
Methylene chloride	20.0	19.5	97.6	20.0	19.7	98.7	1.19	55 - 140	30	
n-Butylbenzene	20.0	19.1	95.7	20.0	18.7	93.6	2.28	70 - 135	30	
n-Propylbenzene	20.0	21.7	109	20.0	21.2	106	2.67	70 - 130	30	
Naphthalene	20.0	17.6	88.0	20.0	17.4	86.9	1.30	55 - 140	30	
o-Xylene	20.0	21.2	106	20.0	21.4	107	0.902	80 - 120	30	
p-Isopropyltoluene	20.0	20.9	104	20.0	20.4	102	2.50	75 - 130	30	
sec-Butylbenzene	20.0	20.9	105	20.0	20.8	104	0.579	70 - 125	30	
Styrene	20.0	21.4	107	20.0	21.5	108	0.587	65 - 135	30	
tert-Butylbenzene	20.0	21.8	109	20.0	21.9	109	0.245	70 - 130	30	
Tetrachloroethene	20.0	21.2	106	20.0	21.2	106	0.287	45 - 150	30	
Toluene	20.0	20.9	104	20.0	20.7	104	0.704	75 - 120	30	
trans-1,2-Dichloroethene	20.0	19.8	98.9	20.0	19.8	99.1	0.146	60 - 140	30	
trans-1,3-Dichloropropene	20.0	19.9	99.3	20.0	19.6	98.0	1.35	55 - 140	30	
Trichloroethene	20.0	21.6	108	20.0	21.7	109	0.742	70 - 125	30	
Trichlorofluoromethane	20.0	17.7	88.3	20.0	17.7	88.6	0.372	60 - 145	30	
Vinyl chloride	20.0	20.1	100	20.0	20.4	102	1.50	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	81.0	81.4	70 - 120	PASS
Dibromofluoromethane	90.7	91.6	85 - 115	PASS
4-Bromofluorobenzene	105	103	75 - 120	PASS
Toluene-d8	98.8	99.0	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4814711
Report generated: 06/29/2016 13:45

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060504
Instrument: HPMS11
Analyst: TMB /DLW
Workgroup: WG527475

Tune ID: WG527475-01
Run Date: 06/14/2015
Run Time: 09:34
File ID: 11M08234
Cal ID: HPMS11 - 14-JUN-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.9	7754	PASS
75.0	95.0	30.0	60.0	49.9	19472	PASS
95.0	95.0	100	100	100	38997	PASS
96.0	95.0	5.00	9.00	7.00	2731	PASS
173	174	0	2.00	0.338	111	PASS
174	95.0	50.0	100	84.2	32837	PASS
175	174	5.00	9.00	7.18	2357	PASS
176	174	95.0	101	97.9	32146	PASS
177	176	5.00	9.00	7.11	2284	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG527475-02	STD	01	06/14/2015 09:58	
WG527475-03	STD	01	06/14/2015 10:30	
WG527475-04	STD	01	06/14/2015 11:02	
WG527475-05	STD-CCV	01	06/14/2015 11:34	
WG527475-06	STD	01	06/14/2015 12:06	
WG527475-07	STD	01	06/14/2015 12:38	
WG527475-08	STD	01	06/14/2015 13:10	
WG527475-09	STD	01	06/14/2015 13:42	
WG527475-10	SSCV	01	06/14/2015 15:18	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4808088
Report generated 06/29/2016 13:45

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060504
Instrument: HPMS11
Analyst: JDS
Workgroup: WG568769

Tune ID: WG568769-01
Run Date: 05/13/2016
Run Time: 14:15
File ID: 11M11836
Cal ID: HPMS11 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	24.2	11638	PASS
75.0	95.0	30.0	60.0	50.2	24088	PASS
95.0	95.0	100	100	100	48016	PASS
96.0	95.0	5.00	9.00	6.26	3008	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	86.2	41402	PASS
175	174	5.00	9.00	8.26	3421	PASS
176	174	95.0	101	97.3	40288	PASS
177	176	5.00	9.00	6.92	2789	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG568769-02	STD	01	05/13/2016 14:40	
WG568769-03	STD	01	05/13/2016 15:12	
WG568769-04	STD	01	05/13/2016 15:43	
WG568769-05	STD	01	05/13/2016 16:15	
WG568769-06	STD	01	05/13/2016 16:47	
WG568769-07	STD	01	05/13/2016 17:19	
WG568769-08	STD-CCV	01	05/13/2016 17:51	
WG568769-09	STD	01	05/13/2016 18:22	
WG568769-10	STD	01	05/13/2016 18:54	
WG568769-11	STD	01	05/13/2016 19:26	
WG568769-12	SSCV	01	05/13/2016 20:30	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4808088
Report generated 06/29/2016 13:45

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060504
Instrument: HPMS11
Analyst: JDS
Workgroup: WG572507

Tune ID: WG572507-01
Run Date: 06/13/2016
Run Time: 16:33
File ID: 11M12592
Cal ID: HPMS11 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.6	12399	PASS
75.0	95.0	30.0	60.0	48.5	29232	PASS
95.0	95.0	100	100	100	60272	PASS
96.0	95.0	5.00	9.00	7.11	4288	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	90.9	54805	PASS
175	174	5.00	9.00	7.74	4241	PASS
176	174	95.0	101	96.1	52656	PASS
177	176	5.00	9.00	6.07	3194	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG572507-02	CCV	01	06/13/2016 17:01	
WG572509-01	BLANK	01	06/13/2016 18:05	
WG572509-02	LCS	01	06/13/2016 18:37	
WG572509-03	LCS2	01	06/13/2016 19:09	
L16060504-05	TRIP BLANK	01	06/13/2016 22:53	
L16060504-01	18CPTMW08SW-060816	01	06/14/2016 02:36	
L16060504-03	MW5-060816	01	06/14/2016 03:08	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4808088
Report generated 06/29/2016 13:45

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060504
Instrument: HPMS8
Analyst: TMB
Workgroup: WG568561

Tune ID: WG568561-01
Run Date: 05/13/2016
Run Time: 12:36
File ID: 8M412218
Cal ID: HPMS8 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	16.7	6575	PASS
75.0	95.0	30.0	60.0	51.3	20171	PASS
95.0	95.0	100	100	100	39312	PASS
96.0	95.0	5.00	9.00	6.74	2649	PASS
173	174	0	2.00	0.363	122	PASS
174	95.0	50.0	100	85.5	33616	PASS
175	174	5.00	9.00	8.17	2746	PASS
176	174	95.0	101	99.2	33360	PASS
177	176	5.00	9.00	6.80	2267	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG568561-02	STD	01	05/13/2016 13:29	
WG568561-03	STD	01	05/13/2016 13:58	
WG568561-04	STD	01	05/13/2016 14:27	
WG568561-05	STD	01	05/13/2016 14:56	
WG568561-06	STD	01	05/13/2016 15:25	
WG568561-07	STD	01	05/13/2016 15:54	
WG568561-08	STD-CCV	01	05/13/2016 16:23	
WG568561-09	STD	01	05/13/2016 16:52	
WG568561-10	STD	01	05/13/2016 17:21	
WG568561-11	STD	01	05/13/2016 17:50	
WG568561-12	SSCV	01	05/13/2016 19:17	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4808088
Report generated 06/29/2016 13:45

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060504
Instrument: HPMS8
Analyst: TMB
Workgroup: WG569084

Tune ID: WG569084-01
Run Date: 05/17/2016
Run Time: 08:53
File ID: 8M412319
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.1	6316	PASS
75.0	95.0	30.0	60.0	54.7	18130	PASS
95.0	95.0	100	100	100	33138	PASS
96.0	95.0	5.00	9.00	6.76	2241	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	72.2	23934	PASS
175	174	5.00	9.00	7.88	1886	PASS
176	174	95.0	101	96.8	23159	PASS
177	176	5.00	9.00	7.15	1655	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG569079-01	STD-CCV	01	05/17/2016 09:47	
WG569079-03	STD	01	05/17/2016 10:16	
WG569079-04	STD	01	05/17/2016 10:44	
WG569079-05	STD	01	05/17/2016 11:13	
WG569079-06	STD	01	05/17/2016 11:42	
WG569079-07	STD	01	05/17/2016 12:40	
WG569079-08	STD	01	05/17/2016 13:10	
WG569079-09	STD	01	05/17/2016 13:39	
WG569079-10	SSCV	01	05/17/2016 15:06	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4808088
Report generated 06/29/2016 13:45

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060504
Instrument: HPMS8
Analyst: TMB
Workgroup: WG572591

Tune ID: WG572591-01
Run Date: 06/14/2016
Run Time: 09:33
File ID: 8M412971
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	17.4	8269	PASS
75.0	95.0	30.0	60.0	53.5	25445	PASS
95.0	95.0	100	100	100	47570	PASS
96.0	95.0	5.00	9.00	6.39	3042	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	90.3	42970	PASS
175	174	5.00	9.00	7.06	3032	PASS
176	174	95.0	101	97.6	41930	PASS
177	176	5.00	9.00	6.54	2744	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG572591-02	CCV	01	06/14/2016 09:57	
WG572592-01	BLANK	01	06/14/2016 10:54	
WG572592-02	LCS	01	06/14/2016 12:21	
L16060504-04	18CPTMW03SW-060816	01	06/14/2016 21:31	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4808088
Report generated 06/29/2016 13:45

Calibration Table Report
Method: A9FOOWT.M
Title: Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Calibration: Thu Aug 20 11:41:47 2015
Curve: WG527475
Calibration Files

	Compound	5 (11M08235.D)	20 (11M08236.D)	50 (11M08237.D)	100 (11M08238.D)	200 (11M08239.D)	300 (11M08240.D)	400 (11M08241.D)	500 (11M08242.D)	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD											
T	Acetonitrile	0.024	0.022	0.018	0.018	0.018	0.018	0.018	0.018	0.019	13.425		
T	3-Chloro-1-propene	0.380	0.372	0.371	0.380	0.375	0.379	0.368	0.385	0.376	1.470		
T	2-Chloro-1,3-butadiene	0.421	0.418	0.426	0.444	0.450	0.482	0.477	0.496	0.452	6.648		
T	Methacrylonitrile	0.124	0.115	0.112	0.114	0.112	0.114	0.120	0.119	0.116	3.530		
T	Isobutyl Alcohol		0.006	0.006	0.006	0.005	0.006	0.006	0.006	0.006	5.929		
T	1-Butanol			0.003	0.003	0.003	0.003	0.003	0.003	0.003	5.214		
T	Cyclohexanone		0.031	0.028	0.031	0.030	0.027	0.028	0.026	0.029	6.768		
T	2-Nitropropane			0.028	0.032	0.035	0.039	0.042	0.044	0.037	16.955	0.996	
T	Ethyl Acetate	0.133	0.145	0.133	0.140	0.137	0.136	0.141	0.139	0.138	3.039		
T	Methyl methacrylate	0.151	0.161	0.151	0.158	0.158	0.161	0.170	0.172	0.160	4.681		
I	Chlorobenzene-d5	ISTD											
I	1,4-Dichlorobenzene-d4	ISTD											

Thu Aug 20 11:49:17 2015

Calibration Table Report
Method: 8260WT.M
Title: 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Calibration: Sat May 14 18:45:57 2016
Curve: WG568769
Calibration Files

	Compound	0.3 11M11837.D	0.4 11M11838.D	1 11M11839.D	2 11M11840.D	5 11M11841.D	20 11M11842.D	50 11M11843.D	100 11M11844.D	200 11M11845.D	300 11M11846.D	Avg	%RSD	Linear	Quadratic
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.345	0.368	0.326	0.431	0.400	0.424	0.417	0.424	0.392	10.308		
P	Chloromethane			0.348	0.363	0.289	0.310	0.276	0.296	0.305	0.324	0.314	9.474		
C	Vinyl Chloride		0.275	0.241	0.249	0.244	0.268	0.250	0.271	0.271	0.276	0.261	5.458		
T	1,3-Butadiene					0.242	0.284	0.269	0.264	0.256	0.240	0.259	6.530		
T	Bromomethane			0.167	0.174	0.164	0.180	0.165	0.182	0.194	0.206	0.179	8.292		
T	Chloroethane			0.164	0.165	0.151	0.174	0.161	0.171	0.173	0.181	0.167	5.524		
T	Trichlorofluoromethane		0.514	0.523	0.537	0.496	0.552	0.498	0.524	0.514	0.514	0.519	3.376		
T	Diethyl ether			0.189	0.191	0.195	0.196	0.188	0.193		0.192	0.192	1.552		
T	Isoprene					0.299	0.331	0.317	0.323	0.325	0.325	0.320	3.522		
T	Acrolein			0.013	0.022	0.024	0.024	0.024	0.025		0.027	0.023	19.436	0.999	
T	1,1,2-Trichloro-1,2,2-Trifluor			0.261	0.245	0.234	0.268	0.245	0.252	0.254	0.257	0.252	4.225		
T	Acetone					0.063	0.067	0.058	0.057	0.057	0.054	0.059	7.931		
C	1,1-Dichloroethene		0.459	0.452	0.460	0.429	0.492	0.441	0.464	0.461	0.461	0.458	3.810		
T	Tert-Butyl Alcohol			0.014	0.015	0.017	0.018	0.017	0.017		0.017	0.016	9.673		
T	Dimethyl Sulfide					0.169	0.185	0.186	0.185	0.188	0.184	0.183	3.765		
T	Iodomethane				0.043	0.072	0.164	0.206	0.217	0.219	0.208	0.162	45.603		0.999
T	Methyl acetate				0.182	0.317	0.215	0.178	0.176	0.169	0.168	0.201	26.745		1.000
T	Methylene Chloride			0.239	0.256	0.230	0.243	0.224	0.232	0.234	0.238	0.237	4.076		
T	Carbon Disulfide			0.737	0.762	0.714	0.798	0.783	0.783	0.782	0.770	0.766	3.624		
T	Acrylonitrile			0.072	0.069	0.075	0.085	0.081	0.085		0.090	0.080	9.576		
T	Methyl Tert Butyl Ether			0.568	0.546	0.564	0.650	0.585	0.606	0.612	0.595	0.591	5.543		
T	trans-1,2-Dichloroethene		0.288	0.230	0.264	0.229	0.263	0.242	0.251	0.254	0.260	0.253	7.263		
T	n-Hexane				0.424	0.377	0.450	0.431	0.426	0.424	0.422	0.422	5.186		
T	Diisopropyl ether			1.034	1.075	1.083	1.055	1.046	1.062		1.015	1.053	2.218		
T	Vinyl Acetate					0.235	0.391	0.393	0.395	0.430	0.431	0.379	19.260	0.999	
P	1,1-Dichloroethane		0.463	0.517	0.527	0.505	0.535	0.495	0.513	0.511	0.508	0.508	4.023		
T	Ethyl-Tert-Butyl ether			0.815	0.854	0.881	0.876	0.855	0.873		0.844	0.857	2.667		
T	2-Butanone					0.079	0.097	0.087	0.092	0.092	0.091	0.090	6.720		
T	Propionitrile			0.023	0.025	0.026	0.029	0.027	0.027		0.027	0.026	7.381		
T	2,2-Dichloropropane		0.325	0.372	0.435	0.395	0.406	0.386	0.422	0.418	0.419	0.398	8.479		
T	cis-1,2-Dichloroethene		0.276	0.266	0.289	0.269	0.294	0.271	0.280	0.284	0.285	0.279	3.456		
C	Chloroform	0.587	0.483	0.491	0.514	0.480	0.509	0.470	0.486	0.489	0.482	0.499	6.767		
T	1-Bromopropane			0.014	0.041	0.045	0.047	0.048	0.049	0.050	0.050	0.043	28.190	1.000	
T	Bromochloromethane		0.115	0.140	0.169	0.167	0.188	0.172	0.179	0.180	0.181	0.166	14.065		
T	Tetrahydrofuran			0.074	0.061	0.058	0.067	0.061	0.062		0.059	0.063	8.769		
S	Dibromofluoromethane				0.251	0.266	0.284	0.268	0.284	0.285	0.278	0.274	4.605		
T	1,1,1-Trichloroethane		0.475	0.478	0.508	0.471	0.515	0.477	0.502	0.499	0.495	0.491	3.293		
T	Cyclohexane		0.477	0.485	0.547	0.509	0.574	0.551	0.560	0.558	0.556	0.535	6.606		
T	1,1-Dichloropropene		0.342	0.350	0.346	0.332	0.370	0.339	0.358	0.359	0.362	0.351	3.562		
T	Carbon Tetrachloride		0.409	0.457	0.522	0.465	0.518	0.473	0.496	0.492	0.486	0.480	7.177		
T	Tert-Amyl-Methyl ether			0.565	0.596	0.603	0.611	0.588	0.605		0.6	0.59537	2.5818		
S	1,2-Dichloroethane-d4			0.315	0.304	0.32	0.326	0.303	0.319	0.31	0.298	0.31197	3.15125		
T	1,2-Dichloroethane		0.388	0.391	0.419	0.395	0.441	0.402	0.413	0.409	0.391	0.40536	4.2274		
T	Benzene		1.058	0.952	1.016	0.923	0.996	0.908	0.943	0.931	0.914	0.96002	5.38884		
T	Trichloroethene		0.308	0.317	0.329	0.306	0.322	0.294	0.313	0.309	0.311	0.31204	3.21019		
T	Methylcyclohexane		0.332	0.37	0.389	0.35	0.411	0.401	0.4	0.405	0.407	0.3851	7.28708		
C	1,2-Dichloropropane		0.259	0.262	0.273	0.254	0.276	0.257	0.268	0.27	0.273	0.26575	2.95636		
T	1,4-Dioxane				0.001	0.001	0.002	0.001	0.002		0.002	0.0014	19.4617	0.999	
T	Bromodichloromethane		0.346	0.346	0.373	0.362	0.4	0.369	0.387	0.389	0.385	0.37307	5.09783		
T	Dibromomethane		0.118	0.136	0.135	0.137	0.149	0.137	0.146	0.145	0.144	0.13848	6.69192		
T	2-Chloroethyl Vinyl Ether					0.112	0.138	0.128	0.136	0.138	0.135	0.13098	7.7176		
T	4-Methyl-2-Pentanone					0.06	0.08	0.073	0.076	0.077	0.077	0.07387	9.67651		
T	cis-1,3-Dichloropropene		0.326	0.338	0.358	0.357	0.406	0.379	0.395	0.401	0.399	0.37315	7.91395		
T	Dimethyl Disulfide					0.185	0.229	0.227	0.233	0.238	0.235	0.22454	8.74309		

I	Chlorobenzene-d5	ISTD												
S	Toluene-d8				1.101	1.093	1.115	1.056	1.103	1.092	1.044	1.08625	2.42896	
C	Toluene		1.309	1.253	1.287	1.269	1.347	1.249	1.287	1.241	1.149	1.2656	4.33323	
T	Ethyl Methacrylate			0.234	0.233	0.25	0.299	0.285	0.289	0.291	0.281	0.27024	9.93745	
T	trans-1,3-Dichloropropene			0.335	0.388	0.387	0.448	0.418	0.432	0.43	0.412	0.40623	8.82781	
T	1,1,2-Trichloroethane		0.222	0.201	0.243	0.21	0.246	0.221	0.228	0.227	0.221	0.22442	6.30977	
T	2-Hexanone					0.137	0.179	0.165	0.172	0.172	0.165	0.16482	8.91224	
T	1,3-Dichloropropane		0.337	0.338	0.351	0.355	0.396	0.361	0.374	0.373	0.358	0.36039	5.16222	
T	Tetrachloroethene		0.274	0.287	0.317	0.286	0.306	0.286	0.3	0.299	0.294	0.29431	4.41886	
T	Dibromochloromethane		0.283	0.297	0.336	0.33	0.378	0.354	0.372	0.372	0.359	0.3423	9.88235	
T	1,2-Dibromoethane		0.232	0.182	0.228	0.214	0.243	0.224	0.233	0.235	0.232	0.22485	7.92714	
T	1-Chlorohexane		0.37	0.399	0.414	0.391	0.442	0.429	0.44	0.438	0.432	0.41726	6.09034	
P	Chlorobenzene		0.927	0.917	0.998	0.932	0.976	0.909	0.93	0.902	0.853	0.92715	4.48215	
T	1,1,1,2-Tetrachloroethane		0.341	0.361	0.405	0.366	0.388	0.371	0.384	0.385	0.376	0.37515	4.87731	
C	Ethylbenzene		0.453	0.457	0.512	0.463	0.495	0.466	0.482	0.479	0.472	0.47542	3.94078	
T	m-,p-Xylene		0.619	0.583	0.605	0.564	0.604	0.568	0.579	0.559	0.522	0.57798	5.08853	
T	o-Xylene		0.539	0.549	0.574	0.539	0.6	0.561	0.574	0.57	0.557	0.56249	3.43829	
T	Styrene		0.865	0.848	0.897	0.918	1.018	0.955	0.985	0.959	0.917	0.92933	5.96246	
P	Bromoform			0.172	0.189	0.185	0.226	0.21	0.225	0.226	0.228	0.20747	10.9157	
T	Isopropylbenzene		1.515	1.456	1.567	1.46	1.592	1.493	1.534	1.449	1.323	1.48754	5.34769	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.288	0.357	0.369	0.371	0.441	0.396	0.412	0.428	0.442	0.38931	12.6902	
S	p-Bromofluorobenzene				0.772	0.784	0.794	0.716	0.767	0.789	0.773	0.77065	3.38935	
T	1,2,3-Trichloropropane			0.087	0.129	0.138	0.151	0.137	0.142	0.148	0.148	0.13515	15.3522	0.999
T	trans-1,4-Dichloro-2-Butene			0.105	0.117	0.124	0.177	0.178	0.184	0.192	0.193	0.15883	23.0996	0.999
T	n-Propylbenzene		2.87	2.8	3.077	2.949	3.134	2.886	2.979	2.836	2.526	2.89527	6.10377	
T	Bromobenzene	0.663	0.778	0.81	0.798	0.765	0.784	0.718	0.752	0.769	0.76	0.75973	5.57443	
T	1,3,5-Trimethylbenzene		2.338	2.056	2.263	2.172	2.357	2.166	2.252	2.223	2.059	2.20939	4.86261	
T	2-Chlorotoluene		2.158	2.096	2.122	2.033	2.128	1.936	2.002	1.954	1.82	2.0279	5.4704	
T	4-Chlorotoluene		1.782	1.755	1.937	1.808	1.916	1.763	1.832	1.838	1.717	1.8165	4.03452	
T	a-Methylstyrene			1	1.066	1.101	1.241	1.231	1.235	1.242	1.208	1.16555	8.18507	
T	tert-Butylbenzene		0.378	0.44	0.48	0.489	0.498	0.458	0.483	0.49	0.497	0.46809	8.31778	
T	1,2,4-Trimethylbenzene		2.159	2.195	2.274	2.295	2.472	2.234	2.309	2.244	2.067	2.24981	4.97706	
T	sec-Butylbenzene			2.593	2.734	2.647	2.87	2.634	2.723	2.617	2.404	2.65291	5.05975	
T	p-Isopropyltoluene			2.247	2.592	2.45	2.641	2.43	2.506	2.404	2.226	2.43674	6.05243	
T	1,3-Dichlorobenzene		1.487	1.488	1.538	1.46	1.53	1.398	1.451	1.446	1.406	1.46732	3.33475	
T	1,4-Dichlorobenzene	1.482	1.601	1.511	1.569	1.484	1.538	1.404	1.456	1.434	1.395	1.4873	4.59741	
T	n-Butylbenzene		2.048	2.099	2.295	2.049	2.32	2.134	2.224	2.136	2.021	2.14721	5.09289	
T	1,2-Dichlorobenzene	1.33	1.26	1.333	1.432	1.33	1.406	1.296	1.343	1.326	1.31	1.33665	3.71841	
T	1,2-Dibromo-3-Chloropropane				0.057	0.079	0.096	0.081	0.086	0.087	0.091	0.08248	15.3444	0.999
T	1,2,4-Trichlorobenzene		0.927	0.903	0.957	0.956	1.042	0.972	0.998	1.002	1.047	0.97808	4.96993	
T	Hexachlorobutadiene		0.393	0.381	0.451	0.418	0.447	0.415	0.441	0.442	0.49	0.43089	7.64497	
T	Naphthalene		1.885	1.633	1.765	1.712	2.026	1.824	1.878	1.821	1.794	1.81543	6.15168	
T	1,2,3-Trichlorobenzene	0.854	0.957	0.865	0.918	0.834	0.946	0.86	0.889	0.912	0.943	0.89764	4.8559	

Tue May 17 13:57:02 2016

Calibration Table Report
Method: 8260WT.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Calibration: Sat May 14 18:08:06 2016
Curve: WG568561
Calibration Files

	Compound	0.3 8M412220.D	0.4 8M412221.D	1 8M412222.D	2 8M412223.D	5 8M412224.D	20 8M412225.D	50 8M412226.D	100 8M412227.D	200 8M412228.D	300 8M412229.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane		0.427	0.390	0.397	0.364	0.468	0.439	0.452	0.427	0.408	0.419	7.751		
P	Chloromethane			0.264	0.257	0.223	0.253	0.240	0.240	0.239	0.241	0.245	5.336		
C	Vinyl Chloride		0.274	0.296	0.297	0.277	0.299	0.292	0.299	0.292	0.288	0.290	3.191		
T	1,3-Butadiene				0.218	0.208	0.242	0.251	0.277	0.254	0.254	0.243	9.644		
T	Bromomethane			0.129	0.133	0.127	0.162	0.167	0.187	0.205	0.212	0.165	20.449		1.000
T	Chloroethane		0.173	0.157	0.153	0.143	0.164	0.157	0.163	0.164	0.164	0.160	5.354		
T	Trichlorofluoromethane		0.544	0.538	0.559	0.506	0.570	0.538	0.551	0.531	0.525	0.540	3.520		
T	Diethyl ether			0.130	0.138	0.123	0.132	0.125	0.128		0.127	0.129	3.866		
T	Isoprene		0.335	0.351	0.334	0.293	0.334	0.320	0.334	0.322	0.329	0.328	4.867		
T	Acrolein				0.012	0.010	0.010	0.011	0.012		0.014	0.012	12.987		
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.256	0.269	0.240	0.260	0.249	0.257	0.251	0.250	0.254	3.397		
T	Acetone					0.023	0.030	0.029	0.030	0.028	0.028	0.028	9.132		
C	1,1-Dichloroethene		0.424	0.407	0.406	0.387	0.416	0.398	0.409	0.400	0.393	0.404	2.830		
T	Tert-Butyl Alcohol				0.010	0.009	0.009	0.009	0.009		0.009	0.009	2.872		
T	Dimethyl Sulfide		0.133	0.142	0.152	0.137	0.145	0.142	0.151	0.147	0.151	0.145	4.534		
T	Iodomethane				0.019	0.024	0.066	0.101	0.129	0.135	0.131	0.087	58.244		0.998
T	Methyl acetate					0.075	0.076	0.074	0.078	0.076	0.078	0.076	2.221		
T	Methylene Chloride			0.274	0.265	0.244	0.263	0.250	0.255	0.254	0.252	0.257	3.686		
T	Carbon Disulfide			0.888	0.922	0.801	0.873	0.816	0.854	0.813	0.802	0.846	5.346		
T	Acrylonitrile			0.027	0.035	0.033	0.038	0.038	0.039		0.044	0.036	14.671		
T	Methyl Tert Butyl Ether			0.534	0.543	0.521	0.586	0.579	0.585	0.560	0.546	0.557	4.455		
T	trans-1,2-Dichloroethene		0.389	0.395	0.364	0.352	0.381	0.367	0.372	0.364	0.358	0.371	3.858		
T	n-Hexane					0.265	0.280	0.270	0.286	0.275	0.279	0.276	2.732		
T	Diisopropyl ether			0.600	0.607	0.548	0.588	0.572	0.571		0.567	0.579	3.559		
T	Vinyl Acetate				0.256	0.243	0.270	0.275	0.266	0.271	0.275	0.265	4.509		
P	1,1-Dichloroethane		0.441	0.463	0.486	0.434	0.488	0.464	0.470	0.459	0.447	0.461	4.012		
T	Ethyl-Tert-Butyl ether			0.616	0.645	0.590	0.641	0.628	0.619		0.603	0.620	3.188		
T	2-Butanone					0.035	0.042	0.043	0.045	0.041	0.043	0.041	8.268		
T	Propionitrile			0.010	0.012	0.012	0.013	0.012	0.013		0.013	0.012	8.354		
T	2,2-Dichloropropane		0.471	0.462	0.520	0.476	0.503	0.494	0.497	0.483	0.470	0.486	3.839		
T	cis-1,2-Dichloroethene		0.299	0.298	0.291	0.267	0.295	0.282	0.289	0.283	0.277	0.287	3.685		
C	Chloroform	0.563	0.567	0.581	0.536	0.509	0.566	0.543	0.546	0.529	0.506	0.545	4.619		
T	1-Bromopropane			0.034	0.040	0.040	0.043	0.041	0.043	0.043	0.044	0.041	7.649		
T	Bromochloromethane		0.131	0.164	0.147	0.137	0.154	0.148	0.151	0.148	0.145	0.147	6.598		
T	Tetrahydrofuran			0.034	0.028	0.025	0.026	0.026	0.026		0.026	0.027	11.724		
S	Dibromofluoromethane			0.249	0.261	0.257	0.280	0.271	0.284	0.271	0.275	0.269	4.465		
T	1,1,1-Trichloroethane		0.492	0.537	0.515	0.496	0.545	0.525	0.533	0.515	0.499	0.517	3.660		
T	Cyclohexane			0.373	0.369	0.335	0.359	0.344	0.366	0.356	0.364	0.358	3.619		
T	1,1-Dichloropropene			0.414	0.399	0.369	0.403	0.395	0.399	0.392	0.382	0.394	3.488		
T	Tert-Amyl-Methyl ether			0.567	0.587	0.534	0.576	0.568	0.561		0.549	0.563	3.077		
T	Carbon Tetrachloride		0.444	0.456	0.462	0.441	0.481	0.465	0.474	0.462	0.448	0.4594	2.92173		
S	1,2-Dichloroethane-d4			0.241	0.309	0.276	0.312	0.295	0.301	0.284	0.286	0.288	7.93644		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.347	0.335	0.354	0.336	0.371	0.36	0.364	0.349	0.338	0.3505	3.65503		
T	Benzene		1.128	1.084	1.071	0.977	1.085	1.033	1.019	0.963	0.883	1.0269	7.39343		
T	Trichloroethene		0.285	0.275	0.276	0.251	0.283	0.273	0.279	0.273	0.27	0.2739	3.66126		
T	Methylcyclohexane					0.396	0.426	0.408	0.429	0.416	0.422	0.4161	2.94153		
C	1,2-Dichloropropane		0.239	0.222	0.233	0.207	0.238	0.226	0.233	0.231	0.229	0.2286	4.30096		
T	Bromodichloromethane		0.369	0.382	0.412	0.385	0.426	0.421	0.417	0.41	0.395	0.4018	4.93305		
T	1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.0011	14.5817		
T	Dibromomethane		0.141	0.13	0.137	0.128	0.141	0.134	0.137	0.136	0.133	0.1353	3.26799		
T	2-Chloroethyl Vinyl Ether				0.1	0.084	0.103	0.104	0.103	0.095	0.098	0.0983	7.09792		
T	4-Methyl-2-Pentanone					0.033	0.042	0.042	0.043	0.04	0.041	0.0401	8.66859		
T	cis-1,3-Dichloropropene		0.391	0.393	0.386	0.398	0.431	0.428	0.428	0.42	0.405	0.409	4.41527		

T	Dimethyl Disulfide					0.182	0.218	0.221	0.23	0.229	0.23	0.2183	8.49419	
I	Chlorobenzene-d5	ISTD												
S	Toluene-d8			1.282	1.295	1.228	1.385	1.333	1.378	1.289	1.278	1.3084	4.07746	
C	Toluene		1.653	1.696	1.678	1.507	1.647	1.554	1.545	1.418	1.27	1.552	8.98325	
T	Ethyl Methacrylate			0.251	0.293	0.268	0.314	0.314	0.327	0.309	0.31	0.2981	8.76897	
T	Paraldehyde											0	0	
T	trans-1,3-Dichloropropene			0.472	0.51	0.466	0.561	0.552	0.553	0.533	0.515	0.5201	7.01006	
T	1,1,2-Trichloroethane		0.261	0.241	0.242	0.222	0.254	0.249	0.252	0.243	0.241	0.2449	4.54209	
T	2-Hexanone					0.042	0.053	0.053	0.056	0.051	0.053	0.0515	9.50479	
T	1,3-Dichloropropane		0.355	0.442	0.465	0.42	0.468	0.454	0.457	0.437	0.428	0.436	7.93348	
T	Tetrachloroethene		0.355	0.337	0.336	0.306	0.333	0.325	0.337	0.334	0.33	0.3325	3.83886	
T	Dibromochloromethane		0.349	0.336	0.338	0.328	0.373	0.372	0.383	0.373	0.367	0.3576	5.60043	
T	1,2-Dibromoethane		0.233	0.234	0.234	0.227	0.259	0.254	0.258	0.251	0.247	0.2441	5.04151	
T	1-Chlorohexane		0.532	0.584	0.505	0.502	0.54	0.52	0.547	0.521	0.516	0.5298	4.7826	
P	Chlorobenzene		1.029	1.173	1.09	1.007	1.099	1.037	1.043	1.002	0.939	1.0466	6.41465	
T	1,1,1,2-Tetrachloroethane		0.392	0.399	0.403	0.357	0.431	0.414	0.424	0.417	0.413	0.4055	5.39495	
C	Ethylbenzene		0.6	0.594	0.59	0.532	0.586	0.559	0.57	0.564	0.558	0.5726	3.7769	
T	m-,p-Xylene		0.744	0.696	0.691	0.643	0.713	0.67	0.673	0.634	0.581	0.6716	7.12586	
T	o-Xylene			0.691	0.651	0.614	0.692	0.658	0.667	0.65	0.63	0.6567	4.11758	
T	Styrene		1.05	1.06	1.096	1.043	1.159	1.124	1.12	1.061	0.98	1.077	4.96781	
P	Bromoform			0.177	0.21	0.181	0.226	0.221	0.232	0.227	0.223	0.2121	10.0546	
T	Isopropylbenzene		1.853	1.891	1.871	1.708	1.897	1.781	1.75	1.573	1.377	1.7444	9.92447	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.426	0.492	0.503	0.486	0.543	0.51	0.527	0.513	0.514	0.5018	6.60291	
S	p-Bromofluorobenzene				1.054	0.976	1.071	1.016	1.053	1.031	1.046	1.0352	3.05136	
T	1,2,3-Trichloropropane			0.119	0.158	0.161	0.162	0.155	0.162	0.16	0.158	0.1545	9.40789	
T	trans-1,4-Dichloro-2-Butene			0.085	0.118	0.12	0.149	0.151	0.16	0.159	0.161	0.1376	19.9543	1.000
T	n-Propylbenzene		4.139	4.239	4.243	4.051	4.241	3.953	3.882	3.419	2.935	3.9003	11.4439	
T	Bromobenzene	0.796	0.708	0.843	0.837	0.778	0.84	0.798	0.817	0.803	0.803	0.8022	4.93253	
T	1,3,5-Trimethylbenzene		2.941	2.93	2.941	2.839	3.053	2.882	2.871	2.689	2.423	2.8411	6.50391	
T	2-Chlorotoluene		2.917	2.935	2.929	2.712	2.861	2.795	2.682	2.533	2.145	2.7231	9.37022	
T	4-Chlorotoluene		2.681	2.596	2.581	2.474	2.625	2.326	2.447	2.286	2.121	2.4597	7.49558	
T	a-Methylstyrene					1.257	1.406	1.34	1.384	1.35	1.351	1.3479	3.77654	
T	tert-Butylbenzene			0.587	0.555	0.53	0.571	0.533	0.552	0.561	0.558	0.5558	3.34508	
T	1,2,4-Trimethylbenzene		2.955	3.168	3.127	2.936	3.12	2.914	2.937	2.709	2.427	2.9214	7.97314	
T	sec-Butylbenzene			3.701	3.536	3.487	3.607	3.34	3.332	3.045	2.69	3.3424	9.93324	
T	p-Isopropyltoluene			3.112	3.062	2.903	2.988	2.813	2.809	2.634	2.382	2.8379	8.45265	
T	1,3-Dichlorobenzene		1.484	1.617	1.627	1.53	1.605	1.531	1.549	1.51	1.45	1.5448	3.95774	
T	1,4-Dichlorobenzene	1.713	1.524	1.672	1.594	1.503	1.6	1.511	1.535	1.49	1.431	1.5574	5.56562	
T	n-Butylbenzene			3.143	2.96	2.895	3.002	2.791	2.792	2.571	2.292	2.8056	9.55812	
T	1,2-Dichlorobenzene	1.59	1.307	1.415	1.41	1.322	1.404	1.333	1.356	1.315	1.286	1.3739	6.4618	
T	1,2-Dibromo-3-Chloropropane				0.085	0.103	0.102	0.103	0.106	0.104	0.103	0.1007	6.86771	
T	1,2,4-Trichlorobenzene		1.074	1.01	1.028	0.982	1.069	1.013	1.036	1.029	1.002	1.0269	2.90829	
T	Hexachlorobutadiene		0.516	0.476	0.483	0.447	0.487	0.459	0.48	0.485	0.485	0.4798	4.00465	
T	Naphthalene		1.594	1.457	1.574	1.455	1.63	1.552	1.564	1.485	1.422	1.5258	4.75891	
T	1,2,3-Trichlorobenzene	0.913	0.934	0.905	0.862	0.805	0.877	0.824	0.862	0.846	0.835	0.8664	4.7474	

Tue May 17 11:49:41 2016

Calibration Table Report
Method: A9FOOWT.M
Title: A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Calibration: Thu May 19 08:54:31 2016
Curve: WG569079
Calibration Files

	Compound	5 8M412324.D	20 8M412323.D	50 8M412322.D	100 8M412321.D	200 8M412325.D	300 8M412326.D	400 8M412327.D	500 8M412328.D	Avg	%RSD
I	Fluorobenzene	ISTD									
T	Acetonitrile		0.009	0.010	0.010	0.010	0.010	0.010	0.010	0.010	2.076
T	3-Chloro-1-propene	0.306	0.330	0.335	0.331	0.324	0.307	0.304	0.304	0.318	4.307
T	2-Chloro-1,3-butadiene	0.368	0.420	0.420	0.419	0.419	0.392	0.389	0.387	0.402	5.022
T	Ethyl Acetate	0.080	0.096	0.097	0.100	0.099	0.098	0.100	0.095	0.096	6.751
T	Methacrylonitrile	0.041	0.054	0.055	0.055	0.055	0.054	0.055	0.052	0.053	9.227
T	Isobutyl Alcohol			0.003	0.003	0.003	0.003	0.003	0.003	0.003	3.599
T	1-Butanol									0.000	0.000
T	Methyl methacrylate	0.089	0.106	0.106	0.105	0.106	0.105	0.107	0.102	0.103	5.868
T	2-Nitropropane		0.041	0.042	0.043	0.046	0.047	0.048	0.046	0.045	5.992
I	Chlorobenzene-d5	ISTD									
I	1,4-Dichlorobenzene-d4	ISTD									
T	Cyclohexanone		0.011	0.010	0.010	0.009	0.010	0.011	0.010	0.010	4.971

Thu May 19 09:04:52 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060504 Run Date: 05/13/2016 Sample ID: WG568769-12
Instrument ID: HPMS11 Run Time: 20:30 Method: 8260B
File ID: 11M11848 Analyst: JDS QC Key: DOD4
ICal Workgroup: WG568769 Cal ID: HPMS11 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.6	ug/L	0.475	4.80	20	
1,1-Dichloroethene	CCC	50.0	47.5	ug/L	0.435	4.90	20	
1,2-Dichloropropane	CCC	50.0	52.8	ug/L	0.281	5.60	20	
Ethylbenzene	CCC	50.0	52.4	ug/L	0.498	4.80	20	
Toluene	CCC	50.0	53.8	ug/L	1.36	7.50	20	
Vinyl Chloride	CCC	50.0	56.1	ug/L	0.292	12.2	20	
Bromoform	SPCC	50.0	49.8	ug/L	0.207	0.300	20	
Chlorobenzene	SPCC	50.0	53.3	ug/L	0.988	6.60	20	
Chloromethane	SPCC	50.0	55.1	ug/L	0.346	10.2	20	
1,1-Dichloroethane	SPCC	50.0	48.5	ug/L	0.493	3.00	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	54.9	ug/L	0.428	9.90	20	
Acetone		50.0	49.7	ug/L	0.0590	0.700	20	
Benzene		50.0	51.2	ug/L	0.983	2.40	20	
Bromobenzene		50.0	51.6	ug/L	0.785	3.30	20	
Bromochloromethane		50.0	53.9	ug/L	0.179	7.80	20	
Bromodichloromethane		50.0	49.5	ug/L	0.370	0.900	20	
Bromomethane		50.0	50.5	ug/L	0.181	1.00	20	
2-Butanone		50.0	50.3	ug/L	0.0904	0.700	20	
n-Butylbenzene		50.0	53.9	ug/L	2.31	7.80	20	
sec-Butylbenzene		50.0	55.9	ug/L	2.97	11.8	20	
tert-Butylbenzene		50.0	56.5	ug/L	0.529	13.1	20	
Carbon Disulfide		50.0	44.7	ug/L	0.685	10.6	20	
Carbon Tetrachloride		50.0	47.3	ug/L	0.454	5.30	20	
Dibromochloromethane		50.0	52.5	ug/L	0.360	5.10	20	
Chloroethane		50.0	58.9	ug/L	0.197	17.7	20	
2-Chlorotoluene		50.0	52.8	ug/L	2.14	5.50	20	
4-Chlorotoluene		50.0	55.4	ug/L	2.01	10.8	20	
1,2-Dibromo-3-Chloropropane		50.0	48.1	ug/L	0.0844	3.80	20	
1,2-Dibromoethane		50.0	52.6	ug/L	0.237	5.30	20	
Dibromomethane		50.0	48.0	ug/L	0.133	3.90	20	
1,2-Dichlorobenzene		50.0	53.6	ug/L	1.43	7.20	20	
1,3-Dichlorobenzene		50.0	52.7	ug/L	1.55	5.40	20	
1,4-Dichlorobenzene		50.0	53.0	ug/L	1.58	6.10	20	
Dichlorodifluoromethane		50.0	56.6	ug/L	0.443	13.2	20	
1,2-Dichloroethane		50.0	47.9	ug/L	0.388	4.20	20	
cis-1,2-Dichloroethene		50.0	53.2	ug/L	0.297	6.30	20	
trans-1,2-Dichloroethene		50.0	52.1	ug/L	0.264	4.30	20	
1,3-Dichloropropane		50.0	56.3	ug/L	0.406	12.6	20	
2,2-Dichloropropane		50.0	45.6	ug/L	0.362	8.90	20	
cis-1,3-Dichloropropene		50.0	57.6	ug/L	0.430	15.2	20	
trans-1,3-Dichloropropene		50.0	52.1	ug/L	0.423	4.20	20	
1,1-Dichloropropene		50.0	50.1	ug/L	0.352	0.200	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4808087
Report generated 06/29/2016 13:45

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060504 Run Date: 05/13/2016 Sample ID: WG568769-12
Instrument ID: HPMS11 Run Time: 20:30 Method: 8260B
File ID: 11M11848 Analyst: JDS QC Key: DOD4
ICal Workgroup: WG568769 Cal ID: HPMS11 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	52.2	ug/L	0.172	4.40	20	
Hexachlorobutadiene		50.0	55.9	ug/L	0.482	11.8	20	
Isopropylbenzene		50.0	54.2	ug/L	1.61	8.50	20	
p-Isopropyltoluene		50.0	54.7	ug/L	2.67	9.40	20	
4-Methyl-2-Pentanone		50.0	52.6	ug/L	0.0777	5.10	20	
Methylene Chloride		50.0	52.0	ug/L	0.246	4.00	20	
Naphthalene		50.0	51.1	ug/L	1.86	2.30	20	
n-Propylbenzene		50.0	56.6	ug/L	3.28	13.2	20	
Styrene		50.0	55.0	ug/L	1.02	9.90	20	
1,1,1,2-Tetrachloroethane		50.0	51.0	ug/L	0.383	2.10	20	
Tetrachloroethene		50.0	52.2	ug/L	0.307	4.40	20	
1,2,3-Trichlorobenzene		50.0	54.1	ug/L	0.971	8.10	20	
1,2,4-Trichlorobenzene		50.0	55.4	ug/L	1.08	10.9	20	
1,1,1-Trichloroethane		50.0	48.1	ug/L	0.472	3.90	20	
1,1,2-Trichloroethane		50.0	52.8	ug/L	0.237	5.50	20	
Trichloroethene		50.0	52.3	ug/L	0.327	4.60	20	
Trichlorofluoromethane		50.0	47.5	ug/L	0.494	4.90	20	
1,2,3-Trichloropropane		50.0	50.1	ug/L	0.147	0.300	20	
1,2,4-Trimethylbenzene		50.0	53.8	ug/L	2.42	7.70	20	
1,3,5-Trimethylbenzene		50.0	55.1	ug/L	2.44	10.3	20	
o-Xylene		50.0	54.7	ug/L	0.615	9.40	20	
m-,p-Xylene		100	107	ug/L	0.620	7.20	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4808087
Report generated 06/29/2016 13:45

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060504 Run Date: 05/13/2016 Sample ID: WG568561-12
Instrument ID: HPMS8 Run Time: 19:17 Method: 8260B
File ID: 8M412232 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG568561 Cal ID: HPMS8 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.1	ug/L	0.513	5.70	20	
1,1-Dichloroethene	CCC	50.0	46.0	ug/L	0.372	8.10	20	
1,2-Dichloropropane	CCC	50.0	51.0	ug/L	0.233	1.90	20	
Ethylbenzene	CCC	50.0	48.2	ug/L	0.552	3.60	20	
Toluene	CCC	50.0	49.1	ug/L	1.52	1.80	20	
Vinyl Chloride	CCC	50.0	52.4	ug/L	0.304	4.80	20	
Bromoform	SPCC	50.0	48.2	ug/L	0.205	3.60	20	
Chlorobenzene	SPCC	50.0	50.2	ug/L	1.05	0.400	20	
Chloromethane	SPCC	50.0	50.7	ug/L	0.248	1.40	20	
1,1-Dichloroethane	SPCC	50.0	46.7	ug/L	0.431	6.60	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.6	ug/L	0.498	0.800	20	
Acetone		50.0	57.5	ug/L	0.0324	15.1	20	
Benzene		50.0	48.5	ug/L	0.997	3.00	20	
Bromobenzene		50.0	49.5	ug/L	0.794	1.10	20	
Bromochloromethane		50.0	47.5	ug/L	0.140	4.90	20	
Bromodichloromethane		50.0	48.3	ug/L	0.388	3.40	20	
Bromomethane		50.0	46.4	ug/L	0.162	7.20	20	
2-Butanone		50.0	53.0	ug/L	0.0438	6.00	20	
n-Butylbenzene		50.0	49.7	ug/L	2.79	0.700	20	
sec-Butylbenzene		50.0	51.3	ug/L	3.43	2.70	20	
tert-Butylbenzene		50.0	50.9	ug/L	0.566	1.90	20	
Carbon Disulfide		50.0	42.3	ug/L	0.716	15.4	20	
Carbon Tetrachloride		50.0	46.2	ug/L	0.425	7.50	20	
Dibromochloromethane		50.0	49.7	ug/L	0.355	0.700	20	
Chloroethane		50.0	53.3	ug/L	0.170	6.70	20	
2-Chlorotoluene		50.0	51.6	ug/L	2.81	3.10	20	
4-Chlorotoluene		50.0	48.3	ug/L	2.37	3.50	20	
1,2-Dibromo-3-Chloropropane		50.0	48.5	ug/L	0.0977	3.00	20	
1,2-Dibromoethane		50.0	51.1	ug/L	0.250	2.20	20	
Dibromomethane		50.0	45.8	ug/L	0.124	8.40	20	
1,2-Dichlorobenzene		50.0	50.5	ug/L	1.39	1.00	20	
1,3-Dichlorobenzene		50.0	50.9	ug/L	1.57	1.80	20	
1,4-Dichlorobenzene		50.0	50.5	ug/L	1.57	0.900	20	
Dichlorodifluoromethane		50.0	54.2	ug/L	0.455	8.40	20	
1,2-Dichloroethane		50.0	49.0	ug/L	0.344	2.00	20	
cis-1,2-Dichloroethene		50.0	48.9	ug/L	0.281	2.20	20	
trans-1,2-Dichloroethene		50.0	48.1	ug/L	0.357	3.90	20	
1,3-Dichloropropane		50.0	53.7	ug/L	0.468	7.30	20	
2,2-Dichloropropane		50.0	47.9	ug/L	0.466	4.20	20	
cis-1,3-Dichloropropene		50.0	53.9	ug/L	0.441	7.80	20	
trans-1,3-Dichloropropene		50.0	50.7	ug/L	0.527	1.30	20	
1,1-Dichloropropene		50.0	47.5	ug/L	0.374	5.10	20	

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Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060504 Run Date: 05/13/2016 Sample ID: WG568561-12
Instrument ID: HPMS8 Run Time: 19:17 Method: 8260B
File ID: 8M412232 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG568561 Cal ID: HPMS8 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	53.6	ug/L	0.0552	7.20	20	
Hexachlorobutadiene		50.0	52.1	ug/L	0.500	4.20	20	
Isopropylbenzene		50.0	51.1	ug/L	1.78	2.20	20	
p-Isopropyltoluene		50.0	50.1	ug/L	2.85	0.300	20	
4-Methyl-2-Pentanone		50.0	51.9	ug/L	0.0416	3.70	20	
Methylene Chloride		50.0	48.4	ug/L	0.249	3.10	20	
Naphthalene		50.0	45.8	ug/L	1.40	8.40	20	
n-Propylbenzene		50.0	51.9	ug/L	4.05	3.80	20	
Styrene		50.0	51.5	ug/L	1.11	3.00	20	
1,1,1,2-Tetrachloroethane		50.0	49.4	ug/L	0.400	1.20	20	
Tetrachloroethene		50.0	47.8	ug/L	0.318	4.40	20	
1,2,3-Trichlorobenzene		50.0	47.7	ug/L	0.827	4.50	20	
1,2,4-Trichlorobenzene		50.0	50.1	ug/L	1.03	0.200	20	
1,1,1-Trichloroethane		50.0	47.6	ug/L	0.492	4.80	20	
1,1,2-Trichloroethane		50.0	49.0	ug/L	0.240	1.90	20	
Trichloroethene		50.0	51.1	ug/L	0.280	2.10	20	
Trichlorofluoromethane		50.0	46.9	ug/L	0.507	6.10	20	
1,2,3-Trichloropropane		50.0	50.1	ug/L	0.155	0.200	20	
1,2,4-Trimethylbenzene		50.0	49.7	ug/L	2.90	0.700	20	
1,3,5-Trimethylbenzene		50.0	51.6	ug/L	2.93	3.30	20	
o-Xylene		50.0	50.6	ug/L	0.664	1.10	20	
m-,p-Xylene		100	101	ug/L	0.679	1.10	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

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Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504 Run Date: 06/13/2016 Sample ID: WG572507-02
Instrument ID: HPMS11 Run Time: 17:01 Method: 8260B
File ID: 11M12593 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG572509 Cal ID: HPMS11 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	43.8	ug/L	0.437	12.4	20	
1,1-Dichloroethene	CCC	50.0	43.6	ug/L	0.399	12.9	20	
1,2-Dichloropropane	CCC	50.0	45.2	ug/L	0.240	9.58	20	
Ethylbenzene	CCC	50.0	50.9	ug/L	0.484	1.86	20	
Toluene	CCC	50.0	51.2	ug/L	1.29	2.30	20	
Vinyl Chloride	CCC	50.0	45.9	ug/L	0.239	8.16	20	
Bromoform	SPCC	50.0	50.4	ug/L	0.209	0.841	20	
Chlorobenzene	SPCC	50.0	50.2	ug/L	0.931	0.434	20	
Chloromethane	SPCC	50.0	40.9	ug/L	0.257	18.2	20	
1,1-Dichloroethane	SPCC	50.0	44.6	ug/L	0.453	10.8	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	47.1	ug/L	0.367	5.80	20	
Xylenes		150	153	ug/L	0.581	1.85	20	
Acetone		50.0	32.7	ug/L	0.0388	34.6	20	*
Benzene		50.0	46.8	ug/L	0.898	6.45	20	
Bromobenzene		50.0	52.0	ug/L	0.790	3.95	20	
Bromochloromethane		50.0	50.9	ug/L	0.169	1.83	20	
Bromodichloromethane		50.0	45.7	ug/L	0.341	8.64	20	
Bromomethane		50.0	48.0	ug/L	0.172	4.02	20	
2-Butanone		50.0	35.4	ug/L	0.0636	29.1	20	*
n-Butylbenzene		50.0	45.7	ug/L	1.96	8.53	20	
sec-Butylbenzene		50.0	48.3	ug/L	2.56	3.33	20	
tert-Butylbenzene		50.0	51.1	ug/L	0.479	2.30	20	
Carbon Disulfide		50.0	48.6	ug/L	0.745	2.80	20	
Carbon Tetrachloride		50.0	44.6	ug/L	0.428	10.8	20	
Dibromochloromethane		50.0	50.7	ug/L	0.347	1.38	20	
Chloroethane		50.0	47.9	ug/L	0.160	4.17	20	
2-Chlorotoluene		50.0	49.5	ug/L	2.01	1.01	20	
4-Chlorotoluene		50.0	50.5	ug/L	1.83	0.930	20	
1,2-Dibromo-3-Chloropropane		50.0	34.8	ug/L	0.0607	30.4	20	*
1,2-Dibromoethane		50.0	50.3	ug/L	0.226	0.623	20	
Dibromomethane		50.0	45.6	ug/L	0.126	8.83	20	
1,2-Dichlorobenzene		50.0	49.9	ug/L	1.33	0.226	20	
1,3-Dichlorobenzene		50.0	50.2	ug/L	1.47	0.476	20	
1,4-Dichlorobenzene		50.0	49.9	ug/L	1.48	0.195	20	
Dichlorodifluoromethane		50.0	42.9	ug/L	0.336	14.1	20	
1,2-Dichloroethane		50.0	41.6	ug/L	0.338	16.7	20	
cis-1,2-Dichloroethene		50.0	48.2	ug/L	0.269	3.58	20	
trans-1,2-Dichloroethene		50.0	48.0	ug/L	0.243	3.97	20	
1,3-Dichloropropane		50.0	49.0	ug/L	0.353	2.07	20	
2,2-Dichloropropane		50.0	46.4	ug/L	0.369	7.15	20	
cis-1,3-Dichloropropene		50.0	48.7	ug/L	0.363	2.63	20	
trans-1,3-Dichloropropene		50.0	50.0	ug/L	0.406	0.0794	20	

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504 Run Date: 06/13/2016 Sample ID: WG572507-02
Instrument ID: HPMS11 Run Time: 17:01 Method: 8260B
File ID: 11M12593 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG572509 Cal ID: HPMS11 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	46.7	ug/L	0.328	6.50	20	
2-Hexanone		50.0	37.7	ug/L	0.124	24.5	20	*
Hexachlorobutadiene		50.0	42.6	ug/L	0.367	14.8	20	
Isopropylbenzene		50.0	49.6	ug/L	1.47	0.872	20	
p-Isopropyltoluene		50.0	49.0	ug/L	2.39	2.05	20	
4-Methyl-2-Pentanone		50.0	41.1	ug/L	0.0608	17.7	20	
Methylene Chloride		50.0	46.7	ug/L	0.221	6.58	20	
Naphthalene		50.0	46.5	ug/L	1.69	6.94	20	
n-Propylbenzene		50.0	50.5	ug/L	2.92	0.918	20	
Styrene		50.0	52.5	ug/L	0.975	4.95	20	
1,1,1,2-Tetrachloroethane		50.0	49.7	ug/L	0.373	0.665	20	
Tetrachloroethene		50.0	52.2	ug/L	0.307	4.42	20	
1,2,3-Trichlorobenzene		50.0	45.6	ug/L	0.819	8.77	20	
1,2,4-Trichlorobenzene		50.0	48.4	ug/L	0.947	3.21	20	
1,1,1-Trichloroethane		50.0	44.4	ug/L	0.436	11.2	20	
1,1,2-Trichloroethane		50.0	49.5	ug/L	0.222	0.981	20	
Trichloroethene		50.0	48.8	ug/L	0.304	2.48	20	
Trichlorofluoromethane		50.0	44.3	ug/L	0.460	11.4	20	
1,2,3-Trichloropropane		50.0	46.6	ug/L	0.136	6.70	20	
1,2,4-Trimethylbenzene		50.0	50.6	ug/L	2.28	1.14	20	
1,3,5-Trimethylbenzene		50.0	50.8	ug/L	2.24	1.59	20	
o-Xylene		50.0	51.0	ug/L	0.574	1.96	20	
m-,p-Xylene		100	102	ug/L	0.588	1.80	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504 Run Date: 06/14/2016 Sample ID: WG572591-02
Instrument ID: HPMS8 Run Time: 09:57 Method: 8260B
File ID: 8M412972 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG572592 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	52.7	ug/L	0.574	5.32	20	
1,1-Dichloroethene	CCC	50.0	52.8	ug/L	0.427	5.65	20	
1,2-Dichloropropane	CCC	50.0	48.2	ug/L	0.221	3.50	20	
Ethylbenzene	CCC	50.0	49.5	ug/L	0.567	1.04	20	
Toluene	CCC	50.0	50.4	ug/L	1.57	0.889	20	
Vinyl Chloride	CCC	50.0	55.8	ug/L	0.324	11.6	20	
Bromoform	SPCC	50.0	49.3	ug/L	0.209	1.31	20	
Chlorobenzene	SPCC	50.0	50.1	ug/L	1.05	0.118	20	
Chloromethane	SPCC	50.0	50.8	ug/L	0.248	1.51	20	
1,1-Dichloroethane	SPCC	50.0	51.9	ug/L	0.479	3.87	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	41.8	ug/L	0.419	16.5	20	
Xylenes		150	152	ug/L	0.670	1.10	20	
Acetone		50.0	48.9	ug/L	0.0275	2.30	20	
Benzene		50.0	51.6	ug/L	1.06	3.12	20	
Bromobenzene		50.0	48.3	ug/L	0.775	3.44	20	
Bromochloromethane		50.0	50.5	ug/L	0.149	1.05	20	
Bromodichloromethane		50.0	52.0	ug/L	0.418	4.06	20	
Bromomethane		50.0	40.9	ug/L	0.142	18.2	20	
2-Butanone		50.0	44.9	ug/L	0.0371	10.2	20	
n-Butylbenzene		50.0	48.7	ug/L	2.73	2.58	20	
sec-Butylbenzene		50.0	49.3	ug/L	3.30	1.41	20	
tert-Butylbenzene		50.0	48.9	ug/L	0.544	2.20	20	
Carbon Disulfide		50.0	53.2	ug/L	0.899	6.31	20	
Carbon Tetrachloride		50.0	55.2	ug/L	0.507	10.3	20	
Dibromochloromethane		50.0	49.2	ug/L	0.352	1.69	20	
Chloroethane		50.0	51.5	ug/L	0.164	2.93	20	
2-Chlorotoluene		50.0	44.6	ug/L	2.43	10.8	20	
4-Chlorotoluene		50.0	53.0	ug/L	2.61	6.05	20	
1,2-Dibromo-3-Chloropropane		50.0	41.1	ug/L	0.0829	17.7	20	
1,2-Dibromoethane		50.0	46.1	ug/L	0.225	7.71	20	
Dibromomethane		50.0	46.8	ug/L	0.127	6.47	20	
1,2-Dichlorobenzene		50.0	46.7	ug/L	1.28	6.63	20	
1,3-Dichlorobenzene		50.0	49.2	ug/L	1.52	1.53	20	
1,4-Dichlorobenzene		50.0	47.7	ug/L	1.49	4.51	20	
Dichlorodifluoromethane		50.0	55.3	ug/L	0.463	10.5	20	
1,2-Dichloroethane		50.0	51.2	ug/L	0.359	2.38	20	
cis-1,2-Dichloroethene		50.0	51.3	ug/L	0.294	2.59	20	
trans-1,2-Dichloroethene		50.0	52.1	ug/L	0.387	4.25	20	
1,3-Dichloropropane		50.0	46.0	ug/L	0.401	8.04	20	
2,2-Dichloropropane		50.0	58.5	ug/L	0.569	17.0	20	
cis-1,3-Dichloropropene		50.0	51.6	ug/L	0.422	3.26	20	
trans-1,3-Dichloropropene		50.0	49.1	ug/L	0.511	1.76	20	

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504 Run Date: 06/14/2016 Sample ID: WG572591-02
Instrument ID: HPMS8 Run Time: 09:57 Method: 8260B
File ID: 8M412972 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG572592 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	52.9	ug/L	0.417	5.84	20	
2-Hexanone		50.0	42.8	ug/L	0.0441	14.3	20	
Hexachlorobutadiene		50.0	51.9	ug/L	0.498	3.75	20	
Isopropylbenzene		50.0	51.5	ug/L	1.80	2.92	20	
p-Isopropyltoluene		50.0	49.3	ug/L	2.80	1.43	20	
4-Methyl-2-Pentanone		50.0	42.3	ug/L	0.0340	15.4	20	
Methylene Chloride		50.0	49.3	ug/L	0.254	1.44	20	
Naphthalene		50.0	42.6	ug/L	1.30	14.8	20	
n-Propylbenzene		50.0	49.2	ug/L	3.84	1.56	20	
Styrene		50.0	51.2	ug/L	1.10	2.41	20	
1,1,1,2-Tetrachloroethane		50.0	50.7	ug/L	0.411	1.48	20	
Tetrachloroethene		50.0	52.9	ug/L	0.352	5.89	20	
1,2,3-Trichlorobenzene		50.0	44.9	ug/L	0.777	10.3	20	
1,2,4-Trichlorobenzene		50.0	48.1	ug/L	0.988	3.84	20	
1,1,1-Trichloroethane		50.0	55.1	ug/L	0.570	10.1	20	
1,1,2-Trichloroethane		50.0	45.1	ug/L	0.221	9.88	20	
Trichloroethene		50.0	52.7	ug/L	0.289	5.45	20	
Trichlorofluoromethane		50.0	55.1	ug/L	0.595	10.2	20	
1,2,3-Trichloropropane		50.0	43.2	ug/L	0.134	13.5	20	
1,2,4-Trimethylbenzene		50.0	49.6	ug/L	2.90	0.789	20	
1,3,5-Trimethylbenzene		50.0	50.3	ug/L	2.86	0.509	20	
o-Xylene		50.0	50.0	ug/L	0.657	0.0780	20	
m-,p-Xylene		100	102	ug/L	0.683	1.61	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060504
Instrument ID: HPMS11
Workgroup (AAB#): WG572509

ICAL CCV Number: WG568769-08
CAL ID: HPMS11-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568769-08	NA	NA	263885	438582	521583
Upper Limit	NA	NA	527770	877164	1043166
Lower Limit	NA	NA	131943	219291	260792
L16060504-01	1.00	01	336868	579411	688668
L16060504-03	1.00	01	333082	583003	703760
L16060504-05	1.00	01	345024	604613	735062
WG572509-01	1.00	01	389978	677255	831276
WG572509-02	1.00	01	392010	686435	835829
WG572509-03	1.00	01	393247	675005	811546

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
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Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060504
Instrument ID: HPMS8
Workgroup (AAB#): WG572592

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	288225	539116	778260
Upper Limit	NA	NA	576450	1078232	1556520
Lower Limit	NA	NA	144113	269558	389130
L16060504-04	1.00	01	303479	548941	736400
WG572592-01	1.00	01	333089	597833	818923
WG572592-02	1.00	01	328956	583790	789634

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
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Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060504
Instrument ID: HPMS8
Workgroup (AAB#): WG572592

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	17.6	14.58	10.71
Upper Limit	NA	NA	18.1	15.08	11.21
Lower Limit	NA	NA	17.1	14.08	10.21
L16060504-04	1.00	01	17.6	14.57	10.71
WG572592-01	1.00	01	17.6	14.57	10.71
WG572592-02	1.00	01	17.6	14.57	10.71

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4809974
Report generated: 06/29/2016 13:45

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060504
Instrument ID: HPMS11
Workgroup (AAB#): WG572509

ICAL CCV Number: WG568769-08
CAL ID: HPMS11-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568769-08	NA	NA	17.06	14.25	10.61
Upper Limit	NA	NA	17.56	14.75	11.11
Lower Limit	NA	NA	16.56	13.75	10.11
L16060504-01	1.00	01	17.06	14.25	10.61
L16060504-03	1.00	01	17.06	14.25	10.61
L16060504-05	1.00	01	17.06	14.25	10.61
WG572509-01	1.00	01	17.06	14.25	10.61
WG572509-02	1.00	01	17.06	14.25	10.61
WG572509-03	1.00	01	17.06	14.25	10.61

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4809974
Report generated: 06/29/2016 13:45

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061316\11M12611.D Vial: 20
Acq On : 14 Jun 2016 2:36 Operator: JDS
Sample : L16060504-01 A 826-SPE Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 09:26:14 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	688668	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	579411	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	336868	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	175983	23.3495 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.40%		
43) 1,2-Dichloroethane-d4	10.23	65	191451	22.2779 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 89.12%		
57) Toluene-d8	12.47	98	613927	24.3860 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.56%		
78) p-Bromofluorobenzene	15.64	95	260005	25.0383 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.16%		

Target Compounds					Qvalue
3) Chloromethane	3.71	50	1604	0.1856 ug/L	86
4) Vinyl Chloride	3.96	62	64345	8.9660 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	322265	46.4303 ug/L	95
14) 1,1-Dichloroethene	6.56	61	12472	0.9893 ug/L	95
23) trans-1,2-Dichloroethene	7.75	96	2423	0.3473 ug/L	75
27) 1,1-Dichloroethane	8.34	63	62023	4.4301 ug/L	99
32) cis-1,2-Dichloroethene	9.15	96	133525	17.3559 ug/L	78
33) Chloroform	9.35	83	6989	0.5083 ug/L	94
45) Benzene	10.38	78	4578	0.1731 ug/L #	61
46) Trichloroethene	11.08	130	638074	74.2313 ug/L	99
47) Methylcyclohexane	11.08	83	6241	0.5883 ug/L #	1
64) Tetrachloroethene	13.34	164	1980	0.2903 ug/L	94
91) 1,3-Dichlorobenzene	16.98	146	9711	0.4912 ug/L	93

(#) = qualifier out of range (m) = manual integration
11M12611.D 8260WT.M Tue Jun 14 09:26:15 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061316\11M12611.D Vial: 20
Acq On : 14 Jun 2016 2:36 Operator: JDS
Sample : L16060504-01 A 826-SPE Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 9:26 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

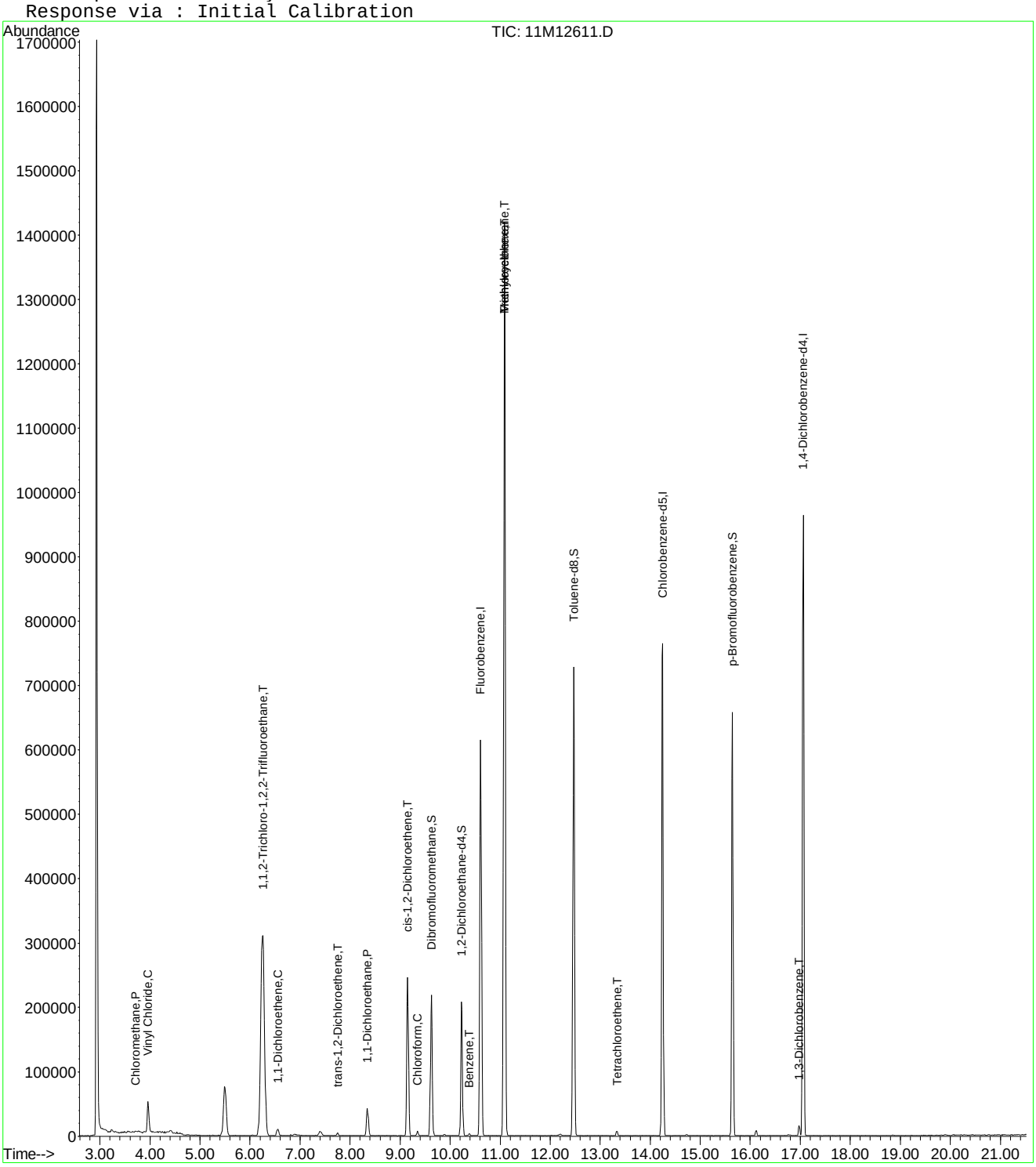

11M12611.D 8260WT.M Tue Jun 14 09:26:15 2016 Page 2

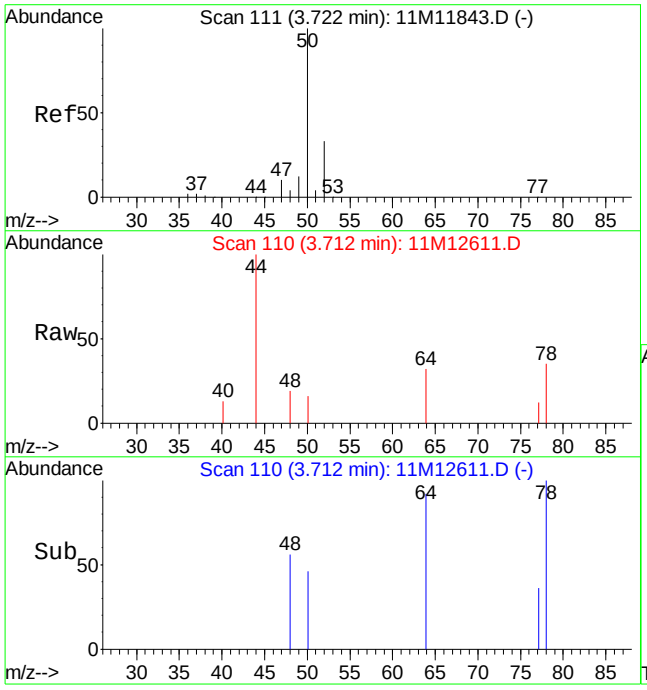

#3
Chloromethane
Concen: 0.19 ug/L
RT: 3.71 min Scan# 110
Delta R.T. -0.01 min
Lab File: 11M12611.D
Acq: 14 Jun 2016 2:36

Tgt Ion: 50 Resp: 1604

Ion	Ratio	Lower	Upper
50	100		
52	25.1	20.0	46.6

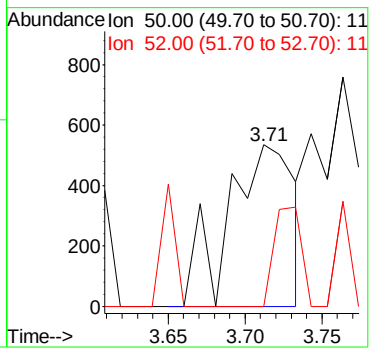

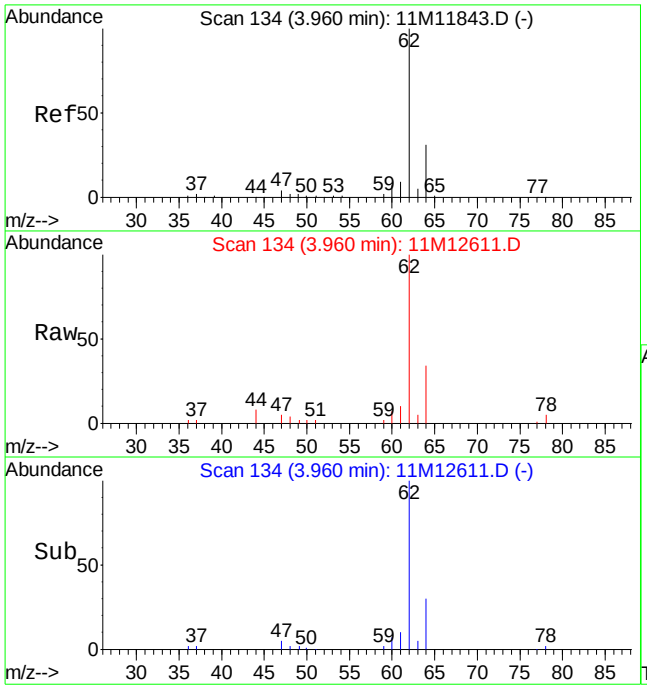

#4
Vinyl Chloride
Concen: 8.97 ug/L
RT: 3.96 min Scan# 134
Delta R.T. -0.00 min
Lab File: 11M12611.D
Acq: 14 Jun 2016 2:36

Tgt Ion: 62 Resp: 64345

Ion	Ratio	Lower	Upper
62	100		
64	34.6	18.4	43.0

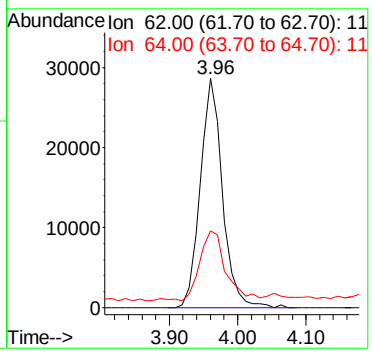

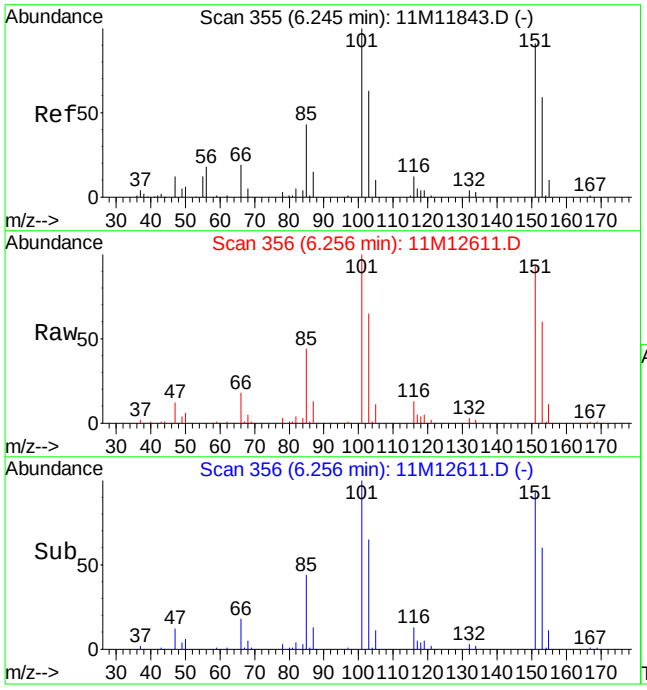

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 46.43 ug/L
RT: 6.26 min Scan# 356
Delta R.T. 0.01 min
Lab File: 11M12611.D
Acq: 14 Jun 2016 2:36

Tgt Ion:101 Resp: 322265

Ion	Ratio	Lower	Upper
101	100		
151	95.1	50.7	130.7

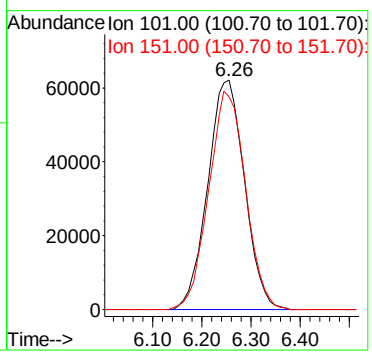

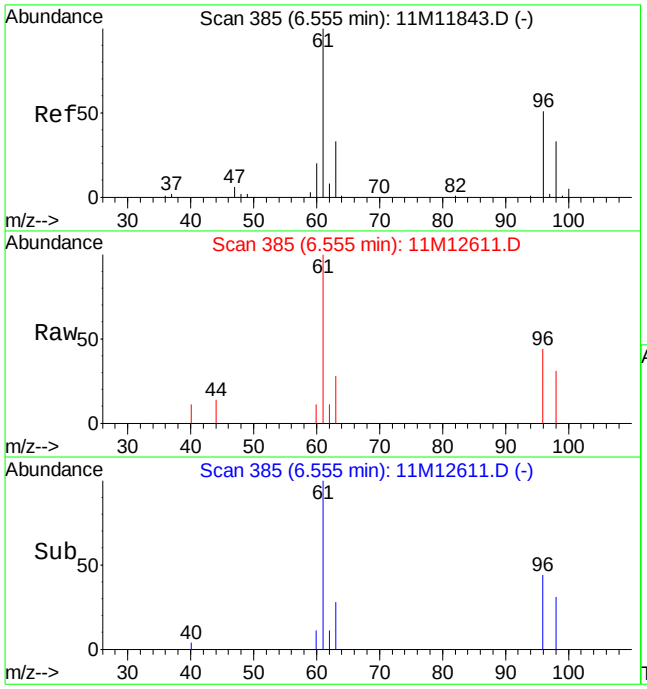

#14
1,1-Dichloroethene
Concen: 0.99 ug/L
RT: 6.56 min Scan# 385
Delta R.T. -0.00 min
Lab File: 11M12611.D
Acq: 14 Jun 2016 2:36

Tgt Ion: 61 Resp: 12472

Ion	Ratio	Lower	Upper
61	100		
96	46.6	30.1	70.3

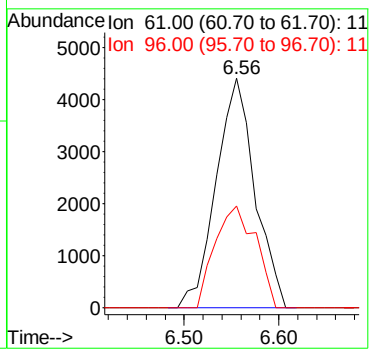

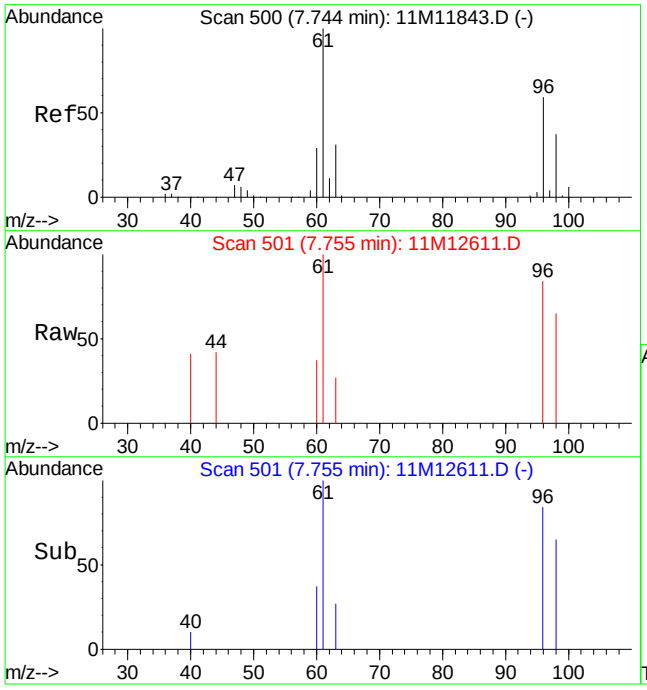

#23
trans-1,2-Dichloroethene
Concen: 0.35 ug/L
RT: 7.75 min Scan# 501
Delta R.T. 0.01 min
Lab File: 11M12611.D
Acq: 14 Jun 2016 2:36

Tgt Ion: 96 Resp: 2423

Ion	Ratio	Lower	Upper
96	100		
61	133.5	100.6	234.6

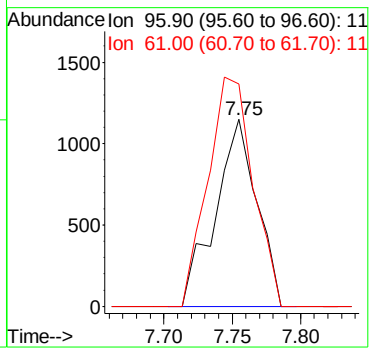

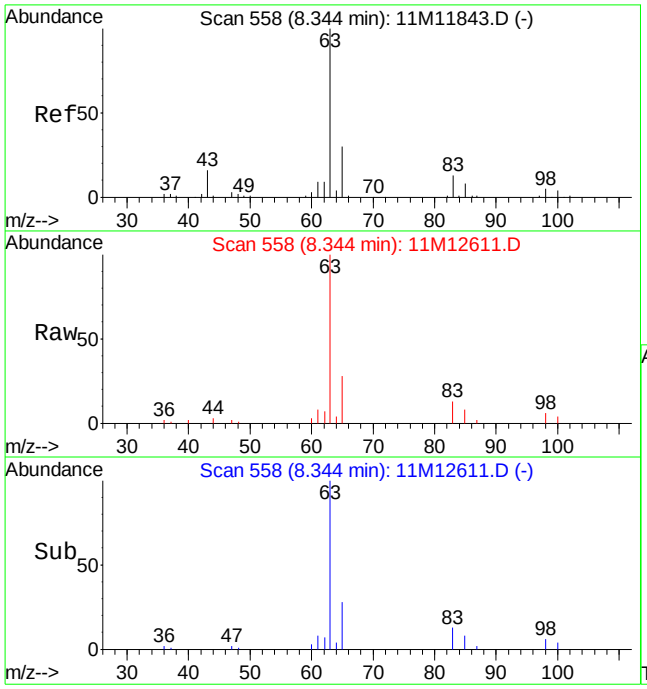

#27
1,1-Dichloroethane
Concen: 4.43 ug/L
RT: 8.34 min Scan# 558
Delta R.T. -0.00 min
Lab File: 11M12611.D
Acq: 14 Jun 2016 2:36

Tgt Ion: 63 Resp: 62023

Ion	Ratio	Lower	Upper
63	100		
65	30.0	17.8	41.6
83	13.0	7.4	17.4

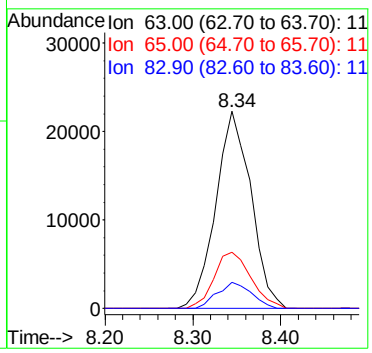

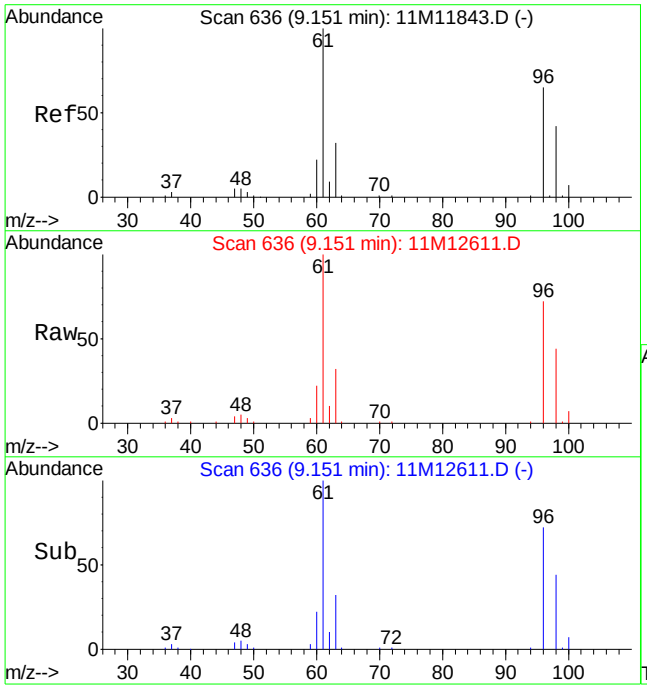

#32
cis-1,2-Dichloroethene
Concen: 17.36 ug/L
RT: 9.15 min Scan# 636
Delta R.T. -0.00 min
Lab File: 11M12611.D
Acq: 14 Jun 2016 2:36

Tgt Ion: 96 Resp: 133525

Ion	Ratio	Lower	Upper
96	100		
61	144.5	105.2	245.6

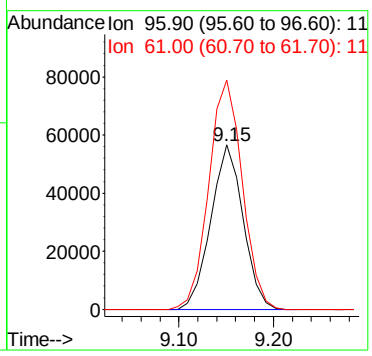

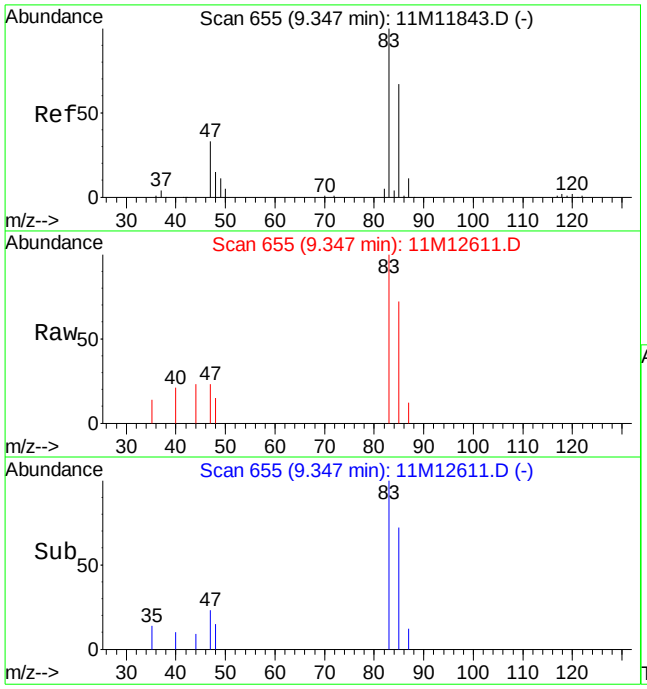

#33
Chloroform
Concen: 0.51 ug/L
RT: 9.35 min Scan# 655
Delta R.T. -0.00 min
Lab File: 11M12611.D
Acq: 14 Jun 2016 2:36

Tgt Ion: 83 Resp: 6989

Ion	Ratio	Lower	Upper
83	100		
85	69.8	39.2	91.4

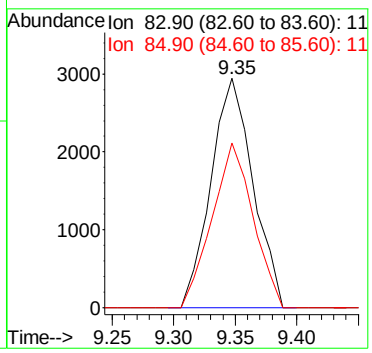

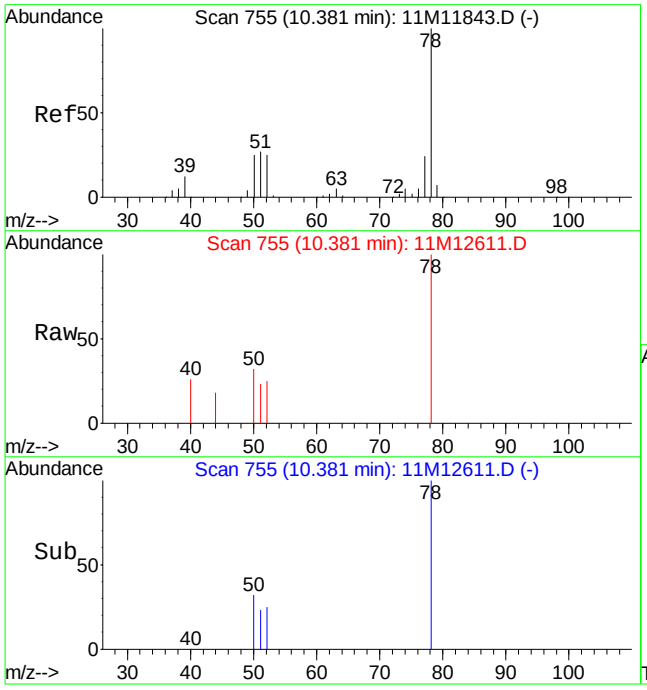

#45
Benzene
Concen: 0.17 ug/L
RT: 10.38 min Scan# 755
Delta R.T. -0.00 min
Lab File: 11M12611.D
Acq: 14 Jun 2016 2:36

Tgt Ion: 78 Resp: 4578

Ion	Ratio	Lower	Upper
78	100		
77	4.9	14.3	33.5#

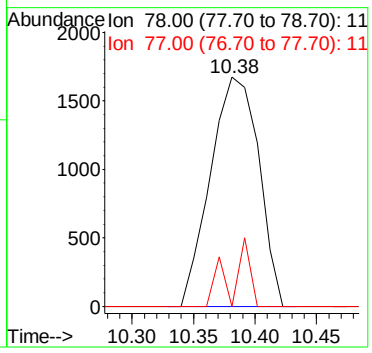

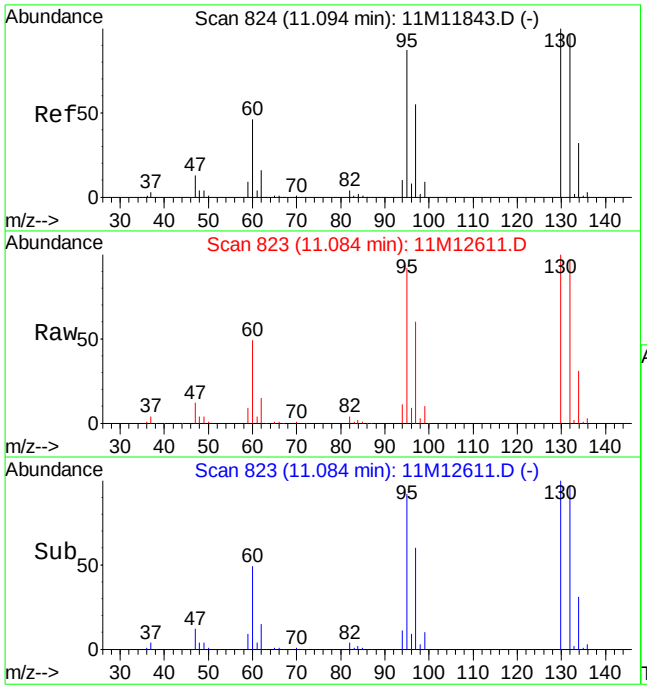

#46
Trichloroethene
Concen: 74.23 ug/L
RT: 11.08 min Scan# 823
Delta R.T. -0.01 min
Lab File: 11M12611.D
Acq: 14 Jun 2016 2:36

Tgt Ion:130 Resp: 638074

Ion	Ratio	Lower	Upper
130	100		
132	97.2	58.3	136.1
95	90.5	55.6	129.8

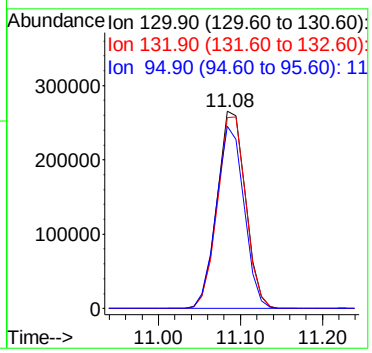

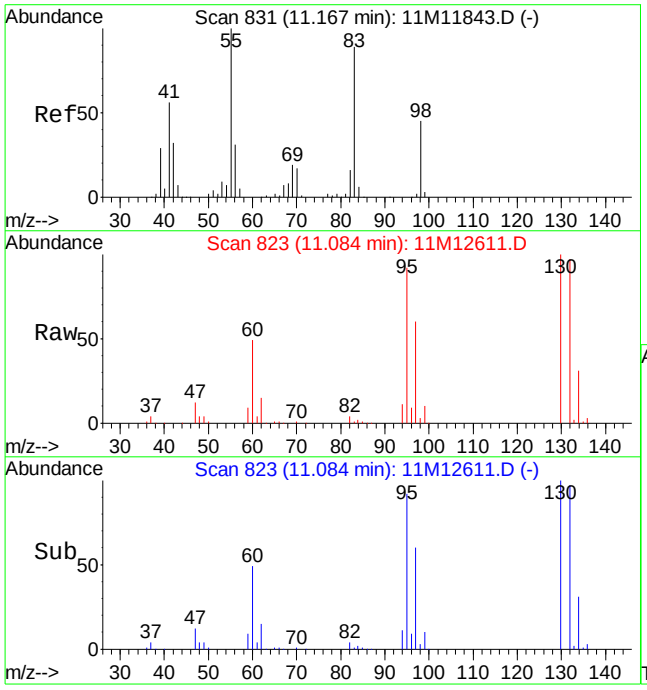

#47
Methylcyclohexane
Concen: 0.59 ug/L
RT: 11.08 min Scan# 823
Delta R.T. -0.08 min
Lab File: 11M12611.D
Acq: 14 Jun 2016 2:36

Tgt Ion: 83 Resp: 6241

Ion	Ratio	Lower	Upper
83	100		
55	0.0	66.5	155.1#
98	250.0	29.9	69.7#

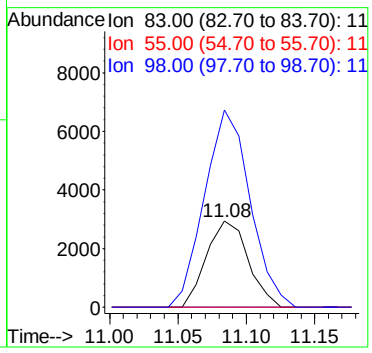

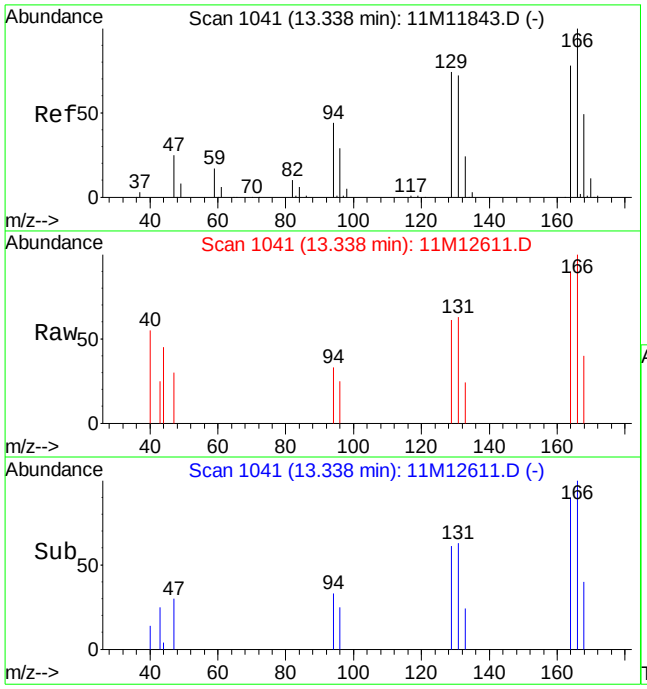

#64
Tetrachloroethene
Concen: 0.29 ug/L
RT: 13.34 min Scan# 1041
Delta R.T. -0.00 min
Lab File: 11M12611.D
Acq: 14 Jun 2016 2:36

Tgt Ion:164 Resp: 1980

Ion	Ratio	Lower	Upper
164	100		
129	90.7	57.9	135.1

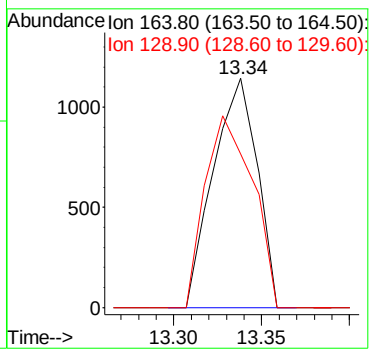

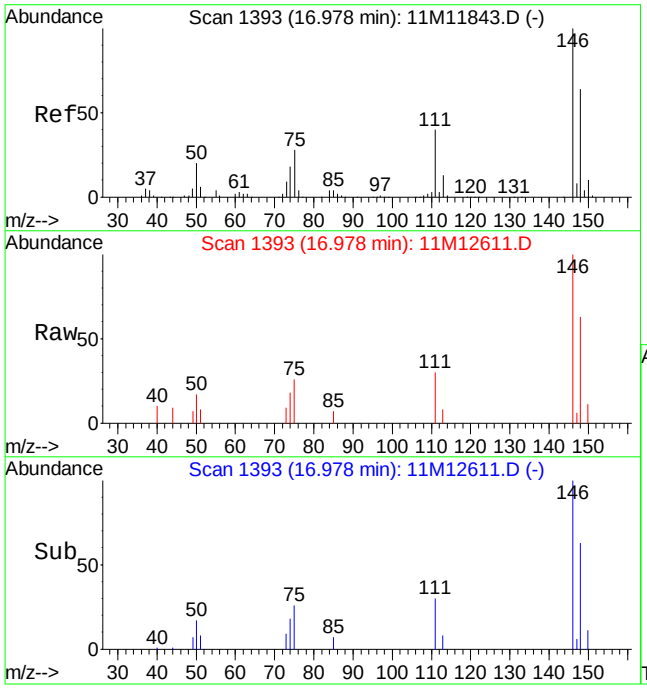

#91
1,3-Dichlorobenzene
Concen: 0.49 ug/L
RT: 16.98 min Scan# 1393
Delta R.T. -0.00 min
Lab File: 11M12611.D
Acq: 14 Jun 2016 2:36

Tgt Ion:146 Resp: 9711

Ion	Ratio	Lower	Upper
146	100		
111	35.0	23.8	55.4

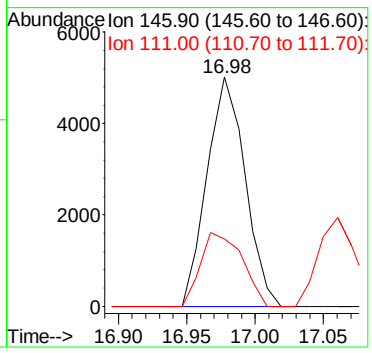

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061316\11M12612.D Vial: 21
Acq On : 14 Jun 2016 3:08 Operator: JDS
Sample : L16060504-03 A 826-SPE Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 09:26:18 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	703760	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	583003	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	333082	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	176822	22.9577 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 91.84%		
43) 1,2-Dichloroethane-d4	10.23	65	191638	21.8215 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 87.28%		
57) Toluene-d8	12.47	98	622456	24.5724 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.28%		
78) p-Bromofluorobenzene	15.64	95	263833	25.6957 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.80%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.17	85	1502	0.1362 ug/L	96
3) Chloromethane	3.73	50	1651	0.1870 ug/L #	62
4) Vinyl Chloride	3.96	62	36015	4.9108 ug/L	86
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	537078	75.7200 ug/L	96
13) Acetone	6.33	43	1073	0.6421 ug/L #	49
14) 1,1-Dichloroethene	6.56	61	13019	1.0105 ug/L	97
23) trans-1,2-Dichloroethene	7.75	96	1810	0.2538 ug/L	89
27) 1,1-Dichloroethane	8.34	63	49154	3.4356 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	105291	13.3925 ug/L	79
33) Chloroform	9.35	83	6040	0.4299 ug/L	100
39) Cyclohexane	9.88	56	4960	0.3292 ug/L #	92
46) Trichloroethene	11.09	130	472017	53.7352 ug/L	98
47) Methylcyclohexane	11.09	83	4530	0.4179 ug/L #	1
64) Tetrachloroethene	13.34	164	1488	0.2168 ug/L	99
91) 1,3-Dichlorobenzene	16.98	146	11037	0.5646 ug/L	93

(#) = qualifier out of range (m) = manual integration
11M12612.D 8260WT.M Tue Jun 14 09:26:19 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061316\11M12612.D Vial: 21
Acq On : 14 Jun 2016 3:08 Operator: JDS
Sample : L16060504-03 A 826-SPE Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 9:26 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

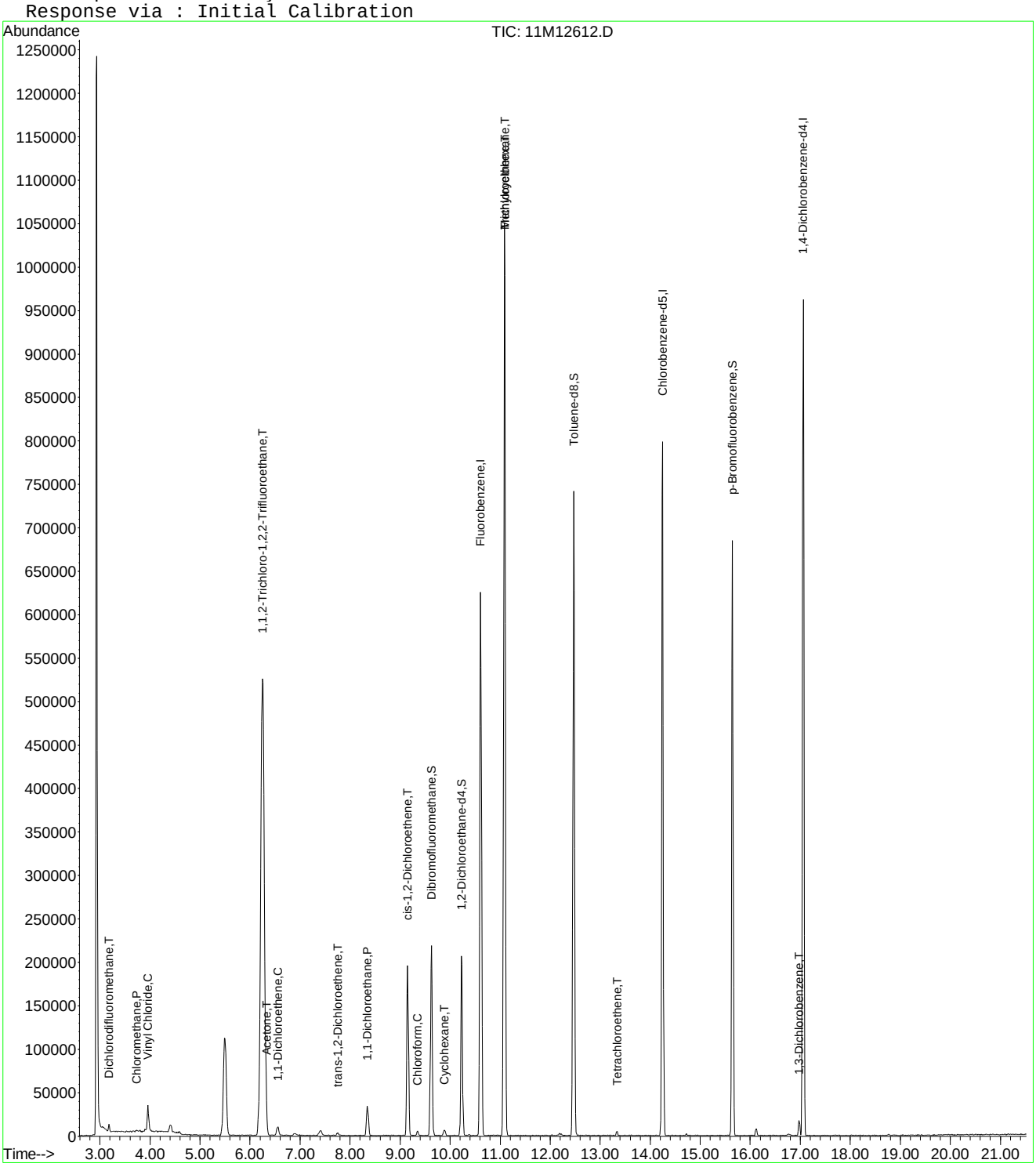

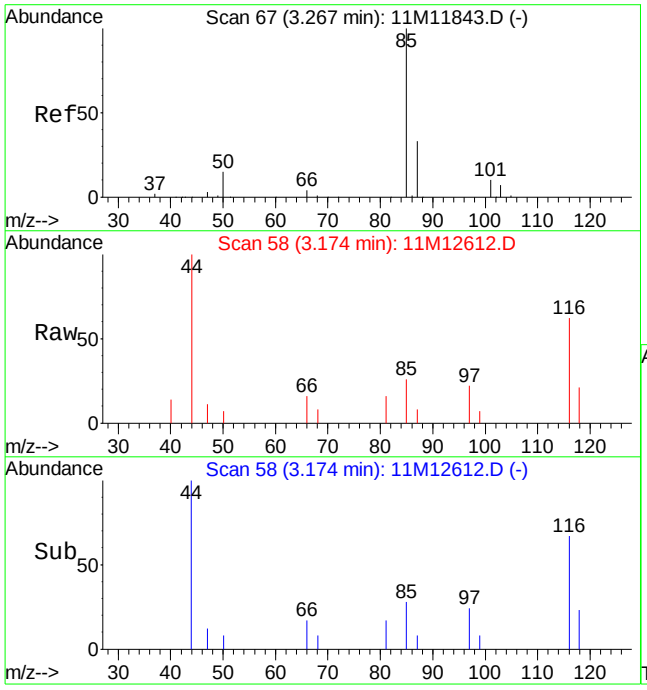

#2
Dichlorodifluoromethane
Concen: 0.14 ug/L
RT: 3.17 min Scan# 58
Delta R.T. -0.09 min
Lab File: 11M12612.D
Acq: 14 Jun 2016 3:08

Tgt Ion: 85 Resp: 1502

Ion	Ratio	Lower	Upper
85	100		
50	12.6	8.5	19.7

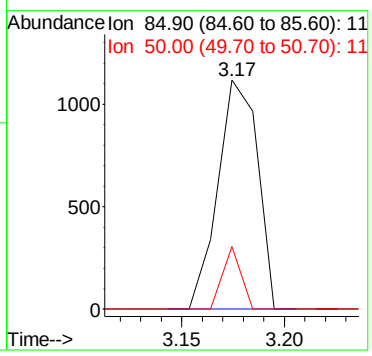

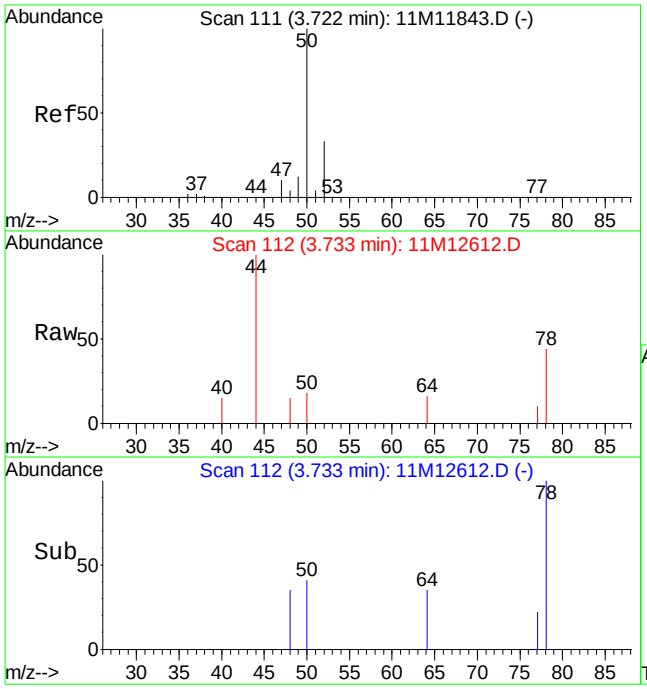

#3
Chloromethane
Concen: 0.19 ug/L
RT: 3.73 min Scan# 112
Delta R.T. 0.01 min
Lab File: 11M12612.D
Acq: 14 Jun 2016 3:08

Tgt Ion: 50 Resp: 1651

Ion	Ratio	Lower	Upper
50	100		
52	11.6	20.0	46.6#

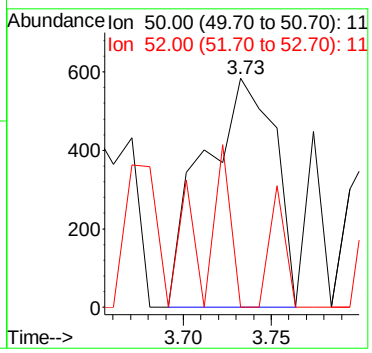

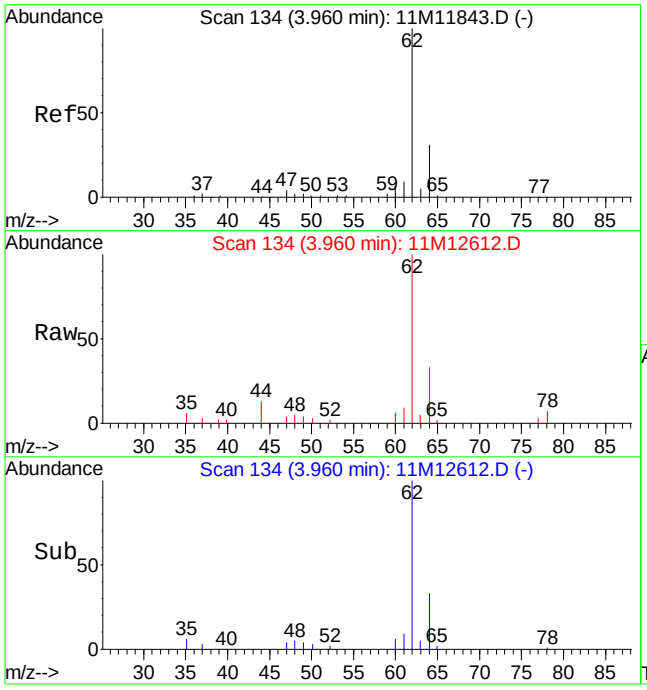

#4
Vinyl Chloride
Concen: 4.91 ug/L
RT: 3.96 min Scan# 134
Delta R.T. -0.00 min
Lab File: 11M12612.D
Acq: 14 Jun 2016 3:08

Tgt Ion: 62 Resp: 36015

Ion	Ratio	Lower	Upper
62	100		
64	38.6	18.4	43.0

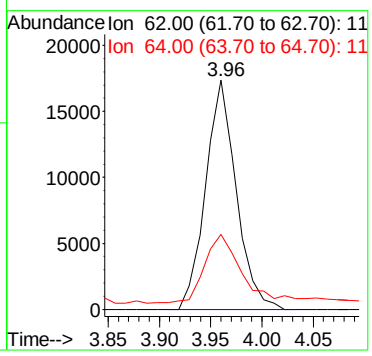

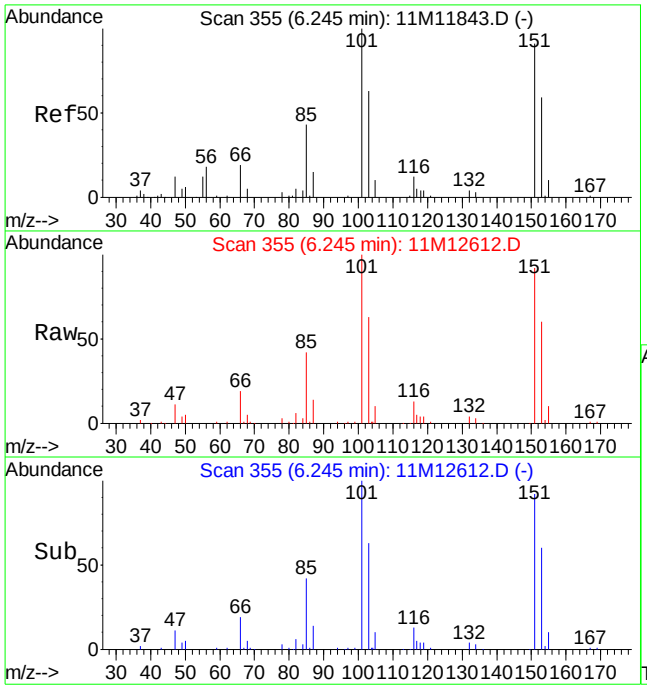

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 75.72 ug/L
RT: 6.25 min Scan# 355
Delta R.T. -0.00 min
Lab File: 11M12612.D
Acq: 14 Jun 2016 3:08

Tgt Ion:101 Resp: 537078

Ion	Ratio	Lower	Upper
101	100		
151	94.7	50.7	130.7

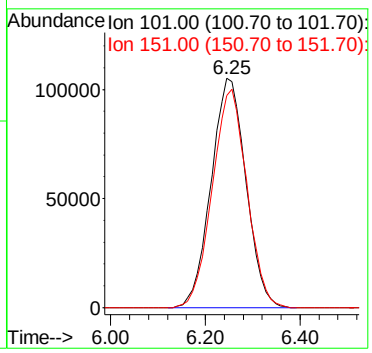

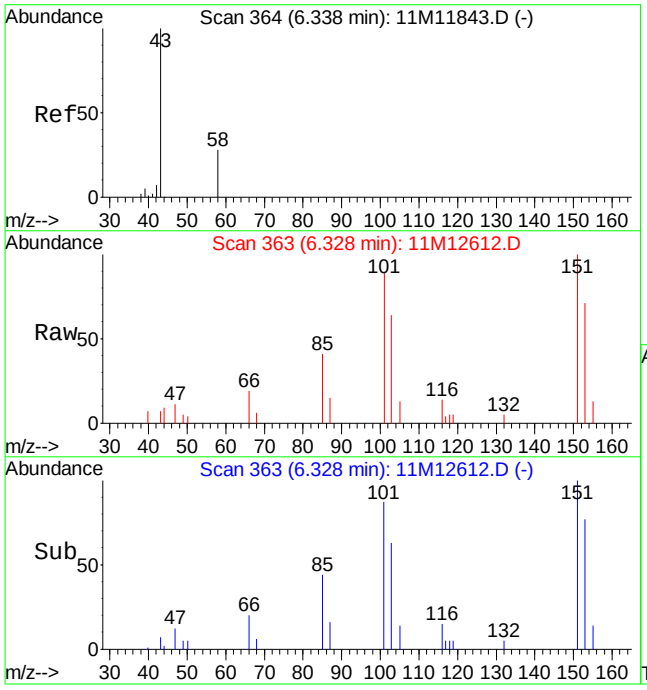

#13
Acetone
Concen: 0.64 ug/L
RT: 6.33 min Scan# 363
Delta R.T. -0.01 min
Lab File: 11M12612.D
Acq: 14 Jun 2016 3:08

Tgt Ion: 43 Resp: 1073

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

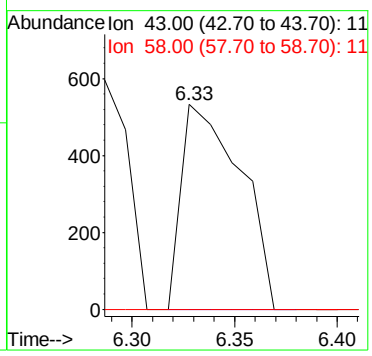

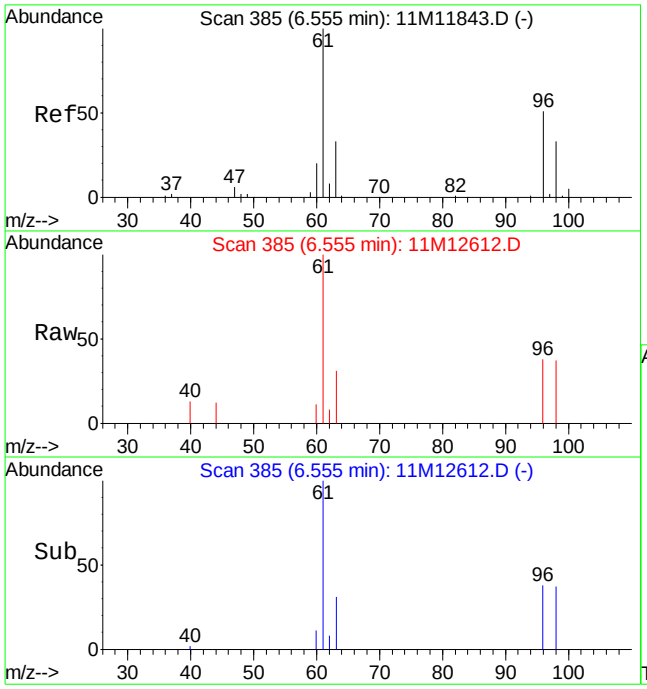

#14
1,1-Dichloroethene
Concen: 1.01 ug/L
RT: 6.56 min Scan# 385
Delta R.T. -0.00 min
Lab File: 11M12612.D
Acq: 14 Jun 2016 3:08

Tgt Ion: 61 Resp: 13019

Ion	Ratio	Lower	Upper
61	100		
96	48.3	30.1	70.3

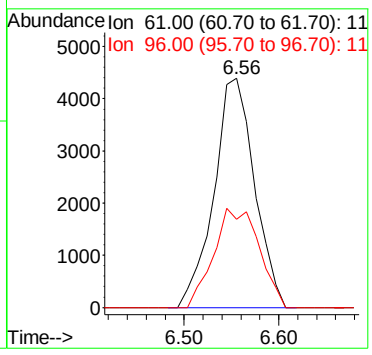

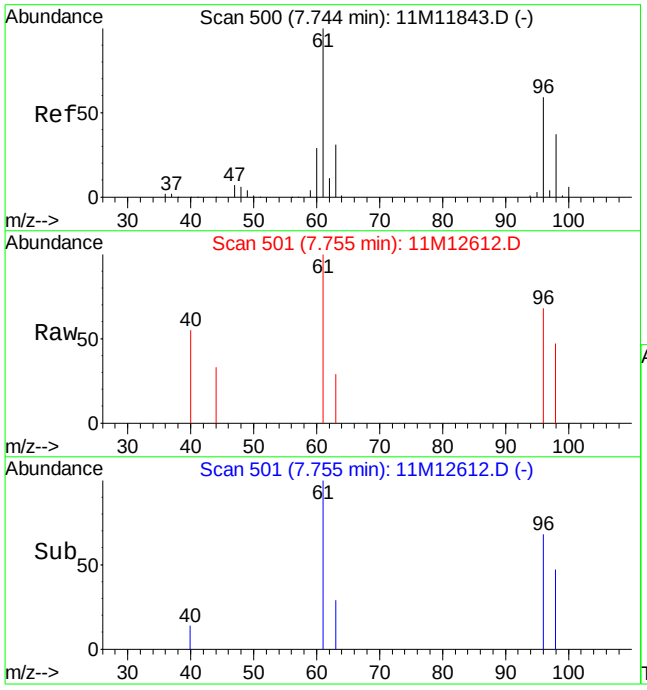

#23
trans-1,2-Dichloroethene
Concen: 0.25 ug/L
RT: 7.75 min Scan# 501
Delta R.T. 0.01 min
Lab File: 11M12612.D
Acq: 14 Jun 2016 3:08

Tgt Ion: 96 Resp: 1810

Ion	Ratio	Lower	Upper
96	100		
61	182.5	100.6	234.6

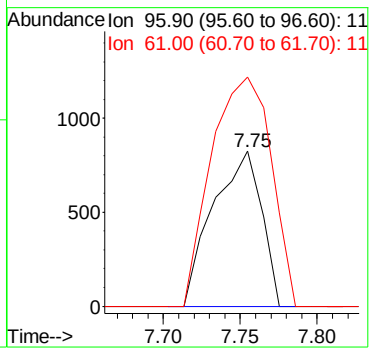

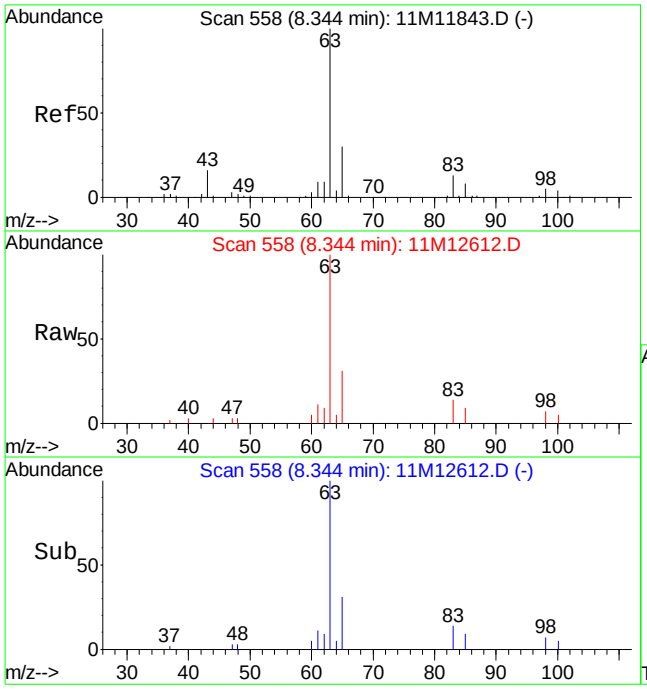

#27
1,1-Dichloroethane
Concen: 3.44 ug/L
RT: 8.34 min Scan# 558
Delta R.T. -0.00 min
Lab File: 11M12612.D
Acq: 14 Jun 2016 3:08

Tgt Ion: 63 Resp: 49154

Ion	Ratio	Lower	Upper
63	100		
65	29.8	17.8	41.6
83	12.4	7.4	17.4

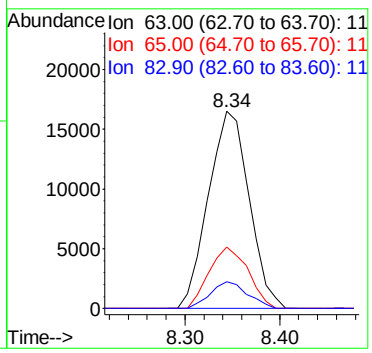

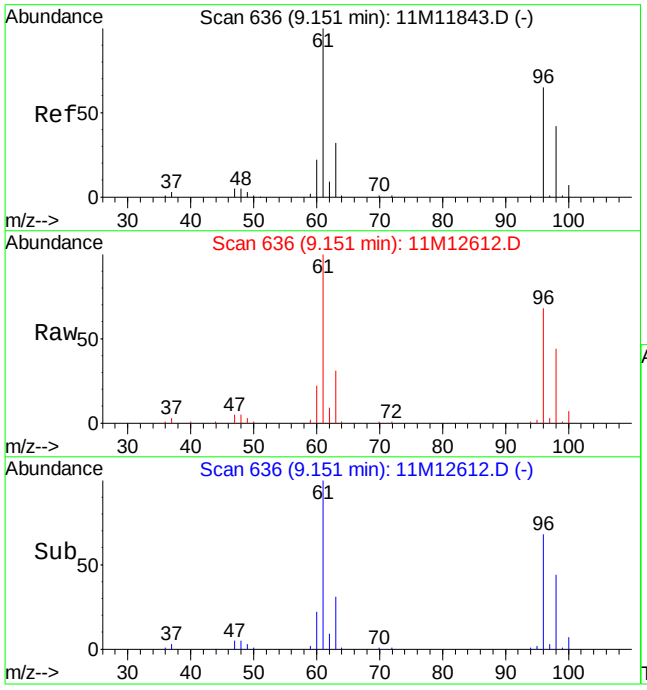

#32
cis-1,2-Dichloroethene
Concen: 13.39 ug/L
RT: 9.15 min Scan# 636
Delta R.T. -0.00 min
Lab File: 11M12612.D
Acq: 14 Jun 2016 3:08

Tgt Ion: 96 Resp: 105291

Ion	Ratio	Lower	Upper
96	100		
61	145.5	105.2	245.6

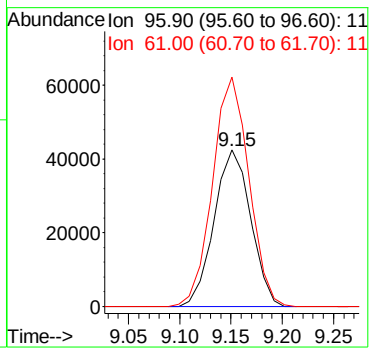

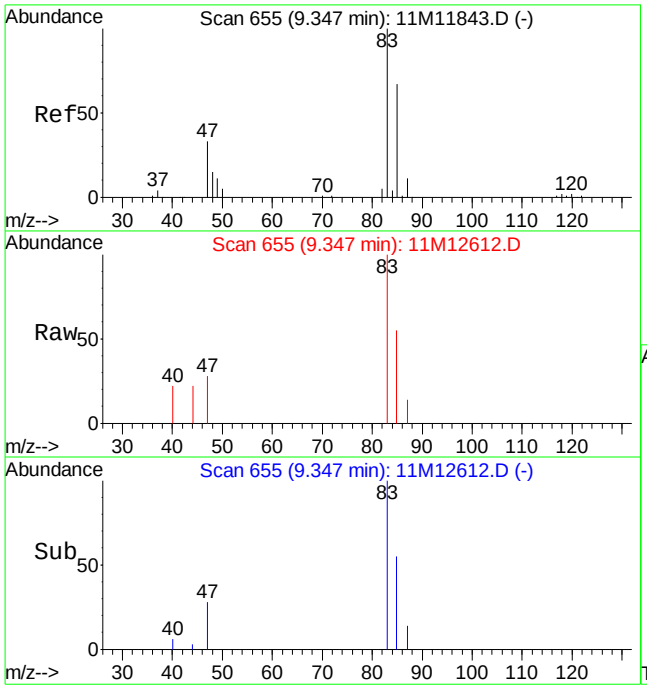

#33
Chloroform
Concen: 0.43 ug/L
RT: 9.35 min Scan# 655
Delta R.T. -0.00 min
Lab File: 11M12612.D
Acq: 14 Jun 2016 3:08

Tgt Ion: 83 Resp: 6040

Ion	Ratio	Lower	Upper
83	100		
85	65.1	39.2	91.4

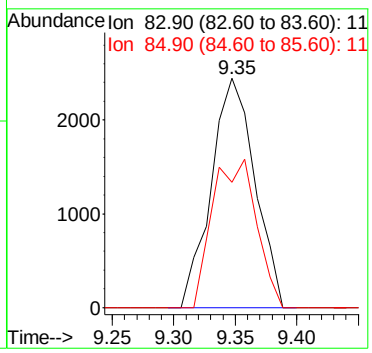

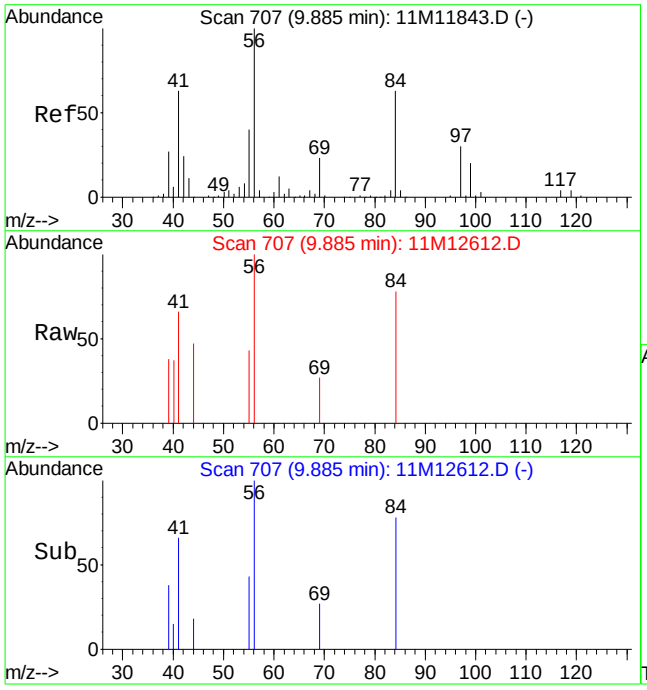

#39
Cyclohexane
Concen: 0.33 ug/L
RT: 9.88 min Scan# 707
Delta R.T. -0.00 min
Lab File: 11M12612.D
Acq: 14 Jun 2016 3:08

Tgt Ion: 56 Resp: 4960

Ion	Ratio	Lower	Upper
56	100		
69	10.4	13.7	31.9#
84	63.1	38.5	89.7

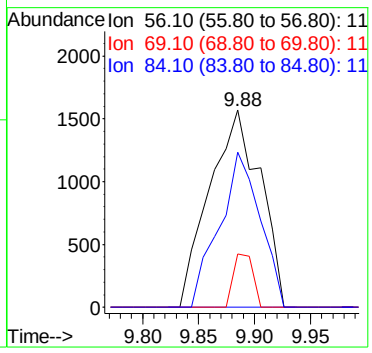

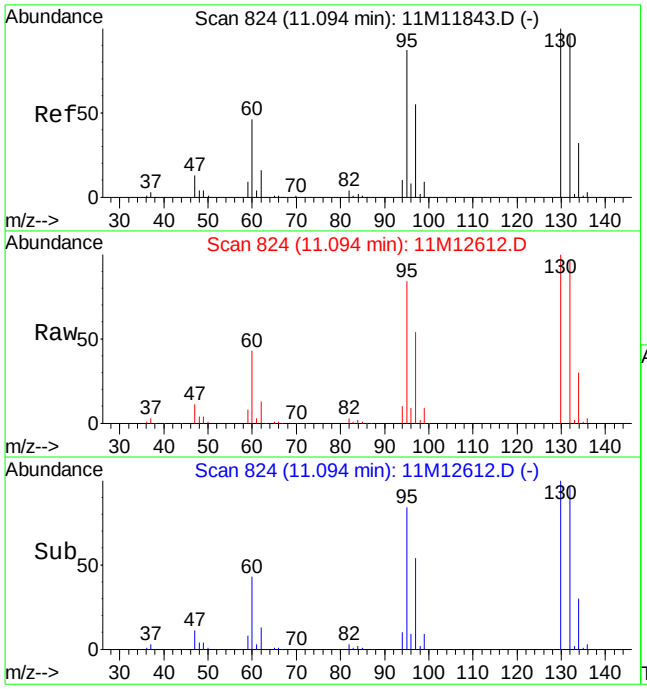

#46
Trichloroethene
Concen: 53.74 ug/L
RT: 11.09 min Scan# 824
Delta R.T. -0.00 min
Lab File: 11M12612.D
Acq: 14 Jun 2016 3:08

Tgt Ion:130 Resp: 472017

Ion	Ratio	Lower	Upper
130	100		
132	96.8	58.3	136.1
95	88.8	55.6	129.8

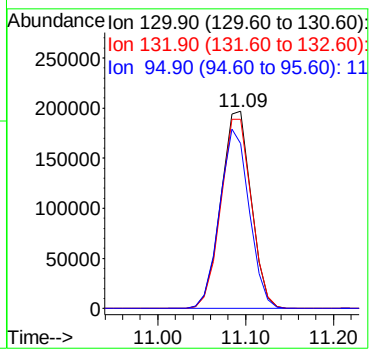

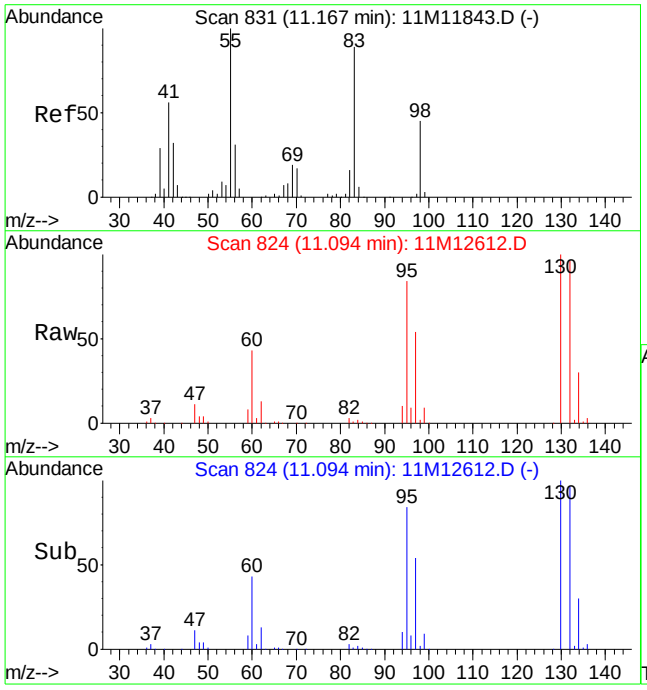

#47
Methylcyclohexane
Concen: 0.42 ug/L
RT: 11.09 min Scan# 824
Delta R.T. -0.07 min
Lab File: 11M12612.D
Acq: 14 Jun 2016 3:08

Tgt Ion: 83 Resp: 4530

Ion	Ratio	Lower	Upper
83	100		
55	0.0	66.5	155.1#
98	248.4	29.9	69.7#

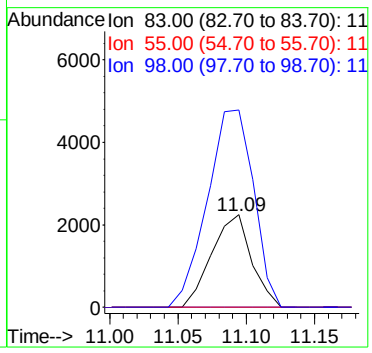

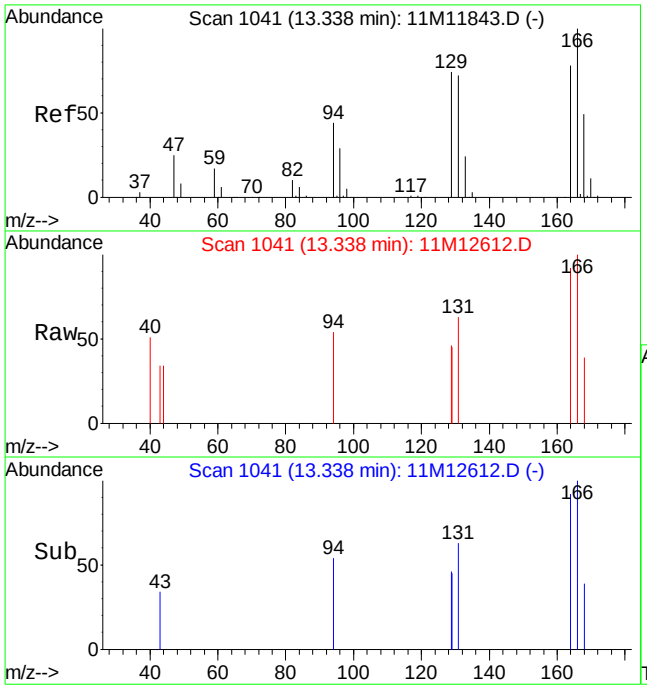

#64
Tetrachloroethene
Concen: 0.22 ug/L
RT: 13.34 min Scan# 1041
Delta R.T. -0.00 min
Lab File: 11M12612.D
Acq: 14 Jun 2016 3:08

Tgt Ion:164 Resp: 1488

Ion	Ratio	Lower	Upper
164	100		
129	95.6	57.9	135.1

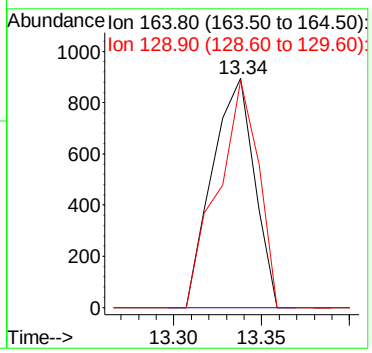

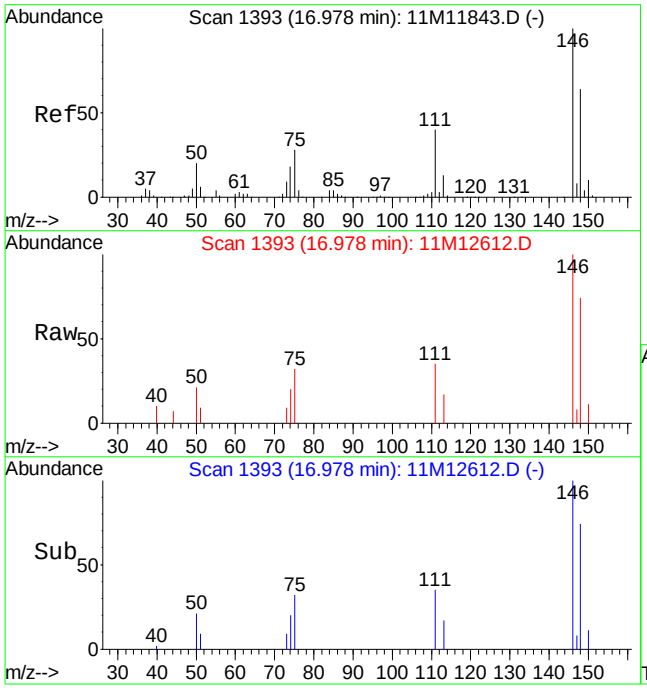

#91
1,3-Dichlorobenzene
Concen: 0.56 ug/L
RT: 16.98 min Scan# 1393
Delta R.T. -0.00 min
Lab File: 11M12612.D
Acq: 14 Jun 2016 3:08

Tgt Ion:146 Resp: 11037

Ion	Ratio	Lower	Upper
146	100		
111	35.2	23.8	55.4

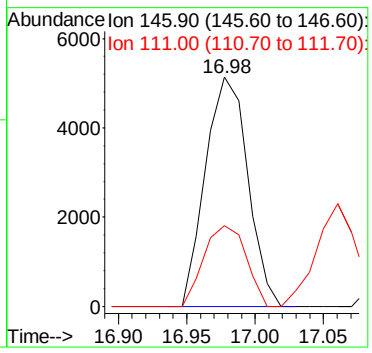

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412996.D Vial: 26
Acq On : 14 Jun 2016 21:31 Operator: TMB
Sample : L16060504-04 B 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 08:27:46 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	736400	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	548941	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	303479	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	218202	27.5786 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.32%		
43) 1,2-Dichloroethane-d4	10.30	65	241028	28.4110 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 113.64%		
58) Toluene-d8	12.68	98	751676	26.1643 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.64%		
80) p-Bromofluorobenzene	16.08	95	314344	25.0151 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.08%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.08	85	11648	0.9434 ug/L	98
3) Chloromethane	3.64	50	1622	0.2251 ug/L #	42
4) Vinyl Chloride	3.84	62	9590	1.1216 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	91739	12.2668 ug/L	91
13) Acetone	6.25	43	6049	7.3010 ug/L #	80
14) 1,1-Dichloroethene	6.48	61	2950	0.2477 ug/L #	62
19) Methylene Chloride	7.26	84	13857	1.8286 ug/L	94
20) Carbon Disulfide	7.30	76	3896	0.1563 ug/L #	74
23) trans-1,2-Dichloroethene	7.70	61	49277	4.5044 ug/L	97
27) 1,1-Dichloroethane	8.33	63	4126	0.3037 ug/L #	75
28) Ethyl-Tert-Butyl ether	8.62	59	2533	0.1386 ug/L #	37
32) cis-1,2-Dichloroethene	9.17	96	164298	19.4368 ug/L	82
45) 1,2-Dichloroethane	10.43	62	133902	12.9689 ug/L	95
46) Benzene	10.46	78	185384	6.1285 ug/L	97
47) Trichloroethene	11.21	130	1236359	153.2453 ug/L	99
48) Methylcyclohexane	11.20	83	16271	1.3275 ug/L #	1
59) Toluene	12.78	91	15574	0.4570 ug/L	93

(#) = qualifier out of range (m) = manual integration
8M412996.D 8260WT.M Wed Jun 15 08:27:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412996.D Vial: 26
Acq On : 14 Jun 2016 21:31 Operator: TMB
Sample : L16060504-04 B 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 8:28 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

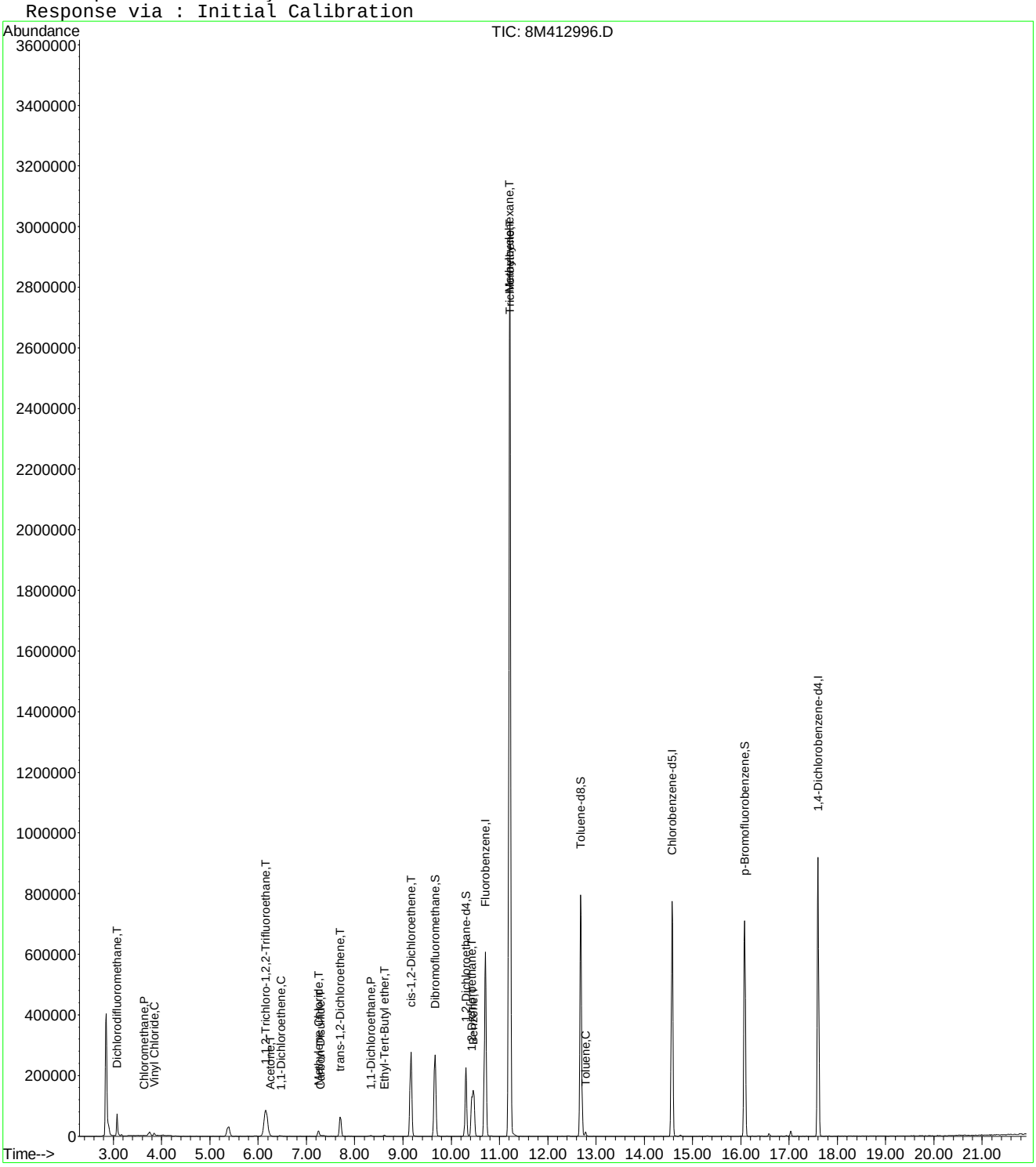

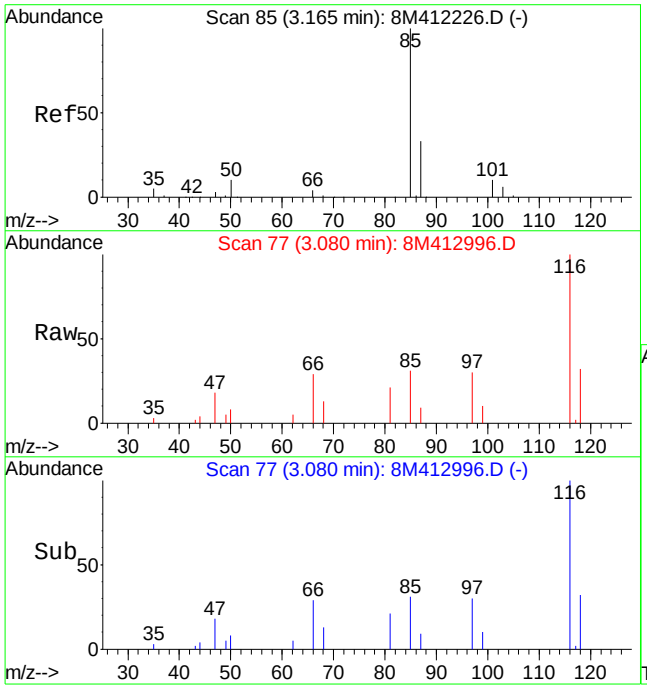

#2
Dichlorodifluoromethane
Concen: 0.94 ug/L
RT: 3.08 min Scan# 77
Delta R.T. -0.09 min
Lab File: 8M412996.D
Acq: 14 Jun 2016 21:31

Tgt Ion: 85 Resp: 11648

Ion	Ratio	Lower	Upper
85	100		
87	33.9	19.6	45.8

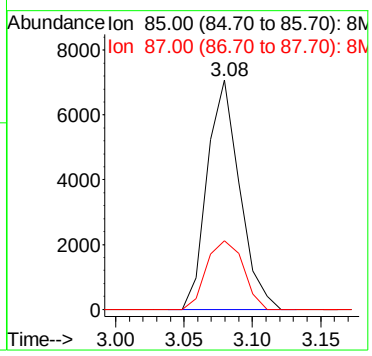

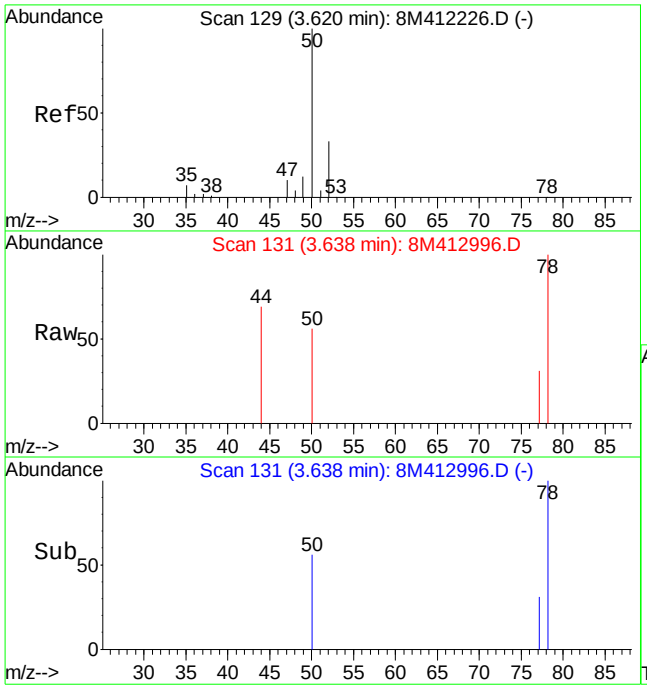

#3
Chloromethane
Concen: 0.23 ug/L
RT: 3.64 min Scan# 131
Delta R.T. 0.02 min
Lab File: 8M412996.D
Acq: 14 Jun 2016 21:31

Tgt Ion: 50 Resp: 1622

Ion	Ratio	Lower	Upper
50	100		
52	0.0	19.9	46.3#

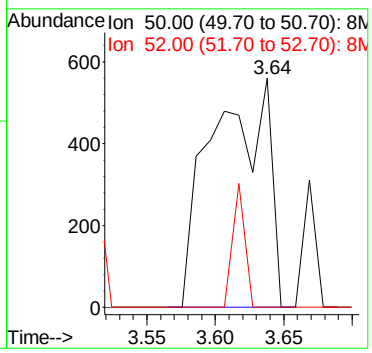

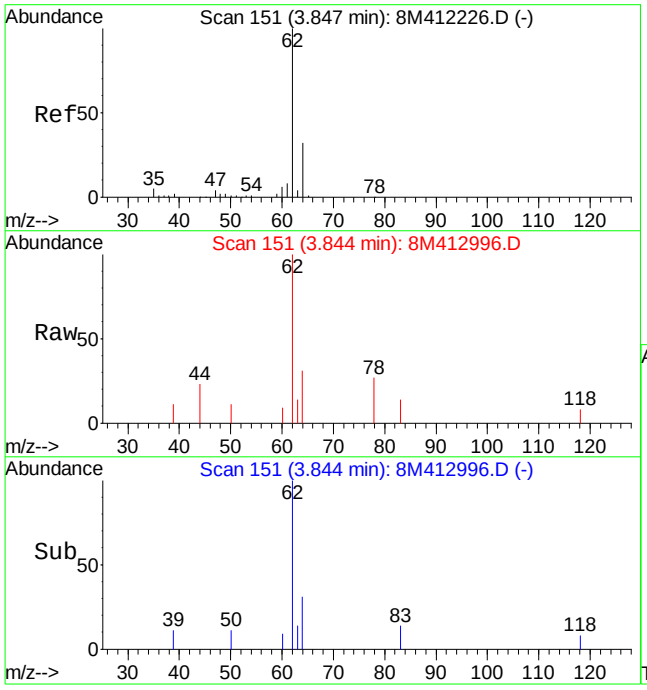

#4
Vinyl Chloride
Concen: 1.12 ug/L
RT: 3.84 min Scan# 151
Delta R.T. -0.00 min
Lab File: 8M412996.D
Acq: 14 Jun 2016 21:31

Tgt Ion: 62 Resp: 9590

Ion	Ratio	Lower	Upper
62	100		
64	31.9	19.3	45.1

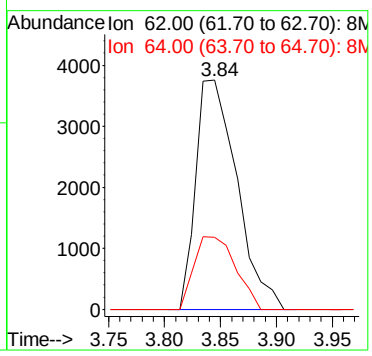

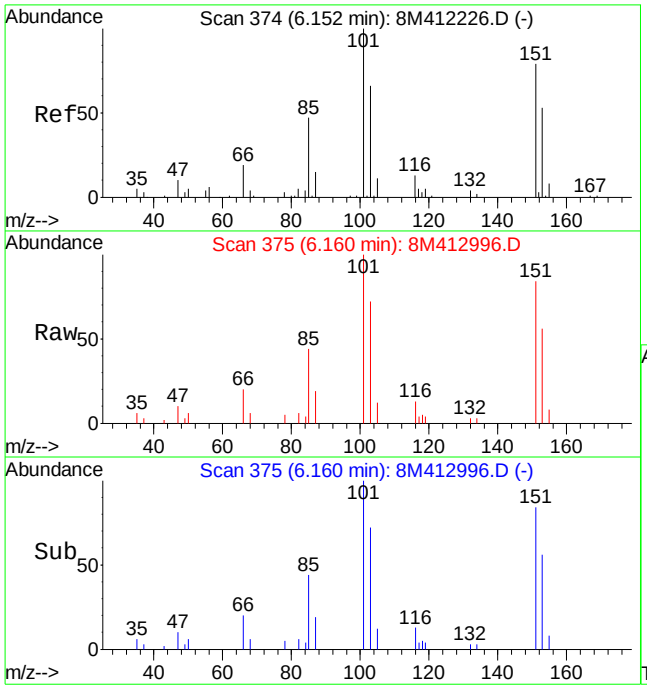

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 12.27 ug/L
RT: 6.16 min Scan# 375
Delta R.T. 0.01 min
Lab File: 8M412996.D
Acq: 14 Jun 2016 21:31

Tgt Ion:101 Resp: 91739

Ion	Ratio	Lower	Upper
101	100		
151	88.0	40.2	120.2

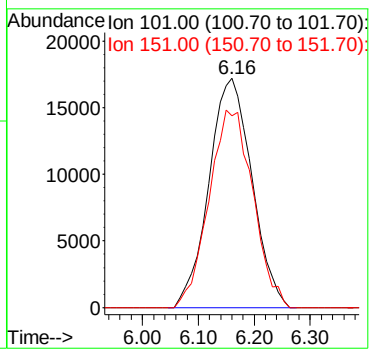

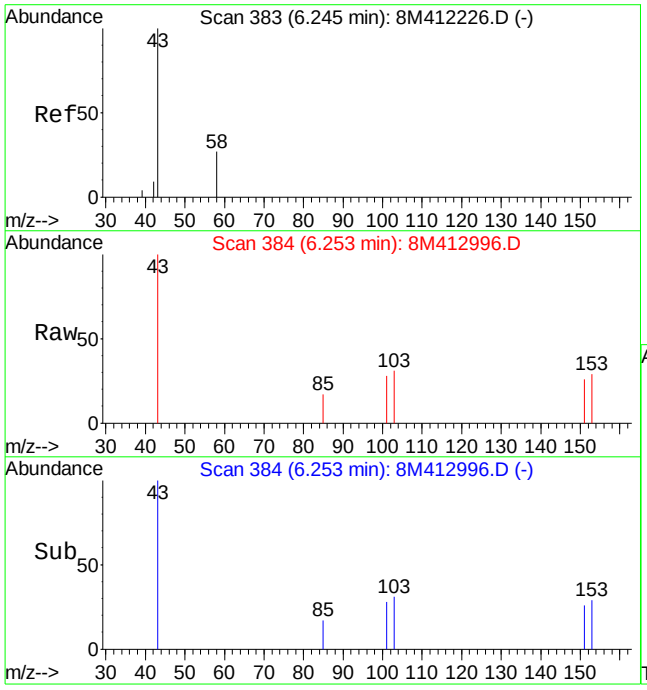

#13
Acetone
Concen: 7.30 ug/L
RT: 6.25 min Scan# 384
Delta R.T. 0.01 min
Lab File: 8M412996.D
Acq: 14 Jun 2016 21:31

Tgt Ion: 43 Resp: 6049

Ion	Ratio	Lower	Upper
43	100		
58	15.1	15.2	35.4#

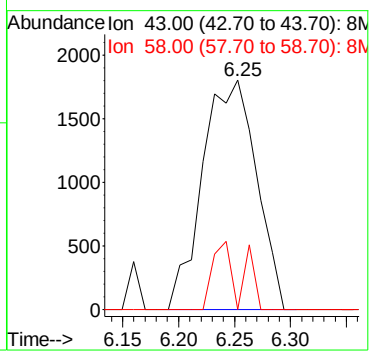

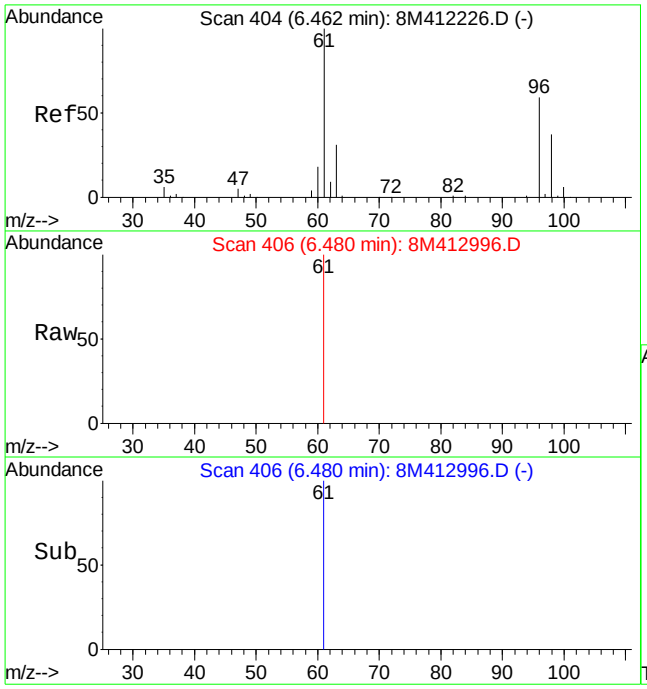

#14
1,1-Dichloroethene
Concen: 0.25 ug/L
RT: 6.48 min Scan# 406
Delta R.T. 0.02 min
Lab File: 8M412996.D
Acq: 14 Jun 2016 21:31

Tgt Ion: 61 Resp: 2950

Ion	Ratio	Lower	Upper
61	100		
96	29.2	34.6	80.8#

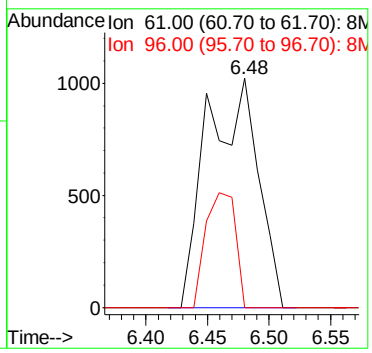

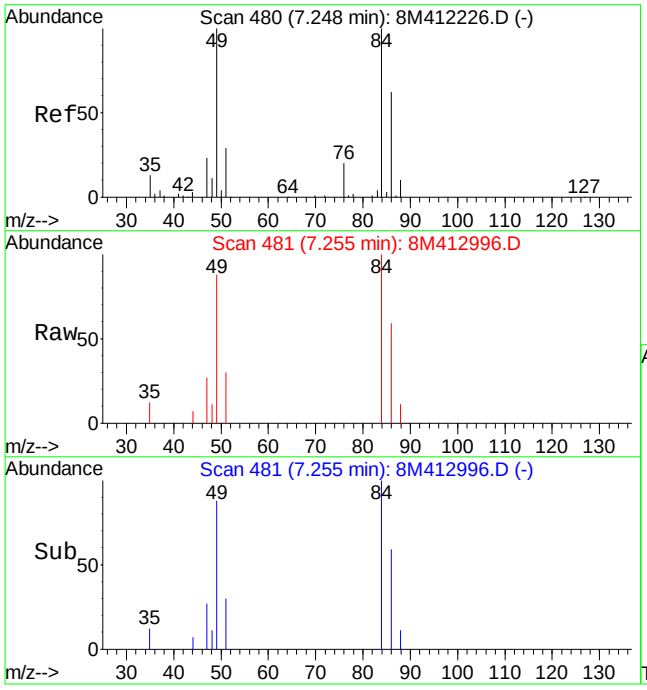

#19
Methylene Chloride
Concen: 1.83 ug/L
RT: 7.26 min Scan# 481
Delta R.T. 0.01 min
Lab File: 8M412996.D
Acq: 14 Jun 2016 21:31

Tgt Ion: 84 Resp: 13857

Ion	Ratio	Lower	Upper
84	100		
49	95.1	60.5	141.3

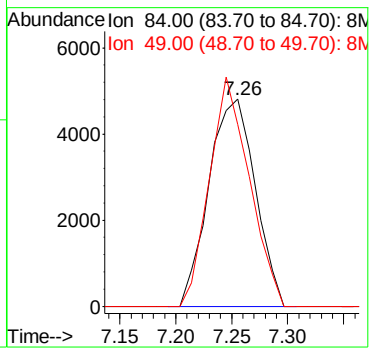

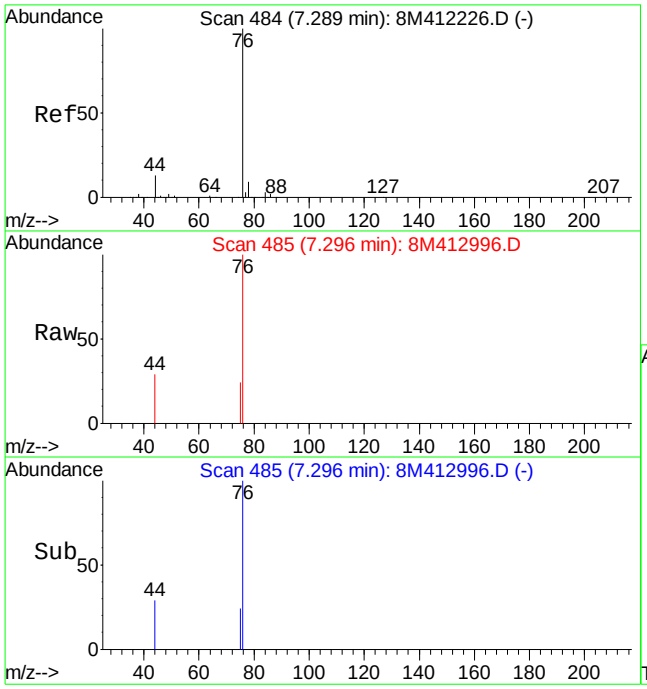

#20
Carbon Disulfide
Concen: 0.16 ug/L
RT: 7.30 min Scan# 485
Delta R.T. 0.01 min
Lab File: 8M412996.D
Acq: 14 Jun 2016 21:31

Tgt Ion: 76 Resp: 3896

Ion	Ratio	Lower	Upper
76	100		
78	0.0	5.6	13.0#

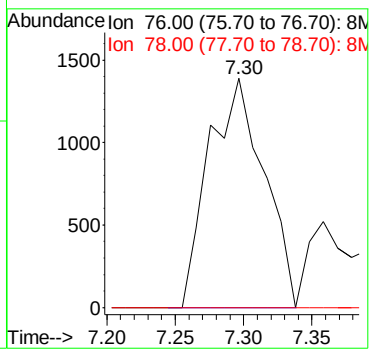

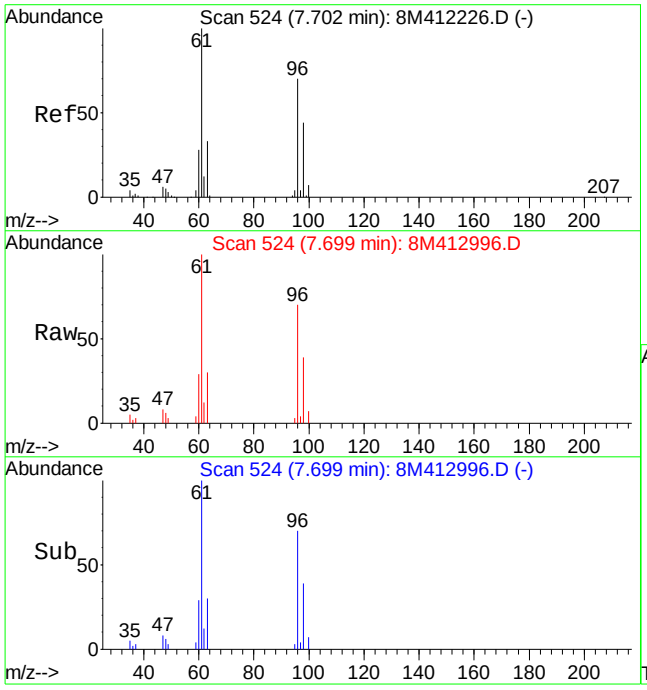

#23
trans-1,2-Dichloroethene
Concen: 4.50 ug/L
RT: 7.70 min Scan# 524
Delta R.T. -0.00 min
Lab File: 8M412996.D
Acq: 14 Jun 2016 21:31

Tgt Ion: 61 Resp: 49277

Ion	Ratio	Lower	Upper
61	100		
96	72.4	41.8	97.4

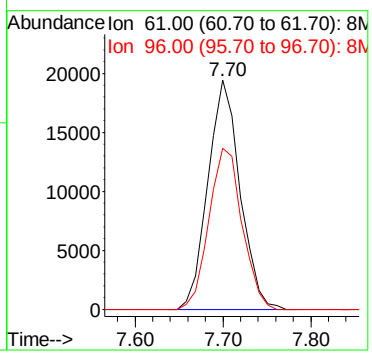

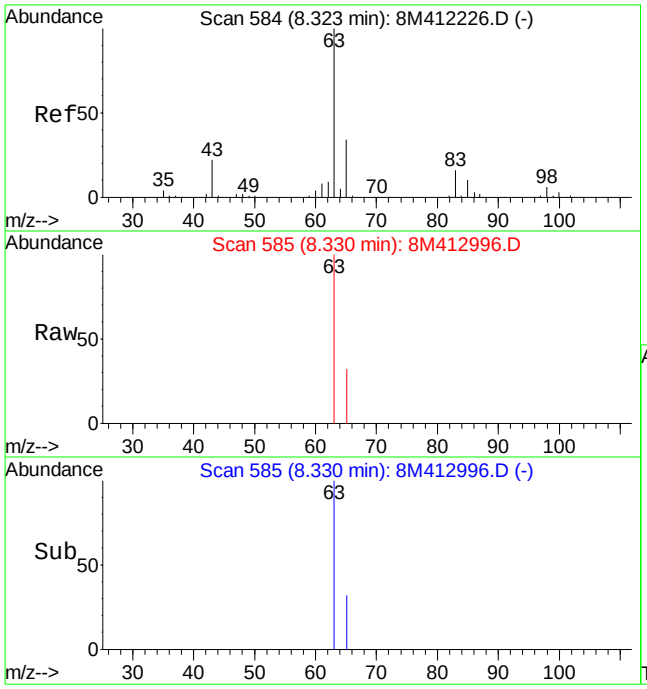

#27
1,1-Dichloroethane
Concen: 0.30 ug/L
RT: 8.33 min Scan# 585
Delta R.T. 0.01 min
Lab File: 8M412996.D
Acq: 14 Jun 2016 21:31

Tgt Ion: 63 Resp: 4126

Ion	Ratio	Lower	Upper
63	100		
65	22.3	20.2	47.0
83	0.0	9.1	21.1#

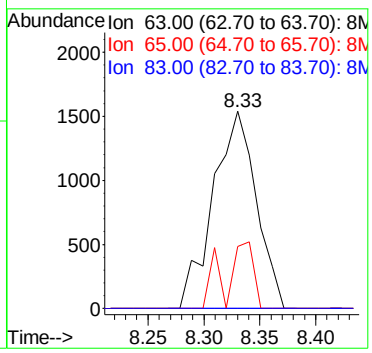

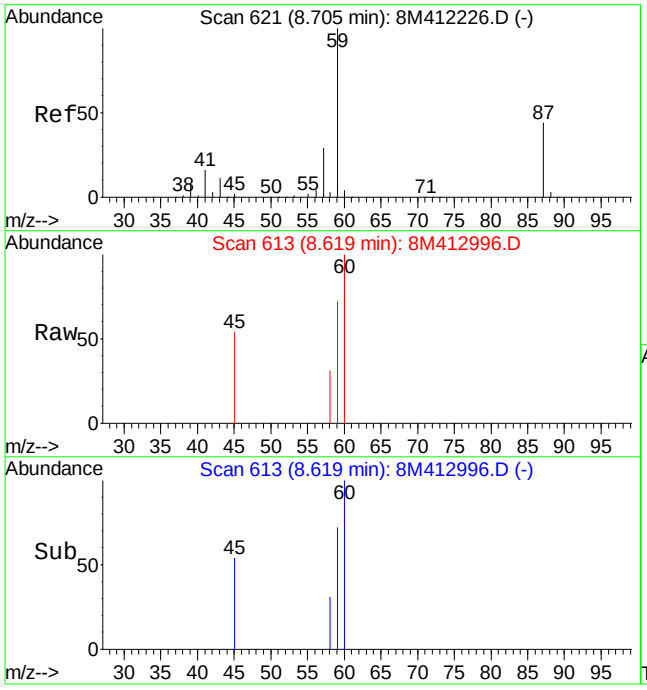

#28
Ethyl-Tert-Butyl ether
Concen: 0.14 ug/L
RT: 8.62 min Scan# 613
Delta R.T. -0.09 min
Lab File: 8M412996.D
Acq: 14 Jun 2016 21:31

Tgt Ion: 59 Resp: 2533

Ion	Ratio	Lower	Upper
59	100		
87	0.0	26.8	62.4#
57	0.0	17.4	40.6#

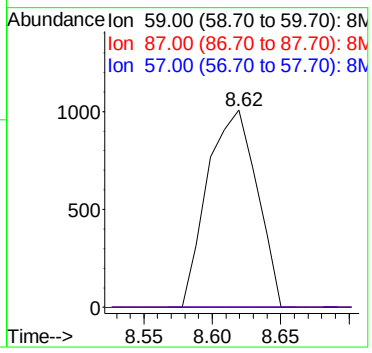

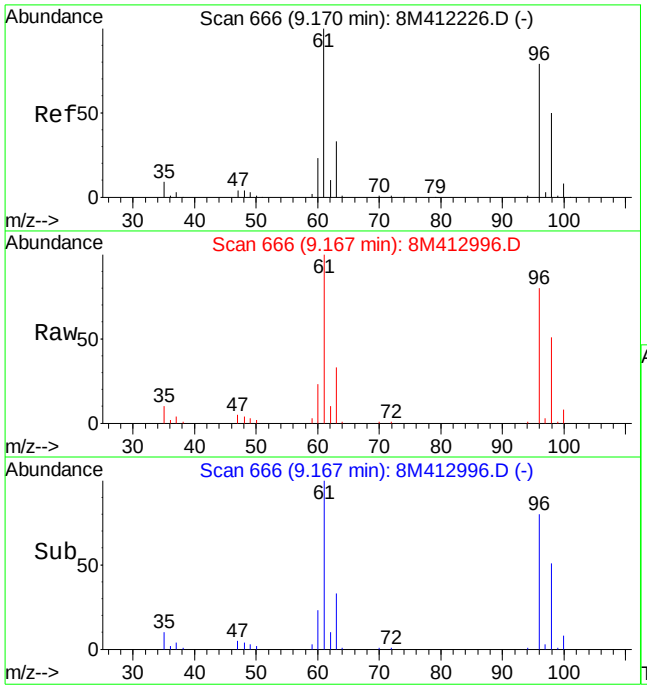

#32
cis-1,2-Dichloroethene
Concen: 19.44 ug/L
RT: 9.17 min Scan# 666
Delta R.T. -0.00 min
Lab File: 8M412996.D
Acq: 14 Jun 2016 21:31

Tgt Ion: 96 Resp: 164298

Ion	Ratio	Lower	Upper
96	100		
61	129.7	91.5	213.5

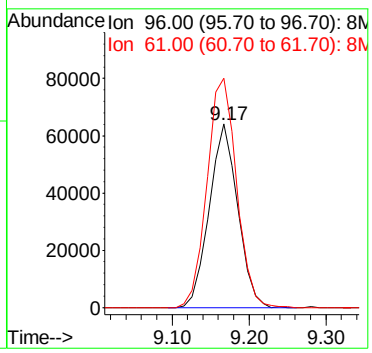

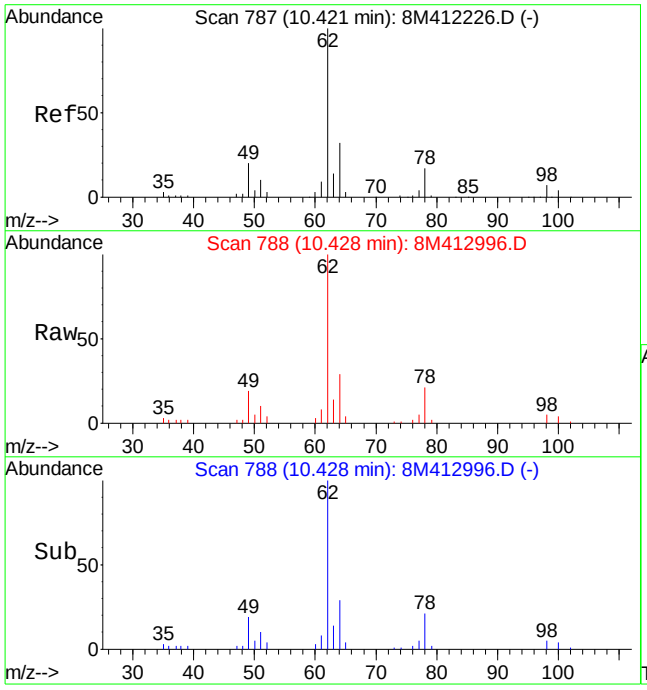

#45
1,2-Dichloroethane
Concen: 12.97 ug/L
RT: 10.43 min Scan# 788
Delta R.T. 0.01 min
Lab File: 8M412996.D
Acq: 14 Jun 2016 21:31

Tgt Ion: 62 Resp: 133902

Ion	Ratio	Lower	Upper
62	100		
64	31.7	19.6	45.6
49	20.9	15.5	36.1

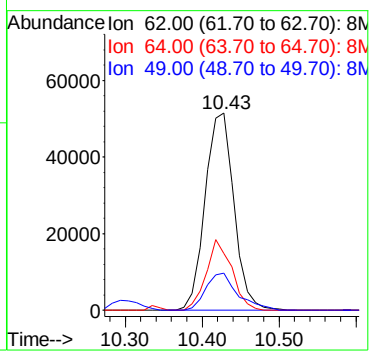

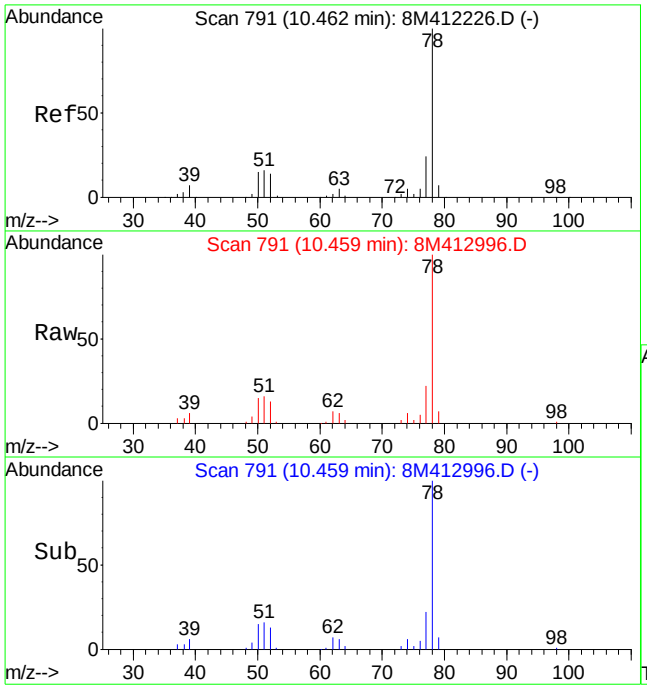

#46
Benzene
Concen: 6.13 ug/L
RT: 10.46 min Scan# 791
Delta R.T. -0.00 min
Lab File: 8M412996.D
Acq: 14 Jun 2016 21:31

Tgt Ion: 78 Resp: 185384

Ion	Ratio	Lower	Upper
78	100		
52	13.6	8.4	19.6
51	20.0	10.9	25.5

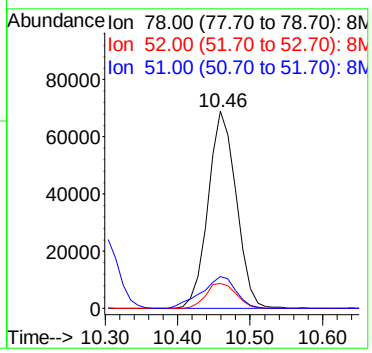

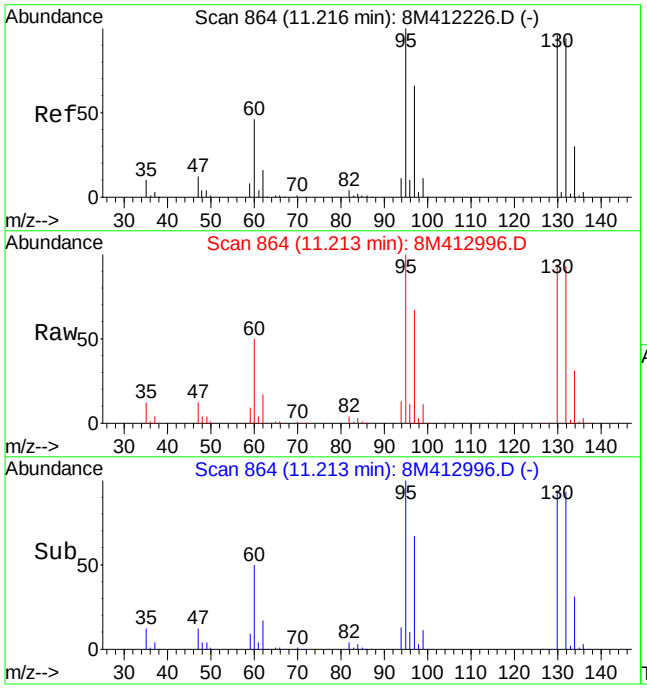

#47
Trichloroethene
Concen: 153.25 ug/L
RT: 11.21 min Scan# 864
Delta R.T. -0.00 min
Lab File: 8M412996.D
Acq: 14 Jun 2016 21:31

Tgt Ion:130 Resp: 1236359

Ion	Ratio	Lower	Upper
130	100		
132	98.4	58.0	135.2
95	107.1	64.9	151.5

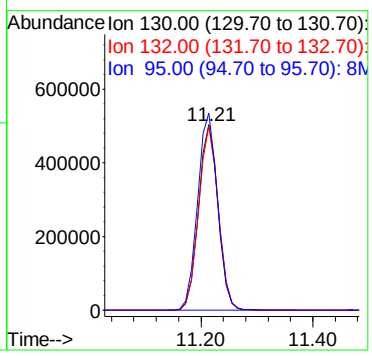

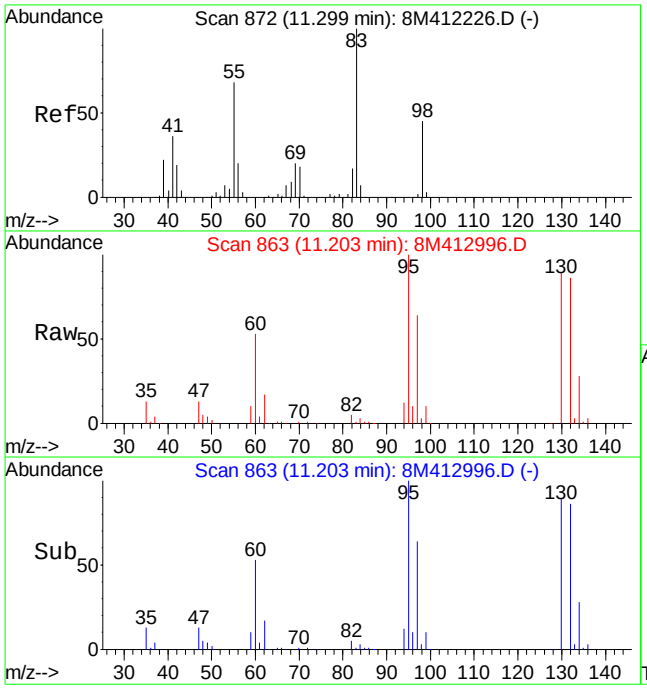

#48
Methylcyclohexane
Concen: 1.33 ug/L
RT: 11.20 min Scan# 863
Delta R.T. -0.10 min
Lab File: 8M412996.D
Acq: 14 Jun 2016 21:31

Tgt Ion: 83 Resp: 16271

Ion	Ratio	Lower	Upper
83	100		
55	0.0	40.9	95.3#
98	229.6	28.1	65.7#

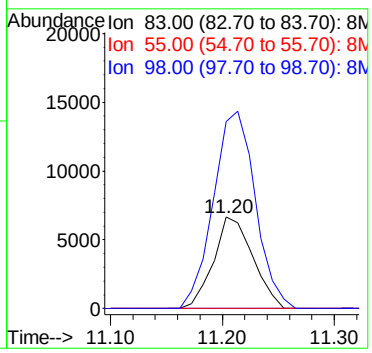

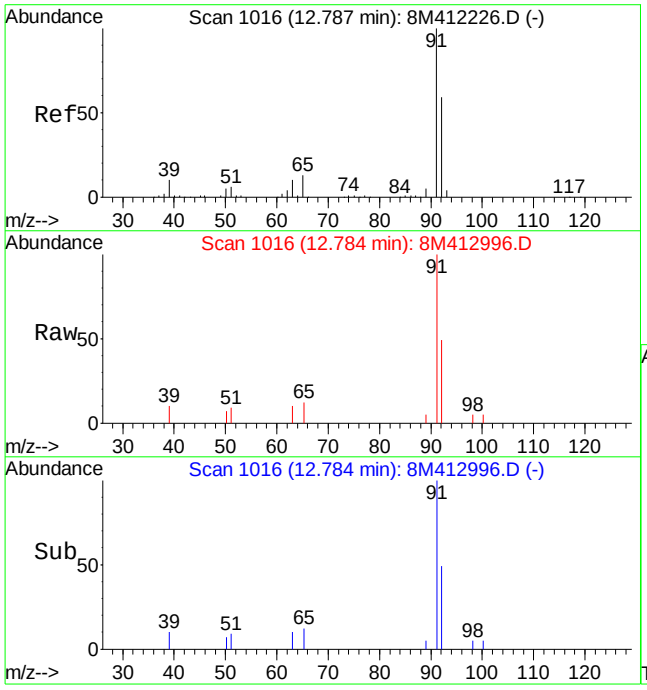

#59
Toluene
Concen: 0.46 ug/L
RT: 12.78 min Scan# 1016
Delta R.T. -0.00 min
Lab File: 8M412996.D
Acq: 14 Jun 2016 21:31

Tgt Ion: 91 Resp: 15574

Ion	Ratio	Lower	Upper
91	100		
92	54.1	35.5	82.7

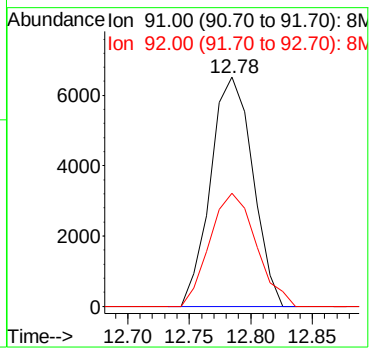

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061316\11M12604.D Vial: 13
Acq On : 13 Jun 2016 22:53 Operator: JDS
Sample : L16060504-05 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 09:25:57 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	735062	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	604613	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	345024	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	180431	22.4287 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 89.72%		
43) 1,2-Dichloroethane-d4	10.23	65	198272	21.6155 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 86.48%		
57) Toluene-d8	12.47	98	652040	24.8203 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.28%		
78) p-Bromofluorobenzene	15.64	95	276042	25.9543 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.80%		

Target Compounds					Qvalue
3) Chloromethane	3.72	50	1597	0.1731 ug/L #	62
13) Acetone	6.33	43	1064	0.6096 ug/L #	49
36) Tetrahydrofuran	9.60	42	2982	1.6003 ug/L	88

(#) = qualifier out of range (m) = manual integration
11M12604.D 8260WT.M Tue Jun 14 09:25:58 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061316\11M12604.D Vial: 13
Acq On : 13 Jun 2016 22:53 Operator: JDS
Sample : L16060504-05 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 9:25 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

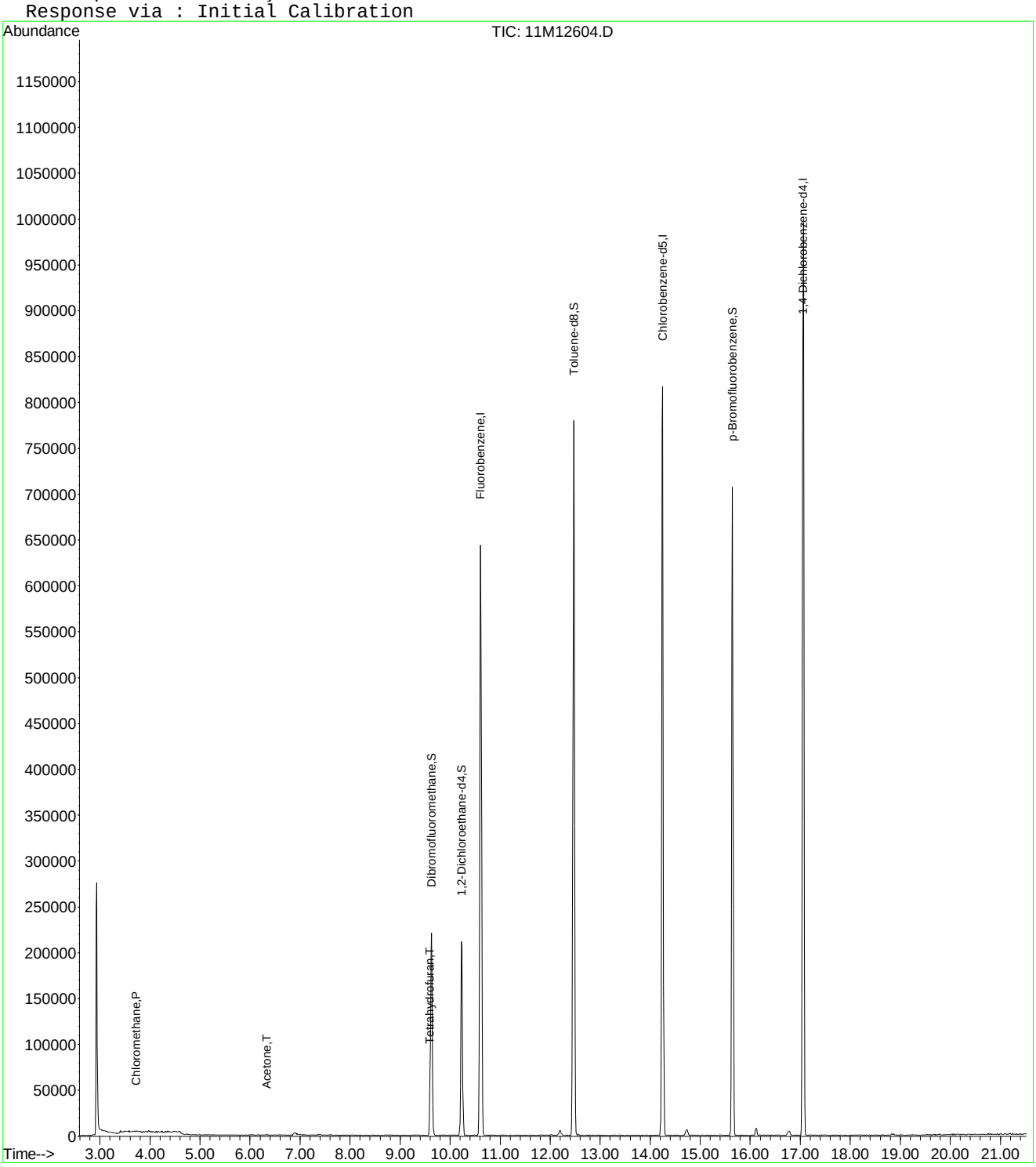

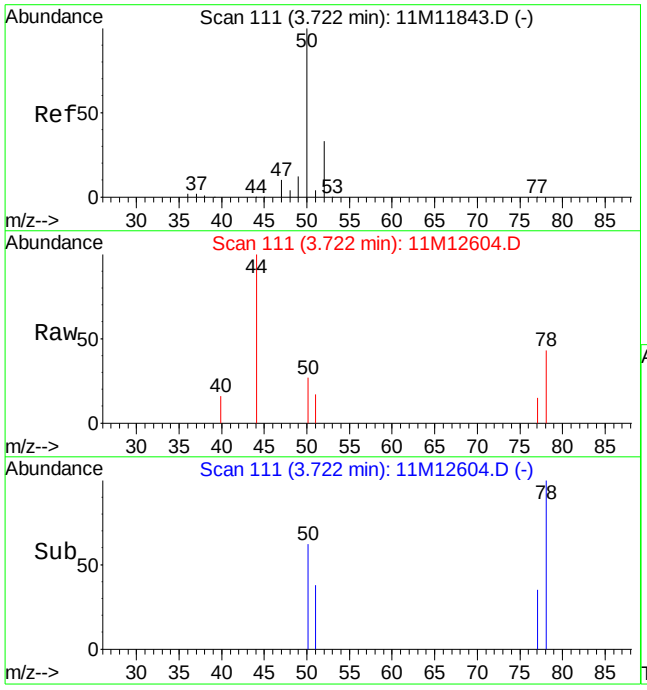

#3
Chloromethane
Concen: 0.17 ug/L
RT: 3.72 min Scan# 111
Delta R.T. -0.00 min
Lab File: 11M12604.D
Acq: 13 Jun 2016 22:53

Tgt Ion: 50 Resp: 1597

Ion	Ratio	Lower	Upper
50	100		
52	11.7	20.0	46.6#

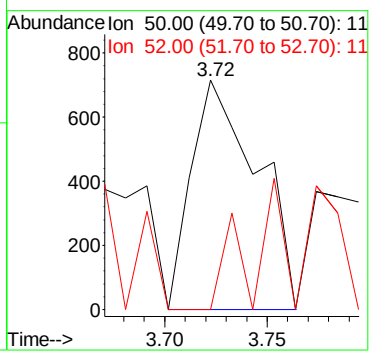

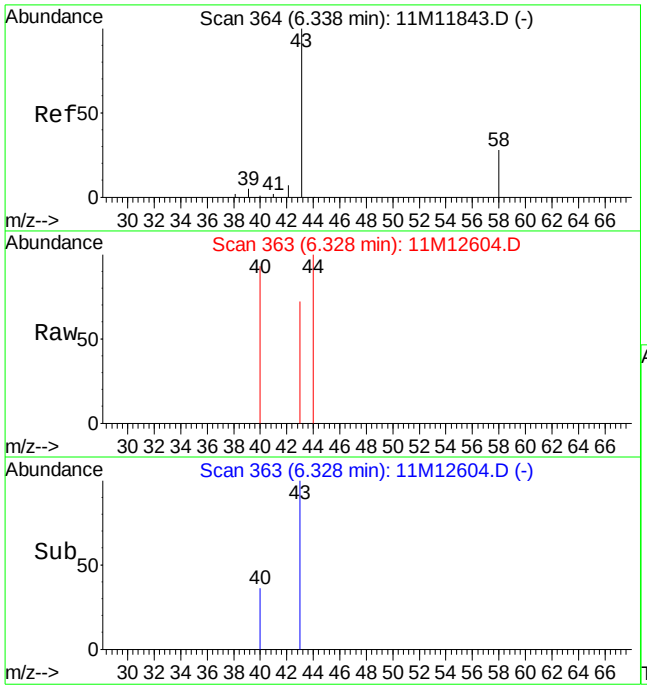

#13
Acetone
Concen: 0.61 ug/L
RT: 6.33 min Scan# 363
Delta R.T. -0.01 min
Lab File: 11M12604.D
Acq: 13 Jun 2016 22:53

Tgt Ion: 43 Resp: 1064

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

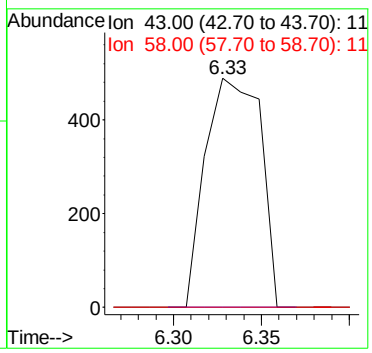

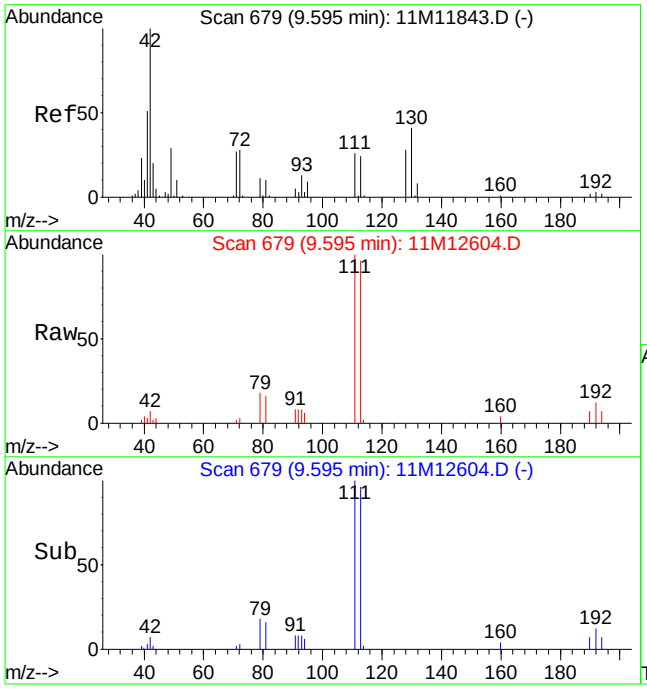

#36
Tetrahydrofuran
Concen: 1.60 ug/L
RT: 9.60 min Scan# 679
Delta R.T. -0.00 min
Lab File: 11M12604.D
Acq: 13 Jun 2016 22:53

Tgt Ion: 42 Resp: 2982

Ion	Ratio	Lower	Upper
42	100		
71	31.4	16.4	38.2
72	19.5	16.6	38.8

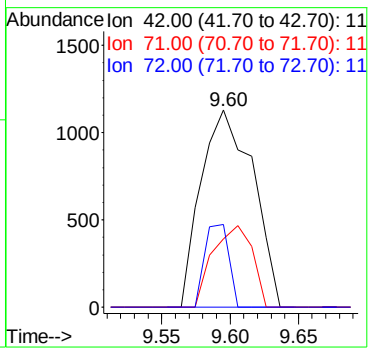

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 10:20:26 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	665958	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.19	117	486224	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.01	152	252862	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	169215	22.8906 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 91.56%		
43) 1,2-Dichloroethane-d4	10.17	65	154962	19.2999 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 77.20%#		
57) Toluene-d8	12.42	98	584744	28.4742 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 113.88%#		
78) p-Bromofluorobenzene	15.58	95	202664	25.0472 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.20%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.23	85	8067	0.8041 ug/L #	81
3) Chloromethane	3.68	50	5797	0.5011 ug/L	91
4) Vinyl Chloride	3.91	62	15554	1.9132 ug/L	97
5) 1,3-Butadiene	3.96	54	11402	1.8745 ug/L	83
6) Bromomethane	4.80	94	1566	0.4085 ug/L	98
7) Chloroethane	4.96	64	1797	0.3015 ug/L #	43
8) Trichlorofluoromethane	5.43	101	4457	0.3306 ug/L	92
10) Isoprene	5.99	67	2109	0.2044 ug/L #	51
12) 1,1,2-Trichloro-1,2,2-Trif	6.23	101	1597	0.2057 ug/L	98
13) Acetone	6.30	43	3590	1.8309 ug/L #	60
14) 1,1-Dichloroethene	6.50	61	4933	0.3633 ug/L	96
19) Methylene Chloride	7.28	84	2287	0.2902 ug/L	89
20) Carbon Disulfide	7.31	76	24059	1.0619 ug/L	98
23) trans-1,2-Dichloroethene	7.69	96	3973	0.5072 ug/L	81
24) n-Hexane	7.78	57	5925	0.4871 ug/L #	85
32) cis-1,2-Dichloroethene	9.10	96	2970	0.3509 ug/L	71
33) Chloroform	9.30	83	1689	0.1200 ug/L	78
35) Bromochloromethane	9.51	130	597	0.1244 ug/L #	66
36) Tetrahydrofuran	9.56	42	405	0.1826 ug/L #	44
39) Cyclohexane	9.83	56	2167	0.1307 ug/L	90
40) 1,1-Dichloropropene	9.99	75	3207	0.2986 ug/L	86
45) Benzene	10.32	78	3922	0.1286 ug/L	88
46) Trichloroethene	11.03	130	3473	0.3872 ug/L	90
47) Methylcyclohexane	11.10	83	2708	0.2333 ug/L #	77
51) Dibromomethane	11.60	93	782	0.1870 ug/L	62
54) cis-1,3-Dichloropropene	12.11	75	1452	0.1277 ug/L #	41
58) Toluene	12.51	91	4350	0.1662 ug/L	83
60) trans-1,3-Dichloropropene	12.68	75	1450	0.1811 ug/L #	47
64) Tetrachloroethene	13.28	164	1514	0.2507 ug/L	75
66) 1,2-Dibromoethane	13.77	107	783	0.1520 ug/L	82
67) 1-Chlorohexane	13.83	91	2267	0.2766 ug/L	67
68) Chlorobenzene	14.24	112	4044	0.2287 ug/L	88
70) Ethylbenzene	14.25	106	1461	0.1464 ug/L	62
71) m-,p-Xylene	14.34	106	3596	0.3050 ug/L #	47
73) Styrene	14.90	104	2784	0.1479 ug/L	80
75) Isopropylbenzene	15.25	105	4163	0.1408 ug/L #	74
81) n-Propylbenzene	15.73	91	6395	0.2079 ug/L #	73
82) Bromobenzene	15.86	156	1681	0.2112 ug/L	100
83) 1,3,5-Trimethylbenzene	15.90	105	3253	0.1356 ug/L	100
84) 2-Chlorotoluene	16.00	91	3395	0.1597 ug/L	86

(#) = qualifier out of range (m) = manual integration
11M08235.D 8260WTR.M Sun Jun 14 10:20:27 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 10:20:26 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
85)	4-Chlorotoluene	16.03	91	4746	0.2598 ug/L	84
86)	a-Methylstyrene	16.27	118	1776	0.1452 ug/L	76
88)	1,2,4-Trimethylbenzene	16.39	105	3776	0.1571 ug/L	77
89)	sec-Butylbenzene	16.58	105	5834	0.2044 ug/L #	77
90)	p-Isopropyltoluene	16.73	119	5149	0.2137 ug/L	87
91)	1,3-Dichlorobenzene	16.93	146	3649	0.2531 ug/L	97
92)	1,4-Dichlorobenzene	17.04	146	5213	0.3507 ug/L #	7
93)	n-Butylbenzene	17.23	91	5778	0.3036 ug/L #	78
94)	1,2-Dichlorobenzene	17.51	146	2232	0.1581 ug/L	92
96)	1,2,4-Trichlorobenzene	19.49	180	1750	0.2281 ug/L #	64
97)	Hexachlorobutadiene	19.62	225	1771	0.4493 ug/L	86
98)	Naphthalene	19.84	128	2058	0.1572 ug/L #	63
99)	1,2,3-Trichlorobenzene	20.13	180	1072	0.1483 ug/L #	40

(#) = qualifier out of range (m) = manual integration
11M08235.D 8260WTR.M Sun Jun 14 10:20:27 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 10:20 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration

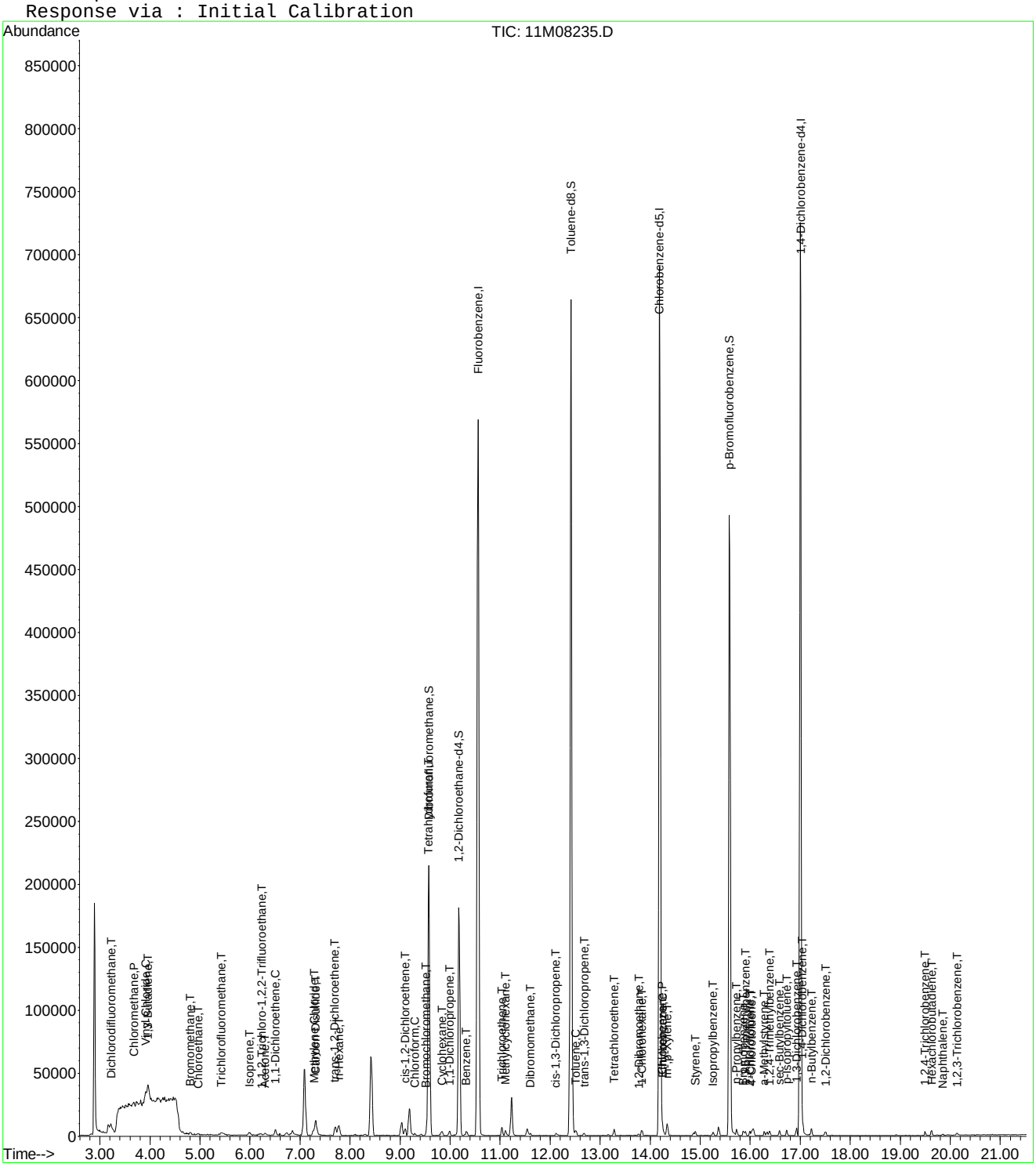

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 09:43:53 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	665958	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	486224	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.01	152	252862	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	6.73	41	3211	6.0366 ug/L	70
3) 3-Chloro-1-propene	7.08	41	50601	4.3748 ug/L	86
4) 2-Chloro-1,3-butadiene	8.42	53	56035	4.7289 ug/L	97
5) Methacrylonitrile	9.18	41	16495	5.1749 ug/L	91
6) Isobutyl Alcohol	9.21	43	2014	16.4797 ug/L #	1
8) Cyclohexanone	15.36	55	3979	4.5232 ug/L	98
9) 2-Nitropropane	11.54	43	3915	3.2057 ug/L #	72
10) Ethyl Acetate	9.03	43	17657	4.5044 ug/L	95
11) Methyl methacrylate	11.22	41	20122	4.7597 ug/L	95

(#) = qualifier out of range (m) = manual integration
11M08235.D A9FOOWT.M Tue Jun 16 09:43:53 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 9:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration

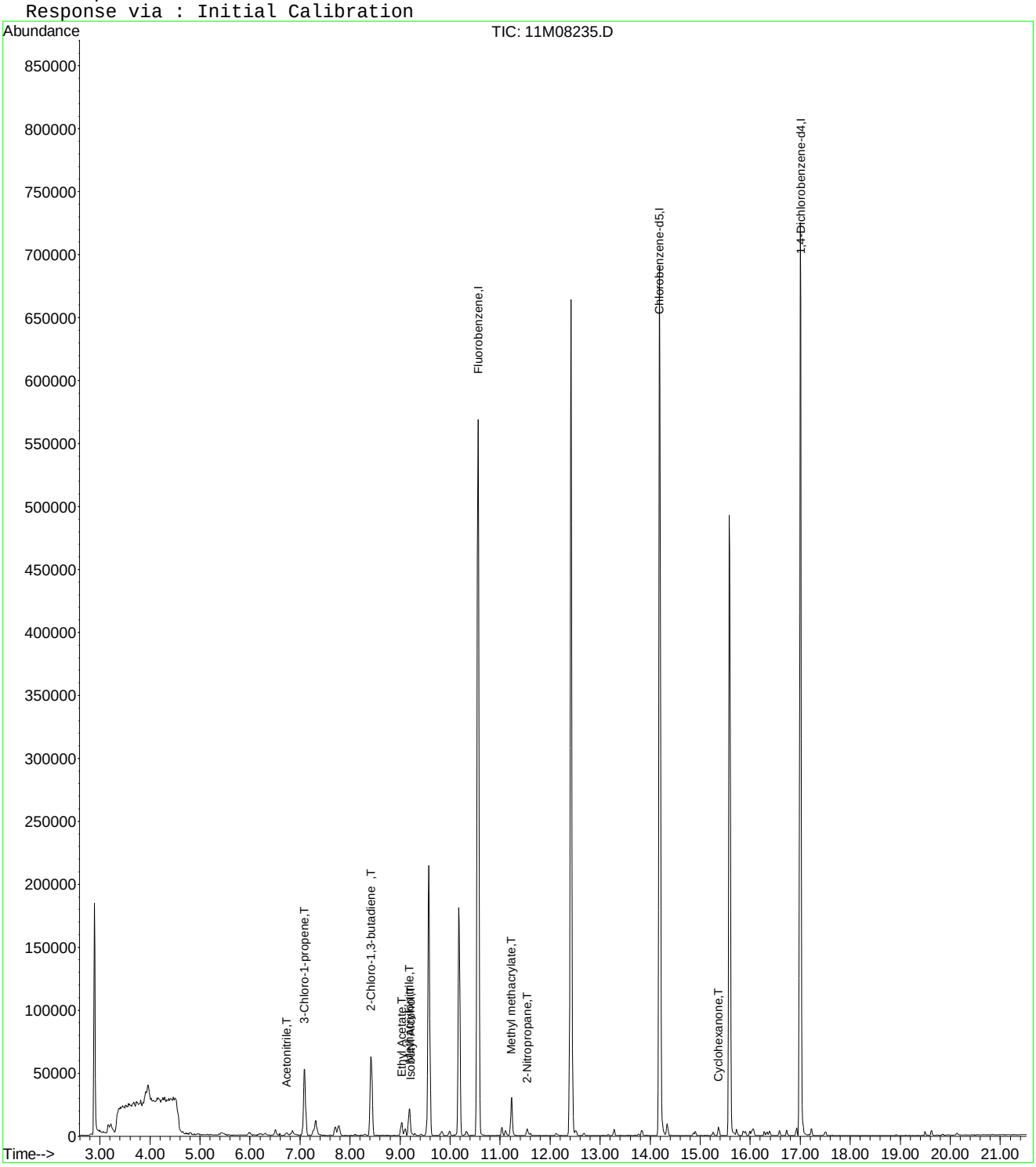

11M08235.D A9FOOWT.M Tue Jun 16 09:43:53 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28:04 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	665958	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	486224	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.01	152	252862	25.00 ug/L	-0.02

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M08235.D A9FOOWT.M Thu Aug 20 11:28:04 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration

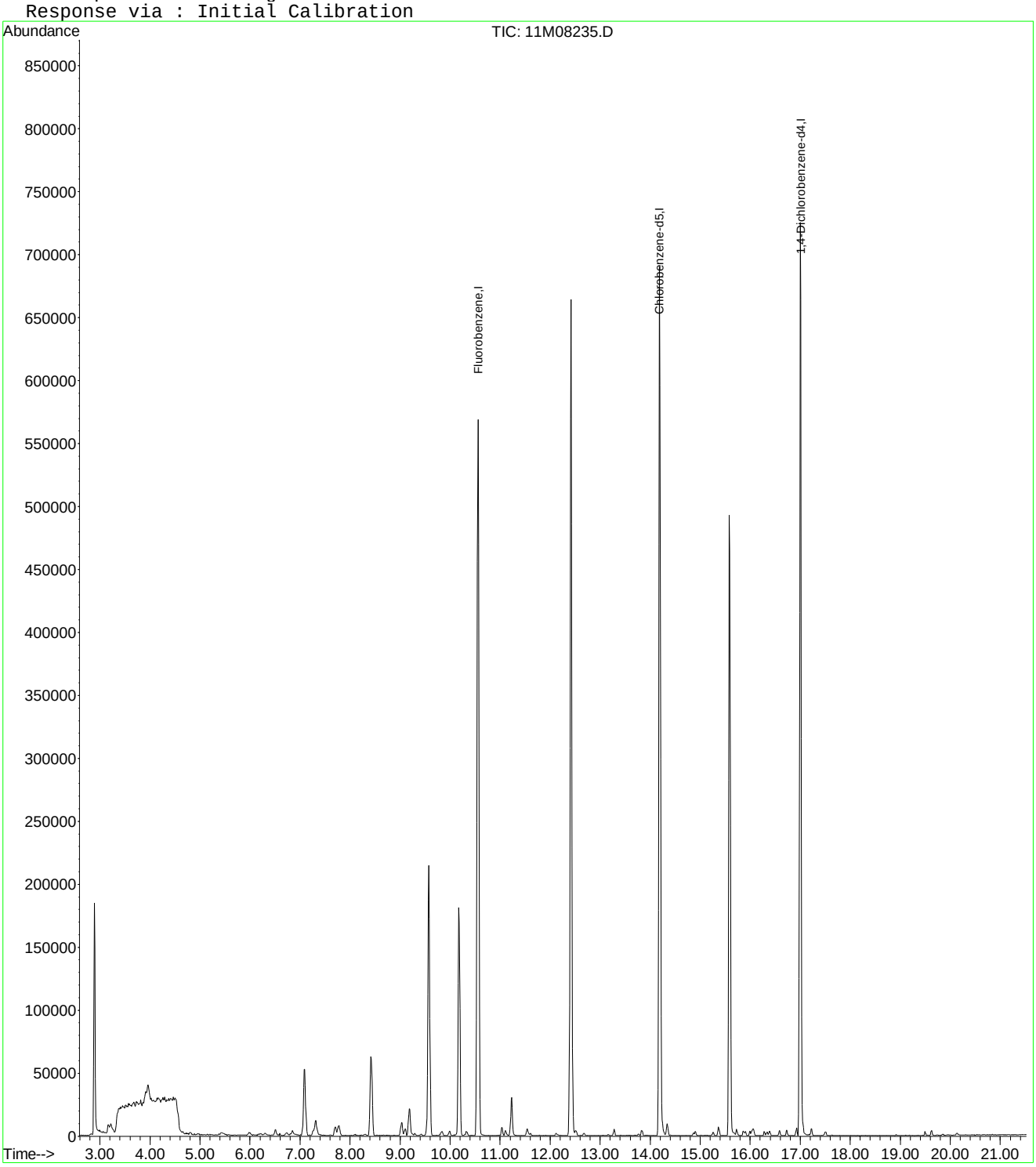

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43:46 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	665958	25.00 ug/L	0.00
12) Chlorobenzene-d5	14.19	117	486224	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.01	152	252862	25.00 ug/L	0.01

Target Compounds					Qvalue
2) Acetonitrile	6.73	41	3211	6.2865 ug/L	70
3) 3-Chloro-1-propene	7.08	41	50601	5.0485 ug/L	86
4) 2-Chloro-1,3-butadiene	8.42	53	56035	4.6571 ug/L	97
5) Methacrylonitrile	9.18	41	16495	5.3246 ug/L	91
6) Isobutyl Alcohol	9.21	43	2014	12.6338 ug/L #	1
7) 1-Butanol	9.83	56	2167	25.6978 ug/L #	47
8) Cyclohexanone	15.36	55	3979	5.1947 ug/L	98
9) 2-Nitropropane	11.54	43	3915	35.7530 ug/L #	72
10) Ethyl Acetate	9.03	43	17657	4.8057 ug/L	95
11) Methyl methacrylate	11.22	41	20122	4.7099 ug/L	95

(#) = qualifier out of range (m) = manual integration
11M08235.D A9FOOWT.M Thu Aug 20 11:43:47 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration

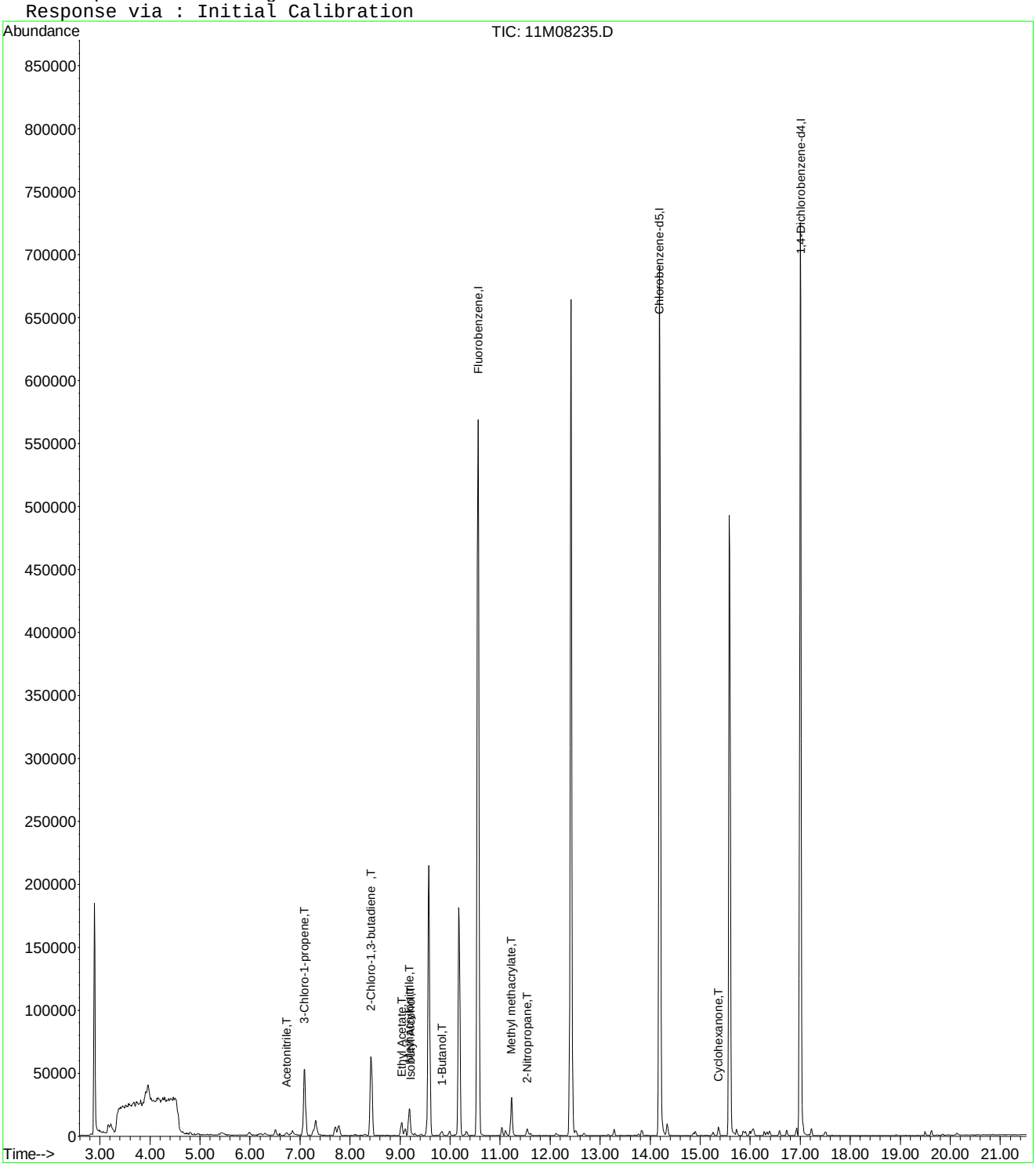

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	5.0000	6.2866	-25.7	100	0.01
3	T	3-Chloro-1-propene	5.0000	5.0485	-1.0	100	-0.01
4	T	2-Chloro-1,3-butadiene	5.0000	4.6571	6.9	100	0.00
5	T	Methacrylonitrile	5.0000	5.3246	-6.5	100	0.00
6	T	Isobutyl Alcohol	-1.0000	12.6338	0.0	100	0.02
7	T	1-Butanol	-1.0000	25.6978	0.0	0	-0.24
8	T	Cyclohexanone	-1.0000	5.1947	0.0	100	0.00
9	T	2-Nitropropane	-1.0000	35.7530	0.0	0	0.00
10	T	Ethyl Acetate	5.0000	4.8057	3.9	100	0.00
11	T	Methyl methacrylate	5.0000	4.7099	5.8	100	0.00
12	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
13	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M08235.D A9FOOWT.M Thu Aug 20 11:44:19 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08236.D Vial: 3
Acq On : 14 Jun 2015 10:30 Operator: TMB /DLW
Sample : WG527475-03 20ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 10:52:27 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	610715	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.19	117	451165	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.00	152	232233	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	159209	23.4852 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.96%		
43) 1,2-Dichloroethane-d4	10.17	65	149549	20.3105 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 81.24%		
57) Toluene-d8	12.42	98	551790	28.9575 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 115.84%#		
78) p-Bromofluorobenzene	15.58	95	193663	26.0609 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.24%		

Target Compounds					Qvalue
3) Chloromethane	3.68	50	2560	0.2413 ug/L	85
5) 1,3-Butadiene	3.94	54	1485	0.2662 ug/L #	60
13) Acetone	6.30	43	3499	1.9459 ug/L #	49

(#) = qualifier out of range (m) = manual integration
11M08236.D 8260WTR.M Sun Jun 14 10:52:28 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08236.D Vial: 3
Acq On : 14 Jun 2015 10:30 Operator: TMB /DLW
Sample : WG527475-03 20ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 10:52 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration

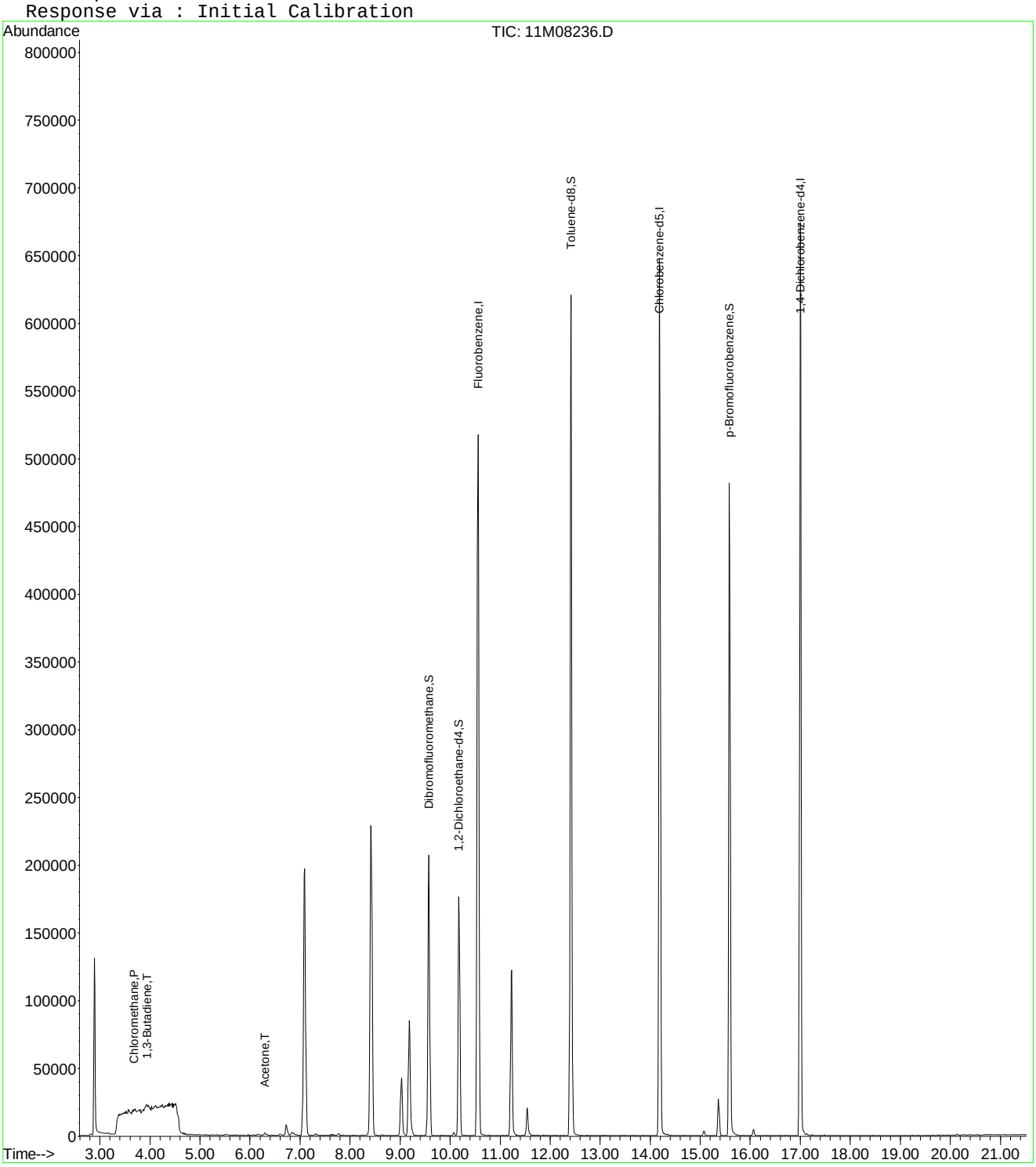

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08236.D Vial: 3
Acq On : 14 Jun 2015 10:30 Operator: TMB /DLW
Sample : WG527475-03 20ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 09:43:55 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	610715	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	451165	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	232233	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	10965	22.4787 ug/L	99
3) 3-Chloro-1-propene	7.09	41	181745	17.1344 ug/L	86
4) 2-Chloro-1,3-butadiene	8.42	53	204133	18.7856 ug/L	96
5) Methacrylonitrile	9.18	41	56411	19.2984 ug/L	84
6) Isobutyl Alcohol	9.19	43	6275	55.9901 ug/L	85
7) 1-Butanol	10.07	56	1474	31.3751 ug/L	93
8) Cyclohexanone	15.36	55	15226	18.8740 ug/L	98
9) 2-Nitropropane	11.54	43	14015	12.5138 ug/L #	72
10) Ethyl Acetate	9.03	43	70834	19.7046 ug/L	96
11) Methyl methacrylate	11.22	41	78843	20.3367 ug/L	93

(#) = qualifier out of range (m) = manual integration
11M08236.D A9FOOWT.M Tue Jun 16 09:43:55 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08236.D Vial: 3
Acq On : 14 Jun 2015 10:30 Operator: TMB /DLW
Sample : WG527475-03 20ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 9:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration

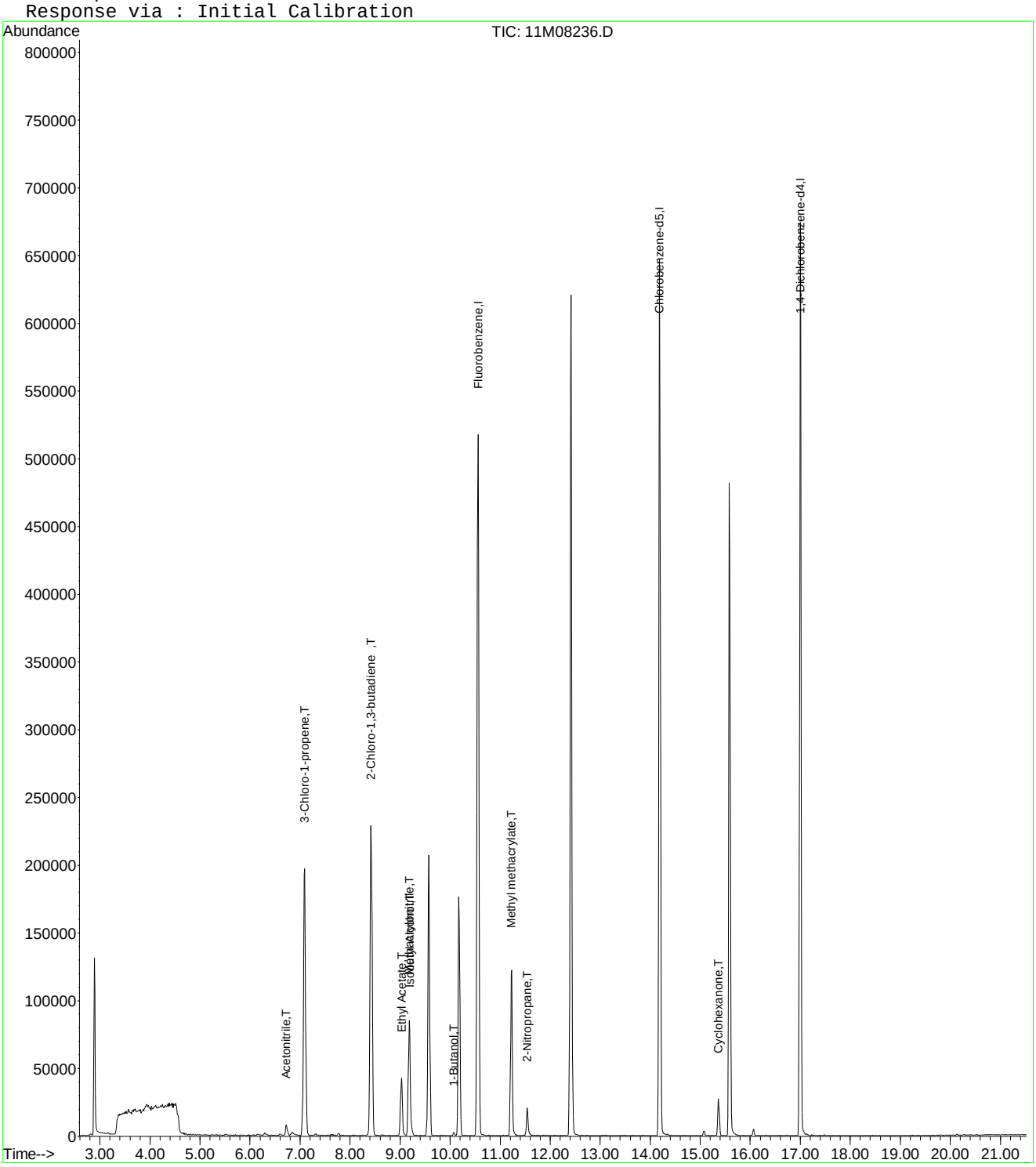

11M08236.D A9FOOWT.M Tue Jun 16 09:43:56 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08236.D Vial: 3
Acq On : 14 Jun 2015 10:30 Operator: TMB /DLW
Sample : WG527475-03 20ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28:06 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	610715	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	451165	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	232233	25.00 ug/L	-0.03

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M08236.D A9FOOWT.M Thu Aug 20 11:28:07 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08236.D Vial: 3
Acq On : 14 Jun 2015 10:30 Operator: TMB /DLW
Sample : WG527475-03 20ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration

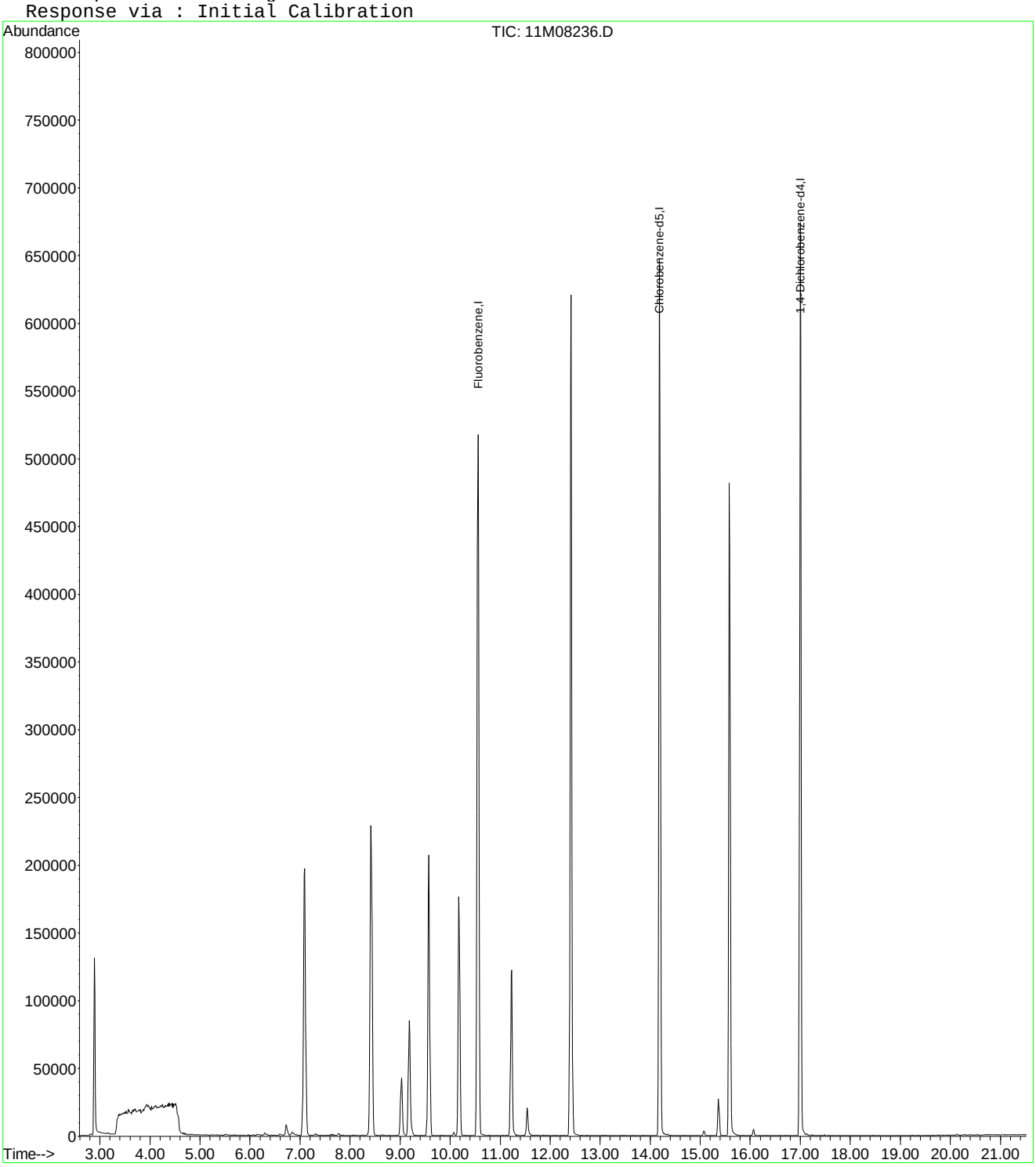

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08236.D Vial: 3
Acq On : 14 Jun 2015 10:30 Operator: TMB /DLW
Sample : WG527475-03 20ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43:48 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	610715	25.00 ug/L	0.00
12) Chlorobenzene-d5	14.19	117	451165	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.00	152	232233	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	10965	23.4093 ug/L	99
3) 3-Chloro-1-propene	7.09	41	181745	19.7730 ug/L	86
4) 2-Chloro-1,3-butadiene	8.42	53	204133	18.5003 ug/L	96
5) Methacrylonitrile	9.18	41	56411	19.8567 ug/L	84
6) Isobutyl Alcohol	9.19	43	6275	42.9238 ug/L	85
7) 1-Butanol	10.07	56	1474	19.0608 ug/L	93
8) Cyclohexanone	15.36	55	15226	21.6762 ug/L	98
9) 2-Nitropropane	11.54	43	14015	45.0214 ug/L #	72
10) Ethyl Acetate	9.03	43	70834	21.0227 ug/L	96
11) Methyl methacrylate	11.22	41	78843	20.1239 ug/L	93

(#) = qualifier out of range (m) = manual integration
11M08236.D A9FOOWT.M Thu Aug 20 11:43:48 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08236.D Vial: 3
Acq On : 14 Jun 2015 10:30 Operator: TMB /DLW
Sample : WG527475-03 20ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration

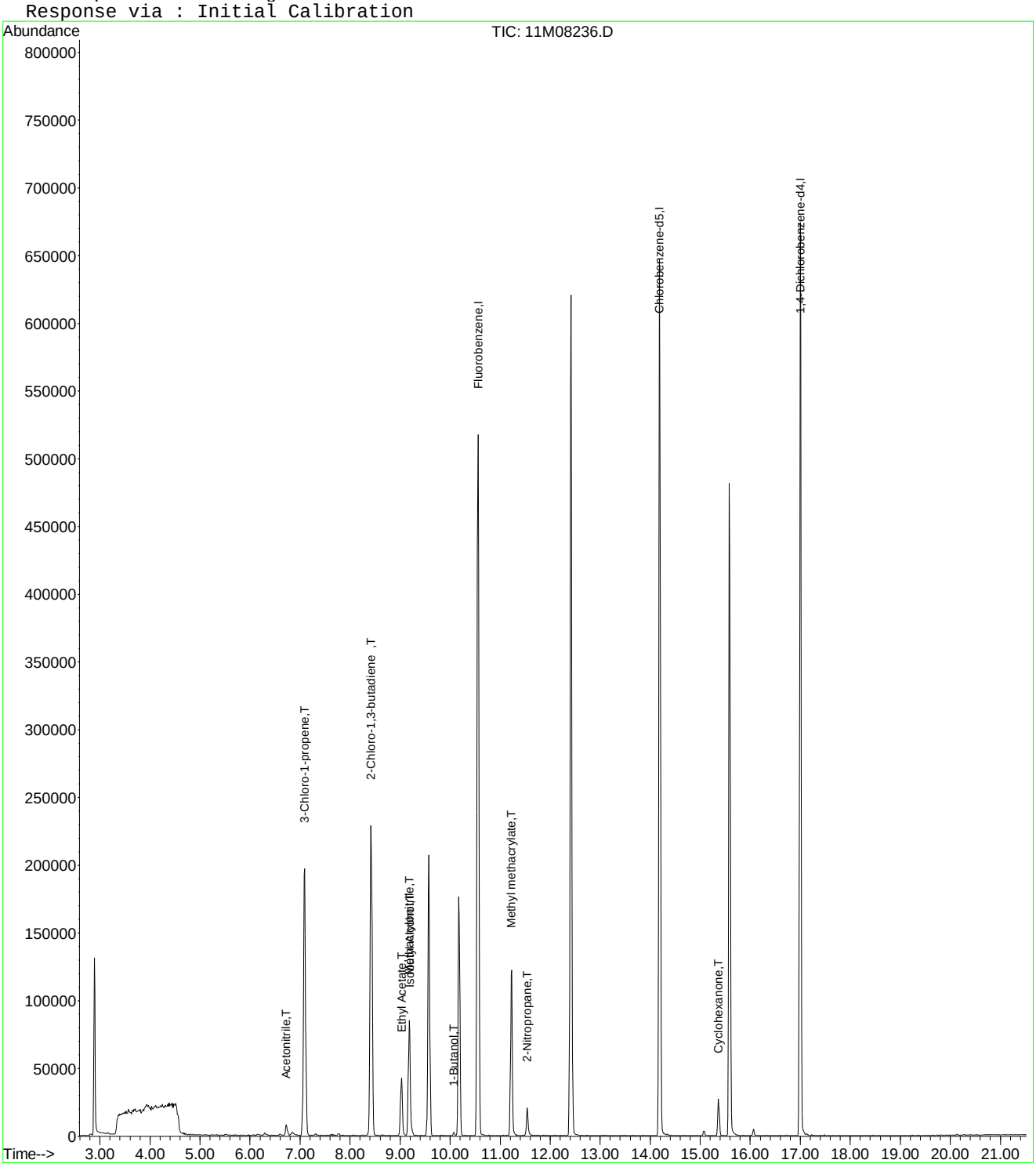

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061415\11M08236.D Vial: 3
Acq On : 14 Jun 2015 10:30 Operator: TMB /DLW
Sample : WG527475-03 20ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	23.4093	-17.0	100	0.00
3	T	3-Chloro-1-propene	20.0000	19.7730	1.1	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	18.5003	7.5	100	0.00
5	T	Methacrylonitrile	20.0000	19.8567	0.7	100	0.00
6	T	Isobutyl Alcohol	40.0000	42.9238	-7.3	100	0.00
7	T	1-Butanol	-1.0000	19.0608	0.0	100	0.00
8	T	Cyclohexanone	20.0000	21.6762	-8.4	100	0.00
9	T	2-Nitropropane	-1.0000	45.0214	0.0	0	0.00
10	T	Ethyl Acetate	20.0000	21.0227	-5.1	100	0.00
11	T	Methyl methacrylate	20.0000	20.1239	-0.6	100	0.00
12	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
13	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M08236.D A9FOOWT.M Thu Aug 20 11:44:30 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08237.D Vial: 4
Acq On : 14 Jun 2015 11:02 Operator: TMB /DLW
Sample : WG527475-04 50ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 11:24:26 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	593911	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.19	117	439398	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.00	152	227606	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	153812	23.3311 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.32%		
43) 1,2-Dichloroethane-d4	10.17	65	141347	19.7397 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 78.96%#		
57) Toluene-d8	12.42	98	530398	28.5803 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 114.32%#		
78) p-Bromofluorobenzene	15.58	95	184116	25.2799 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.12%		

Target Compounds					Qvalue
3) Chloromethane	3.68	50	1722	0.1669 ug/L #	66
13) Acetone	6.30	43	6340	3.6256 ug/L	95

(#) = qualifier out of range (m) = manual integration
11M08237.D 8260WTR.M Sun Jun 14 11:24:27 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08237.D Vial: 4
Acq On : 14 Jun 2015 11:02 Operator: TMB /DLW
Sample : WG527475-04 50ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 11:24 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration

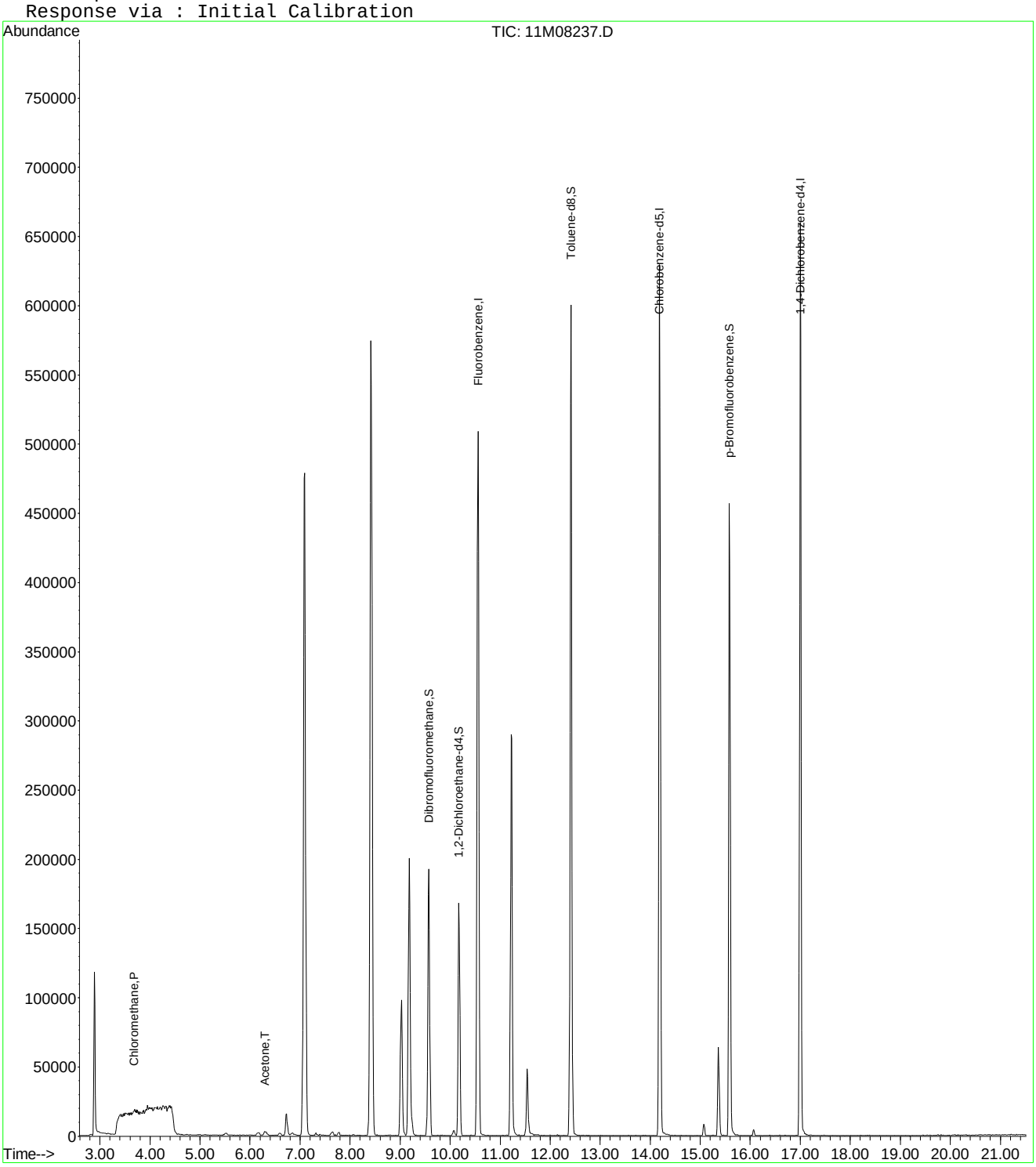

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08237.D Vial: 4
Acq On : 14 Jun 2015 11:02 Operator: TMB /DLW
Sample : WG527475-04 50ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 09:43:56 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	593911	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	439398	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	227606	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	6.73	41	21370	45.0489 ug/L	93
3) 3-Chloro-1-propene	7.08	41	441208	42.7727 ug/L	85
4) 2-Chloro-1,3-butadiene	8.42	53	506427	47.9232 ug/L	96
5) Methacrylonitrile	9.18	41	133439	46.9416 ug/L	86
6) Isobutyl Alcohol	9.19	43	13722	125.9019 ug/L	88
7) 1-Butanol	10.06	56	3449	75.4914 ug/L #	8
8) Cyclohexanone	15.36	55	33575	42.7968 ug/L	96
9) 2-Nitropropane	11.54	43	32837	30.1492 ug/L #	75
10) Ethyl Acetate	9.03	43	158260	45.2705 ug/L	95
11) Methyl methacrylate	11.22	41	179947	47.7287 ug/L	89

(#) = qualifier out of range (m) = manual integration
11M08237.D A9FOOWT.M Tue Jun 16 09:43:57 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08237.D Vial: 4
Acq On : 14 Jun 2015 11:02 Operator: TMB /DLW
Sample : WG527475-04 50ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 9:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration

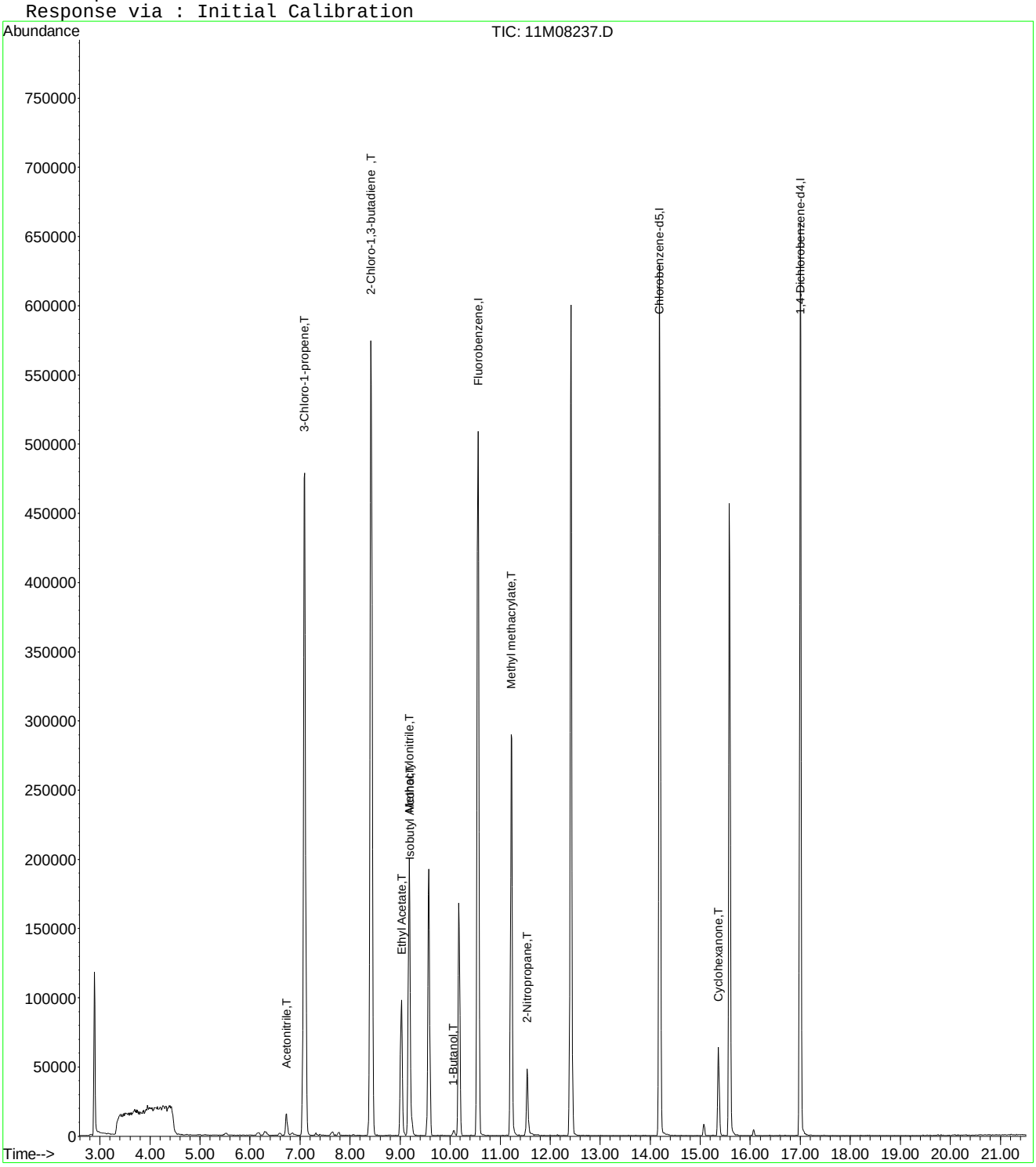

11M08237.D A9FOOWT.M Tue Jun 16 09:43:57 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08237.D Vial: 4
Acq On : 14 Jun 2015 11:02 Operator: TMB /DLW
Sample : WG527475-04 50ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28:07 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	593911	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	439398	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	227606	25.00 ug/L	-0.03

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M08237.D A9FOOWT.M Thu Aug 20 11:28:08 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08237.D Vial: 4
Acq On : 14 Jun 2015 11:02 Operator: TMB /DLW
Sample : WG527475-04 50ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration

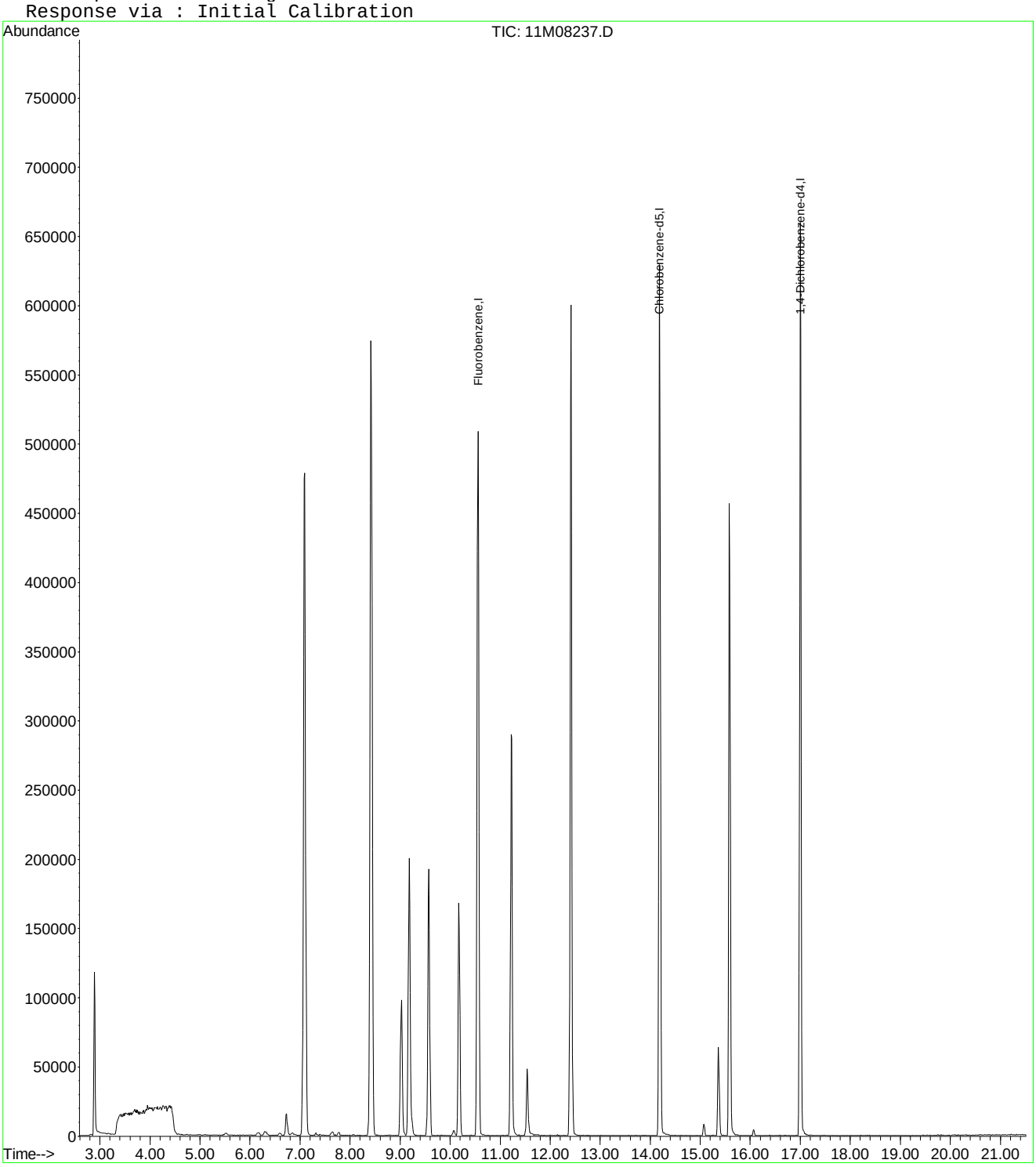

11M08237.D A9FOOWT.M Thu Aug 20 11:28:08 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08237.D Vial: 4
Acq On : 14 Jun 2015 11:02 Operator: TMB /DLW
Sample : WG527475-04 50ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43:49 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	593911	25.00 ug/L	0.00
12) Chlorobenzene-d5	14.19	117	439398	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.00	152	227606	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.73	41	21370	46.9139 ug/L	93
3) 3-Chloro-1-propene	7.08	41	441208	49.3594 ug/L	85
4) 2-Chloro-1,3-butadiene	8.42	53	506427	47.1955 ug/L	96
5) Methacrylonitrile	9.18	41	133439	48.2996 ug/L	86
6) Isobutyl Alcohol	9.19	43	13722	96.5203 ug/L	88
7) 1-Butanol	10.06	56	3449	45.8622 ug/L #	8
8) Cyclohexanone	15.36	55	33575	49.1507 ug/L	96
9) 2-Nitropropane	11.54	43	32837	62.5818 ug/L #	75
10) Ethyl Acetate	9.03	43	158260	48.2986 ug/L	95
11) Methyl methacrylate	11.22	41	179947	47.2293 ug/L	89

(#) = qualifier out of range (m) = manual integration
11M08237.D A9FOOWT.M Thu Aug 20 11:43:49 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08237.D Vial: 4
Acq On : 14 Jun 2015 11:02 Operator: TMB /DLW
Sample : WG527475-04 50ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration

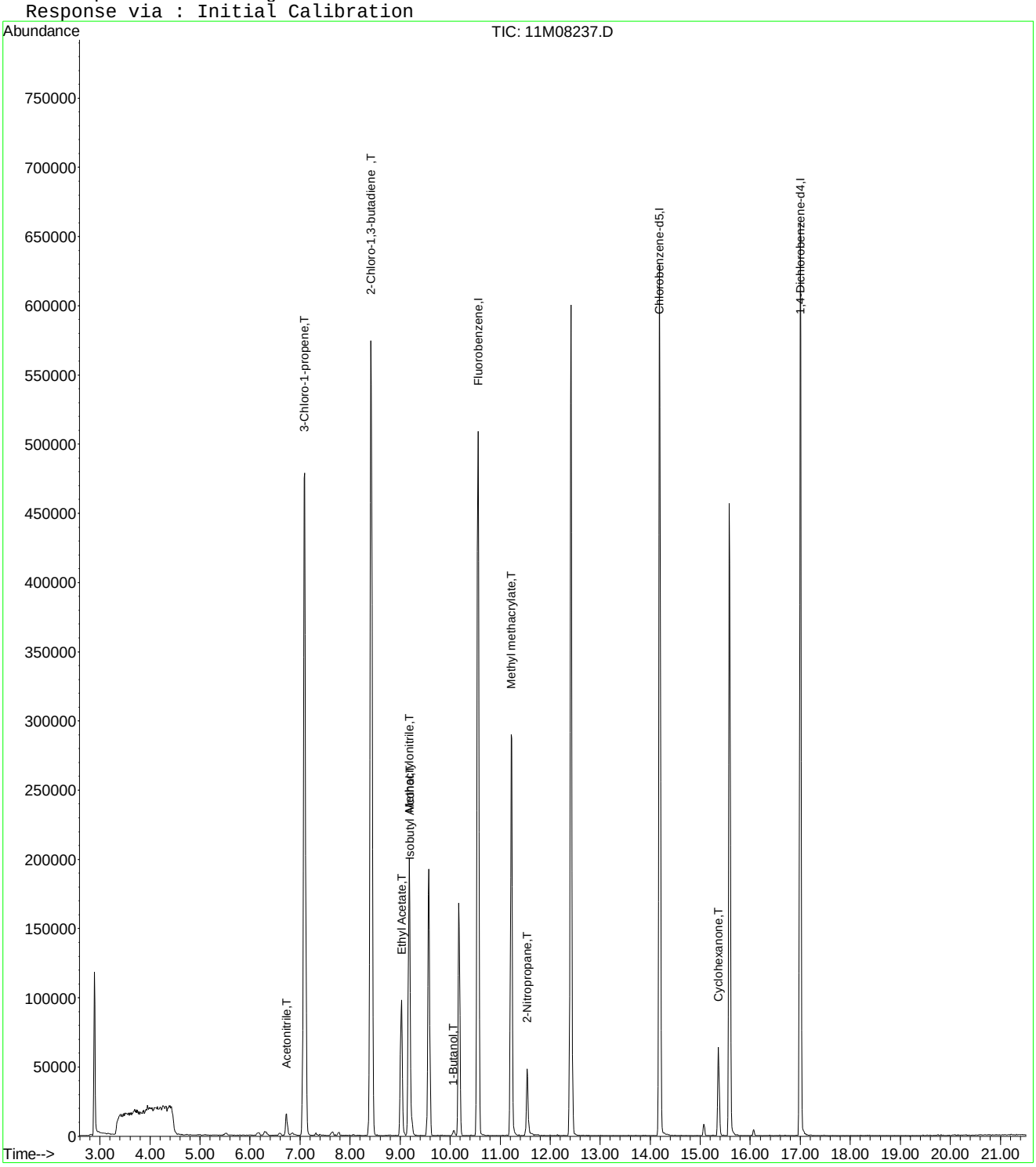

11M08237.D A9FOOWT.M Thu Aug 20 11:43:49 2015 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061415\11M08237.D Vial: 4
Acq On : 14 Jun 2015 11:02 Operator: TMB /DLW
Sample : WG527475-04 50ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	46.9140	6.2	100	0.01
3	T	3-Chloro-1-propene	50.0000	49.3594	1.3	100	-0.01
4	T	2-Chloro-1,3-butadiene	50.0000	47.1955	5.6	100	0.00
5	T	Methacrylonitrile	50.0000	48.2996	3.4	100	0.00
6	T	Isobutyl Alcohol	100.0000	96.5203	3.5	100	0.00
7	T	1-Butanol	50.0000	45.8622	8.3	100	-0.01
8	T	Cyclohexanone	50.0000	49.1508	1.7	100	0.00
9	T	2-Nitropropane	50.0000	62.5818	-25.2	100	0.00
10	T	Ethyl Acetate	50.0000	48.2986	3.4	100	0.00
11	T	Methyl methacrylate	50.0000	47.2293	5.5	100	0.00
12	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
13	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M08237.D A9FOOWT.M Thu Aug 20 11:44:41 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08238.D Vial: 5
Acq On : 14 Jun 2015 11:34 Operator: TMB /DLW
Sample : WG527475-05 100ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 11:56:24 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	593660	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.19	117	435951	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.00	152	224898	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	154015	23.3717 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.48%		
43) 1,2-Dichloroethane-d4	10.17	65	141727	19.8012 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 79.20%#		
57) Toluene-d8	12.42	98	525710	28.5517 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 114.20%#		
78) p-Bromofluorobenzene	15.58	95	182017	25.2926 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.16%		

Target Compounds					Qvalue
3) Chloromethane	3.68	50	2521	0.2445 ug/L	100
13) Acetone	6.30	43	8631	4.9378 ug/L	80
24) n-Hexane	7.78	57	2688	0.2479 ug/L #	72
29) 2-Butanone	8.85	43	412	0.1450 ug/L #	77

(#) = qualifier out of range (m) = manual integration
11M08238.D 8260WTR.M Sun Jun 14 11:56:26 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08238.D Vial: 5
Acq On : 14 Jun 2015 11:34 Operator: TMB /DLW
Sample : WG527475-05 100ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 11:56 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration

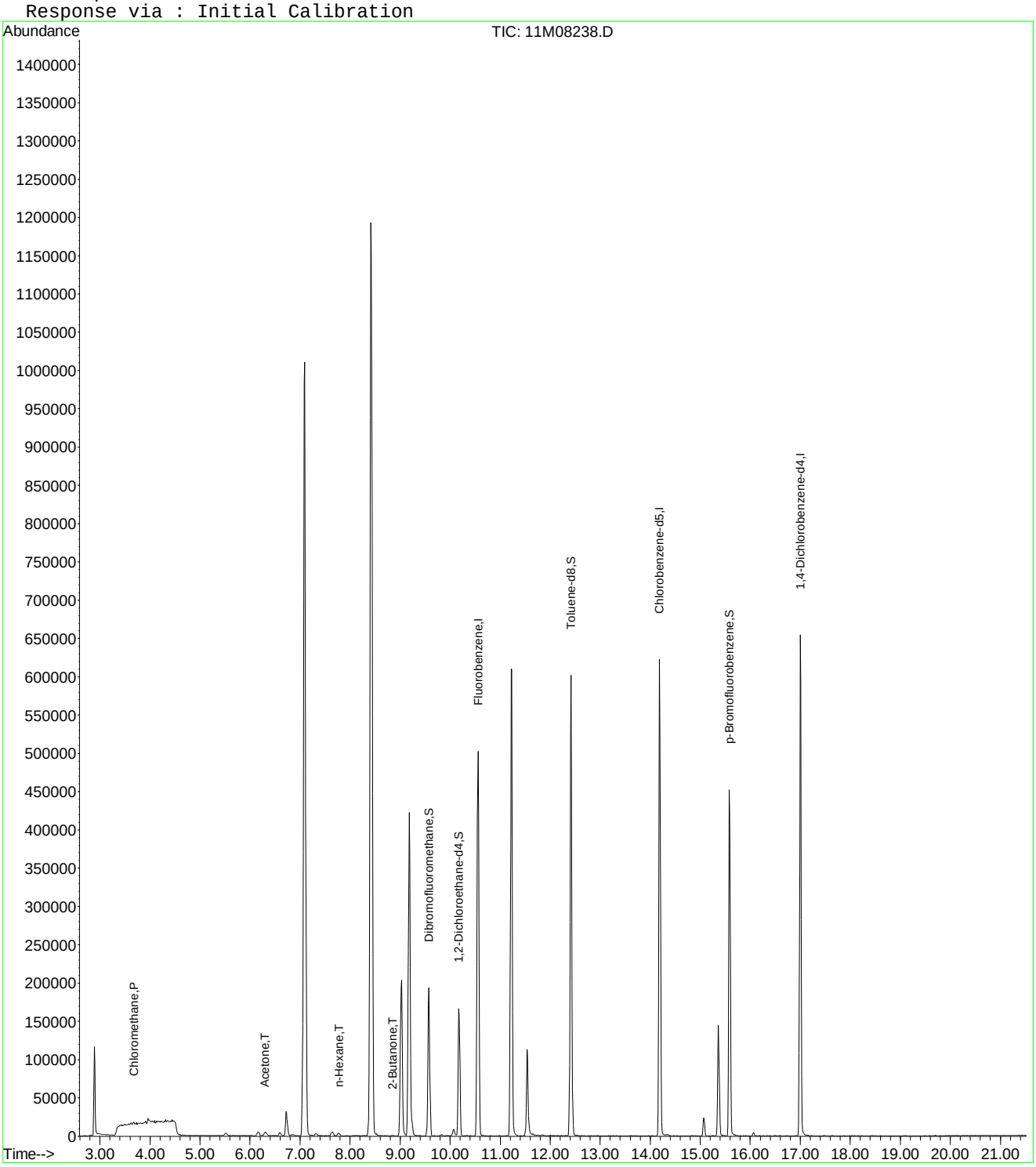

11M08238.D 8260WTR.M Sun Jun 14 11:56:26 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08238.D Vial: 5
Acq On : 14 Jun 2015 11:34 Operator: TMB /DLW
Sample : WG527475-05 100ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 09:43:58 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	593660	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	435951	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	224898	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	41783	88.1177 ug/L	97
3) 3-Chloro-1-propene	7.09	41	901667	87.4486 ug/L	84
4) 2-Chloro-1,3-butadiene	8.42	53	1055196	99.8955 ug/L	96
5) Methacrylonitrile	9.18	41	269812	94.9555 ug/L	83
6) Isobutyl Alcohol	9.19	43	28965	265.8717 ug/L	87
7) 1-Butanol	10.07	56	7719	169.0243 ug/L	87
8) Cyclohexanone	15.36	55	72878	92.9342 ug/L	95
9) 2-Nitropropane	11.54	43	76568	70.3304 ug/L	82
10) Ethyl Acetate	9.03	43	331707	94.9253 ug/L	95
11) Methyl methacrylate	11.22	41	375863	99.7350 ug/L	89

(#) = qualifier out of range (m) = manual integration
11M08238.D A9FOOWT.M Tue Jun 16 09:43:58 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08238.D Vial: 5
Acq On : 14 Jun 2015 11:34 Operator: TMB /DLW
Sample : WG527475-05 100ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 9:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration

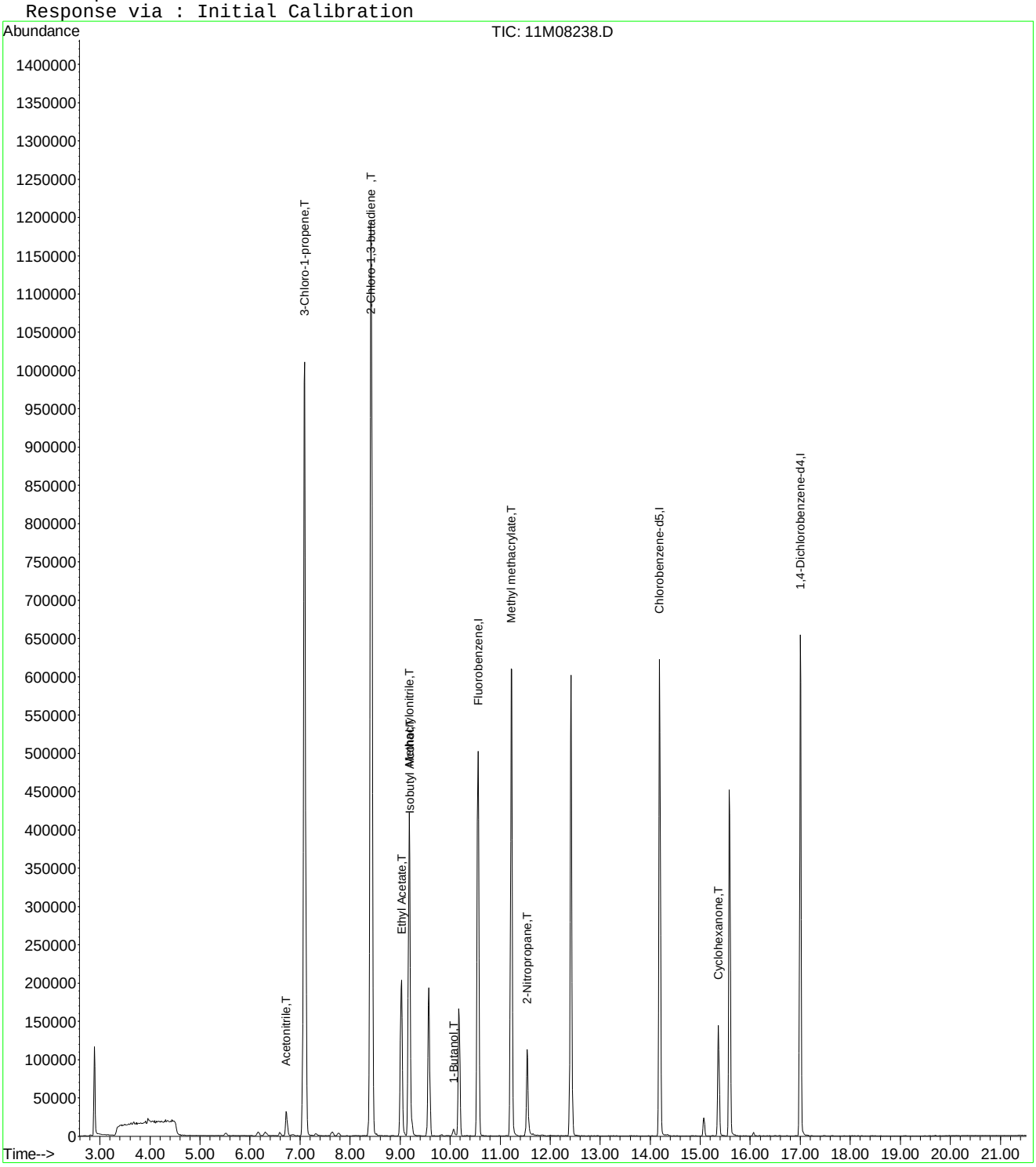

11M08238.D A9FOOWT.M Tue Jun 16 09:43:58 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08238.D Vial: 5
Acq On : 14 Jun 2015 11:34 Operator: TMB /DLW
Sample : WG527475-05 100ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28:09 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	593660	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	435951	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	224898	25.00 ug/L	-0.03

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M08238.D A9FOOWT.M Thu Aug 20 11:28:10 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08238.D Vial: 5
Acq On : 14 Jun 2015 11:34 Operator: TMB /DLW
Sample : WG527475-05 100ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration

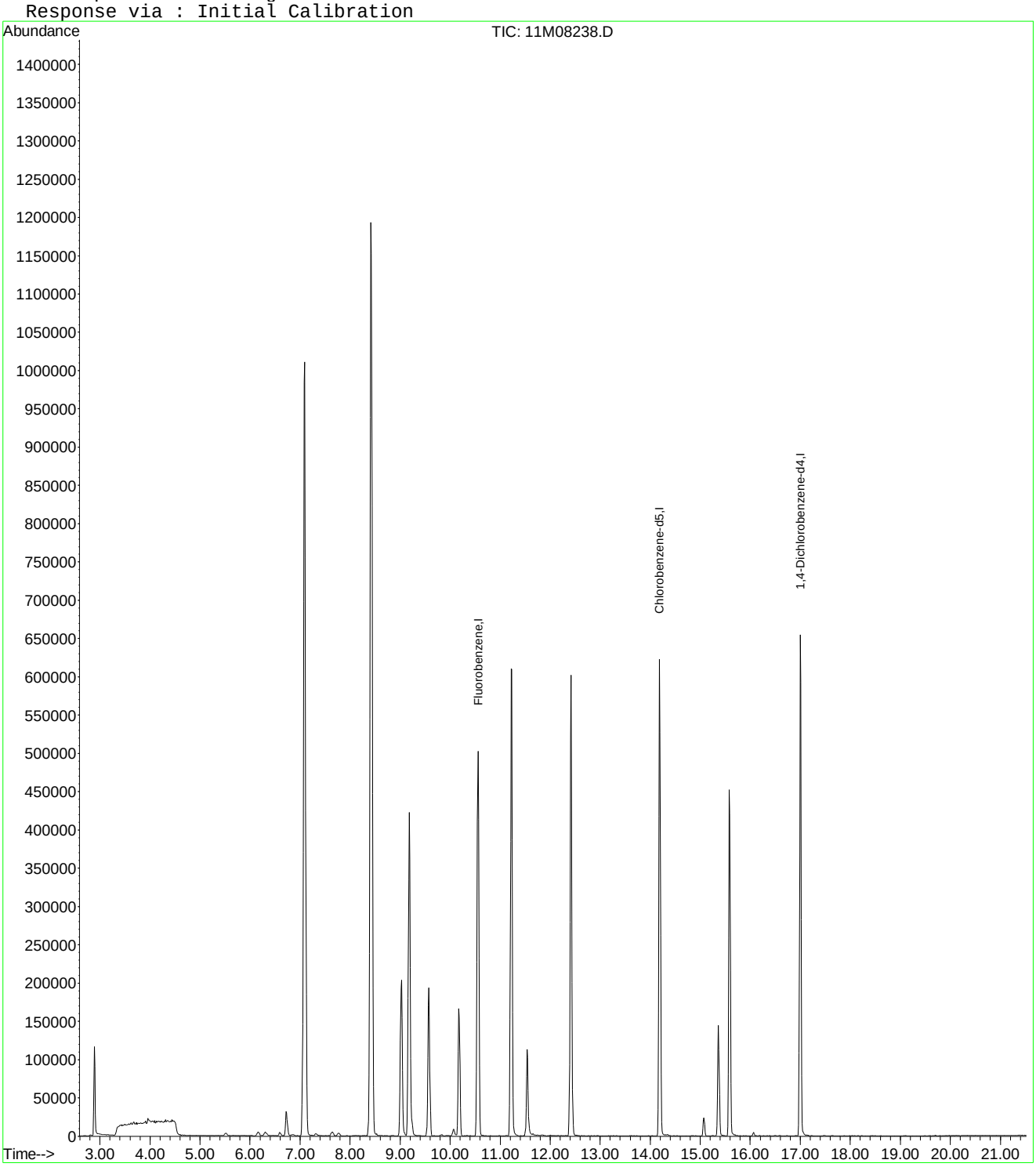

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08238.D Vial: 5
Acq On : 14 Jun 2015 11:34 Operator: TMB /DLW
Sample : WG527475-05 100ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43:50 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	593660	25.00 ug/L	0.00
12) Chlorobenzene-d5	14.19	117	435951	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.00	152	224898	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	41783	91.7658 ug/L	97
3) 3-Chloro-1-propene	7.09	41	901667	100.9151 ug/L	84
4) 2-Chloro-1,3-butadiene	8.42	53	1055196	98.3785 ug/L	96
5) Methacrylonitrile	9.18	41	269812	97.7026 ug/L	83
6) Isobutyl Alcohol	9.19	43	28965	203.8255 ug/L	87
7) 1-Butanol	10.07	56	7719	102.6849 ug/L	87
8) Cyclohexanone	15.36	55	72878	106.7319 ug/L	95
9) 2-Nitropropane	11.54	43	76568	102.5921 ug/L	82
10) Ethyl Acetate	9.03	43	331707	101.2749 ug/L	95
11) Methyl methacrylate	11.22	41	375863	98.6916 ug/L	89

(#) = qualifier out of range (m) = manual integration
11M08238.D A9FOOWT.M Thu Aug 20 11:43:50 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08238.D Vial: 5
Acq On : 14 Jun 2015 11:34 Operator: TMB /DLW
Sample : WG527475-05 100ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration

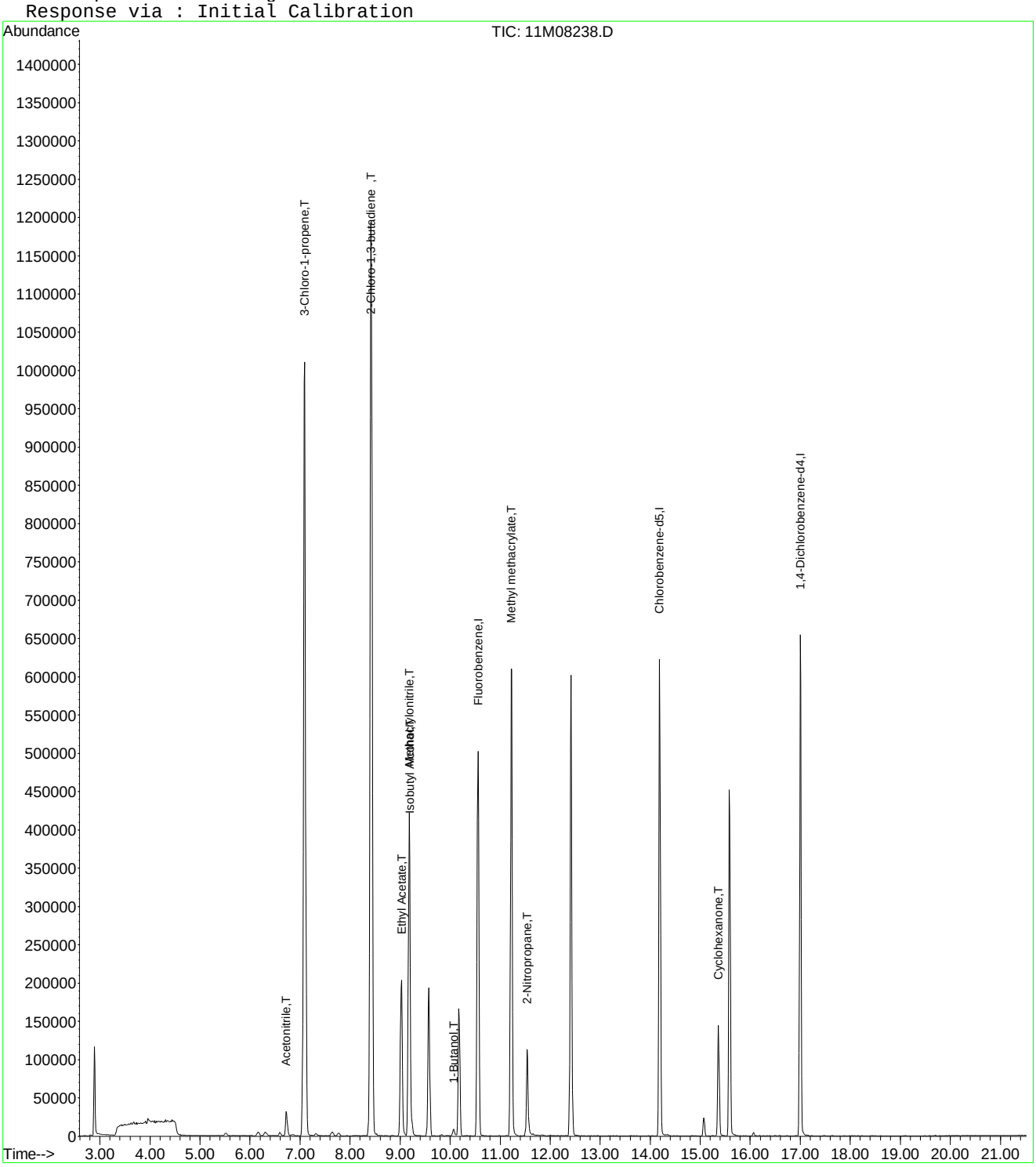

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061415\11M08238.D Vial: 5
Acq On : 14 Jun 2015 11:34 Operator: TMB /DLW
Sample : WG527475-05 100ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	91.7658	8.2	100	0.00
3	T	3-Chloro-1-propene	100.0000	100.9152	-0.9	100	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	98.3785	1.6	100	0.00
5	T	Methacrylonitrile	100.0000	97.7026	2.3	100	0.00
6	T	Isobutyl Alcohol	200.0000	203.8255	-1.9	100	0.00
7	T	1-Butanol	100.0000	102.6849	-2.7	100	0.00
8	T	Cyclohexanone	100.0000	106.7319	-6.7	100	0.00
9	T	2-Nitropropane	100.0000	102.5921	-2.6	100	0.00
10	T	Ethyl Acetate	100.0000	101.2749	-1.3	100	0.00
11	T	Methyl methacrylate	100.0000	98.6916	1.3	100	0.00
12	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
13	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M08238.D A9FOOWT.M Thu Aug 20 11:44:51 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08239.D Vial: 6
Acq On : 14 Jun 2015 12:06 Operator: TMB /DLW
Sample : WG527475-06 200ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 12:28:24 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	594644	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.19	117	435974	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.00	152	229058	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	154998	23.4820 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.92%		
43) 1,2-Dichloroethane-d4	10.17	65	140981	19.6644 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 78.64%#		
57) Toluene-d8	12.42	98	523704	28.4412 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 113.76%#		
78) p-Bromofluorobenzene	15.58	95	185106	25.2547 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.00%		

Target Compounds

					Qvalue
3) Chloromethane	3.68	50	2432	0.2354 ug/L #	41
6) Bromomethane	4.80	94	741	0.2165 ug/L	88
13) Acetone	6.30	43	14437	8.2458 ug/L	88
24) n-Hexane	7.78	57	4836	0.4453 ug/L #	80
29) 2-Butanone	8.84	43	1521	0.5342 ug/L #	77
39) Cyclohexane	9.83	56	2702	0.1826 ug/L #	90
47) Methylcyclohexane	11.23	83	2411	0.2326 ug/L #	1
70) Ethylbenzene	14.34	106	1287	0.1439 ug/L	84
71) m-,p-Xylene	14.34	106	1287	0.1218 ug/L #	4

(#) = qualifier out of range (m) = manual integration
11M08239.D 8260WTR.M Sun Jun 14 12:28:25 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08239.D Vial: 6
Acq On : 14 Jun 2015 12:06 Operator: TMB /DLW
Sample : WG527475-06 200ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 12:28 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration

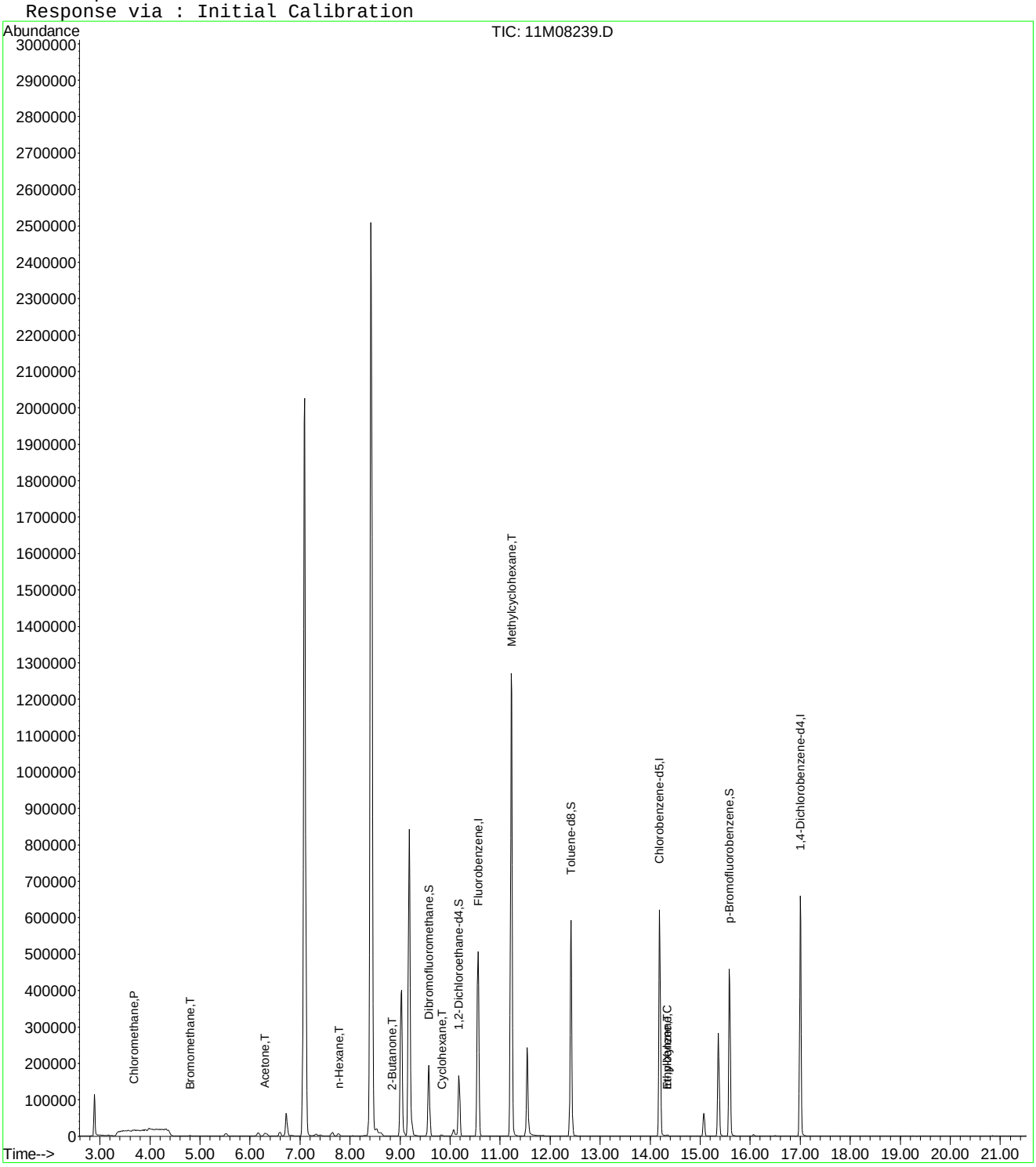

11M08239.D 8260WTR.M Sun Jun 14 12:28:25 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08239.D Vial: 6
Acq On : 14 Jun 2015 12:06 Operator: TMB /DLW
Sample : WG527475-06 200ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 09:43:59 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.56	96	594644	25.00	ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	435974	25.00	ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	229058	25.00	ug/L	-0.03

Target Compounds						Qvalue
2) Acetonitrile	6.72	41	84573	178.0639	ug/L	99
3) 3-Chloro-1-propene	7.09	41	1784664	172.8000	ug/L	83
4) 2-Chloro-1,3-butadiene	8.42	53	2139008	202.1651	ug/L	95
5) Methacrylonitrile	9.18	41	534300	187.7261	ug/L	82
6) Isobutyl Alcohol	9.19	43	51366	470.7117	ug/L	98
7) 1-Butanol	10.07	56	15596	340.9432	ug/L #	87
8) Cyclohexanone	15.36	55	142194	181.0260	ug/L	95
9) 2-Nitropropane	11.54	43	168554	154.5666	ug/L	84
10) Ethyl Acetate	9.03	43	649446	185.5458	ug/L	94
11) Methyl methacrylate	11.22	41	751654	199.1209	ug/L	88

(#) = qualifier out of range (m) = manual integration
11M08239.D A9FOOWT.M Tue Jun 16 09:43:59 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08239.D Vial: 6
Acq On : 14 Jun 2015 12:06 Operator: TMB /DLW
Sample : WG527475-06 200ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 9:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration

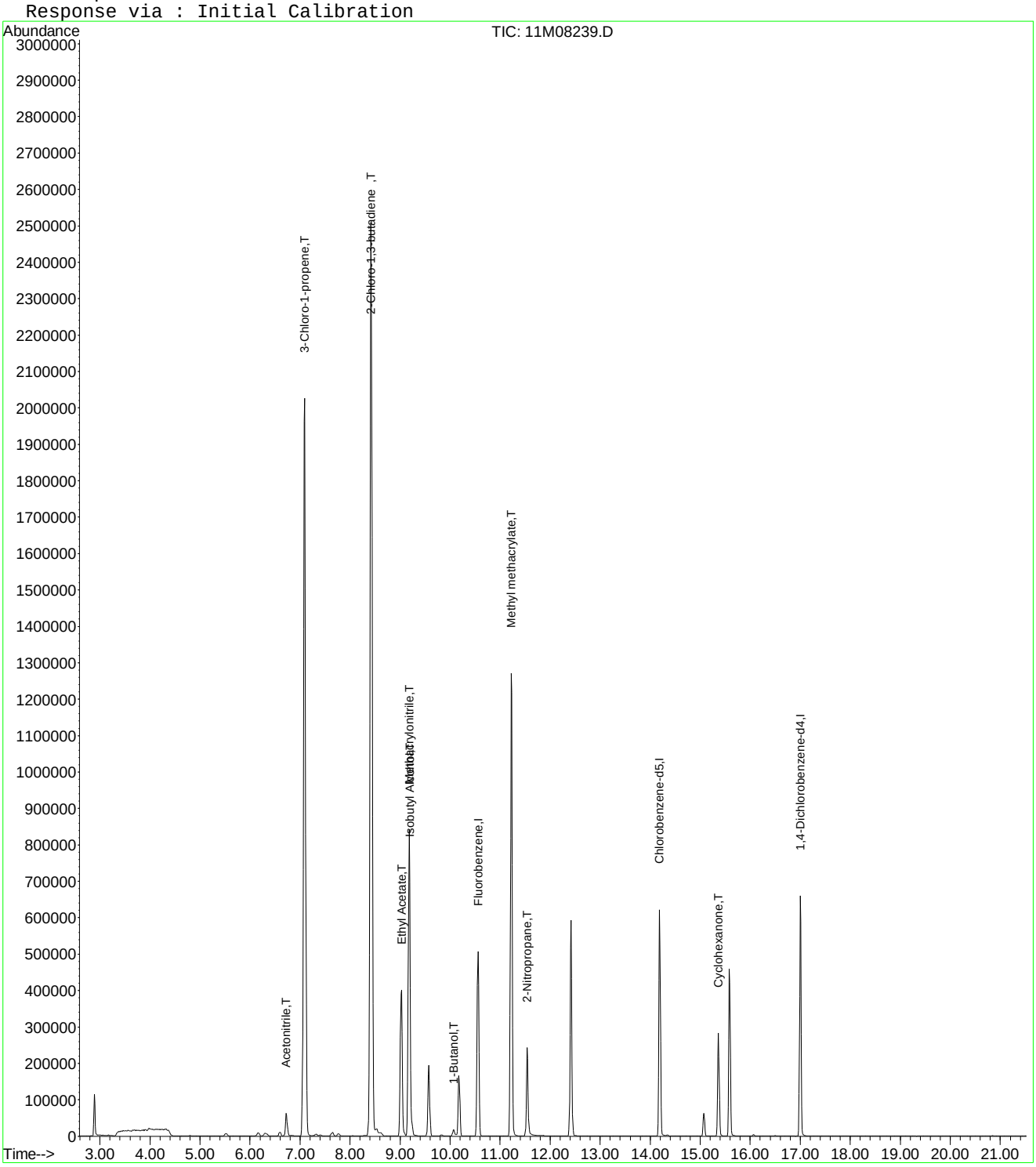

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08239.D Vial: 6
Acq On : 14 Jun 2015 12:06 Operator: TMB /DLW
Sample : WG527475-06 200ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28:11 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	594644	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	435974	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	229058	25.00 ug/L	-0.03

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M08239.D A9FOOWT.M Thu Aug 20 11:28:11 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08239.D Vial: 6
Acq On : 14 Jun 2015 12:06 Operator: TMB /DLW
Sample : WG527475-06 200ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration

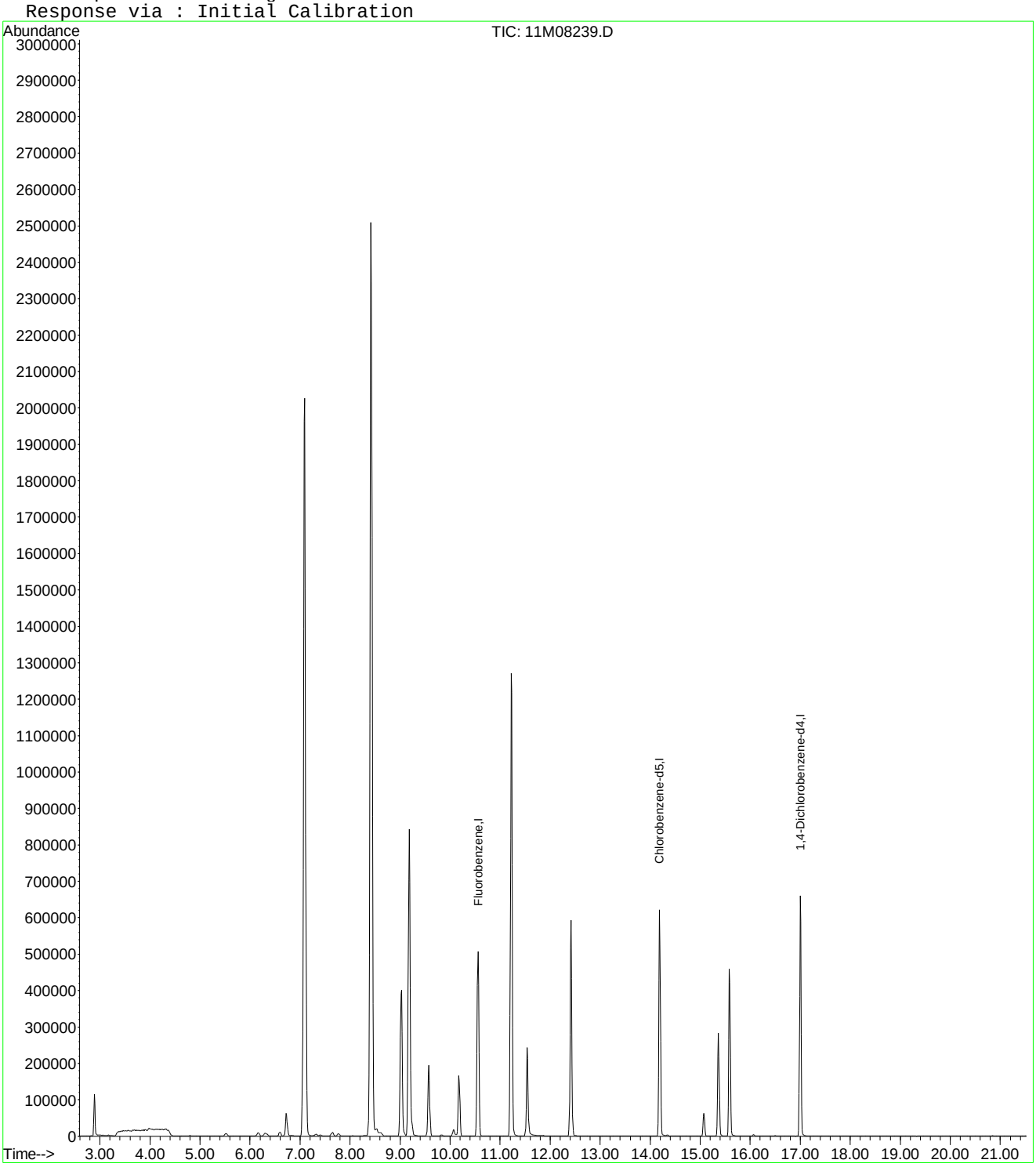

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08239.D Vial: 6
Acq On : 14 Jun 2015 12:06 Operator: TMB /DLW
Sample : WG527475-06 200ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43:51 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	594644	25.00 ug/L	0.00
12) Chlorobenzene-d5	14.19	117	435974	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.00	152	229058	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	84573	185.4358 ug/L	99
3) 3-Chloro-1-propene	7.09	41	1784664	199.4102 ug/L	83
4) 2-Chloro-1,3-butadiene	8.42	53	2139008	199.0949 ug/L	95
5) Methacrylonitrile	9.18	41	534300	193.1571 ug/L	82
6) Isobutyl Alcohol	9.19	43	51337	360.6585 ug/L	98
7) 1-Butanol	10.07	56	15596	207.1283 ug/L #	87
8) Cyclohexanone	15.36	55	142194	207.9025 ug/L	95
9) 2-Nitropropane	11.54	43	168554	186.4698 ug/L	84
10) Ethyl Acetate	9.03	43	649446	197.9570 ug/L	94
11) Methyl methacrylate	11.22	41	751654	197.0377 ug/L	88

(#) = qualifier out of range (m) = manual integration
11M08239.D A9FOOWT.M Thu Aug 20 11:43:51 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08239.D Vial: 6
Acq On : 14 Jun 2015 12:06 Operator: TMB /DLW
Sample : WG527475-06 200ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration

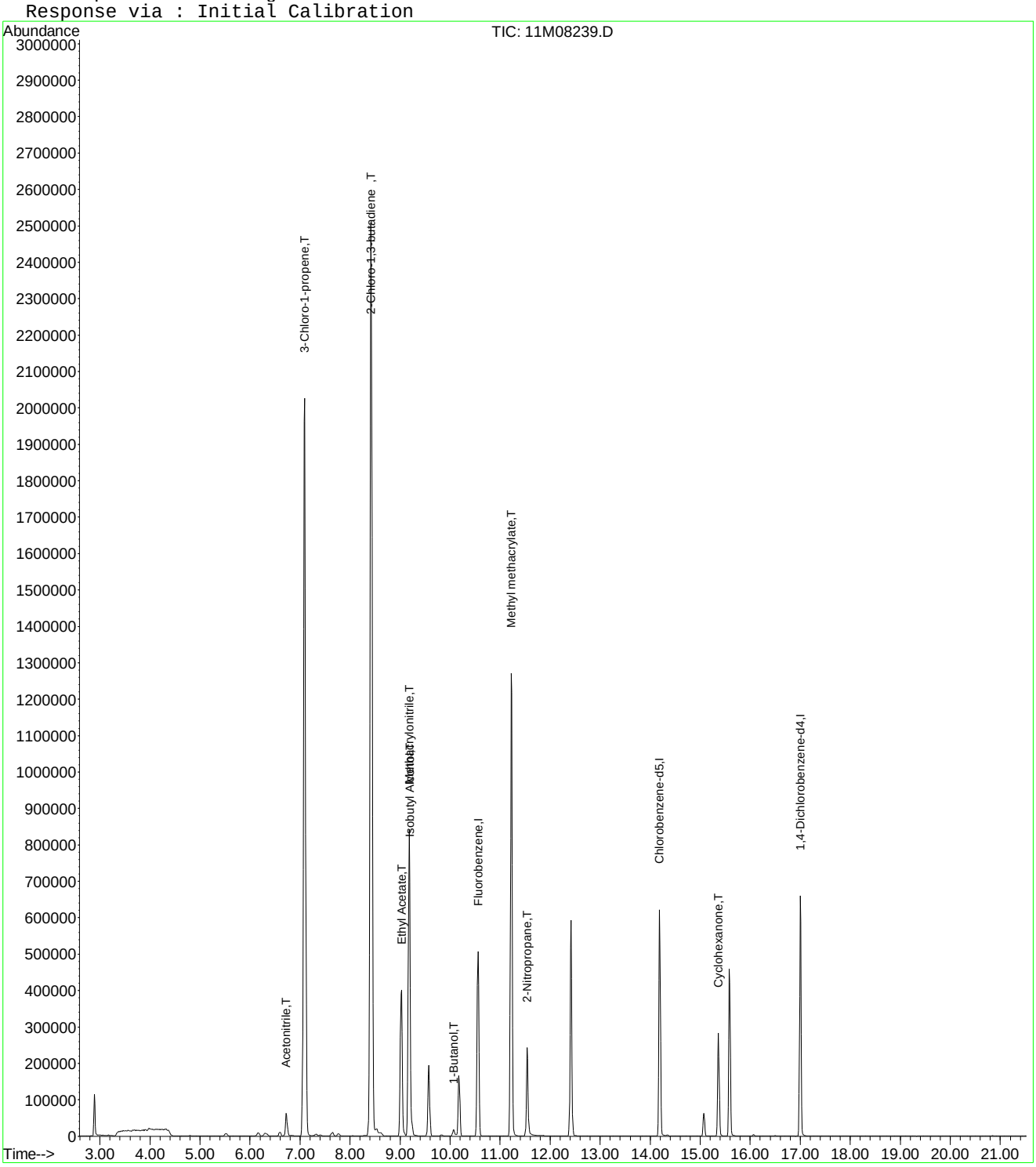

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08240.D Vial: 7
Acq On : 14 Jun 2015 12:38 Operator: TMB /DLW
Sample : WG527475-07 300ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 13:00:23 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	590021	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.19	117	427539	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.00	152	226251	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	154989	23.6646 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.64%		
43) 1,2-Dichloroethane-d4	10.17	65	137616	19.3454 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 77.40%#		
57) Toluene-d8	12.42	98	526940	29.1815 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 116.72%#		
78) p-Bromofluorobenzene	15.58	95	183651	25.3670 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.48%		

Target Compounds

					Qvalue
3) Chloromethane	3.68	50	4067	0.3968 ug/L	98
6) Bromomethane	4.81	94	1456	0.4286 ug/L	94
11) Acrolein	6.23	56	2665	2.6647 ug/L #	63
13) Acetone	6.30	43	17405	10.0188 ug/L	87
18) Methyl acetate	7.03	43	1109	0.1829 ug/L #	67
20) Carbon Disulfide	7.31	76	3126	0.1557 ug/L #	88
24) n-Hexane	7.78	57	7639	0.7089 ug/L #	89
29) 2-Butanone	8.84	43	1699	0.6014 ug/L #	77
30) Propionitrile	9.00	54	221	0.2481 ug/L #	1
39) Cyclohexane	9.84	56	3351	0.2282 ug/L #	68
71) m-,p-Xylene	14.34	106	1591	0.1535 ug/L #	17

(#) = qualifier out of range (m) = manual integration
11M08240.D 8260WTR.M Sun Jun 14 13:00:23 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08240.D Vial: 7
Acq On : 14 Jun 2015 12:38 Operator: TMB /DLW
Sample : WG527475-07 300ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 13:00 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration

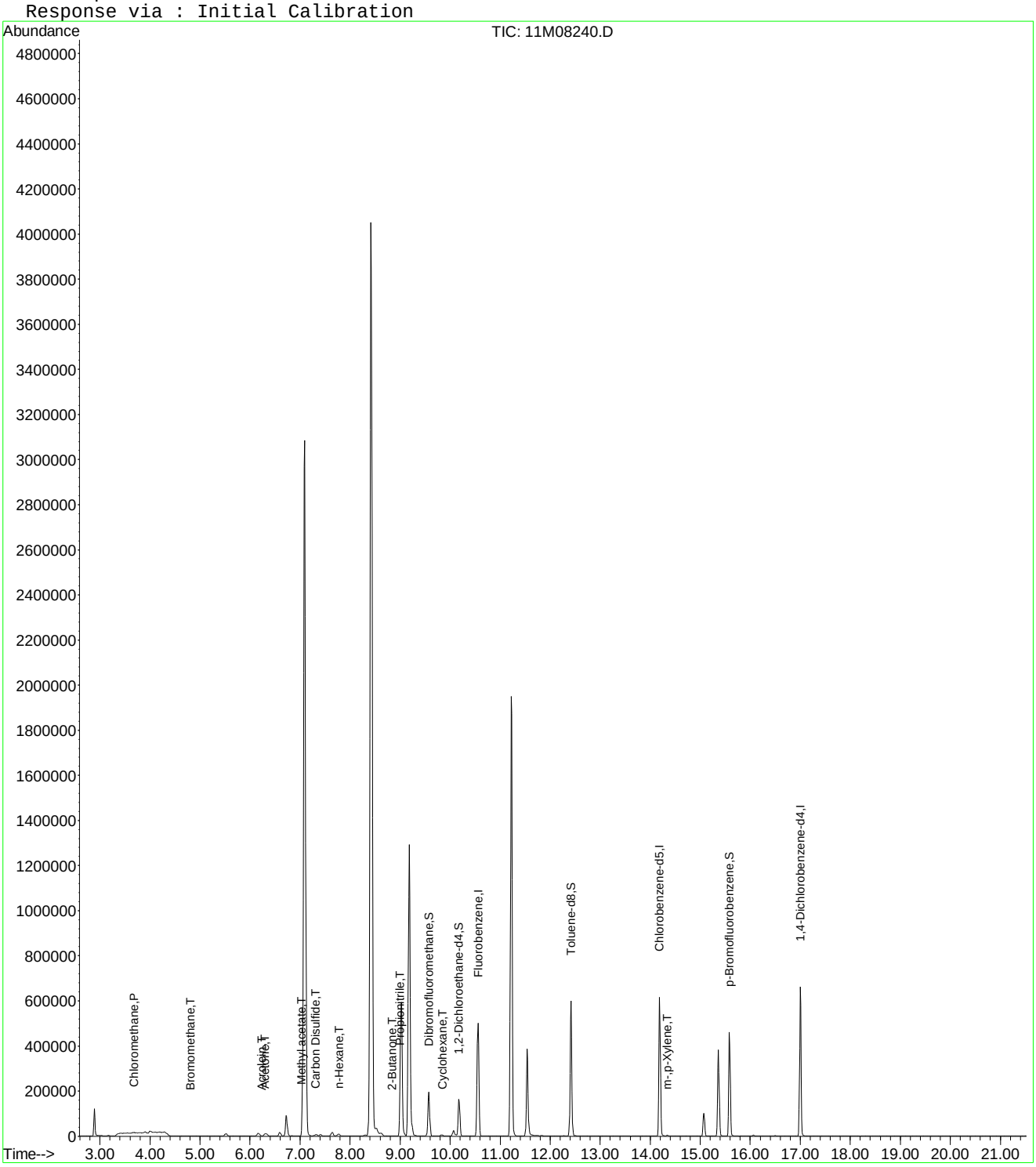

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08240.D Vial: 7
Acq On : 14 Jun 2015 12:38 Operator: TMB /DLW
Sample : WG527475-07 300ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 09:44:00 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.56	96	590021	25.00	ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	427539	25.00	ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	226251	25.00	ug/L	-0.03

Target Compounds						Qvalue
2) Acetonitrile	6.72	41	124797	264.8121	ug/L	99
3) 3-Chloro-1-propene	7.09	41	2683921	261.9067	ug/L	83
4) 2-Chloro-1,3-butadiene	8.42	53	3409409	324.7599	ug/L	95
5) Methacrylonitrile	9.18	41	809195	286.5380	ug/L	82
6) Isobutyl Alcohol	9.19	43	83440	770.6251	ug/L	88
7) 1-Butanol	10.07	56	21640	476.7773	ug/L	91
8) Cyclohexanone	15.36	55	191378	245.5507	ug/L	95
9) 2-Nitropropane	11.54	43	277273	256.2558	ug/L	85
10) Ethyl Acetate	9.03	43	962378	277.1043	ug/L #	93
11) Methyl methacrylate	11.22	41	1142167	304.9426	ug/L	88

(#) = qualifier out of range (m) = manual integration
11M08240.D A9FOOWT.M Tue Jun 16 09:44:01 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08240.D Vial: 7
Acq On : 14 Jun 2015 12:38 Operator: TMB /DLW
Sample : WG527475-07 300ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 9:44 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration

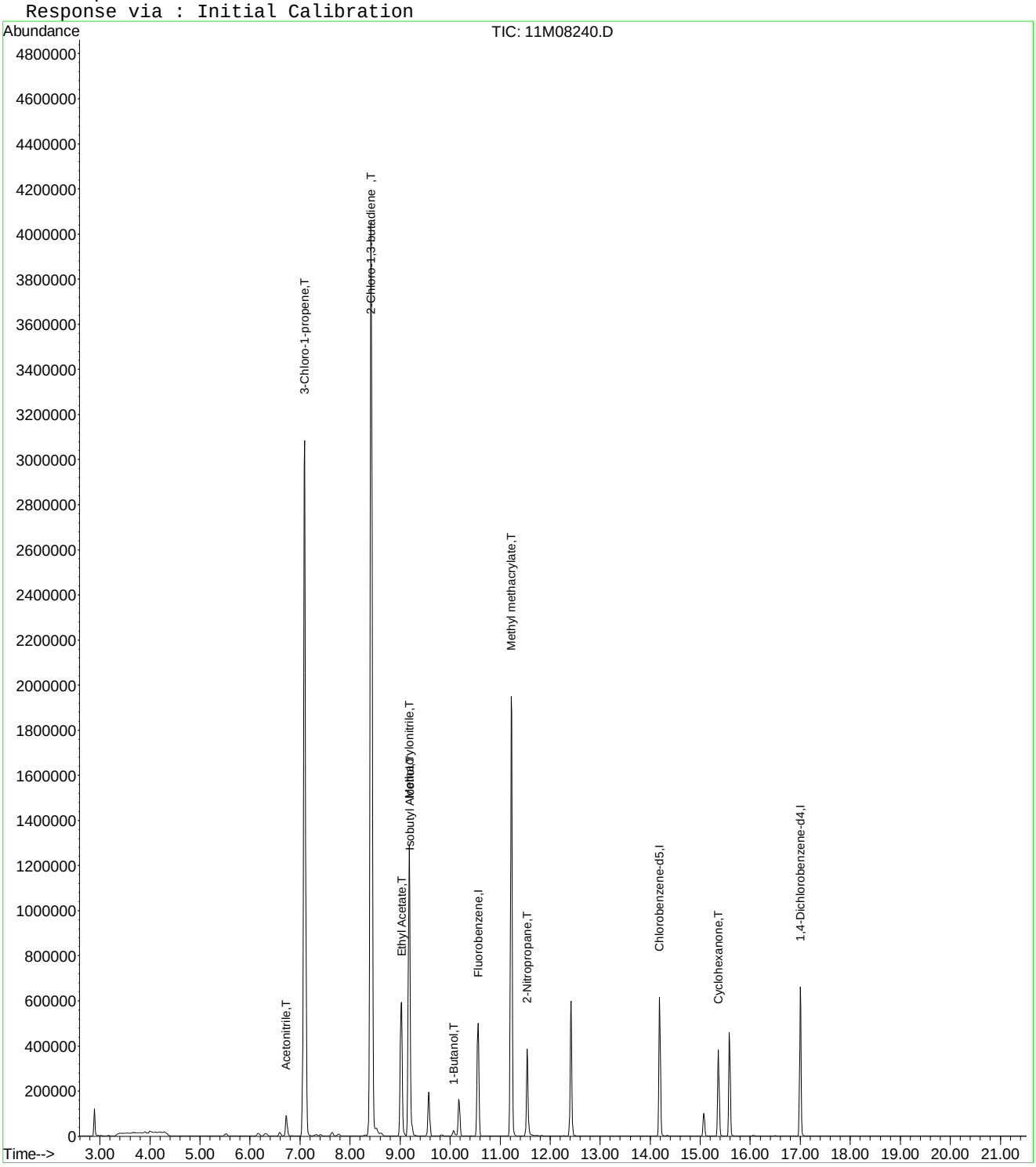

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08240.D Vial: 7
Acq On : 14 Jun 2015 12:38 Operator: TMB /DLW
Sample : WG527475-07 300ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28:12 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	590021	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	427539	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	226251	25.00 ug/L	-0.03

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M08240.D A9FOOWT.M Thu Aug 20 11:28:12 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08240.D Vial: 7
Acq On : 14 Jun 2015 12:38 Operator: TMB /DLW
Sample : WG527475-07 300ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration

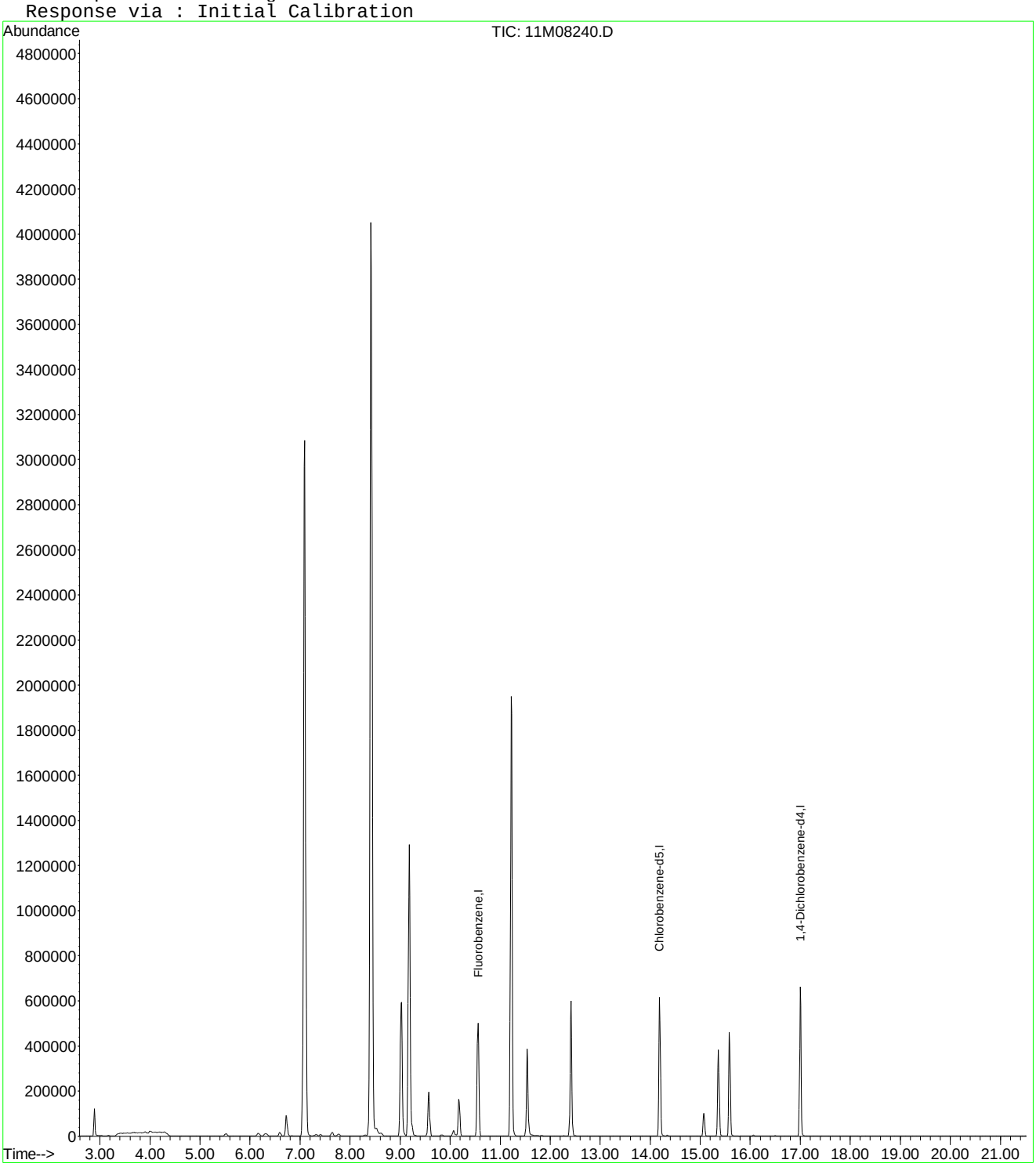

11M08240.D A9FOOWT.M Thu Aug 20 11:28:13 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08240.D Vial: 7
Acq On : 14 Jun 2015 12:38 Operator: TMB /DLW
Sample : WG527475-07 300ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43:52 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.56	96	590021	25.00	ug/L	0.00
12) Chlorobenzene-d5	14.19	117	427539	25.00	ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.00	152	226251	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.72	41	124797	275.7754	ug/L	99
3) 3-Chloro-1-propene	7.09	41	2683921	302.2388	ug/L	83
4) 2-Chloro-1,3-butadiene	8.42	53	3409409	319.8280	ug/L	95
5) Methacrylonitrile	9.18	41	809195	294.8276	ug/L	82
6) Isobutyl Alcohol	9.19	43	83440	590.7851	ug/L	88
7) 1-Butanol	10.07	56	21640	289.6496	ug/L	91
8) Cyclohexanone	15.36	55	191378	282.0071	ug/L	95
9) 2-Nitropropane	11.54	43	277273	287.7263	ug/L	85
10) Ethyl Acetate	9.03	43	962378	295.6400	ug/L #	93
11) Methyl methacrylate	11.22	41	1142167	301.7522	ug/L	88

(#) = qualifier out of range (m) = manual integration
11M08240.D A9FOOWT.M Thu Aug 20 11:43:53 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08240.D Vial: 7
Acq On : 14 Jun 2015 12:38 Operator: TMB /DLW
Sample : WG527475-07 300ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration

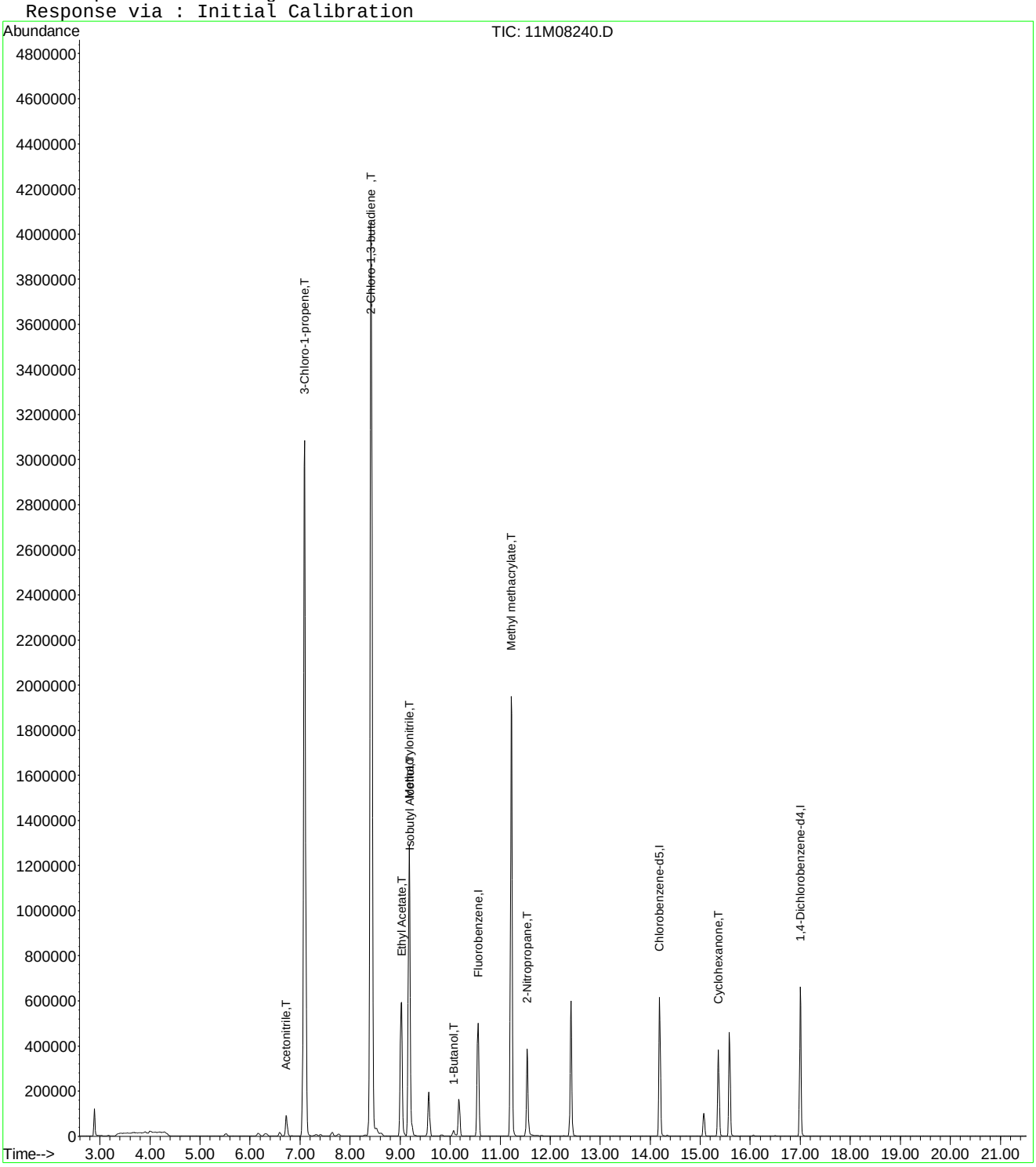

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08241.D Vial: 8
Acq On : 14 Jun 2015 13:10 Operator: TMB /DLW
Sample : WG527475-08 400ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 13:32:12 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	602921	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.19	117	438769	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.00	152	234608	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	157490	23.5320 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.12%		
43) 1,2-Dichloroethane-d4	10.17	65	142445	19.5958 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 78.40%#		
57) Toluene-d8	12.42	98	529319	28.5630 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 114.24%#		
78) p-Bromofluorobenzene	15.58	95	184124	24.5264 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.12%		

Target Compounds

					Qvalue
3) Chloromethane	3.67	50	5951	0.5682 ug/L	86
4) Vinyl Chloride	3.90	62	1145	0.1556 ug/L #	42
6) Bromomethane	4.81	94	1631	0.4699 ug/L #	56
11) Acrolein	6.25	56	3616	3.5382 ug/L #	49
13) Acetone	6.30	43	20681	11.6499 ug/L	94
18) Methyl acetate	7.02	43	2450	0.3954 ug/L #	67
19) Methylene Chloride	7.28	84	869	0.1218 ug/L #	49
20) Carbon Disulfide	7.31	76	4210	0.2052 ug/L	97
24) n-Hexane	7.77	57	9223	0.8376 ug/L #	93
29) 2-Butanone	8.83	43	2572	0.8910 ug/L #	77
31) 2,2-Dichloropropane	9.03	77	1535	0.1632 ug/L #	41
39) Cyclohexane	9.83	56	5053	0.3367 ug/L	91
71) m-,p-Xylene	14.34	106	2254	0.2119 ug/L #	36

(#) = qualifier out of range (m) = manual integration
11M08241.D 8260WTR.M Sun Jun 14 13:32:14 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08241.D Vial: 8
Acq On : 14 Jun 2015 13:10 Operator: TMB /DLW
Sample : WG527475-08 400ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 13:32 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration

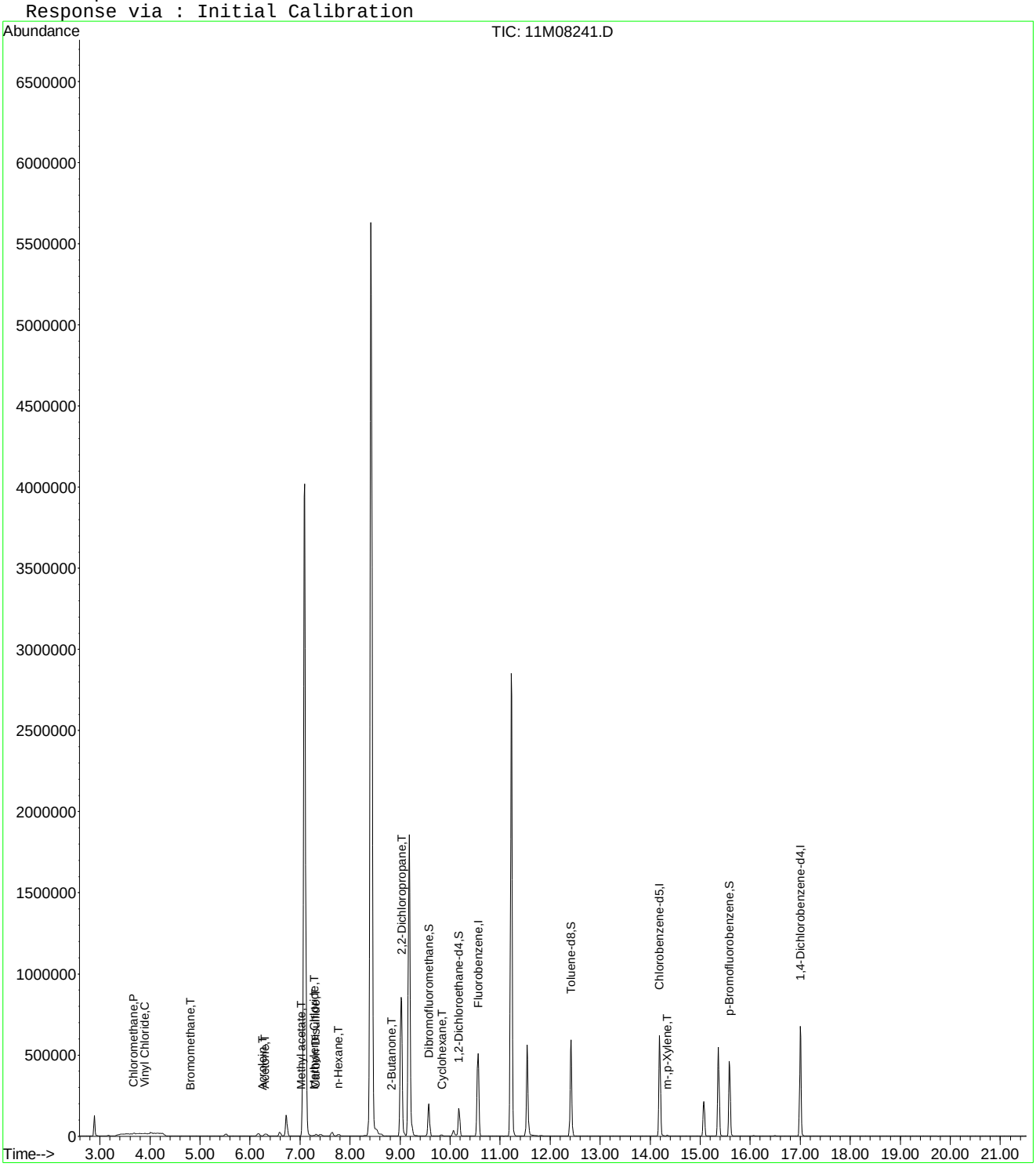

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08241.D Vial: 8
Acq On : 14 Jun 2015 13:10 Operator: TMB /DLW
Sample : WG527475-08 400ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 09:44:01 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	602921	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	438769	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	234608	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	173440	360.1555 ug/L	100
3) 3-Chloro-1-propene	7.09	41	3550959	339.1014 ug/L	82
4) 2-Chloro-1,3-butadiene	8.42	53	4600620	428.8513 ug/L	94
5) Methacrylonitrile	9.18	41	1153886	399.8518 ug/L	82
6) Isobutyl Alcohol	9.19	43	123004	1111.7192 ug/L	89
7) 1-Butanol	10.07	56	32355	697.6005 ug/L #	86
8) Cyclohexanone	15.36	55	274055	344.1074 ug/L	95
9) 2-Nitropropane	11.54	43	405951	367.1528 ug/L	87
10) Ethyl Acetate	9.02	43	1363919	384.3202 ug/L #	93
11) Methyl methacrylate	11.22	41	1637406	427.8110 ug/L	87

(#) = qualifier out of range (m) = manual integration
11M08241.D A9FOOWT.M Tue Jun 16 09:44:02 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08241.D Vial: 8
Acq On : 14 Jun 2015 13:10 Operator: TMB /DLW
Sample : WG527475-08 400ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 9:44 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration

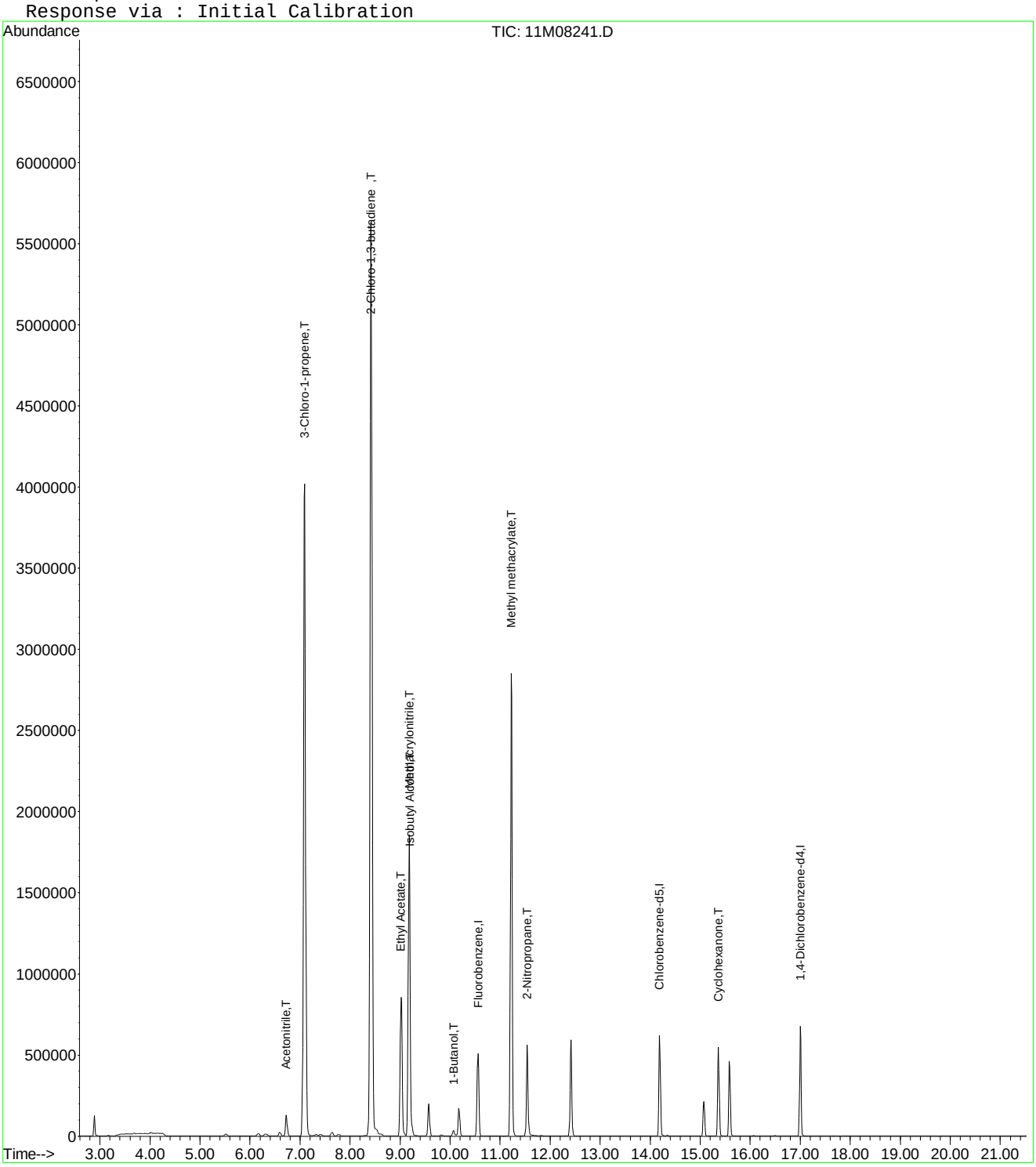

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08241.D Vial: 8
Acq On : 14 Jun 2015 13:10 Operator: TMB /DLW
Sample : WG527475-08 400ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28:13 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	602921	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	438769	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	234608	25.00 ug/L	-0.03

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M08241.D A9FOOWT.M Thu Aug 20 11:28:14 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08241.D Vial: 8
Acq On : 14 Jun 2015 13:10 Operator: TMB /DLW
Sample : WG527475-08 400ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration

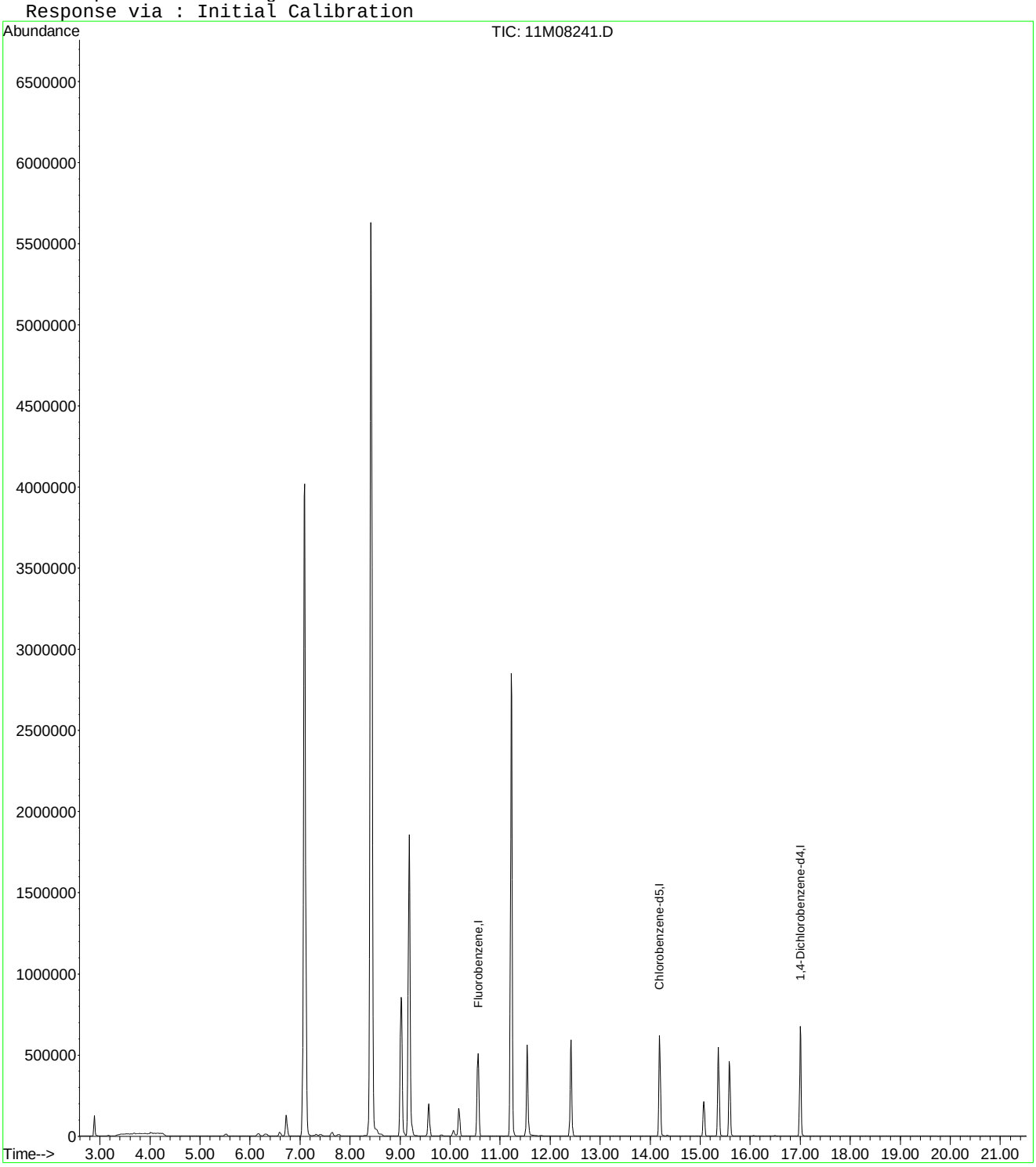

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08241.D Vial: 8
Acq On : 14 Jun 2015 13:10 Operator: TMB /DLW
Sample : WG527475-08 400ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43:53 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	602921	25.00 ug/L	0.00
12) Chlorobenzene-d5	14.19	117	438769	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.00	152	234608	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	173440	375.0660 ug/L	100
3) 3-Chloro-1-propene	7.09	41	3550959	391.3211 ug/L	82
4) 2-Chloro-1,3-butadiene	8.42	53	4600620	422.3386 ug/L	94
5) Methacrylonitrile	9.18	41	1153886	411.4196 ug/L	82
6) Isobutyl Alcohol	9.19	43	123004	852.2785 ug/L	89
7) 1-Butanol	10.07	56	32355	423.8032 ug/L #	86
8) Cyclohexanone	15.36	55	274055	395.1962 ug/L	95
9) 2-Nitropropane	11.54	43	405951	398.1514 ug/L	87
10) Ethyl Acetate	9.02	43	1363919	410.0276 ug/L #	93
11) Methyl methacrylate	11.22	41	1637406	423.3352 ug/L	87

(#) = qualifier out of range (m) = manual integration
11M08241.D A9FOOWT.M Thu Aug 20 11:43:54 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08241.D Vial: 8
Acq On : 14 Jun 2015 13:10 Operator: TMB /DLW
Sample : WG527475-08 400ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration

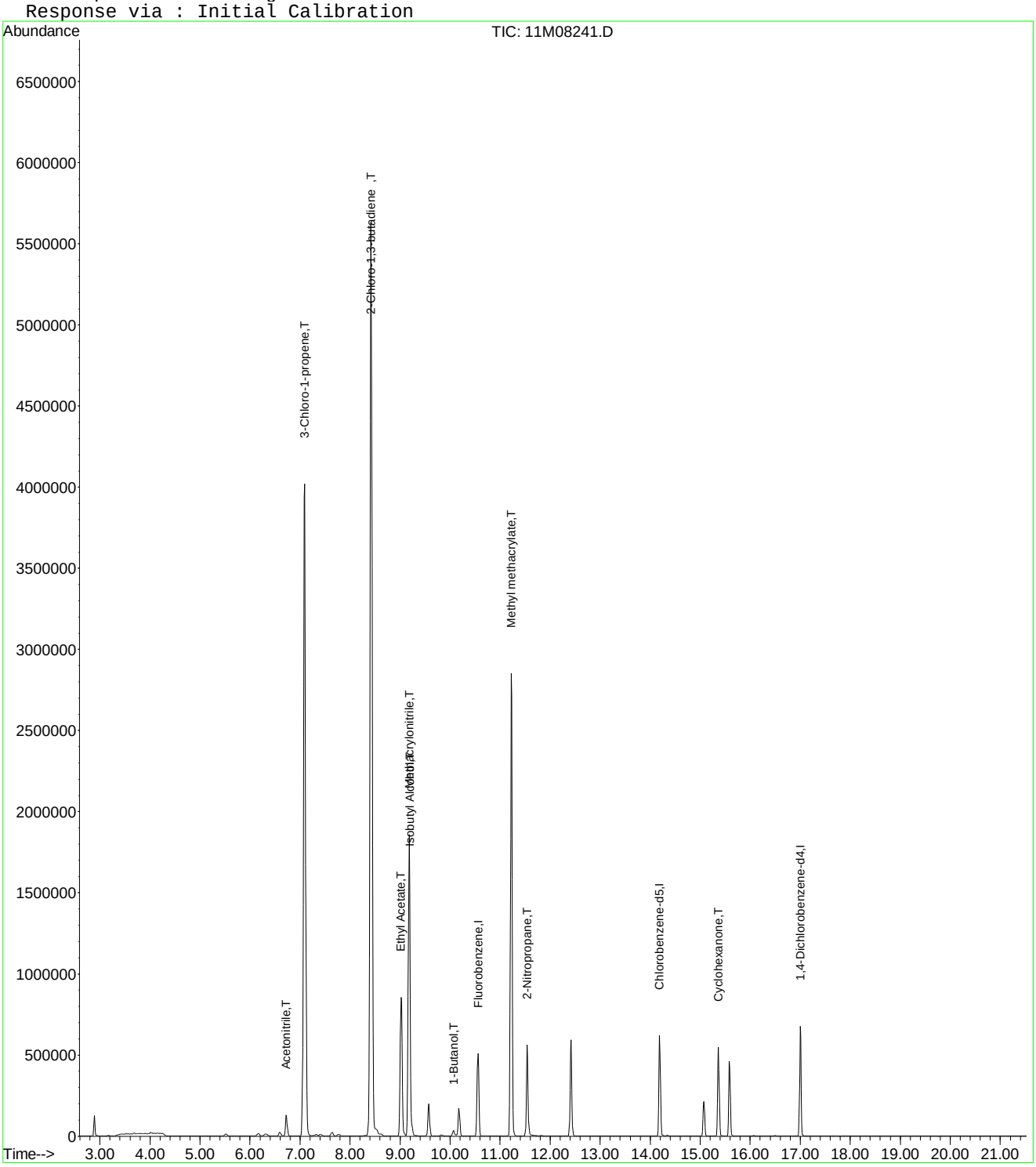

11M08241.D A9FOOWT.M Thu Aug 20 11:43:54 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08242.D Vial: 9
Acq On : 14 Jun 2015 13:42 Operator: TMB /DLW
Sample : WG527475-09 500ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 14:04:11 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	597347	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.19	117	436979	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.00	152	232858	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	155779	23.4935 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.96%		
43) 1,2-Dichloroethane-d4	10.17	65	141894	19.7022 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 78.80%#		
57) Toluene-d8	12.42	98	528602	28.6412 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 114.56%#		
78) p-Bromofluorobenzene	15.58	95	185769	24.9315 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.72%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.22	85	1211	0.1346 ug/L #	65
3) Chloromethane	3.68	50	8612	0.8299 ug/L	97
4) Vinyl Chloride	3.90	62	1110	0.1522 ug/L #	42
6) Bromomethane	4.80	94	872	0.2536 ug/L	68
11) Acrolein	6.25	56	4513	4.4571 ug/L	75
13) Acetone	6.30	43	20816	11.8354 ug/L	98
18) Methyl acetate	7.02	43	2826	0.4604 ug/L #	67
19) Methylene Chloride	7.26	84	1446	0.2045 ug/L	95
20) Carbon Disulfide	7.31	76	5502	0.2707 ug/L #	81
24) n-Hexane	7.77	57	12135	1.1123 ug/L #	96
29) 2-Butanone	8.83	43	2711	0.9479 ug/L #	77
30) Propionitrile	9.00	54	625	0.6931 ug/L #	1
31) 2,2-Dichloropropane	9.03	77	1917	0.2057 ug/L #	41
39) Cyclohexane	9.84	56	6427	0.4323 ug/L	96
71) m-,p-Xylene	14.34	106	3239	0.3057 ug/L	58

(#) = qualifier out of range (m) = manual integration
11M08242.D 8260WTR.M Sun Jun 14 14:04:12 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08242.D Vial: 9
Acq On : 14 Jun 2015 13:42 Operator: TMB /DLW
Sample : WG527475-09 500ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 14:04 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration

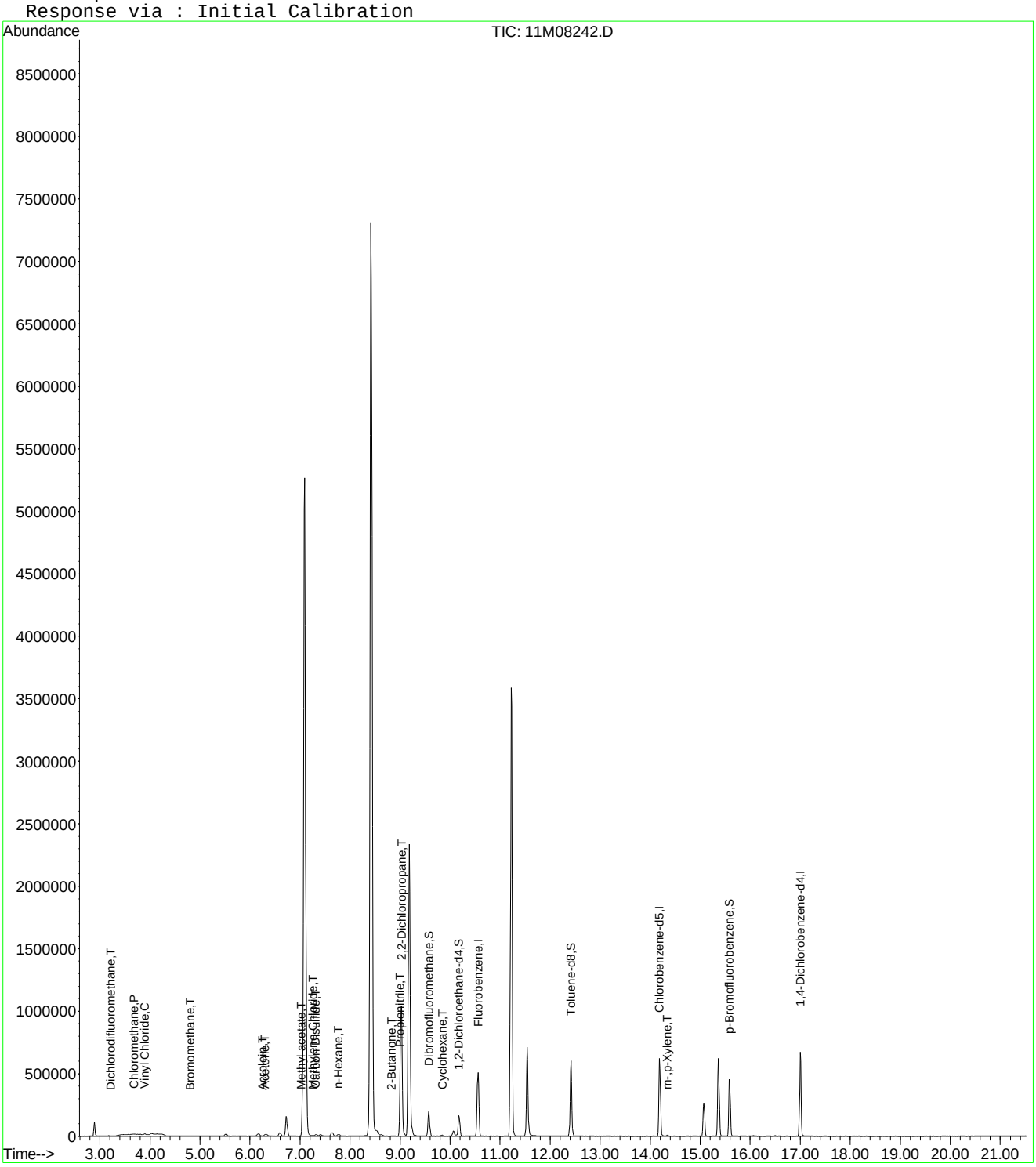

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08242.D Vial: 9
Acq On : 14 Jun 2015 13:42 Operator: TMB /DLW
Sample : WG527475-09 500ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 09:44:02 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.56	96	597347	25.00	ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	436979	25.00	ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	232858	25.00	ug/L	-0.03

Target Compounds						Qvalue
2) Acetonitrile	6.72	41	213542	447.5667	ug/L	100
3) 3-Chloro-1-propene	7.09	41	4596340	443.0265	ug/L	80
4) 2-Chloro-1,3-butadiene	8.42	53	5927514	557.6949	ug/L	92
5) Methacrylonitrile	9.18	41	1420105	496.6956	ug/L	79
6) Isobutyl Alcohol	9.19	43	141621	1291.9249	ug/L	95
7) 1-Butanol	10.07	56	37640	819.1222	ug/L	86
8) Cyclohexanone	15.36	55	308601	391.0996	ug/L	95
9) 2-Nitropropane	11.54	43	527973	481.9685	ug/L	88
10) Ethyl Acetate	9.03	43	1662142	472.7227	ug/L #	93
11) Methyl methacrylate	11.22	41	2052004	541.1374	ug/L	86

(#) = qualifier out of range (m) = manual integration
11M08242.D A9FOOWT.M Tue Jun 16 09:44:03 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08242.D Vial: 9
Acq On : 14 Jun 2015 13:42 Operator: TMB /DLW
Sample : WG527475-09 500ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 9:44 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration

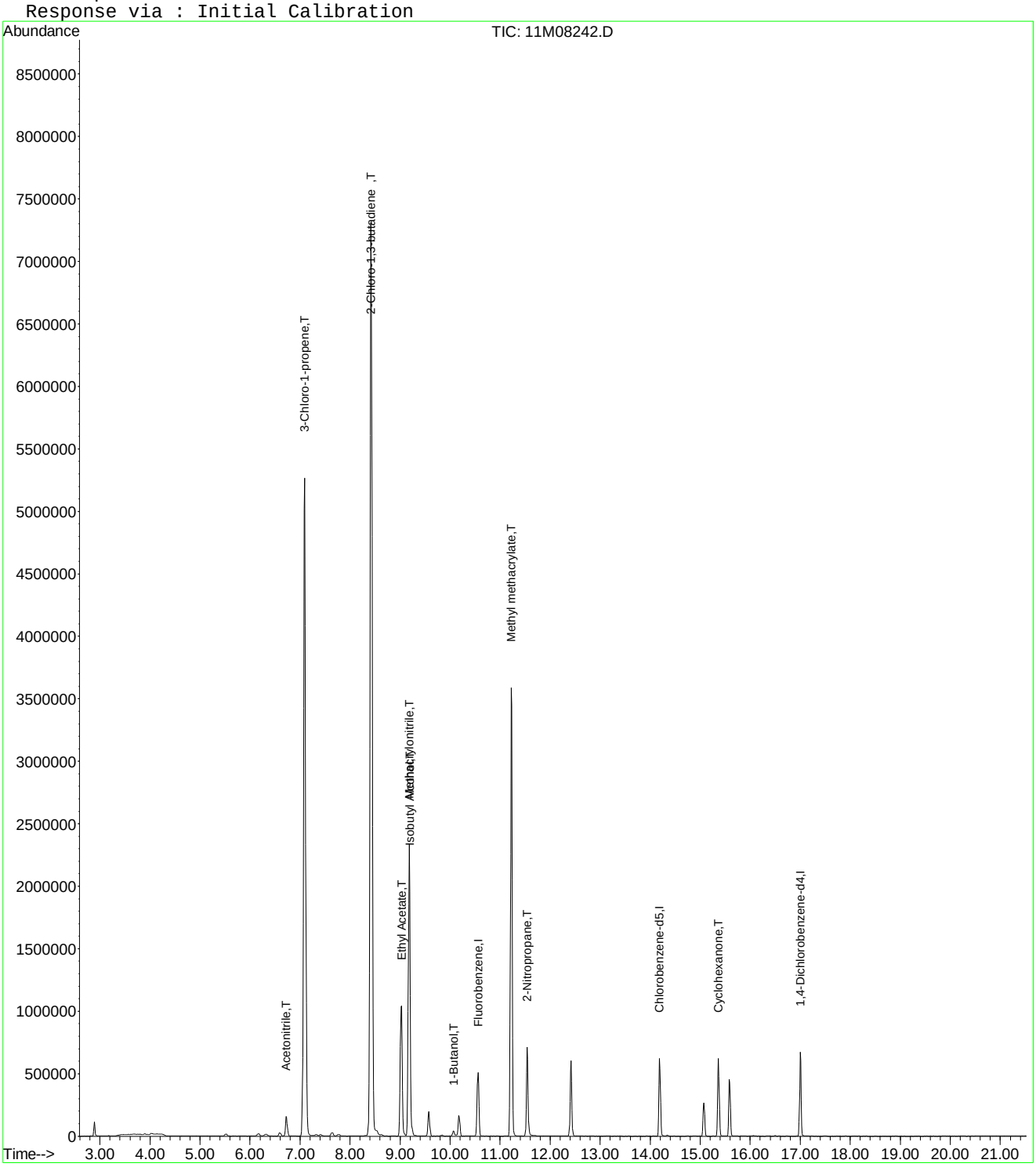

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08242.D Vial: 9
Acq On : 14 Jun 2015 13:42 Operator: TMB /DLW
Sample : WG527475-09 500ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28:15 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.56	96	597347	25.00	ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	436979	25.00	ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	232858	25.00	ug/L	-0.03

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M08242.D A9FOOWT.M Thu Aug 20 11:28:15 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08242.D Vial: 9
Acq On : 14 Jun 2015 13:42 Operator: TMB /DLW
Sample : WG527475-09 500ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration

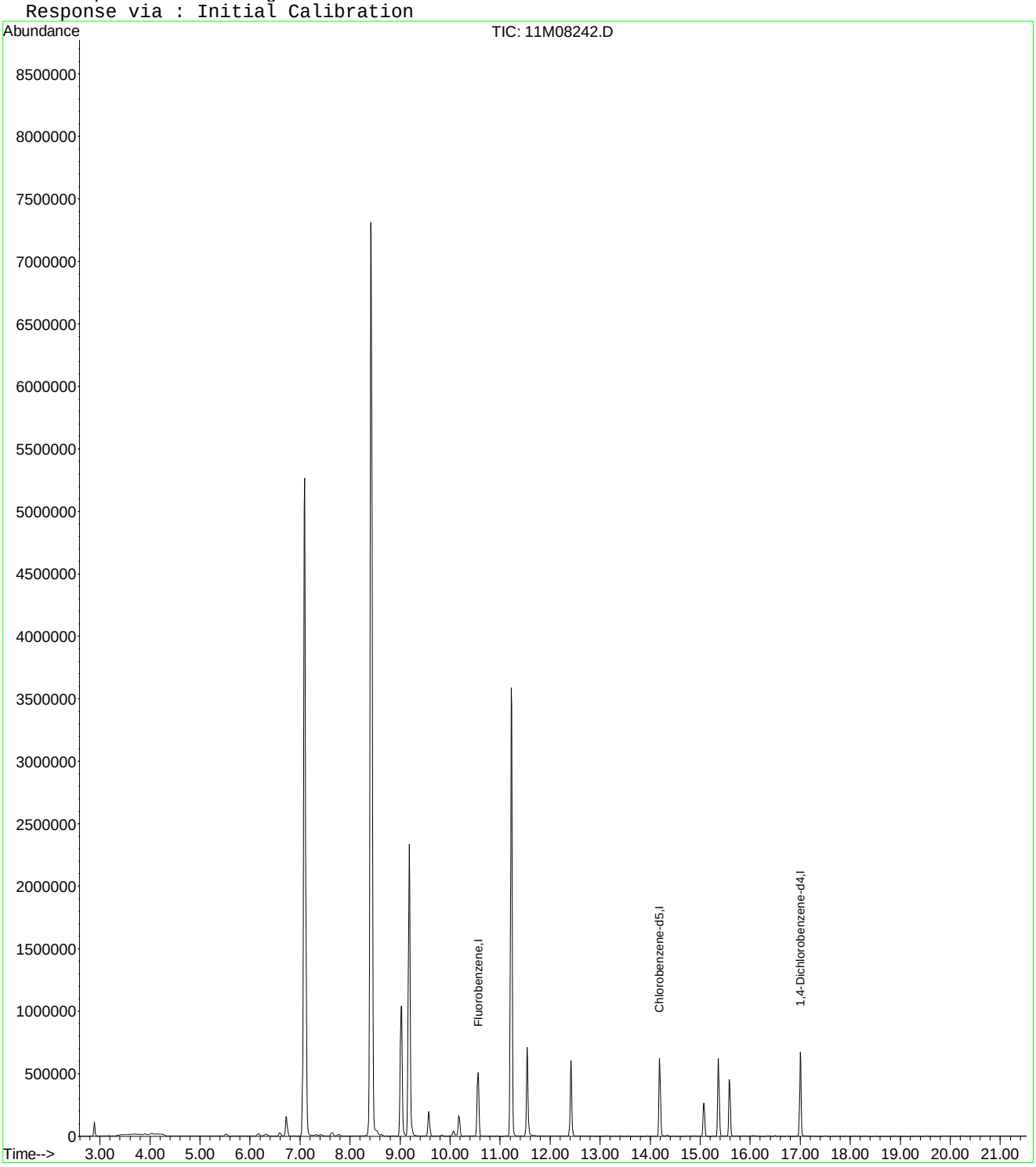

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08242.D Vial: 9
Acq On : 14 Jun 2015 13:42 Operator: TMB /DLW
Sample : WG527475-09 500ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43:54 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.56	96	597347	25.00	ug/L	0.00
12) Chlorobenzene-d5	14.19	117	436979	25.00	ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.00	152	232858	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.72	41	213542	466.0961	ug/L	100
3) 3-Chloro-1-propene	7.09	41	4596340	511.2501	ug/L	80
4) 2-Chloro-1,3-butadiene	8.42	53	5927514	549.2255	ug/L	92
5) Methacrylonitrile	9.18	41	1420105	511.0651	ug/L	79
6) Isobutyl Alcohol	9.19	43	141574	990.1011	ug/L	95
7) 1-Butanol	10.07	56	37640	497.6295	ug/L	86
8) Cyclohexanone	15.36	55	308601	449.1652	ug/L	95
9) 2-Nitropropane	11.54	43	527973	512.4786	ug/L	88
10) Ethyl Acetate	9.03	43	1662142	504.3435	ug/L #	93
11) Methyl methacrylate	11.22	41	2052004	535.4759	ug/L	86

(#) = qualifier out of range (m) = manual integration
11M08242.D A9FOOWT.M Thu Aug 20 11:43:55 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08242.D Vial: 9
Acq On : 14 Jun 2015 13:42 Operator: TMB /DLW
Sample : WG527475-09 500ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration

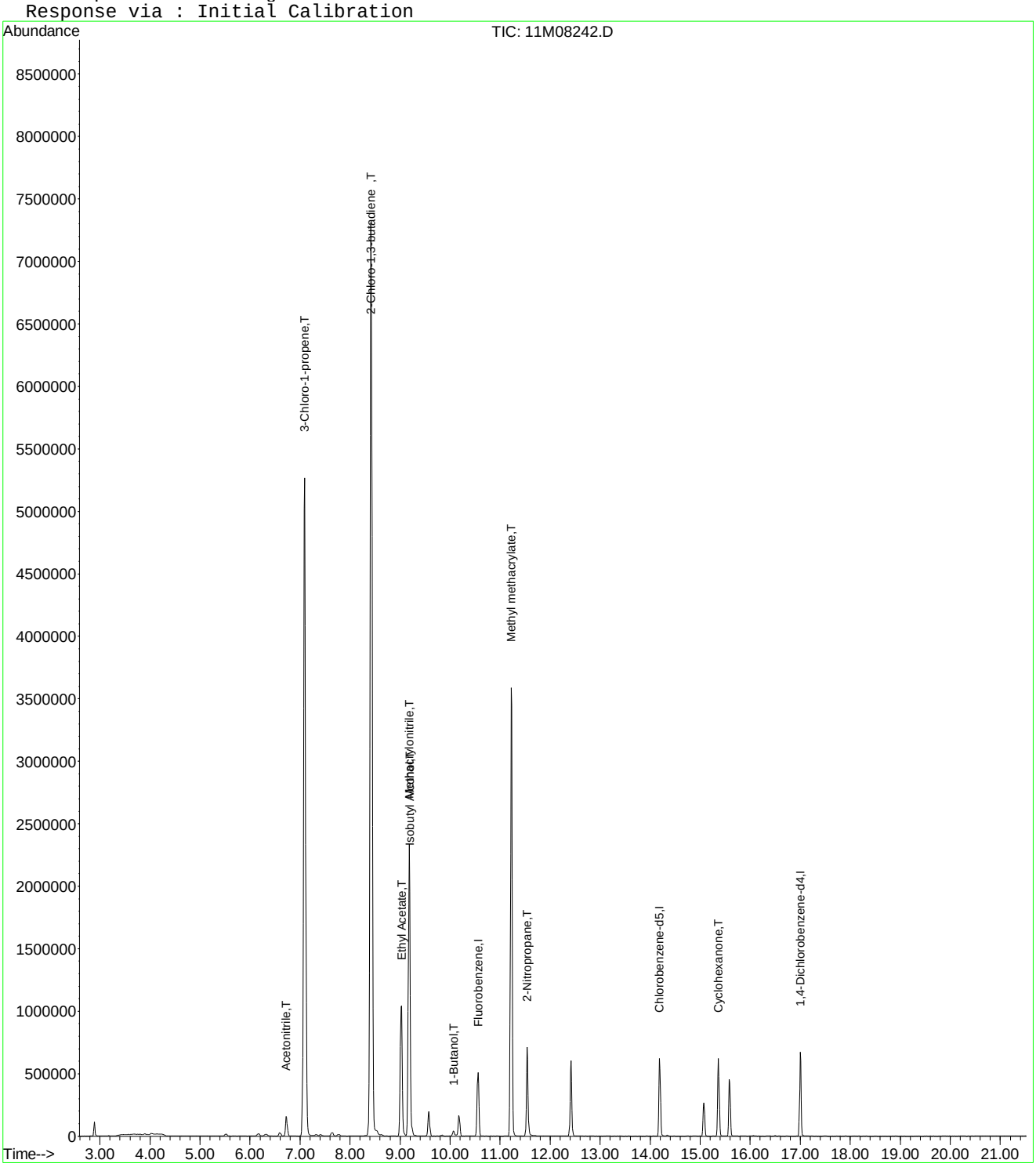

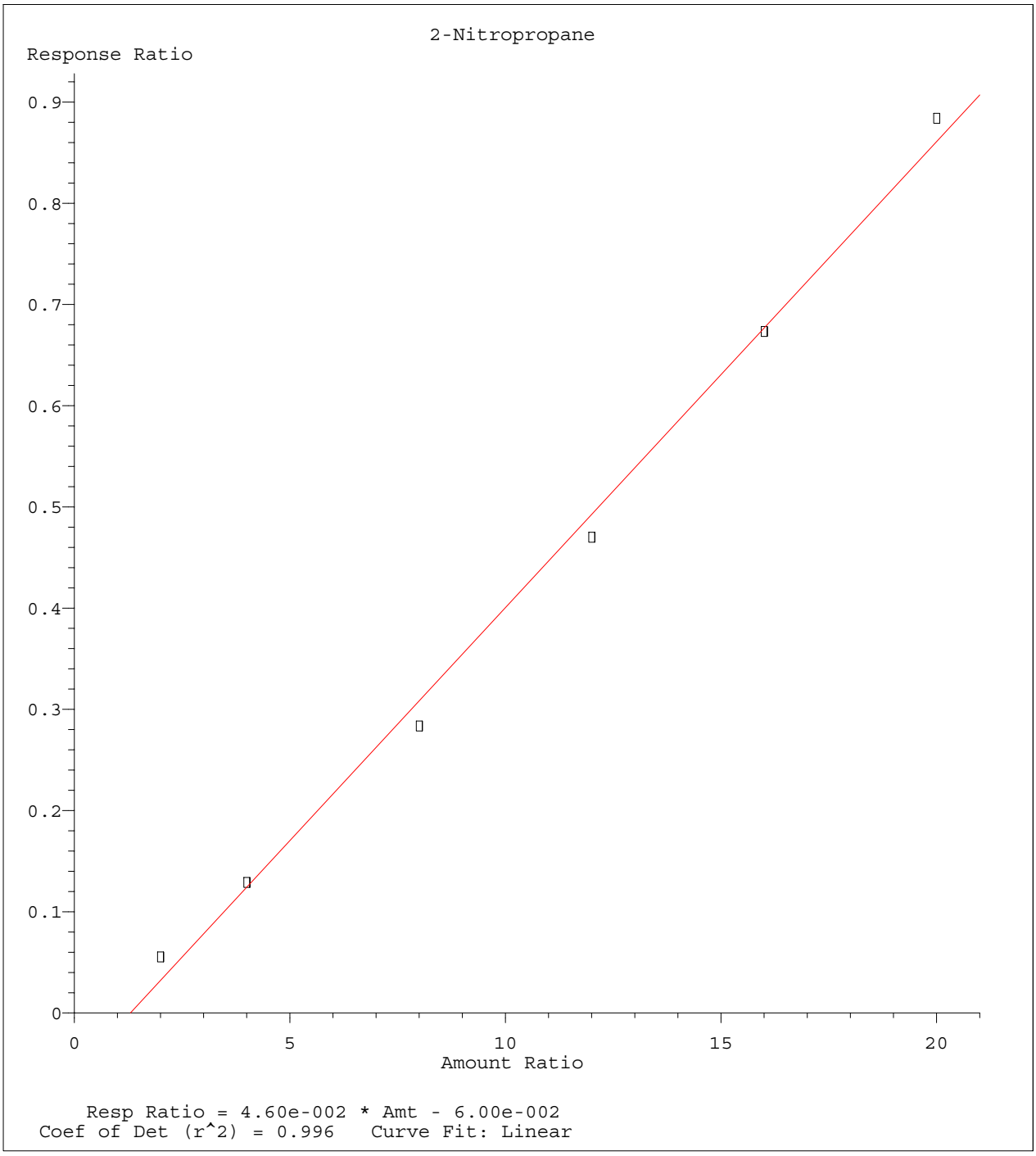

Method Name: C:\MSDCHEM\1\METHODS\A9FOOWT.M
Calibration Table Last Updated: Thu Aug 20 11:44:55 2015

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08245.D Vial: 12
Acq On : 14 Jun 2015 15:18 Operator: TMB /DLW
Sample : WG527475-10 100ug/L ALT STD8260 Inst : hpms11
Misc : 1,1 STD70514 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 15:40:10 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	543635	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.19	117	396503	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.01	152	206025	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	140300	23.2496 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.00%		
43) 1,2-Dichloroethane-d4	10.17	65	129308	19.7285 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 78.92%#		
57) Toluene-d8	12.42	98	479748	28.6477 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 114.60%#		
78) p-Bromofluorobenzene	15.58	95	164471	24.9480 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.80%		

Target Compounds					Qvalue
3) Chloromethane	3.67	50	1708	0.1809 ug/L #	64
5) 1,3-Butadiene	3.96	54	337713	68.0129 ug/L	95
9) Diethyl ether	5.96	59	421860	68.0021 ug/L	82
13) Acetone	6.30	43	8473	5.2935 ug/L	79
29) 2-Butanone	8.83	43	2399	0.9217 ug/L #	77
30) Propionitrile	8.93	54	45537	55.4849 ug/L	96
49) 1,4-Dioxane	11.51	88	6417	143.4316 ug/L	93
77) 1,1,2,2-Tetrachloroethane	15.38	83	1792	0.4132 ug/L #	17

(#) = qualifier out of range (m) = manual integration
11M08245.D 8260WTR.M Sun Jun 14 15:40:11 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08245.D Vial: 12
Acq On : 14 Jun 2015 15:18 Operator: TMB /DLW
Sample : WG527475-10 100ug/L ALT STD8260 Inst : hpms11
Misc : 1,1 STD70514 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 15:40 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration

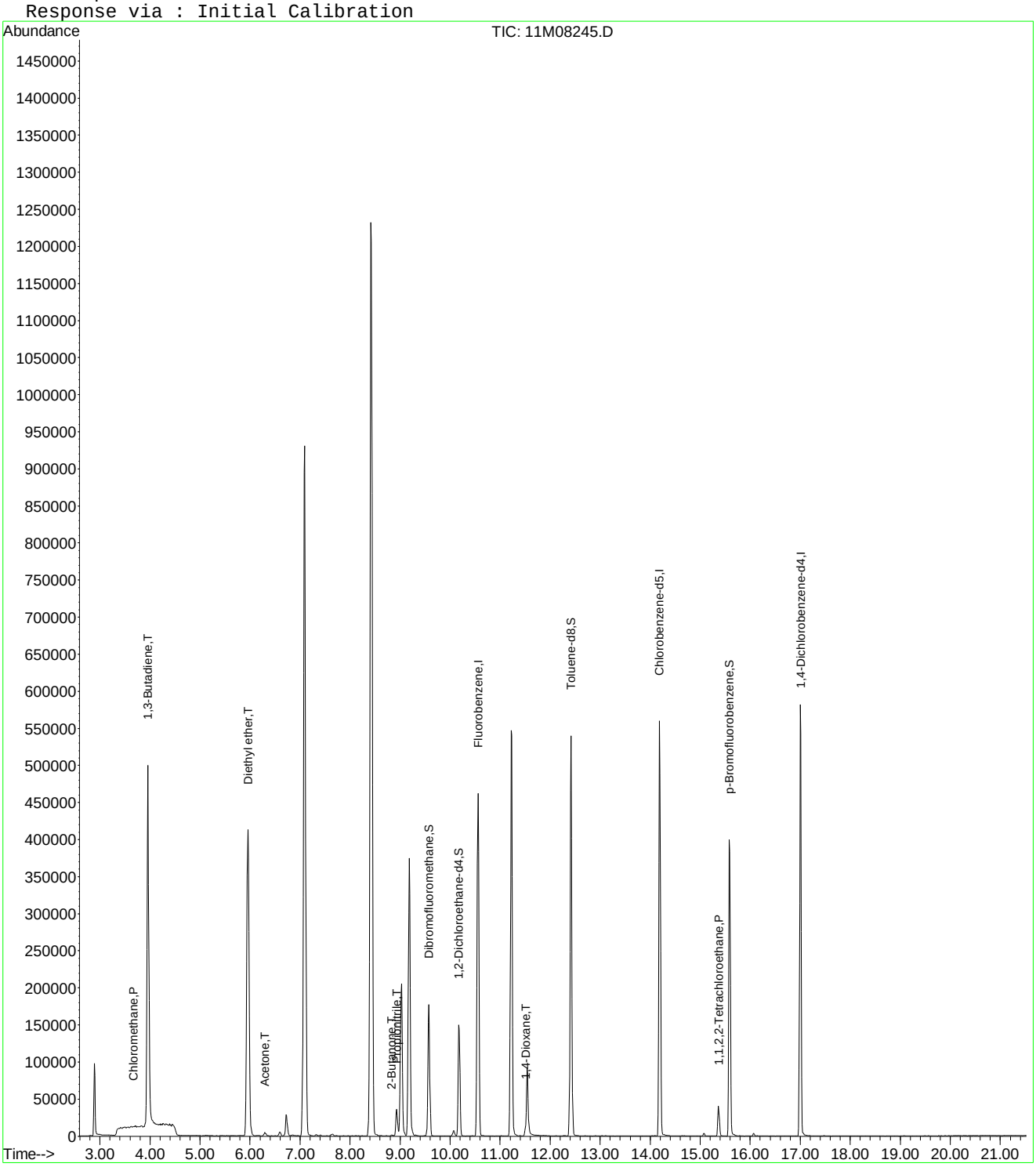

11M08245.D 8260WTR.M Sun Jun 14 15:40:11 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08245.D Vial: 12
Acq On : 14 Jun 2015 15:18 Operator: TMB /DLW
Sample : WG527475-10 100ug/L ALT STD8260 Inst : hpms11
Misc : 1,1 STD70514 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28:16 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	543635	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	396503	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.01	152	206025	25.00 ug/L	-0.02

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M08245.D A9FOOWT.M Thu Aug 20 11:28:17 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08245.D Vial: 12
Acq On : 14 Jun 2015 15:18 Operator: TMB /DLW
Sample : WG527475-10 100ug/L ALT STD8260 Inst : hpms11
Misc : 1,1 STD70514 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration

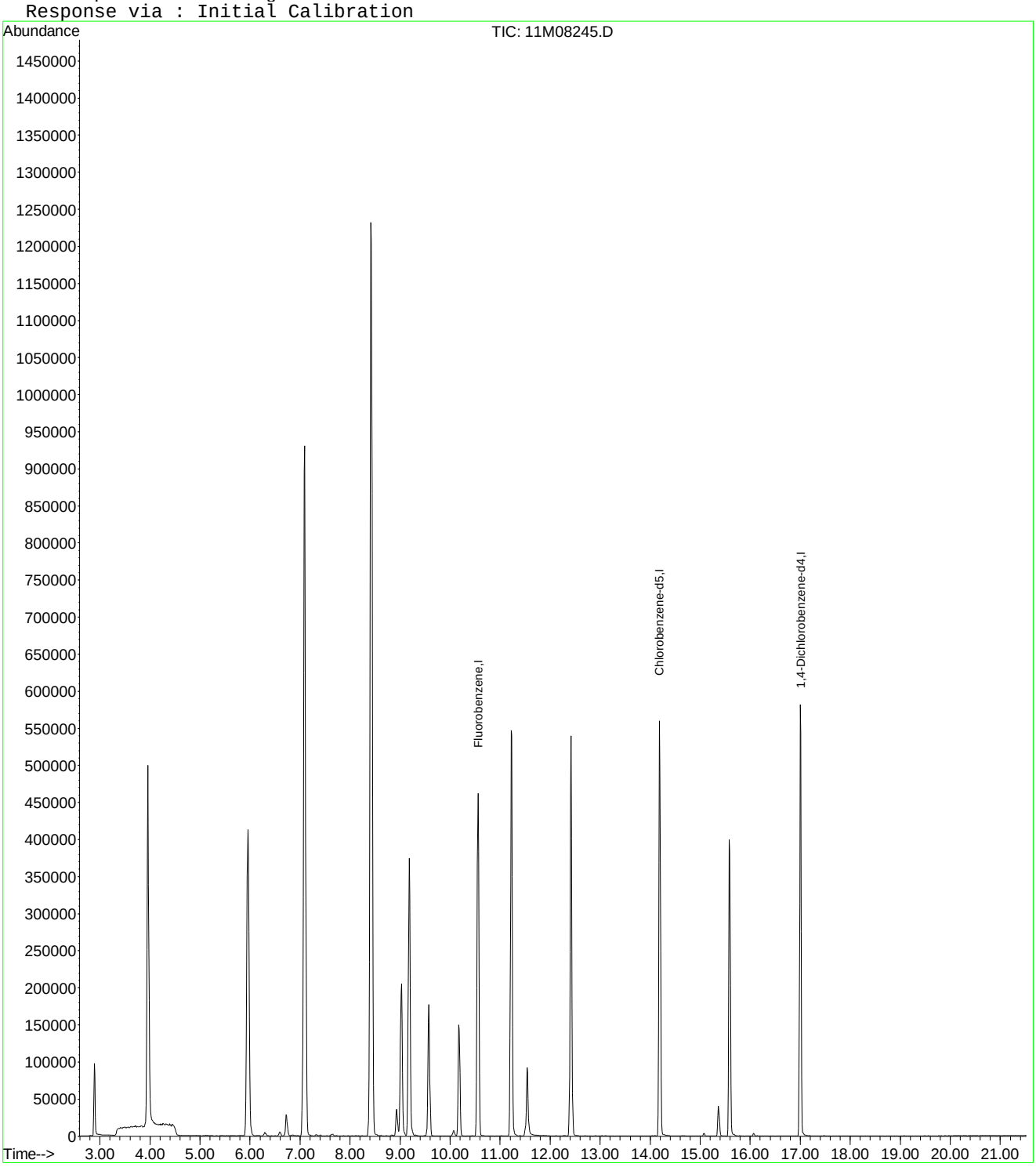

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08245.D Vial: 12
Acq On : 14 Jun 2015 15:18 Operator: TMB /DLW
Sample : WG527475-10 100ug/L ALT STD8260 Inst : hpms11
Misc : 1,1 STD70514 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43:56 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	543635	25.00 ug/L	0.00
12) Chlorobenzene-d5	14.19	117	396503	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.01	152	206025	25.00 ug/L	0.01

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	38243	91.7199 ug/L	100
3) 3-Chloro-1-propene	7.09	41	808581	98.8244 ug/L	82
4) 2-Chloro-1,3-butadiene	8.42	53	1078924	109.8470 ug/L	94
5) Methacrylonitrile	9.18	41	233249	92.2348 ug/L	79
6) Isobutyl Alcohol	9.19	43	24110	185.2732 ug/L	90
7) 1-Butanol	10.07	56	6038	87.7140 ug/L #	79
8) Cyclohexanone	15.36	55	22693	36.2928 ug/L	98
9) 2-Nitropropane	11.54	43	62961	95.4458 ug/L	82
10) Ethyl Acetate	9.03	43	328836	109.6369 ug/L #	93
11) Methyl methacrylate	11.22	41	327033	93.7719 ug/L	87

(#) = qualifier out of range (m) = manual integration
11M08245.D A9FOOWT.M Thu Aug 20 11:43:56 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08245.D Vial: 12
Acq On : 14 Jun 2015 15:18 Operator: TMB /DLW
Sample : WG527475-10 100ug/L ALT STD8260 Inst : hpms11
Misc : 1,1 STD70514 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration

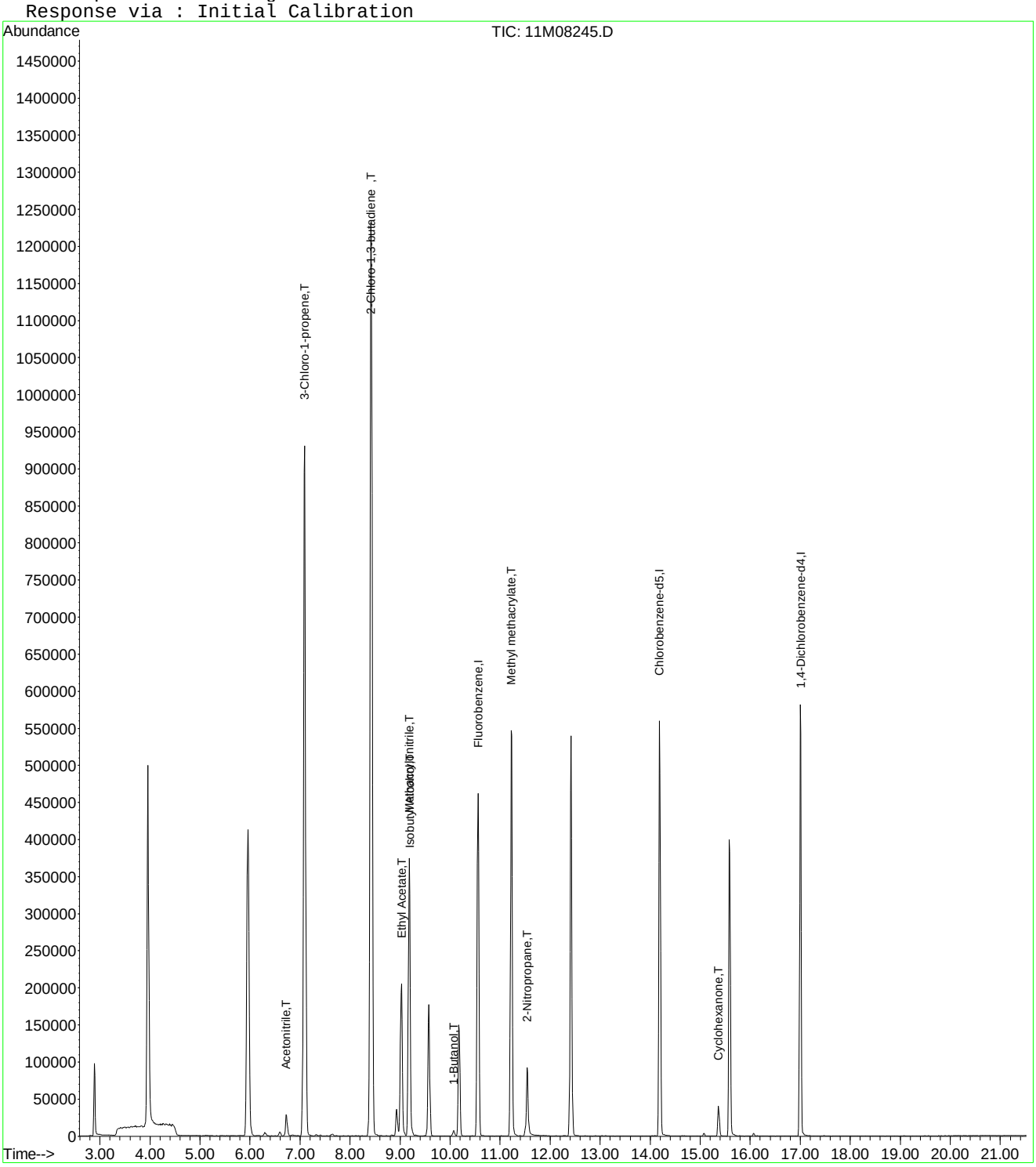

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061415\11M08245.D Vial: 12
Acq On : 14 Jun 2015 15:18 Operator: TMB /DLW
Sample : WG527475-10 100ug/L ALT STD8260 Inst : hpms11
Misc : 1,1 STD70514 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	92	0.00
2	T	Acetonitrile	100.0000	91.7199	8.3	92	0.00
3	T	3-Chloro-1-propene	100.0000	98.8244	1.2	90	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	109.8470	-9.8	102	0.00
5	T	Methacrylonitrile	100.0000	92.2348	7.8	86	0.00
6	T	Isobutyl Alcohol	200.0000	185.2732	7.4	83	0.00
7	T	1-Butanol	100.0000	87.7140	12.3	78	0.00
8	T	Cyclohexanone	100.0000	36.2928	63.7	31	0.00
9	T	2-Nitropropane	100.0000	95.4458	4.6	82	0.00
10	T	Ethyl Acetate	100.0000	109.6369	-9.6	99	0.00
11	T	Methyl methacrylate	100.0000	93.7719	6.2	87	0.00
12	I	Chlorobenzene-d5	25.0000	25.0000	0.0	91	0.00
13	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	92	0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M08245.D A9FOOWT.M Thu Aug 20 11:45:26 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:20 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	538041	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	450050	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	251600	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
57) Toluene-d8	12.47	98	210	0.0099 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.04%#	
78) p-Bromofluorobenzene	15.64	95	566	0.0689 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	2475	0.3135 ug/L #	66
3) Chloromethane	3.72	50	4639	0.6471 ug/L	91
4) Vinyl Chloride	3.96	62	1882	0.3288 ug/L #	44
5) 1,3-Butadiene	4.01	54	1564	0.2900 ug/L #	19
6) Bromomethane	4.84	94	1717	0.4723 ug/L	83
7) Chloroethane	5.00	64	616	0.1589 ug/L #	45
8) Trichlorofluoromethane	5.49	101	3531	0.3330 ug/L	97
10) Isoprene	6.04	67	1746	0.2381 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	1344	0.2515 ug/L	96
13) Acetone	6.34	43	2389	1.4850 ug/L #	45
14) 1,1-Dichloroethene	6.56	61	3780	0.3817 ug/L	78
16) Dimethyl Sulfide	6.80	62	762	0.1697 ug/L	78
18) Methyl acetate	7.02	43	24685	4.4975 ug/L #	70
19) Methylene Chloride	7.31	84	1766	0.3184 ug/L	74
20) Carbon Disulfide	7.36	76	5848	0.3373 ug/L	92
22) Methyl Tert Butyl Ether	7.54	73	3068	0.2131 ug/L #	48
23) trans-1,2-Dichloroethene	7.75	96	1449	0.2556 ug/L	91
24) n-Hexane	7.82	57	3745	0.4031 ug/L #	73
26) Vinyl Acetate	8.30	43	2410	0.6995 ug/L #	78
27) 1,1-Dichloroethane	8.35	63	3312	0.2969 ug/L #	76
31) 2,2-Dichloropropane	9.10	77	2449	0.3040 ug/L #	42
32) cis-1,2-Dichloroethene	9.15	96	1729	0.2748 ug/L	96
33) Chloroform	9.35	83	3792	0.3639 ug/L	92
35) Bromochloromethane	9.56	130	948	0.2355 ug/L #	68
38) 1,1,1-Trichloroethane	9.85	97	3449	0.3423 ug/L #	79
39) Cyclohexane	9.88	56	3639	0.2986 ug/L #	84
40) 1,1-Dichloropropene	10.04	75	2365	0.3106 ug/L #	53
41) Carbon Tetrachloride	10.17	117	2613	0.2748 ug/L	87
44) 1,2-Dichloroethane	10.35	62	2493	0.2788 ug/L #	73
45) Benzene	10.38	78	7133	0.3275 ug/L	99
46) Trichloroethene	11.09	130	1973	0.2780 ug/L	93
47) Methylcyclohexane	11.17	83	2570	0.2986 ug/L	84
48) 1,2-Dichloropropane	11.29	63	1665	0.2692 ug/L	87
50) Bromodichloromethane	11.57	83	2418	0.2950 ug/L #	82
51) Dibromomethane	11.65	93	756	0.2331 ug/L	88
54) cis-1,3-Dichloropropene	12.17	75	1869	0.2166 ug/L #	82
55) Dimethyl Disulfide	12.42	79	1028	0.1910 ug/L	95
58) Toluene	12.57	91	7355	0.3156 ug/L	91
59) Ethyl Methacrylate	12.64	69	1041	0.1887 ug/L	88
60) trans-1,3-Dichloropropene	12.72	75	1951	0.2556 ug/L #	51

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:20 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
61)	1,1,2-Trichloroethane	12.92	97	1087	0.2492 ug/L		87
62)	2-Hexanone	12.86	43	687	0.1910 ug/L	#	29
63)	1,3-Dichloropropane	13.21	76	1673	0.2309 ug/L		94
64)	Tetrachloroethene	13.34	164	1703	0.3238 ug/L		94
65)	Dibromochloromethane	13.59	129	1515	0.2406 ug/L		92
66)	1,2-Dibromoethane	13.82	107	966	0.2181 ug/L		98
67)	1-Chlorohexane	13.89	91	2128	0.2784 ug/L		97
68)	Chlorobenzene	14.29	112	5248	0.3062 ug/L		99
69)	1,1,1,2-Tetrachloroethane	14.32	131	2025	0.3082 ug/L		98
70)	Ethylbenzene	14.31	106	2602	0.2992 ug/L		88
71)	m-,p-Xylene	14.40	106	6296	0.6083 ug/L		82
72)	o-Xylene	14.92	106	3032	0.2937 ug/L		95
73)	Styrene	14.95	104	4953	0.2828 ug/L		95
75)	Isopropylbenzene	15.31	105	7848	0.3006 ug/L		93
77)	1,1,2,2-Tetrachloroethane	15.52	83	1145	0.2759 ug/L		68
81)	n-Propylbenzene	15.79	91	9421	0.3332 ug/L		94
82)	Bromobenzene	15.92	156	2002	0.2551 ug/L		66
83)	1,3,5-Trimethylbenzene	15.95	105	6742	0.3138 ug/L		91
84)	2-Chlorotoluene	16.05	91	6735	0.3228 ug/L		96
85)	4-Chlorotoluene	16.09	91	6023	0.3518 ug/L		99
86)	a-Methylstyrene	16.34	118	2850	0.2387 ug/L		95
87)	tert-Butylbenzene	16.39	134	1197	0.2539 ug/L		64
88)	1,2,4-Trimethylbenzene	16.44	105	6992	0.3180 ug/L		88
89)	sec-Butylbenzene	16.65	105	8335	0.3278 ug/L		97
90)	p-Isopropyltoluene	16.79	119	7094	0.3065 ug/L		96
91)	1,3-Dichlorobenzene	16.98	146	4505	0.3090 ug/L		96
92)	1,4-Dichlorobenzene	17.10	146	4475	0.3006 ug/L	#	1
93)	n-Butylbenzene	17.28	91	7076	0.3396 ug/L	#	93
94)	1,2-Dichlorobenzene	17.56	146	4016	0.2922 ug/L		100
96)	1,2,4-Trichlorobenzene	19.55	180	2964	0.2902 ug/L		99
97)	Hexachlorobutadiene	19.69	225	1160	0.2796 ug/L	#	71
98)	Naphthalene	19.90	128	4679	0.2394 ug/L	#	93
99)	1,2,3-Trichlorobenzene	20.19	180	2578	0.2696 ug/L		87

(#) = qualifier out of range (m) = manual integration
11M11837.D 8260WT.M Fri May 13 17:04:21 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration

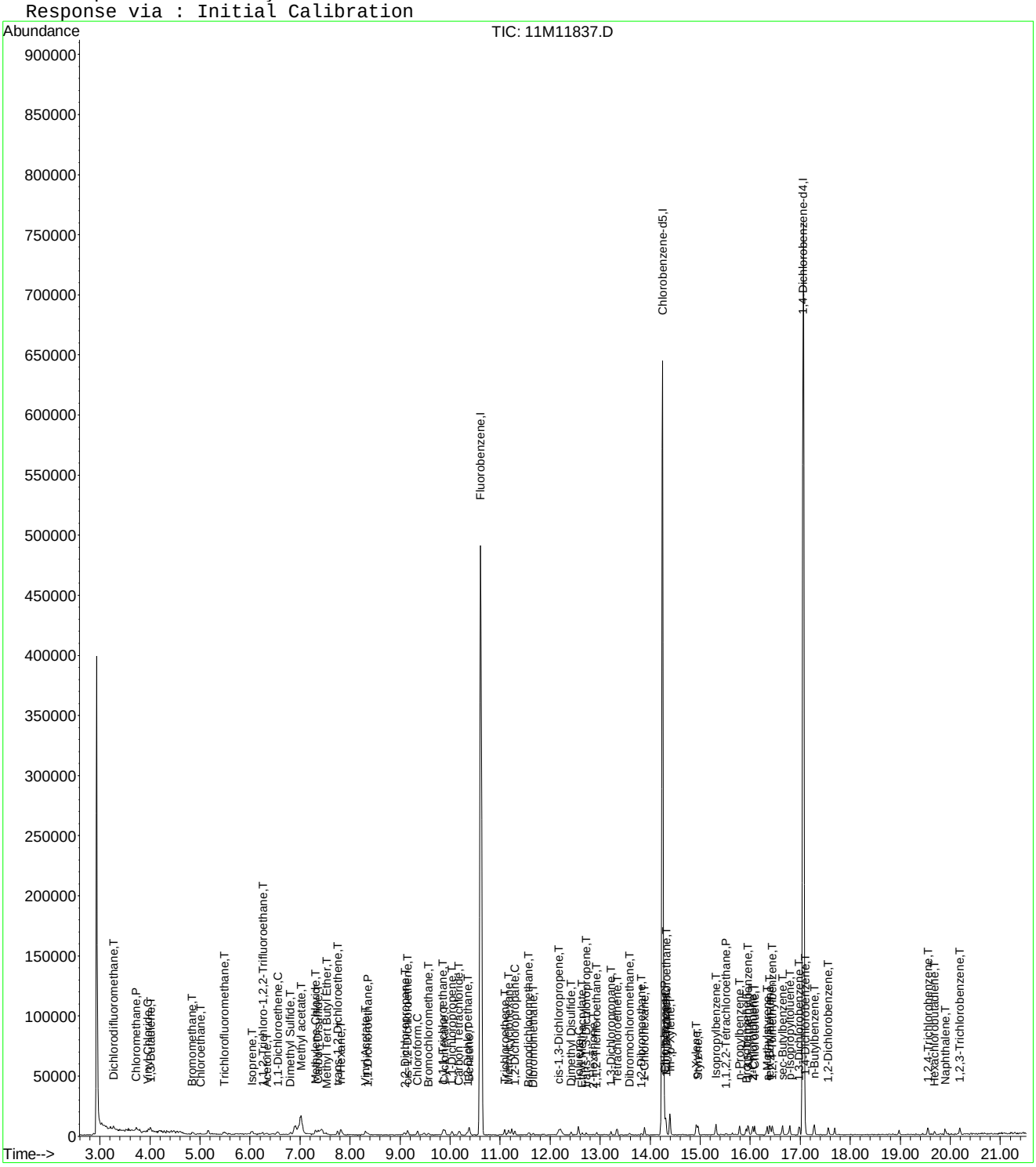

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:40:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2936	0.0	0	0.00
3	P	Chloromethane	-1.0000	0.6871	0.0	0	0.00
4	C	Vinyl Chloride	-1.0000	0.3357	0.0	0	0.00
5	T	1,3-Butadiene	-1.0000	0.2805	0.0	0	0.01
6	T	Bromomethane	-1.0000	0.4454	0.0	0	-0.01
7	T	Chloroethane	-1.0000	0.1710	0.0	0	0.00
8	T	Trichlorofluoromethane	-1.0000	0.3160	0.0	0	0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.01#
10	T	Isoprene	-1.0000	0.2535	0.0	0	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.23#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2478	0.0	0	0.01
13	T	Acetone	-1.0000	1.8699	0.0	0	0.00
14	C	1,1-Dichloroethene	-1.0000	0.3838	0.0	0	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.66#
16	T	Dimethyl Sulfide	-1.0000	0.1937	0.0	0	-0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.06#
18	T	Methyl acetate	-1.0000	5.1442	0.0	0	-0.04
19	T	Methylene Chloride	-1.0000	0.3464	0.0	0	0.00
20	T	Carbon Disulfide	-1.0000	0.3546	0.0	0	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.49#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2413	0.0	0	0.02
23	T	trans-1,2-Dichloroethene	-1.0000	0.2658	0.0	0	0.01
24	T	n-Hexane	-1.0000	0.4125	0.0	0	0.00
25	T	Diisopropyl ether	-1.0000	0.0083	0.0	0	0.08
26	T	Vinyl Acetate	-1.0000	2.6933	0.0	0	-0.01
27	P	1,1-Dichloroethane	-1.0000	0.3028	0.0	0	0.01
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.70#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.87#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.97#
31	T	2,2-Dichloropropane	-1.0000	0.2862	0.0	0	0.01
32	T	cis-1,2-Dichloroethene	-1.0000	0.2877	0.0	0	0.00
33	C	Chloroform	0.3000	0.3530	-17.7	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.48#
35	T	Bromochloromethane	-1.0000	0.2656	0.0	0	-0.01
36	T	Tetrahydrofuran	-1.0000	0.0000	0.0	0	-9.60#
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.63#
38	T	1,1,1-Trichloroethane	-1.0000	0.3263	0.0	0	0.00
39	T	Cyclohexane	-1.0000	0.3159	0.0	0	0.00
40	T	1,1-Dichloropropene	-1.0000	0.3134	0.0	0	0.00
41	T	Carbon Tetrachloride	-1.0000	0.2532	0.0	0	-0.01
42	T	Tert-Amyl-Methyl ether	-1.0000	0.0152	0.0	0	-0.09
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.23#
44	T	1,2-Dichloroethane	-1.0000	0.2858	0.0	0	0.01
45	T	Benzene	-1.0000	0.3452	0.0	0	0.00
46	T	Trichloroethene	-1.0000	0.2938	0.0	0	0.00
47	T	Methylcyclohexane	-1.0000	0.3101	0.0	0	0.00
48	C	1,2-Dichloropropane	-1.0000	0.2911	0.0	0	0.00
49	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.55#
50	T	Bromodichloromethane	-1.0000	0.3012	0.0	0	0.00
51	T	Dibromomethane	-1.0000	0.2537	0.0	0	0.00
52	T	2-Chloroethyl Vinyl Ether	-1.0000	0.0000	0.0	0	-11.84#
53	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-11.87#
54	T	cis-1,3-Dichloropropene	-1.0000	0.2327	0.0	0	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:40:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	-1.0000	0.2127	0.0	0	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	-1.0000	0.0107	0.0	0	0.00
58	C	Toluene	-1.0000	0.3228	0.0	0	0.01
59	T	Ethyl Methacrylate	-1.0000	0.2140	0.0	0	-0.01
60	T	trans-1,3-Dichloropropene	-1.0000	0.2668	0.0	0	-0.01
61	T	1,1,2-Trichloroethane	-1.0000	0.2691	0.0	0	-0.01
62	T	2-Hexanone	-1.0000	0.2315	0.0	0	0.00
63	T	1,3-Dichloropropane	-1.0000	0.2579	0.0	0	0.00
64	T	Tetrachloroethene	-1.0000	0.3214	0.0	0	0.00
65	T	Dibromochloromethane	-1.0000	0.2459	0.0	0	0.00
66	T	1,2-Dibromoethane	-1.0000	0.2387	0.0	0	0.00
67	T	1-Chlorohexane	-1.0000	0.2833	0.0	0	0.00
68	P	Chlorobenzene	-1.0000	0.3144	0.0	0	0.00
69	T	1,1,1,2-Tetrachloroethane	-1.0000	0.2998	0.0	0	0.00
70	C	Ethylbenzene	-1.0000	0.3040	0.0	0	0.00
71	T	m-,p-Xylene	-1.0000	0.6051	0.0	0	0.01
72	T	o-Xylene	-1.0000	0.2994	0.0	0	0.00
73	T	Styrene	-1.0000	0.2961	0.0	0	0.00
74	P	Bromoform	-1.0000	0.0798	0.0	0	-0.01
75	T	Isopropylbenzene	-1.0000	0.2931	0.0	0	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2922	0.0	0	0.00
78	S	p-Bromofluorobenzene	-1.0000	0.0730	0.0	0	0.00
79	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-15.70#
80	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-15.74#
81	T	n-Propylbenzene	-1.0000	0.3233	0.0	0	0.00
82	T	Bromobenzene	0.3000	0.2618	12.7	100	0.00
83	T	1,3,5-Trimethylbenzene	-1.0000	0.3032	0.0	0	-0.01
84	T	2-Chlorotoluene	-1.0000	0.3300	0.0	0	0.00
85	T	4-Chlorotoluene	-1.0000	0.3295	0.0	0	0.00
86	T	a-Methylstyrene	-1.0000	0.2430	0.0	0	0.00
87	T	tert-Butylbenzene	-1.0000	0.2541	0.0	0	-0.01
88	T	1,2,4-Trimethylbenzene	-1.0000	0.3088	0.0	0	0.00
89	T	sec-Butylbenzene	-1.0000	0.3122	0.0	0	0.00
90	T	p-Isopropyltoluene	-1.0000	0.2893	0.0	0	0.00
91	T	1,3-Dichlorobenzene	-1.0000	0.3051	0.0	0	0.00
92	T	1,4-Dichlorobenzene	0.3000	0.2990	0.3	100	0.00
93	T	n-Butylbenzene	-1.0000	0.3274	0.0	0	0.00
94	T	1,2-Dichlorobenzene	0.3000	0.2985	0.5	100	-0.01
95	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-18.49#
96	T	1,2,4-Trichlorobenzene	-1.0000	0.3011	0.0	0	0.00
97	T	Hexachlorobutadiene	-1.0000	0.2675	0.0	0	0.00
98	T	Naphthalene	-1.0000	0.2561	0.0	0	0.00
99	T	1,2,3-Trichlorobenzene	0.3000	0.2854	4.9	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11837.D 8260WT.M Sat May 14 18:41:07 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11838.D Vial: 4
Acq On : 13 May 2016 15:12 Operator: JDS
Sample : WG568769-03 0.4ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:23 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	515473	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	435266	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	244818	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
57) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
78) p-Bromofluorobenzene	15.64	95	236	0.0295 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	2765	0.3656 ug/L #	66
3) Chloromethane	3.72	50	4021	0.5854 ug/L #	77
4) Vinyl Chloride	3.96	62	2267	0.4134 ug/L #	64
5) 1,3-Butadiene	4.01	54	2044	0.3956 ug/L #	18
6) Bromomethane	4.85	94	1571	0.4511 ug/L	89
7) Chloroethane	5.01	64	1496	0.4029 ug/L #	45
8) Trichlorofluoromethane	5.49	101	4241	0.4175 ug/L	96
10) Isoprene	6.03	67	2394	0.3408 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	1439	0.2811 ug/L #	23
13) Acetone	6.33	43	1125	0.7299 ug/L #	45
14) 1,1-Dichloroethene	6.56	61	3786	0.3990 ug/L	77
16) Dimethyl Sulfide	6.80	62	1622	0.3769 ug/L	59
18) Methyl acetate	7.01	43	21364	4.0629 ug/L #	70
19) Methylene Chloride	7.32	84	2266	0.4265 ug/L	97
20) Carbon Disulfide	7.35	76	6628	0.3991 ug/L #	82
22) Methyl Tert Butyl Ether	7.52	73	4808	0.3486 ug/L #	74
23) trans-1,2-Dichloroethene	7.74	96	2372	0.4368 ug/L	93
24) n-Hexane	7.83	57	4212	0.4732 ug/L #	73
26) Vinyl Acetate	8.34	43	434	0.1315 ug/L #	78
27) 1,1-Dichloroethane	8.34	63	3822	0.3576 ug/L #	89
29) 2-Butanone	8.88	43	484	0.2099 ug/L #	60
31) 2,2-Dichloropropane	9.09	77	2680	0.3472 ug/L #	55
32) cis-1,2-Dichloroethene	9.15	96	2277	0.3777 ug/L	91
33) Chloroform	9.35	83	3981	0.3988 ug/L	89
35) Bromochloromethane	9.57	130	952	0.2468 ug/L	57
36) Tetrahydrofuran	9.59	42	212	0.1340 ug/L #	46
38) 1,1,1-Trichloroethane	9.85	97	3917	0.4058 ug/L #	84
39) Cyclohexane	9.88	56	3935	0.3371 ug/L #	80
40) 1,1-Dichloropropene	10.04	75	2817	0.3862 ug/L	82
41) Carbon Tetrachloride	10.18	117	3373	0.3702 ug/L #	88
44) 1,2-Dichloroethane	10.35	62	3201	0.3737 ug/L #	78
45) Benzene	10.39	78	8729	0.4184 ug/L	90
46) Trichloroethene	11.08	130	2537	0.3731 ug/L	93
47) Methylcyclohexane	11.17	83	2742	0.3325 ug/L	90
48) 1,2-Dichloropropane	11.29	63	2133	0.3600 ug/L	84
50) Bromodichloromethane	11.58	83	2857	0.3638 ug/L #	84
51) Dibromomethane	11.65	93	972	0.3128 ug/L	81
52) 2-Chloroethyl Vinyl Ether	11.85	63	791	0.2560 ug/L #	50
54) cis-1,3-Dichloropropene	12.17	75	2689	0.3253 ug/L	99
55) Dimethyl Disulfide	12.42	79	1113	0.2158 ug/L	74

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11838.D Vial: 4
Acq On : 13 May 2016 15:12 Operator: JDS
Sample : WG568769-03 0.4ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:23 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
58)	Toluene	12.56	91	9113	0.4043 ug/L		99
59)	Ethyl Methacrylate	12.65	69	1556	0.2916 ug/L		96
60)	trans-1,3-Dichloropropene	12.73	75	2303	0.3119 ug/L		86
61)	1,1,2-Trichloroethane	12.94	97	1549	0.3672 ug/L		85
62)	2-Hexanone	12.86	43	840	0.2415 ug/L	#	11
63)	1,3-Dichloropropane	13.21	76	2345	0.3346 ug/L		82
64)	Tetrachloroethene	13.34	164	1905	0.3745 ug/L		88
65)	Dibromochloromethane	13.59	129	1972	0.3238 ug/L		89
66)	1,2-Dibromoethane	13.82	107	1617	0.3776 ug/L		69
67)	1-Chlorohexane	13.89	91	2578	0.3487 ug/L		77
68)	Chlorobenzene	14.29	112	6458	0.3896 ug/L		93
69)	1,1,1,2-Tetrachloroethane	14.31	131	2374	0.3736 ug/L		98
70)	Ethylbenzene	14.31	106	3158	0.3754 ug/L		79
71)	m-,p-Xylene	14.39	106	8621	0.8613 ug/L		93
72)	o-Xylene	14.93	106	3752	0.3758 ug/L		96
73)	Styrene	14.95	104	6027	0.3558 ug/L		90
74)	Bromoform	15.44	173	931	0.2454 ug/L		87
75)	Isopropylbenzene	15.31	105	10551	0.4179 ug/L		95
77)	1,1,2,2-Tetrachloroethane	15.52	83	1129	0.2796 ug/L		84
79)	1,2,3-Trichloropropane	15.71	110	200	0.1341 ug/L	#	28
81)	n-Propylbenzene	15.79	91	11244	0.4087 ug/L		98
82)	Bromobenzene	15.91	156	3048	0.3991 ug/L		95
83)	1,3,5-Trimethylbenzene	15.96	105	9158	0.4381 ug/L		92
84)	2-Chlorotoluene	16.05	91	8455	0.4164 ug/L		96
85)	4-Chlorotoluene	16.09	91	6979	0.4189 ug/L		92
86)	a-Methylstyrene	16.34	118	4052	0.3488 ug/L		74
87)	tert-Butylbenzene	16.40	134	1479	0.3224 ug/L		63
88)	1,2,4-Trimethylbenzene	16.45	105	8457	0.3953 ug/L		95
89)	sec-Butylbenzene	16.65	105	10479	0.4236 ug/L		93
90)	p-Isopropyltoluene	16.79	119	9613	0.4269 ug/L		93
91)	1,3-Dichlorobenzene	16.98	146	5826	0.4107 ug/L		93
92)	1,4-Dichlorobenzene	17.10	146	6273	0.4331 ug/L	#	74
93)	n-Butylbenzene	17.28	91	8021	0.3956 ug/L	#	91
94)	1,2-Dichlorobenzene	17.57	146	4937	0.3691 ug/L		97
96)	1,2,4-Trichlorobenzene	19.55	180	3632	0.3655 ug/L		95
97)	Hexachlorobutadiene	19.69	225	1539	0.3812 ug/L		96
98)	Naphthalene	19.90	128	7383	0.3882 ug/L		97
99)	1,2,3-Trichlorobenzene	20.19	180	3748	0.4028 ug/L		84

(#) = qualifier out of range (m) = manual integration
11M11838.D 8260WT.M Fri May 13 17:04:24 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11838.D Vial: 4
Acq On : 13 May 2016 15:12 Operator: JDS
Sample : WG568769-03 0.4ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration

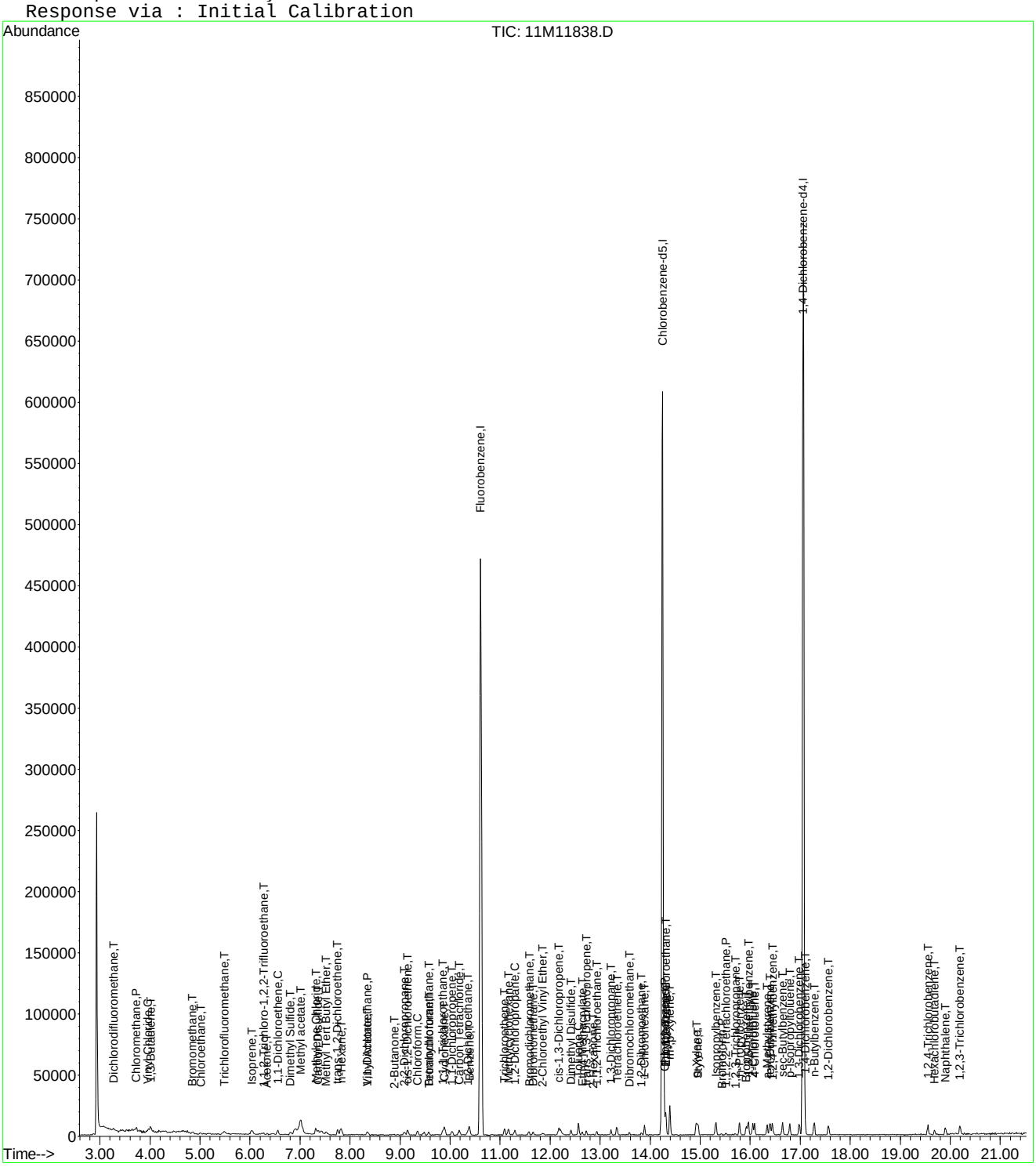

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:25 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	523425	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	440574	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	249989	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	1729	0.2910 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.16%#	
43) 1,2-Dichloroethane-d4	10.23	65	3301	0.4585 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	1.84%#	
57) Toluene-d8	12.47	98	9307	0.4494 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	1.80%#	
78) p-Bromofluorobenzene	15.64	95	4047	0.4956 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	7215	0.9394 ug/L	98
3) Chloromethane	3.72	50	7292	1.0455 ug/L	80
4) Vinyl Chloride	3.96	62	5040	0.9051 ug/L	92
5) 1,3-Butadiene	4.02	54	5876	1.1198 ug/L #	76
6) Bromomethane	4.85	94	3488	0.9862 ug/L	94
7) Chloroethane	4.99	64	3425	0.9083 ug/L #	57
8) Trichlorofluoromethane	5.49	101	10960	1.0625 ug/L	95
9) Diethyl ether	6.01	59	19830	4.2253 ug/L	90
10) Isoprene	6.04	67	6121	0.8582 ug/L	94
11) Acrolein	6.25	56	697	1.2730 ug/L	65
12) 1,1,2-Trichloro-1,2,2-Trif	6.27	101	5456	1.0497 ug/L	90
13) Acetone	6.34	43	1782	1.1386 ug/L #	45
14) 1,1-Dichloroethene	6.55	61	9456	0.9814 ug/L	91
15) Tert-Butyl Alcohol	6.67	59	2848	6.8484 ug/L #	67
16) Dimethyl Sulfide	6.80	62	3631	0.8310 ug/L	93
18) Methyl acetate	7.01	43	20953	3.9242 ug/L #	70
19) Methylene Chloride	7.31	84	5001	0.9270 ug/L	97
20) Carbon Disulfide	7.36	76	15438	0.9154 ug/L	99
21) Acrylonitrile	7.50	53	3780	1.8795 ug/L	89
22) Methyl Tert Butyl Ether	7.53	73	11891	0.8490 ug/L	90
23) trans-1,2-Dichloroethene	7.75	96	4815	0.8732 ug/L	95
24) n-Hexane	7.82	57	9213	1.0194 ug/L #	81
25) Diisopropyl ether	8.15	45	108233	4.5267 ug/L	99
26) Vinyl Acetate	8.31	43	1723	0.5141 ug/L #	78
27) 1,1-Dichloroethane	8.34	63	10818	0.9968 ug/L	95
28) Ethyl-Tert-Butyl ether	8.70	59	85288	4.3548 ug/L	99
29) 2-Butanone	8.88	43	1368	0.5844 ug/L #	60
30) Propionitrile	8.99	54	2406	3.5185 ug/L #	60
31) 2,2-Dichloropropane	9.09	77	7787	0.9935 ug/L	90
32) cis-1,2-Dichloroethene	9.15	96	5567	0.9095 ug/L	94
33) Chloroform	9.35	83	10278	1.0139 ug/L	96
34) 1-Bromopropane	9.48	122	295	0.2934 ug/L	49
35) Bromochloromethane	9.57	130	2941	0.7509 ug/L	88
36) Tetrahydrofuran	9.60	42	7790	4.8493 ug/L	92
38) 1,1,1-Trichloroethane	9.85	97	10000	1.0202 ug/L #	90
39) Cyclohexane	9.88	56	10164	0.8574 ug/L	98
40) 1,1-Dichloropropene	10.04	75	7321	0.9884 ug/L	92
41) Carbon Tetrachloride	10.18	117	9558	1.0331 ug/L	98
42) Tert-Amyl-Methyl ether	10.13	73	59107	4.2417 ug/L	97
44) 1,2-Dichloroethane	10.34	62	8181	0.9406 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:25 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	Benzene	10.38	78	19924	0.9404 ug/L		95
46)	Trichloroethene	11.08	130	6636	0.9611 ug/L		92
47)	Methylcyclohexane	11.18	83	7740	0.9243 ug/L		94
48)	1,2-Dichloropropane	11.29	63	5477	0.9103 ug/L		99
49)	1,4-Dioxane	11.55	88	187	5.1264 ug/L	#	10
50)	Bromodichloromethane	11.57	83	7238	0.9076 ug/L		94
51)	Dibromomethane	11.65	93	2839	0.8997 ug/L		97
52)	2-Chloroethyl Vinyl Ether	11.84	63	1934	0.6164 ug/L	#	72
53)	4-Methyl-2-Pentanone	11.87	58	1016	0.5282 ug/L	#	42
54)	cis-1,3-Dichloropropene	12.17	75	7078	0.8432 ug/L		99
55)	Dimethyl Disulfide	12.42	79	3514	0.6710 ug/L		93
58)	Toluene	12.56	91	22074	0.9676 ug/L		96
59)	Ethyl Methacrylate	12.64	69	4130	0.7646 ug/L		88
60)	trans-1,3-Dichloropropene	12.73	75	5897	0.7891 ug/L		90
61)	1,1,2-Trichloroethane	12.94	97	3547	0.8307 ug/L		96
62)	2-Hexanone	12.87	43	2461	0.6990 ug/L	#	63
63)	1,3-Dichloropropane	13.21	76	5965	0.8410 ug/L		87
64)	Tetrachloroethene	13.34	164	5050	0.9809 ug/L		94
65)	Dibromochloromethane	13.59	129	5237	0.8497 ug/L		90
66)	1,2-Dibromoethane	13.82	107	3214	0.7414 ug/L		91
67)	1-Chlorohexane	13.89	91	7025	0.9387 ug/L		91
68)	Chlorobenzene	14.29	112	16160	0.9630 ug/L		95
69)	1,1,1,2-Tetrachloroethane	14.32	131	6361	0.9889 ug/L		97
70)	Ethylbenzene	14.31	106	8050	0.9455 ug/L		93
71)	m-,p-Xylene	14.39	106	20545	2.0278 ug/L		95
72)	o-Xylene	14.92	106	9683	0.9581 ug/L		96
73)	Styrene	14.96	104	14946	0.8716 ug/L		98
74)	Bromoform	15.43	173	3024	0.7876 ug/L		97
75)	Isopropylbenzene	15.31	105	25656	1.0039 ug/L		92
77)	1,1,2,2-Tetrachloroethane	15.52	83	3569	0.8655 ug/L		89
79)	1,2,3-Trichloropropane	15.71	110	872	0.5724 ug/L		84
80)	trans-1,4-Dichloro-2-Buten	15.74	53	1048	0.6163 ug/L	#	44
81)	n-Propylbenzene	15.79	91	27998	0.9967 ug/L		98
82)	Bromobenzene	15.92	156	8101	1.0388 ug/L		89
83)	1,3,5-Trimethylbenzene	15.96	105	20563	0.9633 ug/L		98
84)	2-Chlorotoluene	16.05	91	20962	1.0111 ug/L		96
85)	4-Chlorotoluene	16.09	91	17553	1.0318 ug/L		100
86)	a-Methylstyrene	16.34	118	10002	0.8431 ug/L		97
87)	tert-Butylbenzene	16.40	134	4396	0.9384 ug/L		84
88)	1,2,4-Trimethylbenzene	16.44	105	21945	1.0045 ug/L		96
89)	sec-Butylbenzene	16.65	105	25927	1.0263 ug/L		100
90)	p-Isopropyltoluene	16.79	119	22467	0.9771 ug/L		96
91)	1,3-Dichlorobenzene	16.98	146	14883	1.0274 ug/L		96
92)	1,4-Dichlorobenzene	17.10	146	15106	1.0213 ug/L	#	67
93)	n-Butylbenzene	17.28	91	20991	1.0139 ug/L		98
94)	1,2-Dichlorobenzene	17.57	146	13331	0.9762 ug/L		99
95)	1,2-Dibromo-3-Chloropropan	18.49	75	493	0.5750 ug/L		75
96)	1,2,4-Trichlorobenzene	19.55	180	9030	0.8899 ug/L		96
97)	Hexachlorobutadiene	19.69	225	3810	0.9242 ug/L		95
98)	Naphthalene	19.90	128	16333	0.8410 ug/L		99
99)	1,2,3-Trichlorobenzene	20.19	180	8645	0.9098 ug/L		88

(#) = qualifier out of range (m) = manual integration
11M11839.D 8260WT.M Fri May 13 17:04:25 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration

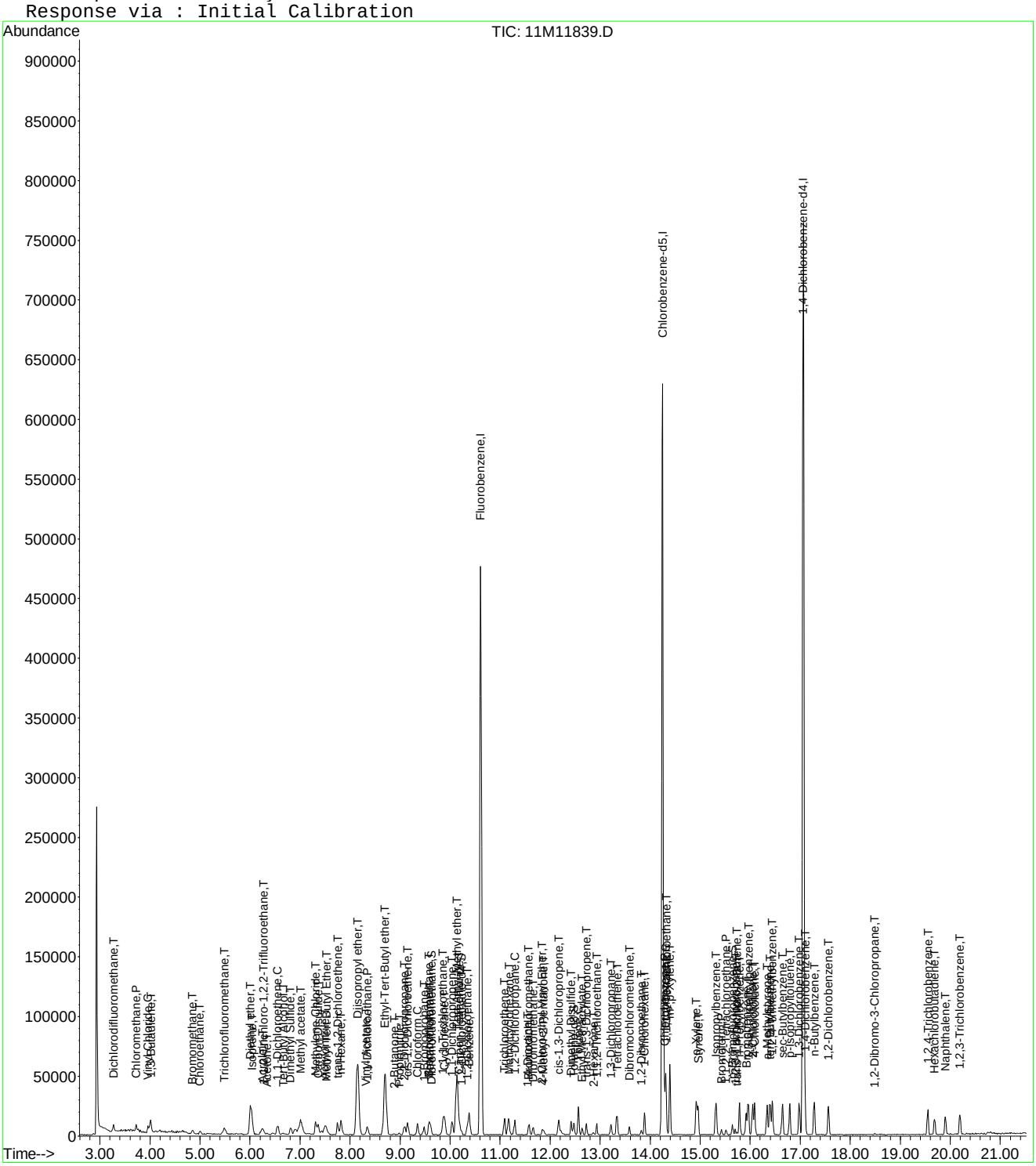

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:40:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.8798	12.0	100	0.00
3	P	Chloromethane	1.0000	1.1102	-11.0	100	0.00
4	C	Vinyl Chloride	1.0000	0.9240	7.6	100	0.00
5	T	1,3-Butadiene	-1.0000	1.0834	0.0	100	0.02
6	T	Bromomethane	1.0000	0.9301	7.0	100	0.00
7	T	Chloroethane	1.0000	0.9773	2.3	100	-0.01
8	T	Trichlorofluoromethane	1.0000	1.0081	-0.8	100	0.01
9	T	Diethyl ether	5.0000	4.9318	1.4	100	0.00
10	T	Isoprene	-1.0000	0.9134	0.0	100	0.00
11	T	Acrolein	2.5000	2.7854	-11.4	100	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0342	-3.4	100	0.02
13	T	Acetone	-1.0000	1.4337	0.0	0	0.00
14	C	1,1-Dichloroethene	1.0000	0.9868	1.3	100	-0.01
15	T	Tert-Butyl Alcohol	10.0000	8.2841	17.2	100	0.01
16	T	Dimethyl Sulfide	-1.0000	0.9488	0.0	100	-0.01
17	T	Iodomethane	-1.0000	2.2962	0.0	0	0.01
18	T	Methyl acetate	-1.0000	4.2835	0.0	0	-0.05
19	T	Methylene Chloride	1.0000	1.0084	-0.8	100	0.00
20	T	Carbon Disulfide	1.0000	0.9624	3.8	100	0.00
21	T	Acrylonitrile	2.5000	2.2683	9.3	100	0.01
22	T	Methyl Tert Butyl Ether	1.0000	0.9614	3.9	100	0.01
23	T	trans-1,2-Dichloroethene	1.0000	0.9079	9.2	100	0.01
24	T	n-Hexane	-1.0000	1.0430	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	4.9106	1.8	100	0.00
26	T	Vinyl Acetate	-1.0000	2.6242	0.0	0	0.00
27	P	1,1-Dichloroethane	1.0000	1.0166	-1.7	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.7543	4.9	100	0.00
29	T	2-Butanone	-1.0000	0.7280	0.0	0	0.01
30	T	Propionitrile	5.0000	4.3718	12.6	100	0.01
31	T	2,2-Dichloropropane	1.0000	0.9353	6.5	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	0.9520	4.8	100	0.00
33	C	Chloroform	1.0000	0.9836	1.6	100	0.00
34	T	1-Bromopropane	1.0000	0.9106	8.9	100	0.00
35	T	Bromochloromethane	1.0000	0.8469	15.3	100	0.00
36	T	Tetrahydrofuran	5.0000	5.8710	-17.4	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.3018	0.0	100	0.00
38	T	1,1,1-Trichloroethane	1.0000	0.9725	2.8	100	0.00
39	T	Cyclohexane	1.0000	0.9069	9.3	100	0.00
40	T	1,1-Dichloropropene	1.0000	0.9971	0.3	100	0.00
41	T	Carbon Tetrachloride	1.0000	0.9518	4.8	100	0.00
42	T	Tert-Amyl-Methyl ether	5.0000	4.7417	5.2	100	0.00
43	S	1,2-Dichloroethane-d4	0.5000	0.5054	-1.1	100	0.00
44	T	1,2-Dichloroethane	1.0000	0.9639	3.6	100	0.00
45	T	Benzene	1.0000	0.9912	0.9	100	0.00
46	T	Trichloroethene	1.0000	1.0157	-1.6	100	-0.01
47	T	Methylcyclohexane	1.0000	0.9600	4.0	100	0.01
48	C	1,2-Dichloropropane	1.0000	0.9844	1.6	100	0.00
49	T	1,4-Dioxane	-1.0000	28.5532	0.0	0	0.00
50	T	Bromodichloromethane	1.0000	0.9266	7.3	100	0.00
51	T	Dibromomethane	1.0000	0.9792	2.1	100	0.00
52	T	2-Chloroethyl Vinyl Ether	-1.0000	0.7053	0.0	100	0.00
53	T	4-Methyl-2-Pentanone	-1.0000	0.6569	0.0	0	0.00
54	T	cis-1,3-Dichloropropene	1.0000	0.9060	9.4	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:40:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	-1.0000	0.7475	0.0	100	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	-1.0000	0.4862	0.0	100	0.00
58	C	Toluene	1.0000	0.9897	1.0	100	0.00
59	T	Ethyl Methacrylate	1.0000	0.8672	13.3	100	-0.01
60	T	trans-1,3-Dichloropropene	1.0000	0.8237	17.6	100	0.00
61	T	1,1,2-Trichloroethane	1.0000	0.8969	10.3	100	0.00
62	T	2-Hexanone	-1.0000	0.8473	0.0	100	0.01
63	T	1,3-Dichloropropane	1.0000	0.9392	6.1	100	0.00
64	T	Tetrachloroethene	1.0000	0.9737	2.6	100	0.00
65	T	Dibromochloromethane	1.0000	0.8681	13.2	100	0.00
66	T	1,2-Dibromoethane	1.0000	0.8111	18.9	100	0.00
67	T	1-Chlorohexane	1.0000	0.9554	4.5	100	0.00
68	P	Chlorobenzene	1.0000	0.9890	1.1	100	0.00
69	T	1,1,1,2-Tetrachloroethane	1.0000	0.9621	3.8	100	0.00
70	C	Ethylbenzene	1.0000	0.9608	3.9	100	0.00
71	T	m-,p-Xylene	2.0000	2.0170	-0.9	100	0.00
72	T	o-Xylene	1.0000	0.9768	2.3	100	0.00
73	T	Styrene	1.0000	0.9126	8.7	100	0.01
74	P	Bromoform	1.0000	0.8271	17.3	100	0.00
75	T	Isopropylbenzene	1.0000	0.9787	2.1	100	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	1.0000	0.9168	8.3	100	0.00
78	S	p-Bromofluorobenzene	-1.0000	0.5252	0.0	100	0.00
79	T	1,2,3-Trichloropropane	1.0000	0.9573	4.3	100	0.01
80	T	trans-1,4-Dichloro-2-Butene	1.0000	1.2934	-29.3#	100	0.00
81	T	n-Propylbenzene	1.0000	0.9671	3.3	100	0.00
82	T	Bromobenzene	1.0000	1.0663	-6.6	100	0.00
83	T	1,3,5-Trimethylbenzene	1.0000	0.9307	6.9	100	0.00
84	T	2-Chlorotoluene	1.0000	1.0337	-3.4	100	0.00
85	T	4-Chlorotoluene	1.0000	0.9664	3.4	100	0.00
86	T	a-Methylstyrene	1.0000	0.8582	14.2	100	0.00
87	T	tert-Butylbenzene	1.0000	0.9392	6.1	100	0.00
88	T	1,2,4-Trimethylbenzene	1.0000	0.9755	2.5	100	0.00
89	T	sec-Butylbenzene	1.0000	0.9774	2.3	100	0.00
90	T	p-Isopropyltoluene	1.0000	0.9221	7.8	100	0.00
91	T	1,3-Dichlorobenzene	1.0000	1.0144	-1.4	100	0.00
92	T	1,4-Dichlorobenzene	1.0000	1.0157	-1.6	100	0.00
93	T	n-Butylbenzene	1.0000	0.9776	2.2	100	0.00
94	T	1,2-Dichlorobenzene	1.0000	0.9974	0.3	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.1961	0.0	100	0.00
96	T	1,2,4-Trichlorobenzene	1.0000	0.9233	7.7	100	0.00
97	T	Hexachlorobutadiene	1.0000	0.8843	11.6	100	0.00
98	T	Naphthalene	1.0000	0.8997	10.0	100	0.00
99	T	1,2,3-Trichlorobenzene	1.0000	0.9631	3.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11839.D 8260WT.M Sat May 14 18:41:49 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:26 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	504626	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	418265	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	241104	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	5067	0.8846 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.52%#	
43) 1,2-Dichloroethane-d4	10.23	65	6143	0.8851 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.56%#	
57) Toluene-d8	12.47	98	18425	0.9371 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	3.76%#	
78) p-Bromofluorobenzene	15.64	95	7442	0.9449 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	3.76%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	14866	2.0077 ug/L	98
3) Chloromethane	3.72	50	14641	2.1775 ug/L	94
4) Vinyl Chloride	3.96	62	10045	1.8711 ug/L	99
5) 1,3-Butadiene	4.01	54	10590	2.0934 ug/L	82
6) Bromomethane	4.85	94	7024	2.0600 ug/L	94
7) Chloroethane	4.99	64	6661	1.8324 ug/L	97
8) Trichlorofluoromethane	5.49	101	21690	2.1811 ug/L	99
9) Diethyl ether	6.01	59	96350	21.2945 ug/L	97
10) Isoprene	6.04	67	12682	1.8443 ug/L	94
11) Acrolein	6.23	56	5531	10.4784 ug/L	91
12) 1,1,2-Trichloro-1,2,2-Trif	6.23	101	9909	1.9774 ug/L	96
13) Acetone	6.35	43	3346	2.2176 ug/L #	68
14) 1,1-Dichloroethene	6.56	61	18584	2.0007 ug/L	98
15) Tert-Butyl Alcohol	6.66	59	15203	37.9194 ug/L #	93
16) Dimethyl Sulfide	6.81	62	7308	1.7348 ug/L	98
17) Iodomethane	7.06	142	1747	0.4335 ug/L #	49
18) Methyl acetate	7.01	43	17794	3.4567 ug/L #	75
19) Methylene Chloride	7.31	84	10330	1.9861 ug/L	99
20) Carbon Disulfide	7.36	76	30745	1.8910 ug/L	99
21) Acrylonitrile	7.49	53	17499	9.0252 ug/L	91
22) Methyl Tert Butyl Ether	7.52	73	22031	1.6315 ug/L	97
23) trans-1,2-Dichloroethene	7.74	96	10660	2.0051 ug/L	95
24) n-Hexane	7.82	57	17125	1.9654 ug/L #	94
25) Diisopropyl ether	8.15	45	542272	23.5246 ug/L	99
26) Vinyl Acetate	8.31	43	6813	2.1084 ug/L #	84
27) 1,1-Dichloroethane	8.34	63	21278	2.0336 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	431080	22.8311 ug/L	100
29) 2-Butanone	8.87	43	3175	1.4068 ug/L #	60
30) Propionitrile	8.99	54	12529	19.0049 ug/L	98
31) 2,2-Dichloropropane	9.09	77	17576	2.3259 ug/L	94
32) cis-1,2-Dichloroethene	9.15	96	11652	1.9746 ug/L	96
33) Chloroform	9.35	83	20769	2.1252 ug/L	96
34) 1-Bromopropane	9.48	122	1648	1.7003 ug/L	70
35) Bromochloromethane	9.57	130	6812	1.8040 ug/L	100
36) Tetrahydrofuran	9.60	42	30834	19.9093 ug/L	96
38) 1,1,1-Trichloroethane	9.84	97	20518	2.1713 ug/L #	94
39) Cyclohexane	9.88	56	22087	1.9325 ug/L	98
40) 1,1-Dichloropropene	10.04	75	13954	1.9542 ug/L	98
41) Carbon Tetrachloride	10.18	117	21054	2.3604 ug/L	98
42) Tert-Amyl-Methyl ether	10.13	73	300593	22.3753 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M11840.D 8260WT.M Fri May 13 17:04:27 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:26 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
44)	1,2-Dichloroethane	10.34	62	16928	2.0188 ug/L		98
45)	Benzene	10.38	78	41004	2.0075 ug/L		97
46)	Trichloroethene	11.08	130	13283	1.9954 ug/L		96
47)	Methylcyclohexane	11.17	83	15711	1.9461 ug/L		95
48)	1,2-Dichloropropane	11.29	63	11010	1.8980 ug/L		91
49)	1,4-Dioxane	11.55	88	898	25.5347 ug/L		88
50)	Bromodichloromethane	11.57	83	15058	1.9584 ug/L		100
51)	Dibromomethane	11.66	93	5461	1.7952 ug/L		97
52)	2-Chloroethyl Vinyl Ether	11.84	63	4894	1.6180 ug/L		83
53)	4-Methyl-2-Pentanone	11.87	58	2173	1.1717 ug/L	#	65
54)	cis-1,3-Dichloropropene	12.17	75	14440	1.7842 ug/L		91
55)	Dimethyl Disulfide	12.42	79	7378	1.4613 ug/L		97
58)	Toluene	12.56	91	43051	1.9877 ug/L		98
59)	Ethyl Methacrylate	12.64	69	7792	1.5195 ug/L		95
60)	trans-1,3-Dichloropropene	12.73	75	12991	1.8310 ug/L		98
61)	1,1,2-Trichloroethane	12.93	97	8138	2.0075 ug/L		91
62)	2-Hexanone	12.86	43	4715	1.4106 ug/L	#	61
63)	1,3-Dichloropropane	13.21	76	11740	1.7434 ug/L		95
64)	Tetrachloroethene	13.34	164	10610	2.1708 ug/L		90
65)	Dibromochloromethane	13.59	129	11236	1.9202 ug/L		96
66)	1,2-Dibromoethane	13.82	107	7613	1.8499 ug/L		99
67)	1-Chlorohexane	13.89	91	13853	1.9499 ug/L		96
68)	Chlorobenzene	14.29	112	33381	2.0954 ug/L		99
69)	1,1,1,2-Tetrachloroethane	14.32	131	13541	2.2175 ug/L		97
70)	Ethylbenzene	14.31	106	17116	2.1175 ug/L		98
71)	m-,p-Xylene	14.39	106	40469	4.2073 ug/L		95
72)	o-Xylene	14.92	106	19196	2.0006 ug/L		99
73)	Styrene	14.96	104	30019	1.8440 ug/L		92
74)	Bromoform	15.43	173	6309	1.7308 ug/L		96
75)	Isopropylbenzene	15.31	105	52419	2.1605 ug/L		98
77)	1,1,2,2-Tetrachloroethane	15.51	83	7118	1.7898 ug/L		100
79)	1,2,3-Trichloropropane	15.70	110	2487	1.6927 ug/L		98
80)	trans-1,4-Dichloro-2-Buten	15.74	53	2265	1.3810 ug/L		68
81)	n-Propylbenzene	15.79	91	59353	2.1908 ug/L		100
82)	Bromobenzene	15.91	156	15393	2.0465 ug/L		97
83)	1,3,5-Trimethylbenzene	15.95	105	43641	2.1197 ug/L		98
84)	2-Chlorotoluene	16.05	91	40923	2.0467 ug/L		96
85)	4-Chlorotoluene	16.09	91	37360	2.2771 ug/L		97
86)	a-Methylstyrene	16.34	118	20567	1.7976 ug/L		92
87)	tert-Butylbenzene	16.40	134	9253	2.0481 ug/L		89
88)	1,2,4-Trimethylbenzene	16.44	105	43857	2.0815 ug/L		99
89)	sec-Butylbenzene	16.65	105	52733	2.1643 ug/L		99
90)	p-Isopropyltoluene	16.79	119	49990	2.2541 ug/L		98
91)	1,3-Dichlorobenzene	16.98	146	29674	2.1240 ug/L		99
92)	1,4-Dichlorobenzene	17.10	146	30258	2.1211 ug/L		87
93)	n-Butylbenzene	17.28	91	44260	2.2167 ug/L		98
94)	1,2-Dichlorobenzene	17.57	146	27619	2.0969 ug/L		95
95)	1,2-Dibromo-3-Chloropropan	18.49	75	1094	1.3229 ug/L		60
96)	1,2,4-Trichlorobenzene	19.55	180	18455	1.8857 ug/L		98
97)	Hexachlorobutadiene	19.69	225	8691	2.1858 ug/L		89
98)	Naphthalene	19.90	128	34041	1.8174 ug/L	#	95
99)	1,2,3-Trichlorobenzene	20.19	180	17703	1.9318 ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration

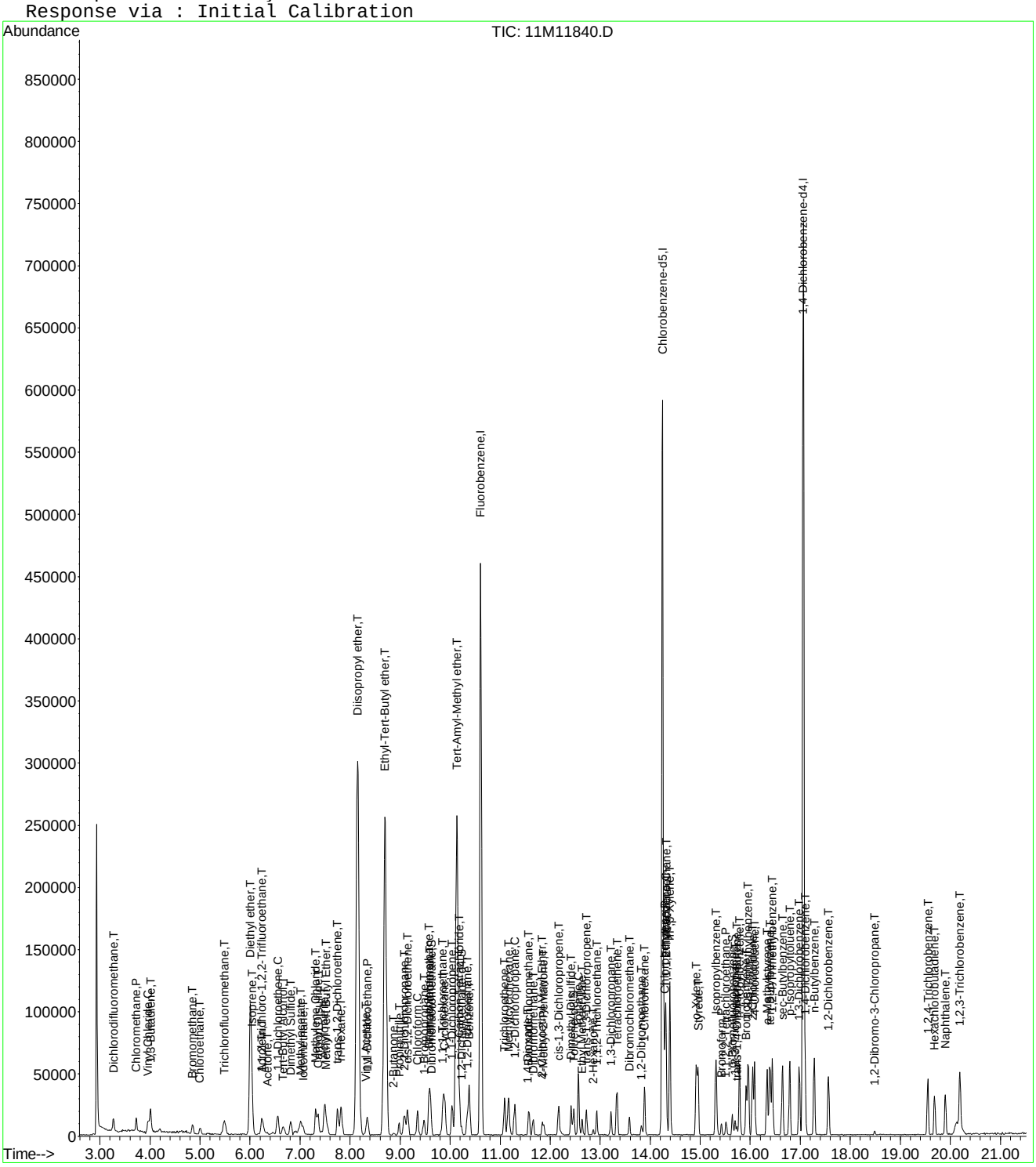

11M11840.D 8260WT.M Fri May 13 17:04:28 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.8802	6.0	100	0.00
3	P	Chloromethane	2.0000	2.3121	-15.6	100	0.00
4	C	Vinyl Chloride	2.0000	1.9102	4.5	100	0.00
5	T	1,3-Butadiene	-1.0000	2.0253	0.0	100	0.01
6	T	Bromomethane	2.0000	1.9427	2.9	100	0.00
7	T	Chloroethane	2.0000	1.9714	1.4	100	-0.01
8	T	Trichlorofluoromethane	2.0000	2.0694	-3.5	100	0.01
9	T	Diethyl ether	25.0000	24.8555	0.6	100	0.00
10	T	Isoprene	-1.0000	1.9630	0.0	100	0.00
11	T	Acrolein	12.5000	12.0322	3.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.9483	2.6	100	-0.01
13	T	Acetone	-1.0000	2.7924	0.0	100	0.01
14	C	1,1-Dichloroethene	2.0000	2.0117	-0.6	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	45.8688	8.3	100	0.00
16	T	Dimethyl Sulfide	-1.0000	1.9809	0.0	100	0.00
17	T	Iodomethane	2.0000	2.6580	-32.9#	100	0.00
18	T	Methyl acetate	2.0000	0.8555	57.2#	100	0.00
19	T	Methylene Chloride	2.0000	2.1606	-8.0	100	0.00
20	T	Carbon Disulfide	2.0000	1.9879	0.6	100	0.00
21	T	Acrylonitrile	12.5000	10.8919	12.9	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.8475	7.6	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	2.0850	-4.2	100	0.00
24	T	n-Hexane	2.0000	2.0110	-0.6	100	0.00
25	T	Diisopropyl ether	25.0000	25.5200	-2.1	100	0.00
26	T	Vinyl Acetate	-1.0000	3.2184	0.0	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.0741	-3.7	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	24.9254	0.3	100	0.00
29	T	2-Butanone	-1.0000	1.7527	0.0	0	0.00
30	T	Propionitrile	25.0000	23.6140	5.5	100	0.01
31	T	2,2-Dichloropropane	2.0000	2.1897	-9.5	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0669	-3.3	100	0.00
33	C	Chloroform	2.0000	2.0616	-3.1	100	0.00
34	T	1-Bromopropane	2.0000	2.2551	-12.8	100	0.00
35	T	Bromochloromethane	2.0000	2.0347	-1.7	100	0.00
36	T	Tetrahydrofuran	25.0000	24.1040	3.6	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9175	8.3	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	2.0696	-3.5	100	-0.01
39	T	Cyclohexane	2.0000	2.0442	-2.2	100	0.00
40	T	1,1-Dichloropropene	2.0000	1.9713	1.4	100	0.00
41	T	Carbon Tetrachloride	2.0000	2.1748	-8.7	100	0.00
42	T	Tert-Amyl-Methyl ether	25.0000	25.0128	-0.1	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	0.9755	2.4	100	0.00
44	T	1,2-Dichloroethane	2.0000	2.0689	-3.4	100	0.00
45	T	Benzene	2.0000	2.1160	-5.8	100	0.00
46	T	Trichloroethene	2.0000	2.1089	-5.4	100	-0.01
47	T	Methylcyclohexane	2.0000	2.0212	-1.1	100	0.00
48	C	1,2-Dichloropropane	2.0000	2.0525	-2.6	100	0.00
49	T	1,4-Dioxane	50.0000	49.5313	0.9	100	0.00
50	T	Bromodichloromethane	2.0000	1.9996	0.0	100	0.00
51	T	Dibromomethane	2.0000	1.9537	2.3	100	0.01
52	T	2-Chloroethyl Vinyl Ether	-1.0000	1.8512	0.0	100	0.00
53	T	4-Methyl-2-Pentanone	-1.0000	1.4573	0.0	100	0.00
54	T	cis-1,3-Dichloropropene	2.0000	1.9172	4.1	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	-1.0000	1.6278	0.0	100	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	1.0000	1.0138	-1.4	100	0.00
58	C	Toluene	2.0000	2.0332	-1.7	100	0.00
59	T	Ethyl Methacrylate	2.0000	1.7234	13.8	100	-0.01
60	T	trans-1,3-Dichloropropene	2.0000	1.9114	4.4	100	0.00
61	T	1,1,2-Trichloroethane	2.0000	2.1674	-8.4	100	0.00
62	T	2-Hexanone	-1.0000	1.7098	0.0	100	0.00
63	T	1,3-Dichloropropane	2.0000	1.9471	2.6	100	0.00
64	T	Tetrachloroethene	2.0000	2.1547	-7.7	100	0.00
65	T	Dibromochloromethane	2.0000	1.9620	1.9	100	0.00
66	T	1,2-Dibromoethane	2.0000	2.0238	-1.2	100	0.00
67	T	1-Chlorohexane	2.0000	1.9844	0.8	100	0.00
68	P	Chlorobenzene	2.0000	2.1520	-7.6	100	0.00
69	T	1,1,1,2-Tetrachloroethane	2.0000	2.1574	-7.9	100	0.00
70	C	Ethylbenzene	2.0000	2.1518	-7.6	100	0.00
71	T	m-,p-Xylene	4.0000	4.1851	-4.6	100	0.00
72	T	o-Xylene	2.0000	2.0398	-2.0	100	0.00
73	T	Styrene	2.0000	1.9307	3.5	100	0.01
74	P	Bromoform	2.0000	1.8176	9.1	100	0.00
75	T	Isopropylbenzene	2.0000	2.1063	-5.3	100	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	2.0000	1.8958	5.2	100	-0.01
78	S	p-Bromofluorobenzene	1.0000	1.0013	-0.1	100	0.00
79	T	1,2,3-Trichloropropane	2.0000	2.1172	-5.9	100	0.00
80	T	trans-1,4-Dichloro-2-Butene	2.0000	1.9762	1.2	100	0.00
81	T	n-Propylbenzene	2.0000	2.1256	-6.3	100	0.00
82	T	Bromobenzene	2.0000	2.1009	-5.0	100	-0.01
83	T	1,3,5-Trimethylbenzene	2.0000	2.0481	-2.4	100	-0.01
84	T	2-Chlorotoluene	2.0000	2.0925	-4.6	100	0.00
85	T	4-Chlorotoluene	2.0000	2.1326	-6.6	100	0.00
86	T	a-Methylstyrene	2.0000	1.8297	8.5	100	0.00
87	T	tert-Butylbenzene	2.0000	2.0497	-2.5	100	0.00
88	T	1,2,4-Trimethylbenzene	2.0000	2.0213	-1.1	100	0.00
89	T	sec-Butylbenzene	2.0000	2.0611	-3.1	100	0.00
90	T	p-Isopropyltoluene	2.0000	2.1272	-6.4	100	0.00
91	T	1,3-Dichlorobenzene	2.0000	2.0970	-4.8	100	0.00
92	T	1,4-Dichlorobenzene	2.0000	2.1095	-5.5	100	0.00
93	T	n-Butylbenzene	2.0000	2.1373	-6.9	100	0.00
94	T	1,2-Dichlorobenzene	2.0000	2.1425	-7.1	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	2.0000	1.9175	4.1	100	0.00
96	T	1,2,4-Trichlorobenzene	2.0000	1.9565	2.2	100	0.00
97	T	Hexachlorobutadiene	2.0000	2.0914	-4.6	100	0.00
98	T	Naphthalene	2.0000	1.9443	2.8	100	0.00
99	T	1,2,3-Trichlorobenzene	2.0000	2.0449	-2.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11840.D 8260WT.M Sat May 14 18:46:53 2016 Page 2

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:46 2016 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Single Level Calibration

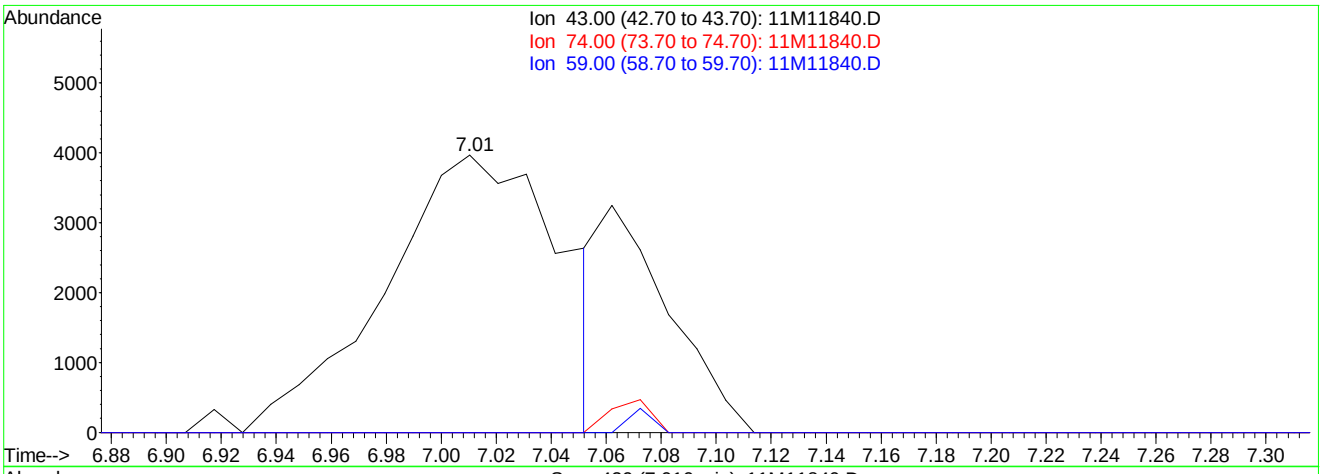

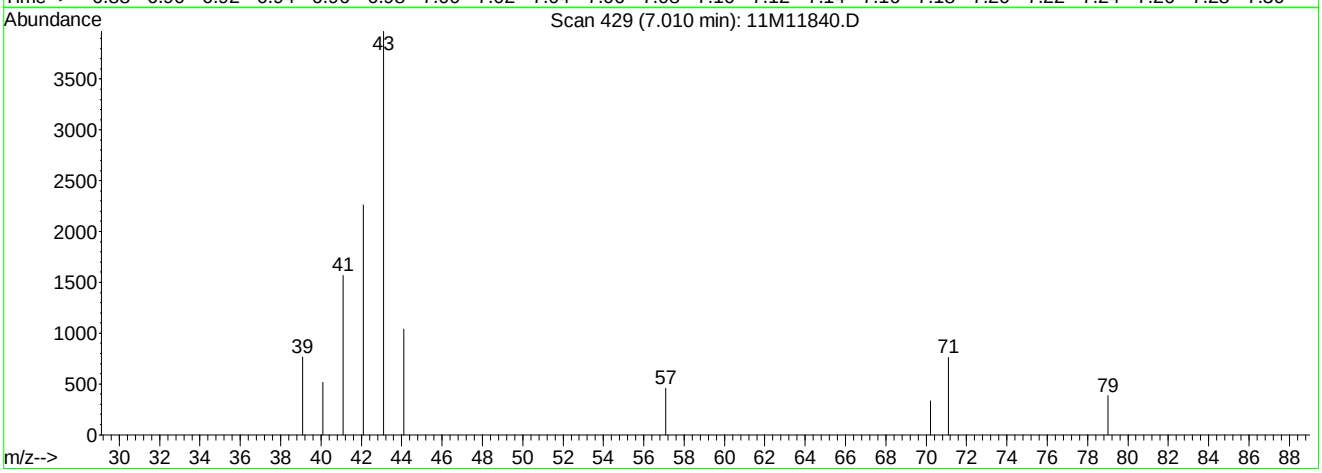

TIC: 11M11840.D

(18) Methyl acetate (T)

7.01min 3.69ug/L

response 17794

Ion	Exp%	Act%
43.00	100	100
74.00	13.60	2.82#
59.00	6.50	1.21#
0.00	0.00	0.00

11M11840.D 8260WT.M Sat May 14 18:46:34 2016

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:46 2016 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Single Level Calibration

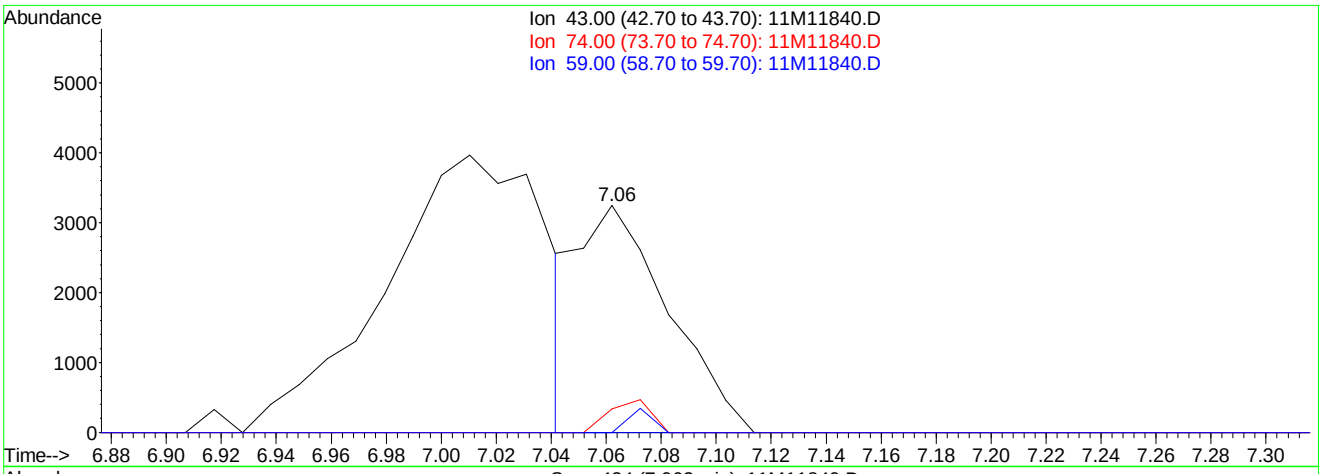

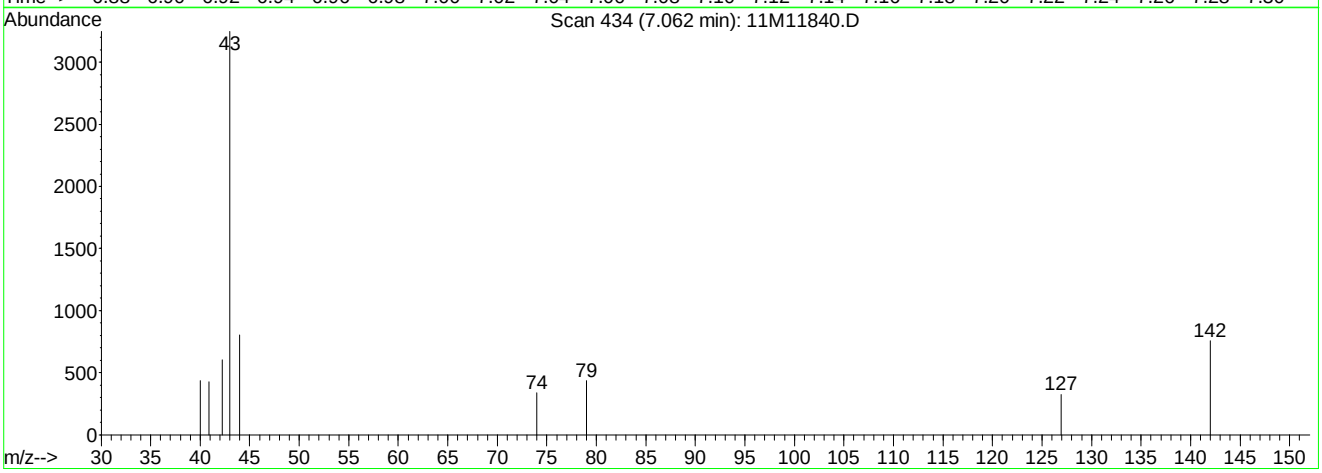

TIC: 11M11840.D

(18) Methyl acetate (T)

7.06min 0.86ug/L mint

response 7344

Ion	Exp%	Act%
43.00	100	100
74.00	13.60	6.84#
59.00	6.50	2.93#
0.00	0.00	0.00

11M11840.D 8260WT.M Sat May 14 18:46:39 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:12:58 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 17:07:56 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	510485	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	424113	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	244127	25.00 ug/L	-0.01
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	13577	2.3093 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	9.24%#	
43) 1,2-Dichloroethane-d4	10.23	65	16340	2.3640 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	9.44%#	
57) Toluene-d8	12.47	98	46369	2.3570 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	9.44%#	
78) p-Bromofluorobenzene	15.64	95	19139	2.4218 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	9.68%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	33260	4.2909 ug/L	97
3) Chloromethane	3.72	50	29484	4.2588 ug/L	100
4) Vinyl Chloride	3.96	62	24947	4.6446 ug/L	98
5) 1,3-Butadiene	4.00	54	24704	4.8274 ug/L	87
6) Bromomethane	4.85	94	16794	4.7876 ug/L	96
7) Chloroethane	5.00	64	15417	4.1982 ug/L	96
8) Trichlorofluoromethane	5.48	101	50663	4.8750 ug/L	98
9) Diethyl ether	6.01	59	199353	45.0064 ug/L	100
10) Isoprene	6.04	67	30513	4.3864 ug/L	99
11) Acrolein	6.25	56	12345	23.3877 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	23865	4.5585 ug/L	97
13) Acetone	6.35	43	6439	4.2186 ug/L	86
14) 1,1-Dichloroethene	6.56	61	43769	4.6158 ug/L	96
15) Tert-Butyl Alcohol	6.66	59	34212	87.4805 ug/L	100
16) Dimethyl Sulfide	6.81	62	17251	4.0482 ug/L	99
17) Iodomethane	7.06	142	7385	2.0684 ug/L	94
18) Methyl acetate	7.06	43	32363	5.4250 ug/L #	83
19) Methylene Chloride	7.31	84	23476	4.4707 ug/L	98
20) Carbon Disulfide	7.36	76	72931	4.4715 ug/L	98
21) Acrylonitrile	7.49	53	38039	20.0847 ug/L	96
22) Methyl Tert Butyl Ether	7.52	73	57597	4.3071 ug/L	98
23) trans-1,2-Dichloroethene	7.74	96	23369	4.3390 ug/L	99
24) n-Hexane	7.82	57	38507	4.3615 ug/L	99
25) Diisopropyl ether	8.15	45	1105208	48.2180 ug/L	99
26) Vinyl Acetate	8.31	43	24007	7.3442 ug/L	97
27) 1,1-Dichloroethane	8.34	63	51535	4.8316 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	899266	48.1312 ug/L	99
29) 2-Butanone	8.88	43	8098	3.5469 ug/L	98
30) Propionitrile	8.98	54	26204	41.2561 ug/L	97
31) 2,2-Dichloropropane	9.09	77	40285	5.2526 ug/L	97
32) cis-1,2-Dichloroethene	9.15	96	27456	4.6081 ug/L	91
33) Chloroform	9.35	83	48958	4.7306 ug/L	97
34) 1-Bromopropane	9.47	122	4632	4.9482 ug/L	88
35) Bromochloromethane	9.57	130	17073	4.6807 ug/L	99
36) Tetrahydrofuran	9.60	42	59638	39.6839 ug/L	99
38) 1,1,1-Trichloroethane	9.85	97	48123	4.8983 ug/L	100
39) Cyclohexane	9.88	56	51945	4.5931 ug/L	98
40) 1,1-Dichloropropene	10.04	75	33867	4.6344 ug/L	99
41) Carbon Tetrachloride	10.17	117	47434	5.0851 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	615710	46.3601 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M11841.D 8260WT.M Fri May 13 17:12:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:12:58 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 17:07:56 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	40281	4.6727 ug/L	99
45)	Benzene	10.38	78	94223	4.6151 ug/L	99
46)	Trichloroethene	11.08	130	31195	4.7740 ug/L	96
47)	Methylcyclohexane	11.17	83	35731	4.4100 ug/L	96
48)	1,2-Dichloropropane	11.29	63	25973	4.4921 ug/L	93
49)	1,4-Dioxane	11.56	88	2747	80.2363 ug/L	93
50)	Bromodichloromethane	11.57	83	36997	4.7467 ug/L	99
51)	Dibromomethane	11.65	93	13963	4.5774 ug/L	97
52)	2-Chloroethyl Vinyl Ether	11.84	63	11417	3.7313 ug/L	95
53)	4-Methyl-2-Pentanone	11.87	58	6133	3.2690 ug/L	90
54)	cis-1,3-Dichloropropene	12.17	75	36461	4.5343 ug/L	100
55)	Dimethyl Disulfide	12.42	79	18914	3.7032 ug/L	99
58)	Toluene	12.56	91	107617	4.9467 ug/L	100
59)	Ethyl Methacrylate	12.65	69	21187	4.1021 ug/L	99
60)	trans-1,3-Dichloropropene	12.73	75	32824	4.5778 ug/L	99
61)	1,1,2-Trichloroethane	12.94	97	17791	4.3060 ug/L	98
62)	2-Hexanone	12.86	43	11606	3.4244 ug/L	99
63)	1,3-Dichloropropane	13.21	76	30121	4.5460 ug/L	97
64)	Tetrachloroethene	13.33	164	24241	4.8819 ug/L	95
65)	Dibromochloromethane	13.59	129	27989	4.7024 ug/L	95
66)	1,2-Dibromoethane	13.82	107	18147	4.4382 ug/L	96
67)	1-Chlorohexane	13.89	91	33195	4.6591 ug/L	97
68)	Chlorobenzene	14.29	112	79059	4.9583 ug/L	98
69)	1,1,1,2-Tetrachloroethane	14.32	131	31047	4.8956 ug/L	97
70)	Ethylbenzene	14.31	106	39304	4.8168 ug/L	95
71)	m-,p-Xylene	14.39	106	95751	9.7273 ug/L	95
72)	o-Xylene	14.92	106	45759	4.7228 ug/L	96
73)	Styrene	14.95	104	77900	4.8227 ug/L	98
74)	Bromoform	15.43	173	15663	4.1856 ug/L	97
75)	Isopropylbenzene	15.31	105	123883	4.9827 ug/L	99
77)	1,1,2,2-Tetrachloroethane	15.51	83	18105	4.4049 ug/L	100
79)	1,2,3-Trichloropropane	15.70	110	6717	4.7266 ug/L	85
80)	trans-1,4-Dichloro-2-Buten	15.74	53	6067	3.6507 ug/L	69
81)	n-Propylbenzene	15.79	91	143972	5.2435 ug/L	99
82)	Bromobenzene	15.92	156	37345	4.9800 ug/L	93
83)	1,3,5-Trimethylbenzene	15.95	105	106030	5.0309 ug/L	100
84)	2-Chlorotoluene	16.05	91	99279	4.9734 ug/L	100
85)	4-Chlorotoluene	16.09	91	88275	5.1992 ug/L	98
86)	a-Methylstyrene	16.34	118	53766	4.7153 ug/L	98
87)	tert-Butylbenzene	16.39	134	23868	5.2956 ug/L	97
88)	1,2,4-Trimethylbenzene	16.44	105	112072	5.2401 ug/L	99
89)	sec-Butylbenzene	16.65	105	129249	5.1810 ug/L	99
90)	p-Isopropyltoluene	16.79	119	119605	5.2524 ug/L	98
91)	1,3-Dichlorobenzene	16.98	146	71265	5.0271 ug/L	99
92)	1,4-Dichlorobenzene	17.10	146	72437	5.0122 ug/L	96
93)	n-Butylbenzene	17.28	91	100062	4.9277 ug/L	99
94)	1,2-Dichlorobenzene	17.57	146	64925	4.9520 ug/L	98
95)	1,2-Dibromo-3-Chloropropan	18.49	75	3875	4.6567 ug/L	87
96)	1,2,4-Trichlorobenzene	19.55	180	46664	4.8629 ug/L	97
97)	Hexachlorobutadiene	19.69	225	20419	5.1319 ug/L	96
98)	Naphthalene	19.90	128	83612	4.4869 ug/L	99
99)	1,2,3-Trichlorobenzene	20.19	180	40714	4.5323 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M11841.D 8260WT.M Fri May 13 17:12:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:12 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 17:07:56 2016
Response via : Initial Calibration

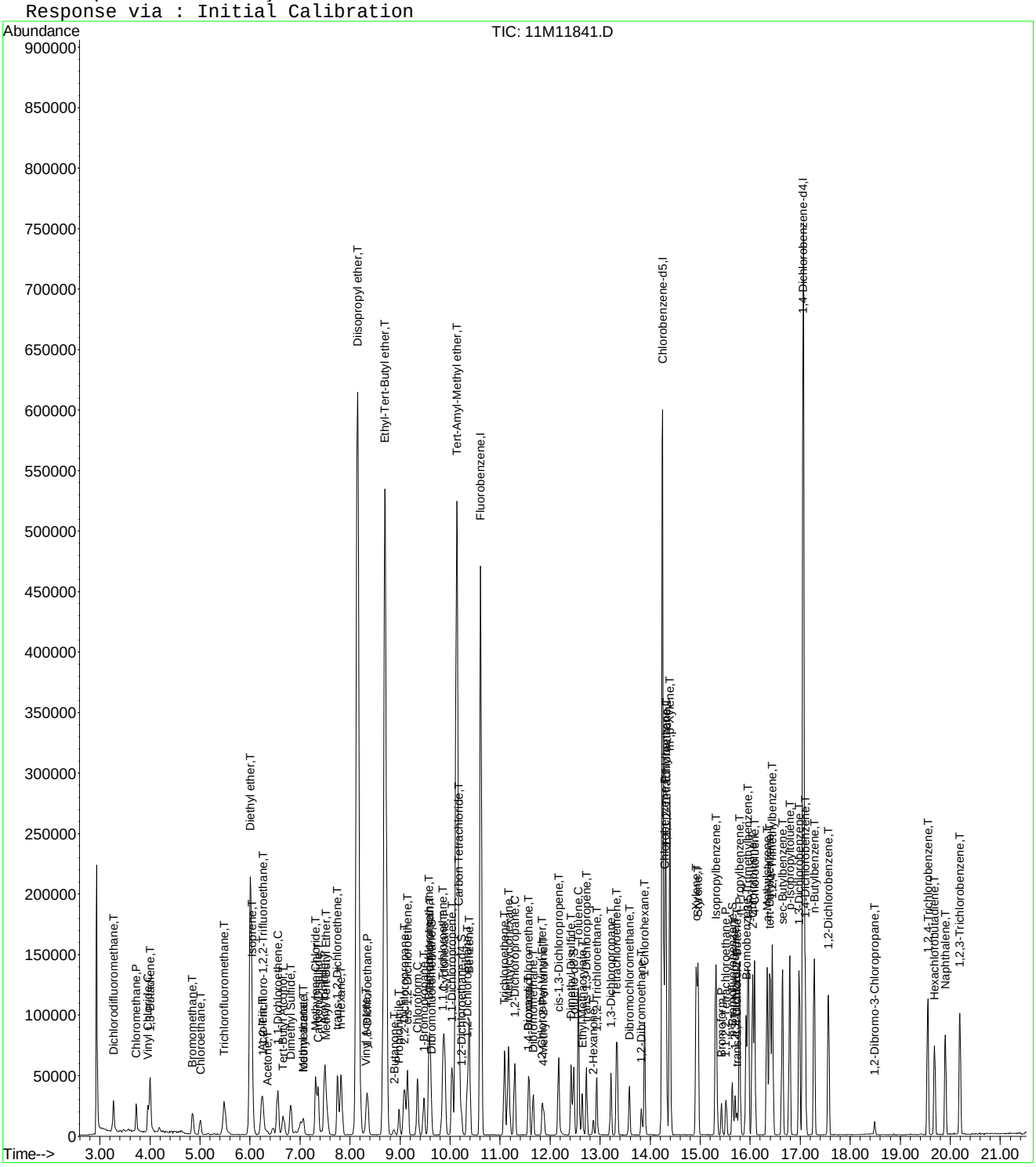

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.1584	16.8	100	0.00
3	P	Chloromethane	5.0000	4.6027	7.9	100	0.00
4	C	Vinyl Chloride	5.0000	4.6895	6.2	100	0.00
5	T	1,3-Butadiene	5.0000	4.6702	6.6	100	0.00
6	T	Bromomethane	5.0000	4.5915	8.2	100	0.00
7	T	Chloroethane	5.0000	4.5105	9.8	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.7781	4.4	100	0.00
9	T	Diethyl ether	50.0000	50.8371	-1.7	100	0.00
10	T	Isoprene	5.0000	4.6688	6.6	100	0.00
11	T	Acrolein	25.0000	24.7297	1.1	100	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.6385	7.2	100	0.01
13	T	Acetone	5.0000	5.3120	-6.2	100	0.01
14	C	1,1-Dichloroethene	5.0000	4.6835	6.3	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	102.0360	-2.0	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.6223	7.6	100	0.00
17	T	Iodomethane	5.0000	3.9124	21.8	100	0.00
18	T	Methyl acetate	5.0000	7.5474	-50.9#	100	0.00
19	T	Methylene Chloride	5.0000	4.8539	2.9	100	0.00
20	T	Carbon Disulfide	5.0000	4.6615	6.8	100	0.00
21	T	Acrylonitrile	25.0000	23.4049	6.4	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.7747	4.5	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.5182	9.6	100	0.00
24	T	n-Hexane	5.0000	4.4700	10.6	100	0.00
25	T	Diisopropyl ether	50.0000	51.4154	-2.8	100	0.00
26	T	Vinyl Acetate	5.0000	5.1698	-3.4	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.9658	0.7	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	51.3996	-2.8	100	0.00
29	T	2-Butanone	5.0000	4.4190	11.6	100	0.01
30	T	Propionitrile	50.0000	48.8210	2.4	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.9614	0.8	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.8145	3.7	100	0.00
33	C	Chloroform	5.0000	4.8039	3.9	100	0.00
34	T	1-Bromopropane	5.0000	5.1449	-2.9	100	0.00
35	T	Bromochloromethane	5.0000	5.0410	-0.8	100	0.00
36	T	Tetrahydrofuran	50.0000	46.0861	7.8	100	0.00
37	S	Dibromofluoromethane	2.5000	2.4302	2.8	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.7984	4.0	100	0.00
39	T	Cyclohexane	5.0000	4.7526	4.9	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.7295	5.4	100	0.00
41	T	Carbon Tetrachloride	5.0000	4.8435	3.1	100	-0.01
42	T	Tert-Amyl-Methyl ether	50.0000	50.6462	-1.3	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.5650	-2.6	100	0.00
44	T	1,2-Dichloroethane	5.0000	4.8665	2.7	100	0.00
45	T	Benzene	5.0000	4.8065	3.9	100	0.00
46	T	Trichloroethene	5.0000	4.8959	2.1	100	-0.01
47	T	Methylcyclohexane	5.0000	4.5439	9.1	100	0.00
48	C	1,2-Dichloropropane	5.0000	4.7864	4.3	100	0.00
49	T	1,4-Dioxane	100.0000	102.6541	-2.7	100	0.01
50	T	Bromodichloromethane	5.0000	4.8566	2.9	100	0.00
51	T	Dibromomethane	5.0000	4.9379	1.2	100	0.00
52	T	2-Chloroethyl Vinyl Ether	5.0000	4.2689	14.6	100	0.00
53	T	4-Methyl-2-Pentanone	5.0000	4.0658	18.7	100	0.00
54	T	cis-1,3-Dichloropropene	5.0000	4.7853	4.3	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	5.0000	4.1252	17.5	100	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	2.5000	2.5163	-0.7	100	0.00
58	C	Toluene	5.0000	5.0124	-0.2	100	0.00
59	T	Ethyl Methacrylate	5.0000	4.6214	7.6	100	0.00
60	T	trans-1,3-Dichloropropene	5.0000	4.7629	4.7	100	0.00
61	T	1,1,2-Trichloroethane	5.0000	4.6730	6.5	100	0.00
62	T	2-Hexanone	5.0000	4.1507	17.0	100	0.00
63	T	1,3-Dichloropropane	5.0000	4.9267	1.5	100	0.00
64	T	Tetrachloroethene	5.0000	4.8551	2.9	100	-0.01
65	T	Dibromochloromethane	5.0000	4.8199	3.6	100	0.00
66	T	1,2-Dibromoethane	5.0000	4.7575	4.8	100	0.00
67	T	1-Chlorohexane	5.0000	4.6895	6.2	100	0.00
68	P	Chlorobenzene	5.0000	5.0264	-0.5	100	0.00
69	T	1,1,1,2-Tetrachloroethane	5.0000	4.8783	2.4	100	0.00
70	C	Ethylbenzene	5.0000	4.8732	2.5	100	0.00
71	T	m-,p-Xylene	10.0000	9.7654	2.3	100	0.00
72	T	o-Xylene	5.0000	4.7954	4.1	100	0.00
73	T	Styrene	5.0000	4.9411	1.2	100	0.00
74	P	Bromoform	5.0000	4.4503	11.0	100	0.00
75	T	Isopropylbenzene	5.0000	4.9091	1.8	100	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	5.0000	4.7624	4.8	100	-0.01
78	S	p-Bromofluorobenzene	2.5000	2.5432	-1.7	100	0.00
79	T	1,2,3-Trichloropropane	5.0000	5.0393	-0.8	100	0.00
80	T	trans-1,4-Dichloro-2-Butene	5.0000	4.0050	19.9	100	0.00
81	T	n-Propylbenzene	5.0000	5.0923	-1.8	100	0.00
82	T	Bromobenzene	5.0000	5.0338	-0.7	100	0.00
83	T	1,3,5-Trimethylbenzene	5.0000	4.9145	1.7	100	-0.01
84	T	2-Chlorotoluene	5.0000	5.0134	-0.3	100	0.00
85	T	4-Chlorotoluene	5.0000	4.9765	0.5	100	0.00
86	T	a-Methylstyrene	5.0000	4.7239	5.5	100	0.00
87	T	tert-Butylbenzene	5.0000	5.2217	-4.4	100	-0.01
88	T	1,2,4-Trimethylbenzene	5.0000	5.1012	-2.0	100	0.00
89	T	sec-Butylbenzene	5.0000	4.9892	0.2	100	0.00
90	T	p-Isopropyltoluene	5.0000	5.0265	-0.5	100	0.00
91	T	1,3-Dichlorobenzene	5.0000	4.9737	0.5	100	0.00
92	T	1,4-Dichlorobenzene	5.0000	4.9875	0.2	100	0.00
93	T	n-Butylbenzene	5.0000	4.7722	4.6	100	0.00
94	T	1,2-Dichlorobenzene	5.0000	4.9741	0.5	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	5.0000	5.1051	-2.1	100	0.00
96	T	1,2,4-Trichlorobenzene	5.0000	4.8858	2.3	100	0.00
97	T	Hexachlorobutadiene	5.0000	4.8528	2.9	100	0.00
98	T	Naphthalene	5.0000	4.7164	5.7	100	0.00
99	T	1,2,3-Trichlorobenzene	5.0000	4.6448	7.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11841.D 8260WT.M Sat May 14 18:48:20 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11842.D Vial: 7
Acq On : 13 May 2016 17:19 Operator: JDS
Sample : WG568769-07 20ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:53 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	512017	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	433937	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	255524	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	58089	10.3664 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 41.48%#		
43) 1,2-Dichloroethane-d4	10.23	65	66804	10.4555 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 41.84%#		
57) Toluene-d8	12.47	98	193532	10.2645 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 41.04%#		
78) p-Bromofluorobenzene	15.64	95	81186	10.3070 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 41.24%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	176636	22.0179 ug/L	99
3) Chloromethane	3.72	50	126901	19.7510 ug/L	98
4) Vinyl Chloride	3.96	62	109592	20.5394 ug/L	98
5) 1,3-Butadiene	4.00	54	116317	21.9237 ug/L	96
6) Bromomethane	4.85	94	73878	20.1380 ug/L	93
7) Chloroethane	5.00	64	71103	20.7401 ug/L	100
8) Trichlorofluoromethane	5.49	101	225913	21.2425 ug/L	99
9) Diethyl ether	6.01	59	321203	81.6650 ug/L	99
10) Isoprene	6.04	67	135641	20.6925 ug/L	98
11) Acrolein	6.24	56	19366	37.8284 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	109792	21.2757 ug/L	99
13) Acetone	6.34	43	27399	22.5356 ug/L	96
14) 1,1-Dichloroethene	6.56	61	201658	21.5139 ug/L	98
15) Tert-Butyl Alcohol	6.67	59	60081	178.6532 ug/L	99
16) Dimethyl Sulfide	6.81	62	75759	20.2383 ug/L	97
17) Iodomethane	7.06	142	67280	17.2594 ug/L	97
18) Methyl acetate	7.07	43	87945	22.4983 ug/L	96
19) Methylene Chloride	7.31	84	99453	20.5013 ug/L	100
20) Carbon Disulfide	7.36	76	327043	20.8410 ug/L	100
21) Acrylonitrile	7.49	53	69618	42.7070 ug/L	95
22) Methyl Tert Butyl Ether	7.52	73	266288	22.0086 ug/L	99
23) trans-1,2-Dichloroethene	7.75	96	107858	20.7912 ug/L	99
24) n-Hexane	7.82	57	184135	21.3111 ug/L	99
25) Diisopropyl ether	8.15	45	1729257	80.2062 ug/L	99
26) Vinyl Acetate	8.31	43	160029	20.6235 ug/L	99
27) 1,1-Dichloroethane	8.34	63	218994	21.0387 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1435318	81.7933 ug/L	100
29) 2-Butanone	8.87	43	39878	21.6958 ug/L	99
30) Propionitrile	8.97	54	47221	87.7149 ug/L	99
31) 2,2-Dichloropropane	9.09	77	166427	20.4352 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	120620	21.0877 ug/L	99
33) Chloroform	9.35	83	208615	20.4085 ug/L	99
34) 1-Bromopropane	9.48	122	19153	19.2424 ug/L	96
35) Bromochloromethane	9.57	130	77189	22.7226 ug/L	99
36) Tetrahydrofuran	9.60	42	109362	84.2581 ug/L	100
38) 1,1,1-Trichloroethane	9.85	97	210871	20.9631 ug/L	98
39) Cyclohexane	9.88	56	235071	21.4428 ug/L	99
40) 1,1-Dichloropropene	10.04	75	151682	21.1188 ug/L	99
41) Carbon Tetrachloride	10.17	117	212111	21.5941 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	1001790	82.1572 ug/L	100

(#) = qualifier out of range (m) = manual integration
11M11842.D 8260WT.M Sat May 14 18:50:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11842.D Vial: 7
Acq On : 13 May 2016 17:19 Operator: JDS
Sample : WG568769-07 20ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:53 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	180438	21.7339	ug/L	99
45)	Benzene	10.38	78	407777	20.7394	ug/L	100
46)	Trichloroethene	11.08	130	132094	20.6692	ug/L	99
47)	Methylcyclohexane	11.17	83	168355	21.3455	ug/L	98
48)	1,2-Dichloropropane	11.29	63	112875	20.7388	ug/L	99
49)	1,4-Dioxane	11.56	88	4948	165.8209	ug/L	99
50)	Bromodichloromethane	11.57	83	163762	21.4329	ug/L	98
51)	Dibromomethane	11.65	93	61028	21.5174	ug/L	98
52)	2-Chloroethyl Vinyl Ether	11.84	63	56664	21.1238	ug/L	99
53)	4-Methyl-2-Pentanone	11.87	58	32621	21.5609	ug/L	99
54)	cis-1,3-Dichloropropene	12.17	75	166399	21.7735	ug/L	100
55)	Dimethyl Disulfide	12.42	79	93808	20.3984	ug/L	99
58)	Toluene	12.56	91	467769	21.2936	ug/L	99
59)	Ethyl Methacrylate	12.64	69	103892	22.1484	ug/L	98
60)	trans-1,3-Dichloropropene	12.73	75	155661	22.0759	ug/L	100
61)	1,1,2-Trichloroethane	12.94	97	85297	21.8971	ug/L	100
62)	2-Hexanone	12.86	43	62113	21.7109	ug/L	99
63)	1,3-Dichloropropane	13.21	76	137448	21.9726	ug/L	98
64)	Tetrachloroethene	13.34	164	106368	20.8217	ug/L	99
65)	Dibromochloromethane	13.59	129	131143	22.0723	ug/L	99
66)	1,2-Dibromoethane	13.82	107	84381	21.6209	ug/L	99
67)	1-Chlorohexane	13.89	91	153420	21.1830	ug/L	100
68)	Chlorobenzene	14.29	112	338669	21.0446	ug/L	99
69)	1,1,1,2-Tetrachloroethane	14.32	131	134571	20.6660	ug/L	98
70)	Ethylbenzene	14.31	106	171752	20.8130	ug/L	97
71)	m-,p-Xylene	14.39	106	419228	41.7882	ug/L	99
72)	o-Xylene	14.92	106	208125	21.3170	ug/L	99
73)	Styrene	14.95	104	353452	21.9116	ug/L	98
74)	Bromoform	15.43	173	78592	21.8247	ug/L	100
75)	Isopropylbenzene	15.31	105	552747	21.4078	ug/L	99
77)	1,1,2,2-Tetrachloroethane	15.52	83	90122	22.6486	ug/L	98
79)	1,2,3-Trichloropropane	15.70	110	30969	20.9562	ug/L	97
80)	trans-1,4-Dichloro-2-Buten	15.74	53	36190	19.3325	ug/L	86
81)	n-Propylbenzene	15.79	91	640711	21.6512	ug/L	100
82)	Bromobenzene	15.92	156	160227	20.6340	ug/L	100
83)	1,3,5-Trimethylbenzene	15.95	105	481759	21.3337	ug/L	100
84)	2-Chlorotoluene	16.05	91	435100	20.9919	ug/L	99
85)	4-Chlorotoluene	16.09	91	391759	21.1004	ug/L	100
86)	a-Methylstyrene	16.34	118	253642	21.2911	ug/L	99
87)	tert-Butylbenzene	16.39	134	101859	21.2903	ug/L	99
88)	1,2,4-Trimethylbenzene	16.44	105	505239	21.9714	ug/L	98
89)	sec-Butylbenzene	16.65	105	586770	21.6398	ug/L	100
90)	p-Isopropyltoluene	16.79	119	539795	21.6735	ug/L	100
91)	1,3-Dichlorobenzene	16.98	146	312832	20.8591	ug/L	99
92)	1,4-Dichlorobenzene	17.10	146	314339	20.6779	ug/L	99
93)	n-Butylbenzene	17.28	91	474312	21.6121	ug/L	99
94)	1,2-Dichlorobenzene	17.57	146	287316	21.0305	ug/L	100
95)	1,2-Dibromo-3-Chloropropan	18.49	75	19607	22.2193	ug/L	89
96)	1,2,4-Trichlorobenzene	19.55	180	212916	21.2982	ug/L	100
97)	Hexachlorobutadiene	19.69	225	91388	20.7507	ug/L	99
98)	Naphthalene	19.90	128	414073	22.3154	ug/L	99
99)	1,2,3-Trichlorobenzene	20.19	180	193437	21.0836	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11842.D Vial: 7
Acq On : 13 May 2016 17:19 Operator: JDS
Sample : WG568769-07 20ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

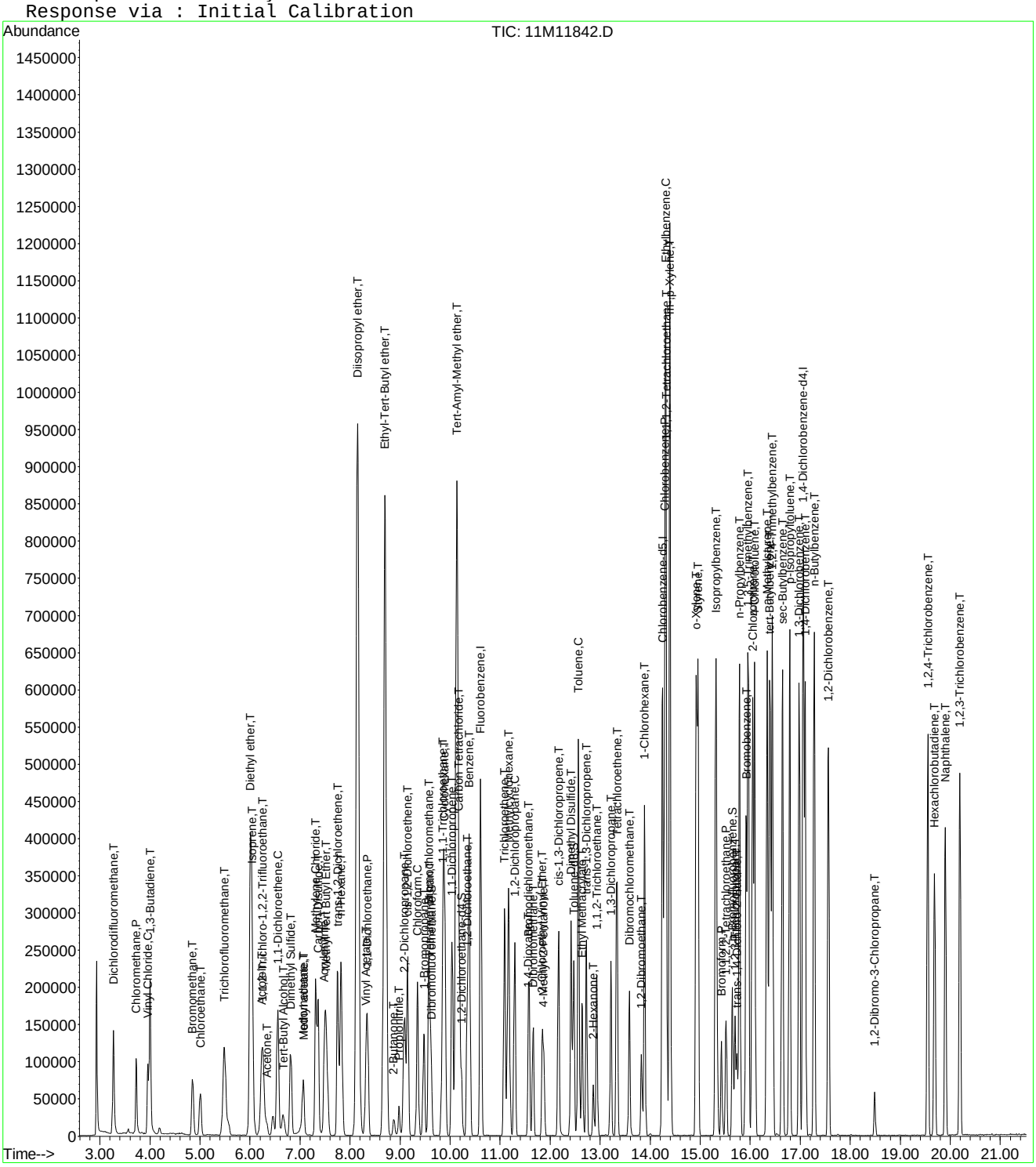

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11843.D Vial: 8
Acq On : 13 May 2016 17:51 Operator: JDS
Sample : WG568769-08 50ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:56 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	521583	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	438582	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	263885	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	139784	24.4879 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.96%		
43) 1,2-Dichloroethane-d4	10.23	65	158200	24.3058 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.24%		
57) Toluene-d8	12.47	98	462969	24.2947 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.16%		
78) p-Bromofluorobenzene	15.64	95	188875	23.2189 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.88%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	416971	51.0228 ug/L	100
3) Chloromethane	3.72	50	287508	43.9273 ug/L	100
4) Vinyl Chloride	3.96	62	261024	48.0232 ug/L	100
5) 1,3-Butadiene	4.00	54	280913	51.9760 ug/L	100
6) Bromomethane	4.85	94	172294	46.1032 ug/L	100
7) Chloroethane	5.00	64	167978	48.0991 ug/L	100
8) Trichlorofluoromethane	5.48	101	519806	47.9806 ug/L	100
9) Diethyl ether	6.01	59	391891	97.8098 ug/L	100
10) Isoprene	6.04	67	331169	49.5943 ug/L	100
11) Acrolein	6.23	56	25228	47.9550 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	255341	48.5730 ug/L	100
13) Acetone	6.34	43	57896	46.7459 ug/L	98
14) 1,1-Dichloroethene	6.56	61	459793	48.1534 ug/L	100
15) Tert-Butyl Alcohol	6.66	59	69395	202.5643 ug/L	100
16) Dimethyl Sulfide	6.81	62	193959	50.8640 ug/L	100
17) Iodomethane	7.06	142	214554	49.3519 ug/L	100
18) Methyl acetate	7.06	43	185465	48.1983 ug/L	100
19) Methylene Chloride	7.31	84	233601	47.2715 ug/L	100
20) Carbon Disulfide	7.36	76	816514	51.0786 ug/L	100
21) Acrylonitrile	7.49	53	84821	51.0789 ug/L	100
22) Methyl Tert Butyl Ether	7.52	73	610666	49.5457 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	252405	47.7624 ug/L	100
24) n-Hexane	7.82	57	449694	51.0913 ug/L	100
25) Diisopropyl ether	8.15	45	2181723	99.3365 ug/L	100
26) Vinyl Acetate	8.31	43	410275	48.2141 ug/L	100
27) 1,1-Dichloroethane	8.34	63	516691	48.7281 ug/L	100
28) Ethyl-Tert-Butyl ether	8.70	59	1783350	99.7625 ug/L	100
29) 2-Butanone	8.87	43	91238	48.7281 ug/L	100
30) Propionitrile	8.97	54	56538	103.0954 ug/L	100
31) 2,2-Dichloropropane	9.09	77	402511	48.5170 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	282222	48.4353 ug/L	100
33) Chloroform	9.35	83	489993	47.0562 ug/L	100
34) 1-Bromopropane	9.48	122	50180	48.4991 ug/L	100
35) Bromochloromethane	9.57	130	179921	51.9932 ug/L	100
36) Tetrahydrofuran	9.60	42	127999	96.8083 ug/L	100
38) 1,1,1-Trichloroethane	9.85	97	497667	48.5667 ug/L	100
39) Cyclohexane	9.88	56	575045	51.4928 ug/L	100
40) 1,1-Dichloropropene	10.04	75	353148	48.2674 ug/L	100
41) Carbon Tetrachloride	10.18	117	493225	49.2921 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	1227500	98.8215 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11843.D Vial: 8
Acq On : 13 May 2016 17:51 Operator: JDS
Sample : WG568769-08 50ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:56 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.34	62	419000	49.5434 ug/L	100
45) Benzene	10.38	78	947514	47.3064 ug/L	100
46) Trichloroethene	11.09	130	307211	47.1888 ug/L	100
47) Methylcyclohexane	11.17	83	418631	52.1043 ug/L	100
48) 1,2-Dichloropropane	11.29	63	268423	48.4136 ug/L	100
49) 1,4-Dioxane	11.55	88	5866	189.1665 ug/L	100
50) Bromodichloromethane	11.57	83	385292	49.5015 ug/L	100
51) Dibromomethane	11.65	93	142910	49.4635 ug/L	100
52) 2-Chloroethyl Vinyl Ether	11.84	63	133225	48.7541 ug/L	100
53) 4-Methyl-2-Pentanone	11.87	58	75720	49.1295 ug/L	100
54) cis-1,3-Dichloropropene	12.17	75	394857	50.7199 ug/L	100
55) Dimethyl Disulfide	12.42	79	236984	50.5867 ug/L	100
58) Toluene	12.56	91	1095397	49.3360 ug/L	100
59) Ethyl Methacrylate	12.65	69	249821	52.6944 ug/L	100
60) trans-1,3-Dichloropropene	12.73	75	366443	51.4187 ug/L	100
61) 1,1,2-Trichloroethane	12.93	97	194150	49.3135 ug/L	100
62) 2-Hexanone	12.86	43	144364	49.9264 ug/L	100
63) 1,3-Dichloropropane	13.21	76	316783	50.1049 ug/L	100
64) Tetrachloroethene	13.34	164	251037	48.6205 ug/L	100
65) Dibromochloromethane	13.59	129	310662	51.7330 ug/L	100
66) 1,2-Dibromoethane	13.82	107	196704	49.8676 ug/L	100
67) 1-Chlorohexane	13.89	91	376690	51.4596 ug/L	100
68) Chlorobenzene	14.29	112	797442	49.0276 ug/L	100
69) 1,1,1,2-Tetrachloroethane	14.32	131	325801	49.5033 ug/L	100
70) Ethylbenzene	14.31	106	408749	49.0078 ug/L	100
71) m-,p-Xylene	14.39	106	996141	98.2427 ug/L	100
72) o-Xylene	14.92	106	492043	49.8632 ug/L	100
73) Styrene	14.95	104	838125	51.4077 ug/L	100
74) Bromoform	15.43	173	184100	50.5823 ug/L	100
75) Isopropylbenzene	15.31	105	1309383	50.1751 ug/L	100
77) 1,1,2,2-Tetrachloroethane	15.52	83	208930	50.8426 ug/L	100
79) 1,2,3-Trichloropropane	15.70	110	72411	46.9859 ug/L	100
80) trans-1,4-Dichloro-2-Buten	15.74	53	94075	47.5347 ug/L	100
81) n-Propylbenzene	15.79	91	1522917	49.8325 ug/L	100
82) Bromobenzene	15.92	156	379178	47.2834 ug/L	100
83) 1,3,5-Trimethylbenzene	15.96	105	1143246	49.0221 ug/L	100
84) 2-Chlorotoluene	16.05	91	1021921	47.7415 ug/L	100
85) 4-Chlorotoluene	16.09	91	930690	48.5394 ug/L	100
86) a-Methylstyrene	16.34	118	649847	52.8208 ug/L	100
87) tert-Butylbenzene	16.40	134	241955	48.9705 ug/L	100
88) 1,2,4-Trimethylbenzene	16.44	105	1178963	49.6454 ug/L	100
89) sec-Butylbenzene	16.65	105	1390388	49.6522 ug/L	100
90) p-Isopropyltoluene	16.79	119	1282252	49.8529 ug/L	100
91) 1,3-Dichlorobenzene	16.98	146	737967	47.6473 ug/L	100
92) 1,4-Dichlorobenzene	17.10	146	740977	47.1987 ug/L	100
93) n-Butylbenzene	17.28	91	1126170	49.6883 ug/L	100
94) 1,2-Dichlorobenzene	17.57	146	684016	48.4812 ug/L	100
95) 1,2-Dibromo-3-Chloropropan	18.49	75	42848	46.3023 ug/L	100
96) 1,2,4-Trichlorobenzene	19.55	180	512927	49.6830 ug/L	100
97) Hexachlorobutadiene	19.69	225	219129	48.1793 ug/L	100
98) Naphthalene	19.90	128	962852	50.2463 ug/L	100
99) 1,2,3-Trichlorobenzene	20.19	180	453828	47.8975 ug/L	100

(#) = qualifier out of range (m) = manual integration
11M11843.D 8260WT.M Sat May 14 18:50:57 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11843.D Vial: 8
Acq On : 13 May 2016 17:51 Operator: JDS
Sample : WG568769-08 50ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

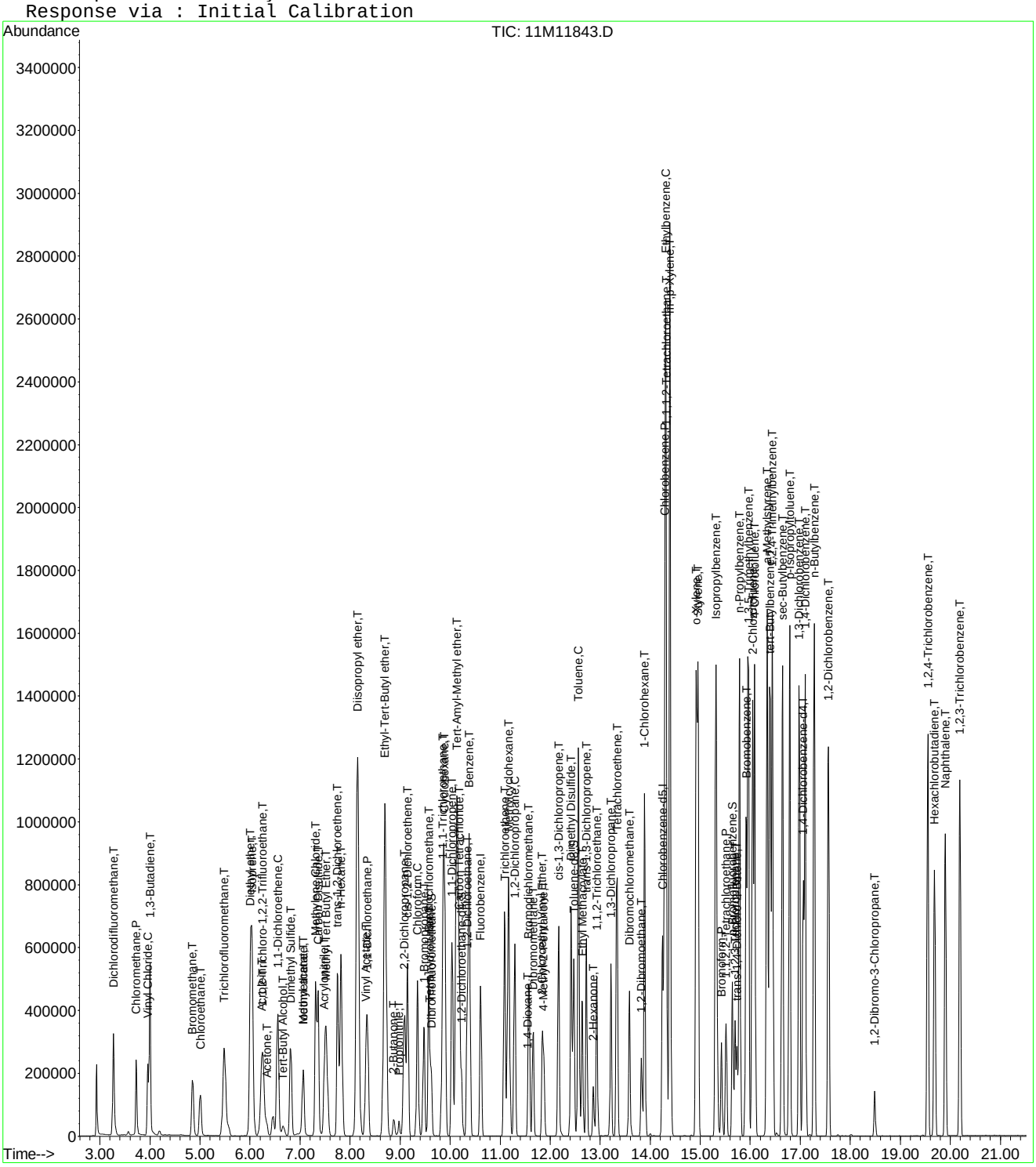

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11844.D Vial: 9
Acq On : 13 May 2016 18:22 Operator: JDS
Sample : WG568769-09 100ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:57 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	541540	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	458522	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	275719	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	307700	51.9175 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 207.68%#		
43) 1,2-Dichloroethane-d4	10.23	65	345779	51.1676 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 204.68%#		
57) Toluene-d8	12.47	98	1011334	50.7627 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 203.04%#		
78) p-Bromofluorobenzene	15.64	95	423157	49.7872 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 199.16%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	918088	108.2020 ug/L	100
3) Chloromethane	3.72	50	641242	94.3625 ug/L	99
4) Vinyl Chloride	3.95	62	586615	103.9481 ug/L	100
5) 1,3-Butadiene	3.99	54	571156	101.7838 ug/L	99
6) Bromomethane	4.85	94	394826	101.7560 ug/L	99
7) Chloroethane	5.00	64	370541	102.1913 ug/L	99
8) Trichlorofluoromethane	5.48	101	1135647	100.9627 ug/L	98
9) Diethyl ether	6.01	59	836495	201.0821 ug/L	99
10) Isoprene	6.04	67	699724	100.9257 ug/L	100
11) Acrolein	6.24	56	55228	99.4421 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	545013	99.8560 ug/L	100
13) Acetone	6.34	43	123799	96.2731 ug/L	95
14) 1,1-Dichloroethene	6.56	61	1004294	101.3022 ug/L	100
15) Tert-Butyl Alcohol	6.66	59	148134	416.4687 ug/L	98
16) Dimethyl Sulfide	6.81	62	401237	101.3432 ug/L	100
17) Iodomethane	7.06	142	471112	102.3553 ug/L	100
18) Methyl acetate	7.07	43	381031	98.0957 ug/L	99
19) Methylene Chloride	7.31	84	501609	97.7649 ug/L	99
20) Carbon Disulfide	7.36	76	1695322	102.1458 ug/L	100
21) Acrylonitrile	7.49	53	184461	106.9881 ug/L	99
22) Methyl Tert Butyl Ether	7.52	73	1312901	102.5951 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	542907	98.9478 ug/L	98
24) n-Hexane	7.82	57	921942	100.8849 ug/L	99
25) Diisopropyl ether	8.15	45	4599625	201.7086 ug/L	99
26) Vinyl Acetate	8.31	43	855488	94.3763 ug/L	99
27) 1,1-Dichloroethane	8.34	63	1111115	100.9254 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	3780769	203.7060 ug/L	100
29) 2-Butanone	8.87	43	198511	102.1130 ug/L	100
30) Propionitrile	8.98	54	118699	208.4678 ug/L	97
31) 2,2-Dichloropropane	9.09	77	914695	106.1904 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	606774	100.2977 ug/L	99
33) Chloroform	9.35	83	1053766	97.4685 ug/L	100
34) 1-Bromopropane	9.48	122	106914	98.8615 ug/L	100
35) Bromochloromethane	9.57	130	387239	107.7795 ug/L	100
36) Tetrahydrofuran	9.60	42	270148	196.7890 ug/L	99
38) 1,1,1-Trichloroethane	9.85	97	1088263	102.2884 ug/L	99
39) Cyclohexane	9.88	56	1213186	104.6320 ug/L	100
40) 1,1-Dichloropropene	10.04	75	775674	102.1101 ug/L	98
41) Carbon Tetrachloride	10.18	117	1074698	103.4456 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	2619501	203.1147 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11844.D Vial: 9
Acq On : 13 May 2016 18:22 Operator: JDS
Sample : WG568769-09 100ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:57 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	895394	101.9714 ug/L	100
45)	Benzene	10.38	78	2041856	98.1867 ug/L	100
46)	Trichloroethene	11.08	130	677193	100.1861 ug/L	99
47)	Methylcyclohexane	11.17	83	867487	103.9915 ug/L	100
48)	1,2-Dichloropropane	11.29	63	580562	100.8530 ug/L	98
49)	1,4-Dioxane	11.56	88	13651	395.0901 ug/L	100
50)	Bromodichloromethane	11.57	83	837797	103.6717 ug/L	99
51)	Dibromomethane	11.65	93	315786	105.2707 ug/L	99
52)	2-Chloroethyl Vinyl Ether	11.84	63	293822	103.5626 ug/L	100
53)	4-Methyl-2-Pentanone	11.87	58	164890	103.0430 ug/L	98
54)	cis-1,3-Dichloropropene	12.17	75	854611	105.7305 ug/L	99
55)	Dimethyl Disulfide	12.42	79	505463	103.9202 ug/L	99
58)	Toluene	12.56	91	2361378	101.7300 ug/L	100
59)	Ethyl Methacrylate	12.65	69	529740	106.8782 ug/L	98
60)	trans-1,3-Dichloropropene	12.73	75	793063	106.4420 ug/L	99
61)	1,1,2-Trichloroethane	12.94	97	418327	101.6330 ug/L	99
62)	2-Hexanone	12.86	43	314588	104.0648 ug/L	99
63)	1,3-Dichloropropane	13.21	76	685844	103.7610 ug/L	100
64)	Tetrachloroethene	13.34	164	550335	101.9528 ug/L	99
65)	Dibromochloromethane	13.59	129	681591	108.5659 ug/L	100
66)	1,2-Dibromoethane	13.82	107	427945	103.7729 ug/L	99
67)	1-Chlorohexane	13.89	91	807177	105.4730 ug/L	98
68)	Chlorobenzene	14.29	112	1705646	100.3046 ug/L	99
69)	1,1,1,2-Tetrachloroethane	14.32	131	704959	102.4557 ug/L	100
70)	Ethylbenzene	14.31	106	883839	101.3614 ug/L	99
71)	m-,p-Xylene	14.39	106	2123651	200.3333 ug/L	98
72)	o-Xylene	14.92	106	1053682	102.1356 ug/L	100
73)	Styrene	14.95	104	1807222	106.0282 ug/L	99
74)	Bromoform	15.43	173	412378	108.3755 ug/L	100
75)	Isopropylbenzene	15.31	105	2813193	103.1127 ug/L	99
77)	1,1,2,2-Tetrachloroethane	15.52	83	454052	105.7501 ug/L	99
79)	1,2,3-Trichloropropane	15.70	110	156532	96.8210 ug/L	100
80)	trans-1,4-Dichloro-2-Buten	15.74	53	203327	97.5343 ug/L	96
81)	n-Propylbenzene	15.79	91	3285915	102.9061 ug/L	99
82)	Bromobenzene	15.92	156	828973	98.9359 ug/L	99
83)	1,3,5-Trimethylbenzene	15.96	105	2483230	101.9102 ug/L	100
84)	2-Chlorotoluene	16.05	91	2208423	98.7437 ug/L	100
85)	4-Chlorotoluene	16.09	91	2020827	100.8710 ug/L	100
86)	a-Methylstyrene	16.34	118	1361545	105.9190 ug/L	99
87)	tert-Butylbenzene	16.40	134	532522	103.1540 ug/L	98
88)	1,2,4-Trimethylbenzene	16.44	105	2546912	102.6457 ug/L	100
89)	sec-Butylbenzene	16.65	105	3003570	102.6569 ug/L	99
90)	p-Isopropyltoluene	16.79	119	2763313	102.8241 ug/L	99
91)	1,3-Dichlorobenzene	16.98	146	1600684	98.9134 ug/L	100
92)	1,4-Dichlorobenzene	17.10	146	1605475	97.8762 ug/L	100
93)	n-Butylbenzene	17.28	91	2452438	103.5609 ug/L	100
94)	1,2-Dichlorobenzene	17.57	146	1481276	100.4827 ug/L	100
95)	1,2-Dibromo-3-Chloropropan	18.49	75	95062	97.5959 ug/L	99
96)	1,2,4-Trichlorobenzene	19.55	180	1100416	102.0133 ug/L	100
97)	Hexachlorobutadiene	19.69	225	486893	102.4572 ug/L	100
98)	Naphthalene	19.90	128	2071229	103.4477 ug/L	100
99)	1,2,3-Trichlorobenzene	20.19	180	980181	99.0092 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M11844.D 8260WT.M Sat May 14 18:50:58 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11844.D Vial: 9
Acq On : 13 May 2016 18:22 Operator: JDS
Sample : WG568769-09 100ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

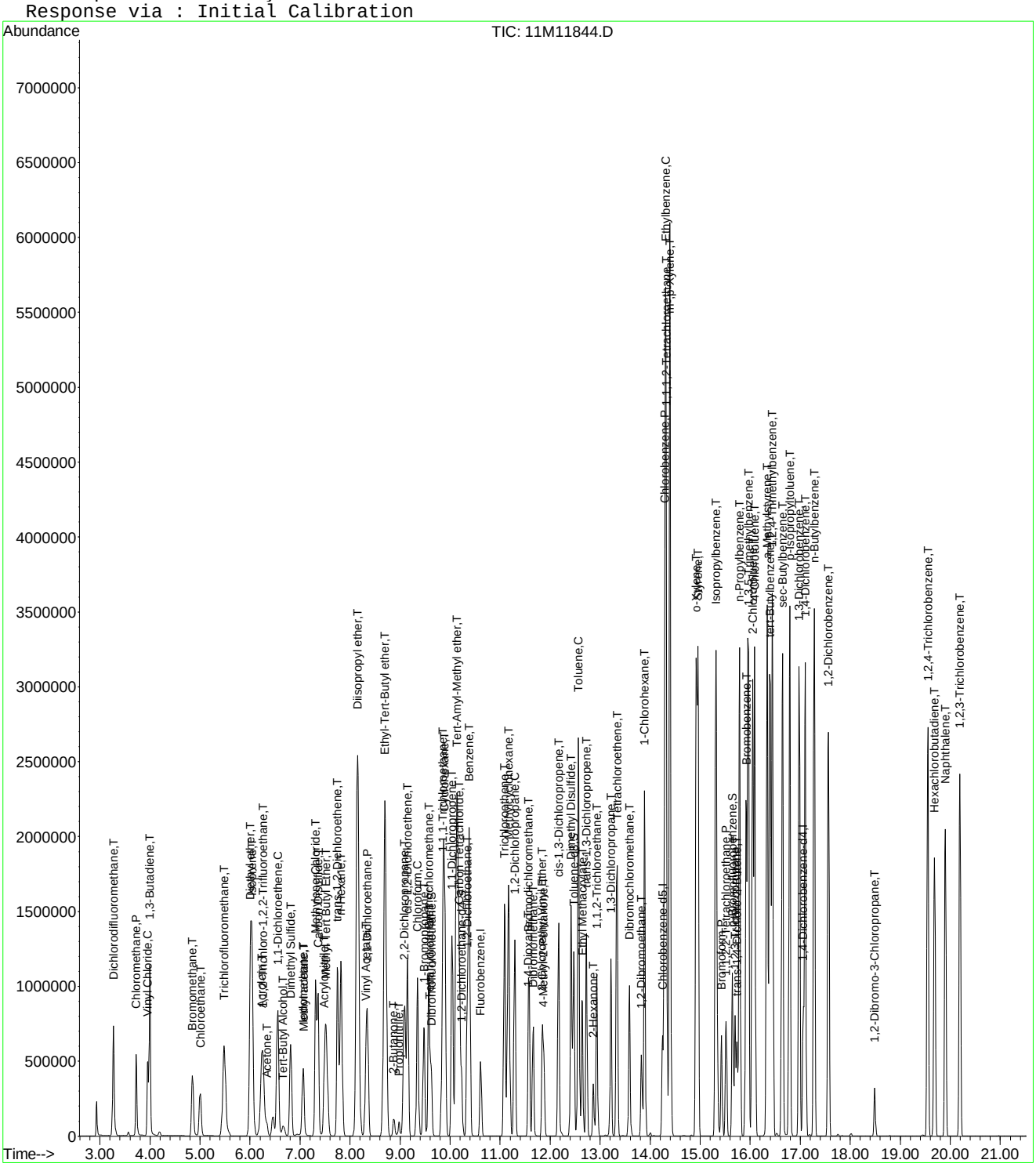

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11845.D Vial: 10
Acq On : 13 May 2016 18:54 Operator: JDS
Sample : WG568769-10 200ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:59 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	552905	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	473364	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	274188	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	629894	104.0960 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 416.40%#		
43) 1,2-Dichloroethane-d4	10.23	65	684792	99.2511 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 397.00%#		
57) Toluene-d8	12.47	98	2068111	100.5516 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 402.20%#		
78) p-Bromofluorobenzene	15.64	95	864999	102.3411 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 409.36%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	1843265	212.7741 ug/L	99
3) Chloromethane	3.72	50	1346993	194.1434 ug/L	100
4) Vinyl Chloride	3.95	62	1199147	208.1209 ug/L	100
5) 1,3-Butadiene	3.99	54	1131910	197.5677 ug/L	97
6) Bromomethane	4.85	94	859963	217.0771 ug/L	100
7) Chloroethane	5.00	64	764060	206.3883 ug/L	100
8) Trichlorofluoromethane	5.48	101	2275404	198.1327 ug/L	100
9) Diethyl ether	6.03	59	2592	0.6103 ug/L #	21
10) Isoprene	6.04	67	1435794	202.8369 ug/L	97
11) Acrolein	6.25	56	3061	6.8231 ug/L	88
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	1123889	201.6837 ug/L	99
13) Acetone	6.34	43	254053	193.5049 ug/L	96
14) 1,1-Dichloroethene	6.56	61	2040432	201.5858 ug/L	99
15) Tert-Butyl Alcohol	6.67	59	7729	21.2829 ug/L #	82
16) Dimethyl Sulfide	6.81	62	830179	205.3739 ug/L	99
17) Iodomethane	7.06	142	969857	206.1133 ug/L	99
18) Methyl acetate	7.07	43	749575	196.5068 ug/L	97
19) Methylene Chloride	7.31	84	1035656	197.7029 ug/L	97
20) Carbon Disulfide	7.36	76	3459748	204.1704 ug/L	99
21) Acrylonitrile	7.52	53	35662	20.2589 ug/L #	39
22) Methyl Tert Butyl Ether	7.52	73	2706665	207.1616 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	1121963	200.2808 ug/L	99
24) n-Hexane	7.82	57	1873652	200.8128 ug/L	99
25) Diisopropyl ether	8.16	45	16567	0.7116 ug/L #	87
26) Vinyl Acetate	8.31	43	1904053	202.8645 ug/L	100
27) 1,1-Dichloroethane	8.34	63	2261904	201.2314 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	9063	0.4783 ug/L	90
29) 2-Butanone	8.87	43	407543	205.3288 ug/L	99
30) Propionitrile	8.97	54	4182	7.1938 ug/L #	60
31) 2,2-Dichloropropane	9.09	77	1850091	210.3692 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	1257477	203.5843 ug/L	100
33) Chloroform	9.35	83	2160999	195.7739 ug/L	100
34) 1-Bromopropane	9.48	122	222798	201.1267 ug/L	98
35) Bromochloromethane	9.57	130	798076	217.5612 ug/L	99
36) Tetrahydrofuran	9.60	42	9110	6.4998 ug/L	97
38) 1,1,1-Trichloroethane	9.85	97	2208198	203.2875 ug/L	99
39) Cyclohexane	9.88	56	2467804	208.4625 ug/L	100
40) 1,1-Dichloropropene	10.04	75	1587009	204.6205 ug/L	99
41) Carbon Tetrachloride	10.18	117	2174730	205.0269 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	6538	0.4965 ug/L #	83

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11845.D Vial: 10
Acq On : 13 May 2016 18:54 Operator: JDS
Sample : WG568769-10 200ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:59 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
44)	1,2-Dichloroethane	10.34	62	1808450	201.7209 ug/L		99
45)	Benzene	10.38	78	4119227	194.0096 ug/L		99
46)	Trichloroethene	11.09	130	1367103	198.0963 ug/L		100
47)	Methylcyclohexane	11.17	83	1789256	210.0812 ug/L		99
48)	1,2-Dichloropropane	11.29	63	1196100	203.5109 ug/L		99
49)	1,4-Dioxane	11.57	88	2656	94.1370 ug/L	#	31
50)	Bromodichloromethane	11.58	83	1721733	208.6734 ug/L		99
51)	Dibromomethane	11.66	93	641583	209.4825 ug/L		100
52)	2-Chloroethyl Vinyl Ether	11.84	63	608231	209.9748 ug/L		99
53)	4-Methyl-2-Pentanone	11.87	58	342251	209.4831 ug/L		99
54)	cis-1,3-Dichloropropene	12.17	75	1772737	214.8108 ug/L		100
55)	Dimethyl Disulfide	12.42	79	1052498	211.9395 ug/L		98
58)	Toluene	12.56	91	4699240	196.0993 ug/L		98
59)	Ethyl Methacrylate	12.65	69	1101451	215.2567 ug/L		97
60)	trans-1,3-Dichloropropene	12.73	75	1627488	211.5866 ug/L		99
61)	1,1,2-Trichloroethane	12.93	97	860113	202.4133 ug/L		99
62)	2-Hexanone	12.86	43	651287	208.6888 ug/L		99
63)	1,3-Dichloropropane	13.21	76	1412360	206.9756 ug/L		99
64)	Tetrachloroethene	13.34	164	1133410	203.3874 ug/L		99
65)	Dibromochloromethane	13.59	129	1409248	217.4313 ug/L		99
66)	1,2-Dibromoethane	13.82	107	889951	209.0389 ug/L		99
67)	1-Chlorohexane	13.89	91	1659272	210.0173 ug/L		97
68)	Chlorobenzene	14.29	112	3416597	194.6214 ug/L		98
69)	1,1,1,2-Tetrachloroethane	14.32	131	1457008	205.1158 ug/L		100
70)	Ethylbenzene	14.31	106	1814385	201.5551 ug/L		91
71)	m-,p-Xylene	14.39	106	4230307	386.5510 ug/L		85
72)	o-Xylene	14.92	106	2156790	202.5071 ug/L		96
73)	Styrene	14.96	104	3630570	206.3240 ug/L		98
74)	Bromoform	15.43	173	854308	217.4778 ug/L		100
75)	Isopropylbenzene	15.31	105	5485636	194.7621 ug/L		97
77)	1,1,2,2-Tetrachloroethane	15.52	83	939708	220.0830 ug/L		98
79)	1,2,3-Trichloropropane	15.70	110	325518	202.0716 ug/L		99
80)	trans-1,4-Dichloro-2-Buten	15.74	53	421012	202.2796 ug/L		97
81)	n-Propylbenzene	15.79	91	6220435	195.8952 ug/L		95
82)	Bromobenzene	15.92	156	1685980	202.3412 ug/L		99
83)	1,3,5-Trimethylbenzene	15.96	105	4875063	201.1866 ug/L		97
84)	2-Chlorotoluene	16.05	91	4287026	192.7532 ug/L		98
85)	4-Chlorotoluene	16.09	91	4030756	202.3214 ug/L		98
86)	a-Methylstyrene	16.34	118	2724122	213.1015 ug/L		98
87)	tert-Butylbenzene	16.40	134	1075661	209.5280 ug/L		96
88)	1,2,4-Trimethylbenzene	16.44	105	4921395	199.4496 ug/L		97
89)	sec-Butylbenzene	16.65	105	5740919	197.3104 ug/L		97
90)	p-Isopropyltoluene	16.79	119	5274037	197.3451 ug/L		95
91)	1,3-Dichlorobenzene	16.98	146	3171808	197.0945 ug/L		99
92)	1,4-Dichlorobenzene	17.10	146	3145357	192.8244 ug/L		99
93)	n-Butylbenzene	17.28	91	4684496	198.9203 ug/L		97
94)	1,2-Dichlorobenzene	17.57	146	2909224	198.4498 ug/L		99
95)	1,2-Dibromo-3-Chloropropan	18.49	75	191088	196.6217 ug/L		99
96)	1,2,4-Trichlorobenzene	19.55	180	2198003	204.9021 ug/L		99
97)	Hexachlorobutadiene	19.69	225	969160	205.0797 ug/L		99
98)	Naphthalene	19.90	128	3994903	200.6399 ug/L		98
99)	1,2,3-Trichlorobenzene	20.19	180	1999949	203.1452 ug/L		99

(#) = qualifier out of range (m) = manual integration
11M11845.D 8260WT.M Sat May 14 18:51:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11845.D Vial: 10
Acq On : 13 May 2016 18:54 Operator: JDS
Sample : WG568769-10 200ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

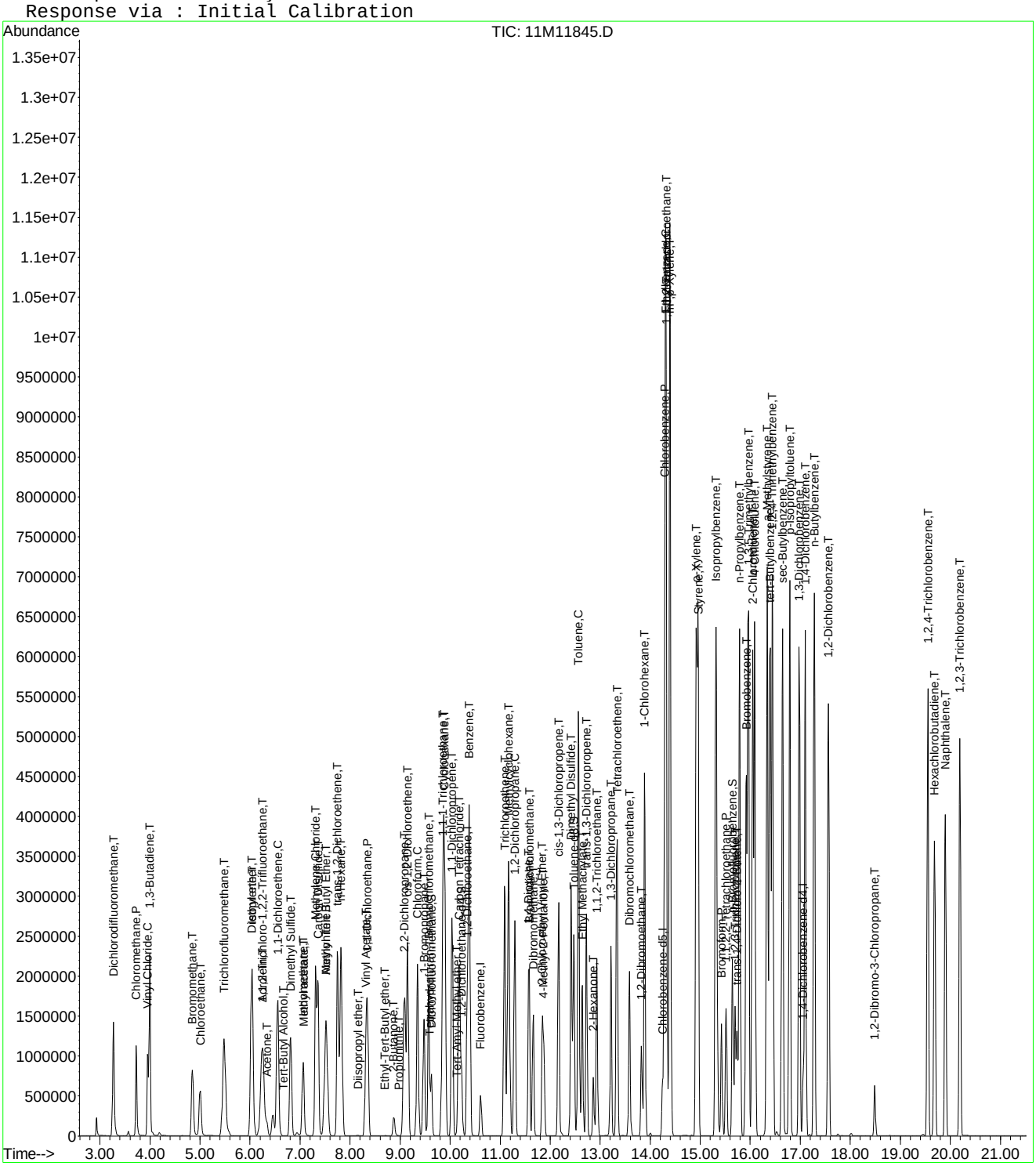

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11846.D Vial: 11
Acq On : 13 May 2016 19:26 Operator: JDS
Sample : WG568769-11 300ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:51:01 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	543599	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	479542	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	277309	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	905755	152.2472 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 609.00%#		
43) 1,2-Dichloroethane-d4	10.23	65	970758	143.1066 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 572.44%#		
57) Toluene-d8	12.47	98	3002456	144.0987 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 576.40%#		
78) p-Bromofluorobenzene	15.64	95	1285822	150.4179 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 601.68%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	2762707	324.3678 ug/L	99
3) Chloromethane	3.72	50	2113477	309.8323 ug/L	100
4) Vinyl Chloride	3.95	62	1802126	318.1269 ug/L	100
5) 1,3-Butadiene	3.99	54	1562377	277.3715 ug/L	98
6) Bromomethane	4.85	94	1341865	344.5204 ug/L	100
7) Chloroethane	5.00	64	1181546	324.6236 ug/L	100
8) Trichlorofluoromethane	5.48	101	3351045	296.7904 ug/L	99
9) Diethyl ether	6.01	59	1250668	299.5049 ug/L	97
10) Isoprene	6.04	67	2121830	304.8859 ug/L	97
11) Acrolein	6.23	56	87016	155.2272 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	1679276	306.5076 ug/L	99
13) Acetone	6.34	43	352141	272.8074 ug/L	95
14) 1,1-Dichloroethene	6.56	61	3009080	302.3733 ug/L	98
15) Tert-Butyl Alcohol	6.67	59	227782	637.9680 ug/L	97
16) Dimethyl Sulfide	6.81	62	1199487	301.8151 ug/L	96
17) Iodomethane	7.06	142	1359092	295.3515 ug/L	96
18) Methyl acetate	7.07	43	1093862	303.3719 ug/L	97
19) Methylene Chloride	7.31	84	1550974	301.1438 ug/L	91
20) Carbon Disulfide	7.36	76	5025219	301.6304 ug/L	99
21) Acrylonitrile	7.49	53	292311	168.8994 ug/L	94
22) Methyl Tert Butyl Ether	7.52	73	3880019	302.0512 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	1693308	307.4459 ug/L	98
24) n-Hexane	7.82	57	2752540	300.0599 ug/L	99
25) Diisopropyl ether	8.15	45	6621718	289.2841 ug/L	99
26) Vinyl Acetate	8.31	43	2814279	303.7518 ug/L	99
27) 1,1-Dichloroethane	8.34	63	3313473	299.8312 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	5508427	295.6672 ug/L	99
29) 2-Butanone	8.87	43	590742	302.7235 ug/L	97
30) Propionitrile	8.99	54	177454	310.4771 ug/L	98
31) 2,2-Dichloropropane	9.09	77	2735421	316.3626 ug/L	99
32) cis-1,2-Dichloroethene	9.15	96	1856543	305.7181 ug/L	98
33) Chloroform	9.35	83	3144758	289.7739 ug/L	100
34) 1-Bromopropane	9.48	122	329211	301.9597 ug/L	98
35) Bromochloromethane	9.57	130	1179409	327.0194 ug/L	97
36) Tetrahydrofuran	9.60	42	386389	280.3985 ug/L	96
38) 1,1,1-Trichloroethane	9.85	97	3227247	302.1877 ug/L	99
39) Cyclohexane	9.88	56	3625895	311.5332 ug/L	99
40) 1,1-Dichloropropene	10.04	75	2360605	309.5743 ug/L	100
41) Carbon Tetrachloride	10.18	117	3172921	304.2542 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	3912691	302.2388 ug/L	97

(#) = qualifier out of range (m) = manual integration
11M11846.D 8260WT.M Sat May 14 18:51:02 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11846.D Vial: 11
Acq On : 13 May 2016 19:26 Operator: JDS
Sample : WG568769-11 300ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:51:01 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
44)	1,2-Dichloroethane	10.34	62	2551762	289.5052 ug/L		98
45)	Benzene	10.38	78	5961793	285.5987 ug/L		97
46)	Trichloroethene	11.09	130	2025948	298.5901 ug/L		99
47)	Methylcyclohexane	11.17	83	2657028	317.3092 ug/L		98
48)	1,2-Dichloropropane	11.29	63	1781372	308.2809 ug/L		96
49)	1,4-Dioxane	11.56	88	21540	607.7372 ug/L		100
50)	Bromodichloromethane	11.57	83	2511276	309.5762 ug/L		100
51)	Dibromomethane	11.65	93	939605	312.0413 ug/L		99
52)	2-Chloroethyl Vinyl Ether	11.84	63	879534	308.8327 ug/L		100
53)	4-Methyl-2-Pentanone	11.87	58	505191	314.5081 ug/L		99
54)	cis-1,3-Dichloropropene	12.17	75	2604960	321.0589 ug/L		99
55)	Dimethyl Disulfide	12.42	79	1529785	313.3234 ug/L		99
58)	Toluene	12.56	91	6613670	272.4329 ug/L		95
59)	Ethyl Methacrylate	12.65	69	1618015	312.1351 ug/L		94
60)	trans-1,3-Dichloropropene	12.73	75	2369133	304.0383 ug/L		98
61)	1,1,2-Trichloroethane	12.93	97	1271039	295.2644 ug/L		98
62)	2-Hexanone	12.86	43	950079	300.5074 ug/L		97
63)	1,3-Dichloropropane	13.21	76	2062188	298.3119 ug/L		97
64)	Tetrachloroethene	13.34	164	1691190	299.5697 ug/L		98
65)	Dibromochloromethane	13.59	129	2065480	314.5750 ug/L		100
66)	1,2-Dibromoethane	13.82	107	1334668	309.4588 ug/L		99
67)	1-Chlorohexane	13.89	91	2483371	310.2757 ug/L		95
68)	Chlorobenzene	14.29	112	4911463	276.1698 ug/L		96
69)	1,1,1,2-Tetrachloroethane	14.32	131	2161701	300.4009 ug/L		100
70)	Ethylbenzene	14.31	106	2715675	297.7904 ug/L		79
71)	m-,p-Xylene	14.39	106	6004062	541.5626 ug/L		73
72)	o-Xylene	14.92	106	3202500	296.8179 ug/L		90
73)	Styrene	14.96	104	5278134	296.0902 ug/L		96
74)	Bromoform	15.43	173	1313245	330.0007 ug/L		100
75)	Isopropylbenzene	15.31	105	7610374	266.7178 ug/L		92
77)	1,1,2,2-Tetrachloroethane	15.52	83	1470787	340.5868 ug/L		97
79)	1,2,3-Trichloropropane	15.70	110	494041	303.0514 ug/L		98
80)	trans-1,4-Dichloro-2-Buten	15.74	53	640812	304.0444 ug/L		94
81)	n-Propylbenzene	15.79	91	8405785	261.7374 ug/L		88
82)	Bromobenzene	15.92	156	2530711	300.3025 ug/L		98
83)	1,3,5-Trimethylbenzene	15.96	105	6851753	279.5793 ug/L		93
84)	2-Chlorotoluene	16.05	91	6055423	269.1996 ug/L		95
85)	4-Chlorotoluene	16.09	91	5712933	283.5299 ug/L		94
86)	a-Methylstyrene	16.34	118	4020347	310.9625 ug/L		96
87)	tert-Butylbenzene	16.40	134	1654009	318.5583 ug/L		89
88)	1,2,4-Trimethylbenzene	16.44	105	6879061	275.6504 ug/L		91
89)	sec-Butylbenzene	16.65	105	7999374	271.8373 ug/L		92
90)	p-Isopropyltoluene	16.79	119	7406083	274.0036 ug/L		90
91)	1,3-Dichlorobenzene	16.98	146	4679194	287.4903 ug/L		97
92)	1,4-Dichlorobenzene	17.10	146	4642399	281.3967 ug/L		96
93)	n-Butylbenzene	17.28	91	6723928	282.3084 ug/L		93
94)	1,2-Dichlorobenzene	17.57	146	4360022	294.0672 ug/L		96
95)	1,2-Dibromo-3-Chloropropan	18.49	75	302346	307.2381 ug/L		100
96)	1,2,4-Trichlorobenzene	19.55	180	3482946	321.0328 ug/L		97
97)	Hexachlorobutadiene	19.69	225	1629665	340.9652 ug/L		98
98)	Naphthalene	19.90	128	5970381	296.4815 ug/L	#	96
99)	1,2,3-Trichlorobenzene	20.19	180	3137470	315.1025 ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11846.D Vial: 11
Acq On : 13 May 2016 19:26 Operator: JDS
Sample : WG568769-11 300ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:51 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

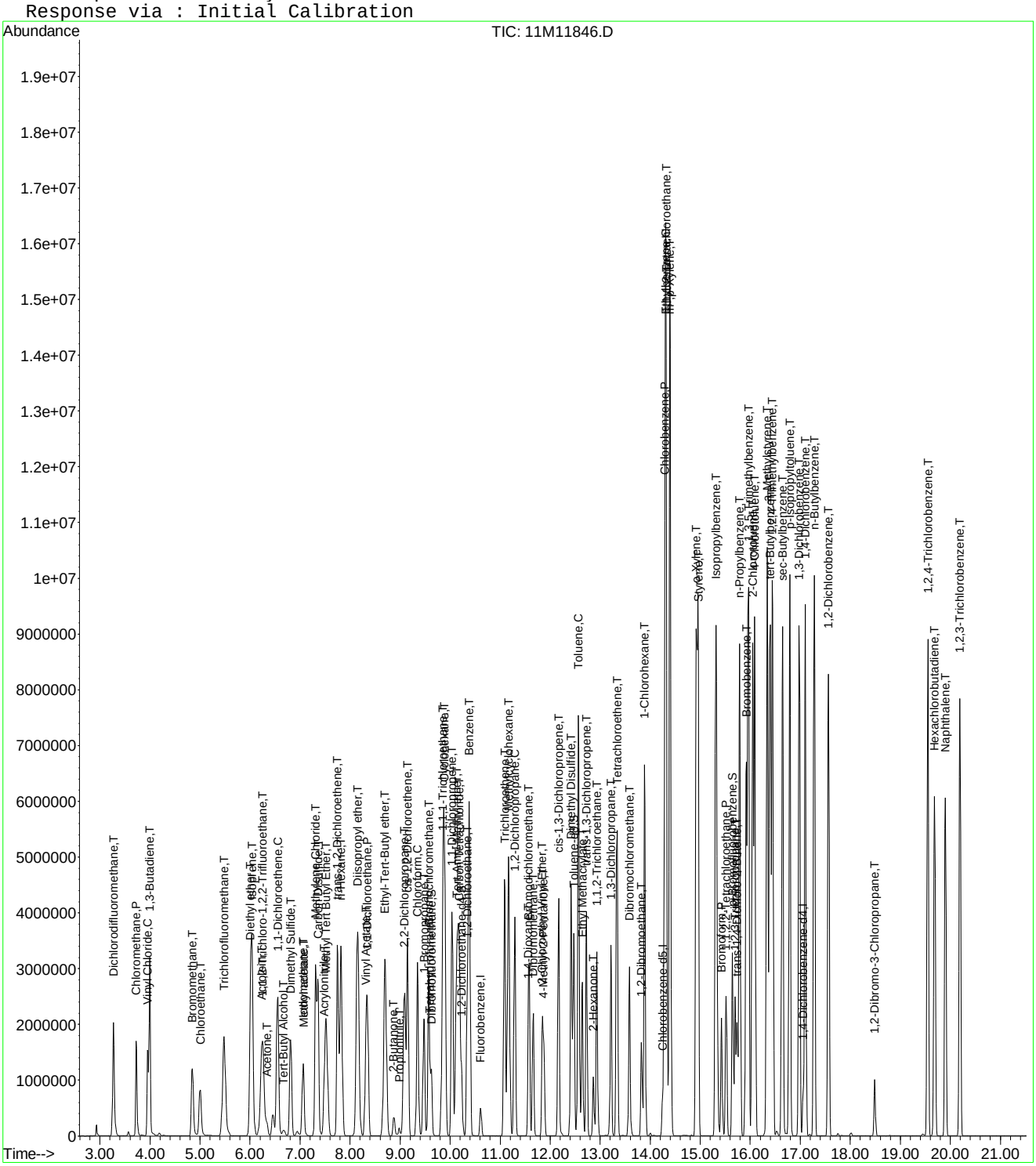

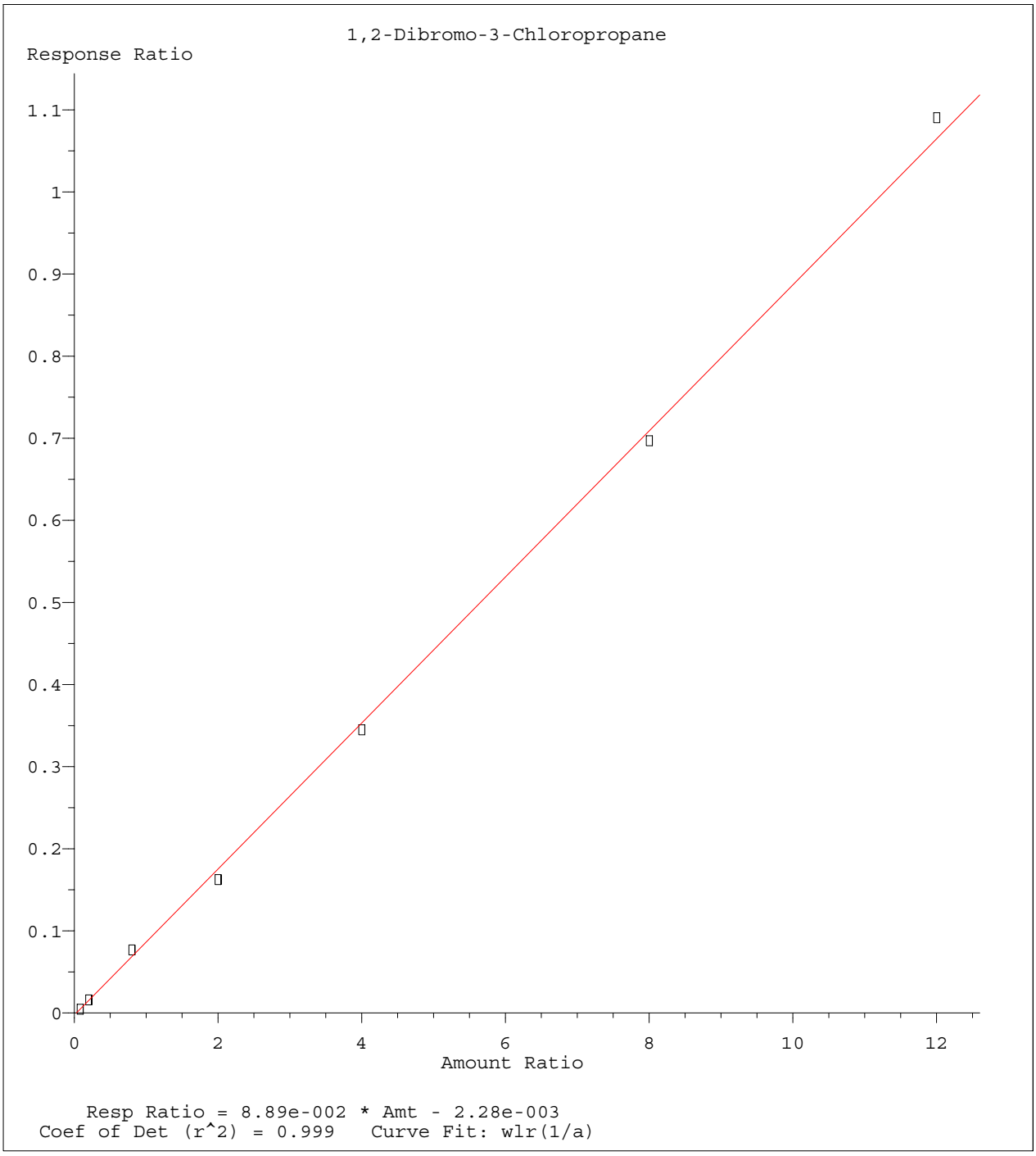

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

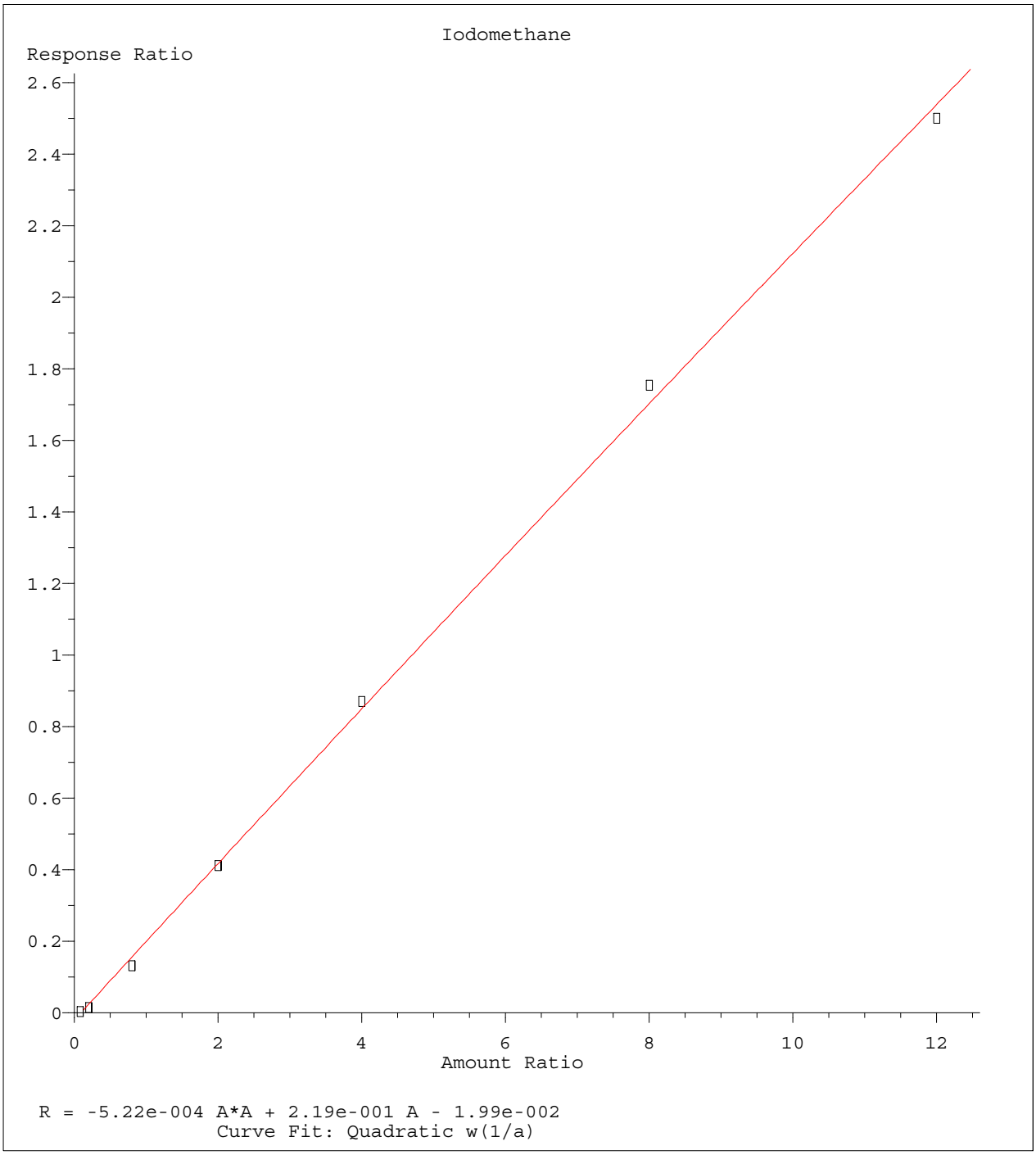

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

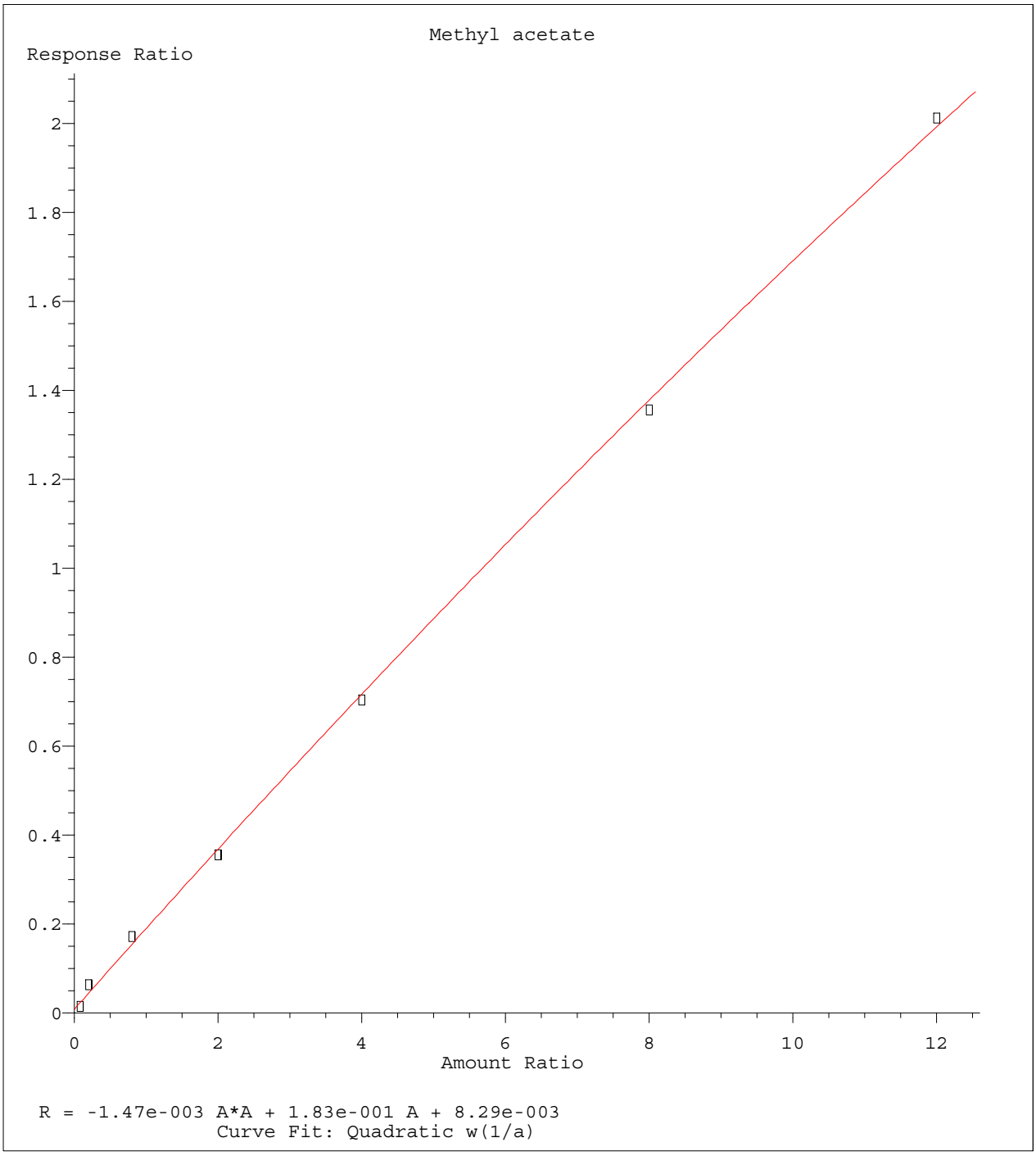

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

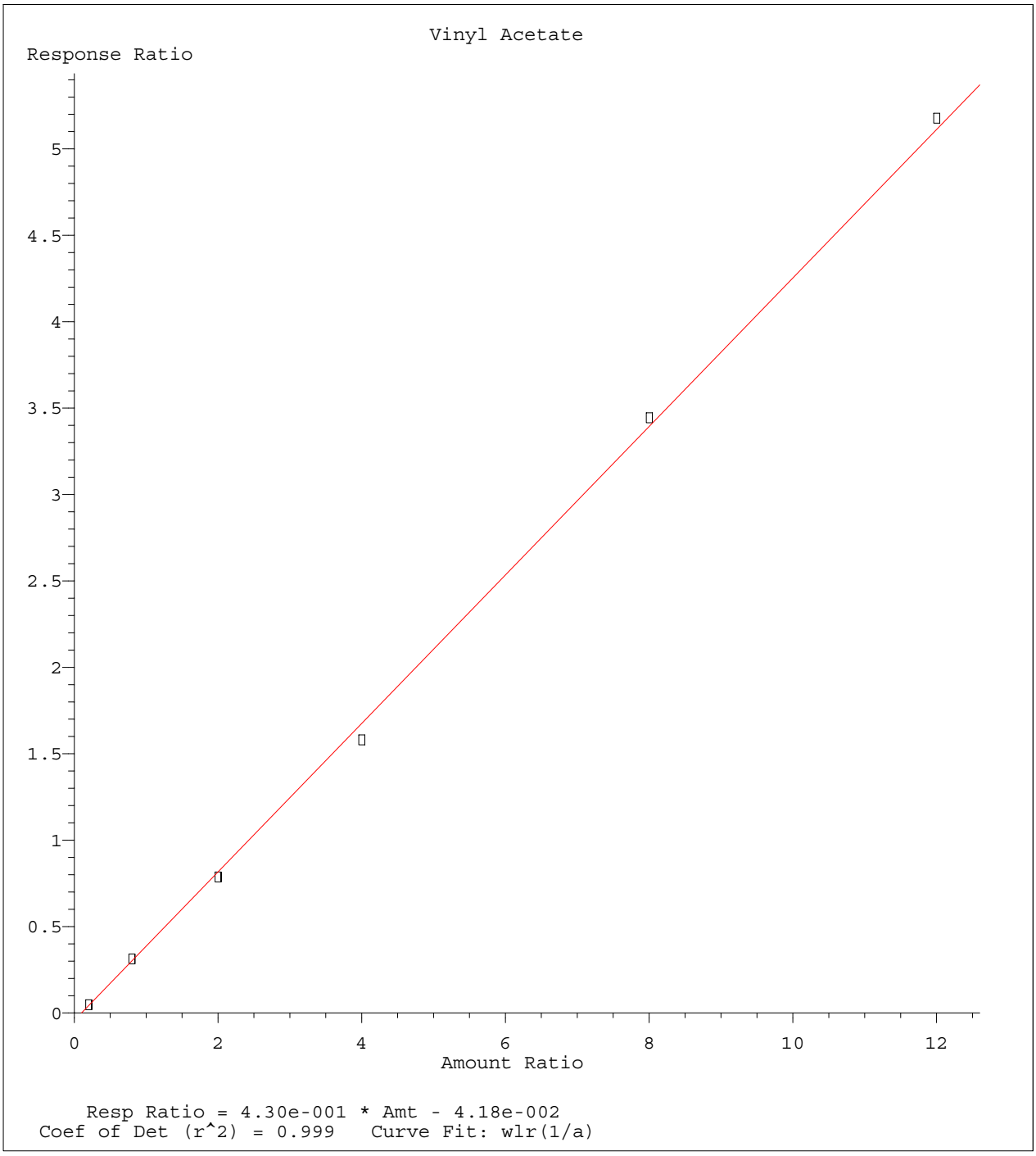

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

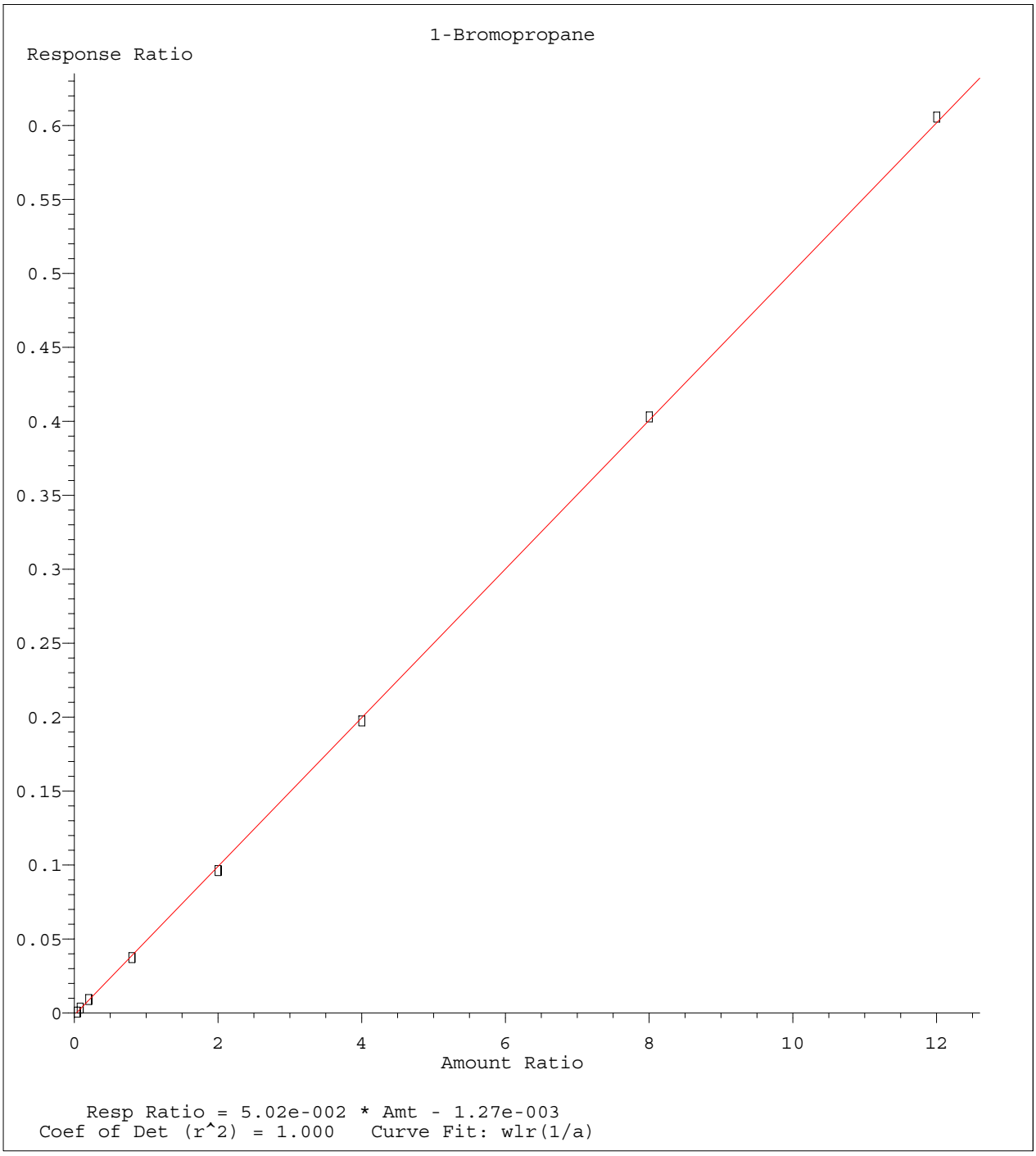

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

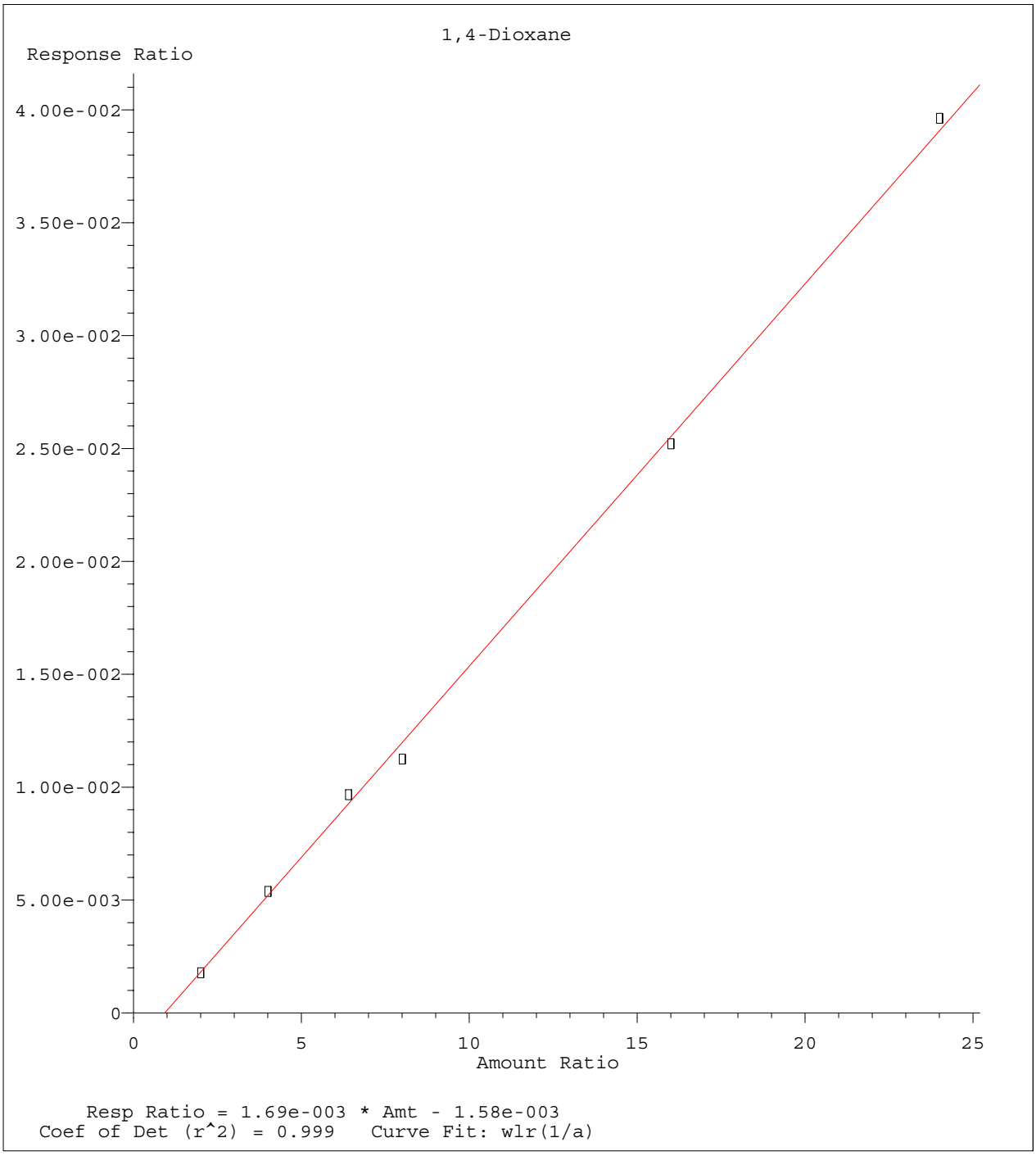

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

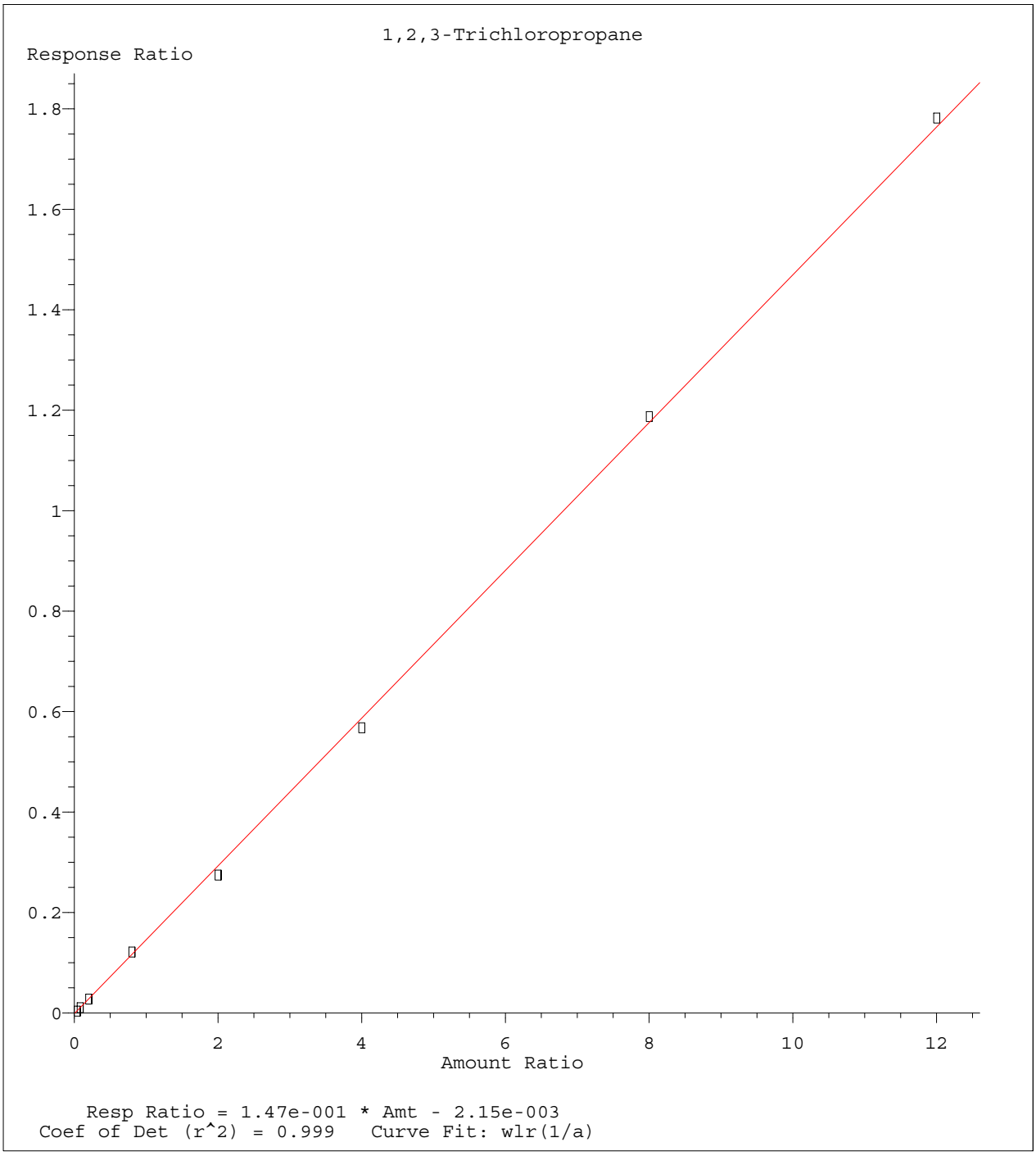

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

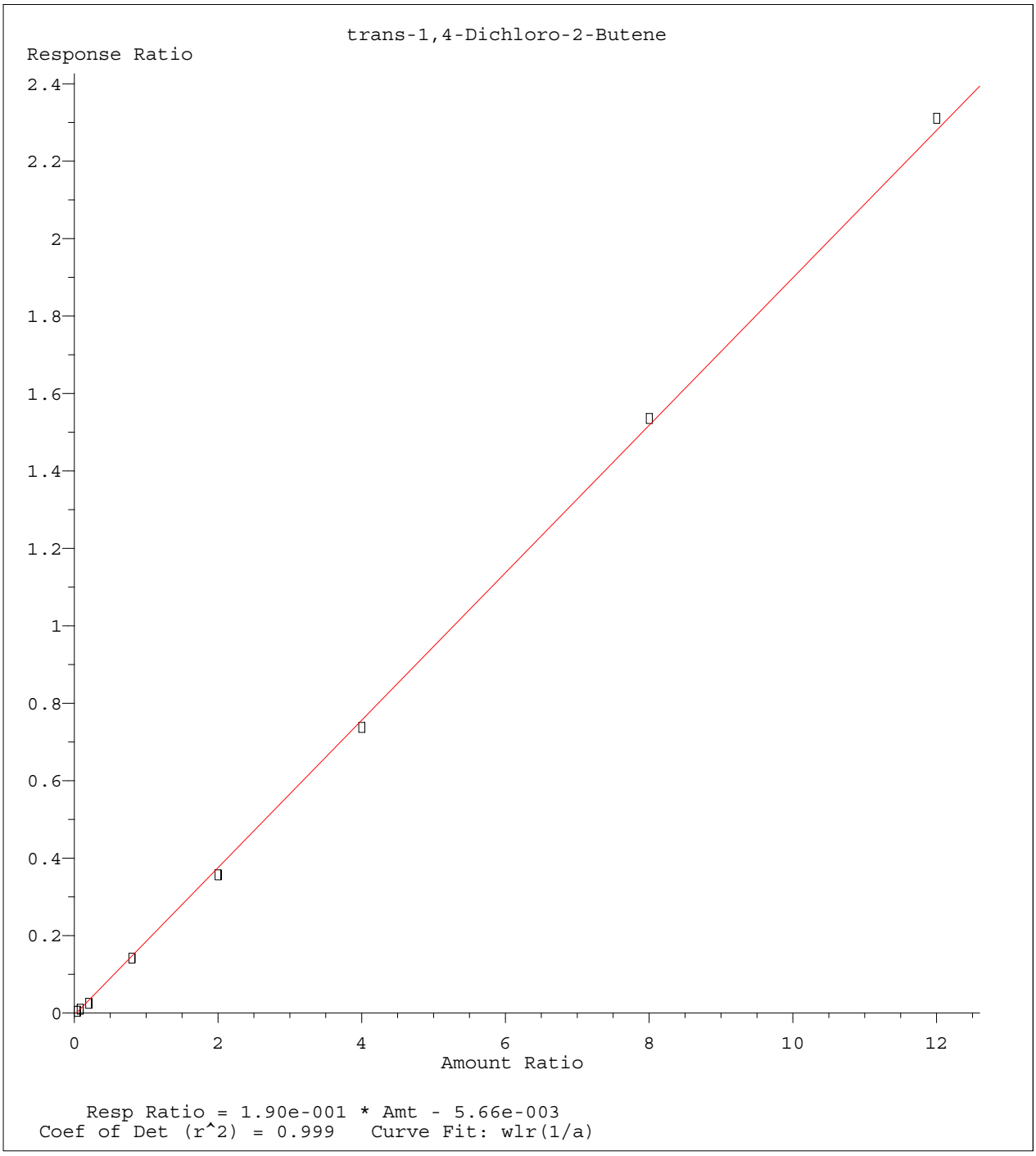

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

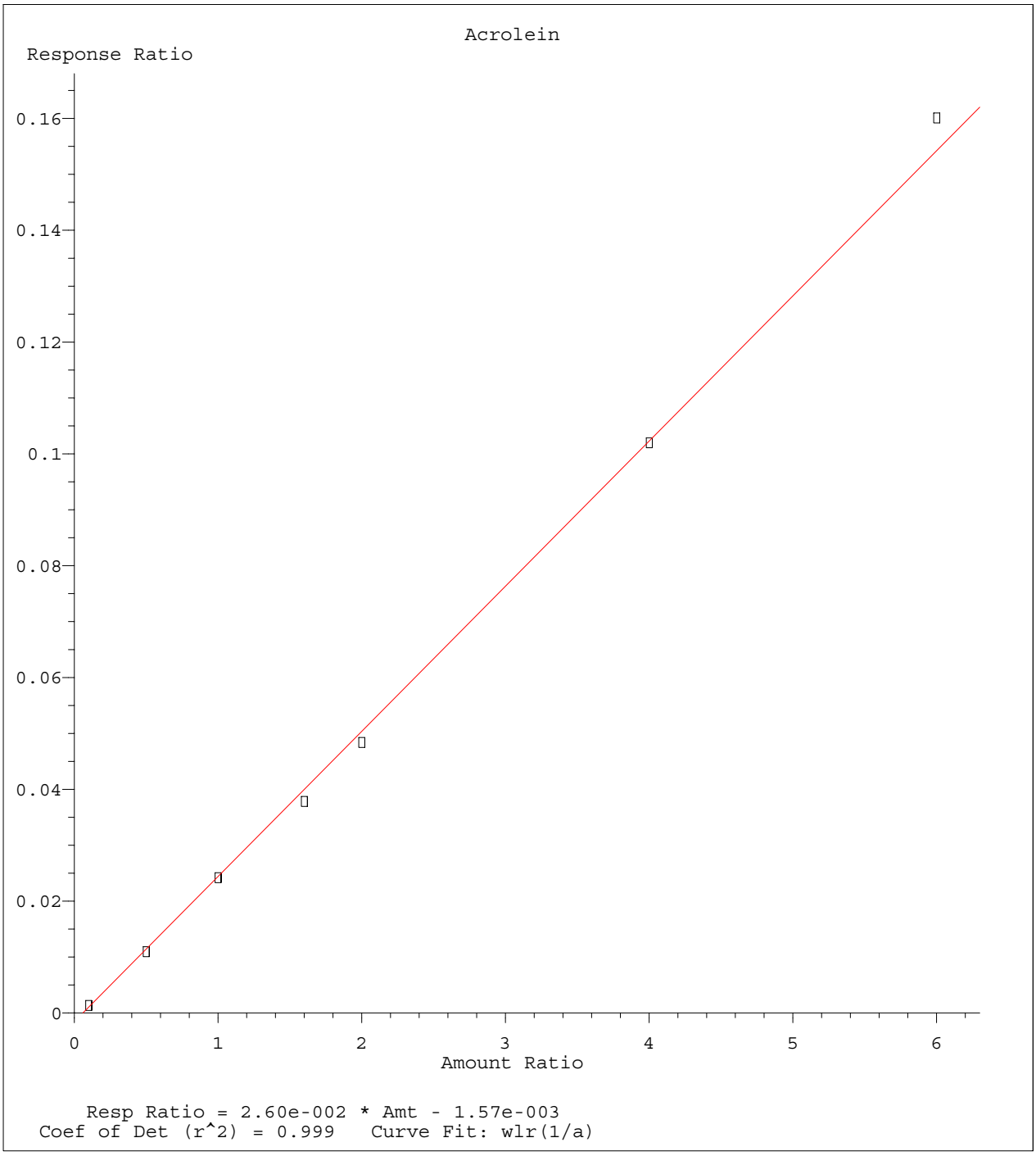

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:47:09 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	559172	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	461765	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	267551	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	155853	25.4675 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.88%		
43) 1,2-Dichloroethane-d4	10.23	65	160000	22.9299 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 91.72%		
57) Toluene-d8	12.47	98	531547	26.4930 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.96%		
78) p-Bromofluorobenzene	15.64	95	203747	24.7040 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.80%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	495777	56.5878 ug/L	98
3) Chloromethane	3.72	50	386673	55.1069 ug/L	100
4) Vinyl Chloride	3.95	62	326996	56.1165 ug/L	100
5) 1,3-Butadiene	3.99	54	212443	36.6650 ug/L	98
6) Bromomethane	4.84	94	202280	50.4885 ug/L	99
7) Chloroethane	5.00	64	220373	58.8601 ug/L	99
8) Trichlorofluoromethane	5.48	101	552017	47.5286 ug/L	99
9) Diethyl ether	6.01	59	453011	105.4639 ug/L	97
10) Isoprene	6.04	67	388108	54.2141 ug/L	93
11) Acrolein	6.23	56	56029	97.7296 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	292836	51.9609 ug/L	99
13) Acetone	6.35	43	65954	49.6723 ug/L	97
14) 1,1-Dichloroethene	6.55	61	486567	47.5319 ug/L	96
15) Tert-Butyl Alcohol	6.67	59	79387	216.1534 ug/L	96
16) Dimethyl Sulfide	6.81	62	290204	70.9875 ug/L	94
17) Iodomethane	7.06	142	176766	38.4128 ug/L	92
18) Methyl acetate	7.07	43	200985	48.7416 ug/L	98
19) Methylene Chloride	7.31	84	275442	51.9916 ug/L	91
20) Carbon Disulfide	7.35	76	765803	44.6859 ug/L	99
21) Acrylonitrile	7.49	53	93674	52.6181 ug/L	100
22) Methyl Tert Butyl Ether	7.52	73	687029	51.9942 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	295337	52.1295 ug/L	97
24) n-Hexane	7.82	57	420811	44.5959 ug/L	99
25) Diisopropyl ether	8.15	45	2449232	104.0201 ug/L	98
26) Vinyl Acetate	8.31	43	395913	43.6417 ug/L	99
27) 1,1-Dichloroethane	8.34	63	551372	48.5033 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1884917	98.3560 ug/L	99
29) 2-Butanone	8.87	43	101045	50.3380 ug/L	98
30) Propionitrile	8.99	54	62190	105.7785 ug/L	98
31) 2,2-Dichloropropane	9.09	77	405332	45.5727 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	332086	53.1618 ug/L	94
33) Chloroform	9.35	83	531122	47.5773 ug/L	100
34) 1-Bromopropane	9.48	122	76460	68.6656 ug/L	96
35) Bromochloromethane	9.57	130	199933	53.8923 ug/L	96
36) Tetrahydrofuran	9.60	42	131835	93.0068 ug/L	96
38) 1,1,1-Trichloroethane	9.85	97	527857	48.0501 ug/L	99
39) Cyclohexane	9.88	56	601180	50.2142 ug/L	99
40) 1,1-Dichloropropene	10.04	75	393057	50.1107 ug/L	100
41) Carbon Tetrachloride	10.18	117	507914	47.3479 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	1406419	105.6143 ug/L	97

(#) = qualifier out of range (m) = manual integration
11M11848.D 8260WT.M Sat May 14 18:47:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:47:09 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	434117	47.8802	ug/L	99
45)	Benzene	10.38	78	1098993	51.1808	ug/L	100
46)	Trichloroethene	11.08	130	365193	52.3242	ug/L	99
47)	Methylcyclohexane	11.17	83	450581	52.3110	ug/L	97
48)	1,2-Dichloropropane	11.29	63	313901	52.8102	ug/L	94
49)	1,4-Dioxane	11.56	88	6366	191.2043	ug/L	95
50)	Bromodichloromethane	11.57	83	413329	49.5339	ug/L	99
51)	Dibromomethane	11.65	93	148822	48.0471	ug/L	97
52)	2-Chloroethyl Vinyl Ether	11.84	63	152083	51.9140	ug/L	99
53)	4-Methyl-2-Pentanone	11.87	58	86849	52.5623	ug/L	99
54)	cis-1,3-Dichloropropene	12.17	75	480729	57.5993	ug/L	99
55)	Dimethyl Disulfide	12.42	79	261188	52.0055	ug/L	96
58)	Toluene	12.56	91	1256481	53.7500	ug/L	100
59)	Ethyl Methacrylate	12.65	69	284944	57.0854	ug/L	90
60)	trans-1,3-Dichloropropene	12.73	75	391013	52.1118	ug/L	97
61)	1,1,2-Trichloroethane	12.93	97	218717	52.7643	ug/L	99
62)	2-Hexanone	12.86	43	158873	52.1857	ug/L	98
63)	1,3-Dichloropropane	13.21	76	374611	56.2767	ug/L	95
64)	Tetrachloroethene	13.34	164	283714	52.1906	ug/L	97
65)	Dibromochloromethane	13.59	129	332092	52.5252	ug/L	99
66)	1,2-Dibromoethane	13.82	107	218604	52.6373	ug/L	99
67)	1-Chlorohexane	13.89	91	420217	54.5237	ug/L	92
68)	Chlorobenzene	14.29	112	912650	53.2936	ug/L	100
69)	1,1,1,2-Tetrachloroethane	14.32	131	353663	51.0389	ug/L	98
70)	Ethylbenzene	14.31	106	460093	52.3943	ug/L	99
71)	m-,p-Xylene	14.39	106	1144896	107.2445	ug/L	98
72)	o-Xylene	14.92	106	568307	54.7003	ug/L	100
73)	Styrene	14.95	104	943635	54.9735	ug/L	98
74)	Bromoform	15.43	173	190959	49.8328	ug/L	99
75)	Isopropylbenzene	15.31	105	1490416	54.2449	ug/L	100
77)	1,1,2,2-Tetrachloroethane	15.52	83	228913	54.9422	ug/L	100
79)	1,2,3-Trichloropropane	15.70	110	78385	50.1407	ug/L	92
80)	trans-1,4-Dichloro-2-Buten	15.74	53	73730	36.9129	ug/L	62
81)	n-Propylbenzene	15.79	91	1753049	56.5769	ug/L	99
82)	Bromobenzene	15.92	156	419932	51.6479	ug/L	99
83)	1,3,5-Trimethylbenzene	15.95	105	1303495	55.1277	ug/L	99
84)	2-Chlorotoluene	16.05	91	1145029	52.7599	ug/L	99
85)	4-Chlorotoluene	16.09	91	1077116	55.4064	ug/L	99
86)	a-Methylstyrene	16.34	118	741671	59.4584	ug/L	99
87)	tert-Butylbenzene	16.40	134	283244	56.5417	ug/L	95
88)	1,2,4-Trimethylbenzene	16.44	105	1296091	53.8297	ug/L	99
89)	sec-Butylbenzene	16.65	105	1586978	55.8961	ug/L	100
90)	p-Isopropyltoluene	16.79	119	1426648	54.7069	ug/L	99
91)	1,3-Dichlorobenzene	16.98	146	827515	52.6969	ug/L	98
92)	1,4-Dichlorobenzene	17.10	146	844174	53.0354	ug/L	98
93)	n-Butylbenzene	17.28	91	1238500	53.8957	ug/L	99
94)	1,2-Dichlorobenzene	17.57	146	766416	53.5772	ug/L	98
95)	1,2-Dibromo-3-Chloropropan	18.49	75	45158	48.1046	ug/L	97
96)	1,2,4-Trichlorobenzene	19.55	180	580278	55.4365	ug/L	99
97)	Hexachlorobutadiene	19.69	225	257859	55.9180	ug/L	98
98)	Naphthalene	19.90	128	993390	51.1296	ug/L	100
99)	1,2,3-Trichlorobenzene	20.19	180	519374	54.0642	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:47 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

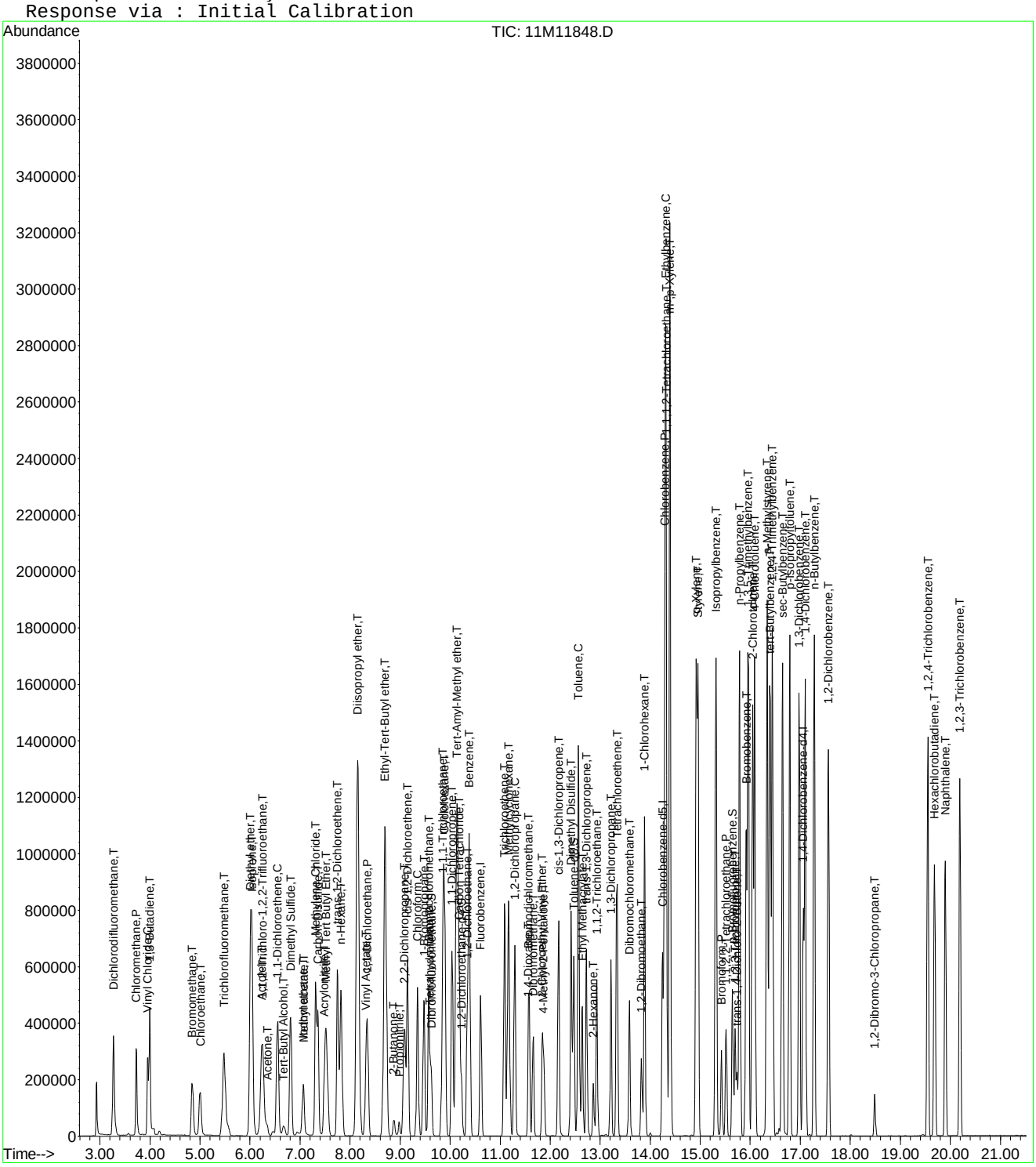

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	107	0.00
2	T	Dichlorodifluoromethane	50.0000	56.5878	-13.2	119	0.00
3	P	Chloromethane	50.0000	55.1069	-10.2	134	0.00
4	C	Vinyl Chloride	50.0000	56.1165	-12.2	125	-0.01
5	T	1,3-Butadiene	50.0000	36.6650	26.7#	76	-0.01
6	T	Bromomethane	50.0000	50.4885	-1.0	117	-0.01
7	T	Chloroethane	50.0000	58.8601	-17.7	131	0.00
8	T	Trichlorofluoromethane	50.0000	47.5286	4.9	106	0.00
9	T	Diethyl ether	100.0000	105.4639	-5.5	116	0.00
10	T	Isoprene	50.0000	54.2141	-8.4	117	0.00
11	T	Acrolein	50.0000	97.7296	-95.5#	222	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	51.9609	-3.9	115	0.00
13	T	Acetone	50.0000	49.6723	0.7	110	0.01
14	C	1,1-Dichloroethene	50.0000	47.5320	4.9	106	-0.01
15	T	Tert-Butyl Alcohol	200.0000	216.1534	-8.1	114	0.01
16	T	Dimethyl Sulfide	50.0000	70.9875	-42.0#	150	0.00
17	T	Iodomethane	50.0000	38.4128	23.2	82	0.00
18	T	Methyl acetate	50.0000	48.7416	2.5	108	0.01
19	T	Methylene Chloride	50.0000	51.9916	-4.0	118	0.00
20	T	Carbon Disulfide	50.0000	44.6859	10.6	94	-0.01
21	T	Acrylonitrile	50.0000	52.6181	-5.2	110	0.00
22	T	Methyl Tert Butyl Ether	50.0000	51.9942	-4.0	113	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.1295	-4.3	117	0.00
24	T	n-Hexane	50.0000	44.5959	10.8	94	0.00
25	T	Diisopropyl ether	100.0000	104.0201	-4.0	112	0.00
26	T	Vinyl Acetate	50.0000	43.6417	12.7	96	0.00
27	P	1,1-Dichloroethane	50.0000	48.5033	3.0	107	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.3560	1.6	106	0.00
29	T	2-Butanone	50.0000	50.3381	-0.7	111	0.00
30	T	Propionitrile	100.0000	105.7786	-5.8	110	0.01
31	T	2,2-Dichloropropane	50.0000	45.5727	8.9	101	0.00
32	T	cis-1,2-Dichloroethene	50.0000	53.1618	-6.3	118	0.00
33	C	Chloroform	50.0000	47.5773	4.8	108	0.00
34	T	1-Bromopropane	50.0000	68.6656	-37.3#	152	0.00
35	T	Bromochloromethane	50.0000	53.8923	-7.8	111	0.00
36	T	Tetrahydrofuran	100.0000	93.0068	7.0	103	0.00
37	S	Dibromofluoromethane	25.0000	25.4675	-1.9	111	0.00
38	T	1,1,1-Trichloroethane	50.0000	48.0501	3.9	106	0.00
39	T	Cyclohexane	50.0000	50.2142	-0.4	105	0.00
40	T	1,1-Dichloropropene	50.0000	50.1107	-0.2	111	0.00
41	T	Carbon Tetrachloride	50.0000	47.3479	5.3	103	0.00
42	T	Tert-Amyl-Methyl ether	100.0000	105.6143	-5.6	115	0.00
43	S	1,2-Dichloroethane-d4	25.0000	22.9299	8.3	101	0.00
44	T	1,2-Dichloroethane	50.0000	47.8802	4.2	104	0.00
45	T	Benzene	50.0000	51.1809	-2.4	116	0.00
46	T	Trichloroethene	50.0000	52.3242	-4.6	119	-0.01
47	T	Methylcyclohexane	50.0000	52.3110	-4.6	108	0.00
48	C	1,2-Dichloropropane	50.0000	52.8102	-5.6	117	0.00
49	T	1,4-Dioxane	200.0000	191.2043	4.4	109	0.01
50	T	Bromodichloromethane	50.0000	49.5339	0.9	107	0.00
51	T	Dibromomethane	50.0000	48.0471	3.9	104	0.00
52	T	2-Chloroethyl Vinyl Ether	50.0000	51.9140	-3.8	114	0.00
53	T	4-Methyl-2-Pentanone	50.0000	52.5623	-5.1	115	0.00
54	T	cis-1,3-Dichloropropene	50.0000	57.5993	-15.2	122	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	50.0000	52.0055	-4.0	110	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	105	0.00
57	S	Toluene-d8	25.0000	26.4930	-6.0	115	0.00
58	C	Toluene	50.0000	53.7500	-7.5	115	0.00
59	T	Ethyl Methacrylate	50.0000	57.0854	-14.2	114	0.00
60	T	trans-1,3-Dichloropropene	50.0000	52.1118	-4.2	107	0.00
61	T	1,1,2-Trichloroethane	50.0000	52.7643	-5.5	113	0.00
62	T	2-Hexanone	50.0000	52.1857	-4.4	110	0.00
63	T	1,3-Dichloropropane	50.0000	56.2767	-12.6	118	0.00
64	T	Tetrachloroethene	50.0000	52.1906	-4.4	113	0.00
65	T	Dibromochloromethane	50.0000	52.5251	-5.1	107	0.00
66	T	1,2-Dibromoethane	50.0000	52.6373	-5.3	111	0.00
67	T	1-Chlorohexane	50.0000	54.5237	-9.0	112	0.00
68	P	Chlorobenzene	50.0000	53.2936	-6.6	114	0.00
69	T	1,1,1,2-Tetrachloroethane	50.0000	51.0388	-2.1	109	0.00
70	C	Ethylbenzene	50.0000	52.3943	-4.8	113	0.00
71	T	m-,p-Xylene	100.0000	107.2445	-7.2	115	0.00
72	T	o-Xylene	50.0000	54.7003	-9.4	115	0.00
73	T	Styrene	50.0000	54.9735	-9.9	113	0.00
74	P	Bromoform	50.0000	49.8327	0.3	104	0.00
75	T	Isopropylbenzene	50.0000	54.2449	-8.5	114	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	101	0.00
77	P	1,1,2,2-Tetrachloroethane	50.0000	54.9422	-9.9	110	0.00
78	S	p-Bromofluorobenzene	25.0000	24.7040	1.2	108	0.00
79	T	1,2,3-Trichloropropane	50.0000	50.1407	-0.3	108	0.00
80	T	trans-1,4-Dichloro-2-Butene	50.0000	36.9129	26.2#	78	0.00
81	T	n-Propylbenzene	50.0000	56.5769	-13.2	115	0.00
82	T	Bromobenzene	50.0000	51.6479	-3.3	111	0.00
83	T	1,3,5-Trimethylbenzene	50.0000	55.1277	-10.3	114	-0.01
84	T	2-Chlorotoluene	50.0000	52.7599	-5.5	112	0.00
85	T	4-Chlorotoluene	50.0000	55.4064	-10.8	116	0.00
86	T	a-Methylstyrene	50.0000	59.4584	-18.9	114	0.00
87	T	tert-Butylbenzene	50.0000	56.5417	-13.1	117	0.00
88	T	1,2,4-Trimethylbenzene	50.0000	53.8297	-7.7	110	0.00
89	T	sec-Butylbenzene	50.0000	55.8961	-11.8	114	0.00
90	T	p-Isopropyltoluene	50.0000	54.7069	-9.4	111	0.00
91	T	1,3-Dichlorobenzene	50.0000	52.6969	-5.4	112	0.00
92	T	1,4-Dichlorobenzene	50.0000	53.0354	-6.1	114	0.00
93	T	n-Butylbenzene	50.0000	53.8957	-7.8	110	0.00
94	T	1,2-Dichlorobenzene	50.0000	53.5772	-7.2	112	0.00
95	T	1,2-Dibromo-3-Chloropropane	50.0000	48.1046	3.8	105	0.00
96	T	1,2,4-Trichlorobenzene	50.0000	55.4365	-10.9	113	0.00
97	T	Hexachlorobutadiene	50.0000	55.9180	-11.8	118	0.00
98	T	Naphthalene	50.0000	51.1296	-2.3	103	0.00
99	T	1,2,3-Trichlorobenzene	50.0000	54.0642	-8.1	114	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:40:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	823748	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	571926	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	299321	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	12.68	98	567	0.0189 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.08%#	
80) p-Bromofluorobenzene	16.08	95	313	0.0253 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	3836	0.2778 ug/L	91
3) Chloromethane	3.62	50	3658	0.4537 ug/L	95
4) Vinyl Chloride	3.85	62	2516	0.2630 ug/L #	58
5) 1,3-Butadiene	3.91	54	2079	0.2592 ug/L	71
6) Bromomethane	4.73	94	1152	0.6530 ug/L #	55
7) Chloroethane	4.90	64	1112	0.2113 ug/L #	72
8) Trichlorofluoromethane	5.35	101	2706	0.1520 ug/L #	53
10) Isoprene	5.93	67	2147	0.1987 ug/L	85
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1746	0.2087 ug/L	97
14) 1,1-Dichloroethene	6.48	61	3332	0.2501 ug/L	75
16) Dimethyl Sulfide	6.73	62	1099	0.2308 ug/L	95
19) Methylene Chloride	7.26	84	3414	0.4028 ug/L	88
20) Carbon Disulfide	7.30	76	10739	0.3853 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	4927	0.2686 ug/L #	60
23) trans-1,2-Dichloroethene	7.70	61	3879	0.3170 ug/L	98
24) n-Hexane	7.78	57	2794	0.3075 ug/L	85
26) Vinyl Acetate	8.30	43	1973	0.2259 ug/L #	70
27) 1,1-Dichloroethane	8.33	63	4881	0.3212 ug/L #	88
31) 2,2-Dichloropropane	9.11	77	4966	0.3101 ug/L	89
32) cis-1,2-Dichloroethene	9.17	96	2958	0.3128 ug/L	87
33) Chloroform	9.37	83	5564	0.3101 ug/L	95
34) 1-Bromopropane	9.52	122	210	0.1551 ug/L #	1
35) Bromochloromethane	9.60	130	1386	0.2858 ug/L	76
36) Tetrahydrofuran	9.62	42	1849	2.0617 ug/L #	60
38) 1,1,1-Trichloroethane	9.91	97	4978	0.2921 ug/L	95
39) Cyclohexane	9.93	56	3120	0.2644 ug/L #	85
40) 1,1-Dichloropropene	10.11	75	3779	0.2909 ug/L	97
42) Carbon Tetrachloride	10.24	117	4835	0.3194 ug/L #	74
45) 1,2-Dichloroethane	10.43	62	3295	0.2853 ug/L #	81
46) Benzene	10.46	78	11279	0.3333 ug/L	93
47) Trichloroethene	11.20	130	2410	0.2670 ug/L	97
48) Methylcyclohexane	11.31	83	3936	0.2871 ug/L	84
49) 1,2-Dichloropropane	11.42	63	2136	0.2836 ug/L	88
50) Bromodichloromethane	11.73	83	3767	0.2845 ug/L #	91
52) Dibromomethane	11.82	93	700	0.1570 ug/L #	59
53) 2-Chloroethyl Vinyl Ether	12.02	63	847	0.2616 ug/L #	47
55) cis-1,3-Dichloropropene	12.36	75	4763	0.3535 ug/L	84
56) Dimethyl Disulfide	12.63	79	1647	0.2290 ug/L	82
59) Toluene	12.78	91	11513	0.3243 ug/L	92
60) Ethyl Methacrylate	12.89	69	1631	0.2392 ug/L #	64

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:40:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
62)	trans-1,3-Dichloropropene	12.96	75	3626	0.3047 ug/L		82
63)	1,1,2-Trichloroethane	13.18	97	1409	0.2515 ug/L		98
65)	1,3-Dichloropropane	13.49	76	2584	0.2590 ug/L		93
66)	Tetrachloroethene	13.61	164	2678	0.3520 ug/L	#	75
67)	Dibromochloromethane	13.87	129	2126	0.2599 ug/L		79
68)	1,2-Dibromoethane	14.12	107	1895	0.3394 ug/L		91
69)	1-Chlorohexane	14.21	91	3835	0.3164 ug/L		99
70)	Chlorobenzene	14.62	112	7968	0.3328 ug/L		88
71)	1,1,1,2-Tetrachloroethane	14.67	131	2872	0.3096 ug/L		87
72)	Ethylbenzene	14.64	106	3844	0.2934 ug/L		81
73)	m-,p-Xylene	14.75	106	10447	0.6799 ug/L		96
74)	o-Xylene	15.31	106	4577	0.3047 ug/L		97
75)	Styrene	15.35	104	7545	0.3062 ug/L		95
76)	Bromoform	15.84	173	1301	0.2681 ug/L	#	51
77)	Isopropylbenzene	15.74	105	13119	0.3287 ug/L		90
79)	1,1,2,2-Tetrachloroethane	15.96	83	1714	0.2853 ug/L	#	85
83)	n-Propylbenzene	16.24	91	15676	0.3357 ug/L		92
84)	Bromobenzene	16.38	156	2859	0.2977 ug/L		90
85)	1,3,5-Trimethylbenzene	16.43	105	10873	0.3196 ug/L		99
86)	2-Chlorotoluene	16.52	91	11133	0.3415 ug/L		96
87)	4-Chlorotoluene	16.56	91	10305	0.3499 ug/L		97
88)	a-Methylstyrene	16.83	118	4090	0.2534 ug/L		86
89)	tert-Butylbenzene	16.90	134	1734	0.2606 ug/L		72
90)	1,2,4-Trimethylbenzene	16.95	105	10734	0.3069 ug/L		89
91)	sec-Butylbenzene	17.16	105	13749	0.3436 ug/L		97
92)	p-Isopropyltoluene	17.32	119	10847	0.3192 ug/L		95
93)	1,3-Dichlorobenzene	17.52	146	6023	0.3257 ug/L		99
94)	1,4-Dichlorobenzene	17.65	146	6152	0.3299 ug/L	#	60
95)	n-Butylbenzene	17.85	91	11161	0.3323 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	5711	0.3472 ug/L		92
98)	1,2,4-Trichlorobenzene	20.29	180	4203	0.3418 ug/L		91
99)	Hexachlorobutadiene	20.43	225	1894	0.3297 ug/L		84
100)	Naphthalene	20.65	128	6039	0.3306 ug/L		91
101)	1,2,3-Trichlorobenzene	20.96	180	3279	0.3161 ug/L		86

(#) = qualifier out of range (m) = manual integration
8M412220.D 8260WT.M Tue May 17 11:40:55 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2778	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.4537	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.2630	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	0.2592	0.0	100	0.03
6	T	Bromomethane	-1.0000	0.9911	0.0	100	0.00
7	T	Chloroethane	-1.0000	0.2113	0.0	100	0.00
8	T	Trichlorofluoromethane	-1.0000	0.1520	0.0	100	-0.02
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.90#
10	T	Isoprene	-1.0000	0.1987	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.13#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2087	0.0	100	0.00
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	-1.0000	0.2501	0.0	100	0.02
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.58#
16	T	Dimethyl Sulfide	-1.0000	0.2308	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.0000	0.0	0	-7.00#
19	T	Methylene Chloride	-1.0000	0.4028	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.3853	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.43#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2686	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	-1.0000	0.3170	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.3075	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.2259	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.3212	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.98#
31	T	2,2-Dichloropropane	-1.0000	0.3101	0.0	100	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.3128	0.0	100	0.00
33	C	Chloroform	0.3000	0.3101	-3.4	100	0.00
34		1-Bromopropane	-1.0000	0.1551	0.0	100	0.00
35	T	Bromochloromethane	-1.0000	0.2858	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	2.0617	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	-1.0000	0.2921	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.2644	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.2909	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	-1.0000	0.3194	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	-1.0000	0.2853	0.0	100	0.00
46	T	Benzene	-1.0000	0.3333	0.0	100	0.00
47	T	Trichloroethene	-1.0000	0.2670	0.0	100	-0.01
48	T	Methylcyclohexane	-1.0000	0.2871	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2836	0.0	100	0.00
50	T	Bromodichloromethane	-1.0000	0.2845	0.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	-1.0000	0.1570	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2616	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.05#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.3535	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2290	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0189	0.0	100	0.00
59	C	Toluene	-1.0000	0.3243	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2392	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3047	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.2515	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	-1.0000	0.2590	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.3520	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.2599	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.3394	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.3164	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.3328	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.3096	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.2934	0.0	100	-0.01
73	T	m-,p-Xylene	-1.0000	0.6799	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.3047	0.0	100	0.00
75	T	Styrene	-1.0000	0.3062	0.0	100	0.00
76	P	Bromoform	-1.0000	0.2681	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.3287	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2853	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0253	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.1103	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	-1.0000	0.3357	0.0	100	0.00
84	T	Bromobenzene	0.3000	0.2977	0.8	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.3196	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.3415	0.0	100	0.00
87	T	4-Chlorotoluene	-1.0000	0.3499	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2534	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.2606	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.3069	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3436	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.3192	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.3257	0.0	100	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.3299	-10.0	100	0.00
95	T	n-Butylbenzene	-1.0000	0.3323	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.3472	-15.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.3418	0.0	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.3297	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.3306	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.3161	-5.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	801173	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	557498	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	293108	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.00%#	
80) p-Bromofluorobenzene	16.08	95	343	0.0286 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	5478	0.3262 ug/L	79
3) Chloromethane	3.63	50	3930	0.2484 ug/L	85
4) Vinyl Chloride	3.84	62	3512	0.3288 ug/L	97
5) 1,3-Butadiene	3.90	54	2479	0.2375 ug/L #	75
6) Bromomethane	4.73	94	1343	0.9497 ug/L	85
7) Chloroethane	4.90	64	2219	0.3174 ug/L #	43
8) Trichlorofluoromethane	5.36	101	6974	0.3289 ug/L #	93
10) Isoprene	5.94	67	4288	0.3952 ug/L #	62
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	3168	0.3263 ug/L #	40
14) 1,1-Dichloroethene	6.47	61	5431	0.2882 ug/L	92
16) Dimethyl Sulfide	6.74	62	1708	0.2453 ug/L	64
19) Methylene Chloride	7.24	84	3785	0.4239 ug/L #	43
20) Carbon Disulfide	7.29	76	12437	0.4565 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	6580	0.3336 ug/L #	76
23) trans-1,2-Dichloroethene	7.71	61	4990	0.2928 ug/L	96
24) n-Hexane	7.79	57	3110	0.2011 ug/L	99
26) Vinyl Acetate	8.31	43	2753	0.1566 ug/L	100
27) 1,1-Dichloroethane	8.32	63	5655	0.2774 ug/L #	92
31) 2,2-Dichloropropane	9.10	77	6035	0.3360 ug/L	82
32) cis-1,2-Dichloroethene	9.16	96	3837	0.3762 ug/L	74
33) Chloroform	9.37	83	7267	0.3842 ug/L	100
34) 1-Bromopropane	9.50	122	234	0.1456 ug/L #	1
35) Bromochloromethane	9.60	130	1674	0.3137 ug/L	62
36) Tetrahydrofuran	9.62	42	447	0.2146 ug/L #	41
38) 1,1,1-Trichloroethane	9.91	97	6304	0.3305 ug/L	90
39) Cyclohexane	9.94	56	4658	0.2238 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	5172	0.3768 ug/L	80
42) Carbon Tetrachloride	10.25	117	5692	0.3172 ug/L	95
45) 1,2-Dichloroethane	10.43	62	4443	0.2796 ug/L #	63
46) Benzene	10.46	78	14456	0.4134 ug/L #	77
47) Trichloroethene	11.21	130	3659	0.3626 ug/L	98
48) Methylcyclohexane	11.29	83	5025	0.3562 ug/L	84
49) 1,2-Dichloropropane	11.42	63	3060	0.3007 ug/L	98
50) Bromodichloromethane	11.73	83	4734	0.3343 ug/L #	93
52) Dibromomethane	11.82	93	1805	0.3767 ug/L	84
55) cis-1,3-Dichloropropene	12.36	75	5008	0.3514 ug/L	90
56) Dimethyl Disulfide	12.63	79	1921	0.2573 ug/L	85
59) Toluene	12.78	91	14742	0.4416 ug/L	98
60) Ethyl Methacrylate	12.90	69	2062	0.3292 ug/L	66
62) trans-1,3-Dichloropropene	12.96	75	3693	0.3171 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M412221.D 8260WT.M Fri May 13 14:20:38 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
63)	1,1,2-Trichloroethane	13.18	97	2326	0.4391 ug/L	70
65)	1,3-Dichloropropane	13.49	76	3163	0.3219 ug/L	88
66)	Tetrachloroethene	13.61	164	3164	0.4185 ug/L	93
67)	Dibromochloromethane	13.87	129	3113	0.3727 ug/L	86
68)	1,2-Dibromoethane	14.12	107	2076	0.3760 ug/L	90
69)	1-Chlorohexane	14.21	91	4746	0.4174 ug/L	80
70)	Chlorobenzene	14.62	112	9180	0.3960 ug/L	98
71)	1,1,1,2-Tetrachloroethane	14.66	131	3501	0.3876 ug/L	95
72)	Ethylbenzene	14.65	106	5348	0.4066 ug/L	84
73)	m-,p-Xylene	14.75	106	13269	0.8757 ug/L	89
74)	o-Xylene	15.31	106	6019	0.3943 ug/L	97
75)	Styrene	15.35	104	9370	0.3849 ug/L	95
76)	Bromoform	15.83	173	1198	0.2500 ug/L #	76
77)	Isopropylbenzene	15.73	105	16528	0.4270 ug/L	92
79)	1,1,2,2-Tetrachloroethane	15.96	83	1999	0.3419 ug/L #	83
83)	n-Propylbenzene	16.25	91	19410	0.4297 ug/L	95
84)	Bromobenzene	16.37	156	3319	0.3524 ug/L	75
85)	1,3,5-Trimethylbenzene	16.42	105	13794	0.4127 ug/L	95
86)	2-Chlorotoluene	16.51	91	13678	0.4729 ug/L	90
87)	4-Chlorotoluene	16.56	91	12572	0.4219 ug/L	98
88)	a-Methylstyrene	16.84	118	5739	0.3485 ug/L	96
89)	tert-Butylbenzene	16.90	134	2254	0.3403 ug/L	55
90)	1,2,4-Trimethylbenzene	16.95	105	13859	0.4051 ug/L	90
91)	sec-Butylbenzene	17.17	105	17612	0.4382 ug/L	90
92)	p-Isopropyltoluene	17.32	119	13616	0.3968 ug/L	90
93)	1,3-Dichlorobenzene	17.52	146	6961	0.3724 ug/L	86
94)	1,4-Dichlorobenzene	17.64	146	7149	0.3832 ug/L #	1
95)	n-Butylbenzene	17.85	91	15223	0.4664 ug/L	91
96)	1,2-Dichlorobenzene	18.14	146	6129	0.3742 ug/L	92
98)	1,2,4-Trichlorobenzene	20.28	180	5035	0.3969 ug/L	97
99)	Hexachlorobutadiene	20.44	225	2420	0.4122 ug/L	83
100)	Naphthalene	20.65	128	7474	0.3874 ug/L #	84
101)	1,2,3-Trichlorobenzene	20.96	180	4378	0.4056 ug/L #	78

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

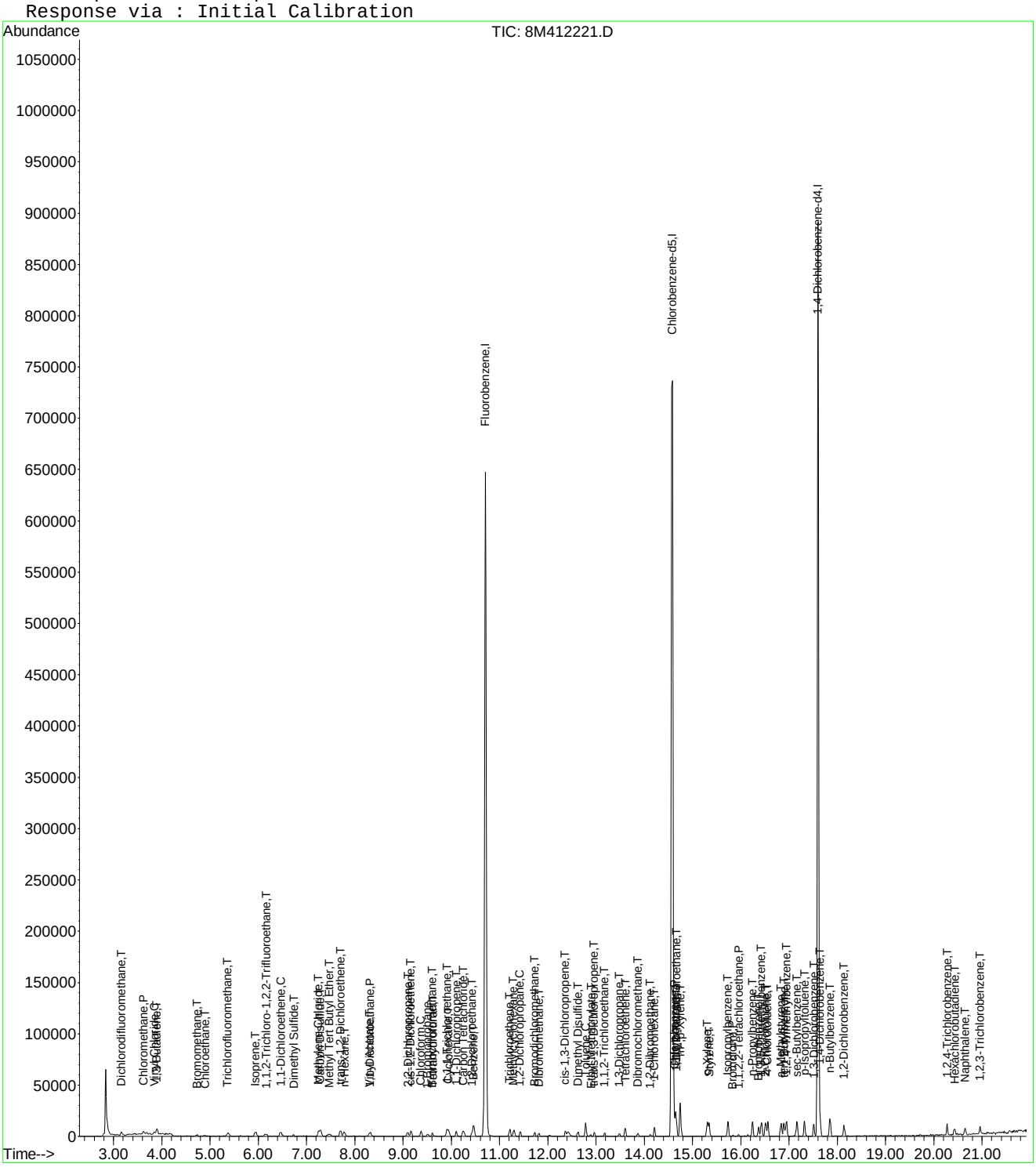

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	0.4000	0.4078	-2.0	100	0.00
3	P	Chloromethane	-1.0000	0.5012	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.3775	5.6	100	0.00
5	T	1,3-Butadiene	-1.0000	0.3178	0.0	100	0.02
6	T	Bromomethane	-1.0000	1.0253	0.0	100	0.00
7	T	Chloroethane	0.4000	0.4335	-8.4	100	0.00
8	T	Trichlorofluoromethane	0.4000	0.4029	-0.7	100	-0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.90#
10	T	Isoprene	0.4000	0.4079	-2.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.13#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3894	0.0	100	0.02
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	0.4000	0.4192	-4.8	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.58#
16	T	Dimethyl Sulfide	0.4000	0.3687	7.8	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.2179	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4591	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4587	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.43#
22	T	Methyl Tert Butyl Ether	-1.0000	0.3688	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.4193	-4.8	100	0.00
24	T	n-Hexane	-1.0000	0.3519	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.3241	0.0	100	0.02
27	P	1,1-Dichloroethane	0.4000	0.3826	4.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.98#
31	T	2,2-Dichloropropane	0.4000	0.3874	3.1	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.4172	-4.3	100	-0.01
33	C	Chloroform	0.4000	0.4164	-4.1	100	0.00
34		1-Bromopropane	-1.0000	0.1776	0.0	100	-0.01
35	T	Bromochloromethane	0.4000	0.3550	11.3	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.5125	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	0.4000	0.3803	4.9	100	0.00
39	T	Cyclohexane	-1.0000	0.4058	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4093	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	0.4000	0.3867	3.3	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	0.4000	0.3955	1.1	100	0.00
46	T	Benzene	0.4000	0.4393	-9.8	100	0.00
47	T	Trichloroethene	0.4000	0.4169	-4.2	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3768	0.0	100	-0.01
49	C	1,2-Dichloropropane	0.4000	0.4177	-4.4	100	0.00
50	T	Bromodichloromethane	0.4000	0.3676	8.1	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	0.4000	0.4162	-4.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1401	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.05#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3821	4.5	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2746	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0000	0.0	0	-12.68#
59	C	Toluene	0.4000	0.4259	-6.5	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3102	0.0	100	0.02
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3184	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.4259	-6.5	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	0.4000	0.3253	18.7	100	0.00
66	T	Tetrachloroethene	0.4000	0.4267	-6.7	100	0.00
67	T	Dibromochloromethane	0.4000	0.3904	2.4	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.3814	4.6	100	0.00
69	T	1-Chlorohexane	0.4000	0.4017	-0.4	100	0.00
70	P	Chlorobenzene	0.4000	0.3933	1.7	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3872	3.2	100	0.00
72	C	Ethylbenzene	0.4000	0.4188	-4.7	100	0.00
73	T	m-,p-Xylene	0.8000	0.8859	-10.7	100	0.00
74	T	o-Xylene	-1.0000	0.4110	0.0	100	0.00
75	T	Styrene	0.4000	0.3901	2.5	100	0.00
76	P	Bromoform	-1.0000	0.2533	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.4249	-6.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.3398	15.1	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0283	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.14#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	0.4000	0.4245	-6.1	100	0.00
84	T	Bromobenzene	0.4000	0.3529	11.8	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.4141	-3.5	100	0.00
86	T	2-Chlorotoluene	0.4000	0.4284	-7.1	100	0.00
87	T	4-Chlorotoluene	0.4000	0.4359	-9.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.3631	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3459	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	0.4000	0.4046	-1.2	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.4494	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4092	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.3844	3.9	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.3915	2.1	100	0.00
95	T	n-Butylbenzene	-1.0000	0.4628	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.3805	4.9	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	0.4000	0.4182	-4.5	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.4302	-7.5	100	0.00
100	T	Naphthalene	0.4000	0.4178	-4.5	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.4310	-7.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412221.D 8260WT.M Sat May 14 18:03:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	795577	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	547129	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	284579	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.65	111	3962	0.3966 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery	= 1.60%#	
43) 1,2-Dichloroethane-d4	10.31	65	3835	0.3356 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery	= 1.36%#	
58) Toluene-d8	12.68	98	14023	0.4957 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 2.00%#	
80) p-Bromofluorobenzene	16.08	95	6483	0.5565 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery	= 2.24%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	12402	0.7438 ug/L	97
3) Chloromethane	3.62	50	8415	0.5357 ug/L #	75
4) Vinyl Chloride	3.84	62	9412	0.8873 ug/L	89
5) 1,3-Butadiene	3.90	54	6974	0.6729 ug/L	81
6) Bromomethane	4.73	94	4114	1.3123 ug/L	92
7) Chloroethane	4.90	64	4983	0.7178 ug/L #	80
8) Trichlorofluoromethane	5.38	101	17133	0.8136 ug/L #	96
9) Diethyl ether	5.90	59	20707	3.2140 ug/L	84
10) Isoprene	5.94	67	11176	1.0373 ug/L	76
11) Acrolein	6.14	56	246	0.4300 ug/L #	15
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	8135	0.8438 ug/L	96
13) Acetone	6.24	43	413	0.2115 ug/L #	48
14) 1,1-Dichloroethene	6.46	61	12947	0.6919 ug/L	91
15) Tert-Butyl Alcohol	6.59	59	3316	7.3747 ug/L #	55
16) Dimethyl Sulfide	6.72	62	4505	0.6515 ug/L	79
18) Methyl acetate	7.00	43	2119	0.3630 ug/L #	66
19) Methylene Chloride	7.24	84	8723	0.9837 ug/L #	43
20) Carbon Disulfide	7.29	76	28246	1.0441 ug/L	100
21) Acrylonitrile	7.43	53	2164	0.8620 ug/L	76
22) Methyl Tert Butyl Ether	7.47	73	16998	0.8678 ug/L	84
23) trans-1,2-Dichloroethene	7.70	61	12571	0.7427 ug/L	100
24) n-Hexane	7.78	57	9382	0.6109 ug/L	82
25) Diisopropyl ether	8.12	45	95400	2.1939 ug/L #	91
26) Vinyl Acetate	8.30	43	6750	0.3867 ug/L #	89
27) 1,1-Dichloroethane	8.32	63	14721	0.7271 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	97972	3.2102 ug/L	88
29) 2-Butanone	8.88	43	380	0.1215 ug/L #	57
30) Propionitrile	8.99	54	1593	2.0138 ug/L #	56
31) 2,2-Dichloropropane	9.09	77	14691	0.8236 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	9482	0.9362 ug/L	72
33) Chloroform	9.37	83	18494	0.9845 ug/L	94
34) 1-Bromopropane	9.50	122	1092	0.6844 ug/L	80
35) Bromochloromethane	9.61	130	5234	0.9877 ug/L #	55
36) Tetrahydrofuran	9.63	42	5415	2.6185 ug/L #	68
38) 1,1,1-Trichloroethane	9.91	97	17074	0.9016 ug/L	92
39) Cyclohexane	9.94	56	11865	0.5740 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	13172	0.9663 ug/L	87
41) Tert-Amyl-Methyl ether	10.21	73	90255	4.6173 ug/L #	88
42) Carbon Tetrachloride	10.25	117	14515	0.8146 ug/L	95
45) 1,2-Dichloroethane	10.42	62	10675	0.6766 ug/L	85

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	10.47	78	34504	0.9938 ug/L		84
47)	Trichloroethene	11.21	130	8752	0.8735 ug/L		93
48)	Methylcyclohexane	11.30	83	13513	0.9646 ug/L		79
49)	1,2-Dichloropropane	11.43	63	7057	0.6982 ug/L	#	67
50)	Bromodichloromethane	11.73	83	12147	0.8638 ug/L		96
52)	Dibromomethane	11.81	93	4130	0.8681 ug/L		95
53)	2-Chloroethyl Vinyl Ether	12.03	63	2694	0.6366 ug/L		86
54)	4-Methyl-2-Pentanone	12.06	58	848	0.3671 ug/L	#	41
55)	cis-1,3-Dichloropropene	12.36	75	12521	0.8847 ug/L		97
56)	Dimethyl Disulfide	12.63	79	5799	0.7821 ug/L		96
59)	Toluene	12.79	91	37114	1.1328 ug/L		95
60)	Ethyl Methacrylate	12.88	69	5490	0.8930 ug/L		69
62)	trans-1,3-Dichloropropene	12.96	75	10328	0.9035 ug/L		92
63)	1,1,2-Trichloroethane	13.18	97	5274	1.0144 ug/L		93
64)	2-Hexanone	13.10	58	397	0.2127 ug/L	#	1
65)	1,3-Dichloropropane	13.49	76	9673	1.0032 ug/L		73
66)	Tetrachloroethene	13.61	164	7373	0.9937 ug/L		95
67)	Dibromochloromethane	13.87	129	7358	0.8977 ug/L		95
68)	1,2-Dibromoethane	14.13	107	5123	0.9454 ug/L		95
69)	1-Chlorohexane	14.21	91	12790	1.1461 ug/L		79
70)	Chlorobenzene	14.62	112	25662	1.1281 ug/L		89
71)	1,1,1,2-Tetrachloroethane	14.66	131	8722	0.9838 ug/L		94
72)	Ethylbenzene	14.65	106	13009	1.0078 ug/L		87
73)	m-,p-Xylene	14.75	106	30465	2.0486 ug/L		84
74)	o-Xylene	15.31	106	15133	1.0101 ug/L		84
75)	Styrene	15.35	104	23191	0.9707 ug/L		91
76)	Bromoform	15.84	173	3875	0.8240 ug/L		96
77)	Isopropylbenzene	15.74	105	41382	1.0895 ug/L		95
79)	1,1,2,2-Tetrachloroethane	15.95	83	5604	0.9873 ug/L	#	93
81)	1,2,3-Trichloropropane	16.15	110	1355	0.7428 ug/L	#	1
82)	trans-1,4-Dichloro-2-Buten	16.19	53	962	0.3479 ug/L	#	1
83)	n-Propylbenzene	16.25	91	48249	1.1002 ug/L		99
84)	Bromobenzene	16.37	156	9598	1.0497 ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	33355	1.0278 ug/L		96
86)	2-Chlorotoluene	16.51	91	33408	1.1895 ug/L		94
87)	4-Chlorotoluene	16.56	91	29548	1.0213 ug/L		95
88)	a-Methylstyrene	16.84	118	14414	0.9014 ug/L		91
89)	tert-Butylbenzene	16.89	134	6686	1.0398 ug/L		86
90)	1,2,4-Trimethylbenzene	16.95	105	36066	1.0857 ug/L		96
91)	sec-Butylbenzene	17.16	105	42128	1.0796 ug/L		96
92)	p-Isopropyltoluene	17.32	119	35424	1.0633 ug/L		94
93)	1,3-Dichlorobenzene	17.52	146	18409	1.0144 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	19031	1.0506 ug/L	#	62
95)	n-Butylbenzene	17.85	91	35772	1.1288 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	16104	1.0126 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.14	75	1262	1.0152 ug/L	#	53
98)	1,2,4-Trichlorobenzene	20.28	180	11494	0.9331 ug/L		98
99)	Hexachlorobutadiene	20.43	225	5421	0.9510 ug/L		98
100)	Naphthalene	20.65	128	16581	0.8853 ug/L		100
101)	1,2,3-Trichlorobenzene	20.96	180	10306	0.9835 ug/L		94

(#) = qualifier out of range (m) = manual integration
8M412222.D 8260WT.M Fri May 13 14:49:48 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

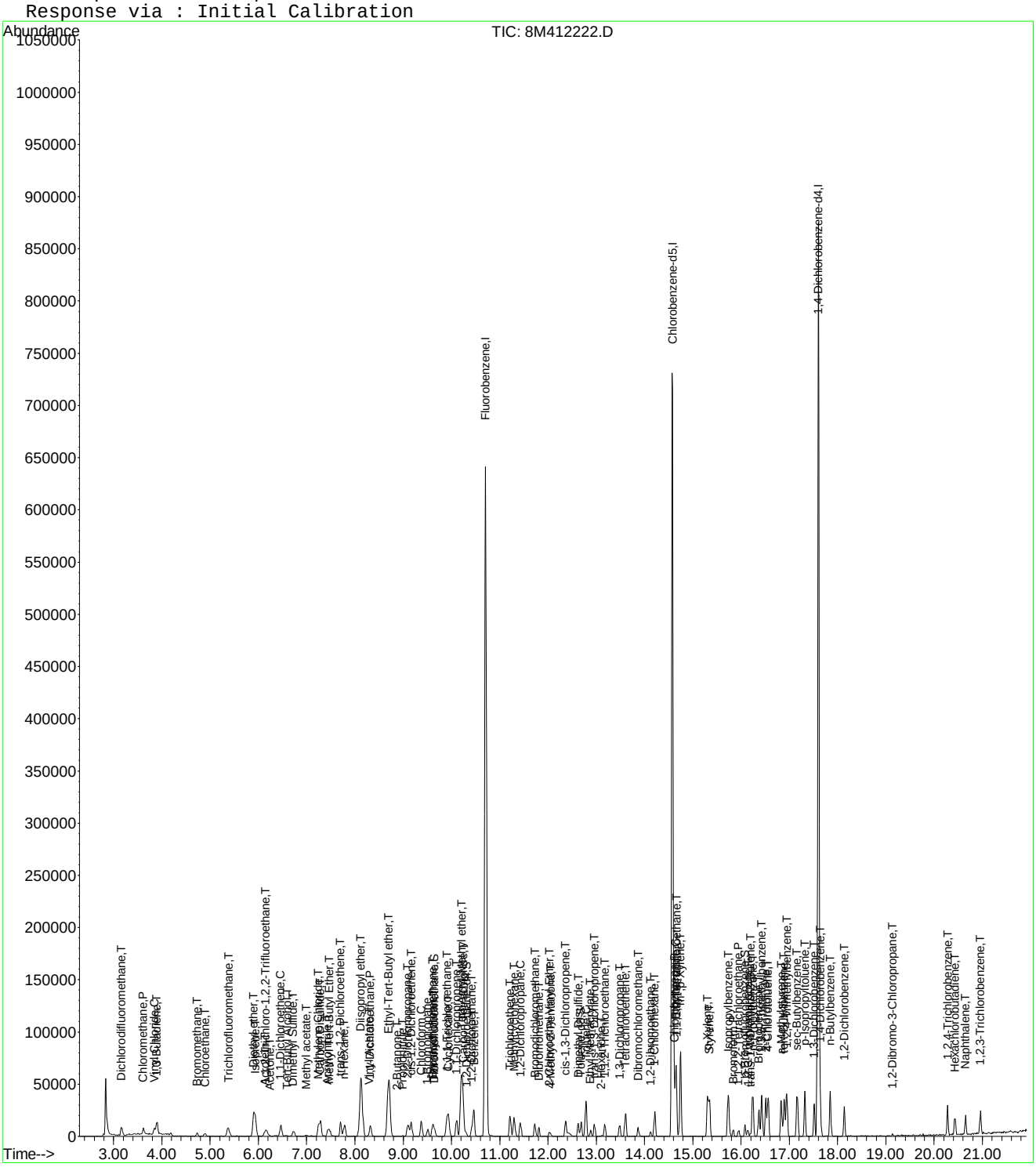

8M412222.D 8260WT.M Fri May 13 14:49:48 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:05:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9298	7.0	100	0.00
3	P	Chloromethane	1.0000	1.0808	-8.1	100	0.00
4	C	Vinyl Chloride	1.0000	1.0189	-1.9	100	0.00
5	T	1,3-Butadiene	-1.0000	0.9002	0.0	100	0.02
6	T	Bromomethane	1.0000	1.2082	-20.8	100	0.00
7	T	Chloroethane	1.0000	0.9803	2.0	100	0.00
8	T	Trichlorofluoromethane	1.0000	0.9968	0.3	100	0.00
9	T	Diethyl ether	5.0000	5.0462	-0.9	100	0.00
10	T	Isoprene	1.0000	1.0707	-7.1	100	0.00
11	T	Acrolein	-1.0000	0.6696	0.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0069	-0.7	100	0.00
13	T	Acetone	-1.0000	0.4614	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	1.0064	-0.6	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	11.5604	0.0	0	0.02
16	T	Dimethyl Sulfide	1.0000	0.9794	2.1	100	-0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.8758	0.0	100	0.00
19	T	Methylene Chloride	1.0000	1.0655	-6.5	100	0.00
20	T	Carbon Disulfide	1.0000	1.0492	-4.9	100	0.00
21	T	Acrylonitrile	2.5000	1.8633	25.5#	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9593	4.1	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	1.0636	-6.4	100	0.00
24	T	n-Hexane	-1.0000	1.0690	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	5.1784	-3.6	100	0.00
26	T	Vinyl Acetate	-1.0000	0.8002	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0029	-0.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.9635	0.7	100	0.00
29	T	2-Butanone	-1.0000	0.2889	0.0	100	0.00
30	T	Propionitrile	5.0000	4.1566	16.9	100	0.00
31	T	2,2-Dichloropropane	1.0000	0.9498	5.0	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	1.0383	-3.8	100	0.00
33	C	Chloroform	1.0000	1.0671	-6.7	100	0.00
34		1-Bromopropane	1.0000	0.8348	16.5	100	-0.01
35	T	Bromochloromethane	1.0000	1.1177	-11.8	100	0.00
36	T	Tetrahydrofuran	5.0000	6.2516	-25.0#	100	0.00
37	S	Dibromofluoromethane	0.5000	0.4635	7.3	100	-0.01
38	T	1,1,1-Trichloroethane	1.0000	1.0372	-3.7	100	0.00
39	T	Cyclohexane	1.0000	1.0411	-4.1	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0498	-5.0	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	5.0344	-0.7	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.9930	0.7	100	0.00
43	S	1,2-Dichloroethane-d4	0.5000	0.4184	16.3	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	1.0000	0.9570	4.3	100	0.00
46	T	Benzene	1.0000	1.0558	-5.6	100	0.00
47	T	Trichloroethene	1.0000	1.0041	-0.4	100	0.00
48	T	Methylcyclohexane	-1.0000	1.0205	0.0	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.9700	3.0	100	0.00
50	T	Bromodichloromethane	1.0000	0.9500	5.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	1.0000	0.9590	4.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.8616	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.6639	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:05:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9621	3.8	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.8348	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	0.5000	0.4897	2.1	100	0.00
59	C	Toluene	1.0000	1.0927	-9.3	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.8416	15.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	1.0000	0.9073	9.3	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.9840	1.6	100	0.00
64	T	2-Hexanone	-1.0000	0.3525	0.0	100	-0.01
65	T	1,3-Dichloropropane	1.0000	1.0137	-1.4	100	0.00
66	T	Tetrachloroethene	1.0000	1.0132	-1.3	100	0.00
67	T	Dibromochloromethane	1.0000	0.9402	6.0	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.9590	4.1	100	0.00
69	T	1-Chlorohexane	1.0000	1.1031	-10.3	100	0.00
70	P	Chlorobenzene	1.0000	1.1204	-12.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.9829	1.7	100	0.00
72	C	Ethylbenzene	1.0000	1.0381	-3.8	100	0.00
73	T	m-,p-Xylene	2.0000	2.0726	-3.6	100	0.00
74	T	o-Xylene	1.0000	1.0530	-5.3	100	0.00
75	T	Styrene	1.0000	0.9839	1.6	100	0.00
76	P	Bromoform	1.0000	0.8348	16.5	100	0.00
77	T	Isopropylbenzene	1.0000	1.0840	-8.4	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	0.9810	1.9	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5502	0.0	100	0.00
81	T	1,2,3-Trichloropropane	1.0000	0.7703	23.0	100	0.02
82	T	trans-1,4-Dichloro-2-Butene	1.0000	1.1443	-14.4	100	0.00
83	T	n-Propylbenzene	1.0000	1.0868	-8.7	100	0.00
84	T	Bromobenzene	1.0000	1.0510	-5.1	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	1.0314	-3.1	100	0.00
86	T	2-Chlorotoluene	1.0000	1.0778	-7.8	100	0.00
87	T	4-Chlorotoluene	1.0000	1.0553	-5.5	100	0.00
88	T	a-Methylstyrene	-1.0000	0.9394	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	1.0567	-5.7	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	1.0845	-8.5	100	0.00
91	T	sec-Butylbenzene	1.0000	1.1073	-10.7	100	0.00
92	T	p-Isopropyltoluene	1.0000	1.0966	-9.7	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0469	-4.7	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	1.0735	-7.3	100	0.00
95	T	n-Butylbenzene	1.0000	1.1201	-12.0	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0297	-3.0	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.1006	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	1.0000	0.9832	1.7	100	0.00
99	T	Hexachlorobutadiene	1.0000	0.9925	0.7	100	0.00
100	T	Naphthalene	1.0000	0.9547	4.5	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	1.0450	-4.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412222.D 8260WT.M Sat May 14 18:05:50 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	782460	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.57	117	543252	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	286450	25.00	ug/L	0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	8161	0.8307	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery	=	3.32%#	
43) 1,2-Dichloroethane-d4	10.30	65	9681	0.8613	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery	=	3.44%#	
58) Toluene-d8	12.68	98	28135	1.0016	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	=	4.00%#	
80) p-Bromofluorobenzene	16.08	95	12079	1.0302	ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery	=	4.12%#	

Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.16	85	24870	1.5166	ug/L	98
3) Chloromethane	3.62	50	16106	1.0425	ug/L	93
4) Vinyl Chloride	3.85	62	18562	1.7792	ug/L	94
5) 1,3-Butadiene	3.90	54	13617	1.3360	ug/L	92
6) Bromomethane	4.73	94	8329	1.8804	ug/L	94
7) Chloroethane	4.90	64	9562	1.4006	ug/L	86
8) Trichlorofluoromethane	5.39	101	34970	1.6885	ug/L	97
9) Diethyl ether	5.90	59	107986	17.0420	ug/L	79
10) Isoprene	5.93	67	20936	1.9757	ug/L	73
11) Acrolein	6.14	56	4864	8.6444	ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	16832	1.7751	ug/L	99
13) Acetone	6.23	43	1519	0.7908	ug/L #	48
14) 1,1-Dichloroethene	6.47	61	25394	1.3798	ug/L	89
15) Tert-Butyl Alcohol	6.58	59	14891	33.6725	ug/L	85
16) Dimethyl Sulfide	6.73	62	9489	1.3953	ug/L	79
17) Iodomethane	6.98	142	1211	1.3472	ug/L #	60
18) Methyl acetate	7.01	43	5064	0.8821	ug/L #	79
19) Methylene Chloride	7.25	84	16579	1.9010	ug/L	52
20) Carbon Disulfide	7.29	76	57693	2.1683	ug/L	98
21) Acrylonitrile	7.43	53	13848	5.6089	ug/L	93
22) Methyl Tert Butyl Ether	7.47	73	33991	1.7644	ug/L	84
23) trans-1,2-Dichloroethene	7.70	61	22786	1.3688	ug/L	88
24) n-Hexane	7.79	57	18282	1.2105	ug/L	84
25) Diisopropyl ether	8.12	45	475271	11.1128	ug/L #	92
26) Vinyl Acetate	8.29	43	15998	0.9318	ug/L	93
27) 1,1-Dichloroethane	8.32	63	30419	1.5277	ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	505010	16.8250	ug/L	89
29) 2-Butanone	8.90	43	2250	0.7313	ug/L #	57
30) Propionitrile	8.99	54	9373	12.0479	ug/L	86
31) 2,2-Dichloropropane	9.10	77	32521	1.8538	ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	18238	1.8309	ug/L	91
33) Chloroform	9.37	83	33543	1.8156	ug/L	99
34) 1-Bromopropane	9.52	122	2513	1.6014	ug/L	88
35) Bromochloromethane	9.60	130	9189	1.7632	ug/L	67
36) Tetrahydrofuran	9.63	42	22074	10.8529	ug/L #	66
38) 1,1,1-Trichloroethane	9.90	97	32268	1.7324	ug/L	96
39) Cyclohexane	9.93	56	23097	1.1362	ug/L #	65
40) 1,1-Dichloropropene	10.10	75	24988	1.8639	ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	459535	23.9029	ug/L	87
42) Carbon Tetrachloride	10.24	117	28935	1.6512	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412223.D 8260WT.M Fri May 13 15:18:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.42	62	22142	1.4270 ug/L #	83
46)	Benzene	10.46	78	67028	1.9629 ug/L	83
47)	Trichloroethene	11.21	130	17287	1.7543 ug/L	96
48)	Methylcyclohexane	11.30	83	26050	1.8907 ug/L	84
49)	1,2-Dichloropropane	11.42	63	14582	1.4670 ug/L	77
50)	Bromodichloromethane	11.73	83	25794	1.8651 ug/L	93
51)	1,4-Dioxane	11.73	88	1282	32.3515 ug/L	74
52)	Dibromomethane	11.81	93	8575	1.8325 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.02	63	6234	1.4979 ug/L	100
54)	4-Methyl-2-Pentanone	12.06	58	2139	0.9416 ug/L	84
55)	cis-1,3-Dichloropropene	12.37	75	24153	1.7353 ug/L	98
56)	Dimethyl Disulfide	12.62	79	12288	1.6851 ug/L	99
59)	Toluene	12.79	91	72944	2.2423 ug/L	95
60)	Ethyl Methacrylate	12.88	69	12716	2.0832 ug/L	71
62)	trans-1,3-Dichloropropene	12.96	75	22163	1.9527 ug/L	100
63)	1,1,2-Trichloroethane	13.18	97	10537	2.0412 ug/L	99
64)	2-Hexanone	13.13	58	2200	1.1873 ug/L #	65
65)	1,3-Dichloropropane	13.49	76	20212	2.1112 ug/L	72
66)	Tetrachloroethene	13.60	164	14595	1.9811 ug/L	90
67)	Dibromochloromethane	13.87	129	14698	1.8061 ug/L	98
68)	1,2-Dibromoethane	14.12	107	10152	1.8869 ug/L	95
69)	1-Chlorohexane	14.21	91	21960	1.9818 ug/L	89
70)	Chlorobenzene	14.62	112	47376	2.0974 ug/L	81
71)	1,1,1,2-Tetrachloroethane	14.66	131	17526	1.9910 ug/L	97
72)	Ethylbenzene	14.66	106	25628	1.9996 ug/L	92
73)	m-,p-Xylene	14.74	106	60087	4.0693 ug/L	84
74)	o-Xylene	15.31	106	28289	1.9017 ug/L	79
75)	Styrene	15.35	104	47644	2.0086 ug/L	92
76)	Bromoform	15.84	173	9145	1.9585 ug/L	95
77)	Isopropylbenzene	15.73	105	81301	2.1557 ug/L	97
79)	1,1,2,2-Tetrachloroethane	15.95	83	11538	2.0194 ug/L	95
81)	1,2,3-Trichloropropane	16.13	110	3630	1.9770 ug/L	94
82)	trans-1,4-Dichloro-2-Buten	16.19	53	2699	0.9698 ug/L #	36
83)	n-Propylbenzene	16.24	91	97233	2.2026 ug/L	96
84)	Bromobenzene	16.37	156	19174	2.0834 ug/L	92
85)	1,3,5-Trimethylbenzene	16.42	105	67395	2.0631 ug/L	97
86)	2-Chlorotoluene	16.51	91	67110	2.3739 ug/L	94
87)	4-Chlorotoluene	16.56	91	59154	2.0313 ug/L	92
88)	a-Methylstyrene	16.84	118	29415	1.8275 ug/L	86
89)	tert-Butylbenzene	16.89	134	12716	1.9647 ug/L	67
90)	1,2,4-Trimethylbenzene	16.95	105	71669	2.1435 ug/L	94
91)	sec-Butylbenzene	17.17	105	81038	2.0632 ug/L	98
92)	p-Isopropyltoluene	17.32	119	70170	2.0924 ug/L	92
93)	1,3-Dichlorobenzene	17.52	146	37289	2.0413 ug/L	93
94)	1,4-Dichlorobenzene	17.64	146	36528	2.0034 ug/L #	73
95)	n-Butylbenzene	17.85	91	67823	2.1262 ug/L	96
96)	1,2-Dichlorobenzene	18.14	146	32322	2.0190 ug/L	92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	1955	1.5624 ug/L	94
98)	1,2,4-Trichlorobenzene	20.28	180	23558	1.9000 ug/L	98
99)	Hexachlorobutadiene	20.43	225	11066	1.9286 ug/L	99
100)	Naphthalene	20.65	128	36066	1.9130 ug/L	99
101)	1,2,3-Trichlorobenzene	20.96	180	19765	1.8738 ug/L	95

(#) = qualifier out of range (m) = manual integration
8M412223.D 8260WT.M Fri May 13 15:18:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

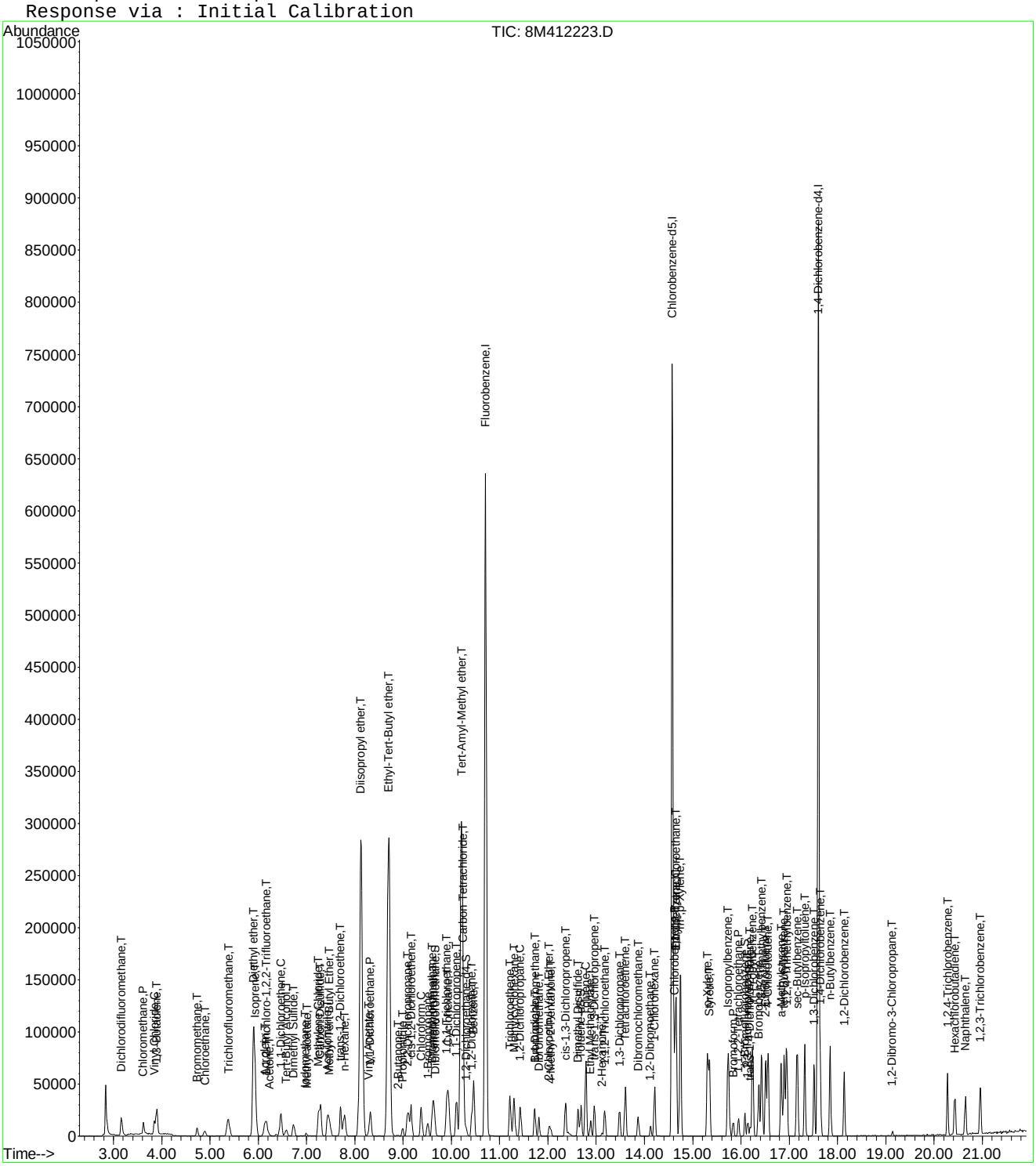

8M412223.D 8260WT.M Fri May 13 15:18:37 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.8958	5.2	100	0.00
3	P	Chloromethane	2.0000	2.1033	-5.2	100	0.00
4	C	Vinyl Chloride	2.0000	2.0431	-2.2	100	0.00
5	T	1,3-Butadiene	2.0000	1.7872	10.6	100	0.02
6	T	Bromomethane	2.0000	2.0126	-0.6	100	0.00
7	T	Chloroethane	2.0000	1.9127	4.4	100	0.00
8	T	Trichlorofluoromethane	2.0000	2.0686	-3.4	100	0.00
9	T	Diethyl ether	25.0000	26.7567	-7.0	100	0.00
10	T	Isoprene	2.0000	2.0394	-2.0	100	0.00
11	T	Acrolein	12.5000	13.4606	-7.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	2.1182	-5.9	100	0.02
13	T	Acetone	-1.0000	1.7255	0.0	100	-0.01
14	C	1,1-Dichloroethene	2.0000	2.0070	-0.4	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	52.7840	-5.6	100	0.00
16	T	Dimethyl Sulfide	2.0000	2.0975	-4.9	100	0.00
17	T	Iodomethane	2.0000	3.0680	-53.4#	100	0.00
18	T	Methyl acetate	-1.0000	2.1281	0.0	100	0.00
19	T	Methylene Chloride	2.0000	2.0590	-3.0	100	0.00
20	T	Carbon Disulfide	2.0000	2.1789	-8.9	100	0.00
21	T	Acrylonitrile	12.5000	12.1237	3.0	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.9505	2.5	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.9603	2.0	100	0.00
24	T	n-Hexane	-1.0000	2.1181	0.0	100	0.00
25	T	Diisopropyl ether	25.0000	26.2305	-4.9	100	0.00
26	T	Vinyl Acetate	2.0000	1.9284	3.6	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.1072	-5.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	26.0139	-4.1	100	0.00
29	T	2-Butanone	-1.0000	1.7396	0.0	100	0.02
30	T	Propionitrile	25.0000	24.8668	0.5	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1378	-6.9	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0306	-1.5	100	0.00
33	C	Chloroform	2.0000	1.9679	1.6	100	0.00
34		1-Bromopropane	2.0000	1.9533	2.3	100	0.00
35	T	Bromochloromethane	2.0000	1.9951	0.2	100	0.00
36	T	Tetrahydrofuran	25.0000	25.9117	-3.6	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9708	2.9	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.9930	0.3	100	0.00
39	T	Cyclohexane	2.0000	2.0605	-3.0	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0248	-1.2	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	26.0627	-4.3	100	0.00
42	T	Carbon Tetrachloride	2.0000	2.0126	-0.6	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0740	-7.4	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	2.0000	2.0183	-0.9	100	0.00
46	T	Benzene	2.0000	2.0854	-4.3	100	0.00
47	T	Trichloroethene	2.0000	2.0166	-0.8	100	0.00
48	T	Methylcyclohexane	-1.0000	2.0003	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0380	-1.9	100	0.00
50	T	Bromodichloromethane	2.0000	2.0511	-2.6	100	0.00
51	T	1,4-Dioxane	-1.0000	35.6688	0.0	100	0.02
52	T	Dibromomethane	2.0000	2.0246	-1.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	2.0271	-1.4	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.7027	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.8869	5.7	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.7986	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	0.9896	1.0	100	0.00
59	C	Toluene	2.0000	2.1628	-8.1	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.9633	1.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	2.0000	1.9609	2.0	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.9800	1.0	100	0.00
64	T	2-Hexanone	-1.0000	1.9672	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.1332	-6.7	100	0.00
66	T	Tetrachloroethene	2.0000	2.0198	-1.0	100	0.00
67	T	Dibromochloromethane	2.0000	1.8915	5.4	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.9141	4.3	100	0.00
69	T	1-Chlorohexane	2.0000	1.9075	4.6	100	0.00
70	P	Chlorobenzene	2.0000	2.0831	-4.2	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.9892	0.5	100	0.00
72	C	Ethylbenzene	2.0000	2.0596	-3.0	100	0.00
73	T	m-,p-Xylene	4.0000	4.1170	-2.9	100	0.00
74	T	o-Xylene	2.0000	1.9825	0.9	100	0.00
75	T	Styrene	2.0000	2.0358	-1.8	100	0.00
76	P	Bromoform	2.0000	1.9841	0.8	100	0.00
77	T	Isopropylbenzene	2.0000	2.1448	-7.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	2.0066	-0.3	100	0.00
80	S	p-Bromofluorobenzene	1.0000	1.0184	-1.8	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	2.0501	-2.5	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	2.0915	-4.6	100	0.00
83	T	n-Propylbenzene	2.0000	2.1757	-8.8	100	0.00
84	T	Bromobenzene	2.0000	2.0859	-4.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.0703	-3.5	100	0.00
86	T	2-Chlorotoluene	2.0000	2.1509	-7.5	100	0.00
87	T	4-Chlorotoluene	2.0000	2.0989	-4.9	100	0.00
88	T	a-Methylstyrene	-1.0000	1.9045	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	1.9967	0.2	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.1411	-7.1	100	0.00
91	T	sec-Butylbenzene	2.0000	2.1161	-5.8	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.1579	-7.9	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.1067	-5.3	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.0470	-2.4	100	0.00
95	T	n-Butylbenzene	2.0000	2.1098	-5.5	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0532	-2.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.6938	15.3	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	2.0021	-0.1	100	0.00
99	T	Hexachlorobutadiene	2.0000	2.0128	-0.6	100	0.00
100	T	Naphthalene	2.0000	2.0630	-3.2	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9910	0.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412223.D 8260WT.M Sat May 14 18:08:14 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	768397	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	534372	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	274234	25.00 ug/L	0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	19775	2.0496 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	8.20%#	
43) 1,2-Dichloroethane-d4	10.30	65	21200	1.9207 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	7.68%#	
58) Toluene-d8	12.68	98	65647	2.3758 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	9.52%#	
80) p-Bromofluorobenzene	16.08	95	26759	2.3838 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	9.52%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	55961	3.4750 ug/L	99
3) Chloromethane	3.62	50	34194	2.2538 ug/L	100
4) Vinyl Chloride	3.84	62	42506	4.1488 ug/L	99
5) 1,3-Butadiene	3.89	54	32006	3.1976 ug/L	93
6) Bromomethane	4.72	94	19582	3.4204 ug/L	94
7) Chloroethane	4.90	64	22000	3.2814 ug/L	84
8) Trichlorofluoromethane	5.37	101	77715	3.8212 ug/L	96
9) Diethyl ether	5.90	59	188516	30.2955 ug/L	79
10) Isoprene	5.94	67	44975	4.3218 ug/L	78
11) Acrolein	6.15	56	7712	13.9568 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	36867	3.9591 ug/L	99
13) Acetone	6.24	43	3578	1.8967 ug/L	85
14) 1,1-Dichloroethene	6.47	61	59405	3.2870 ug/L	95
15) Tert-Butyl Alcohol	6.58	59	27833	64.0897 ug/L #	82
16) Dimethyl Sulfide	6.73	62	21102	3.1597 ug/L	77
17) Iodomethane	6.99	142	3667	1.8964 ug/L	95
18) Methyl acetate	7.00	43	11500	2.0398 ug/L #	86
19) Methylene Chloride	7.24	84	37533	4.3823 ug/L	52
20) Carbon Disulfide	7.29	76	123060	4.7097 ug/L	100
21) Acrylonitrile	7.43	53	25653	10.5804 ug/L	99
22) Methyl Tert Butyl Ether	7.47	73	80005	4.2289 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	54124	3.3108 ug/L	94
24) n-Hexane	7.78	57	40758	2.7480 ug/L	82
25) Diisopropyl ether	8.12	45	841400	20.0337 ug/L #	91
26) Vinyl Acetate	8.30	43	37284	2.2113 ug/L #	90
27) 1,1-Dichloroethane	8.32	63	66711	3.4116 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	907423	30.7852 ug/L	89
29) 2-Butanone	8.89	43	5359	1.7738 ug/L #	82
30) Propionitrile	8.99	54	17933	23.4726 ug/L	100
31) 2,2-Dichloropropane	9.10	77	73150	4.2462 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	41036	4.1950 ug/L	89
33) Chloroform	9.37	83	78227	4.3116 ug/L	99
34) 1-Bromopropane	9.52	122	6162	3.9986 ug/L	99
35) Bromochloromethane	9.60	130	20988	4.1009 ug/L #	62
36) Tetrahydrofuran	9.62	42	38098	19.0742 ug/L #	62
38) 1,1,1-Trichloroethane	9.91	97	76152	4.1633 ug/L	97
39) Cyclohexane	9.94	56	51439	2.5767 ug/L #	66
40) 1,1-Dichloropropene	10.11	75	56645	4.3027 ug/L	93
41) Tert-Amyl-Methyl ether	10.21	73	821180	43.4958 ug/L	87
42) Carbon Tetrachloride	10.25	117	67831	3.9416 ug/L	96

(#) = qualifier out of range (m) = manual integration
8M412224.D 8260WT.M Fri May 13 15:47:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	51708	3.3934 ug/L		85
46)	Benzene	10.46	78	150204	4.4792 ug/L		86
47)	Trichloroethene	11.21	130	38500	3.9784 ug/L		94
48)	Methylcyclohexane	11.30	83	60897	4.5008 ug/L		81
49)	1,2-Dichloropropane	11.43	63	31773	3.2549 ug/L		77
50)	Bromodichloromethane	11.73	83	59127	4.3535 ug/L		94
51)	1,4-Dioxane	11.71	88	2719	69.8702 ug/L	#	62
52)	Dibromomethane	11.81	93	19711	4.2894 ug/L		96
53)	2-Chloroethyl Vinyl Ether	12.03	63	12946	3.1676 ug/L		98
54)	4-Methyl-2-Pentanone	12.05	58	5129	2.2991 ug/L	#	78
55)	cis-1,3-Dichloropropene	12.36	75	61169	4.4752 ug/L		94
56)	Dimethyl Disulfide	12.62	79	27966	3.9053 ug/L		98
59)	Toluene	12.78	91	161007	5.0316 ug/L		97
60)	Ethyl Methacrylate	12.88	69	28595	4.7624 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	49791	4.4599 ug/L		97
63)	1,1,2-Trichloroethane	13.18	97	23678	4.6631 ug/L		99
64)	2-Hexanone	13.11	58	4499	2.4685 ug/L	#	97
65)	1,3-Dichloropropane	13.49	76	44838	4.7614 ug/L		73
66)	Tetrachloroethene	13.60	164	32715	4.5144 ug/L		97
67)	Dibromochloromethane	13.87	129	35009	4.3734 ug/L		98
68)	1,2-Dibromoethane	14.13	107	24247	4.5815 ug/L		99
69)	1-Chlorohexane	14.21	91	53599	4.9176 ug/L		84
70)	Chlorobenzene	14.62	112	107618	4.8437 ug/L		95
71)	1,1,1,2-Tetrachloroethane	14.65	131	38120	4.4025 ug/L		96
72)	Ethylbenzene	14.65	106	56905	4.5138 ug/L		91
73)	m-,p-Xylene	14.75	106	137390	9.4592 ug/L		86
74)	o-Xylene	15.31	106	65650	4.4866 ug/L		85
75)	Styrene	15.35	104	111433	4.7758 ug/L		91
76)	Bromoform	15.84	173	19346	4.2121 ug/L		97
77)	Isopropylbenzene	15.73	105	182523	4.9200 ug/L		96
79)	1,1,2,2-Tetrachloroethane	15.95	83	26655	4.8730 ug/L		99
81)	1,2,3-Trichloropropane	16.13	110	8840	5.0289 ug/L		81
82)	trans-1,4-Dichloro-2-Buten	16.19	53	6584	2.4712 ug/L	#	51
83)	n-Propylbenzene	16.24	91	222196	5.2576 ug/L		96
84)	Bromobenzene	16.37	156	42665	4.8423 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	155714	4.9790 ug/L		93
86)	2-Chlorotoluene	16.52	91	148764	5.4968 ug/L		94
87)	4-Chlorotoluene	16.56	91	135679	4.8666 ug/L		94
88)	a-Methylstyrene	16.84	118	68945	4.4743 ug/L		91
89)	tert-Butylbenzene	16.89	134	29069	4.6914 ug/L		77
90)	1,2,4-Trimethylbenzene	16.95	105	161016	5.0301 ug/L		94
91)	sec-Butylbenzene	17.17	105	191273	5.0866 ug/L		94
92)	p-Isopropyltoluene	17.32	119	159232	4.9597 ug/L		93
93)	1,3-Dichlorobenzene	17.52	146	83896	4.7972 ug/L		95
94)	1,4-Dichlorobenzene	17.64	146	82462	4.7242 ug/L		86
95)	n-Butylbenzene	17.85	91	158787	5.1996 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	72524	4.7321 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	5629	4.6990 ug/L		76
98)	1,2,4-Trichlorobenzene	20.28	180	53855	4.5369 ug/L		98
99)	Hexachlorobutadiene	20.43	225	24504	4.4608 ug/L		93
100)	Naphthalene	20.65	128	79806	4.4217 ug/L		98
101)	1,2,3-Trichlorobenzene	20.96	180	44150	4.3720 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412224.D 8260WT.M Fri May 13 15:47:44 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

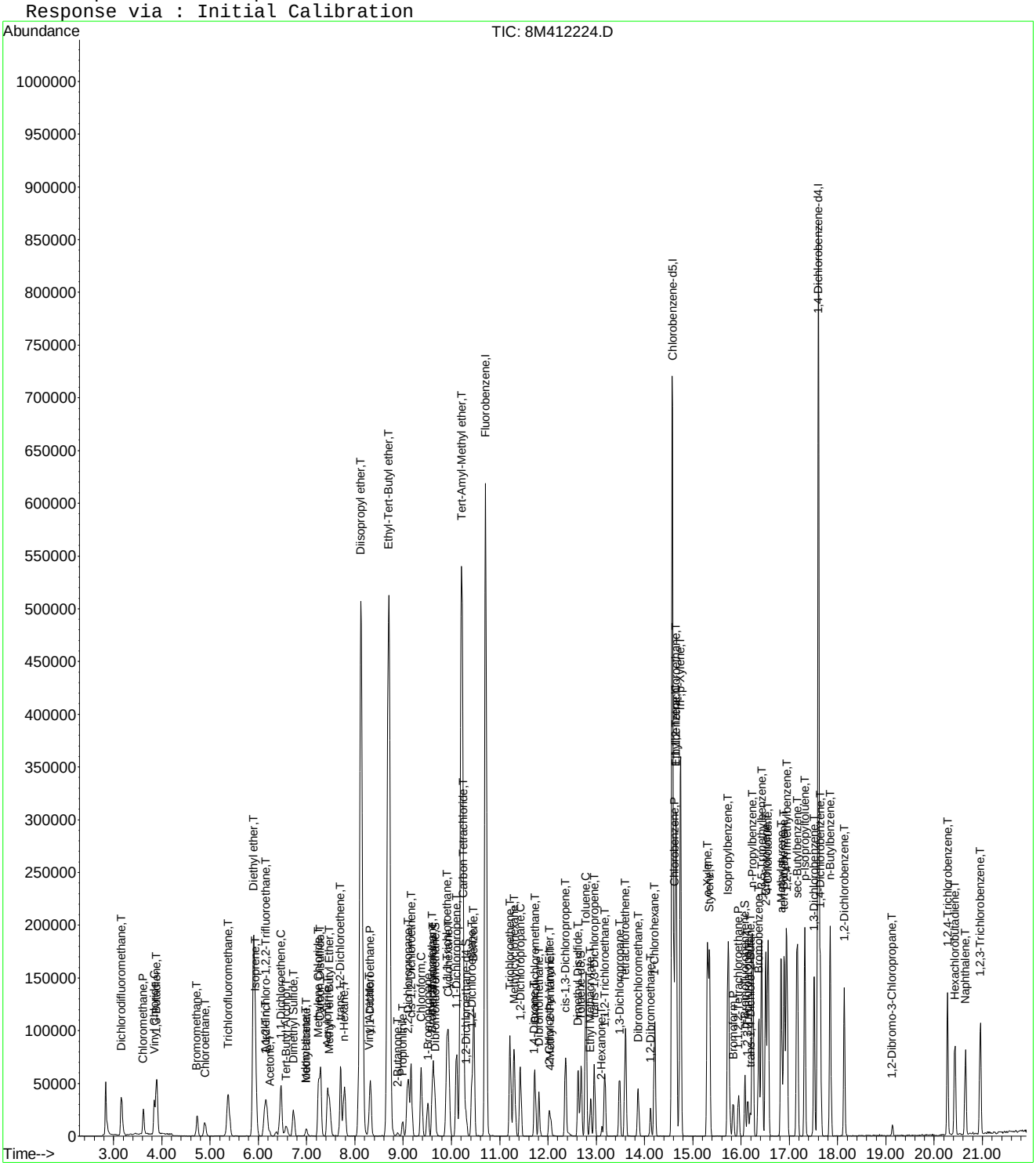

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.3438	13.1	100	0.00
3	P	Chloromethane	5.0000	4.5471	9.1	100	0.00
4	C	Vinyl Chloride	5.0000	4.7641	4.7	100	0.00
5	T	1,3-Butadiene	5.0000	4.2777	14.4	100	0.00
6	T	Bromomethane	5.0000	4.1880	16.2	100	-0.01
7	T	Chloroethane	5.0000	4.4813	10.4	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.6812	6.4	100	0.00
9	T	Diethyl ether	50.0000	47.5652	4.9	100	0.00
10	T	Isoprene	5.0000	4.4611	10.8	100	0.00
11	T	Acrolein	25.0000	21.7328	13.1	100	0.02
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.7244	5.5	100	0.00
13	T	Acetone	5.0000	4.1387	17.2	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.7810	4.4	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	100.4650	-0.5	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.7499	5.0	100	0.00
17	T	Iodomethane	5.0000	3.7634	24.7	100	0.00
18	T	Methyl acetate	5.0000	4.9211	1.6	100	0.00
19	T	Methylene Chloride	5.0000	4.7467	5.1	100	0.00
20	T	Carbon Disulfide	5.0000	4.7328	5.3	100	0.00
21	T	Acrylonitrile	25.0000	22.8698	8.5	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.6750	6.5	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.7415	5.2	100	0.00
24	T	n-Hexane	5.0000	4.8084	3.8	100	0.00
25	T	Diisopropyl ether	50.0000	47.2872	5.4	100	0.00
26	T	Vinyl Acetate	5.0000	4.5766	8.5	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.7058	5.9	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	47.5984	4.8	100	0.00
29	T	2-Butanone	5.0000	4.2191	15.6	100	0.00
30	T	Propionitrile	50.0000	48.4475	3.1	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.8965	2.1	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.6525	7.0	100	0.00
33	C	Chloroform	5.0000	4.6735	6.5	100	0.00
34		1-Bromopropane	5.0000	4.8774	2.5	100	0.00
35	T	Bromochloromethane	5.0000	4.6403	7.2	100	0.00
36	T	Tetrahydrofuran	50.0000	45.5400	8.9	100	-0.01
37	S	Dibromofluoromethane	2.5000	2.3953	4.2	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.7896	4.2	100	0.00
39	T	Cyclohexane	5.0000	4.6730	6.5	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.6741	6.5	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	47.6211	4.8	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.8044	3.9	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.3949	4.2	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	5.0000	4.7996	4.0	100	0.00
46	T	Benzene	5.0000	4.7588	4.8	100	0.00
47	T	Trichloroethene	5.0000	4.5733	8.5	100	0.00
48	T	Methylcyclohexane	5.0000	4.7616	4.8	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.5219	9.6	100	0.00
50	T	Bromodichloromethane	5.0000	4.7878	4.2	100	0.00
51	T	1,4-Dioxane	100.0000	77.0346	23.0	100	0.00
52	T	Dibromomethane	5.0000	4.7390	5.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.2867	14.3	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.1576	16.8	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.8662	2.7	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.1683	16.6	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.3473	6.1	100	0.00
59	C	Toluene	5.0000	4.8533	2.9	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.4883	10.2	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	5.0000	4.4786	10.4	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.5231	9.5	100	0.00
64	T	2-Hexanone	5.0000	4.0898	18.2	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.8109	3.8	100	0.00
66	T	Tetrachloroethene	5.0000	4.6028	7.9	100	0.00
67	T	Dibromochloromethane	5.0000	4.5802	8.4	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.6475	7.1	100	0.00
69	T	1-Chlorohexane	5.0000	4.7331	5.3	100	0.00
70	P	Chlorobenzene	5.0000	4.8107	3.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.3984	12.0	100	0.00
72	C	Ethylbenzene	5.0000	4.6492	7.0	100	0.00
73	T	m-,p-Xylene	10.0000	9.5700	4.3	100	0.00
74	T	o-Xylene	5.0000	4.6773	6.5	100	0.00
75	T	Styrene	5.0000	4.8405	3.2	100	0.00
76	P	Bromoform	5.0000	4.2672	14.7	100	0.00
77	T	Isopropylbenzene	5.0000	4.8951	2.1	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	4.8422	3.2	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.3565	5.7	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.2150	-4.3	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.3781	12.4	100	0.00
83	T	n-Propylbenzene	5.0000	5.1935	-3.9	100	0.00
84	T	Bromobenzene	5.0000	4.8483	3.0	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	4.9964	0.1	100	0.00
86	T	2-Chlorotoluene	5.0000	4.9803	0.4	100	0.00
87	T	4-Chlorotoluene	5.0000	5.0286	-0.6	100	0.00
88	T	a-Methylstyrene	5.0000	4.6629	6.7	100	0.00
89	T	tert-Butylbenzene	5.0000	4.7677	4.6	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.0245	-0.5	100	0.00
91	T	sec-Butylbenzene	5.0000	5.2170	-4.3	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.1150	-2.3	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	4.9511	1.0	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	4.8270	3.5	100	0.00
95	T	n-Butylbenzene	5.0000	5.1595	-3.2	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	4.8122	3.8	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	5.0942	-1.9	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.7808	4.4	100	0.00
99	T	Hexachlorobutadiene	5.0000	4.6555	6.9	100	0.00
100	T	Naphthalene	5.0000	4.7684	4.6	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.6455	7.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412224.D 8260WT.M Sat May 14 18:08:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	770027	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	531490	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	283594	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	86295	10.9569 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 43.84%#		
43) 1,2-Dichloroethane-d4	10.30	65	96239	11.3450 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 45.36%#		
58) Toluene-d8	12.68	98	294491	10.9223 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 43.68%#		
80) p-Bromofluorobenzene	16.08	95	121459	10.5490 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 42.20%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	288235	23.7135 ug/L	99
3) Chloromethane	3.62	50	155712	20.3784 ug/L	98
4) Vinyl Chloride	3.84	62	184250	20.9368 ug/L	95
5) 1,3-Butadiene	3.89	54	149348	22.7750 ug/L	96
6) Bromomethane	4.73	94	100098	25.0143 ug/L	99
7) Chloroethane	4.89	64	100876	20.9404 ug/L	91
8) Trichlorofluoromethane	5.37	101	351299	21.2512 ug/L	98
9) Diethyl ether	5.90	59	324317	80.8265 ug/L	78
10) Isoprene	5.94	67	205842	20.3622 ug/L	77
11) Acrolein	6.14	56	12049	34.8201 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	159996	20.3859 ug/L	97
13) Acetone	6.25	43	18459	25.7405 ug/L	98
14) 1,1-Dichloroethene	6.47	61	256241	20.5065 ug/L	92
15) Tert-Butyl Alcohol	6.57	59	43922	153.5712 ug/L	93
16) Dimethyl Sulfide	6.73	62	89456	20.6087 ug/L	83
17) Iodomethane	6.99	142	40622	61.0474 ug/L	93
18) Methyl acetate	7.00	43	46598	20.2171 ug/L #	85
19) Methylene Chloride	7.25	84	161897	20.1338 ug/L	52
20) Carbon Disulfide	7.30	76	538090	20.0802 ug/L	98
21) Acrylonitrile	7.43	53	46305	46.9889 ug/L	100
22) Methyl Tert Butyl Ether	7.47	73	361116	22.0137 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	234754	20.3175 ug/L	90
24) n-Hexane	7.78	57	172498	21.1165 ug/L	84
25) Diisopropyl ether	8.12	45	1447822	80.3755 ug/L #	91
26) Vinyl Acetate	8.30	43	166501	21.7017 ug/L #	88
27) 1,1-Dichloroethane	8.33	63	300321	21.3849 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	1579265	83.0733 ug/L	89
29) 2-Butanone	8.88	43	25681	23.9099 ug/L	87
30) Propionitrile	8.98	54	30953	89.5673 ug/L	94
31) 2,2-Dichloropropane	9.10	77	309575	20.8527 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	181973	20.4488 ug/L	89
33) Chloroform	9.37	83	348925	20.5535 ug/L	96
34) 1-Bromopropane	9.52	122	26723	22.7206 ug/L	96
35) Bromochloromethane	9.61	130	94952	21.3181 ug/L	65
36) Tetrahydrofuran	9.63	42	63066	70.5772 ug/L #	57
38) 1,1,1-Trichloroethane	9.91	97	335486	21.3640 ug/L	99
39) Cyclohexane	9.94	56	221040	19.9984 ug/L #	64
40) 1,1-Dichloropropene	10.11	75	248373	20.4717 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1418183	81.7883 ug/L	88
42) Carbon Tetrachloride	10.25	117	296471	21.3449 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412225.D 8260WT.M Fri May 13 16:16:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	228665	21.6403	ug/L		85
46)	Benzene	10.46	78	668449	20.3769	ug/L		86
47)	Trichloroethene	11.21	130	174107	20.7980	ug/L		96
48)	Methylcyclohexane	11.29	83	262275	21.4887	ug/L		82
49)	1,2-Dichloropropane	11.43	63	146868	21.1883	ug/L	#	72
50)	Bromodichloromethane	11.73	83	262192	21.9986	ug/L		98
51)	1,4-Dioxane	11.71	88	5351	196.3837	ug/L		76
52)	Dibromomethane	11.81	93	86951	21.0734	ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	63586	22.4600	ug/L		91
54)	4-Methyl-2-Pentanone	12.05	58	25754	25.0531	ug/L	#	73
55)	cis-1,3-Dichloropropene	12.36	75	265439	21.9841	ug/L		99
56)	Dimethyl Disulfide	12.63	79	134192	23.9412	ug/L		100
59)	Toluene	12.78	91	700473	20.1722	ug/L		99
60)	Ethyl Methacrylate	12.88	69	133361	23.2046	ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	238585	23.2548	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	107901	21.0216	ug/L		99
64)	2-Hexanone	13.11	58	22561	25.2093	ug/L	#	85
65)	1,3-Dichloropropane	13.49	76	198804	22.2491	ug/L		74
66)	Tetrachloroethene	13.60	164	141791	20.0055	ug/L		94
67)	Dibromochloromethane	13.87	129	158465	22.0695	ug/L		99
68)	1,2-Dibromoethane	14.13	107	110085	22.3366	ug/L		100
69)	1-Chlorohexane	14.21	91	229753	20.3591	ug/L		83
70)	Chlorobenzene	14.62	112	467492	20.4613	ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.65	131	183079	22.2095	ug/L		96
72)	Ethylbenzene	14.65	106	249016	20.2289	ug/L		90
73)	m-,p-Xylene	14.75	106	606381	41.1308	ug/L		88
74)	o-Xylene	15.30	106	294106	21.2106	ug/L		90
75)	Styrene	15.35	104	492781	21.8207	ug/L		89
76)	Bromoform	15.83	173	95911	23.8070	ug/L		99
77)	Isopropylbenzene	15.73	105	806678	20.7280	ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	123253	22.7779	ug/L		95
81)	1,2,3-Trichloropropane	16.14	110	36712	22.1354	ug/L		94
82)	trans-1,4-Dichloro-2-Buten	16.18	53	33702	27.6513	ug/L	#	56
83)	n-Propylbenzene	16.24	91	962196	20.3511	ug/L		97
84)	Bromobenzene	16.37	156	190566	21.2033	ug/L		94
85)	1,3,5-Trimethylbenzene	16.43	105	692633	20.9615	ug/L		94
86)	2-Chlorotoluene	16.51	91	649077	19.9155	ug/L		96
87)	4-Chlorotoluene	16.56	91	595446	20.3225	ug/L		95
88)	a-Methylstyrene	16.83	118	318960	22.3680	ug/L		92
89)	tert-Butylbenzene	16.90	134	129440	20.4705	ug/L		83
90)	1,2,4-Trimethylbenzene	16.95	105	707749	20.4783	ug/L		94
91)	sec-Butylbenzene	17.17	105	818359	20.1802	ug/L		97
92)	p-Isopropyltoluene	17.32	119	677859	19.7492	ug/L		96
93)	1,3-Dichlorobenzene	17.52	146	364065	20.5126	ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	363066	19.9874	ug/L		92
95)	n-Butylbenzene	17.85	91	681055	20.0187	ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	318612	19.9358	ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	23070	21.6419	ug/L		93
98)	1,2,4-Trichlorobenzene	20.28	180	242455	20.8863	ug/L		98
99)	Hexachlorobutadiene	20.43	225	110384	20.2523	ug/L		96
100)	Naphthalene	20.65	128	369849	21.4526	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	198876	19.8356	ug/L		98

(#) = qualifier out of range (m) = manual integration
8M412225.D 8260WT.M Fri May 13 16:16:35 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration

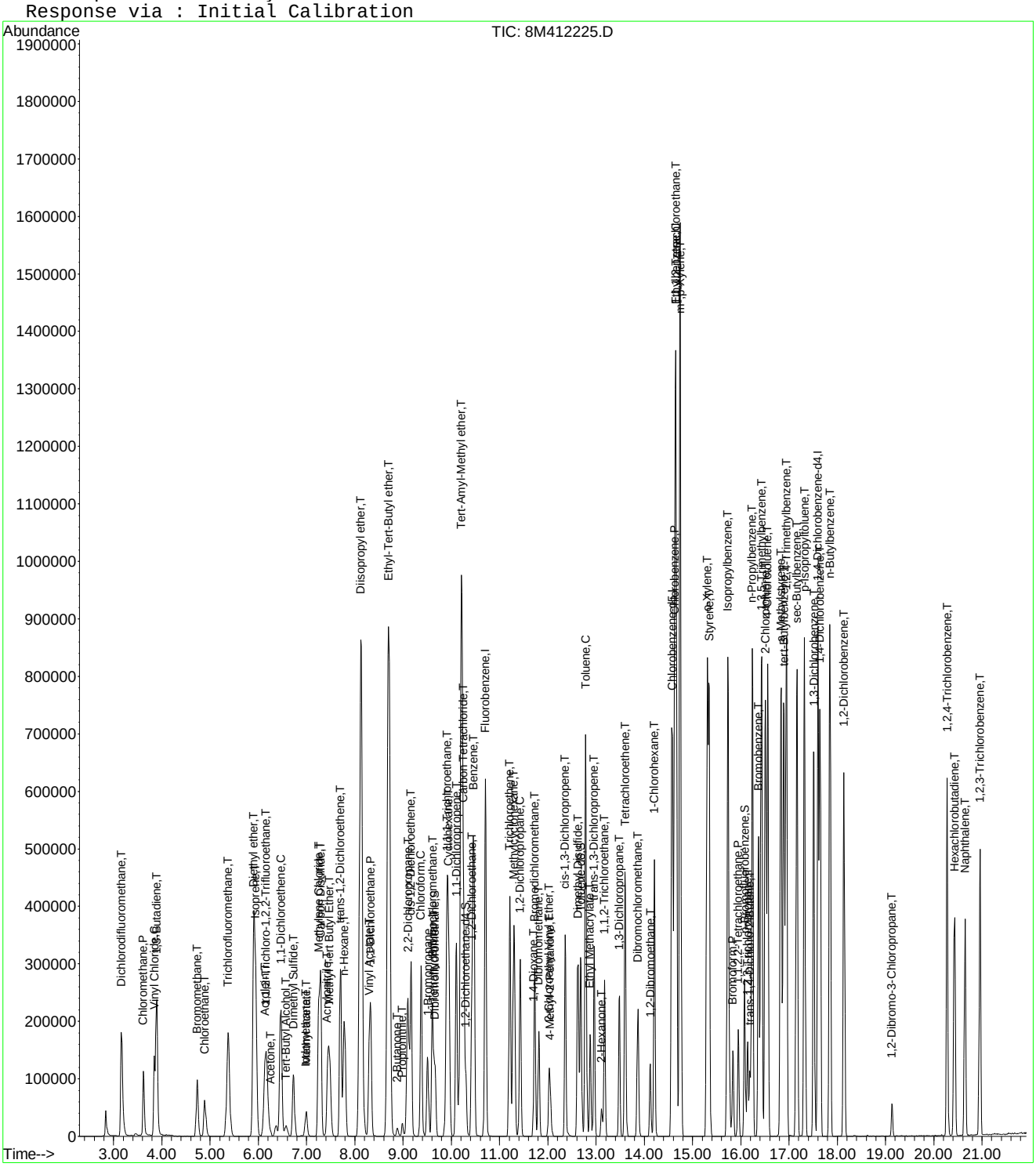

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45:30 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	778260	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	539116	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	288225	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	211053	26.5139 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.04%		
43) 1,2-Dichloroethane-d4	10.31	65	229348	26.7504 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.00%		
58) Toluene-d8	12.68	98	718491	26.2709 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.08%		
80) p-Bromofluorobenzene	16.07	95	292755	25.0180 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.08%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	682745	55.5761 ug/L	100
3) Chloromethane	3.62	50	372858	48.2806 ug/L	98
4) Vinyl Chloride	3.85	62	453905	51.0328 ug/L	96
5) 1,3-Butadiene	3.88	54	390501	58.9199 ug/L	99
6) Bromomethane	4.74	94	260493	64.4080 ug/L	97
7) Chloroethane	4.89	64	244336	50.1840 ug/L	91
8) Trichlorofluoromethane	5.38	101	837676	50.1376 ug/L	99
9) Diethyl ether	5.90	59	389327	96.0019 ug/L	79
10) Isoprene	5.94	67	498060	48.7477 ug/L	76
11) Acrolein	6.13	56	17644	50.4496 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	387643	48.8691 ug/L	97
13) Acetone	6.25	43	45901	63.3305 ug/L	97
14) 1,1-Dichloroethene	6.46	61	619744	49.0724 ug/L	94
15) Tert-Butyl Alcohol	6.58	59	53656	185.6211 ug/L	91
16) Dimethyl Sulfide	6.73	62	221107	50.3993 ug/L	82
17) Iodomethane	6.98	142	157872	234.7428 ug/L	94
18) Methyl acetate	7.00	43	114759	49.2629 ug/L #	81
19) Methylene Chloride	7.25	84	389653	47.9453 ug/L	52
20) Carbon Disulfide	7.29	76	1269941	46.8897 ug/L	99
21) Acrylonitrile	7.43	53	59882	60.1236 ug/L	97
22) Methyl Tert Butyl Ether	7.46	73	901668	54.3843 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	571507	48.9396 ug/L	93
24) n-Hexane	7.79	57	419656	50.8290 ug/L	83
25) Diisopropyl ether	8.13	45	1781012	97.8265 ug/L #	90
26) Vinyl Acetate	8.29	43	428708	55.2866 ug/L #	89
27) 1,1-Dichloroethane	8.32	63	722574	50.9078 ug/L	96
28) Ethyl-Tert-Butyl ether	8.71	59	1955100	101.7552 ug/L	89
29) 2-Butanone	8.88	43	66579	61.3316 ug/L #	82
30) Propionitrile	8.98	54	38235	109.4684 ug/L	95
31) 2,2-Dichloropropane	9.10	77	768496	51.2175 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	439590	48.8754 ug/L	91
33) Chloroform	9.38	83	844564	49.2230 ug/L	97
34) 1-Bromopropane	9.51	122	63442	53.3693 ug/L	99
35) Bromochloromethane	9.60	130	230119	51.1185 ug/L	66
36) Tetrahydrofuran	9.64	42	79437	87.9575 ug/L #	62
38) 1,1,1-Trichloroethane	9.90	97	817606	51.5150 ug/L	99
39) Cyclohexane	9.93	56	535882	47.9707 ug/L #	65
40) 1,1-Dichloropropene	10.10	75	615439	50.1899 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1769381	100.9628 ug/L	88
42) Carbon Tetrachloride	10.24	117	724058	51.5782 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412226.D 8260WT.M Fri May 13 16:45:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45:30 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	561107	52.5401 ug/L		85
46)	Benzene	10.46	78	1607407	48.4816 ug/L		86
47)	Trichloroethene	11.22	130	424998	50.2312 ug/L		96
48)	Methylcyclohexane	11.30	83	635339	51.5040 ug/L		83
49)	1,2-Dichloropropane	11.42	63	351908	50.2320 ug/L	#	71
50)	Bromodichloromethane	11.72	83	654943	54.3701 ug/L		97
51)	1,4-Dioxane	11.71	88	7573	274.9918 ug/L		73
52)	Dibromomethane	11.82	93	209167	50.1574 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	162319	56.7281 ug/L		93
54)	4-Methyl-2-Pentanone	12.05	58	64928	62.4928 ug/L		80
55)	cis-1,3-Dichloropropene	12.36	75	666861	54.6463 ug/L		98
56)	Dimethyl Disulfide	12.62	79	343446	60.6260 ug/L		96
59)	Toluene	12.79	91	1676069	47.5846 ug/L		100
60)	Ethyl Methacrylate	12.88	69	338996	58.1503 ug/L		69
62)	trans-1,3-Dichloropropene	12.96	75	594749	57.1499 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	268432	51.5570 ug/L		98
64)	2-Hexanone	13.12	58	56859	62.6347 ug/L	#	83
65)	1,3-Dichloropropane	13.48	76	489226	53.9770 ug/L		75
66)	Tetrachloroethene	13.60	164	350332	48.7296 ug/L		95
67)	Dibromochloromethane	13.86	129	401149	55.0780 ug/L		100
68)	1,2-Dibromoethane	14.12	107	273580	54.7252 ug/L		99
69)	1-Chlorohexane	14.21	91	560883	48.9984 ug/L		82
70)	Chlorobenzene	14.63	112	1117812	48.2326 ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	446892	53.4462 ug/L		99
72)	Ethylbenzene	14.66	106	603074	48.2980 ug/L		91
73)	m-,p-Xylene	14.74	106	1443780	96.5463 ug/L		90
74)	o-Xylene	15.31	106	709244	50.4265 ug/L		90
75)	Styrene	15.34	104	1212099	52.9133 ug/L		91
76)	Bromoform	15.84	173	238354	58.3272 ug/L		100
77)	Isopropylbenzene	15.73	105	1919993	48.6372 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	294266	53.5083 ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	89279	52.9656 ug/L		93
82)	trans-1,4-Dichloro-2-Buten	16.19	53	86829	70.0956 ug/L	#	53
83)	n-Propylbenzene	16.24	91	2278994	47.4277 ug/L		98
84)	Bromobenzene	16.37	156	459959	50.3549 ug/L		93
85)	1,3,5-Trimethylbenzene	16.43	105	1661486	49.4745 ug/L		95
86)	2-Chlorotoluene	16.51	91	1611031	48.6367 ug/L		97
87)	4-Chlorotoluene	16.56	91	1341051	45.0344 ug/L		95
88)	a-Methylstyrene	16.83	118	772611	53.3111 ug/L		90
89)	tert-Butylbenzene	16.89	134	307503	47.8493 ug/L		81
90)	1,2,4-Trimethylbenzene	16.94	105	1679809	47.8234 ug/L		95
91)	sec-Butylbenzene	17.16	105	1925411	46.7166 ug/L		97
92)	p-Isopropyltoluene	17.32	119	1621383	46.4795 ug/L		95
93)	1,3-Dichlorobenzene	17.51	146	882656	48.9327 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	871210	47.1909 ug/L		92
95)	n-Butylbenzene	17.85	91	1608832	46.5296 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	768548	47.3159 ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	59586	54.9992 ug/L		86
98)	1,2,4-Trichlorobenzene	20.28	180	583880	49.4902 ug/L		100
99)	Hexachlorobutadiene	20.44	225	264699	47.7844 ug/L		98
100)	Naphthalene	20.65	128	894629	51.0579 ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	475246	46.6387 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412226.D 8260WT.M Fri May 13 16:45:33 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration

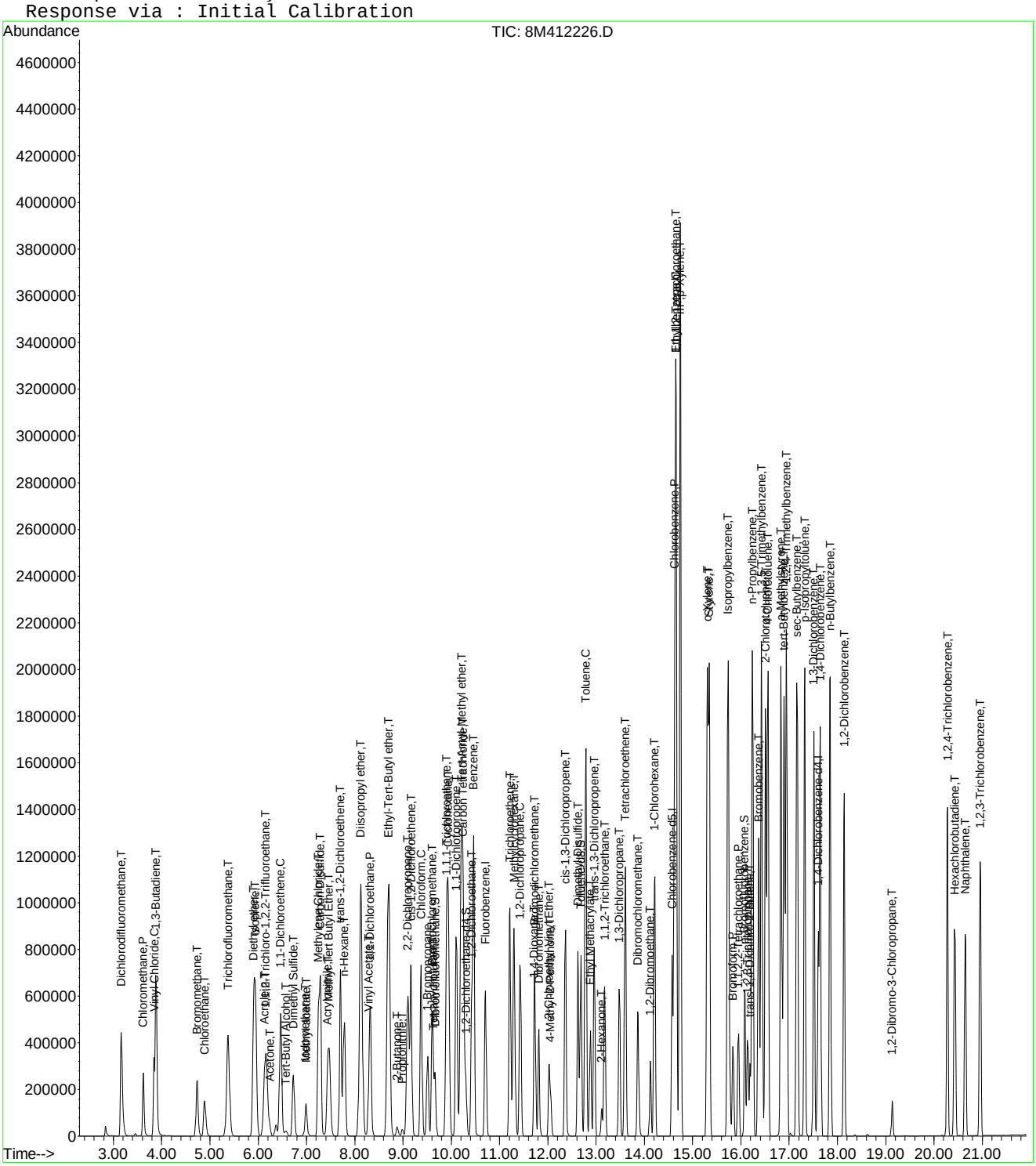

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	809533	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	559075	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	296193	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	460283	53.9056 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 215.64%#		
43) 1,2-Dichloroethane-d4	10.30	65	488116	52.5821 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 210.32%#		
58) Toluene-d8	12.68	98	1540572	52.8075 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 211.24%#		
80) p-Bromofluorobenzene	16.08	95	623735	51.1573 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 204.64%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	1463283	109.1068 ug/L	100
3) Chloromethane	3.62	50	778702	97.2380 ug/L	98
4) Vinyl Chloride	3.84	62	968312	103.4979 ug/L	95
5) 1,3-Butadiene	3.88	54	896569	120.4972 ug/L	95
6) Bromomethane	4.73	94	605228	129.8677 ug/L	99
7) Chloroethane	4.89	64	528153	103.4126 ug/L	90
8) Trichlorofluoromethane	5.37	101	1782726	101.4754 ug/L	99
9) Diethyl ether	5.90	59	828091	197.4770 ug/L	79
10) Isoprene	5.94	67	1080684	101.8037 ug/L	78
11) Acrolein	6.14	56	38655	109.5572 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	833546	101.0906 ug/L	97
13) Acetone	6.24	43	97515	109.1944 ug/L	100
14) 1,1-Dichloroethene	6.46	61	1323999	100.6729 ug/L	93
15) Tert-Butyl Alcohol	6.57	59	114220	387.5328 ug/L	91
16) Dimethyl Sulfide	6.73	62	489571	106.5996 ug/L	82
17) Iodomethane	6.99	142	416890	244.5557 ug/L	97
18) Methyl acetate	7.00	43	252444	104.3161 ug/L #	81
19) Methylene Chloride	7.24	84	827241	98.5346 ug/L	53
20) Carbon Disulfide	7.29	76	2766110	99.3432 ug/L	100
21) Acrylonitrile	7.43	53	126153	113.2272 ug/L	98
22) Methyl Tert Butyl Ether	7.46	73	1894494	105.8643 ug/L	87
23) trans-1,2-Dichloroethene	7.70	61	1203701	99.1822 ug/L	93
24) n-Hexane	7.78	57	926226	105.3097 ug/L	84
25) Diisopropyl ether	8.12	45	3699807	196.0386 ug/L #	90
26) Vinyl Acetate	8.29	43	860820	101.8643 ug/L #	88
27) 1,1-Dichloroethane	8.32	63	1521237	101.5567 ug/L	96
28) Ethyl-Tert-Butyl ether	8.70	59	4005676	198.2271 ug/L	89
29) 2-Butanone	8.88	43	145126	112.6698 ug/L #	81
30) Propionitrile	8.98	54	83038	219.1648 ug/L	97
31) 2,2-Dichloropropane	9.11	77	1610615	102.0557 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	935490	99.9944 ug/L	89
33) Chloroform	9.37	83	1766988	98.8341 ug/L	98
34) 1-Bromopropane	9.51	122	139657	108.5299 ug/L	100
35) Bromochloromethane	9.61	130	488678	102.8480 ug/L	66
36) Tetrahydrofuran	9.63	42	167812	187.5699 ug/L #	61
38) 1,1,1-Trichloroethane	9.91	97	1724504	102.7713 ug/L	100
39) Cyclohexane	9.94	56	1185537	102.8628 ug/L #	66
40) 1,1-Dichloropropene	10.11	75	1293224	100.8377 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	3634806	198.1264 ug/L	88
42) Carbon Tetrachloride	10.25	117	1534696	103.3979 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	1177876	103.7352	ug/L		85
46)	Benzene	10.46	78	3298928	95.8405	ug/L		87
47)	Trichloroethene	11.21	130	903490	101.9036	ug/L		97
48)	Methylcyclohexane	11.30	83	1389528	104.6454	ug/L		83
49)	1,2-Dichloropropane	11.43	63	755128	102.5297	ug/L		73
50)	Bromodichloromethane	11.73	83	1351612	104.6036	ug/L		99
51)	1,4-Dioxane	11.72	88	16303	473.9624	ug/L		68
52)	Dibromomethane	11.81	93	445130	101.6543	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.02	63	333977	105.4228	ug/L		92
54)	4-Methyl-2-Pentanone	12.05	58	138980	110.1494	ug/L	#	77
55)	cis-1,3-Dichloropropene	12.36	75	1387475	105.9136	ug/L		100
56)	Dimethyl Disulfide	12.62	79	745504	111.3169	ug/L		97
59)	Toluene	12.78	91	3455614	95.2346	ug/L		99
60)	Ethyl Methacrylate	12.88	69	731009	113.5760	ug/L		70
62)	trans-1,3-Dichloropropene	12.96	75	1236182	107.9445	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	564076	103.0604	ug/L		99
64)	2-Hexanone	13.12	58	126268	114.5366	ug/L	#	79
65)	1,3-Dichloropropane	13.48	76	1021082	105.2672	ug/L		74
66)	Tetrachloroethene	13.60	164	752835	101.4023	ug/L		95
67)	Dibromochloromethane	13.87	129	856499	109.6525	ug/L		100
68)	1,2-Dibromoethane	14.12	107	577701	107.6426	ug/L		98
69)	1-Chlorohexane	14.21	91	1222720	103.0385	ug/L		82
70)	Chlorobenzene	14.62	112	2332247	97.2408	ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	947925	106.1463	ug/L		99
72)	Ethylbenzene	14.66	106	1275519	98.8771	ug/L		97
73)	m-,p-Xylene	14.75	106	3009424	194.2602	ug/L		98
74)	o-Xylene	15.31	106	1490638	100.8068	ug/L		93
75)	Styrene	15.35	104	2503721	102.8373	ug/L		88
76)	Bromoform	15.83	173	517827	114.0520	ug/L		100
77)	Isopropylbenzene	15.73	105	3913141	95.4433	ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	624965	106.8610	ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	192087	107.3268	ug/L		97
82)	trans-1,4-Dichloro-2-Buten	16.18	53	189214	128.4818	ug/L	#	59
83)	n-Propylbenzene	16.24	91	4599057	93.6644	ug/L		100
84)	Bromobenzene	16.37	156	968011	102.1426	ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	3401719	97.9556	ug/L		97
86)	2-Chlorotoluene	16.52	91	3177047	93.8267	ug/L		98
87)	4-Chlorotoluene	16.56	91	2899171	96.0712	ug/L		96
88)	a-Methylstyrene	16.84	118	1639166	103.6811	ug/L		90
89)	tert-Butylbenzene	16.90	134	654025	99.4199	ug/L		85
90)	1,2,4-Trimethylbenzene	16.95	105	3479295	96.7054	ug/L		97
91)	sec-Butylbenzene	17.17	105	3947832	94.2785	ug/L		98
92)	p-Isopropyltoluene	17.32	119	3328450	94.4148	ug/L		97
93)	1,3-Dichlorobenzene	17.52	146	1834740	98.9074	ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	1818309	96.6271	ug/L		92
95)	n-Butylbenzene	17.85	91	3308330	94.4002	ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	1606254	97.0179	ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	125368	107.7020	ug/L		87
98)	1,2,4-Trichlorobenzene	20.28	180	1227926	100.7076	ug/L		99
99)	Hexachlorobutadiene	20.43	225	569213	100.5231	ug/L		97
100)	Naphthalene	20.65	128	1852486	101.2968	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	1021163	98.5794	ug/L		100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration

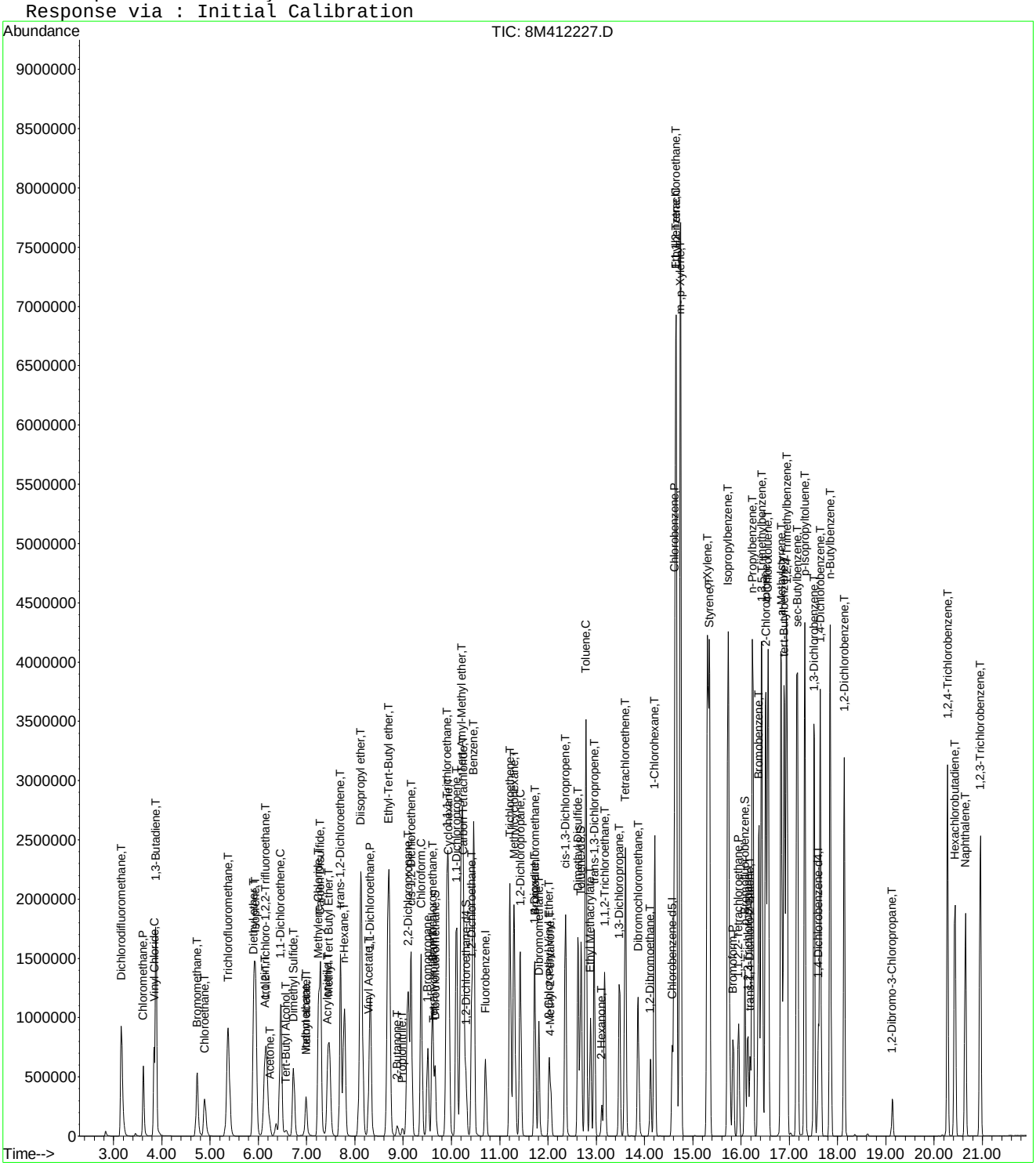

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	828540	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	578848	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	301401	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	898145	101.4517 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 405.80%#		
43) 1,2-Dichloroethane-d4	10.30	65	939848	98.0779 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 392.32%#		
58) Toluene-d8	12.68	98	2984162	97.8805 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 391.52%#		
80) p-Bromofluorobenzene	16.08	95	1242720	99.7023 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 398.80%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	2830517	203.5621 ug/L	98
3) Chloromethane	3.62	50	1586058	194.4056 ug/L	97
4) Vinyl Chloride	3.83	62	1935009	201.0738 ug/L	94
5) 1,3-Butadiene	3.88	54	1684964	212.5477 ug/L	94
6) Bromomethane	4.72	94	1358068	271.2231 ug/L	99
7) Chloroethane	4.89	64	1084803	206.5255 ug/L	90
8) Trichlorofluoromethane	5.37	101	3516760	195.1756 ug/L	99
10) Isoprene	5.94	67	2136665	196.1573 ug/L	78
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1662142	196.5993 ug/L	95
13) Acetone	6.24	43	187748	200.7963 ug/L	97
14) 1,1-Dichloroethene	6.46	61	2649821	196.6732 ug/L	92
15) Tert-Butyl Alcohol	6.58	59	6024	20.0950 ug/L #	87
16) Dimethyl Sulfide	6.73	62	976862	205.8822 ug/L	82
17) Iodomethane	6.99	142	896947	398.7987 ug/L	100
18) Methyl acetate	7.00	43	504293	201.4324 ug/L #	81
19) Methylene Chloride	7.25	84	1684780	196.5546 ug/L	52
20) Carbon Disulfide	7.29	76	5386210	189.2120 ug/L	99
21) Acrylonitrile	7.45	53	30354	26.0447 ug/L #	32
22) Methyl Tert Butyl Ether	7.46	73	3711011	200.6529 ug/L	87
23) trans-1,2-Dichloroethene	7.70	61	2410498	194.2902 ug/L	92
24) n-Hexane	7.78	57	1821777	199.7288 ug/L	84
26) Vinyl Acetate	8.29	43	1796217	206.9060 ug/L #	88
27) 1,1-Dichloroethane	8.32	63	3042055	197.9863 ug/L	95
29) 2-Butanone	8.88	43	271767	199.8193 ug/L #	77
30) Propionitrile	8.90	54	208	0.5280 ug/L #	1
31) 2,2-Dichloropropane	9.11	77	3202633	197.6970 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	1875631	195.8883 ug/L	89
33) Chloroform	9.37	83	3506648	191.9199 ug/L	99
34) 1-Bromopropane	9.51	122	286158	214.2313 ug/L	99
35) Bromochloromethane	9.60	130	980373	200.7807 ug/L	66
36) Tetrahydrofuran	9.62	42	2381	2.6275 ug/L	87
38) 1,1,1-Trichloroethane	9.91	97	3410306	197.7909 ug/L	99
39) Cyclohexane	9.94	56	2357393	198.8974 ug/L #	66
40) 1,1-Dichloropropene	10.10	75	2601175	197.8946 ug/L	96
42) Carbon Tetrachloride	10.25	117	3062767	200.6417 ug/L	99
45) 1,2-Dichloroethane	10.42	62	2313662	198.0324 ug/L	85
46) Benzene	10.46	78	6379817	182.1771 ug/L	89
47) Trichloroethene	11.21	130	1810459	198.9741 ug/L	97
48) Methylcyclohexane	11.30	83	2755373	200.4193 ug/L	83
49) 1,2-Dichloropropane	11.43	63	1528407	202.0331 ug/L	74

(#) = qualifier out of range (m) = manual integration
8M412228.D 8260WT.M Fri May 13 17:43:34 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
50)	Bromodichloromethane	11.73	83	2716764	204.0895 ug/L		99
51)	1,4-Dioxane	11.73	88	3865	104.9352 ug/L	#	18
52)	Dibromomethane	11.81	93	898971	200.1154 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.02	63	631656	192.7236 ug/L		90
54)	4-Methyl-2-Pentanone	12.05	58	262702	198.3957 ug/L	#	75
55)	cis-1,3-Dichloropropene	12.36	75	2784162	205.9153 ug/L		99
56)	Dimethyl Disulfide	12.62	79	1518705	215.4711 ug/L		95
59)	Toluene	12.78	91	6564353	175.9274 ug/L		96
60)	Ethyl Methacrylate	12.88	69	1429837	209.8161 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	2468609	205.4771 ug/L		98
63)	1,1,2-Trichloroethane	13.18	97	1124672	197.6019 ug/L		100
64)	2-Hexanone	13.12	58	237678	200.9290 ug/L	#	81
65)	1,3-Dichloropropane	13.48	76	2023247	199.9545 ug/L		76
66)	Tetrachloroethene	13.60	164	1546618	200.8018 ug/L		97
67)	Dibromochloromethane	13.87	129	1726523	210.5823 ug/L		100
68)	1,2-Dibromoethane	14.12	107	1163160	207.0667 ug/L		99
69)	1-Chlorohexane	14.21	91	2414147	195.6413 ug/L		83
70)	Chlorobenzene	14.62	112	4641169	187.6386 ug/L		94
71)	1,1,1,2-Tetrachloroethane	14.66	131	1929251	206.8372 ug/L		99
72)	Ethylbenzene	14.66	106	2611321	195.8267 ug/L		88
73)	m-,p-Xylene	14.75	106	5876234	367.8657 ug/L		83
74)	o-Xylene	15.31	106	3012318	196.4899 ug/L		98
75)	Styrene	15.35	104	4913204	194.1235 ug/L		86
76)	Bromoform	15.83	173	1052629	218.7989 ug/L		100
77)	Isopropylbenzene	15.73	105	7284624	172.7305 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	1237171	205.8673 ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	386738	209.7906 ug/L	#	54
82)	trans-1,4-Dichloro-2-Buten	16.19	53	382467	243.6526 ug/L		76
83)	n-Propylbenzene	16.24	91	8244387	166.5110 ug/L		93
84)	Bromobenzene	16.37	156	1935166	200.1305 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	6482975	183.9948 ug/L		98
86)	2-Chlorotoluene	16.52	91	6108308	178.8549 ug/L		99
87)	4-Chlorotoluene	16.56	91	5513221	180.5508 ug/L		99
88)	a-Methylstyrene	16.84	118	3255254	200.4995 ug/L		89
89)	tert-Butylbenzene	16.90	134	1351569	202.1005 ug/L		92
90)	1,2,4-Trimethylbenzene	16.95	105	6531416	179.2445 ug/L		97
91)	sec-Butylbenzene	17.17	105	7342730	173.9814 ug/L		97
92)	p-Isopropyltoluene	17.32	119	6352010	178.7315 ug/L		99
93)	1,3-Dichlorobenzene	17.52	146	3640547	193.1654 ug/L		90
94)	1,4-Dichlorobenzene	17.64	146	3593548	188.4603 ug/L		91
95)	n-Butylbenzene	17.85	91	6198060	175.4375 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	3171699	188.9651 ug/L		89
97)	1,2-Dibromo-3-Chloropropan	19.13	75	249646	207.5645 ug/L		88
98)	1,2,4-Trichlorobenzene	20.28	180	2480626	199.7296 ug/L		99
99)	Hexachlorobutadiene	20.43	225	1169411	202.7981 ug/L		98
100)	Naphthalene	20.65	128	3580198	192.0323 ug/L		97
101)	1,2,3-Trichlorobenzene	20.96	180	2040570	193.9298 ug/L		100

(#) = qualifier out of range (m) = manual integration
8M412228.D 8260WT.M Fri May 13 17:43:35 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration

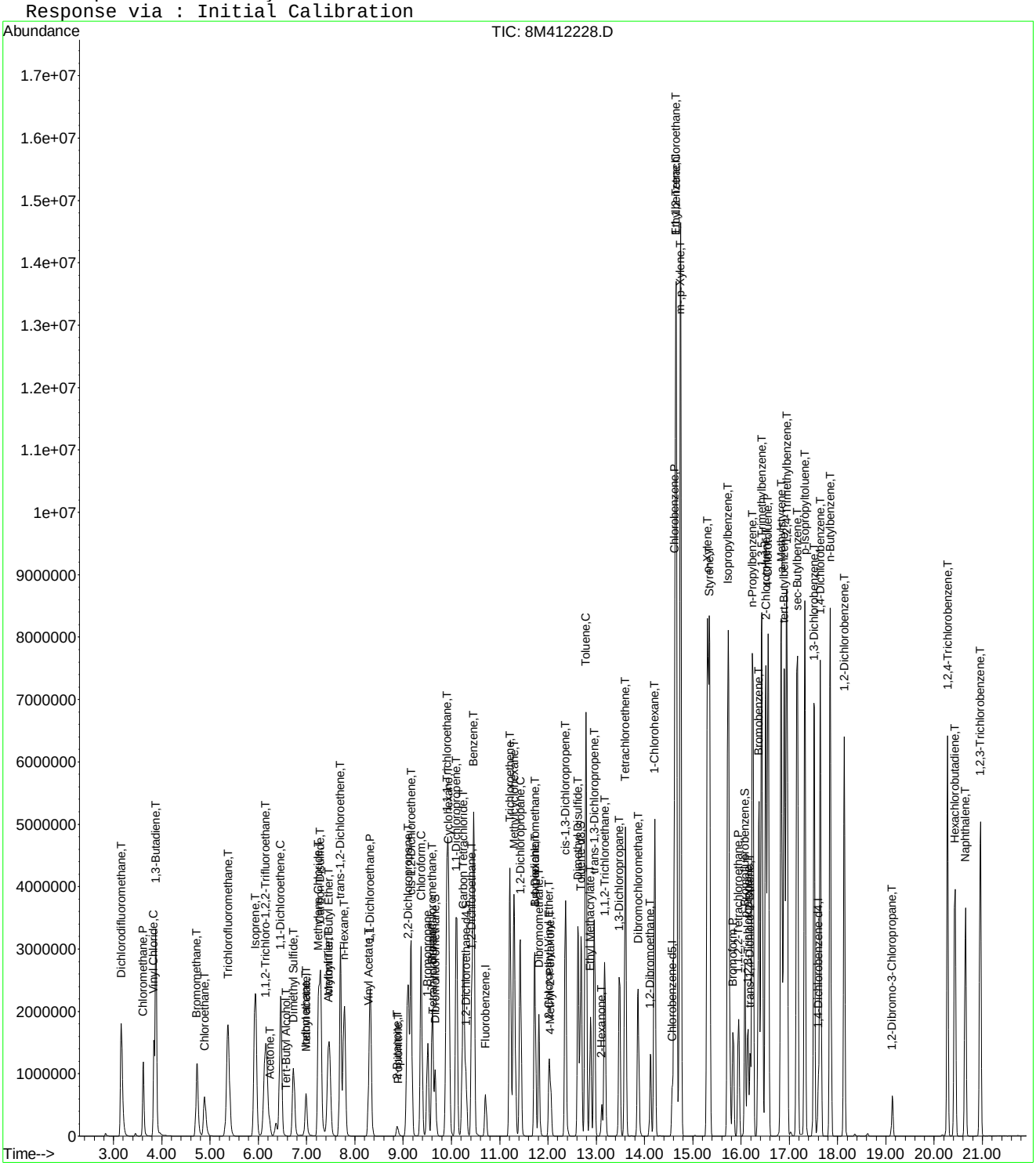

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	855409	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	599314	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	305726	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	1411837	154.4674 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 617.88%#		
43) 1,2-Dichloroethane-d4	10.30	65	1466019	148.1811 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 592.72%#		
58) Toluene-d8	12.69	98	4594713	145.5601 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 582.24%#		
80) p-Bromofluorobenzene	16.08	95	1918996	151.7813 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 607.12%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	4191932	292.0014 ug/L	97
3) Chloromethane	3.62	50	2474035	293.7212 ug/L	97
4) Vinyl Chloride	3.83	62	2956347	297.5552 ug/L	94
5) 1,3-Butadiene	3.87	54	2605506	318.3447 ug/L	94
6) Bromomethane	4.72	94	2177550	421.2239 ug/L	98
7) Chloroethane	4.89	64	1688005	311.2693 ug/L	90
8) Trichlorofluoromethane	5.37	101	5387662	289.6161 ug/L	99
9) Diethyl ether	5.90	59	1306432	295.4610 ug/L	80
10) Isoprene	5.93	67	3377164	300.3032 ug/L	78
11) Acrolein	6.14	56	70572	185.7401 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	2563878	293.7317 ug/L	94
13) Acetone	6.24	43	283185	293.3529 ug/L	90
14) 1,1-Dichloroethene	6.46	61	4031745	289.8421 ug/L	91
15) Tert-Butyl Alcohol	6.58	59	181796	587.3907 ug/L	90
16) Dimethyl Sulfide	6.73	62	1553493	317.1280 ug/L	81
17) Iodomethane	6.99	142	1347307	580.2206 ug/L	98
18) Methyl acetate	7.00	43	800046	309.5287 ug/L #	80
19) Methylene Chloride	7.24	84	2587731	292.4144 ug/L	52
20) Carbon Disulfide	7.29	76	8228181	279.9683 ug/L	98
21) Acrylonitrile	7.43	53	228227	189.6753 ug/L	94
22) Methyl Tert Butyl Ether	7.46	73	5605924	293.5892 ug/L	88
23) trans-1,2-Dichloroethene	7.70	61	3678699	287.1957 ug/L	92
24) n-Hexane	7.78	57	2863434	304.0691 ug/L	86
25) Diisopropyl ether	8.12	45	5819647	292.7898 ug/L #	89
26) Vinyl Acetate	8.30	43	2819503	314.5767 ug/L #	87
27) 1,1-Dichloroethane	8.32	63	4586531	289.1293 ug/L	94
28) Ethyl-Tert-Butyl ether	8.70	59	6190206	290.3321 ug/L	89
29) 2-Butanone	8.88	43	439359	312.8959 ug/L #	76
30) Propionitrile	8.99	54	133197	327.4673 ug/L	95
31) 2,2-Dichloropropane	9.10	77	4821388	288.2735 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	2847005	287.9976 ug/L	89
33) Chloroform	9.37	83	5197860	275.5447 ug/L	100
34) 1-Bromopropane	9.51	122	450012	326.3179 ug/L	100
35) Bromochloromethane	9.61	130	1490221	295.6112 ug/L	66
36) Tetrahydrofuran	9.63	42	271736	290.4491 ug/L #	62
38) 1,1,1-Trichloroethane	9.91	97	5126354	287.9792 ug/L	98
39) Cyclohexane	9.94	56	3733392	305.0987 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	3923871	289.1471 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	5639573	291.3713 ug/L	88
42) Carbon Tetrachloride	10.25	117	4598150	291.7629 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412229.D 8260WT.M Fri May 13 18:12:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	3468738	287.5726	ug/L		86
46)	Benzene	10.46	78	9065861	250.7462	ug/L		93
47)	Trichloroethene	11.21	130	2772282	295.1106	ug/L		97
48)	Methylcyclohexane	11.30	83	4327357	304.8748	ug/L		84
49)	1,2-Dichloropropane	11.43	63	2350729	300.9718	ug/L		74
50)	Bromodichloromethane	11.73	83	4051493	294.7973	ug/L		99
51)	1,4-Dioxane	11.72	88	26614	699.8767	ug/L		67
52)	Dibromomethane	11.81	93	1369945	295.3776	ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.03	63	1006317	297.3917	ug/L		90
54)	4-Methyl-2-Pentanone	12.06	58	424684	310.6522	ug/L	#	76
55)	cis-1,3-Dichloropropene	12.36	75	4156310	297.7431	ug/L		97
56)	Dimethyl Disulfide	12.63	79	2359825	324.2911	ug/L		94
59)	Toluene	12.78	91	9135213	236.4669	ug/L		90
60)	Ethyl Methacrylate	12.88	69	2228037	315.7801	ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	3700845	297.5240	ug/L		96
63)	1,1,2-Trichloroethane	13.18	97	1730199	293.6104	ug/L		100
64)	2-Hexanone	13.11	58	381967	311.8816	ug/L	#	78
65)	1,3-Dichloropropane	13.49	76	3080177	294.0141	ug/L		76
66)	Tetrachloroethene	13.60	164	2374435	297.7522	ug/L		96
67)	Dibromochloromethane	13.87	129	2638145	310.7838	ug/L		100
68)	1,2-Dibromoethane	14.13	107	1778561	305.8085	ug/L		99
69)	1-Chlorohexane	14.21	91	3712592	290.5924	ug/L		84
70)	Chlorobenzene	14.63	112	6754240	263.7433	ug/L		90
71)	1,1,1,2-Tetrachloroethane	14.65	131	2967650	307.3001	ug/L		100
72)	Ethylbenzene	14.65	106	4014412	290.7661	ug/L		70
73)	m-,p-Xylene	14.75	106	8357822	505.3514	ug/L		70
74)	o-Xylene	15.31	106	4530840	285.4488	ug/L		88
75)	Styrene	15.35	104	7050702	269.0641	ug/L		82
76)	Bromoform	15.84	173	1602587	321.7373	ug/L		99
77)	Isopropylbenzene	15.73	105	9900817	226.7477	ug/L		90
79)	1,1,2,2-Tetrachloroethane	15.95	83	1885953	309.3861	ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	581198	310.8176	ug/L		61
82)	trans-1,4-Dichloro-2-Buten	16.18	53	589705	370.3601	ug/L		82
83)	n-Propylbenzene	16.25	91	10768378	214.4110	ug/L		86
84)	Bromobenzene	16.37	156	2947671	300.5290	ug/L		99
85)	1,3,5-Trimethylbenzene	16.43	105	8890651	248.7580	ug/L		92
86)	2-Chlorotoluene	16.51	91	7868844	227.1449	ug/L		92
87)	4-Chlorotoluene	16.57	91	7782731	251.2687	ug/L		93
88)	a-Methylstyrene	16.84	118	4955768	300.9205	ug/L		86
89)	tert-Butylbenzene	16.90	134	2046401	301.6701	ug/L		95
90)	1,2,4-Trimethylbenzene	16.95	105	8903769	240.8932	ug/L		89
91)	sec-Butylbenzene	17.17	105	9867862	230.5051	ug/L		91
92)	p-Isopropyltoluene	17.32	119	8738927	242.4155	ug/L		94
93)	1,3-Dichlorobenzene	17.52	146	5319954	278.2806	ug/L		87
94)	1,4-Dichlorobenzene	17.64	146	5248511	271.3593	ug/L		88
95)	n-Butylbenzene	17.85	91	8408157	234.6279	ug/L		92
96)	1,2-Dichlorobenzene	18.14	146	4717385	277.0787	ug/L		87
97)	1,2-Dibromo-3-Chloropropan	19.13	75	377070	309.0741	ug/L		91
98)	1,2,4-Trichlorobenzene	20.28	180	3677657	291.9206	ug/L		98
99)	Hexachlorobutadiene	20.43	225	1780695	304.4378	ug/L		96
100)	Naphthalene	20.65	128	5216751	275.8542	ug/L		95
101)	1,2,3-Trichlorobenzene	20.96	180	3064908	287.1593	ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration

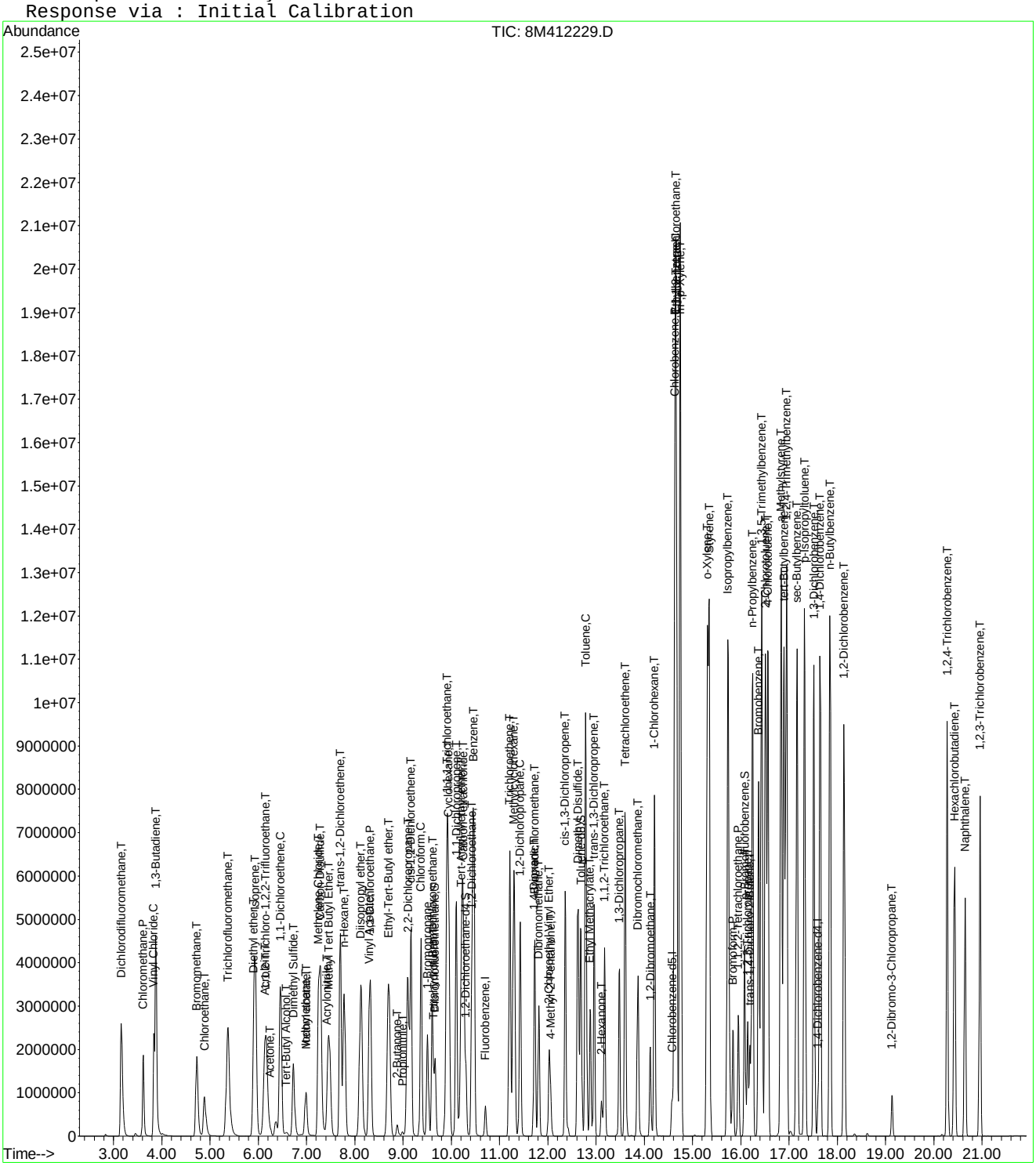

8M412229.D 8260WT.M Fri May 13 18:12:36 2016 Page 3

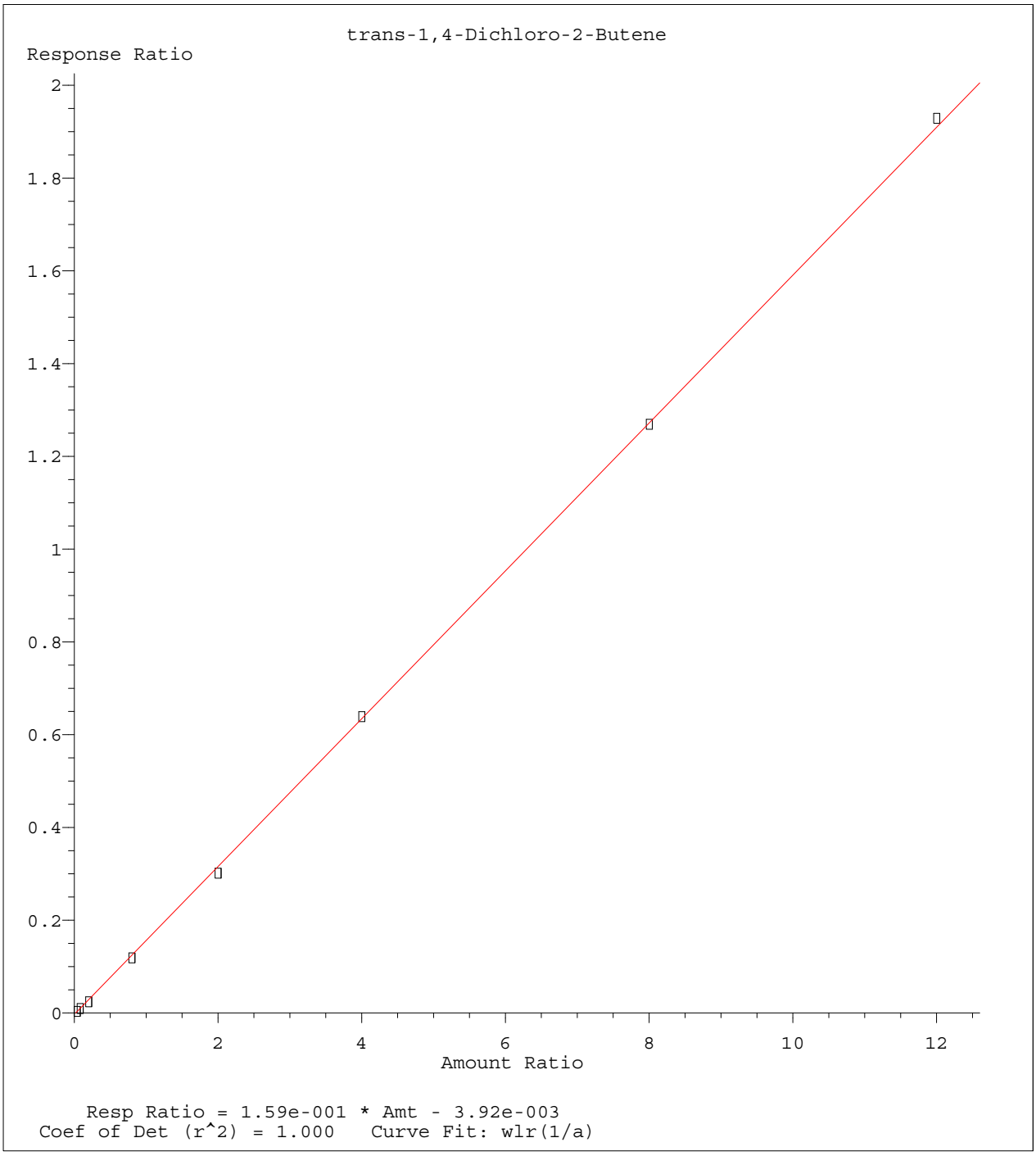

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

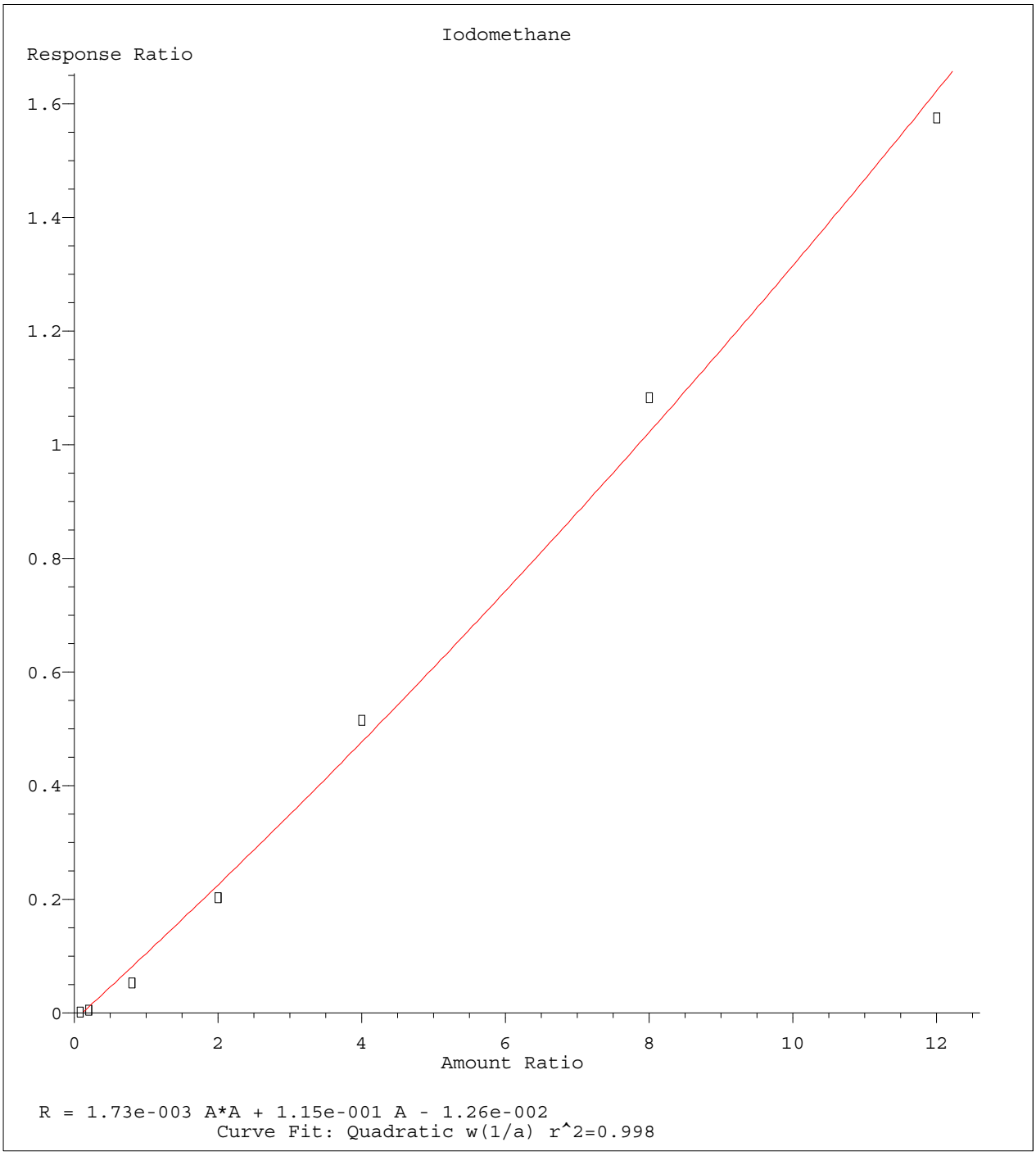

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

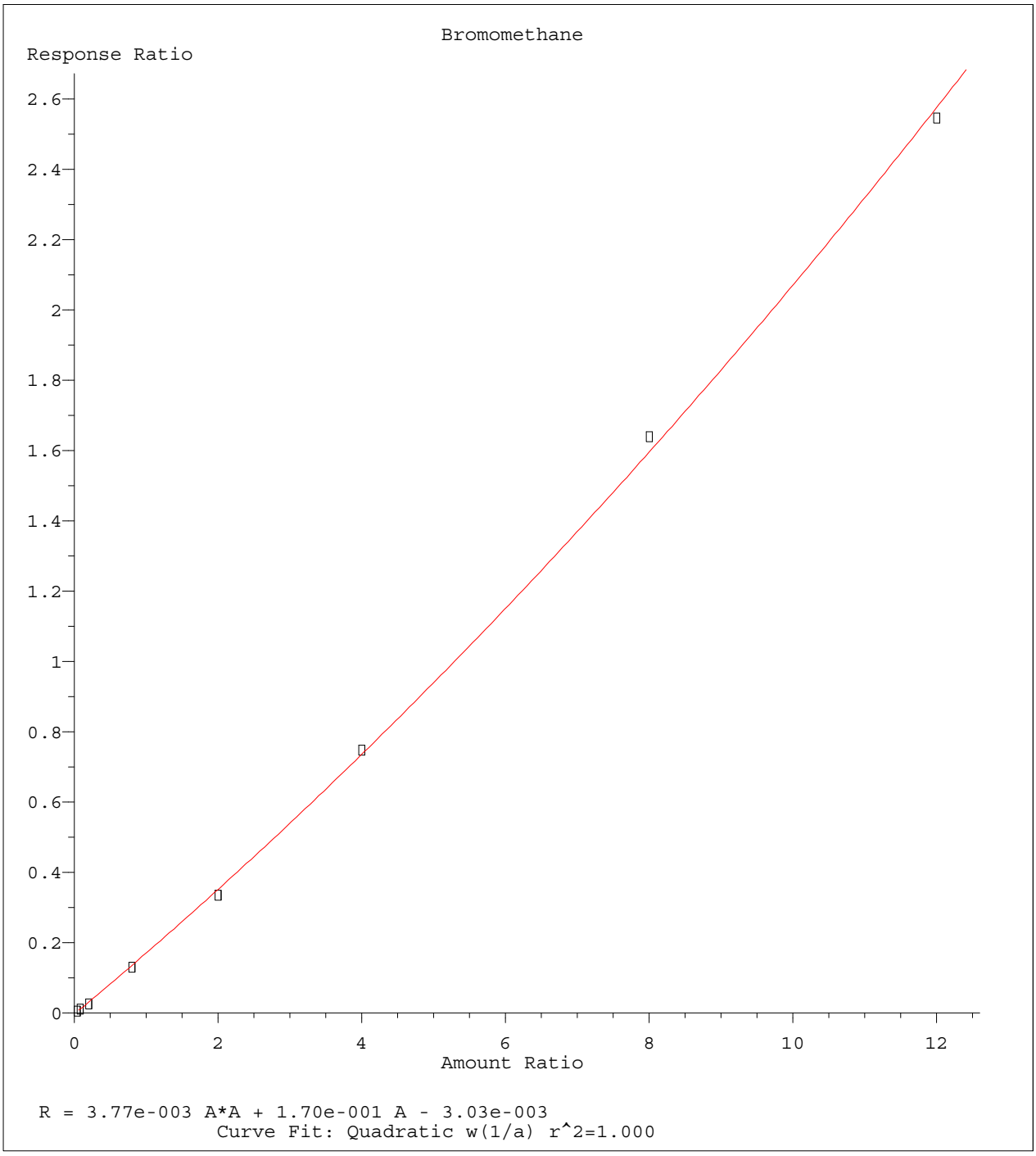

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:44:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Tue May 17 11:43:20 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	837879	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	574720	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	304324	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	229742	25.5204 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.08%		
43) 1,2-Dichloroethane-d4	10.31	65	238672	24.7259 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.92%		
58) Toluene-d8	12.68	98	776362	25.8115 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.24%		
80) p-Bromofluorobenzene	16.07	95	315683	25.0519 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.20%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	761591	54.2141 ug/L	99
3) Chloromethane	3.62	50	415589	50.6814 ug/L	100
4) Vinyl Chloride	3.84	62	509607	52.3810 ug/L	100
5) 1,3-Butadiene	3.88	54	347562	42.6002 ug/L	97
6) Bromomethane	4.73	94	272060	46.3924 ug/L	99
7) Chloroethane	4.88	64	285509	53.3336 ug/L	98
8) Trichlorofluoromethane	5.37	101	849580	46.9313 ug/L	100
9) Diethyl ether	5.90	59	451307	104.4282 ug/L	99
10) Isoprene	5.93	67	582863	53.0208 ug/L	99
11) Acrolein	6.13	56	38877	100.4722 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	419584	49.3091 ug/L	97
13) Acetone	6.23	43	54234	57.5310 ug/L	94
14) 1,1-Dichloroethene	6.46	61	622831	45.9700 ug/L	99
15) Tert-Butyl Alcohol	6.59	59	59797	197.9422 ug/L	97
16) Dimethyl Sulfide	6.73	62	351814	72.6234 ug/L	98
17) Iodomethane	6.99	142	92716	26.2832 ug/L	99
18) Methyl acetate	7.00	43	127540	50.0514 ug/L	98
19) Methylene Chloride	7.25	84	417642	48.4385 ug/L	99
20) Carbon Disulfide	7.29	76	1199899	42.3200 ug/L	100
21) Acrylonitrile	7.43	53	65324	53.4074 ug/L	93
22) Methyl Tert Butyl Ether	7.46	73	949572	50.8859 ug/L	97
23) trans-1,2-Dichloroethene	7.70	61	598296	48.0666 ug/L	99
24) n-Hexane	7.77	57	425106	45.9930 ug/L	99
25) Diisopropyl ether	8.13	45	2040382	105.1615 ug/L	98
26) Vinyl Acetate	8.29	43	415568	46.7802 ug/L	99
27) 1,1-Dichloroethane	8.32	63	721661	46.6846 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	2040020	98.1343 ug/L	99
29) 2-Butanone	8.88	43	73394	52.9905 ug/L	99
30) Propionitrile	8.98	54	42290	104.7756 ug/L	100
31) 2,2-Dichloropropane	9.10	77	780073	47.8861 ug/L	99
32) cis-1,2-Dichloroethene	9.16	96	470465	48.9162 ug/L	98
33) Chloroform	9.38	83	860252	47.1317 ug/L	100
34) 1-Bromopropane	9.51	122	98585	71.5615 ug/L	98
35) Bromochloromethane	9.60	130	234493	47.5456 ug/L	99
36) Tetrahydrofuran	9.62	42	86049	94.3281 ug/L	99
38) 1,1,1-Trichloroethane	9.90	97	825167	47.5949 ug/L	100
39) Cyclohexane	9.93	56	586721	48.8808 ug/L	97
40) 1,1-Dichloropropene	10.10	75	627217	47.4632 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1962875	103.9618 ug/L	99
42) Carbon Tetrachloride	10.24	117	711823	46.2363 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M412232.D 8260WT.M Tue May 17 11:44:38 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	108	0.00
2	T	Dichlorodifluoromethane	50.0000	54.2141	-8.4	112	0.00
3	P	Chloromethane	50.0000	50.6814	-1.4	111	0.00
4	C	Vinyl Chloride	50.0000	52.3811	-4.8	112	-0.01
5	T	1,3-Butadiene	50.0000	42.6002	14.8	89	0.00
6	T	Bromomethane	50.0000	46.3924	7.2	104	-0.01
7	T	Chloroethane	50.0000	53.3336	-6.7	117	-0.01
8	T	Trichlorofluoromethane	50.0000	46.9313	6.1	101	-0.01
9	T	Diethyl ether	100.0000	104.4282	-4.4	116	0.00
10	T	Isoprene	50.0000	53.0208	-6.0	117	0.00
11	T	Acrolein	50.0000	100.4722	-100.9#	220	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	49.3091	1.4	108	0.00
13	T	Acetone	50.0000	57.5310	-15.1	118	-0.01
14	C	1,1-Dichloroethene	50.0000	45.9700	8.1	100	0.00
15	T	Tert-Butyl Alcohol	200.0000	197.9423	1.0	108	0.01
16	T	Dimethyl Sulfide	50.0000	72.6234	-45.2#	159	0.00
17	T	Iodomethane	50.0000	26.2832	47.4#	59	0.01
18	T	Methyl acetate	50.0000	50.0514	-0.1	111	0.00
19	T	Methylene Chloride	50.0000	48.4385	3.1	107	0.00
20	T	Carbon Disulfide	50.0000	42.3200	15.4	94	0.00
21	T	Acrylonitrile	50.0000	53.4074	-6.8	109	0.00
22	T	Methyl Tert Butyl Ether	50.0000	50.8859	-1.8	105	0.00
23	T	trans-1,2-Dichloroethene	50.0000	48.0666	3.9	105	0.00
24	T	n-Hexane	50.0000	45.9930	8.0	101	-0.01
25	T	Diisopropyl ether	100.0000	105.1615	-5.2	115	0.00
26	T	Vinyl Acetate	50.0000	46.7802	6.4	97	0.00
27	P	1,1-Dichloroethane	50.0000	46.6846	6.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.1343	1.9	104	0.00
29	T	2-Butanone	50.0000	52.9905	-6.0	110	0.00
30	T	Propionitrile	100.0000	104.7756	-4.8	111	0.00
31	T	2,2-Dichloropropane	50.0000	47.8861	4.2	102	0.00
32	T	cis-1,2-Dichloroethene	50.0000	48.9162	2.2	107	-0.01
33	C	Chloroform	50.0000	47.1317	5.7	102	0.00
34		1-Bromopropane	50.0000	71.5615	-43.1#	155	0.00
35	T	Bromochloromethane	50.0000	47.5456	4.9	102	0.00
36	T	Tetrahydrofuran	100.0000	94.3281	5.7	108	-0.01
37	S	Dibromofluoromethane	25.0000	25.5204	-2.1	109	0.00
38	T	1,1,1-Trichloroethane	50.0000	47.5949	4.8	101	0.00
39	T	Cyclohexane	50.0000	48.8808	2.2	109	0.00
40	T	1,1-Dichloropropene	50.0000	47.4632	5.1	102	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	103.9618	-4.0	111	0.00
42	T	Carbon Tetrachloride	50.0000	46.2363	7.5	98	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.7259	1.1	104	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	49.0148	2.0	103	0.00
46	T	Benzene	50.0000	48.5232	3.0	104	0.00
47	T	Trichloroethene	50.0000	51.0658	-2.1	110	0.00
48	T	Methylcyclohexane	50.0000	49.8573	0.3	109	0.00
49	C	1,2-Dichloropropane	50.0000	50.9747	-1.9	111	0.00
50	T	Bromodichloromethane	50.0000	48.3053	3.4	99	0.00
51	T	1,4-Dioxane	200.0000	216.9538	-8.5	110	0.01
52	T	Dibromomethane	50.0000	45.8126	8.4	99	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	51.2623	-2.5	104	0.00
54	T	4-Methyl-2-Pentanone	50.0000	51.8715	-3.7	107	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.8979	-7.8	111	0.00
56	T	Dimethyl Disulfide	50.0000	52.2714	-4.5	111	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	107	0.00
58	S	Toluene-d8	25.0000	25.8115	-3.2	108	0.00
59	C	Toluene	50.0000	49.0912	1.8	105	0.00
60	T	Ethyl Methacrylate	50.0000	55.9509	-11.9	113	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	50.6740	-1.3	102	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.0377	1.9	103	0.00
64	T	2-Hexanone	50.0000	53.6057	-7.2	112	0.00
65	T	1,3-Dichloropropane	50.0000	53.6720	-7.3	110	0.00
66	T	Tetrachloroethene	50.0000	47.8053	4.4	104	0.00
67	T	Dibromochloromethane	50.0000	49.6585	0.7	102	0.00
68	T	1,2-Dibromoethane	50.0000	51.1121	-2.2	105	0.00
69	T	1-Chlorohexane	50.0000	51.0611	-2.1	111	0.00
70	P	Chlorobenzene	50.0000	50.1844	-0.4	108	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	49.3793	1.2	103	0.00
72	C	Ethylbenzene	50.0000	48.2013	3.6	105	0.00
73	T	m-,p-Xylene	100.0000	101.1341	-1.1	108	0.00
74	T	o-Xylene	50.0000	50.5675	-1.1	108	0.00
75	T	Styrene	50.0000	51.5086	-3.0	105	0.00
76	P	Bromoform	50.0000	48.2227	3.6	99	0.00
77	T	Isopropylbenzene	50.0000	51.1140	-2.2	107	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	106	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	49.6172	0.8	103	0.00
80	S	p-Bromofluorobenzene	25.0000	25.0519	-0.2	108	0.00
81	T	1,2,3-Trichloropropane	50.0000	50.0849	-0.2	106	0.01
82	T	trans-1,4-Dichloro-2-Butene	50.0000	39.2043	21.6	86	0.00
83	T	n-Propylbenzene	50.0000	51.9237	-3.8	108	0.00
84	T	Bromobenzene	50.0000	49.4648	1.1	105	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	51.6344	-3.3	107	0.00
86	T	2-Chlorotoluene	50.0000	51.5639	-3.1	106	0.00
87	T	4-Chlorotoluene	50.0000	48.2650	3.5	108	0.00
88	T	a-Methylstyrene	50.0000	56.4132	-12.8	120	0.00
89	T	tert-Butylbenzene	50.0000	50.9494	-1.9	112	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	49.6617	0.7	105	0.00
91	T	sec-Butylbenzene	50.0000	51.3386	-2.7	108	0.00
92	T	p-Isopropyltoluene	50.0000	50.1261	-0.3	107	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.8943	-1.8	108	0.00
94	T	1,4-Dichlorobenzene	50.0000	50.4742	-0.9	110	0.00
95	T	n-Butylbenzene	50.0000	49.6520	0.7	105	0.00
96	T	1,2-Dichlorobenzene	50.0000	50.4907	-1.0	110	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	48.4851	3.0	100	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	50.1129	-0.2	107	0.00
99	T	Hexachlorobutadiene	50.0000	52.0919	-4.2	115	0.00
100	T	Naphthalene	50.0000	45.8047	8.4	95	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	47.7353	4.5	106	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412232.D 8260WT.M Sat May 14 18:09:03 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:21 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	709364	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	505399	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	272922	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	27428	100.2132 ug/L	99
3) 3-Chloro-1-propene	7.07	41	940418	104.3259 ug/L	82
4) 2-Chloro-1,3-butadiene	8.45	53	1188994	104.3183 ug/L	86
5) Ethyl Acetate	9.10	43	283167	104.3264 ug/L	95
6) Methacrylonitrile	9.25	67	155775	104.5365 ug/L #	63
7) Isobutyl Alcohol	9.25	43	17893	197.3629 ug/L #	96
9) Methyl methacrylate	11.42	41	298802	102.0346 ug/L	70
10) 2-Nitropropane	11.75	43	121321	95.8263 ug/L	97
13) Cyclohexanone	15.84	55	11401	102.1363 ug/L #	70

(#) = qualifier out of range (m) = manual integration
8M412321.D A9FOOWT.M Thu May 19 09:01:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

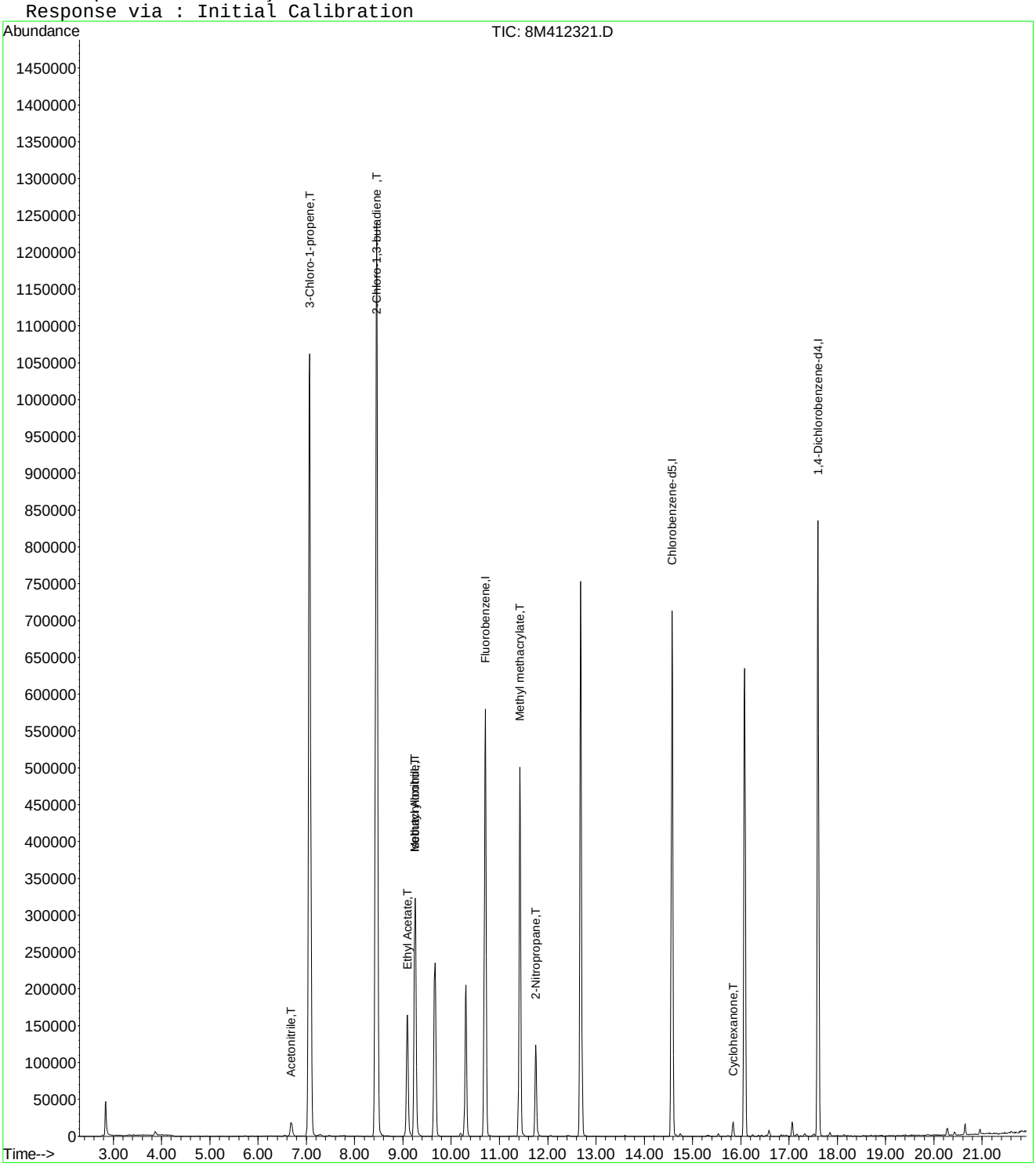

8M412321.D A9FOOWT.M Thu May 19 09:01:22 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	100.2132	-0.2	100	0.00
3	T	3-Chloro-1-propene	100.0000	104.3259	-4.3	100	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	104.3183	-4.3	100	0.00
5	T	Ethyl Acetate	100.0000	104.3264	-4.3	100	0.00
6	T	Methacrylonitrile	100.0000	104.5365	-4.5	100	0.00
7	T	Isobutyl Alcohol	200.0000	197.3629	1.3	100	-0.01
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.02
9	T	Methyl methacrylate	100.0000	102.0346	-2.0	100	0.00
10	T	2-Nitropropane	100.0000	95.8263	4.2	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	100.0000	102.1363	-2.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412321.D A9FOOWT.M Thu May 19 09:02:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:20:35 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	677339	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	488377	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	260939	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	13323	50.9795 ug/L	98
3) 3-Chloro-1-propene	7.07	41	453655	52.7060 ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	568765	52.2609 ug/L	87
5) Ethyl Acetate	9.09	43	131636	50.7913 ug/L	97
6) Methacrylonitrile	9.25	67	74064	52.0523 ug/L #	62
7) Isobutyl Alcohol	9.26	43	8483	97.9930 ug/L	95
9) Methyl methacrylate	11.42	41	143892	51.4593 ug/L	70
10) 2-Nitropropane	11.75	43	56559	46.7858 ug/L	95
13) Cyclohexanone	15.84	55	5225	48.9579 ug/L	83

(#) = qualifier out of range (m) = manual integration
8M412322.D A9FOOWT.M Thu May 19 09:20:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:19 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

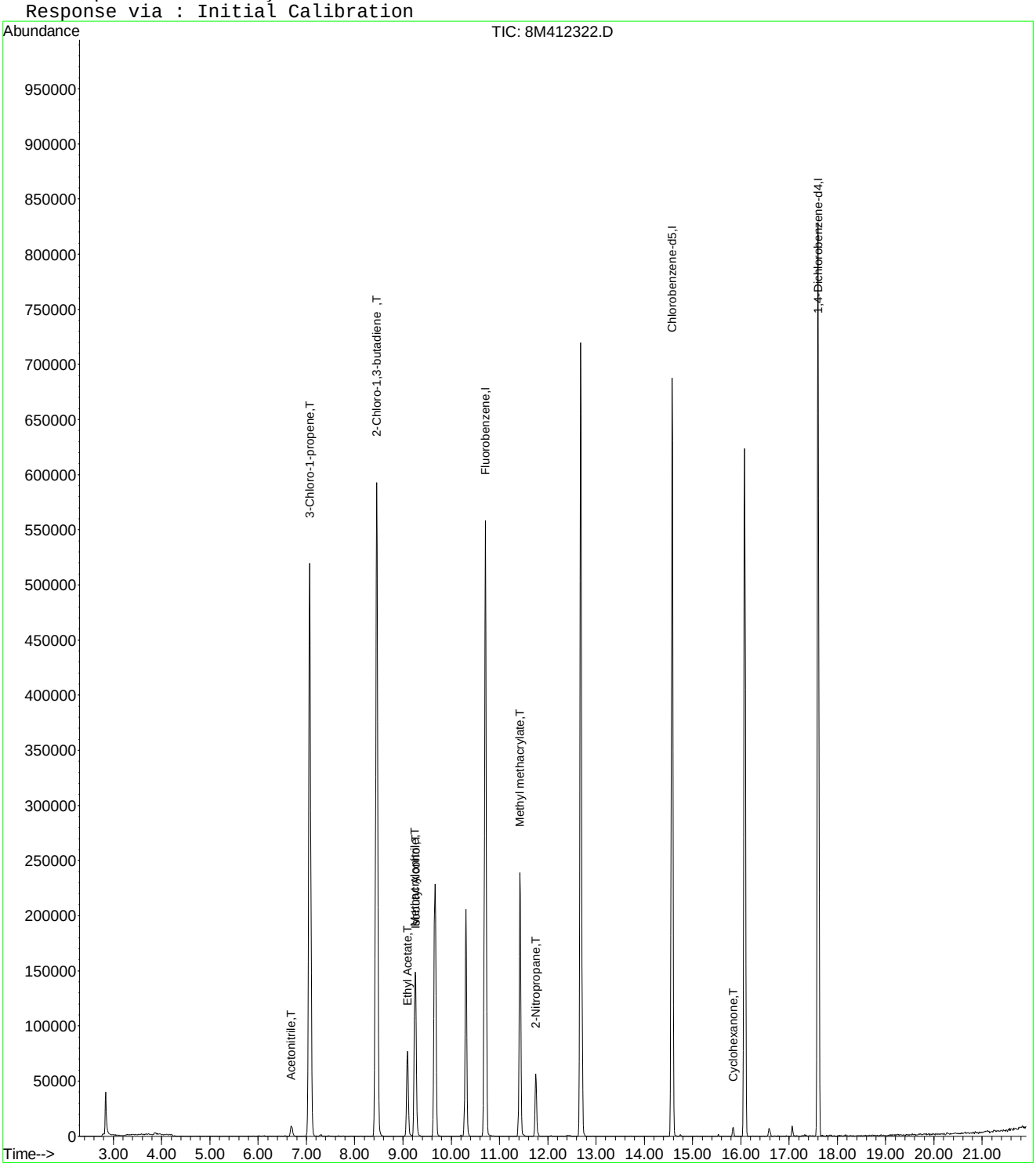

8M412322.D A9FOOWT.M Thu May 19 09:20:36 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	50.9795	-2.0	100	0.00
3	T	3-Chloro-1-propene	50.0000	52.7060	-5.4	100	0.00
4	T	2-Chloro-1,3-butadiene	50.0000	52.2609	-4.5	100	0.00
5	T	Ethyl Acetate	50.0000	50.7913	-1.6	100	0.00
6	T	Methacrylonitrile	50.0000	52.0523	-4.1	100	0.00
7	T	Isobutyl Alcohol	100.0000	97.9929	2.0	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.02
9	T	Methyl methacrylate	50.0000	51.4592	-2.9	100	0.00
10	T	2-Nitropropane	50.0000	46.7858	6.4	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	50.0000	48.9579	2.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412322.D A9FOOWT.M Thu May 19 09:02:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:22:33 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	652985	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	476539	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	256082	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	4873	19.3416 ug/L	80
3) 3-Chloro-1-propene	7.07	41	172467	20.7847 ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	219296	20.9015 ug/L	87
5) Ethyl Acetate	9.09	43	50385	20.1659 ug/L	100
6) Methacrylonitrile	9.26	67	28119	20.4992 ug/L #	63
7) Isobutyl Alcohol	9.27	43	2774	33.2395 ug/L #	8
9) Methyl methacrylate	11.42	41	55309	20.5176 ug/L	73
10) 2-Nitropropane	11.75	43	21584	18.5202 ug/L	99
13) Cyclohexanone	15.84	55	2230	21.2913 ug/L	87

(#) = qualifier out of range (m) = manual integration
8M412323.D A9FOOWT.M Thu May 19 09:22:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:21 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

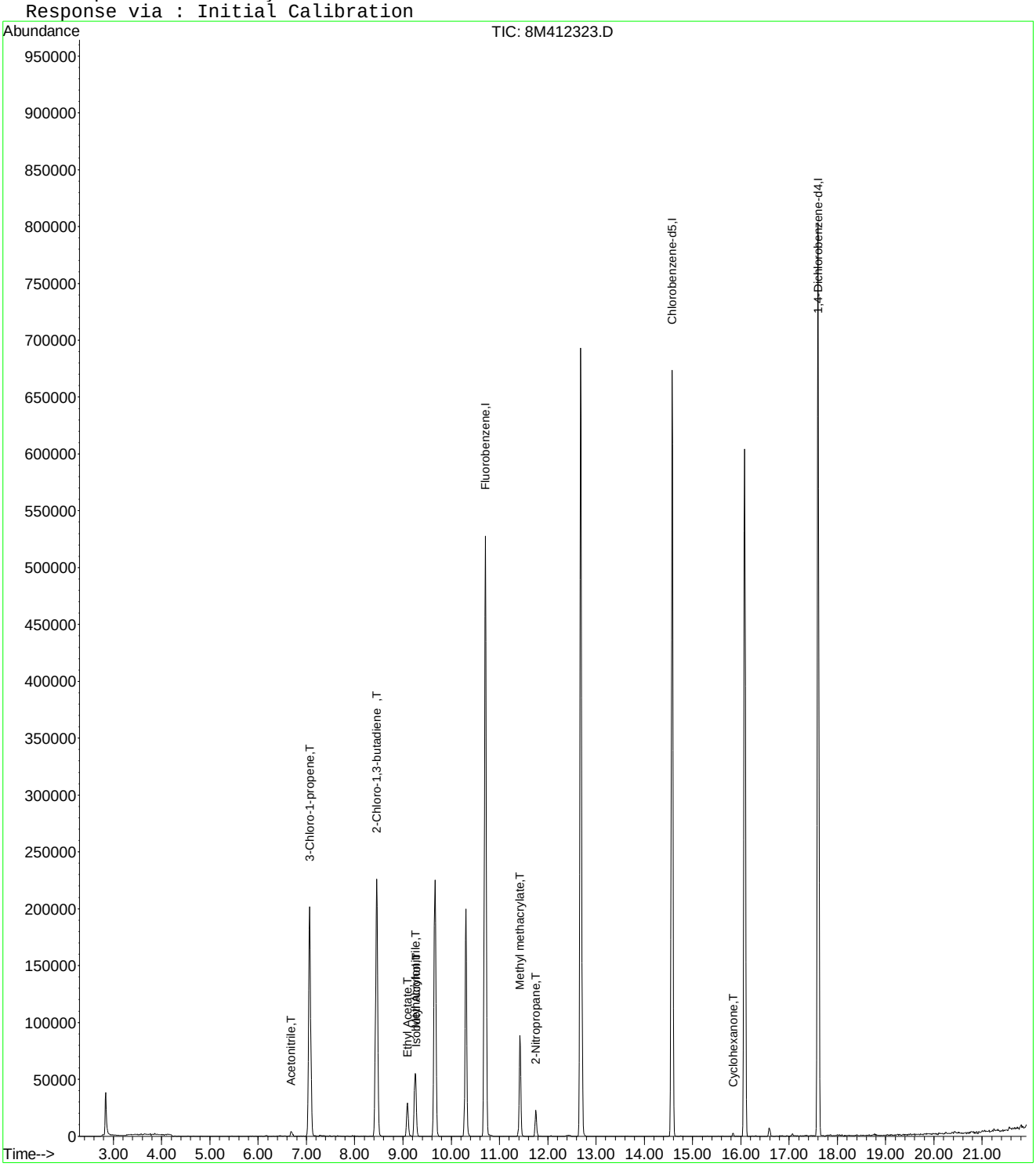

8M412323.D A9FOOWT.M Thu May 19 09:22:34 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	19.3416	3.3	100	0.00
3	T	3-Chloro-1-propene	20.0000	20.7847	-3.9	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	20.9015	-4.5	100	0.00
5	T	Ethyl Acetate	20.0000	20.1659	-0.8	100	0.00
6	T	Methacrylonitrile	20.0000	20.4992	-2.5	100	0.00
7	T	Isobutyl Alcohol	-1.0000	33.2395	0.0	0	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.18#
9	T	Methyl methacrylate	20.0000	20.5176	-2.6	100	0.00
10	T	2-Nitropropane	20.0000	18.5203	7.4	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	20.0000	21.2913	-6.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412323.D A9FOOWT.M Thu May 19 09:02:17 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:22:43 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	665645	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	483812	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	257678	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	405	1.5769 ug/L #	23
3) 3-Chloro-1-propene	7.07	41	40699	4.8115 ug/L	84
4) 2-Chloro-1,3-butadiene	8.45	53	48973	4.5789 ug/L	81
5) Ethyl Acetate	9.09	43	10675	4.1913 ug/L	95
6) Methacrylonitrile	9.26	67	5417	3.8740 ug/L #	72
7) Isobutyl Alcohol	9.27	43	441	5.1838 ug/L #	8
9) Methyl methacrylate	11.43	41	11811	4.2981 ug/L	65
10) 2-Nitropropane	11.76	43	4170	3.5100 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412324.D A9FOOWT.M Thu May 19 09:22:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:21 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

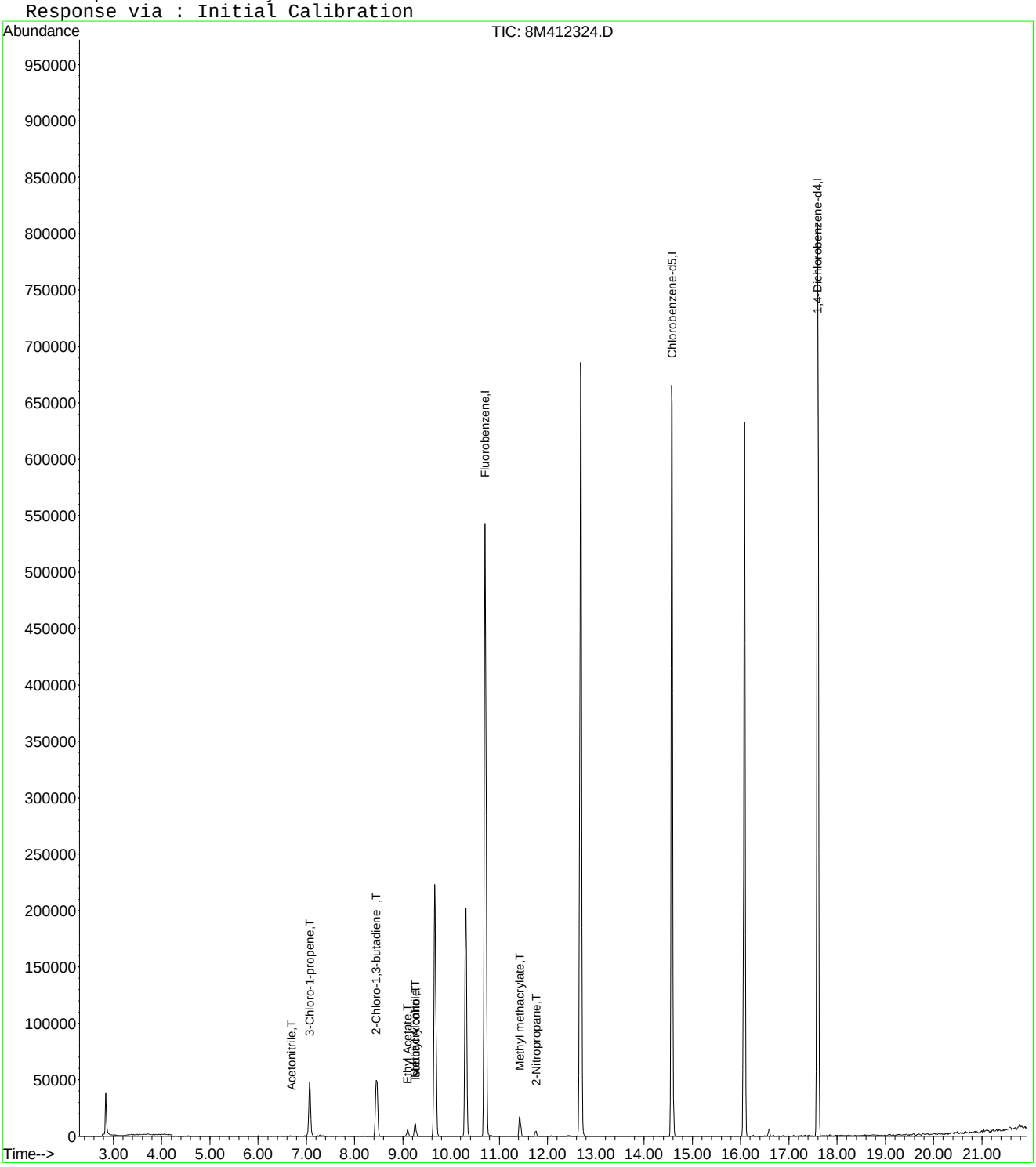

8M412324.D A9FOOWT.M Thu May 19 09:22:43 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	-1.0000	1.5769	0.0	0	0.00
3	T	3-Chloro-1-propene	5.0000	4.8115	3.8	100	0.00
4	T	2-Chloro-1,3-butadiene	5.0000	4.5789	8.4	100	0.00
5	T	Ethyl Acetate	5.0000	4.1913	16.2	100	0.00
6	T	Methacrylonitrile	5.0000	3.8740	22.5	100	0.00
7	T	Isobutyl Alcohol	-1.0000	5.1838	0.0	0	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.18#
9	T	Methyl methacrylate	5.0000	4.2981	14.0	100	0.00
10	T	2-Nitropropane	-1.0000	3.5100	0.0	0	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	0.0000	0.0	0	-15.84#

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412324.D A9FOOWT.M Thu May 19 09:02:03 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412325.D Vial: 7
Acq On : 17 May 2016 11:42 Operator: TMB
Sample : WG569079-06 200ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:27 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	682012	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	491515	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	261877	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.68	41	52022	197.6946 ug/L	97
3) 3-Chloro-1-propene	7.06	41	1768403	204.0468 ug/L	83
4) 2-Chloro-1,3-butadiene	8.46	53	2283706	208.4003 ug/L	87
5) Ethyl Acetate	9.09	43	537585	206.0040 ug/L	94
6) Methacrylonitrile	9.25	67	297408	207.5869 ug/L #	63
7) Isobutyl Alcohol	9.26	43	34441	395.1256 ug/L	95
9) Methyl methacrylate	11.42	41	577612	205.1526 ug/L	72
10) 2-Nitropropane	11.75	43	248395	204.0652 ug/L	95
13) Cyclohexanone	15.85	55	19752	184.4122 ug/L #	59

(#) = qualifier out of range (m) = manual integration
8M412325.D A9FOOWT.M Thu May 19 09:01:28 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412325.D Vial: 7
Acq On : 17 May 2016 11:42 Operator: TMB
Sample : WG569079-06 200ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

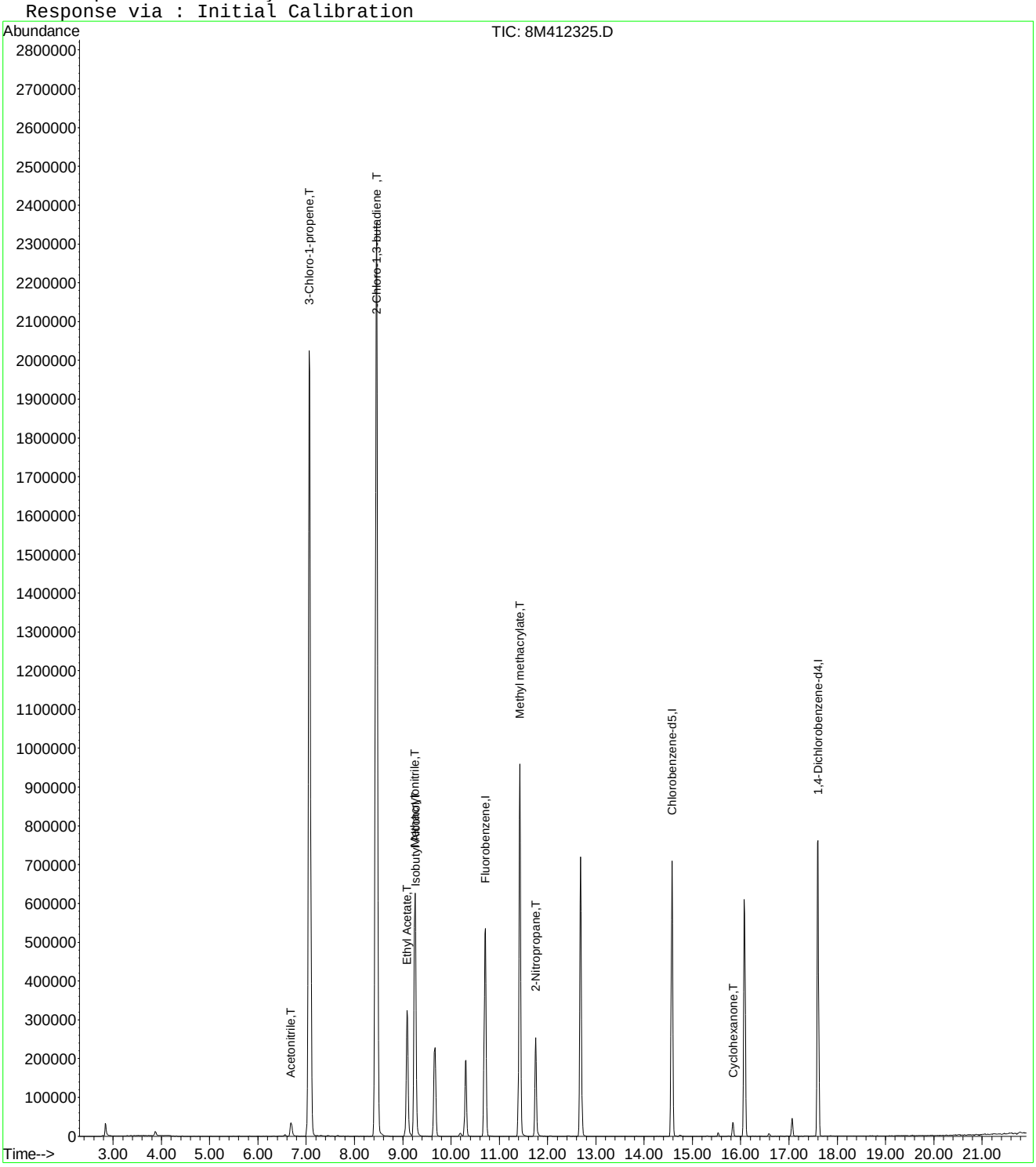

8M412325.D A9FOOWT.M Thu May 19 09:01:28 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412326.D Vial: 8
Acq On : 17 May 2016 12:40 Operator: TMB
Sample : WG569079-07 300ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:29 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	694903	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	496643	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	267309	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.69	41	81471	303.8636	ug/L	98
3) 3-Chloro-1-propene	7.06	41	2563559	290.3084	ug/L	83
4) 2-Chloro-1,3-butadiene	8.46	53	3270971	292.9562	ug/L	86
5) Ethyl Acetate	9.09	43	821184	308.8424	ug/L	95
6) Methacrylonitrile	9.25	67	451708	309.4374	ug/L #	62
7) Isobutyl Alcohol	9.26	43	55071	620.0836	ug/L	94
9) Methyl methacrylate	11.42	41	874430	304.8132	ug/L	70
10) 2-Nitropropane	11.75	43	392965	316.8456	ug/L	94
13) Cyclohexanone	15.84	55	33523	306.6233	ug/L #	61

(#) = qualifier out of range (m) = manual integration
8M412326.D A9FOOWT.M Thu May 19 09:01:29 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412326.D Vial: 8
Acq On : 17 May 2016 12:40 Operator: TMB
Sample : WG569079-07 300ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

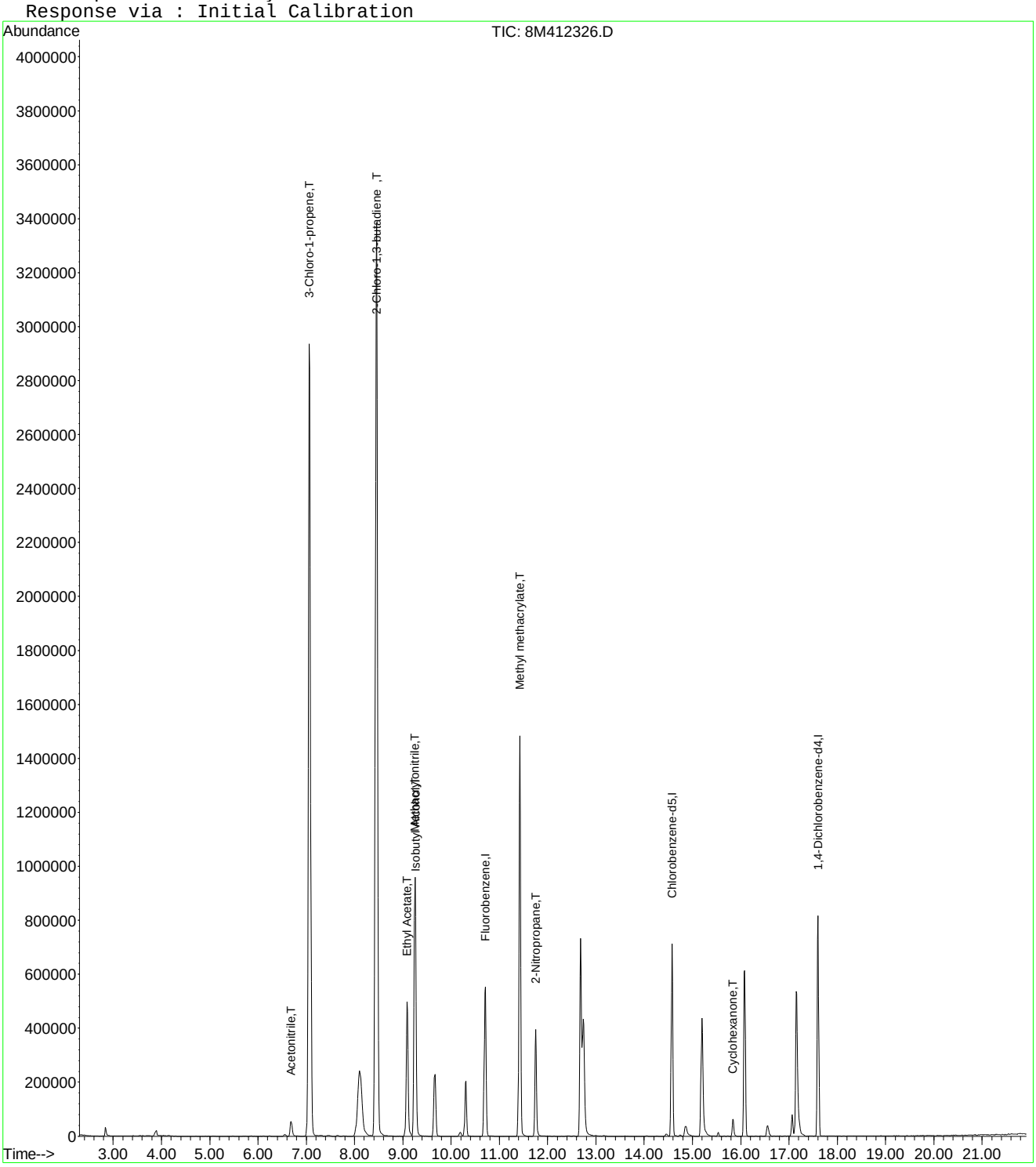

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412327.D Vial: 9
Acq On : 17 May 2016 13:10 Operator: TMB
Sample : WG569079-08 400ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:30 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	700514	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	502552	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	270883	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	110761	409.7980 ug/L	97
3) 3-Chloro-1-propene	7.07	41	3406131	382.6353 ug/L	82
4) 2-Chloro-1,3-butadiene	8.45	53	4356691	387.0705 ug/L	85
5) Ethyl Acetate	9.09	43	1116818	416.6642 ug/L	94
6) Methacrylonitrile	9.25	67	615482	418.2517 ug/L #	62
7) Isobutyl Alcohol	9.26	43	75472	842.9862 ug/L	97
9) Methyl methacrylate	11.42	41	1199317	414.7153 ug/L	71
10) 2-Nitropropane	11.75	43	538580	430.7760 ug/L	94
13) Cyclohexanone	15.84	55	45874	414.0575 ug/L #	55

(#) = qualifier out of range (m) = manual integration
8M412327.D A9FOOWT.M Thu May 19 09:01:31 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412327.D Vial: 9
Acq On : 17 May 2016 13:10 Operator: TMB
Sample : WG569079-08 400ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

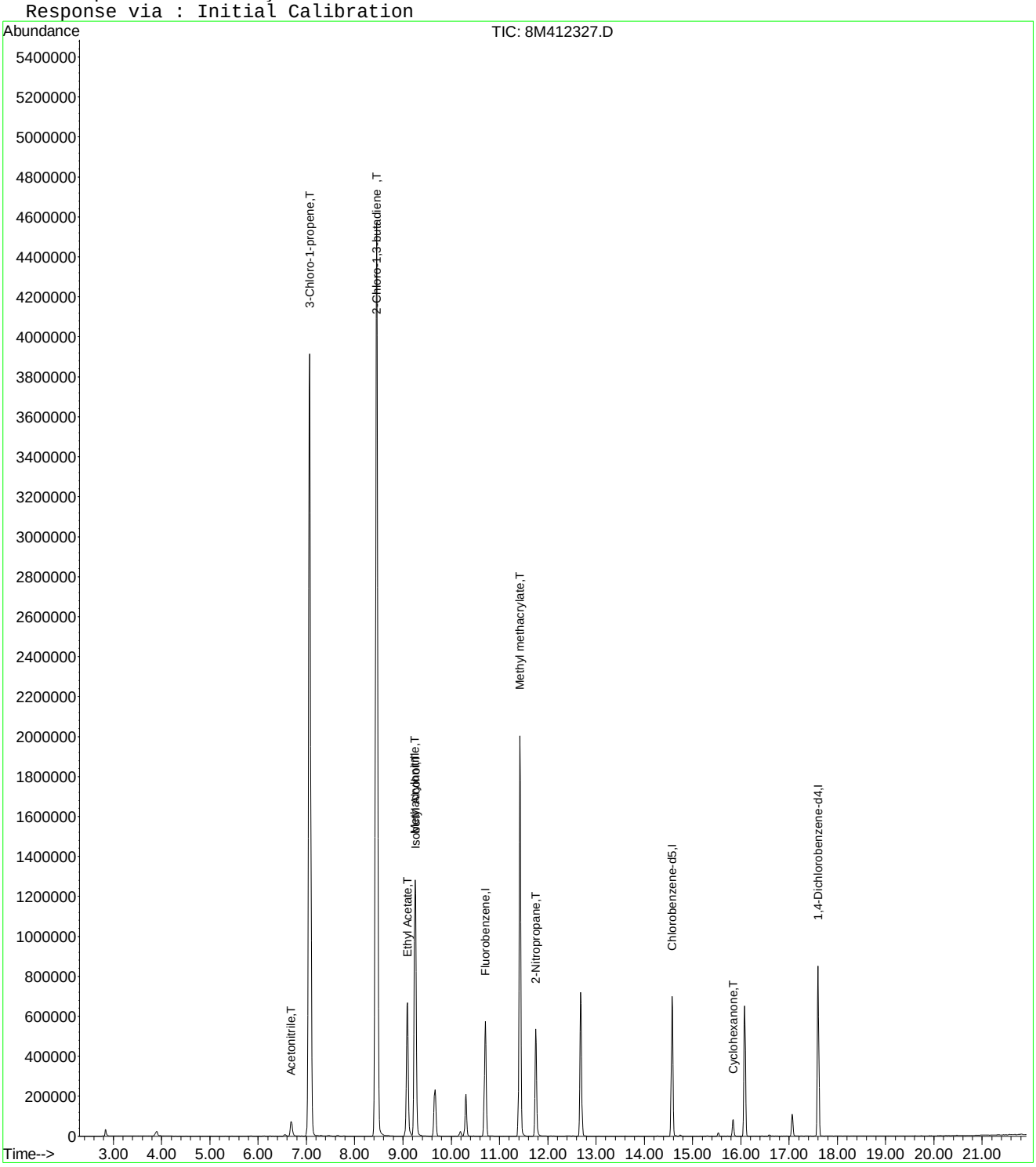

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412328.D Vial: 10
Acq On : 17 May 2016 13:39 Operator: TMB
Sample : WG569079-09 500ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:31 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	695694	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	495257	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	266442	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	132245	492.6753 ug/L	99
3) 3-Chloro-1-propene	7.06	41	4228273	478.2834 ug/L	82
4) 2-Chloro-1,3-butadiene	8.46	53	5390856	482.2693 ug/L	85
5) Ethyl Acetate	9.09	43	1321922	496.6017 ug/L	95
6) Methacrylonitrile	9.25	67	729852	499.4083 ug/L #	61
7) Isobutyl Alcohol	9.26	43	85200	958.2367 ug/L	96
9) Methyl methacrylate	11.42	41	1416438	493.1877 ug/L	72
10) 2-Nitropropane	11.75	43	637335	513.2956 ug/L	93
13) Cyclohexanone	15.84	55	52070	477.8160 ug/L #	61

(#) = qualifier out of range (m) = manual integration
8M412328.D A9FOOWT.M Thu May 19 09:01:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412328.D Vial: 10
Acq On : 17 May 2016 13:39 Operator: TMB
Sample : WG569079-09 500ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

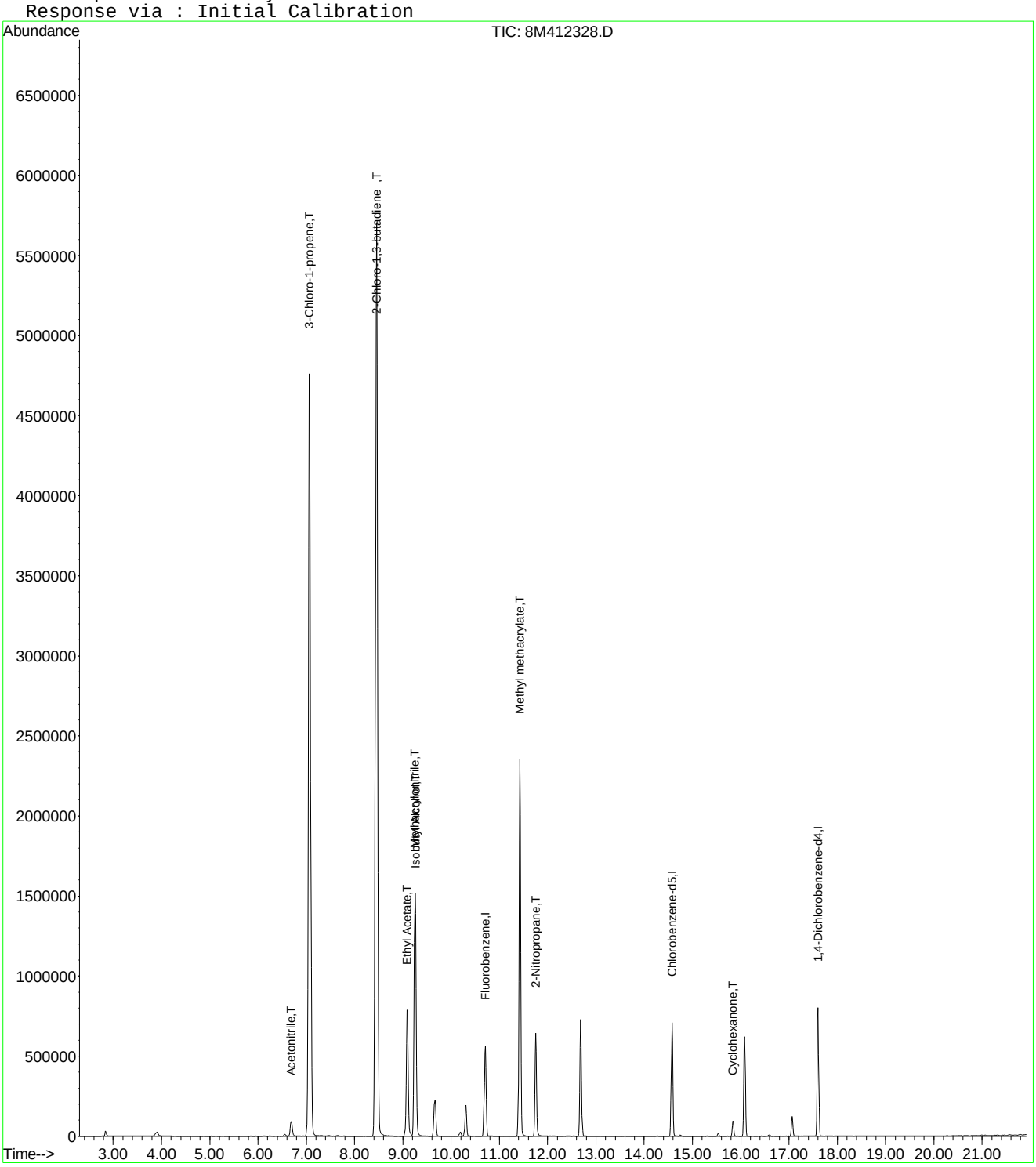

8M412328.D A9FOOWT.M Thu May 19 09:01:32 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:32 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	676765	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	486447	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	263036	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.69	41	29876	114.4154	ug/L	97
3) 3-Chloro-1-propene	7.07	41	858035	99.7718	ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	1224194	112.5803	ug/L	87
5) Ethyl Acetate	9.09	43	295545	114.1317	ug/L	96
6) Methacrylonitrile	9.25	67	161574	113.6509	ug/L #	63
7) Isobutyl Alcohol	9.26	43	19948	230.6285	ug/L	94
9) Methyl methacrylate	11.42	41	326465	116.8508	ug/L	72
10) 2-Nitropropane	11.75	43	131261	108.6716	ug/L	94
13) Cyclohexanone	15.83	55	10459	97.2189	ug/L #	74

(#) = qualifier out of range (m) = manual integration
8M412331.D A9FOOWT.M Thu May 19 09:01:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

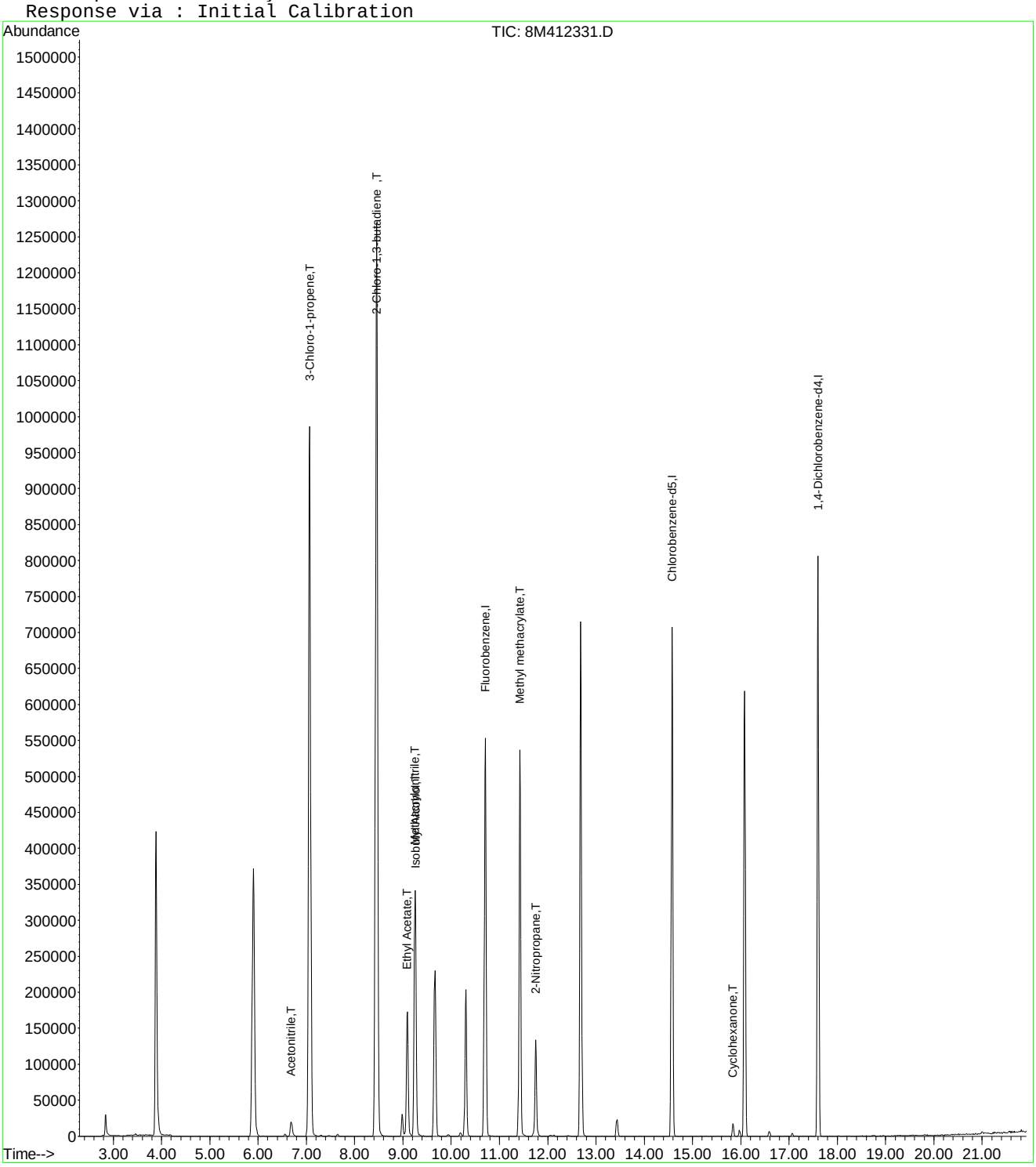

8M412331.D A9FOOWT.M Thu May 19 09:01:33 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	95	0.00
2	T	Acetonitrile	100.0000	114.4154	-14.4	109	0.00
3	T	3-Chloro-1-propene	100.0000	99.7718	0.2	91	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	112.5803	-12.6	103	0.00
5	T	Ethyl Acetate	100.0000	114.1317	-14.1	104	0.00
6	T	Methacrylonitrile	100.0000	113.6509	-13.7	104	0.00
7	T	Isobutyl Alcohol	200.0000	230.6285	-15.3	111	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.01
9	T	Methyl methacrylate	100.0000	116.8508	-16.9	109	0.00
10	T	2-Nitropropane	100.0000	108.6716	-8.7	108	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	96	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	96	0.00
13	T	Cyclohexanone	100.0000	97.2189	2.8	92	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412331.D A9FOOWT.M Thu May 19 09:03:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061316\11M12593.D Vial: 2
Acq On : 13 Jun 2016 17:01 Operator: JDS
Sample : WG572507-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 09:21:50 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	911776	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	727635	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	413608	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	225551	22.6034 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 90.40%		
43) 1,2-Dichloroethane-d4	10.23	65	224590	19.7392 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 78.96%#		
57) Toluene-d8	12.47	98	803914	25.4276 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.72%		
78) p-Bromofluorobenzene	15.64	95	340201	26.6827 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 106.72%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	613503	42.9447 ug/L	95
3) Chloromethane	3.72	50	468110	40.9136 ug/L	100
4) Vinyl Chloride	3.96	62	436323	45.9213 ug/L	99
5) 1,3-Butadiene	4.00	54	423316	44.8055 ug/L	98
6) Bromomethane	4.85	94	313504	47.9888 ug/L	99
7) Chloroethane	5.00	64	292515	47.9146 ug/L	100
8) Trichlorofluoromethane	5.48	101	838764	44.2894 ug/L	100
9) Diethyl ether	6.01	59	642877	91.7868 ug/L	90
10) Isoprene	6.04	67	534562	45.7947 ug/L	87
11) Acrolein	6.23	56	43182	46.9872 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	418387	45.5290 ug/L	95
13) Acetone	6.34	43	70784	32.6938 ug/L	87
14) 1,1-Dichloroethene	6.56	61	726993	43.5542 ug/L	93
15) Tert-Butyl Alcohol	6.66	59	84766	141.5441 ug/L	91
16) Dimethyl Sulfide	6.81	62	294957	44.2481 ug/L	85
17) Iodomethane	7.06	142	339571	44.8780 ug/L	91
18) Methyl acetate	7.06	43	211338	30.8430 ug/L	92
19) Methylene Chloride	7.31	84	403507	46.7101 ug/L	74
20) Carbon Disulfide	7.36	76	1358026	48.5980 ug/L	100
21) Acrylonitrile	7.49	53	122018	42.0337 ug/L	98
22) Methyl Tert Butyl Ether	7.52	73	989628	45.9313 ug/L	97
23) trans-1,2-Dichloroethene	7.75	96	443558	48.0146 ug/L	89
24) n-Hexane	7.82	57	635081	41.2757 ug/L	97
25) Diisopropyl ether	8.15	45	3100949	80.7679 ug/L	97
26) Vinyl Acetate	8.31	43	609483	41.3382 ug/L	98
27) 1,1-Dichloroethane	8.34	63	826314	44.5789 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	2791770	89.3400 ug/L	97
29) 2-Butanone	8.87	43	115979	35.4338 ug/L	92
30) Propionitrile	8.97	54	75426	78.6784 ug/L	98
31) 2,2-Dichloropropane	9.09	77	673280	46.4245 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	491056	48.2101 ug/L	88
33) Chloroform	9.35	83	797047	43.7871 ug/L	100
34) 1-Bromopropane	9.48	122	86953	48.0809 ug/L	97
35) Bromochloromethane	9.57	130	308000	50.9155 ug/L	84
36) Tetrahydrofuran	9.60	42	158486	68.5697 ug/L	86
38) 1,1,1-Trichloroethane	9.85	97	795482	44.4084 ug/L	96
39) Cyclohexane	9.88	56	842996	43.1822 ug/L	92
40) 1,1-Dichloropropene	10.04	75	597913	46.7488 ug/L	99
41) Carbon Tetrachloride	10.18	117	780216	44.6049 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	2019523	93.0066 ug/L	94

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061316\11M12593.D Vial: 2
Acq On : 13 Jun 2016 17:01 Operator: JDS
Sample : WG572507-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 09:21:50 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.34	62	615489	41.6320 ug/L	98
45) Benzene	10.38	78	1637661	46.7728 ug/L	100
46) Trichloroethene	11.09	130	554931	48.7614 ug/L	98
47) Methylcyclohexane	11.17	83	645871	45.9857 ug/L	91
48) 1,2-Dichloropropane	11.29	63	438204	45.2125 ug/L	96
49) 1,4-Dioxane	11.56	88	8787	165.4299 ug/L	87
50) Bromodichloromethane	11.57	83	621548	45.6813 ug/L	99
51) Dibromomethane	11.66	93	230239	45.5865 ug/L	93
52) 2-Chloroethyl Vinyl Ether	11.84	63	184080	38.5361 ug/L	96
53) 4-Methyl-2-Pentanone	11.87	58	110815	41.1306 ug/L	92
54) cis-1,3-Dichloropropene	12.17	75	662530	48.6833 ug/L	98
55) Dimethyl Disulfide	12.42	79	377663	46.1166 ug/L	95
58) Toluene	12.56	91	1884225	51.1520 ug/L	99
59) Ethyl Methacrylate	12.65	69	394456	50.1501 ug/L	80
60) trans-1,3-Dichloropropene	12.73	75	590708	49.9603 ug/L	96
61) 1,1,2-Trichloroethane	12.93	97	323387	49.5094 ug/L	100
62) 2-Hexanone	12.86	43	180985	37.7269 ug/L #	90
63) 1,3-Dichloropropane	13.21	76	513623	48.9666 ug/L	85
64) Tetrachloroethene	13.34	164	447235	52.2101 ug/L	95
65) Dibromochloromethane	13.59	129	505026	50.6909 ug/L	99
66) 1,2-Dibromoethane	13.82	107	329249	50.3115 ug/L	99
67) 1-Chlorohexane	13.89	91	603649	49.7054 ug/L	87
68) Chlorobenzene	14.29	112	1355097	50.2168 ug/L	100
69) 1,1,1,2-Tetrachloroethane	14.32	131	542316	49.6674 ug/L	100
70) Ethylbenzene	14.31	106	704719	50.9286 ug/L	96
71) m-,p-Xylene	14.39	106	1712536	101.8020 ug/L	94
72) o-Xylene	14.92	106	834617	50.9802 ug/L	96
73) Styrene	14.95	104	1419388	52.4756 ug/L	96
74) Bromoform	15.43	173	304457	50.4206 ug/L	100
75) Isopropylbenzene	15.31	105	2145896	49.5642 ug/L	99
77) 1,1,2,2-Tetrachloroethane	15.52	83	303367	47.1001 ug/L	99
79) 1,2,3-Trichloropropane	15.70	110	112673	46.6480 ug/L	92
80) trans-1,4-Dichloro-2-Buten	15.74	53	103688	33.6470 ug/L	55
81) n-Propylbenzene	15.79	91	2416988	50.4588 ug/L	97
82) Bromobenzene	15.92	156	653263	51.9732 ug/L	92
83) 1,3,5-Trimethylbenzene	15.96	105	1856785	50.7972 ug/L	99
84) 2-Chlorotoluene	16.05	91	1660546	49.4944 ug/L	98
85) 4-Chlorotoluene	16.09	91	1516620	50.4652 ug/L	98
86) a-Methylstyrene	16.34	118	1010397	52.3976 ug/L	98
87) tert-Butylbenzene	16.40	134	396105	51.1489 ug/L	91
88) 1,2,4-Trimethylbenzene	16.44	105	1882353	50.5715 ug/L	98
89) sec-Butylbenzene	16.65	105	2121415	48.3341 ug/L	99
90) p-Isopropyltoluene	16.79	119	1974311	48.9732 ug/L	99
91) 1,3-Dichlorobenzene	16.98	146	1219562	50.2379 ug/L	96
92) 1,4-Dichlorobenzene	17.10	146	1227923	49.9025 ug/L	98
93) n-Butylbenzene	17.28	91	1624645	45.7335 ug/L	98
94) 1,2-Dichlorobenzene	17.57	146	1103195	49.8868 ug/L	98
95) 1,2-Dibromo-3-Chloropropan	18.49	75	50235	34.7958 ug/L	92
96) 1,2,4-Trichlorobenzene	19.55	180	783096	48.3941 ug/L	98
97) Hexachlorobutadiene	19.69	225	303556	42.5819 ug/L	95
98) Naphthalene	19.90	128	1397514	46.5293 ug/L	99
99) 1,2,3-Trichlorobenzene	20.19	180	677460	45.6174 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061316\11M12593.D Vial: 2
Acq On : 13 Jun 2016 17:01 Operator: JDS
Sample : WG572507-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 9:21 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

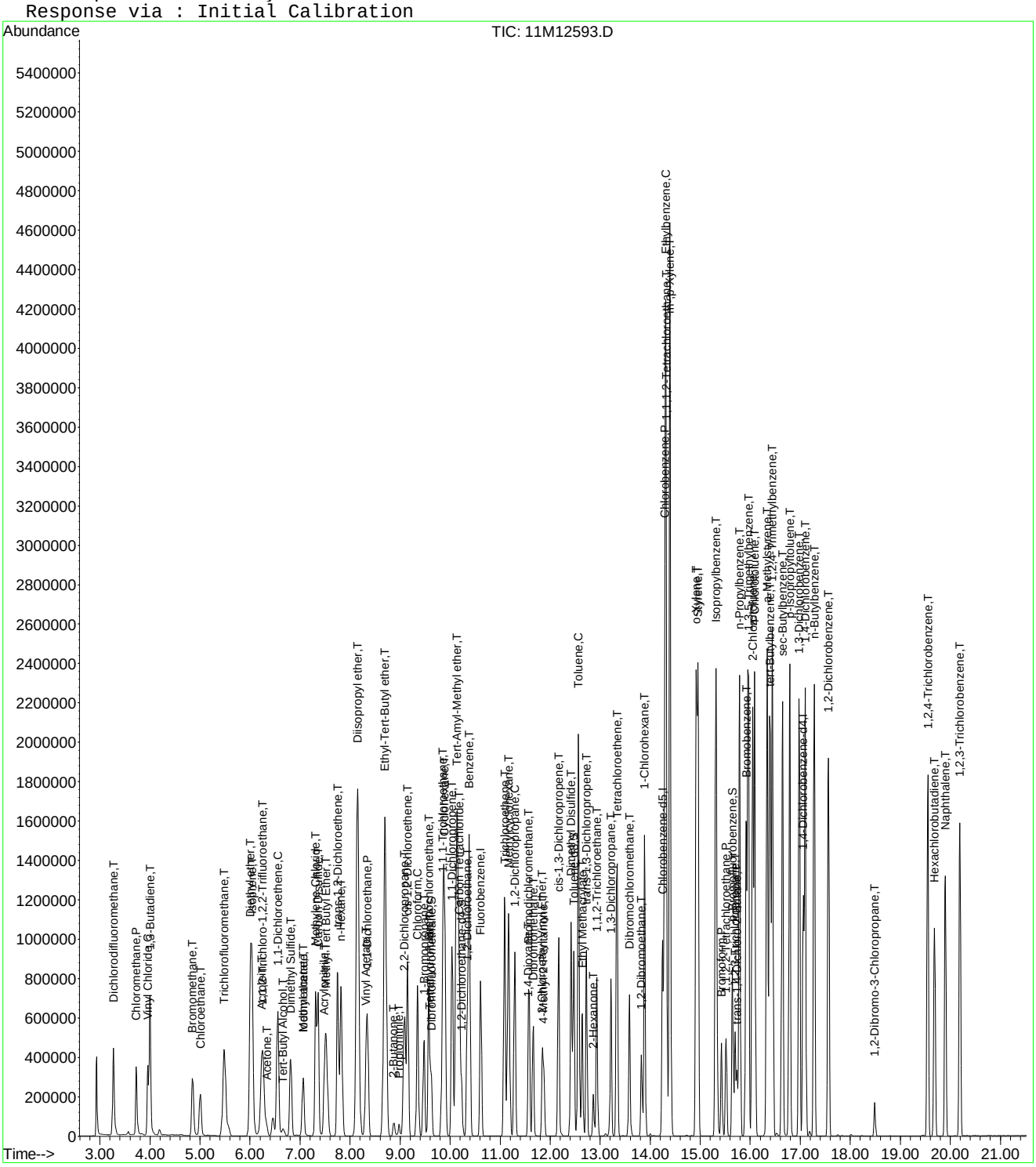

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061316\11M12593.D Vial: 2
Acq On : 13 Jun 2016 17:01 Operator: JDS
Sample : WG572507-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	175#	0.00
2	T	Dichlorodifluoromethane	0.3917	0.3364	14.1	147	0.00
3	P	Chloromethane	0.3137	0.2567	18.2	163#	0.00
4	C	Vinyl Chloride	0.2605	0.2393	8.2	167#	0.00
5	T	1,3-Butadiene	0.2591	0.2321	10.4	151#	0.00
6	T	Bromomethane	0.1791	0.1719	4.0	182#	0.00
7	T	Chloroethane	0.1674	0.1604	4.2	174#	0.00
8	T	Trichlorofluoromethane	0.5193	0.4600	11.4	161#	0.00
9	T	Diethyl ether	0.1920	0.1763	8.2	164#	0.00
10	T	Isoprene	0.3201	0.2931	8.4	161#	0.00
11	T	Acrolein	0.0228	0.0237	-4.0	171#	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2520	0.2294	8.9	164#	0.00
13	T	Acetone	0.0594	0.0388	34.6#	118	0.00
14	C	1,1-Dichloroethene	0.4577	0.3987	12.9	158#	0.00
15	T	Tert-Butyl Alcohol	0.0164	0.0116	29.2#	122	0.00
16	T	Dimethyl Sulfide	0.1828	0.1618	11.5	152#	0.00
17	T	Iodomethane	0.1615	0.1862	-15.3	158#	0.00
18	T	Methyl acetate	0.2006	0.1159	42.2#	114	0.00
19	T	Methylene Chloride	0.2369	0.2213	6.6	173#	0.00
20	T	Carbon Disulfide	0.7662	0.7447	2.8	166#	0.00
21	T	Acrylonitrile	0.0796	0.0669	15.9	144	0.00
22	T	Methyl Tert Butyl Ether	0.5908	0.5427	8.1	162#	0.00
23	T	trans-1,2-Dichloroethene	0.2533	0.2432	4.0	176#	0.01
24	T	n-Hexane	0.4219	0.3483	17.4	141	0.00
25	T	Diisopropyl ether	1.0527	0.8502	19.2	142	0.00
26	T	Vinyl Acetate	0.3793	0.3342	11.9	149	0.00
27	P	1,1-Dichloroethane	0.5082	0.4531	10.8	160#	0.00
28	T	Ethyl-Tert-Butyl ether	0.8568	0.7655	10.7	157#	0.00
29	T	2-Butanone	0.0897	0.0636	29.1#	127	0.00
30	T	Propionitrile	0.0263	0.0207	21.3	133	0.00
31	T	2,2-Dichloropropane	0.3977	0.3692	7.2	167#	0.00
32	T	cis-1,2-Dichloroethene	0.2793	0.2693	3.6	174#	0.00
33	C	Chloroform	0.4991	0.4371	12.4	163#	0.00
34	T	1-Bromopropane	0.0432	0.0477	-10.4	173#	0.00
35	T	Bromochloromethane	0.1659	0.1689	-1.8	171#	0.00
36	T	Tetrahydrofuran	0.0634	0.0435	31.4#	124	0.00
37	S	Dibromofluoromethane	0.2736	0.2474	9.6	161#	0.00
38	T	1,1,1-Trichloroethane	0.4911	0.4362	11.2	160#	0.00
39	T	Cyclohexane	0.5353	0.4623	13.6	147	0.00
40	T	1,1-Dichloropropene	0.3507	0.3279	6.5	169#	0.00
41	T	Carbon Tetrachloride	0.4796	0.4279	10.8	158#	0.00
42	T	Tert-Amyl-Methyl ether	0.5954	0.5537	7.0	165#	0.00
43	S	1,2-Dichloroethane-d4	0.3120	0.2463	21.0	142	0.00
44	T	1,2-Dichloroethane	0.4054	0.3375	16.7	147	0.00
45	T	Benzene	0.9600	0.8981	6.5	173#	0.00
46	T	Trichloroethene	0.3120	0.3043	2.5	181#	0.00
47	T	Methylcyclohexane	0.3851	0.3542	8.0	154#	0.00
48	C	1,2-Dichloropropane	0.2657	0.2403	9.6	163#	0.00
49	T	1,4-Dioxane	0.0014	0.0012	14.3	150	0.01
50	T	Bromodichloromethane	0.3731	0.3408	8.6	161#	0.00
51	T	Dibromomethane	0.1385	0.1263	8.8	161#	0.01
52	T	2-Chloroethyl Vinyl Ether	0.1310	0.1010	22.9	138	0.00
53	T	4-Methyl-2-Pentanone	0.0739	0.0608	17.7	146	0.00
54	T	cis-1,3-Dichloropropene	0.3731	0.3633	2.6	168#	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061316\11M12593.D Vial: 2
Acq On : 13 Jun 2016 17:01 Operator: JDS
Sample : WG572507-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	0.2245	0.2071	7.8	159#	0.00
56	I	Chlorobenzene-d5	1.0000	1.0000	0.0	166#	0.00
57	S	Toluene-d8	1.0862	1.1048	-1.7	174#	0.00
58	C	Toluene	1.2656	1.2948	-2.3	172#	0.00
59	T	Ethyl Methacrylate	0.2702	0.2711	-0.3	158#	0.00
60	T	trans-1,3-Dichloropropene	0.4062	0.4059	0.1	161#	0.00
61	T	1,1,2-Trichloroethane	0.2244	0.2222	1.0	167#	0.00
62	T	2-Hexanone	0.1648	0.1244	24.5	125	0.00
63	T	1,3-Dichloropropane	0.3604	0.3529	2.1	162#	0.00
64	T	Tetrachloroethene	0.2943	0.3073	-4.4	178#	0.00
65	T	Dibromochloromethane	0.3423	0.3470	-1.4	163#	0.00
66	T	1,2-Dibromoethane	0.2248	0.2263	-0.6	167#	0.00
67	T	1-Chlorohexane	0.4173	0.4148	0.6	160#	0.00
68	P	Chlorobenzene	0.9272	0.9312	-0.4	170#	0.00
69	T	1,1,1,2-Tetrachloroethane	0.3751	0.3727	0.7	166#	0.00
70	C	Ethylbenzene	0.4754	0.4843	-1.9	172#	0.00
71	T	m-,p-Xylene	0.5780	0.5884	-1.8	172#	0.00
72	T	o-Xylene	0.5625	0.5735	-2.0	170#	0.00
73	T	Styrene	0.9293	0.9753	-5.0	169#	0.00
74	P	Bromoform	0.2075	0.2092	-0.8	165#	0.00
75	T	Isopropylbenzene	1.4875	1.4746	0.9	164#	0.00
76	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	157#	0.00
77	P	1,1,2,2-Tetrachloroethane	0.3893	0.3667	5.8	145	0.00
78	S	p-Bromofluorobenzene	0.7706	0.8225	-6.7	180#	0.00
79	T	1,2,3-Trichloropropane	0.1351	0.1362	-0.8	156#	0.00
80	T	trans-1,4-Dichloro-2-Butene	0.1588	0.1253	21.1	110	0.00
81	T	n-Propylbenzene	2.8953	2.9218	-0.9	159#	0.00
82	T	Bromobenzene	0.7597	0.7897	-3.9	172#	0.00
83	T	1,3,5-Trimethylbenzene	2.2094	2.2446	-1.6	162#	0.00
84	T	2-Chlorotoluene	2.0279	2.0074	1.0	162#	0.00
85	T	4-Chlorotoluene	1.8165	1.8334	-0.9	163#	0.00
86	T	a-Methylstyrene	1.1656	1.2214	-4.8	155#	0.00
87	T	tert-Butylbenzene	0.4681	0.4788	-2.3	164#	0.00
88	T	1,2,4-Trimethylbenzene	2.2498	2.2755	-1.1	160#	0.00
89	T	sec-Butylbenzene	2.6529	2.5645	3.3	153#	0.00
90	T	p-Isopropyltoluene	2.4367	2.3867	2.1	154#	0.00
91	T	1,3-Dichlorobenzene	1.4673	1.4743	-0.5	165#	0.00
92	T	1,4-Dichlorobenzene	1.4873	1.4844	0.2	166#	0.00
93	T	n-Butylbenzene	2.1472	1.9640	8.5	144	0.00
94	T	1,2-Dichlorobenzene	1.3366	1.3336	0.2	161#	0.00
95	T	1,2-Dibromo-3-Chloropropane	0.0825	0.0607	26.4#	117	0.00
96	T	1,2,4-Trichlorobenzene	0.9781	0.9467	3.2	153#	0.00
97	T	Hexachlorobutadiene	0.4309	0.3670	14.8	139	0.00
98	T	Naphthalene	1.8154	1.6894	6.9	145	0.00
99	T	1,2,3-Trichlorobenzene	0.8976	0.8190	8.8	149	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M12593.D 8260WT.M Tue Jun 14 09:25:14 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061316\11M12593.D Vial: 2
Acq On : 13 Jun 2016 17:01 Operator: JDS
Sample : WG572507-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	175	0.00
2	T	Dichlorodifluoromethane	50.0000	42.9447	14.1	147	0.00
3	P	Chloromethane	50.0000	40.9136	18.2	163	0.00
4	C	Vinyl Chloride	50.0000	45.9213	8.2	167	0.00
5	T	1,3-Butadiene	50.0000	44.8055	10.4	151	0.00
6	T	Bromomethane	50.0000	47.9888	4.0	182	0.00
7	T	Chloroethane	50.0000	47.9146	4.2	174	0.00
8	T	Trichlorofluoromethane	50.0000	44.2894	11.4	161	0.00
9	T	Diethyl ether	100.0000	91.7868	8.2	164	0.00
10	T	Isoprene	50.0000	45.7947	8.4	161	0.00
11	T	Acrolein	50.0000	46.9872	6.0	171	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	45.5290	8.9	164	0.00
13	T	Acetone	50.0000	32.6938	34.6#	118	0.00
14	C	1,1-Dichloroethene	50.0000	43.5542	12.9	158	0.00
15	T	Tert-Butyl Alcohol	200.0000	141.5441	29.2#	122	0.00
16	T	Dimethyl Sulfide	50.0000	44.2481	11.5	152	0.00
17	T	Iodomethane	50.0000	44.8780	10.2	158	0.00
18	T	Methyl acetate	50.0000	30.8430	38.3#	114	0.00
19	T	Methylene Chloride	50.0000	46.7101	6.6	173	0.00
20	T	Carbon Disulfide	50.0000	48.5980	2.8	166	0.00
21	T	Acrylonitrile	50.0000	42.0337	15.9	144	0.00
22	T	Methyl Tert Butyl Ether	50.0000	45.9313	8.1	162	0.00
23	T	trans-1,2-Dichloroethene	50.0000	48.0146	4.0	176	0.01
24	T	n-Hexane	50.0000	41.2757	17.4	141	0.00
25	T	Diisopropyl ether	100.0000	80.7679	19.2	142	0.00
26	T	Vinyl Acetate	50.0000	41.3382	17.3	149	0.00
27	P	1,1-Dichloroethane	50.0000	44.5789	10.8	160	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	89.3400	10.7	157	0.00
29	T	2-Butanone	50.0000	35.4338	29.1#	127	0.00
30	T	Propionitrile	100.0000	78.6784	21.3	133	0.00
31	T	2,2-Dichloropropane	50.0000	46.4245	7.2	167	0.00
32	T	cis-1,2-Dichloroethene	50.0000	48.2101	3.6	174	0.00
33	C	Chloroform	50.0000	43.7871	12.4	163	0.00
34	T	1-Bromopropane	50.0000	48.0808	3.8	173	0.00
35	T	Bromochloromethane	50.0000	50.9155	-1.8	171	0.00
36	T	Tetrahydrofuran	100.0000	68.5697	31.4#	124	0.00
37	S	Dibromofluoromethane	25.0000	22.6034	9.6	161	0.00
38	T	1,1,1-Trichloroethane	50.0000	44.4084	11.2	160	0.00
39	T	Cyclohexane	50.0000	43.1822	13.6	147	0.00
40	T	1,1-Dichloropropene	50.0000	46.7488	6.5	169	0.00
41	T	Carbon Tetrachloride	50.0000	44.6049	10.8	158	0.00
42	T	Tert-Amyl-Methyl ether	100.0000	93.0066	7.0	165	0.00
43	S	1,2-Dichloroethane-d4	25.0000	19.7392	21.0	142	0.00
44	T	1,2-Dichloroethane	50.0000	41.6320	16.7	147	0.00
45	T	Benzene	50.0000	46.7728	6.5	173	0.00
46	T	Trichloroethene	50.0000	48.7614	2.5	181	0.00
47	T	Methylcyclohexane	50.0000	45.9857	8.0	154	0.00
48	C	1,2-Dichloropropane	50.0000	45.2125	9.6	163	0.00
49	T	1,4-Dioxane	200.0000	165.4299	17.3	150	0.01
50	T	Bromodichloromethane	50.0000	45.6813	8.6	161	0.00
51	T	Dibromomethane	50.0000	45.5865	8.8	161	0.01
52	T	2-Chloroethyl Vinyl Ether	50.0000	38.5361	22.9	138	0.00
53	T	4-Methyl-2-Pentanone	50.0000	41.1306	17.7	146	0.00
54	T	cis-1,3-Dichloropropene	50.0000	48.6833	2.6	168	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061316\11M12593.D Vial: 2
Acq On : 13 Jun 2016 17:01 Operator: JDS
Sample : WG572507-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	50.0000	46.1166	7.8	159	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	166	0.00
57	S	Toluene-d8	25.0000	25.4277	-1.7	174	0.00
58	C	Toluene	50.0000	51.1520	-2.3	172	0.00
59	T	Ethyl Methacrylate	50.0000	50.1501	-0.3	158	0.00
60	T	trans-1,3-Dichloropropene	50.0000	49.9603	0.1	161	0.00
61	T	1,1,2-Trichloroethane	50.0000	49.5094	1.0	167	0.00
62	T	2-Hexanone	50.0000	37.7269	24.5	125	0.00
63	T	1,3-Dichloropropane	50.0000	48.9666	2.1	162	0.00
64	T	Tetrachloroethene	50.0000	52.2101	-4.4	178	0.00
65	T	Dibromochloromethane	50.0000	50.6909	-1.4	163	0.00
66	T	1,2-Dibromoethane	50.0000	50.3115	-0.6	167	0.00
67	T	1-Chlorohexane	50.0000	49.7054	0.6	160	0.00
68	P	Chlorobenzene	50.0000	50.2168	-0.4	170	0.00
69	T	1,1,1,2-Tetrachloroethane	50.0000	49.6674	0.7	166	0.00
70	C	Ethylbenzene	50.0000	50.9286	-1.9	172	0.00
71	T	m-,p-Xylene	100.0000	101.8020	-1.8	172	0.00
72	T	o-Xylene	50.0000	50.9802	-2.0	170	0.00
73	T	Styrene	50.0000	52.4756	-5.0	169	0.00
74	P	Bromoform	50.0000	50.4206	-0.8	165	0.00
75	T	Isopropylbenzene	50.0000	49.5642	0.9	164	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	157	0.00
77	P	1,1,2,2-Tetrachloroethane	50.0000	47.1001	5.8	145	0.00
78	S	p-Bromofluorobenzene	25.0000	26.6827	-6.7	180	0.00
79	T	1,2,3-Trichloropropane	50.0000	46.6480	6.7	156	0.00
80	T	trans-1,4-Dichloro-2-Butene	50.0000	33.6470	32.7#	110	0.00
81	T	n-Propylbenzene	50.0000	50.4588	-0.9	159	0.00
82	T	Bromobenzene	50.0000	51.9732	-3.9	172	0.00
83	T	1,3,5-Trimethylbenzene	50.0000	50.7972	-1.6	162	0.00
84	T	2-Chlorotoluene	50.0000	49.4944	1.0	162	0.00
85	T	4-Chlorotoluene	50.0000	50.4652	-0.9	163	0.00
86	T	a-Methylstyrene	50.0000	52.3976	-4.8	155	0.00
87	T	tert-Butylbenzene	50.0000	51.1489	-2.3	164	0.00
88	T	1,2,4-Trimethylbenzene	50.0000	50.5715	-1.1	160	0.00
89	T	sec-Butylbenzene	50.0000	48.3341	3.3	153	0.00
90	T	p-Isopropyltoluene	50.0000	48.9732	2.1	154	0.00
91	T	1,3-Dichlorobenzene	50.0000	50.2379	-0.5	165	0.00
92	T	1,4-Dichlorobenzene	50.0000	49.9025	0.2	166	0.00
93	T	n-Butylbenzene	50.0000	45.7335	8.5	144	0.00
94	T	1,2-Dichlorobenzene	50.0000	49.8867	0.2	161	0.00
95	T	1,2-Dibromo-3-Chloropropane	50.0000	34.7958	30.4#	117	0.00
96	T	1,2,4-Trichlorobenzene	50.0000	48.3941	3.2	153	0.00
97	T	Hexachlorobutadiene	50.0000	42.5819	14.8	139	0.00
98	T	Naphthalene	50.0000	46.5293	6.9	145	0.00
99	T	1,2,3-Trichlorobenzene	50.0000	45.6174	8.8	149	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412972.D Vial: 2
Acq On : 14 Jun 2016 9:57 Operator: TMB
Sample : WG572591-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 10:26:09 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	861783	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	616369	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	340859	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	242870	26.2303 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.92%		
43) 1,2-Dichloroethane-d4	10.31	65	251186	25.3005 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.20%		
58) Toluene-d8	12.68	98	847007	26.2574 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.04%		
80) p-Bromofluorobenzene	16.07	95	350285	24.8183 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.28%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	798613	55.2727 ug/L	100
3) Chloromethane	3.62	50	428071	50.7556 ug/L	99
4) Vinyl Chloride	3.84	62	558202	55.7845 ug/L	98
5) 1,3-Butadiene	3.88	54	505989	60.2981 ug/L	98
6) Bromomethane	4.74	94	245244	40.9046 ug/L	98
7) Chloroethane	4.89	64	283366	51.4650 ug/L	98
8) Trichlorofluoromethane	5.38	101	1026292	55.1205 ug/L	100
9) Diethyl ether	5.90	59	414376	93.2231 ug/L	98
10) Isoprene	5.95	67	577409	51.0677 ug/L	97
11) Acrolein	6.14	56	18807	47.2559 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	458778	52.4197 ug/L	97
13) Acetone	6.23	43	47365	48.8507 ug/L	99
14) 1,1-Dichloroethene	6.46	61	736122	52.8248 ug/L	99
15) Tert-Butyl Alcohol	6.57	59	58103	186.9998 ug/L	97
16) Dimethyl Sulfide	6.73	62	239775	48.1228 ug/L	99
17) Iodomethane	6.98	142	145756	38.4711 ug/L	99
18) Methyl acetate	6.99	43	111199	42.4282 ug/L	98
19) Methylene Chloride	7.25	84	437021	49.2801 ug/L	99
20) Carbon Disulfide	7.29	76	1550127	53.1559 ug/L	99
21) Acrylonitrile	7.43	53	58565	46.5533 ug/L	98
22) Methyl Tert Butyl Ether	7.45	73	912498	47.5428 ug/L	100
23) trans-1,2-Dichloroethene	7.70	61	667300	52.1233 ug/L	99
24) n-Hexane	7.79	57	514876	54.1603 ug/L	100
25) Diisopropyl ether	8.13	45	1924583	96.4418 ug/L	98
26) Vinyl Acetate	8.29	43	443221	48.5092 ug/L	99
27) 1,1-Dichloroethane	8.32	63	825688	51.9326 ug/L	100
28) Ethyl-Tert-Butyl ether	8.71	59	2092484	97.8660 ug/L	99
29) 2-Butanone	8.88	43	63966	44.9025 ug/L	94
30) Propionitrile	8.98	54	38422	92.5520 ug/L	97
31) 2,2-Dichloropropane	9.10	77	980311	58.5088 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	507409	51.2941 ug/L	99
33) Chloroform	9.38	83	988608	52.6617 ug/L	100
34) 1-Bromopropane	9.51	122	79530	56.1284 ug/L	99
35) Bromochloromethane	9.60	130	256291	50.5240 ug/L	95
36) Tetrahydrofuran	9.64	42	86242	91.9173 ug/L	98
38) 1,1,1-Trichloroethane	9.90	97	981797	55.0584 ug/L	99
39) Cyclohexane	9.93	56	636037	51.5196 ug/L	99
40) 1,1-Dichloropropene	10.10	75	719276	52.9198 ug/L	100
41) Tert-Amyl-Methyl ether	10.21	73	1851012	95.3177 ug/L	100
42) Carbon Tetrachloride	10.25	117	873387	55.1571 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412972.D Vial: 2
Acq On : 14 Jun 2016 9:57 Operator: TMB
Sample : WG572591-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 10:26:09 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	618514	51.1897	ug/L		100
46)	Benzene	10.46	78	1825183	51.5591	ug/L		100
47)	Trichloroethene	11.22	130	497804	52.7250	ug/L		99
48)	Methylcyclohexane	11.30	83	761741	53.1075	ug/L		100
49)	1,2-Dichloropropane	11.42	63	380220	48.2489	ug/L		94
50)	Bromodichloromethane	11.72	83	720670	52.0320	ug/L		99
51)	1,4-Dioxane	11.71	88	8814	222.6574	ug/L		95
52)	Dibromomethane	11.81	93	218153	46.7657	ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	144000	42.5146	ug/L		99
54)	4-Methyl-2-Pentanone	12.05	58	58549	42.3174	ug/L		90
55)	cis-1,3-Dichloropropene	12.36	75	727888	51.6311	ug/L		99
56)	Dimethyl Disulfide	12.62	79	378256	50.2696	ug/L		98
59)	Toluene	12.79	91	1930265	50.4444	ug/L		100
60)	Ethyl Methacrylate	12.88	69	340395	46.3206	ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	629873	49.1191	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	272077	45.0599	ug/L		98
64)	2-Hexanone	13.11	58	54357	42.8392	ug/L	#	99
65)	1,3-Dichloropropane	13.48	76	494316	45.9818	ug/L		97
66)	Tetrachloroethene	13.60	164	434076	52.9471	ug/L		96
67)	Dibromochloromethane	13.86	129	433382	49.1561	ug/L		99
68)	1,2-Dibromoethane	14.12	107	277686	46.1442	ug/L		99
69)	1-Chlorohexane	14.21	91	680020	52.0613	ug/L		99
70)	Chlorobenzene	14.63	112	1291687	50.0589	ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.66	131	507206	50.7380	ug/L		99
72)	Ethylbenzene	14.66	106	698553	49.4805	ug/L		100
73)	m-,p-Xylene	14.74	106	1682573	101.6088	ug/L		99
74)	o-Xylene	15.31	106	810112	50.0390	ug/L		99
75)	Styrene	15.34	104	1359728	51.2071	ug/L		98
76)	Bromoform	15.84	173	258049	49.3460	ug/L		98
77)	Isopropylbenzene	15.73	105	2213293	51.4619	ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	285787	41.7690	ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	91103	43.2395	ug/L		91
82)	trans-1,4-Dichloro-2-Buten	16.19	53	94527	44.0888	ug/L		84
83)	n-Propylbenzene	16.24	91	2617527	49.2222	ug/L		99
84)	Bromobenzene	16.36	156	528110	48.2819	ug/L		96
85)	1,3,5-Trimethylbenzene	16.43	105	1946688	50.2543	ug/L		100
86)	2-Chlorotoluene	16.51	91	1655446	44.5882	ug/L		91
87)	4-Chlorotoluene	16.56	91	1778320	53.0260	ug/L		93
88)	a-Methylstyrene	16.83	118	891593	48.5135	ug/L		100
89)	tert-Butylbenzene	16.89	134	370571	48.8989	ug/L		97
90)	1,2,4-Trimethylbenzene	16.94	105	1975877	49.6057	ug/L		100
91)	sec-Butylbenzene	17.16	105	2246426	49.2950	ug/L		99
92)	p-Isopropyltoluene	17.32	119	1907014	49.2852	ug/L		98
93)	1,3-Dichlorobenzene	17.51	146	1036948	49.2337	ug/L		98
94)	1,4-Dichlorobenzene	17.65	146	1013800	47.7443	ug/L		98
95)	n-Butylbenzene	17.84	91	1863249	48.7090	ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	874543	46.6867	ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.13	75	56505	41.1417	ug/L		96
98)	1,2,4-Trichlorobenzene	20.28	180	673192	48.0792	ug/L		100
99)	Hexachlorobutadiene	20.43	225	339363	51.8734	ug/L		99
100)	Naphthalene	20.64	128	885979	42.5898	ug/L		99
101)	1,2,3-Trichlorobenzene	20.95	180	529902	44.8588	ug/L		98

(#) = qualifier out of range (m) = manual integration
8M412972.D 8260WT.M Tue Jun 14 10:26:12 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412972.D Vial: 2
Acq On : 14 Jun 2016 9:57 Operator: TMB
Sample : WG572591-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 10:26 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

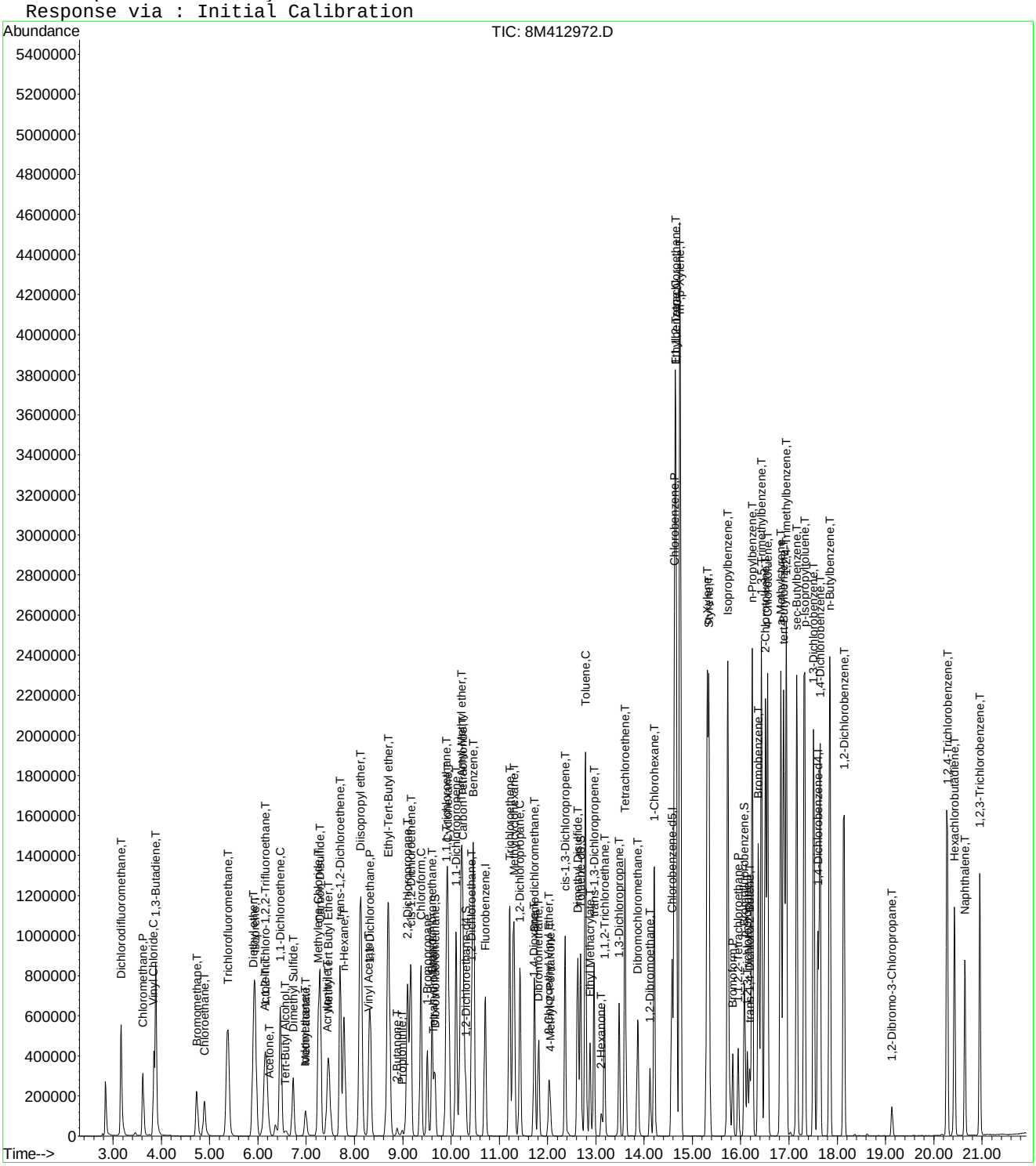

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412972.D Vial: 2
Acq On : 14 Jun 2016 9:57 Operator: TMB
Sample : WG572591-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	111	0.00
2	T	Dichlorodifluoromethane	0.4192	0.4633	-10.5	117	0.00
3	P	Chloromethane	0.2447	0.2484	-1.5	115	0.00
4	C	Vinyl Chloride	0.2903	0.3239	-11.6	123	-0.01
5	T	1,3-Butadiene	0.2434	0.2936	-20.6	130	0.00
6	T	Bromomethane	0.1654	0.1423	14.0	94	0.00
7	T	Chloroethane	0.1597	0.1644	-2.9	116	0.00
8	T	Trichlorofluoromethane	0.5401	0.5955	-10.2	123	0.00
9	T	Diethyl ether	0.1290	0.1202	6.8	106	0.00
10	T	Isoprene	0.3280	0.3350	-2.1	116	0.01
11	T	Acrolein	0.0116	0.0109	5.5	107	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2539	0.2662	-4.8	118	0.00
13	T	Acetone	0.0281	0.0275	2.3	103	-0.01
14	C	1,1-Dichloroethene	0.4043	0.4271	-5.6	119	0.00
15	T	Tert-Butyl Alcohol	0.0090	0.0084	6.4	105	-0.01
16	T	Dimethyl Sulfide	0.1445	0.1391	3.7	108	0.00
17	T	Iodomethane	0.0866	0.0846	2.3	92	0.00
18	T	Methyl acetate	0.0760	0.0645	15.1	97	-0.01
19	T	Methylene Chloride	0.2573	0.2536	1.4	112	0.00
20	T	Carbon Disulfide	0.8460	0.8994	-6.3	122	0.00
21	T	Acrylonitrile	0.0365	0.0340	6.9	98	0.00
22	T	Methyl Tert Butyl Ether	0.5568	0.5294	4.9	101	-0.01
23	T	trans-1,2-Dichloroethene	0.3714	0.3872	-4.2	117	0.00
24	T	n-Hexane	0.2758	0.2987	-8.3	123	0.00
25	T	Diisopropyl ether	0.5789	0.5583	3.6	108	0.00
26	T	Vinyl Acetate	0.2651	0.2571	3.0	103	0.00
27	P	1,1-Dichloroethane	0.4612	0.4791	-3.9	114	0.00
28	T	Ethyl-Tert-Butyl ether	0.6203	0.6070	2.1	107	0.00
29	T	2-Butanone	0.0413	0.0371	10.2	96	0.00
30	T	Propionitrile	0.0120	0.0112	7.4	100	0.00
31	T	2,2-Dichloropropane	0.4860	0.5688	-17.0	128	0.00
32	T	cis-1,2-Dichloroethene	0.2870	0.2944	-2.6	115	0.00
33	C	Chloroform	0.5446	0.5736	-5.3	117	0.00
34		1-Bromopropane	0.0411	0.0461	-12.3	125	0.00
35	T	Bromochloromethane	0.1472	0.1487	-1.0	111	0.00
36	T	Tetrahydrofuran	0.0272	0.0250	8.1	109	0.00
37	S	Dibromofluoromethane	0.2686	0.2818	-4.9	115	0.00
38	T	1,1,1-Trichloroethane	0.5173	0.5696	-10.1	120	0.00
39	T	Cyclohexane	0.3581	0.3690	-3.0	119	0.00
40	T	1,1-Dichloropropene	0.3943	0.4173	-5.8	117	0.00
41	T	Tert-Amyl-Methyl ether	0.5634	0.5370	4.7	105	0.00
42	T	Carbon Tetrachloride	0.4593	0.5067	-10.3	121	0.00
43	S	1,2-Dichloroethane-d4	0.2880	0.2915	-1.2	110	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.3505	0.3589	-2.4	110	0.00
46	T	Benzene	1.0269	1.0590	-3.1	114	0.00
47	T	Trichloroethene	0.2739	0.2888	-5.5	117	0.00
48	T	Methylcyclohexane	0.4161	0.4420	-6.2	120	0.00
49	C	1,2-Dichloropropane	0.2286	0.2206	3.5	108	0.00
50	T	Bromodichloromethane	0.4018	0.4181	-4.1	110	0.00
51	T	1,4-Dioxane	0.0012	0.0013	-11.3	116	0.00
52	T	Dibromomethane	0.1353	0.1266	6.5	104	-0.01
53	T	2-Chloroethyl Vinyl Ether	0.0983	0.0835	15.0	89	0.00
54	T	4-Methyl-2-Pentanone	0.0401	0.0340	15.4	90	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412972.D Vial: 2
Acq On : 14 Jun 2016 9:57 Operator: TMB
Sample : WG572591-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4090	0.4223	-3.3	109	0.00
56	T	Dimethyl Disulfide	0.2183	0.2195	-0.5	110	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	114	0.00
58	S	Toluene-d8	1.3084	1.3742	-5.0	118	0.00
59	C	Toluene	1.5520	1.5658	-0.9	115	0.00
60	T	Ethyl Methacrylate	0.2981	0.2761	7.4	100	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.5201	0.5110	1.8	106	0.00
63	T	1,1,2-Trichloroethane	0.2449	0.2207	9.9	101	0.00
64	T	2-Hexanone	0.0515	0.0441	14.3	96	-0.01
65	T	1,3-Dichloropropane	0.4360	0.4010	8.0	101	0.00
66	T	Tetrachloroethene	0.3325	0.3521	-5.9	124	0.00
67	T	Dibromochloromethane	0.3576	0.3516	1.7	108	0.00
68	T	1,2-Dibromoethane	0.2441	0.2253	7.7	102	0.00
69	T	1-Chlorohexane	0.5298	0.5516	-4.1	121	0.00
70	P	Chlorobenzene	1.0466	1.0478	-0.1	116	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4055	0.4114	-1.5	113	0.00
72	C	Ethylbenzene	0.5726	0.5667	1.0	116	0.00
73	T	m-,p-Xylene	0.6716	0.6825	-1.6	117	0.00
74	T	o-Xylene	0.6566	0.6572	-0.1	114	0.00
75	T	Styrene	1.0770	1.1030	-2.4	112	0.00
76	P	Bromoform	0.2121	0.2093	1.3	108	0.00
77	T	Isopropylbenzene	1.7444	1.7954	-2.9	115	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	118	0.00
79	P	1,1,2,2-Tetrachloroethane	0.5018	0.4192	16.5	97	0.00
80	S	p-Bromofluorobenzene	1.0352	1.0277	0.7	120	0.00
81	T	1,2,3-Trichloropropane	0.1545	0.1336	13.5	102	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1376	0.1387	-0.8	109	0.00
83	T	n-Propylbenzene	3.9003	3.8396	1.6	115	0.00
84	T	Bromobenzene	0.8022	0.7747	3.4	115	-0.01
85	T	1,3,5-Trimethylbenzene	2.8411	2.8556	-0.5	117	0.00
86	T	2-Chlorotoluene	2.7231	2.4283	10.8	103	0.00
87	T	4-Chlorotoluene	2.4597	2.6086	-6.1	133	0.00
88	T	a-Methylstyrene	1.3479	1.3079	3.0	115	0.00
89	T	tert-Butylbenzene	0.5558	0.5436	2.2	121	0.00
90	T	1,2,4-Trimethylbenzene	2.9214	2.8984	0.8	118	0.00
91	T	sec-Butylbenzene	3.3424	3.2952	1.4	117	0.00
92	T	p-Isopropyltoluene	2.8379	2.7974	1.4	118	0.00
93	T	1,3-Dichlorobenzene	1.5448	1.5211	1.5	117	0.00
94	T	1,4-Dichlorobenzene	1.5574	1.4871	4.5	116	0.00
95	T	n-Butylbenzene	2.8056	2.7332	2.6	116	-0.01
96	T	1,2-Dichlorobenzene	1.3739	1.2829	6.6	114	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1007	0.0829	17.7	95	0.00
98	T	1,2,4-Trichlorobenzene	1.0269	0.9875	3.8	115	0.00
99	T	Hexachlorobutadiene	0.4798	0.4978	-3.7	128	-0.01
100	T	Naphthalene	1.5257	1.2996	14.8	99	-0.01
101	T	1,2,3-Trichlorobenzene	0.8664	0.7773	10.3	112	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412972.D 8260WT.M Tue Jun 14 10:26:19 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412972.D Vial: 2
Acq On : 14 Jun 2016 9:57 Operator: TMB
Sample : WG572591-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	111	0.00
2	T	Dichlorodifluoromethane	50.0000	55.2727	-10.5	117	0.00
3	P	Chloromethane	50.0000	50.7556	-1.5	115	0.00
4	C	Vinyl Chloride	50.0000	55.7845	-11.6	123	-0.01
5	T	1,3-Butadiene	50.0000	60.2981	-20.6	130	0.00
6	T	Bromomethane	50.0000	40.9046	18.2	94	0.00
7	T	Chloroethane	50.0000	51.4650	-2.9	116	0.00
8	T	Trichlorofluoromethane	50.0000	55.1205	-10.2	123	0.00
9	T	Diethyl ether	100.0000	93.2231	6.8	106	0.00
10	T	Isoprene	50.0000	51.0677	-2.1	116	0.01
11	T	Acrolein	50.0000	47.2559	5.5	107	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	52.4196	-4.8	118	0.00
13	T	Acetone	50.0000	48.8507	2.3	103	-0.01
14	C	1,1-Dichloroethene	50.0000	52.8248	-5.6	119	0.00
15	T	Tert-Butyl Alcohol	200.0000	186.9998	6.5	105	-0.01
16	T	Dimethyl Sulfide	50.0000	48.1228	3.8	108	0.00
17	T	Iodomethane	50.0000	38.4711	23.1	92	0.00
18	T	Methyl acetate	50.0000	42.4282	15.1	97	-0.01
19	T	Methylene Chloride	50.0000	49.2801	1.4	112	0.00
20	T	Carbon Disulfide	50.0000	53.1559	-6.3	122	0.00
21	T	Acrylonitrile	50.0000	46.5532	6.9	98	0.00
22	T	Methyl Tert Butyl Ether	50.0000	47.5428	4.9	101	-0.01
23	T	trans-1,2-Dichloroethene	50.0000	52.1233	-4.2	117	0.00
24	T	n-Hexane	50.0000	54.1603	-8.3	123	0.00
25	T	Diisopropyl ether	100.0000	96.4418	3.6	108	0.00
26	T	Vinyl Acetate	50.0000	48.5092	3.0	103	0.00
27	P	1,1-Dichloroethane	50.0000	51.9326	-3.9	114	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	97.8660	2.1	107	0.00
29	T	2-Butanone	50.0000	44.9025	10.2	96	0.00
30	T	Propionitrile	100.0000	92.5520	7.4	100	0.00
31	T	2,2-Dichloropropane	50.0000	58.5088	-17.0	128	0.00
32	T	cis-1,2-Dichloroethene	50.0000	51.2941	-2.6	115	0.00
33	C	Chloroform	50.0000	52.6617	-5.3	117	0.00
34		1-Bromopropane	50.0000	56.1284	-12.3	125	0.00
35	T	Bromochloromethane	50.0000	50.5240	-1.0	111	0.00
36	T	Tetrahydrofuran	100.0000	91.9173	8.1	109	0.00
37	S	Dibromofluoromethane	25.0000	26.2303	-4.9	115	0.00
38	T	1,1,1-Trichloroethane	50.0000	55.0584	-10.1	120	0.00
39	T	Cyclohexane	50.0000	51.5196	-3.0	119	0.00
40	T	1,1-Dichloropropene	50.0000	52.9198	-5.8	117	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	95.3178	4.7	105	0.00
42	T	Carbon Tetrachloride	50.0000	55.1571	-10.3	121	0.00
43	S	1,2-Dichloroethane-d4	25.0000	25.3005	-1.2	110	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	51.1897	-2.4	110	0.00
46	T	Benzene	50.0000	51.5591	-3.1	114	0.00
47	T	Trichloroethene	50.0000	52.7250	-5.5	117	0.00
48	T	Methylcyclohexane	50.0000	53.1075	-6.2	120	0.00
49	C	1,2-Dichloropropane	50.0000	48.2489	3.5	108	0.00
50	T	Bromodichloromethane	50.0000	52.0320	-4.1	110	0.00
51	T	1,4-Dioxane	200.0000	222.6574	-11.3	116	0.00
52	T	Dibromomethane	50.0000	46.7657	6.5	104	-0.01
53	T	2-Chloroethyl Vinyl Ether	50.0000	42.5146	15.0	89	0.00
54	T	4-Methyl-2-Pentanone	50.0000	42.3174	15.4	90	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412972.D Vial: 2
Acq On : 14 Jun 2016 9:57 Operator: TMB
Sample : WG572591-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	51.6311	-3.3	109	0.00
56	T	Dimethyl Disulfide	50.0000	50.2696	-0.5	110	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	114	0.00
58	S	Toluene-d8	25.0000	26.2573	-5.0	118	0.00
59	C	Toluene	50.0000	50.4444	-0.9	115	0.00
60	T	Ethyl Methacrylate	50.0000	46.3206	7.4	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	49.1191	1.8	106	0.00
63	T	1,1,2-Trichloroethane	50.0000	45.0599	9.9	101	0.00
64	T	2-Hexanone	50.0000	42.8392	14.3	96	-0.01
65	T	1,3-Dichloropropane	50.0000	45.9818	8.0	101	0.00
66	T	Tetrachloroethene	50.0000	52.9471	-5.9	124	0.00
67	T	Dibromochloromethane	50.0000	49.1561	1.7	108	0.00
68	T	1,2-Dibromoethane	50.0000	46.1442	7.7	102	0.00
69	T	1-Chlorohexane	50.0000	52.0613	-4.1	121	0.00
70	P	Chlorobenzene	50.0000	50.0589	-0.1	116	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	50.7380	-1.5	113	0.00
72	C	Ethylbenzene	50.0000	49.4805	1.0	116	0.00
73	T	m-,p-Xylene	100.0000	101.6088	-1.6	117	0.00
74	T	o-Xylene	50.0000	50.0391	-0.1	114	0.00
75	T	Styrene	50.0000	51.2071	-2.4	112	0.00
76	P	Bromoform	50.0000	49.3460	1.3	108	0.00
77	T	Isopropylbenzene	50.0000	51.4619	-2.9	115	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	118	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	41.7690	16.5	97	0.00
80	S	p-Bromofluorobenzene	25.0000	24.8183	0.7	120	0.00
81	T	1,2,3-Trichloropropane	50.0000	43.2396	13.5	102	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	44.0888	11.8	109	0.00
83	T	n-Propylbenzene	50.0000	49.2222	1.6	115	0.00
84	T	Bromobenzene	50.0000	48.2819	3.4	115	-0.01
85	T	1,3,5-Trimethylbenzene	50.0000	50.2543	-0.5	117	0.00
86	T	2-Chlorotoluene	50.0000	44.5882	10.8	103	0.00
87	T	4-Chlorotoluene	50.0000	53.0260	-6.1	133	0.00
88	T	a-Methylstyrene	50.0000	48.5135	3.0	115	0.00
89	T	tert-Butylbenzene	50.0000	48.8989	2.2	121	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	49.6057	0.8	118	0.00
91	T	sec-Butylbenzene	50.0000	49.2950	1.4	117	0.00
92	T	p-Isopropyltoluene	50.0000	49.2852	1.4	118	0.00
93	T	1,3-Dichlorobenzene	50.0000	49.2338	1.5	117	0.00
94	T	1,4-Dichlorobenzene	50.0000	47.7443	4.5	116	0.00
95	T	n-Butylbenzene	50.0000	48.7090	2.6	116	-0.01
96	T	1,2-Dichlorobenzene	50.0000	46.6867	6.6	114	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	41.1417	17.7	95	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	48.0792	3.8	115	0.00
99	T	Hexachlorobutadiene	50.0000	51.8734	-3.7	128	-0.01
100	T	Naphthalene	50.0000	42.5898	14.8	99	-0.01
101	T	1,2,3-Trichlorobenzene	50.0000	44.8588	10.3	112	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412972.D 8260WT.M Tue Jun 14 10:26:22 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\1\DATA\061415\11M08234.D          Vial: 1
Acq On    : 14 Jun 2015   9:34                        Operator: TMB /DLW
Sample    : WG527475-01 50ng BFB STD                  Inst    : hpms11
Misc      : 1,1 STD70707                              Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title     : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
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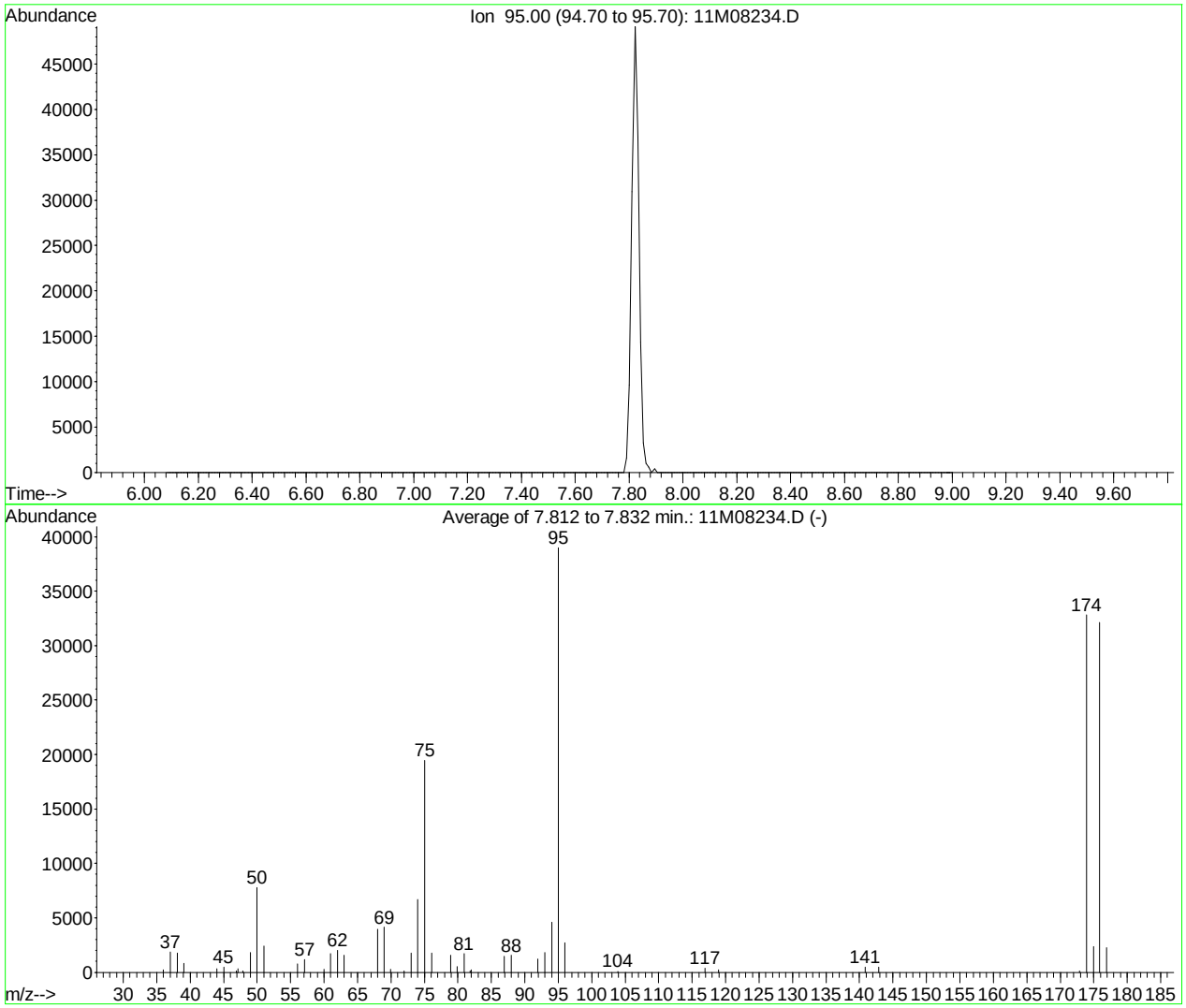

AutoFind: Scans 168, 169, 170; Background Corrected with Scan 163

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.9	7754	PASS
75	95	30	60	49.9	19472	PASS
95	95	100	100	100.0	38997	PASS
96	95	5	9	7.0	2731	PASS
173	174	0.00	2	0.3	111	PASS
174	95	50	100	84.2	32837	PASS
175	174	5	9	7.2	2357	PASS
176	174	95	101	97.9	32146	PASS
177	176	5	9	7.1	2284	PASS

11M08234.D 8260WTR.M Sun Jun 14 09:44:09 2015

BFB

```
Data File : C:\MSDCHEM\2\DATA\051316\8M412218.D          Vial: 3
Acq On    : 13 May 2016  12:36                       Operator: TMB
Sample    : WG568561-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD76034                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

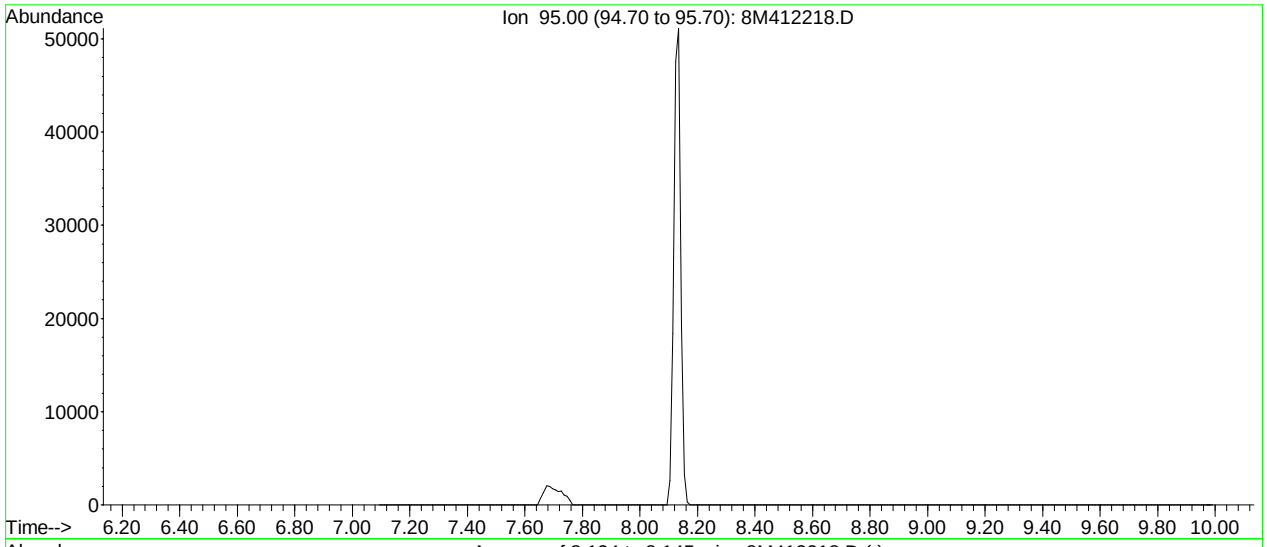

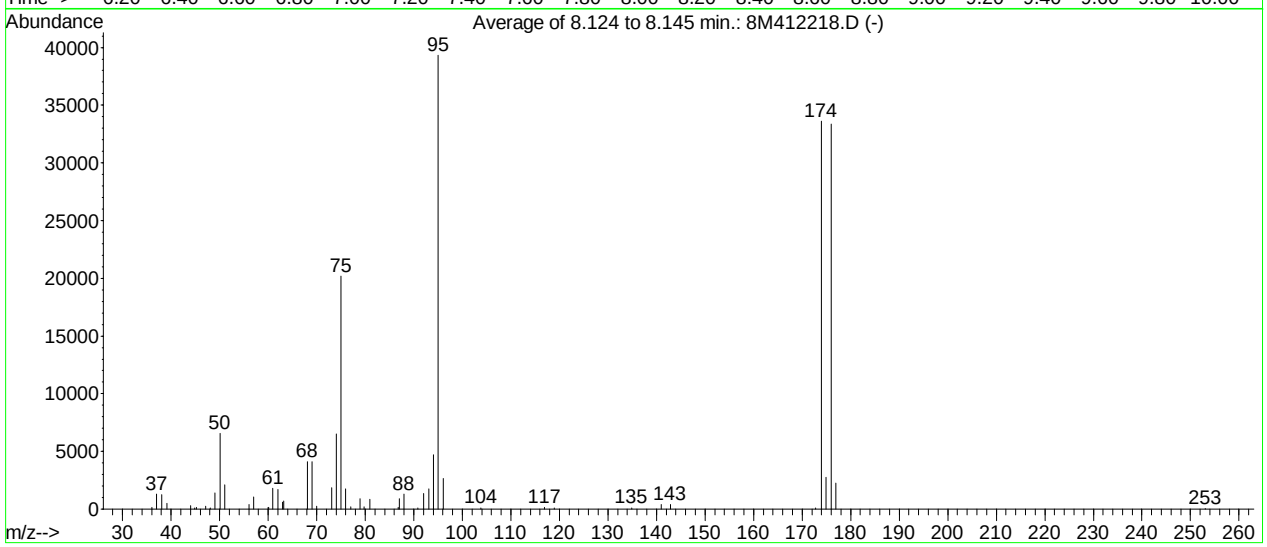

AutoFind: Scans 102, 103, 104; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.7	6575	PASS
75	95	30	60	51.3	20171	PASS
95	95	100	100	100.0	39312	PASS
96	95	5	9	6.7	2649	PASS
173	174	0.00	2	0.4	122	PASS
174	95	50	100	85.5	33616	PASS
175	174	5	9	8.2	2746	PASS
176	174	95	101	99.2	33360	PASS
177	176	5	9	6.8	2267	PASS

8M412218.D BFB.M Fri May 13 12:47:24 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\051316\11M11836.D          Vial: 2
Acq On    : 13 May 2016  14:15                        Operator: JDS
Sample    : WG568769-01 50ng BFB STD 8260             Inst    : hpms11
Misc      : 1,1 STD76034                              Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title     : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
```

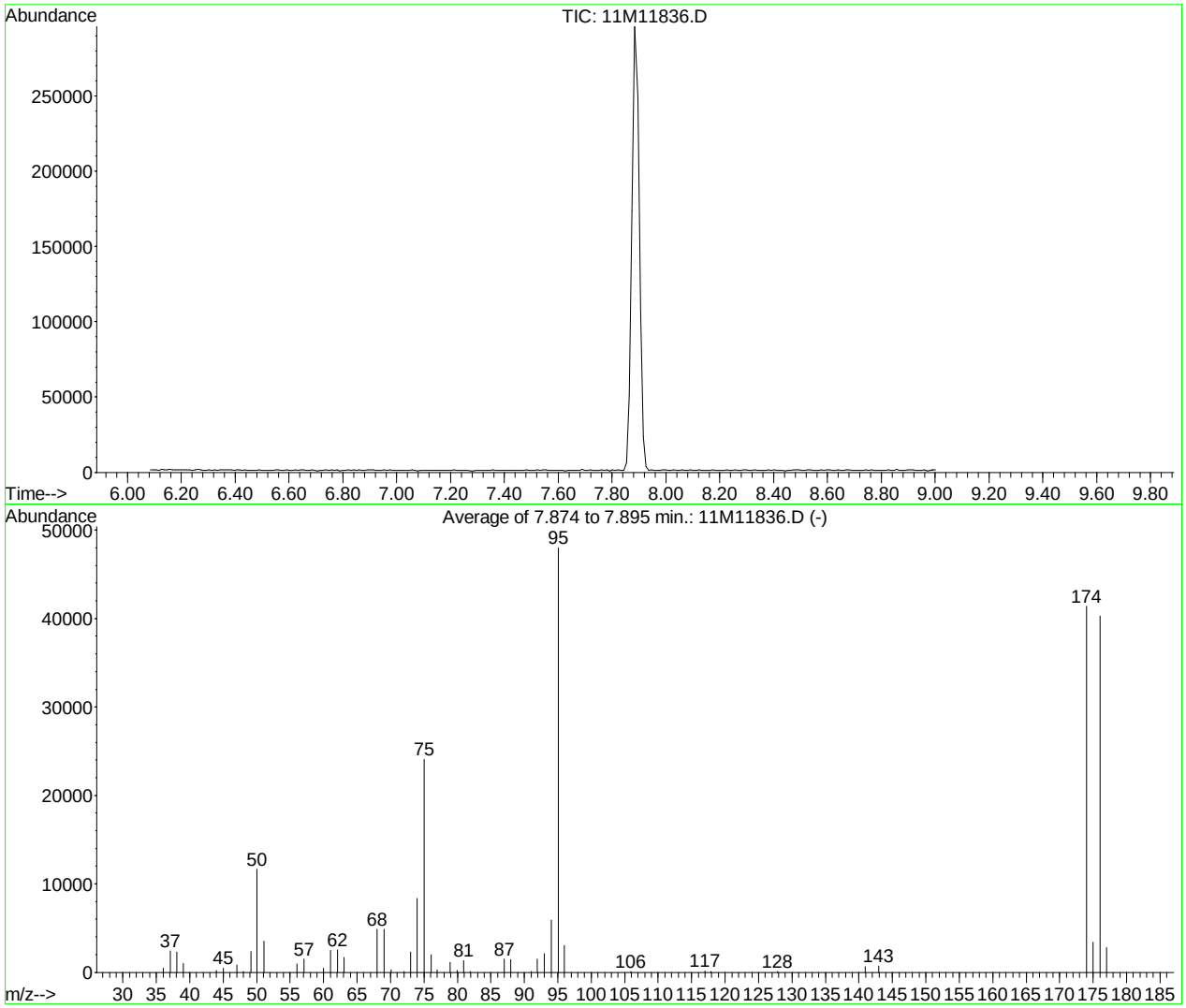

AutoFind: Scans 174, 175, 176; Background Corrected with Scan 169

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	24.2	11638	PASS
75	95	30	60	50.2	24088	PASS
95	95	100	100	100.0	48016	PASS
96	95	5	9	6.3	3008	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	86.2	41402	PASS
175	174	5	9	8.3	3421	PASS
176	174	95	101	97.3	40288	PASS
177	176	5	9	6.9	2789	PASS

11M11836.D 8260WT.M Tue May 17 14:18:03 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\061316\11M12592.D          Vial: 1
Acq On    : 13 Jun 2016  16:33                       Operator: JDS
Sample    : WG572507-01 50ng BFB STD 8260            Inst    : hpms11
Misc      : 1,1 STD76496                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title     : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
```

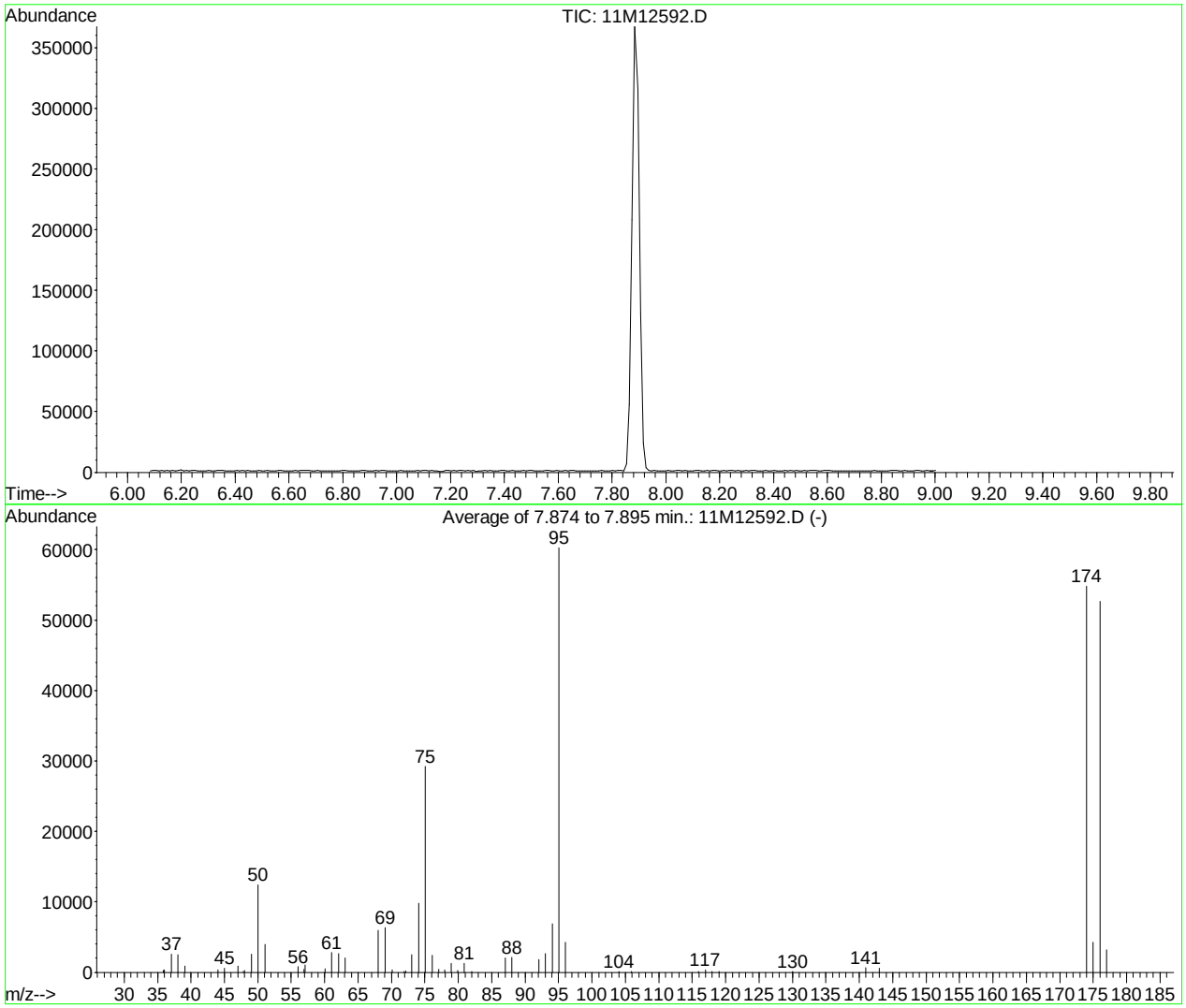

AutoFind: Scans 174, 175, 176; Background Corrected with Scan 169

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.6	12399	PASS
75	95	30	60	48.5	29232	PASS
95	95	100	100	100.0	60272	PASS
96	95	5	9	7.1	4288	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	90.9	54805	PASS
175	174	5	9	7.7	4241	PASS
176	174	95	101	96.1	52656	PASS
177	176	5	9	6.1	3194	PASS

11M12592.D 8260WT.M Mon Jun 13 17:13:00 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412971.D Vial: 1
Acq On    : 14 Jun 2016   9:33                        Operator: TMB
Sample    : WG572591-01 50ng BFB STD 8260             Inst    : HPMS8
Misc      : 1,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title     : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
```

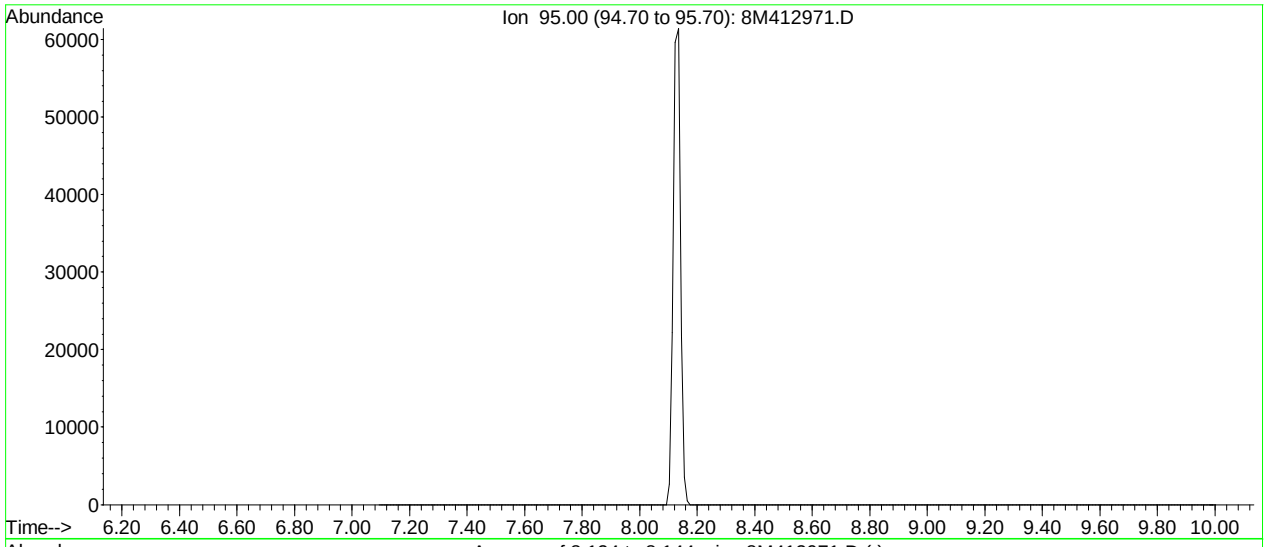

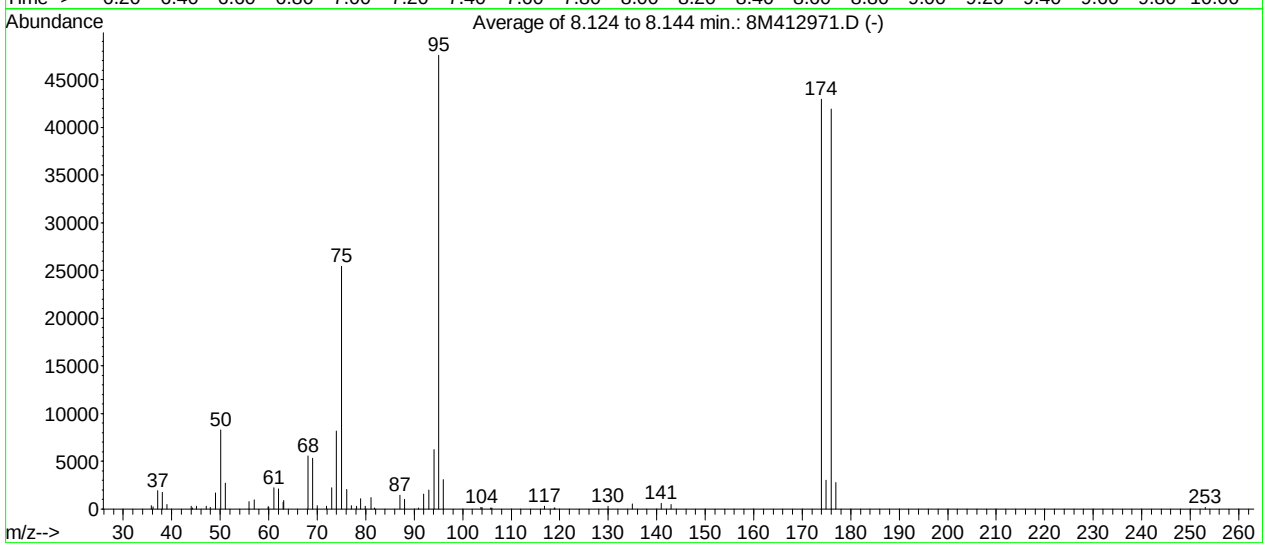

AutoFind: Scans 102, 103, 104; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.4	8269	PASS
75	95	30	60	53.5	25445	PASS
95	95	100	100	100.0	47570	PASS
96	95	5	9	6.4	3042	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	90.3	42970	PASS
175	174	5	9	7.1	3032	PASS
176	174	95	101	97.6	41930	PASS
177	176	5	9	6.5	2744	PASS

8M412971.D 8260WT.M Tue Jun 14 10:25:59 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061316\11M12595.D Vial: 4
Acq On : 13 Jun 2016 18:05 Operator: JDS
Sample : WG572509-01 BLANK STD 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 09:25:39 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	831276	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	677255	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	389978	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	200410	22.0288 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 88.12%		
43) 1,2-Dichloroethane-d4	10.23	65	208787	20.1273 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 80.52%		
57) Toluene-d8	12.47	98	735244	24.9856 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.96%		
78) p-Bromofluorobenzene	15.64	95	314986	26.2020 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.80%		

Target Compounds

					Qvalue
3) Chloromethane	3.72	50	3356	0.3217 ug/L	83
13) Acetone	6.34	43	1201	0.6084 ug/L #	49
18) Methyl acetate	6.99	43	194	Below Cal #	71
36) Tetrahydrofuran	9.60	42	2417	1.1470 ug/L #	67
97) Hexachlorobutadiene	19.68	225	1945	0.2894 ug/L	90

(#) = qualifier out of range (m) = manual integration
11M12595.D 8260WT.M Tue Jun 14 09:25:40 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061316\11M12595.D Vial: 4
Acq On : 13 Jun 2016 18:05 Operator: JDS
Sample : WG572509-01 BLANK STD 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 9:25 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

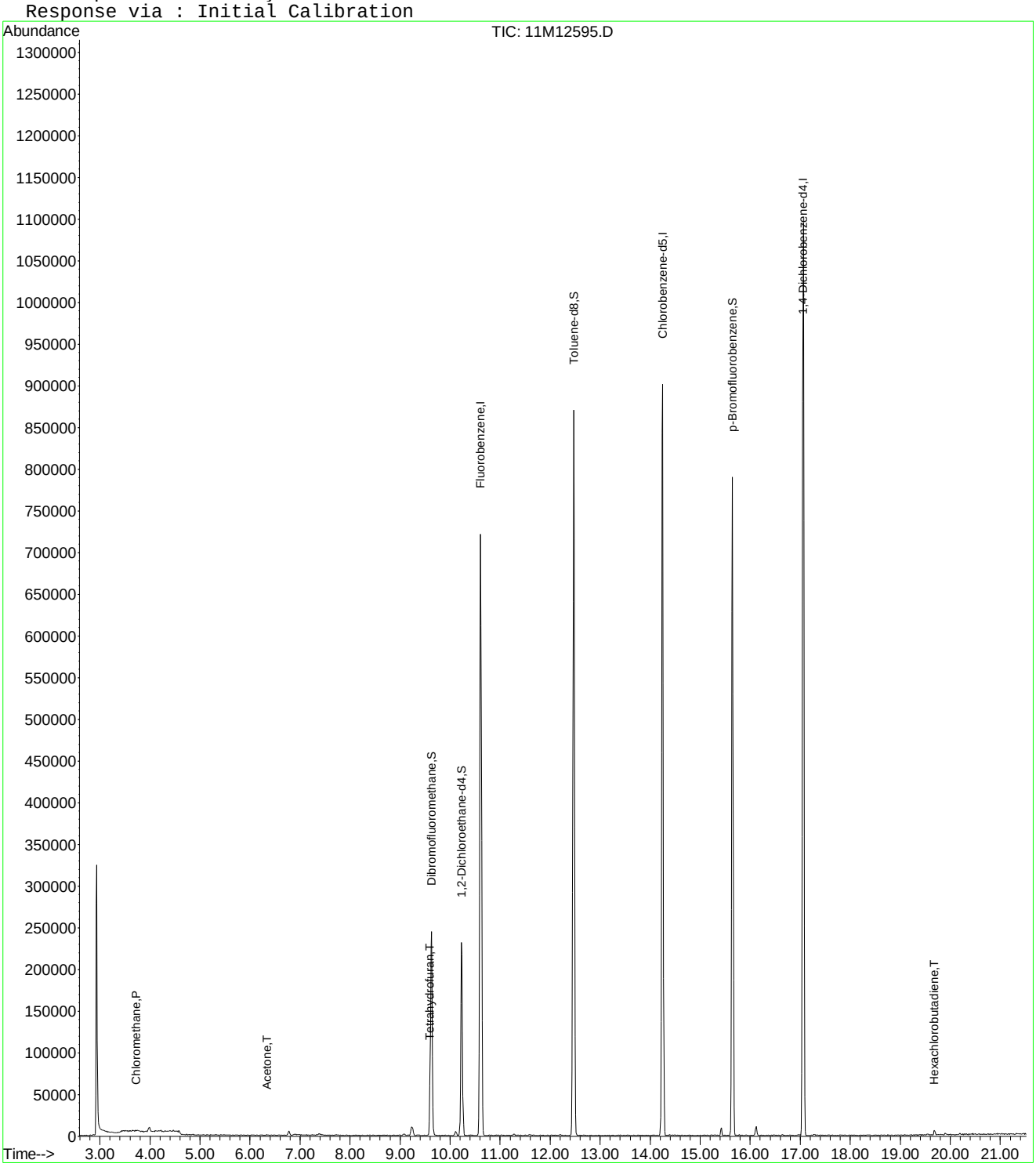

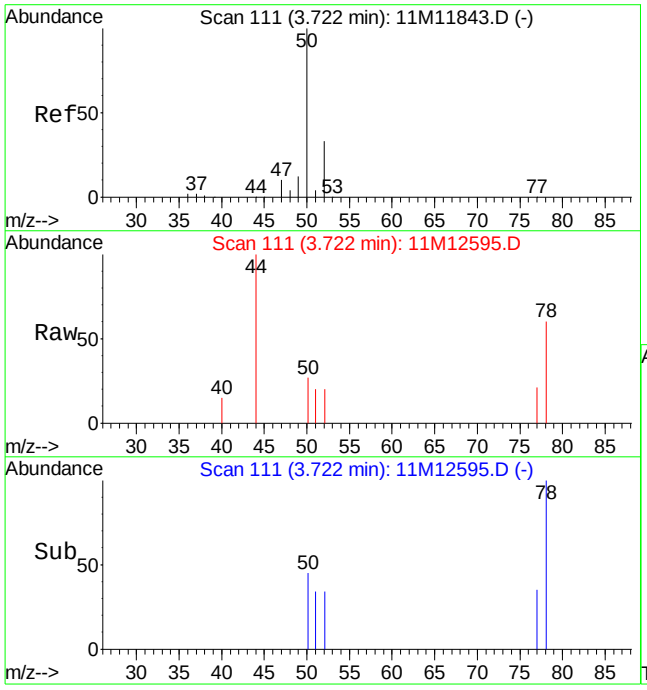

#3
Chloromethane
Concen: 0.32 ug/L
RT: 3.72 min Scan# 111
Delta R.T. 0.00 min
Lab File: 11M12595.D
Acq: 13 Jun 2016 18:05

Tgt Ion: 50 Resp: 3356

Ion	Ratio	Lower	Upper
50	100		
52	23.5	20.0	46.6

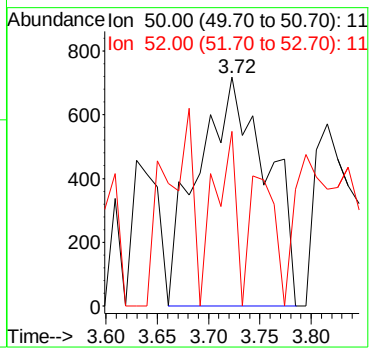

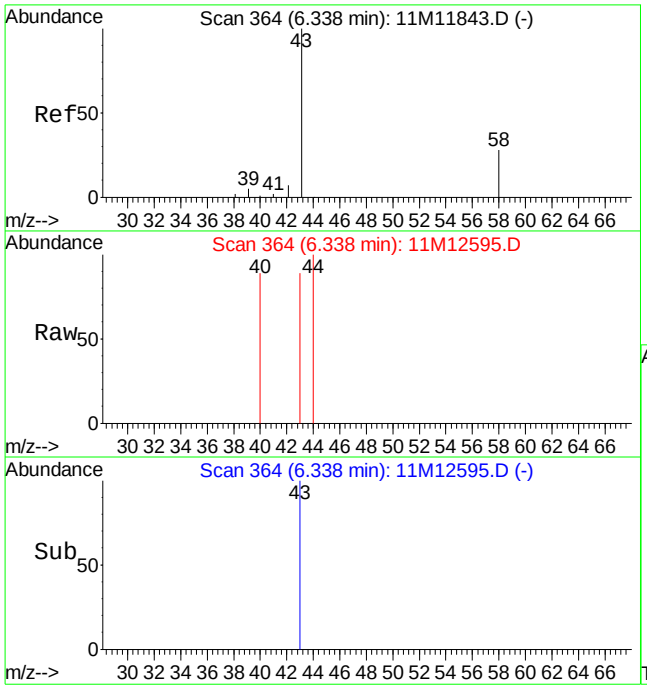

#13
Acetone
Concen: 0.61 ug/L
RT: 6.34 min Scan# 364
Delta R.T. 0.00 min
Lab File: 11M12595.D
Acq: 13 Jun 2016 18:05

Tgt Ion: 43 Resp: 1201

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

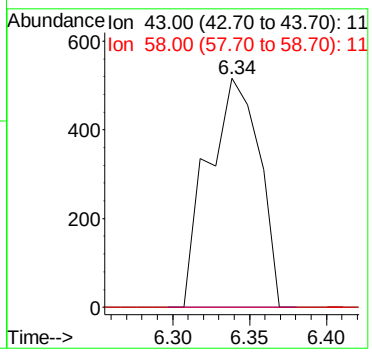

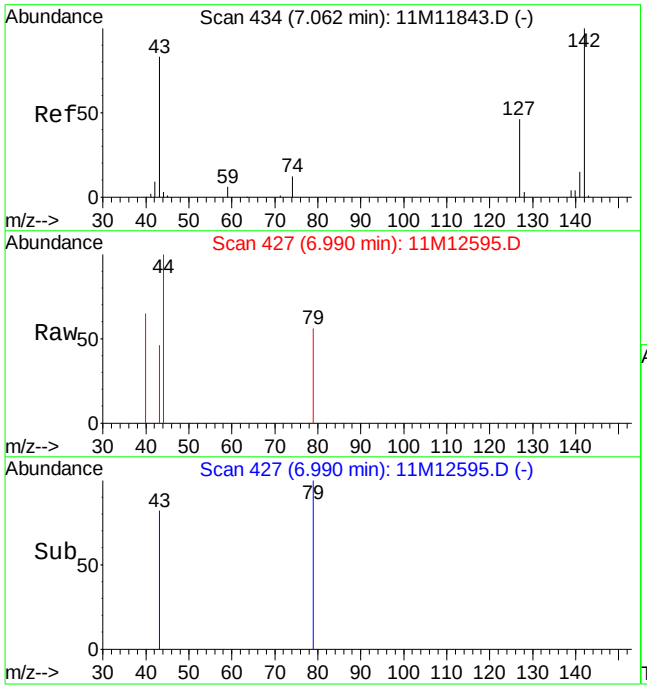

#18
Methyl acetate
Concen: Below Cal
RT: 6.99 min Scan# 427
Delta R.T. -0.07 min
Lab File: 11M12595.D
Acq: 13 Jun 2016 18:05

Tgt Ion: 43 Resp: 194

Ion	Ratio	Lower	Upper
43	100		
74	0.0	8.2	19.0#
59	0.0	3.9	9.1#

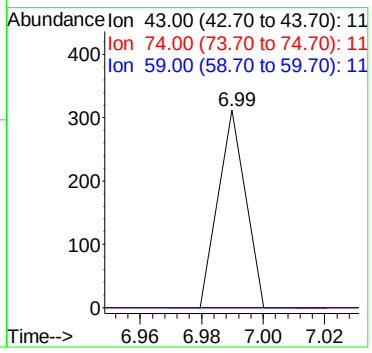

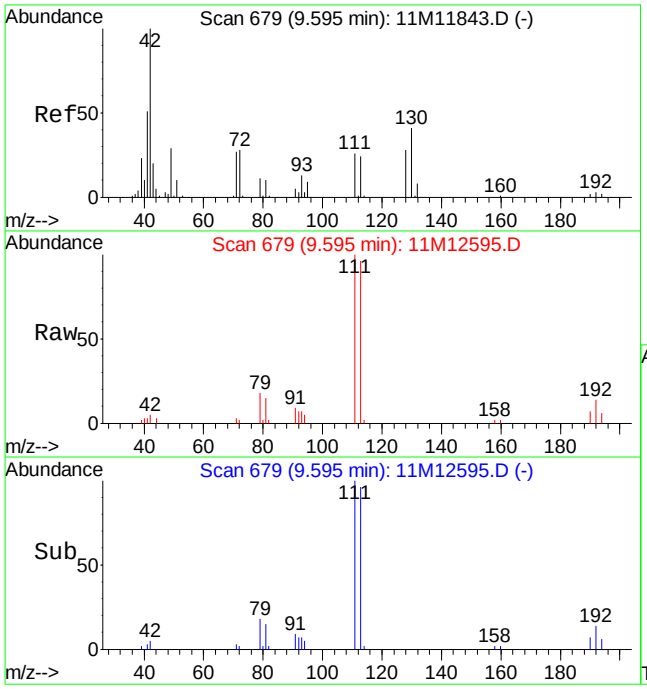

#36
Tetrahydrofuran
Concen: 1.15 ug/L
RT: 9.60 min Scan# 679
Delta R.T. 0.00 min
Lab File: 11M12595.D
Acq: 13 Jun 2016 18:05

Tgt Ion: 42 Resp: 2417

Ion	Ratio	Lower	Upper
42	100		
71	42.4	16.4	38.2#
72	8.2	16.6	38.8#

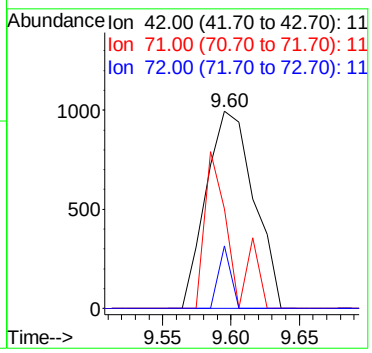

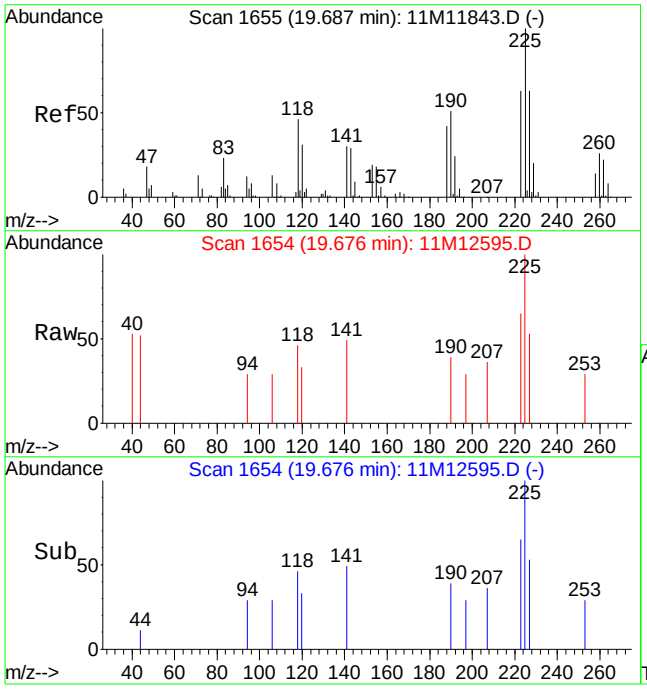

#97
Hexachlorobutadiene
Concen: 0.29 ug/L
RT: 19.68 min Scan# 1654
Delta R.T. -0.01 min
Lab File: 11M12595.D
Acq: 13 Jun 2016 18:05

Tgt Ion:225 Resp: 1945

Ion	Ratio	Lower	Upper
225	100		
227	57.4	38.3	89.3
118	38.8	28.7	66.9

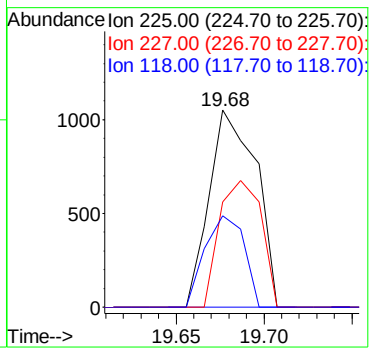

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412974.D Vial: 4
Acq On : 14 Jun 2016 10:54 Operator: TMB
Sample : WG572592-01 VBLK0614 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 12:48:03 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	818923	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	597833	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	333089	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	235191	26.7304 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.92%		
43) 1,2-Dichloroethane-d4	10.30	65	251220	26.6283 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 106.52%		
58) Toluene-d8	12.68	98	827015	26.4325 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.72%		
80) p-Bromofluorobenzene	16.08	95	340654	24.6989 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.80%		

Target Compounds					Qvalue
36) Tetrahydrofuran	9.63	42	238	0.2669 ug/L #	28

(#) = qualifier out of range (m) = manual integration
8M412974.D 8260WT.M Tue Jun 14 12:48:06 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412974.D Vial: 4
Acq On : 14 Jun 2016 10:54 Operator: TMB
Sample : WG572592-01 VBLK0614 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 12:48 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

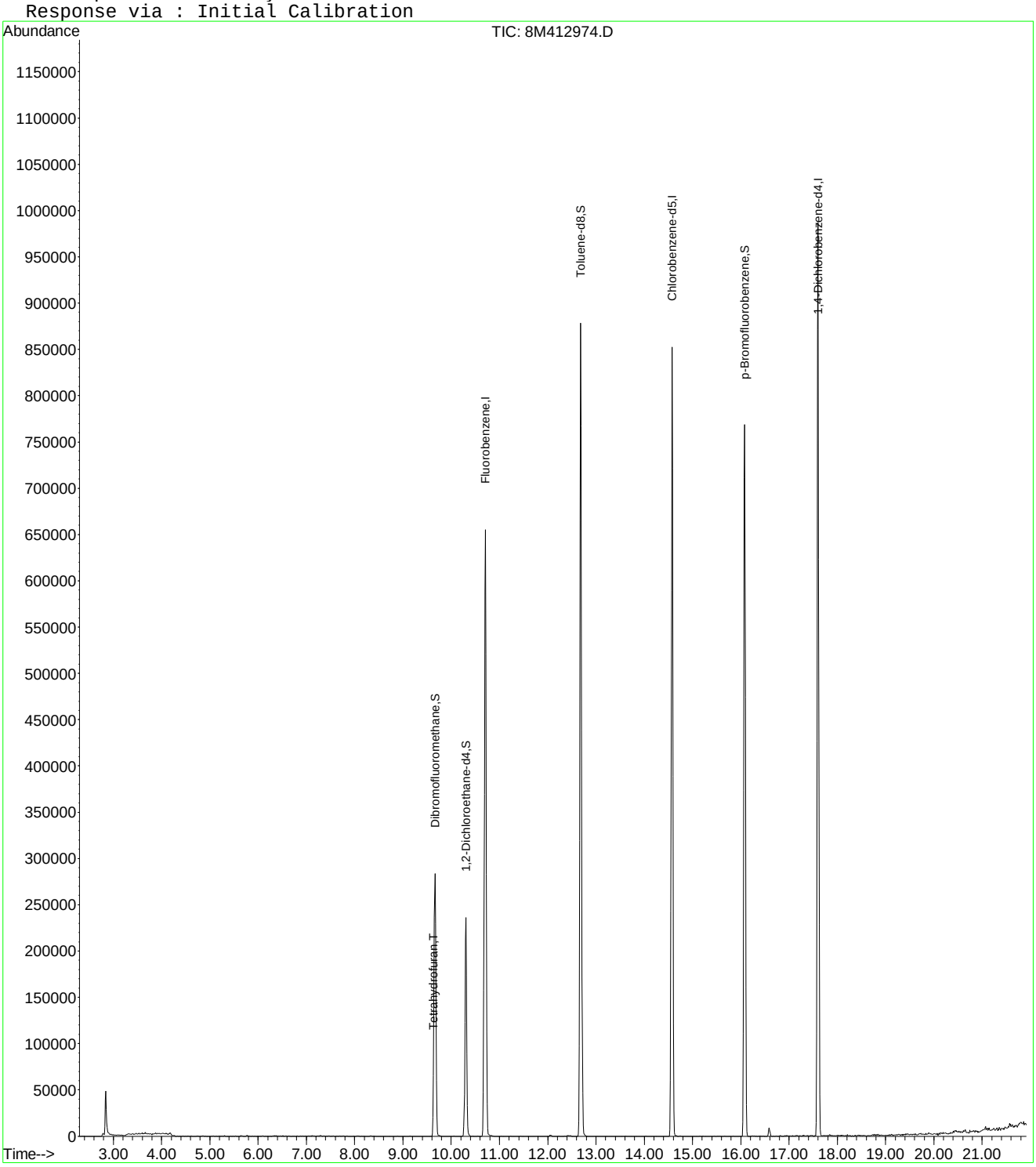

8M412974.D 8260WT.M Tue Jun 14 12:48:07 2016 Page 2

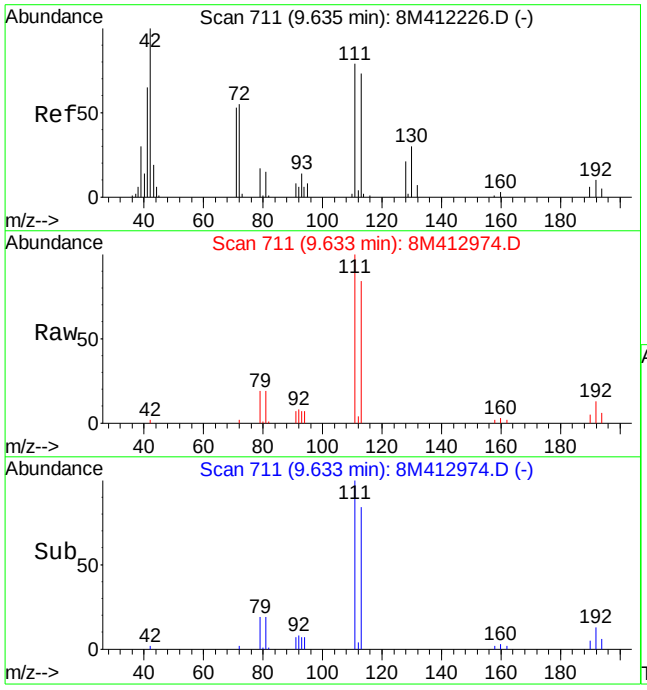

#36
Tetrahydrofuran
Concen: 0.27 ug/L
RT: 9.63 min Scan# 711
Delta R.T. -0.00 min
Lab File: 8M412974.D
Acq: 14 Jun 2016 10:54

Tgt Ion: 42 Resp: 238

Ion	Ratio	Lower	Upper
42	100		
72	127.7	33.8	78.8#
71	86.1	32.0	74.8#

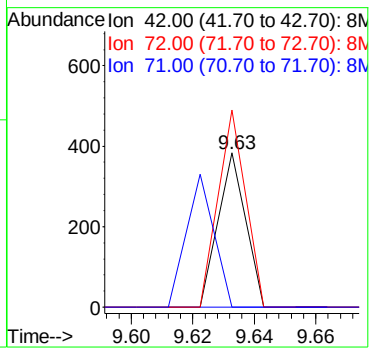

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061316\11M12596.D Vial: 5
Acq On : 13 Jun 2016 18:37 Operator: JDS
Sample : WG572509-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 09:21:56 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	835829	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	686435	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	392010	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	207450	22.6784 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 90.72%		
43) 1,2-Dichloroethane-d4	10.23	65	211303	20.2589 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 81.04%		
57) Toluene-d8	12.47	98	736565	24.6957 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.80%		
78) p-Bromofluorobenzene	15.64	95	316159	26.1632 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.64%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	239148	18.2613 ug/L	94
3) Chloromethane	3.72	50	187391	17.8665 ug/L	98
4) Vinyl Chloride	3.96	62	174685	20.0554 ug/L	99
5) 1,3-Butadiene	4.00	54	40351	4.6590 ug/L	95
6) Bromomethane	4.85	94	115015	19.2053 ug/L	100
7) Chloroethane	5.00	64	116028	20.7326 ug/L	100
8) Trichlorofluoromethane	5.48	101	306533	17.6566 ug/L	100
9) Diethyl ether	6.01	59	216342	33.6949 ug/L	92
10) Isoprene	6.04	67	220473	20.6036 ug/L	89
11) Acrolein	6.23	56	46927	55.4225 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	157531	18.7002 ug/L	93
13) Acetone	6.34	43	27877	14.0458 ug/L	95
14) 1,1-Dichloroethene	6.56	61	261530	17.0920 ug/L	92
15) Tert-Butyl Alcohol	6.66	59	58970	107.4167 ug/L	92
16) Dimethyl Sulfide	6.81	62	201208	32.9270 ug/L	82
17) Iodomethane	7.06	142	186828	27.7982 ug/L	91
18) Methyl acetate	7.07	43	85509	12.8988 ug/L	91
19) Methylene Chloride	7.31	84	154534	19.5144 ug/L	76
20) Carbon Disulfide	7.36	76	451072	17.6087 ug/L	100
21) Acrylonitrile	7.49	53	43758	16.4438 ug/L	100
22) Methyl Tert Butyl Ether	7.52	73	382330	19.3574 ug/L	95
23) trans-1,2-Dichloroethene	7.74	96	167565	19.7869 ug/L	90
24) n-Hexane	7.82	57	225746	16.0050 ug/L	98
25) Diisopropyl ether	8.15	45	2295572	65.2238 ug/L	97
26) Vinyl Acetate	8.31	43	155535	13.2632 ug/L	98
27) 1,1-Dichloroethane	8.34	63	300505	17.6851 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	2021596	70.5718 ug/L	97
29) 2-Butanone	8.87	43	42975	14.3227 ug/L	91
30) Propionitrile	8.97	54	61798	70.3201 ug/L	99
31) 2,2-Dichloropropane	9.09	77	241344	18.1534 ug/L	99
32) cis-1,2-Dichloroethene	9.15	96	190376	20.3887 ug/L	87
33) Chloroform	9.35	83	304488	18.2475 ug/L	98
34) 1-Bromopropane	9.48	122	45441	27.6807 ug/L	95
35) Bromochloromethane	9.57	130	113685	20.5009 ug/L	86
36) Tetrahydrofuran	9.60	42	120064	56.6663 ug/L	87
38) 1,1,1-Trichloroethane	9.85	97	306740	18.6800 ug/L	96
39) Cyclohexane	9.88	56	311462	17.4043 ug/L	93
40) 1,1-Dichloropropene	10.04	75	222040	18.9380 ug/L	98
41) Carbon Tetrachloride	10.18	117	292309	18.2298 ug/L	98
42) Tert-Amyl-Methyl ether	10.13	73	1776469	89.2470 ug/L	94

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061316\11M12596.D Vial: 5
Acq On : 13 Jun 2016 18:37 Operator: JDS
Sample : WG572509-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 09:21:56 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.34	62	242409	17.8865 ug/L	97
45) Benzene	10.38	78	621900	19.3759 ug/L	99
46) Trichloroethene	11.08	130	225058	21.5726 ug/L	97
47) Methylcyclohexane	11.17	83	241732	18.7751 ug/L	92
48) 1,2-Dichloropropane	11.29	63	169447	19.0716 ug/L	98
49) 1,4-Dioxane	11.56	88	2870	73.9299 ug/L	89
50) Bromodichloromethane	11.57	83	235291	18.8643 ug/L	98
51) Dibromomethane	11.65	93	86209	18.6200 ug/L	93
52) 2-Chloroethyl Vinyl Ether	11.84	63	67247	15.3569 ug/L	94
53) 4-Methyl-2-Pentanone	11.87	58	41241	16.6981 ug/L	93
54) cis-1,3-Dichloropropene	12.17	75	267968	21.4797 ug/L	100
55) Dimethyl Disulfide	12.42	79	139941	18.6410 ug/L	90
58) Toluene	12.56	91	724851	20.8590 ug/L	100
59) Ethyl Methacrylate	12.64	69	145473	19.6051 ug/L	81
60) trans-1,3-Dichloropropene	12.73	75	221528	19.8607 ug/L	97
61) 1,1,2-Trichloroethane	12.93	97	125290	20.3327 ug/L	99
62) 2-Hexanone	12.86	43	64451	14.2414 ug/L	88
63) 1,3-Dichloropropane	13.21	76	219533	22.1855 ug/L	85
64) Tetrachloroethene	13.34	164	171175	21.1823 ug/L	95
65) Dibromochloromethane	13.59	129	190311	20.2486 ug/L	100
66) 1,2-Dibromoethane	13.82	107	127648	20.6762 ug/L	100
67) 1-Chlorohexane	13.89	91	221841	19.3631 ug/L	87
68) Chlorobenzene	14.29	112	541159	21.2578 ug/L	100
69) 1,1,1,2-Tetrachloroethane	14.32	131	206849	20.0810 ug/L	99
70) Ethylbenzene	14.31	106	271834	20.8240 ug/L	97
71) m-,p-Xylene	14.39	106	674382	42.4949 ug/L	97
72) o-Xylene	14.92	106	327389	21.1979 ug/L	98
73) Styrene	14.95	104	546109	21.4018 ug/L	96
74) Bromoform	15.43	173	109625	19.2445 ug/L	100
75) Isopropylbenzene	15.31	105	862019	21.1052 ug/L	100
77) 1,1,2,2-Tetrachloroethane	15.52	83	110136	18.0416 ug/L	98
79) 1,2,3-Trichloropropane	15.70	110	44640	19.7120 ug/L	86
80) trans-1,4-Dichloro-2-Buten	15.74	53	26384	9.5770 ug/L #	3
81) n-Propylbenzene	15.79	91	986632	21.7325 ug/L	98
82) Bromobenzene	15.91	156	252798	21.2206 ug/L	91
83) 1,3,5-Trimethylbenzene	15.95	105	743687	21.4665 ug/L	98
84) 2-Chlorotoluene	16.05	91	674090	21.1990 ug/L	98
85) 4-Chlorotoluene	16.09	91	595089	20.8924 ug/L	97
86) a-Methylstyrene	16.34	118	403726	22.0901 ug/L	98
87) tert-Butylbenzene	16.39	134	160294	21.8391 ug/L	94
88) 1,2,4-Trimethylbenzene	16.44	105	741694	21.0243 ug/L	98
89) sec-Butylbenzene	16.65	105	869789	20.9090 ug/L	99
90) p-Isopropyltoluene	16.79	119	798138	20.8887 ug/L	99
91) 1,3-Dichlorobenzene	16.98	146	487491	21.1878 ug/L	97
92) 1,4-Dichlorobenzene	17.10	146	502186	21.5332 ug/L	98
93) n-Butylbenzene	17.28	91	644690	19.1478 ug/L	97
94) 1,2-Dichlorobenzene	17.57	146	446258	21.2917 ug/L	98
95) 1,2-Dibromo-3-Chloropropan	18.49	75	18068	13.6026 ug/L	93
96) 1,2,4-Trichlorobenzene	19.55	180	310468	20.2435 ug/L	99
97) Hexachlorobutadiene	19.69	225	124882	18.4832 ug/L	94
98) Naphthalene	19.90	128	500960	17.5981 ug/L	100
99) 1,2,3-Trichlorobenzene	20.19	180	267207	18.9840 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M12596.D 8260WT.M Tue Jun 14 09:21:57 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061316\11M12596.D Vial: 5
Acq On : 13 Jun 2016 18:37 Operator: JDS
Sample : WG572509-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 9:21 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

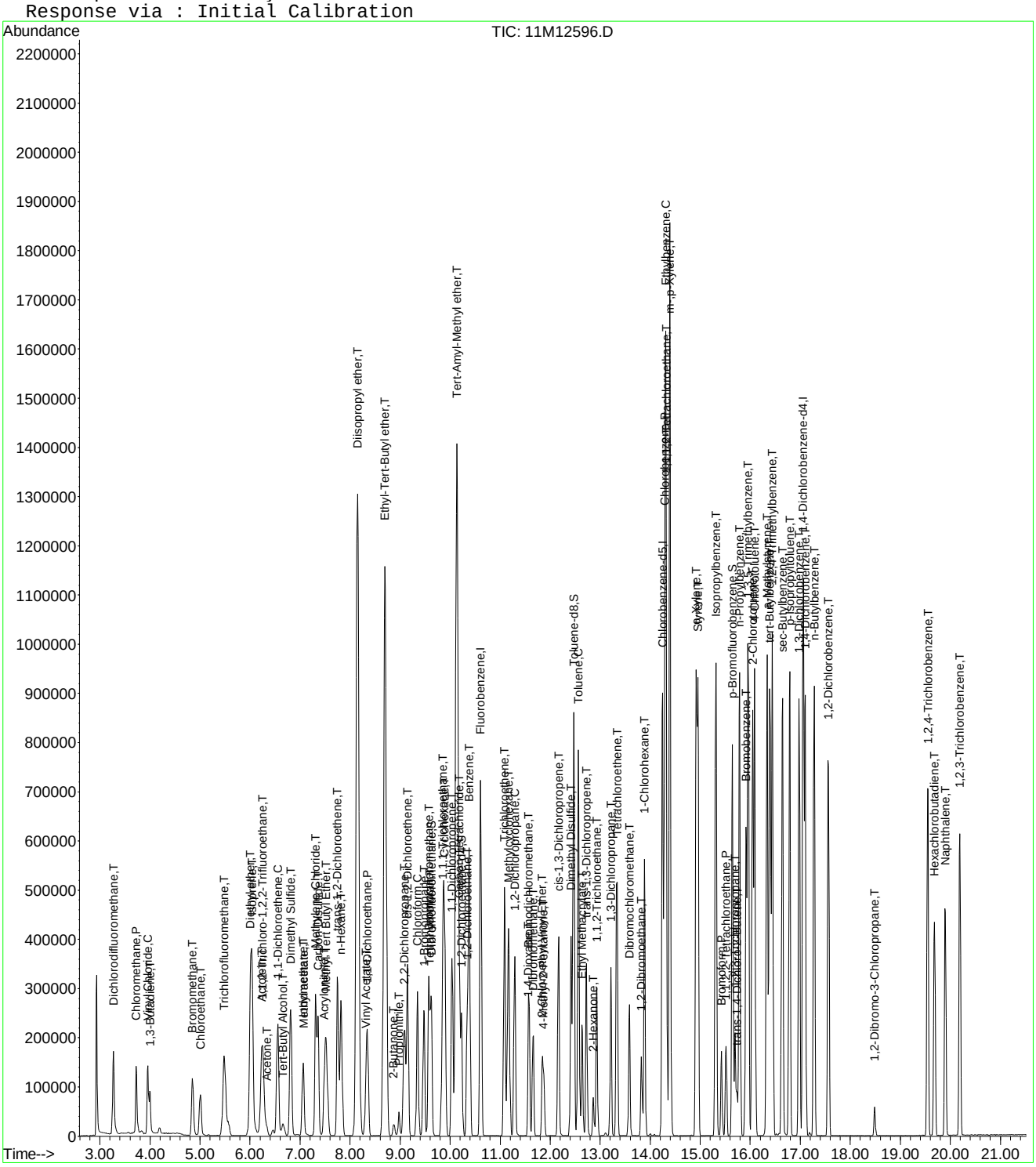

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412977.D Vial: 7
Acq On : 14 Jun 2016 12:21 Operator: TMB
Sample : WG572592-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 12:48:43 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	789634	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	583790	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	328956	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	228147	26.8916 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.56%		
43) 1,2-Dichloroethane-d4	10.31	65	248944	27.3658 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 109.48%		
58) Toluene-d8	12.68	98	808917	26.4760 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.92%		
80) p-Bromofluorobenzene	16.07	95	332263	24.3932 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.56%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	300808	22.7214 ug/L	99
3) Chloromethane	3.61	50	164125	21.2381 ug/L	99
4) Vinyl Chloride	3.84	62	225832	24.6309 ug/L	99
5) 1,3-Butadiene	3.88	54	43045	5.5983 ug/L	97
6) Bromomethane	4.73	94	71561	13.6397 ug/L	96
7) Chloroethane	4.88	64	111225	22.0465 ug/L	99
8) Trichlorofluoromethane	5.37	101	379953	22.2712 ug/L	99
9) Diethyl ether	5.90	59	425634	104.5051 ug/L	98
10) Isoprene	5.93	67	233154	22.5049 ug/L	98
11) Acrolein	6.13	56	37981	104.1537 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.14	101	175380	21.8697 ug/L	92
13) Acetone	6.23	43	21940	24.6958 ug/L	91
14) 1,1-Dichloroethene	6.46	61	259784	20.3457 ug/L	98
15) Tert-Butyl Alcohol	6.58	59	59624	209.4284 ug/L	97
16) Dimethyl Sulfide	6.72	62	174226	38.1621 ug/L	99
17) Iodomethane	6.98	142	65943	20.5666 ug/L	100
18) Methyl acetate	7.00	43	48265	20.0982 ug/L	98
19) Methylene Chloride	7.25	84	163093	20.0714 ug/L	99
20) Carbon Disulfide	7.29	76	512380	19.1756 ug/L	100
21) Acrylonitrile	7.43	53	23781	20.6307 ug/L	94
22) Methyl Tert Butyl Ether	7.46	73	397722	22.6154 ug/L	100
23) trans-1,2-Dichloroethene	7.70	61	246939	21.0510 ug/L	99
24) n-Hexane	7.78	57	169650	19.4762 ug/L	97
25) Diisopropyl ether	8.13	45	1927712	105.4249 ug/L	97
26) Vinyl Acetate	8.29	43	133626	15.9612 ug/L	100
27) 1,1-Dichloroethane	8.32	63	296874	20.3783 ug/L	100
28) Ethyl-Tert-Butyl ether	8.69	59	2048889	104.5828 ug/L	98
29) 2-Butanone	8.88	43	27097	20.7594 ug/L	100
30) Propionitrile	8.99	54	41312	108.6061 ug/L	100
31) 2,2-Dichloropropane	9.10	77	352699	22.9738 ug/L	99
32) cis-1,2-Dichloroethene	9.16	96	191196	21.0941 ug/L	100
33) Chloroform	9.38	83	369726	21.4943 ug/L	100
34) 1-Bromopropane	9.51	122	40738	31.3779 ug/L	97
35) Bromochloromethane	9.60	130	97863	21.0550 ug/L	95
36) Tetrahydrofuran	9.62	42	79612	92.6039 ug/L	98
38) 1,1,1-Trichloroethane	9.91	97	371800	22.7553 ug/L	100
39) Cyclohexane	9.93	56	229989	20.3315 ug/L	96
40) 1,1-Dichloropropene	10.10	75	262245	21.0573 ug/L	99
41) Tert-Amyl-Methyl ether	10.20	73	1956280	109.9430 ug/L	99
42) Carbon Tetrachloride	10.24	117	322240	22.2099 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412977.D Vial: 7
Acq On : 14 Jun 2016 12:21 Operator: TMB
Sample : WG572592-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 12:48:43 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.42	62	252836	22.8372 ug/L	97
46)	Benzene	10.46	78	684839	21.1135 ug/L	100
47)	Trichloroethene	11.22	130	196590	22.7244 ug/L	98
48)	Methylcyclohexane	11.30	83	281836	21.4446 ug/L	99
49)	1,2-Dichloropropane	11.42	63	151922	21.0400 ug/L	93
50)	Bromodichloromethane	11.72	83	282235	22.2391 ug/L	100
51)	1,4-Dioxane	11.72	88	7558	208.3738 ug/L	94
52)	Dibromomethane	11.81	93	84703	19.8170 ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.02	63	64236	20.6979 ug/L	94
54)	4-Methyl-2-Pentanone	12.05	58	25847	20.3883 ug/L	91
55)	cis-1,3-Dichloropropene	12.36	75	303145	23.4676 ug/L	98
56)	Dimethyl Disulfide	12.62	79	153043	22.1976 ug/L	91
59)	Toluene	12.79	91	737048	20.3365 ug/L	100
60)	Ethyl Methacrylate	12.88	69	148536	21.3406 ug/L	99
62)	trans-1,3-Dichloropropene	12.96	75	258189	21.2578 ug/L	99
63)	1,1,2-Trichloroethane	13.17	97	114373	19.9989 ug/L	98
64)	2-Hexanone	13.12	58	24370	20.2780 ug/L #	95
65)	1,3-Dichloropropane	13.48	76	217003	21.3123 ug/L	99
66)	Tetrachloroethene	13.60	164	160734	20.6999 ug/L	96
67)	Dibromochloromethane	13.86	129	171176	20.4990 ug/L	100
68)	1,2-Dibromoethane	14.12	107	113723	19.9524 ug/L	98
69)	1-Chlorohexane	14.21	91	256011	20.6936 ug/L	99
70)	Chlorobenzene	14.63	112	506153	20.7105 ug/L	99
71)	1,1,1,2-Tetrachloroethane	14.66	131	198120	20.9248 ug/L	100
72)	Ethylbenzene	14.66	106	264089	19.7501 ug/L	96
73)	m-,p-Xylene	14.74	106	653046	41.6376 ug/L	96
74)	o-Xylene	15.31	106	330056	21.5246 ug/L	100
75)	Styrene	15.34	104	535687	21.2997 ug/L	98
76)	Bromoform	15.84	173	100112	20.2125 ug/L	98
77)	Isopropylbenzene	15.73	105	887039	21.7758 ug/L	99
79)	1,1,2,2-Tetrachloroethane	15.95	83	117162	17.7434 ug/L	100
81)	1,2,3-Trichloropropane	16.15	110	38260	18.8161 ug/L	82
82)	trans-1,4-Dichloro-2-Buten	16.19	53	34037	16.8349 ug/L	92
83)	n-Propylbenzene	16.24	91	1056135	20.5791 ug/L	100
84)	Bromobenzene	16.36	156	206447	19.5572 ug/L	97
85)	1,3,5-Trimethylbenzene	16.42	105	767927	20.5416 ug/L	100
86)	2-Chlorotoluene	16.51	91	659331	18.4012 ug/L	92
87)	4-Chlorotoluene	16.56	91	717563	22.1705 ug/L	91
88)	a-Methylstyrene	16.83	118	386327	21.7815 ug/L	99
89)	tert-Butylbenzene	16.89	134	146756	20.0660 ug/L	99
90)	1,2,4-Trimethylbenzene	16.94	105	768345	19.9878 ug/L	100
91)	sec-Butylbenzene	17.16	105	891437	20.2693 ug/L	99
92)	p-Isopropyltoluene	17.32	119	743909	19.9214 ug/L	100
93)	1,3-Dichlorobenzene	17.51	146	412440	20.2910 ug/L	99
94)	1,4-Dichlorobenzene	17.64	146	416220	20.3109 ug/L	100
95)	n-Butylbenzene	17.84	91	710572	19.2479 ug/L	98
96)	1,2-Dichlorobenzene	18.14	146	365176	20.2000 ug/L	98
97)	1,2-Dibromo-3-Chloropropan	19.13	75	25929	19.5622 ug/L	100
98)	1,2,4-Trichlorobenzene	20.28	180	263147	19.4739 ug/L	99
99)	Hexachlorobutadiene	20.42	225	131850	20.8832 ug/L	98
100)	Naphthalene	20.64	128	339159	16.8936 ug/L	100
101)	1,2,3-Trichlorobenzene	20.95	180	212625	18.6510 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412977.D Vial: 7
Acq On : 14 Jun 2016 12:21 Operator: TMB
Sample : WG572592-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 12:48 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

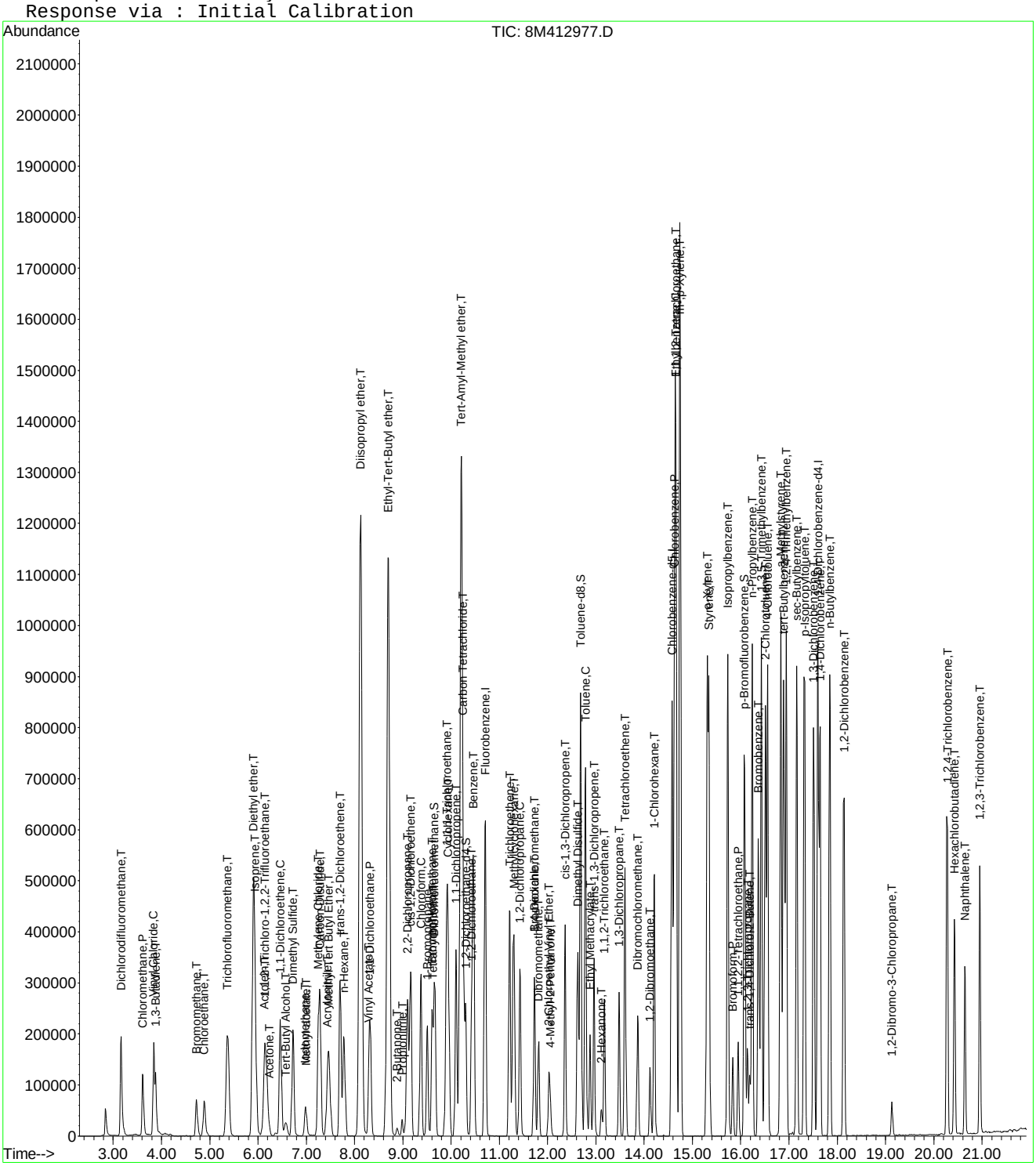

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061316\11M12597.D Vial: 6
Acq On : 13 Jun 2016 19:09 Operator: JDS
Sample : WG572509-03 20ug/L LCS2 STD 8260 Inst : hpms11
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 09:21:58 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	811546	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	675005	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	393247	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	203369	22.8975 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 91.60%		
43) 1,2-Dichloroethane-d4	10.23	65	206050	20.3464 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 81.40%		
57) Toluene-d8	12.47	98	725967	24.7526 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.00%		
78) p-Bromofluorobenzene	15.64	95	311277	25.6782 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.72%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	235956	18.5566 ug/L	94
3) Chloromethane	3.72	50	181682	17.8405 ug/L	98
4) Vinyl Chloride	3.95	62	172170	20.3581 ug/L	99
5) 1,3-Butadiene	3.99	54	38124	4.5336 ug/L	97
6) Bromomethane	4.85	94	112157	19.2885 ug/L	99
7) Chloroethane	5.00	64	108058	19.8862 ug/L	97
8) Trichlorofluoromethane	5.48	101	298738	17.7225 ug/L	99
9) Diethyl ether	6.01	59	212447	34.0783 ug/L	92
10) Isoprene	6.04	67	215996	20.7892 ug/L	88
11) Acrolein	6.23	56	47938	58.2321 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	156369	19.1177 ug/L	93
13) Acetone	6.34	43	27266	14.1490 ug/L	95
14) 1,1-Dichloroethene	6.56	61	258353	17.3896 ug/L	92
15) Tert-Butyl Alcohol	6.66	59	99278	186.2507 ug/L	92
16) Dimethyl Sulfide	6.81	62	193984	32.6947 ug/L	86
17) Iodomethane	7.06	142	200008	30.4246 ug/L	93
18) Methyl acetate	7.06	43	88158	13.7705 ug/L	91
19) Methylene Chloride	7.31	84	151846	19.7487 ug/L	77
20) Carbon Disulfide	7.36	76	445510	17.9120 ug/L	100
21) Acrylonitrile	7.49	53	43064	16.6672 ug/L	98
22) Methyl Tert Butyl Ether	7.52	73	373193	19.4601 ug/L	96
23) trans-1,2-Dichloroethene	7.74	96	162935	19.8158 ug/L	91
24) n-Hexane	7.82	57	218519	15.9562 ug/L	97
25) Diisopropyl ether	8.15	45	2248080	65.7857 ug/L	97
26) Vinyl Acetate	8.31	43	142888	12.6802 ug/L	97
27) 1,1-Dichloroethane	8.34	63	290331	17.5976 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	1974847	71.0026 ug/L	98
29) 2-Butanone	8.87	43	43327	14.8721 ug/L	89
30) Propionitrile	8.97	54	67653	79.2860 ug/L	97
31) 2,2-Dichloropropane	9.09	77	239385	18.5449 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	183360	20.2249 ug/L	89
33) Chloroform	9.35	83	293245	18.0996 ug/L	100
34) 1-Bromopropane	9.48	122	44836	28.1192 ug/L	100
35) Bromochloromethane	9.57	130	112530	20.8998 ug/L	85
36) Tetrahydrofuran	9.60	42	123327	59.9480 ug/L	89
38) 1,1,1-Trichloroethane	9.85	97	297927	18.6862 ug/L	95
39) Cyclohexane	9.88	56	308995	17.7830 ug/L	94
40) 1,1-Dichloropropene	10.04	75	216984	19.0605 ug/L	98
41) Carbon Tetrachloride	10.18	117	288494	18.5302 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	1713965	88.6834 ug/L	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061316\11M12597.D Vial: 6
Acq On : 13 Jun 2016 19:09 Operator: JDS
Sample : WG572509-03 20ug/L LCS2 STD 8260 Inst : hpms11
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 09:21:58 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.34	62	237001	18.0108 ug/L	97
45) Benzene	10.38	78	607564	19.4956 ug/L	99
46) Trichloroethene	11.08	130	220147	21.7333 ug/L	97
47) Methylcyclohexane	11.17	83	234566	18.7636 ug/L	92
48) 1,2-Dichloropropane	11.29	63	167105	19.3708 ug/L	97
49) 1,4-Dioxane	11.56	88	7810	165.2289 ug/L	98
50) Bromodichloromethane	11.57	83	233234	19.2589 ug/L	98
51) Dibromomethane	11.65	93	84351	18.7639 ug/L	93
52) 2-Chloroethyl Vinyl Ether	11.84	63	64281	15.1188 ug/L	98
53) 4-Methyl-2-Pentanone	11.87	58	40731	16.9850 ug/L	92
54) cis-1,3-Dichloropropene	12.17	75	265193	21.8933 ug/L	98
55) Dimethyl Disulfide	12.42	79	137059	18.8034 ug/L	89
58) Toluene	12.56	91	707778	20.7126 ug/L	100
59) Ethyl Methacrylate	12.64	69	140323	19.2313 ug/L	81
60) trans-1,3-Dichloropropene	12.73	75	214918	19.5944 ug/L	97
61) 1,1,2-Trichloroethane	12.93	97	123169	20.3270 ug/L	98
62) 2-Hexanone	12.86	43	64762	14.5524 ug/L #	91
63) 1,3-Dichloropropane	13.21	76	208929	21.4714 ug/L	86
64) Tetrachloroethene	13.34	164	168809	21.2432 ug/L	95
65) Dibromochloromethane	13.59	129	188657	20.4125 ug/L	98
66) 1,2-Dibromoethane	13.82	107	124827	20.5616 ug/L	100
67) 1-Chlorohexane	13.89	91	213591	18.9587 ug/L	89
68) Chlorobenzene	14.29	112	529813	21.1645 ug/L	100
69) 1,1,1,2-Tetrachloroethane	14.32	131	200235	19.7681 ug/L	100
70) Ethylbenzene	14.31	106	268671	20.9302 ug/L	96
71) m-,p-Xylene	14.39	106	659578	42.2658 ug/L	97
72) o-Xylene	14.92	106	324855	21.3900 ug/L	97
73) Styrene	14.95	104	540178	21.5278 ug/L	96
74) Bromoform	15.43	173	107885	19.2597 ug/L	100
75) Isopropylbenzene	15.31	105	844403	21.0240 ug/L	100
77) 1,1,2,2-Tetrachloroethane	15.52	83	107026	17.4770 ug/L	97
79) 1,2,3-Trichloropropane	15.70	110	44503	19.5919 ug/L	79
80) trans-1,4-Dichloro-2-Buten	15.74	53	24425	8.8954 ug/L #	1
81) n-Propylbenzene	15.79	91	963686	21.1603 ug/L	98
82) Bromobenzene	15.92	156	249380	20.8678 ug/L	90
83) 1,3,5-Trimethylbenzene	15.95	105	730923	21.0317 ug/L	98
84) 2-Chlorotoluene	16.05	91	667399	20.9225 ug/L	98
85) 4-Chlorotoluene	16.09	91	585424	20.4884 ug/L	99
86) a-Methylstyrene	16.34	118	390910	21.3216 ug/L	96
87) tert-Butylbenzene	16.39	134	161194	21.8927 ug/L	90
88) 1,2,4-Trimethylbenzene	16.44	105	730811	20.6506 ug/L	98
89) sec-Butylbenzene	16.65	105	867497	20.7883 ug/L	99
90) p-Isopropyltoluene	16.79	119	780882	20.3728 ug/L	99
91) 1,3-Dichlorobenzene	16.98	146	483328	20.9408 ug/L	97
92) 1,4-Dichlorobenzene	17.10	146	487700	20.8462 ug/L	98
93) n-Butylbenzene	17.28	91	632131	18.7157 ug/L	97
94) 1,2-Dichlorobenzene	17.57	146	439440	20.9005 ug/L	98
95) 1,2-Dibromo-3-Chloropropan	18.49	75	18945	14.1890 ug/L	100
96) 1,2,4-Trichlorobenzene	19.55	180	302766	19.6792 ug/L	98
97) Hexachlorobutadiene	19.69	225	123943	18.2866 ug/L	96
98) Naphthalene	19.90	128	496037	17.3703 ug/L	99
99) 1,2,3-Trichlorobenzene	20.19	180	264849	18.7572 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M12597.D 8260WT.M Tue Jun 14 09:21:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061316\11M12597.D Vial: 6
Acq On : 13 Jun 2016 19:09 Operator: JDS
Sample : WG572509-03 20ug/L LCS2 STD 8260 Inst : hpms11
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 9:21 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

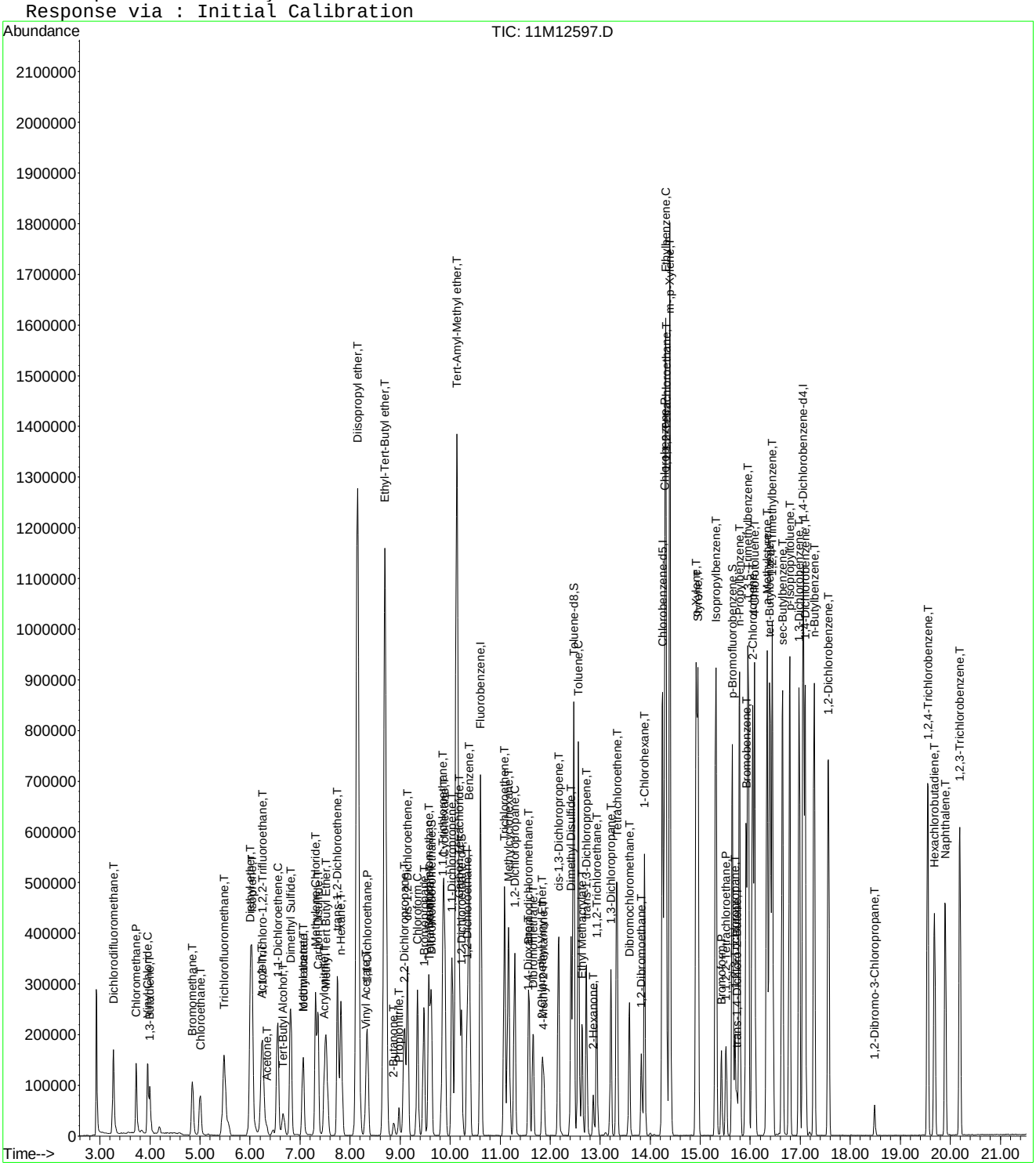

2.2 Semivolatiles Data

2.2.1 Semivolatiles GC/MS Data (Dioxane)

2.2.1.1 Summary Data

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW08SW-060816	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 12:17
Collect Date:	06/08/2016 08:00	**Dilution:**	1	**File ID:**	15M18406
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.39	J	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	50.1	20	129	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW08DW-060816	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 12:39
Collect Date:	06/08/2016 09:05	**Dilution:**	1	**File ID:**	15M18407
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	69.6	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	MW5-060816	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 13:02
Collect Date:	06/08/2016 10:10	**Dilution:**	1	**File ID:**	15M18408
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	0.819	J	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	38.5	20	129	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW03SW-060816	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 13:25
Collect Date:	06/08/2016 11:20	**Dilution:**	1	**File ID:**	15M18409
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.15	J	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	48.1	20	129	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.2.1.2 QC Summary Data

Example 8270 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	1261197
Cis = Concentration of the specific internal standard (ug/mL)	40
Ais = Area of the characteristic ion of the specific internal standard	608044
Cx = Concentration of the compound in the standard being measured (ug/mL)	50
RF = Calculated Response Factor	**1.65935**

2.0 Calculating the concentration (C) of a compound in water using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Vi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Vi = Initial volume of sample extracted from prep log (mL)	1021
Cx = Concentration of the compound in the sample being measured (ug/mL)	0.016947
Cx = Concentration of the compound in the sample being measured (ug/L)	**16.947**

3.0 Calculating the concentration (C) of a compound in soil using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Wi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Wi = Initial weight of sample extracted (g) from prep log	30
Cx = Concentration of the compound in the sample being measured (ug/g)	0.576763
Cx = Concentration of the compound in the sample being measured (ug/kg)	**576.7627**

Dry weight correction:

Percent solids (PCT_S)	50
Cd = (Cx) (100)/PCT_S	**1153.525** ug/kg

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve plot

b = intercept from curve plot

Step 2: Calculate y from Quantitation Report

y = 16790/784838 = 0.02139

Step 3: Solve for x

x = (y - b)/m = [(0.02139 -(- 0.0435)]/ 0.0783 = 0.829

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.829) = 20.72 ug/L

Example Spreadsheet Calculation:

Slope from curve, m:	0.0783	
Intercept from curve, b:	-0.0435	
Area of analyte, Ax:	16790	
Area of Internal Standard , Ais:	784484	
Concentration of IS, Cis	25.00	ug/L
Response Ratio (y) :	0.021403	
Amount Ratio:	0.828897	
Concentration (Cx):	20.72241	ug/L

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**0.0259**	
Value of B from plot:	**0.0596**	
Value of C from plot:	**-0.0165**	
Area of analyte from quantitation report:	**203233**	
Area of IS from quantiation report:	**1425653**	
Response ratio, y:	**0.142554**	
C - y:	**-0.15905**	
Root 1 - Computed amount ratio , X1:	**-3.88278**	
Root 2 - Computed amount ratio , X2:	**1.581623**	use this solution
Concentration of IS, Cis:	**40.00**	
Concentration of analyte, Cx:	**63.26**	ug/L

Microbac Laboratories Inc.
Continuous Sample Extract Log

Workgroup: WG572341
Analyst: CPD
Spike Analyst: CPD
Method: 3520C
Run Date: 06/13/2016 16:16
SOP: EXB01 Revison 20
Spike Witness: AED
Surr Solution: STD74051

TIME ON: 16:55 OFF: 12:40 ON: 15:20 OFF: 11:00

CH2CL2 Lot #: COA18982
sodium sulfate Lot #: COA18814
1:1 H2SO4 Lot #: RGT36755

	SAMPLE #	Type	Reference	Prod	pH	Init Amnt	Surr Amnt	Spike Amnt	Spike Sol	Final Vol	Color
1	L16060497-01	RS01		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
2	L16060497-02	MS01	L16060497-01	827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD66388	1 mL	Transparent
3	L16060497-03	SD01	L16060497-01	827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD66388	1 mL	Transparent
4	L16060504-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
5	L16060504-02	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
6	L16060504-03	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
7	L16060504-04	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
8	L16060615-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
9	L16060615-02	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
10	L16060615-03	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
11	L16060615-04	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
12	L16060616-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
13	L16060616-02	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
14	L16060616-03	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
15	L16060637-03	SAMP		827-DIOX	<2	1000 mL	.05 mL			1 mL	Transparent
16	WG572341-01	BLANK		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
17	WG572341-02	LCS		827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD66388	1 mL	Transparent
18	WG572341-03	REF	L16060497-01	827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
19	WG572341-04	MS	L16060497-01	827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD66388	1 mL	Transparent
20	WG572341-05	MSD	L16060497-01	827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD66388	1 mL	Transparent

Analyst: Charlie Davis

Reviewer: Justin Hesson

EXTRACT - Modified 01/23/2009
PDF ID: 4809358
Report generated: 06/16/2016 08:25

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 061016
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG571947

Internal STD: STD75471 Surrogate STD: NA Calibration STD
CCV STD: STD74784 LCS STD: STD74214 MS/MSD STD:

Comments: L16051582-01, and L16060024-01,03,05 were already sent for re-extract due to QC contamination. L16060024s are being re-extracted as 827-SPE-DIOX only.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18332	BAKEOUT-IS CHECK	1	1		06/10/16 08:27
2	15M18333	BAKEOUT-IS CHECK	1	1		06/10/16 08:53
3	15M18334	WG571981-01 5PPM DFTPP STD	1	1	STD75016	06/10/16 09:13
4	15M18335	BAKEOUT-IS CHECK	1	1		06/10/16 09:31
5	15M18336	BAKEOUT-IS CHECK	1	1		06/10/16 09:53
6	15M18337	WG572230-01 5PPM DFTPP STD	1	1	STD75016	06/10/16 10:18
7	15M18338	WG572230-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 10:36
8	15M18339	WG572230-03 10 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 11:00
9	15M18340	WG572230-04 7.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 11:22
10	15M18341	WG572230-05 2.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 11:45
11	15M18342	WG572230-06 1 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 12:08
12	15M18343	WG572230-07 0.4 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 12:30
13	15M18344	WG572230-08 5PPM 1,4-DIOXANE ALT SRC	1	1	STD74214	06/10/16 12:52
14	15M18345	WG571410-01 BLANK 6/6	1	1		06/10/16 13:15
15	15M18346	WG571410-02 LCS 6/6	1	1		06/10/16 13:38
16	15M18347	WG571410-03 LCSDUP 6/6	1	1		06/10/16 14:01
17	15M18348	WG571404-01 BLANK 6/2	1	1		06/10/16 14:24
18	15M18349	WG571404-02 LCS 6/2	1	1		06/10/16 14:47
19	15M18350	WG571404-03 LCSDUP 6/2	1	1		06/10/16 15:09
20	15M18351	L16060067-01 827-DIOX	1	1		06/10/16 15:32
21	15M18352	L16051582-01 5X 827-DIOX	1	5		06/10/16 15:55
22	15M18353	L16060024-05 20X 827-DIOX	1	20		06/10/16 16:18
23	15M18354	L16060024-03 20X 827-DIOX	1	20		06/10/16 16:40
24	15M18355	L16060024-01 20,000X 827-DIOX	1	20000		06/10/16 17:03
25	15M18356	L16060067-01 2X 827-DIOX	1	2		06/10/16 17:26
26	15M18357	L16060024-03 100X 827-DIOX	1	100		06/10/16 17:49

Comments

Seq.	Rerun	Dil.	Reason	Analytes
3				
	DFTPP check after installing new source and retuning.			
17				
	WG571404-01 BLANK 6/2 dioxane hit above the RL.			

Page: 1 Approved: 13-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 061016

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG571947

Internal STD: STD75471 Surrogate STD: NA

CCV STD: STD74784 LCS STD: STD74214

Comments

Seq.	Rerun	Dil.	Reason	Analytes
18				
	WG571404-02 LCS 6/2 fails high.			
19				
	WG571404-03 LCSDUP 6/2 fails high.			
20	X	2	Over Calibration Range	
	L16060067-01			
23	X	100	Over Calibration Range	
	L16060024-03 20X DNR			

Page: 2 Approved: 13-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 061616
Analyst1: SCB Analyst2: MES
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG572971

Internal STD: STD75471, 76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18399	WG572958-01 5PPM DFTPP STD	1	1	STD75016	06/16/16 09:38
2	15M18400	WG572958-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/16/16 10:00
3	15M18401	WG572341-01 BLANK 6/13	1	1		06/16/16 10:23
4	15M18402	WG572341-02 LCS 6/13	1	1		06/16/16 10:46
5	15M18403	L16060497-01 REF 827-DIOX	1	1		06/16/16 11:08
6	15M18404	L16060497-02 MS 827-DIOX	1	1		06/16/16 11:31
7	15M18405	L16060497-03 MSD 827-DIOX	1	1		06/16/16 11:54
8	15M18406	L16060504-01 827-DIOX	1	1		06/16/16 12:17
9	15M18407	L16060504-02 827-DIOX	1	1		06/16/16 12:39
10	15M18408	L16060504-03 827-DIOX	1	1		06/16/16 13:02
11	15M18409	L16060504-04 827-DIOX	1	1		06/16/16 13:25
12	15M18410	L16060615-01 827-DIOX	1	1		06/16/16 13:48
13	15M18411	L16060615-02 827-DIOX	1	1		06/16/16 14:11
14	15M18412	L16060615-03 827-DIOX	1	1		06/16/16 14:33
15	15M18413	L16060615-04 827-DIOX	1	1		06/16/16 14:56
16	15M18414	L16060616-01 827-DIOX	1	1		06/16/16 15:19
17	15M18415	L16060616-02 827-DIOX	1	1		06/16/16 15:42
18	15M18416	L16060616-03 827-DIOX	1	1		06/16/16 16:04
19	15M18417	L16060637-03 827-DIOX	1	1		06/16/16 16:27

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 20-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 10-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75640
Analytical Workgroups: L16051582, L16060024, L16060067

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 12-JUN-2016

Secondary Reviewer: 13-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-13-2016 08:34:44

Microbac Laboratories Inc.

Data Checklist

Date: 16-JUN-2016
Analyst: SCB
Analyst: MES
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75783
Analytical Workgroups: L16060497, L16060504, L16060615, L16060616, L16060637

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	SCB
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 20-JUN-2016 Sarah Bogolin

Secondary Reviewer: 20-JUN-2016 Eric C. Zum

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-20-2016 16:55:27

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8270D

AAB#: WG572971

Login Number: L16060504

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW08SW-060816	01	06/08/16					06/13/2016	5.3	7		06/16/16	2.8	40	
18CPTMW08DW-060816	02	06/08/16					06/13/2016	5.3	7		06/16/16	2.8	40	
MW5-060816	03	06/08/16					06/13/2016	5.3	7		06/16/16	2.9	40	
18CPTMW03SW-060816	04	06/08/16					06/13/2016	5.2	7		06/16/16	2.9	40	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4814654
Report generated 06/21/2016 08:51

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060504
Instrument Id: HPMS15
Workgroup (AAB#): WG572971

Method: 827-DIOXANE
CAL ID: HPMS15-10-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1
L16060504-01	1.00	01	50.1
L16060504-02	1.00	01	69.6
L16060504-03	1.00	01	38.5
L16060504-04	1.00	01	48.1
WG572341-01	1.00	01	29.4
WG572341-02	1.00	01	35.7

Surrogates	Surrogate Limits		
1 - 1,4-Dioxane-d8	20	-	129

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4814666
Report generated: 06/21/2016 08:51

METHOD BLANK SUMMARY

Login Number: L16060504
Blank File ID: 15M18401
Prep Date: 06/13/16 16:16
Analyzed Date: 06/16/16 10:23
Analyst: MES

Work Group: WG572971
Blank Sample ID: WG572341-01
Instrument ID: HPMS15
Method: 8270D

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572341-02	15M18402	06/16/16 10:46	01
18CPTMW08SW-060816	L16060504-01	15M18406	06/16/16 12:17	01
18CPTMW08DW-060816	L16060504-02	15M18407	06/16/16 12:39	01
MW5-060816	L16060504-03	15M18408	06/16/16 13:02	01
18CPTMW03SW-060816	L16060504-04	15M18409	06/16/16 13:25	01

Report Name: BLANK_SUMMARY
PDF File ID: 4814656
Report generated 06/21/2016 08:51

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060504 Prep Date: 06/13/16 16:16 Sample ID: WG572341-01
Instrument ID: HPMS15 Run Date: 06/16/16 10:23 Prep Method: 3520C
File ID: 15M18401 Analyst: MES Method: 8270D
Workgroup (AAB#): WG572971 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS15-10-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
1,4-Dioxane	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	29.4	20 - 129	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4814657
21-JUN-2016 08:51

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060504 Run Date: 06/16/2016 Sample ID: WG572341-02
Instrument ID: HPMS15 Run Time: 10:46 Prep Method: 3520C
File ID: 15M18402 Analyst: MES Method: 8270D
Workgroup (AAB#): WG572971 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD66388 Cal ID: HPMS15-10-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
1,4-Dioxane	5.00	1.67	33.3	30 - 104	

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	35.7	20 - 129	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4814658
Report generated: 06/21/2016 08:51

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16060504
Instrument: HPMS15
Analyst: MES
Workgroup: WG572230

Tune ID: WG572230-01
Run Date: 06/10/2016
Run Time: 10:18
File ID: 15M18337
Cal ID: HPMS15 - 10-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	39.5	52157	PASS
68.0	69.0	0	2.00	1.91	1026	PASS
69.0	198	0	100	40.8	53844	PASS
70.0	69.0	0	2.00	0.223	120	PASS
127	198	40.0	60.0	51.4	67853	PASS
197	198	0	1.00	0.383	505	PASS
198	198	100	100	100	131981	PASS
199	198	5.00	9.00	6.72	8869	PASS
275	198	10.0	30.0	26.4	34853	PASS
365	198	1.00	100	3.17	4186	PASS
441	443	0.0100	100	73.9	15632	PASS
442	198	40.0	100	83.4	110112	PASS
443	442	17.0	23.0	19.2	21163	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG572230-02	STD-CCV	01	06/10/2016 10:36	
WG572230-03	STD	01	06/10/2016 11:00	
WG572230-04	STD	01	06/10/2016 11:22	
WG572230-05	STD	01	06/10/2016 11:45	
WG572230-06	STD	01	06/10/2016 12:08	
WG572230-07	STD	01	06/10/2016 12:30	
WG572230-08	SSCV	01	06/10/2016 12:52	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4814663
Report generated 06/21/2016 08:51

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16060504
Instrument: HPMS15
Analyst: MES
Workgroup: WG572958

Tune ID: WG572958-01
Run Date: 06/16/2016
Run Time: 09:38
File ID: 15M18399
Cal ID: HPMS15 - 10-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	39.7	42335	PASS
68.0	69.0	0	2.00	1.65	714	PASS
69.0	198	0	100	40.7	43391	PASS
70.0	69.0	0	2.00	0.643	279	PASS
127	198	40.0	60.0	52.1	55592	PASS
197	198	0	1.00	0.0637	68	PASS
198	198	100	100	100	106736	PASS
199	198	5.00	9.00	6.72	7172	PASS
275	198	10.0	30.0	25.9	27632	PASS
365	198	1.00	100	3.04	3241	PASS
441	443	0.0100	100	76.2	12912	PASS
442	198	40.0	100	81.0	86427	PASS
443	442	17.0	23.0	19.6	16937	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG572958-02	CCV	01	06/16/2016 10:00	
WG572341-01	BLANK	01	06/16/2016 10:23	
WG572341-02	LCS	01	06/16/2016 10:46	
L16060504-01	18CPTMW08SW-060816	01	06/16/2016 12:17	
L16060504-02	18CPTMW08DW-060816	01	06/16/2016 12:39	
L16060504-03	MW5-060816	01	06/16/2016 13:02	
L16060504-04	18CPTMW03SW-060816	01	06/16/2016 13:25	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4814663
Report generated 06/21/2016 08:51

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060504
Analytical Method: 8270D
ICAL Workgroup: WG572230

Instrument ID: HPMS15
Initial Calibration Date: 10-JUN-16 12:30
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
1,4-Dioxane		0.3253	2.74		

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4814659
Report generated 06/21/2016 08:51

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060504

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 10-JUN-16 12:30

Column ID: F

Analyte	WG572230-02			WG572230-03			WG572230-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	5.00	107215.000	0.3234	10.0	192761.000	0.3420	7.50	146003.000	0.3236

INT_CAL - Modified 03/06/2008
PDF File ID: 4814659
Report generated 06/21/2016 08:51

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060504

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 10-JUN-16 12:30

Column ID: F

Analyte	WG572230-05			WG572230-06			WG572230-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	2.50	36488.0000	0.3190	1.00	18621.0000	0.3169	0.400	6733.00000	0.3266

INT_CAL - Modified 03/06/2008
PDF File ID: 4814659
Report generated 06/21/2016 08:51

Calibration Table Report
Method: DIOXANE_D8.M
Title: OVD MSS01 SIM 1,4-dioxane ICAL 061016
Last Calibration: Fri Jun 10 12:46:00 2016
Curve:WG572230
Calibration Files

Compound	10 15M18339.D	7.5 15M18340.D	5 15M18338.D	2.5 15M18341.D	1 15M18342.D	0.4 15M18343.D	Avg	%RSD	Linear
1,4-Dichlorobenzene-d4	ISTD								
1,4-Dioxane	0.342	0.324	0.324	0.319	0.317	0.327	0.325	2.735	
1,4-Dioxane-d8	0.440	0.415	0.417	0.411	0.409		0.419	2.988	
Nitrobenzene-d5	1.115	1.034	0.970	0.852	0.755	0.697	0.904	18.064	0.994
2-Fluorobiphenyl	2.685	2.595	2.549	2.638	2.570	2.639	2.613	1.934	
p-Terphenyl-d14	2.815	2.671	2.579	2.506	2.382	2.421	2.562	6.338	

Sun Jun 12 19:13:55 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060504 Run Date: 06/10/2016 Sample ID: WG572230-08
Instrument ID: HPMS15 Run Time: 12:52 Method: 8270D
File ID: 15M18344 Analyst: MES QC Key: DOD4
ICal Workgroup: WG572230 Cal ID: HPMS15 - 10-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
1,4-Dioxane		5000	5110	ug/L	0.333	2.30	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4814662
Report generated 06/21/2016 08:51

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504
Run Date: 06/16/2016
Sample ID: WG572958-02
Instrument ID: HPMS15
Run Time: 10:00
Method: 8270D
File ID: 15M18400
Analyst: MES
QC Key: DOD4
Workgroup (AAB#): WG572971
Cal ID: HPMS15 - 10-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,4-Dioxane		5000	5080	ug/L	0.331	1.65	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4814664
Report generated 06/21/2016 08:51

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060504
Instrument ID: HPMS15
Workgroup (AAB#): WG572971

ICAL CCV Number: WG572230-02
CAL ID: HPMS15-10-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG572230-02	NA	NA	66625
Upper Limit	NA	NA	133250
Lower Limit	NA	NA	33313
L16060504-01	1.00	01	54223
L16060504-02	1.00	01	55371
L16060504-03	1.00	01	51940
L16060504-04	1.00	01	56328
WG572341-01	1.00	01	57712
WG572341-02	1.00	01	54087

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4814665
Report generated 06/21/2016 08:51

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060504
Instrument ID: HPMS15
Workgroup (AAB#): WG572971

ICAL CCV Number: WG572230-02
CAL ID: HPMS15-10-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG572230-02	NA	NA	6.94
Upper Limit	NA	NA	7.44
Lower Limit	NA	NA	6.44
L16060504-01	1.00	01	6.951
L16060504-02	1.00	01	6.951
L16060504-03	1.00	01	6.951
L16060504-04	1.00	01	6.951
WG572341-01	1.00	01	6.948
WG572341-02	1.00	01	6.951

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4814667
Report generated: 06/21/2016 08:51

2.2.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18406.D
Acq On : 16 Jun 2016 12:17
Operator : MES
Sample : L16060504-01 827-DIOX
Misc : 1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 16 14:00:50 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.951	152	54223	1.0000	ug/mL	# 0.01
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.876	96	56903	2.5073	ug/L	0.01
Spiked Amount 5.000			Recovery	=	50.20%	
4) Nitrobenzene-d5	7.452	82	3625	0.2803	ug/L	0.02
Spiked Amount 5.000			Recovery	=	5.60%	
5) 2-Fluorobiphenyl	8.937	172	205	0.0014	ug/L	0.01
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.221	244	1194	0.0086	ug/L	0.04
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.912	58	24573	1.3929	ug/L	82

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18406.D
Acq On : 16 Jun 2016 12:17
Operator : MES
Sample : L16060504-01 827-DIOX
Misc : 1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 16 14:00:50 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

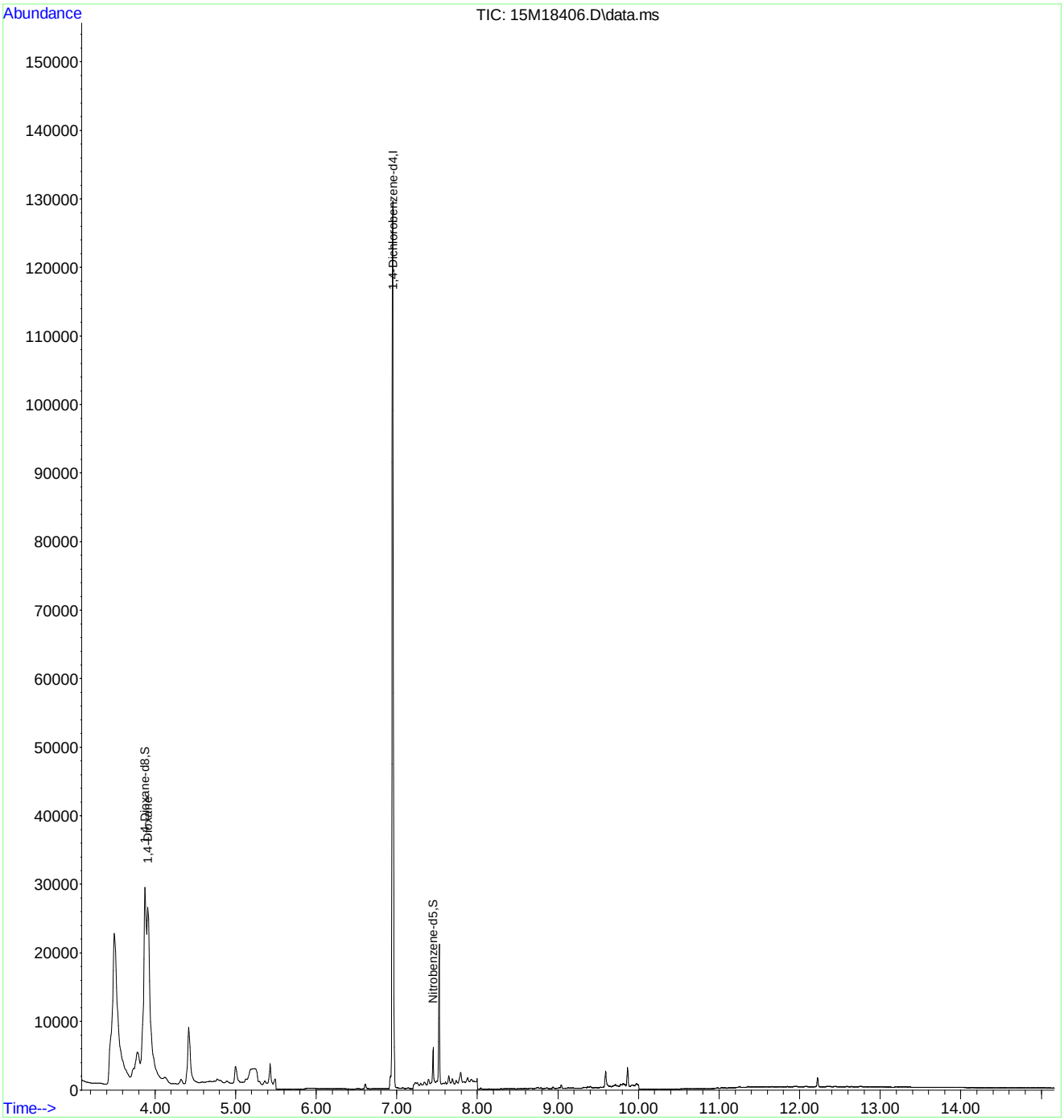

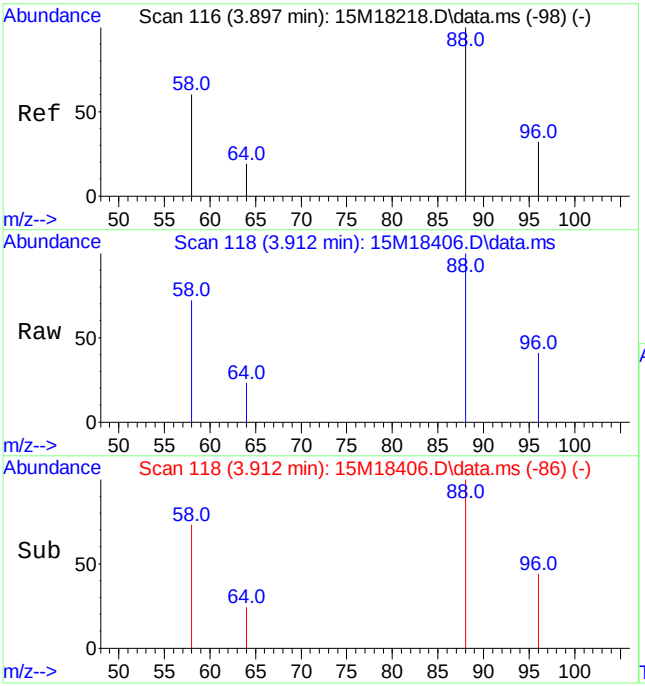

#2
1,4-Dioxane
Concen: 1.39 ug/L
RT: 3.912 min Scan# 118
Delta R.T. 0.015 min
Lab File: 15M18406.D
Acq: 16 Jun 2016 12:17

Tgt Ion: 58 Resp: 24573

Ion	Ratio	Lower	Upper
58	100		
88	147.0	103.1	240.7

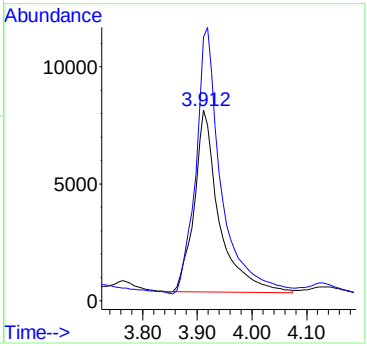

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18407.D
Acq On : 16 Jun 2016 12:39
Operator : MES
Sample : L16060504-02 827-DIOX
Misc : 1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 16 14:00:56 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.951	152	55371	1.0000	ug/mL	# 0.01
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.883	96	80688	3.4816	ug/L	0.02
Spiked Amount 5.000			Recovery	=	69.60%	
4) Nitrobenzene-d5	7.452	82	6747	0.3315	ug/L	0.02
Spiked Amount 5.000			Recovery	=	6.60%	
5) 2-Fluorobiphenyl	8.941	172	190	0.0013	ug/L	0.01
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.229	244	889	0.0063	ug/L	0.05
Spiked Amount 5.000			Recovery	=	0.20%	

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18407.D
Acq On : 16 Jun 2016 12:39
Operator : MES
Sample : L16060504-02 827-DIOX
Misc : 1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 16 14:00:56 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

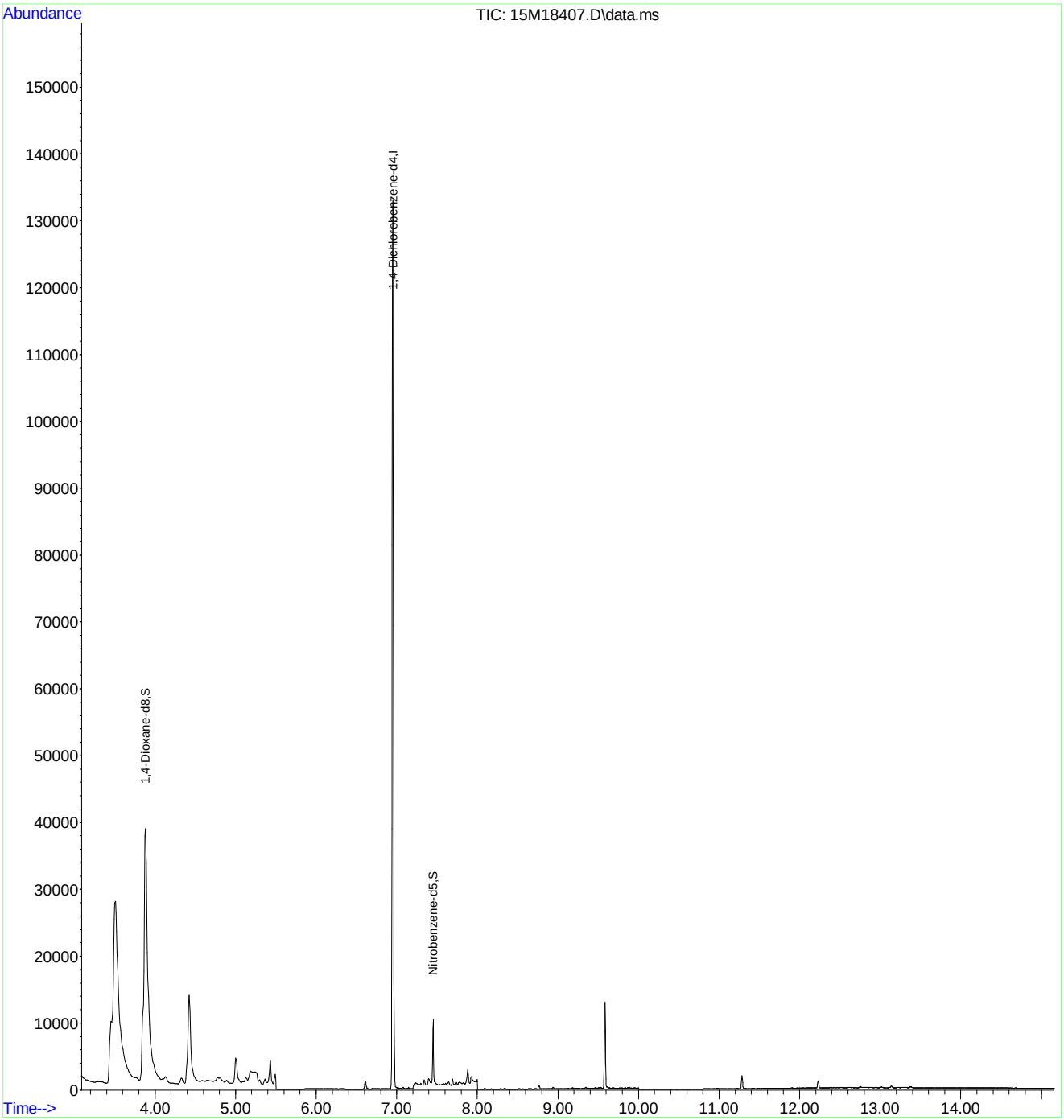

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18408.D
Acq On : 16 Jun 2016 13:02
Operator : MES
Sample : L16060504-03 827-DIOX
Misc : 1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 16 14:00:59 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.951	152	51940	1.0000	ug/mL	# 0.01
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.876	96	41899	1.9273	ug/L	0.01
Spiked Amount 5.000			Recovery	=	38.60%	
4) Nitrobenzene-d5	7.452	82	2114	0.2559	ug/L	0.02
Spiked Amount 5.000			Recovery	=	5.20%	
5) 2-Fluorobiphenyl	8.941	172	137	0.0010	ug/L	0.01
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.232	244	437	0.0033	ug/L	0.05
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.918	58	13841	0.8191	ug/L	82

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18408.D
Acq On : 16 Jun 2016 13:02
Operator : MES
Sample : L16060504-03 827-DIOX
Misc : 1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 16 14:00:59 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

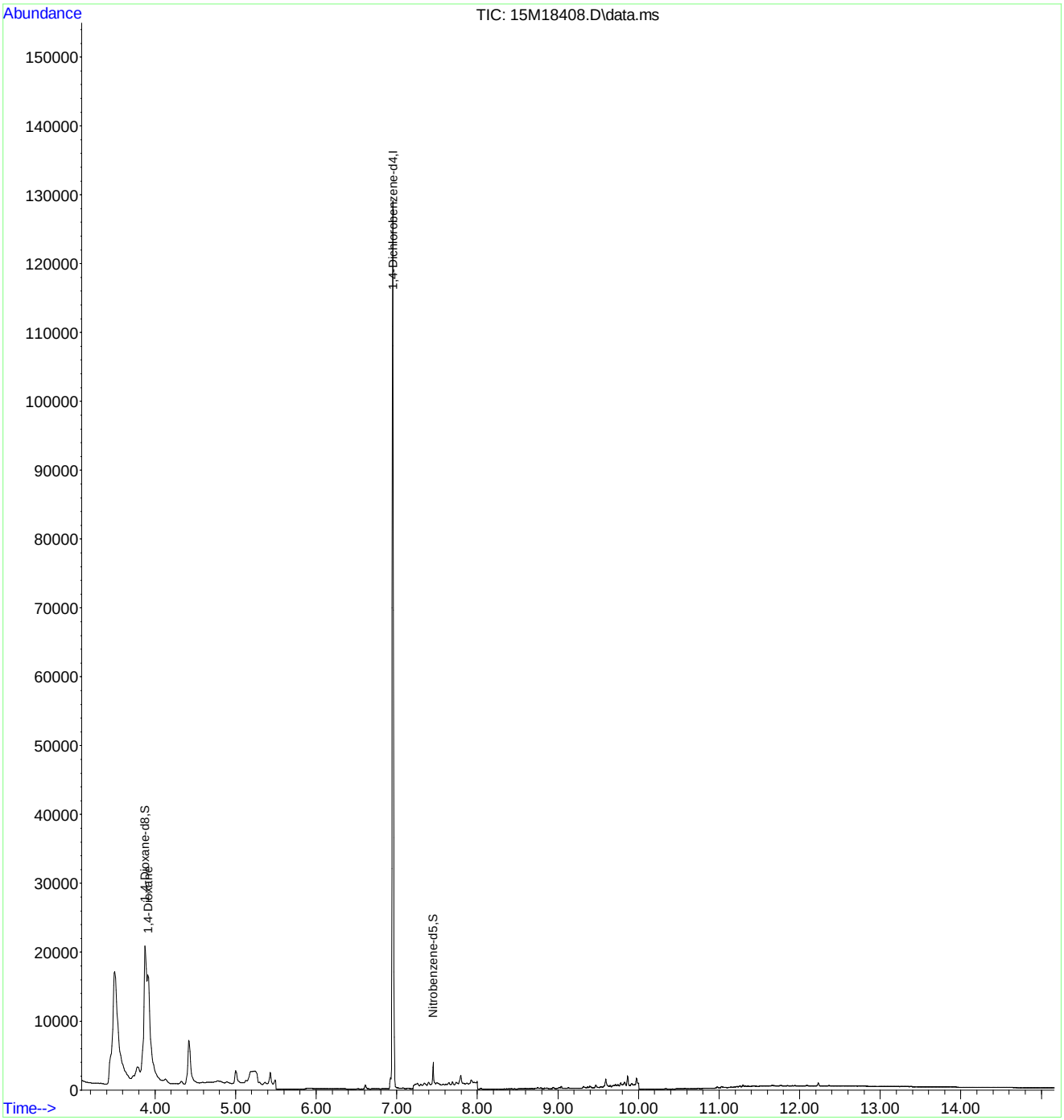

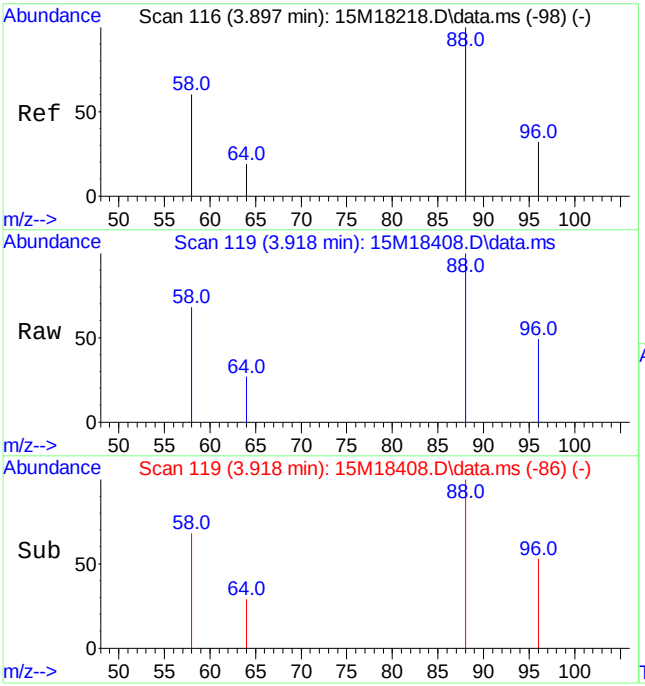

#2
1,4-Dioxane
Concen: 0.82 ug/L
RT: 3.918 min Scan# 119
Delta R.T. 0.021 min
Lab File: 15M18408.D
Acq: 16 Jun 2016 13:02

Tgt Ion: 58 Resp: 13841

Ion	Ratio	Lower	Upper
58	100		
88	146.6	103.1	240.7

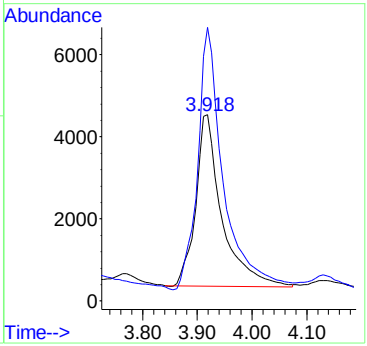

15M18408.D DIOXANE_D8.M Thu Jun 16 14:01:00 2016 Page 3

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18409.D
Acq On : 16 Jun 2016 13:25
Operator : MES
Sample : L16060504-04 827-DIOX
Misc : 1,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jun 16 14:01:02 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.951	152	56328	1.0000	ug/mL	# 0.01
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.876	96	56747	2.4070	ug/L	0.01
Spiked Amount 5.000			Recovery	=	48.20%	
4) Nitrobenzene-d5	7.452	82	4539	0.2931	ug/L	0.02
Spiked Amount 5.000			Recovery	=	5.80%	
5) 2-Fluorobiphenyl	8.941	172	105	0.0007	ug/L	0.02
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.236	244	1247	0.0086	ug/L	0.05
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.919	58	21147	1.1539	ug/L	87

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18409.D
Acq On : 16 Jun 2016 13:25
Operator : MES
Sample : L16060504-04 827-DIOX
Misc : 1,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jun 16 14:01:02 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

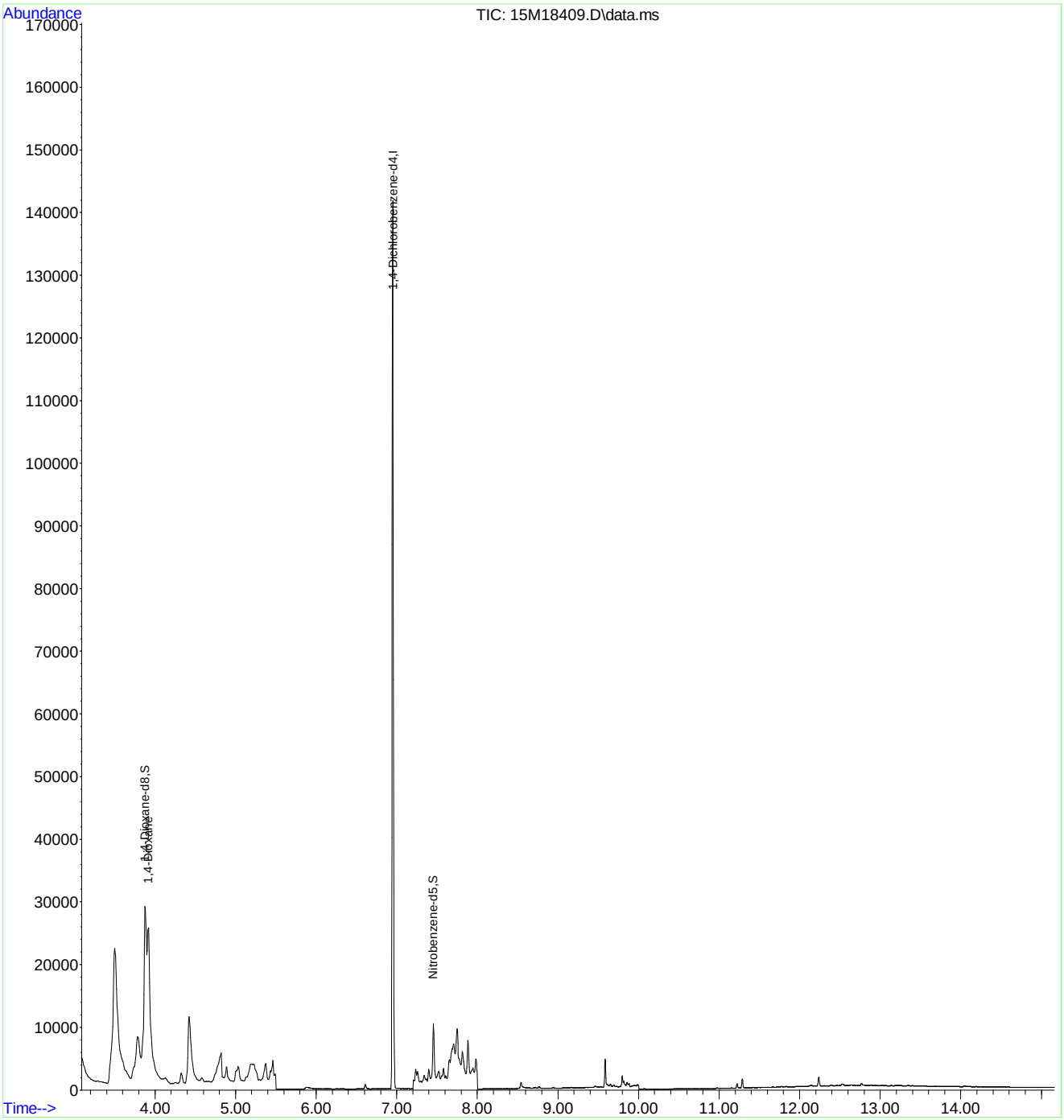

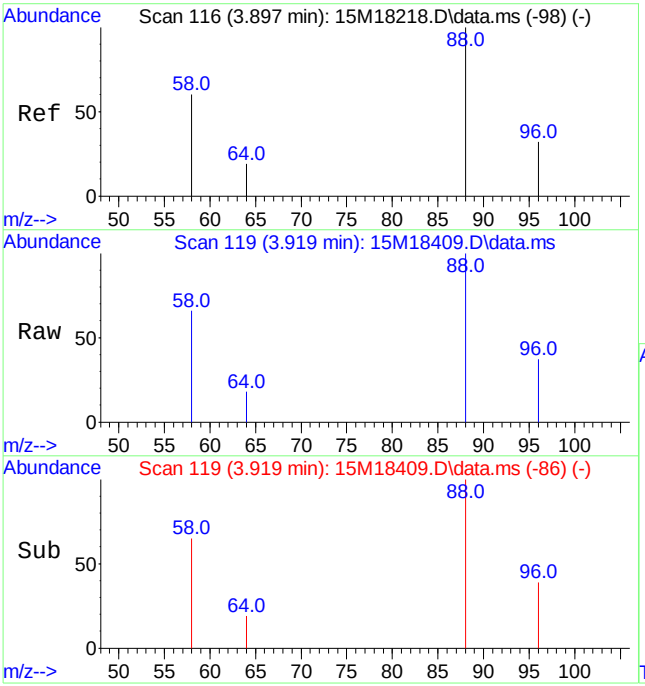

#2
1,4-Dioxane
Concen: 1.15 ug/L
RT: 3.919 min Scan# 119
Delta R.T. 0.022 min
Lab File: 15M18409.D
Acq: 16 Jun 2016 13:25

Tgt Ion: 58 Resp: 21147

Ion	Ratio	Lower	Upper
58	100		
88	154.2	103.1	240.7

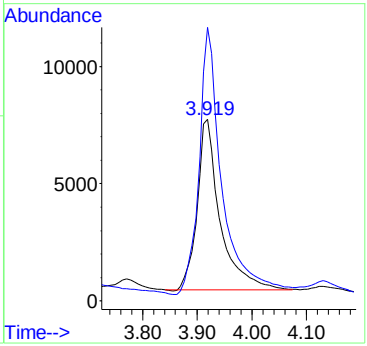

2.2.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18338.D
Acq On : 10 Jun 2016 10:36
Operator : MES
Sample : WG572230-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 10 18:15:30 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.940	152	66625	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.862	96	138302	4.9596 ug/L	0.00
Spiked Amount 5.000			Recovery	= 99.20%	
4) Nitrobenzene-d5	7.436	82	321639	4.7189 ug/L	0.00
Spiked Amount 5.000			Recovery	= 94.40%	
5) 2-Fluorobiphenyl	8.926	172	845013	4.8542 ug/L	0.00
Spiked Amount 5.000			Recovery	= 97.00%	
6) p-Terphenyl-d14	12.181	244	855352	5.0103 ug/L	0.00
Spiked Amount 5.000			Recovery	= 100.20%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.897	58	107215	4.9462 ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18338.D
Acq On : 10 Jun 2016 10:36
Operator : MES
Sample : WG572230-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 10 18:15:30 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

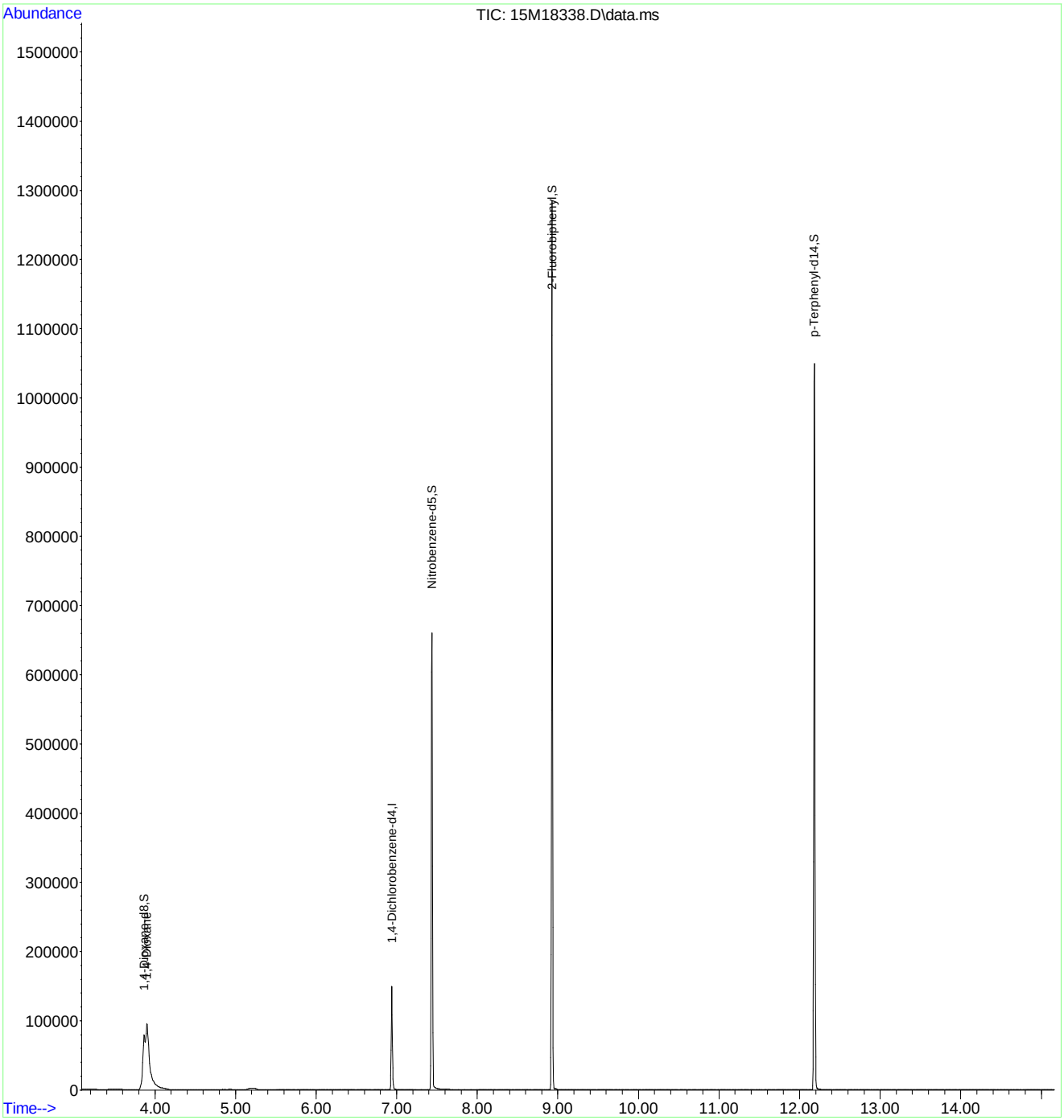

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18339.D
Acq On : 10 Jun 2016 11:00
Operator : MES
Sample : WG572230-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 10 18:15:34 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	56194	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	248072	10.5474	ug/L	0.00
Spiked Amount 5.000			Recovery = 211.00%			
4) Nitrobenzene-d5	7.436	82	628184	10.6403	ug/L	0.00
Spiked Amount 5.000			Recovery = 212.80%			
5) 2-Fluorobiphenyl	8.926	172	1513331	10.3070	ug/L	0.00
Spiked Amount 5.000			Recovery = 206.20%			
6) p-Terphenyl-d14	12.184	244	1587021	11.0217	ug/L	0.00
Spiked Amount 5.000			Recovery = 220.40%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	192761	10.5434	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18339.D
Acq On : 10 Jun 2016 11:00
Operator : MES
Sample : WG572230-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 10 18:15:34 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

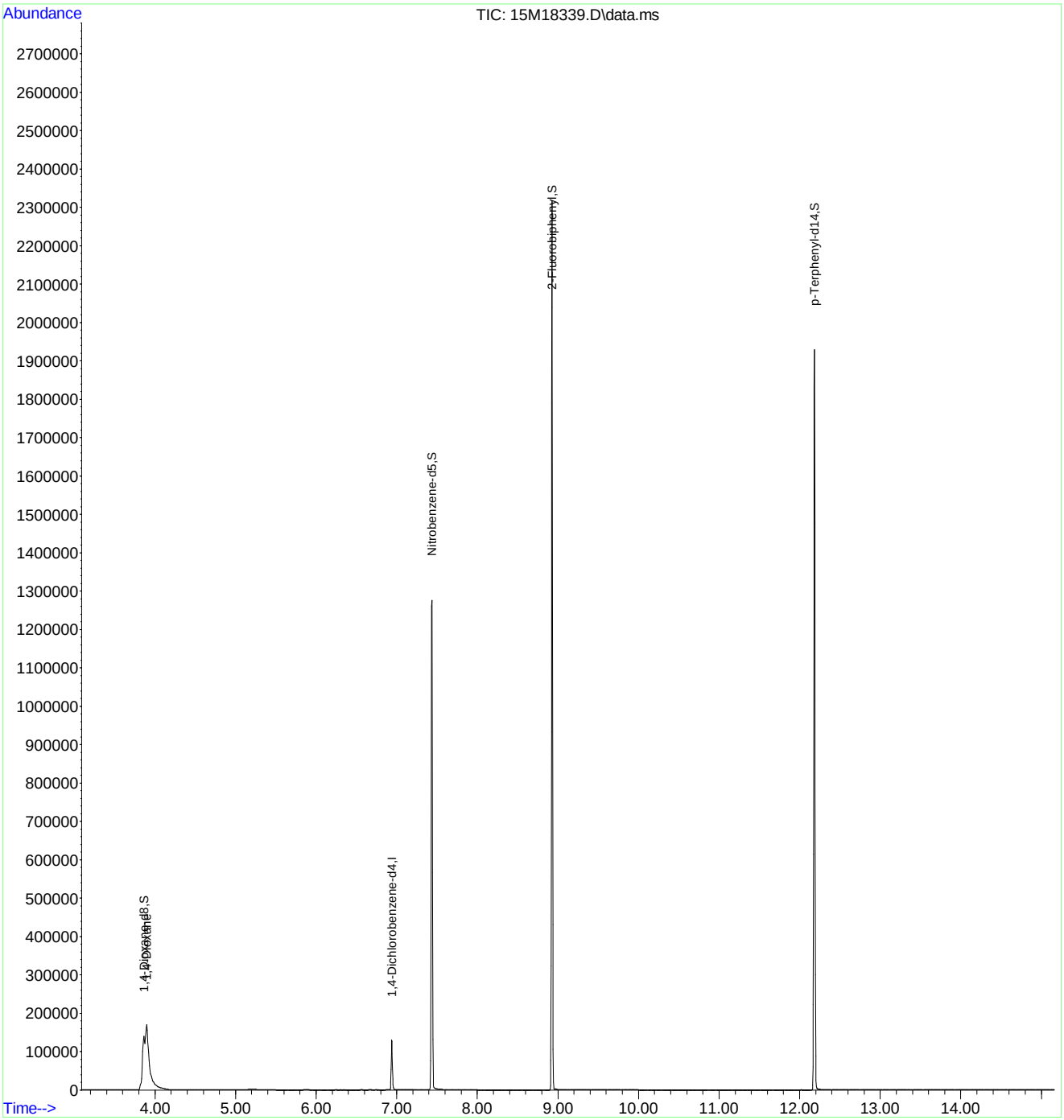

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18340.D
Acq On : 10 Jun 2016 11:22
Operator : MES
Sample : WG572230-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 10 18:15:37 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	60457	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	187351	7.4040	ug/L	0.00
Spiked Amount 5.000			Recovery	= 148.00%		
4) Nitrobenzene-d5	7.431	82	466388	7.4103	ug/L	0.00
Spiked Amount 5.000			Recovery	= 148.20%		
5) 2-Fluorobiphenyl	8.926	172	1170859	7.4122	ug/L	0.00
Spiked Amount 5.000			Recovery	= 148.20%		
6) p-Terphenyl-d14	12.192	244	1205938	7.7846	ug/L	0.01
Spiked Amount 5.000			Recovery	= 155.60%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	146003	7.4228	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18340.D
Acq On : 10 Jun 2016 11:22
Operator : MES
Sample : WG572230-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 10 18:15:37 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

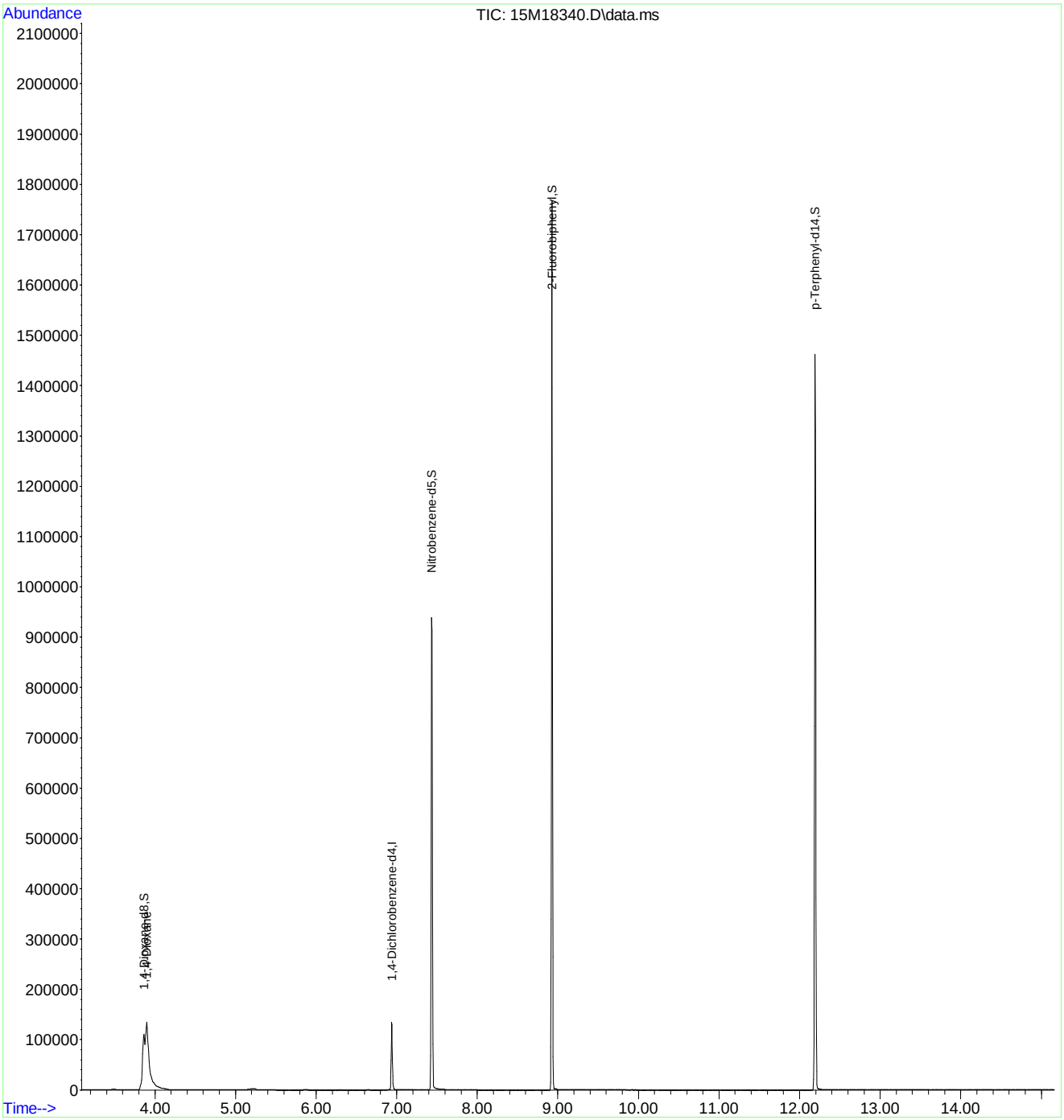

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18341.D
Acq On : 10 Jun 2016 11:45
Operator : MES
Sample : WG572230-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 10 18:15:40 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	45954	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.848	96	46972	2.4422	ug/L	-0.01
Spiked Amount 5.000			Recovery	=	48.80%	
4) Nitrobenzene-d5	7.436	82	97423	2.1945	ug/L	0.00
Spiked Amount 5.000			Recovery	=	43.80%	
5) 2-Fluorobiphenyl	8.926	172	301696	2.5127	ug/L	0.00
Spiked Amount 5.000			Recovery	=	50.20%	
6) p-Terphenyl-d14	12.188	244	286720	2.4350	ug/L	0.00
Spiked Amount 5.000			Recovery	=	48.60%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.883	58	36488	2.4405	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18341.D
Acq On : 10 Jun 2016 11:45
Operator : MES
Sample : WG572230-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 10 18:15:40 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

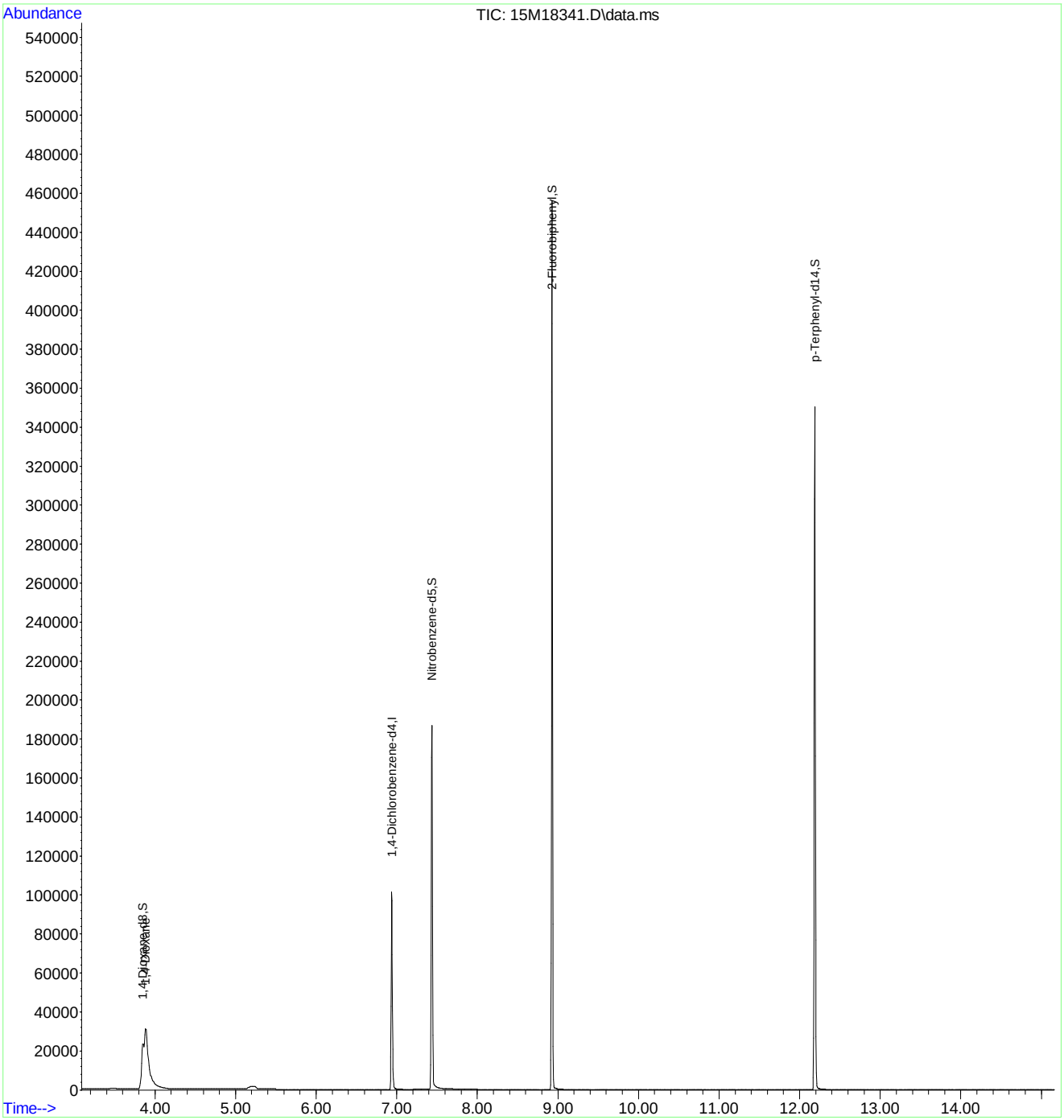

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18342.D
Acq On : 10 Jun 2016 12:08
Operator : MES
Sample : WG572230-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 10 18:15:43 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	59037	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	24054	0.9735	ug/L	0.00
Spiked Amount 5.000			Recovery = 19.40%			
4) Nitrobenzene-d5	7.436	82	44358	0.9184	ug/L	0.00
Spiked Amount 5.000			Recovery = 18.40%			
5) 2-Fluorobiphenyl	8.926	172	151018	0.9790	ug/L	0.00
Spiked Amount 5.000			Recovery = 19.60%			
6) p-Terphenyl-d14	12.199	244	140040	0.9257	ug/L	0.02
Spiked Amount 5.000			Recovery = 18.60%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.904	58	18621	0.9695	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18342.D
Acq On : 10 Jun 2016 12:08
Operator : MES
Sample : WG572230-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 10 18:15:43 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

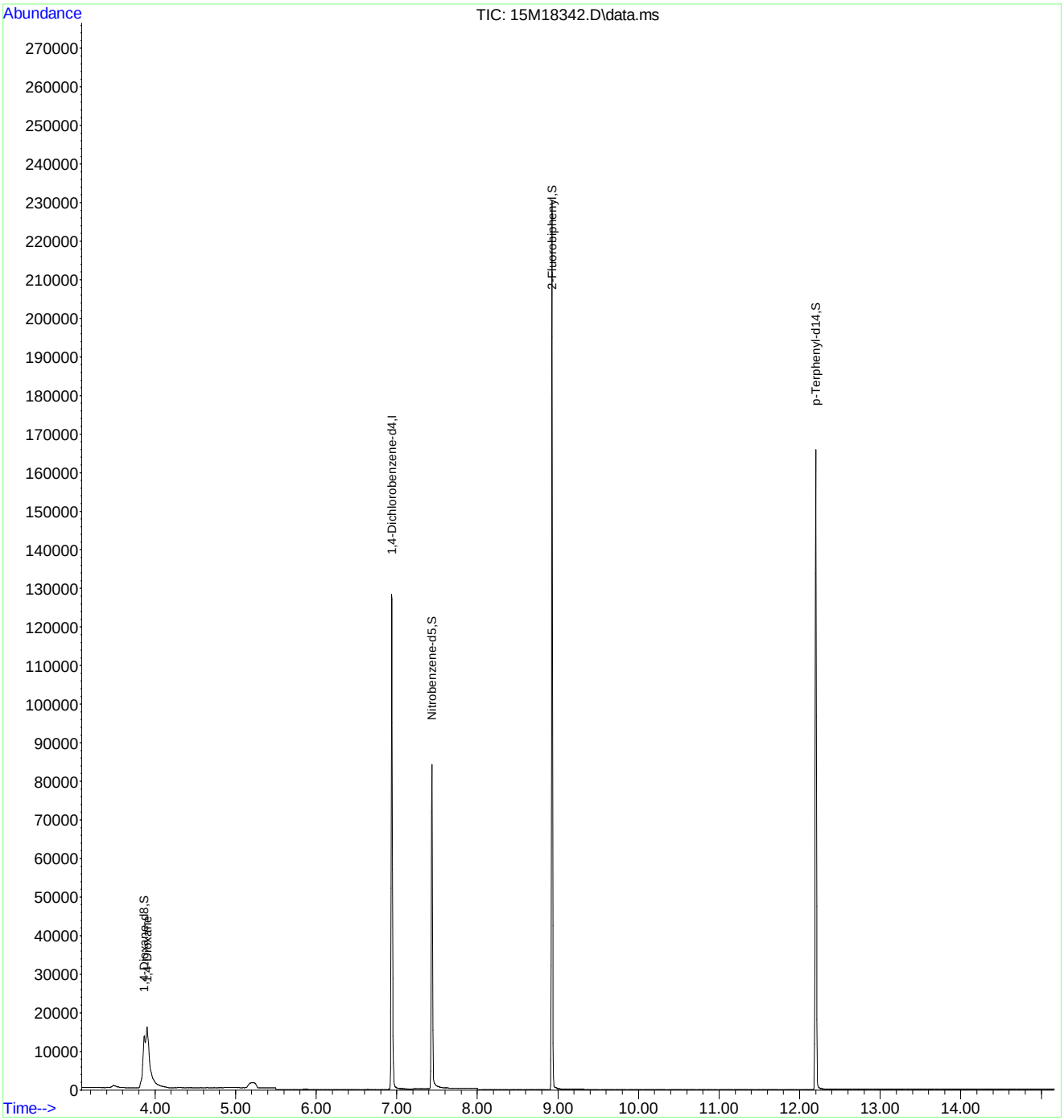

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18343.D
Acq On : 10 Jun 2016 12:30
Operator : MES
Sample : WG572230-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 10 18:15:46 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	51531	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	8760	0.4062	ug/L	0.00
Spiked Amount 5.000			Recovery	=	8.20%	
4) Nitrobenzene-d5	7.436	82	14371	0.4779	ug/L	0.00
Spiked Amount 5.000			Recovery	=	9.60%	
5) 2-Fluorobiphenyl	8.926	172	54404	0.4041	ug/L	0.00
Spiked Amount 5.000			Recovery	=	8.00%	
6) p-Terphenyl-d14	12.203	244	49910	0.3780	ug/L	0.02
Spiked Amount 5.000			Recovery	=	7.60%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	6733	0.4016	ug/L	79

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18343.D
Acq On : 10 Jun 2016 12:30
Operator : MES
Sample : WG572230-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 10 18:15:46 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

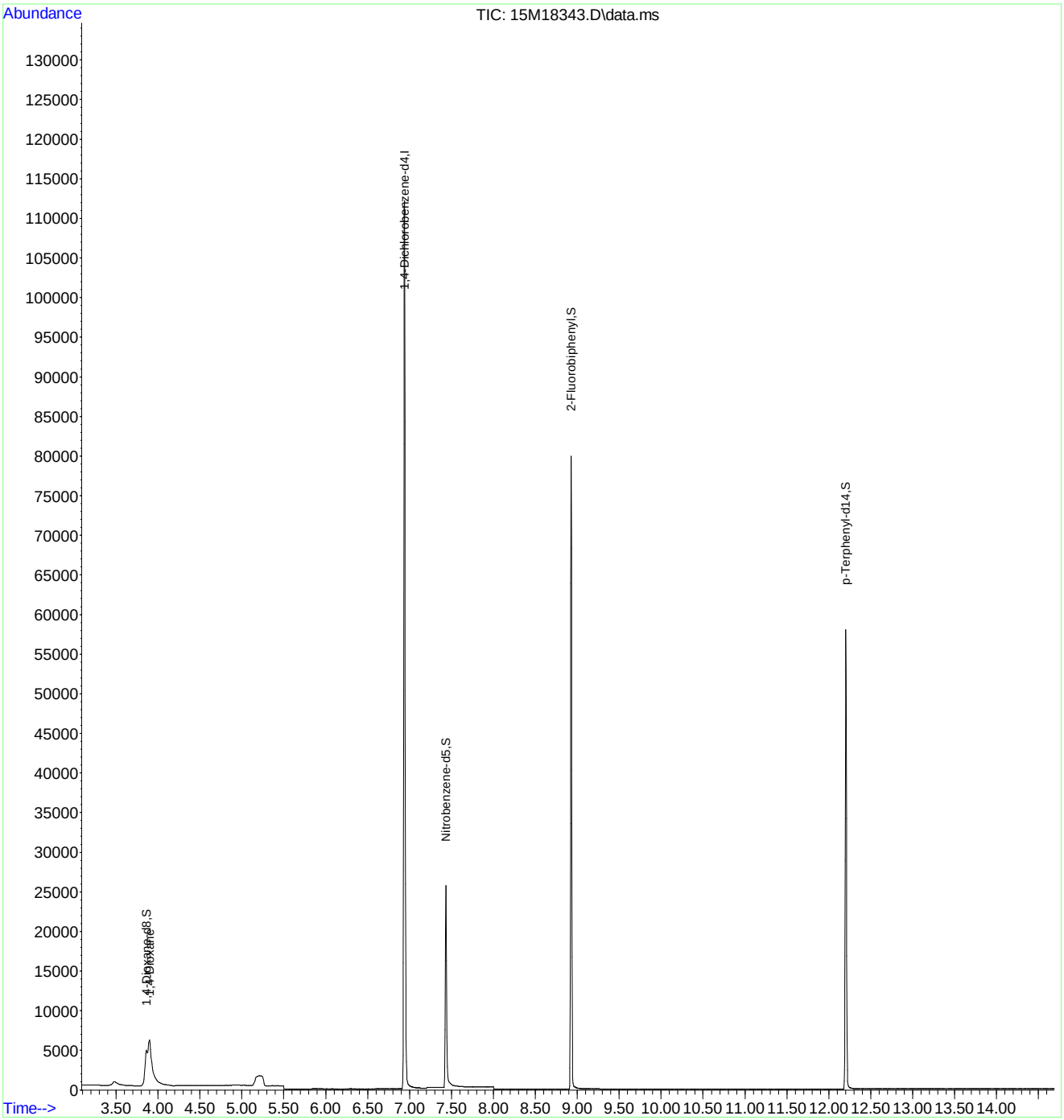

Nitrobenzene-d5

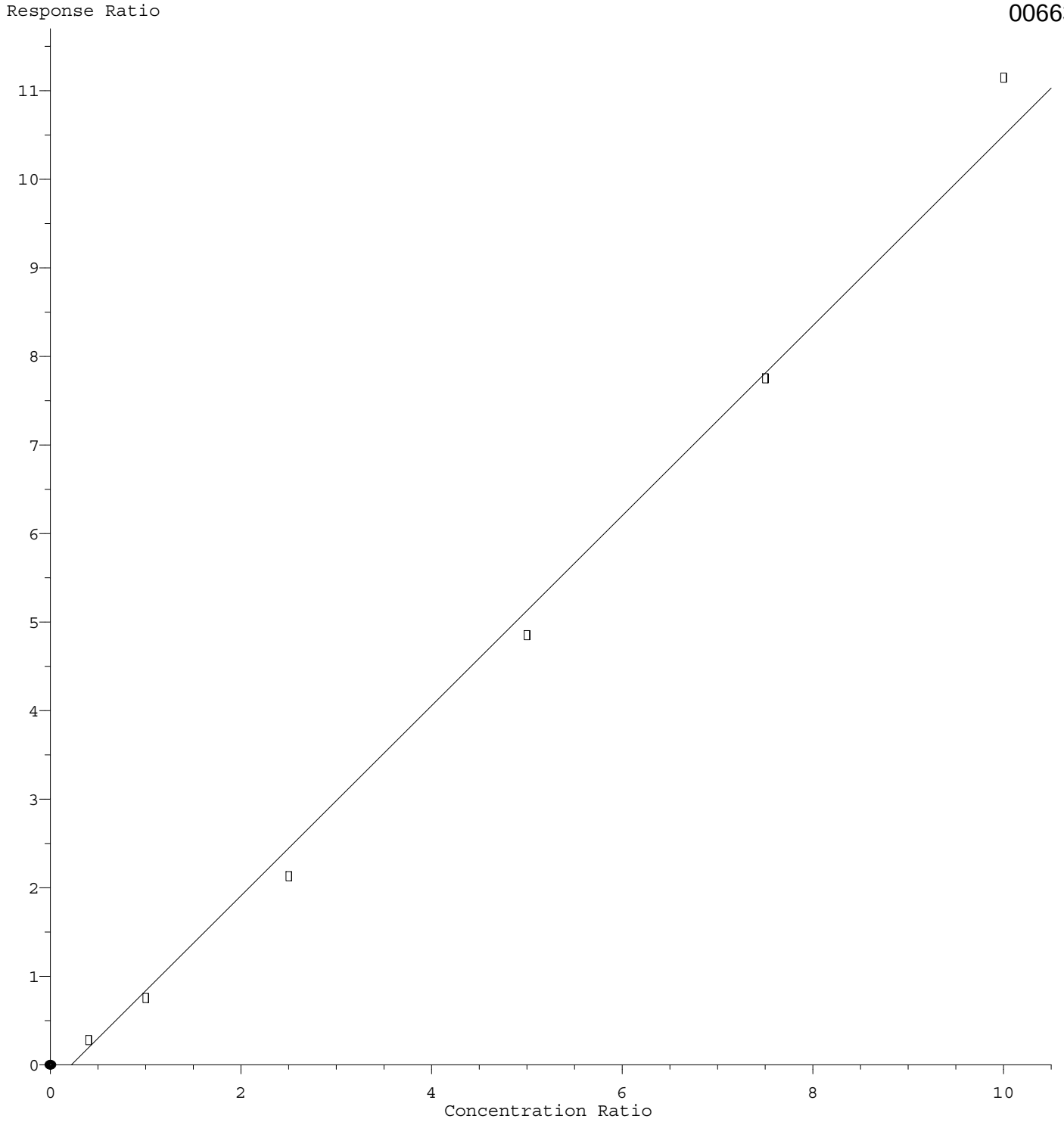

Response = 1.07e+000 * Amt - 2.34e-001
Coef of Det (r^2) = 0.994 Curve Fit: wlr(1/a)
Method Name: C:\msdchem\1\methods\DIOXANE_D8.M
Calibration Table Last Updated: Fri Jun 10 12:46:00 2016

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18344.D
Acq On : 10 Jun 2016 12:52
Operator : MES
Sample : WG572230-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 10 18:15:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	51498	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.897	96	61	0.0028	ug/L	0.04
Spiked Amount 5.000			Recovery	=	0.00%	
4) Nitrobenzene-d5	7.442	82	61	0.2190	ug/L	0.00
Spiked Amount 5.000			Recovery	=	4.40%	
5) 2-Fluorobiphenyl	8.926	172	23	0.0002	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.214	244	150	0.0011	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	85662	5.1127	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18344.D
Acq On : 10 Jun 2016 12:52
Operator : MES
Sample : WG572230-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 10 18:15:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

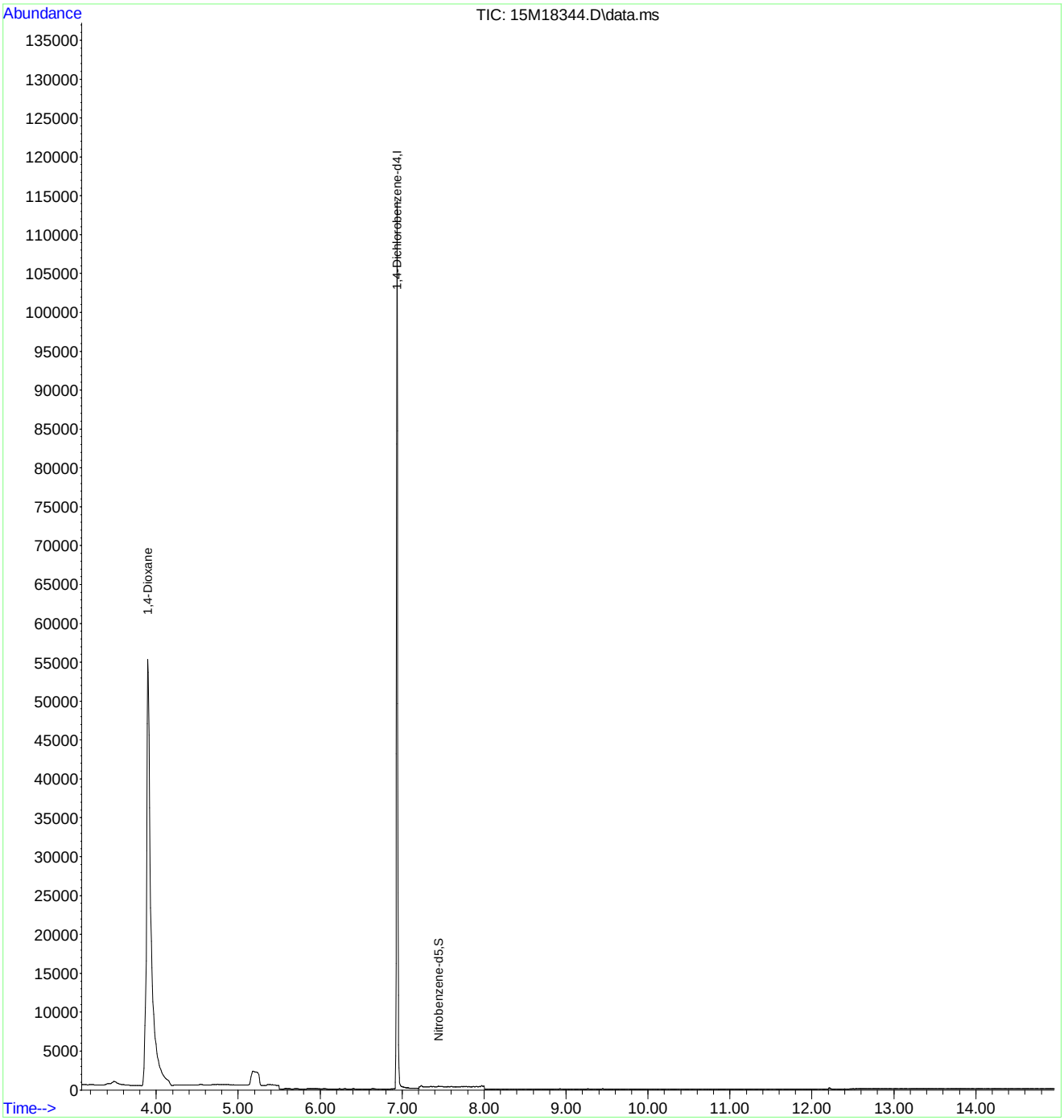

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18344.D
Acq On : 10 Jun 2016 12:52
Operator : MES
Sample : WG572230-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 10 18:15:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	78	0.00
2	1,4-Dioxane	5.000	5.113	-2.3	80	0.00
3 S	1,4-Dioxane-d8	5.000	0.003	99.9#	0	0.04
4 S	Nitrobenzene-d5	5.000	0.219	95.6#	0	0.00
5 S	2-Fluorobiphenyl	5.000	0.000	100.0#	0	0.00
6 S	p-Terphenyl-d14	5.000	0.001	100.0#	0	0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18400.D
Acq On : 16 Jun 2016 10:00
Operator : MES
Sample : WG572958-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 16 10:16:14 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.951	152	63702	1.0000	ug/mL	# 0.01
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.876	96	138261	5.1857	ug/L	0.01
Spiked Amount 5.000			Recovery	= 103.80%		
4) Nitrobenzene-d5	7.447	82	239213	3.7190	ug/L	0.01
Spiked Amount 5.000			Recovery	= 74.40%		
5) 2-Fluorobiphenyl	8.937	172	842255	5.0603	ug/L	0.01
Spiked Amount 5.000			Recovery	= 101.20%		
6) p-Terphenyl-d14	12.228	244	851642	5.2175	ug/L	0.05
Spiked Amount 5.000			Recovery	= 104.40%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.918	58	105339	5.0826	ug/L	81

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18400.D
Acq On : 16 Jun 2016 10:00
Operator : MES
Sample : WG572958-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 16 10:16:14 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

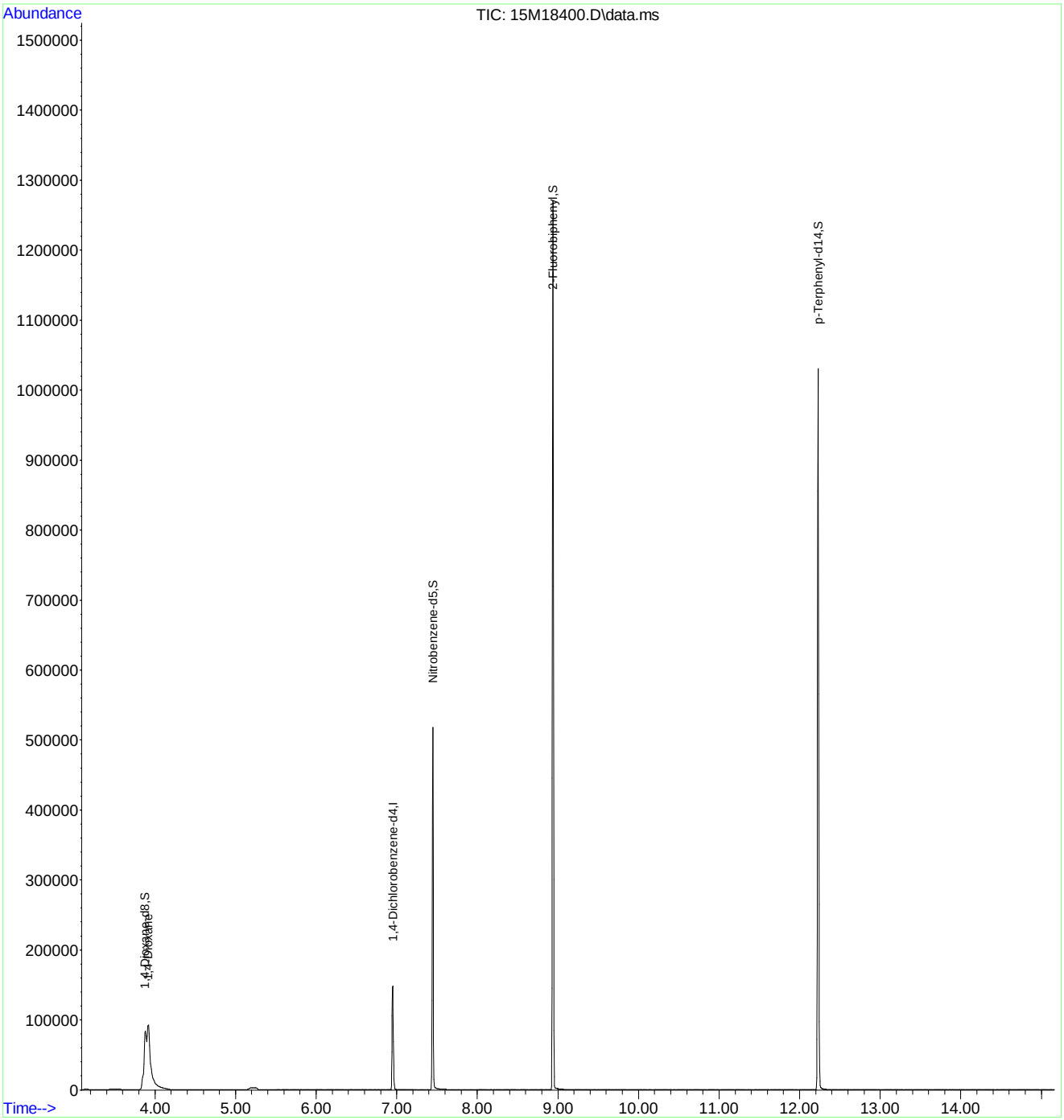

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18400.D
Acq On : 16 Jun 2016 10:00
Operator : MES
Sample : WG572958-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 16 10:16:14 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	96	0.01
2	1,4-Dioxane	5.000	5.083	-1.7	98	0.02
3 S	1,4-Dioxane-d8	5.000	5.186	-3.7	100	0.01
4 S	Nitrobenzene-d5	5.000	3.719	25.6#	74	0.01
5 S	2-Fluorobiphenyl	5.000	5.060	-1.2	100	0.01
6 S	p-Terphenyl-d14	5.000	5.217	-4.3	100	0.05

(#) = Out of Range SPCC's out = 0 CCC's out = 0

2.2.1.5 Raw QC Data

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18337.D
Acq On : 10 Jun 2016 10:18
Operator : MES
Sample : WG572230-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

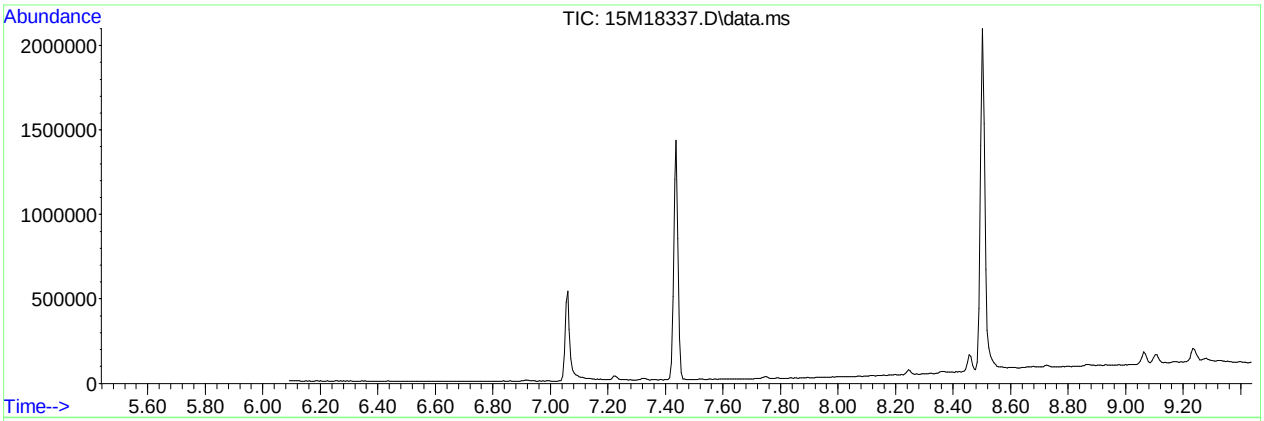

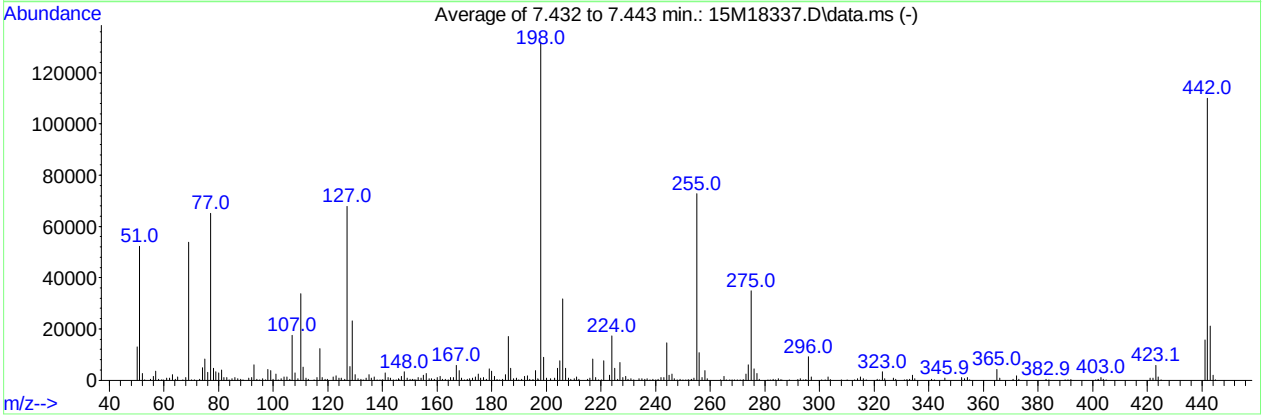

AutoFind: Scans 235, 236, 237; Background Corrected with Scan 229

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	39.5	52157	PASS
68	69	0.00	2	1.9	1026	PASS
69	198	0.00	100	40.8	53844	PASS
70	69	0.00	2	0.2	120	PASS
127	198	40	60	51.4	67853	PASS
197	198	0.00	1	0.4	505	PASS
198	198	100	100	100.0	131981	PASS
199	198	5	9	6.7	8869	PASS
275	198	10	30	26.4	34853	PASS
365	198	1	100	3.2	4186	PASS
441	443	0.01	100	73.9	15632	PASS
442	198	40	100	83.4	110112	PASS
443	442	17	23	19.2	21163	PASS

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18337.D
Acq On : 10 Jun 2016 10:18
Operator : MES
Sample : WG572230-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 10 10:29:37 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

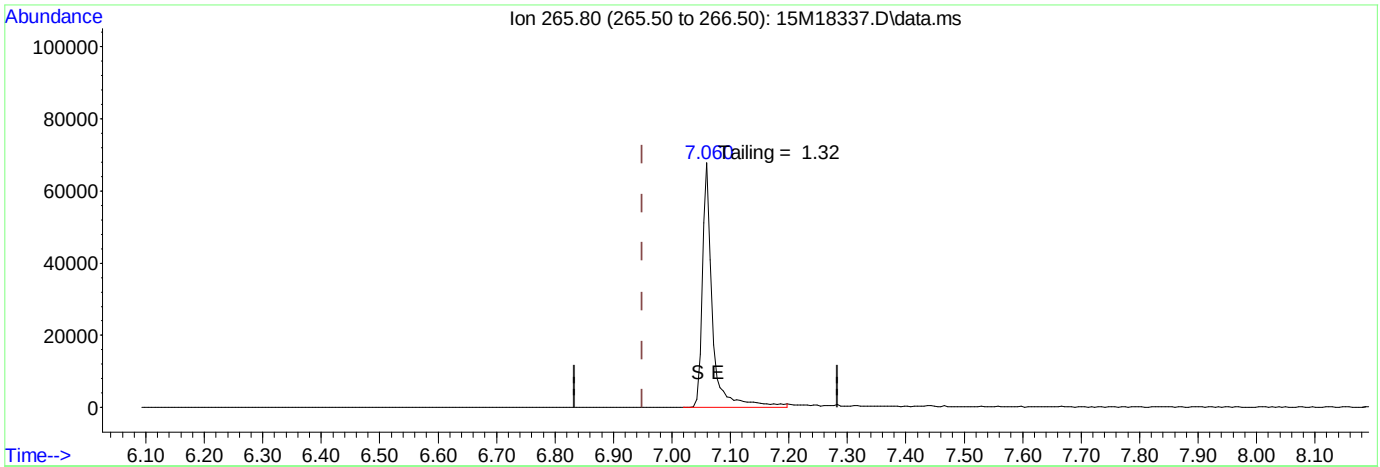

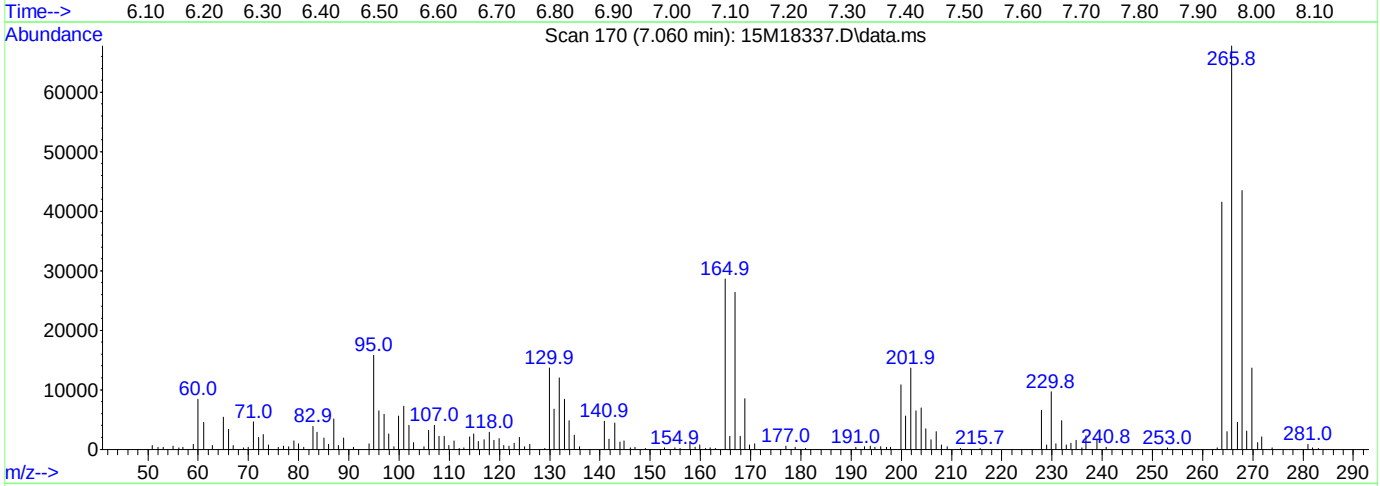

TIC: 15M18337.D\data.ms

(1) Pentachlorophenol

7.060min (+ 0.111) 0.00 ug/ml

response 82111

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18337.D
Acq On : 10 Jun 2016 10:18
Operator : MES
Sample : WG572230-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 10 10:29:37 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

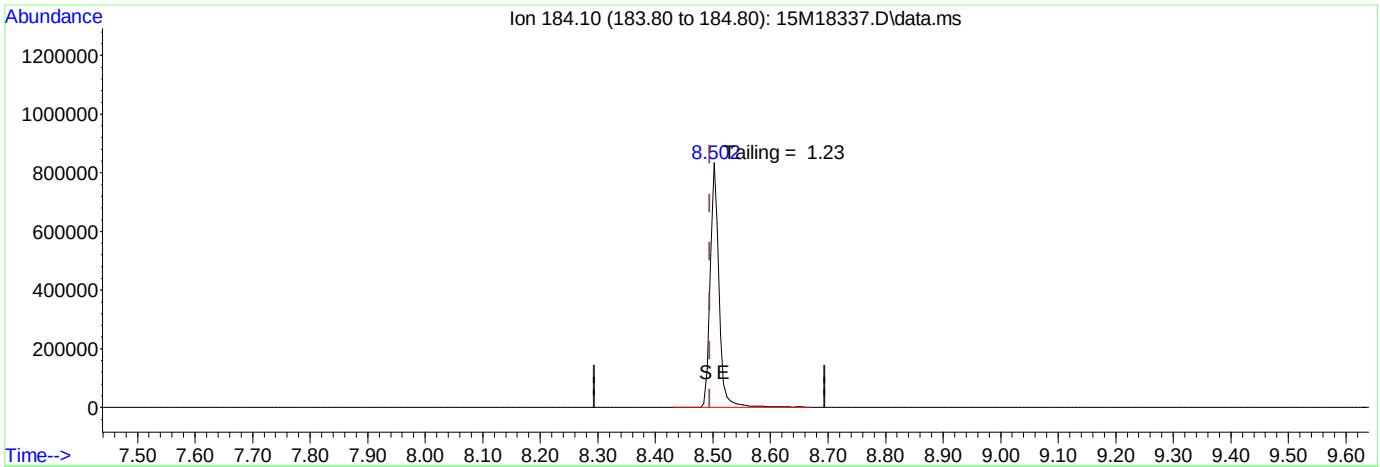

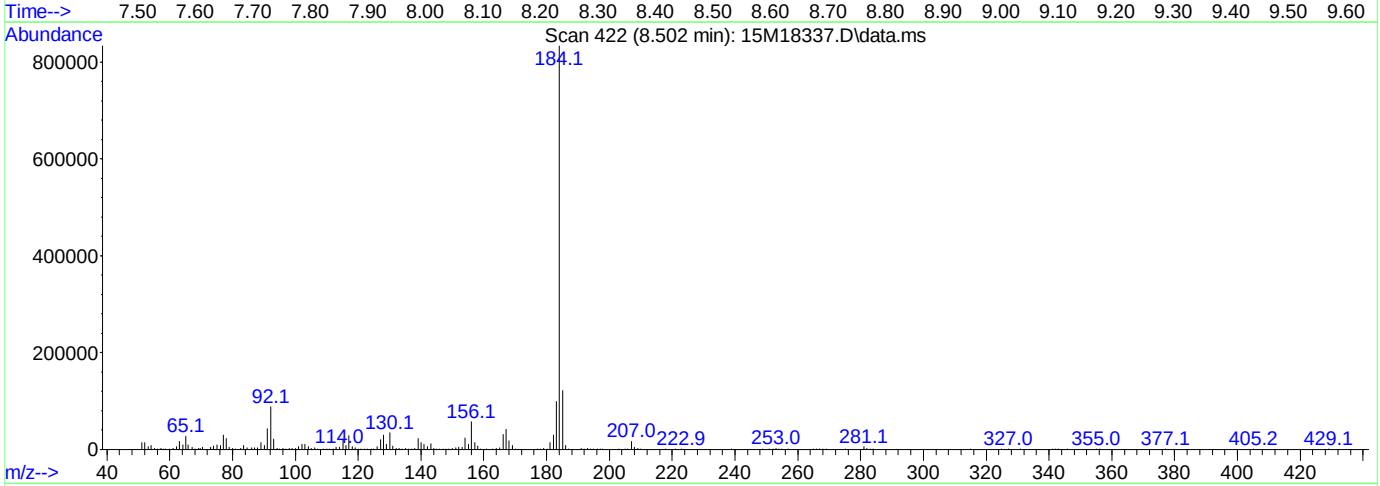

TIC: 15M18337.D\data.ms

(2) Benzidine

8.502min (+ 0.008) 0.00 ug/ml

response 896980

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18337.D
Acq On : 10 Jun 2016 10:18
Operator : MES
Sample : WG572230-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 10 10:29:37 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

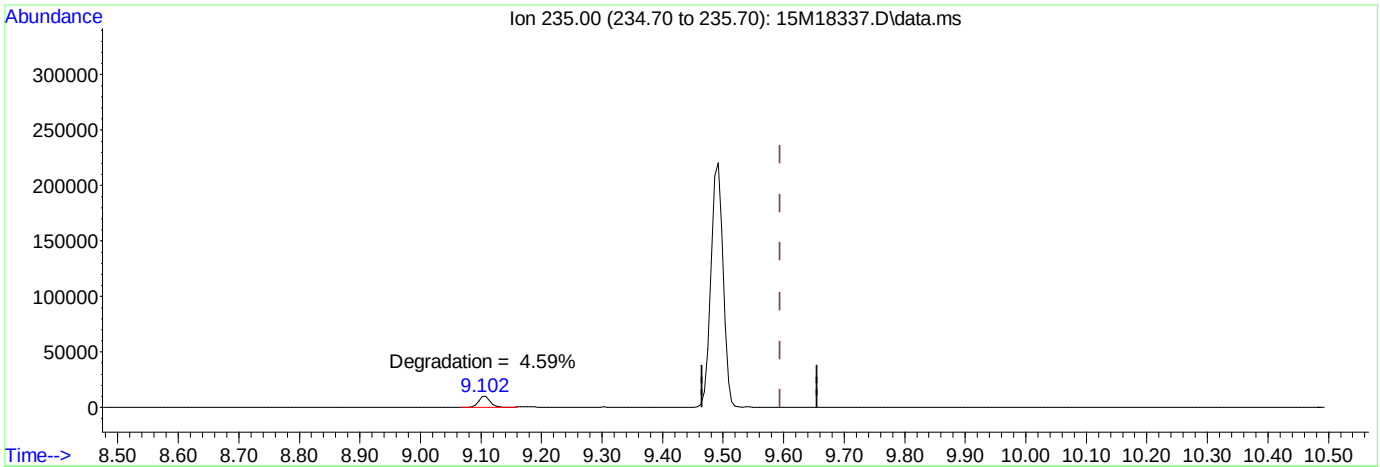

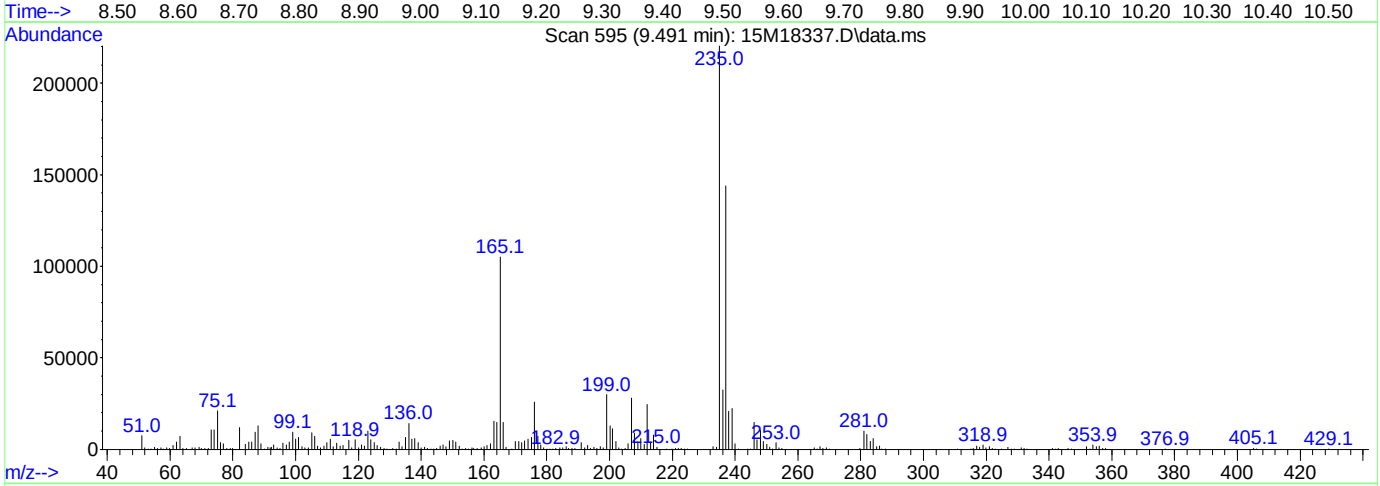

TIC: 15M18337.D\data.ms

(3) DDT

9.491min (-0.103) 0.00 ug/ml

response 283319

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18399.D
Acq On : 16 Jun 2016 9:38
Operator : MES
Sample : WG572958-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

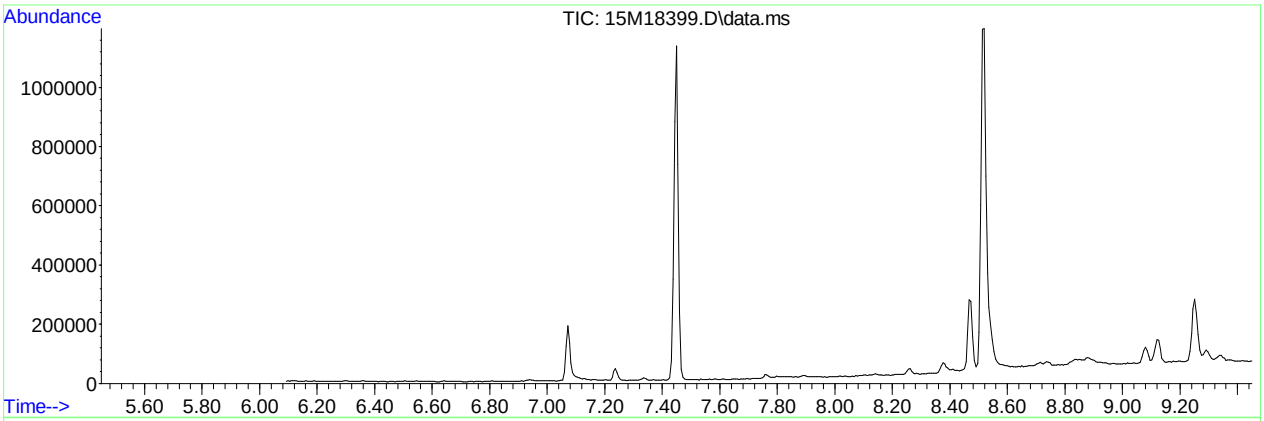

AutoFind: Scans 237, 238, 239; Background Corrected with Scan 231

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	39.7	42335	PASS
68	69	0.00	2	1.6	714	PASS
69	198	0.00	100	40.7	43391	PASS
70	69	0.00	2	0.6	279	PASS
127	198	40	60	52.1	55592	PASS
197	198	0.00	1	0.1	68	PASS
198	198	100	100	100.0	106736	PASS
199	198	5	9	6.7	7172	PASS
275	198	10	30	25.9	27632	PASS
365	198	1	100	3.0	3241	PASS
441	443	0.01	100	76.2	12912	PASS
442	198	40	100	81.0	86427	PASS
443	442	17	23	19.6	16937	PASS

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18399.D
Acq On : 16 Jun 2016 9:38
Operator : MES
Sample : WG572958-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 16 09:56:45 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

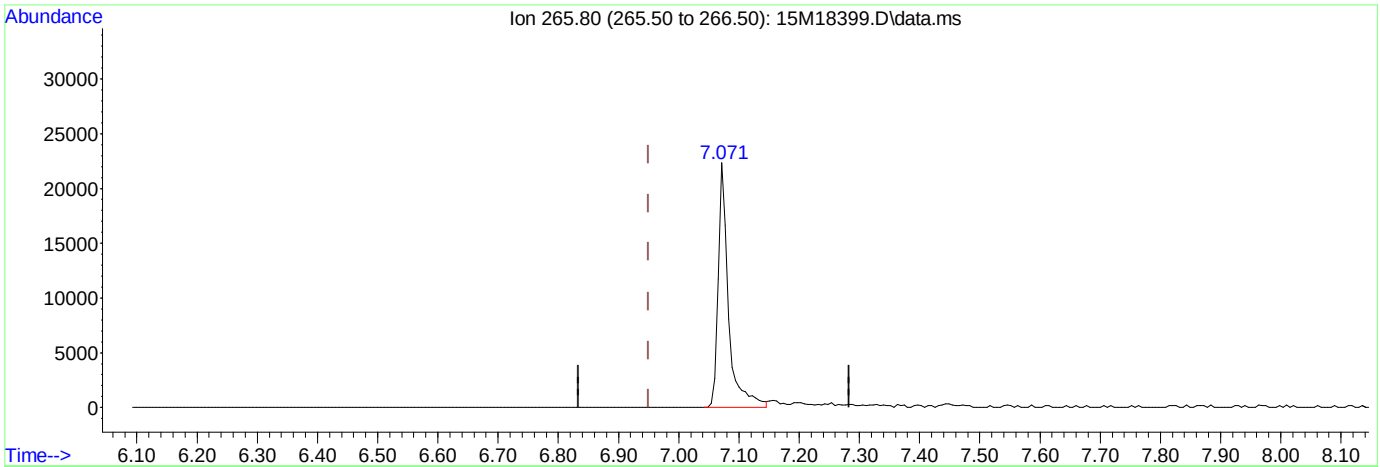

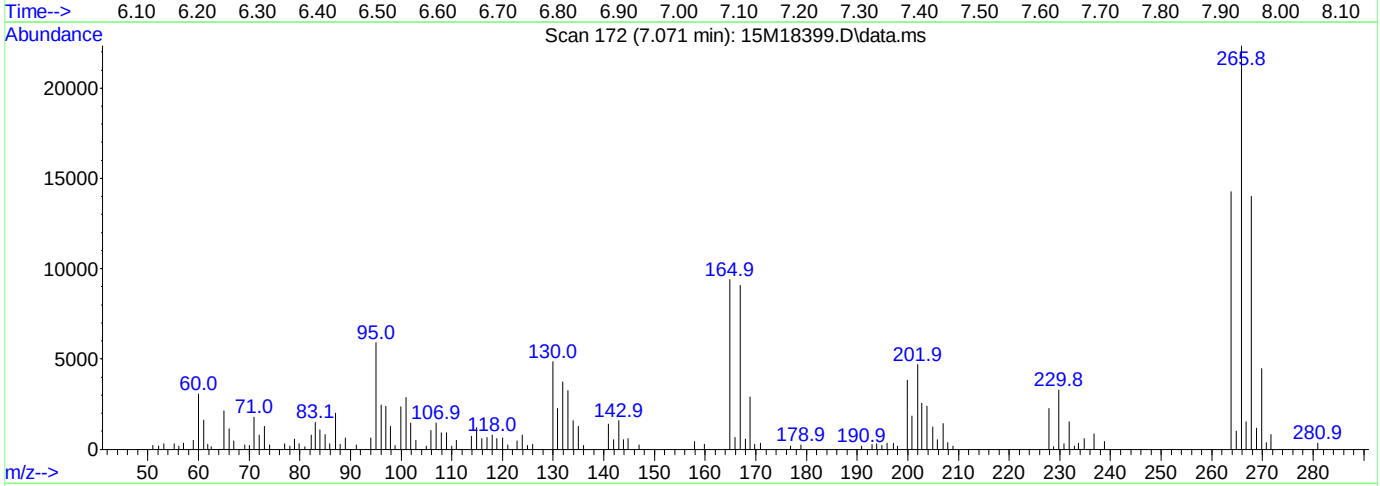

TIC: 15M18399.D\data.ms

(1) Pentachlorophenol

7.071min (+ 0.122) 0.00 ug/ml

response 26601

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18399.D
Acq On : 16 Jun 2016 9:38
Operator : MES
Sample : WG572958-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 16 09:56:45 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

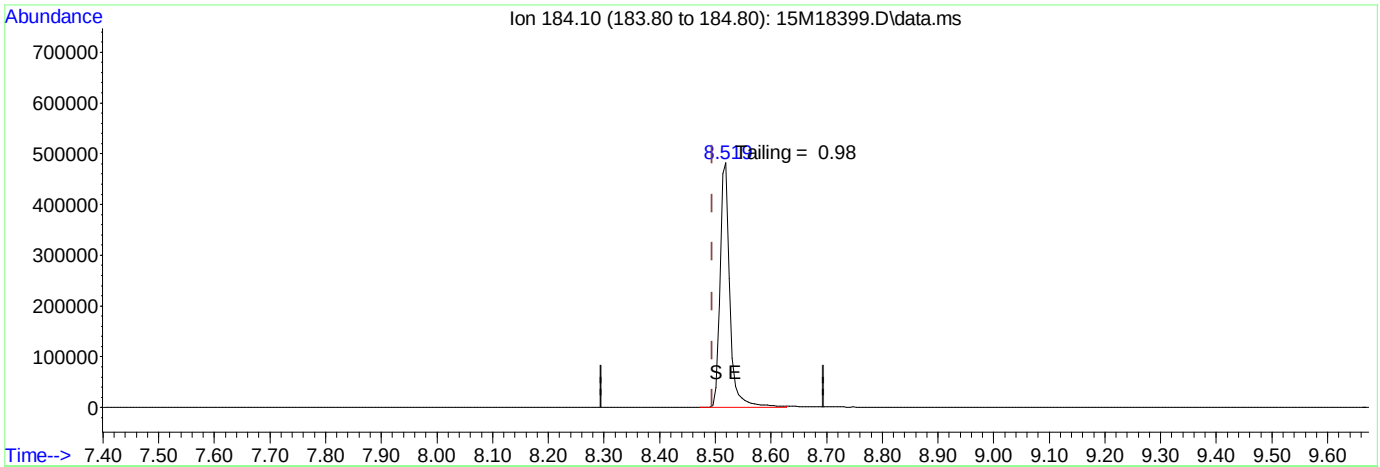

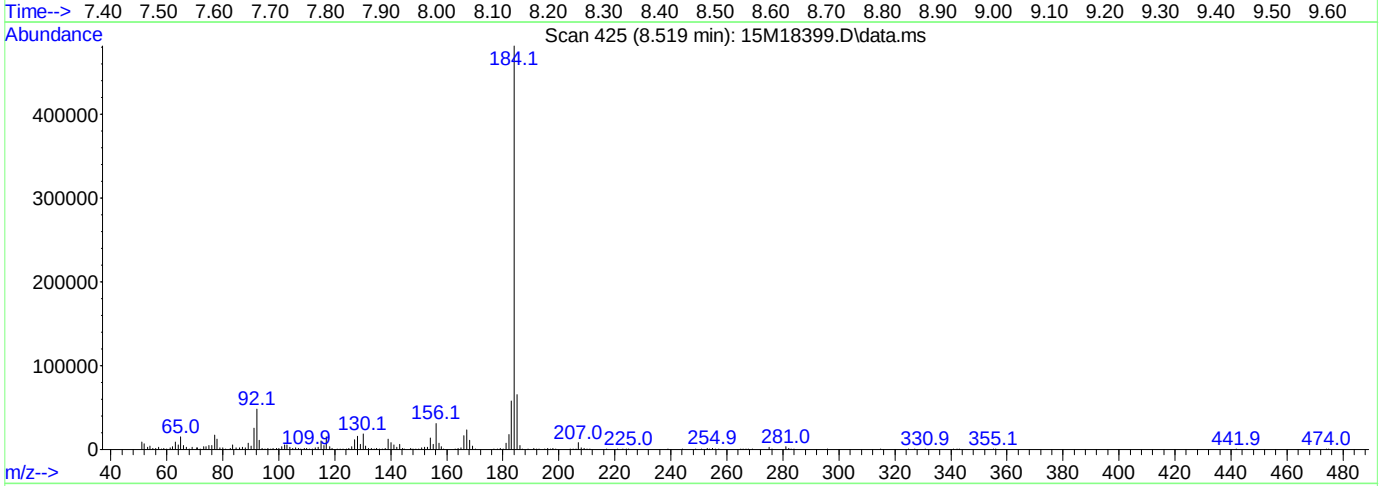

(2) Benzidine

8.519min (+ 0.025) 0.00 ug/ml

response 591309

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18399.D
Acq On : 16 Jun 2016 9:38
Operator : MES
Sample : WG572958-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 16 09:56:45 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

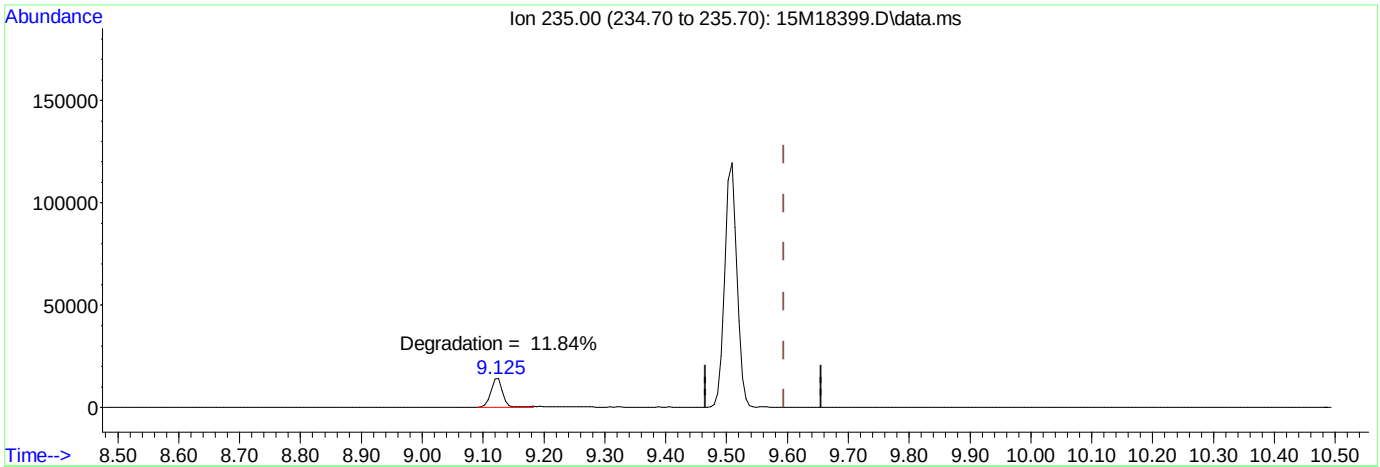

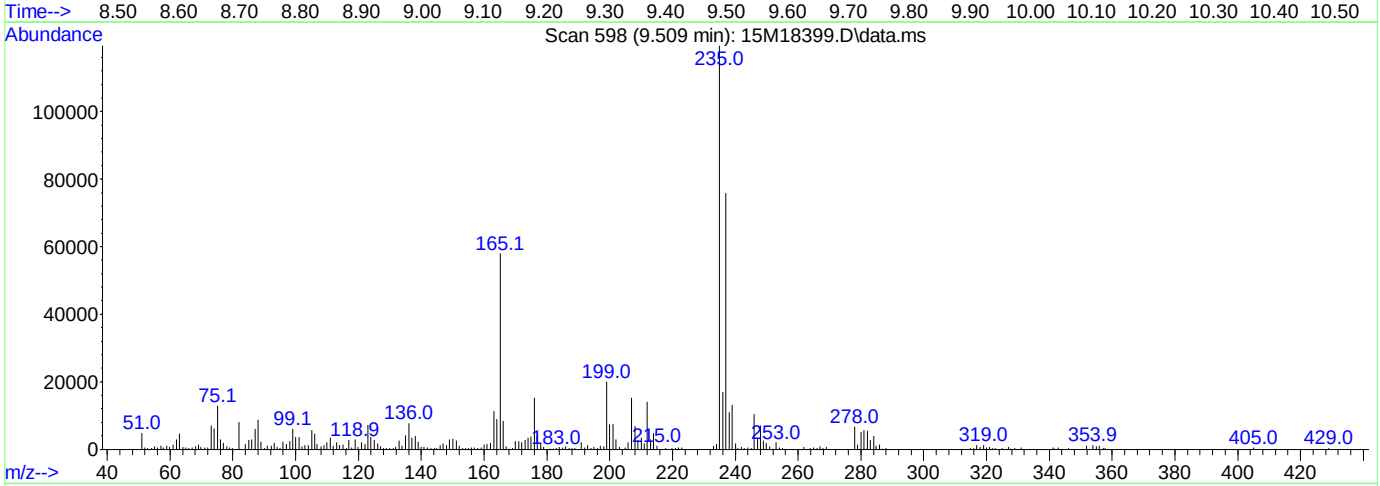

(3) DDT

9.509min (-0.085) 0.00 ug/ml

response 162825

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18401.D
Acq On : 16 Jun 2016 10:23
Operator : MES
Sample : WG572341-01 BLANK 6/13
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 16 12:53:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.948	152	57712	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.876	96	35450	1.4676	ug/L	0.01
Spiked Amount 5.000			Recovery = 29.40%			
4) Nitrobenzene-d5	7.442	82	935690	15.3339	ug/L	0.00
Spiked Amount 5.000			Recovery = 306.60%			
5) 2-Fluorobiphenyl	8.937	172	2176930	14.4366	ug/L	0.01
Spiked Amount 5.000			Recovery = 288.80%			
6) p-Terphenyl-d14	12.221	244	5289384	35.7680	ug/L	0.04
Spiked Amount 5.000			Recovery = 715.40%			

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18401.D
Acq On : 16 Jun 2016 10:23
Operator : MES
Sample : WG572341-01 BLANK 6/13
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 16 12:53:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

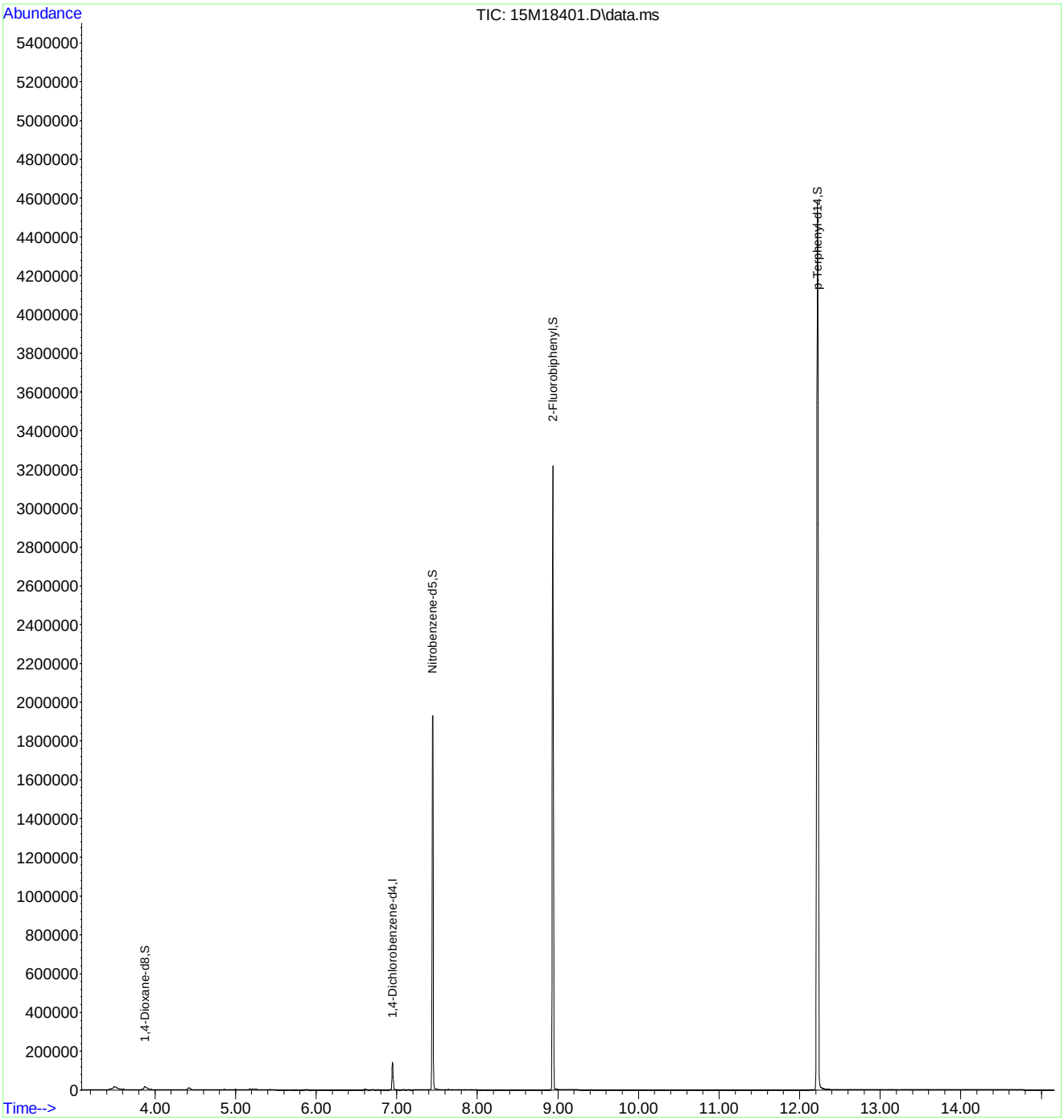

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18402.D
Acq On : 16 Jun 2016 10:46
Operator : MES
Sample : WG572341-02 LCS 6/13
Misc : 1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 16 12:54:04 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.951	152	54087	1.0000	ug/mL	# 0.01
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.883	96	40383	1.7839	ug/L	0.02
Spiked Amount 5.000			Recovery	=	35.60%	
4) Nitrobenzene-d5	7.447	82	8192	0.3591	ug/L	0.01
Spiked Amount 5.000			Recovery	=	7.20%	
5) 2-Fluorobiphenyl	8.937	172	5120	0.0362	ug/L	0.01
Spiked Amount 5.000			Recovery	=	0.80%	
6) p-Terphenyl-d14	12.228	244	1871	0.0135	ug/L	0.05
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.918	58	29330	1.6668	ug/L	82

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18402.D
Acq On : 16 Jun 2016 10:46
Operator : MES
Sample : WG572341-02 LCS 6/13
Misc : 1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 16 12:54:04 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

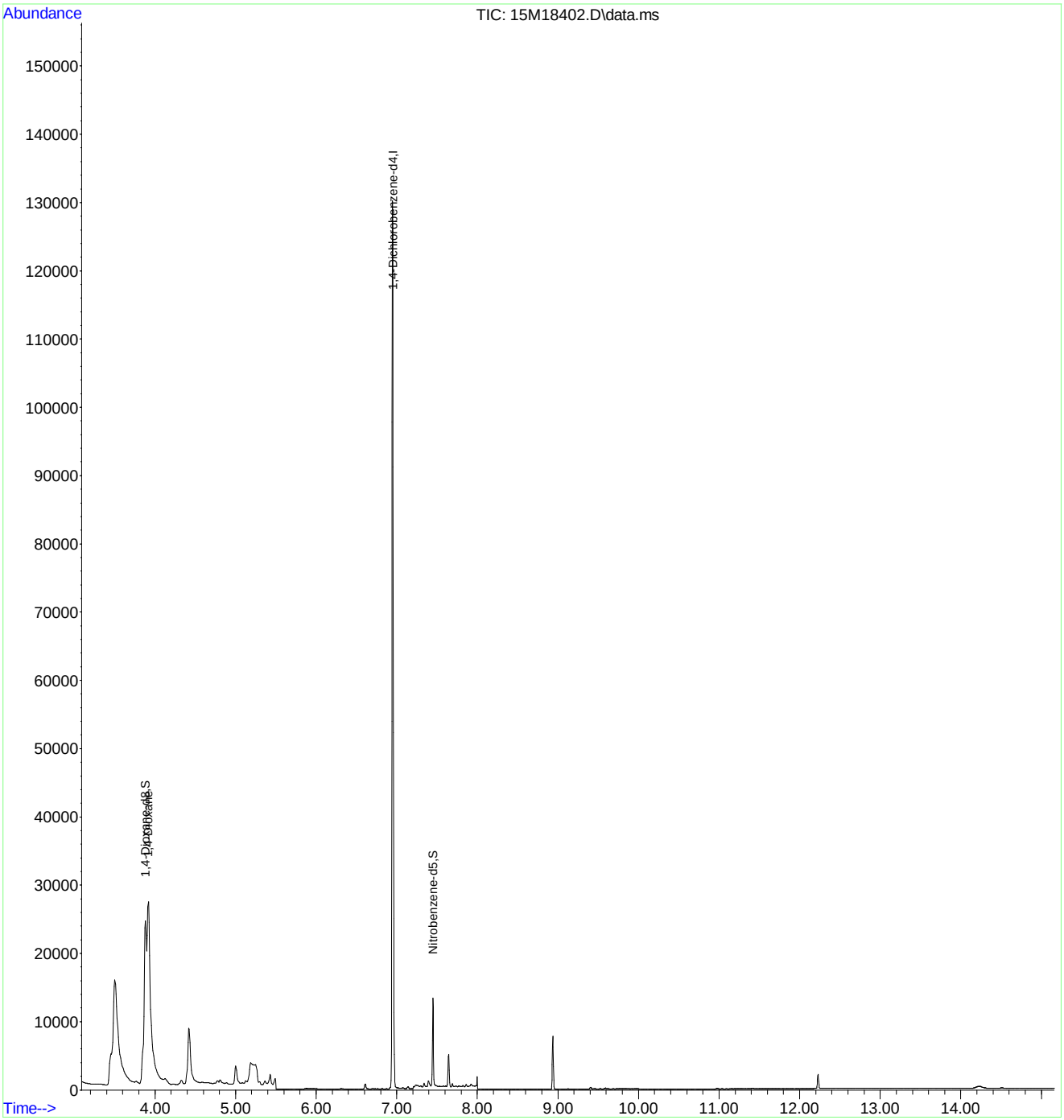

2.2 General Chromatography Data

2.2.2 6850 LC/MS Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW08SW-060816	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/11/2016 13:40
Collect Date:	06/08/2016 08:00	**Dilution:**	10000	**File ID:**	1LM.LM35286
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	35000		4000	2000	1000

Certificate of Analysis

Sample #:	L16060504-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW08DW-060816	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/11/2016 13:58
Collect Date:	06/08/2016 09:05	**Dilution:**	1000	**File ID:**	1LM.LM35287
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	672		400	200	100

Certificate of Analysis

Sample #:	L16060504-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW5-060816	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/11/2016 14:17
Collect Date:	06/08/2016 10:10	**Dilution:**	10000	**File ID:**	1LM.LM35288
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	31300		4000	2000	1000

Certificate of Analysis

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Sample #:	L16060504-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW03SW-060816	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/11/2016 17:19
Collect Date:	06/08/2016 11:20	**Dilution:**	100	**File ID:**	1LM.LM35295
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	260		40.0	20.0	10.0

2.2.2.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1402 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG572200-01 MCT	9,990	
-02 BLK	0.93	
-03 LCS	1.04	
L16060411-01	1433	
-02	1475	
-03	349	
-04	356	
L16060414-01	327	
-02	319	
-03	3510	
-04	4180	
L16060497-01	1546	
-02	1445	
-03	1450	
-04	2560	
L16060504-01	1254	
-02	853	
-03	938	
-04	2350	
L16060575-01	595	
-02	583	
-03	505	

Analyst: Wade T. Dey

Date/Time: 6-10-16 / 1354

DCN#119023

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

Page: 1 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

Page: 2 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061016_WTD.TXT
Analyst1: WTD Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)
CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35225	WG572198-01 CCB	1	1		06/10/16 09:49
2	1LM.LM35226	WG572198-02 CCV (1.0ug/L)	1	1	STD75510	06/10/16 10:08
3	1LM.LM35227	WG572200-07 MRL (0.2ug/L)	1	1	STD75510	06/10/16 10:27
4	1LM.LM35228	WG572200-01 MCT (0.2ug/L)	1	1	STD75512	06/10/16 10:46
5	1LM.LM35229	WG572200-02 BLANK	1	1		06/10/16 11:05
6	1LM.LM35230	WG572200-03 LCS (0.2ug/L)	1	1	STD75512	06/10/16 11:24
22	1LM.LM35231	L16060497-01	1	1		06/10/16 11:43
23	1LM.LM35232	L16060497-02 MS (0.2ug/L)	1	1	STD75512	06/10/16 12:02
24	1LM.LM35233	L16060497-03 MSD (0.2ug/L)	1	1	STD75512	06/10/16 12:21
10	1LM.LM35234	L16060497-04 50X	1	50		06/10/16 12:40
11	1LM.LM35235	L16060575-01	1	1		06/10/16 12:59
12	1LM.LM35236	L16060575-02	1	1		06/10/16 13:18
13	1LM.LM35237	L16060575-03	1	1		06/10/16 13:37
14	1LM.LM35238	WG572198-03 CCV (1.0ug/L)	1	1	STD75510	06/10/16 13:55
15	1LM.LM35239	WG572200-08 MRL (0.2ug/L)	1	1	STD75510	06/10/16 14:14
16	1LM.LM35240	WG572198-04 CCB	1	1		06/10/16 14:33
17	1LM.LM35241	L16060575-01 100X	1	100		06/10/16 14:52
18	1LM.LM35242	L16060575-02	1	1		06/10/16 15:11
19	1LM.LM35243	L16060575-03	1	1		06/10/16 15:30
20	1LM.LM35244	WG572198-05 CCV (1.0ug/L)	1	1	STD75510	06/10/16 15:49
21	1LM.LM35245	WG572200-09 MRL (0.2ug/L)	1	1	STD75510	06/10/16 16:08
25	1LM.LM35246	WG572198-06 CCB	1	1		06/10/16 16:27
26	1LM.LM35247	L16060411-01 50X	1	50		06/10/16 16:46
27	1LM.LM35248	L16060411-02 50X	1	50		06/10/16 17:05
28	1LM.LM35249	L16060411-03 200X	1	200		06/10/16 17:24
29	1LM.LM35250	L16060411-04 200X	1	200		06/10/16 17:43
30	1LM.LM35251	L16060414-01	1	1		06/10/16 18:02
31	1LM.LM35252	L16060414-02	1	1		06/10/16 18:21
32	1LM.LM35253	L16060414-03 20X	1	20		06/10/16 18:40
33	1LM.LM35254	L16060414-04 20X	1	20		06/10/16 18:59
58	1LM.LM35255	L16060497-01 10X	1	10		06/10/16 19:18
35	1LM.LM35256	L16060497-04 500X	1	500		06/10/16 19:37
36	1LM.LM35257	WG572198-07 CCV (1.0ug/L)	1	1	STD75510	06/10/16 19:56

Page: 1 Approved: 13-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061016_WTD.TXT
Analyst1: WTD Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)
CCV STD: STD75510 LCS STD: STD75512 NA

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
37	1LM.LM35258	WG572200-10 MRL (0.2ug/L)	1	1	STD75510	06/10/16 20:15
38	1LM.LM35259	WG572198-08 CCB	1	1		06/10/16 20:34
39	1LM.LM35260	L16060504-01 1000X	1	1000		06/10/16 20:53
40	1LM.LM35261	L16060504-02 1000X	1	1000		06/10/16 21:12
41	1LM.LM35262	L16060504-03 1000X	1	1000		06/10/16 21:31
42	1LM.LM35263	L16060504-04 10000X	1	10000		06/10/16 21:50
43	1LM.LM35264	WG572198-09 CCV (1.0ug/L)	1	1	STD75510	06/10/16 22:09
44	1LM.LM35265	WG572200-11 MRL (0.2ug/L)	1	1	STD75510	06/10/16 22:27
45	1LM.LM35266	WG572198-10 CCB	1	1		06/10/16 22:46
46	1LM.LM35267	WG572289-07 MRL (0.2ug/L)	1	1	STD75510	06/10/16 23:05
47	1LM.LM35268	WG572289-01 MCT (0.2ug/l)	1	1	STD75512	06/10/16 23:24
48	1LM.LM35269	WG572289-02 BLANK	1	1		06/10/16 23:43
49	1LM.LM35270	WG572289-03 LCS (0.2ug/L)	1	1	STD75512	06/11/16 00:02
50	1LM.LM35271	L16060582-01 100X	1	100		06/11/16 00:21
51	1LM.LM35272	L16060582-02	1	1		06/11/16 00:40
59	1LM.LM35273	L16060582-03	1	1		06/11/16 00:59
53	1LM.LM35274	L16060582-03 MS (0.2ug/L)	1	1	STD75512	06/11/16 01:18
54	1LM.LM35275	L16060582-03 MSD (0.2ug/L)	1	1	STD75512	06/11/16 01:37
55	1LM.LM35276	WG572198-11 CCV (1.0ug/L)	1	1	STD75510	06/11/16 01:56
56	1LM.LM35277	WG572289-08 MRL (0.2ug/L)	1	1	STD75510	06/11/16 02:15
57	1LM.LM35278	WG572198-12 CCB	1	1		06/11/16 02:34

Comments

Seq.	Rerun	Dil.	Reason	Analytes
22	X	10	Over Calibration Range	
	L16060497-01			
23				
	WG572200-05 - Sample does not appear to be homogenous with Sample 01, the reference and Sample 03, the MSD.			
24				
	WG572200-06 - Sample does not appear to be homogenous with Sample 01, the reference and Sample 02, the MS.			
10	X	500	Over Calibration Range	
	L16060497-04			
11	X	100	Over Calibration Range	
	L16060575-01			
12	X	1	Carry-over contamination	
	L16060575-02			

Page: 2 Approved: 13-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061016_WTD.TXT

Analyst1: WTD Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 NA

Comments

Seq.	Rerun	Dil.	Reason	Analytes
13	X	1	Carry-over contamination	
	L16060575-03			
26	X	500	Over Calibration Range	
	L16060411-01			
27	X	100	Over Calibration Range	
	L16060411-02			
32	X	10000	Over Calibration Range	
	L16060414-03			
33	X	10000	Over Calibration Range	
	L16060414-04			
39	X	10000	Over Calibration Range	
	L16060504-01			
40	X		Internal standard failure	
	L16060504-02 - No Internal Standard added.			
41	X	10000	Over Calibration Range	
	L16060504-03 - No Internal Standard added.			
42	X	1000	Analyzed too dilute	
	L16060504-04 - No Internal Standard added.			
50				
	L16060582-01 - Analyzed at a dilution based on information from the client.			

Page: 3 Approved: 13-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061116_WTD.TXT
Analyst1: WTD Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)
CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35279	WG572339-01 CCB	1	1		06/11/16 11:27
2	1LM.LM35280	WG572339-02 CCV (1.0ug/L)	1	1	STD75510	06/11/16 11:46
3	1LM.LM35281	WG572200-12 MRL (0.2ug/L)	1	1	STD75510	06/11/16 12:05
4	1LM.LM35282	L16060411-01 500X	1	500		06/11/16 12:24
5	1LM.LM35283	L16060411-02 100X	1	100		06/11/16 12:43
6	1LM.LM35284	L16060414-03 10000X	1	10000		06/11/16 13:02
7	1LM.LM35285	L16060414-04 10000X	1	10000		06/11/16 13:21
8	1LM.LM35286	L16060504-01 10000X	1	10000		06/11/16 13:40
9	1LM.LM35287	L16060504-02 1000X	1	1000		06/11/16 13:58
10	1LM.LM35288	L16060504-03 10000X	1	10000		06/11/16 14:17
11	1LM.LM35289	L16060504-04 1000X	1	1000		06/11/16 14:36
12	1LM.LM35290	L16060414-03 100000X	1	100000		06/11/16 14:55
13	1LM.LM35291	L16060414-04 100000X	1	100000		06/11/16 15:15
14	1LM.LM35292	WG572339-03 CCV (1.0ug/L)	1	1	STD75510	06/11/16 15:34
15	1LM.LM35293	WG572200-13 MRL (0.2ug/L)	1	1	STD75510	06/11/16 16:41
16	1LM.LM35294	WG572339-04 CCB	1	1		06/11/16 17:00
17	1LM.LM35295	L16060504-04 100X	1	100		06/11/16 17:19
18	1LM.LM35296	WG572339-05 CCV (1.0ug/L)	1	1	STD75510	06/11/16 17:38
19	1LM.LM35297	WG572200-14 MRL (0.2ug/L)	1	1	STD75510	06/11/16 17:57
20	1LM.LM35298	WG572339-06 CCB	1	1		06/11/16 18:16
21	1LM.LM35299	WG572350-05 MRL (0.2ug/L)	1	1	STD75510	06/11/16 18:35
22	1LM.LM35300	WG572350-01 MCT (0.2ug/l)	1	1	STD75512	06/11/16 18:54
23	1LM.LM35301	WG572350-02 BLANK	1	1		06/11/16 19:13
24	1LM.LM35302	WG572350-03 LCS (0.2ug/L)	1	1	STD75512	06/11/16 19:32
25	1LM.LM35303	WG572350-03 LCSD (0.2ug/L)	1	1	STD75512	06/11/16 19:51
26	1LM.LM35304	L16060632-01 100X	1	100		06/11/16 20:10
27	1LM.LM35305	L16060632-02 100X	1	100		06/11/16 20:29
28	1LM.LM35306	L16060632-03 100X	1	100		06/11/16 20:48
29	1LM.LM35307	L16060632-04 100X	1	100		06/11/16 21:07
30	1LM.LM35308	L16060615-01 10000X	1	10000		06/11/16 21:26
31	1LM.LM35309	L16060615-02 100X	1	100		06/11/16 21:44
43	1LM.LM35310	WG572339-07 CCV (1.0ug/L)	1	1	STD75510	06/11/16 22:03
33	1LM.LM35311	WG572350-06 MRL (0.2ug/L)	1	1	STD75510	06/11/16 22:22

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061116_WTD.TXT
Analyst1: WTD Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:
Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)
CCV STD: STD75510 LCS STD: STD75512 NA

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
44	1LM.LM35312	WG572339-08 CCB	1	1		06/11/16 22:41
35	1LM.LM35313	L16060615-03 100X	1	100		06/11/16 23:00
36	1LM.LM35314	L16060615-04 100X	1	100		06/11/16 23:19
37	1LM.LM35315	L16060616-01 10000X	1	10000		06/11/16 23:38
38	1LM.LM35316	L16060616-02 10000X	1	10000		06/11/16 23:57
39	1LM.LM35317	L16060616-03	1	1		06/12/16 00:16
45	1LM.LM35318	WG572339-09 CCV (1.0ug/L)	1	1	STD75510	06/12/16 00:35
41	1LM.LM35319	WG572350-07 MRL (0.2ug/L)	1	1	STD75510	06/12/16 00:54
46	1LM.LM35320	WG572339-10 CCB	1	1		06/12/16 01:13

Comments

Seq.	Rerun	Dil.	Reason	Analytes
6	X	100000	Over Calibration Range	
	L16060414-03			
7	X	100000	Over Calibration Range	
	L16060414-04			
11	X	100	Analyzed too dilute	
	L16060504-04			
26	X	1	Analyzed too dilute	
	L16060632-01			
27	X	1	Analyzed too dilute	
	L16060632-02			
28	X	1	Analyzed too dilute	
	L16060632-03			
29	X	1	Analyzed too dilute	
	L16060632-04			
30	X	1	Analyzed too dilute	
	L16060615-01			
31	X	1	Analyzed too dilute	
	L16060615-02			
35	X	1	Analyzed too dilute	
	L16060615-03			
36	X	10000	Over Calibration Range	
	L16060615-04			
37				
	L16060616-01 Analyzed at a dilution based on historical data			

Page: 2 Approved: 13-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061116_WTD.TXT

Analyst1: WTD Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups:

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 NA

Comments

Seq.	Rerun	Dil.	Reason	Analytes
38	X	100	Analyzed too dilute	
	L16060616-02			

Page: 3 Approved: 13-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 04-MAY-2016 John Richards

Secondary Reviewer: 05-MAY-2016 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 10-JUN-2016
Analyst: WTD
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 75634
Analytical Workgroups: WG572200, WG572289

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	WTD
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MES

Primary Reviewer: 11-JUN-2016

Secondary Reviewer: 13-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-13-2016 11:53:25

Microbac Laboratories Inc.

Data Checklist

Date: 11-JUN-2016
Analyst: WTD
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 75641
Analytical Workgroups: L16060411, L16060414, L16060504, L16060616

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	WTD
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 12-JUN-2016

Secondary Reviewer: 13-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-14-2016 08:50:47

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG572200

Login Number: L16060504

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW08SW-060816	01	06/08/16					06/10/2016	2	28		06/11/16	1.2	28	
18CPTMW08DW-060816	02	06/08/16					06/10/2016	2	28		06/11/16	1.2	28	
MW5-060816	03	06/08/16					06/10/2016	2	28		06/11/16	1.2	28	
18CPTMW03SW-060816	04	06/08/16					06/10/2016	1.9	28		06/11/16	1.3	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4805762
Report generated 06/14/2016 08:40

METHOD BLANK SUMMARY

Login Number: L16060504
Blank File ID: 1LM.LM35229
Prep Date: 06/10/16 09:00
Analyzed Date: 06/10/16 11:05
Analyst: WTD

Work Group: WG572200
Blank Sample ID: WG572200-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG572200-07	1LM.LM35227	06/10/16 10:27	01
MCT	WG572200-01	1LM.LM35228	06/10/16 10:46	01
LCS	WG572200-03	1LM.LM35230	06/10/16 11:24	01
QCMRL	WG572200-08	1LM.LM35239	06/10/16 14:14	01
QCMRL	WG572200-09	1LM.LM35245	06/10/16 16:08	01
QCMRL	WG572200-10	1LM.LM35258	06/10/16 20:15	01
QCMRL	WG572200-11	1LM.LM35265	06/10/16 22:27	01
QCMRL	WG572200-12	1LM.LM35281	06/11/16 12:05	01
18CPTMW08SW-060816	L16060504-01	1LM.LM35286	06/11/16 13:40	DL01
18CPTMW08DW-060816	L16060504-02	1LM.LM35287	06/11/16 13:58	DL01
MW5-060816	L16060504-03	1LM.LM35288	06/11/16 14:17	DL01
QCMRL	WG572200-13	1LM.LM35293	06/11/16 16:41	01
18CPTMW03SW-060816	L16060504-04	1LM.LM35295	06/11/16 17:19	DL01
QCMRL	WG572200-14	1LM.LM35297	06/11/16 17:57	01

Report Name: BLANK_SUMMARY
PDF File ID: 4805763
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060504 Prep Date: 06/10/16 09:00 Sample ID: WG572200-02
Instrument ID: LCMS1 Run Date: 06/10/16 11:05 Prep Method: 6850
File ID: 1LM.LM35229 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4805764
14-JUN-2016 08:40

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060504 Run Date: 06/10/2016 Sample ID: WG572200-03
Instrument ID: LCMS1 Run Time: 11:24 Prep Method: 6850
File ID: 1LM.LM35230 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD75512 Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	0.200	0.201	101	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4805765
Report generated: 06/14/2016 08:40

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060504
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4805767
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060504

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4805767
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060504

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4805767
Report generated 06/14/2016 08:40

INITIAL CALIBRATION DATA

Login Number: L16060504
Analytical Method: 6850

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008
PDF File ID: 4805767
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060504 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4805768
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060504
Run Date: 06/10/2016
Sample ID: WG572198-01
Instrument ID: LCMS1
Run Time: 09:49
Method: 6850
File ID: 1LM.LM35225
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4805770
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060504
Run Date: 06/10/2016
Sample ID: WG572198-04
Instrument ID: LCMS1
Run Time: 14:33
Method: 6850
File ID: 1LM.LM35240
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4805770
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060504
Run Date: 06/10/2016
Sample ID: WG572198-06
Instrument ID: LCMS1
Run Time: 16:27
Method: 6850
File ID: 1LM.LM35246
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4805770
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060504
Run Date: 06/10/2016
Sample ID: WG572198-08
Instrument ID: LCMS1
Run Time: 20:34
Method: 6850
File ID: 1LM.LM35259
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4805770
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060504
Run Date: 06/10/2016
Sample ID: WG572198-10
Instrument ID: LCMS1
Run Time: 22:46
Method: 6850
File ID: 1LM.LM35266
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4805770
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060504
Run Date: 06/11/2016
Sample ID: WG572339-01
Instrument ID: LCMS1
Run Time: 11:27
Method: 6850
File ID: 1LM.LM35279
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4805770
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060504
Run Date: 06/11/2016
Sample ID: WG572339-04
Instrument ID: LCMS1
Run Time: 17:00
Method: 6850
File ID: 1LM.LM35294
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4805770
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060504
Run Date: 06/11/2016
Sample ID: WG572339-06
Instrument ID: LCMS1
Run Time: 18:16
Method: 6850
File ID: 1LM.LM35298
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4805770
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504
Run Date: 06/10/2016
Sample ID: WG572198-02
Instrument ID: LCMS1
Run Time: 10:08
Method: 6850
File ID: 1LM.LM35226
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.70	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4805769
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504
Run Date: 06/10/2016
Sample ID: WG572198-03
Instrument ID: LCMS1
Run Time: 13:55
Method: 6850
File ID: 1LM.LM35238
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.71	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4805769
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504
Run Date: 06/10/2016
Sample ID: WG572198-05
Instrument ID: LCMS1
Run Time: 15:49
Method: 6850
File ID: 1LM.LM35244
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.05	ug/L	1.77	5.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
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Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504
Run Date: 06/10/2016
Sample ID: WG572198-07
Instrument ID: LCMS1
Run Time: 19:56
Method: 6850
File ID: 1LM.LM35257
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.08	ug/L	1.82	8.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4805769
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504
Run Date: 06/10/2016
Sample ID: WG572198-09
Instrument ID: LCMS1
Run Time: 22:09
Method: 6850
File ID: 1LM.LM35264
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.74	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4805769
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504
Run Date: 06/11/2016
Sample ID: WG572198-11
Instrument ID: LCMS1
Run Time: 01:56
Method: 6850
File ID: 1LM.LM35276
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.74	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4805769
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504
Run Date: 06/11/2016
Sample ID: WG572339-02
Instrument ID: LCMS1
Run Time: 11:46
Method: 6850
File ID: 1LM.LM35280
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.75	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4805769
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504
Run Date: 06/11/2016
Sample ID: WG572339-03
Instrument ID: LCMS1
Run Time: 15:34
Method: 6850
File ID: 1LM.LM35292
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.05	ug/L	1.78	5.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4805769
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504
Run Date: 06/11/2016
Sample ID: WG572339-05
Instrument ID: LCMS1
Run Time: 17:38
Method: 6850
File ID: 1LM.LM35296
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.73	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4805769
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504 Run Date: 06/11/2016 Sample ID: WG572339-07
Instrument ID: LCMS1 Run Time: 22:03 Method: 6850
File ID: 1LM.LM35310 Analyst: WTD QC Key: DOD4
Workgroup (AAB#): WG572200 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.06	ug/L	1.79	6.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4805769
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060504 Run Date: 06/10/2016 Sample ID: WG572200-07
Instrument ID: LCMS1 Run Time: 10:27 Prep Method: 6850
File ID: 1LM.LM35227 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.202	101	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4805766
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060504 Run Date: 06/10/2016 Sample ID: WG572200-08
Instrument ID: LCMS1 Run Time: 14:14 Prep Method: 6850
File ID: 1LM.LM35239 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.215	108	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4805766
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060504 Run Date: 06/10/2016 Sample ID: WG572200-09
Instrument ID: LCMS1 Run Time: 16:08 Prep Method: 6850
File ID: 1LM.LM35245 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.210	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4805766
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060504 Run Date: 06/10/2016 Sample ID: WG572200-10
Instrument ID: LCMS1 Run Time: 20:15 Prep Method: 6850
File ID: 1LM.LM35258 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.222	111	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4805766
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060504 Run Date: 06/10/2016 Sample ID: WG572200-11
Instrument ID: LCMS1 Run Time: 22:27 Prep Method: 6850
File ID: 1LM.LM35265 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.216	108	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4805766
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060504 Run Date: 06/11/2016 Sample ID: WG572200-12
Instrument ID: LCMS1 Run Time: 12:05 Prep Method: 6850
File ID: 1LM.LM35281 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4805766
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060504 Run Date: 06/11/2016 Sample ID: WG572200-13
Instrument ID: LCMS1 Run Time: 16:41 Prep Method: 6850
File ID: 1LM.LM35293 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4805766
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060504 Run Date: 06/11/2016 Sample ID: WG572200-14
Instrument ID: LCMS1 Run Time: 17:57 Prep Method: 6850
File ID: 1LM.LM35297 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.215	108	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4805766
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16060504
Instrument ID: LCMS1
Workgroup (AAB#): WG572200

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16060504-01	10000	DL01	444000
L16060504-02	1000	DL01	471000
L16060504-03	10000	DL01	451000
L16060504-04	100	DL01	420000
WG572200-02	1.00	01	441000
WG572200-03	1.00	01	434000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4805771
Report generated 06/14/2016 08:40

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**	6850	**Samplenum:**	L16060504-01
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35286
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 13:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	523000	180000	2.91	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**	6850	**Samplenum:**	L16060504-02
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35287
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 13:58	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	107000	36200	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**	6850	**Samplenum:**	L16060504-03
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35288
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 14:17	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	476000	164000	2.90	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**	6850	**Samplenum:**	L16060504-04
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35295
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 17:19	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	367000	124000	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG572198-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35225
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 09:49	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG572198-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35226
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 10:08	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	151000	53700	2.81	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG572198-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35238
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 13:55	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	172000	59600	2.89	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG572198-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35240
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 14:33	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	3660	1770	2.07	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG572198-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35244
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 15:49	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	179000	63400	2.82	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG572198-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35246
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 16:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	377	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG572198-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35257
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 19:56	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	175000	58000	3.02	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG572198-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35259
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 20:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG572198-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35264
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 22:09	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	57800	2.92	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG572198-10
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35266
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 22:46	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	971	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG572198-11
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35276
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 01:56	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	183000	61800	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**	6850	**Samplenum:**	WG572200-01
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35228
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 10:46	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35200	10400	3.38	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**	6850	**Samplenum:**	WG572200-02
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35229
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 11:05	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	309	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**	6850	**Samplenum:**	WG572200-03
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35230
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 11:24	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	30000	11800	2.54	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**	6850	**Samplenum:**	WG572200-07
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35227
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 10:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	30600	11100	2.76	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**	6850	**Samplenum:**	WG572200-08
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35239
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 14:14	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36500	13800	2.64	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**	6850	**Samplenum:**	WG572200-09
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35245
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 16:08	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36700	12600	2.91	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**	6850	**Samplenum:**	WG572200-10
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35258
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 20:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36200	12400	2.92	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**	6850	**Samplenum:**	WG572200-11
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35265
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 22:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35800	11700	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**	6850	**Samplenum:**	WG572200-12
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35281
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 12:05	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	33000	11900	2.77	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**	6850	**Samplenum:**	WG572200-13
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35293
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 16:41	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	33900	12200	2.78	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**	6850	**Samplenum:**	WG572200-14
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35297
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 17:57	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36500	12700	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG572339-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35279
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 11:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	7310	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG572339-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35280
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 11:46	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	160000	54700	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG572339-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35292
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 15:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	171000	56800	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG572339-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35294
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 17:00	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG572339-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35296
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 17:38	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	172000	59300	2.90	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG572339-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35298
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 18:16	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG572339-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35310
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 22:03	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	180000	60500	2.98	2.3	3.8	

2.2.2.3 Sample Data

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Created with Analyst Reporter
Printed: 6/12/2016 9:38 PM

Data File	LM35286.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 1:40:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060504-01 10000X	**Injection Vial**	24.00
Data File	LM35286.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 1:40:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	L16060504-01	**Dilution Factor**	1.00
Sample Comment	110,000.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.440e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.230e+05	9.84	N/A	3.50
Perchlorate conf	1.800e+05	9.83	N/A	3.61

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

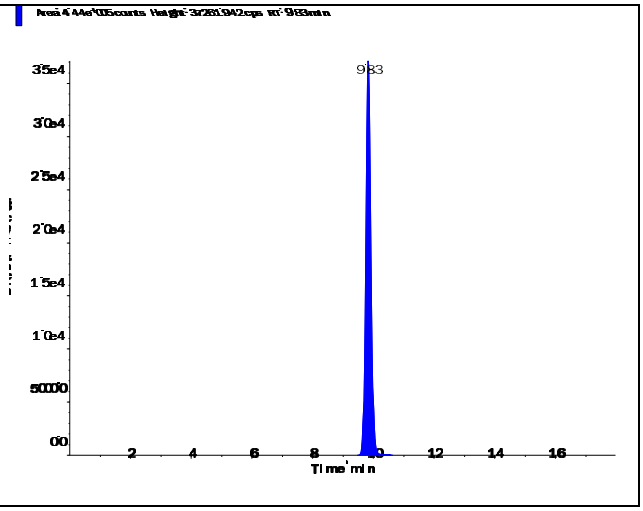

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	3.50 ng/ml
Area Ratio:	1.178
Sample Type:	(Unknown)

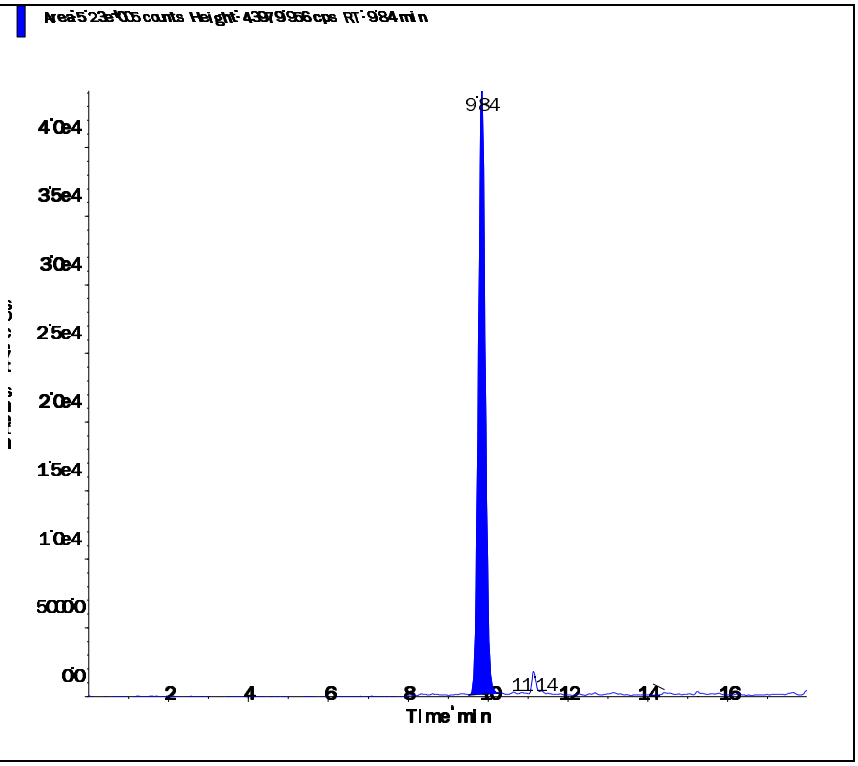

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	3.61 ng/ml
Area Ratio:	0.405
Sample Type:	(Unknown)

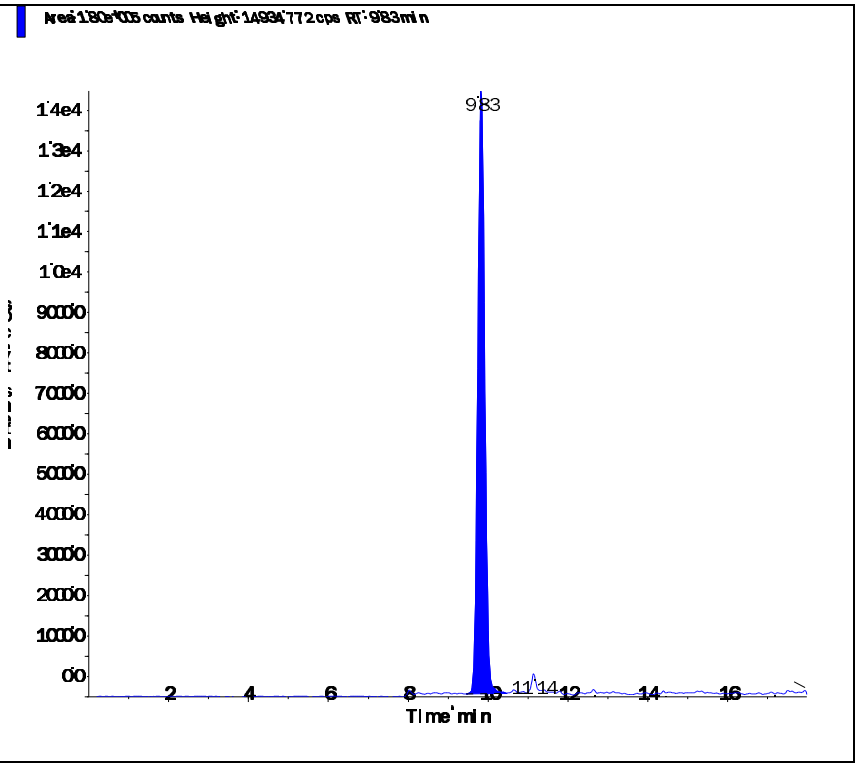

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Created with Analyst Reporter
Printed: 6/12/2016 9:39 PM

Data File	LM35287.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 1:58:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060504-02 1000X	**Injection Vial**	25.00
Data File	LM35287.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 1:58:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	L16060504-02	**Dilution Factor**	1.00
Sample Comment	11,000.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.710e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.070e+05	9.84	N/A	0.672
Perchlorate conf	3.620e+04	9.83	N/A	0.67

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

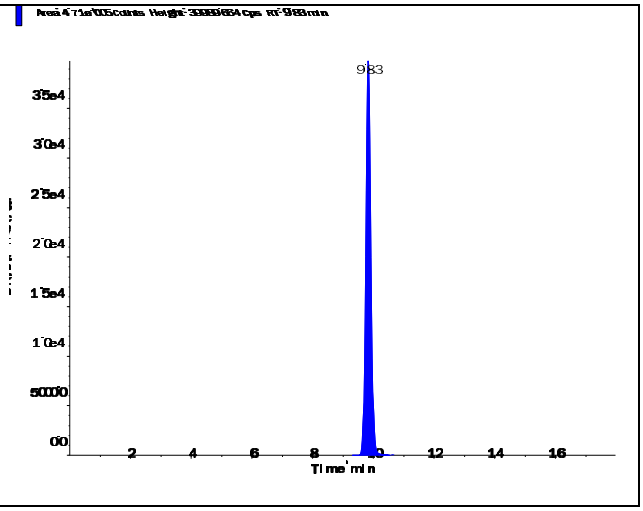

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Printed: 6/12/2016 9:39 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.672 ng/ml
Area Ratio:	0.227
Sample Type:	(Unknown)

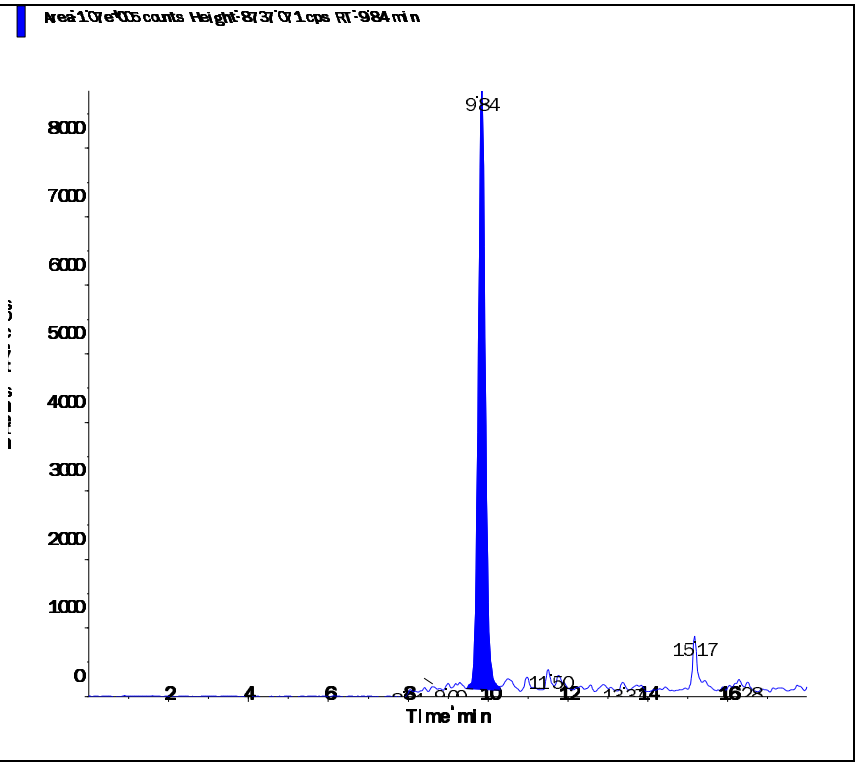

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.67 ng/ml
Area Ratio:	0.077
Sample Type:	(Unknown)

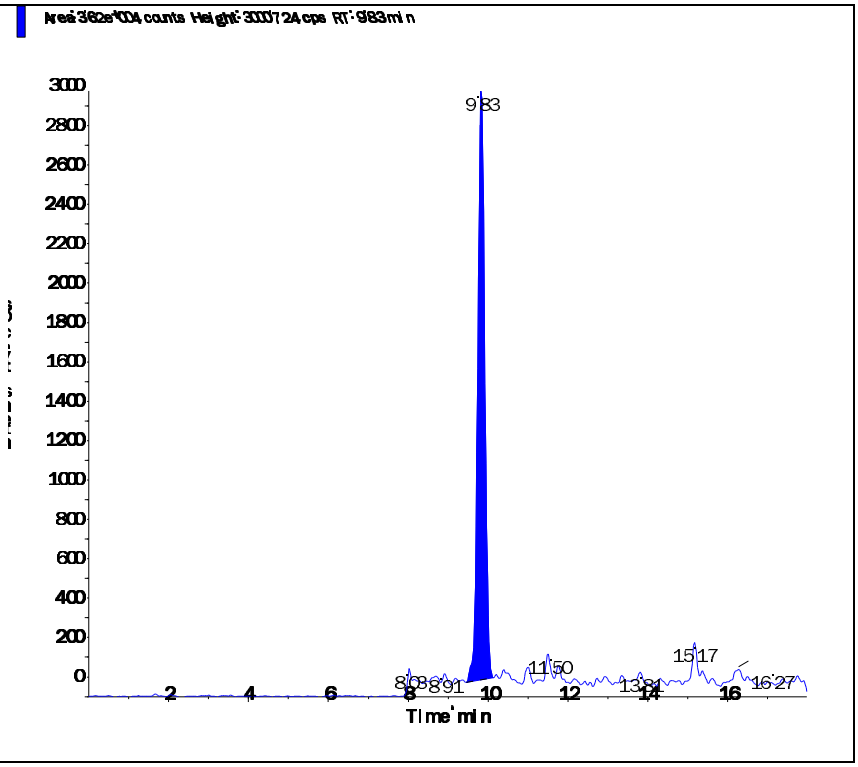

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Created with Analyst Reporter
Printed: 6/12/2016 9:39 PM

Data File	LM35288.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 2:17:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060504-03 10000X	**Injection Vial**	26.00
Data File	LM35288.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 2:17:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	L16060504-03	**Dilution Factor**	1.00
Sample Comment	110,000.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.510e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.760e+05	9.84	N/A	3.13
Perchlorate conf	1.640e+05	9.83	N/A	3.24

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

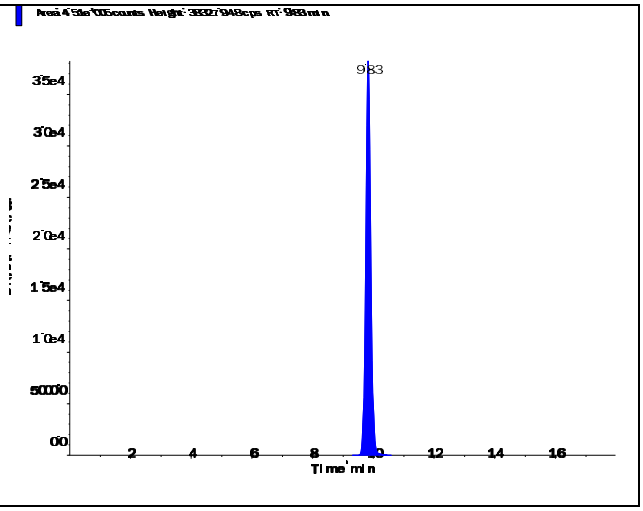

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	3.13 ng/ml
Area Ratio:	1.055
Sample Type:	(Unknown)

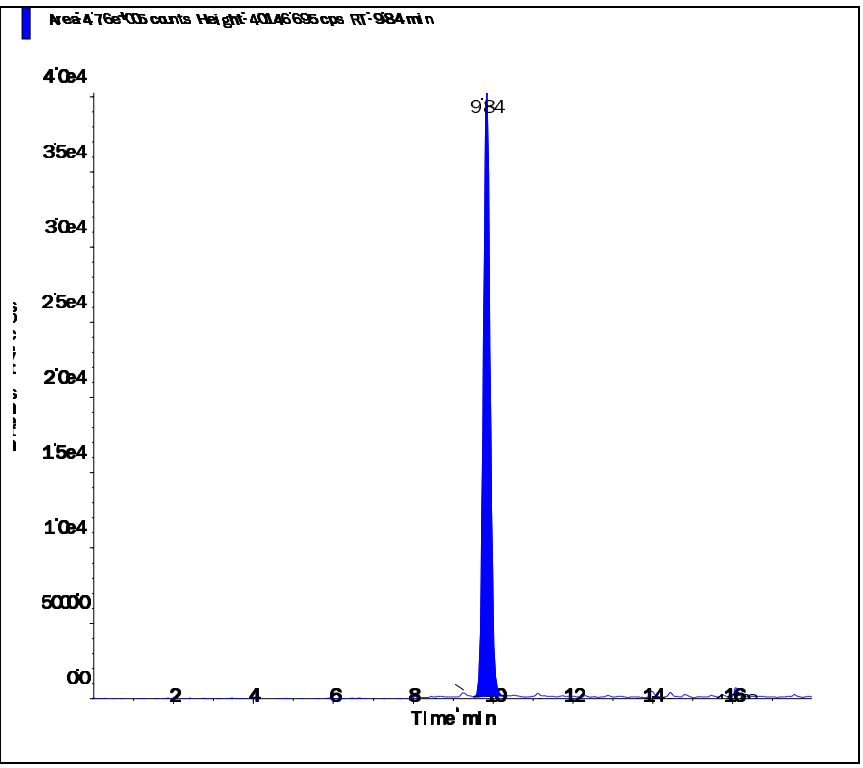

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	3.24 ng/ml
Area Ratio:	0.363
Sample Type:	(Unknown)

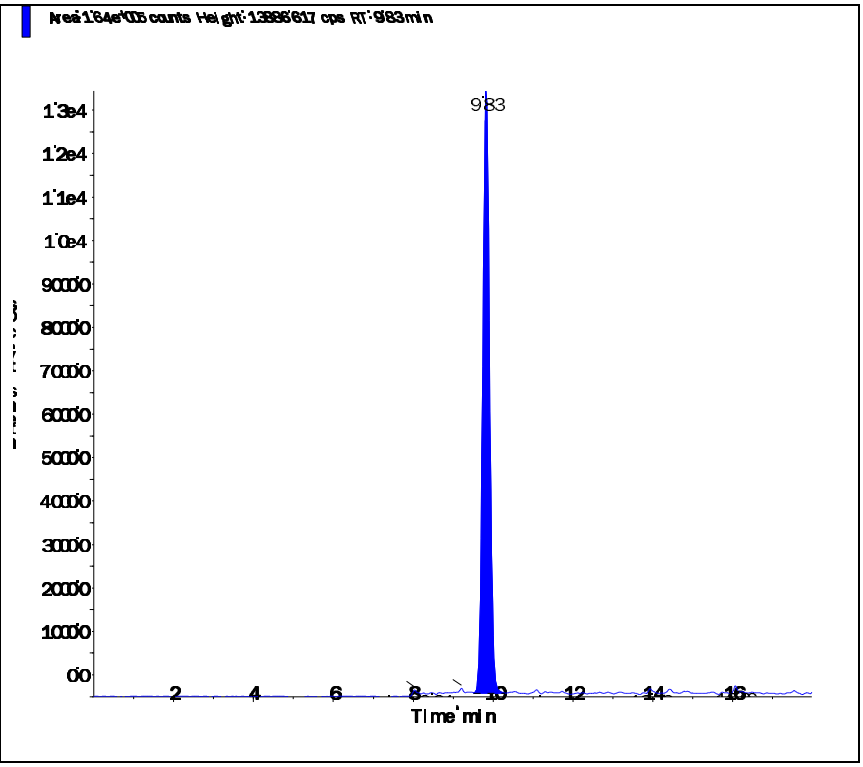

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Printed: 6/12/2016 9:41 PM

Data File	LM35295.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 5:19:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060504-04 100X	**Injection Vial**	27.00
Data File	LM35295.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 5:19:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	L16060504-04	**Dilution Factor**	1.00
Sample Comment	1,100.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.200e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.670e+05	9.82	N/A	2.60
Perchlorate conf	1.240e+05	9.81	N/A	2.62

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

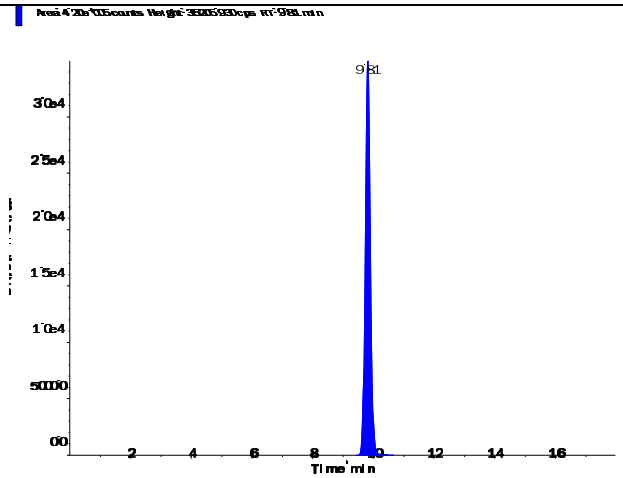

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	2.60 ng/ml
Area Ratio:	0.874
Sample Type:	(Unknown)

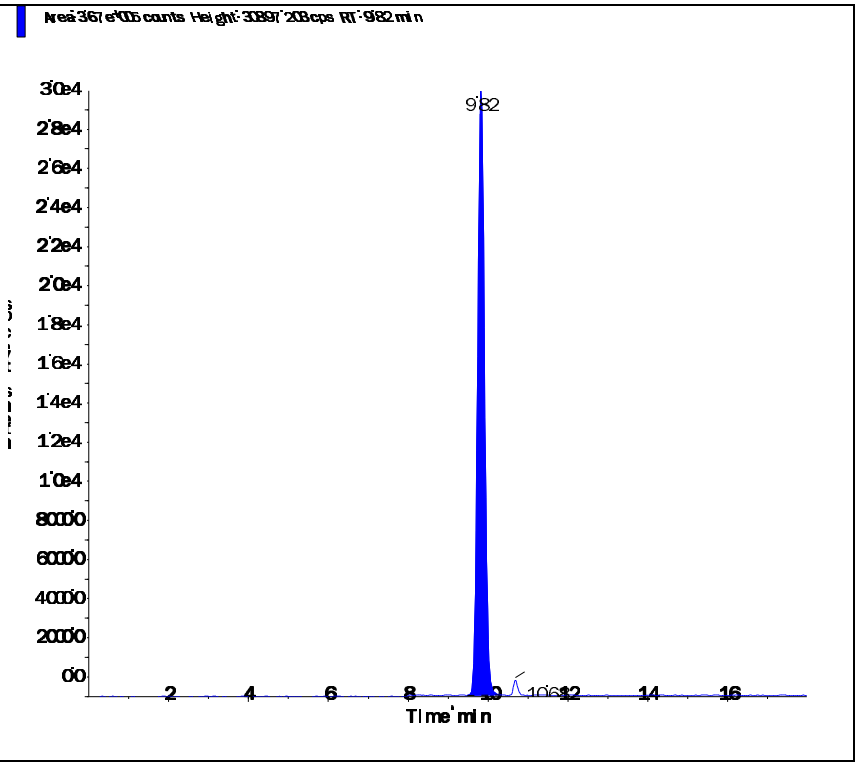

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.81 (9.84) min
Calculated conc:	2.62 ng/ml
Area Ratio:	0.294
Sample Type:	(Unknown)

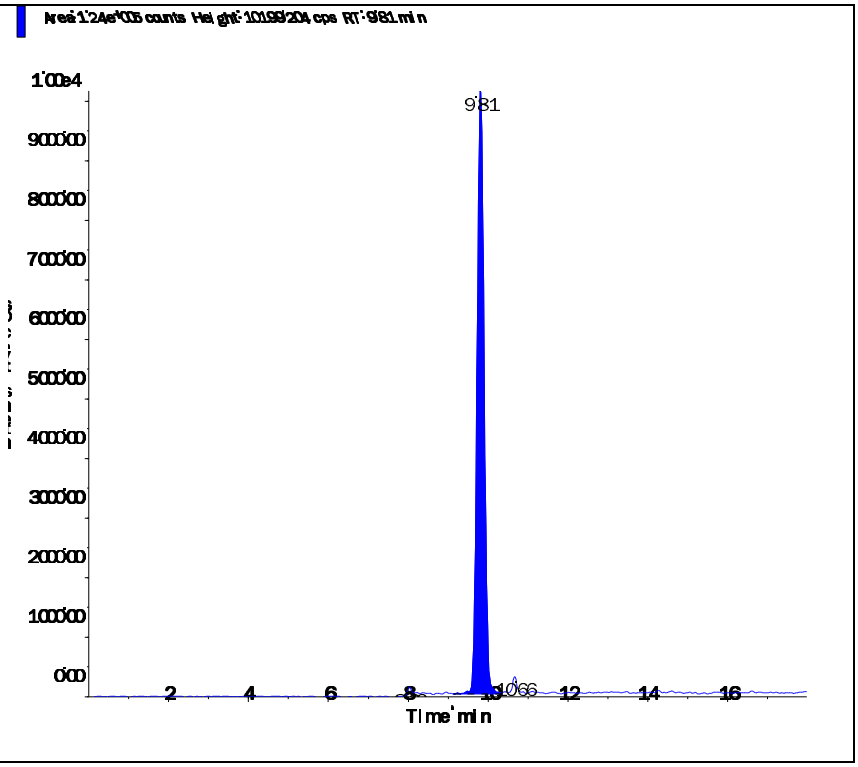

2.2.2.4 Standards Data

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Data File	LM34686.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

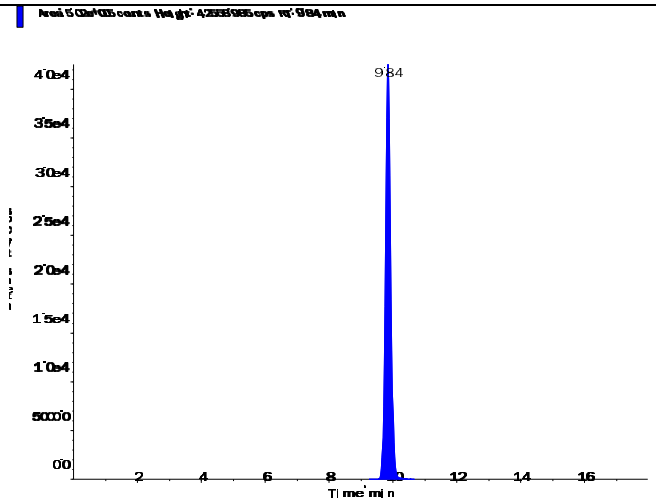

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

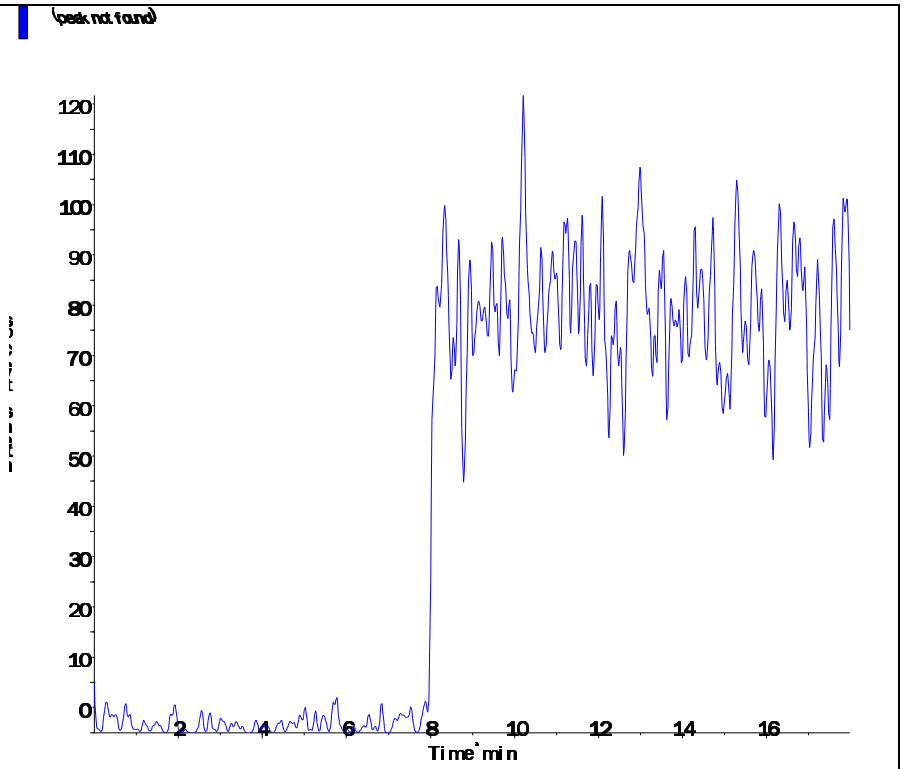

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

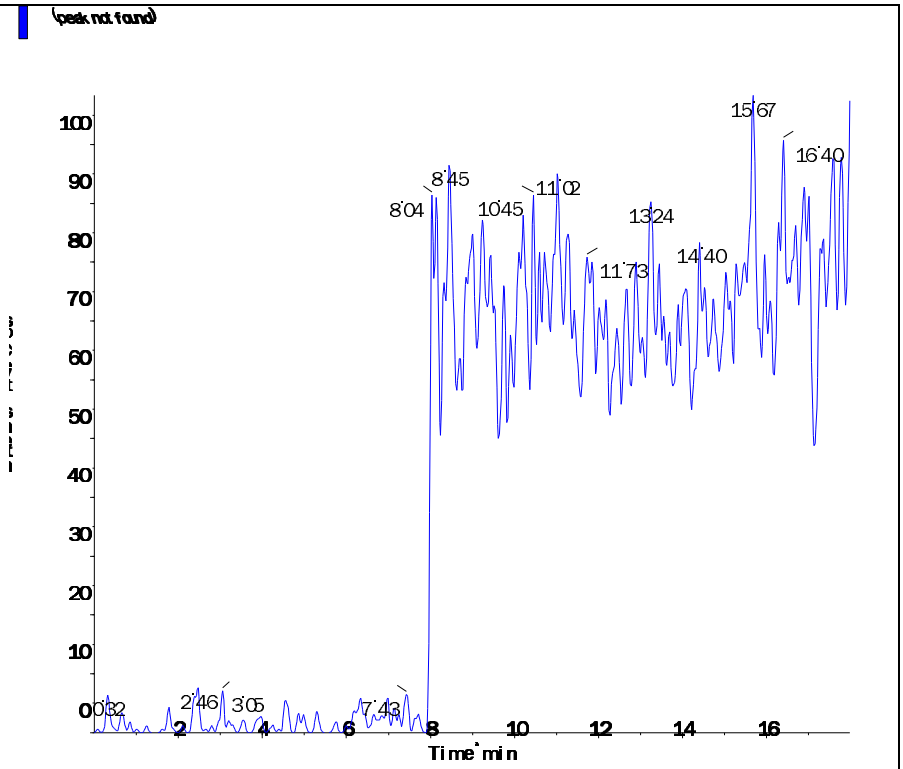

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Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

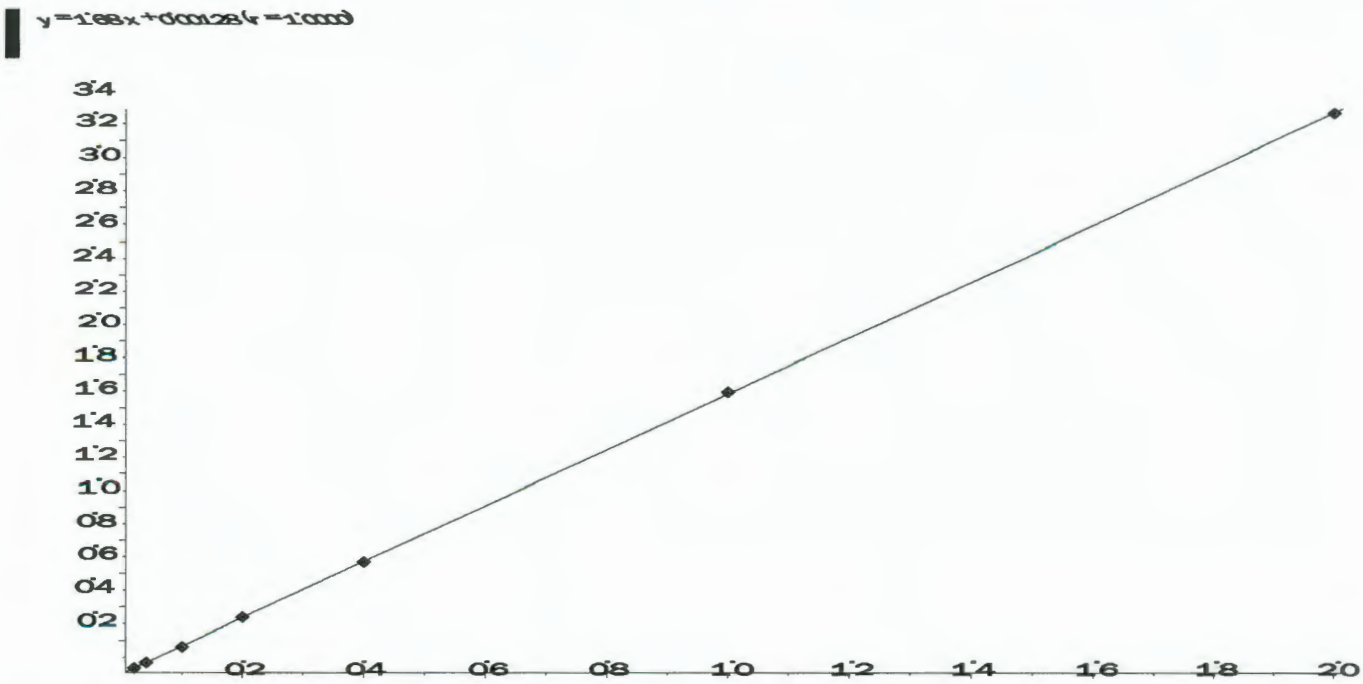

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Created with Analyst Reporter
Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

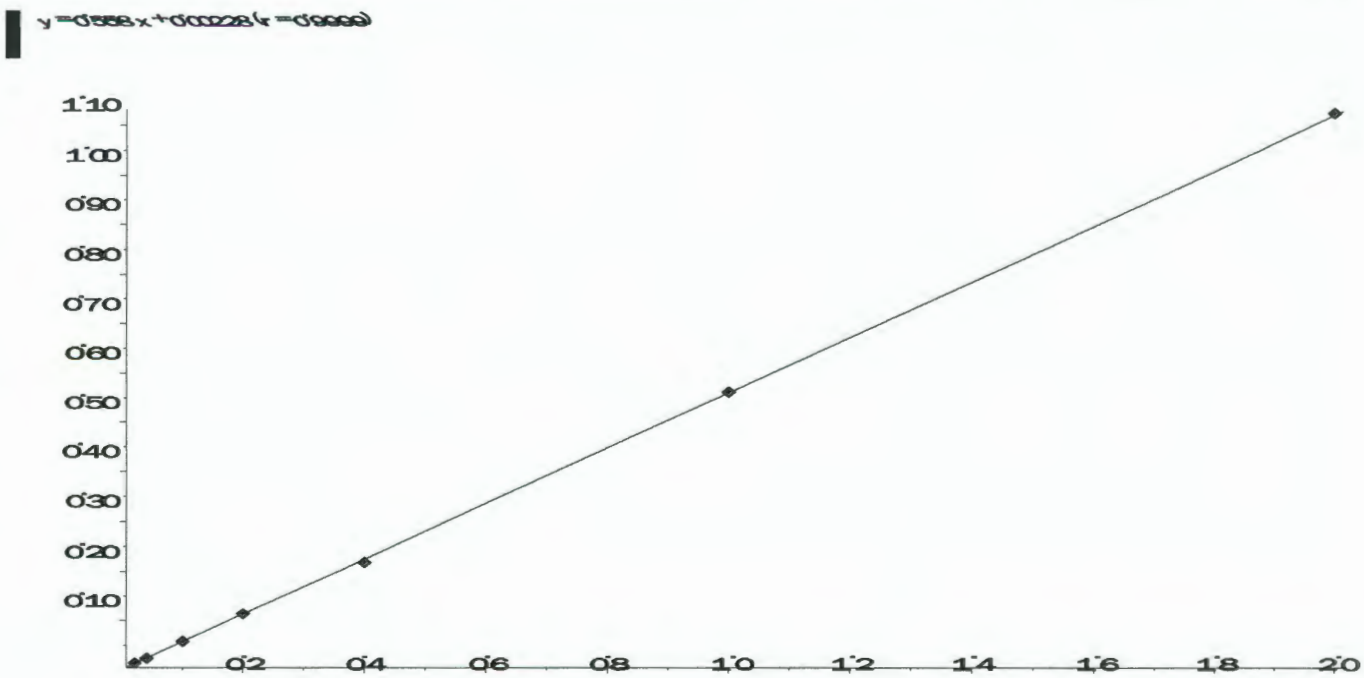

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Data File	LM34687.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

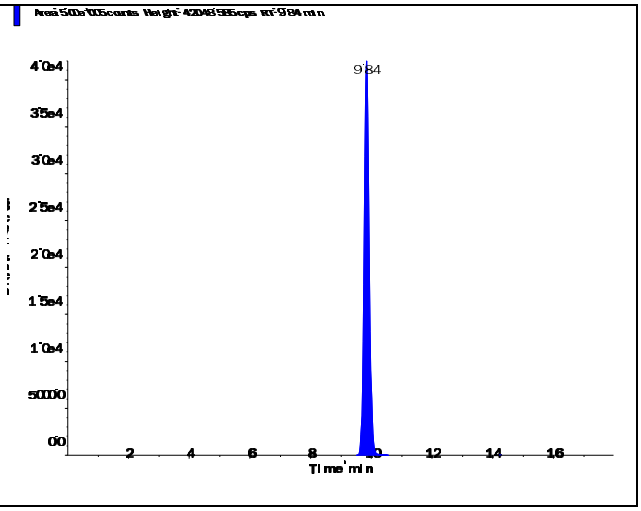

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.103 ng/ml
Area Ratio:	0.036
Sample Type:	(Standard)

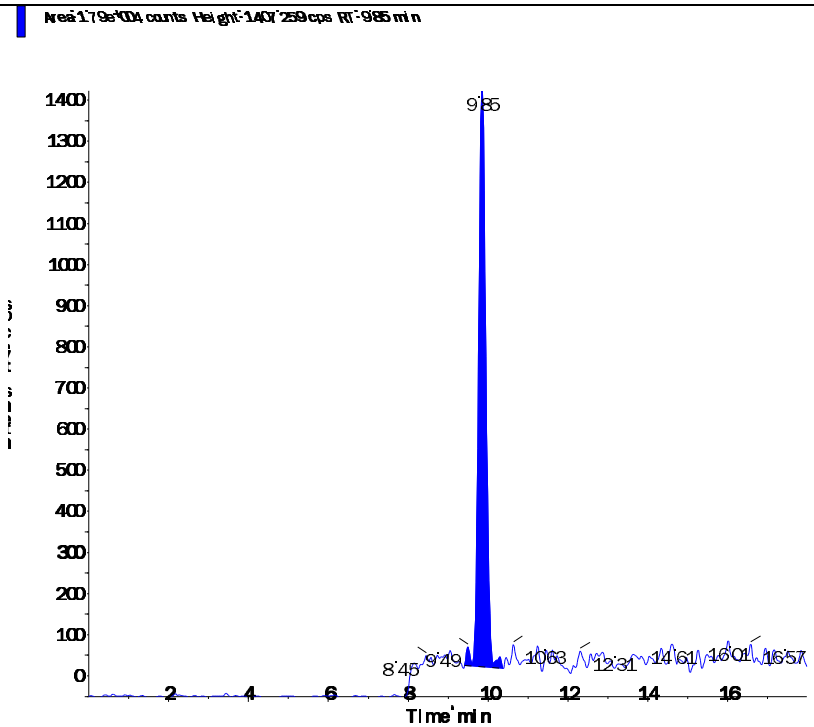

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.104 ng/ml
Area Ratio:	0.014
Sample Type:	(Standard)

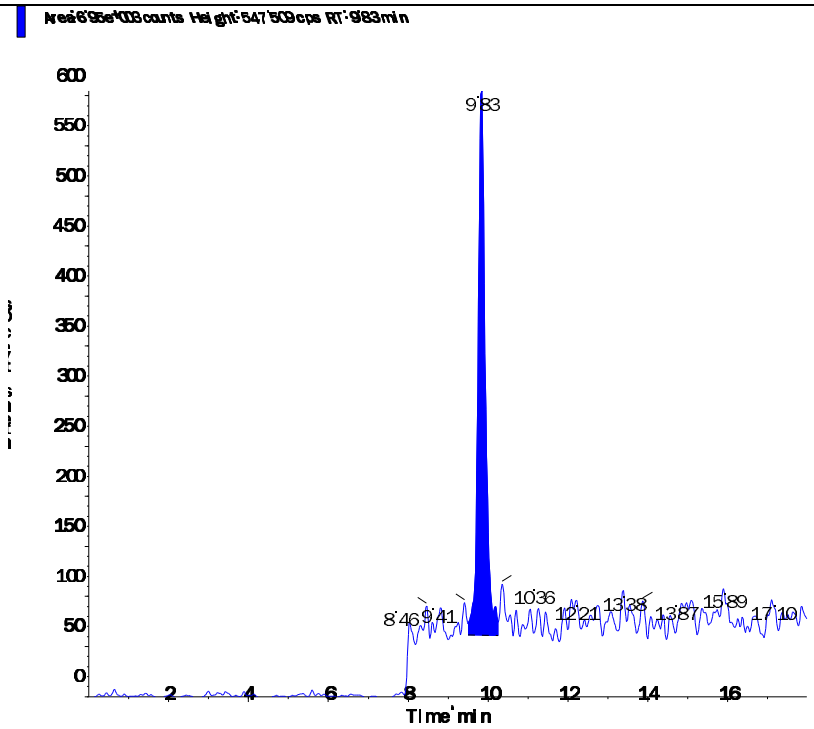

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Data File	LM34688.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

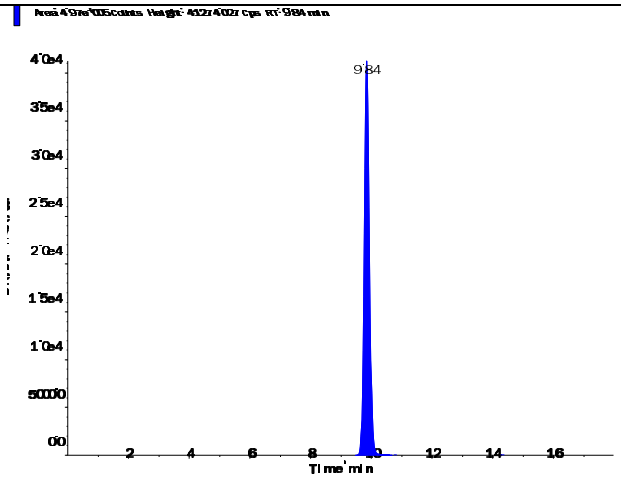

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

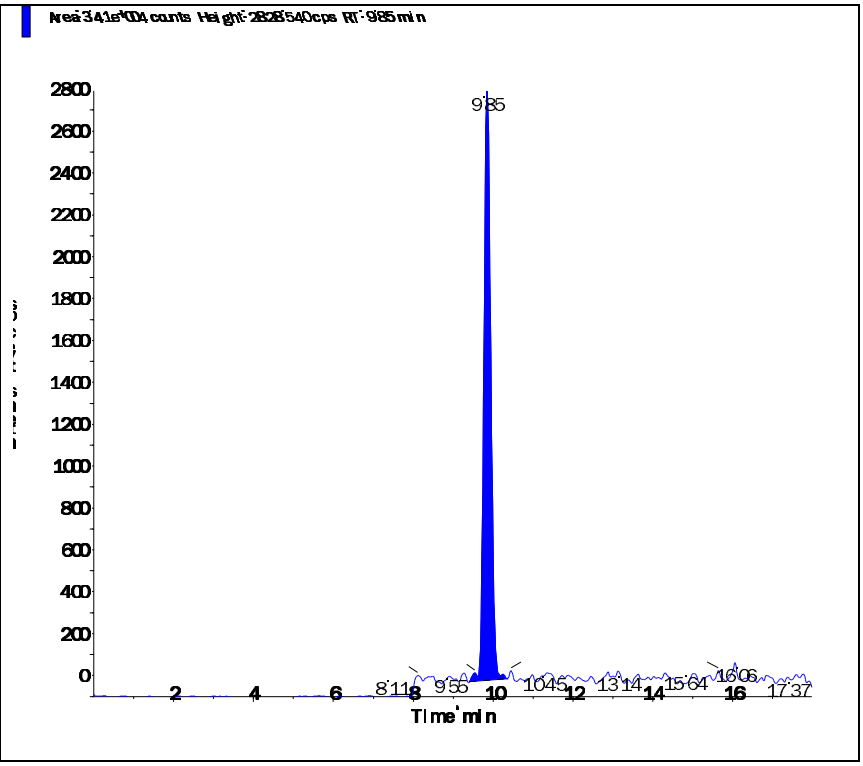

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

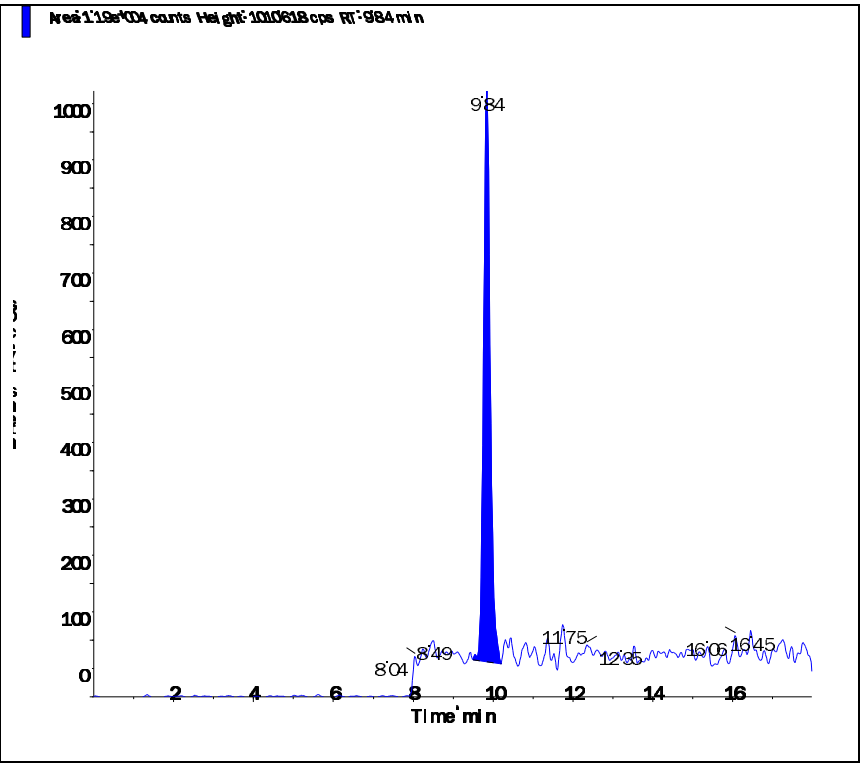

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Data File	LM34689.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

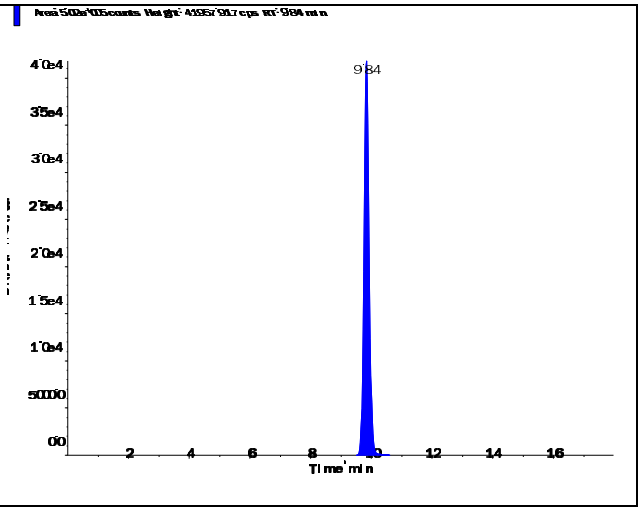

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.483 ng/ml
Area Ratio:	0.164
Sample Type:	(Standard)

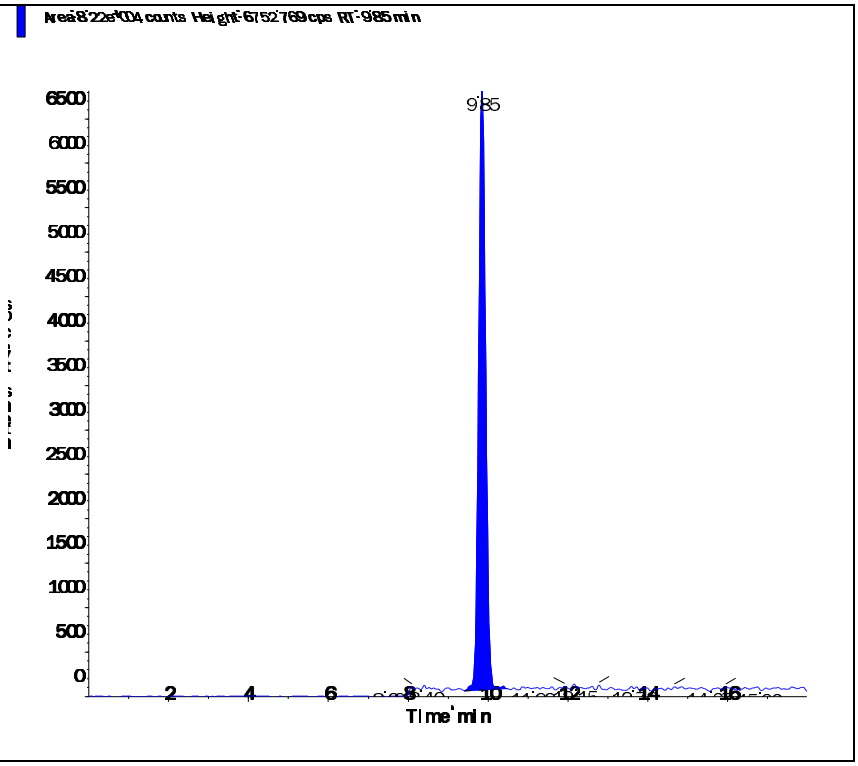

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.503 ng/ml
Area Ratio:	0.058
Sample Type:	(Standard)

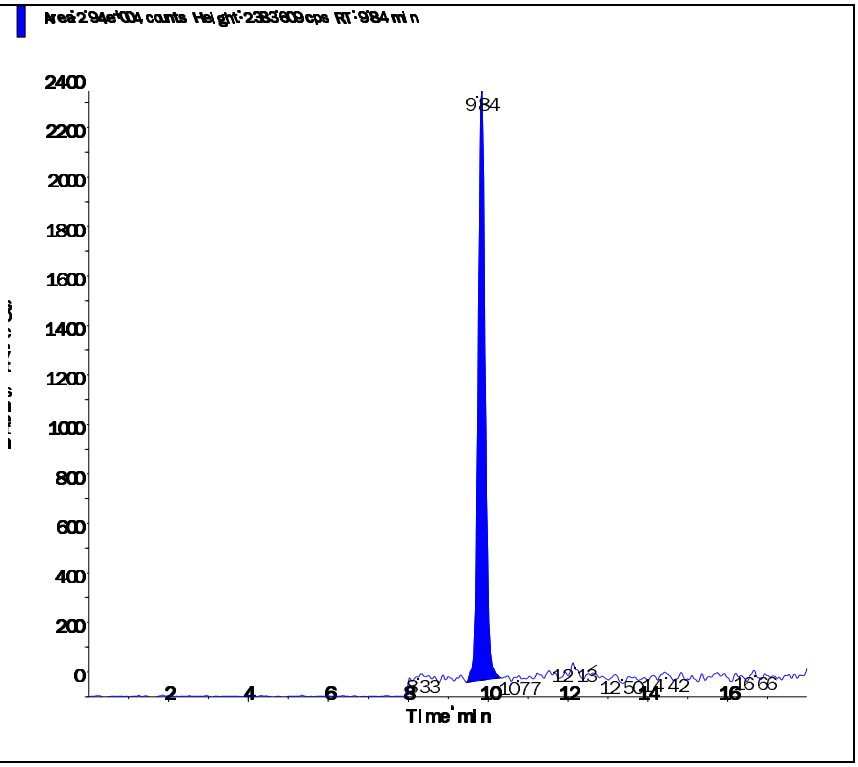

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Data File	LM34690.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

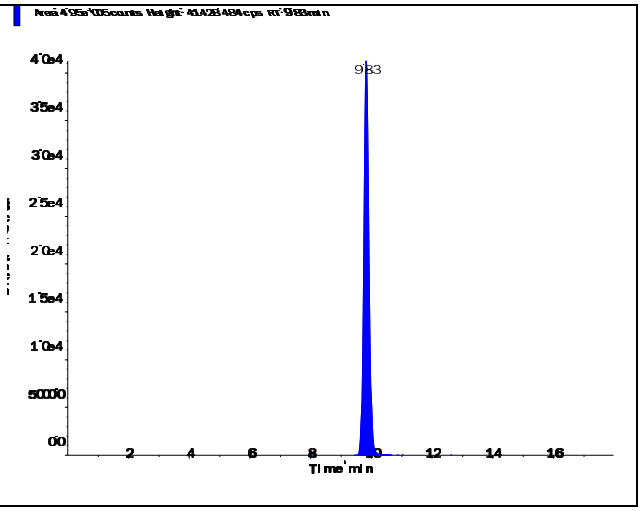

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

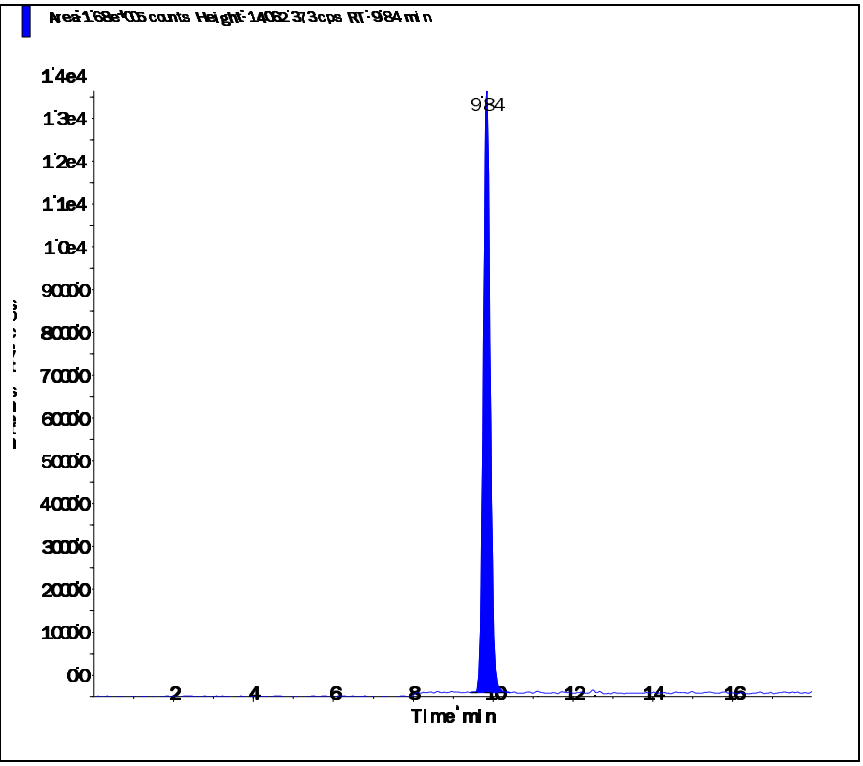

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

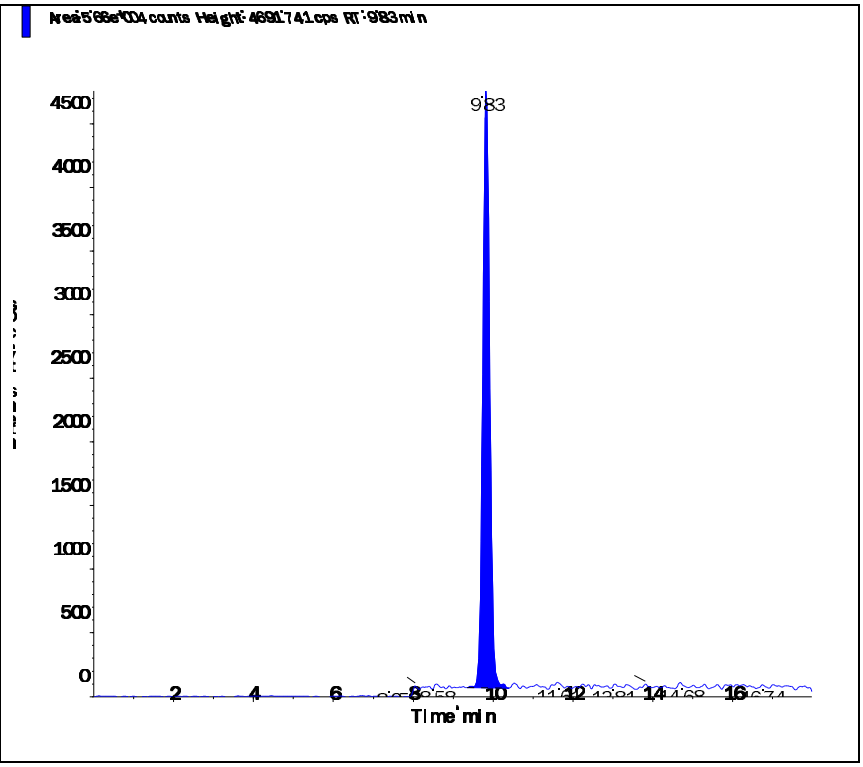

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Data File	LM34691.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

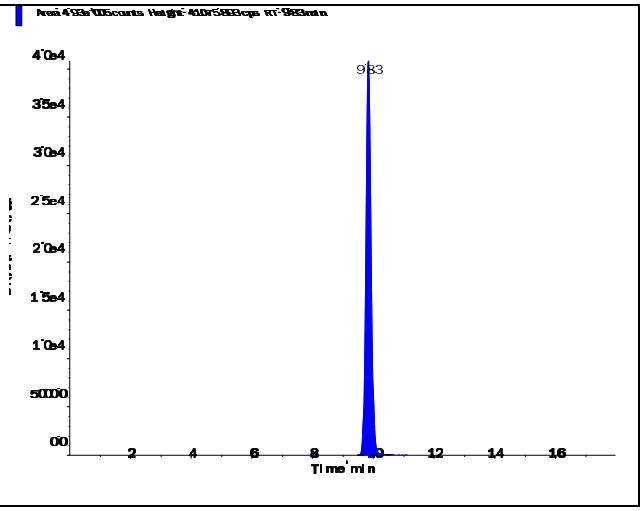

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.99 ng/ml
Area Ratio:	0.669
Sample Type:	(Standard)

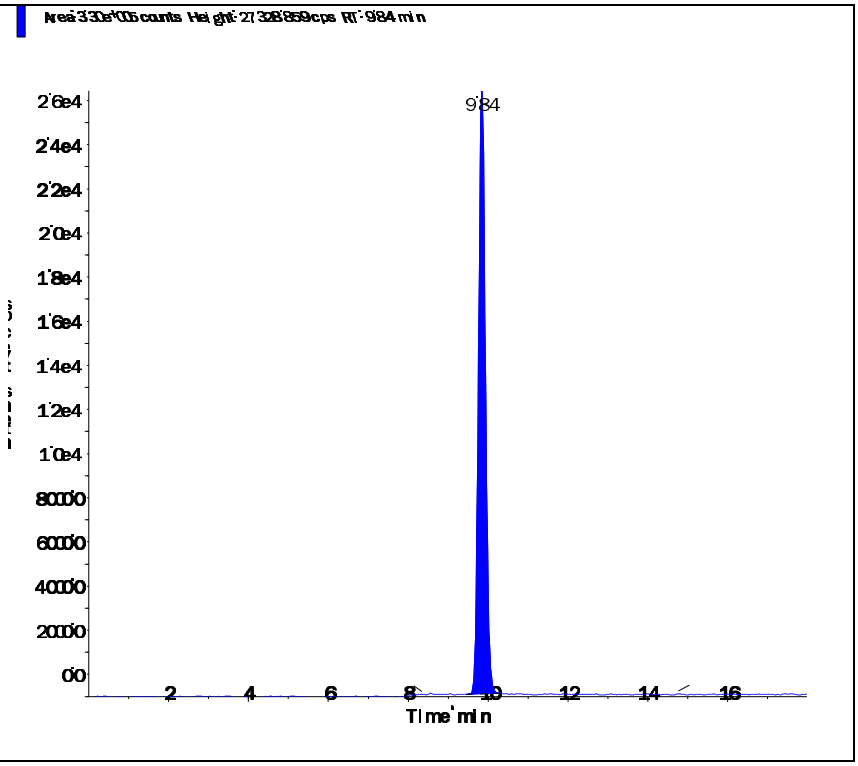

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.94 ng/ml
Area Ratio:	0.219
Sample Type:	(Standard)

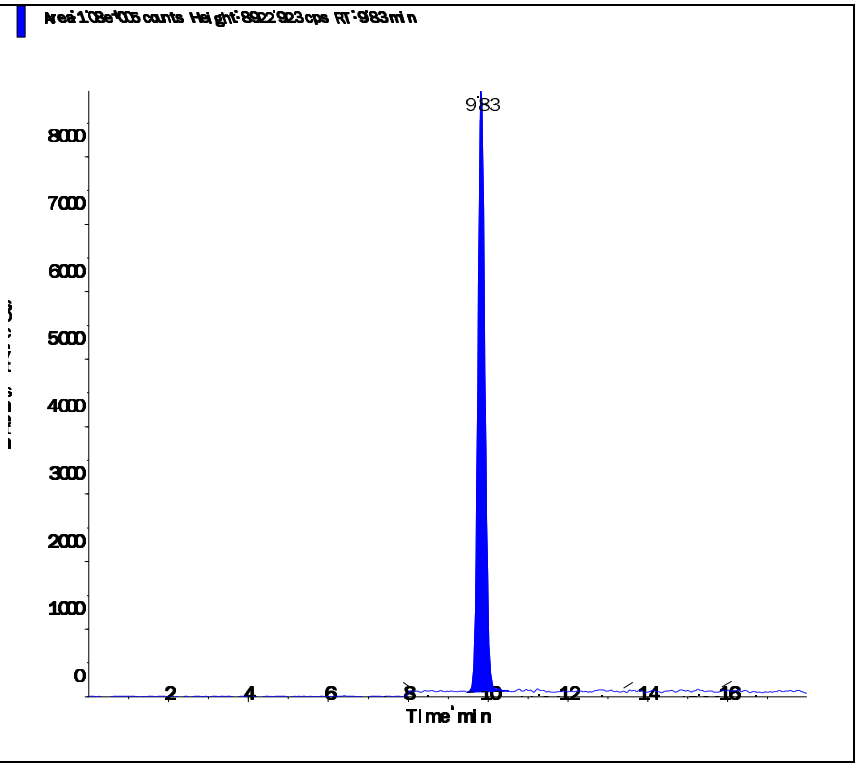

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Data File	LM34692.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

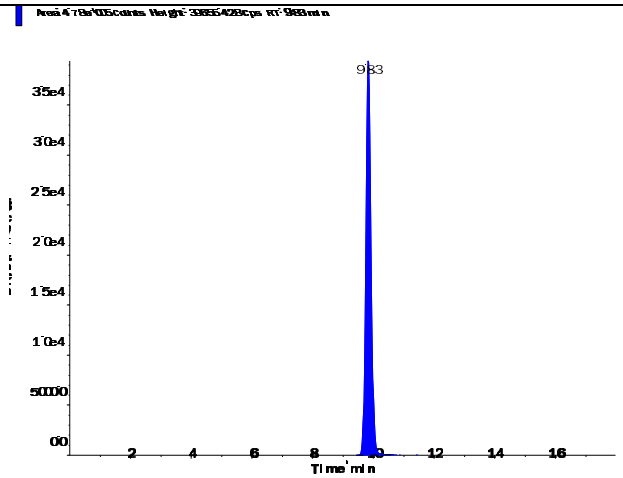

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

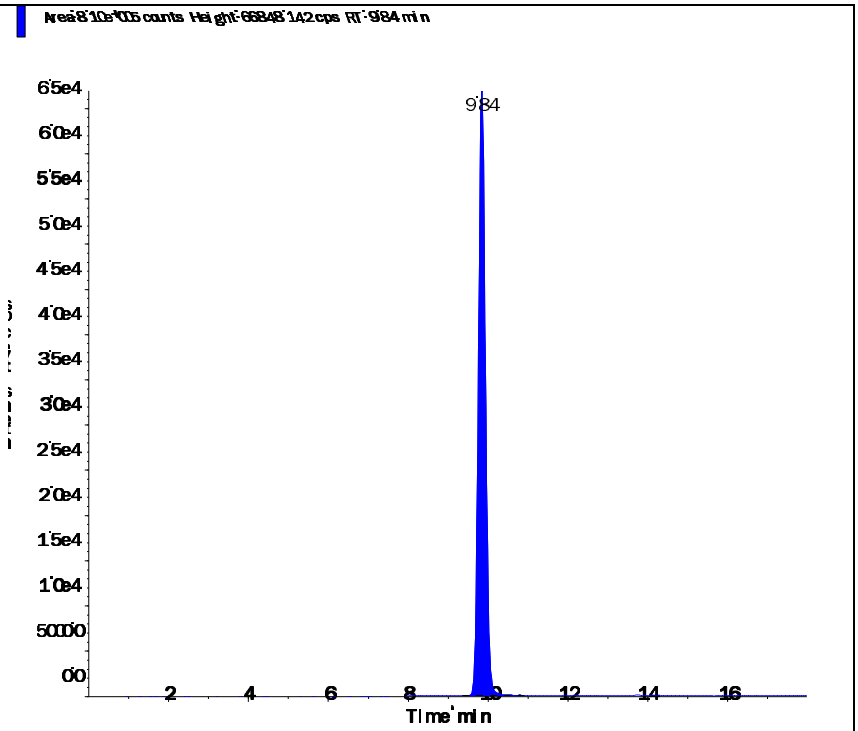

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

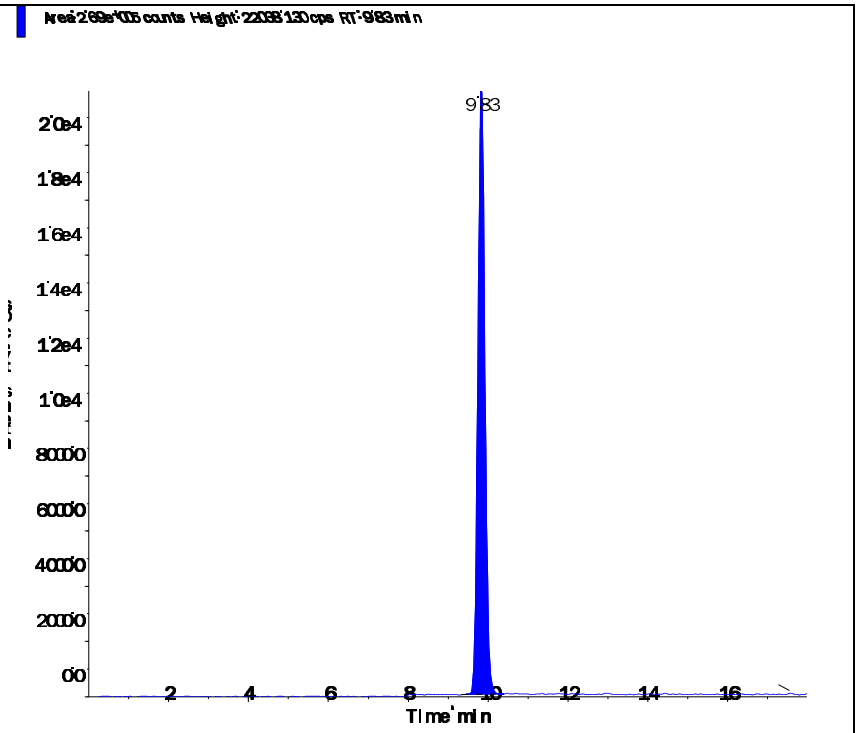

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Created with Analyst Reporter
Printed: 6/13/2016 10:30 AM

Data File	LM34693.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

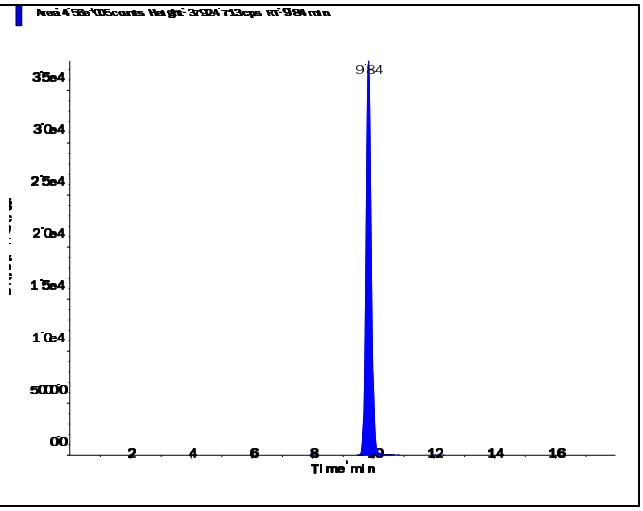

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	9.99 ng/ml
Area Ratio:	3.36
Sample Type:	(Standard)

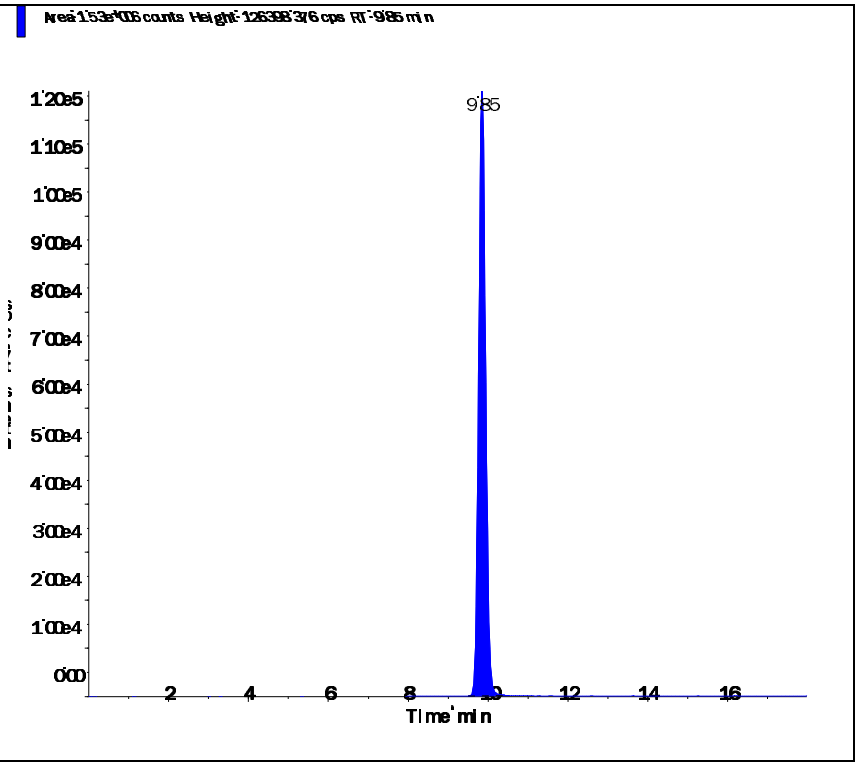

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	10.00 ng/ml
Area Ratio:	1.122
Sample Type:	(Standard)

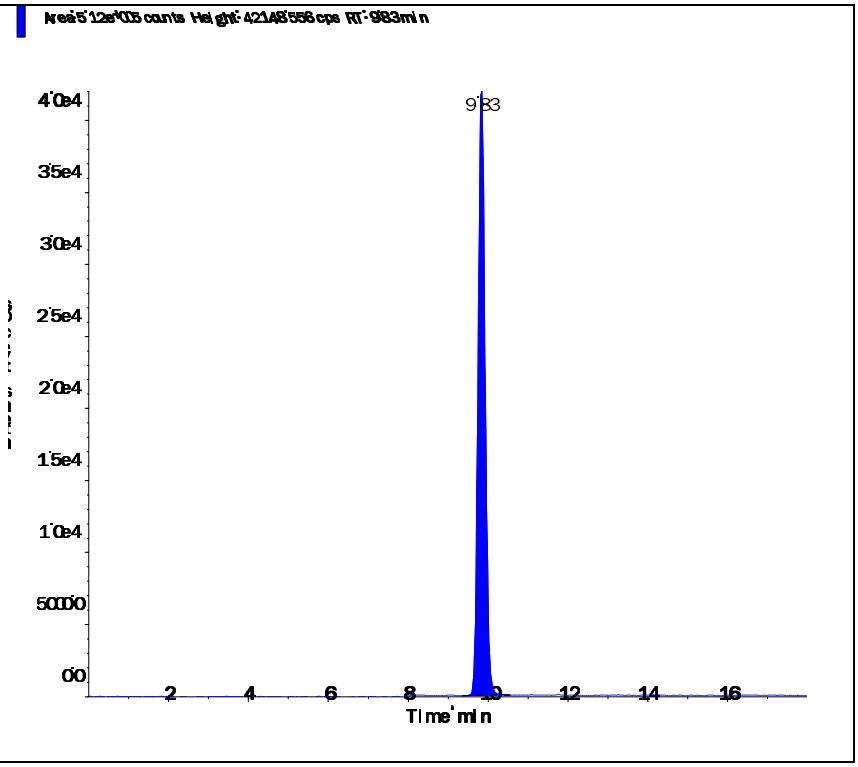

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Printed: 5/4/2016 1:23 PM

Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

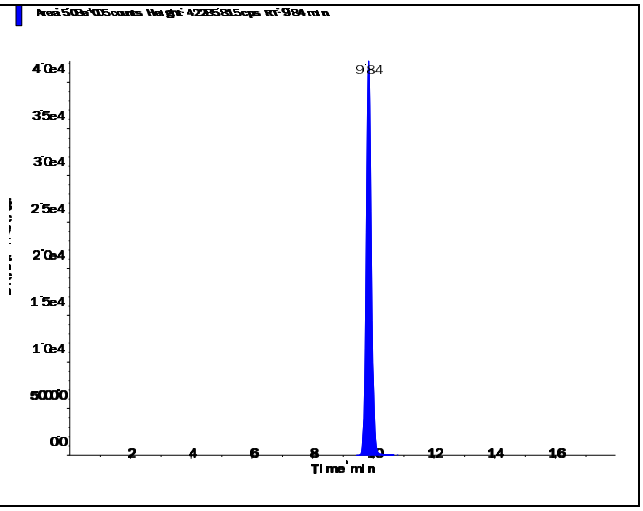

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.332
Sample Type:	(Quality Control)

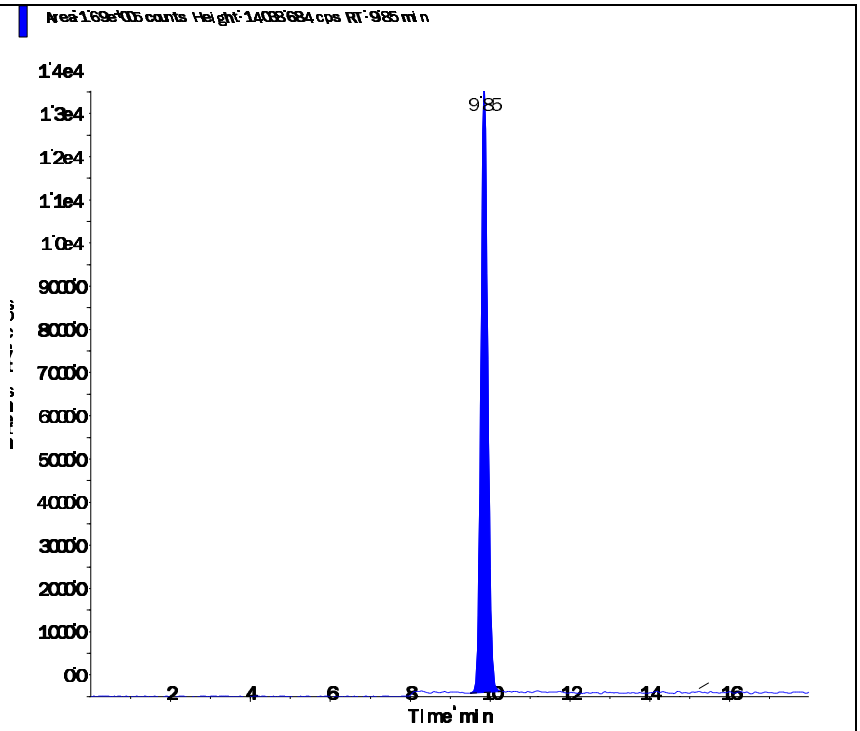

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

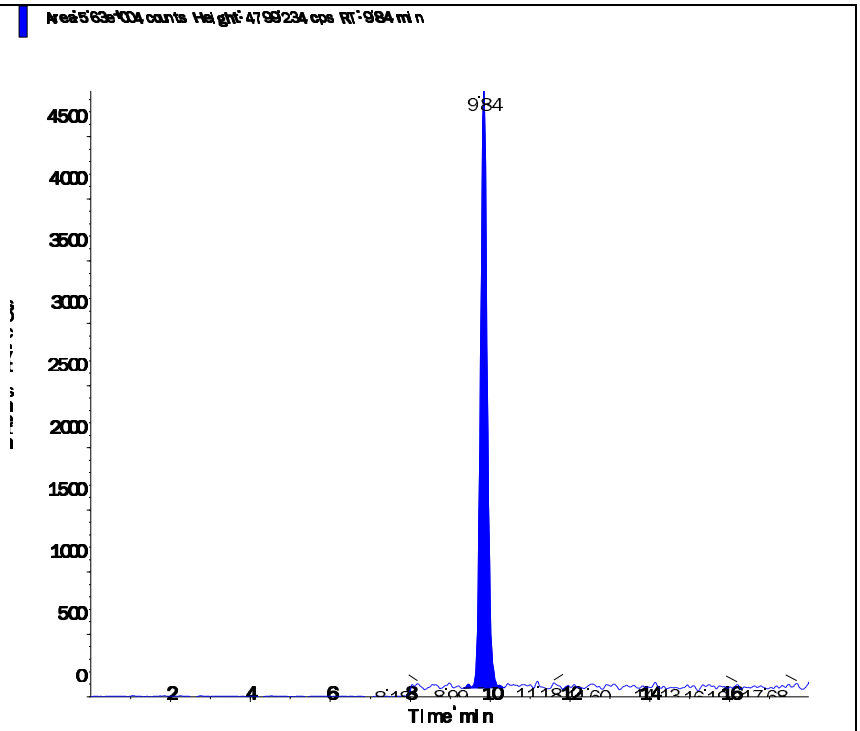

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Printed: 6/11/2016 12:59 PM

Data File	LM35226.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 10:08:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35226.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 10:08:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.430e+05	9.64	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.510e+05	9.65	1.00	1.01
Perchlorate conf	5.370e+04	9.63	1.00	1.06

O18LP (Internal Standard)

RT (Exp. RT): 9.64(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

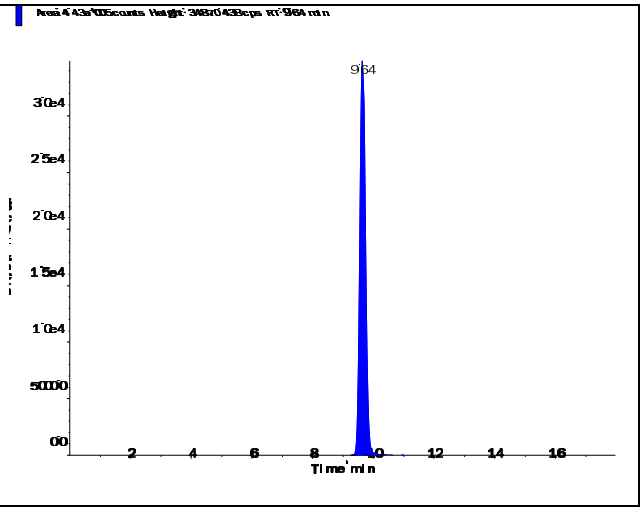

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.65 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.34
Sample Type:	(Quality Control)

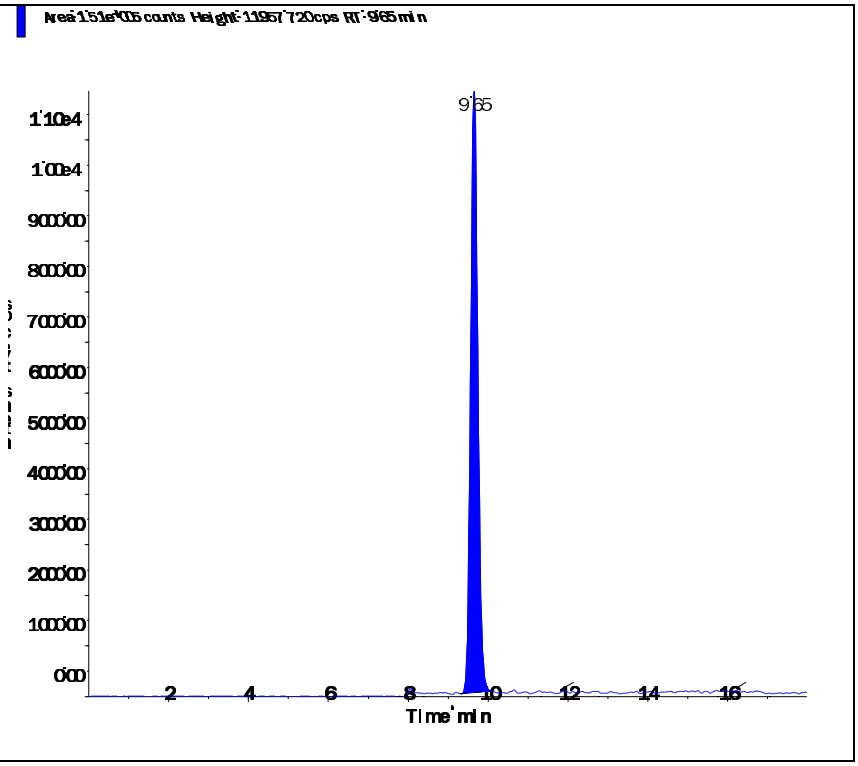

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

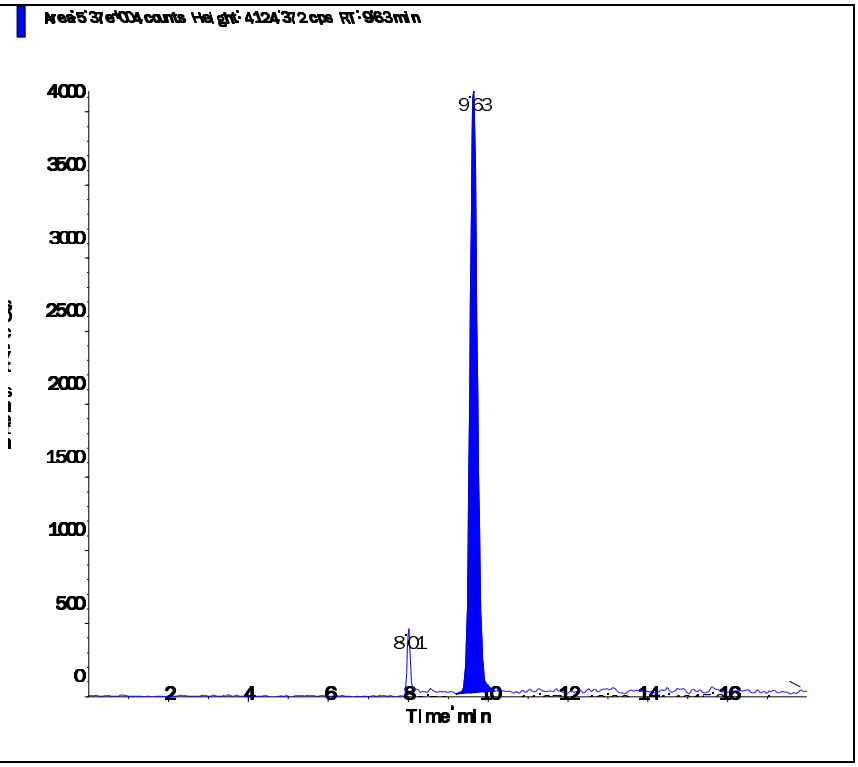

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Printed: 6/11/2016 1:03 PM

Data File	LM35238.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 1:55:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35238.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 1:55:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.720e+05	9.64	1.00	1.01
Perchlorate conf	5.960e+04	9.63	1.00	1.04

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

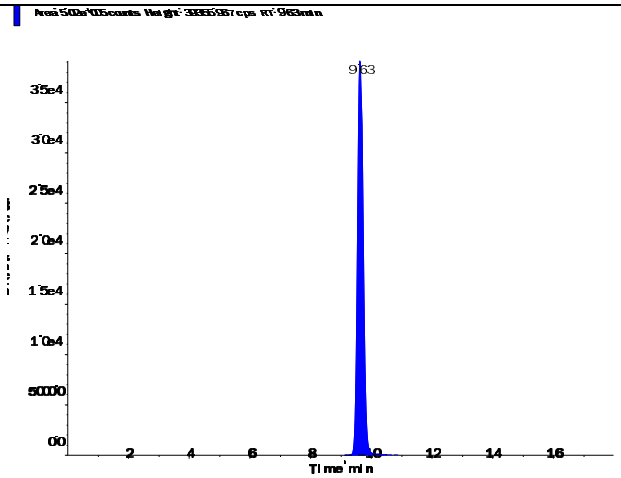

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.342
Sample Type:	(Quality Control)

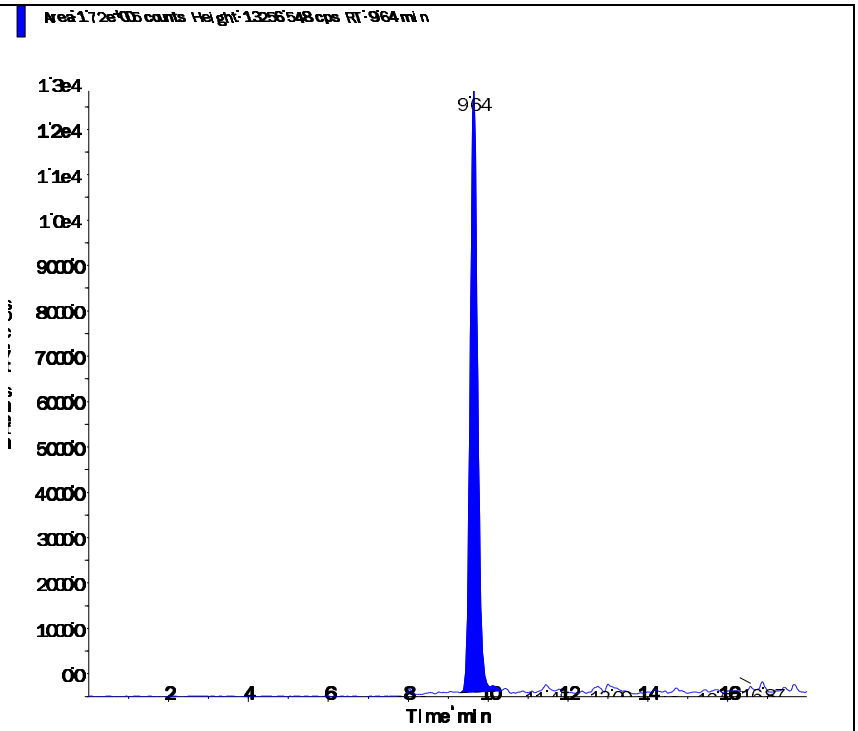

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

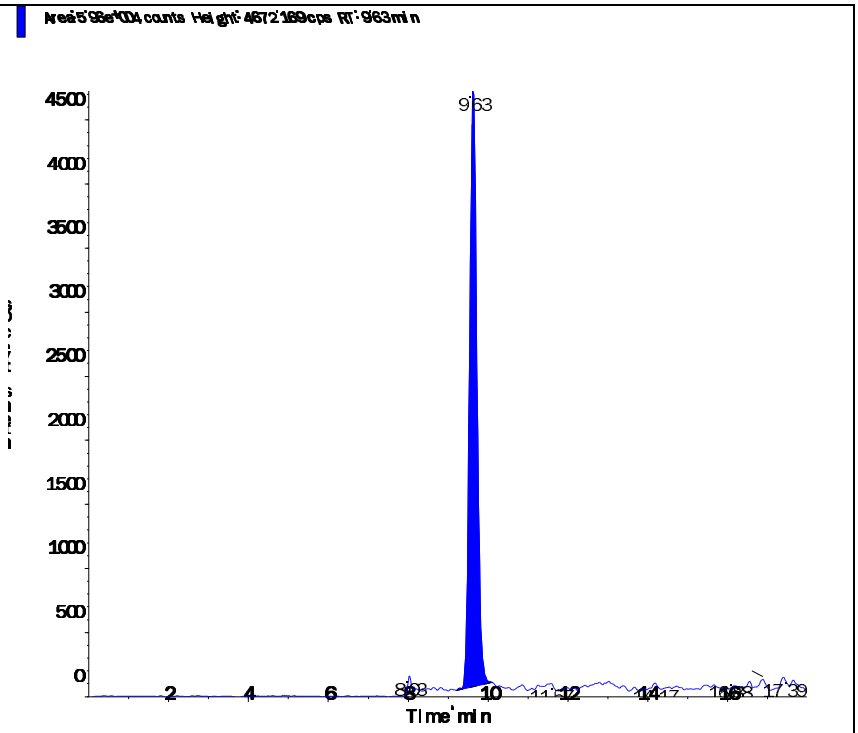

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Data File	LM35244.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 3:49:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35244.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 3:49:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+05	9.64	1.00	1.05
Perchlorate conf	6.340e+04	9.64	1.00	1.10

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

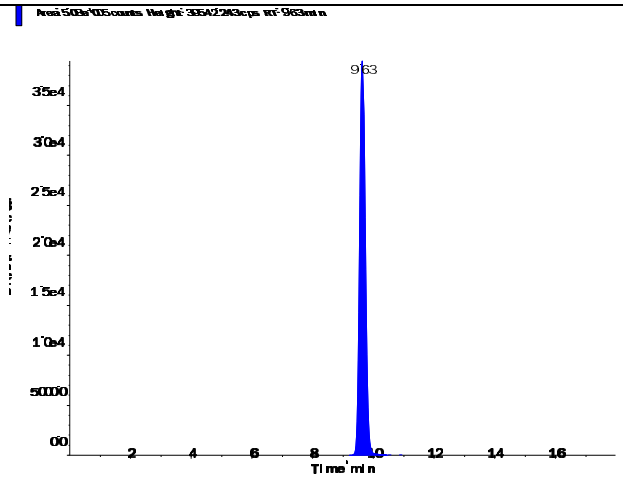

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.353
Sample Type:	(Quality Control)

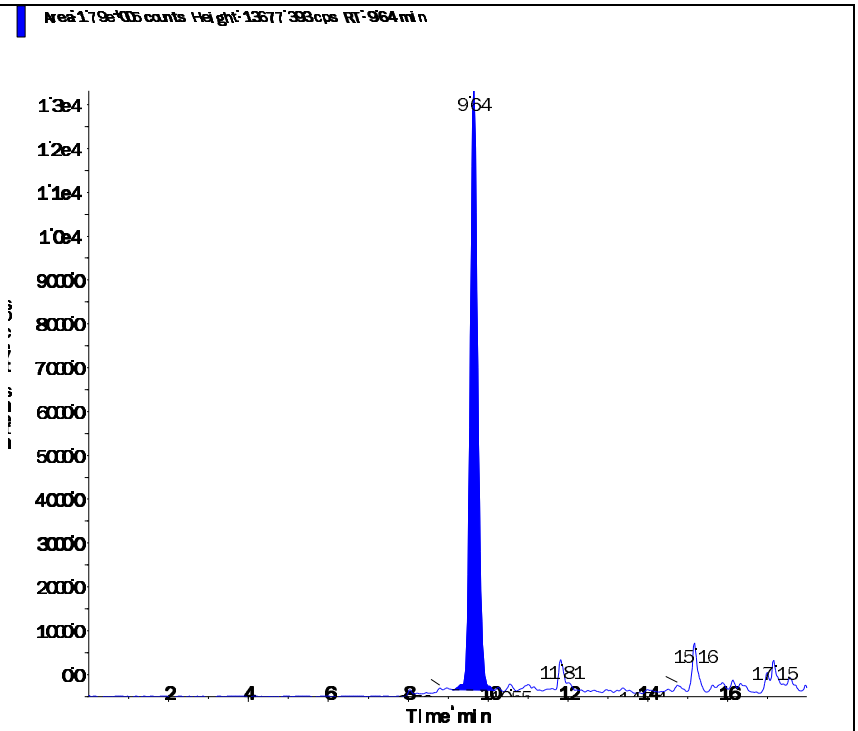

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.10 ng/ml
Area Ratio:	0.125
Sample Type:	(Quality Control)

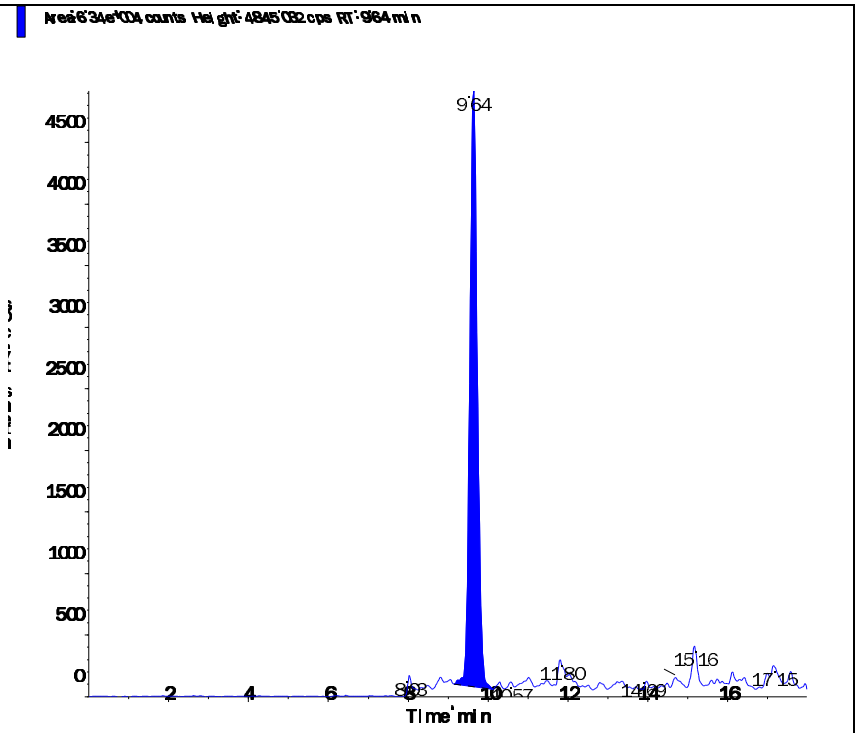

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Data File	LM35257.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 7:56:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35257.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 7:56:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.810e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.750e+05	9.64	1.00	1.08
Perchlorate conf	5.800e+04	9.62	1.00	1.06

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

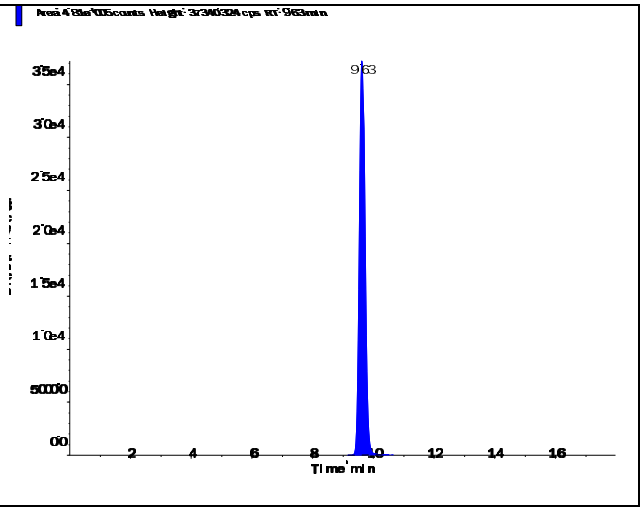

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.08 ng/ml
Area Ratio:	0.363
Sample Type:	(Quality Control)

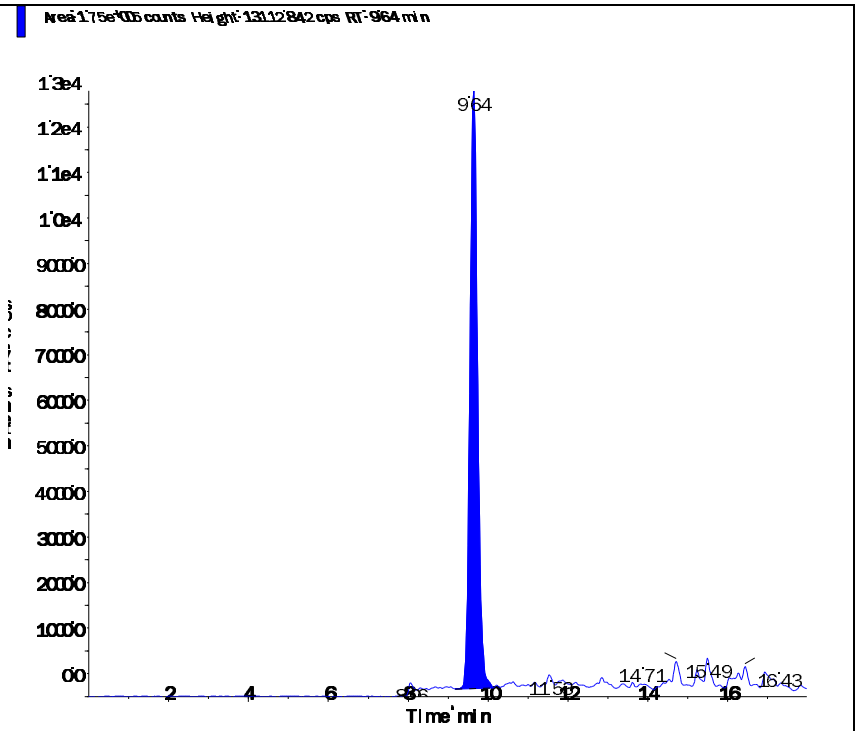

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.62 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

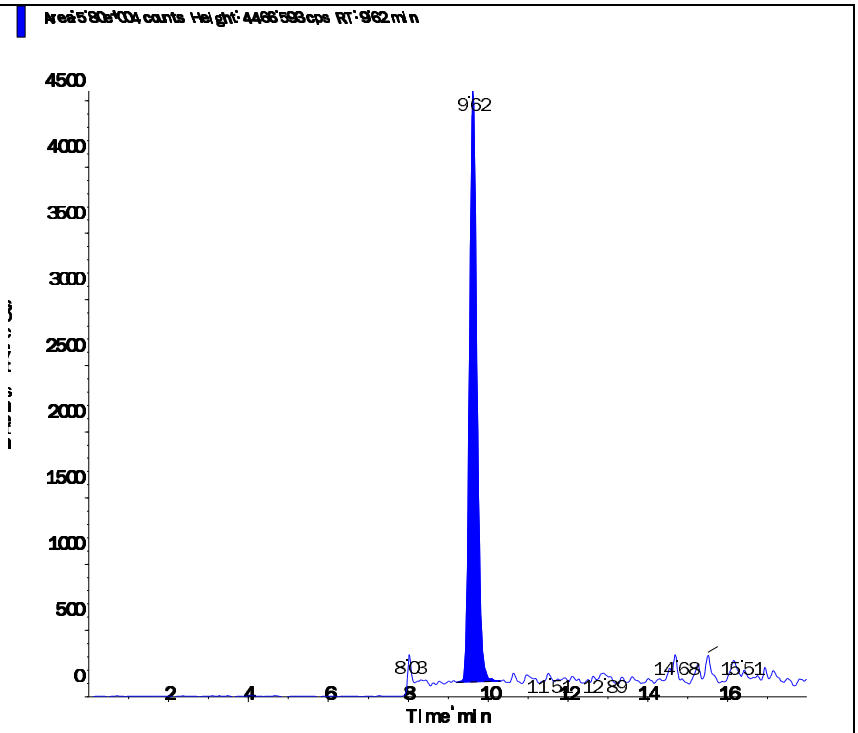

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Data File	LM35264.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 10:09:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35264.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 10:09:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.860e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.64	1.00	1.03
Perchlorate conf	5.780e+04	9.63	1.00	1.04

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

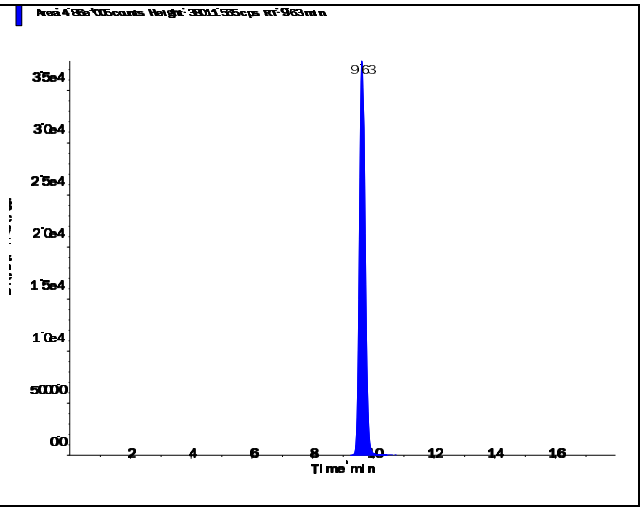

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Printed: 6/11/2016 1:12 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.348
Sample Type:	(Quality Control)

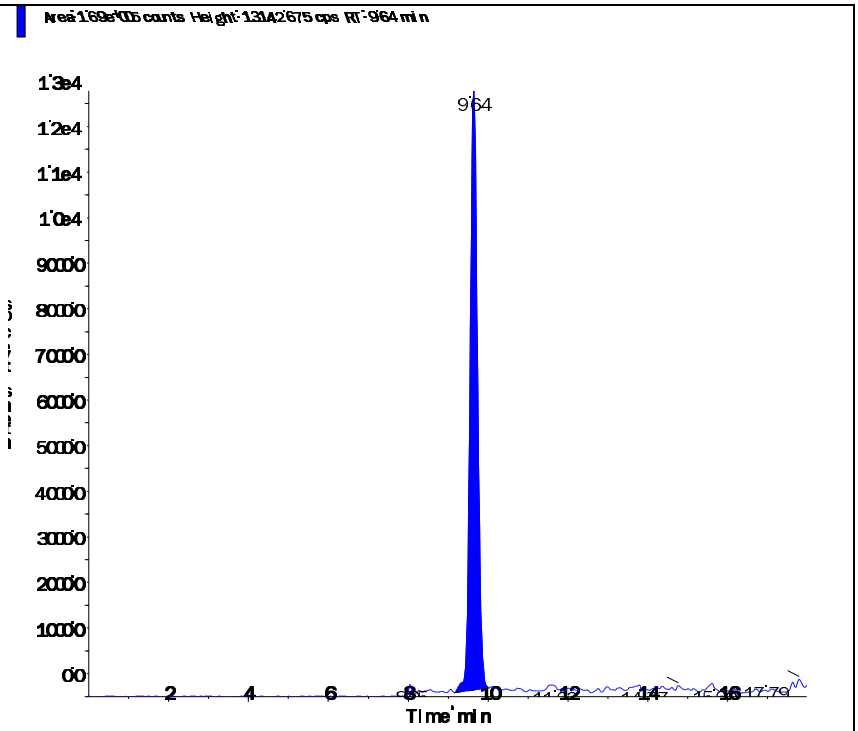

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

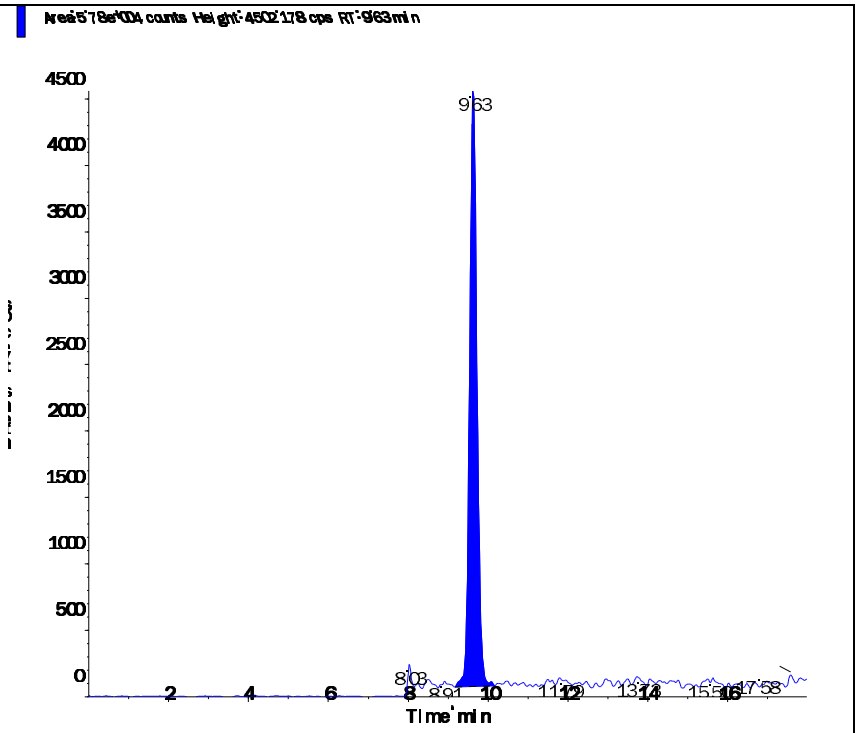

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Data File	LM35276.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/11/2016 1:56:12 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-11 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35276.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 1:56:12 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.260e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.830e+05	9.64	1.00	1.03
Perchlorate conf	6.180e+04	9.62	1.00	1.03

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

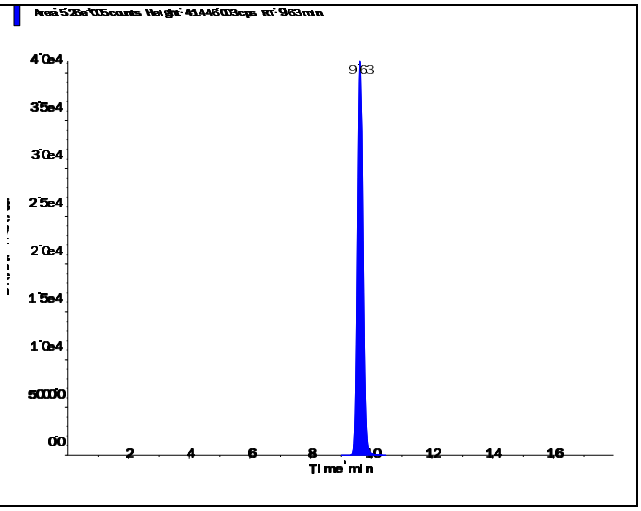

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.349
Sample Type:	(Quality Control)

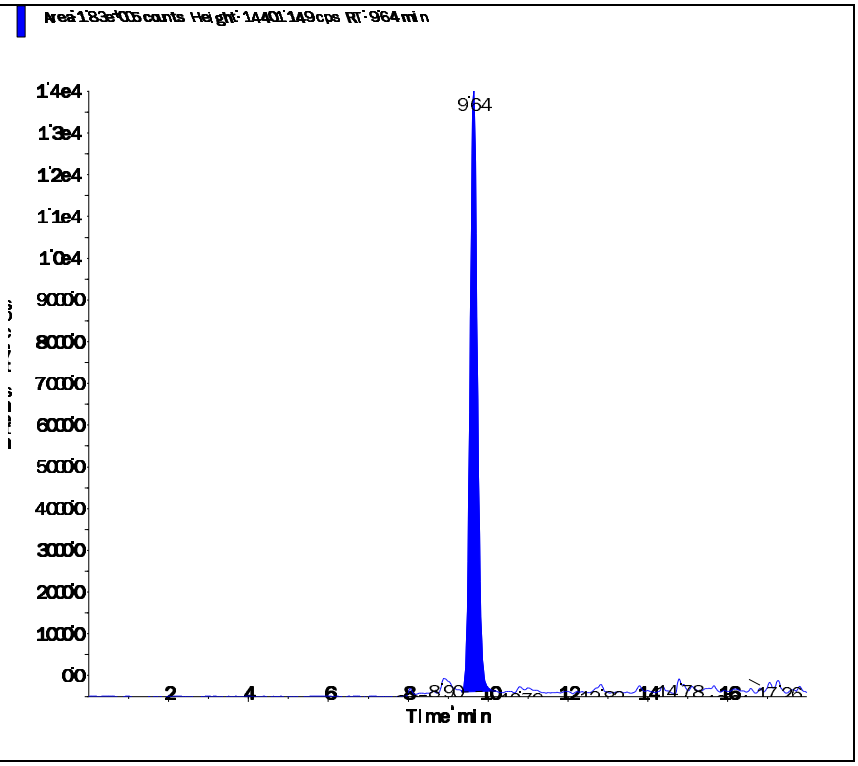

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.62 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.117
Sample Type:	(Quality Control)

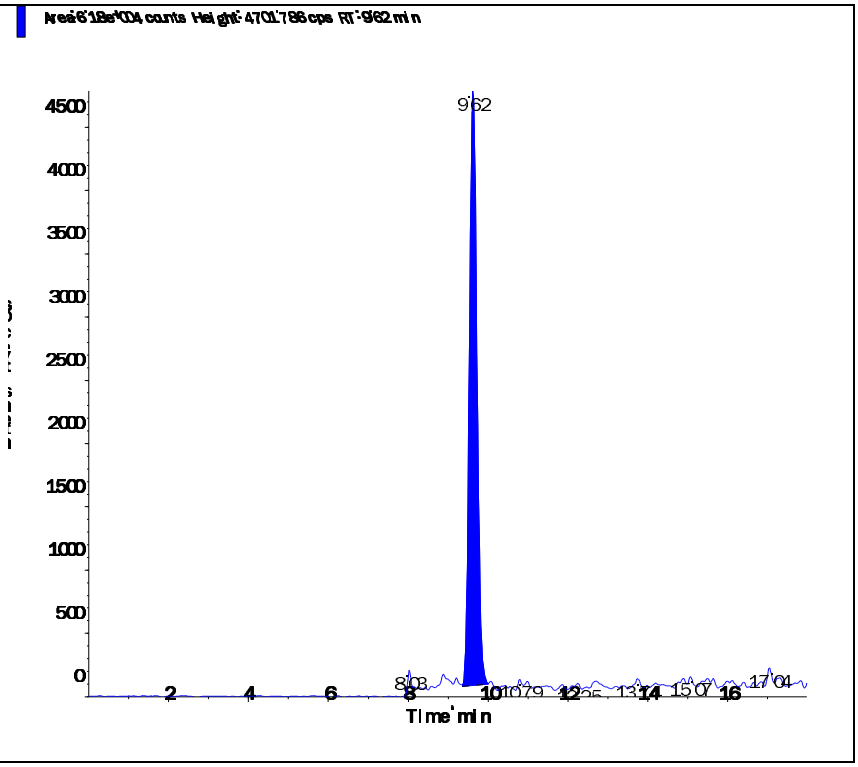

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Printed: 6/12/2016 9:37 PM

Data File	LM35280.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 11:46:23 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35280.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 11:46:23 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.580e+05	9.62	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.600e+05	9.63	1.00	1.04
Perchlorate conf	5.470e+04	9.61	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.62(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

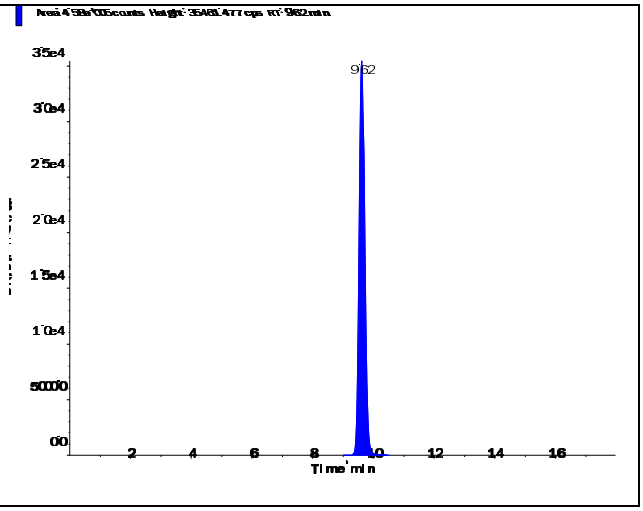

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.35
Sample Type:	(Quality Control)

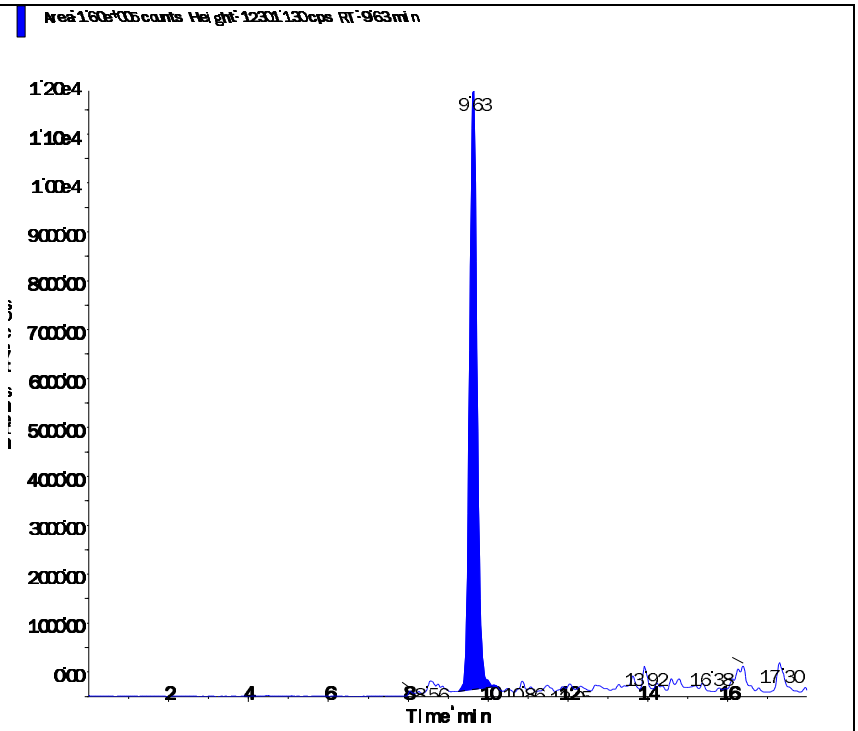

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.61 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

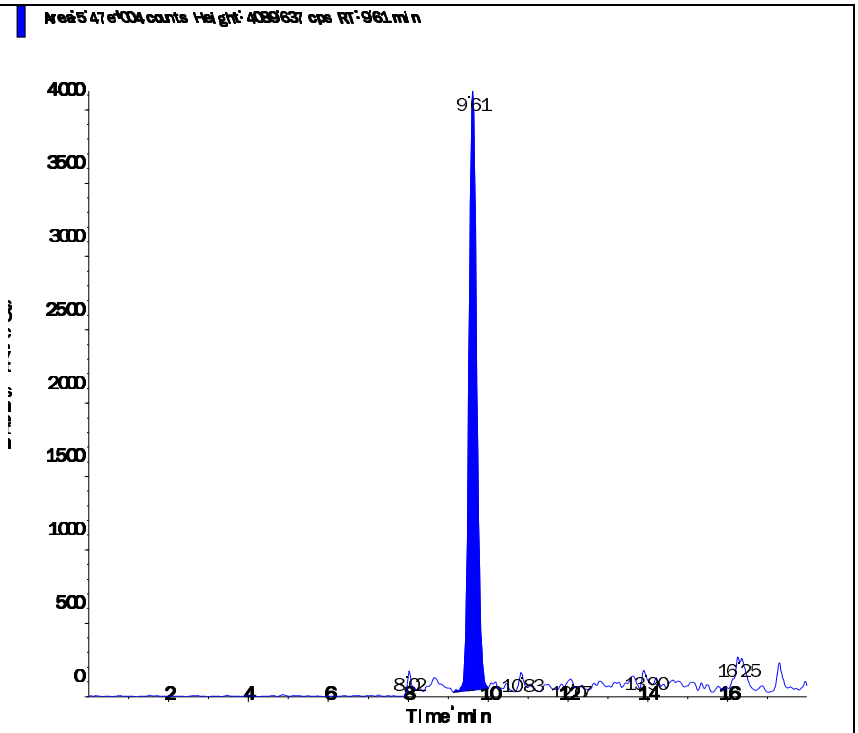

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Data File	LM35292.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 3:34:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35292.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 3:34:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.800e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.710e+05	9.64	1.00	1.05
Perchlorate conf	5.680e+04	9.63	1.00	1.04

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

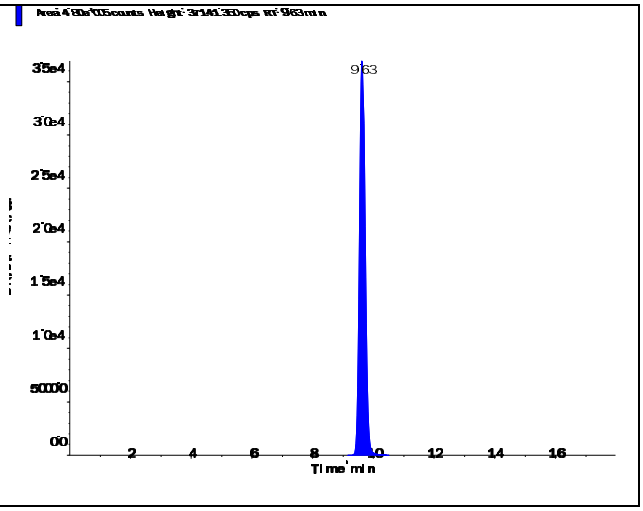

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.355
Sample Type:	(Quality Control)

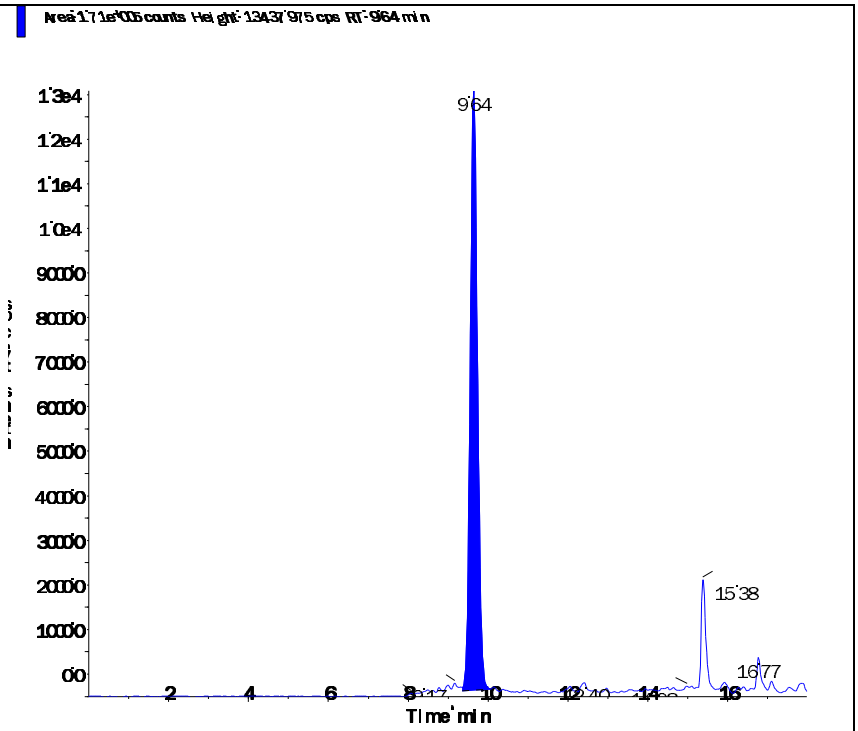

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.118
Sample Type:	(Quality Control)

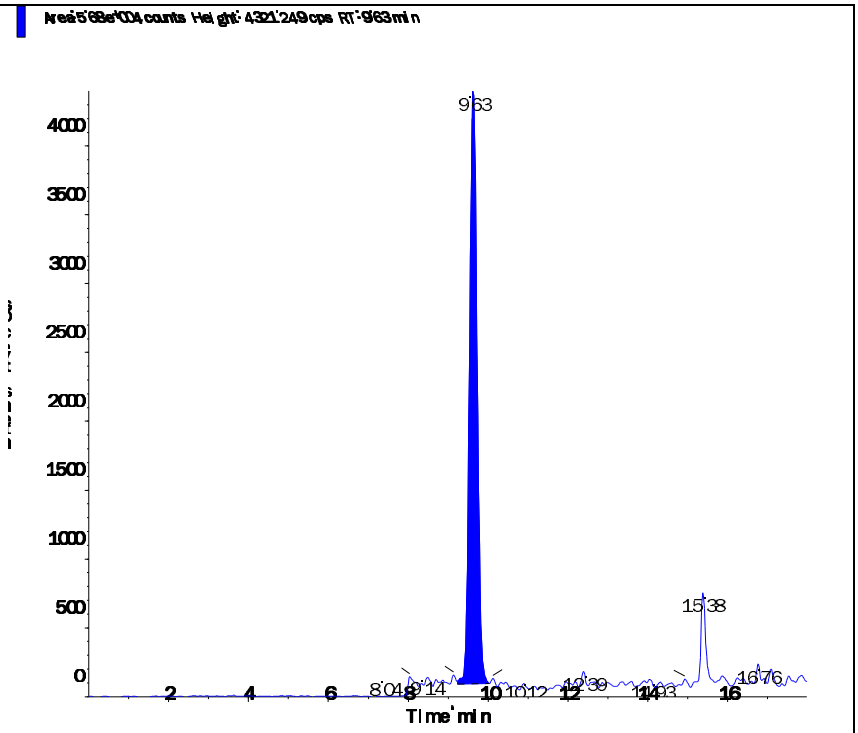

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Data File	LM35296.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 5:38:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35296.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 5:38:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.960e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.720e+05	9.65	1.00	1.03
Perchlorate conf	5.930e+04	9.64	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

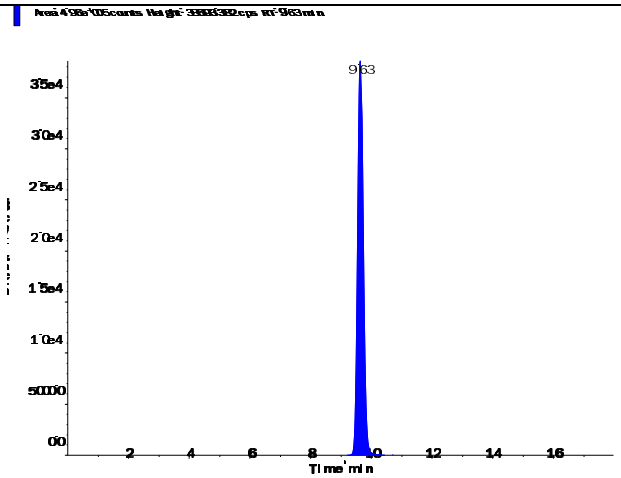

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.65 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.346
Sample Type:	(Quality Control)

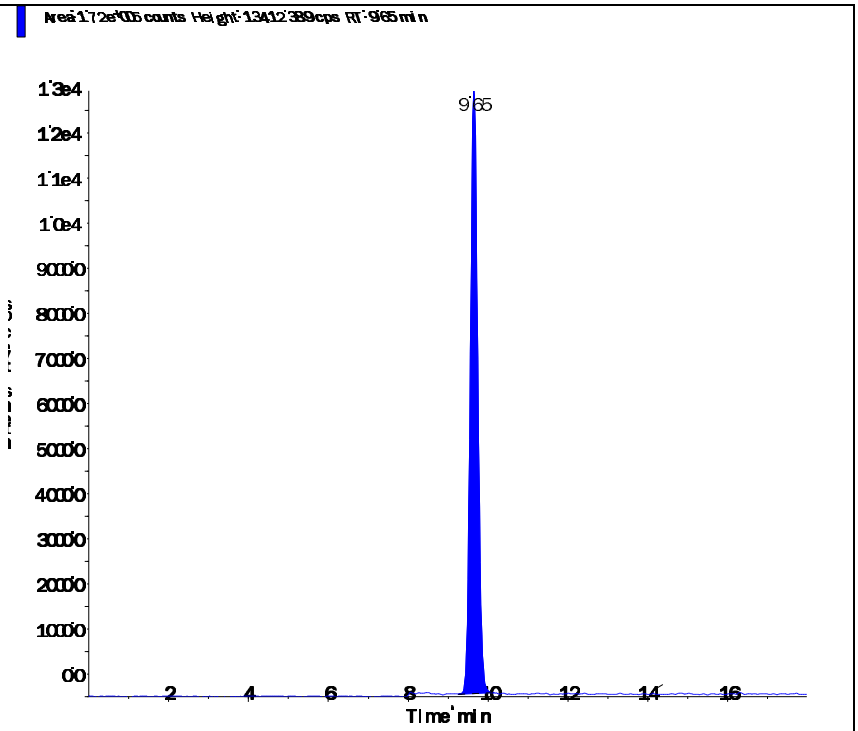

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

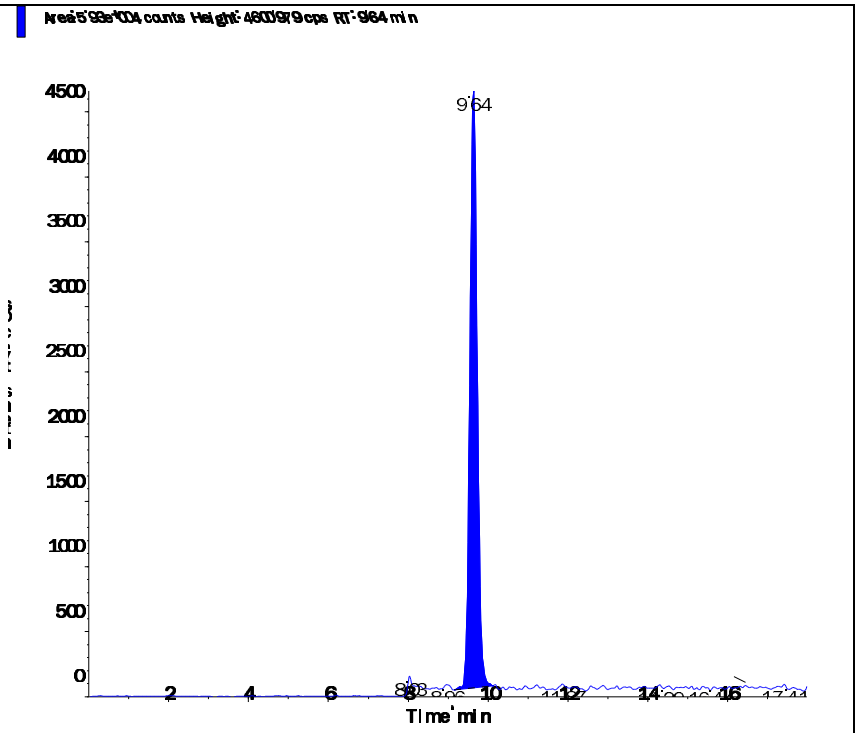

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Data File	LM35310.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 10:03:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35310.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 10:03:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.050e+05	9.62	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.800e+05	9.63	1.00	1.06
Perchlorate conf	6.050e+04	9.62	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.62(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

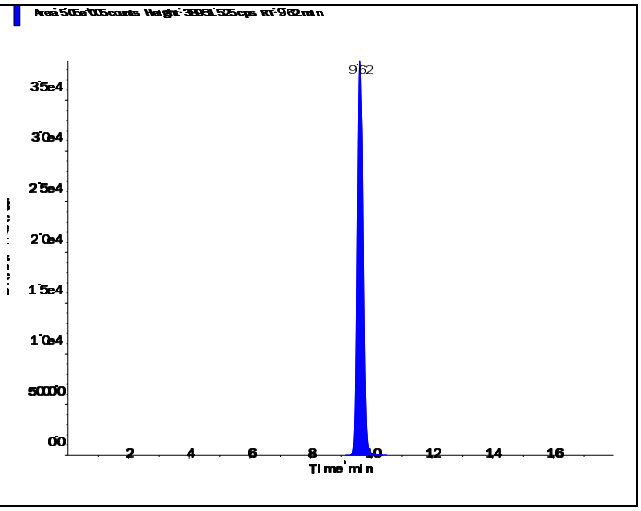

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.357
Sample Type:	(Quality Control)

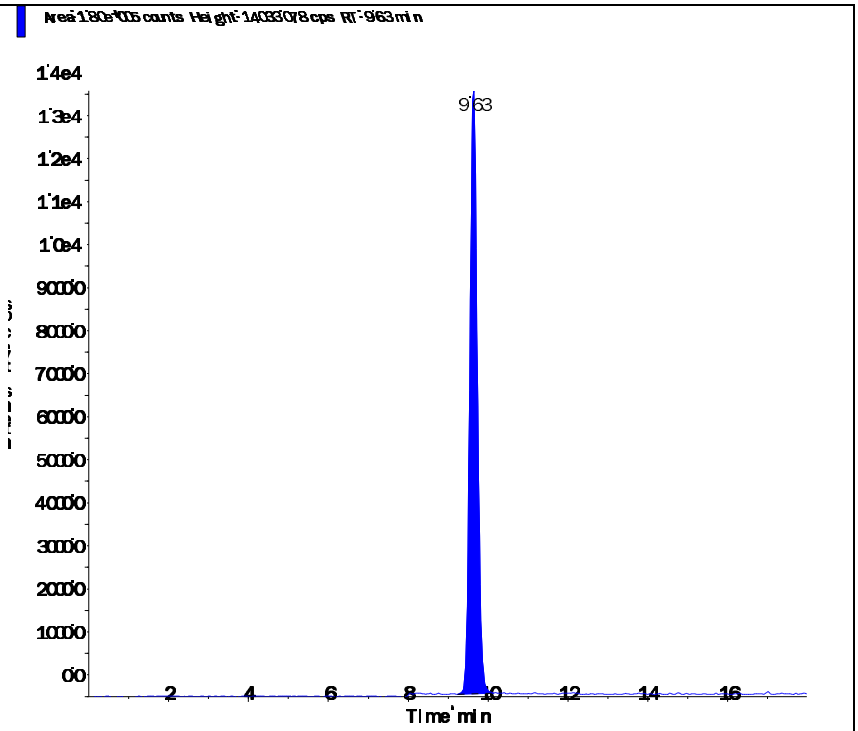

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.62 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.12
Sample Type:	(Quality Control)

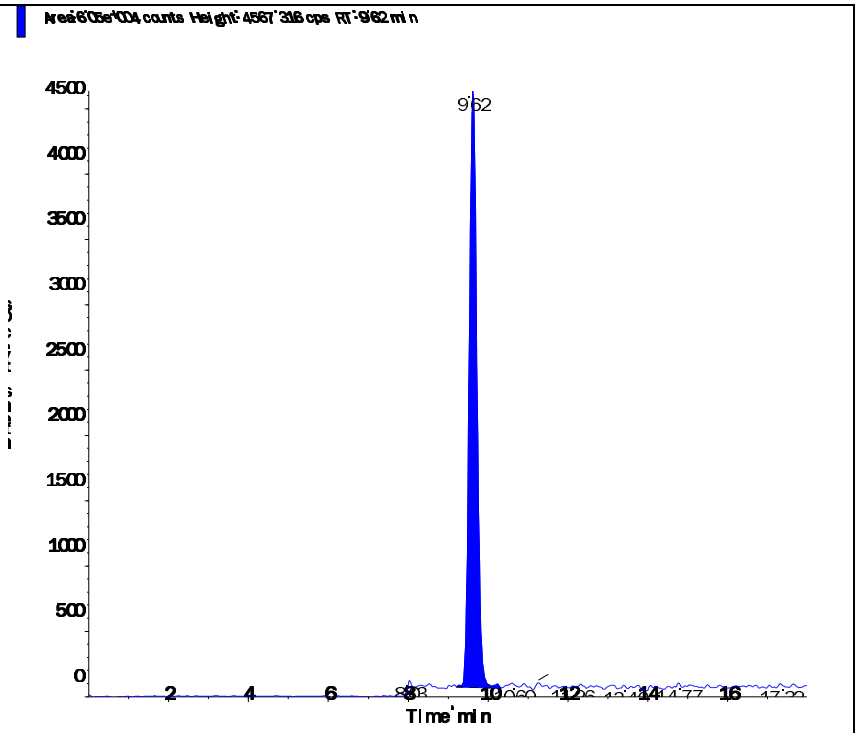

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Data File	LM35227.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 10:27:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35227.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 10:27:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.430e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.060e+04	9.68	N/A	0.202
Perchlorate conf	1.110e+04	9.67	N/A	0.204

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

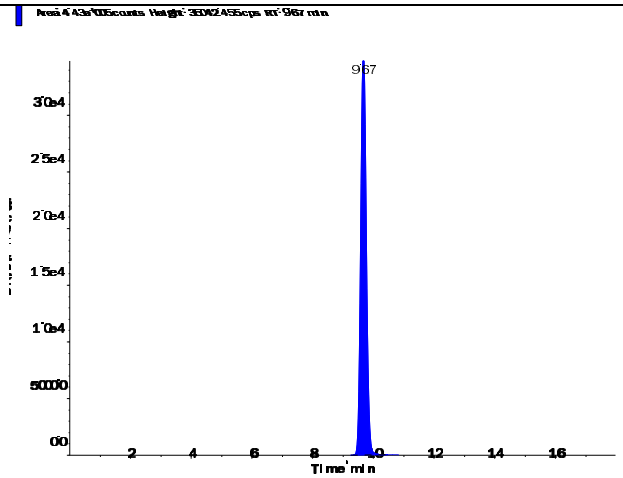

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.68 (9.84) min
Calculated conc:	0.202 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

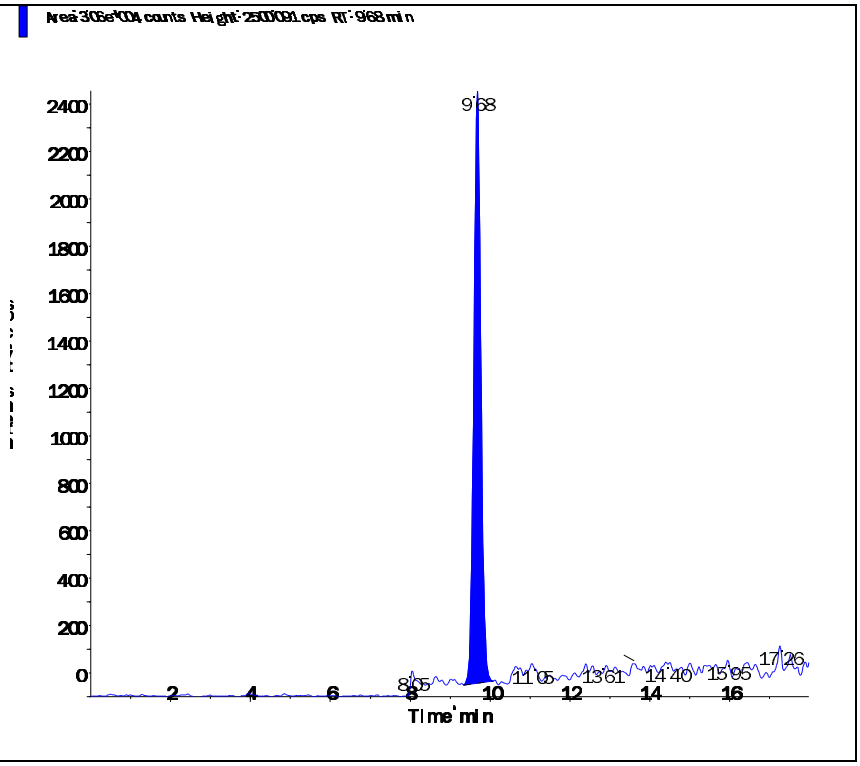

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.67 (9.84) min
Calculated conc:	0.204 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

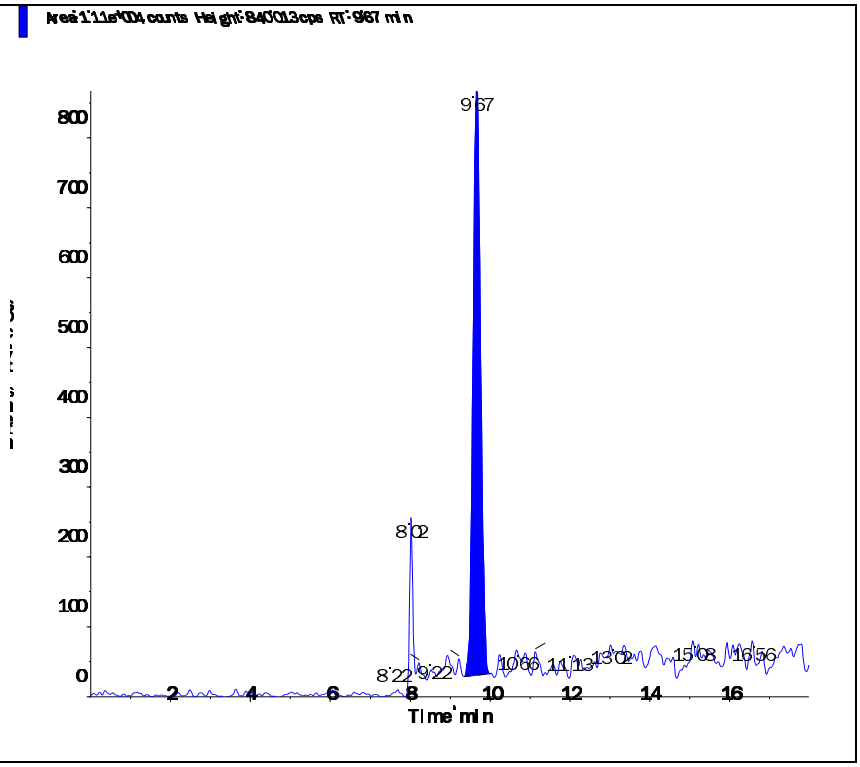

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Data File	LM35239.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 2:14:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-08 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35239.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 2:14:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.960e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.650e+04	9.68	N/A	0.215
Perchlorate conf	1.380e+04	9.66	N/A	0.228

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

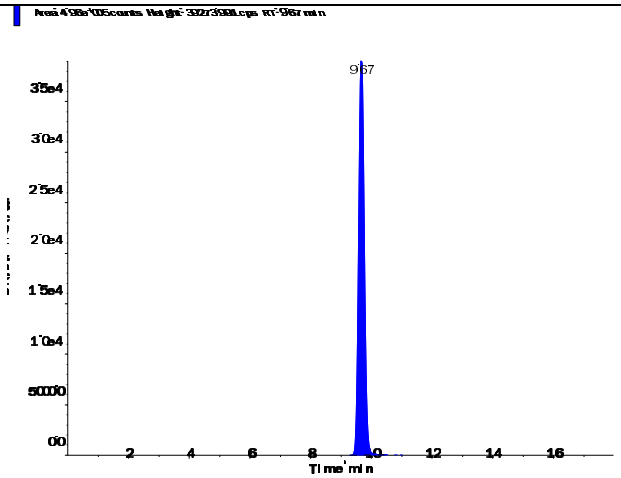

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.68 (9.84) min
Calculated conc:	0.215 ng/ml
Area Ratio:	0.074
Sample Type:	(Unknown)

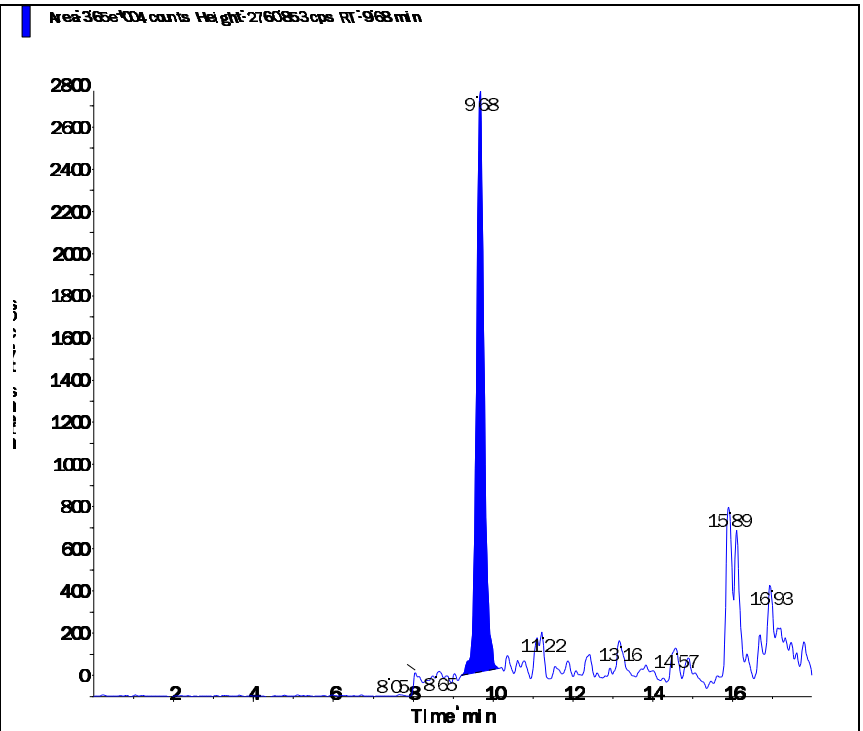

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.228 ng/ml
Area Ratio:	0.028
Sample Type:	(Unknown)

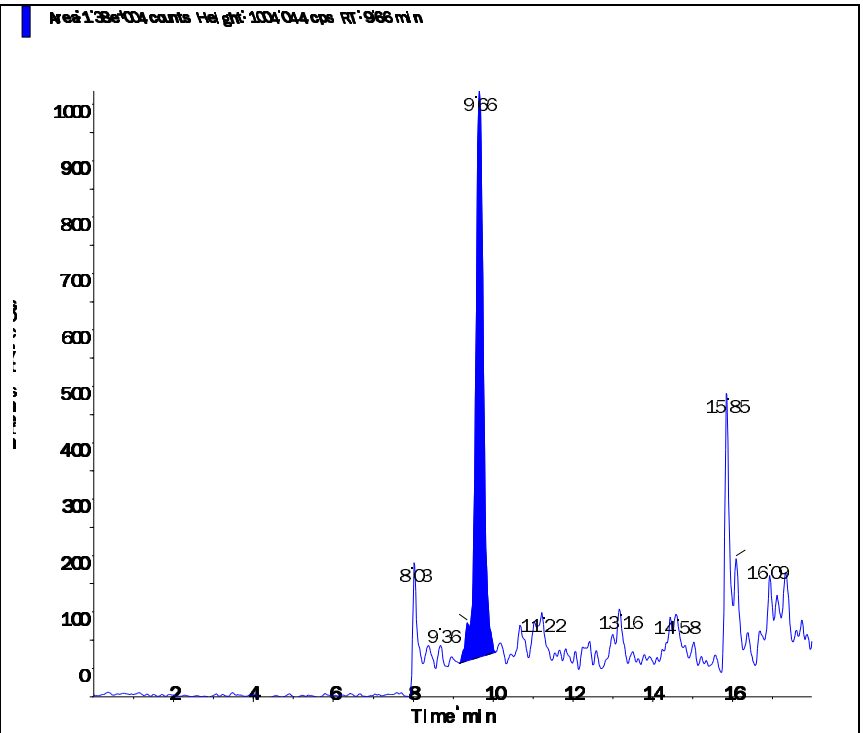

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Printed: 6/11/2016 1:05 PM

Data File	LM35245.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 4:08:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-09 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35245.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 4:08:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.670e+04	9.69	N/A	0.21
Perchlorate conf	1.260e+04	9.66	N/A	0.201

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

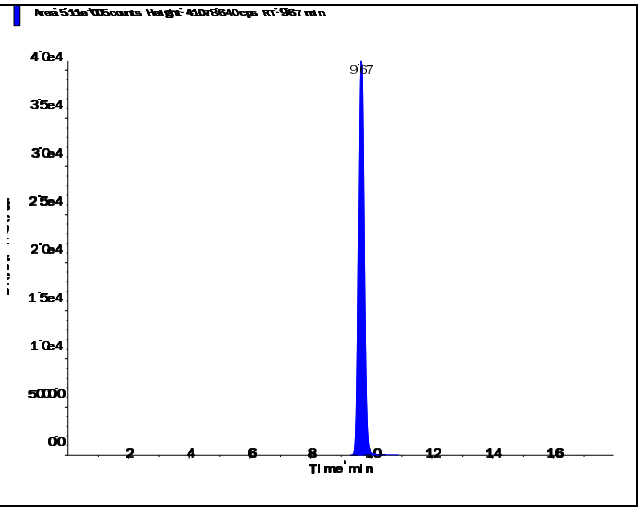

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.69 (9.84) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

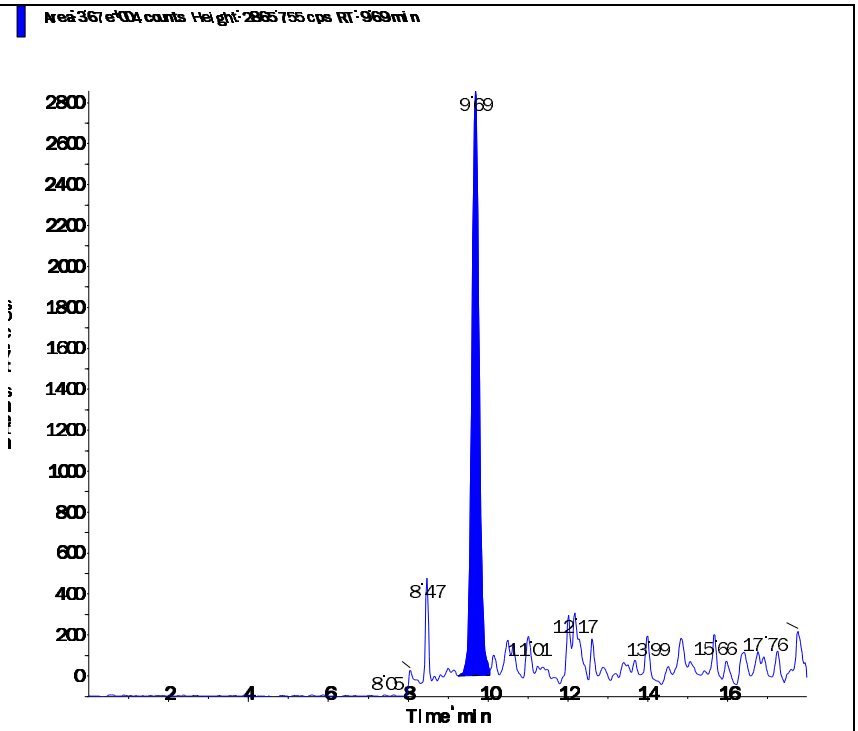

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

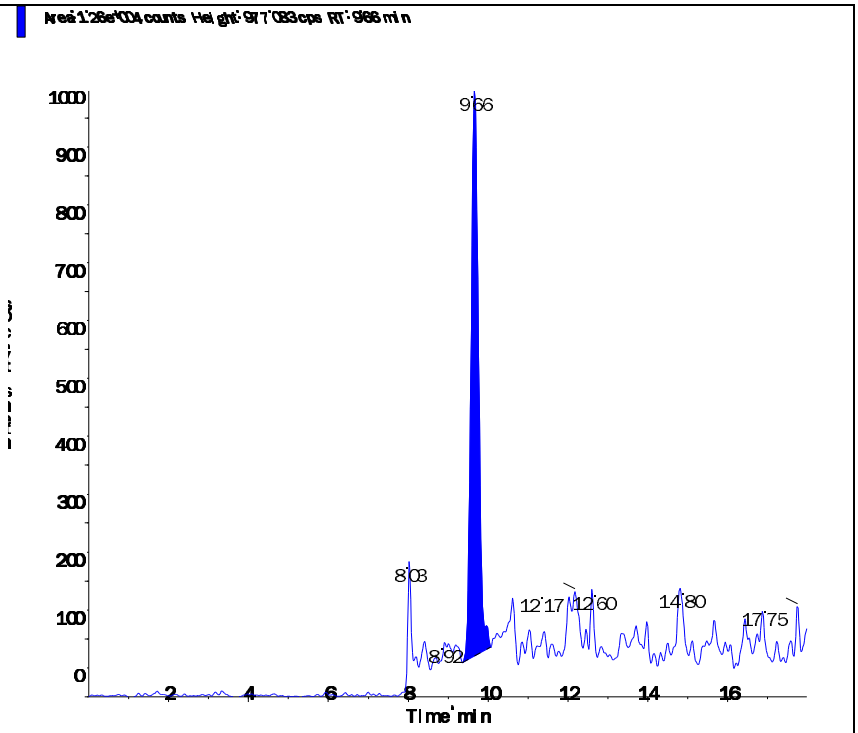

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Data File	LM35258.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 8:15:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-10 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35258.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 8:15:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-10	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.620e+04	9.68	N/A	0.222
Perchlorate conf	1.240e+04	9.66	N/A	0.212

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

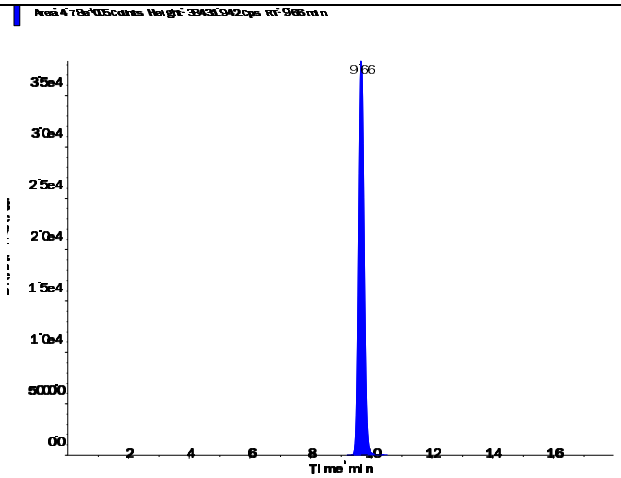

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.68 (9.84) min
Calculated conc:	0.222 ng/ml
Area Ratio:	0.076
Sample Type:	(Unknown)

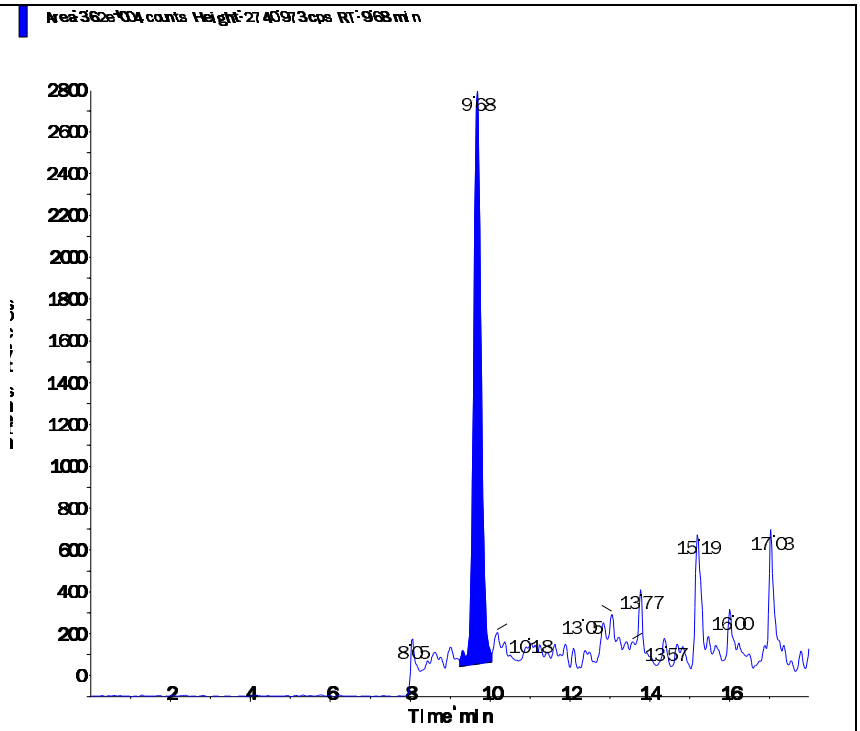

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.212 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

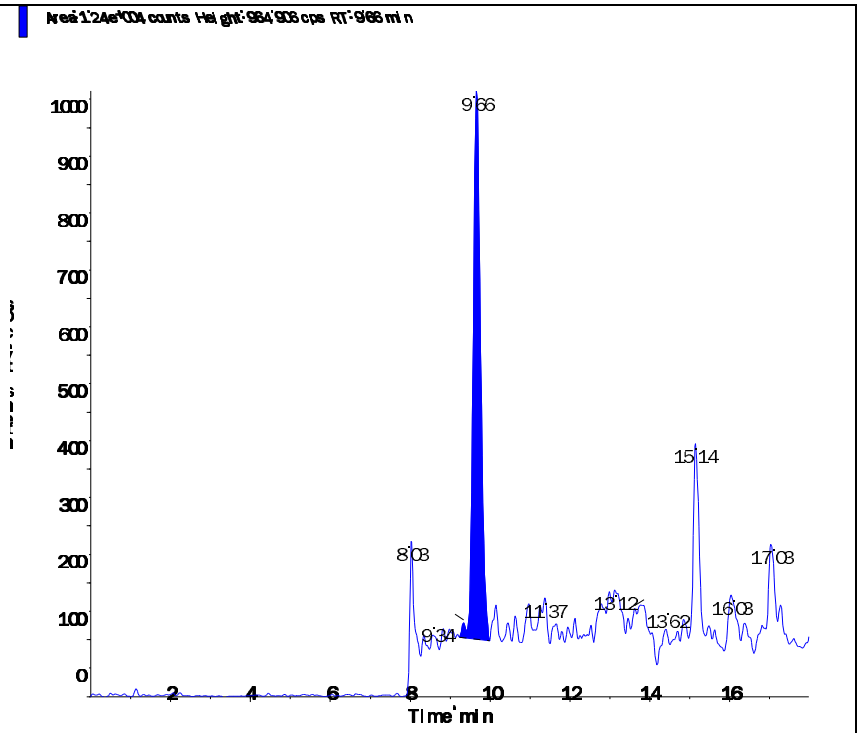

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Data File	LM35265.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 10:27:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-11 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35265.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 10:27:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.850e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.580e+04	9.67	N/A	0.216
Perchlorate conf	1.170e+04	9.66	N/A	0.197

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

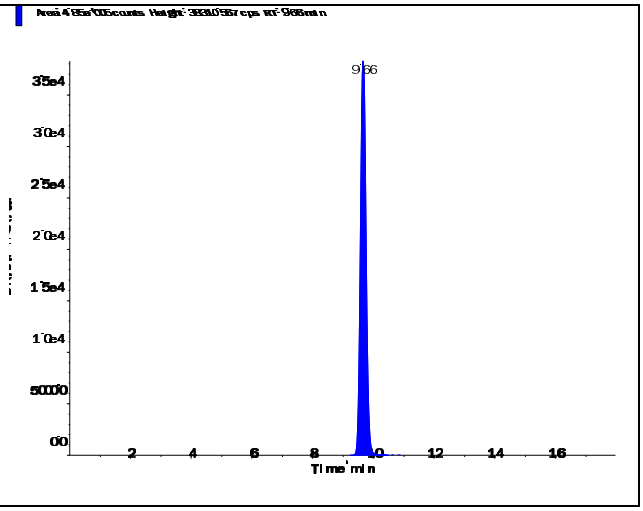

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.67 (9.84) min
Calculated conc:	0.216 ng/ml
Area Ratio:	0.074
Sample Type:	(Unknown)

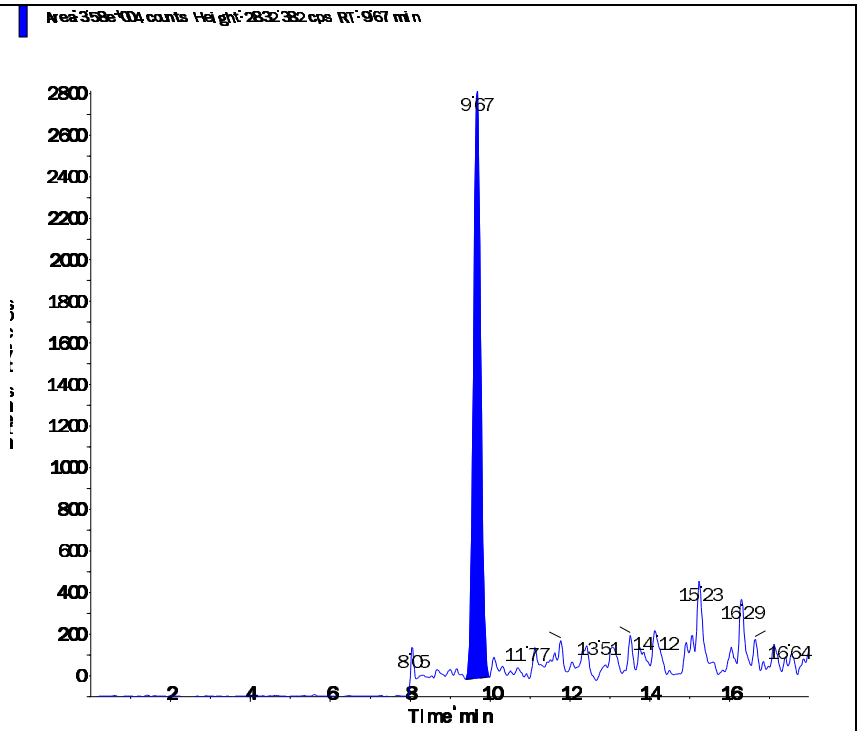

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

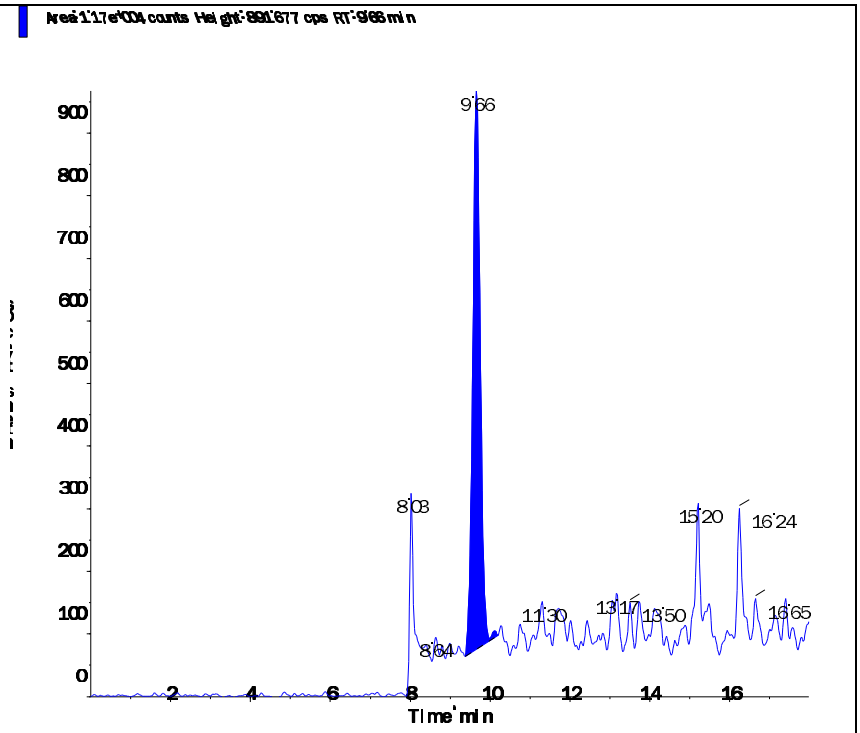

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Data File	LM35281.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 12:05:19 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-12 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35281.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 12:05:19 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572200-12	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.660e+05	9.65	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+04	9.66	N/A	0.206
Perchlorate conf	1.190e+04	9.65	N/A	0.209

O18LP (Internal Standard)

RT (Exp. RT): 9.65(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

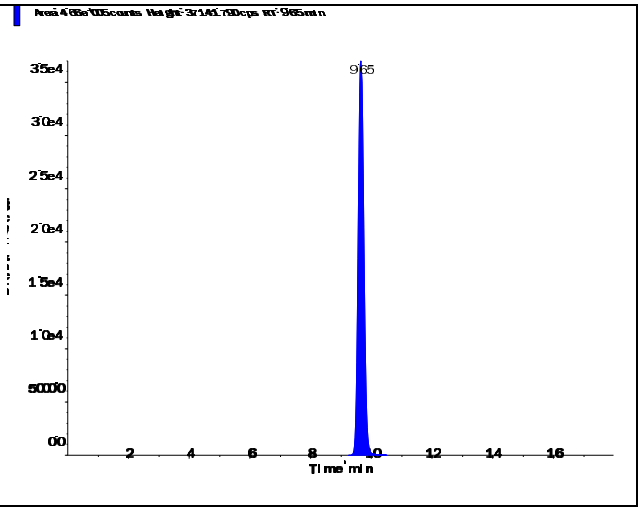

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

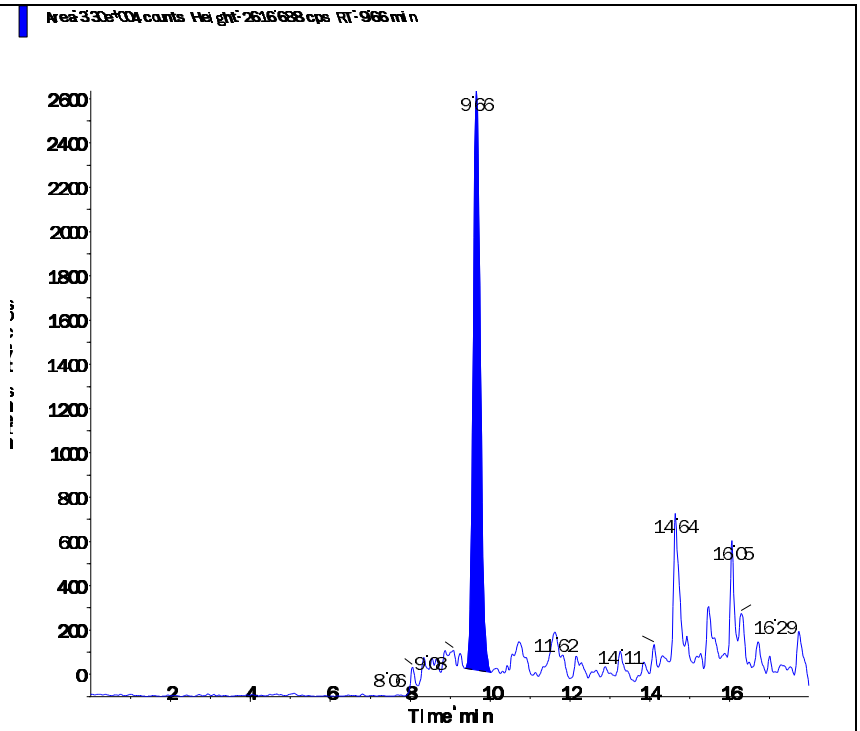

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.65 (9.84) min
Calculated conc:	0.209 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

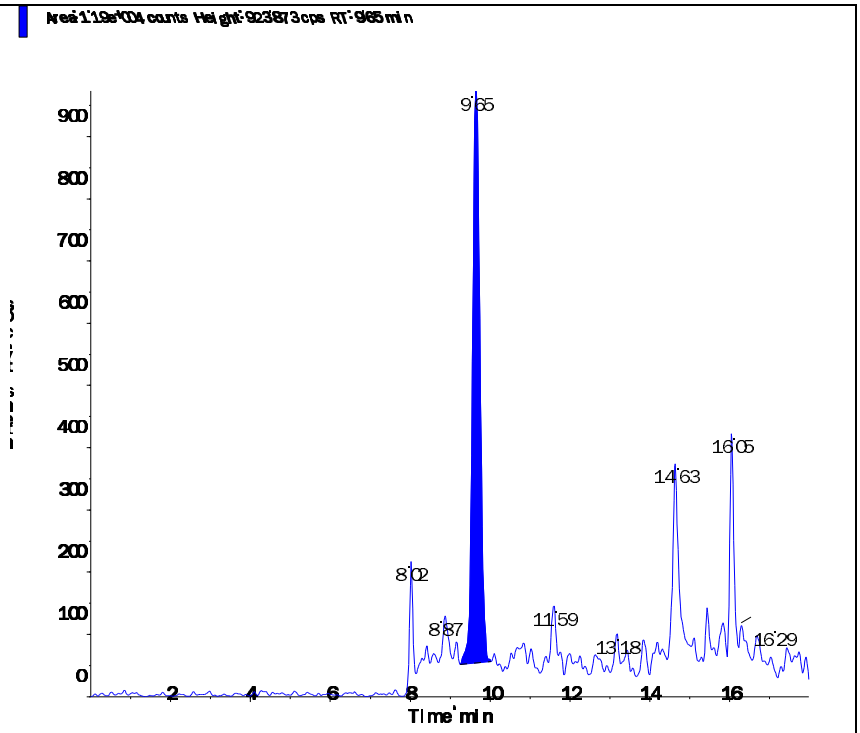

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Data File	LM35293.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 4:41:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-13 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35293.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 4:41:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572200-13	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.800e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.390e+04	9.68	N/A	0.206
Perchlorate conf	1.220e+04	9.66	N/A	0.207

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

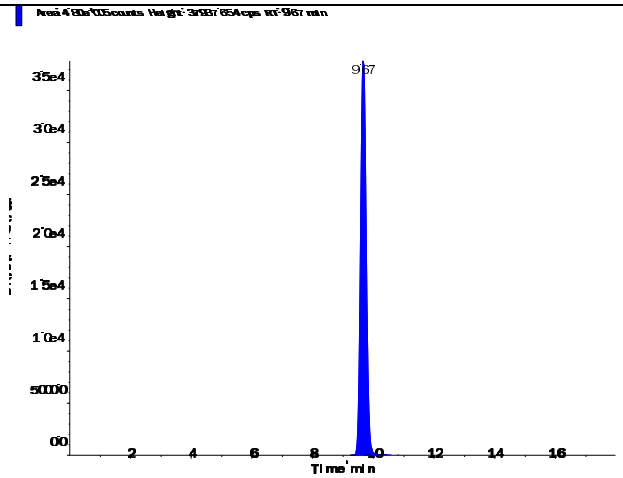

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.68 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

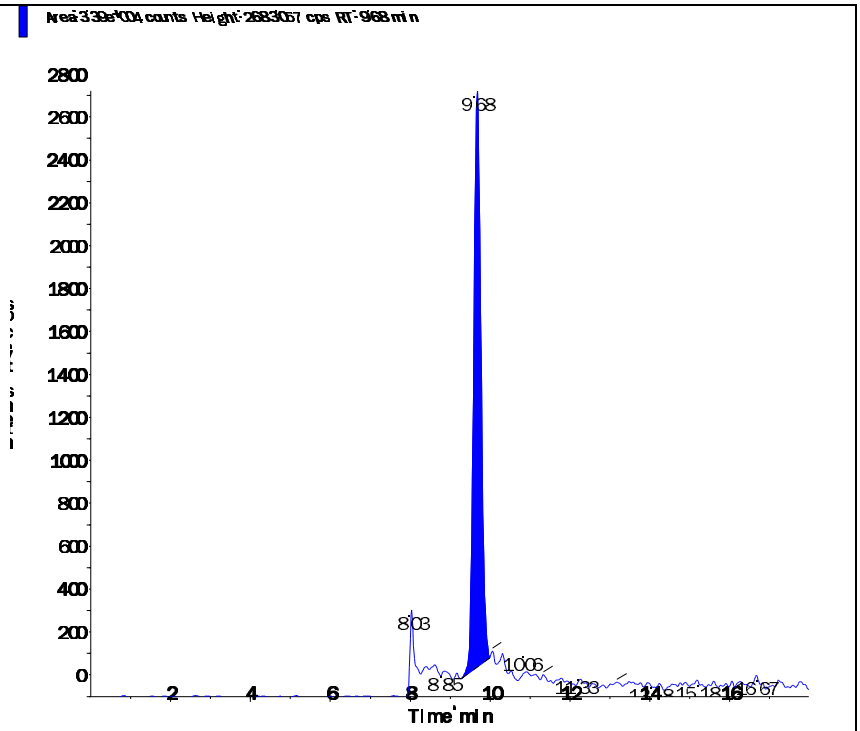

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

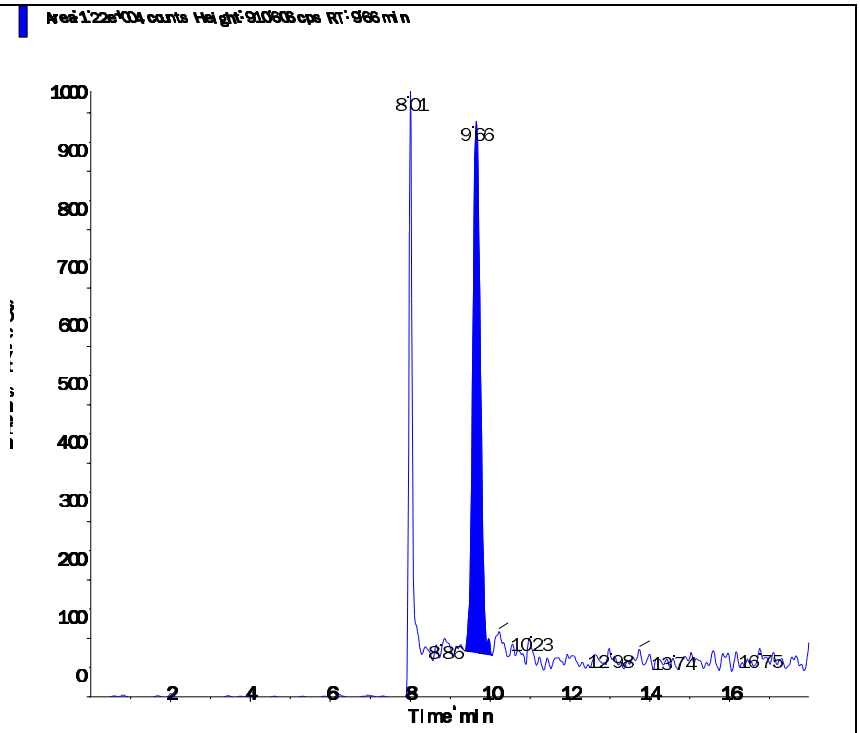

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Printed: 6/12/2016 9:42 PM

Data File	LM35297.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 5:57:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-14 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35297.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 5:57:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572200-14	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.980e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.650e+04	9.67	N/A	0.215
Perchlorate conf	1.270e+04	9.66	N/A	0.208

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

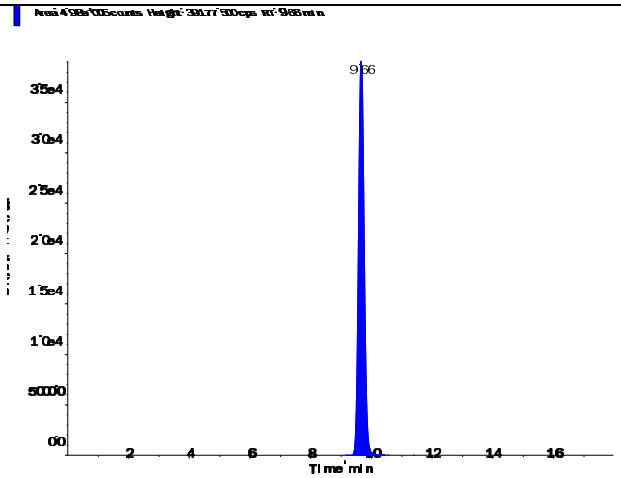

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.67 (9.84) min Calculated conc: 0.215 ng/ml Area Ratio: 0.073 Sample Type: (Unknown)	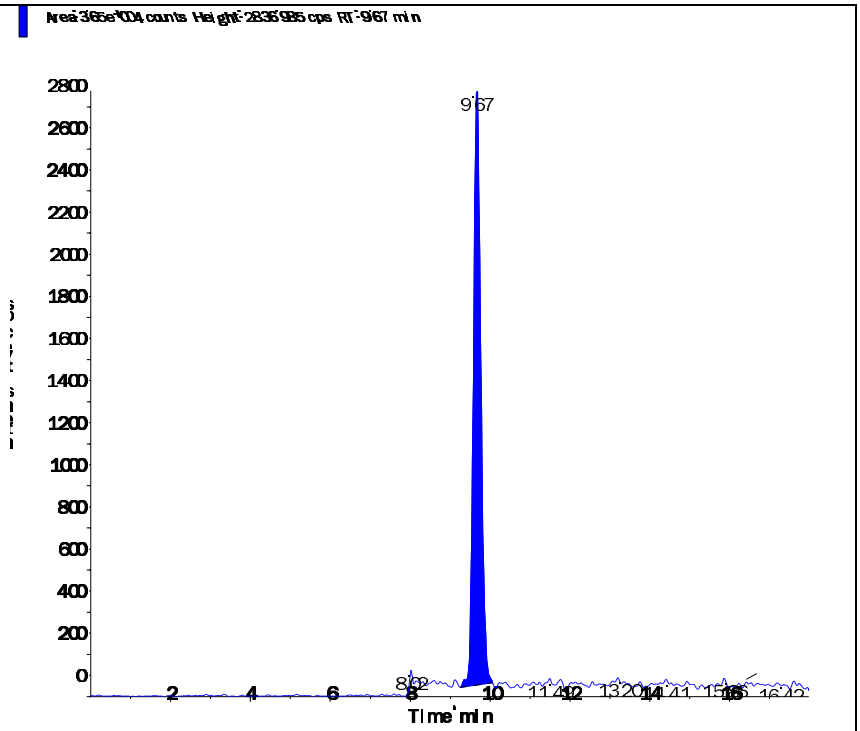
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.66 (9.84) min Calculated conc: 0.208 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	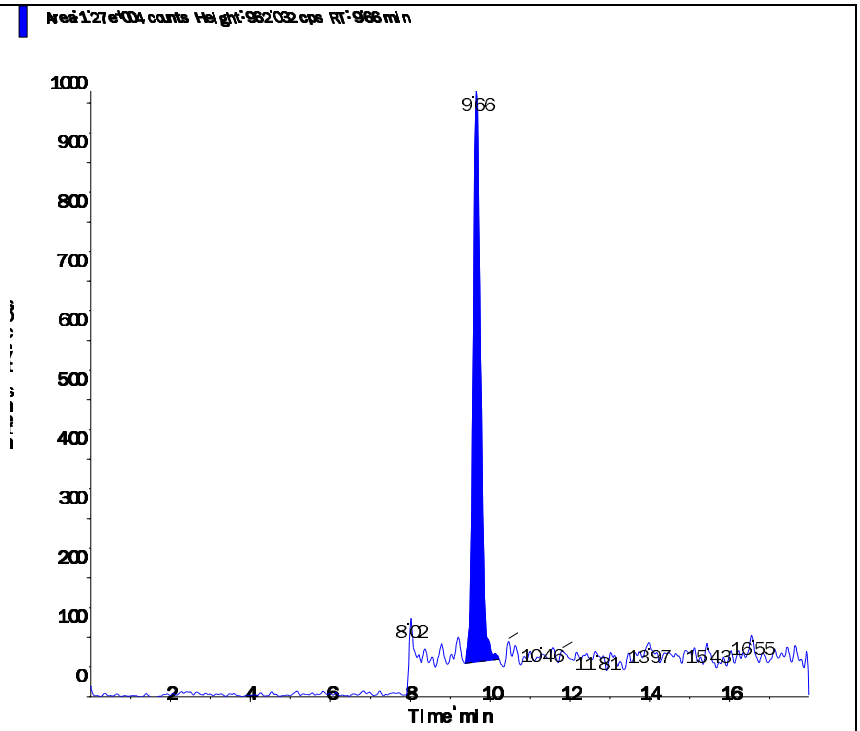

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Data File	LM35225.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 9:49:48 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-01 CCB	**Injection Vial**	1.00
Data File	LM35225.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 9:49:48 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.710e+05	9.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.80(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

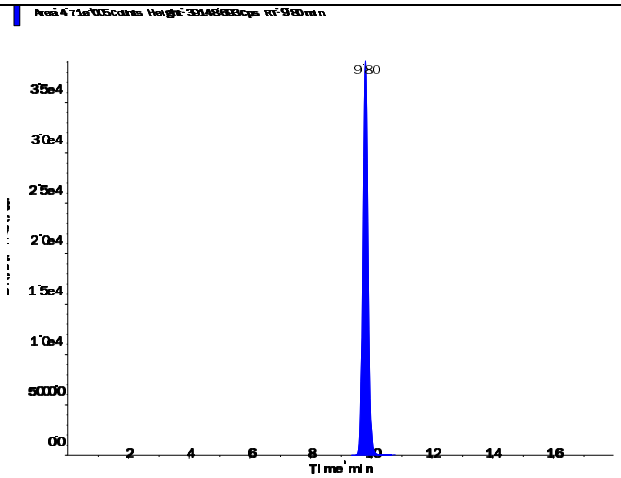

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

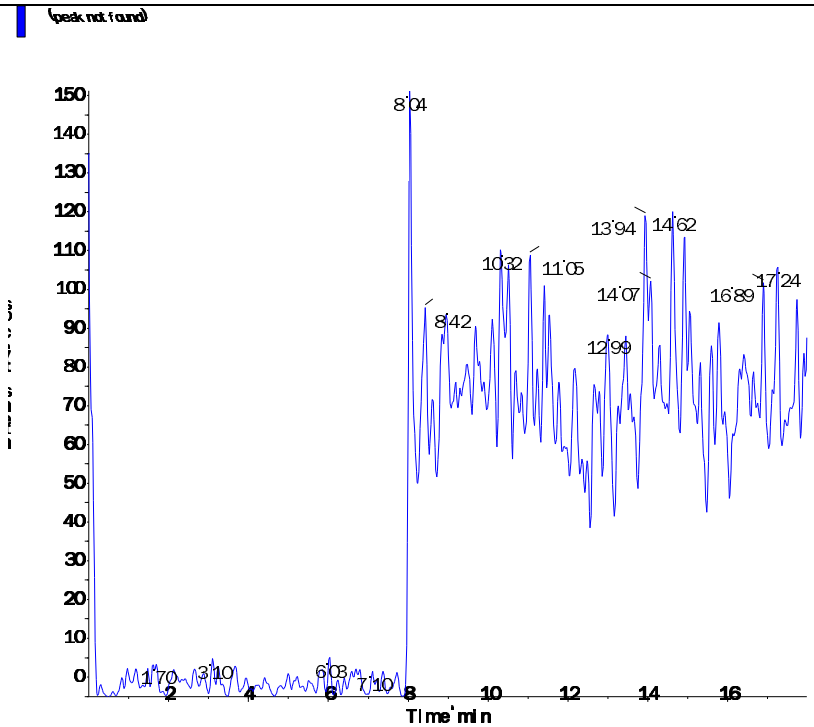

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

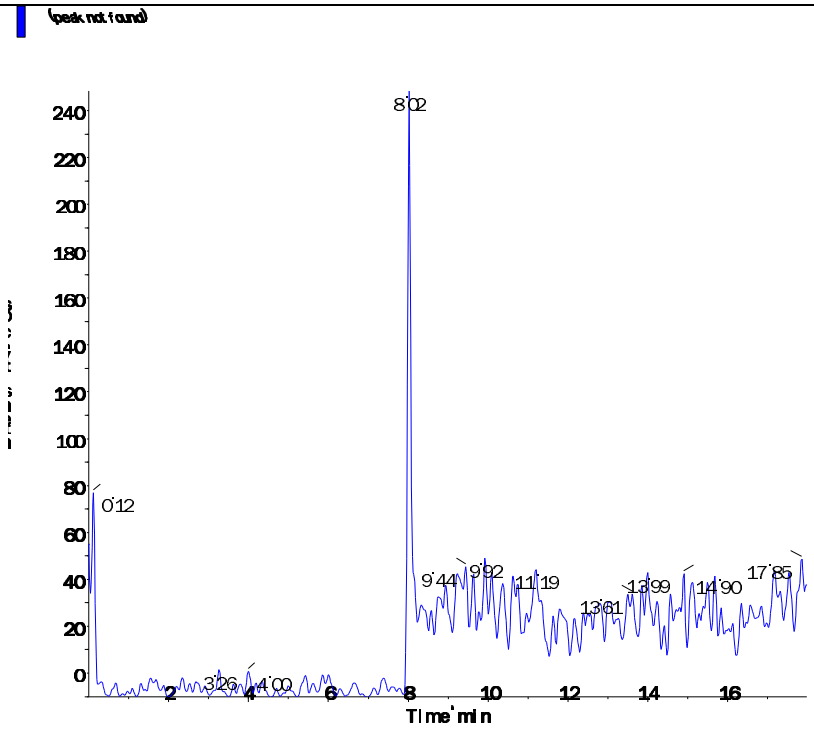

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Data File	LM35240.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 2:33:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-04 CCB	**Injection Vial**	1.00
Data File	LM35240.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 2:33:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.660e+03	10.00	N/A	0.018
Perchlorate conf	1.770e+03	10.00	N/A	0.0114

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

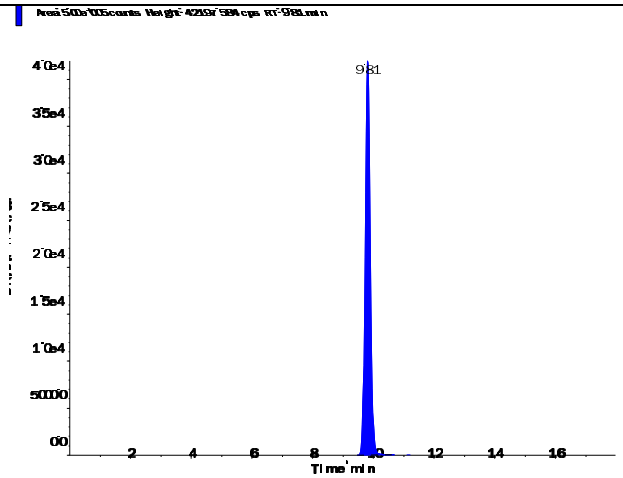

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.00 (9.84) min
Calculated conc:	0.018 ng/ml
Area Ratio:	0.007
Sample Type:	(Unknown)

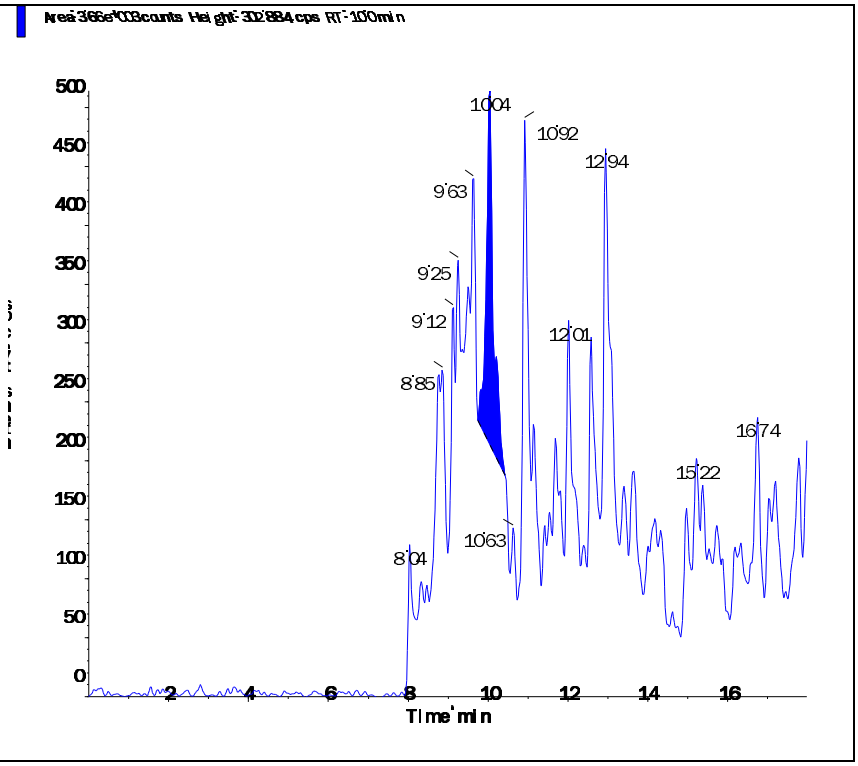

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.00 (9.84) min
Calculated conc:	0.0114 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)

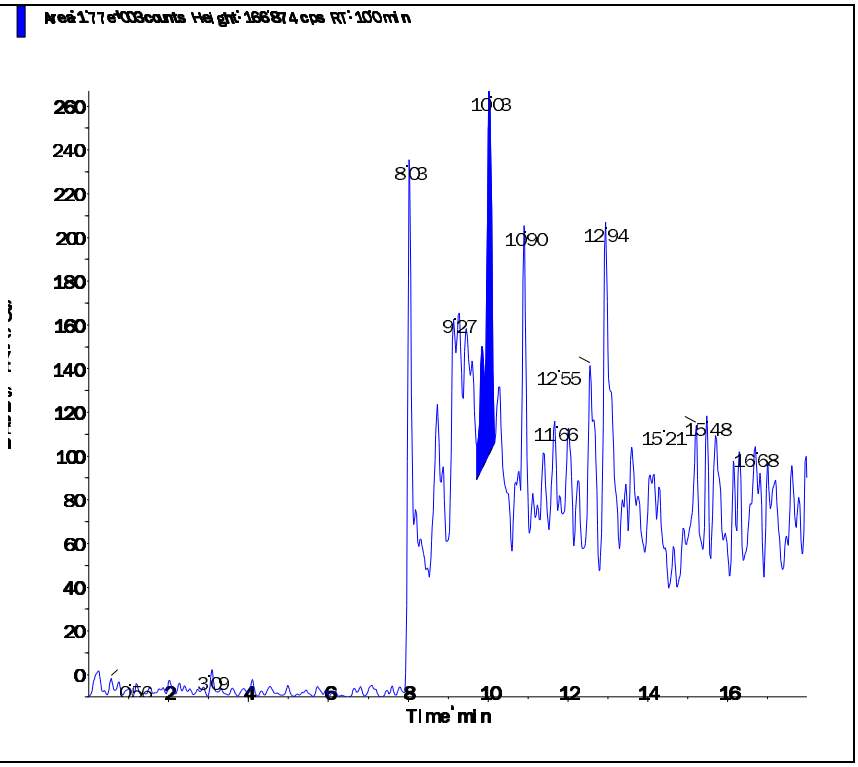

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Printed: 6/11/2016 1:06 PM

Data File	LM35246.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 4:27:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-06 CCB	**Injection Vial**	1.00
Data File	LM35246.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 4:27:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.160e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	3.770e+02	9.80	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

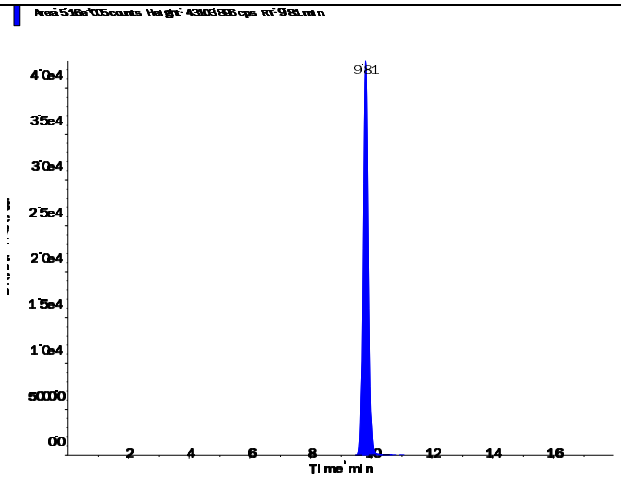

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

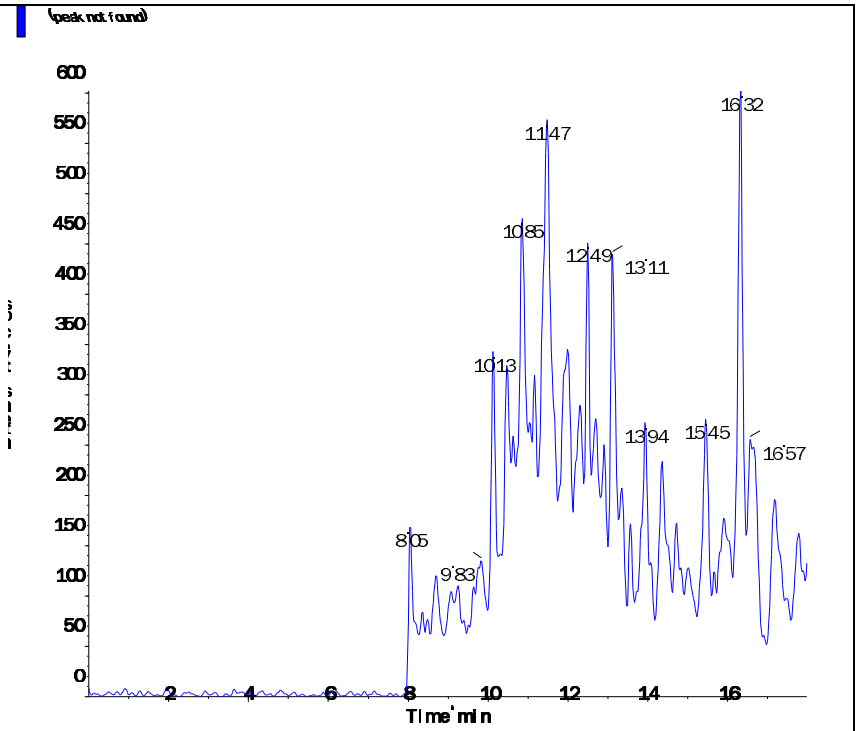

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.80 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

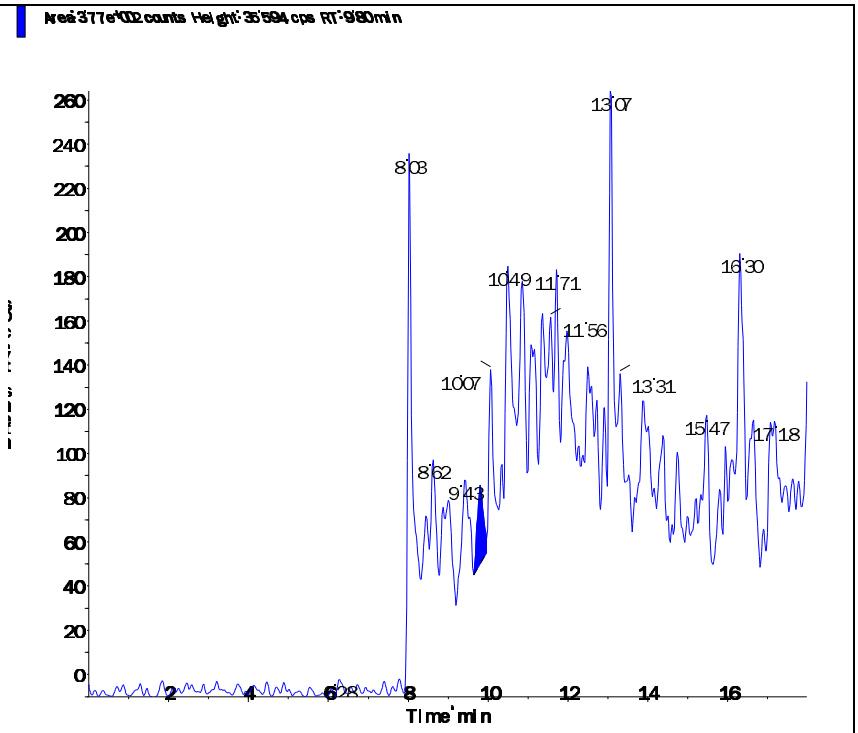

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Printed: 6/11/2016 1:11 PM

Data File	LM35259.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 8:34:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-08 CCB	**Injection Vial**	1.00
Data File	LM35259.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 8:34:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.920e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

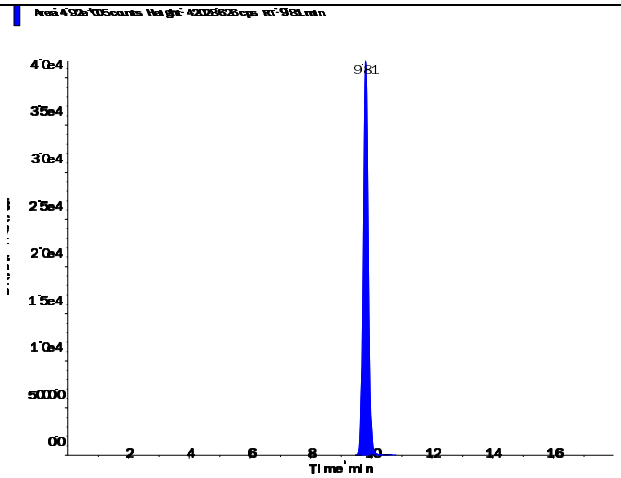

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

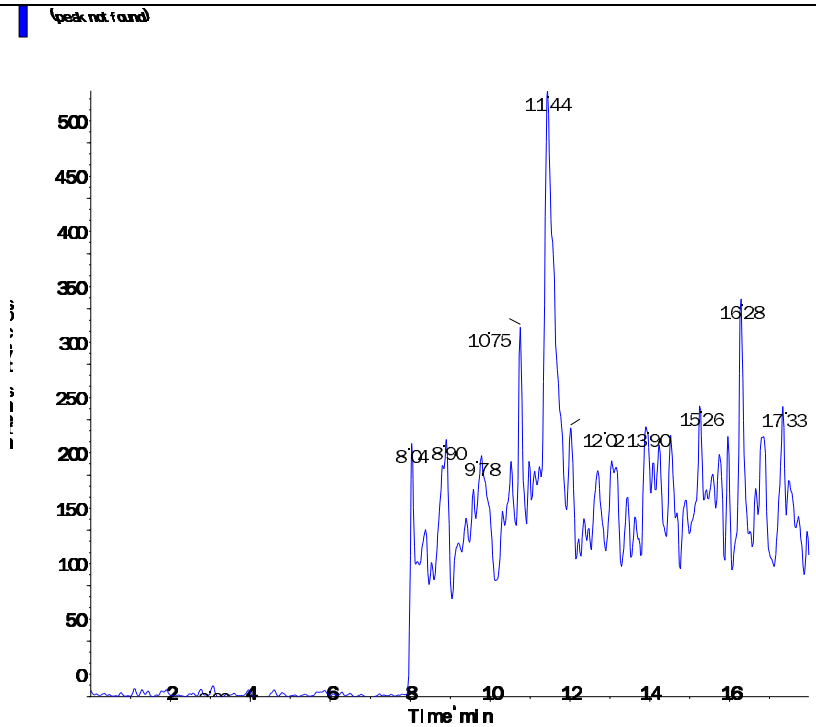

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

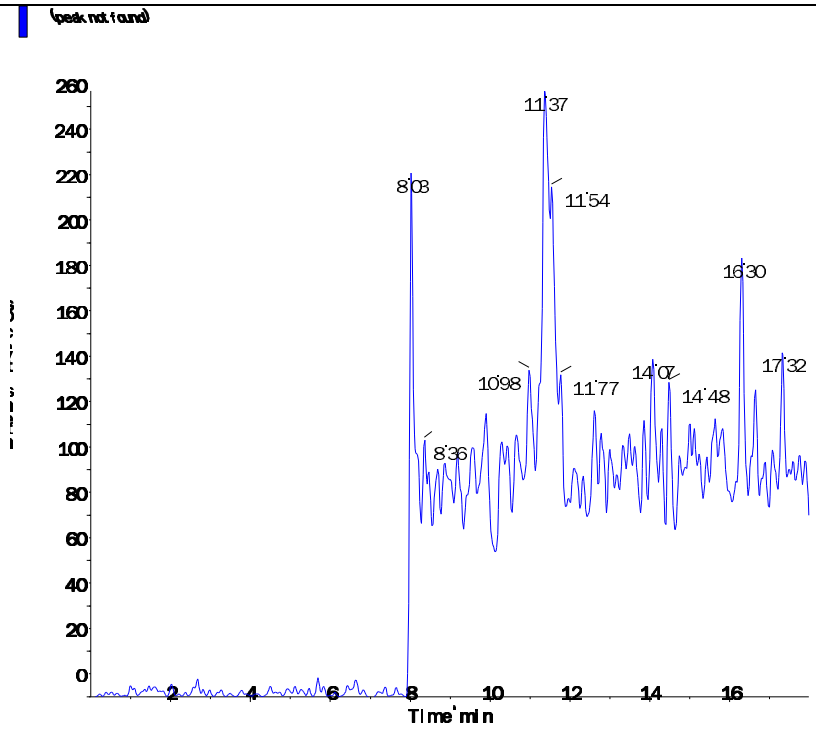

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Data File	LM35266.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 10:46:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-10 CCB	**Injection Vial**	1.00
Data File	LM35266.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 10:46:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.990e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	9.710e+02	9.90	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

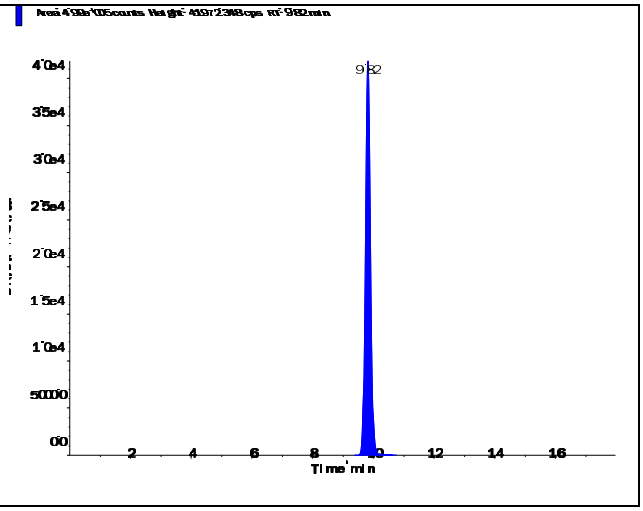

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	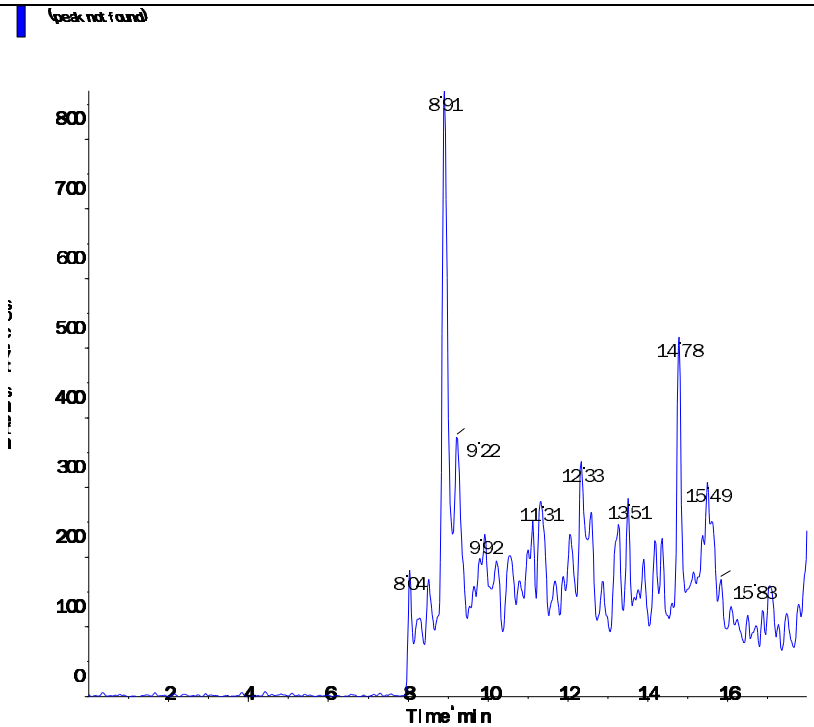
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.90 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	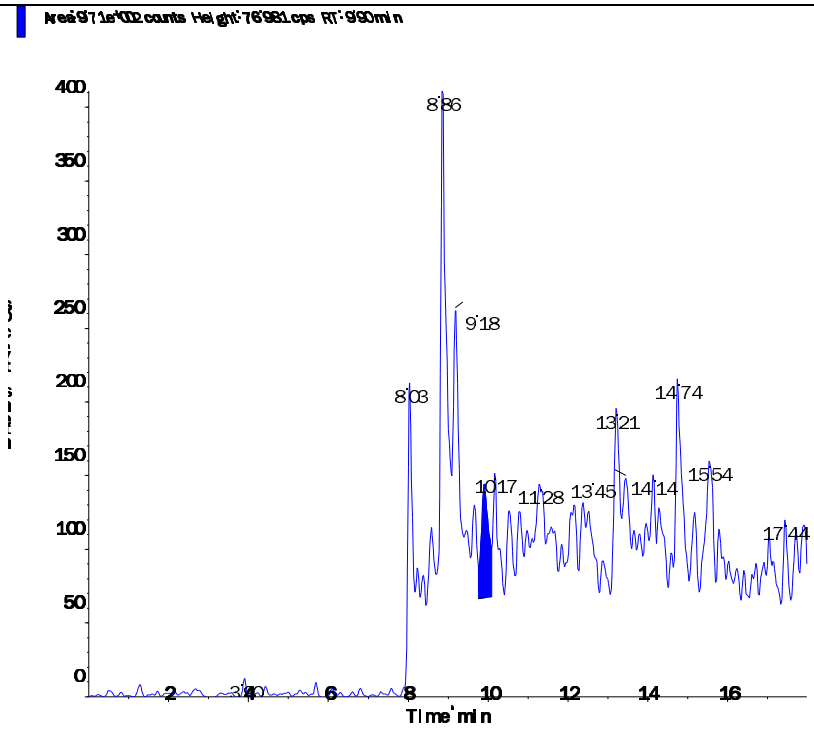

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Data File	LM35279.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 11:27:29 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-01 CCB	**Injection Vial**	1.00
Data File	LM35279.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 11:27:29 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.540e+05	9.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.310e+03	9.56	N/A	0.0441
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.80(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

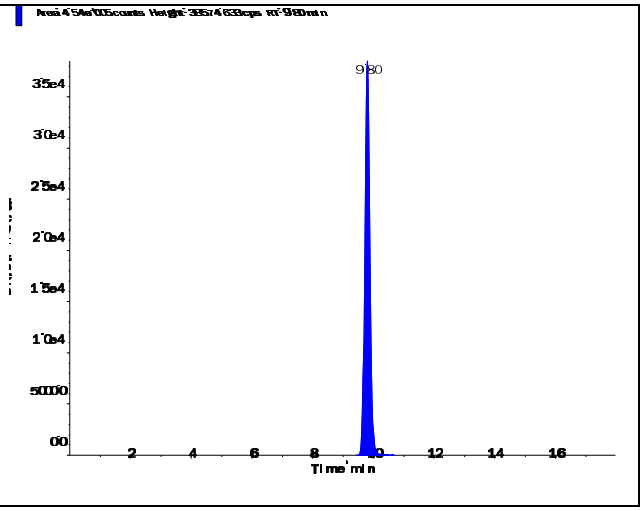

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.56 (9.84) min
Calculated conc:	0.0441 ng/ml
Area Ratio:	0.016
Sample Type:	(Unknown)

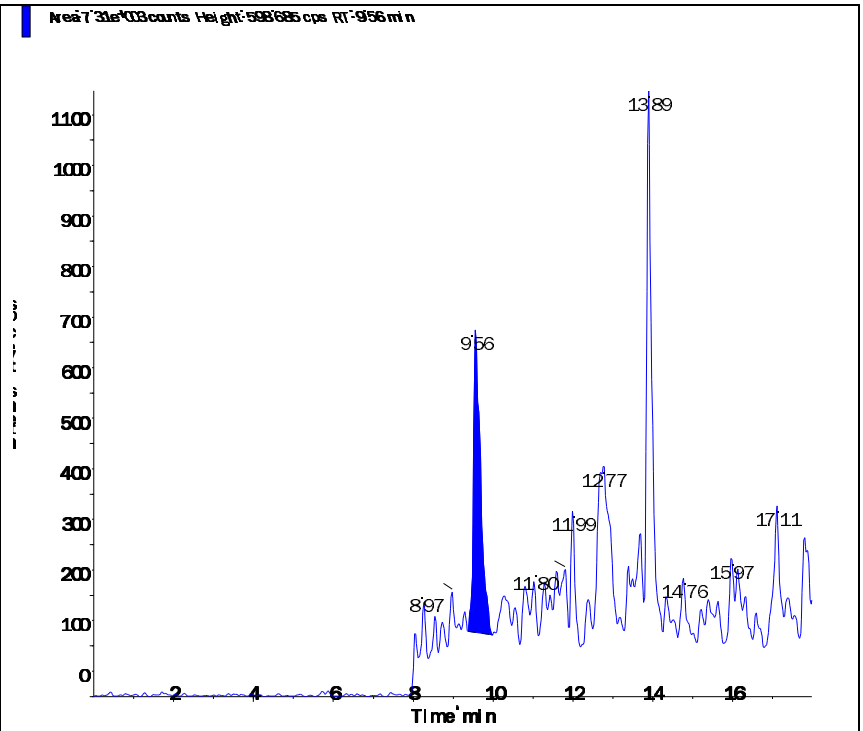

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

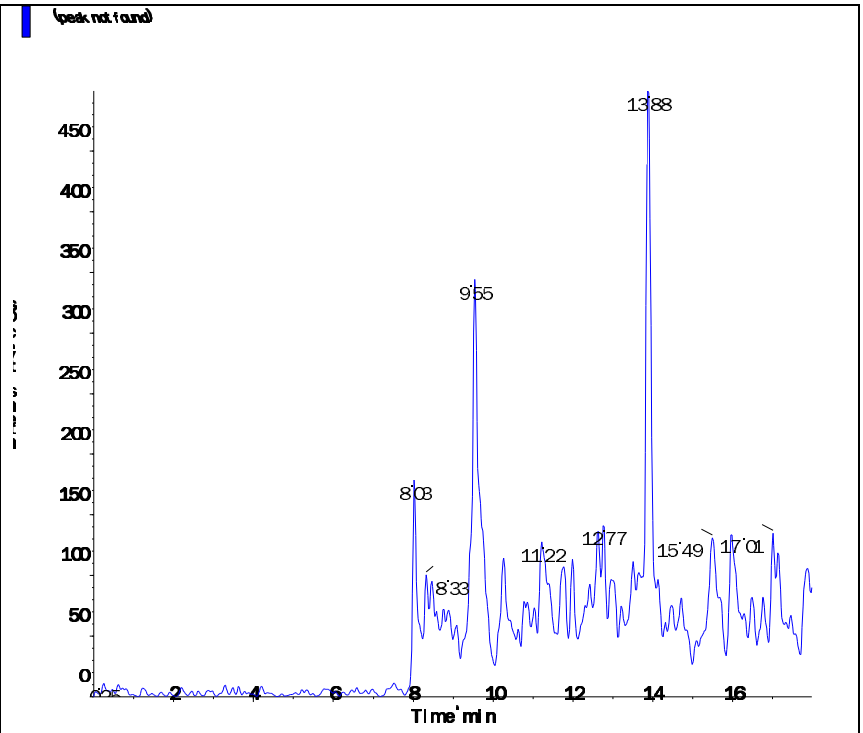

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Data File	LM35294.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 5:00:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-04 CCB	**Injection Vial**	1.00
Data File	LM35294.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 5:00:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.960e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

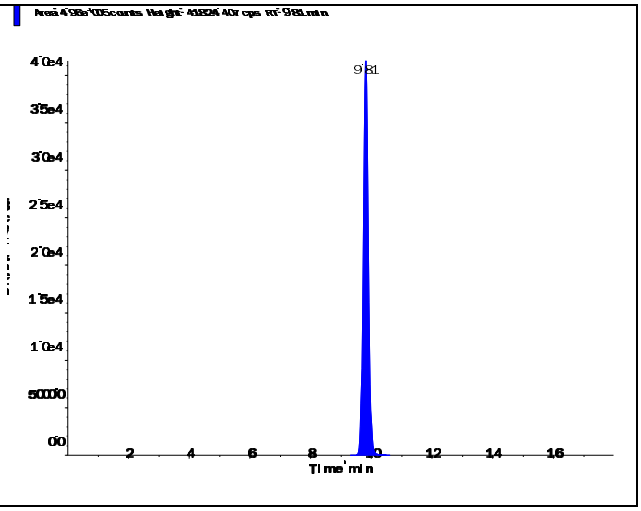

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

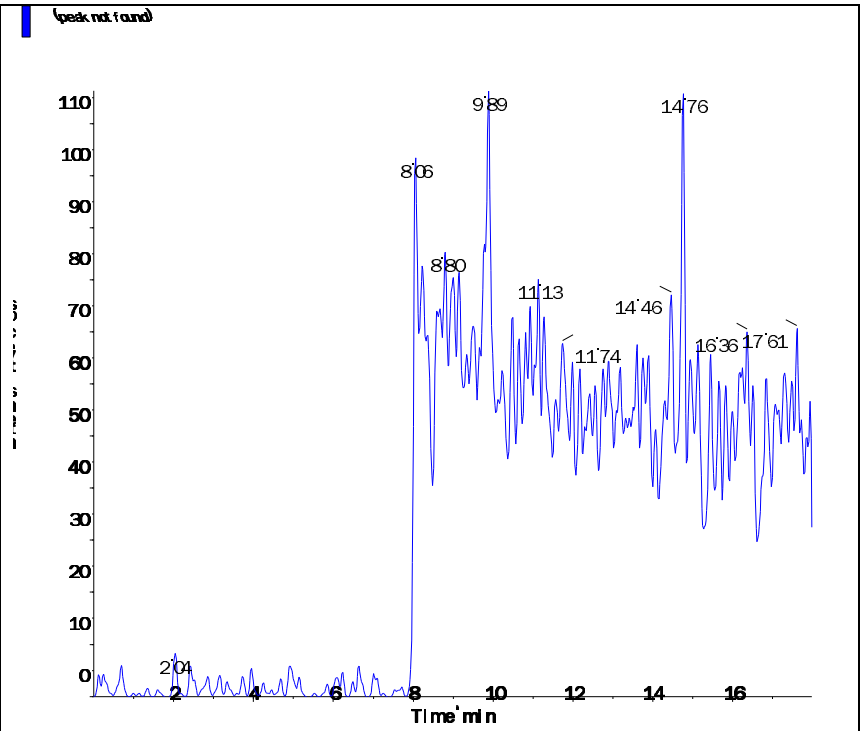

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

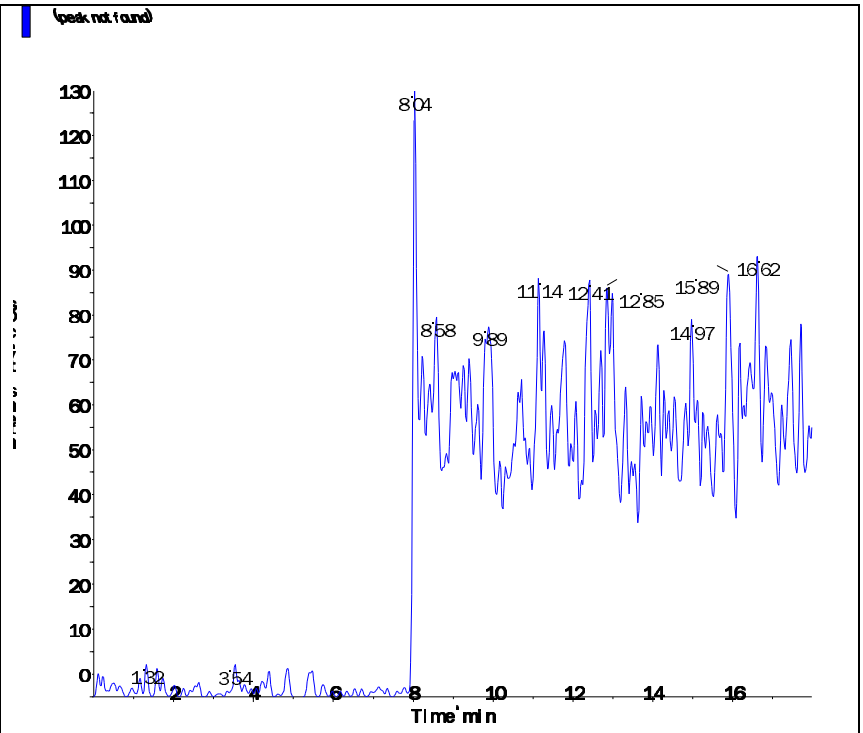

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Data File	LM35298.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 6:16:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-06 CCB	**Injection Vial**	1.00
Data File	LM35298.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 6:16:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.040e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

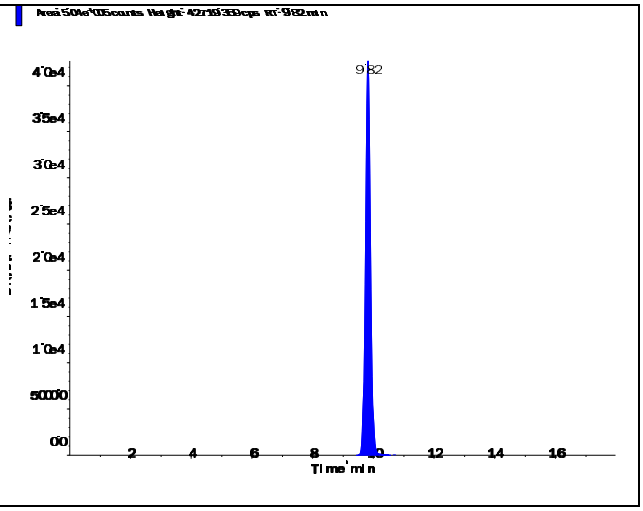

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

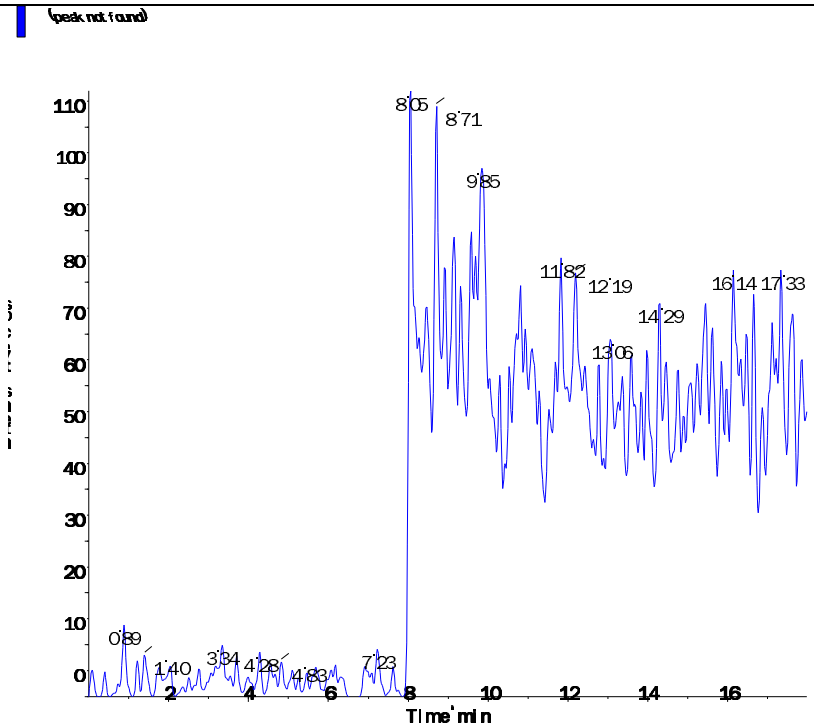

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

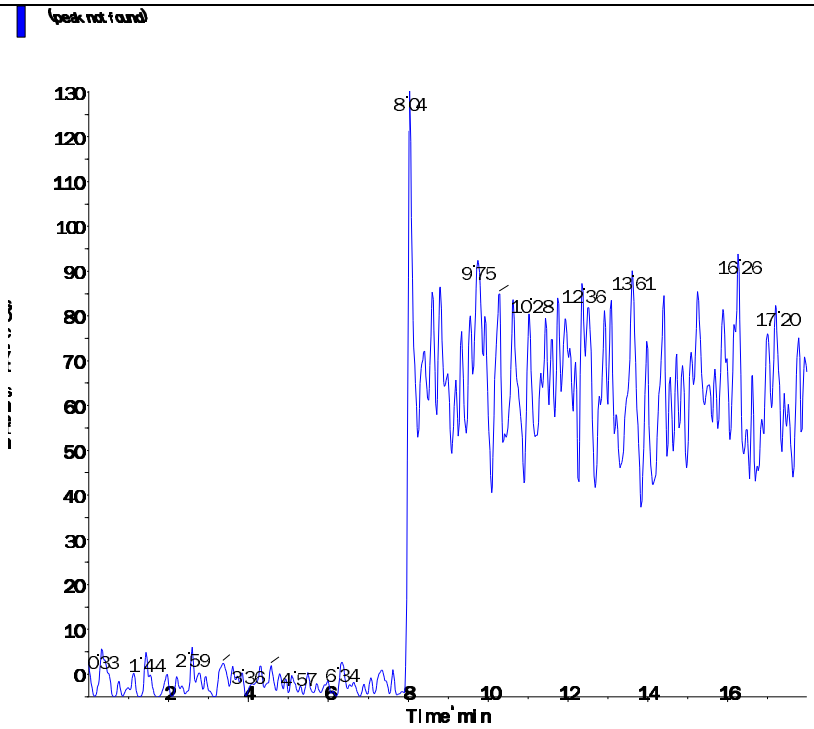

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Data File	LM35228.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 10:46:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM35228.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 10:46:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.550e+05	9.16	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.520e+04	9.17	N/A	0.226
Perchlorate conf	1.040e+04	9.17	N/A	0.184

O18LP (Internal Standard)

RT (Exp. RT): 9.16(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

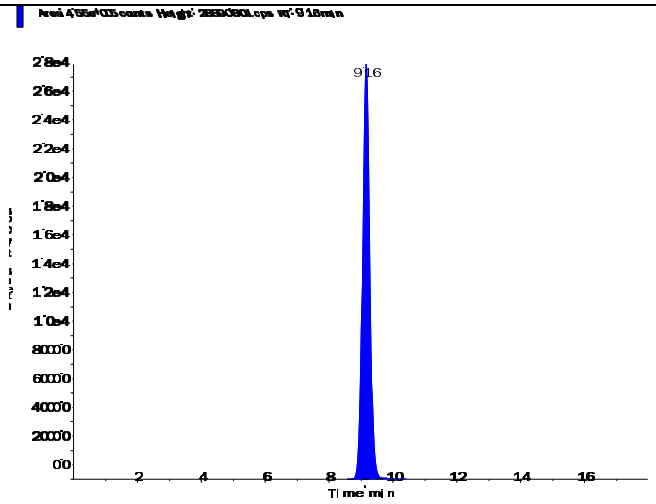

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.17 (9.84) min
Calculated conc:	0.226 ng/ml
Area Ratio:	0.077
Sample Type:	(Unknown)

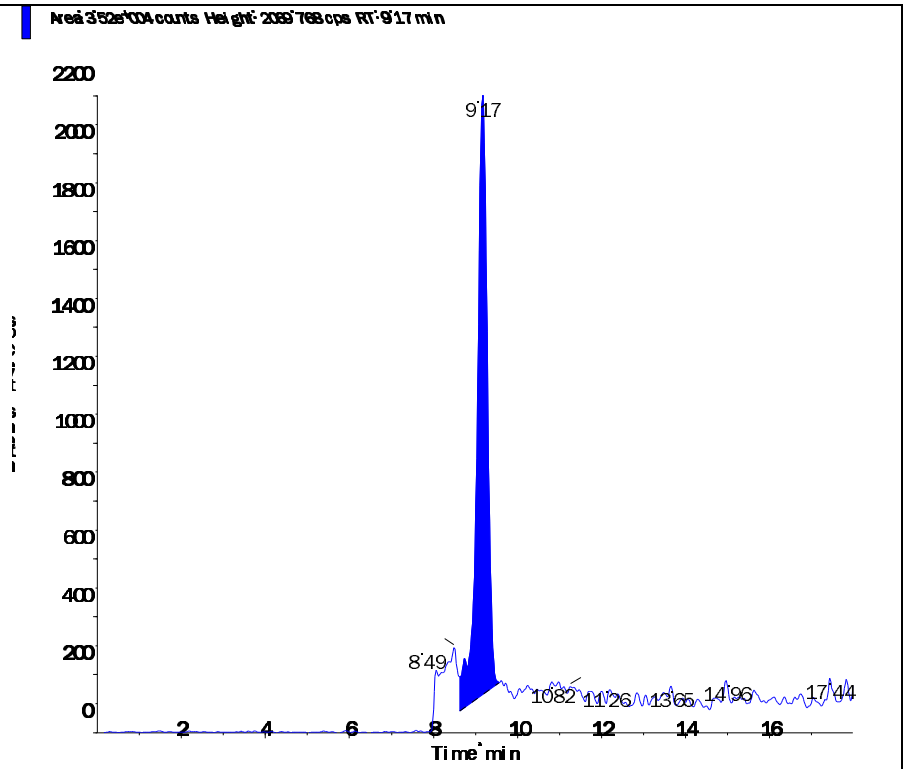

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.17 (9.84) min
Calculated conc:	0.184 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

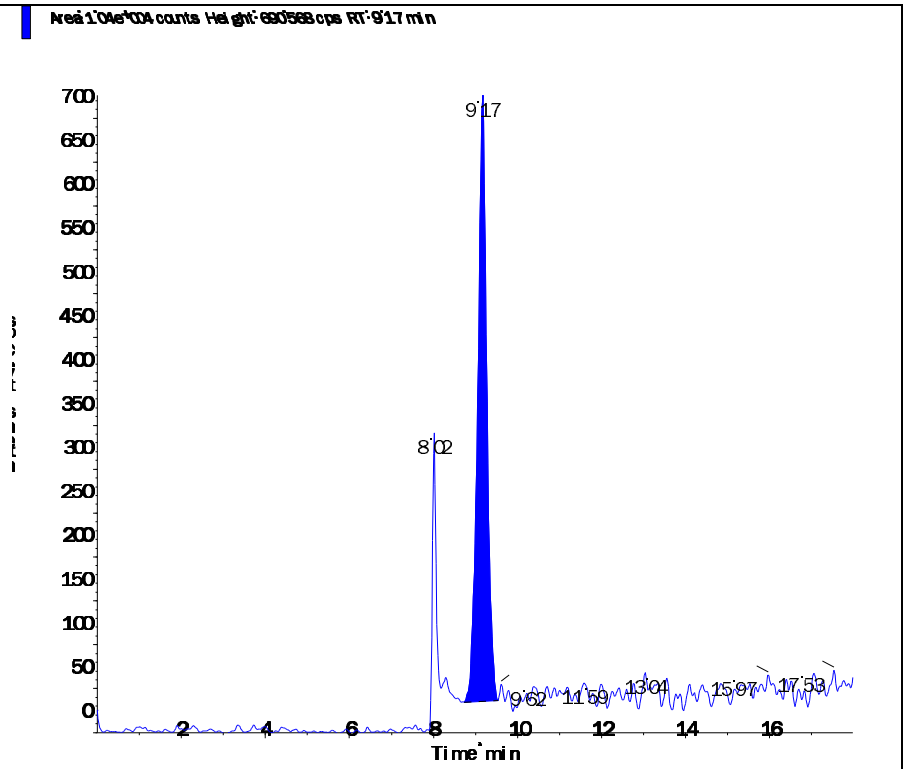

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2.2.2.5 Raw QC Data

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Data File	LM35229.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 11:05:30 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-02 BLANK	**Injection Vial**	5.00
Data File	LM35229.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 11:05:30 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.410e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	3.090e+02	9.81	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

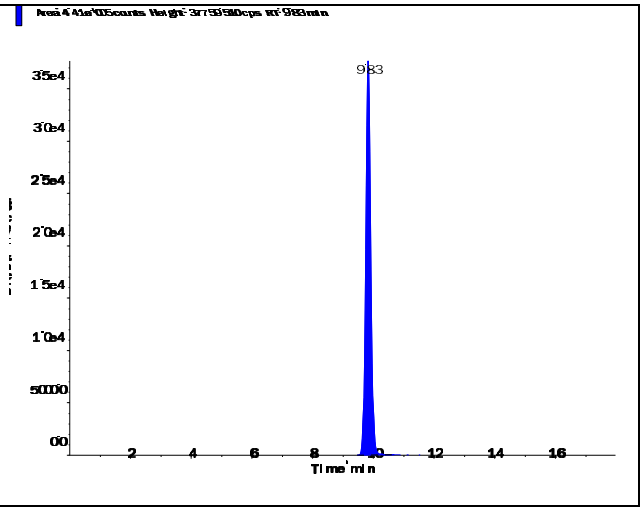

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	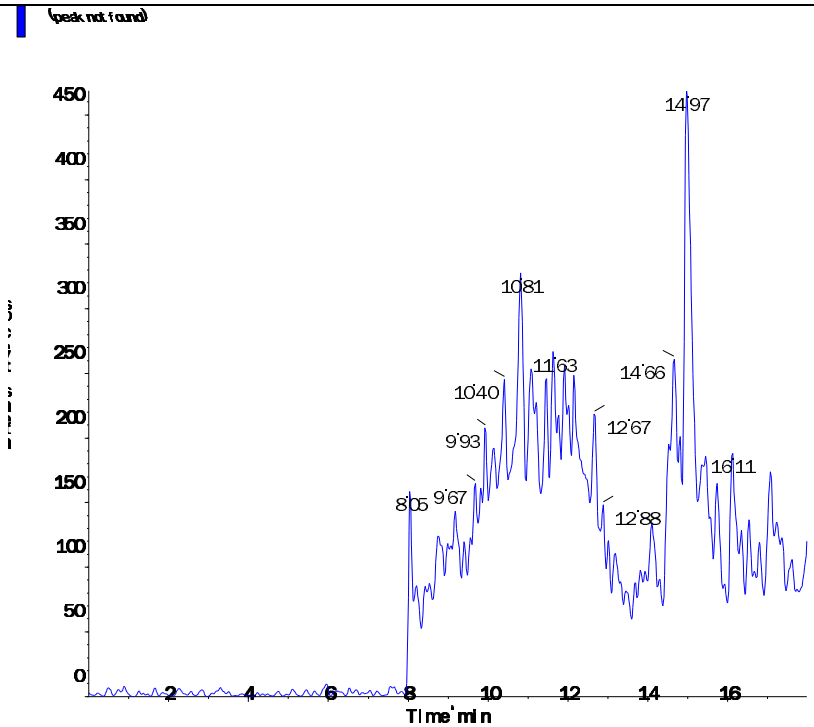
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.81 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	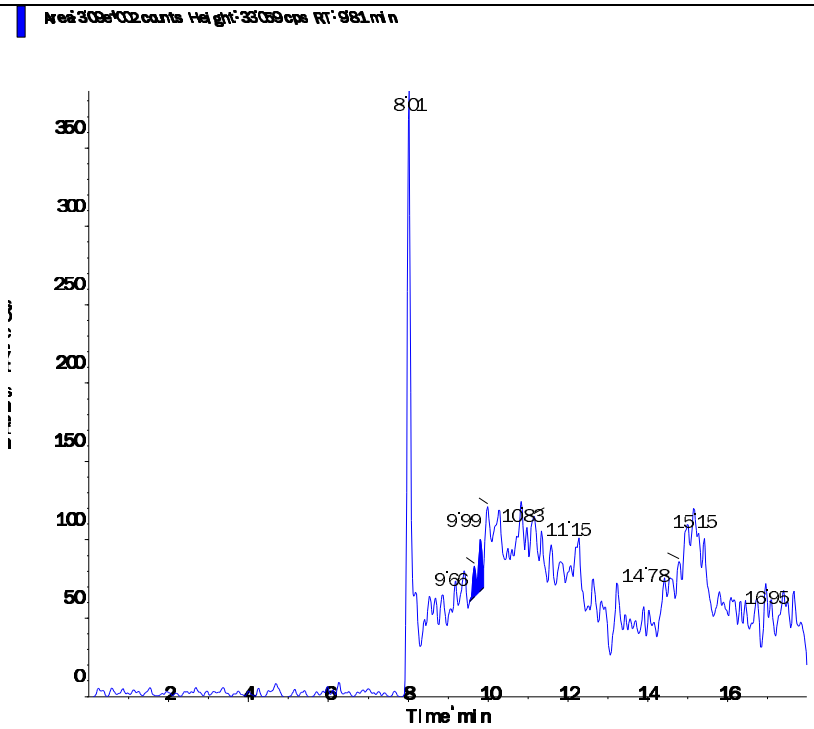

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/11/2016 1:01 PM

Data File	LM35230.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 11:24:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM35230.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 11:24:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.340e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.000e+04	9.83	N/A	0.201
Perchlorate conf	1.180e+04	9.83	N/A	0.223

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

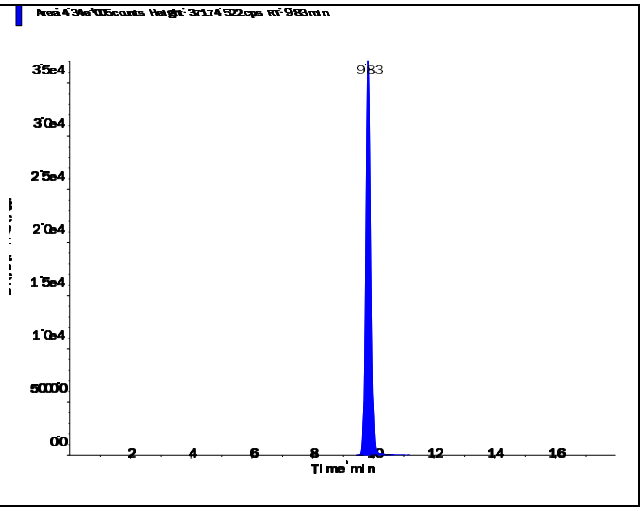

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

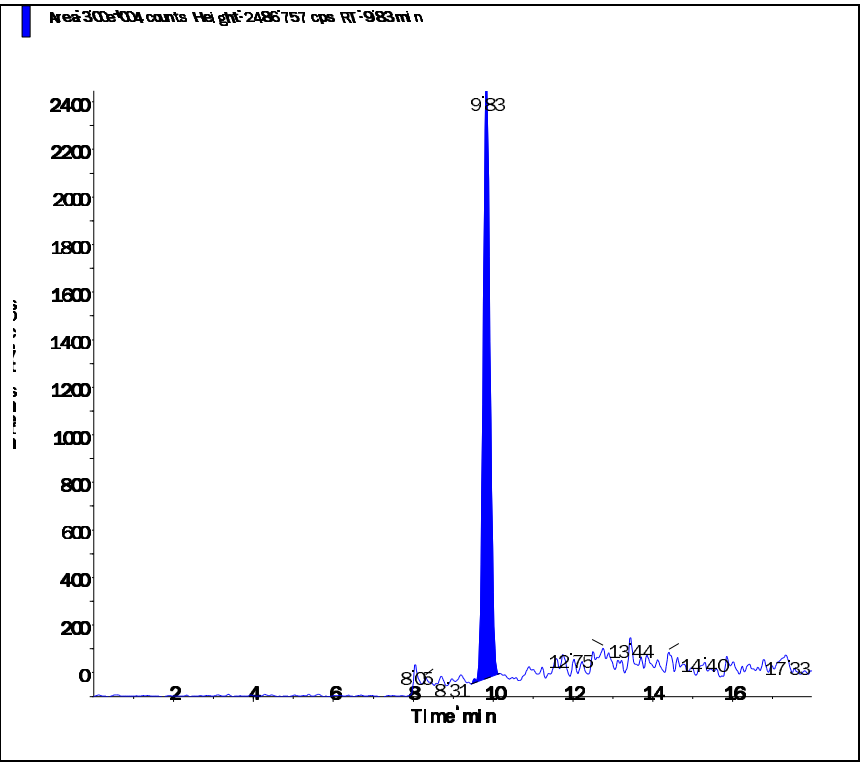

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.223 ng/ml
Area Ratio:	0.027
Sample Type:	(Unknown)

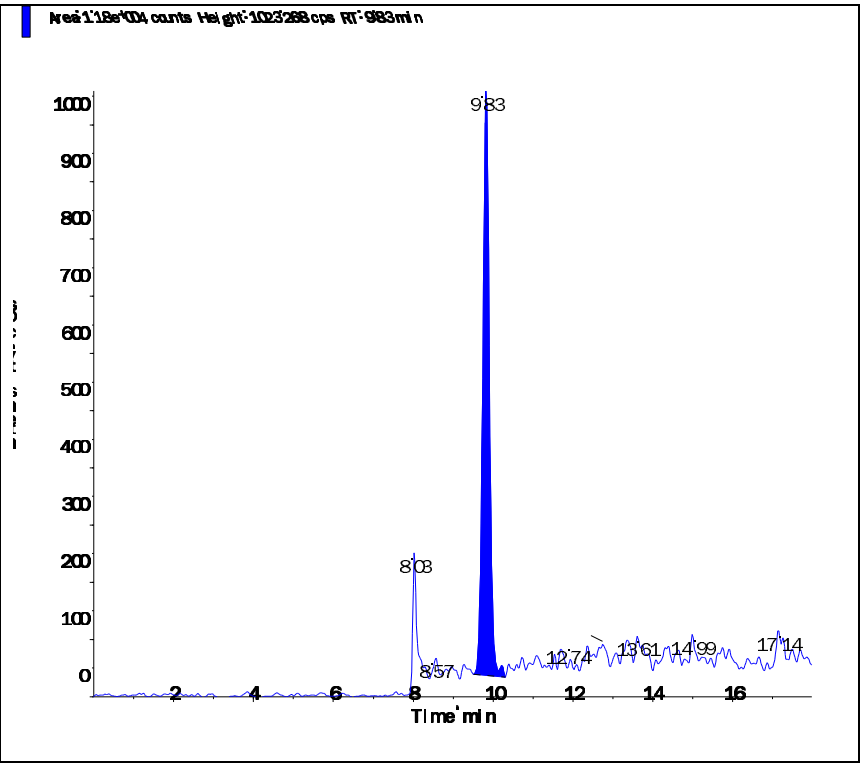

s.dataFile Page 2 of 2

2.3 Metals Data

2.3.1 Metals I C P Data

2.3.1.1 Summary Data

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW5-060816	**Prep Method:**	3015	**Prep Date:**	06/10/2016 11:21
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/14/2016 12:52
Workgroup #:	WG572544	**Analyst:**	JYH	**Run Date:**	06/14/2016 14:24
Collect Date:	06/08/2016 10:10	**Dilution:**	1	**File ID:**	T3.061416.142427
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.0635	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	24.9		0.500	0.250	0.125
Iron, Total	7439-89-6	1.00		0.200	0.100	0.0500
Potassium, Total	7440-09-7	2.42		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW5-060816	**Prep Method:**	3015	**Prep Date:**	06/10/2016 11:21
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/14/2016 12:52
Workgroup #:	WG572544	**Analyst:**	JYH	**Run Date:**	06/14/2016 14:32
Collect Date:	06/08/2016 10:10	**Dilution:**	5	**File ID:**	T3.061416.143214
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Magnesium, Total	7439-95-4	26.1		5.00	2.50	1.25
Sodium, Total	7440-23-5	124		5.00	2.50	1.25

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.3.1.2 QC Summary Data

Example 6010 Calculations
Thermo Scientific iCAP

1.0 Initial Calibration (ICAL) Parameters
For a multi-point calibration, the system performs linear regression from data consisting of a blank and four standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

TCLP Non-Volatile

Analyst(s): AMA
Date: 06/09/2016
Filter Lot #: 94186030
Microbac SOP: TCLP01 Rev #: 12

Analyst / Date		Analyst / Date	
AMA	6/9/16	CPD	6/10/16
Time On	Temp On °C	Time Off	Temp Off °C
1435	22.9	0810	21.8

Agitator Speed 30 ± 2 rpm ☑

Jug #	Sample #	Tests	Method	Fluid #	Matrix *	% Solid	Pretest pH Initial	Pretest pH Final	Int. Wt. (g)	Fluid Vol. (mL)	Final extract pH
G-8	06-0360-02	ME, SV, Pest, Herb	1311	F1-180	S	100	7.62	3.16	100.79	2015	5.25
↓	↓	pH-L	↓	↓	↓	↓	↓	↓	↓	↓	↓
D	06-0401-01	ME	1311	F2-379	S	100	12.78	12.31	50.40	1008	12.44
D	06-0403-01	ME	1311	F2-379	S	100	12.83	12.32	50.40	1008	11.99
D	06-0418-01	300	1312	SPLP F1-61	S	100	NA	NA	50.45	1009	9.65
D	-02	↓	↓	↓	↓	↓	↓	↓	50.09	1002	9.78
D	-03	↓	↓	↓	↓	↓	↓	↓	50.40	1008	8.85
D	-04	↓	↓	↓	↓	↓	↓	↓	50.54	1010	9.68
D	-05	↓	↓	↓	↓	↓	↓	↓	50.71	1014	9.08
D	-06	↓	↓	↓	↓	↓	↓	↓	50.48	1009	9.65
D	-07	↓	↓	↓	↓	↓	↓	↓	50.56	1011	9.04
D	-08	↓	↓	↓	↓	↓	↓	↓	50.23	1004	9.56
D	06-0482-01	ME	1311		S	100	6.29	2.01	100.64	2013	5.55
	FBLK 1	ME, SV, Pest, Herb, PHL	1311	F1-180	NA	NA	NA	NA	100	100	4.92
	FBLK 2	ME	1311	F2-379	↓	↓	↓	↓	↓	↓	2.92
	SPLP F1	300	1312	F1-61	↓	↓	↓	↓	↓	↓	4.17

AMA 6/10/16

*Matrix Code: (S = solid, sand, soil or sludge) (P = paint) (O = organic) (W = water or aqueous waste)
D = Disposable plastic jug
TCLP Pretest weight will be 5.0 g (± 0.1) unless otherwise noted.
Temperature shall be maintained at 23° ± 2 for 18 ± 2 hours unless otherwise noted.

Comments: NA

Peer Review By: [signature]

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG572244
Analyst: REK
Spike Analyst: REK
Run Date: 06/10/2016 11:21
Method: 3015
Balance: BAL019
Instrument: MW-3
Instrument Start: 06/10/2016 11:31

SOP: ME407 Revison 19
Spike Solution: STD76255
Spike Witness: VC
40 & 50 ML. DIGESTION TU COA18772
HCL Lot #: COA18769
HNO3 Lot #: COA18905
ICP Filters- fisher-Lot# RGT35619

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG572244-02	BLANK	1	40 mL	50 mL	205.022 g	205.023 g		
2	WG572115-01	FBLK1	17	5 mL	50 mL	206.992 g	206.986 g		
3	WG572115-02	FBLK2	17	5 mL	50 mL	207.137 g	207.135 g		
4	WG572244-03	LCS	1	40 mL	50 mL	208.114 g	208.113 g	5 mL	
5	L16060360-02	SAMP	17	5 mL	50 mL	203.076 g	203.077 g		06/17/16
6	WG572244-01	REF	17	5 mL	50 mL	203.751 g	203.758 g		
7	L16060401-01	SAMP	17	5 mL	50 mL	203.751 g	203.758 g		06/16/16
8	L16060403-01	SAMP	17	5 mL	50 mL	205.372 g	205.393 g		06/16/16
9	L16060437-01	SAMP	1	40 mL	50 mL	205.943 g	205.95 g		06/16/16
10	L16060438-01	SAMP	1	40 mL	50 mL	204.961 g	204.972 g		06/13/16
11	L16060442-01	SAMP	1	40 mL	50 mL	204.147 g	204.148 g		06/16/16
12	L16060442-02	SAMP	1	40 mL	50 mL	208.019 g	208.021 g		06/16/16
13	L16060442-03	SAMP	1	40 mL	50 mL	206.775 g	206.778 g		06/16/16
14	L16060442-04	SAMP	1	40 mL	50 mL	207.876 g	207.888 g		06/16/16
15	L16060442-05	SAMP	1	40 mL	50 mL	208.182 g	208.181 g		06/16/16
16	L16060442-06	SAMP	1	40 mL	50 mL	206.956 g	206.956 g		06/16/16
17	L16060443-01	SAMP	1	40 mL	50 mL	209.069 g	209.068 g		06/16/16
18	L16060443-02	SAMP	1	40 mL	50 mL	208.862 g	208.866 g		06/16/16
19	L16060443-03	SAMP	1	40 mL	50 mL	205.416 g	205.415 g		06/16/16
20	L16060446-01	SAMP	1	40 mL	50 mL	206.819 g	206.811 g		06/16/16
21	L16060447-01	SAMP	1	40 mL	50 mL	205.977 g	205.985 g		06/16/16
22	L16060482-01	SAMP	17	5 mL	50 mL	204.66 g	204.657 g		06/14/16
23	L16060504-03	SAMP	1	40 mL	50 mL	208.016 g	208.013 g		06/20/16
24	WG572244-04	MS	1	5 mL	50 mL	211.365 g	211.368 g	5 mL	
25	WG572244-05	MSD	1	5 mL	50 mL	210.515 g	210.529 g	5 mL	

L16060438-01	FILTERED DIGESTATE
L16060442-02	FILTERED DIGESTATE
L16060442-04	FILTERED DIGESTATE
L16060442-06	FILTERED DIGESTATE
L16060443-01	FILTERED DIGESTATE

Analyst: _____

Reviewer: _____

MW_DIG - Modified 09/30/2009
PDF ID: 4803249
Report generated: 06/15/2016 11:00

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 061416T3.2R.TXT

Analyst1: Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 572544, 572626, 572020

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.061416.123628	WG572687-01	Calibration Point		1		06/14/16 12:36
2	T3.061416.124032	WG572687-02	Calibration Point		1		06/14/16 12:40
3	T3.061416.124435	WG572687-03	Calibration Point		1		06/14/16 12:44
4	T3.061416.124840	WG572687-04	Calibration Point		1		06/14/16 12:48
5	T3.061416.125223	WG572687-05	Calibration Point		1		06/14/16 12:52
6	T3.061416.125605	WG572687-06	Initial Calibration Verification		1		06/14/16 12:56
7	T3.061416.125947	WG572687-07	Initial Calib Blank		1		06/14/16 12:59
8	T3.061416.130350	WG572687-08	Low Level Initial Calibration V		1		06/14/16 13:03
9	T3.061416.130753	WG572687-09	Low Level Initial Calibration V		1		06/14/16 13:07
10	T3.061416.131152	WG572687-10	Interference Check		1		06/14/16 13:11
11	T3.061416.131551	WG572687-11	Interference Check		1		06/14/16 13:15
12	T3.061416.131940	WG572687-12	CCV		1		06/14/16 13:19
13	T3.061416.132323	WG572687-13	CCB		1		06/14/16 13:23
14	T3.061416.133305	WG572244-02	Method/Prep Blank	40/50	1		06/14/16 13:33
15	T3.061416.133710	WG572244-03	Laboratory Control S	40/50	1		06/14/16 13:37
16	T3.061416.134058	WG572115-01	Fluid Blank 1		1		06/14/16 13:40
17	T3.061416.134504	WG572115-02	Fluid Blank 2		1		06/14/16 13:45
18	T3.061416.134908	WG572244-01	Reference Sample		1	L16060401-01	06/14/16 13:49
19	T3.061416.135310	WG572244-04	Matrix Spike	40/50	1	L16060401-01	06/14/16 13:53
20	T3.061416.135655	WG572244-05	Matrix Spike Duplica	40/50	1	L16060401-01	06/14/16 13:56
21	T3.061416.140044	L16060360-02	V6F0104-02	5/50	1		06/14/16 14:00
22	T3.061416.140444	L16060403-01	KAISER 12 BAGS 6/6/16	5/50	1		06/14/16 14:04
23	T3.061416.140844	WG572687-14	CCV		1		06/14/16 14:08
24	T3.061416.141227	WG572687-15	CCB		1		06/14/16 14:12
25	T3.061416.141631	L16060438-01	PIT WATER	40/50	1		06/14/16 14:16
26	T3.061416.142028	L16060482-01	13837-SSP0551	5/50	1		06/14/16 14:20
27	T3.061416.142427	L16060504-03	MW5-060816	40/50	1		06/14/16 14:24
28	T3.061416.142829	WG572544-01	Post Digestion Spike		1	L16060504-03	06/14/16 14:28
29	T3.061416.143214	WG572544-02	Serial Dilution		5	L16060504-03	06/14/16 14:32
30	T3.061416.143615	WG572544-02	Serial Dilution		25	L16060504-03	06/14/16 14:36
31	T3.061416.144017	WG572687-16	CCV		1		06/14/16 14:40
32	T3.061416.144359	WG572687-17	CCB		1		06/14/16 14:43
33	T3.061416.144804	WG572687-18	Low Level Continuing Calibra		1		06/14/16 14:48
34	T3.061416.145155	WG572687-19	Low Level Continuing Calibra		1		06/14/16 14:51

Page: 1 Approved: June 14, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 061416T3.2R.TXT
Analyst1: Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 572544, 572626, 572020

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.061416.145555	L16060403-01	KAISER 12 BAGS 6/6/16		1		06/14/16 14:55
36	T3.061416.145955	L16060437-01	0101-151-B	40/50	1		06/14/16 14:59
37	T3.061416.150355	L16060442-01	27-3-25.14 S1	40/50	1		06/14/16 15:03
38	T3.061416.150755	L16060442-02	6-10-15.01 S12	40/50	1		06/14/16 15:07
39	T3.061416.151155	L16060442-03	6-10-15.01 S11		1		06/14/16 15:11
40	T3.061416.151559	L16060442-04	6-10-15.01 S7	40/50	1		06/14/16 15:15
41	T3.061416.152000	L16060442-05	6-10-15.01 S8	40/50	1		06/14/16 15:20
42	T3.061416.152359	L16060442-06	6-10-15.01 S1	40/50	1		06/14/16 15:23
43	T3.061416.152759	WG572687-20	CCV		1		06/14/16 15:27
44	T3.061416.153141	WG572687-21	CCB		1		06/14/16 15:31
45	T3.061416.153545	L16060443-01	45-11-15.02 S2	40/50	1		06/14/16 15:35
46	T3.061416.153934	L16060443-02	45-11-15.02 S1	40/50	1		06/14/16 15:39
47	T3.061416.154331	L16060443-03	1803-126 W1	40/50	1		06/14/16 15:43
48	T3.061416.154727	L16060446-01	1802-116-A W1	40/50	1		06/14/16 15:47
49	T3.061416.155127	L16060447-01	6-7-32 W1	40/50	1		06/14/16 15:51
50	T3.061416.155527	L16060442-03	6-10-15.01 S11	40/50	1		06/14/16 15:55
51	T3.061416.155927	WG572687-22	CCV		1		06/14/16 15:59
52	T3.061416.160309	WG572687-23	CCB		1		06/14/16 16:03
53	T3.061416.160713	WG572463-02	Method/Prep Blank	40/50	1		06/14/16 16:07
54	T3.061416.161106	WG572463-03	Laboratory Control S	40/50	1		06/14/16 16:11
55	T3.061416.161451	WG572463-04	Filter Blank		1		06/14/16 16:14
56	T3.061416.161854	WG572463-01	Reference Sample		1	L16060540-06	06/14/16 16:18
57	T3.061416.162255	WG572463-05	Matrix Spike	40/50	1	L16060540-06	06/14/16 16:22
58	T3.061416.162640	WG572463-06	Matrix Spike Duplica	40/50	1	L16060540-06	06/14/16 16:26
59	T3.061416.163026	L16060645-03	5506-G01-WQ-W0163	40/50	1		06/14/16 16:30
60	T3.061416.163430	WG572626-01	Post Digestion Spike		1	L16060645-03	06/14/16 16:34
61	T3.061416.163816	WG572626-02	Serial Dilution		5	L16060645-03	06/14/16 16:38
62	T3.061416.164220	WG572626-02	Serial Dilution		25	L16060645-03	06/14/16 16:42
63	T3.061416.164625	WG572687-24	CCV		1		06/14/16 16:46
64	T3.061416.165007	WG572687-25	CCB		1		06/14/16 16:50
65	T3.061416.165411	L16060411-03	AWD4T-060716	40/50	1		06/14/16 16:54
66	T3.061416.165809	L16060411-04	AWD4B-060716	40/50	1		06/14/16 16:58
67	T3.061416.170207	L16060485-03	FTB-034-GM-MW16B-06081	40/50	1		06/14/16 17:02
68	T3.061416.170608	L16060485-04	FTB-034-GM-MW08B-06081	40/50	1		06/14/16 17:06

Page: 2 Approved: June 14, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 061416T3.2R.TXT
Analyst1: Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 572544, 572626, 572020

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.061416.170958	L16060485-05	FTB-034-GM-MW15A-06081	40/50	1		06/14/16 17:09
70	T3.061416.171358	L16060485-06	FTB-034-GM-MW11B-06081	40/50	1		06/14/16 17:13
71	T3.061416.171759	L16060540-09	AG4578	40/50	1		06/14/16 17:17
72	T3.061416.172158	L16060540-10	AG4579	40/50	1		06/14/16 17:21
73	T3.061416.172558	L16060540-11	AG4580	40/50	1		06/14/16 17:25
74	T3.061416.172958	L16060540-14	AG4584	40/50	1		06/14/16 17:29
75	T3.061416.173357	WG572687-26	CCV		1		06/14/16 17:33
76	T3.061416.173740	WG572687-27	CCB		1		06/14/16 17:37
77	T3.061416.174143	L16060492-01	SPW_06082016	40/50	100		06/14/16 17:41
78	T3.061416.174556	L16060492-02	SPW_06082016	40/50	100		06/14/16 17:45
79	T3.061416.175013	L16060540-15	AG4587	40/50	1		06/14/16 17:50
80	T3.061416.175412	L16060540-16	AG4589	40/50	1		06/14/16 17:54
81	T3.061416.175813	L16060645-01	5003-G15-WQ-W0222	40/50	1		06/14/16 17:58
82	T3.061416.180216	L16060645-02	5320-G02-WQ-W0182	40/50	1		06/14/16 18:02
83	T3.061416.180620	L16060411-03	AWD4T-060716		20		06/14/16 18:06
84	T3.061416.181023	WG572687-28	CCV		1		06/14/16 18:10
85	T3.061416.181405	WG572687-29	CCB		1		06/14/16 18:14
86	T3.061416.181809	L16060411-04	AWD4B-060716		20		06/14/16 18:18
87	T3.061416.182210	L16060485-03	FTB-034-GM-MW16B-06081	40/50	20		06/14/16 18:22
88	T3.061416.182614	L16060485-04	FTB-034-GM-MW08B-06081	40/50	20		06/14/16 18:26
89	T3.061416.183019	L16060485-05	FTB-034-GM-MW15A-06081	40/50	20		06/14/16 18:30
90	T3.061416.183422	L16060485-06	FTB-034-GM-MW11B-06081	40/50	20		06/14/16 18:34
91	T3.061416.183825	WG572687-30	CCV		1		06/14/16 18:38
92	T3.061416.184207	WG572687-31	CCB		1		06/14/16 18:42
93	T3.061416.184611	WG572687-32	Low Level Continuing Calibra		1		06/14/16 18:46
94	T3.061416.185013	WG571814-02	Method/Prep Blank	40/50	1		06/14/16 18:50
95	T3.061416.185417	WG571814-03	Laboratory Control S	40/50	1		06/14/16 18:54
96	T3.061416.185803	WG571814-01	Reference Sample		1	L16060308-01	06/14/16 18:58
97	T3.061416.190204	WG571814-04	Matrix Spike	40/50	1	L16060308-01	06/14/16 19:02
98	T3.061416.190549	WG571814-05	Matrix Spike Duplica	40/50	1	L16060308-01	06/14/16 19:05
99	T3.061416.190934	L16060303-01	LH18/24-SP650-6368-GRAB	40/50	1		06/14/16 19:09
100	T3.061416.191335	L16060303-02	LH18/24-SP650-6368-COMP	40/50	1		06/14/16 19:13
101	T3.061416.191734	L16060304-02	LH18/24-SP650-6369-GRAB	40/50	1		06/14/16 19:17
102	T3.061416.192134	WG572020-03	Post Digestion Spike		1	L16060304-02	06/14/16 19:21

Page: 3 Approved: June 14, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 061416T3.2R.TXT

Analyst1: Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 572544, 572626, 572020

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T3.061416.192521	WG572020-04	Serial Dilution		5	L16060304-02	06/14/16 19:25
104	T3.061416.192921	WG572687-33	CCV		1		06/14/16 19:29
105	T3.061416.193304	WG572687-34	CCB		1		06/14/16 19:33
106	T3.061416.193707	WG571974-02	Method/Prep Blank	40/50	1		06/14/16 19:37
107	T3.061416.194111	WG571974-03	Laboratory Control S	40/50	1		06/14/16 19:41
108	T3.061416.194456	L16060395-08	MW-4		1	WG571974-01	06/14/16 19:44
109	T3.061416.194858	WG571974-04	Matrix Spike	40/50	1	L16060395-08	06/14/16 19:48
110	T3.061416.195242	WG571974-05	Matrix Spike Duplica	40/50	1	L16060395-08	06/14/16 19:52
111	T3.061416.195628	L16060376-01	FTB-034-GM-MW12B-06071	40/50	10		06/14/16 19:56
112	T3.061416.200030	L16060376-02	FTB-034-GM-MW1C-060716	40/50	10		06/14/16 20:00
113	T3.061416.200432	L16060376-03	FTB-034-GM-MW07B-06071	40/50	10		06/14/16 20:04
114	T3.061416.200832	WG572145-03	Post Digestion Spike		10	L16060376-03	06/14/16 20:08
115	T3.061416.201218	WG572145-04	Serial Dilution		50	L16060376-03	06/14/16 20:12
116	T3.061416.201622	WG572687-35	CCV		1		06/14/16 20:16
117	T3.061416.202004	WG572687-36	CCB		1		06/14/16 20:20
118	T3.061416.202408	L16060376-04	FTB-034-GM-MW13B-06071	40/50	10		06/14/16 20:24
119	T3.061416.202810	WG572687-37	CCV		1		06/14/16 20:28
120	T3.061416.203152	WG572687-38	CCB		1		06/14/16 20:31
121	T3.061416.203555	WG572687-39	Low Level Continuing Calibra		1		06/14/16 20:35

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Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 14-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 572687
Runlog ID: 75684
Analytical Workgroups: 572544, 572626, 572020

Additional Workgroup	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	
Client Forms	X
Level X	
Level 3	
Level 4	482
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer: Secondary Reviewer: 14-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-15-2016 10:40:52

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010C

AAB#: WG572544

Login Number: L16060504

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW5-060816	03	06/08/16					06/10/2016	2	180		06/14/16	6.2	180	
MW5-060816	03	06/08/16					06/10/2016	2	180		06/14/16	6.2	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4807542
Report generated 06/14/2016 16:35

METHOD BLANK SUMMARY

Login Number: L16060504
Blank File ID: T3.061416.133305
Prep Date: 06/10/16 11:21
Analyzed Date: 06/14/16 13:33
Analyst: JYH

Work Group: WG572544
Blank Sample ID: WG572244-02
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572244-03	T3.061416.133710	06/14/16 13:37	01
MW5-060816	L16060504-03	T3.061416.142427	06/14/16 14:24	01
MW5-060816	L16060504-03	T3.061416.143214	06/14/16 14:32	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4807543
Report generated 06/14/2016 16:35

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060504 Prep Date: 06/10/16 11:21 Sample ID: WG572244-02
Instrument ID: ICP-THERMO3 Run Date: 06/14/16 13:33 Prep Method: 3015
File ID: T3.061416.133305 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG572544 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-14-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Aluminum, Total	0.0500	0.200	0.0500	1	U
Beryllium, Total	0.00500	0.0200	0.00500	1	U
Calcium, Total	0.125	0.500	0.125	1	U
Iron, Total	0.0500	0.200	0.0500	1	U
Magnesium, Total	0.250	1.00	0.250	1	U
Potassium, Total	0.500	2.00	0.500	1	U
Selenium, Total	0.00500	0.0200	0.00500	1	U
Sodium, Total	0.250	1.00	0.250	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4807544
14-JUN-2016 16:35

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060504 Run Date: 06/14/2016 Sample ID: WG572244-03
Instrument ID: ICP-THERMO3 Run Time: 13:37 Prep Method: 3015
File ID: T3.061416.133710 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG572544 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76255 Cal ID: ICP-TH-14-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Aluminum, Total	6.25	6.27	100	80 - 120	
Beryllium, Total	0.0313	0.0306	97.9	80 - 120	
Calcium, Total	6.25	6.25	100	80 - 120	
Iron, Total	2.50	2.50	100	80 - 120	
Magnesium, Total	6.25	6.23	99.6	80 - 120	
Potassium, Total	31.3	30.3	97.1	80 - 120	
Selenium, Total	0.250	0.255	102	80 - 120	
Sodium, Total	31.3	30.6	97.8	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4807545
Report generated: 06/14/2016 16:35

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060504 Cal ID: ICP-THERMO3- Worknum: WG572544
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG572244-01 File ID: T3.061416.134908 Dil: 1 Matrix: WATER
Sample ID: WG572244-04 MS File ID: T3.061416.135310 Dil: 1 Units: mg/L
Sample ID: WG572244-05 MSD File ID: T3.061416.135655 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Aluminum	ND	50.0	51.0	102	50.0	51.3	103	0.640	80 - 120	20	
Beryllium	ND	0.250	0.244	97.4	0.250	0.247	98.7	1.31	80 - 120	20	
Iron	ND	20.0	19.0	94.9	20.0	19.1	95.7	0.887	80 - 120	20	
Magnesium	ND	50.0	47.1	94.2	50.0	46.2	92.3	2.03	80 - 120	20	
Potassium	2540	250	2800	104	250	2770	94.6	0.833	80 - 120	20	
Selenium	0.264	2.00	2.20	97.0	2.00	2.28	101	3.57	80 - 120	20	
Sodium	3160	250	3430	107	250	3390	91.6	1.16	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4807546
Report generated 06/15/2016 11:17

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16060504 **Worknum:** WG572544
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG572544-02 **File ID:** T3.061416.143615 **Dil:** 25 **Units:** ug/L
Sample: L16060504-03 **File ID:** T3.061416.143214 **Dil:** 5

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	35.0		ND	U		
Beryllium	0.300	X	1.25		317.00	
Calcium	19000		18400		2.90	
Iron	820		824		0.49	
Magnesium	20900		21600		3.42	
Potassium	1430		ND	U		
Selenium	13.7		ND	U		
Sodium	98800		97900		0.87	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4807540
06/14/2016 16:35

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16060504 **Worknum:** WG572544
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG572544-02 **File ID:** T3.061416.143214 **Dil:** 5 **Units:** ug/L
Sample: L16060504-03 **File ID:** T3.061416.142427 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	50.8		35.0		31.10	E
Beryllium	0.0900	X	0.300		233.00	
Calcium	19900		19000		4.55	
Iron	802		820		2.19	
Magnesium	21500		20900		2.90	
Potassium	1930		1430		26.10	E
Selenium	1.56		13.7		775.00	E
Sodium	104000		98800		4.56	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4807540
06/14/2016 16:35

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060504 **Worknum:** WG572544
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG572544-01 **File ID:** T3.061416.142829 **Dil:** 1 **Units:** ug/L
Sample ID: L16060504-03 **File ID:** T3.061416.142427 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	5230		50.8	F	5000	103.8	75 - 125	
BERYLLIUM	25.5		0	U	25	101.9	75 - 125	
CALCIUM	22900		19900		5000	100.8	75 - 125	
IRON	2730		802		2000	100.4	75 - 125	
MAGNESIUM	24100		21500		5000	94.8	75 - 125	
POTASSIUM	26900		1930		25000	100.6	75 - 125	
SELENIUM	204		0	U	200	101.8	75 - 125	
SODIUM	118000		104000		25000	100.5	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4807541
Report generated: 06/14/2016 16:35

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16060504	Workgroup (AAB#):	WG572544
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG572687	Initial Calibration Date:	14-JUN-2016 12:52

	WG572687-01		WG572687-02		WG572687-03		WG572687-04		WG572687-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000680	.1	0.00147	.2	0.00211	10	0.0887	20	0.181	.99992	
BERYLLIUM	0	0.000320	.0005	0.000740	.001	0.00120	.05	0.0569	.1	0.114	.999978	
CALCIUM	0	-0.000380	.1	0.00268	.2	0.00754	10	0.461	20	0.895	.999844	
IRON	0	-0.000350	.04	0.000330	.08	0.00108	4	0.0868	8	0.169	.999976	
MAGNESIUM	0	-0.000290	NA	NA	.2	0.000600	10	0.0603	20	0.118	.999915	
POTASSIUM	0	0.00895	.5	0.0284	1	0.0488	50	3.19	100	6.17	.999883	
SELENIUM	0	-0.0000600	NA	NA	.008	0.0000700	.4	0.00607	.8	0.0124	.999714	
SODIUM	0	0.000500	.5	0.0620	1	0.131	50	8.64	100	16.8	.999875	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4807549
Report generated: 14-JUN-2016 16:35

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060504
Run Date: 06/14/2016
Sample ID: WG572687-07
Instrument ID: ICP-THERMO3
Run Time: 12:59
Method: 6010C
File ID: T3.061416.125947
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG572544
Cal ID: ICP-THERI - 14-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	.004	U
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4807551
Report generated 06/14/2016 16:35

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060504
Run Date: 06/14/2016
Sample ID: WG572687-13
Instrument ID: ICP-THERMO3
Run Time: 13:23
Method: 6010C
File ID: T3.061416.132323
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG572544
Cal ID: ICP-TH - 14-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00506	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4807554
Report generated 06/14/2016 16:35

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060504
Run Date: 06/14/2016
Sample ID: WG572687-15
Instrument ID: ICP-THERMO3
Run Time: 14:12
Method: 6010C
File ID: T3.061416.141227
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG572544
Cal ID: ICP-TH - 14-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00621	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4807554
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Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060504
Run Date: 06/14/2016
Sample ID: WG572687-17
Instrument ID: ICP-THERMO3
Run Time: 14:43
Method: 6010C
File ID: T3.061416.144359
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG572544
Cal ID: ICP-TH - 14-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00560	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
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Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060504
Run Date: 06/14/2016
Sample ID: WG572687-06
Instrument ID: ICP-THERMO3
Run Time: 12:56
Method: 6010C
File ID: T3.061416.125605
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG572544
Cal ID: ICP-TH - 14-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	9.66	96.6	90 - 110	
Beryllium		.05	0.0488	97.5	90 - 110	
Calcium		10	9.73	97.3	90 - 110	
Iron		4	3.88	96.9	90 - 110	
Magnesium		10	9.72	97.2	90 - 110	
Potassium		50	49.0	98.0	90 - 110	
Selenium		.4	0.394	98.5	90 - 110	
Sodium		50	48.7	97.3	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4807550
Report generated 06/14/2016 16:35

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504
Run Date: 06/14/2016
Sample ID: WG572687-12
Instrument ID: ICP-THERMO3
Run Time: 13:19
Method: 6010C
File ID: T3.061416.131940
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG572544
Cal ID: ICP-TH - 14-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.68	mg/L	96.8	90 - 110		
Beryllium		0.0500	0.0485	mg/L	96.9	90 - 110		
Calcium		10.0	9.59	mg/L	95.9	90 - 110		
Iron		4.00	3.86	mg/L	96.4	90 - 110		
Magnesium		10.0	9.62	mg/L	96.2	90 - 110		
Potassium		50.0	48.2	mg/L	96.4	90 - 110		
Selenium		0.400	0.381	mg/L	95.2	90 - 110		
Sodium		50.0	48.1	mg/L	96.1	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504
Run Date: 06/14/2016
Sample ID: WG572687-14
Instrument ID: ICP-THERMO3
Run Time: 14:08
Method: 6010C
File ID: T3.061416.140844
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG572544
Cal ID: ICP-TH - 14-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.1	mg/L	101	90 - 110		
Beryllium		0.0500	0.0502	mg/L	100	90 - 110		
Calcium		10.0	9.84	mg/L	98.4	90 - 110		
Iron		4.00	3.98	mg/L	99.5	90 - 110		
Magnesium		10.0	9.84	mg/L	98.4	90 - 110		
Potassium		50.0	49.6	mg/L	99.1	90 - 110		
Selenium		0.400	0.404	mg/L	101	90 - 110		
Sodium		50.0	49.2	mg/L	98.4	90 - 110		

* Exceeds LIMITS Criteria

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Report generated 06/14/2016 16:35

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504
Run Date: 06/14/2016
Sample ID: WG572687-16
Instrument ID: ICP-THERMO3
Run Time: 14:40
Method: 6010C
File ID: T3.061416.144017
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG572544
Cal ID: ICP-TH - 14-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.69	mg/L	96.9	90 - 110		
Beryllium		0.0500	0.0482	mg/L	96.3	90 - 110		
Calcium		10.0	9.44	mg/L	94.4	90 - 110		
Iron		4.00	3.77	mg/L	94.3	90 - 110		
Magnesium		10.0	9.34	mg/L	93.4	90 - 110		
Potassium		50.0	47.2	mg/L	94.4	90 - 110		
Selenium		0.400	0.380	mg/L	94.9	90 - 110		
Sodium		50.0	47.2	mg/L	94.4	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060504
Run Date: 06/14/2016
Sample ID: WG572687-08
Instrument ID: ICP-THERMO3
Run Time: 13:03
Method: 6010C
File ID: T3.061416.130350
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG572544
Cal ID: ICP-TH - 14-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.161	mg/L	101	70 - 130		
Beryllium		0.00160	0.00154	mg/L	96.3	70 - 130		
Calcium		0.400	0.398	mg/L	99.5	70 - 130		
Iron		0.0800	0.0751	mg/L	93.8	70 - 130		
Magnesium		0.400	0.282	mg/L	70.5	70 - 130		
Potassium		0.800	0.644	mg/L	80.6	70 - 130		
Selenium		0.0160	0.0176	mg/L	110	70 - 130		
Sodium		0.400	0.385	mg/L	96.2	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4807555
Report generated 06/14/2016 16:35

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060504
Run Date: 06/14/2016
Sample ID: WG572687-18
Instrument ID: ICP-THERMO3
Run Time: 14:48
Method: 6010C
File ID: T3.061416.144804
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG572544
Cal ID: ICP-TH - 14-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.161	mg/L	101	70 - 130		
Beryllium		0.00160	0.00157	mg/L	98.1	70 - 130		
Calcium		0.400	0.383	mg/L	95.8	70 - 130		
Iron		0.0800	0.0806	mg/L	101	70 - 130		
Magnesium		0.400	0.332	mg/L	82.9	70 - 130		
Potassium		0.800	0.679	mg/L	84.8	70 - 130		
Selenium		0.0160	0.0153	mg/L	95.4	70 - 130		
Sodium		0.400	0.382	mg/L	95.5	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4807555
Report generated 06/14/2016 16:35

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060504
Instrument ID: ICP-THERMO3
Sol. A : WG572687-10 **File ID:** T3.061416.131152
Sol. AB : WG572687-11 **File ID:** T3.061416.131551

Workgroup (AAB#): WG572544
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	263	105	250	265	106	
Beryllium	NS	-0.000100	NS	0.250	0.248	99.2	
Calcium	250	235	94.0	250	238	95.2	
Iron	100	94.4	94.4	100	93.4	93.4	
Magnesium	250	242	96.8	250	238	95.2	
Potassium	NS	-0.0698	NS	5.00	5.06	101	
Selenium	NS	0.00541	NS	0.250	0.256	102	
Sodium	NS	0.0153	NS	5.00	5.12	102	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4807552
Report generated 06/14/2016 16:35

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060504 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	AG	AL	AS	B	BA
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000410	0	0	0
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0.0115	0	-0.0000800
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0.000260	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	-0.000289	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	-0.0000490	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.0000120	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0.0000300	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4807548
Report generated: 06/14/2016 16:35

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060504 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	BE	CA	CD	CO	CR
ALUMINUM	308.20	0	0	0	-0.000820	0
ANTIMONY	206.80	0	0	0	0	0.0200
ARSENIC	189.00	0	0	0	0	-0.00190
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0.00343	0
CADMIUM	228.80	0	0	0	-0.00390	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	-0.000200
COPPER	224.70	0	0	0	0.0000770	-0.00100
IRON	261.10	0	0	0	0	-0.00100
LEAD	220.30	0	0	0	-0.0000130	-0.000132
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.0000500
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	-0.000860	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0.00000500	0	0	0
THALLIUM	190.80	0	0	0	0.00240	0.000276
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	-0.00480
ZINC	206.20	0	0	0	0	-0.00180
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4807548
Report generated: 06/14/2016 16:35

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060504 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	CU	FE	K	LI	MG
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000560	0	0	0
ARSENIC	189.00	0	-0.0000500	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0.000300	0	0	0
CADMIUM	228.80	0	-0.0000190	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000500	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0.00160	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0.000609	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.00000300
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0.0000420	0	0	0
PHOSPHORUS	214.90	-0.323	0.000900	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000270	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000400	0	0	0
VANADIUM	292.40	0	0.00000700	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	-0.0000300	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4807548
Report generated: 06/14/2016 16:35

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060504 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	MN	MO	NA	NI	P
ALUMINUM	308.20	0	0.0163	0	0	0
ANTIMONY	206.80	0	-0.00310	0	-0.00350	0
ARSENIC	189.00	0	0.00120	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	-0.00190	0	0	0
CADMIUM	228.80	0	0.0000320	0	-0.000770	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0.000360	0	0	0	0
COBALT	228.60	0	-0.00200	0	0.000100	0
COPPER	224.70	0	0.00160	0	-0.0123	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	-0.00210	0	0.000110	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	-0.00290	-0.0230	0	0	0
MANGANESE	257.60	0	0.0000300	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0.00710	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0.000600	0.000580	0	0	0
SILICON	212.40	0	0.0187	0	0	0
SILVER	328.00	0	-0.0000430	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0.00100	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000153	0	0	0
VANADIUM	292.40	-0.000200	-0.00830	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4807548
Report generated: 06/14/2016 16:35

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060504 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	PB	SB	SE	SI	SN
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0	0	0	-0.0220
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0.00440	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4807548
Report generated: 06/14/2016 16:35

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060504 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	SR	TI	TL	V	ZN
ALUMINUM	308.20	0	0	0	0.0950	0
ANTIMONY	206.80	0	0.00110	0	-0.00360	0
ARSENIC	189.00	0	0	0	0.000107	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	-0.00000700	0	0.000990	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0.000102	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000550	0	0	0
COBALT	228.60	0	0.00210	0	0.0000200	0
COPPER	224.70	0	0.000269	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	-0.000126	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	-0.00290	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	-0.000110	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	-0.00100	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000720	0	-0.000260	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.000800	0	-0.00490	0
TIN	189.90	0	-0.00190	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0.000820	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4807548
Report generated: 06/14/2016 16:35

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060504 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	ZR
ALUMINUM	308.20	0
ANTIMONY	206.80	0
ARSENIC	189.00	0
BARIUM	455.40	0
BERYLLIUM	313.10	0
BORON	249.60	0
CADMIUM	228.80	0
CALCIUM	422.60	0
CHROMIUM	267.70	0
COBALT	228.60	0
COPPER	224.70	0
IRON	261.10	0
LEAD	220.30	0
LITHIUM	670.70	0
MAGNESIUM	279.00	0
MANGANESE	257.60	0
MOLYBDENUM	202.00	0
NICKEL	231.60	0
PHOSPHORUS	214.90	0
POTASSIUM	766.40	0
SELENIUM	196.00	0
SILICON	212.40	0
SILVER	328.00	0
SODIUM	589.50	0
STRONTIUM	407.70	0
THALLIUM	190.80	0
TIN	189.90	0
TITANIUM	337.20	0
VANADIUM	292.40	0
ZINC	206.20	0
ZIRCONIUM	339.10	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4807548
Report generated: 06/14/2016 16:35

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16060504 **Date:** 04/29/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	900.0
Antimony	20.00	45.0
Arsenic	10.00	45.0
Barium	10.00	45.0
Beryllium	10.00	1.8
Boron	20.00	45.0
Cadmium	20.00	4.5
Calcium	5.00	270.0
Chromium	20.00	36.0
Cobalt	20.00	45.0
Copper	20.00	180.0
Iron	5.00	720.0
Lead	20.00	225.0
Lithium	5.00	36.0
Magnesium	5.00	900.0
Manganese	10.00	36.0
Molybdenum	20.00	27.0
Nickel	20.00	90.0
Phosphorus	20.00	180.0
Potassium	5.00	450.0
Selenium	20.00	90.0
Silicon	20.00	36.0
Silver	10.00	9.0
Sodium	5.00	270.0
Strontium	5.00	9.0
Thallium	20.00	18.0
Tin	20.00	45.0
Titanium	5.00	36.0
Vanadium	20.00	27.0
Zinc	20.00	45.0
Zirconium	10.00	45.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4807547
Report generated: 06/14/2016 16:35

2.3.1.3 Raw Data

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000058	0.054734	0.000000	1.000000
Al 308.215 {109}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.000676	0.008865	0.000000	1.000000
As 189.042 {478}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.000051	0.022803	0.000000	1.000000
B 249.678 {135}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000098	0.021859	0.000000	1.000000
Ba 455.403 { 74}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.003817	2.128212	0.000000	1.000000
Be 313.107 {108}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.000323	1.115211	0.000000	1.000000
Ca 422.673 { 80}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000378	0.045215	0.000000	1.000000
Cd 228.802 {447}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000159	0.571631	0.000000	1.000000
Co 228.616 {447}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000049	0.361318	0.000000	1.000000
Cr 267.716 {126}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.000083	0.065120	0.000000	1.000000
Cu 224.700 {450}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000084	0.124789	0.000000	1.000000
Fe 261.187 {129}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000350	0.021350	0.000000	1.000000
K 766.490 { 44}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.008937	0.062121	0.000000	1.000000
Li 670.784 { 50}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000147	1.592157	0.000000	1.000000
Mg 279.079 {121}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000292	0.005969	0.000000	1.000000
Mn 257.610 {131}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.000124	0.270877	0.000000	1.000000
Mo 202.030 {467}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.000062	0.185810	0.000000	1.000000
Na 589.592 { 57}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.000491	0.169204	0.000000	1.000000
Ni 231.604 {446}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000561	0.135561	0.000000	1.000000
P 214.914 {457}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000073	0.012159	0.000000	1.000000
Pb 220.353 {453}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000166	0.060818	0.000000	1.000000
Sb 206.833 {463}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.000246	0.029184	0.000000	1.000000
Se 196.090 {472}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000062	0.015516	0.000000	1.000000
Si 212.412 {459}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.001290	0.038259	0.000000	1.000000
Sn 189.989 {477}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000057	0.067376	0.000000	1.000000
Sr 407.771 { 83}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.000549	3.551418	0.000000	1.000000
Ti 337.280 {100}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.002165	0.117486	0.000000	1.000000
Tl 190.856 {477}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000146	0.028829	0.000000	1.000000
V 292.402 {115}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000079	0.081335	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.000320	0.361669	0.000000	1.000000
Zr 339.198 { 99}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.002492	2.733046	0.000000	1.000000

Approved: June 15, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999652	0.000004	0.002198	0.007327	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999920	0.000007	0.009539	0.031798	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999693	0.000002	0.003424	0.011414	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999881	0.000002	0.003259	0.010862	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999873	0.000215	0.001054	0.003514	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999978	0.000002	0.000096	0.000321	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999844	0.000051	0.040539	0.135129	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999707	0.000005	0.000276	0.000920	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999981	0.000003	0.000418	0.001394	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999949	0.000002	0.001251	0.004171	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999976	0.000003	0.001417	0.004724	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999883	0.000008	0.022505	0.075016	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999721	0.000465	0.100125	0.333750	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999900	0.000222	0.003661	0.012204	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999915	0.000008	0.087992	0.293308	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999573	0.000025	0.002464	0.008212	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999961	0.000010	0.000428	0.001425	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999875	0.000849	0.031334	0.104447	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999899	0.000006	0.001189	0.003962	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999898	0.000011	0.008173	0.027242	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999271	0.000007	0.003806	0.012688	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999909	0.000003	0.004621	0.015404	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999714	0.000001	0.007217	0.024056	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999985	0.000007	0.002442	0.008140	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999947	0.000004	0.000958	0.003195	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999869	0.000364	0.000427	0.001423	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999565	0.000022	0.006792	0.022640	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999488	0.000004	0.003185	0.010616	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999984	0.000003	0.000968	0.003227	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999970	0.000018	0.000237	0.000790	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.999838	0.000312	0.000590	0.001966	OK.	1.000000	0.000000	1	0

Approved: June 15, 2016

Sample Name: S0 Acquired: 6/14/2016 12:36:28 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00006**	**.00068**	**.00005**	**-.00010**	**.00382**	**.00032**	**-.00038**
Stddev	.00007	.00005	.00006	.00003	.00149	.00008	.00199
%RSD	127.78	6.9540	108.69	28.204	39.007	23.984	527.67
#1	.00002	.00062	.00012	-.00013	.00360	.00023	-.00135
#2	-.00007	.00071	.00002	-.00007	.00244	.00037	.00192
#3	-.00013	.00069	.00001	-.00010	.00540	.00036	-.00170

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00016**	**-.00005**	**.00008**	**-.00008**	**-.00035**	**.00895**	**-.00014**
Stddev	.00018	.00017	.00004	.00010	.00030	.00651	.00294
%RSD	112.42	354.51	53.601	115.31	85.792	72.797	2024.9
#1	-.00036	.00010	.00005	-.00005	-.00062	.00659	-.00183
#2	-.00006	-.00001	.00013	-.00001	-.00003	.00394	-.00185
#3	-.00006	-.00024	.00007	-.00019	-.00040	.01631	.00324

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00029**	**.00012**	**.00006**	**.00050**	**-.00056**	**-.00007**	**-.00017**
Stddev	.00027	.00039	.00003	.00316	.00021	.00004	.00010
%RSD	92.089	311.89	55.494	634.63	37.660	61.525	58.515
#1	-.00011	-.00024	.00008	.00363	-.00076	-.00004	-.00015
#2	-.00060	.00007	.00002	-.00270	-.00058	-.00006	-.00008
#3	-.00017	.00054	.00008	.00056	-.00034	-.00012	-.00027

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00025**	**-.00006**	**.00129**	**-.00006**	**.00055**	**-.00217**	**-.00015**
Stddev	.00005	.00010	.00006	.00001	.00029	.00059	.00010
%RSD	18.752	156.41	4.9051	14.171	52.353	27.408	68.703
#1	.00029	.00005	.00136	-.00006	.00026	-.00176	-.00003
#2	.00020	-.00012	.00125	-.00006	.00083	-.00189	-.00019
#3	.00026	-.00012	.00125	-.00005	.00055	-.00285	-.00022

Approved: June 15, 2016

Sample Name: S0 Acquired: 6/14/2016 12:36:28 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**-.00008**	**.00032**	**-.00249**
Stddev	.00006	.00004	.00068
%RSD	75.710	11.449	27.236
#1	-.00001	.00031	-.00218
#2	-.00013	.00036	-.00202
#3	-.00010	.00029	-.00326
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8286.5**	**48489.**	**3106.1**
Stddev	36.0	91.	15.4
%RSD	.43455	.18721	.49564
#1	8272.1	48593.	3092.5
#2	8327.5	48450.	3122.8
#3	8259.9	48424.	3103.0

Approved: June 15, 2016

Sample Name: S1 Acquired: 6/14/2016 12:40:32 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00018**	**.00147**	**.02156**	**.00074**	**.00268**	**.00005**	**.00049**
Stddev	.00004	.00003	.00115	.00006	.00139	.00006	.00025
%RSD	20.982	2.1261	5.3558	8.4884	51.728	121.46	51.031
#1	.00021	.00150	.02122	.00071	.00282	-.00002	.00038
#2	.00014	.00144	.02284	.00070	.00123	.00009	.00032
#3	.00018	.00147	.02061	.00081	.00400	.00008	.00078

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00033**	**.00046**	**.00033**	**.02836**	**.00069**	**.00138**	**.06202**
Stddev	.00003	.00004	.00035	.00810	.00037	.00002	.00264
%RSD	8.6292	9.0648	107.92	28.561	54.643	1.5320	4.2600
#1	.00030	.00041	.00044	.03146	.00104	.00136	.05897
#2	.00036	.00048	.00062	.03445	.00072	.00140	.06342
#3	.00034	.00048	-.00007	.01917	.00029	.00139	.06367

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00004**	**.00089**	**-.00004**	**.00054**	**.00276**	**.00054**	**.02900**
Stddev	.00004	.00010	.00016	.00002	.00003	.00001	.00154
%RSD	97.321	11.053	374.77	3.1119	1.0891	2.3218	5.3103
#1	.00008	.00094	.00001	.00052	.00272	.00053	.02965
#2	-.00000	.00078	.00008	.00054	.00278	.00055	.02724
#3	.00005	.00096	-.00022	.00055	.00277	.00054	.03011

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00081**	**.00057**	**.00313**	**.01677**
Stddev	.00019	.00005	.00008	.00099
%RSD	23.545	9.5839	2.5270	5.9201
#1	-.00102	.00061	.00312	.01792
#2	-.00066	.00060	.00321	.01628
#3	-.00073	.00051	.00305	.01612

Approved: June 15, 2016

Sample Name: S1 Acquired: 6/14/2016 12:40:32 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8265.3**	**47968.**	**3073.4**
Stddev	16.3	320.	22.8
%RSD	.19662	.66685	.74067
#1	8282.0	47602.	3070.6
#2	8249.5	48110.	3097.4
#3	8264.2	48192.	3052.1

Approved: June 15, 2016

Sample Name: S2 Acquired: 6/14/2016 12:44:35 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00038**	**.00211**	**.00016**	**.00005**	**.03946**	**.00120**	**.00754**
Stddev	.00002	.00002	.00007	.00008	.00240	.00005	.00038
%RSD	6.4916	.78489	44.539	143.44	6.0801	4.1595	5.0864
#1	.00040	.00213	.00009	.00011	.03998	.00120	.00774
#2	.00037	.00209	.00023	-.00003	.03684	.00115	.00710
#3	.00035	.00211	.00015	.00008	.04156	.00124	.00779

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00019**	**.00106**	**.00056**	**.00091**	**.00108**	**.04882**	**.02325**
Stddev	.00016	.00021	.00003	.00002	.00053	.00323	.00105
%RSD	83.759	20.238	6.2018	2.1298	49.185	6.6257	4.5078
#1	.00023	.00102	.00054	.00091	.00080	.04535	.02209
#2	.00032	.00129	.00053	.00093	.00075	.05175	.02414
#3	.00001	.00087	.00060	.00089	.00169	.04936	.02352

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00060**	**.00203**	**.00289**	**.13050**	**.00070**	**.00177**	**.00014**
Stddev	.00011	.00036	.00006	.00243	.00011	.00004	.00024
%RSD	17.637	17.923	1.9674	1.8619	15.197	2.3554	174.50
#1	.00055	.00176	.00293	.13247	.00064	.00180	.00015
#2	.00052	.00244	.00291	.13125	.00082	.00179	.00037
#3	.00072	.00189	.00282	.12778	.00063	.00172	-.00011

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00082**	**.00007**	**.00427**	**.00105**	**.05852**	**-.00002**	**.00016**
Stddev	.00007	.00004	.00016	.00004	.00110	.00029	.00000
%RSD	8.5855	61.985	3.8021	3.8322	1.8794	1625.3	1.8552
#1	.00090	.00012	.00440	.00108	.05978	-.00024	.00016
#2	.00078	.00005	.00432	.00105	.05774	.00031	.00016
#3	.00078	.00004	.00409	.00100	.05804	-.00012	.00016

Approved: June 15, 2016

Sample Name: S2 Acquired: 6/14/2016 12:44:35 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00120	.00606	.03826
Stddev	.00006	.00019	.00061
%RSD	5.1133	3.1020	1.6008
#1	.00120	.00623	.03831
#2	.00114	.00608	.03762
#3	.00126	.00586	.03884

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8152.7	47552.	3052.8
Stddev	29.5	83.	45.6
%RSD	.36198	.17399	1.4946
#1	8120.4	47457.	3000.7
#2	8159.5	47611.	3071.7
#3	8178.2	47587.	3085.9

Approved: June 15, 2016

Sample Name: S3 Acquired: 6/14/2016 12:48:40 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.02147	.08865	.00894	.01055	2.1778	.05685	.46084	.03067
Stddev	.00019	.00063	.00015	.00006	.1313	.00018	.02607	.00025
%RSD	.87764	.70925	1.7234	.54571	6.0300	.31600	5.6581	.82726
#1	.02141	.08907	.00885	.01049	2.0765	.05670	.44238	.03078
#2	.02168	.08895	.00885	.01060	2.1307	.05705	.44949	.03038
#3	.02132	.08793	.00912	.01055	2.3261	.05680	.49067	.03085

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.07167	.03236	.06180	.08683	3.1858	1.6217	.06028	.13829
Stddev	.00031	.00005	.00012	.00479	.1845	.1048	.00364	.00846
%RSD	.43603	.15877	.20220	5.5215	5.7921	6.4614	6.0324	6.1165
#1	.07151	.03236	.06172	.08385	3.0466	1.5456	.05768	.13209
#2	.07148	.03241	.06173	.08428	3.1156	1.5784	.05872	.13486
#3	.07203	.03230	.06194	.09236	3.3951	1.7412	.06444	.14793

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.18449	8.6426	.06665	.11728	.03029	.03400	.00607	.19214
Stddev	.00031	.5042	.00021	.00051	.00013	.00013	.00011	.00052
%RSD	.16673	5.8344	.31349	.43130	.43664	.38359	1.8578	.27196
#1	.18463	8.2643	.06652	.11714	.03019	.03396	.00620	.19211
#2	.18414	8.4485	.06654	.11685	.03024	.03390	.00601	.19163
#3	.18471	9.2151	.06689	.11784	.03044	.03415	.00600	.19268

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.06636	3.6329	.11746	.01302	.08043	.35793	2.7949
Stddev	.00026	.2154	.00729	.00006	.00052	.00088	.1051
%RSD	.38747	5.9283	6.2067	.44274	.64284	.24518	3.7586
#1	.06627	3.4707	.11175	.01299	.08042	.35722	2.7056
#2	.06616	3.5508	.11496	.01298	.08095	.35767	2.7683
#3	.06665	3.8773	.12567	.01309	.07992	.35891	2.9106

Approved: June 15, 2016

Sample Name: S3 Acquired: 6/14/2016 12:48:40 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8036.1**	**46688.**	**2947.0**
Stddev	28.9	254.	111.6
%RSD	.35913	.54439	3.7880
#1	8067.6	46396.	3032.5
#2	8030.0	46805.	2987.9
#3	8010.8	46862.	2820.7

Approved: June 15, 2016

Sample Name: S4 Acquired: 6/14/2016 12:52:23 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.04359	.18090	.01840	.02175	4.2122	.11444	.89472	.06280
Stddev	.00016	.00050	.00008	.00005	.0277	.00022	.00335	.00004
%RSD	.37046	.27391	.43894	.21845	.65634	.18788	.37436	.05607
#1	.04362	.18133	.01833	.02178	4.1822	.11456	.89133	.06284
#2	.04373	.18101	.01849	.02170	4.2176	.11456	.89803	.06280
#3	.04341	.18036	.01839	.02178	4.2367	.11419	.89480	.06277

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.14474	.06563	.12514	.16858	6.1655	3.1565	.11778	.26918
Stddev	.00031	.00005	.00063	.00137	.0319	.0155	.00109	.00355
%RSD	.21748	.08337	.50365	.81267	.51675	.48947	.92432	1.3204
#1	.14447	.06565	.12458	.16709	6.1292	3.1387	.11664	.26508
#2	.14509	.06568	.12582	.16887	6.1785	3.1666	.11881	.27137
#3	.14467	.06557	.12502	.16979	6.1887	3.1642	.11789	.27110

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.37331	16.750	.13533	.24176	.06145	.06963	.01242	.38663
Stddev	.00108	.061	.00053	.00064	.00039	.00033	.00010	.00080
%RSD	.29054	.36204	.39317	.26501	.63244	.47878	.81305	.20587
#1	.37363	16.682	.13501	.24117	.06100	.06945	.01248	.38614
#2	.37421	16.774	.13595	.24244	.06166	.07002	.01230	.38755
#3	.37211	16.796	.13504	.24168	.06169	.06943	.01248	.38621

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13518	7.0217	.22950	.02621	.16285	.72726	5.4039
Stddev	.00039	.0367	.00162	.00011	.00027	.00157	.0423
%RSD	.28600	.52243	.70585	.40655	.16349	.21522	.78237
#1	.13481	6.9820	.22778	.02612	.16314	.72583	5.3960
#2	.13558	7.0287	.22975	.02632	.16278	.72893	5.4495
#3	.13516	7.0544	.23099	.02618	.16262	.72701	5.3661

Approved: June 15, 2016

Sample Name: S4 Acquired: 6/14/2016 12:52:23 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7822.2**	**45311.**	**2998.8**
Stddev	28.2	227.	12.6
%RSD	.36089	.50117	.42036
#1	7833.8	45107.	2994.8
#2	7790.0	45556.	2988.6
#3	7842.8	45271.	3012.9

Approved: June 15, 2016

Sample Name: ICV Acquired: 6/14/2016 12:56:05 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38543**	**9.6557**	**.39426**	**.49034**	**.97556**	**.04877**	**9.7251**	**.04918**
Stddev	.01774	.4641	.00050	.02173	.01359	.00226	.1000	.00025
%RSD	4.6025	4.8067	.12759	4.4321	1.3927	4.6241	1.0285	.51776
#1	.40071	10.089	.39484	.51051	.96249	.05089	9.6197	.04929
#2	.36598	9.1661	.39401	.46733	.97460	.04640	9.7368	.04889
#3	.38961	9.7117	.39393	.49318	.98961	.04902	9.8187	.04936
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19716**	**.48666**	**.49480**	**3.8772**	**48.994**	**.97078**	**9.7206**	**.48890**
Stddev	.00029	.02364	.00027	.0845	.688	.01104	.2437	.00666
%RSD	.14939	4.8571	.05481	2.1802	1.4035	1.1376	2.5074	1.3632
#1	.19698	.50898	.49492	3.7928	48.342	.95932	9.4806	.48144
#2	.19750	.46189	.49449	3.8770	48.928	.97166	9.7134	.49100
#3	.19700	.48910	.49499	3.9619	49.713	.98136	9.9679	.49427
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99560**	**48.662**	**.49303**	**9.7939**	**.49546**	**1.1765**	**.39409**	**4.9575**
Stddev	.00075	.610	.00114	.0104	.00196	.0027	.00187	.0084
%RSD	.07581	1.2528	.23061	.10658	.39603	.23247	.47510	.17014
#1	.99520	48.095	.49208	9.7985	.49333	1.1743	.39434	4.9576
#2	.99513	48.583	.49271	9.7819	.49720	1.1758	.39582	4.9490
#3	.99647	49.307	.49429	9.8012	.49585	1.1796	.39210	4.9659
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 15, 2016

Sample Name: ICV Acquired: 6/14/2016 12:56:05 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98209	.97713	.96807	.49283	.97367	.98465	.98282
Stddev	.00262	.01108	.01267	.00210	.04662	.00197	.01299
%RSD	.26629	1.1338	1.3085	.42575	4.7878	.19972	1.3213
#1	.98103	.96733	.95745	.49525	1.0166	.98669	.97922
#2	.98017	.97490	.96467	.49178	.92408	.98276	.97201
#3	.98507	.98915	.98209	.49147	.98034	.98450	.99722
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8082.9	47341.	3031.3
Stddev	21.3	1786.	40.9
%RSD	.26345	3.7721	1.3486
#1	8073.9	45699.	3074.5
#2	8107.2	49242.	3026.3
#3	8067.6	47081.	2993.2

Approved: June 15, 2016

Sample Name: ICB Acquired: 6/14/2016 12:59:47 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00098	.00942	-.00171	.00363	.00011	.00002	.03576	.00005
Stddev	.00078	.00820	.00266	.00212	.00122	.00005	.03492	.00017
%RSD	80.233	87.066	155.97	58.314	1137.9	265.56	97.651	327.57
#1	.00156	.00319	-.00295	.00400	.00074	.00002	-.00424	.00013
#2	.00009	.00635	-.00353	.00554	.00088	.00006	.05135	-.00014
#3	.00129	.01871	.00135	.00135	-.00130	-.00003	.06017	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	.00047	-.00019	.01795	-.08212	.00115	.01184	-.00022
Stddev	.00033	.00091	.00038	.01447	.05829	.00182	.05225	.00316
%RSD	176.47	192.38	202.82	80.618	70.987	158.00	441.14	1423.9
#1	-.00031	.00001	-.00042	.00497	-.04252	.00296	.00562	-.00222
#2	-.00044	-.00011	-.00039	.03356	-.14906	-.00068	.06693	.00343
#3	.00019	.00152	.00025	.01533	-.05477	.00117	-.03701	-.00187
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00248	-.00804	.00009	.00401	-.00201	.00298	.00393	.00114
Stddev	.00043	.02558	.00090	.00372	.00255	.00250	.00519	.00226
%RSD	17.436	318.18	1005.9	92.759	127.12	83.827	132.08	198.39
#1	.00257	.00629	-.00095	.00764	-.00338	.00037	-.00156	.00346
#2	.00201	-.03757	.00062	.00021	.00094	.00534	.00874	.00102
#3	.00286	.00716	.00060	.00416	-.00357	.00323	.00460	-.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: ICB Acquired: 6/14/2016 12:59:47 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00109	.00025	.00491	.00055	-.00068	.00019	.00086
Stddev	.00066	.00022	.00321	.00307	.00056	.00014	.00021
%RSD	60.629	87.512	65.448	554.99	83.490	73.830	23.999
#1	.00179	.00046	.00635	.00132	-.00004	.00032	.00066
#2	.00047	.00027	.00123	.00317	-.00086	.00023	.00107
#3	.00102	.00002	.00715	-.00283	-.00112	.00004	.00085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8272.2	48161.	3104.2
Stddev	22.8	82.	33.4
%RSD	.27532	.16928	1.0772
#1	8279.7	48125.	3070.9
#2	8290.4	48255.	3104.0
#3	8246.7	48104.	3137.8

Approved: June 15, 2016

Sample Name: LLICV Acquired: 6/14/2016 13:03:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00880**	**.16139**	**.00761**	**.07641**	**.00824**	**.00154**	**.39811**	**.00067**
Stddev	.00106	.00724	.00219	.00166	.00029	.00004	.01409	.00009
%RSD	12.035	4.4839	28.794	2.1759	3.5038	2.5652	3.5387	12.844
#1	.00983	.15309	.00858	.07600	.00810	.00156	.40270	.00058
#2	.00772	.16472	.00510	.07500	.00858	.00149	.40932	.00076
#3	.00884	.16636	.00916	.07824	.00805	.00156	.38229	.00068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00405**	**.00423**	**.00388**	**.07505**	**.64449**	**.07565**	**.28195**	**.00660**
Stddev	.00028	.00036	.00040	.00975	.06457	.00211	.06127	.00066
%RSD	6.8288	8.4594	10.205	12.990	10.019	2.7873	21.732	9.9473
#1	.00392	.00459	.00421	.08174	.66926	.07329	.25661	.00708
#2	.00437	.00421	.00399	.07954	.69301	.07734	.23742	.00585
#3	.00387	.00388	.00344	.06386	.57120	.07633	.35183	.00687
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00788**	**.38497**	**.01646**	**.74511**	**.00759**	**.07609**	**.01758**	**.76337**
Stddev	.00018	.01539	.00091	.00508	.00213	.00245	.00573	.00199
%RSD	2.3375	3.9984	5.5065	.68178	28.124	3.2251	32.583	.26020
#1	.00800	.39677	.01652	.74025	.00575	.07875	.01529	.76557
#2	.00766	.39058	.01734	.75039	.00993	.07562	.01335	.76283
#3	.00796	.36756	.01553	.74468	.00709	.07391	.02410	.76171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: LLICV Acquired: 6/14/2016 13:03:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.38632	.03829	.03165	.14530	.00724	.01558	.04231
Stddev	.00287	.00112	.00591	.00348	.00092	.00016	.00124
%RSD	.74389	2.9297	18.689	2.3966	12.749	1.0443	2.9326
#1	.38917	.03700	.03437	.14402	.00619	.01565	.04090
#2	.38636	.03885	.03572	.14925	.00759	.01539	.04279
#3	.38343	.03902	.02486	.14264	.00793	.01569	.04324
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8334.6	48400.	3138.3
Stddev	10.8	361.	29.0
%RSD	.13011	.74658	.92345
#1	8325.4	48694.	3151.1
#2	8331.9	48510.	3158.8
#3	8346.5	47997.	3105.2

Approved: June 15, 2016

Sample Name: LLICV Acquired: 6/14/2016 13:07:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01991	.39026	.01795	.18610	.01975	.00371	.94504	.00202
Stddev	.00019	.01061	.00271	.00129	.00108	.00005	.00570	.00011
%RSD	.96690	2.7190	15.095	.69199	5.4909	1.2610	.60301	5.4056
#1	.01970	.38072	.01988	.18732	.02040	.00366	.94317	.00215
#2	.01999	.40169	.01911	.18476	.02034	.00371	.94051	.00199
#3	.02006	.38838	.01485	.18623	.01849	.00376	.95143	.00194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00962	.00984	.00984	.18756	1.7940	.18739	.94403	.01808
Stddev	.00041	.00070	.00088	.01679	.1044	.00308	.07072	.00340
%RSD	4.2785	7.0637	8.9550	8.9517	5.8207	1.6431	7.4909	18.795
#1	.01008	.00937	.00884	.20458	1.7125	.18652	.86440	.02042
#2	.00928	.01064	.01016	.18710	1.9117	.19081	.96819	.01963
#3	.00952	.00952	.01051	.17101	1.7578	.18484	.99949	.01418
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01794	.93632	.03985	1.8373	.01717	.18868	.03666	1.9003
Stddev	.00031	.01666	.00136	.0085	.00129	.00169	.00731	.0062
%RSD	1.7382	1.7798	3.4162	.46128	7.5186	.89723	19.946	.32625
#1	.01765	.92444	.03991	1.8275	.01733	.18677	.03653	1.8932
#2	.01827	.95537	.04118	1.8425	.01837	.19001	.04404	1.9044
#3	.01791	.92916	.03846	1.8418	.01580	.18925	.02942	1.9034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: LLICV Acquired: 6/14/2016 13:07:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.96121	.09463	.06084	.36358	.01926	.03933	.09673
Stddev	.00258	.00079	.00302	.00212	.00069	.00028	.00035
%RSD	.26849	.83553	4.9712	.58445	3.5652	.71646	.36438
#1	.95841	.09448	.05930	.36237	.01976	.03901	.09667
#2	.96172	.09548	.05889	.36233	.01954	.03942	.09711
#3	.96349	.09392	.06432	.36603	.01848	.03955	.09641
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8214.6	47987.	3082.1
Stddev	36.9	116.	8.8
%RSD	.44975	.24179	.28564
#1	8237.1	48067.	3081.2
#2	8234.7	48041.	3073.8
#3	8172.0	47854.	3091.3

Approved: June 15, 2016

Sample Name: ICSA Acquired: 6/14/2016 13:11:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00253**	**262.58**	**.00384**	**.06070**	**-.00003**	**-.00010**	**235.11**	**-.00006**
Stddev	.00220	.29	.00235	.00160	.00016	.00010	.65	.00032
%RSD	86.930	.11149	61.149	2.6307	621.80	95.355	.27559	534.39
#1	.00504	262.54	.00223	.06238	.00016	-.00005	235.84	.00030
#2	.00091	262.88	.00653	.06054	-.00013	-.00021	234.89	-.00017
#3	.00164	262.30	.00275	.05920	-.00011	-.00005	234.61	-.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00096**	**-.00132**	**-.00273**	**94.416**	**-.06977**	**.00355**	**241.82**	**-.00121**
Stddev	.00023	.00121	.00196	.391	.00708	.00354	.90	.00150
%RSD	23.683	91.662	71.863	.41427	10.151	99.797	.37401	123.89
#1	-.00093	-.00243	-.00356	94.399	-.07486	.00706	242.75	-.00082
#2	-.00120	-.00149	-.00049	94.815	-.06168	-.00003	241.75	.00006
#3	-.00075	-.00003	-.00415	94.033	-.07277	.00362	240.95	-.00287
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00156**	**.01529**	**.00217**	**.06058**	**.00007**	**-.00481**	**.00541**	**.00486**
Stddev	.00020	.00891	.00164	.01011	.00331	.00662	.00382	.00038
%RSD	12.683	58.263	75.524	16.694	4644.1	137.44	70.478	7.8520
#1	-.00145	.00545	.00097	.06875	-.00287	-.01225	.00445	.00474
#2	-.00144	.01760	.00150	.06372	-.00057	-.00261	.00217	.00529
#3	-.00179	.02281	.00404	.04927	.00365	.00042	.00962	.00455
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: ICSA Acquired: 6/14/2016 13:11:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00108	.00006	-.00440	.00243	-.00681	.00109	-.00527
Stddev	.00068	.00007	.00288	.00105	.00090	.00049	.00026
%RSD	63.354	105.93	65.411	43.154	13.237	44.987	4.9047
#1	.00187	.00011	-.00125	.00364	-.00642	.00089	-.00513
#2	.00066	-.00001	-.00506	.00176	-.00784	.00164	-.00556
#3	.00071	.00009	-.00690	.00189	-.00617	.00073	-.00510
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7567.3	43764.	2994.7
Stddev	6.1	135.	18.2
%RSD	.08020	.30953	.60792
#1	7562.8	43847.	2974.9
#2	7574.2	43607.	3010.7
#3	7564.9	43837.	2998.6

Approved: June 15, 2016

Sample Name: ICSAB Acquired: 6/14/2016 13:15:51 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51506	264.64	.25166	.06052	.24591	.24846	238.35	.48785
Stddev	.00145	1.17	.00554	.00533	.00201	.00127	1.23	.00130
%RSD	.28058	.44173	2.2010	8.8082	.81911	.51078	.51598	.26736
#1	.51603	265.66	.25793	.06570	.24823	.24965	239.49	.48677
#2	.51576	264.89	.24746	.05505	.24462	.24861	237.05	.48930
#3	.51340	263.36	.24957	.06080	.24488	.24712	238.52	.48749
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.23689	.24763	.23943	93.425	5.0594	.00409	238.48	.23704
Stddev	.00063	.00124	.00226	.388	.0869	.00160	1.50	.00169
%RSD	.26564	.50095	.94539	.41581	1.7181	39.192	.63072	.71306
#1	.23620	.24900	.23725	93.833	5.1304	.00246	239.93	.23802
#2	.23742	.24732	.24177	93.060	5.0853	.00566	236.93	.23509
#3	.23705	.24658	.23927	93.382	4.9624	.00416	238.57	.23801
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00157	5.1161	.47379	.12146	.48868	.50579	.25646	.01152
Stddev	.00011	.0060	.00276	.01111	.00053	.00493	.01094	.00161
%RSD	7.0318	.11748	.58202	9.1449	.10760	.97382	4.2677	13.950
#1	-.00164	5.1136	.47069	.11309	.48914	.50285	.24427	.01179
#2	-.00163	5.1118	.47470	.13406	.48811	.51148	.26546	.01297
#3	-.00144	5.1230	.47598	.11722	.48881	.50304	.25965	.00979
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: ICSAB Acquired: 6/14/2016 13:15:51 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**.00036**	**-.00226**	**.45396**	**.24570**	**.47320**	**-.00522**
Stddev	.00076	.00033	.00394	.00178	.00158	.00162	.00024
%RSD	717.90	91.178	174.48	.39200	.64430	.34159	4.6419
#1	-.00027	-.00001	-.00171	.45204	.24753	.47141	-.00531
#2	-.00078	.00063	-.00644	.45556	.24483	.47454	-.00495
#3	.00072	.00047	.00138	.45429	.24475	.47365	-.00541
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7513.1**	**43560.**	**2982.5**
Stddev	19.0	244.	20.4
%RSD	.25242	.56027	.68385
#1	7524.1	43280.	2975.5
#2	7491.2	43665.	3005.4
#3	7523.9	43733.	2966.5

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 13:19:40 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38842**	**9.6766**	**.38670**	**.48146**	**.96406**	**.04846**	**9.5852**	**.04848**
Stddev	.00098	.0297	.00253	.00416	.01300	.00044	.1732	.00040
%RSD	.25157	.30735	.65463	.86489	1.3487	.91791	1.8064	.81691
#1	.38857	9.7094	.38712	.48625	.94993	.04897	9.4127	.04850
#2	.38932	9.6689	.38399	.47945	.97553	.04822	9.7589	.04807
#3	.38738	9.6514	.38900	.47868	.96671	.04818	9.5839	.04886
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19459**	**.48546**	**.48652**	**3.8561**	**48.199**	**.96251**	**9.6204**	**.48138**
Stddev	.00098	.00499	.00342	.0607	.641	.00860	.1903	.00688
%RSD	.50162	1.0279	.70275	1.5736	1.3303	.89352	1.9776	1.4298
#1	.19526	.49097	.48987	3.8001	47.506	.95695	9.4044	.47514
#2	.19347	.48417	.48304	3.9206	48.772	.97241	9.6937	.48876
#3	.19505	.48124	.48667	3.8477	48.318	.95816	9.7630	.48022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.97291**	**48.050**	**.48501**	**9.6373**	**.48965**	**1.1590**	**.38093**	**4.8869**
Stddev	.00494	.696	.00161	.0194	.00476	.0037	.00079	.0127
%RSD	.50749	1.4491	.33221	.20096	.97245	.31640	.20650	.26006
#1	.97811	47.304	.48658	9.6588	.49203	1.1568	.38012	4.8994
#2	.96829	48.683	.48336	9.6317	.48417	1.1570	.38169	4.8740
#3	.97234	48.164	.48509	9.6213	.49275	1.1633	.38096	4.8872
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 13:19:40 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.96575**	**.96428**	**.95494**	**.48624**	**.96823**	**.97016**	**.97459**
Stddev	.00169	.01391	.02178	.00378	.00985	.00094	.00888
%RSD	.17512	1.4429	2.2804	.77775	1.0173	.09644	.91115
#1	.96675	.94960	.92982	.48816	.97960	.97099	.96517
#2	.96380	.97727	.96856	.48188	.96284	.96915	.98280
#3	.96670	.96597	.96644	.48867	.96226	.97035	.97581
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8121.3**	**46861.**	**3044.5**
Stddev	6.6	174.	24.7
%RSD	.08169	.37150	.81231
#1	8121.3	46669.	3071.6
#2	8128.0	47009.	3023.3
#3	8114.7	46903.	3038.5

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 13:23:23 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.01018	.00017	.00437	.00045	.00003	-.01350	-.00019
Stddev	.00185	.00088	.00277	.00270	.00058	.00006	.02608	.00008
%RSD	687.15	8.6656	1611.9	61.807	127.00	195.02	193.09	42.189
#1	-.00181	.00930	-.00181	.00585	.00083	-.00004	-.04335	-.00017
#2	.00175	.01106	-.00102	.00125	-.00021	.00006	.00485	-.00012
#3	.00087	.01019	.00334	.00601	.00075	.00008	-.00201	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	-.00032	.00005	.01705	-.09454	-.00109	.03233	-.00144
Stddev	.00008	.00135	.00142	.01744	.11900	.00207	.12089	.00023
%RSD	42.335	421.58	2661.9	102.25	125.86	189.98	373.89	15.988
#1	-.00023	-.00080	.00087	.00263	.03856	.00130	-.10164	-.00165
#2	-.00009	.00121	-.00159	.01210	-.19064	-.00241	.06536	-.00148
#3	-.00023	-.00137	.00088	.03643	-.13154	-.00216	.13328	-.00119
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00166	-.00824	.00052	.00046	-.00300	.00064	.00506	.00065
Stddev	.00017	.02537	.00078	.00248	.00188	.00012	.00386	.00218
%RSD	10.394	307.81	149.96	537.03	62.740	19.075	76.221	337.18
#1	.00151	.01786	.00017	.00314	-.00092	.00074	.00577	-.00182
#2	.00162	-.00978	.00141	-.00002	-.00460	.00069	.00090	.00231
#3	.00185	-.03281	-.00002	-.00174	-.00348	.00050	.00852	.00144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 13:23:23 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00140**	**.00011**	**.00599**	**-.00037**	**.00039**	**-.00005**	**.00046**
Stddev	.00059	.00015	.00636	.00033	.00057	.00017	.00065
%RSD	41.947	133.47	106.18	88.219	144.29	355.84	140.69
#1	.00074	.00028	.00405	-.00062	.00028	-.00025	-.00015
#2	.00185	.00003	.00083	-.00050	.00102	.00008	.00040
#3	.00161	.00002	.01309	-.00000	-.00011	.00002	.00115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8279.0**	**48298.**	**3150.0**
Stddev	18.1	229.	46.0
%RSD	.21838	.47431	1.4612
#1	8279.2	48072.	3107.6
#2	8297.0	48530.	3143.4
#3	8260.9	48293.	3198.9

Approved: June 15, 2016

Sample Name: PBW 46 Acquired: 6/14/2016 13:33:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572244-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00167	.01388	.00104	.00274	-.00034	.00003	.02791	-.00005
Stddev	.00094	.00439	.00157	.00153	.00115	.00004	.01471	.00011
%RSD	56.568	31.644	151.23	55.699	337.19	120.34	52.715	224.25
#1	.00246	.01051	.00181	.00314	-.00124	.00005	.01675	-.00005
#2	.00063	.01885	-.00077	.00403	-.00073	.00006	.04458	.00006
#3	.00192	.01229	.00207	.00106	.00095	-.00001	.02240	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	.00071	-.00014	.02199	-.15165	-.00055	-.04599	-.00023
Stddev	.00014	.00042	.00094	.01014	.08201	.00046	.08242	.00223
%RSD	104.13	59.240	668.69	46.130	54.078	82.275	179.19	983.85
#1	-.00030	.00024	.00010	.02468	-.18048	-.00030	-.05233	.00067
#2	-.00002	.00106	-.00118	.01077	-.21534	-.00028	-.12506	.00141
#3	-.00010	.00084	.00066	.03051	-.05912	-.00108	.03941	-.00276
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	-.00852	.00096	-.00216	.00101	-.00161	-.00102	.00482
Stddev	.00048	.00751	.00028	.00632	.00246	.00429	.00539	.00199
%RSD	190.24	88.124	29.094	292.35	243.46	265.68	526.40	41.278
#1	-.00001	-.00365	.00064	-.00716	-.00098	.00320	.00472	.00347
#2	-.00004	-.01717	.00104	.00494	.00024	-.00304	-.00599	.00387
#3	.00080	-.00474	.00118	-.00427	.00377	-.00501	-.00181	.00710
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: PBW 46 Acquired: 6/14/2016 13:33:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572244-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	.00007	.00408	-.00157	.00006	.00105	.00068
Stddev	.00108	.00022	.00071	.00099	.00060	.00019	.00065
%RSD	179.70	333.32	17.312	63.182	979.98	17.830	96.256
#1	-.00051	.00032	.00382	-.00086	.00057	.00127	.00057
#2	.00164	-.00010	.00487	-.00271	.00022	.00093	.00138
#3	.00067	-.00002	.00354	-.00116	-.00060	.00096	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7863.8	45826.	2967.5
Stddev	15.1	145.	24.8
%RSD	.19230	.31735	.83681
#1	7881.2	45800.	2945.9
#2	7853.7	45695.	2961.9
#3	7856.6	45983.	2994.6

Approved: June 15, 2016

Sample Name: LCSW 46 Acquired: 6/14/2016 13:37:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572244-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19704**	**5.0144**	**.19968**	**.96617**	**.49809**	**.02448**	**5.0003**	**.02463**
Stddev	.00259	.0093	.00495	.00478	.00282	.00006	.0498	.00023
%RSD	1.3127	.18499	2.4785	.49492	.56657	.22489	.99603	.94804
#1	.19426	5.0094	.20392	.97139	.50122	.02453	5.0247	.02488
#2	.19749	5.0251	.20088	.96512	.49731	.02448	4.9430	.02462
#3	.19937	5.0086	.19424	.96200	.49573	.02442	5.0332	.02441
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10135**	**.25165**	**.25303**	**2.0001**	**24.272**	**.49883**	**4.9824**	**.24610**
Stddev	.00031	.00138	.00087	.0308	.137	.00123	.1846	.00466
%RSD	.30274	.54872	.34331	1.5397	.56601	.24576	3.7049	1.8926
#1	.10168	.25187	.25388	2.0040	24.430	.49827	5.0916	.25147
#2	.10131	.25290	.25308	1.9675	24.181	.50023	5.0863	.24355
#3	.10107	.25017	.25214	2.0288	24.205	.49798	4.7692	.24327
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51104**	**24.461**	**.25342**	**4.8383**	**.25092**	**.59123**	**.20401**	**2.5663**
Stddev	.00152	.145	.00050	.0218	.00320	.00037	.00930	.0035
%RSD	.29711	.59146	.19600	.45011	1.2737	.06220	4.5568	.13735
#1	.51249	24.612	.25388	4.8563	.24757	.59085	.19730	2.5675
#2	.50946	24.449	.25289	4.8141	.25394	.59159	.21462	2.5623
#3	.51118	24.323	.25350	4.8444	.25124	.59126	.20010	2.5691
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: LCSW 46 Acquired: 6/14/2016 13:37:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572244-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50211	.50421	.49421	.25176	.50027	.50541	.00451
Stddev	.00113	.00139	.00229	.00210	.00179	.00065	.00081
%RSD	.22533	.27517	.46297	.83466	.35715	.12806	17.975
#1	.50305	.50577	.49685	.25188	.50233	.50544	.00358
#2	.50085	.50376	.49281	.24959	.49917	.50475	.00486
#3	.50242	.50311	.49296	.25379	.49931	.50604	.00508
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7849.3	45516.	2986.3
Stddev	9.1	95.	21.8
%RSD	.11540	.20802	.72880
#1	7848.6	45539.	2971.2
#2	7858.8	45411.	3011.2
#3	7840.7	45596.	2976.5

Approved: June 15, 2016

Sample Name: F BLANK Acquired: 6/14/2016 13:40:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572115-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00185**	**.01400**	**.00026**	**.00476**	**.00092**	**.00004**	**.02957**	**-.00022**
Stddev	.00213	.00374	.00154	.00200	.00091	.00006	.02948	.00014
%RSD	115.20	26.739	594.17	42.124	98.264	149.28	99.713	61.633
#1	-.00056	.01531	-.00127	.00664	.00037	.00010	.04968	-.00022
#2	.00349	.01692	.00024	.00497	.00043	-.00002	-.00428	-.00036
#3	.00261	.00978	.00181	.00265	.00197	.00003	.04330	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00044**	**.00075**	**.00060**	**.02464**	**-.14630**	**-.00035**	**-.03295**	**-.00164**
Stddev	.00031	.00072	.00044	.00914	.06975	.00275	.08765	.00307
%RSD	71.037	96.066	72.661	37.109	47.677	783.39	265.99	187.60
#1	.00014	.00157	.00012	.01419	-.06736	-.00212	-.03307	.00129
#2	.00041	.00025	.00097	.03118	-.19961	-.00174	-.12054	-.00136
#3	.00076	.00043	.00071	.02854	-.17193	.00282	.05475	-.00484
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**160.32**	**.00146**	**-.00184**	**.00085**	**.00136**	**.00519**	**.01119**
Stddev	.00028	.87	.00075	.00269	.00024	.00391	.00753	.00213
%RSD	1943.5	.54401	51.722	145.79	28.371	287.40	145.07	19.075
#1	.00028	160.84	.00174	-.00493	.00110	-.00028	.01066	.01313
#2	-.00006	160.81	.00203	-.00054	.00084	-.00146	.00830	.00891
#3	-.00026	159.31	.00060	-.00005	.00062	.00582	-.00339	.01153
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: F BLANK Acquired: 6/14/2016 13:40:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572115-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00123	.00013	.00803	-.00134	-.00004	.00271	-.00017
Stddev	.00082	.00053	.00222	.00184	.00075	.00010	.00010
%RSD	66.327	398.01	27.614	136.77	1965.9	3.8033	59.138
#1	.00182	-.00043	.00550	.00075	-.00055	.00283	-.00023
#2	.00158	.00021	.00896	-.00267	-.00038	.00264	-.00005
#3	.00030	.00062	.00962	-.00211	.00082	.00267	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7878.8	45526.	3023.1
Stddev	12.8	222.	25.0
%RSD	.16243	.48791	.82843
#1	7864.9	45272.	3021.7
#2	7890.1	45623.	2998.8
#3	7881.3	45683.	3048.9

Approved: June 15, 2016

Sample Name: F BLANK Acquired: 6/14/2016 13:45:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572115-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00136	.00351	-.00192	.00345	.00034	.00001	-.00726	.00006
Stddev	.00252	.00131	.00242	.00488	.00029	.00001	.01582	.00022
%RSD	185.37	37.172	125.83	141.41	84.450	129.93	217.92	362.52
#1	-.00243	.00404	-.00445	.00904	.00006	-.00001	.01088	.00007
#2	.00152	.00447	-.00170	.00003	.00033	.00002	-.01815	.00028
#3	-.00316	.00202	.00038	.00128	.00063	.00002	-.01451	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	.00051	.00038	-.01203	-.15029	-.00189	.02947	-.00004
Stddev	.00020	.00043	.00113	.00493	.04617	.00174	.04121	.00159
%RSD	75.575	84.376	297.20	40.977	30.719	91.879	139.83	3862.3
#1	-.00026	.00086	-.00077	-.00758	-.20186	-.00320	-.00969	.00170
#2	-.00006	.00003	.00149	-.01733	-.13619	.00008	.02564	-.00042
#3	-.00045	.00064	.00042	-.01119	-.11282	-.00257	.07246	-.00141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	3.7215	.00127	-.00241	.00047	-.00102	.00776	.00564
Stddev	.00029	.0188	.00041	.00360	.00187	.00062	.00547	.00068
%RSD	50.759	.50397	32.698	149.11	396.34	60.607	70.470	12.073
#1	-.00054	3.7362	.00093	-.00570	-.00102	-.00094	.00899	.00588
#2	-.00086	3.7004	.00115	.00143	-.00014	-.00168	.01251	.00617
#3	-.00029	3.7280	.00173	-.00296	.00258	-.00045	.00178	.00487
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: F BLANK Acquired: 6/14/2016 13:45:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572115-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00079	.00002	.00524	-.00270	.00012	.00291	-.00032
Stddev	.00031	.00074	.00246	.00052	.00043	.00035	.00023
%RSD	38.972	3192.4	46.992	19.091	363.05	12.182	72.008
#1	.00046	.00082	.00240	-.00329	.00061	.00316	-.00006
#2	.00106	-.00013	.00674	-.00231	-.00014	.00251	-.00040
#3	.00085	-.00062	.00659	-.00251	-.00012	.00308	-.00049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8052.0	47666.	3085.0
Stddev	9.9	193.	21.7
%RSD	.12270	.40467	.70499
#1	8063.3	47469.	3072.0
#2	8045.2	47854.	3073.0
#3	8047.4	47675.	3110.2

Approved: June 15, 2016

Sample Name: L1606040101 Acquired: 6/14/2016 13:49:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572244-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00068**	**.03606**	**-.00019**	**.04592**	**.71433**	**.00002**	F **338.51**
Stddev	.00085	.00748	.00279	.00153	.00631	.00007	2.54
%RSD	125.55	20.735	1478.1	3.3300	.88317	416.14	.75155
#1	-.00019	.02770	-.00292	.04444	.72051	-.00007	341.17
#2	-.00019	.03839	-.00031	.04749	.71457	.00005	338.28
#3	-.00166	.04210	.00266	.04583	.70790	.00007	336.09
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.00063**	**.00091**	**.00356**	**.00913**	**253.60**	**.04717**
Stddev	.00007	.00006	.00098	.00090	.02653	1.92	.00396
%RSD	53.778	9.8659	107.64	25.247	290.55	.75540	8.3932
#1	.00022	.00056	.00027	.00362	.01490	255.61	.05134
#2	.00008	.00065	.00204	.00443	.03230	253.40	.04346
#3	.00011	.00068	.00042	.00263	-.01981	251.79	.04670
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09247**	**-.00210**	**.00670**	F **316.05**	**.00021**	**.07799**	**.01568**
Stddev	.11383	.00121	.00047	2.24	.00017	.00668	.00370
%RSD	123.10	57.721	6.9900	.70779	82.322	8.5685	23.601
#1	.12617	-.00306	.00643	318.39	.00039	.07211	.01702
#2	-.03440	-.00249	.00643	315.83	.00018	.08526	.01852
#3	.18565	-.00074	.00724	313.93	.00005	.07660	.01149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 15, 2016

Sample Name: L1606040101 Acquired: 6/14/2016 13:49:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572244-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00223**	**.02642**	**.27128**	**.00085**	**.42467**	F **-.04716**	**-.00249**
Stddev	.00127	.00543	.00084	.00088	.00237	.00308	.00187
%RSD	56.993	20.546	.30879	103.84	.55858	6.5360	75.050
#1	-.00326	.02629	.27160	.00101	.42711	-.05067	-.00386
#2	-.00081	.02105	.27033	-.00010	.42451	-.04593	-.00036
#3	-.00261	.03191	.27191	.00164	.42238	-.04489	-.00326
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00004**	**.01324**	**-.00006**
Stddev	.00105	.00024	.00018
%RSD	2770.5	1.7772	296.48
#1	-.00033	.01314	.00012
#2	-.00091	.01351	-.00023
#3	.00113	.01308	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7563.1**	**43779.**	**3072.4**
Stddev	12.8	81.	43.0
%RSD	.16968	.18476	1.4009
#1	7562.4	43826.	3025.1
#2	7550.7	43826.	3082.6
#3	7576.3	43686.	3109.4

Approved: June 15, 2016

Sample Name: L1606040101S Acquired: 6/14/2016 13:53:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572244-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19684**	**5.0967**	**.20209**	**1.0293**	**1.2091**	**.02436**	F **348.43**
Stddev	.00072	.0198	.00364	.0035	.0047	.00016	1.04
%RSD	.36586	.38874	1.8037	.33737	.38871	.66177	.29871
#1	.19607	5.0758	.20622	1.0256	1.2140	.02442	349.63
#2	.19749	5.0989	.20070	1.0325	1.2089	.02417	347.79
#3	.19697	5.1153	.19934	1.0298	1.2046	.02448	347.87
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02502**	**.09564**	**.24613**	**.24077**	**1.8978**	**279.57**	**.55292**
Stddev	.00022	.00088	.00145	.00121	.0280	1.03	.00424
%RSD	.87422	.91844	.58870	.50163	1.4759	.36950	.76626
#1	.02481	.09556	.24642	.24212	1.9301	280.64	.55508
#2	.02525	.09656	.24742	.23978	1.8804	279.50	.55564
#3	.02500	.09481	.24456	.24042	1.8828	278.58	.54804
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.7110**	**.23643**	**.50454**	F **342.92**	**.23553**	**5.1054**	**.25383**
Stddev	.1325	.00250	.00285	1.61	.00135	.0181	.00445
%RSD	2.8116	1.0580	.56389	.46928	.57240	.35448	1.7549
#1	4.6985	.23703	.50781	344.77	.23515	5.1263	.25324
#2	4.5853	.23857	.50257	342.04	.23702	5.0944	.25855
#3	4.8493	.23368	.50325	341.93	.23441	5.0955	.24969
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 15, 2016

Sample Name: L1606040101S Acquired: 6/14/2016 13:53:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572244-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.59878	.22037	2.8542	.47468	.90635	.43516	.11372
Stddev	.00379	.00716	.0077	.00230	.00451	.00599	.00231
%RSD	.63362	3.2478	.27084	.48499	.49797	1.3757	2.0338
#1	.59849	.22049	2.8625	.47709	.91125	.44190	.11155
#2	.60271	.21315	2.8471	.47250	.90543	.43315	.11615
#3	.59514	.22747	2.8531	.47444	.90237	.43044	.11345
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.50185	.50996	.00426
Stddev	.00231	.00221	.00033
%RSD	.46044	.43407	7.8538
#1	.50384	.51250	.00388
#2	.50239	.50894	.00438
#3	.49932	.50844	.00452
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7390.0	42543.	2969.4
Stddev	21.9	114.	29.1
%RSD	.29659	.26750	.97982
#1	7365.7	42638.	2958.4
#2	7408.2	42573.	3002.4
#3	7396.1	42417.	2947.5

Approved: June 15, 2016

Sample Name: L1606040101SD Acquired: 6/14/2016 13:56:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572244-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20087**	**5.1294**	**.20614**	**1.0412**	**1.1986**	**.02468**	F **342.25**
Stddev	.00169	.0132	.00305	.0012	.0027	.00015	.37
%RSD	.84103	.25629	1.4807	.11249	.22860	.59405	.10873
#1	.20023	5.1306	.20420	1.0399	1.2013	.02470	342.61
#2	.20279	5.1419	.20966	1.0417	1.1988	.02453	342.26
#3	.19959	5.1157	.20457	1.0421	1.1958	.02482	341.87
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02550**	**.09821**	**.24874**	**.24766**	**1.9147**	**277.25**	**.55479**
Stddev	.00025	.00024	.00049	.00122	.0433	.18	.00297
%RSD	.96207	.23992	.19544	.49076	2.2609	.06416	.53472
#1	.02575	.09796	.24907	.24906	1.8856	277.40	.55786
#2	.02526	.09842	.24897	.24698	1.9644	277.30	.55194
#3	.02547	.09824	.24818	.24694	1.8940	277.05	.55456
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.6163**	**.23816**	**.51974**	F **338.95**	**.24144**	**5.2503**	**.25969**
Stddev	.0907	.00076	.00121	2.46	.00117	.0100	.00390
%RSD	1.9649	.31723	.23234	.72579	.48290	.19104	1.5019
#1	4.5117	.23878	.51963	340.51	.24229	5.2430	.26015
#2	4.6733	.23732	.52100	340.23	.24192	5.2617	.25558
#3	4.6640	.23837	.51859	336.12	.24011	5.2461	.26334
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 15, 2016

Sample Name: L1606040101SD Acquired: 6/14/2016 13:56:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572244-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.60859**	**.22837**	**2.9129**	**.48961**	**.90083**	**.44288**	**.18565**
Stddev	.00407	.00257	.0028	.00167	.00054	.00669	.00295
%RSD	.66861	1.1272	.09542	.34067	.05968	1.5113	1.5903
#1	.60971	.22771	2.9148	.49096	.90135	.45032	.18245
#2	.61198	.22619	2.9097	.49014	.90027	.43737	.18625
#3	.60408	.23121	2.9142	.48775	.90088	.44094	.18826
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.50879**	**.51735**	**.00053**
Stddev	.00181	.00047	.00037
%RSD	.35485	.08989	69.842
#1	.51013	.51755	.00022
#2	.50951	.51769	.00043
#3	.50674	.51682	.00095
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7437.0**	**42930.**	**3011.0**
Stddev	12.2	77.	22.8
%RSD	.16370	.17893	.75631
#1	7440.7	42873.	2987.5
#2	7423.4	42901.	3012.5
#3	7446.9	43018.	3033.0

Approved: June 15, 2016

Sample Name: L1606036002 Acquired: 6/14/2016 14:00:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.03539	-.00160	.04716	.04338	-.00005	13.438	.00025
Stddev	.00179	.00562	.00262	.00095	.00044	.00006	.139	.00008
%RSD	919.45	15.871	163.58	2.0212	1.0145	118.33	1.0321	31.622
#1	.00208	.02891	-.00460	.04742	.04372	-.00004	13.563	.00026
#2	-.00002	.03830	-.00049	.04795	.04288	-.00000	13.289	.00031
#3	-.00148	.03895	.00028	.04610	.04353	-.00012	13.462	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00084	.00068	.00095	.03898	.90932	-.00296	1.7377	.47740
Stddev	.00022	.00054	.00095	.01689	.06082	.00668	.0489	.00609
%RSD	25.717	79.454	100.28	43.336	6.6885	225.59	2.8148	1.2751
#1	.00067	.00102	.00046	.05629	.95023	.00129	1.7694	.48173
#2	.00078	.00006	.00034	.03810	.83943	-.01066	1.6814	.47044
#3	.00109	.00098	.00204	.02254	.93830	.00049	1.7623	.48003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	142.73	.00267	.13572	-.00105	-.00124	.00664	.78284
Stddev	.00019	1.62	.00011	.00523	.00149	.00318	.00793	.00198
%RSD	40.060	1.1376	4.0493	3.8535	141.40	256.83	119.47	.25278
#1	.00027	144.10	.00258	.13845	-.00164	.00208	-.00008	.78083
#2	.00048	140.93	.00266	.12969	-.00216	-.00427	.01539	.78288
#3	.00064	143.15	.00279	.13901	.00064	-.00152	.00460	.78479
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606036002 Acquired: 6/14/2016 14:00:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00136	.21742	.00701	-.00042	-.00004	.10829	-.00001
Stddev	.00043	.00286	.00337	.00141	.00024	.00008	.00063
%RSD	31.504	1.3143	47.997	338.48	626.59	.07249	4577.5
#1	.00136	.21922	.01043	.00093	.00018	.10824	-.00058
#2	.00180	.21412	.00370	-.00189	-.00029	.10838	.00067
#3	.00094	.21890	.00690	-.00029	.00000	.10826	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7913.7	46461.	3136.3
Stddev	21.5	120.	39.8
%RSD	.27174	.25909	1.2706
#1	7938.5	46580.	3096.1
#2	7902.6	46464.	3175.8
#3	7900.1	46340.	3136.9

Approved: June 15, 2016

Sample Name: L1606040301 Acquired: 6/14/2016 14:04:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.10870**	**.00259**	**.03180**	**.22091**	**-.00009**	F **301.33**
Stddev	.00155	.00247	.00230	.00096	.00055	.00004	.70
%RSD	1520.2	2.2763	89.084	3.0261	.24692	43.359	.23170
#1	.00093	.10812	.00521	.03224	.22056	-.00006	301.23
#2	.00064	.10656	.00090	.03247	.22063	-.00008	300.69
#3	-.00188	.11141	.00164	.03070	.22154	-.00014	302.08
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00006**	**.00053**	**.00168**	**.00808**	**.02703**	**246.44**	**1.0250**
Stddev	.00024	.00051	.00026	.00030	.01540	.42	.0030
%RSD	423.83	95.084	15.494	3.6767	56.974	.16978	.29649
#1	-.00003	.00106	.00191	.00833	.03321	246.48	1.0283
#2	.00033	.00051	.00140	.00776	.00950	246.01	1.0224
#3	-.00013	.00004	.00175	.00817	.03838	246.84	1.0243
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.01867**	**-.00091**	**.00410**	F **290.21**	**.00079**	**.05312**	**.01345**
Stddev	.08012	.00232	.00018	1.00	.00078	.00725	.00471
%RSD	429.05	253.68	4.4741	.34363	98.782	13.654	35.045
#1	-.06132	-.00046	.00413	290.01	-.00011	.06077	.01735
#2	-.06845	-.00342	.00427	289.32	.00131	.04634	.00821
#3	.07375	.00114	.00391	291.29	.00117	.05227	.01479
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 15, 2016

Sample Name: L1606040301 Acquired: 6/14/2016 14:04:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00185**	**.01201**	**.14023**	**.00097**	**.37299**	F **-.03665**	**-.00129**
Stddev	.00194	.00714	.00189	.00047	.00184	.00141	.00126
%RSD	104.92	59.445	1.3470	48.573	.49453	3.8444	98.372
#1	.00250	.01999	.14122	.00130	.37392	-.03822	-.00095
#2	.00339	.00625	.14141	.00043	.37087	-.03622	-.00268
#3	-.00033	.00978	.13805	.00118	.37418	-.03551	-.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00027**	**.17242**	**.00003**
Stddev	.00025	.00091	.00049
%RSD	93.764	.53063	1635.1
#1	-.00031	.17166	-.00053
#2	.00000	.17218	.00022
#3	-.00049	.17344	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7444.8**	**43321.**	**3001.6**
Stddev	15.4	236.	17.0
%RSD	.20751	.54453	.56728
#1	7462.3	43447.	2995.9
#2	7438.7	43468.	3020.8
#3	7433.3	43049.	2988.2

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 14:08:44 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40287	10.072	.40039	.50197	.99037	.05023	9.8363	.05078
Stddev	.00087	.036	.00475	.00183	.00406	.00019	.0185	.00018
%RSD	.21505	.35972	1.1875	.36411	.40995	.37307	.18826	.36196
#1	.40380	10.096	.40588	.50315	.98913	.05040	9.8176	.05057
#2	.40273	10.090	.39749	.50290	.98708	.05025	9.8546	.05090
#3	.40208	10.031	.39781	.49987	.99491	.05003	9.8367	.05087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20329	.50144	.51034	3.9786	49.552	.99098	9.8437	.49205
Stddev	.00043	.00148	.00280	.0079	.197	.00940	.1177	.00061
%RSD	.21307	.29611	.54897	.19805	.39701	.94882	1.1959	.12430
#1	.20368	.50306	.51307	3.9695	49.492	1.0017	9.7321	.49239
#2	.20335	.50115	.51049	3.9841	49.393	.98432	9.8323	.49242
#3	.20283	.50013	.50747	3.9821	49.772	.98688	9.9667	.49135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0152	49.223	.50945	10.062	.50837	1.2088	.40379	5.1182
Stddev	.0049	.070	.00238	.024	.00034	.0042	.00577	.0128
%RSD	.48067	.14158	.46713	.24339	.06659	.34938	1.4280	.25044
#1	1.0199	49.180	.50995	10.082	.50798	1.2073	.40904	5.1186
#2	1.0155	49.187	.51154	10.069	.50860	1.2135	.40472	5.1308
#3	1.0101	49.304	.50686	10.035	.50852	1.2055	.39762	5.1051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 14:08:44 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0080**	**.98991**	**.97455**	**.50425**	**1.0045**	**1.0128**	**1.0065**
Stddev	.0023	.00126	.00867	.00178	.0013	.0037	.0121
%RSD	.22662	.12763	.88921	.35217	.12434	.36160	1.2030
#1	1.0095	.98913	.96990	.50273	1.0056	1.0154	1.0139
#2	1.0092	.98924	.96921	.50620	1.0032	1.0144	1.0131
#3	1.0054	.99137	.98455	.50381	1.0048	1.0086	.99255
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7855.3**	**45661.**	**2998.7**
Stddev	37.4	35.	28.3
%RSD	.47565	.07626	.94396
#1	7833.8	45698.	2982.9
#2	7833.7	45630.	2981.9
#3	7898.5	45654.	3031.4

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 14:12:27 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00145**	**.01301**	**-.00079**	**-.00040**	**.00054**	**.00007**	**.01269**	**-.00023**
Stddev	.00118	.00272	.00417	.00138	.00097	.00007	.03045	.00008
%RSD	81.520	20.883	524.30	345.41	180.39	104.37	240.01	35.478
#1	-.00270	.01093	.00374	-.00170	.00118	.00013	.04622	-.00026
#2	-.00128	.01609	-.00446	-.00054	-.00058	.00008	-.01323	-.00029
#3	-.00036	.01201	-.00166	.00104	.00101	-.00001	.00506	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00018**	**.00013**	**.00040**	**.01146**	**.06408**	**.00116**	**-.01836**	**.00048**
Stddev	.00004	.00111	.00068	.00923	.12796	.00095	.09556	.00146
%RSD	20.747	871.23	171.02	80.558	199.68	82.263	520.63	301.52
#1	.00022	.00129	.00118	.00158	-.05158	.00029	-.05564	-.00119
#2	.00017	-.00093	.00010	.01987	.04229	.00218	-.08965	.00151
#3	.00015	.00002	-.00009	.01294	.20154	.00102	.09023	.00113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00188**	**.04883**	**.00055**	**.00620**	**-.00235**	**-.00116**	**.00621**	**.00071**
Stddev	.00047	.00950	.00034	.00186	.00127	.00391	.00979	.00029
%RSD	25.115	19.460	62.211	29.933	54.281	337.62	157.71	40.450
#1	.00138	.03930	.00037	.00801	-.00095	-.00325	-.00115	.00092
#2	.00194	.04888	.00095	.00630	-.00266	.00335	.00246	.00082
#3	.00232	.05830	.00033	.00430	-.00344	-.00357	.01732	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 14:12:27 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00108**	**.00026**	**-.00208**	**-.00069**	**-.00014**	**-.00007**	**.00042**
Stddev	.00137	.00012	.00089	.00375	.00011	.00016	.00033
%RSD	127.39	44.068	42.741	546.89	80.729	233.21	78.883
#1	-.00002	.00013	-.00189	.00363	-.00006	-.00022	.00039
#2	.00064	.00033	-.00130	-.00318	-.00026	-.00009	.00010
#3	.00262	.00033	-.00305	-.00250	-.00009	.00010	.00076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8026.3**	**46832.**	**3019.4**
Stddev	38.7	175.	16.9
%RSD	.48212	.37290	.55903
#1	8019.8	46693.	3038.0
#2	8067.9	46775.	3005.0
#3	7991.3	47028.	3015.3

Approved: June 15, 2016

Sample Name: L1606043801 Acquired: 6/14/2016 14:16:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00165**	**18.316**	**.01107**	**.04675**	**.24795**	**.00123**	**34.387**	**.00070**
Stddev	.00207	.005	.00205	.00153	.00128	.00004	.043	.00027
%RSD	126.09	.02538	18.509	3.2756	.51748	3.6422	.12484	38.470
#1	-.00021	18.321	.00872	.04595	.24937	.00120	34.420	.00099
#2	.00388	18.312	.01205	.04578	.24687	.00128	34.339	.00045
#3	.00127	18.317	.01245	.04851	.24761	.00121	34.404	.00068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01989**	**.02761**	**.05076**	**30.488**	**5.6678**	**.02554**	**8.3554**	**1.4174**
Stddev	.00035	.00051	.00115	.151	.0258	.00282	.1122	.0016
%RSD	1.7556	1.8359	2.2696	.49600	.45490	11.029	1.3425	.11480
#1	.02010	.02783	.04943	30.662	5.6387	.02237	8.4726	1.4179
#2	.02008	.02703	.05139	30.383	5.6767	.02773	8.3448	1.4188
#3	.01949	.02797	.05146	30.421	5.6880	.02653	8.2490	1.4156
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01045**	**37.585**	**.04256**	**.60322**	**.06107**	**-.00016**	**.00245**	**23.598**
Stddev	.00003	.051	.00062	.00847	.00290	.00213	.00511	.032
%RSD	.25053	.13511	1.4618	1.4044	4.7555	1293.5	208.89	.13456
#1	.01048	37.637	.04280	.59622	.05778	.00196	.00627	23.564
#2	.01043	37.536	.04185	.60079	.06328	-.00015	.00443	23.603
#3	.01044	37.581	.04303	.61264	.06216	-.00230	-.00336	23.627
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606043801 Acquired: 6/14/2016 14:16:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00637	.22090	.19006	.00477	.03490	.30164	.00430
Stddev	.00082	.00022	.01097	.00202	.00052	.00091	.00035
%RSD	12.836	.10049	5.7697	42.372	1.5013	.30290	8.0336
#1	.00621	.22112	.18150	.00542	.03436	.30069	.00414
#2	.00726	.22090	.18626	.00639	.03541	.30172	.00406
#3	.00565	.22068	.20242	.00251	.03493	.30251	.00469
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7828.9	45876.	3028.8
Stddev	16.2	108.	7.8
%RSD	.20630	.23627	.25736
#1	7844.9	45985.	3029.3
#2	7812.6	45875.	3036.3
#3	7829.1	45768.	3020.7

Approved: June 15, 2016

Sample Name: L1606048201 Acquired: 6/14/2016 14:20:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00085	.07848	.00518	.02726	.06388	-.00011	28.356	.01239
Stddev	.00064	.00608	.00266	.00275	.00096	.00010	.053	.00052
%RSD	75.865	7.7426	51.490	10.105	1.5100	94.103	.18745	4.1888
#1	-.00018	.07727	.00716	.02410	.06442	.00001	28.398	.01182
#2	-.00089	.08507	.00215	.02851	.06445	-.00016	28.296	.01253
#3	-.00146	.07310	.00621	.02916	.06276	-.00018	28.375	.01283
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00044	.00153	.07861	.04250	1.1855	.00277	1.5701	.18421
Stddev	.00011	.00083	.00132	.03136	.1146	.00370	.0638	.00117
%RSD	24.371	53.840	1.6782	73.778	9.6697	133.39	4.0625	.63391
#1	.00049	.00102	.07937	.03282	1.3150	.00132	1.5014	.18286
#2	.00032	.00110	.07937	.07756	1.1447	.00002	1.5812	.18488
#3	.00052	.00249	.07709	.01713	1.0969	.00698	1.6275	.18489
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	145.37	.00618	.18213	.00681	-.00178	-.00056	.77992
Stddev	.00009	.04	.00049	.00367	.00330	.00142	.00695	.00200
%RSD	35.255	.02705	7.9203	2.0166	48.520	79.994	1239.9	.25675
#1	-.00022	145.40	.00568	.18637	.00820	-.00341	-.00102	.78213
#2	-.00038	145.37	.00666	.17994	.00919	-.00110	-.00726	.77824
#3	-.00020	145.33	.00620	.18007	.00304	-.00082	.00660	.77938
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606048201 Acquired: 6/14/2016 14:20:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00209	.11794	-.00157	.00100	.00008	3.4861	.00045
Stddev	.00035	.00088	.00575	.00326	.00054	.0158	.00026
%RSD	16.953	.74517	367.13	327.49	642.94	.45166	57.234
#1	.00248	.11895	-.00570	.00132	-.00035	3.4688	.00064
#2	.00178	.11737	-.00400	.00408	-.00008	3.4900	.00016
#3	.00201	.11748	.00500	-.00241	.00068	3.4996	.00055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7671.0	44631.	2991.1
Stddev	8.3	158.	9.8
%RSD	.10797	.35449	.32775
#1	7677.5	44580.	2982.7
#2	7673.9	44505.	3001.9
#3	7661.7	44809.	2988.8

Approved: June 15, 2016

Sample Name: L1606050403 Acquired: 6/14/2016 14:24:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	.05079	-.00123	.00648	.85105	.00009	19.884	.00060
Stddev	.00104	.00255	.00161	.00149	.00455	.00011	.174	.00017
%RSD	242.60	5.0206	131.10	23.050	.53491	123.44	.87263	28.694
#1	.00162	.05313	-.00181	.00807	.85592	.00012	20.072	.00057
#2	-.00008	.05116	.00059	.00625	.85035	-.00003	19.849	.00079
#3	-.00026	.04807	-.00247	.00511	.84689	.00018	19.731	.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00246	.11916	.00293	.80214	1.9322	.05798	21.538	.08731
Stddev	.00010	.00051	.00104	.02673	.0534	.00348	.052	.00209
%RSD	4.0606	.42953	35.447	3.3319	2.7623	6.0091	.24147	2.3890
#1	.00238	.11862	.00366	.79050	1.9822	.06056	21.593	.08943
#2	.00257	.11963	.00340	.78321	1.8760	.05402	21.533	.08725
#3	.00243	.11923	.00174	.83271	1.9385	.05937	21.489	.08526
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	103.53	.06954	.07095	.00117	-.00111	.00156	27.182
Stddev	.00005	.66	.00176	.00512	.00059	.00188	.00471	.081
%RSD	9.2590	.63559	2.5372	7.2097	49.911	169.06	302.33	.29633
#1	.00061	104.18	.06951	.07437	.00075	.00095	.00637	27.102
#2	.00053	103.56	.07132	.06507	.00184	-.00156	-.00303	27.263
#3	.00052	102.86	.06780	.07342	.00093	-.00273	.00133	27.181
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606050403 Acquired: 6/14/2016 14:24:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00123**	**.51113**	**-.00066**	**.00109**	**.00001**	**.01901**	**.00040**
Stddev	.00015	.00256	.00586	.00237	.00050	.00009	.00049
%RSD	12.178	.50066	889.16	217.32	8878.0	.49488	124.24
#1	.00119	.51387	.00499	.00093	.00019	.01891	.00079
#2	.00140	.51072	-.00025	.00354	.00039	.01903	.00055
#3	.00111	.50881	-.00672	-.00120	-.00057	.01909	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7629.8**	**44279.**	**2952.6**
Stddev	27.8	185.	27.3
%RSD	.36469	.41871	.92453
#1	7651.8	44069.	2923.9
#2	7639.1	44421.	2978.2
#3	7598.5	44348.	2955.6

Approved: June 15, 2016

Sample Name: L1606050403PS Acquired: 6/14/2016 14:28:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572544-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20301**	**5.2332**	**.20434**	**1.0191**	**1.2721**	**.02548**	**22.935**	**.02626**
Stddev	.00168	.0230	.00109	.0066	.0014	.00008	.154	.00007
%RSD	.82639	.43963	.53159	.65216	.11363	.32356	.66937	.28400
#1	.20367	5.2532	.20556	1.0189	1.2738	.02539	22.784	.02630
#2	.20426	5.2384	.20401	1.0259	1.2710	.02555	22.931	.02631
#3	.20111	5.2081	.20346	1.0126	1.2717	.02551	23.091	.02618
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10490**	**.36618**	**.25717**	**2.7294**	**26.890**	**.56771**	**24.122**	**.32859**
Stddev	.00058	.00261	.00314	.0179	.024	.00044	.167	.00185
%RSD	.55188	.71375	1.2227	.65570	.08857	.07694	.69034	.56393
#1	.10537	.36918	.26040	2.7201	26.863	.56752	24.123	.33034
#2	.10426	.36493	.25701	2.7182	26.900	.56739	23.956	.32665
#3	.10509	.36442	.25411	2.7501	26.907	.56821	24.289	.32876
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52374**	**118.31**	**.31687**	**5.0964**	**.25698**	**.61196**	**.20359**	**26.803**
Stddev	.00137	.10	.00202	.0159	.00328	.00379	.00561	.038
%RSD	.26119	.08347	.63803	.31259	1.2746	.61899	2.7532	.14288
#1	.52532	118.25	.31900	5.1130	.25917	.60877	.19721	26.839
#2	.52299	118.27	.31662	5.0813	.25321	.61615	.20585	26.763
#3	.52292	118.43	.31498	5.0948	.25855	.61096	.20771	26.809
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606050403PS Acquired: 6/14/2016 14:28:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572544-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51195**	**.95388**	**.50326**	**.25080**	**.51838**	**.53084**	**.00305**
Stddev	.00047	.00310	.00682	.00349	.00242	.00090	.00062
%RSD	.09277	.32492	1.3555	1.3911	.46705	.17019	20.386
#1	.51249	.95571	.51082	.25310	.51944	.53188	.00234
#2	.51159	.95030	.49756	.25252	.52009	.53041	.00332
#3	.51177	.95563	.50140	.24679	.51561	.53024	.00349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7614.3**	**44074.**	**2952.6**
Stddev	10.9	75.	8.0
%RSD	.14253	.16944	.27154
#1	7623.5	44151.	2960.7
#2	7616.9	44002.	2952.6
#3	7602.3	44068.	2944.6

Approved: June 15, 2016

Sample Name: L1606050403SDL Acquired: 6/14/2016 14:32:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG572544-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00062	.00700	.00023	.00421	.16210	.00006	3.7959	-.00001
Stddev	.00089	.00370	.00210	.00182	.00087	.00014	.0433	.00023
%RSD	143.33	52.855	895.70	43.236	.53705	240.43	1.1397	1571.9
#1	-.00122	.00299	.00233	.00623	.16311	-.00003	3.7819	.00012
#2	-.00106	.01029	.00024	.00369	.16161	.00022	3.8444	-.00028
#3	.00040	.00773	-.00187	.00270	.16159	-.00001	3.7614	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.02231	.00117	.16394	.28556	.00746	4.1825	.01651
Stddev	.00020	.00034	.00099	.01427	.08847	.00125	.1080	.00110
%RSD	41.665	1.5310	85.024	8.7072	30.980	16.695	2.5820	6.6413
#1	.00056	.02230	.00003	.15170	.19046	.00870	4.1005	.01615
#2	.00026	.02197	.00159	.17962	.30082	.00747	4.1422	.01774
#3	.00064	.02265	.00188	.16051	.36540	.00621	4.3049	.01564
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	19.761	.01384	.01190	-.00090	.00033	.00273	5.1779
Stddev	.00042	.075	.00067	.00387	.00193	.00212	.00368	.0337
%RSD	229.98	.37868	4.8657	32.494	212.86	644.73	134.54	.65079
#1	.00053	19.690	.01361	.01305	-.00219	.00272	.00525	5.1686
#2	-.00028	19.839	.01460	.00759	-.00183	-.00130	-.00149	5.2153
#3	.00029	19.753	.01332	.01507	.00131	-.00043	.00444	5.1499
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606050403SDL Acquired: 6/14/2016 14:32:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG572544-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00124**	**.09713**	**.00696**	**.00230**	**.00076**	**.00430**	**-.00038**
Stddev	.00064	.00077	.00455	.00259	.00065	.00012	.00044
%RSD	51.460	.79200	65.353	112.64	85.408	2.8192	115.86
#1	.00072	.09662	.01075	.00054	.00116	.00431	-.00081
#2	.00105	.09801	.00192	.00108	.00110	.00417	-.00041
#3	.00196	.09675	.00821	.00528	.00001	.00441	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8107.0**	**46979.**	**3023.3**
Stddev	27.4	142.	14.8
%RSD	.33816	.30134	.48798
#1	8077.2	46827.	3030.2
#2	8131.1	47107.	3006.4
#3	8112.7	47003.	3033.4

Approved: June 15, 2016

Sample Name: L1606050403SDL Acquired: 6/14/2016 14:36:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG572544-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	-.00070	-.00123	.00078	.03286	.00005	.73716	-.00006
Stddev	.00087	.00243	.00190	.00359	.00141	.00008	.04250	.00018
%RSD	117.38	347.31	155.02	460.34	4.2955	150.55	5.7652	295.61
#1	.00004	.00067	-.00340	.00492	.03133	.00014	.69290	-.00021
#2	.00171	-.00351	-.00038	-.00118	.03411	.00004	.77765	.00015
#3	.00047	.00073	.00011	-.00140	.03314	-.00002	.74092	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	.00544	.00053	.03295	-.00023	.00065	.86507	.00262
Stddev	.00020	.00120	.00089	.00496	.04743	.00164	.03420	.00146
%RSD	1719.1	21.985	168.02	15.056	20796.	251.35	3.9539	55.605
#1	.00013	.00409	-.00049	.03130	-.00117	.00055	.90454	.00148
#2	-.00024	.00587	.00096	.02903	.04767	.00234	.84646	.00426
#3	.00008	.00637	.00112	.03853	-.04718	-.00093	.84420	.00212
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	3.9177	.00340	.01257	-.00178	.00162	-.00304	.97233
Stddev	.00040	.0387	.00093	.00205	.00154	.00458	.00214	.02609
%RSD	103.20	.98745	27.225	16.330	86.252	281.99	70.452	2.6830
#1	.00001	3.8792	.00258	.01425	-.00106	.00668	-.00386	1.0024
#2	-.00038	3.9173	.00323	.01028	-.00355	.00045	-.00465	.95901
#3	-.00079	3.9566	.00440	.01316	-.00074	-.00225	-.00061	.95560
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606050403SDL Acquired: 6/14/2016 14:36:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG572544-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00062	.01898	.00344	.00253	-.00028	.00097	-.00018
Stddev	.00081	.00011	.00184	.00165	.00040	.00018	.00010
%RSD	132.03	.56699	53.424	65.164	141.54	18.829	57.425
#1	.00067	.01897	.00452	.00157	-.00047	.00096	-.00029
#2	.00140	.01888	.00448	.00443	-.00056	.00115	-.00008
#3	-.00022	.01909	.00132	.00159	.00018	.00079	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8471.1	47626.	3070.0
Stddev	143.8	163.	28.6
%RSD	1.6969	.34178	.93160
#1	8308.3	47801.	3098.4
#2	8524.6	47479.	3070.5
#3	8580.5	47598.	3041.2

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 14:40:17 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38909**	**9.6925**	**.37921**	**.48367**	**.94871**	**.04815**	**9.4357**	**.04840**
Stddev	.00150	.0208	.00565	.00297	.00487	.00025	.0808	.00058
%RSD	.38504	.21460	1.4889	.61360	.51314	.52837	.85669	1.1917
#1	.39014	9.6698	.38569	.48326	.95060	.04785	9.4155	.04905
#2	.38738	9.6973	.37533	.48682	.95236	.04830	9.5247	.04821
#3	.38976	9.7106	.37660	.48092	.94318	.04829	9.3668	.04794
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19468**	**.48259**	**.48474**	**3.7712**	**47.215**	**.94232**	**9.3385**	**.47111**
Stddev	.00042	.00173	.00305	.0229	.122	.00410	.0059	.00172
%RSD	.21660	.35788	.62936	.60684	.25821	.43465	.06276	.36550
#1	.19514	.48063	.48724	3.7604	47.310	.94206	9.3397	.47065
#2	.19430	.48329	.48134	3.7975	47.258	.94654	9.3436	.47301
#3	.19461	.48386	.48565	3.7557	47.078	.93837	9.3321	.46966
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.96477**	**47.183**	**.48606**	**9.6057**	**.48725**	**1.1594**	**.37971**	**4.8773**
Stddev	.00630	.258	.00293	.0486	.00226	.0115	.00691	.0230
%RSD	.65277	.54583	.60290	.50597	.46433	.98923	1.8187	.47161
#1	.97196	47.262	.48785	9.6534	.48882	1.1722	.38287	4.9025
#2	.96023	47.392	.48268	9.5562	.48826	1.1500	.38447	4.8575
#3	.96213	46.895	.48766	9.6074	.48465	1.1559	.37179	4.8718
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 14:40:17 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.96127	.94929	.93896	.48362	.96581	.96673	.96510
Stddev	.00529	.00476	.00767	.00467	.00268	.00448	.00130
%RSD	.55082	.50164	.81734	.96621	.27763	.46292	.13436
#1	.96644	.95118	.94655	.48681	.96273	.97185	.96425
#2	.95586	.95281	.93912	.47825	.96768	.96354	.96659
#3	.96151	.94387	.93121	.48579	.96700	.96481	.96446
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8074.8	46641.	3084.8
Stddev	12.8	133.	18.4
%RSD	.15824	.28428	.59486
#1	8061.4	46785.	3088.3
#2	8086.9	46523.	3064.9
#3	8076.2	46615.	3101.1

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 14:43:59 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.00075	.00026	.00206	.00087	.00006	-.00390	-.00007
Stddev	.00156	.00812	.00068	.00160	.00062	.00004	.02599	.00036
%RSD	1035.0	1088.9	258.25	77.620	72.146	75.951	665.62	529.10
#1	.00100	.00596	-.00046	.00365	.00132	.00010	-.03020	.00015
#2	-.00165	.00489	.00037	.00045	.00112	.00002	-.00329	.00014
#3	.00111	-.00861	.00089	.00207	.00015	.00005	.02177	-.00049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00061	.00026	-.00361	-.07520	.00069	.01969	-.00125
Stddev	.00016	.00033	.00088	.00455	.07635	.00199	.00698	.00017
%RSD	124.76	53.924	334.68	126.06	101.53	290.03	35.426	13.319
#1	-.00005	.00082	.00126	-.00811	.01272	-.00150	.02673	-.00138
#2	.00026	.00023	-.00042	-.00369	-.11353	.00238	.01277	-.00130
#3	.00016	.00077	-.00005	.00098	-.12479	.00117	.01957	-.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00166	-.00275	.00037	.00208	-.00144	.00044	.00560	.00117
Stddev	.00029	.02001	.00045	.00113	.00140	.00241	.00185	.00112
%RSD	17.264	727.08	119.88	54.385	97.115	551.63	32.972	95.725
#1	.00136	.01876	.00036	.00297	-.00290	.00006	.00774	.00241
#2	.00169	-.00621	.00083	.00081	-.00133	-.00176	.00455	.00091
#3	.00194	-.02082	-.00007	.00245	-.00010	.00302	.00452	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 14:43:59 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00012**	**.00020**	**.00268**	**.00090**	**-.00002**	**.00007**	**.00079**
Stddev	.00049	.00031	.00608	.00338	.00092	.00007	.00022
%RSD	403.62	153.43	226.69	373.90	5032.9	104.09	27.352
#1	-.00049	.00055	-.00003	.00467	.00008	-.00001	.00054
#2	-.00032	.00013	.00964	-.00187	.00085	.00009	.00093
#3	.00044	-.00007	-.00157	-.00008	-.00099	.00013	.00090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8172.0**	**47648.**	**3078.1**
Stddev	64.9	350.	9.5
%RSD	.79392	.73460	.30987
#1	8101.1	47961.	3087.4
#2	8228.4	47714.	3068.4
#3	8186.4	47270.	3078.7

Approved: June 15, 2016

Sample Name: LLCCV Acquired: 6/14/2016 14:48:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00979	.16139	.00635	.07835	.00792	.00157	.38322	.00073
Stddev	.00179	.00594	.00207	.00088	.00061	.00003	.05584	.00011
%RSD	18.313	3.6833	32.545	1.1236	7.6693	2.1807	14.570	14.738
#1	.01185	.15625	.00826	.07743	.00850	.00157	.31895	.00084
#2	.00863	.16790	.00664	.07918	.00729	.00160	.41981	.00062
#3	.00887	.16001	.00415	.07843	.00796	.00153	.41090	.00074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00370	.00385	.00386	.08058	.67879	.07657	.33166	.00633
Stddev	.00039	.00073	.00103	.01502	.02336	.00300	.05512	.00237
%RSD	10.417	19.063	26.542	18.641	3.4417	3.9149	16.621	37.471
#1	.00414	.00336	.00293	.08770	.68168	.07837	.32433	.00375
#2	.00347	.00349	.00371	.06332	.65412	.07825	.28056	.00681
#3	.00349	.00469	.00496	.09071	.70057	.07311	.39008	.00842
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00736	.38207	.01611	.75146	.00769	.07705	.01527	.76721
Stddev	.00029	.00935	.00057	.01311	.00339	.00101	.00082	.00931
%RSD	3.8806	2.4471	3.5650	1.7447	44.017	1.3142	5.3546	1.2136
#1	.00703	.39162	.01658	.76590	.00507	.07696	.01442	.77085
#2	.00753	.38164	.01628	.74819	.01152	.07608	.01535	.77415
#3	.00751	.37294	.01547	.74030	.00650	.07810	.01605	.75663
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: LLCCV Acquired: 6/14/2016 14:48:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38819**	**.03866**	**.03101**	**.14787**	**.00784**	**.01607**	**.04257**
Stddev	.00667	.00044	.00342	.00413	.00022	.00032	.00135
%RSD	1.7177	1.1337	11.035	2.7928	2.8059	1.9833	3.1768
#1	.39344	.03817	.03295	.14966	.00775	.01637	.04102
#2	.39045	.03879	.02706	.15080	.00810	.01611	.04352
#3	.38069	.03902	.03303	.14314	.00769	.01574	.04317
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8296.2**	**47601.**	**3111.3**
Stddev	90.1	568.	13.6
%RSD	1.0858	1.1931	.43636
#1	8224.2	47445.	3122.5
#2	8267.2	47127.	3096.2
#3	8397.2	48230.	3115.2

Approved: June 15, 2016

Sample Name: LLCCV Acquired: 6/14/2016 14:51:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02082**	**.39736**	**.01945**	**.19110**	**.01962**	**.00387**	**.96551**	**.00167**
Stddev	.00017	.01047	.00274	.00416	.00055	.00004	.03154	.00022
%RSD	.83706	2.6349	14.094	2.1769	2.8156	.99294	3.2670	13.376
#1	.02064	.38704	.01648	.18827	.01923	.00383	.99855	.00181
#2	.02085	.40798	.02189	.18915	.01938	.00389	.93571	.00142
#3	.02098	.39707	.01998	.19587	.02025	.00390	.96228	.00180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00938**	**.00996**	**.01040**	**.19547**	**1.7662**	**.18239**	**.96403**	**.01771**
Stddev	.00030	.00104	.00168	.01682	.0591	.00312	.01940	.00042
%RSD	3.1795	10.411	16.126	8.6059	3.3449	1.7112	2.0125	2.3793
#1	.00910	.01049	.01233	.18962	1.7045	.18589	.95579	.01806
#2	.00969	.01062	.00947	.18236	1.8222	.17990	.95011	.01724
#3	.00936	.00877	.00939	.21444	1.7720	.18138	.98619	.01784
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01760**	**.94036**	**.03831**	**1.7960**	**.01636**	**.18198**	**.03416**	**1.8563**
Stddev	.00047	.01118	.00083	.0228	.00371	.00232	.00543	.0273
%RSD	2.6648	1.1889	2.1625	1.2682	22.677	1.2728	15.891	1.4732
#1	.01714	.92881	.03808	1.7714	.01289	.17976	.03561	1.8275
#2	.01759	.94114	.03923	1.8164	.02027	.18180	.03872	1.8819
#3	.01808	.95113	.03762	1.8002	.01593	.18438	.02816	1.8594
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: LLCCV Acquired: 6/14/2016 14:51:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.93317**	**.09426**	**.05656**	**.35433**	**.01897**	**.03880**	**.09721**
Stddev	.00966	.00085	.00744	.00369	.00021	.00070	.00052
%RSD	1.0356	.90449	13.146	1.0417	1.1135	1.7944	.53191
#1	.92360	.09447	.05025	.35013	.01894	.03800	.09672
#2	.94292	.09332	.05468	.35578	.01878	.03925	.09717
#3	.93298	.09498	.06476	.35707	.01920	.03916	.09775
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8395.4**	**47540.**	**3117.8**
Stddev	101.0	351.	5.0
%RSD	1.2028	.73785	.16055
#1	8511.1	47945.	3121.8
#2	8325.2	47345.	3119.5
#3	8349.9	47331.	3112.2

Approved: June 15, 2016

Sample Name: L1606040301 Acquired: 6/14/2016 14:55:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00044	.11669	.00278	.03288	.23711	-.00002	F 320.06
Stddev	.00109	.00421	.00460	.00346	.00353	.00004	4.65
%RSD	246.41	3.6090	165.31	10.508	1.4879	222.16	1.4526
#1	-.00074	.11285	.00442	.02891	.23351	.00000	314.89
#2	.00140	.11603	.00634	.03458	.24057	-.00006	323.90
#3	.00067	.12119	-.00241	.03516	.23725	.00001	321.38
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	.00073	.00156	.00943	.00460	259.36	1.0897
Stddev	.00013	.00018	.00069	.00107	.01334	3.30	.0182
%RSD	542.41	24.811	43.871	11.301	290.11	1.2740	1.6702
#1	-.00008	.00089	.00190	.00830	.01810	255.75	1.0703
#2	.00012	.00054	.00077	.01042	.00426	262.24	1.1064
#3	-.00012	.00076	.00201	.00955	-.00857	260.09	1.0924
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.03325	.00101	.00395	F 306.28	.00090	.05246	.01346
Stddev	.05226	.00381	.00023	4.34	.00022	.00477	.00396
%RSD	157.20	378.83	5.8151	1.4154	24.384	9.1005	29.393
#1	-.08555	.00356	.00372	301.61	.00109	.05152	.01000
#2	-.03318	-.00337	.00418	310.18	.00066	.05763	.01778
#3	.01898	.00283	.00395	307.05	.00094	.04822	.01261
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 15, 2016

Sample Name: L1606040301 Acquired: 6/14/2016 14:55:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00314	.01843	.13831	.00117	.39726	F -.04397	.00046
Stddev	.00134	.00502	.00251	.00077	.00693	.00264	.00412
%RSD	42.657	27.220	1.8138	65.252	1.7446	5.9945	905.34
#1	.00159	.02144	.13974	.00041	.38942	-.04171	-.00100
#2	.00386	.02121	.13977	.00194	.40258	-.04687	-.00274
#3	.00396	.01264	.13541	.00118	.39977	-.04332	.00511
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00019	.17944	.00124
Stddev	.00045	.00095	.00012
%RSD	234.31	.52849	10.038
#1	.00014	.17876	.00129
#2	-.00001	.18052	.00109
#3	-.00071	.17903	.00132
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7268.2	42211.	2905.0
Stddev	19.3	805.	36.6
%RSD	.26544	1.9060	1.2612
#1	7285.4	43079.	2937.7
#2	7247.4	41490.	2865.4
#3	7271.8	42066.	2912.0

Approved: June 15, 2016

Sample Name: L1606043701 Acquired: 6/14/2016 14:59:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	.20249	.00014	.01592	.04863	-.00003	46.657	-.00009
Stddev	.00154	.01292	.00087	.00166	.00064	.00002	1.430	.00036
%RSD	258.11	6.3819	607.42	10.410	1.3109	55.475	3.0651	379.11
#1	-.00095	.21556	.00015	.01725	.04934	-.00005	47.944	.00028
#2	.00214	.20218	.00101	.01407	.04811	-.00002	46.909	-.00013
#3	.00060	.18972	-.00073	.01645	.04843	-.00002	45.117	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00094	.00181	.16114	.91914	.00368	8.4800	.00804
Stddev	.00024	.00066	.00033	.01534	.02724	.00649	.1670	.00161
%RSD	432.95	70.175	18.521	9.5207	2.9635	176.31	1.9688	20.032
#1	.00012	.00062	.00144	.17156	.93200	.00684	8.6616	.00898
#2	-.00021	.00169	.00189	.16834	.88785	.00799	8.4452	.00897
#3	.00026	.00050	.00209	.14353	.93757	-.00378	8.3332	.00618
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	3.4956	.00161	.00083	-.00103	-.00270	.00463	4.2291
Stddev	.00022	.1165	.00055	.00923	.00111	.00159	.00420	.0240
%RSD	39.374	3.3333	34.071	1116.8	107.14	58.829	90.524	.56690
#1	-.00049	3.6042	.00154	.00362	-.00120	-.00187	.00870	4.2055
#2	-.00038	3.5101	.00218	-.00948	-.00205	-.00169	.00032	4.2284
#3	-.00080	3.3725	.00109	.00834	.00015	-.00452	.00489	4.2534
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606043701 Acquired: 6/14/2016 14:59:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00142	.12394	.00401	.00187	.00065	.00122	.00068
Stddev	.00118	.00388	.00562	.00191	.00063	.00010	.00038
%RSD	82.618	3.1280	140.20	102.44	97.242	7.9647	55.336
#1	.00044	.12713	.00176	.00132	.00136	.00129	.00025
#2	.00111	.12505	.01040	.00029	.00019	.00111	.00084
#3	.00273	.11962	-.00014	.00400	.00039	.00125	.00096
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7666.9	44676.	2932.8
Stddev	38.9	621.	82.3
%RSD	.50787	1.3906	2.8070
#1	7702.9	43965.	2855.3
#2	7672.3	44948.	2924.0
#3	7625.6	45114.	3019.3

Approved: June 15, 2016

Sample Name: L1606044201 Acquired: 6/14/2016 15:03:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.06775	-.00099	.01077	.03792	-.00001	35.951	-.00002
Stddev	.00142	.00217	.00121	.00116	.00058	.00005	.612	.00015
%RSD	348.65	3.2042	122.65	10.798	1.5279	465.80	1.7012	664.77
#1	.00196	.06598	.00017	.01186	.03726	-.00007	35.720	.00013
#2	.00012	.07017	-.00089	.01091	.03837	.00001	36.644	-.00003
#3	-.00085	.06710	-.00225	.00954	.03812	.00003	35.488	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00012	.00190	.00069	.05905	.42169	.00245	3.0962	.00091
Stddev	.00010	.00056	.00055	.02738	.02928	.00330	.1260	.00190
%RSD	80.494	29.481	79.975	46.366	6.9432	134.62	4.0706	208.96
#1	-.00020	.00126	.00073	.03276	.45069	.00189	2.9539	.00060
#2	-.00014	.00230	.00012	.05700	.42224	-.00053	3.1938	.00294
#3	-.00001	.00214	.00121	.08740	.39214	.00600	3.1408	-.00082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00034	2.0353	.00145	.00938	-.00048	.00198	.00441	3.1225
Stddev	.00019	.0518	.00087	.00904	.00251	.00080	.00294	.0016
%RSD	55.912	2.5449	59.807	96.346	525.99	40.298	66.533	.05125
#1	-.00049	1.9937	.00071	.01109	-.00213	.00290	.00200	3.1219
#2	-.00013	2.0933	.00123	.01744	.00241	.00157	.00768	3.1213
#3	-.00042	2.0188	.00240	-.00039	-.00170	.00147	.00356	3.1243
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606044201 Acquired: 6/14/2016 15:03:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.07580	.00001	-.00149	.00037	.00103	.00011
Stddev	.00073	.00107	.00444	.00076	.00054	.00017	.00074
%RSD	234.83	1.4172	51040.	51.307	145.88	16.090	641.66
#1	-.00003	.07488	-.00391	-.00109	.00088	.00100	-.00028
#2	.00114	.07698	-.00090	-.00101	.00042	.00088	-.00035
#3	-.00019	.07554	.00484	-.00237	-.00019	.00121	.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7655.1	45324.	2926.6
Stddev	29.2	249.	58.7
%RSD	.38133	.55021	2.0066
#1	7676.9	45217.	2926.8
#2	7666.3	45609.	2867.8
#3	7621.9	45147.	2985.2

Approved: June 15, 2016

Sample Name: L1606044202 Acquired: 6/14/2016 15:07:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00071	5.0155	.00085	.01962	.10381	.00031	39.957	.00007
Stddev	.00079	.0624	.00173	.00170	.00182	.00003	.627	.00016
%RSD	111.37	1.2437	203.52	8.6473	1.7492	9.8758	1.5704	222.28
#1	.00002	5.0432	.00250	.02129	.10566	.00030	40.269	-.00011
#2	-.00155	4.9441	.00099	.01968	.10375	.00028	40.367	.00015
#3	-.00061	5.0593	-.00094	.01790	.10203	.00034	39.235	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00219	.00739	.00574	6.1191	1.5761	.00646	7.3380	.11606
Stddev	.00008	.00089	.00034	.0746	.0682	.00451	.0440	.00358
%RSD	3.8501	12.059	6.0032	1.2197	4.3287	69.752	.59930	3.0856
#1	.00228	.00660	.00556	6.1907	1.6008	.00290	7.3655	.11479
#2	.00219	.00836	.00614	6.1247	1.6286	.01153	7.3612	.12010
#3	.00211	.00723	.00552	6.0418	1.4990	.00496	7.2873	.11328
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	3.1686	.00652	.09920	.00355	-.00101	.00107	10.533
Stddev	.00027	.0466	.00088	.00648	.00250	.00236	.00267	.025
%RSD	263.85	1.4714	13.431	6.5323	70.426	232.59	249.65	.24009
#1	.00020	3.2130	.00712	.09543	.00123	-.00323	.00091	10.515
#2	-.00032	3.1727	.00552	.09549	.00620	.00146	-.00152	10.521
#3	-.00019	3.1200	.00693	.10668	.00323	-.00126	.00381	10.562
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606044202 Acquired: 6/14/2016 15:07:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00079	.11398	.05807	.00114	.00826	.03322	.00109
Stddev	.00157	.00167	.00612	.00182	.00050	.00019	.00037
%RSD	199.48	1.4686	10.542	159.45	6.0809	.58566	33.428
#1	.00158	.11525	.05991	.00303	.00851	.03341	.00151
#2	.00179	.11461	.05123	.00098	.00768	.03302	.00096
#3	-.00102	.11208	.06305	-.00059	.00859	.03324	.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7634.9	44727.	2918.7
Stddev	9.8	314.	31.4
%RSD	.12817	.70175	1.0746
#1	7633.5	44505.	2917.5
#2	7645.4	45086.	2887.9
#3	7626.0	44591.	2950.6

Approved: June 15, 2016

Sample Name: L1606044203 Acquired: 6/14/2016 15:11:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	s .00054	s .01992	s .00079	s -.00118	.62846	s .00046
Stddev	.00276	.07964	.00274	.00294	.88673	.00068
%RSD	516.65	399.70	348.55	248.40	141.10	147.45
#1	s .00325	s -.02648	s .00359	s .00146	1.6429	s .00010
#2	.00063	-.02563	.00066	-.00067	.24135	.00003
#3	s -.00228	s .11188	k -.00189	s -.00434	.00111	s .00124
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Elem	Ca4226	Cd2288	Co2286	Cr2677	Cu2247	Fe2611
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -30.820	s .00004	s .00110	s .00140	s -.00014	k 2.7346
Stddev	49.164	.00019	.00135	.00266	.00100	4.0096
%RSD	159.52	483.93	122.55	190.52	710.88	146.62
#1	-87.516	s -.00017	s .00078	s .00078	s -.00118	k 7.3417
#2	-4.9774	.00017	.00259	-.00090	-.00007	.82745
#3	.0328	k .00012	k -.00005	s .00432	k .00082	k .03457
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	270.00					
Low Limit	-.10000					

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	29.752	F -1.7197	k 13.519	k .30236	s -.00125	F -24.342
Stddev	54.733	1.8429	21.494	.55439	.00062	36.570
%RSD	183.96	107.16	158.98	183.36	50.004	150.23
#1	92.919	-3.6653	k 38.307	k .94211	s -.00196	-66.396
#2	-3.5891	-1.4933	2.2059	-.03735	-.00080	-6.6160
#3	-.07354	-.00043	k .04565	k .00232	k -.00098	-.0131
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit		36.000				270.00
Low Limit		-.10000				-.50000

Approved: June 15, 2016

Sample Name: L1606044203 Acquired: 6/14/2016 15:11:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	s **-.00058**	s **-.01024**	sF **-.00505**	s **.00295**	s **.00306**	s **.01376**
Stddev	.00345	.01054	.01028	.00401	.00551	.03196
%RSD	591.14	102.97	203.73	135.92	179.85	232.32
#1	s -.00452	s -.02193	s -.01686	s .00414	s .00942	s .05066
#2	.00083	-.00146	.00190	.00623	-.00002	-.00396
#3	k .00194	k -.00732	k -.00019	k -.00152	k -.00022	k -.00542
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit			225.00			
Low Limit			-.00500			

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	s **-.00050**	F **-.03956**	kF **-6.3621**	s **-.00132**	s **-.00018**	s **-.00031**
Stddev	.00218	.15821	9.6749	.00091	.00194	.00014
%RSD	434.82	399.95	152.07	69.394	1053.7	44.620
#1	s .00030	-.21371	k -17.496	s -.00139	s -.00009	s -.00015
#2	-.00296	.09528	-1.5844	-.00219	.00171	-.00039
#3	k .00116	-.00024	k -.0054	k -.00037	s -.00217	k -.00039
Check ?	Chk Pass	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit		9.0000	36.000			
Low Limit		-.01000	-.03000			

Elem	Zr3391
Units	ppm
Avg	kF **-.27723**
Stddev	.50436
%RSD	181.93
#1	k -.85940
#2	.02775
#3	k -.00005
Check ?	Chk Fail
High Limit	36.000
Low Limit	-.04000

Approved: June 15, 2016

Sample Name: L1606044203 Acquired: 6/14/2016 15:11:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	^ *****	^ *****	939.44
Stddev	-----	-----	1604.6
%RSD	-----	-----	170.80
#1	^ -----	^ -----	2.742
#2	10803.	61946.	23.363
#3	11948.	^ -----	2792.2

Approved: June 15, 2016

Sample Name: L1606044204 Acquired: 6/14/2016 15:15:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00035	.90382	.00126	.01646	.06374	.00013	38.916	-.00008
Stddev	.00097	.00368	.00341	.00103	.00081	.00012	.215	.00023
%RSD	272.85	.40767	270.34	6.2701	1.2688	94.647	.55343	301.83
#1	.00073	.89997	.00520	.01752	.06458	.00025	38.910	.00019
#2	-.00068	.90731	-.00052	.01546	.06370	.00001	38.704	-.00025
#3	-.00111	.90418	-.00089	.01639	.06296	.00012	39.134	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	.00180	.00686	1.3185	.73503	.00102	7.3251	.04660
Stddev	.00032	.00100	.00056	.0217	.01613	.00271	.0264	.00175
%RSD	59.950	55.538	8.1129	1.6466	2.1949	265.70	.36005	3.7497
#1	.00091	.00085	.00634	1.3024	.75359	.00040	7.3547	.04459
#2	.00031	.00171	.00679	1.3100	.72439	-.00132	7.3167	.04767
#3	.00040	.00284	.00745	1.3432	.72711	.00398	7.3040	.04755
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00033	2.8064	.00247	.05513	.00250	.00200	.00793	4.9379
Stddev	.00054	.0316	.00060	.00939	.00208	.00056	.00531	.0407
%RSD	165.02	1.1270	24.108	17.022	83.219	28.057	66.981	.82438
#1	-.00095	2.8419	.00296	.06417	.00327	.00152	.00197	4.9840
#2	.00008	2.7963	.00266	.05580	.00014	.00185	.00964	4.9070
#3	-.00013	2.7812	.00181	.04543	.00407	.00262	.01217	4.9226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606044204 Acquired: 6/14/2016 15:15:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00162	.12336	.00737	-.00004	.00081	.02701	.00020
Stddev	.00073	.00030	.00493	.00400	.00098	.00014	.00044
%RSD	45.314	.24134	66.822	9146.5	121.00	.50285	221.72
#1	.00132	.12370	.00982	.00257	.00193	.02712	.00002
#2	.00245	.12317	.01060	.00195	.00035	.02704	-.00013
#3	.00108	.12320	.00170	-.00465	.00014	.02686	.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7754.1	45315.	2957.6
Stddev	42.8	241.	20.0
%RSD	.55216	.53105	.67617
#1	7707.7	45257.	2940.2
#2	7762.5	45108.	2979.4
#3	7792.1	45579.	2953.2

Approved: June 15, 2016

Sample Name: L1606044205 Acquired: 6/14/2016 15:20:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00049	.67935	.00094	.01451	.11454	.00004	54.607	.00007
Stddev	.00105	.01333	.00197	.00060	.00113	.00009	.192	.00005
%RSD	216.84	1.9628	209.41	4.1071	.98534	237.97	.35243	81.897
#1	-.00062	.68505	-.00069	.01451	.11548	-.00004	54.798	.00007
#2	.00063	.68889	.00039	.01392	.11485	.00001	54.610	.00001
#3	-.00147	.66411	.00312	.01511	.11329	.00014	54.413	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.00260	.00117	.77831	.74549	.00402	7.3643	.03508
Stddev	.00033	.00046	.00160	.03294	.04549	.00151	.0950	.00178
%RSD	210.03	17.659	136.21	4.2323	6.1016	37.607	1.2902	5.0604
#1	.00047	.00253	-.00046	.74129	.75116	.00498	7.2563	.03661
#2	.00019	.00310	.00274	.80440	.78787	.00228	7.4350	.03313
#3	-.00019	.00219	.00124	.78923	.69743	.00481	7.4015	.03549
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	2.8626	.00154	.03129	.00208	-.00346	.00510	5.3358
Stddev	.00020	.0203	.00043	.00486	.00307	.00175	.00021	.0265
%RSD	154.01	.70797	27.735	15.544	147.86	50.678	4.1587	.49572
#1	.00007	2.8660	.00198	.02813	.00046	-.00147	.00487	5.3137
#2	-.00013	2.8810	.00154	.03689	.00562	-.00479	.00529	5.3651
#3	-.00033	2.8409	.00112	.02884	.00015	-.00412	.00514	5.3286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606044205 Acquired: 6/14/2016 15:20:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00152	.17678	.00473	.00077	.00066	.00321	.00048
Stddev	.00030	.00079	.00381	.00153	.00117	.00019	.00029
%RSD	19.441	.44752	80.498	198.57	177.07	5.9449	59.784
#1	.00124	.17746	.00780	-.00013	-.00000	.00326	.00079
#2	.00149	.17696	.00047	.00253	.00200	.00337	.00022
#3	.00183	.17591	.00592	-.00010	-.00003	.00300	.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7713.4	44825.	2930.5
Stddev	21.8	248.	11.9
%RSD	.28287	.55396	.40531
#1	7736.6	44748.	2927.0
#2	7693.3	44625.	2920.8
#3	7710.4	45103.	2943.8

Approved: June 15, 2016

Sample Name: L1606044206 Acquired: 6/14/2016 15:23:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.78971	-.00105	.02039	.07992	.00008	53.195	-.00010
Stddev	.00155	.00820	.00371	.00081	.00125	.00008	.554	.00029
%RSD	508.09	1.0389	353.17	3.9831	1.5583	100.42	1.0419	282.75
#1	.00023	.79790	.00046	.01948	.08059	.00013	53.801	.00022
#2	.00189	.78149	-.00527	.02104	.08069	-.00001	53.072	-.00034
#3	-.00121	.78974	.00167	.02065	.07848	.00013	52.713	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	.00218	.00231	.87911	1.0840	.00272	6.9008	.03949
Stddev	.00019	.00073	.00097	.03512	.2109	.00171	.0985	.00186
%RSD	73.437	33.617	42.108	3.9953	19.456	62.810	1.4280	4.7025
#1	.00043	.00209	.00140	.91957	1.2558	.00097	6.8220	.03940
#2	.00032	.00150	.00333	.85641	.84863	.00437	6.8691	.03768
#3	.00005	.00296	.00220	.86136	1.1476	.00281	7.0113	.04140
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00047	3.2767	.00138	.04207	-.00010	-.00210	.00767	5.0194
Stddev	.00013	.0160	.00064	.00473	.00080	.00565	.00218	.0064
%RSD	28.605	.48933	46.377	11.253	818.94	268.51	28.392	.12725
#1	-.00057	3.2941	.00064	.03682	-.00100	-.00176	.01018	5.0185
#2	-.00051	3.2735	.00166	.04601	.00051	.00336	.00623	5.0262
#3	-.00032	3.2625	.00182	.04339	.00020	-.00792	.00660	5.0135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606044206 Acquired: 6/14/2016 15:23:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00044	.19373	.00199	.00119	.00131	.01675	.00042
Stddev	.00092	.00071	.00447	.00133	.00002	.00007	.00052
%RSD	209.64	.36464	224.35	111.45	1.5482	.40557	125.48
#1	-.00054	.19434	-.00133	.00085	.00129	.01673	.00092
#2	.00058	.19390	.00023	.00266	.00131	.01683	-.00012
#3	.00128	.19296	.00708	.00007	.00133	.01670	.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7704.3	44843.	2915.4
Stddev	16.8	228.	40.0
%RSD	.21830	.50801	1.3718
#1	7717.5	44737.	2891.9
#2	7685.4	44688.	2892.8
#3	7710.1	45105.	2961.6

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 15:27:59 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37019**	**9.2290**	**.36188**	**.46327**	**.90739**	**.04601**	F **8.9539**
Stddev	.00352	.0830	.00051	.00383	.00395	.00055	.0256
%RSD	.95044	.89904	.14152	.82653	.43543	1.1953	.28644
#1	.36957	9.2356	.36242	.46323	.90732	.04595	8.9702
#2	.37398	9.3084	.36182	.46711	.90347	.04659	8.9243
#3	.36703	9.1429	.36140	.45945	.91138	.04550	8.9671
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
Value							10.000
Range							-10.000%

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04629**	**.18621**	**.46236**	**.46486**	**3.6336**	**45.441**	**.90441**
Stddev	.00013	.00071	.00538	.00058	.0480	.162	.00628
%RSD	.27125	.37872	1.1625	.12502	1.3206	.35748	.69435
#1	.04642	.18549	.46097	.46537	3.6051	45.473	.91153
#2	.04626	.18690	.46830	.46500	3.6068	45.265	.89964
#3	.04617	.18624	.45782	.46423	3.6890	45.585	.90207
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **8.9682**	**.45212**	**.92258**	**45.466**	**.46577**	**9.2421**	**.46721**
Stddev	.0196	.00369	.00353	.238	.00181	.0276	.00534
%RSD	.21844	.81578	.38249	.52331	.38795	.29887	1.1433
#1	8.9475	.44813	.92401	45.430	.46725	9.2441	.46738
#2	8.9707	.45281	.92516	45.249	.46631	9.2686	.47247
#3	8.9864	.45541	.91856	45.720	.46376	9.2135	.46179
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	10.000						
Range	-10.000%						

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 15:27:59 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.1065	.36190	4.6690	.92220	.90503	F .89756	.46070
Stddev	.0037	.01232	.0140	.00277	.00456	.00795	.00212
%RSD	.33129	3.4043	.29997	.30051	.50383	.88590	.46092
#1	1.1081	.36969	4.6626	.92337	.90591	.89217	.46276
#2	1.1091	.36831	4.6851	.92420	.90009	.89383	.46083
#3	1.1023	.34769	4.6594	.91904	.90909	.90670	.45852
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
Value						1.0000	
Range						-10.000%	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.92561	.93083	.93804
Stddev	.01088	.00205	.00891
%RSD	1.1754	.22003	.95026
#1	.92367	.92865	.94614
#2	.93733	.93272	.92849
#3	.91583	.93112	.93949
Check ?	Chk Pass	Chk Pass	Chk Pass
Value			
Range			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8391.5	48659.	3170.6
Stddev	26.5	196.	26.9
%RSD	.31626	.40316	.84886
#1	8395.5	48726.	3156.5
#2	8363.2	48438.	3201.6
#3	8415.8	48813.	3153.5

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 15:31:41 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	.00829	-.00086	.00211	.00086	.00005	.00731	-.00017
Stddev	.00171	.00239	.00363	.00085	.00009	.00009	.02393	.00012
%RSD	322.91	28.835	422.57	40.186	10.518	197.52	327.25	66.290
#1	-.00117	.00574	-.00029	.00137	.00093	.00011	-.01856	-.00026
#2	.00225	.01047	-.00474	.00193	.00089	.00008	.02865	-.00022
#3	.00051	.00865	.00245	.00304	.00076	-.00006	.01185	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	-.00053	.00005	.02835	-.14787	.00015	.01936	-.00097
Stddev	.00030	.00040	.00111	.01256	.07615	.00395	.08605	.00385
%RSD	220.00	75.448	2129.9	44.295	51.500	2718.9	444.45	395.98
#1	.00048	-.00061	.00073	.03420	-.23525	.00325	-.07841	-.00207
#2	-.00002	-.00089	-.00123	.03692	-.09564	-.00430	.08356	-.00415
#3	-.00006	-.00010	.00066	.01394	-.11271	.00148	.05293	.00331
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00178	-.01343	.00079	.00419	-.00178	-.00120	.00084	.00142
Stddev	.00043	.01144	.00060	.00347	.00174	.00401	.00240	.00094
%RSD	24.300	85.175	76.408	82.936	98.074	334.16	286.95	66.123
#1	.00130	-.01354	.00009	.00166	-.00282	.00277	.00165	.00060
#2	.00189	-.02481	.00114	.00814	.00024	-.00526	-.00187	.00123
#3	.00214	-.00194	.00113	.00275	-.00275	-.00111	.00273	.00245
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 15:31:41 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00144**	**-.00015**	**.00829**	**.00071**	**.00060**	**-.00027**	**.00048**
Stddev	.00021	.00025	.00385	.00305	.00095	.00032	.00041
%RSD	14.613	163.08	46.437	430.49	160.23	118.65	85.624
#1	.00121	.00009	.00834	.00148	.00103	.00010	.00005
#2	.00162	-.00013	.01212	.00330	-.00050	-.00049	.00086
#3	.00148	-.00041	.00442	-.00265	.00126	-.00042	.00052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8439.4**	**49045.**	**3190.3**
Stddev	36.7	215.	18.8
%RSD	.43529	.43903	.58776
#1	8448.0	49185.	3203.4
#2	8471.1	48797.	3198.8
#3	8399.1	49153.	3168.8

Approved: June 15, 2016

Sample Name: L1606044301 Acquired: 6/14/2016 15:35:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00083	.94483	-.00077	.01655	.05842	.00010	55.517	.00001
Stddev	.00080	.01282	.00471	.00060	.00033	.00009	.209	.00003
%RSD	95.507	1.3568	611.07	3.6218	.57276	90.815	.37579	373.01
#1	-.00007	.95472	-.00053	.01678	.05819	.00014	55.734	.00001
#2	.00144	.94943	.00381	.01699	.05880	-.00000	55.318	-.00003
#3	.00112	.93035	-.00559	.01587	.05826	.00016	55.497	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.00140	.00161	.82585	1.5152	-.00017	11.041	.02198
Stddev	.00008	.00028	.00042	.00767	.0714	.00158	.206	.00163
%RSD	19.490	19.904	26.087	.92853	4.7105	944.41	1.8614	7.4226
#1	.00039	.00135	.00200	.83241	1.4975	-.00085	11.122	.02056
#2	.00034	.00114	.00116	.81742	1.5938	-.00129	10.807	.02377
#3	.00050	.00169	.00167	.82772	1.4544	.00164	11.193	.02162
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	4.2627	.00174	.03928	.00201	-.00196	.00097	5.0783
Stddev	.00019	.0574	.00030	.00947	.00245	.00241	.00332	.0117
%RSD	107.79	1.3460	17.454	24.109	121.41	123.00	340.48	.23054
#1	.00006	4.2825	.00193	.03192	.00032	-.00293	.00301	5.0875
#2	.00007	4.1981	.00139	.03595	.00090	-.00372	.00277	5.0823
#3	.00039	4.3076	.00189	.04996	.00482	.00079	-.00285	5.0652
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606044301 Acquired: 6/14/2016 15:35:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00087	.12664	.01000	-.00067	.00186	.01953	.00143
Stddev	.00045	.00010	.00269	.00183	.00034	.00002	.00023
%RSD	51.898	.07772	26.930	275.48	18.205	.10556	16.329
#1	.00048	.12675	.00833	-.00275	.00147	.01953	.00148
#2	.00077	.12659	.01310	.00071	.00199	.01950	.00118
#3	.00136	.12658	.00856	.00004	.00211	.01954	.00163
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7648.5	44599.	2914.5
Stddev	13.7	198.	16.7
%RSD	.17869	.44313	.57148
#1	7641.1	44599.	2897.3
#2	7664.3	44401.	2915.7
#3	7640.1	44796.	2930.6

Approved: June 15, 2016

Sample Name: L1606044302 Acquired: 6/14/2016 15:39:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	.31425	-.00280	.01501	.05999	.00004	43.485	.00009
Stddev	.00169	.00500	.00193	.00271	.00104	.00007	.260	.00043
%RSD	277.77	1.5906	68.793	18.086	1.7418	172.00	.59711	457.14
#1	.00194	.31017	-.00058	.01188	.05978	.00010	43.752	-.00030
#2	-.00129	.31276	-.00400	.01667	.06112	.00006	43.472	.00054
#3	.00117	.31983	-.00384	.01648	.05906	-.00004	43.233	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00041	.00018	.43885	.23787	.49483	.00015	5.4956	.00096
Stddev	.00027	.00085	.00144	.01500	.03424	.00236	.0245	.00030
%RSD	65.688	471.53	.32740	6.3079	6.9196	1550.7	.44681	31.612
#1	-.00040	.00091	.43984	.24714	.53194	-.00252	5.4992	.00128
#2	-.00014	.00037	.43951	.22056	.48812	.00103	5.4694	.00068
#3	-.00068	-.00075	.43720	.24590	.46445	.00195	5.5182	.00092
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	3.0559	.00190	.12813	.00381	.00193	-.00055	4.9185
Stddev	.00026	.0336	.00040	.01180	.00387	.00142	.00988	.0138
%RSD	68.764	1.1012	20.993	9.2062	101.58	73.572	1785.6	.28151
#1	-.00066	3.0532	.00162	.13002	.00128	.00266	.01043	4.9342
#2	-.00037	3.0909	.00236	.13887	.00826	.00285	-.00870	4.9078
#3	-.00013	3.0238	.00173	.11551	.00188	.00029	-.00340	4.9136
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606044302 Acquired: 6/14/2016 15:39:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.15898	.00558	.00058	.00106	.09812	.00095
Stddev	.00108	.00135	.00502	.00238	.00029	.00040	.00063
%RSD	330.35	.84703	89.858	410.53	26.892	.40424	66.505
#1	.00004	.15983	.00119	.00319	.00098	.09808	.00035
#2	.00152	.15968	.01105	-.00147	.00138	.09853	.00161
#3	-.00058	.15742	.00451	.00002	.00083	.09774	.00089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7669.7	44854.	2899.8
Stddev	24.4	236.	14.7
%RSD	.31765	.52585	.50829
#1	7666.9	44611.	2885.4
#2	7646.9	44869.	2899.1
#3	7695.4	45082.	2914.8

Approved: June 15, 2016

Sample Name: L1606044303 Acquired: 6/14/2016 15:43:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00192	.06868	.00062	.01204	.02592	-.00003	47.125	-.00016
Stddev	.00223	.00330	.00339	.00465	.00096	.00004	.501	.00017
%RSD	115.82	4.7994	550.31	38.640	3.7083	111.70	1.0633	107.83
#1	.00395	.06487	.00075	.00713	.02610	-.00000	47.635	-.00003
#2	.00229	.07073	-.00284	.01639	.02678	-.00002	47.105	-.00010
#3	-.00046	.07042	.00394	.01260	.02488	-.00007	46.634	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.00071	.00154	.05952	.86052	.00487	5.3933	.00488
Stddev	.00031	.00079	.00044	.02152	.11673	.00275	.0232	.00290
%RSD	1753.1	110.70	28.366	36.162	13.565	56.602	.43099	59.379
#1	.00038	.00160	.00178	.04194	.95094	.00788	5.4060	.00389
#2	-.00011	.00009	.00182	.08353	.72874	.00426	5.4074	.00815
#3	-.00021	.00045	.00104	.05310	.90188	.00247	5.3665	.00261
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	3.4088	.00121	.10337	-.00263	.00085	.00133	4.2146
Stddev	.00019	.0392	.00040	.00520	.00140	.00243	.00426	.0129
%RSD	117.75	1.1508	32.874	5.0262	53.377	287.74	320.72	.30560
#1	-.00036	3.4506	.00127	.09962	-.00102	.00363	-.00276	4.2293
#2	-.00015	3.3728	.00079	.10120	-.00360	-.00088	.00100	4.2095
#3	.00002	3.4030	.00158	.10930	-.00327	-.00021	.00574	4.2050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606044303 Acquired: 6/14/2016 15:43:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.13830	-.00843	.00082	-.00023	.00100	.00069
Stddev	.00054	.00099	.00311	.00249	.00049	.00009	.00031
%RSD	249.80	.71918	36.859	303.24	216.47	8.9909	45.504
#1	-.00006	.13944	-.01026	.00312	.00032	.00107	.00070
#2	-.00013	.13790	-.01018	-.00182	-.00036	.00090	.00037
#3	.00084	.13758	-.00484	.00116	-.00064	.00103	.00099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7655.8	45074.	2925.2
Stddev	25.7	330.	40.5
%RSD	.33624	.73106	1.3836
#1	7628.7	44706.	2879.2
#2	7680.0	45173.	2941.2
#3	7658.6	45343.	2955.3

Approved: June 15, 2016

Sample Name: L1606044601 Acquired: 6/14/2016 15:47:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00080	.03283	-.00210	.01285	.08206	.00004	28.822	-.00008
Stddev	.00146	.00667	.00072	.00446	.00077	.00005	.286	.00026
%RSD	182.20	20.307	34.086	34.746	.93723	123.48	.99355	320.10
#1	-.00072	.02516	-.00128	.01161	.08195	.00010	29.141	-.00037
#2	.00062	.03606	-.00244	.00913	.08135	.00003	28.587	-.00001
#3	-.00231	.03726	-.00258	.01780	.08288	-.00000	28.738	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.00140	.05688	.81359	.41082	.00176	5.4125	.36346
Stddev	.00031	.00107	.00111	.01675	.05974	.00276	.1335	.00176
%RSD	2959.0	76.740	1.9535	2.0591	14.541	156.52	2.4660	.48543
#1	.00034	.00232	.05816	.81207	.43404	.00005	5.5071	.36470
#2	-.00004	.00022	.05630	.79765	.34295	.00494	5.2598	.36425
#3	-.00027	.00166	.05619	.83105	.45545	.00029	5.4706	.36144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00060	11.894	.00143	.04483	-.00076	.00045	.00040	5.6474
Stddev	.00054	.103	.00087	.00510	.00348	.00096	.00380	.0084
%RSD	90.785	.86679	61.013	11.379	456.15	215.61	960.82	.14967
#1	-.00099	12.013	.00187	.03900	-.00157	.00108	-.00219	5.6569
#2	-.00083	11.848	.00198	.04848	-.00376	-.00066	.00476	5.6443
#3	.00002	11.823	.00042	.04701	.00305	.00092	-.00138	5.6409
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606044601 Acquired: 6/14/2016 15:47:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00085	.13394	.00143	.00015	-.00060	.02010	.00054
Stddev	.00025	.00125	.00347	.00203	.00054	.00005	.00081
%RSD	29.080	.93161	241.50	1315.7	89.901	.23060	150.64
#1	.00106	.13536	.00534	-.00042	-.00018	.02011	.00065
#2	.00058	.13344	.00022	.00241	-.00041	.02014	-.00032
#3	.00091	.13302	-.00126	-.00152	-.00120	.02005	.00129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7671.8	44661.	2894.4
Stddev	24.4	417.	52.3
%RSD	.31835	.93286	1.8066
#1	7645.6	44196.	2844.2
#2	7675.9	44787.	2890.5
#3	7694.0	45001.	2948.5

Approved: June 15, 2016

Sample Name: L1606044701 Acquired: 6/14/2016 15:51:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00040	.01675	-.00233	.01185	.08080	.00001	107.29	.00013
Stddev	.00263	.00406	.00217	.00379	.00030	.00012	.64	.00027
%RSD	652.02	24.229	93.196	31.979	.37610	2143.5	.59439	211.01
#1	-.00083	.01266	-.00072	.01620	.08068	-.00014	108.02	-.00017
#2	.00241	.02077	-.00480	.01003	.08115	.00008	107.00	.00020
#3	-.00279	.01682	-.00147	.00931	.08058	.00008	106.84	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	.00157	.06676	.02685	1.0096	.00493	8.2299	.00074
Stddev	.00010	.00075	.00043	.01320	.1054	.00459	.0218	.00075
%RSD	62.888	47.612	.65037	49.178	10.443	93.171	.26502	101.69
#1	-.00026	.00177	.06691	.02916	1.1302	.00948	8.2537	.00001
#2	-.00016	.00220	.06709	.01264	.93506	.00029	8.2252	.00069
#3	-.00006	.00074	.06627	.03875	.96343	.00501	8.2108	.00151
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00064	5.5572	.00069	.02575	.00281	-.00010	.00314	4.8264
Stddev	.00034	.0190	.00058	.00140	.00068	.00467	.00191	.0154
%RSD	53.302	.34155	83.998	5.4386	24.061	4744.8	60.793	.31803
#1	-.00101	5.5638	.00047	.02474	.00350	.00031	.00197	4.8287
#2	-.00059	5.5358	.00025	.02517	.00277	.00436	.00212	4.8405
#3	-.00033	5.5720	.00134	.02735	.00215	-.00496	.00535	4.8100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606044701 Acquired: 6/14/2016 15:51:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00126	.28580	-.01963	-.00067	-.00037	.05982	-.00015
Stddev	.00057	.00037	.00570	.00284	.00063	.00030	.00078
%RSD	45.524	.12779	29.018	425.88	170.42	.49562	508.44
#1	.00063	.28566	-.02579	-.00097	.00033	.06010	-.00077
#2	.00139	.28622	-.01455	.00231	-.00055	.05984	-.00043
#3	.00176	.28553	-.01855	-.00334	-.00088	.05951	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7550.7	44078.	2904.1
Stddev	3.5	167.	29.8
%RSD	.04633	.37836	1.0246
#1	7552.5	44215.	2874.7
#2	7553.0	43893.	2903.3
#3	7546.7	44127.	2934.2

Approved: June 15, 2016

Sample Name: L1606044203 Acquired: 6/14/2016 15:55:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00131	11.112	.00161	.02302	.15599	.00065	37.525	.00016
Stddev	.00136	.042	.00103	.00167	.00104	.00010	.057	.00010
%RSD	103.90	.37520	63.879	7.2535	.66564	15.171	.15132	62.036
#1	.00007	11.083	.00155	.02421	.15676	.00056	37.564	.00012
#2	-.00135	11.093	.00061	.02112	.15481	.00075	37.550	.00028
#3	-.00264	11.160	.00266	.02374	.15639	.00063	37.459	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00456	.01455	.01003	12.098	3.0486	.01840	7.6211	.19756
Stddev	.00057	.00205	.00098	.042	.0756	.00083	.0508	.00057
%RSD	12.525	14.093	9.7234	.34548	2.4813	4.5384	.66641	.28648
#1	.00390	.01360	.00937	12.140	3.1033	.01749	7.5668	.19812
#2	.00484	.01691	.01115	12.098	2.9623	.01857	7.6289	.19757
#3	.00492	.01315	.00958	12.056	3.0802	.01914	7.6675	.19699
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	3.0577	.01273	.19586	.00832	-.00305	.00300	18.992
Stddev	.00032	.0079	.00024	.00861	.00057	.00238	.00382	.087
%RSD	247.33	.25810	1.8938	4.3984	6.8097	77.867	127.64	.45862
#1	-.00048	3.0622	.01281	.18736	.00844	-.00539	-.00003	18.908
#2	.00017	3.0624	.01246	.19565	.00771	-.00313	.00172	19.082
#3	-.00008	3.0486	.01292	.20459	.00883	-.00064	.00730	18.988
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606044203 Acquired: 6/14/2016 15:55:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00147	.11444	.12341	.00291	.01817	.08390	.00170
Stddev	.00018	.00085	.00681	.00156	.00050	.00046	.00033
%RSD	12.268	.74678	5.5166	53.415	2.7290	.55383	19.220
#1	.00164	.11399	.12441	.00260	.01804	.08339	.00138
#2	.00149	.11390	.11615	.00460	.01775	.08402	.00204
#3	.00128	.11542	.12966	.00153	.01872	.08429	.00169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7772.8	45486.	2934.4
Stddev	39.2	53.	6.6
%RSD	.50428	.11606	.22468
#1	7810.2	45505.	2928.1
#2	7776.3	45426.	2941.3
#3	7732.0	45526.	2933.7

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 15:59:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.38891	9.7125	.37998	.48822	.95091	.04849	9.4023	.04812
Stddev	.00293	.0408	.00051	.00240	.00479	.00025	.0796	.00022
%RSD	.75420	.42011	.13412	.49100	.50342	.51406	.84648	.46490
#1	.39225	9.7596	.38013	.48582	.94841	.04866	9.3911	.04830
#2	.38673	9.6873	.38039	.49062	.94788	.04860	9.3290	.04820
#3	.38777	9.6907	.37941	.48822	.95643	.04820	9.4870	.04787
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19607	.48779	.48916	3.8239	47.366	.94326	9.4722	.47492
Stddev	.00107	.00373	.00382	.0265	.180	.00342	.0706	.00305
%RSD	.54588	.76387	.78192	.69417	.38084	.36297	.74564	.64195
#1	.19710	.49112	.49085	3.7947	47.206	.94177	9.5253	.47291
#2	.19497	.48850	.48478	3.8467	47.331	.94083	9.4993	.47341
#3	.19614	.48376	.49184	3.8302	47.562	.94718	9.3920	.47843
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.96730	47.630	.49065	9.7031	.49070	1.1679	.37988	4.8920
Stddev	.00778	.255	.00409	.0539	.00399	.0060	.00902	.0247
%RSD	.80397	.53592	.83410	.55504	.81226	.51680	2.3738	.50458
#1	.97622	47.436	.49475	9.7545	.49529	1.1715	.38855	4.9124
#2	.96196	47.534	.48657	9.6471	.48808	1.1714	.37055	4.8645
#3	.96371	47.919	.49064	9.7076	.48873	1.1610	.38052	4.8991
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 15:59:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.96738	.94921	.93495	.48534	.97439	.97833	.98533
Stddev	.00366	.00545	.00103	.00596	.00678	.00607	.00704
%RSD	.37794	.57410	.11058	1.2280	.69586	.62056	.71495
#1	.97078	.94734	.93568	.49181	.97746	.98512	.99347
#2	.96351	.94494	.93377	.48008	.97910	.97344	.98140
#3	.96783	.95535	.93541	.48412	.96662	.97641	.98113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8114.7	46873.	3071.7
Stddev	23.9	188.	13.5
%RSD	.29483	.40094	.43845
#1	8091.4	46745.	3061.4
#2	8113.4	47089.	3086.9
#3	8139.2	46787.	3066.6

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 16:03:09 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00063**	**.00601**	**.00010**	**.00281**	**.00034**	**.00004**	**-.00166**	**-.00003**
Stddev	.00178	.00640	.00377	.00038	.00089	.00005	.02435	.00020
%RSD	283.54	106.40	3764.9	13.448	258.27	122.00	1470.6	590.98
#1	.00005	-.00106	-.00403	.00239	-.00024	-.00002	-.01899	-.00027
#2	-.00265	.00771	.00335	.00313	.00137	.00008	-.01216	.00007
#3	.00071	.01139	.00098	.00291	-.00009	.00007	.02618	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**-.00030**	**.00036**	**.01279**	**-.12005**	**-.00056**	**-.05022**	**-.00285**
Stddev	.00069	.00092	.00100	.01697	.07647	.00076	.13069	.00065
%RSD	1776.4	305.09	273.63	132.65	63.699	136.14	260.22	22.979
#1	-.00008	-.00071	.00041	-.00644	-.04591	-.00090	.09093	-.00216
#2	.00067	.00075	.00133	.02567	-.11558	-.00108	-.16704	-.00346
#3	-.00070	-.00095	-.00066	.01914	-.19866	.00031	-.07456	-.00293
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00151**	**-.03119**	**.00106**	**.00584**	**.00053**	**-.00247**	**-.00147**	**.00152**
Stddev	.00042	.04482	.00091	.00766	.00200	.00558	.00067	.00151
%RSD	27.751	143.70	85.600	131.20	380.16	226.39	45.698	99.453
#1	.00118	-.05886	.00070	-.00296	-.00055	.00371	-.00129	-.00015
#2	.00137	.02052	.00210	.01108	.00283	-.00396	-.00221	.00191
#3	.00198	-.05521	.00039	.00940	-.00071	-.00715	-.00091	.00280
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 16:03:09 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00063**	**-.00007**	**-.00042**	**.00031**	**-.00026**	**-.00025**	**.00102**
Stddev	.00062	.00033	.00669	.00104	.00059	.00019	.00019
%RSD	98.839	500.26	1604.2	340.25	230.81	75.967	18.598
#1	.00025	.00024	.00629	-.00042	.00039	-.00003	.00097
#2	.00029	-.00042	-.00045	.00150	-.00037	-.00033	.00085
#3	.00135	-.00002	-.00709	-.00016	-.00078	-.00039	.00122
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8232.4**	**47973.**	**3040.4**
Stddev	31.1	288.	5.5
%RSD	.37775	.60022	.17943
#1	8197.2	47801.	3045.7
#2	8256.1	47812.	3034.8
#3	8243.8	48305.	3040.7

Approved: June 15, 2016

Sample Name: PBW 53 Acquired: 6/14/2016 16:07:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572463-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	.02998	-.00013	.00649	.00094	.00013	.05144	-.00024
Stddev	.00075	.00761	.00099	.00070	.00022	.00013	.02465	.00005
%RSD	87.541	25.370	749.41	10.727	23.200	97.464	47.926	19.015
#1	.00154	.03432	-.00127	.00728	.00076	.00024	.05075	-.00020
#2	.00005	.02120	.00053	.00595	.00087	-.00001	.07644	-.00029
#3	.00099	.03442	.00034	.00625	.00118	.00017	.02714	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00063	.00022	.00749	-.14447	-.00333	-.02923	-.00060
Stddev	.00019	.00169	.00053	.00649	.09010	.00042	.09794	.00285
%RSD	157.60	266.70	244.38	86.675	62.367	12.701	335.06	478.79
#1	-.00004	.00243	-.00037	.00438	-.24851	-.00361	-.00672	.00133
#2	.00033	-.00092	.00035	.00314	-.09178	-.00353	-.13646	-.00387
#3	.00007	.00039	.00067	.01495	-.09312	-.00284	.05549	.00075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	-.02146	.00131	-.00648	.00005	-.00086	.00712	.00204
Stddev	.00058	.01487	.00154	.00488	.00248	.00455	.00238	.00008
%RSD	289.27	69.325	117.54	75.247	5206.9	527.23	33.431	4.1127
#1	-.00045	-.03458	.00024	-.00453	-.00034	-.00258	.00915	.00213
#2	.00040	-.00530	.00307	-.00288	-.00221	.00430	.00450	.00204
#3	.00064	-.02449	.00061	-.01203	.00270	-.00431	.00770	.00196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: PBW 53 Acquired: 6/14/2016 16:07:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572463-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00062	.00116	.00369	-.00074	.00015	.00252	.00083
Stddev	.00084	.00029	.00218	.00268	.00047	.00004	.00047
%RSD	135.67	25.163	59.057	360.86	304.10	1.6265	57.345
#1	.00098	.00117	.00167	-.00163	.00059	.00250	.00034
#2	.00123	.00145	.00600	.00227	.00022	.00249	.00086
#3	-.00034	.00087	.00340	-.00287	-.00034	.00256	.00128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7737.0	45156.	2929.4
Stddev	23.3	249.	37.2
%RSD	.30064	.55160	1.2693
#1	7722.8	44906.	2887.1
#2	7724.4	45159.	2956.6
#3	7763.9	45404.	2944.6

Approved: June 15, 2016

Sample Name: LCSW 53 Acquired: 6/14/2016 16:11:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572463-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20502**	**5.2225**	**.20642**	**1.0182**	**.52227**	**.02545**	**5.2203**	**.02613**
Stddev	.00345	.0454	.00026	.0111	.00382	.00028	.1066	.00035
%RSD	1.6817	.86924	.12803	1.0894	.73163	1.0919	2.0428	1.3502
#1	.20232	5.1729	.20648	1.0055	.52201	.02515	5.1822	.02622
#2	.20383	5.2620	.20665	1.0240	.51859	.02553	5.1380	.02642
#3	.20890	5.2327	.20614	1.0253	.52622	.02568	5.3408	.02573
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10689**	**.26365**	**.26616**	**2.0833**	**25.570**	**.51931**	**5.1932**	**.25849**
Stddev	.00021	.00198	.00196	.0036	.123	.00291	.0839	.00488
%RSD	.19311	.74994	.73506	.17375	.48025	.56062	1.6162	1.8879
#1	.10687	.26146	.26392	2.0818	25.530	.51743	5.2674	.26315
#2	.10669	.26532	.26752	2.0875	25.471	.51784	5.1021	.25342
#3	.10710	.26417	.26704	2.0807	25.707	.52266	5.2099	.25891
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53219**	**25.989**	**.26935**	**5.1157**	**.26583**	**.63140**	**.20253**	**2.6705**
Stddev	.00130	.235	.00082	.0122	.00559	.00279	.00298	.0044
%RSD	.24461	.90267	.30355	.23929	2.1024	.44109	1.4715	.16477
#1	.53069	26.047	.26855	5.1044	.27196	.62820	.20539	2.6654
#2	.53284	25.730	.27018	5.1287	.26102	.63321	.19944	2.6734
#3	.53303	26.188	.26933	5.1141	.26452	.63280	.20277	2.6726
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: LCSW 53 Acquired: 6/14/2016 16:11:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572463-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52854	.52944	.51750	.26366	.52365	.53202	.00444
Stddev	.00045	.00403	.01055	.00473	.00620	.00114	.00121
%RSD	.08522	.76107	2.0378	1.7945	1.1844	.21430	27.365
#1	.52858	.52895	.50980	.25880	.51649	.53072	.00333
#2	.52808	.52568	.51319	.26393	.52739	.53244	.00425
#3	.52898	.53369	.52952	.26825	.52706	.53288	.00574
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7655.3	44877.	2918.8
Stddev	38.0	268.	11.4
%RSD	.49703	.59614	.39040
#1	7663.6	45156.	2915.4
#2	7688.5	44623.	2931.5
#3	7613.8	44852.	2909.5

Approved: June 15, 2016

Sample Name: F BLANK Acquired: 6/14/2016 16:14:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572463-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00054	.01871	.00246	.00331	.00203	.00007	.04530	-.00009
Stddev	.00032	.00452	.00296	.00277	.00084	.00003	.04120	.00028
%RSD	60.483	24.171	120.34	83.684	41.492	43.432	90.942	301.74
#1	-.00027	.01918	.00066	.00234	.00136	.00005	.07727	.00015
#2	-.00090	.01398	.00085	.00116	.00175	.00006	-.00119	-.00040
#3	-.00044	.02299	.00588	.00644	.00297	.00010	.05981	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00038	.00119	.00049	.01827	-.11284	-.00438	-.00184	.00025
Stddev	.00029	.00050	.00054	.02171	.14297	.00156	.07871	.00165
%RSD	75.410	42.227	109.51	118.83	126.70	35.544	4266.6	656.42
#1	-.00071	.00167	.00107	.00623	-.27793	-.00529	-.08921	-.00126
#2	-.00028	.00123	.00000	.00525	-.03024	-.00526	.06355	.00202
#3	-.00016	.00067	.00041	.04333	-.03035	-.00258	.02013	.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.02769	-.00007	-.00504	.00126	-.00282	.00159	.00261
Stddev	.00023	.00982	.00050	.00733	.00168	.00172	.00745	.00041
%RSD	93.807	35.460	706.74	145.25	133.76	60.989	469.40	15.677
#1	.00013	.03872	.00018	.00194	.00302	-.00177	-.00618	.00305
#2	.00009	.02446	.00026	-.01266	.00107	-.00188	.00866	.00253
#3	.00050	.01990	-.00064	-.00441	-.00032	-.00480	.00228	.00224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: F BLANK Acquired: 6/14/2016 16:14:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572463-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00144	.00176	.00556	-.00010	.00021	.00147	-.00001
Stddev	.00066	.00027	.00127	.00137	.00042	.00004	.00018
%RSD	45.684	15.394	22.866	1397.3	202.39	2.9369	1486.2
#1	.00073	.00170	.00582	.00010	.00052	.00145	.00013
#2	.00202	.00206	.00418	-.00156	.00036	.00152	-.00021
#3	.00158	.00153	.00668	.00116	-.00027	.00144	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7758.8	45493.	2929.1
Stddev	5.5	16.	17.7
%RSD	.07131	.03506	.60517
#1	7762.6	45478.	2909.9
#2	7761.3	45509.	2932.6
#3	7752.5	45493.	2944.8

Approved: June 15, 2016

Sample Name: L1606054006 Acquired: 6/14/2016 16:18:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572463-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	.30826	.00245	.01619	.05438	.00073	11.475	.00026
Stddev	.00136	.00441	.00152	.00158	.00099	.00006	.079	.00020
%RSD	258.25	1.4316	61.903	9.7770	1.8117	7.9344	.68606	76.539
#1	-.00070	.30354	.00111	.01773	.05549	.00067	11.554	.00003
#2	.00029	.30897	.00410	.01457	.05362	.00073	11.477	.00036
#3	.00199	.31228	.00213	.01628	.05403	.00078	11.396	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00902	.00105	.00123	1.4758	.14149	-.00240	2.9836	.02658
Stddev	.00042	.00100	.00056	.0180	.04944	.00226	.1232	.00106
%RSD	4.6701	95.639	45.460	1.2224	34.938	94.324	4.1278	3.9726
#1	.00875	.00109	.00096	1.4966	.17939	-.00010	3.1192	.02537
#2	.00880	.00202	.00086	1.4659	.08557	-.00462	2.9528	.02701
#3	.00950	.00002	.00188	1.4648	.15952	-.00247	2.8787	.02734
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00065	5.0398	.01193	.00647	-.00183	.00112	.00413	3.3850
Stddev	.00017	.0118	.00141	.00153	.00220	.00096	.00489	.0058
%RSD	26.198	.23311	11.846	23.705	120.34	85.390	118.27	.17205
#1	-.00082	5.0513	.01082	.00824	-.00008	.00125	.00391	3.3852
#2	-.00065	5.0404	.01352	.00545	-.00431	.00011	.00913	3.3791
#3	-.00048	5.0278	.01144	.00573	-.00110	.00201	-.00064	3.3908
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606054006 Acquired: 6/14/2016 16:18:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572463-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00123**	**.13012**	**.00443**	**-.00030**	**.00027**	**.00613**	**.00062**
Stddev	.00021	.00089	.00192	.00093	.00031	.00010	.00062
%RSD	17.414	.68145	43.381	313.26	116.66	1.6216	100.99
#1	.00109	.13111	.00664	.00075	-.00002	.00619	.00001
#2	.00111	.12985	.00313	-.00063	.00059	.00602	.00059
#3	.00147	.12940	.00352	-.00101	.00023	.00618	.00125
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7770.7**	**45610.**	**2938.3**
Stddev	18.6	149.	16.1
%RSD	.23915	.32683	.54842
#1	7763.3	45519.	2921.5
#2	7791.9	45529.	2939.7
#3	7757.0	45782.	2953.6

Approved: June 15, 2016

Sample Name: L1606054007S Acquired: 6/14/2016 16:22:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572463-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20330**	**5.5213**	**.20524**	**1.0135**	**.56339**	**.02595**	**16.043**	**.02570**
Stddev	.00096	.0256	.00256	.0059	.00201	.00005	.066	.00008
%RSD	.47259	.46290	1.2486	.57778	.35592	.18431	.41312	.30634
#1	.20333	5.5162	.20814	1.0181	.56111	.02590	16.012	.02576
#2	.20232	5.5490	.20327	1.0156	.56422	.02598	15.998	.02572
#3	.20424	5.4987	.20430	1.0069	.56485	.02598	16.119	.02561
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.11422**	**.26088**	**.26148**	**3.5507**	**25.657**	**.51757**	**7.9644**	**.28160**
Stddev	.00047	.00130	.00175	.0302	.068	.00476	.0721	.00185
%RSD	.40804	.49953	.66936	.85073	.26578	.91886	.90524	.65681
#1	.11375	.26219	.26264	3.5458	25.676	.51991	7.9460	.28139
#2	.11468	.26087	.26234	3.5232	25.582	.51210	7.9033	.28354
#3	.11422	.25959	.25947	3.5830	25.715	.52070	8.0439	.27986
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52538**	**29.363**	**.27468**	**5.0878**	**.26080**	**.62073**	**.20239**	**6.1089**
Stddev	.00281	.043	.00095	.0171	.00390	.00074	.00306	.0218
%RSD	.53537	.14793	.34666	.33563	1.4947	.11842	1.5136	.35630
#1	.52220	29.318	.27390	5.0724	.26429	.62008	.20077	6.0838
#2	.52757	29.367	.27440	5.0847	.25659	.62153	.20592	6.1224
#3	.52635	29.405	.27574	5.1062	.26151	.62057	.20047	6.1204
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606054007S Acquired: 6/14/2016 16:22:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572463-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52322**	**.59450**	**.51115**	**.26026**	**.52151**	**.52827**	**.00073**
Stddev	.00198	.00101	.00748	.00099	.00031	.00095	.00104
%RSD	.37895	.17036	1.4624	.38160	.05849	.17995	141.87
#1	.52099	.59344	.50369	.25922	.52172	.52745	.00028
#2	.52391	.59458	.51864	.26119	.52165	.52931	-.00000
#3	.52476	.59547	.51114	.26038	.52116	.52804	.00192
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7653.6**	**44760.**	**2920.2**
Stddev	4.3	121.	10.2
%RSD	.05601	.27046	.34770
#1	7658.1	44631.	2929.3
#2	7653.2	44778.	2922.2
#3	7649.6	44871.	2909.3

Approved: June 15, 2016

Sample Name: L1606054008SD Acquired: 6/14/2016 16:26:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572463-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20242**	**5.4639**	**.20654**	**1.0107**	**.55978**	**.02574**	**15.954**	**.02572**
Stddev	.00252	.0625	.00249	.0095	.00367	.00020	.113	.00015
%RSD	1.2442	1.1446	1.2051	.94401	.65617	.76165	.70968	.59265
#1	.20426	5.5118	.20912	1.0195	.56271	.02586	16.050	.02581
#2	.19955	5.3931	.20637	1.0006	.56097	.02551	15.983	.02554
#3	.20344	5.4866	.20415	1.0121	.55566	.02584	15.829	.02580
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.11401**	**.26012**	**.26185**	**3.6461**	**25.636**	**.51350**	**7.9415**	**.27893**
Stddev	.00072	.00244	.00037	.0381	.058	.00572	.1108	.00250
%RSD	.63524	.93979	.14071	1.0446	.22574	1.1148	1.3948	.89454
#1	.11384	.26294	.26226	3.6581	25.703	.51891	8.0651	.28062
#2	.11339	.25860	.26154	3.6767	25.600	.51410	7.8511	.28010
#3	.11481	.25883	.26176	3.6034	25.606	.50750	7.9084	.27606
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52546**	**29.197**	**.27393**	**5.0795**	**.26474**	**.62390**	**.20391**	**6.0710**
Stddev	.00261	.175	.00085	.0176	.00234	.00057	.00447	.0287
%RSD	.49680	.59815	.31129	.34592	.88574	.09073	2.1903	.47293
#1	.52602	29.359	.27402	5.0770	.26366	.62424	.19882	6.0612
#2	.52262	29.221	.27303	5.0632	.26743	.62324	.20719	6.0485
#3	.52775	29.012	.27473	5.0981	.26314	.62421	.20572	6.1034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606054008SD Acquired: 6/14/2016 16:26:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572463-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52265	.59843	.50614	.25658	.51560	.52711	.00017
Stddev	.00284	.00366	.01422	.00267	.00612	.00167	.00052
%RSD	.54266	.61143	2.8095	1.0391	1.1866	.31640	300.48
#1	.51961	.60253	.52203	.25677	.51933	.52667	-.00042
#2	.52312	.59727	.49461	.25382	.50854	.52571	.00043
#3	.52522	.59549	.50179	.25914	.51894	.52896	.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7649.1	44897.	2907.9
Stddev	23.2	331.	9.2
%RSD	.30322	.73616	.31680
#1	7668.9	44526.	2897.3
#2	7654.8	45160.	2913.2
#3	7623.6	45006.	2913.2

Approved: June 15, 2016

Sample Name: L1606064503 Acquired: 6/14/2016 16:30:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00132	.01150	-.00005	.00614	.00013	.00011	-.00379	-.00012
Stddev	.00141	.00180	.00044	.00112	.00120	.00005	.00432	.00020
%RSD	106.66	15.628	824.28	18.242	888.48	45.176	114.24	167.64
#1	.00014	.01228	-.00055	.00735	.00109	.00015	.00106	.00009
#2	-.00267	.01278	.00025	.00593	-.00121	.00012	-.00516	-.00014
#3	-.00143	.00945	.00014	.00514	.00052	.00005	-.00726	-.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	.00094	.00065	.01297	-.13267	-.00173	.00420	-.00047
Stddev	.00021	.00056	.00045	.00272	.13746	.00286	.03994	.00122
%RSD	114.11	59.466	69.557	20.939	103.61	164.81	951.59	257.72
#1	.00006	.00066	.00086	.01535	-.16257	-.00096	.02232	.00093
#2	-.00028	.00058	.00097	.01357	.01728	.00066	-.04160	-.00130
#3	-.00032	.00159	.00013	.01001	-.25272	-.00490	.03186	-.00105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	.00193	.00094	-.00041	-.00413	.00133	.00170	.01392
Stddev	.00007	.03674	.00025	.00534	.00267	.00167	.00316	.00203
%RSD	26.491	1899.3	26.499	1287.9	64.724	125.33	186.06	14.584
#1	-.00021	-.00807	.00066	.00177	-.00487	-.00052	-.00024	.01511
#2	-.00022	-.02877	.00104	.00348	-.00635	.00271	.00535	.01158
#3	-.00033	.04263	.00112	-.00650	-.00116	.00179	-.00001	.01509
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606064503 Acquired: 6/14/2016 16:30:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00101	.00037	.00505	.00047	-.00013	.00108	.00020
Stddev	.00050	.00023	.00363	.00061	.00029	.00025	.00066
%RSD	48.934	63.513	71.935	128.98	220.01	22.710	326.63
#1	.00136	.00058	.00112	-.00014	-.00043	.00131	.00021
#2	.00045	.00040	.00829	.00108	.00015	.00082	.00086
#3	.00124	.00012	.00572	.00049	-.00012	.00112	-.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7747.7	45488.	2923.1
Stddev	26.9	238.	5.4
%RSD	.34760	.52374	.18486
#1	7725.3	45398.	2926.6
#2	7740.3	45309.	2916.9
#3	7777.6	45759.	2925.8

Approved: June 15, 2016

Sample Name: L1606064503PS Acquired: 6/14/2016 16:34:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572626-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20186**	**5.1173**	**.20038**	**.99917**	**.50876**	**.02515**	**5.0916**	**.02544**
Stddev	.00076	.0138	.00013	.00125	.00454	.00006	.0328	.00044
%RSD	.37426	.26892	.06509	.12559	.89193	.24877	.64438	1.7465
#1	.20226	5.1229	.20028	.99775	.51165	.02521	5.0720	.02536
#2	.20099	5.1016	.20053	.99960	.51110	.02509	5.1295	.02505
#3	.20233	5.1273	.20033	1.0001	.50353	.02514	5.0733	.02592
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10526**	**.26078**	**.26205**	**2.0565**	**25.036**	**.50867**	**5.0830**	**.25411**
Stddev	.00081	.00124	.00224	.0079	.201	.00113	.0500	.00451
%RSD	.77104	.47527	.85303	.38346	.80461	.22161	.98310	1.7748
#1	.10448	.26206	.25978	2.0630	25.045	.50878	5.0640	.25847
#2	.10520	.26070	.26212	2.0477	25.233	.50973	5.1396	.25440
#3	.10610	.25959	.26425	2.0590	24.830	.50749	5.0453	.24946
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52345**	**25.498**	**.26585**	**5.0506**	**.26419**	**.61973**	**.20113**	**2.6205**
Stddev	.00145	.178	.00168	.0320	.00199	.00277	.00142	.0129
%RSD	.27632	.69756	.63256	.63420	.75234	.44634	.70372	.49073
#1	.52224	25.575	.26779	5.0176	.26549	.61676	.20202	2.6121
#2	.52306	25.626	.26480	5.0525	.26517	.62022	.19950	2.6142
#3	.52505	25.295	.26496	5.0816	.26190	.62222	.20187	2.6353
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606064503PS Acquired: 6/14/2016 16:34:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572626-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52056**	**.51391**	**.50709**	**.26014**	**.51580**	**.54913**	**.00073**
Stddev	.00071	.00321	.00384	.00456	.00216	.00206	.00013
%RSD	.13609	.62439	.75822	1.7536	.41917	.37507	18.080
#1	.52095	.51608	.50893	.26540	.51513	.54760	.00058
#2	.51974	.51544	.50268	.25779	.51822	.54832	.00082
#3	.52098	.51023	.50967	.25723	.51405	.55148	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7681.7**	**45046.**	**2903.6**
Stddev	20.7	143.	28.5
%RSD	.26996	.31727	.98236
#1	7658.2	44883.	2888.7
#2	7697.3	45147.	2885.7
#3	7689.7	45108.	2936.5

Approved: June 15, 2016

Sample Name: L1606064503SDL Acquired: 6/14/2016 16:38:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG572626-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	-.00132	-.00064	.00241	.00013	.00008	.01142	-.00008
Stddev	.00280	.00394	.00095	.00099	.00109	.00003	.02207	.00016
%RSD	327.95	298.49	147.02	41.076	838.13	35.092	193.22	201.73
#1	-.00083	-.00566	-.00007	.00185	.00139	.00008	-.00249	.00005
#2	-.00069	-.00032	-.00173	.00356	-.00056	.00011	-.00011	-.00003
#3	.00409	.00202	-.00012	.00184	-.00044	.00005	.03686	-.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.00049	.00070	-.00875	-.12175	-.00307	.03462	-.00139
Stddev	.00039	.00108	.00091	.02446	.05201	.00171	.05768	.00146
%RSD	1001.2	218.09	129.25	279.55	42.715	55.890	166.59	104.91
#1	.00010	.00174	-.00032	-.03097	-.14052	-.00162	.00634	-.00282
#2	.00040	-.00009	.00100	.01745	-.16177	-.00262	-.00345	-.00144
#3	-.00038	-.00017	.00143	-.01273	-.06297	-.00496	.10099	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	-.00631	.00097	.00222	-.00123	.00255	.00803	.00158
Stddev	.00022	.02640	.00060	.00113	.00166	.00209	.00387	.00033
%RSD	38.696	418.14	61.760	50.792	135.23	81.960	48.190	20.922
#1	-.00055	-.02847	.00058	.00247	-.00028	.00347	.00920	.00184
#2	-.00035	-.01337	.00067	.00099	-.00314	.00016	.01117	.00170
#3	-.00079	.02290	.00166	.00321	-.00026	.00403	.00371	.00121
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606064503SDL Acquired: 6/14/2016 16:38:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG572626-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00099	-.00014	.00360	.00074	.00020	.00084	.00037
Stddev	.00066	.00023	.00386	.00062	.00023	.00018	.00045
%RSD	66.595	160.02	107.32	84.512	116.94	21.341	120.74
#1	.00077	-.00041	-.00023	.00028	.00012	.00097	.00071
#2	.00173	.00002	.00353	.00145	.00046	.00091	-.00014
#3	.00047	-.00004	.00750	.00048	.00002	.00064	.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8489.3	49496.	3124.4
Stddev	13.1	124.	7.5
%RSD	.15402	.25143	.23943
#1	8478.8	49391.	3123.6
#2	8504.0	49634.	3132.2
#3	8485.2	49465.	3117.3

Approved: June 15, 2016

Sample Name: L1606064503SDL Acquired: 6/14/2016 16:42:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG572626-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	.00106	-.00069	.00143	.00069	.00007	-.02519	-.00008
Stddev	.00058	.00443	.00246	.00196	.00020	.00008	.03601	.00012
%RSD	688.48	419.34	353.83	137.46	28.716	112.27	142.96	148.74
#1	-.00063	.00295	-.00034	.00353	.00088	-.00002	-.05078	-.00022
#2	-.00016	-.00400	-.00331	.00110	.00071	.00015	.01599	-.00000
#3	.00053	.00422	.00157	-.00035	.00048	.00009	-.04079	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.00119	.00031	-.00661	-.17608	-.00028	.04324	-.00129
Stddev	.00010	.00011	.00090	.02052	.10371	.00267	.04520	.00122
%RSD	67.477	9.0638	288.36	310.21	58.899	939.34	104.53	94.298
#1	.00018	.00126	.00135	-.02862	-.23476	-.00030	.08704	-.00117
#2	.00024	.00106	-.00015	.01200	-.05633	-.00295	.04593	-.00257
#3	.00004	.00124	-.00026	-.00322	-.23714	.00239	-.00324	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00077	-.02028	.00061	.00338	.00083	-.00143	.00178	-.00235
Stddev	.00011	.02046	.00059	.00394	.00282	.00314	.00413	.00203
%RSD	14.613	100.88	95.791	116.47	337.45	220.51	232.12	86.314
#1	-.00079	-.04134	.00128	.00783	-.00163	-.00423	.00078	-.00456
#2	-.00065	-.00048	.00035	.00031	.00023	-.00202	.00632	-.00057
#3	-.00087	-.01901	.00020	.00202	.00391	.00197	-.00176	-.00191
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606064503SDL Acquired: 6/14/2016 16:42:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG572626-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.00014	.00387	.00018	.00007	.00051	-.00004
Stddev	.00026	.00018	.00134	.00191	.00021	.00008	.00100
%RSD	81.755	127.45	34.714	1052.9	284.80	15.405	2464.1
#1	.00030	.00004	.00298	.00138	.00011	.00052	-.00086
#2	.00007	.00004	.00321	.00119	-.00015	.00058	.00107
#3	.00059	.00035	.00541	-.00203	.00026	.00042	-.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8461.6	49123.	3127.6
Stddev	25.4	107.	14.7
%RSD	.30044	.21688	.46882
#1	8482.6	49231.	3128.9
#2	8468.9	49121.	3141.6
#3	8433.4	49018.	3112.4

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 16:46:25 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39081	9.7719	.38242	.49067	.96258	.04873	9.5257	.04896
Stddev	.00243	.0072	.00249	.00509	.00353	.00030	.0605	.00014
%RSD	.62175	.07369	.65224	1.0375	.36707	.62365	.63483	.28628
#1	.39344	9.7714	.38513	.49003	.96243	.04864	9.5913	.04883
#2	.38865	9.7793	.38023	.48594	.95913	.04849	9.5136	.04893
#3	.39035	9.7650	.38189	.49606	.96619	.04907	9.4722	.04911
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19898	.49121	.49478	3.8869	48.124	.95094	9.5171	.47509
Stddev	.00009	.00301	.00133	.0319	.240	.00557	.1776	.00391
%RSD	.04391	.61353	.26810	.82011	.49874	.58621	1.8659	.82349
#1	.19900	.48811	.49412	3.9078	48.372	.95547	9.5166	.47912
#2	.19888	.49140	.49391	3.8502	47.892	.94472	9.6950	.47131
#3	.19905	.49413	.49631	3.9026	48.108	.95265	9.3398	.47483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98127	48.463	.49860	9.8742	.49982	1.1859	.38935	4.9766
Stddev	.00366	.211	.00115	.0300	.00206	.0040	.00201	.0076
%RSD	.37269	.43504	.23027	.30428	.41226	.33810	.51546	.15339
#1	.98440	48.651	.49970	9.8816	.50140	1.1900	.38705	4.9778
#2	.98215	48.235	.49868	9.8999	.50058	1.1820	.39029	4.9836
#3	.97725	48.504	.49741	9.8412	.49749	1.1856	.39072	4.9685
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 16:46:25 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98198	.96216	.94599	.48903	.97974	.99268	.99805
Stddev	.00342	.00368	.00950	.00455	.00391	.00161	.00449
%RSD	.34803	.38298	1.0039	.93033	.39906	.16249	.45023
#1	.98593	.96593	.95555	.48842	.97845	.99445	1.0020
#2	.97999	.95857	.94587	.48481	.97664	.99231	.99316
#3	.98003	.96197	.93656	.49385	.98413	.99128	.99900
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7978.8	46288.	3015.8
Stddev	.5	215.	15.7
%RSD	.00636	.46417	.51920
#1	7979.4	46139.	2998.0
#2	7978.5	46192.	3027.6
#3	7978.5	46535.	3021.8

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 16:50:07 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	.00460	-.00224	.00243	.00122	.00008	.00179	.00001
Stddev	.00065	.00884	.00189	.00187	.00109	.00005	.01725	.00031
%RSD	95.680	192.37	84.306	76.954	88.817	57.942	963.10	4374.3
#1	-.00007	.00642	-.00039	.00452	.00248	.00014	-.01032	.00014
#2	.00107	.01239	-.00416	.00091	.00062	.00007	.02154	.00022
#3	.00103	-.00502	-.00217	.00187	.00057	.00004	-.00584	-.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	-.00012	.00028	.01260	-.15716	-.00016	-.02234	-.00193
Stddev	.00022	.00116	.00085	.01322	.11156	.00233	.09453	.00098
%RSD	226.25	986.00	306.85	104.92	70.985	1472.7	423.09	50.832
#1	-.00010	.00016	.00109	-.00234	-.07470	.00242	.07940	-.00123
#2	.00006	-.00139	-.00060	.01736	-.28409	-.00081	-.03896	-.00151
#3	.00034	.00088	.00034	.02277	-.11267	-.00209	-.10747	-.00306
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00167	.00017	.00101	-.00098	-.00154	-.00057	.00409	.00298
Stddev	.00045	.02520	.00077	.00275	.00418	.00109	.00373	.00206
%RSD	26.941	14627.	76.465	280.19	270.71	191.92	91.120	69.068
#1	.00120	-.01174	.00189	-.00110	.00066	.00058	.00116	.00357
#2	.00169	.02912	.00071	-.00367	-.00636	-.00070	.00829	.00069
#3	.00210	-.01686	.00044	.00182	.00107	-.00158	.00282	.00468
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 16:50:07 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	.00027	.00391	.00022	-.00064	-.00034	.00045
Stddev	.00035	.00043	.00220	.00160	.00020	.00015	.00071
%RSD	46.883	158.52	56.384	723.05	31.461	43.608	159.63
#1	.00041	.00069	.00275	-.00121	-.00059	-.00039	.00018
#2	.00072	.00031	.00645	-.00007	-.00086	-.00017	-.00010
#3	.00111	-.00018	.00253	.00195	-.00046	-.00045	.00126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8070.0	46856.	3017.3
Stddev	36.4	288.	32.9
%RSD	.45120	.61475	1.0900
#1	8041.5	47170.	3017.9
#2	8111.0	46603.	3049.9
#3	8057.5	46794.	2984.1

Approved: June 15, 2016

Sample Name: L1606041103 Acquired: 6/14/2016 16:54:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	4.5647	.00040	.01039	.18545	.00030	6.8971
Stddev	.00094	.0044	.00363	.00249	.00046	.00006	.0258
%RSD	115.39	.09682	902.93	23.992	.25015	21.821	.37378
#1	-.00010	4.5630	-.00316	.01230	.18549	.00022	6.9015
#2	.00076	4.5614	.00410	.00757	.18497	.00033	6.8695
#3	.00178	4.5697	.00026	.01129	.18589	.00034	6.9205
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00411	.07832	.00873	4.1063	.36153	.01555
Stddev	.00014	.00026	.00012	.00103	.0360	.10287	.00115
%RSD	79.888	6.3763	.14901	11.764	.87604	28.454	7.3859
#1	.00034	.00441	.07845	.00769	4.0674	.24610	.01422
#2	.00008	.00398	.07826	.00876	4.1132	.39498	.01620
#3	.00012	.00394	.07824	.00975	4.1384	.44352	.01622
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.7810	.03458	.00201	56.450	.20838	.02547	.00721
Stddev	.0177	.00119	.00033	.069	.00108	.00272	.00260
%RSD	.36954	3.4284	16.570	.12255	.52014	10.671	36.089
#1	4.7797	.03585	.00175	56.529	.20961	.02515	.00459
#2	4.7992	.03351	.00189	56.422	.20757	.02292	.00725
#3	4.7640	.03438	.00239	56.399	.20797	.02833	.00980
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 15, 2016

Sample Name: L1606041103 Acquired: 6/14/2016 16:54:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00083**	**.01289**	F **47.548**	**.00068**	**.14132**	**.03990**	**-.00083**
Stddev	.00358	.00245	.078	.00064	.00012	.00485	.00215
%RSD	430.25	19.002	.16342	94.147	.08329	12.166	258.14
#1	-.00476	.01232	47.596	-.00003	.14118	.03464	.00017
#2	.00002	.01558	47.589	.00085	.14138	.04085	.00063
#3	.00225	.01078	47.458	.00123	.14140	.04421	-.00331
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-1.0000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00701**	**.01622**	**.00206**
Stddev	.00081	.00032	.00036
%RSD	11.554	1.9585	17.664
#1	.00747	.01585	.00248
#2	.00750	.01638	.00188
#3	.00608	.01642	.00183
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7655.9**	**44658.**	**2904.3**
Stddev	5.9	251.	23.1
%RSD	.07647	.56235	.79553
#1	7653.4	44498.	2877.6
#2	7651.7	44528.	2918.1
#3	7662.6	44947.	2917.1

Approved: June 15, 2016

Sample Name: L1606041104 Acquired: 6/14/2016 16:58:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	4.2703	-.00025	.01115	.16700	.00024	6.9209
Stddev	.00085	.0189	.00275	.00378	.00144	.00007	.0649
%RSD	4105.9	.44349	1094.0	33.872	.86054	27.267	.93815
#1	-.00028	4.2629	.00083	.00684	.16681	.00031	6.8710
#2	.00099	4.2563	-.00338	.01274	.16852	.00019	6.9943
#3	-.00064	4.2919	.00180	.01387	.16566	.00022	6.8975
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.00493	.07583	.00744	3.7095	.34502	.01555
Stddev	.00013	.00031	.00042	.00053	.0351	.06596	.00152
%RSD	68.175	6.2644	.55838	7.1285	.94733	19.119	9.7561
#1	.00007	.00525	.07562	.00750	3.7368	.28315	.01384
#2	.00016	.00463	.07632	.00688	3.7219	.41443	.01674
#3	.00033	.00491	.07555	.00793	3.6699	.33746	.01606
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.5990	.03824	.00328	57.589	.24632	.02793	.00685
Stddev	.1291	.00387	.00048	.313	.00195	.00899	.00195
%RSD	2.8071	10.111	14.656	.54293	.79021	32.181	28.417
#1	4.7046	.03390	.00274	57.819	.24856	.02090	.00464
#2	4.4551	.03952	.00344	57.714	.24513	.03806	.00762
#3	4.6373	.04131	.00366	57.233	.24525	.02484	.00830
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 15, 2016

Sample Name: L1606041104 Acquired: 6/14/2016 16:58:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00134	.00802	F 47.724	.00153	.13535	.04339	-.00167
Stddev	.00223	.00215	.137	.00025	.00030	.00514	.00107
%RSD	166.50	26.828	.28606	16.627	.21970	11.845	63.926
#1	-.00315	.00617	47.876	.00125	.13535	.04706	-.00106
#2	-.00201	.01038	47.684	.00161	.13506	.04561	-.00290
#3	.00115	.00750	47.612	.00174	.13565	.03752	-.00105
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-1.0000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00638	.01397	.00198
Stddev	.00029	.00007	.00041
%RSD	4.4695	.50623	20.917
#1	.00650	.01405	.00196
#2	.00606	.01391	.00158
#3	.00659	.01395	.00241
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7657.4	44804.	2917.9
Stddev	9.3	34.	11.3
%RSD	.12094	.07598	.38571
#1	7656.3	44843.	2916.1
#2	7667.1	44790.	2907.6
#3	7648.7	44780.	2929.9

Approved: June 15, 2016

Sample Name: L1606048503 Acquired: 6/14/2016 17:02:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00152	.01061	.00001	.05813	.06331	.00007	72.107	-.00018
Stddev	.00196	.00546	.00231	.00301	.00087	.00008	.445	.00011
%RSD	128.95	51.417	21723.	5.1731	1.3806	103.08	.61711	58.387
#1	-.00309	.01509	-.00178	.05550	.06364	.00008	72.620	-.00007
#2	.00068	.01222	-.00081	.06141	.06396	-.00001	71.870	-.00020
#3	-.00214	.00453	.00262	.05749	.06231	.00014	71.831	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.00069	.00108	.25572	2.0912	.00196	18.924	.29265
Stddev	.00003	.00089	.00204	.02174	.0273	.00392	.228	.00607
%RSD	28.787	128.75	188.42	8.5010	1.3052	199.53	1.2052	2.0751
#1	.00013	.00033	.00268	.25034	2.1093	.00647	19.122	.29908
#2	.00008	.00170	.00177	.23718	2.0598	-.00058	18.975	.28700
#3	.00009	.00004	-.00121	.27965	2.1045	-.00000	18.674	.29188
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	42.483	.00008	.01719	.00025	-.00220	.00591	9.3210
Stddev	.00025	.228	.00112	.00580	.00262	.00462	.00430	.0317
%RSD	34.474	.53784	1380.0	33.727	1047.0	210.40	72.775	.34014
#1	.00046	42.745	-.00035	.01615	-.00139	-.00084	.00094	9.3538
#2	.00076	42.327	-.00076	.02343	-.00114	.00160	.00836	9.3186
#3	.00096	42.377	.00135	.01198	.00327	-.00734	.00842	9.2906
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606048503 Acquired: 6/14/2016 17:02:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00099	.47561	-.01092	.00058	.00034	.00357	.00121
Stddev	.00056	.00310	.00259	.00147	.00106	.00011	.00052
%RSD	56.087	.65238	23.751	253.30	312.19	3.0534	43.100
#1	.00090	.47907	-.01348	.00126	.00105	.00367	.00079
#2	.00159	.47468	-.01098	-.00111	.00085	.00358	.00104
#3	.00049	.47308	-.00830	.00159	-.00088	.00346	.00180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7623.1	44400.	2911.5
Stddev	9.3	312.	23.1
%RSD	.12201	.70181	.79392
#1	7612.8	44046.	2888.8
#2	7631.0	44519.	2935.0
#3	7625.4	44634.	2910.8

Approved: June 15, 2016

Sample Name: L1606048504 Acquired: 6/14/2016 17:06:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00038	.00809	-.00089	.07200	.13789	.00004	73.871	.00005
Stddev	.00109	.01401	.00392	.00141	.00087	.00003	.386	.00014
%RSD	285.56	173.15	439.20	1.9544	.63250	71.483	.52261	261.72
#1	-.00164	-.00354	.00208	.07163	.13777	.00003	74.265	.00009
#2	.00031	.02365	-.00534	.07082	.13708	.00003	73.493	.00016
#3	.00018	.00417	.00058	.07356	.13881	.00008	73.856	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	.00039	.00084	.02766	2.0711	.01202	20.170	.05556
Stddev	.00022	.00029	.00055	.02848	.0287	.00105	.136	.00248
%RSD	156.26	73.397	65.603	102.97	1.3843	8.7239	.67280	4.4606
#1	-.00032	.00022	.00147	.04751	2.1041	.01280	20.323	.05598
#2	-.00019	.00072	.00056	-.00497	2.0516	.01244	20.125	.05781
#3	.00010	.00023	.00048	.04045	2.0578	.01083	20.063	.05290
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00280	34.620	.00007	.00202	-.00033	.00195	.00608	12.532
Stddev	.00034	.214	.00071	.00171	.00108	.00316	.00199	.015
%RSD	12.163	.61684	960.77	84.643	325.44	161.76	32.708	.12208
#1	.00315	34.830	-.00073	.00400	-.00155	.00490	.00755	12.542
#2	.00247	34.403	.00062	.00095	.00004	-.00138	.00382	12.539
#3	.00276	34.625	.00033	.00112	.00052	.00233	.00687	12.514
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606048504 Acquired: 6/14/2016 17:06:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00090	1.0465	-.00796	-.00112	-.00050	.00188	.00125
Stddev	.00082	.0048	.00800	.00102	.00041	.00013	.00046
%RSD	90.993	.46043	100.58	91.021	81.907	7.1181	37.021
#1	.00184	1.0510	-.00792	-.00154	-.00096	.00176	.00090
#2	.00055	1.0414	.00003	.00004	-.00016	.00188	.00108
#3	.00032	1.0470	-.01598	-.00187	-.00039	.00202	.00177
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7632.8	44543.	2912.7
Stddev	9.8	160.	18.7
%RSD	.12845	.36000	.64357
#1	7625.6	44386.	2909.4
#2	7644.0	44536.	2932.9
#3	7628.9	44707.	2895.9

Approved: June 15, 2016

Sample Name: L1606048505 Acquired: 6/14/2016 17:09:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00034	.01879	.04944	.04926	.22831	-.00001	102.09	.00009
Stddev	.00089	.00569	.00246	.00208	.00242	.00006	.53	.00036
%RSD	263.15	30.297	4.9718	4.2151	1.0581	600.25	.52002	405.18
#1	-.00049	.02331	.04743	.04823	.23095	-.00006	102.47	-.00022
#2	-.00114	.01240	.04870	.05165	.22620	.00006	101.48	.00048
#3	.00062	.02068	.05218	.04791	.22778	-.00003	102.31	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00107	.00105	.00285	13.621	.91780	.00699	11.647	1.6925
Stddev	.00038	.00031	.00048	.062	.03718	.00117	.017	.0045
%RSD	35.181	29.478	16.814	.45567	4.0507	16.764	.14949	.26564
#1	.00131	.00140	.00287	13.693	.91341	.00570	11.658	1.6967
#2	.00127	.00093	.00332	13.584	.88302	.00799	11.627	1.6878
#3	.00064	.00082	.00236	13.586	.95698	.00728	11.655	1.6929
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00880	35.195	.00148	.02014	-.00029	-.00276	.01014	10.052
Stddev	.00006	.204	.00087	.01116	.00179	.00420	.00716	.022
%RSD	.73480	.57867	58.755	55.430	626.55	152.01	70.557	.21544
#1	.00886	35.317	.00233	.03297	-.00103	.00025	.01403	10.046
#2	.00879	34.960	.00060	.01272	-.00159	-.00098	.00188	10.035
#3	.00873	35.308	.00150	.01472	.00176	-.00757	.01451	10.076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606048505 Acquired: 6/14/2016 17:09:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00093	.40788	-.00619	-.00136	-.00112	.00233	.00017
Stddev	.00066	.00052	.00468	.00199	.00031	.00029	.00002
%RSD	70.386	.12751	75.605	146.60	27.400	12.617	11.831
#1	.00165	.40754	-.00081	-.00023	-.00133	.00262	.00017
#2	.00076	.40763	-.00847	-.00019	-.00127	.00203	.00015
#3	.00038	.40848	-.00931	-.00365	-.00077	.00233	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7618.3	44475.	2925.7
Stddev	13.0	191.	30.7
%RSD	.17002	.42925	1.0494
#1	7625.7	44377.	2897.2
#2	7603.4	44696.	2958.2
#3	7625.9	44354.	2921.7

Approved: June 15, 2016

Sample Name: L1606048506 Acquired: 6/14/2016 17:13:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.01138	.00024	.03778	.00736	.00004	106.04	.00006
Stddev	.00023	.00375	.00193	.00217	.00076	.00005	1.13	.00030
%RSD	180.26	32.932	818.96	5.7541	10.303	105.02	1.0640	546.35
#1	-.00010	.00982	-.00051	.03571	.00767	.00009	107.11	.00032
#2	.00036	.00867	-.00122	.04005	.00792	.00003	104.86	.00012
#3	.00012	.01566	.00243	.03757	.00650	.00001	106.15	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00089	.00151	.00421	1.0217	.00847	10.023	.10725
Stddev	.00000	.00105	.00061	.01495	.0430	.00400	.113	.00472
%RSD	1.0820	117.63	39.949	355.30	4.2070	47.284	1.1264	4.3971
#1	.00009	.00086	.00151	-.01303	1.0602	.00631	10.129	.11074
#2	.00009	.00195	.00091	.01365	.97531	.01309	9.9045	.10189
#3	.00009	-.00014	.00212	.01201	1.0295	.00601	10.034	.10913
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	21.638	.00000	.01440	-.00287	-.00145	.00559	8.2477
Stddev	.00052	.238	.00066	.00749	.00105	.00489	.00222	.0108
%RSD	197.84	1.1021	44082.	52.014	36.461	337.86	39.709	.13085
#1	-.00042	21.839	-.00044	.00576	-.00211	.00287	.00583	8.2486
#2	.00032	21.374	.00076	.01837	-.00406	-.00045	.00768	8.2580
#3	-.00069	21.701	-.00032	.01906	-.00244	-.00676	.00326	8.2365
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606048506 Acquired: 6/14/2016 17:13:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00134	.40115	-.01349	-.00088	.00037	.01164	.00050
Stddev	.00061	.00470	.00459	.00242	.00086	.00016	.00059
%RSD	45.823	1.1720	34.033	274.17	230.70	1.3342	116.57
#1	.00069	.40585	-.00890	-.00046	.00101	.01179	.00115
#2	.00191	.39645	-.01349	.00130	.00071	.01148	.00000
#3	.00141	.40117	-.01808	-.00348	-.00060	.01165	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7638.1	44699.	2914.0
Stddev	20.7	111.	24.2
%RSD	.27089	.24803	.83147
#1	7627.6	44571.	2886.5
#2	7624.8	44757.	2923.7
#3	7661.9	44769.	2931.9

Approved: June 15, 2016

Sample Name: L1606054009 Acquired: 6/14/2016 17:17:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00111	.03943	.00779	.03258	.15787	.00002	41.513	.00028
Stddev	.00130	.00427	.00101	.00104	.00054	.00010	.055	.00022
%RSD	117.32	10.835	12.972	3.2060	.34408	668.10	.13286	79.532
#1	-.00041	.03453	.00685	.03157	.15758	.00006	41.574	.00012
#2	-.00031	.04241	.00886	.03252	.15754	.00009	41.498	.00053
#3	-.00261	.04133	.00766	.03365	.15850	-.00010	41.466	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00148	-.00019	.00256	24.059	73.927	.00089	4.3234	1.9945
Stddev	.00020	.00070	.00122	.087	.392	.00382	.0764	.0055
%RSD	13.837	359.54	47.717	.36250	.53075	427.61	1.7681	.27412
#1	.00130	-.00048	.00319	24.132	74.358	-.00319	4.3759	2.0004
#2	.00170	.00060	.00333	24.084	73.831	.00147	4.2357	1.9933
#3	.00143	-.00070	.00115	23.962	73.592	.00440	4.3587	1.9897
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	26.005	.00333	.03353	-.00058	.00218	.00638	3.0621
Stddev	.00037	.076	.00117	.00682	.00205	.00145	.00436	.0032
%RSD	367.07	.29119	34.967	20.331	351.12	66.629	68.369	.10485
#1	-.00021	26.091	.00363	.02576	.00144	.00082	.00868	3.0626
#2	.00001	25.978	.00432	.03850	-.00265	.00200	.00910	3.0650
#3	.00050	25.947	.00205	.03633	-.00054	.00371	.00135	3.0586
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606054009 Acquired: 6/14/2016 17:17:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.25224	.00858	-.00274	-.00072	.00584	-.00049
Stddev	.00024	.00083	.00691	.00074	.00081	.00017	.00026
%RSD	34.529	.32894	80.505	27.008	112.85	2.9778	52.350
#1	.00042	.25172	.01378	-.00359	-.00065	.00603	-.00044
#2	.00078	.25319	.00074	-.00242	.00006	.00583	-.00077
#3	.00088	.25179	.01121	-.00221	-.00156	.00568	-.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7903.6	46315.	3079.0
Stddev	7.7	134.	26.8
%RSD	.09746	.29005	.86994
#1	7912.4	46452.	3048.4
#2	7898.1	46183.	3090.9
#3	7900.2	46311.	3097.8

Approved: June 15, 2016

Sample Name: L1606054010 Acquired: 6/14/2016 17:21:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00068	.52065	.00622	.03095	.07368	.00009	111.16	.00014
Stddev	.00155	.00029	.00578	.00107	.00070	.00004	.16	.00040
%RSD	227.75	.05474	92.951	3.4634	.94507	48.885	.14044	287.60
#1	-.00202	.52086	.00654	.03041	.07448	.00012	111.17	-.00007
#2	.00101	.52033	.00029	.03218	.07321	.00010	111.01	.00060
#3	-.00103	.52077	.01183	.03025	.07336	.00004	111.32	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	.00275	.00284	3.1244	9.8775	.01955	3.4781	.24503
Stddev	.00010	.00086	.00090	.0122	.0402	.00231	.0584	.00219
%RSD	11.831	31.373	31.651	.38957	.40690	11.827	1.6799	.89444
#1	.00100	.00358	.00388	3.1212	9.9088	.02219	3.5227	.24286
#2	.00079	.00282	.00238	3.1378	9.8915	.01789	3.4119	.24498
#3	.00088	.00186	.00227	3.1141	9.8321	.01857	3.4995	.24724
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00296	139.31	.00163	.10512	.00187	-.00071	.00573	9.0899
Stddev	.00030	.13	.00007	.00533	.00224	.00522	.00584	.0241
%RSD	9.9861	.09166	4.5431	5.0677	119.75	731.40	101.80	.26556
#1	.00319	139.45	.00163	.10531	.00197	-.00669	.01044	9.0921
#2	.00263	139.30	.00170	.11035	-.00042	.00161	-.00080	9.1128
#3	.00307	139.19	.00155	.09970	.00406	.00294	.00756	9.0647
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606054010 Acquired: 6/14/2016 17:21:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00128	.52415	-.00141	.00026	.00251	.03824	.00089
Stddev	.00019	.00015	.00263	.00482	.00017	.00012	.00034
%RSD	14.500	.02827	187.00	1865.9	6.5933	.32280	38.664
#1	.00141	.52411	-.00087	-.00414	.00236	.03835	.00087
#2	.00107	.52431	.00091	-.00050	.00249	.03811	.00055
#3	.00138	.52402	-.00426	.00542	.00269	.03827	.00124
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7560.1	43953.	2932.6
Stddev	31.2	87.	3.3
%RSD	.41305	.19687	.11312
#1	7528.5	43862.	2935.6
#2	7560.8	43962.	2929.0
#3	7590.9	44034.	2933.2

Approved: June 15, 2016

Sample Name: L1606054011 Acquired: 6/14/2016 17:25:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.59515	.00344	.02999	.07563	.00005	115.10	.00000
Stddev	.00078	.00265	.00380	.00089	.00043	.00002	.67	.00016
%RSD	464.25	.44542	110.46	2.9844	.56630	42.594	.58592	7754.2
#1	-.00079	.59669	.00756	.02951	.07514	.00006	115.78	-.00007
#2	-.00044	.59667	.00008	.02943	.07578	.00006	115.07	.00018
#3	.00071	.59209	.00267	.03102	.07596	.00002	114.44	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00106	.00229	.00148	3.2444	10.063	.01918	3.7279	.25161
Stddev	.00025	.00123	.00161	.0362	.046	.00176	.1735	.00137
%RSD	23.474	53.530	108.64	1.1150	.45978	9.1615	4.6546	.54645
#1	.00094	.00127	.00149	3.2072	10.116	.01931	3.9133	.25305
#2	.00089	.00195	.00308	3.2465	10.033	.02087	3.7009	.25145
#3	.00135	.00365	-.00013	3.2795	10.039	.01736	3.5694	.25032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00326	143.24	.00151	.11253	.00076	.00277	.00059	9.5696
Stddev	.00037	.47	.00105	.00442	.00357	.00485	.00570	.0206
%RSD	11.251	.32871	69.691	3.9282	469.50	175.36	962.96	.21480
#1	.00358	143.73	.00087	.11680	-.00197	.00552	-.00589	9.5755
#2	.00335	143.18	.00093	.11283	.00480	.00562	.00485	9.5865
#3	.00286	142.80	.00272	.10797	-.00055	-.00284	.00282	9.5467
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606054011 Acquired: 6/14/2016 17:25:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00112	.54100	-.00388	-.00133	.00210	.03558	.00074
Stddev	.00029	.00204	.00158	.00292	.00047	.00016	.00021
%RSD	26.123	.37736	40.668	218.80	22.534	.45204	28.694
#1	.00145	.54304	-.00563	-.00065	.00220	.03545	.00056
#2	.00102	.54103	-.00342	.00118	.00251	.03576	.00069
#3	.00089	.53895	-.00258	-.00453	.00158	.03553	.00098
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7562.5	43692.	2925.3
Stddev	7.4	94.	21.7
%RSD	.09845	.21575	.74097
#1	7554.0	43714.	2902.1
#2	7567.7	43589.	2928.7
#3	7565.9	43773.	2945.1

Approved: June 15, 2016

Sample Name: L1606054014 Acquired: 6/14/2016 17:29:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	.02147	.02563	.03147	.10443	.00052	44.979	-.00011
Stddev	.00177	.00155	.00230	.00162	.00075	.00003	.156	.00026
%RSD	199.14	7.2106	8.9775	5.1480	.72193	5.1761	.34687	233.98
#1	.00248	.02013	.02523	.03283	.10519	.00055	45.131	-.00040
#2	.00119	.02112	.02811	.02968	.10369	.00052	44.819	.00001
#3	-.00101	.02317	.02356	.03190	.10441	.00050	44.986	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.00065	.00171	11.927	2.8315	.00332	5.0603	4.2095
Stddev	.00032	.00163	.00073	.043	.1122	.00300	.1266	.0225
%RSD	1719.9	252.70	42.747	.35731	3.9615	90.325	2.5015	.53536
#1	.00016	-.00096	.00098	11.976	2.7301	.00471	5.2016	4.2183
#2	-.00035	.00060	.00171	11.903	2.8124	.00537	5.0222	4.1839
#3	.00025	.00230	.00244	11.902	2.9520	-.00012	4.9572	4.2263
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	21.056	.00746	.29297	.00171	.00052	.00342	6.5374
Stddev	.00023	.085	.00023	.00731	.00278	.00281	.00238	.0082
%RSD	182.43	.40320	3.0991	2.4950	162.25	545.40	69.447	.12564
#1	-.00005	21.154	.00721	.28603	.00243	-.00223	.00546	6.5457
#2	.00005	21.000	.00767	.30060	-.00135	.00038	.00400	6.5293
#3	.00039	21.014	.00750	.29228	.00405	.00339	.00081	6.5371
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606054014 Acquired: 6/14/2016 17:29:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	.26905	.00054	-.00104	.00010	.01946	-.00030
Stddev	.00041	.00145	.00327	.00117	.00069	.00024	.00033
%RSD	73.408	.53923	602.21	112.06	703.56	1.2360	108.01
#1	.00057	.27052	-.00004	-.00228	-.00015	.01972	-.00066
#2	.00014	.26761	-.00239	-.00087	.00088	.01941	-.00002
#3	.00095	.26901	.00406	.00003	-.00044	.01925	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7940.0	46251.	3083.1
Stddev	9.7	187.	14.5
%RSD	.12161	.40489	.46939
#1	7929.3	46036.	3071.7
#2	7942.6	46371.	3099.4
#3	7948.1	46347.	3078.2

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 17:33:57 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38498**	**9.6272**	**.37768**	**.48429**	**.94492**	**.04818**	**9.3126**	**.04814**
Stddev	.00131	.0270	.00464	.00312	.00340	.00031	.0767	.00045
%RSD	.34096	.28029	1.2295	.64359	.35938	.63947	.82387	.93562
#1	.38416	9.6046	.38110	.48253	.94654	.04783	9.2598	.04787
#2	.38650	9.6570	.37954	.48789	.94721	.04830	9.4006	.04788
#3	.38429	9.6198	.37239	.48245	.94102	.04841	9.2774	.04866
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19534**	**.48542**	**.48677**	**3.8362**	**47.458**	**.93559**	**9.3954**	**.47377**
Stddev	.00076	.00459	.00292	.0239	.143	.00233	.0588	.00374
%RSD	.38763	.94577	.59982	.62337	.30195	.24913	.62580	.79026
#1	.19614	.48012	.48785	3.8326	47.408	.93568	9.4629	.47387
#2	.19526	.48816	.48900	3.8618	47.620	.93788	9.3675	.47746
#3	.19463	.48798	.48347	3.8143	47.347	.93322	9.3557	.46998
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.96293**	**47.783**	**.49303**	**9.7488**	**.49339**	**1.1697**	**.37378**	**4.9113**
Stddev	.00208	.121	.00182	.0030	.00369	.0094	.00622	.0034
%RSD	.21557	.25352	.36828	.03101	.74785	.80324	1.6639	.06973
#1	.96524	47.741	.49512	9.7514	.49140	1.1747	.37155	4.9082
#2	.96231	47.919	.49215	9.7455	.49113	1.1589	.38080	4.9109
#3	.96123	47.688	.49183	9.7495	.49765	1.1756	.36898	4.9150
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 17:33:57 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.96781	.94451	.93961	.48614	.97117	.98136	.98482
Stddev	.00181	.00385	.00962	.00086	.00421	.00059	.00966
%RSD	.18691	.40778	1.0241	.17744	.43323	.05993	.98123
#1	.96572	.94685	.94895	.48553	.96634	.98200	.97784
#2	.96894	.94662	.92973	.48577	.97403	.98084	.99585
#3	.96877	.94006	.94013	.48713	.97313	.98125	.98076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8106.1	46904.	3053.5
Stddev	14.2	116.	28.0
%RSD	.17535	.24722	.91848
#1	8121.6	46783.	3068.5
#2	8093.5	46913.	3021.2
#3	8103.3	47015.	3070.9

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 17:37:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00093	-.00096	-.00201	.00104	.00066	.00001	.00291	-.00007
Stddev	.00099	.00384	.00191	.00196	.00047	.00000	.02138	.00030
%RSD	105.58	400.76	94.758	188.90	72.011	16.008	735.63	416.90
#1	-.00011	-.00218	-.00126	.00294	.00114	.00001	.02266	.00028
#2	.00184	.00335	-.00418	.00114	.00019	.00001	.00586	-.00026
#3	.00107	-.00405	-.00060	-.00097	.00064	.00001	-.01979	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	.00027	.00078	.02860	-.07775	-.00235	-.08523	-.00011
Stddev	.00030	.00025	.00097	.00867	.03524	.00291	.06296	.00090
%RSD	5543.4	92.384	124.39	30.305	45.320	123.77	73.865	815.20
#1	.00007	-.00001	.00038	.02834	-.06394	.00061	-.12601	-.00105
#2	-.00033	.00033	.00189	.03740	-.11780	-.00246	-.01272	-.00002
#3	.00025	.00047	.00008	.02007	-.05151	-.00521	-.11697	.00074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00172	-.00758	.00067	.00433	-.00180	-.00156	.00163	-.00062
Stddev	.00008	.01278	.00113	.01084	.00201	.00169	.00204	.00304
%RSD	4.5302	168.50	169.28	250.54	111.94	108.44	125.35	492.42
#1	.00171	-.02228	.00050	-.00116	-.00407	-.00172	.00386	.00264
#2	.00180	.00085	-.00037	-.00267	-.00023	-.00317	-.00012	-.00338
#3	.00164	-.00131	.00187	.01681	-.00110	.00020	.00114	-.00111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 17:37:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00084	-.00027	.00695	-.00077	.00062	-.00018	.00097
Stddev	.00053	.00031	.00335	.00191	.00048	.00010	.00019
%RSD	63.218	114.23	48.177	248.77	77.522	56.107	20.049
#1	.00080	-.00012	.01069	-.00296	.00010	-.00019	.00075
#2	.00033	-.00062	.00424	.00015	.00105	-.00007	.00103
#3	.00138	-.00007	.00591	.00051	.00072	-.00027	.00112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8221.5	47984.	3086.2
Stddev	10.2	168.	9.4
%RSD	.12365	.35008	.30370
#1	8233.2	47792.	3094.9
#2	8216.7	48103.	3087.6
#3	8214.6	48058.	3076.3

Approved: June 15, 2016

Sample Name: L1606049201 Acquired: 6/14/2016 17:41:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00215**	**.02347**	**-.00090**	**.87063**	**2.3677**	**.00000**	**156.67**
Stddev	.00076	.00683	.00200	.00033	.0092	.00006	.58
%RSD	35.428	29.125	221.66	.03805	.38693	2330.6	.36866
#1	.00177	.03088	-.00085	.87026	2.3679	-.00003	156.49
#2	.00302	.02210	-.00293	.87087	2.3768	.00007	157.32
#3	.00164	.01742	.00107	.87077	2.3585	-.00003	156.21
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00000**	**.00055**	**.00120**	**.00105**	**.83013**	**12.176**	**.50661**
Stddev	.00012	.00039	.00010	.00099	.01750	.096	.00296
%RSD	3139.3	70.493	8.6986	93.534	2.1085	.78722	.58363
#1	-.00014	.00046	.00132	.00001	.84409	12.169	.50520
#2	.00005	.00098	.00115	.00117	.81050	12.275	.51000
#3	.00008	.00022	.00114	.00197	.83581	12.084	.50461
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**15.352**	**.07152**	**-.00082**	F **354.19**	**-.00034**	**.00655**	**-.00109**
Stddev	.280	.00339	.00031	3.41	.00046	.00996	.00207
%RSD	1.8248	4.7469	38.053	.96361	134.77	152.05	189.28
#1	15.232	.06772	-.00047	355.31	.00011	.01803	.00022
#2	15.672	.07426	-.00094	356.91	-.00081	.00016	-.00348
#3	15.151	.07257	-.00105	350.36	-.00033	.00147	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 15, 2016

Sample Name: L1606049201 Acquired: 6/14/2016 17:41:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00095	-.00089	.06448	.00014	F 29.923	-.02126	.00098
Stddev	.00435	.00190	.00066	.00042	.450	.00367	.00313
%RSD	459.30	214.91	1.0207	304.06	1.5039	17.247	319.44
#1	-.00507	.00097	.06471	.00049	29.773	-.02328	.00152
#2	.00360	-.00080	.06374	.00026	30.429	-.01702	-.00239
#3	-.00137	-.00283	.06499	-.00033	29.568	-.02346	.00381
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00047	.00109	.00001
Stddev	.00091	.00012	.00069
%RSD	193.35	10.669	5931.7
#1	-.00072	.00111	-.00022
#2	-.00122	.00096	.00078
#3	.00054	.00119	-.00053
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7971.4	46009.	3079.7
Stddev	44.5	243.	45.5
%RSD	.55834	.52921	1.4758
#1	8008.8	45858.	3084.4
#2	7983.2	46289.	3032.1
#3	7922.1	45878.	3122.7

Approved: June 15, 2016

Sample Name: L1606049202 Acquired: 6/14/2016 17:45:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00195**	**.00584**	**.00047**	**1.0255**	**2.6925**	**.00009**	**180.26**
Stddev	.00068	.00645	.00085	.0065	.0203	.00003	1.46
%RSD	34.850	110.34	180.73	.63199	.75419	32.062	.80934
#1	-.00257	-.00080	-.00038	1.0180	2.6710	.00013	178.80
#2	-.00122	.01207	.00047	1.0288	2.6952	.00007	180.25
#3	-.00206	.00626	.00131	1.0297	2.7113	.00009	181.72
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.00079**	**.00206**	**.00117**	**.80917**	**13.992**	**.58500**
Stddev	.00025	.00028	.00050	.00038	.03069	.046	.00087
%RSD	778.47	34.987	24.093	32.200	3.7932	.32920	.14892
#1	-.00025	.00073	.00253	.00152	.83454	13.944	.58447
#2	-.00008	.00055	.00154	.00077	.77505	13.997	.58452
#3	.00023	.00109	.00209	.00123	.81791	14.036	.58600
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**17.741**	**.08635**	**-.00109**	F **400.16**	**-.00018**	**.00481**	**.00113**
Stddev	.218	.00134	.00022	8.06	.00014	.00366	.00227
%RSD	1.2310	1.5470	20.438	2.0149	81.500	76.151	200.09
#1	17.627	.08556	-.00096	391.97	-.00009	.00321	.00263
#2	17.602	.08561	-.00096	408.09	-.00010	.00900	-.00148
#3	17.992	.08789	-.00135	400.41	-.00034	.00222	.00225
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 15, 2016

Sample Name: L1606049202 Acquired: 6/14/2016 17:45:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.00457	.04502	-.00029	F 34.426	F -.03234	.00220
Stddev	.00339	.00346	.00083	.00061	.642	.00135	.00088
%RSD	1434.2	75.822	1.8512	208.45	1.8663	4.1862	39.887
#1	.00407	.00823	.04585	-.00048	33.778	-.03372	.00174
#2	-.00103	.00135	.04418	-.00078	35.063	-.03229	.00322
#3	-.00233	.00413	.04504	.00039	34.438	-.03101	.00165
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Pass
High Limit					9.0000	36.000	
Low Limit					-.01000	-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00070	.00074	-.00023
Stddev	.00078	.00008	.00039
%RSD	111.90	11.119	170.09
#1	.00007	.00083	.00021
#2	-.00068	.00067	-.00051
#3	-.00149	.00072	-.00039
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7566.0	42993.	2923.4
Stddev	67.3	191.	41.8
%RSD	.88952	.44475	1.4309
#1	7497.0	42999.	2969.9
#2	7631.5	42800.	2911.5
#3	7569.4	43182.	2888.8

Approved: June 15, 2016

Sample Name: L1606054015 Acquired: 6/14/2016 17:50:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00064	.05888	.00391	.03129	.16499	.00027	40.028	.00011
Stddev	.00270	.01280	.00389	.00177	.00170	.00005	.239	.00016
%RSD	420.10	21.745	99.359	5.6446	1.0311	18.510	.59756	141.22
#1	.00248	.05199	.00681	.02980	.16350	.00032	40.036	.00006
#2	-.00213	.07366	.00544	.03083	.16461	.00022	39.785	-.00001
#3	-.00228	.05100	-.00051	.03324	.16684	.00027	40.263	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.00069	.03741	4.4993	3.4523	.01652	2.7005	.07158
Stddev	.00032	.00045	.00198	.0435	.1087	.00228	.0240	.00236
%RSD	66.875	65.605	5.2808	.96762	3.1471	13.820	.88807	3.3023
#1	.00057	.00091	.03513	4.5082	3.4758	.01902	2.6975	.06963
#2	.00012	.00017	.03859	4.4520	3.3338	.01601	2.6782	.07421
#3	.00075	.00098	.03852	4.5377	3.5473	.01454	2.7259	.07090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00049	39.854	.00303	.84930	.00486	.00570	.00528	26.027
Stddev	.00017	.187	.00016	.00705	.00313	.00445	.00855	.255
%RSD	35.759	.46881	5.2195	.82978	64.456	78.013	161.81	.97825
#1	-.00032	39.893	.00286	.84246	.00140	.00990	-.00455	25.734
#2	-.00048	39.650	.00317	.84890	.00751	.00104	.00948	26.144
#3	-.00067	40.018	.00308	.85653	.00566	.00617	.01092	26.202
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606054015 Acquired: 6/14/2016 17:50:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.22818	.00295	-.00203	.00146	.12516	.00158
Stddev	.00045	.00177	.00178	.00115	.00067	.00151	.00063
%RSD	65.519	.77458	60.266	56.639	46.052	1.2053	39.886
#1	.00112	.23020	.00164	-.00084	.00155	.12343	.00108
#2	.00072	.22743	.00224	-.00212	.00208	.12584	.00138
#3	.00022	.22691	.00498	-.00314	.00075	.12620	.00229
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7466.8	45349.	3005.3
Stddev	49.7	420.	11.4
%RSD	.66497	.92717	.38026
#1	7515.0	45835.	3008.6
#2	7415.9	45119.	3014.8
#3	7469.6	45094.	2992.6

Approved: June 15, 2016

Sample Name: L1606054016 Acquired: 6/14/2016 17:54:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00142	.04949	.00150	.04448	.03246	.00005	80.331	-.00002
Stddev	.00148	.00818	.00200	.00064	.00080	.00009	.248	.00003
%RSD	104.47	16.534	132.84	1.4344	2.4673	178.94	.30895	121.34
#1	-.00034	.04796	.00298	.04492	.03313	.00010	80.364	-.00004
#2	-.00311	.05834	-.00077	.04375	.03157	.00010	80.560	.00001
#3	-.00081	.04219	.00230	.04477	.03268	-.00005	80.067	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00216	.00326	6.3843	1.8356	.00865	2.6804	.16626
Stddev	.00019	.00076	.00062	.0555	.1457	.00281	.0710	.00030
%RSD	336.57	35.200	19.078	.86908	7.9350	32.493	2.6487	.18110
#1	-.00015	.00299	.00377	6.3295	1.8467	.00688	2.6981	.16642
#2	.00009	.00149	.00257	6.4405	1.9753	.01189	2.7408	.16591
#3	.00022	.00201	.00345	6.3829	1.6847	.00718	2.6022	.16645
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00051	28.673	.01287	1.2137	-.00003	-.00234	.00358	17.085
Stddev	.00059	.126	.00065	.0083	.00374	.00162	.00762	.070
%RSD	116.54	.43795	5.0508	.68200	14167.	68.985	212.89	.40749
#1	-.00093	28.719	.01337	1.2208	-.00418	-.00264	-.00418	17.141
#2	-.00075	28.770	.01214	1.2046	.00103	-.00060	.00387	17.107
#3	.00017	28.531	.01310	1.2156	.00306	-.00379	.01105	17.007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606054016 Acquired: 6/14/2016 17:54:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.36984	-.00618	-.00191	.00059	.01730	.00109
Stddev	.00061	.00119	.00630	.00126	.00147	.00026	.00044
%RSD	225.55	.32169	101.96	66.068	248.31	1.5198	40.069
#1	.00028	.36997	-.00452	-.00184	.00151	.01758	.00072
#2	.00087	.37096	-.00088	-.00068	.00137	.01706	.00098
#3	-.00035	.36859	-.01315	-.00320	-.00110	.01724	.00157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7408.5	43089.	2810.4
Stddev	18.4	120.	10.8
%RSD	.24900	.27807	.38501
#1	7406.7	43207.	2798.0
#2	7391.0	42967.	2815.0
#3	7427.7	43091.	2818.2

Approved: June 15, 2016

Sample Name: L1606064501 Acquired: 6/14/2016 17:58:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00078	.01025	-.00002	-.00000	.00016	.00003	.03499	.00015
Stddev	.00153	.00759	.00189	.00291	.00078	.00004	.03521	.00014
%RSD	195.57	74.093	8696.6	192800.	487.87	169.86	100.63	88.637
#1	.00236	.01552	-.00015	-.00318	.00090	.00005	.06275	.00004
#2	-.00070	.00154	-.00184	.00253	-.00065	.00005	-.00462	.00031
#3	.00068	.01368	.00193	.00064	.00024	-.00002	.04685	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.00099	.00057	-.01457	-.15866	-.00222	.04173	-.00039
Stddev	.00049	.00030	.00097	.02016	.08192	.00402	.07812	.00141
%RSD	291.16	30.575	170.64	138.36	51.630	181.25	187.17	359.52
#1	-.00049	.00109	.00110	-.01251	-.20689	-.00680	.04278	-.00202
#2	.00039	.00124	-.00055	-.03568	-.06408	-.00063	-.03690	.00042
#3	-.00040	.00066	.00116	.00448	-.20501	.00076	.11932	.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00085	.00805	.00038	.00129	-.00172	.00184	.00683	.00181
Stddev	.00052	.03487	.00113	.00101	.00059	.00376	.00256	.00082
%RSD	61.179	433.14	298.55	78.644	34.357	203.67	37.470	45.144
#1	-.00132	-.00592	.00143	.00012	-.00143	.00565	.00716	.00087
#2	-.00029	.04774	.00050	.00190	-.00240	-.00186	.00412	.00235
#3	-.00094	-.01767	-.00081	.00184	-.00133	.00175	.00921	.00220
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606064501 Acquired: 6/14/2016 17:58:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00072	.00202	.00582	-.00226	-.00020	.00124	.00022
Stddev	.00080	.00024	.00162	.00041	.00026	.00024	.00049
%RSD	110.54	11.685	27.792	18.274	127.80	19.136	221.29
#1	.00150	.00201	.00671	-.00192	.00003	.00151	-.00026
#2	-.00010	.00179	.00396	-.00214	-.00048	.00106	.00020
#3	.00078	.00226	.00681	-.00272	-.00015	.00116	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7507.7	44131.	2809.4
Stddev	13.4	94.	31.1
%RSD	.17810	.21357	1.1071
#1	7518.9	44175.	2839.8
#2	7492.9	44022.	2810.9
#3	7511.4	44194.	2777.6

Approved: June 15, 2016

Sample Name: L1606064502 Acquired: 6/14/2016 18:02:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	.01881	.00154	.00007	.00199	.00007	2.0964	.00007
Stddev	.00069	.00654	.00252	.00417	.00148	.00003	.0317	.00012
%RSD	301.82	34.769	163.36	6334.4	74.144	50.420	1.5101	171.99
#1	-.00056	.01507	.00410	.00395	.00029	.00003	2.1239	.00002
#2	.00057	.02637	.00148	-.00433	.00281	.00009	2.0618	.00022
#3	-.00069	.01501	-.00094	.00058	.00289	.00008	2.1035	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00041	.00401	.00151	.14379	-.13332	-.00298	.18185	.00254
Stddev	.00034	.00065	.00128	.01005	.04769	.00094	.05404	.00171
%RSD	81.289	16.084	84.714	6.9902	35.772	31.467	29.716	67.419
#1	-.00074	.00458	.00285	.13275	-.13561	-.00406	.15507	.00267
#2	-.00007	.00331	.00032	.15240	-.08452	-.00244	.24405	.00077
#3	-.00042	.00415	.00135	.14623	-.17982	-.00243	.14643	.00418
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00161	.12292	.00091	.00800	-.00174	-.00264	.00870	.02305
Stddev	.00028	.02001	.00036	.00376	.00146	.00326	.00775	.00248
%RSD	17.696	16.283	39.156	47.061	83.994	123.62	89.101	10.767
#1	.00144	.10059	.00085	.01072	-.00080	.00061	.00585	.02030
#2	.00145	.12894	.00059	.00957	-.00100	-.00261	.00277	.02373
#3	.00194	.13924	.00130	.00370	-.00343	-.00591	.01747	.02512
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606064502 Acquired: 6/14/2016 18:02:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00098	.00416	.00548	.00105	.00104	.01146	.00028
Stddev	.00027	.00051	.00609	.00146	.00110	.00008	.00074
%RSD	27.372	12.269	111.11	139.01	105.08	.68979	269.70
#1	.00067	.00405	.00747	.00173	.00092	.01138	.00113
#2	.00114	.00472	.01034	-.00063	.00001	.01154	-.00018
#3	.00113	.00372	-.00135	.00203	.00219	.01145	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7566.2	43999.	2794.7
Stddev	29.7	263.	11.9
%RSD	.39244	.59722	.42516
#1	7552.8	43697.	2793.1
#2	7545.6	44175.	2807.4
#3	7600.2	44124.	2783.8

Approved: June 15, 2016

Sample Name: L1606041103 Acquired: 6/14/2016 18:06:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**.20230**	**.00188**	**.00134**	**.00804**	**.00007**	**.28731**	**-.00033**
Stddev	.00176	.01138	.00080	.00109	.00111	.00003	.00779	.00013
%RSD	767.36	5.6245	42.755	80.910	13.797	45.161	2.7124	39.586
#1	-.00173	.19806	.00276	.00259	.00803	.00006	.29383	-.00044
#2	.00171	.19364	.00169	.00062	.00916	.00011	.27868	-.00019
#3	-.00066	.21518	.00118	.00082	.00694	.00005	.28943	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00024**	**.00419**	**.00119**	**.18721**	**-.10774**	**.00140**	**.17924**	**-.00033**
Stddev	.00046	.00080	.00086	.01977	.11543	.00464	.07879	.00056
%RSD	188.83	19.056	72.501	10.561	107.14	330.49	43.958	168.60
#1	.00034	.00508	.00024	.20924	-.03738	-.00349	.17519	-.00098
#2	-.00026	.00394	.00193	.18138	-.24096	.00197	.10255	.00001
#3	.00064	.00354	.00139	.17101	-.04488	.00573	.25998	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00079**	**2.5002**	**.00968**	**.00687**	**-.00215**	**.00170**	**.00475**	**2.0899**
Stddev	.00039	.0483	.00004	.00785	.00209	.00229	.00239	.0163
%RSD	49.721	1.9311	.44513	114.29	97.277	134.93	50.212	.77799
#1	-.00114	2.5217	.00968	.00211	-.00117	.00162	.00313	2.0989
#2	-.00087	2.5341	.00964	.00257	-.00455	.00403	.00749	2.0997
#3	-.00037	2.4449	.00972	.01593	-.00073	-.00055	.00363	2.0711
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606041103 Acquired: 6/14/2016 18:06:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00076**	**.00576**	**.00895**	**.00105**	**.00066**	**.00138**	**.00045**
Stddev	.00051	.00044	.00280	.00269	.00107	.00008	.00036
%RSD	66.900	7.5966	31.228	257.44	163.17	5.7236	79.319
#1	.00027	.00553	.00573	.00403	-.00051	.00146	.00008
#2	.00128	.00627	.01044	.00033	.00159	.00131	.00048
#3	.00073	.00549	.01069	-.00121	.00089	.00137	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8530.4**	**49451.**	**3121.0**
Stddev	21.2	309.	21.4
%RSD	.24892	.62577	.68619
#1	8525.3	49735.	3096.4
#2	8553.8	49122.	3130.9
#3	8512.3	49497.	3135.7

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 18:10:23 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41032	10.299	.40306	.51555	1.0137	.05157	10.006	.05125
Stddev	.00257	.028	.00072	.00347	.0058	.00042	.020	.00054
%RSD	.62607	.26727	.17928	.67253	.57243	.81202	.19734	1.0553
#1	.41221	10.319	.40315	.51181	1.0080	.05120	9.9914	.05095
#2	.40739	10.310	.40230	.51865	1.0134	.05150	9.9979	.05188
#3	.41135	10.268	.40374	.51620	1.0196	.05203	10.028	.05093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20946	.51928	.52086	4.1267	50.524	1.0038	10.045	.50685
Stddev	.00093	.00422	.00400	.0344	.316	.0040	.110	.00328
%RSD	.44362	.81356	.76862	.83412	.62457	.39440	1.0941	.64805
#1	.20904	.51956	.52195	4.0871	50.168	1.0079	9.9715	.50329
#2	.21053	.51493	.52421	4.1484	50.634	1.0035	9.9918	.50748
#3	.20882	.52336	.51643	4.1448	50.770	1.0000	10.171	.50976
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0294	50.978	.52495	10.362	.52713	1.2490	.39867	5.2281
Stddev	.0067	.288	.00357	.043	.00573	.0091	.00494	.0229
%RSD	.65493	.56404	.68059	.41261	1.0865	.73063	1.2401	.43742
#1	1.0335	50.653	.52609	10.372	.52995	1.2508	.39409	5.2355
#2	1.0331	51.079	.52780	10.399	.53091	1.2571	.40391	5.2463
#3	1.0216	51.201	.52094	10.315	.52054	1.2391	.39801	5.2024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 18:10:23 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0354**	**1.0131**	**1.0079**	**.51623**	**1.0349**	**1.0503**	**1.0615**
Stddev	.0051	.0040	.0032	.00447	.0075	.0036	.0080
%RSD	.49400	.39648	.31784	.86522	.71980	.34332	.75490
#1	1.0358	1.0092	1.0085	.51656	1.0289	1.0498	1.0637
#2	1.0403	1.0129	1.0045	.52053	1.0326	1.0541	1.0526
#3	1.0301	1.0172	1.0109	.51161	1.0432	1.0469	1.0681
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7559.0**	**43649.**	**2831.4**
Stddev	16.5	283.	9.1
%RSD	.21858	.64896	.31973
#1	7539.9	43844.	2838.9
#2	7568.3	43324.	2833.9
#3	7568.7	43779.	2821.3

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 18:14:05 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00113**	**.00778**	**.00082**	**.00237**	**.00115**	**.00017**	**-.00480**	**-.00014**
Stddev	.00080	.00665	.00358	.00224	.00102	.00006	.01651	.00017
%RSD	70.779	85.381	438.45	94.230	88.415	36.371	344.24	119.88
#1	-.00105	.01184	.00405	.00402	.00000	.00021	-.01106	.00005
#2	-.00037	.00011	.00144	.00326	.00194	.00010	-.01725	-.00024
#3	-.00196	.01140	-.00304	-.00017	.00152	.00019	.01393	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**.00075**	**.00023**	**-.00304**	**-.12504**	**-.00263**	**-.02184**	**-.00041**
Stddev	.00011	.00079	.00057	.01464	.02078	.00206	.02081	.00430
%RSD	128.23	105.22	252.89	481.50	16.619	78.140	95.243	1048.0
#1	-.00022	.00165	.00027	-.01353	-.12219	-.00391	-.04166	.00456
#2	-.00004	.00015	-.00037	-.00928	-.10582	-.00373	-.02369	-.00301
#3	-.00001	.00046	.00077	.01369	-.14709	-.00026	-.00018	-.00278
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00184**	**-.00565**	**.00087**	**.00224**	**-.00282**	**.00051**	**.00861**	**.00271**
Stddev	.00047	.02805	.00043	.01179	.00159	.00047	.00687	.00133
%RSD	25.554	496.30	49.363	526.04	56.340	93.444	79.771	48.940
#1	.00146	-.03535	.00131	-.01108	-.00317	.00026	.00279	.00409
#2	.00170	-.00200	.00045	.00648	-.00108	.00105	.01619	.00261
#3	.00237	.02040	.00085	.01132	-.00420	.00021	.00685	.00144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 18:14:05 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00133	.00014	.00722	.00127	-.00037	-.00014	.00108
Stddev	.00068	.00010	.00779	.00275	.00054	.00008	.00055
%RSD	51.355	70.111	107.90	215.96	143.80	59.039	50.667
#1	.00091	.00019	-.00027	.00081	-.00017	-.00015	.00051
#2	.00211	.00020	.00665	.00423	.00003	-.00021	.00160
#3	.00096	.00003	.01529	-.00122	-.00098	-.00005	.00111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7731.7	45144.	2870.4
Stddev	35.6	209.	39.0
%RSD	.46004	.46369	1.3589
#1	7699.2	44902.	2846.8
#2	7726.0	45253.	2848.9
#3	7769.7	45276.	2915.4

Approved: June 15, 2016

Sample Name: L1606041104 Acquired: 6/14/2016 18:18:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00044	.19521	.00109	.00048	.00823	.00005	.30813	-.00016
Stddev	.00144	.00461	.00128	.00292	.00062	.00004	.04735	.00001
%RSD	329.00	2.3633	117.97	606.69	7.5050	75.630	15.366	3.6712
#1	-.00058	.19072	.00245	.00361	.00769	.00006	.28619	-.00016
#2	-.00180	.19497	-.00010	.00001	.00810	.00001	.27574	-.00017
#3	.00107	.19994	.00091	-.00217	.00891	.00009	.36247	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.00350	.00048	.15658	-.10616	.00126	.15753	.00213
Stddev	.00064	.00090	.00102	.01788	.11285	.00341	.02033	.00122
%RSD	189.36	25.626	212.11	11.421	106.31	271.11	12.909	57.205
#1	.00044	.00270	.00145	.13774	-.12677	.00198	.18071	.00218
#2	.00092	.00447	-.00058	.15869	.01558	-.00246	.14269	.00089
#3	-.00035	.00333	.00058	.17331	-.20728	.00425	.14918	.00333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00062	2.5794	.01140	-.00045	-.00159	-.00393	.00168	2.1311
Stddev	.00014	.0085	.00031	.00882	.00310	.00227	.00399	.0073
%RSD	23.379	.32897	2.6775	1942.8	195.12	57.783	237.06	.34468
#1	-.00068	2.5781	.01147	-.00216	.00146	-.00159	.00104	2.1329
#2	-.00072	2.5716	.01107	-.00830	-.00149	-.00613	.00596	2.1373
#3	-.00045	2.5885	.01167	.00910	-.00475	-.00408	-.00195	2.1230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606041104 Acquired: 6/14/2016 18:18:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00111**	**.00582**	**.00470**	**.00111**	**.00046**	**.00090**	**.00056**
Stddev	.00105	.00014	.00103	.00138	.00055	.00005	.00037
%RSD	94.390	2.4767	21.984	123.73	117.56	5.1249	65.026
#1	.00230	.00567	.00458	.00265	.00079	.00095	.00082
#2	.00070	.00584	.00373	-.00002	-.00017	.00085	.00014
#3	.00032	.00595	.00578	.00072	.00077	.00090	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8444.9**	**48946.**	**3101.3**
Stddev	14.8	250.	19.0
%RSD	.17482	.51108	.61358
#1	8461.5	49117.	3121.9
#2	8439.8	48659.	3097.7
#3	8433.3	49061.	3084.3

Approved: June 15, 2016

Sample Name: L1606048503 Acquired: 6/14/2016 18:22:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00058	.00254	.00128	.00221	.00376	.00014	3.2725	-.00004
Stddev	.00202	.00600	.00310	.00076	.00140	.00005	.0107	.00019
%RSD	347.20	236.50	242.50	34.549	37.260	32.373	.32565	498.52
#1	.00095	.00885	.00485	.00300	.00329	.00016	3.2610	-.00024
#2	-.00288	-.00309	-.00054	.00148	.00266	.00009	3.2746	.00013
#3	.00017	.00185	-.00048	.00213	.00534	.00017	3.2819	-.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	-.00031	.00023	-.00132	-.06347	-.00035	.93682	.01121
Stddev	.00031	.00085	.00040	.00460	.06537	.00299	.07738	.00361
%RSD	159.75	278.32	178.44	349.46	103.00	850.12	8.2594	32.208
#1	-.00016	-.00097	.00061	.00211	.00627	.00041	.90753	.00734
#2	.00042	-.00060	.00026	.00049	-.07332	-.00364	1.0246	.01449
#3	.00032	.00065	-.00019	-.00655	-.12335	.00218	.87837	.01180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00059	1.9280	.00051	.00463	-.00199	-.00168	.00135	.41261
Stddev	.00022	.0235	.00035	.00539	.00139	.00394	.00217	.00375
%RSD	37.233	1.2187	67.504	116.36	69.919	234.73	160.18	.90853
#1	-.00045	1.9122	.00082	.00069	-.00200	.00016	.00019	.40925
#2	-.00084	1.9167	.00014	.01077	-.00338	.00101	.00386	.41665
#3	-.00048	1.9550	.00059	.00243	-.00060	-.00621	.00001	.41192
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606048503 Acquired: 6/14/2016 18:22:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	.02080	.00951	-.00064	.00001	.00086	-.00037
Stddev	.00052	.00028	.00247	.00222	.00064	.00004	.00059
%RSD	132.27	1.3291	25.919	345.32	6624.0	4.6434	160.18
#1	.00063	.02049	.00809	.00085	-.00059	.00086	-.00103
#2	-.00020	.02088	.01236	-.00320	-.00006	.00082	.00010
#3	.00077	.02103	.00808	.00042	.00068	.00090	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8407.4	48756.	3086.6
Stddev	20.9	237.	25.6
%RSD	.24893	.48688	.83029
#1	8431.4	48977.	3089.7
#2	8392.5	48505.	3110.6
#3	8398.4	48785.	3059.6

Approved: June 15, 2016

Sample Name: L1606048504 Acquired: 6/14/2016 18:26:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00045**	**.00098**	**.00006**	**.00218**	**.00711**	**.00006**	**3.3571**	**.00008**
Stddev	.00104	.00627	.00148	.00141	.00106	.00004	.0451	.00027
%RSD	233.10	641.65	2510.0	64.848	14.945	76.439	1.3427	341.24
#1	-.00158	.00274	.00151	.00168	.00590	.00001	3.3096	.00028
#2	.00048	.00618	.00012	.00378	.00754	.00006	3.3992	.00019
#3	-.00024	-.00599	-.00145	.00109	.00788	.00010	3.3627	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00020**	**-.00045**	**-.00053**	**.00386**	**-.09403**	**-.00304**	**.92898**	**.00177**
Stddev	.00025	.00033	.00105	.00685	.06519	.00159	.09330	.00246
%RSD	123.37	72.868	197.72	177.67	69.332	52.321	10.043	139.40
#1	-.00002	-.00007	-.00175	.00029	-.10545	-.00474	1.0102	-.00098
#2	.00048	-.00068	.00002	.01175	-.15276	-.00280	.94970	.00251
#3	.00015	-.00060	.00013	-.00048	-.02388	-.00158	.82707	.00377
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00084**	**1.5620**	**.00088**	**.00463**	**-.00211**	**.00083**	**.00265**	**.55044**
Stddev	.00013	.0322	.00075	.00429	.00351	.00220	.00452	.00142
%RSD	15.857	2.0638	85.246	92.836	166.39	264.78	170.92	.25850
#1	-.00093	1.5794	.00003	-.00033	-.00225	.00072	.00344	.54956
#2	-.00090	1.5818	.00118	.00699	.00147	.00308	.00672	.54966
#3	-.00068	1.5248	.00143	.00722	-.00555	-.00131	-.00222	.55208
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606048504 Acquired: 6/14/2016 18:26:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.04727	.00667	-.00152	.00023	.00048	.00024
Stddev	.00029	.00090	.00460	.00123	.00062	.00013	.00026
%RSD	81.209	1.8954	69.026	80.601	269.03	25.958	109.58
#1	.00011	.04646	.00207	-.00049	-.00006	.00063	.00008
#2	.00028	.04712	.00666	-.00288	-.00019	.00043	.00054
#3	.00067	.04823	.01128	-.00120	.00094	.00040	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8436.1	48837.	3119.8
Stddev	21.5	146.	17.4
%RSD	.25510	.29970	.55763
#1	8421.4	48972.	3114.2
#2	8460.8	48682.	3139.3
#3	8426.0	48858.	3105.8

Approved: June 15, 2016

Sample Name: L1606048505 Acquired: 6/14/2016 18:30:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00083	.00445	.00078	.00185	.00999	.00013	4.6841	-.00010
Stddev	.00047	.00402	.00268	.00158	.00053	.00002	.0160	.00016
%RSD	56.539	90.453	342.81	85.685	5.3470	16.719	.34123	151.60
#1	.00104	.00859	.00373	.00002	.00938	.00012	4.7026	-.00007
#2	.00029	.00421	-.00151	.00274	.01034	.00011	4.6748	-.00028
#3	.00115	.00055	.00012	.00279	.01026	.00015	4.6751	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00028	.00072	.00057	.61374	-.17492	-.00242	.52461	.07515
Stddev	.00031	.00136	.00070	.00905	.06054	.00423	.00041	.00209
%RSD	112.90	188.34	123.55	1.4744	34.609	174.86	.07910	2.7832
#1	-.00034	.00201	.00064	.62149	-.20814	-.00227	.52429	.07636
#2	.00006	.00086	-.00017	.60380	-.10505	.00173	.52508	.07635
#3	-.00055	-.00070	.00123	.61594	-.21158	-.00672	.52446	.07273
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00041	1.5866	.00067	.00377	-.00126	-.00263	-.00066	.44091
Stddev	.00018	.0273	.00091	.00176	.00360	.00354	.00654	.00084
%RSD	43.607	1.7237	135.54	46.702	285.20	134.77	999.04	.19116
#1	-.00037	1.5869	.00033	.00237	-.00414	-.00582	.00617	.44114
#2	-.00060	1.6139	-.00002	.00319	-.00243	.00118	-.00127	.43997
#3	-.00025	1.5592	.00170	.00574	.00278	-.00324	-.00687	.44161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606048505 Acquired: 6/14/2016 18:30:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.01787	.00933	-.00022	.00072	.00032	.00018
Stddev	.00039	.00008	.00676	.00059	.00102	.00021	.00023
%RSD	56.937	.47570	72.461	262.69	141.06	67.491	130.76
#1	.00086	.01796	.00164	-.00048	-.00023	.00008	.00006
#2	.00098	.01784	.01200	.00045	.00060	.00037	.00044
#3	.00024	.01780	.01435	-.00064	.00179	.00049	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8429.3	48865.	3091.3
Stddev	36.1	178.	8.3
%RSD	.42862	.36515	.26929
#1	8460.6	49064.	3093.3
#2	8437.4	48720.	3082.2
#3	8389.7	48811.	3098.5

Approved: June 15, 2016

Sample Name: L1606048506 Acquired: 6/14/2016 18:34:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00168	-.00820	.00027	-.00185	.00094	.00014	4.7670	-.00010
Stddev	.00273	.00704	.00198	.00190	.00125	.00003	.0185	.00021
%RSD	162.99	85.857	727.08	102.67	132.47	24.575	.38836	220.74
#1	.00382	-.01162	-.00181	-.00148	.00081	.00015	4.7789	-.00031
#2	-.00140	-.00010	.00213	-.00390	.00225	.00010	4.7457	.00012
#3	.00261	-.01288	.00049	-.00016	-.00024	.00016	4.7765	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.00030	.00040	.01260	-.16821	-.00191	.35472	.00380
Stddev	.00010	.00099	.00201	.01751	.09808	.00189	.03415	.00102
%RSD	350.66	332.79	503.89	138.95	58.309	98.734	9.6286	26.773
#1	.00002	.00087	.00082	.00016	-.28006	-.00345	.32173	.00460
#2	-.00014	-.00085	-.00179	.00503	-.12769	.00019	.35251	.00414
#3	.00004	.00087	.00216	.03262	-.09688	-.00247	.38993	.00266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00073	.94385	.00083	.00634	-.00363	-.00009	.00168	.35914
Stddev	.00045	.00809	.00069	.00605	.00329	.00319	.00041	.00237
%RSD	61.788	.85693	82.879	95.403	90.695	3491.7	24.317	.65887
#1	-.00097	.95250	.00009	.01212	-.00683	-.00002	.00161	.35648
#2	-.00102	.94257	.00145	.00005	-.00025	-.00332	.00131	.36099
#3	-.00021	.93648	.00096	.00685	-.00382	.00307	.00212	.35996
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606048506 Acquired: 6/14/2016 18:34:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	.01749	.00512	-.00046	.00036	.00073	.00017
Stddev	.00042	.00027	.00617	.00013	.00047	.00032	.00060
%RSD	90.558	1.5678	120.47	28.235	132.43	43.531	358.82
#1	.00090	.01777	.00844	-.00032	-.00018	.00046	.00063
#2	.00006	.01746	.00891	-.00058	.00070	.00108	.00039
#3	.00043	.01723	-.00200	-.00048	.00054	.00066	-.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8416.3	48869.	3117.6
Stddev	8.4	313.	16.6
%RSD	.09954	.64122	.53141
#1	8422.3	48705.	3134.3
#2	8406.7	48673.	3101.2
#3	8419.9	49231.	3117.5

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 18:38:25 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37274**	**9.3653**	**.36703**	**.47488**	**.92360**	**.04696**	**9.1202**	**.04737**
Stddev	.00134	.0510	.00363	.00362	.00453	.00032	.0773	.00032
%RSD	.35883	.54508	.98905	.76257	.49001	.68764	.84750	.67029
#1	.37191	9.3403	.36303	.47282	.91867	.04664	9.0562	.04772
#2	.37428	9.3317	.36793	.47277	.92757	.04695	9.0983	.04711
#3	.37203	9.4241	.37013	.47906	.92455	.04729	9.2060	.04727
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19201**	**.47216**	**.47977**	**3.7033**	**46.458**	**.91691**	**9.1244**	**.46057**
Stddev	.00050	.00483	.00235	.0236	.146	.00279	.1308	.00329
%RSD	.26014	1.0227	.48972	.63846	.31321	.30386	1.4335	.71400
#1	.19161	.46705	.48075	3.6768	46.328	.92004	8.9963	.45718
#2	.19184	.47278	.47710	3.7223	46.615	.91600	9.2577	.46375
#3	.19257	.47664	.48148	3.7107	46.431	.91469	9.1193	.46079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.94277**	**46.744**	**.48271**	**9.5480**	**.48330**	**1.1424**	**.37235**	**4.8111**
Stddev	.00261	.200	.00239	.0174	.00182	.0059	.00249	.0055
%RSD	.27714	.42770	.49593	.18237	.37693	.51475	.66988	.11352
#1	.94575	46.545	.48067	9.5290	.48146	1.1367	.37126	4.8120
#2	.94086	46.944	.48535	9.5518	.48510	1.1420	.37059	4.8053
#3	.94171	46.742	.48211	9.5631	.48334	1.1485	.37521	4.8161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 18:38:25 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.94699	.91805	.90974	.47244	.94584	.96456	.96527
Stddev	.00181	.00419	.00971	.00132	.00791	.00170	.00518
%RSD	.19122	.45684	1.0672	.27897	.83580	.17614	.53644
#1	.94683	.91342	.90198	.47396	.93770	.96260	.95930
#2	.94888	.92159	.90662	.47164	.94634	.96559	.96855
#3	.94527	.91914	.92063	.47171	.95348	.96549	.96796
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8063.2	47010.	3057.0
Stddev	17.3	244.	17.2
%RSD	.21481	.51893	.56114
#1	8057.6	47116.	3074.7
#2	8049.3	47182.	3040.5
#3	8082.6	46731.	3055.9

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 18:42:07 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.00600	.00009	.00022	.00034	.00006	-.00541	-.00007
Stddev	.00170	.00632	.00131	.00112	.00040	.00005	.02196	.00030
%RSD	1887.5	105.34	1439.3	511.75	114.92	81.633	405.75	420.91
#1	.00187	-.00032	.00114	.00146	.00075	.00009	.01783	-.00042
#2	-.00093	.01233	.00051	-.00072	-.00004	.00000	-.02581	.00013
#3	-.00121	.00600	-.00138	-.00008	.00033	.00008	-.00826	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00032	-.00081	.00003	.02147	-.05580	-.00112	-.02941	-.00024
Stddev	.00042	.00063	.00192	.03470	.08976	.00086	.09497	.00102
%RSD	133.48	77.830	5607.3	161.62	160.86	76.588	322.96	427.33
#1	-.00028	-.00068	-.00212	.00337	-.02672	-.00206	-.01489	.00042
#2	.00008	-.00026	.00155	.06148	.01581	-.00095	.05747	.00028
#3	-.00076	-.00150	.00068	-.00044	-.15649	-.00036	-.13080	-.00142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00147	-.00272	.00046	.00153	-.00219	.00120	.00256	.00126
Stddev	.00037	.01584	.00075	.00616	.00232	.00095	.00265	.00094
%RSD	25.463	583.30	164.17	401.98	106.10	79.560	103.41	74.211
#1	.00108	-.02051	-.00031	-.00397	-.00478	.00090	.00560	.00162
#2	.00150	.00983	.00049	.00819	-.00149	.00226	.00139	.00197
#3	.00183	.00253	.00119	.00038	-.00030	.00043	.00070	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 18:42:07 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00112**	**.00048**	**.00352**	**.00219**	**.00003**	**-.00039**	**.00088**
Stddev	.00016	.00017	.00461	.00227	.00030	.00020	.00017
%RSD	14.068	34.660	130.87	103.84	860.88	51.149	19.189
#1	.00126	.00064	-.00090	-.00016	-.00023	-.00058	.00073
#2	.00095	.00031	.00317	.00438	.00036	-.00018	.00084
#3	.00115	.00048	.00830	.00236	-.00003	-.00043	.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8215.9**	**47868.**	**3055.8**
Stddev	14.8	104.	40.5
%RSD	.18052	.21828	1.3267
#1	8199.4	47752.	3075.6
#2	8228.2	47895.	3009.2
#3	8220.1	47956.	3082.7

Approved: June 15, 2016

Sample Name: LLCCV Acquired: 6/14/2016 18:46:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00798	.16315	.00817	.07319	.00789	.00155	.37749	.00044
Stddev	.00104	.00903	.00056	.00026	.00031	.00006	.05271	.00028
%RSD	13.084	5.5357	6.8744	.35783	3.9768	3.8843	13.962	62.553
#1	.00883	.15394	.00752	.07289	.00765	.00149	.32452	.00019
#2	.00682	.16354	.00842	.07339	.00777	.00157	.37802	.00073
#3	.00830	.17199	.00856	.07328	.00824	.00160	.42993	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00376	.00399	.00500	.08442	.61306	.07166	.35674	.00688
Stddev	.00013	.00040	.00056	.02379	.06630	.00403	.04913	.00129
%RSD	3.3607	10.023	11.105	28.186	10.814	5.6263	13.771	18.728
#1	.00381	.00443	.00545	.08961	.67849	.07614	.33374	.00816
#2	.00361	.00390	.00518	.05845	.54593	.06833	.41314	.00690
#3	.00384	.00364	.00438	.10518	.61477	.07051	.32332	.00558
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00692	.36710	.01663	.73730	.00701	.07462	.01686	.75697
Stddev	.00040	.01092	.00054	.00538	.00158	.00239	.00068	.00168
%RSD	5.7176	2.9739	3.2572	.73035	22.502	3.2073	4.0544	.22256
#1	.00661	.37923	.01601	.73657	.00567	.07678	.01652	.75561
#2	.00737	.35807	.01702	.74301	.00875	.07504	.01764	.75644
#3	.00679	.36399	.01684	.73231	.00661	.07205	.01641	.75886
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: LLCCV Acquired: 6/14/2016 18:46:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38559**	**.03748**	**.02579**	**.14398**	**.00705**	**.01793**	**.04204**
Stddev	.00077	.00025	.00251	.00189	.00087	.00014	.00135
%RSD	.19844	.67853	9.7484	1.3141	12.389	.75305	3.2147
#1	.38633	.03720	.02823	.14595	.00604	.01809	.04084
#2	.38563	.03768	.02594	.14382	.00752	.01785	.04179
#3	.38481	.03757	.02321	.14218	.00758	.01786	.04351
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8291.9**	**48232.**	**3085.5**
Stddev	23.9	66.	36.0
%RSD	.28860	.13642	1.1683
#1	8268.2	48157.	3125.8
#2	8291.5	48276.	3056.3
#3	8316.1	48264.	3074.3

Approved: June 15, 2016

Sample Name: PBW 17 Acquired: 6/14/2016 18:50:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571814-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00051**	**.02468**	**-.00105**	**.00628**	**.00138**	**.00008**	**.05267**	**-.00014**
Stddev	.00170	.00685	.00113	.00072	.00033	.00011	.02410	.00014
%RSD	332.22	27.752	107.87	11.501	24.202	143.89	45.760	96.762
#1	-.00230	.01993	-.00199	.00702	.00176	.00003	.08014	-.00027
#2	.00109	.03253	.00021	.00558	.00126	.00020	.04279	.00000
#3	-.00033	.02158	-.00136	.00624	.00113	.00000	.03507	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.00088**	**.00035**	**.00586**	**-.06296**	**-.00161**	**.03112**	**.00009**
Stddev	.00032	.00025	.00092	.02103	.06670	.00582	.11790	.00293
%RSD	247.63	28.236	260.21	359.08	105.95	362.49	378.92	3187.5
#1	.00023	.00073	.00127	.02986	-.12655	.00438	.09487	.00280
#2	-.00021	.00075	.00036	-.00294	-.06879	-.00196	-.10494	.00049
#3	-.00040	.00117	-.00057	-.00935	.00647	-.00724	.10342	-.00301
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**-.00995**	**.00087**	**-.00250**	**-.00099**	**-.00027**	**-.00549**	**.05286**
Stddev	.00018	.02677	.00021	.00255	.00178	.00185	.00448	.00171
%RSD	135.07	269.16	23.933	101.98	180.81	695.80	81.631	3.2432
#1	.00001	-.04047	.00104	.00028	-.00303	-.00009	-.00853	.05216
#2	-.00008	.00956	.00094	-.00473	.00026	.00149	-.00761	.05160
#3	-.00034	.00107	.00064	-.00307	-.00020	-.00219	-.00034	.05481
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: PBW 17 Acquired: 6/14/2016 18:50:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571814-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**.00153**	**-.00135**	**.00051**	**.00001**	**.00194**	**.00042**
Stddev	.00035	.00029	.00531	.00072	.00074	.00013	.00042
%RSD	244.19	18.664	392.83	141.06	7560.1	6.5013	98.186
#1	.00054	.00183	-.00557	.00084	-.00046	.00208	.00073
#2	-.00012	.00151	.00461	.00100	-.00037	.00184	-.00005
#3	.00001	.00126	-.00309	-.00031	.00086	.00190	.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7689.5**	**44705.**	**2859.4**
Stddev	19.7	153.	14.5
%RSD	.25604	.34284	.50814
#1	7668.2	44541.	2865.8
#2	7707.0	44844.	2869.7
#3	7693.3	44730.	2842.8

Approved: June 15, 2016

Sample Name: LCSW 17 Acquired: 6/14/2016 18:54:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571814-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20598	5.2596	.20344	1.0180	.51982	.02559	5.2299	.02594
Stddev	.00217	.0042	.00146	.0029	.00436	.00008	.0654	.00012
%RSD	1.0543	.07910	.71623	.28485	.83942	.32218	1.2502	.46800
#1	.20357	5.2638	.20502	1.0214	.52484	.02556	5.3022	.02588
#2	.20657	5.2555	.20314	1.0167	.51692	.02553	5.1750	.02608
#3	.20779	5.2595	.20215	1.0161	.51770	.02569	5.2125	.02586
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10708	.26691	.26658	2.1224	25.321	.51860	5.2287	.25794
Stddev	.00020	.00188	.00074	.0070	.161	.00430	.1258	.00478
%RSD	.18536	.70334	.27923	.32977	.63658	.82820	2.4061	1.8538
#1	.10726	.26806	.26682	2.1144	25.507	.51708	5.3686	.25733
#2	.10687	.26794	.26574	2.1277	25.228	.51527	5.1249	.25349
#3	.10712	.26475	.26717	2.1249	25.227	.52345	5.1927	.26300
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53157	25.885	.27151	5.1280	.26913	.62741	.20347	2.9553
Stddev	.00087	.171	.00050	.0064	.00047	.00332	.00208	.0060
%RSD	.16430	.66175	.18488	.12459	.17524	.52993	1.0227	.20402
#1	.53240	26.068	.27106	5.1248	.26954	.62833	.20389	2.9483
#2	.53066	25.728	.27143	5.1238	.26862	.63018	.20531	2.9588
#3	.53166	25.858	.27205	5.1353	.26924	.62372	.20121	2.9587
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: LCSW 17 Acquired: 6/14/2016 18:54:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571814-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52856	.52429	.50473	.26522	.52582	.54577	.00342
Stddev	.00193	.00218	.00065	.00201	.00088	.00103	.00085
%RSD	.36426	.41657	.12903	.75767	.16726	.18839	24.808
#1	.52729	.52629	.50409	.26404	.52588	.54516	.00245
#2	.52761	.52196	.50472	.26754	.52490	.54520	.00400
#3	.53077	.52463	.50540	.26409	.52666	.54696	.00382
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7534.5	43877.	2842.3
Stddev	4.4	144.	42.4
%RSD	.05883	.32754	1.4903
#1	7538.2	44036.	2793.4
#2	7529.6	43838.	2866.1
#3	7535.7	43756.	2867.4

Approved: June 15, 2016

Sample Name: L1606030801 Acquired: 6/14/2016 18:58:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571814-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	.02242	-.00112	.12124	.05938	.00009	76.611	-.00004
Stddev	.00102	.00692	.00177	.00226	.00113	.00005	.443	.00003
%RSD	118.66	30.851	158.69	1.8678	1.9070	58.435	.57770	93.387
#1	.00150	.03002	.00088	.12248	.05998	.00010	77.113	-.00003
#2	-.00032	.02077	-.00173	.11863	.06009	.00003	76.447	-.00001
#3	.00141	.01649	-.00250	.12261	.05808	.00013	76.275	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.00130	.00224	.07656	2.1859	.00686	21.950	.07143
Stddev	.00035	.00084	.00106	.01324	.0107	.00225	.042	.00214
%RSD	786.29	64.466	47.374	17.296	.48943	32.827	.19281	3.0009
#1	-.00034	.00148	.00313	.09114	2.1766	.00856	21.902	.06997
#2	.00012	.00204	.00106	.06527	2.1976	.00772	21.982	.07044
#3	.00035	.00039	.00254	.07327	2.1835	.00431	21.966	.07389
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00283	48.809	.00040	.00276	.00231	.00008	.00141	12.663
Stddev	.00054	.307	.00048	.00468	.00146	.00272	.00154	.023
%RSD	19.130	.62999	120.87	169.96	62.889	3589.5	109.63	.18225
#1	.00220	49.161	.00072	.00816	.00131	.00185	.00204	12.648
#2	.00312	48.668	-.00016	.00026	.00164	.00144	-.00035	12.690
#3	.00316	48.596	.00064	-.00015	.00398	-.00306	.00252	12.652
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606030801 Acquired: 6/14/2016 18:58:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571814-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	.93998	-.00948	.00023	.00065	.00446	.00036
Stddev	.00067	.00533	.00108	.00312	.00045	.00028	.00018
%RSD	94.864	.56733	11.404	1349.8	69.250	6.2130	49.868
#1	.00148	.94604	-.01045	.00085	.00098	.00426	.00047
#2	.00036	.93788	-.00967	.00300	.00083	.00477	.00047
#3	.00028	.93602	-.00831	-.00315	.00014	.00434	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7436.0	43134.	2815.2
Stddev	9.2	251.	18.3
%RSD	.12369	.58076	.65017
#1	7436.6	43022.	2810.5
#2	7444.9	42960.	2835.4
#3	7426.6	43421.	2799.7

Approved: June 15, 2016

Sample Name: L1606030802S Acquired: 6/14/2016 19:02:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571814-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20854**	**5.3073**	**.20999**	**1.1552**	**.57984**	**.02610**	**82.512**	**.02617**
Stddev	.00264	.0137	.00471	.0047	.00507	.00005	.582	.00017
%RSD	1.2660	.25776	2.2453	.40985	.87482	.19170	.70558	.64413
#1	.20615	5.2916	.21457	1.1598	.58409	.02605	83.094	.02636
#2	.21137	5.3161	.20515	1.1554	.58121	.02615	82.512	.02610
#3	.20809	5.3143	.21024	1.1503	.57423	.02609	81.930	.02604
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10496**	**.26631**	**.26067**	**2.1725**	**28.222**	**.53424**	**27.217**	**.33167**
Stddev	.00013	.00188	.00241	.0103	.288	.00453	.379	.00291
%RSD	.12668	.70702	.92492	.47246	1.0218	.84755	1.3929	.87677
#1	.10485	.26413	.26317	2.1714	28.470	.53706	26.970	.33005
#2	.10511	.26742	.25836	2.1628	28.290	.53665	27.653	.33503
#3	.10493	.26737	.26048	2.1832	27.906	.52902	27.027	.32994
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53852**	**75.773**	**.26178**	**5.2904**	**.26538**	**.63873**	**.20557**	**15.610**
Stddev	.00227	.437	.00225	.0146	.00446	.00383	.00649	.030
%RSD	.42221	.57696	.86040	.27651	1.6814	.59966	3.1567	.19182
#1	.53819	76.173	.25962	5.3029	.26910	.63472	.20705	15.604
#2	.53643	75.839	.26159	5.2743	.26661	.63911	.19846	15.583
#3	.54094	75.306	.26412	5.2940	.26043	.64235	.21118	15.642
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606030802S Acquired: 6/14/2016 19:02:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571814-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53213	1.4639	.51003	.25626	.53177	.53841	.00066
Stddev	.00076	.0086	.00891	.00282	.00080	.00145	.00049
%RSD	.14293	.59087	1.7476	1.1007	.14972	.26878	73.735
#1	.53256	1.4719	.51540	.25620	.53127	.53758	.00035
#2	.53125	1.4651	.51496	.25348	.53269	.53756	.00041
#3	.53257	1.4548	.49974	.25912	.53135	.54008	.00122
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7385.7	42973.	2817.7
Stddev	21.3	279.	25.1
%RSD	.28879	.65015	.89148
#1	7362.2	42818.	2794.0
#2	7391.0	42806.	2815.0
#3	7403.9	43296.	2844.0

Approved: June 15, 2016

Sample Name: L1606030803SD Acquired: 6/14/2016 19:05:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571814-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20901	5.3769	.21028	1.1784	.58833	.02630	82.590	.02637
Stddev	.00238	.0105	.00198	.0027	.00473	.00011	.635	.00016
%RSD	1.1372	.19530	.94293	.23229	.80332	.41396	.76911	.60864
#1	.20650	5.3855	.21232	1.1771	.59327	.02624	83.245	.02639
#2	.21123	5.3800	.20836	1.1766	.58788	.02623	82.548	.02620
#3	.20930	5.3652	.21018	1.1816	.58385	.02642	81.976	.02652
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10653	.26918	.26383	2.1850	28.541	.54186	27.103	.33541
Stddev	.00020	.00136	.00151	.0082	.283	.00482	.080	.00300
%RSD	.18373	.50378	.57354	.37464	.99235	.88896	.29601	.89365
#1	.10673	.26845	.26521	2.1887	28.842	.54691	27.195	.33683
#2	.10635	.27075	.26221	2.1906	28.499	.54136	27.063	.33743
#3	.10650	.26835	.26407	2.1756	28.281	.53732	27.051	.33197
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.54505	76.360	.26744	5.3480	.26828	.64664	.21093	15.617
Stddev	.00306	.525	.00178	.0279	.00449	.00524	.00905	.064
%RSD	.56103	.68814	.66643	.52101	1.6739	.81088	4.2925	.40748
#1	.54815	76.957	.26942	5.3783	.26346	.65083	.21309	15.672
#2	.54497	76.158	.26692	5.3419	.27234	.64833	.20099	15.632
#3	.54204	75.966	.26597	5.3236	.26905	.64076	.21871	15.547
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606030803SD Acquired: 6/14/2016 19:05:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571814-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53706**	**1.4729**	**.51688**	**.26207**	**.54027**	**.54531**	**.00066**
Stddev	.00106	.0122	.00615	.00144	.00152	.00105	.00023
%RSD	.19681	.83012	1.1891	.54763	.28146	.19216	34.873
#1	.53809	1.4853	.52389	.26372	.53908	.54650	.00050
#2	.53711	1.4727	.51431	.26109	.54198	.54451	.00056
#3	.53598	1.4608	.51243	.26142	.53976	.54493	.00093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7395.5**	**42933.**	**2822.4**
Stddev	25.4	128.	23.3
%RSD	.34379	.29830	.82376
#1	7367.0	43059.	2796.5
#2	7403.3	42803.	2829.2
#3	7416.0	42936.	2841.4

Approved: June 15, 2016

Sample Name: L1606030301 Acquired: 6/14/2016 19:09:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00094**	**.02561**	**.00009**	**.03370**	**.27526**	**.00010**	**34.425**
Stddev	.00066	.00510	.00232	.00082	.00064	.00003	.257
%RSD	70.159	19.896	2451.3	2.4305	.23199	31.215	.74549
#1	-.00046	.02602	.00277	.03407	.27600	.00013	34.711
#2	-.00067	.03049	-.00138	.03276	.27481	.00007	34.215
#3	-.00169	.02032	-.00111	.03426	.27498	.00010	34.348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**.00142**	**.00160**	**.00078**	**.12819**	**1.4329**	**.02149**
Stddev	.00017	.00034	.00081	.00070	.01700	.0736	.00230
%RSD	68.829	23.765	50.457	90.379	13.264	5.1373	10.697
#1	-.00028	.00161	.00159	.00149	.11594	1.3479	.01888
#2	-.00039	.00103	.00241	.00075	.12103	1.4750	.02322
#3	-.00006	.00162	.00080	.00009	.14760	1.4759	.02237
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**39.760**	**.05630**	**.00020**	F **360.13**	**.00187**	**1.7585**	**-.00211**
Stddev	.187	.00172	.00026	2.84	.00129	.0125	.00201
%RSD	.46957	3.0503	130.15	.78947	69.122	.71314	95.240
#1	39.877	.05828	-.00010	363.31	.00066	1.7501	-.00443
#2	39.544	.05536	.00031	357.83	.00324	1.7729	-.00079
#3	39.857	.05525	.00039	359.25	.00172	1.7525	-.00112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 15, 2016

Sample Name: L1606030301 Acquired: 6/14/2016 19:09:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00213	.00476	16.167	.00099	.65002	.00199	-.00095
Stddev	.00167	.00114	.021	.00061	.01290	.00304	.00107
%RSD	78.527	23.879	.13049	60.961	1.9842	152.87	112.66
#1	.00318	.00475	16.190	.00133	.66491	.00322	-.00210
#2	.00300	.00590	16.150	.00029	.64229	-.00147	-.00073
#3	.00020	.00363	16.159	.00136	.64286	.00422	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00086	.00790	.00041
Stddev	.00009	.00015	.00077
%RSD	10.367	1.9145	188.33
#1	-.00096	.00785	.00086
#2	-.00079	.00807	-.00048
#3	-.00082	.00778	.00084
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7267.7	41836.	2822.8
Stddev	45.9	257.	32.4
%RSD	.63161	.61406	1.1475
#1	7235.1	41564.	2786.0
#2	7247.7	41870.	2835.3
#3	7320.2	42074.	2847.0

Approved: June 15, 2016

Sample Name: L1606030302 Acquired: 6/14/2016 19:13:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00044	.03559	-.00044	.03092	.26461	.00001	33.104
Stddev	.00039	.00868	.00188	.00189	.00432	.00006	.395
%RSD	87.497	24.386	426.27	6.1079	1.6328	430.22	1.1935
#1	.00037	.03223	.00157	.03260	.26781	.00007	33.478
#2	.00009	.04545	-.00074	.02887	.26633	-.00005	33.144
#3	.00086	.02909	-.00216	.03129	.25970	.00002	32.691
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00000	.00126	.00205	.00188	.18886	1.4522	.02124
Stddev	.00017	.00026	.00023	.00055	.01820	.0778	.00555
%RSD	3694.4	20.669	11.219	29.409	9.6354	5.3548	26.129
#1	-.00002	.00127	.00179	.00205	.16885	1.5252	.01666
#2	-.00015	.00099	.00215	.00233	.19333	1.4609	.01964
#3	.00019	.00151	.00223	.00126	.20441	1.3704	.02741
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	37.836	.05394	-.00005	F 344.59	.00217	1.7031	.00015
Stddev	.580	.00293	.00018	4.32	.00121	.0153	.00135
%RSD	1.5326	5.4407	365.11	1.2542	55.839	.89731	870.71
#1	38.503	.05731	.00011	349.14	.00185	1.7147	.00169
#2	37.451	.05193	-.00001	344.11	.00115	1.7088	-.00084
#3	37.555	.05258	-.00025	340.54	.00351	1.6858	-.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 15, 2016

Sample Name: L1606030302 Acquired: 6/14/2016 19:13:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00115	.00106	16.148	.00074	.62653	-.00058	.00083
Stddev	.00291	.00135	.033	.00087	.01164	.00393	.00075
%RSD	253.59	128.23	.20357	117.71	1.8572	677.66	90.535
#1	-.00030	.00226	16.176	.00114	.63930	.00147	.00030
#2	-.00439	-.00041	16.155	.00135	.62377	.00190	.00050
#3	.00124	.00132	16.112	-.00026	.61653	-.00511	.00168
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00094	.00970	-.00003
Stddev	.00053	.00009	.00059
%RSD	56.435	.89047	2036.3
#1	-.00151	.00961	-.00070
#2	-.00046	.00975	.00041
#3	-.00084	.00976	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7307.8	41959.	2801.5
Stddev	27.4	342.	55.2
%RSD	.37463	.81610	1.9720
#1	7276.2	41603.	2738.1
#2	7324.2	41986.	2827.3
#3	7323.0	42286.	2839.2

Approved: June 15, 2016

Sample Name: L1606030402 Acquired: 6/14/2016 19:17:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	.03015	.00182	.02867	.25811	.00008	32.990
Stddev	.00138	.00433	.00203	.00122	.00258	.00002	.370
%RSD	204.76	14.351	111.57	4.2535	1.0003	22.938	1.1215
#1	-.00073	.02520	.00242	.02924	.26078	.00006	33.410
#2	.00071	.03323	-.00044	.02727	.25562	.00010	32.710
#3	.00204	.03202	.00347	.02950	.25794	.00009	32.851
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.00156	.00211	.00125	.13755	1.4713	.02050
Stddev	.00033	.00042	.00076	.00007	.01539	.1025	.00201
%RSD	364.38	26.952	36.303	5.4418	11.187	6.9638	9.8081
#1	-.00001	.00171	.00268	.00123	.15504	1.4645	.02268
#2	.00019	.00109	.00240	.00132	.12610	1.5770	.01872
#3	-.00045	.00189	.00124	.00119	.13151	1.3724	.02009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	37.039	.05311	-.00047	F 326.91	.00179	1.5936	.00352
Stddev	.458	.00337	.00019	3.29	.00097	.0060	.00499
%RSD	1.2376	6.3398	40.068	1.0063	54.341	.37596	141.72
#1	37.528	.05457	-.00043	330.71	.00245	1.5990	.00813
#2	36.619	.05551	-.00031	325.05	.00067	1.5947	.00420
#3	36.971	.04926	-.00068	324.97	.00225	1.5872	-.00177
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 15, 2016

Sample Name: L1606030402 Acquired: 6/14/2016 19:17:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00076	16.412	.00060	.62324	-.00001	-.00050
Stddev	.00431	.00409	.031	.00052	.01053	.00329	.00088
%RSD	7156.8	534.50	.18932	86.965	1.6898	26749.	177.90
#1	-.00489	-.00395	16.430	.00075	.63540	-.00370	-.00074
#2	.00300	.00308	16.429	.00104	.61692	.00260	-.00123
#3	.00207	.00317	16.376	.00002	.61741	.00106	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00092	.00784	-.00025
Stddev	.00115	.00012	.00054
%RSD	124.39	1.5091	221.00
#1	-.00003	.00771	-.00083
#2	-.00222	.00790	-.00015
#3	-.00052	.00792	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7323.3	41993.	2789.0
Stddev	20.3	242.	32.0
%RSD	.27717	.57550	1.1470
#1	7299.8	41753.	2754.2
#2	7334.9	41990.	2817.2
#3	7335.0	42236.	2795.7

Approved: June 15, 2016

Sample Name: L1606030402PS Acquired: 6/14/2016 19:21:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572020-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20716**	**5.3118**	**.21056**	**1.0592**	**.75547**	**.02620**	**34.998**
Stddev	.00096	.0185	.00287	.0044	.00700	.00007	.267
%RSD	.46463	.34851	1.3632	.41668	.92721	.27594	.76303
#1	.20679	5.3199	.21217	1.0623	.76212	.02628	35.243
#2	.20644	5.3249	.21226	1.0610	.75614	.02617	35.037
#3	.20825	5.2906	.20724	1.0541	.74816	.02614	34.713
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02582**	**.10585**	**.26541**	**.26089**	**2.2193**	**27.784**	**.54758**
Stddev	.00031	.00006	.00111	.00156	.0087	.323	.00395
%RSD	1.2146	.05795	.41956	.59606	.39191	1.1636	.72175
#1	.02607	.10584	.26597	.25952	2.2246	28.103	.54467
#2	.02547	.10580	.26614	.26057	2.2241	27.792	.54600
#3	.02591	.10592	.26413	.26258	2.2093	27.456	.55208
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**38.334**	**.30344**	**.53016**	F **321.49**	**.26333**	**6.7219**	**.25823**
Stddev	.126	.00480	.00125	2.47	.00106	.0263	.00091
%RSD	.32902	1.5811	.23525	.76926	.40435	.39101	.35323
#1	38.317	.30706	.52968	323.38	.26432	6.6920	.25922
#2	38.467	.30528	.53157	322.41	.26346	6.7414	.25806
#3	38.217	.29800	.52921	318.69	.26221	6.7322	.25742
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 15, 2016

Sample Name: L1606030402PS Acquired: 6/14/2016 19:21:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572020-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.63492**	**.20066**	**17.488**	**.52603**	**1.0714**	**.50816**	**.24861**
Stddev	.00819	.00346	.049	.00105	.0079	.00820	.00198
%RSD	1.2897	1.7225	.28101	.19876	.73529	1.6139	.79641
#1	.62615	.20454	17.431	.52505	1.0792	.50866	.24835
#2	.64237	.19952	17.516	.52713	1.0716	.49972	.25071
#3	.63624	.19792	17.517	.52589	1.0634	.51610	.24678
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.53155**	**.53916**	**-.00020**
Stddev	.00151	.00058	.00011
%RSD	.28468	.10824	55.034
#1	.53133	.53866	-.00028
#2	.53316	.53980	-.00008
#3	.53016	.53903	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7310.5**	**41943.**	**2781.5**
Stddev	15.7	117.	21.1
%RSD	.21455	.27937	.75858
#1	7298.3	41808.	2762.8
#2	7305.1	42003.	2777.5
#3	7328.2	42018.	2804.4

Approved: June 15, 2016

Sample Name: L1606030402SDL Acquired: 6/14/2016 19:25:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG572020-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00117**	**.00571**	**.00101**	**.00740**	**.04361**	**.00014**	**5.4801**	**-.00010**
Stddev	.00135	.01502	.00205	.00306	.00091	.00009	.0698	.00019
%RSD	115.68	263.28	203.68	41.393	2.0835	67.058	1.2739	185.54
#1	-.00268	-.00334	-.00105	.00398	.04270	.00014	5.4292	-.00031
#2	-.00070	-.00258	.00305	.00832	.04451	.00005	5.4515	.00007
#3	-.00011	.02304	.00102	.00990	.04362	.00024	5.5597	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**-.00002**	**.00067**	**.02565**	**.19574**	**.00072**	**6.4219**	**.01051**
Stddev	.00019	.00044	.00168	.01486	.06160	.00039	.0540	.00077
%RSD	2431.7	2734.0	250.33	57.920	31.470	53.959	.84022	7.3661
#1	.00022	-.00010	.00098	.03488	.12863	.00105	6.3675	.01060
#2	-.00007	-.00041	-.00114	.03355	.20886	.00029	6.4754	.01124
#3	-.00013	.00046	.00218	.00851	.24972	.00083	6.4226	.00970
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**54.984**	**.00117**	**.26580**	**-.00313**	**.00179**	**-.00024**	**2.8192**
Stddev	.00017	.237	.00063	.00815	.00250	.00202	.00191	.0036
%RSD	172.16	.43085	54.055	3.0670	79.803	112.95	785.76	.12845
#1	-.00018	54.739	.00164	.26260	-.00034	.00060	-.00074	2.8190
#2	-.00021	55.001	.00142	.27507	-.00390	.00412	.00187	2.8157
#3	.00010	55.212	.00045	.25974	-.00515	.00065	-.00186	2.8229
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606030402SDL Acquired: 6/14/2016 19:25:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG572020-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	.10587	.00245	.00126	.00036	.00177	-.00014
Stddev	.00120	.00085	.00449	.00181	.00063	.00019	.00027
%RSD	196.39	.80757	183.63	143.96	176.29	10.821	188.65
#1	.00094	.10544	-.00149	.00071	.00069	.00183	.00003
#2	-.00072	.10531	.00149	.00327	.00075	.00156	-.00001
#3	.00160	.10685	.00734	-.00022	-.00037	.00193	-.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8270.6	47795.	3071.7
Stddev	13.8	199.	16.2
%RSD	.16681	.41665	.52828
#1	8265.2	47756.	3072.7
#2	8286.2	48011.	3087.4
#3	8260.2	47618.	3055.0

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 19:29:21 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37506**	**9.3974**	**.36909**	**.47805**	**.91683**	**.04727**	**9.0768**	**.04742**
Stddev	.00353	.0191	.00176	.00407	.00871	.00023	.0698	.00007
%RSD	.94038	.20293	.47672	.85179	.95044	.49652	.76959	.13993
#1	.37424	9.3868	.37093	.47559	.90776	.04700	9.0578	.04743
#2	.37202	9.3860	.36743	.47581	.91758	.04742	9.0185	.04747
#3	.37893	9.4194	.36892	.48275	.92514	.04740	9.1542	.04734
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19204**	**.47573**	**.47884**	**3.7028**	**45.974**	**.90927**	**9.1493**	**.45874**
Stddev	.00043	.00308	.00152	.0688	.476	.00799	.0809	.00684
%RSD	.22562	.64671	.31678	1.8587	1.0357	.87897	.88445	1.4913
#1	.19199	.47256	.47714	3.6263	45.629	.90277	9.0946	.45518
#2	.19164	.47592	.47933	3.7224	45.775	.90686	9.1111	.45442
#3	.19250	.47871	.48005	3.7597	46.517	.91819	9.2423	.46663
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.94632**	**46.252**	**.48300**	**9.5302**	**.48341**	**1.1449**	**.37311**	**4.8067**
Stddev	.00098	.486	.00184	.0157	.00293	.0047	.00354	.0064
%RSD	.10325	1.0501	.38123	.16437	.60631	.40947	.94810	.13271
#1	.94744	45.866	.48334	9.5325	.48054	1.1432	.37478	4.8007
#2	.94564	46.093	.48101	9.5135	.48329	1.1413	.36905	4.8060
#3	.94587	46.798	.48464	9.5446	.48640	1.1502	.37550	4.8134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 19:29:21 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.94958**	**.91521**	**.91034**	**.47524**	**.94987**	**.96174**	**.96285**
Stddev	.00351	.00813	.01228	.00124	.00696	.00095	.01228
%RSD	.36999	.88803	1.3490	.26100	.73306	.09921	1.2749
#1	.94758	.90751	.90035	.47510	.94196	.96211	.95842
#2	.94753	.91441	.90661	.47655	.95256	.96066	.95341
#3	.95364	.92371	.92405	.47408	.95508	.96246	.97672
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8049.1**	**46705.**	**3036.1**
Stddev	17.8	43.	35.0
%RSD	.22149	.09260	1.1522
#1	8062.1	46683.	3048.2
#2	8056.3	46754.	3063.4
#3	8028.8	46676.	2996.6

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 19:33:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	.00265	.00141	.00105	.00070	.00009	.03686	-.00034
Stddev	.00076	.00140	.00015	.00068	.00088	.00014	.01834	.00006
%RSD	180.29	52.712	10.480	64.570	126.63	150.66	49.766	17.366
#1	.00032	.00208	.00144	.00153	-.00030	-.00005	.05223	-.00028
#2	-.00028	.00424	.00153	.00028	.00138	.00023	.04180	-.00040
#3	.00123	.00162	.00124	.00135	.00101	.00009	.01655	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00000	.00131	.00087	-.00376	-.14930	-.00253	.00807	-.00216
Stddev	.00014	.00053	.00033	.00841	.01221	.00239	.06261	.00104
%RSD	3001.5	40.686	38.603	223.47	8.1768	94.446	775.94	48.168
#1	.00013	.00129	.00121	-.01248	-.16067	-.00010	.07963	-.00308
#2	-.00015	.00185	.00054	.00431	-.15082	-.00487	-.01882	-.00103
#3	.00001	.00079	.00085	-.00312	-.13640	-.00261	-.03660	-.00238
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00135	-.01983	.00054	.00492	-.00144	.00011	.00275	.00153
Stddev	.00042	.02377	.00102	.00972	.00168	.00122	.00295	.00092
%RSD	31.199	119.85	188.52	197.76	116.62	1092.0	107.10	60.095
#1	.00091	-.03222	.00164	.01574	.00014	.00065	-.00024	.00255
#2	.00141	.00757	.00036	.00206	-.00125	-.00129	.00284	.00124
#3	.00175	-.03486	-.00037	-.00306	-.00320	.00098	.00565	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 19:33:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	TI1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00111**	**.00015**	**.00516**	**-.00218**	**.00018**	**-.00030**	**.00092**
Stddev	.00064	.00038	.00845	.00060	.00012	.00016	.00036
%RSD	57.434	246.29	163.76	27.548	64.141	52.839	39.305
#1	.00179	.00057	.00693	-.00187	.00006	-.00014	.00128
#2	.00054	.00003	.01258	-.00179	.00028	-.00046	.00056
#3	.00099	-.00015	-.00404	-.00287	.00020	-.00030	.00091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8190.1**	**47609.**	**3025.4**
Stddev	37.2	128.	21.8
%RSD	.45429	.26849	.72140
#1	8150.5	47546.	3050.4
#2	8195.8	47525.	3009.9
#3	8224.2	47756.	3015.9

Approved: June 15, 2016

Sample Name: PBW A7 Acquired: 6/14/2016 19:37:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571974-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.00720	.00087	.00055	.00184	.00007	-.04157	.00003
Stddev	.00147	.01132	.00379	.00049	.00109	.00010	.02939	.00027
%RSD	850.81	157.25	435.32	88.623	59.140	142.26	70.709	882.98
#1	-.00151	-.00477	-.00184	.00110	.00302	.00005	-.05691	.00020
#2	.00081	.01774	.00520	.00041	.00161	.00018	-.00768	-.00028
#3	.00122	.00864	-.00075	.00015	.00088	-.00002	-.06011	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00060	.00032	-.00907	-.12906	-.00203	-.05239	-.00079
Stddev	.00012	.00048	.00152	.01275	.10454	.00262	.03768	.00352
%RSD	185.65	80.493	471.75	140.59	81.000	129.41	71.923	444.81
#1	-.00007	.00062	.00207	.00565	-.00849	.00076	-.03880	-.00259
#2	.00009	.00011	-.00048	-.01609	-.19444	-.00444	-.09497	.00326
#3	.00016	.00107	-.00063	-.01677	-.18426	-.00240	-.02339	-.00304
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	-.00351	.00072	-.00331	-.00074	.00211	.00983	.03320
Stddev	.00058	.02246	.00069	.00245	.00092	.00499	.00752	.00014
%RSD	8665.7	639.87	96.310	74.047	125.62	236.68	76.523	.40960
#1	.00026	-.00652	.00070	-.00254	-.00022	-.00010	.01178	.03310
#2	-.00065	.02031	.00004	-.00134	-.00019	.00782	.00153	.03336
#3	.00041	-.02432	.00142	-.00606	-.00180	-.00139	.01619	.03315
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: PBW A7 Acquired: 6/14/2016 19:37:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571974-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00105	.00030	-.00260	-.00307	.00050	.00077	.00059
Stddev	.00125	.00028	.00409	.00326	.00045	.00005	.00030
%RSD	118.85	94.383	157.60	106.16	89.721	6.3200	50.880
#1	.00120	.00061	-.00166	-.00280	.00084	.00082	.00031
#2	-.00027	.00021	.00094	.00005	-.00001	.00076	.00054
#3	.00222	.00007	-.00707	-.00645	.00066	.00072	.00091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7568.6	43918.	2787.6
Stddev	12.6	145.	19.8
%RSD	.16596	.33103	.71091
#1	7558.8	43910.	2772.6
#2	7582.8	43777.	2780.2
#3	7564.4	44067.	2810.1

Approved: June 15, 2016

Sample Name: LCSW A7 Acquired: 6/14/2016 19:41:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571974-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20807**	**5.2852**	**.20553**	**1.0275**	**.52606**	**.02592**	**5.2718**	**.02606**
Stddev	.00197	.0088	.00236	.0027	.00556	.00005	.0775	.00042
%RSD	.94632	.16701	1.1506	.26298	1.0570	.20552	1.4706	1.6247
#1	.20593	5.2945	.20382	1.0294	.53244	.02586	5.3274	.02575
#2	.20846	5.2769	.20453	1.0244	.52345	.02594	5.3047	.02654
#3	.20981	5.2844	.20823	1.0286	.52228	.02596	5.1832	.02588
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10824**	**.26830**	**.27004**	**2.1237**	**26.008**	**.52386**	**5.2434**	**.26123**
Stddev	.00062	.00227	.00041	.0419	.286	.00256	.0732	.00355
%RSD	.57695	.84641	.15223	1.9746	1.1007	.48924	1.3964	1.3586
#1	.10837	.26744	.27003	2.1466	26.339	.52681	5.2546	.26482
#2	.10756	.26659	.27045	2.1493	25.843	.52264	5.1652	.26114
#3	.10880	.27088	.26963	2.0753	25.842	.52214	5.3104	.25773
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53678**	**26.331**	**.27362**	**5.1611**	**.26830**	**.63319**	**.20684**	**2.8617**
Stddev	.00128	.206	.00065	.0100	.00224	.00177	.00413	.0026
%RSD	.23837	.78206	.23909	.19312	.83363	.27976	1.9964	.09044
#1	.53658	26.569	.27432	5.1519	.26573	.63427	.20414	2.8646
#2	.53562	26.211	.27302	5.1596	.26939	.63416	.21159	2.8595
#3	.53815	26.213	.27352	5.1717	.26978	.63115	.20478	2.8610
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: LCSW A7 Acquired: 6/14/2016 19:41:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571974-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53563**	**.53378**	**.51587**	**.26514**	**.53250**	**.53776**	**.00413**
Stddev	.00079	.00412	.00397	.00249	.00160	.00091	.00110
%RSD	.14697	.77145	.77052	.93894	.30052	.16838	26.657
#1	.53525	.53844	.51258	.26507	.53321	.53834	.00316
#2	.53654	.53226	.51474	.26767	.53067	.53672	.00389
#3	.53511	.53064	.52029	.26269	.53362	.53823	.00533
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7498.6**	**43546.**	**2803.0**
Stddev	15.2	234.	43.1
%RSD	.20258	.53779	1.5362
#1	7484.2	43290.	2753.9
#2	7497.3	43749.	2834.3
#3	7514.5	43599.	2820.8

Approved: June 15, 2016

Sample Name: L1606039508 Acquired: 6/14/2016 19:44:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571974-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00024	.01639	-.00015	.01975	.08787	.00010	65.420	-.00005
Stddev	.00150	.00814	.00338	.00291	.00091	.00012	.406	.00018
%RSD	612.46	49.655	2188.6	14.735	1.0393	116.48	.62037	396.50
#1	.00148	.00820	-.00083	.02247	.08892	-.00003	65.887	-.00011
#2	-.00115	.02448	-.00314	.02009	.08724	.00019	65.229	-.00018
#3	-.00107	.01649	.00351	.01668	.08746	.00014	65.146	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	.00074	.00230	.02232	1.7167	.00758	14.923	.00195
Stddev	.00034	.00041	.00127	.01034	.0941	.00477	.058	.00136
%RSD	168.62	55.487	55.388	46.345	5.4830	62.936	.38825	69.665
#1	-.00005	.00080	.00375	.01050	1.7924	.01300	14.981	.00347
#2	.00004	.00112	.00176	.02671	1.7464	.00570	14.865	.00089
#3	-.00059	.00030	.00138	.02974	1.6113	.00403	14.922	.00148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	9.0544	.00111	.00635	-.00305	.00122	.00944	2.5428
Stddev	.00032	.0906	.00058	.00660	.00168	.00403	.00806	.0105
%RSD	106.12	1.0011	52.196	103.86	55.043	330.14	85.392	.41368
#1	-.00001	9.1589	.00089	.00496	-.00370	-.00163	.00318	2.5463
#2	.00063	9.0065	.00068	.00056	-.00431	-.00054	.00660	2.5510
#3	.00029	8.9976	.00177	.01353	-.00114	.00583	.01853	2.5309
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606039508 Acquired: 6/14/2016 19:44:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571974-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.27938	-.00328	.00131	-.00043	.00191	.00002
Stddev	.00050	.00187	.00461	.00107	.00085	.00004	.00076
%RSD	272.59	.66811	140.75	81.879	197.81	2.2227	3783.1
#1	.00062	.28132	.00086	.00250	.00013	.00186	-.00086
#2	.00029	.27760	-.00825	.00042	-.00142	.00193	.00053
#3	-.00036	.27921	-.00244	.00101	-.00001	.00193	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7485.5	43573.	2795.9
Stddev	13.6	272.	30.6
%RSD	.18208	.62346	1.0928
#1	7472.5	43651.	2764.9
#2	7484.4	43270.	2796.8
#3	7499.7	43796.	2826.0

Approved: June 15, 2016

Sample Name: L1606039508S Acquired: 6/14/2016 19:48:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571974-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21003**	**5.4004**	**.21220**	**1.0640**	**.62209**	**.02634**	**72.551**	**.02624**
Stddev	.00030	.0056	.00204	.0034	.00216	.00003	.252	.00021
%RSD	.14384	.10280	.96108	.31692	.34720	.11663	.34739	.78334
#1	.21038	5.4068	.21160	1.0605	.62229	.02635	72.803	.02647
#2	.20982	5.3971	.21447	1.0672	.61984	.02636	72.299	.02607
#3	.20989	5.3974	.21052	1.0643	.62414	.02630	72.552	.02618
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10639**	**.27104**	**.26556**	**2.1376**	**28.231**	**.54738**	**20.453**	**.26857**
Stddev	.00050	.00197	.00124	.0222	.164	.00181	.152	.00190
%RSD	.47429	.72857	.46541	1.0369	.58063	.33065	.74273	.70922
#1	.10694	.26925	.26679	2.1241	28.214	.54587	20.371	.26877
#2	.10630	.27316	.26432	2.1632	28.076	.54688	20.628	.26658
#3	.10594	.27072	.26557	2.1256	28.403	.54938	20.360	.27037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.54526**	**35.974**	**.26676**	**5.3429**	**.26913**	**.64798**	**.20364**	**5.3639**
Stddev	.00277	.030	.00217	.0240	.00218	.00065	.00281	.0233
%RSD	.50825	.08384	.81499	.44925	.81078	.09958	1.3807	.43369
#1	.54846	36.002	.26874	5.3705	.27076	.64777	.20569	5.3907
#2	.54359	35.942	.26444	5.3307	.26999	.64747	.20480	5.3492
#3	.54373	35.978	.26712	5.3273	.26665	.64871	.20044	5.3518
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606039508S Acquired: 6/14/2016 19:48:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571974-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53794**	**.80495**	**.51824**	**.26501**	**.54074**	**.53367**	**.00057**
Stddev	.00307	.00129	.00764	.00658	.00171	.00281	.00044
%RSD	.57045	.16062	1.4749	2.4844	.31661	.52634	76.984
#1	.54144	.80478	.52694	.27219	.54058	.53691	.00007
#2	.53662	.80375	.51522	.25925	.54252	.53212	.00075
#3	.53574	.80632	.51257	.26360	.53911	.53197	.00090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7401.9**	**42787.**	**2797.6**
Stddev	43.8	116.	23.0
%RSD	.59240	.27032	.82384
#1	7351.3	42653.	2781.9
#2	7427.5	42857.	2824.0
#3	7427.0	42850.	2786.8

Approved: June 15, 2016

Sample Name: L1606039508SD Acquired: 6/14/2016 19:52:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571974-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20851	5.3665	.20899	1.0619	.62106	.02632	72.427	.02675
Stddev	.00270	.0172	.00276	.0024	.00329	.00009	.229	.00005
%RSD	1.2926	.32056	1.3219	.22839	.52977	.32479	.31647	.18053
#1	.21144	5.3725	.20582	1.0638	.62316	.02641	72.687	.02670
#2	.20613	5.3799	.21027	1.0592	.62275	.02632	72.342	.02678
#3	.20795	5.3471	.21087	1.0628	.61727	.02624	72.252	.02679
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10707	.27170	.26697	2.1111	28.377	.54651	20.400	.26652
Stddev	.00055	.00127	.00075	.0083	.190	.00518	.056	.00292
%RSD	.51616	.46853	.28076	.39356	.66862	.94844	.27536	1.0960
#1	.10753	.27057	.26778	2.1082	28.596	.55190	20.390	.26913
#2	.10723	.27144	.26631	2.1046	28.258	.54605	20.350	.26707
#3	.10646	.27308	.26681	2.1205	28.277	.54156	20.461	.26337
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.54821	36.067	.26714	5.3592	.27142	.64907	.21231	5.3873
Stddev	.00158	.135	.00028	.0095	.00304	.00480	.00566	.0105
%RSD	.28732	.37522	.10369	.17697	1.1192	.73895	2.6662	.19454
#1	.55000	36.161	.26702	5.3680	.27404	.64701	.21853	5.3958
#2	.54703	36.127	.26695	5.3605	.26809	.65456	.20746	5.3905
#3	.54759	35.912	.26746	5.3492	.27213	.64566	.21095	5.3756
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606039508SD Acquired: 6/14/2016 19:52:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571974-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.54066**	**.80474**	**.52622**	**.26649**	**.54208**	**.53669**	**.00046**
Stddev	.00132	.00376	.00890	.00354	.00109	.00110	.00052
%RSD	.24472	.46719	1.6906	1.3276	.20129	.20446	113.12
#1	.54217	.80820	.52425	.26720	.54214	.53737	.00040
#2	.54011	.80527	.53594	.26264	.54097	.53728	-.00003
#3	.53970	.80074	.51848	.26961	.54315	.53543	.00101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7390.9**	**43047.**	**2800.8**
Stddev	17.0	267.	14.1
%RSD	.23008	.62072	.50521
#1	7377.3	42745.	2784.5
#2	7385.6	43142.	2808.9
#3	7410.0	43253.	2809.0

Approved: June 15, 2016

Sample Name: L1606037601 Acquired: 6/14/2016 19:56:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	-.00014	.00094	.00726	.00371	.00011	6.0557	-.00020
Stddev	.00150	.00851	.00054	.00024	.00072	.00003	.0567	.00018
%RSD	205.65	6070.8	57.218	3.3266	19.533	24.154	.93610	88.758
#1	-.00094	.00305	.00033	.00726	.00453	.00010	6.0436	-.00001
#2	.00117	.00632	.00136	.00702	.00317	.00009	6.0061	-.00037
#3	.00197	-.00979	.00114	.00750	.00342	.00014	6.1175	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.00093	.00084	-.00926	-.02341	.00207	1.9740	.00190
Stddev	.00015	.00060	.00062	.01229	.04957	.00216	.0819	.00112
%RSD	450.72	64.373	74.097	132.77	211.75	104.05	4.1494	59.160
#1	-.00008	.00146	.00093	-.02345	-.07749	.00184	2.0682	.00110
#2	-.00002	.00028	.00018	-.00230	-.01263	.00004	1.9191	.00142
#3	.00020	.00104	.00141	-.00203	.01988	.00434	1.9348	.00319
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	2.4390	.00034	.00575	.00036	.00286	.00141	.67438
Stddev	.00011	.0467	.00138	.00687	.00293	.00177	.00067	.00389
%RSD	132.32	1.9138	400.87	119.34	816.88	61.951	47.777	.57680
#1	.00010	2.3999	.00189	.00080	-.00265	.00093	.00120	.67886
#2	.00019	2.4265	-.00077	.00287	.00053	.00322	.00216	.67226
#3	-.00003	2.4907	-.00008	.01359	.00320	.00441	.00086	.67200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606037601 Acquired: 6/14/2016 19:56:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	.12237	.00187	.00147	.00073	.00297	-.00011
Stddev	.00051	.00017	.00895	.00106	.00057	.00007	.00065
%RSD	57.552	.13790	477.52	71.939	77.807	2.3218	566.12
#1	.00092	.12220	.00919	.00035	.00072	.00290	-.00031
#2	.00036	.12237	-.00811	.00245	.00131	.00295	-.00064
#3	.00138	.12254	.00454	.00160	.00017	.00304	.00061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8367.7	48536.	3026.6
Stddev	16.7	329.	33.1
%RSD	.19959	.67740	1.0928
#1	8386.1	48895.	3043.3
#2	8353.5	48464.	3048.0
#3	8363.4	48249.	2988.5

Approved: June 15, 2016

Sample Name: L1606037602 Acquired: 6/14/2016 20:00:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	.00592	-.00091	.00782	.00354	.00007	5.9713	-.00003
Stddev	.00307	.00708	.00202	.00289	.00026	.00005	.0317	.00025
%RSD	344.07	119.69	220.80	36.909	7.4289	70.102	.53161	932.08
#1	-.00256	.00231	.00049	.00694	.00338	.00004	5.9390	-.00032
#2	.00192	.00136	-.00000	.00548	.00385	.00013	6.0025	.00015
#3	.00332	.01408	-.00323	.01105	.00340	.00004	5.9725	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	-.00001	-.00033	.03570	-.05760	-.00271	2.1279	.00219
Stddev	.00021	.00115	.00115	.02041	.01524	.00211	.1105	.00083
%RSD	152.47	15261.	345.69	57.159	26.463	77.893	5.1935	37.762
#1	.00010	.00132	.00072	.01495	-.04001	-.00390	2.1230	.00220
#2	-.00024	-.00059	-.00157	.05574	-.06574	-.00396	2.0199	.00136
#3	-.00028	-.00075	-.00015	.03641	-.06704	-.00027	2.2408	.00302
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	2.3138	.00030	.00544	-.00128	.00145	.00263	.66338
Stddev	.00036	.0343	.00116	.00122	.00220	.00238	.00089	.00341
%RSD	165.63	1.4830	385.02	22.336	172.23	164.18	33.857	.51465
#1	.00005	2.3113	.00164	.00530	-.00359	.00071	.00173	.66405
#2	-.00062	2.3493	-.00028	.00672	-.00102	-.00047	.00351	.66641
#3	-.00007	2.2808	-.00045	.00430	.00078	.00412	.00264	.65968
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606037602 Acquired: 6/14/2016 20:00:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00098	.12589	.00504	.00091	-.00058	.00165	-.00027
Stddev	.00056	.00094	.00194	.00237	.00037	.00026	.00032
%RSD	57.044	.74629	38.505	261.46	64.091	15.772	117.99
#1	.00155	.12485	.00713	.00070	-.00099	.00138	.00004
#2	.00097	.12613	.00330	.00337	-.00027	.00166	-.00059
#3	.00043	.12668	.00470	-.00135	-.00048	.00190	-.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8346.8	48368.	3061.9
Stddev	19.9	133.	44.9
%RSD	.23813	.27530	1.4650
#1	8369.7	48513.	3076.7
#2	8333.5	48250.	3011.5
#3	8337.3	48341.	3097.4

Approved: June 15, 2016

Sample Name: L1606037603 Acquired: 6/14/2016 20:04:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00096	.02968	.00056	.07611	.10444	-.00001	95.727	-.00019
Stddev	.00095	.00304	.00516	.00094	.00195	.00011	.930	.00033
%RSD	98.134	10.231	925.81	1.2340	1.8680	1336.6	.97202	172.21
#1	.00196	.03189	-.00270	.07707	.10649	.00009	96.590	-.00049
#2	.00007	.03093	-.00213	.07607	.10424	-.00012	95.851	.00017
#3	.00086	.02621	.00651	.07519	.10260	.00000	94.741	-.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	.00154	.00136	.22364	2.0989	.00833	50.340	.14855
Stddev	.00015	.00127	.00161	.01700	.0889	.00290	.333	.00193
%RSD	19.058	82.160	119.06	7.6001	4.2342	34.767	.66152	1.3009
#1	.00093	.00012	.00232	.24130	2.1119	.00752	50.603	.14977
#2	.00066	.00255	-.00051	.22222	2.0042	.00593	50.451	.14632
#3	.00071	.00195	.00226	.20739	2.1805	.01154	49.966	.14955
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00304	83.455	.00081	.01036	.00176	-.00253	.00653	9.3352
Stddev	.00024	.785	.00079	.00625	.00391	.00509	.00407	.0339
%RSD	7.9983	.94114	97.320	60.365	222.30	201.08	62.292	.36345
#1	.00312	84.149	.00168	.00802	-.00135	-.00105	.00183	9.3690
#2	.00323	83.613	.00015	.00561	.00614	.00166	.00894	9.3356
#3	.00276	82.603	.00060	.01745	.00048	-.00820	.00883	9.3011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606037603 Acquired: 6/14/2016 20:04:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00078**	**1.4500**	**-.01203**	**-.00400**	**-.00070**	**.00146**	**-.00024**
Stddev	.00069	.0150	.00372	.00078	.00128	.00009	.00044
%RSD	87.683	1.0373	30.925	19.362	183.82	5.8270	185.51
#1	-.00000	1.4640	-.01576	-.00318	-.00201	.00148	.00024
#2	.00107	1.4518	-.00832	-.00410	-.00064	.00153	-.00063
#3	.00128	1.4341	-.01201	-.00473	.00055	.00137	-.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7293.7**	**42511.**	**2808.7**
Stddev	15.6	250.	35.6
%RSD	.21378	.58896	1.2663
#1	7293.7	42569.	2769.0
#2	7278.1	42237.	2819.5
#3	7309.3	42727.	2837.6

Approved: June 15, 2016

Sample Name: L1606037603PS Acquired: 6/14/2016 20:08:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG572145-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.16732**	**4.2412**	**.16944**	**.83702**	**.41439**	**.02074**	**11.579**	**.02115**
Stddev	.00139	.0191	.00055	.00429	.00359	.00011	.063	.00010
%RSD	.82837	.45074	.32693	.51228	.86551	.53973	.54503	.45567
#1	.16603	4.2333	.16930	.84081	.41141	.02062	11.543	.02107
#2	.16878	4.2272	.16896	.83237	.41337	.02076	11.542	.02112
#3	.16714	4.2630	.17004	.83789	.41837	.02084	11.651	.02125
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.08601**	**.21073**	**.21599**	**1.6632**	**20.569**	**.40388**	**8.1236**	**.21564**
Stddev	.00040	.00198	.00122	.0255	.143	.00058	.0942	.00140
%RSD	.46318	.93892	.56504	1.5349	.69709	.14430	1.1594	.65062
#1	.08561	.21093	.21589	1.6338	20.497	.40327	8.1811	.21440
#2	.08601	.21260	.21482	1.6797	20.477	.40444	8.0149	.21535
#3	.08641	.20866	.21726	1.6762	20.735	.40393	8.1747	.21716
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41572**	**27.073**	**.21550**	**4.2521**	**.21524**	**.51017**	**.17452**	**2.8867**
Stddev	.00074	.163	.00156	.0179	.00219	.00226	.00975	.0102
%RSD	.17800	.60189	.72201	.42172	1.0170	.44375	5.5860	.35409
#1	.41638	26.907	.21398	4.2603	.21760	.50995	.16328	2.8804
#2	.41586	27.080	.21541	4.2316	.21327	.51254	.17973	2.8813
#3	.41492	27.233	.21709	4.2645	.21486	.50803	.18056	2.8985
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606037603PS Acquired: 6/14/2016 20:08:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG572145-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.42434**	**.52719**	**.39763**	**.21184**	**.41778**	**.44062**	**.00026**
Stddev	.00079	.00274	.00417	.00138	.00012	.00160	.00018
%RSD	.18688	.51925	1.0479	.65013	.02859	.36335	70.019
#1	.42415	.52439	.39765	.21034	.41792	.43949	.00011
#2	.42367	.52734	.39346	.21213	.41770	.43991	.00046
#3	.42522	.52986	.40179	.21305	.41773	.44245	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8298.7**	**48092.**	**3084.7**
Stddev	12.4	86.	20.2
%RSD	.14907	.17788	.65460
#1	8288.8	48133.	3072.9
#2	8312.6	48150.	3073.2
#3	8294.8	47994.	3108.1

Approved: June 15, 2016

Sample Name: L1606037603SDL Acquired: 6/14/2016 20:12:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 50 Custom ID2: Custom ID3:
Comment: WG572145-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00031	-.00011	-.00097	.00240	.00192	.00011	.87778	.00003
Stddev	.00260	.00534	.00110	.00082	.00097	.00007	.01744	.00017
%RSD	841.71	5015.3	113.10	34.080	50.302	59.901	1.9871	678.48
#1	-.00185	-.00220	-.00008	.00334	.00301	.00004	.85985	.00013
#2	-.00177	.00596	-.00064	.00201	.00115	.00016	.89469	.00011
#3	.00269	-.00408	-.00219	.00185	.00161	.00014	.87880	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	-.00023	.00070	.01828	-.16788	-.00115	.47163	.00013
Stddev	.00048	.00071	.00071	.01664	.04101	.00386	.02394	.00101
%RSD	223.31	310.73	101.23	91.044	24.431	334.03	5.0753	777.31
#1	.00012	-.00097	.00149	.00012	-.14254	.00224	.44631	.00080
#2	-.00077	-.00015	.00010	.02193	-.21520	-.00035	.49389	.00062
#3	.00000	.00044	.00052	.03280	-.14590	-.00535	.47469	-.00103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00111	.72833	.00096	.00426	-.00417	.00129	-.00065	.08029
Stddev	.00041	.02820	.00090	.00142	.00166	.00287	.00232	.00106
%RSD	36.848	3.8712	93.807	33.267	39.811	223.01	360.18	1.3149
#1	.00073	.76071	.00140	.00373	-.00324	-.00167	.00199	.08117
#2	.00105	.71513	-.00008	.00319	-.00609	.00147	-.00150	.08057
#3	.00154	.70916	.00156	.00587	-.00318	.00407	-.00242	.07912
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606037603SDL Acquired: 6/14/2016 20:12:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 50 Custom ID2: Custom ID3:
Comment: WG572145-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00079**	**.01313**	**.01047**	**.00019**	**.00030**	**.00034**	**-.00008**
Stddev	.00037	.00024	.00514	.00188	.00079	.00023	.00040
%RSD	46.789	1.8404	49.142	988.87	263.82	67.672	497.35
#1	.00042	.01340	.00662	.00146	.00115	.00020	-.00004
#2	.00115	.01293	.00847	-.00197	-.00040	.00022	-.00050
#3	.00079	.01307	.01631	.00108	.00015	.00061	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8299.8**	**48423.**	**3040.2**
Stddev	2.4	241.	19.9
%RSD	.02852	.49677	.65448
#1	8300.5	48697.	3022.5
#2	8301.7	48325.	3061.7
#3	8297.1	48246.	3036.3

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 20:16:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37667**	**9.4035**	**.37286**	**.47167**	**.91227**	**.04717**	**9.0153**	**.04733**
Stddev	.00057	.0112	.00507	.00209	.00363	.00052	.0508	.00009
%RSD	.15239	.11915	1.3598	.44295	.39777	1.1056	.56302	.18986
#1	.37679	9.4093	.36870	.47367	.91318	.04776	8.9983	.04732
#2	.37717	9.3906	.37138	.47184	.90827	.04680	8.9752	.04724
#3	.37604	9.4106	.37851	.46950	.91535	.04694	9.0723	.04742
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19138**	**.47412**	**.47768**	**3.6643**	**45.667**	**.90836**	**9.0831**	**.45268**
Stddev	.00014	.00427	.00155	.0187	.193	.01297	.0576	.00104
%RSD	.07565	.89993	.32400	.51025	.42192	1.4277	.63437	.22950
#1	.19134	.47904	.47937	3.6823	45.628	.92071	9.0439	.45192
#2	.19154	.47152	.47633	3.6658	45.497	.89485	9.0561	.45386
#3	.19126	.47178	.47734	3.6449	45.876	.90952	9.1492	.45225
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.94376**	**45.777**	**.47920**	**9.4727**	**.47711**	**1.1407**	**.37357**	**4.7802**
Stddev	.00129	.168	.00165	.0120	.00216	.0020	.00433	.0044
%RSD	.13645	.36596	.34418	.12611	.45245	.17860	1.1581	.09222
#1	.94378	45.655	.47935	9.4621	.47545	1.1412	.37603	4.7810
#2	.94504	45.708	.48076	9.4704	.47634	1.1424	.36858	4.7754
#3	.94246	45.968	.47748	9.4856	.47955	1.1384	.37611	4.7841
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 20:16:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.94598	.91008	.90369	.47410	.94227	.95554	.94155
Stddev	.00185	.00240	.00268	.00143	.00647	.00081	.00205
%RSD	.19513	.26351	.29672	.30197	.68629	.08453	.21754
#1	.94734	.90976	.90113	.47353	.94973	.95463	.94138
#2	.94671	.90785	.90648	.47304	.93835	.95617	.93959
#3	.94388	.91261	.90346	.47573	.93872	.95582	.94367
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7990.7	46358.	3064.5
Stddev	9.5	189.	12.5
%RSD	.11949	.40691	.40645
#1	7986.0	46249.	3065.8
#2	8001.6	46576.	3076.3
#3	7984.4	46249.	3051.5

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 20:20:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00041**	**.00477**	**-.00352**	**.00434**	**.00063**	**.00004**	**.00529**	**-.00028**
Stddev	.00148	.00927	.00260	.00261	.00035	.00005	.02742	.00023
%RSD	358.80	194.45	73.925	60.210	55.103	124.46	518.08	79.970
#1	-.00068	.01259	-.00192	.00391	.00096	.00007	-.02614	-.00007
#2	.00119	-.00547	-.00212	.00713	.00027	-.00002	.01776	-.00052
#3	-.00175	.00717	-.00652	.00197	.00067	.00008	.02427	-.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00027**	**.00049**	**.00115**	**-.01548**	**-.16235**	**-.00338**	**-.10490**	**-.00144**
Stddev	.00043	.00079	.00098	.01032	.08835	.00370	.07013	.00188
%RSD	159.36	160.48	85.441	66.640	54.419	109.36	66.857	130.28
#1	-.00056	.00140	.00228	-.01628	-.26434	-.00613	-.17497	-.00361
#2	-.00048	-.00003	.00064	-.00479	-.11311	-.00484	-.10501	-.00034
#3	.00023	.00010	.00052	-.02537	-.10959	.00082	-.03471	-.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00154**	**-.01137**	**.00094**	**-.00396**	**.00016**	**-.00066**	**.00783**	**.00086**
Stddev	.00031	.00719	.00070	.00432	.00142	.00225	.00680	.00113
%RSD	20.100	63.243	74.541	109.13	914.54	343.13	86.840	131.58
#1	.00122	-.00683	.00175	-.00894	-.00062	.00151	.01483	.00213
#2	.00183	-.00761	.00062	-.00187	.00179	-.00298	.00126	.00044
#3	.00157	-.01965	.00046	-.00108	-.00071	-.00050	.00738	-.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 20:20:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00072**	**-.00001**	**.00377**	**.00009**	**.00009**	**-.00035**	**.00075**
Stddev	.00107	.00035	.00166	.00197	.00007	.00014	.00032
%RSD	147.86	2694.1	44.168	2118.5	76.833	38.859	42.404
#1	.00191	.00026	.00246	-.00218	.00004	-.00049	.00092
#2	-.00014	.00011	.00320	.00136	.00006	-.00036	.00094
#3	.00039	-.00041	.00564	.00110	.00017	-.00021	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8168.3**	**47490.**	**3047.5**
Stddev	10.3	198.	12.7
%RSD	.12556	.41629	.41563
#1	8176.9	47701.	3044.4
#2	8170.9	47308.	3061.5
#3	8156.9	47462.	3036.7

Approved: June 15, 2016

Sample Name: L1606037604 Acquired: 6/14/2016 20:24:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00032**	**.00756**	**-.00185**	**.00469**	**.00404**	**.00007**	**8.7792**	**-.00032**
Stddev	.00019	.00312	.00051	.00180	.00005	.00008	.0398	.00009
%RSD	59.067	41.210	27.877	38.444	1.2193	113.73	.45339	29.604
#1	-.00026	.01101	-.00206	.00275	.00402	-.00001	8.7433	-.00028
#2	-.00016	.00494	-.00222	.00500	.00400	.00015	8.7724	-.00025
#3	-.00053	.00674	-.00126	.00632	.00409	.00008	8.8220	-.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**.00039**	**.00058**	**.00730**	**.00847**	**.00083**	**1.2642**	**.03208**
Stddev	.00038	.00082	.00073	.01936	.04904	.00128	.0199	.00048
%RSD	1319.7	212.15	125.15	265.20	579.15	154.65	1.5728	1.4950
#1	.00046	-.00036	.00116	.02451	-.04789	.00204	1.2658	.03202
#2	-.00026	.00026	.00083	-.01366	.03191	.00097	1.2832	.03164
#3	-.00011	.00126	-.00024	.01105	.04139	-.00052	1.2435	.03259
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00030**	**3.7411**	**.00189**	**.00717**	**-.00387**	**.00020**	**-.00206**	**.76318**
Stddev	.00045	.0143	.00183	.00136	.00242	.00213	.00680	.00111
%RSD	150.40	.38310	96.540	18.952	62.478	1056.0	330.72	.14550
#1	-.00074	3.7570	.00399	.00765	-.00665	-.00221	-.00933	.76446
#2	.00016	3.7370	.00062	.00564	-.00219	.00099	-.00099	.76269
#3	-.00033	3.7292	.00107	.00822	-.00279	.00183	.00414	.76241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606037604 Acquired: 6/14/2016 20:24:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00072**	**.04318**	**-.00014**	**.00075**	**.00033**	**.00145**	**-.00023**
Stddev	.00006	.00011	.00435	.00228	.00014	.00014	.00105
%RSD	8.4337	.25383	3096.5	301.47	43.640	9.5729	452.41
#1	.00074	.04307	.00031	.00337	.00016	.00153	-.00117
#2	.00065	.04319	-.00470	-.00073	.00043	.00129	-.00044
#3	.00077	.04329	.00396	-.00037	.00039	.00153	.00091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8314.4**	**48031.**	**3034.3**
Stddev	12.3	138.	25.7
%RSD	.14819	.28704	.84757
#1	8306.7	47891.	3030.2
#2	8328.6	48034.	3061.8
#3	8307.8	48167.	3010.9

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 20:28:10 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38145**	**9.5297**	**.37179**	**.47895**	**.91835**	**.04744**	**9.0623**	**.04770**
Stddev	.00074	.0208	.00359	.00192	.00362	.00029	.0379	.00014
%RSD	.19353	.21829	.96432	.40042	.39393	.61309	.41775	.28741
#1	.38124	9.5376	.36791	.48097	.91631	.04778	9.0921	.04762
#2	.38228	9.5455	.37246	.47873	.91622	.04725	9.0197	.04763
#3	.38084	9.5061	.37499	.47715	.92253	.04730	9.0750	.04786
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19264**	**.47622**	**.48088**	**3.6771**	**46.027**	**.91668**	**9.1578**	**.46068**
Stddev	.00058	.00219	.00109	.0271	.144	.00757	.0724	.00386
%RSD	.29895	.45902	.22576	.73645	.31279	.82598	.79011	.83793
#1	.19200	.47875	.48020	3.6525	45.914	.92433	9.0875	.45627
#2	.19281	.47502	.48030	3.6728	45.977	.90919	9.2320	.46341
#3	.19311	.47491	.48213	3.7061	46.189	.91650	9.1539	.46237
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.95289**	**46.112**	**.48191**	**9.5513**	**.48065**	**1.1478**	**.37978**	**4.8187**
Stddev	.00288	.222	.00113	.0283	.00473	.0063	.00516	.0172
%RSD	.30192	.48246	.23487	.29588	.98378	.54720	1.3580	.35629
#1	.95113	45.892	.48073	9.5206	.47833	1.1406	.38331	4.8019
#2	.95621	46.107	.48299	9.5571	.47754	1.1507	.38218	4.8362
#3	.95134	46.337	.48202	9.5763	.48609	1.1521	.37386	4.8182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 20:28:10 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.95214	.91766	.91145	.47927	.95378	.96314	.95662
Stddev	.00224	.00487	.00908	.00249	.00832	.00208	.00950
%RSD	.23556	.53063	.99667	.51969	.87275	.21595	.99290
#1	.95106	.91471	.90663	.47834	.96319	.96092	.95069
#2	.95472	.91500	.90579	.48209	.95078	.96504	.95161
#3	.95064	.92328	.92193	.47737	.94737	.96345	.96758
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8029.3	46259.	3052.8
Stddev	40.6	206.	17.4
%RSD	.50537	.44620	.57101
#1	8035.1	46087.	3059.4
#2	7986.2	46203.	3065.9
#3	8066.7	46488.	3033.0

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 20:31:52 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00069	.00437	.00079	.00195	.00089	.00004	.01496	-.00002
Stddev	.00059	.00687	.00511	.00214	.00047	.00006	.03133	.00015
%RSD	85.649	157.29	643.31	109.54	53.013	160.33	209.40	643.65
#1	-.00030	.01102	-.00465	.00409	.00085	.00002	.03337	.00015
#2	-.00137	-.00271	.00548	-.00019	.00044	.00011	-.02121	-.00008
#3	-.00040	.00481	.00156	.00197	.00138	-.00001	.03273	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00047	.00090	.00007	-.00390	-.12491	-.00044	-.03143	-.00151
Stddev	.00024	.00117	.00052	.03152	.11655	.00214	.00810	.00239
%RSD	50.813	129.53	737.64	807.40	93.313	487.54	25.752	158.74
#1	-.00038	-.00041	.00057	.03124	-.24893	.00139	-.02619	.00055
#2	-.00074	.00127	-.00047	-.01327	-.10814	.00008	-.02736	-.00094
#3	-.00028	.00185	.00012	-.02968	-.01764	-.00279	-.04076	-.00413
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00150	-.01020	-.00000	.00303	-.00270	-.00035	.00675	.00182
Stddev	.00038	.02614	.00033	.00543	.00172	.00335	.00318	.00079
%RSD	25.535	256.29	12533.	179.56	63.729	958.50	47.058	43.331
#1	.00106	-.03994	-.00014	-.00311	-.00379	.00159	.00633	.00273
#2	.00165	.00912	-.00024	.00498	-.00072	.00158	.01012	.00140
#3	.00177	.00023	.00037	.00721	-.00359	-.00422	.00381	.00133
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 20:31:52 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	.00014	.00541	.00038	-.00080	-.00014	.00069
Stddev	.00060	.00004	.00437	.00194	.00017	.00017	.00006
%RSD	282.76	31.285	80.645	506.67	20.920	125.59	8.2535
#1	.00049	.00018	.00744	-.00159	-.00096	-.00003	.00066
#2	-.00048	.00014	.00040	.00045	-.00081	-.00005	.00075
#3	.00063	.00009	.00840	.00229	-.00062	-.00034	.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8164.0	47462.	3072.1
Stddev	14.2	179.	18.2
%RSD	.17425	.37672	.59115
#1	8152.7	47258.	3051.6
#2	8159.2	47592.	3078.4
#3	8180.0	47536.	3086.3

Approved: June 15, 2016

Sample Name: LLCCV Acquired: 6/14/2016 20:35:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00796	.15654	.00520	.07362	.00772	.00155	.36450	.00072
Stddev	.00058	.00604	.00233	.00171	.00060	.00003	.00774	.00008
%RSD	7.2560	3.8586	44.788	2.3295	7.7289	1.8142	2.1230	11.177
#1	.00863	.16003	.00770	.07267	.00720	.00156	.35816	.00064
#2	.00766	.14956	.00309	.07259	.00759	.00151	.37312	.00071
#3	.00760	.16002	.00482	.07560	.00837	.00156	.36222	.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00374	.00376	.00416	.08157	.58896	.07087	.34991	.00537
Stddev	.00013	.00055	.00080	.00802	.06552	.00052	.04718	.00220
%RSD	3.4987	14.670	19.296	9.8277	11.124	.73849	13.483	40.929
#1	.00389	.00388	.00409	.08757	.56210	.07050	.40372	.00309
#2	.00367	.00316	.00499	.08467	.54115	.07064	.31562	.00748
#3	.00367	.00425	.00339	.07246	.66364	.07147	.33040	.00555
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00723	.35769	.01538	.72222	.00467	.07288	.01608	.74185
Stddev	.00045	.01580	.00072	.00535	.00062	.00148	.00634	.00241
%RSD	6.2012	4.4166	4.6660	.74030	13.263	2.0373	39.420	.32510
#1	.00671	.37510	.01481	.72802	.00439	.07167	.02340	.74233
#2	.00746	.34427	.01618	.71749	.00424	.07245	.01257	.74399
#3	.00751	.35370	.01514	.72115	.00538	.07454	.01227	.73924
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: LLCCV Acquired: 6/14/2016 20:35:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37476**	**.03636**	**.02406**	**.14149**	**.00689**	**.01529**	**.04153**
Stddev	.00102	.00023	.00222	.00136	.00043	.00012	.00094
%RSD	.27273	.63775	9.2116	.96161	6.2626	.77005	2.2600
#1	.37560	.03610	.02169	.14259	.00666	.01517	.04059
#2	.37506	.03645	.02441	.14192	.00661	.01541	.04153
#3	.37362	.03654	.02608	.13997	.00738	.01529	.04247
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8208.9**	**47722.**	**3044.8**
Stddev	14.5	284.	6.1
%RSD	.17665	.59522	.20194
#1	8214.3	47755.	3047.5
#2	8192.5	47423.	3037.7
#3	8220.0	47989.	3049.0

Approved: June 15, 2016

2.3.2 Metals ICP-MS Data

2.3.2.1 Summary Data

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW5-060816	**Prep Method:**	3015	**Prep Date:**	06/10/2016 07:51
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/15/2016 12:43
Workgroup #:	WG572444	**Analyst:**	BKT	**Run Date:**	06/15/2016 14:46
Collect Date:	06/08/2016 10:10	**Dilution:**	1	**File ID:**	NI.061516.144612
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Cobalt, Total	7440-48-4	0.00267		0.00200	0.00100	0.000500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW5-060816	**Prep Method:**	3015	**Prep Date:**	06/10/2016 07:51
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/13/2016 11:56
Workgroup #:	WG572444	**Analyst:**	BKT	**Run Date:**	06/13/2016 14:36
Collect Date:	06/08/2016 10:10	**Dilution:**	1	**File ID:**	NI.061316.143618
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00122	J	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000758	J	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.126		0.00400	0.00200	0.00100
Copper, Total	7440-50-8	0.00218	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.102		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.0777		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00158	J	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0231	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW5-060816	**Prep Method:**	3015	**Prep Date:**	06/10/2016 07:51
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/15/2016 12:43
Workgroup #:	WG572444	**Analyst:**	BKT	**Run Date:**	06/15/2016 14:49
Collect Date:	06/08/2016 10:10	**Dilution:**	10	**File ID:**	NI.061516.144923
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.960		0.0600	0.0300	0.0150

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer NexION 300X

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	100
Vi = Initial volume	40
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/L)	0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	200
Vi = Initial volume	0.5
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/kg)	40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	40
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	50

50 ug/kg = 0.050 mg/kg

Perkin Elmer NexION ICP/MS

STANDARDS KEY

QC Std 1 - ICV
QC Std 2 - ICB
QC Std 3 - LLICV
QC Std 4 - ICSA
QC Std 5 - ICSAB
QC Std 6 - CCV
QC Std 7 - CCB
QC Std 8 - LLCCV

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.00005	0.05	0.1
Sb	10	0	0.00005	0.05	0.1
As	10	0	0.00005	0.05	0.1
Ba	10	0	0.00005	0.05	0.1
Be	10	0	0.00005	0.05	0.1
Ca	1000	0	0.005	5	10
Cd	10	0	0.0005	0.05	0.1
Cr	10	0	0.0005	0.05	0.1
Co	10	0	0.0005	0.05	0.1
Cu	10	0	0.0005	0.05	0.1
Fe	1000	0	0.005	5	10
Pb	10	0	0.00005	0.05	0.1
Mg	1000	0	0.005	5	10
Mn	10	0	0.00005	0.05	0.1
Ni	10	0	0.00005	0.05	0.1
K	1000	0	0.005	5	10
Se	10	0	0.00005	0.05	0.1
Ag	10	0	0.00005	0.05	0.1
Na	1000	0	0.005	5	10
Tl	10	0	0.00005	0.05	0.1
V	10	0	0.00005	0.05	0.1
U	1000	0	0.00005	0.05	0.1
Zn	10	0	0.00005	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG572187
Analyst: VC
Spike Analyst: VC
Run Date: 06/10/2016 07:51
Method: 3015
Balance: BAL016
Instrument: MW-3
Instrument Start: 06/10/2016 07:50

SOP: ME407 Revison 19
Spike Solution: STD75998
Spike Witness: REK
40 & 50 ML. DIGESTION TU COA18772
HNO3 Lot #: COA18905
MS Filters- fisher-Lot#R RGT35621

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG572187-02	BLANK	1	20 mL	50 mL	181.549 g	181.542 g		
2	WG572187-03	LCS	1	20 mL	50 mL	181.588 g	181.571 g	.25 mL	
3	L16060400-01	SAMP	2	20 mL	50 mL	185.42 g	185.402 g		06/15/16
4	L16060400-02	SAMP	2	20 mL	50 mL	183.811 g	183.793 g		06/15/16
5	L16060400-05	SAMP	2	20 mL	50 mL	184.322 g	184.308 g		06/15/16
6	L16060400-06	SAMP	2	20 mL	50 mL	181.391 g	181.38 g		06/15/16
7	L16060400-07	SAMP	2	20 mL	50 mL	184.098 g	184.081 g		06/15/16
8	L16060400-08	SAMP	2	20 mL	50 mL	183.079 g	183.045 g		06/15/16
9	L16060400-09	SAMP	2	20 mL	50 mL	184.037 g	184.034 g		06/15/16
10	L16060400-10	SAMP	2	20 mL	50 mL	183.132 g	183.107 g		06/15/16
11	L16060433-01	SAMP	2	20 mL	50 mL	183.108 g	183.097 g		06/15/16
12	L16060438-01	SAMP	1	20 mL	50 mL	182.495 g	182.459 g		06/13/16
13	L16060465-01	SAMP	2	20 mL	50 mL	183.574 g	183.552 g		06/16/16
14	L16060481-01	SAMP	2	20 mL	50 mL	182.723 g	182.693 g		06/16/16
15	L16060481-02	SAMP	2	20 mL	50 mL	183.527 g	183.501 g		06/16/16
16	L16060492-01	SAMP	1	20 mL	50 mL	187.008 g	186.993 g		06/20/16
17	L16060504-03	SAMP	1	20 mL	50 mL	179.157 g	179.146 g		06/20/16
18	L16060519-01	SAMP	2	20 mL	50 mL	180.63 g	180.607 g		06/16/16
19	WG572187-01	REF	2	20 mL	50 mL	183.832 g	183.82 g		
20	L16060521-01	SAMP	2	20 mL	50 mL	183.832 g	183.82 g		06/13/16
21	WG572187-04	DUP	1	20 mL	50 mL	182.133 g	182.116 g		
22	WG572187-05	MS	1	20 mL	50 mL	183.926 g	183.91 g	.25 mL	
23	WG572187-06	MSD	1	20 mL	50 mL	183.033 g	183.029 g	.25 mL	

L16060400-09	PH ADJ
L16060438-01	PH ADJ , FILTERED DIGESTATE
L16060400-01	PH ADJ

Analyst: Vicki Collins

Reviewer:

MW_DIG - Modified 09/30/2009
PDF ID: 4802154
Report generated: 06/10/2016 09:18

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 061316A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 572083,572444

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.061316.114314	Blank	Blank		1		06/13/16 11:43
2	NI.061316.114626	WG572466-01	Calibration Point		1		06/13/16 11:46
3	NI.061316.114938	WG572466-02	Calibration Point		1		06/13/16 11:49
4	NI.061316.115249	WG572466-03	Calibration Point		1		06/13/16 11:52
5	NI.061316.115601	WG572466-04	Calibration Point		1		06/13/16 11:56
6	NI.061316.115914	WG572466-05	Initial Calibration Verification		1		06/13/16 11:59
7	NI.061316.120227	WG572466-06	Initial Calib Blank		1		06/13/16 12:02
8	NI.061316.120540	WG572466-07	Low Level Initial Calibration V		1		06/13/16 12:05
9	NI.061316.120851	WG572466-08	Interference Check		1		06/13/16 12:08
10	NI.061316.121203	WG572466-09	Interference Check		1		06/13/16 12:12
11	NI.061316.121517	WG572466-10	CCV		1		06/13/16 12:15
12	NI.061316.121828	WG572466-11	CCB		1		06/13/16 12:18
13	NI.061316.122517	WG571571-02	Method/Prep Blank	20/50	1		06/13/16 12:25
14	NI.061316.122828	WG571571-03	Laboratory Control S	20/50	1		06/13/16 12:28
15	NI.061316.123139	WG571571-01	Reference Sample		5	L16060283-01	06/13/16 12:31
16	NI.061316.123451	WG571571-05	Matrix Spike	20/50	5	L16060283-01	06/13/16 12:34
17	NI.061316.123802	WG571571-06	Matrix Spike Duplica	20/50	5	L16060283-01	06/13/16 12:38
18	NI.061316.124114	L16060081-02	T6E0899-02	20/50	1		06/13/16 12:41
19	NI.061316.124426	L16060088-01	LH18/24-SP650-6366-GRAB	20/50	1		06/13/16 12:44
20	NI.061316.124738	L16060088-02	LH18/24-SP650-6366-COMP	20/50	1		06/13/16 12:47
21	NI.061316.125049	WG572083-03	Post Digestion Spike		1	L16060088-02	06/13/16 12:50
22	NI.061316.125401	WG572083-04	Serial Dilution		5	L16060088-02	06/13/16 12:54
23	NI.061316.125714	WG572466-12	CCV		1		06/13/16 12:57
24	NI.061316.130025	WG572466-13	CCB		1		06/13/16 13:00
25	NI.061316.130339	WG572187-02	Method/Prep Blank	20/50	1		06/13/16 13:03
26	NI.061316.130650	WG572187-03	Laboratory Control S	20/50	1		06/13/16 13:06
27	NI.061316.131001	L16060438-01	PIT WATER	20/50	1		06/13/16 13:10
28	NI.061316.131313	WG572187-01	Reference Sample		1	L16060521-01	06/13/16 13:13
29	NI.061316.131624	WG572187-04	Duplicate	20/50	1	L16060521-01	06/13/16 13:16
30	NI.061316.131936	WG572187-05	Matrix Spike	20/50	1	L16060521-01	06/13/16 13:19
31	NI.061316.132247	WG572187-06	Matrix Spike Duplica	20/50	1	L16060521-01	06/13/16 13:22
32	NI.061316.132559	WG572444-01	Post Digestion Spike		1	L16060521-01	06/13/16 13:25
33	NI.061316.132910	WG572444-02	Serial Dilution		5	L16060521-01	06/13/16 13:29
34	NI.061316.133221	WG572444-02	Serial Dilution		25	L16060521-01	06/13/16 13:32

Page: 1 Approved: June 15, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 061316A.REP

Analyst1: BKT Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705

ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607

CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345

Stannous : Hydroxylamine :

Workgroups: 572083,572444

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.061316.133534	WG572466-14	CCV		1		06/13/16 13:35
36	NI.061316.133846	WG572466-15	CCB		1		06/13/16 13:38
37	NI.061316.134159	WG572466-16	Low Level Continuing Calibra		1		06/13/16 13:41
38	NI.061316.134512	WG571571-04	Duplicate	20/50	5	L16060283-01	06/13/16 13:45
39	NI.061316.134823	L16060400-01	NBD01	20/50	1		06/13/16 13:48
40	NI.061316.135135	L16060400-02	NBD01	20/50	1		06/13/16 13:51
41	NI.061316.135446	L16060400-05	ALD02	20/50	1		06/13/16 13:54
42	NI.061316.135758	L16060400-06	ALD02	20/50	1		06/13/16 13:57
43	NI.061316.140109	L16060400-07	ALD01	20/50	1		06/13/16 14:01
44	NI.061316.140421	L16060400-08	ALD01	20/50	1		06/13/16 14:04
45	NI.061316.140732	L16060400-09	NBD05	20/50	1		06/13/16 14:07
46	NI.061316.141044	L16060400-10	NBD05	20/50	1		06/13/16 14:10
47	NI.061316.141355	L16060433-01	16F0536-01	20/50	1		06/13/16 14:13
48	NI.061316.141708	WG572466-17	CCV		1		06/13/16 14:17
49	NI.061316.142019	WG572466-18	CCB		1		06/13/16 14:20
50	NI.061316.142332	L16060465-01	HOA01	20/50	1		06/13/16 14:23
51	NI.061316.142644	L16060481-01	ROADSIDE GH53-01	20/50	1		06/13/16 14:26
52	NI.061316.142955	L16060481-02	CORNER SUMP GH53-01	20/50	1		06/13/16 14:29
53	NI.061316.143306	L16060492-01	SPW_06082016	20/50	100		06/13/16 14:33
54	NI.061316.143618	L16060504-03	MW5-060816	20/50	1		06/13/16 14:36
55	NI.061316.143929	L16060519-01	V6F0101-02	20/50	1		06/13/16 14:39
56	NI.061316.144242	WG572466-19	CCV		1		06/13/16 14:42
57	NI.061316.144553	WG572466-20	CCB		1		06/13/16 14:45
58	NI.061316.154623	WG572466-21	CCV		1		06/13/16 15:46
59	NI.061316.160813	WG572466-22	CCB		1		06/13/16 16:08
60	NI.061316.210354	WG572466-23	Low Level Continuing Calibra		1		06/13/16 21:03
61	NI.061316.210706	WG572466-24	CCV		1		06/13/16 21:07
62	NI.061316.211018	WG572466-25	CCB		1		06/13/16 21:10

Page: 2 Approved: June 15, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 061516A.REP

Analyst1: BKT Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705

ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607

CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345

Stannous : Hydroxylamine :

Workgroups: 572831,572444,572834,572844

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.061516.123034	Blank	Blank		1		06/15/16 12:30
2	NI.061516.123346	WG572861-01	Calibration Point		1		06/15/16 12:33
3	NI.061516.123658	WG572861-02	Calibration Point		1		06/15/16 12:36
4	NI.061516.124010	WG572861-03	Calibration Point		1		06/15/16 12:40
5	NI.061516.124321	WG572861-04	Calibration Point		1		06/15/16 12:43
6	NI.061516.124634	WG572861-05	Initial Calibration Verification		1		06/15/16 12:46
7	NI.061516.124947	WG572861-06	Initial Calib Blank		1		06/15/16 12:49
8	NI.061516.125300	WG572861-07	Low Level Initial Calibration V		1		06/15/16 12:53
9	NI.061516.125613	WG572861-08	Interference Check		1		06/15/16 12:56
10	NI.061516.125925	WG572861-09	Interference Check		1		06/15/16 12:59
11	NI.061516.130238	WG572861-10	CCV		1		06/15/16 13:02
12	NI.061516.130550	WG572861-11	CCB		1		06/15/16 13:05
13	NI.061516.130902	WG572379-02	Method/Prep Blank	.25/100	1		06/15/16 13:09
14	NI.061516.131213	WG572379-03	Laboratory Control S	.25/100	1		06/15/16 13:12
15	NI.061516.131525	WG572379-01	Reference Sample		1	L16060620-01	06/15/16 13:15
16	NI.061516.131836	WG572379-04	Matrix Spike	.25/100	1	L16060620-01	06/15/16 13:18
17	NI.061516.132148	WG572379-05	Matrix Spike Duplica	.257/100	1	L16060620-01	06/15/16 13:21
18	NI.061516.132459	L16060418-01	GH58-1	.253/100	1		06/15/16 13:24
19	NI.061516.132811	L16060418-03	GH58-3	.252/100	1		06/15/16 13:28
20	NI.061516.133122	L16060418-02	GH58-2	.251/100	1		06/15/16 13:31
21	NI.061516.134129	WG572831-01	Post Digestion Spike		1	L16060418-02	06/15/16 13:41
22	NI.061516.134440	WG572831-02	Serial Dilution		5	L16060418-02	06/15/16 13:44
23	NI.061516.134753	WG572861-12	CCV		1		06/15/16 13:47
24	NI.061516.135104	WG572861-13	CCB		1		06/15/16 13:51
25	NI.061516.135418	L16060418-04	GH58-4	.259/100	1		06/15/16 13:54
26	NI.061516.135729	L16060418-05	GH58-5	.25/100	1		06/15/16 13:57
27	NI.061516.140040	L16060418-06	GH58-6	.259/100	1		06/15/16 14:00
28	NI.061516.140352	L16060418-07	GH58-7	.255/100	1		06/15/16 14:03
29	NI.061516.140703	L16060418-08	GH58-8	.256/100	1		06/15/16 14:07
30	NI.061516.141015	L16060531-01	GH53-04	.259/100	1		06/15/16 14:10
31	NI.061516.141415	L16060532-01	GH53-SC1	.254/100	1		06/15/16 14:14
32	NI.061516.141726	L16060532-02	GH53-SC2	.252/100	1		06/15/16 14:17
33	NI.061516.142037	L16060532-03	GH53-SC3	.25/100	1		06/15/16 14:20
34	NI.061516.142348	L16060532-04	GH53-SC4	.256/100	1		06/15/16 14:23

Page: 1 Approved: June 16, 2016

Kim H. Rhoden

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 061516A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 572831,572444,572834,572844

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.061516.142702	WG572861-14	CCV		1		06/15/16 14:27
36	NI.061516.143013	WG572861-15	CCB		1		06/15/16 14:30
37	NI.061516.143326	L16060519-01	V6F0101-02	20/50	1		06/15/16 14:33
38	NI.061516.143637	L16060481-01	ROADSIDE GH53-01	20/50	1		06/15/16 14:36
39	NI.061516.143949	L16060481-02	CORNER SUMP GH53-01	20/50	1		06/15/16 14:39
40	NI.061516.144300	L16060465-01	HOA01	20/50	1		06/15/16 14:43
41	NI.061516.144612	L16060504-03	MW5-060816	20/50	1		06/15/16 14:46
42	NI.061516.144923	L16060504-03	MW5-060816	20/50	10		06/15/16 14:49
43	NI.061516.145235	L16060433-01	16F0536-01	20/50	10		06/15/16 14:52
44	NI.061516.145547	WG572861-16	CCV		1		06/15/16 14:55
45	NI.061516.145859	WG572861-17	CCB		1		06/15/16 14:58
46	NI.061516.150212	WG572861-18	Low Level Continuing Calibra		1		06/15/16 15:02
47	NI.061516.150525	WG572244-02	Method/Prep Blank	40/50	50		06/15/16 15:05
48	NI.061516.150836	WG572244-03	Laboratory Control S	40/50	50		06/15/16 15:08
49	NI.061516.151148	WG572244-01	Reference Sample		50	L16060401-01	06/15/16 15:11
50	NI.061516.151459	WG572244-04	Matrix Spike	5/50	50	L16060401-01	06/15/16 15:14
51	NI.061516.151811	WG572244-05	Matrix Spike Duplica	5/50	50	L16060401-01	06/15/16 15:18
52	NI.061516.152122	L16060403-01	KAISER 12 BAGS 6/6/16	5/50	50		06/15/16 15:21
53	NI.061516.152433	WG572834-01	Post Digestion Spike		50	L16060403-01	06/15/16 15:24
54	NI.061516.152745	WG572834-02	Serial Dilution		250	L16060403-01	06/15/16 15:27
55	NI.061516.153237	WG572861-19	CCV		1		06/15/16 15:32
56	NI.061516.153549	WG572861-20	CCB		1		06/15/16 15:35
57	NI.061516.154241	WG572637-03	Method/Prep Blank	40/50	50		06/15/16 15:42
58	NI.061516.154552	WG572637-04	Laboratory Control S	40/50	50		06/15/16 15:45
59	NI.061516.154904	WG572637-01	Reference Sample		1000	L16060564-01	06/15/16 15:49
60	NI.061516.155216	WG572637-06	Matrix Spike	40/50	1000	L16060564-01	06/15/16 15:52
61	NI.061516.155527	WG572637-07	Matrix Spike Duplica	40/50	1000	L16060564-01	06/15/16 15:55
62	NI.061516.155839	L16060633-01	ALAN 17 BAGS	5/50	50		06/15/16 15:58
63	NI.061516.160150	WG572844-01	Post Digestion Spike		50	L16060633-01	06/15/16 16:01
64	NI.061516.160501	WG572844-02	Serial Dilution		250	L16060633-01	06/15/16 16:05
65	NI.061516.160814	WG572861-21	CCV		1		06/15/16 16:08
66	NI.061516.161126	WG572861-22	CCB		1		06/15/16 16:11
67	NI.061516.172115	+10	+10		1		06/15/16 17:21
68	NI.061516.172427	+20	+20		1		06/15/16 17:24

Page: 2 Approved: June 16, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 061516A.REP

Analyst1: BKT Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705

ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607

CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345

Stannous : Hydroxylamine :

Workgroups: 572831,572444,572834,572844

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.061516.172739	+30	+30		1		06/15/16 17:27
70	NI.061516.173052	WG572861-23	CCV		1		06/15/16 17:30
71	NI.061516.173403	WG572861-24	CCB		1		06/15/16 17:34

Page: 3 Approved: June 16, 2016

Kim H. Rhoden

Microbac Laboratories Inc.

Data Checklist

Date: 13-JUN-2016
Analyst: BKT
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 572466
Runlog ID: 75655
Analytical Workgroups: 572083,572444

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	
Level 4	88,504
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BKT
Secondary Reviewer	KHR
Comments	

Primary Reviewer:
15-JUN-2016

Secondary Reviewer:
15-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-15-2016 13:46:03

Microbac Laboratories Inc.

Data Checklist

Date: 15-JUN-2016
Analyst: BKT
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 572861
Runlog ID: 75705
Analytical Workgroups: 572831,572444,572834,572844

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	
Level 4	504
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BKT
Secondary Reviewer	KHR
Comments	

Primary Reviewer:
16-JUN-2016

Secondary Reviewer:
16-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-16-2016 12:29:10

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG572444

Login Number: L16060504

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW5-060816	03	06/08/16					06/10/2016	1.9	180		06/15/16	7.2	180	
MW5-060816	03	06/08/16					06/10/2016	1.9	180		06/13/16	5.2	180	
MW5-060816	03	06/08/16					06/10/2016	1.9	180		06/15/16	7.2	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4805716
Report generated 06/28/2016 16:55

METHOD BLANK SUMMARY

Login Number: L16060504
Blank File ID: NI.061316.130339
Prep Date: 06/10/16 07:51
Analyzed Date: 06/13/16 13:03
Analyst: BKT

Work Group: WG572444
Blank Sample ID: WG572187-02
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572187-03	NI.061316.130650	06/13/16 13:06	01
DUP	WG572187-04	NI.061316.131624	06/13/16 13:16	01
MW5-060816	L16060504-03	NI.061316.143618	06/13/16 14:36	01
MW5-060816	L16060504-03	NI.061516.144612	06/15/16 14:46	02
MW5-060816	L16060504-03	NI.061516.144923	06/15/16 14:49	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4805717
Report generated 06/28/2016 16:55

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060504 Prep Date: 06/10/16 07:51 Sample ID: WG572187-02
Instrument ID: ICP-MS2 Run Date: 06/13/16 13:03 Prep Method: 3015
File ID: NI.061316.130339 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG572444 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-13-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Antimony, Total	0.000500	0.00200	0.000500	1	U
Arsenic, Total	0.000500	0.00200	0.000500	1	U
Barium, Total	0.00150	0.00600	0.00150	1	U
Cadmium, Total	0.000300	0.00120	0.000300	1	U
Chromium, Total	0.00100	0.00400	0.00100	1	U
Cobalt, Total	0.000500	0.00200	0.000500	1	U
Copper, Total	0.00100	0.00400	0.00100	1	U
Lead, Total	0.000500	0.00200	0.000500	1	U
Manganese, Total	0.00100	0.00400	0.00100	1	U
Nickel, Total	0.00200	0.00800	0.00200	1	U
Silver, Total	0.000500	0.00200	0.000500	1	U
Thallium, Total	0.000100	0.000400	0.000100	1	U
Vanadium, Total	0.000500	0.00200	0.000500	1	U
Zinc, Total	0.0125	0.0500	0.0125	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4805718
28-JUN-2016 16:55

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060504 Run Date: 06/13/2016 Sample ID: WG572187-03
Instrument ID: ICP-MS2 Run Time: 13:06 Prep Method: 3015
File ID: NI.061316.130650 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG572444 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD75998 Cal ID: ICP-MS-13-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Antimony, Total	0.125	0.129	103	80 - 120	
Arsenic, Total	0.125	0.125	100	80 - 120	
Barium, Total	0.125	0.128	102	80 - 120	
Cadmium, Total	0.125	0.129	103	80 - 120	
Chromium, Total	0.125	0.126	100	80 - 120	
Cobalt, Total	0.125	0.131	105	80 - 120	
Copper, Total	0.125	0.129	103	80 - 120	
Lead, Total	0.125	0.129	103	80 - 120	
Manganese, Total	0.125	0.130	104	80 - 120	
Nickel, Total	0.125	0.127	102	80 - 120	
Silver, Total	0.125	0.134	107	80 - 120	
Thallium, Total	0.125	0.128	103	80 - 120	
Vanadium, Total	0.125	0.127	102	80 - 120	
Zinc, Total	0.125	0.130	104	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4805719
Report generated: 06/28/2016 16:55

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060504 Cal ID: ICP-MS2- Worknum: WG572444
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG572187-01 File ID: NI.061316.131313 Dil: 1 Matrix: WATER
Sample ID: WG572187-05 MS File ID: NI.061316.131936 Dil: 1 Units: mg/L
Sample ID: WG572187-06 MSD File ID: NI.061316.132247 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Antimony	ND	0.125	0.134	107	0.125	0.130	104	3.06	80 - 120	20	
Arsenic	0.00267	0.125	0.132	104	0.125	0.136	106	2.52	80 - 120	20	
Barium	0.0417	0.125	0.167	100	0.125	0.166	99.2	0.604	80 - 120	20	
Cadmium	ND	0.125	0.128	103	0.125	0.126	100	2.29	80 - 120	20	
Chromium	ND	0.125	0.126	100	0.125	0.130	104	3.39	80 - 120	20	
Cobalt	ND	0.125	0.132	105	0.125	0.137	110	4.20	80 - 120	20	
Copper	0.00187	0.125	0.128	101	0.125	0.131	103	2.69	80 - 120	20	
Lead	ND	0.125	0.127	101	0.125	0.128	102	0.982	80 - 120	20	
Manganese	0.0339	0.125	0.158	99.7	0.125	0.165	105	4.31	80 - 120	20	
Nickel	ND	0.125	0.128	102	0.125	0.130	104	1.41	80 - 120	20	
Silver	ND	0.125	0.131	105	0.125	0.128	103	2.19	80 - 120	20	
Thallium	0.000122	0.125	0.128	102	0.125	0.128	103	0.277	80 - 120	20	
Vanadium	0.00125	0.125	0.131	104	0.125	0.132	105	1.20	80 - 120	20	
Zinc	ND	0.125	0.133	106	0.125	0.134	107	0.913	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4805720
Report generated 06/28/2016 16:55

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16060504 **Worknum:** WG572444
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG572444-02 **File ID:** NI.061316.132910 **Dil:** 5 **Units:** ug/L
Sample: L16060521-01 **File ID:** NI.061316.131313 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	ND	U	2.55	F	1300.00	
Arsenic	1.07	X	1.28	F	19.70	
Barium	16.7	X	17.1	X	2.68	
Cadmium	ND	U	ND	U		
Chromium	ND	U	ND	U		
Cobalt	ND	U	ND	U		
Copper	0.747	F	ND	U		
Lead	ND	U	ND	U		
Manganese	13.6	X	13.2	X	2.71	
Nickel	ND	U	ND	U		
Silver	ND	U	ND	U		
Thallium	0.0488	F	ND	U		
Vanadium	0.498	F	ND	U		
Zinc	ND	U	ND	U		

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4805714
06/28/2016 16:55

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060504 **Worknum:** WG572444
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG572444-01 **File ID:** NI.061316.132559 **Dil:** 1 **Units:** ug/L
Sample ID: L16060521-01 **File ID:** NI.061316.131313 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	51.0		0	U	50	102.0	75 - 125	
ARSENIC	53.3		1.07		50	104.5	75 - 125	
BARIUM	66.4		16.7		50	99.5	75 - 125	
CADMIUM	51.6		0	U	50	103.1	75 - 125	
CHROMIUM	50.5		0	U	50	101.0	75 - 125	
COBALT	55.4		0	U	50	110.8	75 - 125	
COPPER	51.5		0.747	F	50	101.5	75 - 125	
LEAD	52.6		0	U	50	105.2	75 - 125	
MANGANESE	67.0		13.6		50	106.8	75 - 125	
NICKEL	51.1		0	U	50	102.2	75 - 125	
SILVER	51.1		0	U	50	102.3	75 - 125	
THALLIUM	51.5		0.0488	F	50	103.0	75 - 125	
VANADIUM	52.7		0.498	F	50	104.4	75 - 125	
ZINC	53.6		0	U	50	107.3	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4805715
Report generated: 06/28/2016 16:55

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16060504	Workgroup (AAB#):	WG572444
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG572466	Initial Calibration Date:	13-JUN-2016 11:56

	WG572466-01		WG572466-02		WG572466-03		WG572466-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	71.5	.4	330	50	277000	100	541000	.999913	
ARSENIC	0	-93.3	.4	-5.60	50	66300	100	132000	.999961	
BARIUM	0	57.7	.4	182	50	121000	100	235000	.9999	
CADMIUM	0	16.0	.4	134	50	129000	100	257000	.999988	
CHROMIUM	0	8480	.4	9260	50	490000	100	943000	.99999	
COBALT	0	213	.4	640	50	432000	100	854000	.999987	
COPPER	0	238	.4	370	50	118000	100	228000	.999961	
LEAD	0	1100	.4	2430	50	1140000	100	2250000	.999971	
MANGANESE	0	1080	.4	1570	50	378000	100	753000	.999961	
NICKEL	0	328	.4	441	50	122000	100	233000	.999947	
SILVER	0	127	.4	535	50	419000	100	803000	.999734	
THALLIUM	0	48.0	.4	545	50	492000	100	960000	.999997	
VANADIUM	0	1650	.4	2140	50	478000	100	939000	.999999	
ZINC	0	604	.4	802	50	67900	100	132000	1	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4805723
Report generated: 28-JUN-2016 16:55

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16060504	Workgroup (AAB#):	WG572444
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG572861	Initial Calibration Date:	15-JUN-2016 12:43

	WG572861-01		WG572861-02		WG572861-03		WG572861-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	23.7	.4	209	50	161000	100	319000	.999936	
ARSENIC	0	-28.0	.4	8.20	50	42000	100	82900	.99997	
BARIUM	0	17.3	.4	100	50	68700	100	136000	.999942	
CADMIUM	0	1.70	.4	84.6	50	72700	100	144000	.999919	
CHROMIUM	0	6480	.4	6940	50	296000	100	579000	.999988	
COBALT	0	144	.4	409	50	239000	100	477000	.999999	
COPPER	0	109	.4	214	50	70200	100	138000	.999954	
LEAD	0	728	.4	1510	50	619000	100	1240000	.999907	
MANGANESE	0	656	.4	1070	50	220000	100	439000	1	
NICKEL	0	174	.4	253	50	72000	100	141000	.999946	
SILVER	0	69.7	.4	317	50	226000	100	443000	.999981	
THALLIUM	0	19.3	.4	338	50	263000	100	518000	.999978	
VANADIUM	0	1310	.4	1700	50	280000	100	547000	.999939	
ZINC	0	110	.4	247	50	40900	100	80600	.99998	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4805723
Report generated: 28-JUN-2016 16:55

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060504
Run Date: 06/13/2016
Sample ID: WG572466-06
Instrument ID: ICP-MS2
Run Time: 12:02
Method: 6020A
File ID: NI.061316.120227
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572444
Cal ID: ICP-MS2 - 13-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
COPPER	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.443	*
THALLIUM	.04	.16	.04	U
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4805725
Report generated 06/28/2016 16:55

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060504
Instrument ID: ICP-MS2
File ID: NI.061516.124947
Workgroup (AAB#): WG572444
Matrix: WATER

Run Date: 06/15/2016
Run Time: 12:49
Analyst: BKT
Cal ID: ICP-MS2 - 15-JUN-16

Sample ID: WG572861-06
Method: 6020A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
COPPER	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.508	*
THALLIUM	.04	.16	.0502	F
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4805725
Report generated 06/28/2016 16:55

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060504
Run Date: 06/13/2016
Sample ID: WG572466-11
Instrument ID: ICP-MS2
Run Time: 12:18
Method: 6020A
File ID: NI.061316.121828
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572444
Cal ID: ICP-MS - 13-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.259	F
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4805728
Report generated 06/28/2016 16:55

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060504
Run Date: 06/13/2016
Sample ID: WG572466-13
Instrument ID: ICP-MS2
Run Time: 13:00
Method: 6020A
File ID: NI.061316.130025
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572444
Cal ID: ICP-MS - 13-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060504
Run Date: 06/13/2016
Sample ID: WG572466-15
Instrument ID: ICP-MS2
Run Time: 13:38
Method: 6020A
File ID: NI.061316.133846
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572444
Cal ID: ICP-MS - 13-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060504
Run Date: 06/13/2016
Sample ID: WG572466-18
Instrument ID: ICP-MS2
Run Time: 14:20
Method: 6020A
File ID: NI.061316.142019
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572444
Cal ID: ICP-MS - 13-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	1.04	F
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060504
Run Date: 06/13/2016
Sample ID: WG572466-20
Instrument ID: ICP-MS2
Run Time: 14:45
Method: 6020A
File ID: NI.061316.144553
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572444
Cal ID: ICP-MS - 13-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060504
Run Date: 06/15/2016
Sample ID: WG572861-11
Instrument ID: ICP-MS2
Run Time: 13:05
Method: 6020A
File ID: NI.061516.130550
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572444
Cal ID: ICP-MS - 15-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.271	F
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060504
Run Date: 06/15/2016
Sample ID: WG572861-15
Instrument ID: ICP-MS2
Run Time: 14:30
Method: 6020A
File ID: NI.061516.143013
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572444
Cal ID: ICP-MS - 15-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060504
Run Date: 06/15/2016
Sample ID: WG572861-17
Instrument ID: ICP-MS2
Run Time: 14:58
Method: 6020A
File ID: NI.061516.145859
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572444
Cal ID: ICP-MS - 15-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060504
Run Date: 06/13/2016
Sample ID: WG572466-05
Instrument ID: ICP-MS2
Run Time: 11:59
Method: 6020A
File ID: NI.061316.115914
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572444
Cal ID: ICP-MS - 13-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	49.3	98.5	90 - 110	
Arsenic		50	50.6	101	90 - 110	
Barium		50	49.7	99.3	90 - 110	
Cadmium		50	50.0	99.9	90 - 110	
Chromium		50	50.0	99.9	90 - 110	
Cobalt		50	50.3	101	90 - 110	
Copper		50	50.6	101	90 - 110	
Lead		50	49.8	99.5	90 - 110	
Manganese		50	51.1	102	90 - 110	
Nickel		50	49.7	99.4	90 - 110	
Silver		50	50.3	101	90 - 110	
Thallium		50	49.8	99.7	90 - 110	
Vanadium		50	49.9	99.8	90 - 110	
Zinc		50	51.1	102	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4805724
Report generated 06/28/2016 16:55

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060504
Run Date: 06/15/2016
Sample ID: WG572861-05
Instrument ID: ICP-MS2
Run Time: 12:46
Method: 6020A
File ID: NI.061516.124634
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572444
Cal ID: ICP-MS - 15-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	51.1	102	90 - 110	
Arsenic		50	52.3	105	90 - 110	
Barium		50	51.8	104	90 - 110	
Cadmium		50	53.1	106	90 - 110	
Chromium		50	51.8	104	90 - 110	
Cobalt		50	51.8	104	90 - 110	
Copper		50	52.9	106	90 - 110	
Lead		50	52.3	105	90 - 110	
Manganese		50	52.7	105	90 - 110	
Nickel		50	52.3	105	90 - 110	
Silver		50	52.2	104	90 - 110	
Thallium		50	52.0	104	90 - 110	
Vanadium		50	52.3	105	90 - 110	
Zinc		50	53.6	107	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4805724
Report generated 06/28/2016 16:55

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504
Run Date: 06/13/2016
Sample ID: WG572466-10
Instrument ID: ICP-MS2
Run Time: 12:15
Method: 6020A
File ID: NI.061316.121517
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572444
Cal ID: ICP-MS - 13-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0525	mg/L	105	90 - 110		
Arsenic		0.0500	0.0506	mg/L	101	90 - 110		
Barium		0.0500	0.0505	mg/L	101	90 - 110		
Cadmium		0.0500	0.0507	mg/L	101	90 - 110		
Chromium		0.0500	0.0494	mg/L	98.8	90 - 110		
Cobalt		0.0500	0.0524	mg/L	105	90 - 110		
Copper		0.0500	0.0509	mg/L	102	90 - 110		
Lead		0.0500	0.0515	mg/L	103	90 - 110		
Manganese		0.0500	0.0510	mg/L	102	90 - 110		
Nickel		0.0500	0.0499	mg/L	99.8	90 - 110		
Silver		0.0500	0.0513	mg/L	103	90 - 110		
Thallium		0.0500	0.0511	mg/L	102	90 - 110		
Vanadium		0.0500	0.0506	mg/L	101	90 - 110		
Zinc		0.0500	0.0498	mg/L	99.6	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504
Instrument ID: ICP-MS2
File ID: NI.061316.125714
Workgroup (AAB#): WG572444
Matrix: WATER

Run Date: 06/13/2016
Run Time: 12:57
Analyst: BKT
Cal ID: ICP-MS - 13-JUN-16

Sample ID: WG572466-12
Method: 6020A
QC Key: DOD4

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0510	mg/L	102	90 - 110		
Arsenic		0.0500	0.0507	mg/L	101	90 - 110		
Barium		0.0500	0.0493	mg/L	98.6	90 - 110		
Cadmium		0.0500	0.0504	mg/L	101	90 - 110		
Chromium		0.0500	0.0502	mg/L	100	90 - 110		
Cobalt		0.0500	0.0539	mg/L	108	90 - 110		
Copper		0.0500	0.0508	mg/L	102	90 - 110		
Lead		0.0500	0.0518	mg/L	104	90 - 110		
Manganese		0.0500	0.0523	mg/L	105	90 - 110		
Nickel		0.0500	0.0508	mg/L	102	90 - 110		
Silver		0.0500	0.0510	mg/L	102	90 - 110		
Thallium		0.0500	0.0508	mg/L	102	90 - 110		
Vanadium		0.0500	0.0514	mg/L	103	90 - 110		
Zinc		0.0500	0.0506	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504
Instrument ID: ICP-MS2
File ID: NI.061316.133534
Workgroup (AAB#): WG572444
Matrix: WATER

Run Date: 06/13/2016
Run Time: 13:35
Analyst: BKT
Cal ID: ICP-MS - 13-JUN-16

Sample ID: WG572466-14
Method: 6020A
QC Key: DOD4

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0500	mg/L	100	90 - 110		
Arsenic		0.0500	0.0506	mg/L	101	90 - 110		
Barium		0.0500	0.0484	mg/L	96.7	90 - 110		
Cadmium		0.0500	0.0500	mg/L	100	90 - 110		
Chromium		0.0500	0.0499	mg/L	99.7	90 - 110		
Cobalt		0.0500	0.0542	mg/L	108	90 - 110		
Copper		0.0500	0.0507	mg/L	101	90 - 110		
Lead		0.0500	0.0519	mg/L	104	90 - 110		
Manganese		0.0500	0.0525	mg/L	105	90 - 110		
Nickel		0.0500	0.0503	mg/L	101	90 - 110		
Silver		0.0500	0.0495	mg/L	98.9	90 - 110		
Thallium		0.0500	0.0505	mg/L	101	90 - 110		
Vanadium		0.0500	0.0502	mg/L	100	90 - 110		
Zinc		0.0500	0.0512	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504
Run Date: 06/13/2016
Sample ID: WG572466-17
Instrument ID: ICP-MS2
Run Time: 14:17
Method: 6020A
File ID: NI.061316.141708
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572444
Cal ID: ICP-MS - 13-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0527	mg/L	105	90 - 110		
Arsenic		0.0500	0.0519	mg/L	104	90 - 110		
Barium		0.0500	0.0501	mg/L	100	90 - 110		
Cadmium		0.0500	0.0513	mg/L	103	90 - 110		
Chromium		0.0500	0.0507	mg/L	101	90 - 110		
Cobalt		0.0500	0.0597	mg/L	119	90 - 110		*
Copper		0.0500	0.0517	mg/L	103	90 - 110		
Lead		0.0500	0.0516	mg/L	103	90 - 110		
Manganese		0.0500	0.0527	mg/L	105	90 - 110		
Nickel		0.0500	0.0517	mg/L	103	90 - 110		
Silver		0.0500	0.0542	mg/L	108	90 - 110		
Thallium		0.0500	0.0520	mg/L	104	90 - 110		
Vanadium		0.0500	0.0539	mg/L	108	90 - 110		
Zinc		0.0500	0.0512	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504
Run Date: 06/13/2016
Sample ID: WG572466-19
Instrument ID: ICP-MS2
Run Time: 14:42
Method: 6020A
File ID: NI.061316.144242
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572444
Cal ID: ICP-MS - 13-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0522	mg/L	104	90 - 110		
Arsenic		0.0500	0.0507	mg/L	101	90 - 110		
Barium		0.0500	0.0496	mg/L	99.1	90 - 110		
Cadmium		0.0500	0.0519	mg/L	104	90 - 110		
Chromium		0.0500	0.0505	mg/L	101	90 - 110		
Cobalt		0.0500	0.0598	mg/L	120	90 - 110		*
Copper		0.0500	0.0516	mg/L	103	90 - 110		
Lead		0.0500	0.0540	mg/L	108	90 - 110		
Manganese		0.0500	0.0542	mg/L	108	90 - 110		
Nickel		0.0500	0.0523	mg/L	105	90 - 110		
Silver		0.0500	0.0536	mg/L	107	90 - 110		
Thallium		0.0500	0.0526	mg/L	105	90 - 110		
Vanadium		0.0500	0.0540	mg/L	108	90 - 110		
Zinc		0.0500	0.0503	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504
Instrument ID: ICP-MS2
File ID: NI.061516.130238
Workgroup (AAB#): WG572444
Matrix: WATER

Run Date: 06/15/2016
Run Time: 13:02
Analyst: BKT
Cal ID: ICP-MS - 15-JUN-16

Sample ID: WG572861-10
Method: 6020A
QC Key: DOD4

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0521	mg/L	104	90 - 110		
Arsenic		0.0500	0.0509	mg/L	102	90 - 110		
Barium		0.0500	0.0511	mg/L	102	90 - 110		
Cadmium		0.0500	0.0516	mg/L	103	90 - 110		
Chromium		0.0500	0.0510	mg/L	102	90 - 110		
Cobalt		0.0500	0.0521	mg/L	104	90 - 110		
Copper		0.0500	0.0514	mg/L	103	90 - 110		
Lead		0.0500	0.0520	mg/L	104	90 - 110		
Manganese		0.0500	0.0513	mg/L	103	90 - 110		
Nickel		0.0500	0.0515	mg/L	103	90 - 110		
Silver		0.0500	0.0515	mg/L	103	90 - 110		
Thallium		0.0500	0.0515	mg/L	103	90 - 110		
Vanadium		0.0500	0.0523	mg/L	105	90 - 110		
Zinc		0.0500	0.0520	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504
Instrument ID: ICP-MS2
File ID: NI.061516.142702
Workgroup (AAB#): WG572444
Matrix: WATER

Run Date: 06/15/2016
Run Time: 14:27
Analyst: BKT
Cal ID: ICP-MS - 15-JUN-16

Sample ID: WG572861-14
Method: 6020A
QC Key: DOD4

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0518	mg/L	104	90 - 110		
Arsenic		0.0500	0.0515	mg/L	103	90 - 110		
Barium		0.0500	0.0527	mg/L	105	90 - 110		
Cadmium		0.0500	0.0519	mg/L	104	90 - 110		
Chromium		0.0500	0.0541	mg/L	108	90 - 110		
Cobalt		0.0500	0.0506	mg/L	101	90 - 110		
Copper		0.0500	0.0535	mg/L	107	90 - 110		
Lead		0.0500	0.0522	mg/L	104	90 - 110		
Manganese		0.0500	0.0557	mg/L	111	90 - 110		*
Nickel		0.0500	0.0540	mg/L	108	90 - 110		
Silver		0.0500	0.0526	mg/L	105	90 - 110		
Thallium		0.0500	0.0519	mg/L	104	90 - 110		
Vanadium		0.0500	0.0531	mg/L	106	90 - 110		
Zinc		0.0500	0.0522	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504
Run Date: 06/15/2016
Sample ID: WG572861-16
Instrument ID: ICP-MS2
Run Time: 14:55
Method: 6020A
File ID: NI.061516.145547
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572444
Cal ID: ICP-MS - 15-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0522	mg/L	104	90 - 110		
Arsenic		0.0500	0.0513	mg/L	103	90 - 110		
Barium		0.0500	0.0528	mg/L	106	90 - 110		
Cadmium		0.0500	0.0526	mg/L	105	90 - 110		
Chromium		0.0500	0.0532	mg/L	106	90 - 110		
Cobalt		0.0500	0.0530	mg/L	106	90 - 110		
Copper		0.0500	0.0524	mg/L	105	90 - 110		
Lead		0.0500	0.0523	mg/L	105	90 - 110		
Manganese		0.0500	0.0555	mg/L	111	90 - 110		*
Nickel		0.0500	0.0526	mg/L	105	90 - 110		
Silver		0.0500	0.0522	mg/L	104	90 - 110		
Thallium		0.0500	0.0525	mg/L	105	90 - 110		
Vanadium		0.0500	0.0536	mg/L	107	90 - 110		
Zinc		0.0500	0.0521	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4805727
Report generated 06/28/2016 16:55

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060504
Run Date: 06/13/2016
Sample ID: WG572466-07
Instrument ID: ICP-MS2
Run Time: 12:05
Method: 6020A
File ID: NI.061316.120540
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572444
Cal ID: ICP-MS - 13-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.461	ug/L	115	70 - 130		
Arsenic		0.400	0.392	ug/L	97.9	70 - 130		
Barium		0.750	0.754	ug/L	101	70 - 130		
Cadmium		0.240	0.253	ug/L	105	70 - 130		
Chromium		0.800	0.738	ug/L	92.3	70 - 130		
Cobalt		0.400	0.390	ug/L	97.4	70 - 130		
Copper		0.800	0.751	ug/L	93.9	70 - 130		
Lead		0.200	0.199	ug/L	99.5	70 - 130		
Manganese		0.500	0.453	ug/L	90.6	70 - 130		
Nickel		1.60	1.49	ug/L	92.9	70 - 130		
Silver		0.400	0.405	ug/L	101	70 - 130		
Thallium		0.0800	0.0978	ug/L	122	70 - 130		
Vanadium		0.400	0.384	ug/L	95.9	70 - 130		
Zinc		6.25	6.49	ug/L	104	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4805729
Report generated 06/28/2016 16:55

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060504
Run Date: 06/13/2016
Sample ID: WG572466-16
Instrument ID: ICP-MS2
Run Time: 13:41
Method: 6020A
File ID: NI.061316.134159
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572444
Cal ID: ICP-MS - 13-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.416	ug/L	104	70 - 130		
Arsenic		0.400	0.407	ug/L	102	70 - 130		
Barium		0.750	0.700	ug/L	93.4	70 - 130		
Cadmium		0.240	0.236	ug/L	98.3	70 - 130		
Chromium		0.800	0.824	ug/L	103	70 - 130		
Cobalt		0.400	0.405	ug/L	101	70 - 130		
Copper		0.800	0.778	ug/L	97.3	70 - 130		
Lead		0.200	0.191	ug/L	95.3	70 - 130		
Manganese		0.500	0.434	ug/L	86.8	70 - 130		
Nickel		1.60	1.55	ug/L	97.2	70 - 130		
Silver		0.400	0.399	ug/L	99.6	70 - 130		
Thallium		0.0800	0.0771	ug/L	96.4	70 - 130		
Vanadium		0.400	0.384	ug/L	95.9	70 - 130		
Zinc		6.25	6.76	ug/L	108	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4805729
Report generated 06/28/2016 16:55

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060504
Run Date: 06/13/2016
Sample ID: WG572466-23
Instrument ID: ICP-MS2
Run Time: 21:03
Method: 6020A
File ID: NI.061316.210354
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572444
Cal ID: ICP-MS - 13-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.433	ug/L	108	70 - 130		
Arsenic		0.400	0.380	ug/L	95.1	70 - 130		
Barium		0.750	0.728	ug/L	97.1	70 - 130		
Cadmium		0.240	0.257	ug/L	107	70 - 130		
Chromium		0.800	0.829	ug/L	104	70 - 130		
Cobalt		0.400	0.427	ug/L	107	70 - 130		
Copper		0.800	0.785	ug/L	98.1	70 - 130		
Lead		0.200	0.207	ug/L	104	70 - 130		
Manganese		0.500	0.531	ug/L	106	70 - 130		
Nickel		1.60	1.57	ug/L	98.1	70 - 130		
Silver		0.400	0.389	ug/L	97.3	70 - 130		
Thallium		0.0800	0.0801	ug/L	100	70 - 130		
Vanadium		0.400	0.394	ug/L	98.6	70 - 130		
Zinc		6.25	6.87	ug/L	110	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4805729
Report generated 06/28/2016 16:55

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060504
Run Date: 06/15/2016
Sample ID: WG572861-07
Instrument ID: ICP-MS2
Run Time: 12:53
Method: 6020A
File ID: NI.061516.125300
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572444
Cal ID: ICP-MS - 15-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.457	ug/L	114	70 - 130		
Arsenic		0.400	0.458	ug/L	115	70 - 130		
Barium		0.750	0.726	ug/L	96.8	70 - 130		
Cadmium		0.240	0.230	ug/L	95.7	70 - 130		
Chromium		0.800	0.689	ug/L	86.1	70 - 130		
Cobalt		0.400	0.402	ug/L	100	70 - 130		
Copper		0.800	0.784	ug/L	98.0	70 - 130		
Lead		0.200	0.195	ug/L	97.5	70 - 130		
Manganese		0.500	0.422	ug/L	84.4	70 - 130		
Nickel		1.60	1.58	ug/L	98.9	70 - 130		
Silver		0.400	0.385	ug/L	96.3	70 - 130		
Thallium		0.0800	0.0677	ug/L	84.6	70 - 130		
Vanadium		0.400	0.345	ug/L	86.1	70 - 130		
Zinc		6.25	6.89	ug/L	110	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4805729
Report generated 06/28/2016 16:55

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060504
Run Date: 06/15/2016
Sample ID: WG572861-18
Instrument ID: ICP-MS2
Run Time: 15:02
Method: 6020A
File ID: NI.061516.150212
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572444
Cal ID: ICP-MS - 15-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.419	ug/L	105	70 - 130		
Arsenic		0.400	0.385	ug/L	96.2	70 - 130		
Barium		0.750	0.746	ug/L	99.5	70 - 130		
Cadmium		0.240	0.230	ug/L	96.0	70 - 130		
Chromium		0.800	0.750	ug/L	93.8	70 - 130		
Cobalt		0.400	0.405	ug/L	101	70 - 130		
Copper		0.800	0.767	ug/L	95.9	70 - 130		
Lead		0.200	0.190	ug/L	95.0	70 - 130		
Manganese		0.500	0.461	ug/L	92.3	70 - 130		
Nickel		1.60	1.56	ug/L	97.2	70 - 130		
Silver		0.400	0.408	ug/L	102	70 - 130		
Thallium		0.0800	0.0701	ug/L	87.6	70 - 130		
Vanadium		0.400	0.380	ug/L	95.0	70 - 130		
Zinc		6.25	6.98	ug/L	112	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4805729
Report generated 06/28/2016 16:55

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060504
Instrument ID: ICP-MS2
Sol. A : WG572466-08 **File ID:** NI.061316.120851
Sol. AB : WG572466-09 **File ID:** NI.061316.121203

Workgroup (AAB#): WG572444
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.0816	NS	100	102	102	
Arsenic	NS	-0.0231	NS	100	102	102	
Barium	NS	0.0854	NS	100	97.7	97.7	
Cadmium	NS	-0.0880	NS	100	98.9	98.9	
Chromium	NS	0.170	NS	100	98.7	98.7	
Cobalt	NS	0.0318	NS	100	102	102	
Copper	NS	0.263	NS	100	99.6	99.6	
Lead	NS	0.0291	NS	100	99.9	99.9	
Manganese	NS	0.0535	NS	100	103	103	
Nickel	NS	0.332	NS	100	97.2	97.2	
Silver	NS	0.0154	NS	100	93.1	93.1	
Thallium	NS	0.0181	NS	100	99.1	99.1	
Vanadium	NS	0.0246	NS	100	102	102	
Zinc	NS	1.11	NS	100	118	118	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4805726
Report generated 06/28/2016 16:55

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060504
Instrument ID: ICP-MS2
Sol. A : WG572861-08 **File ID:** NI.061516.125613
Sol. AB : WG572861-09 **File ID:** NI.061516.125925

Workgroup (AAB#): WG572444
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.0773	NS	100	102	102	
Arsenic	NS	-0.0358	NS	100	101	101	
Barium	NS	0.112	NS	100	99.8	99.8	
Cadmium	NS	-0.0800	NS	100	102	102	
Chromium	NS	0.0733	NS	100	99.2	99.2	
Cobalt	NS	0.0262	NS	100	101	101	
Copper	NS	0.267	NS	100	99.4	99.4	
Lead	NS	0.0560	NS	100	102	102	
Manganese	NS	0.0617	NS	100	101	101	
Nickel	NS	0.371	NS	100	99.6	99.6	
Silver	NS	0.0166	NS	100	96.7	96.7	
Thallium	NS	0.0190	NS	100	101	101	
Vanadium	NS	0.00520	NS	100	101	101	
Zinc	NS	1.71	NS	100	103	103	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4805726
Report generated 06/28/2016 16:55

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060504 **Analytical Method:** 6020
Analytical Workgroup: WG572444 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 13-JUN-2016 11:46

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060504-03	SAMP	13-JUN-2016 14:36	**120.771**	**130.874**	**130.453**
WG572187-02	BLANK	13-JUN-2016 13:03	103.424	103.34	103.703
WG572187-03	LCS	13-JUN-2016 13:06	105.257	106.493	103.205
WG572444-01	PSPK	13-JUN-2016 13:25	104.688	103.265	104.526
WG572444-02	SERIAL	13-JUN-2016 13:29	105.696	106.73	103.16
WG572466-05	ICV	13-JUN-2016 11:59	97.657	97.055	97.722
WG572466-06	ICB	13-JUN-2016 12:02	99.906	101.319	97.494
WG572466-07	LLICV	13-JUN-2016 12:05	95.199	96.228	93.99
WG572466-08	ICS	13-JUN-2016 12:08	98.471	101.039	96.668
WG572466-09	ICS	13-JUN-2016 12:12	99.358	97.883	99.373
WG572466-10	CCV	13-JUN-2016 12:15	98.2	99.58	98.661
WG572466-11	CCB	13-JUN-2016 12:18	101.138	102.225	99.275
WG572466-12	CCV	13-JUN-2016 12:57	102.719	101.678	103.107
WG572466-13	CCB	13-JUN-2016 13:00	105.056	105.369	101.201
WG572466-14	CCV	13-JUN-2016 13:35	103.123	101.406	105.086
WG572466-15	CCB	13-JUN-2016 13:38	104.172	107.193	102.272
WG572466-16	LLCCV	13-JUN-2016 13:41	104.274	99.993	102.431
WG572466-17	CCV	13-JUN-2016 14:17	119.809	117.758	118.939
WG572466-18	CCB	13-JUN-2016 14:20	119.783	113.592	119.37
WG572466-19	CCV	13-JUN-2016 14:42	**129.284**	**137.056**	**134.523**
WG572466-20	CCB	13-JUN-2016 14:45	**134.134**	**136.92**	**138.965**
WG572466-23	LLCCV	13-JUN-2016 21:03	100.875	107.211	104.668

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4805722
Report generated: 06/16/2016 11:32

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060504 **Analytical Method:** 6020
Analytical Workgroup: WG572444 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 15-JUN-2016 12:33

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060504-03	SAMP	15-JUN-2016 14:46	99.515	101.743	99.913
L16060504-03	SAMP	15-JUN-2016 14:49	100.991	102.99	101.928
WG572861-05	ICV	15-JUN-2016 12:46	99.605	99.446	99.631
WG572861-06	ICB	15-JUN-2016 12:49	100.469	100.685	99.97
WG572861-07	LLICV	15-JUN-2016 12:53	97.635	96.409	97.761
WG572861-08	ICS	15-JUN-2016 12:56	100.228	100.1	100.221
WG572861-09	ICS	15-JUN-2016 12:59	101.86	101.718	101.144
WG572861-10	CCV	15-JUN-2016 13:02	100.078	99.765	100.204
WG572861-11	CCB	15-JUN-2016 13:05	102.995	101.825	99.792
WG572861-14	CCV	15-JUN-2016 14:27	92.966	97.16	95.088
WG572861-15	CCB	15-JUN-2016 14:30	95.141	98.174	95.869
WG572861-16	CCV	15-JUN-2016 14:55	99.118	100.336	99.632
WG572861-17	CCB	15-JUN-2016 14:58	100.669	100.489	100.49
WG572861-18	LLCCV	15-JUN-2016 15:02	98.981	97.223	96.665

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4805722
Report generated: 06/16/2016 11:32

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060504 **Analytical Method:** 6020
Analytical Workgroup: WG572444 **Matrix:** 2
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 13-JUN-2016 11:46

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060521-01	SAMP	13-JUN-2016 13:13	105.098	104.902	106.454

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4805722
Report generated: 06/16/2016 11:32

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16060504 **Date:** 04/19/2016
Insturment ID: ICP-MS2 **Method:** 6020A

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Uranium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4805721
Report generated: 06/28/2016 16:55

2.3.2.3 Raw Data

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Monday, June 13, 2016 11:23:32

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	6.975	1329	2024	0.710	
Mg	23.985	23.975	4500	2020	0.694	
Co	58.933	58.975	11692	2022	0.693	
In	114.904	114.875	22859	2028	0.693	
U	238.050	238.025	47455	2043	0.695	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	3.872
5.575	4.277
5.625	4.975
5.675	2.676
5.725	3.582
5.775	2.848
5.825	1.299
5.875	3.478
5.925	2.709
5.975	2.916
6.025	1.716
6.075	4.024
6.125	5.522
6.175	5.231
6.225	31.882
6.275	149.071
6.325	122.475
6.375	61.237
6.425	47.128
6.475	18.164
6.525	6.930
6.575	4.274
6.625	1.867
6.675	2.685
6.725	2.168
6.775	2.386
6.825	1.357

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6.875	1.506
6.925	1.702
6.975	2.603
7.025	2.028
7.075	1.978
7.125	1.748
7.175	3.451
7.225	4.646
7.275	16.298
7.325	47.140
7.375	51.602
7.425	59.266
7.475	108.653
7.525	81.441
7.575	70.711
7.625	81.441
7.675	70.711
7.725	136.931
7.775	106.863
7.825	81.441
7.875	173.205
7.925	74.689
7.975	70.711
8.025	62.361
8.075	120.442
8.125	24.845
8.175	91.287
8.225	91.287
8.275	63.888
8.325	70.711
8.375	104.583
8.425	35.355
8.475	49.793
22.525	223.607
22.575	61.237
22.625	50.000
22.675	45.799
22.725	46.187
22.775	37.815
22.825	41.650
22.875	37.908
22.925	11.111
22.975	64.489
23.025	17.008
23.075	19.325
23.125	22.361
23.175	16.667

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23.225	20.761
23.275	50.713
23.325	11.641
23.375	9.508
23.425	28.085
23.475	18.468
23.525	4.230
23.575	2.591
23.625	0.928
23.675	1.849
23.725	0.544
23.775	1.138
23.825	0.694
23.875	0.714
23.925	1.101
23.975	1.210
24.025	0.379
24.075	0.657
24.125	1.119
24.175	1.390
24.225	0.711
24.275	3.302
24.325	27.000
24.375	28.085
24.425	15.972
24.475	9.595
24.525	3.960
24.575	1.558
24.625	2.740
24.675	2.275
24.725	1.087
24.775	1.357
24.825	2.276
24.875	1.434
24.925	0.898
24.975	1.969
25.025	1.479
25.075	1.003
25.125	1.315
25.175	1.386
25.225	2.255
25.275	7.773
25.325	37.268
25.375	51.618
25.425	26.517
25.475	20.152
57.525	9.084

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57.575	4.902
57.625	1.407
57.675	3.656
57.725	2.588
57.775	1.196
57.825	1.769
57.875	1.538
57.925	0.743
57.975	1.697
58.025	1.999
58.075	1.930
58.125	2.673
58.175	2.864
58.225	1.586
58.275	4.625
58.325	15.252
58.375	47.628
58.425	52.916
58.475	20.543
58.525	10.239
58.575	4.575
58.625	2.425
58.675	2.241
58.725	1.397
58.775	0.767
58.825	1.548
58.875	2.102
58.925	1.498
58.975	2.567
59.025	2.470
59.075	1.531
59.125	1.628
59.175	1.990
59.225	1.780
59.275	4.889
59.325	38.434
59.375	35.355
59.425	80.889
59.475	15.972
59.525	5.226
59.575	10.590
59.625	5.524
59.675	4.686
59.725	1.904
59.775	3.764
59.825	1.831
59.875	2.691

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59.925	1.606
59.975	1.226
60.025	2.822
60.075	2.196
60.125	1.505
60.175	1.785
60.225	6.014
60.275	16.858
60.325	33.333
60.375	34.233
60.425	80.889
60.475	73.823
113.525	6.393
113.575	1.215
113.625	3.222
113.675	3.263
113.725	1.330
113.775	1.501
113.825	1.440
113.875	1.964
113.925	1.679
113.975	2.673
114.025	1.847
114.075	1.699
114.125	2.371
114.175	2.587
114.225	2.941
114.275	8.558
114.325	35.551
114.375	14.684
114.425	12.771
114.475	3.252
114.525	4.334
114.575	1.842
114.625	1.651
114.675	0.827
114.725	1.334
114.775	1.411
114.825	2.196
114.875	1.247
114.925	0.785
114.975	2.189
115.025	1.206
115.075	0.527
115.125	0.997
115.175	2.735
115.225	4.012

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115.275	10.537
115.325	19.174
115.375	40.825
115.425	18.923
115.475	17.815
115.525	6.811
115.575	3.816
115.625	4.586
115.675	4.231
115.725	1.514
115.775	2.139
115.825	3.560
115.875	2.648
115.925	0.479
115.975	3.505
116.025	1.602
116.075	1.766
116.125	5.054
116.175	6.329
116.225	9.464
116.275	17.151
116.325	74.689
116.375	89.694
116.425	70.711
116.475	64.438
236.525	223.607
236.575	30.322
236.625	42.229
236.675	27.163
236.725	26.307
236.775	22.934
236.825	24.845
236.875	35.315
236.925	21.030
236.975	43.853
237.025	29.315
237.075	22.978
237.125	32.407
237.175	39.772
237.225	23.565
237.275	23.177
237.325	30.138
237.375	23.458
237.425	33.853
237.475	26.146
237.525	16.019
237.575	7.424

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237.625	6.375
237.675	2.653
237.725	2.384
237.775	1.845
237.825	2.982
237.875	1.394
237.925	1.594
237.975	1.294
238.025	1.729
238.075	1.181
238.125	0.431
238.175	1.030
238.225	0.943
238.275	0.818
238.325	2.345
238.375	3.285
238.425	1.713
238.475	5.998
238.525	18.910
238.575	11.103
238.625	14.650
238.675	30.534
238.725	29.463
238.775	34.480
238.825	37.293
238.875	44.599
238.925	25.408
238.975	13.176
239.025	33.402
239.075	57.334
239.125	39.317
239.175	30.018
239.225	34.272
239.275	43.241
239.325	35.355
239.375	28.838
239.425	50.047
239.475	35.761

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SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 6/13/2016 11:28:07 AM
End Time: 6/13/2016 11:30:19 AM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 6033.60
        Obtained Intensity (Mg 23.985): 164863.95
        Obtained Intensity (In 114.904): 82215.15
        Obtained Intensity (U 238.05): 160232.06
        Obtained Intensity (Bkgd 220): 0.40
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.019 (=4506.67 / 232395.33)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.007 (=1511.14 / 232395.33)
```

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SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 6/13/2016 11:28:07 AM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 6033.60
                Obtained Intensity (Mg 23.985): 164863.95
                Obtained Intensity (In 114.904): 82215.15
                Obtained Intensity (U 238.05): 160232.06
                Obtained Intensity (Bkgd 220): 0.40
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.019 (=4506.67 / 232395.33)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.007 (=1511.14 / 232395.33)
[Passed]  Optimum value(s): N/A

End Time: 6/13/2016 11:30:19 AM
```


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Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Monday, June 13, 2016 11:43:14
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	84319.0	1.4				ug/L		Standard
	Be	9	6.7	86.6				ug/L		Standard
	Al	27	1021.7	7.8				ug/L		Standard
	Sc	45	56654.1	2.6				ug/L		Standard
	Ti	47	114.0	9.8				ug/L		Standard
	V	51	1609.2	4.6				ug/L		Standard
	Cr	52	8547.7	1.6				ug/L		Standard
	Cr	53	925.0	13.6				ug/L		Standard
	Mn	55	1051.4	0.3				ug/L		Standard
	Co	59	178.0	4.1				ug/L		Standard
	Ni	60	311.7	3.9				ug/L		Standard
	Cu	65	232.7	11.2				ug/L		Standard
	Zn	66	606.3	11.7				ug/L		Standard
>	Ge	72	641815.7	0.9				ug/L		Standard
	As	75	-20.8	116.8				ug/L		Standard
	Se	82	23.4	36.2				ug/L		Standard
	Se-1	77	85.7	11.7				ug/L		Standard
>	Ga	71	151.7	31.2				mg/L		Standard
	Rb	85	18.3	83.3				ug/L		Standard
	Y	89	578199.4	1.7				ug/L		Standard
>	Rh	103	20.0	66.1				ug/L		Standard
	Mo	98	18.6	16.4				ug/L		Standard
	Ag	107	113.3	6.4				ug/L		Standard
	Cd	111	3.3	17.5				mg/L		Standard
	Cd	114	8.4	286.9				ug/L		Standard
>	In	115	797687.1	0.7				ug/L		Standard
	Sn	118	620.0	6.6				ug/L		Standard
	Sb	123	112.7	28.5				ug/L		Standard
	Ba	135	47.7	10.3				ug/L		Standard
	Ce	140	33.3	22.9				ug/L		Standard
>	Tb	159	1160331.0	1.3				ug/L		Standard
	Ho	165	5.0	173.2				ug/L		Standard
	Tl	203	14.7	30.7				ug/L		Standard
	Tl	205	15.0	33.3				ug/L		Standard
	Pb	206	289.0	2.3				ug/L		Standard
	Pb	207	249.7	11.0				ug/L		Standard
	Pb	208	1112.7	4.6				ug/L		Standard
	U	238	2.7	21.7				ug/L		Standard
>	Bi	209	670731.5	1.0				ug/L		Standard

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	Na	23	0.0		mg/L	Standard
	Mg	24	31.7	36.5	mg/L	Standard
	K	39	33.3	48.2	mg/L	Standard
	Ca	43	58.3	13.1	mg/L	Standard
	Fe	54	212.6	8.8	mg/L	Standard
	Fe	57	131.7	30.9	mg/L	Standard
>	**Sc-1**	45	56654.1	2.6	mg/L	Standard
	Cl	35	93221.2	0.8	ug/L	Standard
	Kr	83	1.3	114.6	ug/L	Standard
	Br	81	2706.9	7.2	ug/L	Standard
	P	31	24082.5	0.3	ug/L	Standard
	S	34	3865.5	1.4	ug/L	Standard
	Sr	88	43.3	13.3	ug/L	Standard
	C	12	103.3	22.3	mg/L	Standard
	N	14	0.0		mg/L	Standard
	Hg	202	0.0		mg/L	Standard
	Dy	164	19.5	90.9	mg/L	Standard
	Ho-1	165	5.0	173.2	mg/L	Standard
	Er	166	10.0	100.0	mg/L	Standard
	I	127	2335.2	2.8	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Monday, June 13, 2016 11:46:26
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81168.5	1.5				ug/L	84319	Standard
	Be	9	16.7	34.6				ug/L	7	Standard
	Al	27	1023.4	3.5				ug/L	1022	Standard
	Sc	45	54011.1	0.6				ug/L	56654	Standard
	Ti	47	116.0	13.5				ug/L	114	Standard
	V	51	1652.9	7.2				ug/L	1609	Standard
	Cr	52	8477.4	1.2				ug/L	8548	Standard
	Cr	53	933.4	3.4				ug/L	925	Standard
	Mn	55	1081.4	2.7				ug/L	1051	Standard
	Co	59	213.3	19.1				ug/L	178	Standard
	Ni	60	328.3	7.7				ug/L	312	Standard
	Cu	65	238.0	6.4				ug/L	233	Standard
	Zn	66	604.0	10.8				ug/L	606	Standard
>	**Ge**	72	635761.0	0.3				ug/L	641816	Standard
	As	75	-93.3	24.7				ug/L	-21	Standard
	Se	82	19.8	12.3				ug/L	23	Standard
	Se-1	77	83.7	10.2				ug/L	86	Standard
>	**Ga**	71	170.0	18.4				mg/L	152	Standard
	Rb	85	25.0	20.0				ug/L	18	Standard
	Y	89	582683.3	0.9				ug/L	578199	Standard
>	**Rh**	103	13.3	78.1				ug/L	20	Standard
	Mo	98	16.7	15.9				ug/L	19	Standard
	Ag	107	126.7	43.4				ug/L	113	Standard
	Cd	111	16.0	114.9				mg/L	3	Standard
	Cd	114	45.9	101.2				ug/L	8	Standard
>	**In**	115	779321.4	1.4				ug/L	797687	Standard
	Sn	118	586.7	4.3				ug/L	620	Standard
	Sb	123	71.5	70.9				ug/L	113	Standard
	Ba	135	57.7	31.1				ug/L	48	Standard
	Ce	140	196.7	151.2				ug/L	33	Standard
>	**Tb**	159	1132847.9	0.9				ug/L	1160331	Standard
	Ho	165	11.7	24.7				ug/L	5	Standard
	Tl	203	48.0	133.7				ug/L	15	Standard
	Tl	205	30.0	144.3				ug/L	15	Standard
	Pb	206	309.7	18.1				ug/L	289	Standard
	Pb	207	252.0	16.5				ug/L	250	Standard
	Pb	208	1103.3	5.7				ug/L	1113	Standard
	U	238	17.3	158.2				ug/L	3	Standard
>	**Bi**	209	650912.4	0.9				ug/L	670731	Standard

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Na	23	1.7	173.2	mg/L	0	Standard
Mg	24	31.7	63.8	mg/L	32	Standard
K	39	30.0	28.9	mg/L	33	Standard
Ca	43	65.0	15.4	mg/L	58	Standard
Fe	54	204.4	27.1	mg/L	213	Standard
Fe	57	128.3	18.4	mg/L	132	Standard
> **Sc-1**	45	54011.1	0.6	mg/L	56654	Standard
Cl	35	93648.7	3.0	ug/L	93221	Standard
Kr	83	2.0	100.0	ug/L	1	Standard
Br	81	2716.9	10.0	ug/L	2707	Standard
P	31	23546.6	3.0	ug/L	24082	Standard
S	34	3778.8	4.7	ug/L	3865	Standard
Sr	88	41.7	13.9	ug/L	43	Standard
C	12	96.7	15.8	mg/L	103	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	6.7	86.6	mg/L	0	Standard
Dy	164	5.9	107.8	mg/L	20	Standard
Ho-1	165	11.7	24.7	mg/L	5	Standard
Er	166	16.7	69.3	mg/L	10	Standard
I	127	2235.2	7.2	mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Monday, June 13, 2016 11:49:38
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81899.1	0.4				ug/L	84319	Standard
	Be	9	68.3	25.7				ug/L	7	Standard
	Al	27	11100.7	3.8				ug/L	1022	Standard
	Sc	45	54874.3	4.2				ug/L	56654	Standard
	Ti	47	139.7	8.5				ug/L	114	Standard
	V	51	2138.1	1.9				ug/L	1609	Standard
	Cr	52	9263.2	1.5				ug/L	8548	Standard
	Cr	53	965.0	10.4				ug/L	925	Standard
	Mn	55	1571.7	1.9				ug/L	1051	Standard
	Co	59	640.0	6.9				ug/L	178	Standard
	Ni	60	440.7	2.3				ug/L	312	Standard
	Cu	65	370.3	5.1				ug/L	233	Standard
	Zn	66	801.7	10.6				ug/L	606	Standard
>	**Ge**	72	644427.5	0.7				ug/L	641816	Standard
	As	75	-5.6	433.2				ug/L	-21	Standard
	Se	82	30.0	14.2				ug/L	23	Standard
	Se-1	77	87.0	11.5				ug/L	86	Standard
>	**Ga**	71	165.0	18.4				mg/L	152	Standard
	Rb	85	26.7	10.8				ug/L	18	Standard
	Y	89	572363.1	1.2				ug/L	578199	Standard
>	**Rh**	103	28.3	71.3				ug/L	20	Standard
	Mo	98	361.0	2.2				ug/L	19	Standard
	Ag	107	535.0	2.1				ug/L	113	Standard
	Cd	111	134.0	4.9				mg/L	3	Standard
	Cd	114	331.6	0.6				ug/L	8	Standard
>	**In**	115	774875.1	1.9				ug/L	797687	Standard
	Sn	118	998.4	3.3				ug/L	620	Standard
	Sb	123	330.2	4.9				ug/L	113	Standard
	Ba	135	181.7	7.7				ug/L	48	Standard
	Ce	140	156.7	95.8				ug/L	33	Standard
>	**Tb**	159	1149410.5	2.1				ug/L	1160331	Standard
	Ho	165	18.3	41.7				ug/L	5	Standard
	Tl	203	545.0	1.1				ug/L	15	Standard
	Tl	205	530.0	10.7				ug/L	15	Standard
	Pb	206	613.0	4.8				ug/L	289	Standard
	Pb	207	556.3	4.3				ug/L	250	Standard
	Pb	208	2431.4	2.4				ug/L	1113	Standard
	U	238	450.0	6.5				ug/L	3	Standard
>	**Bi**	209	661162.0	0.5				ug/L	670731	Standard

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Na	23	1.7	173.2	mg/L	0	Standard
Mg	24	40.0	57.3	mg/L	32	Standard
K	39	35.0	42.9	mg/L	33	Standard
Ca	43	51.7	39.1	mg/L	58	Standard
Fe	54	229.0	7.6	mg/L	213	Standard
Fe	57	138.3	24.6	mg/L	132	Standard
Sc-1	45	54874.3	4.2	mg/L	56654	Standard
Cl	35	94803.7	1.3	ug/L	93221	Standard
Kr	83	1.7	34.6	ug/L	1	Standard
Br	81	2900.3	9.7	ug/L	2707	Standard
P	31	24823.7	1.2	ug/L	24082	Standard
S	34	3888.8	2.5	ug/L	3865	Standard
Sr	88	60.0	8.3	ug/L	43	Standard
C	12	116.7	4.9	mg/L	103	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	0.0		mg/L	0	Standard
Dy	164	5.4	109.8	mg/L	20	Standard
Ho-1	165	18.3	41.7	mg/L	5	Standard
Er	166	26.7	21.7	mg/L	10	Standard
I	127	2246.8	5.7	mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Monday, June 13, 2016 11:52:49
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81589.1	0.2				ug/L	84319	Standard
	Be	9	55993.3	1.2	**50.0000**	0.533	1.1	ug/L	7	Standard
	Al	27	9172857.8	1.5	**50.0000**	0.859	1.7	ug/L	1022	Standard
	Sc	45	54017.8	1.0				ug/L	56654	Standard
	Ti	47	38414.0	0.6	**100.0000**	0.518	0.5	ug/L	114	Standard
	V	51	478474.4	2.1	**50.0000**	0.841	1.7	ug/L	1609	Standard
	Cr	52	489860.3	0.9	**50.0000**	0.024	0.0	ug/L	8548	Standard
	Cr	53	59300.8	1.6	**50.0000**	0.772	1.5	ug/L	925	Standard
	Mn	55	378147.4	0.4	**50.0000**	0.567	1.1	ug/L	1051	Standard
	Co	59	431691.6	1.1	**50.0000**	0.312	0.6	ug/L	178	Standard
	Ni	60	121780.8	1.2	**50.0000**	0.334	0.7	ug/L	312	Standard
	Cu	65	118443.2	1.0	**50.0000**	0.138	0.3	ug/L	233	Standard
	Zn	66	67909.2	0.4	**50.0000**	0.684	1.4	ug/L	606	Standard
>	**Ge**	72	624508.9	1.0				ug/L	641816	Standard
	As	75	66257.2	0.5	**50.0000**	0.697	1.4	ug/L	-21	Standard
	Se	82	7170.9	0.8	**50.0000**	0.845	1.7	ug/L	23	Standard
	Se-1	77	4611.0	0.4	**50.0000**	0.704	1.4	ug/L	86	Standard
>	**Ga**	71	203.3	6.2				mg/L	152	Standard
	Rb	85	1076.7	7.0				ug/L	18	Standard
	Y	89	558525.8	2.1				ug/L	578199	Standard
>	**Rh**	103	36.7	41.7				ug/L	20	Standard
	Mo	98	314495.2	0.7	**100.0000**	1.588	1.6	ug/L	19	Standard
	Ag	107	419234.8	0.8	**50.0000**	0.963	1.9	ug/L	113	Standard
	Cd	111	129201.7	0.3	**50.0000**	0.447	0.9	mg/L	3	Standard
	Cd	114	320878.3	2.2	**50.0000**	1.080	2.2	ug/L	8	Standard
>	**In**	115	771254.5	1.2				ug/L	797687	Standard
	Sn	118	361723.8	0.8	**50.0000**	0.211	0.4	ug/L	620	Standard
	Sb	123	276858.0	0.4	**50.0000**	0.762	1.5	ug/L	113	Standard
	Ba	135	120747.6	0.2	**50.0000**	0.641	1.3	ug/L	48	Standard
	Ce	140	88.3	22.9				ug/L	33	Standard
>	**Tb**	159	1157963.5	1.1				ug/L	1160331	Standard
	Ho	165	13.3	78.1				ug/L	5	Standard
	Tl	203	492193.7	0.3	**50.0000**	0.167	0.3	ug/L	15	Standard
	Tl	205	455137.1	2.3	**50.0000**	1.061	2.1	ug/L	15	Standard
	Pb	206	286848.5	0.3	**50.0000**	0.097	0.2	ug/L	289	Standard
	Pb	207	259850.0	0.2	**50.0000**	0.053	0.1	ug/L	250	Standard
	Pb	208	1141940.3	0.8	**50.0000**	0.476	1.0	ug/L	1113	Standard
	U	238	420698.9	0.8	**50.0000**	0.394	0.8	ug/L	3	Standard
>	**Bi**	209	651081.8	0.3				ug/L	670731	Standard

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Na	23	0.0		**5.0000**	0.000	0.0	mg/L	0	Standard
Mg	24	5139.2	5.2	**5.0000**	0.284	5.7	mg/L	32	Standard
K	39	1326.7	7.9	**5.0000**	0.457	9.1	mg/L	33	Standard
Ca	43	123.3	9.4	**5.0000**	0.884	17.7	mg/L	58	Standard
Fe	54	8611.3	1.3	**5.0000**	0.080	1.6	mg/L	213	Standard
Fe	57	2326.8	2.9	**5.0000**	0.205	4.1	mg/L	132	Standard
> **Sc-1**	45	54017.8	1.0				mg/L	56654	Standard
Cl	35	96881.4	0.8				ug/L	93221	Standard
Kr	83	2.3	49.5				ug/L	1	Standard
Br	81	2766.9	4.6				ug/L	2707	Standard
P	31	25145.9	3.3				ug/L	24082	Standard
S	34	4150.6	2.6				ug/L	3865	Standard
Sr	88	38.3	37.7				ug/L	43	Standard
C	12	120.0	30.0				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	0	Standard
Dy	164	19.2	179.7				mg/L	20	Standard
Ho-1	165	13.3	78.1				mg/L	5	Standard
Er	166	16.7	91.7				mg/L	10	Standard
I	127	14835.6	0.4				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 3
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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Monday, June 13, 2016 11:56:01
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	78888.3	2.9				ug/L	84319	Standard
	Be	9	110671.2	2.7	**101.1013**	1.119	1.1	ug/L	7	Standard
	Al	27	17805083.0	0.9	**100.2140**	2.444	2.4	ug/L	1022	Standard
	Sc	45	53684.9	1.1				ug/L	56654	Standard
	Ti	47	74773.7	0.6	**199.5109**	0.683	0.3	ug/L	114	Standard
	V	51	938535.1	1.0	**100.1614**	0.392	0.4	ug/L	1609	Standard
	Cr	52	942837.6	1.1	**99.5606**	0.297	0.3	ug/L	8548	Standard
	Cr	53	113381.0	1.6	**99.1682**	2.478	2.5	ug/L	925	Standard
	Mn	55	752659.0	0.8	**100.8818**	0.891	0.9	ug/L	1051	Standard
	Co	59	854020.9	0.5	**100.5156**	0.885	0.9	ug/L	178	Standard
	Ni	60	233378.7	0.8	**98.9763**	0.810	0.8	ug/L	312	Standard
	Cu	65	227693.1	0.2	**99.1220**	1.008	1.0	ug/L	233	Standard
	Zn	66	132116.5	0.9	**99.9260**	1.277	1.3	ug/L	606	Standard
>	Ge	72	611557.6	0.9				ug/L	641816	Standard
	As	75	132167.1	0.8	**100.8859**	0.917	0.9	ug/L	-21	Standard
	Se	82	14366.1	0.8	**101.2050**	0.108	0.1	ug/L	23	Standard
	Se-1	77	9129.1	0.7	**100.9800**	0.603	0.6	ug/L	86	Standard
>	Ga	71	203.3	3.8				mg/L	152	Standard
	Rb	85	2018.5	7.2				ug/L	18	Standard
	Y	89	563953.0	2.0				ug/L	578199	Standard
>	Rh	103	46.7	40.6				ug/L	20	Standard
	Mo	98	626567.8	0.6	**199.3721**	0.745	0.4	ug/L	19	Standard
	Ag	107	802574.4	0.5	**97.6942**	0.522	0.5	ug/L	113	Standard
	Cd	111	256528.6	0.6	**99.5143**	0.320	0.3	mg/L	3	Standard
	Cd	114	631685.3	1.8	**99.0872**	1.146	1.2	ug/L	8	Standard
>	In	115	773097.9	0.6				ug/L	797687	Standard
	Sn	118	714191.9	1.9	**99.2775**	1.558	1.6	ug/L	620	Standard
	Sb	123	540593.0	1.0	**98.6808**	0.716	0.7	ug/L	113	Standard
	Ba	135	235298.9	1.3	**98.5876**	0.756	0.8	ug/L	48	Standard
	Ce	140	168.3	7.5				ug/L	33	Standard
>	Tb	159	1131506.4	1.5				ug/L	1160331	Standard
	Ho	165	16.7	17.3				ug/L	5	Standard
	Tl	203	960318.4	0.5	**100.2485**	0.569	0.6	ug/L	15	Standard
	Tl	205	899926.0	0.8	**100.9182**	1.250	1.2	ug/L	15	Standard
	Pb	206	559141.9	0.2	**100.2269**	0.207	0.2	ug/L	289	Standard
	Pb	207	507629.0	0.4	**100.3370**	0.549	0.5	ug/L	250	Standard
	Pb	208	2249670.0	0.3	**100.7565**	0.332	0.3	ug/L	1113	Standard
	U	238	845051.2	0.4	**101.7011**	0.440	0.4	ug/L	3	Standard
>	Bi	209	632042.9	0.4				ug/L	670731	Standard

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Na	23	0.0		**6.6672**	0.000	0.0	mg/L	0	Standard
Mg	24	10346.9	2.4	**10.0800**	0.248	2.5	mg/L	32	Standard
K	39	2598.6	7.1	**9.9847**	0.636	6.4	mg/L	33	Standard
Ca	43	201.7	23.8	**10.2600**	3.370	32.8	mg/L	58	Standard
Fe	54	17019.8	2.7	**10.0368**	0.389	3.9	mg/L	213	Standard
Fe	57	4485.7	3.8	**9.9905**	0.345	3.5	mg/L	132	Standard
Sc-1	45	53684.9	1.1				mg/L	56654	Standard
Cl	35	97672.5	1.4				ug/L	93221	Standard
Kr	83	1.0	173.2				ug/L	1	Standard
Br	81	2713.6	2.7				ug/L	2707	Standard
P	31	24680.1	0.6				ug/L	24082	Standard
S	34	4287.3	3.2				ug/L	3865	Standard
Sr	88	48.3	58.8				ug/L	43	Standard
C	12	93.3	16.4				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.5	122.8				mg/L	20	Standard
Ho-1	165	16.7	17.3				mg/L	5	Standard
Er	166	16.7	91.7				mg/L	10	Standard
I	127	25715.1	0.4				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998

Sample ID: Standard 4
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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Monday, June 13, 2016 11:59:14
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81029.4	1.0				ug/L	84319	Standard
	Be	9	56023.4	2.0	**49.8160**	0.653	1.3	ug/L	7	Standard
	Al	27	9062729.2	2.4	**49.6289**	0.705	1.4	ug/L	1022	Standard
	Sc	45	55770.9	3.4				ug/L	56654	Standard
	Ti	47	40709.0	1.2	**106.5180**	1.091	1.0	ug/L	114	Standard
	V	51	476990.1	1.3	**49.8941**	0.727	1.5	ug/L	1609	Standard
	Cr	52	486057.0	1.9	**49.9523**	0.904	1.8	ug/L	8548	Standard
	Cr	53	59041.5	0.8	**50.3216**	0.394	0.8	ug/L	925	Standard
	Mn	55	388850.8	1.7	**51.0920**	0.725	1.4	ug/L	1051	Standard
	Co	59	435016.2	2.3	**50.2519**	1.001	2.0	ug/L	178	Standard
	Ni	60	119573.0	1.5	**49.7208**	0.613	1.2	ug/L	312	Standard
	Cu	65	118467.7	1.4	**50.5782**	0.588	1.2	ug/L	233	Standard
	Zn	66	69144.8	2.2	**51.0825**	0.985	1.9	ug/L	606	Standard
>	Ge	72	622912.5	0.3				ug/L	641816	Standard
	As	75	67536.2	1.8	**50.6361**	0.790	1.6	ug/L	-21	Standard
	Se	82	7214.5	0.7	**49.8206**	0.252	0.5	ug/L	23	Standard
	Se-1	77	4657.7	2.3	**50.1463**	1.173	2.3	ug/L	86	Standard
>	Ga	71	203.3	16.4				mg/L	152	Standard
	Rb	85	775.0	6.8				ug/L	18	Standard
	Y	89	559626.1	0.6				ug/L	578199	Standard
>	Rh	103	41.7	54.1				ug/L	20	Standard
	Mo	98	333437.9	1.3	**105.2226**	1.711	1.6	ug/L	19	Standard
	Ag	107	416526.7	1.9	**50.2805**	1.208	2.4	ug/L	113	Standard
	Cd	111	129830.8	0.8	**49.9506**	0.554	1.1	mg/L	3	Standard
	Cd	114	317356.2	0.8	**49.3721**	0.178	0.4	ug/L	8	Standard
>	In	115	779512.9	0.5				ug/L	797687	Standard
	Sn	118	407209.8	0.9	**56.1014**	0.314	0.6	ug/L	620	Standard
	Sb	123	272085.7	1.6	**49.2561**	1.018	2.1	ug/L	113	Standard
	Ba	135	119552.1	0.2	**49.6677**	0.177	0.4	ug/L	48	Standard
	Ce	140	166.7	12.1				ug/L	33	Standard
>	Tb	159	1150128.7	1.3				ug/L	1160331	Standard
	Ho	165	15.0	57.7				ug/L	5	Standard
	Tl	203	494663.5	0.3	**49.8272**	0.357	0.7	ug/L	15	Standard
	Tl	205	458952.9	1.2	**49.6616**	0.865	1.7	ug/L	15	Standard
	Pb	206	292469.5	0.1	**50.5624**	0.462	0.9	ug/L	289	Standard
	Pb	207	254331.8	0.2	**48.4826**	0.579	1.2	ug/L	250	Standard
	Pb	208	1152176.4	1.0	**49.7705**	0.877	1.8	ug/L	1113	Standard
	U	238	419150.0	0.5	**48.6790**	0.750	1.5	ug/L	3	Standard
>	Bi	209	655014.8	1.0				ug/L	670731	Standard

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Na	23	0.0		**6.6672**	0.000	0.0	mg/L	0	Standard
Mg	24	5547.7	0.6	**5.1911**	0.208	4.0	mg/L	32	Standard
K	39	1338.4	6.0	**4.8853**	0.195	4.0	mg/L	33	Standard
Ca	43	115.0	21.7	**4.0623**	1.627	40.0	mg/L	58	Standard
Fe	54	8734.1	2.1	**4.8977**	0.284	5.8	mg/L	213	Standard
Fe	57	2308.5	4.9	**4.8060**	0.437	9.1	mg/L	132	Standard
> **Sc-1**	45	55770.9	3.4				mg/L	56654	Standard
Cl	35	97879.2	1.3				ug/L	93221	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	2496.9	9.7				ug/L	2707	Standard
P	31	25815.3	1.4				ug/L	24082	Standard
S	34	4083.9	3.7				ug/L	3865	Standard
Sr	88	48.3	15.8				ug/L	43	Standard
C	12	133.3	43.3				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	28.9	59.5				mg/L	20	Standard
Ho-1	165	15.0	57.7				mg/L	5	Standard
Er	166	23.3	65.5				mg/L	10	Standard
I	127	1930.1	4.3				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	99.632		
Al	27	99.258		
Sc	45			
Ti	47	106.518		
V	51	99.788		
Cr	52	99.905		
Cr	53			
Mn	55	102.184		
Co	59	100.504		
Ni	60	99.442		
Cu	65	101.156		
Zn	66	102.165		
> Ge	72		97.055	
As	75	101.272		
Se	82	99.641		
Se-1	77			
> Ga	71			

Sample ID: QC Std 1
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Rb	85			
Y	89			
> Rh	103			
Mo	98	105.223		
Ag	107	100.561		
Cd	111	99.901		
Cd	114			
> In	115		97.722	
Sn	118	112.203		
Sb	123	98.512		
Ba	135	99.335		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.654		
Tl	205			
Pb	206	101.125		
Pb	207	96.965		
Pb	208	99.541		
U	238	97.358		
> Bi	209		97.657	
Na	23	133.344		
Mg	24	103.822		
K	39	97.707		
Ca	43	81.246		
Fe	54	97.954		
Fe	57	96.121		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Monday, June 13, 2016 12:02:27
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79087.6	2.1				ug/L	84319	Standard
	Be	9	68.3	90.9	**0.0513**	0.055	106.5	ug/L	7	Standard
	Al	27	6799.2	97.3	**0.0275**	0.036	130.7	ug/L	1022	Standard
	Sc	45	55131.8	0.9				ug/L	56654	Standard
	Ti	47	117.7	20.4	**0.0413**	0.057	139.2	ug/L	114	Standard
	V	51	1709.1	3.6	**0.0049**	0.006	129.1	ug/L	1609	Standard
	Cr	52	8802.9	4.2	**-0.0047**	0.031	654.3	ug/L	8548	Standard
	Cr	53	886.7	11.1	**-0.0218**	0.085	390.3	ug/L	925	Standard
	Mn	55	1047.7	5.7	**-0.0180**	0.007	40.3	ug/L	1051	Standard
	Co	59	314.3	20.8	**0.0133**	0.007	54.6	ug/L	178	Standard
	Ni	60	313.0	34.1	**-0.0028**	0.041	1450.4	ug/L	312	Standard
	Cu	65	298.7	26.8	**0.0191**	0.031	164.8	ug/L	233	Standard
	Zn	66	626.7	12.9	**-0.0805**	0.053	65.9	ug/L	606	Standard
>	**Ge**	72	650284.1	1.0				ug/L	641816	Standard
	As	75	-32.0	81.9	**0.0309**	0.019	61.1	ug/L	-21	Standard
	Se	82	24.9	13.1	**0.0142**	0.023	162.9	ug/L	23	Standard
	Se-1	77	83.0	8.4	**-0.0003**	0.065	20540.4	ug/L	86	Standard
>	**Ga**	71	148.3	25.5				mg/L	152	Standard
	Rb	85	18.3	63.0				ug/L	18	Standard
	Y	89	566284.2	1.2				ug/L	578199	Standard
>	**Rh**	103	23.3	75.3				ug/L	20	Standard
	Mo	98	357.6	18.8	**0.0985**	0.021	21.3	ug/L	19	Standard
	Ag	107	236.7	24.5	**0.0136**	0.007	51.1	ug/L	113	Standard
	Cd	111	41.6	47.8	**0.0141**	0.008	54.1	mg/L	3	Standard
	Cd	114	94.2	64.4	**0.0128**	0.009	74.0	ug/L	8	Standard
>	**In**	115	777700.8	0.4				ug/L	797687	Standard
	Sn	118	1396.7	16.5	**0.1046**	0.031	30.0	ug/L	620	Standard
	Sb	123	2496.0	25.5	**0.4427**	0.114	25.8	ug/L	113	Standard
	Ba	135	83.0	25.3	**0.0087**	0.009	100.1	ug/L	48	Standard
	Ce	140	25.0	52.9				ug/L	33	Standard
>	**Tb**	159	1151749.4	0.8				ug/L	1160331	Standard
	Ho	165	18.3	56.8				ug/L	5	Standard
	Tl	203	167.0	37.3	**0.0120**	0.006	50.7	ug/L	15	Standard
	Tl	205	135.0	42.7	**0.0074**	0.006	80.7	ug/L	15	Standard
	Pb	206	375.0	7.9	**0.0083**	0.005	58.3	ug/L	289	Standard
	Pb	207	308.0	12.7	**0.0023**	0.007	320.3	ug/L	250	Standard
	Pb	208	1391.4	8.6	**0.0046**	0.005	106.2	ug/L	1113	Standard
	U	238	119.7	39.8	**0.0118**	0.005	45.4	ug/L	3	Standard
>	**Bi**	209	670101.2	0.5				ug/L	670731	Standard

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Na	23	0.0		**6.6672**	0.000	0.0	mg/L	0	Standard
Mg	24	30.0	16.7	**-0.0043**	0.005	108.0	mg/L	32	Standard
K	39	16.7	45.8	**-0.0657**	0.029	44.2	mg/L	33	Standard
Ca	43	48.3	6.0	**-0.2726**	0.193	71.0	mg/L	58	Standard
Fe	54	234.4	4.3	**0.0071**	0.007	91.8	mg/L	213	Standard
Fe	57	123.3	19.2	**-0.0284**	0.053	187.4	mg/L	132	Standard
Sc-1	45	55131.8	0.9				mg/L	56654	Standard
Cl	35	96164.9	1.3				ug/L	93221	Standard
Kr	83	1.3	86.6				ug/L	1	Standard
Br	81	2650.2	2.4				ug/L	2707	Standard
P	31	25107.5	1.0				ug/L	24082	Standard
S	34	4027.2	8.6				ug/L	3865	Standard
Sr	88	40.0	45.1				ug/L	43	Standard
C	12	93.3	22.3				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.5	45.0				mg/L	20	Standard
Ho-1	165	18.3	56.8				mg/L	5	Standard
Er	166	16.7	34.6				mg/L	10	Standard
I	127	2298.5	7.9				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.319	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.494
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.906
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Na	23	
QC Std 2	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Monday, June 13, 2016 12:05:40
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75094.0	1.5				ug/L	84319	Standard
	Be	9	238.3	7.4	**0.2188**	0.020	9.2	ug/L	7	Standard
	Al	27	1581.8	31.4	**-0.0008**	0.003	329.6	ug/L	1022	Standard
	Sc	45	52193.1	2.5				ug/L	56654	Standard
	Ti	47	88.7	16.0	**-0.0195**	0.037	187.6	ug/L	114	Standard
	V	51	5199.9	1.8	**0.3835**	0.006	1.5	ug/L	1609	Standard
	Cr	52	15398.2	2.1	**0.7381**	0.045	6.0	ug/L	8548	Standard
	Cr	53	1601.8	5.3	**0.6412**	0.085	13.3	ug/L	925	Standard
	Mn	55	4538.7	1.4	**0.4531**	0.010	2.1	ug/L	1051	Standard
	Co	59	3526.7	4.9	**0.3896**	0.020	5.1	ug/L	178	Standard
	Ni	60	3836.8	2.8	**1.4857**	0.043	2.9	ug/L	312	Standard
	Cu	65	1980.5	3.7	**0.7514**	0.027	3.6	ug/L	233	Standard
	Zn	66	9322.5	1.1	**6.4902**	0.025	0.4	ug/L	606	Standard
>	**Ge**	72	617606.4	0.7				ug/L	641816	Standard
	As	75	447.0	10.5	**0.3915**	0.034	8.7	ug/L	-21	Standard
	Se	82	69.8	18.2	**0.3362**	0.087	25.8	ug/L	23	Standard
	Se-1	77	115.0	5.4	**0.3994**	0.061	15.2	ug/L	86	Standard
>	**Ga**	71	156.7	4.9				mg/L	152	Standard
	Rb	85	18.3	41.7				ug/L	18	Standard
	Y	89	552227.5	3.4				ug/L	578199	Standard
>	**Rh**	103	13.3	43.3				ug/L	20	Standard
	Mo	98	152.0	51.2	**0.0354**	0.026	73.1	ug/L	19	Standard
	Ag	107	3343.4	1.5	**0.4047**	0.006	1.5	ug/L	113	Standard
	Cd	111	636.2	6.1	**0.2526**	0.016	6.4	mg/L	3	Standard
	Cd	114	1755.0	12.5	**0.2821**	0.037	13.1	ug/L	8	Standard
>	**In**	115	749746.2	0.6				ug/L	797687	Standard
	Sn	118	813.4	34.5	**0.0283**	0.041	144.8	ug/L	620	Standard
	Sb	123	2500.6	8.2	**0.4608**	0.041	9.0	ug/L	113	Standard
	Ba	135	1805.1	1.8	**0.7542**	0.013	1.7	ug/L	48	Standard
	Ce	140	33.3	31.2				ug/L	33	Standard
>	**Tb**	159	1098900.7	0.1				ug/L	1160331	Standard
	Ho	165	8.3	69.3				ug/L	5	Standard
	Tl	203	988.0	18.6	**0.0978**	0.019	19.9	ug/L	15	Standard
	Tl	205	776.7	11.3	**0.0794**	0.010	12.8	ug/L	15	Standard
	Pb	206	1467.4	7.3	**0.2055**	0.020	9.9	ug/L	289	Standard
	Pb	207	1261.7	3.8	**0.1919**	0.010	5.4	ug/L	250	Standard
	Pb	208	5706.1	2.9	**0.1990**	0.009	4.3	ug/L	1113	Standard
	U	238	3298.0	1.3	**0.3911**	0.006	1.6	ug/L	3	Standard
>	**Bi**	209	638527.2	0.5				ug/L	670731	Standard

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Na	23	0.0		**6.6672**	0.000	0.0	mg/L	0	Standard
Mg	24	40.0	25.0	**0.0074**	0.010	135.9	mg/L	32	Standard
K	39	18.3	41.7	**-0.0555**	0.031	56.0	mg/L	33	Standard
Ca	43	46.7	37.6	**-0.2105**	1.237	587.6	mg/L	58	Standard
Fe	54	158.9	22.6	**-0.0318**	0.021	65.6	mg/L	213	Standard
Fe	57	153.3	6.8	**0.0582**	0.030	51.8	mg/L	132	Standard
Sc-1	45	52193.1	2.5				mg/L	56654	Standard
Cl	35	94428.8	2.1				ug/L	93221	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	2496.9	11.0				ug/L	2707	Standard
P	31	17917.3	2.1				ug/L	24082	Standard
S	34	4107.2	4.6				ug/L	3865	Standard
Sr	88	56.7	31.0				ug/L	43	Standard
C	12	73.3	61.5				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.0	93.6				mg/L	20	Standard
Ho-1	165	8.3	69.3				mg/L	5	Standard
Er	166	13.3	43.3				mg/L	10	Standard
I	127	1278.4	1.2				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	109.378		
Al	27	-0.084		
Sc	45			
Ti	47			
V	51	95.870		
Cr	52	92.262		
Cr	53			
Mn	55	90.612		
Co	59	97.404		
Ni	60	92.858		
Cu	65	93.920		
Zn	66	103.843		
Ge	72		96.228	
As	75	97.884		
Se	82	84.060		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	101.174		
Cd	111	105.255		
Cd	114			
> In	115			93.990
Sn	118			
Sb	123	115.192		
Ba	135	100.558		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	122.217		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.487		
U	238	97.780		
> Bi	209			95.199
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Monday, June 13, 2016 12:08:51
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	87234.0	4.0				ug/L	84319	Standard
	Be	9	25.0	20.0	**0.0105**	0.004	41.5	ug/L	7	Standard
	Al	27	9429502.9	1.1	**48.0063**	1.429	3.0	ug/L	1022	Standard
	Sc	45	56490.1	0.7				ug/L	56654	Standard
	Ti	47	43315.8	1.2	**108.8771**	0.485	0.4	ug/L	114	Standard
	V	51	1899.2	1.7	**0.0246**	0.004	15.5	ug/L	1609	Standard
	Cr	52	10513.3	0.5	**0.1699**	0.012	7.3	ug/L	8548	Standard
	Cr	53	2558.6	10.5	**1.3708**	0.241	17.6	ug/L	925	Standard
	Mn	55	1609.1	2.1	**0.0535**	0.005	10.2	ug/L	1051	Standard
	Co	59	479.7	2.4	**0.0318**	0.001	3.1	ug/L	178	Standard
	Ni	60	1146.7	1.9	**0.3316**	0.005	1.5	ug/L	312	Standard
	Cu	65	891.0	1.4	**0.2631**	0.009	3.3	ug/L	233	Standard
	Zn	66	2278.8	2.8	**1.1056**	0.028	2.6	ug/L	606	Standard
>	**Ge**	72	648482.1	1.1				ug/L	641816	Standard
	As	75	-107.1	30.5	**-0.0231**	0.024	103.9	ug/L	-21	Standard
	Se	82	26.4	18.4	**0.0245**	0.031	124.5	ug/L	23	Standard
	Se-1	77	305.3	1.3	**2.3423**	0.076	3.3	ug/L	86	Standard
>	**Ga**	71	258.3	9.1				mg/L	152	Standard
	Rb	85	1181.7	12.7				ug/L	18	Standard
	Y	89	563336.5	0.5				ug/L	578199	Standard
>	**Rh**	103	18.3	31.5				ug/L	20	Standard
	Mo	98	326094.9	1.7	**104.0482**	3.099	3.0	ug/L	19	Standard
	Ag	107	248.7	5.5	**0.0154**	0.002	12.6	ug/L	113	Standard
	Cd	111	-221.4	7.7	**-0.0880**	0.007	8.3	mg/L	3	Standard
	Cd	114	571.0	14.2	**0.0880**	0.014	15.6	ug/L	8	Standard
>	**In**	115	771109.1	1.2				ug/L	797687	Standard
	Sn	118	1020.0	11.6	**0.0536**	0.015	27.7	ug/L	620	Standard
	Sb	123	502.3	26.2	**0.0816**	0.023	28.3	ug/L	113	Standard
	Ba	135	265.0	8.5	**0.0854**	0.008	9.5	ug/L	48	Standard
	Ce	140	146.7	5.2				ug/L	33	Standard
>	**Tb**	159	1149451.9	1.0				ug/L	1160331	Standard
	Ho	165	16.7	34.6				ug/L	5	Standard
	Tl	203	225.0	16.4	**0.0181**	0.004	21.7	ug/L	15	Standard
	Tl	205	173.3	4.4	**0.0118**	0.001	7.4	ug/L	15	Standard
	Pb	206	501.7	3.5	**0.0310**	0.003	10.6	ug/L	289	Standard
	Pb	207	442.7	5.9	**0.0287**	0.006	21.6	ug/L	250	Standard
	Pb	208	1940.4	2.5	**0.0291**	0.002	7.3	ug/L	1113	Standard
	U	238	46.0	37.7	**0.0035**	0.002	58.1	ug/L	3	Standard
>	**Bi**	209	660477.4	1.9				ug/L	670731	Standard

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Na	23	5.0	0.0	**-13.6415**	0.135	1.0	mg/L	0	Standard
Mg	24	13591.1	0.4	**12.5912**	0.136	1.1	mg/L	32	Standard
K	39	1246.7	7.6	**4.4824**	0.318	7.1	mg/L	33	Standard
Ca	43	248.3	6.5	**12.5788**	0.990	7.9	mg/L	58	Standard
Fe	54	21160.3	3.3	**11.8777**	0.315	2.7	mg/L	213	Standard
Fe	57	5427.6	2.4	**11.5335**	0.202	1.8	mg/L	132	Standard
> **Sc-1**	45	56490.1	0.7				mg/L	56654	Standard
Cl	35	101892.2	1.2				ug/L	93221	Standard
Kr	83	1.7	173.2				ug/L	1	Standard
Br	81	2636.9	5.2				ug/L	2707	Standard
P	31	23820.4	2.2				ug/L	24082	Standard
S	34	3750.5	5.0				ug/L	3865	Standard
Sr	88	36.7	39.4				ug/L	43	Standard
C	12	193.3	38.8				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	52.9				mg/L	0	Standard
Dy	164	14.1	43.4				mg/L	20	Standard
Ho-1	165	16.7	34.6				mg/L	5	Standard
Er	166	53.3	39.0				mg/L	10	Standard
I	127	2553.5	0.9				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27	0.960		
Sc	45			
Ti	47	108.877		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.039	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	104.048		
Ag	107			
Cd	111			
Cd	114			
> In	115		96.668	
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209		98.471	
Na	23	-109.132		
Mg	24	251.825		
K	39	89.649		
Ca	43	83.859		
Fe	54	95.021		
Fe	57	92.268		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	

Sample ID: QC Std 4
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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Monday, June 13, 2016 12:12:03
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	91306.0	1.1				ug/L	84319	Standard
	Be	9	129259.1	1.0	**102.0236**	1.566	1.5	ug/L	7	Standard
	Al	27	10149123.8	1.2	**49.3275**	0.331	0.7	ug/L	1022	Standard
	Sc	45	54770.5	2.3				ug/L	56654	Standard
	Ti	47	45204.3	1.5	**117.3341**	3.296	2.8	ug/L	114	Standard
	V	51	981257.4	0.4	**101.9518**	0.909	0.9	ug/L	1609	Standard
	Cr	52	960312.8	0.9	**98.7258**	2.118	2.1	ug/L	8548	Standard
	Cr	53	116953.0	0.5	**99.5731**	0.867	0.9	ug/L	925	Standard
	Mn	55	788843.7	0.7	**102.9377**	1.615	1.6	ug/L	1051	Standard
	Co	59	894273.8	0.1	**102.4661**	1.237	1.2	ug/L	178	Standard
	Ni	60	235534.7	0.7	**97.2486**	1.749	1.8	ug/L	312	Standard
	Cu	65	234969.1	1.2	**99.5772**	1.508	1.5	ug/L	233	Standard
	Zn	66	159752.1	0.3	**117.7235**	1.790	1.5	ug/L	606	Standard
>	Ge	72	628231.1	1.3				ug/L	641816	Standard
	As	75	137608.7	1.5	**102.2457**	0.291	0.3	ug/L	-21	Standard
	Se	82	14890.6	1.3	**102.1169**	0.318	0.3	ug/L	23	Standard
	Se-1	77	9569.0	0.6	**103.0673**	1.786	1.7	ug/L	86	Standard
>	Ga	71	395.0	13.3				mg/L	152	Standard
	Rb	85	1285.1	6.3				ug/L	18	Standard
	Y	89	589237.9	1.7				ug/L	578199	Standard
>	Rh	103	61.7	12.4				ug/L	20	Standard
	Mo	98	347631.4	1.0	**107.8964**	2.267	2.1	ug/L	19	Standard
	Ag	107	784271.1	2.0	**93.1145**	1.923	2.1	ug/L	113	Standard
	Cd	111	261459.2	0.3	**98.9395**	1.824	1.8	mg/L	3	Standard
	Cd	114	643639.1	4.3	**98.4586**	3.361	3.4	ug/L	8	Standard
>	In	115	792684.5	1.6				ug/L	797687	Standard
	Sn	118	5819.5	2.2	**0.7011**	0.005	0.7	ug/L	620	Standard
	Sb	123	574192.6	0.7	**102.2342**	0.942	0.9	ug/L	113	Standard
	Ba	135	239065.0	0.6	**97.7029**	0.957	1.0	ug/L	48	Standard
	Ce	140	100.0	18.0				ug/L	33	Standard
>	Tb	159	1170611.2	1.6				ug/L	1160331	Standard
	Ho	165	10.0	100.0				ug/L	5	Standard
	Tl	203	1000553.9	0.3	**99.0620**	0.524	0.5	ug/L	15	Standard
	Tl	205	951413.7	0.3	**101.1877**	0.662	0.7	ug/L	15	Standard
	Pb	206	602703.7	0.5	**102.4697**	1.346	1.3	ug/L	289	Standard
	Pb	207	527421.7	0.8	**98.8729**	1.048	1.1	ug/L	250	Standard
	Pb	208	2352885.2	1.0	**99.9469**	1.417	1.4	ug/L	1113	Standard
	U	238	871702.0	0.5	**99.5006**	1.046	1.1	ug/L	3	Standard
>	Bi	209	666427.5	0.9				ug/L	670731	Standard

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Na	23	1.7	173.2	**-0.4927**	12.401	2517.2	mg/L	0	Standard
Mg	24	14333.4	0.9	**13.7013**	0.222	1.6	mg/L	32	Standard
K	39	1231.7	4.6	**4.5748**	0.285	6.2	mg/L	33	Standard
Ca	43	276.7	10.4	**15.0086**	2.356	15.7	mg/L	58	Standard
Fe	54	21795.9	0.7	**12.6326**	0.312	2.5	mg/L	213	Standard
Fe	57	5937.8	3.8	**13.0641**	0.750	5.7	mg/L	132	Standard
> **Sc-1**	45	54770.5	2.3				mg/L	56654	Standard
Cl	35	103787.6	1.1				ug/L	93221	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	2706.9	4.1				ug/L	2707	Standard
P	31	22917.3	1.2				ug/L	24082	Standard
S	34	3657.1	1.3				ug/L	3865	Standard
Sr	88	43.3	17.6				ug/L	43	Standard
C	12	203.3	47.8				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	25.9	57.5				mg/L	20	Standard
Ho-1	165	10.0	100.0				mg/L	5	Standard
Er	166	16.7	69.3				mg/L	10	Standard
I	127	2115.1	7.1				mg/L	2335	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	102.024		
	Al	27	0.987		
	Sc	45			
	Ti	47	117.334		
	V	51	101.952		
	Cr	52	98.726		
	Cr	53			
	Mn	55	102.938		
	Co	59	102.466		
	Ni	60	97.249		
	Cu	65	99.577		
	Zn	66	117.723		
>	Ge	72		97.883	
	As	75	102.246		
	Se	82	102.117		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	107.896		
Ag	107	93.114		
Cd	111	98.939		
Cd	114			
In	115		99.373	
Sn	118			
Sb	123	102.234		
Ba	135	97.703		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.062		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.947		
U	238	99.501		
Bi	209		99.358	
Na	23	-3.941		
Mg	24	274.027		
K	39	91.497		
Ca	43	100.057		
Fe	54	101.061		
Fe	57	104.512		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

Sample ID: QC Std 5
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, June 13, 2016 12:15:17
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	87621.1	3.3				ug/L	84319	Standard
	Be	9	62783.1	0.9	**51.6763**	2.140	4.1	ug/L	7	Standard
	Al	27	9759268.2	0.9	**49.4679**	1.898	3.8	ug/L	1022	Standard
	Sc	45	54287.1	1.3				ug/L	56654	Standard
	Ti	47	39129.5	1.3	**99.8108**	3.040	3.0	ug/L	114	Standard
	V	51	495918.1	0.1	**50.5724**	1.000	2.0	ug/L	1609	Standard
	Cr	52	493202.9	0.6	**49.4012**	0.741	1.5	ug/L	8548	Standard
	Cr	53	59750.9	2.0	**49.6384**	1.498	3.0	ug/L	925	Standard
	Mn	55	398421.6	1.6	**51.0460**	1.797	3.5	ug/L	1051	Standard
	Co	59	465160.6	0.6	**52.3837**	0.773	1.5	ug/L	178	Standard
	Ni	60	123100.1	0.7	**49.9022**	0.962	1.9	ug/L	312	Standard
	Cu	65	122412.2	0.4	**50.9497**	0.897	1.8	ug/L	233	Standard
	Zn	66	69164.5	0.4	**49.8007**	0.858	1.7	ug/L	606	Standard
>	Ge	72	639120.3	1.9				ug/L	641816	Standard
	As	75	69232.2	0.4	**50.6073**	1.164	2.3	ug/L	-21	Standard
	Se	82	7603.3	1.5	**51.2001**	1.746	3.4	ug/L	23	Standard
	Se-1	77	4843.1	0.9	**50.8377**	0.524	1.0	ug/L	86	Standard
>	Ga	71	123.3	13.0				mg/L	152	Standard
	Rb	85	1055.0	7.6				ug/L	18	Standard
	Y	89	579517.4	2.9				ug/L	578199	Standard
>	Rh	103	45.0	29.4				ug/L	20	Standard
	Mo	98	337796.1	1.0	**105.5984**	1.409	1.3	ug/L	19	Standard
	Ag	107	428845.0	0.3	**51.2854**	0.974	1.9	ug/L	113	Standard
	Cd	111	133115.4	1.7	**50.7293**	0.267	0.5	mg/L	3	Standard
	Cd	114	326206.4	1.1	**50.2755**	0.692	1.4	ug/L	8	Standard
>	In	115	787004.9	2.2				ug/L	797687	Standard
	Sn	118	376891.9	0.9	**51.4367**	1.007	2.0	ug/L	620	Standard
	Sb	123	292557.2	0.1	**52.4722**	1.156	2.2	ug/L	113	Standard
	Ba	135	122800.3	0.9	**50.5405**	0.626	1.2	ug/L	48	Standard
	Ce	140	93.3	27.0				ug/L	33	Standard
>	Tb	159	1160213.3	2.0				ug/L	1160331	Standard
	Ho	165	15.0	33.3				ug/L	5	Standard
	Tl	203	509631.5	0.2	**51.0522**	0.571	1.1	ug/L	15	Standard
	Tl	205	480281.1	2.4	**51.6767**	1.056	2.0	ug/L	15	Standard
	Pb	206	300861.3	1.0	**51.7256**	0.606	1.2	ug/L	289	Standard
	Pb	207	274197.9	0.6	**51.9834**	0.571	1.1	ug/L	250	Standard
	Pb	208	1199313.0	1.5	**51.5185**	0.815	1.6	ug/L	1113	Standard
	U	238	444313.6	1.6	**51.3120**	0.796	1.6	ug/L	3	Standard
>	Bi	209	658656.9	0.9				ug/L	670731	Standard

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Na	23	0.0		**6.6672**	0.000	0.0	mg/L	0	Standard
Mg	24	5556.0	3.2	**5.3367**	0.136	2.5	mg/L	32	Standard
K	39	1148.4	11.8	**4.2965**	0.573	13.3	mg/L	33	Standard
Ca	43	158.3	35.5	**7.2098**	3.923	54.4	mg/L	58	Standard
Fe	54	8567.4	5.9	**4.9329**	0.359	7.3	mg/L	213	Standard
Fe	57	2116.8	6.0	**4.4989**	0.246	5.5	mg/L	132	Standard
> **Sc-1**	45	54287.1	1.3				mg/L	56654	Standard
Cl	35	98634.1	2.0				ug/L	93221	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	2853.6	9.0				ug/L	2707	Standard
P	31	24992.3	1.2				ug/L	24082	Standard
S	34	3940.5	4.1				ug/L	3865	Standard
Sr	88	48.3	51.0				ug/L	43	Standard
C	12	106.7	10.8				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	16.0	32.7				mg/L	20	Standard
Ho-1	165	15.0	33.3				mg/L	5	Standard
Er	166	13.3	114.6				mg/L	10	Standard
I	127	2106.8	5.1				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	103.353		
Al	27	98.936		
Sc	45			
Ti	47	99.811		
V	51	101.145		
Cr	52	98.802		
Cr	53			
Mn	55	102.092		
Co	59	104.767		
Ni	60	99.804		
Cu	65	101.899		
Zn	66	99.601		
> Ge	72		99.580	
As	75	101.215		
Se	82	102.400		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	105.598		
Ag	107	102.571		
Cd	111	101.459		
Cd	114			
In	115		98.661	
Sn	118	102.873		
Sb	123	104.944		
Ba	135	101.081		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.104		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.037		
U	238	102.624		
Bi	209		98.200	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, June 13, 2016 12:18:28
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	87004.1	0.7				ug/L	84319	Standard
	Be	9	40.0	43.3	**0.0230**	0.014	62.9	ug/L	7	Standard
	Al	27	4185.6	29.6	**0.0112**	0.006	57.4	ug/L	1022	Standard
	Sc	45	55284.0	0.9				ug/L	56654	Standard
	Ti	47	92.7	9.8	**-0.0231**	0.025	109.1	ug/L	114	Standard
	V	51	1796.5	11.2	**0.0120**	0.018	150.2	ug/L	1609	Standard
	Cr	52	8901.9	2.0	**-0.0025**	0.016	632.3	ug/L	8548	Standard
	Cr	53	935.0	12.3	**0.0105**	0.085	814.4	ug/L	925	Standard
	Mn	55	1045.7	2.2	**-0.0194**	0.001	7.3	ug/L	1051	Standard
	Co	59	366.0	20.7	**0.0187**	0.008	43.6	ug/L	178	Standard
	Ni	60	310.0	41.1	**-0.0052**	0.049	934.5	ug/L	312	Standard
	Cu	65	317.7	38.3	**0.0256**	0.048	186.6	ug/L	233	Standard
	Zn	66	601.7	15.2	**-0.1022**	0.061	59.5	ug/L	606	Standard
>	**Ge**	72	656094.0	1.2				ug/L	641816	Standard
	As	75	7.2	672.4	**0.0588**	0.034	58.2	ug/L	-21	Standard
	Se	82	34.4	13.0	**0.0752**	0.030	39.6	ug/L	23	Standard
	Se-1	77	94.3	10.9	**0.1095**	0.096	87.7	ug/L	86	Standard
>	**Ga**	71	96.7	18.2				mg/L	152	Standard
	Rb	85	15.0	66.7				ug/L	18	Standard
	Y	89	573528.9	1.0				ug/L	578199	Standard
>	**Rh**	103	18.3	83.3				ug/L	20	Standard
	Mo	98	370.6	7.6	**0.1005**	0.009	8.5	ug/L	19	Standard
	Ag	107	319.0	34.7	**0.0229**	0.013	57.2	ug/L	113	Standard
	Cd	111	60.2	68.7	**0.0209**	0.016	74.9	mg/L	3	Standard
	Cd	114	175.5	80.0	**0.0249**	0.021	86.0	ug/L	8	Standard
>	**In**	115	791905.7	0.3				ug/L	797687	Standard
	Sn	118	1163.4	21.5	**0.0694**	0.033	48.3	ug/L	620	Standard
	Sb	123	1509.2	35.2	**0.2587**	0.094	36.3	ug/L	113	Standard
	Ba	135	104.3	36.3	**0.0168**	0.015	92.0	ug/L	48	Standard
	Ce	140	36.7	83.3				ug/L	33	Standard
>	**Tb**	159	1154148.0	1.1				ug/L	1160331	Standard
	Ho	165	10.0	86.6				ug/L	5	Standard
	Tl	203	255.0	49.7	**0.0204**	0.012	60.9	ug/L	15	Standard
	Tl	205	218.3	35.0	**0.0160**	0.008	50.1	ug/L	15	Standard
	Pb	206	423.3	10.9	**0.0156**	0.008	49.6	ug/L	289	Standard
	Pb	207	363.7	8.6	**0.0118**	0.006	49.0	ug/L	250	Standard
	Pb	208	1530.7	8.5	**0.0098**	0.005	55.4	ug/L	1113	Standard
	U	238	140.7	45.3	**0.0140**	0.007	50.6	ug/L	3	Standard
>	**Bi**	209	678363.4	0.6				ug/L	670731	Standard

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Na	23	0.0		**6.6672**	0.000	0.0	mg/L	0	Standard
Mg	24	36.7	7.9	**0.0020**	0.003	131.9	mg/L	32	Standard
K	39	21.7	26.6	**-0.0472**	0.021	45.0	mg/L	33	Standard
Ca	43	35.0	24.7	**-1.1638**	0.562	48.3	mg/L	58	Standard
Fe	54	225.6	16.0	**0.0015**	0.020	1319.1	mg/L	213	Standard
Fe	57	130.0	20.4	**-0.0146**	0.057	393.9	mg/L	132	Standard
Sc-1	45	55284.0	0.9				mg/L	56654	Standard
Cl	35	99944.6	2.0				ug/L	93221	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	2623.6	6.7				ug/L	2707	Standard
P	31	25324.5	2.7				ug/L	24082	Standard
S	34	4048.9	1.6				ug/L	3865	Standard
Sr	88	53.3	19.5				ug/L	43	Standard
C	12	110.0	24.1				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.2	111.3				mg/L	20	Standard
Ho-1	165	10.0	86.6				mg/L	5	Standard
Er	166	16.7	34.6				mg/L	10	Standard
I	127	2230.2	4.5				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.225	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.275	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	101.138	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW 63 WG571571-02
Sample Date/Time: Monday, June 13, 2016 12:25:17
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84050.9	2.1				ug/L	84319	Standard
	Be	9	23.3	81.1	**0.0096**	0.016	162.8	ug/L	7	Standard
	Al	27	11569.4	1.3	**0.0510**	0.002	3.2	ug/L	1022	Standard
	Sc	45	55187.0	0.9				ug/L	56654	Standard
	Ti	47	93.0	11.3	**-0.0196**	0.028	143.2	ug/L	114	Standard
	V	51	1689.0	0.5	**0.0034**	0.003	75.5	ug/L	1609	Standard
	Cr	52	10003.6	1.6	**0.1184**	0.013	11.1	ug/L	8548	Standard
	Cr	53	926.7	5.4	**0.0134**	0.048	359.0	ug/L	925	Standard
	Mn	55	2122.1	0.5	**0.1184**	0.003	3.0	ug/L	1051	Standard
	Co	59	264.0	2.4	**0.0078**	0.001	9.4	ug/L	178	Standard
	Ni	60	2588.6	2.8	**0.9087**	0.019	2.1	ug/L	312	Standard
	Cu	65	1028.4	2.0	**0.3194**	0.009	2.7	ug/L	233	Standard
	Zn	66	2396.9	1.7	**1.1902**	0.032	2.7	ug/L	606	Standard
>	**Ge**	72	648584.5	1.0				ug/L	641816	Standard
	As	75	-80.9	25.9	**-0.0042**	0.015	348.4	ug/L	-21	Standard
	Se	82	17.5	32.1	**-0.0340**	0.038	112.6	ug/L	23	Standard
	Se-1	77	82.0	13.4	**-0.0076**	0.122	1611.6	ug/L	86	Standard
>	**Ga**	71	80.0	12.5				mg/L	152	Standard
	Rb	85	55.0	18.2				ug/L	18	Standard
	Y	89	588258.7	3.4				ug/L	578199	Standard
>	**Rh**	103	35.0	42.9				ug/L	20	Standard
	Mo	98	74.3	12.6	**0.0085**	0.003	39.6	ug/L	19	Standard
	Ag	107	110.7	7.6	**-0.0019**	0.001	46.5	ug/L	113	Standard
	Cd	111	13.5	18.8	**0.0032**	0.001	26.9	mg/L	3	Standard
	Cd	114	29.9	30.5	**0.0027**	0.001	54.9	ug/L	8	Standard
>	**In**	115	792011.9	2.1				ug/L	797687	Standard
	Sn	118	1183.4	11.6	**0.0725**	0.022	30.1	ug/L	620	Standard
	Sb	123	661.4	30.3	**0.1083**	0.038	35.0	ug/L	113	Standard
	Ba	135	146.3	6.9	**0.0340**	0.005	13.8	ug/L	48	Standard
	Ce	140	56.7	50.9				ug/L	33	Standard
>	**Tb**	159	1160309.8	1.3				ug/L	1160331	Standard
	Ho	165	10.0	50.0				ug/L	5	Standard
	Tl	203	37.0	16.4	**-0.0007**	0.001	88.6	ug/L	15	Standard
	Tl	205	26.7	39.0	**-0.0040**	0.001	27.1	ug/L	15	Standard
	Pb	206	363.3	6.1	**0.0068**	0.004	65.8	ug/L	289	Standard
	Pb	207	305.7	2.6	**0.0022**	0.001	42.4	ug/L	250	Standard
	Pb	208	1324.4	1.8	**0.0022**	0.001	44.7	ug/L	1113	Standard
	U	238	16.0	18.8	**0.0000**	0.000	779.6	ug/L	3	Standard
>	**Bi**	209	665818.4	1.2				ug/L	670731	Standard

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Na	23	0.0		**6.6672**	0.000	0.0	mg/L	0	Standard
Mg	24	43.3	52.0	**0.0084**	0.022	256.9	mg/L	32	Standard
K	39	30.0	44.1	**-0.0151**	0.051	335.2	mg/L	33	Standard
Ca	43	50.0	10.0	**-0.1636**	0.358	218.6	mg/L	58	Standard
Fe	54	212.6	16.0	**-0.0056**	0.021	371.7	mg/L	213	Standard
Fe	57	83.3	34.6	**-0.1182**	0.064	54.0	mg/L	132	Standard
Sc-1	45	55187.0	0.9				mg/L	56654	Standard
Cl	35	101884.9	2.5				ug/L	93221	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	2870.3	4.0				ug/L	2707	Standard
P	31	24281.1	0.9				ug/L	24082	Standard
S	34	3942.2	2.0				ug/L	3865	Standard
Sr	88	50.0	10.0				ug/L	43	Standard
C	12	156.7	31.5				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	8.9	196.7				mg/L	20	Standard
Ho-1	165	10.0	50.0				mg/L	5	Standard
Er	166	23.3	65.5				mg/L	10	Standard
I	127	1461.7	3.6				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.682	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.055	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		99.289
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		99.268
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 63 WG571571-03
Sample Date/Time: Monday, June 13, 2016 12:28:28
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85277.8	3.0				ug/L	84319	Standard
	Be	9	63812.5	3.2	**53.9154**	0.270	0.5	ug/L	7	Standard
	Al	27	9779.8	1.5	**0.0408**	0.002	5.4	ug/L	1022	Standard
	Sc	45	57279.7	1.4				ug/L	56654	Standard
	Ti	47	88.7	16.0	**-0.0248**	0.038	152.1	ug/L	114	Standard
	V	51	500713.9	0.6	**51.6066**	0.412	0.8	ug/L	1609	Standard
	Cr	52	511824.9	0.8	**51.8560**	0.238	0.5	ug/L	8548	Standard
	Cr	53	62510.4	0.6	**52.5229**	0.279	0.5	ug/L	925	Standard
	Mn	55	413305.1	0.7	**53.5105**	0.291	0.5	ug/L	1051	Standard
	Co	59	461679.5	1.6	**52.5502**	1.137	2.2	ug/L	178	Standard
	Ni	60	127503.7	1.7	**52.2410**	0.799	1.5	ug/L	312	Standard
	Cu	65	126169.8	0.7	**53.0761**	0.326	0.6	ug/L	233	Standard
	Zn	66	72980.4	1.0	**53.1427**	0.598	1.1	ug/L	606	Standard
>	**Ge**	72	632266.1	0.6				ug/L	641816	Standard
	As	75	68919.4	1.4	**50.9114**	0.839	1.6	ug/L	-21	Standard
	Se	82	7592.0	1.6	**51.6614**	1.090	2.1	ug/L	23	Standard
	Se-1	77	4978.2	1.8	**52.8463**	0.666	1.3	ug/L	86	Standard
>	**Ga**	71	160.0	17.4				mg/L	152	Standard
	Rb	85	61.7	18.7				ug/L	18	Standard
	Y	89	599090.2	1.0				ug/L	578199	Standard
>	**Rh**	103	26.7	28.6				ug/L	20	Standard
	Mo	98	82.5	8.3	**0.0101**	0.002	18.6	ug/L	19	Standard
	Ag	107	445417.7	0.6	**51.1369**	0.507	1.0	ug/L	113	Standard
	Cd	111	136194.9	0.4	**49.8405**	0.856	1.7	mg/L	3	Standard
	Cd	114	331587.0	1.2	**49.0690**	1.009	2.1	ug/L	8	Standard
>	**In**	115	819636.2	1.4				ug/L	797687	Standard
	Sn	118	981.7	14.7	**0.0403**	0.019	48.2	ug/L	620	Standard
	Sb	123	285564.2	1.3	**49.1653**	0.612	1.2	ug/L	113	Standard
	Ba	135	126024.3	0.6	**49.7986**	0.641	1.3	ug/L	48	Standard
	Ce	140	81.7	7.1				ug/L	33	Standard
>	**Tb**	159	1187671.0	2.2				ug/L	1160331	Standard
	Ho	165	6.7	114.6				ug/L	5	Standard
	Tl	203	516990.3	0.2	**50.5443**	0.881	1.7	ug/L	15	Standard
	Tl	205	486579.5	1.8	**51.1081**	1.672	3.3	ug/L	15	Standard
	Pb	206	310108.9	1.0	**52.0349**	0.979	1.9	ug/L	289	Standard
	Pb	207	271197.9	0.4	**50.1749**	0.678	1.4	ug/L	250	Standard
	Pb	208	1224520.6	0.6	**51.3397**	1.052	2.0	ug/L	1113	Standard
	U	238	444295.1	0.4	**50.0764**	0.686	1.4	ug/L	3	Standard
>	**Bi**	209	674964.7	1.6				ug/L	670731	Standard

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Na	23	1.7	173.2	**0.0850**	11.401	13412.2	mg/L	0	Standard
Mg	24	86.7	17.6	**0.0467**	0.015	32.2	mg/L	32	Standard
K	39	28.3	44.4	**-0.0254**	0.047	183.7	mg/L	33	Standard
Ca	43	48.3	33.3	**-0.3993**	1.002	251.0	mg/L	58	Standard
Fe	54	169.3	24.0	**-0.0344**	0.023	66.2	mg/L	213	Standard
Fe	57	120.0	19.1	**-0.0455**	0.053	116.1	mg/L	132	Standard
Sc-1	45	57279.7	1.4				mg/L	56654	Standard
Cl	35	102805.0	1.7				ug/L	93221	Standard
Kr	83	3.3	34.6				ug/L	1	Standard
Br	81	2763.6	2.3				ug/L	2707	Standard
P	31	24464.7	3.3				ug/L	24082	Standard
S	34	4080.5	2.7				ug/L	3865	Standard
Sr	88	56.7	44.4				ug/L	43	Standard
C	12	126.7	12.1				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	15.7	73.8				mg/L	20	Standard
Ho-1	165	6.7	114.6				mg/L	5	Standard
Er	166	20.0	100.0				mg/L	10	Standard
I	127	1568.4	6.6				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.137	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.512	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.752
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.631
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606028301 WG571571-01
Sample Date/Time: Monday, June 13, 2016 12:31:39
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92458.1	3.6				ug/L	84319	Standard
	Be	9	33.3	22.9	**0.0158**	0.006	39.1	ug/L	7	Standard
	Al	27	40754745.8	3.1	**195.6610**	0.981	0.5	ug/L	1022	Standard
	Sc	45	54514.6	2.1				ug/L	56654	Standard
	Ti	47	366.0	5.8	**0.6798**	0.052	7.7	ug/L	114	Standard
	V	51	9198.3	0.5	**0.7722**	0.005	0.6	ug/L	1609	Standard
	Cr	52	11101.7	3.4	**0.2431**	0.036	14.9	ug/L	8548	Standard
	Cr	53	2458.5	15.8	**1.3113**	0.316	24.1	ug/L	925	Standard
	Mn	55	1416681.6	1.0	**181.4679**	1.677	0.9	ug/L	1051	Standard
	Co	59	6280.6	3.2	**0.6847**	0.027	3.9	ug/L	178	Standard
	Ni	60	29702.4	0.7	**11.9187**	0.107	0.9	ug/L	312	Standard
	Cu	65	2086.5	2.3	**0.7652**	0.018	2.4	ug/L	233	Standard
	Zn	66	9871.2	1.2	**6.6402**	0.128	1.9	ug/L	606	Standard
>	**Ge**	72	640325.2	0.6				ug/L	641816	Standard
	As	75	731.3	15.3	**0.5871**	0.085	14.4	ug/L	-21	Standard
	Se	82	623.6	1.0	**4.0514**	0.063	1.6	ug/L	23	Standard
	Se-1	77	549.3	6.1	**4.9819**	0.338	6.8	ug/L	86	Standard
>	**Ga**	71	300.0	10.9				mg/L	152	Standard
	Rb	85	8242.2	4.3				ug/L	18	Standard
	Y	89	587377.7	2.3				ug/L	578199	Standard
>	**Rh**	103	85.0	15.6				ug/L	20	Standard
	Mo	98	8067.0	1.7	**2.5012**	0.040	1.6	ug/L	19	Standard
	Ag	107	196.3	18.8	**0.0084**	0.004	52.2	ug/L	113	Standard
	Cd	111	1082.7	1.7	**0.4098**	0.010	2.3	mg/L	3	Standard
	Cd	114	2773.0	1.0	**0.4244**	0.005	1.1	ug/L	8	Standard
>	**In**	115	788878.2	0.7				ug/L	797687	Standard
	Sn	118	890.0	7.8	**0.0328**	0.010	31.5	ug/L	620	Standard
	Sb	123	3156.0	18.9	**0.5548**	0.110	19.7	ug/L	113	Standard
	Ba	135	10515.3	0.5	**4.2932**	0.048	1.1	ug/L	48	Standard
	Ce	140	1280.1	3.1				ug/L	33	Standard
>	**Tb**	159	1180404.0	0.9				ug/L	1160331	Standard
	Ho	165	70.0	39.8				ug/L	5	Standard
	Tl	203	1071.4	8.8	**0.1028**	0.010	9.5	ug/L	15	Standard
	Tl	205	1061.7	6.4	**0.1074**	0.009	8.1	ug/L	15	Standard
	Pb	206	741.0	7.2	**0.0722**	0.009	12.4	ug/L	289	Standard
	Pb	207	645.7	2.5	**0.0672**	0.003	4.9	ug/L	250	Standard
	Pb	208	2882.8	2.8	**0.0697**	0.005	7.0	ug/L	1113	Standard
	U	238	24255.4	0.6	**2.7959**	0.019	0.7	ug/L	3	Standard
>	**Bi**	209	659513.1	1.2				ug/L	670731	Standard

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Na	23	1.7	173.2	**-0.5014**	12.416	2476.3	mg/L	0	Standard
Mg	24	14411.9	3.2	**13.8438**	0.583	4.2	mg/L	32	Standard
K	39	170.0	14.7	**0.5217**	0.082	15.8	mg/L	33	Standard
Ca	43	241.7	12.6	**12.7100**	1.958	15.4	mg/L	58	Standard
Fe	54	267.6	34.4	**0.0284**	0.055	192.2	mg/L	213	Standard
Fe	57	245.0	39.7	**0.2503**	0.221	88.3	mg/L	132	Standard
> **Sc-1**	45	54514.6	2.1				mg/L	56654	Standard
Cl	35	163254.9	0.9				ug/L	93221	Standard
Kr	83	2.3	89.2				ug/L	1	Standard
Br	81	27368.1	6.9				ug/L	2707	Standard
P	31	25945.5	2.7				ug/L	24082	Standard
S	34	3887.2	0.9				ug/L	3865	Standard
Sr	88	295.0	10.3				ug/L	43	Standard
C	12	130.0	27.7				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	100.6	21.8				mg/L	20	Standard
Ho-1	165	70.0	39.8				mg/L	5	Standard
Er	166	56.7	44.4				mg/L	10	Standard
I	127	125585.1	7.2				mg/L	2335	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		109.653	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.768	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.896
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.327
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Approved: June 15, 2016

Method 6020 - Summary Report

Sample ID: L1606028301S WG571571-05
Sample Date/Time: Monday, June 13, 2016 12:34:51
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	101396.6	2.1				ug/L	84319	Standard
	Be	9	13873.0	2.9	**9.8506**	0.231	2.3	ug/L	7	Standard
	Al	27	41429044.0	1.1	**181.3717**	2.225	1.2	ug/L	1022	Standard
	Sc	45	56438.3	1.5				ug/L	56654	Standard
	Ti	47	354.0	3.4	**0.6335**	0.014	2.2	ug/L	114	Standard
	V	51	112026.4	0.1	**11.0767**	0.225	2.0	ug/L	1609	Standard
	Cr	52	111990.4	1.0	**10.3143**	0.153	1.5	ug/L	8548	Standard
	Cr	53	15090.9	4.5	**11.7213**	0.321	2.7	ug/L	925	Standard
	Mn	55	1431126.0	1.8	**180.2379**	6.244	3.5	ug/L	1051	Standard
	Co	59	98614.2	1.2	**10.8786**	0.309	2.8	ug/L	178	Standard
	Ni	60	54843.4	0.3	**21.7369**	0.389	1.8	ug/L	312	Standard
	Cu	65	26742.6	0.5	**10.8374**	0.181	1.7	ug/L	233	Standard
	Zn	66	23354.0	1.0	**16.1451**	0.509	3.2	ug/L	606	Standard
>	**Ge**	72	651549.4	2.1				ug/L	641816	Standard
	As	75	15203.1	0.7	**10.9426**	0.158	1.4	ug/L	-21	Standard
	Se	82	2073.1	2.0	**13.5780**	0.146	1.1	ug/L	23	Standard
	Se-1	77	1487.7	0.4	**14.7135**	0.365	2.5	ug/L	86	Standard
>	**Ga**	71	291.7	21.7				mg/L	152	Standard
	Rb	85	8038.8	1.1				ug/L	18	Standard
	Y	89	576972.6	2.8				ug/L	578199	Standard
>	**Rh**	103	78.3	9.8				ug/L	20	Standard
	Mo	98	8131.4	2.9	**2.5203**	0.060	2.4	ug/L	19	Standard
	Ag	107	81667.9	1.8	**9.7256**	0.129	1.3	ug/L	113	Standard
	Cd	111	27326.1	1.3	**10.3843**	0.161	1.5	mg/L	3	Standard
	Cd	114	67591.5	0.4	**10.3878**	0.202	1.9	ug/L	8	Standard
>	**In**	115	789140.2	1.5				ug/L	797687	Standard
	Sn	118	833.4	7.2	**0.0251**	0.009	34.6	ug/L	620	Standard
	Sb	123	61796.9	0.9	**11.0442**	0.219	2.0	ug/L	113	Standard
	Ba	135	34664.6	0.4	**14.2091**	0.202	1.4	ug/L	48	Standard
	Ce	140	1326.7	4.1				ug/L	33	Standard
>	**Tb**	159	1190805.2	2.0				ug/L	1160331	Standard
	Ho	165	58.3	34.6				ug/L	5	Standard
	Tl	203	104008.8	1.0	**10.1634**	0.225	2.2	ug/L	15	Standard
	Tl	205	98046.2	0.5	**10.2887**	0.129	1.3	ug/L	15	Standard
	Pb	206	63590.8	0.6	**10.6242**	0.166	1.6	ug/L	289	Standard
	Pb	207	55498.5	0.5	**10.2222**	0.157	1.5	ug/L	250	Standard
	Pb	208	240918.4	0.6	**10.0544**	0.119	1.2	ug/L	1113	Standard
	U	238	113391.4	0.8	**12.7769**	0.229	1.8	ug/L	3	Standard
>	**Bi**	209	675071.6	1.3				ug/L	670731	Standard

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Na	23	1.7	173.2	**-0.1069**	11.733	10970.8	mg/L	0	Standard
Mg	24	14820.6	1.5	**13.7495**	0.421	3.1	mg/L	32	Standard
K	39	128.3	16.2	**0.3471**	0.084	24.1	mg/L	33	Standard
Ca	43	223.3	9.0	**10.9667**	1.088	9.9	mg/L	58	Standard
Fe	54	265.2	3.4	**0.0214**	0.003	15.3	mg/L	213	Standard
Fe	57	266.7	10.3	**0.2781**	0.060	21.6	mg/L	132	Standard
Sc-1	45	56438.3	1.5				mg/L	56654	Standard
Cl	35	168793.1	1.2				ug/L	93221	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	21238.2	2.4				ug/L	2707	Standard
P	31	26885.5	1.1				ug/L	24082	Standard
S	34	3875.5	0.7				ug/L	3865	Standard
Sr	88	305.0	1.6				ug/L	43	Standard
C	12	143.3	47.5				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	94.4				mg/L	0	Standard
Dy	164	96.6	10.5				mg/L	20	Standard
Ho-1	165	58.3	34.6				mg/L	5	Standard
Er	166	70.0	49.5				mg/L	10	Standard
I	127	127757.9	6.6				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		120.254	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.517	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.929
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.647
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606028301SD WG571571-06
Sample Date/Time: Monday, June 13, 2016 12:38:02
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	107045.2	1.8				ug/L	84319	Standard
	Be	9	15371.1	1.8	**10.3428**	0.369	3.6	ug/L	7	Standard
	Al	27	45843992.5	0.9	**190.1379**	4.961	2.6	ug/L	1022	Standard
	Sc	45	58564.7	1.7				ug/L	56654	Standard
	Ti	47	390.0	13.9	**0.7319**	0.124	17.0	ug/L	114	Standard
	V	51	113349.6	0.9	**11.3107**	0.062	0.5	ug/L	1609	Standard
	Cr	52	114750.0	1.7	**10.6962**	0.343	3.2	ug/L	8548	Standard
	Cr	53	15714.8	3.1	**12.3583**	0.277	2.2	ug/L	925	Standard
	Mn	55	1566842.9	0.5	**199.0866**	3.044	1.5	ug/L	1051	Standard
	Co	59	101547.8	0.9	**11.3022**	0.144	1.3	ug/L	178	Standard
	Ni	60	57368.4	1.3	**22.9474**	0.184	0.8	ug/L	312	Standard
	Cu	65	26815.7	1.2	**10.9656**	0.116	1.1	ug/L	233	Standard
	Zn	66	23953.9	0.7	**16.7241**	0.219	1.3	ug/L	606	Standard
>	**Ge**	72	645654.1	1.4				ug/L	641816	Standard
	As	75	15488.0	0.5	**11.2470**	0.158	1.4	ug/L	-21	Standard
	Se	82	2239.1	1.2	**14.8158**	0.394	2.7	ug/L	23	Standard
	Se-1	77	1606.1	2.1	**16.1018**	0.305	1.9	ug/L	86	Standard
>	**Ga**	71	355.0	14.1				mg/L	152	Standard
	Rb	85	8906.0	0.3				ug/L	18	Standard
	Y	89	594937.0	3.0				ug/L	578199	Standard
>	**Rh**	103	85.0	15.6				ug/L	20	Standard
	Mo	98	8568.1	1.7	**2.5492**	0.084	3.3	ug/L	19	Standard
	Ag	107	88973.2	1.1	**10.1697**	0.256	2.5	ug/L	113	Standard
	Cd	111	28814.6	0.1	**10.5092**	0.288	2.7	mg/L	3	Standard
	Cd	114	70255.8	2.5	**10.3571**	0.101	1.0	ug/L	8	Standard
>	**In**	115	822574.5	2.7				ug/L	797687	Standard
	Sn	118	815.0	11.8	**0.0178**	0.010	54.9	ug/L	620	Standard
	Sb	123	62704.6	0.2	**10.7539**	0.283	2.6	ug/L	113	Standard
	Ba	135	37584.9	1.7	**14.7817**	0.162	1.1	ug/L	48	Standard
	Ce	140	3062.0	0.8				ug/L	33	Standard
>	**Tb**	159	1232680.5	0.8				ug/L	1160331	Standard
	Ho	165	95.0	10.5				ug/L	5	Standard
	Tl	203	108543.4	0.8	**10.3272**	0.071	0.7	ug/L	15	Standard
	Tl	205	101386.5	1.7	**10.3601**	0.188	1.8	ug/L	15	Standard
	Pb	206	64920.1	0.3	**10.5610**	0.057	0.5	ug/L	289	Standard
	Pb	207	56143.5	0.5	**10.0685**	0.065	0.6	ug/L	250	Standard
	Pb	208	250669.6	1.2	**10.1874**	0.112	1.1	ug/L	1113	Standard
	U	238	119244.7	0.4	**13.0832**	0.057	0.4	ug/L	3	Standard
>	**Bi**	209	693203.6	0.2				ug/L	670731	Standard

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Na	23	1.7	173.2	**0.0085**	11.53	135803.2	mg/L	0	Standard
Mg	24	16479.0	2.5	**14.7350**	0.514	3.5	mg/L	32	Standard
K	39	131.7	22.3	**0.3422**	0.113	33.1	mg/L	33	Standard
Ca	43	231.7	17.3	**10.9497**	2.296	21.0	mg/L	58	Standard
Fe	54	291.7	13.7	**0.0304**	0.021	69.1	mg/L	213	Standard
Fe	57	291.7	8.8	**0.3102**	0.065	20.8	mg/L	132	Standard
> **Sc-1**	45	58564.7	1.7				mg/L	56654	Standard
Cl	35	180448.3	1.1				ug/L	93221	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	24025.7	2.3				ug/L	2707	Standard
P	31	27895.7	1.9				ug/L	24082	Standard
S	34	4055.5	2.6				ug/L	3865	Standard
Sr	88	335.0	17.0				ug/L	43	Standard
C	12	123.3	16.9				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	65.5				mg/L	0	Standard
Dy	164	95.7	17.2				mg/L	20	Standard
Ho-1	165	95.0	10.5				mg/L	5	Standard
Er	166	90.0	22.2				mg/L	10	Standard
I	127	142292.7	7.8				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		126.953	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.598	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.120
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.350
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606028301SD WG571571-06
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Method 6020 - Summary Report

Sample ID: L1606008102
Sample Date/Time: Monday, June 13, 2016 12:41:14
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	104928.8	1.2				ug/L	84319	Standard
	Be	9	21.7	48.0	**0.0047**	0.007	151.7	ug/L	7	Standard
	Al	27	19651278.2	1.6	**83.1141**	0.452	0.5	ug/L	1022	Standard
	Sc	45	55422.9	3.5				ug/L	56654	Standard
	Ti	47	1381.4	4.4	**3.3413**	0.168	5.0	ug/L	114	Standard
	V	51	6405.9	3.9	**0.5001**	0.024	4.8	ug/L	1609	Standard
	Cr	52	33646.7	1.2	**2.6056**	0.055	2.1	ug/L	8548	Standard
	Cr	53	6903.2	3.7	**5.1694**	0.235	4.6	ug/L	925	Standard
	Mn	55	278781.4	0.4	**36.3036**	0.090	0.2	ug/L	1051	Standard
	Co	59	10011.3	2.1	**1.1266**	0.028	2.5	ug/L	178	Standard
	Ni	60	9409.9	1.6	**3.7651**	0.075	2.0	ug/L	312	Standard
	Cu	65	8316.9	0.9	**3.4275**	0.040	1.2	ug/L	233	Standard
	Zn	66	46880.1	0.1	**34.1943**	0.114	0.3	ug/L	606	Standard
>	**Ge**	72	627777.3	0.4				ug/L	641816	Standard
	As	75	6667.1	1.9	**5.0086**	0.078	1.6	ug/L	-21	Standard
	Se	82	249.4	9.9	**1.5628**	0.163	10.5	ug/L	23	Standard
	Se-1	77	415.7	13.9	**3.6465**	0.625	17.1	ug/L	86	Standard
>	**Ga**	71	386.7	6.4				mg/L	152	Standard
	Rb	85	163703.1	1.9				ug/L	18	Standard
	Y	89	581637.8	1.8				ug/L	578199	Standard
>	**Rh**	103	38.3	52.7				ug/L	20	Standard
	Mo	98	1669.3	1.4	**0.5082**	0.013	2.6	ug/L	19	Standard
	Ag	107	2419.5	4.9	**0.2749**	0.015	5.3	ug/L	113	Standard
	Cd	111	89.2	13.6	**0.0322**	0.005	15.0	mg/L	3	Standard
	Cd	114	719.1	44.3	**0.1096**	0.051	46.8	ug/L	8	Standard
>	**In**	115	785729.5	1.8				ug/L	797687	Standard
	Sn	118	256199.3	3.2	**34.9864**	1.023	2.9	ug/L	620	Standard
	Sb	123	4040.1	2.5	**0.7159**	0.029	4.0	ug/L	113	Standard
	Ba	135	14394.2	1.3	**5.9106**	0.090	1.5	ug/L	48	Standard
	Ce	140	628.3	14.0				ug/L	33	Standard
>	**Tb**	159	1182512.7	2.3				ug/L	1160331	Standard
	Ho	165	53.3	28.6				ug/L	5	Standard
	Tl	203	153.7	9.8	**0.0111**	0.001	11.8	ug/L	15	Standard
	Tl	205	135.0	3.7	**0.0078**	0.000	4.6	ug/L	15	Standard
	Pb	206	3815.5	1.6	**0.6043**	0.020	3.4	ug/L	289	Standard
	Pb	207	3252.3	2.5	**0.5645**	0.014	2.4	ug/L	250	Standard
	Pb	208	14820.5	0.4	**0.5857**	0.011	1.8	ug/L	1113	Standard
	U	238	69.7	0.8	**0.0063**	0.000	2.7	ug/L	3	Standard
>	**Bi**	209	656109.8	1.5				ug/L	670731	Standard

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Na	23	0.0		**6.6672**	0.000	0.0	mg/L	0	Standard
Mg	24	84218.6	3.0	**79.7154**	1.661	2.1	mg/L	32	Standard
K	39	2486.9	5.1	**9.2461**	0.148	1.6	mg/L	33	Standard
Ca	43	215.0	12.3	**10.6726**	1.405	13.2	mg/L	58	Standard
Fe	54	301.9	16.6	**0.0452**	0.027	60.4	mg/L	213	Standard
Fe	57	223.3	14.9	**0.1913**	0.059	30.6	mg/L	132	Standard
Sc-1	45	55422.9	3.5				mg/L	56654	Standard
Cl	35	158329.0	1.0				ug/L	93221	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	42044.9	2.3				ug/L	2707	Standard
P	31	28727.2	3.3				ug/L	24082	Standard
S	34	4122.2	1.0				ug/L	3865	Standard
Sr	88	126.7	17.8				ug/L	43	Standard
C	12	340.0	0.0				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	57.3				mg/L	0	Standard
Dy	164	68.9	13.8				mg/L	20	Standard
Ho-1	165	53.3	28.6				mg/L	5	Standard
Er	166	23.3	49.5				mg/L	10	Standard
I	127	371709.2	4.7				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.443	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.813	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.501
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.820
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 15, 2016

Method 6020 - Summary Report

Sample ID: L1606008801
Sample Date/Time: Monday, June 13, 2016 12:44:26
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	108733.8	0.7				ug/L	84319	Standard
	Be	9	26.7	96.2	**0.0074**	0.017	226.9	ug/L	7	Standard
	Al	27	40750443.8	1.5	**166.3405**	2.634	1.6	ug/L	1022	Standard
	Sc	45	58407.4	2.3				ug/L	56654	Standard
	Ti	47	1382.4	2.6	**3.3229**	0.057	1.7	ug/L	114	Standard
	V	51	4206.4	4.2	**0.2686**	0.017	6.2	ug/L	1609	Standard
	Cr	52	18025.1	1.6	**0.9736**	0.024	2.5	ug/L	8548	Standard
	Cr	53	11512.7	4.6	**9.0691**	0.419	4.6	ug/L	925	Standard
	Mn	55	176531.8	0.5	**22.8033**	0.209	0.9	ug/L	1051	Standard
	Co	59	4986.8	0.6	**0.5472**	0.006	1.1	ug/L	178	Standard
	Ni	60	3431.1	1.8	**1.2837**	0.019	1.5	ug/L	312	Standard
	Cu	65	2145.8	3.1	**0.8026**	0.024	3.0	ug/L	233	Standard
	Zn	66	7467.2	1.3	**4.9712**	0.076	1.5	ug/L	606	Standard
>	**Ge**	72	631367.4	1.1				ug/L	641816	Standard
	As	75	1235.7	4.8	**0.9674**	0.052	5.4	ug/L	-21	Standard
	Se	82	464.6	3.5	**3.0245**	0.115	3.8	ug/L	23	Standard
	Se-1	77	1006.0	5.3	**9.9980**	0.474	4.7	ug/L	86	Standard
>	**Ga**	71	146.7	18.8				mg/L	152	Standard
	Rb	85	9938.3	2.3				ug/L	18	Standard
	Y	89	566158.6	1.6				ug/L	578199	Standard
>	**Rh**	103	121.7	19.4				ug/L	20	Standard
	Mo	98	487.4	4.2	**0.1452**	0.005	3.7	ug/L	19	Standard
	Ag	107	122.3	13.6	**0.0003**	0.002	613.3	ug/L	113	Standard
	Cd	111	47.2	7.7	**0.0170**	0.002	9.2	mg/L	3	Standard
	Cd	114	120.1	45.9	**0.0175**	0.009	50.7	ug/L	8	Standard
>	**In**	115	750396.9	0.8				ug/L	797687	Standard
	Sn	118	1238.4	10.4	**0.0889**	0.017	19.5	ug/L	620	Standard
	Sb	123	762.7	5.3	**0.1333**	0.008	5.7	ug/L	113	Standard
	Ba	135	212124.4	1.4	**91.5649**	0.760	0.8	ug/L	48	Standard
	Ce	140	610.0	8.7				ug/L	33	Standard
>	**Tb**	159	1151465.5	1.6				ug/L	1160331	Standard
	Ho	165	60.0	14.4				ug/L	5	Standard
	Tl	203	123.0	4.2	**0.0084**	0.000	4.6	ug/L	15	Standard
	Tl	205	110.0	19.8	**0.0055**	0.002	40.1	ug/L	15	Standard
	Pb	206	399.7	7.0	**0.0164**	0.005	30.5	ug/L	289	Standard
	Pb	207	335.7	2.8	**0.0111**	0.003	27.1	ug/L	250	Standard
	Pb	208	1484.0	2.1	**0.0122**	0.001	11.2	ug/L	1113	Standard
	U	238	723.0	2.4	**0.0851**	0.003	3.8	ug/L	3	Standard
>	**Bi**	209	633362.2	2.3				ug/L	670731	Standard

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Na	23	3.3	173.2	**-6.5349**	22.867	349.9	mg/L	0	Standard
Mg	24	181097.8	2.0	**162.7409**	6.446	4.0	mg/L	32	Standard
K	39	145.0	10.3	**0.3893**	0.042	10.9	mg/L	33	Standard
Ca	43	175.0	11.4	**7.4579**	1.071	14.4	mg/L	58	Standard
Fe	54	263.4	23.0	**0.0155**	0.034	221.5	mg/L	213	Standard
Fe	57	238.3	27.3	**0.2008**	0.148	73.6	mg/L	132	Standard
> **Sc-1**	45	58407.4	2.3				mg/L	56654	Standard
Cl	35	133054.6	2.6				ug/L	93221	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	90704.3	3.9				ug/L	2707	Standard
P	31	38756.2	1.4				ug/L	24082	Standard
S	34	4013.9	2.0				ug/L	3865	Standard
Sr	88	408.3	8.7				ug/L	43	Standard
C	12	576.7	10.0				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	47.3	61.5				mg/L	20	Standard
Ho-1	165	60.0	14.4				mg/L	5	Standard
Er	166	56.7	53.9				mg/L	10	Standard
I	127	703148.1	6.9				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.955	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.372	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.072
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.429
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Approved: June 15, 2016

Method 6020 - Summary Report

Sample ID: L1606008802
Sample Date/Time: Monday, June 13, 2016 12:47:38
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	111332.7	2.3				ug/L	84319	Standard
	Be	9	18.3	56.8	**0.0018**	0.007	390.8	ug/L	7	Standard
	Al	27	36511284.7	0.3	**145.5985**	3.036	2.1	ug/L	1022	Standard
	Sc	45	59493.4	4.4				ug/L	56654	Standard
	Ti	47	1348.7	6.3	**3.2085**	0.313	9.8	ug/L	114	Standard
	V	51	4383.1	5.7	**0.2825**	0.018	6.3	ug/L	1609	Standard
	Cr	52	19222.2	0.5	**1.0793**	0.058	5.4	ug/L	8548	Standard
	Cr	53	12004.8	3.0	**9.4020**	0.553	5.9	ug/L	925	Standard
	Mn	55	150976.8	0.8	**19.3009**	0.436	2.3	ug/L	1051	Standard
	Co	59	5053.8	1.7	**0.5497**	0.023	4.1	ug/L	178	Standard
	Ni	60	3857.5	0.7	**1.4446**	0.034	2.4	ug/L	312	Standard
	Cu	65	2346.8	2.0	**0.8783**	0.022	2.5	ug/L	233	Standard
	Zn	66	8811.6	1.5	**5.9023**	0.181	3.1	ug/L	606	Standard
>	**Ge**	72	637402.2	2.6				ug/L	641816	Standard
	As	75	1777.7	7.0	**1.3547**	0.071	5.3	ug/L	-21	Standard
	Se	82	628.6	3.2	**4.1043**	0.072	1.7	ug/L	23	Standard
	Se-1	77	965.0	3.3	**9.4646**	0.461	4.9	ug/L	86	Standard
>	**Ga**	71	135.0	16.1				mg/L	152	Standard
	Rb	85	9714.8	2.3				ug/L	18	Standard
	Y	89	563598.0	0.9				ug/L	578199	Standard
>	**Rh**	103	131.7	41.7				ug/L	20	Standard
	Mo	98	660.8	4.2	**0.1965**	0.008	4.1	ug/L	19	Standard
	Ag	107	122.7	3.9	**-0.0000**	0.001	2511.2	ug/L	113	Standard
	Cd	111	57.1	4.4	**0.0204**	0.001	4.9	mg/L	3	Standard
	Cd	114	146.1	25.2	**0.0211**	0.006	27.4	ug/L	8	Standard
>	**In**	115	769968.5	0.5				ug/L	797687	Standard
	Sn	118	1203.4	9.8	**0.0795**	0.016	19.8	ug/L	620	Standard
	Sb	123	831.5	8.1	**0.1423**	0.012	8.2	ug/L	113	Standard
	Ba	135	179427.2	0.6	**75.4803**	0.534	0.7	ug/L	48	Standard
	Ce	140	730.0	12.8				ug/L	33	Standard
>	**Tb**	159	1176611.5	1.1				ug/L	1160331	Standard
	Ho	165	46.7	6.2				ug/L	5	Standard
	Tl	203	126.0	9.9	**0.0084**	0.001	15.3	ug/L	15	Standard
	Tl	205	116.7	13.8	**0.0059**	0.002	29.7	ug/L	15	Standard
	Pb	206	670.3	0.8	**0.0619**	0.001	1.9	ug/L	289	Standard
	Pb	207	580.0	3.7	**0.0565**	0.004	7.7	ug/L	250	Standard
	Pb	208	2530.7	1.4	**0.0562**	0.001	2.3	ug/L	1113	Standard
	U	238	1309.4	2.8	**0.1516**	0.005	3.0	ug/L	3	Standard
>	**Bi**	209	649460.7	0.2				ug/L	670731	Standard

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Na	23	1.7	173.2	**0.5205**	10.646	2045.4	mg/L	0	Standard
Mg	24	188917.2	1.0	**166.7371**	5.536	3.3	mg/L	32	Standard
K	39	111.7	20.7	**0.2637**	0.082	31.3	mg/L	33	Standard
Ca	43	155.0	32.3	**6.0917**	3.349	55.0	mg/L	58	Standard
Fe	54	270.4	8.3	**0.0170**	0.018	108.1	mg/L	213	Standard
Fe	57	195.0	11.2	**0.1005**	0.051	50.6	mg/L	132	Standard
Sc-1	45	59493.4	4.4				mg/L	56654	Standard
Cl	35	146877.2	0.7				ug/L	93221	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	125521.2	1.2				ug/L	2707	Standard
P	31	38112.9	2.4				ug/L	24082	Standard
S	34	3837.2	2.8				ug/L	3865	Standard
Sr	88	355.0	24.4				ug/L	43	Standard
C	12	463.3	4.5				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	51.1	79.1				mg/L	20	Standard
Ho-1	165	46.7	6.2				mg/L	5	Standard
Er	166	46.7	68.9				mg/L	10	Standard
I	127	828159.0	7.3				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.037	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.312	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.525
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.829
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Approved: June 15, 2016

Method 6020 - Summary Report

Sample ID: L1606008802PS WG572083-03
Sample Date/Time: Monday, June 13, 2016 12:50:49
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	112126.7	0.5				ug/L	84319	Standard
	Be	9	78266.6	0.6	**50.2950**	0.088	0.2	ug/L	7	Standard
	Al	27	36592388.6	0.7	**144.8476**	1.578	1.1	ug/L	1022	Standard
	Sc	45	58114.6	1.7				ug/L	56654	Standard
	Ti	47	1292.4	1.2	**3.2149**	0.057	1.8	ug/L	114	Standard
	V	51	508926.3	0.4	**54.4967**	1.056	1.9	ug/L	1609	Standard
	Cr	52	503964.0	0.9	**53.0558**	0.620	1.2	ug/L	8548	Standard
	Cr	53	70029.8	0.6	**61.2473**	1.192	1.9	ug/L	925	Standard
	Mn	55	552522.1	1.5	**74.3769**	2.248	3.0	ug/L	1051	Standard
	Co	59	471322.0	0.6	**55.7274**	1.193	2.1	ug/L	178	Standard
	Ni	60	123626.7	0.6	**52.6166**	0.789	1.5	ug/L	312	Standard
	Cu	65	120220.7	0.4	**52.5334**	0.923	1.8	ug/L	233	Standard
	Zn	66	77862.6	0.8	**58.9479**	0.616	1.0	ug/L	606	Standard
>	**Ge**	72	608768.1	1.5				ug/L	641816	Standard
	As	75	72064.7	0.6	**55.2926**	0.972	1.8	ug/L	-21	Standard
	Se	82	8263.6	0.6	**58.4277**	1.042	1.8	ug/L	23	Standard
	Se-1	77	5793.4	2.4	**64.0551**	0.633	1.0	ug/L	86	Standard
>	**Ga**	71	165.0	5.2				mg/L	152	Standard
	Rb	85	9793.2	4.1				ug/L	18	Standard
	Y	89	582382.8	1.3				ug/L	578199	Standard
>	**Rh**	103	146.7	20.5				ug/L	20	Standard
	Mo	98	693.9	5.4	**0.2012**	0.010	5.2	ug/L	19	Standard
	Ag	107	394611.6	1.7	**46.9492**	0.621	1.3	ug/L	113	Standard
	Cd	111	131027.6	0.5	**49.6919**	0.495	1.0	mg/L	3	Standard
	Cd	114	324035.1	0.8	**49.6944**	0.669	1.3	ug/L	8	Standard
>	**In**	115	790801.9	0.6				ug/L	797687	Standard
	Sn	118	1458.4	3.4	**0.1098**	0.006	5.7	ug/L	620	Standard
	Sb	123	290215.0	1.1	**51.7858**	0.562	1.1	ug/L	113	Standard
	Ba	135	303537.9	1.1	**124.3470**	1.847	1.5	ug/L	48	Standard
	Ce	140	626.7	13.2				ug/L	33	Standard
>	**Tb**	159	1191836.2	1.7				ug/L	1160331	Standard
	Ho	165	50.0	52.9				ug/L	5	Standard
	Tl	203	510640.9	0.7	**51.9191**	0.783	1.5	ug/L	15	Standard
	Tl	205	484948.9	0.8	**52.9673**	1.057	2.0	ug/L	15	Standard
	Pb	206	310138.4	0.5	**54.1240**	0.888	1.6	ug/L	289	Standard
	Pb	207	268968.4	0.3	**51.7558**	0.750	1.4	ug/L	250	Standard
	Pb	208	1190321.6	1.3	**51.9033**	1.231	2.4	ug/L	1113	Standard
	U	238	465562.1	1.7	**54.5789**	1.520	2.8	ug/L	3	Standard
>	**Bi**	209	648967.3	1.1				ug/L	670731	Standard

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Na	23	1.7	173.2	**-0.0137**	11.572	84498.2	mg/L	0	Standard
Mg	24	188834.5	0.9	**170.4996**	4.081	2.4	mg/L	32	Standard
K	39	116.7	26.2	**0.2895**	0.102	35.3	mg/L	33	Standard
Ca	43	105.0	9.5	**3.1299**	0.700	22.4	mg/L	58	Standard
Fe	54	297.0	15.4	**0.0346**	0.025	72.1	mg/L	213	Standard
Fe	57	225.0	20.4	**0.1719**	0.089	51.5	mg/L	132	Standard
> **Sc-1**	45	58114.6	1.7				mg/L	56654	Standard
Cl	35	150715.3	1.2				ug/L	93221	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	125551.9	3.8				ug/L	2707	Standard
P	31	39299.2	1.0				ug/L	24082	Standard
S	34	4078.9	2.7				ug/L	3865	Standard
Sr	88	415.0	9.9				ug/L	43	Standard
C	12	510.0	31.1				mg/L	103	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	46.8	58.7				mg/L	20	Standard
Ho-1	165	50.0	52.9				mg/L	5	Standard
Er	166	66.7	56.8				mg/L	10	Standard
I	127	858238.4	6.3				mg/L	2335	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		132.979	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		94.851	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606008802PS WG572083-03
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.137
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.755
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606008802SDL WG572083-04
Sample Date/Time: Monday, June 13, 2016 12:54:01
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	108040.5	0.8				ug/L	84319	Standard
	Be	9	26.7	10.8	**0.0076**	0.002	23.7	ug/L	7	Standard
	Al	27	7425581.1	0.7	**30.4964**	0.140	0.5	ug/L	1022	Standard
	Sc	45	56809.6	0.9				ug/L	56654	Standard
	Ti	47	292.3	5.1	**0.4868**	0.032	6.5	ug/L	114	Standard
	V	51	2678.0	3.6	**0.1048**	0.013	12.7	ug/L	1609	Standard
	Cr	52	12281.6	0.7	**0.3552**	0.026	7.3	ug/L	8548	Standard
	Cr	53	3913.8	5.6	**2.5149**	0.162	6.5	ug/L	925	Standard
	Mn	55	32391.9	0.5	**3.9757**	0.062	1.5	ug/L	1051	Standard
	Co	59	1273.7	2.4	**0.1208**	0.004	3.5	ug/L	178	Standard
	Ni	60	996.7	2.0	**0.2740**	0.006	2.3	ug/L	312	Standard
	Cu	65	808.4	3.4	**0.2312**	0.015	6.6	ug/L	233	Standard
	Zn	66	3226.0	3.1	**1.7999**	0.104	5.8	ug/L	606	Standard
>	**Ge**	72	644555.7	1.4				ug/L	641816	Standard
	As	75	331.5	11.6	**0.2937**	0.025	8.3	ug/L	-21	Standard
	Se	82	161.3	3.8	**0.9286**	0.041	4.4	ug/L	23	Standard
	Se-1	77	272.0	8.1	**2.0092**	0.243	12.1	ug/L	86	Standard
>	**Ga**	71	118.3	28.1				mg/L	152	Standard
	Rb	85	2055.1	0.6				ug/L	18	Standard
	Y	89	605278.9	1.8				ug/L	578199	Standard
>	**Rh**	103	31.7	59.8				ug/L	20	Standard
	Mo	98	148.8	2.1	**0.0306**	0.002	6.2	ug/L	19	Standard
	Ag	107	325.0	8.5	**0.0228**	0.003	12.4	ug/L	113	Standard
	Cd	111	32.7	40.4	**0.0103**	0.005	50.6	mg/L	3	Standard
	Cd	114	95.8	47.8	**0.0125**	0.007	55.6	ug/L	8	Standard
>	**In**	115	809401.5	2.4				ug/L	797687	Standard
	Sn	118	778.4	3.9	**0.0149**	0.006	38.8	ug/L	620	Standard
	Sb	123	2864.4	19.6	**0.4911**	0.109	22.2	ug/L	113	Standard
	Ba	135	37185.3	2.1	**14.8606**	0.056	0.4	ug/L	48	Standard
	Ce	140	120.0	14.4				ug/L	33	Standard
>	**Tb**	159	1202927.6	1.4				ug/L	1160331	Standard
	Ho	165	20.0	0.0				ug/L	5	Standard
	Tl	203	217.7	22.0	**0.0169**	0.005	28.5	ug/L	15	Standard
	Tl	205	215.0	26.4	**0.0157**	0.006	37.2	ug/L	15	Standard
	Pb	206	490.7	4.7	**0.0271**	0.004	16.1	ug/L	289	Standard
	Pb	207	407.3	6.1	**0.0201**	0.005	25.1	ug/L	250	Standard
	Pb	208	1791.4	6.7	**0.0209**	0.005	26.3	ug/L	1113	Standard
	U	238	350.3	9.4	**0.0376**	0.004	10.5	ug/L	3	Standard
>	**Bi**	209	676259.7	0.6				ug/L	670731	Standard

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Na	23	1.7	173.2	**0.0044**	11.54(261	296.2	mg/L	0	Standard
Mg	24	37478.0	1.0	**34.5836**	0.545	1.6	mg/L	32	Standard
K	39	53.3	23.6	**0.0671**	0.045	67.1	mg/L	33	Standard
Ca	43	65.0	46.2	**0.7063**	1.945	275.4	mg/L	58	Standard
Fe	54	258.7	8.6	**0.0167**	0.011	67.7	mg/L	213	Standard
Fe	57	153.3	18.5	**0.0287**	0.063	221.1	mg/L	132	Standard
> **Sc-1**	45	56809.6	0.9				mg/L	56654	Standard
Cl	35	133779.7	2.9				ug/L	93221	Standard
Kr	83	1.3	86.6				ug/L	1	Standard
Br	81	28707.2	3.1				ug/L	2707	Standard
P	31	31299.0	5.8				ug/L	24082	Standard
S	34	4278.9	3.2				ug/L	3865	Standard
Sr	88	126.7	23.1				ug/L	43	Standard
C	12	223.3	21.2				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	25.9	93.0				mg/L	20	Standard
Ho-1	165	20.0	0.0				mg/L	5	Standard
Er	166	16.7	124.9				mg/L	10	Standard
I	127	192431.3	2.1				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.133	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.427	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	101.469
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.824
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, June 13, 2016 12:57:14
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	101438.6	2.8				ug/L	84319	Standard
	Be	9	72503.2	3.5	**51.5023**	1.173	2.3	ug/L	7	Standard
	Al	27	10255791.6	0.8	**44.8837**	1.013	2.3	ug/L	1022	Standard
	Sc	45	56844.8	3.0				ug/L	56654	Standard
	Ti	47	40589.0	0.2	**101.3717**	1.063	1.0	ug/L	114	Standard
	V	51	514228.4	1.5	**51.3556**	1.215	2.4	ug/L	1609	Standard
	Cr	52	511130.5	0.5	**50.1503**	0.772	1.5	ug/L	8548	Standard
	Cr	53	62289.5	1.5	**50.6866**	1.042	2.1	ug/L	925	Standard
	Mn	55	417238.2	0.2	**52.3394**	0.680	1.3	ug/L	1051	Standard
	Co	59	488794.0	1.0	**53.9056**	0.882	1.6	ug/L	178	Standard
	Ni	60	128056.9	0.8	**50.8369**	0.840	1.7	ug/L	312	Standard
	Cu	65	124690.0	1.0	**50.8198**	0.762	1.5	ug/L	233	Standard
	Zn	66	71730.7	0.1	**50.5843**	0.532	1.1	ug/L	606	Standard
>	Ge	72	652585.5	1.2				ug/L	641816	Standard
	As	75	70845.0	1.1	**50.7089**	0.928	1.8	ug/L	-21	Standard
	Se	82	7771.8	1.0	**51.2413**	1.070	2.1	ug/L	23	Standard
	Se-1	77	5110.5	0.2	**52.5643**	0.528	1.0	ug/L	86	Standard
>	Ga	71	113.3	5.1				mg/L	152	Standard
	Rb	85	1105.0	9.5				ug/L	18	Standard
	Y	89	596668.7	1.7				ug/L	578199	Standard
>	Rh	103	33.3	31.2				ug/L	20	Standard
	Mo	98	348758.8	0.9	**104.3451**	2.409	2.3	ug/L	19	Standard
	Ag	107	445344.2	0.2	**50.9711**	1.314	2.6	ug/L	113	Standard
	Cd	111	138186.1	1.4	**50.4000**	0.820	1.6	mg/L	3	Standard
	Cd	114	337557.1	0.7	**49.7897**	0.988	2.0	ug/L	8	Standard
>	In	115	822475.3	2.7				ug/L	797687	Standard
	Sn	118	397402.5	2.2	**51.8923**	0.774	1.5	ug/L	620	Standard
	Sb	123	297300.4	0.8	**51.0238**	0.961	1.9	ug/L	113	Standard
	Ba	135	125221.0	1.3	**49.3181**	0.814	1.7	ug/L	48	Standard
	Ce	140	90.0	19.2				ug/L	33	Standard
>	Tb	159	1200158.4	3.0				ug/L	1160331	Standard
	Ho	165	16.7	86.6				ug/L	5	Standard
	Tl	203	530633.7	0.2	**50.8173**	0.431	0.8	ug/L	15	Standard
	Tl	205	506228.9	1.4	**52.0750**	0.677	1.3	ug/L	15	Standard
	Pb	206	316810.3	0.7	**52.0722**	0.393	0.8	ug/L	289	Standard
	Pb	207	287476.7	0.8	**52.1018**	0.298	0.6	ug/L	250	Standard
	Pb	208	1262223.2	0.3	**51.8380**	0.557	1.1	ug/L	1113	Standard
	U	238	470975.4	0.4	**51.9997**	0.364	0.7	ug/L	3	Standard
>	Bi	209	688966.5	1.1				ug/L	670731	Standard

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Na	23	3.3	86.6	**-6.6116**	11.505	174.0	mg/L	0	Standard
Mg	24	5831.1	6.0	**5.3464**	0.180	3.4	mg/L	32	Standard
K	39	1101.7	5.9	**3.9214**	0.194	4.9	mg/L	33	Standard
Ca	43	96.7	24.4	**2.7299**	1.464	53.6	mg/L	58	Standard
Fe	54	8527.6	1.5	**4.6816**	0.102	2.2	mg/L	213	Standard
Fe	57	2298.5	4.9	**4.6853**	0.384	8.2	mg/L	132	Standard
Sc-1	45	56844.8	3.0				mg/L	56654	Standard
Cl	35	121876.5	2.8				ug/L	93221	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	3663.8	1.8				ug/L	2707	Standard
P	31	28775.6	2.2				ug/L	24082	Standard
S	34	4440.7	1.9				ug/L	3865	Standard
Sr	88	68.3	30.5				ug/L	43	Standard
C	12	150.0	29.1				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	18.9	107.2				mg/L	20	Standard
Ho-1	165	16.7	86.6				mg/L	5	Standard
Er	166	23.3	24.7				mg/L	10	Standard
I	127	11499.5	24.1				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	103.005		
Al	27	89.767		
Sc	45			
Ti	47	101.372		
V	51	102.711		
Cr	52	100.301		
Cr	53			
Mn	55	104.679		
Co	59	107.811		
Ni	60	101.674		
Cu	65	101.640		
Zn	66	101.169		
Ge	72		101.678	
As	75	101.418		
Se	82	102.483		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	104.345		
Ag	107	101.942		
Cd	111	100.800		
Cd	114			
In	115		103.107	
Sn	118	103.785		
Sb	123	102.048		
Ba	135	98.636		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.635		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.676		
U	238	103.999		
Bi	209		102.719	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, June 13, 2016 13:00:25
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	97896.9	0.8				ug/L	84319	Standard
	Be	9	43.3	17.6	**0.0218**	0.006	26.9	ug/L	7	Standard
	Al	27	4687.6	65.7	**0.0111**	0.014	126.2	ug/L	1022	Standard
	Sc	45	57587.6	2.4				ug/L	56654	Standard
	Ti	47	72.3	3.5	**-0.0793**	0.006	8.0	ug/L	114	Standard
	V	51	1766.6	4.0	**0.0038**	0.005	139.3	ug/L	1609	Standard
	Cr	52	9151.8	1.2	**-0.0048**	0.001	29.3	ug/L	8548	Standard
	Cr	53	955.0	4.2	**0.0041**	0.029	696.5	ug/L	925	Standard
	Mn	55	980.4	4.5	**-0.0312**	0.004	14.2	ug/L	1051	Standard
	Co	59	254.3	28.7	**0.0056**	0.008	137.5	ug/L	178	Standard
	Ni	60	203.0	4.3	**-0.0496**	0.003	6.1	ug/L	312	Standard
	Cu	65	252.0	6.0	**-0.0038**	0.006	160.5	ug/L	233	Standard
	Zn	66	442.7	5.2	**-0.2239**	0.013	5.8	ug/L	606	Standard
>	**Ge**	72	676275.4	1.0				ug/L	641816	Standard
	As	75	-66.8	63.8	**0.0081**	0.029	359.5	ug/L	-21	Standard
	Se	82	25.9	26.2	**0.0148**	0.044	296.2	ug/L	23	Standard
	Se-1	77	93.3	11.8	**0.0715**	0.118	165.4	ug/L	86	Standard
>	**Ga**	71	80.0	6.3				mg/L	152	Standard
	Rb	85	26.7	21.7				ug/L	18	Standard
	Y	89	578144.7	4.3				ug/L	578199	Standard
>	**Rh**	103	23.3	53.9				ug/L	20	Standard
	Mo	98	236.0	17.3	**0.0573**	0.012	21.4	ug/L	19	Standard
	Ag	107	190.0	22.2	**0.0071**	0.005	67.6	ug/L	113	Standard
	Cd	111	21.9	74.5	**0.0062**	0.006	96.8	mg/L	3	Standard
	Cd	114	53.9	42.6	**0.0062**	0.003	55.4	ug/L	8	Standard
>	**In**	115	807268.0	0.8				ug/L	797687	Standard
	Sn	118	1160.0	15.8	**0.0660**	0.025	37.2	ug/L	620	Standard
	Sb	123	833.8	27.8	**0.1356**	0.040	29.6	ug/L	113	Standard
	Ba	135	59.0	29.4	**-0.0022**	0.007	310.7	ug/L	48	Standard
	Ce	140	28.3	27.0				ug/L	33	Standard
>	**Tb**	159	1178675.3	0.9				ug/L	1160331	Standard
	Ho	165	18.3	63.0				ug/L	5	Standard
	Tl	203	103.7	61.3	**0.0054**	0.006	113.6	ug/L	15	Standard
	Tl	205	90.0	48.1	**0.0023**	0.004	197.4	ug/L	15	Standard
	Pb	206	345.7	11.7	**0.0006**	0.007	1306.6	ug/L	289	Standard
	Pb	207	303.7	9.3	**-0.0013**	0.006	457.3	ug/L	250	Standard
	Pb	208	1345.4	9.8	**-0.0000**	0.006	18195.4	ug/L	1113	Standard
	U	238	78.3	77.2	**0.0067**	0.007	99.0	ug/L	3	Standard
>	**Bi**	209	704643.6	1.4				ug/L	670731	Standard

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Na	23	0.0		**6.6672**	0.000	0.0	mg/L	0	Standard
Mg	24	36.7	61.5	**0.0004**	0.020	4994.9	mg/L	32	Standard
K	39	31.7	18.2	**-0.0137**	0.023	167.2	mg/L	33	Standard
Ca	43	45.0	33.3	**-0.6144**	0.964	156.9	mg/L	58	Standard
Fe	54	225.5	11.5	**-0.0037**	0.013	343.3	mg/L	213	Standard
Fe	57	128.3	18.4	**-0.0286**	0.058	201.8	mg/L	132	Standard
Sc-1	45	57587.6	2.4				mg/L	56654	Standard
Cl	35	118667.7	2.2				ug/L	93221	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	2920.3	2.7				ug/L	2707	Standard
P	31	29009.4	1.8				ug/L	24082	Standard
S	34	4557.4	1.8				ug/L	3865	Standard
Sr	88	58.3	27.6				ug/L	43	Standard
C	12	123.3	36.6				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	18.9	141.6				mg/L	20	Standard
Ho-1	165	18.3	63.0				mg/L	5	Standard
Er	166	23.3	65.5				mg/L	10	Standard
I	127	6938.3	4.8				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		105.369	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.201
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.056
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW 45 WG572187-02
Sample Date/Time: Monday, June 13, 2016 13:03:39
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	95327.5	3.1				ug/L	84319	Standard
	Be	9	25.0	40.0	**0.0088**	0.008	88.9	ug/L	7	Standard
	Al	27	20086.7	7.9	**0.0833**	0.004	5.3	ug/L	1022	Standard
	Sc	45	57549.1	2.1				ug/L	56654	Standard
	Ti	47	78.7	0.7	**-0.0602**	0.003	5.7	ug/L	114	Standard
	V	51	1803.6	8.7	**0.0110**	0.017	155.9	ug/L	1609	Standard
	Cr	52	10531.3	0.3	**0.1481**	0.014	9.6	ug/L	8548	Standard
	Cr	53	1093.4	4.9	**0.1316**	0.045	34.2	ug/L	925	Standard
	Mn	55	2613.9	1.2	**0.1733**	0.003	1.8	ug/L	1051	Standard
	Co	59	241.7	13.2	**0.0047**	0.003	67.0	ug/L	178	Standard
	Ni	60	318.3	4.6	**-0.0029**	0.006	191.3	ug/L	312	Standard
	Cu	65	368.0	4.8	**0.0447**	0.005	12.1	ug/L	233	Standard
	Zn	66	2082.1	6.3	**0.9313**	0.086	9.3	ug/L	606	Standard
>	**Ge**	72	663249.4	1.2				ug/L	641816	Standard
	As	75	-42.9	35.2	**0.0237**	0.011	46.6	ug/L	-21	Standard
	Se	82	31.6	10.0	**0.0548**	0.020	36.8	ug/L	23	Standard
	Se-1	77	95.7	13.9	**0.1125**	0.127	113.1	ug/L	86	Standard
>	**Ga**	71	90.0	20.0				mg/L	152	Standard
	Rb	85	151.7	10.1				ug/L	18	Standard
	Y	89	605883.5	3.0				ug/L	578199	Standard
>	**Rh**	103	36.7	51.6				ug/L	20	Standard
	Mo	98	95.6	4.7	**0.0138**	0.001	7.5	ug/L	19	Standard
	Ag	107	127.7	15.1	**-0.0005**	0.002	418.5	ug/L	113	Standard
	Cd	111	10.5	19.7	**0.0019**	0.001	39.6	mg/L	3	Standard
	Cd	114	24.2	74.6	**0.0017**	0.003	159.6	ug/L	8	Standard
>	**In**	115	827223.5	2.3				ug/L	797687	Standard
	Sn	118	1645.1	6.1	**0.1256**	0.018	14.2	ug/L	620	Standard
	Sb	123	367.3	34.9	**0.0529**	0.023	43.9	ug/L	113	Standard
	Ba	135	323.7	10.2	**0.1011**	0.015	14.8	ug/L	48	Standard
	Ce	140	156.7	25.8				ug/L	33	Standard
>	**Tb**	159	1194142.1	1.8				ug/L	1160331	Standard
	Ho	165	10.0					ug/L	5	Standard
	Tl	203	52.3	30.7	**0.0006**	0.001	257.0	ug/L	15	Standard
	Tl	205	78.3	7.4	**0.0012**	0.001	54.2	ug/L	15	Standard
	Pb	206	366.7	4.5	**0.0048**	0.003	58.6	ug/L	289	Standard
	Pb	207	318.7	5.9	**0.0022**	0.003	135.9	ug/L	250	Standard
	Pb	208	1390.7	6.1	**0.0026**	0.003	111.2	ug/L	1113	Standard
	U	238	25.7	23.8	**0.0010**	0.001	62.7	ug/L	3	Standard
>	**Bi**	209	693694.9	1.3				ug/L	670731	Standard

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Na	23	0.0		**6.6672**	0.000	0.0	mg/L	0	Standard
Mg	24	66.7	11.5	**0.0280**	0.007	25.1	mg/L	32	Standard
K	39	23.3	75.3	**-0.0448**	0.062	139.0	mg/L	33	Standard
Ca	43	41.7	45.4	**-0.8432**	1.165	138.2	mg/L	58	Standard
Fe	54	204.0	15.4	**-0.0158**	0.015	96.8	mg/L	213	Standard
Fe	57	128.3	15.7	**-0.0289**	0.047	161.1	mg/L	132	Standard
Sc-1	45	57549.1	2.1				mg/L	56654	Standard
Cl	35	120402.6	1.9				ug/L	93221	Standard
Kr	83	4.3	58.1				ug/L	1	Standard
Br	81	3603.8	1.6				ug/L	2707	Standard
P	31	28082.7	4.5				ug/L	24082	Standard
S	34	4313.9	2.6				ug/L	3865	Standard
Sr	88	61.7	9.4				ug/L	43	Standard
C	12	146.7	41.1				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.2	96.3				mg/L	20	Standard
Ho-1	165	10.0					mg/L	5	Standard
Er	166	10.0	100.0				mg/L	10	Standard
I	127	5821.1	4.5				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		113.056	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.340	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.703
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.424
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 45 WG572187-03
Sample Date/Time: Monday, June 13, 2016 13:06:50
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	95230.0	1.1				ug/L	84319	Standard
	Be	9	71129.9	0.7	**53.8248**	0.753	1.4	ug/L	7	Standard
	Al	27	21637.6	21.1	**0.0906**	0.020	22.3	ug/L	1022	Standard
	Sc	45	57749.9	0.7				ug/L	56654	Standard
	Ti	47	108.0	25.2	**0.0040**	0.064	1600.3	ug/L	114	Standard
	V	51	534088.6	1.2	**50.9189**	0.524	1.0	ug/L	1609	Standard
	Cr	52	535925.0	0.7	**50.2058**	0.776	1.5	ug/L	8548	Standard
	Cr	53	64871.9	1.8	**50.4019**	1.480	2.9	ug/L	925	Standard
	Mn	55	433541.1	0.9	**51.9251**	0.940	1.8	ug/L	1051	Standard
	Co	59	498906.8	1.3	**52.5304**	0.818	1.6	ug/L	178	Standard
	Ni	60	134458.0	0.6	**50.9651**	0.854	1.7	ug/L	312	Standard
	Cu	65	132530.1	0.8	**51.5769**	0.966	1.9	ug/L	233	Standard
	Zn	66	77392.8	0.3	**52.1239**	0.394	0.8	ug/L	606	Standard
>	**Ge**	72	683491.4	1.1				ug/L	641816	Standard
	As	75	73439.9	0.7	**50.1872**	0.587	1.2	ug/L	-21	Standard
	Se	82	7964.2	1.1	**50.1309**	1.000	2.0	ug/L	23	Standard
	Se-1	77	5299.3	2.8	**52.0349**	1.737	3.3	ug/L	86	Standard
>	**Ga**	71	105.0	9.5				mg/L	152	Standard
	Rb	85	106.7	13.5				ug/L	18	Standard
	Y	89	599999.8	1.7				ug/L	578199	Standard
>	**Rh**	103	60.0	30.0				ug/L	20	Standard
	Mo	98	88.0	8.4	**0.0117**	0.002	20.9	ug/L	19	Standard
	Ag	107	469938.6	0.9	**53.7214**	0.912	1.7	ug/L	113	Standard
	Cd	111	141237.8	0.7	**51.4654**	1.190	2.3	mg/L	3	Standard
	Cd	114	345934.8	1.7	**50.9666**	0.962	1.9	ug/L	8	Standard
>	**In**	115	823255.6	1.9				ug/L	797687	Standard
	Sn	118	1610.1	5.7	**0.1220**	0.016	13.2	ug/L	620	Standard
	Sb	123	301523.5	1.1	**51.6885**	0.505	1.0	ug/L	113	Standard
	Ba	135	130049.4	1.0	**51.1697**	1.004	2.0	ug/L	48	Standard
	Ce	140	140.0	21.7				ug/L	33	Standard
>	**Tb**	159	1197220.6	1.9				ug/L	1160331	Standard
	Ho	165	8.3	69.3				ug/L	5	Standard
	Tl	203	549655.9	0.5	**51.3749**	0.879	1.7	ug/L	15	Standard
	Tl	205	517709.2	2.3	**51.9889**	1.945	3.7	ug/L	15	Standard
	Pb	206	336325.1	1.1	**53.9535**	0.937	1.7	ug/L	289	Standard
	Pb	207	293419.8	1.3	**51.8985**	0.605	1.2	ug/L	250	Standard
	Pb	208	1287226.4	0.3	**51.5949**	0.903	1.7	ug/L	1113	Standard
	U	238	472176.2	0.3	**50.8814**	0.887	1.7	ug/L	3	Standard
>	**Bi**	209	705989.3	1.5				ug/L	670731	Standard

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Na	23	0.0		**6.6672**	0.000	0.0	mg/L	0	Standard
Mg	24	58.3	4.9	**0.0202**	0.003	13.5	mg/L	32	Standard
K	39	16.7	75.5	**-0.0684**	0.046	67.3	mg/L	33	Standard
Ca	43	41.7	36.7	**-0.8351**	0.983	117.7	mg/L	58	Standard
Fe	54	180.2	14.4	**-0.0292**	0.014	48.8	mg/L	213	Standard
Fe	57	116.7	39.6	**-0.0548**	0.101	183.8	mg/L	132	Standard
Sc-1	45	57749.9	0.7				mg/L	56654	Standard
Cl	35	118632.1	2.3				ug/L	93221	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	3133.7	5.1				ug/L	2707	Standard
P	31	27758.8	2.8				ug/L	24082	Standard
S	34	4382.3	3.4				ug/L	3865	Standard
Sr	88	66.7	24.1				ug/L	43	Standard
C	12	193.3	3.0				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	6.0	100.7				mg/L	20	Standard
Ho-1	165	8.3	69.3				mg/L	5	Standard
Er	166	13.3	86.6				mg/L	10	Standard
I	127	4390.6	4.5				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.940	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.493	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.205
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.257
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606043801
Sample Date/Time: Monday, June 13, 2016 13:10:01
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	110080.1	1.0				ug/L	84319	Standard
	Be	9	1441.7	4.4	**0.9335**	0.032	3.4	ug/L	7	Standard
	Al	27	10649163.2	3.4	**42.9223**	1.026	2.4	ug/L	1022	Standard
	Sc	45	81790.2	0.8				ug/L	56654	Standard
	Ti	47	92496.5	1.9	**224.0952**	7.919	3.5	ug/L	114	Standard
	V	51	328554.5	1.4	**31.7140**	0.693	2.2	ug/L	1609	Standard
	Cr	52	244119.7	1.1	**22.7235**	0.604	2.7	ug/L	8548	Standard
	Cr	53	30353.7	0.6	**23.5209**	0.291	1.2	ug/L	925	Standard
	Mn	55	5389171.8	1.0	**656.5483**	17.388	2.6	ug/L	1051	Standard
	Co	59	98183.8	0.7	**10.4695**	0.163	1.6	ug/L	178	Standard
	Ni	60	58746.0	0.9	**22.5161**	0.426	1.9	ug/L	312	Standard
	Cu	65	63150.0	0.9	**24.8734**	0.221	0.9	ug/L	233	Standard
	Zn	66	179998.2	0.7	**123.6942**	2.037	1.6	ug/L	606	Standard
>	Ge	72	673848.8	1.6				ug/L	641816	Standard
	As	75	9931.9	0.8	**6.9312**	0.079	1.1	ug/L	-21	Standard
	Se	82	115.3	6.4	**0.5880**	0.054	9.1	ug/L	23	Standard
	Se-1	77	230.0	5.4	**1.4594**	0.153	10.5	ug/L	86	Standard
>	Ga	71	39103.7	0.6				mg/L	152	Standard
	Rb	85	556526.3	2.7				ug/L	18	Standard
	Y	89	797002.6	0.9				ug/L	578199	Standard
>	Rh	103	88.3	14.2				ug/L	20	Standard
	Mo	98	18963.9	2.6	**5.6444**	0.153	2.7	ug/L	19	Standard
	Ag	107	571.7	0.3	**0.0503**	0.000	0.3	ug/L	113	Standard
	Cd	111	690.6	3.4	**0.2493**	0.008	3.3	mg/L	3	Standard
	Cd	114	1803.8	7.0	**0.2635**	0.019	7.3	ug/L	8	Standard
>	In	115	824435.1	0.3				ug/L	797687	Standard
	Sn	118	11791.3	2.6	**1.4498**	0.040	2.8	ug/L	620	Standard
	Sb	123	5389.7	11.7	**0.9125**	0.108	11.8	ug/L	113	Standard
	Ba	135	393319.1	1.8	**154.5535**	2.770	1.8	ug/L	48	Standard
	Ce	140	1076739.8	2.3				ug/L	33	Standard
>	Tb	159	1247422.7	0.6				ug/L	1160331	Standard
	Ho	165	15177.6	2.1				ug/L	5	Standard
	Tl	203	3102.0	0.7	**0.2899**	0.003	1.0	ug/L	15	Standard
	Tl	205	2928.6	6.9	**0.2917**	0.022	7.5	ug/L	15	Standard
	Pb	206	197214.9	0.4	**32.0906**	0.244	0.8	ug/L	289	Standard
	Pb	207	161734.7	0.8	**29.0147**	0.357	1.2	ug/L	250	Standard
	Pb	208	732070.6	1.7	**29.7618**	0.682	2.3	ug/L	1113	Standard
	U	238	8856.6	2.6	**0.9670**	0.030	3.1	ug/L	3	Standard
>	Bi	209	695462.4	0.6				ug/L	670731	Standard

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Na	23	5.0	0.0	**-7.3596**	0.112	1.5	mg/L	0	Standard
Mg	24	22124.5	0.8	**14.1611**	0.217	1.5	mg/L	32	Standard
K	39	1278.4	3.3	**3.1378**	0.101	3.2	mg/L	33	Standard
Ca	43	286.7	11.6	**9.3195**	1.397	15.0	mg/L	58	Standard
Fe	54	31077.3	2.3	**12.0508**	0.218	1.8	mg/L	213	Standard
Fe	57	8115.5	2.8	**11.9234**	0.421	3.5	mg/L	132	Standard
Sc-1	45	81790.2	0.8				mg/L	56654	Standard
Cl	35	120480.6	1.9				ug/L	93221	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	6871.6	0.9				ug/L	2707	Standard
P	31	75052.1	0.4				ug/L	24082	Standard
S	34	3557.1	4.3				ug/L	3865	Standard
Sr	88	308.3	8.9				ug/L	43	Standard
C	12	426.7	11.6				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	63.3	9.1				mg/L	0	Standard
Dy	164	26554.5	4.3				mg/L	20	Standard
Ho-1	165	15177.6	2.1				mg/L	5	Standard
Er	166	13986.5	4.0				mg/L	10	Standard
I	127	30953.3	4.6				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		130.552	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		104.991	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.353
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.687
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	

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Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606052101 WG572187-01
Sample Date/Time: Monday, June 13, 2016 13:13:13
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	106305.1	2.7				ug/L	84319	Standard
	Be	9	46.7	37.6	**0.0214**	0.012	54.9	ug/L	7	Standard
	Al	27	8564606.4	0.9	**35.7609**	0.620	1.7	ug/L	1022	Standard
	Sc	45	59101.8	2.9				ug/L	56654	Standard
	Ti	47	374.3	17.5	**0.6538**	0.154	23.5	ug/L	114	Standard
	V	51	6851.2	4.0	**0.4984**	0.029	5.8	ug/L	1609	Standard
	Cr	52	12168.2	1.0	**0.2910**	0.005	1.7	ug/L	8548	Standard
	Cr	53	2008.5	3.8	**0.8510**	0.069	8.1	ug/L	925	Standard
	Mn	55	112440.7	0.8	**13.5596**	0.165	1.2	ug/L	1051	Standard
	Co	59	1148.7	13.9	**0.1014**	0.018	17.3	ug/L	178	Standard
	Ni	60	2388.5	4.2	**0.7938**	0.040	5.1	ug/L	312	Standard
	Cu	65	2148.5	1.3	**0.7473**	0.015	2.1	ug/L	233	Standard
	Zn	66	4971.8	0.2	**2.9055**	0.026	0.9	ug/L	606	Standard
>	**Ge**	72	673274.8	0.6				ug/L	641816	Standard
	As	75	1463.8	4.5	**1.0685**	0.050	4.7	ug/L	-21	Standard
	Se	82	79.4	20.7	**0.3580**	0.106	29.7	ug/L	23	Standard
	Se-1	77	161.7	1.8	**0.7677**	0.035	4.6	ug/L	86	Standard
>	**Ga**	71	313.3	24.2				mg/L	152	Standard
	Rb	85	9324.5	3.0				ug/L	18	Standard
	Y	89	622233.2	0.5				ug/L	578199	Standard
>	**Rh**	103	60.0	8.3				ug/L	20	Standard
	Mo	98	2190.0	1.5	**0.6199**	0.014	2.2	ug/L	19	Standard
	Ag	107	293.7	95.7	**0.0176**	0.031	177.9	ug/L	113	Standard
	Cd	111	114.0	117.7	**0.0385**	0.048	123.8	mg/L	3	Standard
	Cd	114	284.2	116.6	**0.0388**	0.048	122.6	ug/L	8	Standard
>	**In**	115	849170.2	0.7				ug/L	797687	Standard
	Sn	118	1646.8	22.3	**0.1202**	0.048	39.8	ug/L	620	Standard
	Sb	123	1158.1	28.2	**0.1826**	0.055	30.4	ug/L	113	Standard
	Ba	135	43765.5	1.5	**16.6746**	0.332	2.0	ug/L	48	Standard
	Ce	140	2165.2	22.7				ug/L	33	Standard
>	**Tb**	159	1234112.5	1.6				ug/L	1160331	Standard
	Ho	165	48.3	43.1				ug/L	5	Standard
	Tl	203	568.7	69.5	**0.0488**	0.037	75.8	ug/L	15	Standard
	Tl	205	425.0	32.9	**0.0359**	0.014	39.3	ug/L	15	Standard
	Pb	206	928.4	18.5	**0.0942**	0.028	29.5	ug/L	289	Standard
	Pb	207	738.7	22.2	**0.0758**	0.029	38.5	ug/L	250	Standard
	Pb	208	3293.8	12.8	**0.0782**	0.017	21.7	ug/L	1113	Standard
	U	238	1206.0	7.3	**0.1284**	0.010	7.6	ug/L	3	Standard
>	**Bi**	209	704923.0	0.5				ug/L	670731	Standard

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Na	23	1.7	173.2	**0.3743**	10.900	2912.3	mg/L	0	Standard
Mg	24	10075.0	3.7	**8.9099**	0.086	1.0	mg/L	32	Standard
K	39	183.3	18.2	**0.5213**	0.133	25.6	mg/L	33	Standard
Ca	43	231.7	4.5	**10.8607**	1.036	9.5	mg/L	58	Standard
Fe	54	237.0	2.6	**-0.0006**	0.007	1236.7	mg/L	213	Standard
Fe	57	233.3	4.5	**0.1830**	0.036	19.4	mg/L	132	Standard
> **Sc-1**	45	59101.8	2.9				mg/L	56654	Standard
Cl	35	140032.8	0.2				ug/L	93221	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	10363.5	1.3				ug/L	2707	Standard
P	31	27578.4	1.2				ug/L	24082	Standard
S	34	3962.2	2.4				ug/L	3865	Standard
Sr	88	230.0	21.0				ug/L	43	Standard
C	12	293.3	14.2				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	107.0	24.4				mg/L	20	Standard
Ho-1	165	48.3	43.1				mg/L	5	Standard
Er	166	63.3	18.2				mg/L	10	Standard
I	127	22630.2	3.2				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		126.075	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.902	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.454
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.098
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606052101DP WG572187-04
Sample Date/Time: Monday, June 13, 2016 13:16:24
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	103482.2	1.6				ug/L	84319	Standard
	Be	9	53.3	23.6	**0.0269**	0.009	31.7	ug/L	7	Standard
	Al	27	8008861.6	0.8	**34.3450**	0.355	1.0	ug/L	1022	Standard
	Sc	45	57975.7	0.7				ug/L	56654	Standard
	Ti	47	323.3	2.0	**0.5217**	0.005	1.0	ug/L	114	Standard
	V	51	6643.2	2.3	**0.4710**	0.020	4.2	ug/L	1609	Standard
	Cr	52	12060.8	1.2	**0.2678**	0.032	12.1	ug/L	8548	Standard
	Cr	53	2161.8	4.0	**0.9535**	0.046	4.9	ug/L	925	Standard
	Mn	55	104704.2	0.4	**12.4744**	0.286	2.3	ug/L	1051	Standard
	Co	59	1015.4	8.7	**0.0860**	0.011	13.0	ug/L	178	Standard
	Ni	60	2210.5	1.3	**0.7157**	0.027	3.7	ug/L	312	Standard
	Cu	65	2175.8	3.2	**0.7488**	0.043	5.7	ug/L	233	Standard
	Zn	66	3401.0	4.2	**1.7934**	0.065	3.6	ug/L	606	Standard
>	**Ge**	72	681008.5	1.9				ug/L	641816	Standard
	As	75	1338.8	1.4	**0.9715**	0.026	2.7	ug/L	-21	Standard
	Se	82	75.4	22.0	**0.3264**	0.101	31.0	ug/L	23	Standard
	Se-1	77	142.3	5.3	**0.5558**	0.083	15.0	ug/L	86	Standard
>	**Ga**	71	315.0	8.4				mg/L	152	Standard
	Rb	85	8605.8	0.6				ug/L	18	Standard
	Y	89	602770.4	1.9				ug/L	578199	Standard
>	**Rh**	103	58.3	13.1				ug/L	20	Standard
	Mo	98	2006.8	2.6	**0.5904**	0.028	4.7	ug/L	19	Standard
	Ag	107	206.7	54.6	**0.0086**	0.012	143.5	ug/L	113	Standard
	Cd	111	58.6	100.1	**0.0194**	0.021	107.8	mg/L	3	Standard
	Cd	114	147.1	108.9	**0.0197**	0.023	117.5	ug/L	8	Standard
>	**In**	115	816623.0	2.7				ug/L	797687	Standard
	Sn	118	1473.4	6.0	**0.1058**	0.017	16.1	ug/L	620	Standard
	Sb	123	734.4	15.5	**0.1172**	0.023	19.9	ug/L	113	Standard
	Ba	135	40876.7	0.8	**16.2030**	0.568	3.5	ug/L	48	Standard
	Ce	140	1840.1	0.7				ug/L	33	Standard
>	**Tb**	159	1211252.3	1.0				ug/L	1160331	Standard
	Ho	165	58.3	32.5				ug/L	5	Standard
	Tl	203	419.0	37.3	**0.0352**	0.015	42.3	ug/L	15	Standard
	Tl	205	278.3	5.5	**0.0214**	0.002	7.7	ug/L	15	Standard
	Pb	206	786.7	11.6	**0.0726**	0.015	21.0	ug/L	289	Standard
	Pb	207	658.7	6.1	**0.0628**	0.008	12.1	ug/L	250	Standard
	Pb	208	2893.4	4.1	**0.0632**	0.005	8.2	ug/L	1113	Standard
	U	238	1008.0	6.2	**0.1081**	0.007	6.7	ug/L	3	Standard
>	**Bi**	209	698146.4	0.3				ug/L	670731	Standard

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Na	23	6.7	114.6	**-19.6698**	30.051	152.8	mg/L	0	Standard
Mg	24	9496.3	0.7	**8.5619**	0.118	1.4	mg/L	32	Standard
K	39	175.0	12.5	**0.5018**	0.076	15.2	mg/L	33	Standard
Ca	43	218.3	15.2	**10.2852**	2.146	20.9	mg/L	58	Standard
Fe	54	277.4	19.8	**0.0243**	0.032	129.6	mg/L	213	Standard
Fe	57	221.7	5.7	**0.1670**	0.026	15.5	mg/L	132	Standard
Sc-1	45	57975.7	0.7				mg/L	56654	Standard
Cl	35	139851.9	1.5				ug/L	93221	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	9536.3	4.6				ug/L	2707	Standard
P	31	27224.4	2.0				ug/L	24082	Standard
S	34	3842.2	1.5				ug/L	3865	Standard
Sr	88	223.3	12.3				ug/L	43	Standard
C	12	266.7	26.6				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	96.6	29.8				mg/L	20	Standard
Ho-1	165	58.3	32.5				mg/L	5	Standard
Er	166	70.0	37.8				mg/L	10	Standard
I	127	19165.5	2.8				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		122.727	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.107	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.374
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.087
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606052101S WG572187-05
Sample Date/Time: Monday, June 13, 2016 13:19:36
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	104752.6	1.2				ug/L	84319	Standard
	Be	9	78601.7	0.5	**54.0718**	0.676	1.2	ug/L	7	Standard
	Al	27	8314786.7	0.4	**35.2258**	0.562	1.6	ug/L	1022	Standard
	Sc	45	58604.8	2.1				ug/L	56654	Standard
	Ti	47	361.0	5.3	**0.6151**	0.049	7.9	ug/L	114	Standard
	V	51	544169.7	1.6	**52.2501**	0.833	1.6	ug/L	1609	Standard
	Cr	52	532120.2	0.4	**50.2031**	0.991	2.0	ug/L	8548	Standard
	Cr	53	65263.6	1.5	**51.0720**	1.326	2.6	ug/L	925	Standard
	Mn	55	525325.1	0.8	**63.3944**	1.140	1.8	ug/L	1051	Standard
	Co	59	496426.2	0.4	**52.6380**	0.603	1.1	ug/L	178	Standard
	Ni	60	134094.8	0.6	**51.1878**	1.019	2.0	ug/L	312	Standard
	Cu	65	130375.5	0.7	**51.0908**	0.544	1.1	ug/L	233	Standard
	Zn	66	78391.0	1.2	**53.1784**	0.741	1.4	ug/L	606	Standard
>	**Ge**	72	678742.4	1.6				ug/L	641816	Standard
	As	75	76873.3	1.1	**52.8992**	0.612	1.2	ug/L	-21	Standard
	Se	82	8026.1	1.2	**50.8730**	0.507	1.0	ug/L	23	Standard
	Se-1	77	5204.2	2.3	**51.4408**	0.709	1.4	ug/L	86	Standard
>	**Ga**	71	350.0	19.8				mg/L	152	Standard
	Rb	85	8742.5	4.9				ug/L	18	Standard
	Y	89	584476.9	2.3				ug/L	578199	Standard
>	**Rh**	103	66.7	28.4				ug/L	20	Standard
	Mo	98	2087.6	1.9	**0.6085**	0.014	2.4	ug/L	19	Standard
	Ag	107	459605.0	0.3	**52.4713**	1.209	2.3	ug/L	113	Standard
	Cd	111	141175.3	0.8	**51.3767**	1.566	3.0	mg/L	3	Standard
	Cd	114	347643.1	0.5	**51.1502**	0.921	1.8	ug/L	8	Standard
>	**In**	115	824454.5	2.3				ug/L	797687	Standard
	Sn	118	1461.7	9.4	**0.1020**	0.015	14.8	ug/L	620	Standard
	Sb	123	313258.7	0.8	**53.6394**	1.564	2.9	ug/L	113	Standard
	Ba	135	169607.0	0.6	**66.6537**	1.605	2.4	ug/L	48	Standard
	Ce	140	2006.8	12.7				ug/L	33	Standard
>	**Tb**	159	1215073.8	2.1				ug/L	1160331	Standard
	Ho	165	68.3	29.6				ug/L	5	Standard
	Tl	203	548954.0	0.4	**51.1655**	0.311	0.6	ug/L	15	Standard
	Tl	205	520237.5	0.6	**52.0863**	0.407	0.8	ug/L	15	Standard
	Pb	206	334180.6	0.7	**53.4625**	0.744	1.4	ug/L	289	Standard
	Pb	207	291384.0	0.9	**51.4011**	0.834	1.6	ug/L	250	Standard
	Pb	208	1267404.3	1.5	**50.6581**	0.944	1.9	ug/L	1113	Standard
	U	238	480924.0	0.9	**51.6784**	0.524	1.0	ug/L	3	Standard
>	**Bi**	209	707877.4	0.7				ug/L	670731	Standard

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Na	23	5.0	100.0	**-12.7394**	19.501	153.1	mg/L	0	Standard
Mg	24	9804.8	3.0	**8.7510**	0.434	5.0	mg/L	32	Standard
K	39	206.7	25.2	**0.6060**	0.171	28.2	mg/L	33	Standard
Ca	43	228.3	11.0	**10.7748**	1.813	16.8	mg/L	58	Standard
Fe	54	302.4	3.3	**0.0362**	0.003	9.7	mg/L	213	Standard
Fe	57	276.7	1.0	**0.2777**	0.013	4.5	mg/L	132	Standard
> **Sc-1**	45	58604.8	2.1				mg/L	56654	Standard
Cl	35	141179.4	0.8				ug/L	93221	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	10360.2	3.7				ug/L	2707	Standard
P	31	28293.2	7.2				ug/L	24082	Standard
S	34	3978.9	1.9				ug/L	3865	Standard
Sr	88	210.0	13.3				ug/L	43	Standard
C	12	223.3	20.2				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	0	Standard
Dy	164	80.5	17.6				mg/L	20	Standard
Ho-1	165	68.3	29.6				mg/L	5	Standard
Er	166	60.0	44.1				mg/L	10	Standard
I	127	18279.4	2.6				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.234	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.753	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.356
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.538
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606052101SD WG572187-06
Sample Date/Time: Monday, June 13, 2016 13:22:47
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	108292.4	1.9				ug/L	84319	Standard
	Be	9	79141.2	0.9	**52.6764**	1.451	2.8	ug/L	7	Standard
	Al	27	8618464.2	1.0	**35.3262**	0.957	2.7	ug/L	1022	Standard
	Sc	45	59965.1	2.1				ug/L	56654	Standard
	Ti	47	401.3	20.5	**0.7404**	0.194	26.2	ug/L	114	Standard
	V	51	534426.7	0.5	**52.8835**	0.878	1.7	ug/L	1609	Standard
	Cr	52	533956.0	0.8	**51.9333**	0.306	0.6	ug/L	8548	Standard
	Cr	53	65041.0	1.6	**52.4579**	0.643	1.2	ug/L	925	Standard
	Mn	55	532263.3	1.3	**66.1865**	0.642	1.0	ug/L	1051	Standard
	Co	59	502453.1	1.7	**54.8937**	0.437	0.8	ug/L	178	Standard
	Ni	60	131995.9	1.4	**51.9168**	0.787	1.5	ug/L	312	Standard
	Cu	65	129972.8	0.8	**52.4855**	0.446	0.8	ug/L	233	Standard
	Zn	66	76763.6	1.0	**53.6660**	0.814	1.5	ug/L	606	Standard
>	**Ge**	72	658673.7	1.3				ug/L	641816	Standard
	As	75	76500.0	0.2	**54.2469**	0.775	1.4	ug/L	-21	Standard
	Se	82	8049.3	0.5	**52.5827**	0.826	1.6	ug/L	23	Standard
	Se-1	77	5281.9	3.6	**53.8311**	1.274	2.4	ug/L	86	Standard
>	**Ga**	71	325.0	1.5				mg/L	152	Standard
	Rb	85	9002.7	2.0				ug/L	18	Standard
	Y	89	605661.1	3.3				ug/L	578199	Standard
>	**Rh**	103	98.3	17.9				ug/L	20	Standard
	Mo	98	2162.1	1.4	**0.6136**	0.001	0.2	ug/L	19	Standard
	Ag	107	461872.5	0.5	**51.3337**	0.746	1.5	ug/L	113	Standard
	Cd	111	141753.2	1.3	**50.2118**	0.570	1.1	mg/L	3	Standard
	Cd	114	348698.8	0.7	**49.9490**	0.573	1.1	ug/L	8	Standard
>	**In**	115	846702.3	1.5				ug/L	797687	Standard
	Sn	118	1265.1	6.0	**0.0722**	0.010	13.8	ug/L	620	Standard
	Sb	123	312103.2	0.4	**52.0242**	0.979	1.9	ug/L	113	Standard
	Ba	135	173173.0	0.4	**66.2520**	0.902	1.4	ug/L	48	Standard
	Ce	140	2036.8	7.0				ug/L	33	Standard
>	**Tb**	159	1238915.1	0.6				ug/L	1160331	Standard
	Ho	165	76.7	27.2				ug/L	5	Standard
	Tl	203	554198.4	0.7	**51.3076**	0.539	1.1	ug/L	15	Standard
	Tl	205	531286.4	0.9	**52.8342**	0.455	0.9	ug/L	15	Standard
	Pb	206	334260.7	0.8	**53.1131**	0.477	0.9	ug/L	289	Standard
	Pb	207	290958.8	0.1	**50.9802**	0.672	1.3	ug/L	250	Standard
	Pb	208	1288512.7	0.6	**51.1579**	0.836	1.6	ug/L	1113	Standard
	U	238	488505.6	0.6	**52.1438**	0.875	1.7	ug/L	3	Standard
>	**Bi**	209	712703.7	1.4				ug/L	670731	Standard

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Na	23	0.0		**6.6672**	0.000	0.0	mg/L	0	Standard
Mg	24	10216.8	3.4	**8.9118**	0.439	4.9	mg/L	32	Standard
K	39	168.3	21.9	**0.4597**	0.141	30.7	mg/L	33	Standard
Ca	43	271.7	9.1	**13.0937**	1.818	13.9	mg/L	58	Standard
Fe	54	280.3	7.4	**0.0208**	0.013	62.3	mg/L	213	Standard
Fe	57	313.3	18.4	**0.3390**	0.113	33.2	mg/L	132	Standard
> **Sc-1**	45	59965.1	2.1				mg/L	56654	Standard
Cl	35	145143.9	0.5				ug/L	93221	Standard
Kr	83	0.3	173.2				ug/L	1	Standard
Br	81	9953.3	5.1				ug/L	2707	Standard
P	31	28446.7	0.8				ug/L	24082	Standard
S	34	4303.9	1.9				ug/L	3865	Standard
Sr	88	231.7	5.4				ug/L	43	Standard
C	12	263.3	17.5				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	74.1	61.4				mg/L	20	Standard
Ho-1	165	76.7	27.2				mg/L	5	Standard
Er	166	53.3	28.6				mg/L	10	Standard
I	127	18629.8	4.9				mg/L	2335	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		128.432	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		102.627	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.145
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.258
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606052101PS WG572444-01
Sample Date/Time: Monday, June 13, 2016 13:25:59
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	104475.7	2.1				ug/L	84319	Standard
	Be	9	77149.3	2.4	**53.2063**	0.160	0.3	ug/L	7	Standard
	Al	27	8335662.4	2.3	**35.4026**	0.066	0.2	ug/L	1022	Standard
	Sc	45	57197.8	3.0				ug/L	56654	Standard
	Ti	47	318.3	15.2	**0.5307**	0.119	22.4	ug/L	114	Standard
	V	51	535725.5	1.7	**52.6745**	0.713	1.4	ug/L	1609	Standard
	Cr	52	522708.2	0.8	**50.4988**	0.410	0.8	ug/L	8548	Standard
	Cr	53	63538.0	1.5	**50.9090**	1.046	2.1	ug/L	925	Standard
	Mn	55	541961.6	0.2	**66.9761**	0.303	0.5	ug/L	1051	Standard
	Co	59	510279.1	0.4	**55.4060**	0.349	0.6	ug/L	178	Standard
	Ni	60	130747.1	0.8	**51.1020**	0.343	0.7	ug/L	312	Standard
	Cu	65	128339.3	0.6	**51.5015**	0.497	1.0	ug/L	233	Standard
	Zn	66	77192.5	0.4	**53.6267**	0.174	0.3	ug/L	606	Standard
>	**Ge**	72	662773.9	0.5				ug/L	641816	Standard
	As	75	75687.1	0.3	**53.3340**	0.377	0.7	ug/L	-21	Standard
	Se	82	8260.5	1.1	**53.6260**	0.635	1.2	ug/L	23	Standard
	Se-1	77	5303.9	2.6	**53.7348**	1.649	3.1	ug/L	86	Standard
>	**Ga**	71	330.0	6.6				mg/L	152	Standard
	Rb	85	8667.5	2.5				ug/L	18	Standard
	Y	89	617595.2	1.3				ug/L	578199	Standard
>	**Rh**	103	93.3	31.4				ug/L	20	Standard
	Mo	98	2130.4	1.1	**0.6140**	0.010	1.7	ug/L	19	Standard
	Ag	107	453154.0	1.5	**51.1414**	0.890	1.7	ug/L	113	Standard
	Cd	111	143338.3	0.6	**51.5587**	0.343	0.7	mg/L	3	Standard
	Cd	114	348896.2	3.1	**50.7421**	1.205	2.4	ug/L	8	Standard
>	**In**	115	833792.1	1.2				ug/L	797687	Standard
	Sn	118	1625.1	3.0	**0.1211**	0.008	6.5	ug/L	620	Standard
	Sb	123	301424.5	1.0	**51.0160**	0.670	1.3	ug/L	113	Standard
	Ba	135	170986.2	1.6	**66.4176**	0.286	0.4	ug/L	48	Standard
	Ce	140	1733.4	5.9				ug/L	33	Standard
>	**Tb**	159	1211697.2	0.9				ug/L	1160331	Standard
	Ho	165	66.7	17.3				ug/L	5	Standard
	Tl	203	548366.7	0.3	**51.5284**	0.566	1.1	ug/L	15	Standard
	Tl	205	533441.2	1.6	**53.8466**	1.161	2.2	ug/L	15	Standard
	Pb	206	334258.6	0.7	**53.9076**	0.220	0.4	ug/L	289	Standard
	Pb	207	291663.9	0.7	**51.8661**	0.224	0.4	ug/L	250	Standard
	Pb	208	1305457.7	0.5	**52.6068**	0.715	1.4	ug/L	1113	Standard
	U	238	484891.9	0.6	**52.5309**	0.675	1.3	ug/L	3	Standard
>	**Bi**	209	702177.9	1.1				ug/L	670731	Standard

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Na	23	3.3	86.6	**-6.6463**	11.544	173.7	mg/L	0	Standard
Mg	24	9764.8	1.1	**8.9311**	0.333	3.7	mg/L	32	Standard
K	39	165.0	34.9	**0.4701**	0.190	40.4	mg/L	33	Standard
Ca	43	233.3	13.8	**11.3953**	1.613	14.2	mg/L	58	Standard
Fe	54	262.7	16.0	**0.0178**	0.021	120.4	mg/L	213	Standard
Fe	57	273.3	12.2	**0.2847**	0.071	24.9	mg/L	132	Standard
> **Sc-1**	45	57197.8	3.0				mg/L	56654	Standard
Cl	35	149037.4	0.8				ug/L	93221	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	9856.5	5.3				ug/L	2707	Standard
P	31	28870.8	2.4				ug/L	24082	Standard
S	34	3977.2	10.2				ug/L	3865	Standard
Sr	88	253.3	13.4				ug/L	43	Standard
C	12	193.3	28.5				mg/L	103	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	81.1	42.8				mg/L	20	Standard
Ho-1	165	66.7	17.3				mg/L	5	Standard
Er	166	46.7	32.7				mg/L	10	Standard
I	127	20947.8	4.5				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.905	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.265	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.526
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.688
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: L1606052101PS WG572444-01
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Method 6020 - Summary Report

Sample ID: L1606052101SDL WG572444-02
Sample Date/Time: Monday, June 13, 2016 13:29:10
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	100124.8	1.8				ug/L	84319	Standard
	Be	9	58.3	19.8	**0.0317**	0.008	24.6	ug/L	7	Standard
	Al	27	1824533.2	1.4	**8.0785**	0.037	0.5	ug/L	1022	Standard
	Sc	45	58827.3	1.8				ug/L	56654	Standard
	Ti	47	113.7	12.9	**0.0169**	0.033	194.0	ug/L	114	Standard
	V	51	3159.3	3.4	**0.1346**	0.011	8.0	ug/L	1609	Standard
	Cr	52	10754.1	1.4	**0.1365**	0.021	15.2	ug/L	8548	Standard
	Cr	53	1106.7	4.3	**0.1143**	0.050	44.0	ug/L	925	Standard
	Mn	55	23269.9	2.4	**2.6383**	0.045	1.7	ug/L	1051	Standard
	Co	59	504.7	28.7	**0.0314**	0.014	46.1	ug/L	178	Standard
	Ni	60	681.3	6.2	**0.1306**	0.012	9.3	ug/L	312	Standard
	Cu	65	692.0	5.1	**0.1660**	0.010	6.3	ug/L	233	Standard
	Zn	66	2505.2	3.1	**1.1720**	0.027	2.3	ug/L	606	Standard
>	**Ge**	72	685012.7	1.5				ug/L	641816	Standard
	As	75	296.1	3.4	**0.2557**	0.008	3.0	ug/L	-21	Standard
	Se	82	46.5	11.9	**0.1417**	0.032	22.4	ug/L	23	Standard
	Se-1	77	89.3	11.0	**0.0182**	0.087	474.7	ug/L	86	Standard
>	**Ga**	71	140.0	3.6				mg/L	152	Standard
	Rb	85	1873.4	4.5				ug/L	18	Standard
	Y	89	597287.3	0.7				ug/L	578199	Standard
>	**Rh**	103	28.3	10.2				ug/L	20	Standard
	Mo	98	429.3	10.5	**0.1138**	0.014	12.4	ug/L	19	Standard
	Ag	107	239.3	46.5	**0.0124**	0.013	103.9	ug/L	113	Standard
	Cd	111	43.2	94.3	**0.0139**	0.015	107.4	mg/L	3	Standard
	Cd	114	96.5	65.2	**0.0124**	0.009	75.7	ug/L	8	Standard
>	**In**	115	822891.9	0.7				ug/L	797687	Standard
	Sn	118	875.0	2.3	**0.0258**	0.002	8.2	ug/L	620	Standard
	Sb	123	3036.8	20.1	**0.5103**	0.102	19.9	ug/L	113	Standard
	Ba	135	8761.9	1.5	**3.4244**	0.073	2.1	ug/L	48	Standard
	Ce	140	396.7	4.8				ug/L	33	Standard
>	**Tb**	159	1196832.6	1.2				ug/L	1160331	Standard
	Ho	165	20.0	0.0				ug/L	5	Standard
	Tl	203	256.3	49.5	**0.0195**	0.012	61.6	ug/L	15	Standard
	Tl	205	190.0	64.0	**0.0122**	0.012	100.9	ug/L	15	Standard
	Pb	206	503.0	18.9	**0.0254**	0.016	62.0	ug/L	289	Standard
	Pb	207	428.7	20.3	**0.0205**	0.016	78.0	ug/L	250	Standard
	Pb	208	1928.0	18.2	**0.0229**	0.015	63.7	ug/L	1113	Standard
	U	238	346.7	20.9	**0.0355**	0.008	22.7	ug/L	3	Standard
>	**Bi**	209	708933.1	0.7				ug/L	670731	Standard

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Na	23	0.0		**6.6672**	0.000	0.0	mg/L	0	Standard
Mg	24	2065.1	0.2	**1.8095**	0.031	1.7	mg/L	32	Standard
K	39	40.0	37.5	**0.0129**	0.052	401.2	mg/L	33	Standard
Ca	43	58.3	19.8	**0.1403**	0.668	476.1	mg/L	58	Standard
Fe	54	203.9	23.3	**-0.0181**	0.026	144.7	mg/L	213	Standard
Fe	57	130.0	27.7	**-0.0320**	0.074	230.7	mg/L	132	Standard
> **Sc-1**	45	58827.3	1.8				mg/L	56654	Standard
Cl	35	135766.9	1.0				ug/L	93221	Standard
Kr	83	2.3	107.9				ug/L	1	Standard
Br	81	4237.3	3.3				ug/L	2707	Standard
P	31	28217.9	1.7				ug/L	24082	Standard
S	34	4352.3	3.3				ug/L	3865	Standard
Sr	88	80.0	45.1				ug/L	43	Standard
C	12	136.7	33.8				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	0	Standard
Dy	164	29.0	61.1				mg/L	20	Standard
Ho-1	165	20.0	0.0				mg/L	5	Standard
Er	166	20.0	50.0				mg/L	10	Standard
I	127	6283.0	1.3				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.745	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.730	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.160
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.696
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606052101SDL WG572444-02
Sample Date/Time: Monday, June 13, 2016 13:32:21
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	99601.4	1.9				ug/L	84319	Standard
	Be	9	48.3	63.2	**0.0250**	0.022	89.1	ug/L	7	Standard
	Al	27	379123.6	3.6	**1.6797**	0.066	3.9	ug/L	1022	Standard
	Sc	45	58233.4	1.1				ug/L	56654	Standard
	Ti	47	70.7	22.0	**-0.0856**	0.036	42.6	ug/L	114	Standard
	V	51	2414.3	3.8	**0.0635**	0.009	14.8	ug/L	1609	Standard
	Cr	52	10538.0	2.7	**0.1157**	0.026	22.7	ug/L	8548	Standard
	Cr	53	963.4	3.7	**0.0009**	0.028	2976.9	ug/L	925	Standard
	Mn	55	6168.3	20.2	**0.5887**	0.148	25.1	ug/L	1051	Standard
	Co	59	372.3	55.3	**0.0176**	0.022	122.2	ug/L	178	Standard
	Ni	60	349.7	19.8	**0.0049**	0.026	525.7	ug/L	312	Standard
	Cu	65	340.0	22.7	**0.0291**	0.030	102.3	ug/L	233	Standard
	Zn	66	2022.8	2.8	**0.8448**	0.043	5.1	ug/L	606	Standard
>	**Ge**	72	685105.0	0.8				ug/L	641816	Standard
	As	75	-19.3	227.9	**0.0407**	0.030	73.8	ug/L	-21	Standard
	Se	82	26.1	4.1	**0.0133**	0.007	53.3	ug/L	23	Standard
	Se-1	77	82.3	16.1	**-0.0506**	0.134	264.3	ug/L	86	Standard
>	**Ga**	71	83.3	22.7				mg/L	152	Standard
	Rb	85	416.7	5.7				ug/L	18	Standard
	Y	89	595367.1	3.4				ug/L	578199	Standard
>	**Rh**	103	21.7	48.0				ug/L	20	Standard
	Mo	98	109.9	7.5	**0.0178**	0.002	11.0	ug/L	19	Standard
	Ag	107	155.0	27.4	**0.0024**	0.005	190.8	ug/L	113	Standard
	Cd	111	21.5	98.2	**0.0058**	0.007	128.9	mg/L	3	Standard
	Cd	114	55.4	56.3	**0.0061**	0.004	72.4	ug/L	8	Standard
>	**In**	115	835090.9	2.0				ug/L	797687	Standard
	Sn	118	730.0	6.3	**0.0054**	0.005	85.4	ug/L	620	Standard
	Sb	123	739.8	24.7	**0.1153**	0.033	28.9	ug/L	113	Standard
	Ba	135	1817.1	4.4	**0.6790**	0.023	3.4	ug/L	48	Standard
	Ce	140	80.0	28.6				ug/L	33	Standard
>	**Tb**	159	1201293.1	0.7				ug/L	1160331	Standard
	Ho	165	16.7	75.5				ug/L	5	Standard
	Tl	203	79.3	59.6	**0.0030**	0.004	148.0	ug/L	15	Standard
	Tl	205	395.0	145.8	**0.0327**	0.058	176.4	ug/L	15	Standard
	Pb	206	380.7	12.7	**0.0056**	0.008	141.6	ug/L	289	Standard
	Pb	207	325.7	8.0	**0.0021**	0.005	225.2	ug/L	250	Standard
	Pb	208	2336.4	67.6	**0.0391**	0.063	162.2	ug/L	1113	Standard
	U	238	374.0	139.2	**0.0384**	0.056	145.8	ug/L	3	Standard
>	**Bi**	209	710502.1	0.5				ug/L	670731	Standard

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Na	23	0.0		**6.6672**	0.000	0.0	mg/L	0	Standard
Mg	24	436.7	18.5	**0.3602**	0.069	19.2	mg/L	32	Standard
K	39	28.3	20.4	**-0.0272**	0.021	78.1	mg/L	33	Standard
Ca	43	48.3	15.8	**-0.4454**	0.456	102.4	mg/L	58	Standard
Fe	54	240.6	15.9	**0.0032**	0.021	654.6	mg/L	213	Standard
Fe	57	126.7	8.2	**-0.0359**	0.025	68.8	mg/L	132	Standard
Sc-1	45	58233.4	1.1				mg/L	56654	Standard
Cl	35	135596.6	3.8				ug/L	93221	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	3457.1	8.0				ug/L	2707	Standard
P	31	28642.1	2.5				ug/L	24082	Standard
S	34	4359.0	3.5				ug/L	3865	Standard
Sr	88	55.0	41.7				ug/L	43	Standard
C	12	103.3	20.1				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	0	Standard
Dy	164	2.2	231.7				mg/L	20	Standard
Ho-1	165	16.7	75.5				mg/L	5	Standard
Er	166	23.3	89.2				mg/L	10	Standard
I	127	3130.3	2.4				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		118.124	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.745	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.689
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.929
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, June 13, 2016 13:35:34
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	97316.6	2.0				ug/L	84319	Standard
	Be	9	68566.5	1.8	**50.7696**	0.332	0.7	ug/L	7	Standard
	Al	27	10166042.3	2.6	**46.3559**	0.636	1.4	ug/L	1022	Standard
	Sc	45	57912.1	1.3				ug/L	56654	Standard
	Ti	47	40894.5	1.6	**102.4207**	2.622	2.6	ug/L	114	Standard
	V	51	501809.5	1.0	**50.2411**	0.655	1.3	ug/L	1609	Standard
	Cr	52	506775.1	0.4	**49.8502**	0.676	1.4	ug/L	8548	Standard
	Cr	53	61486.2	1.7	**50.1579**	1.020	2.0	ug/L	925	Standard
	Mn	55	417758.6	0.2	**52.5452**	0.649	1.2	ug/L	1051	Standard
	Co	59	490079.7	0.1	**54.1907**	0.512	0.9	ug/L	178	Standard
	Ni	60	126408.1	0.2	**50.3138**	0.531	1.1	ug/L	312	Standard
	Cu	65	123945.9	0.9	**50.6534**	0.898	1.8	ug/L	233	Standard
	Zn	66	72355.0	1.0	**51.1701**	1.017	2.0	ug/L	606	Standard
>	Ge	72	650836.7	1.0				ug/L	641816	Standard
	As	75	70555.0	0.8	**50.6352**	0.732	1.4	ug/L	-21	Standard
	Se	82	7727.2	1.0	**51.0804**	0.830	1.6	ug/L	23	Standard
	Se-1	77	5062.8	2.1	**52.2012**	0.764	1.5	ug/L	86	Standard
>	Ga	71	98.3	43.8				mg/L	152	Standard
	Rb	85	1098.4	7.1				ug/L	18	Standard
	Y	89	614527.0	1.8				ug/L	578199	Standard
>	Rh	103	33.3	60.6				ug/L	20	Standard
	Mo	98	348248.6	0.9	**102.1991**	0.837	0.8	ug/L	19	Standard
	Ag	107	440650.2	1.8	**49.4604**	0.274	0.6	ug/L	113	Standard
	Cd	111	139726.1	1.1	**49.9966**	0.885	1.8	mg/L	3	Standard
	Cd	114	345564.7	0.6	**50.0012**	0.777	1.6	ug/L	8	Standard
>	In	115	838255.8	1.6				ug/L	797687	Standard
	Sn	118	398492.8	3.4	**51.0368**	0.987	1.9	ug/L	620	Standard
	Sb	123	297212.2	1.9	**50.0303**	0.341	0.7	ug/L	113	Standard
	Ba	135	125190.8	1.6	**48.3649**	0.328	0.7	ug/L	48	Standard
	Ce	140	80.0	18.8				ug/L	33	Standard
>	Tb	159	1193616.8	2.4				ug/L	1160331	Standard
	Ho	165	11.7	49.5				ug/L	5	Standard
	Tl	203	529483.0	1.0	**50.5063**	0.413	0.8	ug/L	15	Standard
	Tl	205	510108.1	0.2	**52.2699**	0.466	0.9	ug/L	15	Standard
	Pb	206	313992.2	1.3	**51.4055**	0.686	1.3	ug/L	289	Standard
	Pb	207	284386.5	0.9	**51.3394**	0.475	0.9	ug/L	250	Standard
	Pb	208	1269724.2	0.6	**51.9423**	0.721	1.4	ug/L	1113	Standard
	U	238	472726.2	0.8	**51.9891**	0.648	1.2	ug/L	3	Standard
>	Bi	209	691679.6	1.0				ug/L	670731	Standard

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Na	23	0.0		**6.6672**	0.000	0.0	mg/L	0	Standard
Mg	24	5564.4	0.6	**5.0093**	0.096	1.9	mg/L	32	Standard
K	39	1086.7	6.3	**3.7915**	0.196	5.2	mg/L	33	Standard
Ca	43	108.3	2.7	**3.3598**	0.270	8.0	mg/L	58	Standard
Fe	54	8545.6	3.2	**4.6025**	0.189	4.1	mg/L	213	Standard
Fe	57	2420.2	4.5	**4.8464**	0.264	5.4	mg/L	132	Standard
Sc-1	45	57912.1	1.3				mg/L	56654	Standard
Cl	35	130616.7	1.5				ug/L	93221	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	2896.9	10.6				ug/L	2707	Standard
P	31	29049.5	2.8				ug/L	24082	Standard
S	34	4889.1	0.6				ug/L	3865	Standard
Sr	88	61.7	65.0				ug/L	43	Standard
C	12	113.3	27.0				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	14.4	142.9				mg/L	20	Standard
Ho-1	165	11.7	49.5				mg/L	5	Standard
Er	166	46.7	12.4				mg/L	10	Standard
I	127	2175.2	2.7				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	101.539		
Al	27	92.712		
Sc	45			
Ti	47	102.421		
V	51	100.482		
Cr	52	99.700		
Cr	53			
Mn	55	105.090		
Co	59	108.381		
Ni	60	100.628		
Cu	65	101.307		
Zn	66	102.340		
Ge	72		101.406	
As	75	101.270		
Se	82	102.161		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	102.199		
Ag	107	98.921		
Cd	111	99.993		
Cd	114			
> In	115			105.086
Sn	118	102.074		
Sb	123	100.061		
Ba	135	96.730		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.013		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.885		
U	238	103.978		
> Bi	209			103.123
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, June 13, 2016 13:38:46
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92508.3	2.2				ug/L	84319	Standard
	Be	9	63.3	73.4	**0.0391**	0.036	91.2	ug/L	7	Standard
	Al	27	5244.7	87.9	**0.0149**	0.022	146.1	ug/L	1022	Standard
	Sc	45	57813.4	1.6				ug/L	56654	Standard
	Ti	47	65.3	0.9	**-0.0988**	0.004	4.2	ug/L	114	Standard
	V	51	1912.1	24.5	**0.0156**	0.049	318.0	ug/L	1609	Standard
	Cr	52	9112.7	2.6	**-0.0228**	0.042	185.9	ug/L	8548	Standard
	Cr	53	700.0	8.7	**-0.2076**	0.059	28.4	ug/L	925	Standard
	Mn	55	1189.1	38.5	**-0.0074**	0.059	793.4	ug/L	1051	Standard
	Co	59	435.3	65.2	**0.0246**	0.031	127.0	ug/L	178	Standard
	Ni	60	241.0	7.7	**-0.0365**	0.009	23.9	ug/L	312	Standard
	Cu	65	240.0	26.8	**-0.0097**	0.027	283.1	ug/L	233	Standard
	Zn	66	447.7	10.3	**-0.2250**	0.039	17.3	ug/L	606	Standard
>	**Ge**	72	687982.4	2.6				ug/L	641816	Standard
	As	75	-70.0	54.8	**0.0069**	0.025	359.0	ug/L	-21	Standard
	Se	82	22.8	18.3	**-0.0072**	0.030	418.7	ug/L	23	Standard
	Se-1	77	91.3	6.2	**0.0364**	0.079	217.0	ug/L	86	Standard
>	**Ga**	71	86.7	32.8				mg/L	152	Standard
	Rb	85	36.7	43.8				ug/L	18	Standard
	Y	89	600019.3	1.8				ug/L	578199	Standard
>	**Rh**	103	16.7	75.5				ug/L	20	Standard
	Mo	98	324.9	42.8	**0.0827**	0.039	47.0	ug/L	19	Standard
	Ag	107	402.7	94.6	**0.0307**	0.042	137.1	ug/L	113	Standard
	Cd	111	93.4	126.0	**0.0317**	0.042	131.8	mg/L	3	Standard
	Cd	114	255.3	131.0	**0.0352**	0.048	136.4	ug/L	8	Standard
>	**In**	115	815813.7	3.2				ug/L	797687	Standard
	Sn	118	1295.1	3.1	**0.0823**	0.009	10.9	ug/L	620	Standard
	Sb	123	927.2	7.2	**0.1505**	0.015	9.6	ug/L	113	Standard
	Ba	135	150.7	116.6	**0.0327**	0.067	205.5	ug/L	48	Standard
	Ce	140	53.3	125.9				ug/L	33	Standard
>	**Tb**	159	1170481.1	1.8				ug/L	1160331	Standard
	Ho	165	11.7	65.5				ug/L	5	Standard
	Tl	203	393.3	127.3	**0.0327**	0.047	144.3	ug/L	15	Standard
	Tl	205	246.7	85.6	**0.0182**	0.021	117.5	ug/L	15	Standard
	Pb	206	509.0	45.3	**0.0274**	0.037	135.9	ug/L	289	Standard
	Pb	207	443.7	47.6	**0.0242**	0.038	155.9	ug/L	250	Standard
	Pb	208	1748.7	38.1	**0.0167**	0.027	160.9	ug/L	1113	Standard
	U	238	195.0	100.1	**0.0194**	0.021	109.1	ug/L	3	Standard
>	**Bi**	209	698712.0	0.9				ug/L	670731	Standard

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Na	23	3.3	86.6	**-6.4697**	11.379	175.9	mg/L	0	Standard
Mg	24	46.7	22.3	**0.0095**	0.009	96.5	mg/L	32	Standard
K	39	21.7	35.3	**-0.0505**	0.028	55.7	mg/L	33	Standard
Ca	43	41.7	27.7	**-0.8359**	0.768	91.8	mg/L	58	Standard
Fe	54	199.2	13.3	**-0.0189**	0.013	70.0	mg/L	213	Standard
Fe	57	121.7	13.2	**-0.0445**	0.037	84.0	mg/L	132	Standard
Sc-1	45	57813.4	1.6				mg/L	56654	Standard
Cl	35	127954.8	1.6				ug/L	93221	Standard
Kr	83	3.3	34.6				ug/L	1	Standard
Br	81	2743.6	1.1				ug/L	2707	Standard
P	31	28949.3	3.0				ug/L	24082	Standard
S	34	4654.0	4.2				ug/L	3865	Standard
Sr	88	43.3	53.3				ug/L	43	Standard
C	12	106.7	37.9				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.2	122.9				mg/L	20	Standard
Ho-1	165	11.7	65.5				mg/L	5	Standard
Er	166	23.3	24.7				mg/L	10	Standard
I	127	2428.5	1.7				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.193	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.272
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.172
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Monday, June 13, 2016 13:41:59
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	90171.1	3.4				ug/L	84319	Standard
	Be	9	290.0	9.6	**0.2216**	0.020	9.1	ug/L	7	Standard
	Al	27	1443.4	18.2	**-0.0031**	0.001	41.7	ug/L	1022	Standard
	Sc	45	56419.9	2.2				ug/L	56654	Standard
	Ti	47	50.3	18.8	**-0.1259**	0.024	18.7	ug/L	114	Standard
	V	51	5404.4	1.3	**0.3836**	0.007	1.7	ug/L	1609	Standard
	Cr	52	16849.7	2.0	**0.8240**	0.026	3.1	ug/L	8548	Standard
	Cr	53	1575.1	8.1	**0.5657**	0.106	18.7	ug/L	925	Standard
	Mn	55	4565.7	1.5	**0.4338**	0.009	2.1	ug/L	1051	Standard
	Co	59	3801.1	1.1	**0.4049**	0.006	1.4	ug/L	178	Standard
	Ni	60	4156.9	1.3	**1.5545**	0.024	1.5	ug/L	312	Standard
	Cu	65	2122.1	1.2	**0.7781**	0.007	0.9	ug/L	233	Standard
	Zn	66	10060.7	2.7	**6.7602**	0.152	2.3	ug/L	606	Standard
>	Ge	72	641773.3	0.7				ug/L	641816	Standard
	As	75	485.7	9.0	**0.4069**	0.029	7.2	ug/L	-21	Standard
	Se	82	78.5	21.5	**0.3766**	0.111	29.5	ug/L	23	Standard
	Se-1	77	116.3	3.0	**0.3660**	0.036	9.8	ug/L	86	Standard
>	Ga	71	83.3	34.1				mg/L	152	Standard
	Rb	85	26.7	57.3				ug/L	18	Standard
	Y	89	568878.0	2.3				ug/L	578199	Standard
>	Rh	103	35.0	57.1				ug/L	20	Standard
	Mo	98	73.7	7.8	**0.0076**	0.002	26.8	ug/L	19	Standard
	Ag	107	3588.1	2.9	**0.3985**	0.017	4.4	ug/L	113	Standard
	Cd	111	647.9	1.4	**0.2360**	0.007	2.8	mg/L	3	Standard
	Cd	114	1633.1	3.2	**0.2406**	0.009	3.9	ug/L	8	Standard
>	In	115	817076.8	1.5				ug/L	797687	Standard
	Sn	118	695.0	17.0	**0.0028**	0.014	510.7	ug/L	620	Standard
	Sb	123	2467.9	2.6	**0.4162**	0.010	2.5	ug/L	113	Standard
	Ba	135	1830.8	1.2	**0.7002**	0.016	2.3	ug/L	48	Standard
	Ce	140	26.7	10.8				ug/L	33	Standard
>	Tb	159	1175430.4	0.9				ug/L	1160331	Standard
	Ho	165	13.3	43.3				ug/L	5	Standard
	Tl	203	863.7	1.2	**0.0771**	0.001	0.8	ug/L	15	Standard
	Tl	205	783.4	5.9	**0.0726**	0.004	6.0	ug/L	15	Standard
	Pb	206	1533.7	4.2	**0.1935**	0.011	5.6	ug/L	289	Standard
	Pb	207	1319.7	1.3	**0.1807**	0.005	2.6	ug/L	250	Standard
	Pb	208	6041.5	0.4	**0.1905**	0.002	0.8	ug/L	1113	Standard
	U	238	3577.1	1.4	**0.3873**	0.007	1.9	ug/L	3	Standard
>	Bi	209	699398.8	0.8				ug/L	670731	Standard

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Na	23	0.0		**6.6672**	0.000	0.0	mg/L	0	Standard
Mg	24	38.3	58.8	**0.0028**	0.021	760.4	mg/L	32	Standard
K	39	28.3	44.4	**-0.0242**	0.047	192.6	mg/L	33	Standard
Ca	43	33.3	22.9	**-1.3224**	0.455	34.4	mg/L	58	Standard
Fe	54	178.3	17.5	**-0.0281**	0.016	57.1	mg/L	213	Standard
Fe	57	140.0	9.4	**0.0018**	0.031	1731.0	mg/L	132	Standard
Sc-1	45	56419.9	2.2				mg/L	56654	Standard
Cl	35	124197.0	1.1				ug/L	93221	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	2850.3	7.0				ug/L	2707	Standard
P	31	20981.2	1.4				ug/L	24082	Standard
S	34	4974.1	1.3				ug/L	3865	Standard
Sr	88	65.0	30.8				ug/L	43	Standard
C	12	140.0	0.0				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.5	186.3				mg/L	20	Standard
Ho-1	165	13.3	43.3				mg/L	5	Standard
Er	166	10.0	100.0				mg/L	10	Standard
I	127	1555.1	2.9				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	110.777		
Al	27			
Sc	45			
Ti	47			
V	51	95.907		
Cr	52	103.004		
Cr	53			
Mn	55	86.759		
Co	59	101.232		
Ni	60	97.159		
Cu	65	97.259		
Zn	66	108.163		
Ge	72		99.993	
As	75	101.735		
Se	82	94.147		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	99.614		
Cd	111	98.325		
Cd	114			
> In	115			102.431
Sn	118			
Sb	123	104.049		
Ba	135	93.364		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	96.364		
Tl	205			
Pb	206			
Pb	207			
Pb	208	95.253		
U	238	96.822		
> Bi	209			104.274
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606028301DP WG571571-04
Sample Date/Time: Monday, June 13, 2016 13:45:12
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	99462.3	3.2				ug/L	84319	Standard
	Be	9	38.3	15.1	**0.0177**	0.005	29.0	ug/L	7	Standard
	Al	27	44212153.0	1.8	**197.3553**	3.058	1.5	ug/L	1022	Standard
	Sc	45	57194.4	1.2				ug/L	56654	Standard
	Ti	47	329.3	4.6	**0.5324**	0.043	8.1	ug/L	114	Standard
	V	51	9902.4	1.0	**0.7790**	0.014	1.8	ug/L	1609	Standard
	Cr	52	11778.2	2.0	**0.2346**	0.013	5.4	ug/L	8548	Standard
	Cr	53	4125.6	4.3	**2.4910**	0.121	4.8	ug/L	925	Standard
	Mn	55	1497151.4	1.1	**179.4350**	3.619	2.0	ug/L	1051	Standard
	Co	59	6645.1	2.1	**0.6776**	0.020	3.0	ug/L	178	Standard
	Ni	60	31969.4	1.7	**12.0018**	0.105	0.9	ug/L	312	Standard
	Cu	65	2549.2	3.7	**0.8893**	0.028	3.2	ug/L	233	Standard
	Zn	66	10138.4	0.7	**6.3597**	0.085	1.3	ug/L	606	Standard
>	**Ge**	72	684433.9	0.9				ug/L	641816	Standard
	As	75	629.8	5.2	**0.4832**	0.019	4.0	ug/L	-21	Standard
	Se	82	619.2	1.0	**3.7531**	0.076	2.0	ug/L	23	Standard
	Se-1	77	592.3	3.7	**5.0342**	0.217	4.3	ug/L	86	Standard
>	**Ga**	71	255.0	21.2				mg/L	152	Standard
	Rb	85	8357.3	2.9				ug/L	18	Standard
	Y	89	591283.2	0.1				ug/L	578199	Standard
>	**Rh**	103	101.7	12.4				ug/L	20	Standard
	Mo	98	8795.9	2.7	**2.6346**	0.080	3.0	ug/L	19	Standard
	Ag	107	126.7	5.7	**-0.0004**	0.001	187.7	ug/L	113	Standard
	Cd	111	1101.7	2.8	**0.4026**	0.010	2.5	mg/L	3	Standard
	Cd	114	2879.7	3.4	**0.4257**	0.016	3.9	ug/L	8	Standard
>	**In**	115	816865.0	0.5				ug/L	797687	Standard
	Sn	118	891.7	10.4	**0.0288**	0.012	40.8	ug/L	620	Standard
	Sb	123	753.7	14.8	**0.1201**	0.019	15.6	ug/L	113	Standard
	Ba	135	11199.5	1.1	**4.4163**	0.030	0.7	ug/L	48	Standard
	Ce	140	1341.7	9.4				ug/L	33	Standard
>	**Tb**	159	1202264.1	1.9				ug/L	1160331	Standard
	Ho	165	58.3	21.6				ug/L	5	Standard
	Tl	203	1093.4	2.7	**0.1004**	0.001	0.9	ug/L	15	Standard
	Tl	205	1023.4	0.3	**0.0986**	0.002	2.0	ug/L	15	Standard
	Pb	206	758.4	7.1	**0.0697**	0.007	9.5	ug/L	289	Standard
	Pb	207	581.7	6.4	**0.0504**	0.006	11.2	ug/L	250	Standard
	Pb	208	2718.1	0.9	**0.0577**	0.003	4.5	ug/L	1113	Standard
	U	238	26178.3	1.7	**2.8911**	0.013	0.4	ug/L	3	Standard
>	**Bi**	209	688357.9	1.9				ug/L	670731	Standard

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Na	23	6.7	43.3	**-20.0082**	11.274	56.3	mg/L	0	Standard
Mg	24	15568.0	3.2	**14.2470**	0.313	2.2	mg/L	32	Standard
K	39	105.0	17.2	**0.2543**	0.061	24.2	mg/L	33	Standard
Ca	43	283.3	2.7	**14.6193**	0.511	3.5	mg/L	58	Standard
Fe	54	265.9	12.6	**0.0200**	0.021	103.4	mg/L	213	Standard
Fe	57	245.0	12.4	**0.2241**	0.070	31.2	mg/L	132	Standard
> **Sc-1**	45	57194.4	1.2				mg/L	56654	Standard
Cl	35	201507.5	2.1				ug/L	93221	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	20587.3	3.9				ug/L	2707	Standard
P	31	29520.4	4.4				ug/L	24082	Standard
S	34	4610.7	3.2				ug/L	3865	Standard
Sr	88	368.3	6.4				ug/L	43	Standard
C	12	106.7	39.0				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	90.8	23.1				mg/L	20	Standard
Ho-1	165	58.3	21.6				mg/L	5	Standard
Er	166	53.3	47.2				mg/L	10	Standard
I	127	122018.9	6.2				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.960	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.640	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	102.404
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.628
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606040001
Sample Date/Time: Monday, June 13, 2016 13:48:23
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	116036.2	3.0				ug/L	84319	Standard
	Be	9	25594.9	2.1	**15.8892**	0.134	0.8	ug/L	7	Standard
	Al	27	72417806.6	2.0	**277.0790**	5.269	1.9	ug/L	1022	Standard
	Sc	45	95563.8	1.0				ug/L	56654	Standard
	Ti	47	29782.9	0.8	**76.6451**	1.966	2.6	ug/L	114	Standard
	V	51	60086.8	6.3	**6.0363**	0.295	4.9	ug/L	1609	Standard
	Cr	52	684370.6	2.4	**69.5564**	0.814	1.2	ug/L	8548	Standard
	Cr	53	88353.7	3.2	**74.4623**	1.713	2.3	ug/L	925	Standard
	Mn	55	66899523.0	1.1	**8678.3634**	210.130	2.4	ug/L	1051	Standard
	Co	59	2854823.4	1.8	**324.8016**	11.100	3.4	ug/L	178	Standard
	Ni	60	1418301.1	0.5	**581.9054**	11.791	2.0	ug/L	312	Standard
	Cu	65	413627.9	0.1	**174.0811**	3.106	1.8	ug/L	233	Standard
	Zn	66	1859031.5	0.3	**1365.4264**	26.722	2.0	ug/L	606	Standard
>	**Ge**	72	632957.3	1.8				ug/L	641816	Standard
	As	75	11091.8	0.7	**8.2320**	0.199	2.4	ug/L	-21	Standard
	Se	82	291.0	4.4	**1.8341**	0.122	6.7	ug/L	23	Standard
	Se-1	77	283.3	10.0	**2.1857**	0.337	15.4	ug/L	86	Standard
>	**Ga**	71	9881.6	3.4				mg/L	152	Standard
	Rb	85	81490.3	2.7				ug/L	18	Standard
	Y	89	2798901.8	1.2				ug/L	578199	Standard
>	**Rh**	103	538.3	7.2				ug/L	20	Standard
	Mo	98	99034.4	1.7	**32.1478**	0.219	0.7	ug/L	19	Standard
	Ag	107	331.0	28.8	**0.0261**	0.012	44.8	ug/L	113	Standard
	Cd	111	6498.1	2.6	**2.5707**	0.048	1.9	mg/L	3	Standard
	Cd	114	16678.7	2.8	**2.6679**	0.018	0.7	ug/L	8	Standard
>	**In**	115	757573.2	2.1				ug/L	797687	Standard
	Sn	118	2816.9	1.2	**0.3115**	0.010	3.3	ug/L	620	Standard
	Sb	123	1177.0	6.5	**0.2090**	0.010	4.7	ug/L	113	Standard
	Ba	135	109565.8	1.2	**46.8414**	0.445	1.0	ug/L	48	Standard
	Ce	140	1474039.5	1.6				ug/L	33	Standard
>	**Tb**	159	1323437.1	1.9				ug/L	1160331	Standard
	Ho	165	186626.1	2.3				ug/L	5	Standard
	Tl	203	1534.4	9.0	**0.1549**	0.013	8.4	ug/L	15	Standard
	Tl	205	1348.4	8.2	**0.1436**	0.011	7.6	ug/L	15	Standard
	Pb	206	8732.2	0.8	**1.5034**	0.012	0.8	ug/L	289	Standard
	Pb	207	6817.5	1.0	**1.2865**	0.006	0.4	ug/L	250	Standard
	Pb	208	30826.5	2.1	**1.3203**	0.013	1.0	ug/L	1113	Standard
	U	238	46626.0	1.6	**5.5820**	0.023	0.4	ug/L	3	Standard
>	**Bi**	209	635161.3	1.3				ug/L	670731	Standard

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Na	23	61.7	24.8	**-141.1821**	35.545	25.2	mg/L	0	Standard
Mg	24	7698.6	3.4	**4.1935**	0.110	2.6	mg/L	32	Standard
K	39	653.3	4.2	**1.2999**	0.054	4.1	mg/L	33	Standard
Ca	43	5072.5	2.3	**190.3657**	2.551	1.3	mg/L	58	Standard
Fe	54	283603.4	2.0	**95.0030**	1.199	1.3	mg/L	213	Standard
Fe	57	79193.1	1.2	**101.8008**	0.349	0.3	mg/L	132	Standard
> **Sc-1**	45	95563.8	1.0				mg/L	56654	Standard
Cl	35	374891.0	1.2				ug/L	93221	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	8469.0	3.9				ug/L	2707	Standard
P	31	68039.1	1.0				ug/L	24082	Standard
S	34	4447.3	0.6				ug/L	3865	Standard
Sr	88	2723.6	2.7				ug/L	43	Standard
C	12	546.7	11.0				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	24.7				mg/L	0	Standard
Dy	164	290319.1	2.2				mg/L	20	Standard
Ho-1	165	186626.1	2.3				mg/L	5	Standard
Er	166	158067.0	1.3				mg/L	10	Standard
I	127	16831.0	3.6				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		137.616	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.620	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.971
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.697
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Co 59 Upper, S, EEE	Co	59
Ni 60 Upper, S, EEE	Ni	60
Cu 65 Upper, S, EEE	Cu	65
Zn 66 Upper, S, EEE	Zn	66

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Method 6020 - Summary Report

Sample ID: L1606040002
Sample Date/Time: Monday, June 13, 2016 13:51:35
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	128694.3	0.7				ug/L	84319	Standard
	Be	9	43.3	29.0	**0.0141**	0.007	49.1	ug/L	7	Standard
	Al	27	51670343.9	0.9	**178.1965**	0.619	0.3	ug/L	1022	Standard
	Sc	45	59277.5	3.4				ug/L	56654	Standard
	Ti	47	210.7	20.9	**0.2692**	0.114	42.2	ug/L	114	Standard
	V	51	2606.1	3.4	**0.0918**	0.007	7.8	ug/L	1609	Standard
	Cr	52	13135.0	2.3	**0.4133**	0.041	9.8	ug/L	8548	Standard
	Cr	53	1300.1	11.4	**0.3065**	0.114	37.0	ug/L	925	Standard
	Mn	55	4004673.5	0.2	**499.0753**	4.534	0.9	ug/L	1051	Standard
	Co	59	54422.6	0.7	**5.9285**	0.089	1.5	ug/L	178	Standard
	Ni	60	48938.6	2.0	**19.1739**	0.531	2.8	ug/L	312	Standard
	Cu	65	31925.9	1.1	**12.8177**	0.236	1.8	ug/L	233	Standard
	Zn	66	6337.7	4.5	**3.9472**	0.216	5.5	ug/L	606	Standard
>	**Ge**	72	658527.5	0.8				ug/L	641816	Standard
	As	75	747.0	2.9	**0.5832**	0.014	2.4	ug/L	-21	Standard
	Se	82	379.7	2.2	**2.3366**	0.035	1.5	ug/L	23	Standard
	Se-1	77	118.7	8.6	**0.3582**	0.097	27.1	ug/L	86	Standard
>	**Ga**	71	421.7	5.6				mg/L	152	Standard
	Rb	85	83638.7	2.8				ug/L	18	Standard
	Y	89	630379.7	0.4				ug/L	578199	Standard
>	**Rh**	103	281.7	17.1				ug/L	20	Standard
	Mo	98	2033.6	1.9	**0.5587**	0.008	1.3	ug/L	19	Standard
	Ag	107	124.7	9.9	**-0.0016**	0.001	83.5	ug/L	113	Standard
	Cd	111	59.7	11.1	**0.0186**	0.003	14.1	mg/L	3	Standard
	Cd	114	175.3	13.4	**0.0224**	0.003	14.2	ug/L	8	Standard
>	**In**	115	872641.9	1.9				ug/L	797687	Standard
	Sn	118	1978.5	10.2	**0.1552**	0.023	15.0	ug/L	620	Standard
	Sb	123	242.0	23.1	**0.0291**	0.010	33.1	ug/L	113	Standard
	Ba	135	12744.7	3.8	**4.7055**	0.118	2.5	ug/L	48	Standard
	Ce	140	1048.4	7.0				ug/L	33	Standard
>	**Tb**	159	1270897.4	3.1				ug/L	1160331	Standard
	Ho	165	68.3	62.2				ug/L	5	Standard
	Tl	203	496.3	2.0	**0.0428**	0.001	1.3	ug/L	15	Standard
	Tl	205	501.7	3.5	**0.0444**	0.002	3.5	ug/L	15	Standard
	Pb	206	547.0	2.1	**0.0342**	0.002	6.9	ug/L	289	Standard
	Pb	207	455.3	2.0	**0.0268**	0.002	7.0	ug/L	250	Standard
	Pb	208	2044.7	1.7	**0.0293**	0.001	4.9	ug/L	1113	Standard
	U	238	1966.8	1.4	**0.2138**	0.006	3.0	ug/L	3	Standard
>	**Bi**	209	694264.8	1.6				ug/L	670731	Standard

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Na	23	13.3	21.7	**-45.1469**	12.281	27.2	mg/L	0	Standard
Mg	24	9928.3	2.9	**8.7566**	0.121	1.4	mg/L	32	Standard
K	39	581.7	6.9	**1.9210**	0.093	4.9	mg/L	33	Standard
Ca	43	1461.7	12.2	**86.6274**	10.850	12.5	mg/L	58	Standard
Fe	54	340.3	11.0	**0.0547**	0.017	31.9	mg/L	213	Standard
Fe	57	1266.7	5.8	**2.3299**	0.151	6.5	mg/L	132	Standard
> **Sc-1**	45	59277.5	3.4				mg/L	56654	Standard
Cl	35	399873.4	0.5				ug/L	93221	Standard
Kr	83	1.0	173.2				ug/L	1	Standard
Br	81	66753.5	3.7				ug/L	2707	Standard
P	31	30378.8	4.0				ug/L	24082	Standard
S	34	4514.0	1.2				ug/L	3865	Standard
Sr	88	1125.0	2.8				ug/L	43	Standard
C	12	296.7	32.7				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	57.7				mg/L	0	Standard
Dy	164	127.9	27.3				mg/L	20	Standard
Ho-1	165	68.3	62.2				mg/L	5	Standard
Er	166	113.3	36.7				mg/L	10	Standard
I	127	12823.8	2.0				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		152.628	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.604	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.397
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.509
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606040005
Sample Date/Time: Monday, June 13, 2016 13:54:46
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	150486.1	4.0				ug/L	84319	Standard
	Be	9	19305.6	3.8	**9.2392**	0.302	3.3	ug/L	7	Standard
	Al	27	51314890.6	1.1	**151.4874**	5.581	3.7	ug/L	1022	Standard
	Sc	45	72905.0	0.4				ug/L	56654	Standard
	Ti	47	700.3	4.6	**1.4598**	0.111	7.6	ug/L	114	Standard
	V	51	43747.2	3.9	**4.1133**	0.141	3.4	ug/L	1609	Standard
	Cr	52	164328.4	1.0	**15.1435**	0.471	3.1	ug/L	8548	Standard
	Cr	53	19711.2	3.5	**15.1488**	0.767	5.1	ug/L	925	Standard
	Mn	55	14658971.8	2.0	**1801.4840**	61.314	3.4	ug/L	1051	Standard
	Co	59	989261.6	0.7	**106.5892**	2.017	1.9	ug/L	178	Standard
	Ni	60	511895.7	0.4	**198.8892**	4.931	2.5	ug/L	312	Standard
	Cu	65	86135.5	1.0	**34.2592**	0.717	2.1	ug/L	233	Standard
	Zn	66	913230.3	0.7	**635.1245**	12.178	1.9	ug/L	606	Standard
>	**Ge**	72	668176.1	2.0				ug/L	641816	Standard
	As	75	5589.8	1.0	**3.9585**	0.111	2.8	ug/L	-21	Standard
	Se	82	186.6	5.1	**1.0534**	0.039	3.7	ug/L	23	Standard
	Se-1	77	187.7	5.7	**1.0475**	0.149	14.2	ug/L	86	Standard
>	**Ga**	71	5350.9	2.8				mg/L	152	Standard
	Rb	85	92114.2	1.3				ug/L	18	Standard
	Y	89	1540112.0	1.1				ug/L	578199	Standard
>	**Rh**	103	125.0	32.7				ug/L	20	Standard
	Mo	98	171.5	16.0	**0.0376**	0.008	21.5	ug/L	19	Standard
	Ag	107	148.0	14.1	**0.0023**	0.003	115.5	ug/L	113	Standard
	Cd	111	2637.3	2.2	**0.9779**	0.012	1.2	mg/L	3	Standard
	Cd	114	6427.6	1.6	**0.9639**	0.022	2.3	ug/L	8	Standard
>	**In**	115	807192.5	1.0				ug/L	797687	Standard
	Sn	118	1381.7	5.3	**0.0956**	0.012	12.1	ug/L	620	Standard
	Sb	123	234.8	13.6	**0.0309**	0.006	17.8	ug/L	113	Standard
	Ba	135	6729.2	1.3	**2.6752**	0.022	0.8	ug/L	48	Standard
	Ce	140	714093.1	1.1				ug/L	33	Standard
>	**Tb**	159	1291200.1	1.2				ug/L	1160331	Standard
	Ho	165	81676.2	0.8				ug/L	5	Standard
	Tl	203	2286.8	2.0	**0.2127**	0.004	2.0	ug/L	15	Standard
	Tl	205	2186.8	5.6	**0.2162**	0.012	5.7	ug/L	15	Standard
	Pb	206	1438.7	3.5	**0.1795**	0.003	1.8	ug/L	289	Standard
	Pb	207	1189.0	2.8	**0.1589**	0.012	7.3	ug/L	250	Standard
	Pb	208	5243.4	2.8	**0.1597**	0.011	6.8	ug/L	1113	Standard
	U	238	20020.2	1.4	**2.1898**	0.037	1.7	ug/L	3	Standard
>	**Bi**	209	695070.4	2.7				ug/L	670731	Standard

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Na	23	20.0	43.3	**-56.3389**	27.419	48.7	mg/L	0	Standard
Mg	24	1603.4	5.1	**1.1211**	0.059	5.2	mg/L	32	Standard
K	39	171.7	14.7	**0.3631**	0.071	19.5	mg/L	33	Standard
Ca	43	1138.4	13.4	**53.5497**	7.636	14.3	mg/L	58	Standard
Fe	54	187414.7	0.5	**82.2818**	0.752	0.9	mg/L	213	Standard
Fe	57	50631.1	1.9	**85.2634**	1.425	1.7	mg/L	132	Standard
Sc-1	45	72905.0	0.4				mg/L	56654	Standard
Cl	35	708575.0	2.0				ug/L	93221	Standard
Kr	83	0.0					ug/L	1	Standard
Br	81	5841.1	4.2				ug/L	2707	Standard
P	31	50594.3	0.8				ug/L	24082	Standard
S	34	4527.3	1.7				ug/L	3865	Standard
Sr	88	755.0	14.4				ug/L	43	Standard
C	12	310.0	8.5				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	130296.4	1.6				mg/L	20	Standard
Ho-1	165	81676.2	0.8				mg/L	5	Standard
Er	166	69174.3	2.1				mg/L	10	Standard
I	127	13352.6	7.9				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		178.472	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.107	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.192
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.629
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Co 59 Upper, S, EEE	Co	59
Ni 60 Upper, S, EEE	Ni	60
Zn 66 Upper, S, EEE	Zn	66

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Sample ID: L1606040006
Sample Date/Time: Monday, June 13, 2016 13:57:58
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	160357.7	2.0				ug/L	84319	Standard
	Be	9	19422.5	5.0	**8.7193**	0.419	4.8	ug/L	7	Standard
	Al	27	49041210.9	1.7	**135.7403**	1.095	0.8	ug/L	1022	Standard
	Sc	45	72035.8	0.8				ug/L	56654	Standard
	Ti	47	698.3	4.9	**1.4386**	0.083	5.8	ug/L	114	Standard
	V	51	40397.6	0.7	**3.7512**	0.057	1.5	ug/L	1609	Standard
	Cr	52	152239.2	1.7	**13.8305**	0.387	2.8	ug/L	8548	Standard
	Cr	53	18114.2	1.8	**13.7275**	0.429	3.1	ug/L	925	Standard
	Mn	55	13464096.0	0.9	**1639.4820**	5.894	0.4	ug/L	1051	Standard
	Co	59	895155.9	0.4	**95.5824**	0.811	0.8	ug/L	178	Standard
	Ni	60	476583.8	1.0	**183.4970**	3.670	2.0	ug/L	312	Standard
	Cu	65	81705.7	1.2	**32.2003**	0.530	1.6	ug/L	233	Standard
	Zn	66	848509.3	0.6	**584.7946**	7.666	1.3	ug/L	606	Standard
>	Ge	72	674104.8	1.2				ug/L	641816	Standard
	As	75	5047.3	2.9	**3.5476**	0.113	3.2	ug/L	-21	Standard
	Se	82	179.7	3.8	**0.9993**	0.039	3.9	ug/L	23	Standard
	Se-1	77	169.7	6.1	**0.8475**	0.126	14.8	ug/L	86	Standard
>	Ga	71	4892.5	2.9				mg/L	152	Standard
	Rb	85	82499.0	1.3				ug/L	18	Standard
	Y	89	1448250.4	2.0				ug/L	578199	Standard
>	Rh	103	111.7	18.6				ug/L	20	Standard
	Mo	98	229.2	4.7	**0.0540**	0.004	7.0	ug/L	19	Standard
	Ag	107	152.7	7.0	**0.0025**	0.001	51.0	ug/L	113	Standard
	Cd	111	2691.2	1.6	**0.9806**	0.019	1.9	mg/L	3	Standard
	Cd	114	6906.0	1.4	**1.0176**	0.014	1.3	ug/L	8	Standard
>	In	115	821560.9	0.8				ug/L	797687	Standard
	Sn	118	1388.4	0.9	**0.0932**	0.003	3.1	ug/L	620	Standard
	Sb	123	220.8	20.1	**0.0278**	0.007	26.4	ug/L	113	Standard
	Ba	135	7531.9	1.6	**2.9444**	0.028	0.9	ug/L	48	Standard
	Ce	140	659080.7	2.2				ug/L	33	Standard
>	Tb	159	1317501.4	0.6				ug/L	1160331	Standard
	Ho	165	76713.7	0.6				ug/L	5	Standard
	Tl	203	2117.5	2.6	**0.1904**	0.006	3.1	ug/L	15	Standard
	Tl	205	1995.1	4.5	**0.1904**	0.010	5.1	ug/L	15	Standard
	Pb	206	1556.7	0.7	**0.1909**	0.001	0.6	ug/L	289	Standard
	Pb	207	1334.4	0.9	**0.1774**	0.003	1.7	ug/L	250	Standard
	Pb	208	5604.4	2.0	**0.1672**	0.005	3.2	ug/L	1113	Standard
	U	238	18695.9	1.8	**1.9813**	0.042	2.1	ug/L	3	Standard
>	Bi	209	717159.7	0.5				ug/L	670731	Standard

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Na	23	10.0	50.0	**-25.0994**	15.657	62.4	mg/L	0	Standard
Mg	24	1673.4	12.7	**1.1869**	0.165	13.9	mg/L	32	Standard
K	39	150.0	20.3	**0.3058**	0.084	27.6	mg/L	33	Standard
Ca	43	998.4	9.6	**47.1310**	4.705	10.0	mg/L	58	Standard
Fe	54	171114.0	2.0	**76.0317**	2.175	2.9	mg/L	213	Standard
Fe	57	46676.8	1.1	**79.5423**	1.546	1.9	mg/L	132	Standard
Sc-1	45	72035.8	0.8				mg/L	56654	Standard
Cl	35	663406.6	1.3				ug/L	93221	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	4570.7	0.9				ug/L	2707	Standard
P	31	46549.7	1.8				ug/L	24082	Standard
S	34	4369.0	3.0				ug/L	3865	Standard
Sr	88	736.7	5.8				ug/L	43	Standard
C	12	303.3	16.9				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	120655.2	1.2				mg/L	20	Standard
Ho-1	165	76713.7	0.6				mg/L	5	Standard
Er	166	64256.0	2.3				mg/L	10	Standard
I	127	12892.2	3.8				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		190.180	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		105.031	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.993
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.922
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Ni 60 Upper, S, EEE	Ni	60
Zn 66 Upper, S, EEE	Zn	66

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Method 6020 - Summary Report

Sample ID: L1606040007
Sample Date/Time: Monday, June 13, 2016 14:01:09
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	144637.7	3.6				ug/L	84319	Standard
	Be	9	2271.8	5.0	**1.1217**	0.034	3.0	ug/L	7	Standard
	Al	27	14785046.5	4.1	**45.3644**	1.071	2.4	ug/L	1022	Standard
	Sc	45	59998.6	2.3				ug/L	56654	Standard
	Ti	47	162.3	3.7	**0.1525**	0.012	7.9	ug/L	114	Standard
	V	51	2237.6	3.7	**0.0573**	0.008	14.6	ug/L	1609	Standard
	Cr	52	21092.7	2.3	**1.2200**	0.029	2.4	ug/L	8548	Standard
	Cr	53	2155.2	5.8	**1.0230**	0.087	8.5	ug/L	925	Standard
	Mn	55	3790508.0	0.2	**476.8649**	3.450	0.7	ug/L	1051	Standard
	Co	59	179362.4	0.7	**19.7743**	0.280	1.4	ug/L	178	Standard
	Ni	60	84139.7	2.1	**33.3659**	0.442	1.3	ug/L	312	Standard
	Cu	65	23498.5	1.3	**9.4963**	0.056	0.6	ug/L	233	Standard
	Zn	66	104790.8	0.9	**74.1677**	0.805	1.1	ug/L	606	Standard
>	**Ge**	72	652331.5	0.9				ug/L	641816	Standard
	As	75	223.4	5.1	**0.2138**	0.008	3.6	ug/L	-21	Standard
	Se	82	88.2	3.3	**0.4326**	0.017	4.0	ug/L	23	Standard
	Se-1	77	102.7	3.0	**0.2030**	0.026	13.0	ug/L	86	Standard
>	**Ga**	71	390.0	7.1				mg/L	152	Standard
	Rb	85	36923.3	1.1				ug/L	18	Standard
	Y	89	736261.6	0.7				ug/L	578199	Standard
>	**Rh**	103	140.0	25.8				ug/L	20	Standard
	Mo	98	54.1	25.5	**0.0010**	0.004	391.5	ug/L	19	Standard
	Ag	107	181.0	67.5	**0.0049**	0.013	271.6	ug/L	113	Standard
	Cd	111	592.2	12.0	**0.2060**	0.023	10.9	mg/L	3	Standard
	Cd	114	1504.4	15.0	**0.2116**	0.029	13.8	ug/L	8	Standard
>	**In**	115	853374.1	1.4				ug/L	797687	Standard
	Sn	118	1268.4	5.1	**0.0713**	0.008	11.9	ug/L	620	Standard
	Sb	123	240.9	34.7	**0.0297**	0.013	45.3	ug/L	113	Standard
	Ba	135	19839.3	1.0	**7.5073**	0.076	1.0	ug/L	48	Standard
	Ce	140	141817.3	0.7				ug/L	33	Standard
>	**Tb**	159	1286046.5	1.7				ug/L	1160331	Standard
	Ho	165	10662.1	3.0				ug/L	5	Standard
	Tl	203	1150.0	17.8	**0.1003**	0.018	17.5	ug/L	15	Standard
	Tl	205	1008.4	7.2	**0.0919**	0.007	7.9	ug/L	15	Standard
	Pb	206	3084.6	1.6	**0.4278**	0.005	1.1	ug/L	289	Standard
	Pb	207	2626.9	1.7	**0.3984**	0.010	2.6	ug/L	250	Standard
	Pb	208	11621.1	1.1	**0.4004**	0.006	1.5	ug/L	1113	Standard
	U	238	5018.2	2.4	**0.5255**	0.018	3.5	ug/L	3	Standard
>	**Bi**	209	724066.0	1.2				ug/L	670731	Standard

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Na	23	5.0	0.0	**-12.4600**	0.441	3.5	mg/L	0	Standard
Mg	24	563.3	9.2	**0.4604**	0.053	11.5	mg/L	32	Standard
K	39	181.7	20.7	**0.5037**	0.127	25.1	mg/L	33	Standard
Ca	43	785.0	7.1	**44.3714**	4.409	9.9	mg/L	58	Standard
Fe	54	6216.2	3.6	**3.1951**	0.197	6.2	mg/L	213	Standard
Fe	57	2021.8	3.9	**3.8469**	0.071	1.9	mg/L	132	Standard
> **Sc-1**	45	59998.6	2.3				mg/L	56654	Standard
Cl	35	299210.9	0.2				ug/L	93221	Standard
Kr	83	2.0	0.0				ug/L	1	Standard
Br	81	5187.6	2.9				ug/L	2707	Standard
P	31	29373.5	2.1				ug/L	24082	Standard
S	34	3773.8	2.3				ug/L	3865	Standard
Sr	88	728.4	7.3				ug/L	43	Standard
C	12	290.0	18.2				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	16811.7	2.4				mg/L	20	Standard
Ho-1	165	10662.1	3.0				mg/L	5	Standard
Er	166	9146.1	3.3				mg/L	10	Standard
I	127	17840.5	5.8				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		171.536	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.638	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.981
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.952
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606040008
Sample Date/Time: Monday, June 13, 2016 14:04:21
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	143080.9	2.1				ug/L	84319	Standard
	Be	9	2495.2	3.3	**1.2465**	0.025	2.0	ug/L	7	Standard
	Al	27	14826742.9	0.4	**46.0017**	1.191	2.6	ug/L	1022	Standard
	Sc	45	60791.7	2.1				ug/L	56654	Standard
	Ti	47	183.7	5.1	**0.1915**	0.020	10.3	ug/L	114	Standard
	V	51	2733.1	8.6	**0.0986**	0.025	25.8	ug/L	1609	Standard
	Cr	52	23742.9	1.2	**1.4108**	0.028	2.0	ug/L	8548	Standard
	Cr	53	2301.8	3.2	**1.0855**	0.063	5.8	ug/L	925	Standard
	Mn	55	3977003.1	1.3	**484.7410**	11.360	2.3	ug/L	1051	Standard
	Co	59	193649.9	1.7	**20.6841**	0.507	2.5	ug/L	178	Standard
	Ni	60	90437.8	1.1	**34.7518**	0.510	1.5	ug/L	312	Standard
	Cu	65	25288.1	1.2	**9.9052**	0.145	1.5	ug/L	233	Standard
	Zn	66	116897.9	0.5	**80.1947**	0.889	1.1	ug/L	606	Standard
>	**Ge**	72	673384.7	1.0				ug/L	641816	Standard
	As	75	281.1	9.8	**0.2487**	0.019	7.4	ug/L	-21	Standard
	Se	82	80.7	2.4	**0.3665**	0.008	2.1	ug/L	23	Standard
	Se-1	77	98.0	6.2	**0.1221**	0.057	46.9	ug/L	86	Standard
>	**Ga**	71	518.3	11.4				mg/L	152	Standard
	Rb	85	38523.9	0.8				ug/L	18	Standard
	Y	89	757826.2	0.1				ug/L	578199	Standard
>	**Rh**	103	155.0	3.2				ug/L	20	Standard
	Mo	98	90.1	25.3	**0.0116**	0.007	61.0	ug/L	19	Standard
	Ag	107	150.3	32.8	**0.0017**	0.006	339.4	ug/L	113	Standard
	Cd	111	711.9	2.2	**0.2494**	0.010	4.1	mg/L	3	Standard
	Cd	114	1762.4	8.2	**0.2495**	0.018	7.0	ug/L	8	Standard
>	**In**	115	849855.3	2.0				ug/L	797687	Standard
	Sn	118	1530.1	10.5	**0.1054**	0.024	22.4	ug/L	620	Standard
	Sb	123	248.9	21.3	**0.0313**	0.009	29.6	ug/L	113	Standard
	Ba	135	19368.0	0.5	**7.3598**	0.117	1.6	ug/L	48	Standard
	Ce	140	149290.5	2.3				ug/L	33	Standard
>	**Tb**	159	1282958.1	1.3				ug/L	1160331	Standard
	Ho	165	11607.8	1.5				ug/L	5	Standard
	Tl	203	1238.1	2.8	**0.1084**	0.003	3.0	ug/L	15	Standard
	Tl	205	1281.7	8.8	**0.1187**	0.012	9.9	ug/L	15	Standard
	Pb	206	3156.0	0.7	**0.4388**	0.002	0.4	ug/L	289	Standard
	Pb	207	2626.6	2.1	**0.3981**	0.012	3.0	ug/L	250	Standard
	Pb	208	12218.0	4.9	**0.4237**	0.027	6.3	ug/L	1113	Standard
	U	238	5482.0	3.5	**0.5740**	0.024	4.1	ug/L	3	Standard
>	**Bi**	209	724358.5	0.7				ug/L	670731	Standard

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Na	23	3.3	173.2	**-6.0745**	22.069	363.3	mg/L	0	Standard
Mg	24	671.7	4.4	**0.5473**	0.034	6.3	mg/L	32	Standard
K	39	186.7	12.4	**0.5141**	0.092	17.9	mg/L	33	Standard
Ca	43	711.7	2.9	**39.2767**	0.415	1.1	mg/L	58	Standard
Fe	54	8081.2	2.7	**4.1339**	0.164	4.0	mg/L	213	Standard
Fe	57	2703.6	6.1	**5.1764**	0.340	6.6	mg/L	132	Standard
Sc-1	45	60791.7	2.1				mg/L	56654	Standard
Cl	35	309983.4	1.6				ug/L	93221	Standard
Kr	83	1.3	86.6				ug/L	1	Standard
Br	81	5517.7	8.1				ug/L	2707	Standard
P	31	30899.8	1.6				ug/L	24082	Standard
S	34	3905.5	1.1				ug/L	3865	Standard
Sr	88	690.0	13.5				ug/L	43	Standard
C	12	270.0	16.1				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	19180.2	2.9				mg/L	20	Standard
Ho-1	165	11607.8	1.5				mg/L	5	Standard
Er	166	10143.4	6.0				mg/L	10	Standard
I	127	15187.6	6.0				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		169.690	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.919	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	106.540
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	107.995
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606040009
Sample Date/Time: Monday, June 13, 2016 14:07:32
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	241118.5	0.8				ug/L	84319	Standard
	Be	9	83420.7	0.5	**24.9241**	0.089	0.4	ug/L	7	Standard
	Al	27	69485009.8	0.7	**127.9014**	0.515	0.4	ug/L	1022	Standard
	Sc	45	112984.7	0.9				ug/L	56654	Standard
	Ti	47	31838.8	0.6	**80.7362**	0.950	1.2	ug/L	114	Standard
	V	51	34433.8	5.5	**3.3376**	0.187	5.6	ug/L	1609	Standard
	Cr	52	376636.9	1.3	**37.3213**	0.693	1.9	ug/L	8548	Standard
	Cr	53	45357.8	0.9	**37.2983**	0.122	0.3	ug/L	925	Standard
	Mn	55	66562072.0	1.1	**8506.5563**	52.058	0.6	ug/L	1051	Standard
	Co	59	4976449.1	0.7	**557.7470**	2.195	0.4	ug/L	178	Standard
	Ni	60	1951788.4	2.3	**789.0452**	20.454	2.6	ug/L	312	Standard
	Cu	65	230346.5	0.6	**95.4693**	0.781	0.8	ug/L	233	Standard
	Zn	66	4295984.0	1.3	**3109.4991**	50.188	1.6	ug/L	606	Standard
>	**Ge**	72	642304.3	0.6				ug/L	641816	Standard
	As	75	5393.1	2.4	**3.9718**	0.117	2.9	ug/L	-21	Standard
	Se	82	938.5	2.4	**6.1535**	0.141	2.3	ug/L	23	Standard
	Se-1	77	660.3	3.3	**6.1431**	0.193	3.1	ug/L	86	Standard
>	**Ga**	71	12276.6	3.8				mg/L	152	Standard
	Rb	85	102629.8	1.5				ug/L	18	Standard
	Y	89	6872953.3	0.5				ug/L	578199	Standard
>	**Rh**	103	398.3	9.4				ug/L	20	Standard
	Mo	98	122527.6	1.0	**38.9999**	0.658	1.7	ug/L	19	Standard
	Ag	107	362.3	10.3	**0.0291**	0.004	14.8	ug/L	113	Standard
	Cd	111	13971.2	1.2	**5.4215**	0.110	2.0	mg/L	3	Standard
	Cd	114	35164.3	0.6	**5.5177**	0.076	1.4	ug/L	8	Standard
>	**In**	115	772693.7	1.0				ug/L	797687	Standard
	Sn	118	1798.4	3.5	**0.1618**	0.010	6.3	ug/L	620	Standard
	Sb	123	837.9	2.2	**0.1430**	0.005	3.3	ug/L	113	Standard
	Ba	135	150520.7	1.3	**63.1005**	1.407	2.2	ug/L	48	Standard
	Ce	140	4698578.1	1.7				ug/L	33	Standard
>	**Tb**	159	1706421.0	1.5				ug/L	1160331	Standard
	Ho	165	540817.8	1.7				ug/L	5	Standard
	Tl	203	2115.8	3.7	**0.2085**	0.009	4.3	ug/L	15	Standard
	Tl	205	1991.8	5.8	**0.2085**	0.013	6.4	ug/L	15	Standard
	Pb	206	34722.7	1.4	**5.9464**	0.119	2.0	ug/L	289	Standard
	Pb	207	28841.1	0.7	**5.4414**	0.058	1.1	ug/L	250	Standard
	Pb	208	125475.1	0.7	**5.3642**	0.043	0.8	ug/L	1113	Standard
	U	238	52135.9	0.8	**6.0450**	0.082	1.4	ug/L	3	Standard
>	**Bi**	209	655885.7	0.6				ug/L	670731	Standard

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Na	23	38.3	39.8	**-71.1539**	30.776	43.3	mg/L	0	Standard
Mg	24	5686.1	1.0	**2.6078**	0.033	1.3	mg/L	32	Standard
K	39	793.4	7.3	**1.3393**	0.118	8.8	mg/L	33	Standard
Ca	43	3600.4	2.0	**112.9119**	2.463	2.2	mg/L	58	Standard
Fe	54	205252.8	2.1	**58.1087**	1.161	2.0	mg/L	213	Standard
Fe	57	58382.3	1.2	**63.3659**	0.828	1.3	mg/L	132	Standard
> **Sc-1**	45	112984.7	0.9				mg/L	56654	Standard
Cl	35	390445.6	0.6				ug/L	93221	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	59871.6	5.4				ug/L	2707	Standard
P	31	103890.1	2.3				ug/L	24082	Standard
S	34	3902.2	6.1				ug/L	3865	Standard
Sr	88	2296.8	9.8				ug/L	43	Standard
C	12	626.7	20.2				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	848267.3	1.1				mg/L	20	Standard
Ho-1	165	540817.8	1.7				mg/L	5	Standard
Er	166	449991.7	1.1				mg/L	10	Standard
I	127	46620.1	6.2				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		285.960	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.076	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.867
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.787
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Co 59 Upper, S, EEE	Co	59
Ni 60 Upper, S, EEE	Ni	60
Zn 66 Upper, S, EEE	Zn	66

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Sample ID: L1606040010
Sample Date/Time: Monday, June 13, 2016 14:10:44
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	246529.6	0.9				ug/L	84319	Standard
	Be	9	190.0	29.3	**0.0453**	0.016	35.1	ug/L	7	Standard
	Al	27	42226569.9	1.8	**76.0255**	1.881	2.5	ug/L	1022	Standard
	Sc	45	58069.4	1.2				ug/L	56654	Standard
	Ti	47	209.0	12.9	**0.2602**	0.075	29.0	ug/L	114	Standard
	V	51	2469.3	3.9	**0.0758**	0.009	12.2	ug/L	1609	Standard
	Cr	52	13191.4	1.7	**0.4054**	0.010	2.4	ug/L	8548	Standard
	Cr	53	1173.4	9.7	**0.1935**	0.090	46.4	ug/L	925	Standard
	Mn	55	4632084.7	0.6	**571.5339**	12.496	2.2	ug/L	1051	Standard
	Co	59	124969.6	1.3	**13.5025**	0.143	1.1	ug/L	178	Standard
	Ni	60	94575.3	2.1	**36.7874**	0.203	0.6	ug/L	312	Standard
	Cu	65	3813.5	1.3	**1.4246**	0.022	1.5	ug/L	233	Standard
	Zn	66	14065.5	3.2	**9.3014**	0.216	2.3	ug/L	606	Standard
>	Ge	72	665307.9	1.9				ug/L	641816	Standard
	As	75	582.9	11.4	**0.4632**	0.053	11.5	ug/L	-21	Standard
	Se	82	332.5	6.8	**2.0071**	0.179	8.9	ug/L	23	Standard
	Se-1	77	149.7	3.8	**0.6640**	0.042	6.3	ug/L	86	Standard
>	Ga	71	371.7	20.7				mg/L	152	Standard
	Rb	85	106967.9	0.8				ug/L	18	Standard
	Y	89	605988.8	1.4				ug/L	578199	Standard
>	Rh	103	231.7	2.5				ug/L	20	Standard
	Mo	98	3100.4	1.5	**0.8866**	0.009	1.0	ug/L	19	Standard
	Ag	107	118.7	5.9	**-0.0018**	0.001	44.9	ug/L	113	Standard
	Cd	111	207.6	8.1	**0.0717**	0.006	8.5	mg/L	3	Standard
	Cd	114	558.4	13.3	**0.0782**	0.011	14.2	ug/L	8	Standard
>	In	115	846324.2	0.7				ug/L	797687	Standard
	Sn	118	1428.4	10.2	**0.0930**	0.018	19.6	ug/L	620	Standard
	Sb	123	163.5	7.9	**0.0172**	0.002	13.6	ug/L	113	Standard
	Ba	135	18188.6	0.9	**6.9375**	0.026	0.4	ug/L	48	Standard
	Ce	140	11802.9	1.3				ug/L	33	Standard
>	Tb	159	1271124.7	1.2				ug/L	1160331	Standard
	Ho	165	821.7	3.5				ug/L	5	Standard
	Tl	203	740.4	3.8	**0.0641**	0.003	4.4	ug/L	15	Standard
	Tl	205	706.7	10.3	**0.0634**	0.007	11.0	ug/L	15	Standard
	Pb	206	558.0	2.5	**0.0336**	0.002	5.8	ug/L	289	Standard
	Pb	207	498.0	3.3	**0.0321**	0.003	9.7	ug/L	250	Standard
	Pb	208	2206.4	2.0	**0.0335**	0.002	6.4	ug/L	1113	Standard
	U	238	5145.5	0.7	**0.5471**	0.004	0.8	ug/L	3	Standard
>	Bi	209	713159.0	0.5				ug/L	670731	Standard

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Na	23	20.0	86.6	**-72.7554**	69.461	95.5	mg/L	0	Standard
Mg	24	6221.3	3.3	**5.5900**	0.236	4.2	mg/L	32	Standard
K	39	905.0	13.1	**3.1256**	0.389	12.4	mg/L	33	Standard
Ca	43	1358.4	5.1	**81.9869**	4.992	6.1	mg/L	58	Standard
Fe	54	1695.3	3.6	**0.8068**	0.036	4.5	mg/L	213	Standard
Fe	57	1645.1	4.3	**3.1879**	0.189	5.9	mg/L	132	Standard
> **Sc-1**	45	58069.4	1.2				mg/L	56654	Standard
Cl	35	413082.9	0.9				ug/L	93221	Standard
Kr	83	1.3	86.6				ug/L	1	Standard
Br	81	42924.1	1.9				ug/L	2707	Standard
P	31	29603.9	3.8				ug/L	24082	Standard
S	34	4068.9	2.6				ug/L	3865	Standard
Sr	88	1051.7	6.8				ug/L	43	Standard
C	12	326.7	12.4				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	1342.7	8.9				mg/L	20	Standard
Ho-1	165	821.7	3.5				mg/L	5	Standard
Er	166	780.0	5.9				mg/L	10	Standard
I	127	28752.3	1.1				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		292.377	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.660	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.097
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.326
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606043301
Sample Date/Time: Monday, June 13, 2016 14:13:55
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	139556.7	2.5				ug/L	84319	Standard
	Be	9	20.0	50.0	**0.0001**	0.005	6248.3	ug/L	7	Standard
	Al	27	6460718.2	1.1	**20.5441**	0.385	1.9	ug/L	1022	Standard
	Sc	45	62441.7	1.3				ug/L	56654	Standard
	Ti	47	1064.4	5.3	**2.2353**	0.152	6.8	ug/L	114	Standard
	V	51	5302.4	3.4	**0.3291**	0.015	4.5	ug/L	1609	Standard
	Cr	52	22317.4	1.6	**1.1942**	0.022	1.8	ug/L	8548	Standard
	Cr	53	5162.5	3.6	**3.2250**	0.164	5.1	ug/L	925	Standard
	Mn	55	119265.0	1.9	**13.8610**	0.318	2.3	ug/L	1051	Standard
	Co	59	1823.4	5.6	**0.1664**	0.010	5.9	ug/L	178	Standard
	Ni	60	79447.8	0.7	**29.3971**	0.121	0.4	ug/L	312	Standard
	Cu	65	526894.4	0.7	**200.8397**	2.299	1.1	ug/L	233	Standard
	Zn	66	9094.1	2.0	**5.5238**	0.175	3.2	ug/L	606	Standard
>	Ge	72	698815.9	1.1				ug/L	641816	Standard
	As	75	419.2	5.3	**0.3339**	0.014	4.3	ug/L	-21	Standard
	Se	82	136.9	7.3	**0.6938**	0.053	7.7	ug/L	23	Standard
	Se-1	77	334.7	3.8	**2.3974**	0.143	5.9	ug/L	86	Standard
>	Ga	71	228.3	18.2				mg/L	152	Standard
	Rb	85	65531.4	2.1				ug/L	18	Standard
	Y	89	655183.0	2.0				ug/L	578199	Standard
>	Rh	103	105.0	26.5				ug/L	20	Standard
	Mo	98	161891.8	1.4	**44.1266**	1.333	3.0	ug/L	19	Standard
	Ag	107	8713.8	1.9	**0.8938**	0.021	2.3	ug/L	113	Standard
	Cd	111	-98.3	16.8	**-0.0345**	0.005	15.1	mg/L	3	Standard
	Cd	114	743.0	36.0	**0.0979**	0.035	36.0	ug/L	8	Standard
>	In	115	902632.4	2.1				ug/L	797687	Standard
	Sn	118	279364.5	2.3	**33.2133**	1.064	3.2	ug/L	620	Standard
	Sb	123	2471.6	1.1	**0.3764**	0.004	1.1	ug/L	113	Standard
	Ba	135	167536.3	1.6	**60.1188**	0.552	0.9	ug/L	48	Standard
	Ce	140	2181.8	7.5				ug/L	33	Standard
>	Tb	159	1326788.2	0.9				ug/L	1160331	Standard
	Ho	165	55.0					ug/L	5	Standard
	Tl	203	103.7	14.5	**0.0050**	0.001	26.4	ug/L	15	Standard
	Tl	205	100.0	5.0	**0.0030**	0.001	18.4	ug/L	15	Standard
	Pb	206	242648.0	1.0	**37.9130**	0.316	0.8	ug/L	289	Standard
	Pb	207	204741.1	0.5	**35.2729**	0.435	1.2	ug/L	250	Standard
	Pb	208	920215.5	0.7	**35.9264**	0.690	1.9	ug/L	1113	Standard
	U	238	103.0	8.6	**0.0090**	0.001	9.6	ug/L	3	Standard
>	Bi	209	724469.1	1.2				ug/L	670731	Standard

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Na	23	1.7	173.2	**0.6258**	10.464	1672.0	mg/L	0	Standard
Mg	24	106291.7	2.7	**89.2720**	1.467	1.6	mg/L	32	Standard
K	39	4429.0	2.7	**14.6946**	0.228	1.6	mg/L	33	Standard
Ca	43	183.3	12.3	**7.2438**	1.245	17.2	mg/L	58	Standard
Fe	54	276.2	7.3	**0.0127**	0.012	94.6	mg/L	213	Standard
Fe	57	295.0	15.1	**0.2774**	0.081	29.2	mg/L	132	Standard
> **Sc-1**	45	62441.7	1.3				mg/L	56654	Standard
Cl	35	277225.7	1.8				ug/L	93221	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	17797.1	1.2				ug/L	2707	Standard
P	31	32174.2	3.6				ug/L	24082	Standard
S	34	4075.5	4.7				ug/L	3865	Standard
Sr	88	233.3	17.3				ug/L	43	Standard
C	12	1023.4	7.3				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	73.2	60.0				mg/L	20	Standard
Ho-1	165	55.0					mg/L	5	Standard
Er	166	73.3	90.8				mg/L	10	Standard
I	127	112783.9	5.1				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		165.510	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.881	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.156
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.012
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, June 13, 2016 14:17:08
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	138980.2	4.1				ug/L	84319	Standard
	Be	9	102086.3	2.7	**52.9507**	1.046	2.0	ug/L	7	Standard
	Al	27	12926124.5	0.6	**41.3122**	1.467	3.6	ug/L	1022	Standard
	Sc	45	65812.7	2.3				ug/L	56654	Standard
	Ti	47	47653.5	1.3	**102.7598**	0.167	0.2	ug/L	114	Standard
	V	51	624568.8	2.1	**53.8569**	0.805	1.5	ug/L	1609	Standard
	Cr	52	598810.4	1.0	**50.7375**	0.443	0.9	ug/L	8548	Standard
	Cr	53	71724.4	2.6	**50.3868**	1.296	2.6	ug/L	925	Standard
	Mn	55	486834.1	1.6	**52.7304**	0.898	1.7	ug/L	1051	Standard
	Co	59	627025.7	2.6	**59.7039**	1.310	2.2	ug/L	178	Standard
	Ni	60	150918.3	1.1	**51.7302**	0.449	0.9	ug/L	312	Standard
	Cu	65	146939.2	1.8	**51.7064**	0.441	0.9	ug/L	233	Standard
	Zn	66	84050.5	2.0	**51.1782**	0.497	1.0	ug/L	606	Standard
>	Ge	72	755791.0	1.3				ug/L	641816	Standard
	As	75	84017.0	1.8	**51.9205**	0.888	1.7	ug/L	-21	Standard
	Se	82	9404.7	1.2	**53.5453**	1.015	1.9	ug/L	23	Standard
	Se-1	77	6111.2	1.9	**54.3010**	1.042	1.9	ug/L	86	Standard
>	Ga	71	178.3	9.8				mg/L	152	Standard
	Rb	85	1288.4	7.3				ug/L	18	Standard
	Y	89	677742.4	1.7				ug/L	578199	Standard
>	Rh	103	46.7	40.6				ug/L	20	Standard
	Mo	98	439563.5	2.5	**113.9585**	2.271	2.0	ug/L	19	Standard
	Ag	107	546295.0	0.6	**54.1829**	0.765	1.4	ug/L	113	Standard
	Cd	111	162261.0	0.2	**51.2931**	0.549	1.1	mg/L	3	Standard
	Cd	114	397137.9	0.1	**50.7654**	0.428	0.8	ug/L	8	Standard
>	In	115	948762.6	0.9				ug/L	797687	Standard
	Sn	118	480482.4	1.5	**54.3897**	1.097	2.0	ug/L	620	Standard
	Sb	123	354322.0	0.4	**52.7002**	0.340	0.6	ug/L	113	Standard
	Ba	135	146913.8	0.5	**50.1497**	0.542	1.1	ug/L	48	Standard
	Ce	140	171.7	18.5				ug/L	33	Standard
>	Tb	159	1375234.2	1.4				ug/L	1160331	Standard
	Ho	165	35.0	14.3				ug/L	5	Standard
	Tl	203	633389.4	0.8	**52.0022**	0.404	0.8	ug/L	15	Standard
	Tl	205	612855.6	0.3	**54.0491**	0.053	0.1	ug/L	15	Standard
	Pb	206	377848.7	1.0	**53.2452**	0.632	1.2	ug/L	289	Standard
	Pb	207	343134.8	0.9	**53.3181**	0.513	1.0	ug/L	250	Standard
	Pb	208	1464924.4	0.4	**51.5770**	0.348	0.7	ug/L	1113	Standard
	U	238	559539.3	1.1	**52.9638**	0.707	1.3	ug/L	3	Standard
>	Bi	209	803599.7	0.3				ug/L	670731	Standard

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Na	23	0.0		**6.6672**	0.000	0.0	mg/L	0	Standard
Mg	24	6794.9	1.6	**5.3864**	0.162	3.0	mg/L	32	Standard
K	39	963.4	10.0	**2.9363**	0.373	12.7	mg/L	33	Standard
Ca	43	121.7	23.4	**3.2789**	1.598	48.7	mg/L	58	Standard
Fe	54	10095.1	1.4	**4.7895**	0.111	2.3	mg/L	213	Standard
Fe	57	2840.3	6.9	**5.0203**	0.480	9.6	mg/L	132	Standard
> **Sc-1**	45	65812.7	2.3				mg/L	56654	Standard
Cl	35	152981.6	3.2				ug/L	93221	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	3710.5	1.7				ug/L	2707	Standard
P	31	33991.5	4.3				ug/L	24082	Standard
S	34	4634.0	3.5				ug/L	3865	Standard
Sr	88	46.7	22.3				ug/L	43	Standard
C	12	183.3	12.6				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	39.4	52.0				mg/L	20	Standard
Ho-1	165	35.0	14.3				mg/L	5	Standard
Er	166	13.3	86.6				mg/L	10	Standard
I	127	4279.0	27.8				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	105.901		
Al	27	82.624		
Sc	45			
Ti	47	102.760		
V	51	107.714		
Cr	52	101.475		
Cr	53			
Mn	55	105.461		
Co	59	119.408		
Ni	60	103.460		
Cu	65	103.413		
Zn	66	102.356		
> Ge	72		117.758	
As	75	103.841		
Se	82	107.091		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	113.958		
Ag	107	108.366		
Cd	111	102.586		
Cd	114			
In	115			118.939
Sn	118	108.779		
Sb	123	105.400		
Ba	135	100.299		
Ce	140			
Tb	159			
Ho	165			
Tl	203	104.004		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.154		
U	238	105.928		
Bi	209			119.809
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	
QC Std 6	Co	59	
QC Std 6	Mo	98	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, June 13, 2016 14:20:19
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	134721.5	2.4				ug/L	84319	Standard
	Be	9	96.7	70.2	**0.0410**	0.035	84.5	ug/L	7	Standard
	Al	27	58012.9	143.9	**0.1768**	0.267	151.0	ug/L	1022	Standard
	Sc	45	65024.3	1.8				ug/L	56654	Standard
	Ti	47	78.0	49.9	**-0.0810**	0.080	98.8	ug/L	114	Standard
	V	51	2003.9	9.8	**0.0125**	0.011	89.5	ug/L	1609	Standard
	Cr	52	10169.8	6.9	**0.0217**	0.033	150.3	ug/L	8548	Standard
	Cr	53	758.4	20.6	**-0.1984**	0.095	47.7	ug/L	925	Standard
	Mn	55	10819.8	100.5	**1.0416**	1.160	111.4	ug/L	1051	Standard
	Co	59	978.0	78.9	**0.0735**	0.072	97.4	ug/L	178	Standard
	Ni	60	898.7	123.5	**0.1839**	0.377	205.1	ug/L	312	Standard
	Cu	65	571.3	81.8	**0.1020**	0.161	157.4	ug/L	233	Standard
	Zn	66	1659.8	110.2	**0.5050**	1.109	219.6	ug/L	606	Standard
>	**Ge**	72	729051.9	3.4				ug/L	641816	Standard
	As	75	-55.2	69.3	**0.0181**	0.025	139.6	ug/L	-21	Standard
	Se	82	30.4	25.3	**0.0288**	0.045	154.6	ug/L	23	Standard
	Se-1	77	88.3	9.2	**-0.0444**	0.065	146.3	ug/L	86	Standard
>	**Ga**	71	125.0	14.4				mg/L	152	Standard
	Rb	85	96.7	113.5				ug/L	18	Standard
	Y	89	672898.0	1.5				ug/L	578199	Standard
>	**Rh**	103	13.3	57.3				ug/L	20	Standard
	Mo	98	408.6	37.7	**0.0909**	0.040	43.7	ug/L	19	Standard
	Ag	107	273.7	49.9	**0.0120**	0.013	111.9	ug/L	113	Standard
	Cd	111	50.5	102.8	**0.0140**	0.016	116.6	mg/L	3	Standard
	Cd	114	109.2	103.8	**0.0120**	0.014	120.1	ug/L	8	Standard
>	**In**	115	952198.9	0.1				ug/L	797687	Standard
	Sn	118	1521.7	8.9	**0.0833**	0.015	18.4	ug/L	620	Standard
	Sb	123	721.1	9.9	**0.0968**	0.011	11.0	ug/L	113	Standard
	Ba	135	130.3	102.2	**0.0184**	0.045	245.9	ug/L	48	Standard
	Ce	140	663.4	115.3				ug/L	33	Standard
>	**Tb**	159	1380161.3	1.8				ug/L	1160331	Standard
	Ho	165	70.0	118.9				ug/L	5	Standard
	Tl	203	207.7	93.4	**0.0125**	0.016	124.7	ug/L	15	Standard
	Tl	205	236.7	100.2	**0.0139**	0.021	147.9	ug/L	15	Standard
	Pb	206	492.0	36.1	**0.0141**	0.024	171.2	ug/L	289	Standard
	Pb	207	420.0	36.1	**0.0100**	0.023	227.1	ug/L	250	Standard
	Pb	208	1951.7	35.6	**0.0145**	0.024	162.9	ug/L	1113	Standard
	U	238	207.3	109.4	**0.0177**	0.021	119.5	ug/L	3	Standard
>	**Bi**	209	803423.2	1.4				ug/L	670731	Standard

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Na	23	0.0		**6.6672**	0.000	0.0	mg/L	0	Standard
Mg	24	78.3	101.4	**0.0298**	0.063	210.4	mg/L	32	Standard
K	39	20.0	50.0	**-0.0648**	0.031	48.4	mg/L	33	Standard
Ca	43	31.7	32.9	**-1.7011**	0.566	33.3	mg/L	58	Standard
Fe	54	335.9	58.3	**0.0354**	0.093	263.6	mg/L	213	Standard
Fe	57	141.7	17.8	**-0.0362**	0.043	119.0	mg/L	132	Standard
Sc-1	45	65024.3	1.8				mg/L	56654	Standard
Cl	35	150415.3	2.7				ug/L	93221	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	3543.7	2.1				ug/L	2707	Standard
P	31	34123.4	2.7				ug/L	24082	Standard
S	34	4979.2	2.2				ug/L	3865	Standard
Sr	88	56.7	10.2				ug/L	43	Standard
C	12	173.3	24.0				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	145.8	85.6				mg/L	20	Standard
Ho-1	165	70.0	118.9				mg/L	5	Standard
Er	166	86.7	123.4				mg/L	10	Standard
I	127	2726.9	2.6				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		113.592	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		119.370
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		119.783
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606046501
Sample Date/Time: Monday, June 13, 2016 14:23:32
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	136608.2	1.7				ug/L	84319	Standard
	Be	9	76.7	43.4	**0.0301**	0.017	57.0	ug/L	7	Standard
	Al	27	26429434.9	3.5	**85.8461**	1.597	1.9	ug/L	1022	Standard
	Sc	45	62781.5	1.1				ug/L	56654	Standard
	Ti	47	178.0	11.7	**0.1621**	0.060	37.3	ug/L	114	Standard
	V	51	2916.9	3.6	**0.1053**	0.008	8.0	ug/L	1609	Standard
	Cr	52	12471.1	1.2	**0.2736**	0.019	6.9	ug/L	8548	Standard
	Cr	53	1246.7	7.4	**0.2039**	0.097	47.4	ug/L	925	Standard
	Mn	55	289882.3	1.0	**33.8388**	1.293	3.8	ug/L	1051	Standard
	Co	59	5994.9	11.2	**0.5961**	0.086	14.5	ug/L	178	Standard
	Ni	60	7171.7	4.3	**2.5301**	0.050	2.0	ug/L	312	Standard
	Cu	65	3928.5	3.1	**1.3912**	0.020	1.5	ug/L	233	Standard
	Zn	66	6846.9	0.4	**4.0179**	0.112	2.8	ug/L	606	Standard
>	**Ge**	72	700607.4	2.8				ug/L	641816	Standard
	As	75	400.8	4.6	**0.3209**	0.011	3.3	ug/L	-21	Standard
	Se	82	155.6	14.1	**0.8058**	0.113	14.0	ug/L	23	Standard
	Se-1	77	126.0	4.1	**0.3568**	0.056	15.6	ug/L	86	Standard
>	**Ga**	71	138.3	12.7				mg/L	152	Standard
	Rb	85	16340.5	2.0				ug/L	18	Standard
	Y	89	681890.0	1.4				ug/L	578199	Standard
>	**Rh**	103	123.3	31.5				ug/L	20	Standard
	Mo	98	311.8	8.4	**0.0701**	0.006	8.8	ug/L	19	Standard
	Ag	107	131.3	2.9	**-0.0014**	0.001	39.9	ug/L	113	Standard
	Cd	111	46.9	8.6	**0.0136**	0.001	10.9	mg/L	3	Standard
	Cd	114	125.5	16.7	**0.0149**	0.003	18.4	ug/L	8	Standard
>	**In**	115	905472.2	1.3				ug/L	797687	Standard
	Sn	118	1783.4	4.5	**0.1233**	0.009	7.4	ug/L	620	Standard
	Sb	123	638.2	10.2	**0.0895**	0.011	12.8	ug/L	113	Standard
	Ba	135	18624.4	2.4	**6.6408**	0.248	3.7	ug/L	48	Standard
	Ce	140	3270.4	4.0				ug/L	33	Standard
>	**Tb**	159	1307334.7	1.4				ug/L	1160331	Standard
	Ho	165	338.3	3.7				ug/L	5	Standard
	Tl	203	181.7	13.6	**0.0122**	0.002	17.2	ug/L	15	Standard
	Tl	205	215.0	18.2	**0.0142**	0.004	25.5	ug/L	15	Standard
	Pb	206	662.3	1.7	**0.0486**	0.003	5.2	ug/L	289	Standard
	Pb	207	576.3	0.8	**0.0443**	0.000	0.4	ug/L	250	Standard
	Pb	208	2675.1	2.9	**0.0505**	0.002	4.4	ug/L	1113	Standard
	U	238	482.7	9.1	**0.0489**	0.004	9.2	ug/L	3	Standard
>	**Bi**	209	724136.1	0.9				ug/L	670731	Standard

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Na	23	5.0	0.0	**-11.6074**	0.210	1.8	mg/L	0	Standard
Mg	24	89240.5	2.3	**74.5507**	1.692	2.3	mg/L	32	Standard
K	39	225.0	6.7	**0.6200**	0.046	7.4	mg/L	33	Standard
Ca	43	595.0	9.9	**31.1165**	3.057	9.8	mg/L	58	Standard
Fe	54	285.4	18.0	**0.0166**	0.027	161.4	mg/L	213	Standard
Fe	57	615.0	7.2	**0.9035**	0.098	10.8	mg/L	132	Standard
> **Sc-1**	45	62781.5	1.1				mg/L	56654	Standard
Cl	35	404291.9	2.6				ug/L	93221	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	18581.4	2.2				ug/L	2707	Standard
P	31	31880.2	4.1				ug/L	24082	Standard
S	34	4667.4	2.9				ug/L	3865	Standard
Sr	88	510.0	5.5				ug/L	43	Standard
C	12	236.7	19.1				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	600.7	5.0				mg/L	20	Standard
Ho-1	165	338.3	3.7				mg/L	5	Standard
Er	166	263.3	12.2				mg/L	10	Standard
I	127	13115.7	7.2				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		162.014	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.160	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.512
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.962
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606048101
Sample Date/Time: Monday, June 13, 2016 14:26:44
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	146565.6	1.4				ug/L	84319	Standard
	Be	9	88.3	3.3	**0.0333**	0.001	4.0	ug/L	7	Standard
	Al	27	13591611.9	1.2	**41.1568**	0.830	2.0	ug/L	1022	Standard
	Sc	45	72101.2	0.9				ug/L	56654	Standard
	Ti	47	1736.4	15.4	**3.2651**	0.516	15.8	ug/L	114	Standard
	V	51	7698.0	1.9	**0.4579**	0.018	3.9	ug/L	1609	Standard
	Cr	52	15566.3	1.6	**0.3726**	0.033	8.8	ug/L	8548	Standard
	Cr	53	2710.2	5.5	**1.0567**	0.113	10.7	ug/L	925	Standard
	Mn	55	1725153.9	2.4	**175.6787**	6.035	3.4	ug/L	1051	Standard
	Co	59	3754.1	4.1	**0.3141**	0.017	5.5	ug/L	178	Standard
	Ni	60	3422.4	2.8	**0.9759**	0.043	4.4	ug/L	312	Standard
	Cu	65	1731.1	0.5	**0.4696**	0.009	1.8	ug/L	233	Standard
	Zn	66	5300.6	5.4	**2.5325**	0.196	7.8	ug/L	606	Standard
>	**Ge**	72	805604.8	1.1				ug/L	641816	Standard
	As	75	1249.6	2.6	**0.7776**	0.013	1.7	ug/L	-21	Standard
	Se	82	374.3	1.9	**1.8538**	0.048	2.6	ug/L	23	Standard
	Se-1	77	174.7	5.3	**0.6092**	0.094	15.5	ug/L	86	Standard
>	**Ga**	71	648.3	5.2				mg/L	152	Standard
	Rb	85	12311.7	1.4				ug/L	18	Standard
	Y	89	700834.8	1.0				ug/L	578199	Standard
>	**Rh**	103	71.7	28.2				ug/L	20	Standard
	Mo	98	1016.0	2.2	**0.2355**	0.007	2.9	ug/L	19	Standard
	Ag	107	162.3	9.3	**0.0003**	0.001	498.9	ug/L	113	Standard
	Cd	111	32.3	18.7	**0.0078**	0.002	24.0	mg/L	3	Standard
	Cd	114	64.6	34.3	**0.0059**	0.003	45.3	ug/L	8	Standard
>	**In**	115	999640.3	0.8				ug/L	797687	Standard
	Sn	118	1628.4	9.2	**0.0866**	0.015	17.5	ug/L	620	Standard
	Sb	123	309.2	13.2	**0.0335**	0.005	16.3	ug/L	113	Standard
	Ba	135	92694.0	0.3	**30.0200**	0.220	0.7	ug/L	48	Standard
	Ce	140	17722.0	2.1				ug/L	33	Standard
>	**Tb**	159	1445130.9	1.6				ug/L	1160331	Standard
	Ho	165	280.0	7.8				ug/L	5	Standard
	Tl	203	257.0	11.5	**0.0159**	0.003	16.9	ug/L	15	Standard
	Tl	205	266.7	7.6	**0.0158**	0.002	11.1	ug/L	15	Standard
	Pb	206	1862.4	2.2	**0.1974**	0.001	0.7	ug/L	289	Standard
	Pb	207	1593.8	3.2	**0.1832**	0.012	6.3	ug/L	250	Standard
	Pb	208	7172.3	1.2	**0.1889**	0.007	3.7	ug/L	1113	Standard
	U	238	2628.2	1.7	**0.2374**	0.007	2.7	ug/L	3	Standard
>	**Bi**	209	836105.7	1.7				ug/L	670731	Standard

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Na	23	8.3	124.9	**-19.7621**	32.860	166.3	mg/L	0	Standard
Mg	24	8602.4	4.5	**6.2288**	0.324	5.2	mg/L	32	Standard
K	39	125.0	10.6	**0.2334**	0.038	16.3	mg/L	33	Standard
Ca	43	396.7	15.0	**16.6365**	3.208	19.3	mg/L	58	Standard
Fe	54	880.2	8.2	**0.2624**	0.035	13.5	mg/L	213	Standard
Fe	57	600.0	7.4	**0.7209**	0.068	9.5	mg/L	132	Standard
> **Sc-1**	45	72101.2	0.9				mg/L	56654	Standard
Cl	35	169376.9	1.2				ug/L	93221	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	59131.9	2.7				ug/L	2707	Standard
P	31	38343.5	1.2				ug/L	24082	Standard
S	34	4964.1	3.1				ug/L	3865	Standard
Sr	88	408.3	9.9				ug/L	43	Standard
C	12	356.7	21.2				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	435.0	7.1				mg/L	20	Standard
Ho-1	165	280.0	7.8				mg/L	5	Standard
Er	166	243.3	19.0				mg/L	10	Standard
I	127	10472.0	1.7				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		173.823	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		125.520	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		125.317
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		124.656
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ge 72 Int Std for sample	Ge	72	Rerun sample

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In 115 Int Std for sample	In	115	Rerun sample
Bi 209 Int Std for sample	Bi	209	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606048102
Sample Date/Time: Monday, June 13, 2016 14:29:55
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	316635.7	3.8				ug/L	84319	Standard
	Be	9	163.3	9.8	**0.0270**	0.003	11.1	ug/L	7	Standard
	Al	27	65453119.3	0.6	**91.8210**	3.165	3.4	ug/L	1022	Standard
	Sc	45	67865.0	2.1				ug/L	56654	Standard
	Ti	47	4156.6	0.8	**9.3631**	0.047	0.5	ug/L	114	Standard
	V	51	17992.1	5.6	**1.4987**	0.088	5.8	ug/L	1609	Standard
	Cr	52	23444.1	1.6	**1.2766**	0.028	2.2	ug/L	8548	Standard
	Cr	53	31285.6	2.1	**23.1192**	0.471	2.0	ug/L	925	Standard
	Mn	55	3770129.6	0.9	**438.1354**	3.570	0.8	ug/L	1051	Standard
	Co	59	23512.9	2.4	**2.3757**	0.059	2.5	ug/L	178	Standard
	Ni	60	24105.2	1.1	**8.7376**	0.106	1.2	ug/L	312	Standard
	Cu	65	13602.8	0.4	**5.0306**	0.009	0.2	ug/L	233	Standard
	Zn	66	13739.9	1.0	**8.5195**	0.115	1.3	ug/L	606	Standard
>	**Ge**	72	706126.1	0.4				ug/L	641816	Standard
	As	75	19631.1	1.1	**13.0245**	0.125	1.0	ug/L	-21	Standard
	Se	82	7881.8	0.5	**48.0092**	0.162	0.3	ug/L	23	Standard
	Se-1	77	3690.8	3.0	**34.7888**	0.946	2.7	ug/L	86	Standard
>	**Ga**	71	1565.1	3.1				mg/L	152	Standard
	Rb	85	164446.0	1.3				ug/L	18	Standard
	Y	89	682826.2	1.5				ug/L	578199	Standard
>	**Rh**	103	12131.5	4.6				ug/L	20	Standard
	Mo	98	20177.7	1.5	**5.6929**	0.151	2.6	ug/L	19	Standard
	Ag	107	741.4	28.8	**0.0650**	0.022	34.0	ug/L	113	Standard
	Cd	111	450.2	20.3	**0.1530**	0.029	19.1	mg/L	3	Standard
	Cd	114	1107.5	6.5	**0.1524**	0.008	5.6	ug/L	8	Standard
>	**In**	115	869938.4	1.5				ug/L	797687	Standard
	Sn	118	2145.2	11.3	**0.1764**	0.026	14.8	ug/L	620	Standard
	Sb	123	2482.0	7.0	**0.3924**	0.023	5.9	ug/L	113	Standard
	Ba	135	4033120.2	2.2	**1502.1804**	28.009	1.9	ug/L	48	Standard
	Ce	140	84478.3	3.0				ug/L	33	Standard
>	**Tb**	159	1310182.1	2.0				ug/L	1160331	Standard
	Ho	165	2770.3	8.4				ug/L	5	Standard
	Tl	203	1496.4	14.7	**0.1444**	0.022	14.9	ug/L	15	Standard
	Tl	205	1291.7	4.1	**0.1311**	0.005	3.8	ug/L	15	Standard
	Pb	206	6292.3	2.8	**1.0195**	0.027	2.7	ug/L	289	Standard
	Pb	207	5206.9	3.1	**0.9254**	0.026	2.8	ug/L	250	Standard
	Pb	208	21469.3	1.2	**0.8621**	0.012	1.4	ug/L	1113	Standard
	U	238	8090.5	1.1	**0.9255**	0.007	0.7	ug/L	3	Standard
>	**Bi**	209	663694.0	0.7				ug/L	670731	Standard

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Na	23	18.3	41.7	**-55.0671**	25.183	45.7	mg/L	0	Standard
Mg	24	475368.3	1.7	**367.5069**	1.540	0.4	mg/L	32	Standard
K	39	1913.5	3.7	**5.7687**	0.337	5.8	mg/L	33	Standard
Ca	43	1955.1	7.7	**101.8102**	9.196	9.0	mg/L	58	Standard
Fe	54	2121.0	1.2	**0.8728**	0.009	1.0	mg/L	213	Standard
Fe	57	2433.5	4.6	**4.1167**	0.259	6.3	mg/L	132	Standard
> **Sc-1**	45	67865.0	2.1				mg/L	56654	Standard
Cl	35	171524.4	2.1				ug/L	93221	Standard
Kr	83	1.0	0.0				ug/L	1	Standard
Br	81	1480890.1	4.0				ug/L	2707	Standard
P	31	37715.3	4.0				ug/L	24082	Standard
S	34	5060.8	3.3				ug/L	3865	Standard
Sr	88	54780.6	2.3				ug/L	43	Standard
C	12	280.0	23.4				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	4689.5	1.0				mg/L	20	Standard
Ho-1	165	2770.3	8.4				mg/L	5	Standard
Er	166	2253.5	3.8				mg/L	10	Standard
I	127	1077170.4	13.1				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		375.521	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.020	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	109.058	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.951	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606049201
Sample Date/Time: Monday, June 13, 2016 14:33:06
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	227506.4	3.0				ug/L	84319	Standard
	Be	9	35.0	14.3	**0.0009**	0.002	176.5	ug/L	7	Standard
	Al	27	24076857.6	1.5	**46.9780**	0.760	1.6	ug/L	1022	Standard
	Sc	45	73087.5	1.4				ug/L	56654	Standard
	Ti	47	172.7	13.6	**0.1200**	0.050	42.0	ug/L	114	Standard
	V	51	3536.3	24.4	**0.1393**	0.073	52.4	ug/L	1609	Standard
	Cr	52	14542.0	0.9	**0.3696**	0.003	0.7	ug/L	8548	Standard
	Cr	53	20178.4	2.2	**13.6593**	0.236	1.7	ug/L	925	Standard
	Mn	55	466754.8	1.4	**50.6466**	0.313	0.6	ug/L	1051	Standard
	Co	59	2907.3	3.3	**0.2560**	0.007	2.7	ug/L	178	Standard
	Ni	60	10049.3	3.2	**3.3324**	0.108	3.3	ug/L	312	Standard
	Cu	65	1747.8	1.9	**0.5144**	0.007	1.3	ug/L	233	Standard
	Zn	66	4509.0	1.5	**2.2513**	0.022	1.0	ug/L	606	Standard
>	**Ge**	72	754266.8	0.8				ug/L	641816	Standard
	As	75	26399.5	7.6	**16.3837**	1.237	7.6	ug/L	-21	Standard
	Se	82	11152.7	7.8	**63.6483**	4.966	7.8	ug/L	23	Standard
	Se-1	77	2245.2	2.8	**19.4413**	0.702	3.6	ug/L	86	Standard
>	**Ga**	71	118.3	6.5				mg/L	152	Standard
	Rb	85	280451.2	2.5				ug/L	18	Standard
	Y	89	712015.9	0.3				ug/L	578199	Standard
>	**Rh**	103	14907.3	3.4				ug/L	20	Standard
	Mo	98	347.6	5.5	**0.0749**	0.006	7.5	ug/L	19	Standard
	Ag	107	236.3	0.6	**0.0083**	0.000	3.8	ug/L	113	Standard
	Cd	111	32.7	14.5	**0.0084**	0.001	17.1	mg/L	3	Standard
	Cd	114	37.3	70.4	**0.0028**	0.003	118.1	ug/L	8	Standard
>	**In**	115	955135.7	0.8				ug/L	797687	Standard
	Sn	118	908.4	3.0	**0.0137**	0.002	16.5	ug/L	620	Standard
	Sb	123	415.8	8.5	**0.0513**	0.005	10.4	ug/L	113	Standard
	Ba	135	3904358.9	1.3	**1324.4741**	16.181	1.2	ug/L	48	Standard
	Ce	140	298.3	3.9				ug/L	33	Standard
>	**Tb**	159	1361720.3	1.2				ug/L	1160331	Standard
	Ho	165	16.7	34.6				ug/L	5	Standard
	Tl	203	5113.2	0.3	**0.4846**	0.007	1.5	ug/L	15	Standard
	Tl	205	5299.3	3.7	**0.5374**	0.013	2.5	ug/L	15	Standard
	Pb	206	647.7	7.0	**0.0513**	0.008	15.5	ug/L	289	Standard
	Pb	207	538.3	4.8	**0.0423**	0.004	9.4	ug/L	250	Standard
	Pb	208	2286.7	1.3	**0.0397**	0.002	6.1	ug/L	1113	Standard
	U	238	6.7	37.7	**-0.0010**	0.000	26.7	ug/L	3	Standard
>	**Bi**	209	690118.5	1.5				ug/L	670731	Standard

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Na	23	16.7	34.6	**-45.5642**	17.807	39.1	mg/L	0	Standard
Mg	24	314123.7	2.1	**225.4614**	2.517	1.1	mg/L	32	Standard
K	39	1605.1	4.3	**4.4632**	0.250	5.6	mg/L	33	Standard
Ca	43	1660.1	3.4	**79.4805**	2.632	3.3	mg/L	58	Standard
Fe	54	1401.4	4.8	**0.4858**	0.036	7.5	mg/L	213	Standard
Fe	57	1776.8	5.4	**2.6909**	0.151	5.6	mg/L	132	Standard
> **Sc-1**	45	73087.5	1.4				mg/L	56654	Standard
Cl	35	189854.8	0.6				ug/L	93221	Standard
Kr	83	0.3	173.2				ug/L	1	Standard
Br	81	2008450.0	7.7				ug/L	2707	Standard
P	31	39691.9	0.9				ug/L	24082	Standard
S	34	5874.5	1.2				ug/L	3865	Standard
Sr	88	60217.8	1.6				ug/L	43	Standard
C	12	180.0	41.9				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	15.2	35.5				mg/L	20	Standard
Ho-1	165	16.7	34.6				mg/L	5	Standard
Er	166	30.0	57.7				mg/L	10	Standard
I	127	1219264.2	1.7				mg/L	2335	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		269.816	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		117.521	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		119.738
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.890
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606050403
Sample Date/Time: Monday, June 13, 2016 14:36:18
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	137748.4	1.4				ug/L	84319	Standard
	Be	9	120.0	30.0	**0.0525**	0.018	34.3	ug/L	7	Standard
	Al	27	25596114.1	2.0	**82.4929**	2.774	3.4	ug/L	1022	Standard
	Sc	45	82492.4	3.0				ug/L	56654	Standard
	Ti	47	1048.4	4.2	**1.7864**	0.119	6.7	ug/L	114	Standard
	V	51	10260.4	1.3	**0.6317**	0.003	0.6	ug/L	1609	Standard
	Cr	52	659714.0	1.6	**50.2852**	0.099	0.2	ug/L	8548	Standard
	Cr	53	90291.7	2.8	**57.1675**	1.011	1.8	ug/L	925	Standard
	Mn	55	420449.2	1.1	**40.9508**	1.083	2.6	ug/L	1051	Standard
	Co	59	15239.3	0.9	**1.2848**	0.021	1.6	ug/L	178	Standard
	Ni	60	100948.9	0.7	**31.0853**	0.313	1.0	ug/L	312	Standard
	Cu	65	3069.6	2.8	**0.8712**	0.043	4.9	ug/L	233	Standard
	Zn	66	17675.6	0.9	**9.2570**	0.088	0.9	ug/L	606	Standard
>	**Ge**	72	839972.2	1.6				ug/L	641816	Standard
	As	75	782.3	21.8	**0.4896**	0.101	20.6	ug/L	-21	Standard
	Se	82	392.2	2.6	**1.8645**	0.075	4.0	ug/L	23	Standard
	Se-1	77	670.7	0.9	**4.5778**	0.091	2.0	ug/L	86	Standard
>	**Ga**	71	168.3	6.2				mg/L	152	Standard
	Rb	85	26686.8	1.9				ug/L	18	Standard
	Y	89	767145.4	0.7				ug/L	578199	Standard
>	**Rh**	103	273.3	7.6				ug/L	20	Standard
	Mo	98	2049.1	1.6	**0.4698**	0.006	1.2	ug/L	19	Standard
	Ag	107	180.0	11.3	**0.0013**	0.002	155.3	ug/L	113	Standard
	Cd	111	1058.9	0.4	**0.3033**	0.003	0.9	mg/L	3	Standard
	Cd	114	2520.3	8.0	**0.2918**	0.023	8.0	ug/L	8	Standard
>	**In**	115	1040609.6	1.1				ug/L	797687	Standard
	Sn	118	1860.1	8.5	**0.1038**	0.018	17.5	ug/L	620	Standard
	Sb	123	287.0	4.6	**0.0288**	0.002	7.5	ug/L	113	Standard
	Ba	135	1148690.2	1.1	**357.6706**	5.904	1.7	ug/L	48	Standard
	Ce	140	9824.9	1.9				ug/L	33	Standard
>	**Tb**	159	1461184.5	0.9				ug/L	1160331	Standard
	Ho	165	413.3	19.4				ug/L	5	Standard
	Tl	203	313.3	3.5	**0.0211**	0.001	3.8	ug/L	15	Standard
	Tl	205	333.3	0.9	**0.0224**	0.000	1.4	ug/L	15	Standard
	Pb	206	1199.4	4.1	**0.1127**	0.006	5.7	ug/L	289	Standard
	Pb	207	923.7	3.9	**0.0874**	0.005	5.8	ug/L	250	Standard
	Pb	208	4562.3	2.2	**0.1054**	0.003	2.8	ug/L	1113	Standard
	U	238	247.3	9.2	**0.0214**	0.002	9.6	ug/L	3	Standard
>	**Bi**	209	810049.0	0.4				ug/L	670731	Standard

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Na	23	1.7	173.2	**2.0790**	7.947	382.3	mg/L	0	Standard
Mg	24	68625.1	0.2	**43.6401**	1.242	2.8	mg/L	32	Standard
K	39	160.0	22.5	**0.2750**	0.082	29.9	mg/L	33	Standard
Ca	43	175.0	5.7	**4.2713**	0.313	7.3	mg/L	58	Standard
Fe	54	1007.0	8.5	**0.2617**	0.022	8.3	mg/L	213	Standard
Fe	57	440.0	7.5	**0.3528**	0.039	11.1	mg/L	132	Standard
> **Sc-1**	45	82492.4	3.0				mg/L	56654	Standard
Cl	35	175671.2	3.1				ug/L	93221	Standard
Kr	83	2.3	49.5				ug/L	1	Standard
Br	81	60872.1	1.5				ug/L	2707	Standard
P	31	62614.1	2.1				ug/L	24082	Standard
S	34	5329.3	2.3				ug/L	3865	Standard
Sr	88	838.4	3.6				ug/L	43	Standard
C	12	313.3	24.8				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	66.1				mg/L	0	Standard
Dy	164	484.2	24.9				mg/L	20	Standard
Ho-1	165	413.3	19.4				mg/L	5	Standard
Er	166	330.0	19.9				mg/L	10	Standard
I	127	369435.6	7.4				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		163.366	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		130.874	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		130.453
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		120.771
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ge 72 Int Std for sample	Ge	72	Rerun sample
In 115 Int Std for sample	In	115	Rerun sample

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Ba 135 Upper, S, EEE	Ba	135	
Bi 209 Int Std for sample	Bi	209	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606051901
Sample Date/Time: Monday, June 13, 2016 14:39:29
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	142361.0	2.8				ug/L	84319	Standard
	Be	9	55.0	15.7	**0.0177**	0.005	27.1	ug/L	7	Standard
	Al	27	30331548.3	3.0	**94.5556**	0.376	0.4	ug/L	1022	Standard
	Sc	45	81711.4	0.9				ug/L	56654	Standard
	Ti	47	4194.9	2.2	**7.4518**	0.045	0.6	ug/L	114	Standard
	V	51	8328.4	1.3	**0.4454**	0.013	3.0	ug/L	1609	Standard
	Cr	52	21617.4	1.9	**0.6977**	0.055	7.8	ug/L	8548	Standard
	Cr	53	6769.8	3.8	**3.3446**	0.107	3.2	ug/L	925	Standard
	Mn	55	119188.7	1.7	**10.8527**	0.235	2.2	ug/L	1051	Standard
	Co	59	3658.4	2.6	**0.2747**	0.006	2.1	ug/L	178	Standard
	Ni	60	6529.7	0.9	**1.7795**	0.040	2.2	ug/L	312	Standard
	Cu	65	134804.0	0.7	**40.2943**	0.382	0.9	ug/L	233	Standard
	Zn	66	54326.2	1.1	**27.8762**	0.174	0.6	ug/L	606	Standard
>	**Ge**	72	889360.6	1.7				ug/L	641816	Standard
	As	75	557.8	6.4	**0.3466**	0.018	5.2	ug/L	-21	Standard
	Se	82	315.6	2.7	**1.3801**	0.034	2.4	ug/L	23	Standard
	Se-1	77	460.0	2.4	**2.6583**	0.059	2.2	ug/L	86	Standard
>	**Ga**	71	328.3	16.3				mg/L	152	Standard
	Rb	85	123748.4	1.4				ug/L	18	Standard
	Y	89	768617.0	2.1				ug/L	578199	Standard
>	**Rh**	103	105.0	0.0				ug/L	20	Standard
	Mo	98	1581.2	2.6	**0.3463**	0.013	3.7	ug/L	19	Standard
	Ag	107	329.7	7.3	**0.0138**	0.002	16.8	ug/L	113	Standard
	Cd	111	73.0	8.4	**0.0184**	0.002	8.4	mg/L	3	Standard
	Cd	114	206.0	10.3	**0.0213**	0.002	10.2	ug/L	8	Standard
>	**In**	115	1078076.9	1.2				ug/L	797687	Standard
	Sn	118	3565.4	7.1	**0.2674**	0.029	10.8	ug/L	620	Standard
	Sb	123	456.0	0.7	**0.0496**	0.001	1.7	ug/L	113	Standard
	Ba	135	41722.4	0.1	**12.5149**	0.154	1.2	ug/L	48	Standard
	Ce	140	1230.1	12.8				ug/L	33	Standard
>	**Tb**	159	1535596.5	1.1				ug/L	1160331	Standard
	Ho	165	63.3	9.1				ug/L	5	Standard
	Tl	203	122.0	7.5	**0.0048**	0.001	16.5	ug/L	15	Standard
	Tl	205	80.0	10.8	**-0.0003**	0.001	217.5	ug/L	15	Standard
	Pb	206	3267.0	0.7	**0.3671**	0.002	0.5	ug/L	289	Standard
	Pb	207	2753.9	0.5	**0.3373**	0.003	0.8	ug/L	250	Standard
	Pb	208	12321.3	1.7	**0.3438**	0.007	2.1	ug/L	1113	Standard
	U	238	2740.6	1.1	**0.2359**	0.004	1.6	ug/L	3	Standard
>	**Bi**	209	877054.4	1.2				ug/L	670731	Standard

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Na	23	8.3	124.9	**-16.5602**	28.935	174.7	mg/L	0	Standard
Mg	24	59160.3	0.9	**37.9552**	0.168	0.4	mg/L	32	Standard
K	39	1481.7	9.0	**3.6632**	0.371	10.1	mg/L	33	Standard
Ca	43	410.0	16.8	**14.8399**	2.983	20.1	mg/L	58	Standard
Fe	54	792.8	7.7	**0.1819**	0.025	13.6	mg/L	213	Standard
Fe	57	571.7	7.1	**0.5577**	0.056	10.0	mg/L	132	Standard
> **Sc-1**	45	81711.4	0.9				mg/L	56654	Standard
Cl	35	231206.6	2.2				ug/L	93221	Standard
Kr	83	2.0	0.0				ug/L	1	Standard
Br	81	36046.2	2.5				ug/L	2707	Standard
P	31	44680.8	0.3				ug/L	24082	Standard
S	34	5404.3	1.8				ug/L	3865	Standard
Sr	88	303.3	4.8				ug/L	43	Standard
C	12	713.4	4.9				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	63.3	9.1				mg/L	0	Standard
Dy	164	74.0	14.9				mg/L	20	Standard
Ho-1	165	63.3	9.1				mg/L	5	Standard
Er	166	56.7	20.4				mg/L	10	Standard
I	127	54074.7	2.3				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		168.836	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		138.569	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		135.150
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		130.761
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ge 72 Int Std for sample	Ge	72	Rerun sample
In 115 Int Std for sample	In	115	Rerun sample

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Bi 209 Int Std for sample	Bi	209	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, June 13, 2016 14:42:42
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	133287.3	2.6				ug/L	84319	Standard
	Be	9	107725.0	2.1	**58.2431**	0.566	1.0	ug/L	7	Standard
	Al	27	14441189.3	1.7	**48.0893**	0.643	1.3	ug/L	1022	Standard
	Sc	45	77601.7	3.0				ug/L	56654	Standard
	Ti	47	56148.5	1.9	**104.0411**	2.460	2.4	ug/L	114	Standard
	V	51	728258.4	2.1	**53.9631**	1.473	2.7	ug/L	1609	Standard
	Cr	52	694228.1	0.5	**50.5356**	0.430	0.9	ug/L	8548	Standard
	Cr	53	84173.2	2.1	**50.8137**	1.251	2.5	ug/L	925	Standard
	Mn	55	582456.0	2.4	**54.2048**	1.251	2.3	ug/L	1051	Standard
	Co	59	731360.1	2.4	**59.8361**	1.525	2.5	ug/L	178	Standard
	Ni	60	177455.9	0.9	**52.2629**	0.607	1.2	ug/L	312	Standard
	Cu	65	170755.1	0.4	**51.6295**	0.429	0.8	ug/L	233	Standard
	Zn	66	96061.6	0.6	**50.2513**	0.581	1.2	ug/L	606	Standard
>	**Ge**	72	879646.2	0.8				ug/L	641816	Standard
	As	75	95567.9	0.6	**50.7428**	0.336	0.7	ug/L	-21	Standard
	Se	82	10792.7	1.7	**52.7876**	0.877	1.7	ug/L	23	Standard
	Se-1	77	7138.3	3.1	**54.4957**	1.591	2.9	ug/L	86	Standard
>	**Ga**	71	81.7	9.4				mg/L	152	Standard
	Rb	85	1523.4	7.9				ug/L	18	Standard
	Y	89	767738.8	2.1				ug/L	578199	Standard
>	**Rh**	103	53.3	46.2				ug/L	20	Standard
	Mo	98	511738.3	1.5	**117.3037**	1.126	1.0	ug/L	19	Standard
	Ag	107	611775.4	0.5	**53.6438**	0.033	0.1	ug/L	113	Standard
	Cd	111	185865.4	1.5	**51.9437**	0.554	1.1	mg/L	3	Standard
	Cd	114	462051.5	1.1	**52.2176**	0.350	0.7	ug/L	8	Standard
>	**In**	115	1073071.8	0.5				ug/L	797687	Standard
	Sn	118	547917.9	0.4	**54.8360**	0.442	0.8	ug/L	620	Standard
	Sb	123	396944.4	0.5	**52.1987**	0.246	0.5	ug/L	113	Standard
	Ba	135	164198.3	0.2	**49.5548**	0.361	0.7	ug/L	48	Standard
	Ce	140	136.7	33.2				ug/L	33	Standard
>	**Tb**	159	1486211.6	2.2				ug/L	1160331	Standard
	Ho	165	18.3	15.7				ug/L	5	Standard
	Tl	203	691241.4	0.4	**52.6019**	0.919	1.7	ug/L	15	Standard
	Tl	205	686107.4	0.4	**56.0817**	0.646	1.2	ug/L	15	Standard
	Pb	206	413424.2	0.6	**53.9993**	1.052	1.9	ug/L	289	Standard
	Pb	207	379951.2	0.8	**54.7212**	0.908	1.7	ug/L	250	Standard
	Pb	208	1653042.5	2.0	**53.9557**	1.861	3.5	ug/L	1113	Standard
	U	238	623110.1	1.2	**54.6725**	1.468	2.7	ug/L	3	Standard
>	**Bi**	209	867145.5	1.5				ug/L	670731	Standard

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Na	23	1.7	173.2	**1.6710**	8.654	517.9	mg/L	0	Standard
Mg	24	7793.7	5.8	**5.2363**	0.254	4.9	mg/L	32	Standard
K	39	1080.0	11.2	**2.7758**	0.246	8.9	mg/L	33	Standard
Ca	43	100.0	18.0	**1.2477**	0.962	77.1	mg/L	58	Standard
Fe	54	12311.5	2.9	**4.9578**	0.129	2.6	mg/L	213	Standard
Fe	57	3357.0	4.7	**5.0279**	0.264	5.3	mg/L	132	Standard
Sc-1	45	77601.7	3.0				mg/L	56654	Standard
Cl	35	188402.8	2.9				ug/L	93221	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	6081.2	6.0				ug/L	2707	Standard
P	31	42410.9	0.9				ug/L	24082	Standard
S	34	6037.9	0.4				ug/L	3865	Standard
Sr	88	53.3	30.1				ug/L	43	Standard
C	12	150.0	11.5				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.0	48.8				mg/L	20	Standard
Ho-1	165	18.3	15.7				mg/L	5	Standard
Er	166	20.0	86.6				mg/L	10	Standard
I	127	6934.9	12.6				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	116.486		
Al	27	96.179		
Sc	45			
Ti	47	104.041		
V	51	107.926		
Cr	52	101.071		
Cr	53			
Mn	55	108.410		
Co	59	119.672		
Ni	60	104.526		
Cu	65	103.259		
Zn	66	100.503		
Ge	72		137.056	
As	75	101.486		
Se	82	105.575		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	117.304		
Ag	107	107.288		
Cd	111	103.887		
Cd	114			
> In	115			134.523
Sn	118	109.672		
Sb	123	104.397		
Ba	135	99.110		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	105.204		
Tl	205			
Pb	206			
Pb	207			
Pb	208	107.911		
U	238	109.345		
> Bi	209			129.284
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Co	59	
Ge 72 Int Std for QC Std	Ge	72	Rerun sample

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QC Std 6	Mo	98	
In 115 Int Std for QC Std	In	115	Rerun sample
Bi 209 Int Std for QC Std	Bi	209	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, June 13, 2016 14:45:53
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	133467.1	2.1				ug/L	84319	Standard
	Be	9	48.3	11.9	**0.0159**	0.003	16.1	ug/L	7	Standard
	Al	27	4856.0	59.0	**0.0059**	0.009	155.2	ug/L	1022	Standard
	Sc	45	79226.7	3.0				ug/L	56654	Standard
	Ti	47	57.0	9.8	**-0.1481**	0.010	6.5	ug/L	114	Standard
	V	51	2124.8	2.7	**-0.0088**	0.003	31.3	ug/L	1609	Standard
	Cr	52	11649.5	0.8	**-0.0226**	0.015	65.6	ug/L	8548	Standard
	Cr	53	1190.0	10.5	**-0.0277**	0.064	229.8	ug/L	925	Standard
	Mn	55	1128.0	15.7	**-0.0450**	0.014	31.3	ug/L	1051	Standard
	Co	59	250.0	18.0	**-0.0010**	0.003	310.5	ug/L	178	Standard
	Ni	60	227.0	13.4	**-0.0606**	0.008	13.1	ug/L	312	Standard
	Cu	65	295.7	6.3	**-0.0135**	0.004	27.3	ug/L	233	Standard
	Zn	66	421.3	10.0	**-0.3056**	0.017	5.5	ug/L	606	Standard
>	**Ge**	72	878773.0	2.4				ug/L	641816	Standard
	As	75	-90.1	24.3	**0.0062**	0.011	184.0	ug/L	-21	Standard
	Se	82	39.4	13.0	**0.0424**	0.021	48.6	ug/L	23	Standard
	Se-1	77	122.0	5.0	**0.0761**	0.027	35.9	ug/L	86	Standard
>	**Ga**	71	48.3	33.3				mg/L	152	Standard
	Rb	85	31.7	50.8				ug/L	18	Standard
	Y	89	779251.1	2.6				ug/L	578199	Standard
>	**Rh**	103	25.0	34.6				ug/L	20	Standard
	Mo	98	333.9	23.1	**0.0596**	0.017	29.3	ug/L	19	Standard
	Ag	107	218.7	7.6	**0.0036**	0.001	38.8	ug/L	113	Standard
	Cd	111	15.4	55.0	**0.0023**	0.002	101.0	mg/L	3	Standard
	Cd	114	46.8	78.4	**0.0032**	0.004	124.7	ug/L	8	Standard
>	**In**	115	1108508.1	0.9				ug/L	797687	Standard
	Sn	118	1673.4	16.7	**0.0737**	0.026	35.7	ug/L	620	Standard
	Sb	123	791.0	23.0	**0.0905**	0.023	25.0	ug/L	113	Standard
	Ba	135	122.7	29.0	**0.0100**	0.010	105.2	ug/L	48	Standard
	Ce	140	26.7	60.3				ug/L	33	Standard
>	**Tb**	159	1540536.3	1.7				ug/L	1160331	Standard
	Ho	165	10.0					ug/L	5	Standard
	Tl	203	128.3	33.0	**0.0050**	0.003	61.5	ug/L	15	Standard
	Tl	205	150.0	41.0	**0.0050**	0.005	96.4	ug/L	15	Standard
	Pb	206	454.7	1.9	**0.0022**	0.002	77.5	ug/L	289	Standard
	Pb	207	357.0	7.6	**-0.0056**	0.004	70.6	ug/L	250	Standard
	Pb	208	1689.7	11.6	**-0.0010**	0.006	628.0	ug/L	1113	Standard
	U	238	90.3	69.3	**0.0058**	0.005	90.2	ug/L	3	Standard
>	**Bi**	209	899677.6	1.2				ug/L	670731	Standard

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Na	23	1.7	173.2	**1.6739**	8.649	516.7	mg/L	0	Standard
Mg	24	50.0	36.1	**0.0003**	0.012	3618.9	mg/L	32	Standard
K	39	16.7	45.8	**-0.0852**	0.020	23.0	mg/L	33	Standard
Ca	43	31.7	9.1	**-2.0146**	0.128	6.4	mg/L	58	Standard
Fe	54	292.2	21.7	**-0.0114**	0.023	199.6	mg/L	213	Standard
Fe	57	106.7	14.3	**-0.1385**	0.020	14.6	mg/L	132	Standard
> **Sc-1**	45	79226.7	3.0				mg/L	56654	Standard
Cl	35	186524.0	1.9				ug/L	93221	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	5597.7	4.3				ug/L	2707	Standard
P	31	43007.6	0.9				ug/L	24082	Standard
S	34	5994.5	3.9				ug/L	3865	Standard
Sr	88	48.3	21.5				ug/L	43	Standard
C	12	150.0	24.0				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.2	6.0				mg/L	20	Standard
Ho-1	165	10.0					mg/L	5	Standard
Er	166	16.7	69.3				mg/L	10	Standard
I	127	5152.5	4.3				mg/L	2335	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		136.920	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	138.965
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	134.134
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ge 72 Int Std for QC Std	Ge	72	Rerun sample
In 115 Int Std for QC Std	In	115	Rerun sample
Bi 209 Int Std for QC Std	Bi	209	Rerun sample

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, June 13, 2016 15:46:23
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	90504.6	1.9				ug/L	84319	Standard
	Be	9	70123.7	3.8	**55.8169**	1.177	2.1	ug/L	7	Standard
	Al	27	10001449.2	1.5	**49.0421**	0.214	0.4	ug/L	1022	Standard
	Sc	45	59871.4	1.4				ug/L	56654	Standard
	Ti	47	42801.0	1.3	**97.9927**	2.264	2.3	ug/L	114	Standard
	V	51	536147.1	1.5	**49.0787**	1.239	2.5	ug/L	1609	Standard
	Cr	52	538053.0	0.9	**48.3654**	0.962	2.0	ug/L	8548	Standard
	Cr	53	65909.7	1.1	**49.1379**	0.161	0.3	ug/L	925	Standard
	Mn	55	474781.7	0.2	**54.6022**	0.516	0.9	ug/L	1051	Standard
	Co	59	545176.8	1.4	**55.1124**	0.690	1.3	ug/L	178	Standard
	Ni	60	135720.9	1.0	**49.3843**	0.397	0.8	ug/L	312	Standard
	Cu	65	132821.3	0.8	**49.6202**	0.282	0.6	ug/L	233	Standard
	Zn	66	76939.9	0.8	**49.7287**	0.522	1.1	ug/L	606	Standard
>	Ge	72	711876.1	1.1				ug/L	641816	Standard
	As	75	76000.8	0.5	**49.8668**	0.515	1.0	ug/L	-21	Standard
	Se	82	8375.9	1.0	**50.6196**	0.792	1.6	ug/L	23	Standard
	Se-1	77	5565.0	2.3	**52.4615**	0.671	1.3	ug/L	86	Standard
>	Ga	71	78.3	9.8				mg/L	152	Standard
	Rb	85	1158.4	6.0				ug/L	18	Standard
	Y	89	625056.0	0.6				ug/L	578199	Standard
>	Rh	103	46.7	44.6				ug/L	20	Standard
	Mo	98	378970.0	1.9	**108.5490**	3.410	3.1	ug/L	19	Standard
	Ag	107	463186.6	1.2	**50.7357**	0.164	0.3	ug/L	113	Standard
	Cd	111	146905.9	3.0	**51.2796**	0.803	1.6	mg/L	3	Standard
	Cd	114	358943.4	1.9	**50.6725**	0.454	0.9	ug/L	8	Standard
>	In	115	859021.8	1.5				ug/L	797687	Standard
	Sn	118	418307.4	4.2	**52.2830**	1.783	3.4	ug/L	620	Standard
	Sb	123	310700.2	1.1	**51.0398**	0.215	0.4	ug/L	113	Standard
	Ba	135	130644.9	1.7	**49.2507**	0.117	0.2	ug/L	48	Standard
	Ce	140	111.7	27.4				ug/L	33	Standard
>	Tb	159	1224198.1	1.0				ug/L	1160331	Standard
	Ho	165	8.3	124.9				ug/L	5	Standard
	Tl	203	544685.2	2.0	**50.7097**	1.077	2.1	ug/L	15	Standard
	Tl	205	531265.6	0.8	**53.1291**	0.373	0.7	ug/L	15	Standard
	Pb	206	323361.8	0.2	**51.6683**	0.149	0.3	ug/L	289	Standard
	Pb	207	294025.8	1.3	**51.8054**	0.722	1.4	ug/L	250	Standard
	Pb	208	1328408.6	1.0	**53.0360**	0.486	0.9	ug/L	1113	Standard
	U	238	489296.9	0.7	**52.5178**	0.382	0.7	ug/L	3	Standard
>	Bi	209	708674.9	0.1				ug/L	670731	Standard

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Na	23	1.7	173.2	**0.3445**	10.951	3179.0	mg/L	0	Standard
Mg	24	5949.5	2.7	**5.1806**	0.089	1.7	mg/L	32	Standard
K	39	968.4	7.6	**3.2520**	0.257	7.9	mg/L	33	Standard
Ca	43	110.0	12.0	**3.2306**	0.735	22.8	mg/L	58	Standard
Fe	54	9230.0	3.6	**4.8127**	0.152	3.1	mg/L	213	Standard
Fe	57	2478.5	0.4	**4.7975**	0.092	1.9	mg/L	132	Standard
Sc-1	45	59871.4	1.4				mg/L	56654	Standard
Cl	35	155800.1	3.0				ug/L	93221	Standard
Kr	83	3.3	17.3				ug/L	1	Standard
Br	81	3657.1	8.0				ug/L	2707	Standard
P	31	33463.6	1.6				ug/L	24082	Standard
S	34	5664.4	2.3				ug/L	3865	Standard
Sr	88	61.7	24.8				ug/L	43	Standard
C	12	126.7	24.1				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	29.5	58.7				mg/L	20	Standard
Ho-1	165	8.3	124.9				mg/L	5	Standard
Er	166	10.0					mg/L	10	Standard
I	127	1806.8	3.1				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	111.634		
Al	27	98.084		
Sc	45			
Ti	47	97.993		
V	51	98.157		
Cr	52	96.731		
Cr	53			
Mn	55	109.204		
Co	59	110.225		
Ni	60	98.769		
Cu	65	99.240		
Zn	66	99.457		
Ge	72		110.916	
As	75	99.734		
Se	82	101.239		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	108.549		
Ag	107	101.471		
Cd	111	102.559		
Cd	114			
In	115		107.689	
Sn	118	104.566		
Sb	123	102.080		
Ba	135	98.501		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.419		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.072		
U	238	105.036		
Bi	209		105.657	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Co	59	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, June 13, 2016 16:08:13
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	87532.2	2.8				ug/L	84319	Standard
	Be	9	18.3	83.3	**0.0051**	0.013	252.8	ug/L	7	Standard
	Al	27	765.0	4.0	**-0.0063**	0.000	1.7	ug/L	1022	Standard
	Sc	45	63089.5	2.5				ug/L	56654	Standard
	Ti	47	48.0	9.5	**-0.1474**	0.010	6.9	ug/L	114	Standard
	V	51	1955.8	3.5	**0.0070**	0.008	115.3	ug/L	1609	Standard
	Cr	52	10278.5	2.1	**0.0240**	0.030	124.6	ug/L	8548	Standard
	Cr	53	640.0	4.1	**-0.2878**	0.026	8.9	ug/L	925	Standard
	Mn	55	779.4	1.2	**-0.0632**	0.002	3.0	ug/L	1051	Standard
	Co	59	158.0	5.5	**-0.0060**	0.001	10.7	ug/L	178	Standard
	Ni	60	183.7	10.9	**-0.0628**	0.007	10.8	ug/L	312	Standard
	Cu	65	166.3	2.5	**-0.0428**	0.002	5.3	ug/L	233	Standard
	Zn	66	311.7	7.4	**-0.3312**	0.016	4.7	ug/L	606	Standard
>	**Ge**	72	735675.7	1.4				ug/L	641816	Standard
	As	75	-107.7	34.0	**-0.0145**	0.024	164.4	ug/L	-21	Standard
	Se	82	24.8	19.9	**-0.0055**	0.027	486.6	ug/L	23	Standard
	Se-1	77	84.7	10.9	**-0.0856**	0.084	98.6	ug/L	86	Standard
>	**Ga**	71	55.0	27.3				mg/L	152	Standard
	Rb	85	28.3	66.8				ug/L	18	Standard
	Y	89	635109.7	3.8				ug/L	578199	Standard
>	**Rh**	103	16.7	62.4				ug/L	20	Standard
	Mo	98	55.6	32.6	**0.0008**	0.005	665.2	ug/L	19	Standard
	Ag	107	113.3	2.8	**-0.0030**	0.000	13.0	ug/L	113	Standard
	Cd	111	3.2	98.6	**-0.0008**	0.001	134.6	mg/L	3	Standard
	Cd	114	23.3	141.2	**0.0012**	0.004	359.8	ug/L	8	Standard
>	**In**	115	890672.3	1.7				ug/L	797687	Standard
	Sn	118	935.0	21.5	**0.0246**	0.026	104.4	ug/L	620	Standard
	Sb	123	360.6	32.6	**0.0472**	0.020	41.3	ug/L	113	Standard
	Ba	135	34.3	22.2	**-0.0134**	0.003	19.9	ug/L	48	Standard
	Ce	140	20.0	25.0				ug/L	33	Standard
>	**Tb**	159	1253592.1	1.0				ug/L	1160331	Standard
	Ho	165	8.3	34.6				ug/L	5	Standard
	Tl	203	9.7	26.0	**-0.0035**	0.000	6.2	ug/L	15	Standard
	Tl	205	11.7	24.7	**-0.0057**	0.000	4.9	ug/L	15	Standard
	Pb	206	323.7	5.8	**-0.0051**	0.004	68.8	ug/L	289	Standard
	Pb	207	266.0	2.3	**-0.0099**	0.002	16.3	ug/L	250	Standard
	Pb	208	1256.7	4.2	**-0.0057**	0.002	26.8	ug/L	1113	Standard
	U	238	5.0	52.9	**-0.0013**	0.000	21.2	ug/L	3	Standard
>	**Bi**	209	734066.4	1.3				ug/L	670731	Standard

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Na	23	1.7	173.2	**0.4263**	10.810	2535.4	mg/L	0	Standard
Mg	24	35.0	42.9	**-0.0037**	0.012	326.9	mg/L	32	Standard
K	39	8.3	34.6	**-0.1015**	0.009	8.9	mg/L	33	Standard
Ca	43	40.0	33.1	**-1.1711**	0.716	61.2	mg/L	58	Standard
Fe	54	235.5	15.4	**-0.0093**	0.020	218.5	mg/L	213	Standard
Fe	57	126.7	14.9	**-0.0573**	0.031	54.4	mg/L	132	Standard
Sc-1	45	63089.5	2.5				mg/L	56654	Standard
Cl	35	153619.9	2.8				ug/L	93221	Standard
Kr	83	2.7	78.1				ug/L	1	Standard
Br	81	3493.7	3.1				ug/L	2707	Standard
P	31	32912.4	2.0				ug/L	24082	Standard
S	34	5227.6	5.8				ug/L	3865	Standard
Sr	88	86.7	6.7				ug/L	43	Standard
C	12	90.0	19.2				mg/L	103	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.0	0.0				mg/L	20	Standard
Ho-1	165	8.3	34.6				mg/L	5	Standard
Er	166	20.0	0.0				mg/L	10	Standard
I	127	1866.8	2.3				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.624	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.657
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.443
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Monday, June 13, 2016 21:03:54
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66760.1	1.9				ug/L	84319	Standard
	Be	9	223.3	6.8	**0.2311**	0.020	8.5	ug/L	7	Standard
	Al	27	645.0	6.9	**-0.0059**	0.000	6.1	ug/L	1022	Standard
	Sc	45	56137.2	2.3				ug/L	56654	Standard
	Ti	47	70.0	14.5	**-0.0877**	0.025	28.8	ug/L	114	Standard
	V	51	5905.9	2.0	**0.3942**	0.006	1.5	ug/L	1609	Standard
	Cr	52	18109.8	0.6	**0.8288**	0.042	5.0	ug/L	8548	Standard
	Cr	53	1408.4	8.9	**0.3456**	0.086	25.0	ug/L	925	Standard
	Mn	55	5708.1	2.7	**0.5310**	0.025	4.7	ug/L	1051	Standard
	Co	59	4282.6	1.0	**0.4267**	0.010	2.4	ug/L	178	Standard
	Ni	60	4494.0	1.9	**1.5690**	0.052	3.3	ug/L	312	Standard
	Cu	65	2291.5	0.8	**0.7845**	0.010	1.2	ug/L	233	Standard
	Zn	66	10940.9	0.5	**6.8672**	0.177	2.6	ug/L	606	Standard
>	**Ge**	72	688099.6	1.9				ug/L	641816	Standard
	As	75	481.7	8.1	**0.3804**	0.022	5.9	ug/L	-21	Standard
	Se	82	91.5	5.9	**0.4226**	0.027	6.3	ug/L	23	Standard
	Se-1	77	120.3	3.5	**0.3222**	0.020	6.3	ug/L	86	Standard
>	**Ga**	71	71.7	21.3				mg/L	152	Standard
	Rb	85	11.7	24.7				ug/L	18	Standard
	Y	89	612110.0	1.7				ug/L	578199	Standard
>	**Rh**	103	15.0	88.2				ug/L	20	Standard
	Mo	98	32.6	34.8	**-0.0050**	0.004	71.0	ug/L	19	Standard
	Ag	107	3585.1	1.4	**0.3892**	0.008	2.1	ug/L	113	Standard
	Cd	111	721.3	2.4	**0.2573**	0.010	3.9	mg/L	3	Standard
	Cd	114	1781.8	5.5	**0.2571**	0.017	6.6	ug/L	8	Standard
>	**In**	115	834926.5	1.6				ug/L	797687	Standard
	Sn	118	745.0	4.1	**0.0074**	0.005	63.2	ug/L	620	Standard
	Sb	123	2622.4	2.3	**0.4332**	0.012	2.7	ug/L	113	Standard
	Ba	135	1942.1	1.7	**0.7279**	0.017	2.3	ug/L	48	Standard
	Ce	140	11.7	65.5				ug/L	33	Standard
>	**Tb**	159	1155299.6	1.1				ug/L	1160331	Standard
	Ho	165	13.3	78.1				ug/L	5	Standard
	Tl	203	866.0	4.1	**0.0801**	0.003	3.9	ug/L	15	Standard
	Tl	205	800.0	11.9	**0.0770**	0.010	13.3	ug/L	15	Standard
	Pb	206	1647.4	1.3	**0.2209**	0.002	0.7	ug/L	289	Standard
	Pb	207	1347.4	2.0	**0.1938**	0.007	3.8	ug/L	250	Standard
	Pb	208	6237.5	1.4	**0.2070**	0.004	2.0	ug/L	1113	Standard
	U	238	3676.4	1.5	**0.4116**	0.008	1.8	ug/L	3	Standard
>	**Bi**	209	676602.1	1.2				ug/L	670731	Standard

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Na	23	0.0		**6.6672**	0.000	0.0	mg/L	0	Standard
Mg	24	35.0	28.6	**0.0000**	0.010	48535.2	mg/L	32	Standard
K	39	21.7	13.3	**-0.0483**	0.010	21.1	mg/L	33	Standard
Ca	43	43.3	24.0	**-0.6628**	0.623	94.0	mg/L	58	Standard
Fe	54	155.3	14.2	**-0.0405**	0.012	29.8	mg/L	213	Standard
Fe	57	91.7	30.0	**-0.1035**	0.058	55.6	mg/L	132	Standard
Sc-1	45	56137.2	2.3				mg/L	56654	Standard
Cl	35	148842.9	0.8				ug/L	93221	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	3387.0	6.7				ug/L	2707	Standard
P	31	22698.7	2.5				ug/L	24082	Standard
S	34	5347.6	2.8				ug/L	3865	Standard
Sr	88	53.3	14.3				ug/L	43	Standard
C	12	76.7	84.9				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.5	8.7				mg/L	20	Standard
Ho-1	165	13.3	78.1				mg/L	5	Standard
Er	166	10.0	173.2				mg/L	10	Standard
I	127	983.4	5.7				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		79.176	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.211	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.668
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.875
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, June 13, 2016 21:07:06
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68568.2	2.6				ug/L	84319	Standard
	Be	9	59421.3	0.4	**62.4740**	1.741	2.8	ug/L	7	Standard
	Al	27	9557418.6	2.6	**61.8665**	1.336	2.2	ug/L	1022	Standard
	Sc	45	58655.1	4.0				ug/L	56654	Standard
	Ti	47	44243.2	1.5	**100.8261**	1.372	1.4	ug/L	114	Standard
	V	51	556462.7	0.5	**50.7043**	0.310	0.6	ug/L	1609	Standard
	Cr	52	567968.9	0.1	**50.8618**	0.340	0.7	ug/L	8548	Standard
	Cr	53	68663.6	0.8	**50.9860**	0.158	0.3	ug/L	925	Standard
	Mn	55	548242.7	0.5	**62.7834**	0.354	0.6	ug/L	1051	Standard
	Co	59	571490.2	0.6	**57.5106**	0.370	0.6	ug/L	178	Standard
	Ni	60	145564.6	0.8	**52.7341**	0.550	1.0	ug/L	312	Standard
	Cu	65	145258.7	1.5	**54.0310**	1.031	1.9	ug/L	233	Standard
	Zn	66	81655.1	0.6	**52.5657**	0.579	1.1	ug/L	606	Standard
>	**Ge**	72	715120.0	0.5				ug/L	641816	Standard
	As	75	79969.0	0.3	**52.2268**	0.120	0.2	ug/L	-21	Standard
	Se	82	8652.4	0.6	**52.0530**	0.097	0.2	ug/L	23	Standard
	Se-1	77	5811.4	2.0	**54.5754**	1.087	2.0	ug/L	86	Standard
>	**Ga**	71	85.0	11.8				mg/L	152	Standard
	Rb	85	1123.4	4.9				ug/L	18	Standard
	Y	89	629410.1	1.3				ug/L	578199	Standard
>	**Rh**	103	26.7	47.2				ug/L	20	Standard
	Mo	98	399931.8	0.4	**115.9954**	2.107	1.8	ug/L	19	Standard
	Ag	107	473116.6	1.0	**52.4919**	1.242	2.4	ug/L	113	Standard
	Cd	111	151290.5	0.6	**53.4948**	0.704	1.3	mg/L	3	Standard
	Cd	114	370377.8	2.0	**52.9486**	0.157	0.3	ug/L	8	Standard
>	**In**	115	848289.0	1.8				ug/L	797687	Standard
	Sn	118	424966.7	1.7	**53.8018**	0.712	1.3	ug/L	620	Standard
	Sb	123	320929.0	0.8	**53.4023**	1.388	2.6	ug/L	113	Standard
	Ba	135	136105.6	0.7	**51.9685**	0.627	1.2	ug/L	48	Standard
	Ce	140	96.7	10.8				ug/L	33	Standard
>	**Tb**	159	1202880.8	1.6				ug/L	1160331	Standard
	Ho	165	13.3	21.7				ug/L	5	Standard
	Tl	203	562936.7	0.4	**53.5724**	0.348	0.7	ug/L	15	Standard
	Tl	205	529700.7	2.6	**54.1464**	1.251	2.3	ug/L	15	Standard
	Pb	206	338700.7	0.8	**55.3253**	0.613	1.1	ug/L	289	Standard
	Pb	207	306243.7	0.6	**55.1596**	0.452	0.8	ug/L	250	Standard
	Pb	208	1363084.4	0.7	**55.6308**	0.234	0.4	ug/L	1113	Standard
	U	238	501597.8	1.0	**55.0325**	0.473	0.9	ug/L	3	Standard
>	**Bi**	209	693287.7	0.3				ug/L	670731	Standard

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Na	23	1.7	173.2	**0.0073**	11.53	157401.9	mg/L	0	Standard
Mg	24	5647.7	1.9	**5.0270**	0.292	5.8	mg/L	32	Standard
K	39	1211.7	6.0	**4.1973**	0.382	9.1	mg/L	33	Standard
Ca	43	125.0	21.2	**4.3472**	1.881	43.3	mg/L	58	Standard
Fe	54	9447.7	1.7	**5.0418**	0.282	5.6	mg/L	213	Standard
Fe	57	2585.2	8.1	**5.1264**	0.386	7.5	mg/L	132	Standard
> **Sc-1**	45	58655.1	4.0				mg/L	56654	Standard
Cl	35	151905.9	1.8				ug/L	93221	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	3490.4	12.3				ug/L	2707	Standard
P	31	34477.6	4.2				ug/L	24082	Standard
S	34	5682.7	2.9				ug/L	3865	Standard
Sr	88	63.3	4.6				ug/L	43	Standard
C	12	73.3	92.8				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	22.7	53.9				mg/L	20	Standard
Ho-1	165	13.3	21.7				mg/L	5	Standard
Er	166	13.3	114.6				mg/L	10	Standard
I	127	978.4	15.1				mg/L	2335	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	124.948		
	Al	27	123.733		
	Sc	45			
	Ti	47	100.826		
	V	51	101.409		
	Cr	52	101.724		
	Cr	53			
	Mn	55	125.567		
	Co	59	115.021		
	Ni	60	105.468		
	Cu	65	108.062		
	Zn	66	105.131		
>	Ge	72		111.421	
	As	75	104.454		
	Se	82	104.106		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	115.995		
Ag	107	104.984		
Cd	111	106.990		
Cd	114			
In	115		106.344	
Sn	118	107.604		
Sb	123	106.805		
Ba	135	103.937		
Ce	140			
Tb	159			
Ho	165			
Tl	203	107.145		
Tl	205			
Pb	206			
Pb	207			
Pb	208	111.262		
U	238	110.065		
Bi	209		103.363	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	
QC Std 6	Mn	55	

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QC Std 6	Co	59
QC Std 6	Mo	98
QC Std 6	Pb	208
QC Std 6	U	238

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, June 13, 2016 21:10:18
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66733.3	1.6				ug/L	84319	Standard
	Be	9	18.3	31.5	**0.0097**	0.007	68.0	ug/L	7	Standard
	Al	27	1570.1	4.4	**0.0003**	0.000	110.6	ug/L	1022	Standard
	Sc	45	58994.7	2.9				ug/L	56654	Standard
	Ti	47	79.7	21.1	**-0.0808**	0.035	43.4	ug/L	114	Standard
	V	51	1849.4	1.9	**-0.0058**	0.004	74.8	ug/L	1609	Standard
	Cr	52	9574.0	2.9	**-0.0552**	0.028	50.1	ug/L	8548	Standard
	Cr	53	553.3	4.1	**-0.3594**	0.019	5.3	ug/L	925	Standard
	Mn	55	925.4	2.6	**-0.0490**	0.003	6.2	ug/L	1051	Standard
	Co	59	201.0	8.1	**-0.0022**	0.002	71.9	ug/L	178	Standard
	Ni	60	170.0	10.5	**-0.0687**	0.006	9.1	ug/L	312	Standard
	Cu	65	182.7	1.7	**-0.0382**	0.001	3.6	ug/L	233	Standard
	Zn	66	235.3	6.5	**-0.3824**	0.010	2.7	ug/L	606	Standard
>	**Ge**	72	750482.6	0.8				ug/L	641816	Standard
	As	75	-71.7	30.0	**0.0094**	0.014	144.5	ug/L	-21	Standard
	Se	82	31.1	6.7	**0.0281**	0.011	37.7	ug/L	23	Standard
	Se-1	77	86.3	17.4	**-0.0851**	0.142	166.8	ug/L	86	Standard
>	**Ga**	71	33.3	52.7				mg/L	152	Standard
	Rb	85	25.0	52.9				ug/L	18	Standard
	Y	89	609265.2	2.2				ug/L	578199	Standard
>	**Rh**	103	13.3	21.7				ug/L	20	Standard
	Mo	98	290.2	17.3	**0.0711**	0.015	21.1	ug/L	19	Standard
	Ag	107	142.7	8.4	**0.0011**	0.001	123.5	ug/L	113	Standard
	Cd	111	9.9	16.2	**0.0016**	0.001	34.1	mg/L	3	Standard
	Cd	114	39.6	56.2	**0.0039**	0.003	83.4	ug/L	8	Standard
>	**In**	115	833337.2	0.4				ug/L	797687	Standard
	Sn	118	1320.1	24.3	**0.0818**	0.041	50.5	ug/L	620	Standard
	Sb	123	596.8	27.9	**0.0909**	0.028	31.0	ug/L	113	Standard
	Ba	135	38.3	8.4	**-0.0110**	0.001	11.6	ug/L	48	Standard
	Ce	140	20.0	90.1				ug/L	33	Standard
>	**Tb**	159	1194168.6	1.1				ug/L	1160331	Standard
	Ho	165	8.3	34.6				ug/L	5	Standard
	Tl	203	78.3	1.5	**0.0029**	0.000	3.9	ug/L	15	Standard
	Tl	205	60.0	28.9	**-0.0008**	0.002	210.0	ug/L	15	Standard
	Pb	206	341.0	1.8	**-0.0004**	0.001	283.0	ug/L	289	Standard
	Pb	207	319.3	2.8	**0.0013**	0.001	101.7	ug/L	250	Standard
	Pb	208	1346.0	2.3	**-0.0002**	0.002	794.6	ug/L	1113	Standard
	U	238	59.7	11.9	**0.0046**	0.001	15.1	ug/L	3	Standard
>	**Bi**	209	707114.2	1.2				ug/L	670731	Standard

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Na	23	0.0		**6.6672**	0.000	0.0	mg/L	0	Standard
Mg	24	35.0	28.6	**-0.0015**	0.010	633.0	mg/L	32	Standard
K	39	15.0	33.3	**-0.0757**	0.018	23.4	mg/L	33	Standard
Ca	43	31.7	18.2	**-1.5107**	0.380	25.2	mg/L	58	Standard
Fe	54	238.7	10.4	**0.0008**	0.017	2187.0	mg/L	213	Standard
Fe	57	85.0		**-0.1265**	0.005	4.1	mg/L	132	Standard
> **Sc-1**	45	58994.7	2.9				mg/L	56654	Standard
Cl	35	149254.5	2.3				ug/L	93221	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	3373.7	6.7				ug/L	2707	Standard
P	31	33887.9	1.3				ug/L	24082	Standard
S	34	5676.1	1.8				ug/L	3865	Standard
Sr	88	36.7	67.3				ug/L	43	Standard
C	12	63.3	65.7				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.5	103.2				mg/L	20	Standard
Ho-1	165	8.3	34.6				mg/L	5	Standard
Er	166	16.7	173.2				mg/L	10	Standard
I	127	1080.0	7.1				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		116.931	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.469
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.424
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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MassCal File Name

Mass Calibration File Name default.tun
MassCal File Path C:\NexIONData\MassCal\default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Wednesday, June 15, 2016 11:49:22

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	6.975	1321	2024	0.707	
Mg	23.985	24.025	4507	2020	0.702	
Co	58.933	58.925	11690	2022	0.694	
In	114.904	114.925	22863	2028	0.698	
U	238.050	238.025	47450	2043	0.702	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	6.085
5.575	9.199
5.625	3.785
5.675	2.650
5.725	2.784
5.775	4.551
5.825	2.721
5.875	3.667
5.925	2.298
5.975	2.960
6.025	2.051
6.075	2.518
6.125	1.883
6.175	6.416
6.225	9.261
6.275	34.993
6.325	24.786
6.375	54.565
6.425	67.528
6.475	28.287
6.525	24.416
6.575	8.293
6.625	7.843
6.675	1.449
6.725	3.824
6.775	4.256
6.825	2.187

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6.875	2.362
6.925	2.244
6.975	3.853
7.025	2.385
7.075	1.497
7.125	3.271
7.175	3.067
7.225	2.717
7.275	5.711
7.325	17.986
7.375	26.438
7.425	44.721
7.475	56.845
7.525	67.711
7.575	22.017
7.625	16.667
7.675	30.619
7.725	42.127
7.775	20.000
7.825	47.650
7.875	62.828
7.925	33.503
7.975	28.284
8.025	20.963
8.075	40.745
8.125	22.017
8.175	43.241
8.225	69.869
8.275	39.123
8.325	16.090
8.375	42.592
8.425	35.355
8.475	25.913
22.525	223.607
22.575	79.820
22.625	45.426
22.675	38.846
22.725	44.963
22.775	24.306
22.825	20.328
22.875	28.384
22.925	12.448
22.975	28.221
23.025	35.590
23.075	18.864
23.125	32.660
23.175	19.197

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23.225	41.177
23.275	33.610
23.325	20.242
23.375	39.529
23.425	36.629
23.475	26.220
23.525	1.441
23.575	3.254
23.625	1.840
23.675	1.920
23.725	1.519
23.775	0.490
23.825	1.010
23.875	0.892
23.925	0.952
23.975	0.867
24.025	1.370
24.075	0.752
24.125	0.449
24.175	1.134
24.225	0.680
24.275	1.451
24.325	6.069
24.375	10.480
24.425	43.240
24.475	18.519
24.525	7.275
24.575	1.840
24.625	1.790
24.675	2.333
24.725	2.288
24.775	1.503
24.825	0.889
24.875	2.405
24.925	1.668
24.975	1.830
25.025	2.001
25.075	1.001
25.125	1.831
25.175	1.646
25.225	2.647
25.275	5.737
25.325	28.897
25.375	37.769
25.425	24.787
25.475	14.691
57.525	9.274

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57.575	4.697
57.625	3.697
57.675	1.704
57.725	2.788
57.775	1.286
57.825	2.150
57.875	1.665
57.925	2.665
57.975	2.532
58.025	2.233
58.075	1.653
58.125	2.242
58.175	2.307
58.225	1.438
58.275	9.597
58.325	24.601
58.375	42.056
58.425	11.467
58.475	2.672
58.525	4.688
58.575	3.061
58.625	2.248
58.675	1.580
58.725	1.967
58.775	1.672
58.825	2.160
58.875	2.144
58.925	2.513
58.975	1.953
59.025	2.216
59.075	2.347
59.125	2.549
59.175	2.216
59.225	4.027
59.275	14.816
59.325	28.022
59.375	48.591
59.425	45.913
59.475	15.469
59.525	6.956
59.575	8.038
59.625	4.166
59.675	3.302
59.725	2.024
59.775	3.681
59.825	2.407
59.875	3.150

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59.925	2.356
59.975	3.905
60.025	4.293
60.075	5.249
60.125	2.699
60.175	2.860
60.225	2.555
60.275	16.716
60.325	34.583
60.375	20.203
60.425	44.410
60.475	66.296
113.525	9.103
113.575	3.403
113.625	4.527
113.675	2.870
113.725	4.156
113.775	2.098
113.825	2.205
113.875	0.979
113.925	1.953
113.975	2.036
114.025	1.318
114.075	2.633
114.125	2.614
114.175	2.495
114.225	4.458
114.275	7.728
114.325	11.819
114.375	19.764
114.425	26.842
114.475	16.098
114.525	6.809
114.575	3.363
114.625	3.119
114.675	2.382
114.725	1.074
114.775	1.623
114.825	1.260
114.875	1.385
114.925	0.609
114.975	1.861
115.025	1.207
115.075	1.153
115.125	1.036
115.175	1.651
115.225	6.453

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115.275	5.674
115.325	7.932
115.375	32.810
115.425	16.723
115.475	34.585
115.525	8.547
115.575	16.462
115.625	9.844
115.675	3.172
115.725	3.113
115.775	1.916
115.825	4.169
115.875	5.175
115.925	5.005
115.975	0.626
116.025	4.094
116.075	3.969
116.125	1.868
116.175	3.143
116.225	12.221
116.275	16.944
116.325	40.074
116.375	21.254
116.425	20.494
116.475	24.786
236.525	
236.575	16.383
236.625	26.465
236.675	13.419
236.725	12.512
236.775	25.343
236.825	30.417
236.875	26.514
236.925	20.337
236.975	19.685
237.025	20.721
237.075	9.028
237.125	22.692
237.175	32.775
237.225	17.653
237.275	21.548
237.325	26.716
237.375	35.845
237.425	25.759
237.475	17.149
237.525	22.522
237.575	9.617

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237.625	4.071
237.675	4.758
237.725	4.246
237.775	1.442
237.825	2.101
237.875	1.651
237.925	1.987
237.975	1.469
238.025	1.085
238.075	0.718
238.125	0.946
238.175	0.604
238.225	1.723
238.275	1.434
238.325	0.602
238.375	1.453
238.425	3.040
238.475	3.991
238.525	10.823
238.575	23.859
238.625	20.615
238.675	15.689
238.725	8.818
238.775	30.817
238.825	22.273
238.875	14.038
238.925	14.222
238.975	23.329
239.025	24.882
239.075	12.644
239.125	4.180
239.175	17.049
239.225	31.147
239.275	18.371
239.325	18.669
239.375	17.877
239.425	16.090
239.475	14.076

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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Wednesday, June 15, 2016 12:33:46
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59894.8	1.8				ug/L	58443	Standard
	Be	9	6.7	43.3				ug/L	5	Standard
	Al	27	378.3	14.5				ug/L	385	Standard
	Sc	45	46815.6	0.8				ug/L	46031	Standard
	Ti	47	105.0	0.0				ug/L	94	Standard
	V	51	1305.3	6.5				ug/L	1280	Standard
	Cr	52	6478.7	1.9				ug/L	6381	Standard
	Cr	53	2038.5	2.1				ug/L	1957	Standard
	Mn	55	656.3	6.6				ug/L	667	Standard
	Co	59	144.3	10.9				ug/L	156	Standard
	Ni	60	174.0	16.1				ug/L	154	Standard
	Cu	65	108.7	1.9				ug/L	116	Standard
	Zn	66	110.0	4.7				ug/L	114	Standard
>	**Ge**	72	469196.8	0.5				ug/L	467488	Standard
	As	75	-28.0	48.9				ug/L	-61	Standard
	Se	82	12.5	28.7				ug/L	9	Standard
	Se-1	77	115.7	4.1				ug/L	125	Standard
>	**Ga**	71	76.7	35.9				mg/L	50	Standard
	Rb	85	15.0	0.0				ug/L	18	Standard
	Y	89	409664.9	1.3				ug/L	402730	Standard
>	**Rh**	103	10.0	50.0				ug/L	12	Standard
	Mo	98	7.6	38.4				ug/L	8	Standard
	Ag	107	69.7	15.3				ug/L	65	Standard
	Cd	111	1.7	34.9				mg/L	3	Standard
	Cd	114	3.1	74.2				ug/L	15	Standard
>	**In**	115	536217.4	0.2				ug/L	526825	Standard
	Sn	118	380.0	6.6				ug/L	368	Standard
	Sb	123	23.7	10.9				ug/L	46	Standard
	Ba	135	17.3	29.0				ug/L	16	Standard
	Ce	140	15.0	57.7				ug/L	43	Standard
>	**Tb**	159	789291.6	0.3				ug/L	771780	Standard
	Ho	165	8.3	34.6				ug/L	8	Standard
	Tl	203	19.3	13.0				ug/L	28	Standard
	Tl	205	20.0	43.3				ug/L	20	Standard
	Pb	206	194.7	2.4				ug/L	184	Standard
	Pb	207	148.0	4.7				ug/L	161	Standard
	Pb	208	728.0	3.9				ug/L	746	Standard
	U	238	3.3	45.8				ug/L	6	Standard
>	**Bi**	209	429902.5	0.7				ug/L	429329	Standard

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Na	23	0.0		mg/L	0	Standard
Mg	24	15.0	33.3	mg/L	25	Standard
K	39	43.3	33.3	mg/L	25	Standard
Ca	43	60.0	8.3	mg/L	77	Standard
Fe	54	154.2	12.8	mg/L	165	Standard
Fe	57	155.0	8.5	mg/L	205	Standard
Sc-1	45	46815.6	0.8	mg/L	46031	Standard
Cl	35	29329.0	1.2	ug/L	28530	Standard
Kr	83	2.0	86.6	ug/L	2	Standard
Br	81	1410.1	10.0	ug/L	1560	Standard
P	31	15611.4	2.2	ug/L	15481	Standard
S	34	2200.2	5.0	ug/L	2072	Standard
Sr	88	66.7	17.3	ug/L	70	Standard
C	12	40.0	66.1	mg/L	47	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	0.0		mg/L	0	Standard
Dy	164	12.7	120.8	mg/L	13	Standard
Ho-1	165	8.3	34.6	mg/L	8	Standard
Er	166	13.3	43.3	mg/L	7	Standard
I	127	1153.4	4.0	mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Wednesday, June 15, 2016 12:36:58
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59116.8	1.2				ug/L	58443	Standard
	Be	9	41.7	48.5				ug/L	5	Standard
	Al	27	6709.8	2.1				ug/L	385	Standard
	Sc	45	46795.5	2.1				ug/L	46031	Standard
	Ti	47	129.3	9.4				ug/L	94	Standard
	V	51	1699.2	6.9				ug/L	1280	Standard
	Cr	52	6943.9	1.7				ug/L	6381	Standard
	Cr	53	2026.8	3.7				ug/L	1957	Standard
	Mn	55	1065.7	4.0				ug/L	667	Standard
	Co	59	409.3	1.3				ug/L	156	Standard
	Ni	60	252.7	8.3				ug/L	154	Standard
	Cu	65	214.3	2.9				ug/L	116	Standard
	Zn	66	246.7	9.1				ug/L	114	Standard
>	**Ge**	72	466862.1	2.3				ug/L	467488	Standard
	As	75	8.2	611.9				ug/L	-61	Standard
	Se	82	18.8	46.8				ug/L	9	Standard
	Se-1	77	117.3	13.1				ug/L	125	Standard
>	**Ga**	71	60.0	16.7				mg/L	50	Standard
	Rb	85	15.0	57.7				ug/L	18	Standard
	Y	89	405698.1	0.3				ug/L	402730	Standard
>	**Rh**	103	10.0	100.0				ug/L	12	Standard
	Mo	98	190.7	6.9				ug/L	8	Standard
	Ag	107	317.3	9.2				ug/L	65	Standard
	Cd	111	84.6	13.3				mg/L	3	Standard
	Cd	114	228.9	8.3				ug/L	15	Standard
>	**In**	115	531834.4	1.9				ug/L	526825	Standard
	Sn	118	661.7	11.7				ug/L	368	Standard
	Sb	123	209.4	14.9				ug/L	46	Standard
	Ba	135	100.3	22.1				ug/L	16	Standard
	Ce	140	98.3	133.8				ug/L	43	Standard
>	**Tb**	159	782367.7	1.2				ug/L	771780	Standard
	Ho	165	8.3	34.6				ug/L	8	Standard
	Tl	203	338.0	10.8				ug/L	28	Standard
	Tl	205	296.7	12.4				ug/L	20	Standard
	Pb	206	385.3	6.7				ug/L	184	Standard
	Pb	207	348.3	2.8				ug/L	161	Standard
	Pb	208	1512.4	1.8				ug/L	746	Standard
	U	238	248.3	2.6				ug/L	6	Standard
>	**Bi**	209	430875.6	0.8				ug/L	429329	Standard

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Na	23	0.0		mg/L	0	Standard
Mg	24	28.3	20.4	mg/L	25	Standard
K	39	41.7	18.3	mg/L	25	Standard
Ca	43	55.0	27.3	mg/L	77	Standard
Fe	54	137.7	18.3	mg/L	165	Standard
Fe	57	145.0	39.8	mg/L	205	Standard
Sc-1	45	46795.5	2.1	mg/L	46031	Standard
Cl	35	29985.0	1.3	ug/L	28530	Standard
Kr	83	2.3	49.5	ug/L	2	Standard
Br	81	1570.1	10.8	ug/L	1560	Standard
P	31	16232.0	2.2	ug/L	15481	Standard
S	34	2168.5	2.3	ug/L	2072	Standard
Sr	88	40.0	21.7	ug/L	70	Standard
C	12	23.3	107.9	mg/L	47	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	0.0		mg/L	0	Standard
Dy	164	6.5	86.7	mg/L	13	Standard
Ho-1	165	8.3	34.6	mg/L	8	Standard
Er	166	3.3	173.2	mg/L	7	Standard
I	127	1193.4	4.1	mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Wednesday, June 15, 2016 12:40:10
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59981.9	3.6				ug/L	58443	Standard
	Be	9	29993.0	1.1	**50.0000**	1.351	2.7	ug/L	5	Standard
	Al	27	5732865.5	0.3	**50.0000**	1.774	3.5	ug/L	385	Standard
	Sc	45	47929.1	3.5				ug/L	46031	Standard
	Ti	47	22645.6	0.4	**100.0000**	1.162	1.2	ug/L	94	Standard
	V	51	279829.0	0.2	**50.0000**	0.702	1.4	ug/L	1280	Standard
	Cr	52	295657.6	0.9	**50.0000**	0.722	1.4	ug/L	6381	Standard
	Cr	53	36983.4	2.8	**50.0000**	1.119	2.2	ug/L	1957	Standard
	Mn	55	219931.5	1.1	**50.0000**	0.165	0.3	ug/L	667	Standard
	Co	59	239304.1	2.0	**50.0000**	0.437	0.9	ug/L	156	Standard
	Ni	60	72031.5	0.3	**50.0000**	0.569	1.1	ug/L	154	Standard
	Cu	65	70171.1	0.3	**50.0000**	0.596	1.2	ug/L	116	Standard
	Zn	66	40866.4	1.6	**50.0000**	0.857	1.7	ug/L	114	Standard
>	**Ge**	72	469614.7	1.5				ug/L	467488	Standard
	As	75	42037.0	0.5	**50.0000**	0.567	1.1	ug/L	-61	Standard
	Se	82	4311.2	1.2	**50.0000**	0.141	0.3	ug/L	9	Standard
	Se-1	77	2977.3	2.9	**50.0000**	1.306	2.6	ug/L	125	Standard
>	**Ga**	71	76.7	38.2				mg/L	50	Standard
	Rb	85	623.3	5.3				ug/L	18	Standard
	Y	89	407531.8	2.5				ug/L	402730	Standard
>	**Rh**	103	30.0	16.7				ug/L	12	Standard
	Mo	98	176109.1	1.6	**100.0000**	1.617	1.6	ug/L	8	Standard
	Ag	107	226464.6	0.7	**50.0000**	1.054	2.1	ug/L	65	Standard
	Cd	111	72737.9	1.2	**50.0000**	0.555	1.1	mg/L	3	Standard
	Cd	114	180232.2	1.6	**50.0000**	0.988	2.0	ug/L	15	Standard
>	**In**	115	538513.5	2.3				ug/L	526825	Standard
	Sn	118	204941.8	0.9	**50.0000**	0.791	1.6	ug/L	368	Standard
	Sb	123	161078.7	0.5	**50.0000**	1.144	2.3	ug/L	46	Standard
	Ba	135	68714.8	1.1	**50.0000**	0.635	1.3	ug/L	16	Standard
	Ce	140	83.3	29.6				ug/L	43	Standard
>	**Tb**	159	794334.1	1.4				ug/L	771780	Standard
	Ho	165	1.7	173.2				ug/L	8	Standard
	Tl	203	262806.6	1.4	**50.0000**	0.423	0.8	ug/L	28	Standard
	Tl	205	241330.3	1.2	**50.0000**	0.539	1.1	ug/L	20	Standard
	Pb	206	157753.7	0.5	**50.0000**	1.316	2.6	ug/L	184	Standard
	Pb	207	143572.7	0.3	**50.0000**	1.105	2.2	ug/L	161	Standard
	Pb	208	618918.2	0.5	**50.0000**	0.952	1.9	ug/L	746	Standard
	U	238	225836.4	1.1	**50.0000**	0.731	1.5	ug/L	6	Standard
>	**Bi**	209	435345.3	2.2				ug/L	429329	Standard

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Na	23	1.7	173.2	**5.0000**	8.652	173.0	mg/L	0	Standard
Mg	24	3297.0	3.4	**5.0000**	0.058	1.2	mg/L	25	Standard
K	39	1426.7	5.0	**5.0000**	0.422	8.4	mg/L	25	Standard
Ca	43	123.3	23.4	**5.0000**	2.398	48.0	mg/L	77	Standard
Fe	54	5013.1	7.8	**5.0000**	0.288	5.8	mg/L	165	Standard
Fe	57	1366.7	9.0	**5.0000**	0.683	13.7	mg/L	205	Standard
Sc-1	45	47929.1	3.5				mg/L	46031	Standard
Cl	35	30672.4	1.5				ug/L	28530	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	1486.7	6.5				ug/L	1560	Standard
P	31	18886.8	3.6				ug/L	15481	Standard
S	34	2423.5	12.3				ug/L	2072	Standard
Sr	88	56.7	39.8				ug/L	70	Standard
C	12	33.3	45.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	23.0	66.2				mg/L	13	Standard
Ho-1	165	1.7	173.2				mg/L	8	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	7708.6	4.0				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Wednesday, June 15, 2016 12:43:21
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57676.3	1.8				ug/L	58443	Standard
	Be	9	59829.6	0.4	**101.8199**	2.141	2.1	ug/L	5	Standard
	Al	27	11520319.6	0.8	**102.1690**	1.939	1.9	ug/L	385	Standard
	Sc	45	45707.2	2.2				ug/L	46031	Standard
	Ti	47	44442.1	0.7	**198.2591**	3.744	1.9	ug/L	94	Standard
	V	51	546612.7	0.7	**98.8980**	0.582	0.6	ug/L	1280	Standard
	Cr	52	579384.3	0.9	**99.5024**	1.833	1.8	ug/L	6381	Standard
	Cr	53	71307.4	1.1	**99.4897**	1.169	1.2	ug/L	1957	Standard
	Mn	55	438858.0	0.4	**99.9442**	1.656	1.7	ug/L	667	Standard
	Co	59	477240.9	0.3	**99.8392**	1.493	1.5	ug/L	156	Standard
	Ni	60	141052.9	0.8	**98.9594**	0.596	0.6	ug/L	154	Standard
	Cu	65	137671.3	0.1	**99.0462**	1.245	1.3	ug/L	116	Standard
	Zn	66	80578.0	1.0	**99.3681**	0.706	0.7	ug/L	114	Standard
>	**Ge**	72	470029.0	1.3				ug/L	467488	Standard
	As	75	82892.7	1.1	**99.2245**	0.367	0.4	ug/L	-61	Standard
	Se	82	8458.4	0.6	**99.0802**	0.701	0.7	ug/L	9	Standard
	Se-1	77	5834.8	0.6	**99.9201**	1.417	1.4	ug/L	125	Standard
>	**Ga**	71	86.7	35.3				mg/L	50	Standard
	Rb	85	1113.4	4.4				ug/L	18	Standard
	Y	89	398537.8	1.7				ug/L	402730	Standard
>	**Rh**	103	28.3	44.4				ug/L	12	Standard
	Mo	98	350338.1	0.7	**202.8726**	2.503	1.2	ug/L	8	Standard
	Ag	107	443136.9	1.3	**100.6123**	1.512	1.5	ug/L	65	Standard
	Cd	111	144216.9	0.7	**101.2703**	0.778	0.8	mg/L	3	Standard
	Cd	114	348736.1	2.2	**100.0648**	3.573	3.6	ug/L	15	Standard
>	**In**	115	520450.0	1.4				ug/L	526825	Standard
	Sn	118	400593.3	0.2	**100.6111**	1.254	1.2	ug/L	368	Standard
	Sb	123	318534.4	0.7	**101.1343**	0.726	0.7	ug/L	46	Standard
	Ba	135	135680.1	0.6	**101.0715**	0.888	0.9	ug/L	16	Standard
	Ce	140	90.0	33.8				ug/L	43	Standard
>	**Tb**	159	769703.4	0.6				ug/L	771780	Standard
	Ho	165	5.0	0.0				ug/L	8	Standard
	Tl	203	518300.6	0.2	**100.6693**	0.750	0.7	ug/L	28	Standard
	Tl	205	471865.7	1.2	**100.2348**	1.054	1.1	ug/L	20	Standard
	Pb	206	311901.1	0.8	**100.8135**	1.533	1.5	ug/L	184	Standard
	Pb	207	281780.2	1.0	**100.4457**	1.149	1.1	ug/L	161	Standard
	Pb	208	1237117.9	0.5	**101.3630**	0.942	0.9	ug/L	746	Standard
	U	238	448538.7	1.6	**101.0170**	2.354	2.3	ug/L	6	Standard
>	**Bi**	209	423608.2	0.7				ug/L	429329	Standard

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Na	23	1.7	173.2	**6.6927**	11.583	173.1	mg/L	0	Standard
Mg	24	6264.6	4.6	**10.0050**	0.675	6.7	mg/L	25	Standard
K	39	2880.3	6.8	**10.3484**	0.482	4.7	mg/L	25	Standard
Ca	43	145.0	34.0	**8.2466**	4.255	51.6	mg/L	77	Standard
Fe	54	9624.4	1.5	**10.1083**	0.339	3.3	mg/L	165	Standard
Fe	57	2636.9	2.7	**10.3424**	0.376	3.6	mg/L	205	Standard
Sc-1	45	45707.2	2.2				mg/L	46031	Standard
Cl	35	31191.4	0.8				ug/L	28530	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	1590.1	12.6				ug/L	1560	Standard
P	31	19404.1	2.0				ug/L	15481	Standard
S	34	2561.9	4.4				ug/L	2072	Standard
Sr	88	68.3	36.8				ug/L	70	Standard
C	12	40.0	66.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.7	234.8				mg/L	13	Standard
Ho-1	165	5.0	0.0				mg/L	8	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	13973.1	1.3				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998
Corr. Coef.	Ca	43	Correlation coefficient < 0.998

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Wednesday, June 15, 2016 12:46:34
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56458.3	0.3				ug/L	58443	Standard
	Be	9	30484.0	2.0	**52.9771**	1.175	2.2	ug/L	5	Standard
	Al	27	5934784.1	1.0	**53.7551**	0.718	1.3	ug/L	385	Standard
	Sc	45	46456.1	1.2				ug/L	46031	Standard
	Ti	47	24624.0	1.2	**110.8354**	0.408	0.4	ug/L	94	Standard
	V	51	286833.1	1.9	**52.3440**	0.508	1.0	ug/L	1280	Standard
	Cr	52	301449.3	0.5	**51.7899**	0.810	1.6	ug/L	6381	Standard
	Cr	53	37929.1	1.5	**52.1770**	1.142	2.2	ug/L	1957	Standard
	Mn	55	229205.8	2.7	**52.6755**	1.188	2.3	ug/L	667	Standard
	Co	59	244822.1	2.3	**51.7567**	0.742	1.4	ug/L	156	Standard
	Ni	60	73844.5	0.8	**52.3232**	0.750	1.4	ug/L	154	Standard
	Cu	65	72817.6	1.8	**52.9101**	0.258	0.5	ug/L	116	Standard
	Zn	66	43066.8	1.4	**53.5801**	0.802	1.5	ug/L	114	Standard
>	**Ge**	72	464899.7	1.6				ug/L	467488	Standard
	As	75	43179.9	0.7	**52.2807**	0.470	0.9	ug/L	-61	Standard
	Se	82	4405.0	0.6	**52.0955**	1.038	2.0	ug/L	9	Standard
	Se-1	77	3029.6	1.6	**51.4921**	0.239	0.5	ug/L	125	Standard
>	**Ga**	71	113.3	11.1				mg/L	50	Standard
	Rb	85	483.3	5.7				ug/L	18	Standard
	Y	89	396212.4	1.1				ug/L	402730	Standard
>	**Rh**	103	25.0	52.9				ug/L	12	Standard
	Mo	98	191822.5	1.1	**110.1271**	0.332	0.3	ug/L	8	Standard
	Ag	107	231879.7	1.0	**52.1956**	1.050	2.0	ug/L	65	Standard
	Cd	111	76220.8	0.9	**53.0650**	0.427	0.8	mg/L	3	Standard
	Cd	114	185005.6	0.8	**52.6130**	0.114	0.2	ug/L	15	Standard
>	**In**	115	524881.4	1.0				ug/L	526825	Standard
	Sn	118	229862.3	1.1	**57.1930**	0.913	1.6	ug/L	368	Standard
	Sb	123	162444.6	0.7	**51.1353**	0.848	1.7	ug/L	46	Standard
	Ba	135	70081.4	0.1	**51.7529**	0.549	1.1	ug/L	16	Standard
	Ce	140	91.7	12.6				ug/L	43	Standard
>	**Tb**	159	768984.7	0.4				ug/L	771780	Standard
	Ho	165	8.3	124.9				ug/L	8	Standard
	Tl	203	270475.2	0.7	**52.0339**	0.653	1.3	ug/L	28	Standard
	Tl	205	250233.6	2.4	**52.6514**	1.371	2.6	ug/L	20	Standard
	Pb	206	164463.8	0.4	**52.6210**	0.319	0.6	ug/L	184	Standard
	Pb	207	143608.7	0.9	**50.6751**	0.600	1.2	ug/L	161	Standard
	Pb	208	645002.9	2.5	**52.3136**	1.205	2.3	ug/L	746	Standard
	U	238	229515.8	1.4	**51.1958**	0.650	1.3	ug/L	6	Standard
>	**Bi**	209	427634.1	0.9				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3153.7	1.9	**4.9310**	0.085	1.7	mg/L	25	Standard
K	39	1320.1	3.6	**4.5928**	0.227	4.9	mg/L	25	Standard
Ca	43	136.7	23.2	**7.3651**	2.942	39.9	mg/L	77	Standard
Fe	54	5128.1	2.7	**5.2316**	0.173	3.3	mg/L	165	Standard
Fe	57	1470.1	2.7	**5.4065**	0.121	2.2	mg/L	205	Standard
Sc-1	45	46456.1	1.2				mg/L	46031	Standard
Cl	35	31195.4	0.7				ug/L	28530	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1446.7	5.6				ug/L	1560	Standard
P	31	20018.2	2.7				ug/L	15481	Standard
S	34	2606.9	3.4				ug/L	2072	Standard
Sr	88	55.0	24.1				ug/L	70	Standard
C	12	56.7	83.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	22.5	66.9				mg/L	13	Standard
Ho-1	165	8.3	124.9				mg/L	8	Standard
Er	166	16.7	34.6				mg/L	7	Standard
I	127	1100.0	8.5				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	105.954		
Al	27	107.510		
Sc	45			
Ti	47	110.835		
V	51	104.688		
Cr	52	103.580		
Cr	53			
Mn	55	105.351		
Co	59	103.513		
Ni	60	104.646		
Cu	65	105.820		
Zn	66	107.160		
Ge	72		99.446	
As	75	104.561		
Se	82	104.191		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	110.127		
Ag	107	104.391		
Cd	111	106.130		
Cd	114			
In	115		99.631	
Sn	118	114.386		
Sb	123	102.271		
Ba	135	103.506		
Ce	140			
Tb	159			
Ho	165			
Tl	203	104.068		
Tl	205			
Pb	206	105.242		
Pb	207	101.350		
Pb	208	104.627		
U	238	102.392		
Bi	209		99.605	
Na	23	0.100		
Mg	24	98.619		
K	39	91.856		
Ca	43	147.303		
Fe	54	104.633		
Fe	57	108.130		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Ti	47	
QC Std 1	Mo	98	
QC Std 1	Na	23	

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QC Std 1	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Wednesday, June 15, 2016 12:49:47
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	57264.7	1.0				ug/L	58443	Standard
	Be	9	25.0	40.0	**0.0234**	0.017	71.5	ug/L	5	Standard
	Al	27	3342.1	25.2	**0.0218**	0.008	34.7	ug/L	385	Standard
	Sc	45	47216.8	1.9				ug/L	46031	Standard
	Ti	47	101.0	13.1	**-0.0329**	0.051	156.3	ug/L	94	Standard
	V	51	1361.7	17.8	**-0.0139**	0.040	286.5	ug/L	1280	Standard
	Cr	52	5900.1	3.4	**-0.1417**	0.016	11.0	ug/L	6381	Standard
	Cr	53	1636.8	6.6	**-0.5341**	0.151	28.3	ug/L	1957	Standard
	Mn	55	749.4	11.8	**-0.0245**	0.017	69.1	ug/L	667	Standard
	Co	59	340.7	22.6	**0.0347**	0.015	42.8	ug/L	156	Standard
	Ni	60	194.0	16.1	**0.0072**	0.019	267.9	ug/L	154	Standard
	Cu	65	150.0	1.8	**0.0024**	0.002	86.0	ug/L	116	Standard
	Zn	66	120.3	11.0	**-0.1082**	0.018	16.9	ug/L	114	Standard
>	Ge	72	470690.1	2.0				ug/L	467488	Standard
	As	75	24.6	102.5	**0.0702**	0.030	42.6	ug/L	-61	Standard
	Se	82	16.7	10.3	**0.0243**	0.020	82.0	ug/L	9	Standard
	Se-1	77	107.3	16.6	**-0.1451**	0.281	194.0	ug/L	125	Standard
>	Ga	71	45.0	61.9				mg/L	50	Standard
	Rb	85	21.7	35.3				ug/L	18	Standard
	Y	89	397351.5	2.4				ug/L	402730	Standard
>	Rh	103	10.0					ug/L	12	Standard
	Mo	98	281.9	21.6	**0.1533**	0.034	22.5	ug/L	8	Standard
	Ag	107	336.0	72.9	**0.0546**	0.054	98.8	ug/L	65	Standard
	Cd	111	51.8	62.2	**0.0279**	0.022	79.5	mg/L	3	Standard
	Cd	114	227.3	77.1	**0.0500**	0.049	97.8	ug/L	15	Standard
>	In	115	526665.5	1.8				ug/L	526825	Standard
	Sn	118	970.0	19.6	**0.1280**	0.044	34.6	ug/L	368	Standard
	Sb	123	1667.8	15.0	**0.5084**	0.078	15.3	ug/L	46	Standard
	Ba	135	88.3	61.6	**0.0418**	0.039	93.9	ug/L	16	Standard
	Ce	140	141.7	154.9				ug/L	43	Standard
>	Tb	159	779790.8	1.5				ug/L	771780	Standard
	Ho	165	11.7	65.5				ug/L	8	Standard
	Tl	203	338.7	77.5	**0.0502**	0.050	100.1	ug/L	28	Standard
	Tl	205	178.3	33.4	**0.0253**	0.013	50.3	ug/L	20	Standard
	Pb	206	354.0	32.0	**0.0400**	0.036	90.9	ug/L	184	Standard
	Pb	207	278.0	26.1	**0.0253**	0.026	101.8	ug/L	161	Standard
	Pb	208	1158.0	14.6	**0.0214**	0.014	67.0	ug/L	746	Standard
	U	238	153.3	24.8	**0.0290**	0.009	30.1	ug/L	6	Standard
>	Bi	209	431343.9	1.1				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	21.7	93.3	**-0.0062**	0.030	488.1	mg/L	25	Standard
K	39	26.7	65.8	**-0.0484**	0.063	129.5	mg/L	25	Standard
Ca	43	48.3	26.0	**-0.6414**	1.093	170.4	mg/L	77	Standard
Fe	54	147.8	8.4	**0.0142**	0.016	109.5	mg/L	165	Standard
Fe	57	128.3	30.3	**-0.0714**	0.153	213.8	mg/L	205	Standard
> **Sc-1**	45	47216.8	1.9				mg/L	46031	Standard
Cl	35	31151.3	2.0				ug/L	28530	Standard
Kr	83	2.7	94.4				ug/L	2	Standard
Br	81	1490.1	9.9				ug/L	1560	Standard
P	31	19479.2	3.9				ug/L	15481	Standard
S	34	2538.5	5.4				ug/L	2072	Standard
Sr	88	65.0	13.3				ug/L	70	Standard
C	12	36.7	15.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.7	86.6				mg/L	13	Standard
Ho-1	165	11.7	65.5				mg/L	8	Standard
Er	166	0.0					mg/L	7	Standard
I	127	1135.0	9.2				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.685	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.970	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.469	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Tl	203	
QC Std 2	Ca	43	

Sample ID: QC Std 2
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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Wednesday, June 15, 2016 12:53:00
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54728.7	2.6				ug/L	58443	Standard
	Be	9	128.3	23.5	**0.2116**	0.058	27.4	ug/L	5	Standard
	Al	27	771.7	6.9	**-0.0008**	0.000	47.2	ug/L	385	Standard
	Sc	45	44283.0	1.3				ug/L	46031	Standard
	Ti	47	74.0	8.9	**-0.1382**	0.030	21.8	ug/L	94	Standard
	V	51	3196.3	4.9	**0.3445**	0.030	8.7	ug/L	1280	Standard
	Cr	52	10232.8	1.4	**0.6888**	0.024	3.5	ug/L	6381	Standard
	Cr	53	2025.1	4.3	**0.1510**	0.127	84.2	ug/L	1957	Standard
	Mn	55	2593.2	1.8	**0.4220**	0.010	2.5	ug/L	667	Standard
	Co	59	2006.8	0.9	**0.4017**	0.003	0.8	ug/L	156	Standard
	Ni	60	2334.8	3.7	**1.5819**	0.064	4.0	ug/L	154	Standard
	Cu	65	1184.7	2.8	**0.7842**	0.024	3.1	ug/L	116	Standard
	Zn	66	5542.0	1.5	**6.8886**	0.098	1.4	ug/L	114	Standard
>	**Ge**	72	450702.1	0.2				ug/L	467488	Standard
	As	75	334.5	7.2	**0.4584**	0.030	6.5	ug/L	-61	Standard
	Se	82	53.2	10.0	**0.4798**	0.064	13.3	ug/L	9	Standard
	Se-1	77	131.0	10.7	**0.3724**	0.258	69.4	ug/L	125	Standard
>	**Ga**	71	63.3	25.4				mg/L	50	Standard
	Rb	85	23.3	32.7				ug/L	18	Standard
	Y	89	391548.7	1.4				ug/L	402730	Standard
>	**Rh**	103	20.0	25.0				ug/L	12	Standard
	Mo	98	56.5	7.5	**0.0250**	0.003	10.1	ug/L	8	Standard
	Ag	107	1767.8	2.4	**0.3853**	0.016	4.1	ug/L	65	Standard
	Cd	111	334.9	1.4	**0.2296**	0.006	2.6	mg/L	3	Standard
	Cd	114	831.8	14.1	**0.2269**	0.034	14.8	ug/L	15	Standard
>	**In**	115	515028.4	1.8				ug/L	526825	Standard
	Sn	118	430.0	19.4	**-0.0033**	0.022	684.8	ug/L	368	Standard
	Sb	123	1470.6	5.1	**0.4571**	0.029	6.3	ug/L	46	Standard
	Ba	135	994.7	1.4	**0.7259**	0.004	0.5	ug/L	16	Standard
	Ce	140	16.7	45.8				ug/L	43	Standard
>	**Tb**	159	757506.4	0.7				ug/L	771780	Standard
	Ho	165	6.7	114.6				ug/L	8	Standard
	Tl	203	419.0	4.1	**0.0677**	0.002	2.9	ug/L	28	Standard
	Tl	205	406.7	17.7	**0.0755**	0.017	22.5	ug/L	20	Standard
	Pb	206	807.7	1.9	**0.1916**	0.008	4.4	ug/L	184	Standard
	Pb	207	679.3	2.9	**0.1727**	0.003	1.8	ug/L	161	Standard
	Pb	208	3221.1	1.8	**0.1950**	0.005	2.8	ug/L	746	Standard
	U	238	1750.8	1.9	**0.3935**	0.010	2.5	ug/L	6	Standard
>	**Bi**	209	419177.4	1.7				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	15.0	33.3	**-0.0146**	0.008	58.1	mg/L	25	Standard
K	39	43.3	40.5	**0.0199**	0.066	332.1	mg/L	25	Standard
Ca	43	46.7	6.2	**-0.5094**	0.313	61.4	mg/L	77	Standard
Fe	54	105.9	16.7	**-0.0219**	0.020	91.4	mg/L	165	Standard
Fe	57	143.3	23.2	**0.0271**	0.139	511.8	mg/L	205	Standard
> **Sc-1**	45	44283.0	1.3				mg/L	46031	Standard
Cl	35	30587.5	0.8				ug/L	28530	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	1396.7	4.3				ug/L	1560	Standard
P	31	13781.3	2.8				ug/L	15481	Standard
S	34	2420.2	6.0				ug/L	2072	Standard
Sr	88	55.0	9.1				ug/L	70	Standard
C	12	40.0	75.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	2.9	202.3				mg/L	13	Standard
Ho-1	165	6.7	114.6				mg/L	8	Standard
Er	166	10.0					mg/L	7	Standard
I	127	743.4	3.8				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	105.781		
Al	27	-0.084		
Sc	45			
Ti	47			
V	51	86.134		
Cr	52	86.103		
Cr	53			
Mn	55	84.398		
Co	59	100.416		
Ni	60	98.867		
Cu	65	98.029		
Zn	66	110.217		
> Ge	72		96.409	
As	75	114.608		
Se	82	119.950		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	96.326		
Cd	111	95.671		
Cd	114			
> In	115			97.761
Sn	118			
Sb	123	114.283		
Ba	135	96.786		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	84.579		
Tl	205			
Pb	206			
Pb	207			
Pb	208	97.502		
U	238	98.382		
> Bi	209			97.635
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Wednesday, June 15, 2016 12:56:13
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64538.9	1.6				ug/L	58443	Standard
	Be	9	11.7	49.5	**-0.0016**	0.009	531.0	ug/L	5	Standard
	Al	27	6126940.4	3.0	**48.5459**	1.264	2.6	ug/L	385	Standard
	Sc	45	45832.6	1.7				ug/L	46031	Standard
	Ti	47	25647.4	1.5	**114.6970**	1.263	1.1	ug/L	94	Standard
	V	51	1456.8	10.6	**0.0052**	0.028	525.2	ug/L	1280	Standard
	Cr	52	7097.0	0.8	**0.0733**	0.005	7.2	ug/L	6381	Standard
	Cr	53	4490.7	6.0	**3.5936**	0.369	10.3	ug/L	1957	Standard
	Mn	55	1120.4	1.9	**0.0617**	0.004	7.1	ug/L	667	Standard
	Co	59	297.0	7.2	**0.0262**	0.005	18.1	ug/L	156	Standard
	Ni	60	707.7	5.1	**0.3707**	0.023	6.3	ug/L	154	Standard
	Cu	65	515.3	6.0	**0.2672**	0.021	7.9	ug/L	116	Standard
	Zn	66	1586.7	0.7	**1.7135**	0.013	0.8	ug/L	114	Standard
>	**Ge**	72	467957.0	0.4				ug/L	467488	Standard
	As	75	-63.9	68.0	**-0.0358**	0.052	146.0	ug/L	-61	Standard
	Se	82	10.1	42.8	**-0.0515**	0.051	99.9	ug/L	9	Standard
	Se-1	77	341.3	2.9	**3.9747**	0.175	4.4	ug/L	125	Standard
>	**Ga**	71	100.0	26.0				mg/L	50	Standard
	Rb	85	696.7	13.7				ug/L	18	Standard
	Y	89	402173.4	1.5				ug/L	402730	Standard
>	**Rh**	103	8.3	34.6				ug/L	12	Standard
	Mo	98	182711.3	1.5	**104.3381**	3.876	3.7	ug/L	8	Standard
	Ag	107	165.7	3.0	**0.0166**	0.001	4.4	ug/L	65	Standard
	Cd	111	-103.6	22.0	**-0.0800**	0.017	21.6	mg/L	3	Standard
	Cd	114	423.4	4.4	**0.1054**	0.003	2.7	ug/L	15	Standard
>	**In**	115	527988.1	2.3				ug/L	526825	Standard
	Sn	118	680.0	20.2	**0.0564**	0.037	66.4	ug/L	368	Standard
	Sb	123	293.3	34.2	**0.0773**	0.033	43.1	ug/L	46	Standard
	Ba	135	184.0	11.2	**0.1123**	0.017	15.3	ug/L	16	Standard
	Ce	140	130.0	7.7				ug/L	43	Standard
>	**Tb**	159	785913.3	0.8				ug/L	771780	Standard
	Ho	165	8.3	34.6				ug/L	8	Standard
	Tl	203	175.3	5.0	**0.0190**	0.002	9.3	ug/L	28	Standard
	Tl	205	150.0	16.7	**0.0194**	0.005	27.3	ug/L	20	Standard
	Pb	206	400.7	4.2	**0.0550**	0.005	8.9	ug/L	184	Standard
	Pb	207	354.3	5.0	**0.0523**	0.007	12.8	ug/L	161	Standard
	Pb	208	1584.4	2.1	**0.0560**	0.002	4.0	ug/L	746	Standard
	U	238	17.3	39.3	**-0.0011**	0.001	130.7	ug/L	6	Standard
>	**Bi**	209	430307.3	0.4				ug/L	429329	Standard

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Na	23	5.0	100.0	**20.3984**	20.626	101.1	mg/L	0	Standard
Mg	24	8332.3	4.9	**13.2809**	0.872	6.6	mg/L	25	Standard
K	39	1423.4	5.8	**5.0310**	0.283	5.6	mg/L	25	Standard
Ca	43	218.3	23.5	**14.9093**	4.528	30.4	mg/L	77	Standard
Fe	54	12569.8	1.2	**13.2042**	0.292	2.2	mg/L	165	Standard
Fe	57	3147.0	0.9	**12.4198**	0.314	2.5	mg/L	205	Standard
Sc-1	45	45832.6	1.7				mg/L	46031	Standard
Cl	35	31224.1	0.7				ug/L	28530	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1510.1	10.7				ug/L	1560	Standard
P	31	17895.6	2.2				ug/L	15481	Standard
S	34	2375.2	6.3				ug/L	2072	Standard
Sr	88	53.3	37.9				ug/L	70	Standard
C	12	100.0	26.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	36.7				mg/L	0	Standard
Dy	164	16.0	96.0				mg/L	13	Standard
Ho-1	165	8.3	34.6				mg/L	8	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	1500.1	4.3				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27	0.971		
Sc	45			
Ti	47	114.697		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.100	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	104.338		
Ag	107			
Cd	111			
Cd	114			
In	115			100.221
Sn	118			
Sb	123			
Ba	135			
Ce	140			
Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
Bi	209			100.228
Na	23	163.188		
Mg	24	265.617		
K	39	100.621		
Ca	43	99.395		
Fe	54	105.634		
Fe	57	99.359		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Wednesday, June 15, 2016 12:59:25
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67344.4	1.8				ug/L	58443	Standard
	Be	9	70490.3	2.6	**102.7696**	4.501	4.4	ug/L	5	Standard
	Al	27	6597238.0	0.7	**50.1071**	1.108	2.2	ug/L	385	Standard
	Sc	45	45718.9	1.1				ug/L	46031	Standard
	Ti	47	26318.8	1.7	**115.8578**	3.199	2.8	ug/L	94	Standard
	V	51	565995.4	0.7	**101.2332**	1.511	1.5	ug/L	1280	Standard
	Cr	52	584422.4	2.5	**99.2149**	3.524	3.6	ug/L	6381	Standard
	Cr	53	75889.6	2.1	**104.8256**	3.289	3.1	ug/L	1957	Standard
	Mn	55	448849.4	0.4	**101.0319**	0.705	0.7	ug/L	667	Standard
	Co	59	486759.6	0.3	**100.6479**	0.858	0.9	ug/L	156	Standard
	Ni	60	143574.2	1.7	**99.5816**	2.812	2.8	ug/L	154	Standard
	Cu	65	139830.3	0.6	**99.4396**	1.683	1.7	ug/L	116	Standard
	Zn	66	84138.0	1.5	**102.5744**	2.096	2.0	ug/L	114	Standard
>	Ge	72	475520.9	1.1				ug/L	467488	Standard
	As	75	85537.0	1.3	**101.2188**	2.224	2.2	ug/L	-61	Standard
	Se	82	8746.5	0.9	**101.2821**	1.807	1.8	ug/L	9	Standard
	Se-1	77	6149.6	0.7	**104.1809**	1.886	1.8	ug/L	125	Standard
>	Ga	71	130.0	16.8				mg/L	50	Standard
	Rb	85	700.0	13.1				ug/L	18	Standard
	Y	89	411297.9	0.6				ug/L	402730	Standard
>	Rh	103	36.7	41.7				ug/L	12	Standard
	Mo	98	190089.2	0.9	**107.5201**	2.040	1.9	ug/L	8	Standard
	Ag	107	435749.0	1.5	**96.6552**	2.925	3.0	ug/L	65	Standard
	Cd	111	148564.8	1.8	**101.8892**	0.888	0.9	mg/L	3	Standard
	Cd	114	368407.5	2.1	**103.2187**	1.735	1.7	ug/L	15	Standard
>	In	115	532849.4	1.7				ug/L	526825	Standard
	Sn	118	658.3	3.7	**0.0490**	0.005	10.8	ug/L	368	Standard
	Sb	123	327281.4	1.1	**101.5143**	2.591	2.6	ug/L	46	Standard
	Ba	135	137138.5	0.8	**99.7904**	1.807	1.8	ug/L	16	Standard
	Ce	140	45.0	77.8				ug/L	43	Standard
>	Tb	159	798568.0	0.7				ug/L	771780	Standard
	Ho	165	10.0	50.0				ug/L	8	Standard
	Tl	203	538041.3	0.6	**101.2247**	0.333	0.3	ug/L	28	Standard
	Tl	205	497774.8	0.7	**102.4236**	0.373	0.4	ug/L	20	Standard
	Pb	206	331906.0	0.5	**103.9121**	0.402	0.4	ug/L	184	Standard
	Pb	207	289166.5	1.1	**99.8453**	1.057	1.1	ug/L	161	Standard
	Pb	208	1280347.2	1.0	**101.6154**	1.178	1.2	ug/L	746	Standard
	U	238	470856.4	1.5	**102.7106**	1.735	1.7	ug/L	6	Standard
>	Bi	209	437315.1	0.6				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	8664.1	4.1	**13.8393**	0.675	4.9	mg/L	25	Standard
K	39	1358.4	2.7	**4.8065**	0.083	1.7	mg/L	25	Standard
Ca	43	235.0	12.9	**16.5125**	2.941	17.8	mg/L	77	Standard
Fe	54	12773.4	2.2	**13.4541**	0.437	3.2	mg/L	165	Standard
Fe	57	3382.0	3.0	**13.4264**	0.571	4.3	mg/L	205	Standard
> **Sc-1**	45	45718.9	1.1				mg/L	46031	Standard
Cl	35	30870.1	0.9				ug/L	28530	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1296.7	19.7				ug/L	1560	Standard
P	31	17752.1	2.0				ug/L	15481	Standard
S	34	2196.8	4.5				ug/L	2072	Standard
Sr	88	65.0	23.1				ug/L	70	Standard
C	12	116.7	26.2				mg/L	47	Standard
N	14	6.7	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	19.8	1.4				mg/L	13	Standard
Ho-1	165	10.0	50.0				mg/L	8	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	1120.0	2.9				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	102.770		
Al	27	1.002		
Sc	45			
Ti	47	115.858		
V	51	101.233		
Cr	52	99.215		
Cr	53			
Mn	55	101.032		
Co	59	100.648		
Ni	60	99.582		
Cu	65	99.440		
Zn	66	102.574		
> Ge	72		101.718	
As	75	101.219		
Se	82	101.282		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	107.520		
Ag	107	96.655		
Cd	111	101.889		
Cd	114			
In	115		101.144	
Sn	118			
Sb	123	101.514		
Ba	135	99.790		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.225		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.615		
U	238	102.711		
Bi	209		101.860	
Na	23	0.040		
Mg	24	276.786		
K	39	96.131		
Ca	43	110.084		
Fe	54	107.633		
Fe	57	107.411		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 15, 2016 13:02:38
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64548.9	1.2				ug/L	58443	Standard
	Be	9	33754.3	3.8	**51.2985**	1.492	2.9	ug/L	5	Standard
	Al	27	6153497.0	2.4	**48.7603**	1.673	3.4	ug/L	385	Standard
	Sc	45	46049.9	3.0				ug/L	46031	Standard
	Ti	47	22927.0	0.8	**102.8403**	1.804	1.8	ug/L	94	Standard
	V	51	287721.7	1.3	**52.3441**	1.059	2.0	ug/L	1280	Standard
	Cr	52	298106.9	0.8	**51.0336**	0.958	1.9	ug/L	6381	Standard
	Cr	53	37543.1	0.5	**51.4393**	0.786	1.5	ug/L	1957	Standard
	Mn	55	224132.1	1.2	**51.3453**	1.012	2.0	ug/L	667	Standard
	Co	59	247009.4	1.2	**52.0600**	1.058	2.0	ug/L	156	Standard
	Ni	60	72894.9	0.2	**51.4800**	0.565	1.1	ug/L	154	Standard
	Cu	65	71022.1	0.4	**51.4409**	0.398	0.8	ug/L	116	Standard
	Zn	66	41920.2	0.8	**51.9751**	0.122	0.2	ug/L	114	Standard
>	Ge	72	466390.8	1.0				ug/L	467488	Standard
	As	75	42173.3	0.4	**50.8980**	0.485	1.0	ug/L	-61	Standard
	Se	82	4364.9	1.0	**51.4480**	0.823	1.6	ug/L	9	Standard
	Se-1	77	3011.0	2.3	**51.0004**	1.564	3.1	ug/L	125	Standard
>	Ga	71	75.0	6.7				mg/L	50	Standard
	Rb	85	668.3	7.0				ug/L	18	Standard
	Y	89	402229.2	0.5				ug/L	402730	Standard
>	Rh	103	28.3	10.2				ug/L	12	Standard
	Mo	98	183654.5	0.9	**104.8399**	1.332	1.3	ug/L	8	Standard
	Ag	107	229943.1	0.8	**51.4601**	0.734	1.4	ug/L	65	Standard
	Cd	111	74576.9	1.1	**51.6238**	0.650	1.3	mg/L	3	Standard
	Cd	114	184091.2	1.9	**52.0543**	1.025	2.0	ug/L	15	Standard
>	In	115	527898.9	0.8				ug/L	526825	Standard
	Sn	118	207398.2	0.7	**51.2949**	0.503	1.0	ug/L	368	Standard
	Sb	123	166408.9	0.9	**52.0828**	0.861	1.7	ug/L	46	Standard
	Ba	135	69581.7	0.5	**51.0874**	0.230	0.5	ug/L	16	Standard
	Ce	140	61.7	23.4				ug/L	43	Standard
>	Tb	159	785180.2	1.4				ug/L	771780	Standard
	Ho	165	6.7	114.6				ug/L	8	Standard
	Tl	203	269101.7	0.6	**51.5257**	0.646	1.3	ug/L	28	Standard
	Tl	205	251041.0	0.2	**52.5721**	0.503	1.0	ug/L	20	Standard
	Pb	206	164373.1	0.5	**52.3470**	0.810	1.5	ug/L	184	Standard
	Pb	207	148431.5	0.6	**52.1347**	0.840	1.6	ug/L	161	Standard
	Pb	208	643527.2	0.2	**51.9505**	0.524	1.0	ug/L	746	Standard
	U	238	235025.8	0.6	**52.1823**	0.856	1.6	ug/L	6	Standard
>	Bi	209	429665.8	1.1				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3247.0	5.3	**5.1288**	0.371	7.2	mg/L	25	Standard
K	39	1406.7	5.3	**4.9518**	0.365	7.4	mg/L	25	Standard
Ca	43	116.7	20.3	**5.6800**	2.350	41.4	mg/L	77	Standard
Fe	54	5009.1	4.5	**5.1606**	0.401	7.8	mg/L	165	Standard
Fe	57	1366.7	4.8	**5.0336**	0.156	3.1	mg/L	205	Standard
Sc-1	45	46049.9	3.0				mg/L	46031	Standard
Cl	35	30512.7	0.5				ug/L	28530	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	1516.7	2.7				ug/L	1560	Standard
P	31	18082.5	3.9				ug/L	15481	Standard
S	34	2281.8	5.8				ug/L	2072	Standard
Sr	88	40.0	50.0				ug/L	70	Standard
C	12	30.0	57.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.2	93.3				mg/L	13	Standard
Ho-1	165	6.7	114.6				mg/L	8	Standard
Er	166	10.0					mg/L	7	Standard
I	127	1105.0	7.5				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.597		
Al	27	97.521		
Sc	45			
Ti	47	102.840		
V	51	104.688		
Cr	52	102.067		
Cr	53			
Mn	55	102.691		
Co	59	104.120		
Ni	60	102.960		
Cu	65	102.882		
Zn	66	103.950		
Ge	72		99.765	
As	75	101.796		
Se	82	102.896		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	104.840		
Ag	107	102.920		
Cd	111	103.248		
Cd	114			
> In	115			100.204
Sn	118	102.590		
Sb	123	104.166		
Ba	135	102.175		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	103.051		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.901		
U	238	104.365		
> Bi	209			100.078
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 15, 2016 13:05:50
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64172.3	1.9				ug/L	58443	Standard
	Be	9	25.0	52.9	**0.0187**	0.019	103.7	ug/L	5	Standard
	Al	27	2038.5	48.4	**0.0081**	0.008	92.6	ug/L	385	Standard
	Sc	45	46172.0	3.3				ug/L	46031	Standard
	Ti	47	79.0	3.8	**-0.1343**	0.018	13.3	ug/L	94	Standard
	V	51	1277.9	2.1	**-0.0312**	0.007	23.6	ug/L	1280	Standard
	Cr	52	5752.8	2.1	**-0.1781**	0.022	12.6	ug/L	6381	Standard
	Cr	53	1361.7	2.6	**-0.9503**	0.049	5.2	ug/L	1957	Standard
	Mn	55	619.3	5.9	**-0.0554**	0.010	18.9	ug/L	667	Standard
	Co	59	246.0	19.2	**0.0147**	0.011	72.2	ug/L	156	Standard
	Ni	60	152.0	16.0	**-0.0230**	0.018	79.5	ug/L	154	Standard
	Cu	65	131.3	18.6	**-0.0119**	0.019	158.8	ug/L	116	Standard
	Zn	66	116.7	8.2	**-0.1144**	0.014	12.3	ug/L	114	Standard
>	**Ge**	72	476018.1	1.7				ug/L	467488	Standard
	As	75	-2.2	1152.6	**0.0386**	0.030	76.9	ug/L	-61	Standard
	Se	82	16.3	25.3	**0.0185**	0.049	266.9	ug/L	9	Standard
	Se-1	77	98.3	6.5	**-0.3166**	0.137	43.3	ug/L	125	Standard
>	**Ga**	71	55.0	15.7				mg/L	50	Standard
	Rb	85	21.7	93.3				ug/L	18	Standard
	Y	89	398620.8	0.8				ug/L	402730	Standard
>	**Rh**	103	11.7	49.5				ug/L	12	Standard
	Mo	98	216.4	26.6	**0.1158**	0.032	27.3	ug/L	8	Standard
	Ag	107	149.7	24.8	**0.0131**	0.008	60.9	ug/L	65	Standard
	Cd	111	20.9	52.9	**0.0064**	0.008	117.4	mg/L	3	Standard
	Cd	114	77.3	28.5	**0.0076**	0.006	78.9	ug/L	15	Standard
>	**In**	115	525731.3	1.1				ug/L	526825	Standard
	Sn	118	721.7	32.2	**0.0674**	0.060	88.9	ug/L	368	Standard
	Sb	123	906.7	30.1	**0.2707**	0.089	32.8	ug/L	46	Standard
	Ba	135	39.0	46.6	**0.0057**	0.013	231.6	ug/L	16	Standard
	Ce	140	13.3	94.4				ug/L	43	Standard
>	**Tb**	159	782785.7	0.8				ug/L	771780	Standard
	Ho	165	3.3	86.6				ug/L	8	Standard
	Tl	203	89.7	43.0	**0.0022**	0.007	339.6	ug/L	28	Standard
	Tl	205	86.7	46.6	**0.0057**	0.008	148.3	ug/L	20	Standard
	Pb	206	235.0	6.6	**0.0003**	0.006	1699.1	ug/L	184	Standard
	Pb	207	212.3	6.7	**0.0004**	0.006	1316.0	ug/L	161	Standard
	Pb	208	887.0	11.3	**-0.0022**	0.009	394.8	ug/L	746	Standard
	U	238	76.0	41.5	**0.0115**	0.007	61.1	ug/L	6	Standard
>	**Bi**	209	442186.0	1.3				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	23.3	32.7	**-0.0022**	0.013	609.8	mg/L	25	Standard
K	39	28.3	27.0	**-0.0410**	0.026	63.4	mg/L	25	Standard
Ca	43	53.3	32.9	**-0.0525**	1.730	3295.0	mg/L	77	Standard
Fe	54	127.7	26.1	**-0.0032**	0.038	1185.5	mg/L	165	Standard
Fe	57	120.0	11.0	**-0.0917**	0.067	73.5	mg/L	205	Standard
Sc-1	45	46172.0	3.3				mg/L	46031	Standard
Cl	35	30157.3	2.5				ug/L	28530	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	1473.4	7.7				ug/L	1560	Standard
P	31	17753.7	3.0				ug/L	15481	Standard
S	34	2231.8	5.7				ug/L	2072	Standard
Sr	88	60.0	8.3				ug/L	70	Standard
C	12	73.3	43.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.8	2.8				mg/L	13	Standard
Ho-1	165	3.3	86.6				mg/L	8	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	1120.0	10.8				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.825	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.792	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	102.995	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

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Method 6020 - Summary Report

Sample ID: PBS M9 WG572379-02
Sample Date/Time: Wednesday, June 15, 2016 13:09:02
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62428.4	1.1				ug/L	58443	Standard
	Be	9	21.7	26.6	**0.0148**	0.009	62.7	ug/L	5	Standard
	Al	27	14969.1	3.7	**0.1146**	0.004	3.1	ug/L	385	Standard
	Sc	45	47144.9	2.8				ug/L	46031	Standard
	Ti	47	76.3	29.5	**-0.1408**	0.100	71.1	ug/L	94	Standard
	V	51	1336.4	14.0	**-0.0170**	0.032	189.3	ug/L	1280	Standard
	Cr	52	7139.3	2.7	**0.0801**	0.037	46.5	ug/L	6381	Standard
	Cr	53	1566.7	6.7	**-0.6223**	0.163	26.2	ug/L	1957	Standard
	Mn	55	1546.1	4.1	**0.1591**	0.016	9.9	ug/L	667	Standard
	Co	59	207.3	1.1	**0.0073**	0.001	11.6	ug/L	156	Standard
	Ni	60	650.7	6.5	**0.3302**	0.029	8.8	ug/L	154	Standard
	Cu	65	502.3	3.0	**0.2576**	0.008	3.0	ug/L	116	Standard
	Zn	66	1575.4	3.2	**1.6981**	0.052	3.1	ug/L	114	Standard
>	**Ge**	72	468230.5	0.8				ug/L	467488	Standard
	As	75	19.6	202.5	**0.0648**	0.048	73.8	ug/L	-61	Standard
	Se	82	18.5	15.3	**0.0463**	0.032	68.5	ug/L	9	Standard
	Se-1	77	99.7	14.4	**-0.2672**	0.244	91.5	ug/L	125	Standard
>	**Ga**	71	38.3	7.5				mg/L	50	Standard
	Rb	85	50.0	40.0				ug/L	18	Standard
	Y	89	407194.3	2.3				ug/L	402730	Standard
>	**Rh**	103	8.3	69.3				ug/L	12	Standard
	Mo	98	287.0	1.0	**0.1541**	0.003	1.9	ug/L	8	Standard
	Ag	107	138.7	7.8	**0.0103**	0.003	29.8	ug/L	65	Standard
	Cd	111	12.8	39.4	**0.0007**	0.003	495.9	mg/L	3	Standard
	Cd	114	49.2	4.0	**-0.0005**	0.001	159.3	ug/L	15	Standard
>	**In**	115	533352.2	2.1				ug/L	526825	Standard
	Sn	118	961.7	7.6	**0.1231**	0.015	12.0	ug/L	368	Standard
	Sb	123	412.3	25.4	**0.1124**	0.030	27.1	ug/L	46	Standard
	Ba	135	205.3	5.3	**0.1262**	0.005	3.9	ug/L	16	Standard
	Ce	140	120.0	15.0				ug/L	43	Standard
>	**Tb**	159	786218.7	1.4				ug/L	771780	Standard
	Ho	165	10.0	50.0				ug/L	8	Standard
	Tl	203	64.3	10.9	**-0.0024**	0.001	59.8	ug/L	28	Standard
	Tl	205	70.0	24.7	**0.0025**	0.004	147.0	ug/L	20	Standard
	Pb	206	313.7	10.2	**0.0262**	0.010	37.2	ug/L	184	Standard
	Pb	207	239.7	4.7	**0.0110**	0.004	35.3	ug/L	161	Standard
	Pb	208	1087.3	2.5	**0.0149**	0.003	20.1	ug/L	746	Standard
	U	238	23.3	35.9	**0.0001**	0.002	1341.8	ug/L	6	Standard
>	**Bi**	209	435318.4	1.0				ug/L	429329	Standard

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	Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
	Mg	24	25.0	34.6	**-0.0008**	0.013	1677.3	mg/L	25	Standard
	K	39	26.7	21.7	**-0.0490**	0.019	38.9	mg/L	25	Standard
	Ca	43	56.7	22.2	**0.0910**	0.988	1085.9	mg/L	77	Standard
	Fe	54	129.2	21.6	**-0.0053**	0.025	481.3	mg/L	165	Standard
	Fe	57	136.7	16.5	**-0.0376**	0.076	201.1	mg/L	205	Standard
>	**Sc-1**	45	47144.9	2.8				mg/L	46031	Standard
	Cl	35	30856.7	2.0				ug/L	28530	Standard
	Kr	83	1.0	0.0				ug/L	2	Standard
	Br	81	1700.1	3.9				ug/L	1560	Standard
	P	31	16839.4	3.7				ug/L	15481	Standard
	S	34	2298.5	5.0				ug/L	2072	Standard
	Sr	88	50.0	0.0				ug/L	70	Standard
	C	12	60.0	44.1				mg/L	47	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	0	Standard
	Dy	164	6.0	187.0				mg/L	13	Standard
	Ho-1	165	10.0	50.0				mg/L	8	Standard
	Er	166	13.3	43.3				mg/L	7	Standard
	I	127	1051.7	10.3				mg/L	1227	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		106.820	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.159	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.239
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.395
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBS M9 WG572379-02
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Method 6020 - Summary Report

Sample ID: LCSS M9 WG572379-03
Sample Date/Time: Wednesday, June 15, 2016 13:12:13
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63350.5	0.6				ug/L	58443	Standard
	Be	9	17144.7	1.0	**26.5444**	0.378	1.4	ug/L	5	Standard
	Al	27	6076.2	4.3	**0.0410**	0.002	5.6	ug/L	385	Standard
	Sc	45	46798.8	1.3				ug/L	46031	Standard
	Ti	47	74.7	5.6	**-0.1499**	0.018	12.1	ug/L	94	Standard
	V	51	144501.2	1.3	**25.9122**	0.201	0.8	ug/L	1280	Standard
	Cr	52	157338.0	0.3	**26.1281**	0.073	0.3	ug/L	6381	Standard
	Cr	53	19469.2	0.5	**25.0268**	0.131	0.5	ug/L	1957	Standard
	Mn	55	115362.2	3.3	**26.0831**	0.718	2.8	ug/L	667	Standard
	Co	59	124469.4	2.4	**25.9687**	0.487	1.9	ug/L	156	Standard
	Ni	60	38013.0	1.9	**26.5330**	0.380	1.4	ug/L	154	Standard
	Cu	65	36188.5	2.2	**25.9146**	0.436	1.7	ug/L	116	Standard
	Zn	66	22028.0	0.9	**26.9362**	0.086	0.3	ug/L	114	Standard
>	**Ge**	72	470727.2	0.5				ug/L	467488	Standard
	As	75	21444.6	1.6	**25.6605**	0.261	1.0	ug/L	-61	Standard
	Se	82	2168.6	2.1	**25.2369**	0.550	2.2	ug/L	9	Standard
	Se-1	77	1562.4	2.2	**25.2370**	0.524	2.1	ug/L	125	Standard
>	**Ga**	71	51.7	11.2				mg/L	50	Standard
	Rb	85	41.7	13.9				ug/L	18	Standard
	Y	89	404521.0	1.1				ug/L	402730	Standard
>	**Rh**	103	21.7	35.3				ug/L	12	Standard
	Mo	98	80.2	13.7	**0.0370**	0.007	17.7	ug/L	8	Standard
	Ag	107	118241.6	1.2	**25.9955**	0.174	0.7	ug/L	65	Standard
	Cd	111	37677.7	2.6	**25.6262**	0.440	1.7	mg/L	3	Standard
	Cd	114	92030.3	1.6	**25.5677**	0.274	1.1	ug/L	15	Standard
>	**In**	115	537119.8	1.0				ug/L	526825	Standard
	Sn	118	566.7	12.0	**0.0254**	0.017	66.9	ug/L	368	Standard
	Sb	123	84277.9	0.8	**25.9152**	0.067	0.3	ug/L	46	Standard
	Ba	135	35340.2	1.6	**25.4886**	0.192	0.8	ug/L	16	Standard
	Ce	140	70.0	21.4				ug/L	43	Standard
>	**Tb**	159	788867.1	1.2				ug/L	771780	Standard
	Ho	165	18.3	83.3				ug/L	8	Standard
	Tl	203	137074.3	0.5	**25.5792**	0.158	0.6	ug/L	28	Standard
	Tl	205	125267.7	3.0	**25.5686**	0.784	3.1	ug/L	20	Standard
	Pb	206	84923.4	1.7	**26.3289**	0.475	1.8	ug/L	184	Standard
	Pb	207	73855.2	1.1	**25.2510**	0.302	1.2	ug/L	161	Standard
	Pb	208	326489.5	0.8	**25.6584**	0.224	0.9	ug/L	746	Standard
	U	238	116478.4	1.1	**25.2083**	0.295	1.2	ug/L	6	Standard
>	**Bi**	209	440707.1	0.1				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	26.7	10.8	**0.0023**	0.005	218.2	mg/L	25	Standard
K	39	53.3	5.4	**0.0470**	0.012	26.5	mg/L	25	Standard
Ca	43	48.3	11.9	**-0.5946**	0.567	95.4	mg/L	77	Standard
Fe	54	139.8	5.5	**0.0071**	0.007	97.6	mg/L	165	Standard
Fe	57	133.3	15.2	**-0.0450**	0.087	194.4	mg/L	205	Standard
Sc-1	45	46798.8	1.3				mg/L	46031	Standard
Cl	35	29947.6	2.2				ug/L	28530	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	1450.1	15.6				ug/L	1560	Standard
P	31	17258.2	4.1				ug/L	15481	Standard
S	34	2220.2	4.1				ug/L	2072	Standard
Sr	88	50.0	26.5				ug/L	70	Standard
C	12	53.3	28.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.4	124.8				mg/L	13	Standard
Ho-1	165	18.3	83.3				mg/L	8	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	955.0	8.7				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.398	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.693	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.954
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.650
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606062001 WG572379-01
Sample Date/Time: Wednesday, June 15, 2016 13:15:25
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69450.5	1.5				ug/L	58443	Standard
	Be	9	1548.4	7.7	**2.1678**	0.138	6.4	ug/L	5	Standard
	Al	27	7905061.9	1.4	**58.2084**	0.572	1.0	ug/L	385	Standard
	Sc	45	58735.3	2.5				ug/L	46031	Standard
	Ti	47	16940.5	2.0	**75.6967**	2.120	2.8	ug/L	94	Standard
	V	51	333145.6	1.6	**60.5148**	1.325	2.2	ug/L	1280	Standard
	Cr	52	303985.4	1.7	**51.9477**	1.341	2.6	ug/L	6381	Standard
	Cr	53	37123.8	1.6	**50.7180**	1.351	2.7	ug/L	1957	Standard
	Mn	55	8595402.4	0.6	**1971.8444**	6.957	0.4	ug/L	667	Standard
	Co	59	142818.3	0.9	**30.0166**	0.308	1.0	ug/L	156	Standard
	Ni	60	139345.2	0.5	**98.3106**	1.333	1.4	ug/L	154	Standard
	Cu	65	111908.8	0.9	**80.9403**	1.247	1.5	ug/L	116	Standard
	Zn	66	136006.0	0.6	**168.8466**	2.483	1.5	ug/L	114	Standard
>	**Ge**	72	467414.6	0.9				ug/L	467488	Standard
	As	75	10602.9	0.9	**12.7996**	0.214	1.7	ug/L	-61	Standard
	Se	82	128.7	4.6	**1.3469**	0.058	4.3	ug/L	9	Standard
	Se-1	77	201.3	3.5	**1.5228**	0.137	9.0	ug/L	125	Standard
>	**Ga**	71	30637.6	2.1				mg/L	50	Standard
	Rb	85	328604.2	1.8				ug/L	18	Standard
	Y	89	669572.5	1.7				ug/L	402730	Standard
>	**Rh**	103	68.3	36.1				ug/L	12	Standard
	Mo	98	3545.4	1.3	**2.0491**	0.042	2.0	ug/L	8	Standard
	Ag	107	2839.9	1.5	**0.6257**	0.010	1.6	ug/L	65	Standard
	Cd	111	914.9	3.8	**0.6358**	0.030	4.8	mg/L	3	Standard
	Cd	114	2306.2	2.9	**0.6487**	0.024	3.7	ug/L	15	Standard
>	**In**	115	519437.9	1.1				ug/L	526825	Standard
	Sn	118	583.3	4.9	**0.0343**	0.008	23.7	ug/L	368	Standard
	Sb	123	235.3	28.9	**0.0598**	0.021	35.6	ug/L	46	Standard
	Ba	135	2676280.5	1.0	**1997.8531**	19.391	1.0	ug/L	16	Standard
	Ce	140	1594990.6	1.0				ug/L	43	Standard
>	**Tb**	159	807554.4	2.1				ug/L	771780	Standard
	Ho	165	20382.0	1.5				ug/L	8	Standard
	Tl	203	2195.8	2.3	**0.4072**	0.012	2.9	ug/L	28	Standard
	Tl	205	2075.1	4.1	**0.4239**	0.015	3.6	ug/L	20	Standard
	Pb	206	334095.7	0.5	**106.7722**	0.505	0.5	ug/L	184	Standard
	Pb	207	275193.5	0.9	**96.9913**	0.827	0.9	ug/L	161	Standard
	Pb	208	1234782.9	0.5	**100.0349**	1.088	1.1	ug/L	746	Standard
	U	238	10981.0	1.9	**2.4402**	0.047	1.9	ug/L	6	Standard
>	**Bi**	209	428418.9	0.6				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	396.7	12.4	**0.4562**	0.073	15.9	mg/L	25	Standard
K	39	963.4	2.9	**2.5915**	0.130	5.0	mg/L	25	Standard
Ca	43	328.3	8.7	**18.3462**	1.414	7.7	mg/L	77	Standard
Fe	54	54428.3	0.5	**44.9504**	0.964	2.1	mg/L	165	Standard
Fe	57	14026.5	1.7	**44.6485**	1.135	2.5	mg/L	205	Standard
Sc-1	45	58735.3	2.5				mg/L	46031	Standard
Cl	35	29192.8	1.0				ug/L	28530	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	7368.5	1.7				ug/L	1560	Standard
P	31	17354.9	3.2				ug/L	15481	Standard
S	34	2341.8	2.8				ug/L	2072	Standard
Sr	88	153.3	21.7				ug/L	70	Standard
C	12	126.7	37.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10580.4	3.7				mg/L	0	Standard
Dy	164	34559.0	1.3				mg/L	13	Standard
Ho-1	165	20382.0	1.5				mg/L	8	Standard
Er	166	18908.5	1.9				mg/L	7	Standard
I	127	4907.5	3.5				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.836	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.984	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.598
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.788
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Pb 206 Upper, S, EEE	Pb	206
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1606062001S WG572379-04
Sample Date/Time: Wednesday, June 15, 2016 13:18:36
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69085.5	0.7				ug/L	58443	Standard
	Be	9	18823.4	3.4	**26.7222**	0.861	3.2	ug/L	5	Standard
	Al	27	10039050.4	1.8	**74.3080**	0.866	1.2	ug/L	385	Standard
	Sc	45	59993.5	0.7				ug/L	46031	Standard
	Ti	47	18791.3	0.9	**83.2618**	1.824	2.2	ug/L	94	Standard
	V	51	488887.7	1.1	**88.1221**	1.211	1.4	ug/L	1280	Standard
	Cr	52	493352.3	1.7	**84.2716**	2.777	3.3	ug/L	6381	Standard
	Cr	53	59510.1	3.3	**82.3015**	4.385	5.3	ug/L	1957	Standard
	Mn	55	6122828.8	0.1	**1392.1095**	24.659	1.8	ug/L	667	Standard
	Co	59	285086.3	1.2	**59.4302**	1.801	3.0	ug/L	156	Standard
	Ni	60	174281.1	1.6	**121.9012**	3.450	2.8	ug/L	154	Standard
	Cu	65	148308.7	1.4	**106.3480**	2.712	2.6	ug/L	116	Standard
	Zn	66	187521.7	0.9	**230.8237**	5.137	2.2	ug/L	114	Standard
>	**Ge**	72	471690.0	1.9				ug/L	467488	Standard
	As	75	29679.8	1.3	**35.4382**	0.951	2.7	ug/L	-61	Standard
	Se	82	1826.6	4.2	**21.2011**	1.281	6.0	ug/L	9	Standard
	Se-1	77	1362.1	1.8	**21.6960**	0.266	1.2	ug/L	125	Standard
>	**Ga**	71	36131.4	1.1				mg/L	50	Standard
	Rb	85	354442.9	2.5				ug/L	18	Standard
	Y	89	644035.6	1.1				ug/L	402730	Standard
>	**Rh**	103	80.0	6.3				ug/L	12	Standard
	Mo	98	2128.9	3.0	**1.2276**	0.033	2.6	ug/L	8	Standard
	Ag	107	110570.3	0.7	**25.1488**	0.196	0.8	ug/L	65	Standard
	Cd	111	36614.1	2.3	**25.7695**	0.790	3.1	mg/L	3	Standard
	Cd	114	90238.0	1.8	**25.9386**	0.595	2.3	ug/L	15	Standard
>	**In**	115	519190.1	0.9				ug/L	526825	Standard
	Sn	118	685.0	2.5	**0.0599**	0.003	4.6	ug/L	368	Standard
	Sb	123	1056.0	3.5	**0.3211**	0.009	2.9	ug/L	46	Standard
	Ba	135	2778530.6	1.2	**2075.1616**	23.828	1.1	ug/L	16	Standard
	Ce	140	1494057.4	1.8				ug/L	43	Standard
>	**Tb**	159	807634.2	1.0				ug/L	771780	Standard
	Ho	165	18836.7	3.0				ug/L	8	Standard
	Tl	203	129744.2	1.1	**24.9051**	0.334	1.3	ug/L	28	Standard
	Tl	205	119669.1	1.0	**25.1261**	0.381	1.5	ug/L	20	Standard
	Pb	206	493773.9	0.5	**157.8317**	0.803	0.5	ug/L	184	Standard
	Pb	207	418302.5	0.8	**147.4663**	1.750	1.2	ug/L	161	Standard
	Pb	208	1863695.4	0.7	**151.0129**	1.217	0.8	ug/L	746	Standard
	U	238	122137.3	0.6	**27.1911**	0.269	1.0	ug/L	6	Standard
>	**Bi**	209	428435.4	0.5				ug/L	429329	Standard

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Na	23	1.7	173.2	**5.1153**	8.851	173.0	mg/L	0	Standard
Mg	24	490.0	4.4	**0.5587**	0.030	5.3	mg/L	25	Standard
K	39	910.0	13.9	**2.3841**	0.350	14.7	mg/L	25	Standard
Ca	43	411.7	17.7	**23.6408**	4.832	20.4	mg/L	77	Standard
Fe	54	53553.0	1.4	**43.2839**	0.917	2.1	mg/L	165	Standard
Fe	57	13422.6	1.1	**41.7833**	0.781	1.9	mg/L	205	Standard
Sc-1	45	59993.5	0.7				mg/L	46031	Standard
Cl	35	28576.9	2.1				ug/L	28530	Standard
Kr	83	3.3	45.8				ug/L	2	Standard
Br	81	1950.1	5.6				ug/L	1560	Standard
P	31	17021.2	1.3				ug/L	15481	Standard
S	34	2215.2	3.6				ug/L	2072	Standard
Sr	88	198.3	10.2				ug/L	70	Standard
C	12	116.7	13.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	9192.8	5.6				mg/L	0	Standard
Dy	164	31814.2	1.7				mg/L	13	Standard
Ho-1	165	18836.7	3.0				mg/L	8	Standard
Er	166	17556.8	1.6				mg/L	7	Standard
I	127	4934.1	3.1				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		118.211	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.899	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.551
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.792
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	
Cu 65 Upper, S, EEE	Cu	65	

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Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135
Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

Approved: June 16, 2016

Method 6020 - Summary Report

Sample ID: L1606062001SD WG572379-05
Sample Date/Time: Wednesday, June 15, 2016 13:21:48
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69584.4	1.3				ug/L	58443	Standard
	Be	9	18596.4	4.7	**26.2090**	1.120	4.3	ug/L	5	Standard
	Al	27	8151420.7	1.9	**59.9020**	0.535	0.9	ug/L	385	Standard
	Sc	45	59921.6	1.4				ug/L	46031	Standard
	Ti	47	16903.4	0.5	**74.7371**	0.068	0.1	ug/L	94	Standard
	V	51	480140.4	2.3	**86.4254**	2.210	2.6	ug/L	1280	Standard
	Cr	52	491988.0	1.0	**83.9003**	0.925	1.1	ug/L	6381	Standard
	Cr	53	59727.6	3.3	**82.4474**	2.471	3.0	ug/L	1957	Standard
	Mn	55	6504545.5	0.6	**1476.7782**	10.251	0.7	ug/L	667	Standard
	Co	59	285493.4	1.6	**59.4215**	1.088	1.8	ug/L	156	Standard
	Ni	60	196747.1	1.8	**137.4227**	2.466	1.8	ug/L	154	Standard
	Cu	65	169980.5	2.2	**121.7230**	2.731	2.2	ug/L	116	Standard
	Zn	66	185304.2	1.8	**227.7553**	4.205	1.8	ug/L	114	Standard
>	**Ge**	72	472270.8	0.4				ug/L	467488	Standard
	As	75	31518.3	3.0	**37.5734**	1.113	3.0	ug/L	-61	Standard
	Se	82	1912.7	3.6	**22.1633**	0.756	3.4	ug/L	9	Standard
	Se-1	77	1403.1	4.1	**22.3763**	0.906	4.1	ug/L	125	Standard
>	**Ga**	71	37048.6	4.3				mg/L	50	Standard
	Rb	85	363287.1	0.5				ug/L	18	Standard
	Y	89	668003.2	0.5				ug/L	402730	Standard
>	**Rh**	103	81.7	30.8				ug/L	12	Standard
	Mo	98	5010.1	1.8	**2.8881**	0.026	0.9	ug/L	8	Standard
	Ag	107	113490.6	2.1	**25.7085**	0.551	2.1	ug/L	65	Standard
	Cd	111	37384.8	2.5	**26.2030**	0.736	2.8	mg/L	3	Standard
	Cd	114	91495.3	3.1	**26.1931**	0.876	3.3	ug/L	15	Standard
>	**In**	115	521311.7	1.1				ug/L	526825	Standard
	Sn	118	1073.4	6.0	**0.1567**	0.017	10.6	ug/L	368	Standard
	Sb	123	713.3	6.6	**0.2111**	0.013	6.1	ug/L	46	Standard
	Ba	135	3782208.3	1.6	**2813.3686**	50.816	1.8	ug/L	16	Standard
	Ce	140	1515363.0	1.4				ug/L	43	Standard
>	**Tb**	159	805345.9	0.3				ug/L	771780	Standard
	Ho	165	19761.2	3.1				ug/L	8	Standard
	Tl	203	131930.0	1.3	**25.2592**	0.501	2.0	ug/L	28	Standard
	Tl	205	119775.1	2.7	**25.0844**	0.853	3.4	ug/L	20	Standard
	Pb	206	423598.4	1.6	**135.0417**	2.975	2.2	ug/L	184	Standard
	Pb	207	352960.3	1.3	**124.0951**	2.341	1.9	ug/L	161	Standard
	Pb	208	1581411.6	0.7	**127.7953**	1.782	1.4	ug/L	746	Standard
	U	238	123397.2	1.5	**27.4006**	0.586	2.1	ug/L	6	Standard
>	**Bi**	209	429575.1	0.7				ug/L	429329	Standard

Sample ID: L1606062001SD WG572379-05
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Na	23	5.0	100.0	**15.6021**	15.579	99.9	mg/L	0	Standard
Mg	24	496.7	8.1	**0.5676**	0.053	9.3	mg/L	25	Standard
K	39	1028.4	8.7	**2.7157**	0.237	8.7	mg/L	25	Standard
Ca	43	348.3	8.4	**19.2930**	1.918	9.9	mg/L	77	Standard
Fe	54	57080.2	1.3	**46.2064**	1.257	2.7	mg/L	165	Standard
Fe	57	14371.8	3.1	**44.8429**	1.842	4.1	mg/L	205	Standard
> **Sc-1**	45	59921.6	1.4				mg/L	46031	Standard
Cl	35	28389.2	2.0				ug/L	28530	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	1703.4	2.9				ug/L	1560	Standard
P	31	16614.1	2.6				ug/L	15481	Standard
S	34	2268.5	3.8				ug/L	2072	Standard
Sr	88	201.7	12.5				ug/L	70	Standard
C	12	120.0	14.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10316.8	4.3				mg/L	0	Standard
Dy	164	32294.5	1.8				mg/L	13	Standard
Ho-1	165	19761.2	3.1				mg/L	8	Standard
Er	166	17920.6	3.6				mg/L	7	Standard
I	127	3640.4	2.1				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.065	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.023	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.953
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.057
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	
Cu 65 Upper, S, EEE	Cu	65	

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Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135
Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1606041801
Sample Date/Time: Wednesday, June 15, 2016 13:24:59
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67786.3	0.9				ug/L	58443	Standard
	Be	9	1190.0	10.3	**1.7029**	0.162	9.5	ug/L	5	Standard
	Al	27	8981501.2	1.6	**67.7545**	0.625	0.9	ug/L	385	Standard
	Sc	45	59454.8	0.9				ug/L	46031	Standard
	Ti	47	5858.5	3.3	**25.5904**	0.968	3.8	ug/L	94	Standard
	V	51	164865.4	1.6	**29.5059**	0.528	1.8	ug/L	1280	Standard
	Cr	52	189463.1	1.7	**31.5939**	0.478	1.5	ug/L	6381	Standard
	Cr	53	23576.7	2.6	**30.8100**	1.102	3.6	ug/L	1957	Standard
	Mn	55	4544332.2	1.6	**1031.7046**	14.859	1.4	ug/L	667	Standard
	Co	59	149671.3	2.6	**31.1341**	0.748	2.4	ug/L	156	Standard
	Ni	60	81067.4	2.0	**56.5474**	0.908	1.6	ug/L	154	Standard
	Cu	65	76159.0	2.0	**54.4816**	1.152	2.1	ug/L	116	Standard
	Zn	66	108001.0	2.0	**132.6394**	2.517	1.9	ug/L	114	Standard
>	**Ge**	72	472256.2	0.7				ug/L	467488	Standard
	As	75	7432.4	1.4	**8.8922**	0.135	1.5	ug/L	-61	Standard
	Se	82	56.7	15.1	**0.4903**	0.095	19.4	ug/L	9	Standard
	Se-1	77	131.7	7.6	**0.2755**	0.186	67.4	ug/L	125	Standard
>	**Ga**	71	25920.5	1.8				mg/L	50	Standard
	Rb	85	279377.6	1.7				ug/L	18	Standard
	Y	89	668381.6	1.0				ug/L	402730	Standard
>	**Rh**	103	45.0	33.3				ug/L	12	Standard
	Mo	98	1371.1	3.5	**0.7769**	0.037	4.7	ug/L	8	Standard
	Ag	107	562.7	4.4	**0.1058**	0.007	6.9	ug/L	65	Standard
	Cd	111	226.7	9.7	**0.1493**	0.016	10.9	mg/L	3	Standard
	Cd	114	557.1	7.3	**0.1437**	0.012	8.6	ug/L	15	Standard
>	**In**	115	526625.0	1.4				ug/L	526825	Standard
	Sn	118	231.7	12.3	**-0.0552**	0.006	11.5	ug/L	368	Standard
	Sb	123	125.3	10.2	**0.0243**	0.003	14.3	ug/L	46	Standard
	Ba	135	240051.4	0.6	**176.7590**	3.487	2.0	ug/L	16	Standard
	Ce	140	905805.2	0.3				ug/L	43	Standard
>	**Tb**	159	810661.8	0.3				ug/L	771780	Standard
	Ho	165	21188.2	3.6				ug/L	8	Standard
	Tl	203	1291.7	4.1	**0.2328**	0.012	5.0	ug/L	28	Standard
	Tl	205	1156.7	1.2	**0.2303**	0.002	0.7	ug/L	20	Standard
	Pb	206	58996.3	1.2	**18.7397**	0.318	1.7	ug/L	184	Standard
	Pb	207	48786.1	1.3	**17.0854**	0.336	2.0	ug/L	161	Standard
	Pb	208	222396.6	1.2	**17.9051**	0.294	1.6	ug/L	746	Standard
	U	238	4886.1	2.5	**1.0798**	0.025	2.3	ug/L	6	Standard
>	**Bi**	209	429692.6	0.6				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	280.0	6.2	**0.3055**	0.024	7.9	mg/L	25	Standard
K	39	921.7	5.4	**2.4408**	0.164	6.7	mg/L	25	Standard
Ca	43	283.3	6.2	**14.9343**	1.129	7.6	mg/L	77	Standard
Fe	54	43450.9	1.7	**35.4123**	0.826	2.3	mg/L	165	Standard
Fe	57	11037.4	0.6	**34.5685**	0.351	1.0	mg/L	205	Standard
Sc-1	45	59454.8	0.9				mg/L	46031	Standard
Cl	35	28745.9	0.4				ug/L	28530	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	3620.4	10.5				ug/L	1560	Standard
P	31	16712.5	1.3				ug/L	15481	Standard
S	34	2228.5	5.5				ug/L	2072	Standard
Sr	88	125.0	6.9				ug/L	70	Standard
C	12	63.3	74.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	53.3	28.6				mg/L	0	Standard
Dy	164	34495.4	1.1				mg/L	13	Standard
Ho-1	165	21188.2	3.6				mg/L	8	Standard
Er	166	18214.3	3.5				mg/L	7	Standard
I	127	2781.9	3.9				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.988	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.020	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.962	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.085	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606041803
Sample Date/Time: Wednesday, June 15, 2016 13:28:11
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68198.1	0.2				ug/L	58443	Standard
	Be	9	1153.4	5.4	**1.6405**	0.086	5.3	ug/L	5	Standard
	Al	27	9640563.2	0.9	**72.2902**	0.654	0.9	ug/L	385	Standard
	Sc	45	58531.2	0.8				ug/L	46031	Standard
	Ti	47	4838.1	0.6	**21.2366**	0.274	1.3	ug/L	94	Standard
	V	51	158120.8	1.8	**28.5356**	0.347	1.2	ug/L	1280	Standard
	Cr	52	200133.1	2.8	**33.7409**	0.888	2.6	ug/L	6381	Standard
	Cr	53	25124.2	4.2	**33.3316**	1.539	4.6	ug/L	1957	Standard
	Mn	55	4555464.0	1.9	**1043.2278**	13.251	1.3	ug/L	667	Standard
	Co	59	135189.0	2.4	**28.3632**	0.514	1.8	ug/L	156	Standard
	Ni	60	88704.0	1.8	**62.4292**	0.890	1.4	ug/L	154	Standard
	Cu	65	86177.2	3.0	**62.1959**	1.573	2.5	ug/L	116	Standard
	Zn	66	119874.9	2.8	**148.5293**	3.444	2.3	ug/L	114	Standard
>	**Ge**	72	468158.5	0.6				ug/L	467488	Standard
	As	75	15142.2	2.4	**18.2299**	0.338	1.9	ug/L	-61	Standard
	Se	82	46.7	24.1	**0.3785**	0.130	34.2	ug/L	9	Standard
	Se-1	77	140.0	5.0	**0.4408**	0.114	25.9	ug/L	125	Standard
>	**Ga**	71	28296.4	4.9				mg/L	50	Standard
	Rb	85	269310.1	2.7				ug/L	18	Standard
	Y	89	665572.0	1.7				ug/L	402730	Standard
>	**Rh**	103	38.3	30.1				ug/L	12	Standard
	Mo	98	2841.2	2.2	**1.6290**	0.047	2.9	ug/L	8	Standard
	Ag	107	563.0	9.5	**0.1067**	0.012	11.6	ug/L	65	Standard
	Cd	111	250.2	4.0	**0.1667**	0.007	4.1	mg/L	3	Standard
	Cd	114	632.6	13.7	**0.1663**	0.025	15.1	ug/L	15	Standard
>	**In**	115	523112.8	0.8				ug/L	526825	Standard
	Sn	118	275.0	15.5	**-0.0439**	0.010	23.4	ug/L	368	Standard
	Sb	123	138.2	16.7	**0.0287**	0.007	24.5	ug/L	46	Standard
	Ba	135	234833.9	2.5	**174.0739**	5.560	3.2	ug/L	16	Standard
	Ce	140	827283.0	1.0				ug/L	43	Standard
>	**Tb**	159	807787.5	1.1				ug/L	771780	Standard
	Ho	165	19843.0	1.3				ug/L	8	Standard
	Tl	203	1252.4	3.3	**0.2220**	0.008	3.6	ug/L	28	Standard
	Tl	205	1050.0	8.3	**0.2049**	0.018	8.7	ug/L	20	Standard
	Pb	206	83829.7	2.5	**26.2946**	0.758	2.9	ug/L	184	Standard
	Pb	207	68468.4	2.7	**23.6795**	0.730	3.1	ug/L	161	Standard
	Pb	208	313626.5	1.9	**24.9342**	0.573	2.3	ug/L	746	Standard
	U	238	5635.7	3.3	**1.2292**	0.044	3.6	ug/L	6	Standard
>	**Bi**	209	435627.5	0.5				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	166.7	26.9	**0.1689**	0.055	32.8	mg/L	25	Standard
K	39	751.7	14.6	**1.9984**	0.329	16.5	mg/L	25	Standard
Ca	43	320.0	8.3	**17.8490**	1.683	9.4	mg/L	77	Standard
Fe	54	43552.1	3.0	**36.0605**	1.352	3.8	mg/L	165	Standard
Fe	57	10775.5	1.5	**34.2787**	0.794	2.3	mg/L	205	Standard
Sc-1	45	58531.2	0.8				mg/L	46031	Standard
Cl	35	28072.0	1.0				ug/L	28530	Standard
Kr	83	3.0	0.0				ug/L	2	Standard
Br	81	2446.9	7.6				ug/L	1560	Standard
P	31	16517.3	2.9				ug/L	15481	Standard
S	34	2230.2	3.1				ug/L	2072	Standard
Sr	88	115.0	27.2				ug/L	70	Standard
C	12	56.7	36.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	70.0	14.3				mg/L	0	Standard
Dy	164	33720.4	1.0				mg/L	13	Standard
Ho-1	165	19843.0	1.3				mg/L	8	Standard
Er	166	17653.6	2.8				mg/L	7	Standard
I	127	2163.5	6.2				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		116.693	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.143	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.295
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.467
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606041802
Sample Date/Time: Wednesday, June 15, 2016 13:31:22
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67682.5	1.4				ug/L	58443	Standard
	Be	9	1211.7	3.7	**1.7376**	0.049	2.8	ug/L	5	Standard
	Al	27	11268872.8	0.6	**85.1526**	0.875	1.0	ug/L	385	Standard
	Sc	45	58748.7	2.1				ug/L	46031	Standard
	Ti	47	5918.2	2.1	**26.6073**	0.401	1.5	ug/L	94	Standard
	V	51	154733.3	1.5	**28.4768**	0.386	1.4	ug/L	1280	Standard
	Cr	52	206589.4	1.4	**35.5789**	0.284	0.8	ug/L	6381	Standard
	Cr	53	25638.3	2.5	**34.8005**	0.849	2.4	ug/L	1957	Standard
	Mn	55	5223821.2	0.9	**1220.0141**	6.775	0.6	ug/L	667	Standard
	Co	59	160217.1	1.7	**34.2877**	0.490	1.4	ug/L	156	Standard
	Ni	60	94959.0	0.9	**68.1655**	0.378	0.6	ug/L	154	Standard
	Cu	65	113209.4	1.5	**83.3599**	0.788	0.9	ug/L	116	Standard
	Zn	66	130707.8	1.5	**165.1865**	1.541	0.9	ug/L	114	Standard
>	**Ge**	72	459087.1	0.6				ug/L	467488	Standard
	As	75	5398.6	1.1	**6.6543**	0.042	0.6	ug/L	-61	Standard
	Se	82	59.6	12.5	**0.5458**	0.094	17.2	ug/L	9	Standard
	Se-1	77	145.3	4.1	**0.5848**	0.101	17.3	ug/L	125	Standard
>	**Ga**	71	29244.9	5.5				mg/L	50	Standard
	Rb	85	267224.3	0.4				ug/L	18	Standard
	Y	89	714902.4	0.6				ug/L	402730	Standard
>	**Rh**	103	53.3	14.3				ug/L	12	Standard
	Mo	98	1965.6	1.6	**1.1495**	0.021	1.8	ug/L	8	Standard
	Ag	107	469.0	6.3	**0.0878**	0.007	7.9	ug/L	65	Standard
	Cd	111	452.9	5.3	**0.3154**	0.018	5.6	mg/L	3	Standard
	Cd	114	1094.9	6.9	**0.3052**	0.022	7.3	ug/L	15	Standard
>	**In**	115	511717.9	0.2				ug/L	526825	Standard
	Sn	118	378.3	17.0	**-0.0159**	0.017	104.3	ug/L	368	Standard
	Sb	123	124.7	11.6	**0.0253**	0.005	18.1	ug/L	46	Standard
	Ba	135	231692.1	0.6	**175.5425**	1.270	0.7	ug/L	16	Standard
	Ce	140	1028249.4	0.4				ug/L	43	Standard
>	**Tb**	159	810087.8	1.3				ug/L	771780	Standard
	Ho	165	26180.9	1.3				ug/L	8	Standard
	Tl	203	1340.4	2.0	**0.2495**	0.004	1.7	ug/L	28	Standard
	Tl	205	1108.4	14.6	**0.2270**	0.036	15.8	ug/L	20	Standard
	Pb	206	70924.3	1.2	**23.1956**	0.270	1.2	ug/L	184	Standard
	Pb	207	57741.8	1.0	**20.8214**	0.308	1.5	ug/L	161	Standard
	Pb	208	264689.6	0.2	**21.9414**	0.113	0.5	ug/L	746	Standard
	U	238	6237.0	1.2	**1.4198**	0.024	1.7	ug/L	6	Standard
>	**Bi**	209	417621.7	0.5				ug/L	429329	Standard

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Na	23	15.0	0.0	**47.3827**	0.982	2.1	mg/L	0	Standard
Mg	24	390.0	12.4	**0.4475**	0.069	15.4	mg/L	25	Standard
K	39	791.7	5.3	**2.1025**	0.119	5.7	mg/L	25	Standard
Ca	43	796.7	6.6	**51.5838**	4.287	8.3	mg/L	77	Standard
Fe	54	48826.4	0.9	**40.2925**	0.472	1.2	mg/L	165	Standard
Fe	57	13069.0	0.6	**41.5481**	0.808	1.9	mg/L	205	Standard
> **Sc-1**	45	58748.7	2.1				mg/L	46031	Standard
Cl	35	28997.7	1.6				ug/L	28530	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	2560.2	4.1				ug/L	1560	Standard
P	31	17019.6	3.6				ug/L	15481	Standard
S	34	2300.2	8.3				ug/L	2072	Standard
Sr	88	165.0	3.0				ug/L	70	Standard
C	12	80.0	33.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	88.2				mg/L	0	Standard
Dy	164	43790.1	0.4				mg/L	13	Standard
Ho-1	165	26180.9	1.3				mg/L	8	Standard
Er	166	22606.9	2.7				mg/L	7	Standard
I	127	2458.5	3.4				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.810	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.203	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.132
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.273
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606041802PS WG572831-01
Sample Date/Time: Wednesday, June 15, 2016 13:41:29
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	66325.0	3.4				ug/L	58443	Standard
	Be	9	34495.9	2.5	**51.0583**	1.787	3.5	ug/L	5	Standard
	Al	27	11374685.7	1.2	**87.7855**	3.703	4.2	ug/L	385	Standard
	Sc	45	58700.2	2.6				ug/L	46031	Standard
	Ti	47	6052.2	1.7	**27.1311**	0.678	2.5	ug/L	94	Standard
	V	51	442730.3	0.8	**81.6879**	1.268	1.6	ug/L	1280	Standard
	Cr	52	503762.3	1.1	**88.1378**	1.666	1.9	ug/L	6381	Standard
	Cr	53	60380.1	1.1	**85.5639**	1.361	1.6	ug/L	1957	Standard
	Mn	55	5675002.2	1.2	**1320.9708**	24.350	1.8	ug/L	667	Standard
	Co	59	401137.0	1.4	**85.6171**	1.879	2.2	ug/L	156	Standard
	Ni	60	166313.9	1.2	**119.0850**	2.309	1.9	ug/L	154	Standard
	Cu	65	182558.6	0.6	**134.0419**	1.921	1.4	ug/L	116	Standard
	Zn	66	172296.9	1.2	**217.1077**	4.187	1.9	ug/L	114	Standard
>	Ge	72	460668.2	0.8				ug/L	467488	Standard
	As	75	48361.5	1.3	**59.0878**	1.230	2.1	ug/L	-61	Standard
	Se	82	4381.0	1.6	**52.2834**	1.224	2.3	ug/L	9	Standard
	Se-1	77	3020.0	2.2	**51.8197**	1.593	3.1	ug/L	125	Standard
>	Ga	71	30121.6	1.7				mg/L	50	Standard
	Rb	85	272553.4	1.8				ug/L	18	Standard
	Y	89	736201.6	0.1				ug/L	402730	Standard
>	Rh	103	56.7	45.3				ug/L	12	Standard
	Mo	98	1999.1	0.5	**1.1774**	0.013	1.1	ug/L	8	Standard
	Ag	107	224778.9	1.1	**52.2570**	1.101	2.1	ug/L	65	Standard
	Cd	111	73199.6	1.5	**52.6398**	1.303	2.5	mg/L	3	Standard
	Cd	114	179274.6	1.6	**52.6581**	1.006	1.9	ug/L	15	Standard
>	In	115	508224.3	1.3				ug/L	526825	Standard
	Sn	118	436.7	6.9	**-0.0002**	0.008	3224.1	ug/L	368	Standard
	Sb	123	161952.3	0.7	**52.6527**	0.895	1.7	ug/L	46	Standard
	Ba	135	297754.5	1.1	**227.1911**	5.099	2.2	ug/L	16	Standard
	Ce	140	1030642.3	0.9				ug/L	43	Standard
>	Tb	159	793703.2	1.6				ug/L	771780	Standard
	Ho	165	26668.5	1.2				ug/L	8	Standard
	Tl	203	264676.1	0.6	**52.9300**	0.416	0.8	ug/L	28	Standard
	Tl	205	238127.0	1.6	**52.0819**	0.703	1.3	ug/L	20	Standard
	Pb	206	232649.9	0.5	**77.4135**	0.335	0.4	ug/L	184	Standard
	Pb	207	198876.7	0.4	**72.9818**	0.354	0.5	ug/L	161	Standard
	Pb	208	877093.3	0.5	**73.9821**	0.561	0.8	ug/L	746	Standard
	U	238	232166.7	0.9	**53.8350**	0.495	0.9	ug/L	6	Standard
>	Bi	209	411364.9	0.4				ug/L	429329	Standard

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Na	23	1.7	173.2	**5.2708**	9.121	173.0	mg/L	0	Standard
Mg	24	460.0	24.0	**0.5328**	0.125	23.5	mg/L	25	Standard
K	39	761.7	12.2	**2.0172**	0.233	11.5	mg/L	25	Standard
Ca	43	788.4	8.8	**51.1079**	6.244	12.2	mg/L	77	Standard
Fe	54	49724.3	1.2	**41.0737**	0.594	1.4	mg/L	165	Standard
Fe	57	12963.9	3.6	**41.2500**	1.770	4.3	mg/L	205	Standard
> **Sc-1**	45	58700.2	2.6				mg/L	46031	Standard
Cl	35	29176.1	1.4				ug/L	28530	Standard
Kr	83	1.7	124.9				ug/L	2	Standard
Br	81	2596.9	7.7				ug/L	1560	Standard
P	31	17425.0	3.1				ug/L	15481	Standard
S	34	2358.5	5.3				ug/L	2072	Standard
Sr	88	175.0	11.4				ug/L	70	Standard
C	12	90.0	38.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	43.3				mg/L	0	Standard
Dy	164	44070.8	1.2				mg/L	13	Standard
Ho-1	165	26668.5	1.2				mg/L	8	Standard
Er	166	23237.8	4.3				mg/L	7	Standard
I	127	2595.2	1.3				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.488	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.541	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.469
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.816
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	
Cu 65 Upper, S, EEE	Cu	65	

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Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606041802SDL WG572831-02
Sample Date/Time: Wednesday, June 15, 2016 13:44:40
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61857.7	1.6				ug/L	58443	Standard
	Be	9	270.0	9.8	**0.4095**	0.048	11.6	ug/L	5	Standard
	Al	27	2424594.6	1.9	**20.0400**	0.362	1.8	ug/L	385	Standard
	Sc	45	51626.2	4.0				ug/L	46031	Standard
	Ti	47	1295.1	2.0	**5.2965**	0.108	2.0	ug/L	94	Standard
	V	51	34070.6	0.6	**5.9088**	0.033	0.6	ug/L	1280	Standard
	Cr	52	49126.5	1.9	**7.3534**	0.125	1.7	ug/L	6381	Standard
	Cr	53	6054.5	2.6	**5.7959**	0.276	4.8	ug/L	1957	Standard
	Mn	55	1029733.7	2.5	**234.3041**	5.606	2.4	ug/L	667	Standard
	Co	59	34623.2	3.3	**7.1953**	0.230	3.2	ug/L	156	Standard
	Ni	60	20615.7	2.7	**14.3266**	0.392	2.7	ug/L	154	Standard
	Cu	65	24841.4	1.5	**17.7510**	0.287	1.6	ug/L	116	Standard
	Zn	66	28605.3	1.3	**35.0443**	0.509	1.5	ug/L	114	Standard
>	**Ge**	72	470897.1	0.6				ug/L	467488	Standard
	As	75	1138.6	2.0	**1.4008**	0.026	1.8	ug/L	-61	Standard
	Se	82	24.9	25.7	**0.1203**	0.076	63.4	ug/L	9	Standard
	Se-1	77	87.0	4.6	**-0.4975**	0.062	12.4	ug/L	125	Standard
>	**Ga**	71	6288.0	1.8				mg/L	50	Standard
	Rb	85	57301.5	1.3				ug/L	18	Standard
	Y	89	481754.2	0.6				ug/L	402730	Standard
>	**Rh**	103	25.0	20.0				ug/L	12	Standard
	Mo	98	435.1	3.5	**0.2377**	0.010	4.3	ug/L	8	Standard
	Ag	107	202.7	13.6	**0.0244**	0.006	25.1	ug/L	65	Standard
	Cd	111	104.2	11.5	**0.0633**	0.008	13.3	mg/L	3	Standard
	Cd	114	226.4	10.5	**0.0491**	0.007	14.5	ug/L	15	Standard
>	**In**	115	533673.5	0.8				ug/L	526825	Standard
	Sn	118	383.3	9.2	**-0.0187**	0.009	48.9	ug/L	368	Standard
	Sb	123	1689.7	17.6	**0.5082**	0.091	17.9	ug/L	46	Standard
	Ba	135	49410.4	1.7	**35.8779**	0.583	1.6	ug/L	16	Standard
	Ce	140	223922.7	1.3				ug/L	43	Standard
>	**Tb**	159	790867.7	0.6				ug/L	771780	Standard
	Ho	165	5561.0	3.7				ug/L	8	Standard
	Tl	203	336.7	7.1	**0.0505**	0.005	9.3	ug/L	28	Standard
	Tl	205	358.3	10.5	**0.0637**	0.008	12.4	ug/L	20	Standard
	Pb	206	15151.2	0.4	**4.8006**	0.018	0.4	ug/L	184	Standard
	Pb	207	12528.2	1.6	**4.3720**	0.077	1.8	ug/L	161	Standard
	Pb	208	56711.5	1.3	**4.5521**	0.066	1.5	ug/L	746	Standard
	U	238	1347.7	2.8	**0.2968**	0.009	2.9	ug/L	6	Standard
>	**Bi**	209	425975.7	0.1				ug/L	429329	Standard

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Na	23	3.3	86.6	**11.9680**	10.384	86.8	mg/L	0	Standard
Mg	24	96.7	16.6	**0.0983**	0.028	28.5	mg/L	25	Standard
K	39	228.3	14.9	**0.5974**	0.137	22.9	mg/L	25	Standard
Ca	43	255.0	16.8	**15.7733**	4.235	26.9	mg/L	77	Standard
Fe	54	10651.6	1.5	**9.9068**	0.396	4.0	mg/L	165	Standard
Fe	57	2866.9	7.6	**9.9233**	0.521	5.2	mg/L	205	Standard
Sc-1	45	51626.2	4.0				mg/L	46031	Standard
Cl	35	29725.8	1.4				ug/L	28530	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1666.8	4.9				ug/L	1560	Standard
P	31	18075.8	6.3				ug/L	15481	Standard
S	34	2523.5	0.5				ug/L	2072	Standard
Sr	88	81.7	14.1				ug/L	70	Standard
C	12	73.3	34.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	9751.2	2.5				mg/L	13	Standard
Ho-1	165	5561.0	3.7				mg/L	8	Standard
Er	166	4427.3	0.9				mg/L	7	Standard
I	127	1280.1	5.8				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		105.844	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.729	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.300	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.219	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 15, 2016 13:47:53
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60174.3	2.2				ug/L	58443	Standard
	Be	9	31559.6	6.5	**51.4478**	2.885	5.6	ug/L	5	Standard
	Al	27	5818243.8	4.9	**49.4539**	2.501	5.1	ug/L	385	Standard
	Sc	45	48012.7	2.9				ug/L	46031	Standard
	Ti	47	22960.4	5.7	**103.6500**	4.765	4.6	ug/L	94	Standard
	V	51	277672.3	4.8	**50.8347**	1.874	3.7	ug/L	1280	Standard
	Cr	52	292823.5	6.3	**50.4322**	2.650	5.3	ug/L	6381	Standard
	Cr	53	36039.6	6.1	**49.5955**	2.567	5.2	ug/L	1957	Standard
	Mn	55	224134.3	5.6	**51.6746**	2.275	4.4	ug/L	667	Standard
	Co	59	238927.7	6.1	**50.6753**	2.543	5.0	ug/L	156	Standard
	Ni	60	71561.7	6.5	**50.8579**	2.718	5.3	ug/L	154	Standard
	Cu	65	69534.5	5.2	**50.6880**	2.044	4.0	ug/L	116	Standard
	Zn	66	40574.7	4.9	**50.6292**	1.870	3.7	ug/L	114	Standard
>	**Ge**	72	463219.9	1.2				ug/L	467488	Standard
	As	75	41379.5	4.8	**50.2655**	1.823	3.6	ug/L	-61	Standard
	Se	82	4167.8	6.8	**49.4276**	2.794	5.7	ug/L	9	Standard
	Se-1	77	2888.3	2.3	**49.1764**	0.653	1.3	ug/L	125	Standard
>	**Ga**	71	48.3	15.8				mg/L	50	Standard
	Rb	85	696.7	17.9				ug/L	18	Standard
	Y	89	402110.7	3.0				ug/L	402730	Standard
>	**Rh**	103	20.0	50.0				ug/L	12	Standard
	Mo	98	175752.8	6.4	**102.4468**	3.823	3.7	ug/L	8	Standard
	Ag	107	224033.2	4.4	**51.2132**	0.826	1.6	ug/L	65	Standard
	Cd	111	71558.1	3.8	**50.6056**	0.752	1.5	mg/L	3	Standard
	Cd	114	178074.4	4.5	**51.4334**	0.913	1.8	ug/L	15	Standard
>	**In**	115	516622.4	2.8				ug/L	526825	Standard
	Sn	118	201596.8	3.6	**50.9377**	0.435	0.9	ug/L	368	Standard
	Sb	123	159299.4	4.5	**50.9257**	0.942	1.8	ug/L	46	Standard
	Ba	135	67188.5	4.4	**50.3907**	0.804	1.6	ug/L	16	Standard
	Ce	140	153.3	41.5				ug/L	43	Standard
>	**Tb**	159	762703.1	2.6				ug/L	771780	Standard
	Ho	165	18.3	83.3				ug/L	8	Standard
	Tl	203	257586.0	2.9	**50.6785**	0.497	1.0	ug/L	28	Standard
	Tl	205	232742.9	4.5	**50.0707**	1.172	2.3	ug/L	20	Standard
	Pb	206	155047.2	3.4	**50.7290**	0.717	1.4	ug/L	184	Standard
	Pb	207	139591.6	3.4	**50.3713**	0.666	1.3	ug/L	161	Standard
	Pb	208	606250.5	4.7	**50.2737**	1.339	2.7	ug/L	746	Standard
	U	238	219016.4	4.9	**49.9496**	1.390	2.8	ug/L	6	Standard
>	**Bi**	209	418078.6	2.2				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3218.7	10.3	**4.8619**	0.377	7.7	mg/L	25	Standard
K	39	1333.4	9.9	**4.4779**	0.339	7.6	mg/L	25	Standard
Ca	43	81.7	19.7	**2.1702**	1.278	58.9	mg/L	77	Standard
Fe	54	4617.4	6.0	**4.5367**	0.149	3.3	mg/L	165	Standard
Fe	57	1280.1	12.3	**4.4571**	0.522	11.7	mg/L	205	Standard
Sc-1	45	48012.7	2.9				mg/L	46031	Standard
Cl	35	29463.3	3.3				ug/L	28530	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	1530.1	19.3				ug/L	1560	Standard
P	31	17296.5	2.3				ug/L	15481	Standard
S	34	2430.2	2.1				ug/L	2072	Standard
Sr	88	48.3	23.9				ug/L	70	Standard
C	12	43.3	53.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	16.0	37.9				mg/L	13	Standard
Ho-1	165	18.3	83.3				mg/L	8	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	1038.4	11.6				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.896		
Al	27	98.908		
Sc	45			
Ti	47	103.650		
V	51	101.669		
Cr	52	100.864		
Cr	53			
Mn	55	103.349		
Co	59	101.351		
Ni	60	101.716		
Cu	65	101.376		
Zn	66	101.258		
Ge	72		99.087	
As	75	100.531		
Se	82	98.855		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	102.447		
Ag	107	102.426		
Cd	111	101.211		
Cd	114			
> In	115		98.063	
Sn	118	101.875		
Sb	123	101.851		
Ba	135	100.781		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.357		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.547		
U	238	99.899		
> Bi	209		97.380	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 15, 2016 13:51:04
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61332.2	0.5				ug/L	58443	Standard
	Be	9	13.3	57.3	**0.0020**	0.012	611.7	ug/L	5	Standard
	Al	27	1903.5	39.0	**0.0078**	0.006	79.1	ug/L	385	Standard
	Sc	45	47728.4	2.3				ug/L	46031	Standard
	Ti	47	52.3	15.4	**-0.2500**	0.033	13.1	ug/L	94	Standard
	V	51	1152.5	3.7	**-0.0514**	0.010	18.5	ug/L	1280	Standard
	Cr	52	5735.4	0.4	**-0.1703**	0.018	10.7	ug/L	6381	Standard
	Cr	53	823.4	4.0	**-1.7003**	0.063	3.7	ug/L	1957	Standard
	Mn	55	813.0	13.3	**-0.0100**	0.023	228.2	ug/L	667	Standard
	Co	59	213.7	7.6	**0.0083**	0.003	32.6	ug/L	156	Standard
	Ni	60	101.3	6.9	**-0.0576**	0.004	6.9	ug/L	154	Standard
	Cu	65	131.3	9.5	**-0.0112**	0.008	68.4	ug/L	116	Standard
	Zn	66	136.3	17.9	**-0.0889**	0.028	31.9	ug/L	114	Standard
>	**Ge**	72	470868.5	1.5				ug/L	467488	Standard
	As	75	-3.0	553.5	**0.0374**	0.020	52.3	ug/L	-61	Standard
	Se	82	20.8	15.8	**0.0729**	0.036	50.0	ug/L	9	Standard
	Se-1	77	69.0	16.5	**-0.8122**	0.186	22.9	ug/L	125	Standard
>	**Ga**	71	46.7	43.3				mg/L	50	Standard
	Rb	85	50.0	36.1				ug/L	18	Standard
	Y	89	408287.3	1.7				ug/L	402730	Standard
>	**Rh**	103	10.0					ug/L	12	Standard
	Mo	98	154.3	19.8	**0.0802**	0.017	21.5	ug/L	8	Standard
	Ag	107	145.3	15.7	**0.0121**	0.005	40.0	ug/L	65	Standard
	Cd	111	22.0	39.4	**0.0072**	0.006	84.2	mg/L	3	Standard
	Cd	114	59.5	46.6	**0.0026**	0.008	304.9	ug/L	15	Standard
>	**In**	115	526220.7	1.4				ug/L	526825	Standard
	Sn	118	640.0	14.1	**0.0465**	0.023	48.7	ug/L	368	Standard
	Sb	123	489.2	21.7	**0.1388**	0.034	24.8	ug/L	46	Standard
	Ba	135	62.0	24.4	**0.0226**	0.011	48.4	ug/L	16	Standard
	Ce	140	65.0	60.1				ug/L	43	Standard
>	**Tb**	159	785908.6	1.0				ug/L	771780	Standard
	Ho	165	18.3	56.8				ug/L	8	Standard
	Tl	203	81.7	33.2	**0.0011**	0.005	488.0	ug/L	28	Standard
	Tl	205	55.0	63.6	**-0.0004**	0.008	1778.1	ug/L	20	Standard
	Pb	206	250.0	8.7	**0.0072**	0.007	97.1	ug/L	184	Standard
	Pb	207	206.3	3.2	**0.0004**	0.004	821.0	ug/L	161	Standard
	Pb	208	908.3	8.1	**0.0016**	0.007	445.1	ug/L	746	Standard
	U	238	50.0	60.5	**0.0062**	0.007	112.4	ug/L	6	Standard
>	**Bi**	209	429670.2	2.1				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	23.3	44.6	**-0.0034**	0.017	499.1	mg/L	25	Standard
K	39	43.3	52.0	**0.0086**	0.079	915.3	mg/L	25	Standard
Ca	43	35.0	24.7	**-1.8404**	0.780	42.4	mg/L	77	Standard
Fe	54	136.3	11.8	**0.0006**	0.015	2366.1	mg/L	165	Standard
Fe	57	138.3	18.2	**-0.0375**	0.089	236.7	mg/L	205	Standard
Sc-1	45	47728.4	2.3				mg/L	46031	Standard
Cl	35	28812.1	4.2				ug/L	28530	Standard
Kr	83	3.7	15.7				ug/L	2	Standard
Br	81	1190.0	8.9				ug/L	1560	Standard
P	31	16827.7	3.3				ug/L	15481	Standard
S	34	2285.2	1.6				ug/L	2072	Standard
Sr	88	48.3	15.8				ug/L	70	Standard
C	12	46.7	44.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	0	Standard
Dy	164	9.8	101.7				mg/L	13	Standard
Ho-1	165	18.3	56.8				mg/L	8	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	981.7	6.0				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.723	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.885
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.079
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606041804
Sample Date/Time: Wednesday, June 15, 2016 13:54:18
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66870.6	1.1				ug/L	58443	Standard
	Be	9	1426.7	0.7	**2.0750**	0.033	1.6	ug/L	5	Standard
	Al	27	11080839.3	0.7	**84.7454**	0.749	0.9	ug/L	385	Standard
	Sc	45	61981.5	1.7				ug/L	46031	Standard
	Ti	47	4966.1	3.8	**21.7926**	0.984	4.5	ug/L	94	Standard
	V	51	190877.8	0.8	**34.4683**	0.182	0.5	ug/L	1280	Standard
	Cr	52	230077.7	0.4	**38.9268**	0.408	1.0	ug/L	6381	Standard
	Cr	53	28465.0	0.5	**38.1059**	0.358	0.9	ug/L	1957	Standard
	Mn	55	5743498.7	0.8	**1314.1457**	13.791	1.0	ug/L	667	Standard
	Co	59	171177.5	0.2	**35.8911**	0.250	0.7	ug/L	156	Standard
	Ni	60	108053.0	1.2	**76.0061**	1.256	1.7	ug/L	154	Standard
	Cu	65	102506.3	0.7	**73.9344**	0.422	0.6	ug/L	116	Standard
	Zn	66	137461.1	0.6	**170.2057**	1.682	1.0	ug/L	114	Standard
>	**Ge**	72	468623.2	0.7				ug/L	467488	Standard
	As	75	15288.0	0.9	**18.3884**	0.185	1.0	ug/L	-61	Standard
	Se	82	55.3	16.5	**0.4805**	0.110	23.0	ug/L	9	Standard
	Se-1	77	141.7	6.1	**0.4678**	0.149	31.8	ug/L	125	Standard
>	**Ga**	71	32984.2	1.7				mg/L	50	Standard
	Rb	85	350791.4	1.2				ug/L	18	Standard
	Y	89	750797.9	0.7				ug/L	402730	Standard
>	**Rh**	103	38.3	15.1				ug/L	12	Standard
	Mo	98	864.1	4.5	**0.5005**	0.017	3.5	ug/L	8	Standard
	Ag	107	687.7	4.0	**0.1383**	0.008	5.9	ug/L	65	Standard
	Cd	111	412.4	4.4	**0.2862**	0.010	3.4	mg/L	3	Standard
	Cd	114	998.2	0.6	**0.2768**	0.004	1.5	ug/L	15	Standard
>	**In**	115	511987.2	1.3				ug/L	526825	Standard
	Sn	118	318.3	13.7	**-0.0314**	0.010	32.7	ug/L	368	Standard
	Sb	123	210.2	17.6	**0.0528**	0.011	20.9	ug/L	46	Standard
	Ba	135	265794.8	0.7	**201.3122**	4.088	2.0	ug/L	16	Standard
	Ce	140	1006442.1	1.8				ug/L	43	Standard
>	**Tb**	159	792141.6	0.5				ug/L	771780	Standard
	Ho	165	27596.8	2.4				ug/L	8	Standard
	Tl	203	1494.7	1.2	**0.2798**	0.006	2.0	ug/L	28	Standard
	Tl	205	1358.4	8.5	**0.2808**	0.028	9.9	ug/L	20	Standard
	Pb	206	81000.3	0.6	**26.4883**	0.233	0.9	ug/L	184	Standard
	Pb	207	67084.2	0.6	**24.1892**	0.232	1.0	ug/L	161	Standard
	Pb	208	305067.5	0.2	**25.2870**	0.192	0.8	ug/L	746	Standard
	U	238	6149.9	0.3	**1.3992**	0.018	1.3	ug/L	6	Standard
>	**Bi**	209	417840.8	1.0				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	120.0	15.0	**0.1025**	0.023	22.6	mg/L	25	Standard
K	39	1053.4	8.3	**2.6916**	0.284	10.6	mg/L	25	Standard
Ca	43	395.0	16.2	**21.6715**	4.656	21.5	mg/L	77	Standard
Fe	54	51255.0	2.9	**40.1039**	1.832	4.6	mg/L	165	Standard
Fe	57	13164.1	3.3	**39.6527**	1.978	5.0	mg/L	205	Standard
> **Sc-1**	45	61981.5	1.7				mg/L	46031	Standard
Cl	35	29019.1	1.0				ug/L	28530	Standard
Kr	83	2.3	137.8				ug/L	2	Standard
Br	81	1720.1	4.8				ug/L	1560	Standard
P	31	16742.6	1.9				ug/L	15481	Standard
S	34	2348.5	4.6				ug/L	2072	Standard
Sr	88	141.7	8.2				ug/L	70	Standard
C	12	43.3	70.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	53.3	28.6				mg/L	0	Standard
Dy	164	46789.4	2.1				mg/L	13	Standard
Ho-1	165	27596.8	2.4				mg/L	8	Standard
Er	166	24489.8	1.3				mg/L	7	Standard
I	127	1586.7	3.8				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.421	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.243	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.184
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.324
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606041805
Sample Date/Time: Wednesday, June 15, 2016 13:57:29
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66378.4	1.3				ug/L	58443	Standard
	Be	9	1078.4	6.1	**1.5761**	0.114	7.3	ug/L	5	Standard
	Al	27	10071343.0	1.7	**77.5894**	0.627	0.8	ug/L	385	Standard
	Sc	45	57698.0	1.7				ug/L	46031	Standard
	Ti	47	6554.1	5.7	**29.0600**	1.427	4.9	ug/L	94	Standard
	V	51	197571.3	0.6	**35.8861**	0.786	2.2	ug/L	1280	Standard
	Cr	52	219624.7	0.6	**37.3139**	0.610	1.6	ug/L	6381	Standard
	Cr	53	26965.6	0.4	**36.1575**	0.435	1.2	ug/L	1957	Standard
	Mn	55	4629685.6	0.9	**1065.0156**	14.954	1.4	ug/L	667	Standard
	Co	59	153015.9	1.6	**32.2500**	0.130	0.4	ug/L	156	Standard
	Ni	60	89531.4	0.7	**63.2967**	0.841	1.3	ug/L	154	Standard
	Cu	65	82581.8	1.1	**59.8676**	0.877	1.5	ug/L	116	Standard
	Zn	66	123870.0	0.9	**154.1777**	1.128	0.7	ug/L	114	Standard
>	**Ge**	72	466132.7	1.5				ug/L	467488	Standard
	As	75	9758.7	1.3	**11.8174**	0.272	2.3	ug/L	-61	Standard
	Se	82	53.4	20.6	**0.4613**	0.139	30.1	ug/L	9	Standard
	Se-1	77	132.0	11.0	**0.3111**	0.254	81.7	ug/L	125	Standard
>	**Ga**	71	31025.1	3.0				mg/L	50	Standard
	Rb	85	310246.1	1.1				ug/L	18	Standard
	Y	89	662984.7	1.4				ug/L	402730	Standard
>	**Rh**	103	23.3	61.9				ug/L	12	Standard
	Mo	98	922.3	1.6	**0.5259**	0.010	1.9	ug/L	8	Standard
	Ag	107	528.0	7.9	**0.0994**	0.009	9.3	ug/L	65	Standard
	Cd	111	242.6	5.6	**0.1622**	0.009	5.6	mg/L	3	Standard
	Cd	114	579.0	3.2	**0.1518**	0.006	3.8	ug/L	15	Standard
>	**In**	115	520566.8	0.3				ug/L	526825	Standard
	Sn	118	285.0	20.7	**-0.0410**	0.015	36.5	ug/L	368	Standard
	Sb	123	153.5	29.6	**0.0338**	0.015	43.0	ug/L	46	Standard
	Ba	135	181689.3	1.4	**135.3103**	1.728	1.3	ug/L	16	Standard
	Ce	140	981840.4	1.3				ug/L	43	Standard
>	**Tb**	159	793974.0	1.3				ug/L	771780	Standard
	Ho	165	21136.4	2.8				ug/L	8	Standard
	Tl	203	1304.7	4.4	**0.2440**	0.011	4.3	ug/L	28	Standard
	Tl	205	1111.7	2.0	**0.2290**	0.006	2.6	ug/L	20	Standard
	Pb	206	57878.7	1.0	**19.0251**	0.112	0.6	ug/L	184	Standard
	Pb	207	47221.5	1.0	**17.1125**	0.135	0.8	ug/L	161	Standard
	Pb	208	216540.2	0.8	**18.0409**	0.155	0.9	ug/L	746	Standard
	U	238	5354.9	1.2	**1.2254**	0.020	1.6	ug/L	6	Standard
>	**Bi**	209	415222.7	0.5				ug/L	429329	Standard

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Na	23	1.7	173.2	**5.2912**	9.156	173.0	mg/L	0	Standard
Mg	24	86.7	21.8	**0.0703**	0.022	31.9	mg/L	25	Standard
K	39	871.7	7.1	**2.3759**	0.211	8.9	mg/L	25	Standard
Ca	43	323.3	16.4	**18.4374**	3.861	20.9	mg/L	77	Standard
Fe	54	48370.7	0.6	**40.6432**	0.492	1.2	mg/L	165	Standard
Fe	57	11956.4	2.8	**38.6635**	1.401	3.6	mg/L	205	Standard
Sc-1	45	57698.0	1.7				mg/L	46031	Standard
Cl	35	28811.4	0.9				ug/L	28530	Standard
Kr	83	2.3	89.2				ug/L	2	Standard
Br	81	1880.1	1.4				ug/L	1560	Standard
P	31	16322.1	2.6				ug/L	15481	Standard
S	34	2218.5	0.9				ug/L	2072	Standard
Sr	88	108.3	7.1				ug/L	70	Standard
C	12	46.7	32.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	17.3				mg/L	0	Standard
Dy	164	34411.5	1.4				mg/L	13	Standard
Ho-1	165	21136.4	2.8				mg/L	8	Standard
Er	166	18501.3	1.8				mg/L	7	Standard
I	127	1670.1					mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.579	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.710	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.812
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.714
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606041806
Sample Date/Time: Wednesday, June 15, 2016 14:00:40
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64358.1	0.6				ug/L	58443	Standard
	Be	9	910.0	6.2	**1.3682**	0.079	5.8	ug/L	5	Standard
	Al	27	13361620.0	1.1	**106.1767**	1.367	1.3	ug/L	385	Standard
	Sc	45	55332.5	0.3				ug/L	46031	Standard
	Ti	47	6032.2	1.5	**27.3073**	0.207	0.8	ug/L	94	Standard
	V	51	118504.4	0.7	**21.8899**	0.087	0.4	ug/L	1280	Standard
	Cr	52	128054.3	1.7	**21.7572**	0.301	1.4	ug/L	6381	Standard
	Cr	53	15327.7	0.2	**19.7930**	0.215	1.1	ug/L	1957	Standard
	Mn	55	3935045.2	0.1	**924.9155**	7.268	0.8	ug/L	667	Standard
	Co	59	103155.6	0.7	**22.2067**	0.293	1.3	ug/L	156	Standard
	Ni	60	62677.7	1.4	**45.2373**	0.373	0.8	ug/L	154	Standard
	Cu	65	36887.9	0.8	**27.2662**	0.075	0.3	ug/L	116	Standard
	Zn	66	98143.8	0.7	**124.7710**	0.091	0.1	ug/L	114	Standard
>	**Ge**	72	456159.1	0.8				ug/L	467488	Standard
	As	75	10585.5	1.0	**13.0916**	0.063	0.5	ug/L	-61	Standard
	Se	82	74.6	3.4	**0.7304**	0.025	3.5	ug/L	9	Standard
	Se-1	77	134.0	7.5	**0.3983**	0.193	48.4	ug/L	125	Standard
>	**Ga**	71	17513.5	1.6				mg/L	50	Standard
	Rb	85	176960.9	1.5				ug/L	18	Standard
	Y	89	684660.8	1.4				ug/L	402730	Standard
>	**Rh**	103	48.3	11.9				ug/L	12	Standard
	Mo	98	1710.5	3.8	**1.0258**	0.035	3.4	ug/L	8	Standard
	Ag	107	558.7	14.4	**0.1121**	0.021	19.0	ug/L	65	Standard
	Cd	111	404.7	3.6	**0.2887**	0.016	5.4	mg/L	3	Standard
	Cd	114	1011.8	15.6	**0.2894**	0.054	18.5	ug/L	15	Standard
>	**In**	115	498609.4	2.1				ug/L	526825	Standard
	Sn	118	430.0	5.3	**0.0001**	0.004	3693.1	ug/L	368	Standard
	Sb	123	174.8	30.9	**0.0432**	0.019	44.4	ug/L	46	Standard
	Ba	135	197196.7	0.7	**153.3657**	2.668	1.7	ug/L	16	Standard
	Ce	140	688106.9	0.5				ug/L	43	Standard
>	**Tb**	159	776744.7	2.4				ug/L	771780	Standard
	Ho	165	22853.9	4.4				ug/L	8	Standard
	Tl	203	955.7	11.2	**0.1831**	0.023	12.7	ug/L	28	Standard
	Tl	205	875.0	7.2	**0.1858**	0.014	7.7	ug/L	20	Standard
	Pb	206	50176.6	1.4	**17.1979**	0.236	1.4	ug/L	184	Standard
	Pb	207	41090.3	1.4	**15.5254**	0.097	0.6	ug/L	161	Standard
	Pb	208	185495.8	0.0	**16.1135**	0.128	0.8	ug/L	746	Standard
	U	238	5455.3	1.1	**1.3024**	0.009	0.7	ug/L	6	Standard
>	**Bi**	209	398062.7	0.8				ug/L	429329	Standard

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Na	23	8.3	91.7	**27.9820**	25.668	91.7	mg/L	0	Standard
Mg	24	328.3	14.1	**0.3950**	0.061	15.5	mg/L	25	Standard
K	39	630.0	5.6	**1.7537**	0.100	5.7	mg/L	25	Standard
Ca	43	1738.4	9.3	**125.8947**	12.527	10.0	mg/L	77	Standard
Fe	54	29315.7	1.0	**25.6310**	0.190	0.7	mg/L	165	Standard
Fe	57	8287.3	0.2	**27.7746**	0.020	0.1	mg/L	205	Standard
> **Sc-1**	45	55332.5	0.3				mg/L	46031	Standard
Cl	35	30369.1	0.6				ug/L	28530	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	3737.1	4.1				ug/L	1560	Standard
P	31	16010.1	2.2				ug/L	15481	Standard
S	34	2293.5	3.3				ug/L	2072	Standard
Sr	88	296.7	5.4				ug/L	70	Standard
C	12	110.0	24.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	0	Standard
Dy	164	38119.6	2.8				mg/L	13	Standard
Ho-1	165	22853.9	4.4				mg/L	8	Standard
Er	166	19218.9	2.7				mg/L	7	Standard
I	127	5105.9	3.7				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.122	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.577	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.644
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	92.717
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606041807
Sample Date/Time: Wednesday, June 15, 2016 14:03:52
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65556.5	1.1				ug/L	58443	Standard
	Be	9	1356.7	2.4	**2.0118**	0.033	1.6	ug/L	5	Standard
	Al	27	8811144.5	2.9	**68.7355**	2.060	3.0	ug/L	385	Standard
	Sc	45	62148.9	0.3				ug/L	46031	Standard
	Ti	47	5403.3	4.3	**23.9482**	0.921	3.8	ug/L	94	Standard
	V	51	183697.8	0.8	**33.4417**	0.296	0.9	ug/L	1280	Standard
	Cr	52	195683.8	1.8	**33.2155**	0.458	1.4	ug/L	6381	Standard
	Cr	53	23423.1	1.3	**31.1266**	0.381	1.2	ug/L	1957	Standard
	Mn	55	4666933.6	1.0	**1076.6681**	7.121	0.7	ug/L	667	Standard
	Co	59	149905.3	1.2	**31.6882**	0.304	1.0	ug/L	156	Standard
	Ni	60	87732.6	1.3	**62.1998**	0.549	0.9	ug/L	154	Standard
	Cu	65	88127.3	1.5	**64.0783**	0.730	1.1	ug/L	116	Standard
	Zn	66	118622.3	1.2	**148.0660**	1.211	0.8	ug/L	114	Standard
>	**Ge**	72	464738.2	0.5				ug/L	467488	Standard
	As	75	21228.1	1.0	**25.7293**	0.185	0.7	ug/L	-61	Standard
	Se	82	69.3	7.4	**0.6510**	0.062	9.6	ug/L	9	Standard
	Se-1	77	136.3	6.8	**0.3945**	0.167	42.3	ug/L	125	Standard
>	**Ga**	71	27453.2	2.1				mg/L	50	Standard
	Rb	85	342614.3	1.5				ug/L	18	Standard
	Y	89	726916.3	1.5				ug/L	402730	Standard
>	**Rh**	103	51.7	36.6				ug/L	12	Standard
	Mo	98	997.7	1.0	**0.5794**	0.011	1.9	ug/L	8	Standard
	Ag	107	691.0	1.9	**0.1390**	0.003	2.2	ug/L	65	Standard
	Cd	111	273.5	3.6	**0.1872**	0.007	3.9	mg/L	3	Standard
	Cd	114	664.7	11.7	**0.1795**	0.021	11.9	ug/L	15	Standard
>	**In**	115	511850.8	0.9				ug/L	526825	Standard
	Sn	118	321.7	16.6	**-0.0305**	0.014	45.1	ug/L	368	Standard
	Sb	123	117.2	21.7	**0.0229**	0.008	36.1	ug/L	46	Standard
	Ba	135	247257.2	0.7	**187.2991**	2.440	1.3	ug/L	16	Standard
	Ce	140	1043756.4	0.6				ug/L	43	Standard
>	**Tb**	159	799766.5	1.1				ug/L	771780	Standard
	Ho	165	26623.4	1.9				ug/L	8	Standard
	Tl	203	1415.7	0.4	**0.2638**	0.001	0.5	ug/L	28	Standard
	Tl	205	1328.4	8.0	**0.2737**	0.024	8.8	ug/L	20	Standard
	Pb	206	87325.3	0.5	**28.5166**	0.179	0.6	ug/L	184	Standard
	Pb	207	72346.6	0.5	**26.0509**	0.252	1.0	ug/L	161	Standard
	Pb	208	328779.2	0.3	**27.2144**	0.136	0.5	ug/L	746	Standard
	U	238	8460.0	1.2	**1.9236**	0.029	1.5	ug/L	6	Standard
>	**Bi**	209	418496.0	0.6				ug/L	429329	Standard

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Na	23	1.7	173.2	**4.9871**	8.629	173.0	mg/L	0	Standard
Mg	24	181.7	13.0	**0.1746**	0.028	16.3	mg/L	25	Standard
K	39	978.4	2.8	**2.4798**	0.078	3.2	mg/L	25	Standard
Ca	43	263.3	9.7	**12.7376**	1.705	13.4	mg/L	77	Standard
Fe	54	50092.4	3.2	**39.0632**	1.158	3.0	mg/L	165	Standard
Fe	57	12972.2	1.0	**38.9375**	0.291	0.7	mg/L	205	Standard
> **Sc-1**	45	62148.9	0.3				mg/L	46031	Standard
Cl	35	29361.1	3.6				ug/L	28530	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	2323.5	8.1				ug/L	1560	Standard
P	31	16337.1	0.6				ug/L	15481	Standard
S	34	2321.8	7.1				ug/L	2072	Standard
Sr	88	131.7	19.1				ug/L	70	Standard
C	12	70.0	0.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	0	Standard
Dy	164	44613.6	2.8				mg/L	13	Standard
Ho-1	165	26623.4	1.9				mg/L	8	Standard
Er	166	23214.4	1.9				mg/L	7	Standard
I	127	1880.1	5.6				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.173	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.412	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.158
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.477
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606041808
Sample Date/Time: Wednesday, June 15, 2016 14:07:03
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67724.4	1.3				ug/L	58443	Standard
	Be	9	1018.4	9.8	**1.4555**	0.127	8.7	ug/L	5	Standard
	Al	27	6752275.7	1.2	**50.9873**	0.690	1.4	ug/L	385	Standard
	Sc	45	55463.0	1.4				ug/L	46031	Standard
	Ti	47	4421.3	1.2	**19.0526**	0.070	0.4	ug/L	94	Standard
	V	51	117871.0	1.6	**20.8730**	0.543	2.6	ug/L	1280	Standard
	Cr	52	147118.1	2.5	**24.0904**	0.446	1.9	ug/L	6381	Standard
	Cr	53	17822.1	0.7	**22.4033**	0.156	0.7	ug/L	1957	Standard
	Mn	55	2921235.7	1.5	**658.4436**	7.963	1.2	ug/L	667	Standard
	Co	59	110592.2	1.1	**22.8337**	0.269	1.2	ug/L	156	Standard
	Ni	60	64168.0	2.3	**44.4119**	0.506	1.1	ug/L	154	Standard
	Cu	65	55309.1	1.5	**39.2546**	0.299	0.8	ug/L	116	Standard
	Zn	66	90664.9	2.0	**110.5083**	1.255	1.1	ug/L	114	Standard
>	**Ge**	72	475634.9	1.2				ug/L	467488	Standard
	As	75	9658.7	1.7	**11.4615**	0.135	1.2	ug/L	-61	Standard
	Se	82	67.3	14.9	**0.6084**	0.108	17.8	ug/L	9	Standard
	Se-1	77	103.7	10.8	**-0.2239**	0.204	91.0	ug/L	125	Standard
>	**Ga**	71	20338.6	2.0				mg/L	50	Standard
	Rb	85	227131.8	1.9				ug/L	18	Standard
	Y	89	605173.2	1.0				ug/L	402730	Standard
>	**Rh**	103	25.0	34.6				ug/L	12	Standard
	Mo	98	1147.5	4.3	**0.6589**	0.024	3.7	ug/L	8	Standard
	Ag	107	501.3	13.8	**0.0936**	0.014	14.9	ug/L	65	Standard
	Cd	111	206.7	22.3	**0.1376**	0.033	23.6	mg/L	3	Standard
	Cd	114	447.6	13.0	**0.1145**	0.015	13.1	ug/L	15	Standard
>	**In**	115	518422.5	1.6				ug/L	526825	Standard
	Sn	118	338.3	11.1	**-0.0273**	0.009	33.1	ug/L	368	Standard
	Sb	123	117.5	29.5	**0.0224**	0.011	48.0	ug/L	46	Standard
	Ba	135	195010.3	2.0	**145.8547**	3.456	2.4	ug/L	16	Standard
	Ce	140	570484.7	2.7				ug/L	43	Standard
>	**Tb**	159	799024.1	0.4				ug/L	771780	Standard
	Ho	165	15878.3	4.2				ug/L	8	Standard
	Tl	203	1056.0	5.3	**0.1931**	0.010	5.0	ug/L	28	Standard
	Tl	205	896.7	4.3	**0.1809**	0.007	3.8	ug/L	20	Standard
	Pb	206	58493.4	0.7	**19.0830**	0.268	1.4	ug/L	184	Standard
	Pb	207	47752.5	1.1	**17.1757**	0.330	1.9	ug/L	161	Standard
	Pb	208	218797.4	1.0	**18.0921**	0.301	1.7	ug/L	746	Standard
	U	238	4034.5	2.7	**0.9151**	0.032	3.5	ug/L	6	Standard
>	**Bi**	209	418402.0	1.0				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	716.7	5.9	**0.9072**	0.067	7.4	mg/L	25	Standard
K	39	683.3	15.7	**1.9079**	0.307	16.1	mg/L	25	Standard
Ca	43	188.3	16.2	**9.2301**	2.219	24.0	mg/L	77	Standard
Fe	54	38087.5	2.0	**33.2620**	0.280	0.8	mg/L	165	Standard
Fe	57	9818.2	4.0	**32.9397**	1.433	4.3	mg/L	205	Standard
> **Sc-1**	45	55463.0	1.4				mg/L	46031	Standard
Cl	35	27952.4	2.0				ug/L	28530	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	7005.0	3.2				ug/L	1560	Standard
P	31	15362.8	3.7				ug/L	15481	Standard
S	34	2173.5	8.3				ug/L	2072	Standard
Sr	88	141.7	7.3				ug/L	70	Standard
C	12	80.0	94.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	0	Standard
Dy	164	25584.6	3.5				mg/L	13	Standard
Ho-1	165	15878.3	4.2				mg/L	8	Standard
Er	166	13599.4	3.8				mg/L	7	Standard
I	127	3335.4	7.8				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.882	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.743	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.405
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.455
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606053101
Sample Date/Time: Wednesday, June 15, 2016 14:10:15
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66500.7	2.8				ug/L	58443	Standard
	Be	9	1150.0	8.3	**1.6771**	0.116	6.9	ug/L	5	Standard
	Al	27	15615140.8	1.3	**120.1310**	2.748	2.3	ug/L	385	Standard
	Sc	45	61300.4	0.2				ug/L	46031	Standard
	Ti	47	10253.8	0.9	**46.0760**	0.578	1.3	ug/L	94	Standard
	V	51	193809.6	0.9	**35.4417**	0.379	1.1	ug/L	1280	Standard
	Cr	52	196291.7	2.0	**33.4630**	0.598	1.8	ug/L	6381	Standard
	Cr	53	23489.9	1.4	**31.3611**	0.228	0.7	ug/L	1957	Standard
	Mn	55	17084552.8	1.9	**3957.8112**	50.826	1.3	ug/L	667	Standard
	Co	59	142155.8	2.9	**30.1671**	0.622	2.1	ug/L	156	Standard
	Ni	60	78767.6	1.5	**56.0580**	0.560	1.0	ug/L	154	Standard
	Cu	65	60263.9	0.3	**43.9664**	0.416	0.9	ug/L	116	Standard
	Zn	66	108743.8	0.4	**136.2710**	0.550	0.4	ug/L	114	Standard
>	**Ge**	72	462862.3	0.8				ug/L	467488	Standard
	As	75	13112.5	0.8	**15.9733**	0.091	0.6	ug/L	-61	Standard
	Se	82	104.0	3.8	**1.0675**	0.037	3.4	ug/L	9	Standard
	Se-1	77	161.3	9.0	**0.8477**	0.259	30.6	ug/L	125	Standard
>	**Ga**	71	27543.4	2.1				mg/L	50	Standard
	Rb	85	282670.8	0.6				ug/L	18	Standard
	Y	89	790683.2	0.4				ug/L	402730	Standard
>	**Rh**	103	70.0	44.6				ug/L	12	Standard
	Mo	98	2290.8	2.5	**1.3624**	0.035	2.6	ug/L	8	Standard
	Ag	107	668.0	1.3	**0.1362**	0.001	1.1	ug/L	65	Standard
	Cd	111	887.6	5.5	**0.6358**	0.033	5.2	mg/L	3	Standard
	Cd	114	2122.1	1.8	**0.6147**	0.014	2.2	ug/L	15	Standard
>	**In**	115	503745.2	0.4				ug/L	526825	Standard
	Sn	118	298.3	9.2	**-0.0352**	0.007	20.9	ug/L	368	Standard
	Sb	123	92.8	16.1	**0.0155**	0.005	31.0	ug/L	46	Standard
	Ba	135	679604.4	0.8	**523.1112**	5.817	1.1	ug/L	16	Standard
	Ce	140	1672508.0	1.3				ug/L	43	Standard
>	**Tb**	159	799991.8	1.7				ug/L	771780	Standard
	Ho	165	30430.6	3.3				ug/L	8	Standard
	Tl	203	1375.7	2.1	**0.2641**	0.006	2.4	ug/L	28	Standard
	Tl	205	1261.7	6.7	**0.2675**	0.018	6.9	ug/L	20	Standard
	Pb	206	103034.8	0.7	**34.6778**	0.321	0.9	ug/L	184	Standard
	Pb	207	84579.4	1.0	**31.3890**	0.350	1.1	ug/L	161	Standard
	Pb	208	383337.0	0.2	**32.7022**	0.131	0.4	ug/L	746	Standard
	U	238	7872.0	1.0	**1.8436**	0.018	1.0	ug/L	6	Standard
>	**Bi**	209	406233.8	0.2				ug/L	429329	Standard

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Na	23	3.3	173.2	**10.0834**	17.456	173.1	mg/L	0	Standard
Mg	24	535.0	3.4	**0.5995**	0.021	3.5	mg/L	25	Standard
K	39	706.7	9.6	**1.7774**	0.181	10.2	mg/L	25	Standard
Ca	43	1741.8	7.5	**113.3699**	8.886	7.8	mg/L	77	Standard
Fe	54	56290.3	1.3	**44.5249**	0.475	1.1	mg/L	165	Standard
Fe	57	15115.9	0.5	**46.1065**	0.134	0.3	mg/L	205	Standard
> **Sc-1**	45	61300.4	0.2				mg/L	46031	Standard
Cl	35	30070.5	1.4				ug/L	28530	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	8759.2	4.8				ug/L	1560	Standard
P	31	16956.2	2.9				ug/L	15481	Standard
S	34	2418.5	4.5				ug/L	2072	Standard
Sr	88	258.3	24.5				ug/L	70	Standard
C	12	113.3	25.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	90.0	11.1				mg/L	0	Standard
Dy	164	48196.6	3.0				mg/L	13	Standard
Ho-1	165	30430.6	3.3				mg/L	8	Standard
Er	166	26947.3	1.5				mg/L	7	Standard
I	127	6041.2	0.3				mg/L	1227	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		113.788	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.010	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.619
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.621
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606053201
Sample Date/Time: Wednesday, June 15, 2016 14:14:15
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62212.5	1.5				ug/L	58443	Standard
	Be	9	248.3	9.1	**0.3727**	0.039	10.5	ug/L	5	Standard
	Al	27	11851064.0	3.1	**97.4040**	1.719	1.8	ug/L	385	Standard
	Sc	45	48273.5	2.8				ug/L	46031	Standard
	Ti	47	1615.1	5.7	**7.1476**	0.504	7.0	ug/L	94	Standard
	V	51	58901.8	2.5	**11.0273**	0.358	3.2	ug/L	1280	Standard
	Cr	52	51639.6	2.5	**8.3121**	0.300	3.6	ug/L	6381	Standard
	Cr	53	6192.9	2.6	**6.5090**	0.179	2.7	ug/L	1957	Standard
	Mn	55	7472888.2	1.9	**1800.9446**	49.162	2.7	ug/L	667	Standard
	Co	59	26054.7	3.9	**5.7242**	0.281	4.9	ug/L	156	Standard
	Ni	60	25425.3	2.0	**18.7386**	0.484	2.6	ug/L	154	Standard
	Cu	65	11582.4	1.7	**8.7047**	0.134	1.5	ug/L	116	Standard
	Zn	66	65841.8	1.8	**85.7274**	1.513	1.8	ug/L	114	Standard
>	**Ge**	72	444994.9	1.0				ug/L	467488	Standard
	As	75	2657.0	2.4	**3.3988**	0.059	1.7	ug/L	-61	Standard
	Se	82	215.5	1.9	**2.4998**	0.038	1.5	ug/L	9	Standard
	Se-1	77	98.0	3.1	**-0.2056**	0.073	35.4	ug/L	125	Standard
>	**Ga**	71	3277.0	3.1				mg/L	50	Standard
	Rb	85	44455.1	0.8				ug/L	18	Standard
	Y	89	517705.7	2.3				ug/L	402730	Standard
>	**Rh**	103	108.3	18.7				ug/L	12	Standard
	Mo	98	1900.2	4.2	**1.1928**	0.048	4.0	ug/L	8	Standard
	Ag	107	439.3	5.5	**0.0884**	0.007	7.6	ug/L	65	Standard
	Cd	111	666.7	1.9	**0.5030**	0.016	3.2	mg/L	3	Standard
	Cd	114	1642.5	6.1	**0.4998**	0.026	5.1	ug/L	15	Standard
>	**In**	115	476889.8	1.4				ug/L	526825	Standard
	Sn	118	283.3	2.7	**-0.0349**	0.002	6.5	ug/L	368	Standard
	Sb	123	88.2	1.4	**0.0156**	0.001	3.8	ug/L	46	Standard
	Ba	135	298760.2	1.6	**242.8966**	1.818	0.7	ug/L	16	Standard
	Ce	140	295791.1	0.6				ug/L	43	Standard
>	**Tb**	159	744198.4	1.7				ug/L	771780	Standard
	Ho	165	9429.6	2.6				ug/L	8	Standard
	Tl	203	330.3	12.9	**0.0580**	0.009	15.3	ug/L	28	Standard
	Tl	205	303.3	20.1	**0.0609**	0.014	23.6	ug/L	20	Standard
	Pb	206	27353.7	1.4	**9.9419**	0.115	1.2	ug/L	184	Standard
	Pb	207	22564.1	0.7	**9.0390**	0.050	0.6	ug/L	161	Standard
	Pb	208	100992.2	1.2	**9.3010**	0.075	0.8	ug/L	746	Standard
	U	238	3082.6	2.3	**0.7808**	0.013	1.7	ug/L	6	Standard
>	**Bi**	209	374225.3	0.8				ug/L	429329	Standard

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Na	23	21.7	35.3	**83.8232**	31.965	38.1	mg/L	0	Standard
Mg	24	255.0	2.0	**0.3474**	0.006	1.7	mg/L	25	Standard
K	39	246.7	23.5	**0.7105**	0.211	29.6	mg/L	25	Standard
Ca	43	4385.6	4.8	**373.3637**	18.356	4.9	mg/L	77	Standard
Fe	54	14425.2	4.6	**14.4074**	0.870	6.0	mg/L	165	Standard
Fe	57	5981.2	3.0	**22.8849**	0.828	3.6	mg/L	205	Standard
> **Sc-1**	45	48273.5	2.8				mg/L	46031	Standard
Cl	35	32751.4	1.3				ug/L	28530	Standard
Kr	83	3.3	105.4				ug/L	2	Standard
Br	81	40985.4	1.7				ug/L	1560	Standard
P	31	17470.1	1.9				ug/L	15481	Standard
S	34	2440.2	4.2				ug/L	2072	Standard
Sr	88	355.0	11.5				ug/L	70	Standard
C	12	140.0	37.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	14520.7	0.7				mg/L	13	Standard
Ho-1	165	9429.6	2.6				mg/L	8	Standard
Er	166	8629.1	7.4				mg/L	7	Standard
I	127	9551.3	0.5				mg/L	1227	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		106.451	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.188	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	90.521
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	87.165
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606053202
Sample Date/Time: Wednesday, June 15, 2016 14:17:26
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60175.9	1.6				ug/L	58443	Standard
	Be	9	273.3	2.8	**0.4267**	0.020	4.6	ug/L	5	Standard
	Al	27	15242479.5	0.6	**129.5549**	1.535	1.2	ug/L	385	Standard
	Sc	45	49490.8	3.3				ug/L	46031	Standard
	Ti	47	2872.3	7.2	**13.3509**	1.187	8.9	ug/L	94	Standard
	V	51	55593.9	1.9	**10.5936**	0.012	0.1	ug/L	1280	Standard
	Cr	52	64387.5	0.6	**10.8760**	0.177	1.6	ug/L	6381	Standard
	Cr	53	7458.5	1.8	**8.6439**	0.169	2.0	ug/L	1957	Standard
	Mn	55	6794420.6	2.0	**1668.3231**	29.371	1.8	ug/L	667	Standard
	Co	59	38705.7	2.8	**8.6810**	0.201	2.3	ug/L	156	Standard
	Ni	60	32203.5	0.7	**24.2223**	0.311	1.3	ug/L	154	Standard
	Cu	65	15836.6	0.8	**12.1706**	0.157	1.3	ug/L	116	Standard
	Zn	66	37864.9	1.5	**50.1357**	0.956	1.9	ug/L	114	Standard
>	**Ge**	72	436720.0	2.0				ug/L	467488	Standard
	As	75	5525.4	0.7	**7.1578**	0.110	1.5	ug/L	-61	Standard
	Se	82	66.1	11.5	**0.6643**	0.106	16.0	ug/L	9	Standard
	Se-1	77	108.0	7.6	**0.0172**	0.170	985.7	ug/L	125	Standard
>	**Ga**	71	5547.7	1.3				mg/L	50	Standard
	Rb	85	72285.4	1.5				ug/L	18	Standard
	Y	89	525601.2	0.6				ug/L	402730	Standard
>	**Rh**	103	110.0	7.9				ug/L	12	Standard
	Mo	98	4255.4	1.8	**2.7007**	0.024	0.9	ug/L	8	Standard
	Ag	107	364.0	4.3	**0.0704**	0.003	4.8	ug/L	65	Standard
	Cd	111	492.0	10.3	**0.3716**	0.036	9.6	mg/L	3	Standard
	Cd	114	1232.7	2.9	**0.3745**	0.009	2.4	ug/L	15	Standard
>	**In**	115	473401.1	1.0				ug/L	526825	Standard
	Sn	118	336.7	10.7	**-0.0197**	0.009	48.0	ug/L	368	Standard
	Sb	123	103.7	10.7	**0.0212**	0.003	16.5	ug/L	46	Standard
	Ba	135	274505.1	1.0	**224.8244**	1.818	0.8	ug/L	16	Standard
	Ce	140	315463.0	2.3				ug/L	43	Standard
>	**Tb**	159	740242.4	0.9				ug/L	771780	Standard
	Ho	165	9714.8	1.6				ug/L	8	Standard
	Tl	203	555.7	3.7	**0.1075**	0.005	4.7	ug/L	28	Standard
	Tl	205	483.3	21.2	**0.1042**	0.025	24.1	ug/L	20	Standard
	Pb	206	30263.2	1.2	**10.9919**	0.101	0.9	ug/L	184	Standard
	Pb	207	24465.7	0.8	**9.7937**	0.130	1.3	ug/L	161	Standard
	Pb	208	110227.5	0.8	**10.1443**	0.086	0.8	ug/L	746	Standard
	U	238	7840.4	0.6	**1.9910**	0.023	1.2	ug/L	6	Standard
>	**Bi**	209	374739.3	0.6				ug/L	429329	Standard

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Na	23	26.7	60.3	**101.3156**	64.622	63.8	mg/L	0	Standard
Mg	24	250.0	10.6	**0.3300**	0.031	9.4	mg/L	25	Standard
K	39	375.0	15.1	**1.1215**	0.205	18.3	mg/L	25	Standard
Ca	43	4002.2	2.0	**331.8246**	7.286	2.2	mg/L	77	Standard
Fe	54	14933.8	4.4	**14.5536**	0.915	6.3	mg/L	165	Standard
Fe	57	5961.2	2.5	**22.2272**	0.316	1.4	mg/L	205	Standard
Sc-1	45	49490.8	3.3				mg/L	46031	Standard
Cl	35	32627.1	2.7				ug/L	28530	Standard
Kr	83	2.3	99.0				ug/L	2	Standard
Br	81	2473.5	6.0				ug/L	1560	Standard
P	31	17283.2	0.8				ug/L	15481	Standard
S	34	2568.6	2.6				ug/L	2072	Standard
Sr	88	371.7	7.9				ug/L	70	Standard
C	12	120.0	25.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	15700.4	3.6				mg/L	13	Standard
Ho-1	165	9714.8	1.6				mg/L	8	Standard
Er	166	8729.2	2.9				mg/L	7	Standard
I	127	10663.8	3.0				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		102.966	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		93.418	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	89.859	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	87.285	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606053203
Sample Date/Time: Wednesday, June 15, 2016 14:20:37
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58113.0	4.0				ug/L	58443	Standard
	Be	9	208.3	14.1	**0.3323**	0.046	14.0	ug/L	5	Standard
	Al	27	10122760.3	3.0	**89.2411**	6.096	6.8	ug/L	385	Standard
	Sc	45	50039.2	3.0				ug/L	46031	Standard
	Ti	47	2190.8	3.3	**10.1484**	0.268	2.6	ug/L	94	Standard
	V	51	48910.6	2.9	**9.3705**	0.273	2.9	ug/L	1280	Standard
	Cr	52	62114.2	3.8	**10.5464**	0.356	3.4	ug/L	6381	Standard
	Cr	53	7436.8	1.6	**8.7101**	0.325	3.7	ug/L	1957	Standard
	Mn	55	5217651.6	3.8	**1291.8536**	43.119	3.3	ug/L	667	Standard
	Co	59	29025.8	5.4	**6.5555**	0.320	4.9	ug/L	156	Standard
	Ni	60	28380.9	5.2	**21.5079**	1.003	4.7	ug/L	154	Standard
	Cu	65	20447.5	3.7	**15.8771**	0.543	3.4	ug/L	116	Standard
	Zn	66	37242.4	3.0	**49.7220**	1.402	2.8	ug/L	114	Standard
>	**Ge**	72	433027.4	1.3				ug/L	467488	Standard
	As	75	3361.2	3.5	**4.4060**	0.130	2.9	ug/L	-61	Standard
	Se	82	61.3	10.7	**0.6105**	0.091	14.9	ug/L	9	Standard
	Se-1	77	109.0	10.8	**0.0511**	0.202	395.2	ug/L	125	Standard
>	**Ga**	71	3957.2	3.8				mg/L	50	Standard
	Rb	85	55033.2	4.5				ug/L	18	Standard
	Y	89	517677.4	1.0				ug/L	402730	Standard
>	**Rh**	103	106.7	28.3				ug/L	12	Standard
	Mo	98	1917.5	5.8	**1.2290**	0.076	6.2	ug/L	8	Standard
	Ag	107	524.0	6.4	**0.1121**	0.009	8.0	ug/L	65	Standard
	Cd	111	759.1	5.2	**0.5858**	0.033	5.6	mg/L	3	Standard
	Cd	114	1856.9	5.2	**0.5792**	0.034	5.8	ug/L	15	Standard
>	**In**	115	467204.3	0.5				ug/L	526825	Standard
	Sn	118	370.0	8.2	**-0.0090**	0.009	100.4	ug/L	368	Standard
	Sb	123	84.1	18.0	**0.0148**	0.005	37.1	ug/L	46	Standard
	Ba	135	1678043.5	2.8	**1392.7876**	44.681	3.2	ug/L	16	Standard
	Ce	140	289378.8	2.9				ug/L	43	Standard
>	**Tb**	159	740142.8	1.6				ug/L	771780	Standard
	Ho	165	8971.0	2.3				ug/L	8	Standard
	Tl	203	330.0	3.4	**0.0590**	0.003	4.5	ug/L	28	Standard
	Tl	205	283.3	16.4	**0.0571**	0.011	19.1	ug/L	20	Standard
	Pb	206	26350.9	2.5	**9.7146**	0.294	3.0	ug/L	184	Standard
	Pb	207	21546.6	2.4	**8.7540**	0.256	2.9	ug/L	161	Standard
	Pb	208	96947.7	3.3	**9.0564**	0.351	3.9	ug/L	746	Standard
	U	238	5540.0	3.4	**1.4278**	0.059	4.1	ug/L	6	Standard
>	**Bi**	209	368923.9	0.7				ug/L	429329	Standard

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Na	23	21.7	58.1	**81.3239**	49.541	60.9	mg/L	0	Standard
Mg	24	226.7	10.4	**0.2930**	0.043	14.8	mg/L	25	Standard
K	39	310.0	15.4	**0.8928**	0.189	21.2	mg/L	25	Standard
Ca	43	4484.0	5.9	**368.6824**	31.853	8.6	mg/L	77	Standard
Fe	54	10612.2	3.2	**10.1777**	0.176	1.7	mg/L	165	Standard
Fe	57	5210.9	1.4	**19.1400**	0.329	1.7	mg/L	205	Standard
Sc-1	45	50039.2	3.0				mg/L	46031	Standard
Cl	35	32055.9	2.2				ug/L	28530	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	2020.1	6.9				ug/L	1560	Standard
P	31	17026.2	5.8				ug/L	15481	Standard
S	34	2385.2	4.5				ug/L	2072	Standard
Sr	88	401.7	9.2				ug/L	70	Standard
C	12	140.0	37.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	14180.2	1.3				mg/L	13	Standard
Ho-1	165	8971.0	2.3				mg/L	8	Standard
Er	166	8075.5	4.2				mg/L	7	Standard
I	127	8130.5	6.2				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		99.436	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		92.629	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	88.683
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	85.930
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606053204
Sample Date/Time: Wednesday, June 15, 2016 14:23:48
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57383.5	1.9				ug/L	58443	Standard
	Be	9	266.7	7.1	**0.4368**	0.031	7.2	ug/L	5	Standard
	Al	27	9417672.4	0.7	**83.9447**	1.310	1.6	ug/L	385	Standard
	Sc	45	50591.1	4.3				ug/L	46031	Standard
	Ti	47	3106.0	4.2	**14.3279**	0.880	6.1	ug/L	94	Standard
	V	51	48624.1	1.7	**9.1440**	0.333	3.6	ug/L	1280	Standard
	Cr	52	68682.7	1.8	**11.5552**	0.385	3.3	ug/L	6381	Standard
	Cr	53	8177.2	3.3	**9.6375**	0.641	6.7	ug/L	1957	Standard
	Mn	55	5169814.0	2.2	**1257.3460**	46.117	3.7	ug/L	667	Standard
	Co	59	38740.8	2.9	**8.6069**	0.362	4.2	ug/L	156	Standard
	Ni	60	34109.7	2.3	**25.4146**	0.828	3.3	ug/L	154	Standard
	Cu	65	28816.0	1.8	**22.0195**	0.785	3.6	ug/L	116	Standard
	Zn	66	40011.1	0.6	**52.4782**	1.314	2.5	ug/L	114	Standard
>	**Ge**	72	441038.4	1.9				ug/L	467488	Standard
	As	75	3054.9	0.6	**3.9377**	0.096	2.4	ug/L	-61	Standard
	Se	82	65.7	11.0	**0.6510**	0.092	14.2	ug/L	9	Standard
	Se-1	77	104.3	8.2	**-0.0707**	0.174	245.6	ug/L	125	Standard
>	**Ga**	71	5741.1	2.7				mg/L	50	Standard
	Rb	85	87325.9	1.1				ug/L	18	Standard
	Y	89	523613.7	2.3				ug/L	402730	Standard
>	**Rh**	103	108.3	7.1				ug/L	12	Standard
	Mo	98	1940.0	2.7	**1.2203**	0.041	3.4	ug/L	8	Standard
	Ag	107	343.7	1.8	**0.0648**	0.002	2.6	ug/L	65	Standard
	Cd	111	473.9	3.0	**0.3557**	0.010	2.8	mg/L	3	Standard
	Cd	114	1178.3	6.1	**0.3552**	0.021	5.8	ug/L	15	Standard
>	**In**	115	476028.9	0.7				ug/L	526825	Standard
	Sn	118	313.3	9.8	**-0.0266**	0.009	32.1	ug/L	368	Standard
	Sb	123	114.7	4.5	**0.0248**	0.002	6.8	ug/L	46	Standard
	Ba	135	738377.3	1.1	**601.4548**	8.510	1.4	ug/L	16	Standard
	Ce	140	346615.0	0.6				ug/L	43	Standard
>	**Tb**	159	743264.3	0.4				ug/L	771780	Standard
	Ho	165	10158.4	2.6				ug/L	8	Standard
	Tl	203	431.7	10.1	**0.0797**	0.010	12.6	ug/L	28	Standard
	Tl	205	355.0	8.6	**0.0728**	0.007	9.7	ug/L	20	Standard
	Pb	206	22622.5	1.5	**8.1511**	0.166	2.0	ug/L	184	Standard
	Pb	207	18713.9	1.6	**7.4306**	0.148	2.0	ug/L	161	Standard
	Pb	208	84573.8	1.4	**7.7216**	0.145	1.9	ug/L	746	Standard
	U	238	3144.3	2.5	**0.7909**	0.024	3.1	ug/L	6	Standard
>	**Bi**	209	376923.9	0.6				ug/L	429329	Standard

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Na	23	25.0	40.0	**91.8384**	36.178	39.4	mg/L	0	Standard
Mg	24	310.0	8.4	**0.4103**	0.050	12.2	mg/L	25	Standard
K	39	420.0	6.0	**1.2418**	0.099	8.0	mg/L	25	Standard
Ca	43	3627.1	1.9	**293.7487**	8.445	2.9	mg/L	77	Standard
Fe	54	13505.2	5.0	**12.8816**	1.240	9.6	mg/L	165	Standard
Fe	57	5262.6	2.1	**19.1367**	0.957	5.0	mg/L	205	Standard
Sc-1	45	50591.1	4.3				mg/L	46031	Standard
Cl	35	31888.9	2.7				ug/L	28530	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	1933.5	4.0				ug/L	1560	Standard
P	31	17406.7	2.4				ug/L	15481	Standard
S	34	2663.6	4.2				ug/L	2072	Standard
Sr	88	373.3	20.1				ug/L	70	Standard
C	12	116.7	40.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	16348.0	2.2				mg/L	13	Standard
Ho-1	165	10158.4	2.6				mg/L	8	Standard
Er	166	9002.7	3.7				mg/L	7	Standard
I	127	7376.8	5.8				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.188	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.342	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	90.358
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	87.794
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 15, 2016 14:27:02
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55605.2	0.4				ug/L	58443	Standard
	Be	9	29609.0	5.3	**52.2405**	2.680	5.1	ug/L	5	Standard
	Al	27	5798926.1	3.2	**53.3263**	1.582	3.0	ug/L	385	Standard
	Sc	45	48412.2	1.9				ug/L	46031	Standard
	Ti	47	24336.9	3.4	**112.1165**	3.510	3.1	ug/L	94	Standard
	V	51	284028.5	4.9	**53.0517**	2.486	4.7	ug/L	1280	Standard
	Cr	52	307694.4	3.0	**54.1480**	1.509	2.8	ug/L	6381	Standard
	Cr	53	37701.9	1.7	**53.1253**	0.794	1.5	ug/L	1957	Standard
	Mn	55	236844.9	3.8	**55.7196**	1.987	3.6	ug/L	667	Standard
	Co	59	234044.4	3.7	**50.6404**	1.734	3.4	ug/L	156	Standard
	Ni	60	74487.8	3.3	**54.0152**	1.655	3.1	ug/L	154	Standard
	Cu	65	71892.2	2.3	**53.4672**	1.100	2.1	ug/L	116	Standard
	Zn	66	41041.2	3.9	**52.2472**	1.919	3.7	ug/L	114	Standard
>	**Ge**	72	454210.3	0.3				ug/L	467488	Standard
	As	75	41590.3	3.5	**51.5343**	1.685	3.3	ug/L	-61	Standard
	Se	82	4195.6	1.7	**50.7706**	0.721	1.4	ug/L	9	Standard
	Se-1	77	2847.3	4.8	**49.4516**	2.391	4.8	ug/L	125	Standard
>	**Ga**	71	73.3	15.7				mg/L	50	Standard
	Rb	85	696.7	7.1				ug/L	18	Standard
	Y	89	403813.9	0.6				ug/L	402730	Standard
>	**Rh**	103	20.0	86.6				ug/L	12	Standard
	Mo	98	169384.9	3.2	**101.8738**	1.747	1.7	ug/L	8	Standard
	Ag	107	222886.5	2.6	**52.5554**	0.592	1.1	ug/L	65	Standard
	Cd	111	71212.3	3.0	**51.9394**	0.931	1.8	mg/L	3	Standard
	Cd	114	176395.5	6.3	**52.5373**	2.617	5.0	ug/L	15	Standard
>	**In**	115	500946.8	1.5				ug/L	526825	Standard
	Sn	118	199084.6	1.5	**51.8896**	0.602	1.2	ug/L	368	Standard
	Sb	123	157078.5	3.4	**51.7930**	0.999	1.9	ug/L	46	Standard
	Ba	135	68070.6	2.1	**52.6655**	0.645	1.2	ug/L	16	Standard
	Ce	140	143.3	46.8				ug/L	43	Standard
>	**Tb**	159	744062.2	0.5				ug/L	771780	Standard
	Ho	165	6.7	86.6				ug/L	8	Standard
	Tl	203	251542.0	3.0	**51.8671**	2.288	4.4	ug/L	28	Standard
	Tl	205	223420.5	1.8	**50.3805**	1.657	3.3	ug/L	20	Standard
	Pb	206	153283.2	2.9	**52.5632**	2.130	4.1	ug/L	184	Standard
	Pb	207	138476.8	2.4	**52.3725**	1.971	3.8	ug/L	161	Standard
	Pb	208	600834.5	2.0	**52.2302**	1.831	3.5	ug/L	746	Standard
	U	238	216645.8	2.4	**51.7956**	1.990	3.8	ug/L	6	Standard
>	**Bi**	209	399130.9	1.5				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3252.0	5.6	**4.8811**	0.317	6.5	mg/L	25	Standard
K	39	1450.1	6.6	**4.8516**	0.403	8.3	mg/L	25	Standard
Ca	43	91.7	26.9	**2.9927**	2.178	72.8	mg/L	77	Standard
Fe	54	5107.5	2.3	**4.9933**	0.080	1.6	mg/L	165	Standard
Fe	57	1370.1	10.4	**4.7694**	0.481	10.1	mg/L	205	Standard
Sc-1	45	48412.2	1.9				mg/L	46031	Standard
Cl	35	31723.2	2.2				ug/L	28530	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	1473.4	19.4				ug/L	1560	Standard
P	31	18795.0	0.8				ug/L	15481	Standard
S	34	2708.6	2.6				ug/L	2072	Standard
Sr	88	66.7	31.2				ug/L	70	Standard
C	12	53.3	47.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.7	108.3				mg/L	13	Standard
Ho-1	165	6.7	86.6				mg/L	8	Standard
Er	166	6.7	173.2				mg/L	7	Standard
I	127	1025.0	10.4				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	104.481		
Al	27	106.653		
Sc	45			
Ti	47	112.116		
V	51	106.103		
Cr	52	108.296		
Cr	53			
Mn	55	111.439		
Co	59	101.281		
Ni	60	108.030		
Cu	65	106.934		
Zn	66	104.494		
Ge	72		97.160	
As	75	103.069		
Se	82	101.541		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.874		
Ag	107	105.111		
Cd	111	103.879		
Cd	114			
In	115		95.088	
Sn	118	103.779		
Sb	123	103.586		
Ba	135	105.331		
Ce	140			
Tb	159			
Ho	165			
Tl	203	103.734		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.460		
U	238	103.591		
Bi	209		92.966	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Ti	47	
QC Std 6	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 15, 2016 14:30:13
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56073.6	1.1				ug/L	58443	Standard
	Be	9	16.7	75.5	**0.0099**	0.022	225.3	ug/L	5	Standard
	Al	27	3030.4	55.2	**0.0197**	0.015	78.8	ug/L	385	Standard
	Sc	45	48979.0	0.9				ug/L	46031	Standard
	Ti	47	48.0	19.9	**-0.2639**	0.040	15.2	ug/L	94	Standard
	V	51	1173.8	4.1	**-0.0421**	0.007	16.1	ug/L	1280	Standard
	Cr	52	6112.9	1.7	**-0.0773**	0.021	27.5	ug/L	6381	Standard
	Cr	53	655.0	4.3	**-1.9178**	0.032	1.7	ug/L	1957	Standard
	Mn	55	1735.4	41.3	**0.2090**	0.160	76.7	ug/L	667	Standard
	Co	59	202.0	12.0	**0.0070**	0.005	64.9	ug/L	156	Standard
	Ni	60	74.0	23.8	**-0.0754**	0.012	16.5	ug/L	154	Standard
	Cu	65	122.7	9.4	**-0.0151**	0.008	50.5	ug/L	116	Standard
	Zn	66	114.3	17.4	**-0.1124**	0.023	20.2	ug/L	114	Standard
>	**Ge**	72	458950.8	1.6				ug/L	467488	Standard
	As	75	-43.8	44.5	**-0.0128**	0.025	192.4	ug/L	-61	Standard
	Se	82	12.4	26.2	**-0.0219**	0.040	181.2	ug/L	9	Standard
	Se-1	77	58.3	7.9	**-0.9713**	0.070	7.2	ug/L	125	Standard
>	**Ga**	71	68.3	23.5				mg/L	50	Standard
	Rb	85	46.7	24.7				ug/L	18	Standard
	Y	89	394684.6	0.5				ug/L	402730	Standard
>	**Rh**	103	6.7	43.3				ug/L	12	Standard
	Mo	98	138.7	17.6	**0.0747**	0.015	19.6	ug/L	8	Standard
	Ag	107	110.3	6.9	**0.0053**	0.002	33.2	ug/L	65	Standard
	Cd	111	14.1	17.7	**0.0021**	0.002	86.8	mg/L	3	Standard
	Cd	114	24.7	61.1	**-0.0070**	0.004	64.0	ug/L	15	Standard
>	**In**	115	505060.6	0.1				ug/L	526825	Standard
	Sn	118	631.7	33.2	**0.0510**	0.054	106.9	ug/L	368	Standard
	Sb	123	329.6	32.5	**0.0929**	0.035	37.7	ug/L	46	Standard
	Ba	135	190.3	47.6	**0.1231**	0.070	56.7	ug/L	16	Standard
	Ce	140	90.0	40.1				ug/L	43	Standard
>	**Tb**	159	752617.8	1.3				ug/L	771780	Standard
	Ho	165	6.7	43.3				ug/L	8	Standard
	Tl	203	53.7	32.1	**-0.0037**	0.004	94.7	ug/L	28	Standard
	Tl	205	58.3	13.1	**0.0009**	0.002	198.5	ug/L	20	Standard
	Pb	206	208.3	2.9	**-0.0026**	0.002	83.0	ug/L	184	Standard
	Pb	207	191.0	2.6	**-0.0015**	0.002	147.0	ug/L	161	Standard
	Pb	208	841.3	3.9	**-0.0004**	0.003	834.6	ug/L	746	Standard
	U	238	42.0	44.5	**0.0048**	0.004	91.5	ug/L	6	Standard
>	**Bi**	209	408466.8	0.7				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	28.3	27.0	**0.0029**	0.012	393.6	mg/L	25	Standard
K	39	46.7	6.2	**0.0157**	0.009	54.7	mg/L	25	Standard
Ca	43	40.0	45.1	**-1.4951**	1.547	103.5	mg/L	77	Standard
Fe	54	134.3	6.5	**-0.0049**	0.008	156.5	mg/L	165	Standard
Fe	57	130.0	10.2	**-0.0828**	0.047	56.4	mg/L	205	Standard
> **Sc-1**	45	48979.0	0.9				mg/L	46031	Standard
Cl	35	32103.3	1.2				ug/L	28530	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1463.4	5.5				ug/L	1560	Standard
P	31	19627.7	0.9				ug/L	15481	Standard
S	34	2701.9	0.8				ug/L	2072	Standard
Sr	88	63.3	40.5				ug/L	70	Standard
C	12	53.3	60.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.9	38.5				mg/L	13	Standard
Ho-1	165	6.7	43.3				mg/L	8	Standard
Er	166	10.0	173.2				mg/L	7	Standard
I	127	943.4	8.6				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.174	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.869
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.141
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606051901
Sample Date/Time: Wednesday, June 15, 2016 14:33:26
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61419.2	1.3				ug/L	58443	Standard
	Be	9	10.0		**-0.0034**	0.000	6.0	ug/L	5	Standard
	Al	27	12353213.0	1.9	**102.8823**	3.131	3.0	ug/L	385	Standard
	Sc	45	49836.8	1.0				ug/L	46031	Standard
	Ti	47	1465.4	13.7	**6.1687**	0.913	14.8	ug/L	94	Standard
	V	51	3358.4	6.3	**0.3583**	0.038	10.6	ug/L	1280	Standard
	Cr	52	10234.1	2.0	**0.6397**	0.026	4.1	ug/L	6381	Standard
	Cr	53	2500.2	15.1	**0.7612**	0.533	70.0	ug/L	1957	Standard
	Mn	55	48120.0	2.9	**10.9505**	0.333	3.0	ug/L	667	Standard
	Co	59	1288.1	2.5	**0.2374**	0.007	3.1	ug/L	156	Standard
	Ni	60	2214.2	2.4	**1.4505**	0.046	3.2	ug/L	154	Standard
	Cu	65	55279.7	1.2	**40.3076**	0.495	1.2	ug/L	116	Standard
	Zn	66	23289.2	0.6	**28.9736**	0.219	0.8	ug/L	114	Standard
>	**Ge**	72	463000.9	0.5				ug/L	467488	Standard
	As	75	198.8	26.0	**0.2824**	0.062	21.9	ug/L	-61	Standard
	Se	82	101.4	8.2	**1.0370**	0.096	9.3	ug/L	9	Standard
	Se-1	77	213.3	8.8	**1.7681**	0.319	18.0	ug/L	125	Standard
>	**Ga**	71	180.0	21.0				mg/L	50	Standard
	Rb	85	48755.1	4.1				ug/L	18	Standard
	Y	89	408705.7	0.4				ug/L	402730	Standard
>	**Rh**	103	28.3	10.2				ug/L	12	Standard
	Mo	98	546.3	7.0	**0.3148**	0.026	8.3	ug/L	8	Standard
	Ag	107	142.3	3.2	**0.0125**	0.001	6.1	ug/L	65	Standard
	Cd	111	25.6	18.4	**0.0102**	0.003	29.0	mg/L	3	Standard
	Cd	114	70.2	66.4	**0.0061**	0.013	215.8	ug/L	15	Standard
>	**In**	115	510325.1	2.1				ug/L	526825	Standard
	Sn	118	1360.1	9.8	**0.2359**	0.031	13.2	ug/L	368	Standard
	Sb	123	261.3	13.4	**0.0697**	0.012	16.8	ug/L	46	Standard
	Ba	135	16991.2	3.6	**12.8932**	0.617	4.8	ug/L	16	Standard
	Ce	140	1108.4	87.3				ug/L	43	Standard
>	**Tb**	159	767793.7	1.8				ug/L	771780	Standard
	Ho	165	23.3	24.7				ug/L	8	Standard
	Tl	203	80.3	25.0	**0.0017**	0.004	240.2	ug/L	28	Standard
	Tl	205	56.7	20.4	**0.0006**	0.003	474.2	ug/L	20	Standard
	Pb	206	1297.7	1.7	**0.3646**	0.010	2.8	ug/L	184	Standard
	Pb	207	1029.7	4.9	**0.3104**	0.021	6.8	ug/L	161	Standard
	Pb	208	4732.0	5.1	**0.3321**	0.021	6.4	ug/L	746	Standard
	U	238	961.0	3.6	**0.2204**	0.010	4.6	ug/L	6	Standard
>	**Bi**	209	406831.8	0.9				ug/L	429329	Standard

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Na	23	3.3	86.6	**12.3499**	10.691	86.6	mg/L	0	Standard
Mg	24	25060.7	2.1	**36.7846**	1.115	3.0	mg/L	25	Standard
K	39	2076.8	4.0	**6.8008**	0.309	4.5	mg/L	25	Standard
Ca	43	321.7	9.9	**21.9826**	2.849	13.0	mg/L	77	Standard
Fe	54	262.2	11.3	**0.1178**	0.031	26.2	mg/L	165	Standard
Fe	57	323.3	11.2	**0.6428**	0.128	19.9	mg/L	205	Standard
Sc-1	45	49836.8	1.0				mg/L	46031	Standard
Cl	35	34587.5	3.4				ug/L	28530	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	14190.0	4.9				ug/L	1560	Standard
P	31	19370.7	4.8				ug/L	15481	Standard
S	34	2470.2	7.2				ug/L	2072	Standard
Sr	88	145.0	3.4				ug/L	70	Standard
C	12	150.0	24.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	15.7				mg/L	0	Standard
Dy	164	38.4	50.3				mg/L	13	Standard
Ho-1	165	23.3	24.7				mg/L	8	Standard
Er	166	33.3	75.5				mg/L	7	Standard
I	127	16959.5	5.4				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		105.093	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.040	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.868
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.760
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606048101
Sample Date/Time: Wednesday, June 15, 2016 14:36:37
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62179.0	1.1				ug/L	58443	Standard
	Be	9	25.0	40.0	**0.0201**	0.016	78.9	ug/L	5	Standard
	Al	27	6158750.4	1.9	**50.6514**	0.957	1.9	ug/L	385	Standard
	Sc	45	49739.9	1.7				ug/L	46031	Standard
	Ti	47	750.0	1.0	**2.9435**	0.040	1.4	ug/L	94	Standard
	V	51	4057.5	9.3	**0.4923**	0.075	15.3	ug/L	1280	Standard
	Cr	52	9284.2	2.7	**0.4833**	0.057	11.9	ug/L	6381	Standard
	Cr	53	2001.8	2.2	**0.0558**	0.070	126.3	ug/L	1957	Standard
	Mn	55	818659.9	1.0	**190.6722**	3.250	1.7	ug/L	667	Standard
	Co	59	1626.4	8.8	**0.3116**	0.033	10.6	ug/L	156	Standard
	Ni	60	1431.1	2.2	**0.8988**	0.030	3.3	ug/L	154	Standard
	Cu	65	853.4	6.5	**0.5226**	0.044	8.5	ug/L	116	Standard
	Zn	66	2471.5	3.1	**2.8659**	0.118	4.1	ug/L	114	Standard
>	**Ge**	72	459992.7	0.7				ug/L	467488	Standard
	As	75	553.1	5.1	**0.7173**	0.035	4.9	ug/L	-61	Standard
	Se	82	142.8	2.5	**1.5414**	0.050	3.2	ug/L	9	Standard
	Se-1	77	130.3	7.3	**0.3130**	0.186	59.5	ug/L	125	Standard
>	**Ga**	71	356.7	15.4				mg/L	50	Standard
	Rb	85	5826.1	6.1				ug/L	18	Standard
	Y	89	408233.4	0.9				ug/L	402730	Standard
>	**Rh**	103	28.3	50.9				ug/L	12	Standard
	Mo	98	457.5	7.4	**0.2619**	0.020	7.7	ug/L	8	Standard
	Ag	107	178.7	68.6	**0.0208**	0.028	136.3	ug/L	65	Standard
	Cd	111	27.8	4.3	**0.0118**	0.001	6.9	mg/L	3	Standard
	Cd	114	58.7	25.8	**0.0029**	0.004	154.5	ug/L	15	Standard
>	**In**	115	510784.2	0.1				ug/L	526825	Standard
	Sn	118	670.0	2.0	**0.0589**	0.004	6.0	ug/L	368	Standard
	Sb	123	199.0	33.4	**0.0494**	0.022	43.6	ug/L	46	Standard
	Ba	135	42499.5	1.8	**32.2403**	0.615	1.9	ug/L	16	Standard
	Ce	140	8782.5	2.9				ug/L	43	Standard
>	**Tb**	159	770095.1	1.0				ug/L	771780	Standard
	Ho	165	141.7	13.4				ug/L	8	Standard
	Tl	203	198.0	40.1	**0.0248**	0.015	62.5	ug/L	28	Standard
	Tl	205	165.0	24.1	**0.0239**	0.008	35.0	ug/L	20	Standard
	Pb	206	1037.4	22.2	**0.2709**	0.074	27.2	ug/L	184	Standard
	Pb	207	850.7	20.3	**0.2385**	0.061	25.5	ug/L	161	Standard
	Pb	208	3501.2	8.1	**0.2221**	0.022	9.9	ug/L	746	Standard
	U	238	1097.0	3.5	**0.2481**	0.008	3.4	ug/L	6	Standard
>	**Bi**	209	413447.6	0.7				ug/L	429329	Standard

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Na	23	3.3	173.2	**12.4250**	21.512	173.1	mg/L	0	Standard
Mg	24	4118.9	1.1	**6.0252**	0.155	2.6	mg/L	25	Standard
K	39	243.3	4.3	**0.6723**	0.040	5.9	mg/L	25	Standard
Ca	43	331.7	16.3	**22.8131**	4.097	18.0	mg/L	77	Standard
Fe	54	535.9	7.9	**0.3861**	0.046	11.8	mg/L	165	Standard
Fe	57	391.7	7.3	**0.9066**	0.120	13.2	mg/L	205	Standard
Sc-1	45	49739.9	1.7				mg/L	46031	Standard
Cl	35	34448.5	2.2				ug/L	28530	Standard
Kr	83	3.7	56.8				ug/L	2	Standard
Br	81	30727.8	1.0				ug/L	1560	Standard
P	31	19966.5	3.4				ug/L	15481	Standard
S	34	2421.9	5.3				ug/L	2072	Standard
Sr	88	161.7	12.9				ug/L	70	Standard
C	12	50.0	72.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	213.0	27.7				mg/L	13	Standard
Ho-1	165	141.7	13.4				mg/L	8	Standard
Er	166	146.7	49.3				mg/L	7	Standard
I	127	4649.0	2.8				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.393	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.397	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.955
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.301
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606048102
Sample Date/Time: Wednesday, June 15, 2016 14:39:49
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	143999.9	3.5				ug/L	58443	Standard
	Be	9	50.0	34.6	**0.0145**	0.010	71.9	ug/L	5	Standard
	Al	27	31972791.5	1.4	**113.6035**	2.343	2.1	ug/L	385	Standard
	Sc	45	46461.1	1.6				ug/L	46031	Standard
	Ti	47	1928.1	3.4	**9.0972**	0.317	3.5	ug/L	94	Standard
	V	51	9219.4	6.4	**1.5983**	0.119	7.4	ug/L	1280	Standard
	Cr	52	12735.7	1.4	**1.2937**	0.039	3.0	ug/L	6381	Standard
	Cr	53	16245.4	3.4	**23.0345**	0.812	3.5	ug/L	1957	Standard
	Mn	55	1940591.8	1.3	**491.8401**	7.521	1.5	ug/L	667	Standard
	Co	59	9357.2	1.3	**2.1397**	0.033	1.6	ug/L	156	Standard
	Ni	60	10290.2	2.1	**7.9046**	0.180	2.3	ug/L	154	Standard
	Cu	65	6456.4	2.4	**5.0615**	0.126	2.5	ug/L	116	Standard
	Zn	66	7124.0	1.6	**9.5312**	0.171	1.8	ug/L	114	Standard
>	**Ge**	72	422952.1	0.3				ug/L	467488	Standard
	As	75	7476.8	4.1	**9.9834**	0.430	4.3	ug/L	-61	Standard
	Se	82	2924.5	2.4	**37.9637**	0.989	2.6	ug/L	9	Standard
	Se-1	77	2481.9	2.4	**46.1634**	1.040	2.3	ug/L	125	Standard
>	**Ga**	71	785.0	2.3				mg/L	50	Standard
	Rb	85	78017.0	0.8				ug/L	18	Standard
	Y	89	388145.4	2.3				ug/L	402730	Standard
>	**Rh**	103	4307.3	4.5				ug/L	12	Standard
	Mo	98	8501.8	2.2	**5.5451**	0.141	2.6	ug/L	8	Standard
	Ag	107	277.0	7.5	**0.0505**	0.006	12.5	ug/L	65	Standard
	Cd	111	205.7	8.5	**0.1548**	0.014	8.7	mg/L	3	Standard
	Cd	114	467.5	6.0	**0.1369**	0.007	5.4	ug/L	15	Standard
>	**In**	115	461437.9	1.6				ug/L	526825	Standard
	Sn	118	901.7	3.2	**0.1429**	0.004	3.0	ug/L	368	Standard
	Sb	123	1130.0	1.6	**0.3897**	0.004	0.9	ug/L	46	Standard
	Ba	135	1971028.8	0.4	**1656.5108**	24.739	1.5	ug/L	16	Standard
	Ce	140	40930.2	2.3				ug/L	43	Standard
>	**Tb**	159	724305.8	0.9				ug/L	771780	Standard
	Ho	165	1155.0	1.7				ug/L	8	Standard
	Tl	203	591.7	4.8	**0.1223**	0.007	6.0	ug/L	28	Standard
	Tl	205	555.0	4.1	**0.1284**	0.006	5.0	ug/L	20	Standard
	Pb	206	2747.6	3.1	**0.9857**	0.039	3.9	ug/L	184	Standard
	Pb	207	2268.5	3.8	**0.8913**	0.034	3.9	ug/L	161	Standard
	Pb	208	9439.8	1.7	**0.8497**	0.021	2.5	ug/L	746	Standard
	U	238	3302.7	0.4	**0.8806**	0.007	0.7	ug/L	6	Standard
>	**Bi**	209	355775.6	0.5				ug/L	429329	Standard

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Na	23	11.7	65.5	**46.6267**	30.360	65.1	mg/L	0	Standard
Mg	24	225807.4	2.2	**355.8056**	5.617	1.6	mg/L	25	Standard
K	39	2728.6	3.7	**9.6465**	0.515	5.3	mg/L	25	Standard
Ca	43	1686.8	2.8	**146.2245**	4.153	2.8	mg/L	77	Standard
Fe	54	934.2	9.5	**0.8390**	0.079	9.4	mg/L	165	Standard
Fe	57	1248.4	6.9	**4.5056**	0.404	9.0	mg/L	205	Standard
Sc-1	45	46461.1	1.6				mg/L	46031	Standard
Cl	35	35186.8	2.4				ug/L	28530	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	732817.1	0.7				ug/L	1560	Standard
P	31	19163.8	2.4				ug/L	15481	Standard
S	34	2536.9	1.8				ug/L	2072	Standard
Sr	88	15381.1	2.4				ug/L	70	Standard
C	12	60.0	28.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	2192.8	7.7				mg/L	13	Standard
Ho-1	165	1155.0	1.7				mg/L	8	Standard
Er	166	850.0	12.4				mg/L	7	Standard
I	127	539761.8	10.0				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		246.396	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		90.473	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	87.588
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	82.868
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606046501
Sample Date/Time: Wednesday, June 15, 2016 14:43:00
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67540.5	5.6				ug/L	58443	Standard
	Be	9	26.7	47.2	**0.0202**	0.021	102.4	ug/L	5	Standard
	Al	27	13547102.6	5.7	**102.5742**	0.947	0.9	ug/L	385	Standard
	Sc	45	49873.6	2.0				ug/L	46031	Standard
	Ti	47	92.0	7.6	**-0.0700**	0.026	37.0	ug/L	94	Standard
	V	51	2045.4	9.2	**0.1126**	0.029	25.9	ug/L	1280	Standard
	Cr	52	8596.4	2.1	**0.3361**	0.014	4.1	ug/L	6381	Standard
	Cr	53	2218.5	9.2	**0.3239**	0.340	105.0	ug/L	1957	Standard
	Mn	55	147357.2	3.1	**33.5964**	0.626	1.9	ug/L	667	Standard
	Co	59	2304.5	1.5	**0.4485**	0.003	0.6	ug/L	156	Standard
	Ni	60	3559.1	3.0	**2.3844**	0.047	2.0	ug/L	154	Standard
	Cu	65	2435.2	2.2	**1.6573**	0.023	1.4	ug/L	116	Standard
	Zn	66	3680.8	4.2	**4.3165**	0.135	3.1	ug/L	114	Standard
>	**Ge**	72	467570.1	1.4				ug/L	467488	Standard
	As	75	206.6	16.0	**0.2898**	0.042	14.6	ug/L	-61	Standard
	Se	82	84.0	3.8	**0.8199**	0.051	6.2	ug/L	9	Standard
	Se-1	77	158.3	7.0	**0.7681**	0.232	30.2	ug/L	125	Standard
>	**Ga**	71	60.0	36.3				mg/L	50	Standard
	Rb	85	8055.5	1.5				ug/L	18	Standard
	Y	89	405021.2	1.6				ug/L	402730	Standard
>	**Rh**	103	108.3	48.9				ug/L	12	Standard
	Mo	98	104.5	8.8	**0.0528**	0.005	9.6	ug/L	8	Standard
	Ag	107	67.0	14.9	**-0.0052**	0.002	41.1	ug/L	65	Standard
	Cd	111	27.5	9.1	**0.0113**	0.002	15.1	mg/L	3	Standard
	Cd	114	42.8	35.4	**-0.0020**	0.004	215.1	ug/L	15	Standard
>	**In**	115	516766.2	1.3				ug/L	526825	Standard
	Sn	118	828.4	1.5	**0.0971**	0.005	4.7	ug/L	368	Standard
	Sb	123	277.8	9.0	**0.0738**	0.007	9.2	ug/L	46	Standard
	Ba	135	9554.3	2.0	**7.1458**	0.079	1.1	ug/L	16	Standard
	Ce	140	1636.8	4.8				ug/L	43	Standard
>	**Tb**	159	777215.2	2.3				ug/L	771780	Standard
	Ho	165	183.3	5.7				ug/L	8	Standard
	Tl	203	85.7	19.0	**0.0029**	0.004	121.8	ug/L	28	Standard
	Tl	205	91.7	19.2	**0.0085**	0.004	49.5	ug/L	20	Standard
	Pb	206	338.7	5.2	**0.0423**	0.007	17.1	ug/L	184	Standard
	Pb	207	290.3	12.2	**0.0362**	0.012	32.4	ug/L	161	Standard
	Pb	208	1252.0	6.4	**0.0356**	0.006	16.7	ug/L	746	Standard
	U	238	195.0	8.6	**0.0410**	0.004	9.2	ug/L	6	Standard
>	**Bi**	209	404413.2	1.5				ug/L	429329	Standard

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Na	23	3.3	173.2	**12.6687**	21.934	173.1	mg/L	0	Standard
Mg	24	46563.2	5.1	**68.3637**	4.500	6.6	mg/L	25	Standard
K	39	338.3	2.3	**0.9876**	0.041	4.2	mg/L	25	Standard
Ca	43	560.0	3.1	**41.8687**	2.343	5.6	mg/L	77	Standard
Fe	54	172.8	16.0	**0.0301**	0.024	79.8	mg/L	165	Standard
Fe	57	411.7	11.0	**0.9782**	0.174	17.7	mg/L	205	Standard
Sc-1	45	49873.6	2.0				mg/L	46031	Standard
Cl	35	50009.1	3.6				ug/L	28530	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	13986.5	6.0				ug/L	1560	Standard
P	31	17636.9	3.7				ug/L	15481	Standard
S	34	2438.5	3.1				ug/L	2072	Standard
Sr	88	218.3	13.0				ug/L	70	Standard
C	12	56.7	20.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	270.1	31.8				mg/L	13	Standard
Ho-1	165	183.3	5.7				mg/L	8	Standard
Er	166	136.7	41.6				mg/L	7	Standard
I	127	21809.4	43.8				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.567	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.018	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.091
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.197
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606050403
Sample Date/Time: Wednesday, June 15, 2016 14:46:12
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76794.1	0.9				ug/L	58443	Standard
	Be	9	45.0	29.4	**0.0383**	0.017	45.3	ug/L	5	Standard
	Al	27	11974801.8	1.2	**79.7521**	1.585	2.0	ug/L	385	Standard
	Sc	45	53435.7	0.6				ug/L	46031	Standard
	Ti	47	399.7	9.1	**1.2857**	0.198	15.4	ug/L	94	Standard
	V	51	5222.5	11.0	**0.6753**	0.090	13.3	ug/L	1280	Standard
	Cr	52	290372.2	2.9	**48.7314**	2.734	5.6	ug/L	6381	Standard
	Cr	53	41926.3	1.9	**56.6413**	2.642	4.7	ug/L	1957	Standard
	Mn	55	170536.3	3.2	**38.2904**	2.188	5.7	ug/L	667	Standard
	Co	59	5338.6	2.4	**1.0686**	0.055	5.1	ug/L	156	Standard
	Ni	60	42646.6	3.4	**29.5042**	1.723	5.8	ug/L	154	Standard
	Cu	65	1321.1	3.4	**0.8356**	0.056	6.7	ug/L	116	Standard
	Zn	66	7416.5	2.0	**8.8101**	0.375	4.3	ug/L	114	Standard
>	**Ge**	72	475638.4	2.6				ug/L	467488	Standard
	As	75	271.8	18.0	**0.3635**	0.066	18.2	ug/L	-61	Standard
	Se	82	121.4	3.6	**1.2379**	0.085	6.9	ug/L	9	Standard
	Se-1	77	453.3	6.1	**5.8067**	0.278	4.8	ug/L	125	Standard
>	**Ga**	71	95.0	10.5				mg/L	50	Standard
	Rb	85	11087.4	2.6				ug/L	18	Standard
	Y	89	408962.0	1.9				ug/L	402730	Standard
>	**Rh**	103	50.0	17.3				ug/L	12	Standard
	Mo	98	739.1	4.0	**0.4153**	0.023	5.4	ug/L	8	Standard
	Ag	107	94.0	5.9	**0.0006**	0.001	225.0	ug/L	65	Standard
	Cd	111	435.2	0.9	**0.2941**	0.007	2.3	mg/L	3	Standard
	Cd	114	1017.1	11.9	**0.2745**	0.038	13.8	ug/L	15	Standard
>	**In**	115	526368.4	1.3				ug/L	526825	Standard
	Sn	118	856.7	2.4	**0.1003**	0.004	3.7	ug/L	368	Standard
	Sb	123	117.4	8.6	**0.0219**	0.003	14.3	ug/L	46	Standard
	Ba	135	489503.3	2.1	**360.6757**	11.966	3.3	ug/L	16	Standard
	Ce	140	4450.7	4.7				ug/L	43	Standard
>	**Tb**	159	796351.6	1.9				ug/L	771780	Standard
	Ho	165	113.3	13.5				ug/L	8	Standard
	Tl	203	125.0	12.5	**0.0095**	0.003	27.0	ug/L	28	Standard
	Tl	205	123.3	11.7	**0.0140**	0.004	26.1	ug/L	20	Standard
	Pb	206	524.0	7.8	**0.0955**	0.013	13.3	ug/L	184	Standard
	Pb	207	423.7	4.6	**0.0778**	0.010	12.5	ug/L	161	Standard
	Pb	208	1937.7	2.4	**0.0857**	0.005	6.3	ug/L	746	Standard
	U	238	84.3	16.1	**0.0139**	0.003	23.6	ug/L	6	Standard
>	**Bi**	209	427245.1	2.3				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	31659.7	3.6	**43.3373**	1.421	3.3	mg/L	25	Standard
K	39	240.0	11.0	**0.6056**	0.087	14.4	mg/L	25	Standard
Ca	43	140.0	25.0	**5.9961**	2.657	44.3	mg/L	77	Standard
Fe	54	456.0	3.9	**0.2768**	0.014	4.9	mg/L	165	Standard
Fe	57	268.3	25.4	**0.3647**	0.236	64.8	mg/L	205	Standard
> **Sc-1**	45	53435.7	0.6				mg/L	46031	Standard
Cl	35	32893.0	3.3				ug/L	28530	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	25571.6	2.1				ug/L	1560	Standard
P	31	26755.3	6.1				ug/L	15481	Standard
S	34	2166.8	3.8				ug/L	2072	Standard
Sr	88	246.7	13.5				ug/L	70	Standard
C	12	60.0	28.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	0	Standard
Dy	164	210.1	13.5				mg/L	13	Standard
Ho-1	165	113.3	13.5				mg/L	8	Standard
Er	166	136.7	37.5				mg/L	7	Standard
I	127	162971.9	5.6				mg/L	1227	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		131.401	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.743	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.913
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.515
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606050403
Sample Date/Time: Wednesday, June 15, 2016 14:49:23
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70190.6	1.4				ug/L	58443	Standard
	Be	9	10.0	50.0	**-0.0053**	0.007	135.9	ug/L	5	Standard
	Al	27	1210961.4	2.3	**8.8150**	0.100	1.1	ug/L	385	Standard
	Sc	45	50552.5	0.6				ug/L	46031	Standard
	Ti	47	80.0	6.5	**-0.1340**	0.024	17.7	ug/L	94	Standard
	V	51	1921.1	12.3	**0.0800**	0.041	50.9	ug/L	1280	Standard
	Cr	52	38584.1	0.6	**5.3787**	0.041	0.8	ug/L	6381	Standard
	Cr	53	6102.9	2.1	**5.6718**	0.155	2.7	ug/L	1957	Standard
	Mn	55	19883.7	2.2	**4.2337**	0.096	2.3	ug/L	667	Standard
	Co	59	708.3	7.4	**0.1084**	0.011	9.8	ug/L	156	Standard
	Ni	60	4718.1	0.7	**3.1070**	0.026	0.8	ug/L	154	Standard
	Cu	65	264.3	4.2	**0.0804**	0.008	10.3	ug/L	116	Standard
	Zn	66	1909.8	2.0	**2.0481**	0.045	2.2	ug/L	114	Standard
>	**Ge**	72	481465.4	0.3				ug/L	467488	Standard
	As	75	6.9	478.5	**0.0491**	0.039	78.7	ug/L	-61	Standard
	Se	82	28.5	9.4	**0.1555**	0.030	19.1	ug/L	9	Standard
	Se-1	77	137.3	1.1	**0.3277**	0.025	7.7	ug/L	125	Standard
>	**Ga**	71	41.7	34.6				mg/L	50	Standard
	Rb	85	1228.4	10.2				ug/L	18	Standard
	Y	89	417399.8	0.8				ug/L	402730	Standard
>	**Rh**	103	23.3	32.7				ug/L	12	Standard
	Mo	98	88.8	21.0	**0.0418**	0.011	25.9	ug/L	8	Standard
	Ag	107	72.0	15.0	**-0.0046**	0.002	53.5	ug/L	65	Standard
	Cd	111	45.5	4.6	**0.0229**	0.002	7.1	mg/L	3	Standard
	Cd	114	100.1	9.2	**0.0136**	0.003	20.0	ug/L	15	Standard
>	**In**	115	536984.2	0.9				ug/L	526825	Standard
	Sn	118	430.0	21.0	**-0.0079**	0.022	282.3	ug/L	368	Standard
	Sb	123	72.5	2.9	**0.0073**	0.000	6.4	ug/L	46	Standard
	Ba	135	53197.9	0.9	**38.3944**	0.643	1.7	ug/L	16	Standard
	Ce	140	543.3	9.8				ug/L	43	Standard
>	**Tb**	159	804236.3	0.6				ug/L	771780	Standard
	Ho	165	35.0	37.8				ug/L	8	Standard
	Tl	203	74.7	16.4	**-0.0004**	0.002	565.0	ug/L	28	Standard
	Tl	205	83.3	9.2	**0.0053**	0.002	30.9	ug/L	20	Standard
	Pb	206	263.7	6.6	**0.0108**	0.005	46.4	ug/L	184	Standard
	Pb	207	226.3	9.8	**0.0067**	0.008	115.6	ug/L	161	Standard
	Pb	208	966.7	2.7	**0.0055**	0.002	38.5	ug/L	746	Standard
	U	238	14.7	20.8	**-0.0018**	0.001	37.7	ug/L	6	Standard
>	**Bi**	209	433583.5	0.7				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3310.4	1.8	**4.7551**	0.087	1.8	mg/L	25	Standard
K	39	58.3	4.9	**0.0492**	0.009	18.8	mg/L	25	Standard
Ca	43	33.3	31.2	**-2.1562**	0.840	38.9	mg/L	77	Standard
Fe	54	206.0	8.6	**0.0601**	0.018	30.2	mg/L	165	Standard
Fe	57	140.0	12.9	**-0.0610**	0.064	105.4	mg/L	205	Standard
Sc-1	45	50552.5	0.6				mg/L	46031	Standard
Cl	35	34902.8	2.2				ug/L	28530	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	4737.4	8.4				ug/L	1560	Standard
P	31	19787.9	2.6				ug/L	15481	Standard
S	34	2363.5	4.1				ug/L	2072	Standard
Sr	88	70.0	12.4				ug/L	70	Standard
C	12	73.3	34.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	11.7	90.7				mg/L	13	Standard
Ho-1	165	35.0	37.8				mg/L	8	Standard
Er	166	33.3	96.4				mg/L	7	Standard
I	127	22934.0	5.6				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		120.102	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.990	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.928
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.991
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606043301
Sample Date/Time: Wednesday, June 15, 2016 14:52:35
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72573.4	1.3				ug/L	58443	Standard
	Be	9	8.3	34.6	**-0.0080**	0.004	50.1	ug/L	5	Standard
	Al	27	329254.8	1.8	**2.3126**	0.057	2.5	ug/L	385	Standard
	Sc	45	51950.6	1.5				ug/L	46031	Standard
	Ti	47	90.0	4.0	**-0.0875**	0.018	20.3	ug/L	94	Standard
	V	51	1521.2	7.8	**0.0112**	0.021	186.6	ug/L	1280	Standard
	Cr	52	7732.0	1.8	**0.1558**	0.027	17.6	ug/L	6381	Standard
	Cr	53	1990.1	4.2	**-0.0716**	0.111	154.9	ug/L	1957	Standard
	Mn	55	7002.6	2.4	**1.3760**	0.042	3.0	ug/L	667	Standard
	Co	59	188.3	1.6	**0.0025**	0.000	19.6	ug/L	156	Standard
	Ni	60	4567.7	0.8	**3.0265**	0.027	0.9	ug/L	154	Standard
	Cu	65	30584.5	0.3	**21.5518**	0.090	0.4	ug/L	116	Standard
	Zn	66	1433.1	2.4	**1.4851**	0.035	2.3	ug/L	114	Standard
>	**Ge**	72	478011.0	0.5				ug/L	467488	Standard
	As	75	-5.7	39.6	**0.0343**	0.003	7.6	ug/L	-61	Standard
	Se	82	18.0	14.9	**0.0360**	0.031	85.0	ug/L	9	Standard
	Se-1	77	120.7	6.9	**0.0585**	0.146	249.6	ug/L	125	Standard
>	**Ga**	71	60.0	22.0				mg/L	50	Standard
	Rb	85	3538.7	4.1				ug/L	18	Standard
	Y	89	411938.1	0.2				ug/L	402730	Standard
>	**Rh**	103	30.0	33.3				ug/L	12	Standard
	Mo	98	7380.9	1.2	**4.1661**	0.028	0.7	ug/L	8	Standard
	Ag	107	472.0	2.0	**0.0842**	0.002	2.1	ug/L	65	Standard
	Cd	111	2.7	62.7	**-0.0062**	0.001	18.7	mg/L	3	Standard
	Cd	114	32.1	58.0	**-0.0053**	0.005	99.5	ug/L	15	Standard
>	**In**	115	532868.7	0.5				ug/L	526825	Standard
	Sn	118	14024.8	1.3	**3.3312**	0.058	1.7	ug/L	368	Standard
	Sb	123	204.3	3.8	**0.0484**	0.002	4.5	ug/L	46	Standard
	Ba	135	8798.6	0.7	**6.3794**	0.020	0.3	ug/L	16	Standard
	Ce	140	141.7	19.4				ug/L	43	Standard
>	**Tb**	159	802129.6	0.9				ug/L	771780	Standard
	Ho	165	8.3	91.7				ug/L	8	Standard
	Tl	203	52.7	7.7	**-0.0046**	0.001	15.6	ug/L	28	Standard
	Tl	205	56.7	56.0	**-0.0002**	0.007	3937.1	ug/L	20	Standard
	Pb	206	12165.2	1.3	**3.7810**	0.086	2.3	ug/L	184	Standard
	Pb	207	10162.7	0.3	**3.4781**	0.039	1.1	ug/L	161	Standard
	Pb	208	45144.8	1.1	**3.5530**	0.062	1.7	ug/L	746	Standard
	U	238	6.0	60.1	**-0.0037**	0.001	21.5	ug/L	6	Standard
>	**Bi**	209	432583.0	1.0				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	5946.2	1.5	**8.3427**	0.217	2.6	mg/L	25	Standard
K	39	721.7	6.7	**2.1711**	0.143	6.6	mg/L	25	Standard
Ca	43	66.7	11.5	**0.4480**	0.668	149.1	mg/L	77	Standard
Fe	54	117.3	33.0	**-0.0281**	0.038	133.9	mg/L	165	Standard
Fe	57	136.7	24.4	**-0.0877**	0.118	134.4	mg/L	205	Standard
Sc-1	45	51950.6	1.5				mg/L	46031	Standard
Cl	35	36107.0	1.8				ug/L	28530	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	2653.6	0.8				ug/L	1560	Standard
P	31	18596.4	2.8				ug/L	15481	Standard
S	34	2321.8	6.5				ug/L	2072	Standard
Sr	88	56.7	36.7				ug/L	70	Standard
C	12	66.7	31.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.7	43.3				mg/L	13	Standard
Ho-1	165	8.3	91.7				mg/L	8	Standard
Er	166	13.3	43.3				mg/L	7	Standard
I	127	8283.9	1.8				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		124.179	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.251	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.147
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.758
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 15, 2016 14:55:47
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67285.9	3.5				ug/L	58443	Standard
	Be	9	37327.6	1.8	**54.4539**	1.054	1.9	ug/L	5	Standard
	Al	27	6517774.9	0.2	**49.5727**	1.662	3.4	ug/L	385	Standard
	Sc	45	50527.5	1.8				ug/L	46031	Standard
	Ti	47	24779.2	0.7	**110.5550**	2.050	1.9	ug/L	94	Standard
	V	51	296531.9	0.7	**53.6454**	0.722	1.3	ug/L	1280	Standard
	Cr	52	312177.7	0.7	**53.1815**	0.217	0.4	ug/L	6381	Standard
	Cr	53	38849.8	2.4	**52.9998**	0.700	1.3	ug/L	1957	Standard
	Mn	55	243510.4	2.0	**55.4790**	1.127	2.0	ug/L	667	Standard
	Co	59	252828.7	1.6	**52.9808**	0.942	1.8	ug/L	156	Standard
	Ni	60	74893.6	0.5	**52.5922**	0.368	0.7	ug/L	154	Standard
	Cu	65	72733.8	1.2	**52.3801**	0.059	0.1	ug/L	116	Standard
	Zn	66	42220.7	0.7	**52.0528**	0.523	1.0	ug/L	114	Standard
>	Ge	72	469059.1	1.1				ug/L	467488	Standard
	As	75	42745.0	0.4	**51.2957**	0.630	1.2	ug/L	-61	Standard
	Se	82	4414.1	0.3	**51.7318**	0.474	0.9	ug/L	9	Standard
	Se-1	77	3032.6	1.8	**51.0806**	1.479	2.9	ug/L	125	Standard
>	Ga	71	68.3	22.4				mg/L	50	Standard
	Rb	85	696.7	6.8				ug/L	18	Standard
	Y	89	404714.3	0.9				ug/L	402730	Standard
>	Rh	103	36.7	15.7				ug/L	12	Standard
	Mo	98	184831.1	0.7	**106.1277**	1.796	1.7	ug/L	8	Standard
	Ag	107	231707.3	0.5	**52.1591**	1.017	2.0	ug/L	65	Standard
	Cd	111	75563.5	1.2	**52.6075**	0.429	0.8	mg/L	3	Standard
	Cd	114	186633.1	1.1	**53.0776**	0.438	0.8	ug/L	15	Standard
>	In	115	524888.1	1.5				ug/L	526825	Standard
	Sn	118	209525.5	0.5	**52.1231**	0.506	1.0	ug/L	368	Standard
	Sb	123	165853.0	0.3	**52.2086**	0.663	1.3	ug/L	46	Standard
	Ba	135	71517.8	2.8	**52.8077**	1.091	2.1	ug/L	16	Standard
	Ce	140	418.3	146.3				ug/L	43	Standard
>	Tb	159	786120.2	0.7				ug/L	771780	Standard
	Ho	165	16.7	124.9				ug/L	8	Standard
	Tl	203	271739.8	0.1	**52.5314**	0.136	0.3	ug/L	28	Standard
	Tl	205	249765.6	1.8	**52.8082**	0.924	1.8	ug/L	20	Standard
	Pb	206	166336.8	0.7	**53.4822**	0.504	0.9	ug/L	184	Standard
	Pb	207	150287.0	0.3	**53.2941**	0.300	0.6	ug/L	161	Standard
	Pb	208	642256.1	1.6	**52.3468**	0.783	1.5	ug/L	746	Standard
	U	238	238601.6	1.5	**53.4834**	0.741	1.4	ug/L	6	Standard
>	Bi	209	425541.4	0.3				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3600.4	1.6	**5.1792**	0.144	2.8	mg/L	25	Standard
K	39	1420.1	4.8	**4.5379**	0.149	3.3	mg/L	25	Standard
Ca	43	106.7	15.1	**3.8763**	1.165	30.1	mg/L	77	Standard
Fe	54	5271.3	1.2	**4.9370**	0.101	2.1	mg/L	165	Standard
Fe	57	1328.4	2.7	**4.3925**	0.048	1.1	mg/L	205	Standard
> **Sc-1**	45	50527.5	1.8				mg/L	46031	Standard
Cl	35	35178.1	2.1				ug/L	28530	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	1706.8	7.6				ug/L	1560	Standard
P	31	20785.9	1.7				ug/L	15481	Standard
S	34	2698.6	2.9				ug/L	2072	Standard
Sr	88	40.0	12.5				ug/L	70	Standard
C	12	40.0	66.1				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	21.7	109.9				mg/L	13	Standard
Ho-1	165	16.7	124.9				mg/L	8	Standard
Er	166	33.3	96.4				mg/L	7	Standard
I	127	2238.5	12.8				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	108.908		
Al	27	99.145		
Sc	45			
Ti	47	110.555		
V	51	107.291		
Cr	52	106.363		
Cr	53			
Mn	55	110.958		
Co	59	105.962		
Ni	60	105.184		
Cu	65	104.760		
Zn	66	104.106		
> Ge	72		100.336	
As	75	102.591		
Se	82	103.464		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	106.128		
Ag	107	104.318		
Cd	111	105.215		
Cd	114			
> In	115		99.632	
Sn	118	104.246		
Sb	123	104.417		
Ba	135	105.615		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	105.063		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.694		
U	238	106.967		
> Bi	209		99.118	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Ti	47	
QC Std 6	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 15, 2016 14:58:59
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65683.7	0.0				ug/L	58443	Standard
	Be	9	26.7	21.7	**0.0205**	0.009	42.1	ug/L	5	Standard
	Al	27	1630.1	23.5	**0.0046**	0.003	64.3	ug/L	385	Standard
	Sc	45	49781.7	1.4				ug/L	46031	Standard
	Ti	47	48.7	12.0	**-0.2657**	0.024	9.1	ug/L	94	Standard
	V	51	1162.0	13.1	**-0.0493**	0.027	54.5	ug/L	1280	Standard
	Cr	52	6291.3	1.4	**-0.0713**	0.024	34.1	ug/L	6381	Standard
	Cr	53	1113.4	5.3	**-1.2804**	0.110	8.6	ug/L	1957	Standard
	Mn	55	683.0	3.5	**-0.0390**	0.008	19.9	ug/L	667	Standard
	Co	59	165.0	11.2	**-0.0017**	0.004	218.4	ug/L	156	Standard
	Ni	60	100.0	3.6	**-0.0583**	0.001	2.5	ug/L	154	Standard
	Cu	65	125.7	13.7	**-0.0148**	0.014	92.6	ug/L	116	Standard
	Zn	66	129.0	5.6	**-0.0973**	0.010	10.2	ug/L	114	Standard
>	**Ge**	72	469772.3	1.6				ug/L	467488	Standard
	As	75	-35.5	48.9	**-0.0016**	0.021	1300.9	ug/L	-61	Standard
	Se	82	14.5	25.5	**-0.0012**	0.041	3452.4	ug/L	9	Standard
	Se-1	77	75.7	11.5	**-0.6919**	0.151	21.8	ug/L	125	Standard
>	**Ga**	71	60.0	8.3				mg/L	50	Standard
	Rb	85	18.3	15.7				ug/L	18	Standard
	Y	89	407882.1	2.1				ug/L	402730	Standard
>	**Rh**	103	23.3	32.7				ug/L	12	Standard
	Mo	98	155.5	25.1	**0.0804**	0.022	27.3	ug/L	8	Standard
	Ag	107	122.7	27.4	**0.0069**	0.007	108.8	ug/L	65	Standard
	Cd	111	16.3	51.8	**0.0032**	0.006	182.5	mg/L	3	Standard
	Cd	114	41.9	24.7	**-0.0025**	0.003	120.3	ug/L	15	Standard
>	**In**	115	529408.6	0.6				ug/L	526825	Standard
	Sn	118	675.0	23.3	**0.0542**	0.039	72.6	ug/L	368	Standard
	Sb	123	364.8	17.9	**0.0990**	0.021	21.3	ug/L	46	Standard
	Ba	135	66.0	7.9	**0.0253**	0.004	14.6	ug/L	16	Standard
	Ce	140	8.3	124.9				ug/L	43	Standard
>	**Tb**	159	783914.4	1.1				ug/L	771780	Standard
	Ho	165	15.0	33.3				ug/L	8	Standard
	Tl	203	61.0	37.8	**-0.0029**	0.004	149.0	ug/L	28	Standard
	Tl	205	91.7	25.8	**0.0071**	0.005	69.9	ug/L	20	Standard
	Pb	206	231.3	8.0	**0.0008**	0.006	733.6	ug/L	184	Standard
	Pb	207	200.0	21.0	**-0.0023**	0.015	645.7	ug/L	161	Standard
	Pb	208	862.7	1.2	**-0.0026**	0.000	18.2	ug/L	746	Standard
	U	238	43.7	15.2	**0.0047**	0.002	32.4	ug/L	6	Standard
>	**Bi**	209	432202.5	0.5				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	21.7	26.6	**-0.0075**	0.009	115.9	mg/L	25	Standard
K	39	46.7	52.9	**0.0127**	0.081	638.2	mg/L	25	Standard
Ca	43	43.3	35.3	**-1.2826**	1.244	97.0	mg/L	77	Standard
Fe	54	161.0	7.2	**0.0191**	0.011	55.6	mg/L	165	Standard
Fe	57	143.3	28.2	**-0.0405**	0.150	370.8	mg/L	205	Standard
Sc-1	45	49781.7	1.4				mg/L	46031	Standard
Cl	35	35265.7	1.4				ug/L	28530	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1693.4	7.1				ug/L	1560	Standard
P	31	20332.0	1.0				ug/L	15481	Standard
S	34	2808.6	5.5				ug/L	2072	Standard
Sr	88	65.0	7.7				ug/L	70	Standard
C	12	36.7	15.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	8.9	196.7				mg/L	13	Standard
Ho-1	165	15.0	33.3				mg/L	8	Standard
Er	166	23.3	65.5				mg/L	7	Standard
I	127	1706.8	4.8				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.489	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.490
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.669
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 16, 2016

Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Wednesday, June 15, 2016 15:02:12
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64461.9	2.1				ug/L	58443	Standard
	Be	9	126.7	13.9	**0.1733**	0.024	13.8	ug/L	5	Standard
	Al	27	861.7	12.4	**-0.0012**	0.001	63.6	ug/L	385	Standard
	Sc	45	49059.3	1.0				ug/L	46031	Standard
	Ti	47	33.7	9.1	**-0.3276**	0.013	4.0	ug/L	94	Standard
	V	51	3411.9	6.1	**0.3798**	0.035	9.3	ug/L	1280	Standard
	Cr	52	10659.4	0.2	**0.7500**	0.015	1.9	ug/L	6381	Standard
	Cr	53	1678.4	5.4	**-0.3893**	0.125	32.2	ug/L	1957	Standard
	Mn	55	2781.9	0.6	**0.4614**	0.000	0.0	ug/L	667	Standard
	Co	59	2039.8	2.5	**0.4052**	0.013	3.2	ug/L	156	Standard
	Ni	60	2318.2	2.2	**1.5554**	0.029	1.9	ug/L	154	Standard
	Cu	65	1172.0	0.8	**0.7674**	0.003	0.4	ug/L	116	Standard
	Zn	66	5663.1	0.7	**6.9836**	0.010	0.1	ug/L	114	Standard
>	**Ge**	72	454504.0	0.6				ug/L	467488	Standard
	As	75	277.5	14.3	**0.3846**	0.051	13.2	ug/L	-61	Standard
	Se	82	45.1	15.7	**0.3766**	0.088	23.3	ug/L	9	Standard
	Se-1	77	100.7	3.2	**-0.1957**	0.056	28.6	ug/L	125	Standard
>	**Ga**	71	60.0	22.0				mg/L	50	Standard
	Rb	85	13.3	43.3				ug/L	18	Standard
	Y	89	390903.5	0.7				ug/L	402730	Standard
>	**Rh**	103	18.3	41.7				ug/L	12	Standard
	Mo	98	45.8	5.5	**0.0191**	0.002	8.5	ug/L	8	Standard
	Ag	107	1846.1	4.0	**0.4080**	0.019	4.6	ug/L	65	Standard
	Cd	111	332.2	13.8	**0.2303**	0.032	13.8	mg/L	3	Standard
	Cd	114	836.6	5.9	**0.2310**	0.015	6.5	ug/L	15	Standard
>	**In**	115	509256.1	0.5				ug/L	526825	Standard
	Sn	118	313.3	16.8	**-0.0322**	0.013	41.0	ug/L	368	Standard
	Sb	123	1337.1	2.7	**0.4189**	0.009	2.2	ug/L	46	Standard
	Ba	135	1010.4	2.6	**0.7463**	0.020	2.7	ug/L	16	Standard
	Ce	140	15.0	88.2				ug/L	43	Standard
>	**Tb**	159	765779.8	1.2				ug/L	771780	Standard
	Ho	165	10.0	50.0				ug/L	8	Standard
	Tl	203	437.3	1.6	**0.0701**	0.001	1.9	ug/L	28	Standard
	Tl	205	420.0	12.4	**0.0769**	0.010	13.5	ug/L	20	Standard
	Pb	206	851.7	2.8	**0.2021**	0.009	4.6	ug/L	184	Standard
	Pb	207	706.3	4.2	**0.1791**	0.013	7.1	ug/L	161	Standard
	Pb	208	3205.1	1.8	**0.1900**	0.003	1.3	ug/L	746	Standard
	U	238	1772.1	2.0	**0.3928**	0.005	1.4	ug/L	6	Standard
>	**Bi**	209	424954.5	0.8				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	20.0	66.1	**-0.0096**	0.020	205.4	mg/L	25	Standard
K	39	38.3	7.5	**-0.0128**	0.011	86.6	mg/L	25	Standard
Ca	43	41.7	18.3	**-1.3623**	0.654	48.0	mg/L	77	Standard
Fe	54	115.5	13.4	**-0.0236**	0.016	69.1	mg/L	165	Standard
Fe	57	156.7	12.9	**0.0196**	0.079	401.9	mg/L	205	Standard
Sc-1	45	49059.3	1.0				mg/L	46031	Standard
Cl	35	34409.7	0.9				ug/L	28530	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1456.7	15.2				ug/L	1560	Standard
P	31	14605.4	1.9				ug/L	15481	Standard
S	34	2621.9	3.0				ug/L	2072	Standard
Sr	88	51.7	27.9				ug/L	70	Standard
C	12	23.3	24.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.8	99.2				mg/L	13	Standard
Ho-1	165	10.0	50.0				mg/L	8	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	1108.4	11.9				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	86.661		
Al	27			
Sc	45			
Ti	47			
V	51	94.942		
Cr	52	93.755		
Cr	53			
Mn	55	92.271		
Co	59	101.297		
Ni	60	97.211		
Cu	65	95.919		
Zn	66	111.737		
Ge	72		97.223	
As	75	96.141		
Se	82	94.142		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	101.989		
Cd	111	95.943		
Cd	114			
> In	115			96.665
Sn	118			
Sb	123	104.721		
Ba	135	99.504		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	87.648		
Tl	205			
Pb	206			
Pb	207			
Pb	208	95.010		
U	238	98.203		
> Bi	209			98.981
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
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Method 6020 - Summary Report

Sample ID: PBW 46 WG572244-02
Sample Date/Time: Wednesday, June 15, 2016 15:05:25
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72211.7	2.1				ug/L	58443	Standard
	Be	9	11.7	65.5	**-0.0034**	0.011	313.7	ug/L	5	Standard
	Al	27	1231.7	10.9	**0.0007**	0.001	146.4	ug/L	385	Standard
	Sc	45	50353.6	2.2				ug/L	46031	Standard
	Ti	47	41.7	18.0	**-0.2997**	0.030	10.1	ug/L	94	Standard
	V	51	2254.3	13.2	**0.1438**	0.058	40.4	ug/L	1280	Standard
	Cr	52	6773.8	1.8	**-0.0035**	0.027	758.3	ug/L	6381	Standard
	Cr	53	13290.8	6.2	**15.9508**	1.177	7.4	ug/L	1957	Standard
	Mn	55	935.7	1.9	**0.0157**	0.003	20.0	ug/L	667	Standard
	Co	59	145.0	12.4	**-0.0063**	0.003	53.4	ug/L	156	Standard
	Ni	60	99.0	7.1	**-0.0600**	0.004	7.3	ug/L	154	Standard
	Cu	65	163.7	4.9	**0.0108**	0.004	35.7	ug/L	116	Standard
	Zn	66	2460.2	0.7	**2.7452**	0.046	1.7	ug/L	114	Standard
>	**Ge**	72	476281.7	1.7				ug/L	467488	Standard
	As	75	-86.7	33.1	**-0.0617**	0.035	57.2	ug/L	-61	Standard
	Se	82	17.5	26.2	**0.0308**	0.050	161.0	ug/L	9	Standard
	Se-1	77	545.3	6.5	**7.3827**	0.474	6.4	ug/L	125	Standard
>	**Ga**	71	48.3	52.1				mg/L	50	Standard
	Rb	85	23.3	12.4				ug/L	18	Standard
	Y	89	411189.1	1.6				ug/L	402730	Standard
>	**Rh**	103	16.7	34.6				ug/L	12	Standard
	Mo	98	35.7	17.3	**0.0120**	0.004	30.0	ug/L	8	Standard
	Ag	107	81.3	6.3	**-0.0025**	0.001	46.6	ug/L	65	Standard
	Cd	111	5.6	44.8	**-0.0043**	0.002	39.7	mg/L	3	Standard
	Cd	114	27.9	45.5	**-0.0065**	0.004	55.2	ug/L	15	Standard
>	**In**	115	535377.7	0.7				ug/L	526825	Standard
	Sn	118	451.7	6.7	**-0.0023**	0.008	359.6	ug/L	368	Standard
	Sb	123	115.2	32.8	**0.0205**	0.011	55.8	ug/L	46	Standard
	Ba	135	46.0	19.6	**0.0103**	0.007	64.5	ug/L	16	Standard
	Ce	140	23.3	65.5				ug/L	43	Standard
>	**Tb**	159	798301.1	0.6				ug/L	771780	Standard
	Ho	165	10.0	86.6				ug/L	8	Standard
	Tl	203	100.3	9.8	**0.0044**	0.002	45.7	ug/L	28	Standard
	Tl	205	78.3	38.5	**0.0042**	0.006	147.8	ug/L	20	Standard
	Pb	206	248.0	7.0	**0.0055**	0.006	113.4	ug/L	184	Standard
	Pb	207	220.0	4.6	**0.0042**	0.003	73.6	ug/L	161	Standard
	Pb	208	942.7	0.3	**0.0033**	0.001	27.9	ug/L	746	Standard
	U	238	6.3	63.8	**-0.0036**	0.001	24.6	ug/L	6	Standard
>	**Bi**	209	435516.3	1.0				ug/L	429329	Standard

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Na	23	1.7	173.2	**6.0340**	10.442	173.1	mg/L	0	Standard
Mg	24	28.3	20.4	**0.0017**	0.008	473.7	mg/L	25	Standard
K	39	25.0	52.9	**-0.0597**	0.046	77.0	mg/L	25	Standard
Ca	43	31.7	24.1	**-2.2785**	0.633	27.8	mg/L	77	Standard
Fe	54	159.6	21.7	**0.0155**	0.030	195.0	mg/L	165	Standard
Fe	57	158.3	15.6	**0.0113**	0.101	889.1	mg/L	205	Standard
Sc-1	45	50353.6	2.2				mg/L	46031	Standard
Cl	35	35245.6	1.2				ug/L	28530	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1703.4	3.6				ug/L	1560	Standard
P	31	20256.9	2.3				ug/L	15481	Standard
S	34	2766.9	1.4				ug/L	2072	Standard
Sr	88	50.0	43.6				ug/L	70	Standard
C	12	36.7	87.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.5	179.6				mg/L	13	Standard
Ho-1	165	10.0	86.6				mg/L	8	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	1381.7	8.6				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.560	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.881	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.623
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.441
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: LCSW 46 WG572244-03
Sample Date/Time: Wednesday, June 15, 2016 15:08:36
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76841.1	1.9				ug/L	58443	Standard
	Be	9	400.0	10.0	**0.4913**	0.044	9.0	ug/L	5	Standard
	Al	27	123508.1	2.0	**0.8143**	0.028	3.4	ug/L	385	Standard
	Sc	45	50935.5	2.1				ug/L	46031	Standard
	Ti	47	2483.5	3.4	**10.5222**	0.470	4.5	ug/L	94	Standard
	V	51	60821.9	2.2	**10.6737**	0.341	3.2	ug/L	1280	Standard
	Cr	52	37203.0	2.4	**5.2401**	0.213	4.1	ug/L	6381	Standard
	Cr	53	29188.2	6.6	**38.6551**	3.109	8.0	ug/L	1957	Standard
	Mn	55	24061.1	1.8	**5.2450**	0.142	2.7	ug/L	667	Standard
	Co	59	10087.4	0.9	**2.0554**	0.038	1.8	ug/L	156	Standard
	Ni	60	7416.8	1.8	**5.0344**	0.130	2.6	ug/L	154	Standard
	Cu	65	7357.5	4.3	**5.1460**	0.275	5.3	ug/L	116	Standard
	Zn	66	9385.6	3.7	**11.2437**	0.534	4.8	ug/L	114	Standard
>	**Ge**	72	474375.4	1.0				ug/L	467488	Standard
	As	75	3255.7	4.9	**3.9022**	0.223	5.7	ug/L	-61	Standard
	Se	82	347.1	2.8	**3.8633**	0.077	2.0	ug/L	9	Standard
	Se-1	77	1247.7	6.9	**19.5916**	1.668	8.5	ug/L	125	Standard
>	**Ga**	71	66.7	28.4				mg/L	50	Standard
	Rb	85	93.3	24.2				ug/L	18	Standard
	Y	89	411430.1	2.5				ug/L	402730	Standard
>	**Rh**	103	23.3	44.6				ug/L	12	Standard
	Mo	98	18006.7	1.7	**10.1840**	0.220	2.2	ug/L	8	Standard
	Ag	107	18205.9	1.3	**4.0204**	0.062	1.5	ug/L	65	Standard
	Cd	111	708.2	3.9	**0.4780**	0.020	4.1	mg/L	3	Standard
	Cd	114	1957.6	7.7	**0.5346**	0.042	7.9	ug/L	15	Standard
>	**In**	115	532473.0	0.8				ug/L	526825	Standard
	Sn	118	39553.3	3.4	**9.6084**	0.385	4.0	ug/L	368	Standard
	Sb	123	39445.3	2.5	**12.2287**	0.375	3.1	ug/L	46	Standard
	Ba	135	13618.1	1.7	**9.8951**	0.247	2.5	ug/L	16	Standard
	Ce	140	30.0	44.1				ug/L	43	Standard
>	**Tb**	159	808535.6	1.1				ug/L	771780	Standard
	Ho	165	6.7	43.3				ug/L	8	Standard
	Tl	203	26544.6	1.6	**4.9345**	0.169	3.4	ug/L	28	Standard
	Tl	205	24054.1	1.5	**4.8925**	0.150	3.1	ug/L	20	Standard
	Pb	206	16768.9	3.6	**5.1341**	0.272	5.3	ug/L	184	Standard
	Pb	207	15037.5	2.1	**5.0764**	0.193	3.8	ug/L	161	Standard
	Pb	208	64620.1	3.1	**5.0138**	0.234	4.7	ug/L	746	Standard
	U	238	6.3	32.9	**-0.0036**	0.000	11.9	ug/L	6	Standard
>	**Bi**	209	441519.9	1.8				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	420.0	5.2	**0.5648**	0.041	7.3	mg/L	25	Standard
K	39	186.7	15.5	**0.4669**	0.086	18.4	mg/L	25	Standard
Ca	43	41.7	27.7	**-1.4787**	1.027	69.4	mg/L	77	Standard
Fe	54	159.9	9.3	**0.0145**	0.013	92.3	mg/L	165	Standard
Fe	57	166.7	14.8	**0.0359**	0.106	294.3	mg/L	205	Standard
> **Sc-1**	45	50935.5	2.1				mg/L	46031	Standard
Cl	35	35019.1	0.9				ug/L	28530	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1506.7	6.2				ug/L	1560	Standard
P	31	20153.4	2.8				ug/L	15481	Standard
S	34	2606.9	7.2				ug/L	2072	Standard
Sr	88	73.3	31.5				ug/L	70	Standard
C	12	73.3	55.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.5	122.8				mg/L	13	Standard
Ho-1	165	6.7	43.3				mg/L	8	Standard
Er	166	16.7	69.3				mg/L	7	Standard
I	127	1448.4	7.6				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		131.481	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.473	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.072
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.840
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: LCSW 46 WG572244-03
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Method 6020 - Summary Report

Sample ID: L1606040101 WG572244-01
Sample Date/Time: Wednesday, June 15, 2016 15:11:48
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71630.7	3.2				ug/L	58443	Standard
	Be	9	13.3	78.1	**-0.0008**	0.015	1885.9	ug/L	5	Standard
	Al	27	1371.7	3.8	**0.0018**	0.000	16.1	ug/L	385	Standard
	Sc	45	50756.5	0.4				ug/L	46031	Standard
	Ti	47	40.7	7.1	**-0.3021**	0.012	4.0	ug/L	94	Standard
	V	51	2487.4	7.1	**0.1891**	0.025	13.3	ug/L	1280	Standard
	Cr	52	7001.0	3.8	**0.0466**	0.042	89.8	ug/L	6381	Standard
	Cr	53	8755.9	8.8	**9.6336**	0.934	9.7	ug/L	1957	Standard
	Mn	55	849.4	4.1	**-0.0020**	0.005	244.3	ug/L	667	Standard
	Co	59	194.7	7.2	**0.0043**	0.003	67.6	ug/L	156	Standard
	Ni	60	333.0	7.2	**0.1046**	0.019	17.8	ug/L	154	Standard
	Cu	65	198.0	6.1	**0.0365**	0.007	18.1	ug/L	116	Standard
	Zn	66	1173.7	5.5	**1.1881**	0.058	4.9	ug/L	114	Standard
>	**Ge**	72	471812.3	1.6				ug/L	467488	Standard
	As	75	-65.7	92.2	**-0.0373**	0.072	192.0	ug/L	-61	Standard
	Se	82	49.1	21.1	**0.4017**	0.115	28.6	ug/L	9	Standard
	Se-1	77	588.0	10.5	**8.2166**	1.027	12.5	ug/L	125	Standard
>	**Ga**	71	81.7	14.1				mg/L	50	Standard
	Rb	85	12131.5	2.4				ug/L	18	Standard
	Y	89	416495.6	1.0				ug/L	402730	Standard
>	**Rh**	103	20.0	50.0				ug/L	12	Standard
	Mo	98	291.7	2.2	**0.1547**	0.003	2.2	ug/L	8	Standard
	Ag	107	71.3	15.0	**-0.0049**	0.002	46.9	ug/L	65	Standard
	Cd	111	3.1	49.5	**-0.0060**	0.001	17.1	mg/L	3	Standard
	Cd	114	5.2	107.0	**-0.0128**	0.002	11.9	ug/L	15	Standard
>	**In**	115	539933.2	0.3				ug/L	526825	Standard
	Sn	118	551.7	5.2	**0.0210**	0.007	34.6	ug/L	368	Standard
	Sb	123	103.3	7.7	**0.0167**	0.003	15.2	ug/L	46	Standard
	Ba	135	20015.5	1.1	**14.3515**	0.205	1.4	ug/L	16	Standard
	Ce	140	13.3	94.4				ug/L	43	Standard
>	**Tb**	159	795150.1	1.3				ug/L	771780	Standard
	Ho	165	8.3	124.9				ug/L	8	Standard
	Tl	203	125.7	5.9	**0.0079**	0.001	16.7	ug/L	28	Standard
	Tl	205	81.7	40.8	**0.0040**	0.007	163.7	ug/L	20	Standard
	Pb	206	1355.7	4.5	**0.3317**	0.017	5.1	ug/L	184	Standard
	Pb	207	1166.4	3.3	**0.3115**	0.014	4.6	ug/L	161	Standard
	Pb	208	5116.3	0.7	**0.3149**	0.005	1.6	ug/L	746	Standard
	U	238	4.3	26.6	**-0.0041**	0.000	6.0	ug/L	6	Standard
>	**Bi**	209	459462.6	0.7				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4570.7	2.5	**6.5542**	0.187	2.9	mg/L	25	Standard
K	39	1461.7	8.5	**4.6558**	0.423	9.1	mg/L	25	Standard
Ca	43	126.7	26.9	**5.4879**	2.784	50.7	mg/L	77	Standard
Fe	54	137.6	15.2	**-0.0064**	0.020	305.2	mg/L	165	Standard
Fe	57	193.3	3.0	**0.1361**	0.019	13.8	mg/L	205	Standard
> **Sc-1**	45	50756.5	0.4				mg/L	46031	Standard
Cl	35	35101.3	1.1				ug/L	28530	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	2080.1	16.7				ug/L	1560	Standard
P	31	19836.3	0.7				ug/L	15481	Standard
S	34	2595.2	1.3				ug/L	2072	Standard
Sr	88	83.3	28.4				ug/L	70	Standard
C	12	73.3	28.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	3.3	173.2				mg/L	13	Standard
Ho-1	165	8.3	124.9				mg/L	8	Standard
Er	166	0.0					mg/L	7	Standard
I	127	4447.3	5.7				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		122.566	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.925	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.488
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.019
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606040101S WG572244-04
Sample Date/Time: Wednesday, June 15, 2016 15:14:59
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78176.3	3.5				ug/L	58443	Standard
	Be	9	366.7	4.8	**0.4409**	0.011	2.5	ug/L	5	Standard
	Al	27	128072.7	3.1	**0.8309**	0.051	6.1	ug/L	385	Standard
	Sc	45	50984.0	1.6				ug/L	46031	Standard
	Ti	47	2635.9	2.5	**10.9416**	0.356	3.3	ug/L	94	Standard
	V	51	61843.2	0.2	**10.6136**	0.116	1.1	ug/L	1280	Standard
	Cr	52	38169.7	2.0	**5.2624**	0.144	2.7	ug/L	6381	Standard
	Cr	53	20458.8	1.0	**25.5868**	0.376	1.5	ug/L	1957	Standard
	Mn	55	24809.0	1.6	**5.2918**	0.130	2.5	ug/L	667	Standard
	Co	59	10311.5	2.5	**2.0553**	0.061	3.0	ug/L	156	Standard
	Ni	60	7826.7	3.5	**5.2010**	0.214	4.1	ug/L	154	Standard
	Cu	65	7373.1	1.7	**5.0405**	0.041	0.8	ug/L	116	Standard
	Zn	66	9729.8	0.3	**11.4030**	0.121	1.1	ug/L	114	Standard
>	**Ge**	72	484946.6	0.9				ug/L	467488	Standard
	As	75	3359.1	4.0	**3.9363**	0.142	3.6	ug/L	-61	Standard
	Se	82	397.0	4.9	**4.3424**	0.187	4.3	ug/L	9	Standard
	Se-1	77	1251.7	3.8	**19.1827**	0.941	4.9	ug/L	125	Standard
>	**Ga**	71	91.7	51.8				mg/L	50	Standard
	Rb	85	12680.3	3.8				ug/L	18	Standard
	Y	89	416497.4	1.2				ug/L	402730	Standard
>	**Rh**	103	43.3	33.3				ug/L	12	Standard
	Mo	98	18749.0	0.9	**10.6609**	0.092	0.9	ug/L	8	Standard
	Ag	107	18713.9	2.3	**4.1555**	0.090	2.2	ug/L	65	Standard
	Cd	111	741.5	5.3	**0.5039**	0.034	6.8	mg/L	3	Standard
	Cd	114	2118.8	3.6	**0.5831**	0.024	4.0	ug/L	15	Standard
>	**In**	115	529635.2	1.6				ug/L	526825	Standard
	Sn	118	40380.5	3.9	**9.8616**	0.273	2.8	ug/L	368	Standard
	Sb	123	40369.0	1.1	**12.5832**	0.256	2.0	ug/L	46	Standard
	Ba	135	34194.9	1.5	**25.0124**	0.222	0.9	ug/L	16	Standard
	Ce	140	21.7	35.3				ug/L	43	Standard
>	**Tb**	159	811978.4	2.1				ug/L	771780	Standard
	Ho	165	6.7	43.3				ug/L	8	Standard
	Tl	203	27090.2	0.7	**4.7501**	0.064	1.3	ug/L	28	Standard
	Tl	205	25054.0	2.3	**4.8076**	0.139	2.9	ug/L	20	Standard
	Pb	206	18150.5	0.9	**5.2427**	0.065	1.2	ug/L	184	Standard
	Pb	207	16409.2	1.9	**5.2278**	0.121	2.3	ug/L	161	Standard
	Pb	208	69974.8	1.8	**5.1232**	0.135	2.6	ug/L	746	Standard
	U	238	6.3	24.1	**-0.0037**	0.000	8.6	ug/L	6	Standard
>	**Bi**	209	467878.1	0.8				ug/L	429329	Standard

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Na	23	1.7	173.2	**6.0005**	10.385	173.1	mg/L	0	Standard
Mg	24	5085.9	5.9	**7.2694**	0.537	7.4	mg/L	25	Standard
K	39	1613.4	2.4	**5.1303**	0.161	3.1	mg/L	25	Standard
Ca	43	145.0	6.9	**6.9432**	0.857	12.3	mg/L	77	Standard
Fe	54	179.9	14.4	**0.0334**	0.025	74.1	mg/L	165	Standard
Fe	57	201.7	3.8	**0.1637**	0.019	11.8	mg/L	205	Standard
Sc-1	45	50984.0	1.6				mg/L	46031	Standard
Cl	35	36922.3	1.2				ug/L	28530	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	2156.8	2.2				ug/L	1560	Standard
P	31	20720.8	1.3				ug/L	15481	Standard
S	34	2725.2	6.8				ug/L	2072	Standard
Sr	88	76.7	16.4				ug/L	70	Standard
C	12	106.7	42.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	0	Standard
Dy	164	9.5	102.6				mg/L	13	Standard
Ho-1	165	6.7	43.3				mg/L	8	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	4192.3	10.6				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		133.766	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.734	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.533
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	108.979
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 16, 2016

Method 6020 - Summary Report

Sample ID: L1606040101SD WG572244-05
Sample Date/Time: Wednesday, June 15, 2016 15:18:11
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77472.6	1.2				ug/L	58443	Standard
	Be	9	370.0	10.6	**0.4494**	0.049	10.8	ug/L	5	Standard
	Al	27	126644.0	2.6	**0.8279**	0.012	1.4	ug/L	385	Standard
	Sc	45	50992.4	2.1				ug/L	46031	Standard
	Ti	47	2495.9	2.4	**10.5729**	0.357	3.4	ug/L	94	Standard
	V	51	61169.9	2.0	**10.7308**	0.188	1.8	ug/L	1280	Standard
	Cr	52	37758.0	1.2	**5.3323**	0.032	0.6	ug/L	6381	Standard
	Cr	53	21223.2	2.3	**27.2955**	0.461	1.7	ug/L	1957	Standard
	Mn	55	24734.5	1.3	**5.3946**	0.028	0.5	ug/L	667	Standard
	Co	59	10245.1	2.4	**2.0871**	0.037	1.8	ug/L	156	Standard
	Ni	60	7744.3	3.0	**5.2594**	0.117	2.2	ug/L	154	Standard
	Cu	65	7364.5	1.9	**5.1474**	0.055	1.1	ug/L	116	Standard
	Zn	66	9786.5	1.2	**11.7277**	0.037	0.3	ug/L	114	Standard
>	**Ge**	72	474518.4	0.9				ug/L	467488	Standard
	As	75	3328.3	4.3	**3.9848**	0.133	3.3	ug/L	-61	Standard
	Se	82	395.7	6.7	**4.4261**	0.273	6.2	ug/L	9	Standard
	Se-1	77	1324.1	5.1	**20.8997**	1.269	6.1	ug/L	125	Standard
>	**Ga**	71	75.0	23.1				mg/L	50	Standard
	Rb	85	12164.9	0.3				ug/L	18	Standard
	Y	89	410499.5	1.9				ug/L	402730	Standard
>	**Rh**	103	40.0	25.0				ug/L	12	Standard
	Mo	98	18829.8	0.6	**10.5327**	0.077	0.7	ug/L	8	Standard
	Ag	107	18488.6	3.3	**4.0374**	0.093	2.3	ug/L	65	Standard
	Cd	111	720.4	2.2	**0.4810**	0.012	2.4	mg/L	3	Standard
	Cd	114	2034.8	5.5	**0.5499**	0.026	4.7	ug/L	15	Standard
>	**In**	115	538367.6	1.0				ug/L	526825	Standard
	Sn	118	40963.7	2.4	**9.8422**	0.140	1.4	ug/L	368	Standard
	Sb	123	40186.6	1.7	**12.3200**	0.091	0.7	ug/L	46	Standard
	Ba	135	34155.1	1.6	**24.5758**	0.148	0.6	ug/L	16	Standard
	Ce	140	33.3	31.2				ug/L	43	Standard
>	**Tb**	159	812709.9	0.9				ug/L	771780	Standard
	Ho	165	11.7	65.5				ug/L	8	Standard
	Tl	203	27012.7	1.0	**4.7136**	0.044	0.9	ug/L	28	Standard
	Tl	205	24544.9	3.4	**4.6865**	0.152	3.2	ug/L	20	Standard
	Pb	206	18181.2	1.6	**5.2262**	0.086	1.6	ug/L	184	Standard
	Pb	207	16257.1	1.6	**5.1532**	0.072	1.4	ug/L	161	Standard
	Pb	208	69371.8	1.4	**5.0531**	0.065	1.3	ug/L	746	Standard
	U	238	12.3	47.5	**-0.0025**	0.001	48.0	ug/L	6	Standard
>	**Bi**	209	470114.6	0.4				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	5012.5	3.5	**7.1632**	0.406	5.7	mg/L	25	Standard
K	39	1603.4	5.0	**5.0951**	0.216	4.2	mg/L	25	Standard
Ca	43	121.7	15.6	**5.0152**	1.361	27.1	mg/L	77	Standard
Fe	54	172.0	21.1	**0.0258**	0.034	130.9	mg/L	165	Standard
Fe	57	195.0	9.2	**0.1395**	0.072	51.8	mg/L	205	Standard
> **Sc-1**	45	50992.4	2.1				mg/L	46031	Standard
Cl	35	36753.9	1.9				ug/L	28530	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	2080.1	5.5				ug/L	1560	Standard
P	31	20387.0	1.6				ug/L	15481	Standard
S	34	2653.6	4.0				ug/L	2072	Standard
Sr	88	103.3	29.6				ug/L	70	Standard
C	12	93.3	24.7				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.9	122.5				mg/L	13	Standard
Ho-1	165	11.7	65.5				mg/L	8	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	3510.4	3.8				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.562	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.504	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.191
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.500
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 16, 2016

Method 6020 - Summary Report

Sample ID: L1606040301
Sample Date/Time: Wednesday, June 15, 2016 15:21:22
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74839.4	0.7				ug/L	58443	Standard
	Be	9	5.0	173.2	**-0.0128**	0.011	89.4	ug/L	5	Standard
	Al	27	2396.9	7.5	**0.0083**	0.001	13.4	ug/L	385	Standard
	Sc	45	50233.1	1.3				ug/L	46031	Standard
	Ti	47	43.7	6.6	**-0.2894**	0.014	4.7	ug/L	94	Standard
	V	51	2522.7	23.8	**0.1940**	0.106	54.7	ug/L	1280	Standard
	Cr	52	7611.6	2.2	**0.1478**	0.024	16.4	ug/L	6381	Standard
	Cr	53	11112.4	0.6	**12.9583**	0.142	1.1	ug/L	1957	Standard
	Mn	55	1332.7	1.7	**0.1069**	0.004	3.6	ug/L	667	Standard
	Co	59	180.7	12.4	**0.0013**	0.005	372.9	ug/L	156	Standard
	Ni	60	330.7	2.8	**0.1020**	0.006	6.2	ug/L	154	Standard
	Cu	65	416.0	3.6	**0.1919**	0.009	4.9	ug/L	116	Standard
	Zn	66	4802.4	2.4	**5.6378**	0.116	2.1	ug/L	114	Standard
>	**Ge**	72	473401.3	0.5				ug/L	467488	Standard
	As	75	-30.9	301.5	**0.0045**	0.111	2472.4	ug/L	-61	Standard
	Se	82	37.1	19.8	**0.2610**	0.087	33.4	ug/L	9	Standard
	Se-1	77	653.3	6.0	**9.3159**	0.641	6.9	ug/L	125	Standard
>	**Ga**	71	153.3	16.1				mg/L	50	Standard
	Rb	85	11045.7	0.6				ug/L	18	Standard
	Y	89	414380.6	1.2				ug/L	402730	Standard
>	**Rh**	103	15.0	33.3				ug/L	12	Standard
	Mo	98	204.7	1.8	**0.1079**	0.004	3.4	ug/L	8	Standard
	Ag	107	67.3	3.7	**-0.0055**	0.001	16.2	ug/L	65	Standard
	Cd	111	3.6	100.1	**-0.0056**	0.003	46.1	mg/L	3	Standard
	Cd	114	18.7	107.8	**-0.0090**	0.006	61.9	ug/L	15	Standard
>	**In**	115	532263.7	2.3				ug/L	526825	Standard
	Sn	118	670.0	2.6	**0.0521**	0.008	15.6	ug/L	368	Standard
	Sb	123	105.7	9.7	**0.0179**	0.004	21.5	ug/L	46	Standard
	Ba	135	6290.0	1.1	**4.5610**	0.127	2.8	ug/L	16	Standard
	Ce	140	31.7	50.8				ug/L	43	Standard
>	**Tb**	159	796234.8	0.6				ug/L	771780	Standard
	Ho	165	16.7	17.3				ug/L	8	Standard
	Tl	203	117.3	3.2	**0.0071**	0.001	8.2	ug/L	28	Standard
	Tl	205	103.3	14.8	**0.0089**	0.003	36.3	ug/L	20	Standard
	Pb	206	1243.4	0.9	**0.3093**	0.004	1.4	ug/L	184	Standard
	Pb	207	1059.7	2.7	**0.2867**	0.009	3.3	ug/L	161	Standard
	Pb	208	4658.3	1.7	**0.2907**	0.009	3.0	ug/L	746	Standard
	U	238	3.7	87.7	**-0.0042**	0.001	16.4	ug/L	6	Standard
>	**Bi**	209	446223.0	0.7				ug/L	429329	Standard

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Na	23	1.7	173.2	**6.0720**	10.508	173.1	mg/L	0	Standard
Mg	24	4202.3	5.5	**6.0847**	0.306	5.0	mg/L	25	Standard
K	39	1475.1	5.7	**4.7476**	0.223	4.7	mg/L	25	Standard
Ca	43	101.7	14.2	**3.5197**	1.126	32.0	mg/L	77	Standard
Fe	54	170.8	7.2	**0.0271**	0.010	36.2	mg/L	165	Standard
Fe	57	175.0	20.0	**0.0736**	0.123	167.5	mg/L	205	Standard
Sc-1	45	50233.1	1.3				mg/L	46031	Standard
Cl	35	36933.6	0.7				ug/L	28530	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	2400.2	4.4				ug/L	1560	Standard
P	31	20023.2	1.1				ug/L	15481	Standard
S	34	2633.6	3.1				ug/L	2072	Standard
Sr	88	86.7	14.5				ug/L	70	Standard
C	12	110.0	45.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	6.2	93.6				mg/L	13	Standard
Ho-1	165	16.7	17.3				mg/L	8	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	5019.2	6.5				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		128.056	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.265	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.032
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.935
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 16, 2016

Method 6020 - Summary Report

Sample ID: L1606040301PS WG572834-01
Sample Date/Time: Wednesday, June 15, 2016 15:24:33
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75003.6	2.0				ug/L	58443	Standard
	Be	9	37396.1	3.2	**48.9095**	0.625	1.3	ug/L	5	Standard
	Al	27	2003.5	5.1	**0.0056**	0.001	16.5	ug/L	385	Standard
	Sc	45	50890.4	2.5				ug/L	46031	Standard
	Ti	47	39.3	19.3	**-0.3056**	0.032	10.5	ug/L	94	Standard
	V	51	295847.6	0.8	**54.0439**	0.963	1.8	ug/L	1280	Standard
	Cr	52	311990.0	1.0	**53.6798**	0.998	1.9	ug/L	6381	Standard
	Cr	53	48268.5	3.3	**67.2085**	0.926	1.4	ug/L	1957	Standard
	Mn	55	239337.2	0.3	**55.0677**	1.477	2.7	ug/L	667	Standard
	Co	59	249012.1	1.3	**52.6867**	0.826	1.6	ug/L	156	Standard
	Ni	60	74372.1	1.4	**52.7302**	0.541	1.0	ug/L	154	Standard
	Cu	65	73723.9	1.2	**53.6142**	0.813	1.5	ug/L	116	Standard
	Zn	66	46684.2	1.5	**58.1407**	0.742	1.3	ug/L	114	Standard
>	Ge	72	464631.2	2.4				ug/L	467488	Standard
	As	75	42201.0	2.2	**51.1231**	0.257	0.5	ug/L	-61	Standard
	Se	82	4345.6	2.1	**51.4148**	0.556	1.1	ug/L	9	Standard
	Se-1	77	3509.1	1.5	**60.0132**	1.416	2.4	ug/L	125	Standard
>	Ga	71	105.0	12.6				mg/L	50	Standard
	Rb	85	10907.3	3.8				ug/L	18	Standard
	Y	89	402465.8	1.3				ug/L	402730	Standard
>	Rh	103	38.3	49.4				ug/L	12	Standard
	Mo	98	199.7	1.4	**0.1062**	0.004	3.7	ug/L	8	Standard
	Ag	107	228964.1	0.7	**51.3443**	0.777	1.5	ug/L	65	Standard
	Cd	111	75510.7	2.4	**52.3646**	0.247	0.5	mg/L	3	Standard
	Cd	114	182539.1	2.7	**51.7065**	0.408	0.8	ug/L	15	Standard
>	In	115	526903.4	2.0				ug/L	526825	Standard
	Sn	118	543.3	6.1	**0.0222**	0.008	35.1	ug/L	368	Standard
	Sb	123	162880.8	1.6	**51.0732**	0.288	0.6	ug/L	46	Standard
	Ba	135	75839.1	2.2	**55.7864**	0.100	0.2	ug/L	16	Standard
	Ce	140	16.7	75.5				ug/L	43	Standard
>	Tb	159	795188.3	2.3				ug/L	771780	Standard
	Ho	165	3.3	86.6				ug/L	8	Standard
	Tl	203	272059.6	2.7	**50.8420**	0.302	0.6	ug/L	28	Standard
	Tl	205	252198.3	0.7	**51.5713**	1.385	2.7	ug/L	20	Standard
	Pb	206	173068.2	1.1	**53.8064**	0.563	1.0	ug/L	184	Standard
	Pb	207	149775.4	1.0	**51.3543**	0.611	1.2	ug/L	161	Standard
	Pb	208	653882.6	0.2	**51.5381**	1.000	1.9	ug/L	746	Standard
	U	238	237790.1	0.3	**51.5483**	1.191	2.3	ug/L	6	Standard
>	Bi	209	440157.7	2.1				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4028.9	2.1	**5.7581**	0.120	2.1	mg/L	25	Standard
K	39	1363.4	4.0	**4.3248**	0.279	6.4	mg/L	25	Standard
Ca	43	116.7	23.6	**4.6413**	2.222	47.9	mg/L	77	Standard
Fe	54	118.3	2.0	**-0.0251**	0.005	19.2	mg/L	165	Standard
Fe	57	178.3	7.1	**0.0779**	0.031	40.1	mg/L	205	Standard
> **Sc-1**	45	50890.4	2.5				mg/L	46031	Standard
Cl	35	36766.6	1.0				ug/L	28530	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	2096.8	5.9				ug/L	1560	Standard
P	31	20617.4	1.9				ug/L	15481	Standard
S	34	2593.6	5.5				ug/L	2072	Standard
Sr	88	68.3	27.7				ug/L	70	Standard
C	12	83.3	18.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.5	102.6				mg/L	13	Standard
Ho-1	165	3.3	86.6				mg/L	8	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	5000.8	6.0				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.337	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.389	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606040301PS WG572834-01
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.015
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.522
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 16, 2016

Method 6020 - Summary Report

Sample ID: L1606040301SDL WG572834-02
Sample Date/Time: Wednesday, June 15, 2016 15:27:45
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 250
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68231.6	1.1				ug/L	58443	Standard
	Be	9	11.7	49.5	**-0.0026**	0.008	313.7	ug/L	5	Standard
	Al	27	2081.8	37.7	**0.0075**	0.006	76.2	ug/L	385	Standard
	Sc	45	50072.6	2.9				ug/L	46031	Standard
	Ti	47	34.3	17.6	**-0.3293**	0.027	8.1	ug/L	94	Standard
	V	51	1647.7	24.2	**0.0399**	0.074	185.5	ug/L	1280	Standard
	Cr	52	7028.6	2.8	**0.0598**	0.035	58.4	ug/L	6381	Standard
	Cr	53	4322.3	2.5	**3.3433**	0.131	3.9	ug/L	1957	Standard
	Mn	55	1369.4	15.1	**0.1184**	0.048	40.2	ug/L	667	Standard
	Co	59	188.3	7.5	**0.0033**	0.003	91.4	ug/L	156	Standard
	Ni	60	158.7	6.3	**-0.0168**	0.007	40.2	ug/L	154	Standard
	Cu	65	207.0	0.5	**0.0440**	0.001	2.6	ug/L	116	Standard
	Zn	66	1857.1	0.8	**2.0464**	0.030	1.5	ug/L	114	Standard
>	**Ge**	72	468556.4	0.5				ug/L	467488	Standard
	As	75	-20.3	309.8	**0.0166**	0.076	455.0	ug/L	-61	Standard
	Se	82	16.7	36.6	**0.0260**	0.072	278.1	ug/L	9	Standard
	Se-1	77	213.0	6.6	**1.7177**	0.235	13.7	ug/L	125	Standard
>	**Ga**	71	50.0	36.1				mg/L	50	Standard
	Rb	85	2293.5	1.2				ug/L	18	Standard
	Y	89	406703.5	1.3				ug/L	402730	Standard
>	**Rh**	103	35.0	14.3				ug/L	12	Standard
	Mo	98	93.1	9.2	**0.0453**	0.005	11.6	ug/L	8	Standard
	Ag	107	84.7	13.8	**-0.0015**	0.003	182.1	ug/L	65	Standard
	Cd	111	12.2	62.3	**0.0004**	0.005	1434.0	mg/L	3	Standard
	Cd	114	29.4	15.2	**-0.0059**	0.001	22.0	ug/L	15	Standard
>	**In**	115	526127.8	0.8				ug/L	526825	Standard
	Sn	118	396.7	5.8	**-0.0140**	0.006	46.0	ug/L	368	Standard
	Sb	123	1531.9	18.9	**0.4659**	0.088	19.0	ug/L	46	Standard
	Ba	135	1360.7	7.6	**0.9800**	0.080	8.1	ug/L	16	Standard
	Ce	140	21.7	26.6				ug/L	43	Standard
>	**Tb**	159	802019.9	1.3				ug/L	771780	Standard
	Ho	165	11.7	24.7				ug/L	8	Standard
	Tl	203	172.7	4.5	**0.0180**	0.001	7.8	ug/L	28	Standard
	Tl	205	181.7	20.7	**0.0255**	0.008	30.4	ug/L	20	Standard
	Pb	206	508.7	5.6	**0.0874**	0.009	10.1	ug/L	184	Standard
	Pb	207	402.3	3.1	**0.0674**	0.004	6.1	ug/L	161	Standard
	Pb	208	1805.0	5.4	**0.0720**	0.008	10.7	ug/L	746	Standard
	U	238	39.0	31.1	**0.0036**	0.003	74.4	ug/L	6	Standard
>	**Bi**	209	435659.3	0.2				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	810.0	16.0	**1.1420**	0.157	13.7	mg/L	25	Standard
K	39	356.7	8.0	**1.0426**	0.062	6.0	mg/L	25	Standard
Ca	43	58.3	27.6	**-0.0678**	1.243	1834.7	mg/L	77	Standard
Fe	54	129.4	20.3	**-0.0129**	0.022	173.9	mg/L	165	Standard
Fe	57	125.0	0.0	**-0.1122**	0.014	12.1	mg/L	205	Standard
> **Sc-1**	45	50072.6	2.9				mg/L	46031	Standard
Cl	35	36811.3	1.0				ug/L	28530	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	1640.1	3.2				ug/L	1560	Standard
P	31	20208.5	1.2				ug/L	15481	Standard
S	34	2615.2	8.5				ug/L	2072	Standard
Sr	88	71.7	4.0				ug/L	70	Standard
C	12	46.7	44.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	0.0					mg/L	13	Standard
Ho-1	165	11.7	24.7				mg/L	8	Standard
Er	166	0.0					mg/L	7	Standard
I	127	2031.8	4.1				mg/L	1227	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		116.750	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.228	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.868
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.474
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 16, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 15, 2016 15:32:37
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64838.5	2.6				ug/L	58443	Standard
	Be	9	32344.7	8.9	**48.8957**	3.247	6.6	ug/L	5	Standard
	Al	27	5823704.0	6.1	**45.9089**	1.914	4.2	ug/L	385	Standard
	Sc	45	49363.7	3.0				ug/L	46031	Standard
	Ti	47	22727.4	6.4	**101.7715**	7.161	7.0	ug/L	94	Standard
	V	51	270530.3	5.7	**49.1154**	3.019	6.1	ug/L	1280	Standard
	Cr	52	285162.9	6.9	**48.6835**	3.698	7.6	ug/L	6381	Standard
	Cr	53	35339.6	6.1	**48.1610**	3.265	6.8	ug/L	1957	Standard
	Mn	55	224386.4	7.0	**51.3183**	3.887	7.6	ug/L	667	Standard
	Co	59	235436.6	6.2	**49.5355**	3.312	6.7	ug/L	156	Standard
	Ni	60	69564.6	4.9	**49.0385**	2.645	5.4	ug/L	154	Standard
	Cu	65	67707.9	4.9	**48.9522**	2.606	5.3	ug/L	116	Standard
	Zn	66	39477.1	4.3	**48.8462**	2.219	4.5	ug/L	114	Standard
>	Ge	72	467238.6	0.8				ug/L	467488	Standard
	As	75	39926.9	3.3	**48.1059**	1.834	3.8	ug/L	-61	Standard
	Se	82	4157.0	3.5	**48.8998**	1.805	3.7	ug/L	9	Standard
	Se-1	77	2809.9	6.2	**47.3814**	3.437	7.3	ug/L	125	Standard
>	Ga	71	38.3	15.1				mg/L	50	Standard
	Rb	85	588.3	17.9				ug/L	18	Standard
	Y	89	407306.1	2.6				ug/L	402730	Standard
>	Rh	103	23.3	24.7				ug/L	12	Standard
	Mo	98	170390.1	5.5	**98.2013**	5.092	5.2	ug/L	8	Standard
	Ag	107	217123.6	4.4	**49.0603**	2.108	4.3	ug/L	65	Standard
	Cd	111	69746.2	6.6	**48.7519**	3.302	6.8	mg/L	3	Standard
	Cd	114	171140.6	7.6	**48.8643**	3.761	7.7	ug/L	15	Standard
>	In	115	522806.8	1.0				ug/L	526825	Standard
	Sn	118	192844.7	9.3	**48.1567**	4.564	9.5	ug/L	368	Standard
	Sb	123	154400.9	6.6	**48.7900**	3.170	6.5	ug/L	46	Standard
	Ba	135	65574.5	5.4	**48.6139**	2.653	5.5	ug/L	16	Standard
	Ce	140	58.3	9.9				ug/L	43	Standard
>	Tb	159	786413.2	0.7				ug/L	771780	Standard
	Ho	165	10.0	86.6				ug/L	8	Standard
	Tl	203	255753.9	3.6	**48.9542**	1.506	3.1	ug/L	28	Standard
	Tl	205	234889.5	3.1	**49.1756**	1.300	2.6	ug/L	20	Standard
	Pb	206	155440.9	6.1	**49.4774**	2.779	5.6	ug/L	184	Standard
	Pb	207	140478.3	5.1	**49.3179**	2.279	4.6	ug/L	161	Standard
	Pb	208	605397.5	5.7	**48.8493**	2.517	5.2	ug/L	746	Standard
	U	238	219486.4	7.2	**48.7095**	3.294	6.8	ug/L	6	Standard
>	Bi	209	429719.7	0.7				ug/L	429329	Standard

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Na	23	1.7	173.2	**6.4771**	11.210	173.1	mg/L	0	Standard
Mg	24	3158.7	9.9	**4.6394**	0.329	7.1	mg/L	25	Standard
K	39	1341.7	12.5	**4.3807**	0.494	11.3	mg/L	25	Standard
Ca	43	101.7	10.2	**3.6623**	0.633	17.3	mg/L	77	Standard
Fe	54	4416.7	3.0	**4.2147**	0.114	2.7	mg/L	165	Standard
Fe	57	1220.0	13.3	**4.0859**	0.490	12.0	mg/L	205	Standard
> **Sc-1**	45	49363.7	3.0				mg/L	46031	Standard
Cl	35	34884.8	0.6				ug/L	28530	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	1466.7	13.7				ug/L	1560	Standard
P	31	20492.2	2.3				ug/L	15481	Standard
S	34	2856.9	1.9				ug/L	2072	Standard
Sr	88	46.7	22.3				ug/L	70	Standard
C	12	46.7	101.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.5	177.6				mg/L	13	Standard
Ho-1	165	10.0	86.6				mg/L	8	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	1023.4	14.6				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	97.791		
Al	27	91.818		
Sc	45			
Ti	47	101.771		
V	51	98.231		
Cr	52	97.367		
Cr	53			
Mn	55	102.637		
Co	59	99.071		
Ni	60	98.077		
Cu	65	97.904		
Zn	66	97.692		
> Ge	72		99.947	
As	75	96.212		
Se	82	97.800		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	98.201		
Ag	107	98.121		
Cd	111	97.504		
Cd	114			
In	115			99.237
Sn	118	96.313		
Sb	123	97.580		
Ba	135	97.228		
Ce	140			
Tb	159			
Ho	165			
Tl	203	97.908		
Tl	205			
Pb	206			
Pb	207			
Pb	208	97.699		
U	238	97.419		
Bi	209			100.091
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 15, 2016 15:35:49
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62881.9	1.8				ug/L	58443	Standard
	Be	9	36.7	28.4	**0.0378**	0.016	42.6	ug/L	5	Standard
	Al	27	5893.2	68.4	**0.0400**	0.033	83.3	ug/L	385	Standard
	Sc	45	49686.4	3.5				ug/L	46031	Standard
	Ti	47	47.7	14.0	**-0.2691**	0.030	11.3	ug/L	94	Standard
	V	51	1648.7	26.6	**0.0411**	0.084	205.6	ug/L	1280	Standard
	Cr	52	6046.2	1.2	**-0.1096**	0.014	12.8	ug/L	6381	Standard
	Cr	53	888.4	7.7	**-1.6001**	0.082	5.1	ug/L	1957	Standard
	Mn	55	2619.4	119.7	**0.4118**	0.732	177.8	ug/L	667	Standard
	Co	59	435.3	50.1	**0.0557**	0.047	84.8	ug/L	156	Standard
	Ni	60	149.0	9.3	**-0.0235**	0.009	37.1	ug/L	154	Standard
	Cu	65	142.7	2.1	**-0.0022**	0.004	162.0	ug/L	116	Standard
	Zn	66	156.0	15.6	**-0.0631**	0.030	47.8	ug/L	114	Standard
>	**Ge**	72	467807.2	1.3				ug/L	467488	Standard
	As	75	-25.0	95.6	**0.0107**	0.029	273.9	ug/L	-61	Standard
	Se	82	14.2	58.0	**-0.0042**	0.096	2293.6	ug/L	9	Standard
	Se-1	77	85.0	8.2	**-0.5215**	0.138	26.5	ug/L	125	Standard
>	**Ga**	71	43.3	13.3				mg/L	50	Standard
	Rb	85	26.7	75.8				ug/L	18	Standard
	Y	89	406948.4	1.5				ug/L	402730	Standard
>	**Rh**	103	25.0	40.0				ug/L	12	Standard
	Mo	98	282.7	50.9	**0.1529**	0.081	53.0	ug/L	8	Standard
	Ag	107	284.3	66.4	**0.0429**	0.042	97.2	ug/L	65	Standard
	Cd	111	38.0	27.0	**0.0182**	0.007	39.2	mg/L	3	Standard
	Cd	114	95.5	39.9	**0.0127**	0.011	83.5	ug/L	15	Standard
>	**In**	115	528347.8	0.6				ug/L	526825	Standard
	Sn	118	726.7	23.9	**0.0674**	0.044	65.4	ug/L	368	Standard
	Sb	123	595.6	16.5	**0.1712**	0.030	17.4	ug/L	46	Standard
	Ba	135	91.7	26.2	**0.0443**	0.018	40.4	ug/L	16	Standard
	Ce	140	25.0	87.2				ug/L	43	Standard
>	**Tb**	159	789974.0	1.6				ug/L	771780	Standard
	Ho	165	10.0	50.0				ug/L	8	Standard
	Tl	203	151.7	35.6	**0.0142**	0.011	73.9	ug/L	28	Standard
	Tl	205	221.7	41.7	**0.0340**	0.020	57.4	ug/L	20	Standard
	Pb	206	412.3	56.0	**0.0581**	0.075	128.9	ug/L	184	Standard
	Pb	207	396.0	59.5	**0.0662**	0.084	127.1	ug/L	161	Standard
	Pb	208	1403.7	30.9	**0.0405**	0.036	89.3	ug/L	746	Standard
	U	238	186.0	57.4	**0.0360**	0.024	66.0	ug/L	6	Standard
>	**Bi**	209	434816.3	1.4				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	36.7	56.8	**0.0152**	0.032	212.5	mg/L	25	Standard
K	39	35.0	24.7	**-0.0262**	0.024	93.4	mg/L	25	Standard
Ca	43	46.7	16.4	**-0.9810**	0.703	71.7	mg/L	77	Standard
Fe	54	134.2	7.7	**-0.0069**	0.007	101.5	mg/L	165	Standard
Fe	57	135.0	7.4	**-0.0695**	0.054	78.3	mg/L	205	Standard
Sc-1	45	49686.4	3.5				mg/L	46031	Standard
Cl	35	35578.4	3.0				ug/L	28530	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	1320.1	11.2				ug/L	1560	Standard
P	31	21199.8	4.3				ug/L	15481	Standard
S	34	2786.9	3.9				ug/L	2072	Standard
Sr	88	66.7	38.5				ug/L	70	Standard
C	12	40.0	25.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.7	86.7				mg/L	13	Standard
Ho-1	165	10.0	50.0				mg/L	8	Standard
Er	166	13.3	114.6				mg/L	7	Standard
I	127	938.4	7.5				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.068	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.289
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.278
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Mn	55	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW H4 WG572637-03
Sample Date/Time: Wednesday, June 15, 2016 15:42:41
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69269.6	0.3				ug/L	58443	Standard
	Be	9	10.0		**-0.0052**	0.000	0.8	ug/L	5	Standard
	Al	27	831.7	12.1	**-0.0019**	0.001	38.4	ug/L	385	Standard
	Sc	45	49499.1	0.9				ug/L	46031	Standard
	Ti	47	37.7	8.5	**-0.3159**	0.013	4.3	ug/L	94	Standard
	V	51	2002.5	4.8	**0.1009**	0.014	13.9	ug/L	1280	Standard
	Cr	52	6592.8	0.9	**-0.0264**	0.007	26.5	ug/L	6381	Standard
	Cr	53	9954.9	3.6	**11.3329**	0.709	6.3	ug/L	1957	Standard
	Mn	55	1245.4	0.7	**0.0875**	0.004	5.1	ug/L	667	Standard
	Co	59	156.7	1.0	**-0.0037**	0.000	10.1	ug/L	156	Standard
	Ni	60	102.7	16.8	**-0.0568**	0.013	22.5	ug/L	154	Standard
	Cu	65	122.3	11.0	**-0.0180**	0.009	48.8	ug/L	116	Standard
	Zn	66	1088.7	4.4	**1.0813**	0.060	5.5	ug/L	114	Standard
>	**Ge**	72	472797.0	1.4				ug/L	467488	Standard
	As	75	-64.0	84.4	**-0.0356**	0.065	181.9	ug/L	-61	Standard
	Se	82	11.1	57.5	**-0.0425**	0.072	170.1	ug/L	9	Standard
	Se-1	77	441.0	3.4	**5.6474**	0.357	6.3	ug/L	125	Standard
>	**Ga**	71	48.3	31.6				mg/L	50	Standard
	Rb	85	26.7	28.6				ug/L	18	Standard
	Y	89	418855.7	0.5				ug/L	402730	Standard
>	**Rh**	103	10.0	86.6				ug/L	12	Standard
	Mo	98	32.8	23.0	**0.0103**	0.004	39.8	ug/L	8	Standard
	Ag	107	76.3	16.2	**-0.0037**	0.003	73.0	ug/L	65	Standard
	Cd	111	7.3	21.1	**-0.0031**	0.001	34.7	mg/L	3	Standard
	Cd	114	18.5	172.0	**-0.0092**	0.009	96.6	ug/L	15	Standard
>	**In**	115	536371.3	0.8				ug/L	526825	Standard
	Sn	118	551.7	10.8	**0.0218**	0.014	62.3	ug/L	368	Standard
	Sb	123	234.2	12.2	**0.0571**	0.008	14.6	ug/L	46	Standard
	Ba	135	41.0	12.2	**0.0066**	0.004	54.8	ug/L	16	Standard
	Ce	140	18.3	68.6				ug/L	43	Standard
>	**Tb**	159	793471.3	1.1				ug/L	771780	Standard
	Ho	165	11.7	65.5				ug/L	8	Standard
	Tl	203	93.7	5.5	**0.0030**	0.001	34.7	ug/L	28	Standard
	Tl	205	91.7	16.7	**0.0068**	0.003	44.1	ug/L	20	Standard
	Pb	206	254.0	5.9	**0.0067**	0.005	81.7	ug/L	184	Standard
	Pb	207	199.0	9.2	**-0.0037**	0.007	189.4	ug/L	161	Standard
	Pb	208	904.3	5.0	**-0.0004**	0.004	1007.1	ug/L	746	Standard
	U	238	7.3	61.5	**-0.0034**	0.001	29.5	ug/L	6	Standard
>	**Bi**	209	439438.1	1.0				ug/L	429329	Standard

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Na	23	3.3	173.2	**12.6169**	21.844	173.1	mg/L	0	Standard
Mg	24	26.7	60.3	**-0.0001**	0.023	17656.4	mg/L	25	Standard
K	39	36.7	15.7	**-0.0195**	0.020	103.9	mg/L	25	Standard
Ca	43	35.0	24.7	**-1.9580**	0.704	36.0	mg/L	77	Standard
Fe	54	141.3	20.3	**0.0006**	0.028	4728.1	mg/L	165	Standard
Fe	57	171.7	26.3	**0.0721**	0.174	242.0	mg/L	205	Standard
> **Sc-1**	45	49499.1	0.9				mg/L	46031	Standard
Cl	35	37424.8	2.3				ug/L	28530	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	1386.7	12.8				ug/L	1560	Standard
P	31	21118.0	0.9				ug/L	15481	Standard
S	34	2801.9	0.9				ug/L	2072	Standard
Sr	88	63.3	16.4				ug/L	70	Standard
C	12	60.0	28.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	15.7	39.4				mg/L	13	Standard
Ho-1	165	11.7	65.5				mg/L	8	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	1058.4	5.1				mg/L	1227	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		118.526	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.136	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.812
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.355
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW H4 WG572637-04
Sample Date/Time: Wednesday, June 15, 2016 15:45:52
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73437.9	5.4				ug/L	58443	Standard
	Be	9	378.3	10.0	**0.4855**	0.025	5.1	ug/L	5	Standard
	Al	27	120268.9	10.5	**0.8280**	0.044	5.4	ug/L	385	Standard
	Sc	45	51985.9	5.7				ug/L	46031	Standard
	Ti	47	2355.5	11.7	**9.9825**	0.745	7.5	ug/L	94	Standard
	V	51	57774.4	9.8	**10.1605**	0.536	5.3	ug/L	1280	Standard
	Cr	52	35255.0	11.0	**4.9224**	0.384	7.8	ug/L	6381	Standard
	Cr	53	23829.0	15.6	**31.0765**	3.912	12.6	ug/L	1957	Standard
	Mn	55	24394.8	11.4	**5.3362**	0.371	6.9	ug/L	667	Standard
	Co	59	9922.6	12.7	**2.0263**	0.169	8.3	ug/L	156	Standard
	Ni	60	7230.7	10.5	**4.9207**	0.292	5.9	ug/L	154	Standard
	Cu	65	7106.7	9.7	**4.9834**	0.252	5.1	ug/L	116	Standard
	Zn	66	9581.1	11.3	**11.5152**	0.784	6.8	ug/L	114	Standard
>	**Ge**	72	471938.8	4.8				ug/L	467488	Standard
	As	75	3149.3	10.4	**3.7873**	0.226	6.0	ug/L	-61	Standard
	Se	82	328.3	9.9	**3.6599**	0.228	6.2	ug/L	9	Standard
	Se-1	77	1088.7	12.6	**16.8798**	1.569	9.3	ug/L	125	Standard
>	**Ga**	71	55.0	24.1				mg/L	50	Standard
	Rb	85	73.3	14.2				ug/L	18	Standard
	Y	89	407634.9	5.6				ug/L	402730	Standard
>	**Rh**	103	33.3	45.8				ug/L	12	Standard
	Mo	98	17522.4	12.0	**9.9487**	0.787	7.9	ug/L	8	Standard
	Ag	107	17739.1	10.8	**3.9338**	0.261	6.6	ug/L	65	Standard
	Cd	111	665.3	11.5	**0.4505**	0.035	7.7	mg/L	3	Standard
	Cd	114	1922.2	16.3	**0.5263**	0.067	12.8	ug/L	15	Standard
>	**In**	115	529160.5	4.4				ug/L	526825	Standard
	Sn	118	38262.1	12.8	**9.3244**	0.821	8.8	ug/L	368	Standard
	Sb	123	37906.1	11.5	**11.7987**	0.885	7.5	ug/L	46	Standard
	Ba	135	13141.8	12.7	**9.5831**	0.825	8.6	ug/L	16	Standard
	Ce	140	25.0	40.0				ug/L	43	Standard
>	**Tb**	159	801285.2	4.6				ug/L	771780	Standard
	Ho	165	1.7	173.2				ug/L	8	Standard
	Tl	203	25608.5	11.9	**4.7112**	0.377	8.0	ug/L	28	Standard
	Tl	205	23880.6	11.7	**4.8079**	0.375	7.8	ug/L	20	Standard
	Pb	206	16265.8	10.9	**4.9267**	0.346	7.0	ug/L	184	Standard
	Pb	207	14670.2	11.2	**4.9003**	0.363	7.4	ug/L	161	Standard
	Pb	208	62783.4	10.9	**4.8197**	0.341	7.1	ug/L	746	Standard
	U	238	8.7	73.3	**-0.0031**	0.001	47.9	ug/L	6	Standard
>	**Bi**	209	444929.7	4.1				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	330.0	12.9	**0.4271**	0.072	16.8	mg/L	25	Standard
K	39	176.7	23.1	**0.4194**	0.102	24.3	mg/L	25	Standard
Ca	43	38.3	15.1	**-1.8043**	0.654	36.2	mg/L	77	Standard
Fe	54	182.6	12.6	**0.0330**	0.023	71.0	mg/L	165	Standard
Fe	57	168.3	24.0	**0.0288**	0.145	503.3	mg/L	205	Standard
Sc-1	45	51985.9	5.7				mg/L	46031	Standard
Cl	35	35708.8	7.0				ug/L	28530	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	1553.4	6.4				ug/L	1560	Standard
P	31	20256.9	6.2				ug/L	15481	Standard
S	34	2726.9	9.5				ug/L	2072	Standard
Sr	88	70.0	18.9				ug/L	70	Standard
C	12	43.3	35.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	6.0	100.4				mg/L	13	Standard
Ho-1	165	1.7	173.2				mg/L	8	Standard
Er	166	13.3	43.3				mg/L	7	Standard
I	127	911.7	8.5				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		125.658	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.952	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.443
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.634
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: LCSW H4 WG572637-04
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Method 6020 - Summary Report

Sample ID: L1606056401 WG572637-01
Sample Date/Time: Wednesday, June 15, 2016 15:49:04
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 1000
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74931.5	0.9				ug/L	58443	Standard
	Be	9	10.0	50.0	**-0.0063**	0.006	102.3	ug/L	5	Standard
	Al	27	1577044.3	1.0	**10.7562**	0.090	0.8	ug/L	385	Standard
	Sc	45	51188.0	2.9				ug/L	46031	Standard
	Ti	47	41.0	16.0	**-0.2999**	0.031	10.4	ug/L	94	Standard
	V	51	1546.7	11.7	**0.0202**	0.033	161.7	ug/L	1280	Standard
	Cr	52	6596.1	6.0	**-0.0195**	0.081	416.1	ug/L	6381	Standard
	Cr	53	2483.5	7.3	**0.6804**	0.229	33.6	ug/L	1957	Standard
	Mn	55	39725.0	0.4	**8.8619**	0.135	1.5	ug/L	667	Standard
	Co	59	284.7	5.9	**0.0232**	0.003	13.9	ug/L	156	Standard
	Ni	60	560.3	6.0	**0.2648**	0.024	9.2	ug/L	154	Standard
	Cu	65	293.3	2.3	**0.1056**	0.003	2.5	ug/L	116	Standard
	Zn	66	1200.4	3.5	**1.2264**	0.066	5.4	ug/L	114	Standard
>	**Ge**	72	470404.5	1.1				ug/L	467488	Standard
	As	75	414.2	12.6	**0.5361**	0.061	11.4	ug/L	-61	Standard
	Se	82	149.2	11.1	**1.5799**	0.212	13.4	ug/L	9	Standard
	Se-1	77	269.0	3.8	**2.6801**	0.126	4.7	ug/L	125	Standard
>	**Ga**	71	38.3	27.2				mg/L	50	Standard
	Rb	85	11509.4	2.3				ug/L	18	Standard
	Y	89	413399.2	1.1				ug/L	402730	Standard
>	**Rh**	103	633.3	14.0				ug/L	12	Standard
	Mo	98	53.0	1.9	**0.0219**	0.000	1.4	ug/L	8	Standard
	Ag	107	90.3	12.8	**-0.0005**	0.002	472.0	ug/L	65	Standard
	Cd	111	3.9	25.4	**-0.0054**	0.001	12.1	mg/L	3	Standard
	Cd	114	7.6	176.9	**-0.0122**	0.004	30.8	ug/L	15	Standard
>	**In**	115	532652.5	1.6				ug/L	526825	Standard
	Sn	118	463.3	15.4	**0.0012**	0.018	1496.9	ug/L	368	Standard
	Sb	123	132.0	13.9	**0.0260**	0.006	24.6	ug/L	46	Standard
	Ba	135	1029509.5	0.2	**749.5599**	12.810	1.7	ug/L	16	Standard
	Ce	140	28.3	62.0				ug/L	43	Standard
>	**Tb**	159	802871.1	1.9				ug/L	771780	Standard
	Ho	165	8.3	91.7				ug/L	8	Standard
	Tl	203	270.3	2.6	**0.0370**	0.002	4.8	ug/L	28	Standard
	Tl	205	223.3	13.7	**0.0347**	0.007	19.6	ug/L	20	Standard
	Pb	206	249.3	2.1	**0.0067**	0.002	33.7	ug/L	184	Standard
	Pb	207	190.7	9.5	**-0.0053**	0.007	121.7	ug/L	161	Standard
	Pb	208	899.3	5.1	**0.0005**	0.004	789.0	ug/L	746	Standard
	U	238	5.7	27.0	**-0.0037**	0.000	9.4	ug/L	6	Standard
>	**Bi**	209	431194.6	1.0				ug/L	429329	Standard

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Na	23	5.0	100.0	**17.9732**	17.633	98.1	mg/L	0	Standard
Mg	24	20540.6	3.9	**29.3766**	1.963	6.7	mg/L	25	Standard
K	39	165.0	16.0	**0.3928**	0.071	18.1	mg/L	25	Standard
Ca	43	206.7	15.6	**11.9258**	2.767	23.2	mg/L	77	Standard
Fe	54	197.4	12.0	**0.0491**	0.019	38.0	mg/L	165	Standard
Fe	57	263.3	4.0	**0.3893**	0.041	10.5	mg/L	205	Standard
> **Sc-1**	45	51188.0	2.9				mg/L	46031	Standard
Cl	35	37349.3	1.8				ug/L	28530	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	34843.5	8.3				ug/L	1560	Standard
P	31	20765.9	1.6				ug/L	15481	Standard
S	34	2796.9	1.6				ug/L	2072	Standard
Sr	88	1973.5	1.9				ug/L	70	Standard
C	12	36.7	68.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	-0.3	86.6				mg/L	13	Standard
Ho-1	165	8.3	91.7				mg/L	8	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	46651.7	1.1				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.214	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.624	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606056401 WG572637-01
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.106
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.435
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606056405S WG572637-06
Sample Date/Time: Wednesday, June 15, 2016 15:52:16
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 1000
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75507.7	0.3				ug/L	58443	Standard
	Be	9	45.0	11.1	**0.0392**	0.007	16.9	ug/L	5	Standard
	Al	27	1691889.5	1.0	**11.4516**	0.096	0.8	ug/L	385	Standard
	Sc	45	49306.8	1.5				ug/L	46031	Standard
	Ti	47	161.3	2.2	**0.2342**	0.019	8.2	ug/L	94	Standard
	V	51	4663.1	2.5	**0.5811**	0.025	4.3	ug/L	1280	Standard
	Cr	52	8820.2	1.4	**0.3587**	0.008	2.2	ug/L	6381	Standard
	Cr	53	2666.9	2.0	**0.9262**	0.022	2.4	ug/L	1957	Standard
	Mn	55	43400.1	0.3	**9.6531**	0.171	1.8	ug/L	667	Standard
	Co	59	868.4	12.6	**0.1447**	0.026	17.7	ug/L	156	Standard
	Ni	60	1040.0	4.2	**0.5983**	0.042	6.9	ug/L	154	Standard
	Cu	65	674.0	2.8	**0.3774**	0.020	5.3	ug/L	116	Standard
	Zn	66	2056.8	3.1	**2.2718**	0.072	3.2	ug/L	114	Standard
>	**Ge**	72	472669.6	1.5				ug/L	467488	Standard
	As	75	884.8	7.0	**1.0933**	0.060	5.5	ug/L	-61	Standard
	Se	82	284.6	6.3	**3.1482**	0.164	5.2	ug/L	9	Standard
	Se-1	77	318.3	3.5	**3.5146**	0.125	3.6	ug/L	125	Standard
>	**Ga**	71	33.3	22.9				mg/L	50	Standard
	Rb	85	12034.8	3.1				ug/L	18	Standard
	Y	89	406513.0	0.7				ug/L	402730	Standard
>	**Rh**	103	626.7	12.0				ug/L	12	Standard
	Mo	98	1055.8	7.0	**0.5960**	0.041	7.0	ug/L	8	Standard
	Ag	107	1040.0	2.3	**0.2128**	0.005	2.6	ug/L	65	Standard
	Cd	111	38.4	15.0	**0.0186**	0.004	21.4	mg/L	3	Standard
	Cd	114	100.2	8.7	**0.0141**	0.002	17.4	ug/L	15	Standard
>	**In**	115	526732.1	0.2				ug/L	526825	Standard
	Sn	118	2476.9	6.7	**0.5025**	0.040	8.0	ug/L	368	Standard
	Sb	123	2154.6	1.8	**0.6610**	0.011	1.7	ug/L	46	Standard
	Ba	135	1100818.0	1.9	**810.3433**	15.286	1.9	ug/L	16	Standard
	Ce	140	16.7	45.8				ug/L	43	Standard
>	**Tb**	159	795363.1	0.9				ug/L	771780	Standard
	Ho	165	1.7	173.2				ug/L	8	Standard
	Tl	203	1629.1	2.4	**0.2995**	0.007	2.5	ug/L	28	Standard
	Tl	205	1493.4	6.8	**0.3029**	0.021	7.0	ug/L	20	Standard
	Pb	206	1077.7	4.1	**0.2734**	0.014	5.1	ug/L	184	Standard
	Pb	207	991.0	3.6	**0.2787**	0.012	4.4	ug/L	161	Standard
	Pb	208	4257.2	3.8	**0.2745**	0.013	4.7	ug/L	746	Standard
	U	238	31.3	140.1	**0.0020**	0.010	486.5	ug/L	6	Standard
>	**Bi**	209	426779.2	0.2				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	22555.1	1.2	**33.4549**	0.328	1.0	mg/L	25	Standard
K	39	245.0	14.1	**0.6855**	0.124	18.1	mg/L	25	Standard
Ca	43	188.3	10.7	**10.9949**	1.615	14.7	mg/L	77	Standard
Fe	54	237.7	14.8	**0.0966**	0.037	38.7	mg/L	165	Standard
Fe	57	263.3	22.3	**0.4271**	0.232	54.4	mg/L	205	Standard
> **Sc-1**	45	49306.8	1.5				mg/L	46031	Standard
Cl	35	39386.5	0.9				ug/L	28530	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	61477.9	4.0				ug/L	1560	Standard
P	31	21268.3	5.1				ug/L	15481	Standard
S	34	2930.3	6.7				ug/L	2072	Standard
Sr	88	2013.5	4.6				ug/L	70	Standard
C	12	23.3	24.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.4	243.1				mg/L	13	Standard
Ho-1	165	1.7	173.2				mg/L	8	Standard
Er	166	20.0	0.0				mg/L	7	Standard
I	127	49850.3	4.6				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.200	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.108	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.982
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.406
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606056405S WG572637-06
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Method 6020 - Summary Report

Sample ID: L1606056407SD WG572637-07
Sample Date/Time: Wednesday, June 15, 2016 15:55:27
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 1000
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75482.6	0.6				ug/L	58443	Standard
	Be	9	26.7	60.3	**0.0154**	0.021	136.9	ug/L	5	Standard
	Al	27	1664226.9	0.6	**11.2682**	0.041	0.4	ug/L	385	Standard
	Sc	45	50136.2	1.7				ug/L	46031	Standard
	Ti	47	168.7	5.3	**0.2656**	0.040	15.1	ug/L	94	Standard
	V	51	4526.7	2.3	**0.5553**	0.025	4.6	ug/L	1280	Standard
	Cr	52	9060.0	0.1	**0.3979**	0.014	3.5	ug/L	6381	Standard
	Cr	53	2628.6	3.0	**0.8669**	0.142	16.4	ug/L	1957	Standard
	Mn	55	43043.1	0.2	**9.5566**	0.085	0.9	ug/L	667	Standard
	Co	59	778.7	4.6	**0.1255**	0.006	5.1	ug/L	156	Standard
	Ni	60	1045.0	1.7	**0.6004**	0.014	2.4	ug/L	154	Standard
	Cu	65	681.0	4.3	**0.3814**	0.017	4.4	ug/L	116	Standard
	Zn	66	1717.8	1.6	**1.8518**	0.024	1.3	ug/L	114	Standard
>	**Ge**	72	473362.1	0.9				ug/L	467488	Standard
	As	75	945.0	8.7	**1.1635**	0.092	7.9	ug/L	-61	Standard
	Se	82	318.5	3.9	**3.5391**	0.113	3.2	ug/L	9	Standard
	Se-1	77	290.0	5.1	**3.0155**	0.237	7.9	ug/L	125	Standard
>	**Ga**	71	38.3	27.2				mg/L	50	Standard
	Rb	85	11898.0	4.3				ug/L	18	Standard
	Y	89	415198.5	2.1				ug/L	402730	Standard
>	**Rh**	103	716.7	5.3				ug/L	12	Standard
	Mo	98	1000.3	3.1	**0.5637**	0.018	3.1	ug/L	8	Standard
	Ag	107	1042.4	2.5	**0.2132**	0.006	2.9	ug/L	65	Standard
	Cd	111	39.7	16.5	**0.0194**	0.004	22.8	mg/L	3	Standard
	Cd	114	104.5	37.3	**0.0153**	0.011	72.7	ug/L	15	Standard
>	**In**	115	527226.5	0.4				ug/L	526825	Standard
	Sn	118	2505.2	3.6	**0.5091**	0.025	4.8	ug/L	368	Standard
	Sb	123	2192.7	0.3	**0.6723**	0.005	0.7	ug/L	46	Standard
	Ba	135	1081659.1	0.3	**795.4983**	2.315	0.3	ug/L	16	Standard
	Ce	140	10.0	50.0				ug/L	43	Standard
>	**Tb**	159	791434.4	0.5				ug/L	771780	Standard
	Ho	165	6.7	86.6				ug/L	8	Standard
	Tl	203	1628.8	0.5	**0.3001**	0.005	1.5	ug/L	28	Standard
	Tl	205	1558.4	8.8	**0.3174**	0.031	9.7	ug/L	20	Standard
	Pb	206	1135.0	3.0	**0.2926**	0.014	4.9	ug/L	184	Standard
	Pb	207	991.4	1.3	**0.2795**	0.006	2.1	ug/L	161	Standard
	Pb	208	4182.6	1.7	**0.2691**	0.009	3.3	ug/L	746	Standard
	U	238	6.7	82.6	**-0.0035**	0.001	35.8	ug/L	6	Standard
>	**Bi**	209	425996.3	0.9				ug/L	429329	Standard

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Na	23	3.3	173.2	**12.1198**	20.984	173.1	mg/L	0	Standard
Mg	24	21864.1	2.6	**31.8880**	0.458	1.4	mg/L	25	Standard
K	39	201.7	19.3	**0.5278**	0.133	25.3	mg/L	25	Standard
Ca	43	171.7	23.7	**9.3465**	3.324	35.6	mg/L	77	Standard
Fe	54	250.7	8.4	**0.1051**	0.022	21.2	mg/L	165	Standard
Fe	57	213.3	14.3	**0.2220**	0.128	57.8	mg/L	205	Standard
> **Sc-1**	45	50136.2	1.7				mg/L	46031	Standard
Cl	35	40705.3	0.3				ug/L	28530	Standard
Kr	83	2.7	94.4				ug/L	2	Standard
Br	81	67272.6	5.0				ug/L	1560	Standard
P	31	21989.3	3.8				ug/L	15481	Standard
S	34	2786.9	1.3				ug/L	2072	Standard
Sr	88	2088.5	3.3				ug/L	70	Standard
C	12	56.7	88.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.2	124.3				mg/L	13	Standard
Ho-1	165	6.7	86.6				mg/L	8	Standard
Er	166	23.3	49.5				mg/L	7	Standard
I	127	51529.2	2.6				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.157	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.256	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.076	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.224	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606056407SD WG572637-07
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Method 6020 - Summary Report

Sample ID: L1606063301
Sample Date/Time: Wednesday, June 15, 2016 15:58:39
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70944.1	1.8				ug/L	58443	Standard
	Be	9	13.3	43.3	**-0.0009**	0.008	871.6	ug/L	5	Standard
	Al	27	1658.4	14.4	**0.0039**	0.002	41.3	ug/L	385	Standard
	Sc	45	51412.1	1.9				ug/L	46031	Standard
	Ti	47	44.0	4.5	**-0.2881**	0.012	4.0	ug/L	94	Standard
	V	51	1870.3	16.3	**0.0757**	0.050	66.4	ug/L	1280	Standard
	Cr	52	8109.5	0.7	**0.2318**	0.031	13.5	ug/L	6381	Standard
	Cr	53	5069.2	7.2	**4.3286**	0.412	9.5	ug/L	1957	Standard
	Mn	55	941.7	3.7	**0.0181**	0.011	62.5	ug/L	667	Standard
	Co	59	215.7	0.7	**0.0085**	0.001	10.2	ug/L	156	Standard
	Ni	60	668.3	2.1	**0.3369**	0.013	3.9	ug/L	154	Standard
	Cu	65	278.7	0.2	**0.0935**	0.003	3.6	ug/L	116	Standard
	Zn	66	1038.0	1.1	**1.0155**	0.033	3.2	ug/L	114	Standard
>	**Ge**	72	474167.1	1.6				ug/L	467488	Standard
	As	75	-24.8	68.4	**0.0119**	0.020	166.4	ug/L	-61	Standard
	Se	82	164.4	4.2	**1.7420**	0.107	6.1	ug/L	9	Standard
	Se-1	77	553.7	12.5	**7.5621**	1.058	14.0	ug/L	125	Standard
>	**Ga**	71	110.0	15.7				mg/L	50	Standard
	Rb	85	10465.3	1.4				ug/L	18	Standard
	Y	89	415884.3	1.2				ug/L	402730	Standard
>	**Rh**	103	13.3	43.3				ug/L	12	Standard
	Mo	98	223.7	2.4	**0.1172**	0.002	1.9	ug/L	8	Standard
	Ag	107	69.3	0.8	**-0.0053**	0.000	7.1	ug/L	65	Standard
	Cd	111	2.2	53.3	**-0.0066**	0.001	11.7	mg/L	3	Standard
	Cd	114	17.6	37.7	**-0.0094**	0.002	18.7	ug/L	15	Standard
>	**In**	115	538182.9	1.8				ug/L	526825	Standard
	Sn	118	400.0	9.4	**-0.0155**	0.008	49.0	ug/L	368	Standard
	Sb	123	89.0	10.9	**0.0124**	0.003	26.4	ug/L	46	Standard
	Ba	135	5910.8	2.2	**4.2376**	0.167	4.0	ug/L	16	Standard
	Ce	140	11.7	24.7				ug/L	43	Standard
>	**Tb**	159	808655.2	1.1				ug/L	771780	Standard
	Ho	165	13.3	57.3				ug/L	8	Standard
	Tl	203	112.7	7.5	**0.0064**	0.001	21.6	ug/L	28	Standard
	Tl	205	141.7	10.8	**0.0169**	0.003	18.2	ug/L	20	Standard
	Pb	206	323.0	1.1	**0.0278**	0.002	7.7	ug/L	184	Standard
	Pb	207	291.0	3.3	**0.0275**	0.003	10.6	ug/L	161	Standard
	Pb	208	1237.7	1.0	**0.0255**	0.001	2.8	ug/L	746	Standard
	U	238	3.0	0.0	**-0.0043**	0.000	0.2	ug/L	6	Standard
>	**Bi**	209	441149.9	1.1				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3957.2	3.2	**5.5970**	0.193	3.4	mg/L	25	Standard
K	39	1241.7	9.6	**3.8840**	0.428	11.0	mg/L	25	Standard
Ca	43	143.3	10.7	**6.7229**	1.446	21.5	mg/L	77	Standard
Fe	54	122.4	13.1	**-0.0226**	0.013	58.0	mg/L	165	Standard
Fe	57	205.0	16.9	**0.1711**	0.136	79.7	mg/L	205	Standard
> **Sc-1**	45	51412.1	1.9				mg/L	46031	Standard
Cl	35	41556.2	1.3				ug/L	28530	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	3477.1	4.2				ug/L	1560	Standard
P	31	21859.1	0.9				ug/L	15481	Standard
S	34	2848.6	4.2				ug/L	2072	Standard
Sr	88	76.7	27.2				ug/L	70	Standard
C	12	96.7	15.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.0	70.3				mg/L	13	Standard
Ho-1	165	13.3	57.3				mg/L	8	Standard
Er	166	13.3	43.3				mg/L	7	Standard
I	127	11859.6	4.5				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		121.391	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.429	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.156
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.753
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 16, 2016

Method 6020 - Summary Report

Sample ID: L1606063301PS WG572844-01
Sample Date/Time: Wednesday, June 15, 2016 16:01:50
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69542.6	0.9				ug/L	58443	Standard
	Be	9	38823.0	0.6	**54.7771**	0.638	1.2	ug/L	5	Standard
	Al	27	1706.8	0.9	**0.0045**	0.000	3.6	ug/L	385	Standard
	Sc	45	50679.7	3.0				ug/L	46031	Standard
	Ti	47	38.3	9.9	**-0.3139**	0.019	5.9	ug/L	94	Standard
	V	51	306878.3	1.5	**54.6946**	0.112	0.2	ug/L	1280	Standard
	Cr	52	330333.8	0.3	**55.4957**	0.750	1.4	ug/L	6381	Standard
	Cr	53	44592.2	0.8	**60.3274**	1.336	2.2	ug/L	1957	Standard
	Mn	55	257215.6	0.6	**57.7432**	0.480	0.8	ug/L	667	Standard
	Co	59	263442.2	1.6	**54.3847**	0.430	0.8	ug/L	156	Standard
	Ni	60	79037.6	0.4	**54.6874**	0.507	0.9	ug/L	154	Standard
	Cu	65	76928.5	0.4	**54.5911**	0.671	1.2	ug/L	116	Standard
	Zn	66	44991.7	1.0	**54.6594**	0.350	0.6	ug/L	114	Standard
>	**Ge**	72	476108.6	1.3				ug/L	467488	Standard
	As	75	44820.2	0.8	**52.9883**	0.648	1.2	ug/L	-61	Standard
	Se	82	4774.8	1.4	**55.1500**	1.388	2.5	ug/L	9	Standard
	Se-1	77	3653.1	2.2	**61.0029**	2.165	3.5	ug/L	125	Standard
>	**Ga**	71	110.0	18.2				mg/L	50	Standard
	Rb	85	10525.3	2.9				ug/L	18	Standard
	Y	89	417417.4	1.3				ug/L	402730	Standard
>	**Rh**	103	13.3	21.7				ug/L	12	Standard
	Mo	98	216.7	3.5	**0.1142**	0.004	3.2	ug/L	8	Standard
	Ag	107	238064.1	0.8	**52.6764**	0.377	0.7	ug/L	65	Standard
	Cd	111	79517.0	0.5	**54.4257**	0.546	1.0	mg/L	3	Standard
	Cd	114	191266.1	1.8	**53.4777**	1.164	2.2	ug/L	15	Standard
>	**In**	115	533895.5	0.6				ug/L	526825	Standard
	Sn	118	585.0	6.0	**0.0307**	0.008	26.8	ug/L	368	Standard
	Sb	123	169783.7	1.5	**52.5366**	0.614	1.2	ug/L	46	Standard
	Ba	135	79133.4	0.6	**57.4516**	0.606	1.1	ug/L	16	Standard
	Ce	140	18.3	83.3				ug/L	43	Standard
>	**Tb**	159	807555.8	0.5				ug/L	771780	Standard
	Ho	165	8.3	91.7				ug/L	8	Standard
	Tl	203	283634.8	1.2	**53.2625**	0.662	1.2	ug/L	28	Standard
	Tl	205	261346.4	0.7	**53.6785**	0.689	1.3	ug/L	20	Standard
	Pb	206	178963.7	0.4	**55.8985**	0.277	0.5	ug/L	184	Standard
	Pb	207	154023.3	1.0	**53.0556**	0.535	1.0	ug/L	161	Standard
	Pb	208	682472.9	0.5	**54.0369**	0.468	0.9	ug/L	746	Standard
	U	238	247794.5	0.4	**53.9559**	0.388	0.7	ug/L	6	Standard
>	**Bi**	209	438083.6	0.7				ug/L	429329	Standard

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Na	23	1.7	173.2	**5.9030**	10.216	173.1	mg/L	0	Standard
Mg	24	3870.5	1.6	**5.5541**	0.105	1.9	mg/L	25	Standard
K	39	1325.1	3.9	**4.2176**	0.271	6.4	mg/L	25	Standard
Ca	43	130.0	16.8	**5.7973**	1.937	33.4	mg/L	77	Standard
Fe	54	144.6	20.0	**0.0008**	0.030	3578.8	mg/L	165	Standard
Fe	57	211.7	5.9	**0.2053**	0.028	13.6	mg/L	205	Standard
> **Sc-1**	45	50679.7	3.0				mg/L	46031	Standard
Cl	35	40835.6	1.9				ug/L	28530	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	2800.3	8.4				ug/L	1560	Standard
P	31	22323.1	1.0				ug/L	15481	Standard
S	34	2803.6	4.0				ug/L	2072	Standard
Sr	88	48.3	46.6				ug/L	70	Standard
C	12	90.0	33.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	15.9	37.3				mg/L	13	Standard
Ho-1	165	8.3	91.7				mg/L	8	Standard
Er	166	16.7	34.6				mg/L	7	Standard
I	127	14213.4	7.3				mg/L	1227	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		118.993	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.844	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.342
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.039
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 16, 2016

Method 6020 - Summary Report

Sample ID: L1606063301SDL WG572844-02
Sample Date/Time: Wednesday, June 15, 2016 16:05:01
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 250
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66591.0	1.2				ug/L	58443	Standard
	Be	9	16.7	17.3	**0.0053**	0.005	85.7	ug/L	5	Standard
	Al	27	870.0	2.1	**-0.0014**	0.000	15.2	ug/L	385	Standard
	Sc	45	50346.9	2.5				ug/L	46031	Standard
	Ti	47	38.3	12.9	**-0.3156**	0.023	7.2	ug/L	94	Standard
	V	51	1637.1	3.6	**0.0302**	0.010	33.4	ug/L	1280	Standard
	Cr	52	7222.4	0.8	**0.0616**	0.013	21.5	ug/L	6381	Standard
	Cr	53	2630.2	4.0	**0.8115**	0.177	21.9	ug/L	1957	Standard
	Mn	55	913.0	5.0	**0.0086**	0.010	115.6	ug/L	667	Standard
	Co	59	213.3	10.7	**0.0073**	0.004	57.2	ug/L	156	Standard
	Ni	60	243.7	4.8	**0.0387**	0.006	16.1	ug/L	154	Standard
	Cu	65	663.3	1.1	**0.3615**	0.004	1.2	ug/L	116	Standard
	Zn	66	1272.7	2.6	**1.2813**	0.036	2.8	ug/L	114	Standard
>	**Ge**	72	480802.4	1.1				ug/L	467488	Standard
	As	75	-2.7	1252.7	**0.0378**	0.039	103.9	ug/L	-61	Standard
	Se	82	40.7	9.8	**0.2965**	0.050	17.0	ug/L	9	Standard
	Se-1	77	199.3	9.0	**1.3898**	0.309	22.2	ug/L	125	Standard
>	**Ga**	71	56.7	5.1				mg/L	50	Standard
	Rb	85	2143.5	8.7				ug/L	18	Standard
	Y	89	411327.1	0.8				ug/L	402730	Standard
>	**Rh**	103	18.3	68.6				ug/L	12	Standard
	Mo	98	54.3	12.1	**0.0226**	0.004	16.1	ug/L	8	Standard
	Ag	107	139.3	25.3	**0.0104**	0.008	76.5	ug/L	65	Standard
	Cd	111	14.6	4.0	**0.0019**	0.000	21.4	mg/L	3	Standard
	Cd	114	35.4	23.5	**-0.0044**	0.002	54.4	ug/L	15	Standard
>	**In**	115	532999.6	0.5				ug/L	526825	Standard
	Sn	118	421.7	6.9	**-0.0092**	0.007	73.2	ug/L	368	Standard
	Sb	123	1533.1	18.4	**0.4601**	0.085	18.5	ug/L	46	Standard
	Ba	135	1260.1	7.1	**0.8938**	0.069	7.7	ug/L	16	Standard
	Ce	140	20.0	0.0				ug/L	43	Standard
>	**Tb**	159	800598.9	0.1				ug/L	771780	Standard
	Ho	165	10.0	86.6				ug/L	8	Standard
	Tl	203	182.0	14.6	**0.0195**	0.005	26.5	ug/L	28	Standard
	Tl	205	186.7	8.2	**0.0262**	0.004	13.4	ug/L	20	Standard
	Pb	206	258.7	16.2	**0.0081**	0.014	170.5	ug/L	184	Standard
	Pb	207	227.3	7.4	**0.0059**	0.006	108.4	ug/L	161	Standard
	Pb	208	960.7	4.2	**0.0039**	0.004	100.0	ug/L	746	Standard
	U	238	38.7	25.9	**0.0034**	0.002	66.1	ug/L	6	Standard
>	**Bi**	209	440019.7	1.0				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	743.4	4.7	**1.0413**	0.030	2.9	mg/L	25	Standard
K	39	316.7	12.9	**0.9044**	0.128	14.1	mg/L	25	Standard
Ca	43	46.7	6.2	**-1.0364**	0.296	28.5	mg/L	77	Standard
Fe	54	126.1	8.3	**-0.0164**	0.010	59.3	mg/L	165	Standard
Fe	57	176.7	17.3	**0.0778**	0.099	126.9	mg/L	205	Standard
> **Sc-1**	45	50346.9	2.5				mg/L	46031	Standard
Cl	35	39593.0	1.1				ug/L	28530	Standard
Kr	83	3.3	62.4				ug/L	2	Standard
Br	81	1886.8	2.4				ug/L	1560	Standard
P	31	20932.8	1.1				ug/L	15481	Standard
S	34	2918.6	3.9				ug/L	2072	Standard
Sr	88	70.0	18.9				ug/L	70	Standard
C	12	53.3	10.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.5	105.0				mg/L	13	Standard
Ho-1	165	10.0	86.6				mg/L	8	Standard
Er	166	10.0					mg/L	7	Standard
I	127	3610.4	3.9				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.943	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.848	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.172
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.490
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 16, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 15, 2016 16:08:14
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	62892.0	1.9				ug/L	58443	Standard
	Be	9	35012.1	3.7	**54.6084**	1.019	1.9	ug/L	5	Standard
	Al	27	6225431.5	1.1	**50.6235**	0.530	1.0	ug/L	385	Standard
	Sc	45	50388.7	2.3				ug/L	46031	Standard
	Ti	47	24321.5	1.4	**108.6780**	1.695	1.6	ug/L	94	Standard
	V	51	295707.3	1.8	**53.5842**	1.021	1.9	ug/L	1280	Standard
	Cr	52	309489.7	0.7	**52.8050**	0.420	0.8	ug/L	6381	Standard
	Cr	53	37990.9	2.2	**51.8625**	1.100	2.1	ug/L	1957	Standard
	Mn	55	240599.8	1.4	**54.9061**	0.775	1.4	ug/L	667	Standard
	Co	59	250679.4	0.2	**52.6175**	0.176	0.3	ug/L	156	Standard
	Ni	60	74858.1	1.0	**52.6552**	0.499	0.9	ug/L	154	Standard
	Cu	65	72775.0	0.4	**52.5007**	0.216	0.4	ug/L	116	Standard
	Zn	66	42218.7	0.5	**52.1376**	0.330	0.6	ug/L	114	Standard
>	Ge	72	468252.8	0.2				ug/L	467488	Standard
	As	75	43051.3	0.9	**51.7479**	0.569	1.1	ug/L	-61	Standard
	Se	82	4408.7	1.7	**51.7555**	0.958	1.9	ug/L	9	Standard
	Se-1	77	3004.3	1.3	**50.6652**	0.767	1.5	ug/L	125	Standard
>	Ga	71	63.3	50.8				mg/L	50	Standard
	Rb	85	613.3	7.4				ug/L	18	Standard
	Y	89	410457.4	1.0				ug/L	402730	Standard
>	Rh	103	28.3	27.0				ug/L	12	Standard
	Mo	98	183247.1	0.5	**104.4401**	0.745	0.7	ug/L	8	Standard
	Ag	107	232014.6	1.8	**51.8358**	0.571	1.1	ug/L	65	Standard
	Cd	111	74860.2	1.4	**51.7366**	0.668	1.3	mg/L	3	Standard
	Cd	114	183492.1	1.7	**51.7998**	0.605	1.2	ug/L	15	Standard
>	In	115	528741.4	1.0				ug/L	526825	Standard
	Sn	118	209282.1	0.5	**51.6792**	0.308	0.6	ug/L	368	Standard
	Sb	123	164569.1	1.4	**51.4191**	0.191	0.4	ug/L	46	Standard
	Ba	135	70101.1	0.6	**51.3886**	0.509	1.0	ug/L	16	Standard
	Ce	140	51.7	31.1				ug/L	43	Standard
>	Tb	159	792615.0	1.1				ug/L	771780	Standard
	Ho	165	3.3	86.6				ug/L	8	Standard
	Tl	203	270987.2	1.5	**51.8932**	0.274	0.5	ug/L	28	Standard
	Tl	205	245726.6	0.6	**51.4722**	0.753	1.5	ug/L	20	Standard
	Pb	206	165722.5	1.4	**52.7865**	0.818	1.6	ug/L	184	Standard
	Pb	207	150102.9	0.7	**52.7310**	0.441	0.8	ug/L	161	Standard
	Pb	208	641631.4	0.3	**51.8117**	0.841	1.6	ug/L	746	Standard
	U	238	237113.0	0.5	**52.6543**	0.436	0.8	ug/L	6	Standard
>	Bi	209	429578.7	1.4				ug/L	429329	Standard

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Na	23	1.7	173.2	**6.0893**	10.538	173.1	mg/L	0	Standard
Mg	24	3428.7	1.1	**4.9437**	0.080	1.6	mg/L	25	Standard
K	39	1338.4	12.0	**4.2756**	0.433	10.1	mg/L	25	Standard
Ca	43	81.7	49.5	**1.8531**	3.310	178.6	mg/L	77	Standard
Fe	54	5144.4	1.7	**4.8303**	0.188	3.9	mg/L	165	Standard
Fe	57	1481.7	0.5	**4.9854**	0.155	3.1	mg/L	205	Standard
Sc-1	45	50388.7	2.3				mg/L	46031	Standard
Cl	35	36671.0	1.7				ug/L	28530	Standard
Kr	83	3.0	100.0				ug/L	2	Standard
Br	81	1710.1	10.5				ug/L	1560	Standard
P	31	21909.2	3.6				ug/L	15481	Standard
S	34	2972.0	4.6				ug/L	2072	Standard
Sr	88	48.3	21.5				ug/L	70	Standard
C	12	43.3	26.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	5.9	95.1				mg/L	13	Standard
Ho-1	165	3.3	86.6				mg/L	8	Standard
Er	166	16.7	124.9				mg/L	7	Standard
I	127	1095.0	5.6				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	109.217		
Al	27	101.247		
Sc	45			
Ti	47	108.678		
V	51	107.168		
Cr	52	105.610		
Cr	53			
Mn	55	109.812		
Co	59	105.235		
Ni	60	105.310		
Cu	65	105.001		
Zn	66	104.275		
Ge	72		100.164	
As	75	103.496		
Se	82	103.511		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	104.440		
Ag	107	103.672		
Cd	111	103.473		
Cd	114			
> In	115			100.364
Sn	118	103.358		
Sb	123	102.838		
Ba	135	102.777		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	103.786		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.623		
U	238	105.309		
> Bi	209			100.058
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Approved: June 16, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 15, 2016 16:11:26
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62421.7	2.4				ug/L	58443	Standard
	Be	9	25.0	34.6	**0.0200**	0.014	68.3	ug/L	5	Standard
	Al	27	1875.1	60.2	**0.0072**	0.009	122.5	ug/L	385	Standard
	Sc	45	49647.9	2.0				ug/L	46031	Standard
	Ti	47	38.3	13.4	**-0.3125**	0.023	7.4	ug/L	94	Standard
	V	51	1199.0	7.7	**-0.0434**	0.017	39.1	ug/L	1280	Standard
	Cr	52	6026.5	1.1	**-0.1220**	0.011	9.0	ug/L	6381	Standard
	Cr	53	816.7	7.2	**-1.7126**	0.085	5.0	ug/L	1957	Standard
	Mn	55	628.3	10.7	**-0.0522**	0.015	29.4	ug/L	667	Standard
	Co	59	244.7	22.1	**0.0147**	0.011	76.1	ug/L	156	Standard
	Ni	60	119.0	10.1	**-0.0453**	0.009	18.8	ug/L	154	Standard
	Cu	65	119.3	8.6	**-0.0199**	0.007	36.4	ug/L	116	Standard
	Zn	66	121.0	12.7	**-0.1079**	0.019	17.5	ug/L	114	Standard
>	**Ge**	72	471761.9	0.2				ug/L	467488	Standard
	As	75	-23.7	38.8	**0.0128**	0.011	85.5	ug/L	-61	Standard
	Se	82	16.3	21.3	**0.0192**	0.040	210.4	ug/L	9	Standard
	Se-1	77	69.0	8.1	**-0.8135**	0.095	11.7	ug/L	125	Standard
>	**Ga**	71	43.3	13.3				mg/L	50	Standard
	Rb	85	26.7	10.8				ug/L	18	Standard
	Y	89	417701.0	0.2				ug/L	402730	Standard
>	**Rh**	103	15.0	33.3				ug/L	12	Standard
	Mo	98	162.1	26.0	**0.0843**	0.023	27.6	ug/L	8	Standard
	Ag	107	151.3	20.0	**0.0133**	0.007	49.2	ug/L	65	Standard
	Cd	111	24.0	42.3	**0.0085**	0.007	81.6	mg/L	3	Standard
	Cd	114	77.7	34.9	**0.0076**	0.007	97.4	ug/L	15	Standard
>	**In**	115	528495.1	0.8				ug/L	526825	Standard
	Sn	118	643.3	15.2	**0.0466**	0.025	53.1	ug/L	368	Standard
	Sb	123	506.1	18.2	**0.1434**	0.030	20.8	ug/L	46	Standard
	Ba	135	112.3	43.7	**0.0592**	0.035	59.6	ug/L	16	Standard
	Ce	140	13.3	43.3				ug/L	43	Standard
>	**Tb**	159	784677.6	0.3				ug/L	771780	Standard
	Ho	165	5.0	100.0				ug/L	8	Standard
	Tl	203	104.7	39.0	**0.0052**	0.008	149.6	ug/L	28	Standard
	Tl	205	111.7	76.6	**0.0112**	0.018	160.1	ug/L	20	Standard
	Pb	206	270.0	12.0	**0.0124**	0.010	83.6	ug/L	184	Standard
	Pb	207	215.7	7.7	**0.0027**	0.006	224.7	ug/L	161	Standard
	Pb	208	958.7	15.0	**0.0046**	0.012	258.8	ug/L	746	Standard
	U	238	88.7	67.4	**0.0145**	0.013	91.5	ug/L	6	Standard
>	**Bi**	209	435460.2	0.7				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	36.7	20.8	**0.0147**	0.012	80.2	mg/L	25	Standard
K	39	36.7	28.4	**-0.0202**	0.034	168.5	mg/L	25	Standard
Ca	43	28.3	20.4	**-2.5171**	0.524	20.8	mg/L	77	Standard
Fe	54	142.9	19.3	**0.0020**	0.029	1427.1	mg/L	165	Standard
Fe	57	138.3	29.2	**-0.0559**	0.163	292.2	mg/L	205	Standard
Sc-1	45	49647.9	2.0				mg/L	46031	Standard
Cl	35	35386.6	0.4				ug/L	28530	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1520.1	8.0				ug/L	1560	Standard
P	31	21662.1	2.4				ug/L	15481	Standard
S	34	2938.6	5.7				ug/L	2072	Standard
Sr	88	55.0	27.3				ug/L	70	Standard
C	12	36.7	15.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.9	41.7				mg/L	13	Standard
Ho-1	165	5.0	100.0				mg/L	8	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	948.4	2.1				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.914	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.317
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.428
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: +10
Sample Date/Time: Wednesday, June 15, 2016 17:21:15
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68551.4	0.9				ug/L	58443	Standard
	Be	9	7561.9	3.8	**10.8062**	0.344	3.2	ug/L	5	Standard
	Al	27	1358.4	4.1	**0.0021**	0.000	20.6	ug/L	385	Standard
	Sc	45	50637.8	1.8				ug/L	46031	Standard
	Ti	47	40.3	12.5	**-0.3074**	0.022	7.2	ug/L	94	Standard
	V	51	64964.4	1.8	**11.2268**	0.186	1.7	ug/L	1280	Standard
	Cr	52	71758.5	0.8	**10.9869**	0.102	0.9	ug/L	6381	Standard
	Cr	53	13055.6	6.8	**15.3895**	1.253	8.1	ug/L	1957	Standard
	Mn	55	58418.4	1.3	**12.7972**	0.179	1.4	ug/L	667	Standard
	Co	59	55903.3	0.2	**11.3667**	0.042	0.4	ug/L	156	Standard
	Ni	60	16659.5	0.5	**11.2790**	0.064	0.6	ug/L	154	Standard
	Cu	65	16366.5	1.0	**11.3834**	0.106	0.9	ug/L	116	Standard
	Zn	66	9928.3	1.4	**11.7080**	0.145	1.2	ug/L	114	Standard
>	**Ge**	72	482183.4	0.2				ug/L	467488	Standard
	As	75	9230.3	2.2	**10.8065**	0.223	2.1	ug/L	-61	Standard
	Se	82	1079.9	3.9	**12.1806**	0.472	3.9	ug/L	9	Standard
	Se-1	77	1202.0	1.1	**18.4539**	0.192	1.0	ug/L	125	Standard
>	**Ga**	71	128.3	25.9				mg/L	50	Standard
	Rb	85	10315.2	3.1				ug/L	18	Standard
	Y	89	420118.7	1.2				ug/L	402730	Standard
>	**Rh**	103	23.3	12.4				ug/L	12	Standard
	Mo	98	220.4	6.6	**0.1168**	0.009	7.4	ug/L	8	Standard
	Ag	107	49727.1	0.8	**11.0198**	0.045	0.4	ug/L	65	Standard
	Cd	111	16191.6	1.6	**11.1086**	0.150	1.3	mg/L	3	Standard
	Cd	114	39432.3	2.3	**11.0462**	0.234	2.1	ug/L	15	Standard
>	**In**	115	532295.7	0.5				ug/L	526825	Standard
	Sn	118	458.3	12.2	**0.0000**	0.01	<282811.5	ug/L	368	Standard
	Sb	123	35052.0	1.8	**10.8672**	0.188	1.7	ug/L	46	Standard
	Ba	135	20449.1	1.6	**14.8727**	0.169	1.1	ug/L	16	Standard
	Ce	140	11.7	24.7				ug/L	43	Standard
>	**Tb**	159	814293.9	1.6				ug/L	771780	Standard
	Ho	165	6.7	43.3				ug/L	8	Standard
	Tl	203	58742.7	1.6	**10.8745**	0.236	2.2	ug/L	28	Standard
	Tl	205	54113.1	0.9	**10.9582**	0.165	1.5	ug/L	20	Standard
	Pb	206	38293.7	0.7	**11.7461**	0.151	1.3	ug/L	184	Standard
	Pb	207	32936.8	0.2	**11.1390**	0.096	0.9	ug/L	161	Standard
	Pb	208	141154.3	0.9	**10.9712**	0.080	0.7	ug/L	746	Standard
	U	238	51846.2	0.9	**11.1365**	0.162	1.5	ug/L	6	Standard
>	**Bi**	209	443945.8	0.7				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3770.5	3.2	**5.4145**	0.241	4.4	mg/L	25	Standard
K	39	1231.7	2.8	**3.9111**	0.165	4.2	mg/L	25	Standard
Ca	43	133.3	38.5	**6.0163**	4.000	66.5	mg/L	77	Standard
Fe	54	163.1	16.2	**0.0185**	0.026	139.7	mg/L	165	Standard
Fe	57	206.7	13.8	**0.1890**	0.118	62.5	mg/L	205	Standard
Sc-1	45	50637.8	1.8				mg/L	46031	Standard
Cl	35	37896.0	1.1				ug/L	28530	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2286.8	2.6				ug/L	1560	Standard
P	31	21149.8	1.9				ug/L	15481	Standard
S	34	2833.6	3.1				ug/L	2072	Standard
Sr	88	61.7	33.8				ug/L	70	Standard
C	12	86.7	33.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.0	35.4				mg/L	13	Standard
Ho-1	165	6.7	43.3				mg/L	8	Standard
Er	166	13.3	114.6				mg/L	7	Standard
I	127	15000.8	7.4				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		117.297	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.143	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.038
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.405
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: +20
Sample Date/Time: Wednesday, June 15, 2016 17:24:27
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68665.3	1.8				ug/L	58443	Standard
	Be	9	13831.3	5.1	**19.7487**	0.862	4.4	ug/L	5	Standard
	Al	27	1265.1	8.1	**0.0014**	0.001	43.9	ug/L	385	Standard
	Sc	45	49341.9	0.6				ug/L	46031	Standard
	Ti	47	34.0	2.9	**-0.3322**	0.005	1.6	ug/L	94	Standard
	V	51	116389.3	1.5	**20.7239**	0.360	1.7	ug/L	1280	Standard
	Cr	52	124909.2	1.5	**20.4034**	0.432	2.1	ug/L	6381	Standard
	Cr	53	19692.8	2.2	**25.2186**	0.757	3.0	ug/L	1957	Standard
	Mn	55	102759.4	2.3	**23.1079**	0.632	2.7	ug/L	667	Standard
	Co	59	99576.3	2.9	**20.6748**	0.694	3.4	ug/L	156	Standard
	Ni	60	29770.6	1.5	**20.6572**	0.402	1.9	ug/L	154	Standard
	Cu	65	29011.1	1.1	**20.6596**	0.337	1.6	ug/L	116	Standard
	Zn	66	17266.8	0.8	**20.9605**	0.246	1.2	ug/L	114	Standard
>	**Ge**	72	472923.0	0.5				ug/L	467488	Standard
	As	75	16507.5	1.7	**19.6727**	0.420	2.1	ug/L	-61	Standard
	Se	82	1840.7	1.9	**21.2966**	0.532	2.5	ug/L	9	Standard
	Se-1	77	1702.8	0.9	**27.5495**	0.431	1.6	ug/L	125	Standard
>	**Ga**	71	110.0	12.0				mg/L	50	Standard
	Rb	85	9908.2	3.9				ug/L	18	Standard
	Y	89	414451.5	2.8				ug/L	402730	Standard
>	**Rh**	103	21.7	58.1				ug/L	12	Standard
	Mo	98	201.0	8.7	**0.1065**	0.010	9.2	ug/L	8	Standard
	Ag	107	91013.9	1.2	**20.3190**	0.127	0.6	ug/L	65	Standard
	Cd	111	29428.1	1.1	**20.3297**	0.113	0.6	mg/L	3	Standard
	Cd	114	70794.5	3.4	**19.9714**	0.525	2.6	ug/L	15	Standard
>	**In**	115	528827.1	1.1				ug/L	526825	Standard
	Sn	118	398.3	13.8	**-0.0140**	0.015	104.8	ug/L	368	Standard
	Sb	123	63776.4	1.5	**19.9142**	0.096	0.5	ug/L	46	Standard
	Ba	135	32598.4	1.5	**23.8825**	0.547	2.3	ug/L	16	Standard
	Ce	140	18.3	56.8				ug/L	43	Standard
>	**Tb**	159	806775.0	2.1				ug/L	771780	Standard
	Ho	165	8.3	69.3				ug/L	8	Standard
	Tl	203	106990.1	0.5	**19.9924**	0.194	1.0	ug/L	28	Standard
	Tl	205	96380.7	2.0	**19.6975**	0.282	1.4	ug/L	20	Standard
	Pb	206	69510.4	1.5	**21.5681**	0.147	0.7	ug/L	184	Standard
	Pb	207	60101.7	1.8	**20.5640**	0.145	0.7	ug/L	161	Standard
	Pb	208	254873.7	1.3	**20.0436**	0.111	0.6	ug/L	746	Standard
	U	238	93564.0	0.3	**20.2790**	0.193	1.0	ug/L	6	Standard
>	**Bi**	209	440065.4	1.1				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3770.5	3.9	**5.5549**	0.198	3.6	mg/L	25	Standard
K	39	1291.7	1.5	**4.2188**	0.088	2.1	mg/L	25	Standard
Ca	43	145.0	11.9	**7.3378**	1.511	20.6	mg/L	77	Standard
Fe	54	106.3	24.8	**-0.0334**	0.026	78.4	mg/L	165	Standard
Fe	57	178.3	4.3	**0.0994**	0.033	33.3	mg/L	205	Standard
Sc-1	45	49341.9	0.6				mg/L	46031	Standard
Cl	35	37411.5	1.2				ug/L	28530	Standard
Kr	83	2.7	142.0				ug/L	2	Standard
Br	81	2010.1	2.6				ug/L	1560	Standard
P	31	20709.1	2.3				ug/L	15481	Standard
S	34	2730.2	7.0				ug/L	2072	Standard
Sr	88	80.0	25.0				ug/L	70	Standard
C	12	66.7	22.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.3	129.7				mg/L	13	Standard
Ho-1	165	8.3	69.3				mg/L	8	Standard
Er	166	6.7	173.2				mg/L	7	Standard
I	127	13916.4	4.2				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.492	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.163	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.380
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.501
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: +30
Sample Date/Time: Wednesday, June 15, 2016 17:27:39
Number of Replicates: 3
Autosampler Position: 346
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69524.2	1.6				ug/L	58443	Standard
	Be	9	19812.9	1.5	**27.9534**	0.409	1.5	ug/L	5	Standard
	Al	27	1428.4	5.6	**0.0025**	0.001	28.8	ug/L	385	Standard
	Sc	45	50480.6	1.7				ug/L	46031	Standard
	Ti	47	45.3	18.0	**-0.2855**	0.036	12.8	ug/L	94	Standard
	V	51	168793.5	0.9	**29.5996**	0.130	0.4	ug/L	1280	Standard
	Cr	52	178724.3	1.0	**29.1148**	0.259	0.9	ug/L	6381	Standard
	Cr	53	26401.3	0.9	**34.0809**	0.288	0.8	ug/L	1957	Standard
	Mn	55	149959.2	1.5	**33.1703**	0.430	1.3	ug/L	667	Standard
	Co	59	145068.7	1.8	**29.5681**	0.559	1.9	ug/L	156	Standard
	Ni	60	42799.4	1.4	**29.1917**	0.398	1.4	ug/L	154	Standard
	Cu	65	42552.7	1.8	**29.7780**	0.408	1.4	ug/L	116	Standard
	Zn	66	24889.4	0.5	**29.7526**	0.109	0.4	ug/L	114	Standard
>	**Ge**	72	481965.4	0.5				ug/L	467488	Standard
	As	75	24286.0	1.7	**28.3798**	0.485	1.7	ug/L	-61	Standard
	Se	82	2625.7	0.8	**29.8754**	0.396	1.3	ug/L	9	Standard
	Se-1	77	2266.2	1.9	**36.5919**	0.747	2.0	ug/L	125	Standard
>	**Ga**	71	116.7	19.3				mg/L	50	Standard
	Rb	85	9683.1	1.5				ug/L	18	Standard
	Y	89	414011.7	2.1				ug/L	402730	Standard
>	**Rh**	103	28.3	27.0				ug/L	12	Standard
	Mo	98	208.3	1.5	**0.1093**	0.003	2.7	ug/L	8	Standard
	Ag	107	133541.6	1.1	**29.4901**	0.560	1.9	ug/L	65	Standard
	Cd	111	42473.4	0.3	**29.0170**	0.392	1.4	mg/L	3	Standard
	Cd	114	104041.3	1.3	**29.0295**	0.206	0.7	ug/L	15	Standard
>	**In**	115	534861.3	1.3				ug/L	526825	Standard
	Sn	118	428.3	7.6	**-0.0080**	0.007	86.1	ug/L	368	Standard
	Sb	123	94217.4	0.6	**29.0977**	0.329	1.1	ug/L	46	Standard
	Ba	135	44787.1	0.9	**32.4474**	0.252	0.8	ug/L	16	Standard
	Ce	140	21.7	53.3				ug/L	43	Standard
>	**Tb**	159	823463.9	0.6				ug/L	771780	Standard
	Ho	165	10.0	100.0				ug/L	8	Standard
	Tl	203	156200.4	0.3	**28.1773**	0.220	0.8	ug/L	28	Standard
	Tl	205	141634.1	1.9	**27.9424**	0.293	1.0	ug/L	20	Standard
	Pb	206	101074.0	0.9	**30.3013**	0.334	1.1	ug/L	184	Standard
	Pb	207	87601.5	0.4	**28.9617**	0.183	0.6	ug/L	161	Standard
	Pb	208	375609.1	0.7	**28.5410**	0.099	0.3	ug/L	746	Standard
	U	238	137490.7	0.5	**28.7636**	0.259	0.9	ug/L	6	Standard
>	**Bi**	209	455940.2	1.0				ug/L	429329	Standard

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Na	23	1.7	173.2	**6.2307**	10.783	173.1	mg/L	0	Standard
Mg	24	3608.8	4.1	**5.1938**	0.159	3.1	mg/L	25	Standard
K	39	1323.4	9.6	**4.2212**	0.350	8.3	mg/L	25	Standard
Ca	43	116.7	38.4	**4.6876**	3.584	76.5	mg/L	77	Standard
Fe	54	143.2	3.4	**-0.0002**	0.006	2370.7	mg/L	165	Standard
Fe	57	221.7	15.0	**0.2456**	0.118	48.0	mg/L	205	Standard
Sc-1	45	50480.6	1.7				mg/L	46031	Standard
Cl	35	37949.5	1.1				ug/L	28530	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	2096.8	4.0				ug/L	1560	Standard
P	31	20452.1	0.5				ug/L	15481	Standard
S	34	2645.2	0.8				ug/L	2072	Standard
Sr	88	58.3	21.6				ug/L	70	Standard
C	12	60.0	16.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.5	107.6				mg/L	13	Standard
Ho-1	165	10.0	100.0				mg/L	8	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	12902.2	6.3				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		118.962	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.097	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.525
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.198
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 16, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 15, 2016 17:30:52
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	62547.2	1.5				ug/L	58443	Standard
	Be	9	31795.0	3.0	**49.8912**	2.098	4.2	ug/L	5	Standard
	Al	27	5683695.8	1.5	**46.4805**	1.369	2.9	ug/L	385	Standard
	Sc	45	50375.3	1.9				ug/L	46031	Standard
	Ti	47	22755.7	0.6	**98.9418**	0.549	0.6	ug/L	94	Standard
	V	51	277125.5	0.7	**48.8633**	0.518	1.1	ug/L	1280	Standard
	Cr	52	289226.3	1.0	**47.9352**	0.636	1.3	ug/L	6381	Standard
	Cr	53	34883.5	2.1	**46.0529**	0.999	2.2	ug/L	1957	Standard
	Mn	55	243690.3	1.4	**54.1353**	0.871	1.6	ug/L	667	Standard
	Co	59	239639.1	3.2	**48.9651**	1.599	3.3	ug/L	156	Standard
	Ni	60	70731.1	1.0	**48.4228**	0.393	0.8	ug/L	154	Standard
	Cu	65	68223.9	1.3	**47.9032**	0.551	1.1	ug/L	116	Standard
	Zn	66	39798.5	1.4	**47.8234**	0.539	1.1	ug/L	114	Standard
>	Ge	72	481004.1	0.3				ug/L	467488	Standard
	As	75	40566.4	0.9	**47.4724**	0.563	1.2	ug/L	-61	Standard
	Se	82	4156.5	0.9	**47.4861**	0.498	1.0	ug/L	9	Standard
	Se-1	77	2834.9	0.7	**46.3768**	0.234	0.5	ug/L	125	Standard
>	Ga	71	56.7	33.4				mg/L	50	Standard
	Rb	85	605.0	5.2				ug/L	18	Standard
	Y	89	409485.2	2.5				ug/L	402730	Standard
>	Rh	103	23.3	32.7				ug/L	12	Standard
	Mo	98	175724.0	1.1	**100.4820**	1.467	1.5	ug/L	8	Standard
	Ag	107	217508.3	1.6	**48.7577**	0.897	1.8	ug/L	65	Standard
	Cd	111	71113.6	0.5	**49.3092**	0.386	0.8	mg/L	3	Standard
	Cd	114	172332.6	0.9	**48.8116**	0.586	1.2	ug/L	15	Standard
>	In	115	526998.6	0.3				ug/L	526825	Standard
	Sn	118	196162.0	2.1	**48.5933**	1.155	2.4	ug/L	368	Standard
	Sb	123	157628.8	1.0	**49.4152**	0.623	1.3	ug/L	46	Standard
	Ba	135	66458.8	0.6	**48.8766**	0.412	0.8	ug/L	16	Standard
	Ce	140	56.7	45.3				ug/L	43	Standard
>	Tb	159	797154.4	1.2				ug/L	771780	Standard
	Ho	165	3.3	86.6				ug/L	8	Standard
	Tl	203	257014.2	0.5	**48.2910**	0.729	1.5	ug/L	28	Standard
	Tl	205	232534.2	0.6	**47.7866**	0.761	1.6	ug/L	20	Standard
	Pb	206	159568.2	1.1	**49.8588**	0.493	1.0	ug/L	184	Standard
	Pb	207	144733.4	0.9	**49.8817**	0.885	1.8	ug/L	161	Standard
	Pb	208	616599.7	0.8	**48.8421**	0.717	1.5	ug/L	746	Standard
	U	238	226676.4	0.4	**49.3854**	0.654	1.3	ug/L	6	Standard
>	Bi	209	437856.0	1.0				ug/L	429329	Standard

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Na	23	1.7	173.2	**6.2801**	10.869	173.1	mg/L	0	Standard
Mg	24	3333.7	4.3	**4.8080**	0.256	5.3	mg/L	25	Standard
K	39	1565.1	9.1	**5.0289**	0.387	7.7	mg/L	25	Standard
Ca	43	100.0	8.7	**3.3634**	0.668	19.8	mg/L	77	Standard
Fe	54	4489.6	4.7	**4.1954**	0.136	3.2	mg/L	165	Standard
Fe	57	1196.7	6.8	**3.9114**	0.250	6.4	mg/L	205	Standard
Sc-1	45	50375.3	1.9				mg/L	46031	Standard
Cl	35	35202.2	2.3				ug/L	28530	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	1276.7	12.5				ug/L	1560	Standard
P	31	20600.7	1.8				ug/L	15481	Standard
S	34	2878.6	1.0				ug/L	2072	Standard
Sr	88	56.7	13.5				ug/L	70	Standard
C	12	46.7	68.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.7	103.5				mg/L	13	Standard
Ho-1	165	3.3	86.6				mg/L	8	Standard
Er	166	6.7	173.2				mg/L	7	Standard
I	127	1131.7	21.5				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	99.782		
Al	27	92.961		
Sc	45			
Ti	47	98.942		
V	51	97.727		
Cr	52	95.870		
Cr	53			
Mn	55	108.271		
Co	59	97.930		
Ni	60	96.846		
Cu	65	95.806		
Zn	66	95.647		
Ge	72		102.891	
As	75	94.945		
Se	82	94.972		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
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Rb	85			
Y	89			
Rh	103			
Mo	98	100.482		
Ag	107	97.515		
Cd	111	98.618		
Cd	114			
In	115			100.033
Sn	118	97.187		
Sb	123	98.830		
Ba	135	97.753		
Ce	140			
Tb	159			
Ho	165			
Tl	203	96.582		
Tl	205			
Pb	206			
Pb	207			
Pb	208	97.684		
U	238	98.771		
Bi	209			101.986
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 15, 2016 17:34:03
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60411.9	1.1				ug/L	58443	Standard
	Be	9	13.3	43.3	**0.0024**	0.010	403.8	ug/L	5	Standard
	Al	27	1033.4	13.7	**0.0007**	0.001	158.3	ug/L	385	Standard
	Sc	45	49393.7	1.6				ug/L	46031	Standard
	Ti	47	37.0	18.9	**-0.3189**	0.032	10.0	ug/L	94	Standard
	V	51	1127.6	9.6	**-0.0569**	0.022	37.8	ug/L	1280	Standard
	Cr	52	6033.9	2.8	**-0.1238**	0.039	31.5	ug/L	6381	Standard
	Cr	53	658.3	2.9	**-1.9419**	0.034	1.8	ug/L	1957	Standard
	Mn	55	600.0	4.4	**-0.0590**	0.007	11.6	ug/L	667	Standard
	Co	59	199.3	1.3	**0.0052**	0.000	2.2	ug/L	156	Standard
	Ni	60	112.7	8.2	**-0.0499**	0.007	14.5	ug/L	154	Standard
	Cu	65	105.7	17.3	**-0.0300**	0.013	41.9	ug/L	116	Standard
	Zn	66	112.3	7.3	**-0.1191**	0.009	7.8	ug/L	114	Standard
>	**Ge**	72	473283.4	1.1				ug/L	467488	Standard
	As	75	-20.6	128.3	**0.0167**	0.031	188.7	ug/L	-61	Standard
	Se	82	17.3	29.9	**0.0310**	0.062	201.1	ug/L	9	Standard
	Se-1	77	65.7	4.9	**-0.8746**	0.067	7.7	ug/L	125	Standard
>	**Ga**	71	60.0	43.3				mg/L	50	Standard
	Rb	85	23.3	24.7				ug/L	18	Standard
	Y	89	408353.1	0.5				ug/L	402730	Standard
>	**Rh**	103	13.3	78.1				ug/L	12	Standard
	Mo	98	144.1	15.4	**0.0745**	0.013	17.6	ug/L	8	Standard
	Ag	107	119.3	18.4	**0.0063**	0.005	80.5	ug/L	65	Standard
	Cd	111	8.4	29.7	**-0.0023**	0.002	77.9	mg/L	3	Standard
	Cd	114	20.9	88.7	**-0.0083**	0.005	63.4	ug/L	15	Standard
>	**In**	115	526612.4	0.7				ug/L	526825	Standard
	Sn	118	651.7	18.6	**0.0491**	0.029	59.2	ug/L	368	Standard
	Sb	123	597.5	25.6	**0.1723**	0.047	27.1	ug/L	46	Standard
	Ba	135	40.7	24.1	**0.0069**	0.007	104.6	ug/L	16	Standard
	Ce	140	5.0	0.0				ug/L	43	Standard
>	**Tb**	159	795959.1	0.6				ug/L	771780	Standard
	Ho	165	15.0	66.7				ug/L	8	Standard
	Tl	203	71.0	19.4	**-0.0013**	0.003	204.6	ug/L	28	Standard
	Tl	205	56.7	28.4	**-0.0004**	0.003	839.9	ug/L	20	Standard
	Pb	206	233.3	10.8	**0.0002**	0.008	3615.9	ug/L	184	Standard
	Pb	207	207.0	12.2	**-0.0010**	0.009	895.1	ug/L	161	Standard
	Pb	208	854.3	3.4	**-0.0044**	0.002	54.5	ug/L	746	Standard
	U	238	43.3	9.3	**0.0044**	0.001	19.9	ug/L	6	Standard
>	**Bi**	209	439522.5	0.2				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	28.3	53.9	**0.0027**	0.023	854.1	mg/L	25	Standard
K	39	41.7	30.2	**-0.0023**	0.044	1930.5	mg/L	25	Standard
Ca	43	33.3	34.6	**-2.0783**	1.008	48.5	mg/L	77	Standard
Fe	54	151.1	21.9	**0.0102**	0.030	294.3	mg/L	165	Standard
Fe	57	160.0	5.4	**0.0284**	0.037	129.4	mg/L	205	Standard
> **Sc-1**	45	49393.7	1.6				mg/L	46031	Standard
Cl	35	36381.0	1.1				ug/L	28530	Standard
Kr	83	4.3	48.0				ug/L	2	Standard
Br	81	1453.4	4.4				ug/L	1560	Standard
P	31	22440.0	3.9				ug/L	15481	Standard
S	34	2871.9	0.9				ug/L	2072	Standard
Sr	88	45.0	38.5				ug/L	70	Standard
C	12	33.3	121.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.5	88.8				mg/L	13	Standard
Ho-1	165	15.0	66.7				mg/L	8	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	945.0	11.3				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.240	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.960
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.374
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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2.3.3 Metals CVAA Data (Mercury)

2.3.3.1 Summary Data

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-03	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW5-060816	**Prep Method:**	7470A	**Prep Date:**	06/10/2016 10:23
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/13/2016 15:11
Workgroup #:	WG572285	**Analyst:**	AMA	**Run Date:**	06/13/2016 16:05
Collect Date:	06/08/2016 10:10	**Dilution:**	1	**File ID:**	M7.061316.160504
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.3.2 QC Summary

Example Cold Vapor Mercury Calculations
Hydra AA Mercury Analyzer / CETAC M-7600 Quick Trace Mercury Analyzer

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and five standards.

2.0 Calculating the concentration (C) of an element in water using data from run log and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to Volume (mL)	40
Vi = Aliquot Volume (mL)	40
D = Manual dilution factor, if required (10X = 10)	1
Cx = Concentration of element in ppb (ug/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Ws} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to volume (mL)	40
Ws = Aliquot weight (g)	0.6
D = Manual dilution factor	1
Cx = Concentration of element in ug/kg	6.67

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

1 Cx = Concentration calculated as received (wet basis)	6.67
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	8.33

8.33 ug/kg = 0.00833 mg/kg

Microbac Laboratories Inc.
Metals Digest Log

Workgroup: WG572231
Analyst: REK
Spike Analyst: REK
Method: 7470A
Run Date: 06/10/2016 10:23
Hotblock Start Temp: 94.8 @ 10:15
Hotblock End Temp: 95 @ 12:15
Instrument: HB2

SOP: ME404 Revison 17
Spike Solution: STD76541
Spike Witness: VC
H2SO4 Lot #: COA18359
40 & 50 ML. DIGESTION TU COA18772
HNO3 Lot #: COA18905
K2S2O8 1:1 Lot #: RGT36713
KMnO4 1:1 Lot #: RGT37006
Mercury Water ICV Lot #: STD76543
HG H2O STDS 10PPM Lot #: STD76549

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Spike Amount	Due Date
1	WG572231-03	BLANK	1	40 mL	40 mL		
2	WG572115-01	FBLK1	17	4 mL	40 mL		
3	WG572115-02	FBLK2	17	4 mL	40 mL		
4	WG572231-04	LCS	1	40 mL	40 mL	4 mL	
5	L16060360-02	SAMP	17	4 mL	40 mL		06/17/16
6	L16060401-01	SAMP	17	4 mL	40 mL		06/16/16
7	L16060403-01	SAMP	17	4 mL	40 mL		06/16/16
8	L16060438-01	SAMP	1	40 mL	40 mL		06/13/16
9	L16060492-01	SAMP	1	40 mL	40 mL		06/20/16
10	L16060504-03	SAMP	1	40 mL	40 mL		06/20/16
11	WG572231-01	REF	1	40 mL	40 mL		
12	L16060540-06	RS01	1	40 mL	40 mL		06/20/16
13	WG572231-05	MS	1	36 mL	40 mL	4 mL	
14	L16060540-07	MS01	1	36 mL	40 mL	4 mL	06/20/16
15	WG572231-06	MSD	1	36 mL	40 mL	4 mL	
16	L16060540-08	SD01	1	36 mL	40 mL	4 mL	06/20/16
17	L16060540-09	SAMP	1	40 mL	40 mL		06/20/16
18	L16060540-10	SAMP	1	40 mL	40 mL		06/20/16
19	L16060540-11	SAMP	1	40 mL	40 mL		06/20/16
20	L16060540-14	SAMP	1	40 mL	40 mL		06/20/16
21	L16060540-15	SAMP	1	40 mL	40 mL		06/20/16
22	L16060540-16	SAMP	1	40 mL	40 mL		06/20/16
23	L16060546-01	SAMP	2	40 mL	40 mL		06/16/16
24	WG572231-02	REF	2	40 mL	40 mL		
25	L16060551-01	SAMP	2	40 mL	40 mL		06/16/16
26	WG572231-07	DUP	1	40 mL	40 mL		

L16060492-01	SAMPLE IS BRINE

Analyst: _____

Reviewer: _____

* All calibration and check standards are prepared and digested with sample batch following the procedures in section 7.0 of SOP ME404/ME405.

HB_DIG - Modified 07/26/2012
PDF ID: 4803223
Report generated: 06/10/2016 12:53

TCLP Non-Volatile

Analyst(s): AMA
Date: 06/09/2016
Filter Lot #: 94186030
Microbac SOP: TCLP01 Rev #: 12

Analyst / Date		Analyst / Date	
AMA	6/9/16	CPD	6/10/16
Time On	Temp On °C	Time Off	Temp Off °C
1435	22.9	0810	21.8

Agitator Speed 30 ± 2 rpm ☑

Jug #	Sample #	Tests	Method	Fluid #	Matrix *	% Solid	Pretest pH Initial	Pretest pH Final	Int. Wt. (g)	Fluid Vol. (mL)	Final extract pH
G-8	06-0360-02	ME, SV, Pest, Herb, PH-L	1311	F1-180	S	100	7.62	3.16	100.79	2015	5.25
D	06-0401-01	ME	1311	F2-379	S	100	12.78	12.31	50.40	1008	12.44
D	06-0403-01	ME	1311	F2-379	S	100	12.83	12.32	50.40	1008	11.99
D	06-0418-01	300	1312	SPLP F1-61	S	100	NA	NA	50.45	1009	9.65
D	-02								50.09	1002	9.78
D	-03								50.40	1008	8.85
D	-04								50.54	1010	9.68
D	-05								50.71	1014	9.08
D	-06								50.48	1009	9.65
D	-07								50.56	1011	9.04
D	-08								50.23	1004	9.56
D	06-0482-01	ME	1311		S	100	6.29	2.01	100.64	2013	5.55
	FBLK 1	ME, SV, Pest, Herb, PH-L	1311	F1-180	NA	NA	NA	NA	100	100	4.92
	FBLK 2	ME	1311	F2-379							2.92
	SPLP F1	300	1312	F1-61							4.17

AMA 6/10/16

*Matrix Code: (S = solid, sand, soil or sludge) (P = paint) (O = organic) (W = water or aqueous waste)
D = Disposable plastic jug
TCLP Pretest weight will be 5.0 g (± 0.1) unless otherwise noted.
Temperature shall be maintained at 23° ± 2 for 18 ± 2 hours unless otherwise noted.

Comments: NA

Peer Review By: [signature]

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 061316D.CSV

Analyst1: PDM Analyst2: N/A

Method: 7470A/245.1 SOP: ME404 Rev: 17

Maintenance Log ID:

Calibration Std: STD76549 ICV Std: STD76543 Post Spike: STD76549

ICSA: N/A ICSAB: N/A Int. Std:

CCV: LLCCV: Tuning Sol :

Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 572285

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	M7.061316.145724	WG572551-01	Calibration Point		1		06/13/16 14:57
2	M7.061316.145955	WG572551-02	Calibration Point		1		06/13/16 14:59
3	M7.061316.150227	WG572551-03	Calibration Point		1		06/13/16 15:02
4	M7.061316.150500	WG572551-04	Calibration Point		1		06/13/16 15:05
5	M7.061316.150918	WG572551-05	Calibration Point		1		06/13/16 15:09
6	M7.061316.151152	WG572551-06	Calibration Point		1		06/13/16 15:11
7	M7.061316.151426	WG572551-07	Initial Calibration Verification		1		06/13/16 15:14
8	M7.061316.151657	WG572551-08	Initial Calib Blank		1		06/13/16 15:16
9	M7.061316.151930	WG572551-09	CCV		1		06/13/16 15:19
10	M7.061316.152200	WG572551-10	CCB		1		06/13/16 15:22
11	M7.061316.152431	WG572231-03	Method/Prep Blank	40/40	1		06/13/16 15:24
12	M7.061316.152702	WG572231-04	Laboratory Control S	40/40	1		06/13/16 15:27
13	M7.061316.152934	WG572115-01	Fluid Blank 1		1		06/13/16 15:29
14	M7.061316.153206	WG572115-02	Fluid Blank 2		1		06/13/16 15:32
15	M7.061316.153438	L16060438-01	PIT WATER	40/40	1		06/13/16 15:34
16	M7.061316.153710	WG572285-02	Post Digestion Spike		1	L16060438-01	06/13/16 15:37
17	M7.061316.153942	L16060450-06	L1606045006	40/40	1		06/13/16 15:39
18	M7.061316.154215	WG572231-05	Matrix Spike	36/40	1	L16060540-06	06/13/16 15:42
19	M7.061316.154448	WG572231-06	Matrix Spike Duplica	36/40	1	L16060540-06	06/13/16 15:44
20	M7.061316.154722	L16060360-02	V6F0104-02	4/40	1		06/13/16 15:47
21	M7.061316.154954	WG572551-11	CCV		1		06/13/16 15:49
22	M7.061316.155225	WG572551-12	CCB		1		06/13/16 15:52
23	M7.061316.155458	WG572285-01	Post Digestion Spike		1	L16060360-02	06/13/16 15:54
24	M7.061316.155732	L16060401-01	SAPA 12 BAGS 6/6/16	4/40	1		06/13/16 15:57
25	M7.061316.160003	L16060403-01	KAISER 12 BAGS 6/6/16	4/40	1		06/13/16 16:00
26	M7.061316.160233	L16060492-01	SPW_06082016	40/40	1		06/13/16 16:02
27	M7.061316.160504	L16060504-03	MW5-060816	40/40	1		06/13/16 16:05
28	M7.061316.160735	L16060540-09	AG4578	40/40	1		06/13/16 16:07
29	M7.061316.161007	L16060540-10	AG4579	40/40	1		06/13/16 16:10
30	M7.061316.161238	L16060540-11	AG4580	40/40	1		06/13/16 16:12
31	M7.061316.161510	L16060540-14	AG4584	40/40	1		06/13/16 16:15
32	M7.061316.161743	L16060540-15	AG4587	40/40	1		06/13/16 16:17
33	M7.061316.162015	WG572551-13	CCV		1		06/13/16 16:20
34	M7.061316.162246	WG572551-14	CCB		1		06/13/16 16:22

Page: 1 Approved: June 16, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 061316D.CSV

Analyst1: PDM Analyst2: N/A

Method: 7470A/245.1 SOP: ME404 Rev: 17

Maintenance Log ID:

Calibration Std: STD76549 ICV Std: STD76543 Post Spike: STD76549

ICSA: N/A ICSAB: N/A Int. Std:

CCV: LLCCV: Tuning Sol :

Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 572285

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	M7.061316.162519	L16060540-16	AG4589	40/40	1		06/13/16 16:25
36	M7.061316.162752	L16060546-01	J6F0161-01	40/40	1		06/13/16 16:27
37	M7.061316.163025	WG572231-02	Reference Sample	40/40	1	L16060551-01	06/13/16 16:30
38	M7.061316.163258	WG572231-07	Duplicate	40/40	1	L16060551-01	06/13/16 16:32
39	M7.061316.163531	WG572551-15	CCV		1		06/13/16 16:35
40	M7.061316.163802	WG572551-16	CCB		1		06/13/16 16:38

Page: 2 Approved: June 16, 2016

Kim H. Rhoden

Microbac Laboratories Inc.

Data Checklist

Date: 13-JUN-2016
Analyst: PDM
Analyst: NA
Method: 7470A/245.1
Instrument: CVAA1
Curve Workgroup: 572551
Runlog ID: 75664
Analytical Workgroups: 572285

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	0540, 0504
Client Forms	X
Level X	
Level 3	
Level 4	0540, 0504
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	AMA
Secondary Reviewer	KHR
Comments	

Primary Reviewer:
15-JUN-2016
Alexandra M. Alfred

Secondary Reviewer:
16-JUN-2016
Kym H. Rhoden

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-16-2016 08:29:46

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 7470A

AAB#: WG572285

Login Number: L16060504

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW5-060816	03	06/08/16					06/10/2016	2	28		06/13/16	5.2	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4808644
Report generated 06/15/2016 12:32

METHOD BLANK SUMMARY

Login Number: L16060504
Blank File ID: M7.061316.152431
Prep Date: 06/10/16 10:23
Analyzed Date: 06/13/16 15:24
Analyst: AMA

Work Group: WG572285
Blank Sample ID: WG572231-03
Instrument ID: CVAA1
Method: 7470A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572231-04	M7.061316.152702	06/13/16 15:27	01
MW5-060816	L16060504-03	M7.061316.160504	06/13/16 16:05	01
DUP	WG572231-07	M7.061316.163258	06/13/16 16:32	01

Report Name: BLANK_SUMMARY
PDF File ID: 4808645
Report generated 06/15/2016 12:32

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060504 Prep Date: 06/10/16 10:23 Sample ID: WG572231-03
Instrument ID: CVAA1 Run Date: 06/13/16 15:24 Prep Method: 7470A
File ID: M7.061316.152431 Analyst: AMA Method: 7470A
Workgroup (AAB#): WG572285 Matrix: Water Units: mg/L
Contract #: Cal ID: CVAA1-13-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Mercury	0.000100	0.000400	0.000100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4808646
15-JUN-2016 12:32

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060504 Run Date: 06/13/2016 Sample ID: WG572231-04
Instrument ID: CVAA1 Run Time: 15:27 Prep Method: 7470A
File ID: M7.061316.152702 Analyst: AMA Method: 7470A
Workgroup (AAB#): WG572285 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76541 Cal ID: CVAA1-13-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Mercury	0.00400	0.00393	98.3	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4808647
Report generated: 06/15/2016 12:32

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060504 Cal ID: CVAA1 - Worknum: WG572285
Instrument ID: CVAA1 Contract #: Method: 7470A
Parent ID: WG572231-01 File ID: M7.061316.153942 Dil: 1 Matrix: WATER
Sample ID: WG572231-05 MS File ID: M7.061316.154215 Dil: 1 Units: mg/L
Sample ID: WG572231-06 MSD File ID: M7.061316.154448 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Mercury	ND	0.00444	0.00440	98.9	0.00444	0.00457	103	3.91	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4808648
Report generated 06/15/2016 12:32

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060504 **Worknum:** WG572285
Instrument ID: CVAA1 **Method:** 7470A
Post Spike ID: WG572285-02 **File ID:** M7.061316.153710 **Dil:** 1 **Units:** ug/L
Sample ID: L16060438-01 **File ID:** M7.061316.153438 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MERCURY	1.01		0	U	1	101.3	85 - 115	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4808643
Report generated: 06/15/2016 12:32

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060504
Analytical Method: 7470A
ICAL Worknum: WG572551

Workgroup (AAB#): WG572285
Instrument ID: CVAA1
Initial Calibration Date: 06/13/2016 15:11

Analyte	WG572551-01		WG572551-02		WG572551-03		WG572551-04		WG572551-05		WG572551-06	
	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT
Mercury	0	36.39	0.200	1752	1.00	8753	2.00	17060	5.00	42970	10.0	82370

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4808649
Report generated 06/15/2016 12:32

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060504
Analytical Method: 7470A
ICAL Worknum: WG572551

Workgroup (AAB#): WG572285
Instrument ID: CVAA1
Initial Calibration Date: 06/13/2016 15:11

Analyte	R	Q
Mercury	1.000	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4808649
Report generated 06/15/2016 12:32

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060504
Run Date: 06/13/2016
Sample ID: WG572551-08
Instrument ID: CVAA1
Run Time: 15:16
Method: 7470A
File ID: M7.061316.151657
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG572285
Cal ID: CVAA1 - 13-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
MERCURY	.1	.4	.1	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4808651
Report generated 06/15/2016 12:32

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060504
Run Date: 06/13/2016
Sample ID: WG572551-10
Instrument ID: CVAA1
Run Time: 15:22
Method: 7470A
File ID: M7.061316.152200
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG572285
Cal ID: CVAA1 - 13-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4808653
Report generated 06/15/2016 12:32

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060504
Run Date: 06/13/2016
Sample ID: WG572551-12
Instrument ID: CVAA1
Run Time: 15:52
Method: 7470A
File ID: M7.061316.155225
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG572285
Cal ID: CVAA1 - 13-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4808653
Report generated 06/15/2016 12:32

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060504
Run Date: 06/13/2016
Sample ID: WG572551-14
Instrument ID: CVAA1
Run Time: 16:22
Method: 7470A
File ID: M7.061316.162246
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG572285
Cal ID: CVAA1 - 13-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4808653
Report generated 06/15/2016 12:32

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060504 Run Date: 06/13/2016 Sample ID: WG572551-07
Instrument ID: CVAA1 Run Time: 15:14 Method: 7470A
File ID: M7.061316.151426 Analyst: AMA Units: ug/L
Workgroup (AAB#): WG572285 Cal ID: CVAA1 - 13-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Mercury		2	2.05	102	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4808650
Report generated 06/15/2016 12:32

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504
Run Date: 06/13/2016
Sample ID: WG572551-09
Instrument ID: CVAA1
Run Time: 15:19
Method: 7470A
File ID: M7.061316.151930
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG572285
Cal ID: CVAA1 - 13-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00204	mg/L	102	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4808652
Report generated 06/15/2016 12:32

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504
Run Date: 06/13/2016
Sample ID: WG572551-11
Instrument ID: CVAA1
Run Time: 15:49
Method: 7470A
File ID: M7.061316.154954
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG572285
Cal ID: CVAA1 - 13-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00203	mg/L	102	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4808652
Report generated 06/15/2016 12:32

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504
Run Date: 06/13/2016
Sample ID: WG572551-13
Instrument ID: CVAA1
Run Time: 16:20
Method: 7470A
File ID: M7.061316.162015
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG572285
Cal ID: CVAA1 - 13-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00208	mg/L	104	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4808652
Report generated 06/15/2016 12:32

2.3.3.3 Raw Data

PDM CVAA1 245.1/7470/7471

Report Generated By CETAC QuickTrace
Analyst: VOA
Worksheet file: C:\Program Files (x86)\QuickTrace\Worksheets\061316D.wsz
Date Started: 6/13/2016 2:37:29 PM
Comment:

Results

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
Standard #0					STD	06/13/16 02:57:24 pm	0.0000	36	36.36		1.00
Replicates	26.8	50.8	44.3	23.6							
Standard #1 (0.2 ug/L)					STD	06/13/16 02:59:55 pm	0.2000	1752	1.25		1.00
Replicates	1741.0	1726.5	1767.2	1773.0							
Standard #2 (1.0 ug/L)					STD	06/13/16 03:02:27 pm	1.0000	8753	0.54		1.00
Replicates	8724.1	8744.6	8721.6	8822.3							
Standard #3 (2.0 ug/L)					STD	06/13/16 03:05:00 pm	2.0000	17058	0.44		1.00
Replicates	16961.0	17037.5	17109.1	17122.8							
Standard #4 (5.0 ug/L)					STD	06/13/16 03:09:18 pm	5.0000	42974	0.41		1.00
Replicates	42748.8	42929.4	43067.1	43150.6							
Standard #5 (10.0 ug/L)					STD	06/13/16 03:11:52 pm	10.0000	82368	0.27		1.00
Replicates	82096.1	82320.4	82419.4	82637.4							

Calibration

Equation: A = 445.985 + 8256.340C
R2: 0.99956
SEE: 752.2704
Flags:

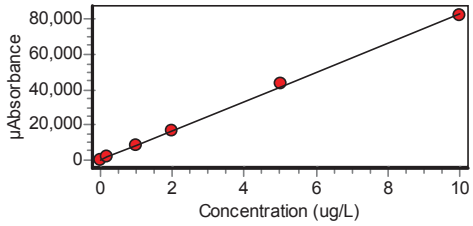

ICV					ICV	06/13/16 03:14:26 pm	2.0480	17355	0.17		1.00
Replicates	17314.1	17351.8	17371.3	17382.8							
% Recovery	102.40										

Approved: June 15, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
ICB					ICB	06/13/16 03:16:57 pm	-0.0517	19	47.20		1.00
Replicates	16.7	27.5	7.6	25.8							
CCV					CCV	06/13/16 03:19:30 pm	2.0410	17301	0.49		1.00
Replicates	17197.0	17279.4	17327.5	17398.9							
% Recovery	102.07										
CCB					CCB	06/13/16 03:22:00 pm	-0.0525	13	55.51		1.00
Replicates	18.3	19.1	7.6	5.6							
WG572231-03					MB	06/13/16 03:24:31 pm	-0.0535	4	397.70		1.00
Replicates	-12.5	25.3	1.9	1.1							
WG572231-04					LCS	06/13/16 03:27:02 pm	3.9310	32901	0.73		1.00
Replicates	32619.7	32803.4	33005.6	33175.4							
% Recovery	98.27										
WG572115-01					UNK	06/13/16 03:29:34 pm	-0.0549	-8	234.92		1.00
Replicates	15.9	-11.7	-7.4	-27.2							
WG572115-02					UNK	06/13/16 03:32:06 pm	-0.0527	11	121.63		1.00
Replicates	8.1	-5.9	24.7	15.7							
L1606043801					UNK	06/13/16 03:34:38 pm	0.0152	571	1.49		1.00
Replicates	566.9	565.2	583.8	569.2							
WG572285-02					SPK	06/13/16 03:37:10 pm	1.0130	8813	0.47		1.00
Replicates	8755.4	8810.7	8839.4	8845.5							
% Recovery	99.82										
L1606045006					UNK	06/13/16 03:39:42 pm	-0.0547	-6	275.71		1.00
Replicates	1.3	-14.1	12.7	-23.0							
WG572231-05					MSK	06/13/16 03:42:15 pm	3.9570	33114	0.54		1.00
Replicates	32888.3	33070.8	33186.6	33309.1							
% Recovery	100.29										
WG572231-06					MSDUP	06/13/16 03:44:48 pm	4.1150	34422	0.46		1.00
Replicates	34220.9	34385.5	34496.0	34585.8							
% Recovery	104.25	RPD 3.93									

Approved: June 15, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1606036002					UNK	06/13/16 03:47:22 pm	-0.0547	-6	262.64		1.00
Replicates	7.0	-24.3	6.7	-13.0							
CCV					CCV	06/13/16 03:49:54 pm	2.0320	17220	0.43		1.00
Replicates	17121.7	17212.7	17249.2	17297.2							
% Recovery	101.58										
CCB					CCB	06/13/16 03:52:25 pm	-0.0544	-3	607.17		1.00
Replicates	-20.5	4.2	17.8	-12.8							
WG572285-01					UNK	06/13/16 03:54:58 pm	0.9702	8457	0.48		1.00
Replicates	8398.8	8467.8	8466.3	8493.6							
L1606040101					UNK	06/13/16 03:57:32 pm	-0.0425	95	8.71		1.00
Replicates	105.8	86.9	96.9	90.4							
L1606040301					UNK	06/13/16 04:00:03 pm	-0.0514	22	52.64		1.00
Replicates	33.7	13.2	10.9	30.1							
L1606049201					UNK	06/13/16 04:02:33 pm	-0.0136	334	3.53		1.00
Replicates	328.0	331.0	324.3	350.7							
L1606050403					UNK	06/13/16 04:05:04 pm	-0.0313	188	6.68		1.00
Replicates	177.2	188.8	179.8	204.9							
L1606054009					UNK	06/13/16 04:07:35 pm	-0.0486	45	26.68		1.00
Replicates	53.3	51.3	27.3	46.6							
L1606054010					UNK	06/13/16 04:10:07 pm	-0.0545	-4	274.23		1.00
Replicates	5.2	-15.1	-11.9	5.8							
L1606054011					UNK	06/13/16 04:12:38 pm	-0.0497	36	63.49		1.00
Replicates	24.9	14.6	67.1	36.6							
L1606054014					UNK	06/13/16 04:15:10 pm	-0.0505	29	29.14		1.00
Replicates	18.7	39.1	27.6	31.8							

Approved: June 15, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1606054015					UNK	06/13/16 04:17:43 pm	-0.0503	30	56.67		1.00
Replicates	22.1	16.1	55.2	28.6							
CCV					CCV	06/13/16 04:20:15 pm	2.0780	17606	0.51		1.00
Replicates	17486.5	17600.0	17637.5	17699.0							
% Recovery	103.92										
CCB					CCB	06/13/16 04:22:46 pm	-0.0531	8	109.89		1.00
Replicates	12.3	13.9	9.1	-4.6							
L1606054016					UNK	06/13/16 04:25:19 pm	-0.0525	12	97.98		1.00
Replicates	27.5	5.4	15.1	0.6							
L1606054601					UNK	06/13/16 04:27:52 pm	-0.0209	274	0.89		1.00
Replicates	271.7	275.9	275.4	271.2							
L1606055101					UNK	06/13/16 04:30:25 pm	-0.0527	11	125.09		1.00
Replicates	12.9	11.6	-7.0	26.0							
WG572231-07					DUP	06/13/16 04:32:58 pm	-0.0523	14	116.05		1.00
Replicates	21.3	-5.0	32.8	7.5							
		RPD 0.00									
CCV					CCV	06/13/16 04:35:31 pm	2.0660	17501	0.32		1.00
Replicates	17426.2	17498.2	17520.9	17559.7							
% Recovery	103.29										
CCB					CCB	06/13/16 04:38:02 pm	-0.0548	-6	187.39		1.00
Replicates	6.5	-9.1	-1.3	-21.6							

Approved: June 15, 2016
Alexandra M. Alfred

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
July 1, 2016

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BNB - Brandi N. Bentley
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJQ - Cameron J. Quick
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
CV - Carl Volkman
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
EMW - ERIC M. WILKEN
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LJH - Lacey J. Hendershot
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
NPH - Natalie P. Hart
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
July 01, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
July 01, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Debra Richmann	Mail to:	Linda Raabe
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000		112 East Pecan STE. 400
	Marietta, OH 45750	Sampler (print):	Scott Beesinger		San Antonio, TX 78205
Phone:	1-800-373-4071				210-296-2000
Client:	AECOM	Signature:	Scott Beesinger	Fed Ex Airbill No:	
Address:	112 East Pecan Ste. 400				
	San Antonio, TX 78205			Program:	
Turn Around Time:	STANDARD	pH:			
Project Name/Location:	Longhorn				
Project Number:	60274185.0013BH 1824 MR10			ERPIMS REQUIRED FIELDS	

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Total Metals	1,4 - DIOXANE					SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 18/24	18CPTMW08SW-060816			6/8/16	0800		✓	W	6	✓	✓		✓									
	18CPTMW08DW-060816			6/8/16	0905		✓	W	3		✓		✓									
	MW5-060816			6/8/16	1010		✓	W	7	✓	✓	✓	✓									
	18CPTMW03SW-060816			6/8/16	1120		✓	W	6	✓	✓		✓									
	TRIP BLANK			6/8/16			✓	W	2	✓												

Microbac OVD
Received: 06/09/2016 10:30
By: BRENDA GREGORY 221000086977
Brenda Gregory

Comments: **STANDARD TAT**

Relinquished by: (Signature) Scott Beesinger	Date 6/8/16	Time 1545	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time	Remarks:	

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060504
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 20-JUN-2016

Samplenum	Container ID	Products
L16060504-01	757239	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:39	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:45	AWE	CLS	
Comments:Products cancelled.							
3	STORE	ORG4	A1	23-JUN-2016 07:38	CLS	AWE	
Comments:Products cancelled.							
4	ANALYZ	A1	ORG4	29-JUN-2016 09:17	JDS	CLS	
Comments:Products cancelled.							
5	STORE	V1	A1	29-JUN-2016 09:28	CLS	JDS	
Comments:Products cancelled.							

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:39	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:45	AWE	CLS	
Comments:Products cancelled.							
3	STORE	ORG4	A1	23-JUN-2016 07:38	CLS	AWE	
Comments:Products cancelled.							
4	ANALYZ	A1	ORG4	29-JUN-2016 09:17	JDS	CLS	
Comments:Products cancelled.							
5	STORE	V1	A1	29-JUN-2016 09:28	CLS	JDS	
Comments:Products cancelled.							

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:39	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:45	AWE	CLS	
Comments:Products cancelled.							
3	STORE	ORG4	A1	23-JUN-2016 07:38	CLS	AWE	
Comments:Products cancelled.							
4	ANALYZ	A1	ORG4	29-JUN-2016 09:18	JDS	CLS	
Comments:Products cancelled.							
5	STORE	V1	A1	29-JUN-2016 09:28	CLS	JDS	
Comments:Products cancelled.							

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060504
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 20-JUN-2016

Samplenum	Container ID	Products
L16060504-01	757240	826-LOW 827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	09-JUN-2016 14:39	CLS		
2	PREP	W1	EXT	13-JUN-2016 15:30	CPD	BRG	
3	SUBBED	EXT	DISP	14-JUN-2016 10:05	BJO	BJO	
4	ANALYZ*	EXT	SEMI	20-JUN-2016 12:17	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		09-JUN-2016 14:39	CLS		

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060504-01	757241	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	09-JUN-2016 14:39	CLS		
2	ANALYZ	W1	SEM	10-JUN-2016 08:24	WTD	BRG	
3	STORE	SEM	A1	11-JUN-2016 11:56	AZH	WTD	

Samplenum	Container ID	Products
L16060504-02	757242	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	09-JUN-2016 14:39	CLS		
2	PREP	W1	EXT	13-JUN-2016 15:30	CPD	BRG	
3	SUBBED	EXT	DISP	14-JUN-2016 10:05	BJO	BJO	
4	ANALYZ*	EXT	SEMI	20-JUN-2016 12:17	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		09-JUN-2016 14:39	CLS		

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060504
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 20-JUN-2016

Samplenum	Container ID	Products
L16060504-02	757243	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	09-JUN-2016 14:39	CLS		
2	ANALYZ	W1	SEM	10-JUN-2016 08:23	WTD	BRG	
3	STORE	SEM	A1	11-JUN-2016 11:56	AZH	WTD	

Samplenum	Container ID	Products
L16060504-03	757244	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:39	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:45	AWE	CLS	

Comments:Products cancelled.

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:39	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:45	AWE	CLS	

Comments:Products cancelled.

3	STORE	ORG4	A1	23-JUN-2016 07:38	CLS	AWE	

Comments:Products cancelled.

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:39	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:45	AWE	CLS	

Comments:Products cancelled.

3	STORE	ORG4	A1	23-JUN-2016 07:38	CLS	AWE	

Comments:Products cancelled.

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060504
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 20-JUN-2016

Samplenum	Container ID	Products
L16060504-03	757245	826-LOW 827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	09-JUN-2016 14:39	CLS		
2	PREP	W1	EXT	13-JUN-2016 15:30	CPD	BRG	
3	SUBBED	EXT	DISP	14-JUN-2016 10:05	BJO	BJO	
4	ANALYZ*	EXT	SEMI	20-JUN-2016 12:17	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		09-JUN-2016 14:39	CLS		

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060504-03	757246	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	09-JUN-2016 14:39	CLS		
2	ANALYZ	W1	SEM	10-JUN-2016 08:24	WTD	BRG	
3	STORE	SEM	A1	11-JUN-2016 11:56	AZH	WTD	

Samplenum	Container ID	Products
L16060504-03	757247	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	09-JUN-2016 14:39	CLS		
2	PREP	W1	DIG	09-JUN-2016 15:20	ERP	CLS	
3	ANALYZ*	DIG	METALS	10-JUN-2016 13:57	AMA	ERP	
4	STORE	DIG	A1	10-JUN-2016 14:59	BRG	VC	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060504
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 20-JUN-2016

Samplenum	Container ID	Products
L16060504-04	757248	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:39	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:45	AWE	CLS	
Comments:Products cancelled.							
3	STORE	ORG4	A1	23-JUN-2016 07:38	CLS	AWE	
Comments:Products cancelled.							

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:39	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:45	AWE	CLS	
Comments:Products cancelled.							
3	STORE	ORG4	A1	23-JUN-2016 07:38	CLS	AWE	
Comments:Products cancelled.							

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:39	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:45	AWE	CLS	
Comments:Products cancelled.							
3	STORE	ORG4	A1	23-JUN-2016 07:38	CLS	AWE	
Comments:Products cancelled.							

Samplenum	Container ID	Products
L16060504-04	757249	826-LOW 827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	09-JUN-2016 14:39	CLS		
2	PREP	W1	EXT	13-JUN-2016 15:30	CPD	BRG	
3	SUBBED	EXT	DISP	14-JUN-2016 10:05	BJO	BJO	
4	ANALYZ*	EXT	SEMI	20-JUN-2016 12:17	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		09-JUN-2016 14:39	CLS		

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060504
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 20-JUN-2016

Samplenum	Container ID	Products
L16060504-04	757250	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	09-JUN-2016 14:39	CLS		
2	ANALYZ	W1	SEM	10-JUN-2016 08:24	WTD	BRG	
3	STORE	SEM	A1	11-JUN-2016 11:56	AZH	WTD	

Samplenum	Container ID	Products
L16060504-04	757251	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	09-JUN-2016 14:39	CLS		

Samplenum	Container ID	Products
L16060504-05	757252	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:39	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:45	AWE	CLS	
3	STORE	ORG4	A1	23-JUN-2016 07:38	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:39	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:45	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
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W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16060615

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Michelle Taylor – Client Services Specialist
(740) 373-4071
Michelle.Taylor@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on June 22 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00112637	H	2.0		J2317165054	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18CPTMW22R-060916	L16060615-01	06/09/2016 07:40	06/10/2016 10:43
18CPTMW22DW-060916	L16060615-02	06/09/2016 08:40	06/10/2016 10:43
18CPTMW22DWFD-060916	L16060615-03	06/09/2016 08:40	06/10/2016 10:43
18CPTMW22SW-060916	L16060615-04	06/09/2016 09:55	06/10/2016 10:43
TRIP BLANK	L16060615-05	06/09/2016 00:01	06/10/2016 10:43

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16060615
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.0 Summary Data

1.1 Narratives

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060615
Project Name:		**Method:**	8260
Prep Batch Number(s):	572737	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-20 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2016-06-20 18:01:46

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060615
Project Name:		**Method:**	8260
Prep Batch Number(s):	572737	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-20 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060615
Project Name:		**Method:**	8260
Prep Batch Number(s):	572737	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-20 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060615
Project Name:		**Method:**	8260
Prep Batch Number(s):	572737	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-20 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060615
Project Name:		**Method:**	8260
Prep Batch Number(s):	572737	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-20 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060615
Project Name:		**Method:**	8260
Prep Batch Number(s):	572737	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-20 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1)Bromomethane exceeded the UCL in the CCV.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060615
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572341	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-21 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-06-21 18:32:49

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060615
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572341	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-21 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060615
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572341	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-21 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060615
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572341	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-21 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060615
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572341	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-21 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060615
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572341	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-21 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060615
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572350	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-06-14 16:51:16

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060615
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572350	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060615
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572350	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060615
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572350	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060615
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572350	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060615
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572350	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

1.2 Certificate of Analysis

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060615-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW22R-060916	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572737	**Analyst:**	TMB	**Run Date:**	06/15/2016 20:07
Collect Date:	06/09/2016 07:40	**Dilution:**	1	**File ID:**	8M413025
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	117	70	120	
Toluene-d8	107	85	120	
4-Bromofluorobenzene	101	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060615-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW22R-060916	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 13:48
Collect Date:	06/09/2016 07:40	**Dilution:**	1	**File ID:**	15M18410
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	56.5	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060615-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22R-060916	**Prep Method:**	6850	**Prep Date:**	06/11/2016 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572350	**Analyst:**	WTD	**Run Date:**	06/12/2016 22:56
Collect Date:	06/09/2016 07:40	**Dilution:**	1	**File ID:**	1LM.LM35328
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.917		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16060615-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW22DW-060916	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572737	**Analyst:**	TMB	**Run Date:**	06/15/2016 19:38
Collect Date:	06/09/2016 08:40	**Dilution:**	1	**File ID:**	8M413024
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	111	85	115	
1,2-Dichloroethane-d4	116	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	101	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060615-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW22DW-060916	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 14:11
Collect Date:	06/09/2016 08:40	**Dilution:**	1	**File ID:**	15M18411
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	62.1	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060615-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW-060916	**Prep Method:**	6850	**Prep Date:**	06/11/2016 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572350	**Analyst:**	WTD	**Run Date:**	06/12/2016 23:34
Collect Date:	06/09/2016 08:40	**Dilution:**	1	**File ID:**	1LM.LM35330
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1.21		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16060615-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW22DWFD-060916	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572737	**Analyst:**	TMB	**Run Date:**	06/15/2016 19:09
Collect Date:	06/09/2016 08:40	**Dilution:**	1	**File ID:**	8M413023
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	116	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	100	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060615-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW22DWFD-060916	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 14:33
Collect Date:	06/09/2016 08:40	**Dilution:**	1	**File ID:**	15M18412
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	47.8	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060615-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DWFD-060916	**Prep Method:**	6850	**Prep Date:**	06/11/2016 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572350	**Analyst:**	WTD	**Run Date:**	06/12/2016 23:53
Collect Date:	06/09/2016 08:40	**Dilution:**	1	**File ID:**	1LM.LM35331
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.473		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16060615-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW22SW-060916	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572737	**Analyst:**	TMB	**Run Date:**	06/15/2016 18:40
Collect Date:	06/09/2016 09:55	**Dilution:**	1	**File ID:**	8M413022
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	15.4		10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.534	J	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.633	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	115	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	99.2	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060615-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW22SW-060916	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 14:56
Collect Date:	06/09/2016 09:55	**Dilution:**	1	**File ID:**	15M18413
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	44.9	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060615-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22SW-060916	**Prep Method:**	6850	**Prep Date:**	06/11/2016 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572350	**Analyst:**	WTD	**Run Date:**	06/13/2016 00:12
Collect Date:	06/09/2016 09:55	**Dilution:**	10000	**File ID:**	1LM.LM35332
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	10200		4000	2000	1000

Certificate of Analysis

Sample #:	L16060615-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572737	**Analyst:**	TMB	**Run Date:**	06/15/2016 14:20
Collect Date:	06/09/2016 00:01	**Dilution:**	1	**File ID:**	8M413013
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	112	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	99.6	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060615-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW22R-060916	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572737	**Analyst:**	TMB	**Run Date:**	06/15/2016 20:07
Collect Date:	06/09/2016 07:40	**Dilution:**	1	**File ID:**	8M413025
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	117	70	120	
Toluene-d8	107	85	120	
4-Bromofluorobenzene	101	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060615-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW22DW-060916	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572737	**Analyst:**	TMB	**Run Date:**	06/15/2016 19:38
Collect Date:	06/09/2016 08:40	**Dilution:**	1	**File ID:**	8M413024
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	111	85	115	
1,2-Dichloroethane-d4	116	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	101	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060615-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW22DWFD-060916	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572737	**Analyst:**	TMB	**Run Date:**	06/15/2016 19:09
Collect Date:	06/09/2016 08:40	**Dilution:**	1	**File ID:**	8M413023
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	116	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	100	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060615-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW22SW-060916	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572737	**Analyst:**	TMB	**Run Date:**	06/15/2016 18:40
Collect Date:	06/09/2016 09:55	**Dilution:**	1	**File ID:**	8M413022
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	15.4		10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.534	J	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.633	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	115	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	99.2	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060615-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572737	**Analyst:**	TMB	**Run Date:**	06/15/2016 14:20
Collect Date:	06/09/2016 00:01	**Dilution:**	1	**File ID:**	8M413013
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

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Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	112	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	99.6	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051316
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53752

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG568561

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412209	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 08:38
8M412210	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 08:57
8M412211	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 09:29
8M412212	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 09:56
8M412213	WG568561-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/13/16 10:19
8M412214	WG568561-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/13/16 10:51
8M412215	WG568565-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76072	05/13/16 11:36
8M412216	BFB CHECK	NA	1	1	STD76034	05/13/16 12:04
8M412217	BFB CHECK	NA	1	1	STD76034	05/13/16 12:18
8M412218	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 12:36
8M412219	RINSE	NA	1	1		05/13/16 13:00
8M412220	WG568561-02 0.3ug/L STD 8260	NA	1	1	STD76127	05/13/16 13:29
8M412221	WG568561-03 0.4ug/L STD 8260	NA	1	1	STD76127	05/13/16 13:58
8M412222	WG568561-04 1ug/L STD 8260	NA	1	1	STD76127	05/13/16 14:27
8M412223	WG568561-05 2ug/L STD 8260	NA	1	1	STD76127	05/13/16 14:56
8M412224	WG568561-06 5ug/L STD 8260	NA	1	1	STD76127	05/13/16 15:25
8M412225	WG568561-07 20ug/L STD 8260	NA	1	1	STD76127	05/13/16 15:54
8M412226	WG568561-08 50ug/L STD 8260	NA	1	1	STD76127	05/13/16 16:23
8M412227	WG568561-09 100ug/L STD 8260	NA	1	1	STD76127	05/13/16 16:52
8M412228	WG568561-10 200ug/L STD 8260	NA	1	1	STD76127	05/13/16 17:21
8M412229	WG568561-11 300ug/L STD 8260	NA	1	1	STD76127	05/13/16 17:50
8M412230	RINSE	NA	1	1		05/13/16 18:19
8M412231	RINSE	NA	1	1		05/13/16 18:49
8M412232	WG568561-12 50ug/L ALT SRC STD 8260	NA	1	1	STD76109	05/13/16 19:17
8M412233	RINSE	NA	1	1		05/13/16 19:46

Comments

Seq.	Rerun	Dil.	Reason	Analytes
5	X			
File ID: 8M412213				
	Several compounds were low, DNR.			
6				
File ID: 8M412214				

Approved: May 20, 2016

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Instrument Run Log

Instrument:	HPMS8	Dataset:	051316		
Analyst1:	TMB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	23
Method:	624	SOP:	MSV10	Rev:	14
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:	53752				

Internal Standard: STD75899 Surrogate Standard: STD75899

CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG568561

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			Two C compounds failed. DNR. Run a curve.	
7 File ID: 8M412215				
			DNR.	

Approved: May 20, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051716
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76072; STD76127 LCS: STD76109; STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG569079; WG569083

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412319	WG569084-01 50ng BFB STD 8260	NA	1	1	STD76034	05/17/16 08:53
8M412320	WG569084-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/17/16 09:18
8M412321	WG569079-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76072	05/17/16 09:47
8M412322	WG569079-03 50ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 10:16
8M412323	WG569079-04 20ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 10:44
8M412324	WG569079-05 5ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 11:13
8M412325	WG569079-06 200ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 11:42
8M412326	WG569079-07 300ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 12:40
8M412327	WG569079-08 400ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 13:10
8M412328	WG569079-09 500ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 13:39
8M412329	RINSE	NA	1	1		05/17/16 14:08
8M412330	RINSE	NA	1	1		05/17/16 14:37
8M412331	WG569079-10 100ug/L ALT SRC STD 826	NA	1	1	STD75801	05/17/16 15:06
8M412332	WG569259-01 BFB 50ng 8260	NA	1	1	STD76034	05/17/16 18:27
8M412333	WG569259-02 50ug/L CCV 8260	NA	1	1	STD76034	05/17/16 18:53
8M412334	WG569260-01 100ug/L CCV A9	NA	1	1	STD76072	05/17/16 19:22
8M412335	WG569083-01 VBLK0517 BLANK 8260	NA	1	1		05/17/16 19:51
8M412336	WG569083-02 20ug/L LCS 8260	NA	1	1	STD76109	05/17/16 20:20
8M412337	WG569083-03 20ug/L LCS2 8260	NA	1	1	STD76109	05/17/16 20:49
8M412338	WG569083-04 100ug/L LCS A9	NA	1	1	STD75801	05/17/16 21:18
8M412339	WG569083-05 100ug/L LCS2 A9	NA	1	1	STD75801	05/17/16 21:46
8M412340	L16050844-01 TB A 826-A9-SPE	5	1	1		05/17/16 22:16
8M412341	L16050844-07 EB A 826-A9-SPE	5	1	1		05/17/16 22:45
8M412342	L16050844-11 AB A 826-A9-SPE	5	1	1		05/17/16 23:14
8M412343	L16050844-02 A 826-A9-SPE	6	1	1		05/17/16 23:43
8M412344	L16050844-05 A 826-A9-SPE	6	1	1		05/18/16 00:12
8M412345	L16050844-06 A 826-A9-SPE	6	1	1		05/18/16 00:41
8M412346	L16050844-12 A 826-A9-SPE	6	1	1		05/18/16 01:10
8M412347	L16050840-01 A 826-A9-SPE	7	1	1		05/18/16 01:38
8M412348	L16050844-08 A 826-A9-SPE	7	1	1		05/18/16 02:07
8M412349	L16050844-13 A 826-A9-SPE	7	1	1		05/18/16 02:36
8M412350	L16050844-15 A 826-A9-SPE	7	1	1		05/18/16 03:05
8M412351	L16050839-01 A 826-A9-SPE	7	1	1		05/18/16 03:33
8M412352	L16050844-03 2.5X A 826-A9-SPE	7	1	2.5		05/18/16 04:02

Approved: May 20, 2016

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Instrument Run Log

Instrument: HPMS8 Dataset: 051716
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76072; STD76127 LCS: STD76109; STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG569079; WG569083

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412353	L16050844-04 5X A 826-A9-SPE	7	1	5		05/18/16 04:31
8M412354	L16050844-09 5X A 826-A9-SPE	7	1	5		05/18/16 05:01
8M412355	L16050844-10 5X A 826-A9-SPE	7	1	5		05/18/16 05:30
8M412356	L16050844-14 50X A 826-A9-SPE	7	1	50		05/18/16 05:59
8M412357	RINSE	NA	1	1		05/18/16 06:28

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
File ID: 8M412320				
	DNR. Running an a9/foo curve.			
32	X	10	Over Calibration Range	CIS12-DCE
File ID: 8M412350				
40	X	2.5	Analyzed too dilute	
File ID: 8M412353				
	DNR.			
37	X	25	Over Calibration Range	TCE
File ID: 8M412355				
38	X	20	Analyzed too dilute	
File ID: 8M412356				
	DNR.			

Approved: May 20, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 061516
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75370 Surrogate Standard: STD76370
CCV: STD76578 LCS: STD76597 MS/MSD: STD76597

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG572737

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M413001	WG572735-01 50ng BFB STD 8260	NA	1	1	STD76496	06/15/16 08:36
8M413002	WG572735-02 50ug/L CCV STD 8260	NA	1	1	STD76578	06/15/16 09:00
8M413003	WG572735-02 50ug/L CCV STD 8260	NA	1	1	STD76578	06/15/16 09:29
8M413004	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76432	06/15/16 09:58
8M413005	WG572737-01 VBLK0615 BLANK STD 826	NA	1	1		06/15/16 10:27
8M413006	WG572737-02 20ug/L LCS STD 8260	NA	1	1	STD75597	06/15/16 10:56
8M413007	WG572737-03 20ug/L LCS2 STD 8260	NA	1	1	STD75597	06/15/16 11:25
8M413008	L16060540-14 B 10X 826-SPE D1	<2	1	10		06/15/16 11:54
8M413009	L16060656-08 A TB 826-BETX	<2	1	1		06/15/16 12:23
8M413010	L16060651-02 A TB 826-BETX	<2	1	1		06/15/16 12:52
8M413011	L16060651-01 A EB 826-BETX	<2	1	1		06/15/16 13:22
8M413012	L16060616-05 A TB 826-LOW	<2	1	1		06/15/16 13:50
8M413013	L16060615-05 A TB 826-LOW	<2	1	1		06/15/16 14:20
8M413014	L16060669-11 B TB 826-VAP2	<2	1	1		06/15/16 14:49
8M413015	L16060760-01 A TB 826-SPE	5	1	1		06/15/16 15:18
8M413016	L16060669-10 B BB 826-VAP2	5	1	1		06/15/16 15:47
8M413017	L16060669-09 B 826-VAP2	6	1	1		06/15/16 16:16
8M413018	L16060540-15 B 826-SPE	<2	1	1		06/15/16 16:45
8M413019	L16060760-02 A 826-SPE	6	1	1		06/15/16 17:14
8M413020	L16060616-03 A 826-LOW	<2	1	1		06/15/16 17:43
8M413021	L16060616-02 A 826-LOW	<2	1	1		06/15/16 18:11
8M413022	L16060615-04 A 826-LOW	<2	1	1		06/15/16 18:40
8M413023	L16060615-03 A 826-LOW	<2	1	1		06/15/16 19:09
8M413024	L16060615-02 A 826-LOW	<2	1	1		06/15/16 19:38
8M413025	L16060615-01 A 826-LOW	<2	1	1		06/15/16 20:07
8M413026	L16060616-01 A 2.5X 826-LOW	<2	1	2.5		06/15/16 20:36
8M413027	CCV	NA	1	1		06/15/16 21:05
8M413028	RINSE	NA	1	1		06/15/16 21:34
8M413029	RINSE	NA	1	1		06/15/16 22:03
8M413030	RINSE	NA	1	1		06/15/16 22:32

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Approved: June 20, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS8	Dataset:	061516		
Analyst1:	ADC	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	23
Method:	OVAP	SOP:	MSV01/PAT01	Rev:	0
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:					

Internal Standard: STD75370 Surrogate Standard: STD76370

CCV: STD76578 LCS: STD76597 MS/MSD: STD76597

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG572737

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
26	X		Analyzed too dilute	
File ID: 8M413026				
L16060616-01 DNR RR STR.				

Approved: June 20, 2016

Sarah Vandenberg

Microbac

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 13-MAY-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75126
Analytical Workgroups: WG568561

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	TMB
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
17-MAY-2016
Tiffany Bailey

Secondary Reviewer:
20-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2016 11:18:36

Microbac Laboratories Inc.

Data Checklist

Date: 17-MAY-2016
Analyst: TMB
Analyst: FJB
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75174
Analytical Workgroups: WG569079; WG569083

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
19-MAY-2016
Tiffany Bailey

Secondary Reviewer:
20-MAY-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2016 11:05:37

Microbac Laboratories Inc.

Data Checklist

Date: 15-JUN-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75739
Analytical Workgroups: WG572737

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
16-JUN-2016

Secondary Reviewer:
20-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-20-2016 13:15:59

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG572737

Login Number: L16060615

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW22R-060916	01	06/09/16					06/15/2016	6.5	14		06/15/16	6.5	14	
18CPTMW22DW-060916	02	06/09/16					06/15/2016	6.5	14		06/15/16	6.5	14	
18CPTMW22DWFD-060916	03	06/09/16					06/15/2016	6.4	14		06/15/16	6.4	14	
18CPTMW22SW-060916	04	06/09/16					06/15/2016	6.4	14		06/15/16	6.4	14	
TRIP BLANK	05	06/09/16					06/15/2016	6.6	14		06/15/16	6.6	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4810854
Report generated 06/20/2016 13:19

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060615
Instrument Id: HPMS8
Workgroup (AAB#): WG572737

Method: 8260
CAL ID: HPMS8-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16060615-01	1.00	01	117	113	101	107
L16060615-02	1.00	01	116	111	101	103
L16060615-03	1.00	01	116	113	100	104
L16060615-04	1.00	01	115	112	99.2	104
L16060615-05	1.00	01	112	110	99.6	102
WG572737-01	1.00	01	110	110	97.6	104
WG572737-02	1.00	01	111	107	100	104
WG572737-03	1.00	01	111	110	102	104

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4810862
Report generated: 06/20/2016 13:19

METHOD BLANK SUMMARY

Login Number: L16060615
Blank File ID: 8M413005
Prep Date: 06/15/16 10:27
Analyzed Date: 06/15/16 10:27
Analyst: TMB

Work Group: WG572737
Blank Sample ID: WG572737-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572737-02	8M413006	06/15/16 10:56	01
LCS2	WG572737-03	8M413007	06/15/16 11:25	01
TRIP BLANK	L16060615-05	8M413013	06/15/16 14:20	01
18CPTMW22SW-060916	L16060615-04	8M413022	06/15/16 18:40	01
18CPTMW22DWFD-060916	L16060615-03	8M413023	06/15/16 19:09	01
18CPTMW22DW-060916	L16060615-02	8M413024	06/15/16 19:38	01
18CPTMW22R-060916	L16060615-01	8M413025	06/15/16 20:07	01

Report Name: BLANK_SUMMARY
PDF File ID: 4810855
Report generated 06/20/2016 13:19

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16060615 Prep Date: 06/15/16 10:27 Sample ID: WG572737-01
Instrument ID: HPMS8 Run Date: 06/15/16 10:27 Prep Method: 5030B/5030C/503
File ID: 8M413005 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG572737 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 4810856
20-JUN-2016 13:19

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16060615 Prep Date: 06/15/16 10:27 Sample ID: WG572737-01
Instrument ID: HPMS8 Run Date: 06/15/16 10:27 Prep Method: 5030B/5030C/503
File ID: 8M413005 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG572737 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	110	85 - 115	PASS
1,2-Dichloroethane-d4	110	70 - 120	PASS
Toluene-d8	104	85 - 120	PASS
4-Bromofluorobenzene	97.6	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4810856
20-JUN-2016 13:19

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060615 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG572737 Units: ug/L
QC Key: DOD4 Lot #: STD76597

Sample ID: WG572737-02 LCS File ID: 8M413006 Run Date: 06/15/2016 10:56
Sample ID: WG572737-03 LCS2 File ID: 8M413007 Run Date: 06/15/2016 11:25

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	21.1	106	20.0	20.8	104	1.33	80 - 130	30	
1,1,1-Trichloroethane	20.0	22.3	112	20.0	22.2	111	0.500	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	18.1	90.5	20.0	18.8	94.0	3.89	65 - 130	30	
1,1,2-Trichloroethane	20.0	20.2	101	20.0	20.0	100	0.857	75 - 125	30	
1,1-Dichloroethane	20.0	19.9	99.4	20.0	20.2	101	1.73	70 - 135	30	
1,1-Dichloroethene	20.0	19.6	97.8	20.0	20.0	99.9	2.07	70 - 130	30	
1,1-Dichloropropene	20.0	20.1	101	20.0	20.7	104	3.16	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	19.0	95.1	20.0	19.3	96.5	1.40	55 - 140	30	
1,2,3-Trichloropropane	20.0	20.5	103	20.0	20.1	100	2.21	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	19.8	98.9	20.0	20.0	100	1.32	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	20.2	101	20.0	20.0	99.9	1.28	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	19.7	98.4	20.0	19.4	97.0	1.49	50 - 130	30	
1,2-Dibromoethane	20.0	20.4	102	20.0	20.3	102	0.581	80 - 120	30	
1,2-Dichlorobenzene	20.0	20.3	102	20.0	20.7	104	1.97	70 - 120	30	
1,2-Dichloroethane	20.0	22.4	112	20.0	23.6	118	5.32	70 - 130	30	
1,2-Dichloropropane	20.0	20.7	104	20.0	21.0	105	1.42	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	20.8	104	20.0	20.8	104	0.0710	75 - 130	30	
1,3-Dichlorobenzene	20.0	20.6	103	20.0	20.6	103	0.116	75 - 125	30	
1,3-Dichloropropane	20.0	21.9	109	20.0	21.5	107	2.01	75 - 125	30	
1,4-Dichlorobenzene	20.0	20.6	103	20.0	20.5	103	0.231	75 - 125	30	
2,2-Dichloropropane	20.0	22.9	114	20.0	23.2	116	1.44	70 - 135	30	
2-Butanone	20.0	20.9	104	20.0	22.3	112	6.63	30 - 150	30	
2-Chlorotoluene	20.0	18.5	92.3	20.0	18.6	92.9	0.574	75 - 125	30	
2-Hexanone	20.0	18.6	92.8	20.0	19.1	95.7	3.07	55 - 130	30	
4-Chlorotoluene	20.0	22.4	112	20.0	22.4	112	0.398	75 - 130	30	
4-Methyl-2-pentanone	20.0	19.8	98.8	20.0	20.3	102	2.82	60 - 135	30	
Acetone	20.0	22.4	112	20.0	24.7	123	9.61	40 - 140	30	
Benzene	20.0	20.7	103	20.0	20.9	105	1.27	80 - 120	30	
Bromobenzene	20.0	19.7	98.7	20.0	20.1	101	1.82	75 - 125	30	
Bromochloromethane	20.0	20.7	104	20.0	21.1	105	1.74	65 - 130	30	
Bromodichloromethane	20.0	21.8	109	20.0	22.3	111	2.31	75 - 120	30	
Bromoform	20.0	20.1	100	20.0	20.2	101	0.331	70 - 130	30	
Bromomethane	20.0	13.9	69.7	20.0	14.9	74.4	6.59	30 - 145	30	
Carbon disulfide	20.0	18.3	91.3	20.0	18.5	92.6	1.44	35 - 160	30	
Carbon tetrachloride	20.0	21.9	109	20.0	21.7	108	0.914	65 - 140	30	
Chlorobenzene	20.0	21.0	105	20.0	20.6	103	1.91	80 - 120	30	
Chloroethane	20.0	21.1	105	20.0	21.5	108	2.22	60 - 135	30	
Chloroform	20.0	21.4	107	20.0	21.3	107	0.454	65 - 135	30	
Chloromethane	20.0	20.3	102	20.0	20.7	104	2.04	40 - 125	30	
cis-1,2-Dichloroethene	20.0	21.2	106	20.0	20.9	104	1.68	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4810857
Report generated: 06/20/2016 13:19

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060615 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG572737 Units: ug/L
QC Key: DOD4 Lot #: STD76597

Sample ID: WG572737-02 LCS File ID: 8M413006 Run Date: 06/15/2016 10:56
Sample ID: WG572737-03 LCS2 File ID: 8M413007 Run Date: 06/15/2016 11:25

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	23.4	117	20.0	23.9	119	2.17	70 - 130	30	
Chlorodibromomethane	20.0	21.0	105	20.0	20.9	105	0.266	60 - 135	30	
Dibromomethane	20.0	19.5	97.6	20.0	19.5	97.3	0.352	75 - 125	30	
Dichlorodifluoromethane	20.0	21.2	106	20.0	21.6	108	1.62	30 - 155	30	
Ethylbenzene	20.0	19.9	99.5	20.0	19.9	99.5	0.0185	75 - 125	30	
Hexachlorobutadiene	20.0	21.0	105	20.0	21.1	105	0.463	50 - 140	30	
Isopropylbenzene	20.0	21.7	109	20.0	21.7	109	0.0757	75 - 125	30	
m-,p-Xylene	40.0	42.0	105	40.0	41.3	103	1.56	75 - 130	30	
Methylene chloride	20.0	19.9	99.3	20.0	20.7	104	4.32	55 - 140	30	
n-Butylbenzene	20.0	19.4	97.1	20.0	19.7	98.6	1.60	70 - 135	30	
n-Propylbenzene	20.0	20.8	104	20.0	21.0	105	0.657	70 - 130	30	
Naphthalene	20.0	17.4	86.8	20.0	17.8	89.0	2.56	55 - 140	30	
o-Xylene	20.0	21.3	107	20.0	20.8	104	2.31	80 - 120	30	
p-Isopropyltoluene	20.0	20.3	102	20.0	20.4	102	0.386	75 - 130	30	
sec-Butylbenzene	20.0	20.5	103	20.0	20.8	104	1.32	70 - 125	30	
Styrene	20.0	21.1	105	20.0	21.1	105	0.0674	65 - 135	30	
tert-Butylbenzene	20.0	19.9	99.5	20.0	20.0	100	0.470	70 - 130	30	
Tetrachloroethene	20.0	20.8	104	20.0	20.6	103	1.34	45 - 150	30	
Toluene	20.0	20.2	101	20.0	20.3	101	0.147	75 - 120	30	
trans-1,2-Dichloroethene	20.0	20.1	100	20.0	20.9	104	3.89	60 - 140	30	
trans-1,3-Dichloropropene	20.0	21.1	106	20.0	20.8	104	1.47	55 - 140	30	
Trichloroethene	20.0	21.9	109	20.0	22.4	112	2.49	70 - 125	30	
Trichlorofluoromethane	20.0	21.1	105	20.0	21.6	108	2.45	60 - 145	30	
Vinyl chloride	20.0	23.1	115	20.0	23.4	117	1.48	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	111	111	70 - 120	PASS
Dibromofluoromethane	107	110	85 - 115	PASS
4-Bromofluorobenzene	100	102	75 - 120	PASS
Toluene-d8	104	104	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4810857
Report generated: 06/20/2016 13:19

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060615
Instrument: HPMS8
Analyst: TMB
Workgroup: WG568561

Tune ID: WG568561-01
Run Date: 05/13/2016
Run Time: 12:36
File ID: 8M412218
Cal ID: HPMS8 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	16.7	6575	PASS
75.0	95.0	30.0	60.0	51.3	20171	PASS
95.0	95.0	100	100	100	39312	PASS
96.0	95.0	5.00	9.00	6.74	2649	PASS
173	174	0	2.00	0.363	122	PASS
174	95.0	50.0	100	85.5	33616	PASS
175	174	5.00	9.00	8.17	2746	PASS
176	174	95.0	101	99.2	33360	PASS
177	176	5.00	9.00	6.80	2267	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG568561-02	STD	01	05/13/2016 13:29	
WG568561-03	STD	01	05/13/2016 13:58	
WG568561-04	STD	01	05/13/2016 14:27	
WG568561-05	STD	01	05/13/2016 14:56	
WG568561-06	STD	01	05/13/2016 15:25	
WG568561-07	STD	01	05/13/2016 15:54	
WG568561-08	STD-CCV	01	05/13/2016 16:23	
WG568561-09	STD	01	05/13/2016 16:52	
WG568561-10	STD	01	05/13/2016 17:21	
WG568561-11	STD	01	05/13/2016 17:50	
WG568561-12	SSCV	01	05/13/2016 19:17	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4810859
Report generated 06/20/2016 13:19

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060615
Instrument: HPMS8
Analyst: TMB
Workgroup: WG569084

Tune ID: WG569084-01
Run Date: 05/17/2016
Run Time: 08:53
File ID: 8M412319
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.1	6316	PASS
75.0	95.0	30.0	60.0	54.7	18130	PASS
95.0	95.0	100	100	100	33138	PASS
96.0	95.0	5.00	9.00	6.76	2241	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	72.2	23934	PASS
175	174	5.00	9.00	7.88	1886	PASS
176	174	95.0	101	96.8	23159	PASS
177	176	5.00	9.00	7.15	1655	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG569079-01	STD-CCV	01	05/17/2016 09:47	
WG569079-03	STD	01	05/17/2016 10:16	
WG569079-04	STD	01	05/17/2016 10:44	
WG569079-05	STD	01	05/17/2016 11:13	
WG569079-06	STD	01	05/17/2016 11:42	
WG569079-07	STD	01	05/17/2016 12:40	
WG569079-08	STD	01	05/17/2016 13:10	
WG569079-09	STD	01	05/17/2016 13:39	
WG569079-10	SSCV	01	05/17/2016 15:06	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4810859
Report generated 06/20/2016 13:19

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060615
Instrument: HPMS8
Analyst: TMB
Workgroup: WG572735

Tune ID: WG572735-01
Run Date: 06/15/2016
Run Time: 08:36
File ID: 8M413001
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	18.6	9690	PASS
75.0	95.0	30.0	60.0	55.4	28818	PASS
95.0	95.0	100	100	100	52034	PASS
96.0	95.0	5.00	9.00	6.36	3311	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	75.4	39229	PASS
175	174	5.00	9.00	8.10	3176	PASS
176	174	95.0	101	96.0	37669	PASS
177	176	5.00	9.00	6.36	2397	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG572735-02	CCV	01	06/15/2016 09:29	
WG572737-01	BLANK	01	06/15/2016 10:27	
WG572737-02	LCS	01	06/15/2016 10:56	
WG572737-03	LCS2	01	06/15/2016 11:25	
L16060615-05	TRIP BLANK	01	06/15/2016 14:20	
L16060615-04	18CPTMW22SW-060916	01	06/15/2016 18:40	
L16060615-03	18CPTMW22DWFD-060916	01	06/15/2016 19:09	
L16060615-02	18CPTMW22DW-060916	01	06/15/2016 19:38	
L16060615-01	18CPTMW22R-060916	01	06/15/2016 20:07	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4810859
Report generated 06/20/2016 13:19

Calibration Table Report
Method: 8260WT.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Calibration: Sat May 14 18:08:06 2016
Curve: WG568561
Calibration Files

	Compound	0.3 8M412220.D	0.4 8M412221.D	1 8M412222.D	2 8M412223.D	5 8M412224.D	20 8M412225.D	50 8M412226.D	100 8M412227.D	200 8M412228.D	300 8M412229.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane		0.427	0.390	0.397	0.364	0.468	0.439	0.452	0.427	0.408	0.419	7.751		
P	Chloromethane			0.264	0.257	0.223	0.253	0.240	0.240	0.239	0.241	0.245	5.336		
C	Vinyl Chloride		0.274	0.296	0.297	0.277	0.299	0.292	0.299	0.292	0.288	0.290	3.191		
T	1,3-Butadiene				0.218	0.208	0.242	0.251	0.277	0.254	0.254	0.243	9.644		
T	Bromomethane			0.129	0.133	0.127	0.162	0.167	0.187	0.205	0.212	0.165	20.449		1.000
T	Chloroethane		0.173	0.157	0.153	0.143	0.164	0.157	0.163	0.164	0.164	0.160	5.354		
T	Trichlorofluoromethane		0.544	0.538	0.559	0.506	0.570	0.538	0.551	0.531	0.525	0.540	3.520		
T	Diethyl ether			0.130	0.138	0.123	0.132	0.125	0.128		0.127	0.129	3.866		
T	Isoprene		0.335	0.351	0.334	0.293	0.334	0.320	0.334	0.322	0.329	0.328	4.867		
T	Acrolein				0.012	0.010	0.010	0.011	0.012		0.014	0.012	12.987		
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.256	0.269	0.240	0.260	0.249	0.257	0.251	0.250	0.254	3.397		
T	Acetone					0.023	0.030	0.029	0.030	0.028	0.028	0.028	9.132		
C	1,1-Dichloroethene		0.424	0.407	0.406	0.387	0.416	0.398	0.409	0.400	0.393	0.404	2.830		
T	Tert-Butyl Alcohol				0.010	0.009	0.009	0.009	0.009		0.009	0.009	2.872		
T	Dimethyl Sulfide		0.133	0.142	0.152	0.137	0.145	0.142	0.151	0.147	0.151	0.145	4.534		
T	Iodomethane				0.019	0.024	0.066	0.101	0.129	0.135	0.131	0.087	58.244		0.998
T	Methyl acetate					0.075	0.076	0.074	0.078	0.076	0.078	0.076	2.221		
T	Methylene Chloride			0.274	0.265	0.244	0.263	0.250	0.255	0.254	0.252	0.257	3.686		
T	Carbon Disulfide			0.888	0.922	0.801	0.873	0.816	0.854	0.813	0.802	0.846	5.346		
T	Acrylonitrile			0.027	0.035	0.033	0.038	0.038	0.039		0.044	0.036	14.671		
T	Methyl Tert Butyl Ether			0.534	0.543	0.521	0.586	0.579	0.585	0.560	0.546	0.557	4.455		
T	trans-1,2-Dichloroethene		0.389	0.395	0.364	0.352	0.381	0.367	0.372	0.364	0.358	0.371	3.858		
T	n-Hexane					0.265	0.280	0.270	0.286	0.275	0.279	0.276	2.732		
T	Diisopropyl ether			0.600	0.607	0.548	0.588	0.572	0.571		0.567	0.579	3.559		
T	Vinyl Acetate				0.256	0.243	0.270	0.275	0.266	0.271	0.275	0.265	4.509		
P	1,1-Dichloroethane		0.441	0.463	0.486	0.434	0.488	0.464	0.470	0.459	0.447	0.461	4.012		
T	Ethyl-Tert-Butyl ether			0.616	0.645	0.590	0.641	0.628	0.619		0.603	0.620	3.188		
T	2-Butanone					0.035	0.042	0.043	0.045	0.041	0.043	0.041	8.268		
T	Propionitrile			0.010	0.012	0.012	0.013	0.012	0.013		0.013	0.012	8.354		
T	2,2-Dichloropropane		0.471	0.462	0.520	0.476	0.503	0.494	0.497	0.483	0.470	0.486	3.839		
T	cis-1,2-Dichloroethene		0.299	0.298	0.291	0.267	0.295	0.282	0.289	0.283	0.277	0.287	3.685		
C	Chloroform	0.563	0.567	0.581	0.536	0.509	0.566	0.543	0.546	0.529	0.506	0.545	4.619		
T	1-Bromopropane			0.034	0.040	0.040	0.043	0.041	0.043	0.043	0.044	0.041	7.649		
T	Bromochloromethane		0.131	0.164	0.147	0.137	0.154	0.148	0.151	0.148	0.145	0.147	6.598		
T	Tetrahydrofuran			0.034	0.028	0.025	0.026	0.026	0.026		0.026	0.027	11.724		
S	Dibromofluoromethane			0.249	0.261	0.257	0.280	0.271	0.284	0.271	0.275	0.269	4.465		
T	1,1,1-Trichloroethane		0.492	0.537	0.515	0.496	0.545	0.525	0.533	0.515	0.499	0.517	3.660		
T	Cyclohexane			0.373	0.369	0.335	0.359	0.344	0.366	0.356	0.364	0.358	3.619		
T	1,1-Dichloropropene			0.414	0.399	0.369	0.403	0.395	0.399	0.392	0.382	0.394	3.488		
T	Tert-Amyl-Methyl ether			0.567	0.587	0.534	0.576	0.568	0.561		0.549	0.563	3.077		
T	Carbon Tetrachloride		0.444	0.456	0.462	0.441	0.481	0.465	0.474	0.462	0.448	0.4594	2.92173		
S	1,2-Dichloroethane-d4			0.241	0.309	0.276	0.312	0.295	0.301	0.284	0.286	0.288	7.93644		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.347	0.335	0.354	0.336	0.371	0.36	0.364	0.349	0.338	0.3505	3.65503		
T	Benzene		1.128	1.084	1.071	0.977	1.085	1.033	1.019	0.963	0.883	1.0269	7.39343		
T	Trichloroethene		0.285	0.275	0.276	0.251	0.283	0.273	0.279	0.273	0.27	0.2739	3.66126		
T	Methylcyclohexane					0.396	0.426	0.408	0.429	0.416	0.422	0.4161	2.94153		
C	1,2-Dichloropropane		0.239	0.222	0.233	0.207	0.238	0.226	0.233	0.231	0.229	0.2286	4.30096		
T	Bromodichloromethane		0.369	0.382	0.412	0.385	0.426	0.421	0.417	0.41	0.395	0.4018	4.93305		
T	1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.0011	14.5817		
T	Dibromomethane		0.141	0.13	0.137	0.128	0.141	0.134	0.137	0.136	0.133	0.1353	3.26799		
T	2-Chloroethyl Vinyl Ether				0.1	0.084	0.103	0.104	0.103	0.095	0.098	0.0983	7.09792		
T	4-Methyl-2-Pentanone					0.033	0.042	0.042	0.043	0.04	0.041	0.0401	8.66859		
T	cis-1,3-Dichloropropene		0.391	0.393	0.386	0.398	0.431	0.428	0.428	0.42	0.405	0.409	4.41527		

T	Dimethyl Disulfide					0.182	0.218	0.221	0.23	0.229	0.23	0.2183	8.49419	
I	Chlorobenzene-d5	ISTD												
S	Toluene-d8			1.282	1.295	1.228	1.385	1.333	1.378	1.289	1.278	1.3084	4.07746	
C	Toluene		1.653	1.696	1.678	1.507	1.647	1.554	1.545	1.418	1.27	1.552	8.98325	
T	Ethyl Methacrylate			0.251	0.293	0.268	0.314	0.314	0.327	0.309	0.31	0.2981	8.76897	
T	Paraldehyde											0	0	
T	trans-1,3-Dichloropropene			0.472	0.51	0.466	0.561	0.552	0.553	0.533	0.515	0.5201	7.01006	
T	1,1,2-Trichloroethane		0.261	0.241	0.242	0.222	0.254	0.249	0.252	0.243	0.241	0.2449	4.54209	
T	2-Hexanone					0.042	0.053	0.053	0.056	0.051	0.053	0.0515	9.50479	
T	1,3-Dichloropropane		0.355	0.442	0.465	0.42	0.468	0.454	0.457	0.437	0.428	0.436	7.93348	
T	Tetrachloroethene		0.355	0.337	0.336	0.306	0.333	0.325	0.337	0.334	0.33	0.3325	3.83886	
T	Dibromochloromethane		0.349	0.336	0.338	0.328	0.373	0.372	0.383	0.373	0.367	0.3576	5.60043	
T	1,2-Dibromoethane		0.233	0.234	0.234	0.227	0.259	0.254	0.258	0.251	0.247	0.2441	5.04151	
T	1-Chlorohexane		0.532	0.584	0.505	0.502	0.54	0.52	0.547	0.521	0.516	0.5298	4.7826	
P	Chlorobenzene		1.029	1.173	1.09	1.007	1.099	1.037	1.043	1.002	0.939	1.0466	6.41465	
T	1,1,1,2-Tetrachloroethane		0.392	0.399	0.403	0.357	0.431	0.414	0.424	0.417	0.413	0.4055	5.39495	
C	Ethylbenzene		0.6	0.594	0.59	0.532	0.586	0.559	0.57	0.564	0.558	0.5726	3.7769	
T	m-,p-Xylene		0.744	0.696	0.691	0.643	0.713	0.67	0.673	0.634	0.581	0.6716	7.12586	
T	o-Xylene			0.691	0.651	0.614	0.692	0.658	0.667	0.65	0.63	0.6567	4.11758	
T	Styrene		1.05	1.06	1.096	1.043	1.159	1.124	1.12	1.061	0.98	1.077	4.96781	
P	Bromoform			0.177	0.21	0.181	0.226	0.221	0.232	0.227	0.223	0.2121	10.0546	
T	Isopropylbenzene		1.853	1.891	1.871	1.708	1.897	1.781	1.75	1.573	1.377	1.7444	9.92447	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.426	0.492	0.503	0.486	0.543	0.51	0.527	0.513	0.514	0.5018	6.60291	
S	p-Bromofluorobenzene				1.054	0.976	1.071	1.016	1.053	1.031	1.046	1.0352	3.05136	
T	1,2,3-Trichloropropane			0.119	0.158	0.161	0.162	0.155	0.162	0.16	0.158	0.1545	9.40789	
T	trans-1,4-Dichloro-2-Butene			0.085	0.118	0.12	0.149	0.151	0.16	0.159	0.161	0.1376	19.9543	1.000
T	n-Propylbenzene		4.139	4.239	4.243	4.051	4.241	3.953	3.882	3.419	2.935	3.9003	11.4439	
T	Bromobenzene	0.796	0.708	0.843	0.837	0.778	0.84	0.798	0.817	0.803	0.803	0.8022	4.93253	
T	1,3,5-Trimethylbenzene		2.941	2.93	2.941	2.839	3.053	2.882	2.871	2.689	2.423	2.8411	6.50391	
T	2-Chlorotoluene		2.917	2.935	2.929	2.712	2.861	2.795	2.682	2.533	2.145	2.7231	9.37022	
T	4-Chlorotoluene		2.681	2.596	2.581	2.474	2.625	2.326	2.447	2.286	2.121	2.4597	7.49558	
T	a-Methylstyrene					1.257	1.406	1.34	1.384	1.35	1.351	1.3479	3.77654	
T	tert-Butylbenzene			0.587	0.555	0.53	0.571	0.533	0.552	0.561	0.558	0.5558	3.34508	
T	1,2,4-Trimethylbenzene		2.955	3.168	3.127	2.936	3.12	2.914	2.937	2.709	2.427	2.9214	7.97314	
T	sec-Butylbenzene			3.701	3.536	3.487	3.607	3.34	3.332	3.045	2.69	3.3424	9.93324	
T	p-Isopropyltoluene			3.112	3.062	2.903	2.988	2.813	2.809	2.634	2.382	2.8379	8.45265	
T	1,3-Dichlorobenzene		1.484	1.617	1.627	1.53	1.605	1.531	1.549	1.51	1.45	1.5448	3.95774	
T	1,4-Dichlorobenzene	1.713	1.524	1.672	1.594	1.503	1.6	1.511	1.535	1.49	1.431	1.5574	5.56562	
T	n-Butylbenzene			3.143	2.96	2.895	3.002	2.791	2.792	2.571	2.292	2.8056	9.55812	
T	1,2-Dichlorobenzene	1.59	1.307	1.415	1.41	1.322	1.404	1.333	1.356	1.315	1.286	1.3739	6.4618	
T	1,2-Dibromo-3-Chloropropane				0.085	0.103	0.102	0.103	0.106	0.104	0.103	0.1007	6.86771	
T	1,2,4-Trichlorobenzene		1.074	1.01	1.028	0.982	1.069	1.013	1.036	1.029	1.002	1.0269	2.90829	
T	Hexachlorobutadiene		0.516	0.476	0.483	0.447	0.487	0.459	0.48	0.485	0.485	0.4798	4.00465	
T	Naphthalene		1.594	1.457	1.574	1.455	1.63	1.552	1.564	1.485	1.422	1.5258	4.75891	
T	1,2,3-Trichlorobenzene	0.913	0.934	0.905	0.862	0.805	0.877	0.824	0.862	0.846	0.835	0.8664	4.7474	

Tue May 17 11:49:41 2016

Calibration Table Report
Method: A9FOOWT.M
Title: A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Calibration: Thu May 19 08:54:31 2016
Curve: WG569079
Calibration Files

	Compound	5 8M412324.D	20 8M412323.D	50 8M412322.D	100 8M412321.D	200 8M412325.D	300 8M412326.D	400 8M412327.D	500 8M412328.D	Avg	%RSD
I	Fluorobenzene	ISTD									
T	Acetonitrile		0.009	0.010	0.010	0.010	0.010	0.010	0.010	0.010	2.076
T	3-Chloro-1-propene	0.306	0.330	0.335	0.331	0.324	0.307	0.304	0.304	0.318	4.307
T	2-Chloro-1,3-butadiene	0.368	0.420	0.420	0.419	0.419	0.392	0.389	0.387	0.402	5.022
T	Ethyl Acetate	0.080	0.096	0.097	0.100	0.099	0.098	0.100	0.095	0.096	6.751
T	Methacrylonitrile	0.041	0.054	0.055	0.055	0.055	0.054	0.055	0.052	0.053	9.227
T	Isobutyl Alcohol			0.003	0.003	0.003	0.003	0.003	0.003	0.003	3.599
T	1-Butanol									0.000	0.000
T	Methyl methacrylate	0.089	0.106	0.106	0.105	0.106	0.105	0.107	0.102	0.103	5.868
T	2-Nitropropane		0.041	0.042	0.043	0.046	0.047	0.048	0.046	0.045	5.992
I	Chlorobenzene-d5	ISTD									
I	1,4-Dichlorobenzene-d4	ISTD									
T	Cyclohexanone		0.011	0.010	0.010	0.009	0.010	0.011	0.010	0.010	4.971

Thu May 19 09:04:52 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060615 Run Date: 05/13/2016 Sample ID: WG568561-12
Instrument ID: HPMS8 Run Time: 19:17 Method: 8260B
File ID: 8M412232 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG568561 Cal ID: HPMS8 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.1	ug/L	0.513	5.70	20	
1,1-Dichloroethene	CCC	50.0	46.0	ug/L	0.372	8.10	20	
1,2-Dichloropropane	CCC	50.0	51.0	ug/L	0.233	1.90	20	
Ethylbenzene	CCC	50.0	48.2	ug/L	0.552	3.60	20	
Toluene	CCC	50.0	49.1	ug/L	1.52	1.80	20	
Vinyl Chloride	CCC	50.0	52.4	ug/L	0.304	4.80	20	
Bromoform	SPCC	50.0	48.2	ug/L	0.205	3.60	20	
Chlorobenzene	SPCC	50.0	50.2	ug/L	1.05	0.400	20	
Chloromethane	SPCC	50.0	50.7	ug/L	0.248	1.40	20	
1,1-Dichloroethane	SPCC	50.0	46.7	ug/L	0.431	6.60	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.6	ug/L	0.498	0.800	20	
Acetone		50.0	57.5	ug/L	0.0324	15.1	20	
Benzene		50.0	48.5	ug/L	0.997	3.00	20	
Bromobenzene		50.0	49.5	ug/L	0.794	1.10	20	
Bromochloromethane		50.0	47.5	ug/L	0.140	4.90	20	
Bromodichloromethane		50.0	48.3	ug/L	0.388	3.40	20	
Bromomethane		50.0	46.4	ug/L	0.162	7.20	20	
2-Butanone		50.0	53.0	ug/L	0.0438	6.00	20	
n-Butylbenzene		50.0	49.7	ug/L	2.79	0.700	20	
sec-Butylbenzene		50.0	51.3	ug/L	3.43	2.70	20	
tert-Butylbenzene		50.0	50.9	ug/L	0.566	1.90	20	
Carbon Disulfide		50.0	42.3	ug/L	0.716	15.4	20	
Carbon Tetrachloride		50.0	46.2	ug/L	0.425	7.50	20	
Dibromochloromethane		50.0	49.7	ug/L	0.355	0.700	20	
Chloroethane		50.0	53.3	ug/L	0.170	6.70	20	
2-Chlorotoluene		50.0	51.6	ug/L	2.81	3.10	20	
4-Chlorotoluene		50.0	48.3	ug/L	2.37	3.50	20	
1,2-Dibromo-3-Chloropropane		50.0	48.5	ug/L	0.0977	3.00	20	
1,2-Dibromoethane		50.0	51.1	ug/L	0.250	2.20	20	
Dibromomethane		50.0	45.8	ug/L	0.124	8.40	20	
1,2-Dichlorobenzene		50.0	50.5	ug/L	1.39	1.00	20	
1,3-Dichlorobenzene		50.0	50.9	ug/L	1.57	1.80	20	
1,4-Dichlorobenzene		50.0	50.5	ug/L	1.57	0.900	20	
Dichlorodifluoromethane		50.0	54.2	ug/L	0.455	8.40	20	
1,2-Dichloroethane		50.0	49.0	ug/L	0.344	2.00	20	
cis-1,2-Dichloroethene		50.0	48.9	ug/L	0.281	2.20	20	
trans-1,2-Dichloroethene		50.0	48.1	ug/L	0.357	3.90	20	
1,3-Dichloropropane		50.0	53.7	ug/L	0.468	7.30	20	
2,2-Dichloropropane		50.0	47.9	ug/L	0.466	4.20	20	
cis-1,3-Dichloropropene		50.0	53.9	ug/L	0.441	7.80	20	
trans-1,3-Dichloropropene		50.0	50.7	ug/L	0.527	1.30	20	
1,1-Dichloropropene		50.0	47.5	ug/L	0.374	5.10	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4810858
Report generated 06/20/2016 13:19

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060615 Run Date: 05/13/2016 Sample ID: WG568561-12
Instrument ID: HPMS8 Run Time: 19:17 Method: 8260B
File ID: 8M412232 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG568561 Cal ID: HPMS8 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	53.6	ug/L	0.0552	7.20	20	
Hexachlorobutadiene		50.0	52.1	ug/L	0.500	4.20	20	
Isopropylbenzene		50.0	51.1	ug/L	1.78	2.20	20	
p-Isopropyltoluene		50.0	50.1	ug/L	2.85	0.300	20	
4-Methyl-2-Pentanone		50.0	51.9	ug/L	0.0416	3.70	20	
Methylene Chloride		50.0	48.4	ug/L	0.249	3.10	20	
Naphthalene		50.0	45.8	ug/L	1.40	8.40	20	
n-Propylbenzene		50.0	51.9	ug/L	4.05	3.80	20	
Styrene		50.0	51.5	ug/L	1.11	3.00	20	
1,1,1,2-Tetrachloroethane		50.0	49.4	ug/L	0.400	1.20	20	
Tetrachloroethene		50.0	47.8	ug/L	0.318	4.40	20	
1,2,3-Trichlorobenzene		50.0	47.7	ug/L	0.827	4.50	20	
1,2,4-Trichlorobenzene		50.0	50.1	ug/L	1.03	0.200	20	
1,1,1-Trichloroethane		50.0	47.6	ug/L	0.492	4.80	20	
1,1,2-Trichloroethane		50.0	49.0	ug/L	0.240	1.90	20	
Trichloroethene		50.0	51.1	ug/L	0.280	2.10	20	
Trichlorofluoromethane		50.0	46.9	ug/L	0.507	6.10	20	
1,2,3-Trichloropropane		50.0	50.1	ug/L	0.155	0.200	20	
1,2,4-Trimethylbenzene		50.0	49.7	ug/L	2.90	0.700	20	
1,3,5-Trimethylbenzene		50.0	51.6	ug/L	2.93	3.30	20	
o-Xylene		50.0	50.6	ug/L	0.664	1.10	20	
m-,p-Xylene		100	101	ug/L	0.679	1.10	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4810858
Report generated 06/20/2016 13:19

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060615 Run Date: 06/15/2016 Sample ID: WG572735-02
Instrument ID: HPMS8 Run Time: 09:29 Method: 8260B
File ID: 8M413003 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG572737 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	52.9	ug/L	0.576	5.76	20	
1,1-Dichloroethene	CCC	50.0	51.9	ug/L	0.420	3.89	20	
1,2-Dichloropropane	CCC	50.0	48.5	ug/L	0.222	2.97	20	
Ethylbenzene	CCC	50.0	48.3	ug/L	0.553	3.36	20	
Toluene	CCC	50.0	49.2	ug/L	1.53	1.70	20	
Vinyl Chloride	CCC	50.0	54.2	ug/L	0.315	8.36	20	
Bromoform	SPCC	50.0	53.0	ug/L	0.225	6.02	20	
Chlorobenzene	SPCC	50.0	49.4	ug/L	1.03	1.22	20	
Chloromethane	SPCC	50.0	48.4	ug/L	0.237	3.28	20	
1,1-Dichloroethane	SPCC	50.0	51.1	ug/L	0.472	2.22	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	45.2	ug/L	0.454	9.55	20	
Xylenes		150	149	ug/L	0.662	0.449	20	
Acetone		50.0	56.4	ug/L	0.0317	12.8	20	
Benzene		50.0	50.9	ug/L	1.04	1.75	20	
Bromobenzene		50.0	48.6	ug/L	0.779	2.89	20	
Bromochloromethane		50.0	52.5	ug/L	0.155	5.07	20	
Bromodichloromethane		50.0	54.1	ug/L	0.435	8.30	20	
Bromomethane		50.0	38.6	ug/L	0.134	22.9	20	*
2-Butanone		50.0	50.0	ug/L	0.0413	0.0610	20	
n-Butylbenzene		50.0	47.3	ug/L	2.65	5.42	20	
sec-Butylbenzene		50.0	47.3	ug/L	3.16	5.46	20	
tert-Butylbenzene		50.0	46.7	ug/L	0.519	6.67	20	
Carbon Disulfide		50.0	51.5	ug/L	0.871	2.99	20	
Carbon Tetrachloride		50.0	56.0	ug/L	0.514	11.9	20	
Dibromochloromethane		50.0	52.2	ug/L	0.373	4.37	20	
Chloroethane		50.0	50.2	ug/L	0.160	0.381	20	
2-Chlorotoluene		50.0	43.7	ug/L	2.38	12.5	20	
4-Chlorotoluene		50.0	51.6	ug/L	2.54	3.26	20	
1,2-Dibromo-3-Chloropropane		50.0	46.2	ug/L	0.0931	7.57	20	
1,2-Dibromoethane		50.0	49.4	ug/L	0.241	1.17	20	
Dibromomethane		50.0	50.0	ug/L	0.135	0.0556	20	
1,2-Dichlorobenzene		50.0	47.1	ug/L	1.29	5.79	20	
1,3-Dichlorobenzene		50.0	49.2	ug/L	1.52	1.67	20	
1,4-Dichlorobenzene		50.0	47.7	ug/L	1.49	4.58	20	
Dichlorodifluoromethane		50.0	54.7	ug/L	0.459	9.40	20	
1,2-Dichloroethane		50.0	55.6	ug/L	0.390	11.2	20	
cis-1,2-Dichloroethene		50.0	51.1	ug/L	0.294	2.30	20	
trans-1,2-Dichloroethene		50.0	50.8	ug/L	0.378	1.67	20	
1,3-Dichloropropane		50.0	48.9	ug/L	0.426	2.29	20	
2,2-Dichloropropane		50.0	58.2	ug/L	0.566	16.4	20	
cis-1,3-Dichloropropene		50.0	53.5	ug/L	0.438	7.09	20	
trans-1,3-Dichloropropene		50.0	51.9	ug/L	0.540	3.77	20	

CCV - Modified 03/05/2008
PDF File ID: 4810860
Report generated 06/20/2016 13:19

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060615 Run Date: 06/15/2016 Sample ID: WG572735-02
Instrument ID: HPMS8 Run Time: 09:29 Method: 8260B
File ID: 8M413003 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG572737 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	53.0	ug/L	0.418	6.05	20	
2-Hexanone		50.0	50.3	ug/L	0.0518	0.596	20	
Hexachlorobutadiene		50.0	50.8	ug/L	0.488	1.64	20	
Isopropylbenzene		50.0	51.1	ug/L	1.78	2.16	20	
p-Isopropyltoluene		50.0	47.9	ug/L	2.72	4.24	20	
4-Methyl-2-Pentanone		50.0	51.2	ug/L	0.0411	2.32	20	
Methylene Chloride		50.0	49.5	ug/L	0.255	1.01	20	
Naphthalene		50.0	46.9	ug/L	1.43	6.24	20	
n-Propylbenzene		50.0	47.7	ug/L	3.72	4.62	20	
Styrene		50.0	51.6	ug/L	1.11	3.15	20	
1,1,1,2-Tetrachloroethane		50.0	51.8	ug/L	0.420	3.61	20	
Tetrachloroethene		50.0	51.9	ug/L	0.345	3.86	20	
1,2,3-Trichlorobenzene		50.0	47.2	ug/L	0.819	5.51	20	
1,2,4-Trichlorobenzene		50.0	48.5	ug/L	0.996	3.02	20	
1,1,1-Trichloroethane		50.0	55.5	ug/L	0.575	11.1	20	
1,1,2-Trichloroethane		50.0	47.8	ug/L	0.234	4.49	20	
Trichloroethene		50.0	52.4	ug/L	0.287	4.80	20	
Trichlorofluoromethane		50.0	55.4	ug/L	0.599	10.9	20	
1,2,3-Trichloropropane		50.0	47.3	ug/L	0.146	5.43	20	
1,2,4-Trimethylbenzene		50.0	48.0	ug/L	2.80	4.05	20	
1,3,5-Trimethylbenzene		50.0	48.3	ug/L	2.74	3.39	20	
o-Xylene		50.0	49.9	ug/L	0.656	0.182	20	
m-,p-Xylene		100	99.4	ug/L	0.668	0.583	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4810860
Report generated 06/20/2016 13:19

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060615
Instrument ID: HPMS8
Workgroup (AAB#): WG572737

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	288225	539116	778260
Upper Limit	NA	NA	576450	1078232	1556520
Lower Limit	NA	NA	144113	269558	389130
L16060615-01	1.00	01	283407	512337	683419
L16060615-02	1.00	01	283174	516723	668654
L16060615-03	1.00	01	286537	519090	682795
L16060615-04	1.00	01	288805	519373	691525
L16060615-05	1.00	01	307596	560361	732888
WG572737-01	1.00	01	330295	588241	780700
WG572737-02	1.00	01	327915	583746	797707
WG572737-03	1.00	01	329286	592812	790550

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4810861
Report generated 06/20/2016 13:19

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060615
Instrument ID: HPMS8
Workgroup (AAB#): WG572737

ICAL CCV Number: WG568561-08
CAL ID: HPMS8-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	17.6	14.58	10.71
Upper Limit	NA	NA	18.1	15.08	11.21
Lower Limit	NA	NA	17.1	14.08	10.21
L16060615-01	1.00	01	17.6	14.57	10.71
L16060615-02	1.00	01	17.6	14.58	10.71
L16060615-03	1.00	01	17.6	14.57	10.71
L16060615-04	1.00	01	17.6	14.57	10.71
L16060615-05	1.00	01	17.6	14.58	10.71
WG572737-01	1.00	01	17.6	14.58	10.71
WG572737-02	1.00	01	17.6	14.57	10.71
WG572737-03	1.00	01	17.6	14.58	10.71

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4810863
Report generated: 06/20/2016 13:19

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413025.D Vial: 25
Acq On : 15 Jun 2016 20:07 Operator: TMB
Sample : L16060615-01 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 13:26:45 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	683419	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	512337	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	283407	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	206760	28.1584 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 112.64%		
43) 1,2-Dichloroethane-d4	10.31	65	230445	29.2693 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 117.08%		
58) Toluene-d8	12.68	98	718279	26.7881 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 107.16%		
80) p-Bromofluorobenzene	16.08	95	296874	25.2980 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.20%		

Target Compounds					Qvalue
3) Chloromethane	3.61	50	961	0.1437 ug/L	89

(#) = qualifier out of range (m) = manual integration
8M413025.D 8260WT.M Thu Jun 16 13:26:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413025.D Vial: 25
Acq On : 15 Jun 2016 20:07 Operator: TMB
Sample : L16060615-01 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 13:26 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

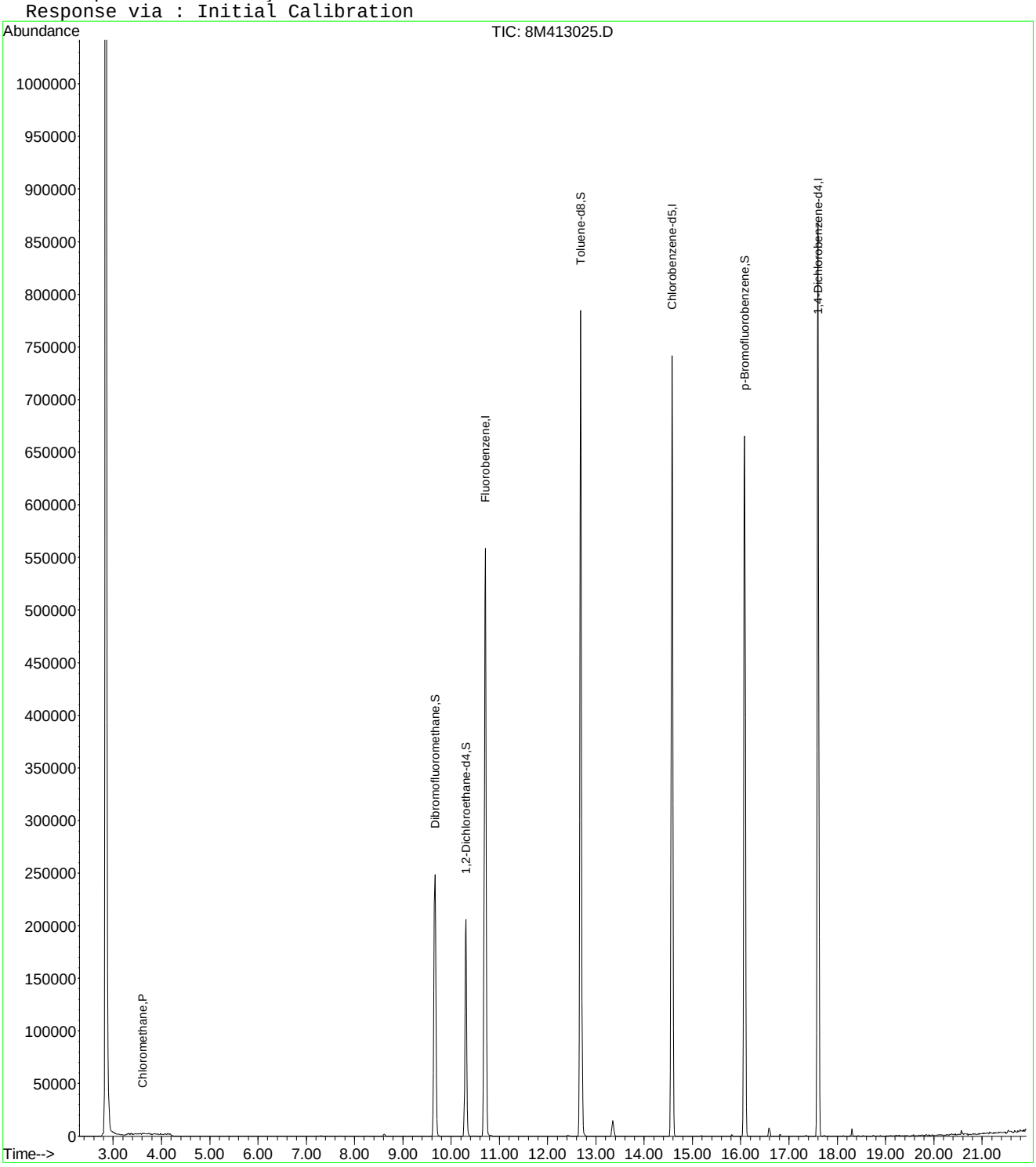

8M413025.D 8260WT.M Thu Jun 16 13:26:49 2016 Page 2

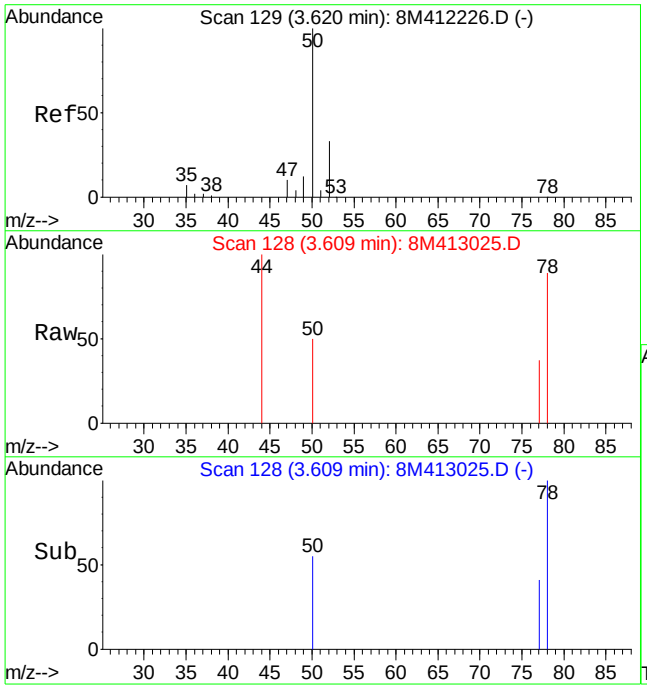

#3
Chloromethane
Concen: 0.14 ug/L
RT: 3.61 min Scan# 128
Delta R.T. -0.01 min
Lab File: 8M413025.D
Acq: 15 Jun 2016 20:07

Tgt Ion: 50 Resp: 961

Ion	Ratio	Lower	Upper
50	100		
52	26.7	19.9	46.3

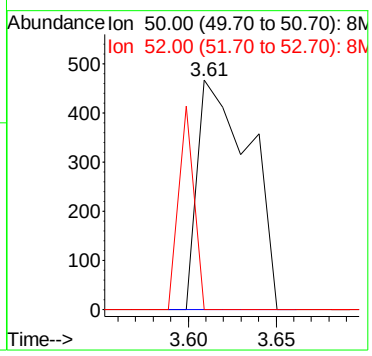

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413024.D Vial: 24
Acq On : 15 Jun 2016 19:38 Operator: TMB
Sample : L16060615-02 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 13:26:39 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	668654	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	516723	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	283174	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	199664	27.7924 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.16%		
43) 1,2-Dichloroethane-d4	10.31	65	223662	29.0351 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 116.16%		
58) Toluene-d8	12.68	98	699222	25.8560 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.44%		
80) p-Bromofluorobenzene	16.07	95	294688	25.1324 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.52%		

Target Compounds

					Qvalue
3) Chloromethane	3.61	50	1231	0.1881 ug/L #	65
13) Acetone	6.22	43	1105	1.4688 ug/L #	50
28) Ethyl-Tert-Butyl ether	8.62	59	2054	0.1238 ug/L #	37

(#) = qualifier out of range (m) = manual integration
8M413024.D 8260WT.M Thu Jun 16 13:26:42 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413024.D Vial: 24
Acq On : 15 Jun 2016 19:38 Operator: TMB
Sample : L16060615-02 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 13:26 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

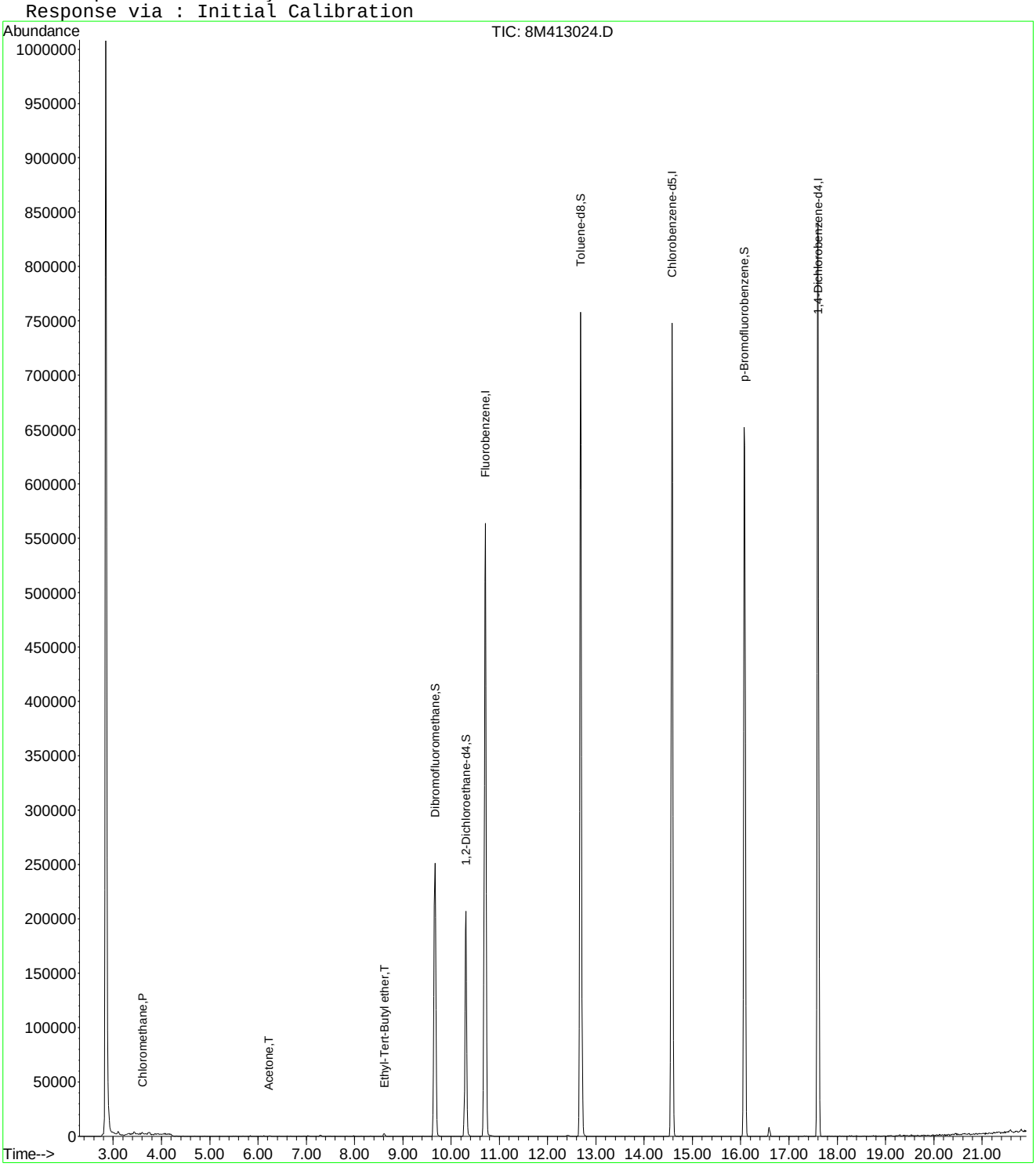

8M413024.D 8260WT.M Thu Jun 16 13:26:43 2016 Page 2

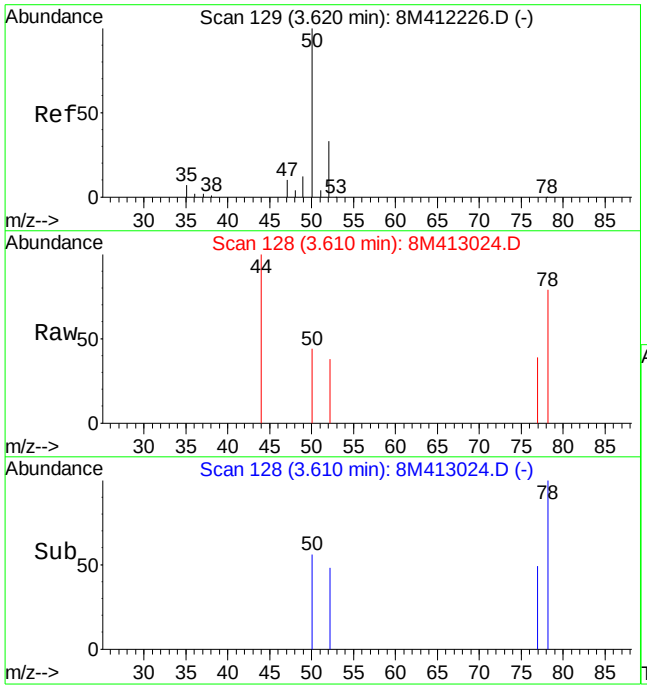

#3
Chloromethane
Concen: 0.19 ug/L
RT: 3.61 min Scan# 128
Delta R.T. -0.01 min
Lab File: 8M413024.D
Acq: 15 Jun 2016 19:38

Tgt Ion: 50 Resp: 1231

Ion	Ratio	Lower	Upper
50	100		
52	52.7	19.9	46.3#

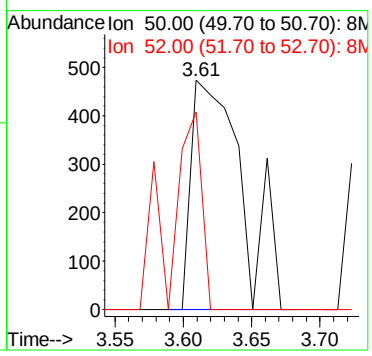

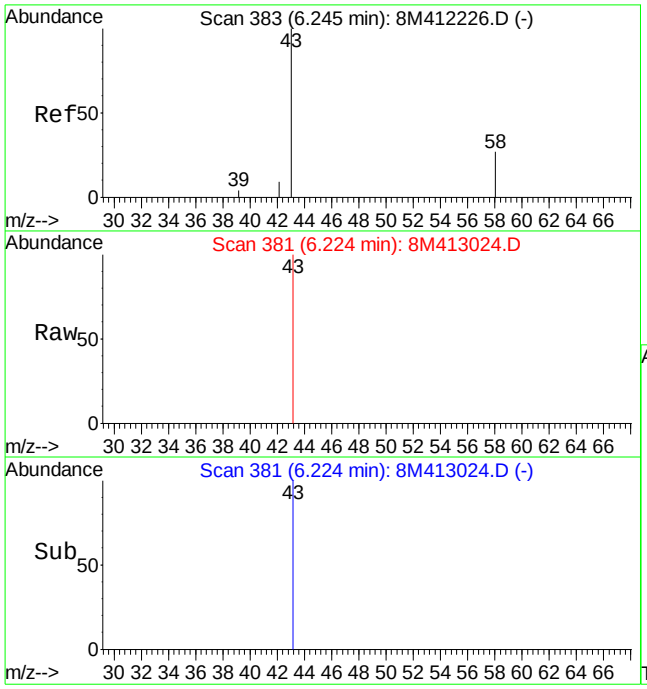

#13
Acetone
Concen: 1.47 ug/L
RT: 6.22 min Scan# 381
Delta R.T. -0.02 min
Lab File: 8M413024.D
Acq: 15 Jun 2016 19:38

Tgt Ion: 43 Resp: 1105

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.2	35.4#

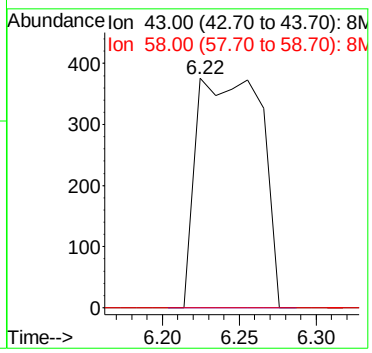

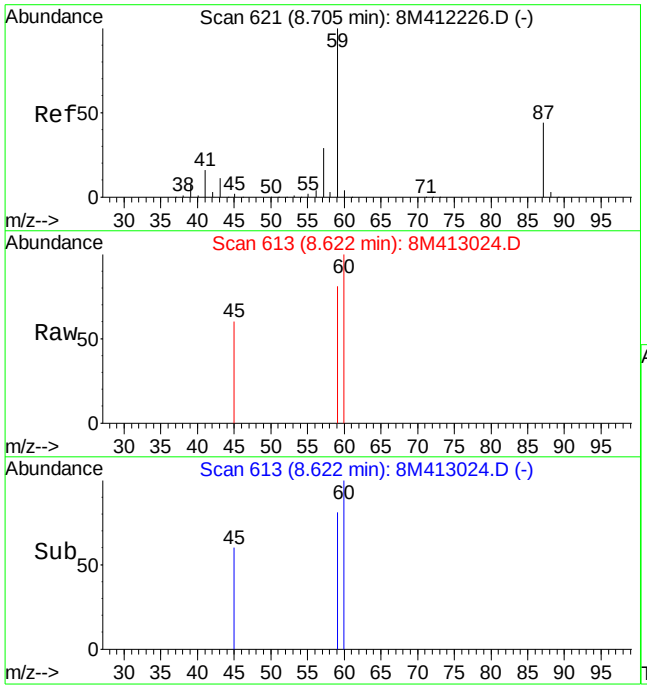

#28
Ethyl-Tert-Butyl ether
Concen: 0.12 ug/L
RT: 8.62 min Scan# 613
Delta R.T. -0.08 min
Lab File: 8M413024.D
Acq: 15 Jun 2016 19:38

Tgt Ion: 59 Resp: 2054

Ion	Ratio	Lower	Upper
59	100		
87	0.0	26.8	62.4#
57	0.0	17.4	40.6#

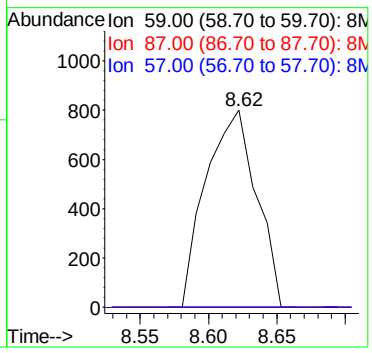

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413023.D Vial: 23
Acq On : 15 Jun 2016 19:09 Operator: TMB
Sample : L16060615-03 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 13:26:33 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	682795	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	519090	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	286537	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	206817	28.1919 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 112.76%		
43) 1,2-Dichloroethane-d4	10.31	65	227860	28.9674 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 115.88%		
58) Toluene-d8	12.68	98	709666	26.1226 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.48%		
80) p-Bromofluorobenzene	16.07	95	296656	25.0033 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.00%		

Target Compounds					Qvalue
3) Chloromethane	3.63	50	1492	0.2233 ug/L	99
13) Acetone	6.23	43	1298	1.6896 ug/L #	50

(#) = qualifier out of range (m) = manual integration
8M413023.D 8260WT.M Thu Jun 16 13:26:37 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413023.D Vial: 23
Acq On : 15 Jun 2016 19:09 Operator: TMB
Sample : L16060615-03 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 13:26 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

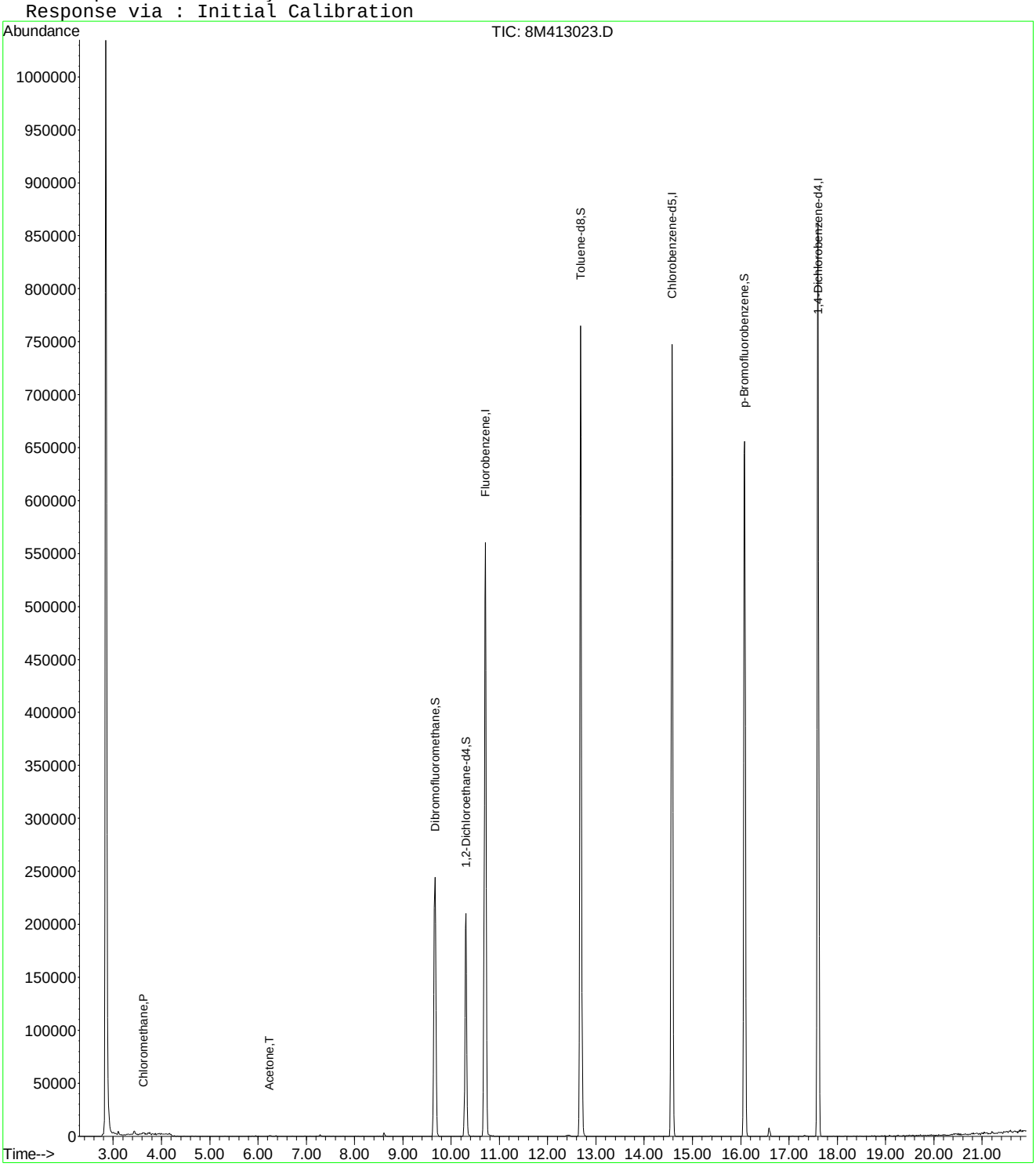

8M413023.D 8260WT.M Thu Jun 16 13:26:37 2016 Page 2

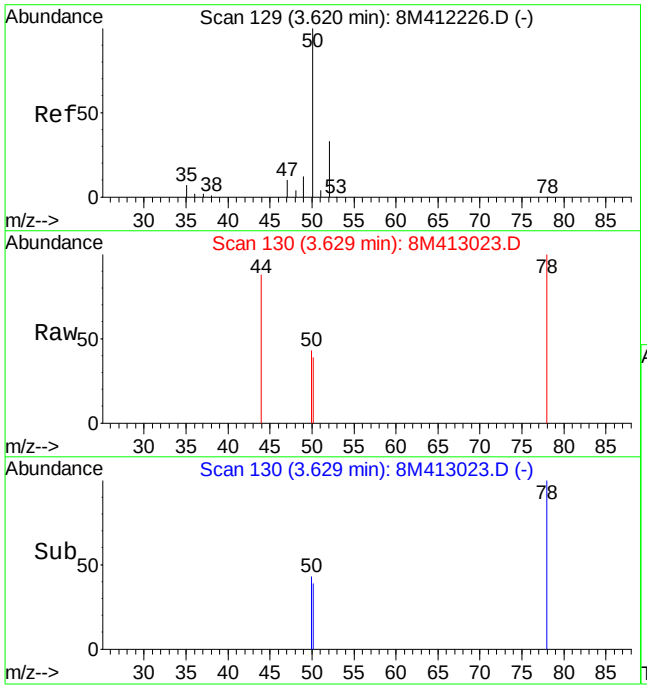

#3
Chloromethane
Concen: 0.22 ug/L
RT: 3.63 min Scan# 130
Delta R.T. 0.01 min
Lab File: 8M413023.D
Acq: 15 Jun 2016 19:09

Tgt Ion: 50 Resp: 1492

Ion	Ratio	Lower	Upper
50	100		
52	32.4	19.9	46.3

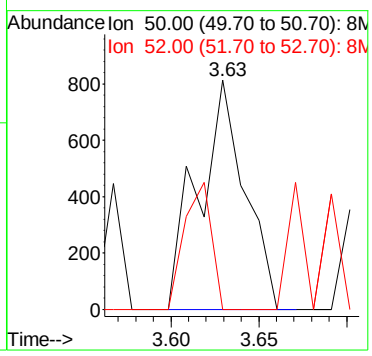

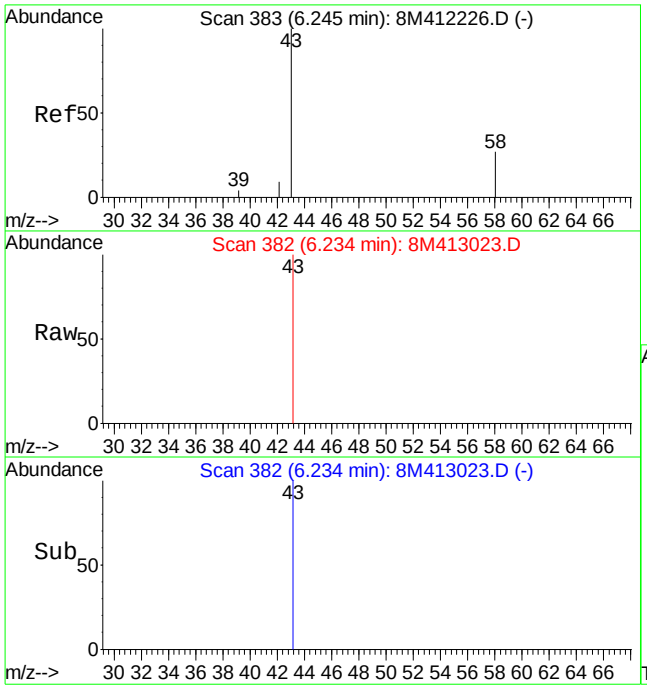

#13
Acetone
Concen: 1.69 ug/L
RT: 6.23 min Scan# 382
Delta R.T. -0.01 min
Lab File: 8M413023.D
Acq: 15 Jun 2016 19:09

Tgt Ion: 43 Resp: 1298

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.2	35.4#

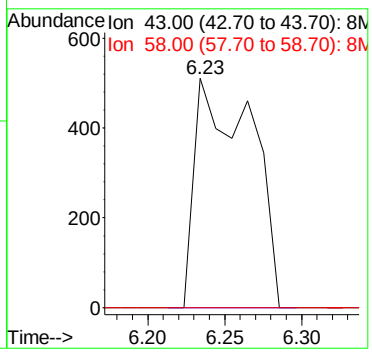

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413022.D Vial: 22
Acq On : 15 Jun 2016 18:40 Operator: TMB
Sample : L16060615-04 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 13:26:27 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	691525	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	519373	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	288805	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	207770	27.9642 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.84%		
43) 1,2-Dichloroethane-d4	10.30	65	229057	28.7520 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 115.00%		
58) Toluene-d8	12.68	98	707388	26.0245 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.08%		
80) p-Bromofluorobenzene	16.08	95	296637	24.8054 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.24%		

Target Compounds					Qvalue
3) Chloromethane	3.61	50	910	0.1345 ug/L	84
13) Acetone	6.23	43	12002	15.4261 ug/L	94
19) Methylene Chloride	7.24	84	3801	0.5341 ug/L	85
29) 2-Butanone	8.91	43	807	0.7060 ug/L #	47
47) Trichloroethene	11.20	130	4792	0.6325 ug/L	91

(#) = qualifier out of range (m) = manual integration
8M413022.D 8260WT.M Thu Jun 16 13:26:30 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413022.D Vial: 22
Acq On : 15 Jun 2016 18:40 Operator: TMB
Sample : L16060615-04 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 13:26 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

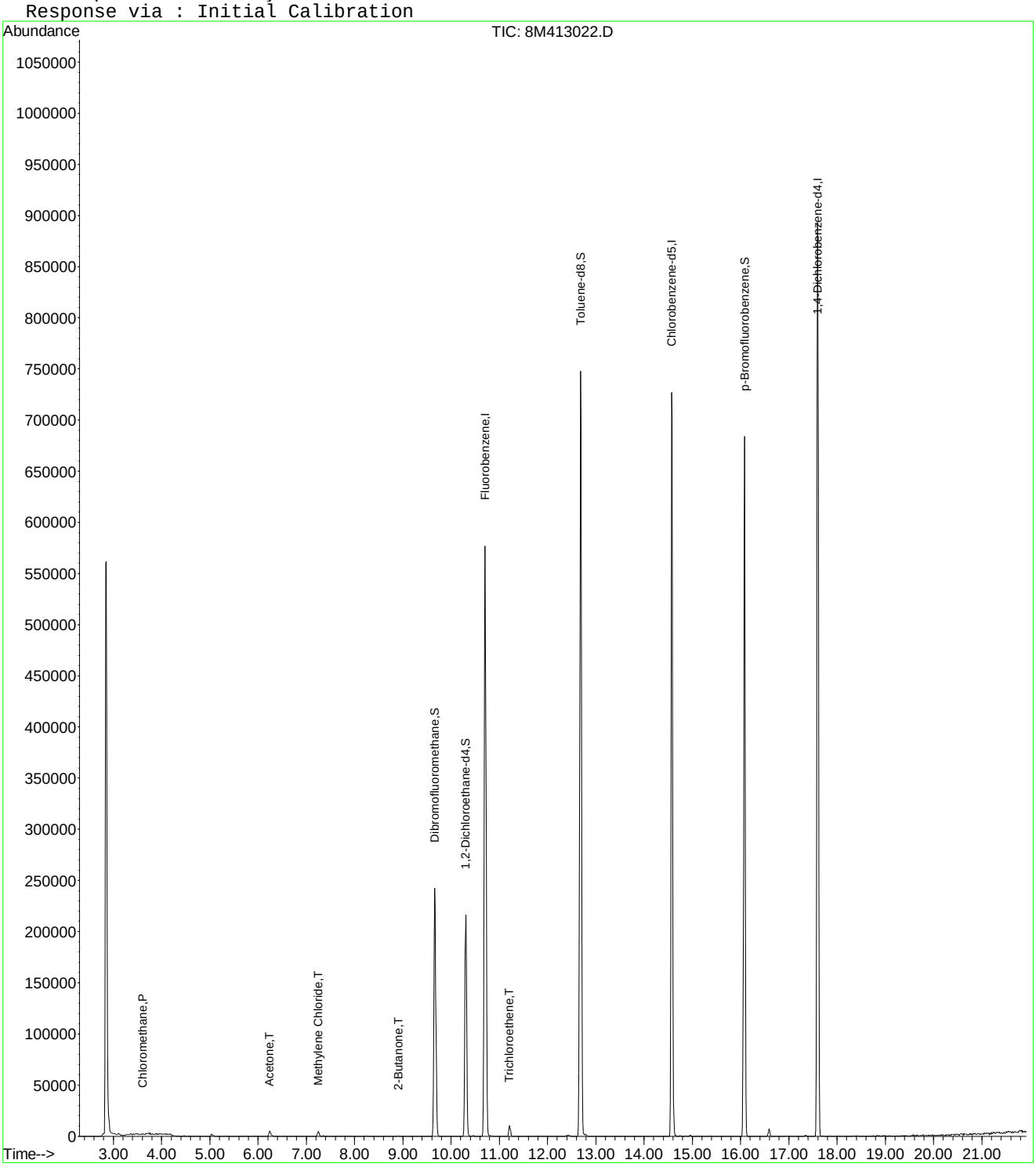

8M413022.D 8260WT.M Thu Jun 16 13:26:31 2016 Page 2

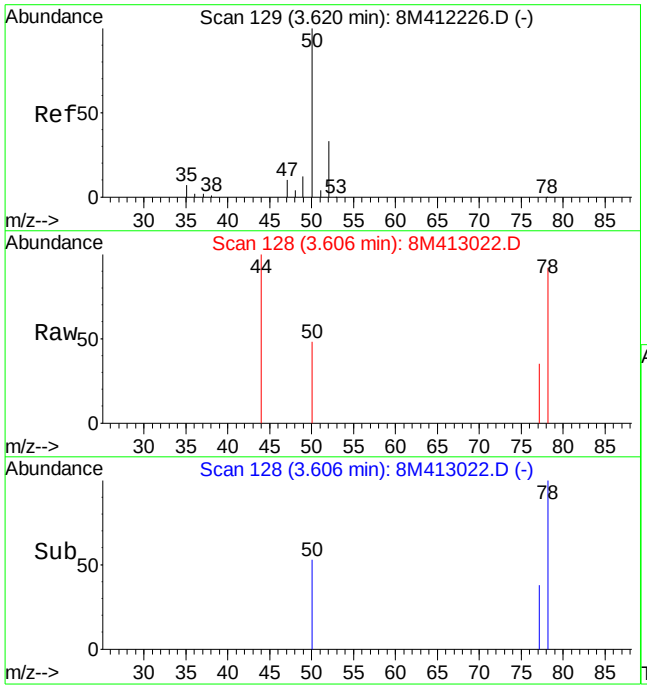

#3
Chloromethane
Concen: 0.13 ug/L
RT: 3.61 min Scan# 128
Delta R.T. -0.01 min
Lab File: 8M413022.D
Acq: 15 Jun 2016 18:40

Tgt Ion: 50 Resp: 910

Ion	Ratio	Lower	Upper
50	100		
52	23.8	19.9	46.3

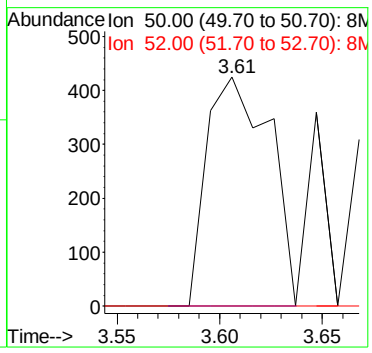

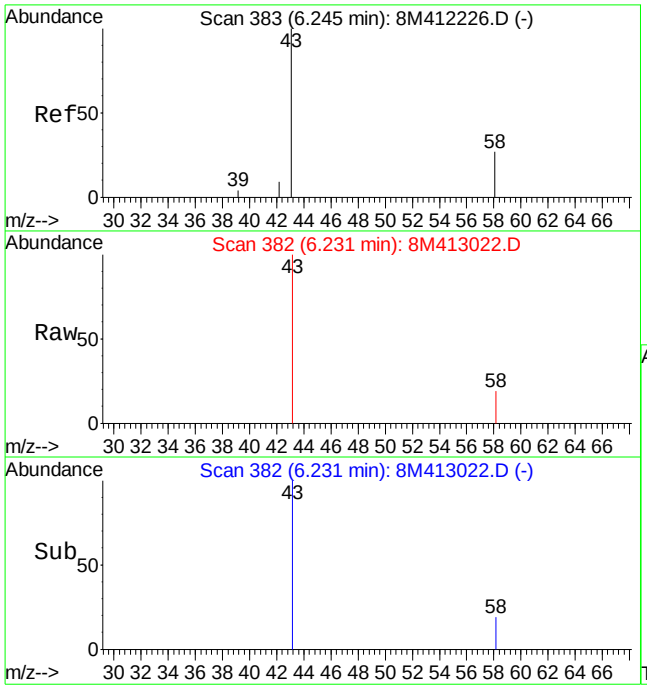

#13
Acetone
Concen: 15.43 ug/L
RT: 6.23 min Scan# 382
Delta R.T. -0.01 min
Lab File: 8M413022.D
Acq: 15 Jun 2016 18:40

Tgt Ion: 43 Resp: 12002

Ion	Ratio	Lower	Upper
43	100		
58	22.5	15.2	35.4

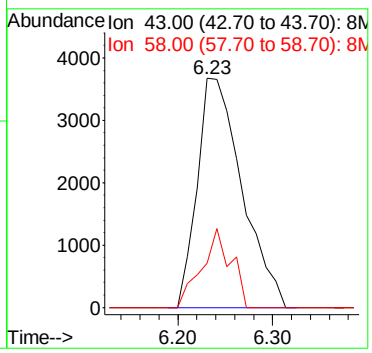

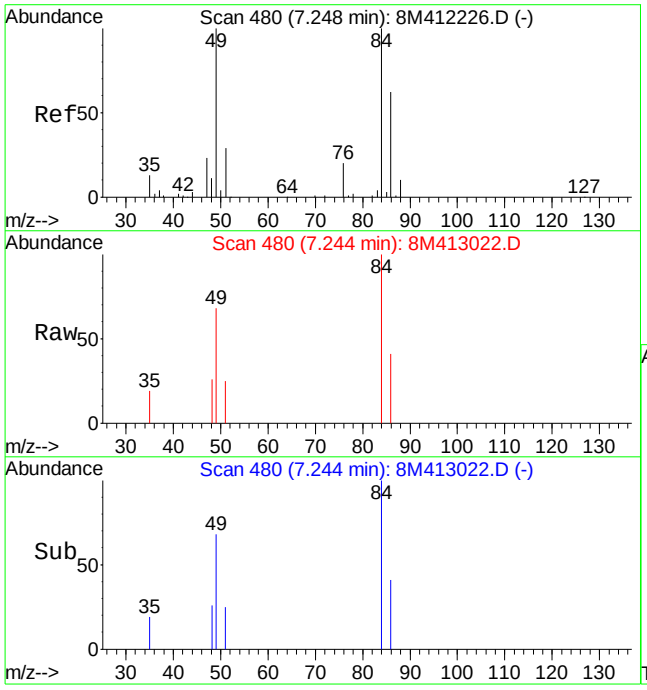

#19
Methylene Chloride
Concen: 0.53 ug/L
RT: 7.24 min Scan# 480
Delta R.T. -0.00 min
Lab File: 8M413022.D
Acq: 15 Jun 2016 18:40

Tgt Ion: 84 Resp: 3801

Ion	Ratio	Lower	Upper
84	100		
49	85.4	60.5	141.3

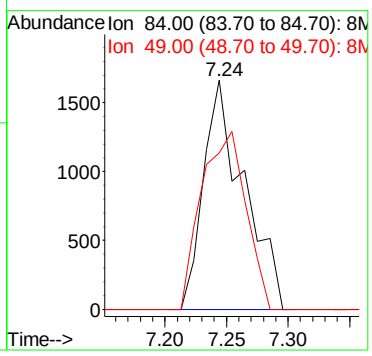

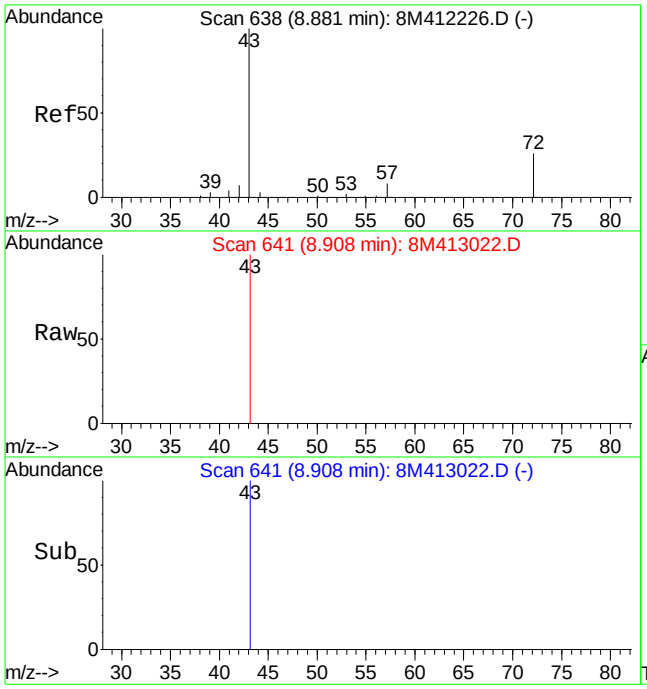

#29
2-Butanone
Concen: 0.71 ug/L
RT: 8.91 min Scan# 641
Delta R.T. 0.03 min
Lab File: 8M413022.D
Acq: 15 Jun 2016 18:40

Tgt Ion: 43 Resp: 807

Ion	Ratio	Lower	Upper
43	100		
72	0.0	16.4	38.4#

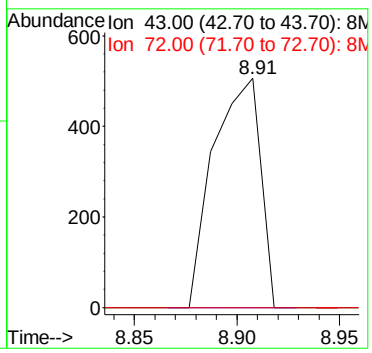

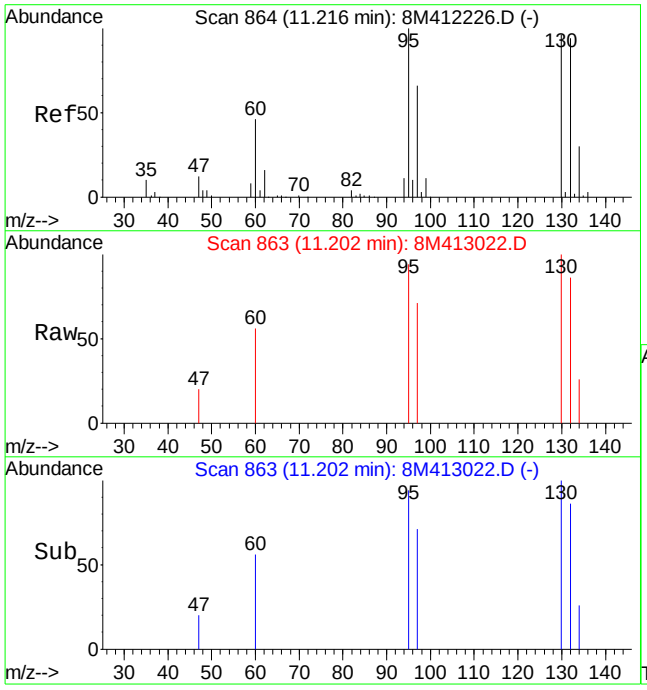

#47
Trichloroethene
Concen: 0.63 ug/L
RT: 11.20 min Scan# 863
Delta R.T. -0.01 min
Lab File: 8M413022.D
Acq: 15 Jun 2016 18:40

Tgt Ion:130 Resp: 4792

Ion	Ratio	Lower	Upper
130	100		
132	100.9	58.0	135.2
95	95.2	64.9	151.5

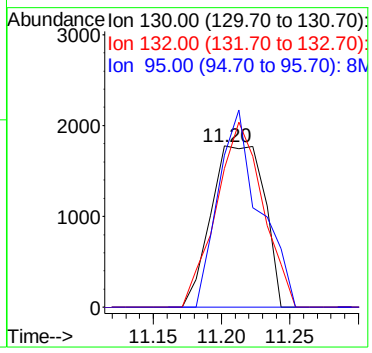

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413013.D Vial: 13
Acq On : 15 Jun 2016 14:20 Operator: TMB
Sample : L16060615-05 A TB 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 13:25:34 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	732888	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	560361	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	307596	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	217056	27.5653 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.28%		
43) 1,2-Dichloroethane-d4	10.31	65	237264	28.1013 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.40%		
58) Toluene-d8	12.68	98	750312	25.5846 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.32%		
80) p-Bromofluorobenzene	16.07	95	317130	24.8990 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.60%		

Target Compounds					Qvalue
3) Chloromethane	3.63	50	1247	0.1739 ug/L #	42
36) Tetrahydrofuran	9.64	42	1116	1.3986 ug/L #	58

(#) = qualifier out of range (m) = manual integration
8M413013.D 8260WT.M Thu Jun 16 13:25:37 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413013.D Vial: 13
Acq On : 15 Jun 2016 14:20 Operator: TMB
Sample : L16060615-05 A TB 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 13:25 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

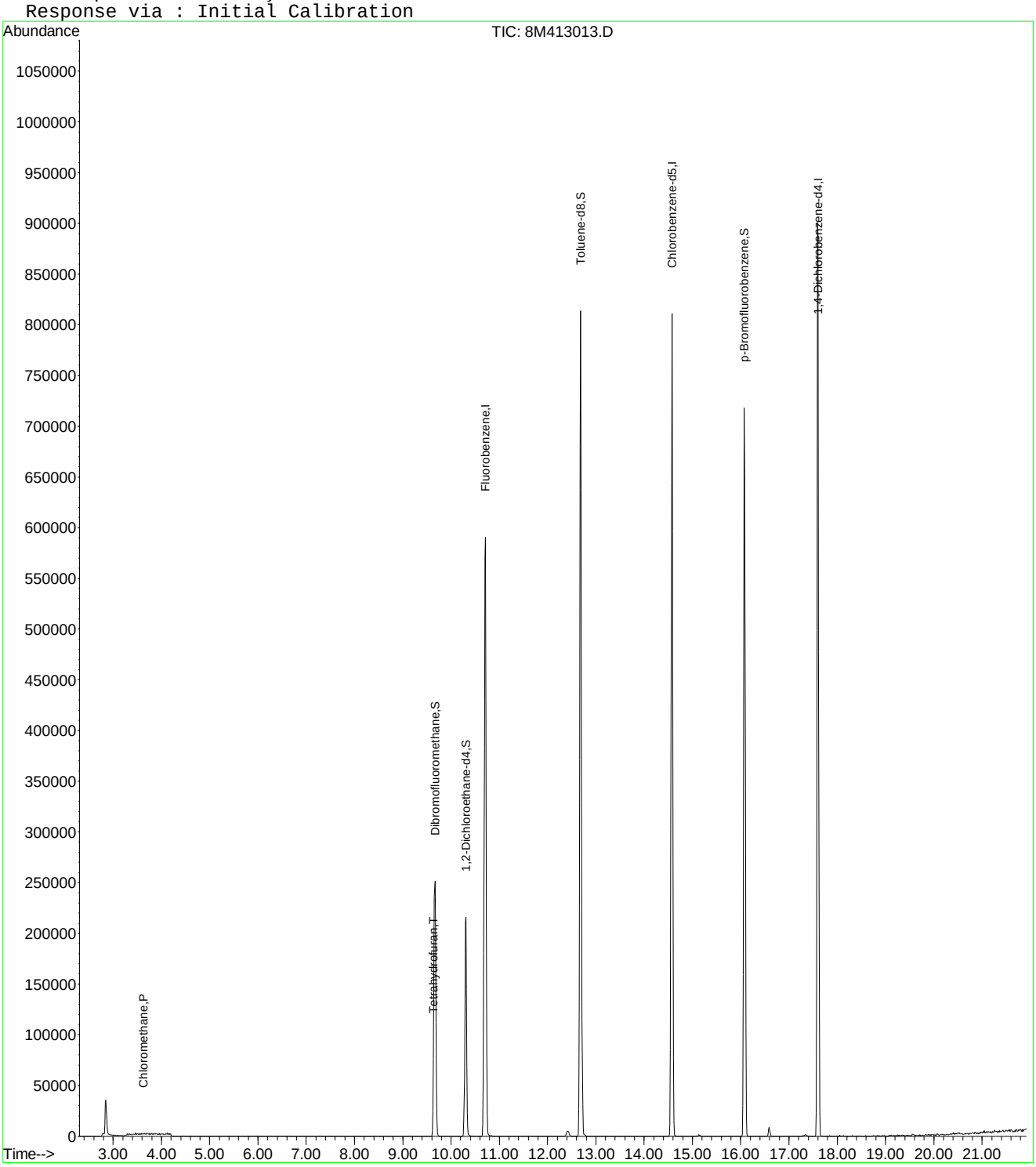

8M413013.D 8260WT.M Thu Jun 16 13:25:37 2016 Page 2

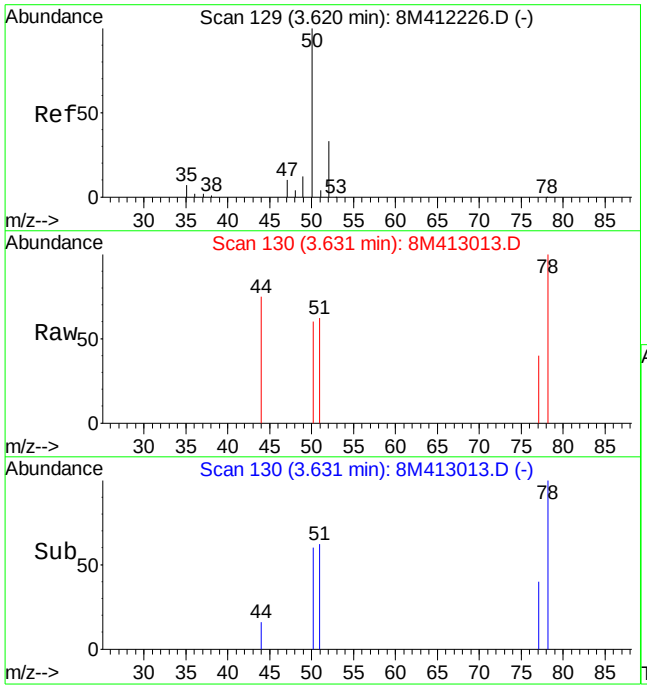

#3
Chloromethane
Concen: 0.17 ug/L
RT: 3.63 min Scan# 130
Delta R.T. 0.01 min
Lab File: 8M413013.D
Acq: 15 Jun 2016 14:20

Tgt Ion: 50 Resp: 1247

Ion	Ratio	Lower	Upper
50	100		
52	0.0	19.9	46.3#

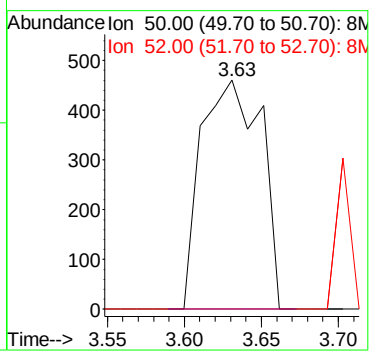

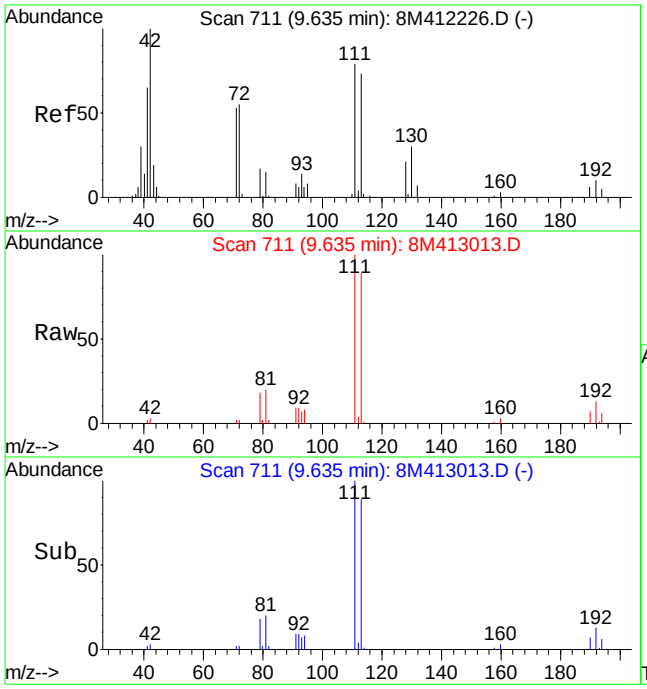

#36
Tetrahydrofuran
Concen: 1.40 ug/L
RT: 9.64 min Scan# 711
Delta R.T. 0.00 min
Lab File: 8M413013.D
Acq: 15 Jun 2016 14:20

Tgt Ion: 42 Resp: 1116

Ion	Ratio	Lower	Upper
42	100		
72	23.6	33.8	78.8#
71	26.2	32.0	74.8#

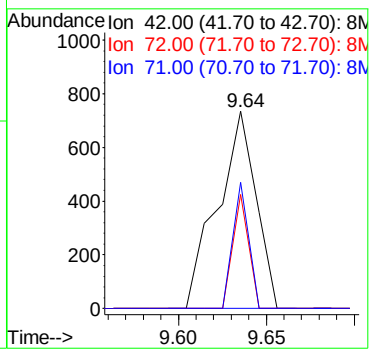

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:40:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	823748	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	571926	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	299321	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	12.68	98	567	0.0189 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.08%#	
80) p-Bromofluorobenzene	16.08	95	313	0.0253 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	3836	0.2778 ug/L	91
3) Chloromethane	3.62	50	3658	0.4537 ug/L	95
4) Vinyl Chloride	3.85	62	2516	0.2630 ug/L #	58
5) 1,3-Butadiene	3.91	54	2079	0.2592 ug/L	71
6) Bromomethane	4.73	94	1152	0.6530 ug/L #	55
7) Chloroethane	4.90	64	1112	0.2113 ug/L #	72
8) Trichlorofluoromethane	5.35	101	2706	0.1520 ug/L #	53
10) Isoprene	5.93	67	2147	0.1987 ug/L	85
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1746	0.2087 ug/L	97
14) 1,1-Dichloroethene	6.48	61	3332	0.2501 ug/L	75
16) Dimethyl Sulfide	6.73	62	1099	0.2308 ug/L	95
19) Methylene Chloride	7.26	84	3414	0.4028 ug/L	88
20) Carbon Disulfide	7.30	76	10739	0.3853 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	4927	0.2686 ug/L #	60
23) trans-1,2-Dichloroethene	7.70	61	3879	0.3170 ug/L	98
24) n-Hexane	7.78	57	2794	0.3075 ug/L	85
26) Vinyl Acetate	8.30	43	1973	0.2259 ug/L #	70
27) 1,1-Dichloroethane	8.33	63	4881	0.3212 ug/L #	88
31) 2,2-Dichloropropane	9.11	77	4966	0.3101 ug/L	89
32) cis-1,2-Dichloroethene	9.17	96	2958	0.3128 ug/L	87
33) Chloroform	9.37	83	5564	0.3101 ug/L	95
34) 1-Bromopropane	9.52	122	210	0.1551 ug/L #	1
35) Bromochloromethane	9.60	130	1386	0.2858 ug/L	76
36) Tetrahydrofuran	9.62	42	1849	2.0617 ug/L #	60
38) 1,1,1-Trichloroethane	9.91	97	4978	0.2921 ug/L	95
39) Cyclohexane	9.93	56	3120	0.2644 ug/L #	85
40) 1,1-Dichloropropene	10.11	75	3779	0.2909 ug/L	97
42) Carbon Tetrachloride	10.24	117	4835	0.3194 ug/L #	74
45) 1,2-Dichloroethane	10.43	62	3295	0.2853 ug/L #	81
46) Benzene	10.46	78	11279	0.3333 ug/L	93
47) Trichloroethene	11.20	130	2410	0.2670 ug/L	97
48) Methylcyclohexane	11.31	83	3936	0.2871 ug/L	84
49) 1,2-Dichloropropane	11.42	63	2136	0.2836 ug/L	88
50) Bromodichloromethane	11.73	83	3767	0.2845 ug/L #	91
52) Dibromomethane	11.82	93	700	0.1570 ug/L #	59
53) 2-Chloroethyl Vinyl Ether	12.02	63	847	0.2616 ug/L #	47
55) cis-1,3-Dichloropropene	12.36	75	4763	0.3535 ug/L	84
56) Dimethyl Disulfide	12.63	79	1647	0.2290 ug/L	82
59) Toluene	12.78	91	11513	0.3243 ug/L	92
60) Ethyl Methacrylate	12.89	69	1631	0.2392 ug/L #	64

(#) = qualifier out of range (m) = manual integration
8M412220.D 8260WT.M Tue May 17 11:40:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:40:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
62)	trans-1,3-Dichloropropene	12.96	75	3626	0.3047 ug/L		82
63)	1,1,2-Trichloroethane	13.18	97	1409	0.2515 ug/L		98
65)	1,3-Dichloropropane	13.49	76	2584	0.2590 ug/L		93
66)	Tetrachloroethene	13.61	164	2678	0.3520 ug/L	#	75
67)	Dibromochloromethane	13.87	129	2126	0.2599 ug/L		79
68)	1,2-Dibromoethane	14.12	107	1895	0.3394 ug/L		91
69)	1-Chlorohexane	14.21	91	3835	0.3164 ug/L		99
70)	Chlorobenzene	14.62	112	7968	0.3328 ug/L		88
71)	1,1,1,2-Tetrachloroethane	14.67	131	2872	0.3096 ug/L		87
72)	Ethylbenzene	14.64	106	3844	0.2934 ug/L		81
73)	m-,p-Xylene	14.75	106	10447	0.6799 ug/L		96
74)	o-Xylene	15.31	106	4577	0.3047 ug/L		97
75)	Styrene	15.35	104	7545	0.3062 ug/L		95
76)	Bromoform	15.84	173	1301	0.2681 ug/L	#	51
77)	Isopropylbenzene	15.74	105	13119	0.3287 ug/L		90
79)	1,1,2,2-Tetrachloroethane	15.96	83	1714	0.2853 ug/L	#	85
83)	n-Propylbenzene	16.24	91	15676	0.3357 ug/L		92
84)	Bromobenzene	16.38	156	2859	0.2977 ug/L		90
85)	1,3,5-Trimethylbenzene	16.43	105	10873	0.3196 ug/L		99
86)	2-Chlorotoluene	16.52	91	11133	0.3415 ug/L		96
87)	4-Chlorotoluene	16.56	91	10305	0.3499 ug/L		97
88)	a-Methylstyrene	16.83	118	4090	0.2534 ug/L		86
89)	tert-Butylbenzene	16.90	134	1734	0.2606 ug/L		72
90)	1,2,4-Trimethylbenzene	16.95	105	10734	0.3069 ug/L		89
91)	sec-Butylbenzene	17.16	105	13749	0.3436 ug/L		97
92)	p-Isopropyltoluene	17.32	119	10847	0.3192 ug/L		95
93)	1,3-Dichlorobenzene	17.52	146	6023	0.3257 ug/L		99
94)	1,4-Dichlorobenzene	17.65	146	6152	0.3299 ug/L	#	60
95)	n-Butylbenzene	17.85	91	11161	0.3323 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	5711	0.3472 ug/L		92
98)	1,2,4-Trichlorobenzene	20.29	180	4203	0.3418 ug/L		91
99)	Hexachlorobutadiene	20.43	225	1894	0.3297 ug/L		84
100)	Naphthalene	20.65	128	6039	0.3306 ug/L		91
101)	1,2,3-Trichlorobenzene	20.96	180	3279	0.3161 ug/L		86

(#) = qualifier out of range (m) = manual integration

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2778	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.4537	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.2630	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	0.2592	0.0	100	0.03
6	T	Bromomethane	-1.0000	0.9911	0.0	100	0.00
7	T	Chloroethane	-1.0000	0.2113	0.0	100	0.00
8	T	Trichlorofluoromethane	-1.0000	0.1520	0.0	100	-0.02
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.90#
10	T	Isoprene	-1.0000	0.1987	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.13#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2087	0.0	100	0.00
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	-1.0000	0.2501	0.0	100	0.02
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.58#
16	T	Dimethyl Sulfide	-1.0000	0.2308	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.0000	0.0	0	-7.00#
19	T	Methylene Chloride	-1.0000	0.4028	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.3853	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.43#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2686	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	-1.0000	0.3170	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.3075	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.2259	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.3212	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.98#
31	T	2,2-Dichloropropane	-1.0000	0.3101	0.0	100	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.3128	0.0	100	0.00
33	C	Chloroform	0.3000	0.3101	-3.4	100	0.00
34		1-Bromopropane	-1.0000	0.1551	0.0	100	0.00
35	T	Bromochloromethane	-1.0000	0.2858	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	2.0617	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	-1.0000	0.2921	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.2644	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.2909	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	-1.0000	0.3194	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	-1.0000	0.2853	0.0	100	0.00
46	T	Benzene	-1.0000	0.3333	0.0	100	0.00
47	T	Trichloroethene	-1.0000	0.2670	0.0	100	-0.01
48	T	Methylcyclohexane	-1.0000	0.2871	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2836	0.0	100	0.00
50	T	Bromodichloromethane	-1.0000	0.2845	0.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	-1.0000	0.1570	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2616	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.05#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.3535	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2290	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0189	0.0	100	0.00
59	C	Toluene	-1.0000	0.3243	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2392	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3047	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.2515	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	-1.0000	0.2590	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.3520	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.2599	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.3394	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.3164	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.3328	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.3096	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.2934	0.0	100	-0.01
73	T	m-,p-Xylene	-1.0000	0.6799	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.3047	0.0	100	0.00
75	T	Styrene	-1.0000	0.3062	0.0	100	0.00
76	P	Bromoform	-1.0000	0.2681	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.3287	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2853	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0253	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.1103	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	-1.0000	0.3357	0.0	100	0.00
84	T	Bromobenzene	0.3000	0.2977	0.8	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.3196	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.3415	0.0	100	0.00
87	T	4-Chlorotoluene	-1.0000	0.3499	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2534	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.2606	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.3069	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3436	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.3192	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.3257	0.0	100	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.3299	-10.0	100	0.00
95	T	n-Butylbenzene	-1.0000	0.3323	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.3472	-15.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.3418	0.0	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.3297	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.3306	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.3161	-5.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412220.D 8260WT.M Sat May 14 18:03:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	801173	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	557498	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	293108	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
80) p-Bromofluorobenzene	16.08	95	343	0.0286 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	5478	0.3262 ug/L	79
3) Chloromethane	3.63	50	3930	0.2484 ug/L	85
4) Vinyl Chloride	3.84	62	3512	0.3288 ug/L	97
5) 1,3-Butadiene	3.90	54	2479	0.2375 ug/L #	75
6) Bromomethane	4.73	94	1343	0.9497 ug/L	85
7) Chloroethane	4.90	64	2219	0.3174 ug/L #	43
8) Trichlorofluoromethane	5.36	101	6974	0.3289 ug/L #	93
10) Isoprene	5.94	67	4288	0.3952 ug/L #	62
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	3168	0.3263 ug/L #	40
14) 1,1-Dichloroethene	6.47	61	5431	0.2882 ug/L	92
16) Dimethyl Sulfide	6.74	62	1708	0.2453 ug/L	64
19) Methylene Chloride	7.24	84	3785	0.4239 ug/L #	43
20) Carbon Disulfide	7.29	76	12437	0.4565 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	6580	0.3336 ug/L #	76
23) trans-1,2-Dichloroethene	7.71	61	4990	0.2928 ug/L	96
24) n-Hexane	7.79	57	3110	0.2011 ug/L	99
26) Vinyl Acetate	8.31	43	2753	0.1566 ug/L	100
27) 1,1-Dichloroethane	8.32	63	5655	0.2774 ug/L #	92
31) 2,2-Dichloropropane	9.10	77	6035	0.3360 ug/L	82
32) cis-1,2-Dichloroethene	9.16	96	3837	0.3762 ug/L	74
33) Chloroform	9.37	83	7267	0.3842 ug/L	100
34) 1-Bromopropane	9.50	122	234	0.1456 ug/L #	1
35) Bromochloromethane	9.60	130	1674	0.3137 ug/L	62
36) Tetrahydrofuran	9.62	42	447	0.2146 ug/L #	41
38) 1,1,1-Trichloroethane	9.91	97	6304	0.3305 ug/L	90
39) Cyclohexane	9.94	56	4658	0.2238 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	5172	0.3768 ug/L	80
42) Carbon Tetrachloride	10.25	117	5692	0.3172 ug/L	95
45) 1,2-Dichloroethane	10.43	62	4443	0.2796 ug/L #	63
46) Benzene	10.46	78	14456	0.4134 ug/L #	77
47) Trichloroethene	11.21	130	3659	0.3626 ug/L	98
48) Methylcyclohexane	11.29	83	5025	0.3562 ug/L	84
49) 1,2-Dichloropropane	11.42	63	3060	0.3007 ug/L	98
50) Bromodichloromethane	11.73	83	4734	0.3343 ug/L #	93
52) Dibromomethane	11.82	93	1805	0.3767 ug/L	84
55) cis-1,3-Dichloropropene	12.36	75	5008	0.3514 ug/L	90
56) Dimethyl Disulfide	12.63	79	1921	0.2573 ug/L	85
59) Toluene	12.78	91	14742	0.4416 ug/L	98
60) Ethyl Methacrylate	12.90	69	2062	0.3292 ug/L	66
62) trans-1,3-Dichloropropene	12.96	75	3693	0.3171 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
63)	1,1,2-Trichloroethane	13.18	97	2326	0.4391 ug/L		70
65)	1,3-Dichloropropane	13.49	76	3163	0.3219 ug/L		88
66)	Tetrachloroethene	13.61	164	3164	0.4185 ug/L		93
67)	Dibromochloromethane	13.87	129	3113	0.3727 ug/L		86
68)	1,2-Dibromoethane	14.12	107	2076	0.3760 ug/L		90
69)	1-Chlorohexane	14.21	91	4746	0.4174 ug/L		80
70)	Chlorobenzene	14.62	112	9180	0.3960 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.66	131	3501	0.3876 ug/L		95
72)	Ethylbenzene	14.65	106	5348	0.4066 ug/L		84
73)	m-,p-Xylene	14.75	106	13269	0.8757 ug/L		89
74)	o-Xylene	15.31	106	6019	0.3943 ug/L		97
75)	Styrene	15.35	104	9370	0.3849 ug/L		95
76)	Bromoform	15.83	173	1198	0.2500 ug/L	#	76
77)	Isopropylbenzene	15.73	105	16528	0.4270 ug/L		92
79)	1,1,2,2-Tetrachloroethane	15.96	83	1999	0.3419 ug/L	#	83
83)	n-Propylbenzene	16.25	91	19410	0.4297 ug/L		95
84)	Bromobenzene	16.37	156	3319	0.3524 ug/L		75
85)	1,3,5-Trimethylbenzene	16.42	105	13794	0.4127 ug/L		95
86)	2-Chlorotoluene	16.51	91	13678	0.4729 ug/L		90
87)	4-Chlorotoluene	16.56	91	12572	0.4219 ug/L		98
88)	a-Methylstyrene	16.84	118	5739	0.3485 ug/L		96
89)	tert-Butylbenzene	16.90	134	2254	0.3403 ug/L		55
90)	1,2,4-Trimethylbenzene	16.95	105	13859	0.4051 ug/L		90
91)	sec-Butylbenzene	17.17	105	17612	0.4382 ug/L		90
92)	p-Isopropyltoluene	17.32	119	13616	0.3968 ug/L		90
93)	1,3-Dichlorobenzene	17.52	146	6961	0.3724 ug/L		86
94)	1,4-Dichlorobenzene	17.64	146	7149	0.3832 ug/L	#	1
95)	n-Butylbenzene	17.85	91	15223	0.4664 ug/L		91
96)	1,2-Dichlorobenzene	18.14	146	6129	0.3742 ug/L		92
98)	1,2,4-Trichlorobenzene	20.28	180	5035	0.3969 ug/L		97
99)	Hexachlorobutadiene	20.44	225	2420	0.4122 ug/L		83
100)	Naphthalene	20.65	128	7474	0.3874 ug/L	#	84
101)	1,2,3-Trichlorobenzene	20.96	180	4378	0.4056 ug/L	#	78

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

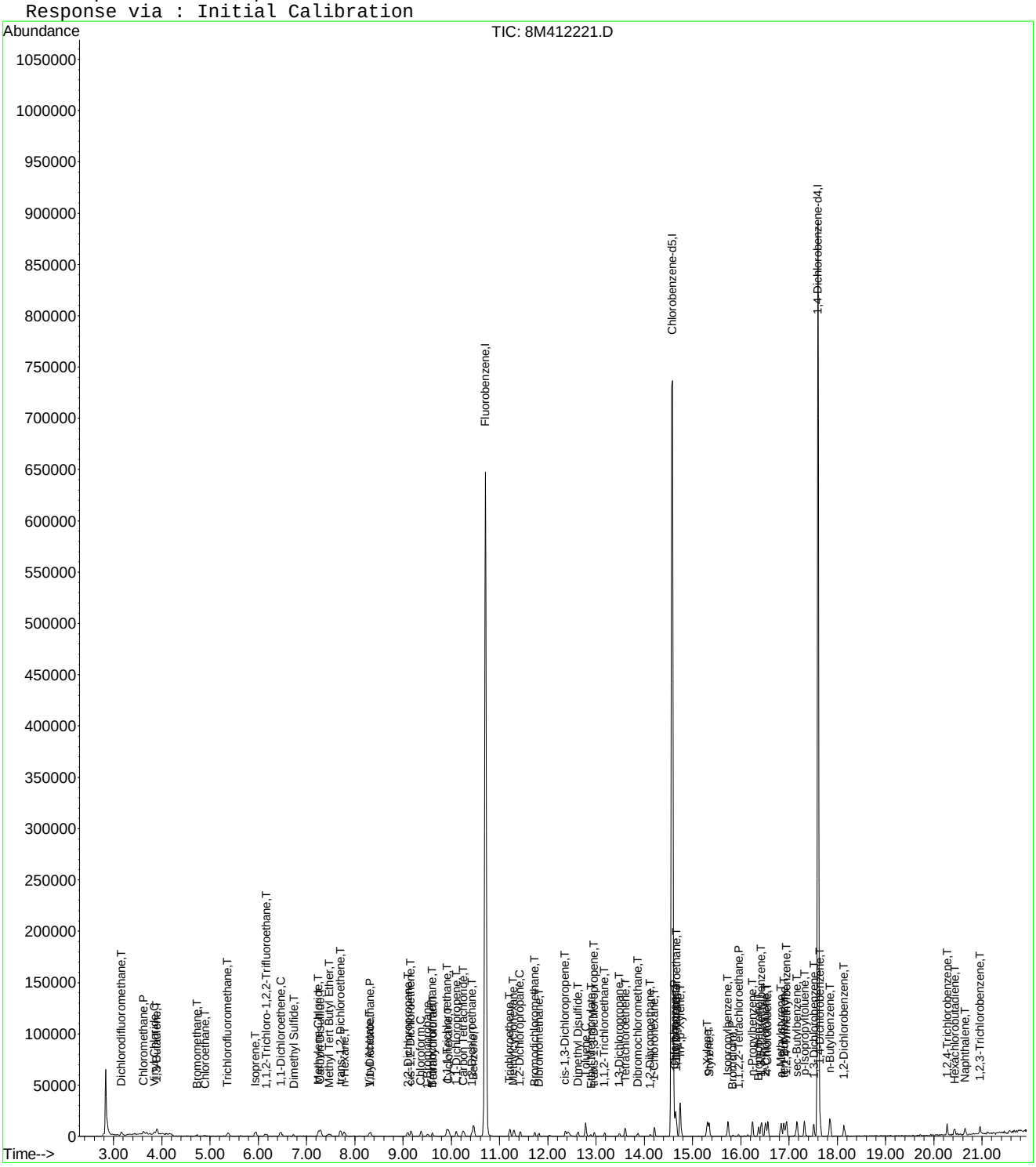

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	0.4000	0.4078	-2.0	100	0.00
3	P	Chloromethane	-1.0000	0.5012	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.3775	5.6	100	0.00
5	T	1,3-Butadiene	-1.0000	0.3178	0.0	100	0.02
6	T	Bromomethane	-1.0000	1.0253	0.0	100	0.00
7	T	Chloroethane	0.4000	0.4335	-8.4	100	0.00
8	T	Trichlorofluoromethane	0.4000	0.4029	-0.7	100	-0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.90#
10	T	Isoprene	0.4000	0.4079	-2.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.13#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3894	0.0	100	0.02
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	0.4000	0.4192	-4.8	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.58#
16	T	Dimethyl Sulfide	0.4000	0.3687	7.8	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.2179	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4591	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4587	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.43#
22	T	Methyl Tert Butyl Ether	-1.0000	0.3688	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.4193	-4.8	100	0.00
24	T	n-Hexane	-1.0000	0.3519	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.3241	0.0	100	0.02
27	P	1,1-Dichloroethane	0.4000	0.3826	4.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.98#
31	T	2,2-Dichloropropane	0.4000	0.3874	3.1	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.4172	-4.3	100	-0.01
33	C	Chloroform	0.4000	0.4164	-4.1	100	0.00
34		1-Bromopropane	-1.0000	0.1776	0.0	100	-0.01
35	T	Bromochloromethane	0.4000	0.3550	11.3	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.5125	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	0.4000	0.3803	4.9	100	0.00
39	T	Cyclohexane	-1.0000	0.4058	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4093	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	0.4000	0.3867	3.3	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	0.4000	0.3955	1.1	100	0.00
46	T	Benzene	0.4000	0.4393	-9.8	100	0.00
47	T	Trichloroethene	0.4000	0.4169	-4.2	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3768	0.0	100	-0.01
49	C	1,2-Dichloropropane	0.4000	0.4177	-4.4	100	0.00
50	T	Bromodichloromethane	0.4000	0.3676	8.1	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	0.4000	0.4162	-4.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1401	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.05#

(#) = Out of Range

8M412221.D 8260WT.M Sat May 14 18:03:54 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3821	4.5	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2746	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0000	0.0	0	-12.68#
59	C	Toluene	0.4000	0.4259	-6.5	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3102	0.0	100	0.02
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3184	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.4259	-6.5	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	0.4000	0.3253	18.7	100	0.00
66	T	Tetrachloroethene	0.4000	0.4267	-6.7	100	0.00
67	T	Dibromochloromethane	0.4000	0.3904	2.4	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.3814	4.6	100	0.00
69	T	1-Chlorohexane	0.4000	0.4017	-0.4	100	0.00
70	P	Chlorobenzene	0.4000	0.3933	1.7	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3872	3.2	100	0.00
72	C	Ethylbenzene	0.4000	0.4188	-4.7	100	0.00
73	T	m-,p-Xylene	0.8000	0.8859	-10.7	100	0.00
74	T	o-Xylene	-1.0000	0.4110	0.0	100	0.00
75	T	Styrene	0.4000	0.3901	2.5	100	0.00
76	P	Bromoform	-1.0000	0.2533	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.4249	-6.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.3398	15.1	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0283	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.14#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	0.4000	0.4245	-6.1	100	0.00
84	T	Bromobenzene	0.4000	0.3529	11.8	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.4141	-3.5	100	0.00
86	T	2-Chlorotoluene	0.4000	0.4284	-7.1	100	0.00
87	T	4-Chlorotoluene	0.4000	0.4359	-9.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.3631	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3459	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	0.4000	0.4046	-1.2	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.4494	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4092	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.3844	3.9	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.3915	2.1	100	0.00
95	T	n-Butylbenzene	-1.0000	0.4628	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.3805	4.9	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	0.4000	0.4182	-4.5	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.4302	-7.5	100	0.00
100	T	Naphthalene	0.4000	0.4178	-4.5	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.4310	-7.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412221.D 8260WT.M Sat May 14 18:03:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	795577	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	547129	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	284579	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.65	111	3962	0.3966 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery	= 1.60%#	
43) 1,2-Dichloroethane-d4	10.31	65	3835	0.3356 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery	= 1.36%#	
58) Toluene-d8	12.68	98	14023	0.4957 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 2.00%#	
80) p-Bromofluorobenzene	16.08	95	6483	0.5565 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery	= 2.24%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	12402	0.7438 ug/L	97
3) Chloromethane	3.62	50	8415	0.5357 ug/L #	75
4) Vinyl Chloride	3.84	62	9412	0.8873 ug/L	89
5) 1,3-Butadiene	3.90	54	6974	0.6729 ug/L	81
6) Bromomethane	4.73	94	4114	1.3123 ug/L	92
7) Chloroethane	4.90	64	4983	0.7178 ug/L #	80
8) Trichlorofluoromethane	5.38	101	17133	0.8136 ug/L #	96
9) Diethyl ether	5.90	59	20707	3.2140 ug/L	84
10) Isoprene	5.94	67	11176	1.0373 ug/L	76
11) Acrolein	6.14	56	246	0.4300 ug/L #	15
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	8135	0.8438 ug/L	96
13) Acetone	6.24	43	413	0.2115 ug/L #	48
14) 1,1-Dichloroethene	6.46	61	12947	0.6919 ug/L	91
15) Tert-Butyl Alcohol	6.59	59	3316	7.3747 ug/L #	55
16) Dimethyl Sulfide	6.72	62	4505	0.6515 ug/L	79
18) Methyl acetate	7.00	43	2119	0.3630 ug/L #	66
19) Methylene Chloride	7.24	84	8723	0.9837 ug/L #	43
20) Carbon Disulfide	7.29	76	28246	1.0441 ug/L	100
21) Acrylonitrile	7.43	53	2164	0.8620 ug/L	76
22) Methyl Tert Butyl Ether	7.47	73	16998	0.8678 ug/L	84
23) trans-1,2-Dichloroethene	7.70	61	12571	0.7427 ug/L	100
24) n-Hexane	7.78	57	9382	0.6109 ug/L	82
25) Diisopropyl ether	8.12	45	95400	2.1939 ug/L #	91
26) Vinyl Acetate	8.30	43	6750	0.3867 ug/L #	89
27) 1,1-Dichloroethane	8.32	63	14721	0.7271 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	97972	3.2102 ug/L	88
29) 2-Butanone	8.88	43	380	0.1215 ug/L #	57
30) Propionitrile	8.99	54	1593	2.0138 ug/L #	56
31) 2,2-Dichloropropane	9.09	77	14691	0.8236 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	9482	0.9362 ug/L	72
33) Chloroform	9.37	83	18494	0.9845 ug/L	94
34) 1-Bromopropane	9.50	122	1092	0.6844 ug/L	80
35) Bromochloromethane	9.61	130	5234	0.9877 ug/L #	55
36) Tetrahydrofuran	9.63	42	5415	2.6185 ug/L #	68
38) 1,1,1-Trichloroethane	9.91	97	17074	0.9016 ug/L	92
39) Cyclohexane	9.94	56	11865	0.5740 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	13172	0.9663 ug/L	87
41) Tert-Amyl-Methyl ether	10.21	73	90255	4.6173 ug/L #	88
42) Carbon Tetrachloride	10.25	117	14515	0.8146 ug/L	95
45) 1,2-Dichloroethane	10.42	62	10675	0.6766 ug/L	85

(#) = qualifier out of range (m) = manual integration
8M412222.D 8260WT.M Fri May 13 14:49:47 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	10.47	78	34504	0.9938 ug/L		84
47)	Trichloroethene	11.21	130	8752	0.8735 ug/L		93
48)	Methylcyclohexane	11.30	83	13513	0.9646 ug/L		79
49)	1,2-Dichloropropane	11.43	63	7057	0.6982 ug/L	#	67
50)	Bromodichloromethane	11.73	83	12147	0.8638 ug/L		96
52)	Dibromomethane	11.81	93	4130	0.8681 ug/L		95
53)	2-Chloroethyl Vinyl Ether	12.03	63	2694	0.6366 ug/L		86
54)	4-Methyl-2-Pentanone	12.06	58	848	0.3671 ug/L	#	41
55)	cis-1,3-Dichloropropene	12.36	75	12521	0.8847 ug/L		97
56)	Dimethyl Disulfide	12.63	79	5799	0.7821 ug/L		96
59)	Toluene	12.79	91	37114	1.1328 ug/L		95
60)	Ethyl Methacrylate	12.88	69	5490	0.8930 ug/L		69
62)	trans-1,3-Dichloropropene	12.96	75	10328	0.9035 ug/L		92
63)	1,1,2-Trichloroethane	13.18	97	5274	1.0144 ug/L		93
64)	2-Hexanone	13.10	58	397	0.2127 ug/L	#	1
65)	1,3-Dichloropropane	13.49	76	9673	1.0032 ug/L		73
66)	Tetrachloroethene	13.61	164	7373	0.9937 ug/L		95
67)	Dibromochloromethane	13.87	129	7358	0.8977 ug/L		95
68)	1,2-Dibromoethane	14.13	107	5123	0.9454 ug/L		95
69)	1-Chlorohexane	14.21	91	12790	1.1461 ug/L		79
70)	Chlorobenzene	14.62	112	25662	1.1281 ug/L		89
71)	1,1,1,2-Tetrachloroethane	14.66	131	8722	0.9838 ug/L		94
72)	Ethylbenzene	14.65	106	13009	1.0078 ug/L		87
73)	m-,p-Xylene	14.75	106	30465	2.0486 ug/L		84
74)	o-Xylene	15.31	106	15133	1.0101 ug/L		84
75)	Styrene	15.35	104	23191	0.9707 ug/L		91
76)	Bromoform	15.84	173	3875	0.8240 ug/L		96
77)	Isopropylbenzene	15.74	105	41382	1.0895 ug/L		95
79)	1,1,2,2-Tetrachloroethane	15.95	83	5604	0.9873 ug/L	#	93
81)	1,2,3-Trichloropropane	16.15	110	1355	0.7428 ug/L	#	1
82)	trans-1,4-Dichloro-2-Buten	16.19	53	962	0.3479 ug/L	#	1
83)	n-Propylbenzene	16.25	91	48249	1.1002 ug/L		99
84)	Bromobenzene	16.37	156	9598	1.0497 ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	33355	1.0278 ug/L		96
86)	2-Chlorotoluene	16.51	91	33408	1.1895 ug/L		94
87)	4-Chlorotoluene	16.56	91	29548	1.0213 ug/L		95
88)	a-Methylstyrene	16.84	118	14414	0.9014 ug/L		91
89)	tert-Butylbenzene	16.89	134	6686	1.0398 ug/L		86
90)	1,2,4-Trimethylbenzene	16.95	105	36066	1.0857 ug/L		96
91)	sec-Butylbenzene	17.16	105	42128	1.0796 ug/L		96
92)	p-Isopropyltoluene	17.32	119	35424	1.0633 ug/L		94
93)	1,3-Dichlorobenzene	17.52	146	18409	1.0144 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	19031	1.0506 ug/L	#	62
95)	n-Butylbenzene	17.85	91	35772	1.1288 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	16104	1.0126 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.14	75	1262	1.0152 ug/L	#	53
98)	1,2,4-Trichlorobenzene	20.28	180	11494	0.9331 ug/L		98
99)	Hexachlorobutadiene	20.43	225	5421	0.9510 ug/L		98
100)	Naphthalene	20.65	128	16581	0.8853 ug/L		100
101)	1,2,3-Trichlorobenzene	20.96	180	10306	0.9835 ug/L		94

(#) = qualifier out of range (m) = manual integration
8M412222.D 8260WT.M Fri May 13 14:49:48 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

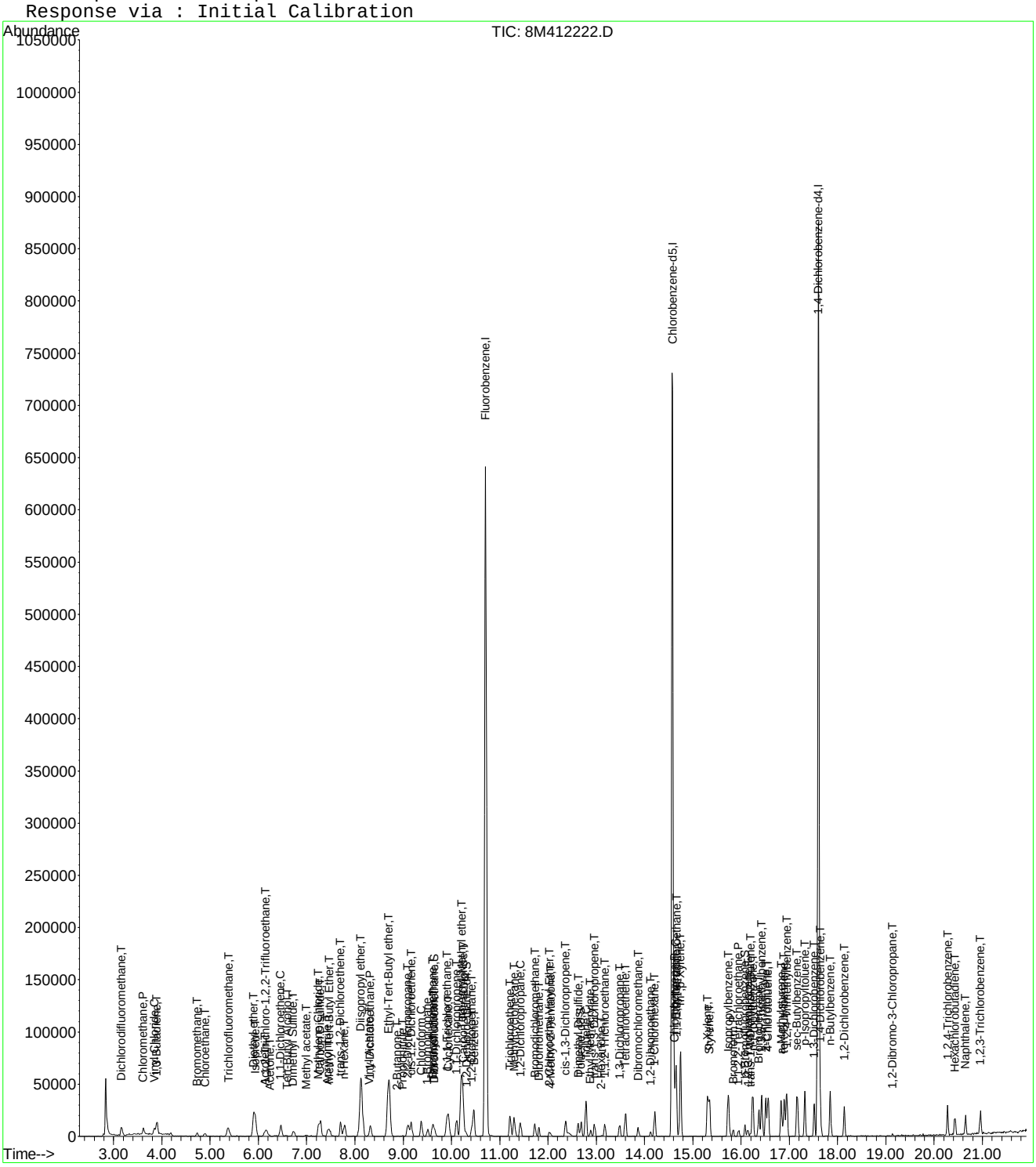

8M412222.D 8260WT.M Fri May 13 14:49:48 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:05:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9298	7.0	100	0.00
3	P	Chloromethane	1.0000	1.0808	-8.1	100	0.00
4	C	Vinyl Chloride	1.0000	1.0189	-1.9	100	0.00
5	T	1,3-Butadiene	-1.0000	0.9002	0.0	100	0.02
6	T	Bromomethane	1.0000	1.2082	-20.8	100	0.00
7	T	Chloroethane	1.0000	0.9803	2.0	100	0.00
8	T	Trichlorofluoromethane	1.0000	0.9968	0.3	100	0.00
9	T	Diethyl ether	5.0000	5.0462	-0.9	100	0.00
10	T	Isoprene	1.0000	1.0707	-7.1	100	0.00
11	T	Acrolein	-1.0000	0.6696	0.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0069	-0.7	100	0.00
13	T	Acetone	-1.0000	0.4614	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	1.0064	-0.6	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	11.5604	0.0	0	0.02
16	T	Dimethyl Sulfide	1.0000	0.9794	2.1	100	-0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.8758	0.0	100	0.00
19	T	Methylene Chloride	1.0000	1.0655	-6.5	100	0.00
20	T	Carbon Disulfide	1.0000	1.0492	-4.9	100	0.00
21	T	Acrylonitrile	2.5000	1.8633	25.5#	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9593	4.1	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	1.0636	-6.4	100	0.00
24	T	n-Hexane	-1.0000	1.0690	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	5.1784	-3.6	100	0.00
26	T	Vinyl Acetate	-1.0000	0.8002	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0029	-0.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.9635	0.7	100	0.00
29	T	2-Butanone	-1.0000	0.2889	0.0	100	0.00
30	T	Propionitrile	5.0000	4.1566	16.9	100	0.00
31	T	2,2-Dichloropropane	1.0000	0.9498	5.0	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	1.0383	-3.8	100	0.00
33	C	Chloroform	1.0000	1.0671	-6.7	100	0.00
34		1-Bromopropane	1.0000	0.8348	16.5	100	-0.01
35	T	Bromochloromethane	1.0000	1.1177	-11.8	100	0.00
36	T	Tetrahydrofuran	5.0000	6.2516	-25.0#	100	0.00
37	S	Dibromofluoromethane	0.5000	0.4635	7.3	100	-0.01
38	T	1,1,1-Trichloroethane	1.0000	1.0372	-3.7	100	0.00
39	T	Cyclohexane	1.0000	1.0411	-4.1	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0498	-5.0	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	5.0344	-0.7	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.9930	0.7	100	0.00
43	S	1,2-Dichloroethane-d4	0.5000	0.4184	16.3	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	1.0000	0.9570	4.3	100	0.00
46	T	Benzene	1.0000	1.0558	-5.6	100	0.00
47	T	Trichloroethene	1.0000	1.0041	-0.4	100	0.00
48	T	Methylcyclohexane	-1.0000	1.0205	0.0	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.9700	3.0	100	0.00
50	T	Bromodichloromethane	1.0000	0.9500	5.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	1.0000	0.9590	4.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.8616	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.6639	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:05:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9621	3.8	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.8348	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	0.5000	0.4897	2.1	100	0.00
59	C	Toluene	1.0000	1.0927	-9.3	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.8416	15.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	1.0000	0.9073	9.3	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.9840	1.6	100	0.00
64	T	2-Hexanone	-1.0000	0.3525	0.0	100	-0.01
65	T	1,3-Dichloropropane	1.0000	1.0137	-1.4	100	0.00
66	T	Tetrachloroethene	1.0000	1.0132	-1.3	100	0.00
67	T	Dibromochloromethane	1.0000	0.9402	6.0	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.9590	4.1	100	0.00
69	T	1-Chlorohexane	1.0000	1.1031	-10.3	100	0.00
70	P	Chlorobenzene	1.0000	1.1204	-12.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.9829	1.7	100	0.00
72	C	Ethylbenzene	1.0000	1.0381	-3.8	100	0.00
73	T	m-,p-Xylene	2.0000	2.0726	-3.6	100	0.00
74	T	o-Xylene	1.0000	1.0530	-5.3	100	0.00
75	T	Styrene	1.0000	0.9839	1.6	100	0.00
76	P	Bromoform	1.0000	0.8348	16.5	100	0.00
77	T	Isopropylbenzene	1.0000	1.0840	-8.4	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	0.9810	1.9	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5502	0.0	100	0.00
81	T	1,2,3-Trichloropropane	1.0000	0.7703	23.0	100	0.02
82	T	trans-1,4-Dichloro-2-Butene	1.0000	1.1443	-14.4	100	0.00
83	T	n-Propylbenzene	1.0000	1.0868	-8.7	100	0.00
84	T	Bromobenzene	1.0000	1.0510	-5.1	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	1.0314	-3.1	100	0.00
86	T	2-Chlorotoluene	1.0000	1.0778	-7.8	100	0.00
87	T	4-Chlorotoluene	1.0000	1.0553	-5.5	100	0.00
88	T	a-Methylstyrene	-1.0000	0.9394	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	1.0567	-5.7	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	1.0845	-8.5	100	0.00
91	T	sec-Butylbenzene	1.0000	1.1073	-10.7	100	0.00
92	T	p-Isopropyltoluene	1.0000	1.0966	-9.7	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0469	-4.7	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	1.0735	-7.3	100	0.00
95	T	n-Butylbenzene	1.0000	1.1201	-12.0	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0297	-3.0	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.1006	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	1.0000	0.9832	1.7	100	0.00
99	T	Hexachlorobutadiene	1.0000	0.9925	0.7	100	0.00
100	T	Naphthalene	1.0000	0.9547	4.5	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	1.0450	-4.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	782460	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.57	117	543252	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	286450	25.00	ug/L	0.01

System Monitoring Compounds						
37) Dibromofluoromethane	9.66	111	8161	0.8307	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery	=	3.32%#	
43) 1,2-Dichloroethane-d4	10.30	65	9681	0.8613	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery	=	3.44%#	
58) Toluene-d8	12.68	98	28135	1.0016	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	=	4.00%#	
80) p-Bromofluorobenzene	16.08	95	12079	1.0302	ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery	=	4.12%#	

Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.16	85	24870	1.5166	ug/L	98
3) Chloromethane	3.62	50	16106	1.0425	ug/L	93
4) Vinyl Chloride	3.85	62	18562	1.7792	ug/L	94
5) 1,3-Butadiene	3.90	54	13617	1.3360	ug/L	92
6) Bromomethane	4.73	94	8329	1.8804	ug/L	94
7) Chloroethane	4.90	64	9562	1.4006	ug/L	86
8) Trichlorofluoromethane	5.39	101	34970	1.6885	ug/L	97
9) Diethyl ether	5.90	59	107986	17.0420	ug/L	79
10) Isoprene	5.93	67	20936	1.9757	ug/L	73
11) Acrolein	6.14	56	4864	8.6444	ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	16832	1.7751	ug/L	99
13) Acetone	6.23	43	1519	0.7908	ug/L #	48
14) 1,1-Dichloroethene	6.47	61	25394	1.3798	ug/L	89
15) Tert-Butyl Alcohol	6.58	59	14891	33.6725	ug/L	85
16) Dimethyl Sulfide	6.73	62	9489	1.3953	ug/L	79
17) Iodomethane	6.98	142	1211	1.3472	ug/L #	60
18) Methyl acetate	7.01	43	5064	0.8821	ug/L #	79
19) Methylene Chloride	7.25	84	16579	1.9010	ug/L	52
20) Carbon Disulfide	7.29	76	57693	2.1683	ug/L	98
21) Acrylonitrile	7.43	53	13848	5.6089	ug/L	93
22) Methyl Tert Butyl Ether	7.47	73	33991	1.7644	ug/L	84
23) trans-1,2-Dichloroethene	7.70	61	22786	1.3688	ug/L	88
24) n-Hexane	7.79	57	18282	1.2105	ug/L	84
25) Diisopropyl ether	8.12	45	475271	11.1128	ug/L #	92
26) Vinyl Acetate	8.29	43	15998	0.9318	ug/L	93
27) 1,1-Dichloroethane	8.32	63	30419	1.5277	ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	505010	16.8250	ug/L	89
29) 2-Butanone	8.90	43	2250	0.7313	ug/L #	57
30) Propionitrile	8.99	54	9373	12.0479	ug/L	86
31) 2,2-Dichloropropane	9.10	77	32521	1.8538	ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	18238	1.8309	ug/L	91
33) Chloroform	9.37	83	33543	1.8156	ug/L	99
34) 1-Bromopropane	9.52	122	2513	1.6014	ug/L	88
35) Bromochloromethane	9.60	130	9189	1.7632	ug/L	67
36) Tetrahydrofuran	9.63	42	22074	10.8529	ug/L #	66
38) 1,1,1-Trichloroethane	9.90	97	32268	1.7324	ug/L	96
39) Cyclohexane	9.93	56	23097	1.1362	ug/L #	65
40) 1,1-Dichloropropene	10.10	75	24988	1.8639	ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	459535	23.9029	ug/L	87
42) Carbon Tetrachloride	10.24	117	28935	1.6512	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412223.D 8260WT.M Fri May 13 15:18:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.42	62	22142	1.4270 ug/L #	83
46)	Benzene	10.46	78	67028	1.9629 ug/L	83
47)	Trichloroethene	11.21	130	17287	1.7543 ug/L	96
48)	Methylcyclohexane	11.30	83	26050	1.8907 ug/L	84
49)	1,2-Dichloropropane	11.42	63	14582	1.4670 ug/L	77
50)	Bromodichloromethane	11.73	83	25794	1.8651 ug/L	93
51)	1,4-Dioxane	11.73	88	1282	32.3515 ug/L	74
52)	Dibromomethane	11.81	93	8575	1.8325 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.02	63	6234	1.4979 ug/L	100
54)	4-Methyl-2-Pentanone	12.06	58	2139	0.9416 ug/L	84
55)	cis-1,3-Dichloropropene	12.37	75	24153	1.7353 ug/L	98
56)	Dimethyl Disulfide	12.62	79	12288	1.6851 ug/L	99
59)	Toluene	12.79	91	72944	2.2423 ug/L	95
60)	Ethyl Methacrylate	12.88	69	12716	2.0832 ug/L	71
62)	trans-1,3-Dichloropropene	12.96	75	22163	1.9527 ug/L	100
63)	1,1,2-Trichloroethane	13.18	97	10537	2.0412 ug/L	99
64)	2-Hexanone	13.13	58	2200	1.1873 ug/L #	65
65)	1,3-Dichloropropane	13.49	76	20212	2.1112 ug/L	72
66)	Tetrachloroethene	13.60	164	14595	1.9811 ug/L	90
67)	Dibromochloromethane	13.87	129	14698	1.8061 ug/L	98
68)	1,2-Dibromoethane	14.12	107	10152	1.8869 ug/L	95
69)	1-Chlorohexane	14.21	91	21960	1.9818 ug/L	89
70)	Chlorobenzene	14.62	112	47376	2.0974 ug/L	81
71)	1,1,1,2-Tetrachloroethane	14.66	131	17526	1.9910 ug/L	97
72)	Ethylbenzene	14.66	106	25628	1.9996 ug/L	92
73)	m-,p-Xylene	14.74	106	60087	4.0693 ug/L	84
74)	o-Xylene	15.31	106	28289	1.9017 ug/L	79
75)	Styrene	15.35	104	47644	2.0086 ug/L	92
76)	Bromoform	15.84	173	9145	1.9585 ug/L	95
77)	Isopropylbenzene	15.73	105	81301	2.1557 ug/L	97
79)	1,1,2,2-Tetrachloroethane	15.95	83	11538	2.0194 ug/L	95
81)	1,2,3-Trichloropropane	16.13	110	3630	1.9770 ug/L	94
82)	trans-1,4-Dichloro-2-Buten	16.19	53	2699	0.9698 ug/L #	36
83)	n-Propylbenzene	16.24	91	97233	2.2026 ug/L	96
84)	Bromobenzene	16.37	156	19174	2.0834 ug/L	92
85)	1,3,5-Trimethylbenzene	16.42	105	67395	2.0631 ug/L	97
86)	2-Chlorotoluene	16.51	91	67110	2.3739 ug/L	94
87)	4-Chlorotoluene	16.56	91	59154	2.0313 ug/L	92
88)	a-Methylstyrene	16.84	118	29415	1.8275 ug/L	86
89)	tert-Butylbenzene	16.89	134	12716	1.9647 ug/L	67
90)	1,2,4-Trimethylbenzene	16.95	105	71669	2.1435 ug/L	94
91)	sec-Butylbenzene	17.17	105	81038	2.0632 ug/L	98
92)	p-Isopropyltoluene	17.32	119	70170	2.0924 ug/L	92
93)	1,3-Dichlorobenzene	17.52	146	37289	2.0413 ug/L	93
94)	1,4-Dichlorobenzene	17.64	146	36528	2.0034 ug/L #	73
95)	n-Butylbenzene	17.85	91	67823	2.1262 ug/L	96
96)	1,2-Dichlorobenzene	18.14	146	32322	2.0190 ug/L	92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	1955	1.5624 ug/L	94
98)	1,2,4-Trichlorobenzene	20.28	180	23558	1.9000 ug/L	98
99)	Hexachlorobutadiene	20.43	225	11066	1.9286 ug/L	99
100)	Naphthalene	20.65	128	36066	1.9130 ug/L	99
101)	1,2,3-Trichlorobenzene	20.96	180	19765	1.8738 ug/L	95

(#) = qualifier out of range (m) = manual integration
8M412223.D 8260WT.M Fri May 13 15:18:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

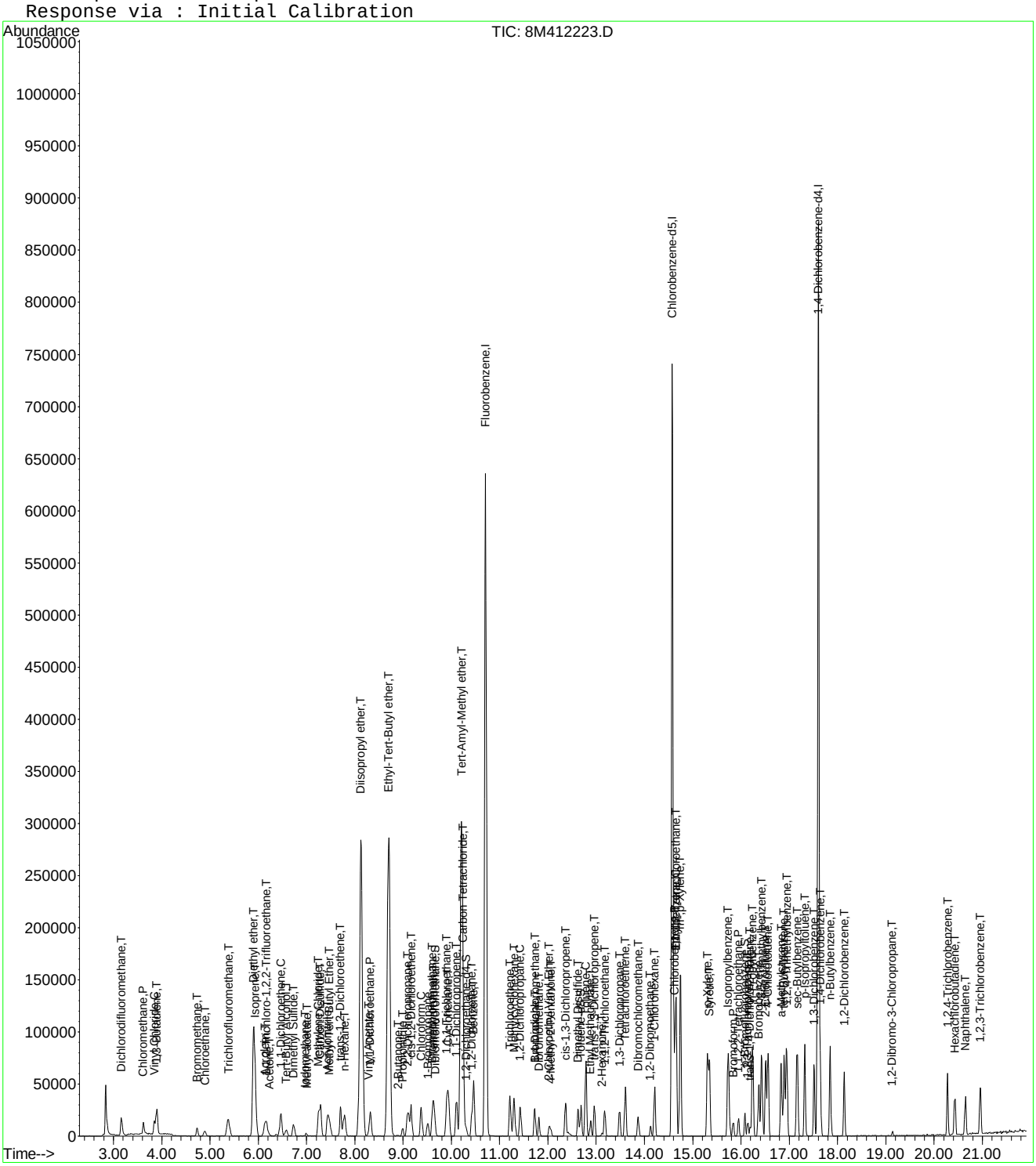

8M412223.D 8260WT.M Fri May 13 15:18:37 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.8958	5.2	100	0.00
3	P	Chloromethane	2.0000	2.1033	-5.2	100	0.00
4	C	Vinyl Chloride	2.0000	2.0431	-2.2	100	0.00
5	T	1,3-Butadiene	2.0000	1.7872	10.6	100	0.02
6	T	Bromomethane	2.0000	2.0126	-0.6	100	0.00
7	T	Chloroethane	2.0000	1.9127	4.4	100	0.00
8	T	Trichlorofluoromethane	2.0000	2.0686	-3.4	100	0.00
9	T	Diethyl ether	25.0000	26.7567	-7.0	100	0.00
10	T	Isoprene	2.0000	2.0394	-2.0	100	0.00
11	T	Acrolein	12.5000	13.4606	-7.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	2.1182	-5.9	100	0.02
13	T	Acetone	-1.0000	1.7255	0.0	100	-0.01
14	C	1,1-Dichloroethene	2.0000	2.0070	-0.4	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	52.7840	-5.6	100	0.00
16	T	Dimethyl Sulfide	2.0000	2.0975	-4.9	100	0.00
17	T	Iodomethane	2.0000	3.0680	-53.4#	100	0.00
18	T	Methyl acetate	-1.0000	2.1281	0.0	100	0.00
19	T	Methylene Chloride	2.0000	2.0590	-3.0	100	0.00
20	T	Carbon Disulfide	2.0000	2.1789	-8.9	100	0.00
21	T	Acrylonitrile	12.5000	12.1237	3.0	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.9505	2.5	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.9603	2.0	100	0.00
24	T	n-Hexane	-1.0000	2.1181	0.0	100	0.00
25	T	Diisopropyl ether	25.0000	26.2305	-4.9	100	0.00
26	T	Vinyl Acetate	2.0000	1.9284	3.6	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.1072	-5.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	26.0139	-4.1	100	0.00
29	T	2-Butanone	-1.0000	1.7396	0.0	100	0.02
30	T	Propionitrile	25.0000	24.8668	0.5	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1378	-6.9	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0306	-1.5	100	0.00
33	C	Chloroform	2.0000	1.9679	1.6	100	0.00
34		1-Bromopropane	2.0000	1.9533	2.3	100	0.00
35	T	Bromochloromethane	2.0000	1.9951	0.2	100	0.00
36	T	Tetrahydrofuran	25.0000	25.9117	-3.6	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9708	2.9	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.9930	0.3	100	0.00
39	T	Cyclohexane	2.0000	2.0605	-3.0	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0248	-1.2	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	26.0627	-4.3	100	0.00
42	T	Carbon Tetrachloride	2.0000	2.0126	-0.6	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0740	-7.4	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	2.0000	2.0183	-0.9	100	0.00
46	T	Benzene	2.0000	2.0854	-4.3	100	0.00
47	T	Trichloroethene	2.0000	2.0166	-0.8	100	0.00
48	T	Methylcyclohexane	-1.0000	2.0003	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0380	-1.9	100	0.00
50	T	Bromodichloromethane	2.0000	2.0511	-2.6	100	0.00
51	T	1,4-Dioxane	-1.0000	35.6688	0.0	100	0.02
52	T	Dibromomethane	2.0000	2.0246	-1.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	2.0271	-1.4	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.7027	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.8869	5.7	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.7986	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	0.9896	1.0	100	0.00
59	C	Toluene	2.0000	2.1628	-8.1	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.9633	1.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	2.0000	1.9609	2.0	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.9800	1.0	100	0.00
64	T	2-Hexanone	-1.0000	1.9672	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.1332	-6.7	100	0.00
66	T	Tetrachloroethene	2.0000	2.0198	-1.0	100	0.00
67	T	Dibromochloromethane	2.0000	1.8915	5.4	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.9141	4.3	100	0.00
69	T	1-Chlorohexane	2.0000	1.9075	4.6	100	0.00
70	P	Chlorobenzene	2.0000	2.0831	-4.2	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.9892	0.5	100	0.00
72	C	Ethylbenzene	2.0000	2.0596	-3.0	100	0.00
73	T	m-,p-Xylene	4.0000	4.1170	-2.9	100	0.00
74	T	o-Xylene	2.0000	1.9825	0.9	100	0.00
75	T	Styrene	2.0000	2.0358	-1.8	100	0.00
76	P	Bromoform	2.0000	1.9841	0.8	100	0.00
77	T	Isopropylbenzene	2.0000	2.1448	-7.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	2.0066	-0.3	100	0.00
80	S	p-Bromofluorobenzene	1.0000	1.0184	-1.8	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	2.0501	-2.5	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	2.0915	-4.6	100	0.00
83	T	n-Propylbenzene	2.0000	2.1757	-8.8	100	0.00
84	T	Bromobenzene	2.0000	2.0859	-4.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.0703	-3.5	100	0.00
86	T	2-Chlorotoluene	2.0000	2.1509	-7.5	100	0.00
87	T	4-Chlorotoluene	2.0000	2.0989	-4.9	100	0.00
88	T	a-Methylstyrene	-1.0000	1.9045	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	1.9967	0.2	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.1411	-7.1	100	0.00
91	T	sec-Butylbenzene	2.0000	2.1161	-5.8	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.1579	-7.9	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.1067	-5.3	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.0470	-2.4	100	0.00
95	T	n-Butylbenzene	2.0000	2.1098	-5.5	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0532	-2.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.6938	15.3	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	2.0021	-0.1	100	0.00
99	T	Hexachlorobutadiene	2.0000	2.0128	-0.6	100	0.00
100	T	Naphthalene	2.0000	2.0630	-3.2	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9910	0.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412223.D 8260WT.M Sat May 14 18:08:14 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	768397	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.58	117	534372	25.00	ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	274234	25.00	ug/L	0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	19775	2.0496	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	8.20%#		
43) 1,2-Dichloroethane-d4	10.30	65	21200	1.9207	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	7.68%#		
58) Toluene-d8	12.68	98	65647	2.3758	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	9.52%#		
80) p-Bromofluorobenzene	16.08	95	26759	2.3838	ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	9.52%#		

Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.16	85	55961	3.4750	ug/L	99
3) Chloromethane	3.62	50	34194	2.2538	ug/L	100
4) Vinyl Chloride	3.84	62	42506	4.1488	ug/L	99
5) 1,3-Butadiene	3.89	54	32006	3.1976	ug/L	93
6) Bromomethane	4.72	94	19582	3.4204	ug/L	94
7) Chloroethane	4.90	64	22000	3.2814	ug/L	84
8) Trichlorofluoromethane	5.37	101	77715	3.8212	ug/L	96
9) Diethyl ether	5.90	59	188516	30.2955	ug/L	79
10) Isoprene	5.94	67	44975	4.3218	ug/L	78
11) Acrolein	6.15	56	7712	13.9568	ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	36867	3.9591	ug/L	99
13) Acetone	6.24	43	3578	1.8967	ug/L	85
14) 1,1-Dichloroethene	6.47	61	59405	3.2870	ug/L	95
15) Tert-Butyl Alcohol	6.58	59	27833	64.0897	ug/L #	82
16) Dimethyl Sulfide	6.73	62	21102	3.1597	ug/L	77
17) Iodomethane	6.99	142	3667	1.8964	ug/L	95
18) Methyl acetate	7.00	43	11500	2.0398	ug/L #	86
19) Methylene Chloride	7.24	84	37533	4.3823	ug/L	52
20) Carbon Disulfide	7.29	76	123060	4.7097	ug/L	100
21) Acrylonitrile	7.43	53	25653	10.5804	ug/L	99
22) Methyl Tert Butyl Ether	7.47	73	80005	4.2289	ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	54124	3.3108	ug/L	94
24) n-Hexane	7.78	57	40758	2.7480	ug/L	82
25) Diisopropyl ether	8.12	45	841400	20.0337	ug/L #	91
26) Vinyl Acetate	8.30	43	37284	2.2113	ug/L #	90
27) 1,1-Dichloroethane	8.32	63	66711	3.4116	ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	907423	30.7852	ug/L	89
29) 2-Butanone	8.89	43	5359	1.7738	ug/L #	82
30) Propionitrile	8.99	54	17933	23.4726	ug/L	100
31) 2,2-Dichloropropane	9.10	77	73150	4.2462	ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	41036	4.1950	ug/L	89
33) Chloroform	9.37	83	78227	4.3116	ug/L	99
34) 1-Bromopropane	9.52	122	6162	3.9986	ug/L	99
35) Bromochloromethane	9.60	130	20988	4.1009	ug/L #	62
36) Tetrahydrofuran	9.62	42	38098	19.0742	ug/L #	62
38) 1,1,1-Trichloroethane	9.91	97	76152	4.1633	ug/L	97
39) Cyclohexane	9.94	56	51439	2.5767	ug/L #	66
40) 1,1-Dichloropropene	10.11	75	56645	4.3027	ug/L	93
41) Tert-Amyl-Methyl ether	10.21	73	821180	43.4958	ug/L	87
42) Carbon Tetrachloride	10.25	117	67831	3.9416	ug/L	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	51708	3.3934 ug/L		85
46)	Benzene	10.46	78	150204	4.4792 ug/L		86
47)	Trichloroethene	11.21	130	38500	3.9784 ug/L		94
48)	Methylcyclohexane	11.30	83	60897	4.5008 ug/L		81
49)	1,2-Dichloropropane	11.43	63	31773	3.2549 ug/L		77
50)	Bromodichloromethane	11.73	83	59127	4.3535 ug/L		94
51)	1,4-Dioxane	11.71	88	2719	69.8702 ug/L	#	62
52)	Dibromomethane	11.81	93	19711	4.2894 ug/L		96
53)	2-Chloroethyl Vinyl Ether	12.03	63	12946	3.1676 ug/L		98
54)	4-Methyl-2-Pentanone	12.05	58	5129	2.2991 ug/L	#	78
55)	cis-1,3-Dichloropropene	12.36	75	61169	4.4752 ug/L		94
56)	Dimethyl Disulfide	12.62	79	27966	3.9053 ug/L		98
59)	Toluene	12.78	91	161007	5.0316 ug/L		97
60)	Ethyl Methacrylate	12.88	69	28595	4.7624 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	49791	4.4599 ug/L		97
63)	1,1,2-Trichloroethane	13.18	97	23678	4.6631 ug/L		99
64)	2-Hexanone	13.11	58	4499	2.4685 ug/L	#	97
65)	1,3-Dichloropropane	13.49	76	44838	4.7614 ug/L		73
66)	Tetrachloroethene	13.60	164	32715	4.5144 ug/L		97
67)	Dibromochloromethane	13.87	129	35009	4.3734 ug/L		98
68)	1,2-Dibromoethane	14.13	107	24247	4.5815 ug/L		99
69)	1-Chlorohexane	14.21	91	53599	4.9176 ug/L		84
70)	Chlorobenzene	14.62	112	107618	4.8437 ug/L		95
71)	1,1,1,2-Tetrachloroethane	14.65	131	38120	4.4025 ug/L		96
72)	Ethylbenzene	14.65	106	56905	4.5138 ug/L		91
73)	m-,p-Xylene	14.75	106	137390	9.4592 ug/L		86
74)	o-Xylene	15.31	106	65650	4.4866 ug/L		85
75)	Styrene	15.35	104	111433	4.7758 ug/L		91
76)	Bromoform	15.84	173	19346	4.2121 ug/L		97
77)	Isopropylbenzene	15.73	105	182523	4.9200 ug/L		96
79)	1,1,2,2-Tetrachloroethane	15.95	83	26655	4.8730 ug/L		99
81)	1,2,3-Trichloropropane	16.13	110	8840	5.0289 ug/L		81
82)	trans-1,4-Dichloro-2-Buten	16.19	53	6584	2.4712 ug/L	#	51
83)	n-Propylbenzene	16.24	91	222196	5.2576 ug/L		96
84)	Bromobenzene	16.37	156	42665	4.8423 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	155714	4.9790 ug/L		93
86)	2-Chlorotoluene	16.52	91	148764	5.4968 ug/L		94
87)	4-Chlorotoluene	16.56	91	135679	4.8666 ug/L		94
88)	a-Methylstyrene	16.84	118	68945	4.4743 ug/L		91
89)	tert-Butylbenzene	16.89	134	29069	4.6914 ug/L		77
90)	1,2,4-Trimethylbenzene	16.95	105	161016	5.0301 ug/L		94
91)	sec-Butylbenzene	17.17	105	191273	5.0866 ug/L		94
92)	p-Isopropyltoluene	17.32	119	159232	4.9597 ug/L		93
93)	1,3-Dichlorobenzene	17.52	146	83896	4.7972 ug/L		95
94)	1,4-Dichlorobenzene	17.64	146	82462	4.7242 ug/L		86
95)	n-Butylbenzene	17.85	91	158787	5.1996 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	72524	4.7321 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	5629	4.6990 ug/L		76
98)	1,2,4-Trichlorobenzene	20.28	180	53855	4.5369 ug/L		98
99)	Hexachlorobutadiene	20.43	225	24504	4.4608 ug/L		93
100)	Naphthalene	20.65	128	79806	4.4217 ug/L		98
101)	1,2,3-Trichlorobenzene	20.96	180	44150	4.3720 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412224.D 8260WT.M Fri May 13 15:47:44 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

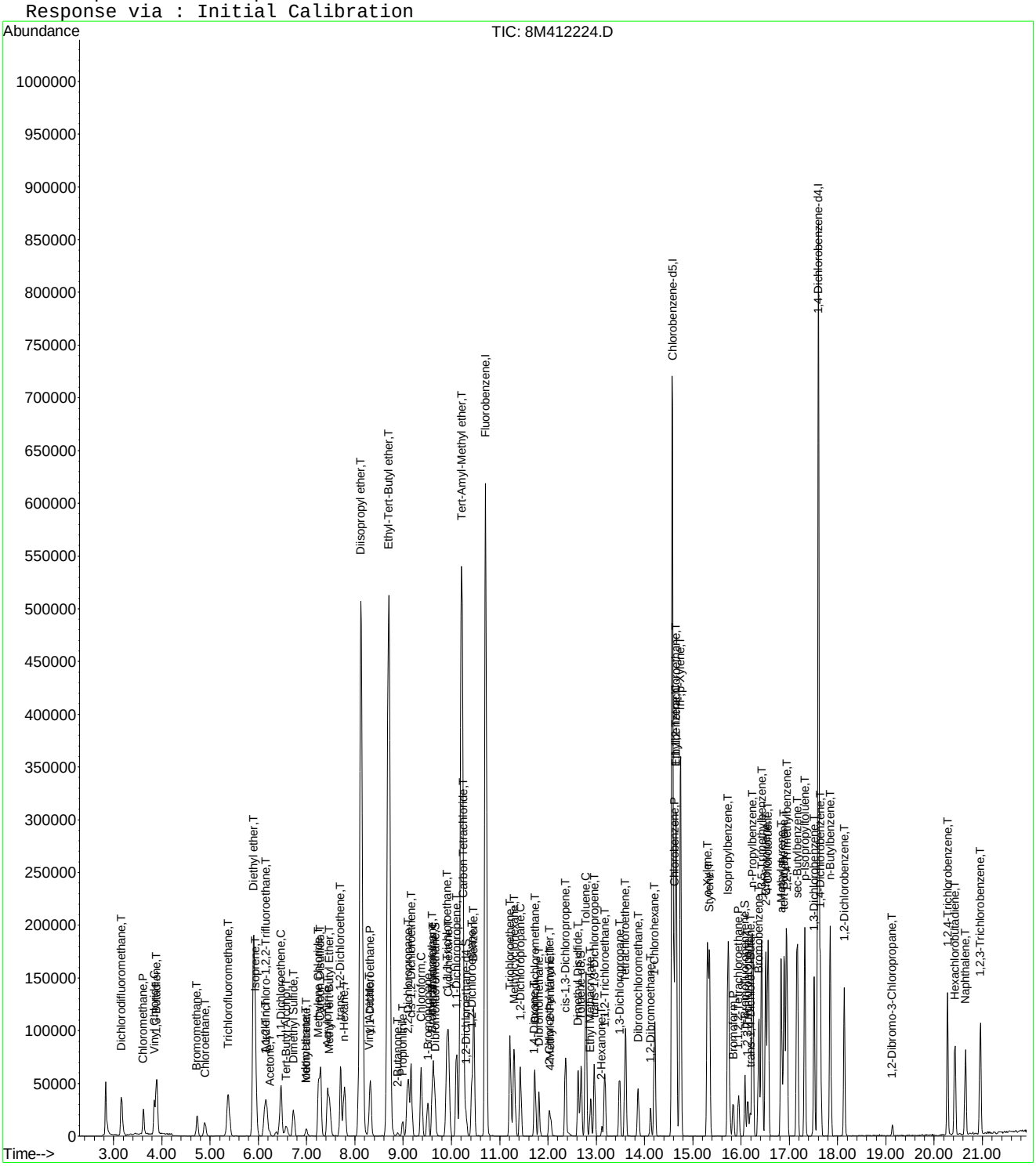

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.3438	13.1	100	0.00
3	P	Chloromethane	5.0000	4.5471	9.1	100	0.00
4	C	Vinyl Chloride	5.0000	4.7641	4.7	100	0.00
5	T	1,3-Butadiene	5.0000	4.2777	14.4	100	0.00
6	T	Bromomethane	5.0000	4.1880	16.2	100	-0.01
7	T	Chloroethane	5.0000	4.4813	10.4	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.6812	6.4	100	0.00
9	T	Diethyl ether	50.0000	47.5652	4.9	100	0.00
10	T	Isoprene	5.0000	4.4611	10.8	100	0.00
11	T	Acrolein	25.0000	21.7328	13.1	100	0.02
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.7244	5.5	100	0.00
13	T	Acetone	5.0000	4.1387	17.2	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.7810	4.4	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	100.4650	-0.5	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.7499	5.0	100	0.00
17	T	Iodomethane	5.0000	3.7634	24.7	100	0.00
18	T	Methyl acetate	5.0000	4.9211	1.6	100	0.00
19	T	Methylene Chloride	5.0000	4.7467	5.1	100	0.00
20	T	Carbon Disulfide	5.0000	4.7328	5.3	100	0.00
21	T	Acrylonitrile	25.0000	22.8698	8.5	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.6750	6.5	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.7415	5.2	100	0.00
24	T	n-Hexane	5.0000	4.8084	3.8	100	0.00
25	T	Diisopropyl ether	50.0000	47.2872	5.4	100	0.00
26	T	Vinyl Acetate	5.0000	4.5766	8.5	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.7058	5.9	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	47.5984	4.8	100	0.00
29	T	2-Butanone	5.0000	4.2191	15.6	100	0.00
30	T	Propionitrile	50.0000	48.4475	3.1	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.8965	2.1	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.6525	7.0	100	0.00
33	C	Chloroform	5.0000	4.6735	6.5	100	0.00
34		1-Bromopropane	5.0000	4.8774	2.5	100	0.00
35	T	Bromochloromethane	5.0000	4.6403	7.2	100	0.00
36	T	Tetrahydrofuran	50.0000	45.5400	8.9	100	-0.01
37	S	Dibromofluoromethane	2.5000	2.3953	4.2	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.7896	4.2	100	0.00
39	T	Cyclohexane	5.0000	4.6730	6.5	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.6741	6.5	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	47.6211	4.8	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.8044	3.9	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.3949	4.2	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	5.0000	4.7996	4.0	100	0.00
46	T	Benzene	5.0000	4.7588	4.8	100	0.00
47	T	Trichloroethene	5.0000	4.5733	8.5	100	0.00
48	T	Methylcyclohexane	5.0000	4.7616	4.8	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.5219	9.6	100	0.00
50	T	Bromodichloromethane	5.0000	4.7878	4.2	100	0.00
51	T	1,4-Dioxane	100.0000	77.0346	23.0	100	0.00
52	T	Dibromomethane	5.0000	4.7390	5.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.2867	14.3	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.1576	16.8	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.8662	2.7	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.1683	16.6	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.3473	6.1	100	0.00
59	C	Toluene	5.0000	4.8533	2.9	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.4883	10.2	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	5.0000	4.4786	10.4	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.5231	9.5	100	0.00
64	T	2-Hexanone	5.0000	4.0898	18.2	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.8109	3.8	100	0.00
66	T	Tetrachloroethene	5.0000	4.6028	7.9	100	0.00
67	T	Dibromochloromethane	5.0000	4.5802	8.4	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.6475	7.1	100	0.00
69	T	1-Chlorohexane	5.0000	4.7331	5.3	100	0.00
70	P	Chlorobenzene	5.0000	4.8107	3.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.3984	12.0	100	0.00
72	C	Ethylbenzene	5.0000	4.6492	7.0	100	0.00
73	T	m-,p-Xylene	10.0000	9.5700	4.3	100	0.00
74	T	o-Xylene	5.0000	4.6773	6.5	100	0.00
75	T	Styrene	5.0000	4.8405	3.2	100	0.00
76	P	Bromoform	5.0000	4.2672	14.7	100	0.00
77	T	Isopropylbenzene	5.0000	4.8951	2.1	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	4.8422	3.2	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.3565	5.7	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.2150	-4.3	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.3781	12.4	100	0.00
83	T	n-Propylbenzene	5.0000	5.1935	-3.9	100	0.00
84	T	Bromobenzene	5.0000	4.8483	3.0	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	4.9964	0.1	100	0.00
86	T	2-Chlorotoluene	5.0000	4.9803	0.4	100	0.00
87	T	4-Chlorotoluene	5.0000	5.0286	-0.6	100	0.00
88	T	a-Methylstyrene	5.0000	4.6629	6.7	100	0.00
89	T	tert-Butylbenzene	5.0000	4.7677	4.6	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.0245	-0.5	100	0.00
91	T	sec-Butylbenzene	5.0000	5.2170	-4.3	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.1150	-2.3	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	4.9511	1.0	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	4.8270	3.5	100	0.00
95	T	n-Butylbenzene	5.0000	5.1595	-3.2	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	4.8122	3.8	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	5.0942	-1.9	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.7808	4.4	100	0.00
99	T	Hexachlorobutadiene	5.0000	4.6555	6.9	100	0.00
100	T	Naphthalene	5.0000	4.7684	4.6	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.6455	7.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412224.D 8260WT.M Sat May 14 18:08:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	770027	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	531490	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	283594	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	86295	10.9569 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 43.84%#		
43) 1,2-Dichloroethane-d4	10.30	65	96239	11.3450 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 45.36%#		
58) Toluene-d8	12.68	98	294491	10.9223 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 43.68%#		
80) p-Bromofluorobenzene	16.08	95	121459	10.5490 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 42.20%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	288235	23.7135 ug/L	99
3) Chloromethane	3.62	50	155712	20.3784 ug/L	98
4) Vinyl Chloride	3.84	62	184250	20.9368 ug/L	95
5) 1,3-Butadiene	3.89	54	149348	22.7750 ug/L	96
6) Bromomethane	4.73	94	100098	25.0143 ug/L	99
7) Chloroethane	4.89	64	100876	20.9404 ug/L	91
8) Trichlorofluoromethane	5.37	101	351299	21.2512 ug/L	98
9) Diethyl ether	5.90	59	324317	80.8265 ug/L	78
10) Isoprene	5.94	67	205842	20.3622 ug/L	77
11) Acrolein	6.14	56	12049	34.8201 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	159996	20.3859 ug/L	97
13) Acetone	6.25	43	18459	25.7405 ug/L	98
14) 1,1-Dichloroethene	6.47	61	256241	20.5065 ug/L	92
15) Tert-Butyl Alcohol	6.57	59	43922	153.5712 ug/L	93
16) Dimethyl Sulfide	6.73	62	89456	20.6087 ug/L	83
17) Iodomethane	6.99	142	40622	61.0474 ug/L	93
18) Methyl acetate	7.00	43	46598	20.2171 ug/L #	85
19) Methylene Chloride	7.25	84	161897	20.1338 ug/L	52
20) Carbon Disulfide	7.30	76	538090	20.0802 ug/L	98
21) Acrylonitrile	7.43	53	46305	46.9889 ug/L	100
22) Methyl Tert Butyl Ether	7.47	73	361116	22.0137 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	234754	20.3175 ug/L	90
24) n-Hexane	7.78	57	172498	21.1165 ug/L	84
25) Diisopropyl ether	8.12	45	1447822	80.3755 ug/L #	91
26) Vinyl Acetate	8.30	43	166501	21.7017 ug/L #	88
27) 1,1-Dichloroethane	8.33	63	300321	21.3849 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	1579265	83.0733 ug/L	89
29) 2-Butanone	8.88	43	25681	23.9099 ug/L	87
30) Propionitrile	8.98	54	30953	89.5673 ug/L	94
31) 2,2-Dichloropropane	9.10	77	309575	20.8527 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	181973	20.4488 ug/L	89
33) Chloroform	9.37	83	348925	20.5535 ug/L	96
34) 1-Bromopropane	9.52	122	26723	22.7206 ug/L	96
35) Bromochloromethane	9.61	130	94952	21.3181 ug/L	65
36) Tetrahydrofuran	9.63	42	63066	70.5772 ug/L #	57
38) 1,1,1-Trichloroethane	9.91	97	335486	21.3640 ug/L	99
39) Cyclohexane	9.94	56	221040	19.9984 ug/L #	64
40) 1,1-Dichloropropene	10.11	75	248373	20.4717 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1418183	81.7883 ug/L	88
42) Carbon Tetrachloride	10.25	117	296471	21.3449 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412225.D 8260WT.M Fri May 13 16:16:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	228665	21.6403	ug/L		85
46)	Benzene	10.46	78	668449	20.3769	ug/L		86
47)	Trichloroethene	11.21	130	174107	20.7980	ug/L		96
48)	Methylcyclohexane	11.29	83	262275	21.4887	ug/L		82
49)	1,2-Dichloropropane	11.43	63	146868	21.1883	ug/L	#	72
50)	Bromodichloromethane	11.73	83	262192	21.9986	ug/L		98
51)	1,4-Dioxane	11.71	88	5351	196.3837	ug/L		76
52)	Dibromomethane	11.81	93	86951	21.0734	ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	63586	22.4600	ug/L		91
54)	4-Methyl-2-Pentanone	12.05	58	25754	25.0531	ug/L	#	73
55)	cis-1,3-Dichloropropene	12.36	75	265439	21.9841	ug/L		99
56)	Dimethyl Disulfide	12.63	79	134192	23.9412	ug/L		100
59)	Toluene	12.78	91	700473	20.1722	ug/L		99
60)	Ethyl Methacrylate	12.88	69	133361	23.2046	ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	238585	23.2548	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	107901	21.0216	ug/L		99
64)	2-Hexanone	13.11	58	22561	25.2093	ug/L	#	85
65)	1,3-Dichloropropane	13.49	76	198804	22.2491	ug/L		74
66)	Tetrachloroethene	13.60	164	141791	20.0055	ug/L		94
67)	Dibromochloromethane	13.87	129	158465	22.0695	ug/L		99
68)	1,2-Dibromoethane	14.13	107	110085	22.3366	ug/L		100
69)	1-Chlorohexane	14.21	91	229753	20.3591	ug/L		83
70)	Chlorobenzene	14.62	112	467492	20.4613	ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.65	131	183079	22.2095	ug/L		96
72)	Ethylbenzene	14.65	106	249016	20.2289	ug/L		90
73)	m-,p-Xylene	14.75	106	606381	41.1308	ug/L		88
74)	o-Xylene	15.30	106	294106	21.2106	ug/L		90
75)	Styrene	15.35	104	492781	21.8207	ug/L		89
76)	Bromoform	15.83	173	95911	23.8070	ug/L		99
77)	Isopropylbenzene	15.73	105	806678	20.7280	ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	123253	22.7779	ug/L		95
81)	1,2,3-Trichloropropane	16.14	110	36712	22.1354	ug/L		94
82)	trans-1,4-Dichloro-2-Buten	16.18	53	33702	27.6513	ug/L	#	56
83)	n-Propylbenzene	16.24	91	962196	20.3511	ug/L		97
84)	Bromobenzene	16.37	156	190566	21.2033	ug/L		94
85)	1,3,5-Trimethylbenzene	16.43	105	692633	20.9615	ug/L		94
86)	2-Chlorotoluene	16.51	91	649077	19.9155	ug/L		96
87)	4-Chlorotoluene	16.56	91	595446	20.3225	ug/L		95
88)	a-Methylstyrene	16.83	118	318960	22.3680	ug/L		92
89)	tert-Butylbenzene	16.90	134	129440	20.4705	ug/L		83
90)	1,2,4-Trimethylbenzene	16.95	105	707749	20.4783	ug/L		94
91)	sec-Butylbenzene	17.17	105	818359	20.1802	ug/L		97
92)	p-Isopropyltoluene	17.32	119	677859	19.7492	ug/L		96
93)	1,3-Dichlorobenzene	17.52	146	364065	20.5126	ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	363066	19.9874	ug/L		92
95)	n-Butylbenzene	17.85	91	681055	20.0187	ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	318612	19.9358	ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	23070	21.6419	ug/L		93
98)	1,2,4-Trichlorobenzene	20.28	180	242455	20.8863	ug/L		98
99)	Hexachlorobutadiene	20.43	225	110384	20.2523	ug/L		96
100)	Naphthalene	20.65	128	369849	21.4526	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	198876	19.8356	ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration

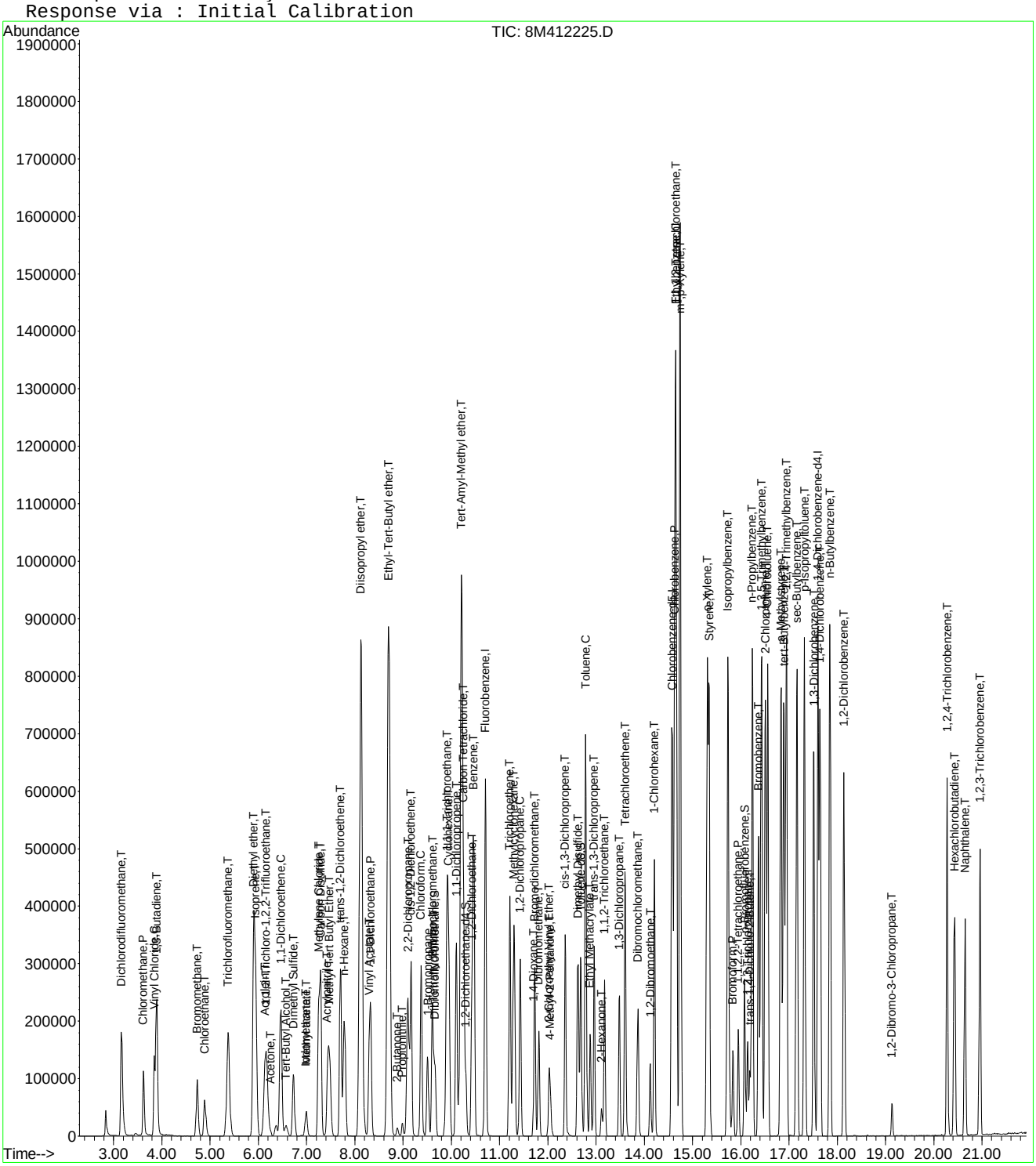

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45:30 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	778260	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	539116	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	288225	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	211053	26.5139 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.04%		
43) 1,2-Dichloroethane-d4	10.31	65	229348	26.7504 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.00%		
58) Toluene-d8	12.68	98	718491	26.2709 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.08%		
80) p-Bromofluorobenzene	16.07	95	292755	25.0180 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.08%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	682745	55.5761 ug/L	100
3) Chloromethane	3.62	50	372858	48.2806 ug/L	98
4) Vinyl Chloride	3.85	62	453905	51.0328 ug/L	96
5) 1,3-Butadiene	3.88	54	390501	58.9199 ug/L	99
6) Bromomethane	4.74	94	260493	64.4080 ug/L	97
7) Chloroethane	4.89	64	244336	50.1840 ug/L	91
8) Trichlorofluoromethane	5.38	101	837676	50.1376 ug/L	99
9) Diethyl ether	5.90	59	389327	96.0019 ug/L	79
10) Isoprene	5.94	67	498060	48.7477 ug/L	76
11) Acrolein	6.13	56	17644	50.4496 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	387643	48.8691 ug/L	97
13) Acetone	6.25	43	45901	63.3305 ug/L	97
14) 1,1-Dichloroethene	6.46	61	619744	49.0724 ug/L	94
15) Tert-Butyl Alcohol	6.58	59	53656	185.6211 ug/L	91
16) Dimethyl Sulfide	6.73	62	221107	50.3993 ug/L	82
17) Iodomethane	6.98	142	157872	234.7428 ug/L	94
18) Methyl acetate	7.00	43	114759	49.2629 ug/L #	81
19) Methylene Chloride	7.25	84	389653	47.9453 ug/L	52
20) Carbon Disulfide	7.29	76	1269941	46.8897 ug/L	99
21) Acrylonitrile	7.43	53	59882	60.1236 ug/L	97
22) Methyl Tert Butyl Ether	7.46	73	901668	54.3843 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	571507	48.9396 ug/L	93
24) n-Hexane	7.79	57	419656	50.8290 ug/L	83
25) Diisopropyl ether	8.13	45	1781012	97.8265 ug/L #	90
26) Vinyl Acetate	8.29	43	428708	55.2866 ug/L #	89
27) 1,1-Dichloroethane	8.32	63	722574	50.9078 ug/L	96
28) Ethyl-Tert-Butyl ether	8.71	59	1955100	101.7552 ug/L	89
29) 2-Butanone	8.88	43	66579	61.3316 ug/L #	82
30) Propionitrile	8.98	54	38235	109.4684 ug/L	95
31) 2,2-Dichloropropane	9.10	77	768496	51.2175 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	439590	48.8754 ug/L	91
33) Chloroform	9.38	83	844564	49.2230 ug/L	97
34) 1-Bromopropane	9.51	122	63442	53.3693 ug/L	99
35) Bromochloromethane	9.60	130	230119	51.1185 ug/L	66
36) Tetrahydrofuran	9.64	42	79437	87.9575 ug/L #	62
38) 1,1,1-Trichloroethane	9.90	97	817606	51.5150 ug/L	99
39) Cyclohexane	9.93	56	535882	47.9707 ug/L #	65
40) 1,1-Dichloropropene	10.10	75	615439	50.1899 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1769381	100.9628 ug/L	88
42) Carbon Tetrachloride	10.24	117	724058	51.5782 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412226.D 8260WT.M Fri May 13 16:45:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45:30 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	561107	52.5401 ug/L		85
46)	Benzene	10.46	78	1607407	48.4816 ug/L		86
47)	Trichloroethene	11.22	130	424998	50.2312 ug/L		96
48)	Methylcyclohexane	11.30	83	635339	51.5040 ug/L		83
49)	1,2-Dichloropropane	11.42	63	351908	50.2320 ug/L	#	71
50)	Bromodichloromethane	11.72	83	654943	54.3701 ug/L		97
51)	1,4-Dioxane	11.71	88	7573	274.9918 ug/L		73
52)	Dibromomethane	11.82	93	209167	50.1574 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	162319	56.7281 ug/L		93
54)	4-Methyl-2-Pentanone	12.05	58	64928	62.4928 ug/L		80
55)	cis-1,3-Dichloropropene	12.36	75	666861	54.6463 ug/L		98
56)	Dimethyl Disulfide	12.62	79	343446	60.6260 ug/L		96
59)	Toluene	12.79	91	1676069	47.5846 ug/L		100
60)	Ethyl Methacrylate	12.88	69	338996	58.1503 ug/L		69
62)	trans-1,3-Dichloropropene	12.96	75	594749	57.1499 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	268432	51.5570 ug/L		98
64)	2-Hexanone	13.12	58	56859	62.6347 ug/L	#	83
65)	1,3-Dichloropropane	13.48	76	489226	53.9770 ug/L		75
66)	Tetrachloroethene	13.60	164	350332	48.7296 ug/L		95
67)	Dibromochloromethane	13.86	129	401149	55.0780 ug/L		100
68)	1,2-Dibromoethane	14.12	107	273580	54.7252 ug/L		99
69)	1-Chlorohexane	14.21	91	560883	48.9984 ug/L		82
70)	Chlorobenzene	14.63	112	1117812	48.2326 ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	446892	53.4462 ug/L		99
72)	Ethylbenzene	14.66	106	603074	48.2980 ug/L		91
73)	m-,p-Xylene	14.74	106	1443780	96.5463 ug/L		90
74)	o-Xylene	15.31	106	709244	50.4265 ug/L		90
75)	Styrene	15.34	104	1212099	52.9133 ug/L		91
76)	Bromoform	15.84	173	238354	58.3272 ug/L		100
77)	Isopropylbenzene	15.73	105	1919993	48.6372 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	294266	53.5083 ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	89279	52.9656 ug/L		93
82)	trans-1,4-Dichloro-2-Buten	16.19	53	86829	70.0956 ug/L	#	53
83)	n-Propylbenzene	16.24	91	2278994	47.4277 ug/L		98
84)	Bromobenzene	16.37	156	459959	50.3549 ug/L		93
85)	1,3,5-Trimethylbenzene	16.43	105	1661486	49.4745 ug/L		95
86)	2-Chlorotoluene	16.51	91	1611031	48.6367 ug/L		97
87)	4-Chlorotoluene	16.56	91	1341051	45.0344 ug/L		95
88)	a-Methylstyrene	16.83	118	772611	53.3111 ug/L		90
89)	tert-Butylbenzene	16.89	134	307503	47.8493 ug/L		81
90)	1,2,4-Trimethylbenzene	16.94	105	1679809	47.8234 ug/L		95
91)	sec-Butylbenzene	17.16	105	1925411	46.7166 ug/L		97
92)	p-Isopropyltoluene	17.32	119	1621383	46.4795 ug/L		95
93)	1,3-Dichlorobenzene	17.51	146	882656	48.9327 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	871210	47.1909 ug/L		92
95)	n-Butylbenzene	17.85	91	1608832	46.5296 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	768548	47.3159 ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	59586	54.9992 ug/L		86
98)	1,2,4-Trichlorobenzene	20.28	180	583880	49.4902 ug/L		100
99)	Hexachlorobutadiene	20.44	225	264699	47.7844 ug/L		98
100)	Naphthalene	20.65	128	894629	51.0579 ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	475246	46.6387 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412226.D 8260WT.M Fri May 13 16:45:33 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration

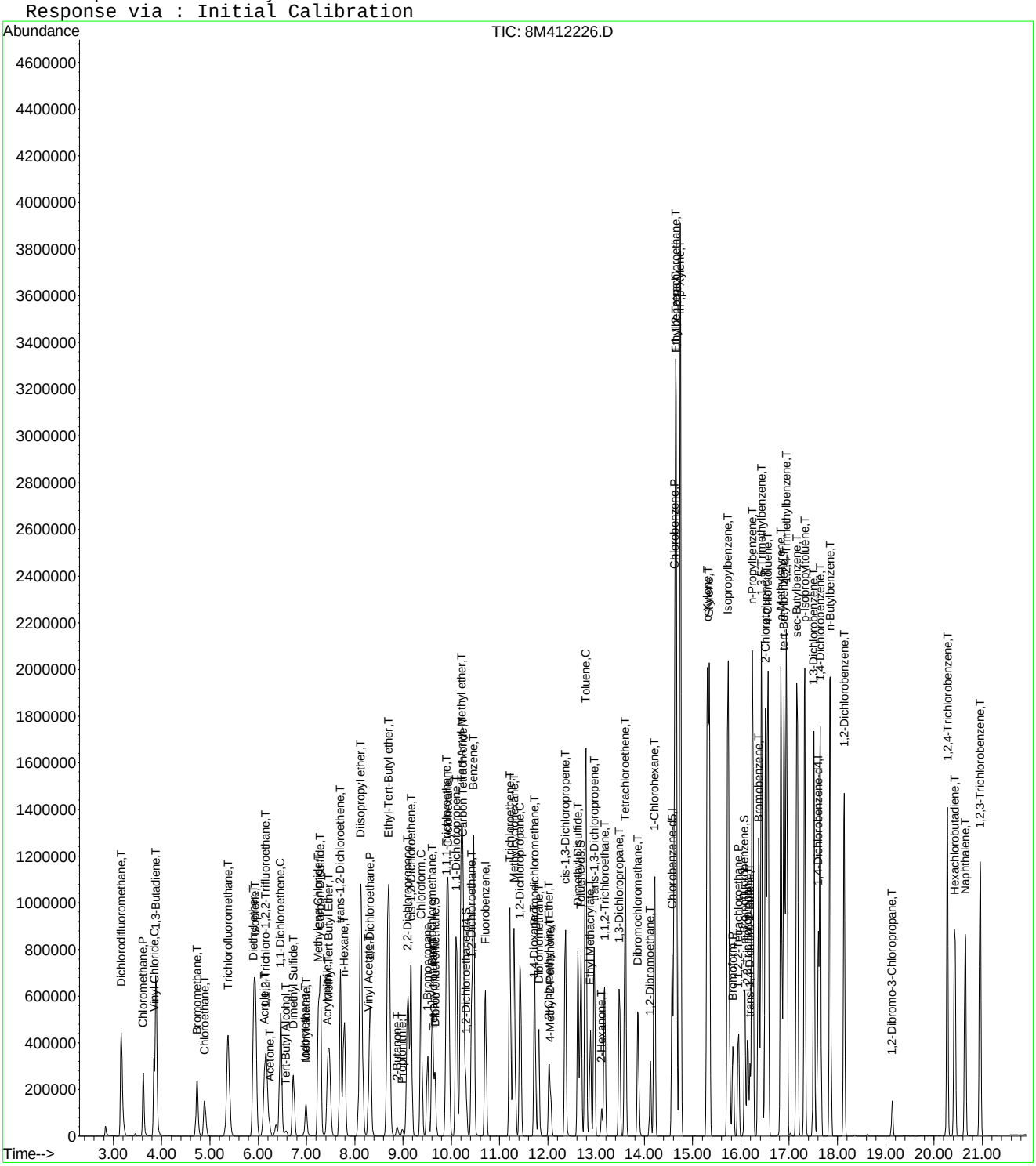

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	809533	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	559075	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	296193	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	460283	53.9056 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 215.64%#		
43) 1,2-Dichloroethane-d4	10.30	65	488116	52.5821 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 210.32%#		
58) Toluene-d8	12.68	98	1540572	52.8075 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 211.24%#		
80) p-Bromofluorobenzene	16.08	95	623735	51.1573 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 204.64%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	1463283	109.1068 ug/L	100
3) Chloromethane	3.62	50	778702	97.2380 ug/L	98
4) Vinyl Chloride	3.84	62	968312	103.4979 ug/L	95
5) 1,3-Butadiene	3.88	54	896569	120.4972 ug/L	95
6) Bromomethane	4.73	94	605228	129.8677 ug/L	99
7) Chloroethane	4.89	64	528153	103.4126 ug/L	90
8) Trichlorofluoromethane	5.37	101	1782726	101.4754 ug/L	99
9) Diethyl ether	5.90	59	828091	197.4770 ug/L	79
10) Isoprene	5.94	67	1080684	101.8037 ug/L	78
11) Acrolein	6.14	56	38655	109.5572 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	833546	101.0906 ug/L	97
13) Acetone	6.24	43	97515	109.1944 ug/L	100
14) 1,1-Dichloroethene	6.46	61	1323999	100.6729 ug/L	93
15) Tert-Butyl Alcohol	6.57	59	114220	387.5328 ug/L	91
16) Dimethyl Sulfide	6.73	62	489571	106.5996 ug/L	82
17) Iodomethane	6.99	142	416890	244.5557 ug/L	97
18) Methyl acetate	7.00	43	252444	104.3161 ug/L #	81
19) Methylene Chloride	7.24	84	827241	98.5346 ug/L	53
20) Carbon Disulfide	7.29	76	2766110	99.3432 ug/L	100
21) Acrylonitrile	7.43	53	126153	113.2272 ug/L	98
22) Methyl Tert Butyl Ether	7.46	73	1894494	105.8643 ug/L	87
23) trans-1,2-Dichloroethene	7.70	61	1203701	99.1822 ug/L	93
24) n-Hexane	7.78	57	926226	105.3097 ug/L	84
25) Diisopropyl ether	8.12	45	3699807	196.0386 ug/L #	90
26) Vinyl Acetate	8.29	43	860820	101.8643 ug/L #	88
27) 1,1-Dichloroethane	8.32	63	1521237	101.5567 ug/L	96
28) Ethyl-Tert-Butyl ether	8.70	59	4005676	198.2271 ug/L	89
29) 2-Butanone	8.88	43	145126	112.6698 ug/L #	81
30) Propionitrile	8.98	54	83038	219.1648 ug/L	97
31) 2,2-Dichloropropane	9.11	77	1610615	102.0557 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	935490	99.9944 ug/L	89
33) Chloroform	9.37	83	1766988	98.8341 ug/L	98
34) 1-Bromopropane	9.51	122	139657	108.5299 ug/L	100
35) Bromochloromethane	9.61	130	488678	102.8480 ug/L	66
36) Tetrahydrofuran	9.63	42	167812	187.5699 ug/L #	61
38) 1,1,1-Trichloroethane	9.91	97	1724504	102.7713 ug/L	100
39) Cyclohexane	9.94	56	1185537	102.8628 ug/L #	66
40) 1,1-Dichloropropene	10.11	75	1293224	100.8377 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	3634806	198.1264 ug/L	88
42) Carbon Tetrachloride	10.25	117	1534696	103.3979 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412227.D 8260WT.M Fri May 13 17:14:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	1177876	103.7352	ug/L		85
46)	Benzene	10.46	78	3298928	95.8405	ug/L		87
47)	Trichloroethene	11.21	130	903490	101.9036	ug/L		97
48)	Methylcyclohexane	11.30	83	1389528	104.6454	ug/L		83
49)	1,2-Dichloropropane	11.43	63	755128	102.5297	ug/L		73
50)	Bromodichloromethane	11.73	83	1351612	104.6036	ug/L		99
51)	1,4-Dioxane	11.72	88	16303	473.9624	ug/L		68
52)	Dibromomethane	11.81	93	445130	101.6543	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.02	63	333977	105.4228	ug/L		92
54)	4-Methyl-2-Pentanone	12.05	58	138980	110.1494	ug/L	#	77
55)	cis-1,3-Dichloropropene	12.36	75	1387475	105.9136	ug/L		100
56)	Dimethyl Disulfide	12.62	79	745504	111.3169	ug/L		97
59)	Toluene	12.78	91	3455614	95.2346	ug/L		99
60)	Ethyl Methacrylate	12.88	69	731009	113.5760	ug/L		70
62)	trans-1,3-Dichloropropene	12.96	75	1236182	107.9445	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	564076	103.0604	ug/L		99
64)	2-Hexanone	13.12	58	126268	114.5366	ug/L	#	79
65)	1,3-Dichloropropane	13.48	76	1021082	105.2672	ug/L		74
66)	Tetrachloroethene	13.60	164	752835	101.4023	ug/L		95
67)	Dibromochloromethane	13.87	129	856499	109.6525	ug/L		100
68)	1,2-Dibromoethane	14.12	107	577701	107.6426	ug/L		98
69)	1-Chlorohexane	14.21	91	1222720	103.0385	ug/L		82
70)	Chlorobenzene	14.62	112	2332247	97.2408	ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	947925	106.1463	ug/L		99
72)	Ethylbenzene	14.66	106	1275519	98.8771	ug/L		97
73)	m-,p-Xylene	14.75	106	3009424	194.2602	ug/L		98
74)	o-Xylene	15.31	106	1490638	100.8068	ug/L		93
75)	Styrene	15.35	104	2503721	102.8373	ug/L		88
76)	Bromoform	15.83	173	517827	114.0520	ug/L		100
77)	Isopropylbenzene	15.73	105	3913141	95.4433	ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	624965	106.8610	ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	192087	107.3268	ug/L		97
82)	trans-1,4-Dichloro-2-Buten	16.18	53	189214	128.4818	ug/L	#	59
83)	n-Propylbenzene	16.24	91	4599057	93.6644	ug/L		100
84)	Bromobenzene	16.37	156	968011	102.1426	ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	3401719	97.9556	ug/L		97
86)	2-Chlorotoluene	16.52	91	3177047	93.8267	ug/L		98
87)	4-Chlorotoluene	16.56	91	2899171	96.0712	ug/L		96
88)	a-Methylstyrene	16.84	118	1639166	103.6811	ug/L		90
89)	tert-Butylbenzene	16.90	134	654025	99.4199	ug/L		85
90)	1,2,4-Trimethylbenzene	16.95	105	3479295	96.7054	ug/L		97
91)	sec-Butylbenzene	17.17	105	3947832	94.2785	ug/L		98
92)	p-Isopropyltoluene	17.32	119	3328450	94.4148	ug/L		97
93)	1,3-Dichlorobenzene	17.52	146	1834740	98.9074	ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	1818309	96.6271	ug/L		92
95)	n-Butylbenzene	17.85	91	3308330	94.4002	ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	1606254	97.0179	ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	125368	107.7020	ug/L		87
98)	1,2,4-Trichlorobenzene	20.28	180	1227926	100.7076	ug/L		99
99)	Hexachlorobutadiene	20.43	225	569213	100.5231	ug/L		97
100)	Naphthalene	20.65	128	1852486	101.2968	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	1021163	98.5794	ug/L		100

(#) = qualifier out of range (m) = manual integration
8M412227.D 8260WT.M Fri May 13 17:14:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration

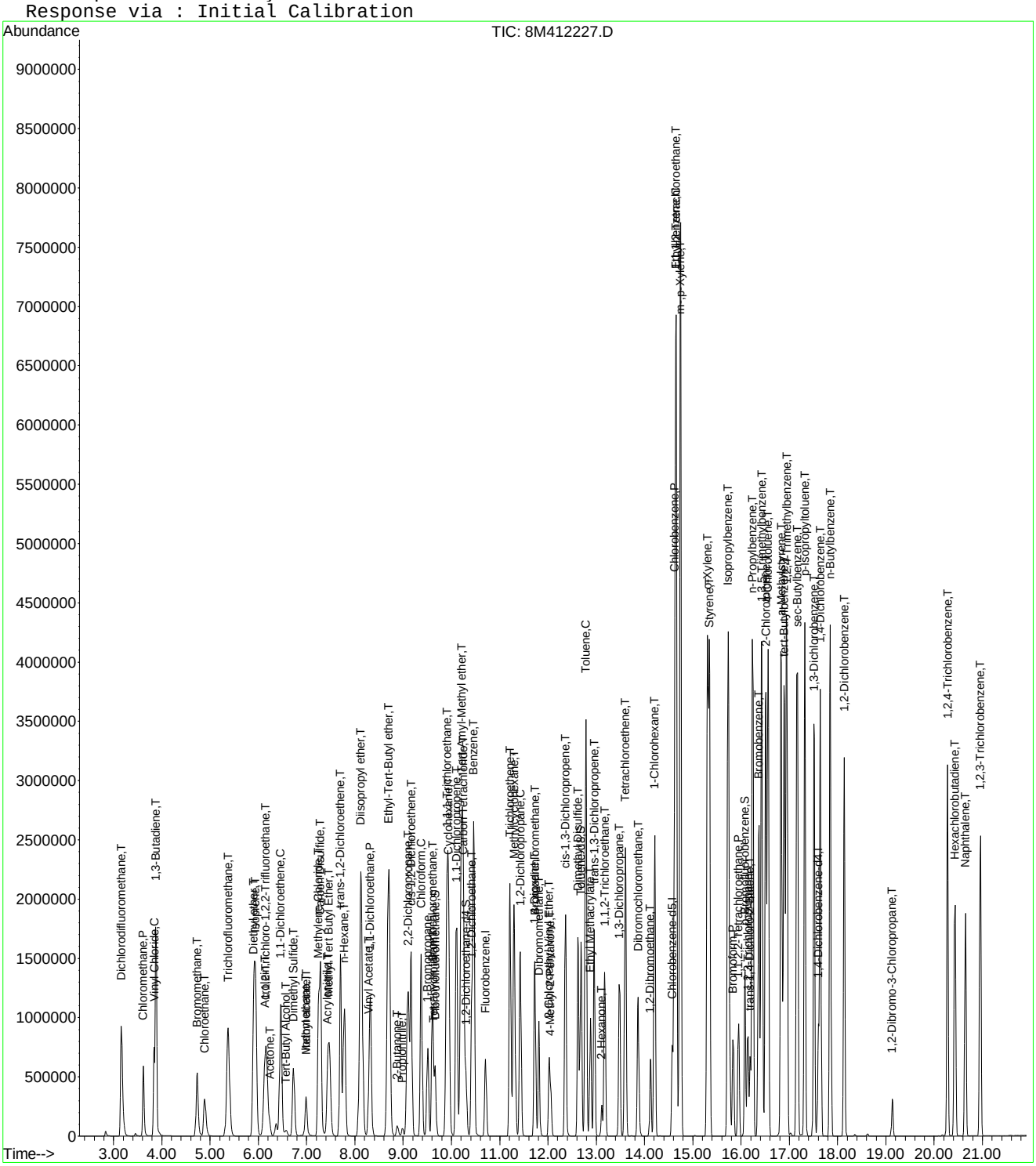

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	828540	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	578848	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	301401	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	898145	101.4517 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 405.80%#		
43) 1,2-Dichloroethane-d4	10.30	65	939848	98.0779 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 392.32%#		
58) Toluene-d8	12.68	98	2984162	97.8805 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 391.52%#		
80) p-Bromofluorobenzene	16.08	95	1242720	99.7023 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 398.80%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	2830517	203.5621 ug/L	98
3) Chloromethane	3.62	50	1586058	194.4056 ug/L	97
4) Vinyl Chloride	3.83	62	1935009	201.0738 ug/L	94
5) 1,3-Butadiene	3.88	54	1684964	212.5477 ug/L	94
6) Bromomethane	4.72	94	1358068	271.2231 ug/L	99
7) Chloroethane	4.89	64	1084803	206.5255 ug/L	90
8) Trichlorofluoromethane	5.37	101	3516760	195.1756 ug/L	99
10) Isoprene	5.94	67	2136665	196.1573 ug/L	78
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1662142	196.5993 ug/L	95
13) Acetone	6.24	43	187748	200.7963 ug/L	97
14) 1,1-Dichloroethene	6.46	61	2649821	196.6732 ug/L	92
15) Tert-Butyl Alcohol	6.58	59	6024	20.0950 ug/L #	87
16) Dimethyl Sulfide	6.73	62	976862	205.8822 ug/L	82
17) Iodomethane	6.99	142	896947	398.7987 ug/L	100
18) Methyl acetate	7.00	43	504293	201.4324 ug/L #	81
19) Methylene Chloride	7.25	84	1684780	196.5546 ug/L	52
20) Carbon Disulfide	7.29	76	5386210	189.2120 ug/L	99
21) Acrylonitrile	7.45	53	30354	26.0447 ug/L #	32
22) Methyl Tert Butyl Ether	7.46	73	3711011	200.6529 ug/L	87
23) trans-1,2-Dichloroethene	7.70	61	2410498	194.2902 ug/L	92
24) n-Hexane	7.78	57	1821777	199.7288 ug/L	84
26) Vinyl Acetate	8.29	43	1796217	206.9060 ug/L #	88
27) 1,1-Dichloroethane	8.32	63	3042055	197.9863 ug/L	95
29) 2-Butanone	8.88	43	271767	199.8193 ug/L #	77
30) Propionitrile	8.90	54	208	0.5280 ug/L #	1
31) 2,2-Dichloropropane	9.11	77	3202633	197.6970 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	1875631	195.8883 ug/L	89
33) Chloroform	9.37	83	3506648	191.9199 ug/L	99
34) 1-Bromopropane	9.51	122	286158	214.2313 ug/L	99
35) Bromochloromethane	9.60	130	980373	200.7807 ug/L	66
36) Tetrahydrofuran	9.62	42	2381	2.6275 ug/L	87
38) 1,1,1-Trichloroethane	9.91	97	3410306	197.7909 ug/L	99
39) Cyclohexane	9.94	56	2357393	198.8974 ug/L #	66
40) 1,1-Dichloropropene	10.10	75	2601175	197.8946 ug/L	96
42) Carbon Tetrachloride	10.25	117	3062767	200.6417 ug/L	99
45) 1,2-Dichloroethane	10.42	62	2313662	198.0324 ug/L	85
46) Benzene	10.46	78	6379817	182.1771 ug/L	89
47) Trichloroethene	11.21	130	1810459	198.9741 ug/L	97
48) Methylcyclohexane	11.30	83	2755373	200.4193 ug/L	83
49) 1,2-Dichloropropane	11.43	63	1528407	202.0331 ug/L	74

(#) = qualifier out of range (m) = manual integration
8M412228.D 8260WT.M Fri May 13 17:43:34 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
50)	Bromodichloromethane	11.73	83	2716764	204.0895 ug/L		99
51)	1,4-Dioxane	11.73	88	3865	104.9352 ug/L	#	18
52)	Dibromomethane	11.81	93	898971	200.1154 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.02	63	631656	192.7236 ug/L		90
54)	4-Methyl-2-Pentanone	12.05	58	262702	198.3957 ug/L	#	75
55)	cis-1,3-Dichloropropene	12.36	75	2784162	205.9153 ug/L		99
56)	Dimethyl Disulfide	12.62	79	1518705	215.4711 ug/L		95
59)	Toluene	12.78	91	6564353	175.9274 ug/L		96
60)	Ethyl Methacrylate	12.88	69	1429837	209.8161 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	2468609	205.4771 ug/L		98
63)	1,1,2-Trichloroethane	13.18	97	1124672	197.6019 ug/L		100
64)	2-Hexanone	13.12	58	237678	200.9290 ug/L	#	81
65)	1,3-Dichloropropane	13.48	76	2023247	199.9545 ug/L		76
66)	Tetrachloroethene	13.60	164	1546618	200.8018 ug/L		97
67)	Dibromochloromethane	13.87	129	1726523	210.5823 ug/L		100
68)	1,2-Dibromoethane	14.12	107	1163160	207.0667 ug/L		99
69)	1-Chlorohexane	14.21	91	2414147	195.6413 ug/L		83
70)	Chlorobenzene	14.62	112	4641169	187.6386 ug/L		94
71)	1,1,1,2-Tetrachloroethane	14.66	131	1929251	206.8372 ug/L		99
72)	Ethylbenzene	14.66	106	2611321	195.8267 ug/L		88
73)	m-,p-Xylene	14.75	106	5876234	367.8657 ug/L		83
74)	o-Xylene	15.31	106	3012318	196.4899 ug/L		98
75)	Styrene	15.35	104	4913204	194.1235 ug/L		86
76)	Bromoform	15.83	173	1052629	218.7989 ug/L		100
77)	Isopropylbenzene	15.73	105	7284624	172.7305 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	1237171	205.8673 ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	386738	209.7906 ug/L	#	54
82)	trans-1,4-Dichloro-2-Buten	16.19	53	382467	243.6526 ug/L		76
83)	n-Propylbenzene	16.24	91	8244387	166.5110 ug/L		93
84)	Bromobenzene	16.37	156	1935166	200.1305 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	6482975	183.9948 ug/L		98
86)	2-Chlorotoluene	16.52	91	6108308	178.8549 ug/L		99
87)	4-Chlorotoluene	16.56	91	5513221	180.5508 ug/L		99
88)	a-Methylstyrene	16.84	118	3255254	200.4995 ug/L		89
89)	tert-Butylbenzene	16.90	134	1351569	202.1005 ug/L		92
90)	1,2,4-Trimethylbenzene	16.95	105	6531416	179.2445 ug/L		97
91)	sec-Butylbenzene	17.17	105	7342730	173.9814 ug/L		97
92)	p-Isopropyltoluene	17.32	119	6352010	178.7315 ug/L		99
93)	1,3-Dichlorobenzene	17.52	146	3640547	193.1654 ug/L		90
94)	1,4-Dichlorobenzene	17.64	146	3593548	188.4603 ug/L		91
95)	n-Butylbenzene	17.85	91	6198060	175.4375 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	3171699	188.9651 ug/L		89
97)	1,2-Dibromo-3-Chloropropan	19.13	75	249646	207.5645 ug/L		88
98)	1,2,4-Trichlorobenzene	20.28	180	2480626	199.7296 ug/L		99
99)	Hexachlorobutadiene	20.43	225	1169411	202.7981 ug/L		98
100)	Naphthalene	20.65	128	3580198	192.0323 ug/L		97
101)	1,2,3-Trichlorobenzene	20.96	180	2040570	193.9298 ug/L		100

(#) = qualifier out of range (m) = manual integration
8M412228.D 8260WT.M Fri May 13 17:43:35 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration

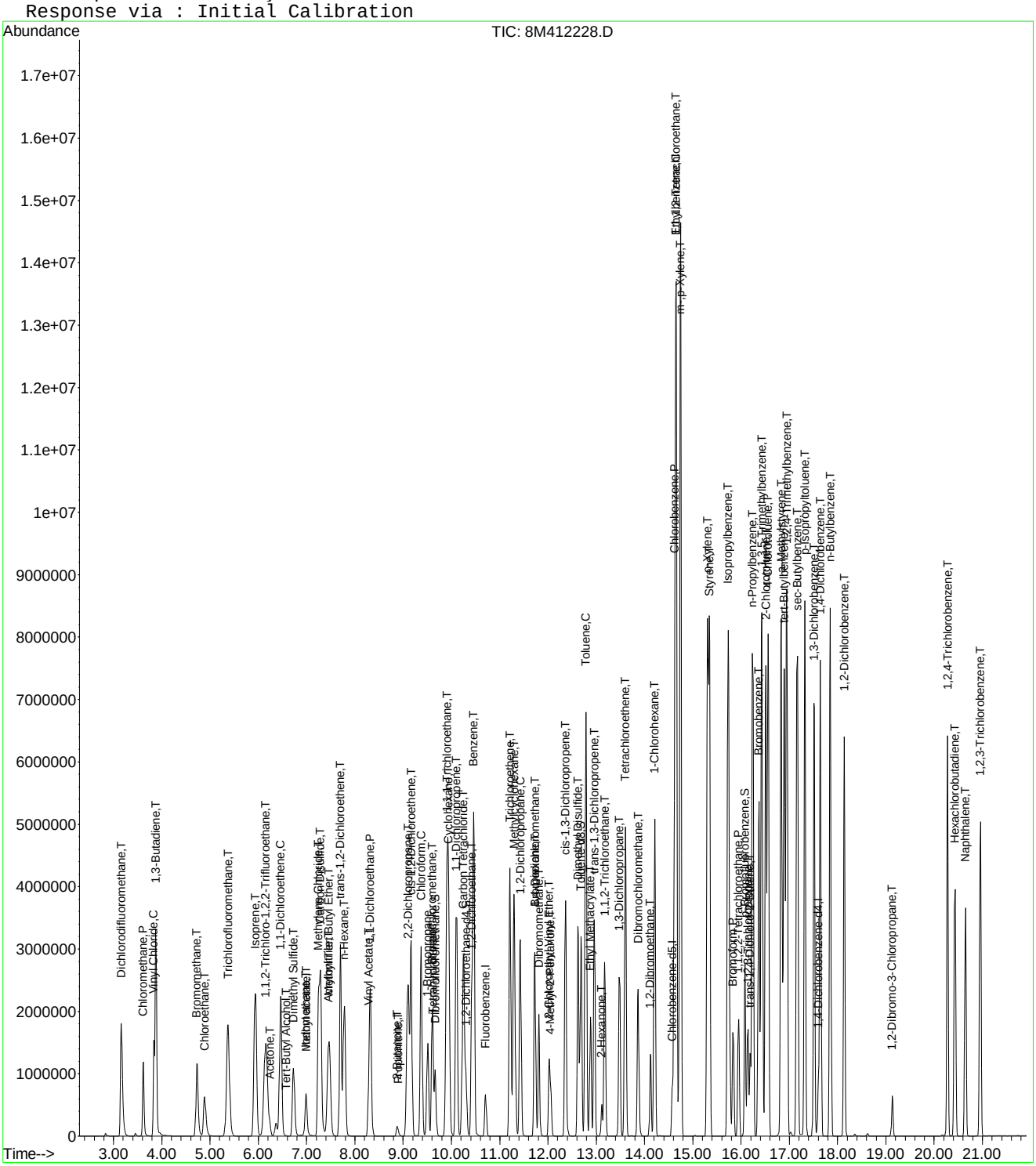

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	855409	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	599314	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	305726	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	1411837	154.4674 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 617.88%#		
43) 1,2-Dichloroethane-d4	10.30	65	1466019	148.1811 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 592.72%#		
58) Toluene-d8	12.69	98	4594713	145.5601 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 582.24%#		
80) p-Bromofluorobenzene	16.08	95	1918996	151.7813 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 607.12%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	4191932	292.0014 ug/L	97
3) Chloromethane	3.62	50	2474035	293.7212 ug/L	97
4) Vinyl Chloride	3.83	62	2956347	297.5552 ug/L	94
5) 1,3-Butadiene	3.87	54	2605506	318.3447 ug/L	94
6) Bromomethane	4.72	94	2177550	421.2239 ug/L	98
7) Chloroethane	4.89	64	1688005	311.2693 ug/L	90
8) Trichlorofluoromethane	5.37	101	5387662	289.6161 ug/L	99
9) Diethyl ether	5.90	59	1306432	295.4610 ug/L	80
10) Isoprene	5.93	67	3377164	300.3032 ug/L	78
11) Acrolein	6.14	56	70572	185.7401 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	2563878	293.7317 ug/L	94
13) Acetone	6.24	43	283185	293.3529 ug/L	90
14) 1,1-Dichloroethene	6.46	61	4031745	289.8421 ug/L	91
15) Tert-Butyl Alcohol	6.58	59	181796	587.3907 ug/L	90
16) Dimethyl Sulfide	6.73	62	1553493	317.1280 ug/L	81
17) Iodomethane	6.99	142	1347307	580.2206 ug/L	98
18) Methyl acetate	7.00	43	800046	309.5287 ug/L #	80
19) Methylene Chloride	7.24	84	2587731	292.4144 ug/L	52
20) Carbon Disulfide	7.29	76	8228181	279.9683 ug/L	98
21) Acrylonitrile	7.43	53	228227	189.6753 ug/L	94
22) Methyl Tert Butyl Ether	7.46	73	5605924	293.5892 ug/L	88
23) trans-1,2-Dichloroethene	7.70	61	3678699	287.1957 ug/L	92
24) n-Hexane	7.78	57	2863434	304.0691 ug/L	86
25) Diisopropyl ether	8.12	45	5819647	292.7898 ug/L #	89
26) Vinyl Acetate	8.30	43	2819503	314.5767 ug/L #	87
27) 1,1-Dichloroethane	8.32	63	4586531	289.1293 ug/L	94
28) Ethyl-Tert-Butyl ether	8.70	59	6190206	290.3321 ug/L	89
29) 2-Butanone	8.88	43	439359	312.8959 ug/L #	76
30) Propionitrile	8.99	54	133197	327.4673 ug/L	95
31) 2,2-Dichloropropane	9.10	77	4821388	288.2735 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	2847005	287.9976 ug/L	89
33) Chloroform	9.37	83	5197860	275.5447 ug/L	100
34) 1-Bromopropane	9.51	122	450012	326.3179 ug/L	100
35) Bromochloromethane	9.61	130	1490221	295.6112 ug/L	66
36) Tetrahydrofuran	9.63	42	271736	290.4491 ug/L #	62
38) 1,1,1-Trichloroethane	9.91	97	5126354	287.9792 ug/L	98
39) Cyclohexane	9.94	56	3733392	305.0987 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	3923871	289.1471 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	5639573	291.3713 ug/L	88
42) Carbon Tetrachloride	10.25	117	4598150	291.7629 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412229.D 8260WT.M Fri May 13 18:12:35 2016 Page 1

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	3468738	287.5726	ug/L		86
46)	Benzene	10.46	78	9065861	250.7462	ug/L		93
47)	Trichloroethene	11.21	130	2772282	295.1106	ug/L		97
48)	Methylcyclohexane	11.30	83	4327357	304.8748	ug/L		84
49)	1,2-Dichloropropane	11.43	63	2350729	300.9718	ug/L		74
50)	Bromodichloromethane	11.73	83	4051493	294.7973	ug/L		99
51)	1,4-Dioxane	11.72	88	26614	699.8767	ug/L		67
52)	Dibromomethane	11.81	93	1369945	295.3776	ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.03	63	1006317	297.3917	ug/L		90
54)	4-Methyl-2-Pentanone	12.06	58	424684	310.6522	ug/L	#	76
55)	cis-1,3-Dichloropropene	12.36	75	4156310	297.7431	ug/L		97
56)	Dimethyl Disulfide	12.63	79	2359825	324.2911	ug/L		94
59)	Toluene	12.78	91	9135213	236.4669	ug/L		90
60)	Ethyl Methacrylate	12.88	69	2228037	315.7801	ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	3700845	297.5240	ug/L		96
63)	1,1,2-Trichloroethane	13.18	97	1730199	293.6104	ug/L		100
64)	2-Hexanone	13.11	58	381967	311.8816	ug/L	#	78
65)	1,3-Dichloropropane	13.49	76	3080177	294.0141	ug/L		76
66)	Tetrachloroethene	13.60	164	2374435	297.7522	ug/L		96
67)	Dibromochloromethane	13.87	129	2638145	310.7838	ug/L		100
68)	1,2-Dibromoethane	14.13	107	1778561	305.8085	ug/L		99
69)	1-Chlorohexane	14.21	91	3712592	290.5924	ug/L		84
70)	Chlorobenzene	14.63	112	6754240	263.7433	ug/L		90
71)	1,1,1,2-Tetrachloroethane	14.65	131	2967650	307.3001	ug/L		100
72)	Ethylbenzene	14.65	106	4014412	290.7661	ug/L		70
73)	m-,p-Xylene	14.75	106	8357822	505.3514	ug/L		70
74)	o-Xylene	15.31	106	4530840	285.4488	ug/L		88
75)	Styrene	15.35	104	7050702	269.0641	ug/L		82
76)	Bromoform	15.84	173	1602587	321.7373	ug/L		99
77)	Isopropylbenzene	15.73	105	9900817	226.7477	ug/L		90
79)	1,1,2,2-Tetrachloroethane	15.95	83	1885953	309.3861	ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	581198	310.8176	ug/L		61
82)	trans-1,4-Dichloro-2-Buten	16.18	53	589705	370.3601	ug/L		82
83)	n-Propylbenzene	16.25	91	10768378	214.4110	ug/L		86
84)	Bromobenzene	16.37	156	2947671	300.5290	ug/L		99
85)	1,3,5-Trimethylbenzene	16.43	105	8890651	248.7580	ug/L		92
86)	2-Chlorotoluene	16.51	91	7868844	227.1449	ug/L		92
87)	4-Chlorotoluene	16.57	91	7782731	251.2687	ug/L		93
88)	a-Methylstyrene	16.84	118	4955768	300.9205	ug/L		86
89)	tert-Butylbenzene	16.90	134	2046401	301.6701	ug/L		95
90)	1,2,4-Trimethylbenzene	16.95	105	8903769	240.8932	ug/L		89
91)	sec-Butylbenzene	17.17	105	9867862	230.5051	ug/L		91
92)	p-Isopropyltoluene	17.32	119	8738927	242.4155	ug/L		94
93)	1,3-Dichlorobenzene	17.52	146	5319954	278.2806	ug/L		87
94)	1,4-Dichlorobenzene	17.64	146	5248511	271.3593	ug/L		88
95)	n-Butylbenzene	17.85	91	8408157	234.6279	ug/L		92
96)	1,2-Dichlorobenzene	18.14	146	4717385	277.0787	ug/L		87
97)	1,2-Dibromo-3-Chloropropan	19.13	75	377070	309.0741	ug/L		91
98)	1,2,4-Trichlorobenzene	20.28	180	3677657	291.9206	ug/L		98
99)	Hexachlorobutadiene	20.43	225	1780695	304.4378	ug/L		96
100)	Naphthalene	20.65	128	5216751	275.8542	ug/L		95
101)	1,2,3-Trichlorobenzene	20.96	180	3064908	287.1593	ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412229.D 8260WT.M Fri May 13 18:12:36 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration

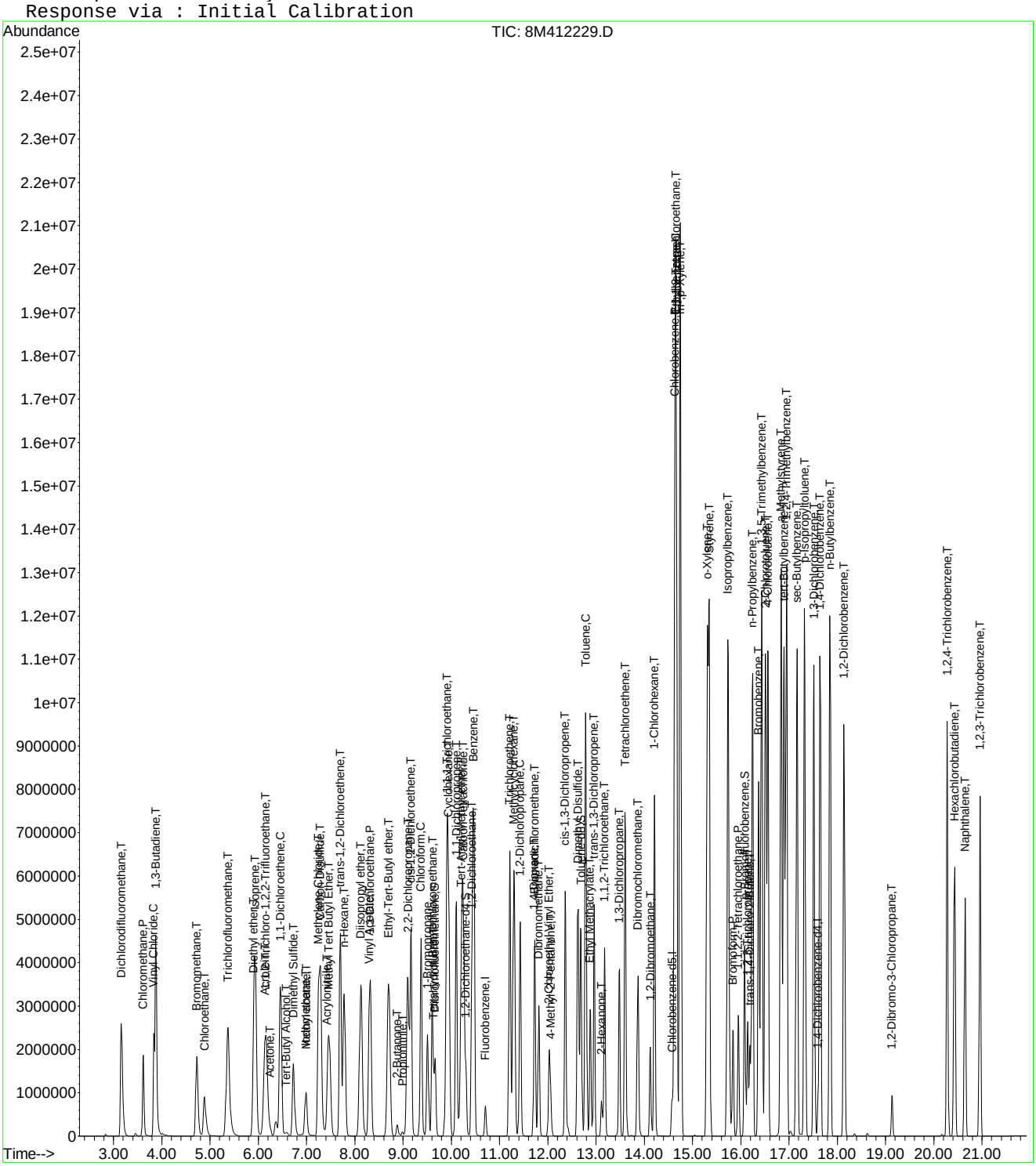

8M412229.D 8260WT.M Fri May 13 18:12:36 2016 Page 3

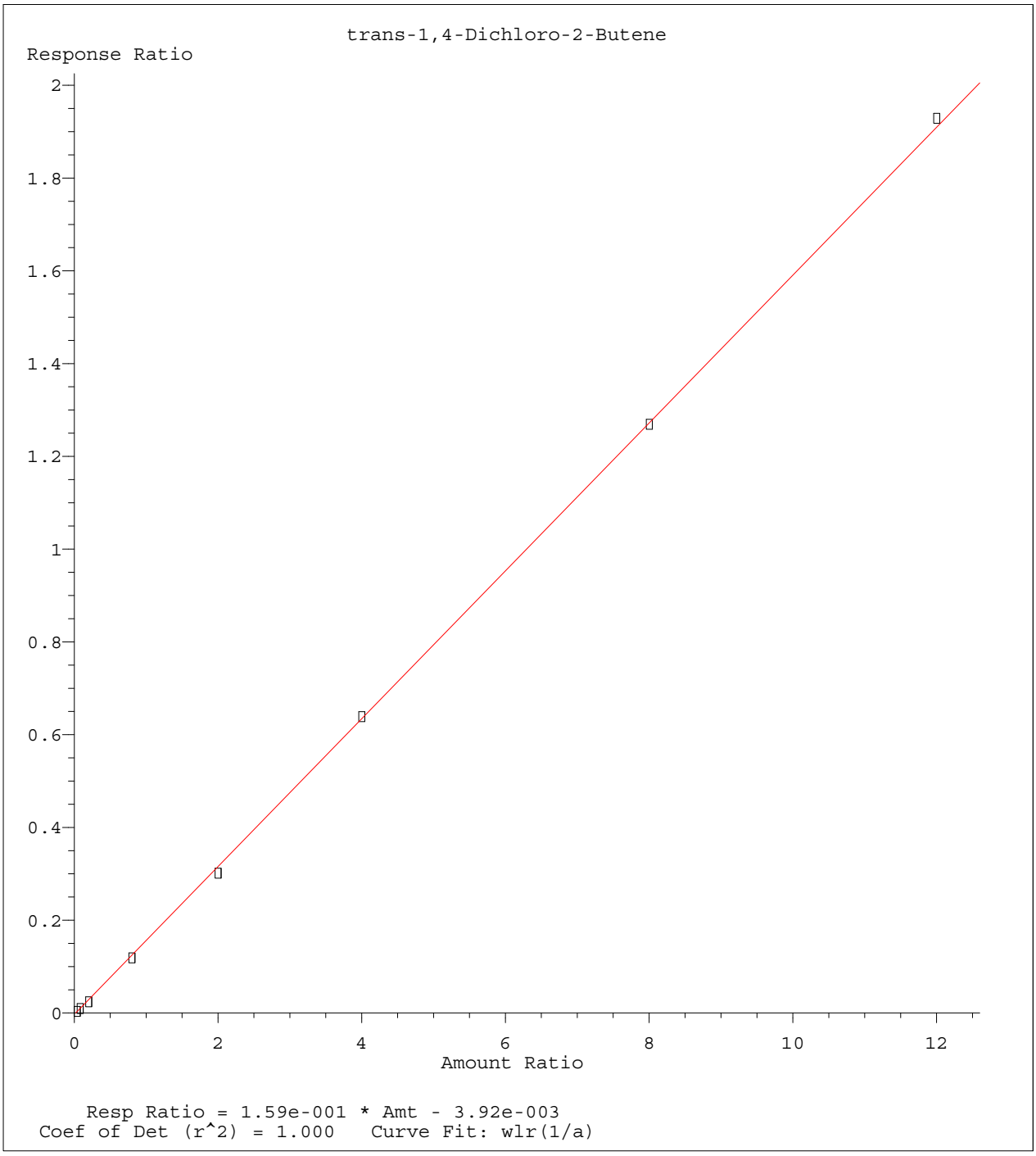

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

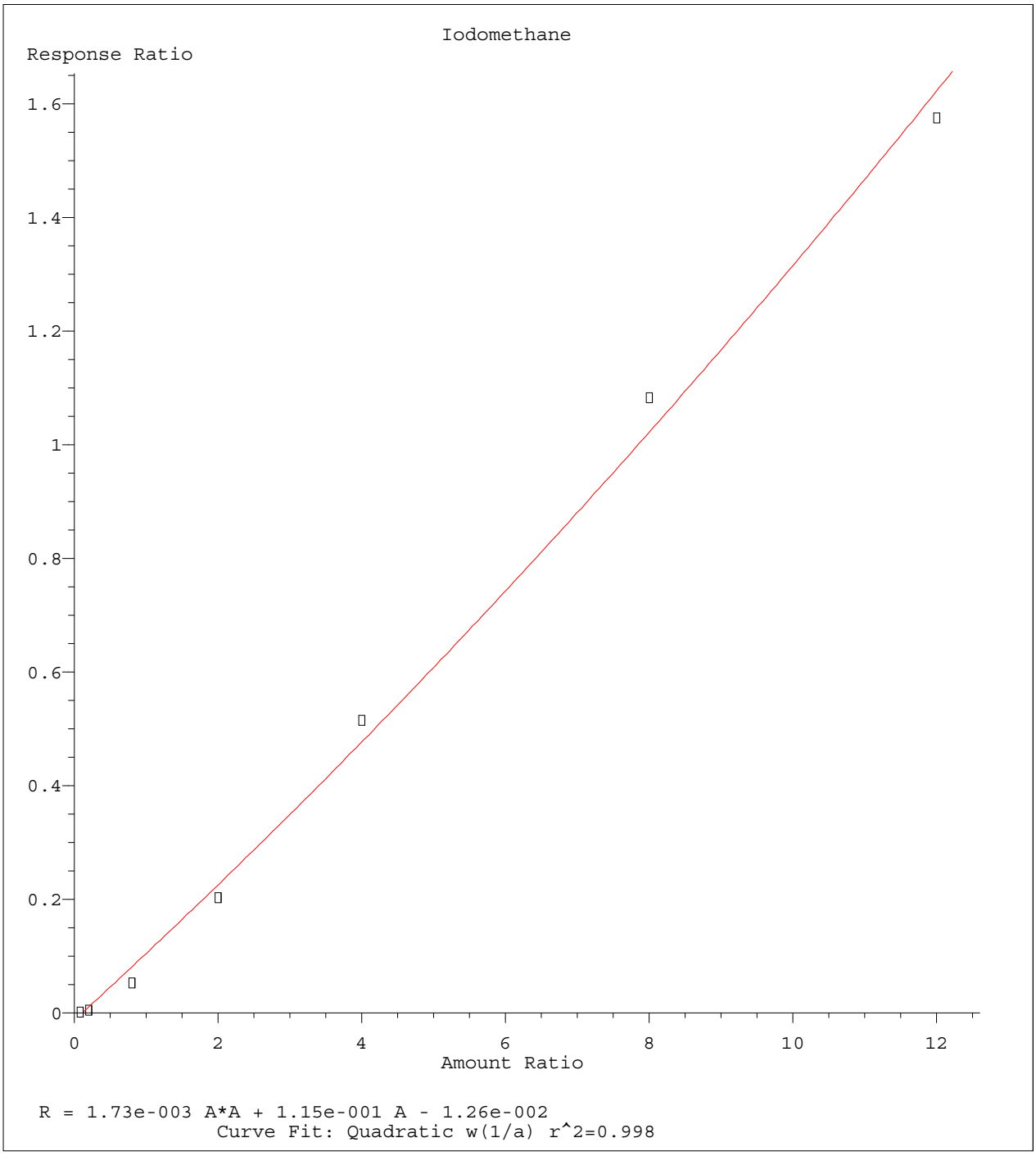

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

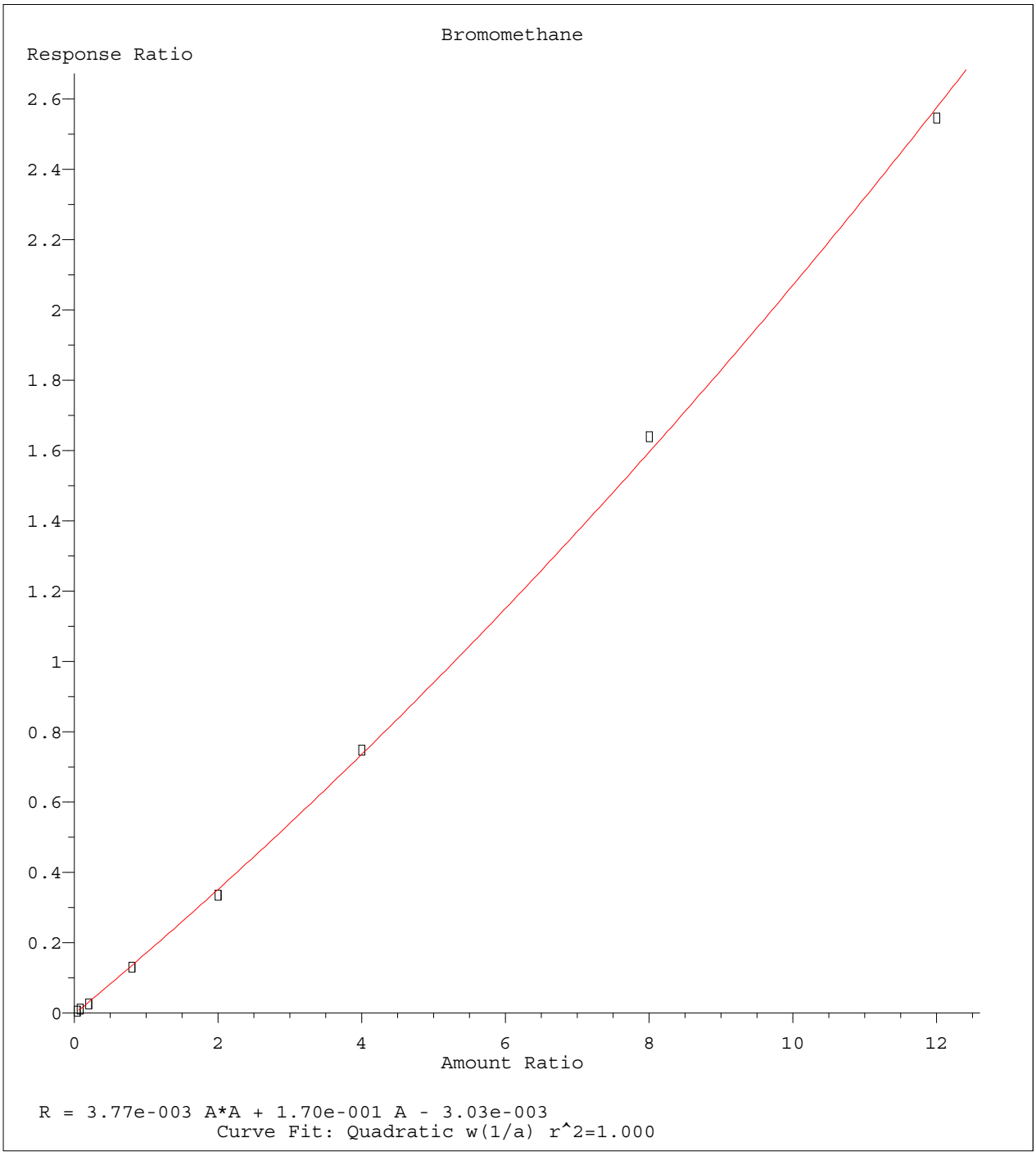

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:44:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Tue May 17 11:43:20 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	837879	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	574720	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	304324	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	229742	25.5204 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.08%		
43) 1,2-Dichloroethane-d4	10.31	65	238672	24.7259 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.92%		
58) Toluene-d8	12.68	98	776362	25.8115 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.24%		
80) p-Bromofluorobenzene	16.07	95	315683	25.0519 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.20%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	761591	54.2141 ug/L	99
3) Chloromethane	3.62	50	415589	50.6814 ug/L	100
4) Vinyl Chloride	3.84	62	509607	52.3810 ug/L	100
5) 1,3-Butadiene	3.88	54	347562	42.6002 ug/L	97
6) Bromomethane	4.73	94	272060	46.3924 ug/L	99
7) Chloroethane	4.88	64	285509	53.3336 ug/L	98
8) Trichlorofluoromethane	5.37	101	849580	46.9313 ug/L	100
9) Diethyl ether	5.90	59	451307	104.4282 ug/L	99
10) Isoprene	5.93	67	582863	53.0208 ug/L	99
11) Acrolein	6.13	56	38877	100.4722 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	419584	49.3091 ug/L	97
13) Acetone	6.23	43	54234	57.5310 ug/L	94
14) 1,1-Dichloroethene	6.46	61	622831	45.9700 ug/L	99
15) Tert-Butyl Alcohol	6.59	59	59797	197.9422 ug/L	97
16) Dimethyl Sulfide	6.73	62	351814	72.6234 ug/L	98
17) Iodomethane	6.99	142	92716	26.2832 ug/L	99
18) Methyl acetate	7.00	43	127540	50.0514 ug/L	98
19) Methylene Chloride	7.25	84	417642	48.4385 ug/L	99
20) Carbon Disulfide	7.29	76	1199899	42.3200 ug/L	100
21) Acrylonitrile	7.43	53	65324	53.4074 ug/L	93
22) Methyl Tert Butyl Ether	7.46	73	949572	50.8859 ug/L	97
23) trans-1,2-Dichloroethene	7.70	61	598296	48.0666 ug/L	99
24) n-Hexane	7.77	57	425106	45.9930 ug/L	99
25) Diisopropyl ether	8.13	45	2040382	105.1615 ug/L	98
26) Vinyl Acetate	8.29	43	415568	46.7802 ug/L	99
27) 1,1-Dichloroethane	8.32	63	721661	46.6846 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	2040020	98.1343 ug/L	99
29) 2-Butanone	8.88	43	73394	52.9905 ug/L	99
30) Propionitrile	8.98	54	42290	104.7756 ug/L	100
31) 2,2-Dichloropropane	9.10	77	780073	47.8861 ug/L	99
32) cis-1,2-Dichloroethene	9.16	96	470465	48.9162 ug/L	98
33) Chloroform	9.38	83	860252	47.1317 ug/L	100
34) 1-Bromopropane	9.51	122	98585	71.5615 ug/L	98
35) Bromochloromethane	9.60	130	234493	47.5456 ug/L	99
36) Tetrahydrofuran	9.62	42	86049	94.3281 ug/L	99
38) 1,1,1-Trichloroethane	9.90	97	825167	47.5949 ug/L	100
39) Cyclohexane	9.93	56	586721	48.8808 ug/L	97
40) 1,1-Dichloropropene	10.10	75	627217	47.4632 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1962875	103.9618 ug/L	99
42) Carbon Tetrachloride	10.24	117	711823	46.2363 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M412232.D 8260WT.M Tue May 17 11:44:38 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	108	0.00
2	T	Dichlorodifluoromethane	50.0000	54.2141	-8.4	112	0.00
3	P	Chloromethane	50.0000	50.6814	-1.4	111	0.00
4	C	Vinyl Chloride	50.0000	52.3811	-4.8	112	-0.01
5	T	1,3-Butadiene	50.0000	42.6002	14.8	89	0.00
6	T	Bromomethane	50.0000	46.3924	7.2	104	-0.01
7	T	Chloroethane	50.0000	53.3336	-6.7	117	-0.01
8	T	Trichlorofluoromethane	50.0000	46.9313	6.1	101	-0.01
9	T	Diethyl ether	100.0000	104.4282	-4.4	116	0.00
10	T	Isoprene	50.0000	53.0208	-6.0	117	0.00
11	T	Acrolein	50.0000	100.4722	-100.9#	220	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	49.3091	1.4	108	0.00
13	T	Acetone	50.0000	57.5310	-15.1	118	-0.01
14	C	1,1-Dichloroethene	50.0000	45.9700	8.1	100	0.00
15	T	Tert-Butyl Alcohol	200.0000	197.9423	1.0	108	0.01
16	T	Dimethyl Sulfide	50.0000	72.6234	-45.2#	159	0.00
17	T	Iodomethane	50.0000	26.2832	47.4#	59	0.01
18	T	Methyl acetate	50.0000	50.0514	-0.1	111	0.00
19	T	Methylene Chloride	50.0000	48.4385	3.1	107	0.00
20	T	Carbon Disulfide	50.0000	42.3200	15.4	94	0.00
21	T	Acrylonitrile	50.0000	53.4074	-6.8	109	0.00
22	T	Methyl Tert Butyl Ether	50.0000	50.8859	-1.8	105	0.00
23	T	trans-1,2-Dichloroethene	50.0000	48.0666	3.9	105	0.00
24	T	n-Hexane	50.0000	45.9930	8.0	101	-0.01
25	T	Diisopropyl ether	100.0000	105.1615	-5.2	115	0.00
26	T	Vinyl Acetate	50.0000	46.7802	6.4	97	0.00
27	P	1,1-Dichloroethane	50.0000	46.6846	6.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.1343	1.9	104	0.00
29	T	2-Butanone	50.0000	52.9905	-6.0	110	0.00
30	T	Propionitrile	100.0000	104.7756	-4.8	111	0.00
31	T	2,2-Dichloropropane	50.0000	47.8861	4.2	102	0.00
32	T	cis-1,2-Dichloroethene	50.0000	48.9162	2.2	107	-0.01
33	C	Chloroform	50.0000	47.1317	5.7	102	0.00
34		1-Bromopropane	50.0000	71.5615	-43.1#	155	0.00
35	T	Bromochloromethane	50.0000	47.5456	4.9	102	0.00
36	T	Tetrahydrofuran	100.0000	94.3281	5.7	108	-0.01
37	S	Dibromofluoromethane	25.0000	25.5204	-2.1	109	0.00
38	T	1,1,1-Trichloroethane	50.0000	47.5949	4.8	101	0.00
39	T	Cyclohexane	50.0000	48.8808	2.2	109	0.00
40	T	1,1-Dichloropropene	50.0000	47.4632	5.1	102	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	103.9618	-4.0	111	0.00
42	T	Carbon Tetrachloride	50.0000	46.2363	7.5	98	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.7259	1.1	104	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	49.0148	2.0	103	0.00
46	T	Benzene	50.0000	48.5232	3.0	104	0.00
47	T	Trichloroethene	50.0000	51.0658	-2.1	110	0.00
48	T	Methylcyclohexane	50.0000	49.8573	0.3	109	0.00
49	C	1,2-Dichloropropane	50.0000	50.9747	-1.9	111	0.00
50	T	Bromodichloromethane	50.0000	48.3053	3.4	99	0.00
51	T	1,4-Dioxane	200.0000	216.9538	-8.5	110	0.01
52	T	Dibromomethane	50.0000	45.8126	8.4	99	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	51.2623	-2.5	104	0.00
54	T	4-Methyl-2-Pentanone	50.0000	51.8715	-3.7	107	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.8979	-7.8	111	0.00
56	T	Dimethyl Disulfide	50.0000	52.2714	-4.5	111	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	107	0.00
58	S	Toluene-d8	25.0000	25.8115	-3.2	108	0.00
59	C	Toluene	50.0000	49.0912	1.8	105	0.00
60	T	Ethyl Methacrylate	50.0000	55.9509	-11.9	113	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	50.6740	-1.3	102	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.0377	1.9	103	0.00
64	T	2-Hexanone	50.0000	53.6057	-7.2	112	0.00
65	T	1,3-Dichloropropane	50.0000	53.6720	-7.3	110	0.00
66	T	Tetrachloroethene	50.0000	47.8053	4.4	104	0.00
67	T	Dibromochloromethane	50.0000	49.6585	0.7	102	0.00
68	T	1,2-Dibromoethane	50.0000	51.1121	-2.2	105	0.00
69	T	1-Chlorohexane	50.0000	51.0611	-2.1	111	0.00
70	P	Chlorobenzene	50.0000	50.1844	-0.4	108	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	49.3793	1.2	103	0.00
72	C	Ethylbenzene	50.0000	48.2013	3.6	105	0.00
73	T	m-,p-Xylene	100.0000	101.1341	-1.1	108	0.00
74	T	o-Xylene	50.0000	50.5675	-1.1	108	0.00
75	T	Styrene	50.0000	51.5086	-3.0	105	0.00
76	P	Bromoform	50.0000	48.2227	3.6	99	0.00
77	T	Isopropylbenzene	50.0000	51.1140	-2.2	107	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	106	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	49.6172	0.8	103	0.00
80	S	p-Bromofluorobenzene	25.0000	25.0519	-0.2	108	0.00
81	T	1,2,3-Trichloropropane	50.0000	50.0849	-0.2	106	0.01
82	T	trans-1,4-Dichloro-2-Butene	50.0000	39.2043	21.6	86	0.00
83	T	n-Propylbenzene	50.0000	51.9237	-3.8	108	0.00
84	T	Bromobenzene	50.0000	49.4648	1.1	105	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	51.6344	-3.3	107	0.00
86	T	2-Chlorotoluene	50.0000	51.5639	-3.1	106	0.00
87	T	4-Chlorotoluene	50.0000	48.2650	3.5	108	0.00
88	T	a-Methylstyrene	50.0000	56.4132	-12.8	120	0.00
89	T	tert-Butylbenzene	50.0000	50.9494	-1.9	112	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	49.6617	0.7	105	0.00
91	T	sec-Butylbenzene	50.0000	51.3386	-2.7	108	0.00
92	T	p-Isopropyltoluene	50.0000	50.1261	-0.3	107	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.8943	-1.8	108	0.00
94	T	1,4-Dichlorobenzene	50.0000	50.4742	-0.9	110	0.00
95	T	n-Butylbenzene	50.0000	49.6520	0.7	105	0.00
96	T	1,2-Dichlorobenzene	50.0000	50.4907	-1.0	110	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	48.4851	3.0	100	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	50.1129	-0.2	107	0.00
99	T	Hexachlorobutadiene	50.0000	52.0919	-4.2	115	0.00
100	T	Naphthalene	50.0000	45.8047	8.4	95	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	47.7353	4.5	106	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412232.D 8260WT.M Sat May 14 18:09:03 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:21 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	709364	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	505399	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	272922	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	27428	100.2132 ug/L	99
3) 3-Chloro-1-propene	7.07	41	940418	104.3259 ug/L	82
4) 2-Chloro-1,3-butadiene	8.45	53	1188994	104.3183 ug/L	86
5) Ethyl Acetate	9.10	43	283167	104.3264 ug/L	95
6) Methacrylonitrile	9.25	67	155775	104.5365 ug/L #	63
7) Isobutyl Alcohol	9.25	43	17893	197.3629 ug/L #	96
9) Methyl methacrylate	11.42	41	298802	102.0346 ug/L	70
10) 2-Nitropropane	11.75	43	121321	95.8263 ug/L	97
13) Cyclohexanone	15.84	55	11401	102.1363 ug/L #	70

(#) = qualifier out of range (m) = manual integration
8M412321.D A9FOOWT.M Thu May 19 09:01:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

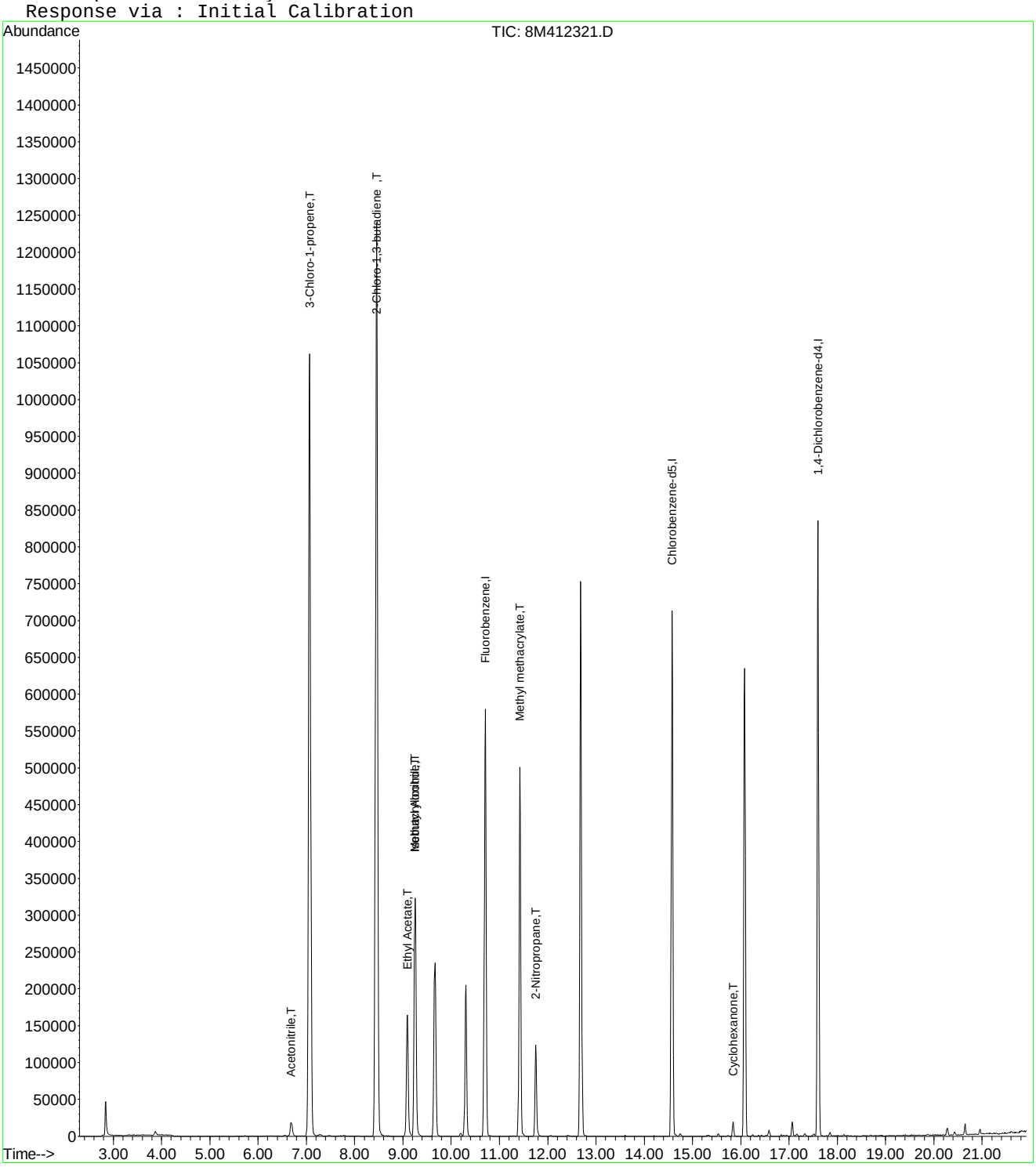

8M412321.D A9FOOWT.M Thu May 19 09:01:22 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	100.2132	-0.2	100	0.00
3	T	3-Chloro-1-propene	100.0000	104.3259	-4.3	100	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	104.3183	-4.3	100	0.00
5	T	Ethyl Acetate	100.0000	104.3264	-4.3	100	0.00
6	T	Methacrylonitrile	100.0000	104.5365	-4.5	100	0.00
7	T	Isobutyl Alcohol	200.0000	197.3629	1.3	100	-0.01
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.02
9	T	Methyl methacrylate	100.0000	102.0346	-2.0	100	0.00
10	T	2-Nitropropane	100.0000	95.8263	4.2	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	100.0000	102.1363	-2.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412321.D A9FOOWT.M Thu May 19 09:02:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:20:35 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	677339	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	488377	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	260939	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	13323	50.9795 ug/L	98
3) 3-Chloro-1-propene	7.07	41	453655	52.7060 ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	568765	52.2609 ug/L	87
5) Ethyl Acetate	9.09	43	131636	50.7913 ug/L	97
6) Methacrylonitrile	9.25	67	74064	52.0523 ug/L #	62
7) Isobutyl Alcohol	9.26	43	8483	97.9930 ug/L	95
9) Methyl methacrylate	11.42	41	143892	51.4593 ug/L	70
10) 2-Nitropropane	11.75	43	56559	46.7858 ug/L	95
13) Cyclohexanone	15.84	55	5225	48.9579 ug/L	83

(#) = qualifier out of range (m) = manual integration
8M412322.D A9FOOWT.M Thu May 19 09:20:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:19 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

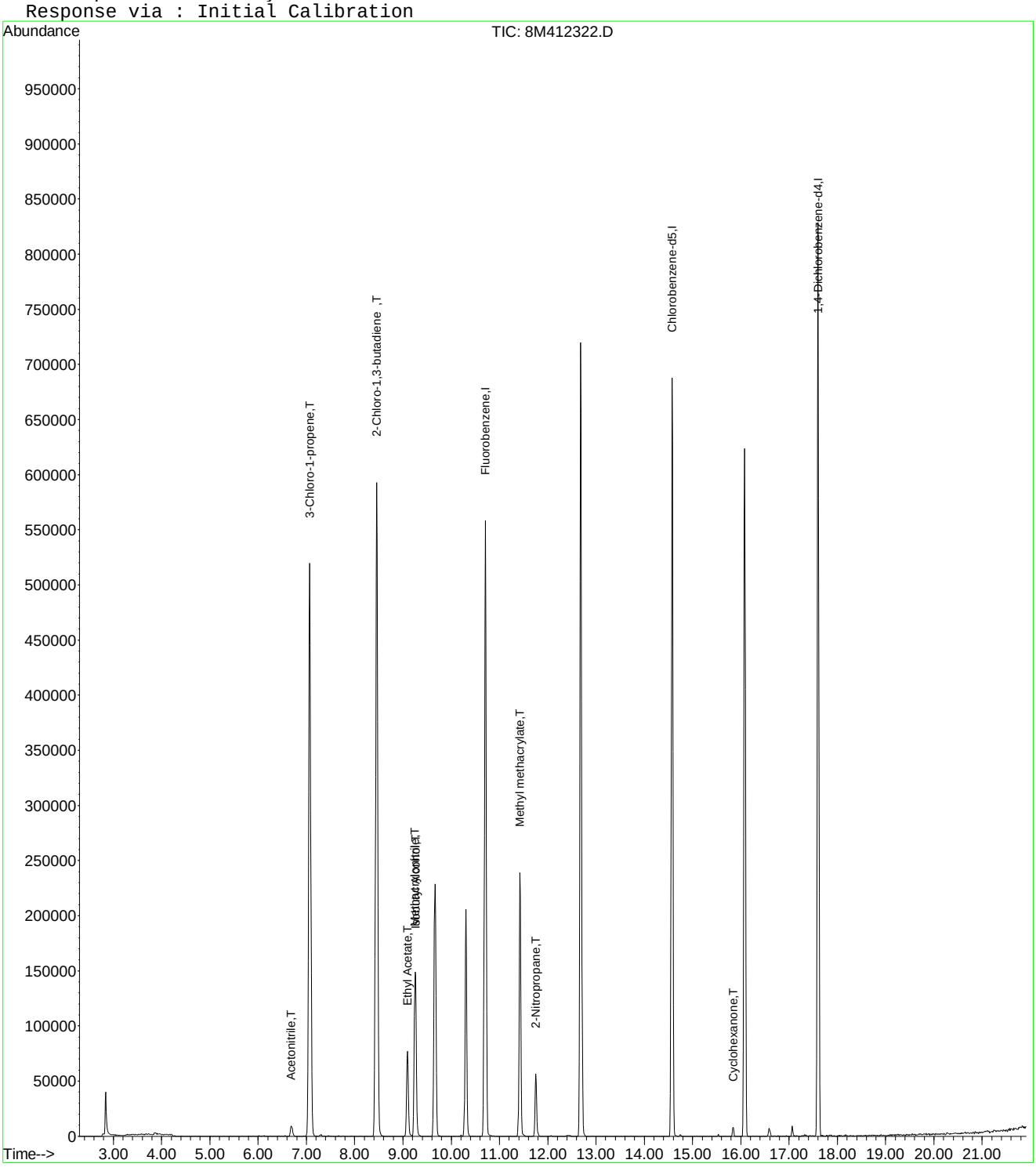

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	50.9795	-2.0	100	0.00
3	T	3-Chloro-1-propene	50.0000	52.7060	-5.4	100	0.00
4	T	2-Chloro-1,3-butadiene	50.0000	52.2609	-4.5	100	0.00
5	T	Ethyl Acetate	50.0000	50.7913	-1.6	100	0.00
6	T	Methacrylonitrile	50.0000	52.0523	-4.1	100	0.00
7	T	Isobutyl Alcohol	100.0000	97.9929	2.0	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.02
9	T	Methyl methacrylate	50.0000	51.4592	-2.9	100	0.00
10	T	2-Nitropropane	50.0000	46.7858	6.4	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	50.0000	48.9579	2.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412322.D A9FOOWT.M Thu May 19 09:02:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:22:33 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	652985	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	476539	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	256082	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	4873	19.3416 ug/L	80
3) 3-Chloro-1-propene	7.07	41	172467	20.7847 ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	219296	20.9015 ug/L	87
5) Ethyl Acetate	9.09	43	50385	20.1659 ug/L	100
6) Methacrylonitrile	9.26	67	28119	20.4992 ug/L #	63
7) Isobutyl Alcohol	9.27	43	2774	33.2395 ug/L #	8
9) Methyl methacrylate	11.42	41	55309	20.5176 ug/L	73
10) 2-Nitropropane	11.75	43	21584	18.5202 ug/L	99
13) Cyclohexanone	15.84	55	2230	21.2913 ug/L	87

(#) = qualifier out of range (m) = manual integration
8M412323.D A9FOOWT.M Thu May 19 09:22:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:21 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

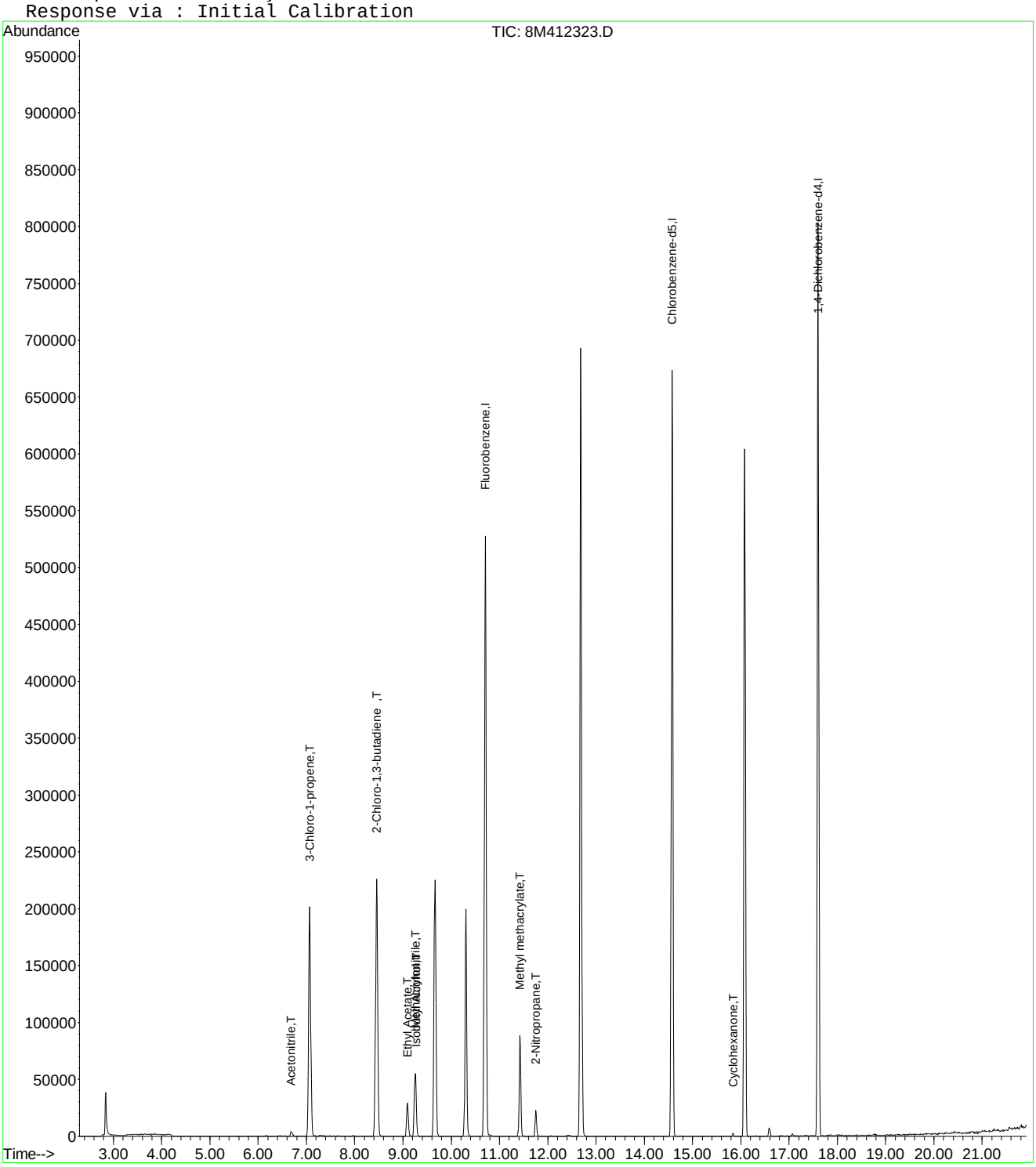

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	19.3416	3.3	100	0.00
3	T	3-Chloro-1-propene	20.0000	20.7847	-3.9	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	20.9015	-4.5	100	0.00
5	T	Ethyl Acetate	20.0000	20.1659	-0.8	100	0.00
6	T	Methacrylonitrile	20.0000	20.4992	-2.5	100	0.00
7	T	Isobutyl Alcohol	-1.0000	33.2395	0.0	0	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.18#
9	T	Methyl methacrylate	20.0000	20.5176	-2.6	100	0.00
10	T	2-Nitropropane	20.0000	18.5203	7.4	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	20.0000	21.2913	-6.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412323.D A9FOOWT.M Thu May 19 09:02:17 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:22:43 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	665645	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	483812	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	257678	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	405	1.5769 ug/L #	23
3) 3-Chloro-1-propene	7.07	41	40699	4.8115 ug/L	84
4) 2-Chloro-1,3-butadiene	8.45	53	48973	4.5789 ug/L	81
5) Ethyl Acetate	9.09	43	10675	4.1913 ug/L	95
6) Methacrylonitrile	9.26	67	5417	3.8740 ug/L #	72
7) Isobutyl Alcohol	9.27	43	441	5.1838 ug/L #	8
9) Methyl methacrylate	11.43	41	11811	4.2981 ug/L	65
10) 2-Nitropropane	11.76	43	4170	3.5100 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412324.D A9FOOWT.M Thu May 19 09:22:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:21 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

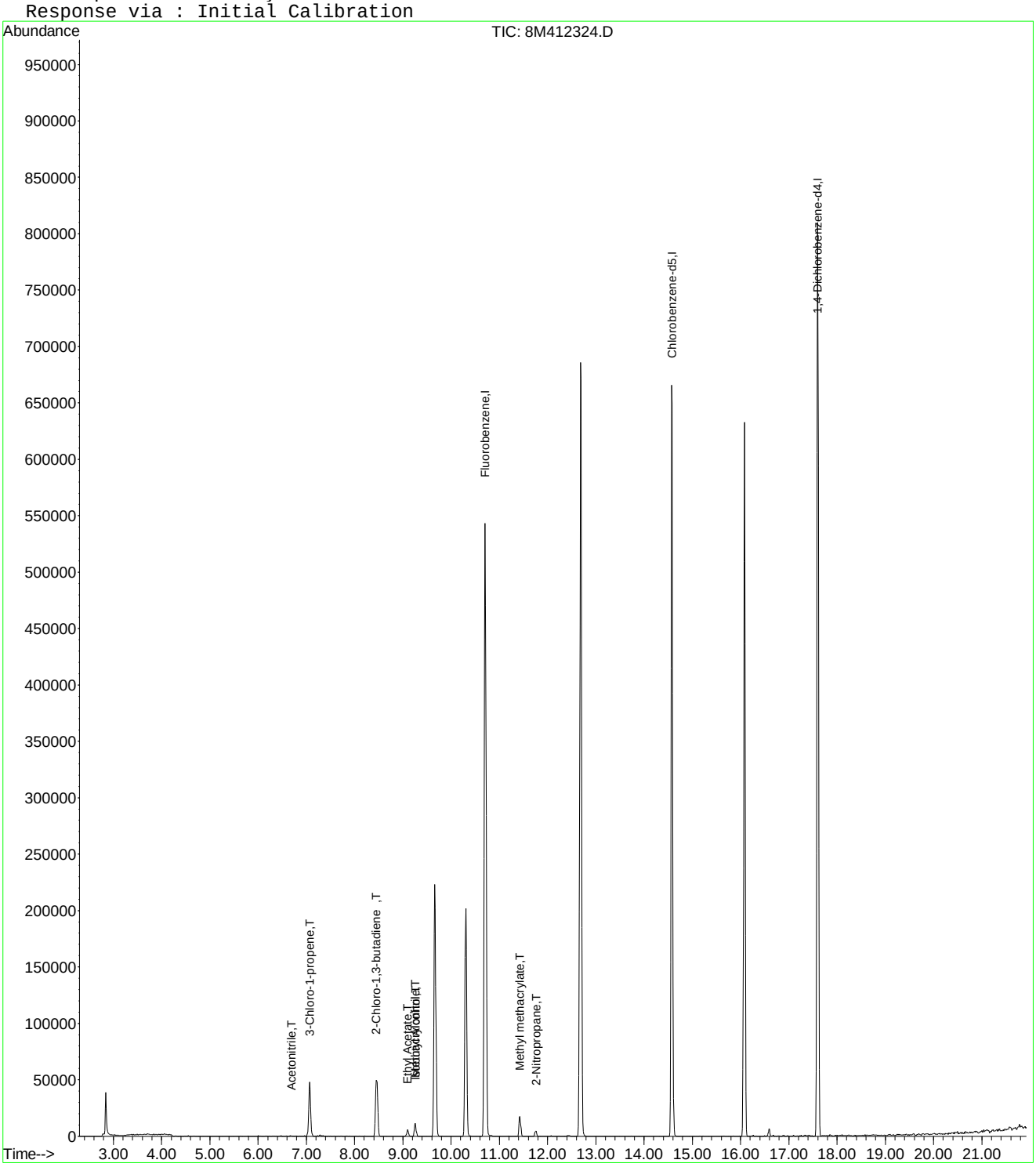

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	-1.0000	1.5769	0.0	0	0.00
3	T	3-Chloro-1-propene	5.0000	4.8115	3.8	100	0.00
4	T	2-Chloro-1,3-butadiene	5.0000	4.5789	8.4	100	0.00
5	T	Ethyl Acetate	5.0000	4.1913	16.2	100	0.00
6	T	Methacrylonitrile	5.0000	3.8740	22.5	100	0.00
7	T	Isobutyl Alcohol	-1.0000	5.1838	0.0	0	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.18#
9	T	Methyl methacrylate	5.0000	4.2981	14.0	100	0.00
10	T	2-Nitropropane	-1.0000	3.5100	0.0	0	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	0.0000	0.0	0	-15.84#

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412324.D A9FOOWT.M Thu May 19 09:02:03 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412325.D Vial: 7
Acq On : 17 May 2016 11:42 Operator: TMB
Sample : WG569079-06 200ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:27 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	682012	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	491515	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	261877	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.68	41	52022	197.6946 ug/L	97
3) 3-Chloro-1-propene	7.06	41	1768403	204.0468 ug/L	83
4) 2-Chloro-1,3-butadiene	8.46	53	2283706	208.4003 ug/L	87
5) Ethyl Acetate	9.09	43	537585	206.0040 ug/L	94
6) Methacrylonitrile	9.25	67	297408	207.5869 ug/L #	63
7) Isobutyl Alcohol	9.26	43	34441	395.1256 ug/L	95
9) Methyl methacrylate	11.42	41	577612	205.1526 ug/L	72
10) 2-Nitropropane	11.75	43	248395	204.0652 ug/L	95
13) Cyclohexanone	15.85	55	19752	184.4122 ug/L #	59

(#) = qualifier out of range (m) = manual integration
8M412325.D A9FOOWT.M Thu May 19 09:01:28 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412325.D Vial: 7
Acq On : 17 May 2016 11:42 Operator: TMB
Sample : WG569079-06 200ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

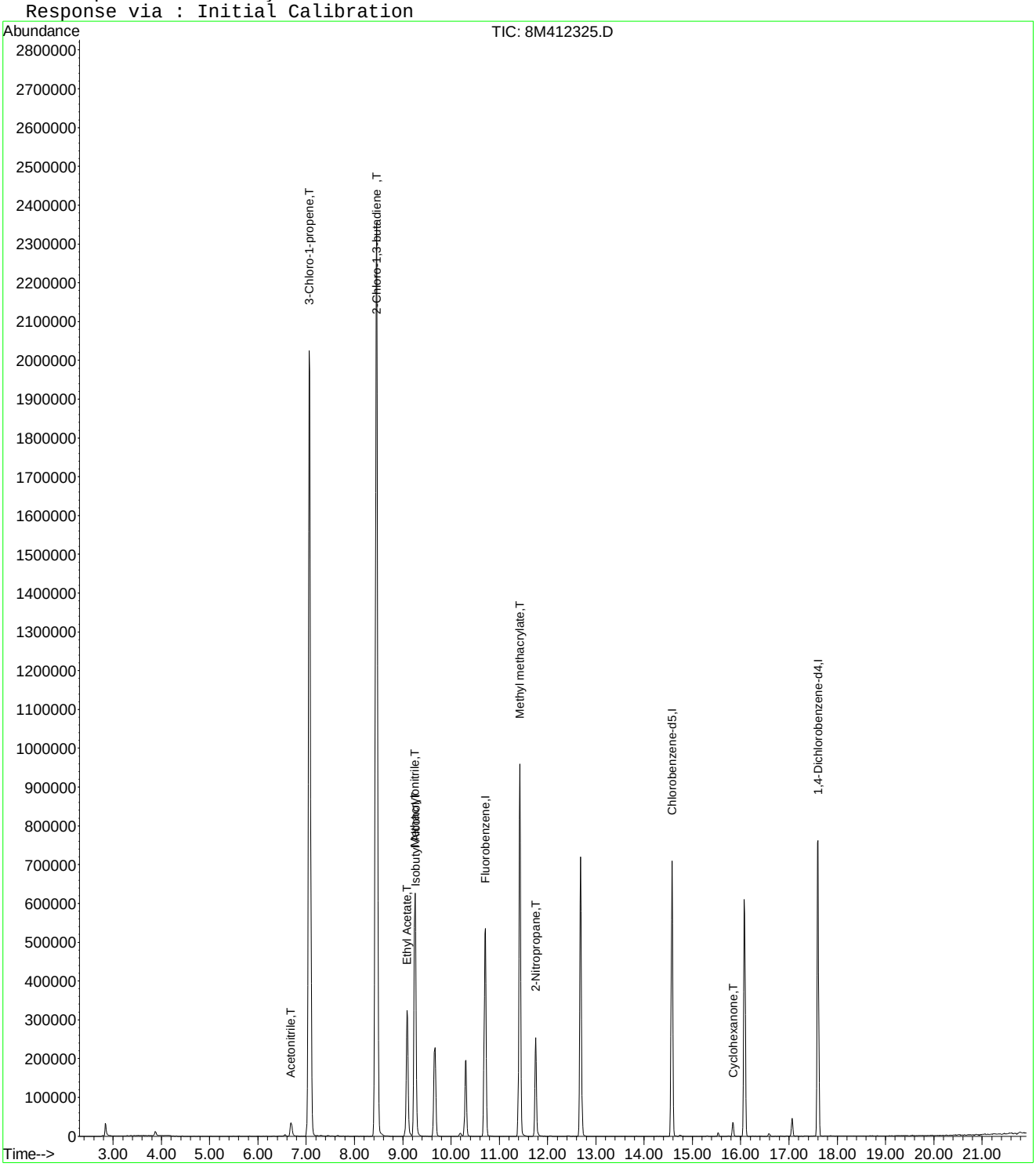

8M412325.D A9FOOWT.M Thu May 19 09:01:28 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412326.D Vial: 8
Acq On : 17 May 2016 12:40 Operator: TMB
Sample : WG569079-07 300ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:29 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	694903	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	496643	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	267309	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	81471	303.8636 ug/L	98
3) 3-Chloro-1-propene	7.06	41	2563559	290.3084 ug/L	83
4) 2-Chloro-1,3-butadiene	8.46	53	3270971	292.9562 ug/L	86
5) Ethyl Acetate	9.09	43	821184	308.8424 ug/L	95
6) Methacrylonitrile	9.25	67	451708	309.4374 ug/L #	62
7) Isobutyl Alcohol	9.26	43	55071	620.0836 ug/L	94
9) Methyl methacrylate	11.42	41	874430	304.8132 ug/L	70
10) 2-Nitropropane	11.75	43	392965	316.8456 ug/L	94
13) Cyclohexanone	15.84	55	33523	306.6233 ug/L #	61

(#) = qualifier out of range (m) = manual integration
8M412326.D A9FOOWT.M Thu May 19 09:01:29 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412326.D Vial: 8
Acq On : 17 May 2016 12:40 Operator: TMB
Sample : WG569079-07 300ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

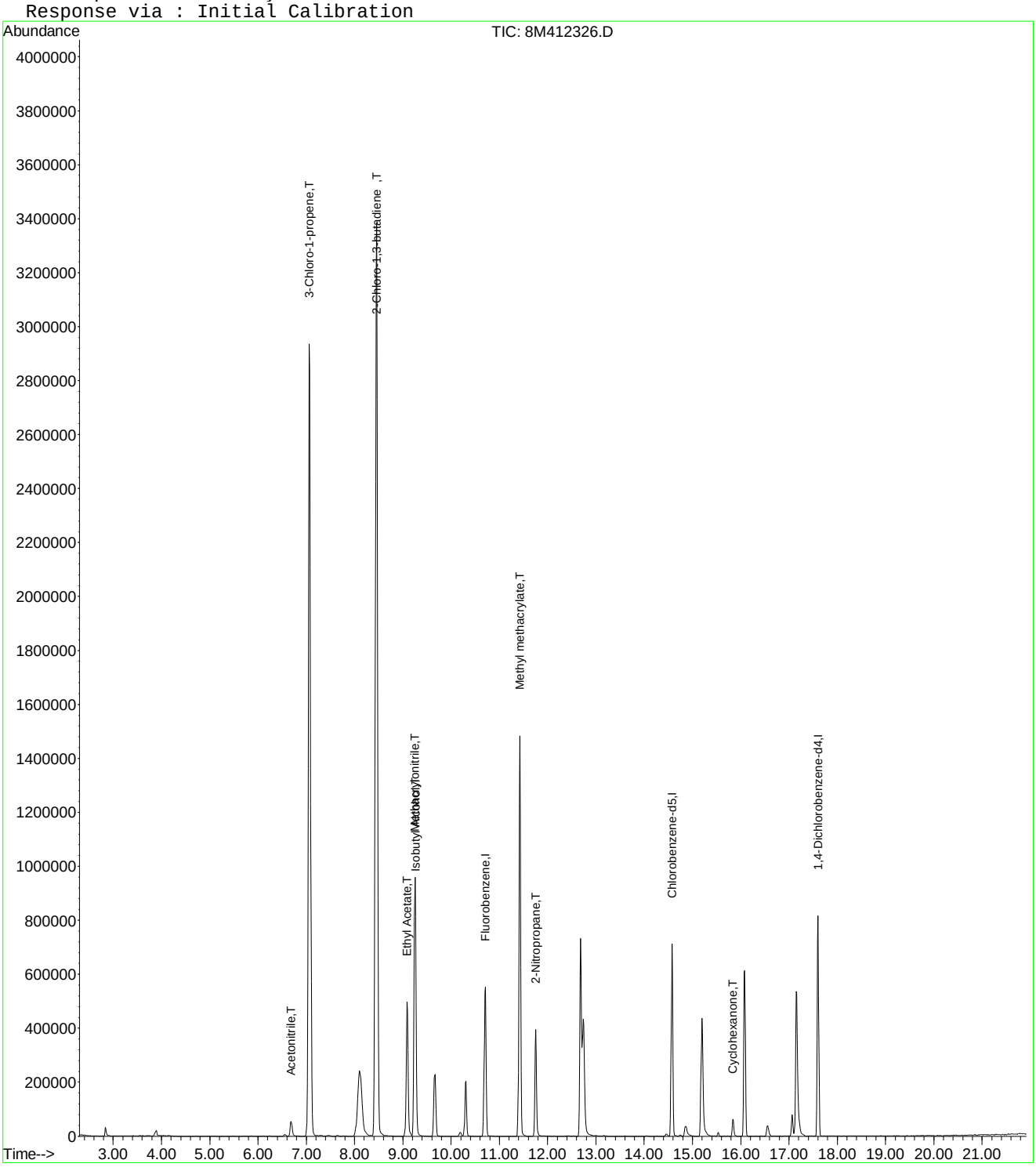

8M412326.D A9FOOWT.M Thu May 19 09:01:29 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412327.D Vial: 9
Acq On : 17 May 2016 13:10 Operator: TMB
Sample : WG569079-08 400ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:30 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	700514	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	502552	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	270883	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	110761	409.7980 ug/L	97
3) 3-Chloro-1-propene	7.07	41	3406131	382.6353 ug/L	82
4) 2-Chloro-1,3-butadiene	8.45	53	4356691	387.0705 ug/L	85
5) Ethyl Acetate	9.09	43	1116818	416.6642 ug/L	94
6) Methacrylonitrile	9.25	67	615482	418.2517 ug/L #	62
7) Isobutyl Alcohol	9.26	43	75472	842.9862 ug/L	97
9) Methyl methacrylate	11.42	41	1199317	414.7153 ug/L	71
10) 2-Nitropropane	11.75	43	538580	430.7760 ug/L	94
13) Cyclohexanone	15.84	55	45874	414.0575 ug/L #	55

(#) = qualifier out of range (m) = manual integration
8M412327.D A9FOOWT.M Thu May 19 09:01:31 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412327.D Vial: 9
Acq On : 17 May 2016 13:10 Operator: TMB
Sample : WG569079-08 400ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

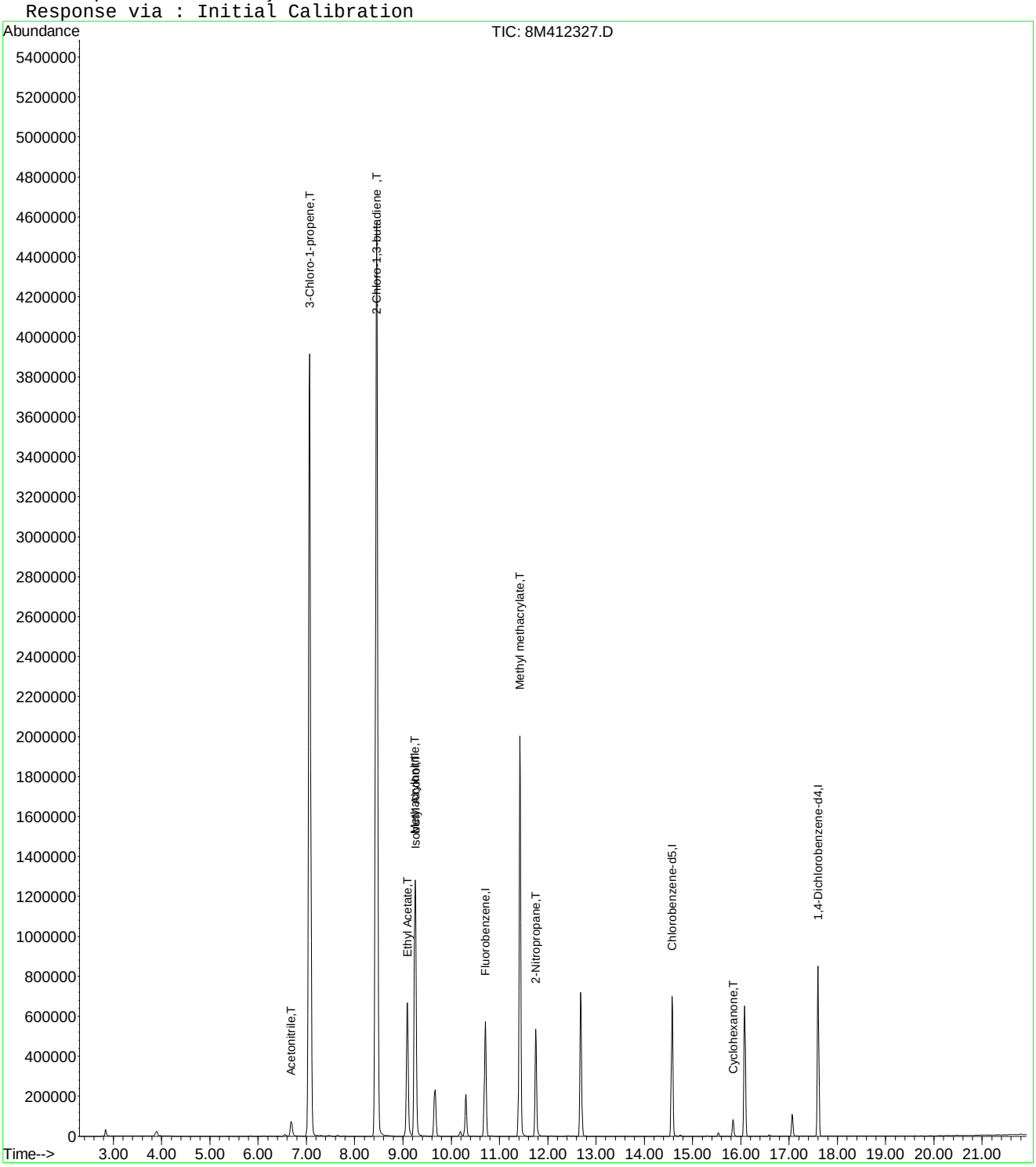

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412328.D Vial: 10
Acq On : 17 May 2016 13:39 Operator: TMB
Sample : WG569079-09 500ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:31 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	695694	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	495257	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	266442	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	132245	492.6753 ug/L	99
3) 3-Chloro-1-propene	7.06	41	4228273	478.2834 ug/L	82
4) 2-Chloro-1,3-butadiene	8.46	53	5390856	482.2693 ug/L	85
5) Ethyl Acetate	9.09	43	1321922	496.6017 ug/L	95
6) Methacrylonitrile	9.25	67	729852	499.4083 ug/L #	61
7) Isobutyl Alcohol	9.26	43	85200	958.2367 ug/L	96
9) Methyl methacrylate	11.42	41	1416438	493.1877 ug/L	72
10) 2-Nitropropane	11.75	43	637335	513.2956 ug/L	93
13) Cyclohexanone	15.84	55	52070	477.8160 ug/L #	61

(#) = qualifier out of range (m) = manual integration
8M412328.D A9FOOWT.M Thu May 19 09:01:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412328.D Vial: 10
Acq On : 17 May 2016 13:39 Operator: TMB
Sample : WG569079-09 500ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

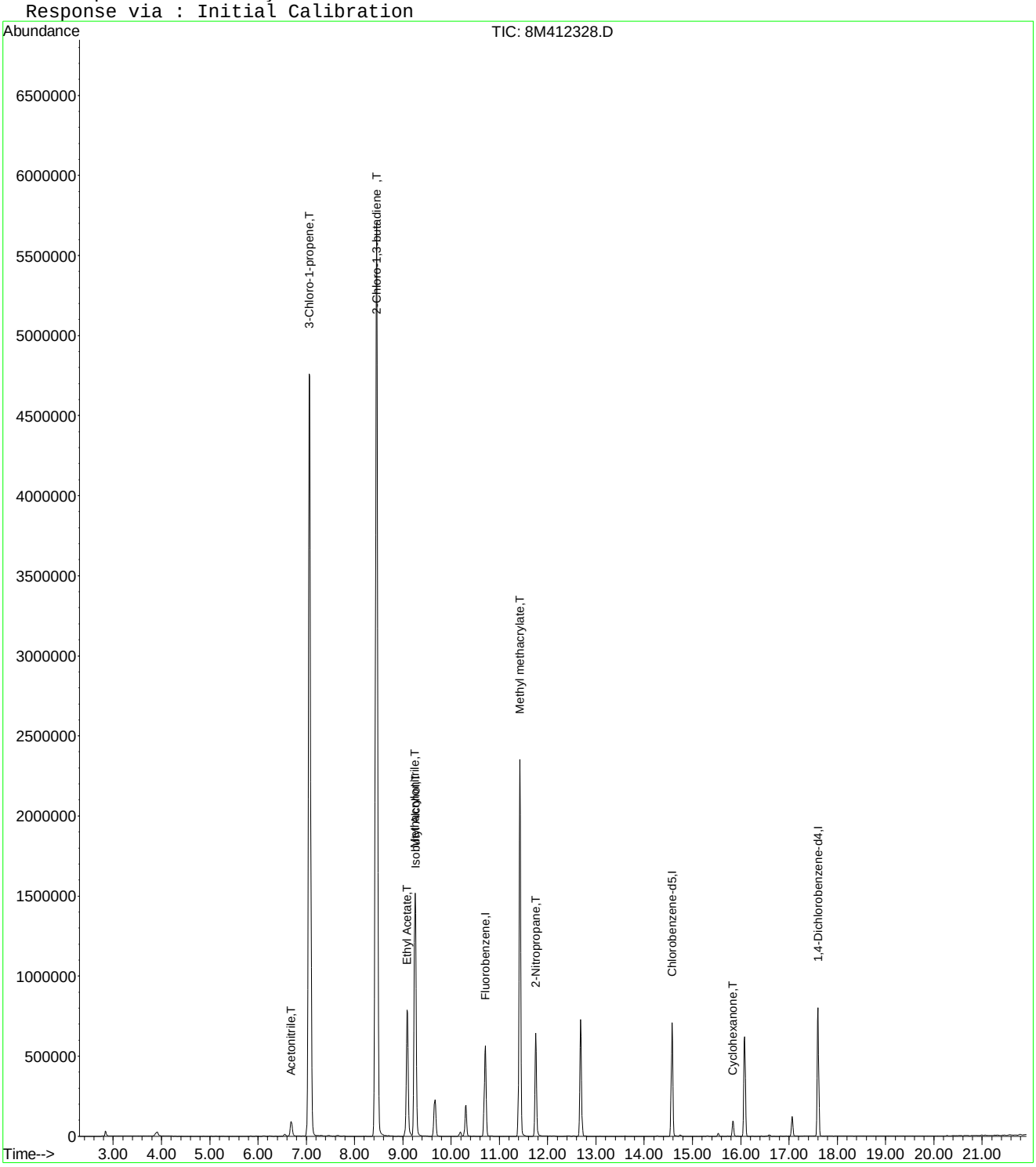

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:32 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	676765	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	486447	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	263036	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.69	41	29876	114.4154	ug/L	97
3) 3-Chloro-1-propene	7.07	41	858035	99.7718	ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	1224194	112.5803	ug/L	87
5) Ethyl Acetate	9.09	43	295545	114.1317	ug/L	96
6) Methacrylonitrile	9.25	67	161574	113.6509	ug/L #	63
7) Isobutyl Alcohol	9.26	43	19948	230.6285	ug/L	94
9) Methyl methacrylate	11.42	41	326465	116.8508	ug/L	72
10) 2-Nitropropane	11.75	43	131261	108.6716	ug/L	94
13) Cyclohexanone	15.83	55	10459	97.2189	ug/L #	74

(#) = qualifier out of range (m) = manual integration
8M412331.D A9FOOWT.M Thu May 19 09:01:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

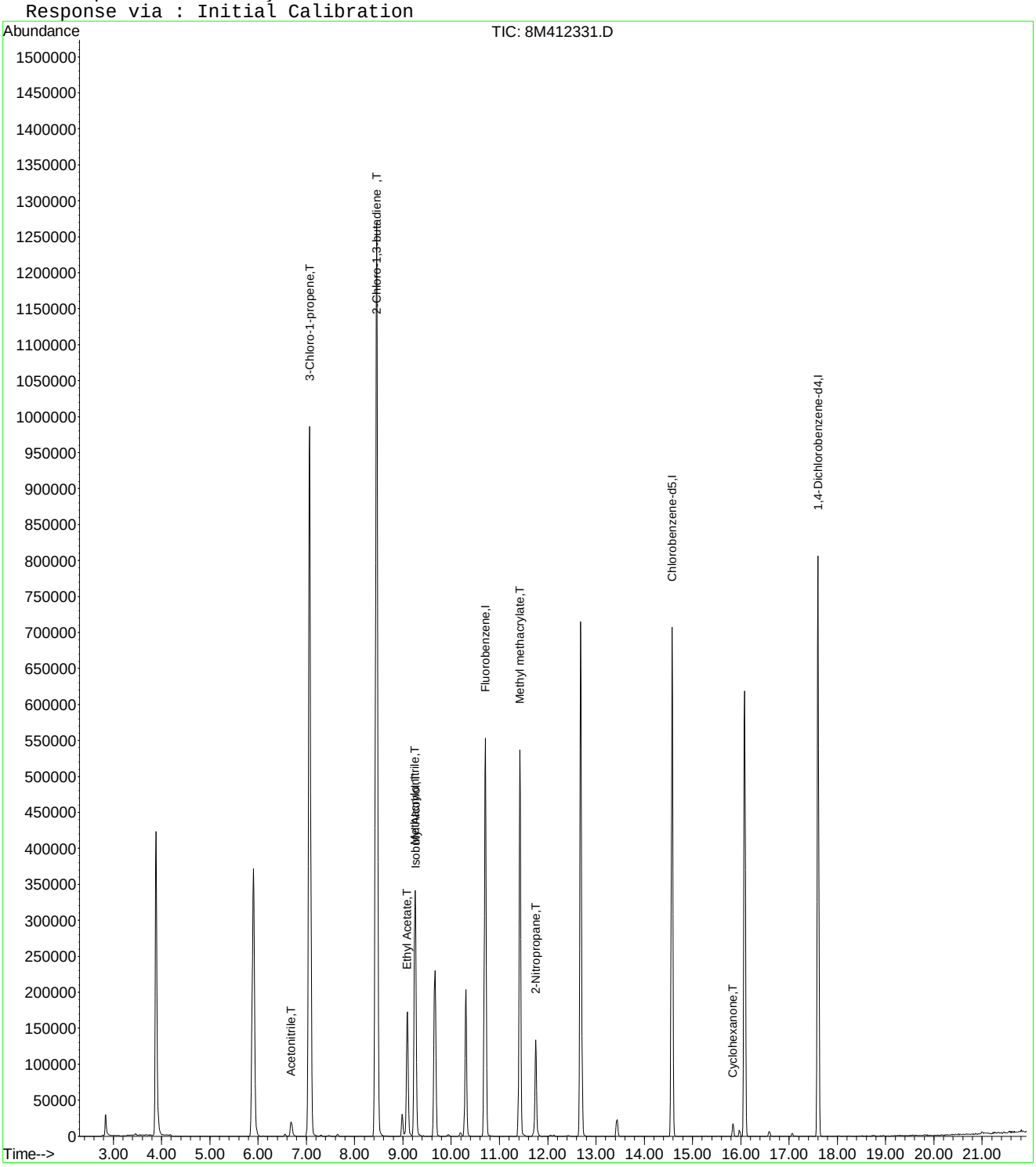

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	95	0.00
2	T	Acetonitrile	100.0000	114.4154	-14.4	109	0.00
3	T	3-Chloro-1-propene	100.0000	99.7718	0.2	91	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	112.5803	-12.6	103	0.00
5	T	Ethyl Acetate	100.0000	114.1317	-14.1	104	0.00
6	T	Methacrylonitrile	100.0000	113.6509	-13.7	104	0.00
7	T	Isobutyl Alcohol	200.0000	230.6285	-15.3	111	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.01
9	T	Methyl methacrylate	100.0000	116.8508	-16.9	109	0.00
10	T	2-Nitropropane	100.0000	108.6716	-8.7	108	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	96	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	96	0.00
13	T	Cyclohexanone	100.0000	97.2189	2.8	92	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412331.D A9FOOWT.M Thu May 19 09:03:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413003.D Vial: 3
Acq On : 15 Jun 2016 9:29 Operator: TMB
Sample : WG572735-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 10:22:49 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	816224	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	599005	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	338264	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	236500	26.9681 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.88%		
43) 1,2-Dichloroethane-d4	10.30	65	258613	27.5026 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 110.00%		
58) Toluene-d8	12.68	98	818079	26.0957 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.40%		
80) p-Bromofluorobenzene	16.07	95	353603	25.2456 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.00%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	748538	54.6986 ug/L	100
3) Chloromethane	3.62	50	386302	48.3597 ug/L	100
4) Vinyl Chloride	3.84	62	513508	54.1824 ug/L	99
5) 1,3-Butadiene	3.88	54	466770	58.7292 ug/L	96
6) Bromomethane	4.73	94	218355	38.5562 ug/L	99
7) Chloroethane	4.89	64	261740	50.1907 ug/L	98
8) Trichlorofluoromethane	5.38	101	977647	55.4386 ug/L	99
9) Diethyl ether	5.90	59	422418	100.3367 ug/L	98
10) Isoprene	5.94	67	537019	50.1466 ug/L	99
11) Acrolein	6.14	56	18159	48.1745 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	431258	52.0256 ug/L	95
13) Acetone	6.24	43	51802	56.4090 ug/L	95
14) 1,1-Dichloroethene	6.46	61	685625	51.9473 ug/L	100
15) Tert-Butyl Alcohol	6.58	59	67191	228.3191 ug/L	97
16) Dimethyl Sulfide	6.73	62	226446	47.9844 ug/L	99
17) Iodomethane	6.98	142	125753	35.3473 ug/L	100
18) Methyl acetate	6.99	43	118016	47.5426 ug/L	98
19) Methylene Chloride	7.25	84	415706	49.4931 ug/L	99
20) Carbon Disulfide	7.29	76	1422328	51.4959 ug/L	100
21) Acrylonitrile	7.43	53	60177	50.5046 ug/L	97
22) Methyl Tert Butyl Ether	7.46	73	970167	53.3688 ug/L	100
23) trans-1,2-Dichloroethene	7.70	61	616383	50.8335 ug/L	99
24) n-Hexane	7.79	57	485002	53.8655 ug/L	98
25) Diisopropyl ether	8.13	45	1875461	99.2260 ug/L	97
26) Vinyl Acetate	8.29	43	459133	53.0555 ug/L	98
27) 1,1-Dichloroethane	8.32	63	769638	51.1092 ug/L	99
28) Ethyl-Tert-Butyl ether	8.69	59	2150385	106.1878 ug/L	99
29) 2-Butanone	8.88	43	67421	49.9695 ug/L	93
30) Propionitrile	8.98	54	40188	102.2094 ug/L	100
31) 2,2-Dichloropropane	9.10	77	923892	58.2193 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	479211	51.1475 ug/L	99
33) Chloroform	9.38	83	940195	52.8783 ug/L	100
34) 1-Bromopropane	9.51	122	75331	56.1325 ug/L	98
35) Bromochloromethane	9.60	130	252399	52.5340 ug/L	96
36) Tetrahydrofuran	9.64	42	81466	91.6734 ug/L	96
38) 1,1,1-Trichloroethane	9.90	97	938108	55.5448 ug/L	100
39) Cyclohexane	9.94	56	590132	50.4693 ug/L	98
40) 1,1-Dichloropropene	10.10	75	682624	53.0265 ug/L	99
41) Tert-Amyl-Methyl ether	10.20	73	1943999	105.6937 ug/L	99
42) Carbon Tetrachloride	10.25	117	839273	55.9611 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413003.D 8260WT.M Wed Jun 15 10:22:53 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413003.D Vial: 3
Acq On : 15 Jun 2016 9:29 Operator: TMB
Sample : WG572735-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 10:22:49 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.42	62	636211	55.5933 ug/L	99
46)	Benzene	10.46	78	1705672	50.8725 ug/L	100
47)	Trichloroethene	11.22	130	468582	52.4002 ug/L	99
48)	Methylcyclohexane	11.30	83	717908	52.8453 ug/L	99
49)	1,2-Dichloropropane	11.42	63	362121	48.5171 ug/L	92
50)	Bromodichloromethane	11.72	83	710340	54.1489 ug/L	99
51)	1,4-Dioxane	11.71	88	8043	214.5215 ug/L	95
52)	Dibromomethane	11.81	93	220787	49.9722 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.02	63	143050	44.5915 ug/L	93
54)	4-Methyl-2-Pentanone	12.05	58	67041	51.1598 ug/L	93
55)	cis-1,3-Dichloropropene	12.36	75	714929	53.5425 ug/L	99
56)	Dimethyl Disulfide	12.62	79	371775	52.1661 ug/L	99
59)	Toluene	12.79	91	1827795	49.1512 ug/L	100
60)	Ethyl Methacrylate	12.88	69	367861	51.5092 ug/L	99
62)	trans-1,3-Dichloropropene	12.96	75	646613	51.8862 ug/L	99
63)	1,1,2-Trichloroethane	13.18	97	280232	47.7558 ug/L	99
64)	2-Hexanone	13.12	58	62023	50.2978 ug/L #	98
65)	1,3-Dichloropropane	13.48	76	510391	48.8533 ug/L	99
66)	Tetrachloroethene	13.60	164	413750	51.9308 ug/L	97
67)	Dibromochloromethane	13.86	129	447120	52.1844 ug/L	99
68)	1,2-Dibromoethane	14.12	107	289001	49.4166 ug/L	99
69)	1-Chlorohexane	14.21	91	633582	49.9121 ug/L	99
70)	Chlorobenzene	14.63	112	1238478	49.3881 ug/L	99
71)	1,1,1,2-Tetrachloroethane	14.66	131	503284	51.8051 ug/L	100
72)	Ethylbenzene	14.66	106	662931	48.3185 ug/L	99
73)	m-,p-Xylene	14.74	106	1599907	99.4174 ug/L	100
74)	o-Xylene	15.31	106	785244	49.9090 ug/L	99
75)	Styrene	15.34	104	1330888	51.5739 ug/L	98
76)	Bromoform	15.84	173	269390	53.0081 ug/L	99
77)	Isopropylbenzene	15.73	105	2134970	51.0798 ug/L	99
79)	1,1,2,2-Tetrachloroethane	15.95	83	307089	45.2267 ug/L	99
81)	1,2,3-Trichloropropane	16.14	110	98863	47.2826 ug/L	91
82)	trans-1,4-Dichloro-2-Buten	16.19	53	100957	47.4023 ug/L	86
83)	n-Propylbenzene	16.24	91	2516708	47.6894 ug/L	99
84)	Bromobenzene	16.36	156	527081	48.5575 ug/L	96
85)	1,3,5-Trimethylbenzene	16.43	105	1856939	48.3052 ug/L	99
86)	2-Chlorotoluene	16.51	91	1611266	43.7311 ug/L	91
87)	4-Chlorotoluene	16.56	91	1718296	51.6293 ug/L	92
88)	a-Methylstyrene	16.83	118	859171	47.1080 ug/L	99
89)	tert-Butylbenzene	16.89	134	350937	46.6633 ug/L	99
90)	1,2,4-Trimethylbenzene	16.94	105	1896413	47.9759 ug/L	100
91)	sec-Butylbenzene	17.16	105	2137758	47.2703 ug/L	99
92)	p-Isopropyltoluene	17.32	119	1838625	47.8823 ug/L	98
93)	1,3-Dichlorobenzene	17.51	146	1027662	49.1672 ug/L	98
94)	1,4-Dichlorobenzene	17.65	146	1005384	47.7112 ug/L	98
95)	n-Butylbenzene	17.84	91	1795243	47.2912 ug/L	99
96)	1,2-Dichlorobenzene	18.14	146	875659	47.1049 ug/L	99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	62987	46.2131 ug/L	94
98)	1,2,4-Trichlorobenzene	20.28	180	673757	48.4887 ug/L	99
99)	Hexachlorobutadiene	20.43	225	329928	50.8181 ug/L	100
100)	Naphthalene	20.64	128	967801	46.8800 ug/L	99
101)	1,2,3-Trichlorobenzene	20.95	180	553851	47.2458 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413003.D 8260WT.M Wed Jun 15 10:22:53 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413003.D Vial: 3
Acq On : 15 Jun 2016 9:29 Operator: TMB
Sample : WG572735-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 10:22 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

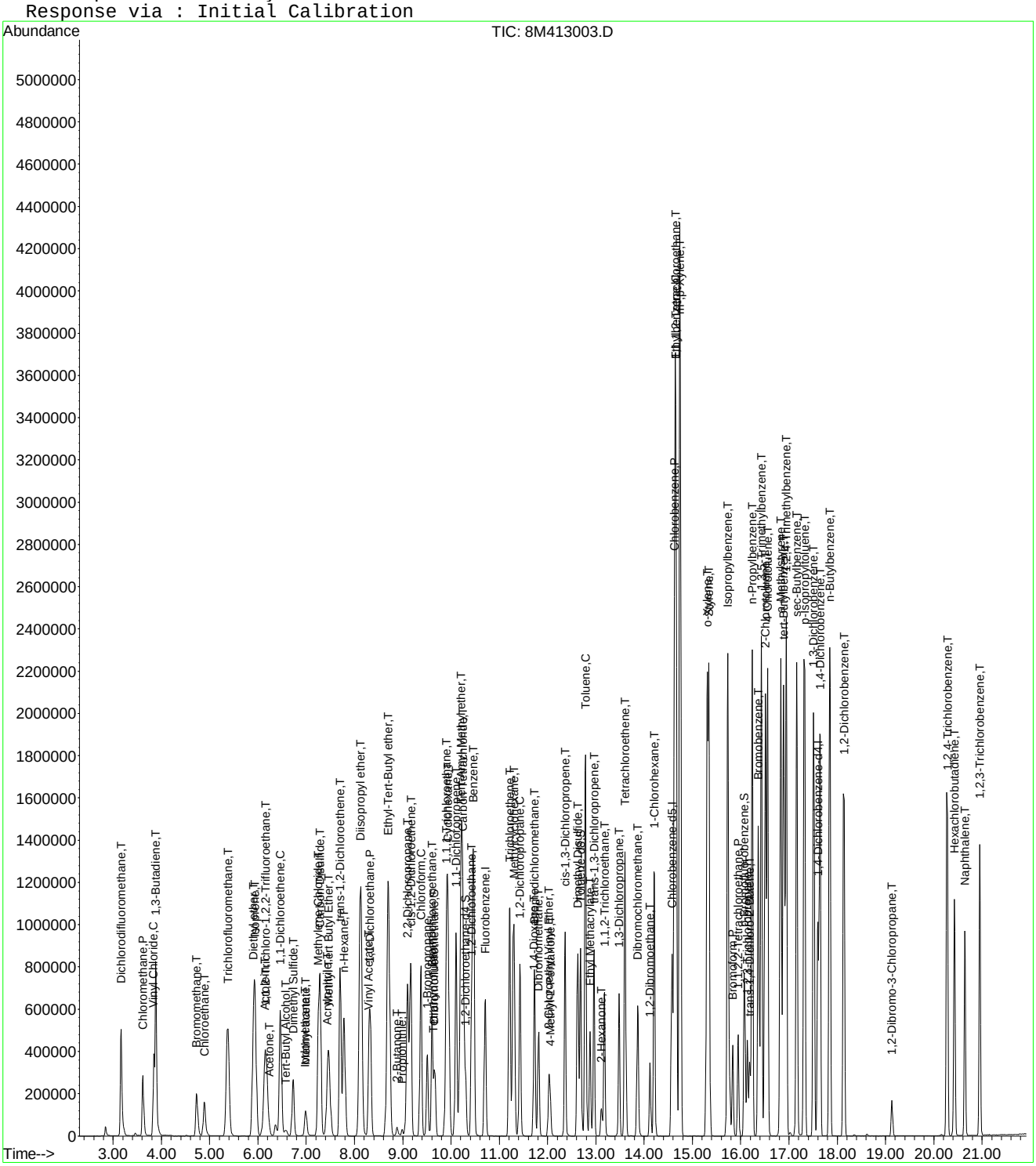

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413003.D Vial: 3
Acq On : 15 Jun 2016 9:29 Operator: TMB
Sample : WG572735-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	105	0.00
2	T	Dichlorodifluoromethane	0.4192	0.4585	-9.4	110	0.00
3	P	Chloromethane	0.2447	0.2366	3.3	104	0.00
4	C	Vinyl Chloride	0.2903	0.3146	-8.4	113	-0.01
5	T	1,3-Butadiene	0.2434	0.2859	-17.5	120	0.00
6	T	Bromomethane	0.1654	0.1338	19.1	84	0.00
7	T	Chloroethane	0.1597	0.1603	-0.4	107	0.00
8	T	Trichlorofluoromethane	0.5401	0.5989	-10.9	117	0.00
9	T	Diethyl ether	0.1290	0.1294	-0.3	108	0.00
10	T	Isoprene	0.3280	0.3290	-0.3	108	0.00
11	T	Acrolein	0.0116	0.0111	3.7	103	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2539	0.2642	-4.1	111	0.01
13	T	Acetone	0.0281	0.0317	-12.8	113	-0.01
14	C	1,1-Dichloroethene	0.4043	0.4200	-3.9	111	0.00
15	T	Tert-Butyl Alcohol	0.0090	0.0103	-14.2	121	0.00
16	T	Dimethyl Sulfide	0.1445	0.1387	4.0	102	0.00
17	T	Iodomethane	0.0866	0.0770	11.0	80	0.00
18	T	Methyl acetate	0.0760	0.0723	4.9	103	-0.01
19	T	Methylene Chloride	0.2573	0.2546	1.0	107	0.00
20	T	Carbon Disulfide	0.8460	0.8713	-3.0	112	0.00
21	T	Acrylonitrile	0.0365	0.0369	-1.0	100	0.00
22	T	Methyl Tert Butyl Ether	0.5568	0.5943	-6.7	108	0.00
23	T	trans-1,2-Dichloroethene	0.3714	0.3776	-1.7	108	0.00
24	T	n-Hexane	0.2758	0.2971	-7.7	116	0.00
25	T	Diisopropyl ether	0.5789	0.5744	0.8	105	0.00
26	T	Vinyl Acetate	0.2651	0.2813	-6.1	107	0.00
27	P	1,1-Dichloroethane	0.4612	0.4715	-2.2	107	0.00
28	T	Ethyl-Tert-Butyl ether	0.6203	0.6586	-6.2	110	-0.01
29	T	2-Butanone	0.0413	0.0413	0.1	101	0.00
30	T	Propionitrile	0.0120	0.0123	-2.2	105	0.00
31	T	2,2-Dichloropropane	0.4860	0.5659	-16.4	120	0.00
32	T	cis-1,2-Dichloroethene	0.2870	0.2935	-2.3	109	0.00
33	C	Chloroform	0.5446	0.5759	-5.8	111	0.00
34		1-Bromopropane	0.0411	0.0461	-12.3	119	0.00
35	T	Bromochloromethane	0.1472	0.1546	-5.1	110	0.00
36	T	Tetrahydrofuran	0.0272	0.0250	8.3	103	0.00
37	S	Dibromofluoromethane	0.2686	0.2898	-7.9	112	-0.01
38	T	1,1,1-Trichloroethane	0.5173	0.5747	-11.1	115	0.00
39	T	Cyclohexane	0.3581	0.3615	-0.9	110	0.00
40	T	1,1-Dichloropropene	0.3943	0.4182	-6.1	111	0.00
41	T	Tert-Amyl-Methyl ether	0.5634	0.5954	-5.7	110	-0.01
42	T	Carbon Tetrachloride	0.4593	0.5141	-11.9	116	0.00
43	S	1,2-Dichloroethane-d4	0.2880	0.3168	-10.0	113	-0.01
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.3505	0.3897	-11.2	113	0.00
46	T	Benzene	1.0269	1.0449	-1.7	106	0.00
47	T	Trichloroethene	0.2739	0.2870	-4.8	110	0.00
48	T	Methylcyclohexane	0.4161	0.4398	-5.7	113	0.00
49	C	1,2-Dichloropropane	0.2286	0.2218	3.0	103	0.00
50	T	Bromodichloromethane	0.4018	0.4351	-8.3	108	0.00
51	T	1,4-Dioxane	0.0012	0.0012	-7.0	106	0.00
52	T	Dibromomethane	0.1353	0.1353	0.1	106	-0.01
53	T	2-Chloroethyl Vinyl Ether	0.0983	0.0876	10.8	88	0.00
54	T	4-Methyl-2-Pentanone	0.0401	0.0411	-2.3	103	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413003.D Vial: 3
Acq On : 15 Jun 2016 9:29 Operator: TMB
Sample : WG572735-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4090	0.4380	-7.1	107	0.00
56	T	Dimethyl Disulfide	0.2183	0.2277	-4.3	108	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	111	0.00
58	S	Toluene-d8	1.3084	1.3657	-4.4	114	0.00
59	C	Toluene	1.5520	1.5257	1.7	109	0.00
60	T	Ethyl Methacrylate	0.2981	0.3071	-3.0	109	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.5201	0.5397	-3.8	109	0.00
63	T	1,1,2-Trichloroethane	0.2449	0.2339	4.5	104	0.00
64	T	2-Hexanone	0.0515	0.0518	-0.6	109	0.00
65	T	1,3-Dichloropropane	0.4360	0.4260	2.3	104	0.00
66	T	Tetrachloroethene	0.3325	0.3454	-3.9	118	0.00
67	T	Dibromochloromethane	0.3576	0.3732	-4.4	111	0.00
68	T	1,2-Dibromoethane	0.2441	0.2412	1.2	106	0.00
69	T	1-Chlorohexane	0.5298	0.5289	0.2	113	0.00
70	P	Chlorobenzene	1.0466	1.0338	1.2	111	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4055	0.4201	-3.6	113	0.00
72	C	Ethylbenzene	0.5726	0.5534	3.4	110	0.00
73	T	m-,p-Xylene	0.6716	0.6677	0.6	111	0.00
74	T	o-Xylene	0.6566	0.6555	0.2	111	0.00
75	T	Styrene	1.0770	1.1109	-3.1	110	0.00
76	P	Bromoform	0.2121	0.2249	-6.0	113	0.00
77	T	Isopropylbenzene	1.7444	1.7821	-2.2	111	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	117	0.00
79	P	1,1,2,2-Tetrachloroethane	0.5018	0.4539	9.5	104	0.00
80	S	p-Bromofluorobenzene	1.0352	1.0454	-1.0	121	0.00
81	T	1,2,3-Trichloropropane	0.1545	0.1461	5.4	111	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1376	0.1492	-8.5	116	0.00
83	T	n-Propylbenzene	3.9003	3.7200	4.6	110	0.00
84	T	Bromobenzene	0.8022	0.7791	2.9	115	-0.01
85	T	1,3,5-Trimethylbenzene	2.8411	2.7448	3.4	112	0.00
86	T	2-Chlorotoluene	2.7231	2.3817	12.5	100	0.00
87	T	4-Chlorotoluene	2.4597	2.5399	-3.3	128	0.00
88	T	a-Methylstyrene	1.3479	1.2700	5.8	111	0.00
89	T	tert-Butylbenzene	0.5558	0.5187	6.7	114	0.00
90	T	1,2,4-Trimethylbenzene	2.9214	2.8032	4.0	113	0.00
91	T	sec-Butylbenzene	3.3424	3.1599	5.5	111	0.00
92	T	p-Isopropyltoluene	2.8379	2.7177	4.2	113	0.00
93	T	1,3-Dichlorobenzene	1.5448	1.5190	1.7	116	0.00
94	T	1,4-Dichlorobenzene	1.5574	1.4861	4.6	115	0.00
95	T	n-Butylbenzene	2.8056	2.6536	5.4	112	-0.01
96	T	1,2-Dichlorobenzene	1.3739	1.2943	5.8	114	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1007	0.0931	7.6	106	0.00
98	T	1,2,4-Trichlorobenzene	1.0269	0.9959	3.0	115	0.00
99	T	Hexachlorobutadiene	0.4798	0.4877	-1.6	125	-0.01
100	T	Naphthalene	1.5257	1.4305	6.2	108	-0.01
101	T	1,2,3-Trichlorobenzene	0.8664	0.8187	5.5	117	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413003.D 8260WT.M Wed Jun 15 10:23:15 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413003.D Vial: 3
Acq On : 15 Jun 2016 9:29 Operator: TMB
Sample : WG572735-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	105	0.00
2	T	Dichlorodifluoromethane	50.0000	54.6986	-9.4	110	0.00
3	P	Chloromethane	50.0000	48.3597	3.3	104	0.00
4	C	Vinyl Chloride	50.0000	54.1824	-8.4	113	-0.01
5	T	1,3-Butadiene	50.0000	58.7292	-17.5	120	0.00
6	T	Bromomethane	50.0000	38.5562	22.9	84	0.00
7	T	Chloroethane	50.0000	50.1907	-0.4	107	0.00
8	T	Trichlorofluoromethane	50.0000	55.4386	-10.9	117	0.00
9	T	Diethyl ether	100.0000	100.3367	-0.3	108	0.00
10	T	Isoprene	50.0000	50.1466	-0.3	108	0.00
11	T	Acrolein	50.0000	48.1745	3.7	103	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	52.0256	-4.1	111	0.01
13	T	Acetone	50.0000	56.4090	-12.8	113	-0.01
14	C	1,1-Dichloroethene	50.0000	51.9473	-3.9	111	0.00
15	T	Tert-Butyl Alcohol	200.0000	228.3191	-14.2	121	0.00
16	T	Dimethyl Sulfide	50.0000	47.9844	4.0	102	0.00
17	T	Iodomethane	50.0000	35.3473	29.3#	80	0.00
18	T	Methyl acetate	50.0000	47.5426	4.9	103	-0.01
19	T	Methylene Chloride	50.0000	49.4931	1.0	107	0.00
20	T	Carbon Disulfide	50.0000	51.4959	-3.0	112	0.00
21	T	Acrylonitrile	50.0000	50.5046	-1.0	100	0.00
22	T	Methyl Tert Butyl Ether	50.0000	53.3689	-6.7	108	0.00
23	T	trans-1,2-Dichloroethene	50.0000	50.8335	-1.7	108	0.00
24	T	n-Hexane	50.0000	53.8655	-7.7	116	0.00
25	T	Diisopropyl ether	100.0000	99.2260	0.8	105	0.00
26	T	Vinyl Acetate	50.0000	53.0555	-6.1	107	0.00
27	P	1,1-Dichloroethane	50.0000	51.1092	-2.2	107	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	106.1878	-6.2	110	-0.01
29	T	2-Butanone	50.0000	49.9695	0.1	101	0.00
30	T	Propionitrile	100.0000	102.2094	-2.2	105	0.00
31	T	2,2-Dichloropropane	50.0000	58.2193	-16.4	120	0.00
32	T	cis-1,2-Dichloroethene	50.0000	51.1475	-2.3	109	0.00
33	C	Chloroform	50.0000	52.8783	-5.8	111	0.00
34		1-Bromopropane	50.0000	56.1325	-12.3	119	0.00
35	T	Bromochloromethane	50.0000	52.5340	-5.1	110	0.00
36	T	Tetrahydrofuran	100.0000	91.6734	8.3	103	0.00
37	S	Dibromofluoromethane	25.0000	26.9681	-7.9	112	-0.01
38	T	1,1,1-Trichloroethane	50.0000	55.5448	-11.1	115	0.00
39	T	Cyclohexane	50.0000	50.4693	-0.9	110	0.00
40	T	1,1-Dichloropropene	50.0000	53.0265	-6.1	111	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	105.6937	-5.7	110	-0.01
42	T	Carbon Tetrachloride	50.0000	55.9611	-11.9	116	0.00
43	S	1,2-Dichloroethane-d4	25.0000	27.5026	-10.0	113	-0.01
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	55.5933	-11.2	113	0.00
46	T	Benzene	50.0000	50.8725	-1.7	106	0.00
47	T	Trichloroethene	50.0000	52.4002	-4.8	110	0.00
48	T	Methylcyclohexane	50.0000	52.8453	-5.7	113	0.00
49	C	1,2-Dichloropropane	50.0000	48.5171	3.0	103	0.00
50	T	Bromodichloromethane	50.0000	54.1489	-8.3	108	0.00
51	T	1,4-Dioxane	200.0000	214.5215	-7.3	106	0.00
52	T	Dibromomethane	50.0000	49.9722	0.1	106	-0.01
53	T	2-Chloroethyl Vinyl Ether	50.0000	44.5915	10.8	88	0.00
54	T	4-Methyl-2-Pentanone	50.0000	51.1598	-2.3	103	0.00

(#) = Out of Range

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413003.D Vial: 3
Acq On : 15 Jun 2016 9:29 Operator: TMB
Sample : WG572735-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.5425	-7.1	107	0.00
56	T	Dimethyl Disulfide	50.0000	52.1661	-4.3	108	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	111	0.00
58	S	Toluene-d8	25.0000	26.0957	-4.4	114	0.00
59	C	Toluene	50.0000	49.1512	1.7	109	0.00
60	T	Ethyl Methacrylate	50.0000	51.5092	-3.0	109	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	51.8862	-3.8	109	0.00
63	T	1,1,2-Trichloroethane	50.0000	47.7558	4.5	104	0.00
64	T	2-Hexanone	50.0000	50.2978	-0.6	109	0.00
65	T	1,3-Dichloropropane	50.0000	48.8533	2.3	104	0.00
66	T	Tetrachloroethene	50.0000	51.9308	-3.9	118	0.00
67	T	Dibromochloromethane	50.0000	52.1844	-4.4	111	0.00
68	T	1,2-Dibromoethane	50.0000	49.4166	1.2	106	0.00
69	T	1-Chlorohexane	50.0000	49.9121	0.2	113	0.00
70	P	Chlorobenzene	50.0000	49.3881	1.2	111	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	51.8051	-3.6	113	0.00
72	C	Ethylbenzene	50.0000	48.3185	3.4	110	0.00
73	T	m-,p-Xylene	100.0000	99.4174	0.6	111	0.00
74	T	o-Xylene	50.0000	49.9090	0.2	111	0.00
75	T	Styrene	50.0000	51.5739	-3.1	110	0.00
76	P	Bromoform	50.0000	53.0080	-6.0	113	0.00
77	T	Isopropylbenzene	50.0000	51.0798	-2.2	111	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	117	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	45.2267	9.5	104	0.00
80	S	p-Bromofluorobenzene	25.0000	25.2456	-1.0	121	0.00
81	T	1,2,3-Trichloropropane	50.0000	47.2826	5.4	111	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	47.4023	5.2	116	0.00
83	T	n-Propylbenzene	50.0000	47.6894	4.6	110	0.00
84	T	Bromobenzene	50.0000	48.5575	2.9	115	-0.01
85	T	1,3,5-Trimethylbenzene	50.0000	48.3051	3.4	112	0.00
86	T	2-Chlorotoluene	50.0000	43.7312	12.5	100	0.00
87	T	4-Chlorotoluene	50.0000	51.6293	-3.3	128	0.00
88	T	a-Methylstyrene	50.0000	47.1080	5.8	111	0.00
89	T	tert-Butylbenzene	50.0000	46.6633	6.7	114	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	47.9759	4.0	113	0.00
91	T	sec-Butylbenzene	50.0000	47.2703	5.5	111	0.00
92	T	p-Isopropyltoluene	50.0000	47.8823	4.2	113	0.00
93	T	1,3-Dichlorobenzene	50.0000	49.1672	1.7	116	0.00
94	T	1,4-Dichlorobenzene	50.0000	47.7112	4.6	115	0.00
95	T	n-Butylbenzene	50.0000	47.2912	5.4	112	-0.01
96	T	1,2-Dichlorobenzene	50.0000	47.1049	5.8	114	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	46.2131	7.6	106	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	48.4887	3.0	115	0.00
99	T	Hexachlorobutadiene	50.0000	50.8181	-1.6	125	-0.01
100	T	Naphthalene	50.0000	46.8800	6.2	108	-0.01
101	T	1,2,3-Trichlorobenzene	50.0000	47.2458	5.5	117	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\2\DATA\051316\8M412218.D          Vial: 3
Acq On    : 13 May 2016  12:36                       Operator: TMB
Sample    : WG568561-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD76034                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

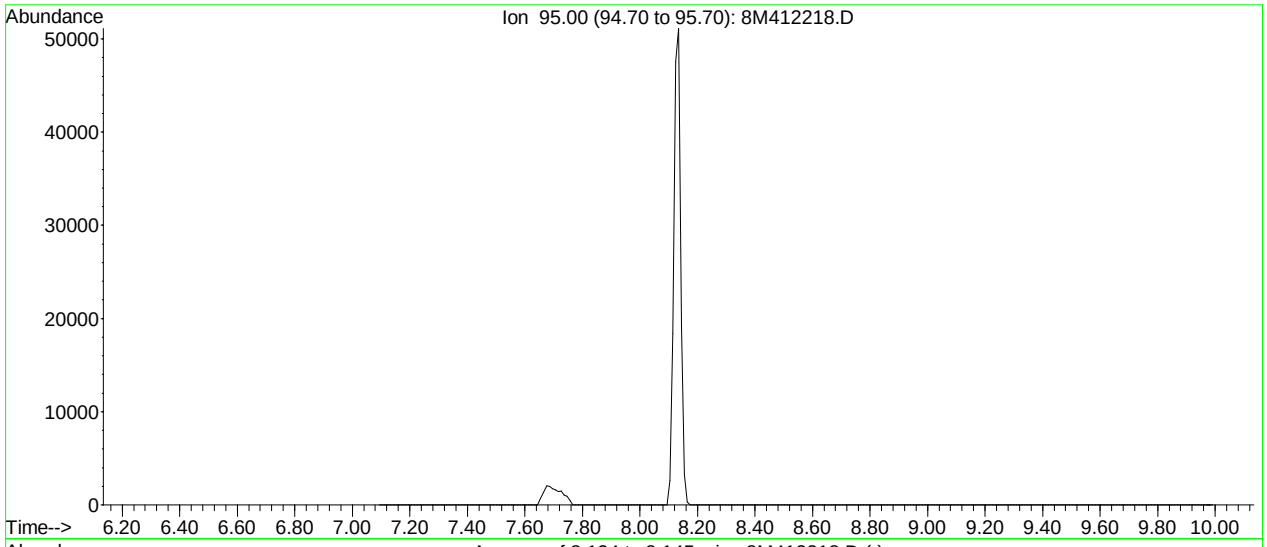

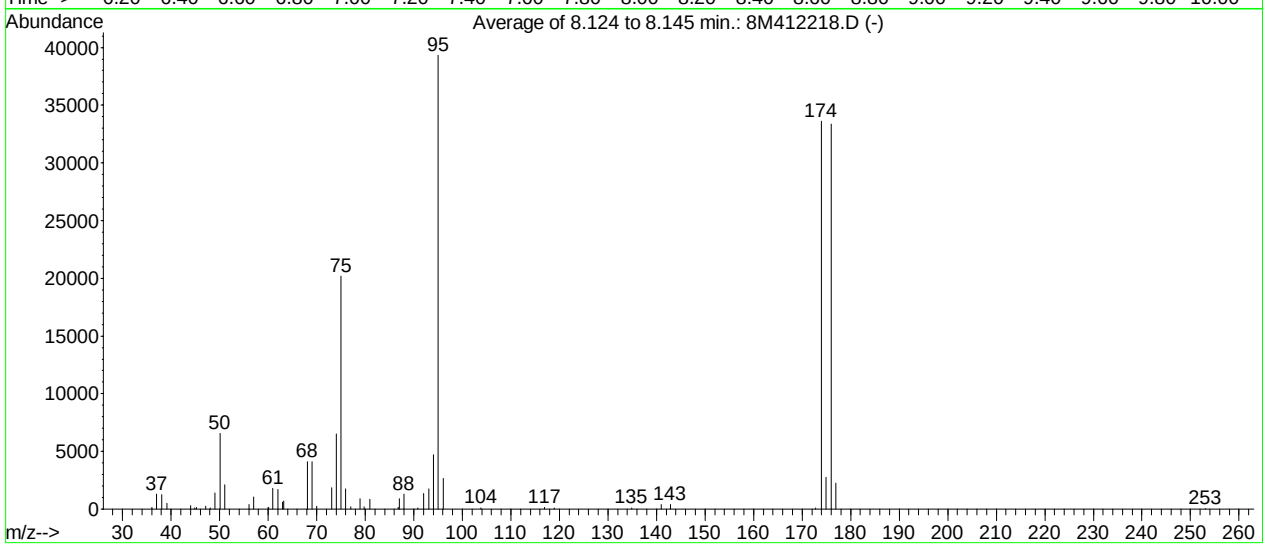

AutoFind: Scans 102, 103, 104; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.7	6575	PASS
75	95	30	60	51.3	20171	PASS
95	95	100	100	100.0	39312	PASS
96	95	5	9	6.7	2649	PASS
173	174	0.00	2	0.4	122	PASS
174	95	50	100	85.5	33616	PASS
175	174	5	9	8.2	2746	PASS
176	174	95	101	99.2	33360	PASS
177	176	5	9	6.8	2267	PASS

8M412218.D BFB.M Fri May 13 12:47:24 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413001.D Vial: 1
Acq On    : 15 Jun 2016   8:36                        Operator: TMB
Sample    : WG572735-01 50ng BFB STD 8260             Inst    : HPMS8
Misc      : 1,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title     : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
```

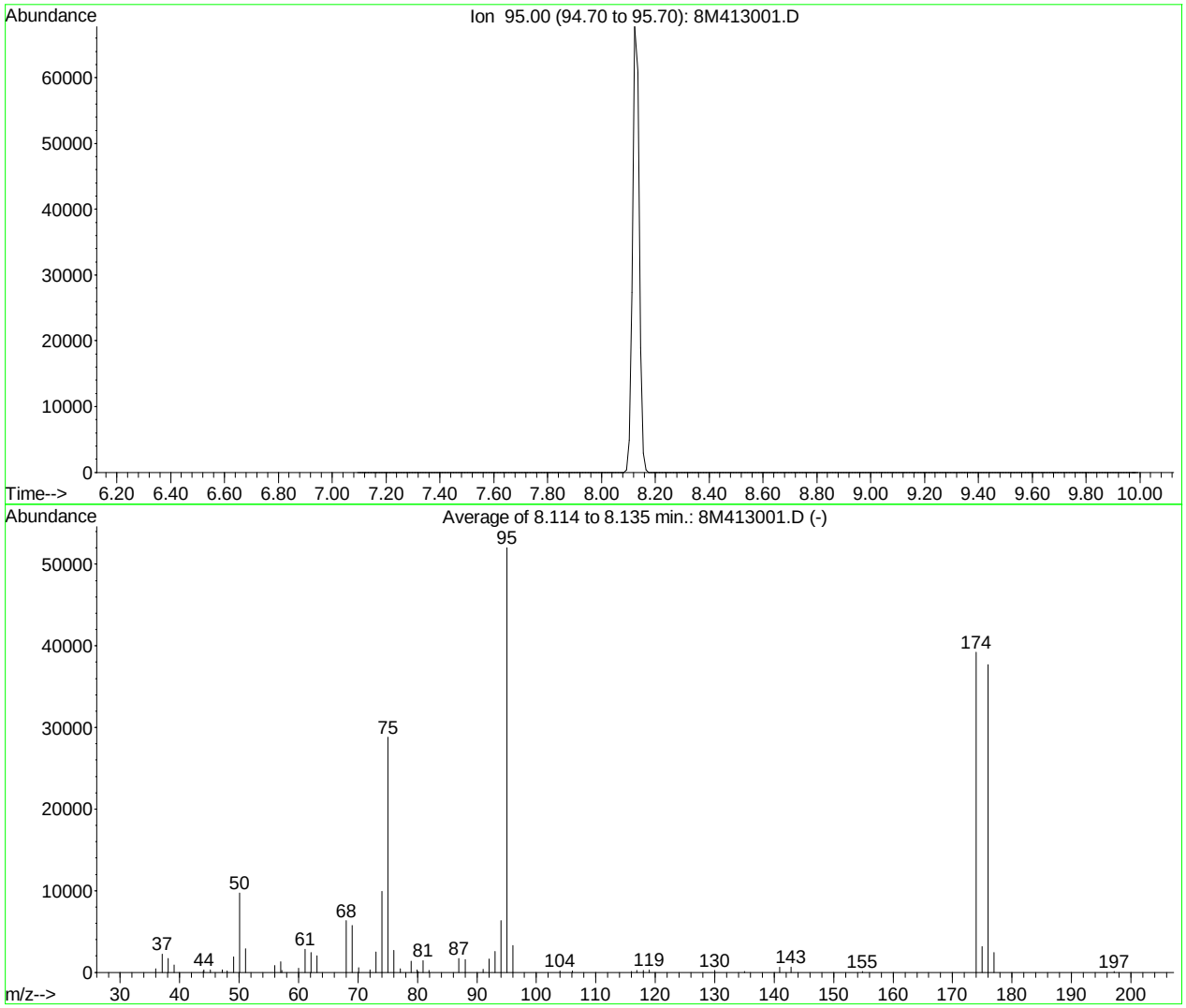

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 96

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.6	9690	PASS
75	95	30	60	55.4	28818	PASS
95	95	100	100	100.0	52034	PASS
96	95	5	9	6.4	3311	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	75.4	39229	PASS
175	174	5	9	8.1	3176	PASS
176	174	95	101	96.0	37669	PASS
177	176	5	9	6.4	2397	PASS

8M413001.D 8260WT.M Wed Jun 15 10:23:34 2016

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413005.D Vial: 5
Acq On : 15 Jun 2016 10:27 Operator: TMB
Sample : WG572737-01 VBLK0615 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 13:24:55 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	780700	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	588241	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	330295	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	231246	27.5688 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.28%		
43) 1,2-Dichloroethane-d4	10.31	65	247427	27.5103 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 110.04%		
58) Toluene-d8	12.68	98	800099	25.9892 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.96%		
80) p-Bromofluorobenzene	16.07	95	333874	24.4121 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.64%		

Target Compounds					Qvalue
36) Tetrahydrofuran	9.66	42	1213	1.4271 ug/L #	53

(#) = qualifier out of range (m) = manual integration
8M413005.D 8260WT.M Thu Jun 16 13:24:58 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413005.D Vial: 5
Acq On : 15 Jun 2016 10:27 Operator: TMB
Sample : WG572737-01 VBLK0615 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 13:24 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

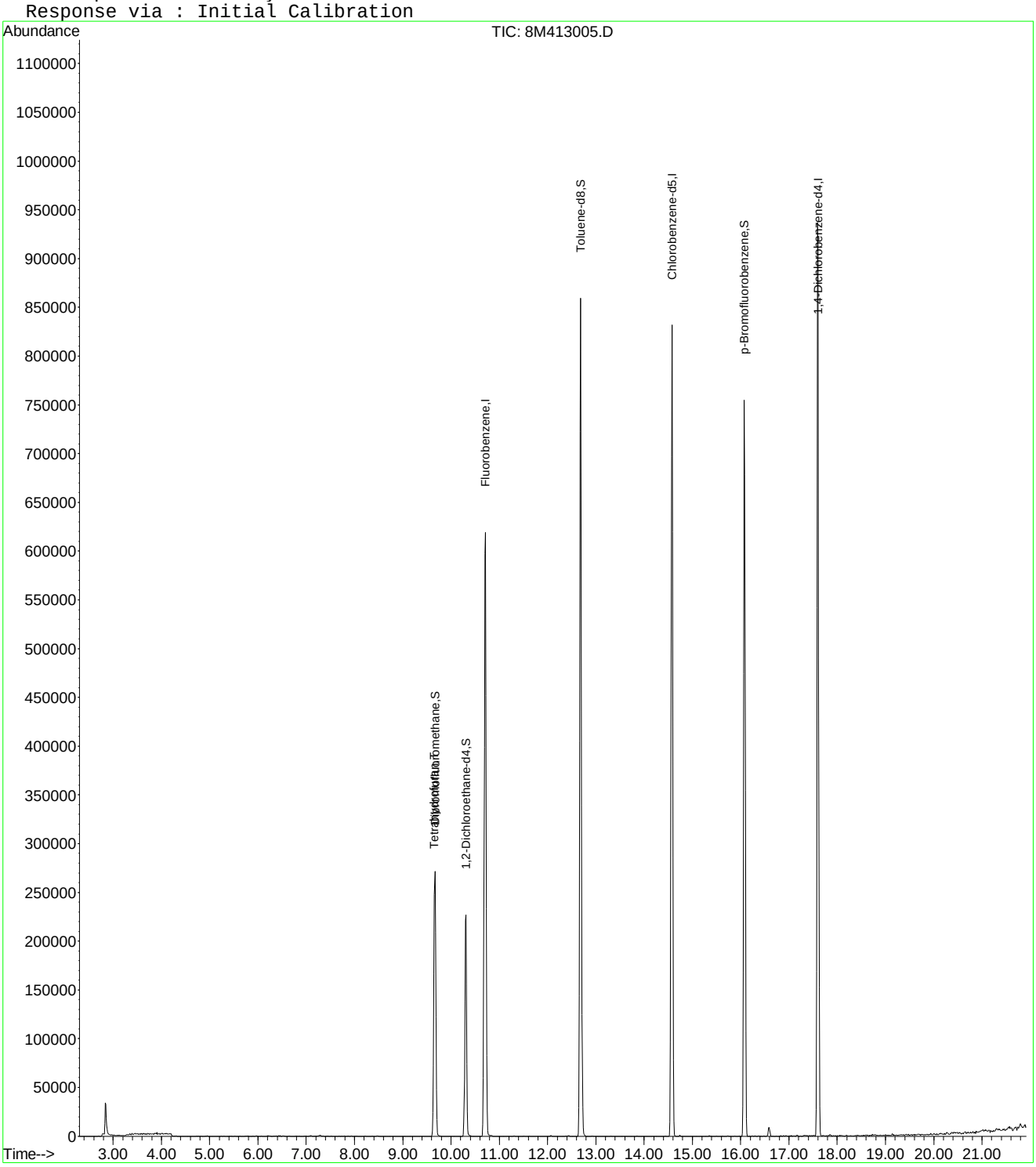

8M413005.D 8260WT.M Thu Jun 16 13:24:59 2016 Page 2

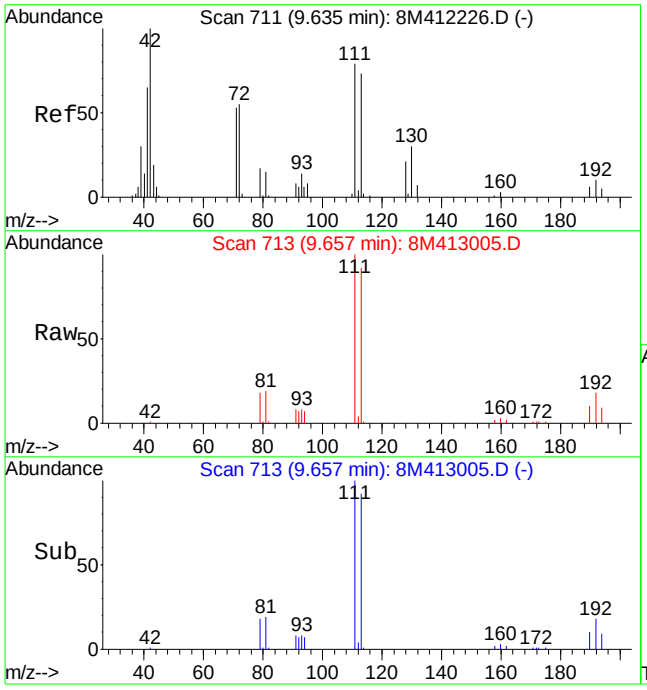

#36
Tetrahydrofuran
Concen: 1.43 ug/L
RT: 9.66 min Scan# 713
Delta R.T. 0.02 min
Lab File: 8M413005.D
Acq: 15 Jun 2016 10:27

Tgt Ion: 42 Resp: 1213

Ion	Ratio	Lower	Upper
42	100		
72	22.8	33.8	78.8#
71	19.7	32.0	74.8#

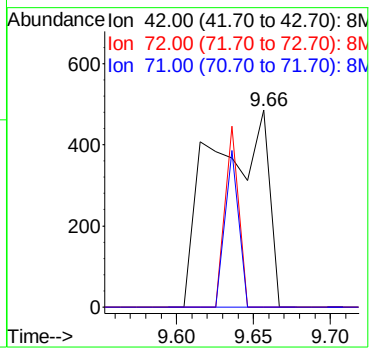

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413006.D Vial: 6
Acq On : 15 Jun 2016 10:56 Operator: TMB
Sample : WG572737-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD75597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 13:12:46 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	797707	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	583746	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	327915	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	229384	26.7638 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.04%		
43) 1,2-Dichloroethane-d4	10.31	65	254648	27.7095 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 110.84%		
58) Toluene-d8	12.68	98	795894	26.0517 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.20%		
80) p-Bromofluorobenzene	16.07	95	340031	25.0428 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.16%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	284160	21.2467 ug/L	99
3) Chloromethane	3.62	50	158514	20.3044 ug/L	98
4) Vinyl Chloride	3.84	62	213868	23.0899 ug/L	98
5) 1,3-Butadiene	3.88	54	35533	4.5746 ug/L	96
6) Bromomethane	4.73	94	73922	13.9336 ug/L	99
7) Chloroethane	4.89	64	107290	21.0513 ug/L	98
8) Trichlorofluoromethane	5.38	101	363474	21.0897 ug/L	100
9) Diethyl ether	5.90	59	423085	102.8279 ug/L	98
10) Isoprene	5.94	67	223906	21.3936 ug/L	98
11) Acrolein	6.14	56	35908	97.4725 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	169440	20.9152 ug/L	98
13) Acetone	6.23	43	20126	22.4246 ug/L	99
14) 1,1-Dichloroethene	6.46	61	252423	19.5691 ug/L	99
15) Tert-Butyl Alcohol	6.59	59	67383	234.2865 ug/L	96
16) Dimethyl Sulfide	6.73	62	167195	36.2514 ug/L	100
17) Iodomethane	6.98	142	45880	15.0557 ug/L	95
18) Methyl acetate	7.00	43	48803	20.1166 ug/L	98
19) Methylene Chloride	7.25	84	163005	19.8575 ug/L	99
20) Carbon Disulfide	7.29	76	492635	18.2500 ug/L	100
21) Acrylonitrile	7.43	53	24089	20.6864 ug/L	99
22) Methyl Tert Butyl Ether	7.46	73	394184	22.1874 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	237897	20.0749 ug/L	97
24) n-Hexane	7.78	57	165301	18.7849 ug/L	98
25) Diisopropyl ether	8.13	45	1883063	101.9408 ug/L	97
26) Vinyl Acetate	8.30	43	133404	15.7735 ug/L	100
27) 1,1-Dichloroethane	8.32	63	292700	19.8885 ug/L	99
28) Ethyl-Tert-Butyl ether	8.69	59	2019885	102.0589 ug/L	98
29) 2-Butanone	8.88	43	27520	20.8701 ug/L	95
30) Propionitrile	8.99	54	38179	99.3539 ug/L	98
31) 2,2-Dichloropropane	9.10	77	354710	22.8710 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	194451	21.2361 ug/L	98
33) Chloroform	9.38	83	372083	21.4124 ug/L	100
34) 1-Bromopropane	9.51	122	41342	31.5209 ug/L	99
35) Bromochloromethane	9.60	130	97315	20.7252 ug/L	96
36) Tetrahydrofuran	9.63	42	74098	85.3178 ug/L	93
38) 1,1,1-Trichloroethane	9.90	97	368225	22.3085 ug/L	100
39) Cyclohexane	9.93	56	222193	19.4435 ug/L	98
40) 1,1-Dichloropropene	10.10	75	252909	20.1021 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1926409	107.1686 ug/L	100
42) Carbon Tetrachloride	10.24	117	320660	21.8773 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413006.D 8260WT.M Wed Jun 15 13:12:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413006.D Vial: 6
Acq On : 15 Jun 2016 10:56 Operator: TMB
Sample : WG572737-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD75597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 13:12:46 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	249988	22.3515 ug/L		99
46)	Benzene	10.46	78	677769	20.6840 ug/L		100
47)	Trichloroethene	11.22	130	191249	21.8833 ug/L		98
48)	Methylcyclohexane	11.30	83	271212	20.4274 ug/L		98
49)	1,2-Dichloropropane	11.42	63	151089	20.7129 ug/L		94
50)	Bromodichloromethane	11.72	83	279173	21.7752 ug/L		100
51)	1,4-Dioxane	11.72	88	7089	193.4655 ug/L		97
52)	Dibromomethane	11.82	93	84325	19.5289 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	59062	18.8382 ug/L		95
54)	4-Methyl-2-Pentanone	12.05	58	25295	19.7510 ug/L		93
55)	cis-1,3-Dichloropropene	12.36	75	305008	23.3729 ug/L		98
56)	Dimethyl Disulfide	12.62	79	150140	21.5561 ug/L		92
59)	Toluene	12.79	91	733515	20.2405 ug/L		100
60)	Ethyl Methacrylate	12.88	69	148427	21.3266 ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	256810	21.1459 ug/L		98
63)	1,1,2-Trichloroethane	13.18	97	115499	20.1973 ug/L		99
64)	2-Hexanone	13.12	58	22315	18.5695 ug/L	#	96
65)	1,3-Dichloropropane	13.48	76	222881	21.8913 ug/L		97
66)	Tetrachloroethene	13.60	164	161836	20.8434 ug/L		96
67)	Dibromochloromethane	13.86	129	175372	21.0031 ug/L		98
68)	1,2-Dibromoethane	14.12	107	116504	20.4419 ug/L		98
69)	1-Chlorohexane	14.21	91	248464	20.0851 ug/L		98
70)	Chlorobenzene	14.63	112	512807	20.9843 ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.66	131	200020	21.1271 ug/L		98
72)	Ethylbenzene	14.66	106	265988	19.8936 ug/L		98
73)	m-,p-Xylene	14.74	106	658272	41.9739 ug/L		97
74)	o-Xylene	15.31	106	327127	21.3352 ug/L		99
75)	Styrene	15.34	104	529865	21.0698 ug/L		96
76)	Bromoform	15.84	173	99478	20.0860 ug/L		99
77)	Isopropylbenzene	15.73	105	884775	21.7219 ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	119073	18.0900 ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	41646	20.5464 ug/L	#	30
82)	trans-1,4-Dichloro-2-Buten	16.19	53	31015	15.4417 ug/L	#	1
83)	n-Propylbenzene	16.24	91	1065587	20.8292 ug/L		100
84)	Bromobenzene	16.36	156	207745	19.7426 ug/L		98
85)	1,3,5-Trimethylbenzene	16.42	105	774723	20.7892 ug/L		99
86)	2-Chlorotoluene	16.51	91	659635	18.4681 ug/L		91
87)	4-Chlorotoluene	16.56	91	724140	22.4448 ug/L		92
88)	a-Methylstyrene	16.83	118	376018	21.2676 ug/L		100
89)	tert-Butylbenzene	16.89	134	145153	19.9098 ug/L		96
90)	1,2,4-Trimethylbenzene	16.94	105	775871	20.2476 ug/L		100
91)	sec-Butylbenzene	17.16	105	899124	20.5090 ug/L		99
92)	p-Isopropyltoluene	17.32	119	756722	20.3288 ug/L		100
93)	1,3-Dichlorobenzene	17.51	146	417144	20.5876 ug/L		97
94)	1,4-Dichlorobenzene	17.64	146	420670	20.5932 ug/L		99
95)	n-Butylbenzene	17.84	91	714421	19.4136 ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	366373	20.3305 ug/L		97
97)	1,2-Dibromo-3-Chloropropan	19.13	75	26008	19.6841 ug/L		99
98)	1,2,4-Trichlorobenzene	20.28	180	266543	19.7879 ug/L		99
99)	Hexachlorobutadiene	20.43	225	132022	20.9768 ug/L		99
100)	Naphthalene	20.64	128	347414	17.3597 ug/L		100
101)	1,2,3-Trichlorobenzene	20.95	180	216248	19.0291 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M413006.D 8260WT.M Wed Jun 15 13:12:49 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413006.D Vial: 6
Acq On : 15 Jun 2016 10:56 Operator: TMB
Sample : WG572737-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD75597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 13:12 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

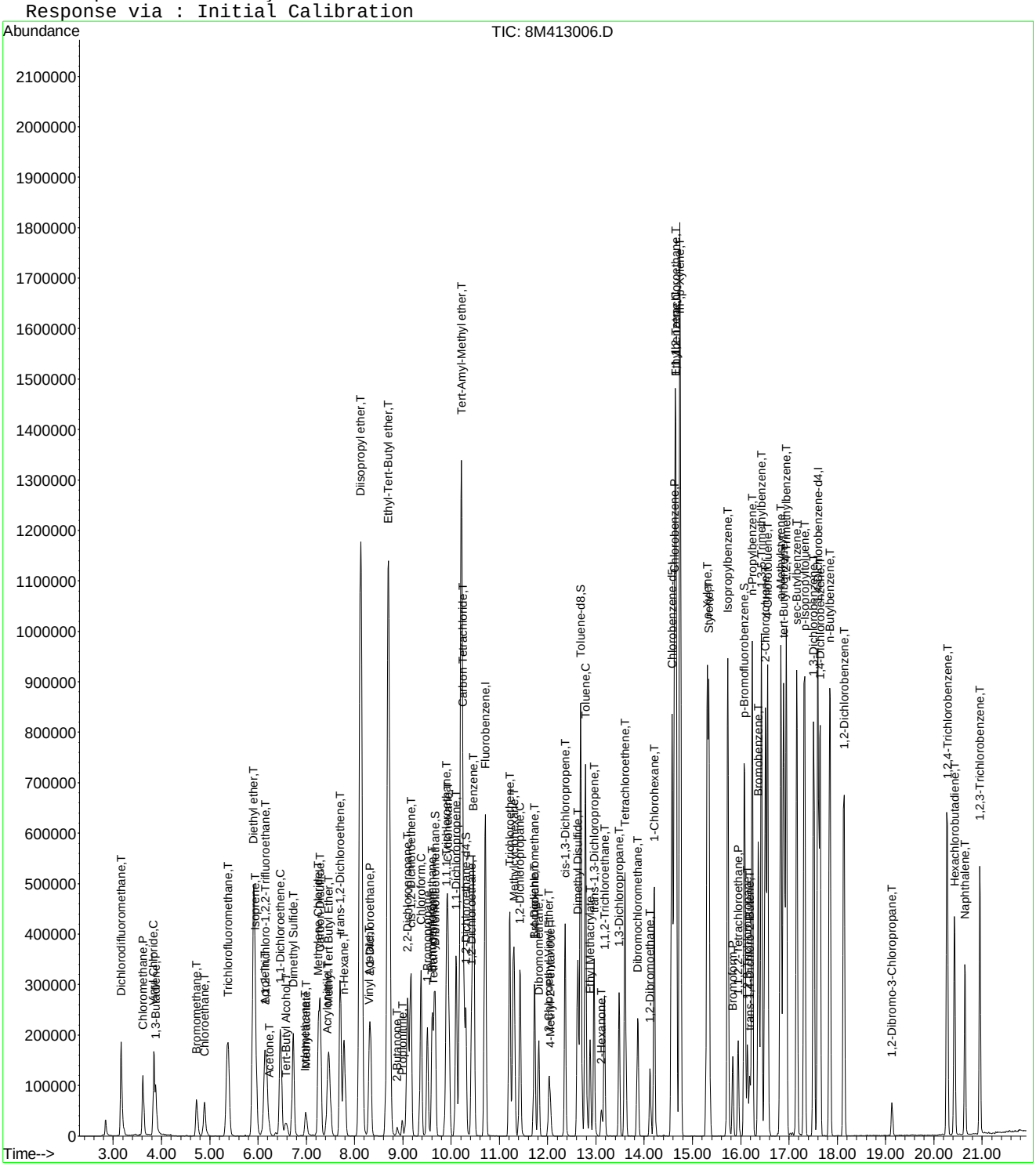

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413007.D Vial: 7
Acq On : 15 Jun 2016 11:25 Operator: TMB
Sample : WG572737-03 20ug/L LCS2 STD 8260 Inst : HPMS8
Misc : 1,1 STD75597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 13:12:51 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	790550	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	592812	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	329286	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	233097	27.4432 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.76%		
43) 1,2-Dichloroethane-d4	10.31	65	253627	27.8483 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.40%		
58) Toluene-d8	12.68	98	809553	26.0935 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.36%		
80) p-Bromofluorobenzene	16.07	95	346437	25.4083 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.64%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	286211	21.5938 ug/L	100
3) Chloromethane	3.62	50	160333	20.7233 ug/L	99
4) Vinyl Chloride	3.84	62	215100	23.4332 ug/L	100
5) 1,3-Butadiene	3.88	54	33429	4.3426 ug/L	94
6) Bromomethane	4.73	94	78480	14.8828 ug/L	100
7) Chloroethane	4.89	64	108715	21.5240 ug/L	99
8) Trichlorofluoromethane	5.38	101	369142	21.6124 ug/L	99
9) Diethyl ether	5.90	59	423639	103.8947 ug/L	99
10) Isoprene	5.93	67	224199	21.6155 ug/L	96
11) Acrolein	6.13	56	36618	100.2997 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	171548	21.3671 ug/L	94
13) Acetone	6.24	43	21959	24.6885 ug/L	96
14) 1,1-Dichloroethene	6.46	61	255403	19.9794 ug/L	98
15) Tert-Butyl Alcohol	6.58	59	69960	245.4488 ug/L	96
16) Dimethyl Sulfide	6.73	62	171865	37.6013 ug/L	99
17) Iodomethane	6.99	142	60508	19.0922 ug/L	96
18) Methyl acetate	7.00	43	52216	21.7183 ug/L	97
19) Methylene Chloride	7.25	84	168673	20.7340 ug/L	99
20) Carbon Disulfide	7.29	76	495290	18.5145 ug/L	99
21) Acrylonitrile	7.43	53	23838	20.6562 ug/L	99
22) Methyl Tert Butyl Ether	7.46	73	402312	22.8499 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	245125	20.8721 ug/L	100
24) n-Hexane	7.78	57	170844	19.5905 ug/L	100
25) Diisopropyl ether	8.13	45	1907939	104.2226 ug/L	97
26) Vinyl Acetate	8.29	43	143629	17.1362 ug/L	98
27) 1,1-Dichloroethane	8.32	63	295146	20.2362 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	2059515	105.0034 ug/L	98
29) 2-Butanone	8.88	43	29144	22.3017 ug/L	99
30) Propionitrile	8.98	54	40076	105.2347 ug/L	99
31) 2,2-Dichloropropane	9.10	77	356627	23.2028 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	189499	20.8826 ug/L	97
33) Chloroform	9.38	83	367074	21.3154 ug/L	99
34) 1-Bromopropane	9.51	122	41437	31.8793 ug/L	97
35) Bromochloromethane	9.60	130	98136	21.0892 ug/L	95
36) Tetrahydrofuran	9.63	42	79387	92.2351 ug/L	97
38) 1,1,1-Trichloroethane	9.90	97	363100	22.1971 ug/L	99
39) Cyclohexane	9.93	56	224247	19.8009 ug/L	96
40) 1,1-Dichloropropene	10.10	75	258698	20.7484 ug/L	99
41) Tert-Amyl-Methyl ether	10.20	73	1971434	110.6663 ug/L	99
42) Carbon Tetrachloride	10.24	117	314892	21.6783 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413007.D 8260WT.M Wed Jun 15 13:12:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413007.D Vial: 7
Acq On : 15 Jun 2016 11:25 Operator: TMB
Sample : WG572737-03 20ug/L LCS2 STD 8260 Inst : HPMS8
Misc : 1,1 STD75597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 13:12:51 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	261278	23.5724	ug/L		97
46)	Benzene	10.46	78	680256	20.9479	ug/L		100
47)	Trichloroethene	11.22	130	194311	22.4349	ug/L		98
48)	Methylcyclohexane	11.30	83	283441	21.5417	ug/L		98
49)	1,2-Dichloropropane	11.42	63	151880	21.0098	ug/L		95
50)	Bromodichloromethane	11.72	83	283122	22.2832	ug/L		100
51)	1,4-Dioxane	11.71	88	7908	217.7707	ug/L		96
52)	Dibromomethane	11.81	93	83275	19.4603	ug/L		94
53)	2-Chloroethyl Vinyl Ether	12.02	63	63767	20.5230	ug/L		100
54)	4-Methyl-2-Pentanone	12.05	58	25785	20.3159	ug/L		91
55)	cis-1,3-Dichloropropene	12.36	75	308896	23.8851	ug/L		100
56)	Dimethyl Disulfide	12.62	79	152219	22.0525	ug/L		94
59)	Toluene	12.79	91	746005	20.2704	ug/L		99
60)	Ethyl Methacrylate	12.88	69	149599	21.1662	ug/L		99
62)	trans-1,3-Dichloropropene	12.96	75	256988	20.8369	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	116292	20.0250	ug/L		95
64)	2-Hexanone	13.12	58	23367	19.1475	ug/L	#	100
65)	1,3-Dichloropropane	13.48	76	221842	21.4560	ug/L		98
66)	Tetrachloroethene	13.60	164	162164	20.5662	ug/L		96
67)	Dibromochloromethane	13.86	129	177622	20.9473	ug/L		98
68)	1,2-Dibromoethane	14.12	107	117628	20.3235	ug/L		99
69)	1-Chlorohexane	14.21	91	252462	20.0962	ug/L		99
70)	Chlorobenzene	14.63	112	510921	20.5874	ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.66	131	200448	20.8485	ug/L		98
72)	Ethylbenzene	14.66	106	270169	19.8973	ug/L		100
73)	m-,p-Xylene	14.74	106	658179	41.3262	ug/L		96
74)	o-Xylene	15.31	106	324634	20.8488	ug/L		96
75)	Styrene	15.34	104	538457	21.0840	ug/L		98
76)	Bromoform	15.84	173	101358	20.1526	ug/L		100
77)	Isopropylbenzene	15.73	105	899197	21.7383	ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	124317	18.8081	ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	40906	20.0973	ug/L	#	13
82)	trans-1,4-Dichloro-2-Buten	16.19	53	35020	17.2867	ug/L	#	1
83)	n-Propylbenzene	16.24	91	1077100	20.9666	ug/L		99
84)	Bromobenzene	16.36	156	212450	20.1057	ug/L		96
85)	1,3,5-Trimethylbenzene	16.43	105	777410	20.7744	ug/L		99
86)	2-Chlorotoluene	16.51	91	666207	18.5744	ug/L		92
87)	4-Chlorotoluene	16.56	91	724276	22.3555	ug/L		92
88)	a-Methylstyrene	16.83	118	373977	21.0641	ug/L		98
89)	tert-Butylbenzene	16.89	134	146447	20.0037	ug/L		98
90)	1,2,4-Trimethylbenzene	16.94	105	769177	19.9894	ug/L		99
91)	sec-Butylbenzene	17.16	105	914916	20.7823	ug/L		99
92)	p-Isopropyltoluene	17.32	119	762827	20.4075	ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	419374	20.6115	ug/L		98
94)	1,4-Dichlorobenzene	17.64	146	421455	20.5458	ug/L		100
95)	n-Butylbenzene	17.84	91	729014	19.7277	ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	375223	20.7349	ug/L		97
97)	1,2-Dibromo-3-Chloropropan	19.13	75	25730	19.3926	ug/L		94
98)	1,2,4-Trichlorobenzene	20.28	180	271201	20.0498	ug/L		99
99)	Hexachlorobutadiene	20.42	225	133189	21.0741	ug/L		99
100)	Naphthalene	20.64	128	357898	17.8092	ug/L		100
101)	1,2,3-Trichlorobenzene	20.95	180	220212	19.2972	ug/L		99

(#) = qualifier out of range (m) = manual integration
8M413007.D 8260WT.M Wed Jun 15 13:12:54 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413007.D Vial: 7
Acq On : 15 Jun 2016 11:25 Operator: TMB
Sample : WG572737-03 20ug/L LCS2 STD 8260 Inst : HPMS8
Misc : 1,1 STD75597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 13:12 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

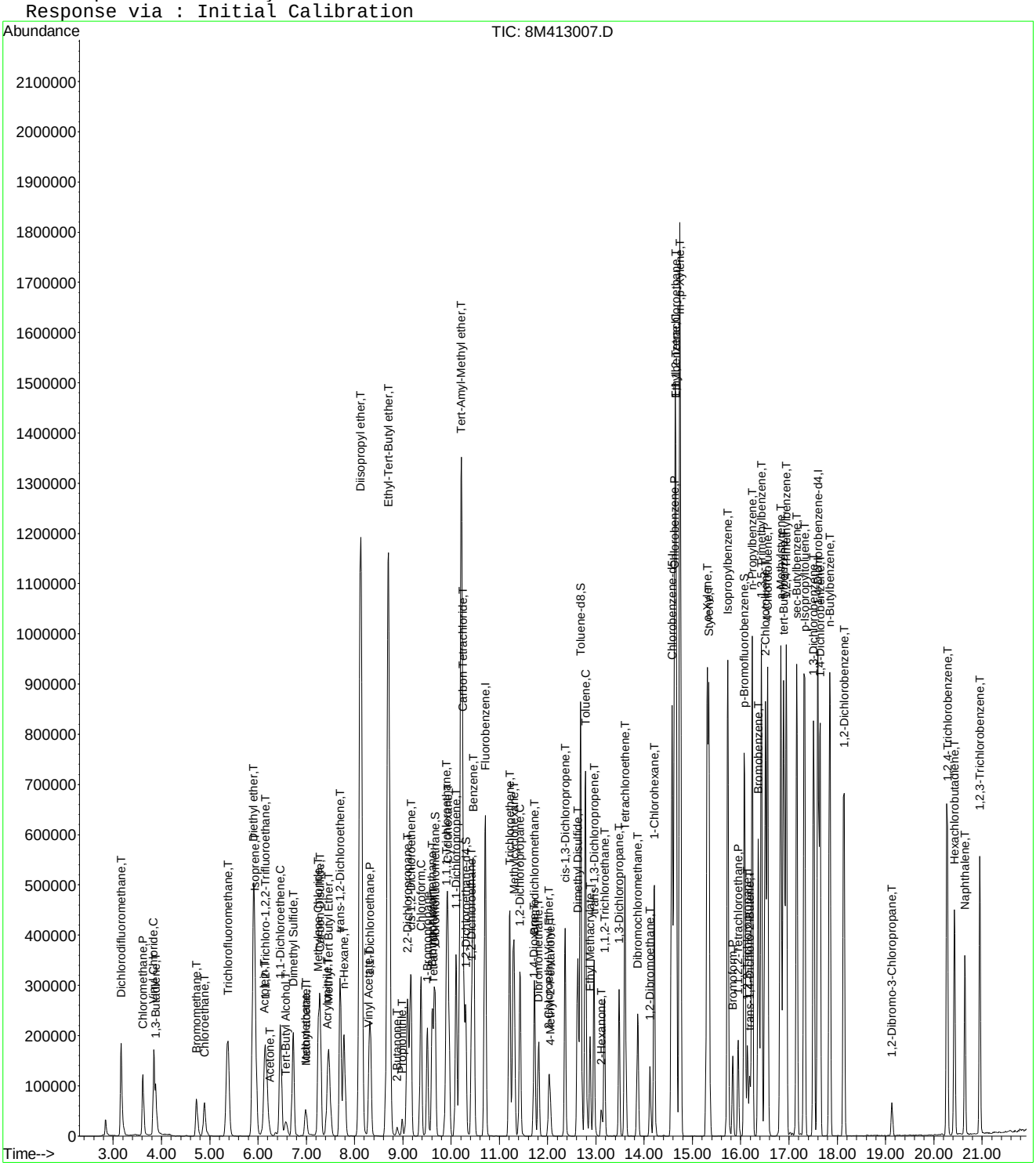

2.2 Semivolatiles Data

2.2.1 Semivolatiles GC/MS Data (Dioxane)

2.2.1.1 Summary Data

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060615-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW22R-060916	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 13:48
Collect Date:	06/09/2016 07:40	**Dilution:**	1	**File ID:**	15M18410
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	56.5	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060615-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW22DW-060916	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 14:11
Collect Date:	06/09/2016 08:40	**Dilution:**	1	**File ID:**	15M18411
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	62.1	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060615-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW22DWFD-060916	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 14:33
Collect Date:	06/09/2016 08:40	**Dilution:**	1	**File ID:**	15M18412
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	47.8	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060615-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW22SW-060916	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 14:56
Collect Date:	06/09/2016 09:55	**Dilution:**	1	**File ID:**	15M18413
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	44.9	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.2.1.2 QC Summary Data

Example 8270 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	1261197
Cis = Concentration of the specific internal standard (ug/mL)	40
Ais = Area of the characteristic ion of the specific internal standard	608044
Cx = Concentration of the compound in the standard being measured (ug/mL)	50
RF = Calculated Response Factor	**1.65935**

2.0 Calculating the concentration (C) of a compound in water using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Vi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Vi = Initial volume of sample extracted from prep log (mL)	1021
Cx = Concentration of the compound in the sample being measured (ug/mL)	0.016947
Cx = Concentration of the compound in the sample being measured (ug/L)	**16.947**

3.0 Calculating the concentration (C) of a compound in soil using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Wi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Wi = Initial weight of sample extracted (g) from prep log	30
Cx = Concentration of the compound in the sample being measured (ug/g)	0.576763
Cx = Concentration of the compound in the sample being measured (ug/kg)	**576.7627**

Dry weight correction:

Percent solids (PCT_S)	50
Cd = (Cx) (100)/PCT_S	**1153.525** ug/kg

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve plot

b = intercept from curve plot

Step 2: Calculate y from Quantitation Report

y = 16790/784838 = 0.02139

Step 3: Solve for x

x = (y - b)/m = [(0.02139 -(- 0.0435)]/ 0.0783 = 0.829

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.829) = 20.72 ug/L

Example Spreadsheet Calculation:

Slope from curve, m:	0.0783	
Intercept from curve, b:	-0.0435	
Area of analyte, Ax:	16790	
Area of Internal Standard , Ais:	784484	
Concentration of IS, Cis	25.00	ug/L
Response Ratio (y) :	0.021403	
Amount Ratio:	0.828897	
Concentration (Cx):	20.72241	ug/L

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**0.0259**	
Value of B from plot:	**0.0596**	
Value of C from plot:	**-0.0165**	
Area of analyte from quantitation report:	**203233**	
Area of IS from quantiation report:	**1425653**	
Response ratio, y:	**0.142554**	
C - y:	**-0.15905**	
Root 1 - Computed amount ratio , X1:	**-3.88278**	
Root 2 - Computed amount ratio , X2:	**1.581623**	use this solution
Concentration of IS, Cis:	**40.00**	
Concentration of analyte, Cx:	**63.26**	ug/L

Microbac Laboratories Inc.
Continuous Sample Extract Log

Workgroup: WG572341
Analyst: CPD
Spike Analyst: CPD
Method: 3520C
Run Date: 06/13/2016 16:16
SOP: EXB01 Revison 20
Spike Witness: AED
Surr Solution: STD74051

TIME ON: 16:55 OFF: 12:40 ON: 15:20 OFF: 11:00

CH2CL2 Lot #: COA18982
sodium sulfate Lot #: COA18814
1:1 H2SO4 Lot #: RGT36755

	SAMPLE #	Type	Reference	Prod	pH	Init Amnt	Surr Amnt	Spike Amnt	Spike Sol	Final Vol	Color
1	L16060497-01	RS01		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
2	L16060497-02	MS01	L16060497-01	827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD66388	1 mL	Transparent
3	L16060497-03	SD01	L16060497-01	827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD66388	1 mL	Transparent
4	L16060504-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
5	L16060504-02	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
6	L16060504-03	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
7	L16060504-04	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
8	L16060615-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
9	L16060615-02	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
10	L16060615-03	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
11	L16060615-04	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
12	L16060616-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
13	L16060616-02	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
14	L16060616-03	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
15	L16060637-03	SAMP		827-DIOX	<2	1000 mL	.05 mL			1 mL	Transparent
16	WG572341-01	BLANK		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
17	WG572341-02	LCS		827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD66388	1 mL	Transparent
18	WG572341-03	REF	L16060497-01	827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
19	WG572341-04	MS	L16060497-01	827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD66388	1 mL	Transparent
20	WG572341-05	MSD	L16060497-01	827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD66388	1 mL	Transparent

Analyst: Chelsea Davis

Reviewer: Justin Hesson

EXTRACT - Modified 01/23/2009
PDF ID: 4809359
Report generated: 06/16/2016 08:25

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 061016
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG571947

Internal STD: STD75471 Surrogate STD: NA Calibration STD
CCV STD: STD74784 LCS STD: STD74214 MS/MSD STD:

Comments: L16051582-01, and L16060024-01,03,05 were already sent for re-extract due to QC contamination. L16060024s are being re-extracted as 827-SPE-DIOX only.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18332	BAKEOUT-IS CHECK	1	1		06/10/16 08:27
2	15M18333	BAKEOUT-IS CHECK	1	1		06/10/16 08:53
3	15M18334	WG571981-01 5PPM DFTPP STD	1	1	STD75016	06/10/16 09:13
4	15M18335	BAKEOUT-IS CHECK	1	1		06/10/16 09:31
5	15M18336	BAKEOUT-IS CHECK	1	1		06/10/16 09:53
6	15M18337	WG572230-01 5PPM DFTPP STD	1	1	STD75016	06/10/16 10:18
7	15M18338	WG572230-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 10:36
8	15M18339	WG572230-03 10 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 11:00
9	15M18340	WG572230-04 7.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 11:22
10	15M18341	WG572230-05 2.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 11:45
11	15M18342	WG572230-06 1 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 12:08
12	15M18343	WG572230-07 0.4 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 12:30
13	15M18344	WG572230-08 5PPM 1,4-DIOXANE ALT SRC	1	1	STD74214	06/10/16 12:52
14	15M18345	WG571410-01 BLANK 6/6	1	1		06/10/16 13:15
15	15M18346	WG571410-02 LCS 6/6	1	1		06/10/16 13:38
16	15M18347	WG571410-03 LCSDUP 6/6	1	1		06/10/16 14:01
17	15M18348	WG571404-01 BLANK 6/2	1	1		06/10/16 14:24
18	15M18349	WG571404-02 LCS 6/2	1	1		06/10/16 14:47
19	15M18350	WG571404-03 LCSDUP 6/2	1	1		06/10/16 15:09
20	15M18351	L16060067-01 827-DIOX	1	1		06/10/16 15:32
21	15M18352	L16051582-01 5X 827-DIOX	1	5		06/10/16 15:55
22	15M18353	L16060024-05 20X 827-DIOX	1	20		06/10/16 16:18
23	15M18354	L16060024-03 20X 827-DIOX	1	20		06/10/16 16:40
24	15M18355	L16060024-01 20,000X 827-DIOX	1	20000		06/10/16 17:03
25	15M18356	L16060067-01 2X 827-DIOX	1	2		06/10/16 17:26
26	15M18357	L16060024-03 100X 827-DIOX	1	100		06/10/16 17:49

Comments

Seq.	Rerun	Dil.	Reason	Analytes
3				
	DFTPP check after installing new source and retuning.			
17				
	WG571404-01 BLANK 6/2 dioxane hit above the RL.			

Page: 1 Approved: 13-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 061016

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG571947

Internal STD: STD75471 Surrogate STD: NA

CCV STD: STD74784 LCS STD: STD74214

Comments

Seq.	Rerun	Dil.	Reason	Analytes
18				
	WG571404-02 LCS 6/2 fails high.			
19				
	WG571404-03 LCSDUP 6/2 fails high.			
20	X	2	Over Calibration Range	
	L16060067-01			
23	X	100	Over Calibration Range	
	L16060024-03 20X DNR			

Page: 2 Approved: 13-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 061616
Analyst1: SCB Analyst2: MES
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG572971

Internal STD: STD75471, 76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18399	WG572958-01 5PPM DFTPP STD	1	1	STD75016	06/16/16 09:38
2	15M18400	WG572958-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/16/16 10:00
3	15M18401	WG572341-01 BLANK 6/13	1	1		06/16/16 10:23
4	15M18402	WG572341-02 LCS 6/13	1	1		06/16/16 10:46
5	15M18403	L16060497-01 REF 827-DIOX	1	1		06/16/16 11:08
6	15M18404	L16060497-02 MS 827-DIOX	1	1		06/16/16 11:31
7	15M18405	L16060497-03 MSD 827-DIOX	1	1		06/16/16 11:54
8	15M18406	L16060504-01 827-DIOX	1	1		06/16/16 12:17
9	15M18407	L16060504-02 827-DIOX	1	1		06/16/16 12:39
10	15M18408	L16060504-03 827-DIOX	1	1		06/16/16 13:02
11	15M18409	L16060504-04 827-DIOX	1	1		06/16/16 13:25
12	15M18410	L16060615-01 827-DIOX	1	1		06/16/16 13:48
13	15M18411	L16060615-02 827-DIOX	1	1		06/16/16 14:11
14	15M18412	L16060615-03 827-DIOX	1	1		06/16/16 14:33
15	15M18413	L16060615-04 827-DIOX	1	1		06/16/16 14:56
16	15M18414	L16060616-01 827-DIOX	1	1		06/16/16 15:19
17	15M18415	L16060616-02 827-DIOX	1	1		06/16/16 15:42
18	15M18416	L16060616-03 827-DIOX	1	1		06/16/16 16:04
19	15M18417	L16060637-03 827-DIOX	1	1		06/16/16 16:27

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 20-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 10-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75640
Analytical Workgroups: L16051582, L16060024, L16060067

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 12-JUN-2016

Secondary Reviewer: 13-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-13-2016 08:34:44

Microbac Laboratories Inc.

Data Checklist

Date: 16-JUN-2016
Analyst: SCB
Analyst: MES
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75783
Analytical Workgroups: L16060497, L16060504, L16060615, L16060616, L16060637

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	SCB
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 20-JUN-2016 Sarah Bogolin

Secondary Reviewer: 20-JUN-2016 Eric C. Zum

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-20-2016 16:55:27

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8270D

AAB#: WG572971

Login Number: L16060615

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW22R-060916	01	06/09/16					06/13/2016	4.4	7		06/16/16	2.9	40	
18CPTMW22DW-060916	02	06/09/16					06/13/2016	4.3	7		06/16/16	2.9	40	
18CPTMW22DWFD-060916	03	06/09/16					06/13/2016	4.3	7		06/16/16	2.9	40	
18CPTMW22SW-060916	04	06/09/16					06/13/2016	4.3	7		06/16/16	2.9	40	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4814668
Report generated 06/21/2016 08:51

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060615
Instrument Id: HPMS15
Workgroup (AAB#): WG572971

Method: 827-DIOXANE
CAL ID: HPMS15-10-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1
L16060615-01	1.00	01	56.5
L16060615-02	1.00	01	62.1
L16060615-03	1.00	01	47.8
L16060615-04	1.00	01	44.9
WG572341-01	1.00	01	29.4
WG572341-02	1.00	01	35.7

Surrogates	Surrogate Limits		
1 - 1,4-Dioxane-d8	20	-	129

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4814677
Report generated: 06/21/2016 08:51

METHOD BLANK SUMMARY

Login Number: L16060615
Blank File ID: 15M18401
Prep Date: 06/13/16 16:16
Analyzed Date: 06/16/16 10:23
Analyst: MES

Work Group: WG572971
Blank Sample ID: WG572341-01
Instrument ID: HPMS15
Method: 8270D

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572341-02	15M18402	06/16/16 10:46	01
18CPTMW22R-060916	L16060615-01	15M18410	06/16/16 13:48	01
18CPTMW22DW-060916	L16060615-02	15M18411	06/16/16 14:11	01
18CPTMW22DWFD-060916	L16060615-03	15M18412	06/16/16 14:33	01
18CPTMW22SW-060916	L16060615-04	15M18413	06/16/16 14:56	01

Report Name: BLANK_SUMMARY
PDF File ID: 4814669
Report generated 06/21/2016 08:51

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060615 Prep Date: 06/13/16 16:16 Sample ID: WG572341-01
Instrument ID: HPMS15 Run Date: 06/16/16 10:23 Prep Method: 3520C
File ID: 15M18401 Analyst: MES Method: 8270D
Workgroup (AAB#): WG572971 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS15-10-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
1,4-Dioxane	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	29.4	20 - 129	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4814670
21-JUN-2016 08:51

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060615 Run Date: 06/16/2016 Sample ID: WG572341-02
Instrument ID: HPMS15 Run Time: 10:46 Prep Method: 3520C
File ID: 15M18402 Analyst: MES Method: 8270D
Workgroup (AAB#): WG572971 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD66388 Cal ID: HPMS15-10-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
1,4-Dioxane	5.00	1.67	33.3	30 - 104	

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	35.7	20 - 129	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4814671
Report generated: 06/21/2016 08:51

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16060615
Instrument: HPMS15
Analyst: MES
Workgroup: WG572230

Tune ID: WG572230-01
Run Date: 06/10/2016
Run Time: 10:18
File ID: 15M18337
Cal ID: HPMS15 - 10-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	39.5	52157	PASS
68.0	69.0	0	2.00	1.91	1026	PASS
69.0	198	0	100	40.8	53844	PASS
70.0	69.0	0	2.00	0.223	120	PASS
127	198	40.0	60.0	51.4	67853	PASS
197	198	0	1.00	0.383	505	PASS
198	198	100	100	100	131981	PASS
199	198	5.00	9.00	6.72	8869	PASS
275	198	10.0	30.0	26.4	34853	PASS
365	198	1.00	100	3.17	4186	PASS
441	443	0.0100	100	73.9	15632	PASS
442	198	40.0	100	83.4	110112	PASS
443	442	17.0	23.0	19.2	21163	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG572230-02	STD-CCV	01	06/10/2016 10:36	
WG572230-03	STD	01	06/10/2016 11:00	
WG572230-04	STD	01	06/10/2016 11:22	
WG572230-05	STD	01	06/10/2016 11:45	
WG572230-06	STD	01	06/10/2016 12:08	
WG572230-07	STD	01	06/10/2016 12:30	
WG572230-08	SSCV	01	06/10/2016 12:52	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4814674
Report generated 06/21/2016 08:51

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16060615
Instrument: HPMS15
Analyst: MES
Workgroup: WG572958

Tune ID: WG572958-01
Run Date: 06/16/2016
Run Time: 09:38
File ID: 15M18399
Cal ID: HPMS15 - 10-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	39.7	42335	PASS
68.0	69.0	0	2.00	1.65	714	PASS
69.0	198	0	100	40.7	43391	PASS
70.0	69.0	0	2.00	0.643	279	PASS
127	198	40.0	60.0	52.1	55592	PASS
197	198	0	1.00	0.0637	68	PASS
198	198	100	100	100	106736	PASS
199	198	5.00	9.00	6.72	7172	PASS
275	198	10.0	30.0	25.9	27632	PASS
365	198	1.00	100	3.04	3241	PASS
441	443	0.0100	100	76.2	12912	PASS
442	198	40.0	100	81.0	86427	PASS
443	442	17.0	23.0	19.6	16937	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG572958-02	CCV	01	06/16/2016 10:00	
WG572341-01	BLANK	01	06/16/2016 10:23	
WG572341-02	LCS	01	06/16/2016 10:46	
L16060615-01	18CPTMW22R-060916	01	06/16/2016 13:48	
L16060615-02	18CPTMW22DW-060916	01	06/16/2016 14:11	
L16060615-03	18CPTMW22DWFD-060916	01	06/16/2016 14:33	
L16060615-04	18CPTMW22SW-060916	01	06/16/2016 14:56	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4814674
Report generated 06/21/2016 08:51

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060615
Analytical Method: 8270D
ICAL Workgroup: WG572230

Instrument ID: HPMS15
Initial Calibration Date: 10-JUN-16 12:30
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
1,4-Dioxane		0.3253	2.74		

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4814672
Report generated 06/21/2016 08:51

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060615

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 10-JUN-16 12:30

Column ID: F

Analyte	WG572230-02			WG572230-03			WG572230-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	5.00	107215.000	0.3234	10.0	192761.000	0.3420	7.50	146003.000	0.3236

INT_CAL - Modified 03/06/2008
PDF File ID: 4814672
Report generated 06/21/2016 08:51

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060615

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 10-JUN-16 12:30

Column ID: F

Analyte	WG572230-05			WG572230-06			WG572230-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	2.50	36488.0000	0.3190	1.00	18621.0000	0.3169	0.400	6733.00000	0.3266

INT_CAL - Modified 03/06/2008
PDF File ID: 4814672
Report generated 06/21/2016 08:51

Calibration Table Report
Method: DIOXANE_D8.M
Title: OVD MSS01 SIM 1,4-dioxane ICAL 061016
Last Calibration: Fri Jun 10 12:46:00 2016
Curve:WG572230
Calibration Files

Compound	10 15M18339.D	7.5 15M18340.D	5 15M18338.D	2.5 15M18341.D	1 15M18342.D	0.4 15M18343.D	Avg	%RSD	Linear
1,4-Dichlorobenzene-d4	ISTD								
1,4-Dioxane	0.342	0.324	0.324	0.319	0.317	0.327	0.325	2.735	
1,4-Dioxane-d8	0.440	0.415	0.417	0.411	0.409		0.419	2.988	
Nitrobenzene-d5	1.115	1.034	0.970	0.852	0.755	0.697	0.904	18.064	0.994
2-Fluorobiphenyl	2.685	2.595	2.549	2.638	2.570	2.639	2.613	1.934	
p-Terphenyl-d14	2.815	2.671	2.579	2.506	2.382	2.421	2.562	6.338	

Sun Jun 12 19:13:55 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060615 Run Date: 06/10/2016 Sample ID: WG572230-08
Instrument ID: HPMS15 Run Time: 12:52 Method: 8270D
File ID: 15M18344 Analyst: MES QC Key: DOD4
ICal Workgroup: WG572230 Cal ID: HPMS15 - 10-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
1,4-Dioxane		5000	5110	ug/L	0.333	2.30	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4814673
Report generated 06/21/2016 08:51

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060615
Run Date: 06/16/2016
Sample ID: WG572958-02
Instrument ID: HPMS15
Run Time: 10:00
Method: 8270D
File ID: 15M18400
Analyst: MES
QC Key: DOD4
Workgroup (AAB#): WG572971
Cal ID: HPMS15 - 10-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,4-Dioxane		5000	5080	ug/L	0.331	1.65	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4814675
Report generated 06/21/2016 08:51

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060615
Instrument ID: HPMS15
Workgroup (AAB#): WG572971

ICAL CCV Number: WG572230-02
CAL ID: HPMS15-10-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG572230-02	NA	NA	66625
Upper Limit	NA	NA	133250
Lower Limit	NA	NA	33313
L16060615-01	1.00	01	55264
L16060615-02	1.00	01	54973
L16060615-03	1.00	01	49699
L16060615-04	1.00	01	44316
WG572341-01	1.00	01	57712
WG572341-02	1.00	01	54087

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4814676
Report generated 06/21/2016 08:51

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060615
Instrument ID: HPMS15
Workgroup (AAB#): WG572971

ICAL CCV Number: WG572230-02
CAL ID: HPMS15-10-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG572230-02	NA	NA	6.94
Upper Limit	NA	NA	7.44
Lower Limit	NA	NA	6.44
L16060615-01	1.00	01	6.951
L16060615-02	1.00	01	6.951
L16060615-03	1.00	01	6.955
L16060615-04	1.00	01	6.955
WG572341-01	1.00	01	6.948
WG572341-02	1.00	01	6.951

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4814678
Report generated: 06/21/2016 08:51

2.2.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18410.D
Acq On : 16 Jun 2016 13:48
Operator : MES
Sample : L16060615-01 827-DIOX
Misc : 1,1
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jun 16 14:42:05 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.951	152	55264	1.0000	ug/mL	# 0.01
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.883	96	65352	2.8254	ug/L	0.02
Spiked Amount 5.000			Recovery	=	56.60%	
4) Nitrobenzene-d5	7.452	82	7967	0.3523	ug/L	0.02
Spiked Amount 5.000			Recovery	=	7.00%	
5) 2-Fluorobiphenyl	8.937	172	694	0.0048	ug/L	0.01
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.254	244	707	0.0050	ug/L	0.07
Spiked Amount 5.000			Recovery	=	0.00%	

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18410.D
Acq On : 16 Jun 2016 13:48
Operator : MES
Sample : L16060615-01 827-DIOX
Misc : 1,1
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jun 16 14:42:05 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

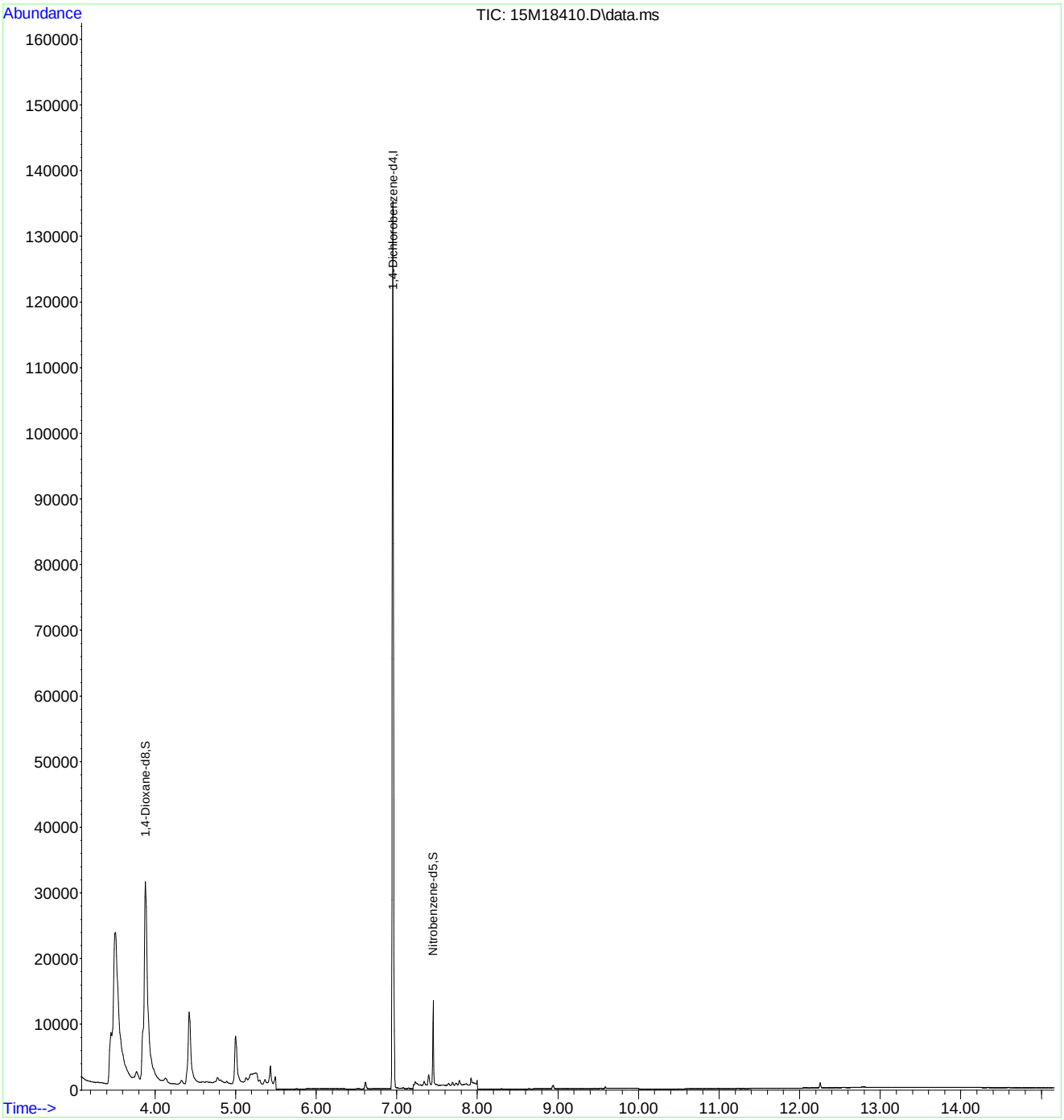

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18411.D
Acq On : 16 Jun 2016 14:11
Operator : MES
Sample : L16060615-02 827-DIOX
Misc : 1,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jun 16 17:37:41 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.951	152	54973	1.0000	ug/mL	# 0.01
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.876	96	71386	3.1026	ug/L	0.01
Spiked Amount 5.000			Recovery	=	62.00%	
4) Nitrobenzene-d5	7.452	82	3113	0.2707	ug/L	0.02
Spiked Amount 5.000			Recovery	=	5.40%	
5) 2-Fluorobiphenyl	8.941	172	105	0.0007	ug/L	0.01
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.247	244	581	0.0041	ug/L	0.07
Spiked Amount 5.000			Recovery	=	0.00%	

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18411.D
Acq On : 16 Jun 2016 14:11
Operator : MES
Sample : L16060615-02 827-DIOX
Misc : 1,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jun 16 17:37:41 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

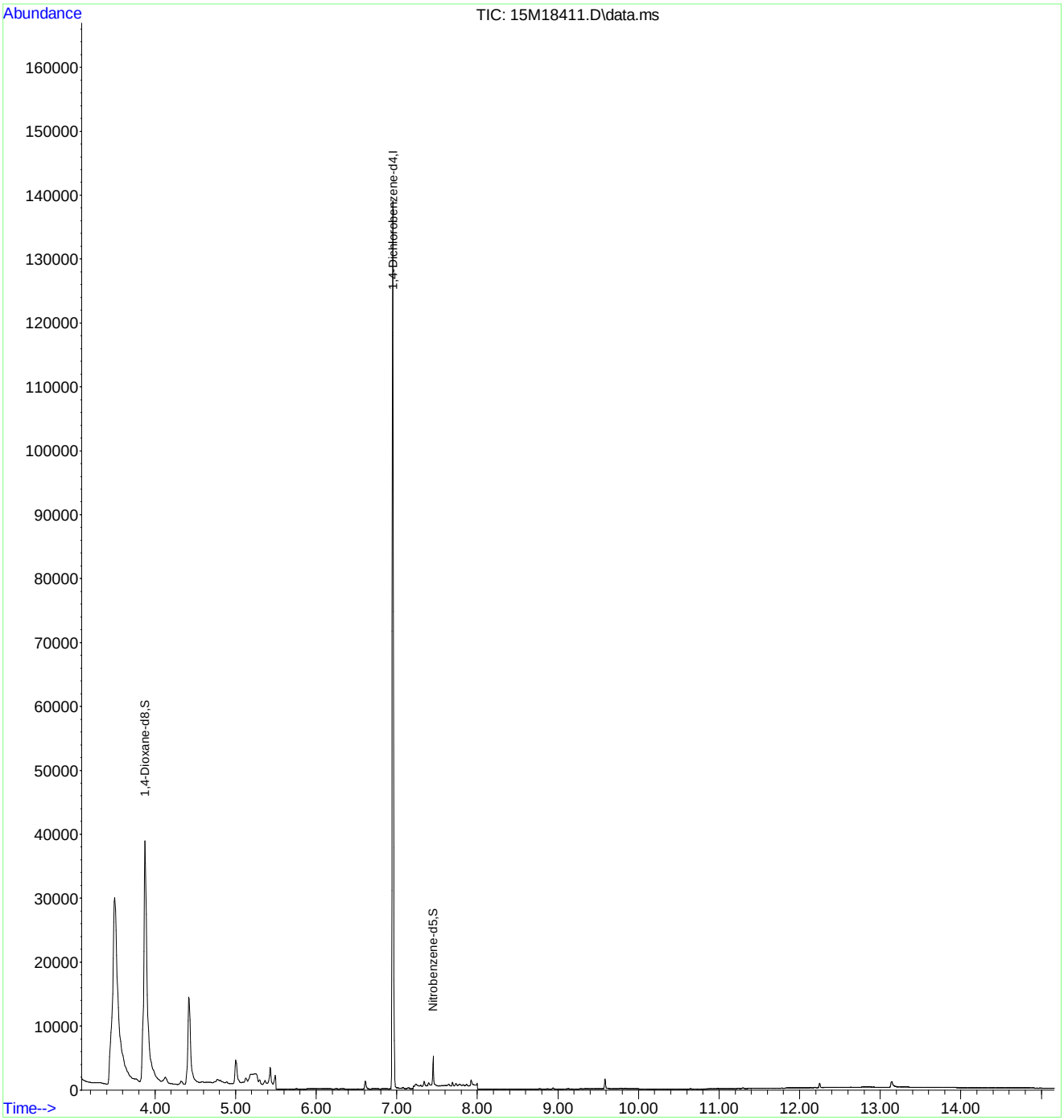

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18412.D
Acq On : 16 Jun 2016 14:33
Operator : MES
Sample : L16060615-03 827-DIOX
Misc : 1,1
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jun 16 17:37:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.955	152	49699	1.0000	ug/mL	# 0.01
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.876	96	49665	2.3876	ug/L	0.01
Spiked Amount 5.000			Recovery	=	47.80%	
4) Nitrobenzene-d5	7.452	82	2680	0.2682	ug/L	0.02
Spiked Amount 5.000			Recovery	=	5.40%	
5) 2-Fluorobiphenyl	8.941	172	129	0.0010	ug/L	0.01
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.239	244	2149	0.0169	ug/L	0.06
Spiked Amount 5.000			Recovery	=	0.40%	

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18412.D
Acq On : 16 Jun 2016 14:33
Operator : MES
Sample : L16060615-03 827-DIOX
Misc : 1,1
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jun 16 17:37:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

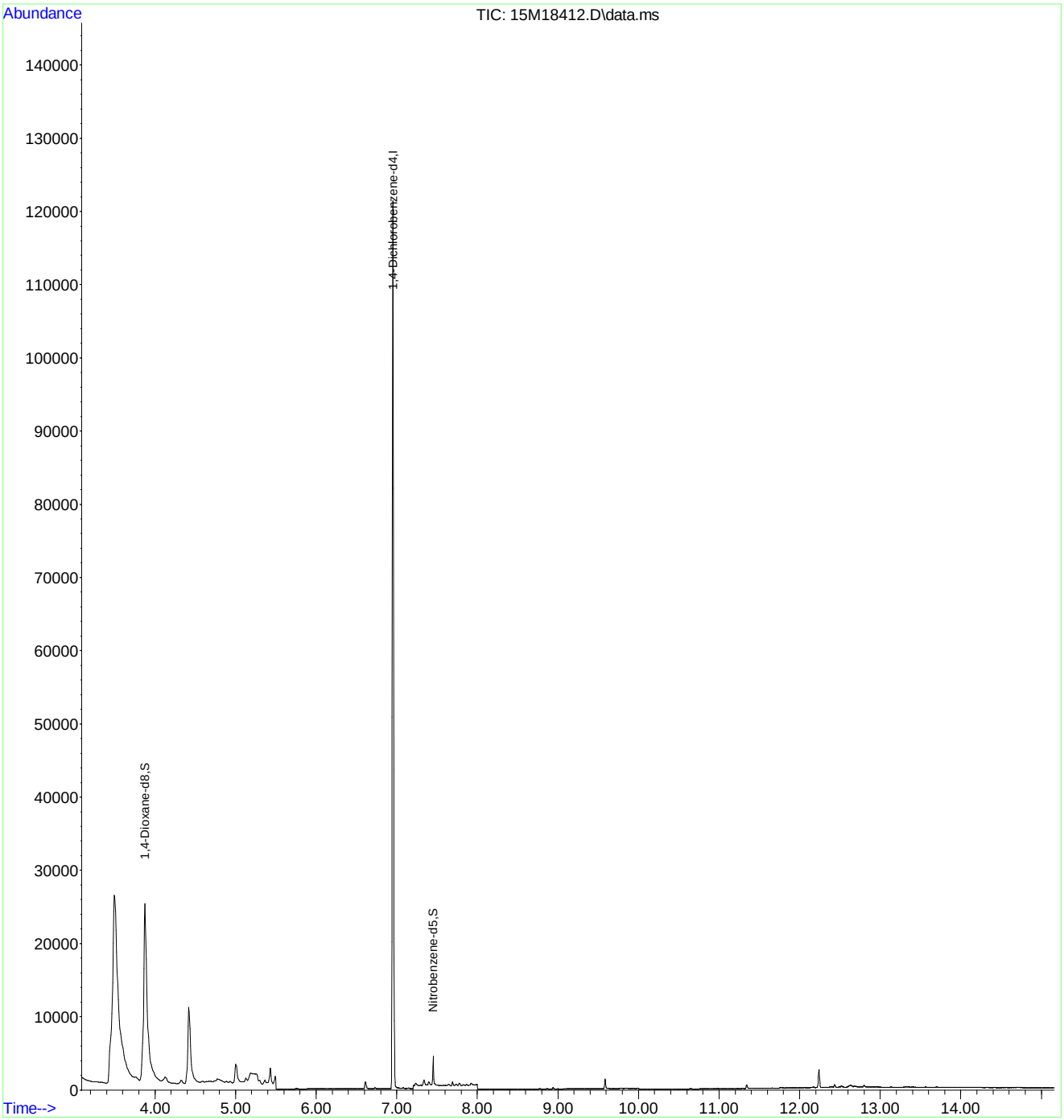

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18413.D
Acq On : 16 Jun 2016 14:56
Operator : MES
Sample : L16060615-04 827-DIOX
Misc : 1,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 16 17:37:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.955	152	44316	1.0000	ug/mL	# 0.01
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.869	96	41627	2.2443	ug/L	0.00
Spiked Amount 5.000			Recovery	=	44.80%	
4) Nitrobenzene-d5	7.452	82	2456	0.2696	ug/L	0.02
Spiked Amount 5.000			Recovery	=	5.40%	
5) 2-Fluorobiphenyl	8.941	172	79	0.0007	ug/L	0.01
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.254	244	490	0.0043	ug/L	0.07
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.904	58	6181	0.4287	ug/L	78

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18413.D
Acq On : 16 Jun 2016 14:56
Operator : MES
Sample : L16060615-04 827-DIOX
Misc : 1,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 16 17:37:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

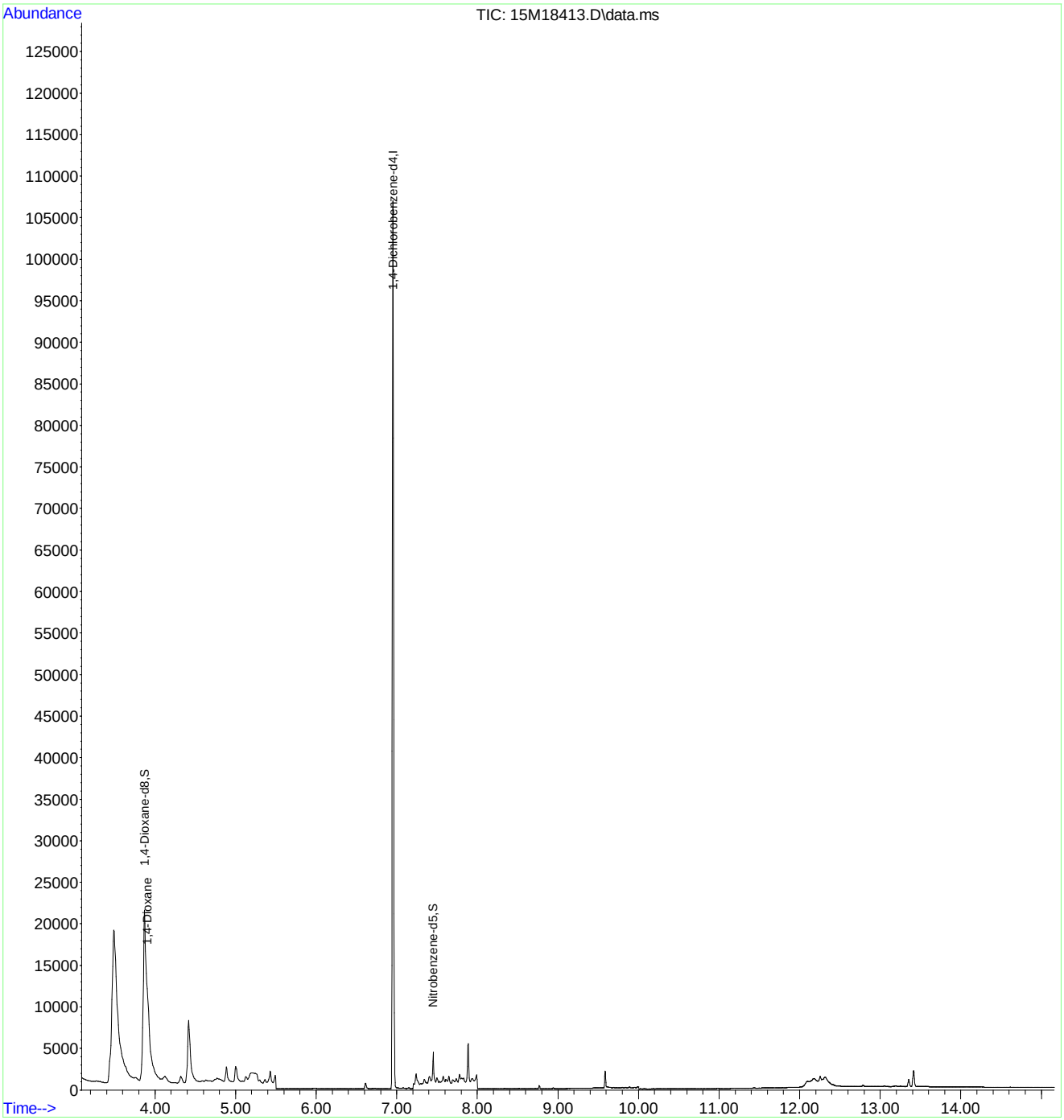

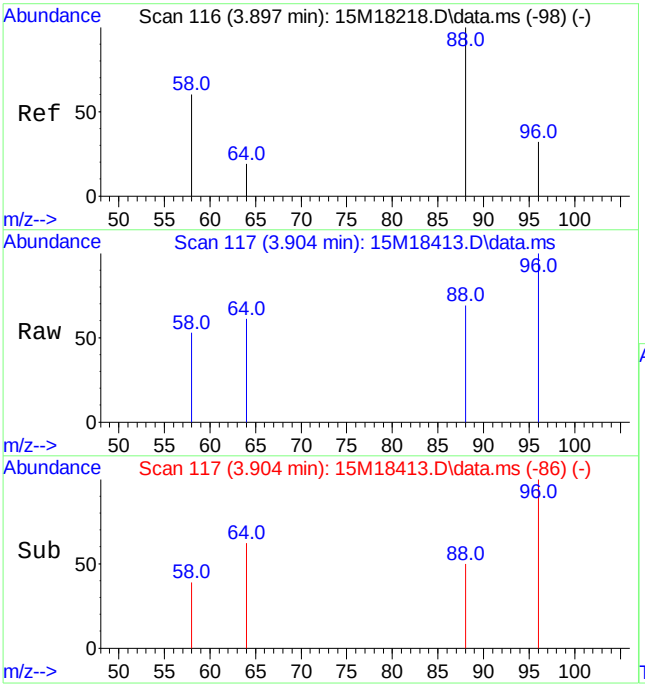

#2
1,4-Dioxane
Concen: 0.43 ug/L
RT: 3.904 min Scan# 117
Delta R.T. 0.007 min
Lab File: 15M18413.D
Acq: 16 Jun 2016 14:56

Tgt Ion: 58 Resp: 6181

Ion	Ratio	Lower	Upper
58	100		
88	142.0	103.1	240.7

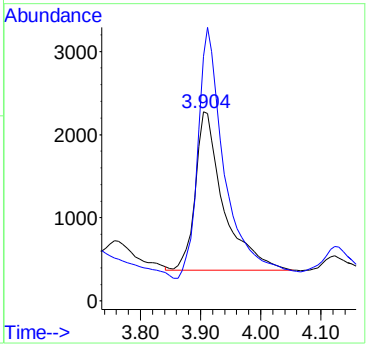

2.2.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18338.D
Acq On : 10 Jun 2016 10:36
Operator : MES
Sample : WG572230-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 10 18:15:30 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.940	152	66625	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.862	96	138302	4.9596 ug/L	0.00
Spiked Amount 5.000			Recovery	= 99.20%	
4) Nitrobenzene-d5	7.436	82	321639	4.7189 ug/L	0.00
Spiked Amount 5.000			Recovery	= 94.40%	
5) 2-Fluorobiphenyl	8.926	172	845013	4.8542 ug/L	0.00
Spiked Amount 5.000			Recovery	= 97.00%	
6) p-Terphenyl-d14	12.181	244	855352	5.0103 ug/L	0.00
Spiked Amount 5.000			Recovery	= 100.20%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.897	58	107215	4.9462 ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18338.D
Acq On : 10 Jun 2016 10:36
Operator : MES
Sample : WG572230-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 10 18:15:30 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

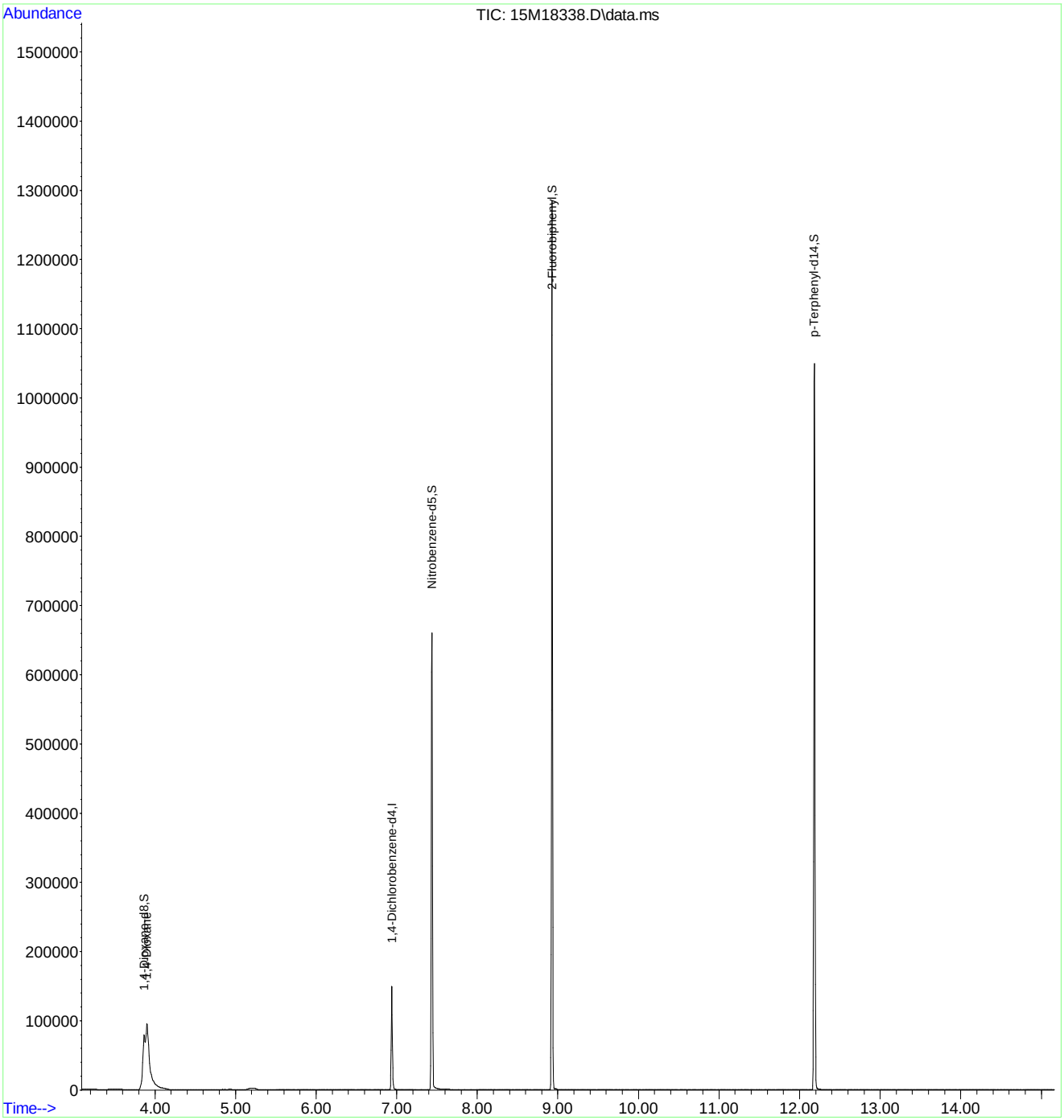

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18339.D
Acq On : 10 Jun 2016 11:00
Operator : MES
Sample : WG572230-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 10 18:15:34 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	56194	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	248072	10.5474	ug/L	0.00
Spiked Amount 5.000			Recovery = 211.00%			
4) Nitrobenzene-d5	7.436	82	628184	10.6403	ug/L	0.00
Spiked Amount 5.000			Recovery = 212.80%			
5) 2-Fluorobiphenyl	8.926	172	1513331	10.3070	ug/L	0.00
Spiked Amount 5.000			Recovery = 206.20%			
6) p-Terphenyl-d14	12.184	244	1587021	11.0217	ug/L	0.00
Spiked Amount 5.000			Recovery = 220.40%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	192761	10.5434	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18339.D
Acq On : 10 Jun 2016 11:00
Operator : MES
Sample : WG572230-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 10 18:15:34 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

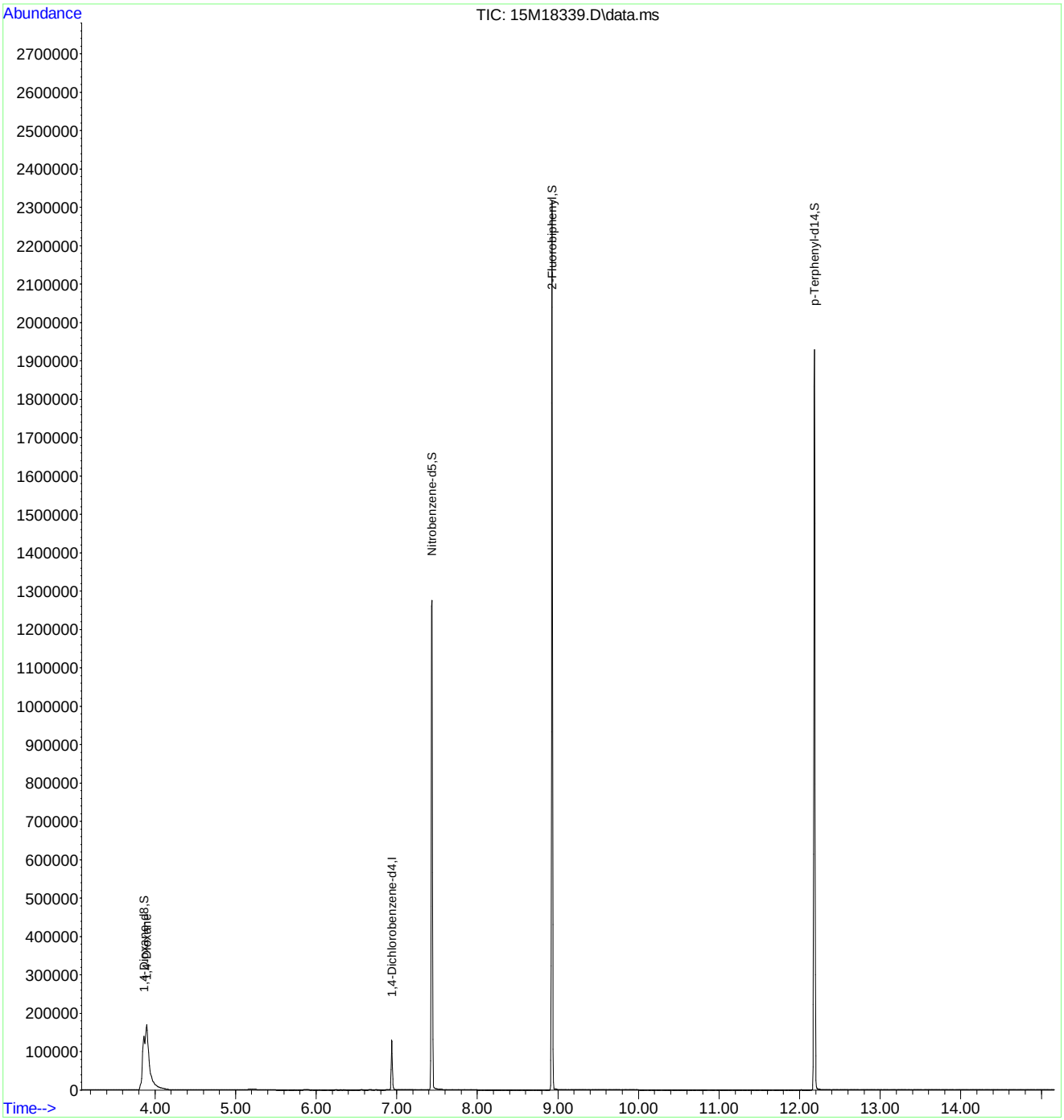

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18340.D
Acq On : 10 Jun 2016 11:22
Operator : MES
Sample : WG572230-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 10 18:15:37 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	60457	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	187351	7.4040	ug/L	0.00
Spiked Amount 5.000			Recovery	= 148.00%		
4) Nitrobenzene-d5	7.431	82	466388	7.4103	ug/L	0.00
Spiked Amount 5.000			Recovery	= 148.20%		
5) 2-Fluorobiphenyl	8.926	172	1170859	7.4122	ug/L	0.00
Spiked Amount 5.000			Recovery	= 148.20%		
6) p-Terphenyl-d14	12.192	244	1205938	7.7846	ug/L	0.01
Spiked Amount 5.000			Recovery	= 155.60%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	146003	7.4228	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18340.D
Acq On : 10 Jun 2016 11:22
Operator : MES
Sample : WG572230-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 10 18:15:37 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

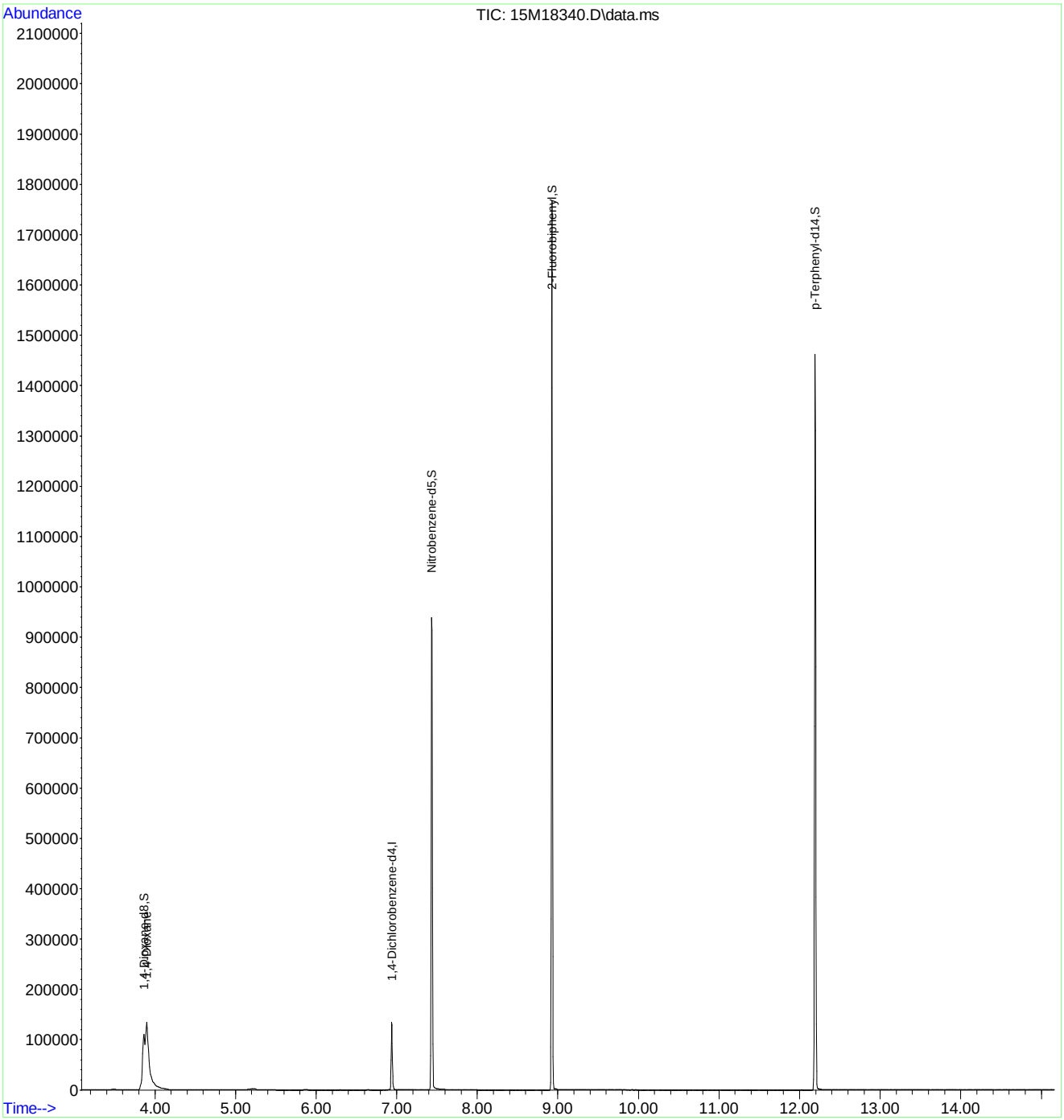

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18341.D
Acq On : 10 Jun 2016 11:45
Operator : MES
Sample : WG572230-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 10 18:15:40 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.940	152	45954	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.848	96	46972	2.4422 ug/L	-0.01
Spiked Amount 5.000			Recovery	= 48.80%	
4) Nitrobenzene-d5	7.436	82	97423	2.1945 ug/L	0.00
Spiked Amount 5.000			Recovery	= 43.80%	
5) 2-Fluorobiphenyl	8.926	172	301696	2.5127 ug/L	0.00
Spiked Amount 5.000			Recovery	= 50.20%	
6) p-Terphenyl-d14	12.188	244	286720	2.4350 ug/L	0.00
Spiked Amount 5.000			Recovery	= 48.60%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.883	58	36488	2.4405 ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18341.D
Acq On : 10 Jun 2016 11:45
Operator : MES
Sample : WG572230-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 10 18:15:40 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

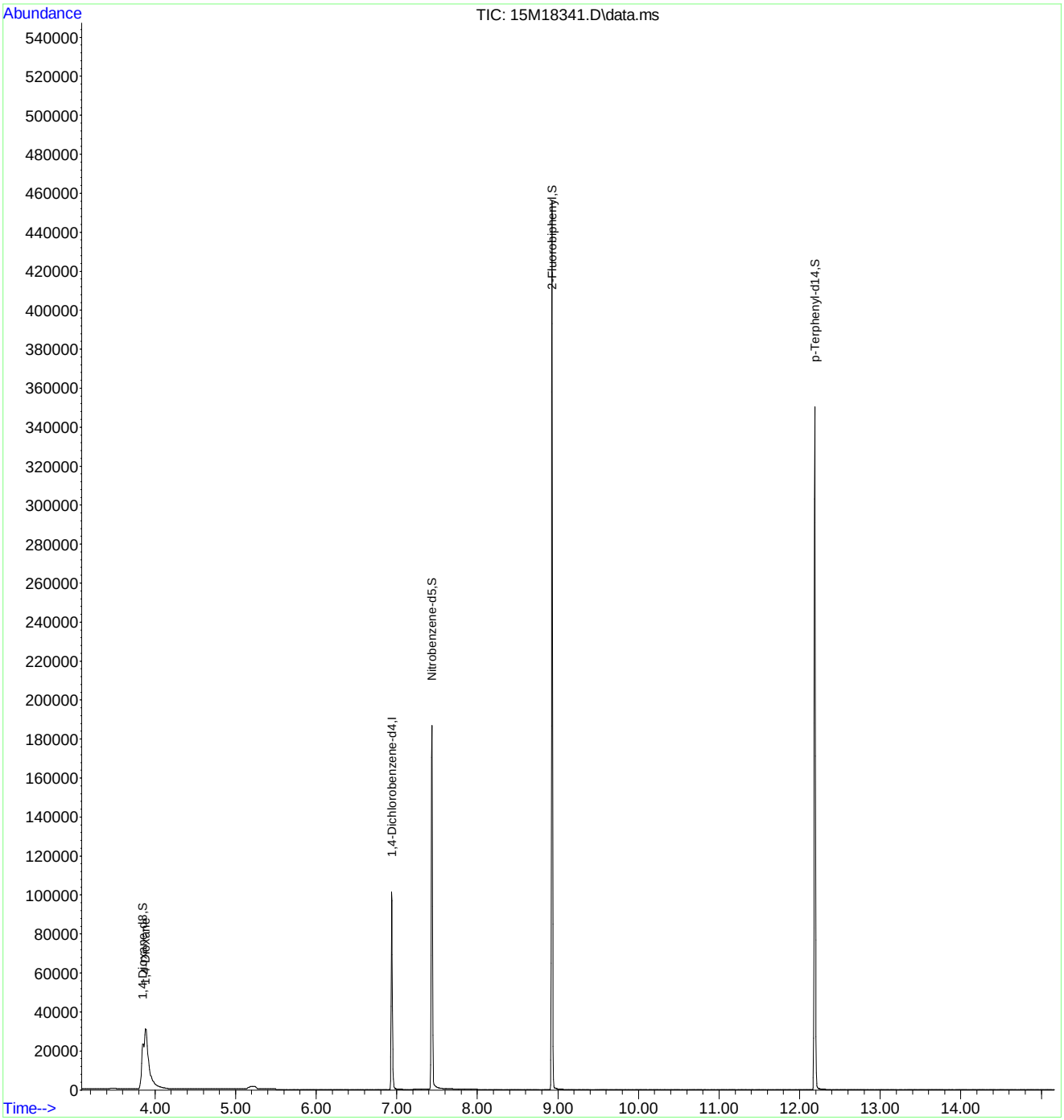

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18342.D
Acq On : 10 Jun 2016 12:08
Operator : MES
Sample : WG572230-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 10 18:15:43 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	59037	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	24054	0.9735	ug/L	0.00
Spiked Amount 5.000			Recovery = 19.40%			
4) Nitrobenzene-d5	7.436	82	44358	0.9184	ug/L	0.00
Spiked Amount 5.000			Recovery = 18.40%			
5) 2-Fluorobiphenyl	8.926	172	151018	0.9790	ug/L	0.00
Spiked Amount 5.000			Recovery = 19.60%			
6) p-Terphenyl-d14	12.199	244	140040	0.9257	ug/L	0.02
Spiked Amount 5.000			Recovery = 18.60%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.904	58	18621	0.9695	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18342.D
Acq On : 10 Jun 2016 12:08
Operator : MES
Sample : WG572230-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 10 18:15:43 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

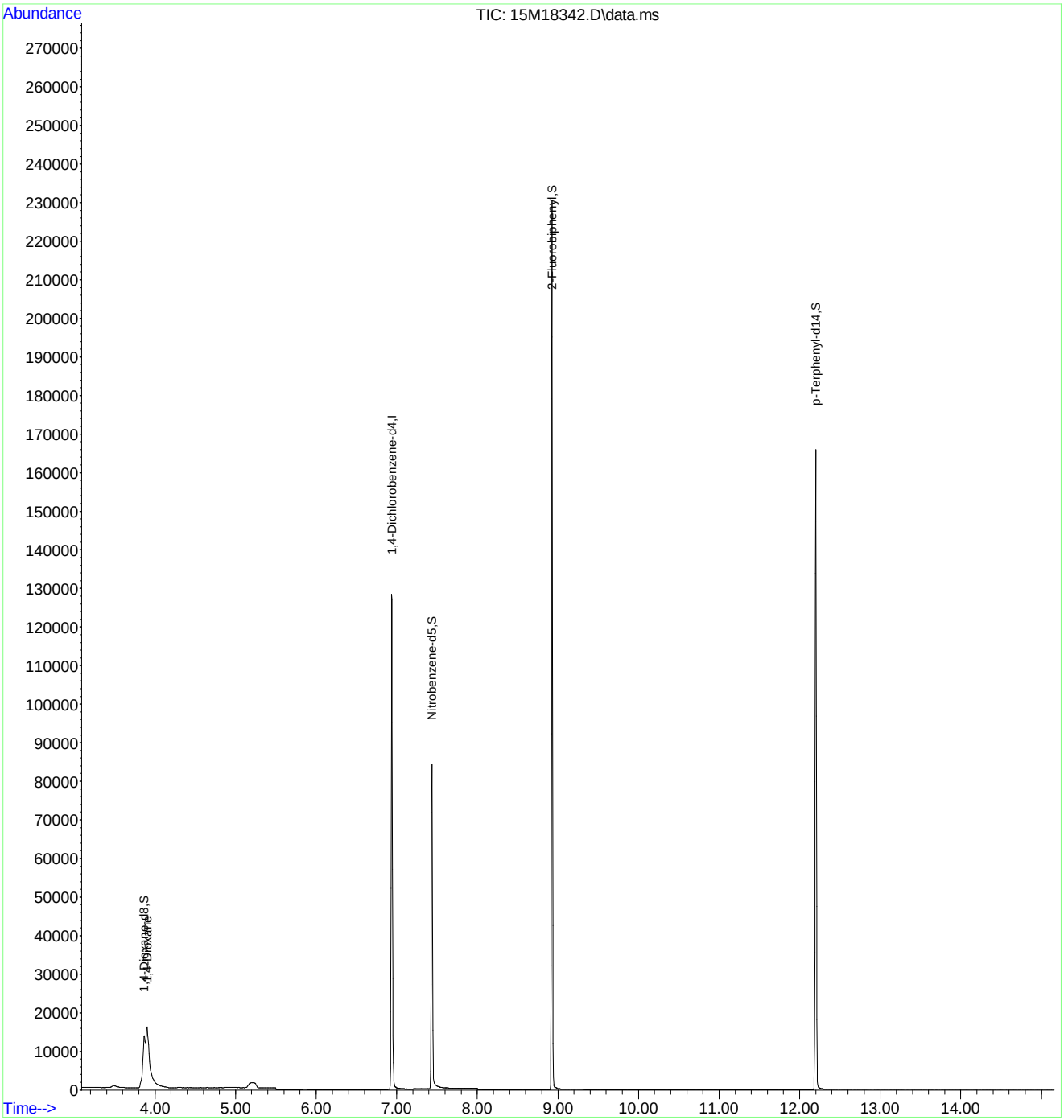

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18343.D
Acq On : 10 Jun 2016 12:30
Operator : MES
Sample : WG572230-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 10 18:15:46 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	51531	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	8760	0.4062	ug/L	0.00
Spiked Amount 5.000			Recovery	=	8.20%	
4) Nitrobenzene-d5	7.436	82	14371	0.4779	ug/L	0.00
Spiked Amount 5.000			Recovery	=	9.60%	
5) 2-Fluorobiphenyl	8.926	172	54404	0.4041	ug/L	0.00
Spiked Amount 5.000			Recovery	=	8.00%	
6) p-Terphenyl-d14	12.203	244	49910	0.3780	ug/L	0.02
Spiked Amount 5.000			Recovery	=	7.60%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	6733	0.4016	ug/L	79

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18343.D
Acq On : 10 Jun 2016 12:30
Operator : MES
Sample : WG572230-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 10 18:15:46 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

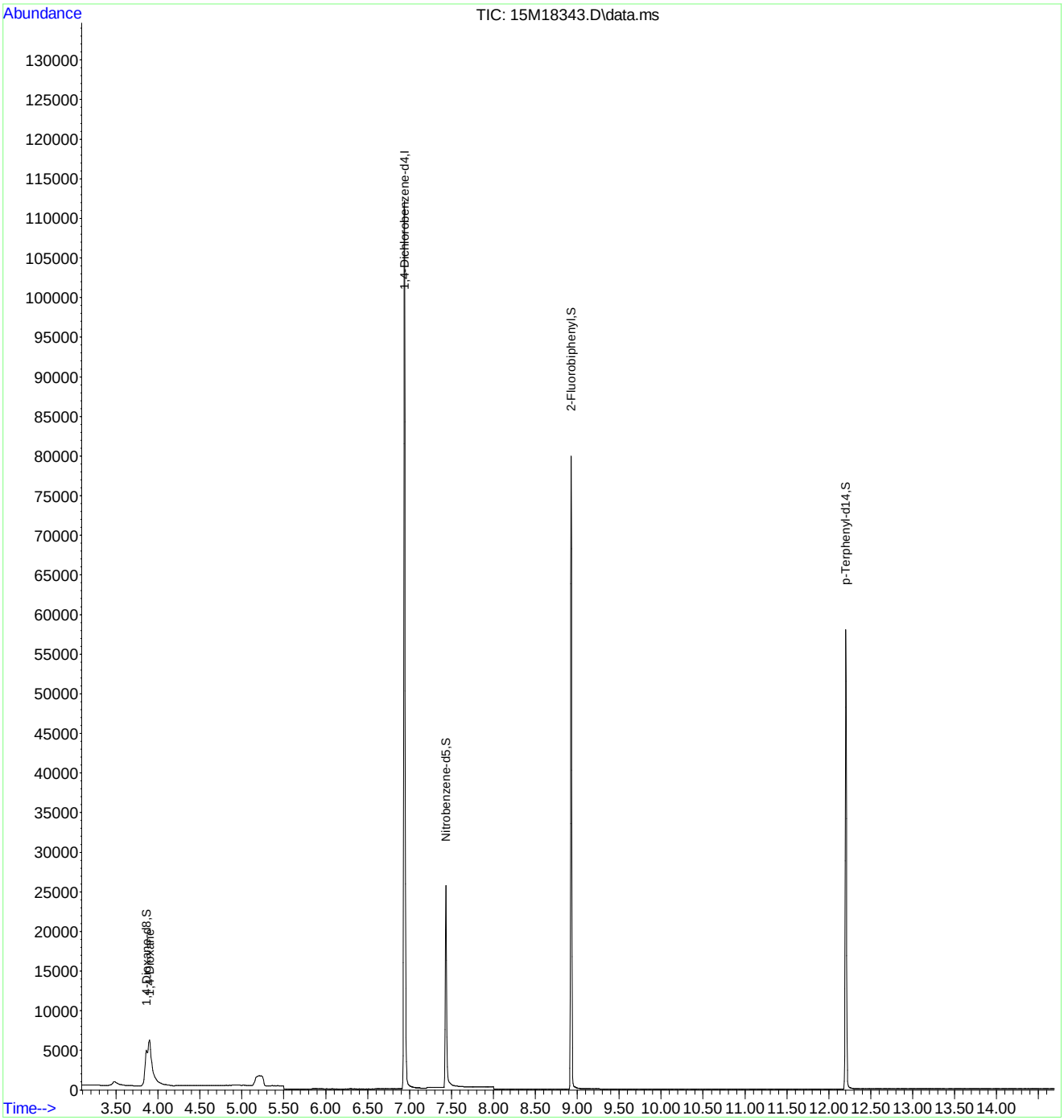

Nitrobenzene-d5

00665261

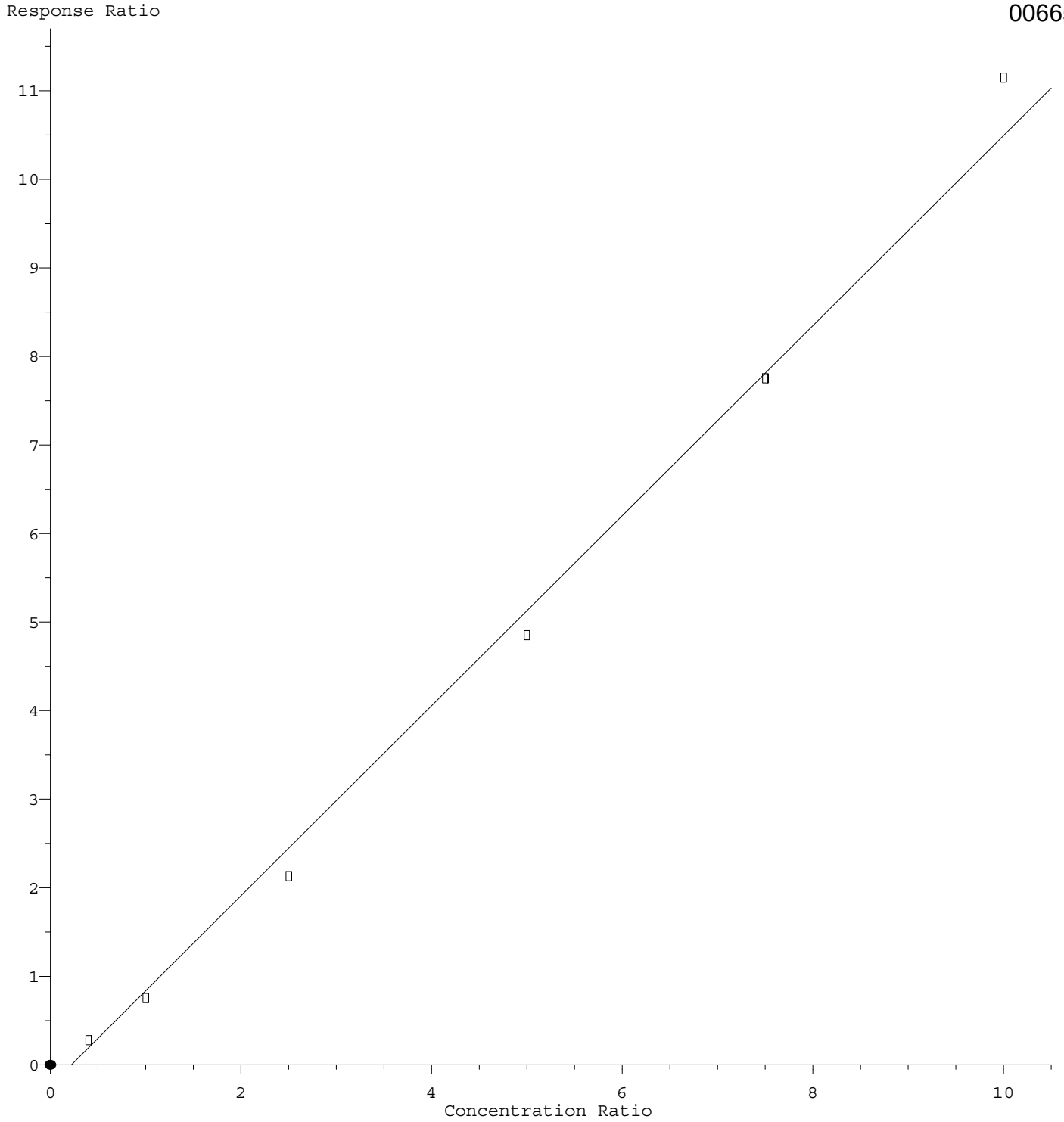

Response = 1.07e+000 * Amt - 2.34e-001
Coef of Det (r^2) = 0.994 Curve Fit: wlr(1/a)
Method Name: C:\msdchem\1\methods\DIOXANE_D8.M
Calibration Table Last Updated: Fri Jun 10 12:46:00 2016

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18344.D
Acq On : 10 Jun 2016 12:52
Operator : MES
Sample : WG572230-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 10 18:15:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	51498	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.897	96	61	0.0028	ug/L	0.04
Spiked Amount 5.000			Recovery	=	0.00%	
4) Nitrobenzene-d5	7.442	82	61	0.2190	ug/L	0.00
Spiked Amount 5.000			Recovery	=	4.40%	
5) 2-Fluorobiphenyl	8.926	172	23	0.0002	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.214	244	150	0.0011	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	85662	5.1127	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18344.D
Acq On : 10 Jun 2016 12:52
Operator : MES
Sample : WG572230-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 10 18:15:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

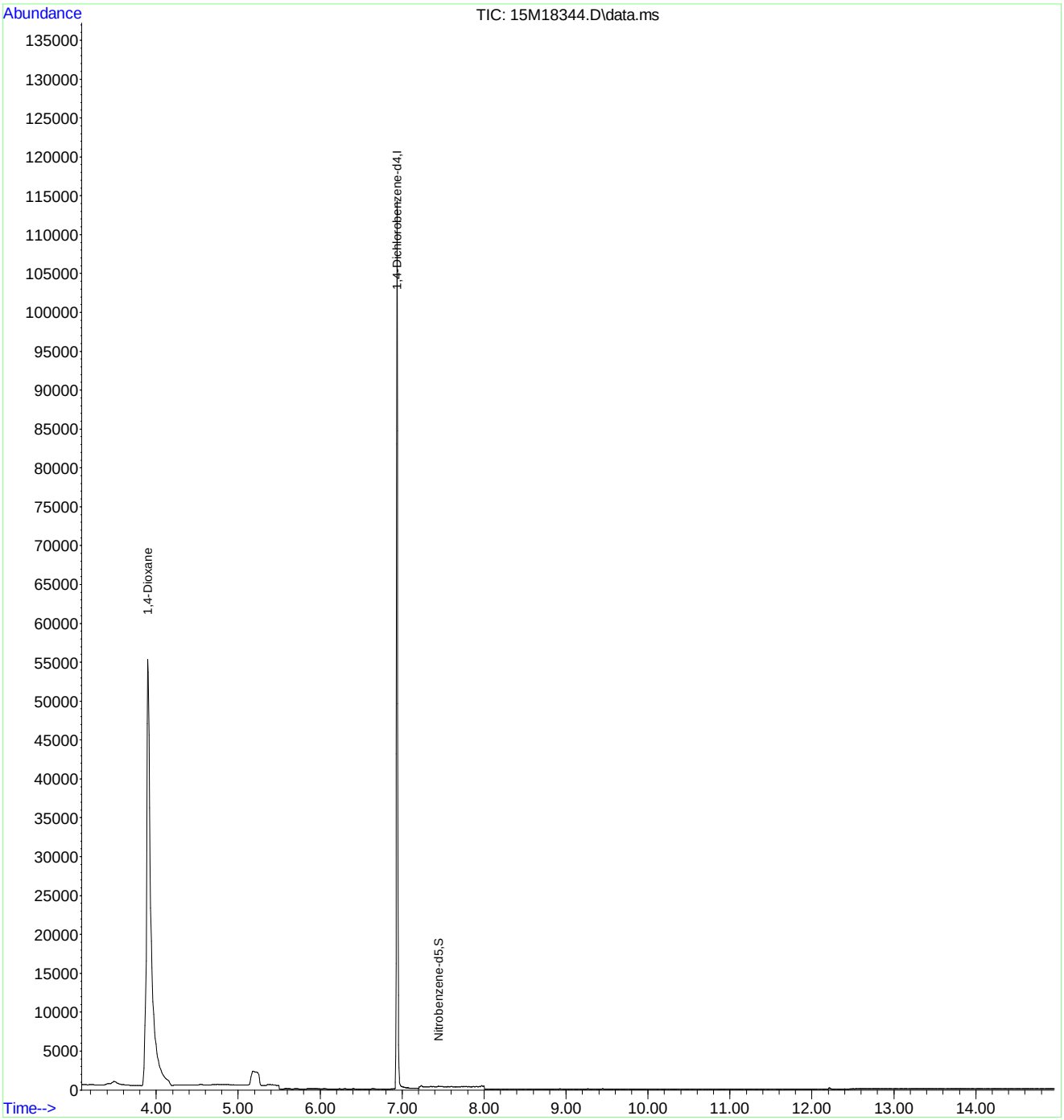

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18344.D
Acq On : 10 Jun 2016 12:52
Operator : MES
Sample : WG572230-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 10 18:15:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	78	0.00
2	1,4-Dioxane	5.000	5.113	-2.3	80	0.00
3 S	1,4-Dioxane-d8	5.000	0.003	99.9#	0	0.04
4 S	Nitrobenzene-d5	5.000	0.219	95.6#	0	0.00
5 S	2-Fluorobiphenyl	5.000	0.000	100.0#	0	0.00
6 S	p-Terphenyl-d14	5.000	0.001	100.0#	0	0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18400.D
Acq On : 16 Jun 2016 10:00
Operator : MES
Sample : WG572958-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 16 10:16:14 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.951	152	63702	1.0000	ug/mL	# 0.01
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.876	96	138261	5.1857	ug/L	0.01
Spiked Amount 5.000			Recovery	= 103.80%		
4) Nitrobenzene-d5	7.447	82	239213	3.7190	ug/L	0.01
Spiked Amount 5.000			Recovery	= 74.40%		
5) 2-Fluorobiphenyl	8.937	172	842255	5.0603	ug/L	0.01
Spiked Amount 5.000			Recovery	= 101.20%		
6) p-Terphenyl-d14	12.228	244	851642	5.2175	ug/L	0.05
Spiked Amount 5.000			Recovery	= 104.40%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.918	58	105339	5.0826	ug/L	81

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18400.D
Acq On : 16 Jun 2016 10:00
Operator : MES
Sample : WG572958-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 16 10:16:14 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

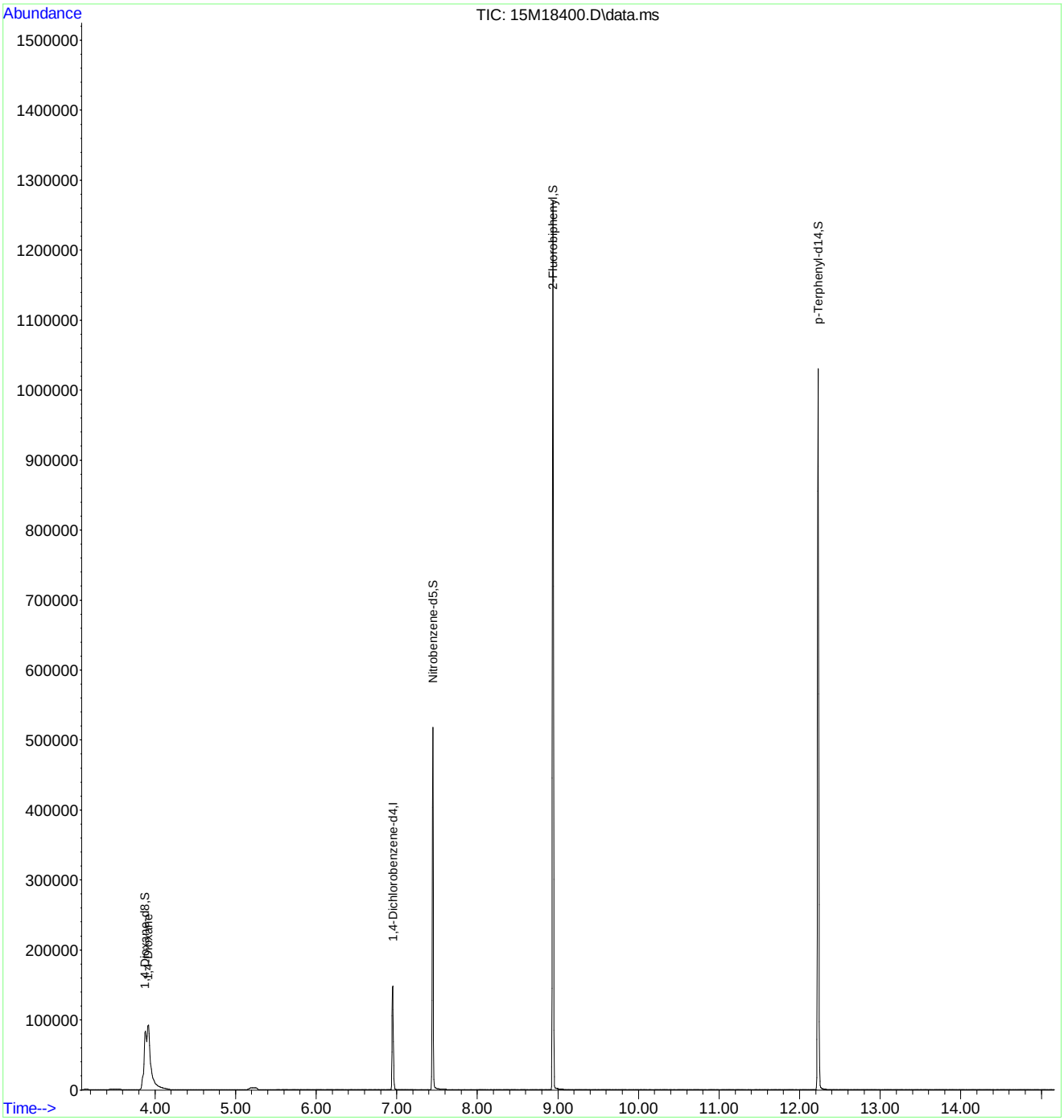

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18400.D
Acq On : 16 Jun 2016 10:00
Operator : MES
Sample : WG572958-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 16 10:16:14 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	96	0.01
2	1,4-Dioxane	5.000	5.083	-1.7	98	0.02
3 S	1,4-Dioxane-d8	5.000	5.186	-3.7	100	0.01
4 S	Nitrobenzene-d5	5.000	3.719	25.6#	74	0.01
5 S	2-Fluorobiphenyl	5.000	5.060	-1.2	100	0.01
6 S	p-Terphenyl-d14	5.000	5.217	-4.3	100	0.05

(#) = Out of Range SPCC's out = 0 CCC's out = 0

2.2.1.5 Raw QC Data

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18337.D
Acq On : 10 Jun 2016 10:18
Operator : MES
Sample : WG572230-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

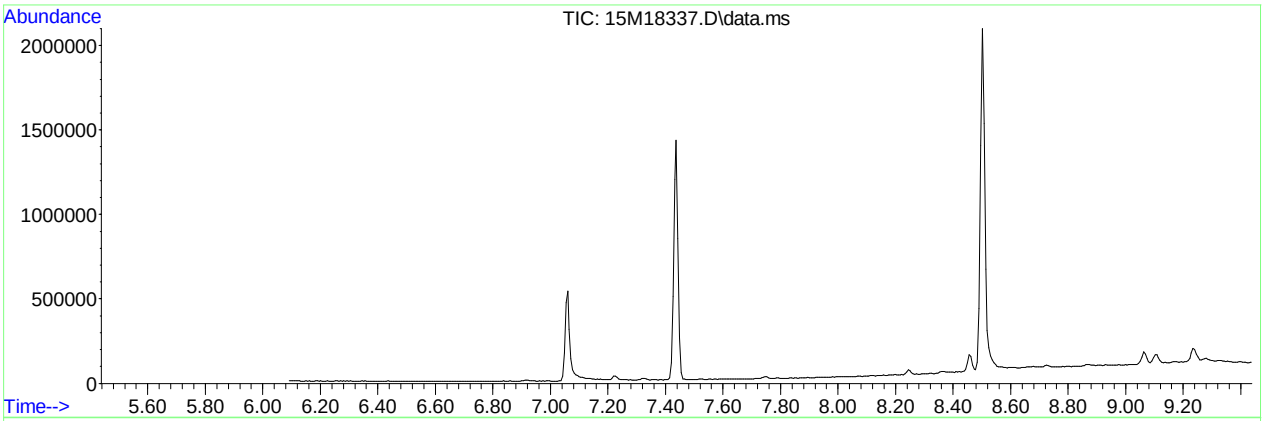

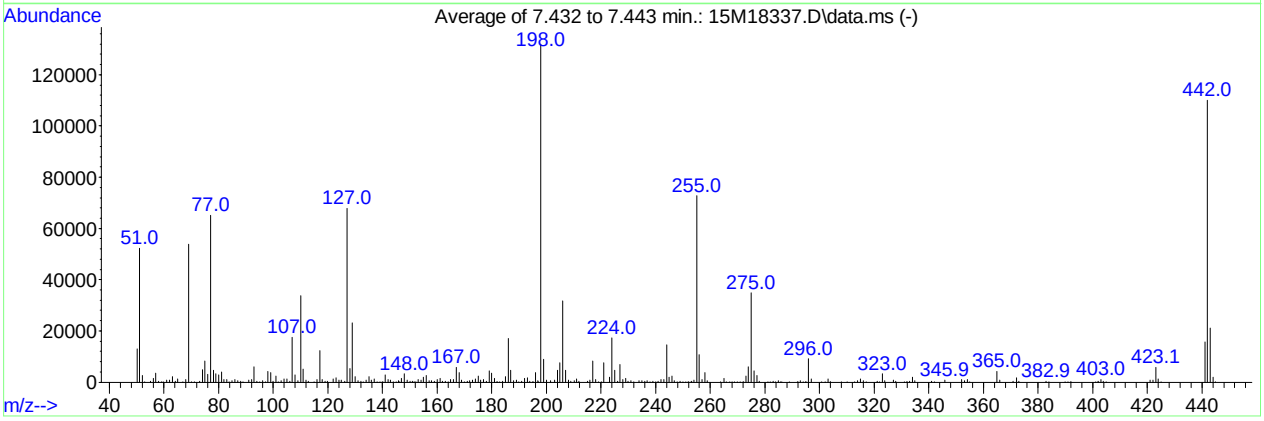

AutoFind: Scans 235, 236, 237; Background Corrected with Scan 229

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	39.5	52157	PASS
68	69	0.00	2	1.9	1026	PASS
69	198	0.00	100	40.8	53844	PASS
70	69	0.00	2	0.2	120	PASS
127	198	40	60	51.4	67853	PASS
197	198	0.00	1	0.4	505	PASS
198	198	100	100	100.0	131981	PASS
199	198	5	9	6.7	8869	PASS
275	198	10	30	26.4	34853	PASS
365	198	1	100	3.2	4186	PASS
441	443	0.01	100	73.9	15632	PASS
442	198	40	100	83.4	110112	PASS
443	442	17	23	19.2	21163	PASS

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18337.D
Acq On : 10 Jun 2016 10:18
Operator : MES
Sample : WG572230-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 10 10:29:37 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

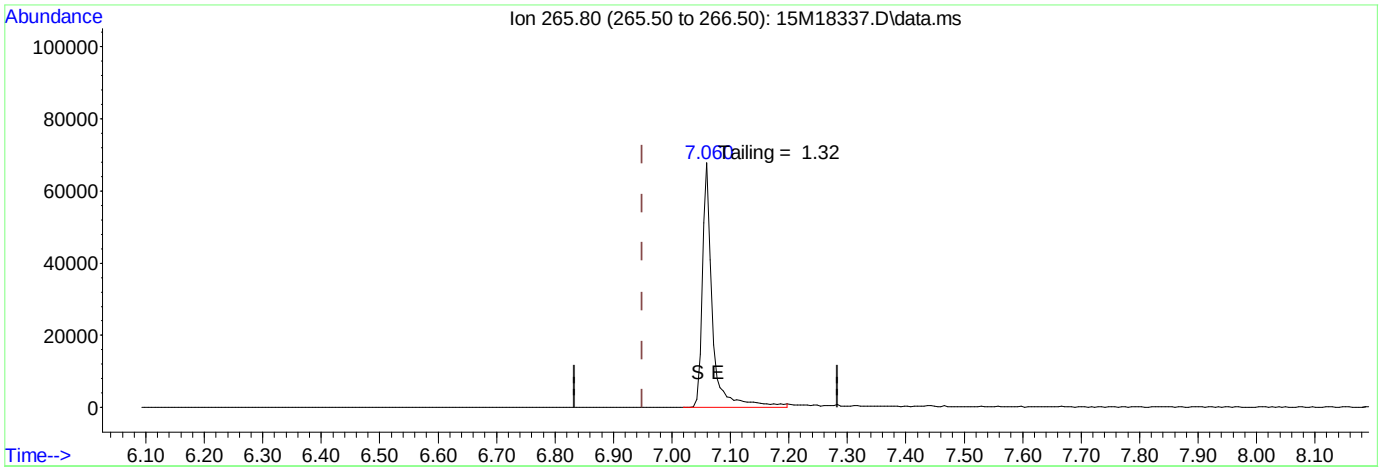

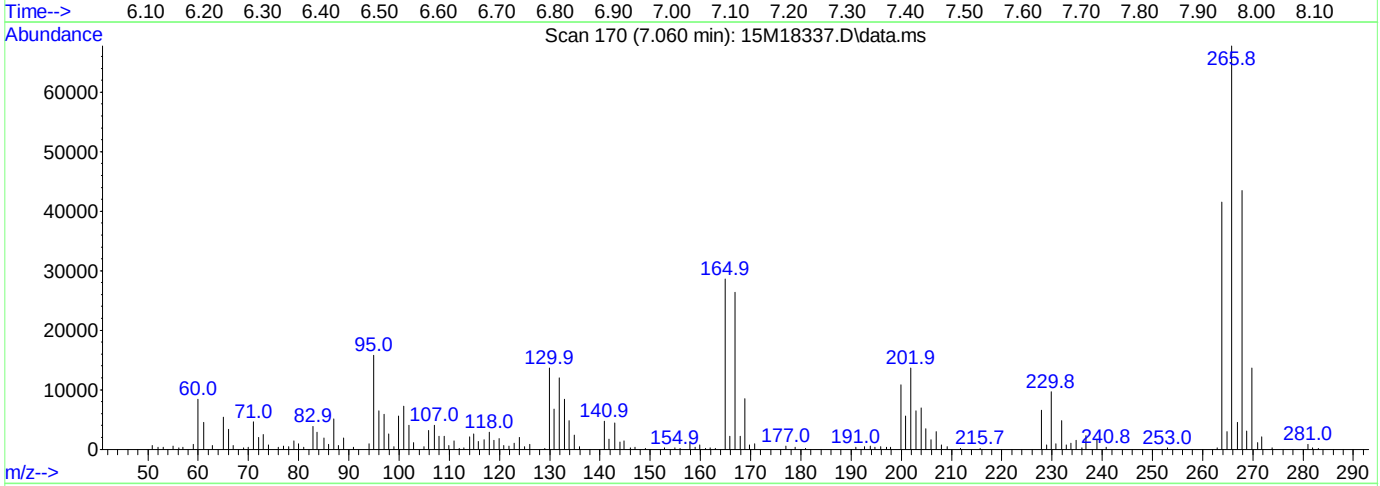

(1) Pentachlorophenol

7.060min (+ 0.111) 0.00 ug/ml

response 82111

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18337.D
Acq On : 10 Jun 2016 10:18
Operator : MES
Sample : WG572230-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 10 10:29:37 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

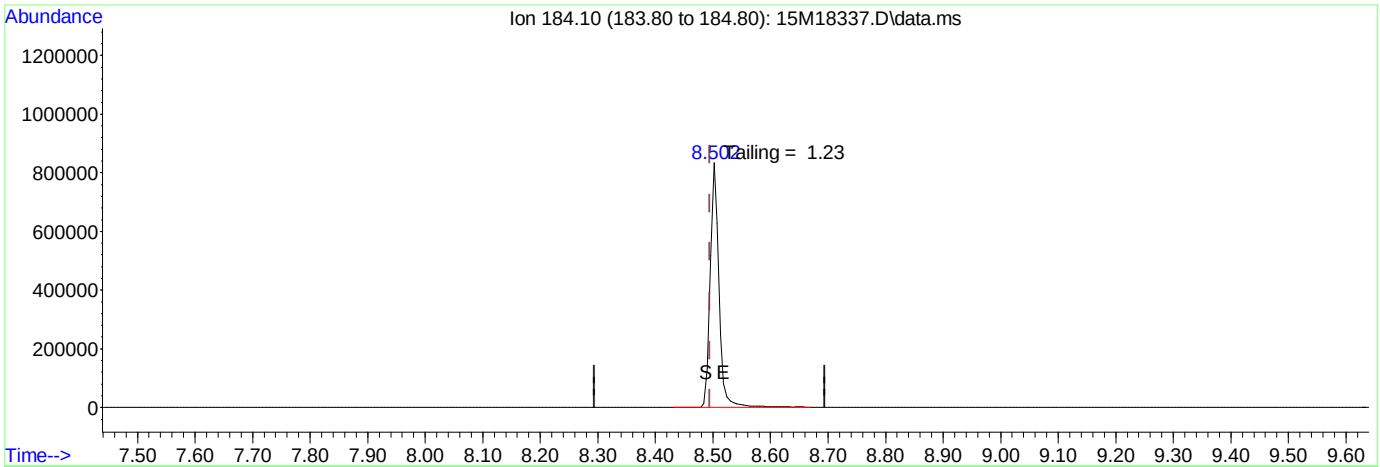

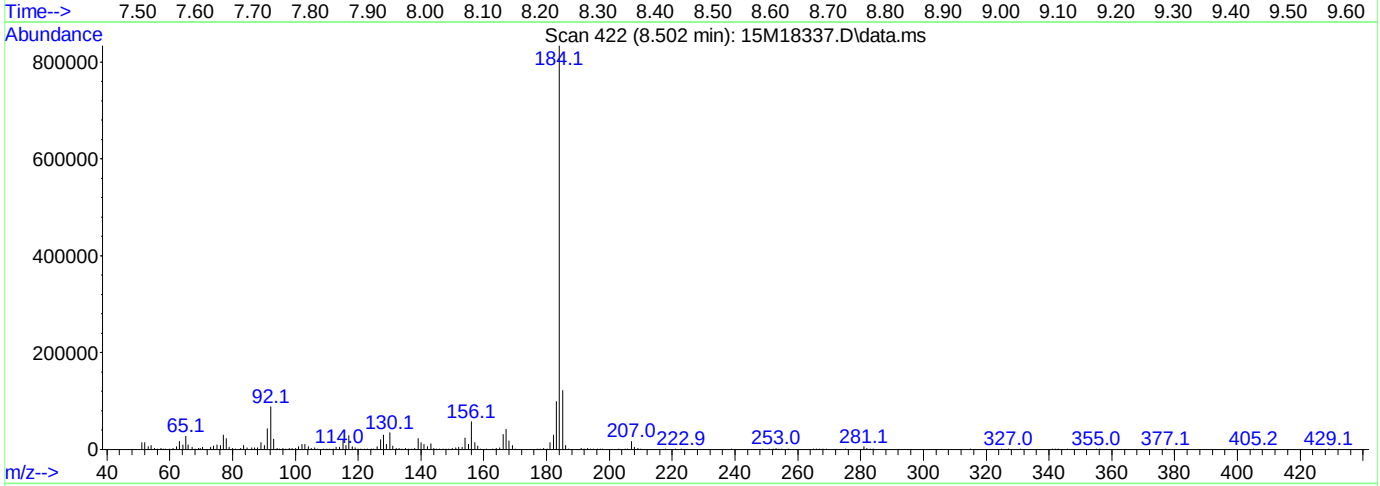

TIC: 15M18337.D\data.ms

(2) Benzidine

8.502min (+ 0.008) 0.00 ug/ml

response 896980

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18337.D
Acq On : 10 Jun 2016 10:18
Operator : MES
Sample : WG572230-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 10 10:29:37 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

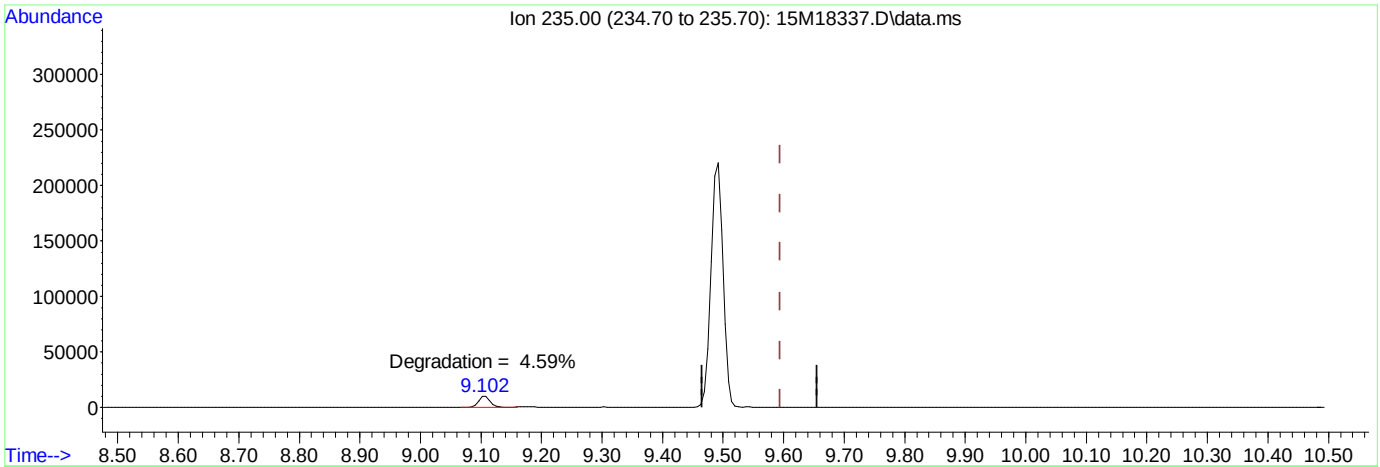

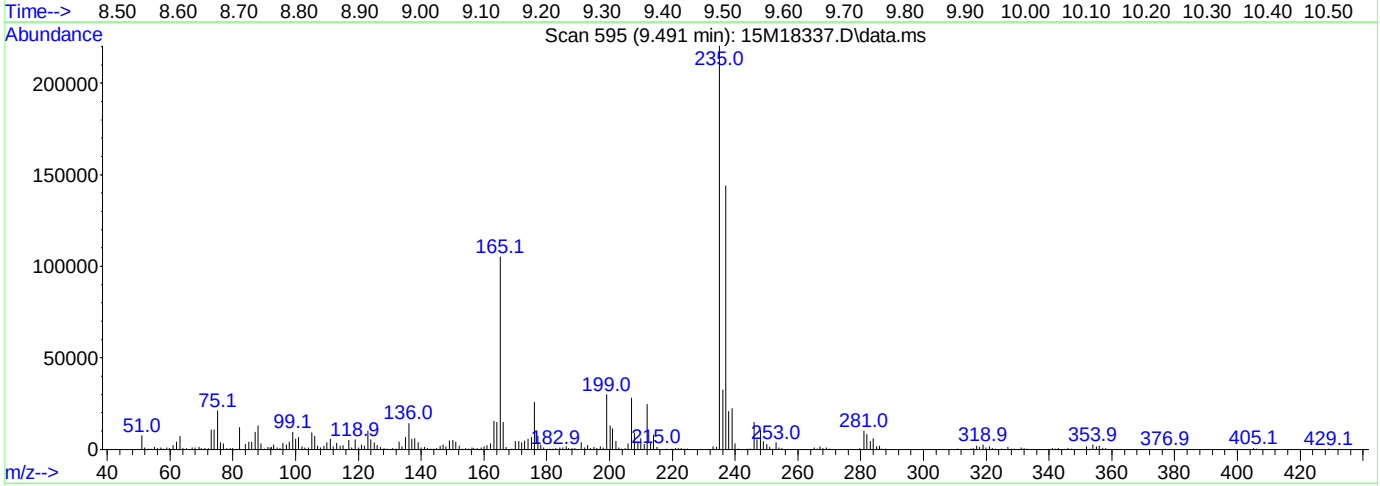

TIC: 15M18337.D\data.ms

(3) DDT

9.491min (-0.103) 0.00 ug/ml

response 283319

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18399.D
Acq On : 16 Jun 2016 9:38
Operator : MES
Sample : WG572958-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

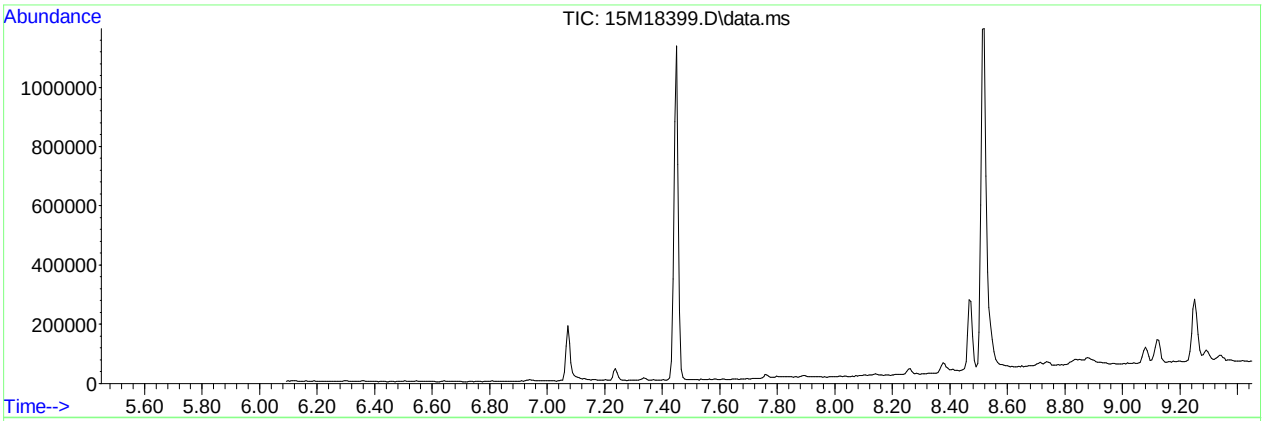

AutoFind: Scans 237, 238, 239; Background Corrected with Scan 231

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	39.7	42335	PASS
68	69	0.00	2	1.6	714	PASS
69	198	0.00	100	40.7	43391	PASS
70	69	0.00	2	0.6	279	PASS
127	198	40	60	52.1	55592	PASS
197	198	0.00	1	0.1	68	PASS
198	198	100	100	100.0	106736	PASS
199	198	5	9	6.7	7172	PASS
275	198	10	30	25.9	27632	PASS
365	198	1	100	3.0	3241	PASS
441	443	0.01	100	76.2	12912	PASS
442	198	40	100	81.0	86427	PASS
443	442	17	23	19.6	16937	PASS

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18399.D
Acq On : 16 Jun 2016 9:38
Operator : MES
Sample : WG572958-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 16 09:56:45 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

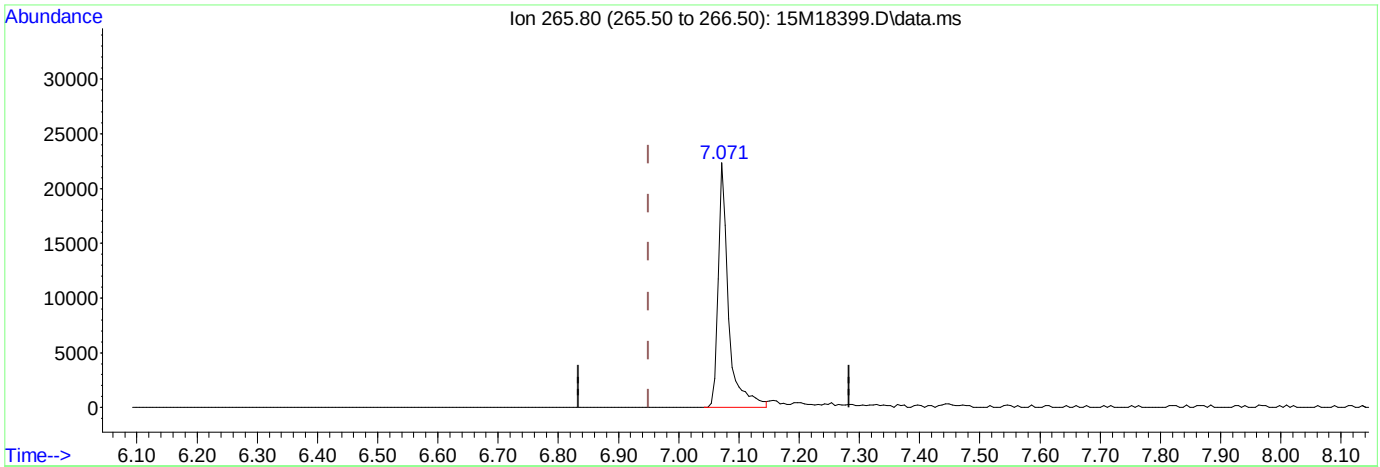

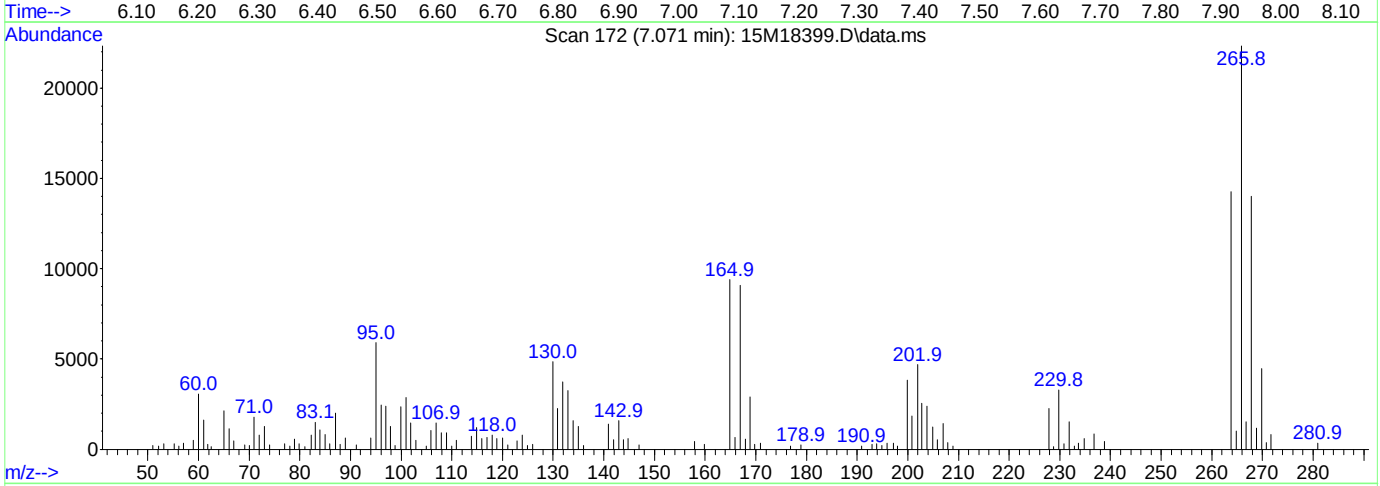

TIC: 15M18399.D\data.ms

(1) Pentachlorophenol

7.071min (+ 0.122) 0.00 ug/ml

response 26601

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18399.D
Acq On : 16 Jun 2016 9:38
Operator : MES
Sample : WG572958-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 16 09:56:45 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

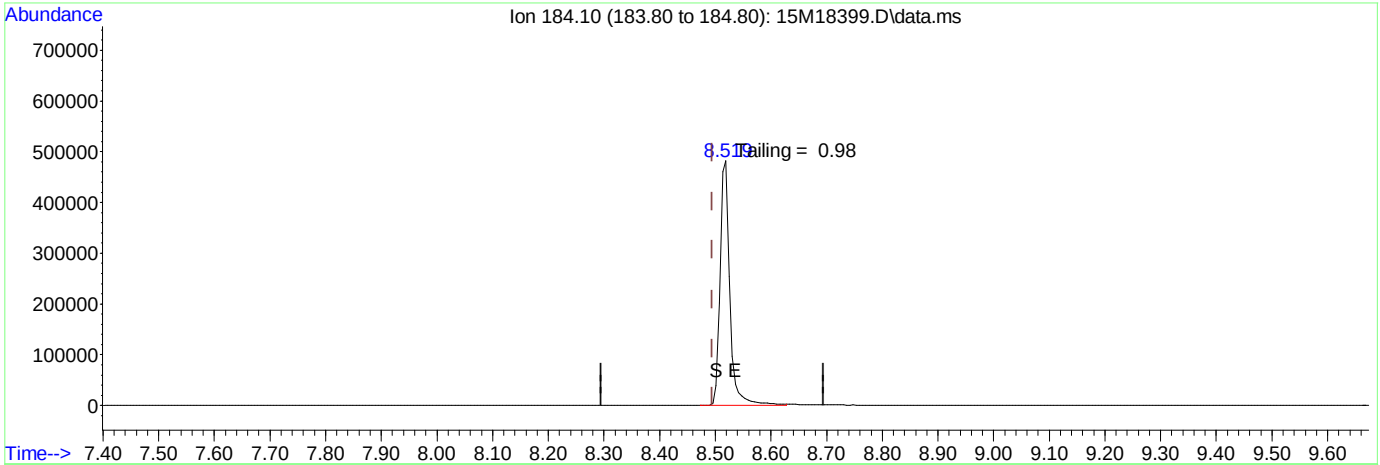

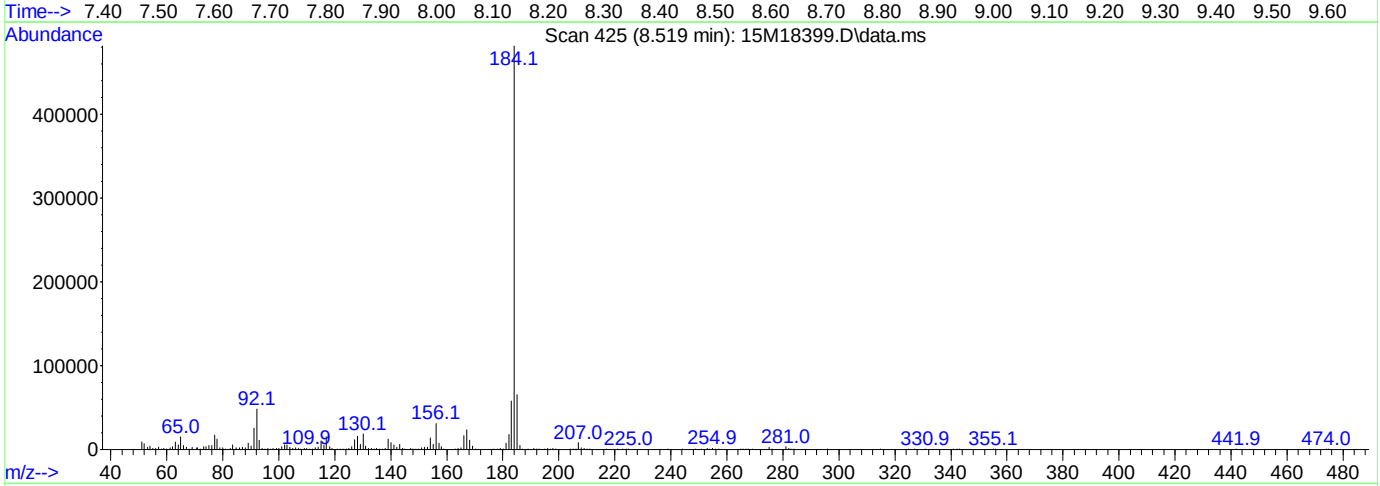

(2) Benzidine

8.519min (+ 0.025) 0.00 ug/ml

response 591309

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18399.D
Acq On : 16 Jun 2016 9:38
Operator : MES
Sample : WG572958-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 16 09:56:45 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

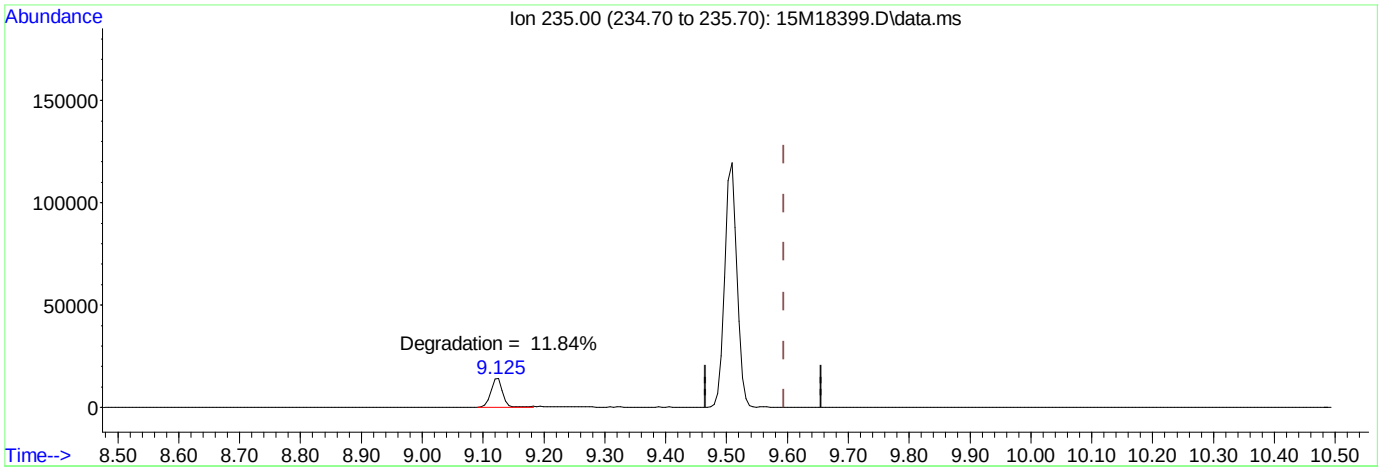

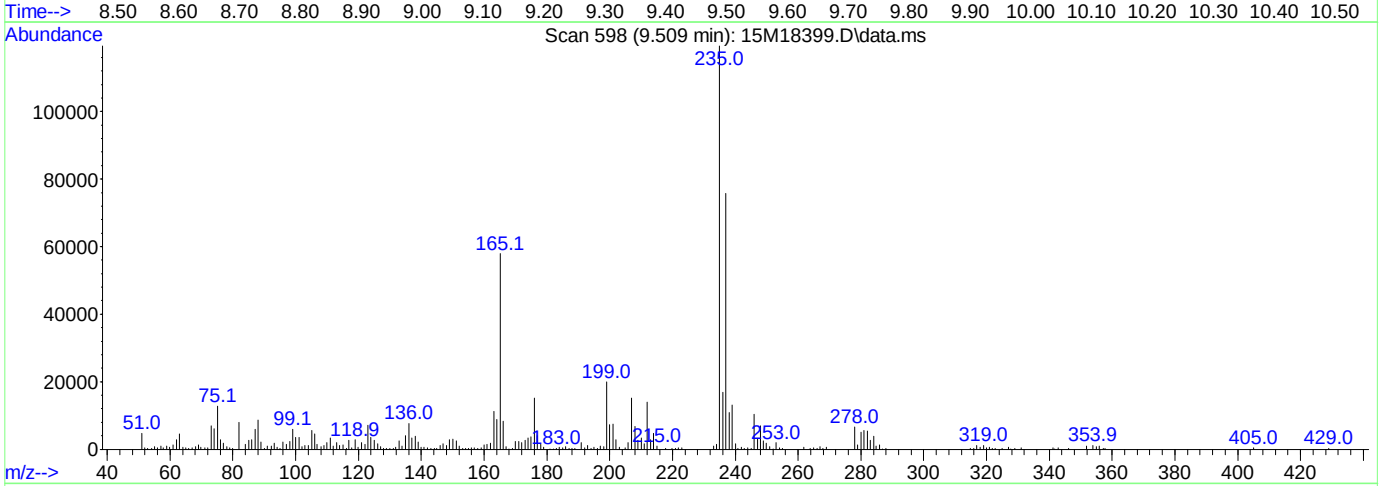

(3) DDT

9.509min (-0.085) 0.00 ug/ml

response 162825

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18401.D
Acq On : 16 Jun 2016 10:23
Operator : MES
Sample : WG572341-01 BLANK 6/13
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 16 12:53:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.948	152	57712	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.876	96	35450	1.4676	ug/L	0.01
Spiked Amount 5.000			Recovery = 29.40%			
4) Nitrobenzene-d5	7.442	82	935690	15.3339	ug/L	0.00
Spiked Amount 5.000			Recovery = 306.60%			
5) 2-Fluorobiphenyl	8.937	172	2176930	14.4366	ug/L	0.01
Spiked Amount 5.000			Recovery = 288.80%			
6) p-Terphenyl-d14	12.221	244	5289384	35.7680	ug/L	0.04
Spiked Amount 5.000			Recovery = 715.40%			

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18401.D
Acq On : 16 Jun 2016 10:23
Operator : MES
Sample : WG572341-01 BLANK 6/13
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 16 12:53:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

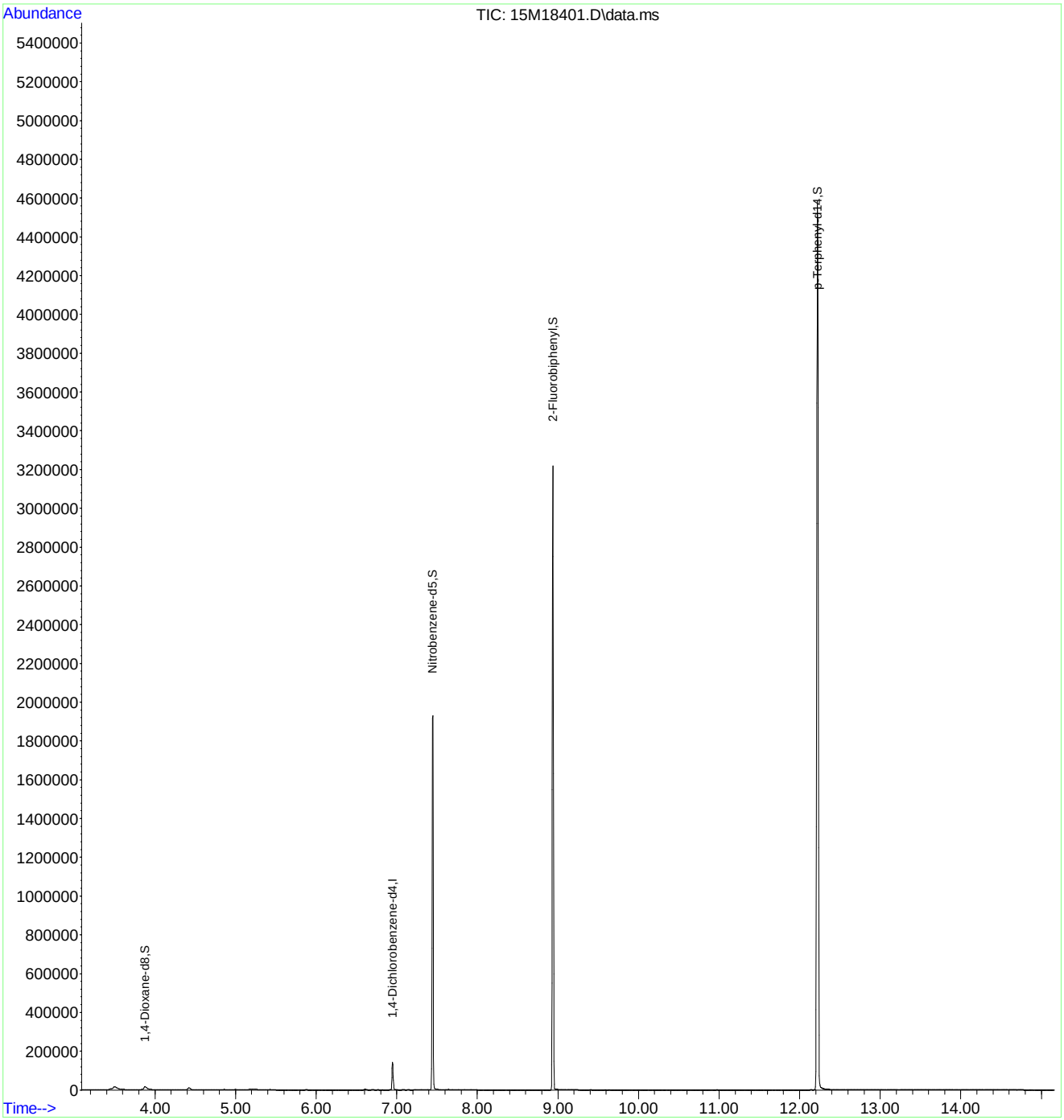

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18402.D
Acq On : 16 Jun 2016 10:46
Operator : MES
Sample : WG572341-02 LCS 6/13
Misc : 1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 16 12:54:04 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.951	152	54087	1.0000	ug/mL	# 0.01
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.883	96	40383	1.7839	ug/L	0.02
Spiked Amount 5.000			Recovery	=	35.60%	
4) Nitrobenzene-d5	7.447	82	8192	0.3591	ug/L	0.01
Spiked Amount 5.000			Recovery	=	7.20%	
5) 2-Fluorobiphenyl	8.937	172	5120	0.0362	ug/L	0.01
Spiked Amount 5.000			Recovery	=	0.80%	
6) p-Terphenyl-d14	12.228	244	1871	0.0135	ug/L	0.05
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.918	58	29330	1.6668	ug/L	82

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18402.D
Acq On : 16 Jun 2016 10:46
Operator : MES
Sample : WG572341-02 LCS 6/13
Misc : 1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 16 12:54:04 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

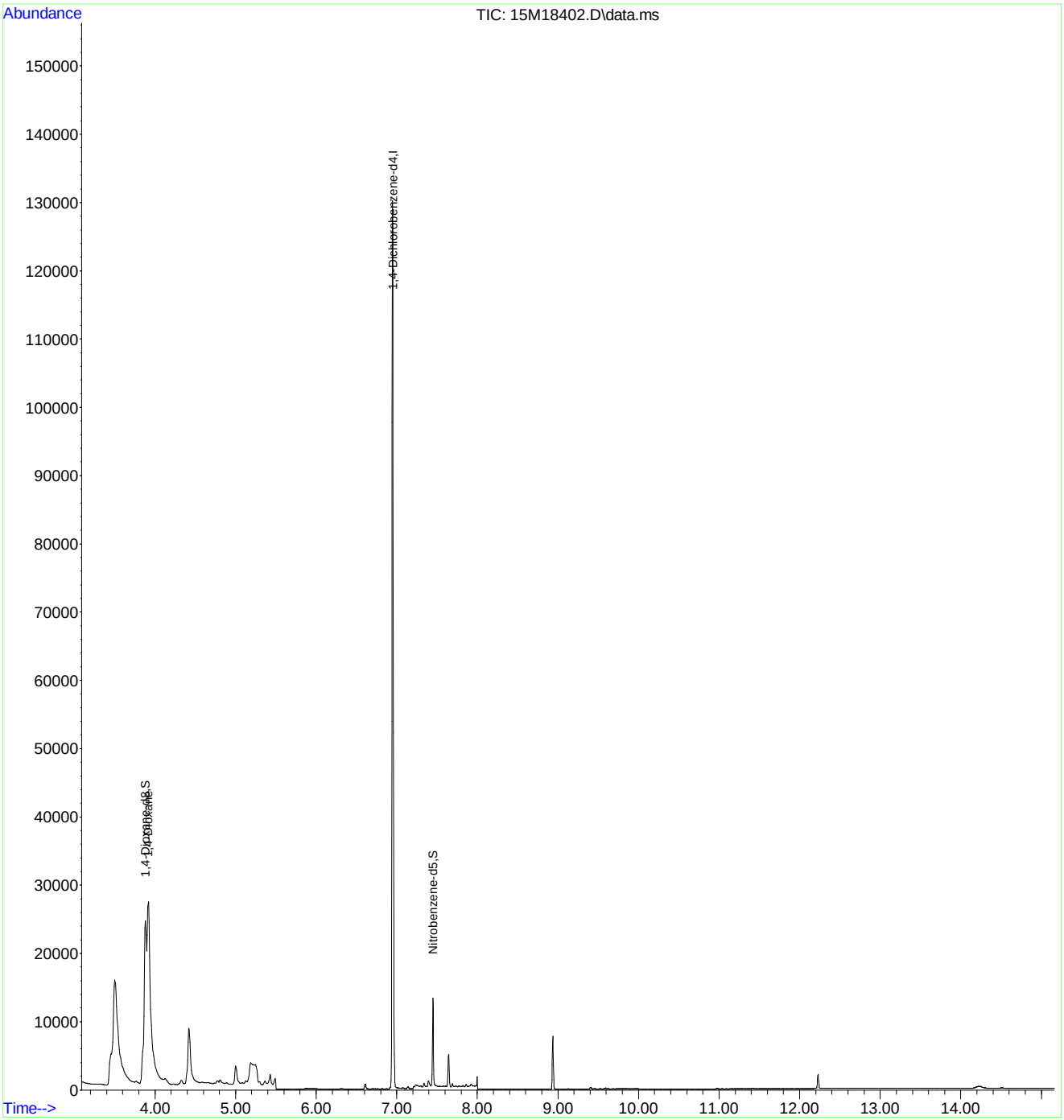

2.2 General Chromatography Data

2.2.2 6850 LC/MS Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060615-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22R-060916	**Prep Method:**	6850	**Prep Date:**	06/11/2016 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572350	**Analyst:**	WTD	**Run Date:**	06/12/2016 22:56
Collect Date:	06/09/2016 07:40	**Dilution:**	1	**File ID:**	1LM.LM35328
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.917		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16060615-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW-060916	**Prep Method:**	6850	**Prep Date:**	06/11/2016 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572350	**Analyst:**	WTD	**Run Date:**	06/12/2016 23:34
Collect Date:	06/09/2016 08:40	**Dilution:**	1	**File ID:**	1LM.LM35330
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1.21		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16060615-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DWFD-060916	**Prep Method:**	6850	**Prep Date:**	06/11/2016 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572350	**Analyst:**	WTD	**Run Date:**	06/12/2016 23:53
Collect Date:	06/09/2016 08:40	**Dilution:**	1	**File ID:**	1LM.LM35331
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.473		0.400	0.200	0.100

Certificate of Analysis

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Sample #:	L16060615-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22SW-060916	**Prep Method:**	6850	**Prep Date:**	06/11/2016 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572350	**Analyst:**	WTD	**Run Date:**	06/13/2016 00:12
Collect Date:	06/09/2016 09:55	**Dilution:**	10000	**File ID:**	1LM.LM35332
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	10200		4000	2000	1000

2.2.2.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1405 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG572350-01 MCT	9960	
-02 Blk	0.27	
-03 LCS	0.31	
-04 LCS2	0.31	
L16060615-01	117	
-02	1261	
-03	1269	
-04	3050	
L16060616-01	979	
-02	2840	
-03	112	
L16060632-01	474	
-02	349	
-03	471	
-04	483	

Analyst: Wade T. Deb

Date/Time: 6-11-16 / 1559

DCN#119043

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

Page: 1 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

Page: 2 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061116_WTD.TXT
Analyst1: WTD Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)
CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35279	WG572339-01 CCB	1	1		06/11/16 11:27
2	1LM.LM35280	WG572339-02 CCV (1.0ug/L)	1	1	STD75510	06/11/16 11:46
3	1LM.LM35281	WG572200-12 MRL (0.2ug/L)	1	1	STD75510	06/11/16 12:05
4	1LM.LM35282	L16060411-01 500X	1	500		06/11/16 12:24
5	1LM.LM35283	L16060411-02 100X	1	100		06/11/16 12:43
6	1LM.LM35284	L16060414-03 10000X	1	10000		06/11/16 13:02
7	1LM.LM35285	L16060414-04 10000X	1	10000		06/11/16 13:21
8	1LM.LM35286	L16060504-01 10000X	1	10000		06/11/16 13:40
9	1LM.LM35287	L16060504-02 1000X	1	1000		06/11/16 13:58
10	1LM.LM35288	L16060504-03 10000X	1	10000		06/11/16 14:17
11	1LM.LM35289	L16060504-04 1000X	1	1000		06/11/16 14:36
12	1LM.LM35290	L16060414-03 100000X	1	100000		06/11/16 14:55
13	1LM.LM35291	L16060414-04 100000X	1	100000		06/11/16 15:15
14	1LM.LM35292	WG572339-03 CCV (1.0ug/L)	1	1	STD75510	06/11/16 15:34
15	1LM.LM35293	WG572200-13 MRL (0.2ug/L)	1	1	STD75510	06/11/16 16:41
16	1LM.LM35294	WG572339-04 CCB	1	1		06/11/16 17:00
17	1LM.LM35295	L16060504-04 100X	1	100		06/11/16 17:19
18	1LM.LM35296	WG572339-05 CCV (1.0ug/L)	1	1	STD75510	06/11/16 17:38
19	1LM.LM35297	WG572200-14 MRL (0.2ug/L)	1	1	STD75510	06/11/16 17:57
20	1LM.LM35298	WG572339-06 CCB	1	1		06/11/16 18:16
21	1LM.LM35299	WG572350-05 MRL (0.2ug/L)	1	1	STD75510	06/11/16 18:35
22	1LM.LM35300	WG572350-01 MCT (0.2ug/l)	1	1	STD75512	06/11/16 18:54
23	1LM.LM35301	WG572350-02 BLANK	1	1		06/11/16 19:13
24	1LM.LM35302	WG572350-03 LCS (0.2ug/L)	1	1	STD75512	06/11/16 19:32
25	1LM.LM35303	WG572350-03 LCSD (0.2ug/L)	1	1	STD75512	06/11/16 19:51
26	1LM.LM35304	L16060632-01 100X	1	100		06/11/16 20:10
27	1LM.LM35305	L16060632-02 100X	1	100		06/11/16 20:29
28	1LM.LM35306	L16060632-03 100X	1	100		06/11/16 20:48
29	1LM.LM35307	L16060632-04 100X	1	100		06/11/16 21:07
30	1LM.LM35308	L16060615-01 10000X	1	10000		06/11/16 21:26
31	1LM.LM35309	L16060615-02 100X	1	100		06/11/16 21:44
43	1LM.LM35310	WG572339-07 CCV (1.0ug/L)	1	1	STD75510	06/11/16 22:03
33	1LM.LM35311	WG572350-06 MRL (0.2ug/L)	1	1	STD75510	06/11/16 22:22

Page: 1 Approved: 13-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061116_WTD.TXT

Analyst1: WTD Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 NA

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
44	1LM.LM35312	WG572339-08 CCB	1	1		06/11/16 22:41
35	1LM.LM35313	L16060615-03 100X	1	100		06/11/16 23:00
36	1LM.LM35314	L16060615-04 100X	1	100		06/11/16 23:19
37	1LM.LM35315	L16060616-01 10000X	1	10000		06/11/16 23:38
38	1LM.LM35316	L16060616-02 10000X	1	10000		06/11/16 23:57
39	1LM.LM35317	L16060616-03	1	1		06/12/16 00:16
45	1LM.LM35318	WG572339-09 CCV (1.0ug/L)	1	1	STD75510	06/12/16 00:35
41	1LM.LM35319	WG572350-07 MRL (0.2ug/L)	1	1	STD75510	06/12/16 00:54
46	1LM.LM35320	WG572339-10 CCB	1	1		06/12/16 01:13

Comments

Seq.	Rerun	Dil.	Reason	Analytes
6	X	100000	Over Calibration Range	
	L16060414-03			
7	X	100000	Over Calibration Range	
	L16060414-04			
11	X	100	Analyzed too dilute	
	L16060504-04			
26	X	1	Analyzed too dilute	
	L16060632-01			
27	X	1	Analyzed too dilute	
	L16060632-02			
28	X	1	Analyzed too dilute	
	L16060632-03			
29	X	1	Analyzed too dilute	
	L16060632-04			
30	X	1	Analyzed too dilute	
	L16060615-01			
31	X	1	Analyzed too dilute	
	L16060615-02			
35	X	1	Analyzed too dilute	
	L16060615-03			
36	X	10000	Over Calibration Range	
	L16060615-04			
37				
	L16060616-01 Analyzed at a dilution based on historical data			

Page: 2 Approved: 13-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061116_WTD.TXT

Analyst1: WTD Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups:

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 NA

Comments

Seq.	Rerun	Dil.	Reason	Analytes
38	X	100	Analyzed too dilute	
	L16060616-02			

Page: 3 Approved: 13-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061216_WTD.TXT
Analyst1: WTD Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG572350

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35321	WG572372-01 CCB	1	1		06/12/16 20:44
2	1LM.LM35322	WG572372-02 CCV (1.0ug/L)	1	1	STD75510	06/12/16 21:03
3	1LM.LM35323	WG572350-08 MRL (0.2ug/L)	1	1	STD75510	06/12/16 21:22
4	1LM.LM35324	L16060632-01	1	1		06/12/16 21:41
5	1LM.LM35325	L16060632-02	1	1		06/12/16 22:00
6	1LM.LM35326	L16060632-03	1	1		06/12/16 22:19
7	1LM.LM35327	L16060632-04	1	1		06/12/16 22:37
8	1LM.LM35328	L16060615-01	1	1		06/12/16 22:56
9	1LM.LM35329	L16060615-01 10x	1	10		06/12/16 23:15
10	1LM.LM35330	L16060615-02	1	1		06/12/16 23:34
11	1LM.LM35331	L16060615-03	1	1		06/12/16 23:53
12	1LM.LM35332	L16060615-04 10000x	1	10000		06/13/16 00:12
13	1LM.LM35333	L16060616-02 100X	1	100		06/13/16 00:31
14	1LM.LM35334	WG572372-03 CCV (1.0ug/L)	1	1	STD75510	06/13/16 00:50
15	1LM.LM35335	WG572350-09 MRL (0.2ug/L)	1	1	STD75510	06/13/16 01:09
16	1LM.LM35336	WG572372-04 CCB	1	1		06/13/16 01:28
17	1LM.LM35337	WG572372-05 CCB	1	1		06/13/16 07:50
18	1LM.LM35338	WG572372-06 CCV (1.0ug/L)	1	1	STD75510	06/13/16 08:09
19	1LM.LM35339	WG572350-10 MRL (0.2ug/L)	1	1	STD75510	06/13/16 08:28
20	1LM.LM35340	L16060616-02	1	1		06/13/16 08:47
21	1LM.LM35341	WG572372-07 CCV (1.0ug/L)	1	1	STD75510	06/13/16 09:06
22	1LM.LM35342	WG572350-10 MRL (0.2ug/L)	1	1	STD75510	06/13/16 09:25
23	1LM.LM35343	WG572372-08 CCB	1	1		06/13/16 09:44

Comments

Seq.	Rerun	Dil.	Reason	Analytes
9				
	L16060615-01 Dilution not needed.			
13	X	1	Analyzed too dilute	
	L16060616-02			

Page: 1 Approved: 13-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 04-MAY-2016 John Richards

Secondary Reviewer: 05-MAY-2016 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 11-JUN-2016
Analyst: WTD
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 75641
Analytical Workgroups: L16060411, L16060414, L16060504, L16060616

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	WTD
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 12-JUN-2016

Secondary Reviewer: 13-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-14-2016 08:50:47

Microbac Laboratories Inc.

Data Checklist

Date: 12-JUN-2016
Analyst: WTD
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 75643
Analytical Workgroups: L16060615, L16060616, L16060632

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	X
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	WTD
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 13-JUN-2016

Secondary Reviewer: 13-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-14-2016 08:50:19

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG572350

Login Number: L16060615

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW22R-060916	01	06/09/16					06/11/2016	2.1	28		06/12/16	1.5	28	
18CPTMW22DW-060916	02	06/09/16					06/11/2016	2.1	28		06/12/16	1.5	28	
18CPTMW22DWFD-060916	03	06/09/16					06/11/2016	2.1	28		06/12/16	1.5	28	
18CPTMW22SW-060916	04	06/09/16					06/11/2016	2	28		06/13/16	1.6	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4804229
Report generated 06/14/2016 08:46

METHOD BLANK SUMMARY

Login Number: L16060615
Blank File ID: 1LM.LM35301
Prep Date: 06/11/16 11:00
Analyzed Date: 06/11/16 19:13
Analyst: WTD

Work Group: WG572350
Blank Sample ID: WG572350-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG572350-05	1LM.LM35299	06/11/16 18:35	01
MCT	WG572350-01	1LM.LM35300	06/11/16 18:54	01
LCS	WG572350-03	1LM.LM35302	06/11/16 19:32	01
LCS2	WG572350-04	1LM.LM35303	06/11/16 19:51	01
QCMRL	WG572350-06	1LM.LM35311	06/11/16 22:22	01
QCMRL	WG572350-07	1LM.LM35319	06/12/16 00:54	01
QCMRL	WG572350-08	1LM.LM35323	06/12/16 21:22	01
18CPTMW22R-060916	L16060615-01	1LM.LM35328	06/12/16 22:56	01
18CPTMW22DW-060916	L16060615-02	1LM.LM35330	06/12/16 23:34	01
18CPTMW22DWFD-060916	L16060615-03	1LM.LM35331	06/12/16 23:53	01
18CPTMW22SW-060916	L16060615-04	1LM.LM35332	06/13/16 00:12	DL01
QCMRL	WG572350-09	1LM.LM35335	06/13/16 01:09	01
QCMRL	WG572350-10	1LM.LM35339	06/13/16 08:28	01
QCMRL	WG572350-10	1LM.LM35342	06/13/16 09:25	02

Report Name: BLANK_SUMMARY
PDF File ID: 4804230
Report generated 06/14/2016 08:46

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060615 Prep Date: 06/11/16 11:00 Sample ID: WG572350-02
Instrument ID: LCMS1 Run Date: 06/11/16 19:13 Prep Method: 6850
File ID: 1LM.LM35301 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572350 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4804231
14-JUN-2016 08:46

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060615 Analyst: WTD Prep Method: 6850
Instrument ID: LCMS1 Matrix: Water Method: 6850
Workgroup (AAB#): WG572350 Units: ug/L
QC Key: DOD4 Lot #: STD75512

Sample ID: WG572350-03 LCS File ID: 1LM.LM35302 Run Date: 06/11/2016 19:32
Sample ID: WG572350-04 LCS2 File ID: 1LM.LM35303 Run Date: 06/11/2016 19:51

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Perchlorate	0.200	0.211	106	0.200	0.208	104	1.43	80 - 120	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4804232
Report generated: 06/14/2016 08:46

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060615
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4804234
Report generated 06/14/2016 08:46

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060615
Analytical Method: 6850

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4804234
Report generated 06/14/2016 08:46

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060615

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4804234
Report generated 06/14/2016 08:46

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060615

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008
PDF File ID: 4804234
Report generated 06/14/2016 08:46

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060615 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4804235
Report generated 06/14/2016 08:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060615
Run Date: 06/11/2016
Sample ID: WG572339-06
Instrument ID: LCMS1
Run Time: 18:16
Method: 6850
File ID: 1LM.LM35298
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4804237
Report generated 06/14/2016 08:47

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060615
Run Date: 06/11/2016
Sample ID: WG572339-08
Instrument ID: LCMS1
Run Time: 22:41
Method: 6850
File ID: 1LM.LM35312
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4804237
Report generated 06/14/2016 08:47

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060615
Run Date: 06/12/2016
Sample ID: WG572339-10
Instrument ID: LCMS1
Run Time: 01:13
Method: 6850
File ID: 1LM.LM35320
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4804237
Report generated 06/14/2016 08:47

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060615
Run Date: 06/12/2016
Sample ID: WG572372-01
Instrument ID: LCMS1
Run Time: 20:44
Method: 6850
File ID: 1LM.LM35321
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4804237
Report generated 06/14/2016 08:47

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060615
Run Date: 06/13/2016
Sample ID: WG572372-04
Instrument ID: LCMS1
Run Time: 01:28
Method: 6850
File ID: 1LM.LM35336
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4804237
Report generated 06/14/2016 08:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060615
Run Date: 06/13/2016
Sample ID: WG572372-05
Instrument ID: LCMS1
Run Time: 07:50
Method: 6850
File ID: 1LM.LM35337
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4804237
Report generated 06/14/2016 08:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060615
Run Date: 06/13/2016
Sample ID: WG572372-08
Instrument ID: LCMS1
Run Time: 09:44
Method: 6850
File ID: 1LM.LM35343
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4804237
Report generated 06/14/2016 08:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060615
Run Date: 06/11/2016
Sample ID: WG572339-05
Instrument ID: LCMS1
Run Time: 17:38
Method: 6850
File ID: 1LM.LM35296
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.73	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4804236
Report generated 06/14/2016 08:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060615
Run Date: 06/11/2016
Sample ID: WG572339-07
Instrument ID: LCMS1
Run Time: 22:03
Method: 6850
File ID: 1LM.LM35310
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.06	ug/L	1.79	6.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4804236
Report generated 06/14/2016 08:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060615
Run Date: 06/12/2016
Sample ID: WG572339-09
Instrument ID: LCMS1
Run Time: 00:35
Method: 6850
File ID: 1LM.LM35318
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.70	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4804236
Report generated 06/14/2016 08:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060615
Run Date: 06/12/2016
Sample ID: WG572372-02
Instrument ID: LCMS1
Run Time: 21:03
Method: 6850
File ID: 1LM.LM35322
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.72	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4804236
Report generated 06/14/2016 08:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060615
Run Date: 06/13/2016
Sample ID: WG572372-03
Instrument ID: LCMS1
Run Time: 00:50
Method: 6850
File ID: 1LM.LM35334
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.71	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4804236
Report generated 06/14/2016 08:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060615 Run Date: 06/13/2016 Sample ID: WG572372-06
Instrument ID: LCMS1 Run Time: 08:09 Method: 6850
File ID: 1LM.LM35338 Analyst: WTD QC Key: DOD4
Workgroup (AAB#): WG572350 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.76	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4804236
Report generated 06/14/2016 08:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060615
Run Date: 06/13/2016
Sample ID: WG572372-07
Instrument ID: LCMS1
Run Time: 09:06
Method: 6850
File ID: 1LM.LM35341
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.73	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4804236
Report generated 06/14/2016 08:47

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060615 Run Date: 06/11/2016 Sample ID: WG572350-05
Instrument ID: LCMS1 Run Time: 18:35 Prep Method: 6850
File ID: 1LM.LM35299 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572350 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.207	104	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4804233
Report generated 06/14/2016 08:46

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060615 Run Date: 06/11/2016 Sample ID: WG572350-06
Instrument ID: LCMS1 Run Time: 22:22 Prep Method: 6850
File ID: 1LM.LM35311 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572350 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.217	109	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4804233
Report generated 06/14/2016 08:46

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060615 Run Date: 06/12/2016 Sample ID: WG572350-07
Instrument ID: LCMS1 Run Time: 00:54 Prep Method: 6850
File ID: 1LM.LM35319 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572350 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.219	110	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4804233
Report generated 06/14/2016 08:46

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060615 Run Date: 06/12/2016 Sample ID: WG572350-08
Instrument ID: LCMS1 Run Time: 21:22 Prep Method: 6850
File ID: 1LM.LM35323 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572350 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.214	107	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4804233
Report generated 06/14/2016 08:46

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060615 Run Date: 06/13/2016 Sample ID: WG572350-09
Instrument ID: LCMS1 Run Time: 01:09 Prep Method: 6850
File ID: 1LM.LM35335 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572350 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.216	108	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4804233
Report generated 06/14/2016 08:46

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060615 Run Date: 06/13/2016 Sample ID: WG572350-10
Instrument ID: LCMS1 Run Time: 08:28 Prep Method: 6850
File ID: 1LM.LM35339 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572350 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.210	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4804233
Report generated 06/14/2016 08:46

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060615 Run Date: 06/13/2016 Sample ID: WG572350-10
Instrument ID: LCMS1 Run Time: 09:25 Prep Method: 6850
File ID: 1LM.LM35342 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572350 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.220	110	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4804233
Report generated 06/14/2016 08:46

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16060615
Instrument ID: LCMS1
Workgroup (AAB#): WG572350

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16060615-01	1.00	01	517000
L16060615-02	1.00	01	528000
L16060615-03	1.00	01	529000
L16060615-04	10000	DL01	534000
WG572350-02	1.00	01	490000
WG572350-03	1.00	01	484000
WG572350-04	1.00	01	484000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4804240
Report generated 06/14/2016 08:47

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**	6850	**Samplenum:**	L16060615-01
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35328
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/12/2016 22:56	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	160000	54700	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**	6850	**Samplenum:**	L16060615-02
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35330
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/12/2016 23:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	215000	73000	2.95	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**	6850	**Samplenum:**	L16060615-03
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35331
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/12/2016 23:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	84900	29500	2.88	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**	6850	**Samplenum:**	L16060615-04
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35332
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/13/2016 00:12	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	184000	62800	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**		**Samplenum:**	WG572339-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35296
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/11/2016 17:38	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	172000	59300	2.90	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**		**Samplenum:**	WG572339-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35298
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/11/2016 18:16	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**		**Samplenum:**	WG572339-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35310
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/11/2016 22:03	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	180000	60500	2.98	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**		**Samplenum:**	WG572339-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35312
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/11/2016 22:41	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**		**Samplenum:**	WG572339-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35318
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/12/2016 00:35	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	174000	61600	2.82	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**		**Samplenum:**	WG572339-10
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35320
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/12/2016 01:13	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	674	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**	6850	**Samplenum:**	WG572350-01
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35300
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/11/2016 18:54	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	41100	12200	3.37	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**	6850	**Samplenum:**	WG572350-02
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35301
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/11/2016 19:13	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	227	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**	6850	**Samplenum:**	WG572350-03
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35302
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/11/2016 19:32	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35000	12100	2.89	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**	6850	**Samplenum:**	WG572350-04
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35303
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/11/2016 19:51	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34400	11900	2.89	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**	6850	**Samplenum:**	WG572350-05
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35299
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/11/2016 18:35	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35100	12900	2.72	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**	6850	**Samplenum:**	WG572350-06
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35311
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/11/2016 22:22	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37800	12300	3.07	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**	6850	**Samplenum:**	WG572350-07
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35319
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/12/2016 00:54	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38100	13000	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**	6850	**Samplenum:**	WG572350-08
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35323
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/12/2016 21:22	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36000	12100	2.98	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**	6850	**Samplenum:**	WG572350-09
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35335
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/13/2016 01:09	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	41200	14000	2.94	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**	6850	**Samplenum:**	WG572350-10
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35339
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/13/2016 08:28	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	39900	13800	2.89	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**	6850	**Samplenum:**	WG572350-10
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35342
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/13/2016 09:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	42100	14300	2.94	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**		**Samplenum:**	WG572372-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35321
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/12/2016 20:44	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1120	906	1.24	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**		**Samplenum:**	WG572372-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35322
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/12/2016 21:03	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	166000	58600	2.83	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**		**Samplenum:**	WG572372-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35334
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/13/2016 00:50	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	190000	63900	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**		**Samplenum:**	WG572372-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35336
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/13/2016 01:28	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**		**Samplenum:**	WG572372-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35337
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/13/2016 07:50	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**		**Samplenum:**	WG572372-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35338
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/13/2016 08:09	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	189000	64700	2.92	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**		**Samplenum:**	WG572372-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35341
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/13/2016 09:06	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	192000	65900	2.91	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**		**Samplenum:**	WG572372-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35343
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/13/2016 09:44	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

2.2.2.3 Sample Data

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Data File	LM35328.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/12/2016 10:56:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060615-01	**Injection Vial**	55.00
Data File	LM35328.wiff	**Injection Volume**	10.00
Acquisition Date	6/12/2016 10:56:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	L16060615-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.170e+05	9.72	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.600e+05	9.73	N/A	0.917
Perchlorate conf	5.470e+04	9.71	N/A	0.928

O18LP (Internal Standard)

RT (Exp. RT): 9.72(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

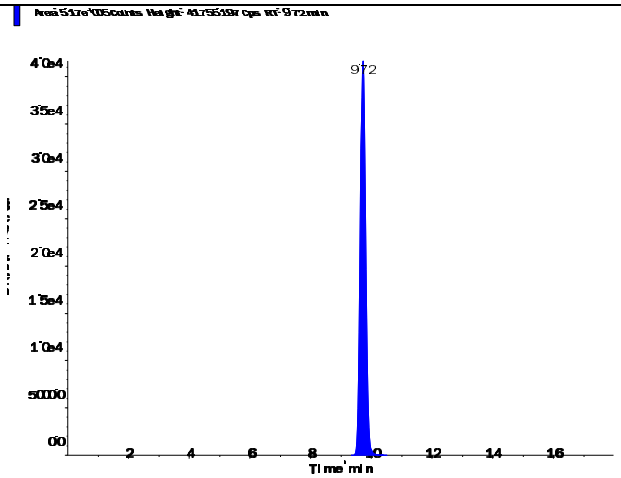

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.73 (9.84) min Calculated conc: 0.917 ng/ml Area Ratio: 0.31 Sample Type: (Unknown)	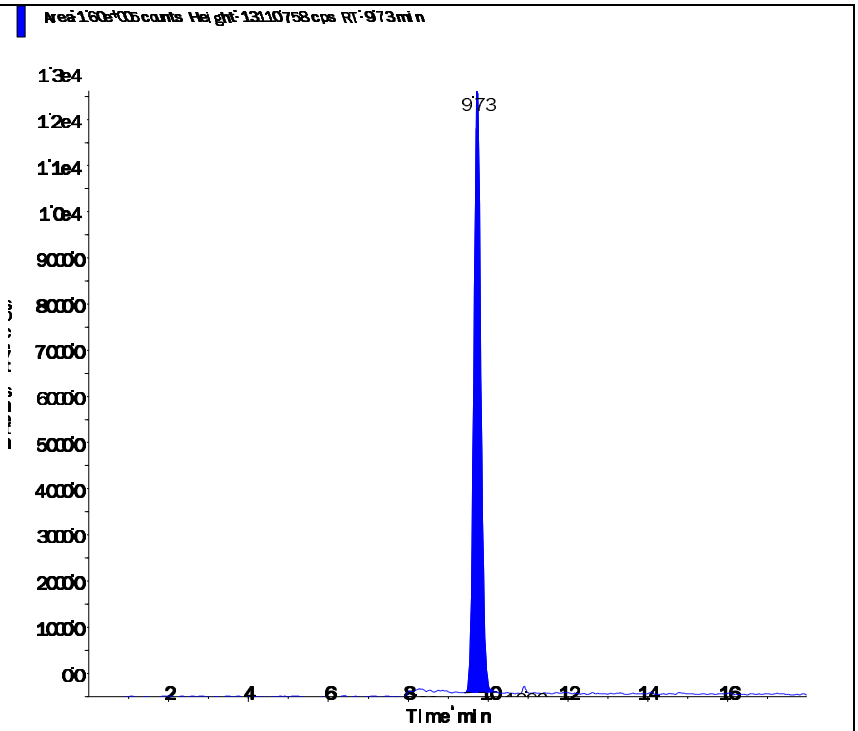
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.71 (9.84) min Calculated conc: 0.928 ng/ml Area Ratio: 0.106 Sample Type: (Unknown)	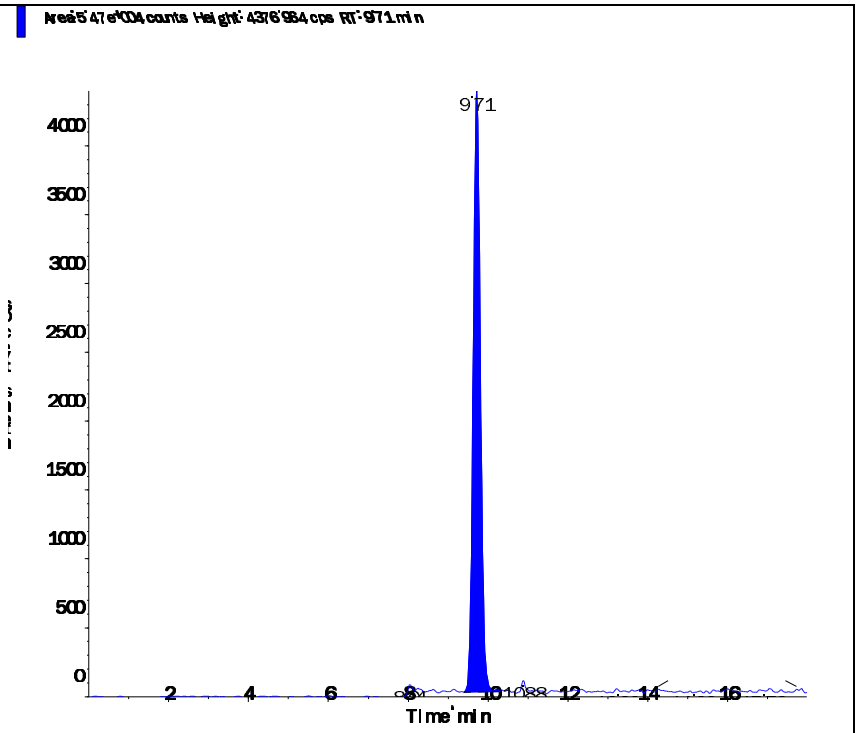

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Data File	LM35330.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/12/2016 11:34:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060615-02	**Injection Vial**	57.00
Data File	LM35330.wiff	**Injection Volume**	10.00
Acquisition Date	6/12/2016 11:34:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	L16060615-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.280e+05	9.57	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.150e+05	9.58	N/A	1.21
Perchlorate conf	7.300e+04	9.56	N/A	1.22

O18LP (Internal Standard)

RT (Exp. RT): 9.57(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

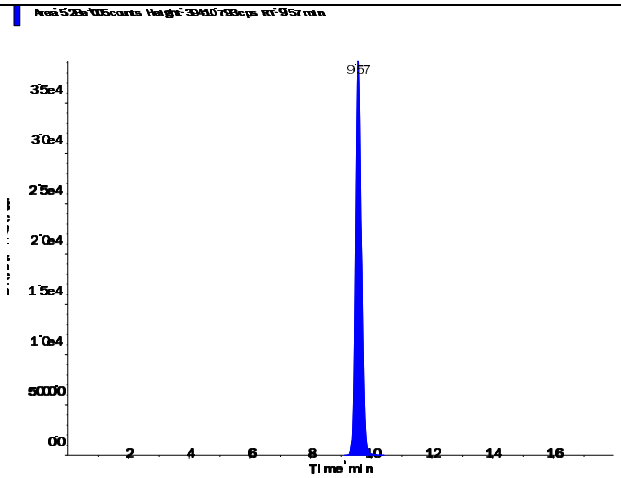

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.58 (9.84) min
Calculated conc:	1.21 ng/ml
Area Ratio:	0.407
Sample Type:	(Unknown)

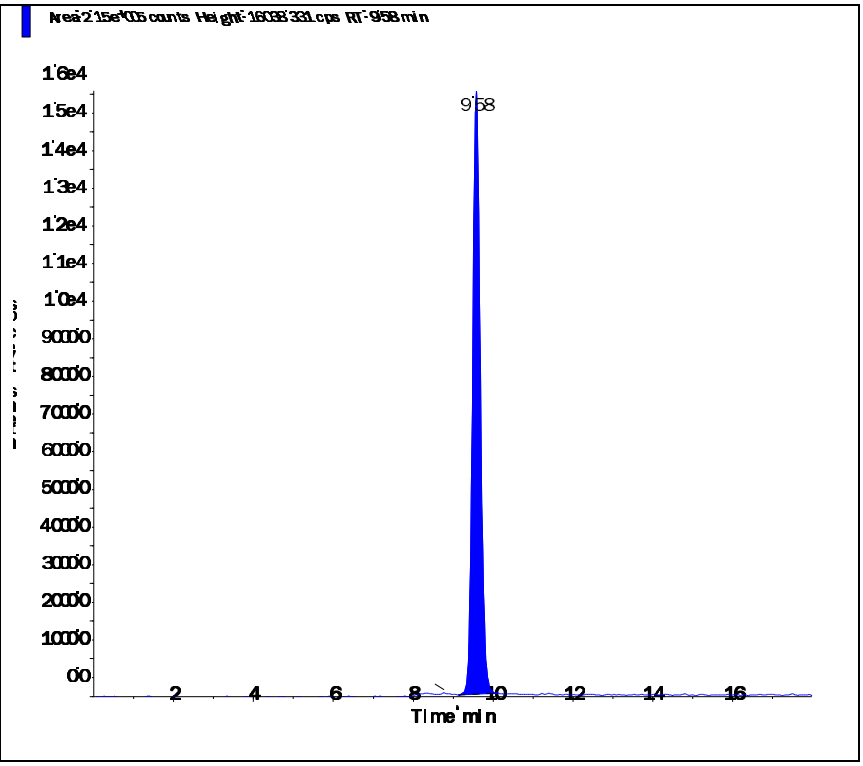

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.56 (9.84) min
Calculated conc:	1.22 ng/ml
Area Ratio:	0.138
Sample Type:	(Unknown)

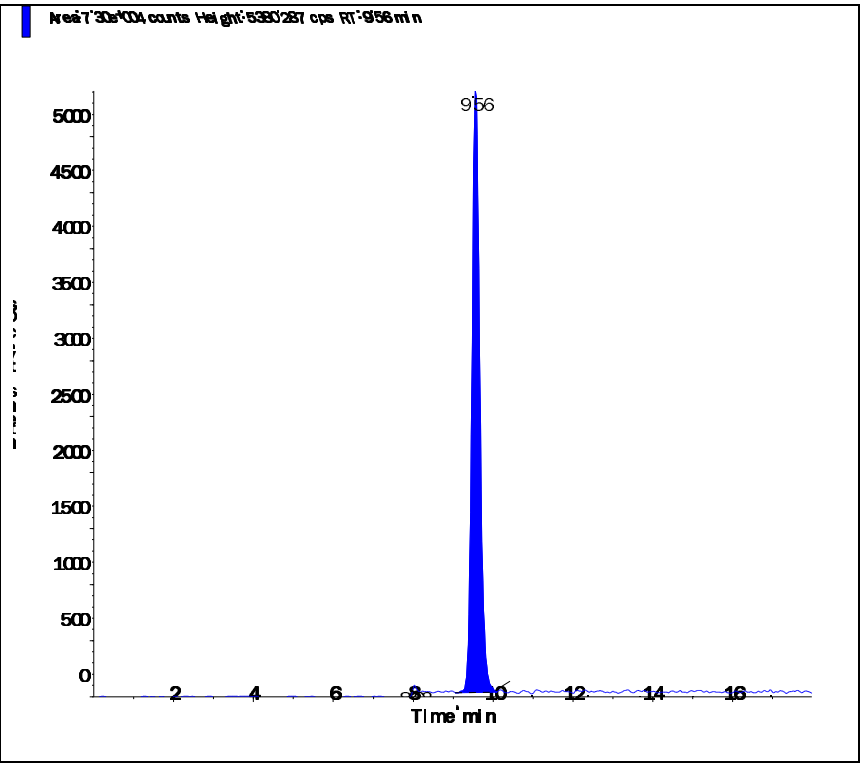

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Data File	LM35331.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/12/2016 11:53:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060615-03	**Injection Vial**	58.00
Data File	LM35331.wiff	**Injection Volume**	10.00
Acquisition Date	6/12/2016 11:53:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	L16060615-03	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.290e+05	9.55	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.490e+04	9.57	N/A	0.473
Perchlorate conf	2.950e+04	9.55	N/A	0.479

O18LP (Internal Standard)

RT (Exp. RT): 9.55(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

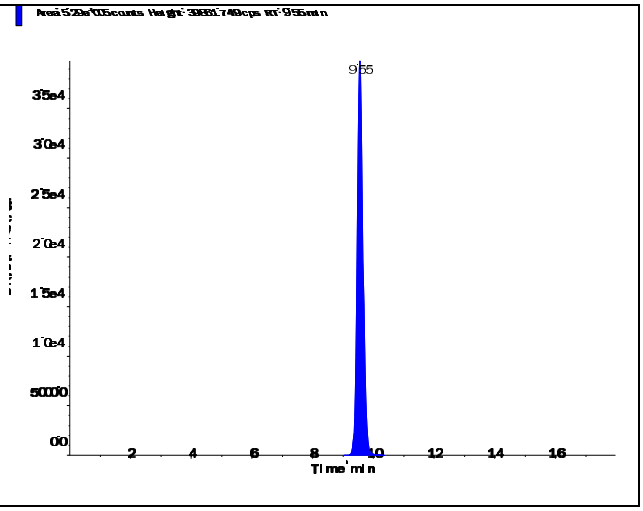

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.57 (9.84) min
Calculated conc:	0.473 ng/ml
Area Ratio:	0.16
Sample Type:	(Unknown)

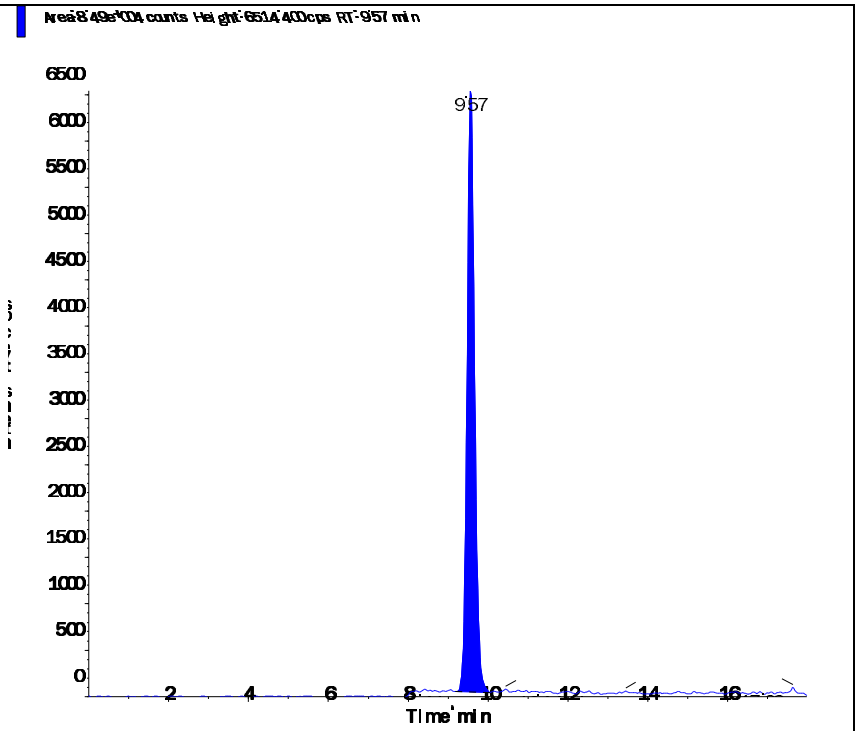

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.55 (9.84) min
Calculated conc:	0.479 ng/ml
Area Ratio:	0.056
Sample Type:	(Unknown)

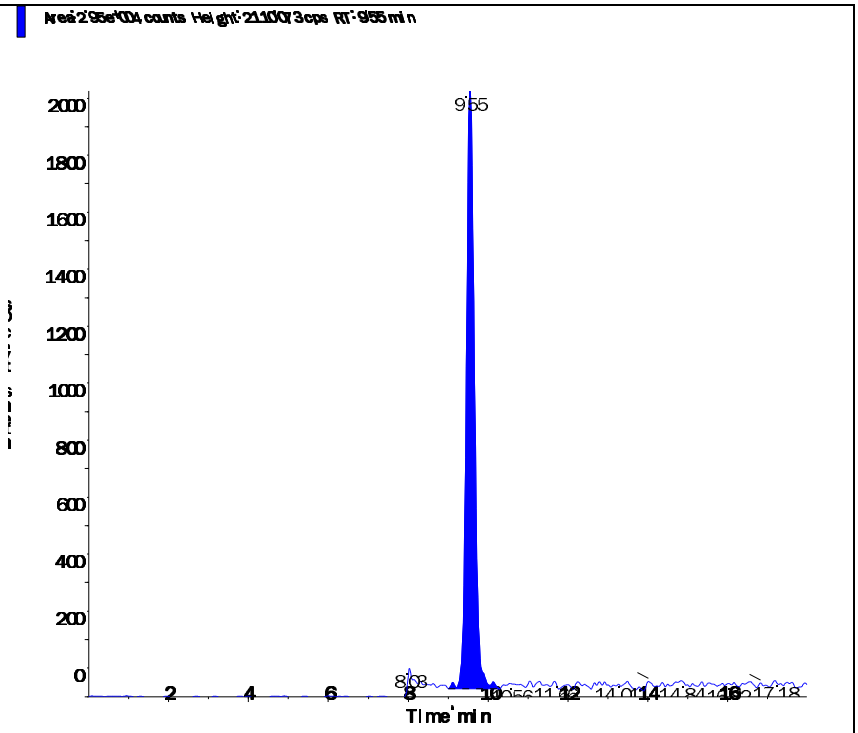

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Data File	LM35332.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/13/2016 12:12:35 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060615-04 10000x	**Injection Vial**	59.00
Data File	LM35332.wiff	**Injection Volume**	10.00
Acquisition Date	6/13/2016 12:12:35 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	L16060615-04	**Dilution Factor**	1.00
Sample Comment	110,000.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.340e+05	9.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.840e+05	9.81	N/A	1.02
Perchlorate conf	6.280e+04	9.80	N/A	1.03

O18LP (Internal Standard)

RT (Exp. RT): 9.80(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

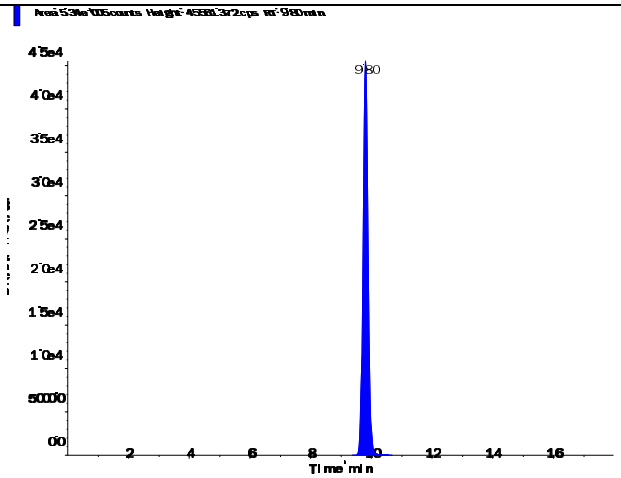

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.81 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.344
Sample Type:	(Unknown)

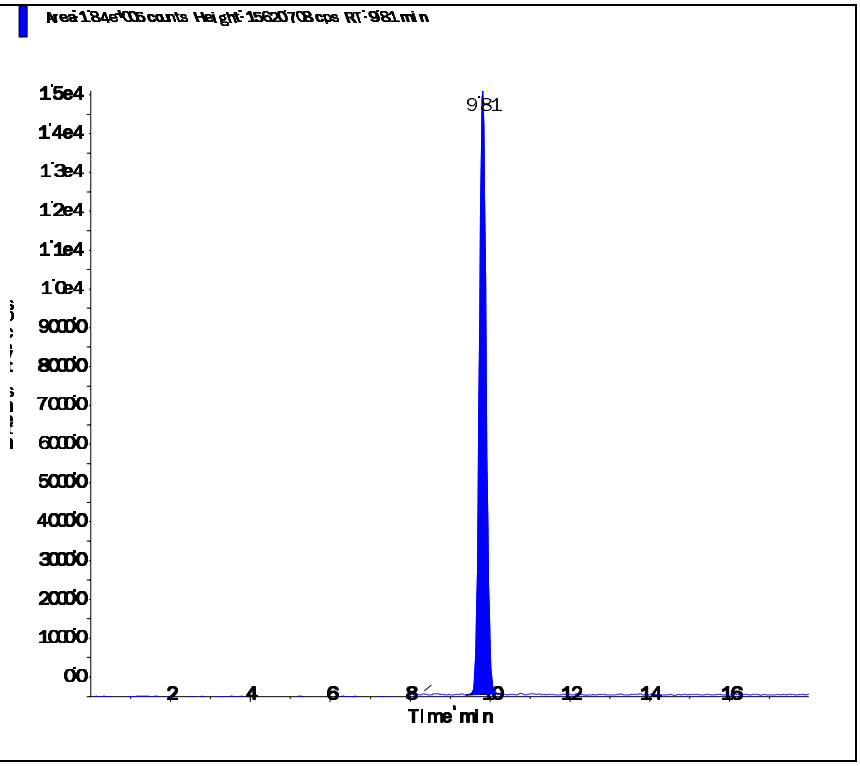

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.80 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.118
Sample Type:	(Unknown)

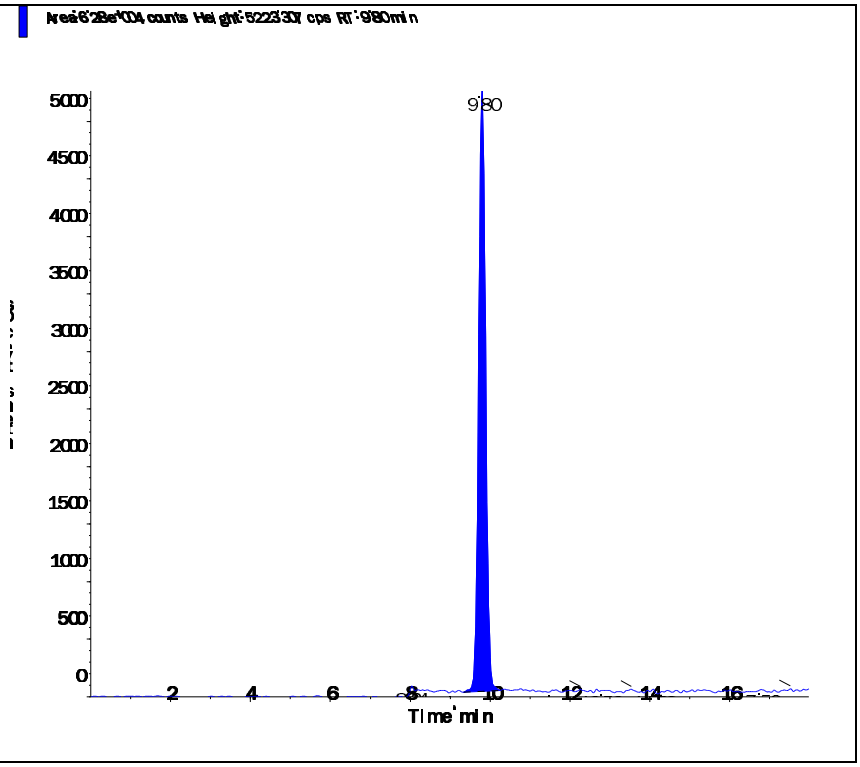

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2.2.2.4 Standards Data

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Data File	LM34686.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

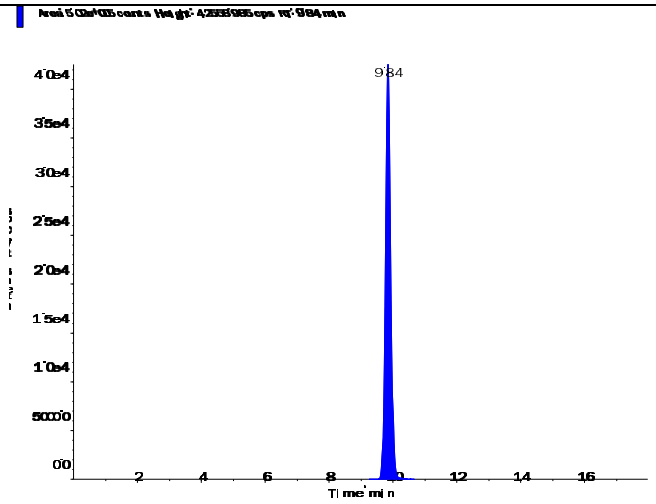

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Printed: 6/13/2016 10:27 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

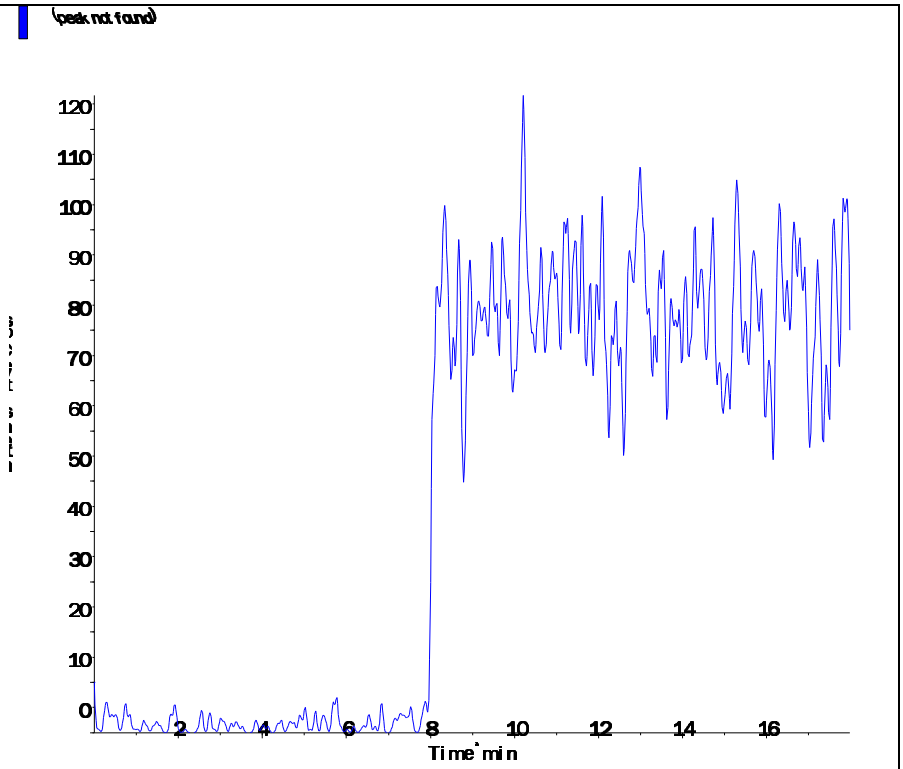

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

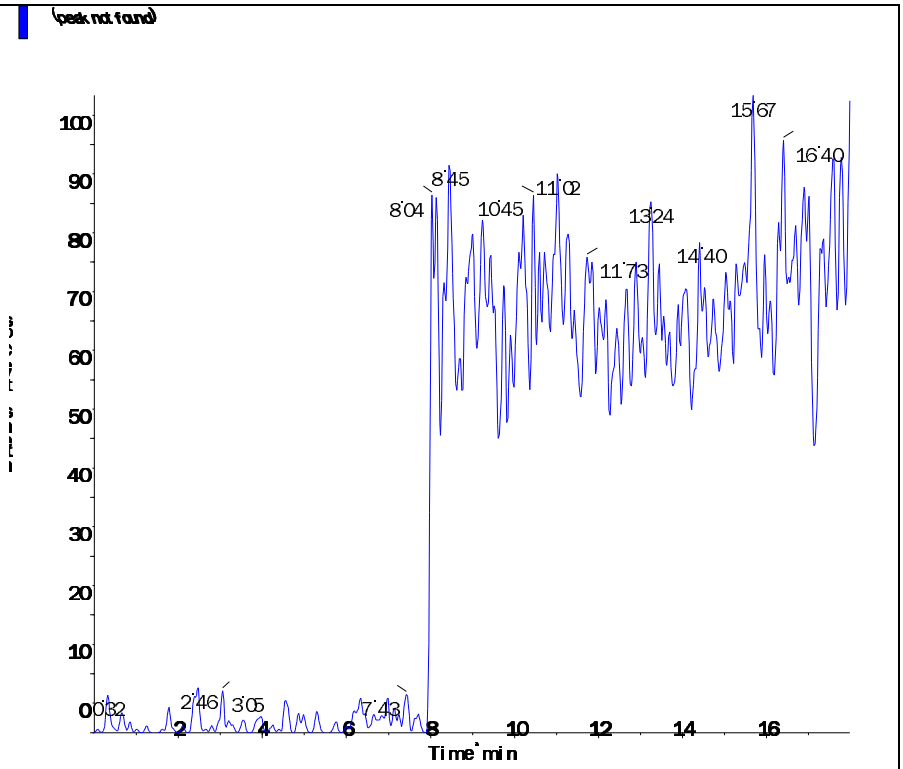

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Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

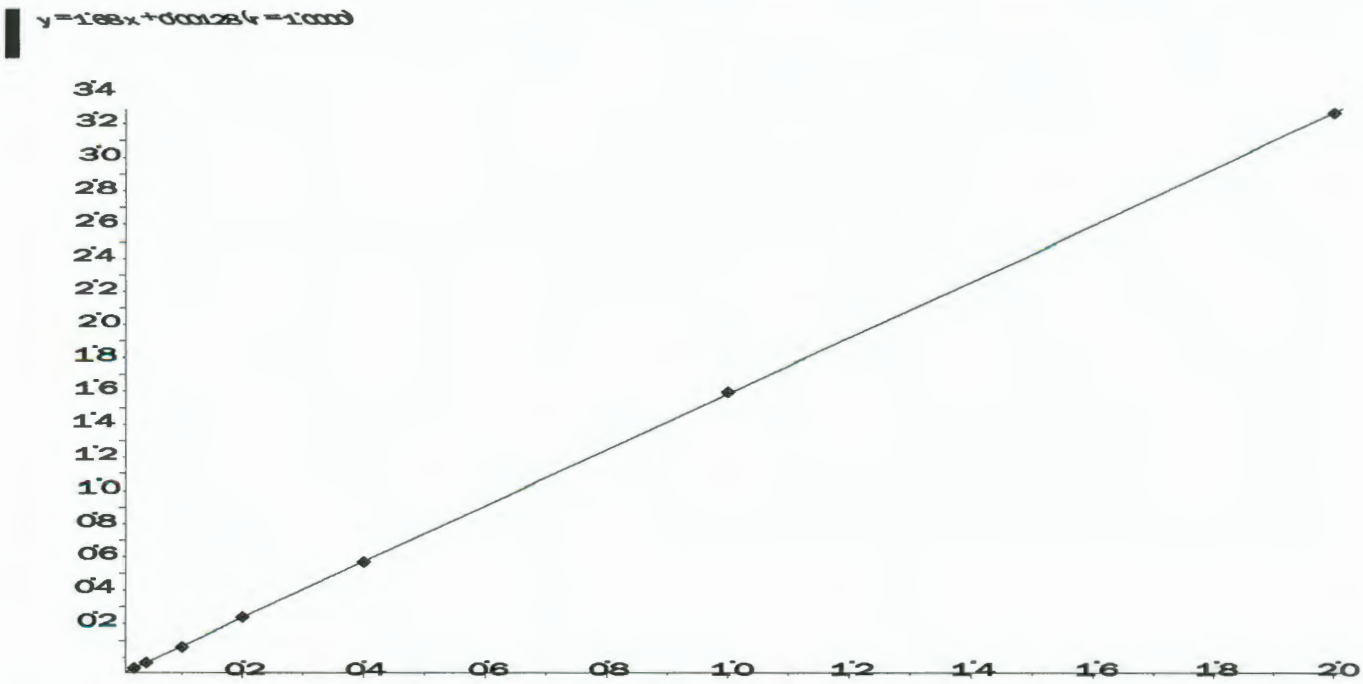

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Created with Analyst Reporter
Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

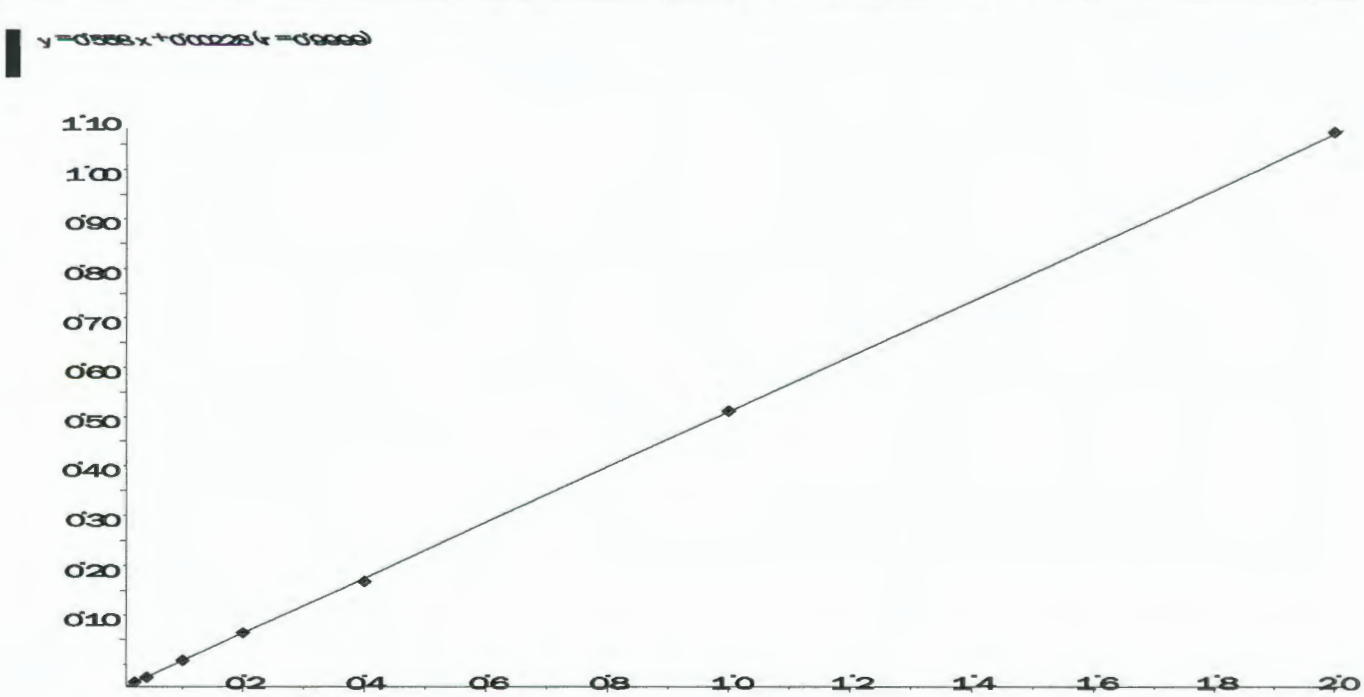

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Created with Analyst Reporter
Printed: 6/13/2016 10:28 AM

Data File	LM34687.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

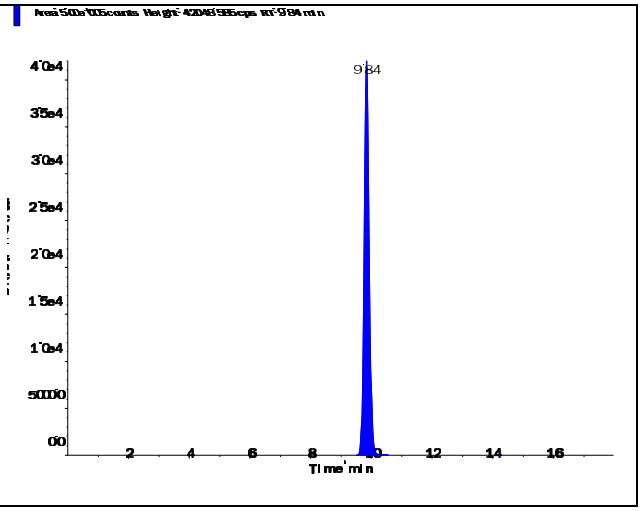

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.103 ng/ml
Area Ratio:	0.036
Sample Type:	(Standard)

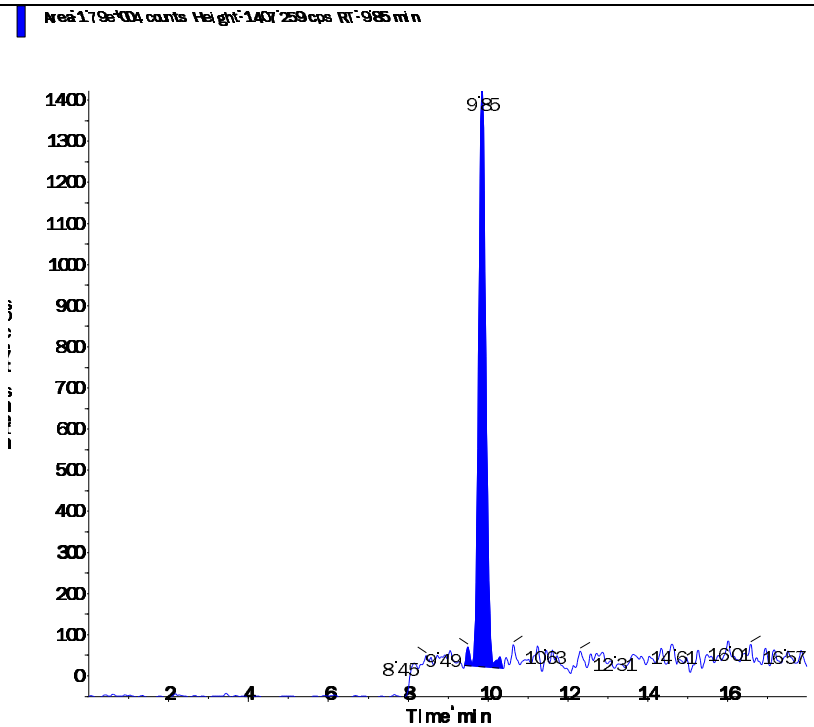

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.104 ng/ml
Area Ratio:	0.014
Sample Type:	(Standard)

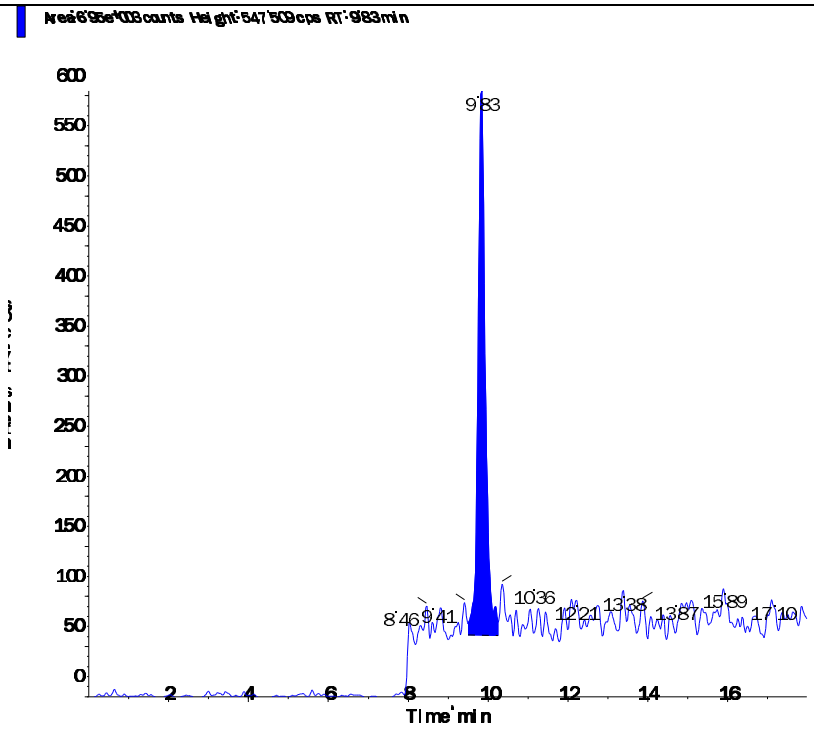

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Data File	LM34688.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

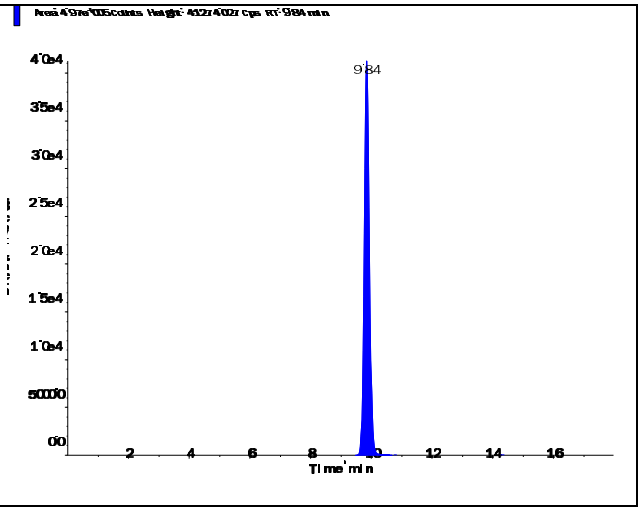

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

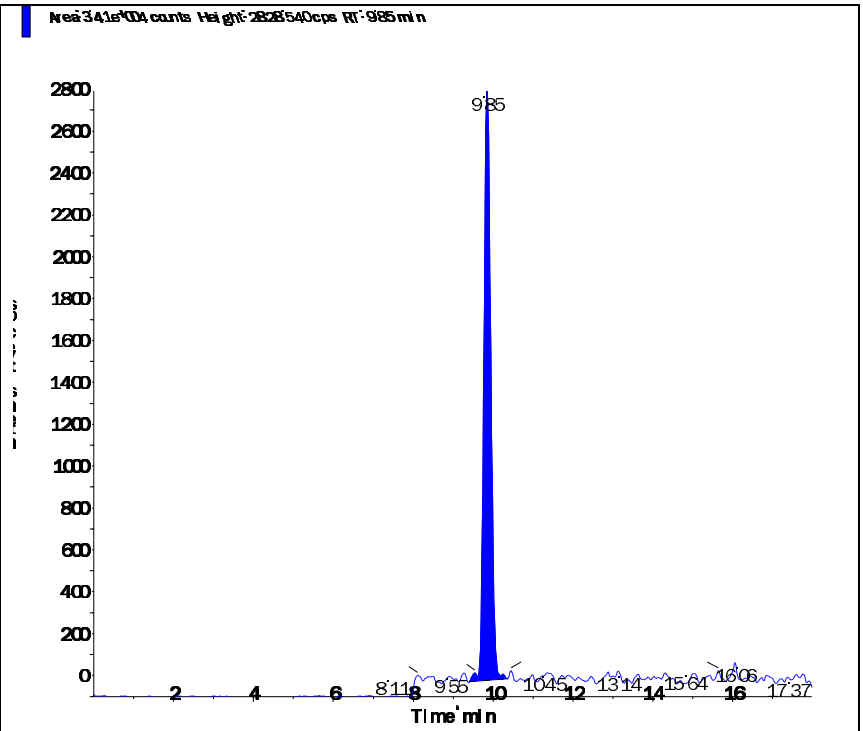

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

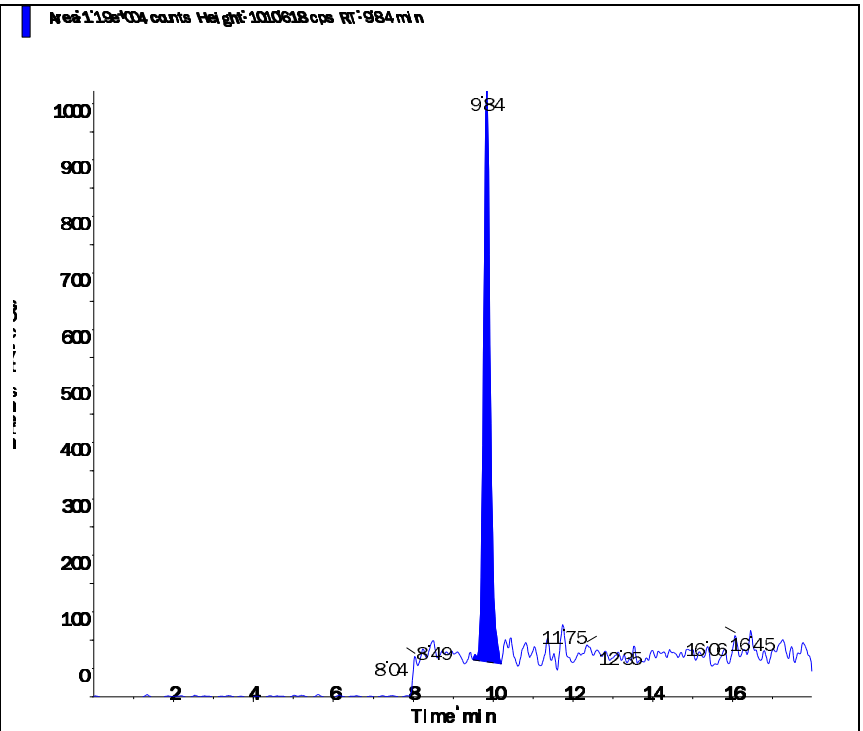

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Data File	LM34689.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

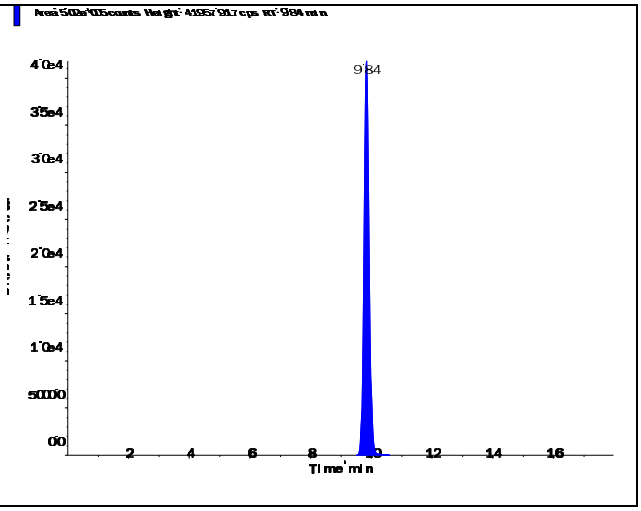

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.483 ng/ml
Area Ratio:	0.164
Sample Type:	(Standard)

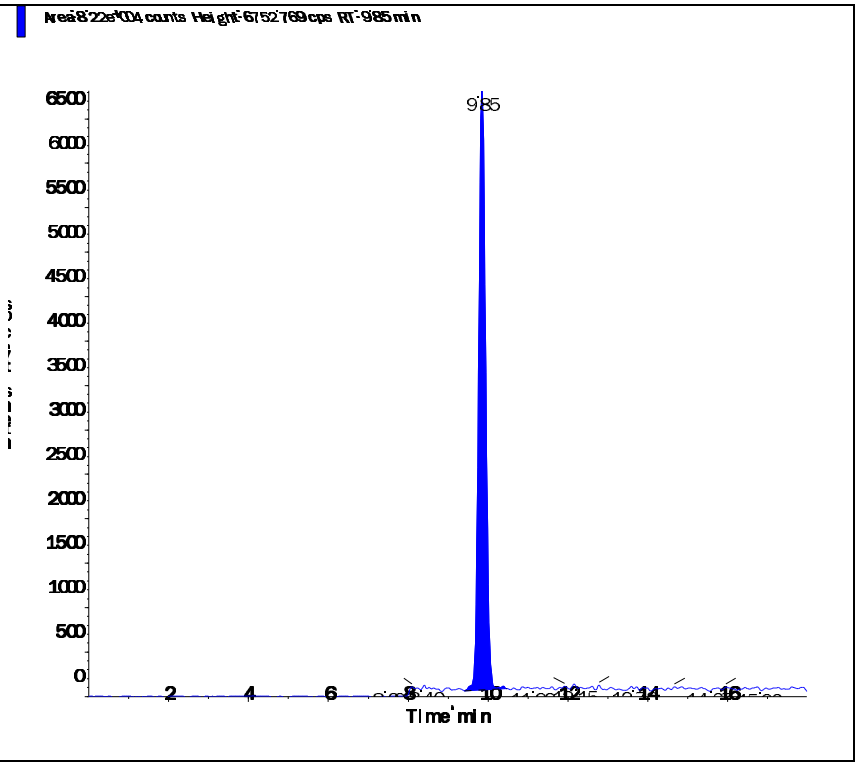

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.503 ng/ml
Area Ratio:	0.058
Sample Type:	(Standard)

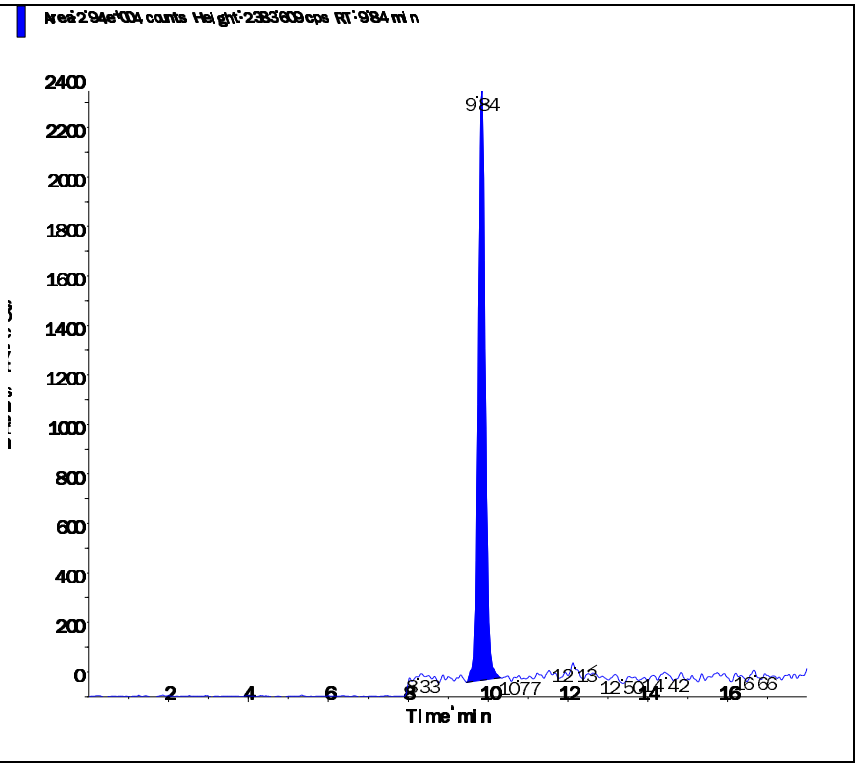

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Data File	LM34690.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

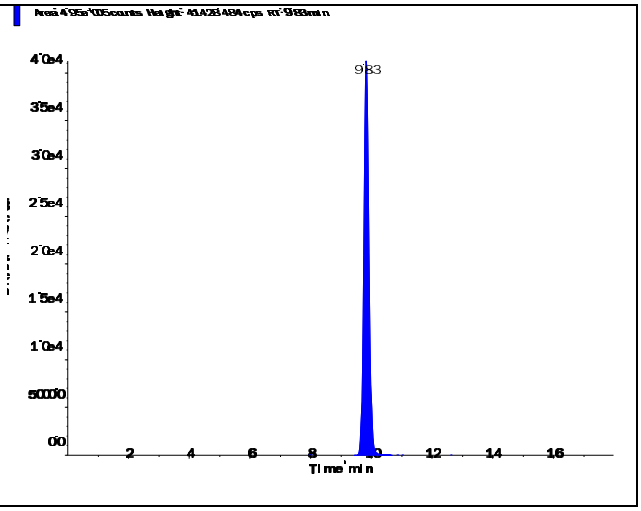

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

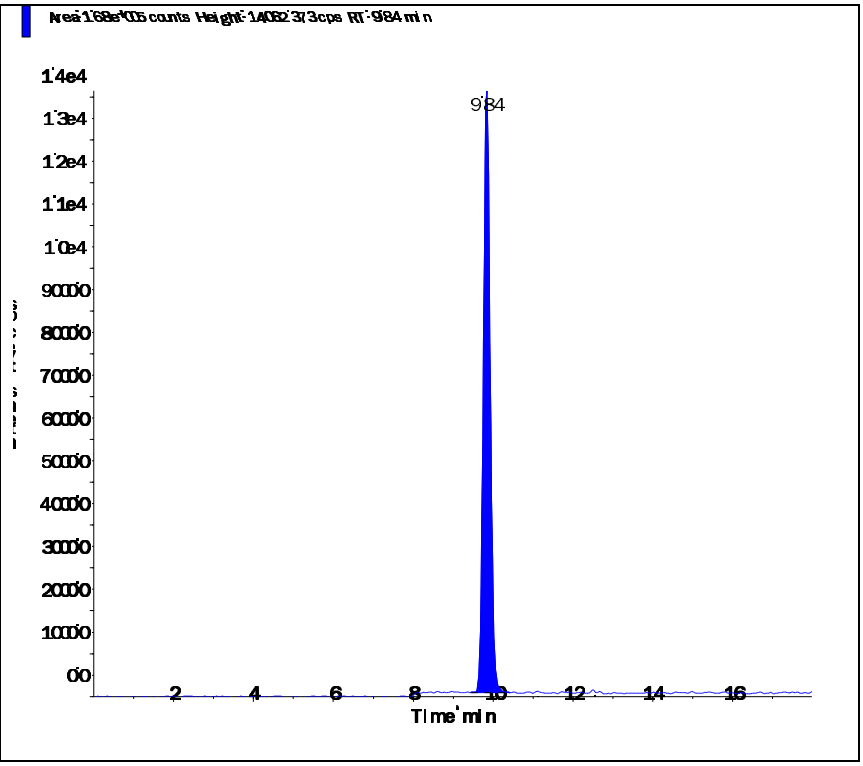

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

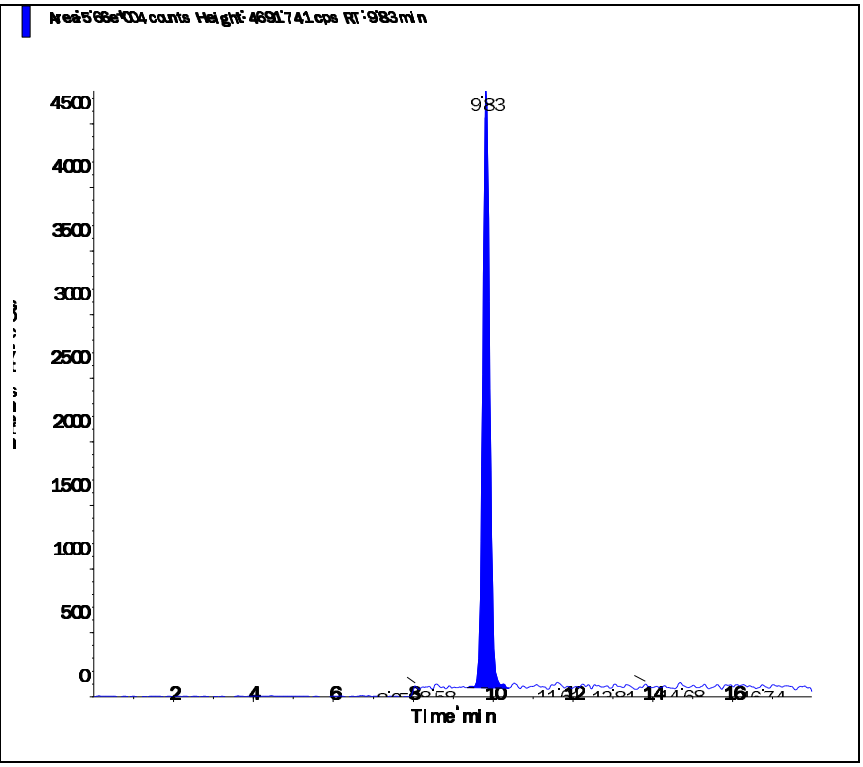

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Data File	LM34691.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

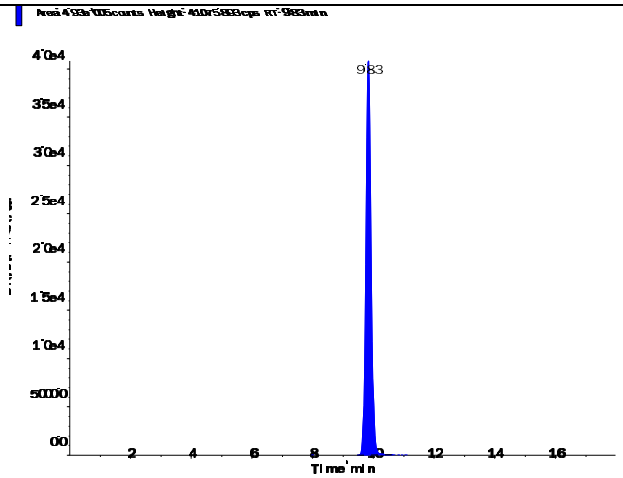

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 1.99 ng/ml Area Ratio: 0.669 Sample Type: (Standard)	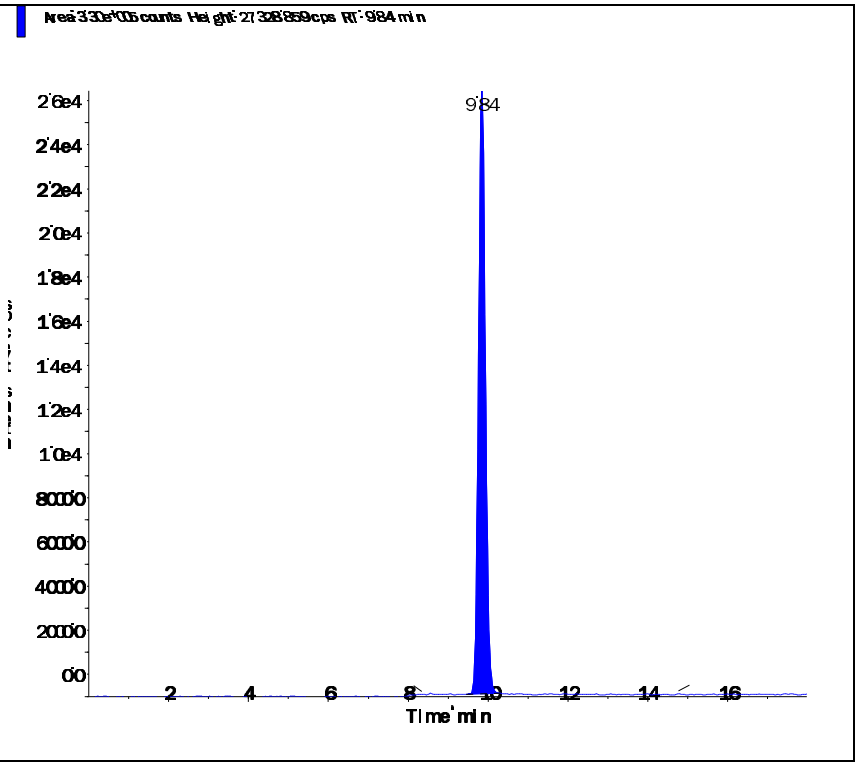
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 1.94 ng/ml Area Ratio: 0.219 Sample Type: (Standard)	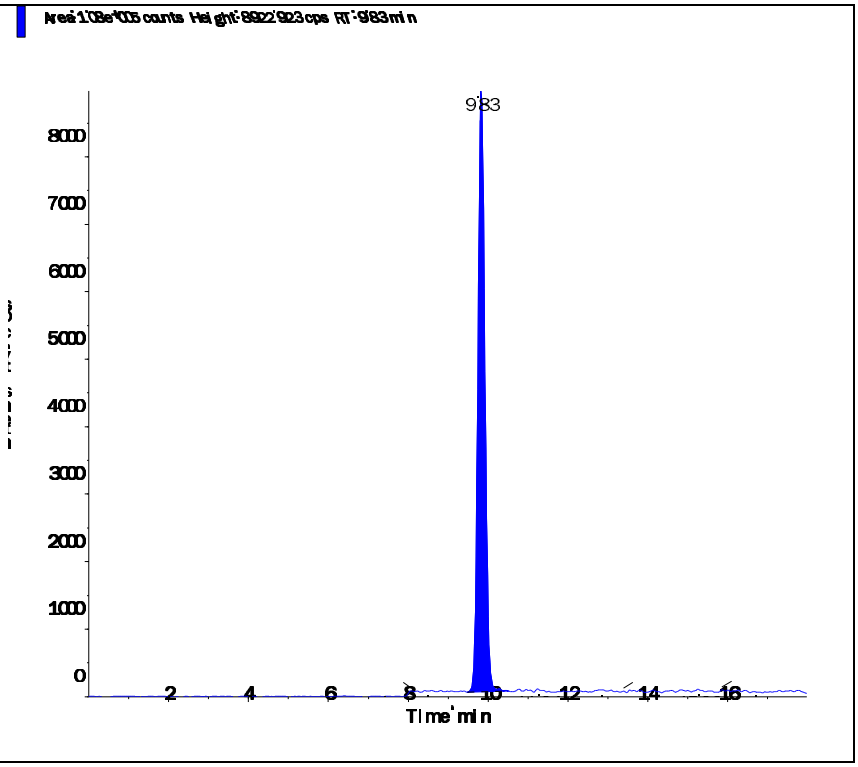

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Data File	LM34692.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

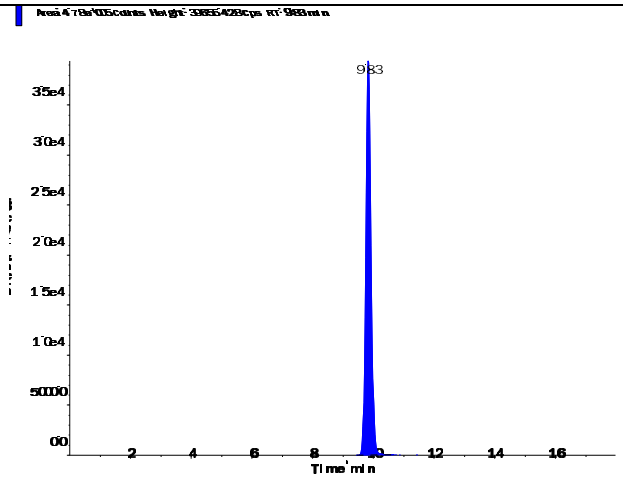

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

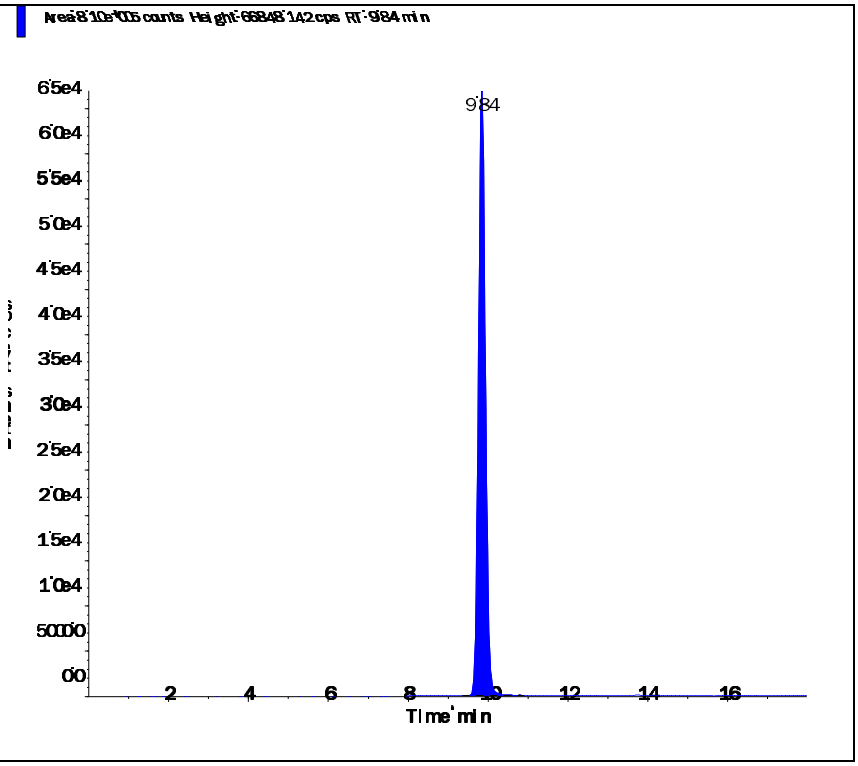

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

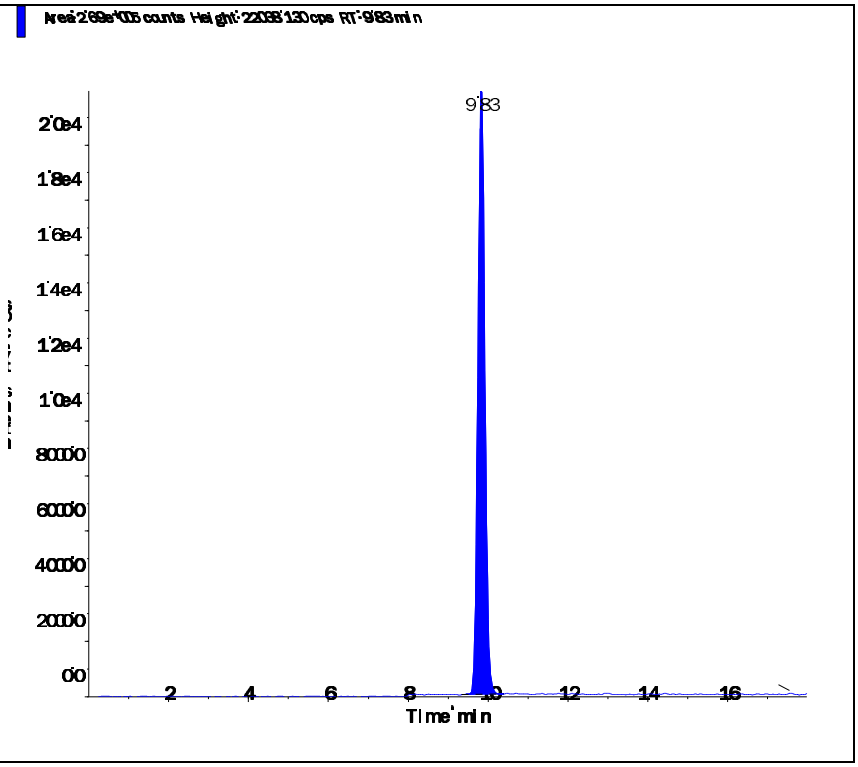

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Data File	LM34693.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

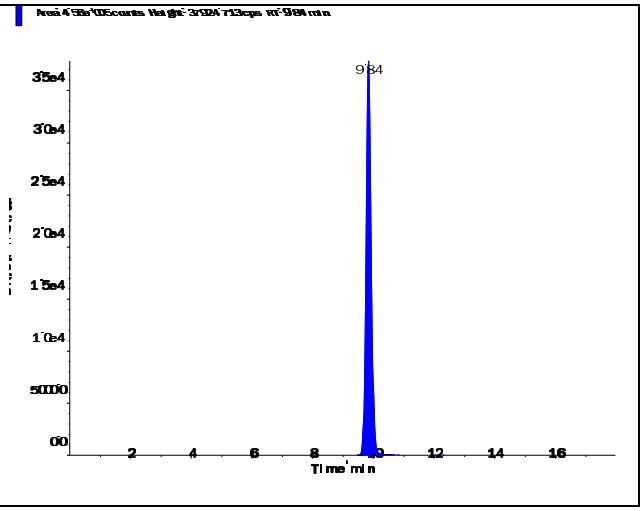

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 9.99 ng/ml Area Ratio: 3.36 Sample Type: (Standard)	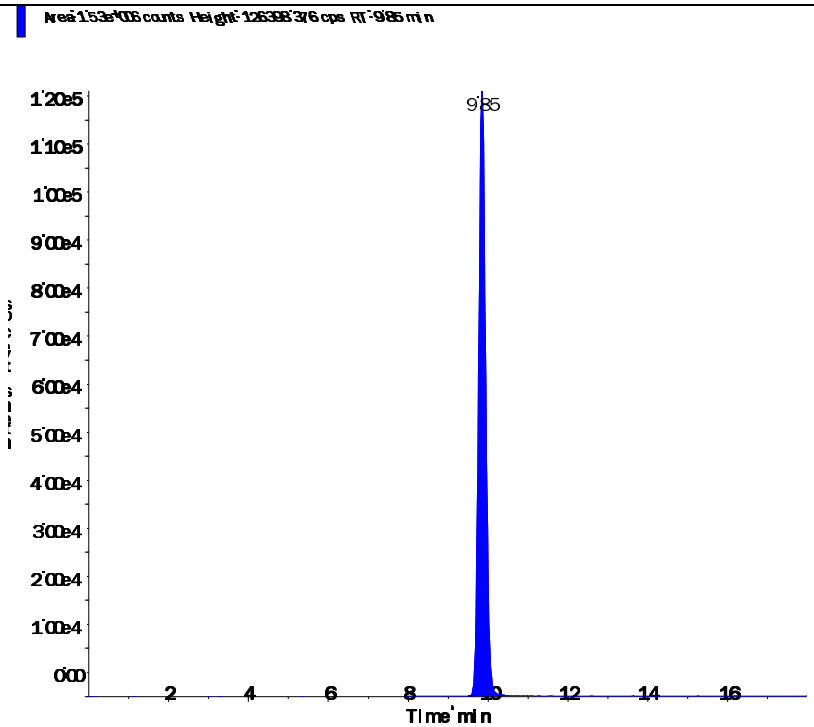
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 10.00 ng/ml Area Ratio: 1.122 Sample Type: (Standard)	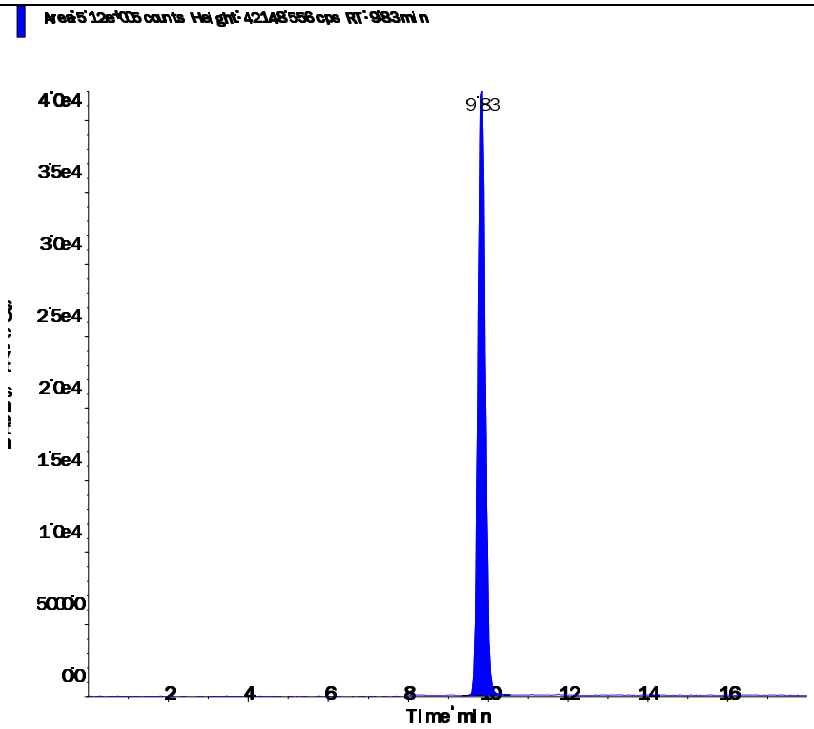

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Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

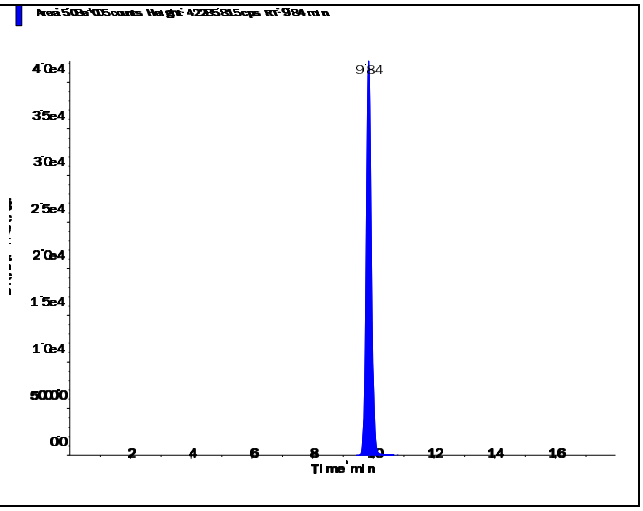

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.332
Sample Type:	(Quality Control)

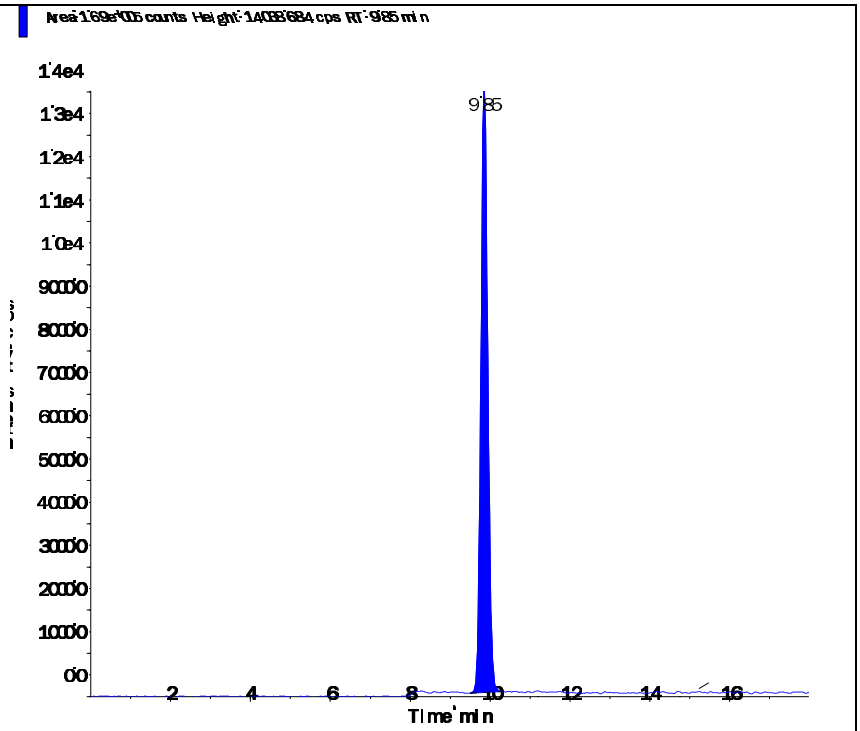

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

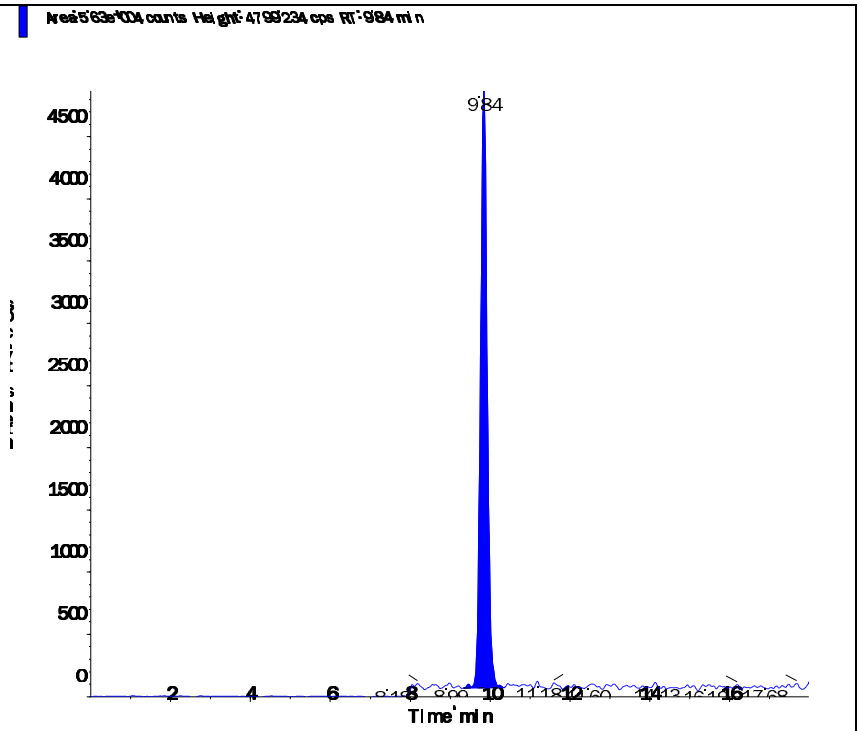

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Data File	LM35296.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 5:38:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35296.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 5:38:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.960e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.720e+05	9.65	1.00	1.03
Perchlorate conf	5.930e+04	9.64	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

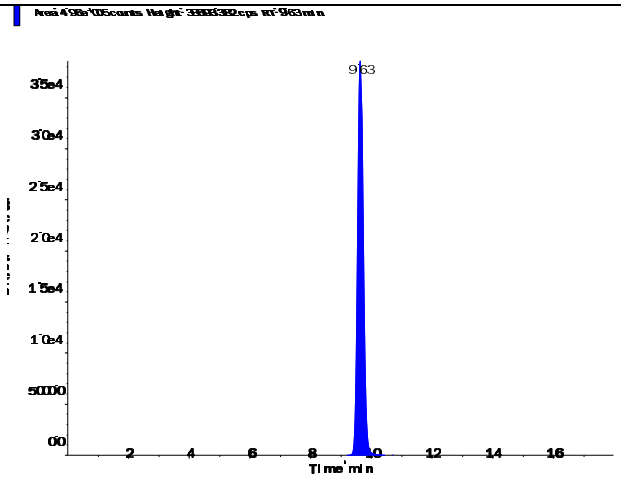

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.65 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.346
Sample Type:	(Quality Control)

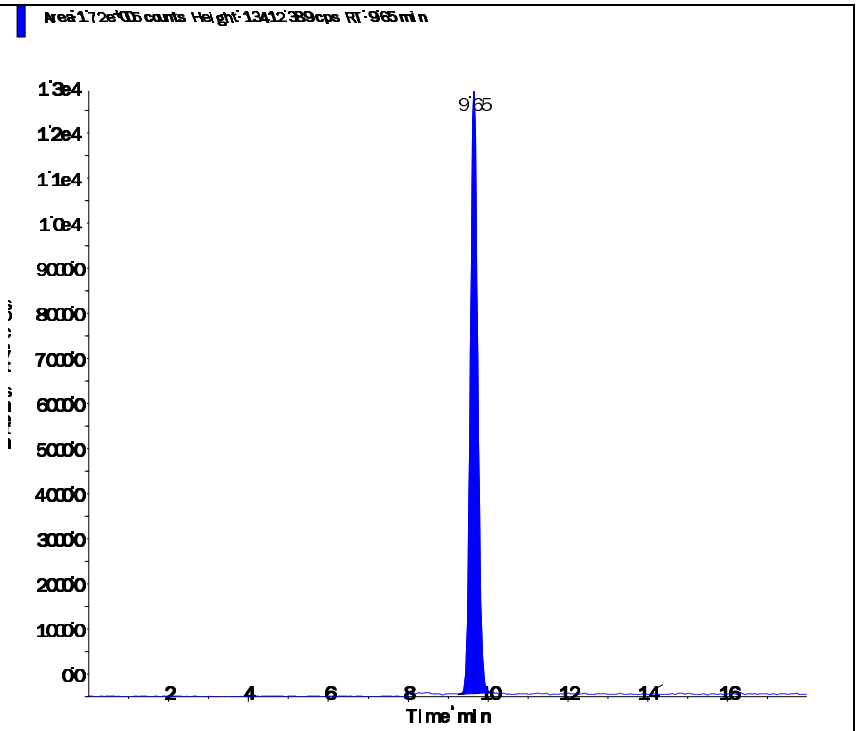

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

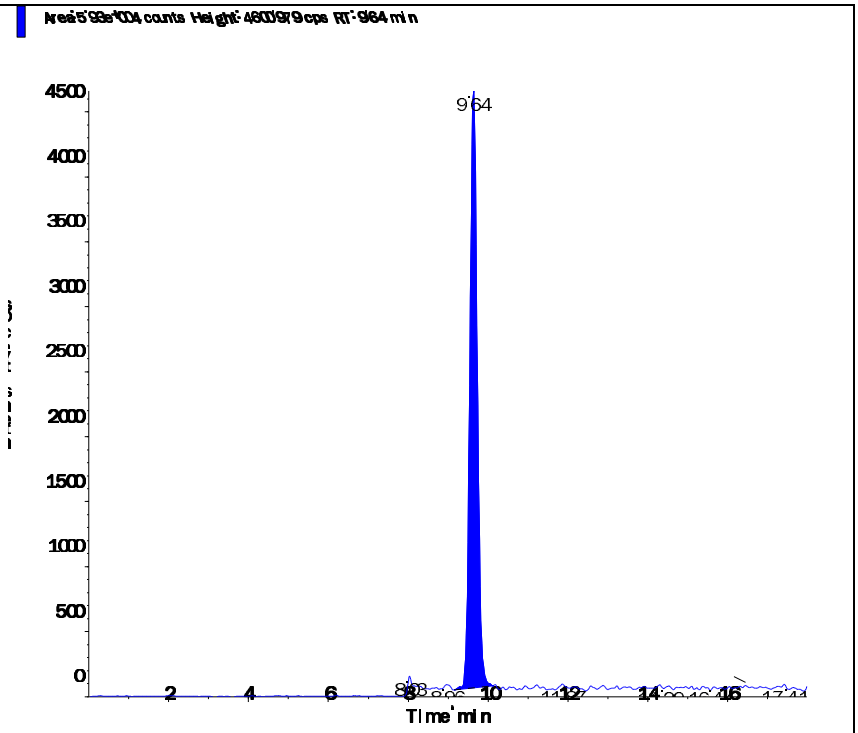

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Data File	LM35310.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 10:03:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35310.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 10:03:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.050e+05	9.62	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.800e+05	9.63	1.00	1.06
Perchlorate conf	6.050e+04	9.62	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.62(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

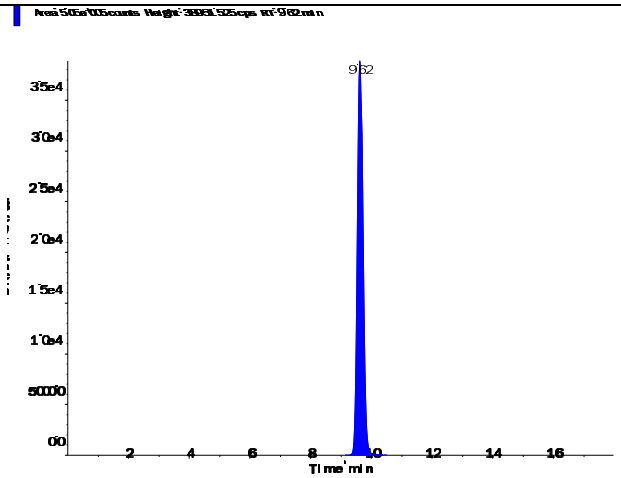

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.357
Sample Type:	(Quality Control)

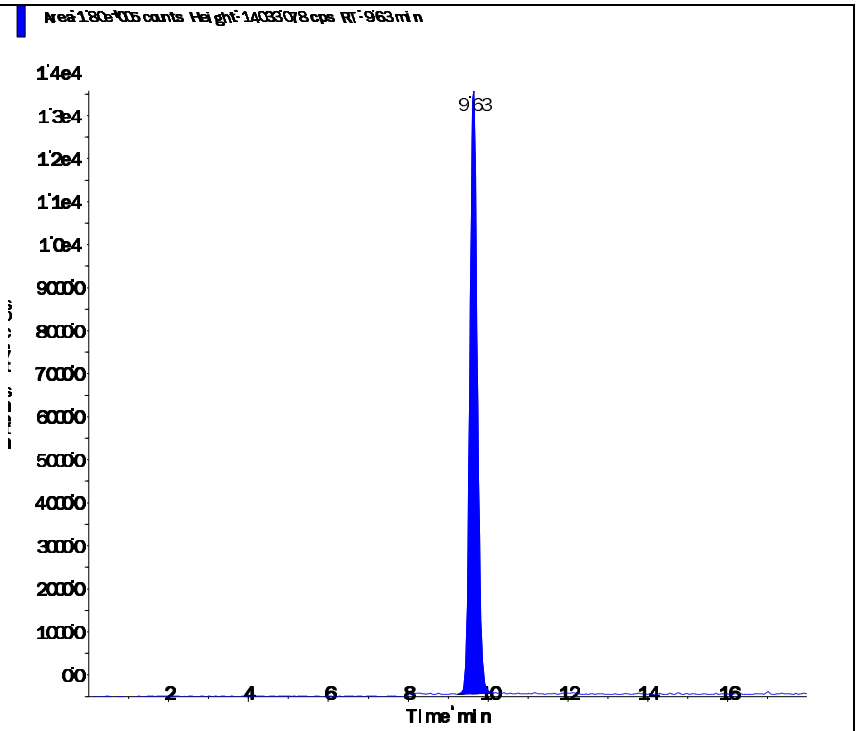

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.62 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.12
Sample Type:	(Quality Control)

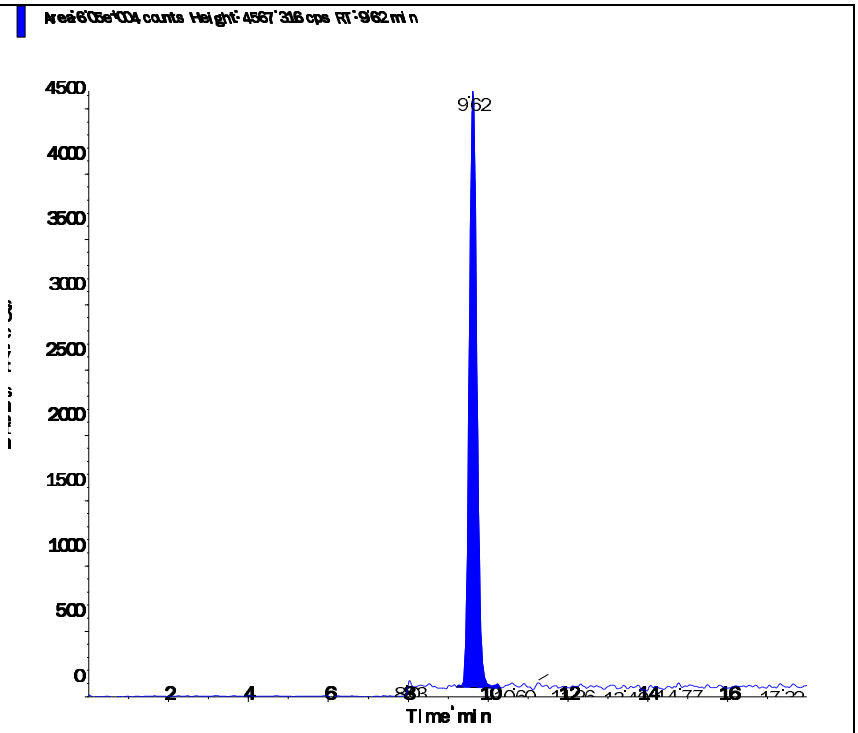

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Data File	LM35318.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/12/2016 12:35:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35318.wiff	**Injection Volume**	10.00
Acquisition Date	6/12/2016 12:35:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.62	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.740e+05	9.63	1.00	1.01
Perchlorate conf	6.160e+04	9.62	1.00	1.06

O18LP (Internal Standard)

RT (Exp. RT): 9.62(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

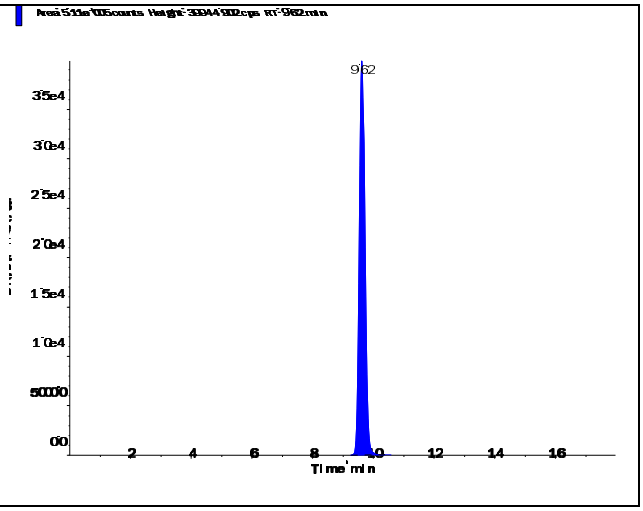

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.341
Sample Type:	(Quality Control)

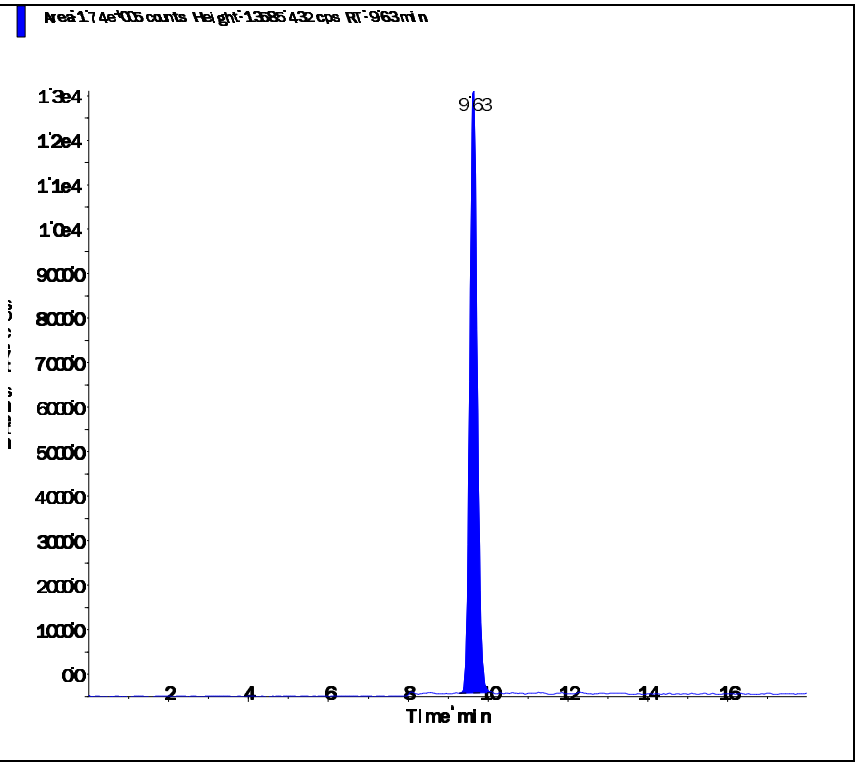

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.62 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.12
Sample Type:	(Quality Control)

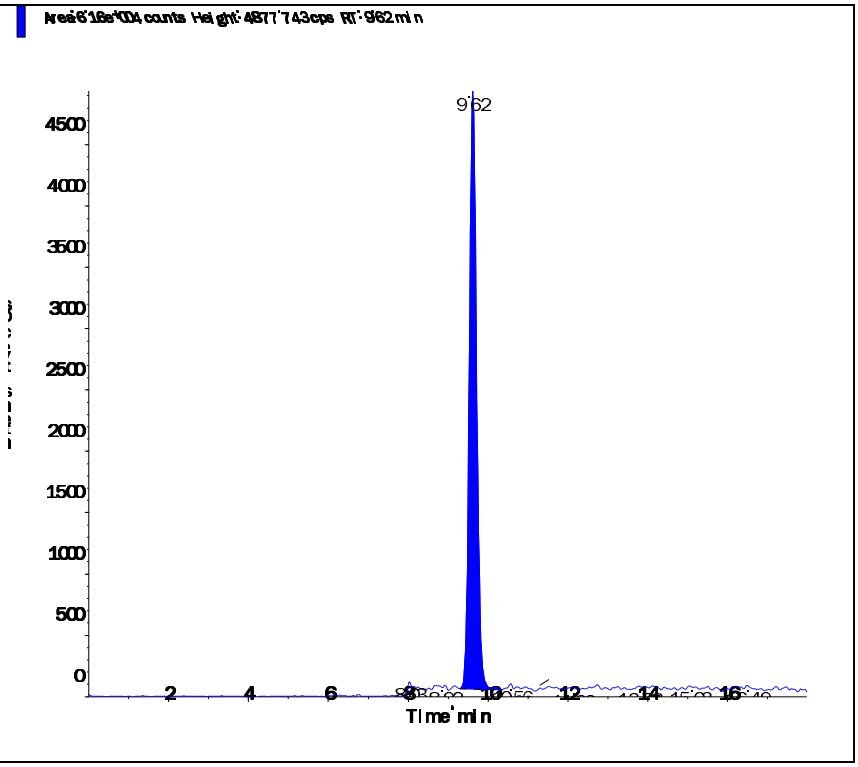

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Data File	LM35322.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/12/2016 9:03:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572372-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35322.wiff	**Injection Volume**	10.00
Acquisition Date	6/12/2016 9:03:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG572372-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.820e+05	9.60	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.660e+05	9.61	1.00	1.02
Perchlorate conf	5.860e+04	9.60	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 9.60(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

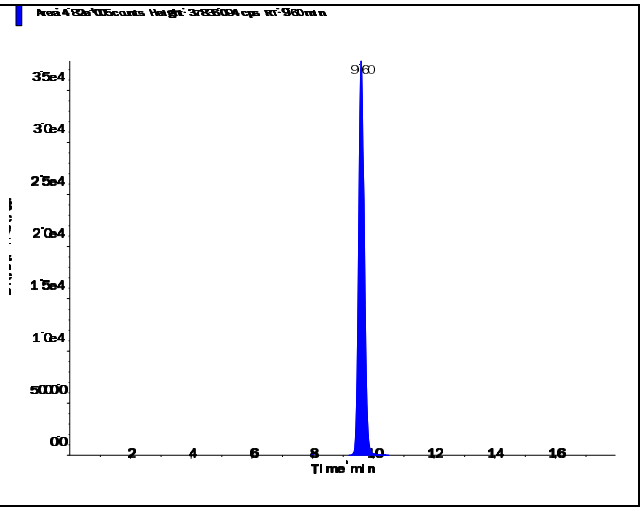

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.61 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.345
Sample Type:	(Quality Control)

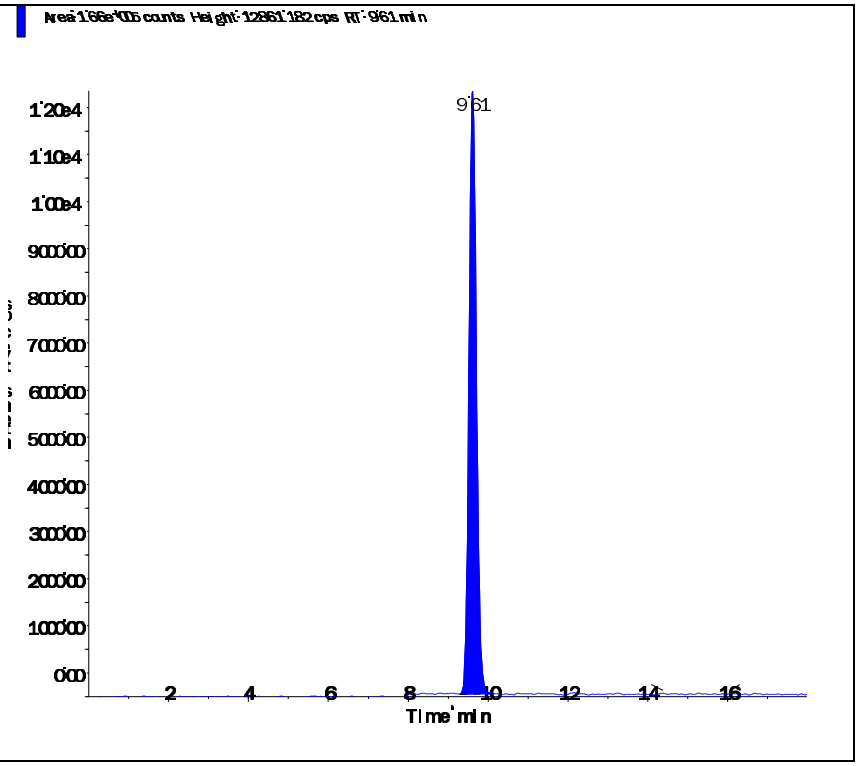

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.60 (9.84) min
Calculated conc:	1.07 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

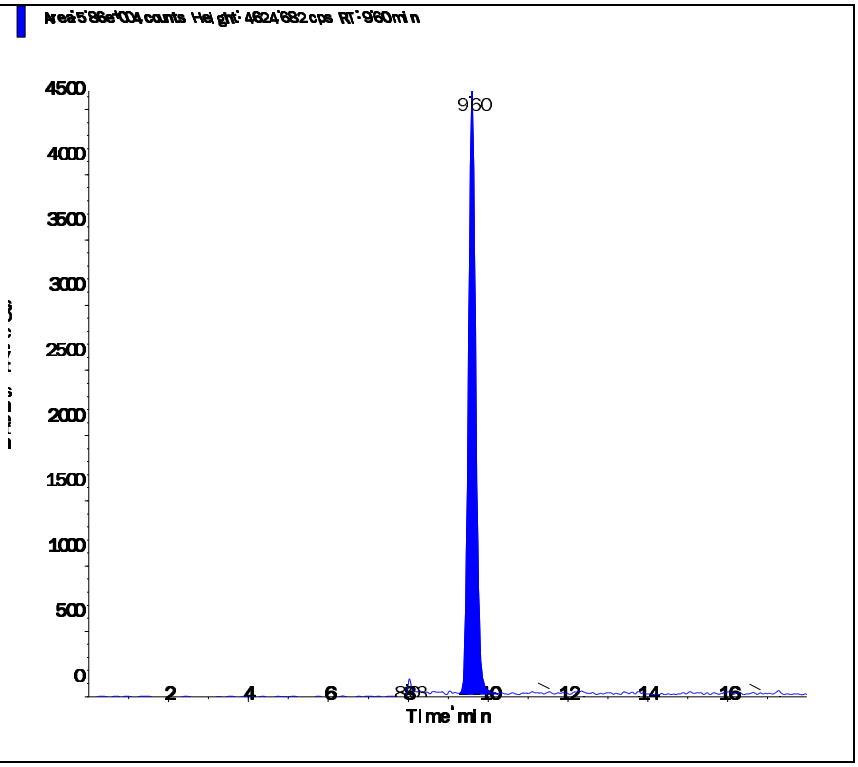

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Data File	LM35334.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/13/2016 12:50:29 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572372-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35334.wiff	**Injection Volume**	10.00
Acquisition Date	6/13/2016 12:50:29 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG572372-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.560e+05	9.60	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.900e+05	9.62	1.00	1.01
Perchlorate conf	6.390e+04	9.60	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.60(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

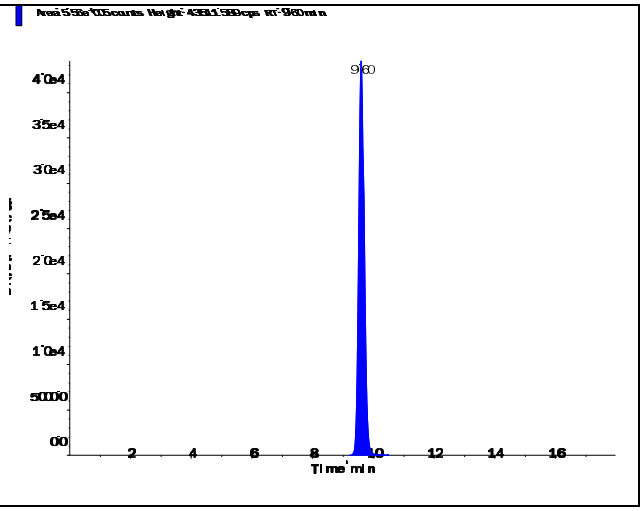

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.62 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.342
Sample Type:	(Quality Control)

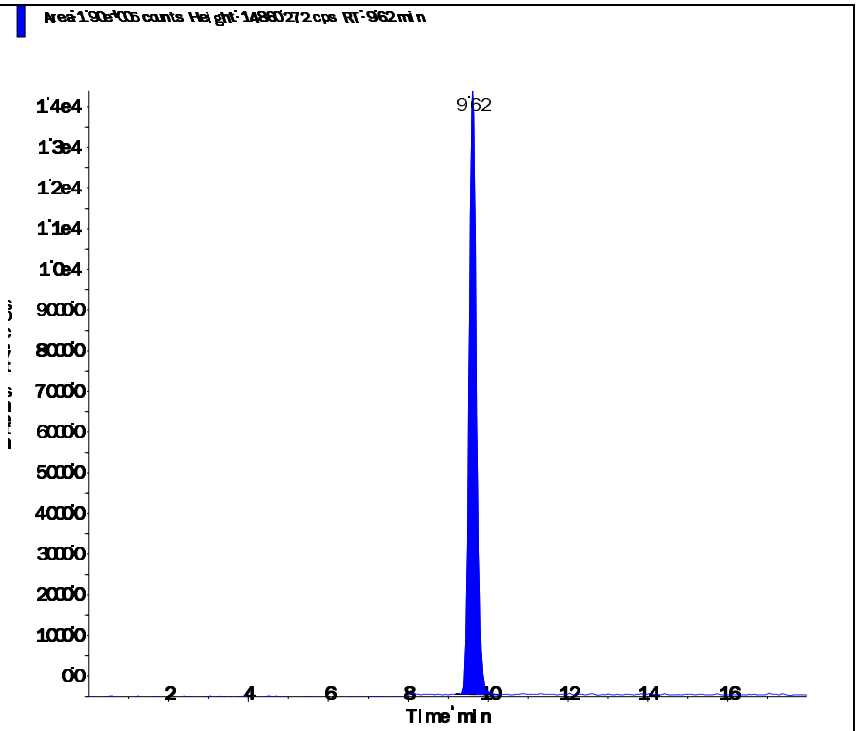

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.60 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.115
Sample Type:	(Quality Control)

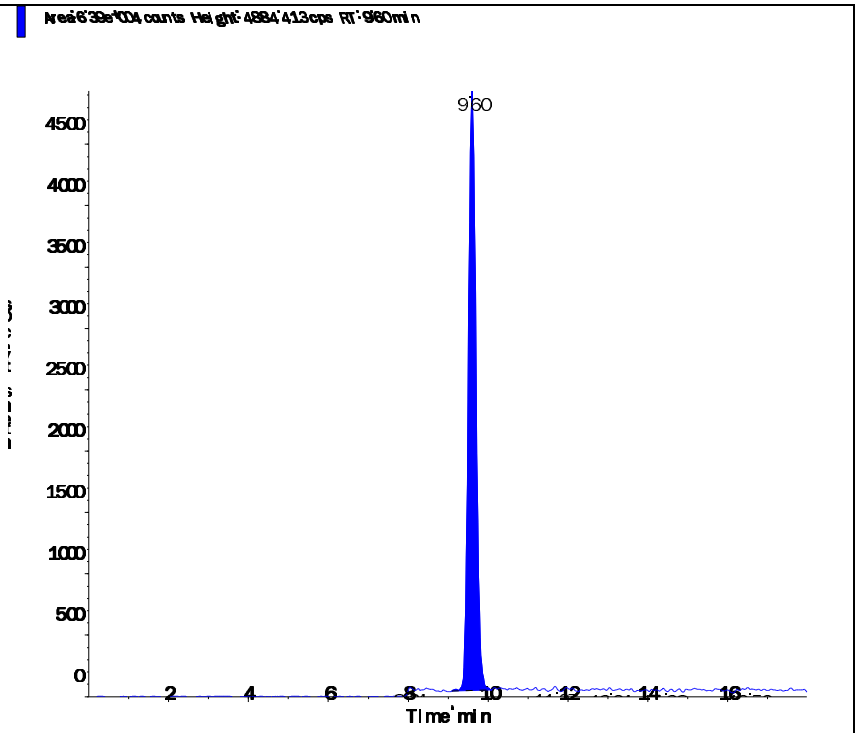

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Data File	LM35338.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/13/2016 8:09:16 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572372-06 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35338.wiff	**Injection Volume**	10.00
Acquisition Date	6/13/2016 8:09:16 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG572372-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.380e+05	9.57	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.890e+05	9.58	1.00	1.04
Perchlorate conf	6.470e+04	9.57	1.00	1.06

O18LP (Internal Standard)

RT (Exp. RT): 9.57(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

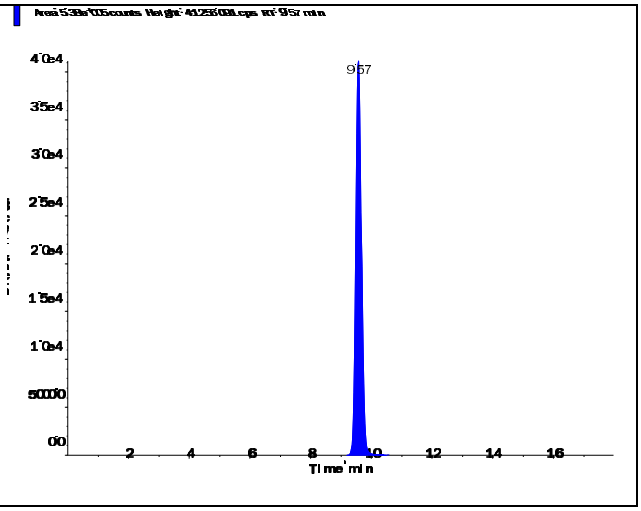

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.58 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.351
Sample Type:	(Quality Control)

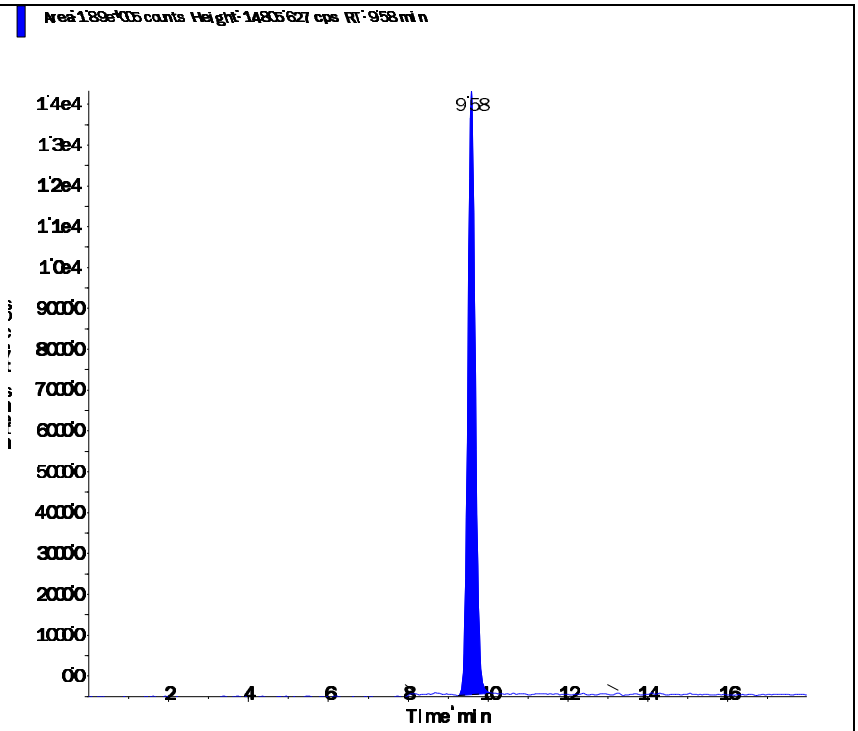

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.57 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.12
Sample Type:	(Quality Control)

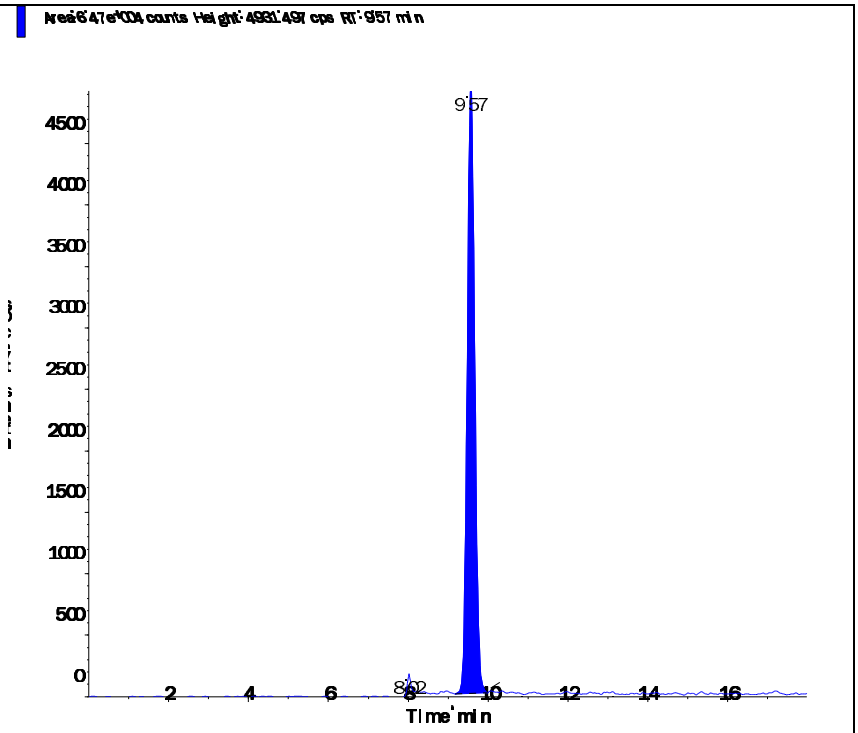

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Data File	LM35341.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/13/2016 9:06:40 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572372-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35341.wiff	**Injection Volume**	10.00
Acquisition Date	6/13/2016 9:06:40 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG572372-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.550e+05	9.59	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.920e+05	9.60	1.00	1.02
Perchlorate conf	6.590e+04	9.59	1.00	1.04

O18LP (Internal Standard)

RT (Exp. RT): 9.59(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

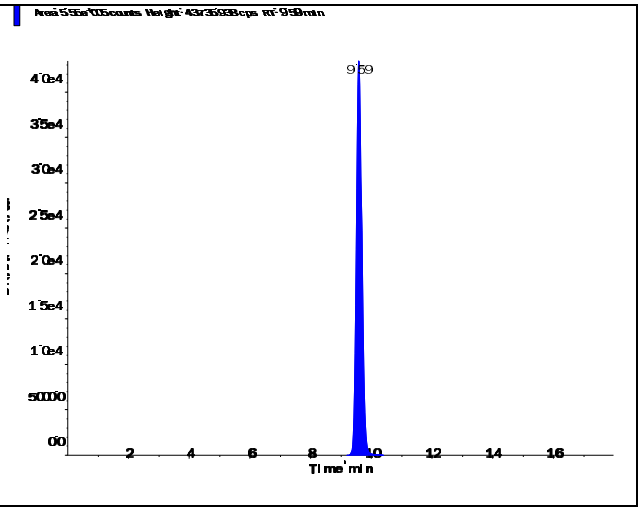

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.60 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.346
Sample Type:	(Quality Control)

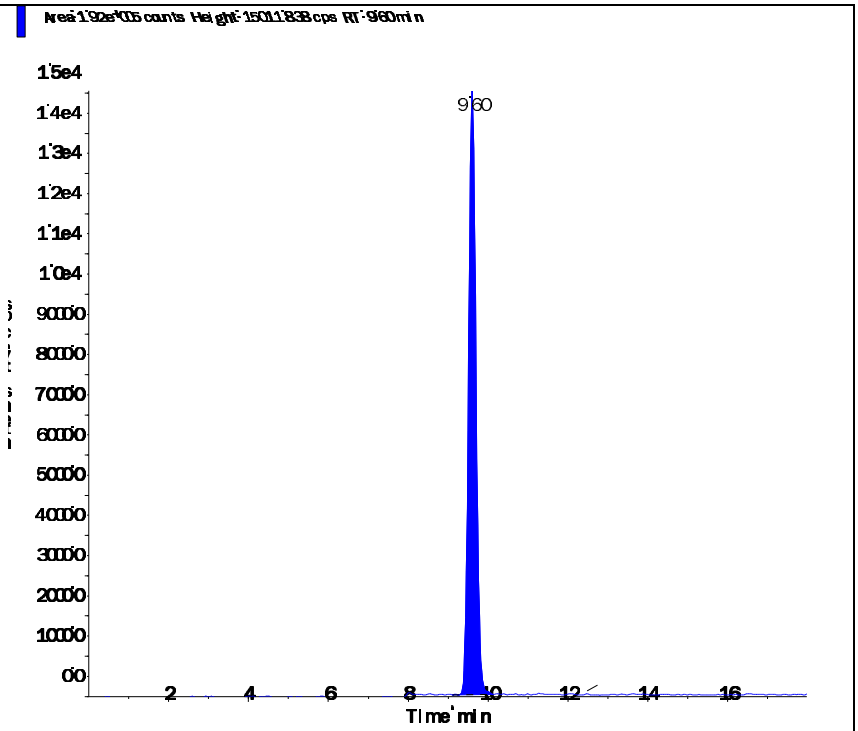

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.59 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

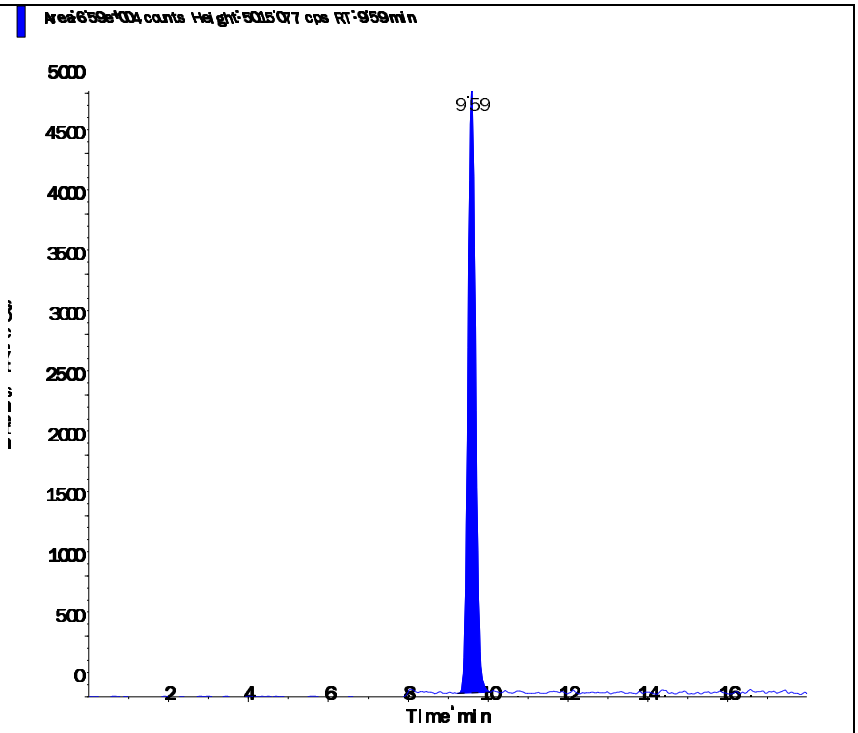

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Data File	LM35299.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 6:35:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572350-05 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35299.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 6:35:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572350-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.960e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.510e+04	9.68	N/A	0.207
Perchlorate conf	1.290e+04	9.67	N/A	0.213

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

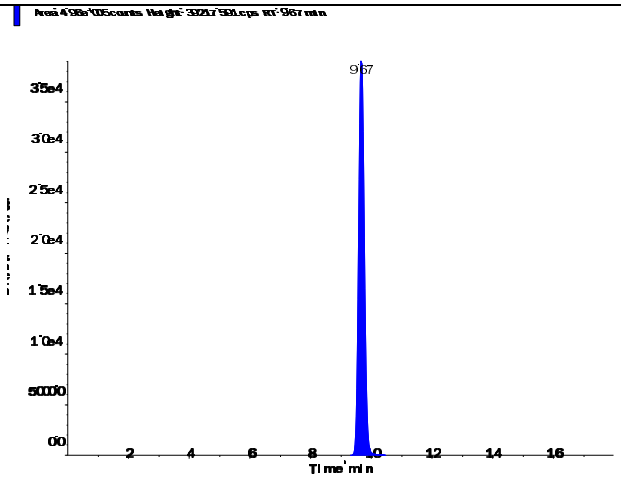

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.68 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

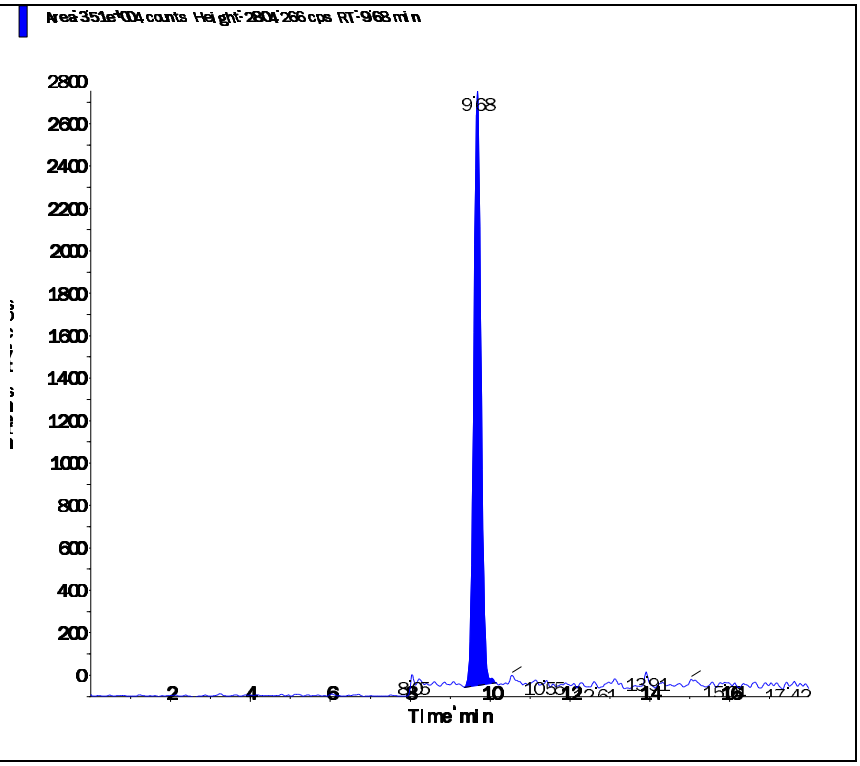

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.67 (9.84) min
Calculated conc:	0.213 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

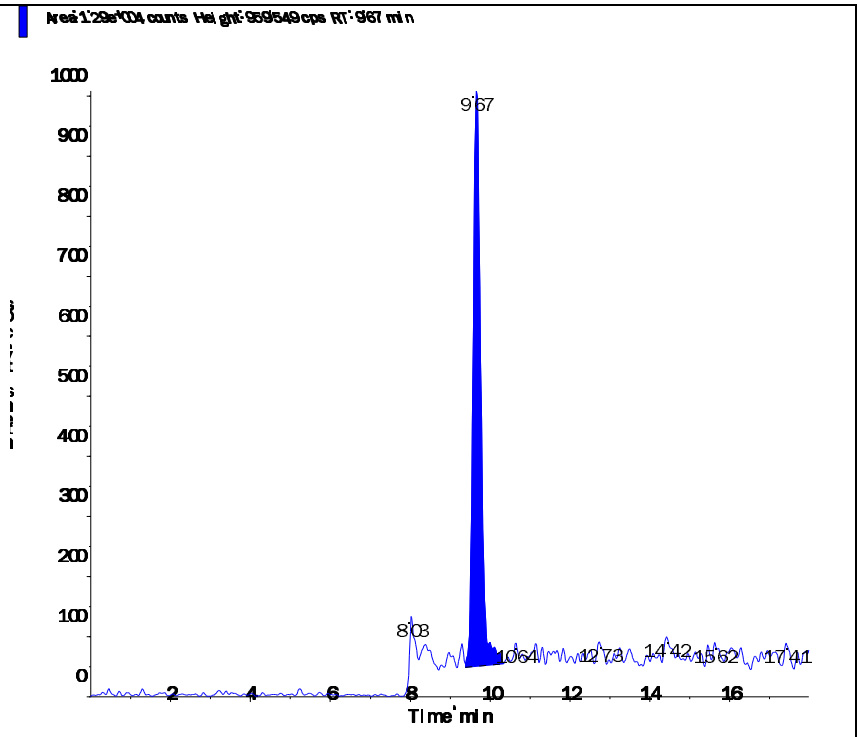

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Data File	LM35311.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 10:22:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572350-06 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35311.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 10:22:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572350-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.090e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.780e+04	9.67	N/A	0.217
Perchlorate conf	1.230e+04	9.67	N/A	0.195

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

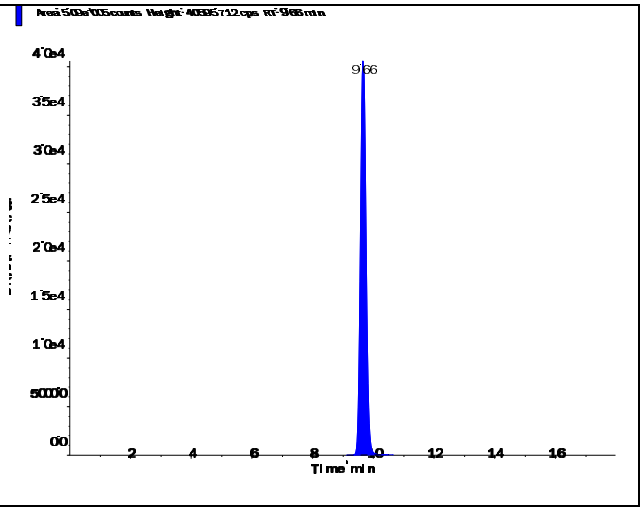

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.67 (9.84) min
Calculated conc:	0.217 ng/ml
Area Ratio:	0.074
Sample Type:	(Unknown)

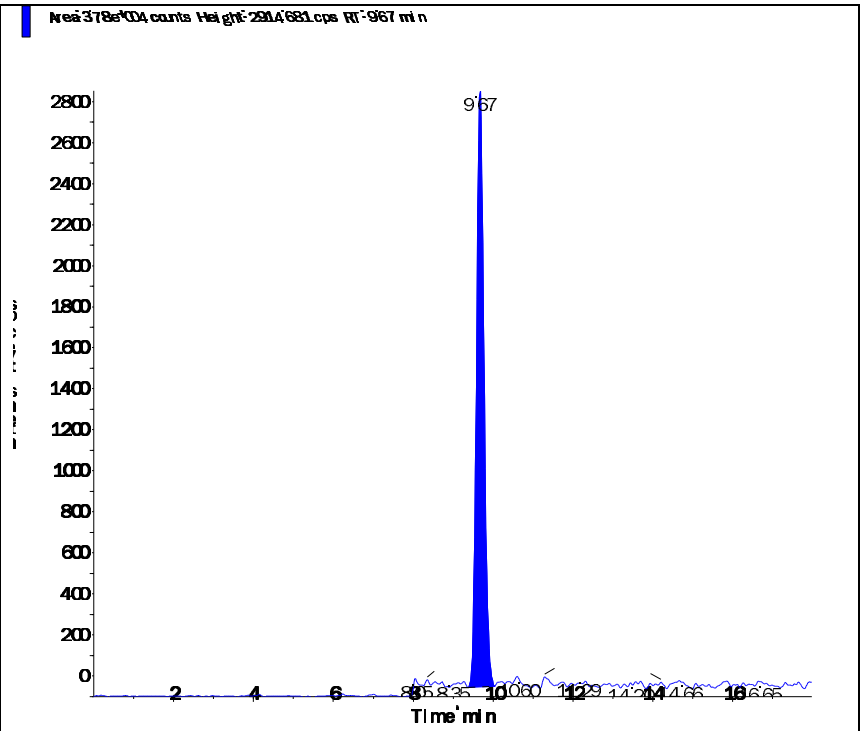

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.67 (9.84) min
Calculated conc:	0.195 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

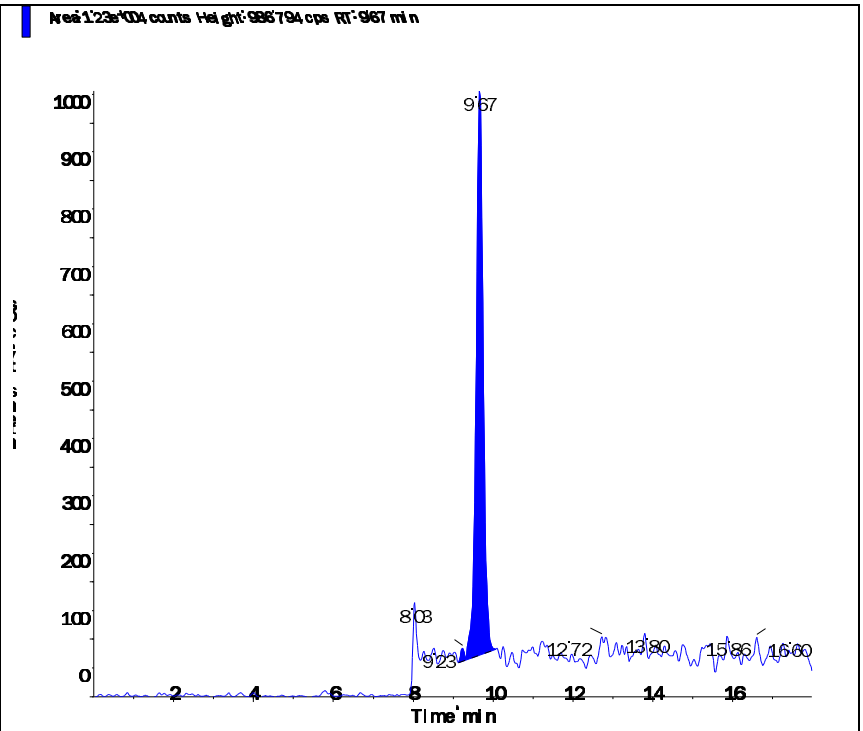

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Data File	LM35319.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/12/2016 12:54:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572350-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35319.wiff	**Injection Volume**	10.00
Acquisition Date	6/12/2016 12:54:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572350-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.810e+04	9.67	N/A	0.219
Perchlorate conf	1.300e+04	9.65	N/A	0.209

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

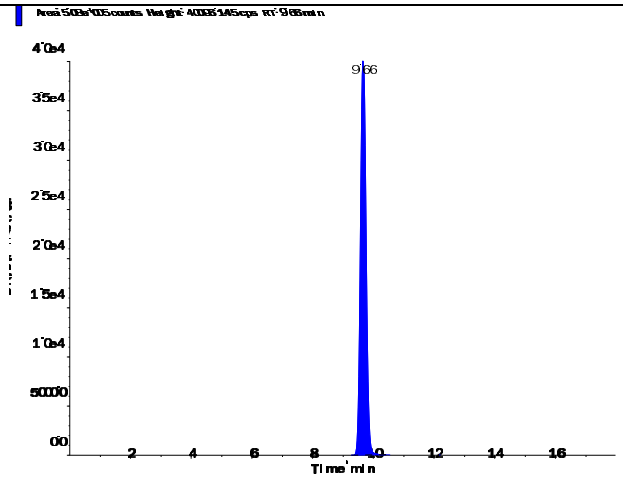

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.67 (9.84) min Calculated conc: 0.219 ng/ml Area Ratio: 0.075 Sample Type: (Unknown)	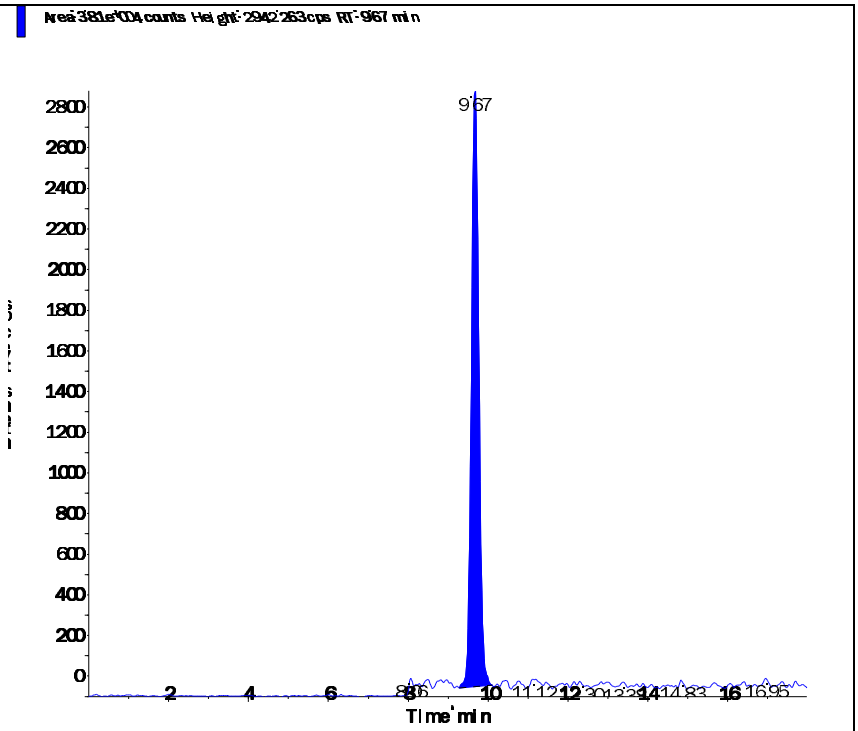
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.65 (9.84) min Calculated conc: 0.209 ng/ml Area Ratio: 0.026 Sample Type: (Unknown)	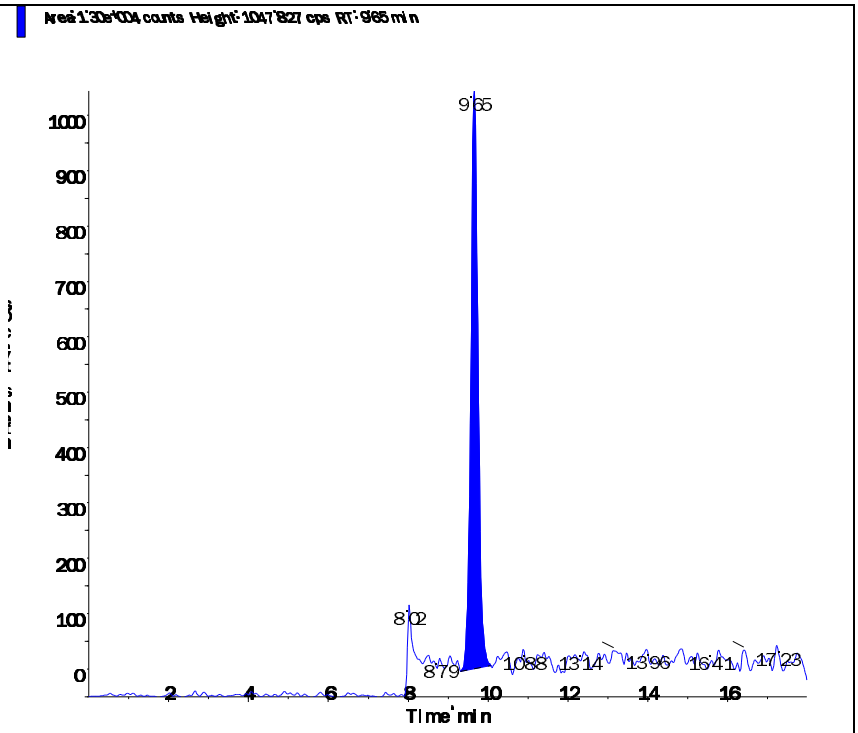

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Data File	LM35323.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/12/2016 9:22:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572350-08 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35323.wiff	**Injection Volume**	10.00
Acquisition Date	6/12/2016 9:22:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG572350-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.920e+05	9.64	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.600e+04	9.65	N/A	0.214
Perchlorate conf	1.210e+04	9.64	N/A	0.199

O18LP (Internal Standard)

RT (Exp. RT): 9.64(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

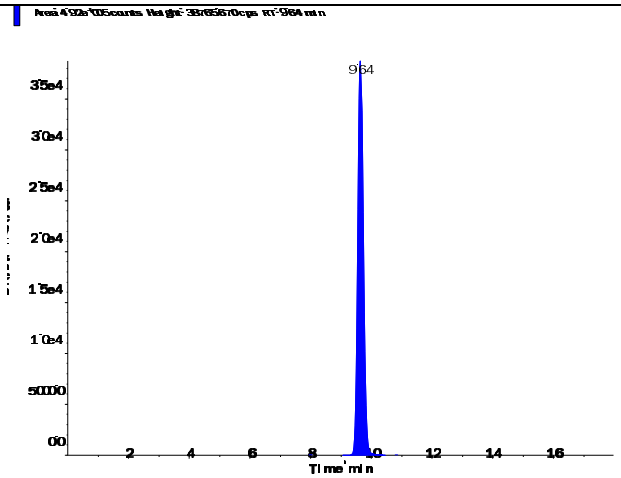

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.65 (9.84) min Calculated conc: 0.214 ng/ml Area Ratio: 0.073 Sample Type: (Unknown)	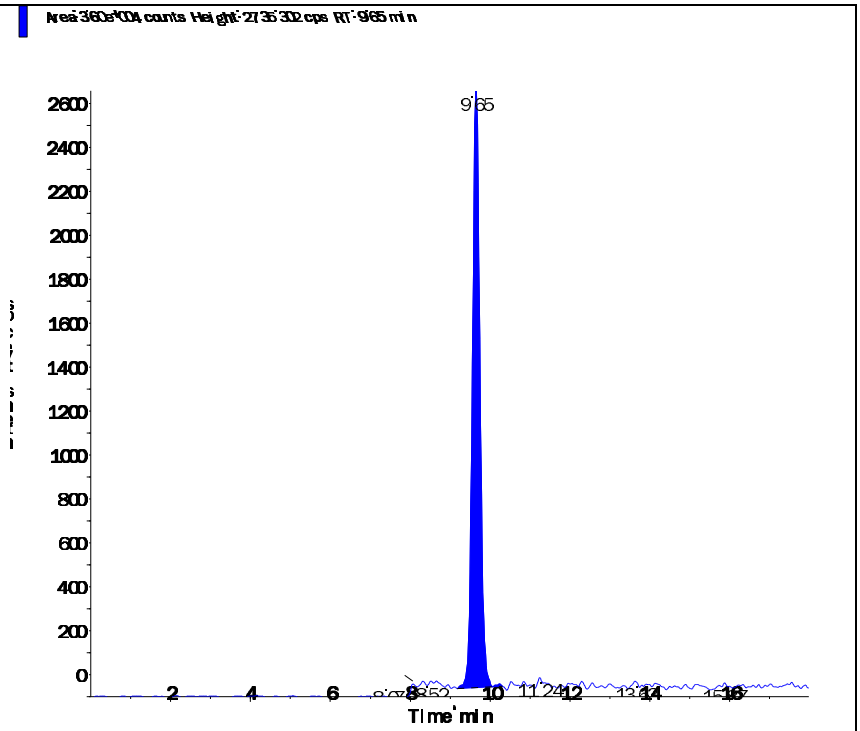
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.64 (9.84) min Calculated conc: 0.199 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	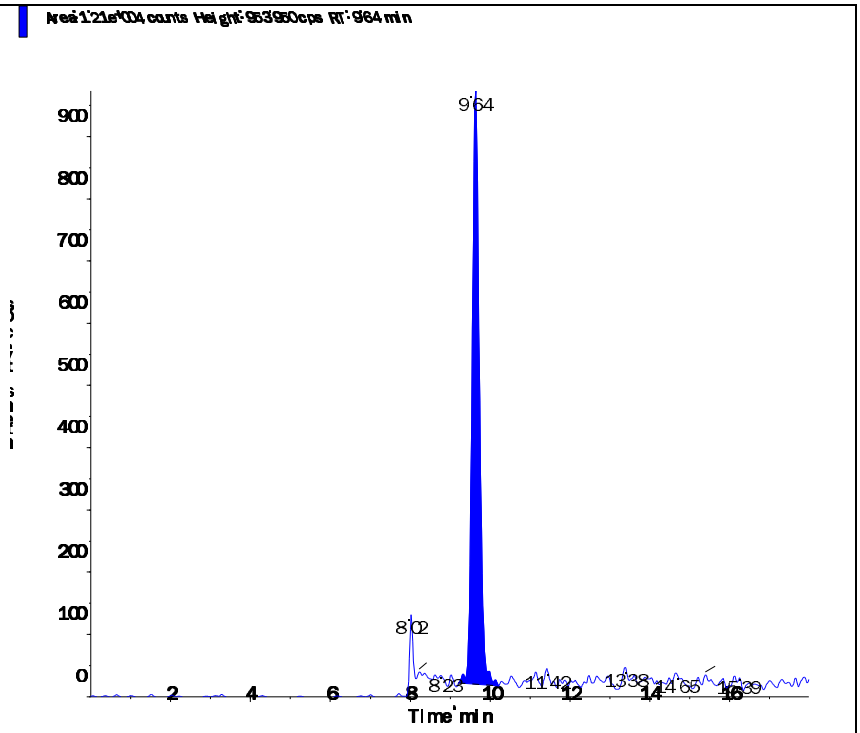

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Printed: 6/13/2016 10:34 AM

Data File	LM35335.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/13/2016 1:09:24 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572350-09 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35335.wiff	**Injection Volume**	10.00
Acquisition Date	6/13/2016 1:09:24 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG572350-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.570e+05	9.64	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.120e+04	9.64	N/A	0.216
Perchlorate conf	1.400e+04	9.63	N/A	0.205

O18LP (Internal Standard)

RT (Exp. RT): 9.64(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

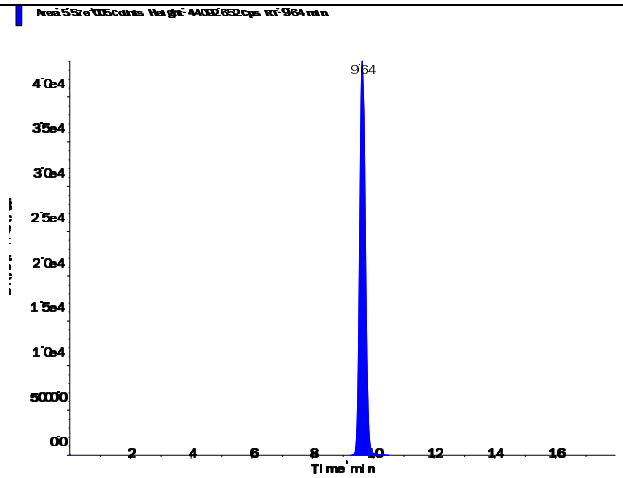

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	0.216 ng/ml
Area Ratio:	0.074
Sample Type:	(Unknown)

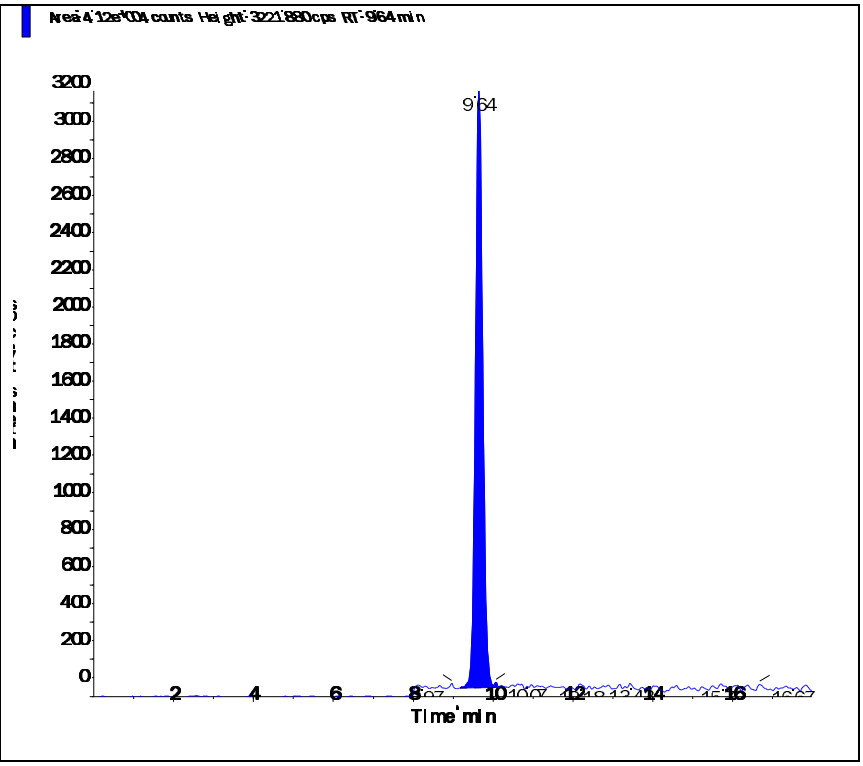

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	0.205 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

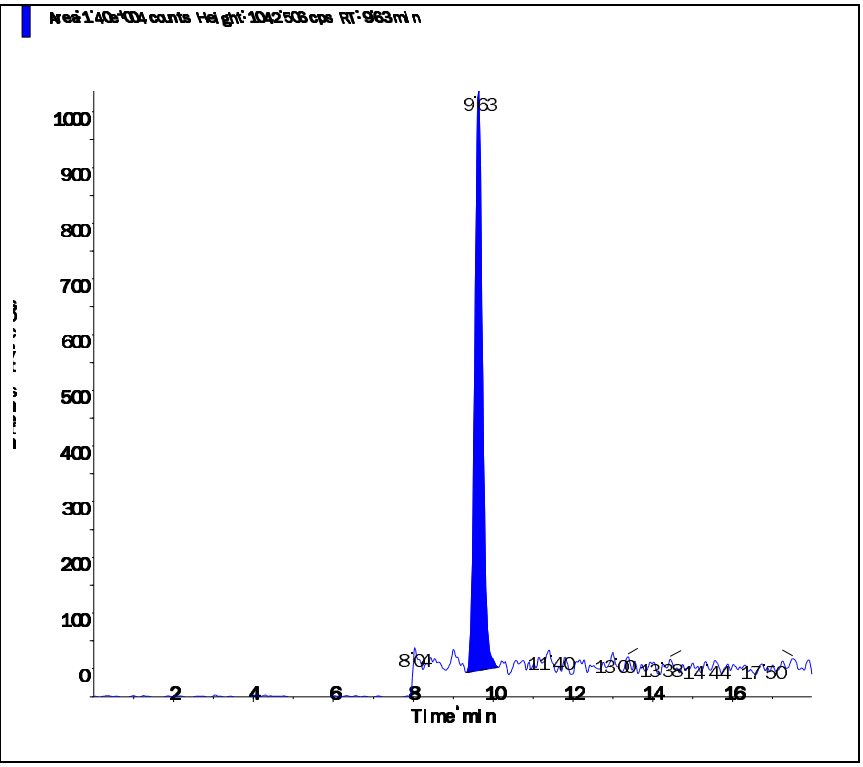

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Data File	LM35339.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/13/2016 8:28:11 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572350-10 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35339.wiff	**Injection Volume**	10.00
Acquisition Date	6/13/2016 8:28:11 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG572350-10	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.540e+05	9.61	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.990e+04	9.62	N/A	0.21
Perchlorate conf	1.380e+04	9.60	N/A	0.203

O18LP (Internal Standard)

RT (Exp. RT): 9.61(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

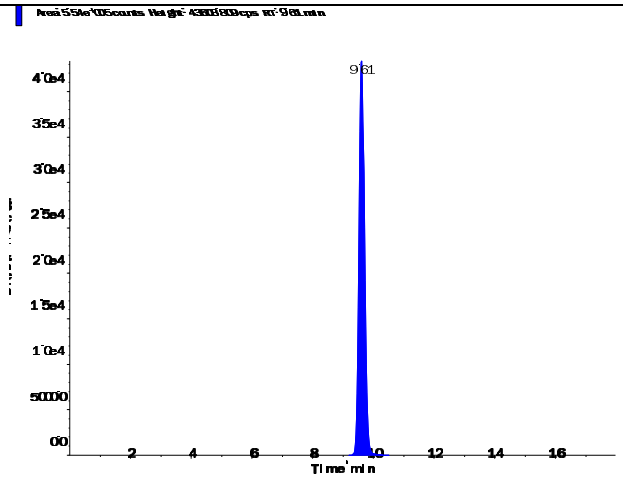

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.62 (9.84) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

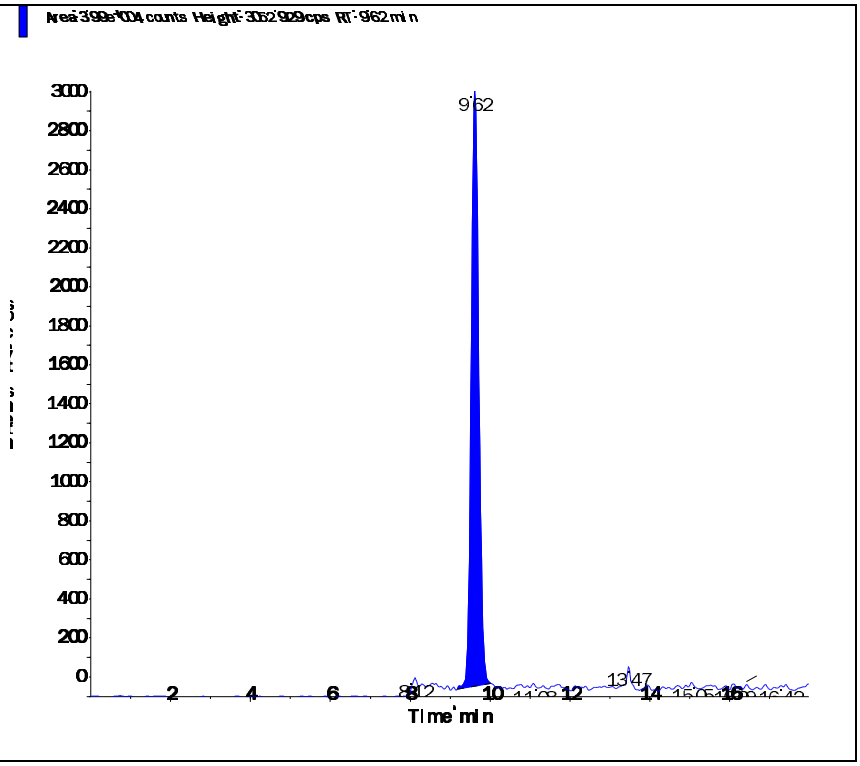

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.60 (9.84) min
Calculated conc:	0.203 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

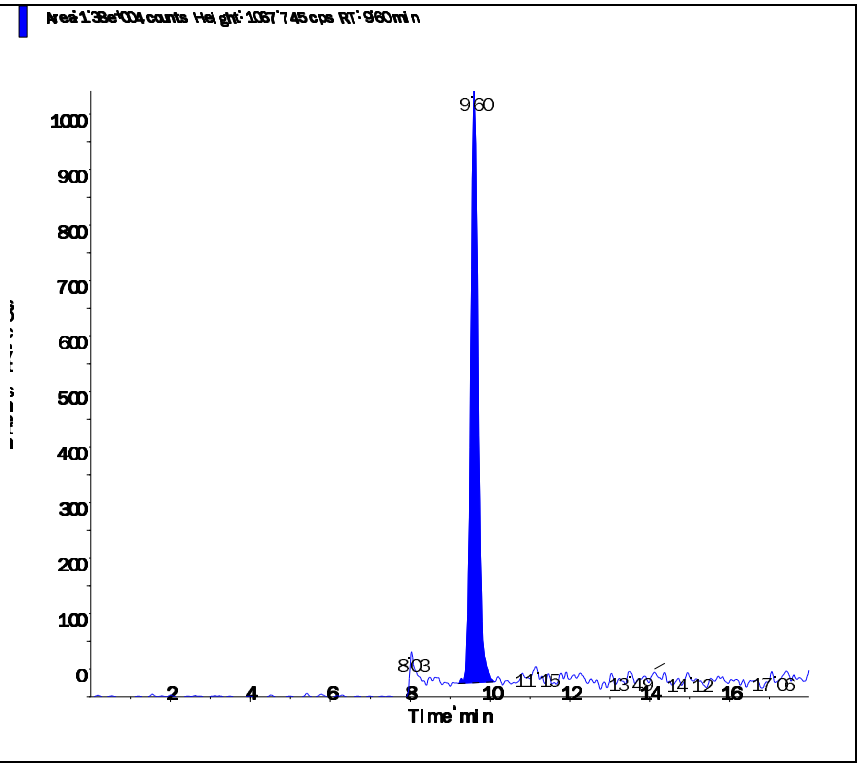

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Data File	LM35342.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/13/2016 9:25:30 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572350-10 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35342.wiff	**Injection Volume**	10.00
Acquisition Date	6/13/2016 9:25:30 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG572350-10	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.600e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.210e+04	9.64	N/A	0.22
Perchlorate conf	1.430e+04	9.63	N/A	0.209

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

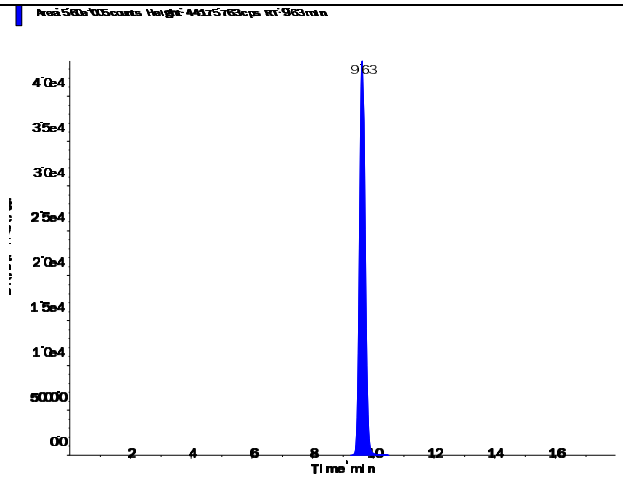

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	0.22 ng/ml
Area Ratio:	0.075
Sample Type:	(Unknown)

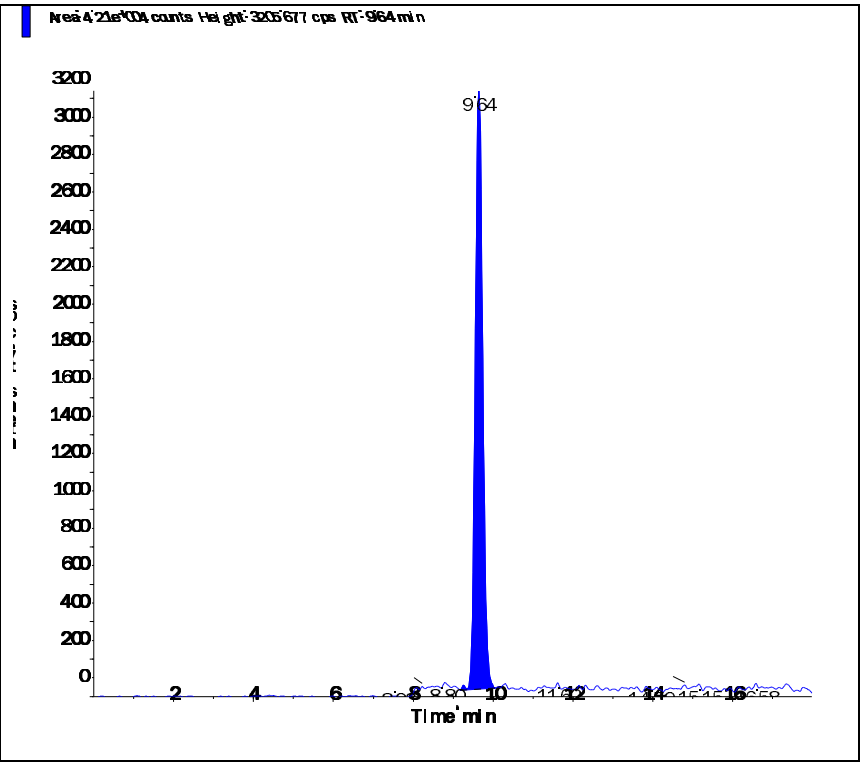

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	0.209 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

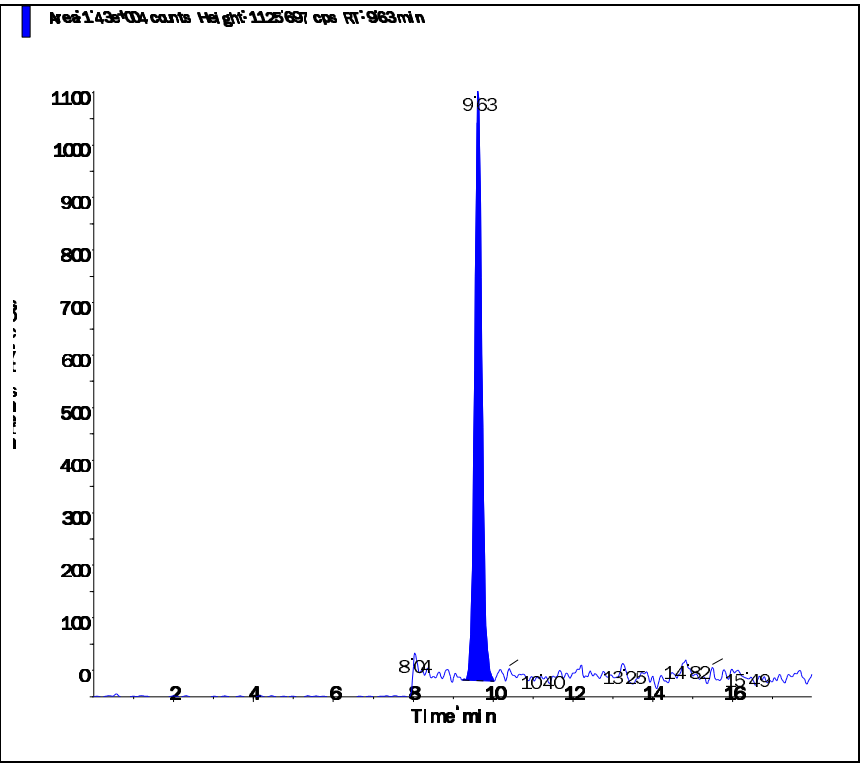

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Data File	LM35298.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 6:16:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-06 CCB	**Injection Vial**	1.00
Data File	LM35298.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 6:16:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.040e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

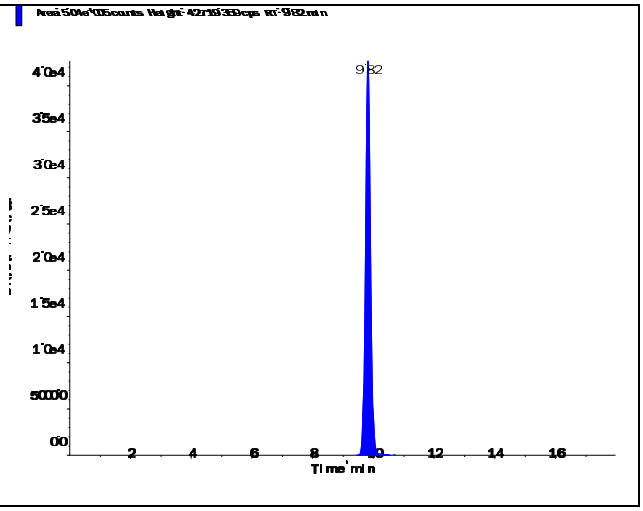

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

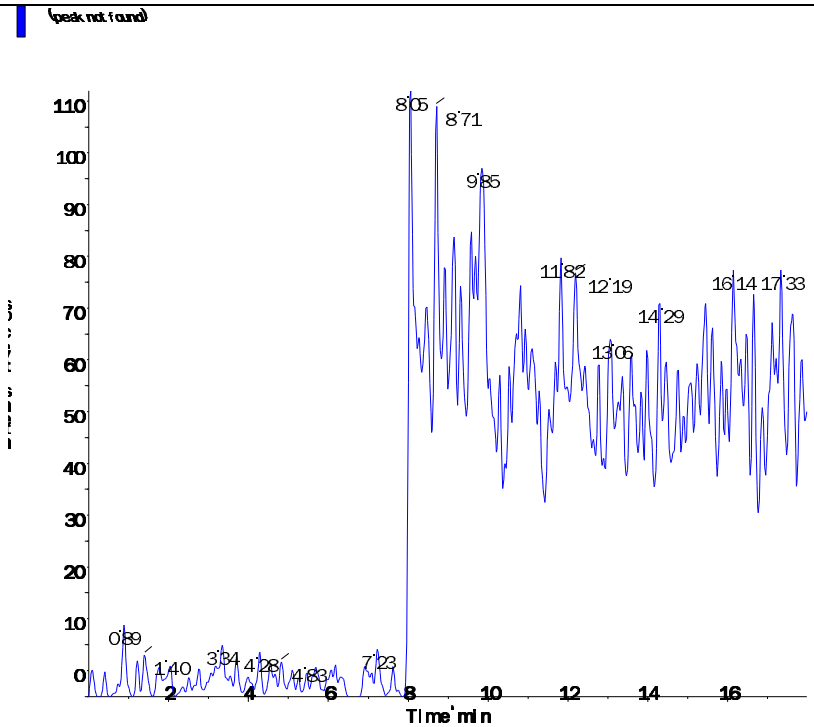

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

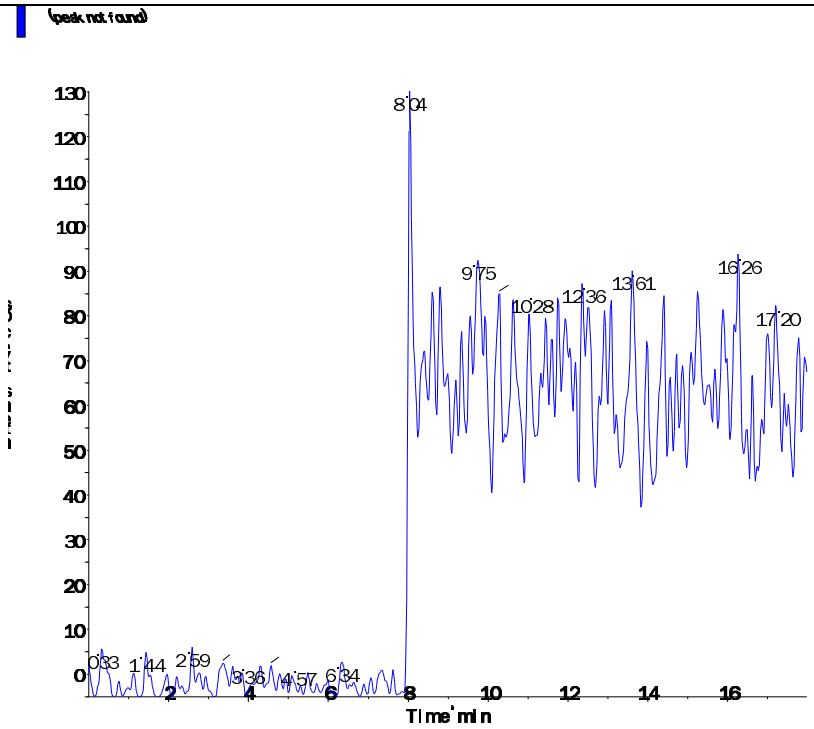

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Created with Analyst Reporter
Printed: 6/12/2016 9:47 PM

Data File	LM35312.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 10:41:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-08 CCB	**Injection Vial**	1.00
Data File	LM35312.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 10:41:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.190e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

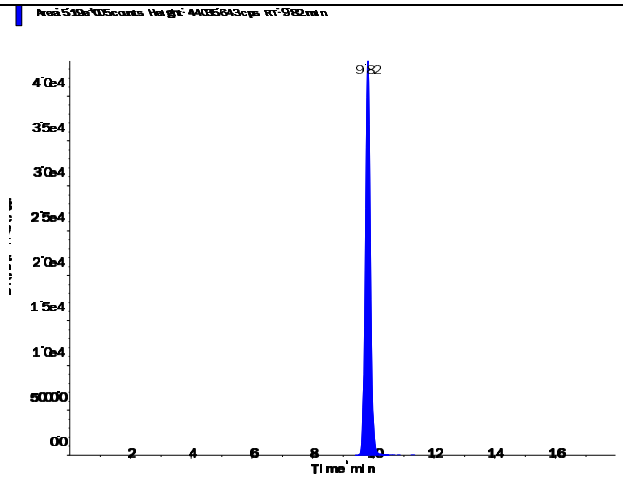

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

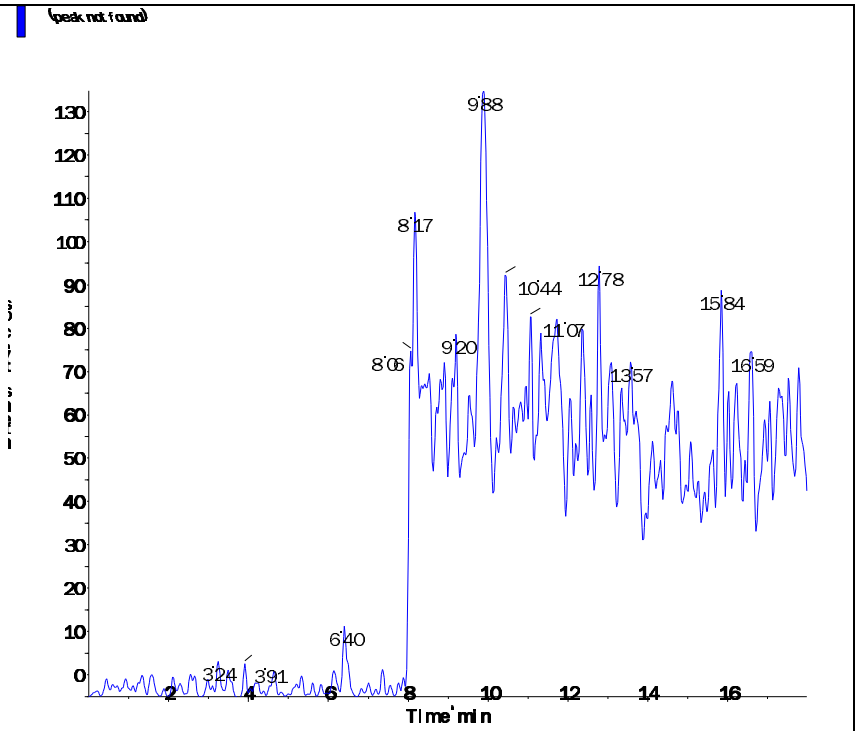

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

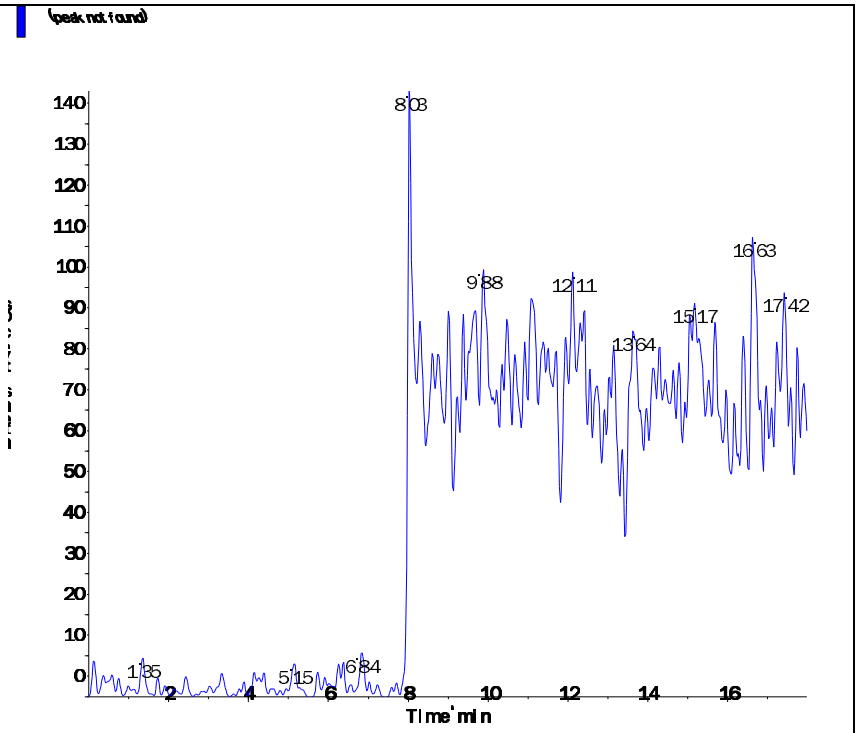

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Created with Analyst Reporter
Printed: 6/12/2016 9:49 PM

Data File	LM35320.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/12/2016 1:13:20 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-10 CCB	**Injection Vial**	1.00
Data File	LM35320.wiff	**Injection Volume**	10.00
Acquisition Date	6/12/2016 1:13:20 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.260e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	6.740e+02	9.81	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

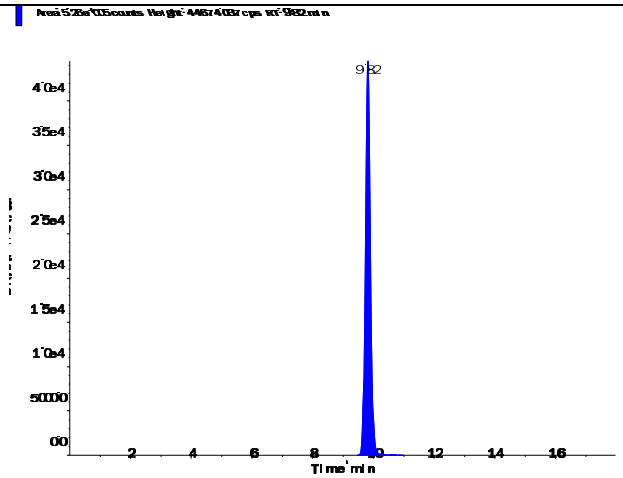

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Created with Analyst Reporter
Printed: 6/12/2016 9:49 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

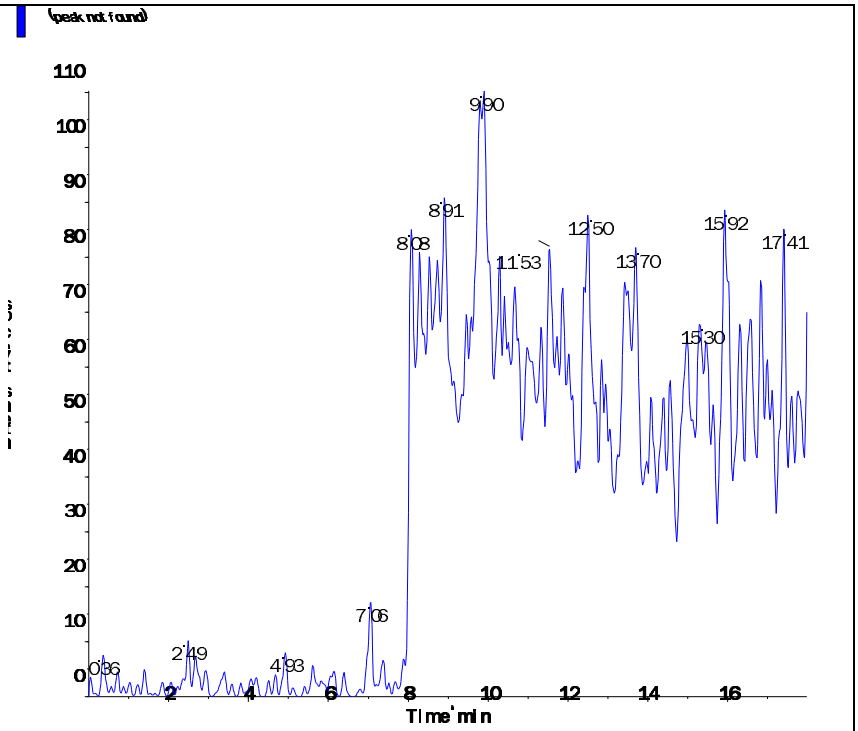

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.81 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

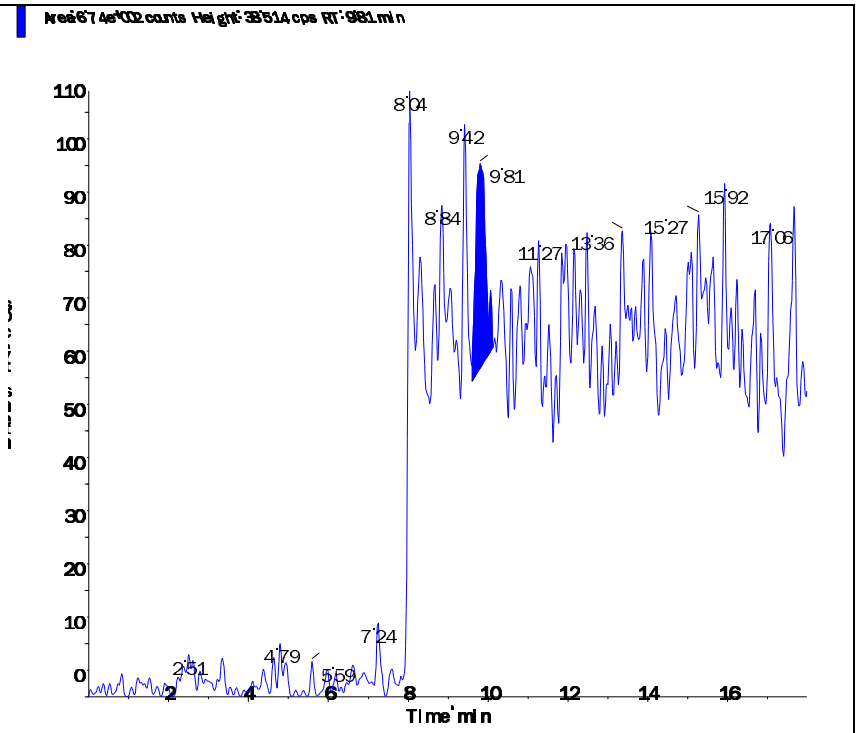

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Created with Analyst Reporter
Printed: 6/13/2016 10:30 AM

Data File	LM35321.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/12/2016 8:44:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572372-01 CCB	**Injection Vial**	1.00
Data File	LM35321.wiff	**Injection Volume**	10.00
Acquisition Date	6/12/2016 8:44:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG572372-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.830e+05	9.79	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.120e+03	9.62	N/A	0.0031
Perchlorate conf	9.060e+02	9.69	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.79(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

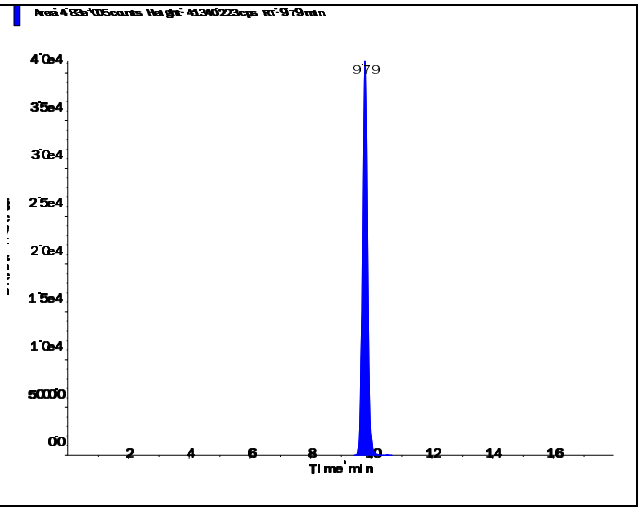

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.62 (9.84) min
Calculated conc:	0.0031 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

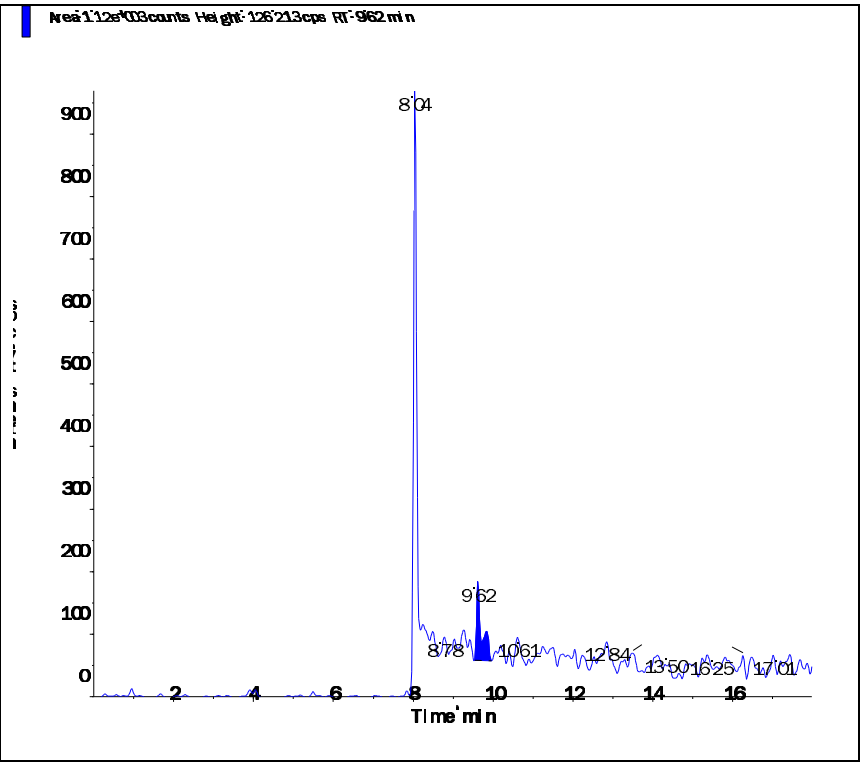

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.69 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

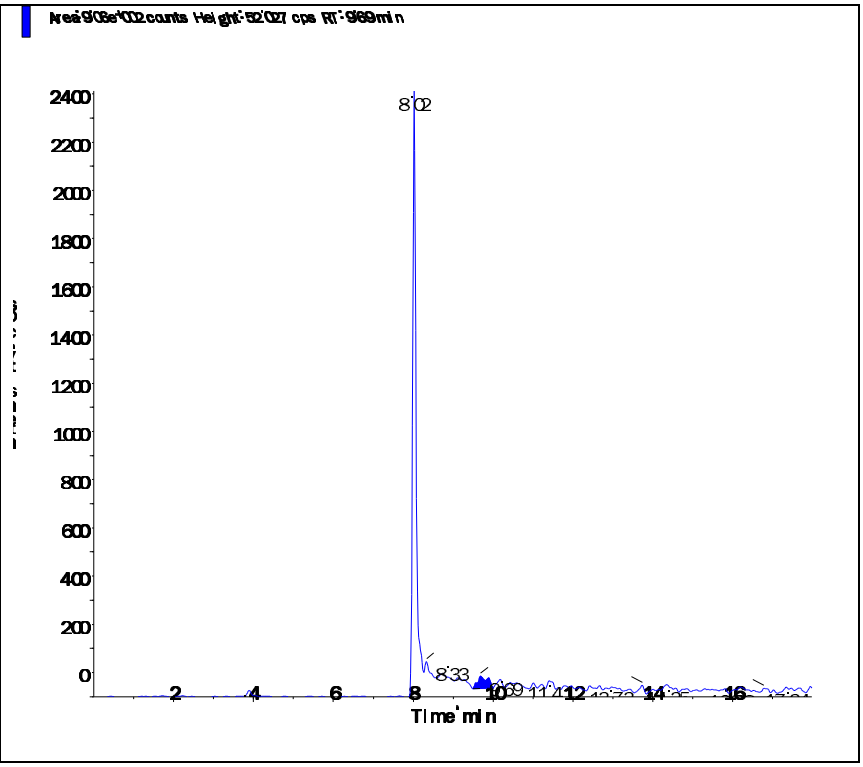

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Created with Analyst Reporter
Printed: 6/13/2016 10:35 AM

Data File	LM35336.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/13/2016 1:28:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572372-04 CCB	**Injection Vial**	1.00
Data File	LM35336.wiff	**Injection Volume**	10.00
Acquisition Date	6/13/2016 1:28:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG572372-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.610e+05	9.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.80(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

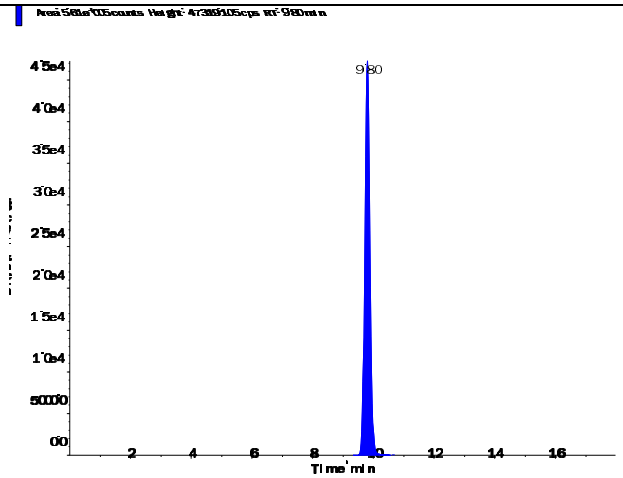

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Created with Analyst Reporter
Printed: 6/13/2016 10:35 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

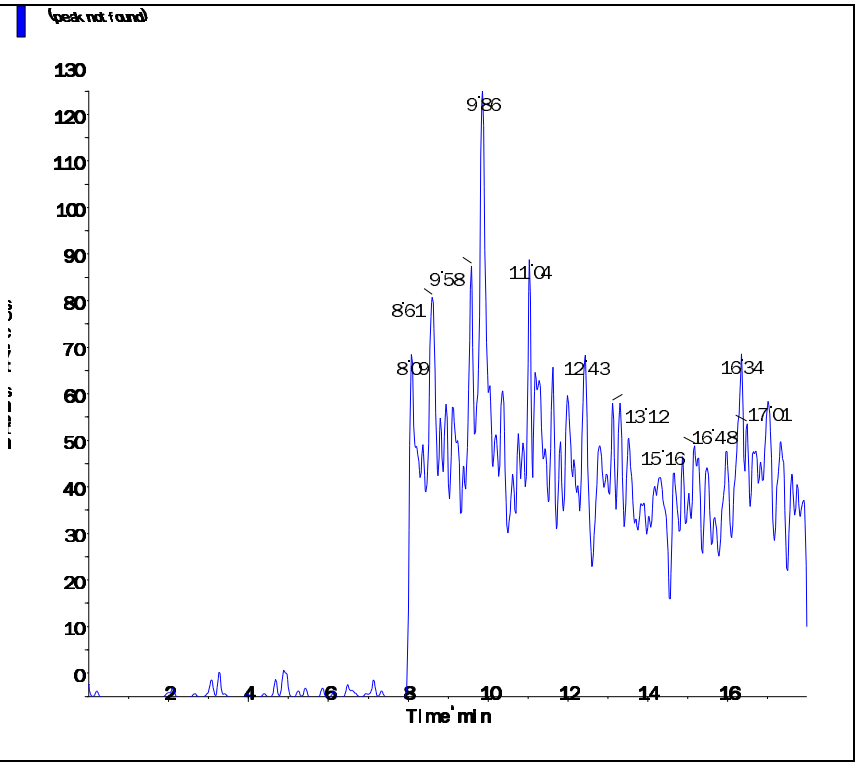

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

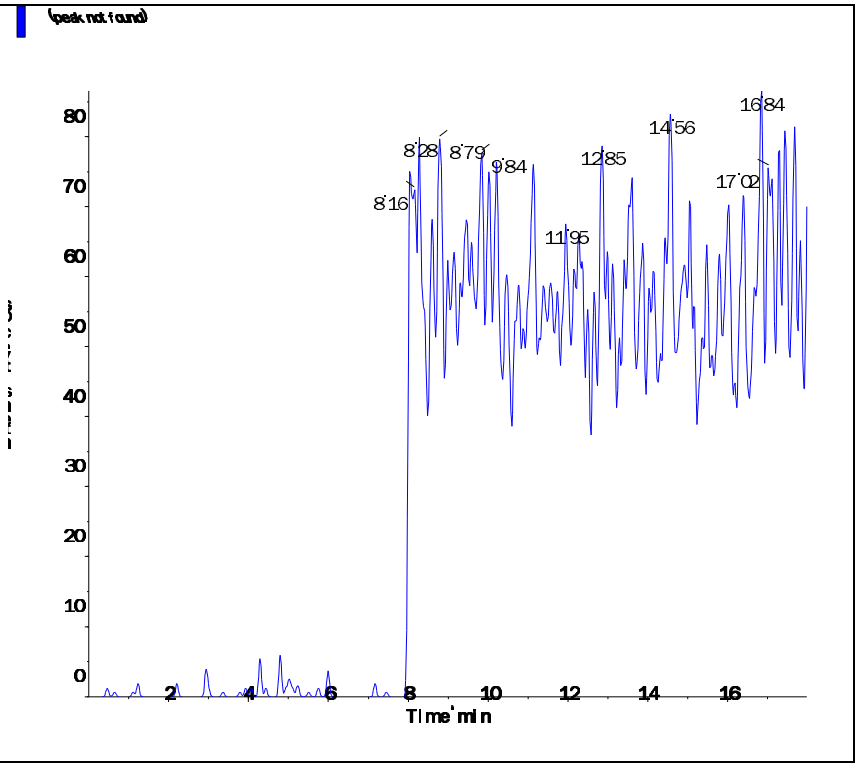

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Created with Analyst Reporter
Printed: 6/13/2016 10:35 AM

Data File	LM35337.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/13/2016 7:50:17 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572372-05 CCB	**Injection Vial**	1.00
Data File	LM35337.wiff	**Injection Volume**	10.00
Acquisition Date	6/13/2016 7:50:17 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG572372-05	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.360e+05	9.79	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.79(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

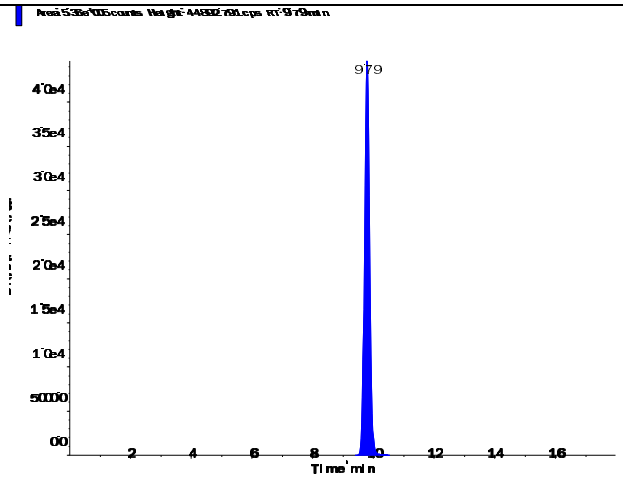

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

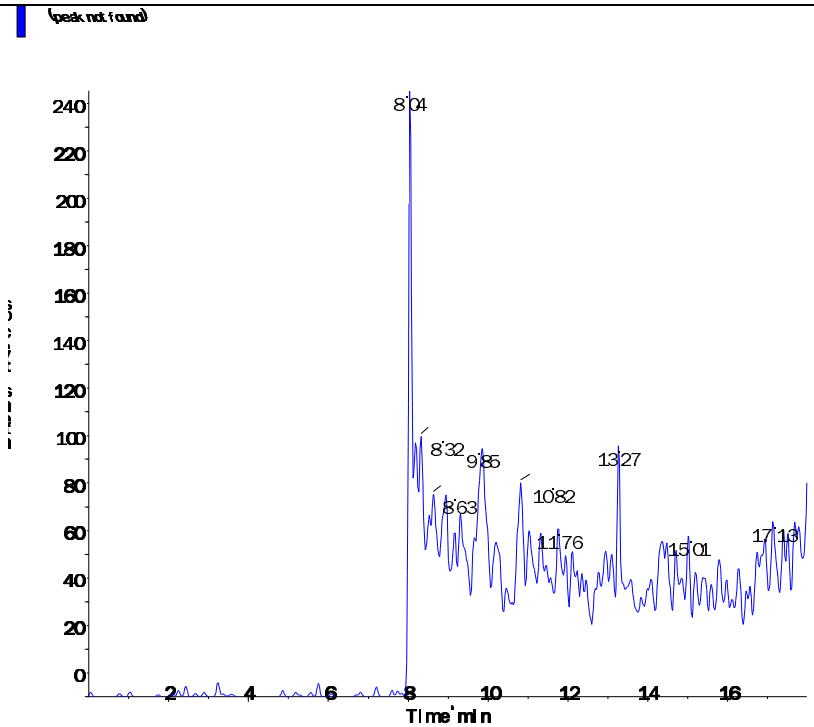

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

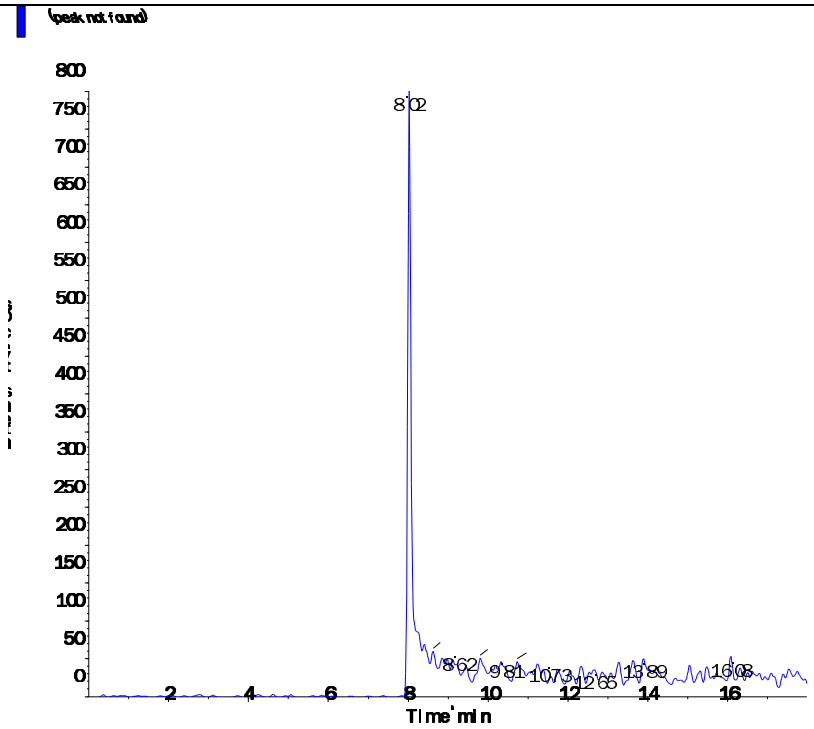

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Created with Analyst Reporter
Printed: 6/13/2016 10:37 AM

Data File	LM35343.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/13/2016 9:44:27 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572372-08 CCB	**Injection Vial**	1.00
Data File	LM35343.wiff	**Injection Volume**	10.00
Acquisition Date	6/13/2016 9:44:27 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG572372-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.710e+05	9.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.80(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

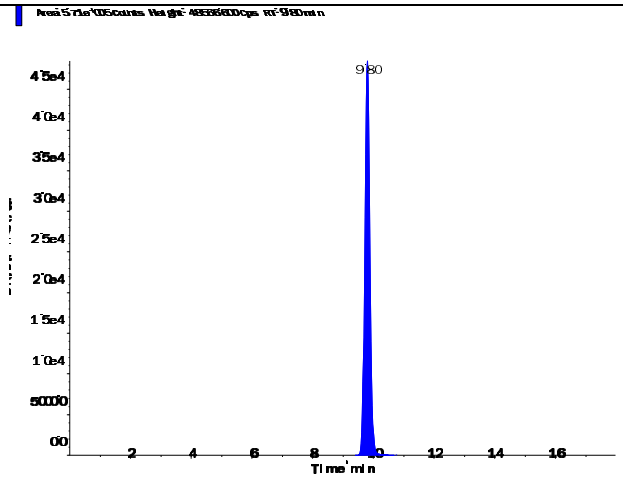

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Created with Analyst Reporter
Printed: 6/13/2016 10:37 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

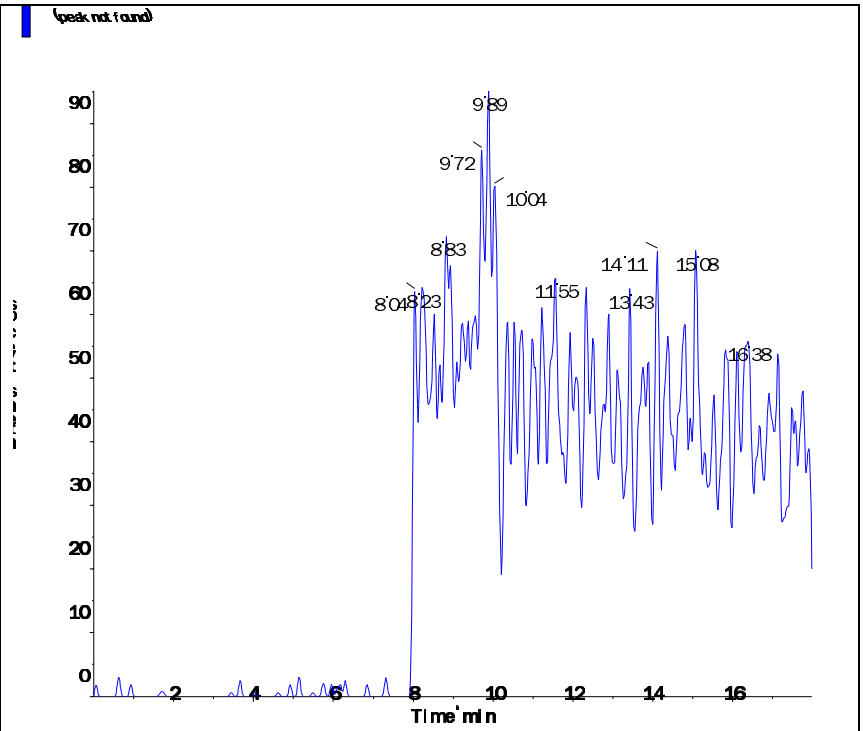

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

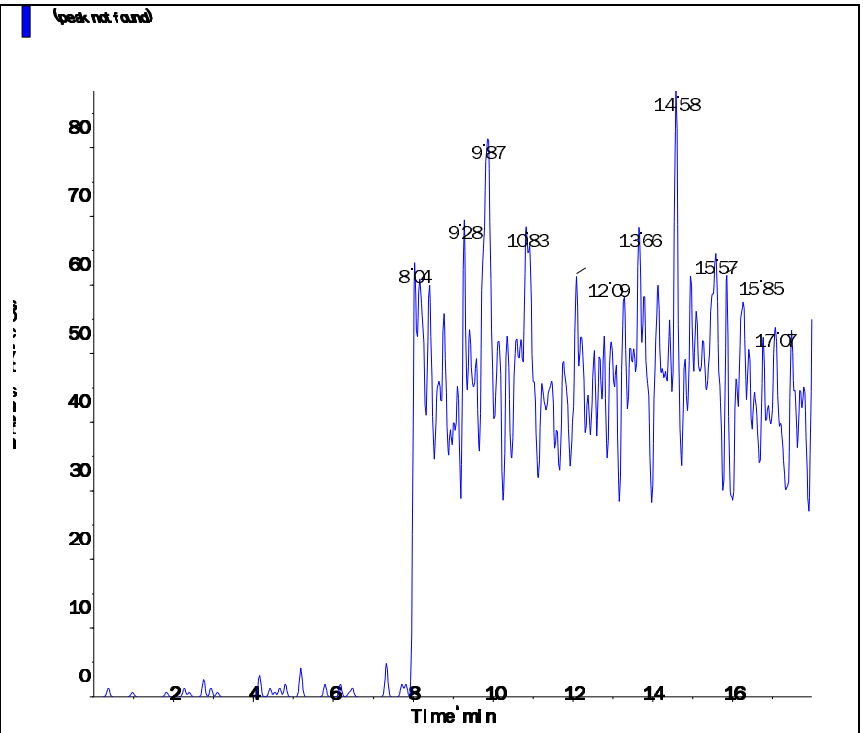

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Created with Analyst Reporter
Printed: 6/12/2016 9:43 PM

Data File	LM35300.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 6:54:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572350-01 MCT (0.2ug/l)	**Injection Vial**	37.00
Data File	LM35300.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 6:54:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572350-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.070e+05	9.15	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.110e+04	9.17	N/A	0.237
Perchlorate conf	1.220e+04	9.15	N/A	0.195

O18LP (Internal Standard)

RT (Exp. RT): 9.15(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

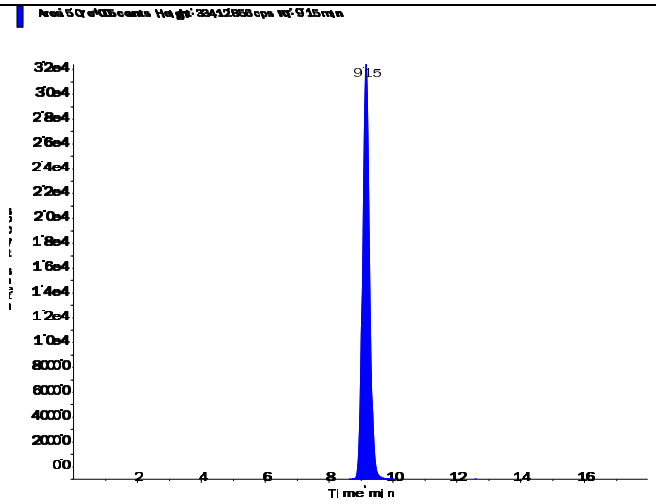

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Created with Analyst Reporter
Printed: 6/12/2016 9:43 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.17 (9.84) min
Calculated conc:	0.237 ng/ml
Area Ratio:	0.081
Sample Type:	(Unknown)

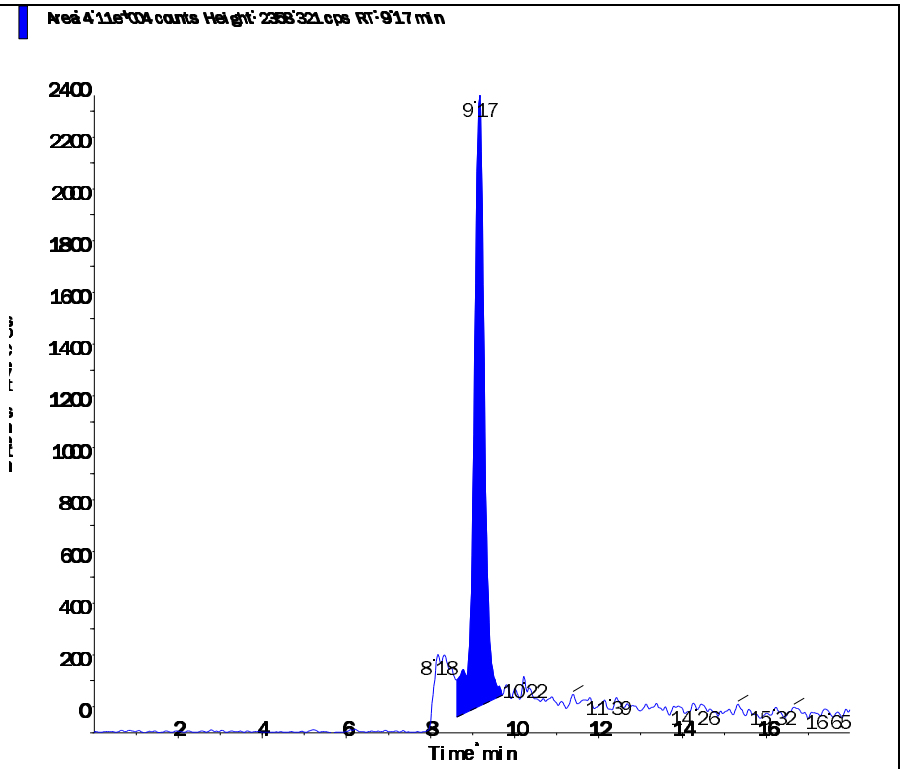

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.15 (9.84) min
Calculated conc:	0.195 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

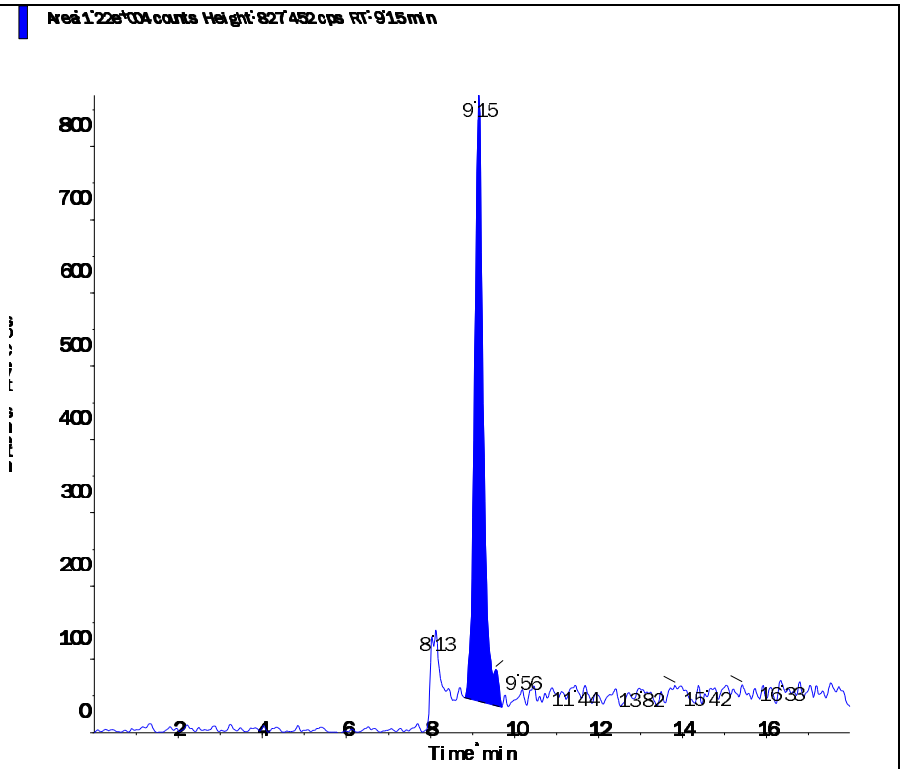

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2.2.2.5 Raw QC Data

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Created with Analyst Reporter
Printed: 6/12/2016 9:43 PM

Data File	LM35301.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 7:13:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572350-02 BLANK	**Injection Vial**	38.00
Data File	LM35301.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 7:13:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572350-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.900e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	2.270e+02	9.59	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

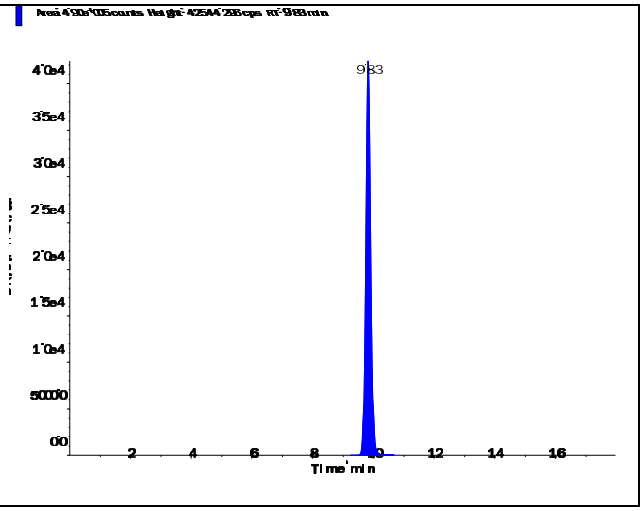

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	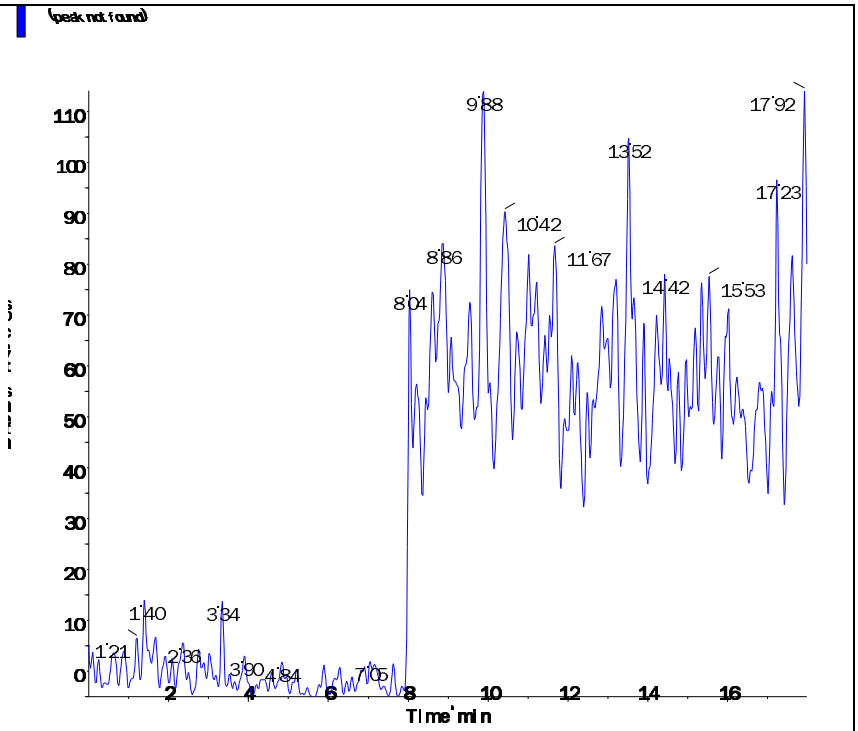
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.59 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	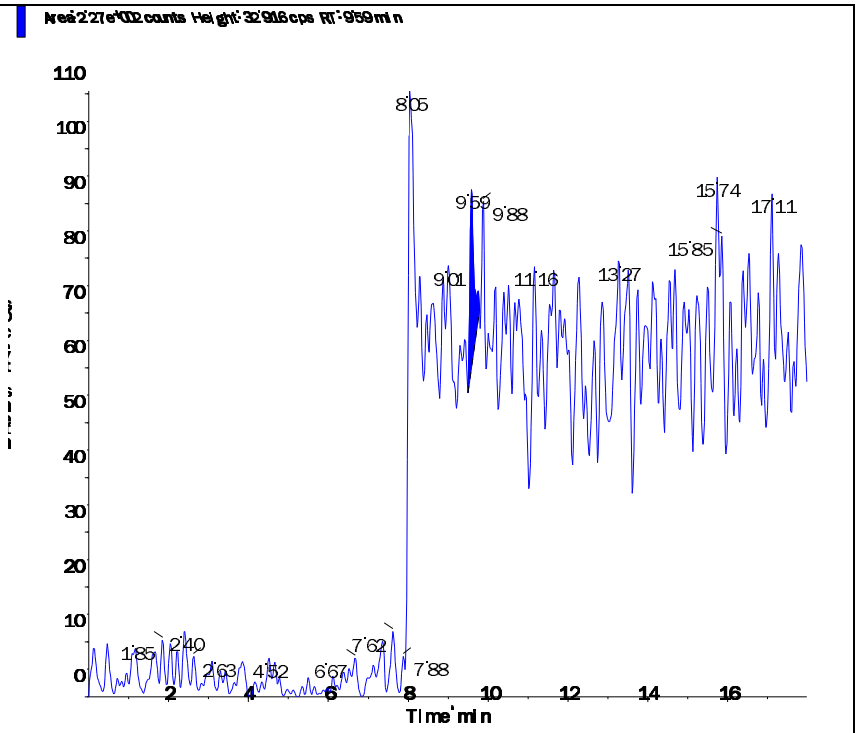

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/12/2016 9:44 PM

Data File	LM35302.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 7:32:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572350-03 LCS (0.2ug/L)	**Injection Vial**	39.00
Data File	LM35302.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 7:32:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572350-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.840e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.500e+04	9.84	N/A	0.211
Perchlorate conf	1.210e+04	9.83	N/A	0.203

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

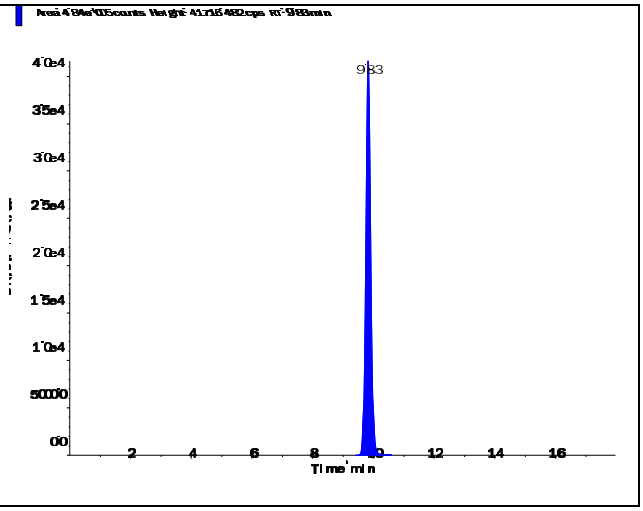

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.211 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

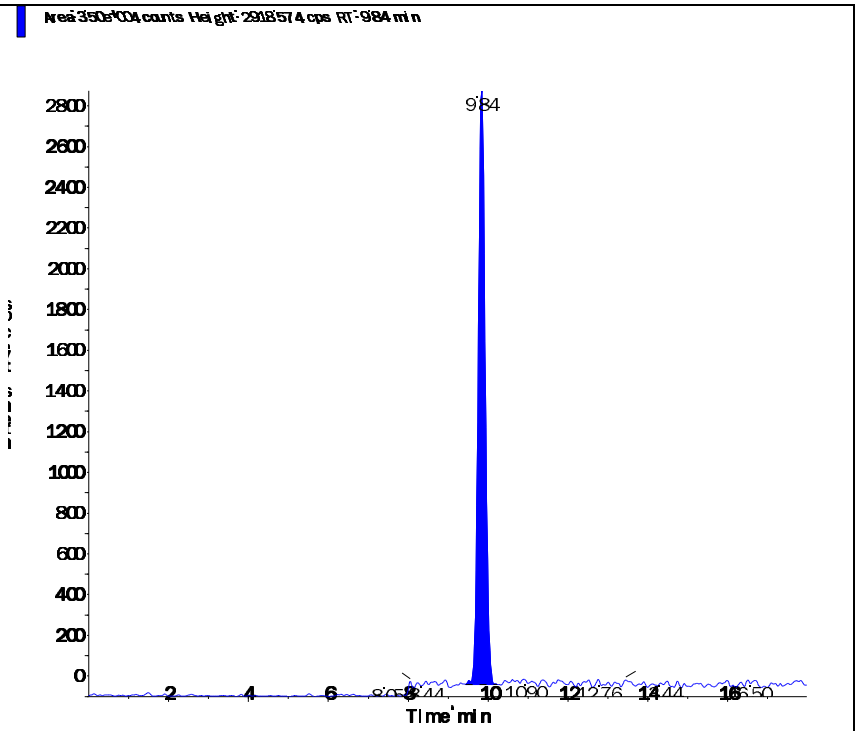

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.203 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

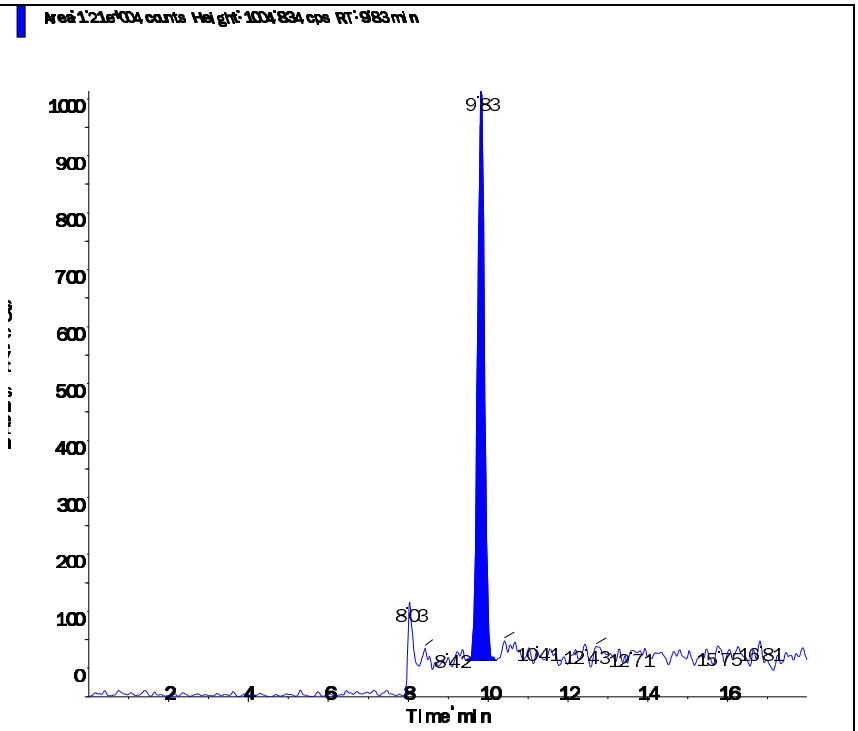

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/12/2016 9:44 PM

Data File	LM35303.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 7:51:23 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572350-03 LCSD (0.2ug/L)	**Injection Vial**	40.00
Data File	LM35303.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 7:51:23 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572350-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.840e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.440e+04	9.84	N/A	0.208
Perchlorate conf	1.190e+04	9.83	N/A	0.20

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

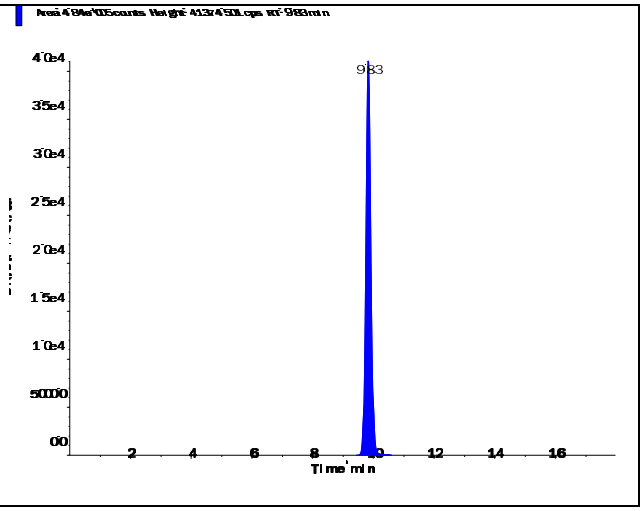

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.208 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

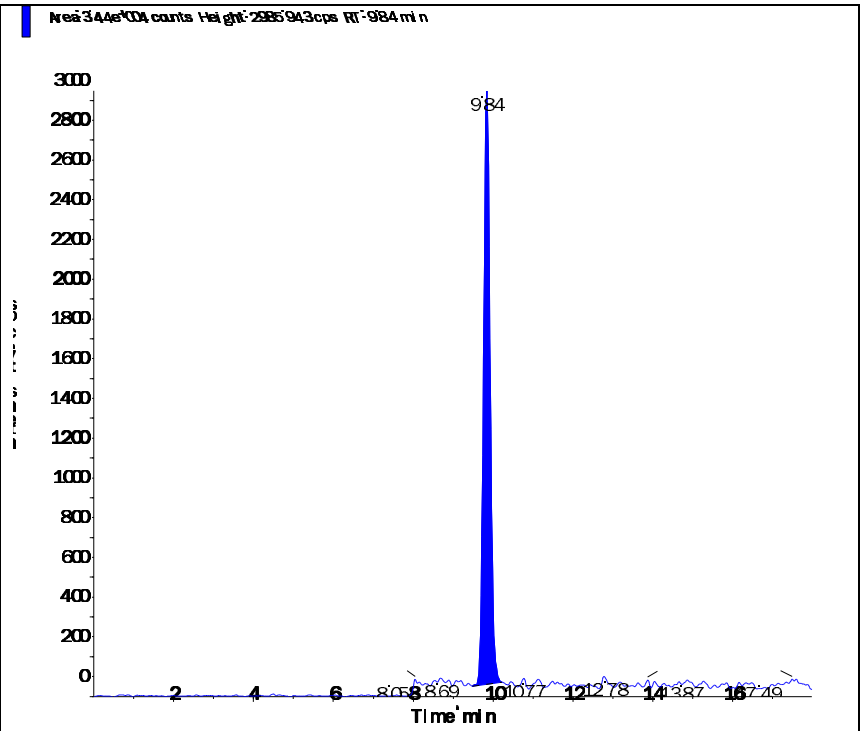

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.20 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

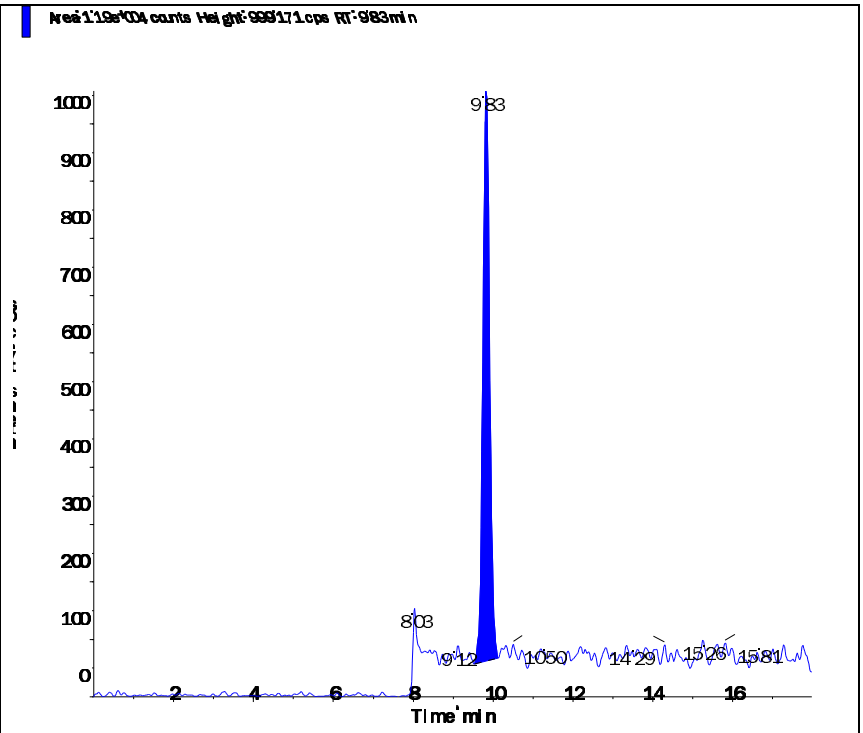

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3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
June 22, 2016

001 - BIO-CHEM TESTING WVDEP 220	002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental	004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES	006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES	008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND	AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER	ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS	ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED	AWE - ANDREW W. ESSIG
AZH - AFTER HOURS	BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE	BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY	CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS	CEB - CHAD E. BARNES
CJQ - Cameron J. Quick	CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD	CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS	CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL	DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE	DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON	DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE	DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR	ECL - ERIC C. LAWSON
EMW - ERIC M. WILKEN	ENY - EMILY N. YOAK
ERP - ERIN R. PORTER	FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY	JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH	JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS	JLD - JESSICA L. DELONG
JLL - JOHN L. LENT	JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON	JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES	JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON	KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH	KEB - KATIE E. BARNES
KHR - KIM H. RHODES	KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON	KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS	LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF	LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA	MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON	MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN	MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE	MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR	MSW - MATT S. WILSON
NPH - Natalie P. Hart	PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE	PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB	QX - QIN XU
RAH - ROY A. HALSTEAD	REK - BOB E. KYER
RLB - BOB BUCHANAN	RM - RAYMOND MALEKE
RNP - RICK N. PETTY	RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG	SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY	SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF	TB - TODD BOYLE
TGF - TIM G. FELTON	TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS	VC - VICKI COLLIER
WJB - WILL J. BEASLEY	WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG	XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
June 22, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
June 22, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Debra Richmann
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD	pH:	
Project Name/Location:	Longhorn		
Project Number:	60274185.0013BH 1824 MR10		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Total Metals	1, 4 - DIOXANE					SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 18/24	18CPTMW22R-060916			6/9/16	0740		✓	W	6	✓	✓		✓									
	18CPTMW22DW-060916			6/9/16	0840		✓	W	6	✓	✓		✓									
	18CPTMW22DWFD-060916			6/9/16	0840		✓	W	6	✓	✓		✓									
	18CPTMW22SW-060916			6/9/16	0955		✓	W	6	✓	✓		✓									
	TRIP BLANK			6/9/16			✓	W	2	✓												

Comments: **STANDARD TAT**

	Date	Time					
Relinquished by: (Signature) Scott Beesinger	6/9/16	1545	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Receiv (Signat			Time	Remarks:

Microbac OVD
Received: 06/10/2016 10:43
By: BRENDA GREGORY 221000087047

Brenda Gregory

*Homogenize all composite samples prior to analysis

...ger, Pink QA/QC Manager

00065451

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060615
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 21-JUN-2016

Samplenum	Container ID	Products
L16060615-01	758402	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:03	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:03	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:03	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	

Samplenum	Container ID	Products
L16060615-01	758403	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	10-JUN-2016 15:03	CLS		
2	PREP	W1	EXT	13-JUN-2016 15:30	CPD	BRG	
3	SUBBED	EXT	DISP	14-JUN-2016 10:05	BJO	BJO	
4	ANALYZ*	EXT	SEMI	20-JUN-2016 12:17	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		10-JUN-2016 15:03	CLS		

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060615-01	758404	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	10-JUN-2016 15:03	CLS		
2	ANALYZ	W1	SEM	11-JUN-2016 10:50	WTD	CLS	
3	STORE	SEM	A1	12-JUN-2016 22:05	AZH	WTD	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060615
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 21-JUN-2016

Samplenum	Container ID	Products
L16060615-02	758405	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:03	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:03	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:03	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	

Samplenum	Container ID	Products
L16060615-02	758406	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	10-JUN-2016 15:03	CLS		
2	PREP	W1	EXT	13-JUN-2016 15:30	CPD	BRG	
3	SUBBED	EXT	DISP	14-JUN-2016 10:05	BJO	BJO	
4	ANALYZ*	EXT	SEMI	20-JUN-2016 12:17	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		10-JUN-2016 15:03	CLS		

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060615-02	758407	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	10-JUN-2016 15:03	CLS		
2	ANALYZ	W1	SEM	11-JUN-2016 10:50	WTD	CLS	
3	STORE	SEM	A1	12-JUN-2016 22:05	AZH	WTD	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060615
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 21-JUN-2016

Samplenum	Container ID	Products
L16060615-03	758408	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:03	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:03	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:03	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	

Samplenum	Container ID	Products
L16060615-03	758409	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	10-JUN-2016 15:03	CLS		
2	PREP	W1	EXT	13-JUN-2016 15:30	CPD	BRG	
3	SUBBED	EXT	DISP	14-JUN-2016 10:05	BJO	BJO	
4	ANALYZ*	EXT	SEMI	20-JUN-2016 12:17	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		10-JUN-2016 15:03	CLS		

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060615-03	758410	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	10-JUN-2016 15:03	CLS		
2	ANALYZ	W1	SEM	11-JUN-2016 10:50	WTD	CLS	
3	STORE	SEM	A1	12-JUN-2016 22:05	AZH	WTD	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060615
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 21-JUN-2016

Samplenum	Container ID	Products
L16060615-04	758411	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:03	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:03	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:03	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	

Samplenum	Container ID	Products
L16060615-04	758412	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	10-JUN-2016 15:03	CLS		
2	PREP	W1	EXT	13-JUN-2016 15:30	CPD	BRG	
3	SUBBED	EXT	DISP	14-JUN-2016 10:05	BJO	BJO	
4	ANALYZ*	EXT	SEMI	20-JUN-2016 12:17	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		10-JUN-2016 15:03	CLS		

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060615-04	758413	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	10-JUN-2016 15:03	CLS		
2	ANALYZ	W1	SEM	11-JUN-2016 10:50	WTD	CLS	
3	STORE	SEM	A1	12-JUN-2016 22:05	AZH	WTD	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060615
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 21-JUN-2016

Samplenum	Container ID	Products
L16060615-05	758414	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:03	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:03	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16060616

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Michelle Taylor – Client Services Specialist
(740) 373-4071
Michelle.Taylor@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on June 27 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00110314	H	3.0		J2317165063	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
MW8-060916	L16060616-01	06/09/2016 11:00	06/10/2016 10:46
18CPTMW26SW-060916	L16060616-02	06/09/2016 13:25	06/10/2016 10:46
MW10-060916	L16060616-03	06/09/2016 14:40	06/10/2016 10:46
MW10F-060916	L16060616-04	06/09/2016 14:40	06/10/2016 10:46
TRIP BLANK	L16060616-05	06/09/2016 00:01	06/10/2016 10:46

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16060616
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	8260
Prep Batch Number(s):	572737,573038	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-23 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2016-06-23 18:27:25

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	8260
Prep Batch Number(s):	572737,573038	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-23 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	8260
Prep Batch Number(s):	572737,573038	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-23 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	8260
Prep Batch Number(s):	572737,573038	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-23 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	8260
Prep Batch Number(s):	572737,573038	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-23 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	8260
Prep Batch Number(s):	572737,573038	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-23 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1)Bromomethane exceeded the UCL in the CCV analyzed 06/15/2016 on HPMS8. Bromomethane exceeded the UCL in the CCV analyzed 06/16/2016 on HPMS8.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572341	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-21 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-06-21 18:34:06

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572341	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-21 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples			X		
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572341	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-21 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572341	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-21 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572341	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-21 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572341	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-21 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572350	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-06-14 16:53:07

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572350	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572350	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572350	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572350	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572350	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572965	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-26 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-06-26 22:54:39

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572965	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-26 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?		X			ER#2
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572965	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-26 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572965	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-26 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			ER#1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572965	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-26 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572965	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-26 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - The low level continuing calibration verification analyzed on 17-Jun-2016 at 12:59 yielded a recovery for selenium that was above the acceptance limit. Generally this elevated recovery could indicate a high bias on the sample result, however, since the samples yielded results less than the LOQ, no further action was taken.

ER#2 - Client sample 01 required dilution analysis in order to obtain a result for sodium within the calibration range. Client sample 02 required dilution analysis in order to obtain results for calcium, iron, magnesium, and sodium within the calibration range.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG572730, WG573483	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-26 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-06-26 22:47:23

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG572730, WG573483	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-26 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?		X			ER#3
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?		X			ER#1
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG572730, WG573483	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-26 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		X			ER#2
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG572730, WG573483	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-26 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG572730, WG573483	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-26 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG572730, WG573483	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-26 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - The method blank analyzed on 16-JUN-2016 yielded results for arsenic and barium that exceeded the reporting detection limit. All QA/QC and client samples 01 and 04 were redigested and reanalyzed on a later calibration for barium. All QA/QC and client sample 02 were redigested and reanalyzed on a later calibration for arsenic. The latter results were reported under WG573557.

ER#2 - The laboratory control sample analysis performed on 16-JUN-2016 yielded a noncompliant result for silver. All QA/QC and client samples were redigested and reanalyzed for silver with a compliant LCS. The latter results were reported under WG573557.

ER#3 - Client samples 01, 02, 04 required dilution analyses in order to obtain results for manganese within the calibration range. Client sample 01 required dilution analyses in order to obtain results for chromium and nickel within the calibration range. Client sample 02 required dilution analysis in order to obtain a result for barium within the calibration range.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572607	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-26 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-06-26 22:42:58

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572607	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-26 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572607	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-26 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			ER#1
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572607	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-26 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572607	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-26 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572607	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-26 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - The matrix spike/matrix spike duplicate performed on nonclient samples on 16-JUN-2016 yielded a noncompliant result for mercury. The samples were reported with a compliant post digestion spike and no further action was takne.

1.2 Certificate of Analysis

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW8-060916	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573038	**Analyst:**	FJB	**Run Date:**	06/16/2016 19:52
Collect Date:	06/09/2016 11:00	**Dilution:**	1	**File ID:**	8M413043
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.607	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.592	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.867	J	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	247		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	116	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	101	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	MW8-060916	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 15:19
Collect Date:	06/09/2016 11:00	**Dilution:**	1	**File ID:**	15M18414
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	0.649	J	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	52.6	20	129	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW8-060916	**Prep Method:**	6850	**Prep Date:**	06/11/2016 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572350	**Analyst:**	WTD	**Run Date:**	06/11/2016 23:38
Collect Date:	06/09/2016 11:00	**Dilution:**	10000	**File ID:**	1LM.LM35315
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	8290		4000	2000	1000

Certificate of Analysis

Sample #:	L16060616-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW8-060916	**Prep Method:**	3015	**Prep Date:**	06/15/2016 10:00
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/17/2016 10:37
Workgroup #:	WG572965	**Analyst:**	JYH	**Run Date:**	06/17/2016 12:00
Collect Date:	06/09/2016 11:00	**Dilution:**	1	**File ID:**	T3.061716.120053
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.122	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	8.30		0.500	0.250	0.125
Iron, Total	7439-89-6	0.888		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	7.45		1.00	0.500	0.250
Potassium, Total	7440-09-7	0.503	J	2.00	1.00	0.500
Selenium, Total	7782-49-2	0.00533	J	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW8-060916	**Prep Method:**	3015	**Prep Date:**	06/15/2016 10:00
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/17/2016 10:37
Workgroup #:	WG572965	**Analyst:**	JYH	**Run Date:**	06/17/2016 12:36
Collect Date:	06/09/2016 11:00	**Dilution:**	100	**File ID:**	T3.061716.123610
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sodium, Total	7440-23-5	191		100	50.0	25.0

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW8-060916	**Prep Method:**	3015	**Prep Date:**	06/21/2016 07:48
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/21/2016 12:44
Workgroup #:	WG573557	**Analyst:**	BKT	**Run Date:**	06/21/2016 15:22
Collect Date:	06/09/2016 11:00	**Dilution:**	1	**File ID:**	NI.062116.152226
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.144		0.00600	0.00300	0.00150
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW8-060916	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 19:47
Collect Date:	06/09/2016 11:00	**Dilution:**	1	**File ID:**	NI.061616.194738
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00171	J	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000344	J	0.00120	0.000600	0.000300
Cobalt, Total	7440-48-4	0.0414		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.0107		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000105	J	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0267	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW8-060916	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 21:13
Collect Date:	06/09/2016 11:00	**Dilution:**	10	**File ID:**	NI.061616.211326
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chromium, Total	7440-47-3	0.278		0.0400	0.0200	0.0100
Manganese, Total	7439-96-5	0.350		0.0400	0.0200	0.0100
Nickel, Total	7440-02-0	0.447		0.0800	0.0400	0.0200

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-01	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW8-060916	**Prep Method:**	7470A	**Prep Date:**	06/14/2016 10:23
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/16/2016 14:15
Workgroup #:	WG573072	**Analyst:**	PDM	**Run Date:**	06/16/2016 15:03
Collect Date:	06/09/2016 11:00	**Dilution:**	1	**File ID:**	M7.061616.150321
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW26SW-060916	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572737	**Analyst:**	TMB	**Run Date:**	06/15/2016 18:11
Collect Date:	06/09/2016 13:25	**Dilution:**	1	**File ID:**	8M413021
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	7.39	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	117	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	100	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW26SW-060916	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 15:42
Collect Date:	06/09/2016 13:25	**Dilution:**	1	**File ID:**	15M18415
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	50.8	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW26SW-060916	**Prep Method:**	6850	**Prep Date:**	06/11/2016 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572350	**Analyst:**	WTD	**Run Date:**	06/13/2016 08:47
Collect Date:	06/09/2016 13:25	**Dilution:**	1	**File ID:**	1LM.LM35340
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	6.42		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16060616-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW26SW-060916	**Prep Method:**	3015	**Prep Date:**	06/15/2016 10:00
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/17/2016 10:37
Workgroup #:	WG572965	**Analyst:**	JYH	**Run Date:**	06/17/2016 12:04
Collect Date:	06/09/2016 13:25	**Dilution:**	1	**File ID:**	T3.061716.120445
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.158	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Potassium, Total	7440-09-7	3.46		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.00586	J	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW26SW-060916	**Prep Method:**	3015	**Prep Date:**	06/15/2016 10:00
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/17/2016 10:37
Workgroup #:	WG572965	**Analyst:**	JYH	**Run Date:**	06/17/2016 12:47
Collect Date:	06/09/2016 13:25	**Dilution:**	20	**File ID:**	T3.061716.124747
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	61.4		10.0	5.00	2.50
Iron, Total	7439-89-6	72.2		4.00	2.00	1.00
Magnesium, Total	7439-95-4	34.1		20.0	10.0	5.00
Sodium, Total	7440-23-5	320		20.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW26SW-060916	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 19:50
Collect Date:	06/09/2016 13:25	**Dilution:**	1	**File ID:**	NI.061616.195050
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00237	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.000803	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00116	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.00238	J	0.00800	0.00400	0.00200
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00101	J	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW26SW-060916	**Prep Method:**	3015	**Prep Date:**	06/21/2016 07:48
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/21/2016 12:44
Workgroup #:	WG573557	**Analyst:**	BKT	**Run Date:**	06/21/2016 15:25
Collect Date:	06/09/2016 13:25	**Dilution:**	1	**File ID:**	NI.062116.152538
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Arsenic, Total	7440-38-2	0.00640		0.00200	0.00100	0.000500
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW26SW-060916	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 21:16
Collect Date:	06/09/2016 13:25	**Dilution:**	10	**File ID:**	NI.061616.211638
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.635		0.0600	0.0300	0.0150
Manganese, Total	7439-96-5	1.70		0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-02	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18CPTMW26SW-060916	**Prep Method:**	7470A	**Prep Date:**	06/14/2016 10:23
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/16/2016 14:15
Workgroup #:	WG573072	**Analyst:**	PDM	**Run Date:**	06/16/2016 15:05
Collect Date:	06/09/2016 13:25	**Dilution:**	1	**File ID:**	M7.061616.150552
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW10-060916	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572737	**Analyst:**	TMB	**Run Date:**	06/15/2016 17:43
Collect Date:	06/09/2016 14:40	**Dilution:**	1	**File ID:**	8M413020
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.796	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	114	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	102	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	MW10-060916	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 16:04
Collect Date:	06/09/2016 14:40	**Dilution:**	1	**File ID:**	15M18416
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	35.0	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW10-060916	**Prep Method:**	6850	**Prep Date:**	06/11/2016 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572350	**Analyst:**	WTD	**Run Date:**	06/12/2016 00:16
Collect Date:	06/09/2016 14:40	**Dilution:**	1	**File ID:**	1LM.LM35317
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.492		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16060616-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW10F-060916	**Prep Method:**	3015	**Prep Date:**	06/15/2016 10:00
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/17/2016 10:37
Workgroup #:	WG572965	**Analyst:**	JYH	**Run Date:**	06/17/2016 12:08
Collect Date:	06/09/2016 14:40	**Dilution:**	1	**File ID:**	T3.061716.120837
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.0804	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	7.72		0.500	0.250	0.125
Iron, Total	7439-89-6	5.73		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	2.22		1.00	0.500	0.250
Potassium, Total	7440-09-7	2.09		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	9.56		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW10F-060916	**Prep Method:**	3015	**Prep Date:**	06/21/2016 07:48
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/21/2016 12:44
Workgroup #:	WG573557	**Analyst:**	BKT	**Run Date:**	06/21/2016 15:28
Collect Date:	06/09/2016 14:40	**Dilution:**	1	**File ID:**	NI.062116.152849
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.0526		0.00600	0.00300	0.00150
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW10F-060916	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 19:54
Collect Date:	06/09/2016 14:40	**Dilution:**	1	**File ID:**	NI.061616.195401
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00100	U	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000376	J	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00283	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00127	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00144	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.00494	J	0.00800	0.00400	0.00200
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW10F-060916	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 21:19
Collect Date:	06/09/2016 14:40	**Dilution:**	10	**File ID:**	NI.061616.211949
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Total	7439-96-5	0.300		0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-04	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW10F-060916	**Prep Method:**	7470A	**Prep Date:**	06/14/2016 10:23
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/16/2016 14:15
Workgroup #:	WG573072	**Analyst:**	PDM	**Run Date:**	06/16/2016 15:08
Collect Date:	06/09/2016 14:40	**Dilution:**	1	**File ID:**	M7.061616.150822
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572737	**Analyst:**	TMB	**Run Date:**	06/15/2016 13:50
Collect Date:	06/09/2016 00:01	**Dilution:**	1	**File ID:**	8M413012
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	111	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	99.8	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW8-060916	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573038	**Analyst:**	FJB	**Run Date:**	06/16/2016 19:52
Collect Date:	06/09/2016 11:00	**Dilution:**	1	**File ID:**	8M413043
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.607	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.592	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.867	J	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	247		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	116	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	101	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW26SW-060916	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572737	**Analyst:**	TMB	**Run Date:**	06/15/2016 18:11
Collect Date:	06/09/2016 13:25	**Dilution:**	1	**File ID:**	8M413021
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	7.39	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	117	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	100	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW10-060916	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572737	**Analyst:**	TMB	**Run Date:**	06/15/2016 17:43
Collect Date:	06/09/2016 14:40	**Dilution:**	1	**File ID:**	8M413020
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.796	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	114	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	102	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572737	**Analyst:**	TMB	**Run Date:**	06/15/2016 13:50
Collect Date:	06/09/2016 00:01	**Dilution:**	1	**File ID:**	8M413012
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	111	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	99.8	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051316
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53752

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG568561

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412209	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 08:38
8M412210	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 08:57
8M412211	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 09:29
8M412212	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 09:56
8M412213	WG568561-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/13/16 10:19
8M412214	WG568561-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/13/16 10:51
8M412215	WG568565-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76072	05/13/16 11:36
8M412216	BFB CHECK	NA	1	1	STD76034	05/13/16 12:04
8M412217	BFB CHECK	NA	1	1	STD76034	05/13/16 12:18
8M412218	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 12:36
8M412219	RINSE	NA	1	1		05/13/16 13:00
8M412220	WG568561-02 0.3ug/L STD 8260	NA	1	1	STD76127	05/13/16 13:29
8M412221	WG568561-03 0.4ug/L STD 8260	NA	1	1	STD76127	05/13/16 13:58
8M412222	WG568561-04 1ug/L STD 8260	NA	1	1	STD76127	05/13/16 14:27
8M412223	WG568561-05 2ug/L STD 8260	NA	1	1	STD76127	05/13/16 14:56
8M412224	WG568561-06 5ug/L STD 8260	NA	1	1	STD76127	05/13/16 15:25
8M412225	WG568561-07 20ug/L STD 8260	NA	1	1	STD76127	05/13/16 15:54
8M412226	WG568561-08 50ug/L STD 8260	NA	1	1	STD76127	05/13/16 16:23
8M412227	WG568561-09 100ug/L STD 8260	NA	1	1	STD76127	05/13/16 16:52
8M412228	WG568561-10 200ug/L STD 8260	NA	1	1	STD76127	05/13/16 17:21
8M412229	WG568561-11 300ug/L STD 8260	NA	1	1	STD76127	05/13/16 17:50
8M412230	RINSE	NA	1	1		05/13/16 18:19
8M412231	RINSE	NA	1	1		05/13/16 18:49
8M412232	WG568561-12 50ug/L ALT SRC STD 8260	NA	1	1	STD76109	05/13/16 19:17
8M412233	RINSE	NA	1	1		05/13/16 19:46

Comments

Seq.	Rerun	Dil.	Reason	Analytes
5	X			
File ID: 8M412213				
	Several compounds were low, DNR.			
6				
File ID: 8M412214				

Approved: May 20, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS8	Dataset:	051316		
Analyst1:	TMB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	23
Method:	624	SOP:	MSV10	Rev:	14
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:	53752				

Internal Standard: STD75899 Surrogate Standard: STD75899

CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG568561

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			Two C compounds failed. DNR. Run a curve.	
7 File ID: 8M412215				
			DNR.	

Approved: May 20, 2016

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051716
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76072; STD76127 LCS: STD76109; STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG569079; WG569083

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412319	WG569084-01 50ng BFB STD 8260	NA	1	1	STD76034	05/17/16 08:53
8M412320	WG569084-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/17/16 09:18
8M412321	WG569079-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76072	05/17/16 09:47
8M412322	WG569079-03 50ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 10:16
8M412323	WG569079-04 20ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 10:44
8M412324	WG569079-05 5ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 11:13
8M412325	WG569079-06 200ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 11:42
8M412326	WG569079-07 300ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 12:40
8M412327	WG569079-08 400ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 13:10
8M412328	WG569079-09 500ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 13:39
8M412329	RINSE	NA	1	1		05/17/16 14:08
8M412330	RINSE	NA	1	1		05/17/16 14:37
8M412331	WG569079-10 100ug/L ALT SRC STD 826	NA	1	1	STD75801	05/17/16 15:06
8M412332	WG569259-01 BFB 50ng 8260	NA	1	1	STD76034	05/17/16 18:27
8M412333	WG569259-02 50ug/L CCV 8260	NA	1	1	STD76034	05/17/16 18:53
8M412334	WG569260-01 100ug/L CCV A9	NA	1	1	STD76072	05/17/16 19:22
8M412335	WG569083-01 VBLK0517 BLANK 8260	NA	1	1		05/17/16 19:51
8M412336	WG569083-02 20ug/L LCS 8260	NA	1	1	STD76109	05/17/16 20:20
8M412337	WG569083-03 20ug/L LCS2 8260	NA	1	1	STD76109	05/17/16 20:49
8M412338	WG569083-04 100ug/L LCS A9	NA	1	1	STD75801	05/17/16 21:18
8M412339	WG569083-05 100ug/L LCS2 A9	NA	1	1	STD75801	05/17/16 21:46
8M412340	L16050844-01 TB A 826-A9-SPE	5	1	1		05/17/16 22:16
8M412341	L16050844-07 EB A 826-A9-SPE	5	1	1		05/17/16 22:45
8M412342	L16050844-11 AB A 826-A9-SPE	5	1	1		05/17/16 23:14
8M412343	L16050844-02 A 826-A9-SPE	6	1	1		05/17/16 23:43
8M412344	L16050844-05 A 826-A9-SPE	6	1	1		05/18/16 00:12
8M412345	L16050844-06 A 826-A9-SPE	6	1	1		05/18/16 00:41
8M412346	L16050844-12 A 826-A9-SPE	6	1	1		05/18/16 01:10
8M412347	L16050840-01 A 826-A9-SPE	7	1	1		05/18/16 01:38
8M412348	L16050844-08 A 826-A9-SPE	7	1	1		05/18/16 02:07
8M412349	L16050844-13 A 826-A9-SPE	7	1	1		05/18/16 02:36
8M412350	L16050844-15 A 826-A9-SPE	7	1	1		05/18/16 03:05
8M412351	L16050839-01 A 826-A9-SPE	7	1	1		05/18/16 03:33
8M412352	L16050844-03 2.5X A 826-A9-SPE	7	1	2.5		05/18/16 04:02

Approved: May 20, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051716
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76072; STD76127 LCS: STD76109; STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG569079; WG569083

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412353	L16050844-04 5X A 826-A9-SPE	7	1	5		05/18/16 04:31
8M412354	L16050844-09 5X A 826-A9-SPE	7	1	5		05/18/16 05:01
8M412355	L16050844-10 5X A 826-A9-SPE	7	1	5		05/18/16 05:30
8M412356	L16050844-14 50X A 826-A9-SPE	7	1	50		05/18/16 05:59
8M412357	RINSE	NA	1	1		05/18/16 06:28

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
File ID: 8M412320				
	DNR. Running an a9/foo curve.			
32	X	10	Over Calibration Range	CIS12-DCE
File ID: 8M412350				
40	X	2.5	Analyzed too dilute	
File ID: 8M412353				
	DNR.			
37	X	25	Over Calibration Range	TCE
File ID: 8M412355				
38	X	20	Analyzed too dilute	
File ID: 8M412356				
	DNR.			

Approved: May 20, 2016

Sarah Vandenberg

Microbac

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 061516
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75370 Surrogate Standard: STD76370
CCV: STD76578 LCS: STD76597 MS/MSD: STD76597

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG572737

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M413001	WG572735-01 50ng BFB STD 8260	NA	1	1	STD76496	06/15/16 08:36
8M413002	WG572735-02 50ug/L CCV STD 8260	NA	1	1	STD76578	06/15/16 09:00
8M413003	WG572735-02 50ug/L CCV STD 8260	NA	1	1	STD76578	06/15/16 09:29
8M413004	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76432	06/15/16 09:58
8M413005	WG572737-01 VBLK0615 BLANK STD 826	NA	1	1		06/15/16 10:27
8M413006	WG572737-02 20ug/L LCS STD 8260	NA	1	1	STD75597	06/15/16 10:56
8M413007	WG572737-03 20ug/L LCS2 STD 8260	NA	1	1	STD75597	06/15/16 11:25
8M413008	L16060540-14 B 10X 826-SPE D1	<2	1	10		06/15/16 11:54
8M413009	L16060656-08 A TB 826-BETX	<2	1	1		06/15/16 12:23
8M413010	L16060651-02 A TB 826-BETX	<2	1	1		06/15/16 12:52
8M413011	L16060651-01 A EB 826-BETX	<2	1	1		06/15/16 13:22
8M413012	L16060616-05 A TB 826-LOW	<2	1	1		06/15/16 13:50
8M413013	L16060615-05 A TB 826-LOW	<2	1	1		06/15/16 14:20
8M413014	L16060669-11 B TB 826-VAP2	<2	1	1		06/15/16 14:49
8M413015	L16060760-01 A TB 826-SPE	5	1	1		06/15/16 15:18
8M413016	L16060669-10 B BB 826-VAP2	5	1	1		06/15/16 15:47
8M413017	L16060669-09 B 826-VAP2	6	1	1		06/15/16 16:16
8M413018	L16060540-15 B 826-SPE	<2	1	1		06/15/16 16:45
8M413019	L16060760-02 A 826-SPE	6	1	1		06/15/16 17:14
8M413020	L16060616-03 A 826-LOW	<2	1	1		06/15/16 17:43
8M413021	L16060616-02 A 826-LOW	<2	1	1		06/15/16 18:11
8M413022	L16060615-04 A 826-LOW	<2	1	1		06/15/16 18:40
8M413023	L16060615-03 A 826-LOW	<2	1	1		06/15/16 19:09
8M413024	L16060615-02 A 826-LOW	<2	1	1		06/15/16 19:38
8M413025	L16060615-01 A 826-LOW	<2	1	1		06/15/16 20:07
8M413026	L16060616-01 A 2.5X 826-LOW	<2	1	2.5		06/15/16 20:36
8M413027	CCV	NA	1	1		06/15/16 21:05
8M413028	RINSE	NA	1	1		06/15/16 21:34
8M413029	RINSE	NA	1	1		06/15/16 22:03
8M413030	RINSE	NA	1	1		06/15/16 22:32

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Approved: June 20, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS8	Dataset:	061516		
Analyst1:	ADC	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	23
Method:	OVAP	SOP:	MSV01/PAT01	Rev:	0
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:					

Internal Standard: STD75370 Surrogate Standard: STD76370

CCV: STD76578 LCS: STD76597 MS/MSD: STD76597

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG572737

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
26	X		Analyzed too dilute	
File ID: 8M413026				
L16060616-01 DNR RR STR.				

Approved: June 20, 2016

Sarah Vandenberg

Microbac

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 061616
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75370 Surrogate Standard: STD76370
CCV: STD76578 LCS: STD76597 MS/MSD: STD76597

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG573038

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M413031	WG573037-01 BFB 50ng 8260	NA	1	1	STD76496	06/16/16 14:02
8M413032	WG573037-02 50ug/L CCV 8260	NA	1	1	STD76578	06/16/16 14:25
8M413033	WG573XXX-01 100ug/L CCV A9	NA	1	1	STD7XXXX	06/16/16 14:54
8M413034	WG573038-01 BLANK 6/16 8260	NA	1	1		06/16/16 15:23
8M413035	WG573038-02 20ug/L LCS 8260	NA	1	1	STD76597	06/16/16 15:52
8M413036	WG573038-03 20ug/L LCS2 8260	NA	1	1	STD76597	06/16/16 16:21
8M413037	L16060637-04 TB A 826-SPE	<2	1	1		06/16/16 16:58
8M413038	L16060756-05 TB A 826-SPE	<2	1	1		06/16/16 17:27
8M413039	L16060765-01 TB A 826-SPE	<2	1	1		06/16/16 17:56
8M413040	L16060730-04 TB A 826-LOW	<2	1	1		06/16/16 18:25
8M413041	L16060732-03 TB A 826-LOW	<2	1	1		06/16/16 18:54
8M413042	L16060823-05 TB A 826-LOW	<2	1	1		06/16/16 19:23
8M413043	L16060616-01 B 826-LOW	<2	1	1		06/16/16 19:52
8M413044	L16060732-01 A 826-LOW	<2	1	1		06/16/16 20:21
8M413045	L16060823-01 A 826-LOW	<2	1	1		06/16/16 20:50
8M413046	L16060823-03 A 826-LOW	<2	1	1		06/16/16 21:19
8M413047	L16060823-04 A 826-LOW	<2	1	1		06/16/16 21:48
8M413048	L16060730-03 A 826-LOW	<2	1	1		06/16/16 22:17
8M413049	L16060765-02 A 826-SPE	<2	1	1		06/16/16 22:46
8M413050	L16060765-03 A 826-SPE	<2	1	1		06/16/16 23:15
8M413051	L16060765-04 A 826-SPE	<2	1	1		06/16/16 23:43
8M413052	L16060730-01 A 826-SPE	<2	1	1		06/17/16 00:12
8M413053	L16060730-02 A 826-SPE	<2	1	1		06/17/16 00:41
8M413054	L16060637-03 A 826-SPE	<2	1	1		06/17/16 01:10
8M413055	L16060756-04 A 826-SPE	<2	1	1		06/17/16 01:38
8M413056	RINSE	NA	1	1		06/17/16 02:07
8M413057	RINSE	NA	1	1		06/17/16 02:37
8M413058	RINSE	NA	1	1		06/17/16 03:05

Comments

Seq.	Rerun	Dil.	Reason	Analytes
14	X		Carry-over contamination	
File ID: 8M413044				

Approved: June 23, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 061616
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75370 Surrogate Standard: STD76370
CCV: STD76578 LCS: STD76597 MS/MSD: STD76597

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG573038

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
	L16060732-01			
15				
File ID: 8M413045				
	L16060823-01 high surrogate but sample is ND.			
17	X		Surrogate standard failure	
File ID: 8M413047				
	L16060823-04			
18	X		Surrogate standard failure	
File ID: 8M413048				
	L16060730-03			
24	X	20	Over Calibration Range	CFORM, CTET, TCE
File ID: 8M413054				
	L16060637-03			
25	X	20	Over Calibration Range	CB
File ID: 8M413055				
	L16060756-04			

Approved: June 23, 2016

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Microbac Laboratories Inc.

Data Checklist

Date: 13-MAY-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75126
Analytical Workgroups: WG568561

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	TMB
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
17-MAY-2016
Tiffany Bailey

Secondary Reviewer:
20-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2016 11:18:36

Microbac Laboratories Inc.

Data Checklist

Date: 17-MAY-2016
Analyst: TMB
Analyst: FJB
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75174
Analytical Workgroups: WG569079; WG569083

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
19-MAY-2016
Tiffany Bailey

Secondary Reviewer:
20-MAY-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2016 11:05:37

Microbac Laboratories Inc.

Data Checklist

Date: 15-JUN-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75739
Analytical Workgroups: WG572737

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
16-JUN-2016

Secondary Reviewer:
20-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-20-2016 13:15:59

Microbac Laboratories Inc.

Data Checklist

Date: 16-JUN-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75860
Analytical Workgroups: WG573038

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
22-JUN-2016

Secondary Reviewer:
23-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-23-2016 13:34:00

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG572737

Login Number: L16060616

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW26SW-060916	02	06/09/16					06/15/2016	6.2	14		06/15/16	6.2	14	
MW10-060916	03	06/09/16					06/15/2016	6.1	14		06/15/16	6.1	14	
TRIP BLANK	05	06/09/16					06/15/2016	6.6	14		06/15/16	6.6	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4810864
Report generated 06/23/2016 13:32

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG573038

Login Number: L16060616

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW8-060916	01	06/09/16					06/16/2016	7.4	14		06/16/16	7.4	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4810864
Report generated 06/23/2016 13:32

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060616
Instrument Id: HPMS8
Workgroup (AAB#): WG572737

Method: 8260
CAL ID: HPMS8-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16060616-02	1.00	01	117	112	100	105
L16060616-03	1.00	01	114	112	102	104
L16060616-05	1.00	01	111	110	99.8	105
WG572737-01	1.00	01	110	110	97.6	104
WG572737-02	1.00	01	111	107	100	104
WG572737-03	1.00	01	111	110	102	104

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4810872
Report generated: 06/23/2016 13:32

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060616
Instrument Id: HPMS8
Workgroup (AAB#): WG573038

Method: 8260
CAL ID: HPMS8-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16060616-01	1.00	01	116	110	101	105
WG573038-01	1.00	01	114	109	102	106
WG573038-02	1.00	01	118	110	99.2	104
WG573038-03	1.00	01	114	108	98.9	104

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4810872
Report generated: 06/23/2016 13:32

METHOD BLANK SUMMARY

Login Number: L16060616
Blank File ID: 8M413005
Prep Date: 06/15/16 10:27
Analyzed Date: 06/15/16 10:27
Analyst: TMB

Work Group: WG572737
Blank Sample ID: WG572737-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572737-02	8M413006	06/15/16 10:56	01
LCS2	WG572737-03	8M413007	06/15/16 11:25	01
TRIP BLANK	L16060616-05	8M413012	06/15/16 13:50	01
MW10-060916	L16060616-03	8M413020	06/15/16 17:43	01
18CPTMW26SW-060916	L16060616-02	8M413021	06/15/16 18:11	01

Report Name: BLANK_SUMMARY
PDF File ID: 4810865
Report generated 06/23/2016 13:32

METHOD BLANK SUMMARY

Login Number: L16060616
Blank File ID: 8M413034
Prep Date: 06/16/16 15:23
Analyzed Date: 06/16/16 15:23
Analyst: FJB

Work Group: WG573038
Blank Sample ID: WG573038-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573038-02	8M413035	06/16/16 15:52	01
LCS2	WG573038-03	8M413036	06/16/16 16:21	01
MW8-060916	L16060616-01	8M413043	06/16/16 19:52	01

Report Name: BLANK_SUMMARY
PDF File ID: 4810865
Report generated 06/23/2016 13:32

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16060616 Prep Date: 06/15/16 10:27 Sample ID: WG572737-01
Instrument ID: HPMS8 Run Date: 06/15/16 10:27 Prep Method: 5030B/5030C/503
File ID: 8M413005 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG572737 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
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Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060616 Prep Date: 06/15/16 10:27 Sample ID: WG572737-01
Instrument ID: HPMS8 Run Date: 06/15/16 10:27 Prep Method: 5030B/5030C/503
File ID: 8M413005 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG572737 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	110	85 - 115	PASS
1,2-Dichloroethane-d4	110	70 - 120	PASS
Toluene-d8	104	85 - 120	PASS
4-Bromofluorobenzene	97.6	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
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Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16060616 Prep Date: 06/16/16 15:23 Sample ID: WG573038-01
Instrument ID: HPMS8 Run Date: 06/16/16 15:23 Prep Method: 5030B/5030C/503
File ID: 8M413034 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573038 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

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Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060616 Prep Date: 06/16/16 15:23 Sample ID: WG573038-01
Instrument ID: HPMS8 Run Date: 06/16/16 15:23 Prep Method: 5030B/5030C/503
File ID: 8M413034 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573038 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	109	85 - 115	PASS
1,2-Dichloroethane-d4	114	70 - 120	PASS
Toluene-d8	106	85 - 120	PASS
4-Bromofluorobenzene	102	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4810866
23-JUN-2016 13:32

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060616 Analyst: FJB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG573038 Units: ug/L
QC Key: DOD4 Lot #: STD76597

Sample ID: WG573038-02 LCS File ID: 8M413035 Run Date: 06/16/2016 15:52
Sample ID: WG573038-03 LCS2 File ID: 8M413036 Run Date: 06/16/2016 16:21

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	20.8	104	20.0	20.9	105	0.576	80 - 130	30	
1,1,1-Trichloroethane	20.0	22.5	112	20.0	23.2	116	3.45	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	17.7	88.5	20.0	18.1	90.5	2.29	65 - 130	30	
1,1,2-Trichloroethane	20.0	19.6	97.9	20.0	19.6	98.1	0.148	75 - 125	30	
1,1-Dichloroethane	20.0	19.5	97.5	20.0	19.9	99.5	2.06	70 - 135	30	
1,1-Dichloroethene	20.0	18.9	94.6	20.0	19.6	98.2	3.75	70 - 130	30	
1,1-Dichloropropene	20.0	20.6	103	20.0	21.0	105	2.03	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	19.0	94.8	20.0	19.4	96.8	2.05	55 - 140	30	
1,2,3-Trichloropropane	20.0	19.8	99.1	20.0	19.6	97.8	1.36	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	19.4	96.9	20.0	20.1	100	3.60	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	19.9	99.5	20.0	20.3	102	2.19	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	19.7	98.7	20.0	21.4	107	7.93	50 - 130	30	
1,2-Dibromoethane	20.0	20.1	100	20.0	19.9	99.3	1.19	80 - 120	30	
1,2-Dichlorobenzene	20.0	19.7	98.6	20.0	20.3	102	3.14	70 - 120	30	
1,2-Dichloroethane	20.0	23.3	117	20.0	23.5	118	0.816	70 - 130	30	
1,2-Dichloropropane	20.0	20.4	102	20.0	21.0	105	3.16	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	20.3	102	20.0	20.9	105	3.05	75 - 130	30	
1,3-Dichlorobenzene	20.0	20.0	99.9	20.0	20.6	103	3.29	75 - 125	30	
1,3-Dichloropropane	20.0	20.7	103	20.0	21.0	105	1.29	75 - 125	30	
1,4-Dichlorobenzene	20.0	19.7	98.6	20.0	20.4	102	3.14	75 - 125	30	
2,2-Dichloropropane	20.0	23.0	115	20.0	23.5	118	2.50	70 - 135	30	
2-Butanone	20.0	20.2	101	20.0	20.8	104	3.17	30 - 150	30	
2-Chlorotoluene	20.0	20.3	102	20.0	20.6	103	1.51	75 - 125	30	
2-Hexanone	20.0	18.6	93.0	20.0	17.8	89.1	4.24	55 - 130	30	
4-Chlorotoluene	20.0	19.7	98.5	20.0	20.0	100	1.77	75 - 130	30	
4-Methyl-2-pentanone	20.0	19.8	98.8	20.0	20.7	103	4.57	60 - 135	30	
Acetone	20.0	21.8	109	20.0	24.1	121	10.2	40 - 140	30	
Benzene	20.0	20.4	102	20.0	21.1	105	3.43	80 - 120	30	
Bromobenzene	20.0	19.2	95.9	20.0	19.7	98.4	2.64	75 - 125	30	
Bromochloromethane	20.0	20.7	103	20.0	20.6	103	0.508	65 - 130	30	
Bromodichloromethane	20.0	21.6	108	20.0	22.5	112	4.14	75 - 120	30	
Bromoform	20.0	20.0	99.8	20.0	20.0	99.9	0.134	70 - 130	30	
Bromomethane	20.0	14.0	70.2	20.0	15.7	78.3	11.0	30 - 145	30	
Carbon disulfide	20.0	18.1	90.6	20.0	18.6	92.9	2.55	35 - 160	30	
Carbon tetrachloride	20.0	22.5	112	20.0	23.1	115	2.71	65 - 140	30	
Chlorobenzene	20.0	20.4	102	20.0	20.7	104	1.62	80 - 120	30	
Chloroethane	20.0	20.4	102	20.0	21.7	109	6.06	60 - 135	30	
Chloroform	20.0	21.2	106	20.0	21.7	108	2.28	65 - 135	30	
Chloromethane	20.0	18.9	94.7	20.0	20.2	101	6.46	40 - 125	30	
cis-1,2-Dichloroethene	20.0	20.5	102	20.0	21.2	106	3.58	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060616 Analyst: FJB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG573038 Units: ug/L
QC Key: DOD4 Lot #: STD76597

Sample ID: WG573038-02 LCS File ID: 8M413035 Run Date: 06/16/2016 15:52
Sample ID: WG573038-03 LCS2 File ID: 8M413036 Run Date: 06/16/2016 16:21

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	23.1	115	20.0	23.5	117	1.55	70 - 130	30	
Chlorodibromomethane	20.0	20.5	102	20.0	20.8	104	1.79	60 - 135	30	
Dibromomethane	20.0	19.9	99.3	20.0	19.9	99.6	0.358	75 - 125	30	
Dichlorodifluoromethane	20.0	20.8	104	20.0	21.8	109	4.81	30 - 155	30	
Ethylbenzene	20.0	19.9	99.3	20.0	19.9	99.5	0.215	75 - 125	30	
Hexachlorobutadiene	20.0	21.3	106	20.0	21.7	108	1.84	50 - 140	30	
Isopropylbenzene	20.0	21.6	108	20.0	22.0	110	1.89	75 - 125	30	
m-,p-Xylene	40.0	40.9	102	40.0	41.7	104	2.14	75 - 130	30	
Methylene chloride	20.0	19.3	96.4	20.0	19.9	99.5	3.13	55 - 140	30	
n-Butylbenzene	20.0	19.4	97.2	20.0	19.8	99.2	2.07	70 - 135	30	
n-Propylbenzene	20.0	20.4	102	20.0	21.0	105	2.87	70 - 130	30	
Naphthalene	20.0	17.4	87.0	20.0	18.1	90.5	3.97	55 - 140	30	
o-Xylene	20.0	21.1	106	20.0	21.4	107	1.39	80 - 120	30	
p-Isopropyltoluene	20.0	20.0	100	20.0	20.9	104	4.05	75 - 130	30	
sec-Butylbenzene	20.0	20.2	101	20.0	20.7	104	2.34	70 - 125	30	
Styrene	20.0	20.7	103	20.0	21.1	106	2.22	65 - 135	30	
tert-Butylbenzene	20.0	19.7	98.5	20.0	20.4	102	3.70	70 - 130	30	
Tetrachloroethene	20.0	20.1	101	20.0	20.5	102	1.70	45 - 150	30	
Toluene	20.0	19.7	98.6	20.0	20.1	101	1.94	75 - 120	30	
trans-1,2-Dichloroethene	20.0	20.1	100	20.0	20.4	102	1.57	60 - 140	30	
trans-1,3-Dichloropropene	20.0	20.9	104	20.0	21.1	105	0.925	55 - 140	30	
Trichloroethene	20.0	21.8	109	20.0	22.5	112	3.24	70 - 125	30	
Trichlorofluoromethane	20.0	22.3	111	20.0	22.8	114	2.49	60 - 145	30	
Vinyl chloride	20.0	23.0	115	20.0	24.1	121	4.97	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	118	114	70 - 120	PASS
Dibromofluoromethane	110	108	85 - 115	PASS
4-Bromofluorobenzene	99.2	98.9	75 - 120	PASS
Toluene-d8	104	104	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4810867
Report generated: 06/23/2016 13:32

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060616 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG572737 Units: ug/L
QC Key: DOD4 Lot #: STD76597

Sample ID: WG572737-02 LCS File ID: 8M413006 Run Date: 06/15/2016 10:56
Sample ID: WG572737-03 LCS2 File ID: 8M413007 Run Date: 06/15/2016 11:25

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	21.1	106	20.0	20.8	104	1.33	80 - 130	30	
1,1,1-Trichloroethane	20.0	22.3	112	20.0	22.2	111	0.500	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	18.1	90.5	20.0	18.8	94.0	3.89	65 - 130	30	
1,1,2-Trichloroethane	20.0	20.2	101	20.0	20.0	100	0.857	75 - 125	30	
1,1-Dichloroethane	20.0	19.9	99.4	20.0	20.2	101	1.73	70 - 135	30	
1,1-Dichloroethene	20.0	19.6	97.8	20.0	20.0	99.9	2.07	70 - 130	30	
1,1-Dichloropropene	20.0	20.1	101	20.0	20.7	104	3.16	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	19.0	95.1	20.0	19.3	96.5	1.40	55 - 140	30	
1,2,3-Trichloropropane	20.0	20.5	103	20.0	20.1	100	2.21	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	19.8	98.9	20.0	20.0	100	1.32	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	20.2	101	20.0	20.0	99.9	1.28	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	19.7	98.4	20.0	19.4	97.0	1.49	50 - 130	30	
1,2-Dibromoethane	20.0	20.4	102	20.0	20.3	102	0.581	80 - 120	30	
1,2-Dichlorobenzene	20.0	20.3	102	20.0	20.7	104	1.97	70 - 120	30	
1,2-Dichloroethane	20.0	22.4	112	20.0	23.6	118	5.32	70 - 130	30	
1,2-Dichloropropane	20.0	20.7	104	20.0	21.0	105	1.42	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	20.8	104	20.0	20.8	104	0.0710	75 - 130	30	
1,3-Dichlorobenzene	20.0	20.6	103	20.0	20.6	103	0.116	75 - 125	30	
1,3-Dichloropropane	20.0	21.9	109	20.0	21.5	107	2.01	75 - 125	30	
1,4-Dichlorobenzene	20.0	20.6	103	20.0	20.5	103	0.231	75 - 125	30	
2,2-Dichloropropane	20.0	22.9	114	20.0	23.2	116	1.44	70 - 135	30	
2-Butanone	20.0	20.9	104	20.0	22.3	112	6.63	30 - 150	30	
2-Chlorotoluene	20.0	18.5	92.3	20.0	18.6	92.9	0.574	75 - 125	30	
2-Hexanone	20.0	18.6	92.8	20.0	19.1	95.7	3.07	55 - 130	30	
4-Chlorotoluene	20.0	22.4	112	20.0	22.4	112	0.398	75 - 130	30	
4-Methyl-2-pentanone	20.0	19.8	98.8	20.0	20.3	102	2.82	60 - 135	30	
Acetone	20.0	22.4	112	20.0	24.7	123	9.61	40 - 140	30	
Benzene	20.0	20.7	103	20.0	20.9	105	1.27	80 - 120	30	
Bromobenzene	20.0	19.7	98.7	20.0	20.1	101	1.82	75 - 125	30	
Bromochloromethane	20.0	20.7	104	20.0	21.1	105	1.74	65 - 130	30	
Bromodichloromethane	20.0	21.8	109	20.0	22.3	111	2.31	75 - 120	30	
Bromoform	20.0	20.1	100	20.0	20.2	101	0.331	70 - 130	30	
Bromomethane	20.0	13.9	69.7	20.0	14.9	74.4	6.59	30 - 145	30	
Carbon disulfide	20.0	18.3	91.3	20.0	18.5	92.6	1.44	35 - 160	30	
Carbon tetrachloride	20.0	21.9	109	20.0	21.7	108	0.914	65 - 140	30	
Chlorobenzene	20.0	21.0	105	20.0	20.6	103	1.91	80 - 120	30	
Chloroethane	20.0	21.1	105	20.0	21.5	108	2.22	60 - 135	30	
Chloroform	20.0	21.4	107	20.0	21.3	107	0.454	65 - 135	30	
Chloromethane	20.0	20.3	102	20.0	20.7	104	2.04	40 - 125	30	
cis-1,2-Dichloroethene	20.0	21.2	106	20.0	20.9	104	1.68	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4810867
Report generated: 06/23/2016 13:32

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060616 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG572737 Units: ug/L
QC Key: DOD4 Lot #: STD76597

Sample ID: WG572737-02 LCS File ID: 8M413006 Run Date: 06/15/2016 10:56
Sample ID: WG572737-03 LCS2 File ID: 8M413007 Run Date: 06/15/2016 11:25

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	23.4	117	20.0	23.9	119	2.17	70 - 130	30	
Chlorodibromomethane	20.0	21.0	105	20.0	20.9	105	0.266	60 - 135	30	
Dibromomethane	20.0	19.5	97.6	20.0	19.5	97.3	0.352	75 - 125	30	
Dichlorodifluoromethane	20.0	21.2	106	20.0	21.6	108	1.62	30 - 155	30	
Ethylbenzene	20.0	19.9	99.5	20.0	19.9	99.5	0.0185	75 - 125	30	
Hexachlorobutadiene	20.0	21.0	105	20.0	21.1	105	0.463	50 - 140	30	
Isopropylbenzene	20.0	21.7	109	20.0	21.7	109	0.0757	75 - 125	30	
m-,p-Xylene	40.0	42.0	105	40.0	41.3	103	1.56	75 - 130	30	
Methylene chloride	20.0	19.9	99.3	20.0	20.7	104	4.32	55 - 140	30	
n-Butylbenzene	20.0	19.4	97.1	20.0	19.7	98.6	1.60	70 - 135	30	
n-Propylbenzene	20.0	20.8	104	20.0	21.0	105	0.657	70 - 130	30	
Naphthalene	20.0	17.4	86.8	20.0	17.8	89.0	2.56	55 - 140	30	
o-Xylene	20.0	21.3	107	20.0	20.8	104	2.31	80 - 120	30	
p-Isopropyltoluene	20.0	20.3	102	20.0	20.4	102	0.386	75 - 130	30	
sec-Butylbenzene	20.0	20.5	103	20.0	20.8	104	1.32	70 - 125	30	
Styrene	20.0	21.1	105	20.0	21.1	105	0.0674	65 - 135	30	
tert-Butylbenzene	20.0	19.9	99.5	20.0	20.0	100	0.470	70 - 130	30	
Tetrachloroethene	20.0	20.8	104	20.0	20.6	103	1.34	45 - 150	30	
Toluene	20.0	20.2	101	20.0	20.3	101	0.147	75 - 120	30	
trans-1,2-Dichloroethene	20.0	20.1	100	20.0	20.9	104	3.89	60 - 140	30	
trans-1,3-Dichloropropene	20.0	21.1	106	20.0	20.8	104	1.47	55 - 140	30	
Trichloroethene	20.0	21.9	109	20.0	22.4	112	2.49	70 - 125	30	
Trichlorofluoromethane	20.0	21.1	105	20.0	21.6	108	2.45	60 - 145	30	
Vinyl chloride	20.0	23.1	115	20.0	23.4	117	1.48	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	111	111	70 - 120	PASS
Dibromofluoromethane	107	110	85 - 115	PASS
4-Bromofluorobenzene	100	102	75 - 120	PASS
Toluene-d8	104	104	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4810867
Report generated: 06/23/2016 13:32

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060616
Instrument: HPMS8
Analyst: TMB
Workgroup: WG568561

Tune ID: WG568561-01
Run Date: 05/13/2016
Run Time: 12:36
File ID: 8M412218
Cal ID: HPMS8 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	16.7	6575	PASS
75.0	95.0	30.0	60.0	51.3	20171	PASS
95.0	95.0	100	100	100	39312	PASS
96.0	95.0	5.00	9.00	6.74	2649	PASS
173	174	0	2.00	0.363	122	PASS
174	95.0	50.0	100	85.5	33616	PASS
175	174	5.00	9.00	8.17	2746	PASS
176	174	95.0	101	99.2	33360	PASS
177	176	5.00	9.00	6.80	2267	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG568561-02	STD	01	05/13/2016 13:29	
WG568561-03	STD	01	05/13/2016 13:58	
WG568561-04	STD	01	05/13/2016 14:27	
WG568561-05	STD	01	05/13/2016 14:56	
WG568561-06	STD	01	05/13/2016 15:25	
WG568561-07	STD	01	05/13/2016 15:54	
WG568561-08	STD-CCV	01	05/13/2016 16:23	
WG568561-09	STD	01	05/13/2016 16:52	
WG568561-10	STD	01	05/13/2016 17:21	
WG568561-11	STD	01	05/13/2016 17:50	
WG568561-12	SSCV	01	05/13/2016 19:17	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4810869
Report generated 06/23/2016 13:32

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060616
Instrument: HPMS8
Analyst: TMB
Workgroup: WG569084

Tune ID: WG569084-01
Run Date: 05/17/2016
Run Time: 08:53
File ID: 8M412319
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.1	6316	PASS
75.0	95.0	30.0	60.0	54.7	18130	PASS
95.0	95.0	100	100	100	33138	PASS
96.0	95.0	5.00	9.00	6.76	2241	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	72.2	23934	PASS
175	174	5.00	9.00	7.88	1886	PASS
176	174	95.0	101	96.8	23159	PASS
177	176	5.00	9.00	7.15	1655	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG569079-01	STD-CCV	01	05/17/2016 09:47	
WG569079-03	STD	01	05/17/2016 10:16	
WG569079-04	STD	01	05/17/2016 10:44	
WG569079-05	STD	01	05/17/2016 11:13	
WG569079-06	STD	01	05/17/2016 11:42	
WG569079-07	STD	01	05/17/2016 12:40	
WG569079-08	STD	01	05/17/2016 13:10	
WG569079-09	STD	01	05/17/2016 13:39	
WG569079-10	SSCV	01	05/17/2016 15:06	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4810869
Report generated 06/23/2016 13:32

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060616
Instrument: HPMS8
Analyst: TMB
Workgroup: WG572735

Tune ID: WG572735-01
Run Date: 06/15/2016
Run Time: 08:36
File ID: 8M413001
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	18.6	9690	PASS
75.0	95.0	30.0	60.0	55.4	28818	PASS
95.0	95.0	100	100	100	52034	PASS
96.0	95.0	5.00	9.00	6.36	3311	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	75.4	39229	PASS
175	174	5.00	9.00	8.10	3176	PASS
176	174	95.0	101	96.0	37669	PASS
177	176	5.00	9.00	6.36	2397	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG572735-02	CCV	01	06/15/2016 09:29	
WG572737-01	BLANK	01	06/15/2016 10:27	
WG572737-02	LCS	01	06/15/2016 10:56	
WG572737-03	LCS2	01	06/15/2016 11:25	
L16060616-05	TRIP BLANK	01	06/15/2016 13:50	
L16060616-03	MW10-060916	01	06/15/2016 17:43	
L16060616-02	18CPTMW26SW-060916	01	06/15/2016 18:11	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4810869
Report generated 06/23/2016 13:32

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060616
Instrument: HPMS8
Analyst: FJB
Workgroup: WG573037

Tune ID: WG573037-01
Run Date: 06/16/2016
Run Time: 14:02
File ID: 8M413031
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.9	6352	PASS
75.0	95.0	30.0	60.0	57.2	18249	PASS
95.0	95.0	100	100	100	31890	PASS
96.0	95.0	5.00	9.00	7.42	2366	PASS
173	174	0	2.00	1.50	352	PASS
174	95.0	50.0	100	73.7	23499	PASS
175	174	5.00	9.00	7.96	1870	PASS
176	174	95.0	101	97.3	22869	PASS
177	176	5.00	9.00	6.73	1538	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573037-02	CCV	01	06/16/2016 14:25	
WG573038-01	BLANK	01	06/16/2016 15:23	
WG573038-02	LCS	01	06/16/2016 15:52	
WG573038-03	LCS2	01	06/16/2016 16:21	
L16060616-01	MW8-060916	01	06/16/2016 19:52	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4810869
Report generated 06/23/2016 13:32

Calibration Table Report
Method: 8260WT.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Calibration: Sat May 14 18:08:06 2016
Curve: WG568561
Calibration Files

	Compound	0.3 8M412220.D	0.4 8M412221.D	1 8M412222.D	2 8M412223.D	5 8M412224.D	20 8M412225.D	50 8M412226.D	100 8M412227.D	200 8M412228.D	300 8M412229.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane		0.427	0.390	0.397	0.364	0.468	0.439	0.452	0.427	0.408	0.419	7.751		
P	Chloromethane			0.264	0.257	0.223	0.253	0.240	0.240	0.239	0.241	0.245	5.336		
C	Vinyl Chloride		0.274	0.296	0.297	0.277	0.299	0.292	0.299	0.292	0.288	0.290	3.191		
T	1,3-Butadiene				0.218	0.208	0.242	0.251	0.277	0.254	0.254	0.243	9.644		
T	Bromomethane			0.129	0.133	0.127	0.162	0.167	0.187	0.205	0.212	0.165	20.449		1.000
T	Chloroethane		0.173	0.157	0.153	0.143	0.164	0.157	0.163	0.164	0.164	0.160	5.354		
T	Trichlorofluoromethane		0.544	0.538	0.559	0.506	0.570	0.538	0.551	0.531	0.525	0.540	3.520		
T	Diethyl ether			0.130	0.138	0.123	0.132	0.125	0.128		0.127	0.129	3.866		
T	Isoprene		0.335	0.351	0.334	0.293	0.334	0.320	0.334	0.322	0.329	0.328	4.867		
T	Acrolein				0.012	0.010	0.010	0.011	0.012		0.014	0.012	12.987		
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.256	0.269	0.240	0.260	0.249	0.257	0.251	0.250	0.254	3.397		
T	Acetone					0.023	0.030	0.029	0.030	0.028	0.028	0.028	9.132		
C	1,1-Dichloroethene		0.424	0.407	0.406	0.387	0.416	0.398	0.409	0.400	0.393	0.404	2.830		
T	Tert-Butyl Alcohol				0.010	0.009	0.009	0.009	0.009		0.009	0.009	2.872		
T	Dimethyl Sulfide		0.133	0.142	0.152	0.137	0.145	0.142	0.151	0.147	0.151	0.145	4.534		
T	Iodomethane				0.019	0.024	0.066	0.101	0.129	0.135	0.131	0.087	58.244		0.998
T	Methyl acetate					0.075	0.076	0.074	0.078	0.076	0.078	0.076	2.221		
T	Methylene Chloride			0.274	0.265	0.244	0.263	0.250	0.255	0.254	0.252	0.257	3.686		
T	Carbon Disulfide			0.888	0.922	0.801	0.873	0.816	0.854	0.813	0.802	0.846	5.346		
T	Acrylonitrile			0.027	0.035	0.033	0.038	0.038	0.039		0.044	0.036	14.671		
T	Methyl Tert Butyl Ether			0.534	0.543	0.521	0.586	0.579	0.585	0.560	0.546	0.557	4.455		
T	trans-1,2-Dichloroethene		0.389	0.395	0.364	0.352	0.381	0.367	0.372	0.364	0.358	0.371	3.858		
T	n-Hexane					0.265	0.280	0.270	0.286	0.275	0.279	0.276	2.732		
T	Diisopropyl ether			0.600	0.607	0.548	0.588	0.572	0.571		0.567	0.579	3.559		
T	Vinyl Acetate				0.256	0.243	0.270	0.275	0.266	0.271	0.275	0.265	4.509		
P	1,1-Dichloroethane		0.441	0.463	0.486	0.434	0.488	0.464	0.470	0.459	0.447	0.461	4.012		
T	Ethyl-Tert-Butyl ether			0.616	0.645	0.590	0.641	0.628	0.619		0.603	0.620	3.188		
T	2-Butanone					0.035	0.042	0.043	0.045	0.041	0.043	0.041	8.268		
T	Propionitrile			0.010	0.012	0.012	0.013	0.012	0.013		0.013	0.012	8.354		
T	2,2-Dichloropropane		0.471	0.462	0.520	0.476	0.503	0.494	0.497	0.483	0.470	0.486	3.839		
T	cis-1,2-Dichloroethene		0.299	0.298	0.291	0.267	0.295	0.282	0.289	0.283	0.277	0.287	3.685		
C	Chloroform	0.563	0.567	0.581	0.536	0.509	0.566	0.543	0.546	0.529	0.506	0.545	4.619		
T	1-Bromopropane			0.034	0.040	0.040	0.043	0.041	0.043	0.043	0.044	0.041	7.649		
T	Bromochloromethane		0.131	0.164	0.147	0.137	0.154	0.148	0.151	0.148	0.145	0.147	6.598		
T	Tetrahydrofuran			0.034	0.028	0.025	0.026	0.026	0.026		0.026	0.027	11.724		
S	Dibromofluoromethane			0.249	0.261	0.257	0.280	0.271	0.284	0.271	0.275	0.269	4.465		
T	1,1,1-Trichloroethane		0.492	0.537	0.515	0.496	0.545	0.525	0.533	0.515	0.499	0.517	3.660		
T	Cyclohexane			0.373	0.369	0.335	0.359	0.344	0.366	0.356	0.364	0.358	3.619		
T	1,1-Dichloropropene			0.414	0.399	0.369	0.403	0.395	0.399	0.392	0.382	0.394	3.488		
T	Tert-Amyl-Methyl ether			0.567	0.587	0.534	0.576	0.568	0.561		0.549	0.563	3.077		
T	Carbon Tetrachloride		0.444	0.456	0.462	0.441	0.481	0.465	0.474	0.462	0.448	0.4594	2.92173		
S	1,2-Dichloroethane-d4			0.241	0.309	0.276	0.312	0.295	0.301	0.284	0.286	0.288	7.93644		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.347	0.335	0.354	0.336	0.371	0.36	0.364	0.349	0.338	0.3505	3.65503		
T	Benzene		1.128	1.084	1.071	0.977	1.085	1.033	1.019	0.963	0.883	1.0269	7.39343		
T	Trichloroethene		0.285	0.275	0.276	0.251	0.283	0.273	0.279	0.273	0.27	0.2739	3.66126		
T	Methylcyclohexane					0.396	0.426	0.408	0.429	0.416	0.422	0.4161	2.94153		
C	1,2-Dichloropropane		0.239	0.222	0.233	0.207	0.238	0.226	0.233	0.231	0.229	0.2286	4.30096		
T	Bromodichloromethane		0.369	0.382	0.412	0.385	0.426	0.421	0.417	0.41	0.395	0.4018	4.93305		
T	1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.0011	14.5817		
T	Dibromomethane		0.141	0.13	0.137	0.128	0.141	0.134	0.137	0.136	0.133	0.1353	3.26799		
T	2-Chloroethyl Vinyl Ether				0.1	0.084	0.103	0.104	0.103	0.095	0.098	0.0983	7.09792		
T	4-Methyl-2-Pentanone					0.033	0.042	0.042	0.043	0.04	0.041	0.0401	8.66859		
T	cis-1,3-Dichloropropene		0.391	0.393	0.386	0.398	0.431	0.428	0.428	0.42	0.405	0.409	4.41527		

T	Dimethyl Disulfide					0.182	0.218	0.221	0.23	0.229	0.23	0.2183	8.49419	
I	Chlorobenzene-d5	ISTD												
S	Toluene-d8			1.282	1.295	1.228	1.385	1.333	1.378	1.289	1.278	1.3084	4.07746	
C	Toluene		1.653	1.696	1.678	1.507	1.647	1.554	1.545	1.418	1.27	1.552	8.98325	
T	Ethyl Methacrylate			0.251	0.293	0.268	0.314	0.314	0.327	0.309	0.31	0.2981	8.76897	
T	Paraldehyde											0	0	
T	trans-1,3-Dichloropropene			0.472	0.51	0.466	0.561	0.552	0.553	0.533	0.515	0.5201	7.01006	
T	1,1,2-Trichloroethane		0.261	0.241	0.242	0.222	0.254	0.249	0.252	0.243	0.241	0.2449	4.54209	
T	2-Hexanone					0.042	0.053	0.053	0.056	0.051	0.053	0.0515	9.50479	
T	1,3-Dichloropropane		0.355	0.442	0.465	0.42	0.468	0.454	0.457	0.437	0.428	0.436	7.93348	
T	Tetrachloroethene		0.355	0.337	0.336	0.306	0.333	0.325	0.337	0.334	0.33	0.3325	3.83886	
T	Dibromochloromethane		0.349	0.336	0.338	0.328	0.373	0.372	0.383	0.373	0.367	0.3576	5.60043	
T	1,2-Dibromoethane		0.233	0.234	0.234	0.227	0.259	0.254	0.258	0.251	0.247	0.2441	5.04151	
T	1-Chlorohexane		0.532	0.584	0.505	0.502	0.54	0.52	0.547	0.521	0.516	0.5298	4.7826	
P	Chlorobenzene		1.029	1.173	1.09	1.007	1.099	1.037	1.043	1.002	0.939	1.0466	6.41465	
T	1,1,1,2-Tetrachloroethane		0.392	0.399	0.403	0.357	0.431	0.414	0.424	0.417	0.413	0.4055	5.39495	
C	Ethylbenzene		0.6	0.594	0.59	0.532	0.586	0.559	0.57	0.564	0.558	0.5726	3.7769	
T	m-,p-Xylene		0.744	0.696	0.691	0.643	0.713	0.67	0.673	0.634	0.581	0.6716	7.12586	
T	o-Xylene			0.691	0.651	0.614	0.692	0.658	0.667	0.65	0.63	0.6567	4.11758	
T	Styrene		1.05	1.06	1.096	1.043	1.159	1.124	1.12	1.061	0.98	1.077	4.96781	
P	Bromoform			0.177	0.21	0.181	0.226	0.221	0.232	0.227	0.223	0.2121	10.0546	
T	Isopropylbenzene		1.853	1.891	1.871	1.708	1.897	1.781	1.75	1.573	1.377	1.7444	9.92447	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.426	0.492	0.503	0.486	0.543	0.51	0.527	0.513	0.514	0.5018	6.60291	
S	p-Bromofluorobenzene				1.054	0.976	1.071	1.016	1.053	1.031	1.046	1.0352	3.05136	
T	1,2,3-Trichloropropane			0.119	0.158	0.161	0.162	0.155	0.162	0.16	0.158	0.1545	9.40789	
T	trans-1,4-Dichloro-2-Butene			0.085	0.118	0.12	0.149	0.151	0.16	0.159	0.161	0.1376	19.9543	1.000
T	n-Propylbenzene		4.139	4.239	4.243	4.051	4.241	3.953	3.882	3.419	2.935	3.9003	11.4439	
T	Bromobenzene	0.796	0.708	0.843	0.837	0.778	0.84	0.798	0.817	0.803	0.803	0.8022	4.93253	
T	1,3,5-Trimethylbenzene		2.941	2.93	2.941	2.839	3.053	2.882	2.871	2.689	2.423	2.8411	6.50391	
T	2-Chlorotoluene		2.917	2.935	2.929	2.712	2.861	2.795	2.682	2.533	2.145	2.7231	9.37022	
T	4-Chlorotoluene		2.681	2.596	2.581	2.474	2.625	2.326	2.447	2.286	2.121	2.4597	7.49558	
T	a-Methylstyrene					1.257	1.406	1.34	1.384	1.35	1.351	1.3479	3.77654	
T	tert-Butylbenzene			0.587	0.555	0.53	0.571	0.533	0.552	0.561	0.558	0.5558	3.34508	
T	1,2,4-Trimethylbenzene		2.955	3.168	3.127	2.936	3.12	2.914	2.937	2.709	2.427	2.9214	7.97314	
T	sec-Butylbenzene			3.701	3.536	3.487	3.607	3.34	3.332	3.045	2.69	3.3424	9.93324	
T	p-Isopropyltoluene			3.112	3.062	2.903	2.988	2.813	2.809	2.634	2.382	2.8379	8.45265	
T	1,3-Dichlorobenzene		1.484	1.617	1.627	1.53	1.605	1.531	1.549	1.51	1.45	1.5448	3.95774	
T	1,4-Dichlorobenzene	1.713	1.524	1.672	1.594	1.503	1.6	1.511	1.535	1.49	1.431	1.5574	5.56562	
T	n-Butylbenzene			3.143	2.96	2.895	3.002	2.791	2.792	2.571	2.292	2.8056	9.55812	
T	1,2-Dichlorobenzene	1.59	1.307	1.415	1.41	1.322	1.404	1.333	1.356	1.315	1.286	1.3739	6.4618	
T	1,2-Dibromo-3-Chloropropane				0.085	0.103	0.102	0.103	0.106	0.104	0.103	0.1007	6.86771	
T	1,2,4-Trichlorobenzene		1.074	1.01	1.028	0.982	1.069	1.013	1.036	1.029	1.002	1.0269	2.90829	
T	Hexachlorobutadiene		0.516	0.476	0.483	0.447	0.487	0.459	0.48	0.485	0.485	0.4798	4.00465	
T	Naphthalene		1.594	1.457	1.574	1.455	1.63	1.552	1.564	1.485	1.422	1.5258	4.75891	
T	1,2,3-Trichlorobenzene	0.913	0.934	0.905	0.862	0.805	0.877	0.824	0.862	0.846	0.835	0.8664	4.7474	

Tue May 17 11:49:41 2016

Calibration Table Report
Method: A9FOOWT.M
Title: A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Calibration: Thu May 19 08:54:31 2016
Curve: WG569079
Calibration Files

	Compound	5 8M412324.D	20 8M412323.D	50 8M412322.D	100 8M412321.D	200 8M412325.D	300 8M412326.D	400 8M412327.D	500 8M412328.D	Avg	%RSD
I	Fluorobenzene	ISTD									
T	Acetonitrile		0.009	0.010	0.010	0.010	0.010	0.010	0.010	0.010	2.076
T	3-Chloro-1-propene	0.306	0.330	0.335	0.331	0.324	0.307	0.304	0.304	0.318	4.307
T	2-Chloro-1,3-butadiene	0.368	0.420	0.420	0.419	0.419	0.392	0.389	0.387	0.402	5.022
T	Ethyl Acetate	0.080	0.096	0.097	0.100	0.099	0.098	0.100	0.095	0.096	6.751
T	Methacrylonitrile	0.041	0.054	0.055	0.055	0.055	0.054	0.055	0.052	0.053	9.227
T	Isobutyl Alcohol			0.003	0.003	0.003	0.003	0.003	0.003	0.003	3.599
T	1-Butanol									0.000	0.000
T	Methyl methacrylate	0.089	0.106	0.106	0.105	0.106	0.105	0.107	0.102	0.103	5.868
T	2-Nitropropane		0.041	0.042	0.043	0.046	0.047	0.048	0.046	0.045	5.992
I	Chlorobenzene-d5	ISTD									
I	1,4-Dichlorobenzene-d4	ISTD									
T	Cyclohexanone		0.011	0.010	0.010	0.009	0.010	0.011	0.010	0.010	4.971

Thu May 19 09:04:52 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060616 Run Date: 05/13/2016 Sample ID: WG568561-12
Instrument ID: HPMS8 Run Time: 19:17 Method: 8260B
File ID: 8M412232 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG568561 Cal ID: HPMS8 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.1	ug/L	0.513	5.70	20	
1,1-Dichloroethene	CCC	50.0	46.0	ug/L	0.372	8.10	20	
1,2-Dichloropropane	CCC	50.0	51.0	ug/L	0.233	1.90	20	
Ethylbenzene	CCC	50.0	48.2	ug/L	0.552	3.60	20	
Toluene	CCC	50.0	49.1	ug/L	1.52	1.80	20	
Vinyl Chloride	CCC	50.0	52.4	ug/L	0.304	4.80	20	
Bromoform	SPCC	50.0	48.2	ug/L	0.205	3.60	20	
Chlorobenzene	SPCC	50.0	50.2	ug/L	1.05	0.400	20	
Chloromethane	SPCC	50.0	50.7	ug/L	0.248	1.40	20	
1,1-Dichloroethane	SPCC	50.0	46.7	ug/L	0.431	6.60	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.6	ug/L	0.498	0.800	20	
Acetone		50.0	57.5	ug/L	0.0324	15.1	20	
Benzene		50.0	48.5	ug/L	0.997	3.00	20	
Bromobenzene		50.0	49.5	ug/L	0.794	1.10	20	
Bromochloromethane		50.0	47.5	ug/L	0.140	4.90	20	
Bromodichloromethane		50.0	48.3	ug/L	0.388	3.40	20	
Bromomethane		50.0	46.4	ug/L	0.162	7.20	20	
2-Butanone		50.0	53.0	ug/L	0.0438	6.00	20	
n-Butylbenzene		50.0	49.7	ug/L	2.79	0.700	20	
sec-Butylbenzene		50.0	51.3	ug/L	3.43	2.70	20	
tert-Butylbenzene		50.0	50.9	ug/L	0.566	1.90	20	
Carbon Disulfide		50.0	42.3	ug/L	0.716	15.4	20	
Carbon Tetrachloride		50.0	46.2	ug/L	0.425	7.50	20	
Dibromochloromethane		50.0	49.7	ug/L	0.355	0.700	20	
Chloroethane		50.0	53.3	ug/L	0.170	6.70	20	
2-Chlorotoluene		50.0	51.6	ug/L	2.81	3.10	20	
4-Chlorotoluene		50.0	48.3	ug/L	2.37	3.50	20	
1,2-Dibromo-3-Chloropropane		50.0	48.5	ug/L	0.0977	3.00	20	
1,2-Dibromoethane		50.0	51.1	ug/L	0.250	2.20	20	
Dibromomethane		50.0	45.8	ug/L	0.124	8.40	20	
1,2-Dichlorobenzene		50.0	50.5	ug/L	1.39	1.00	20	
1,3-Dichlorobenzene		50.0	50.9	ug/L	1.57	1.80	20	
1,4-Dichlorobenzene		50.0	50.5	ug/L	1.57	0.900	20	
Dichlorodifluoromethane		50.0	54.2	ug/L	0.455	8.40	20	
1,2-Dichloroethane		50.0	49.0	ug/L	0.344	2.00	20	
cis-1,2-Dichloroethene		50.0	48.9	ug/L	0.281	2.20	20	
trans-1,2-Dichloroethene		50.0	48.1	ug/L	0.357	3.90	20	
1,3-Dichloropropane		50.0	53.7	ug/L	0.468	7.30	20	
2,2-Dichloropropane		50.0	47.9	ug/L	0.466	4.20	20	
cis-1,3-Dichloropropene		50.0	53.9	ug/L	0.441	7.80	20	
trans-1,3-Dichloropropene		50.0	50.7	ug/L	0.527	1.30	20	
1,1-Dichloropropene		50.0	47.5	ug/L	0.374	5.10	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4810868
Report generated 06/23/2016 13:32

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060616 Run Date: 05/13/2016 Sample ID: WG568561-12
Instrument ID: HPMS8 Run Time: 19:17 Method: 8260B
File ID: 8M412232 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG568561 Cal ID: HPMS8 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	53.6	ug/L	0.0552	7.20	20	
Hexachlorobutadiene		50.0	52.1	ug/L	0.500	4.20	20	
Isopropylbenzene		50.0	51.1	ug/L	1.78	2.20	20	
p-Isopropyltoluene		50.0	50.1	ug/L	2.85	0.300	20	
4-Methyl-2-Pentanone		50.0	51.9	ug/L	0.0416	3.70	20	
Methylene Chloride		50.0	48.4	ug/L	0.249	3.10	20	
Naphthalene		50.0	45.8	ug/L	1.40	8.40	20	
n-Propylbenzene		50.0	51.9	ug/L	4.05	3.80	20	
Styrene		50.0	51.5	ug/L	1.11	3.00	20	
1,1,1,2-Tetrachloroethane		50.0	49.4	ug/L	0.400	1.20	20	
Tetrachloroethene		50.0	47.8	ug/L	0.318	4.40	20	
1,2,3-Trichlorobenzene		50.0	47.7	ug/L	0.827	4.50	20	
1,2,4-Trichlorobenzene		50.0	50.1	ug/L	1.03	0.200	20	
1,1,1-Trichloroethane		50.0	47.6	ug/L	0.492	4.80	20	
1,1,2-Trichloroethane		50.0	49.0	ug/L	0.240	1.90	20	
Trichloroethene		50.0	51.1	ug/L	0.280	2.10	20	
Trichlorofluoromethane		50.0	46.9	ug/L	0.507	6.10	20	
1,2,3-Trichloropropane		50.0	50.1	ug/L	0.155	0.200	20	
1,2,4-Trimethylbenzene		50.0	49.7	ug/L	2.90	0.700	20	
1,3,5-Trimethylbenzene		50.0	51.6	ug/L	2.93	3.30	20	
o-Xylene		50.0	50.6	ug/L	0.664	1.10	20	
m-,p-Xylene		100	101	ug/L	0.679	1.10	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4810868
Report generated 06/23/2016 13:32

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616 Run Date: 06/15/2016 Sample ID: WG572735-02
Instrument ID: HPMS8 Run Time: 09:29 Method: 8260B
File ID: 8M413003 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG572737 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	52.9	ug/L	0.576	5.76	20	
1,1-Dichloroethene	CCC	50.0	51.9	ug/L	0.420	3.89	20	
1,2-Dichloropropane	CCC	50.0	48.5	ug/L	0.222	2.97	20	
Ethylbenzene	CCC	50.0	48.3	ug/L	0.553	3.36	20	
Toluene	CCC	50.0	49.2	ug/L	1.53	1.70	20	
Vinyl Chloride	CCC	50.0	54.2	ug/L	0.315	8.36	20	
Bromoform	SPCC	50.0	53.0	ug/L	0.225	6.02	20	
Chlorobenzene	SPCC	50.0	49.4	ug/L	1.03	1.22	20	
Chloromethane	SPCC	50.0	48.4	ug/L	0.237	3.28	20	
1,1-Dichloroethane	SPCC	50.0	51.1	ug/L	0.472	2.22	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	45.2	ug/L	0.454	9.55	20	
Xylenes		150	149	ug/L	0.662	0.449	20	
Acetone		50.0	56.4	ug/L	0.0317	12.8	20	
Benzene		50.0	50.9	ug/L	1.04	1.75	20	
Bromobenzene		50.0	48.6	ug/L	0.779	2.89	20	
Bromochloromethane		50.0	52.5	ug/L	0.155	5.07	20	
Bromodichloromethane		50.0	54.1	ug/L	0.435	8.30	20	
Bromomethane		50.0	38.6	ug/L	0.134	22.9	20	*
2-Butanone		50.0	50.0	ug/L	0.0413	0.0610	20	
n-Butylbenzene		50.0	47.3	ug/L	2.65	5.42	20	
sec-Butylbenzene		50.0	47.3	ug/L	3.16	5.46	20	
tert-Butylbenzene		50.0	46.7	ug/L	0.519	6.67	20	
Carbon Disulfide		50.0	51.5	ug/L	0.871	2.99	20	
Carbon Tetrachloride		50.0	56.0	ug/L	0.514	11.9	20	
Dibromochloromethane		50.0	52.2	ug/L	0.373	4.37	20	
Chloroethane		50.0	50.2	ug/L	0.160	0.381	20	
2-Chlorotoluene		50.0	43.7	ug/L	2.38	12.5	20	
4-Chlorotoluene		50.0	51.6	ug/L	2.54	3.26	20	
1,2-Dibromo-3-Chloropropane		50.0	46.2	ug/L	0.0931	7.57	20	
1,2-Dibromoethane		50.0	49.4	ug/L	0.241	1.17	20	
Dibromomethane		50.0	50.0	ug/L	0.135	0.0556	20	
1,2-Dichlorobenzene		50.0	47.1	ug/L	1.29	5.79	20	
1,3-Dichlorobenzene		50.0	49.2	ug/L	1.52	1.67	20	
1,4-Dichlorobenzene		50.0	47.7	ug/L	1.49	4.58	20	
Dichlorodifluoromethane		50.0	54.7	ug/L	0.459	9.40	20	
1,2-Dichloroethane		50.0	55.6	ug/L	0.390	11.2	20	
cis-1,2-Dichloroethene		50.0	51.1	ug/L	0.294	2.30	20	
trans-1,2-Dichloroethene		50.0	50.8	ug/L	0.378	1.67	20	
1,3-Dichloropropane		50.0	48.9	ug/L	0.426	2.29	20	
2,2-Dichloropropane		50.0	58.2	ug/L	0.566	16.4	20	
cis-1,3-Dichloropropene		50.0	53.5	ug/L	0.438	7.09	20	
trans-1,3-Dichloropropene		50.0	51.9	ug/L	0.540	3.77	20	

CCV - Modified 03/05/2008
PDF File ID: 4810870
Report generated 06/23/2016 13:32

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616 Run Date: 06/15/2016 Sample ID: WG572735-02
Instrument ID: HPMS8 Run Time: 09:29 Method: 8260B
File ID: 8M413003 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG572737 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	53.0	ug/L	0.418	6.05	20	
2-Hexanone		50.0	50.3	ug/L	0.0518	0.596	20	
Hexachlorobutadiene		50.0	50.8	ug/L	0.488	1.64	20	
Isopropylbenzene		50.0	51.1	ug/L	1.78	2.16	20	
p-Isopropyltoluene		50.0	47.9	ug/L	2.72	4.24	20	
4-Methyl-2-Pentanone		50.0	51.2	ug/L	0.0411	2.32	20	
Methylene Chloride		50.0	49.5	ug/L	0.255	1.01	20	
Naphthalene		50.0	46.9	ug/L	1.43	6.24	20	
n-Propylbenzene		50.0	47.7	ug/L	3.72	4.62	20	
Styrene		50.0	51.6	ug/L	1.11	3.15	20	
1,1,1,2-Tetrachloroethane		50.0	51.8	ug/L	0.420	3.61	20	
Tetrachloroethene		50.0	51.9	ug/L	0.345	3.86	20	
1,2,3-Trichlorobenzene		50.0	47.2	ug/L	0.819	5.51	20	
1,2,4-Trichlorobenzene		50.0	48.5	ug/L	0.996	3.02	20	
1,1,1-Trichloroethane		50.0	55.5	ug/L	0.575	11.1	20	
1,1,2-Trichloroethane		50.0	47.8	ug/L	0.234	4.49	20	
Trichloroethene		50.0	52.4	ug/L	0.287	4.80	20	
Trichlorofluoromethane		50.0	55.4	ug/L	0.599	10.9	20	
1,2,3-Trichloropropane		50.0	47.3	ug/L	0.146	5.43	20	
1,2,4-Trimethylbenzene		50.0	48.0	ug/L	2.80	4.05	20	
1,3,5-Trimethylbenzene		50.0	48.3	ug/L	2.74	3.39	20	
o-Xylene		50.0	49.9	ug/L	0.656	0.182	20	
m-,p-Xylene		100	99.4	ug/L	0.668	0.583	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4810870
Report generated 06/23/2016 13:32

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616 Run Date: 06/16/2016 Sample ID: WG573037-02
Instrument ID: HPMS8 Run Time: 14:25 Method: 8260B
File ID: 8M413032 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG573038 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	54.8	ug/L	0.597	9.65	20	
1,1-Dichloroethene	CCC	50.0	54.7	ug/L	0.442	9.30	20	
1,2-Dichloropropane	CCC	50.0	48.6	ug/L	0.222	2.70	20	
Ethylbenzene	CCC	50.0	50.5	ug/L	0.578	0.905	20	
Toluene	CCC	50.0	50.3	ug/L	1.56	0.600	20	
Vinyl Chloride	CCC	50.0	55.1	ug/L	0.320	10.2	20	
Bromoform	SPCC	50.0	50.9	ug/L	0.216	1.72	20	
Chlorobenzene	SPCC	50.0	49.8	ug/L	1.04	0.474	20	
Chloromethane	SPCC	50.0	46.6	ug/L	0.228	6.88	20	
1,1-Dichloroethane	SPCC	50.0	52.3	ug/L	0.483	4.61	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	41.5	ug/L	0.416	17.0	20	
Xylenes		150	154	ug/L	0.683	2.90	20	
Acetone		50.0	52.2	ug/L	0.0293	4.31	20	
Benzene		50.0	52.0	ug/L	1.07	3.99	20	
Bromobenzene		50.0	48.0	ug/L	0.770	4.08	20	
Bromochloromethane		50.0	51.3	ug/L	0.151	2.54	20	
Bromodichloromethane		50.0	55.4	ug/L	0.445	10.8	20	
Bromomethane		50.0	37.0	ug/L	0.128	26.0	20	*
2-Butanone		50.0	45.9	ug/L	0.0380	8.13	20	
n-Butylbenzene		50.0	50.5	ug/L	2.83	1.00	20	
sec-Butylbenzene		50.0	50.3	ug/L	3.37	0.699	20	
tert-Butylbenzene		50.0	48.9	ug/L	0.544	2.12	20	
Carbon Disulfide		50.0	53.0	ug/L	0.897	6.05	20	
Carbon Tetrachloride		50.0	60.0	ug/L	0.551	20.0	20	
Dibromochloromethane		50.0	50.5	ug/L	0.361	0.983	20	
Chloroethane		50.0	48.9	ug/L	0.156	2.14	20	
2-Chlorotoluene		50.0	47.7	ug/L	2.60	4.50	20	
4-Chlorotoluene		50.0	49.7	ug/L	2.44	0.615	20	
1,2-Dibromo-3-Chloropropane		50.0	44.0	ug/L	0.0886	12.0	20	
1,2-Dibromoethane		50.0	47.2	ug/L	0.230	5.67	20	
Dibromomethane		50.0	49.7	ug/L	0.135	0.584	20	
1,2-Dichlorobenzene		50.0	46.6	ug/L	1.28	6.76	20	
1,3-Dichlorobenzene		50.0	49.6	ug/L	1.53	0.820	20	
1,4-Dichlorobenzene		50.0	47.6	ug/L	1.48	4.82	20	
Dichlorodifluoromethane		50.0	57.6	ug/L	0.483	15.3	20	
1,2-Dichloroethane		50.0	56.7	ug/L	0.397	13.3	20	
cis-1,2-Dichloroethene		50.0	50.9	ug/L	0.292	1.90	20	
trans-1,2-Dichloroethene		50.0	52.1	ug/L	0.387	4.10	20	
1,3-Dichloropropane		50.0	47.0	ug/L	0.410	5.96	20	
2,2-Dichloropropane		50.0	61.8	ug/L	0.601	23.6	20	*
cis-1,3-Dichloropropene		50.0	53.3	ug/L	0.436	6.58	20	
trans-1,3-Dichloropropene		50.0	51.1	ug/L	0.532	2.30	20	

CCV - Modified 03/05/2008
PDF File ID: 4810870
Report generated 06/23/2016 13:32

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616 Run Date: 06/16/2016 Sample ID: WG573037-02
Instrument ID: HPMS8 Run Time: 14:25 Method: 8260B
File ID: 8M413032 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG573038 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	54.6	ug/L	0.430	9.13	20	
2-Hexanone		50.0	44.4	ug/L	0.0457	11.3	20	
Hexachlorobutadiene		50.0	54.7	ug/L	0.525	9.43	20	
Isopropylbenzene		50.0	54.0	ug/L	1.88	7.91	20	
p-Isopropyltoluene		50.0	50.6	ug/L	2.87	1.20	20	
4-Methyl-2-Pentanone		50.0	45.5	ug/L	0.0366	8.93	20	
Methylene Chloride		50.0	48.8	ug/L	0.251	2.36	20	
Naphthalene		50.0	43.5	ug/L	1.33	13.0	20	
n-Propylbenzene		50.0	49.8	ug/L	3.88	0.484	20	
Styrene		50.0	52.0	ug/L	1.12	4.02	20	
1,1,1,2-Tetrachloroethane		50.0	52.3	ug/L	0.424	4.56	20	
Tetrachloroethene		50.0	53.6	ug/L	0.356	7.11	20	
1,2,3-Trichlorobenzene		50.0	45.4	ug/L	0.786	9.28	20	
1,2,4-Trichlorobenzene		50.0	48.6	ug/L	0.997	2.89	20	
1,1,1-Trichloroethane		50.0	59.6	ug/L	0.616	19.1	20	
1,1,2-Trichloroethane		50.0	46.3	ug/L	0.227	7.39	20	
Trichloroethene		50.0	54.0	ug/L	0.296	7.92	20	
Trichlorofluoromethane		50.0	59.7	ug/L	0.645	19.5	20	
1,2,3-Trichloropropane		50.0	45.0	ug/L	0.139	10.0	20	
1,2,4-Trimethylbenzene		50.0	50.1	ug/L	2.93	0.254	20	
1,3,5-Trimethylbenzene		50.0	50.2	ug/L	2.85	0.347	20	
o-Xylene		50.0	51.2	ug/L	0.673	2.46	20	
m-,p-Xylene		100	103	ug/L	0.693	3.11	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4810870
Report generated 06/23/2016 13:32

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060616
Instrument ID: HPMS8
Workgroup (AAB#): WG572737

ICAL CCV Number: WG568561-08
CAL ID: HPMS8-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	288225	539116	778260
Upper Limit	NA	NA	576450	1078232	1556520
Lower Limit	NA	NA	144113	269558	389130
L16060616-02	1.00	01	289966	525132	693655
L16060616-03	1.00	01	290970	530102	703430
L16060616-05	1.00	01	312456	559741	750369
WG572737-01	1.00	01	330295	588241	780700
WG572737-02	1.00	01	327915	583746	797707
WG572737-03	1.00	01	329286	592812	790550

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4810871
Report generated 06/23/2016 13:32

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060616
Instrument ID: HPMS8
Workgroup (AAB#): WG573038

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	288225	539116	778260
Upper Limit	NA	NA	576450	1078232	1556520
Lower Limit	NA	NA	144113	269558	389130
L16060616-01	1.00	01	293456	520089	691444
WG573038-01	1.00	01	292043	533754	717429
WG573038-02	1.00	01	307888	540053	724153
WG573038-03	1.00	01	312159	553122	735322

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4810871
Report generated 06/23/2016 13:32

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060616
Instrument ID: HPMS8
Workgroup (AAB#): WG572737

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	17.6	14.58	10.71
Upper Limit	NA	NA	18.1	15.08	11.21
Lower Limit	NA	NA	17.1	14.08	10.21
L16060616-02	1.00	01	17.6	14.57	10.71
L16060616-03	1.00	01	17.6	14.57	10.71
L16060616-05	1.00	01	17.6	14.57	10.71
WG572737-01	1.00	01	17.6	14.58	10.71
WG572737-02	1.00	01	17.6	14.57	10.71
WG572737-03	1.00	01	17.6	14.58	10.71

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4810873
Report generated: 06/23/2016 13:32

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060616
Instrument ID: HPMS8
Workgroup (AAB#): WG573038

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	17.6	14.58	10.71
Upper Limit	NA	NA	18.1	15.08	11.21
Lower Limit	NA	NA	17.1	14.08	10.21
L16060616-01	1.00	01	17.6	14.57	10.71
WG573038-01	1.00	01	17.6	14.57	10.71
WG573038-02	1.00	01	17.6	14.57	10.71
WG573038-03	1.00	01	17.6	14.57	10.71

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4810873
Report generated: 06/23/2016 13:32

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413043.D Vial: 13
Acq On : 16 Jun 2016 19:52 Operator: FJB
Sample : L16060616-01 B 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:18:24 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	691444	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	520089	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	293456	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	203759	27.4276 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.72%		
43) 1,2-Dichloroethane-d4	10.30	65	230731	28.9655 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 115.88%		
58) Toluene-d8	12.68	98	713814	26.2248 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.88%		
80) p-Bromofluorobenzene	16.08	95	305455	25.1379 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.56%		

Target Compounds					Qvalue
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	10422	1.4842 ug/L	95
32) cis-1,2-Dichloroethene	9.17	96	6885	0.8675 ug/L	77
33) Chloroform	9.37	83	9137	0.6066 ug/L	92
45) 1,2-Dichloroethane	10.42	62	5741	0.5922 ug/L #	78
47) Trichloroethene	11.21	130	1871960	247.1133 ug/L	99
48) Methylcyclohexane	11.21	83	26067	2.2651 ug/L #	1

(#) = qualifier out of range (m) = manual integration
8M413043.D 8260WT.M Mon Jun 20 09:19:55 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413043.D Vial: 13
Acq On : 16 Jun 2016 19:52 Operator: FJB
Sample : L16060616-01 B 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 8:18 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

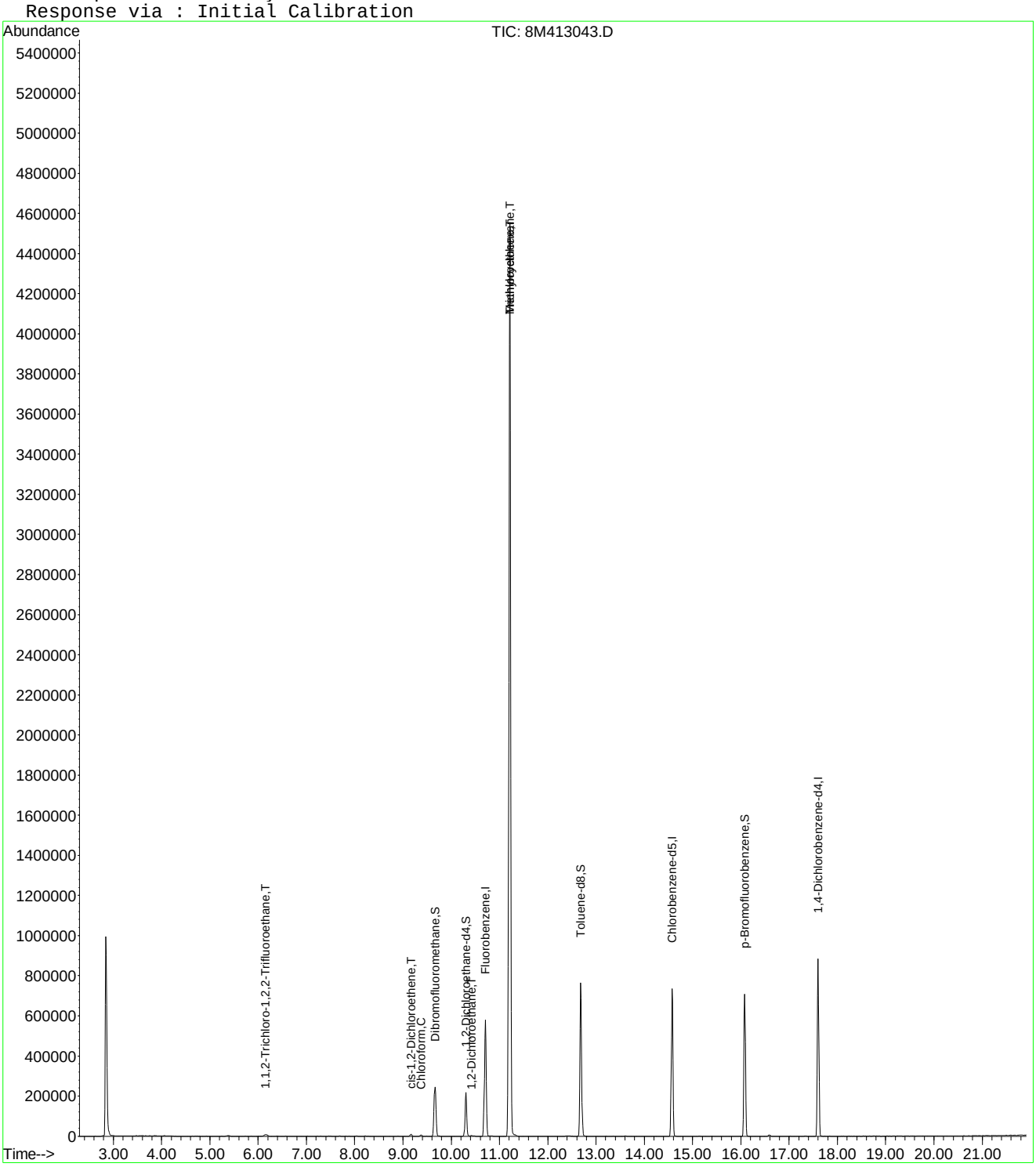

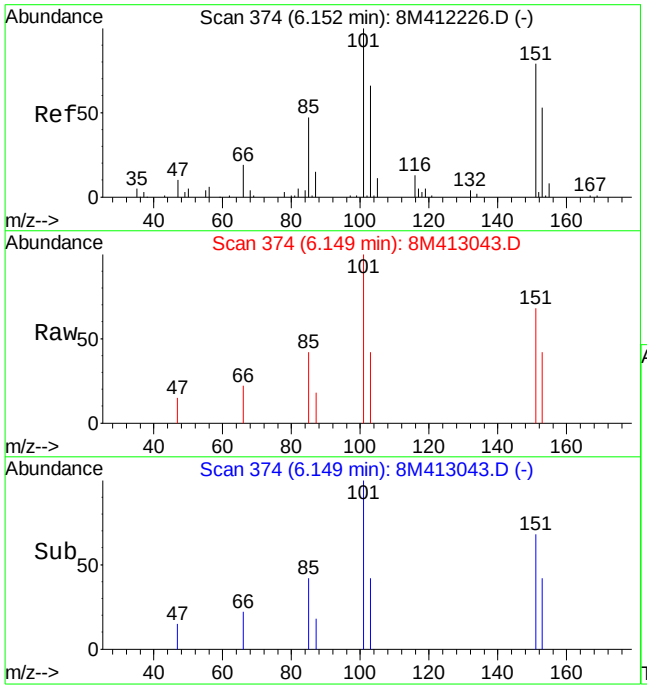

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 1.48 ug/L
RT: 6.15 min Scan# 374
Delta R.T. -0.00 min
Lab File: 8M413043.D
Acq: 16 Jun 2016 19:52

Tgt Ion:101 Resp: 10422

Ion	Ratio	Lower	Upper
101	100		
151	75.5	40.2	120.2

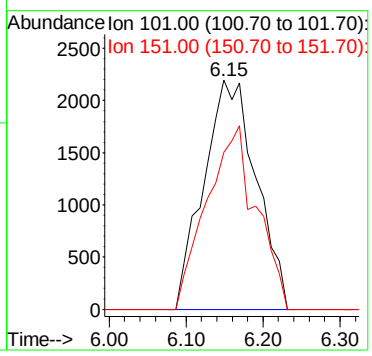

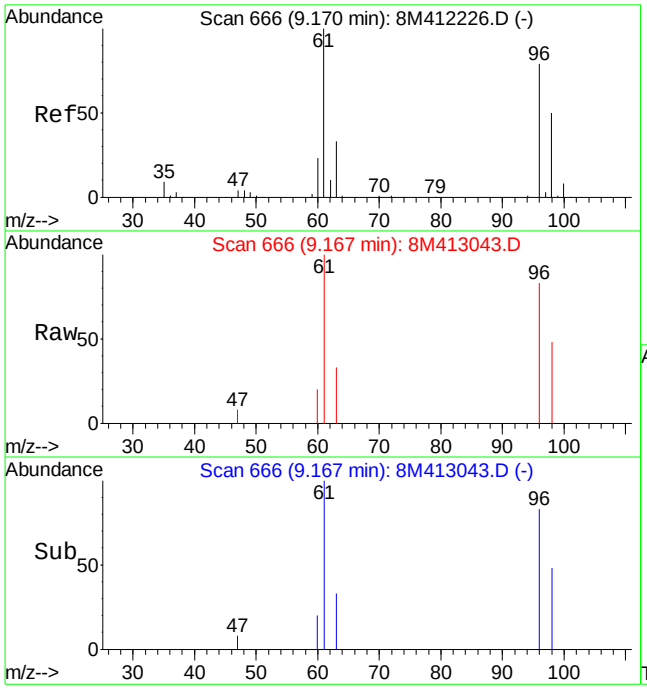

#32
cis-1,2-Dichloroethene
Concen: 0.87 ug/L
RT: 9.17 min Scan# 666
Delta R.T. -0.00 min
Lab File: 8M413043.D
Acq: 16 Jun 2016 19:52

Tgt Ion: 96 Resp: 6885

Ion	Ratio	Lower	Upper
96	100		
61	123.4	91.5	213.5

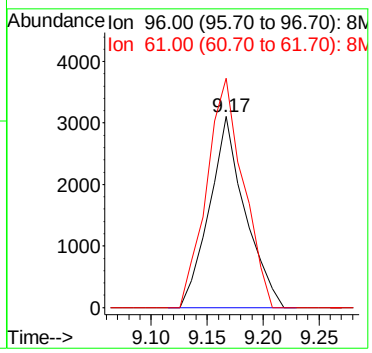

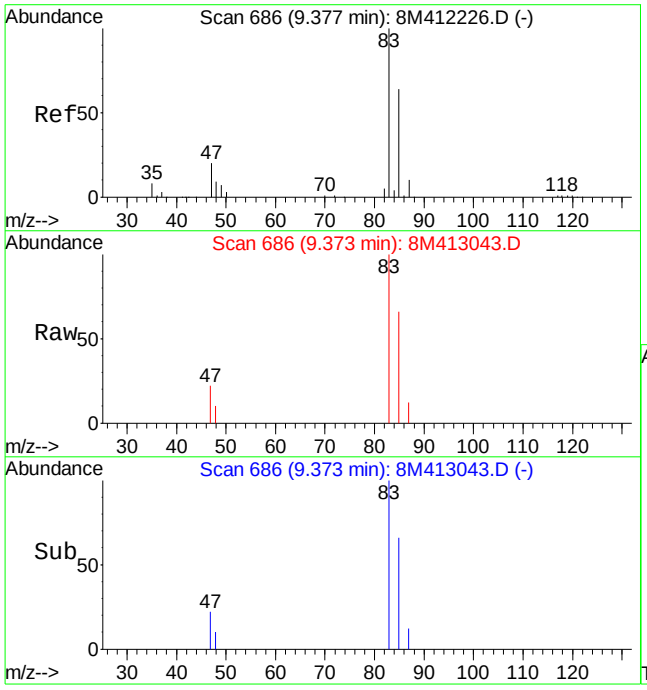

#33
Chloroform
Concen: 0.61 ug/L
RT: 9.37 min Scan# 686
Delta R.T. -0.00 min
Lab File: 8M413043.D
Acq: 16 Jun 2016 19:52

Tgt Ion: 83 Resp: 9137

Ion	Ratio	Lower	Upper
83	100		
85	56.2	37.5	87.5

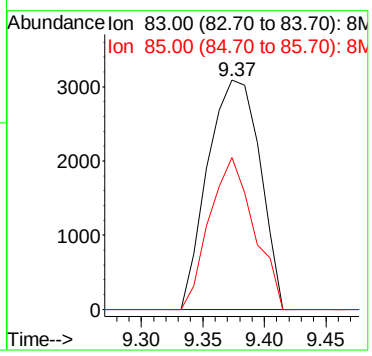

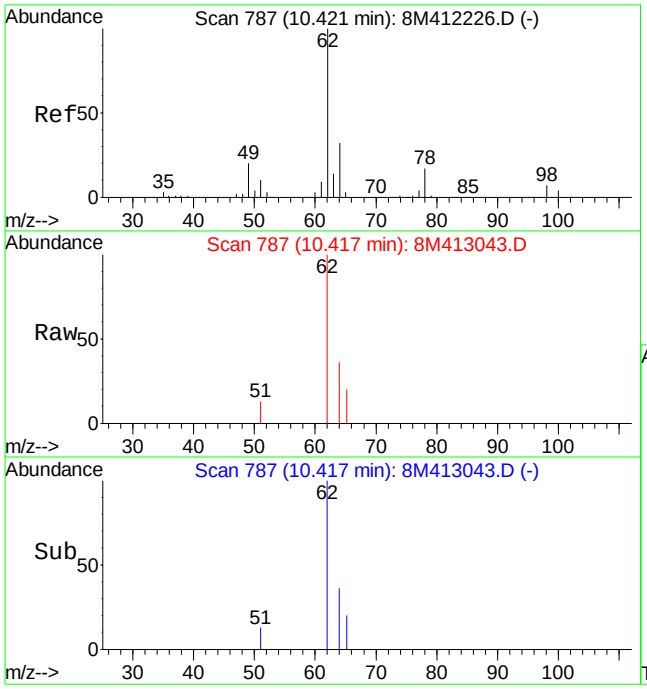

#45
1,2-Dichloroethane
Concen: 0.59 ug/L
RT: 10.42 min Scan# 787
Delta R.T. -0.00 min
Lab File: 8M413043.D
Acq: 16 Jun 2016 19:52

Tgt Ion: 62 Resp: 5741

Ion	Ratio	Lower	Upper
62	100		
64	28.8	19.6	45.6
49	5.0	15.5	36.1#

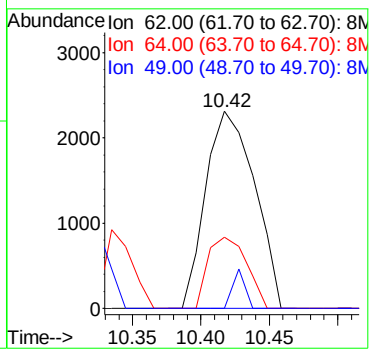

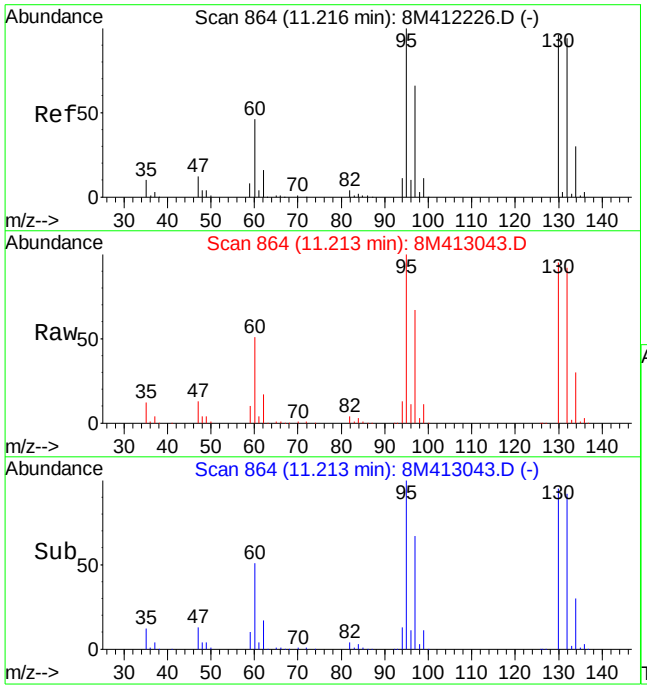

#47
Trichloroethene
Concen: 247.11 ug/L
RT: 11.21 min Scan# 864
Delta R.T. -0.00 min
Lab File: 8M413043.D
Acq: 16 Jun 2016 19:52

Tgt Ion:130 Resp: 1871960

Ion	Ratio	Lower	Upper
130	100		
132	96.5	58.0	135.2
95	106.7	64.9	151.5

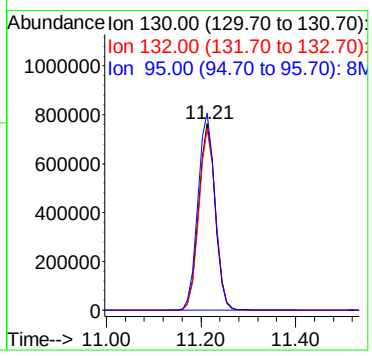

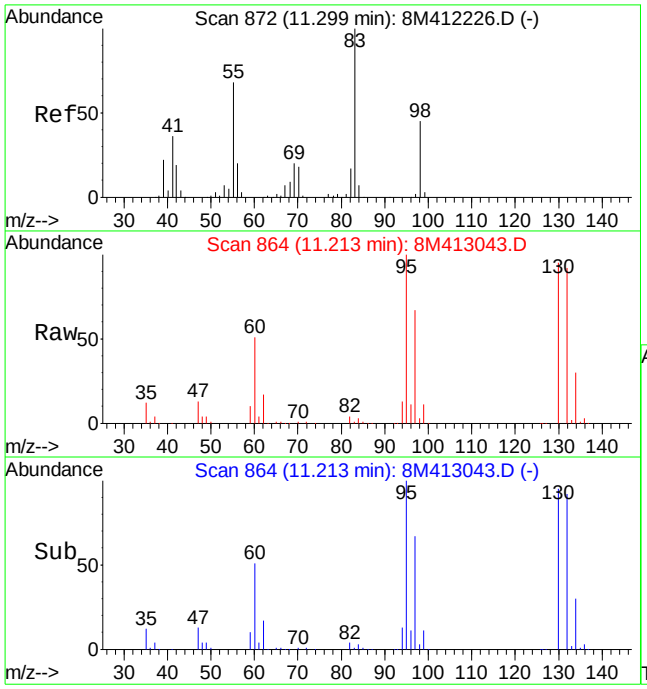

#48
Methylcyclohexane
Concen: 2.27 ug/L
RT: 11.21 min Scan# 864
Delta R.T. -0.09 min
Lab File: 8M413043.D
Acq: 16 Jun 2016 19:52

Tgt Ion: 83 Resp: 26067

Ion	Ratio	Lower	Upper
83	100		
55	0.0	40.9	95.3#
98	215.0	28.1	65.7#

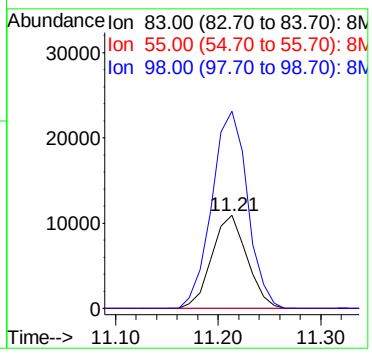

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413021.D Vial: 21
Acq On : 15 Jun 2016 18:11 Operator: TMB
Sample : L16060616-02 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 13:26:22 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	693655	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	525132	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	289966	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	208320	27.9522 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.80%		
43) 1,2-Dichloroethane-d4	10.31	65	234577	29.3545 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 117.40%		
58) Toluene-d8	12.68	98	723557	26.3275 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.32%		
80) p-Bromofluorobenzene	16.07	95	300487	25.0267 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.12%		

Target Compounds					Qvalue
3) Chloromethane	3.62	50	1200	0.1768 ug/L #	42
13) Acetone	6.24	43	5769	7.3921 ug/L #	73
28) Ethyl-Tert-Butyl ether	8.61	59	4729	0.2748 ug/L #	40

(#) = qualifier out of range (m) = manual integration
8M413021.D 8260WT.M Thu Jun 16 13:26:25 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413021.D Vial: 21
Acq On : 15 Jun 2016 18:11 Operator: TMB
Sample : L16060616-02 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 13:26 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

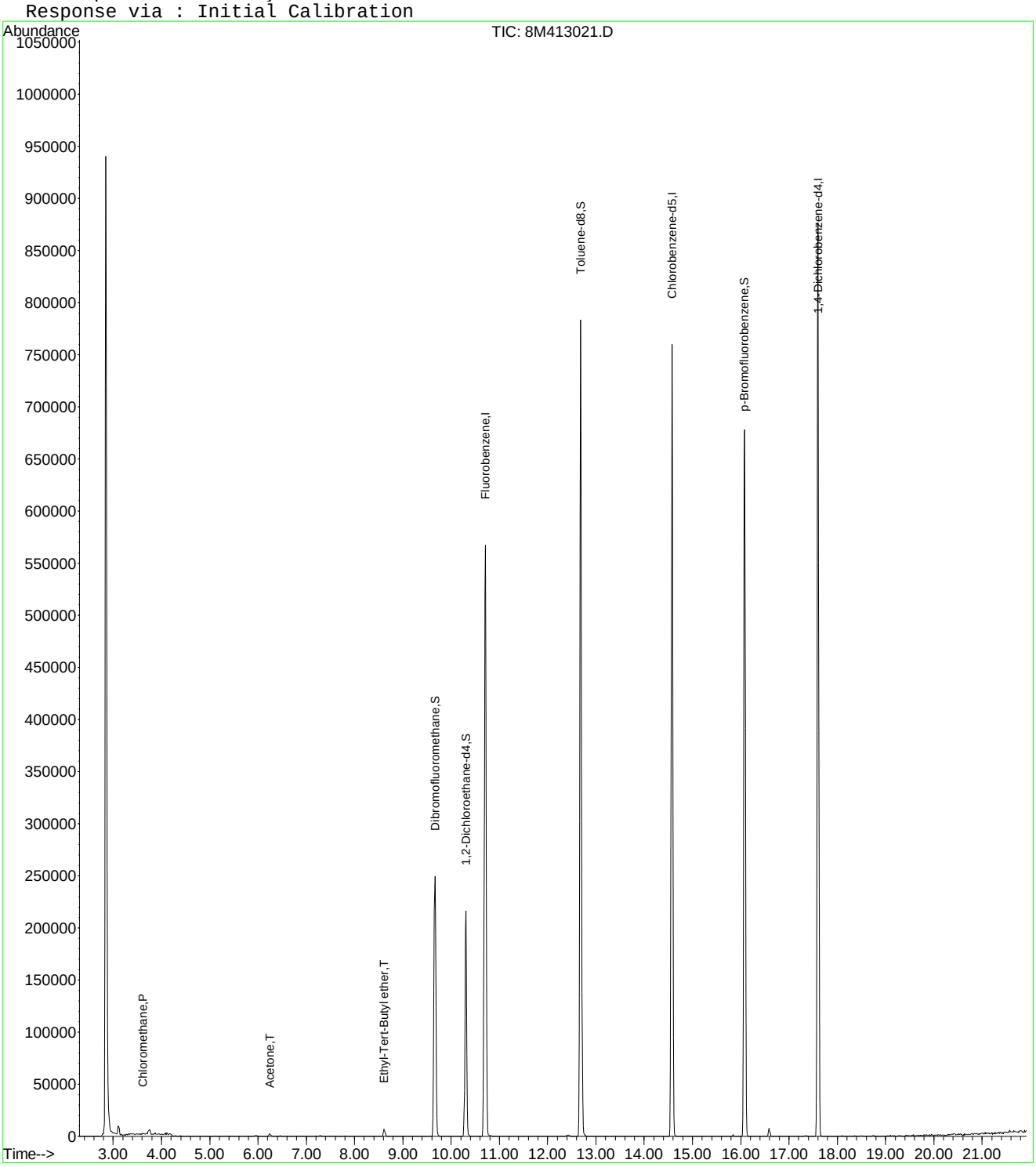

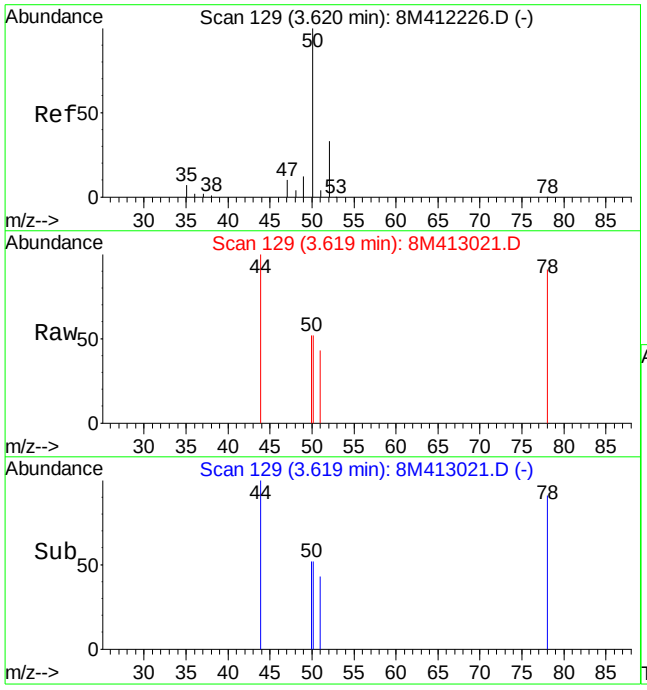

#3
Chloromethane
Concen: 0.18 ug/L
RT: 3.62 min Scan# 129
Delta R.T. -0.00 min
Lab File: 8M413021.D
Acq: 15 Jun 2016 18:11

Tgt Ion: 50 Resp: 1200

Ion	Ratio	Lower	Upper
50	100		
52	0.0	19.9	46.3#

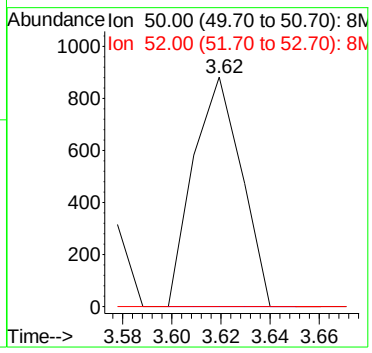

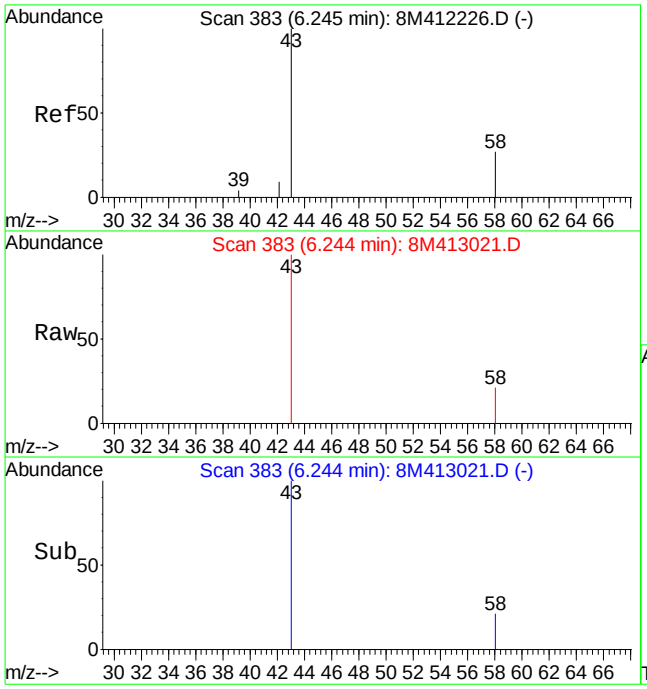

#13
Acetone
Concen: 7.39 ug/L
RT: 6.24 min Scan# 383
Delta R.T. -0.00 min
Lab File: 8M413021.D
Acq: 15 Jun 2016 18:11

Tgt Ion: 43 Resp: 5769

Ion	Ratio	Lower	Upper
43	100		
58	11.6	15.2	35.4#

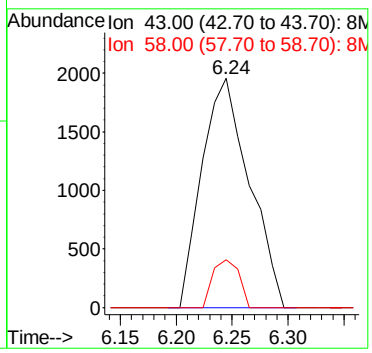

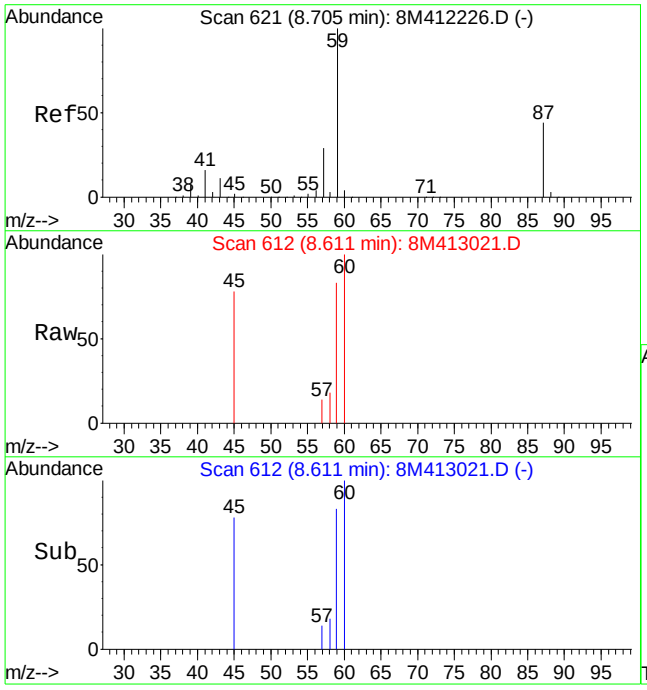

#28
Ethyl-Tert-Butyl ether
Concen: 0.27 ug/L
RT: 8.61 min Scan# 612
Delta R.T. -0.09 min
Lab File: 8M413021.D
Acq: 15 Jun 2016 18:11

Tgt Ion: 59 Resp: 4729

Ion	Ratio	Lower	Upper
59	100		
87	0.0	26.8	62.4#
57	4.4	17.4	40.6#

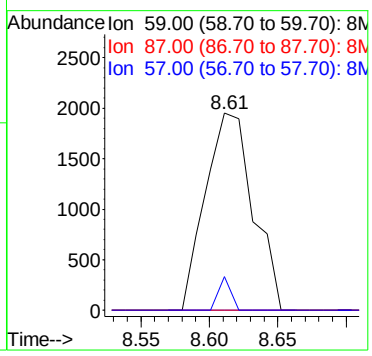

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413020.D Vial: 20
Acq On : 15 Jun 2016 17:43 Operator: TMB
Sample : L16060616-03 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 13:26:16 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	703430	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	530102	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	290970	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	211267	27.9537 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.80%		
43) 1,2-Dichloroethane-d4	10.30	65	231862	28.6115 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 114.44%		
58) Toluene-d8	12.68	98	718796	25.9090 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.64%		
80) p-Bromofluorobenzene	16.08	95	306497	25.4392 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.76%		

Target Compounds

					Qvalue
3) Chloromethane	3.63	50	2464	0.3579 ug/L #	56
13) Acetone	6.24	43	1571	1.9850 ug/L #	50
47) Trichloroethene	11.22	130	6132	0.7957 ug/L	95

(#) = qualifier out of range (m) = manual integration
8M413020.D 8260WT.M Thu Jun 16 13:26:19 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413020.D Vial: 20
Acq On : 15 Jun 2016 17:43 Operator: TMB
Sample : L16060616-03 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 13:26 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

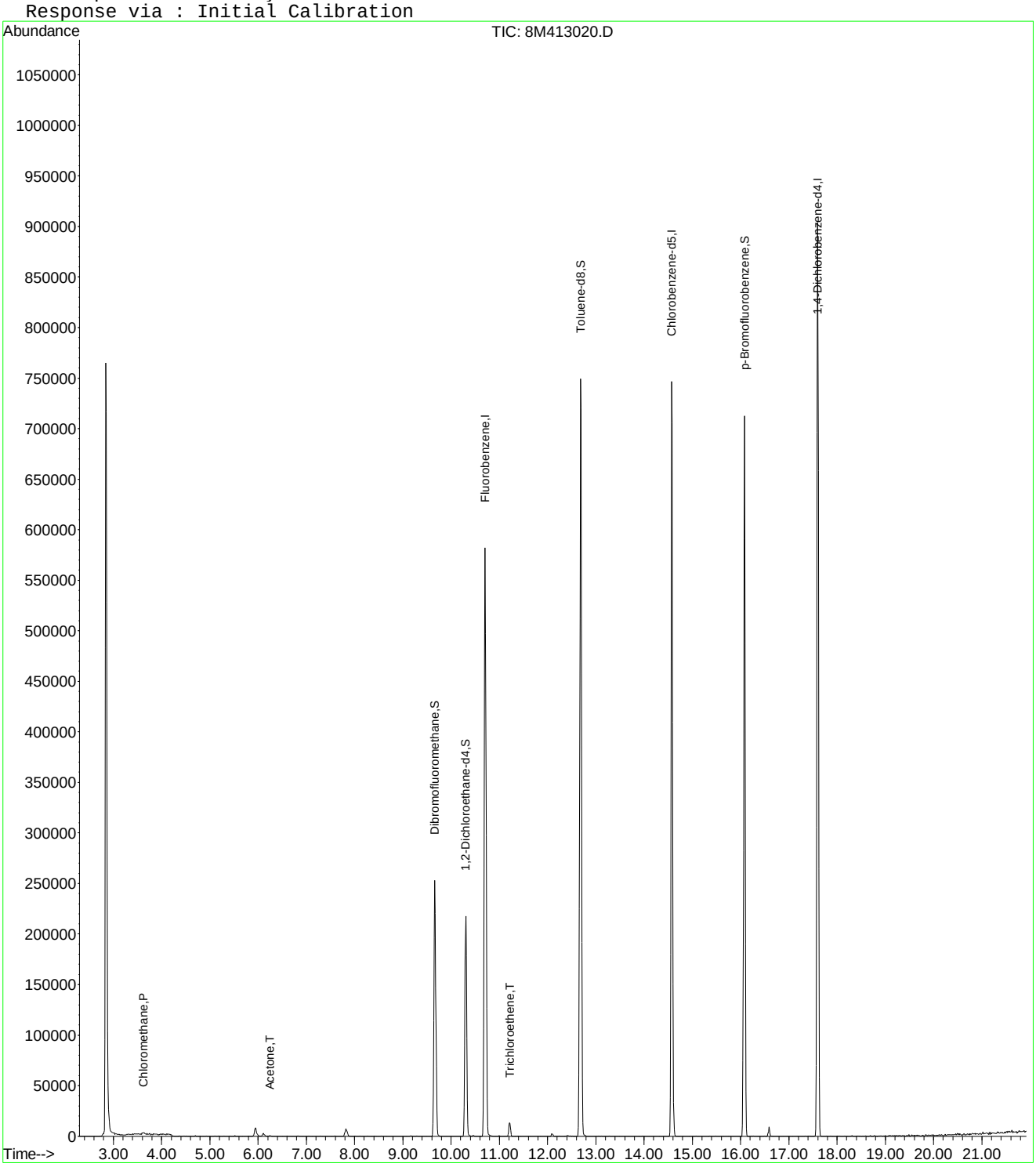

8M413020.D 8260WT.M Thu Jun 16 13:26:20 2016 Page 2

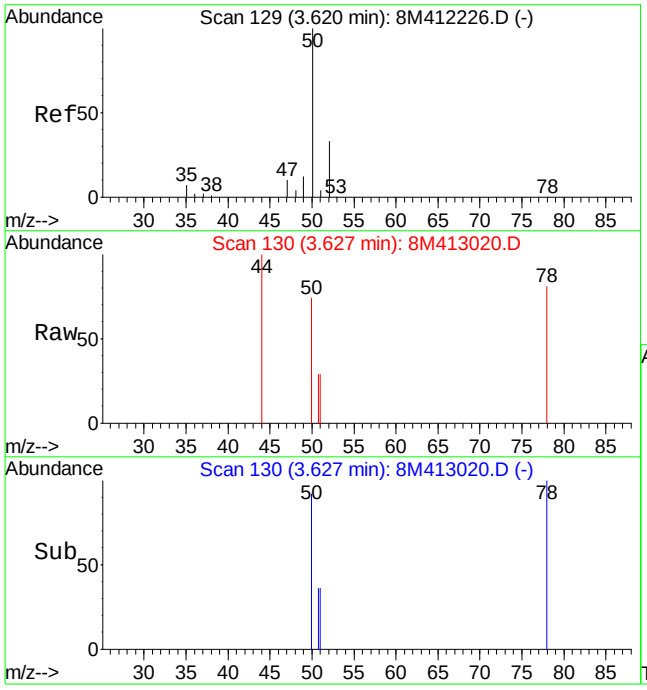

#3
Chloromethane
Concen: 0.36 ug/L
RT: 3.63 min Scan# 130
Delta R.T. 0.01 min
Lab File: 8M413020.D
Acq: 15 Jun 2016 17:43

Tgt Ion: 50 Resp: 2464

Ion	Ratio	Lower	Upper
50	100		
52	8.3	19.9	46.3#

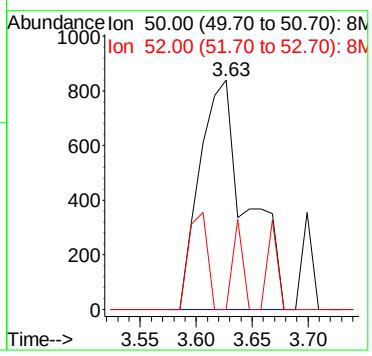

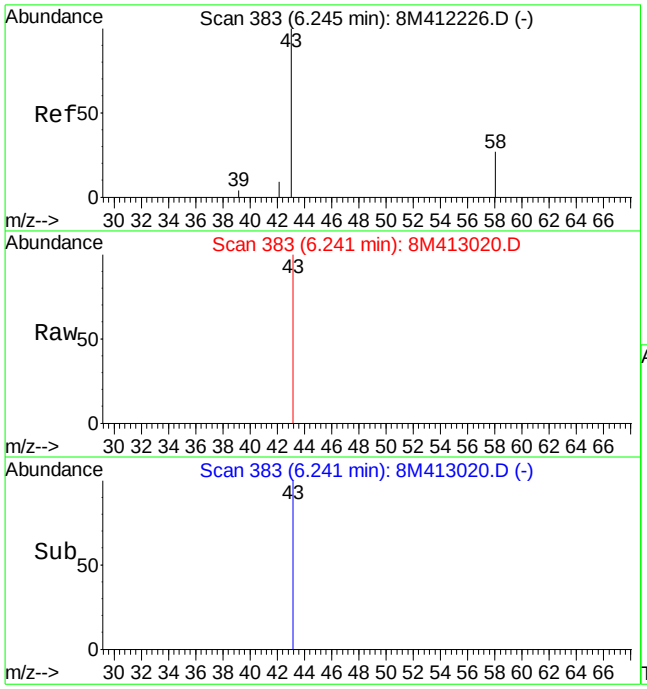

#13
Acetone
Concen: 1.99 ug/L
RT: 6.24 min Scan# 383
Delta R.T. -0.00 min
Lab File: 8M413020.D
Acq: 15 Jun 2016 17:43

Tgt Ion: 43 Resp: 1571

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.2	35.4#

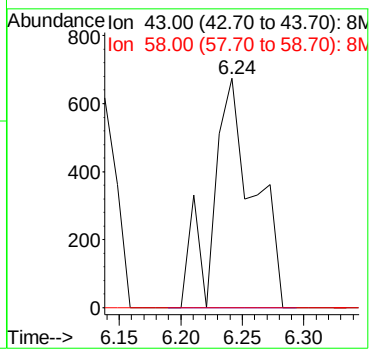

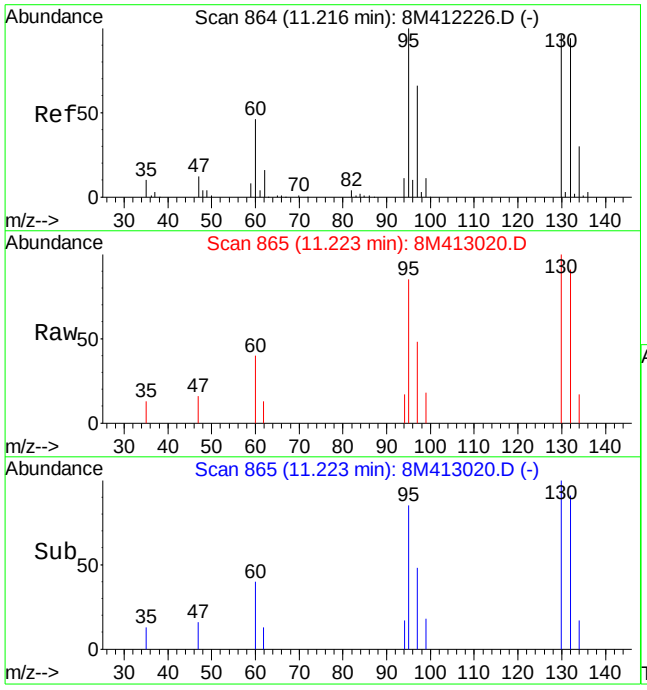

#47
Trichloroethene
Concen: 0.80 ug/L
RT: 11.22 min Scan# 865
Delta R.T. 0.01 min
Lab File: 8M413020.D
Acq: 15 Jun 2016 17:43

Tgt Ion:130 Resp: 6132

Ion	Ratio	Lower	Upper
130	100		
132	98.8	58.0	135.2
95	116.6	64.9	151.5

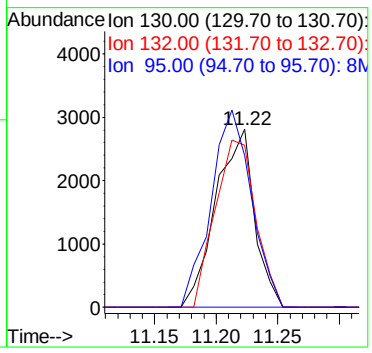

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413012.D Vial: 12
Acq On : 15 Jun 2016 13:50 Operator: TMB
Sample : L16060616-05 A TB 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 13:25:28 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	750369	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	559741	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	312456	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	221306	27.4502 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.80%		
43) 1,2-Dichloroethane-d4	10.30	65	239711	27.7297 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 110.92%		
58) Toluene-d8	12.68	98	767949	26.2150 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.88%		
80) p-Bromofluorobenzene	16.08	95	322926	24.9597 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.84%		
Target Compounds					Qvalue
36) Tetrahydrofuran	9.63	42	856	1.0478 ug/L #	58

(#) = qualifier out of range (m) = manual integration
8M413012.D 8260WT.M Thu Jun 16 13:25:31 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413012.D Vial: 12
Acq On : 15 Jun 2016 13:50 Operator: TMB
Sample : L16060616-05 A TB 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 13:25 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

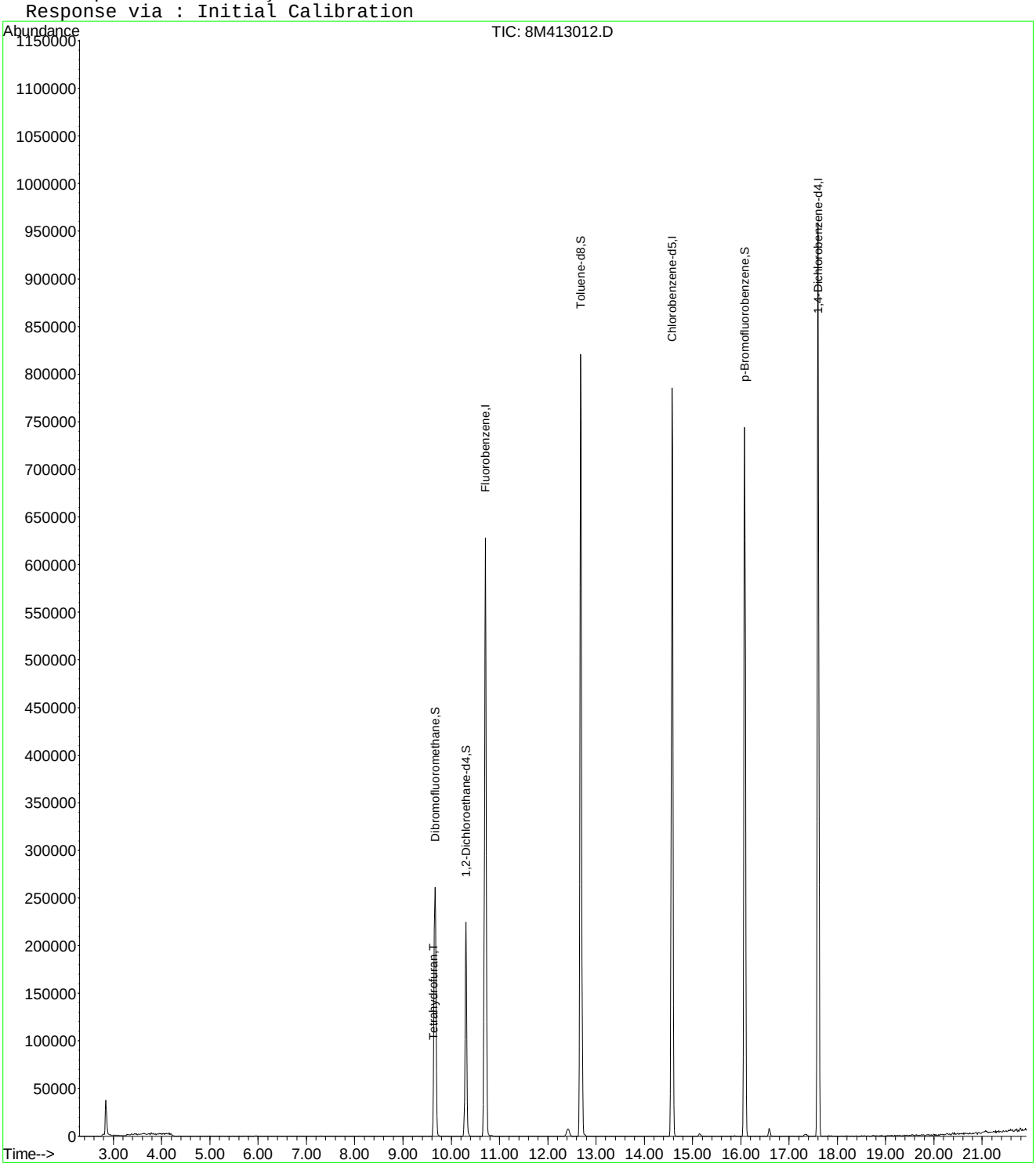

8M413012.D 8260WT.M Thu Jun 16 13:25:32 2016 Page 2

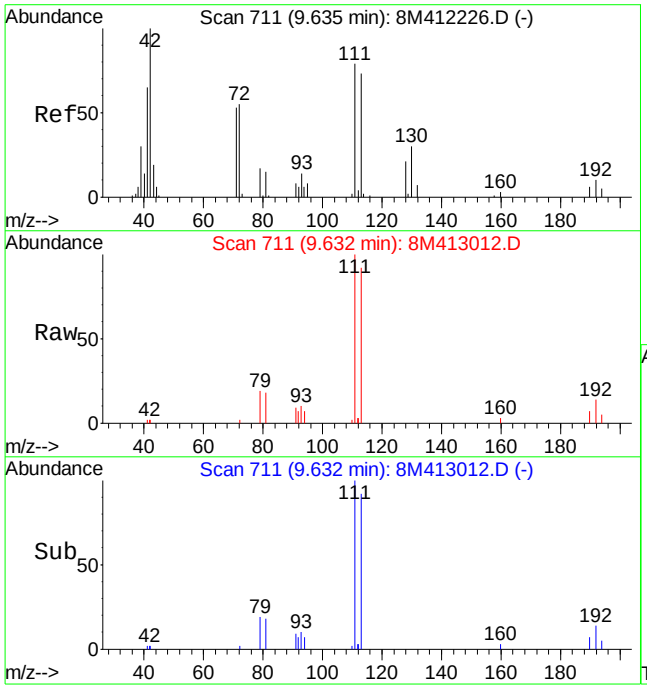

#36
Tetrahydrofuran
Concen: 1.05 ug/L
RT: 9.63 min Scan# 711
Delta R.T. -0.00 min
Lab File: 8M413012.D
Acq: 15 Jun 2016 13:50

Tgt Ion: 42 Resp: 856

Ion	Ratio	Lower	Upper
42	100		
72	47.8	33.8	78.8
71	0.0	32.0	74.8#

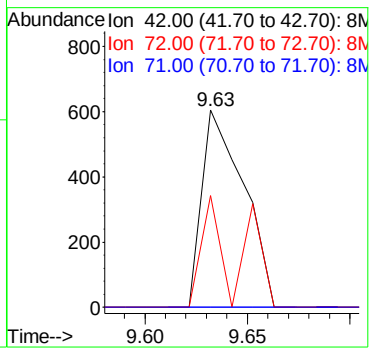

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:40:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	823748	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	571926	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	299321	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	12.68	98	567	0.0189 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.08%#	
80) p-Bromofluorobenzene	16.08	95	313	0.0253 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	3836	0.2778 ug/L	91
3) Chloromethane	3.62	50	3658	0.4537 ug/L	95
4) Vinyl Chloride	3.85	62	2516	0.2630 ug/L #	58
5) 1,3-Butadiene	3.91	54	2079	0.2592 ug/L	71
6) Bromomethane	4.73	94	1152	0.6530 ug/L #	55
7) Chloroethane	4.90	64	1112	0.2113 ug/L #	72
8) Trichlorofluoromethane	5.35	101	2706	0.1520 ug/L #	53
10) Isoprene	5.93	67	2147	0.1987 ug/L	85
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1746	0.2087 ug/L	97
14) 1,1-Dichloroethene	6.48	61	3332	0.2501 ug/L	75
16) Dimethyl Sulfide	6.73	62	1099	0.2308 ug/L	95
19) Methylene Chloride	7.26	84	3414	0.4028 ug/L	88
20) Carbon Disulfide	7.30	76	10739	0.3853 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	4927	0.2686 ug/L #	60
23) trans-1,2-Dichloroethene	7.70	61	3879	0.3170 ug/L	98
24) n-Hexane	7.78	57	2794	0.3075 ug/L	85
26) Vinyl Acetate	8.30	43	1973	0.2259 ug/L #	70
27) 1,1-Dichloroethane	8.33	63	4881	0.3212 ug/L #	88
31) 2,2-Dichloropropane	9.11	77	4966	0.3101 ug/L	89
32) cis-1,2-Dichloroethene	9.17	96	2958	0.3128 ug/L	87
33) Chloroform	9.37	83	5564	0.3101 ug/L	95
34) 1-Bromopropane	9.52	122	210	0.1551 ug/L #	1
35) Bromochloromethane	9.60	130	1386	0.2858 ug/L	76
36) Tetrahydrofuran	9.62	42	1849	2.0617 ug/L #	60
38) 1,1,1-Trichloroethane	9.91	97	4978	0.2921 ug/L	95
39) Cyclohexane	9.93	56	3120	0.2644 ug/L #	85
40) 1,1-Dichloropropene	10.11	75	3779	0.2909 ug/L	97
42) Carbon Tetrachloride	10.24	117	4835	0.3194 ug/L #	74
45) 1,2-Dichloroethane	10.43	62	3295	0.2853 ug/L #	81
46) Benzene	10.46	78	11279	0.3333 ug/L	93
47) Trichloroethene	11.20	130	2410	0.2670 ug/L	97
48) Methylcyclohexane	11.31	83	3936	0.2871 ug/L	84
49) 1,2-Dichloropropane	11.42	63	2136	0.2836 ug/L	88
50) Bromodichloromethane	11.73	83	3767	0.2845 ug/L #	91
52) Dibromomethane	11.82	93	700	0.1570 ug/L #	59
53) 2-Chloroethyl Vinyl Ether	12.02	63	847	0.2616 ug/L #	47
55) cis-1,3-Dichloropropene	12.36	75	4763	0.3535 ug/L	84
56) Dimethyl Disulfide	12.63	79	1647	0.2290 ug/L	82
59) Toluene	12.78	91	11513	0.3243 ug/L	92
60) Ethyl Methacrylate	12.89	69	1631	0.2392 ug/L #	64

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:40:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
62)	trans-1,3-Dichloropropene	12.96	75	3626	0.3047 ug/L		82
63)	1,1,2-Trichloroethane	13.18	97	1409	0.2515 ug/L		98
65)	1,3-Dichloropropane	13.49	76	2584	0.2590 ug/L		93
66)	Tetrachloroethene	13.61	164	2678	0.3520 ug/L	#	75
67)	Dibromochloromethane	13.87	129	2126	0.2599 ug/L		79
68)	1,2-Dibromoethane	14.12	107	1895	0.3394 ug/L		91
69)	1-Chlorohexane	14.21	91	3835	0.3164 ug/L		99
70)	Chlorobenzene	14.62	112	7968	0.3328 ug/L		88
71)	1,1,1,2-Tetrachloroethane	14.67	131	2872	0.3096 ug/L		87
72)	Ethylbenzene	14.64	106	3844	0.2934 ug/L		81
73)	m-,p-Xylene	14.75	106	10447	0.6799 ug/L		96
74)	o-Xylene	15.31	106	4577	0.3047 ug/L		97
75)	Styrene	15.35	104	7545	0.3062 ug/L		95
76)	Bromoform	15.84	173	1301	0.2681 ug/L	#	51
77)	Isopropylbenzene	15.74	105	13119	0.3287 ug/L		90
79)	1,1,2,2-Tetrachloroethane	15.96	83	1714	0.2853 ug/L	#	85
83)	n-Propylbenzene	16.24	91	15676	0.3357 ug/L		92
84)	Bromobenzene	16.38	156	2859	0.2977 ug/L		90
85)	1,3,5-Trimethylbenzene	16.43	105	10873	0.3196 ug/L		99
86)	2-Chlorotoluene	16.52	91	11133	0.3415 ug/L		96
87)	4-Chlorotoluene	16.56	91	10305	0.3499 ug/L		97
88)	a-Methylstyrene	16.83	118	4090	0.2534 ug/L		86
89)	tert-Butylbenzene	16.90	134	1734	0.2606 ug/L		72
90)	1,2,4-Trimethylbenzene	16.95	105	10734	0.3069 ug/L		89
91)	sec-Butylbenzene	17.16	105	13749	0.3436 ug/L		97
92)	p-Isopropyltoluene	17.32	119	10847	0.3192 ug/L		95
93)	1,3-Dichlorobenzene	17.52	146	6023	0.3257 ug/L		99
94)	1,4-Dichlorobenzene	17.65	146	6152	0.3299 ug/L	#	60
95)	n-Butylbenzene	17.85	91	11161	0.3323 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	5711	0.3472 ug/L		92
98)	1,2,4-Trichlorobenzene	20.29	180	4203	0.3418 ug/L		91
99)	Hexachlorobutadiene	20.43	225	1894	0.3297 ug/L		84
100)	Naphthalene	20.65	128	6039	0.3306 ug/L		91
101)	1,2,3-Trichlorobenzene	20.96	180	3279	0.3161 ug/L		86

(#) = qualifier out of range (m) = manual integration
8M412220.D 8260WT.M Tue May 17 11:40:55 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2778	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.4537	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.2630	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	0.2592	0.0	100	0.03
6	T	Bromomethane	-1.0000	0.9911	0.0	100	0.00
7	T	Chloroethane	-1.0000	0.2113	0.0	100	0.00
8	T	Trichlorofluoromethane	-1.0000	0.1520	0.0	100	-0.02
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.90#
10	T	Isoprene	-1.0000	0.1987	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.13#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2087	0.0	100	0.00
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	-1.0000	0.2501	0.0	100	0.02
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.58#
16	T	Dimethyl Sulfide	-1.0000	0.2308	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.0000	0.0	0	-7.00#
19	T	Methylene Chloride	-1.0000	0.4028	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.3853	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.43#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2686	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	-1.0000	0.3170	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.3075	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.2259	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.3212	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.98#
31	T	2,2-Dichloropropane	-1.0000	0.3101	0.0	100	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.3128	0.0	100	0.00
33	C	Chloroform	0.3000	0.3101	-3.4	100	0.00
34		1-Bromopropane	-1.0000	0.1551	0.0	100	0.00
35	T	Bromochloromethane	-1.0000	0.2858	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	2.0617	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	-1.0000	0.2921	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.2644	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.2909	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	-1.0000	0.3194	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	-1.0000	0.2853	0.0	100	0.00
46	T	Benzene	-1.0000	0.3333	0.0	100	0.00
47	T	Trichloroethene	-1.0000	0.2670	0.0	100	-0.01
48	T	Methylcyclohexane	-1.0000	0.2871	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2836	0.0	100	0.00
50	T	Bromodichloromethane	-1.0000	0.2845	0.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	-1.0000	0.1570	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2616	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.05#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.3535	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2290	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0189	0.0	100	0.00
59	C	Toluene	-1.0000	0.3243	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2392	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3047	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.2515	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	-1.0000	0.2590	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.3520	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.2599	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.3394	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.3164	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.3328	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.3096	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.2934	0.0	100	-0.01
73	T	m-,p-Xylene	-1.0000	0.6799	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.3047	0.0	100	0.00
75	T	Styrene	-1.0000	0.3062	0.0	100	0.00
76	P	Bromoform	-1.0000	0.2681	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.3287	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2853	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0253	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.1103	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	-1.0000	0.3357	0.0	100	0.00
84	T	Bromobenzene	0.3000	0.2977	0.8	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.3196	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.3415	0.0	100	0.00
87	T	4-Chlorotoluene	-1.0000	0.3499	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2534	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.2606	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.3069	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3436	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.3192	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.3257	0.0	100	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.3299	-10.0	100	0.00
95	T	n-Butylbenzene	-1.0000	0.3323	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.3472	-15.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.3418	0.0	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.3297	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.3306	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.3161	-5.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412220.D 8260WT.M Sat May 14 18:03:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	801173	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	557498	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	293108	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
80) p-Bromofluorobenzene	16.08	95	343	0.0286 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	5478	0.3262 ug/L	79
3) Chloromethane	3.63	50	3930	0.2484 ug/L	85
4) Vinyl Chloride	3.84	62	3512	0.3288 ug/L	97
5) 1,3-Butadiene	3.90	54	2479	0.2375 ug/L #	75
6) Bromomethane	4.73	94	1343	0.9497 ug/L	85
7) Chloroethane	4.90	64	2219	0.3174 ug/L #	43
8) Trichlorofluoromethane	5.36	101	6974	0.3289 ug/L #	93
10) Isoprene	5.94	67	4288	0.3952 ug/L #	62
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	3168	0.3263 ug/L #	40
14) 1,1-Dichloroethene	6.47	61	5431	0.2882 ug/L	92
16) Dimethyl Sulfide	6.74	62	1708	0.2453 ug/L	64
19) Methylene Chloride	7.24	84	3785	0.4239 ug/L #	43
20) Carbon Disulfide	7.29	76	12437	0.4565 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	6580	0.3336 ug/L #	76
23) trans-1,2-Dichloroethene	7.71	61	4990	0.2928 ug/L	96
24) n-Hexane	7.79	57	3110	0.2011 ug/L	99
26) Vinyl Acetate	8.31	43	2753	0.1566 ug/L	100
27) 1,1-Dichloroethane	8.32	63	5655	0.2774 ug/L #	92
31) 2,2-Dichloropropane	9.10	77	6035	0.3360 ug/L	82
32) cis-1,2-Dichloroethene	9.16	96	3837	0.3762 ug/L	74
33) Chloroform	9.37	83	7267	0.3842 ug/L	100
34) 1-Bromopropane	9.50	122	234	0.1456 ug/L #	1
35) Bromochloromethane	9.60	130	1674	0.3137 ug/L	62
36) Tetrahydrofuran	9.62	42	447	0.2146 ug/L #	41
38) 1,1,1-Trichloroethane	9.91	97	6304	0.3305 ug/L	90
39) Cyclohexane	9.94	56	4658	0.2238 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	5172	0.3768 ug/L	80
42) Carbon Tetrachloride	10.25	117	5692	0.3172 ug/L	95
45) 1,2-Dichloroethane	10.43	62	4443	0.2796 ug/L #	63
46) Benzene	10.46	78	14456	0.4134 ug/L #	77
47) Trichloroethene	11.21	130	3659	0.3626 ug/L	98
48) Methylcyclohexane	11.29	83	5025	0.3562 ug/L	84
49) 1,2-Dichloropropane	11.42	63	3060	0.3007 ug/L	98
50) Bromodichloromethane	11.73	83	4734	0.3343 ug/L #	93
52) Dibromomethane	11.82	93	1805	0.3767 ug/L	84
55) cis-1,3-Dichloropropene	12.36	75	5008	0.3514 ug/L	90
56) Dimethyl Disulfide	12.63	79	1921	0.2573 ug/L	85
59) Toluene	12.78	91	14742	0.4416 ug/L	98
60) Ethyl Methacrylate	12.90	69	2062	0.3292 ug/L	66
62) trans-1,3-Dichloropropene	12.96	75	3693	0.3171 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
63)	1,1,2-Trichloroethane	13.18	97	2326	0.4391 ug/L		70
65)	1,3-Dichloropropane	13.49	76	3163	0.3219 ug/L		88
66)	Tetrachloroethene	13.61	164	3164	0.4185 ug/L		93
67)	Dibromochloromethane	13.87	129	3113	0.3727 ug/L		86
68)	1,2-Dibromoethane	14.12	107	2076	0.3760 ug/L		90
69)	1-Chlorohexane	14.21	91	4746	0.4174 ug/L		80
70)	Chlorobenzene	14.62	112	9180	0.3960 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.66	131	3501	0.3876 ug/L		95
72)	Ethylbenzene	14.65	106	5348	0.4066 ug/L		84
73)	m-,p-Xylene	14.75	106	13269	0.8757 ug/L		89
74)	o-Xylene	15.31	106	6019	0.3943 ug/L		97
75)	Styrene	15.35	104	9370	0.3849 ug/L		95
76)	Bromoform	15.83	173	1198	0.2500 ug/L	#	76
77)	Isopropylbenzene	15.73	105	16528	0.4270 ug/L		92
79)	1,1,2,2-Tetrachloroethane	15.96	83	1999	0.3419 ug/L	#	83
83)	n-Propylbenzene	16.25	91	19410	0.4297 ug/L		95
84)	Bromobenzene	16.37	156	3319	0.3524 ug/L		75
85)	1,3,5-Trimethylbenzene	16.42	105	13794	0.4127 ug/L		95
86)	2-Chlorotoluene	16.51	91	13678	0.4729 ug/L		90
87)	4-Chlorotoluene	16.56	91	12572	0.4219 ug/L		98
88)	a-Methylstyrene	16.84	118	5739	0.3485 ug/L		96
89)	tert-Butylbenzene	16.90	134	2254	0.3403 ug/L		55
90)	1,2,4-Trimethylbenzene	16.95	105	13859	0.4051 ug/L		90
91)	sec-Butylbenzene	17.17	105	17612	0.4382 ug/L		90
92)	p-Isopropyltoluene	17.32	119	13616	0.3968 ug/L		90
93)	1,3-Dichlorobenzene	17.52	146	6961	0.3724 ug/L		86
94)	1,4-Dichlorobenzene	17.64	146	7149	0.3832 ug/L	#	1
95)	n-Butylbenzene	17.85	91	15223	0.4664 ug/L		91
96)	1,2-Dichlorobenzene	18.14	146	6129	0.3742 ug/L		92
98)	1,2,4-Trichlorobenzene	20.28	180	5035	0.3969 ug/L		97
99)	Hexachlorobutadiene	20.44	225	2420	0.4122 ug/L		83
100)	Naphthalene	20.65	128	7474	0.3874 ug/L	#	84
101)	1,2,3-Trichlorobenzene	20.96	180	4378	0.4056 ug/L	#	78

(#) = qualifier out of range (m) = manual integration
8M412221.D 8260WT.M Fri May 13 14:20:39 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

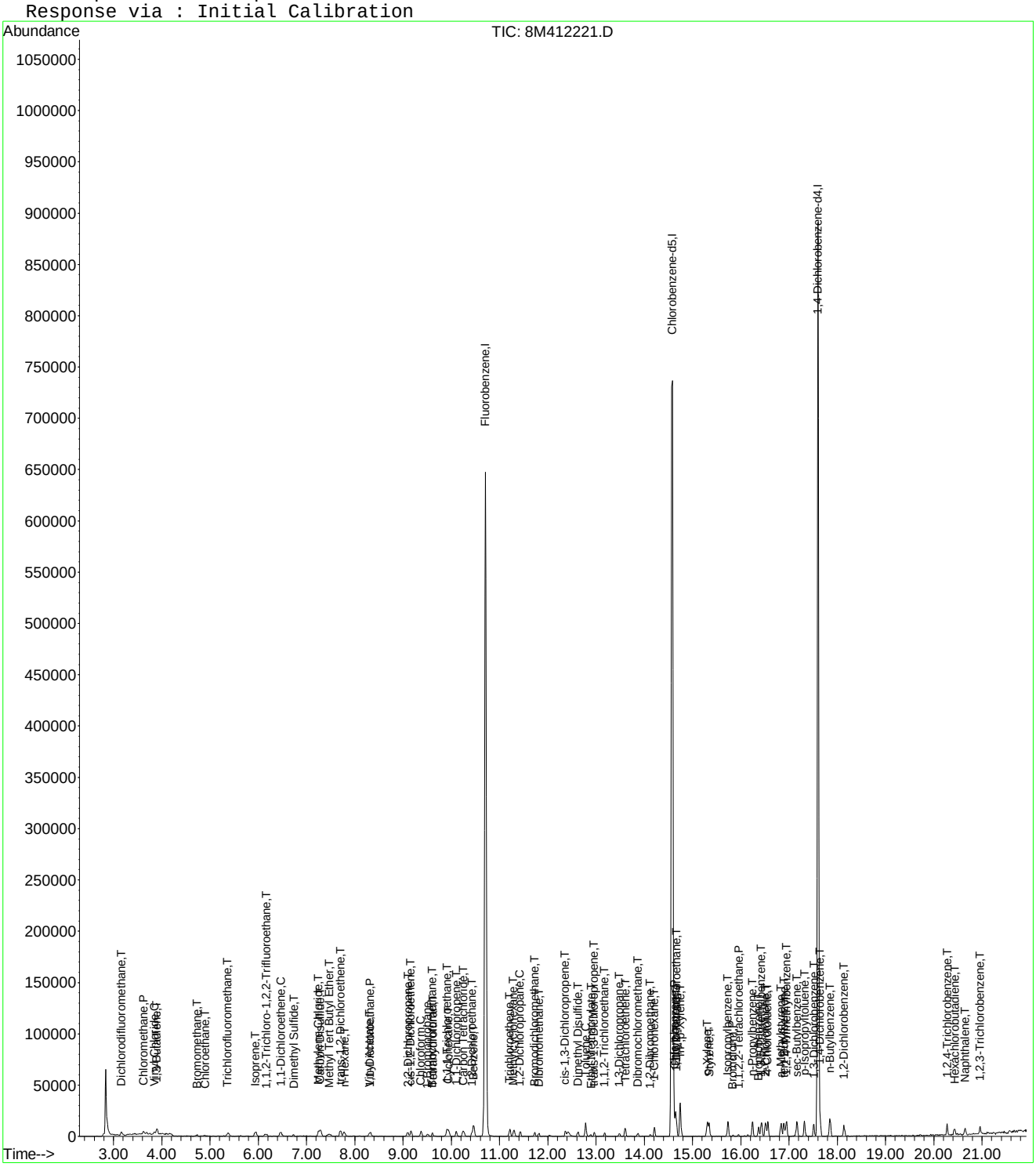

8M412221.D 8260WT.M Fri May 13 14:20:40 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	0.4000	0.4078	-2.0	100	0.00
3	P	Chloromethane	-1.0000	0.5012	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.3775	5.6	100	0.00
5	T	1,3-Butadiene	-1.0000	0.3178	0.0	100	0.02
6	T	Bromomethane	-1.0000	1.0253	0.0	100	0.00
7	T	Chloroethane	0.4000	0.4335	-8.4	100	0.00
8	T	Trichlorofluoromethane	0.4000	0.4029	-0.7	100	-0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.90#
10	T	Isoprene	0.4000	0.4079	-2.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.13#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3894	0.0	100	0.02
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	0.4000	0.4192	-4.8	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.58#
16	T	Dimethyl Sulfide	0.4000	0.3687	7.8	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.2179	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4591	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4587	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.43#
22	T	Methyl Tert Butyl Ether	-1.0000	0.3688	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.4193	-4.8	100	0.00
24	T	n-Hexane	-1.0000	0.3519	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.3241	0.0	100	0.02
27	P	1,1-Dichloroethane	0.4000	0.3826	4.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.98#
31	T	2,2-Dichloropropane	0.4000	0.3874	3.1	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.4172	-4.3	100	-0.01
33	C	Chloroform	0.4000	0.4164	-4.1	100	0.00
34		1-Bromopropane	-1.0000	0.1776	0.0	100	-0.01
35	T	Bromochloromethane	0.4000	0.3550	11.3	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.5125	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	0.4000	0.3803	4.9	100	0.00
39	T	Cyclohexane	-1.0000	0.4058	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4093	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	0.4000	0.3867	3.3	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	0.4000	0.3955	1.1	100	0.00
46	T	Benzene	0.4000	0.4393	-9.8	100	0.00
47	T	Trichloroethene	0.4000	0.4169	-4.2	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3768	0.0	100	-0.01
49	C	1,2-Dichloropropane	0.4000	0.4177	-4.4	100	0.00
50	T	Bromodichloromethane	0.4000	0.3676	8.1	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	0.4000	0.4162	-4.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1401	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.05#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3821	4.5	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2746	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0000	0.0	0	-12.68#
59	C	Toluene	0.4000	0.4259	-6.5	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3102	0.0	100	0.02
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3184	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.4259	-6.5	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	0.4000	0.3253	18.7	100	0.00
66	T	Tetrachloroethene	0.4000	0.4267	-6.7	100	0.00
67	T	Dibromochloromethane	0.4000	0.3904	2.4	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.3814	4.6	100	0.00
69	T	1-Chlorohexane	0.4000	0.4017	-0.4	100	0.00
70	P	Chlorobenzene	0.4000	0.3933	1.7	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3872	3.2	100	0.00
72	C	Ethylbenzene	0.4000	0.4188	-4.7	100	0.00
73	T	m-,p-Xylene	0.8000	0.8859	-10.7	100	0.00
74	T	o-Xylene	-1.0000	0.4110	0.0	100	0.00
75	T	Styrene	0.4000	0.3901	2.5	100	0.00
76	P	Bromoform	-1.0000	0.2533	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.4249	-6.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.3398	15.1	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0283	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.14#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	0.4000	0.4245	-6.1	100	0.00
84	T	Bromobenzene	0.4000	0.3529	11.8	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.4141	-3.5	100	0.00
86	T	2-Chlorotoluene	0.4000	0.4284	-7.1	100	0.00
87	T	4-Chlorotoluene	0.4000	0.4359	-9.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.3631	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3459	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	0.4000	0.4046	-1.2	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.4494	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4092	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.3844	3.9	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.3915	2.1	100	0.00
95	T	n-Butylbenzene	-1.0000	0.4628	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.3805	4.9	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	0.4000	0.4182	-4.5	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.4302	-7.5	100	0.00
100	T	Naphthalene	0.4000	0.4178	-4.5	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.4310	-7.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412221.D 8260WT.M Sat May 14 18:03:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	795577	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	547129	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	284579	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.65	111	3962	0.3966 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery	= 1.60%#	
43) 1,2-Dichloroethane-d4	10.31	65	3835	0.3356 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery	= 1.36%#	
58) Toluene-d8	12.68	98	14023	0.4957 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 2.00%#	
80) p-Bromofluorobenzene	16.08	95	6483	0.5565 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery	= 2.24%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	12402	0.7438 ug/L	97
3) Chloromethane	3.62	50	8415	0.5357 ug/L #	75
4) Vinyl Chloride	3.84	62	9412	0.8873 ug/L	89
5) 1,3-Butadiene	3.90	54	6974	0.6729 ug/L	81
6) Bromomethane	4.73	94	4114	1.3123 ug/L	92
7) Chloroethane	4.90	64	4983	0.7178 ug/L #	80
8) Trichlorofluoromethane	5.38	101	17133	0.8136 ug/L #	96
9) Diethyl ether	5.90	59	20707	3.2140 ug/L	84
10) Isoprene	5.94	67	11176	1.0373 ug/L	76
11) Acrolein	6.14	56	246	0.4300 ug/L #	15
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	8135	0.8438 ug/L	96
13) Acetone	6.24	43	413	0.2115 ug/L #	48
14) 1,1-Dichloroethene	6.46	61	12947	0.6919 ug/L	91
15) Tert-Butyl Alcohol	6.59	59	3316	7.3747 ug/L #	55
16) Dimethyl Sulfide	6.72	62	4505	0.6515 ug/L	79
18) Methyl acetate	7.00	43	2119	0.3630 ug/L #	66
19) Methylene Chloride	7.24	84	8723	0.9837 ug/L #	43
20) Carbon Disulfide	7.29	76	28246	1.0441 ug/L	100
21) Acrylonitrile	7.43	53	2164	0.8620 ug/L	76
22) Methyl Tert Butyl Ether	7.47	73	16998	0.8678 ug/L	84
23) trans-1,2-Dichloroethene	7.70	61	12571	0.7427 ug/L	100
24) n-Hexane	7.78	57	9382	0.6109 ug/L	82
25) Diisopropyl ether	8.12	45	95400	2.1939 ug/L #	91
26) Vinyl Acetate	8.30	43	6750	0.3867 ug/L #	89
27) 1,1-Dichloroethane	8.32	63	14721	0.7271 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	97972	3.2102 ug/L	88
29) 2-Butanone	8.88	43	380	0.1215 ug/L #	57
30) Propionitrile	8.99	54	1593	2.0138 ug/L #	56
31) 2,2-Dichloropropane	9.09	77	14691	0.8236 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	9482	0.9362 ug/L	72
33) Chloroform	9.37	83	18494	0.9845 ug/L	94
34) 1-Bromopropane	9.50	122	1092	0.6844 ug/L	80
35) Bromochloromethane	9.61	130	5234	0.9877 ug/L #	55
36) Tetrahydrofuran	9.63	42	5415	2.6185 ug/L #	68
38) 1,1,1-Trichloroethane	9.91	97	17074	0.9016 ug/L	92
39) Cyclohexane	9.94	56	11865	0.5740 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	13172	0.9663 ug/L	87
41) Tert-Amyl-Methyl ether	10.21	73	90255	4.6173 ug/L #	88
42) Carbon Tetrachloride	10.25	117	14515	0.8146 ug/L	95
45) 1,2-Dichloroethane	10.42	62	10675	0.6766 ug/L	85

(#) = qualifier out of range (m) = manual integration
8M412222.D 8260WT.M Fri May 13 14:49:47 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	10.47	78	34504	0.9938 ug/L		84
47)	Trichloroethene	11.21	130	8752	0.8735 ug/L		93
48)	Methylcyclohexane	11.30	83	13513	0.9646 ug/L		79
49)	1,2-Dichloropropane	11.43	63	7057	0.6982 ug/L	#	67
50)	Bromodichloromethane	11.73	83	12147	0.8638 ug/L		96
52)	Dibromomethane	11.81	93	4130	0.8681 ug/L		95
53)	2-Chloroethyl Vinyl Ether	12.03	63	2694	0.6366 ug/L		86
54)	4-Methyl-2-Pentanone	12.06	58	848	0.3671 ug/L	#	41
55)	cis-1,3-Dichloropropene	12.36	75	12521	0.8847 ug/L		97
56)	Dimethyl Disulfide	12.63	79	5799	0.7821 ug/L		96
59)	Toluene	12.79	91	37114	1.1328 ug/L		95
60)	Ethyl Methacrylate	12.88	69	5490	0.8930 ug/L		69
62)	trans-1,3-Dichloropropene	12.96	75	10328	0.9035 ug/L		92
63)	1,1,2-Trichloroethane	13.18	97	5274	1.0144 ug/L		93
64)	2-Hexanone	13.10	58	397	0.2127 ug/L	#	1
65)	1,3-Dichloropropane	13.49	76	9673	1.0032 ug/L		73
66)	Tetrachloroethene	13.61	164	7373	0.9937 ug/L		95
67)	Dibromochloromethane	13.87	129	7358	0.8977 ug/L		95
68)	1,2-Dibromoethane	14.13	107	5123	0.9454 ug/L		95
69)	1-Chlorohexane	14.21	91	12790	1.1461 ug/L		79
70)	Chlorobenzene	14.62	112	25662	1.1281 ug/L		89
71)	1,1,1,2-Tetrachloroethane	14.66	131	8722	0.9838 ug/L		94
72)	Ethylbenzene	14.65	106	13009	1.0078 ug/L		87
73)	m-,p-Xylene	14.75	106	30465	2.0486 ug/L		84
74)	o-Xylene	15.31	106	15133	1.0101 ug/L		84
75)	Styrene	15.35	104	23191	0.9707 ug/L		91
76)	Bromoform	15.84	173	3875	0.8240 ug/L		96
77)	Isopropylbenzene	15.74	105	41382	1.0895 ug/L		95
79)	1,1,2,2-Tetrachloroethane	15.95	83	5604	0.9873 ug/L	#	93
81)	1,2,3-Trichloropropane	16.15	110	1355	0.7428 ug/L	#	1
82)	trans-1,4-Dichloro-2-Buten	16.19	53	962	0.3479 ug/L	#	1
83)	n-Propylbenzene	16.25	91	48249	1.1002 ug/L		99
84)	Bromobenzene	16.37	156	9598	1.0497 ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	33355	1.0278 ug/L		96
86)	2-Chlorotoluene	16.51	91	33408	1.1895 ug/L		94
87)	4-Chlorotoluene	16.56	91	29548	1.0213 ug/L		95
88)	a-Methylstyrene	16.84	118	14414	0.9014 ug/L		91
89)	tert-Butylbenzene	16.89	134	6686	1.0398 ug/L		86
90)	1,2,4-Trimethylbenzene	16.95	105	36066	1.0857 ug/L		96
91)	sec-Butylbenzene	17.16	105	42128	1.0796 ug/L		96
92)	p-Isopropyltoluene	17.32	119	35424	1.0633 ug/L		94
93)	1,3-Dichlorobenzene	17.52	146	18409	1.0144 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	19031	1.0506 ug/L	#	62
95)	n-Butylbenzene	17.85	91	35772	1.1288 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	16104	1.0126 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.14	75	1262	1.0152 ug/L	#	53
98)	1,2,4-Trichlorobenzene	20.28	180	11494	0.9331 ug/L		98
99)	Hexachlorobutadiene	20.43	225	5421	0.9510 ug/L		98
100)	Naphthalene	20.65	128	16581	0.8853 ug/L		100
101)	1,2,3-Trichlorobenzene	20.96	180	10306	0.9835 ug/L		94

(#) = qualifier out of range (m) = manual integration
8M412222.D 8260WT.M Fri May 13 14:49:48 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

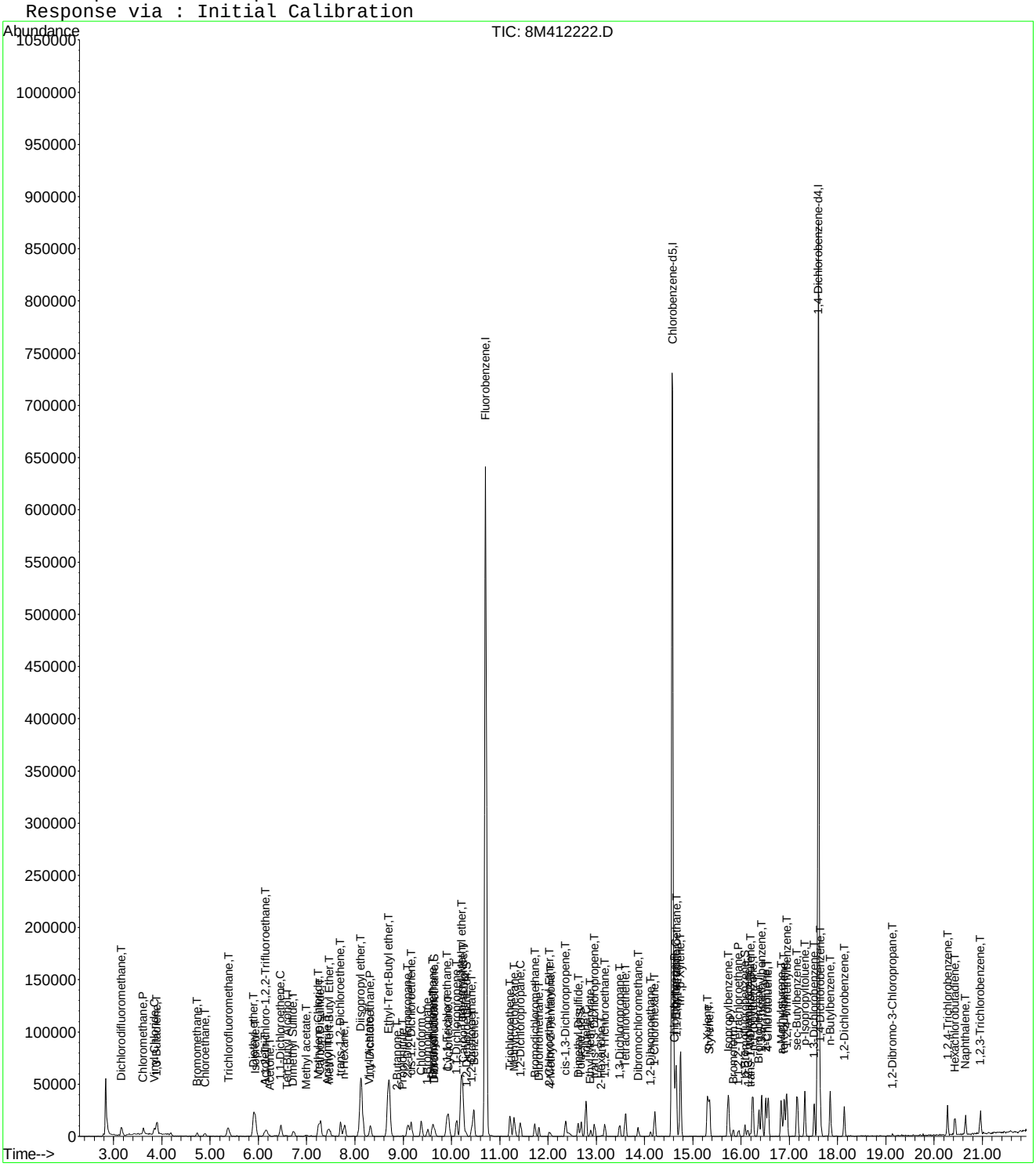

8M412222.D 8260WT.M Fri May 13 14:49:48 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:05:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9298	7.0	100	0.00
3	P	Chloromethane	1.0000	1.0808	-8.1	100	0.00
4	C	Vinyl Chloride	1.0000	1.0189	-1.9	100	0.00
5	T	1,3-Butadiene	-1.0000	0.9002	0.0	100	0.02
6	T	Bromomethane	1.0000	1.2082	-20.8	100	0.00
7	T	Chloroethane	1.0000	0.9803	2.0	100	0.00
8	T	Trichlorofluoromethane	1.0000	0.9968	0.3	100	0.00
9	T	Diethyl ether	5.0000	5.0462	-0.9	100	0.00
10	T	Isoprene	1.0000	1.0707	-7.1	100	0.00
11	T	Acrolein	-1.0000	0.6696	0.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0069	-0.7	100	0.00
13	T	Acetone	-1.0000	0.4614	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	1.0064	-0.6	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	11.5604	0.0	0	0.02
16	T	Dimethyl Sulfide	1.0000	0.9794	2.1	100	-0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.8758	0.0	100	0.00
19	T	Methylene Chloride	1.0000	1.0655	-6.5	100	0.00
20	T	Carbon Disulfide	1.0000	1.0492	-4.9	100	0.00
21	T	Acrylonitrile	2.5000	1.8633	25.5#	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9593	4.1	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	1.0636	-6.4	100	0.00
24	T	n-Hexane	-1.0000	1.0690	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	5.1784	-3.6	100	0.00
26	T	Vinyl Acetate	-1.0000	0.8002	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0029	-0.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.9635	0.7	100	0.00
29	T	2-Butanone	-1.0000	0.2889	0.0	100	0.00
30	T	Propionitrile	5.0000	4.1566	16.9	100	0.00
31	T	2,2-Dichloropropane	1.0000	0.9498	5.0	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	1.0383	-3.8	100	0.00
33	C	Chloroform	1.0000	1.0671	-6.7	100	0.00
34		1-Bromopropane	1.0000	0.8348	16.5	100	-0.01
35	T	Bromochloromethane	1.0000	1.1177	-11.8	100	0.00
36	T	Tetrahydrofuran	5.0000	6.2516	-25.0#	100	0.00
37	S	Dibromofluoromethane	0.5000	0.4635	7.3	100	-0.01
38	T	1,1,1-Trichloroethane	1.0000	1.0372	-3.7	100	0.00
39	T	Cyclohexane	1.0000	1.0411	-4.1	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0498	-5.0	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	5.0344	-0.7	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.9930	0.7	100	0.00
43	S	1,2-Dichloroethane-d4	0.5000	0.4184	16.3	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	1.0000	0.9570	4.3	100	0.00
46	T	Benzene	1.0000	1.0558	-5.6	100	0.00
47	T	Trichloroethene	1.0000	1.0041	-0.4	100	0.00
48	T	Methylcyclohexane	-1.0000	1.0205	0.0	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.9700	3.0	100	0.00
50	T	Bromodichloromethane	1.0000	0.9500	5.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	1.0000	0.9590	4.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.8616	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.6639	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:05:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9621	3.8	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.8348	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	0.5000	0.4897	2.1	100	0.00
59	C	Toluene	1.0000	1.0927	-9.3	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.8416	15.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	1.0000	0.9073	9.3	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.9840	1.6	100	0.00
64	T	2-Hexanone	-1.0000	0.3525	0.0	100	-0.01
65	T	1,3-Dichloropropane	1.0000	1.0137	-1.4	100	0.00
66	T	Tetrachloroethene	1.0000	1.0132	-1.3	100	0.00
67	T	Dibromochloromethane	1.0000	0.9402	6.0	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.9590	4.1	100	0.00
69	T	1-Chlorohexane	1.0000	1.1031	-10.3	100	0.00
70	P	Chlorobenzene	1.0000	1.1204	-12.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.9829	1.7	100	0.00
72	C	Ethylbenzene	1.0000	1.0381	-3.8	100	0.00
73	T	m-,p-Xylene	2.0000	2.0726	-3.6	100	0.00
74	T	o-Xylene	1.0000	1.0530	-5.3	100	0.00
75	T	Styrene	1.0000	0.9839	1.6	100	0.00
76	P	Bromoform	1.0000	0.8348	16.5	100	0.00
77	T	Isopropylbenzene	1.0000	1.0840	-8.4	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	0.9810	1.9	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5502	0.0	100	0.00
81	T	1,2,3-Trichloropropane	1.0000	0.7703	23.0	100	0.02
82	T	trans-1,4-Dichloro-2-Butene	1.0000	1.1443	-14.4	100	0.00
83	T	n-Propylbenzene	1.0000	1.0868	-8.7	100	0.00
84	T	Bromobenzene	1.0000	1.0510	-5.1	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	1.0314	-3.1	100	0.00
86	T	2-Chlorotoluene	1.0000	1.0778	-7.8	100	0.00
87	T	4-Chlorotoluene	1.0000	1.0553	-5.5	100	0.00
88	T	a-Methylstyrene	-1.0000	0.9394	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	1.0567	-5.7	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	1.0845	-8.5	100	0.00
91	T	sec-Butylbenzene	1.0000	1.1073	-10.7	100	0.00
92	T	p-Isopropyltoluene	1.0000	1.0966	-9.7	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0469	-4.7	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	1.0735	-7.3	100	0.00
95	T	n-Butylbenzene	1.0000	1.1201	-12.0	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0297	-3.0	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.1006	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	1.0000	0.9832	1.7	100	0.00
99	T	Hexachlorobutadiene	1.0000	0.9925	0.7	100	0.00
100	T	Naphthalene	1.0000	0.9547	4.5	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	1.0450	-4.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	782460	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.57	117	543252	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	286450	25.00	ug/L	0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	8161	0.8307	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.32%#		
43) 1,2-Dichloroethane-d4	10.30	65	9681	0.8613	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.44%#		
58) Toluene-d8	12.68	98	28135	1.0016	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.00%#		
80) p-Bromofluorobenzene	16.08	95	12079	1.0302	ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.12%#		

Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.16	85	24870	1.5166	ug/L	98
3) Chloromethane	3.62	50	16106	1.0425	ug/L	93
4) Vinyl Chloride	3.85	62	18562	1.7792	ug/L	94
5) 1,3-Butadiene	3.90	54	13617	1.3360	ug/L	92
6) Bromomethane	4.73	94	8329	1.8804	ug/L	94
7) Chloroethane	4.90	64	9562	1.4006	ug/L	86
8) Trichlorofluoromethane	5.39	101	34970	1.6885	ug/L	97
9) Diethyl ether	5.90	59	107986	17.0420	ug/L	79
10) Isoprene	5.93	67	20936	1.9757	ug/L	73
11) Acrolein	6.14	56	4864	8.6444	ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	16832	1.7751	ug/L	99
13) Acetone	6.23	43	1519	0.7908	ug/L #	48
14) 1,1-Dichloroethene	6.47	61	25394	1.3798	ug/L	89
15) Tert-Butyl Alcohol	6.58	59	14891	33.6725	ug/L	85
16) Dimethyl Sulfide	6.73	62	9489	1.3953	ug/L	79
17) Iodomethane	6.98	142	1211	1.3472	ug/L #	60
18) Methyl acetate	7.01	43	5064	0.8821	ug/L #	79
19) Methylene Chloride	7.25	84	16579	1.9010	ug/L	52
20) Carbon Disulfide	7.29	76	57693	2.1683	ug/L	98
21) Acrylonitrile	7.43	53	13848	5.6089	ug/L	93
22) Methyl Tert Butyl Ether	7.47	73	33991	1.7644	ug/L	84
23) trans-1,2-Dichloroethene	7.70	61	22786	1.3688	ug/L	88
24) n-Hexane	7.79	57	18282	1.2105	ug/L	84
25) Diisopropyl ether	8.12	45	475271	11.1128	ug/L #	92
26) Vinyl Acetate	8.29	43	15998	0.9318	ug/L	93
27) 1,1-Dichloroethane	8.32	63	30419	1.5277	ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	505010	16.8250	ug/L	89
29) 2-Butanone	8.90	43	2250	0.7313	ug/L #	57
30) Propionitrile	8.99	54	9373	12.0479	ug/L	86
31) 2,2-Dichloropropane	9.10	77	32521	1.8538	ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	18238	1.8309	ug/L	91
33) Chloroform	9.37	83	33543	1.8156	ug/L	99
34) 1-Bromopropane	9.52	122	2513	1.6014	ug/L	88
35) Bromochloromethane	9.60	130	9189	1.7632	ug/L	67
36) Tetrahydrofuran	9.63	42	22074	10.8529	ug/L #	66
38) 1,1,1-Trichloroethane	9.90	97	32268	1.7324	ug/L	96
39) Cyclohexane	9.93	56	23097	1.1362	ug/L #	65
40) 1,1-Dichloropropene	10.10	75	24988	1.8639	ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	459535	23.9029	ug/L	87
42) Carbon Tetrachloride	10.24	117	28935	1.6512	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412223.D 8260WT.M Fri May 13 15:18:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.42	62	22142	1.4270 ug/L #	83
46)	Benzene	10.46	78	67028	1.9629 ug/L	83
47)	Trichloroethene	11.21	130	17287	1.7543 ug/L	96
48)	Methylcyclohexane	11.30	83	26050	1.8907 ug/L	84
49)	1,2-Dichloropropane	11.42	63	14582	1.4670 ug/L	77
50)	Bromodichloromethane	11.73	83	25794	1.8651 ug/L	93
51)	1,4-Dioxane	11.73	88	1282	32.3515 ug/L	74
52)	Dibromomethane	11.81	93	8575	1.8325 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.02	63	6234	1.4979 ug/L	100
54)	4-Methyl-2-Pentanone	12.06	58	2139	0.9416 ug/L	84
55)	cis-1,3-Dichloropropene	12.37	75	24153	1.7353 ug/L	98
56)	Dimethyl Disulfide	12.62	79	12288	1.6851 ug/L	99
59)	Toluene	12.79	91	72944	2.2423 ug/L	95
60)	Ethyl Methacrylate	12.88	69	12716	2.0832 ug/L	71
62)	trans-1,3-Dichloropropene	12.96	75	22163	1.9527 ug/L	100
63)	1,1,2-Trichloroethane	13.18	97	10537	2.0412 ug/L	99
64)	2-Hexanone	13.13	58	2200	1.1873 ug/L #	65
65)	1,3-Dichloropropane	13.49	76	20212	2.1112 ug/L	72
66)	Tetrachloroethene	13.60	164	14595	1.9811 ug/L	90
67)	Dibromochloromethane	13.87	129	14698	1.8061 ug/L	98
68)	1,2-Dibromoethane	14.12	107	10152	1.8869 ug/L	95
69)	1-Chlorohexane	14.21	91	21960	1.9818 ug/L	89
70)	Chlorobenzene	14.62	112	47376	2.0974 ug/L	81
71)	1,1,1,2-Tetrachloroethane	14.66	131	17526	1.9910 ug/L	97
72)	Ethylbenzene	14.66	106	25628	1.9996 ug/L	92
73)	m-,p-Xylene	14.74	106	60087	4.0693 ug/L	84
74)	o-Xylene	15.31	106	28289	1.9017 ug/L	79
75)	Styrene	15.35	104	47644	2.0086 ug/L	92
76)	Bromoform	15.84	173	9145	1.9585 ug/L	95
77)	Isopropylbenzene	15.73	105	81301	2.1557 ug/L	97
79)	1,1,2,2-Tetrachloroethane	15.95	83	11538	2.0194 ug/L	95
81)	1,2,3-Trichloropropane	16.13	110	3630	1.9770 ug/L	94
82)	trans-1,4-Dichloro-2-Buten	16.19	53	2699	0.9698 ug/L #	36
83)	n-Propylbenzene	16.24	91	97233	2.2026 ug/L	96
84)	Bromobenzene	16.37	156	19174	2.0834 ug/L	92
85)	1,3,5-Trimethylbenzene	16.42	105	67395	2.0631 ug/L	97
86)	2-Chlorotoluene	16.51	91	67110	2.3739 ug/L	94
87)	4-Chlorotoluene	16.56	91	59154	2.0313 ug/L	92
88)	a-Methylstyrene	16.84	118	29415	1.8275 ug/L	86
89)	tert-Butylbenzene	16.89	134	12716	1.9647 ug/L	67
90)	1,2,4-Trimethylbenzene	16.95	105	71669	2.1435 ug/L	94
91)	sec-Butylbenzene	17.17	105	81038	2.0632 ug/L	98
92)	p-Isopropyltoluene	17.32	119	70170	2.0924 ug/L	92
93)	1,3-Dichlorobenzene	17.52	146	37289	2.0413 ug/L	93
94)	1,4-Dichlorobenzene	17.64	146	36528	2.0034 ug/L #	73
95)	n-Butylbenzene	17.85	91	67823	2.1262 ug/L	96
96)	1,2-Dichlorobenzene	18.14	146	32322	2.0190 ug/L	92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	1955	1.5624 ug/L	94
98)	1,2,4-Trichlorobenzene	20.28	180	23558	1.9000 ug/L	98
99)	Hexachlorobutadiene	20.43	225	11066	1.9286 ug/L	99
100)	Naphthalene	20.65	128	36066	1.9130 ug/L	99
101)	1,2,3-Trichlorobenzene	20.96	180	19765	1.8738 ug/L	95

(#) = qualifier out of range (m) = manual integration
8M412223.D 8260WT.M Fri May 13 15:18:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

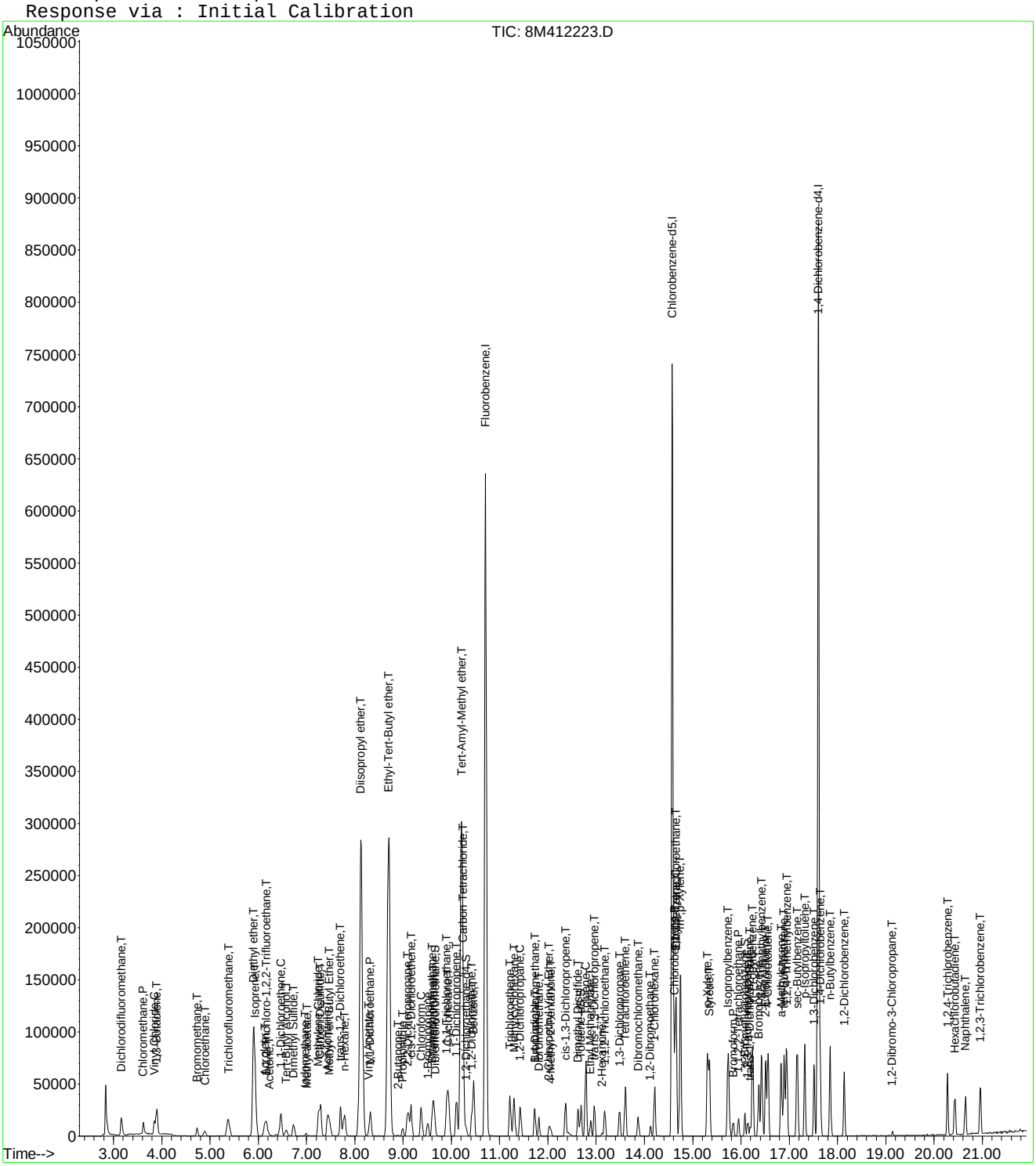

8M412223.D 8260WT.M Fri May 13 15:18:37 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.8958	5.2	100	0.00
3	P	Chloromethane	2.0000	2.1033	-5.2	100	0.00
4	C	Vinyl Chloride	2.0000	2.0431	-2.2	100	0.00
5	T	1,3-Butadiene	2.0000	1.7872	10.6	100	0.02
6	T	Bromomethane	2.0000	2.0126	-0.6	100	0.00
7	T	Chloroethane	2.0000	1.9127	4.4	100	0.00
8	T	Trichlorofluoromethane	2.0000	2.0686	-3.4	100	0.00
9	T	Diethyl ether	25.0000	26.7567	-7.0	100	0.00
10	T	Isoprene	2.0000	2.0394	-2.0	100	0.00
11	T	Acrolein	12.5000	13.4606	-7.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	2.1182	-5.9	100	0.02
13	T	Acetone	-1.0000	1.7255	0.0	100	-0.01
14	C	1,1-Dichloroethene	2.0000	2.0070	-0.4	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	52.7840	-5.6	100	0.00
16	T	Dimethyl Sulfide	2.0000	2.0975	-4.9	100	0.00
17	T	Iodomethane	2.0000	3.0680	-53.4#	100	0.00
18	T	Methyl acetate	-1.0000	2.1281	0.0	100	0.00
19	T	Methylene Chloride	2.0000	2.0590	-3.0	100	0.00
20	T	Carbon Disulfide	2.0000	2.1789	-8.9	100	0.00
21	T	Acrylonitrile	12.5000	12.1237	3.0	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.9505	2.5	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.9603	2.0	100	0.00
24	T	n-Hexane	-1.0000	2.1181	0.0	100	0.00
25	T	Diisopropyl ether	25.0000	26.2305	-4.9	100	0.00
26	T	Vinyl Acetate	2.0000	1.9284	3.6	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.1072	-5.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	26.0139	-4.1	100	0.00
29	T	2-Butanone	-1.0000	1.7396	0.0	100	0.02
30	T	Propionitrile	25.0000	24.8668	0.5	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1378	-6.9	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0306	-1.5	100	0.00
33	C	Chloroform	2.0000	1.9679	1.6	100	0.00
34		1-Bromopropane	2.0000	1.9533	2.3	100	0.00
35	T	Bromochloromethane	2.0000	1.9951	0.2	100	0.00
36	T	Tetrahydrofuran	25.0000	25.9117	-3.6	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9708	2.9	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.9930	0.3	100	0.00
39	T	Cyclohexane	2.0000	2.0605	-3.0	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0248	-1.2	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	26.0627	-4.3	100	0.00
42	T	Carbon Tetrachloride	2.0000	2.0126	-0.6	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0740	-7.4	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	2.0000	2.0183	-0.9	100	0.00
46	T	Benzene	2.0000	2.0854	-4.3	100	0.00
47	T	Trichloroethene	2.0000	2.0166	-0.8	100	0.00
48	T	Methylcyclohexane	-1.0000	2.0003	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0380	-1.9	100	0.00
50	T	Bromodichloromethane	2.0000	2.0511	-2.6	100	0.00
51	T	1,4-Dioxane	-1.0000	35.6688	0.0	100	0.02
52	T	Dibromomethane	2.0000	2.0246	-1.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	2.0271	-1.4	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.7027	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.8869	5.7	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.7986	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	0.9896	1.0	100	0.00
59	C	Toluene	2.0000	2.1628	-8.1	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.9633	1.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	2.0000	1.9609	2.0	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.9800	1.0	100	0.00
64	T	2-Hexanone	-1.0000	1.9672	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.1332	-6.7	100	0.00
66	T	Tetrachloroethene	2.0000	2.0198	-1.0	100	0.00
67	T	Dibromochloromethane	2.0000	1.8915	5.4	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.9141	4.3	100	0.00
69	T	1-Chlorohexane	2.0000	1.9075	4.6	100	0.00
70	P	Chlorobenzene	2.0000	2.0831	-4.2	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.9892	0.5	100	0.00
72	C	Ethylbenzene	2.0000	2.0596	-3.0	100	0.00
73	T	m-,p-Xylene	4.0000	4.1170	-2.9	100	0.00
74	T	o-Xylene	2.0000	1.9825	0.9	100	0.00
75	T	Styrene	2.0000	2.0358	-1.8	100	0.00
76	P	Bromoform	2.0000	1.9841	0.8	100	0.00
77	T	Isopropylbenzene	2.0000	2.1448	-7.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	2.0066	-0.3	100	0.00
80	S	p-Bromofluorobenzene	1.0000	1.0184	-1.8	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	2.0501	-2.5	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	2.0915	-4.6	100	0.00
83	T	n-Propylbenzene	2.0000	2.1757	-8.8	100	0.00
84	T	Bromobenzene	2.0000	2.0859	-4.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.0703	-3.5	100	0.00
86	T	2-Chlorotoluene	2.0000	2.1509	-7.5	100	0.00
87	T	4-Chlorotoluene	2.0000	2.0989	-4.9	100	0.00
88	T	a-Methylstyrene	-1.0000	1.9045	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	1.9967	0.2	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.1411	-7.1	100	0.00
91	T	sec-Butylbenzene	2.0000	2.1161	-5.8	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.1579	-7.9	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.1067	-5.3	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.0470	-2.4	100	0.00
95	T	n-Butylbenzene	2.0000	2.1098	-5.5	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0532	-2.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.6938	15.3	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	2.0021	-0.1	100	0.00
99	T	Hexachlorobutadiene	2.0000	2.0128	-0.6	100	0.00
100	T	Naphthalene	2.0000	2.0630	-3.2	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9910	0.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	768397	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	534372	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	274234	25.00 ug/L	0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	19775	2.0496 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	8.20%#	
43) 1,2-Dichloroethane-d4	10.30	65	21200	1.9207 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	7.68%#	
58) Toluene-d8	12.68	98	65647	2.3758 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	9.52%#	
80) p-Bromofluorobenzene	16.08	95	26759	2.3838 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	9.52%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	55961	3.4750 ug/L	99
3) Chloromethane	3.62	50	34194	2.2538 ug/L	100
4) Vinyl Chloride	3.84	62	42506	4.1488 ug/L	99
5) 1,3-Butadiene	3.89	54	32006	3.1976 ug/L	93
6) Bromomethane	4.72	94	19582	3.4204 ug/L	94
7) Chloroethane	4.90	64	22000	3.2814 ug/L	84
8) Trichlorofluoromethane	5.37	101	77715	3.8212 ug/L	96
9) Diethyl ether	5.90	59	188516	30.2955 ug/L	79
10) Isoprene	5.94	67	44975	4.3218 ug/L	78
11) Acrolein	6.15	56	7712	13.9568 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	36867	3.9591 ug/L	99
13) Acetone	6.24	43	3578	1.8967 ug/L	85
14) 1,1-Dichloroethene	6.47	61	59405	3.2870 ug/L	95
15) Tert-Butyl Alcohol	6.58	59	27833	64.0897 ug/L #	82
16) Dimethyl Sulfide	6.73	62	21102	3.1597 ug/L	77
17) Iodomethane	6.99	142	3667	1.8964 ug/L	95
18) Methyl acetate	7.00	43	11500	2.0398 ug/L #	86
19) Methylene Chloride	7.24	84	37533	4.3823 ug/L	52
20) Carbon Disulfide	7.29	76	123060	4.7097 ug/L	100
21) Acrylonitrile	7.43	53	25653	10.5804 ug/L	99
22) Methyl Tert Butyl Ether	7.47	73	80005	4.2289 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	54124	3.3108 ug/L	94
24) n-Hexane	7.78	57	40758	2.7480 ug/L	82
25) Diisopropyl ether	8.12	45	841400	20.0337 ug/L #	91
26) Vinyl Acetate	8.30	43	37284	2.2113 ug/L #	90
27) 1,1-Dichloroethane	8.32	63	66711	3.4116 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	907423	30.7852 ug/L	89
29) 2-Butanone	8.89	43	5359	1.7738 ug/L #	82
30) Propionitrile	8.99	54	17933	23.4726 ug/L	100
31) 2,2-Dichloropropane	9.10	77	73150	4.2462 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	41036	4.1950 ug/L	89
33) Chloroform	9.37	83	78227	4.3116 ug/L	99
34) 1-Bromopropane	9.52	122	6162	3.9986 ug/L	99
35) Bromochloromethane	9.60	130	20988	4.1009 ug/L #	62
36) Tetrahydrofuran	9.62	42	38098	19.0742 ug/L #	62
38) 1,1,1-Trichloroethane	9.91	97	76152	4.1633 ug/L	97
39) Cyclohexane	9.94	56	51439	2.5767 ug/L #	66
40) 1,1-Dichloropropene	10.11	75	56645	4.3027 ug/L	93
41) Tert-Amyl-Methyl ether	10.21	73	821180	43.4958 ug/L	87
42) Carbon Tetrachloride	10.25	117	67831	3.9416 ug/L	96

(#) = qualifier out of range (m) = manual integration
8M412224.D 8260WT.M Fri May 13 15:47:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	51708	3.3934 ug/L		85
46)	Benzene	10.46	78	150204	4.4792 ug/L		86
47)	Trichloroethene	11.21	130	38500	3.9784 ug/L		94
48)	Methylcyclohexane	11.30	83	60897	4.5008 ug/L		81
49)	1,2-Dichloropropane	11.43	63	31773	3.2549 ug/L		77
50)	Bromodichloromethane	11.73	83	59127	4.3535 ug/L		94
51)	1,4-Dioxane	11.71	88	2719	69.8702 ug/L	#	62
52)	Dibromomethane	11.81	93	19711	4.2894 ug/L		96
53)	2-Chloroethyl Vinyl Ether	12.03	63	12946	3.1676 ug/L		98
54)	4-Methyl-2-Pentanone	12.05	58	5129	2.2991 ug/L	#	78
55)	cis-1,3-Dichloropropene	12.36	75	61169	4.4752 ug/L		94
56)	Dimethyl Disulfide	12.62	79	27966	3.9053 ug/L		98
59)	Toluene	12.78	91	161007	5.0316 ug/L		97
60)	Ethyl Methacrylate	12.88	69	28595	4.7624 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	49791	4.4599 ug/L		97
63)	1,1,2-Trichloroethane	13.18	97	23678	4.6631 ug/L		99
64)	2-Hexanone	13.11	58	4499	2.4685 ug/L	#	97
65)	1,3-Dichloropropane	13.49	76	44838	4.7614 ug/L		73
66)	Tetrachloroethene	13.60	164	32715	4.5144 ug/L		97
67)	Dibromochloromethane	13.87	129	35009	4.3734 ug/L		98
68)	1,2-Dibromoethane	14.13	107	24247	4.5815 ug/L		99
69)	1-Chlorohexane	14.21	91	53599	4.9176 ug/L		84
70)	Chlorobenzene	14.62	112	107618	4.8437 ug/L		95
71)	1,1,1,2-Tetrachloroethane	14.65	131	38120	4.4025 ug/L		96
72)	Ethylbenzene	14.65	106	56905	4.5138 ug/L		91
73)	m-,p-Xylene	14.75	106	137390	9.4592 ug/L		86
74)	o-Xylene	15.31	106	65650	4.4866 ug/L		85
75)	Styrene	15.35	104	111433	4.7758 ug/L		91
76)	Bromoform	15.84	173	19346	4.2121 ug/L		97
77)	Isopropylbenzene	15.73	105	182523	4.9200 ug/L		96
79)	1,1,2,2-Tetrachloroethane	15.95	83	26655	4.8730 ug/L		99
81)	1,2,3-Trichloropropane	16.13	110	8840	5.0289 ug/L		81
82)	trans-1,4-Dichloro-2-Buten	16.19	53	6584	2.4712 ug/L	#	51
83)	n-Propylbenzene	16.24	91	222196	5.2576 ug/L		96
84)	Bromobenzene	16.37	156	42665	4.8423 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	155714	4.9790 ug/L		93
86)	2-Chlorotoluene	16.52	91	148764	5.4968 ug/L		94
87)	4-Chlorotoluene	16.56	91	135679	4.8666 ug/L		94
88)	a-Methylstyrene	16.84	118	68945	4.4743 ug/L		91
89)	tert-Butylbenzene	16.89	134	29069	4.6914 ug/L		77
90)	1,2,4-Trimethylbenzene	16.95	105	161016	5.0301 ug/L		94
91)	sec-Butylbenzene	17.17	105	191273	5.0866 ug/L		94
92)	p-Isopropyltoluene	17.32	119	159232	4.9597 ug/L		93
93)	1,3-Dichlorobenzene	17.52	146	83896	4.7972 ug/L		95
94)	1,4-Dichlorobenzene	17.64	146	82462	4.7242 ug/L		86
95)	n-Butylbenzene	17.85	91	158787	5.1996 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	72524	4.7321 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	5629	4.6990 ug/L		76
98)	1,2,4-Trichlorobenzene	20.28	180	53855	4.5369 ug/L		98
99)	Hexachlorobutadiene	20.43	225	24504	4.4608 ug/L		93
100)	Naphthalene	20.65	128	79806	4.4217 ug/L		98
101)	1,2,3-Trichlorobenzene	20.96	180	44150	4.3720 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412224.D 8260WT.M Fri May 13 15:47:44 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

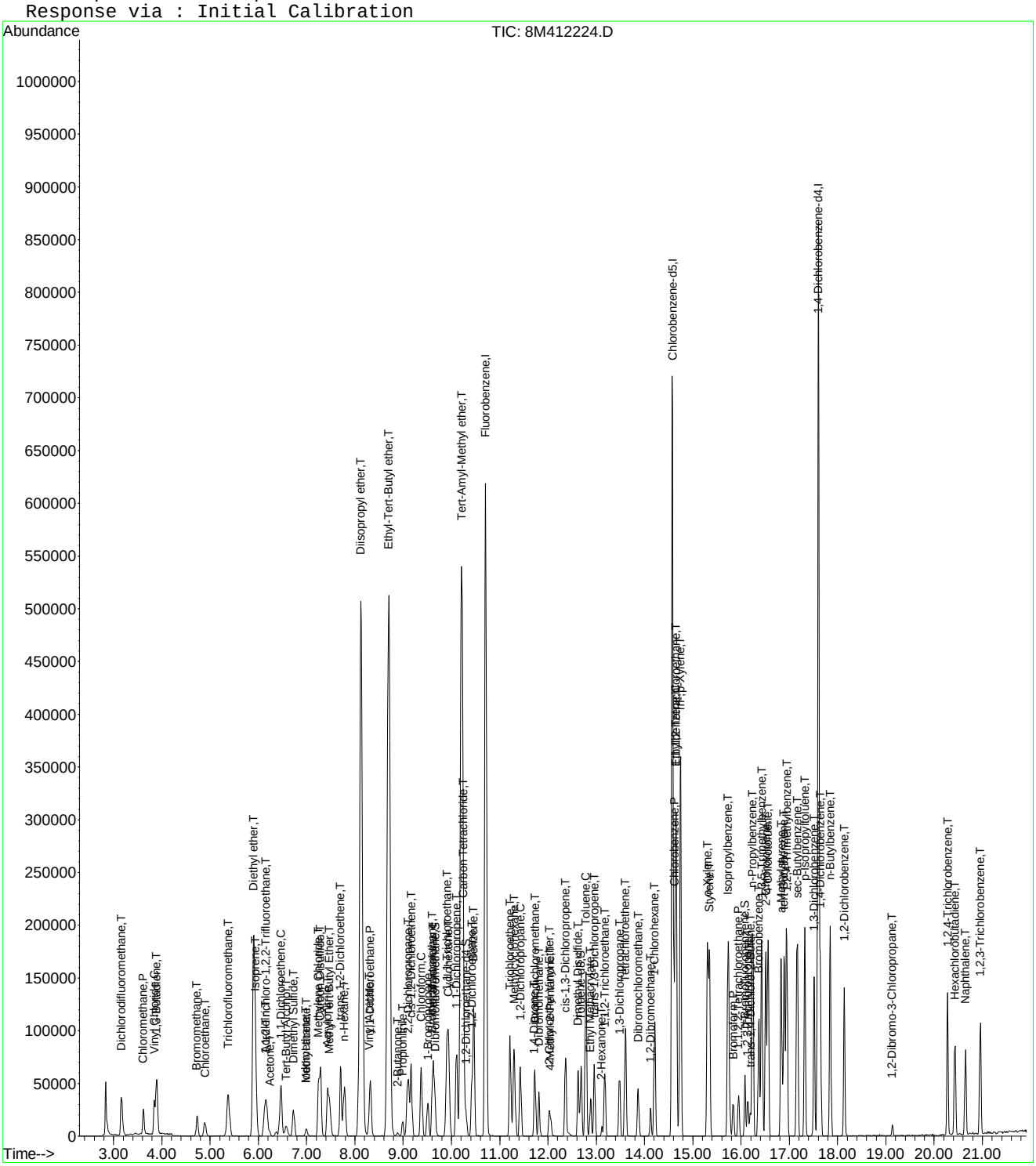

8M412224.D 8260WT.M Fri May 13 15:47:44 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.3438	13.1	100	0.00
3	P	Chloromethane	5.0000	4.5471	9.1	100	0.00
4	C	Vinyl Chloride	5.0000	4.7641	4.7	100	0.00
5	T	1,3-Butadiene	5.0000	4.2777	14.4	100	0.00
6	T	Bromomethane	5.0000	4.1880	16.2	100	-0.01
7	T	Chloroethane	5.0000	4.4813	10.4	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.6812	6.4	100	0.00
9	T	Diethyl ether	50.0000	47.5652	4.9	100	0.00
10	T	Isoprene	5.0000	4.4611	10.8	100	0.00
11	T	Acrolein	25.0000	21.7328	13.1	100	0.02
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.7244	5.5	100	0.00
13	T	Acetone	5.0000	4.1387	17.2	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.7810	4.4	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	100.4650	-0.5	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.7499	5.0	100	0.00
17	T	Iodomethane	5.0000	3.7634	24.7	100	0.00
18	T	Methyl acetate	5.0000	4.9211	1.6	100	0.00
19	T	Methylene Chloride	5.0000	4.7467	5.1	100	0.00
20	T	Carbon Disulfide	5.0000	4.7328	5.3	100	0.00
21	T	Acrylonitrile	25.0000	22.8698	8.5	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.6750	6.5	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.7415	5.2	100	0.00
24	T	n-Hexane	5.0000	4.8084	3.8	100	0.00
25	T	Diisopropyl ether	50.0000	47.2872	5.4	100	0.00
26	T	Vinyl Acetate	5.0000	4.5766	8.5	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.7058	5.9	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	47.5984	4.8	100	0.00
29	T	2-Butanone	5.0000	4.2191	15.6	100	0.00
30	T	Propionitrile	50.0000	48.4475	3.1	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.8965	2.1	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.6525	7.0	100	0.00
33	C	Chloroform	5.0000	4.6735	6.5	100	0.00
34		1-Bromopropane	5.0000	4.8774	2.5	100	0.00
35	T	Bromochloromethane	5.0000	4.6403	7.2	100	0.00
36	T	Tetrahydrofuran	50.0000	45.5400	8.9	100	-0.01
37	S	Dibromofluoromethane	2.5000	2.3953	4.2	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.7896	4.2	100	0.00
39	T	Cyclohexane	5.0000	4.6730	6.5	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.6741	6.5	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	47.6211	4.8	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.8044	3.9	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.3949	4.2	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	5.0000	4.7996	4.0	100	0.00
46	T	Benzene	5.0000	4.7588	4.8	100	0.00
47	T	Trichloroethene	5.0000	4.5733	8.5	100	0.00
48	T	Methylcyclohexane	5.0000	4.7616	4.8	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.5219	9.6	100	0.00
50	T	Bromodichloromethane	5.0000	4.7878	4.2	100	0.00
51	T	1,4-Dioxane	100.0000	77.0346	23.0	100	0.00
52	T	Dibromomethane	5.0000	4.7390	5.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.2867	14.3	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.1576	16.8	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.8662	2.7	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.1683	16.6	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.3473	6.1	100	0.00
59	C	Toluene	5.0000	4.8533	2.9	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.4883	10.2	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	5.0000	4.4786	10.4	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.5231	9.5	100	0.00
64	T	2-Hexanone	5.0000	4.0898	18.2	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.8109	3.8	100	0.00
66	T	Tetrachloroethene	5.0000	4.6028	7.9	100	0.00
67	T	Dibromochloromethane	5.0000	4.5802	8.4	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.6475	7.1	100	0.00
69	T	1-Chlorohexane	5.0000	4.7331	5.3	100	0.00
70	P	Chlorobenzene	5.0000	4.8107	3.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.3984	12.0	100	0.00
72	C	Ethylbenzene	5.0000	4.6492	7.0	100	0.00
73	T	m-,p-Xylene	10.0000	9.5700	4.3	100	0.00
74	T	o-Xylene	5.0000	4.6773	6.5	100	0.00
75	T	Styrene	5.0000	4.8405	3.2	100	0.00
76	P	Bromoform	5.0000	4.2672	14.7	100	0.00
77	T	Isopropylbenzene	5.0000	4.8951	2.1	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	4.8422	3.2	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.3565	5.7	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.2150	-4.3	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.3781	12.4	100	0.00
83	T	n-Propylbenzene	5.0000	5.1935	-3.9	100	0.00
84	T	Bromobenzene	5.0000	4.8483	3.0	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	4.9964	0.1	100	0.00
86	T	2-Chlorotoluene	5.0000	4.9803	0.4	100	0.00
87	T	4-Chlorotoluene	5.0000	5.0286	-0.6	100	0.00
88	T	a-Methylstyrene	5.0000	4.6629	6.7	100	0.00
89	T	tert-Butylbenzene	5.0000	4.7677	4.6	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.0245	-0.5	100	0.00
91	T	sec-Butylbenzene	5.0000	5.2170	-4.3	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.1150	-2.3	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	4.9511	1.0	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	4.8270	3.5	100	0.00
95	T	n-Butylbenzene	5.0000	5.1595	-3.2	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	4.8122	3.8	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	5.0942	-1.9	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.7808	4.4	100	0.00
99	T	Hexachlorobutadiene	5.0000	4.6555	6.9	100	0.00
100	T	Naphthalene	5.0000	4.7684	4.6	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.6455	7.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	770027	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	531490	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	283594	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	86295	10.9569 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 43.84%#		
43) 1,2-Dichloroethane-d4	10.30	65	96239	11.3450 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 45.36%#		
58) Toluene-d8	12.68	98	294491	10.9223 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 43.68%#		
80) p-Bromofluorobenzene	16.08	95	121459	10.5490 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 42.20%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	288235	23.7135 ug/L	99
3) Chloromethane	3.62	50	155712	20.3784 ug/L	98
4) Vinyl Chloride	3.84	62	184250	20.9368 ug/L	95
5) 1,3-Butadiene	3.89	54	149348	22.7750 ug/L	96
6) Bromomethane	4.73	94	100098	25.0143 ug/L	99
7) Chloroethane	4.89	64	100876	20.9404 ug/L	91
8) Trichlorofluoromethane	5.37	101	351299	21.2512 ug/L	98
9) Diethyl ether	5.90	59	324317	80.8265 ug/L	78
10) Isoprene	5.94	67	205842	20.3622 ug/L	77
11) Acrolein	6.14	56	12049	34.8201 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	159996	20.3859 ug/L	97
13) Acetone	6.25	43	18459	25.7405 ug/L	98
14) 1,1-Dichloroethene	6.47	61	256241	20.5065 ug/L	92
15) Tert-Butyl Alcohol	6.57	59	43922	153.5712 ug/L	93
16) Dimethyl Sulfide	6.73	62	89456	20.6087 ug/L	83
17) Iodomethane	6.99	142	40622	61.0474 ug/L	93
18) Methyl acetate	7.00	43	46598	20.2171 ug/L #	85
19) Methylene Chloride	7.25	84	161897	20.1338 ug/L	52
20) Carbon Disulfide	7.30	76	538090	20.0802 ug/L	98
21) Acrylonitrile	7.43	53	46305	46.9889 ug/L	100
22) Methyl Tert Butyl Ether	7.47	73	361116	22.0137 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	234754	20.3175 ug/L	90
24) n-Hexane	7.78	57	172498	21.1165 ug/L	84
25) Diisopropyl ether	8.12	45	1447822	80.3755 ug/L #	91
26) Vinyl Acetate	8.30	43	166501	21.7017 ug/L #	88
27) 1,1-Dichloroethane	8.33	63	300321	21.3849 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	1579265	83.0733 ug/L	89
29) 2-Butanone	8.88	43	25681	23.9099 ug/L	87
30) Propionitrile	8.98	54	30953	89.5673 ug/L	94
31) 2,2-Dichloropropane	9.10	77	309575	20.8527 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	181973	20.4488 ug/L	89
33) Chloroform	9.37	83	348925	20.5535 ug/L	96
34) 1-Bromopropane	9.52	122	26723	22.7206 ug/L	96
35) Bromochloromethane	9.61	130	94952	21.3181 ug/L	65
36) Tetrahydrofuran	9.63	42	63066	70.5772 ug/L #	57
38) 1,1,1-Trichloroethane	9.91	97	335486	21.3640 ug/L	99
39) Cyclohexane	9.94	56	221040	19.9984 ug/L #	64
40) 1,1-Dichloropropene	10.11	75	248373	20.4717 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1418183	81.7883 ug/L	88
42) Carbon Tetrachloride	10.25	117	296471	21.3449 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412225.D 8260WT.M Fri May 13 16:16:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	228665	21.6403 ug/L		85
46)	Benzene	10.46	78	668449	20.3769 ug/L		86
47)	Trichloroethene	11.21	130	174107	20.7980 ug/L		96
48)	Methylcyclohexane	11.29	83	262275	21.4887 ug/L		82
49)	1,2-Dichloropropane	11.43	63	146868	21.1883 ug/L	#	72
50)	Bromodichloromethane	11.73	83	262192	21.9986 ug/L		98
51)	1,4-Dioxane	11.71	88	5351	196.3837 ug/L		76
52)	Dibromomethane	11.81	93	86951	21.0734 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	63586	22.4600 ug/L		91
54)	4-Methyl-2-Pentanone	12.05	58	25754	25.0531 ug/L	#	73
55)	cis-1,3-Dichloropropene	12.36	75	265439	21.9841 ug/L		99
56)	Dimethyl Disulfide	12.63	79	134192	23.9412 ug/L		100
59)	Toluene	12.78	91	700473	20.1722 ug/L		99
60)	Ethyl Methacrylate	12.88	69	133361	23.2046 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	238585	23.2548 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	107901	21.0216 ug/L		99
64)	2-Hexanone	13.11	58	22561	25.2093 ug/L	#	85
65)	1,3-Dichloropropane	13.49	76	198804	22.2491 ug/L		74
66)	Tetrachloroethene	13.60	164	141791	20.0055 ug/L		94
67)	Dibromochloromethane	13.87	129	158465	22.0695 ug/L		99
68)	1,2-Dibromoethane	14.13	107	110085	22.3366 ug/L		100
69)	1-Chlorohexane	14.21	91	229753	20.3591 ug/L		83
70)	Chlorobenzene	14.62	112	467492	20.4613 ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.65	131	183079	22.2095 ug/L		96
72)	Ethylbenzene	14.65	106	249016	20.2289 ug/L		90
73)	m-,p-Xylene	14.75	106	606381	41.1308 ug/L		88
74)	o-Xylene	15.30	106	294106	21.2106 ug/L		90
75)	Styrene	15.35	104	492781	21.8207 ug/L		89
76)	Bromoform	15.83	173	95911	23.8070 ug/L		99
77)	Isopropylbenzene	15.73	105	806678	20.7280 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	123253	22.7779 ug/L		95
81)	1,2,3-Trichloropropane	16.14	110	36712	22.1354 ug/L		94
82)	trans-1,4-Dichloro-2-Buten	16.18	53	33702	27.6513 ug/L	#	56
83)	n-Propylbenzene	16.24	91	962196	20.3511 ug/L		97
84)	Bromobenzene	16.37	156	190566	21.2033 ug/L		94
85)	1,3,5-Trimethylbenzene	16.43	105	692633	20.9615 ug/L		94
86)	2-Chlorotoluene	16.51	91	649077	19.9155 ug/L		96
87)	4-Chlorotoluene	16.56	91	595446	20.3225 ug/L		95
88)	a-Methylstyrene	16.83	118	318960	22.3680 ug/L		92
89)	tert-Butylbenzene	16.90	134	129440	20.4705 ug/L		83
90)	1,2,4-Trimethylbenzene	16.95	105	707749	20.4783 ug/L		94
91)	sec-Butylbenzene	17.17	105	818359	20.1802 ug/L		97
92)	p-Isopropyltoluene	17.32	119	677859	19.7492 ug/L		96
93)	1,3-Dichlorobenzene	17.52	146	364065	20.5126 ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	363066	19.9874 ug/L		92
95)	n-Butylbenzene	17.85	91	681055	20.0187 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	318612	19.9358 ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	23070	21.6419 ug/L		93
98)	1,2,4-Trichlorobenzene	20.28	180	242455	20.8863 ug/L		98
99)	Hexachlorobutadiene	20.43	225	110384	20.2523 ug/L		96
100)	Naphthalene	20.65	128	369849	21.4526 ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	198876	19.8356 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M412225.D 8260WT.M Fri May 13 16:16:35 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration

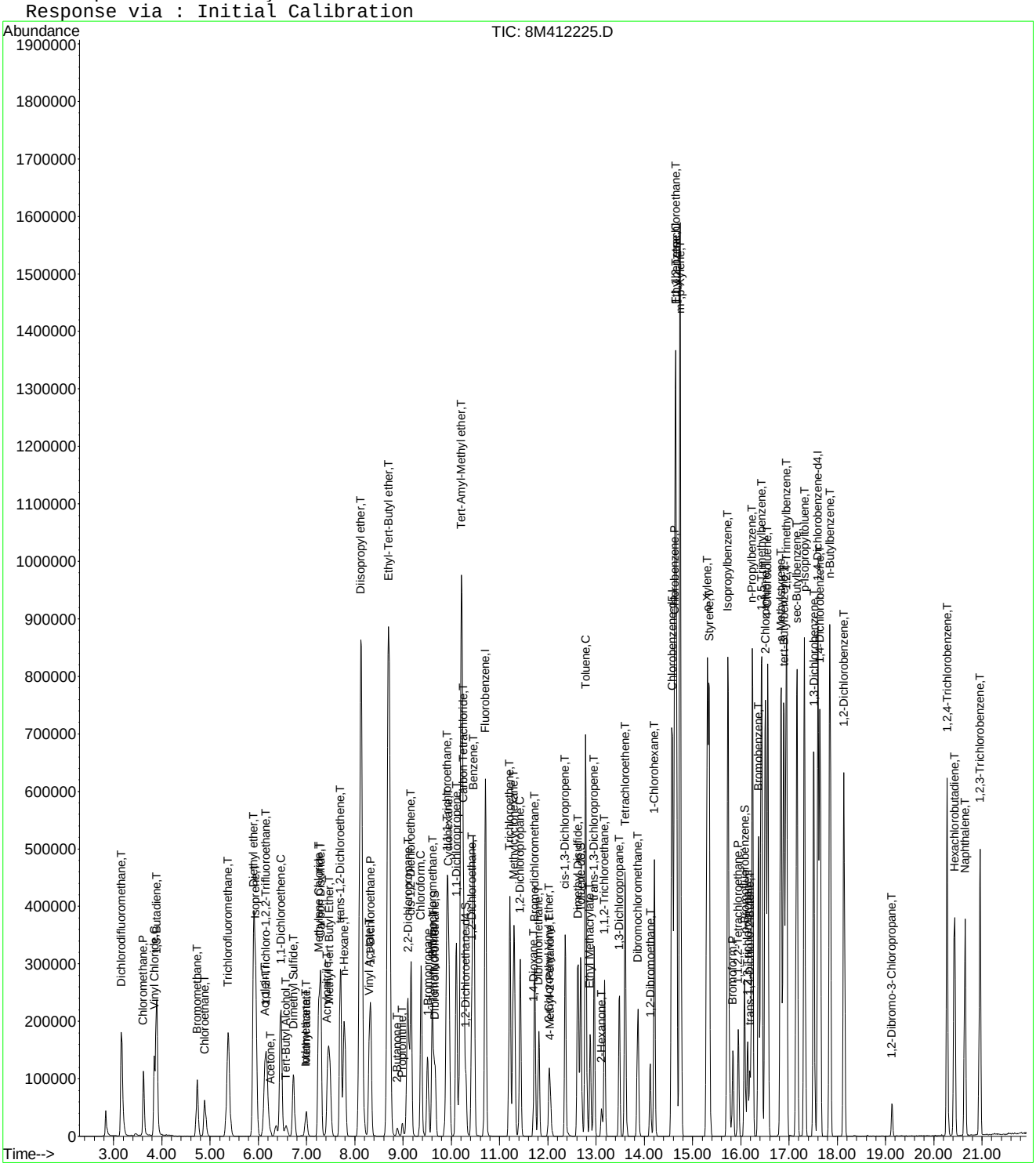

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45:30 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	778260	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	539116	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	288225	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	211053	26.5139 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.04%		
43) 1,2-Dichloroethane-d4	10.31	65	229348	26.7504 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.00%		
58) Toluene-d8	12.68	98	718491	26.2709 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.08%		
80) p-Bromofluorobenzene	16.07	95	292755	25.0180 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.08%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	682745	55.5761 ug/L	100
3) Chloromethane	3.62	50	372858	48.2806 ug/L	98
4) Vinyl Chloride	3.85	62	453905	51.0328 ug/L	96
5) 1,3-Butadiene	3.88	54	390501	58.9199 ug/L	99
6) Bromomethane	4.74	94	260493	64.4080 ug/L	97
7) Chloroethane	4.89	64	244336	50.1840 ug/L	91
8) Trichlorofluoromethane	5.38	101	837676	50.1376 ug/L	99
9) Diethyl ether	5.90	59	389327	96.0019 ug/L	79
10) Isoprene	5.94	67	498060	48.7477 ug/L	76
11) Acrolein	6.13	56	17644	50.4496 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	387643	48.8691 ug/L	97
13) Acetone	6.25	43	45901	63.3305 ug/L	97
14) 1,1-Dichloroethene	6.46	61	619744	49.0724 ug/L	94
15) Tert-Butyl Alcohol	6.58	59	53656	185.6211 ug/L	91
16) Dimethyl Sulfide	6.73	62	221107	50.3993 ug/L	82
17) Iodomethane	6.98	142	157872	234.7428 ug/L	94
18) Methyl acetate	7.00	43	114759	49.2629 ug/L #	81
19) Methylene Chloride	7.25	84	389653	47.9453 ug/L	52
20) Carbon Disulfide	7.29	76	1269941	46.8897 ug/L	99
21) Acrylonitrile	7.43	53	59882	60.1236 ug/L	97
22) Methyl Tert Butyl Ether	7.46	73	901668	54.3843 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	571507	48.9396 ug/L	93
24) n-Hexane	7.79	57	419656	50.8290 ug/L	83
25) Diisopropyl ether	8.13	45	1781012	97.8265 ug/L #	90
26) Vinyl Acetate	8.29	43	428708	55.2866 ug/L #	89
27) 1,1-Dichloroethane	8.32	63	722574	50.9078 ug/L	96
28) Ethyl-Tert-Butyl ether	8.71	59	1955100	101.7552 ug/L	89
29) 2-Butanone	8.88	43	66579	61.3316 ug/L #	82
30) Propionitrile	8.98	54	38235	109.4684 ug/L	95
31) 2,2-Dichloropropane	9.10	77	768496	51.2175 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	439590	48.8754 ug/L	91
33) Chloroform	9.38	83	844564	49.2230 ug/L	97
34) 1-Bromopropane	9.51	122	63442	53.3693 ug/L	99
35) Bromochloromethane	9.60	130	230119	51.1185 ug/L	66
36) Tetrahydrofuran	9.64	42	79437	87.9575 ug/L #	62
38) 1,1,1-Trichloroethane	9.90	97	817606	51.5150 ug/L	99
39) Cyclohexane	9.93	56	535882	47.9707 ug/L #	65
40) 1,1-Dichloropropene	10.10	75	615439	50.1899 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1769381	100.9628 ug/L	88
42) Carbon Tetrachloride	10.24	117	724058	51.5782 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412226.D 8260WT.M Fri May 13 16:45:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45:30 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	561107	52.5401 ug/L		85
46)	Benzene	10.46	78	1607407	48.4816 ug/L		86
47)	Trichloroethene	11.22	130	424998	50.2312 ug/L		96
48)	Methylcyclohexane	11.30	83	635339	51.5040 ug/L		83
49)	1,2-Dichloropropane	11.42	63	351908	50.2320 ug/L	#	71
50)	Bromodichloromethane	11.72	83	654943	54.3701 ug/L		97
51)	1,4-Dioxane	11.71	88	7573	274.9918 ug/L		73
52)	Dibromomethane	11.82	93	209167	50.1574 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	162319	56.7281 ug/L		93
54)	4-Methyl-2-Pentanone	12.05	58	64928	62.4928 ug/L		80
55)	cis-1,3-Dichloropropene	12.36	75	666861	54.6463 ug/L		98
56)	Dimethyl Disulfide	12.62	79	343446	60.6260 ug/L		96
59)	Toluene	12.79	91	1676069	47.5846 ug/L		100
60)	Ethyl Methacrylate	12.88	69	338996	58.1503 ug/L		69
62)	trans-1,3-Dichloropropene	12.96	75	594749	57.1499 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	268432	51.5570 ug/L		98
64)	2-Hexanone	13.12	58	56859	62.6347 ug/L	#	83
65)	1,3-Dichloropropane	13.48	76	489226	53.9770 ug/L		75
66)	Tetrachloroethene	13.60	164	350332	48.7296 ug/L		95
67)	Dibromochloromethane	13.86	129	401149	55.0780 ug/L		100
68)	1,2-Dibromoethane	14.12	107	273580	54.7252 ug/L		99
69)	1-Chlorohexane	14.21	91	560883	48.9984 ug/L		82
70)	Chlorobenzene	14.63	112	1117812	48.2326 ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	446892	53.4462 ug/L		99
72)	Ethylbenzene	14.66	106	603074	48.2980 ug/L		91
73)	m-,p-Xylene	14.74	106	1443780	96.5463 ug/L		90
74)	o-Xylene	15.31	106	709244	50.4265 ug/L		90
75)	Styrene	15.34	104	1212099	52.9133 ug/L		91
76)	Bromoform	15.84	173	238354	58.3272 ug/L		100
77)	Isopropylbenzene	15.73	105	1919993	48.6372 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	294266	53.5083 ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	89279	52.9656 ug/L		93
82)	trans-1,4-Dichloro-2-Buten	16.19	53	86829	70.0956 ug/L	#	53
83)	n-Propylbenzene	16.24	91	2278994	47.4277 ug/L		98
84)	Bromobenzene	16.37	156	459959	50.3549 ug/L		93
85)	1,3,5-Trimethylbenzene	16.43	105	1661486	49.4745 ug/L		95
86)	2-Chlorotoluene	16.51	91	1611031	48.6367 ug/L		97
87)	4-Chlorotoluene	16.56	91	1341051	45.0344 ug/L		95
88)	a-Methylstyrene	16.83	118	772611	53.3111 ug/L		90
89)	tert-Butylbenzene	16.89	134	307503	47.8493 ug/L		81
90)	1,2,4-Trimethylbenzene	16.94	105	1679809	47.8234 ug/L		95
91)	sec-Butylbenzene	17.16	105	1925411	46.7166 ug/L		97
92)	p-Isopropyltoluene	17.32	119	1621383	46.4795 ug/L		95
93)	1,3-Dichlorobenzene	17.51	146	882656	48.9327 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	871210	47.1909 ug/L		92
95)	n-Butylbenzene	17.85	91	1608832	46.5296 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	768548	47.3159 ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	59586	54.9992 ug/L		86
98)	1,2,4-Trichlorobenzene	20.28	180	583880	49.4902 ug/L		100
99)	Hexachlorobutadiene	20.44	225	264699	47.7844 ug/L		98
100)	Naphthalene	20.65	128	894629	51.0579 ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	475246	46.6387 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412226.D 8260WT.M Fri May 13 16:45:33 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration

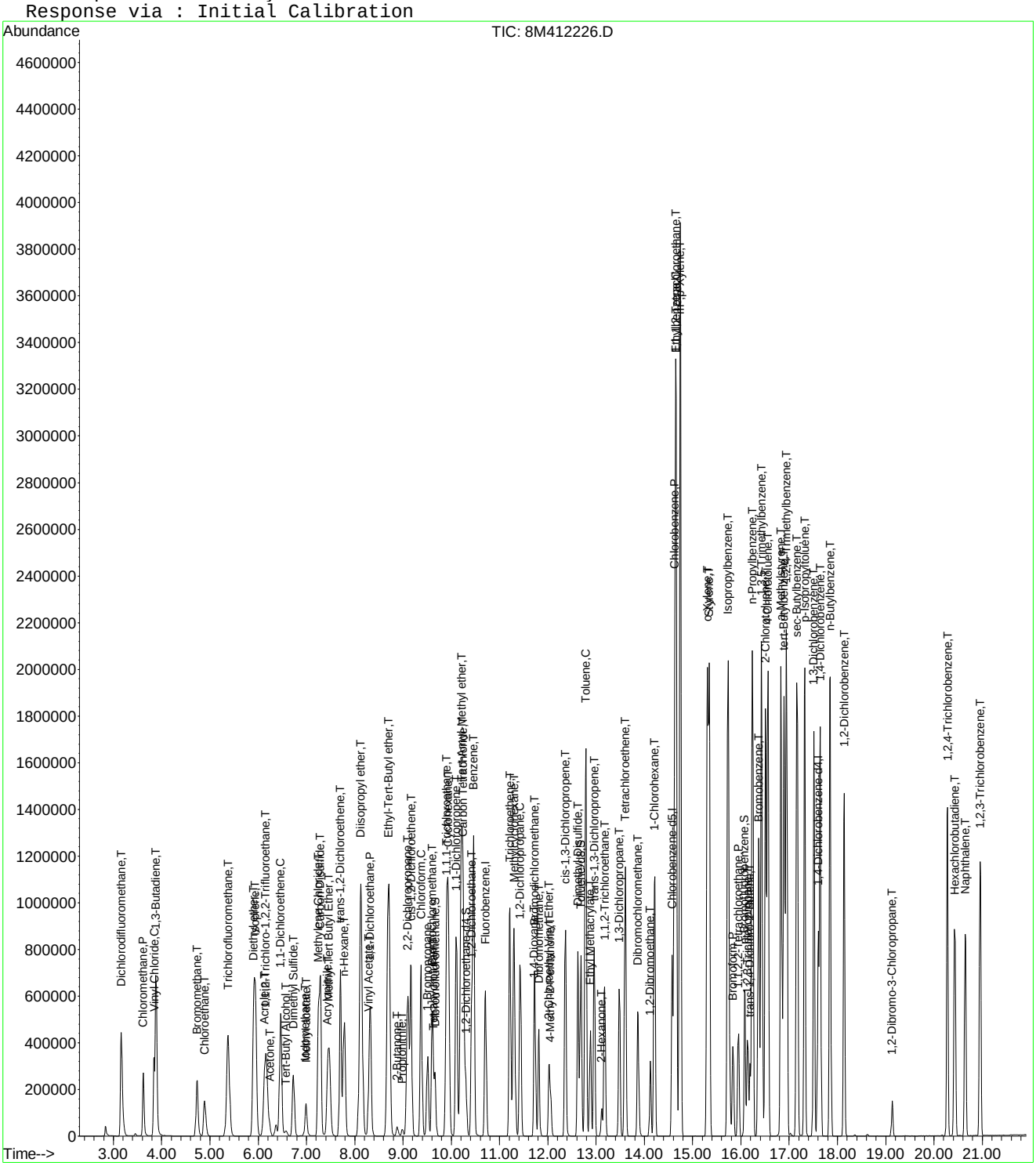

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	809533	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	559075	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	296193	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	460283	53.9056 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 215.64%#		
43) 1,2-Dichloroethane-d4	10.30	65	488116	52.5821 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 210.32%#		
58) Toluene-d8	12.68	98	1540572	52.8075 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 211.24%#		
80) p-Bromofluorobenzene	16.08	95	623735	51.1573 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 204.64%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	1463283	109.1068 ug/L	100
3) Chloromethane	3.62	50	778702	97.2380 ug/L	98
4) Vinyl Chloride	3.84	62	968312	103.4979 ug/L	95
5) 1,3-Butadiene	3.88	54	896569	120.4972 ug/L	95
6) Bromomethane	4.73	94	605228	129.8677 ug/L	99
7) Chloroethane	4.89	64	528153	103.4126 ug/L	90
8) Trichlorofluoromethane	5.37	101	1782726	101.4754 ug/L	99
9) Diethyl ether	5.90	59	828091	197.4770 ug/L	79
10) Isoprene	5.94	67	1080684	101.8037 ug/L	78
11) Acrolein	6.14	56	38655	109.5572 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	833546	101.0906 ug/L	97
13) Acetone	6.24	43	97515	109.1944 ug/L	100
14) 1,1-Dichloroethene	6.46	61	1323999	100.6729 ug/L	93
15) Tert-Butyl Alcohol	6.57	59	114220	387.5328 ug/L	91
16) Dimethyl Sulfide	6.73	62	489571	106.5996 ug/L	82
17) Iodomethane	6.99	142	416890	244.5557 ug/L	97
18) Methyl acetate	7.00	43	252444	104.3161 ug/L #	81
19) Methylene Chloride	7.24	84	827241	98.5346 ug/L	53
20) Carbon Disulfide	7.29	76	2766110	99.3432 ug/L	100
21) Acrylonitrile	7.43	53	126153	113.2272 ug/L	98
22) Methyl Tert Butyl Ether	7.46	73	1894494	105.8643 ug/L	87
23) trans-1,2-Dichloroethene	7.70	61	1203701	99.1822 ug/L	93
24) n-Hexane	7.78	57	926226	105.3097 ug/L	84
25) Diisopropyl ether	8.12	45	3699807	196.0386 ug/L #	90
26) Vinyl Acetate	8.29	43	860820	101.8643 ug/L #	88
27) 1,1-Dichloroethane	8.32	63	1521237	101.5567 ug/L	96
28) Ethyl-Tert-Butyl ether	8.70	59	4005676	198.2271 ug/L	89
29) 2-Butanone	8.88	43	145126	112.6698 ug/L #	81
30) Propionitrile	8.98	54	83038	219.1648 ug/L	97
31) 2,2-Dichloropropane	9.11	77	1610615	102.0557 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	935490	99.9944 ug/L	89
33) Chloroform	9.37	83	1766988	98.8341 ug/L	98
34) 1-Bromopropane	9.51	122	139657	108.5299 ug/L	100
35) Bromochloromethane	9.61	130	488678	102.8480 ug/L	66
36) Tetrahydrofuran	9.63	42	167812	187.5699 ug/L #	61
38) 1,1,1-Trichloroethane	9.91	97	1724504	102.7713 ug/L	100
39) Cyclohexane	9.94	56	1185537	102.8628 ug/L #	66
40) 1,1-Dichloropropene	10.11	75	1293224	100.8377 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	3634806	198.1264 ug/L	88
42) Carbon Tetrachloride	10.25	117	1534696	103.3979 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412227.D 8260WT.M Fri May 13 17:14:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	1177876	103.7352	ug/L		85
46)	Benzene	10.46	78	3298928	95.8405	ug/L		87
47)	Trichloroethene	11.21	130	903490	101.9036	ug/L		97
48)	Methylcyclohexane	11.30	83	1389528	104.6454	ug/L		83
49)	1,2-Dichloropropane	11.43	63	755128	102.5297	ug/L		73
50)	Bromodichloromethane	11.73	83	1351612	104.6036	ug/L		99
51)	1,4-Dioxane	11.72	88	16303	473.9624	ug/L		68
52)	Dibromomethane	11.81	93	445130	101.6543	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.02	63	333977	105.4228	ug/L		92
54)	4-Methyl-2-Pentanone	12.05	58	138980	110.1494	ug/L	#	77
55)	cis-1,3-Dichloropropene	12.36	75	1387475	105.9136	ug/L		100
56)	Dimethyl Disulfide	12.62	79	745504	111.3169	ug/L		97
59)	Toluene	12.78	91	3455614	95.2346	ug/L		99
60)	Ethyl Methacrylate	12.88	69	731009	113.5760	ug/L		70
62)	trans-1,3-Dichloropropene	12.96	75	1236182	107.9445	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	564076	103.0604	ug/L		99
64)	2-Hexanone	13.12	58	126268	114.5366	ug/L	#	79
65)	1,3-Dichloropropane	13.48	76	1021082	105.2672	ug/L		74
66)	Tetrachloroethene	13.60	164	752835	101.4023	ug/L		95
67)	Dibromochloromethane	13.87	129	856499	109.6525	ug/L		100
68)	1,2-Dibromoethane	14.12	107	577701	107.6426	ug/L		98
69)	1-Chlorohexane	14.21	91	1222720	103.0385	ug/L		82
70)	Chlorobenzene	14.62	112	2332247	97.2408	ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	947925	106.1463	ug/L		99
72)	Ethylbenzene	14.66	106	1275519	98.8771	ug/L		97
73)	m-,p-Xylene	14.75	106	3009424	194.2602	ug/L		98
74)	o-Xylene	15.31	106	1490638	100.8068	ug/L		93
75)	Styrene	15.35	104	2503721	102.8373	ug/L		88
76)	Bromoform	15.83	173	517827	114.0520	ug/L		100
77)	Isopropylbenzene	15.73	105	3913141	95.4433	ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	624965	106.8610	ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	192087	107.3268	ug/L		97
82)	trans-1,4-Dichloro-2-Buten	16.18	53	189214	128.4818	ug/L	#	59
83)	n-Propylbenzene	16.24	91	4599057	93.6644	ug/L		100
84)	Bromobenzene	16.37	156	968011	102.1426	ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	3401719	97.9556	ug/L		97
86)	2-Chlorotoluene	16.52	91	3177047	93.8267	ug/L		98
87)	4-Chlorotoluene	16.56	91	2899171	96.0712	ug/L		96
88)	a-Methylstyrene	16.84	118	1639166	103.6811	ug/L		90
89)	tert-Butylbenzene	16.90	134	654025	99.4199	ug/L		85
90)	1,2,4-Trimethylbenzene	16.95	105	3479295	96.7054	ug/L		97
91)	sec-Butylbenzene	17.17	105	3947832	94.2785	ug/L		98
92)	p-Isopropyltoluene	17.32	119	3328450	94.4148	ug/L		97
93)	1,3-Dichlorobenzene	17.52	146	1834740	98.9074	ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	1818309	96.6271	ug/L		92
95)	n-Butylbenzene	17.85	91	3308330	94.4002	ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	1606254	97.0179	ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	125368	107.7020	ug/L		87
98)	1,2,4-Trichlorobenzene	20.28	180	1227926	100.7076	ug/L		99
99)	Hexachlorobutadiene	20.43	225	569213	100.5231	ug/L		97
100)	Naphthalene	20.65	128	1852486	101.2968	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	1021163	98.5794	ug/L		100

(#) = qualifier out of range (m) = manual integration
8M412227.D 8260WT.M Fri May 13 17:14:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration

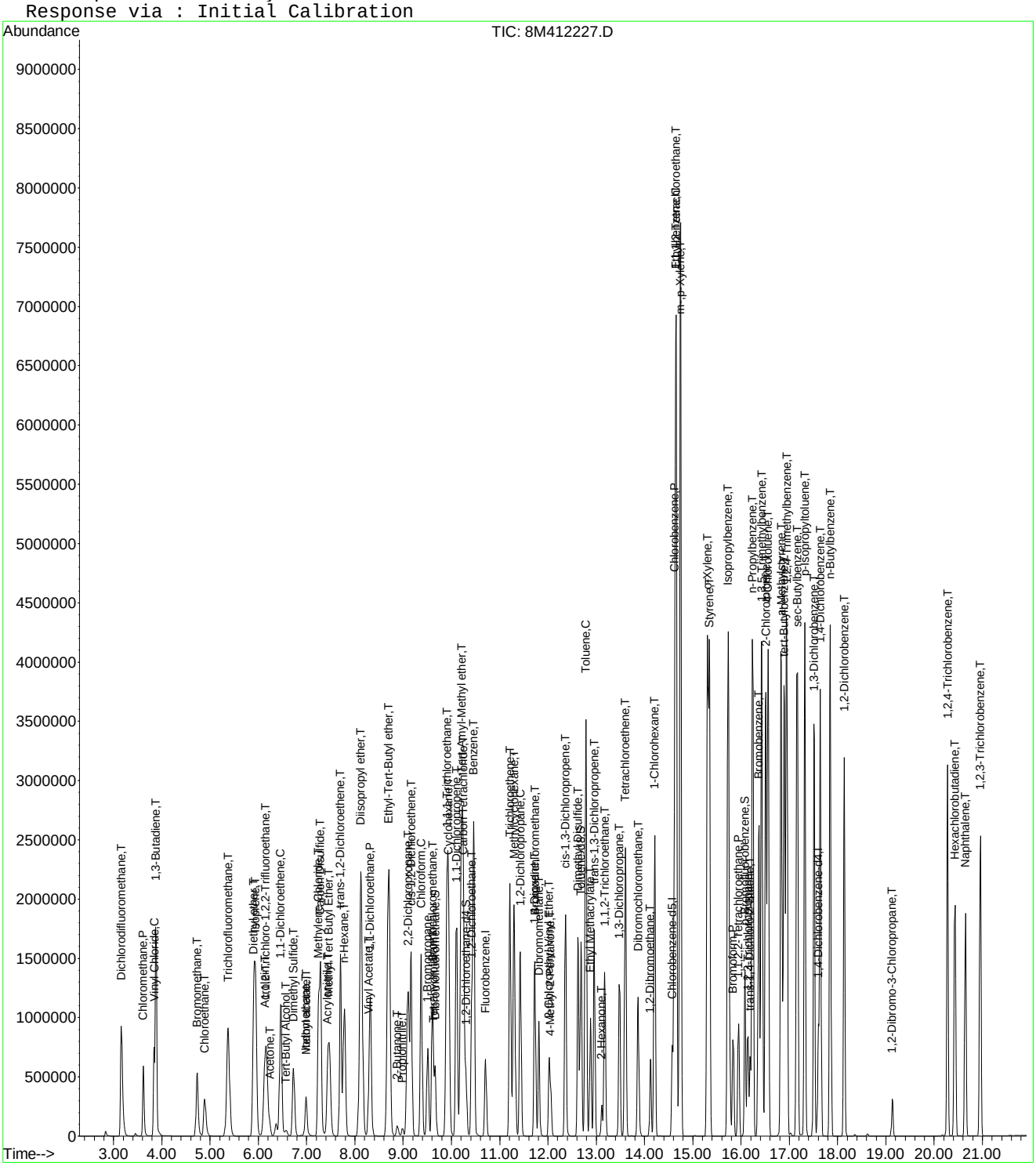

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	828540	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	578848	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	301401	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	898145	101.4517 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 405.80%#		
43) 1,2-Dichloroethane-d4	10.30	65	939848	98.0779 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 392.32%#		
58) Toluene-d8	12.68	98	2984162	97.8805 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 391.52%#		
80) p-Bromofluorobenzene	16.08	95	1242720	99.7023 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 398.80%#		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.16	85	2830517	203.5621 ug/L	98
3) Chloromethane	3.62	50	1586058	194.4056 ug/L	97
4) Vinyl Chloride	3.83	62	1935009	201.0738 ug/L	94
5) 1,3-Butadiene	3.88	54	1684964	212.5477 ug/L	94
6) Bromomethane	4.72	94	1358068	271.2231 ug/L	99
7) Chloroethane	4.89	64	1084803	206.5255 ug/L	90
8) Trichlorofluoromethane	5.37	101	3516760	195.1756 ug/L	99
10) Isoprene	5.94	67	2136665	196.1573 ug/L	78
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1662142	196.5993 ug/L	95
13) Acetone	6.24	43	187748	200.7963 ug/L	97
14) 1,1-Dichloroethene	6.46	61	2649821	196.6732 ug/L	92
15) Tert-Butyl Alcohol	6.58	59	6024	20.0950 ug/L #	87
16) Dimethyl Sulfide	6.73	62	976862	205.8822 ug/L	82
17) Iodomethane	6.99	142	896947	398.7987 ug/L	100
18) Methyl acetate	7.00	43	504293	201.4324 ug/L #	81
19) Methylene Chloride	7.25	84	1684780	196.5546 ug/L	52
20) Carbon Disulfide	7.29	76	5386210	189.2120 ug/L	99
21) Acrylonitrile	7.45	53	30354	26.0447 ug/L #	32
22) Methyl Tert Butyl Ether	7.46	73	3711011	200.6529 ug/L	87
23) trans-1,2-Dichloroethene	7.70	61	2410498	194.2902 ug/L	92
24) n-Hexane	7.78	57	1821777	199.7288 ug/L	84
26) Vinyl Acetate	8.29	43	1796217	206.9060 ug/L #	88
27) 1,1-Dichloroethane	8.32	63	3042055	197.9863 ug/L	95
29) 2-Butanone	8.88	43	271767	199.8193 ug/L #	77
30) Propionitrile	8.90	54	208	0.5280 ug/L #	1
31) 2,2-Dichloropropane	9.11	77	3202633	197.6970 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	1875631	195.8883 ug/L	89
33) Chloroform	9.37	83	3506648	191.9199 ug/L	99
34) 1-Bromopropane	9.51	122	286158	214.2313 ug/L	99
35) Bromochloromethane	9.60	130	980373	200.7807 ug/L	66
36) Tetrahydrofuran	9.62	42	2381	2.6275 ug/L	87
38) 1,1,1-Trichloroethane	9.91	97	3410306	197.7909 ug/L	99
39) Cyclohexane	9.94	56	2357393	198.8974 ug/L #	66
40) 1,1-Dichloropropene	10.10	75	2601175	197.8946 ug/L	96
42) Carbon Tetrachloride	10.25	117	3062767	200.6417 ug/L	99
45) 1,2-Dichloroethane	10.42	62	2313662	198.0324 ug/L	85
46) Benzene	10.46	78	6379817	182.1771 ug/L	89
47) Trichloroethene	11.21	130	1810459	198.9741 ug/L	97
48) Methylcyclohexane	11.30	83	2755373	200.4193 ug/L	83
49) 1,2-Dichloropropane	11.43	63	1528407	202.0331 ug/L	74

(#) = qualifier out of range (m) = manual integration
8M412228.D 8260WT.M Fri May 13 17:43:34 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
50)	Bromodichloromethane	11.73	83	2716764	204.0895 ug/L	99
51)	1,4-Dioxane	11.73	88	3865	104.9352 ug/L #	18
52)	Dibromomethane	11.81	93	898971	200.1154 ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.02	63	631656	192.7236 ug/L	90
54)	4-Methyl-2-Pentanone	12.05	58	262702	198.3957 ug/L #	75
55)	cis-1,3-Dichloropropene	12.36	75	2784162	205.9153 ug/L	99
56)	Dimethyl Disulfide	12.62	79	1518705	215.4711 ug/L	95
59)	Toluene	12.78	91	6564353	175.9274 ug/L	96
60)	Ethyl Methacrylate	12.88	69	1429837	209.8161 ug/L	71
62)	trans-1,3-Dichloropropene	12.96	75	2468609	205.4771 ug/L	98
63)	1,1,2-Trichloroethane	13.18	97	1124672	197.6019 ug/L	100
64)	2-Hexanone	13.12	58	237678	200.9290 ug/L #	81
65)	1,3-Dichloropropane	13.48	76	2023247	199.9545 ug/L	76
66)	Tetrachloroethene	13.60	164	1546618	200.8018 ug/L	97
67)	Dibromochloromethane	13.87	129	1726523	210.5823 ug/L	100
68)	1,2-Dibromoethane	14.12	107	1163160	207.0667 ug/L	99
69)	1-Chlorohexane	14.21	91	2414147	195.6413 ug/L	83
70)	Chlorobenzene	14.62	112	4641169	187.6386 ug/L	94
71)	1,1,1,2-Tetrachloroethane	14.66	131	1929251	206.8372 ug/L	99
72)	Ethylbenzene	14.66	106	2611321	195.8267 ug/L	88
73)	m-,p-Xylene	14.75	106	5876234	367.8657 ug/L	83
74)	o-Xylene	15.31	106	3012318	196.4899 ug/L	98
75)	Styrene	15.35	104	4913204	194.1235 ug/L	86
76)	Bromoform	15.83	173	1052629	218.7989 ug/L	100
77)	Isopropylbenzene	15.73	105	7284624	172.7305 ug/L	97
79)	1,1,2,2-Tetrachloroethane	15.95	83	1237171	205.8673 ug/L	98
81)	1,2,3-Trichloropropane	16.14	110	386738	209.7906 ug/L #	54
82)	trans-1,4-Dichloro-2-Buten	16.19	53	382467	243.6526 ug/L	76
83)	n-Propylbenzene	16.24	91	8244387	166.5110 ug/L	93
84)	Bromobenzene	16.37	156	1935166	200.1305 ug/L	95
85)	1,3,5-Trimethylbenzene	16.43	105	6482975	183.9948 ug/L	98
86)	2-Chlorotoluene	16.52	91	6108308	178.8549 ug/L	99
87)	4-Chlorotoluene	16.56	91	5513221	180.5508 ug/L	99
88)	a-Methylstyrene	16.84	118	3255254	200.4995 ug/L	89
89)	tert-Butylbenzene	16.90	134	1351569	202.1005 ug/L	92
90)	1,2,4-Trimethylbenzene	16.95	105	6531416	179.2445 ug/L	97
91)	sec-Butylbenzene	17.17	105	7342730	173.9814 ug/L	97
92)	p-Isopropyltoluene	17.32	119	6352010	178.7315 ug/L	99
93)	1,3-Dichlorobenzene	17.52	146	3640547	193.1654 ug/L	90
94)	1,4-Dichlorobenzene	17.64	146	3593548	188.4603 ug/L	91
95)	n-Butylbenzene	17.85	91	6198060	175.4375 ug/L	97
96)	1,2-Dichlorobenzene	18.14	146	3171699	188.9651 ug/L	89
97)	1,2-Dibromo-3-Chloropropan	19.13	75	249646	207.5645 ug/L	88
98)	1,2,4-Trichlorobenzene	20.28	180	2480626	199.7296 ug/L	99
99)	Hexachlorobutadiene	20.43	225	1169411	202.7981 ug/L	98
100)	Naphthalene	20.65	128	3580198	192.0323 ug/L	97
101)	1,2,3-Trichlorobenzene	20.96	180	2040570	193.9298 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M412228.D 8260WT.M Fri May 13 17:43:35 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration

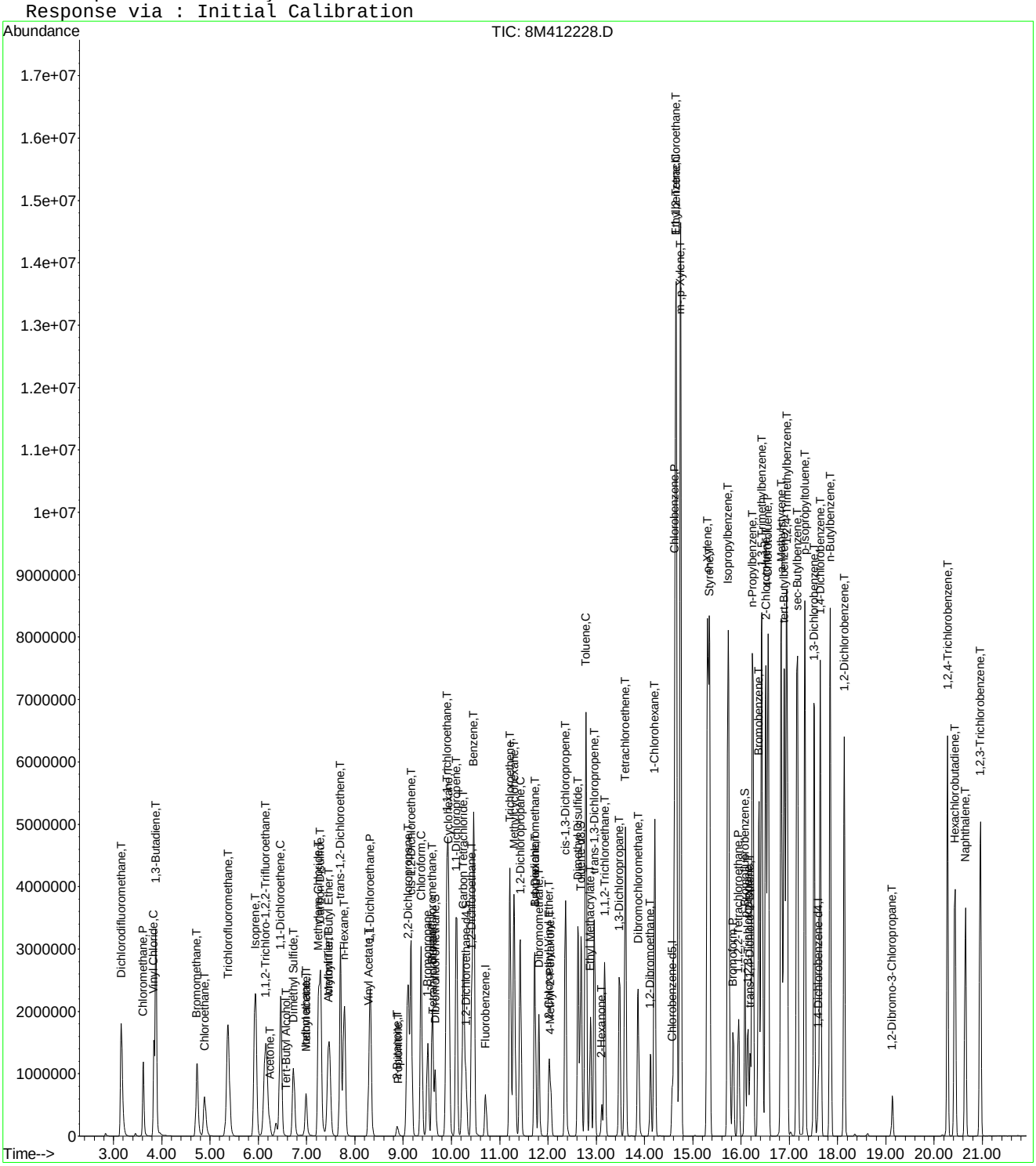

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	855409	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	599314	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	305726	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	1411837	154.4674 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 617.88%#		
43) 1,2-Dichloroethane-d4	10.30	65	1466019	148.1811 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 592.72%#		
58) Toluene-d8	12.69	98	4594713	145.5601 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 582.24%#		
80) p-Bromofluorobenzene	16.08	95	1918996	151.7813 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 607.12%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	4191932	292.0014 ug/L	97
3) Chloromethane	3.62	50	2474035	293.7212 ug/L	97
4) Vinyl Chloride	3.83	62	2956347	297.5552 ug/L	94
5) 1,3-Butadiene	3.87	54	2605506	318.3447 ug/L	94
6) Bromomethane	4.72	94	2177550	421.2239 ug/L	98
7) Chloroethane	4.89	64	1688005	311.2693 ug/L	90
8) Trichlorofluoromethane	5.37	101	5387662	289.6161 ug/L	99
9) Diethyl ether	5.90	59	1306432	295.4610 ug/L	80
10) Isoprene	5.93	67	3377164	300.3032 ug/L	78
11) Acrolein	6.14	56	70572	185.7401 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	2563878	293.7317 ug/L	94
13) Acetone	6.24	43	283185	293.3529 ug/L	90
14) 1,1-Dichloroethene	6.46	61	4031745	289.8421 ug/L	91
15) Tert-Butyl Alcohol	6.58	59	181796	587.3907 ug/L	90
16) Dimethyl Sulfide	6.73	62	1553493	317.1280 ug/L	81
17) Iodomethane	6.99	142	1347307	580.2206 ug/L	98
18) Methyl acetate	7.00	43	800046	309.5287 ug/L #	80
19) Methylene Chloride	7.24	84	2587731	292.4144 ug/L	52
20) Carbon Disulfide	7.29	76	8228181	279.9683 ug/L	98
21) Acrylonitrile	7.43	53	228227	189.6753 ug/L	94
22) Methyl Tert Butyl Ether	7.46	73	5605924	293.5892 ug/L	88
23) trans-1,2-Dichloroethene	7.70	61	3678699	287.1957 ug/L	92
24) n-Hexane	7.78	57	2863434	304.0691 ug/L	86
25) Diisopropyl ether	8.12	45	5819647	292.7898 ug/L #	89
26) Vinyl Acetate	8.30	43	2819503	314.5767 ug/L #	87
27) 1,1-Dichloroethane	8.32	63	4586531	289.1293 ug/L	94
28) Ethyl-Tert-Butyl ether	8.70	59	6190206	290.3321 ug/L	89
29) 2-Butanone	8.88	43	439359	312.8959 ug/L #	76
30) Propionitrile	8.99	54	133197	327.4673 ug/L	95
31) 2,2-Dichloropropane	9.10	77	4821388	288.2735 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	2847005	287.9976 ug/L	89
33) Chloroform	9.37	83	5197860	275.5447 ug/L	100
34) 1-Bromopropane	9.51	122	450012	326.3179 ug/L	100
35) Bromochloromethane	9.61	130	1490221	295.6112 ug/L	66
36) Tetrahydrofuran	9.63	42	271736	290.4491 ug/L #	62
38) 1,1,1-Trichloroethane	9.91	97	5126354	287.9792 ug/L	98
39) Cyclohexane	9.94	56	3733392	305.0987 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	3923871	289.1471 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	5639573	291.3713 ug/L	88
42) Carbon Tetrachloride	10.25	117	4598150	291.7629 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412229.D 8260WT.M Fri May 13 18:12:35 2016 Page 1

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	3468738	287.5726 ug/L		86
46)	Benzene	10.46	78	9065861	250.7462 ug/L		93
47)	Trichloroethene	11.21	130	2772282	295.1106 ug/L		97
48)	Methylcyclohexane	11.30	83	4327357	304.8748 ug/L		84
49)	1,2-Dichloropropane	11.43	63	2350729	300.9718 ug/L		74
50)	Bromodichloromethane	11.73	83	4051493	294.7973 ug/L		99
51)	1,4-Dioxane	11.72	88	26614	699.8767 ug/L		67
52)	Dibromomethane	11.81	93	1369945	295.3776 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.03	63	1006317	297.3917 ug/L		90
54)	4-Methyl-2-Pentanone	12.06	58	424684	310.6522 ug/L	#	76
55)	cis-1,3-Dichloropropene	12.36	75	4156310	297.7431 ug/L		97
56)	Dimethyl Disulfide	12.63	79	2359825	324.2911 ug/L		94
59)	Toluene	12.78	91	9135213	236.4669 ug/L		90
60)	Ethyl Methacrylate	12.88	69	2228037	315.7801 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	3700845	297.5240 ug/L		96
63)	1,1,2-Trichloroethane	13.18	97	1730199	293.6104 ug/L		100
64)	2-Hexanone	13.11	58	381967	311.8816 ug/L	#	78
65)	1,3-Dichloropropane	13.49	76	3080177	294.0141 ug/L		76
66)	Tetrachloroethene	13.60	164	2374435	297.7522 ug/L		96
67)	Dibromochloromethane	13.87	129	2638145	310.7838 ug/L		100
68)	1,2-Dibromoethane	14.13	107	1778561	305.8085 ug/L		99
69)	1-Chlorohexane	14.21	91	3712592	290.5924 ug/L		84
70)	Chlorobenzene	14.63	112	6754240	263.7433 ug/L		90
71)	1,1,1,2-Tetrachloroethane	14.65	131	2967650	307.3001 ug/L		100
72)	Ethylbenzene	14.65	106	4014412	290.7661 ug/L		70
73)	m-,p-Xylene	14.75	106	8357822	505.3514 ug/L		70
74)	o-Xylene	15.31	106	4530840	285.4488 ug/L		88
75)	Styrene	15.35	104	7050702	269.0641 ug/L		82
76)	Bromoform	15.84	173	1602587	321.7373 ug/L		99
77)	Isopropylbenzene	15.73	105	9900817	226.7477 ug/L		90
79)	1,1,2,2-Tetrachloroethane	15.95	83	1885953	309.3861 ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	581198	310.8176 ug/L		61
82)	trans-1,4-Dichloro-2-Buten	16.18	53	589705	370.3601 ug/L		82
83)	n-Propylbenzene	16.25	91	10768378	214.4110 ug/L		86
84)	Bromobenzene	16.37	156	2947671	300.5290 ug/L		99
85)	1,3,5-Trimethylbenzene	16.43	105	8890651	248.7580 ug/L		92
86)	2-Chlorotoluene	16.51	91	7868844	227.1449 ug/L		92
87)	4-Chlorotoluene	16.57	91	7782731	251.2687 ug/L		93
88)	a-Methylstyrene	16.84	118	4955768	300.9205 ug/L		86
89)	tert-Butylbenzene	16.90	134	2046401	301.6701 ug/L		95
90)	1,2,4-Trimethylbenzene	16.95	105	8903769	240.8932 ug/L		89
91)	sec-Butylbenzene	17.17	105	9867862	230.5051 ug/L		91
92)	p-Isopropyltoluene	17.32	119	8738927	242.4155 ug/L		94
93)	1,3-Dichlorobenzene	17.52	146	5319954	278.2806 ug/L		87
94)	1,4-Dichlorobenzene	17.64	146	5248511	271.3593 ug/L		88
95)	n-Butylbenzene	17.85	91	8408157	234.6279 ug/L		92
96)	1,2-Dichlorobenzene	18.14	146	4717385	277.0787 ug/L		87
97)	1,2-Dibromo-3-Chloropropan	19.13	75	377070	309.0741 ug/L		91
98)	1,2,4-Trichlorobenzene	20.28	180	3677657	291.9206 ug/L		98
99)	Hexachlorobutadiene	20.43	225	1780695	304.4378 ug/L		96
100)	Naphthalene	20.65	128	5216751	275.8542 ug/L		95
101)	1,2,3-Trichlorobenzene	20.96	180	3064908	287.1593 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412229.D 8260WT.M Fri May 13 18:12:36 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration

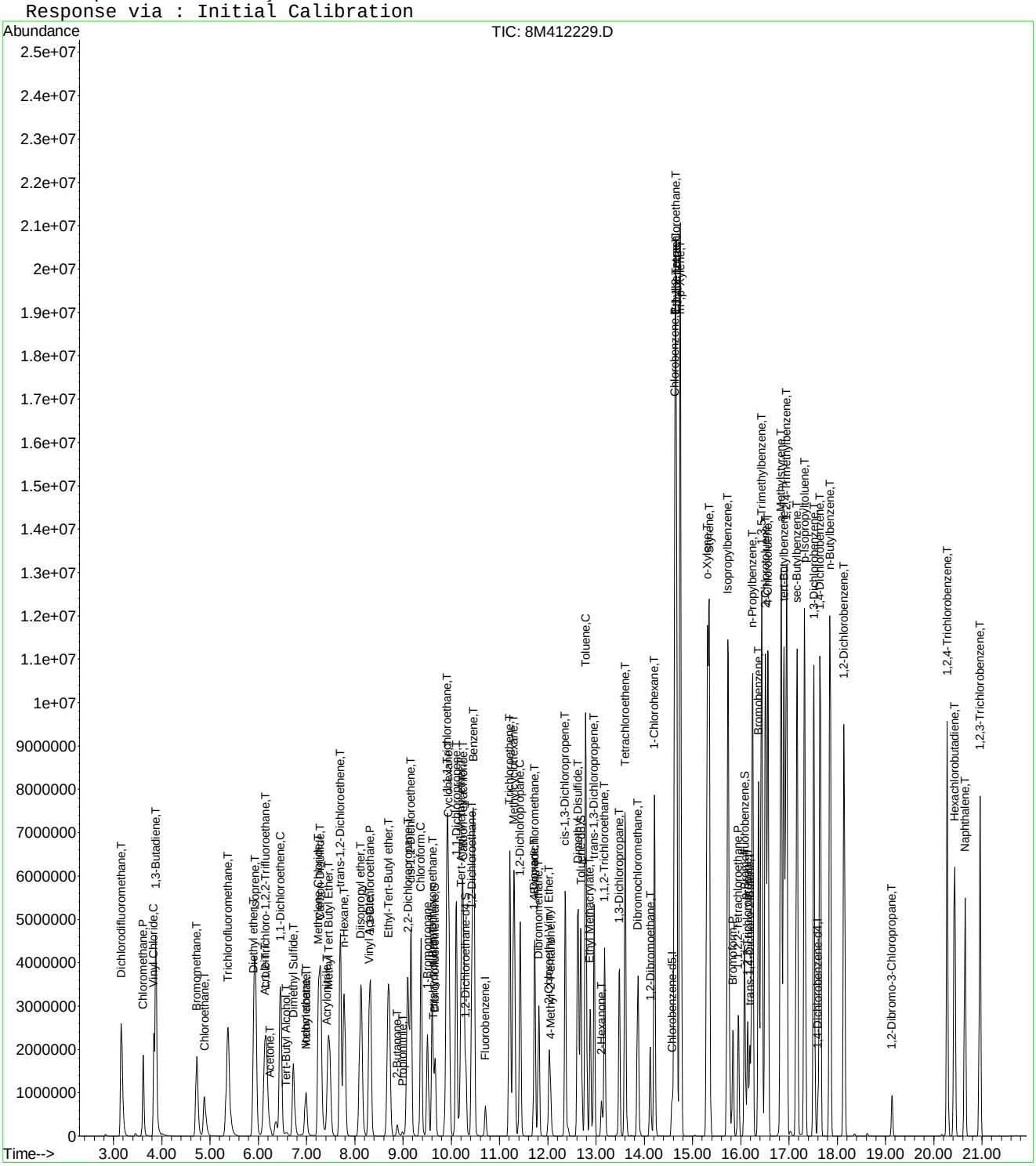

8M412229.D 8260WT.M Fri May 13 18:12:36 2016 Page 3

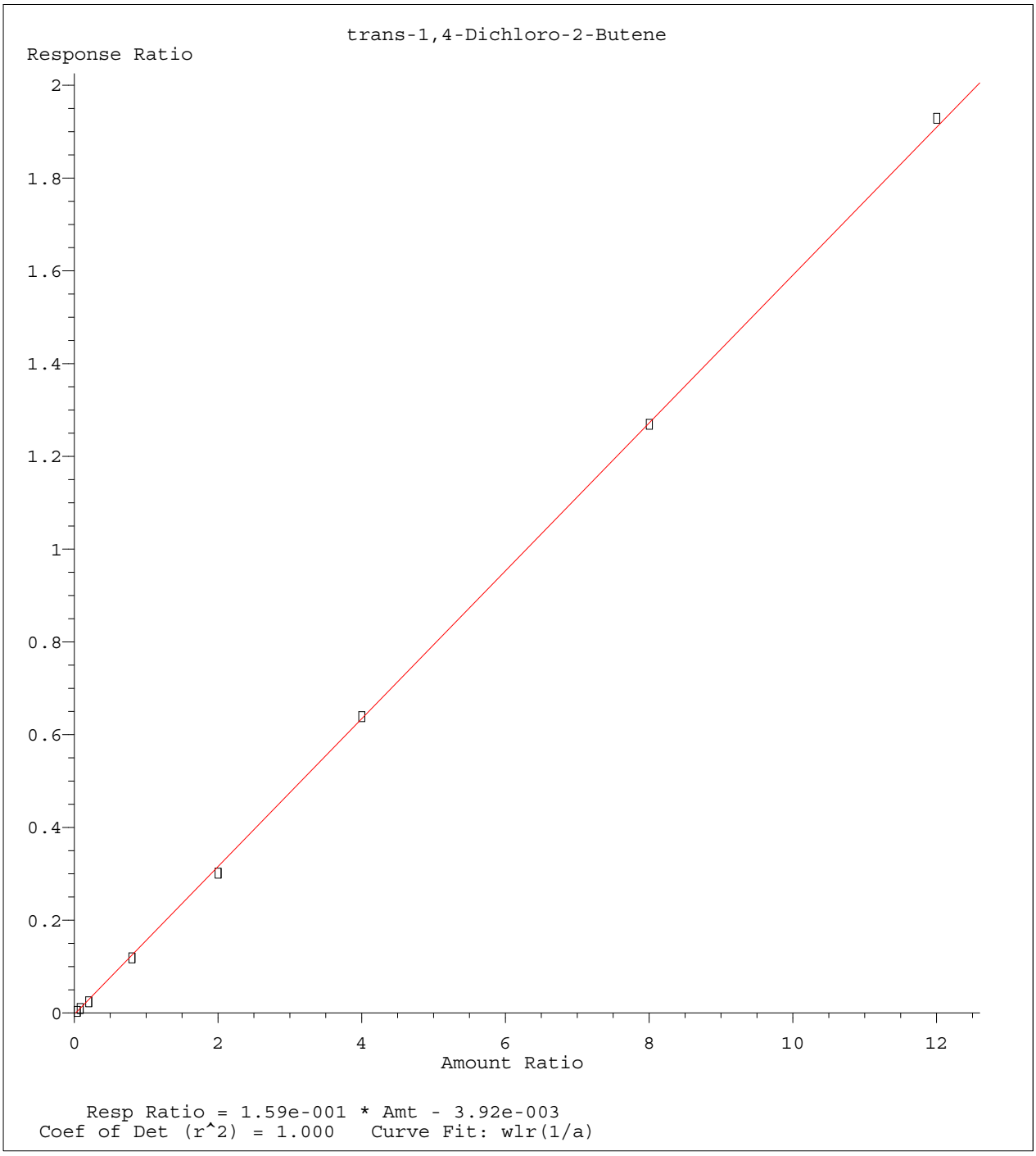

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

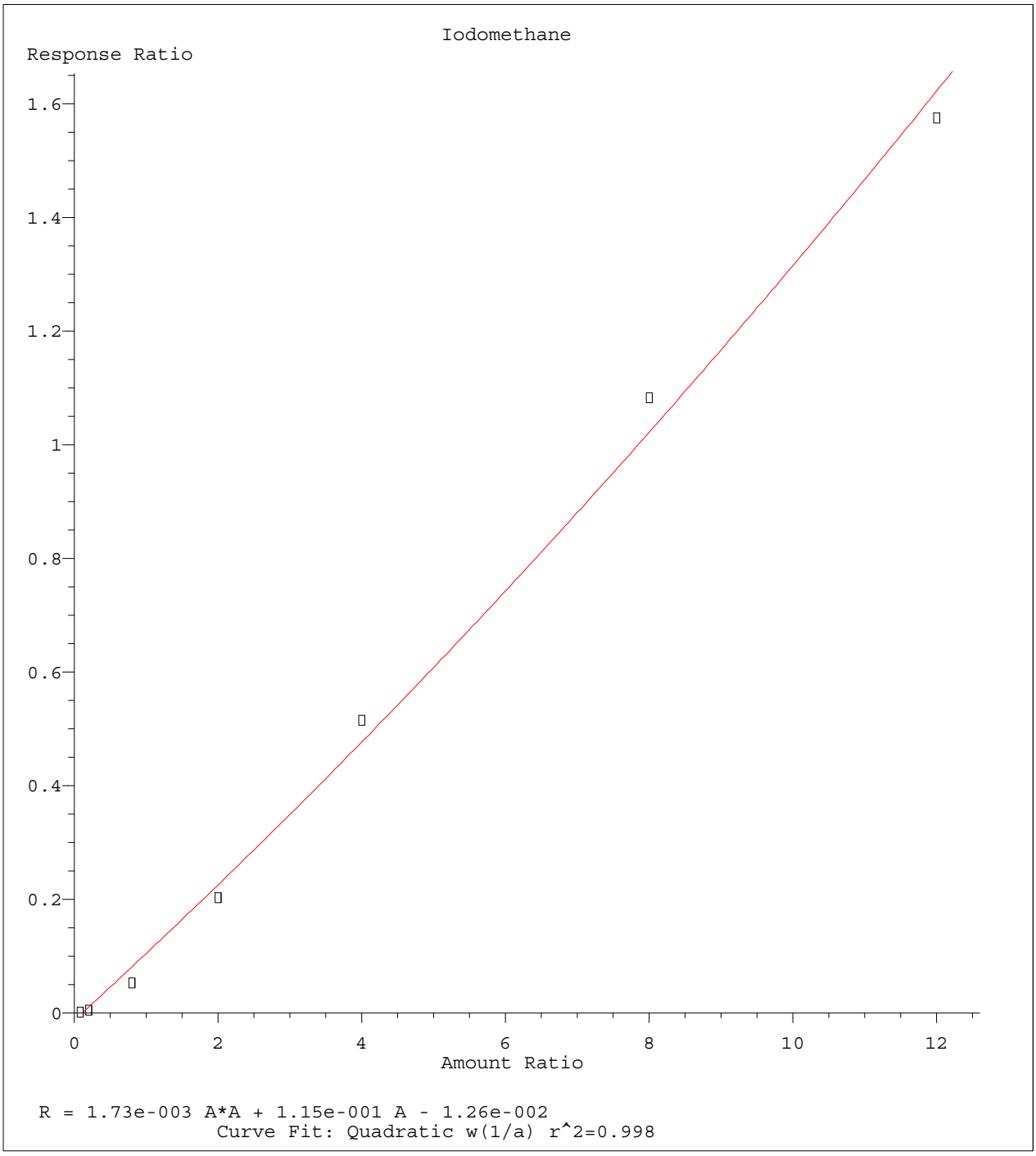

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

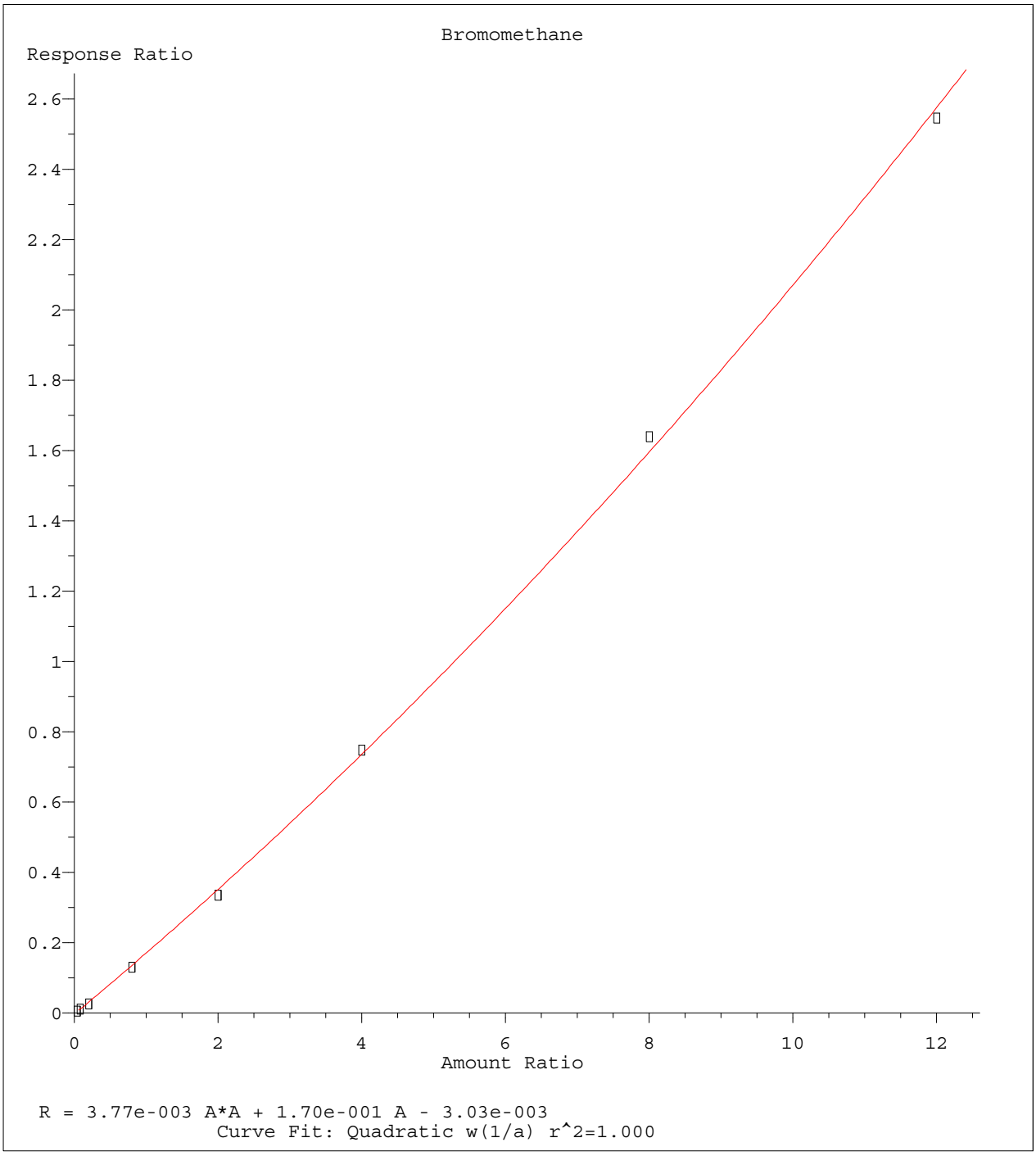

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:44:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Tue May 17 11:43:20 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	837879	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	574720	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	304324	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	229742	25.5204 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.08%		
43) 1,2-Dichloroethane-d4	10.31	65	238672	24.7259 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.92%		
58) Toluene-d8	12.68	98	776362	25.8115 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.24%		
80) p-Bromofluorobenzene	16.07	95	315683	25.0519 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.20%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	761591	54.2141 ug/L	99
3) Chloromethane	3.62	50	415589	50.6814 ug/L	100
4) Vinyl Chloride	3.84	62	509607	52.3810 ug/L	100
5) 1,3-Butadiene	3.88	54	347562	42.6002 ug/L	97
6) Bromomethane	4.73	94	272060	46.3924 ug/L	99
7) Chloroethane	4.88	64	285509	53.3336 ug/L	98
8) Trichlorofluoromethane	5.37	101	849580	46.9313 ug/L	100
9) Diethyl ether	5.90	59	451307	104.4282 ug/L	99
10) Isoprene	5.93	67	582863	53.0208 ug/L	99
11) Acrolein	6.13	56	38877	100.4722 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	419584	49.3091 ug/L	97
13) Acetone	6.23	43	54234	57.5310 ug/L	94
14) 1,1-Dichloroethene	6.46	61	622831	45.9700 ug/L	99
15) Tert-Butyl Alcohol	6.59	59	59797	197.9422 ug/L	97
16) Dimethyl Sulfide	6.73	62	351814	72.6234 ug/L	98
17) Iodomethane	6.99	142	92716	26.2832 ug/L	99
18) Methyl acetate	7.00	43	127540	50.0514 ug/L	98
19) Methylene Chloride	7.25	84	417642	48.4385 ug/L	99
20) Carbon Disulfide	7.29	76	1199899	42.3200 ug/L	100
21) Acrylonitrile	7.43	53	65324	53.4074 ug/L	93
22) Methyl Tert Butyl Ether	7.46	73	949572	50.8859 ug/L	97
23) trans-1,2-Dichloroethene	7.70	61	598296	48.0666 ug/L	99
24) n-Hexane	7.77	57	425106	45.9930 ug/L	99
25) Diisopropyl ether	8.13	45	2040382	105.1615 ug/L	98
26) Vinyl Acetate	8.29	43	415568	46.7802 ug/L	99
27) 1,1-Dichloroethane	8.32	63	721661	46.6846 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	2040020	98.1343 ug/L	99
29) 2-Butanone	8.88	43	73394	52.9905 ug/L	99
30) Propionitrile	8.98	54	42290	104.7756 ug/L	100
31) 2,2-Dichloropropane	9.10	77	780073	47.8861 ug/L	99
32) cis-1,2-Dichloroethene	9.16	96	470465	48.9162 ug/L	98
33) Chloroform	9.38	83	860252	47.1317 ug/L	100
34) 1-Bromopropane	9.51	122	98585	71.5615 ug/L	98
35) Bromochloromethane	9.60	130	234493	47.5456 ug/L	99
36) Tetrahydrofuran	9.62	42	86049	94.3281 ug/L	99
38) 1,1,1-Trichloroethane	9.90	97	825167	47.5949 ug/L	100
39) Cyclohexane	9.93	56	586721	48.8808 ug/L	97
40) 1,1-Dichloropropene	10.10	75	627217	47.4632 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1962875	103.9618 ug/L	99
42) Carbon Tetrachloride	10.24	117	711823	46.2363 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M412232.D 8260WT.M Tue May 17 11:44:38 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	108	0.00
2	T	Dichlorodifluoromethane	50.0000	54.2141	-8.4	112	0.00
3	P	Chloromethane	50.0000	50.6814	-1.4	111	0.00
4	C	Vinyl Chloride	50.0000	52.3811	-4.8	112	-0.01
5	T	1,3-Butadiene	50.0000	42.6002	14.8	89	0.00
6	T	Bromomethane	50.0000	46.3924	7.2	104	-0.01
7	T	Chloroethane	50.0000	53.3336	-6.7	117	-0.01
8	T	Trichlorofluoromethane	50.0000	46.9313	6.1	101	-0.01
9	T	Diethyl ether	100.0000	104.4282	-4.4	116	0.00
10	T	Isoprene	50.0000	53.0208	-6.0	117	0.00
11	T	Acrolein	50.0000	100.4722	-100.9#	220	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	49.3091	1.4	108	0.00
13	T	Acetone	50.0000	57.5310	-15.1	118	-0.01
14	C	1,1-Dichloroethene	50.0000	45.9700	8.1	100	0.00
15	T	Tert-Butyl Alcohol	200.0000	197.9423	1.0	108	0.01
16	T	Dimethyl Sulfide	50.0000	72.6234	-45.2#	159	0.00
17	T	Iodomethane	50.0000	26.2832	47.4#	59	0.01
18	T	Methyl acetate	50.0000	50.0514	-0.1	111	0.00
19	T	Methylene Chloride	50.0000	48.4385	3.1	107	0.00
20	T	Carbon Disulfide	50.0000	42.3200	15.4	94	0.00
21	T	Acrylonitrile	50.0000	53.4074	-6.8	109	0.00
22	T	Methyl Tert Butyl Ether	50.0000	50.8859	-1.8	105	0.00
23	T	trans-1,2-Dichloroethene	50.0000	48.0666	3.9	105	0.00
24	T	n-Hexane	50.0000	45.9930	8.0	101	-0.01
25	T	Diisopropyl ether	100.0000	105.1615	-5.2	115	0.00
26	T	Vinyl Acetate	50.0000	46.7802	6.4	97	0.00
27	P	1,1-Dichloroethane	50.0000	46.6846	6.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.1343	1.9	104	0.00
29	T	2-Butanone	50.0000	52.9905	-6.0	110	0.00
30	T	Propionitrile	100.0000	104.7756	-4.8	111	0.00
31	T	2,2-Dichloropropane	50.0000	47.8861	4.2	102	0.00
32	T	cis-1,2-Dichloroethene	50.0000	48.9162	2.2	107	-0.01
33	C	Chloroform	50.0000	47.1317	5.7	102	0.00
34		1-Bromopropane	50.0000	71.5615	-43.1#	155	0.00
35	T	Bromochloromethane	50.0000	47.5456	4.9	102	0.00
36	T	Tetrahydrofuran	100.0000	94.3281	5.7	108	-0.01
37	S	Dibromofluoromethane	25.0000	25.5204	-2.1	109	0.00
38	T	1,1,1-Trichloroethane	50.0000	47.5949	4.8	101	0.00
39	T	Cyclohexane	50.0000	48.8808	2.2	109	0.00
40	T	1,1-Dichloropropene	50.0000	47.4632	5.1	102	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	103.9618	-4.0	111	0.00
42	T	Carbon Tetrachloride	50.0000	46.2363	7.5	98	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.7259	1.1	104	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	49.0148	2.0	103	0.00
46	T	Benzene	50.0000	48.5232	3.0	104	0.00
47	T	Trichloroethene	50.0000	51.0658	-2.1	110	0.00
48	T	Methylcyclohexane	50.0000	49.8573	0.3	109	0.00
49	C	1,2-Dichloropropane	50.0000	50.9747	-1.9	111	0.00
50	T	Bromodichloromethane	50.0000	48.3053	3.4	99	0.00
51	T	1,4-Dioxane	200.0000	216.9538	-8.5	110	0.01
52	T	Dibromomethane	50.0000	45.8126	8.4	99	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	51.2623	-2.5	104	0.00
54	T	4-Methyl-2-Pentanone	50.0000	51.8715	-3.7	107	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.8979	-7.8	111	0.00
56	T	Dimethyl Disulfide	50.0000	52.2714	-4.5	111	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	107	0.00
58	S	Toluene-d8	25.0000	25.8115	-3.2	108	0.00
59	C	Toluene	50.0000	49.0912	1.8	105	0.00
60	T	Ethyl Methacrylate	50.0000	55.9509	-11.9	113	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	50.6740	-1.3	102	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.0377	1.9	103	0.00
64	T	2-Hexanone	50.0000	53.6057	-7.2	112	0.00
65	T	1,3-Dichloropropane	50.0000	53.6720	-7.3	110	0.00
66	T	Tetrachloroethene	50.0000	47.8053	4.4	104	0.00
67	T	Dibromochloromethane	50.0000	49.6585	0.7	102	0.00
68	T	1,2-Dibromoethane	50.0000	51.1121	-2.2	105	0.00
69	T	1-Chlorohexane	50.0000	51.0611	-2.1	111	0.00
70	P	Chlorobenzene	50.0000	50.1844	-0.4	108	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	49.3793	1.2	103	0.00
72	C	Ethylbenzene	50.0000	48.2013	3.6	105	0.00
73	T	m-,p-Xylene	100.0000	101.1341	-1.1	108	0.00
74	T	o-Xylene	50.0000	50.5675	-1.1	108	0.00
75	T	Styrene	50.0000	51.5086	-3.0	105	0.00
76	P	Bromoform	50.0000	48.2227	3.6	99	0.00
77	T	Isopropylbenzene	50.0000	51.1140	-2.2	107	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	106	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	49.6172	0.8	103	0.00
80	S	p-Bromofluorobenzene	25.0000	25.0519	-0.2	108	0.00
81	T	1,2,3-Trichloropropane	50.0000	50.0849	-0.2	106	0.01
82	T	trans-1,4-Dichloro-2-Butene	50.0000	39.2043	21.6	86	0.00
83	T	n-Propylbenzene	50.0000	51.9237	-3.8	108	0.00
84	T	Bromobenzene	50.0000	49.4648	1.1	105	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	51.6344	-3.3	107	0.00
86	T	2-Chlorotoluene	50.0000	51.5639	-3.1	106	0.00
87	T	4-Chlorotoluene	50.0000	48.2650	3.5	108	0.00
88	T	a-Methylstyrene	50.0000	56.4132	-12.8	120	0.00
89	T	tert-Butylbenzene	50.0000	50.9494	-1.9	112	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	49.6617	0.7	105	0.00
91	T	sec-Butylbenzene	50.0000	51.3386	-2.7	108	0.00
92	T	p-Isopropyltoluene	50.0000	50.1261	-0.3	107	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.8943	-1.8	108	0.00
94	T	1,4-Dichlorobenzene	50.0000	50.4742	-0.9	110	0.00
95	T	n-Butylbenzene	50.0000	49.6520	0.7	105	0.00
96	T	1,2-Dichlorobenzene	50.0000	50.4907	-1.0	110	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	48.4851	3.0	100	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	50.1129	-0.2	107	0.00
99	T	Hexachlorobutadiene	50.0000	52.0919	-4.2	115	0.00
100	T	Naphthalene	50.0000	45.8047	8.4	95	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	47.7353	4.5	106	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412232.D 8260WT.M Sat May 14 18:09:03 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:21 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	709364	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	505399	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	272922	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	27428	100.2132 ug/L	99
3) 3-Chloro-1-propene	7.07	41	940418	104.3259 ug/L	82
4) 2-Chloro-1,3-butadiene	8.45	53	1188994	104.3183 ug/L	86
5) Ethyl Acetate	9.10	43	283167	104.3264 ug/L	95
6) Methacrylonitrile	9.25	67	155775	104.5365 ug/L #	63
7) Isobutyl Alcohol	9.25	43	17893	197.3629 ug/L #	96
9) Methyl methacrylate	11.42	41	298802	102.0346 ug/L	70
10) 2-Nitropropane	11.75	43	121321	95.8263 ug/L	97
13) Cyclohexanone	15.84	55	11401	102.1363 ug/L #	70

(#) = qualifier out of range (m) = manual integration
8M412321.D A9FOOWT.M Thu May 19 09:01:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

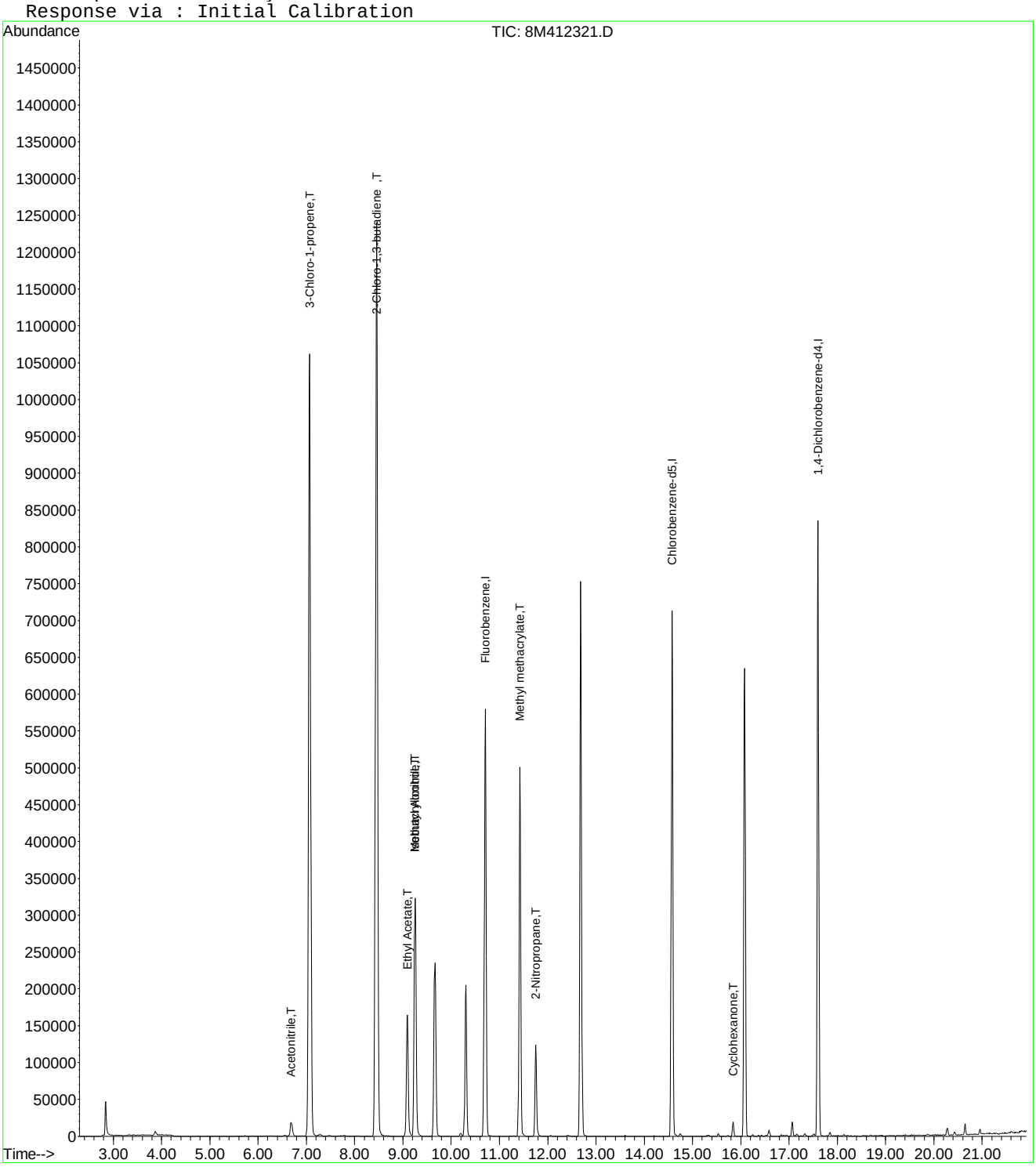

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	100.2132	-0.2	100	0.00
3	T	3-Chloro-1-propene	100.0000	104.3259	-4.3	100	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	104.3183	-4.3	100	0.00
5	T	Ethyl Acetate	100.0000	104.3264	-4.3	100	0.00
6	T	Methacrylonitrile	100.0000	104.5365	-4.5	100	0.00
7	T	Isobutyl Alcohol	200.0000	197.3629	1.3	100	-0.01
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.02
9	T	Methyl methacrylate	100.0000	102.0346	-2.0	100	0.00
10	T	2-Nitropropane	100.0000	95.8263	4.2	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	100.0000	102.1363	-2.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412321.D A9FOOWT.M Thu May 19 09:02:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:20:35 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	677339	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	488377	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	260939	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	13323	50.9795 ug/L	98
3) 3-Chloro-1-propene	7.07	41	453655	52.7060 ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	568765	52.2609 ug/L	87
5) Ethyl Acetate	9.09	43	131636	50.7913 ug/L	97
6) Methacrylonitrile	9.25	67	74064	52.0523 ug/L #	62
7) Isobutyl Alcohol	9.26	43	8483	97.9930 ug/L	95
9) Methyl methacrylate	11.42	41	143892	51.4593 ug/L	70
10) 2-Nitropropane	11.75	43	56559	46.7858 ug/L	95
13) Cyclohexanone	15.84	55	5225	48.9579 ug/L	83

(#) = qualifier out of range (m) = manual integration
8M412322.D A9FOOWT.M Thu May 19 09:20:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:19 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

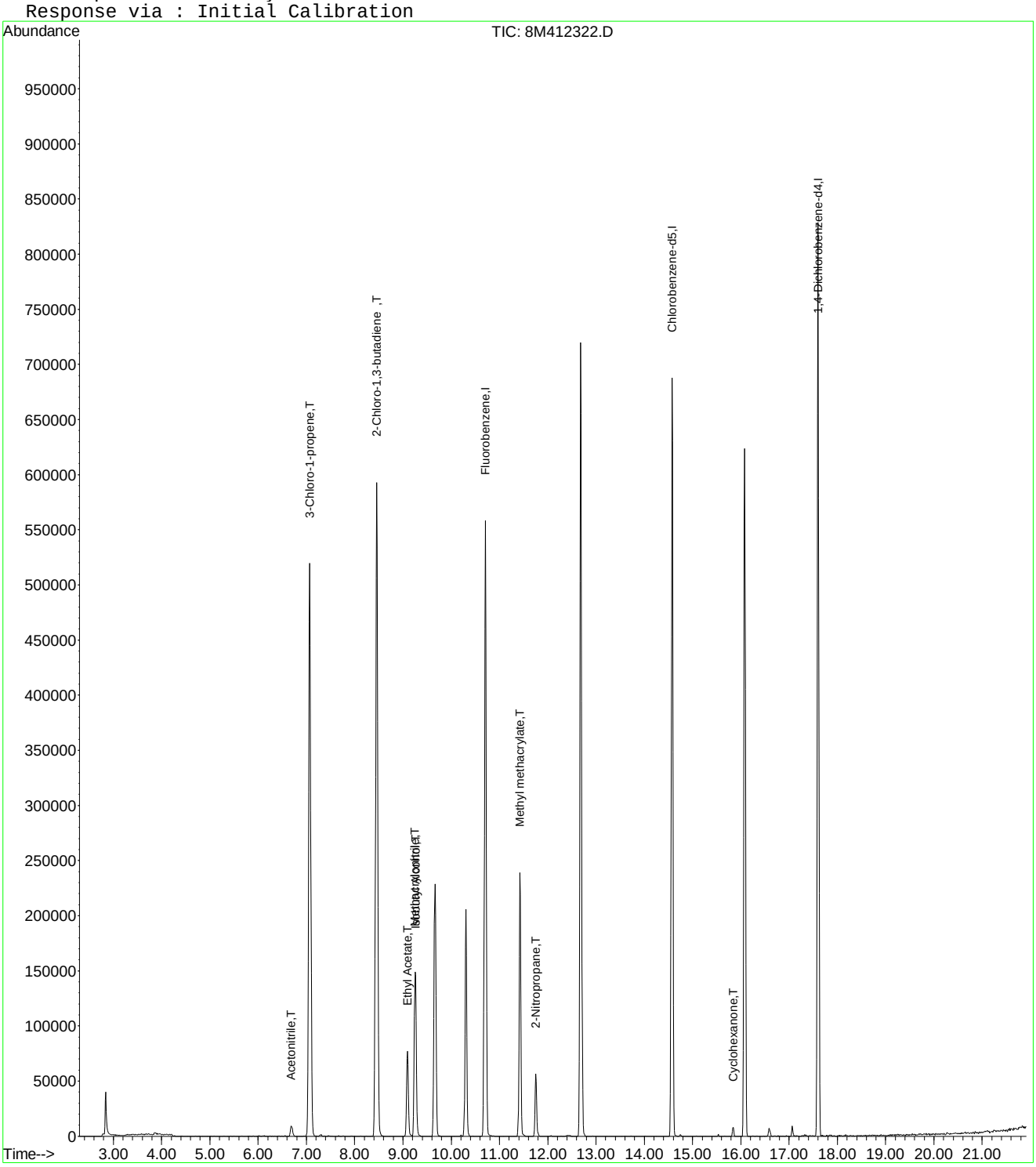

8M412322.D A9FOOWT.M Thu May 19 09:20:36 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	50.9795	-2.0	100	0.00
3	T	3-Chloro-1-propene	50.0000	52.7060	-5.4	100	0.00
4	T	2-Chloro-1,3-butadiene	50.0000	52.2609	-4.5	100	0.00
5	T	Ethyl Acetate	50.0000	50.7913	-1.6	100	0.00
6	T	Methacrylonitrile	50.0000	52.0523	-4.1	100	0.00
7	T	Isobutyl Alcohol	100.0000	97.9929	2.0	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.02
9	T	Methyl methacrylate	50.0000	51.4592	-2.9	100	0.00
10	T	2-Nitropropane	50.0000	46.7858	6.4	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	50.0000	48.9579	2.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412322.D A9FOOWT.M Thu May 19 09:02:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:22:33 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	652985	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	476539	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	256082	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	4873	19.3416 ug/L	80
3) 3-Chloro-1-propene	7.07	41	172467	20.7847 ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	219296	20.9015 ug/L	87
5) Ethyl Acetate	9.09	43	50385	20.1659 ug/L	100
6) Methacrylonitrile	9.26	67	28119	20.4992 ug/L #	63
7) Isobutyl Alcohol	9.27	43	2774	33.2395 ug/L #	8
9) Methyl methacrylate	11.42	41	55309	20.5176 ug/L	73
10) 2-Nitropropane	11.75	43	21584	18.5202 ug/L	99
13) Cyclohexanone	15.84	55	2230	21.2913 ug/L	87

(#) = qualifier out of range (m) = manual integration
8M412323.D A9FOOWT.M Thu May 19 09:22:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:21 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

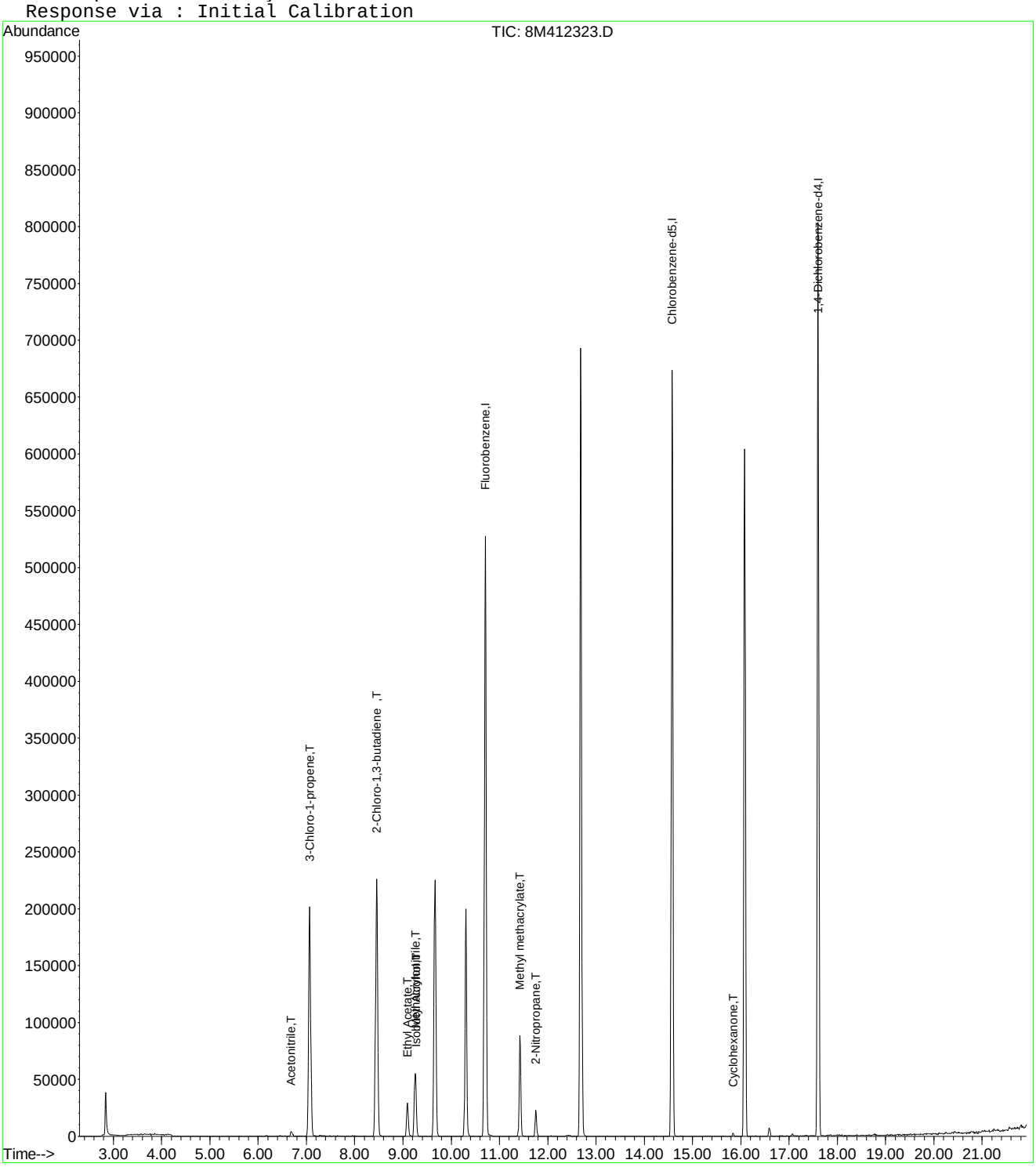

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	19.3416	3.3	100	0.00
3	T	3-Chloro-1-propene	20.0000	20.7847	-3.9	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	20.9015	-4.5	100	0.00
5	T	Ethyl Acetate	20.0000	20.1659	-0.8	100	0.00
6	T	Methacrylonitrile	20.0000	20.4992	-2.5	100	0.00
7	T	Isobutyl Alcohol	-1.0000	33.2395	0.0	0	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.18#
9	T	Methyl methacrylate	20.0000	20.5176	-2.6	100	0.00
10	T	2-Nitropropane	20.0000	18.5203	7.4	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	20.0000	21.2913	-6.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412323.D A9FOOWT.M Thu May 19 09:02:17 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:22:43 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	665645	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	483812	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	257678	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	405	1.5769 ug/L #	23
3) 3-Chloro-1-propene	7.07	41	40699	4.8115 ug/L	84
4) 2-Chloro-1,3-butadiene	8.45	53	48973	4.5789 ug/L	81
5) Ethyl Acetate	9.09	43	10675	4.1913 ug/L	95
6) Methacrylonitrile	9.26	67	5417	3.8740 ug/L #	72
7) Isobutyl Alcohol	9.27	43	441	5.1838 ug/L #	8
9) Methyl methacrylate	11.43	41	11811	4.2981 ug/L	65
10) 2-Nitropropane	11.76	43	4170	3.5100 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412324.D A9FOOWT.M Thu May 19 09:22:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:21 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

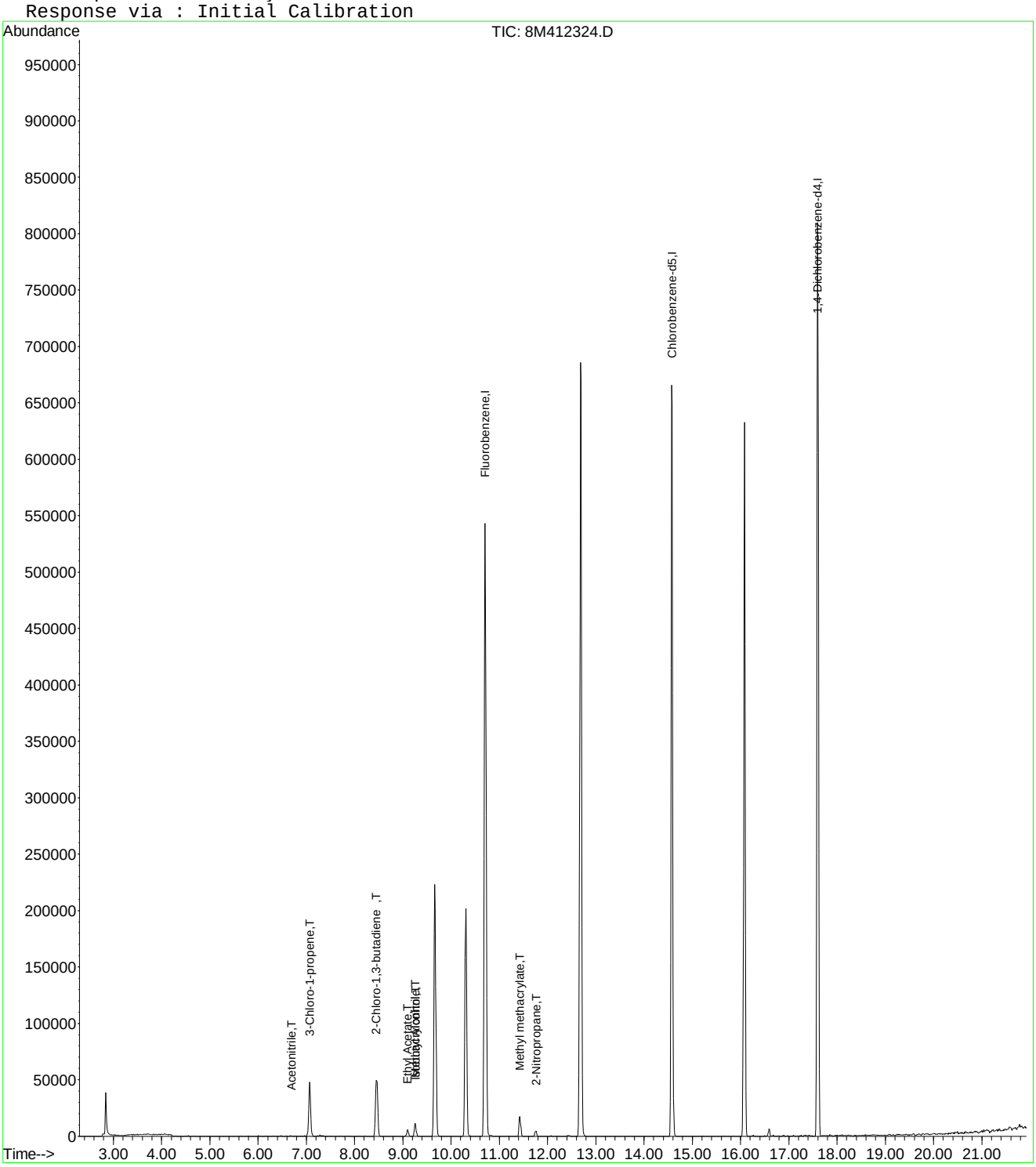

8M412324.D A9FOOWT.M Thu May 19 09:22:43 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	-1.0000	1.5769	0.0	0	0.00
3	T	3-Chloro-1-propene	5.0000	4.8115	3.8	100	0.00
4	T	2-Chloro-1,3-butadiene	5.0000	4.5789	8.4	100	0.00
5	T	Ethyl Acetate	5.0000	4.1913	16.2	100	0.00
6	T	Methacrylonitrile	5.0000	3.8740	22.5	100	0.00
7	T	Isobutyl Alcohol	-1.0000	5.1838	0.0	0	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.18#
9	T	Methyl methacrylate	5.0000	4.2981	14.0	100	0.00
10	T	2-Nitropropane	-1.0000	3.5100	0.0	0	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	0.0000	0.0	0	-15.84#

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412324.D A9FOOWT.M Thu May 19 09:02:03 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412325.D Vial: 7
Acq On : 17 May 2016 11:42 Operator: TMB
Sample : WG569079-06 200ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:27 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	682012	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	491515	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	261877	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.68	41	52022	197.6946 ug/L	97
3) 3-Chloro-1-propene	7.06	41	1768403	204.0468 ug/L	83
4) 2-Chloro-1,3-butadiene	8.46	53	2283706	208.4003 ug/L	87
5) Ethyl Acetate	9.09	43	537585	206.0040 ug/L	94
6) Methacrylonitrile	9.25	67	297408	207.5869 ug/L #	63
7) Isobutyl Alcohol	9.26	43	34441	395.1256 ug/L	95
9) Methyl methacrylate	11.42	41	577612	205.1526 ug/L	72
10) 2-Nitropropane	11.75	43	248395	204.0652 ug/L	95
13) Cyclohexanone	15.85	55	19752	184.4122 ug/L #	59

(#) = qualifier out of range (m) = manual integration
8M412325.D A9FOOWT.M Thu May 19 09:01:28 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412325.D Vial: 7
Acq On : 17 May 2016 11:42 Operator: TMB
Sample : WG569079-06 200ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

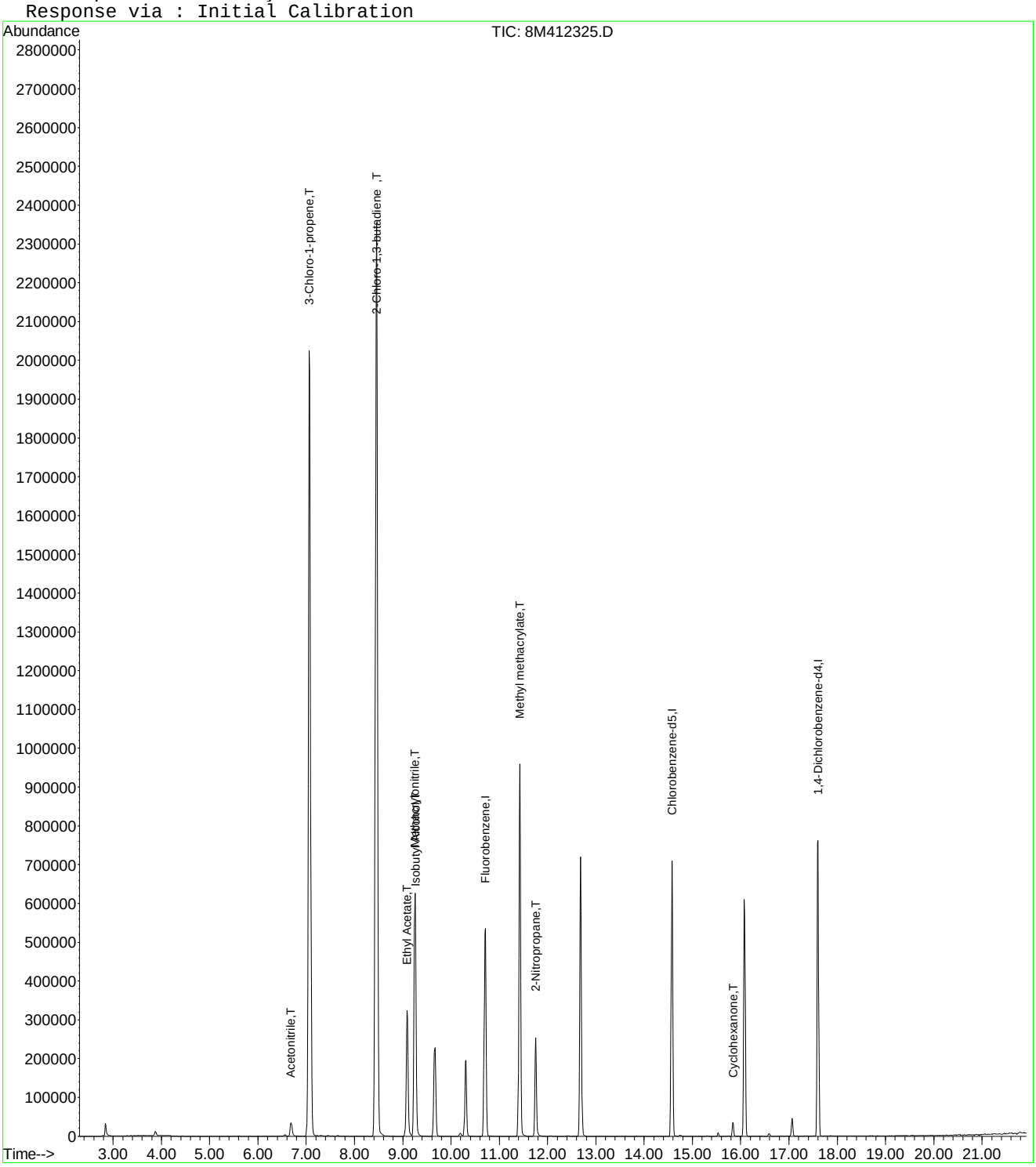

8M412325.D A9FOOWT.M Thu May 19 09:01:28 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412326.D Vial: 8
Acq On : 17 May 2016 12:40 Operator: TMB
Sample : WG569079-07 300ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:29 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	694903	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	496643	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	267309	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	81471	303.8636 ug/L	98
3) 3-Chloro-1-propene	7.06	41	2563559	290.3084 ug/L	83
4) 2-Chloro-1,3-butadiene	8.46	53	3270971	292.9562 ug/L	86
5) Ethyl Acetate	9.09	43	821184	308.8424 ug/L	95
6) Methacrylonitrile	9.25	67	451708	309.4374 ug/L #	62
7) Isobutyl Alcohol	9.26	43	55071	620.0836 ug/L	94
9) Methyl methacrylate	11.42	41	874430	304.8132 ug/L	70
10) 2-Nitropropane	11.75	43	392965	316.8456 ug/L	94
13) Cyclohexanone	15.84	55	33523	306.6233 ug/L #	61

(#) = qualifier out of range (m) = manual integration
8M412326.D A9FOOWT.M Thu May 19 09:01:29 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412326.D Vial: 8
Acq On : 17 May 2016 12:40 Operator: TMB
Sample : WG569079-07 300ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

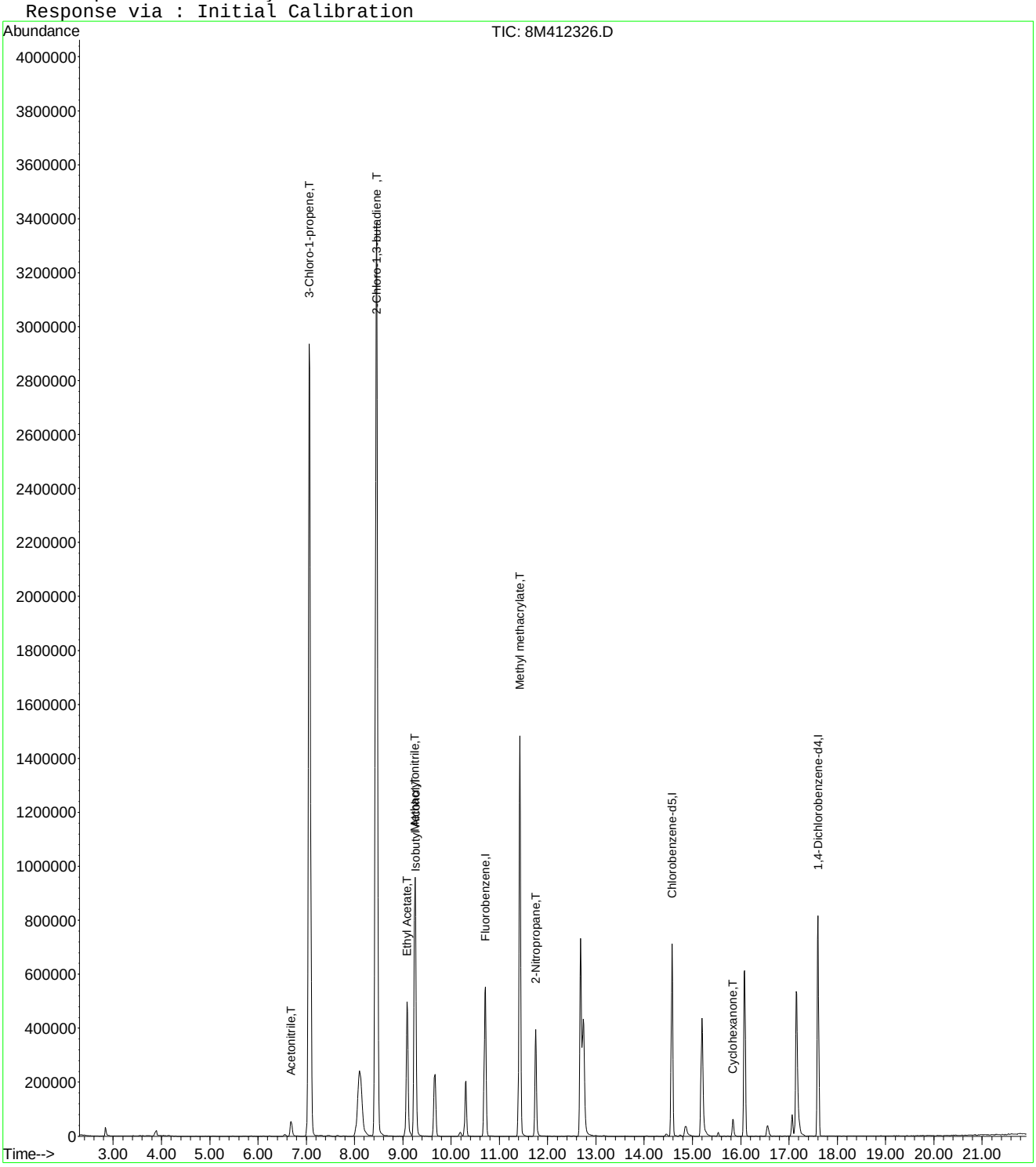

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412327.D Vial: 9
Acq On : 17 May 2016 13:10 Operator: TMB
Sample : WG569079-08 400ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:30 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	700514	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	502552	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	270883	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	110761	409.7980 ug/L	97
3) 3-Chloro-1-propene	7.07	41	3406131	382.6353 ug/L	82
4) 2-Chloro-1,3-butadiene	8.45	53	4356691	387.0705 ug/L	85
5) Ethyl Acetate	9.09	43	1116818	416.6642 ug/L	94
6) Methacrylonitrile	9.25	67	615482	418.2517 ug/L #	62
7) Isobutyl Alcohol	9.26	43	75472	842.9862 ug/L	97
9) Methyl methacrylate	11.42	41	1199317	414.7153 ug/L	71
10) 2-Nitropropane	11.75	43	538580	430.7760 ug/L	94
13) Cyclohexanone	15.84	55	45874	414.0575 ug/L #	55

(#) = qualifier out of range (m) = manual integration
8M412327.D A9FOOWT.M Thu May 19 09:01:31 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412327.D Vial: 9
Acq On : 17 May 2016 13:10 Operator: TMB
Sample : WG569079-08 400ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

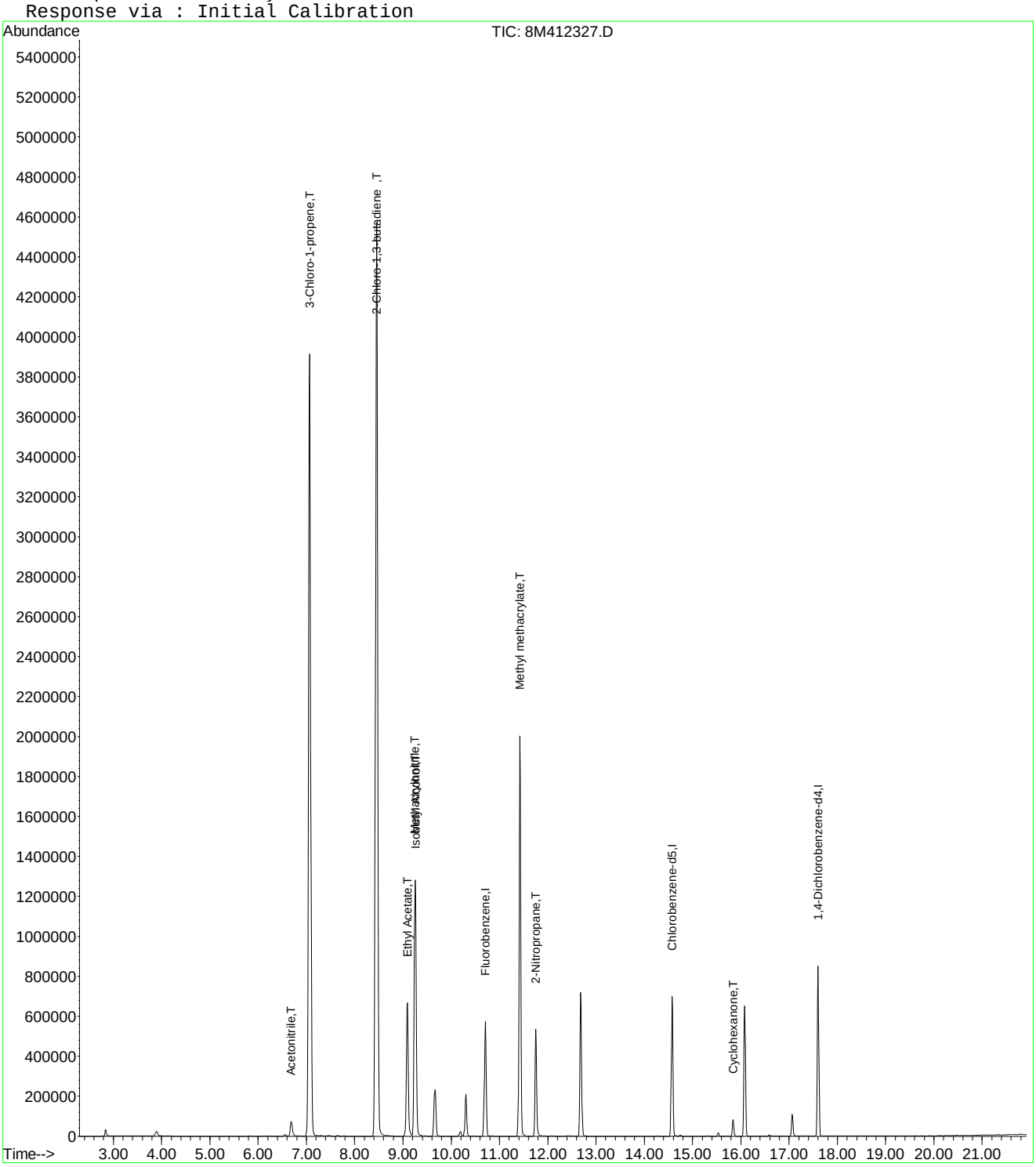

8M412327.D A9FOOWT.M Thu May 19 09:01:31 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412328.D Vial: 10
Acq On : 17 May 2016 13:39 Operator: TMB
Sample : WG569079-09 500ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:31 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	695694	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	495257	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	266442	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	132245	492.6753 ug/L	99
3) 3-Chloro-1-propene	7.06	41	4228273	478.2834 ug/L	82
4) 2-Chloro-1,3-butadiene	8.46	53	5390856	482.2693 ug/L	85
5) Ethyl Acetate	9.09	43	1321922	496.6017 ug/L	95
6) Methacrylonitrile	9.25	67	729852	499.4083 ug/L #	61
7) Isobutyl Alcohol	9.26	43	85200	958.2367 ug/L	96
9) Methyl methacrylate	11.42	41	1416438	493.1877 ug/L	72
10) 2-Nitropropane	11.75	43	637335	513.2956 ug/L	93
13) Cyclohexanone	15.84	55	52070	477.8160 ug/L #	61

(#) = qualifier out of range (m) = manual integration
8M412328.D A9FOOWT.M Thu May 19 09:01:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412328.D Vial: 10
Acq On : 17 May 2016 13:39 Operator: TMB
Sample : WG569079-09 500ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

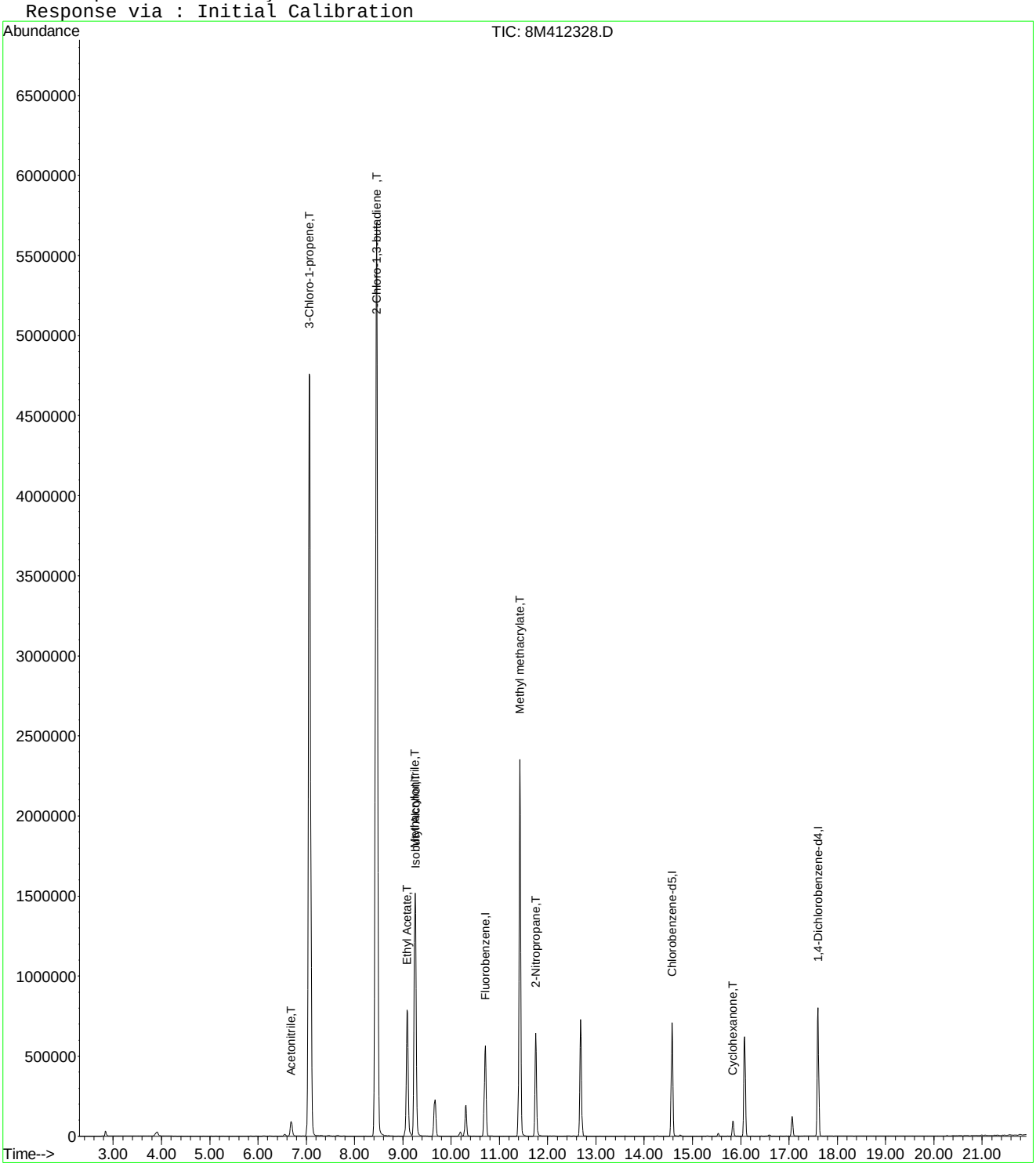

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:32 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	676765	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	486447	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	263036	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.69	41	29876	114.4154	ug/L	97
3) 3-Chloro-1-propene	7.07	41	858035	99.7718	ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	1224194	112.5803	ug/L	87
5) Ethyl Acetate	9.09	43	295545	114.1317	ug/L	96
6) Methacrylonitrile	9.25	67	161574	113.6509	ug/L #	63
7) Isobutyl Alcohol	9.26	43	19948	230.6285	ug/L	94
9) Methyl methacrylate	11.42	41	326465	116.8508	ug/L	72
10) 2-Nitropropane	11.75	43	131261	108.6716	ug/L	94
13) Cyclohexanone	15.83	55	10459	97.2189	ug/L #	74

(#) = qualifier out of range (m) = manual integration
8M412331.D A9FOOWT.M Thu May 19 09:01:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

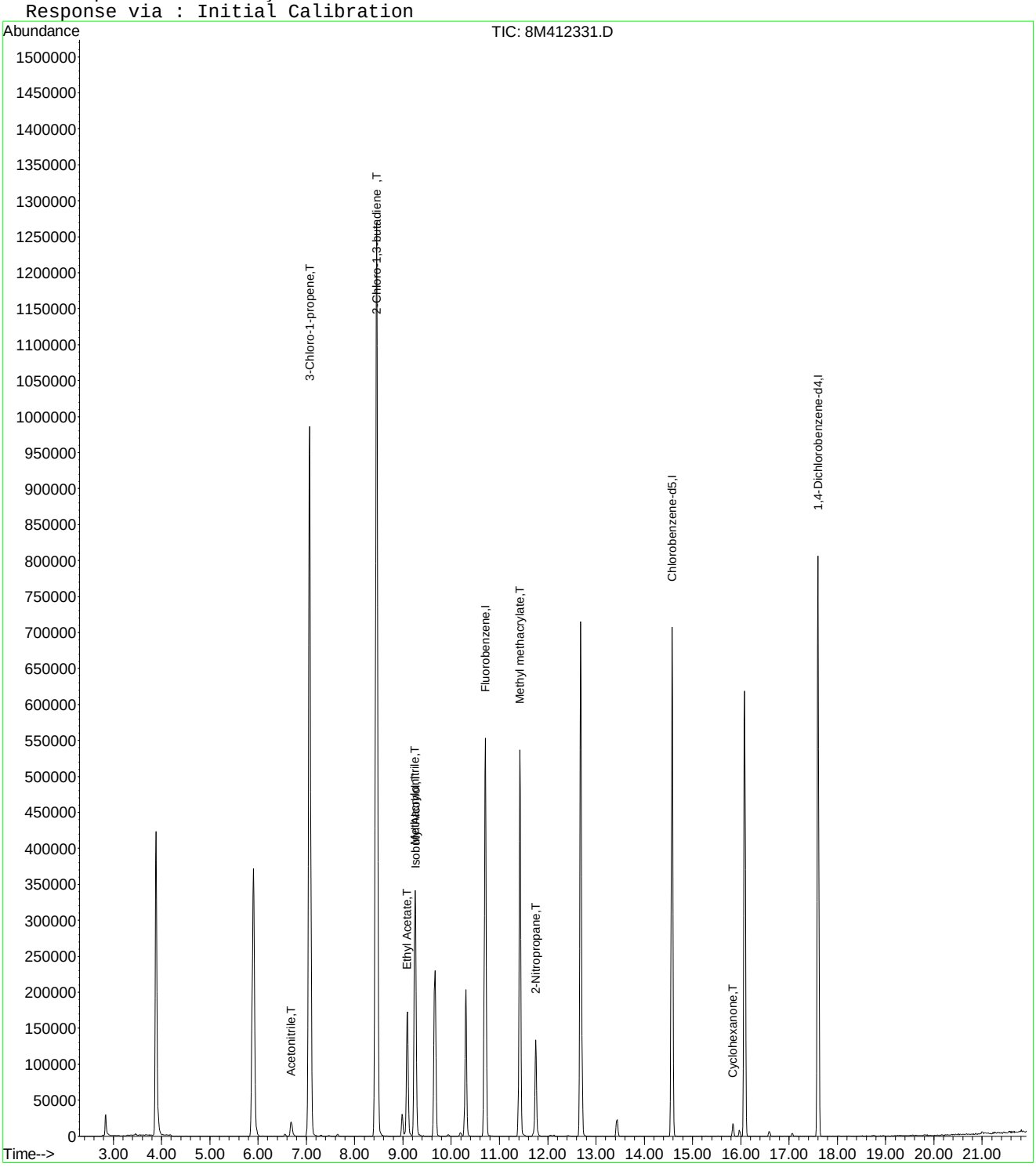

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	95	0.00
2	T	Acetonitrile	100.0000	114.4154	-14.4	109	0.00
3	T	3-Chloro-1-propene	100.0000	99.7718	0.2	91	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	112.5803	-12.6	103	0.00
5	T	Ethyl Acetate	100.0000	114.1317	-14.1	104	0.00
6	T	Methacrylonitrile	100.0000	113.6509	-13.7	104	0.00
7	T	Isobutyl Alcohol	200.0000	230.6285	-15.3	111	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.01
9	T	Methyl methacrylate	100.0000	116.8508	-16.9	109	0.00
10	T	2-Nitropropane	100.0000	108.6716	-8.7	108	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	96	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	96	0.00
13	T	Cyclohexanone	100.0000	97.2189	2.8	92	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412331.D A9FOOWT.M Thu May 19 09:03:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413003.D Vial: 3
Acq On : 15 Jun 2016 9:29 Operator: TMB
Sample : WG572735-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 10:22:49 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	816224	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	599005	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	338264	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	236500	26.9681 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.88%		
43) 1,2-Dichloroethane-d4	10.30	65	258613	27.5026 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 110.00%		
58) Toluene-d8	12.68	98	818079	26.0957 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.40%		
80) p-Bromofluorobenzene	16.07	95	353603	25.2456 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.00%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	748538	54.6986 ug/L	100
3) Chloromethane	3.62	50	386302	48.3597 ug/L	100
4) Vinyl Chloride	3.84	62	513508	54.1824 ug/L	99
5) 1,3-Butadiene	3.88	54	466770	58.7292 ug/L	96
6) Bromomethane	4.73	94	218355	38.5562 ug/L	99
7) Chloroethane	4.89	64	261740	50.1907 ug/L	98
8) Trichlorofluoromethane	5.38	101	977647	55.4386 ug/L	99
9) Diethyl ether	5.90	59	422418	100.3367 ug/L	98
10) Isoprene	5.94	67	537019	50.1466 ug/L	99
11) Acrolein	6.14	56	18159	48.1745 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	431258	52.0256 ug/L	95
13) Acetone	6.24	43	51802	56.4090 ug/L	95
14) 1,1-Dichloroethene	6.46	61	685625	51.9473 ug/L	100
15) Tert-Butyl Alcohol	6.58	59	67191	228.3191 ug/L	97
16) Dimethyl Sulfide	6.73	62	226446	47.9844 ug/L	99
17) Iodomethane	6.98	142	125753	35.3473 ug/L	100
18) Methyl acetate	6.99	43	118016	47.5426 ug/L	98
19) Methylene Chloride	7.25	84	415706	49.4931 ug/L	99
20) Carbon Disulfide	7.29	76	1422328	51.4959 ug/L	100
21) Acrylonitrile	7.43	53	60177	50.5046 ug/L	97
22) Methyl Tert Butyl Ether	7.46	73	970167	53.3688 ug/L	100
23) trans-1,2-Dichloroethene	7.70	61	616383	50.8335 ug/L	99
24) n-Hexane	7.79	57	485002	53.8655 ug/L	98
25) Diisopropyl ether	8.13	45	1875461	99.2260 ug/L	97
26) Vinyl Acetate	8.29	43	459133	53.0555 ug/L	98
27) 1,1-Dichloroethane	8.32	63	769638	51.1092 ug/L	99
28) Ethyl-Tert-Butyl ether	8.69	59	2150385	106.1878 ug/L	99
29) 2-Butanone	8.88	43	67421	49.9695 ug/L	93
30) Propionitrile	8.98	54	40188	102.2094 ug/L	100
31) 2,2-Dichloropropane	9.10	77	923892	58.2193 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	479211	51.1475 ug/L	99
33) Chloroform	9.38	83	940195	52.8783 ug/L	100
34) 1-Bromopropane	9.51	122	75331	56.1325 ug/L	98
35) Bromochloromethane	9.60	130	252399	52.5340 ug/L	96
36) Tetrahydrofuran	9.64	42	81466	91.6734 ug/L	96
38) 1,1,1-Trichloroethane	9.90	97	938108	55.5448 ug/L	100
39) Cyclohexane	9.94	56	590132	50.4693 ug/L	98
40) 1,1-Dichloropropene	10.10	75	682624	53.0265 ug/L	99
41) Tert-Amyl-Methyl ether	10.20	73	1943999	105.6937 ug/L	99
42) Carbon Tetrachloride	10.25	117	839273	55.9611 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413003.D 8260WT.M Wed Jun 15 10:22:53 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413003.D Vial: 3
Acq On : 15 Jun 2016 9:29 Operator: TMB
Sample : WG572735-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 10:22:49 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	636211	55.5933	ug/L		99
46)	Benzene	10.46	78	1705672	50.8725	ug/L		100
47)	Trichloroethene	11.22	130	468582	52.4002	ug/L		99
48)	Methylcyclohexane	11.30	83	717908	52.8453	ug/L		99
49)	1,2-Dichloropropane	11.42	63	362121	48.5171	ug/L		92
50)	Bromodichloromethane	11.72	83	710340	54.1489	ug/L		99
51)	1,4-Dioxane	11.71	88	8043	214.5215	ug/L		95
52)	Dibromomethane	11.81	93	220787	49.9722	ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	143050	44.5915	ug/L		93
54)	4-Methyl-2-Pentanone	12.05	58	67041	51.1598	ug/L		93
55)	cis-1,3-Dichloropropene	12.36	75	714929	53.5425	ug/L		99
56)	Dimethyl Disulfide	12.62	79	371775	52.1661	ug/L		99
59)	Toluene	12.79	91	1827795	49.1512	ug/L		100
60)	Ethyl Methacrylate	12.88	69	367861	51.5092	ug/L		99
62)	trans-1,3-Dichloropropene	12.96	75	646613	51.8862	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	280232	47.7558	ug/L		99
64)	2-Hexanone	13.12	58	62023	50.2978	ug/L	#	98
65)	1,3-Dichloropropane	13.48	76	510391	48.8533	ug/L		99
66)	Tetrachloroethene	13.60	164	413750	51.9308	ug/L		97
67)	Dibromochloromethane	13.86	129	447120	52.1844	ug/L		99
68)	1,2-Dibromoethane	14.12	107	289001	49.4166	ug/L		99
69)	1-Chlorohexane	14.21	91	633582	49.9121	ug/L		99
70)	Chlorobenzene	14.63	112	1238478	49.3881	ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.66	131	503284	51.8051	ug/L		100
72)	Ethylbenzene	14.66	106	662931	48.3185	ug/L		99
73)	m-,p-Xylene	14.74	106	1599907	99.4174	ug/L		100
74)	o-Xylene	15.31	106	785244	49.9090	ug/L		99
75)	Styrene	15.34	104	1330888	51.5739	ug/L		98
76)	Bromoform	15.84	173	269390	53.0081	ug/L		99
77)	Isopropylbenzene	15.73	105	2134970	51.0798	ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	307089	45.2267	ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	98863	47.2826	ug/L		91
82)	trans-1,4-Dichloro-2-Buten	16.19	53	100957	47.4023	ug/L		86
83)	n-Propylbenzene	16.24	91	2516708	47.6894	ug/L		99
84)	Bromobenzene	16.36	156	527081	48.5575	ug/L		96
85)	1,3,5-Trimethylbenzene	16.43	105	1856939	48.3052	ug/L		99
86)	2-Chlorotoluene	16.51	91	1611266	43.7311	ug/L		91
87)	4-Chlorotoluene	16.56	91	1718296	51.6293	ug/L		92
88)	a-Methylstyrene	16.83	118	859171	47.1080	ug/L		99
89)	tert-Butylbenzene	16.89	134	350937	46.6633	ug/L		99
90)	1,2,4-Trimethylbenzene	16.94	105	1896413	47.9759	ug/L		100
91)	sec-Butylbenzene	17.16	105	2137758	47.2703	ug/L		99
92)	p-Isopropyltoluene	17.32	119	1838625	47.8823	ug/L		98
93)	1,3-Dichlorobenzene	17.51	146	1027662	49.1672	ug/L		98
94)	1,4-Dichlorobenzene	17.65	146	1005384	47.7112	ug/L		98
95)	n-Butylbenzene	17.84	91	1795243	47.2912	ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	875659	47.1049	ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	62987	46.2131	ug/L		94
98)	1,2,4-Trichlorobenzene	20.28	180	673757	48.4887	ug/L		99
99)	Hexachlorobutadiene	20.43	225	329928	50.8181	ug/L		100
100)	Naphthalene	20.64	128	967801	46.8800	ug/L		99
101)	1,2,3-Trichlorobenzene	20.95	180	553851	47.2458	ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413003.D Vial: 3
Acq On : 15 Jun 2016 9:29 Operator: TMB
Sample : WG572735-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 10:22 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

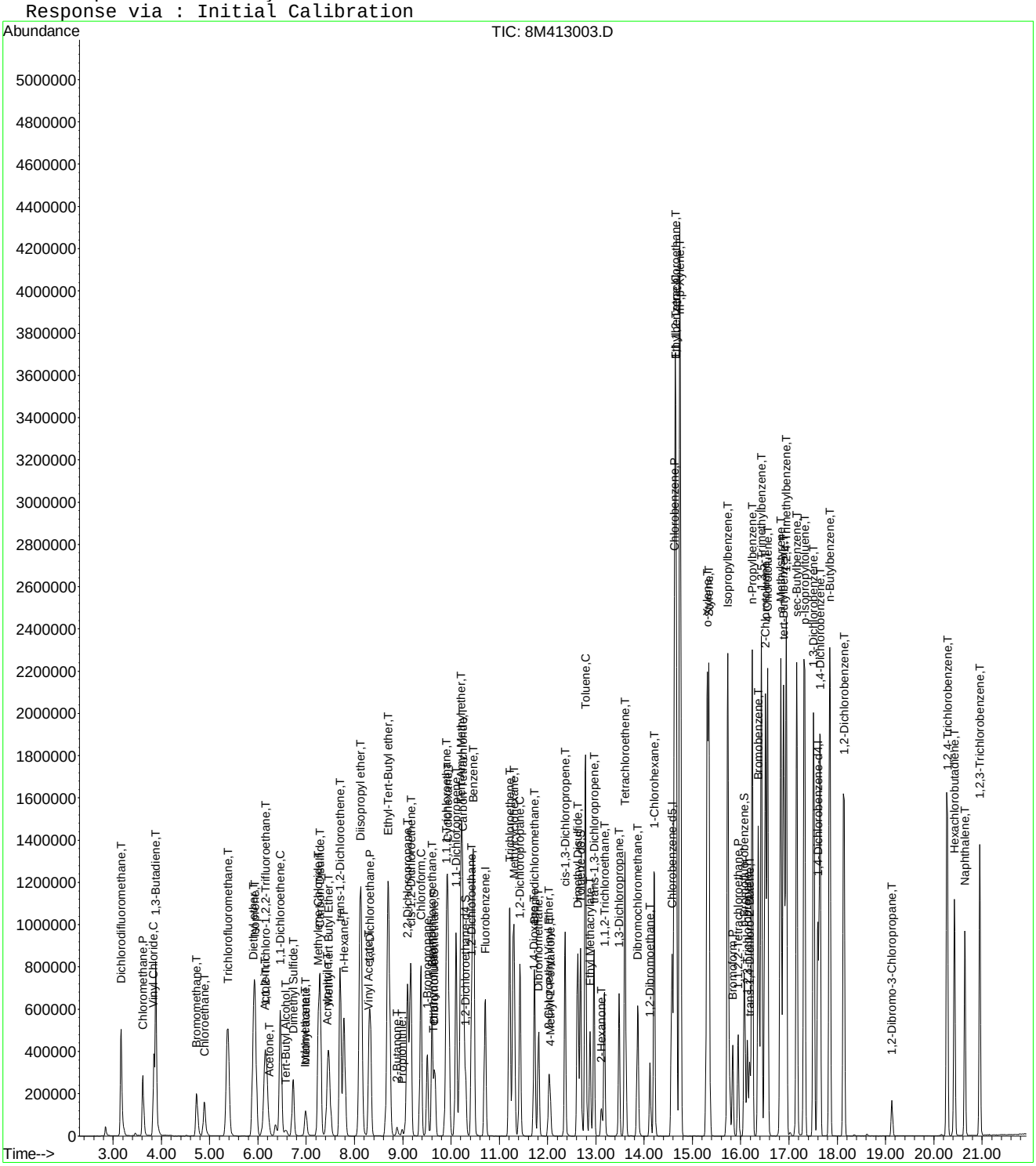

8M413003.D 8260WT.M Wed Jun 15 10:22:54 2016 Page 3

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413003.D Vial: 3
Acq On : 15 Jun 2016 9:29 Operator: TMB
Sample : WG572735-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	105	0.00
2	T	Dichlorodifluoromethane	0.4192	0.4585	-9.4	110	0.00
3	P	Chloromethane	0.2447	0.2366	3.3	104	0.00
4	C	Vinyl Chloride	0.2903	0.3146	-8.4	113	-0.01
5	T	1,3-Butadiene	0.2434	0.2859	-17.5	120	0.00
6	T	Bromomethane	0.1654	0.1338	19.1	84	0.00
7	T	Chloroethane	0.1597	0.1603	-0.4	107	0.00
8	T	Trichlorofluoromethane	0.5401	0.5989	-10.9	117	0.00
9	T	Diethyl ether	0.1290	0.1294	-0.3	108	0.00
10	T	Isoprene	0.3280	0.3290	-0.3	108	0.00
11	T	Acrolein	0.0116	0.0111	3.7	103	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2539	0.2642	-4.1	111	0.01
13	T	Acetone	0.0281	0.0317	-12.8	113	-0.01
14	C	1,1-Dichloroethene	0.4043	0.4200	-3.9	111	0.00
15	T	Tert-Butyl Alcohol	0.0090	0.0103	-14.2	121	0.00
16	T	Dimethyl Sulfide	0.1445	0.1387	4.0	102	0.00
17	T	Iodomethane	0.0866	0.0770	11.0	80	0.00
18	T	Methyl acetate	0.0760	0.0723	4.9	103	-0.01
19	T	Methylene Chloride	0.2573	0.2546	1.0	107	0.00
20	T	Carbon Disulfide	0.8460	0.8713	-3.0	112	0.00
21	T	Acrylonitrile	0.0365	0.0369	-1.0	100	0.00
22	T	Methyl Tert Butyl Ether	0.5568	0.5943	-6.7	108	0.00
23	T	trans-1,2-Dichloroethene	0.3714	0.3776	-1.7	108	0.00
24	T	n-Hexane	0.2758	0.2971	-7.7	116	0.00
25	T	Diisopropyl ether	0.5789	0.5744	0.8	105	0.00
26	T	Vinyl Acetate	0.2651	0.2813	-6.1	107	0.00
27	P	1,1-Dichloroethane	0.4612	0.4715	-2.2	107	0.00
28	T	Ethyl-Tert-Butyl ether	0.6203	0.6586	-6.2	110	-0.01
29	T	2-Butanone	0.0413	0.0413	0.1	101	0.00
30	T	Propionitrile	0.0120	0.0123	-2.2	105	0.00
31	T	2,2-Dichloropropane	0.4860	0.5659	-16.4	120	0.00
32	T	cis-1,2-Dichloroethene	0.2870	0.2935	-2.3	109	0.00
33	C	Chloroform	0.5446	0.5759	-5.8	111	0.00
34		1-Bromopropane	0.0411	0.0461	-12.3	119	0.00
35	T	Bromochloromethane	0.1472	0.1546	-5.1	110	0.00
36	T	Tetrahydrofuran	0.0272	0.0250	8.3	103	0.00
37	S	Dibromofluoromethane	0.2686	0.2898	-7.9	112	-0.01
38	T	1,1,1-Trichloroethane	0.5173	0.5747	-11.1	115	0.00
39	T	Cyclohexane	0.3581	0.3615	-0.9	110	0.00
40	T	1,1-Dichloropropene	0.3943	0.4182	-6.1	111	0.00
41	T	Tert-Amyl-Methyl ether	0.5634	0.5954	-5.7	110	-0.01
42	T	Carbon Tetrachloride	0.4593	0.5141	-11.9	116	0.00
43	S	1,2-Dichloroethane-d4	0.2880	0.3168	-10.0	113	-0.01
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.3505	0.3897	-11.2	113	0.00
46	T	Benzene	1.0269	1.0449	-1.7	106	0.00
47	T	Trichloroethene	0.2739	0.2870	-4.8	110	0.00
48	T	Methylcyclohexane	0.4161	0.4398	-5.7	113	0.00
49	C	1,2-Dichloropropane	0.2286	0.2218	3.0	103	0.00
50	T	Bromodichloromethane	0.4018	0.4351	-8.3	108	0.00
51	T	1,4-Dioxane	0.0012	0.0012	-7.0	106	0.00
52	T	Dibromomethane	0.1353	0.1353	0.1	106	-0.01
53	T	2-Chloroethyl Vinyl Ether	0.0983	0.0876	10.8	88	0.00
54	T	4-Methyl-2-Pentanone	0.0401	0.0411	-2.3	103	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413003.D Vial: 3
Acq On : 15 Jun 2016 9:29 Operator: TMB
Sample : WG572735-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4090	0.4380	-7.1	107	0.00
56	T	Dimethyl Disulfide	0.2183	0.2277	-4.3	108	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	111	0.00
58	S	Toluene-d8	1.3084	1.3657	-4.4	114	0.00
59	C	Toluene	1.5520	1.5257	1.7	109	0.00
60	T	Ethyl Methacrylate	0.2981	0.3071	-3.0	109	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.5201	0.5397	-3.8	109	0.00
63	T	1,1,2-Trichloroethane	0.2449	0.2339	4.5	104	0.00
64	T	2-Hexanone	0.0515	0.0518	-0.6	109	0.00
65	T	1,3-Dichloropropane	0.4360	0.4260	2.3	104	0.00
66	T	Tetrachloroethene	0.3325	0.3454	-3.9	118	0.00
67	T	Dibromochloromethane	0.3576	0.3732	-4.4	111	0.00
68	T	1,2-Dibromoethane	0.2441	0.2412	1.2	106	0.00
69	T	1-Chlorohexane	0.5298	0.5289	0.2	113	0.00
70	P	Chlorobenzene	1.0466	1.0338	1.2	111	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4055	0.4201	-3.6	113	0.00
72	C	Ethylbenzene	0.5726	0.5534	3.4	110	0.00
73	T	m-,p-Xylene	0.6716	0.6677	0.6	111	0.00
74	T	o-Xylene	0.6566	0.6555	0.2	111	0.00
75	T	Styrene	1.0770	1.1109	-3.1	110	0.00
76	P	Bromoform	0.2121	0.2249	-6.0	113	0.00
77	T	Isopropylbenzene	1.7444	1.7821	-2.2	111	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	117	0.00
79	P	1,1,2,2-Tetrachloroethane	0.5018	0.4539	9.5	104	0.00
80	S	p-Bromofluorobenzene	1.0352	1.0454	-1.0	121	0.00
81	T	1,2,3-Trichloropropane	0.1545	0.1461	5.4	111	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1376	0.1492	-8.5	116	0.00
83	T	n-Propylbenzene	3.9003	3.7200	4.6	110	0.00
84	T	Bromobenzene	0.8022	0.7791	2.9	115	-0.01
85	T	1,3,5-Trimethylbenzene	2.8411	2.7448	3.4	112	0.00
86	T	2-Chlorotoluene	2.7231	2.3817	12.5	100	0.00
87	T	4-Chlorotoluene	2.4597	2.5399	-3.3	128	0.00
88	T	a-Methylstyrene	1.3479	1.2700	5.8	111	0.00
89	T	tert-Butylbenzene	0.5558	0.5187	6.7	114	0.00
90	T	1,2,4-Trimethylbenzene	2.9214	2.8032	4.0	113	0.00
91	T	sec-Butylbenzene	3.3424	3.1599	5.5	111	0.00
92	T	p-Isopropyltoluene	2.8379	2.7177	4.2	113	0.00
93	T	1,3-Dichlorobenzene	1.5448	1.5190	1.7	116	0.00
94	T	1,4-Dichlorobenzene	1.5574	1.4861	4.6	115	0.00
95	T	n-Butylbenzene	2.8056	2.6536	5.4	112	-0.01
96	T	1,2-Dichlorobenzene	1.3739	1.2943	5.8	114	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1007	0.0931	7.6	106	0.00
98	T	1,2,4-Trichlorobenzene	1.0269	0.9959	3.0	115	0.00
99	T	Hexachlorobutadiene	0.4798	0.4877	-1.6	125	-0.01
100	T	Naphthalene	1.5257	1.4305	6.2	108	-0.01
101	T	1,2,3-Trichlorobenzene	0.8664	0.8187	5.5	117	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413003.D 8260WT.M Wed Jun 15 10:23:15 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413003.D Vial: 3
Acq On : 15 Jun 2016 9:29 Operator: TMB
Sample : WG572735-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	105	0.00
2	T	Dichlorodifluoromethane	50.0000	54.6986	-9.4	110	0.00
3	P	Chloromethane	50.0000	48.3597	3.3	104	0.00
4	C	Vinyl Chloride	50.0000	54.1824	-8.4	113	-0.01
5	T	1,3-Butadiene	50.0000	58.7292	-17.5	120	0.00
6	T	Bromomethane	50.0000	38.5562	22.9	84	0.00
7	T	Chloroethane	50.0000	50.1907	-0.4	107	0.00
8	T	Trichlorofluoromethane	50.0000	55.4386	-10.9	117	0.00
9	T	Diethyl ether	100.0000	100.3367	-0.3	108	0.00
10	T	Isoprene	50.0000	50.1466	-0.3	108	0.00
11	T	Acrolein	50.0000	48.1745	3.7	103	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	52.0256	-4.1	111	0.01
13	T	Acetone	50.0000	56.4090	-12.8	113	-0.01
14	C	1,1-Dichloroethene	50.0000	51.9473	-3.9	111	0.00
15	T	Tert-Butyl Alcohol	200.0000	228.3191	-14.2	121	0.00
16	T	Dimethyl Sulfide	50.0000	47.9844	4.0	102	0.00
17	T	Iodomethane	50.0000	35.3473	29.3#	80	0.00
18	T	Methyl acetate	50.0000	47.5426	4.9	103	-0.01
19	T	Methylene Chloride	50.0000	49.4931	1.0	107	0.00
20	T	Carbon Disulfide	50.0000	51.4959	-3.0	112	0.00
21	T	Acrylonitrile	50.0000	50.5046	-1.0	100	0.00
22	T	Methyl Tert Butyl Ether	50.0000	53.3689	-6.7	108	0.00
23	T	trans-1,2-Dichloroethene	50.0000	50.8335	-1.7	108	0.00
24	T	n-Hexane	50.0000	53.8655	-7.7	116	0.00
25	T	Diisopropyl ether	100.0000	99.2260	0.8	105	0.00
26	T	Vinyl Acetate	50.0000	53.0555	-6.1	107	0.00
27	P	1,1-Dichloroethane	50.0000	51.1092	-2.2	107	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	106.1878	-6.2	110	-0.01
29	T	2-Butanone	50.0000	49.9695	0.1	101	0.00
30	T	Propionitrile	100.0000	102.2094	-2.2	105	0.00
31	T	2,2-Dichloropropane	50.0000	58.2193	-16.4	120	0.00
32	T	cis-1,2-Dichloroethene	50.0000	51.1475	-2.3	109	0.00
33	C	Chloroform	50.0000	52.8783	-5.8	111	0.00
34		1-Bromopropane	50.0000	56.1325	-12.3	119	0.00
35	T	Bromochloromethane	50.0000	52.5340	-5.1	110	0.00
36	T	Tetrahydrofuran	100.0000	91.6734	8.3	103	0.00
37	S	Dibromofluoromethane	25.0000	26.9681	-7.9	112	-0.01
38	T	1,1,1-Trichloroethane	50.0000	55.5448	-11.1	115	0.00
39	T	Cyclohexane	50.0000	50.4693	-0.9	110	0.00
40	T	1,1-Dichloropropene	50.0000	53.0265	-6.1	111	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	105.6937	-5.7	110	-0.01
42	T	Carbon Tetrachloride	50.0000	55.9611	-11.9	116	0.00
43	S	1,2-Dichloroethane-d4	25.0000	27.5026	-10.0	113	-0.01
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	55.5933	-11.2	113	0.00
46	T	Benzene	50.0000	50.8725	-1.7	106	0.00
47	T	Trichloroethene	50.0000	52.4002	-4.8	110	0.00
48	T	Methylcyclohexane	50.0000	52.8453	-5.7	113	0.00
49	C	1,2-Dichloropropane	50.0000	48.5171	3.0	103	0.00
50	T	Bromodichloromethane	50.0000	54.1489	-8.3	108	0.00
51	T	1,4-Dioxane	200.0000	214.5215	-7.3	106	0.00
52	T	Dibromomethane	50.0000	49.9722	0.1	106	-0.01
53	T	2-Chloroethyl Vinyl Ether	50.0000	44.5915	10.8	88	0.00
54	T	4-Methyl-2-Pentanone	50.0000	51.1598	-2.3	103	0.00

(#) = Out of Range

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413003.D Vial: 3
Acq On : 15 Jun 2016 9:29 Operator: TMB
Sample : WG572735-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.5425	-7.1	107	0.00
56	T	Dimethyl Disulfide	50.0000	52.1661	-4.3	108	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	111	0.00
58	S	Toluene-d8	25.0000	26.0957	-4.4	114	0.00
59	C	Toluene	50.0000	49.1512	1.7	109	0.00
60	T	Ethyl Methacrylate	50.0000	51.5092	-3.0	109	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	51.8862	-3.8	109	0.00
63	T	1,1,2-Trichloroethane	50.0000	47.7558	4.5	104	0.00
64	T	2-Hexanone	50.0000	50.2978	-0.6	109	0.00
65	T	1,3-Dichloropropane	50.0000	48.8533	2.3	104	0.00
66	T	Tetrachloroethene	50.0000	51.9308	-3.9	118	0.00
67	T	Dibromochloromethane	50.0000	52.1844	-4.4	111	0.00
68	T	1,2-Dibromoethane	50.0000	49.4166	1.2	106	0.00
69	T	1-Chlorohexane	50.0000	49.9121	0.2	113	0.00
70	P	Chlorobenzene	50.0000	49.3881	1.2	111	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	51.8051	-3.6	113	0.00
72	C	Ethylbenzene	50.0000	48.3185	3.4	110	0.00
73	T	m-,p-Xylene	100.0000	99.4174	0.6	111	0.00
74	T	o-Xylene	50.0000	49.9090	0.2	111	0.00
75	T	Styrene	50.0000	51.5739	-3.1	110	0.00
76	P	Bromoform	50.0000	53.0080	-6.0	113	0.00
77	T	Isopropylbenzene	50.0000	51.0798	-2.2	111	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	117	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	45.2267	9.5	104	0.00
80	S	p-Bromofluorobenzene	25.0000	25.2456	-1.0	121	0.00
81	T	1,2,3-Trichloropropane	50.0000	47.2826	5.4	111	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	47.4023	5.2	116	0.00
83	T	n-Propylbenzene	50.0000	47.6894	4.6	110	0.00
84	T	Bromobenzene	50.0000	48.5575	2.9	115	-0.01
85	T	1,3,5-Trimethylbenzene	50.0000	48.3051	3.4	112	0.00
86	T	2-Chlorotoluene	50.0000	43.7312	12.5	100	0.00
87	T	4-Chlorotoluene	50.0000	51.6293	-3.3	128	0.00
88	T	a-Methylstyrene	50.0000	47.1080	5.8	111	0.00
89	T	tert-Butylbenzene	50.0000	46.6633	6.7	114	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	47.9759	4.0	113	0.00
91	T	sec-Butylbenzene	50.0000	47.2703	5.5	111	0.00
92	T	p-Isopropyltoluene	50.0000	47.8823	4.2	113	0.00
93	T	1,3-Dichlorobenzene	50.0000	49.1672	1.7	116	0.00
94	T	1,4-Dichlorobenzene	50.0000	47.7112	4.6	115	0.00
95	T	n-Butylbenzene	50.0000	47.2912	5.4	112	-0.01
96	T	1,2-Dichlorobenzene	50.0000	47.1049	5.8	114	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	46.2131	7.6	106	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	48.4887	3.0	115	0.00
99	T	Hexachlorobutadiene	50.0000	50.8181	-1.6	125	-0.01
100	T	Naphthalene	50.0000	46.8800	6.2	108	-0.01
101	T	1,2,3-Trichlorobenzene	50.0000	47.2458	5.5	117	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413003.D 8260WT.M Wed Jun 15 10:23:18 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413032.D Vial: 2
Acq On : 16 Jun 2016 14:25 Operator: FJB
Sample : WG573037-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 20 09:11:28 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	733857	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	538326	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	307491	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	215897	27.3819 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.52%		
43) 1,2-Dichloroethane-d4	10.30	65	234596	27.7486 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.00%		
58) Toluene-d8	12.68	98	742553	26.3564 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.44%		
80) p-Bromofluorobenzene	16.08	95	315298	24.7636 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.04%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	709296	57.6485 ug/L	100
3) Chloromethane	3.62	50	334378	46.5578 ug/L	99
4) Vinyl Chloride	3.84	62	469712	55.1239 ug/L	99
5) 1,3-Butadiene	3.89	54	449731	62.9364 ug/L	97
6) Bromomethane	4.73	94	187928	36.9767 ug/L	99
7) Chloroethane	4.89	64	229428	48.9325 ug/L	97
8) Trichlorofluoromethane	5.37	101	947245	59.7435 ug/L	99
9) Diethyl ether	5.91	59	359174	94.8900 ug/L	97
10) Isoprene	5.94	67	490773	50.9718 ug/L	97
11) Acrolein	6.14	56	15092	44.5317 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	413268	55.4511 ug/L	96
13) Acetone	6.24	43	43062	52.1548 ug/L	100
14) 1,1-Dichloroethene	6.47	61	648526	54.6514 ug/L	98
15) Tert-Butyl Alcohol	6.57	59	62702	236.9793 ug/L	98
16) Dimethyl Sulfide	6.73	62	205530	48.4405 ug/L	98
17) Iodomethane	6.99	142	88941	28.4929 ug/L	92
18) Methyl acetate	7.00	43	95456	42.7704 ug/L	98
19) Methylene Chloride	7.26	84	368680	48.8209 ug/L	100
20) Carbon Disulfide	7.29	76	1316779	53.0253 ug/L	100
21) Acrylonitrile	7.43	53	50980	47.5881 ug/L	94
22) Methyl Tert Butyl Ether	7.46	73	815898	49.9201 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	567448	52.0503 ug/L	100
24) n-Hexane	7.78	57	440578	54.4236 ug/L	99
25) Diisopropyl ether	8.12	45	1629728	95.9026 ug/L	96
26) Vinyl Acetate	8.30	43	383450	49.2832 ug/L	99
27) 1,1-Dichloroethane	8.33	63	708177	52.3061 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1837543	100.9239 ug/L	98
29) 2-Butanone	8.88	43	55723	45.9348 ug/L	98
30) Propionitrile	8.99	54	34053	96.3269 ug/L	98
31) 2,2-Dichloropropane	9.11	77	881786	61.8026 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	429176	50.9485 ug/L	97
33) Chloroform	9.37	83	876461	54.8264 ug/L	100
34) 1-Bromopropane	9.51	122	69827	57.8711 ug/L	99
35) Bromochloromethane	9.61	130	221472	51.2707 ug/L	96
36) Tetrahydrofuran	9.63	42	65588	82.0898 ug/L	92
38) 1,1,1-Trichloroethane	9.91	97	904390	59.5586 ug/L	99
39) Cyclohexane	9.94	56	543065	51.6569 ug/L	96
40) 1,1-Dichloropropene	10.11	75	631550	54.5654 ug/L	100
41) Tert-Amyl-Methyl ether	10.21	73	1667474	100.8347 ug/L	100
42) Carbon Tetrachloride	10.25	117	809209	60.0125 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M413032.D 8260WT.M Mon Jun 20 09:11:29 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413032.D Vial: 2
Acq On : 16 Jun 2016 14:25 Operator: FJB
Sample : WG573037-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 20 09:11:28 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	583022	56.6636	ug/L		98
46)	Benzene	10.46	78	1567451	51.9972	ug/L		99
47)	Trichloroethene	11.21	130	433837	53.9600	ug/L		99
48)	Methylcyclohexane	11.30	83	676953	55.4235	ug/L		100
49)	1,2-Dichloropropane	11.43	63	326457	48.6480	ug/L		86
50)	Bromodichloromethane	11.73	83	653209	55.3826	ug/L		100
51)	1,4-Dioxane	11.72	88	7428	220.3548	ug/L		98
52)	Dibromomethane	11.81	93	197458	49.7082	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.03	63	129844	45.0178	ug/L		95
54)	4-Methyl-2-Pentanone	12.06	58	53646	45.5327	ug/L		94
55)	cis-1,3-Dichloropropene	12.36	75	639780	53.2922	ug/L		100
56)	Dimethyl Disulfide	12.63	79	328801	51.3144	ug/L		99
59)	Toluene	12.78	91	1681041	50.3002	ug/L		100
60)	Ethyl Methacrylate	12.88	69	300733	46.8562	ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	572847	51.1483	ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	244197	46.3057	ug/L		99
64)	2-Hexanone	13.12	58	49168	44.3674	ug/L	#	100
65)	1,3-Dichloropropane	13.48	76	441493	47.0219	ug/L		97
66)	Tetrachloroethene	13.60	164	383463	53.5544	ug/L		98
67)	Dibromochloromethane	13.87	129	388793	50.4917	ug/L		99
68)	1,2-Dibromoethane	14.13	107	247883	47.1634	ug/L		98
69)	1-Chlorohexane	14.21	91	594465	52.1092	ug/L		98
70)	Chlorobenzene	14.62	112	1121470	49.7630	ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.66	131	456454	52.2807	ug/L		100
72)	Ethylbenzene	14.66	106	622088	50.4524	ug/L		99
73)	m-,p-Xylene	14.75	106	1491287	103.1131	ug/L		100
74)	o-Xylene	15.31	106	724388	51.2307	ug/L		99
75)	Styrene	15.35	104	1206191	52.0104	ug/L		96
76)	Bromoform	15.84	173	232298	50.8617	ug/L		99
77)	Isopropylbenzene	15.73	105	2026613	53.9527	ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	256105	41.4928	ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	85494	44.9807	ug/L		72
82)	trans-1,4-Dichloro-2-Buten	16.18	53	84374	43.6303	ug/L	#	51
83)	n-Propylbenzene	16.24	91	2386990	49.7580	ug/L		99
84)	Bromobenzene	16.37	156	473221	47.9586	ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	1753288	50.1733	ug/L		100
86)	2-Chlorotoluene	16.52	91	1599256	47.7491	ug/L		100
87)	4-Chlorotoluene	16.56	91	1503375	49.6923	ug/L		100
88)	a-Methylstyrene	16.84	118	786649	47.4481	ug/L		98
89)	tert-Butylbenzene	16.90	134	334560	48.9377	ug/L		99
90)	1,2,4-Trimethylbenzene	16.95	105	1801178	50.1269	ug/L		100
91)	sec-Butylbenzene	17.17	105	2069862	50.3494	ug/L		99
92)	p-Isopropyltoluene	17.32	119	1766300	50.6022	ug/L		99
93)	1,3-Dichlorobenzene	17.52	146	942205	49.5900	ug/L		98
94)	1,4-Dichlorobenzene	17.64	146	911590	47.5896	ug/L		99
95)	n-Butylbenzene	17.85	91	1742674	50.5007	ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	787813	46.6205	ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	54489	43.9791	ug/L		98
98)	1,2,4-Trichlorobenzene	20.28	180	613274	48.5529	ug/L		100
99)	Hexachlorobutadiene	20.43	225	322898	54.7126	ug/L		99
100)	Naphthalene	20.65	128	816338	43.5006	ug/L		100
101)	1,2,3-Trichlorobenzene	20.96	180	483344	45.3576	ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413032.D Vial: 2
Acq On : 16 Jun 2016 14:25 Operator: FJB
Sample : WG573037-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 20 9:11 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

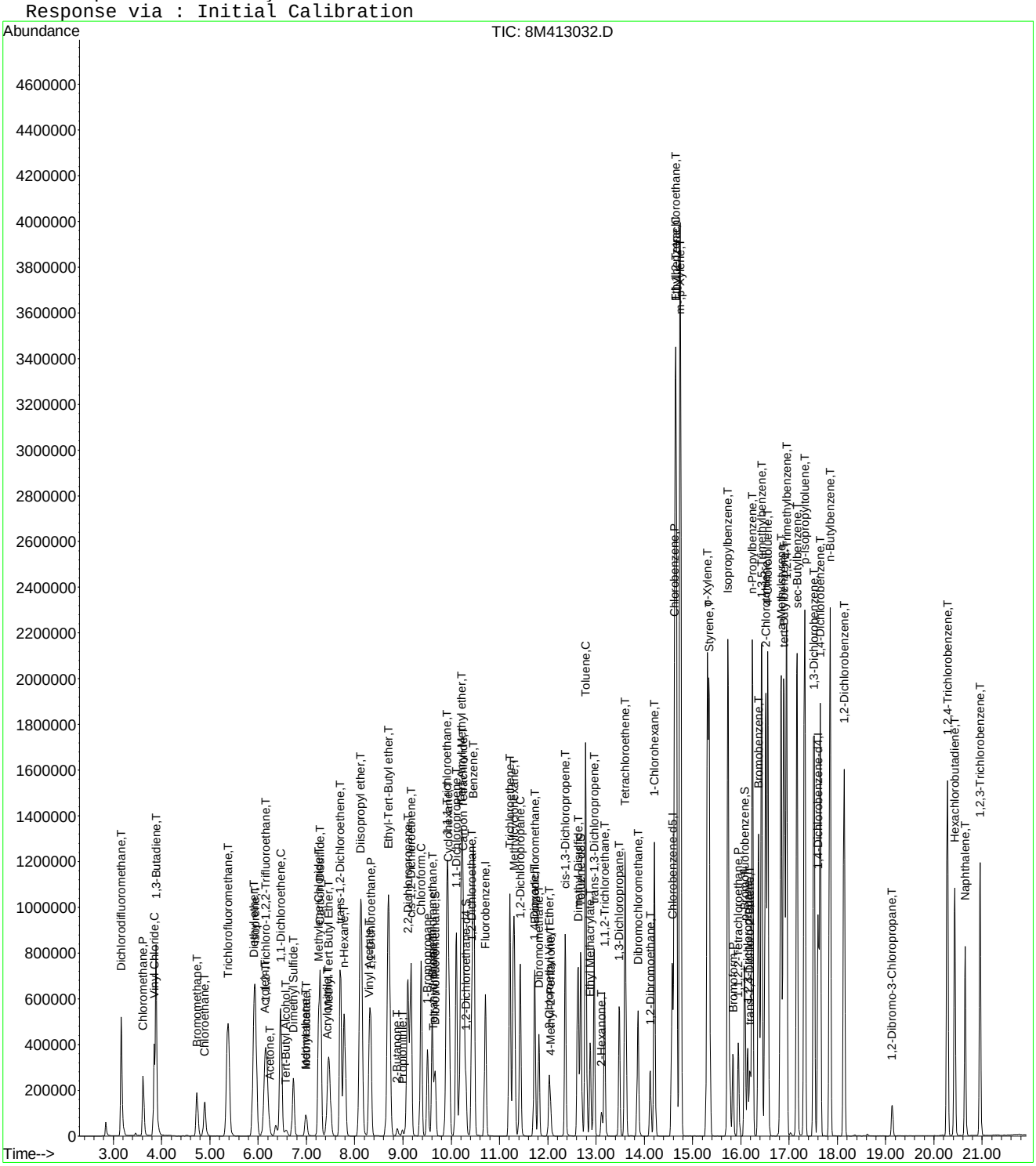

8M413032.D 8260WT.M Mon Jun 20 09:11:30 2016 Page 3

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413032.D Vial: 2
Acq On : 16 Jun 2016 14:25 Operator: FJB
Sample : WG573037-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	94	0.00
2	T	Dichlorodifluoromethane	0.4192	0.4833	-15.3	104	0.00
3	P	Chloromethane	0.2447	0.2278	6.9	90	0.00
4	C	Vinyl Chloride	0.2903	0.3200	-10.2	103	0.00
5	T	1,3-Butadiene	0.2434	0.3064	-25.9#	115	0.00
6	T	Bromomethane	0.1654	0.1280	22.6	72	0.00
7	T	Chloroethane	0.1597	0.1563	2.1	94	0.00
8	T	Trichlorofluoromethane	0.5401	0.6454	-19.5	113	0.00
9	T	Diethyl ether	0.1290	0.1224	5.1	92	0.00
10	T	Isoprene	0.3280	0.3344	-1.9	99	0.00
11	T	Acrolein	0.0116	0.0103	11.0	86	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2539	0.2816	-10.9	107	0.00
13	T	Acetone	0.0281	0.0293	-4.3	94	0.00
14	C	1,1-Dichloroethene	0.4043	0.4419	-9.3	105	0.00
15	T	Tert-Butyl Alcohol	0.0090	0.0107	-18.5	113	0.00
16	T	Dimethyl Sulfide	0.1445	0.1400	3.1	93	0.00
17	T	Iodomethane	0.0866	0.0606	30.0#	56	0.00
18	T	Methyl acetate	0.0760	0.0650	14.5	83	0.00
19	T	Methylene Chloride	0.2573	0.2512	2.4	95	0.00
20	T	Carbon Disulfide	0.8460	0.8972	-6.0	104	0.00
21	T	Acrylonitrile	0.0365	0.0347	4.8	85	0.00
22	T	Methyl Tert Butyl Ether	0.5568	0.5559	0.2	90	0.00
23	T	trans-1,2-Dichloroethene	0.3714	0.3866	-4.1	99	0.00
24	T	n-Hexane	0.2758	0.3002	-8.8	105	0.00
25	T	Diisopropyl ether	0.5789	0.5552	4.1	92	0.00
26	T	Vinyl Acetate	0.2651	0.2613	1.4	89	0.00
27	P	1,1-Dichloroethane	0.4612	0.4825	-4.6	98	0.00
28	T	Ethyl-Tert-Butyl ether	0.6203	0.6260	-0.9	94	0.00
29	T	2-Butanone	0.0413	0.0380	8.1	84	0.00
30	T	Propionitrile	0.0120	0.0116	3.7	89	0.00
31	T	2,2-Dichloropropane	0.4860	0.6008	-23.6	115	0.00
32	T	cis-1,2-Dichloroethene	0.2870	0.2924	-1.9	98	0.00
33	C	Chloroform	0.5446	0.5972	-9.7	104	0.00
34		1-Bromopropane	0.0411	0.0476	-15.8	110	0.00
35	T	Bromochloromethane	0.1472	0.1509	-2.5	96	0.00
36	T	Tetrahydrofuran	0.0272	0.0223	17.9	83	0.00
37	S	Dibromofluoromethane	0.2686	0.2942	-9.5	102	0.00
38	T	1,1,1-Trichloroethane	0.5173	0.6162	-19.1	111	0.00
39	T	Cyclohexane	0.3581	0.3700	-3.3	101	0.00
40	T	1,1-Dichloropropene	0.3943	0.4303	-9.1	103	0.00
41	T	Tert-Amyl-Methyl ether	0.5634	0.5681	-0.8	94	0.00
42	T	Carbon Tetrachloride	0.4593	0.5513	-20.0	112	0.00
43	S	1,2-Dichloroethane-d4	0.2880	0.3197	-11.0	102	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.3505	0.3972	-13.3	104	0.00
46	T	Benzene	1.0269	1.0680	-4.0	98	0.00
47	T	Trichloroethene	0.2739	0.2956	-7.9	102	0.00
48	T	Methylcyclohexane	0.4161	0.4612	-10.8	107	0.00
49	C	1,2-Dichloropropane	0.2286	0.2224	2.7	93	0.00
50	T	Bromodichloromethane	0.4018	0.4451	-10.8	100	0.00
51	T	1,4-Dioxane	0.0012	0.0013	-10.4	98	0.00
52	T	Dibromomethane	0.1353	0.1345	0.6	94	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0983	0.0885	10.0	80	0.00
54	T	4-Methyl-2-Pentanone	0.0401	0.0365	8.9	83	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413032.D Vial: 2
Acq On : 16 Jun 2016 14:25 Operator: FJB
Sample : WG573037-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4090	0.4359	-6.6	96	0.00
56	T	Dimethyl Disulfide	0.2183	0.2240	-2.6	96	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	100	0.00
58	S	Toluene-d8	1.3084	1.3794	-5.4	103	0.00
59	C	Toluene	1.5520	1.5614	-0.6	100	0.00
60	T	Ethyl Methacrylate	0.2981	0.2793	6.3	89	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.5201	0.5321	-2.3	96	0.00
63	T	1,1,2-Trichloroethane	0.2449	0.2268	7.4	91	0.00
64	T	2-Hexanone	0.0515	0.0457	11.3	86	0.00
65	T	1,3-Dichloropropane	0.4360	0.4101	6.0	90	0.00
66	T	Tetrachloroethene	0.3325	0.3562	-7.1	109	0.00
67	T	Dibromochloromethane	0.3576	0.3611	-1.0	97	0.00
68	T	1,2-Dibromoethane	0.2441	0.2302	5.7	91	0.00
69	T	1-Chlorohexane	0.5298	0.5521	-4.2	106	0.00
70	P	Chlorobenzene	1.0466	1.0416	0.5	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4055	0.4240	-4.6	102	0.00
72	C	Ethylbenzene	0.5726	0.5778	-0.9	103	0.00
73	T	m-,p-Xylene	0.6716	0.6926	-3.1	103	0.00
74	T	o-Xylene	0.6566	0.6728	-2.5	102	0.00
75	T	Styrene	1.0770	1.1203	-4.0	100	0.00
76	P	Bromoform	0.2121	0.2158	-1.7	97	0.00
77	T	Isopropylbenzene	1.7444	1.8823	-7.9	106	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	107	0.00
79	P	1,1,2,2-Tetrachloroethane	0.5018	0.4164	17.0	87	0.00
80	S	p-Bromofluorobenzene	1.0352	1.0254	0.9	108	0.00
81	T	1,2,3-Trichloropropane	0.1545	0.1390	10.0	96	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1376	0.1372	0.3	97	0.00
83	T	n-Propylbenzene	3.9003	3.8814	0.5	105	0.00
84	T	Bromobenzene	0.8022	0.7695	4.1	103	0.00
85	T	1,3,5-Trimethylbenzene	2.8411	2.8510	-0.3	106	0.00
86	T	2-Chlorotoluene	2.7231	2.6005	4.5	99	0.00
87	T	4-Chlorotoluene	2.4597	2.4446	0.6	112	0.00
88	T	a-Methylstyrene	1.3479	1.2791	5.1	102	0.00
89	T	tert-Butylbenzene	0.5558	0.5440	2.1	109	0.00
90	T	1,2,4-Trimethylbenzene	2.9214	2.9288	-0.3	107	0.00
91	T	sec-Butylbenzene	3.3424	3.3657	-0.7	108	0.00
92	T	p-Isopropyltoluene	2.8379	2.8721	-1.2	109	0.00
93	T	1,3-Dichlorobenzene	1.5448	1.5321	0.8	107	0.00
94	T	1,4-Dichlorobenzene	1.5574	1.4823	4.8	105	0.00
95	T	n-Butylbenzene	2.8056	2.8337	-1.0	108	0.00
96	T	1,2-Dichlorobenzene	1.3739	1.2810	6.8	103	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1007	0.0886	12.0	91	0.00
98	T	1,2,4-Trichlorobenzene	1.0269	0.9972	2.9	105	0.00
99	T	Hexachlorobutadiene	0.4798	0.5251	-9.4	122	0.00
100	T	Naphthalene	1.5257	1.3274	13.0	91	0.00
101	T	1,2,3-Trichlorobenzene	0.8664	0.7860	9.3	102	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413032.D 8260WT.M Mon Jun 20 09:11:49 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413032.D Vial: 2
Acq On : 16 Jun 2016 14:25 Operator: FJB
Sample : WG573037-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	94	0.00
2	T	Dichlorodifluoromethane	50.0000	57.6485	-15.3	104	0.00
3	P	Chloromethane	50.0000	46.5578	6.9	90	0.00
4	C	Vinyl Chloride	50.0000	55.1240	-10.2	103	0.00
5	T	1,3-Butadiene	50.0000	62.9364	-25.9#	115	0.00
6	T	Bromomethane	50.0000	36.9767	26.0#	72	0.00
7	T	Chloroethane	50.0000	48.9325	2.1	94	0.00
8	T	Trichlorofluoromethane	50.0000	59.7435	-19.5	113	0.00
9	T	Diethyl ether	100.0000	94.8900	5.1	92	0.00
10	T	Isoprene	50.0000	50.9718	-1.9	99	0.00
11	T	Acrolein	50.0000	44.5317	10.9	86	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	55.4511	-10.9	107	0.00
13	T	Acetone	50.0000	52.1548	-4.3	94	0.00
14	C	1,1-Dichloroethene	50.0000	54.6514	-9.3	105	0.00
15	T	Tert-Butyl Alcohol	200.0000	236.9793	-18.5	113	0.00
16	T	Dimethyl Sulfide	50.0000	48.4405	3.1	93	0.00
17	T	Iodomethane	50.0000	28.4930	43.0#	56	0.00
18	T	Methyl acetate	50.0000	42.7704	14.5	83	0.00
19	T	Methylene Chloride	50.0000	48.8209	2.4	95	0.00
20	T	Carbon Disulfide	50.0000	53.0253	-6.1	104	0.00
21	T	Acrylonitrile	50.0000	47.5881	4.8	85	0.00
22	T	Methyl Tert Butyl Ether	50.0000	49.9201	0.2	90	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.0503	-4.1	99	0.00
24	T	n-Hexane	50.0000	54.4236	-8.8	105	0.00
25	T	Diisopropyl ether	100.0000	95.9026	4.1	92	0.00
26	T	Vinyl Acetate	50.0000	49.2832	1.4	89	0.00
27	P	1,1-Dichloroethane	50.0000	52.3061	-4.6	98	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	100.9239	-0.9	94	0.00
29	T	2-Butanone	50.0000	45.9348	8.1	84	0.00
30	T	Propionitrile	100.0000	96.3269	3.7	89	0.00
31	T	2,2-Dichloropropane	50.0000	61.8026	-23.6	115	0.00
32	T	cis-1,2-Dichloroethene	50.0000	50.9485	-1.9	98	0.00
33	C	Chloroform	50.0000	54.8264	-9.7	104	0.00
34		1-Bromopropane	50.0000	57.8711	-15.7	110	0.00
35	T	Bromochloromethane	50.0000	51.2707	-2.5	96	0.00
36	T	Tetrahydrofuran	100.0000	82.0898	17.9	83	0.00
37	S	Dibromofluoromethane	25.0000	27.3819	-9.5	102	0.00
38	T	1,1,1-Trichloroethane	50.0000	59.5586	-19.1	111	0.00
39	T	Cyclohexane	50.0000	51.6569	-3.3	101	0.00
40	T	1,1-Dichloropropene	50.0000	54.5654	-9.1	103	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	100.8347	-0.8	94	0.00
42	T	Carbon Tetrachloride	50.0000	60.0125	-20.0	112	0.00
43	S	1,2-Dichloroethane-d4	25.0000	27.7486	-11.0	102	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	56.6636	-13.3	104	0.00
46	T	Benzene	50.0000	51.9972	-4.0	98	0.00
47	T	Trichloroethene	50.0000	53.9600	-7.9	102	0.00
48	T	Methylcyclohexane	50.0000	55.4235	-10.8	107	0.00
49	C	1,2-Dichloropropane	50.0000	48.6480	2.7	93	0.00
50	T	Bromodichloromethane	50.0000	55.3826	-10.8	100	0.00
51	T	1,4-Dioxane	200.0000	220.3548	-10.2	98	0.00
52	T	Dibromomethane	50.0000	49.7082	0.6	94	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	45.0178	10.0	80	0.00
54	T	4-Methyl-2-Pentanone	50.0000	45.5327	8.9	83	0.00

(#) = Out of Range

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413032.D Vial: 2
Acq On : 16 Jun 2016 14:25 Operator: FJB
Sample : WG573037-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.2922	-6.6	96	0.00
56	T	Dimethyl Disulfide	50.0000	51.3144	-2.6	96	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	25.0000	26.3564	-5.4	103	0.00
59	C	Toluene	50.0000	50.3002	-0.6	100	0.00
60	T	Ethyl Methacrylate	50.0000	46.8562	6.3	89	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	51.1483	-2.3	96	0.00
63	T	1,1,2-Trichloroethane	50.0000	46.3057	7.4	91	0.00
64	T	2-Hexanone	50.0000	44.3674	11.3	86	0.00
65	T	1,3-Dichloropropane	50.0000	47.0219	6.0	90	0.00
66	T	Tetrachloroethene	50.0000	53.5544	-7.1	109	0.00
67	T	Dibromochloromethane	50.0000	50.4917	-1.0	97	0.00
68	T	1,2-Dibromoethane	50.0000	47.1634	5.7	91	0.00
69	T	1-Chlorohexane	50.0000	52.1093	-4.2	106	0.00
70	P	Chlorobenzene	50.0000	49.7630	0.5	100	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	52.2807	-4.6	102	0.00
72	C	Ethylbenzene	50.0000	50.4524	-0.9	103	0.00
73	T	m-,p-Xylene	100.0000	103.1131	-3.1	103	0.00
74	T	o-Xylene	50.0000	51.2307	-2.5	102	0.00
75	T	Styrene	50.0000	52.0104	-4.0	100	0.00
76	P	Bromoform	50.0000	50.8617	-1.7	97	0.00
77	T	Isopropylbenzene	50.0000	53.9527	-7.9	106	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	107	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	41.4928	17.0	87	0.00
80	S	p-Bromofluorobenzene	25.0000	24.7636	0.9	108	0.00
81	T	1,2,3-Trichloropropane	50.0000	44.9807	10.0	96	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	43.6303	12.7	97	0.00
83	T	n-Propylbenzene	50.0000	49.7580	0.5	105	0.00
84	T	Bromobenzene	50.0000	47.9586	4.1	103	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	50.1733	-0.3	106	0.00
86	T	2-Chlorotoluene	50.0000	47.7491	4.5	99	0.00
87	T	4-Chlorotoluene	50.0000	49.6923	0.6	112	0.00
88	T	a-Methylstyrene	50.0000	47.4481	5.1	102	0.00
89	T	tert-Butylbenzene	50.0000	48.9378	2.1	109	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	50.1269	-0.3	107	0.00
91	T	sec-Butylbenzene	50.0000	50.3494	-0.7	108	0.00
92	T	p-Isopropyltoluene	50.0000	50.6022	-1.2	109	0.00
93	T	1,3-Dichlorobenzene	50.0000	49.5900	0.8	107	0.00
94	T	1,4-Dichlorobenzene	50.0000	47.5896	4.8	105	0.00
95	T	n-Butylbenzene	50.0000	50.5007	-1.0	108	0.00
96	T	1,2-Dichlorobenzene	50.0000	46.6205	6.8	103	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	43.9791	12.0	91	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	48.5529	2.9	105	0.00
99	T	Hexachlorobutadiene	50.0000	54.7126	-9.4	122	0.00
100	T	Naphthalene	50.0000	43.5006	13.0	91	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	45.3576	9.3	102	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

2.1.1.5 Raw QC Data

BFB

Data File : C:\MSDCHEM\2\DATA\051316\8M412218.D Vial: 3
Acq On : 13 May 2016 12:36 Operator: TMB
Sample : WG568561-01 50ng BFB STD 8260 Inst : HPMS8
Misc : 1,1 STD76034 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title : SOP:OVL MSV01

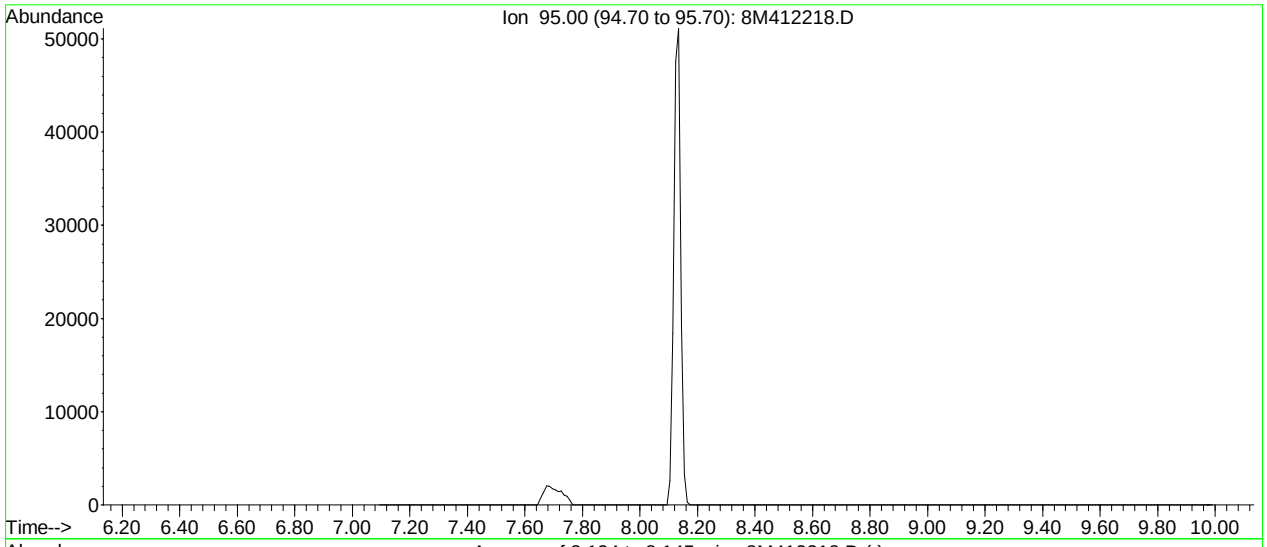

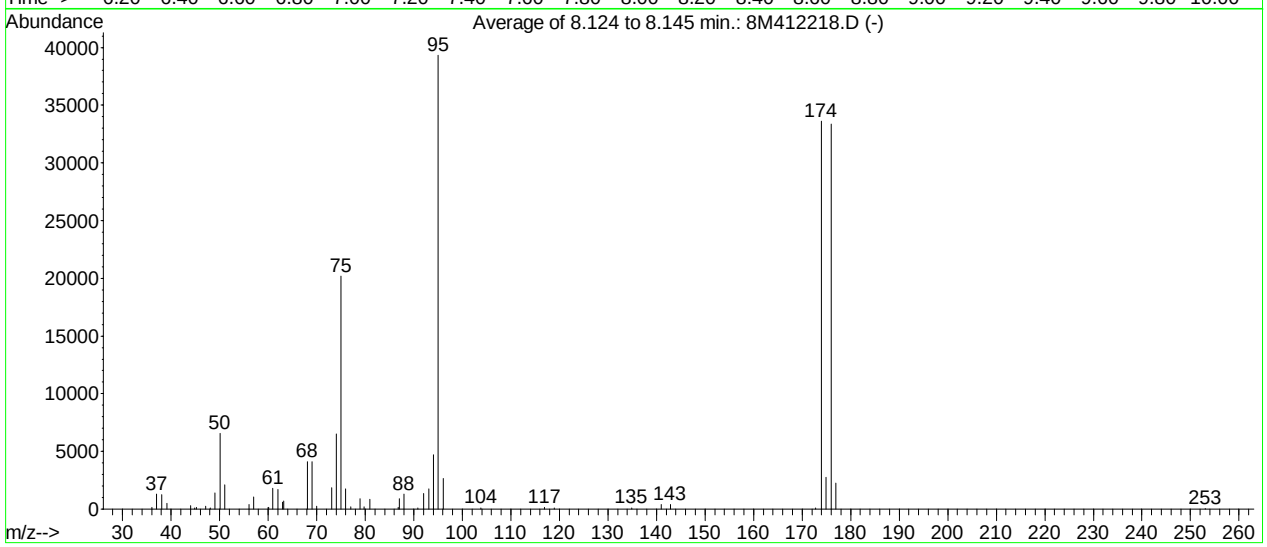

AutoFind: Scans 102, 103, 104; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.7	6575	PASS
75	95	30	60	51.3	20171	PASS
95	95	100	100	100.0	39312	PASS
96	95	5	9	6.7	2649	PASS
173	174	0.00	2	0.4	122	PASS
174	95	50	100	85.5	33616	PASS
175	174	5	9	8.2	2746	PASS
176	174	95	101	99.2	33360	PASS
177	176	5	9	6.8	2267	PASS

8M412218.D BFB.M Fri May 13 12:47:24 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413001.D Vial: 1
Acq On    : 15 Jun 2016   8:36                        Operator: TMB
Sample    : WG572735-01 50ng BFB STD 8260             Inst    : HPMS8
Misc      : 1,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title     : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
```

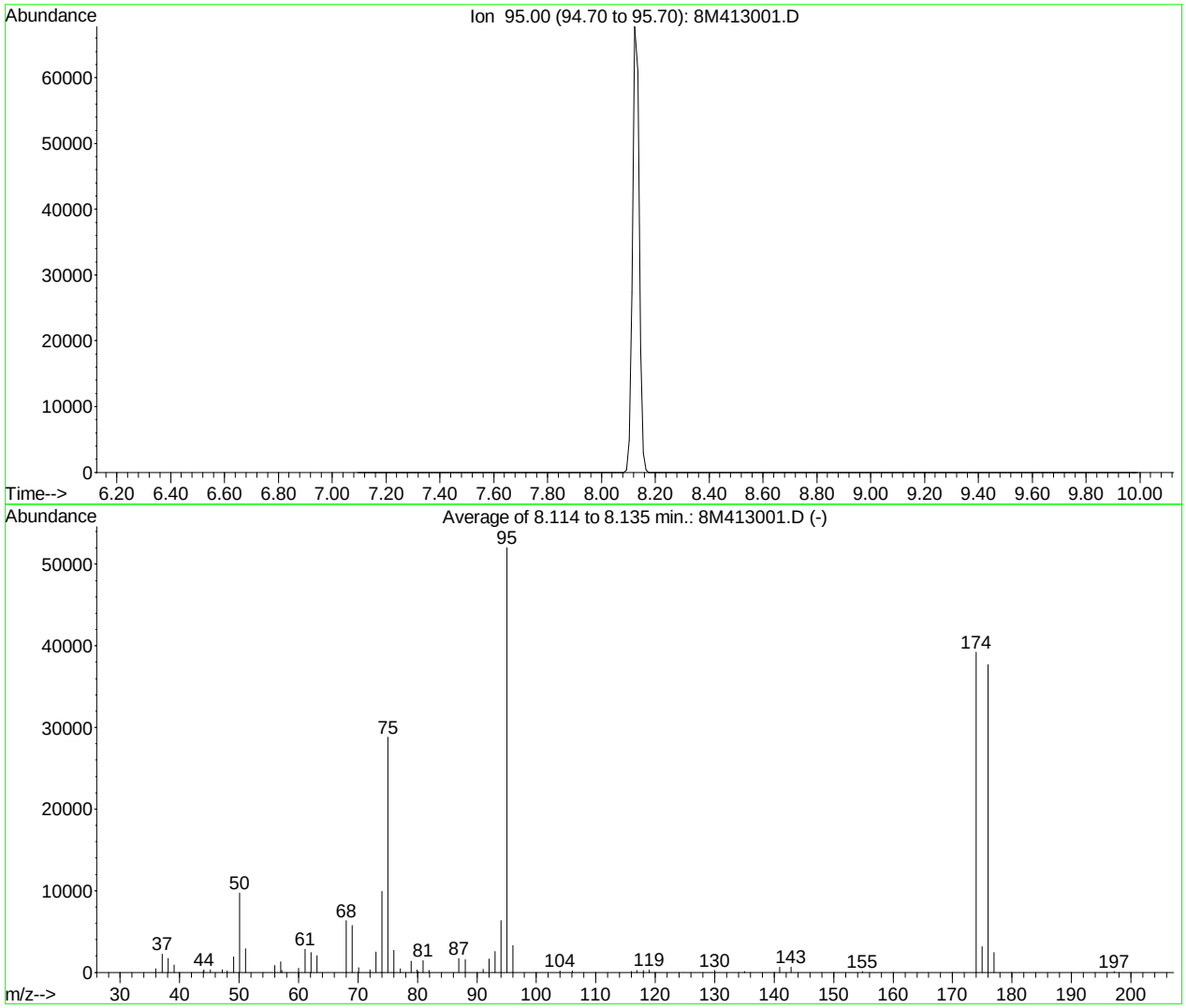

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 96

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.6	9690	PASS
75	95	30	60	55.4	28818	PASS
95	95	100	100	100.0	52034	PASS
96	95	5	9	6.4	3311	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	75.4	39229	PASS
175	174	5	9	8.1	3176	PASS
176	174	95	101	96.0	37669	PASS
177	176	5	9	6.4	2397	PASS

8M413001.D 8260WT.M Wed Jun 15 10:23:34 2016

BFB

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413031.D Vial: 1
Acq On : 16 Jun 2016 14:02 Operator: FJB
Sample : WG573037-01 BFB 50ng 8260 Inst : HPMS8
Misc : 1,1 STD76496 Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8

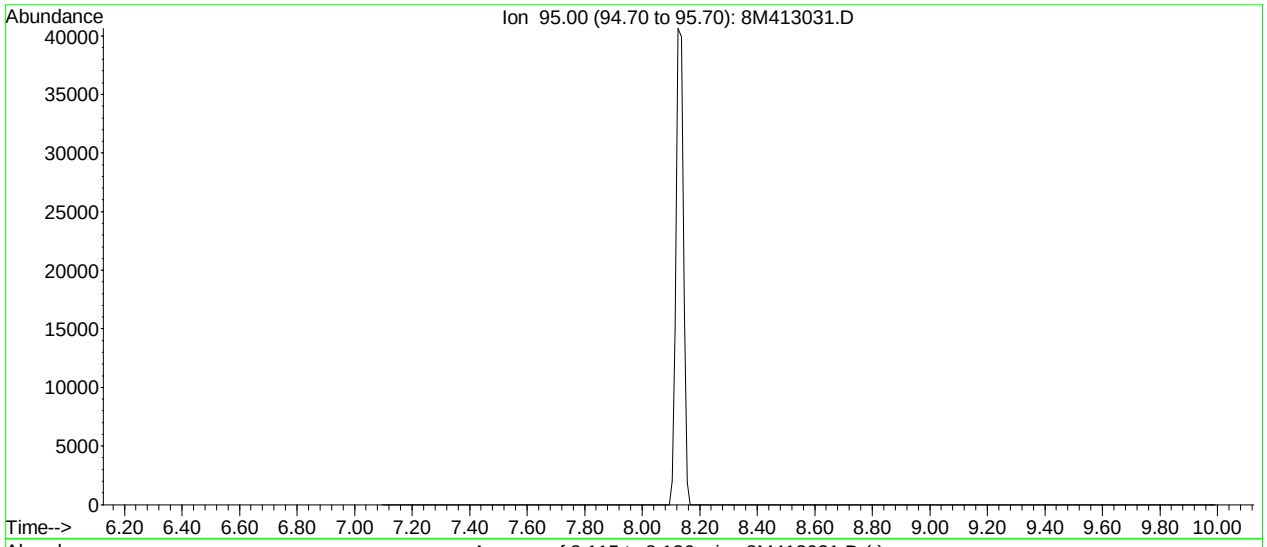

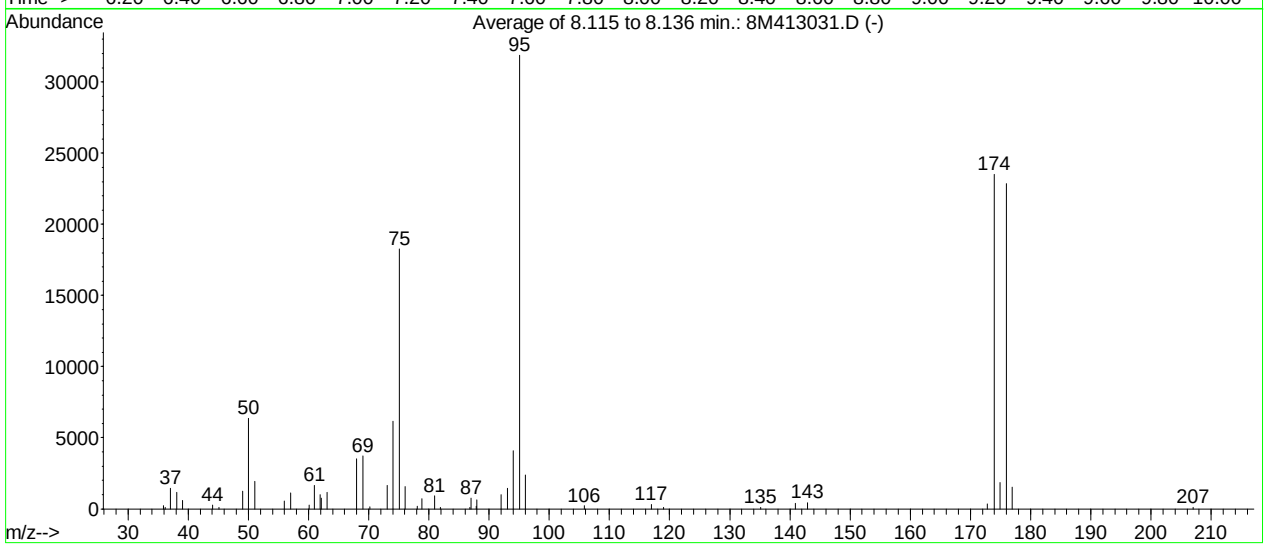

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.9	6352	PASS
75	95	30	60	57.2	18249	PASS
95	95	100	100	100.0	31890	PASS
96	95	5	9	7.4	2366	PASS
173	174	0.00	2	1.5	352	PASS
174	95	50	100	73.7	23499	PASS
175	174	5	9	8.0	1870	PASS
176	174	95	101	97.3	22869	PASS
177	176	5	9	6.7	1538	PASS

8M413031.D 8260WT.M Mon Jun 20 09:08:01 2016

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413005.D Vial: 5
Acq On : 15 Jun 2016 10:27 Operator: TMB
Sample : WG572737-01 VBLK0615 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 13:24:55 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	780700	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	588241	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	330295	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	231246	27.5688 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.28%		
43) 1,2-Dichloroethane-d4	10.31	65	247427	27.5103 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 110.04%		
58) Toluene-d8	12.68	98	800099	25.9892 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.96%		
80) p-Bromofluorobenzene	16.07	95	333874	24.4121 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.64%		

Target Compounds					Qvalue
36) Tetrahydrofuran	9.66	42	1213	1.4271 ug/L #	53

(#) = qualifier out of range (m) = manual integration
8M413005.D 8260WT.M Thu Jun 16 13:24:58 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413005.D Vial: 5
Acq On : 15 Jun 2016 10:27 Operator: TMB
Sample : WG572737-01 VBLK0615 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 13:24 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

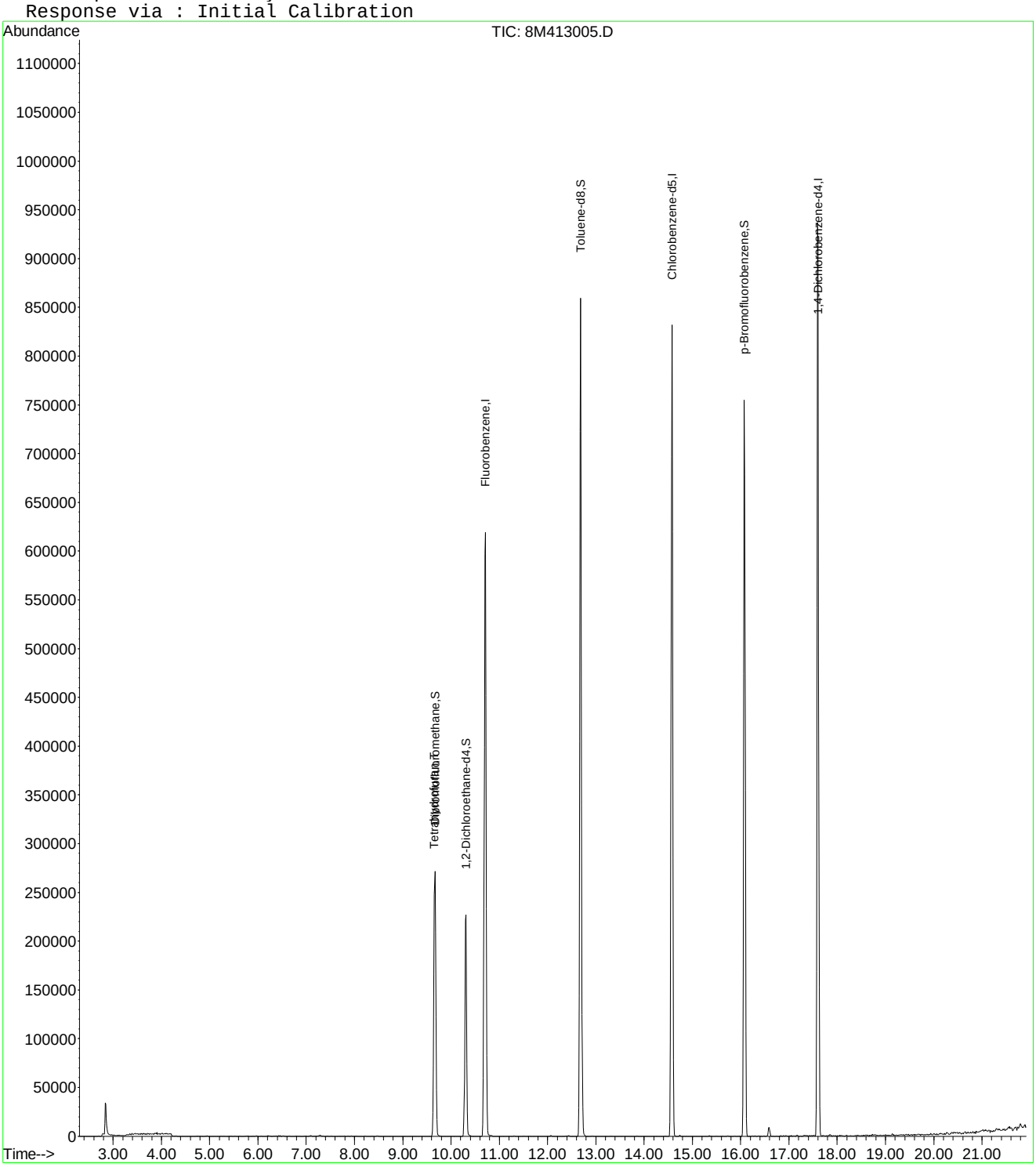

8M413005.D 8260WT.M Thu Jun 16 13:24:59 2016 Page 2

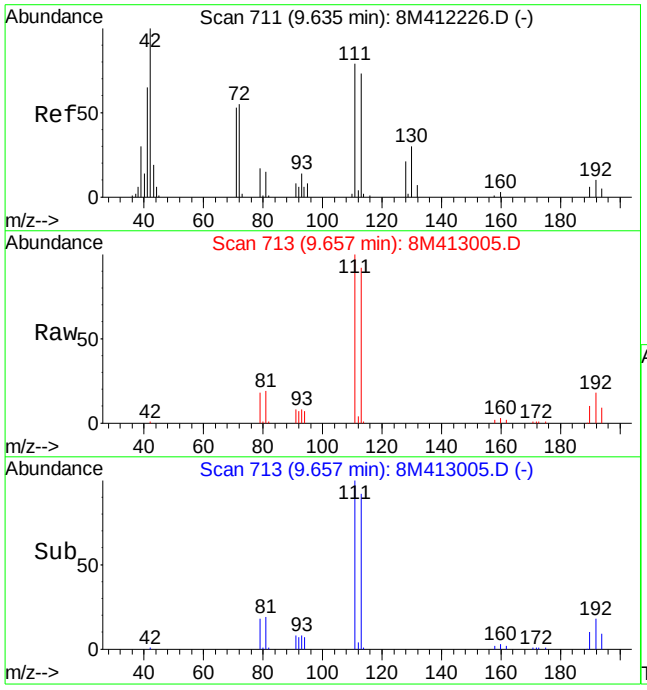

#36
Tetrahydrofuran
Concen: 1.43 ug/L
RT: 9.66 min Scan# 713
Delta R.T. 0.02 min
Lab File: 8M413005.D
Acq: 15 Jun 2016 10:27

Tgt Ion: 42 Resp: 1213

Ion	Ratio	Lower	Upper
42	100		
72	22.8	33.8	78.8#
71	19.7	32.0	74.8#

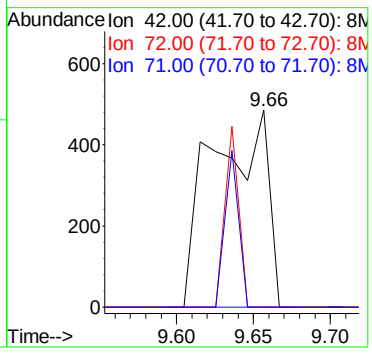

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413034.D Vial: 4
Acq On : 16 Jun 2016 15:23 Operator: FJB
Sample : WG573038-01 BLANK 6/16 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:18:21 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	717429	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	533754	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	292043	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	209977	27.2409 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 108.96%		
43) 1,2-Dichloroethane-d4	10.30	65	235474	28.4902 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 113.96%		
58) Toluene-d8	12.68	98	740524	26.5096 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 106.04%		
80) p-Bromofluorobenzene	16.08	95	307463	25.4256 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.72%		

Target Compounds					Qvalue
36) Tetrahydrofuran	9.64	42	956	1.2239 ug/L	79

(#) = qualifier out of range (m) = manual integration
8M413034.D 8260WT.M Mon Jun 20 09:19:27 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413034.D Vial: 4
Acq On : 16 Jun 2016 15:23 Operator: FJB
Sample : WG573038-01 BLANK 6/16 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 8:18 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

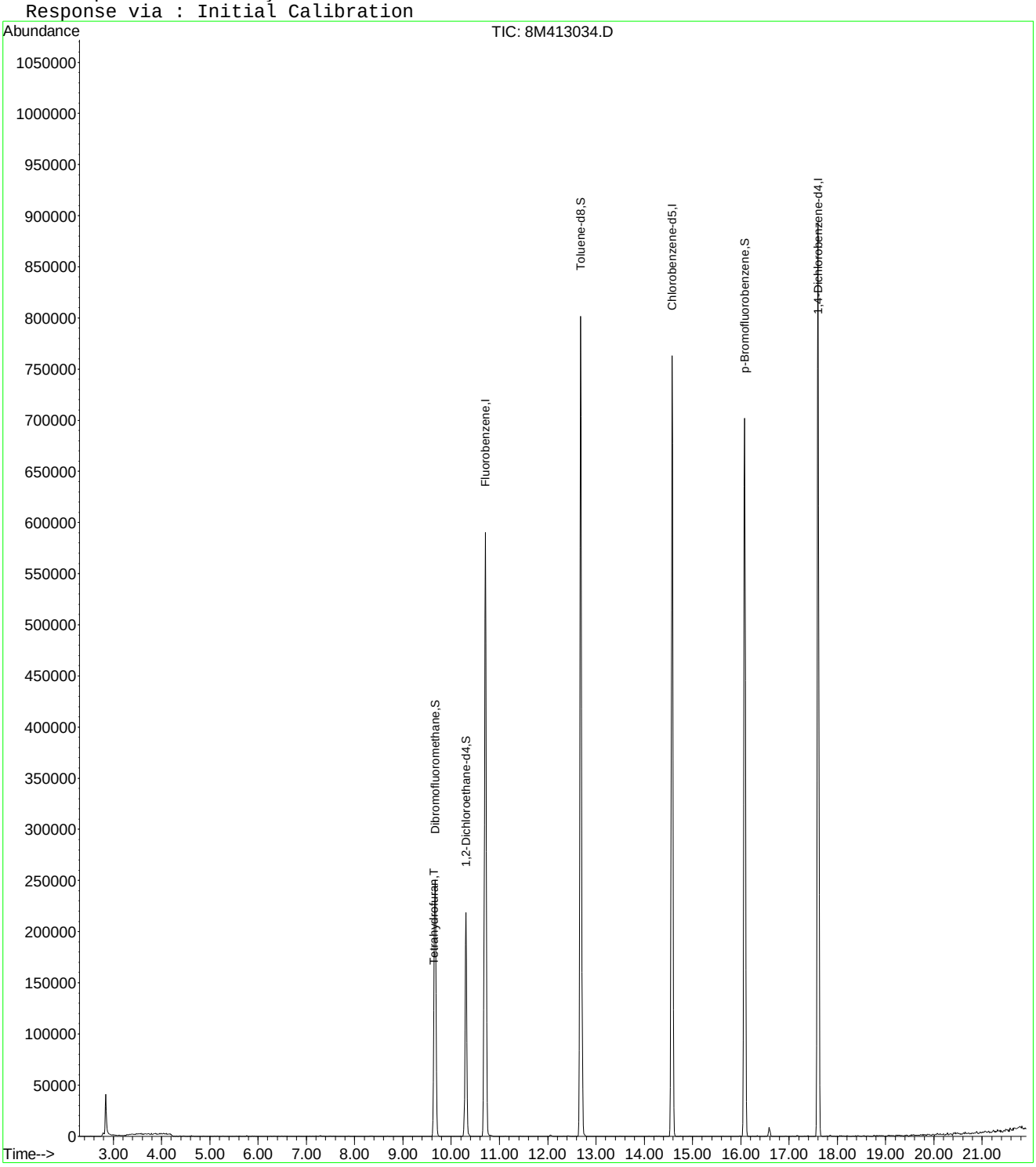

8M413034.D 8260WT.M Mon Jun 20 09:19:28 2016 Page 2

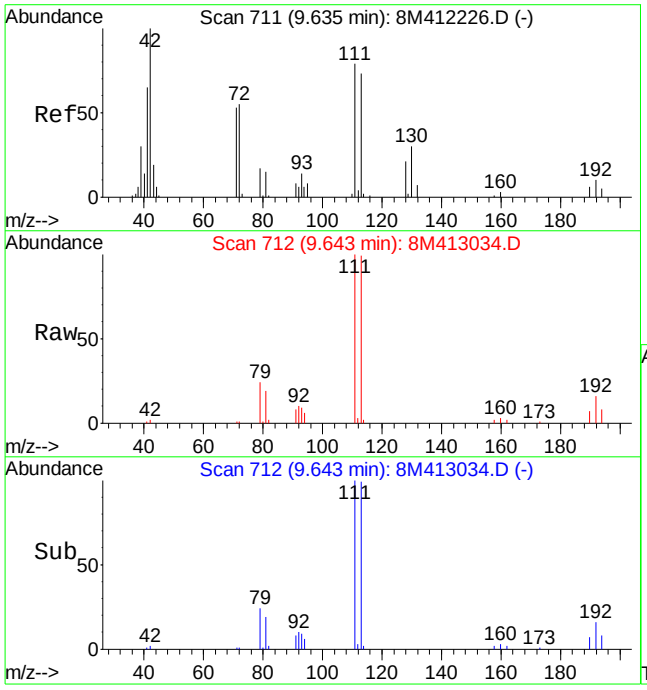

#36
Tetrahydrofuran
Concen: 1.22 ug/L
RT: 9.64 min Scan# 712
Delta R.T. 0.01 min
Lab File: 8M413034.D
Acq: 16 Jun 2016 15:23

Tgt Ion: 42 Resp: 956

Ion	Ratio	Lower	Upper
42	100		
72	74.6	33.8	78.8
71	41.9	32.0	74.8

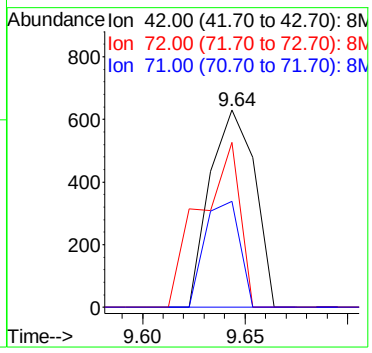

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413006.D Vial: 6
Acq On : 15 Jun 2016 10:56 Operator: TMB
Sample : WG572737-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD75597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 13:12:46 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	797707	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	583746	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	327915	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	229384	26.7638 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.04%		
43) 1,2-Dichloroethane-d4	10.31	65	254648	27.7095 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 110.84%		
58) Toluene-d8	12.68	98	795894	26.0517 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.20%		
80) p-Bromofluorobenzene	16.07	95	340031	25.0428 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.16%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	284160	21.2467 ug/L	99
3) Chloromethane	3.62	50	158514	20.3044 ug/L	98
4) Vinyl Chloride	3.84	62	213868	23.0899 ug/L	98
5) 1,3-Butadiene	3.88	54	35533	4.5746 ug/L	96
6) Bromomethane	4.73	94	73922	13.9336 ug/L	99
7) Chloroethane	4.89	64	107290	21.0513 ug/L	98
8) Trichlorofluoromethane	5.38	101	363474	21.0897 ug/L	100
9) Diethyl ether	5.90	59	423085	102.8279 ug/L	98
10) Isoprene	5.94	67	223906	21.3936 ug/L	98
11) Acrolein	6.14	56	35908	97.4725 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	169440	20.9152 ug/L	98
13) Acetone	6.23	43	20126	22.4246 ug/L	99
14) 1,1-Dichloroethene	6.46	61	252423	19.5691 ug/L	99
15) Tert-Butyl Alcohol	6.59	59	67383	234.2865 ug/L	96
16) Dimethyl Sulfide	6.73	62	167195	36.2514 ug/L	100
17) Iodomethane	6.98	142	45880	15.0557 ug/L	95
18) Methyl acetate	7.00	43	48803	20.1166 ug/L	98
19) Methylene Chloride	7.25	84	163005	19.8575 ug/L	99
20) Carbon Disulfide	7.29	76	492635	18.2500 ug/L	100
21) Acrylonitrile	7.43	53	24089	20.6864 ug/L	99
22) Methyl Tert Butyl Ether	7.46	73	394184	22.1874 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	237897	20.0749 ug/L	97
24) n-Hexane	7.78	57	165301	18.7849 ug/L	98
25) Diisopropyl ether	8.13	45	1883063	101.9408 ug/L	97
26) Vinyl Acetate	8.30	43	133404	15.7735 ug/L	100
27) 1,1-Dichloroethane	8.32	63	292700	19.8885 ug/L	99
28) Ethyl-Tert-Butyl ether	8.69	59	2019885	102.0589 ug/L	98
29) 2-Butanone	8.88	43	27520	20.8701 ug/L	95
30) Propionitrile	8.99	54	38179	99.3539 ug/L	98
31) 2,2-Dichloropropane	9.10	77	354710	22.8710 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	194451	21.2361 ug/L	98
33) Chloroform	9.38	83	372083	21.4124 ug/L	100
34) 1-Bromopropane	9.51	122	41342	31.5209 ug/L	99
35) Bromochloromethane	9.60	130	97315	20.7252 ug/L	96
36) Tetrahydrofuran	9.63	42	74098	85.3178 ug/L	93
38) 1,1,1-Trichloroethane	9.90	97	368225	22.3085 ug/L	100
39) Cyclohexane	9.93	56	222193	19.4435 ug/L	98
40) 1,1-Dichloropropene	10.10	75	252909	20.1021 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1926409	107.1686 ug/L	100
42) Carbon Tetrachloride	10.24	117	320660	21.8773 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413006.D 8260WT.M Wed Jun 15 13:12:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413006.D Vial: 6
Acq On : 15 Jun 2016 10:56 Operator: TMB
Sample : WG572737-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD75597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 13:12:46 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	249988	22.3515 ug/L		99
46)	Benzene	10.46	78	677769	20.6840 ug/L		100
47)	Trichloroethene	11.22	130	191249	21.8833 ug/L		98
48)	Methylcyclohexane	11.30	83	271212	20.4274 ug/L		98
49)	1,2-Dichloropropane	11.42	63	151089	20.7129 ug/L		94
50)	Bromodichloromethane	11.72	83	279173	21.7752 ug/L		100
51)	1,4-Dioxane	11.72	88	7089	193.4655 ug/L		97
52)	Dibromomethane	11.82	93	84325	19.5289 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	59062	18.8382 ug/L		95
54)	4-Methyl-2-Pentanone	12.05	58	25295	19.7510 ug/L		93
55)	cis-1,3-Dichloropropene	12.36	75	305008	23.3729 ug/L		98
56)	Dimethyl Disulfide	12.62	79	150140	21.5561 ug/L		92
59)	Toluene	12.79	91	733515	20.2405 ug/L		100
60)	Ethyl Methacrylate	12.88	69	148427	21.3266 ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	256810	21.1459 ug/L		98
63)	1,1,2-Trichloroethane	13.18	97	115499	20.1973 ug/L		99
64)	2-Hexanone	13.12	58	22315	18.5695 ug/L	#	96
65)	1,3-Dichloropropane	13.48	76	222881	21.8913 ug/L		97
66)	Tetrachloroethene	13.60	164	161836	20.8434 ug/L		96
67)	Dibromochloromethane	13.86	129	175372	21.0031 ug/L		98
68)	1,2-Dibromoethane	14.12	107	116504	20.4419 ug/L		98
69)	1-Chlorohexane	14.21	91	248464	20.0851 ug/L		98
70)	Chlorobenzene	14.63	112	512807	20.9843 ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.66	131	200020	21.1271 ug/L		98
72)	Ethylbenzene	14.66	106	265988	19.8936 ug/L		98
73)	m-,p-Xylene	14.74	106	658272	41.9739 ug/L		97
74)	o-Xylene	15.31	106	327127	21.3352 ug/L		99
75)	Styrene	15.34	104	529865	21.0698 ug/L		96
76)	Bromoform	15.84	173	99478	20.0860 ug/L		99
77)	Isopropylbenzene	15.73	105	884775	21.7219 ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	119073	18.0900 ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	41646	20.5464 ug/L	#	30
82)	trans-1,4-Dichloro-2-Buten	16.19	53	31015	15.4417 ug/L	#	1
83)	n-Propylbenzene	16.24	91	1065587	20.8292 ug/L		100
84)	Bromobenzene	16.36	156	207745	19.7426 ug/L		98
85)	1,3,5-Trimethylbenzene	16.42	105	774723	20.7892 ug/L		99
86)	2-Chlorotoluene	16.51	91	659635	18.4681 ug/L		91
87)	4-Chlorotoluene	16.56	91	724140	22.4448 ug/L		92
88)	a-Methylstyrene	16.83	118	376018	21.2676 ug/L		100
89)	tert-Butylbenzene	16.89	134	145153	19.9098 ug/L		96
90)	1,2,4-Trimethylbenzene	16.94	105	775871	20.2476 ug/L		100
91)	sec-Butylbenzene	17.16	105	899124	20.5090 ug/L		99
92)	p-Isopropyltoluene	17.32	119	756722	20.3288 ug/L		100
93)	1,3-Dichlorobenzene	17.51	146	417144	20.5876 ug/L		97
94)	1,4-Dichlorobenzene	17.64	146	420670	20.5932 ug/L		99
95)	n-Butylbenzene	17.84	91	714421	19.4136 ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	366373	20.3305 ug/L		97
97)	1,2-Dibromo-3-Chloropropan	19.13	75	26008	19.6841 ug/L		99
98)	1,2,4-Trichlorobenzene	20.28	180	266543	19.7879 ug/L		99
99)	Hexachlorobutadiene	20.43	225	132022	20.9768 ug/L		99
100)	Naphthalene	20.64	128	347414	17.3597 ug/L		100
101)	1,2,3-Trichlorobenzene	20.95	180	216248	19.0291 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M413006.D 8260WT.M Wed Jun 15 13:12:49 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413006.D Vial: 6
Acq On : 15 Jun 2016 10:56 Operator: TMB
Sample : WG572737-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD75597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 13:12 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

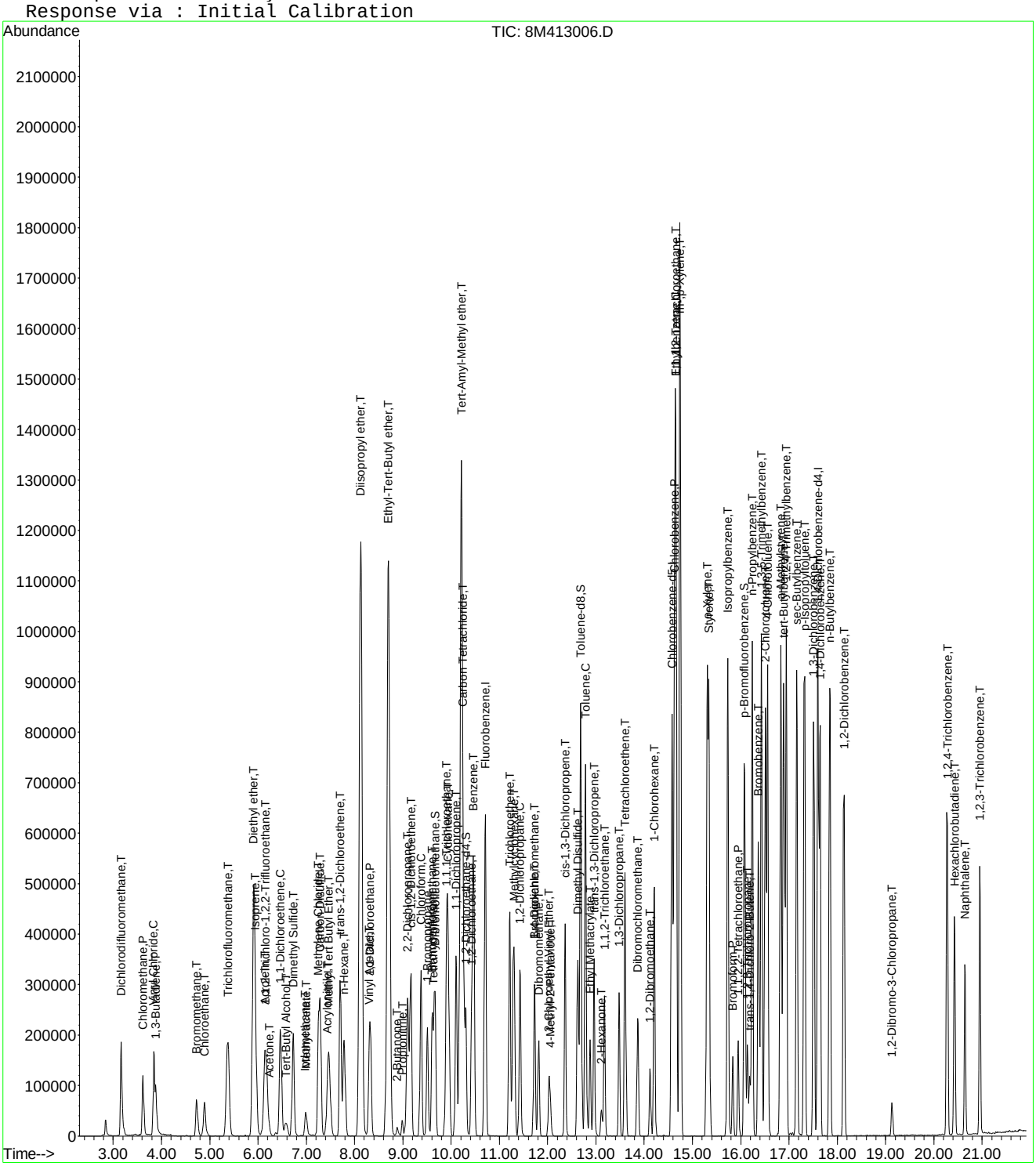

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413035.D Vial: 5
Acq On : 16 Jun 2016 15:52 Operator: FJB
Sample : WG573038-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:18:21 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	724153	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	540053	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	307888	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	213643	27.4591 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.84%		
43) 1,2-Dichloroethane-d4	10.31	65	245621	29.4420 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 117.76%		
58) Toluene-d8	12.68	98	736706	26.0653 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.28%		
80) p-Bromofluorobenzene	16.08	95	316242	24.8057 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.24%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	252315	20.7819 ug/L	99
3) Chloromethane	3.62	50	134208	18.9371 ug/L	99
4) Vinyl Chloride	3.85	62	192999	22.9533 ug/L	100
5) 1,3-Butadiene	3.88	54	21596	3.0627 ug/L	93
6) Bromomethane	4.72	94	67601	14.0319 ug/L	96
7) Chloroethane	4.89	64	94578	20.4419 ug/L	99
8) Trichlorofluoromethane	5.38	101	348634	22.2833 ug/L	99
9) Diethyl ether	5.90	59	376158	100.7087 ug/L	98
10) Isoprene	5.93	67	202345	21.2972 ug/L	96
11) Acrolein	6.13	56	30585	91.4560 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	157632	21.4340 ug/L	96
13) Acetone	6.23	43	17743	21.7775 ug/L	94
14) 1,1-Dichloroethene	6.46	61	221517	18.9174 ug/L	99
15) Tert-Butyl Alcohol	6.58	59	54296	207.9591 ug/L	97
16) Dimethyl Sulfide	6.73	62	149005	35.5890 ug/L	99
17) Iodomethane	6.99	142	33488	12.6554 ug/L	96
18) Methyl acetate	7.00	43	45239	20.5416 ug/L	98
19) Methylene Chloride	7.26	84	143716	19.2860 ug/L	97
20) Carbon Disulfide	7.29	76	443914	18.1155 ug/L	99
21) Acrylonitrile	7.44	53	20303	19.2061 ug/L	97
22) Methyl Tert Butyl Ether	7.46	73	362621	22.4840 ug/L	97
23) trans-1,2-Dichloroethene	7.70	61	216143	20.0918 ug/L	99
24) n-Hexane	7.78	57	148742	18.6200 ug/L	98
25) Diisopropyl ether	8.12	45	1674940	99.8839 ug/L	96
26) Vinyl Acetate	8.30	43	113665	14.8046 ug/L	99
27) 1,1-Dichloroethane	8.32	63	260446	19.4944 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	1819224	101.2567 ug/L	98
29) 2-Butanone	8.88	43	24177	20.1972 ug/L	96
30) Propionitrile	8.99	54	32822	94.0889 ug/L	98
31) 2,2-Dichloropropane	9.11	77	323361	22.9674 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	170309	20.4887 ug/L	97
33) Chloroform	9.37	83	334264	21.1899 ug/L	100
34) 1-Bromopropane	9.51	122	36217	30.4181 ug/L	100
35) Bromochloromethane	9.60	130	88133	20.6762 ug/L	92
36) Tetrahydrofuran	9.62	42	66083	83.8177 ug/L	91
38) 1,1,1-Trichloroethane	9.91	97	336501	22.4572 ug/L	100
39) Cyclohexane	9.94	56	203672	19.6331 ug/L	95
40) 1,1-Dichloropropene	10.10	75	235033	20.5788 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	1758569	107.7684 ug/L	100
42) Carbon Tetrachloride	10.25	117	299046	22.4750 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M413035.D 8260WT.M Mon Jun 20 09:08:47 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413035.D Vial: 5
Acq On : 16 Jun 2016 15:52 Operator: FJB
Sample : WG573038-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:18:21 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	236926	23.3353 ug/L		98
46)	Benzene	10.46	78	605690	20.3618 ug/L		99
47)	Trichloroethene	11.21	130	172682	21.7657 ug/L		99
48)	Methylcyclohexane	11.30	83	251284	20.8488 ug/L		98
49)	1,2-Dichloropropane	11.42	63	134844	20.3635 ug/L		90
50)	Bromodichloromethane	11.73	83	251163	21.5803 ug/L		98
51)	1,4-Dioxane	11.72	88	5908	177.6120 ug/L		98
52)	Dibromomethane	11.81	93	77825	19.8542 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.03	63	55535	19.5124 ug/L		91
54)	4-Methyl-2-Pentanone	12.05	58	22978	19.7642 ug/L		93
55)	cis-1,3-Dichloropropene	12.36	75	273539	23.0905 ug/L		100
56)	Dimethyl Disulfide	12.62	79	137758	21.7873 ug/L		95
59)	Toluene	12.79	91	661287	19.7238 ug/L		99
60)	Ethyl Methacrylate	12.88	69	133238	20.6930 ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	234780	20.8960 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	103597	19.5817 ug/L		97
64)	2-Hexanone	13.12	58	20672	18.5940 ug/L	#	95
65)	1,3-Dichloropropane	13.48	76	194941	20.6961 ug/L		95
66)	Tetrachloroethene	13.60	164	144676	20.1408 ug/L		99
67)	Dibromochloromethane	13.87	129	158132	20.4706 ug/L		100
68)	1,2-Dibromoethane	14.12	107	105951	20.0943 ug/L		99
69)	1-Chlorohexane	14.21	91	223061	19.4904 ug/L		97
70)	Chlorobenzene	14.63	112	460997	20.3904 ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.66	131	182348	20.8187 ug/L		99
72)	Ethylbenzene	14.66	106	245573	19.8527 ug/L		100
73)	m-,p-Xylene	14.75	106	592898	40.8641 ug/L		95
74)	o-Xylene	15.31	106	299422	21.1082 ug/L		99
75)	Styrene	15.35	104	480813	20.6661 ug/L		96
76)	Bromoform	15.83	173	91438	19.9564 ug/L		99
77)	Isopropylbenzene	15.73	105	813144	21.5784 ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	109337	17.6914 ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	37733	19.8268 ug/L		73
82)	trans-1,4-Dichloro-2-Buten	16.19	53	28275	15.0111 ug/L		99
83)	n-Propylbenzene	16.24	91	981466	20.4328 ug/L		100
84)	Bromobenzene	16.37	156	189420	19.1720 ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	710541	20.3071 ug/L		100
86)	2-Chlorotoluene	16.51	91	681730	20.3282 ug/L		98
87)	4-Chlorotoluene	16.56	91	596710	19.6981 ug/L		99
88)	a-Methylstyrene	16.83	118	344648	20.7612 ug/L		100
89)	tert-Butylbenzene	16.90	134	134805	19.6932 ug/L		98
90)	1,2,4-Trimethylbenzene	16.94	105	716254	19.9077 ug/L		99
91)	sec-Butylbenzene	17.16	105	833548	20.2499 ug/L		99
92)	p-Isopropyltoluene	17.32	119	700643	20.0466 ug/L		100
93)	1,3-Dichlorobenzene	17.51	146	379985	19.9735 ug/L		100
94)	1,4-Dichlorobenzene	17.64	146	378307	19.7240 ug/L		99
95)	n-Butylbenzene	17.85	91	671796	19.4428 ug/L		100
96)	1,2-Dichlorobenzene	18.14	146	333637	19.7182 ug/L		97
97)	1,2-Dibromo-3-Chloropropan	19.13	75	24498	19.7473 ug/L		99
98)	1,2,4-Trichlorobenzene	20.28	180	244999	19.3716 ug/L		99
99)	Hexachlorobutadiene	20.43	225	125683	21.2686 ug/L		98
100)	Naphthalene	20.65	128	326897	17.3970 ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	202292	18.9589 ug/L		97

(#) = qualifier out of range (m) = manual integration
8M413035.D 8260WT.M Mon Jun 20 09:08:47 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413035.D Vial: 5
Acq On : 16 Jun 2016 15:52 Operator: FJB
Sample : WG573038-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 8:18 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

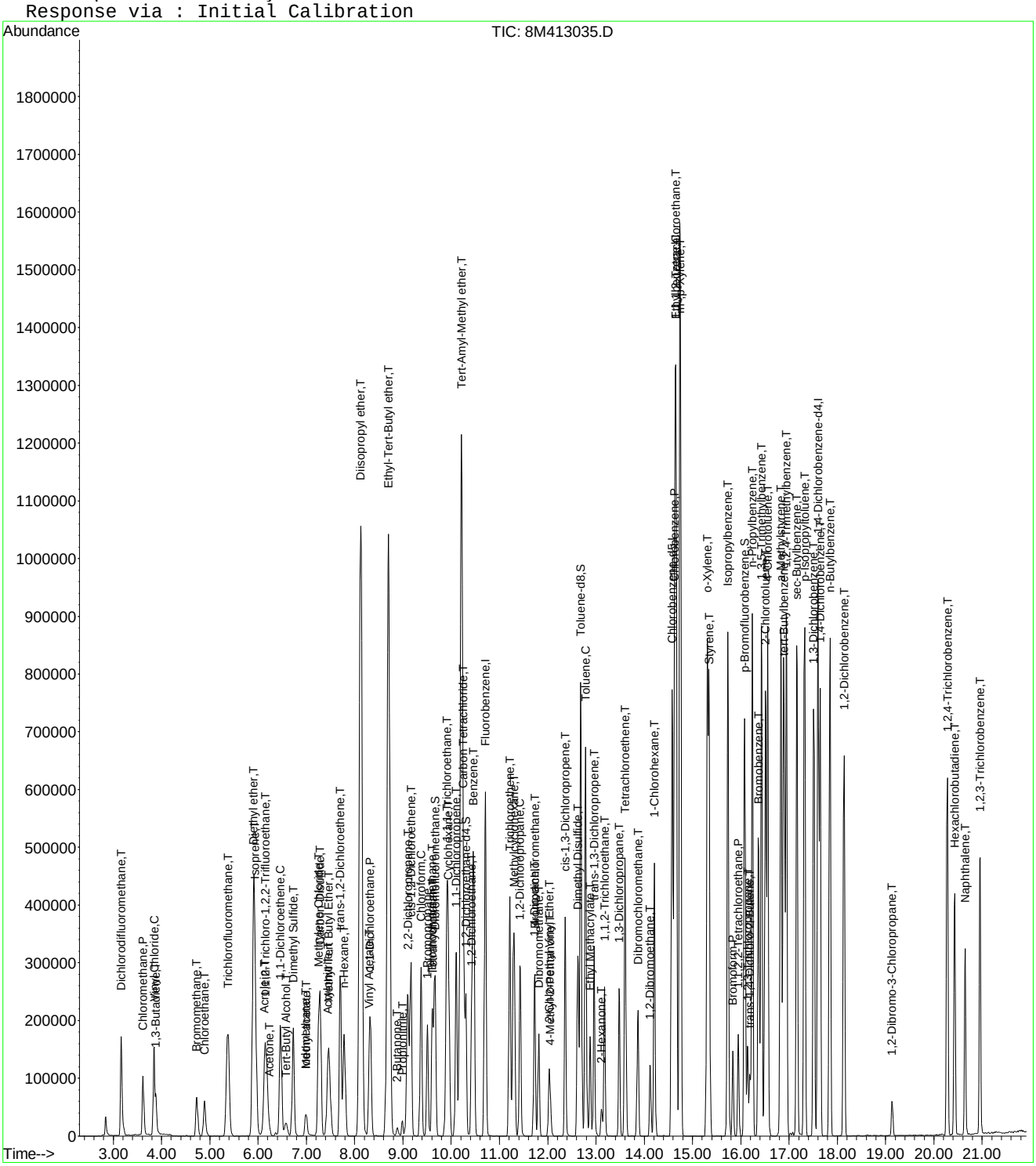

8M413035.D 8260WT.M Mon Jun 20 09:08:48 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413007.D Vial: 7
Acq On : 15 Jun 2016 11:25 Operator: TMB
Sample : WG572737-03 20ug/L LCS2 STD 8260 Inst : HPMS8
Misc : 1,1 STD75597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 13:12:51 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	790550	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	592812	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	329286	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	233097	27.4432 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.76%		
43) 1,2-Dichloroethane-d4	10.31	65	253627	27.8483 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.40%		
58) Toluene-d8	12.68	98	809553	26.0935 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.36%		
80) p-Bromofluorobenzene	16.07	95	346437	25.4083 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.64%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	286211	21.5938 ug/L	100
3) Chloromethane	3.62	50	160333	20.7233 ug/L	99
4) Vinyl Chloride	3.84	62	215100	23.4332 ug/L	100
5) 1,3-Butadiene	3.88	54	33429	4.3426 ug/L	94
6) Bromomethane	4.73	94	78480	14.8828 ug/L	100
7) Chloroethane	4.89	64	108715	21.5240 ug/L	99
8) Trichlorofluoromethane	5.38	101	369142	21.6124 ug/L	99
9) Diethyl ether	5.90	59	423639	103.8947 ug/L	99
10) Isoprene	5.93	67	224199	21.6155 ug/L	96
11) Acrolein	6.13	56	36618	100.2997 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	171548	21.3671 ug/L	94
13) Acetone	6.24	43	21959	24.6885 ug/L	96
14) 1,1-Dichloroethene	6.46	61	255403	19.9794 ug/L	98
15) Tert-Butyl Alcohol	6.58	59	69960	245.4488 ug/L	96
16) Dimethyl Sulfide	6.73	62	171865	37.6013 ug/L	99
17) Iodomethane	6.99	142	60508	19.0922 ug/L	96
18) Methyl acetate	7.00	43	52216	21.7183 ug/L	97
19) Methylene Chloride	7.25	84	168673	20.7340 ug/L	99
20) Carbon Disulfide	7.29	76	495290	18.5145 ug/L	99
21) Acrylonitrile	7.43	53	23838	20.6562 ug/L	99
22) Methyl Tert Butyl Ether	7.46	73	402312	22.8499 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	245125	20.8721 ug/L	100
24) n-Hexane	7.78	57	170844	19.5905 ug/L	100
25) Diisopropyl ether	8.13	45	1907939	104.2226 ug/L	97
26) Vinyl Acetate	8.29	43	143629	17.1362 ug/L	98
27) 1,1-Dichloroethane	8.32	63	295146	20.2362 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	2059515	105.0034 ug/L	98
29) 2-Butanone	8.88	43	29144	22.3017 ug/L	99
30) Propionitrile	8.98	54	40076	105.2347 ug/L	99
31) 2,2-Dichloropropane	9.10	77	356627	23.2028 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	189499	20.8826 ug/L	97
33) Chloroform	9.38	83	367074	21.3154 ug/L	99
34) 1-Bromopropane	9.51	122	41437	31.8793 ug/L	97
35) Bromochloromethane	9.60	130	98136	21.0892 ug/L	95
36) Tetrahydrofuran	9.63	42	79387	92.2351 ug/L	97
38) 1,1,1-Trichloroethane	9.90	97	363100	22.1971 ug/L	99
39) Cyclohexane	9.93	56	224247	19.8009 ug/L	96
40) 1,1-Dichloropropene	10.10	75	258698	20.7484 ug/L	99
41) Tert-Amyl-Methyl ether	10.20	73	1971434	110.6663 ug/L	99
42) Carbon Tetrachloride	10.24	117	314892	21.6783 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413007.D 8260WT.M Wed Jun 15 13:12:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413007.D Vial: 7
Acq On : 15 Jun 2016 11:25 Operator: TMB
Sample : WG572737-03 20ug/L LCS2 STD 8260 Inst : HPMS8
Misc : 1,1 STD75597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 13:12:51 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	261278	23.5724	ug/L		97
46)	Benzene	10.46	78	680256	20.9479	ug/L		100
47)	Trichloroethene	11.22	130	194311	22.4349	ug/L		98
48)	Methylcyclohexane	11.30	83	283441	21.5417	ug/L		98
49)	1,2-Dichloropropane	11.42	63	151880	21.0098	ug/L		95
50)	Bromodichloromethane	11.72	83	283122	22.2832	ug/L		100
51)	1,4-Dioxane	11.71	88	7908	217.7707	ug/L		96
52)	Dibromomethane	11.81	93	83275	19.4603	ug/L		94
53)	2-Chloroethyl Vinyl Ether	12.02	63	63767	20.5230	ug/L		100
54)	4-Methyl-2-Pentanone	12.05	58	25785	20.3159	ug/L		91
55)	cis-1,3-Dichloropropene	12.36	75	308896	23.8851	ug/L		100
56)	Dimethyl Disulfide	12.62	79	152219	22.0525	ug/L		94
59)	Toluene	12.79	91	746005	20.2704	ug/L		99
60)	Ethyl Methacrylate	12.88	69	149599	21.1662	ug/L		99
62)	trans-1,3-Dichloropropene	12.96	75	256988	20.8369	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	116292	20.0250	ug/L		95
64)	2-Hexanone	13.12	58	23367	19.1475	ug/L	#	100
65)	1,3-Dichloropropane	13.48	76	221842	21.4560	ug/L		98
66)	Tetrachloroethene	13.60	164	162164	20.5662	ug/L		96
67)	Dibromochloromethane	13.86	129	177622	20.9473	ug/L		98
68)	1,2-Dibromoethane	14.12	107	117628	20.3235	ug/L		99
69)	1-Chlorohexane	14.21	91	252462	20.0962	ug/L		99
70)	Chlorobenzene	14.63	112	510921	20.5874	ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.66	131	200448	20.8485	ug/L		98
72)	Ethylbenzene	14.66	106	270169	19.8973	ug/L		100
73)	m-,p-Xylene	14.74	106	658179	41.3262	ug/L		96
74)	o-Xylene	15.31	106	324634	20.8488	ug/L		96
75)	Styrene	15.34	104	538457	21.0840	ug/L		98
76)	Bromoform	15.84	173	101358	20.1526	ug/L		100
77)	Isopropylbenzene	15.73	105	899197	21.7383	ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	124317	18.8081	ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	40906	20.0973	ug/L	#	13
82)	trans-1,4-Dichloro-2-Buten	16.19	53	35020	17.2867	ug/L	#	1
83)	n-Propylbenzene	16.24	91	1077100	20.9666	ug/L		99
84)	Bromobenzene	16.36	156	212450	20.1057	ug/L		96
85)	1,3,5-Trimethylbenzene	16.43	105	777410	20.7744	ug/L		99
86)	2-Chlorotoluene	16.51	91	666207	18.5744	ug/L		92
87)	4-Chlorotoluene	16.56	91	724276	22.3555	ug/L		92
88)	a-Methylstyrene	16.83	118	373977	21.0641	ug/L		98
89)	tert-Butylbenzene	16.89	134	146447	20.0037	ug/L		98
90)	1,2,4-Trimethylbenzene	16.94	105	769177	19.9894	ug/L		99
91)	sec-Butylbenzene	17.16	105	914916	20.7823	ug/L		99
92)	p-Isopropyltoluene	17.32	119	762827	20.4075	ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	419374	20.6115	ug/L		98
94)	1,4-Dichlorobenzene	17.64	146	421455	20.5458	ug/L		100
95)	n-Butylbenzene	17.84	91	729014	19.7277	ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	375223	20.7349	ug/L		97
97)	1,2-Dibromo-3-Chloropropan	19.13	75	25730	19.3926	ug/L		94
98)	1,2,4-Trichlorobenzene	20.28	180	271201	20.0498	ug/L		99
99)	Hexachlorobutadiene	20.42	225	133189	21.0741	ug/L		99
100)	Naphthalene	20.64	128	357898	17.8092	ug/L		100
101)	1,2,3-Trichlorobenzene	20.95	180	220212	19.2972	ug/L		99

(#) = qualifier out of range (m) = manual integration
8M413007.D 8260WT.M Wed Jun 15 13:12:54 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413007.D Vial: 7
Acq On : 15 Jun 2016 11:25 Operator: TMB
Sample : WG572737-03 20ug/L LCS2 STD 8260 Inst : HPMS8
Misc : 1,1 STD75597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 13:12 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

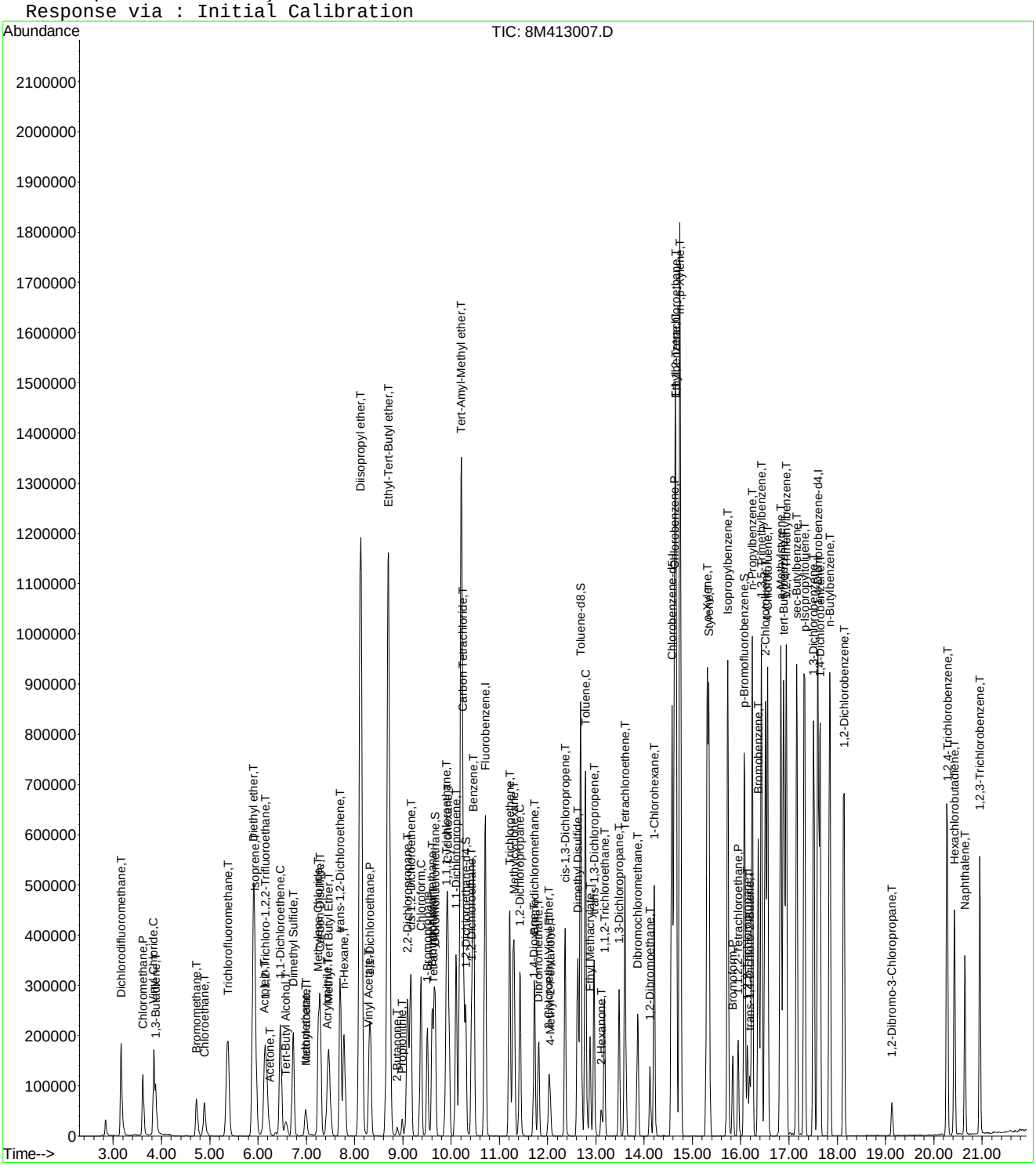

8M413007.D 8260WT.M Wed Jun 15 13:12:55 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413036.D Vial: 6
Acq On : 16 Jun 2016 16:21 Operator: FJB
Sample : WG573038-03 20ug/L LCS2 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:18:22 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	735322	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	553122	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	312159	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	213768	27.0578 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 108.24%		
43) 1,2-Dichloroethane-d4	10.30	65	240558	28.3971 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 113.60%		
58) Toluene-d8	12.68	98	752327	25.9891 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.96%		
80) p-Bromofluorobenzene	16.08	95	319552	24.7224 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.88%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	268839	21.8065 ug/L	99
3) Chloromethane	3.62	50	145372	20.2008 ug/L	99
4) Vinyl Chloride	3.85	62	205956	24.1222 ug/L	100
5) 1,3-Butadiene	3.88	54	22591	3.1551 ug/L	94
6) Bromomethane	4.72	94	76970	15.6580 ug/L	99
7) Chloroethane	4.89	64	102039	21.7196 ug/L	98
8) Trichlorofluoromethane	5.38	101	362939	22.8452 ug/L	98
9) Diethyl ether	5.90	59	397097	104.6998 ug/L	97
10) Isoprene	5.94	67	218692	22.6682 ug/L	99
11) Acrolein	6.14	56	33320	98.1209 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	161414	21.6149 ug/L	94
13) Acetone	6.23	43	19963	24.1301 ug/L	97
14) 1,1-Dichloroethene	6.46	61	233526	19.6401 ug/L	99
15) Tert-Butyl Alcohol	6.57	59	65029	245.2844 ug/L	97
16) Dimethyl Sulfide	6.73	62	155773	36.6403 ug/L	99
17) Iodomethane	6.99	142	48971	16.9853 ug/L	95
18) Methyl acetate	7.00	43	45727	20.4478 ug/L	97
19) Methylene Chloride	7.25	84	150567	19.8985 ug/L	100
20) Carbon Disulfide	7.29	76	462391	18.5829 ug/L	100
21) Acrylonitrile	7.43	53	21986	20.4823 ug/L	92
22) Methyl Tert Butyl Ether	7.47	73	371382	22.6774 ug/L	98
23) trans-1,2-Dichloroethene	7.70	61	222944	20.4092 ug/L	100
24) n-Hexane	7.78	57	159355	19.6456 ug/L	98
25) Diisopropyl ether	8.12	45	1757628	103.2229 ug/L	96
26) Vinyl Acetate	8.30	43	118636	15.2174 ug/L	100
27) 1,1-Dichloroethane	8.32	63	269975	19.9007 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1896750	103.9682 ug/L	98
29) 2-Butanone	8.88	43	25340	20.8472 ug/L	94
30) Propionitrile	8.99	54	36109	101.9393 ug/L	100
31) 2,2-Dichloropropane	9.10	77	336668	23.5494 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	179241	21.2357 ug/L	98
33) Chloroform	9.37	83	347237	21.6779 ug/L	100
34) 1-Bromopropane	9.51	122	37842	31.3001 ug/L	100
35) Bromochloromethane	9.61	130	89039	20.5714 ug/L	96
36) Tetrahydrofuran	9.63	42	72974	91.1522 ug/L	97
38) 1,1,1-Trichloroethane	9.91	97	353698	23.2464 ug/L	100
39) Cyclohexane	9.93	56	214088	20.3237 ug/L	97
40) 1,1-Dichloropropene	10.11	75	243549	21.0005 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1837419	110.8902 ug/L	99
42) Carbon Tetrachloride	10.25	117	311990	23.0917 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413036.D 8260WT.M Mon Jun 20 09:08:50 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413036.D Vial: 6
Acq On : 16 Jun 2016 16:21 Operator: FJB
Sample : WG573038-03 20ug/L LCS2 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:18:22 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	242552	23.5265 ug/L		98
46)	Benzene	10.46	78	636475	21.0718 ug/L		100
47)	Trichloroethene	11.21	130	181127	22.4834 ug/L		99
48)	Methylcyclohexane	11.30	83	268536	21.9418 ug/L		99
49)	1,2-Dichloropropane	11.42	63	141319	21.0171 ug/L		89
50)	Bromodichloromethane	11.73	83	265829	22.4935 ug/L		99
51)	1,4-Dioxane	11.72	88	6780	200.7309 ug/L		99
52)	Dibromomethane	11.81	93	79309	19.9255 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.02	63	56761	19.6402 ug/L		94
54)	4-Methyl-2-Pentanone	12.06	58	24424	20.6889 ug/L		92
55)	cis-1,3-Dichloropropene	12.36	75	282091	23.4507 ug/L		99
56)	Dimethyl Disulfide	12.62	79	140775	21.9263 ug/L		94
59)	Toluene	12.79	91	690537	20.1096 ug/L		99
60)	Ethyl Methacrylate	12.88	69	134927	20.4602 ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	242695	21.0901 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	106261	19.6107 ug/L		98
64)	2-Hexanone	13.12	58	20293	17.8218 ug/L	#	97
65)	1,3-Dichloropropane	13.48	76	202255	20.9653 ug/L		97
66)	Tetrachloroethene	13.60	164	150723	20.4869 ug/L		99
67)	Dibromochloromethane	13.87	129	164885	20.8405 ug/L		100
68)	1,2-Dibromoethane	14.12	107	107229	19.8562 ug/L		100
69)	1-Chlorohexane	14.21	91	238806	20.3731 ug/L		97
70)	Chlorobenzene	14.63	112	479877	20.7240 ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.66	131	187840	20.9390 ug/L		99
72)	Ethylbenzene	14.66	106	252056	19.8954 ug/L		96
73)	m-,p-Xylene	14.75	106	620374	41.7475 ug/L		96
74)	o-Xylene	15.31	106	310957	21.4035 ug/L		98
75)	Styrene	15.35	104	503519	21.1307 ug/L		97
76)	Bromoform	15.83	173	93776	19.9830 ug/L		98
77)	Isopropylbenzene	15.73	105	848704	21.9899 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	113419	18.1008 ug/L		100
81)	1,2,3-Trichloropropane	16.14	110	37740	19.5591 ug/L		73
82)	trans-1,4-Dichloro-2-Buten	16.19	53	34462	17.9212 ug/L		82
83)	n-Propylbenzene	16.24	91	1024017	21.0269 ug/L		99
84)	Bromobenzene	16.37	156	197176	19.6840 ug/L		97
85)	1,3,5-Trimethylbenzene	16.42	105	742680	20.9352 ug/L		99
86)	2-Chlorotoluene	16.51	91	701689	20.6371 ug/L		98
87)	4-Chlorotoluene	16.56	91	615763	20.0490 ug/L		99
88)	a-Methylstyrene	16.83	118	365485	21.7152 ug/L		99
89)	tert-Butylbenzene	16.89	134	141823	20.4349 ug/L		98
90)	1,2,4-Trimethylbenzene	16.94	105	742233	20.3475 ug/L		100
91)	sec-Butylbenzene	17.16	105	865092	20.7287 ug/L		100
92)	p-Isopropyltoluene	17.32	119	739719	20.8751 ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	398135	20.6412 ug/L		100
94)	1,4-Dichlorobenzene	17.64	146	395783	20.3529 ug/L		99
95)	n-Butylbenzene	17.85	91	695375	19.8498 ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	349070	20.3481 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	26890	21.3789 ug/L		96
98)	1,2,4-Trichlorobenzene	20.28	180	257503	20.0816 ug/L		99
99)	Hexachlorobutadiene	20.43	225	129798	21.6644 ug/L		98
100)	Naphthalene	20.65	128	344850	18.1014 ug/L		100
101)	1,2,3-Trichlorobenzene	20.96	180	209338	19.3508 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M413036.D 8260WT.M Mon Jun 20 09:08:51 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413036.D Vial: 6
Acq On : 16 Jun 2016 16:21 Operator: FJB
Sample : WG573038-03 20ug/L LCS2 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 8:18 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

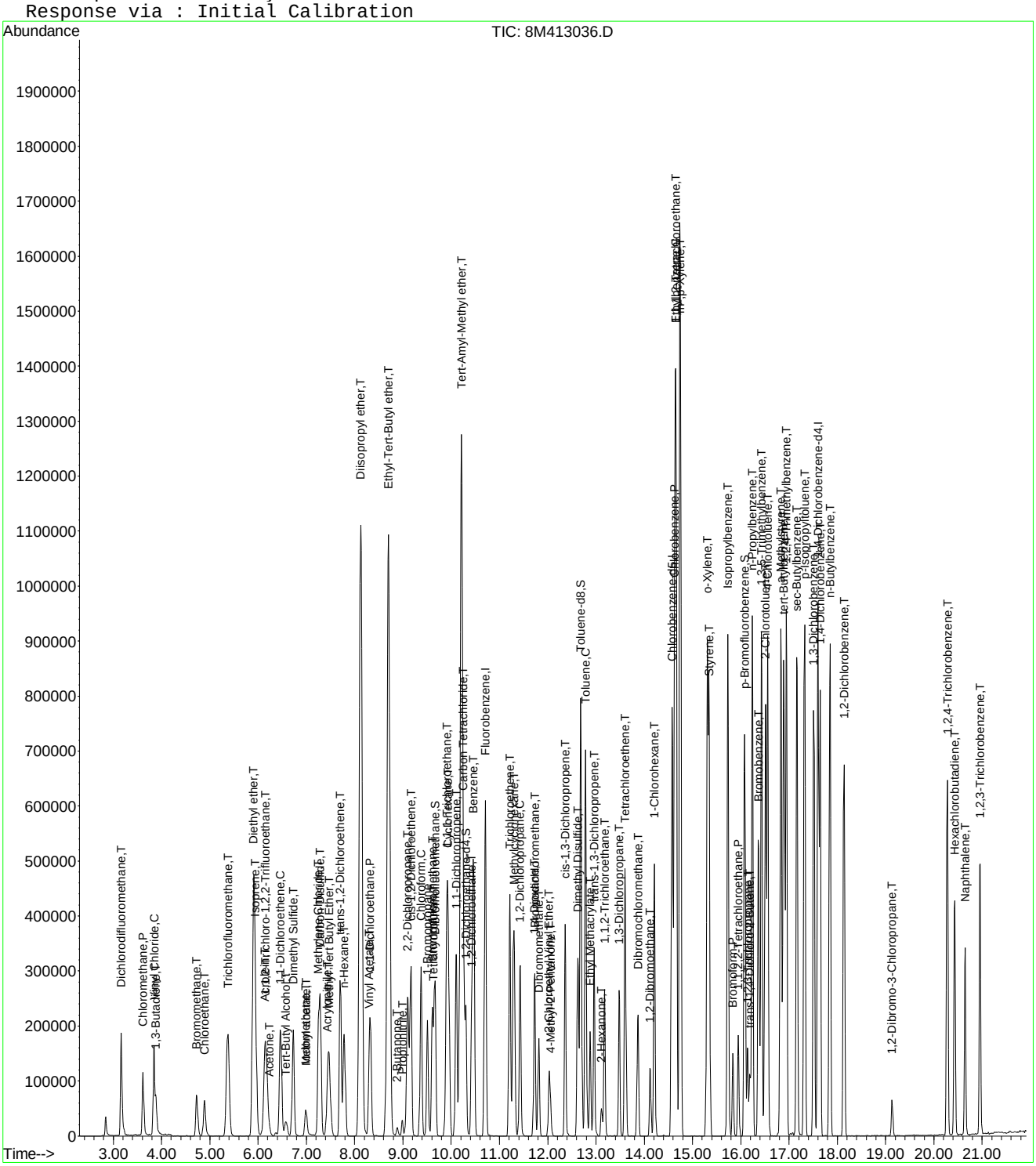

2.2 Semivolatiles Data

2.2.1 Semivolatiles GC/MS Data (Dioxane)

2.2.1.1 Summary Data

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	MW8-060916	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 15:19
Collect Date:	06/09/2016 11:00	**Dilution:**	1	**File ID:**	15M18414
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	0.649	J	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	52.6	20	129	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW26SW-060916	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 15:42
Collect Date:	06/09/2016 13:25	**Dilution:**	1	**File ID:**	15M18415
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	50.8	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	MW10-060916	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 16:04
Collect Date:	06/09/2016 14:40	**Dilution:**	1	**File ID:**	15M18416
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	35.0	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.2.1.2 QC Summary Data

Example 8270 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	1261197
Cis = Concentration of the specific internal standard (ug/mL)	40
Ais = Area of the characteristic ion of the specific internal standard	608044
Cx = Concentration of the compound in the standard being measured (ug/mL)	50
RF = Calculated Response Factor	**1.65935**

2.0 Calculating the concentration (C) of a compound in water using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Vi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Vi = Initial volume of sample extracted from prep log (mL)	1021
Cx = Concentration of the compound in the sample being measured (ug/mL)	0.016947
Cx = Concentration of the compound in the sample being measured (ug/L)	**16.947**

3.0 Calculating the concentration (C) of a compound in soil using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Wi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Wi = Initial weight of sample extracted (g) from prep log	30
Cx = Concentration of the compound in the sample being measured (ug/g)	0.576763
Cx = Concentration of the compound in the sample being measured (ug/kg)	**576.7627**

Dry weight correction:

Percent solids (PCT_S)	50
Cd = (Cx) (100)/PCT_S	**1153.525** ug/kg

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve plot

b = intercept from curve plot

Step 2: Calculate y from Quantitation Report

y = 16790/784838 = 0.02139

Step 3: Solve for x

x = (y - b)/m = [(0.02139 -(- 0.0435)]/ 0.0783 = 0.829

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.829) = 20.72 ug/L

Example Spreadsheet Calculation:

Slope from curve, m:	0.0783	
Intercept from curve, b:	-0.0435	
Area of analyte, Ax:	16790	
Area of Internal Standard , Ais:	784484	
Concentration of IS, Cis	25.00	ug/L
Response Ratio (y) :	0.021403	
Amount Ratio:	0.828897	
Concentration (Cx):	20.72241	ug/L

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**0.0259**	
Value of B from plot:	**0.0596**	
Value of C from plot:	**-0.0165**	
Area of analyte from quantitation report:	**203233**	
Area of IS from quantiation report:	**1425653**	
Response ratio, y:	**0.142554**	
C - y:	**-0.15905**	
Root 1 - Computed amount ratio , X1:	**-3.88278**	
Root 2 - Computed amount ratio , X2:	**1.581623**	use this solution
Concentration of IS, Cis:	**40.00**	
Concentration of analyte, Cx:	**63.26**	ug/L

Microbac Laboratories Inc.
Continuous Sample Extract Log

Workgroup: WG572341
Analyst: CPD
Spike Analyst: CPD
Method: 3520C
Run Date: 06/13/2016 16:16
SOP: EXB01 Revison 20
Spike Witness: AED
Surr Solution: STD74051

TIME ON: 16:55 OFF: 12:40 ON: 15:20 OFF: 11:00

CH2CL2 Lot #: COA18982
sodium sulfate Lot #: COA18814
1:1 H2SO4 Lot #: RGT36755

	SAMPLE #	Type	Reference	Prod	pH	Init Amnt	Surr Amnt	Spike Amnt	Spike Sol	Final Vol	Color
1	L16060497-01	RS01		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
2	L16060497-02	MS01	L16060497-01	827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD66388	1 mL	Transparent
3	L16060497-03	SD01	L16060497-01	827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD66388	1 mL	Transparent
4	L16060504-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
5	L16060504-02	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
6	L16060504-03	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
7	L16060504-04	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
8	L16060615-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
9	L16060615-02	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
10	L16060615-03	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
11	L16060615-04	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
12	L16060616-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
13	L16060616-02	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
14	L16060616-03	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
15	L16060637-03	SAMP		827-DIOX	<2	1000 mL	.05 mL			1 mL	Transparent
16	WG572341-01	BLANK		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
17	WG572341-02	LCS		827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD66388	1 mL	Transparent
18	WG572341-03	REF	L16060497-01	827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
19	WG572341-04	MS	L16060497-01	827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD66388	1 mL	Transparent
20	WG572341-05	MSD	L16060497-01	827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD66388	1 mL	Transparent

Analyst: Chelsie Davis

Reviewer: Justin Hesson

EXTRACT - Modified 01/23/2009
PDF ID: 4809355
Report generated: 06/16/2016 08:25

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 061016
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG571947

Internal STD: STD75471 Surrogate STD: NA Calibration STD
CCV STD: STD74784 LCS STD: STD74214 MS/MSD STD:

Comments: L16051582-01, and L16060024-01,03,05 were already sent for re-extract due to QC contamination. L16060024s are being re-extracted as 827-SPE-DIOX only.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18332	BAKEOUT-IS CHECK	1	1		06/10/16 08:27
2	15M18333	BAKEOUT-IS CHECK	1	1		06/10/16 08:53
3	15M18334	WG571981-01 5PPM DFTPP STD	1	1	STD75016	06/10/16 09:13
4	15M18335	BAKEOUT-IS CHECK	1	1		06/10/16 09:31
5	15M18336	BAKEOUT-IS CHECK	1	1		06/10/16 09:53
6	15M18337	WG572230-01 5PPM DFTPP STD	1	1	STD75016	06/10/16 10:18
7	15M18338	WG572230-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 10:36
8	15M18339	WG572230-03 10 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 11:00
9	15M18340	WG572230-04 7.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 11:22
10	15M18341	WG572230-05 2.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 11:45
11	15M18342	WG572230-06 1 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 12:08
12	15M18343	WG572230-07 0.4 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 12:30
13	15M18344	WG572230-08 5PPM 1,4-DIOXANE ALT SRC	1	1	STD74214	06/10/16 12:52
14	15M18345	WG571410-01 BLANK 6/6	1	1		06/10/16 13:15
15	15M18346	WG571410-02 LCS 6/6	1	1		06/10/16 13:38
16	15M18347	WG571410-03 LCSDUP 6/6	1	1		06/10/16 14:01
17	15M18348	WG571404-01 BLANK 6/2	1	1		06/10/16 14:24
18	15M18349	WG571404-02 LCS 6/2	1	1		06/10/16 14:47
19	15M18350	WG571404-03 LCSDUP 6/2	1	1		06/10/16 15:09
20	15M18351	L16060067-01 827-DIOX	1	1		06/10/16 15:32
21	15M18352	L16051582-01 5X 827-DIOX	1	5		06/10/16 15:55
22	15M18353	L16060024-05 20X 827-DIOX	1	20		06/10/16 16:18
23	15M18354	L16060024-03 20X 827-DIOX	1	20		06/10/16 16:40
24	15M18355	L16060024-01 20,000X 827-DIOX	1	20000		06/10/16 17:03
25	15M18356	L16060067-01 2X 827-DIOX	1	2		06/10/16 17:26
26	15M18357	L16060024-03 100X 827-DIOX	1	100		06/10/16 17:49

Comments

Seq.	Rerun	Dil.	Reason	Analytes
3				
	DFTPP check after installing new source and retuning.			
17				
	WG571404-01 BLANK 6/2 dioxane hit above the RL.			

Page: 1 Approved: 13-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 061016

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG571947

Internal STD: STD75471 Surrogate STD: NA

CCV STD: STD74784 LCS STD: STD74214

Comments

Seq.	Rerun	Dil.	Reason	Analytes
18				
	WG571404-02 LCS 6/2 fails high.			
19				
	WG571404-03 LCSDUP 6/2 fails high.			
20	X	2	Over Calibration Range	
	L16060067-01			
23	X	100	Over Calibration Range	
	L16060024-03 20X DNR			

Page: 2 Approved: 13-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 061616
Analyst1: SCB Analyst2: MES
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG572971

Internal STD: STD75471, 76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18399	WG572958-01 5PPM DFTPP STD	1	1	STD75016	06/16/16 09:38
2	15M18400	WG572958-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/16/16 10:00
3	15M18401	WG572341-01 BLANK 6/13	1	1		06/16/16 10:23
4	15M18402	WG572341-02 LCS 6/13	1	1		06/16/16 10:46
5	15M18403	L16060497-01 REF 827-DIOX	1	1		06/16/16 11:08
6	15M18404	L16060497-02 MS 827-DIOX	1	1		06/16/16 11:31
7	15M18405	L16060497-03 MSD 827-DIOX	1	1		06/16/16 11:54
8	15M18406	L16060504-01 827-DIOX	1	1		06/16/16 12:17
9	15M18407	L16060504-02 827-DIOX	1	1		06/16/16 12:39
10	15M18408	L16060504-03 827-DIOX	1	1		06/16/16 13:02
11	15M18409	L16060504-04 827-DIOX	1	1		06/16/16 13:25
12	15M18410	L16060615-01 827-DIOX	1	1		06/16/16 13:48
13	15M18411	L16060615-02 827-DIOX	1	1		06/16/16 14:11
14	15M18412	L16060615-03 827-DIOX	1	1		06/16/16 14:33
15	15M18413	L16060615-04 827-DIOX	1	1		06/16/16 14:56
16	15M18414	L16060616-01 827-DIOX	1	1		06/16/16 15:19
17	15M18415	L16060616-02 827-DIOX	1	1		06/16/16 15:42
18	15M18416	L16060616-03 827-DIOX	1	1		06/16/16 16:04
19	15M18417	L16060637-03 827-DIOX	1	1		06/16/16 16:27

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 20-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 10-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75640
Analytical Workgroups: L16051582, L16060024, L16060067

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 12-JUN-2016

Secondary Reviewer: 13-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-13-2016 08:34:44

Microbac Laboratories Inc.

Data Checklist

Date: 16-JUN-2016
Analyst: SCB
Analyst: MES
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75783
Analytical Workgroups: L16060497, L16060504, L16060615, L16060616, L16060637

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	SCB
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 20-JUN-2016 Sarah Bogolin

Secondary Reviewer: 20-JUN-2016 Eric C. Zum

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-20-2016 16:55:27

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8270D

AAB#: WG572971

Login Number: L16060616

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW8-060916	01	06/09/16					06/13/2016	4.2	7		06/16/16	3	40	
18CPTMW26SW-060916	02	06/09/16					06/13/2016	4.1	7		06/16/16	3	40	
MW10-060916	03	06/09/16					06/13/2016	4.1	7		06/16/16	3	40	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4814679
Report generated 06/21/2016 08:52

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060616
Instrument Id: HPMS15
Workgroup (AAB#): WG572971

Method: 827-DIOXANE
CAL ID: HPMS15-10-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1
L16060616-01	1.00	01	52.6
L16060616-02	1.00	01	50.8
L16060616-03	1.00	01	35.0
WG572341-01	1.00	01	29.4
WG572341-02	1.00	01	35.7

Surrogates	Surrogate Limits		
1 - 1,4-Dioxane-d8	20	-	129

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4814688
Report generated: 06/21/2016 08:52

METHOD BLANK SUMMARY

Login Number: L16060616
Blank File ID: 15M18401
Prep Date: 06/13/16 16:16
Analyzed Date: 06/16/16 10:23
Analyst: MES

Work Group: WG572971
Blank Sample ID: WG572341-01
Instrument ID: HPMS15
Method: 8270D

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572341-02	15M18402	06/16/16 10:46	01
MW8-060916	L16060616-01	15M18414	06/16/16 15:19	01
18CPTMW26SW-060916	L16060616-02	15M18415	06/16/16 15:42	01
MW10-060916	L16060616-03	15M18416	06/16/16 16:04	01

Report Name: BLANK_SUMMARY
PDF File ID: 4814680
Report generated 06/21/2016 08:52

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060616 Prep Date: 06/13/16 16:16 Sample ID: WG572341-01
Instrument ID: HPMS15 Run Date: 06/16/16 10:23 Prep Method: 3520C
File ID: 15M18401 Analyst: MES Method: 8270D
Workgroup (AAB#): WG572971 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS15-10-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
1,4-Dioxane	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	29.4	20 - 129	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4814681
21-JUN-2016 08:52

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060616 Run Date: 06/16/2016 Sample ID: WG572341-02
Instrument ID: HPMS15 Run Time: 10:46 Prep Method: 3520C
File ID: 15M18402 Analyst: MES Method: 8270D
Workgroup (AAB#): WG572971 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD66388 Cal ID: HPMS15-10-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
1,4-Dioxane	5.00	1.67	33.3	30 - 104	

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	35.7	20 - 129	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4814682
Report generated: 06/21/2016 08:52

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16060616
Instrument: HPMS15
Analyst: MES
Workgroup: WG572230

Tune ID: WG572230-01
Run Date: 06/10/2016
Run Time: 10:18
File ID: 15M18337
Cal ID: HPMS15 - 10-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	39.5	52157	PASS
68.0	69.0	0	2.00	1.91	1026	PASS
69.0	198	0	100	40.8	53844	PASS
70.0	69.0	0	2.00	0.223	120	PASS
127	198	40.0	60.0	51.4	67853	PASS
197	198	0	1.00	0.383	505	PASS
198	198	100	100	100	131981	PASS
199	198	5.00	9.00	6.72	8869	PASS
275	198	10.0	30.0	26.4	34853	PASS
365	198	1.00	100	3.17	4186	PASS
441	443	0.0100	100	73.9	15632	PASS
442	198	40.0	100	83.4	110112	PASS
443	442	17.0	23.0	19.2	21163	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG572230-02	STD-CCV	01	06/10/2016 10:36	
WG572230-03	STD	01	06/10/2016 11:00	
WG572230-04	STD	01	06/10/2016 11:22	
WG572230-05	STD	01	06/10/2016 11:45	
WG572230-06	STD	01	06/10/2016 12:08	
WG572230-07	STD	01	06/10/2016 12:30	
WG572230-08	SSCV	01	06/10/2016 12:52	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4814685
Report generated 06/21/2016 08:52

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16060616
Instrument: HPMS15
Analyst: MES
Workgroup: WG572958

Tune ID: WG572958-01
Run Date: 06/16/2016
Run Time: 09:38
File ID: 15M18399
Cal ID: HPMS15 - 10-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	39.7	42335	PASS
68.0	69.0	0	2.00	1.65	714	PASS
69.0	198	0	100	40.7	43391	PASS
70.0	69.0	0	2.00	0.643	279	PASS
127	198	40.0	60.0	52.1	55592	PASS
197	198	0	1.00	0.0637	68	PASS
198	198	100	100	100	106736	PASS
199	198	5.00	9.00	6.72	7172	PASS
275	198	10.0	30.0	25.9	27632	PASS
365	198	1.00	100	3.04	3241	PASS
441	443	0.0100	100	76.2	12912	PASS
442	198	40.0	100	81.0	86427	PASS
443	442	17.0	23.0	19.6	16937	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG572958-02	CCV	01	06/16/2016 10:00	
WG572341-01	BLANK	01	06/16/2016 10:23	
WG572341-02	LCS	01	06/16/2016 10:46	
L16060616-01	MW8-060916	01	06/16/2016 15:19	
L16060616-02	18CPTMW26SW-060916	01	06/16/2016 15:42	
L16060616-03	MW10-060916	01	06/16/2016 16:04	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4814685
Report generated 06/21/2016 08:52

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060616
Analytical Method: 8270D
ICAL Workgroup: WG572230

Instrument ID: HPMS15
Initial Calibration Date: 10-JUN-16 12:30
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
1,4-Dioxane		0.3253	2.74		

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4814683
Report generated 06/21/2016 08:52

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060616

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 10-JUN-16 12:30

Column ID: F

Analyte	WG572230-02			WG572230-03			WG572230-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	5.00	107215.000	0.3234	10.0	192761.000	0.3420	7.50	146003.000	0.3236

INT_CAL - Modified 03/06/2008
PDF File ID: 4814683
Report generated 06/21/2016 08:52

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060616

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 10-JUN-16 12:30

Column ID: F

Analyte	WG572230-05			WG572230-06			WG572230-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	2.50	36488.0000	0.3190	1.00	18621.0000	0.3169	0.400	6733.00000	0.3266

INT_CAL - Modified 03/06/2008
PDF File ID: 4814683
Report generated 06/21/2016 08:52

Calibration Table Report
Method: DIOXANE_D8.M
Title: OVD MSS01 SIM 1,4-dioxane ICAL 061016
Last Calibration: Fri Jun 10 12:46:00 2016
Curve:WG572230
Calibration Files

Compound	10 15M18339.D	7.5 15M18340.D	5 15M18338.D	2.5 15M18341.D	1 15M18342.D	0.4 15M18343.D	Avg	%RSD	Linear
1,4-Dichlorobenzene-d4	ISTD								
1,4-Dioxane	0.342	0.324	0.324	0.319	0.317	0.327	0.325	2.735	
1,4-Dioxane-d8	0.440	0.415	0.417	0.411	0.409		0.419	2.988	
Nitrobenzene-d5	1.115	1.034	0.970	0.852	0.755	0.697	0.904	18.064	0.994
2-Fluorobiphenyl	2.685	2.595	2.549	2.638	2.570	2.639	2.613	1.934	
p-Terphenyl-d14	2.815	2.671	2.579	2.506	2.382	2.421	2.562	6.338	

Sun Jun 12 19:13:55 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060616 Run Date: 06/10/2016 Sample ID: WG572230-08
Instrument ID: HPMS15 Run Time: 12:52 Method: 8270D
File ID: 15M18344 Analyst: MES QC Key: DOD4
ICal Workgroup: WG572230 Cal ID: HPMS15 - 10-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
1,4-Dioxane		5000	5110	ug/L	0.333	2.30	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4814684
Report generated 06/21/2016 08:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG572958-02
Instrument ID: HPMS15
Run Time: 10:00
Method: 8270D
File ID: 15M18400
Analyst: MES
QC Key: DOD4
Workgroup (AAB#): WG572971
Cal ID: HPMS15 - 10-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,4-Dioxane		5000	5080	ug/L	0.331	1.65	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4814686
Report generated 06/21/2016 08:52

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060616
Instrument ID: HPMS15
Workgroup (AAB#): WG572971

ICAL CCV Number: WG572230-02
CAL ID: HPMS15-10-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG572230-02	NA	NA	66625
Upper Limit	NA	NA	133250
Lower Limit	NA	NA	33313
L16060616-01	1.00	01	52733
L16060616-02	1.00	01	45224
L16060616-03	1.00	01	49761
WG572341-01	1.00	01	57712
WG572341-02	1.00	01	54087

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4814687
Report generated 06/21/2016 08:52

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060616
Instrument ID: HPMS15
Workgroup (AAB#): WG572971

ICAL CCV Number: WG572230-02
CAL ID: HPMS15-10-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG572230-02	NA	NA	6.94
Upper Limit	NA	NA	7.44
Lower Limit	NA	NA	6.44
L16060616-01	1.00	01	6.955
L16060616-02	1.00	01	6.955
L16060616-03	1.00	01	6.955
WG572341-01	1.00	01	6.948
WG572341-02	1.00	01	6.951

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4814689
Report generated: 06/21/2016 08:52

2.2.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18414.D
Acq On : 16 Jun 2016 15:19
Operator : MES
Sample : L16060616-01 827-DIOX
Misc : 1,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jun 16 17:37:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.955	152	52733	1.0000	ug/mL	# 0.02
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.883	96	58024	2.6289	ug/L	0.02
Spiked Amount 5.000			Recovery	=	52.60%	
4) Nitrobenzene-d5	7.453	82	2808	0.2676	ug/L	0.02
Spiked Amount 5.000			Recovery	=	5.40%	
5) 2-Fluorobiphenyl	8.941	172	631	0.0046	ug/L	0.02
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.247	244	15751	0.1166	ug/L	0.07
Spiked Amount 5.000			Recovery	=	2.40%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.919	58	11130	0.6487	ug/L	87

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18414.D
Acq On : 16 Jun 2016 15:19
Operator : MES
Sample : L16060616-01 827-DIOX
Misc : 1,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jun 16 17:37:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

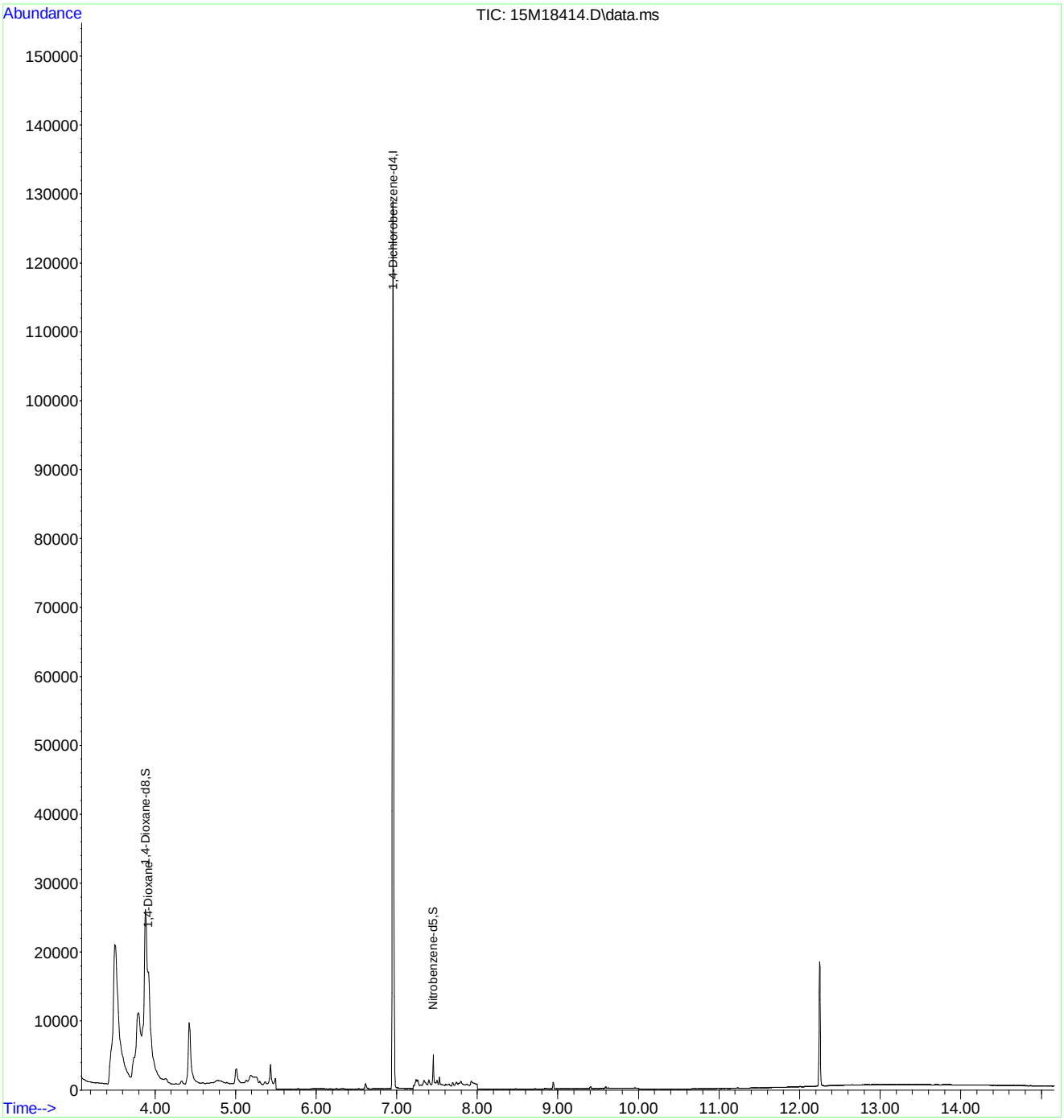

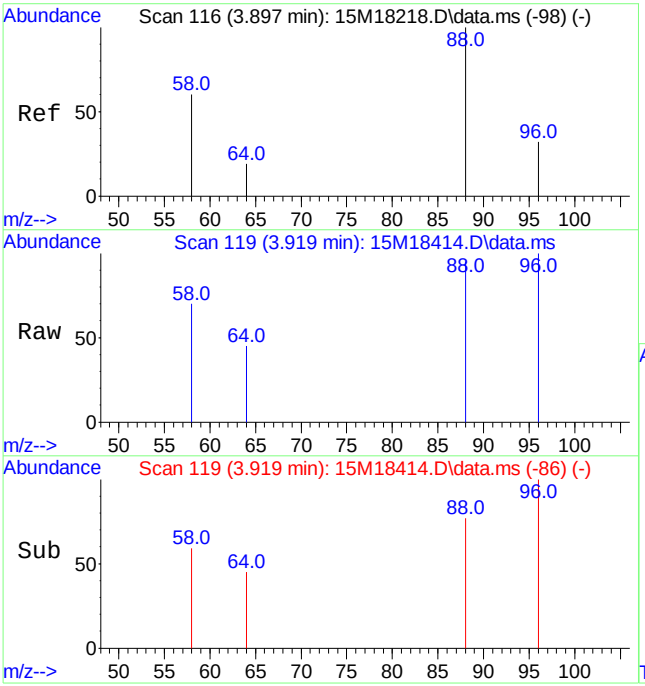

#2
1,4-Dioxane
Concen: 0.65 ug/L
RT: 3.919 min Scan# 119
Delta R.T. 0.022 min
Lab File: 15M18414.D
Acq: 16 Jun 2016 15:19

Tgt Ion: 58 Resp: 11130

Ion	Ratio	Lower	Upper
58	100		
88	154.3	103.1	240.7

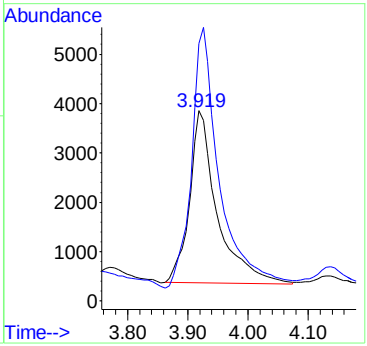

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18415.D
Acq On : 16 Jun 2016 15:42
Operator : MES
Sample : L16060616-02 827-DIOX
Misc : 1,1
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Jun 16 17:37:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.955	152	45224	1.0000	ug/mL	# 0.01
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.869	96	48075	2.5398	ug/L	0.00
Spiked Amount 5.000			Recovery	=	50.80%	
4) Nitrobenzene-d5	7.452	82	3291	0.2858	ug/L	0.02
Spiked Amount 5.000			Recovery	=	5.80%	
5) 2-Fluorobiphenyl	8.945	172	2161	0.0183	ug/L	0.02
Spiked Amount 5.000			Recovery	=	0.40%	
6) p-Terphenyl-d14	12.225	244	2114	0.0182	ug/L	0.04
Spiked Amount 5.000			Recovery	=	0.40%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18415.D
Acq On : 16 Jun 2016 15:42
Operator : MES
Sample : L16060616-02 827-DIOX
Misc : 1,1
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Jun 16 17:37:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

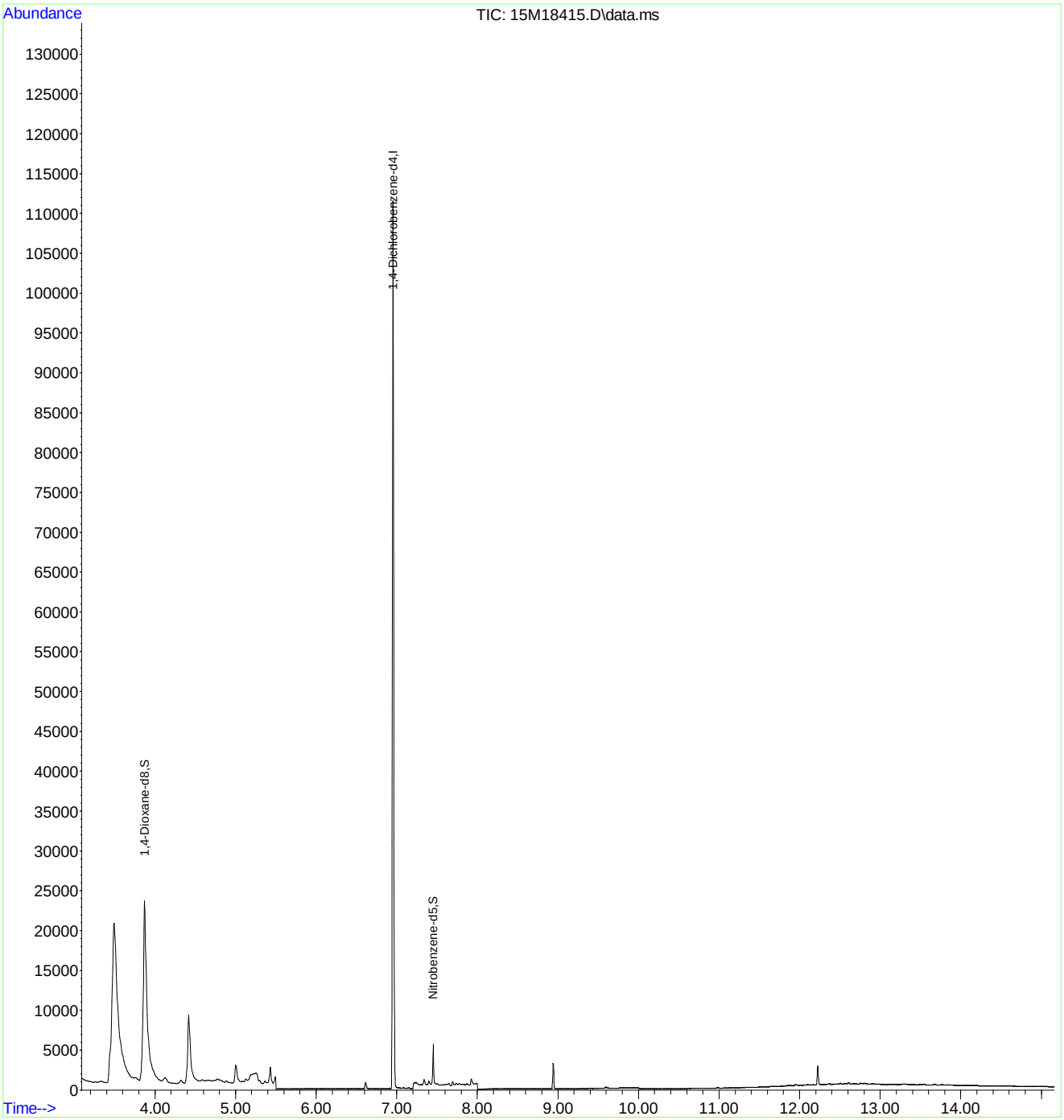

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18416.D
Acq On : 16 Jun 2016 16:04
Operator : MES
Sample : L16060616-03 827-DIOX
Misc : 1,1
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Jun 16 17:37:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.955	152	49761	1.0000	ug/mL	# 0.02
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.883	96	36463	1.7507	ug/L	0.02
Spiked Amount 5.000			Recovery	=	35.00%	
4) Nitrobenzene-d5	7.453	82	1828	0.2522	ug/L	0.02
Spiked Amount 5.000			Recovery	=	5.00%	
5) 2-Fluorobiphenyl	8.941	172	170	0.0013	ug/L	0.02
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.210	244	408	0.0032	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.00%	

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18416.D
Acq On : 16 Jun 2016 16:04
Operator : MES
Sample : L16060616-03 827-DIOX
Misc : 1,1
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Jun 16 17:37:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

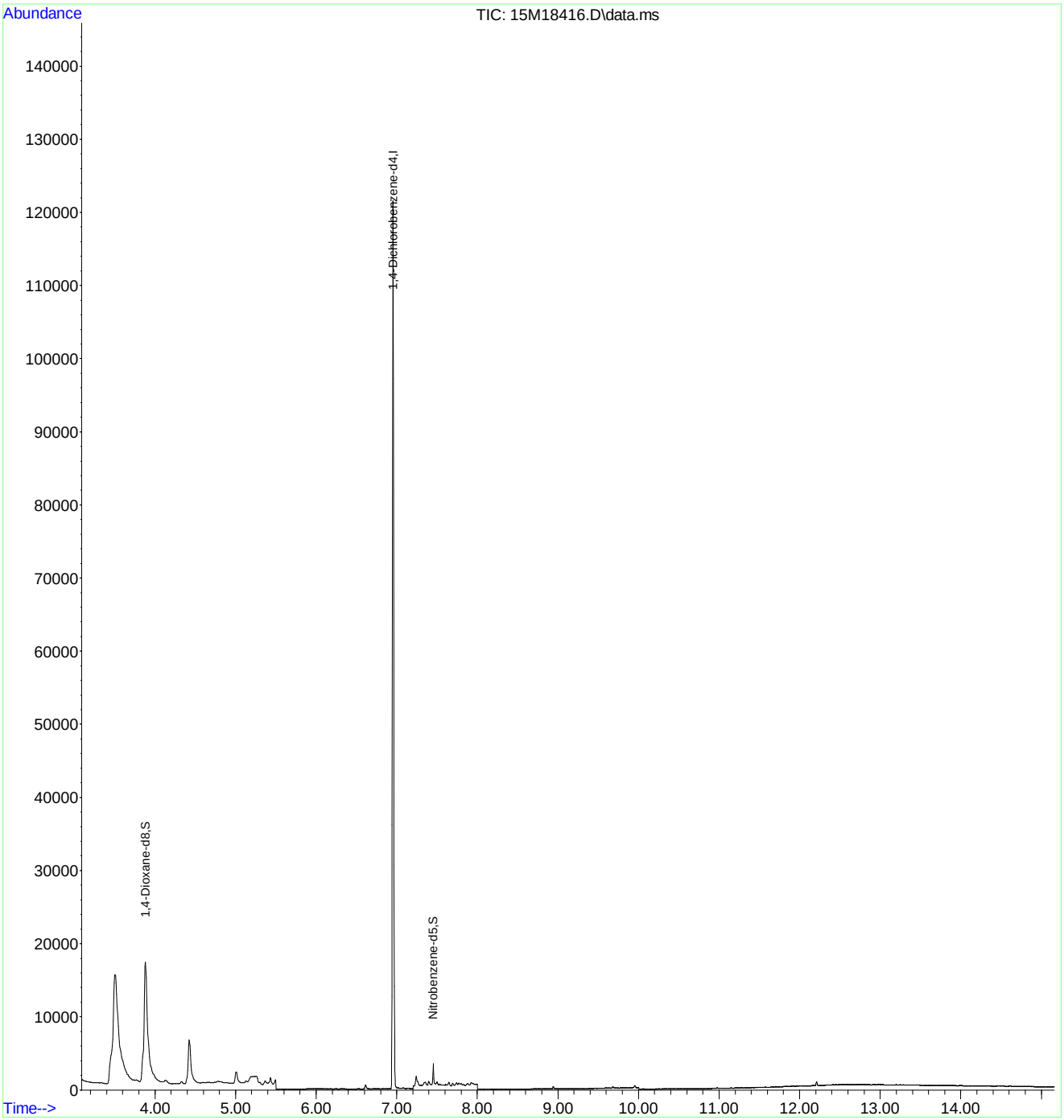

2.2.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18338.D
Acq On : 10 Jun 2016 10:36
Operator : MES
Sample : WG572230-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 10 18:15:30 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	66625	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	138302	4.9596	ug/L	0.00
Spiked Amount 5.000			Recovery	=	99.20%	
4) Nitrobenzene-d5	7.436	82	321639	4.7189	ug/L	0.00
Spiked Amount 5.000			Recovery	=	94.40%	
5) 2-Fluorobiphenyl	8.926	172	845013	4.8542	ug/L	0.00
Spiked Amount 5.000			Recovery	=	97.00%	
6) p-Terphenyl-d14	12.181	244	855352	5.0103	ug/L	0.00
Spiked Amount 5.000			Recovery	=	100.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	107215	4.9462	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18338.D
Acq On : 10 Jun 2016 10:36
Operator : MES
Sample : WG572230-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 10 18:15:30 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

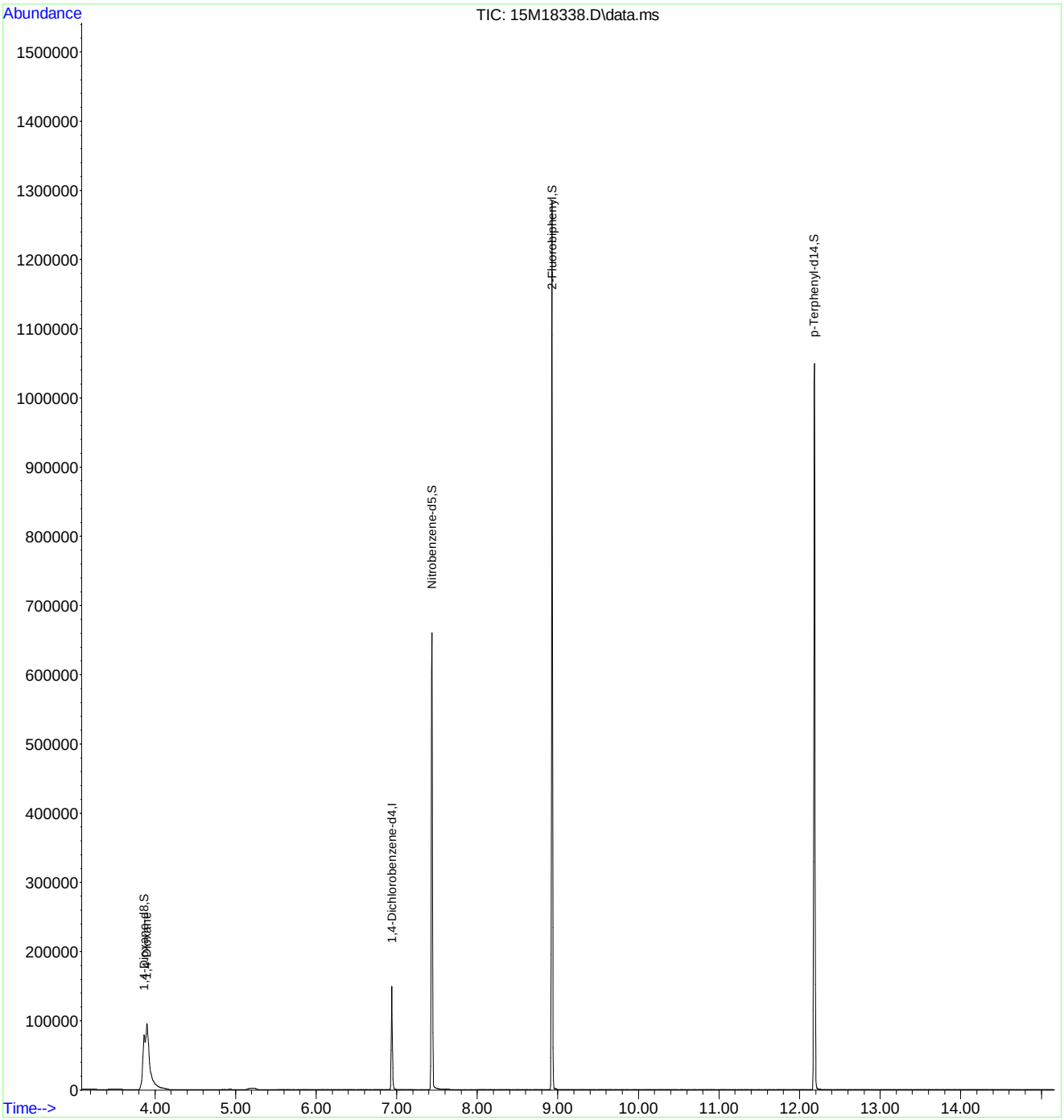

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18339.D
Acq On : 10 Jun 2016 11:00
Operator : MES
Sample : WG572230-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 10 18:15:34 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	56194	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	248072	10.5474	ug/L	0.00
Spiked Amount 5.000			Recovery = 211.00%			
4) Nitrobenzene-d5	7.436	82	628184	10.6403	ug/L	0.00
Spiked Amount 5.000			Recovery = 212.80%			
5) 2-Fluorobiphenyl	8.926	172	1513331	10.3070	ug/L	0.00
Spiked Amount 5.000			Recovery = 206.20%			
6) p-Terphenyl-d14	12.184	244	1587021	11.0217	ug/L	0.00
Spiked Amount 5.000			Recovery = 220.40%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	192761	10.5434	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18339.D
Acq On : 10 Jun 2016 11:00
Operator : MES
Sample : WG572230-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 10 18:15:34 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

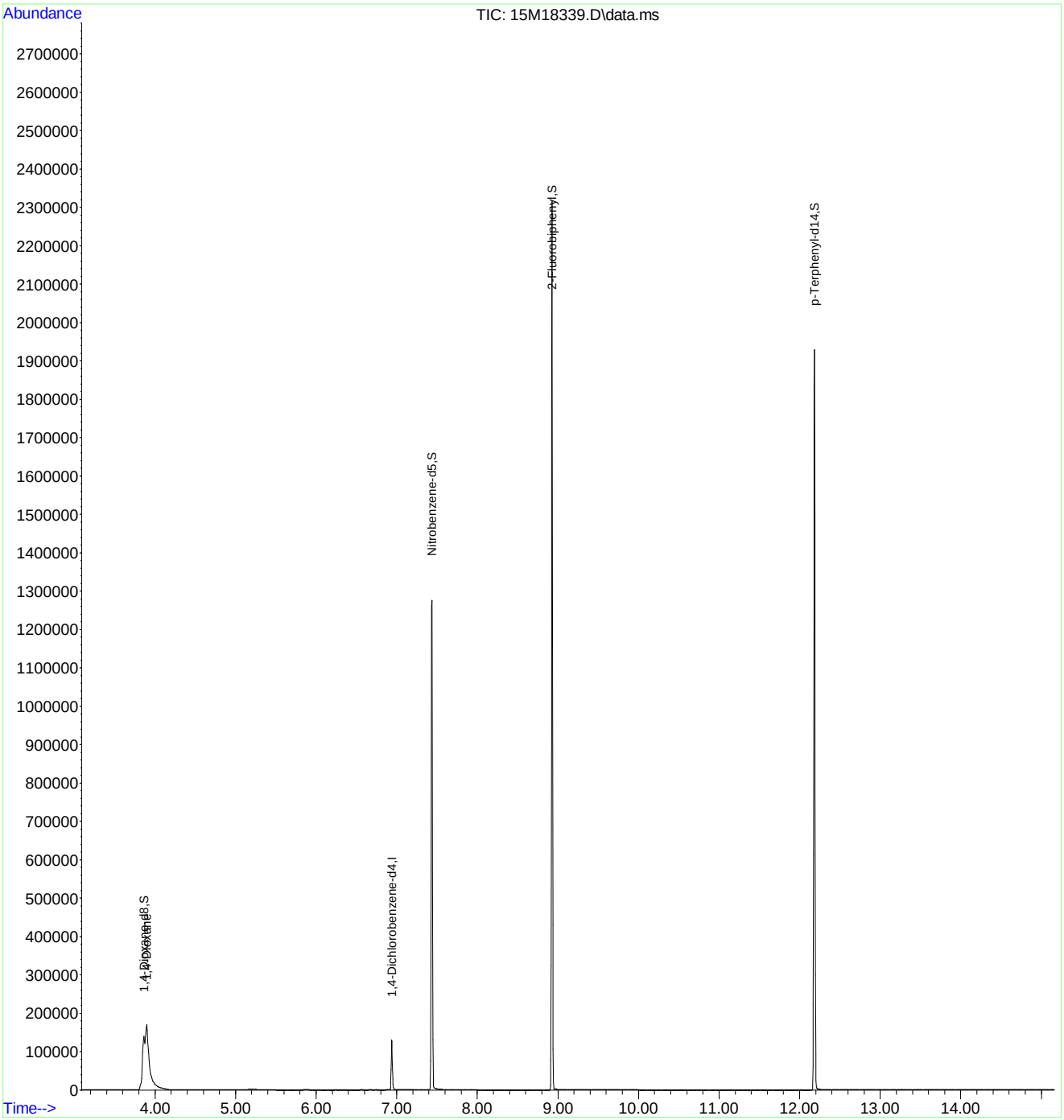

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18340.D
Acq On : 10 Jun 2016 11:22
Operator : MES
Sample : WG572230-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 10 18:15:37 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.940	152	60457	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.862	96	187351	7.4040 ug/L	0.00
Spiked Amount 5.000			Recovery	= 148.00%	
4) Nitrobenzene-d5	7.431	82	466388	7.4103 ug/L	0.00
Spiked Amount 5.000			Recovery	= 148.20%	
5) 2-Fluorobiphenyl	8.926	172	1170859	7.4122 ug/L	0.00
Spiked Amount 5.000			Recovery	= 148.20%	
6) p-Terphenyl-d14	12.192	244	1205938	7.7846 ug/L	0.01
Spiked Amount 5.000			Recovery	= 155.60%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.897	58	146003	7.4228 ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18340.D
Acq On : 10 Jun 2016 11:22
Operator : MES
Sample : WG572230-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 10 18:15:37 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

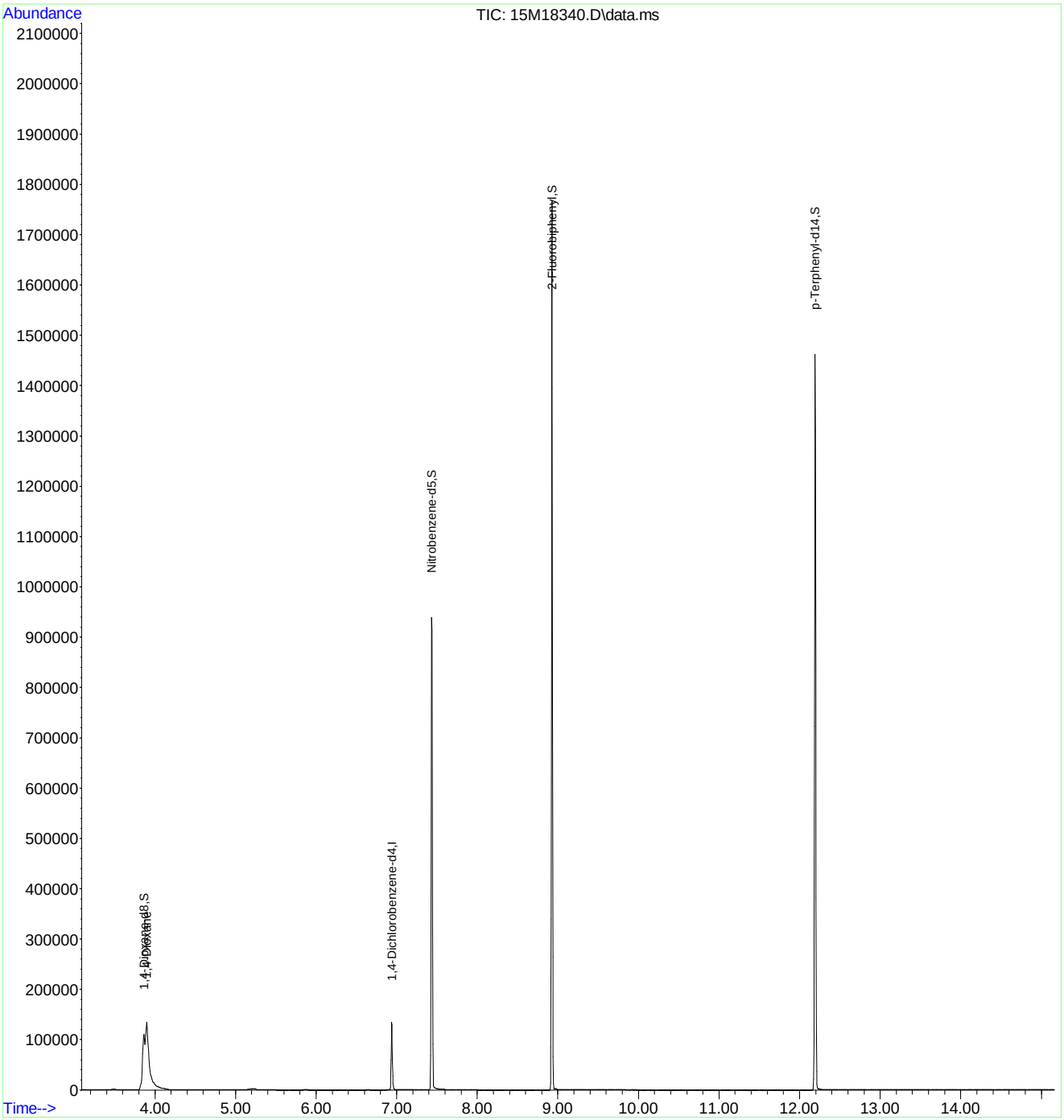

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18341.D
Acq On : 10 Jun 2016 11:45
Operator : MES
Sample : WG572230-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 10 18:15:40 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	45954	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.848	96	46972	2.4422	ug/L	-0.01
Spiked Amount 5.000			Recovery	=	48.80%	
4) Nitrobenzene-d5	7.436	82	97423	2.1945	ug/L	0.00
Spiked Amount 5.000			Recovery	=	43.80%	
5) 2-Fluorobiphenyl	8.926	172	301696	2.5127	ug/L	0.00
Spiked Amount 5.000			Recovery	=	50.20%	
6) p-Terphenyl-d14	12.188	244	286720	2.4350	ug/L	0.00
Spiked Amount 5.000			Recovery	=	48.60%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.883	58	36488	2.4405	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18341.D
Acq On : 10 Jun 2016 11:45
Operator : MES
Sample : WG572230-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 10 18:15:40 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

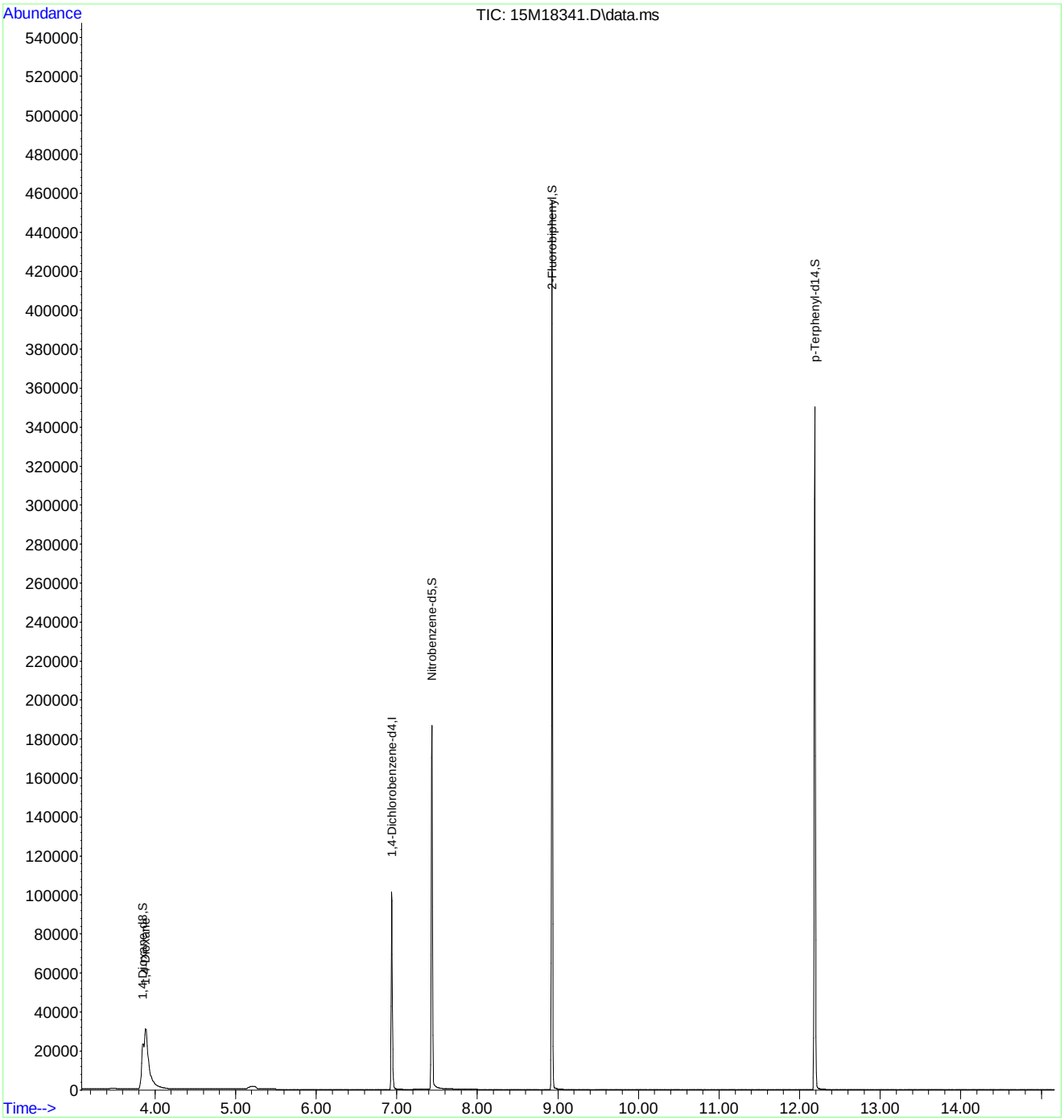

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18342.D
Acq On : 10 Jun 2016 12:08
Operator : MES
Sample : WG572230-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 10 18:15:43 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	59037	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	24054	0.9735	ug/L	0.00
Spiked Amount 5.000			Recovery = 19.40%			
4) Nitrobenzene-d5	7.436	82	44358	0.9184	ug/L	0.00
Spiked Amount 5.000			Recovery = 18.40%			
5) 2-Fluorobiphenyl	8.926	172	151018	0.9790	ug/L	0.00
Spiked Amount 5.000			Recovery = 19.60%			
6) p-Terphenyl-d14	12.199	244	140040	0.9257	ug/L	0.02
Spiked Amount 5.000			Recovery = 18.60%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.904	58	18621	0.9695	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18342.D
Acq On : 10 Jun 2016 12:08
Operator : MES
Sample : WG572230-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 10 18:15:43 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

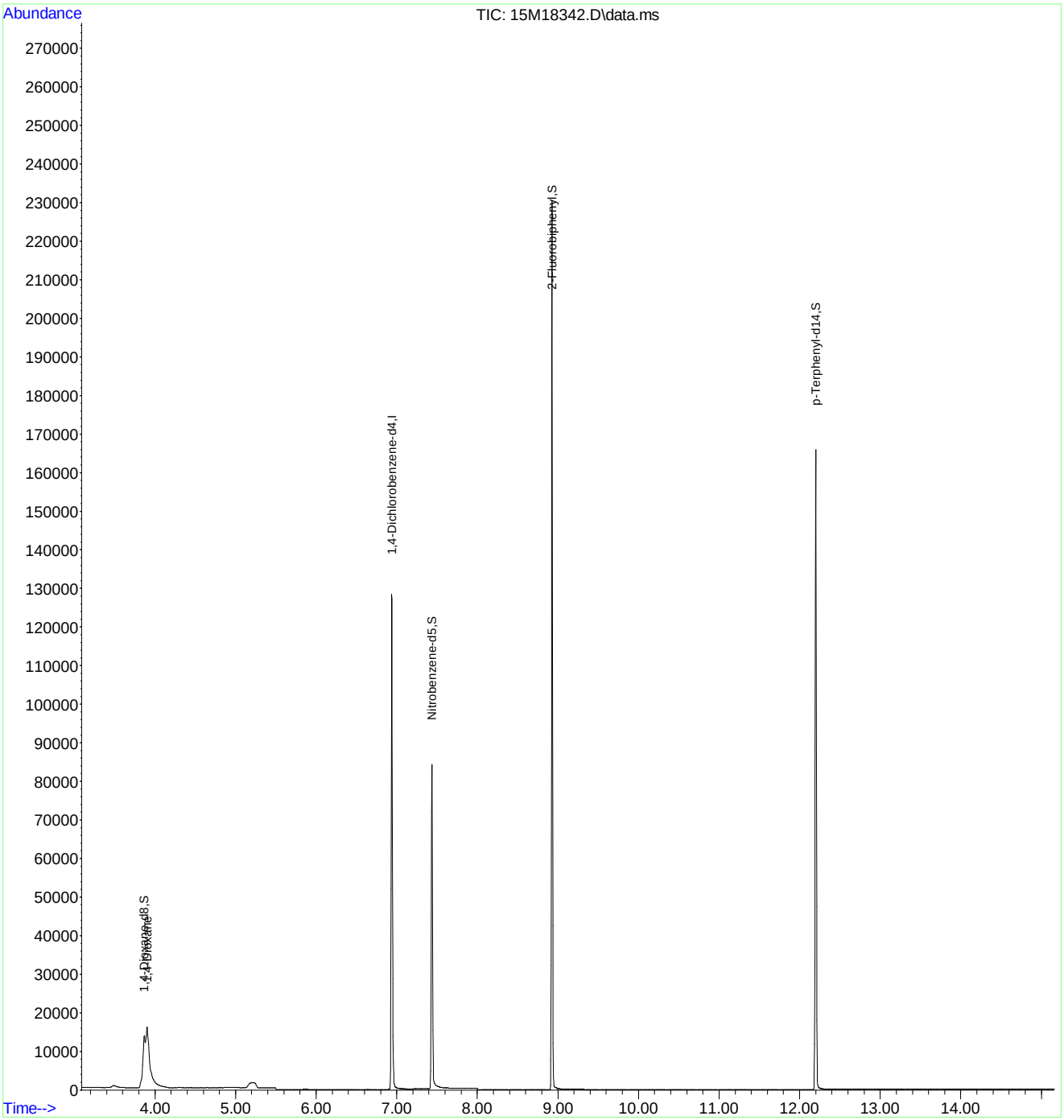

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18343.D
Acq On : 10 Jun 2016 12:30
Operator : MES
Sample : WG572230-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 10 18:15:46 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	51531	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	8760	0.4062	ug/L	0.00
Spiked Amount 5.000			Recovery	=	8.20%	
4) Nitrobenzene-d5	7.436	82	14371	0.4779	ug/L	0.00
Spiked Amount 5.000			Recovery	=	9.60%	
5) 2-Fluorobiphenyl	8.926	172	54404	0.4041	ug/L	0.00
Spiked Amount 5.000			Recovery	=	8.00%	
6) p-Terphenyl-d14	12.203	244	49910	0.3780	ug/L	0.02
Spiked Amount 5.000			Recovery	=	7.60%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	6733	0.4016	ug/L	79

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18343.D
Acq On : 10 Jun 2016 12:30
Operator : MES
Sample : WG572230-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 10 18:15:46 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

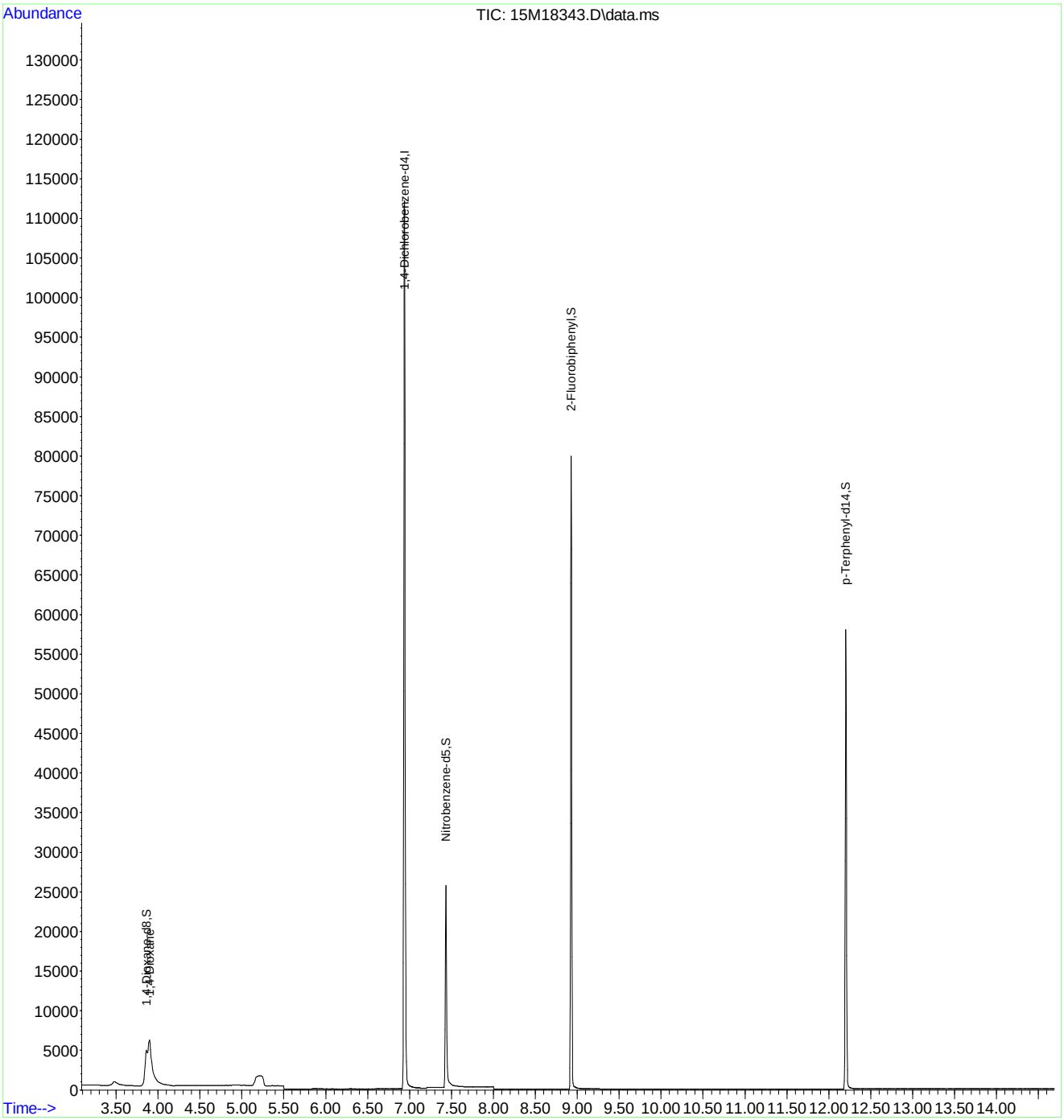

Nitrobenzene-d5

00665774

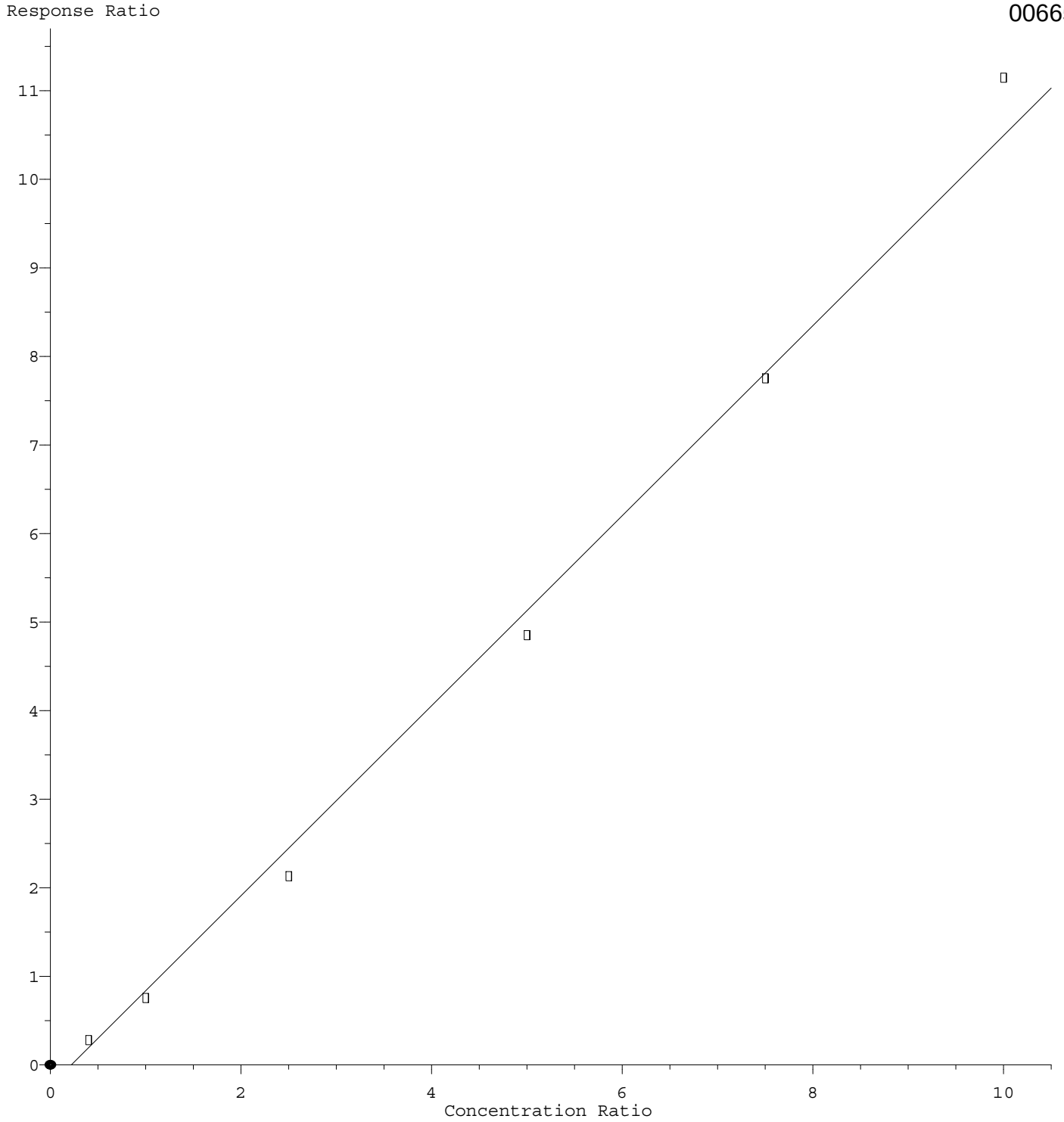

Response = 1.07e+000 * Amt - 2.34e-001
Coef of Det (r^2) = 0.994 Curve Fit: wlr(1/a)
Method Name: C:\msdchem\1\methods\DIOXANE_D8.M
Calibration Table Last Updated: Fri Jun 10 12:46:00 2016

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18344.D
Acq On : 10 Jun 2016 12:52
Operator : MES
Sample : WG572230-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 10 18:15:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	51498	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.897	96	61	0.0028	ug/L	0.04
Spiked Amount 5.000			Recovery	=	0.00%	
4) Nitrobenzene-d5	7.442	82	61	0.2190	ug/L	0.00
Spiked Amount 5.000			Recovery	=	4.40%	
5) 2-Fluorobiphenyl	8.926	172	23	0.0002	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.214	244	150	0.0011	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	85662	5.1127	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18344.D
Acq On : 10 Jun 2016 12:52
Operator : MES
Sample : WG572230-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 10 18:15:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

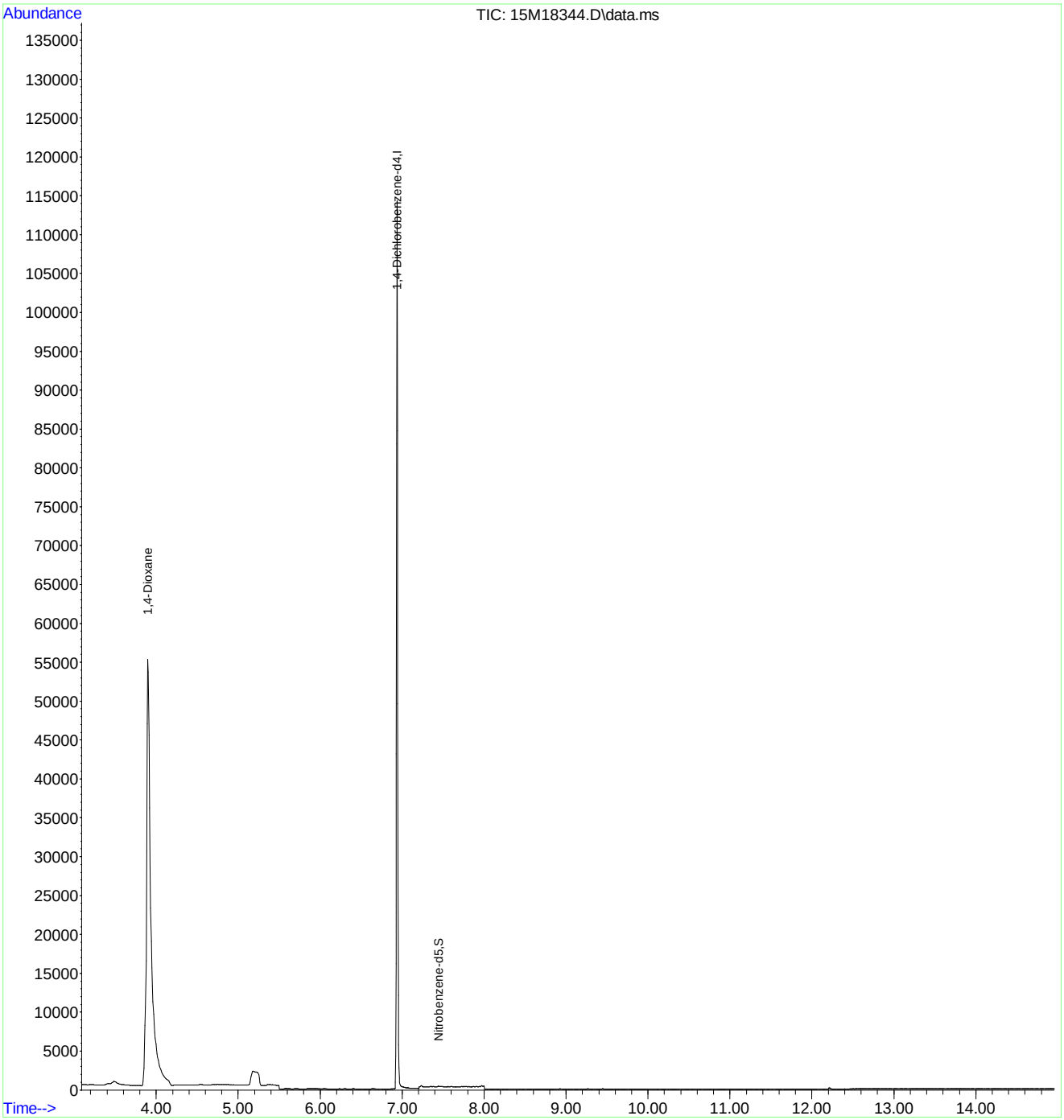

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18344.D
Acq On : 10 Jun 2016 12:52
Operator : MES
Sample : WG572230-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 10 18:15:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	78	0.00
2	1,4-Dioxane	5.000	5.113	-2.3	80	0.00
3 S	1,4-Dioxane-d8	5.000	0.003	99.9#	0	0.04
4 S	Nitrobenzene-d5	5.000	0.219	95.6#	0	0.00
5 S	2-Fluorobiphenyl	5.000	0.000	100.0#	0	0.00
6 S	p-Terphenyl-d14	5.000	0.001	100.0#	0	0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18400.D
Acq On : 16 Jun 2016 10:00
Operator : MES
Sample : WG572958-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 16 10:16:14 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.951	152	63702	1.0000	ug/mL	# 0.01
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.876	96	138261	5.1857	ug/L	0.01
Spiked Amount 5.000			Recovery	= 103.80%		
4) Nitrobenzene-d5	7.447	82	239213	3.7190	ug/L	0.01
Spiked Amount 5.000			Recovery	= 74.40%		
5) 2-Fluorobiphenyl	8.937	172	842255	5.0603	ug/L	0.01
Spiked Amount 5.000			Recovery	= 101.20%		
6) p-Terphenyl-d14	12.228	244	851642	5.2175	ug/L	0.05
Spiked Amount 5.000			Recovery	= 104.40%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.918	58	105339	5.0826	ug/L	81

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18400.D
Acq On : 16 Jun 2016 10:00
Operator : MES
Sample : WG572958-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 16 10:16:14 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

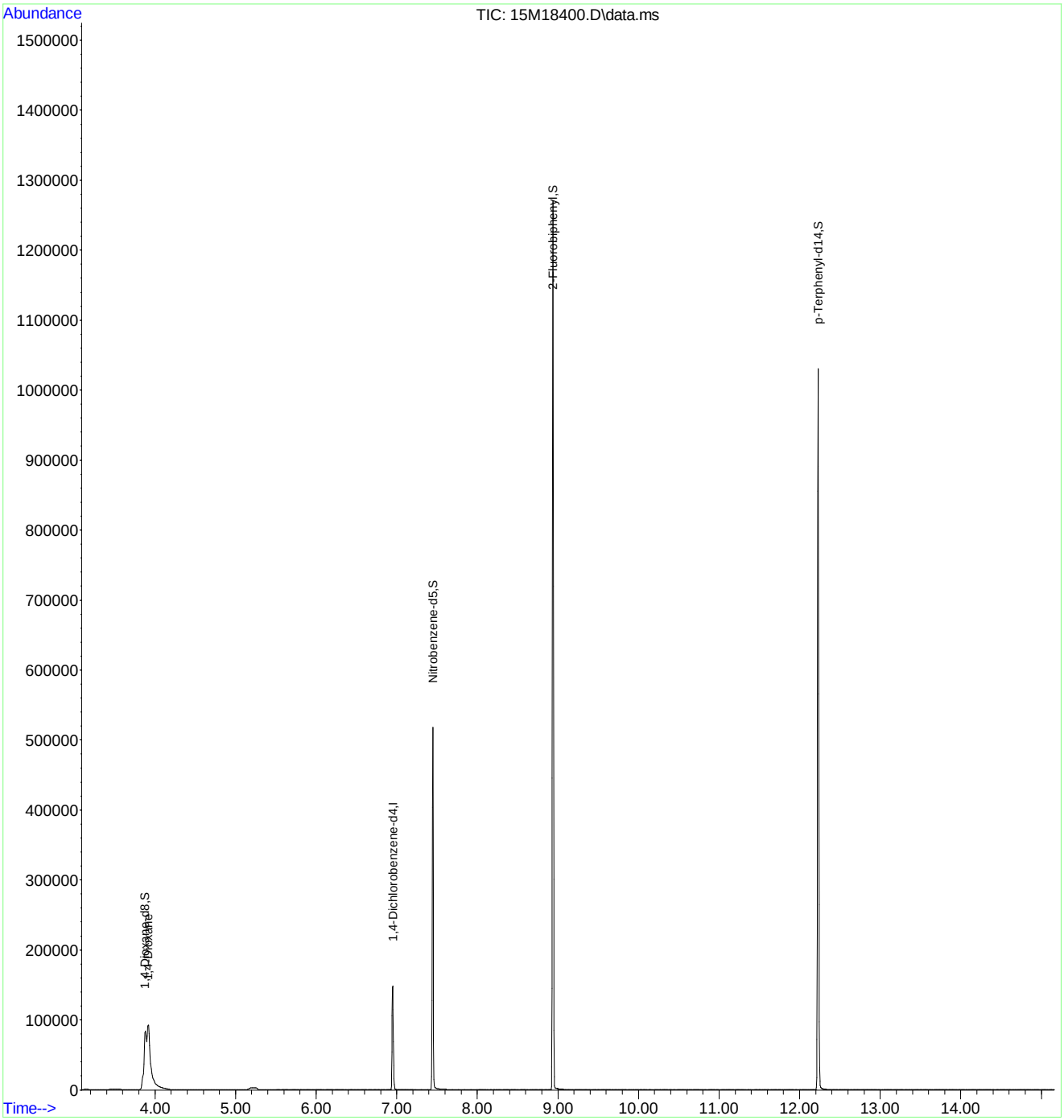

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18400.D
Acq On : 16 Jun 2016 10:00
Operator : MES
Sample : WG572958-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 16 10:16:14 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	96	0.01
2	1,4-Dioxane	5.000	5.083	-1.7	98	0.02
3 S	1,4-Dioxane-d8	5.000	5.186	-3.7	100	0.01
4 S	Nitrobenzene-d5	5.000	3.719	25.6#	74	0.01
5 S	2-Fluorobiphenyl	5.000	5.060	-1.2	100	0.01
6 S	p-Terphenyl-d14	5.000	5.217	-4.3	100	0.05

(#) = Out of Range SPCC's out = 0 CCC's out = 0

2.2.1.5 Raw QC Data

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18337.D
Acq On : 10 Jun 2016 10:18
Operator : MES
Sample : WG572230-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

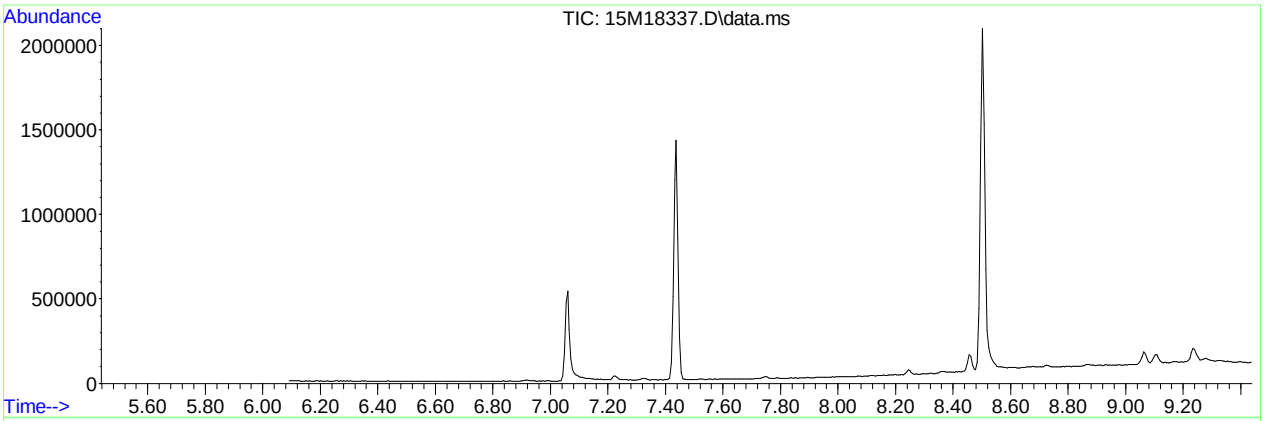

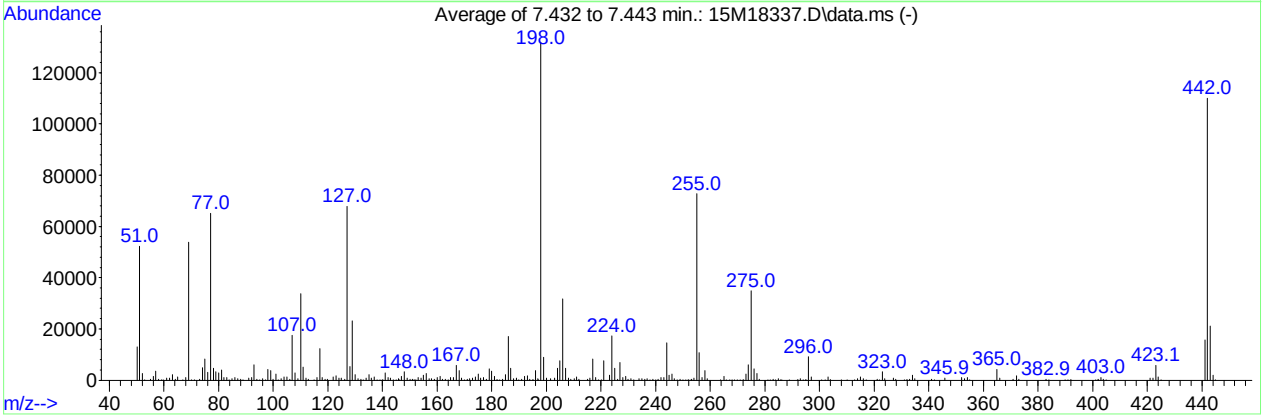

AutoFind: Scans 235, 236, 237; Background Corrected with Scan 229

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	39.5	52157	PASS
68	69	0.00	2	1.9	1026	PASS
69	198	0.00	100	40.8	53844	PASS
70	69	0.00	2	0.2	120	PASS
127	198	40	60	51.4	67853	PASS
197	198	0.00	1	0.4	505	PASS
198	198	100	100	100.0	131981	PASS
199	198	5	9	6.7	8869	PASS
275	198	10	30	26.4	34853	PASS
365	198	1	100	3.2	4186	PASS
441	443	0.01	100	73.9	15632	PASS
442	198	40	100	83.4	110112	PASS
443	442	17	23	19.2	21163	PASS

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18337.D
Acq On : 10 Jun 2016 10:18
Operator : MES
Sample : WG572230-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 10 10:29:37 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

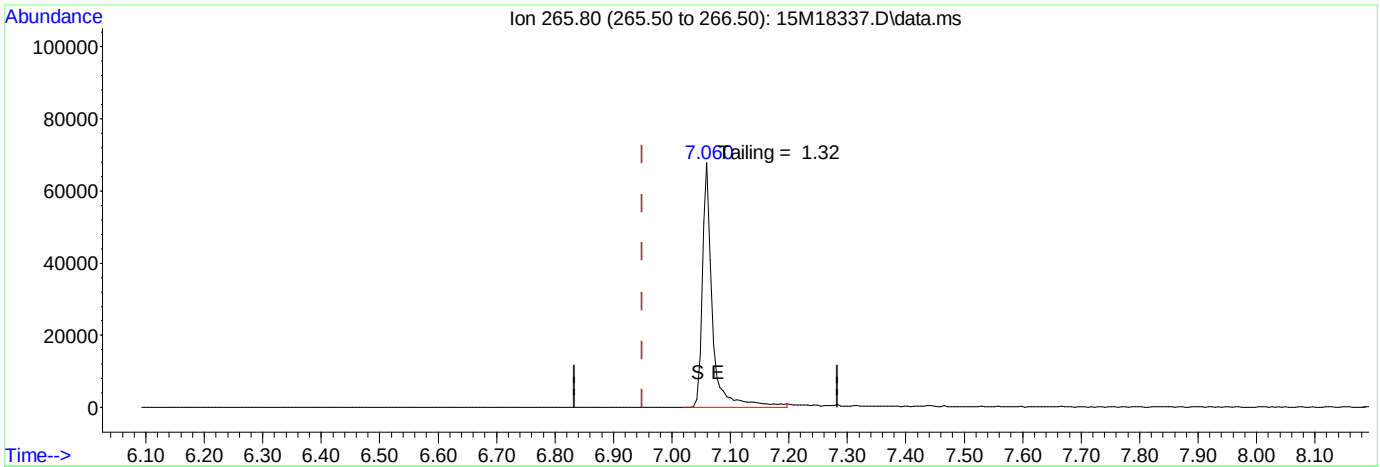

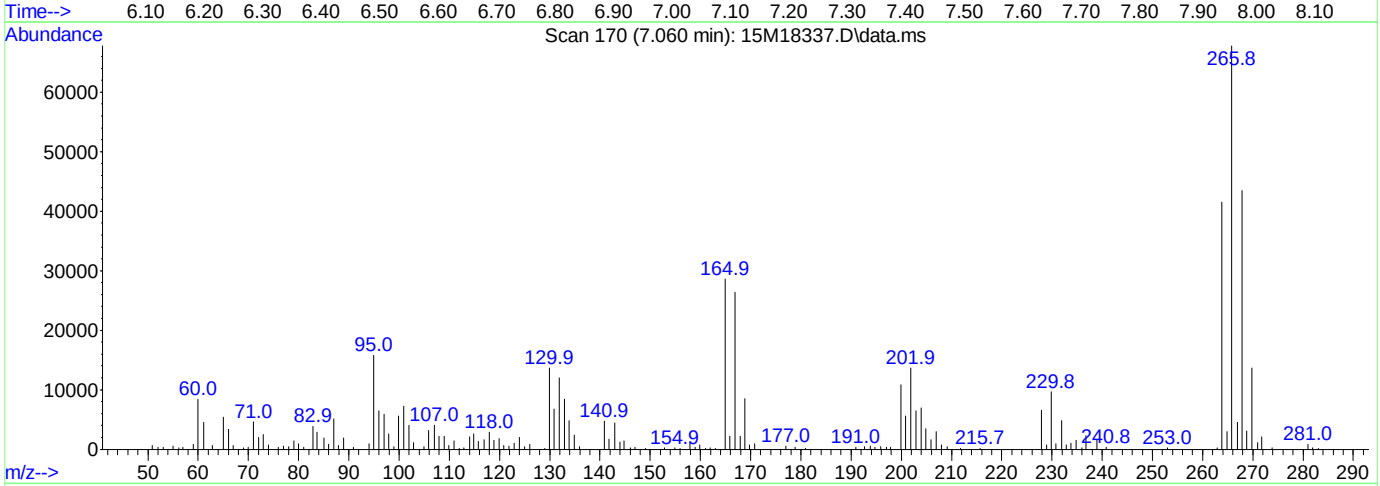

TIC: 15M18337.D\data.ms

(1) Pentachlorophenol

7.060min (+ 0.111) 0.00 ug/ml

response 82111

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18337.D
Acq On : 10 Jun 2016 10:18
Operator : MES
Sample : WG572230-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 10 10:29:37 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

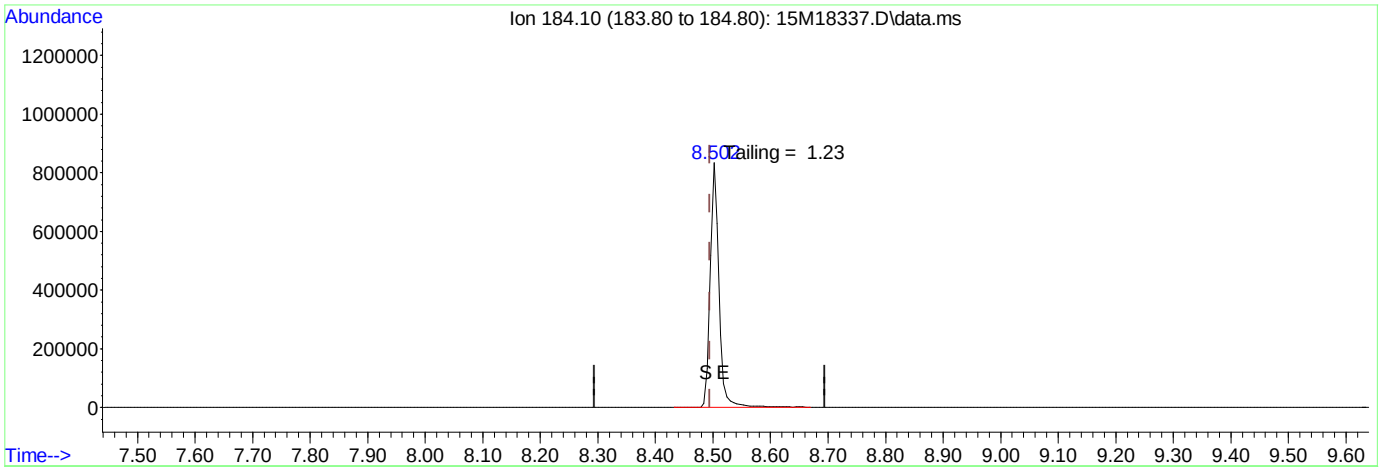

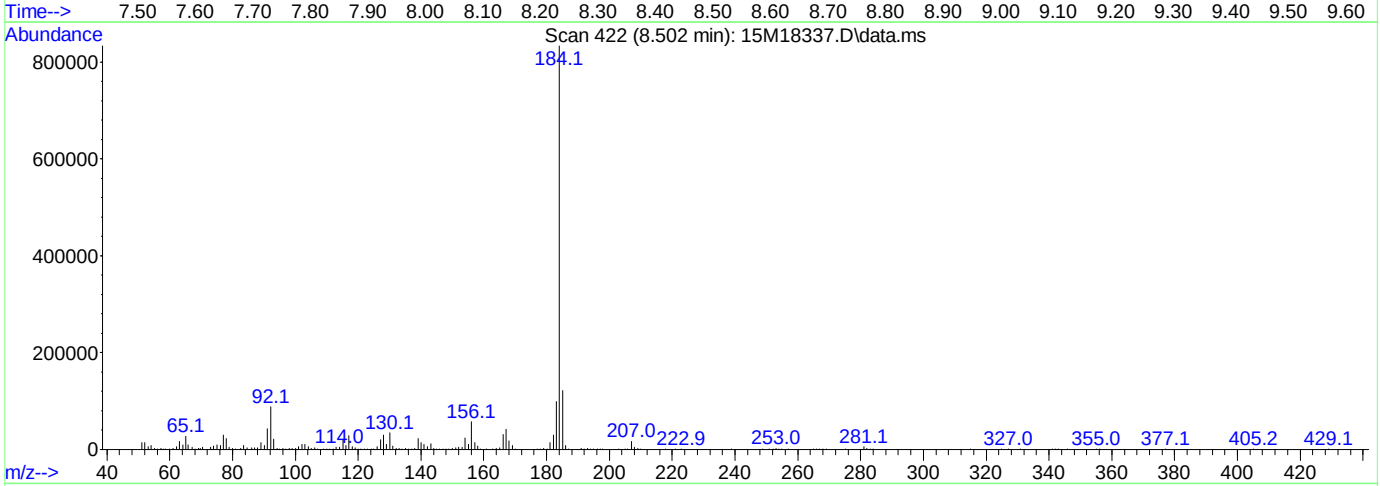

TIC: 15M18337.D\data.ms

(2) Benzidine

8.502min (+ 0.008) 0.00 ug/ml

response 896980

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18337.D
Acq On : 10 Jun 2016 10:18
Operator : MES
Sample : WG572230-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 10 10:29:37 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

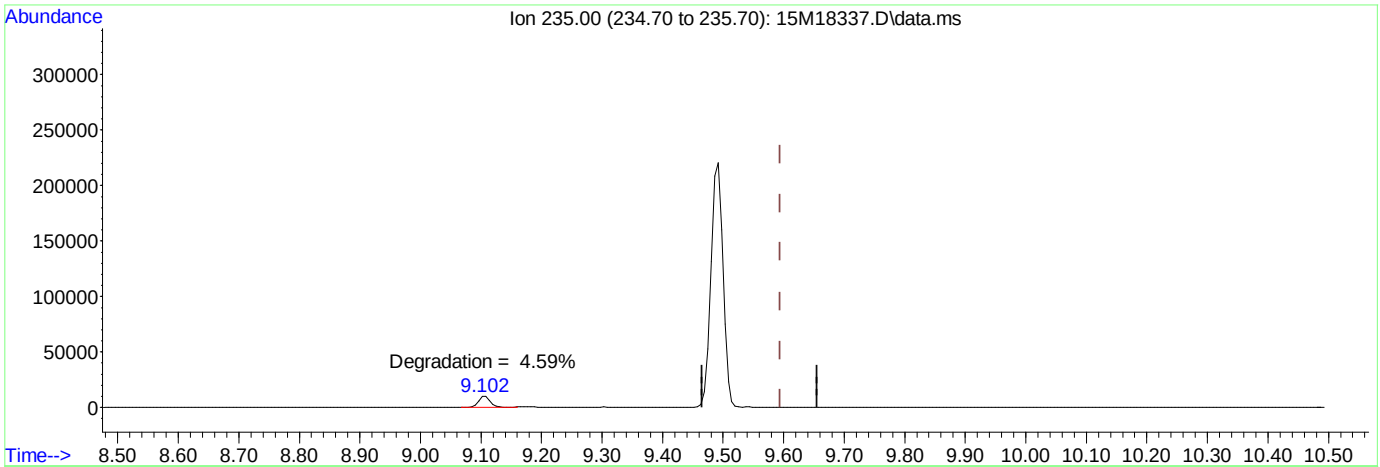

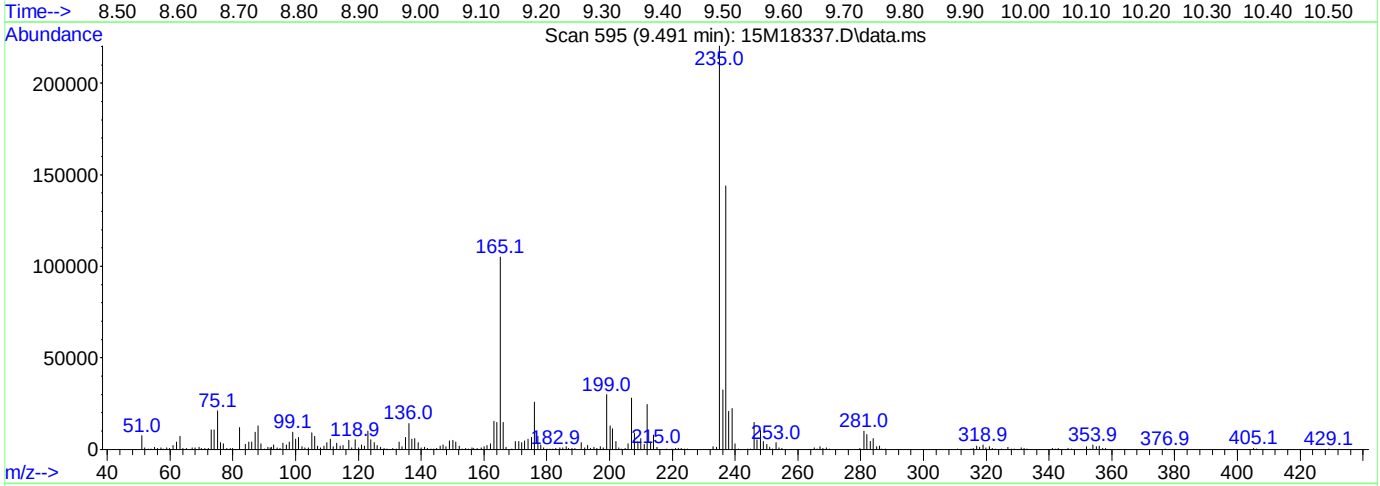

TIC: 15M18337.D\data.ms

(3) DDT

9.491min (-0.103) 0.00 ug/ml

response 283319

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18399.D
Acq On : 16 Jun 2016 9:38
Operator : MES
Sample : WG572958-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

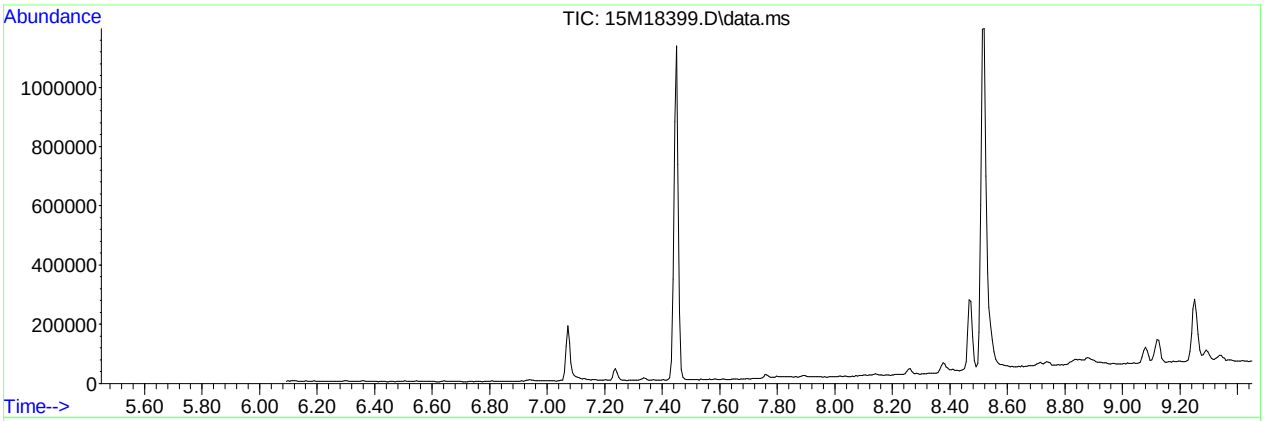

AutoFind: Scans 237, 238, 239; Background Corrected with Scan 231

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	39.7	42335	PASS
68	69	0.00	2	1.6	714	PASS
69	198	0.00	100	40.7	43391	PASS
70	69	0.00	2	0.6	279	PASS
127	198	40	60	52.1	55592	PASS
197	198	0.00	1	0.1	68	PASS
198	198	100	100	100.0	106736	PASS
199	198	5	9	6.7	7172	PASS
275	198	10	30	25.9	27632	PASS
365	198	1	100	3.0	3241	PASS
441	443	0.01	100	76.2	12912	PASS
442	198	40	100	81.0	86427	PASS
443	442	17	23	19.6	16937	PASS

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18399.D
Acq On : 16 Jun 2016 9:38
Operator : MES
Sample : WG572958-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 16 09:56:45 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

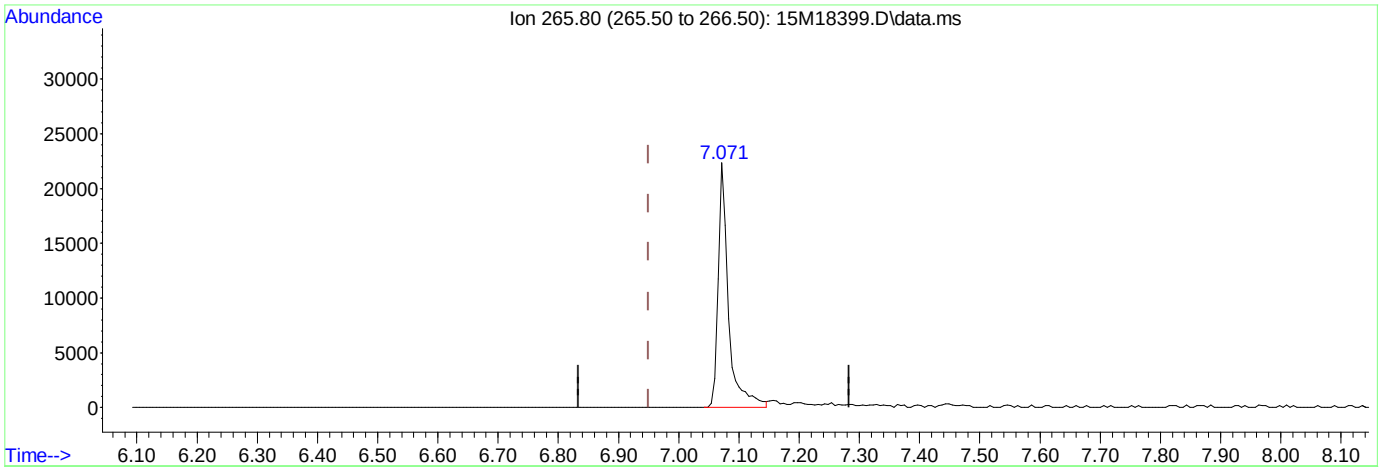

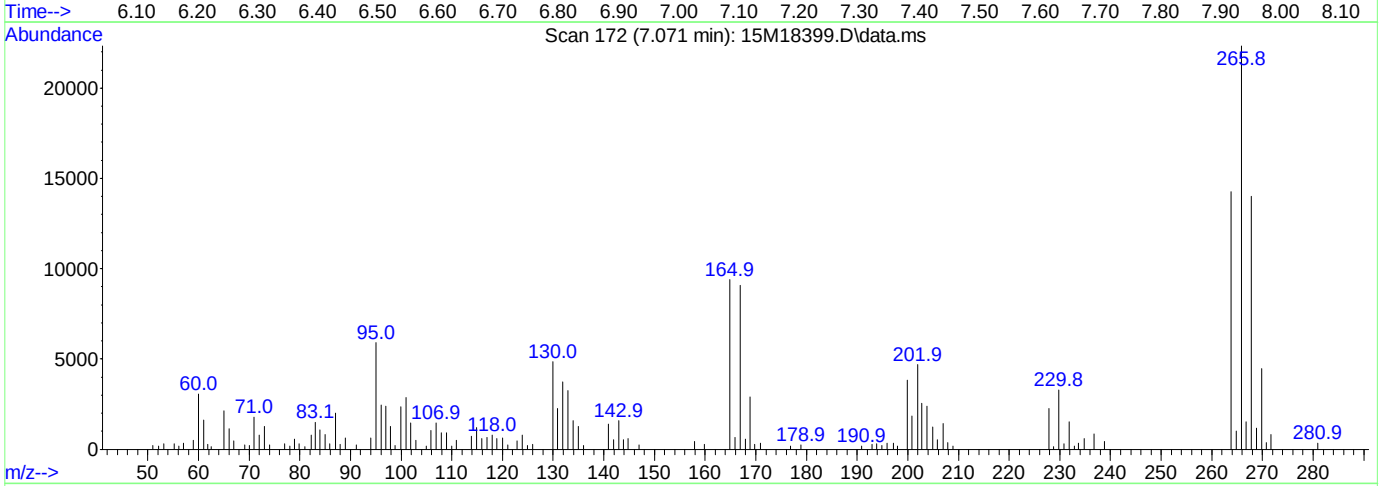

TIC: 15M18399.D\data.ms

(1) Pentachlorophenol

7.071min (+ 0.122) 0.00 ug/ml

response 26601

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18399.D
Acq On : 16 Jun 2016 9:38
Operator : MES
Sample : WG572958-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 16 09:56:45 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

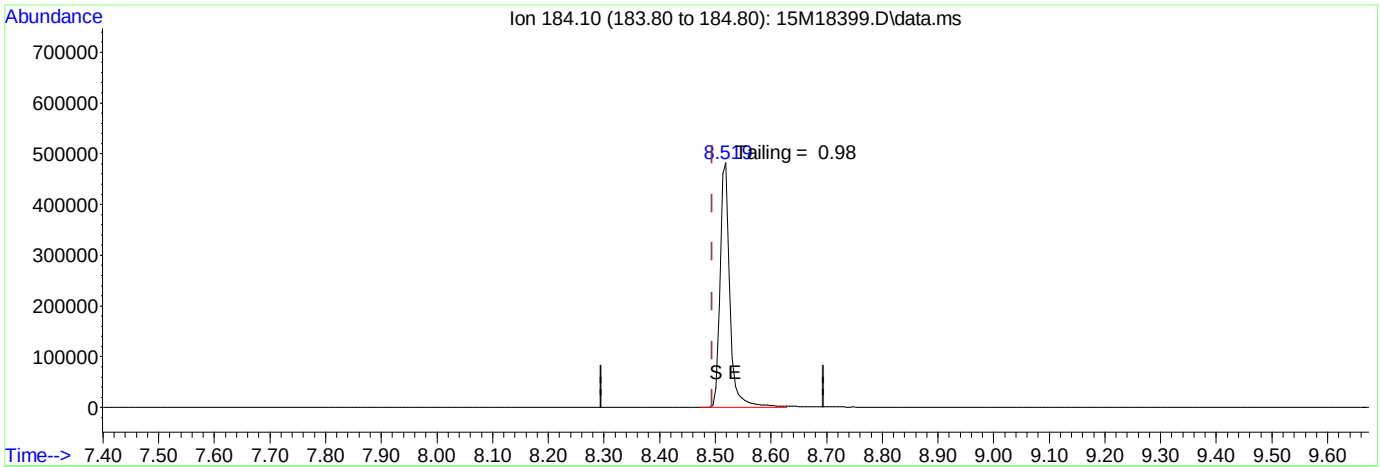

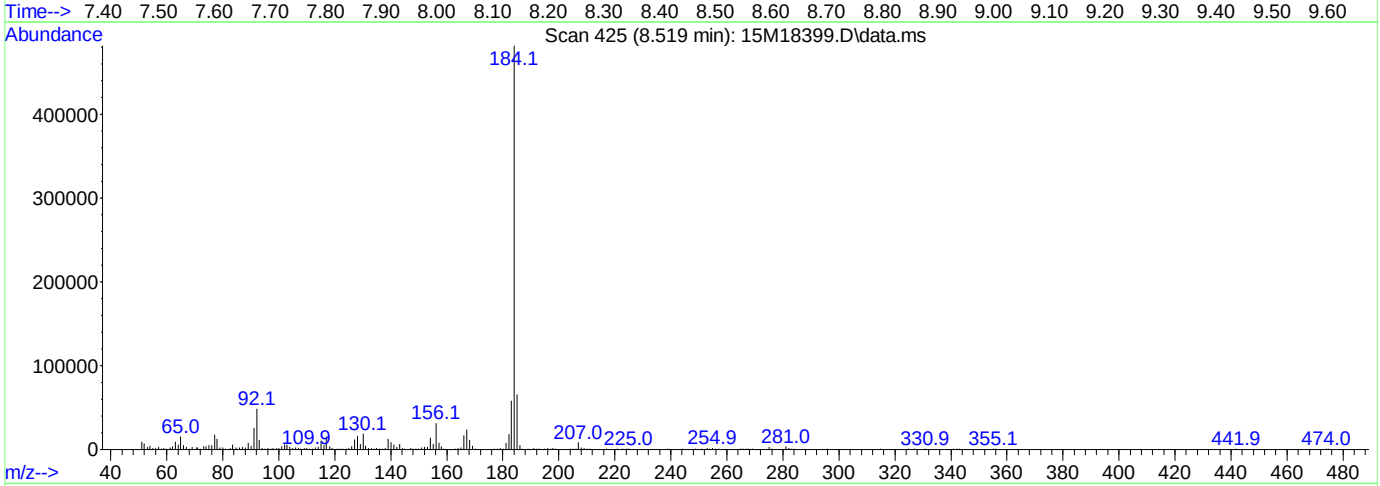

TIC: 15M18399.D\data.ms

(2) Benzidine

8.519min (+ 0.025) 0.00 ug/ml

response 591309

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18399.D
Acq On : 16 Jun 2016 9:38
Operator : MES
Sample : WG572958-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 16 09:56:45 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

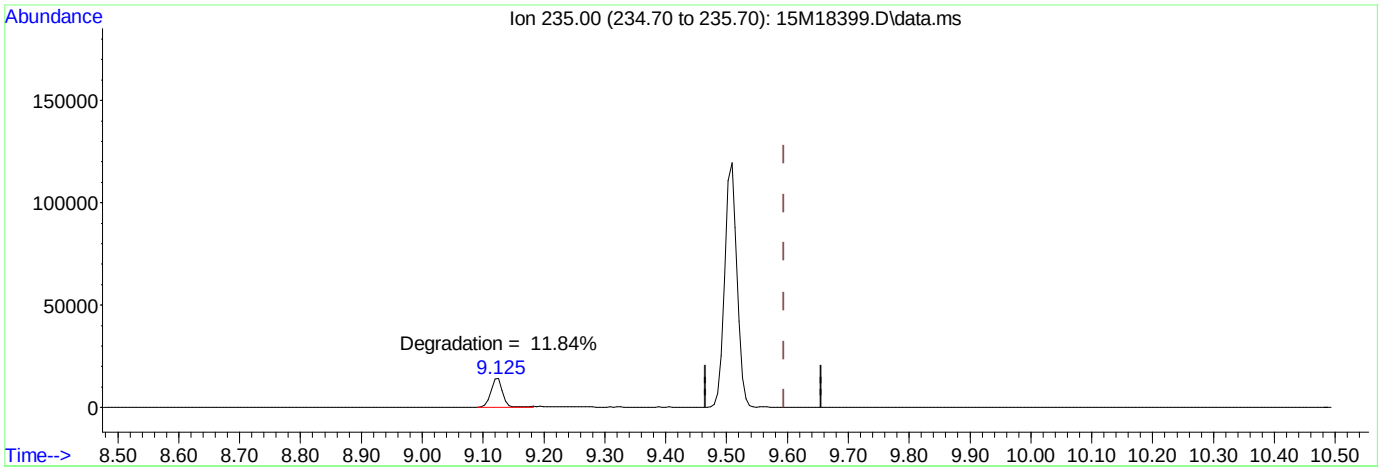

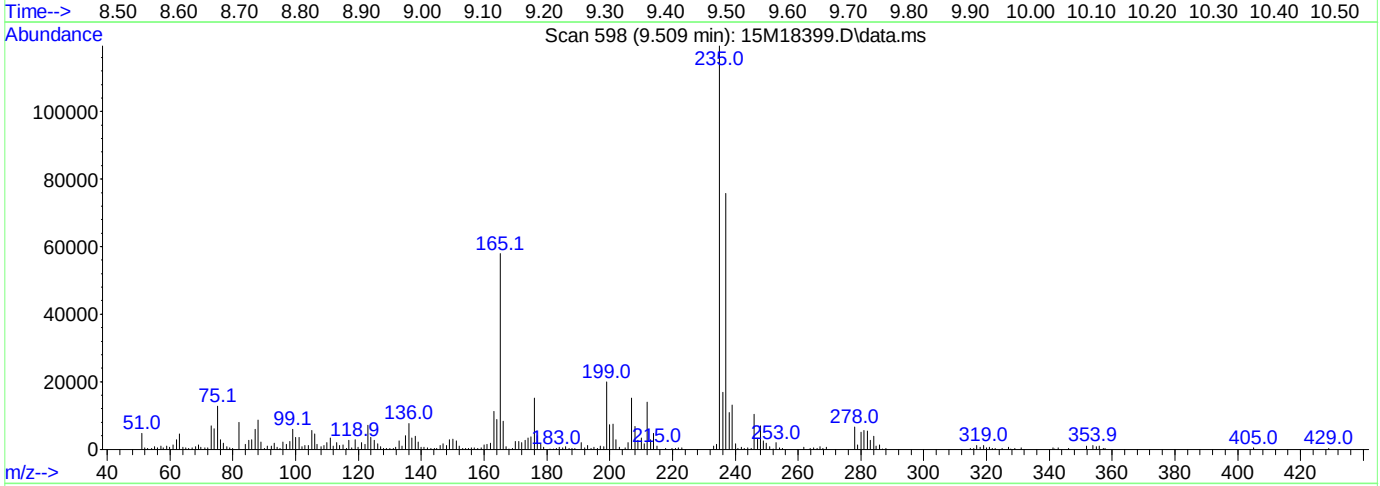

TIC: 15M18399.D\data.ms

(3) DDT

9.509min (-0.085) 0.00 ug/ml

response 162825

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18401.D
Acq On : 16 Jun 2016 10:23
Operator : MES
Sample : WG572341-01 BLANK 6/13
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 16 12:53:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.948	152	57712	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.876	96	35450	1.4676	ug/L	0.01
Spiked Amount 5.000			Recovery = 29.40%			
4) Nitrobenzene-d5	7.442	82	935690	15.3339	ug/L	0.00
Spiked Amount 5.000			Recovery = 306.60%			
5) 2-Fluorobiphenyl	8.937	172	2176930	14.4366	ug/L	0.01
Spiked Amount 5.000			Recovery = 288.80%			
6) p-Terphenyl-d14	12.221	244	5289384	35.7680	ug/L	0.04
Spiked Amount 5.000			Recovery = 715.40%			

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18401.D
Acq On : 16 Jun 2016 10:23
Operator : MES
Sample : WG572341-01 BLANK 6/13
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 16 12:53:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

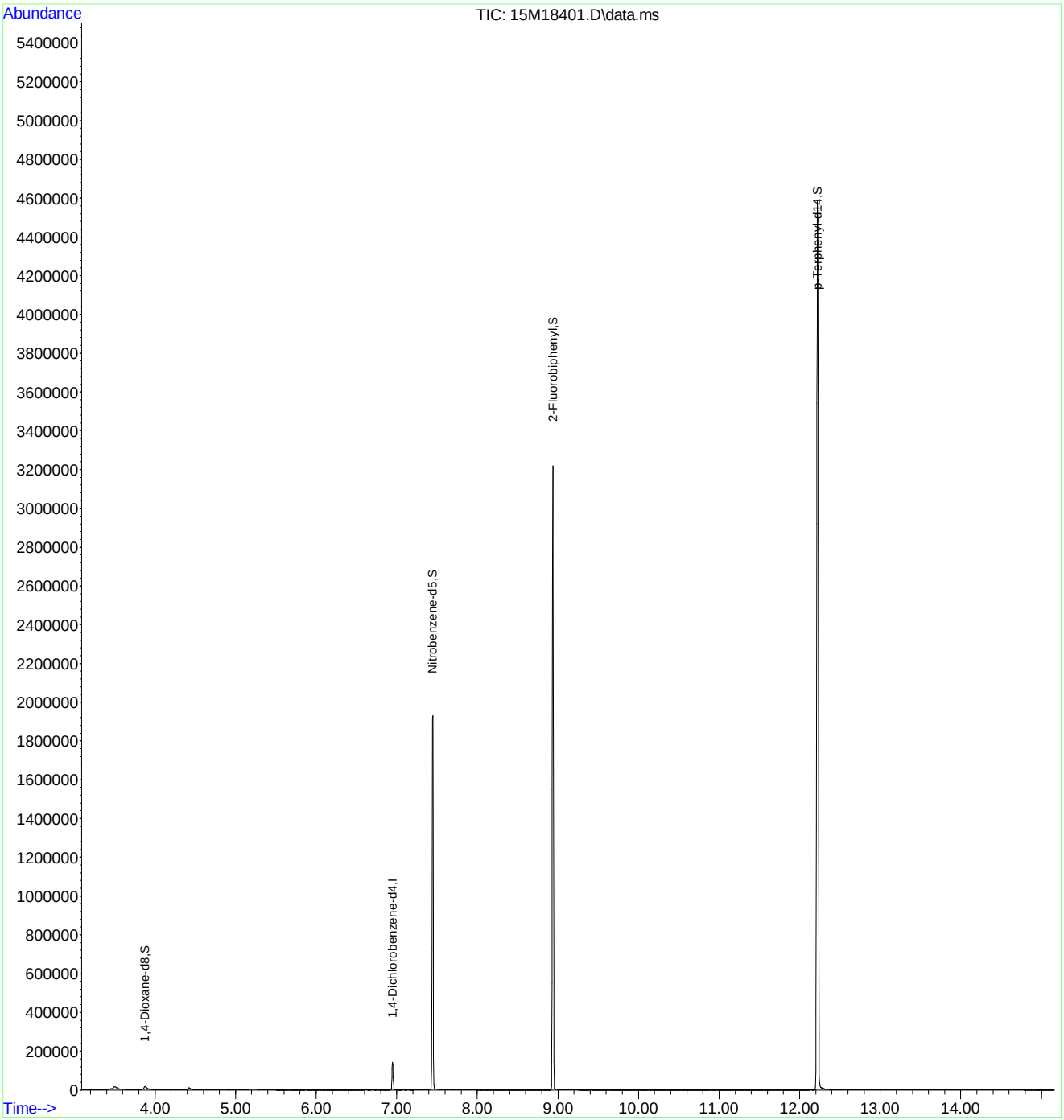

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18402.D
Acq On : 16 Jun 2016 10:46
Operator : MES
Sample : WG572341-02 LCS 6/13
Misc : 1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 16 12:54:04 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.951	152	54087	1.0000	ug/mL	# 0.01
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.883	96	40383	1.7839	ug/L	0.02
Spiked Amount 5.000			Recovery	=	35.60%	
4) Nitrobenzene-d5	7.447	82	8192	0.3591	ug/L	0.01
Spiked Amount 5.000			Recovery	=	7.20%	
5) 2-Fluorobiphenyl	8.937	172	5120	0.0362	ug/L	0.01
Spiked Amount 5.000			Recovery	=	0.80%	
6) p-Terphenyl-d14	12.228	244	1871	0.0135	ug/L	0.05
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.918	58	29330	1.6668	ug/L	82

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18402.D
Acq On : 16 Jun 2016 10:46
Operator : MES
Sample : WG572341-02 LCS 6/13
Misc : 1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 16 12:54:04 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

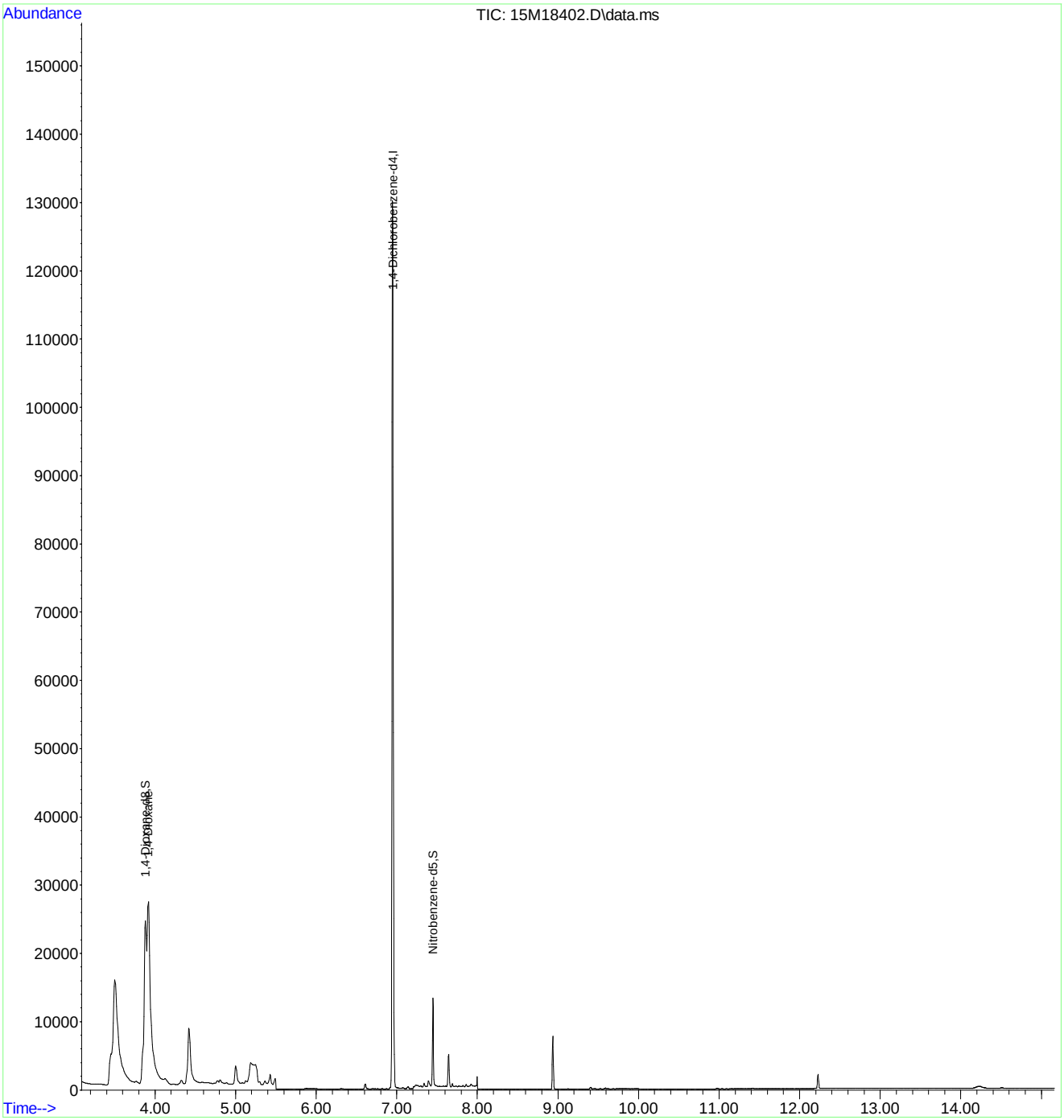

2.2 General Chromatography Data

2.2.2 6850 LC/MS Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW8-060916	**Prep Method:**	6850	**Prep Date:**	06/11/2016 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572350	**Analyst:**	WTD	**Run Date:**	06/11/2016 23:38
Collect Date:	06/09/2016 11:00	**Dilution:**	10000	**File ID:**	1LM.LM35315
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	8290		4000	2000	1000

Certificate of Analysis

Sample #:	L16060616-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW26SW-060916	**Prep Method:**	6850	**Prep Date:**	06/11/2016 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572350	**Analyst:**	WTD	**Run Date:**	06/13/2016 08:47
Collect Date:	06/09/2016 13:25	**Dilution:**	1	**File ID:**	1LM.LM35340
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	6.42		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16060616-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW10-060916	**Prep Method:**	6850	**Prep Date:**	06/11/2016 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572350	**Analyst:**	WTD	**Run Date:**	06/12/2016 00:16
Collect Date:	06/09/2016 14:40	**Dilution:**	1	**File ID:**	1LM.LM35317
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.492		0.400	0.200	0.100

2.2.2.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1405 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG572350-01 MCT	9960	
-02 Blk	0.27	
-03 LCS	0.31	
-04 LCS2	0.31	
L16060615-01	117	
-02	1261	
-03	1269	
-04	3050	
L16060616-01	979	
-02	2840	
-03	112	
L16060632-01	474	
-02	349	
-03	471	
-04	483	

Analyst: Wade T. Deb

Date/Time: 6-11-16 / 1559

DCN#119043

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

Page: 1 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

Page: 2 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061116_WTD.TXT
Analyst1: WTD Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:
Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)
CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35279	WG572339-01 CCB	1	1		06/11/16 11:27
2	1LM.LM35280	WG572339-02 CCV (1.0ug/L)	1	1	STD75510	06/11/16 11:46
3	1LM.LM35281	WG572200-12 MRL (0.2ug/L)	1	1	STD75510	06/11/16 12:05
4	1LM.LM35282	L16060411-01 500X	1	500		06/11/16 12:24
5	1LM.LM35283	L16060411-02 100X	1	100		06/11/16 12:43
6	1LM.LM35284	L16060414-03 10000X	1	10000		06/11/16 13:02
7	1LM.LM35285	L16060414-04 10000X	1	10000		06/11/16 13:21
8	1LM.LM35286	L16060504-01 10000X	1	10000		06/11/16 13:40
9	1LM.LM35287	L16060504-02 1000X	1	1000		06/11/16 13:58
10	1LM.LM35288	L16060504-03 10000X	1	10000		06/11/16 14:17
11	1LM.LM35289	L16060504-04 1000X	1	1000		06/11/16 14:36
12	1LM.LM35290	L16060414-03 100000X	1	100000		06/11/16 14:55
13	1LM.LM35291	L16060414-04 100000X	1	100000		06/11/16 15:15
14	1LM.LM35292	WG572339-03 CCV (1.0ug/L)	1	1	STD75510	06/11/16 15:34
15	1LM.LM35293	WG572200-13 MRL (0.2ug/L)	1	1	STD75510	06/11/16 16:41
16	1LM.LM35294	WG572339-04 CCB	1	1		06/11/16 17:00
17	1LM.LM35295	L16060504-04 100X	1	100		06/11/16 17:19
18	1LM.LM35296	WG572339-05 CCV (1.0ug/L)	1	1	STD75510	06/11/16 17:38
19	1LM.LM35297	WG572200-14 MRL (0.2ug/L)	1	1	STD75510	06/11/16 17:57
20	1LM.LM35298	WG572339-06 CCB	1	1		06/11/16 18:16
21	1LM.LM35299	WG572350-05 MRL (0.2ug/L)	1	1	STD75510	06/11/16 18:35
22	1LM.LM35300	WG572350-01 MCT (0.2ug/l)	1	1	STD75512	06/11/16 18:54
23	1LM.LM35301	WG572350-02 BLANK	1	1		06/11/16 19:13
24	1LM.LM35302	WG572350-03 LCS (0.2ug/L)	1	1	STD75512	06/11/16 19:32
25	1LM.LM35303	WG572350-03 LCSD (0.2ug/L)	1	1	STD75512	06/11/16 19:51
26	1LM.LM35304	L16060632-01 100X	1	100		06/11/16 20:10
27	1LM.LM35305	L16060632-02 100X	1	100		06/11/16 20:29
28	1LM.LM35306	L16060632-03 100X	1	100		06/11/16 20:48
29	1LM.LM35307	L16060632-04 100X	1	100		06/11/16 21:07
30	1LM.LM35308	L16060615-01 10000X	1	10000		06/11/16 21:26
31	1LM.LM35309	L16060615-02 100X	1	100		06/11/16 21:44
43	1LM.LM35310	WG572339-07 CCV (1.0ug/L)	1	1	STD75510	06/11/16 22:03
33	1LM.LM35311	WG572350-06 MRL (0.2ug/L)	1	1	STD75510	06/11/16 22:22

Page: 1 Approved: 13-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061116_WTD.TXT

Analyst1: WTD Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 NA

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
44	1LM.LM35312	WG572339-08 CCB	1	1		06/11/16 22:41
35	1LM.LM35313	L16060615-03 100X	1	100		06/11/16 23:00
36	1LM.LM35314	L16060615-04 100X	1	100		06/11/16 23:19
37	1LM.LM35315	L16060616-01 10000X	1	10000		06/11/16 23:38
38	1LM.LM35316	L16060616-02 10000X	1	10000		06/11/16 23:57
39	1LM.LM35317	L16060616-03	1	1		06/12/16 00:16
45	1LM.LM35318	WG572339-09 CCV (1.0ug/L)	1	1	STD75510	06/12/16 00:35
41	1LM.LM35319	WG572350-07 MRL (0.2ug/L)	1	1	STD75510	06/12/16 00:54
46	1LM.LM35320	WG572339-10 CCB	1	1		06/12/16 01:13

Comments

Seq.	Rerun	Dil.	Reason	Analytes
6	X	100000	Over Calibration Range	
	L16060414-03			
7	X	100000	Over Calibration Range	
	L16060414-04			
11	X	100	Analyzed too dilute	
	L16060504-04			
26	X	1	Analyzed too dilute	
	L16060632-01			
27	X	1	Analyzed too dilute	
	L16060632-02			
28	X	1	Analyzed too dilute	
	L16060632-03			
29	X	1	Analyzed too dilute	
	L16060632-04			
30	X	1	Analyzed too dilute	
	L16060615-01			
31	X	1	Analyzed too dilute	
	L16060615-02			
35	X	1	Analyzed too dilute	
	L16060615-03			
36	X	10000	Over Calibration Range	
	L16060615-04			
37				
	L16060616-01 Analyzed at a dilution based on historical data			

Page: 2 Approved: 13-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061116_WTD.TXT

Analyst1: WTD Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups:

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 NA

Comments

Seq.	Rerun	Dil.	Reason	Analytes
38	X	100	Analyzed too dilute	
	L16060616-02			

Page: 3 Approved: 13-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061216_WTD.TXT
Analyst1: WTD Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG572350

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35321	WG572372-01 CCB	1	1		06/12/16 20:44
2	1LM.LM35322	WG572372-02 CCV (1.0ug/L)	1	1	STD75510	06/12/16 21:03
3	1LM.LM35323	WG572350-08 MRL (0.2ug/L)	1	1	STD75510	06/12/16 21:22
4	1LM.LM35324	L16060632-01	1	1		06/12/16 21:41
5	1LM.LM35325	L16060632-02	1	1		06/12/16 22:00
6	1LM.LM35326	L16060632-03	1	1		06/12/16 22:19
7	1LM.LM35327	L16060632-04	1	1		06/12/16 22:37
8	1LM.LM35328	L16060615-01	1	1		06/12/16 22:56
9	1LM.LM35329	L16060615-01 10x	1	10		06/12/16 23:15
10	1LM.LM35330	L16060615-02	1	1		06/12/16 23:34
11	1LM.LM35331	L16060615-03	1	1		06/12/16 23:53
12	1LM.LM35332	L16060615-04 10000x	1	10000		06/13/16 00:12
13	1LM.LM35333	L16060616-02 100X	1	100		06/13/16 00:31
14	1LM.LM35334	WG572372-03 CCV (1.0ug/L)	1	1	STD75510	06/13/16 00:50
15	1LM.LM35335	WG572350-09 MRL (0.2ug/L)	1	1	STD75510	06/13/16 01:09
16	1LM.LM35336	WG572372-04 CCB	1	1		06/13/16 01:28
17	1LM.LM35337	WG572372-05 CCB	1	1		06/13/16 07:50
18	1LM.LM35338	WG572372-06 CCV (1.0ug/L)	1	1	STD75510	06/13/16 08:09
19	1LM.LM35339	WG572350-10 MRL (0.2ug/L)	1	1	STD75510	06/13/16 08:28
20	1LM.LM35340	L16060616-02	1	1		06/13/16 08:47
21	1LM.LM35341	WG572372-07 CCV (1.0ug/L)	1	1	STD75510	06/13/16 09:06
22	1LM.LM35342	WG572350-10 MRL (0.2ug/L)	1	1	STD75510	06/13/16 09:25
23	1LM.LM35343	WG572372-08 CCB	1	1		06/13/16 09:44

Comments

Seq.	Rerun	Dil.	Reason	Analytes
9				
	L16060615-01 Dilution not needed.			
13	X	1	Analyzed too dilute	
	L16060616-02			

Page: 1 Approved: 13-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 04-MAY-2016 John Richards

Secondary Reviewer: 05-MAY-2016 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 11-JUN-2016
Analyst: WTD
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 75641
Analytical Workgroups: L16060411, L16060414, L16060504, L16060616

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	WTD
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 12-JUN-2016

Secondary Reviewer: 13-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-14-2016 08:50:47

Microbac Laboratories Inc.

Data Checklist

Date: 12-JUN-2016
Analyst: WTD
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 75643
Analytical Workgroups: L16060615, L16060616, L16060632

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	X
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	WTD
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 13-JUN-2016

Secondary Reviewer: 13-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-14-2016 08:50:19

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG572350

Login Number: L16060616

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW8-060916	01	06/09/16					06/11/2016	2	28		06/11/16	.5	28	
18CPTMW26SW-060916	02	06/09/16					06/11/2016	1.9	28		06/13/16	1.9	28	
MW10-060916	03	06/09/16					06/11/2016	1.8	28		06/12/16	.6	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4804241
Report generated 06/14/2016 08:48

METHOD BLANK SUMMARY

Login Number: L16060616
Blank File ID: 1LM.LM35301
Prep Date: 06/11/16 11:00
Analyzed Date: 06/11/16 19:13
Analyst: WTD

Work Group: WG572350
Blank Sample ID: WG572350-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG572350-05	1LM.LM35299	06/11/16 18:35	01
MCT	WG572350-01	1LM.LM35300	06/11/16 18:54	01
LCS	WG572350-03	1LM.LM35302	06/11/16 19:32	01
LCS2	WG572350-04	1LM.LM35303	06/11/16 19:51	01
QCMRL	WG572350-06	1LM.LM35311	06/11/16 22:22	01
MW8-060916	L16060616-01	1LM.LM35315	06/11/16 23:38	DL01
MW10-060916	L16060616-03	1LM.LM35317	06/12/16 00:16	01
QCMRL	WG572350-07	1LM.LM35319	06/12/16 00:54	01
QCMRL	WG572350-08	1LM.LM35323	06/12/16 21:22	01
QCMRL	WG572350-09	1LM.LM35335	06/13/16 01:09	01
QCMRL	WG572350-10	1LM.LM35339	06/13/16 08:28	01
18CPTMW26SW-060916	L16060616-02	1LM.LM35340	06/13/16 08:47	01
QCMRL	WG572350-10	1LM.LM35342	06/13/16 09:25	02

Report Name: BLANK_SUMMARY
PDF File ID: 4804242
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060616 Prep Date: 06/11/16 11:00 Sample ID: WG572350-02
Instrument ID: LCMS1 Run Date: 06/11/16 19:13 Prep Method: 6850
File ID: 1LM.LM35301 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572350 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4804243
14-JUN-2016 08:48

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060616 Analyst: WTD Prep Method: 6850
Instrument ID: LCMS1 Matrix: Water Method: 6850
Workgroup (AAB#): WG572350 Units: ug/L
QC Key: DOD4 Lot #: STD75512

Sample ID: WG572350-03 LCS File ID: 1LM.LM35302 Run Date: 06/11/2016 19:32
Sample ID: WG572350-04 LCS2 File ID: 1LM.LM35303 Run Date: 06/11/2016 19:51

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Perchlorate	0.200	0.211	106	0.200	0.208	104	1.43	80 - 120	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4804244
Report generated: 06/14/2016 08:48

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060616
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4804246
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060616

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4804246
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060616

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4804246
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060616

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008

PDF File ID: 4804246

Report generated 06/14/2016 08:48

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060616 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4804247
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060616
Run Date: 06/11/2016
Sample ID: WG572339-06
Instrument ID: LCMS1
Run Time: 18:16
Method: 6850
File ID: 1LM.LM35298
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4804249
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060616
Run Date: 06/11/2016
Sample ID: WG572339-08
Instrument ID: LCMS1
Run Time: 22:41
Method: 6850
File ID: 1LM.LM35312
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4804249
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060616
Run Date: 06/12/2016
Sample ID: WG572339-10
Instrument ID: LCMS1
Run Time: 01:13
Method: 6850
File ID: 1LM.LM35320
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4804249
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060616
Run Date: 06/12/2016
Sample ID: WG572372-01
Instrument ID: LCMS1
Run Time: 20:44
Method: 6850
File ID: 1LM.LM35321
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4804249
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060616
Run Date: 06/13/2016
Sample ID: WG572372-04
Instrument ID: LCMS1
Run Time: 01:28
Method: 6850
File ID: 1LM.LM35336
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4804249
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060616
Run Date: 06/13/2016
Sample ID: WG572372-05
Instrument ID: LCMS1
Run Time: 07:50
Method: 6850
File ID: 1LM.LM35337
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4804249
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060616
Run Date: 06/13/2016
Sample ID: WG572372-08
Instrument ID: LCMS1
Run Time: 09:44
Method: 6850
File ID: 1LM.LM35343
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4804249
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/11/2016
Sample ID: WG572339-05
Instrument ID: LCMS1
Run Time: 17:38
Method: 6850
File ID: 1LM.LM35296
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.73	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4804248
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/11/2016
Sample ID: WG572339-07
Instrument ID: LCMS1
Run Time: 22:03
Method: 6850
File ID: 1LM.LM35310
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.06	ug/L	1.79	6.00	15	

* Exceeds %D Criteria

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PDF File ID: 4804248
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/12/2016
Sample ID: WG572339-09
Instrument ID: LCMS1
Run Time: 00:35
Method: 6850
File ID: 1LM.LM35318
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.70	1.00	15	

* Exceeds %D Criteria

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PDF File ID: 4804248
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/12/2016
Sample ID: WG572372-02
Instrument ID: LCMS1
Run Time: 21:03
Method: 6850
File ID: 1LM.LM35322
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.72	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4804248
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/13/2016
Sample ID: WG572372-03
Instrument ID: LCMS1
Run Time: 00:50
Method: 6850
File ID: 1LM.LM35334
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.71	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4804248
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/13/2016
Sample ID: WG572372-06
Instrument ID: LCMS1
Run Time: 08:09
Method: 6850
File ID: 1LM.LM35338
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.76	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4804248
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/13/2016
Sample ID: WG572372-07
Instrument ID: LCMS1
Run Time: 09:06
Method: 6850
File ID: 1LM.LM35341
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.73	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4804248
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060616 Run Date: 06/11/2016 Sample ID: WG572350-05
Instrument ID: LCMS1 Run Time: 18:35 Prep Method: 6850
File ID: 1LM.LM35299 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572350 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.207	104	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4804245
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060616 Run Date: 06/11/2016 Sample ID: WG572350-06
Instrument ID: LCMS1 Run Time: 22:22 Prep Method: 6850
File ID: 1LM.LM35311 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572350 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.217	109	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4804245
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060616 Run Date: 06/12/2016 Sample ID: WG572350-07
Instrument ID: LCMS1 Run Time: 00:54 Prep Method: 6850
File ID: 1LM.LM35319 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572350 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.219	110	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4804245
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060616 Run Date: 06/12/2016 Sample ID: WG572350-08
Instrument ID: LCMS1 Run Time: 21:22 Prep Method: 6850
File ID: 1LM.LM35323 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572350 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.214	107	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4804245
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060616 Run Date: 06/13/2016 Sample ID: WG572350-09
Instrument ID: LCMS1 Run Time: 01:09 Prep Method: 6850
File ID: 1LM.LM35335 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572350 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.216	108	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4804245
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060616 Run Date: 06/13/2016 Sample ID: WG572350-10
Instrument ID: LCMS1 Run Time: 08:28 Prep Method: 6850
File ID: 1LM.LM35339 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572350 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.210	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4804245
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060616 Run Date: 06/13/2016 Sample ID: WG572350-10
Instrument ID: LCMS1 Run Time: 09:25 Prep Method: 6850
File ID: 1LM.LM35342 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572350 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.220	110	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4804245
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16060616
Instrument ID: LCMS1
Workgroup (AAB#): WG572350

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16060616-01	10000	DL01	483000
L16060616-02	1.00	01	415000
L16060616-03	1.00	01	467000
WG572350-02	1.00	01	490000
WG572350-03	1.00	01	484000
WG572350-04	1.00	01	484000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4804250
Report generated 06/14/2016 08:48

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**	6850	**Samplenum:**	L16060616-01
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35315
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/11/2016 23:38	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	135000	46200	2.92	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**	6850	**Samplenum:**	L16060616-02
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35340
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/13/2016 08:47	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	896000	301000	2.98	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**	6850	**Samplenum:**	L16060616-03
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35317
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/12/2016 00:16	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	77800	26400	2.95	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**		**Samplenum:**	WG572339-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35296
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/11/2016 17:38	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	172000	59300	2.90	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**		**Samplenum:**	WG572339-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35298
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/11/2016 18:16	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**		**Samplenum:**	WG572339-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35310
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/11/2016 22:03	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	180000	60500	2.98	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**		**Samplenum:**	WG572339-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35312
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/11/2016 22:41	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**		**Samplenum:**	WG572339-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35318
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/12/2016 00:35	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	174000	61600	2.82	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**		**Samplenum:**	WG572339-10
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35320
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/12/2016 01:13	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	674	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**	6850	**Samplenum:**	WG572350-01
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35300
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/11/2016 18:54	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	41100	12200	3.37	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**	6850	**Samplenum:**	WG572350-02
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35301
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/11/2016 19:13	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	227	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**	6850	**Samplenum:**	WG572350-03
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35302
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/11/2016 19:32	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35000	12100	2.89	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**	6850	**Samplenum:**	WG572350-04
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35303
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/11/2016 19:51	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34400	11900	2.89	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**	6850	**Samplenum:**	WG572350-05
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35299
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/11/2016 18:35	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35100	12900	2.72	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**	6850	**Samplenum:**	WG572350-06
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35311
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/11/2016 22:22	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37800	12300	3.07	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**	6850	**Samplenum:**	WG572350-07
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35319
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/12/2016 00:54	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38100	13000	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**	6850	**Samplenum:**	WG572350-08
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35323
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/12/2016 21:22	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36000	12100	2.98	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**	6850	**Samplenum:**	WG572350-09
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35335
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/13/2016 01:09	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	41200	14000	2.94	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**	6850	**Samplenum:**	WG572350-10
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35339
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/13/2016 08:28	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	39900	13800	2.89	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**	6850	**Samplenum:**	WG572350-10
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35342
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/13/2016 09:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	42100	14300	2.94	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**		**Samplenum:**	WG572372-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35321
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/12/2016 20:44	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1120	906	1.24	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**		**Samplenum:**	WG572372-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35322
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/12/2016 21:03	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	166000	58600	2.83	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**		**Samplenum:**	WG572372-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35334
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/13/2016 00:50	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	190000	63900	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**		**Samplenum:**	WG572372-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35336
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/13/2016 01:28	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**		**Samplenum:**	WG572372-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35337
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/13/2016 07:50	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**		**Samplenum:**	WG572372-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35338
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/13/2016 08:09	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	189000	64700	2.92	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**		**Samplenum:**	WG572372-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35341
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/13/2016 09:06	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	192000	65900	2.91	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**		**Samplenum:**	WG572372-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35343
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/13/2016 09:44	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

2.2.2.3 Sample Data

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Data File	LM35315.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 11:38:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060616-01 10000X	**Injection Vial**	49.00
Data File	LM35315.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 11:38:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	L16060616-01	**Dilution Factor**	1.00
Sample Comment	110,000.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.830e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.350e+05	9.84	N/A	0.829
Perchlorate conf	4.620e+04	9.83	N/A	0.837

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

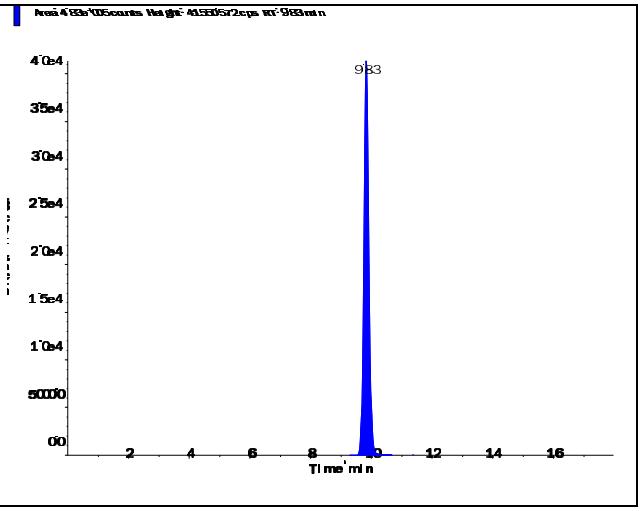

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.829 ng/ml
Area Ratio:	0.28
Sample Type:	(Unknown)

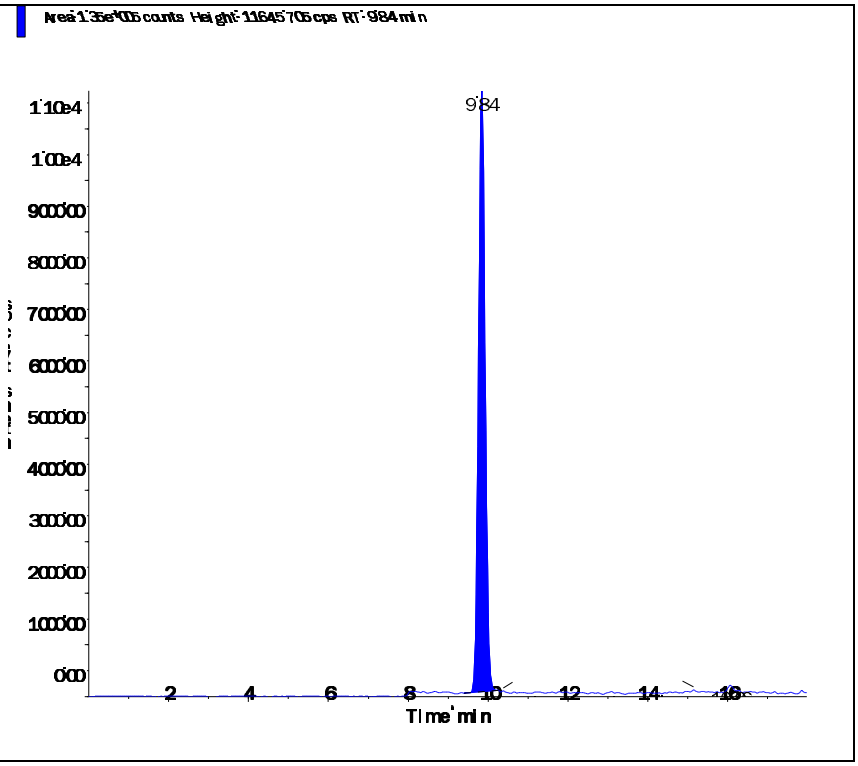

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.837 ng/ml
Area Ratio:	0.096
Sample Type:	(Unknown)

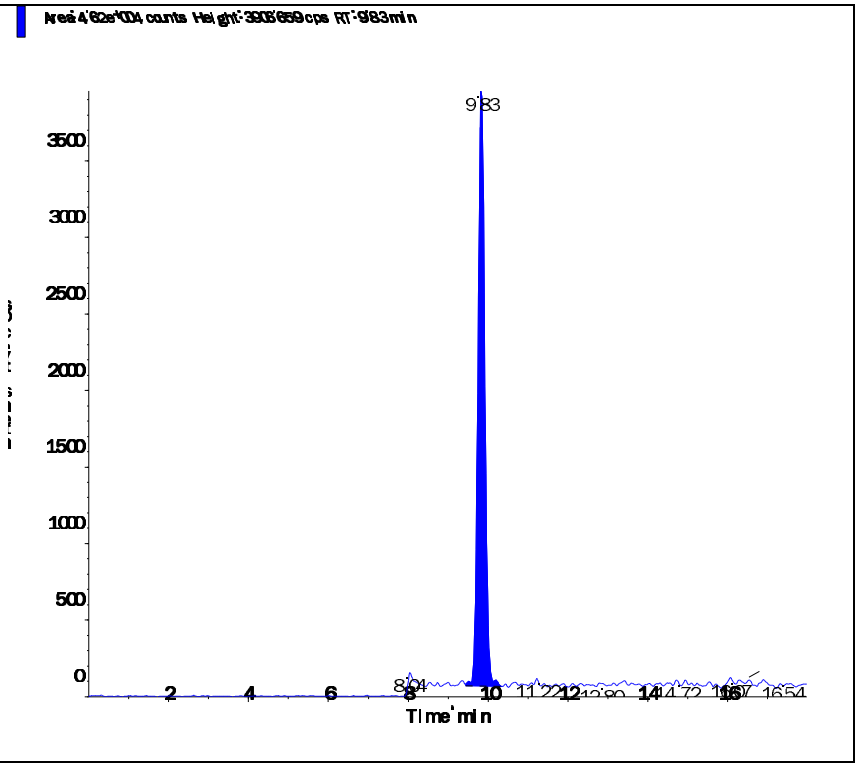

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Printed: 6/13/2016 10:36 AM

Data File	LM35340.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/13/2016 8:47:07 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060616-02	**Injection Vial**	60.00
Data File	LM35340.wiff	**Injection Volume**	10.00
Acquisition Date	6/13/2016 8:47:07 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	L16060616-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.150e+05	9.40	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.960e+05	9.42	N/A	6.42
Perchlorate conf	3.010e+05	9.40	N/A	6.48

O18LP (Internal Standard)

RT (Exp. RT): 9.40(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

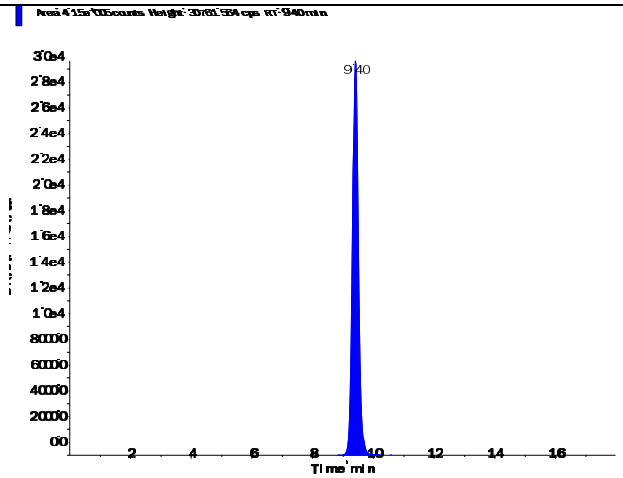

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.42 (9.84) min
Calculated conc:	6.42 ng/ml
Area Ratio:	2.159
Sample Type:	(Unknown)

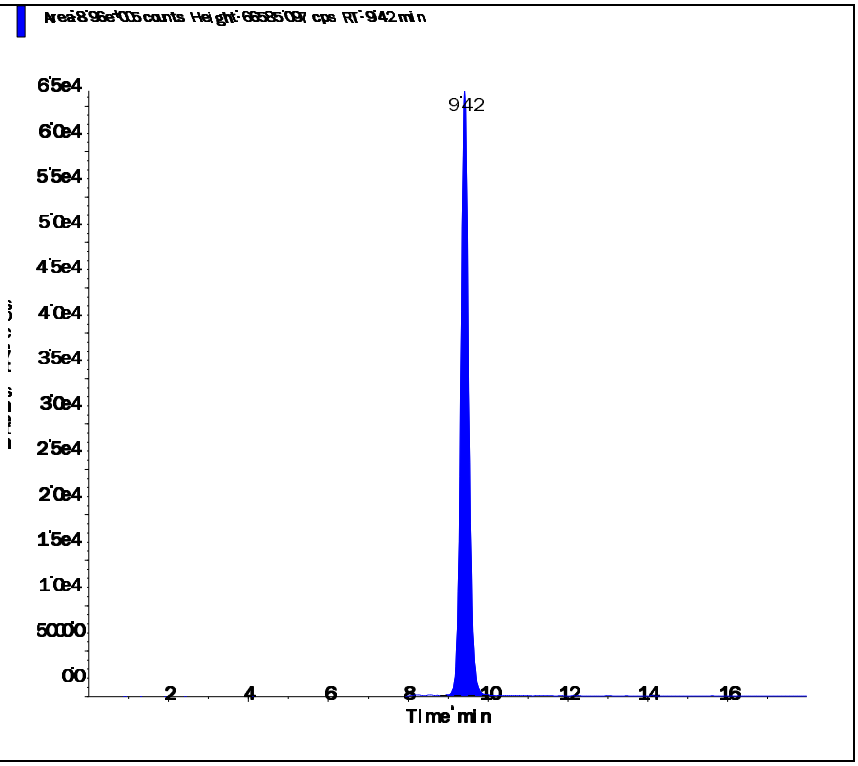

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	6.48 ng/ml
Area Ratio:	0.725
Sample Type:	(Unknown)

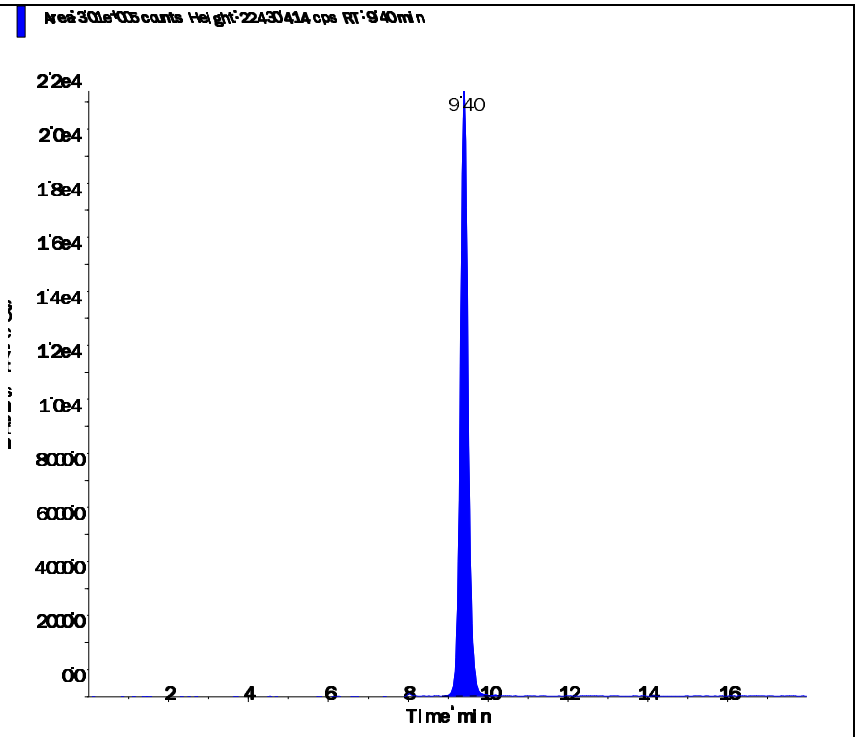

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Created with Analyst Reporter
Printed: 6/12/2016 9:48 PM

Data File	LM35317.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/12/2016 12:16:29 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060616-03	**Injection Vial**	51.00
Data File	LM35317.wiff	**Injection Volume**	10.00
Acquisition Date	6/12/2016 12:16:29 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	L16060616-03	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.670e+05	9.77	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.780e+04	9.79	N/A	0.492
Perchlorate conf	2.640e+04	9.77	N/A	0.487

O18LP (Internal Standard)

RT (Exp. RT): 9.77(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

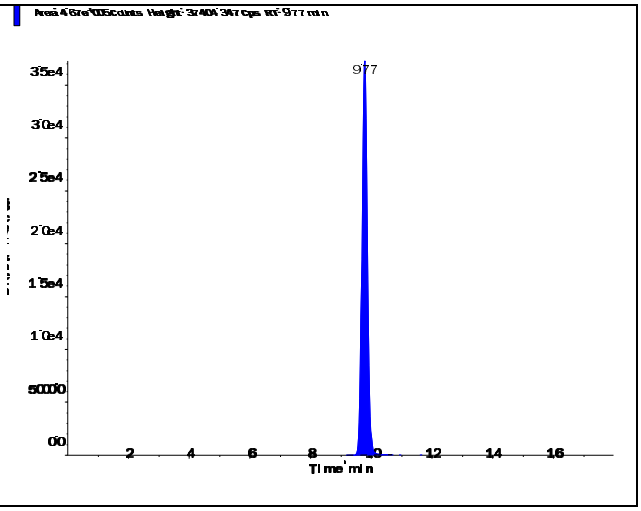

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.79 (9.84) min
Calculated conc:	0.492 ng/ml
Area Ratio:	0.167
Sample Type:	(Unknown)

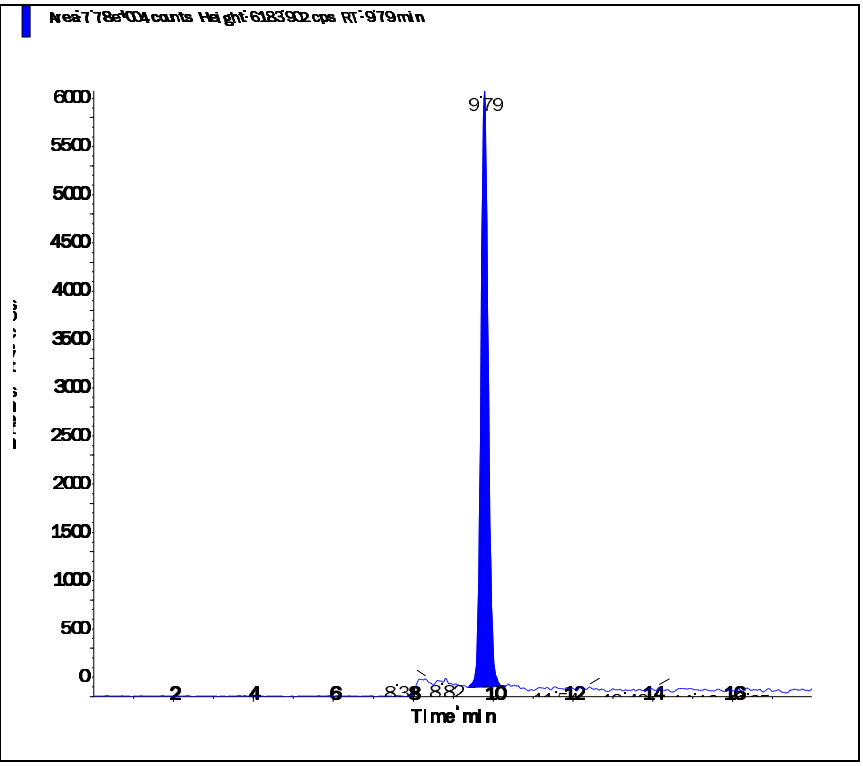

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.77 (9.84) min
Calculated conc:	0.487 ng/ml
Area Ratio:	0.057
Sample Type:	(Unknown)

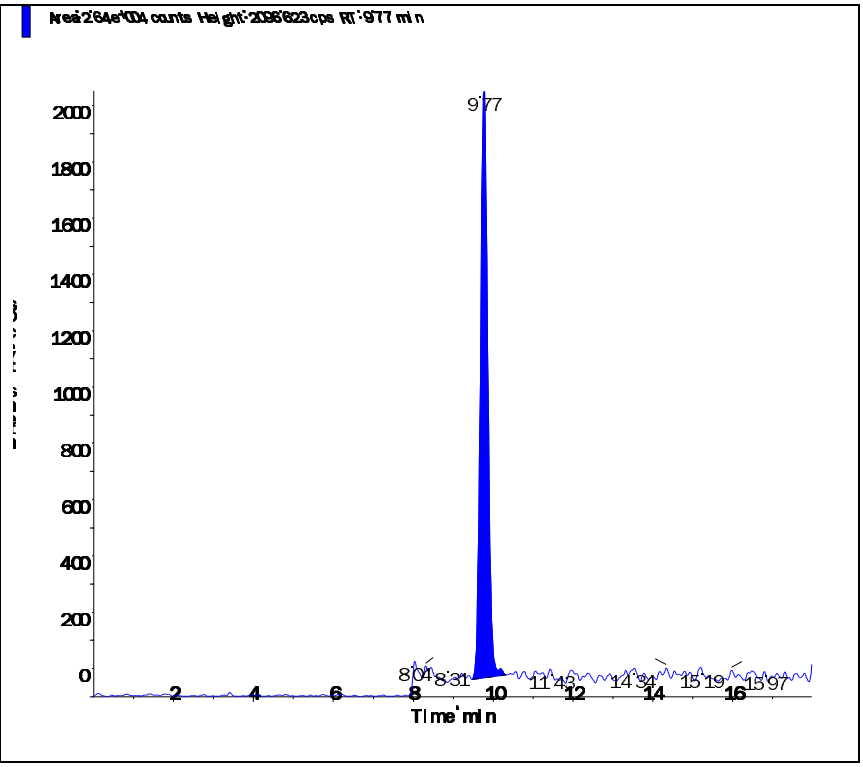

2.2.2.4 Standards Data

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Printed: 6/13/2016 10:27 AM

Data File	LM34686.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

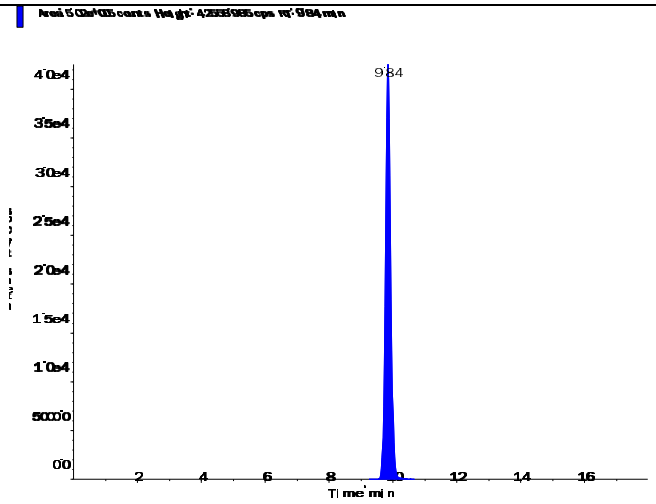

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Printed: 6/13/2016 10:27 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

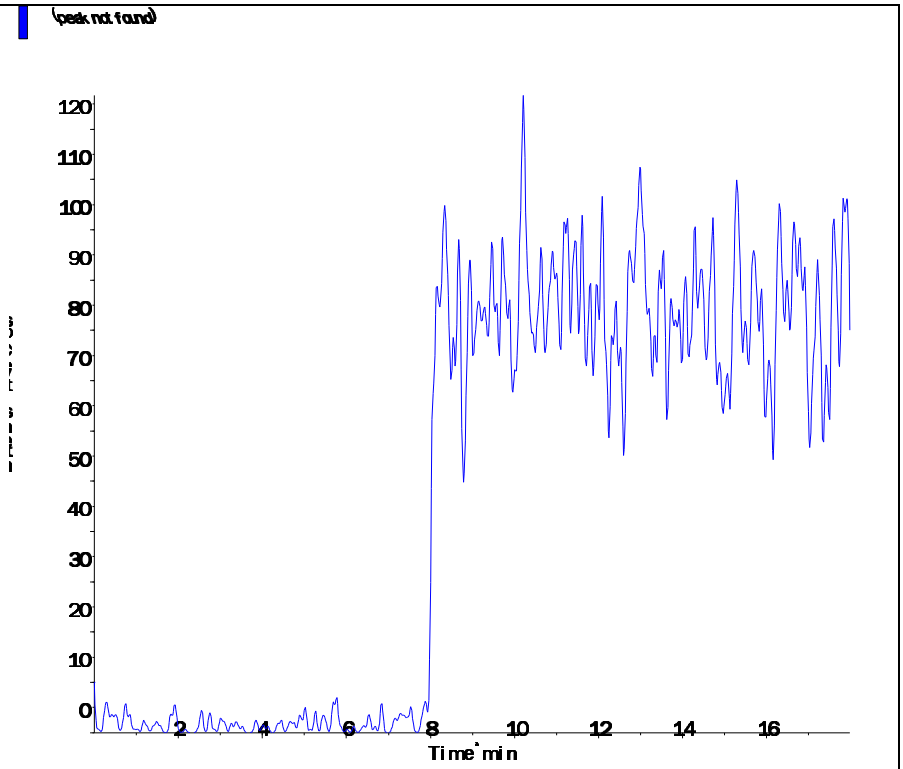

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

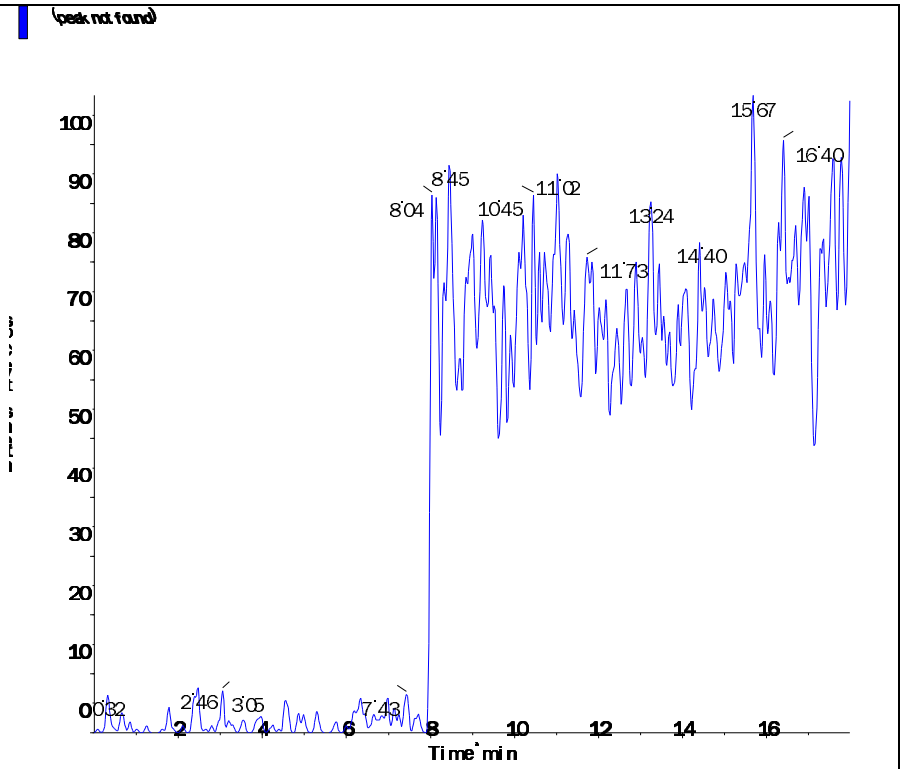

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Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

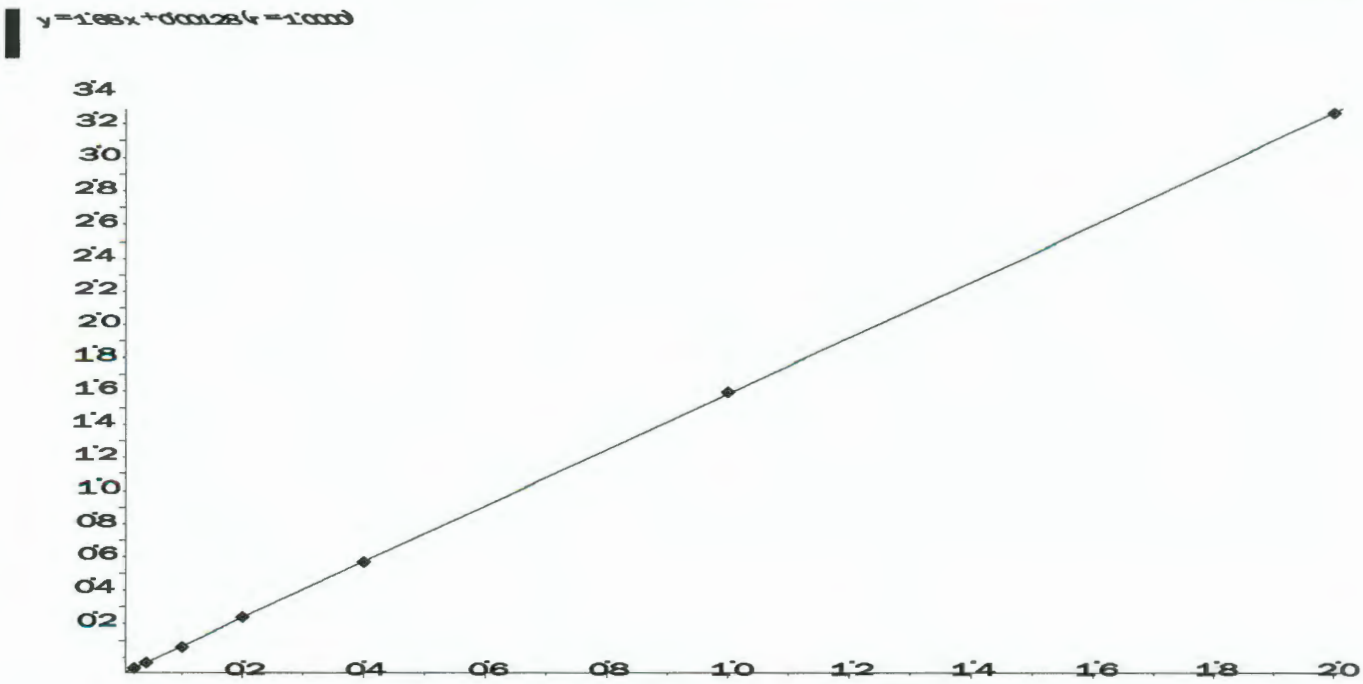

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Created with Analyst Reporter
Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

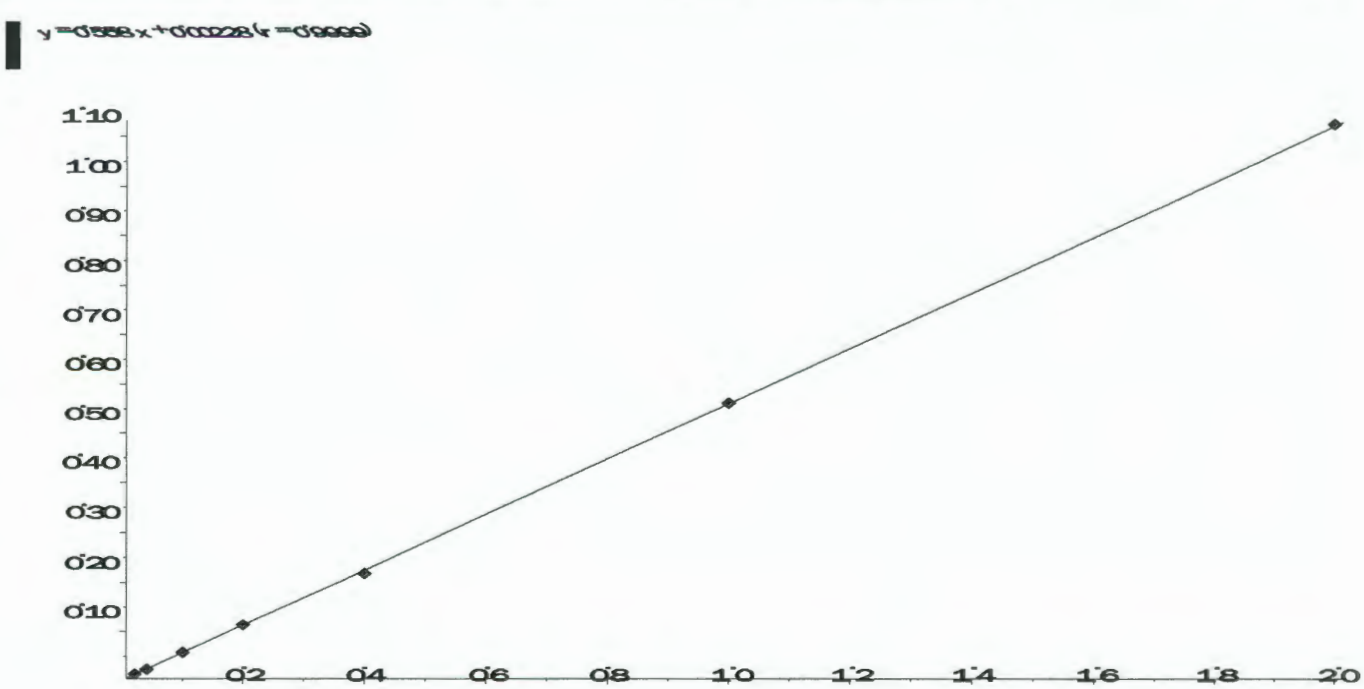

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Printed: 6/13/2016 10:28 AM

Data File	LM34687.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

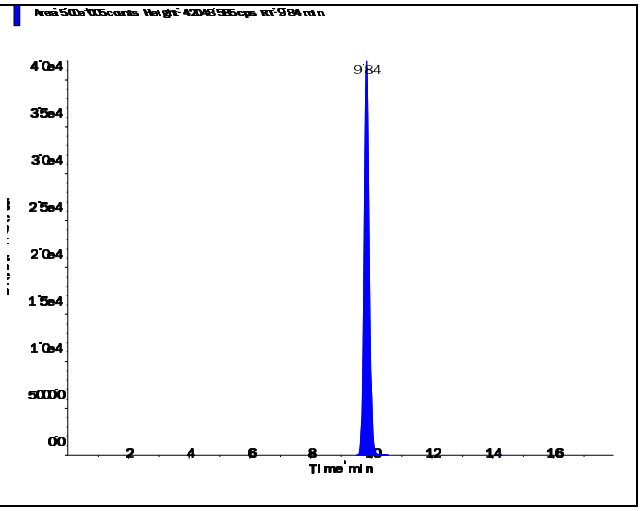

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 0.103 ng/ml Area Ratio: 0.036 Sample Type: (Standard)	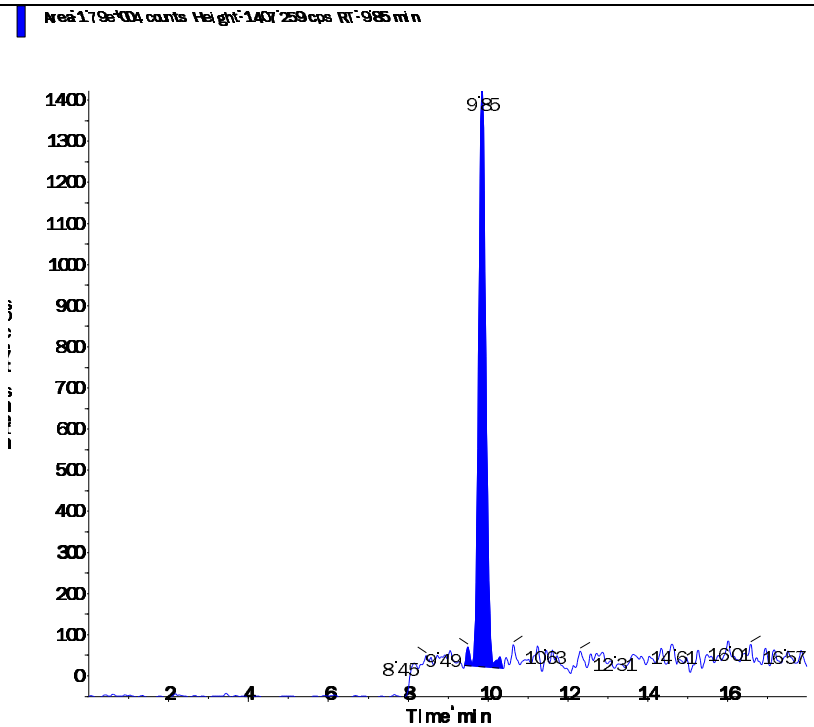
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 0.104 ng/ml Area Ratio: 0.014 Sample Type: (Standard)	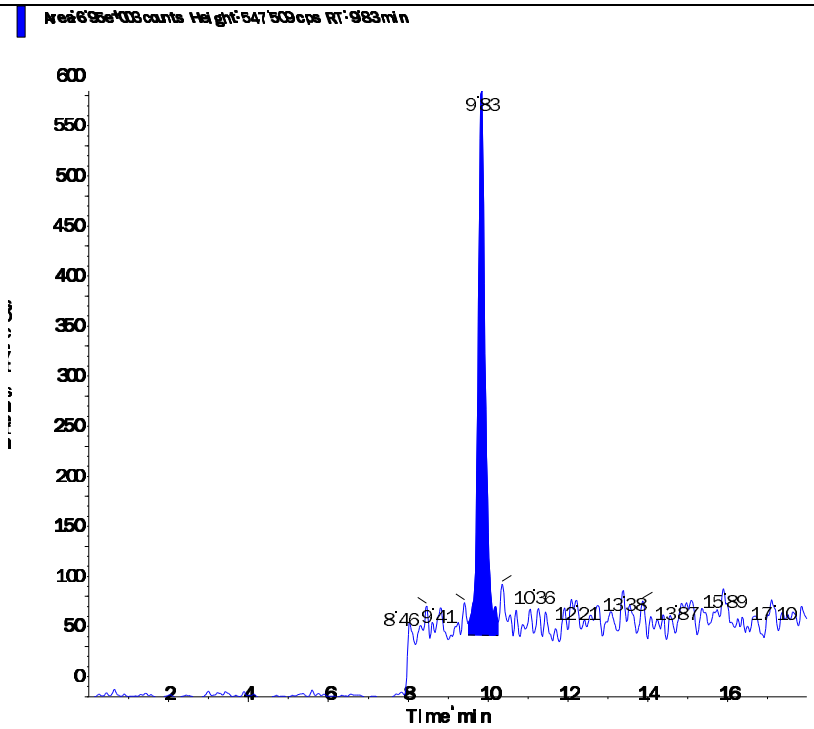

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Data File	LM34688.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

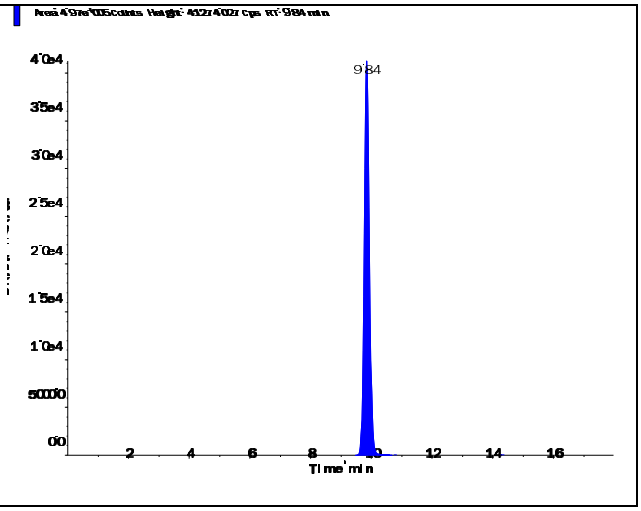

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

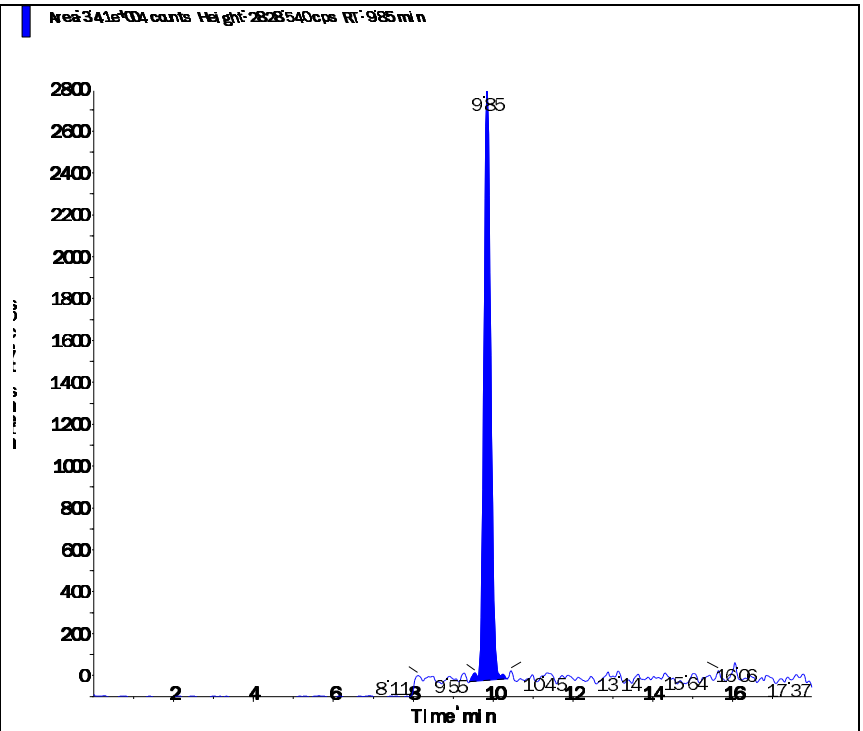

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

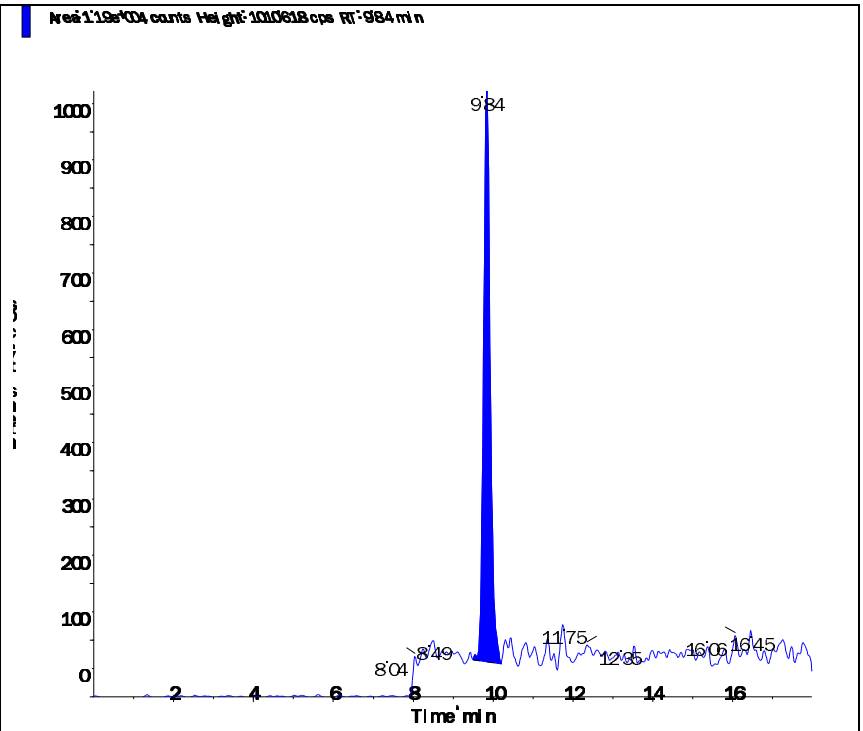

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Data File	LM34689.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

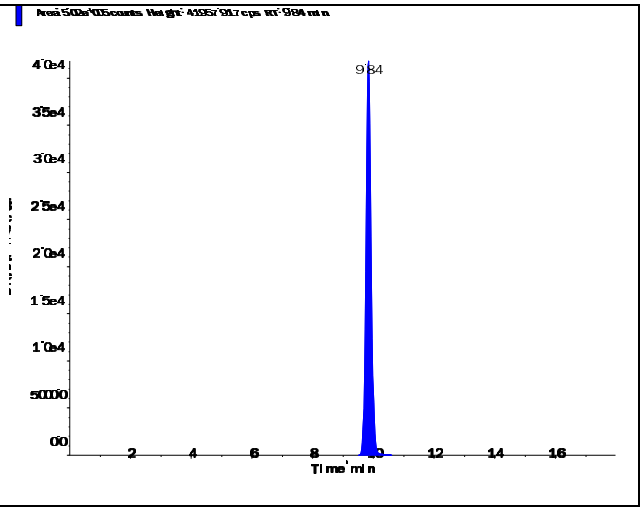

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.483 ng/ml
Area Ratio:	0.164
Sample Type:	(Standard)

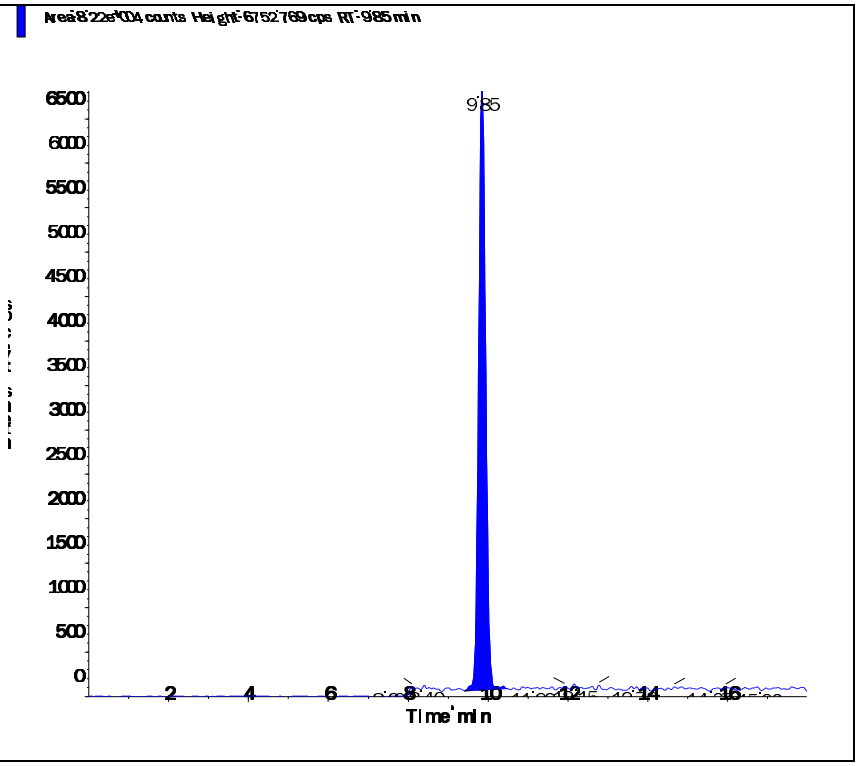

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.503 ng/ml
Area Ratio:	0.058
Sample Type:	(Standard)

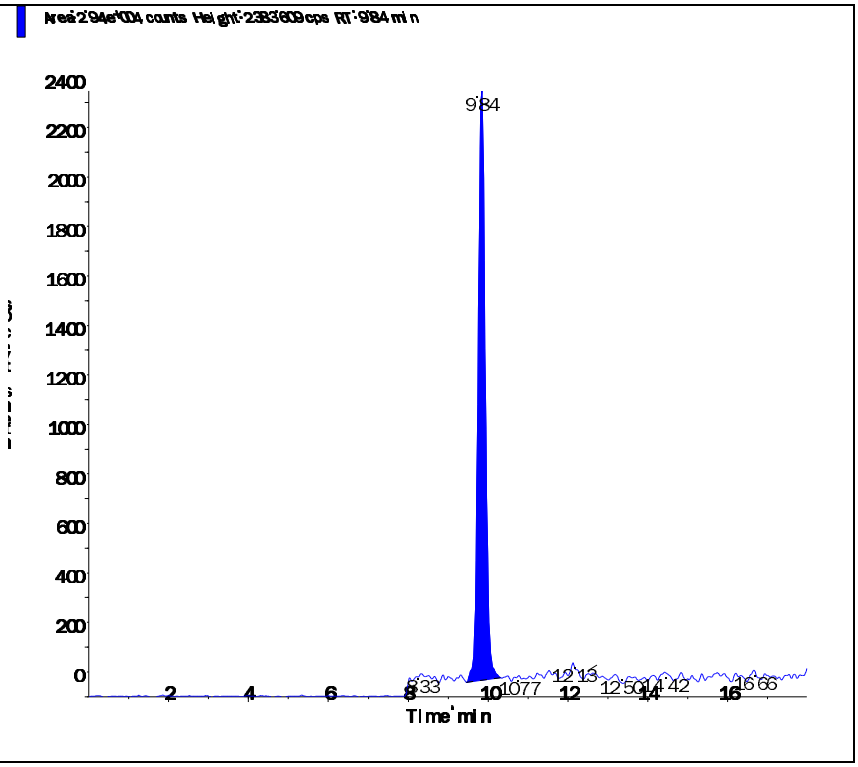

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Data File	LM34690.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

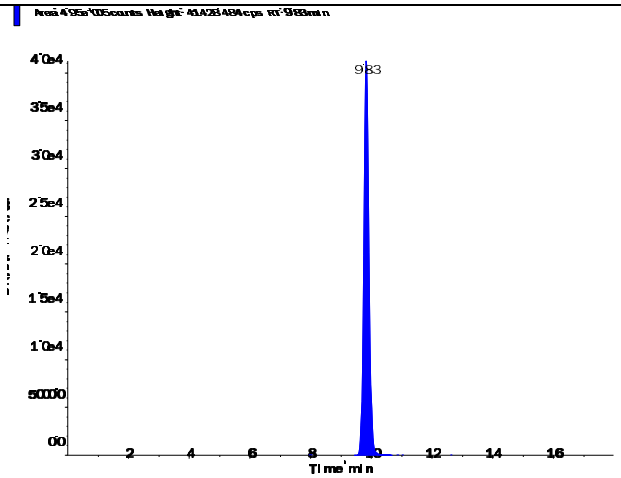

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

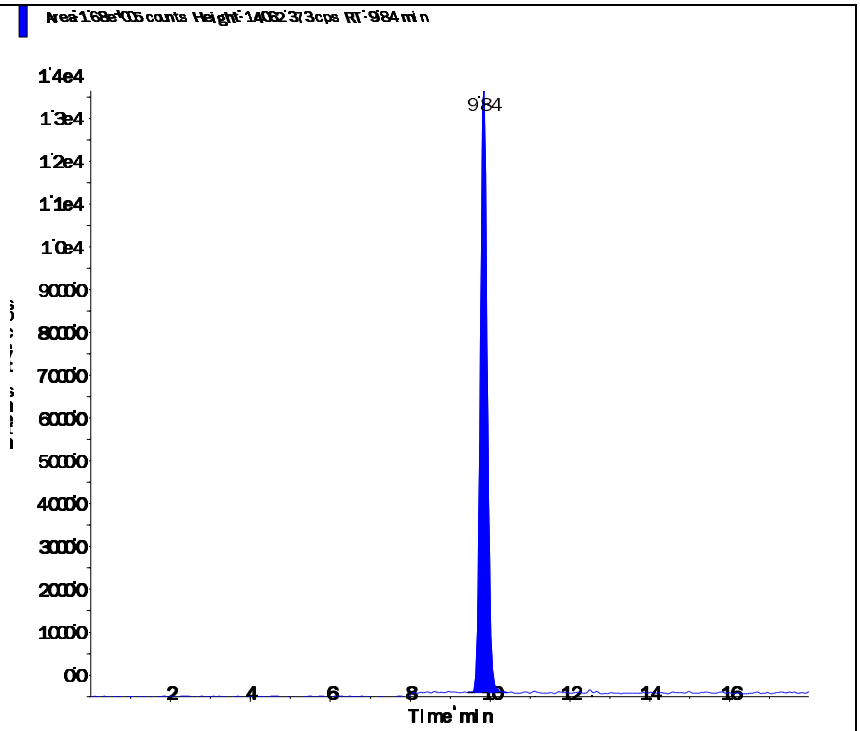

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

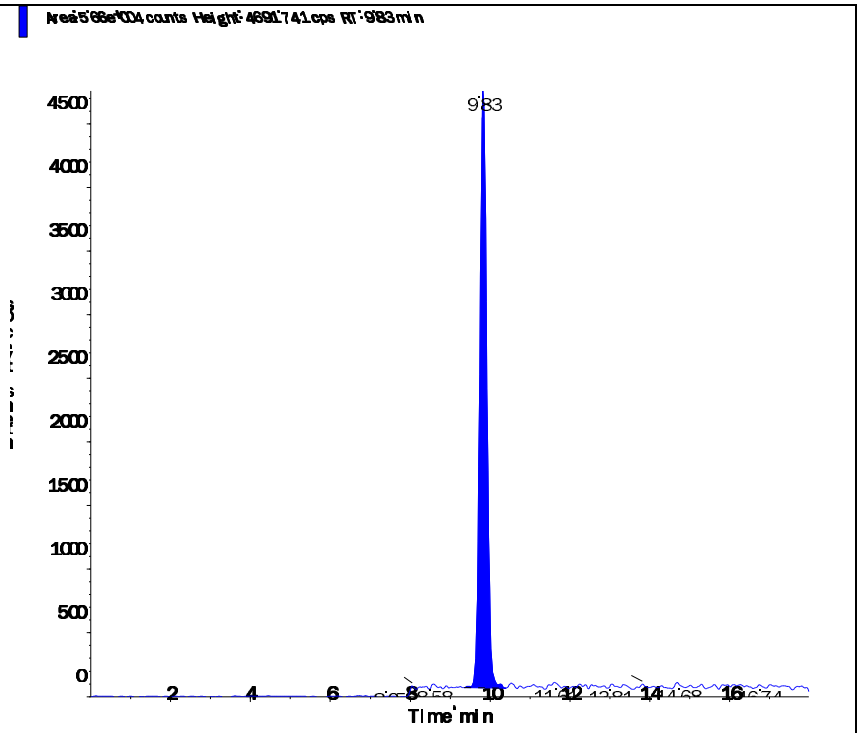

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Data File	LM34691.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

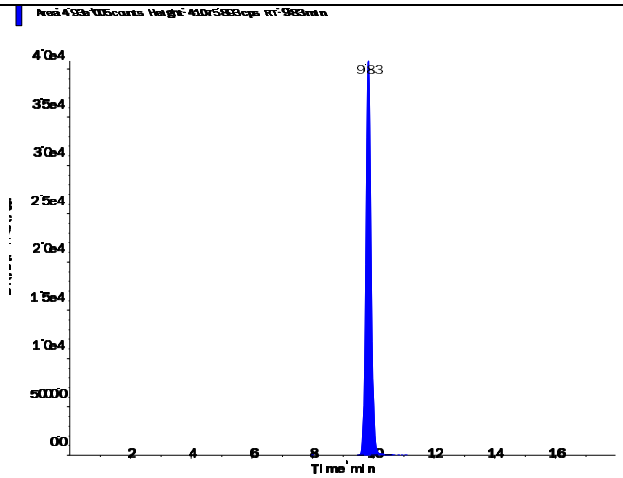

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 1.99 ng/ml Area Ratio: 0.669 Sample Type: (Standard)	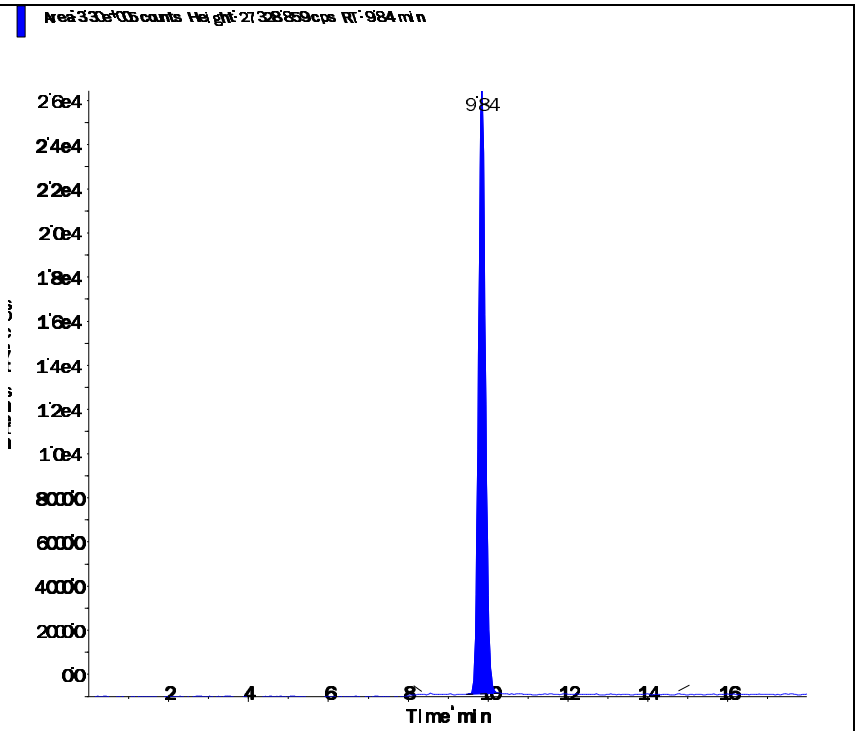
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 1.94 ng/ml Area Ratio: 0.219 Sample Type: (Standard)	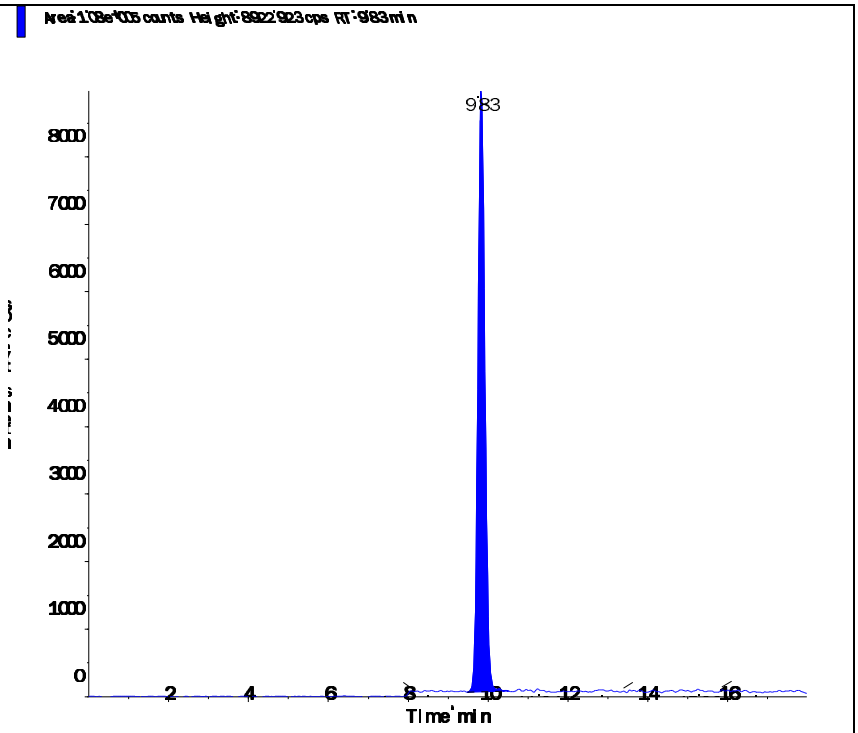

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Data File	LM34692.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

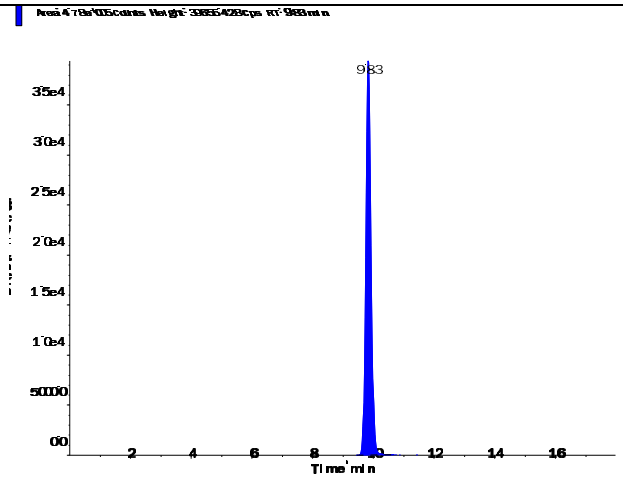

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

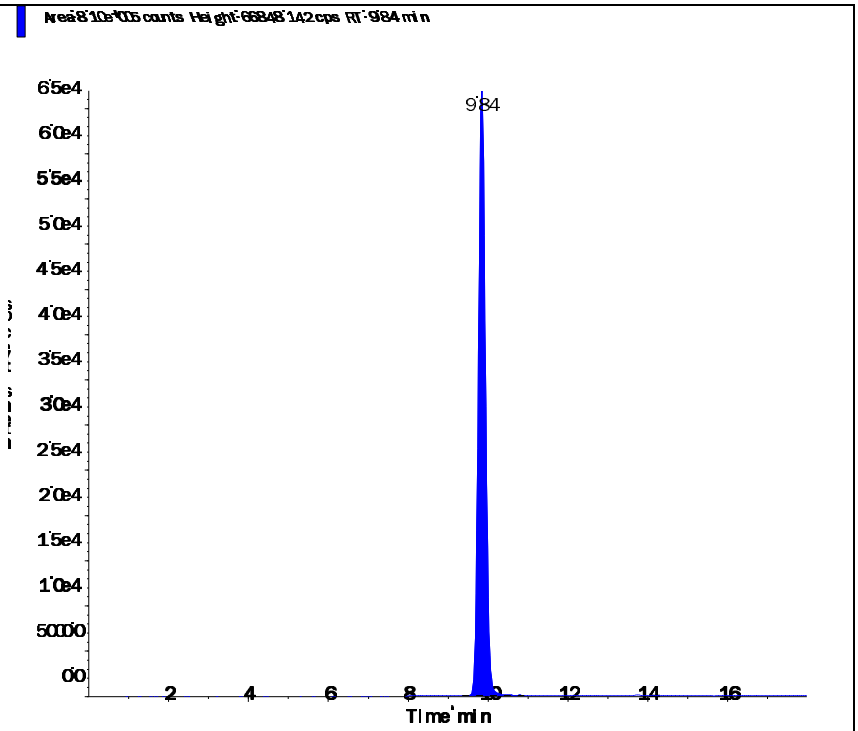

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

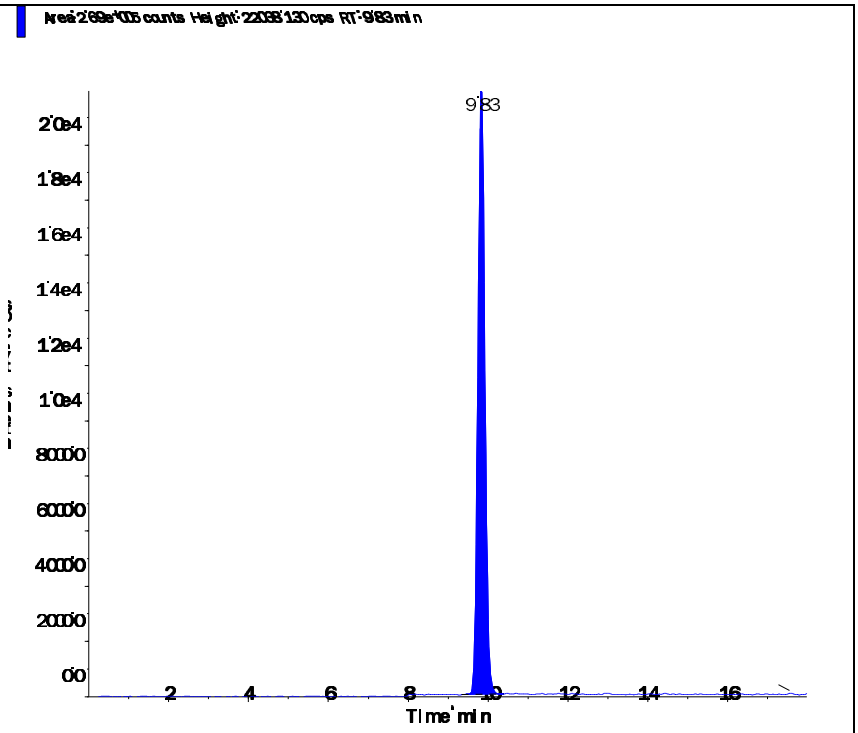

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Data File	LM34693.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

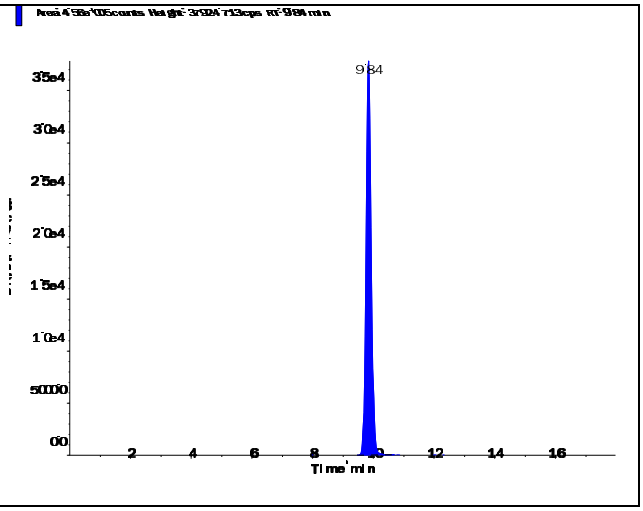

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	9.99 ng/ml
Area Ratio:	3.36
Sample Type:	(Standard)

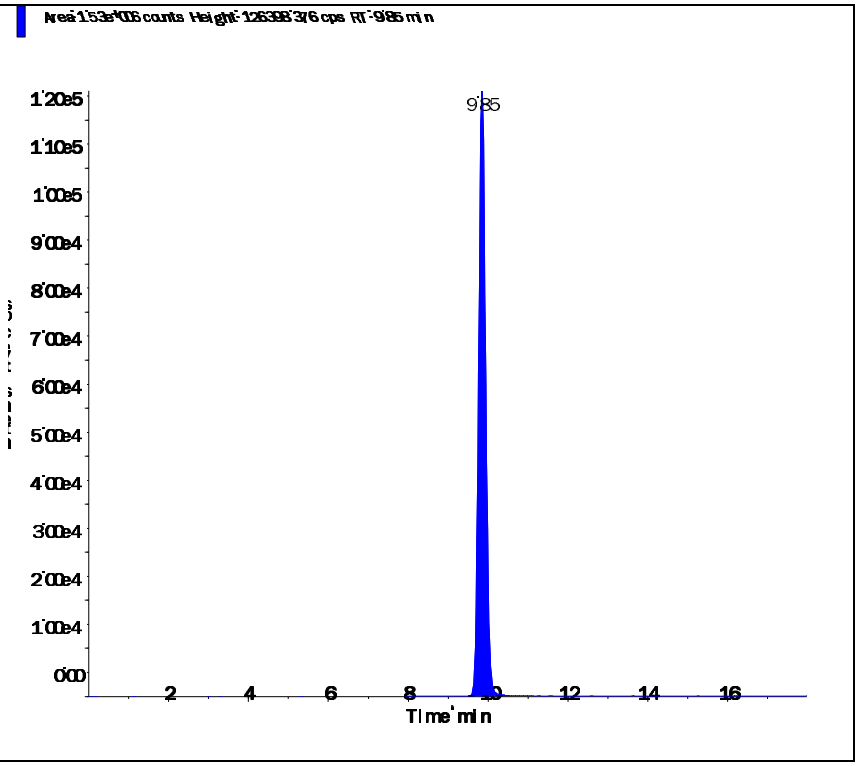

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	10.00 ng/ml
Area Ratio:	1.122
Sample Type:	(Standard)

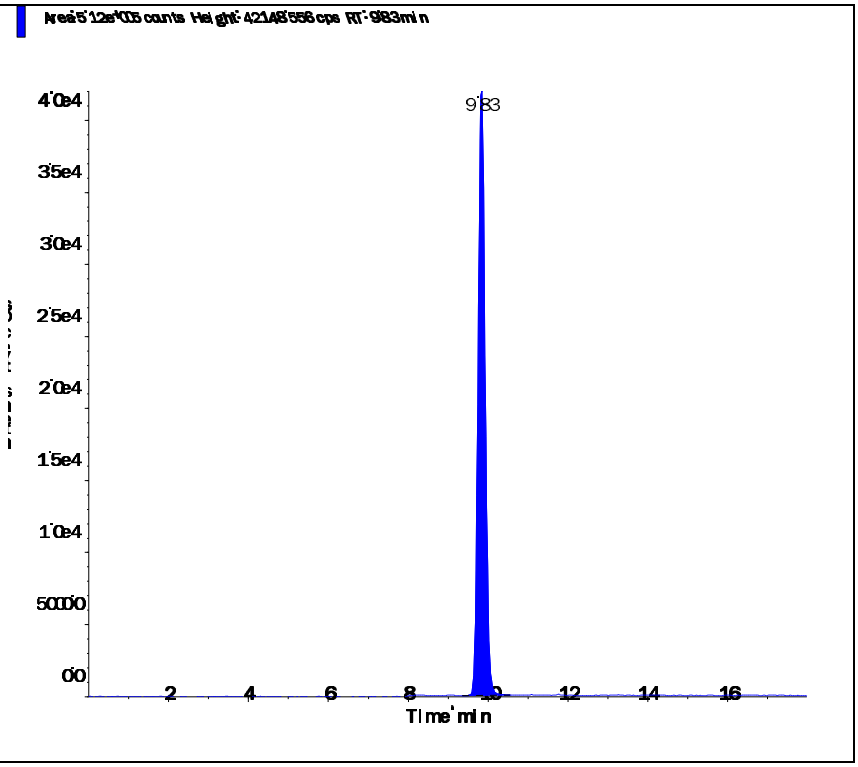

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Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

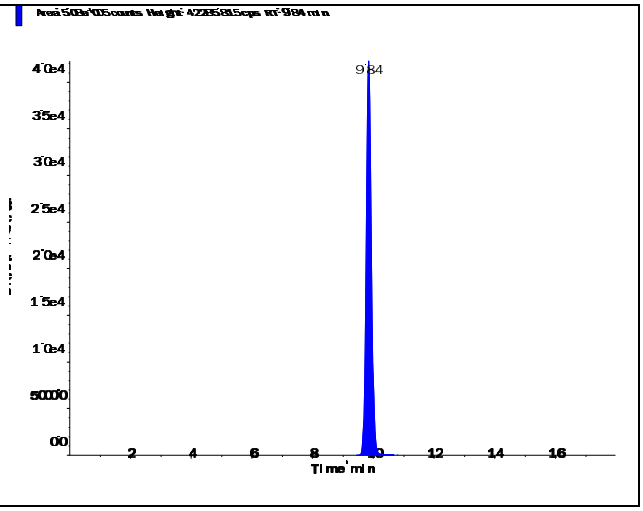

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.332
Sample Type:	(Quality Control)

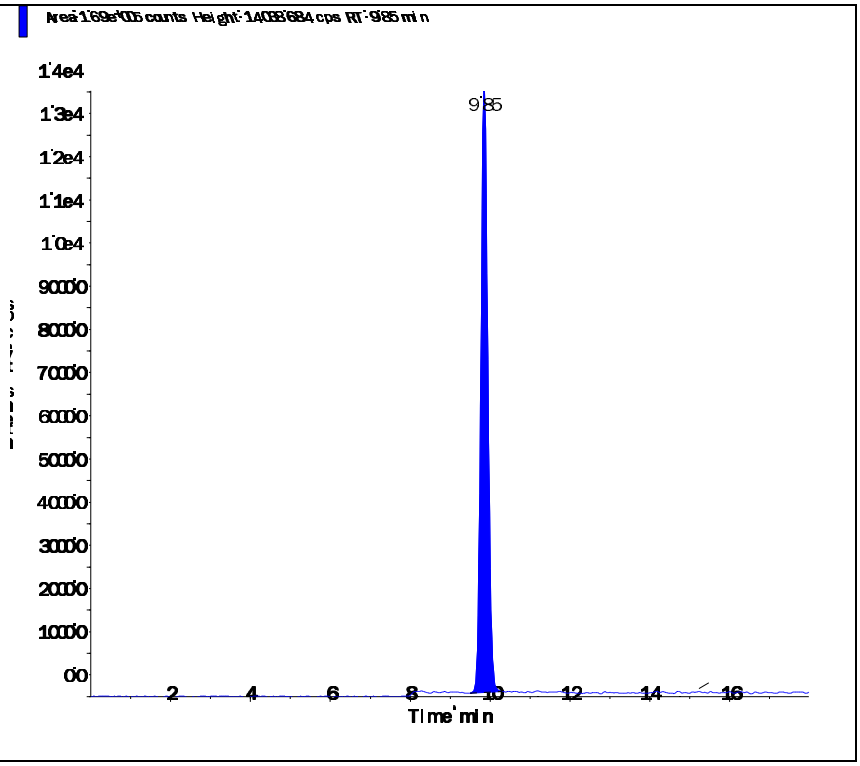

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

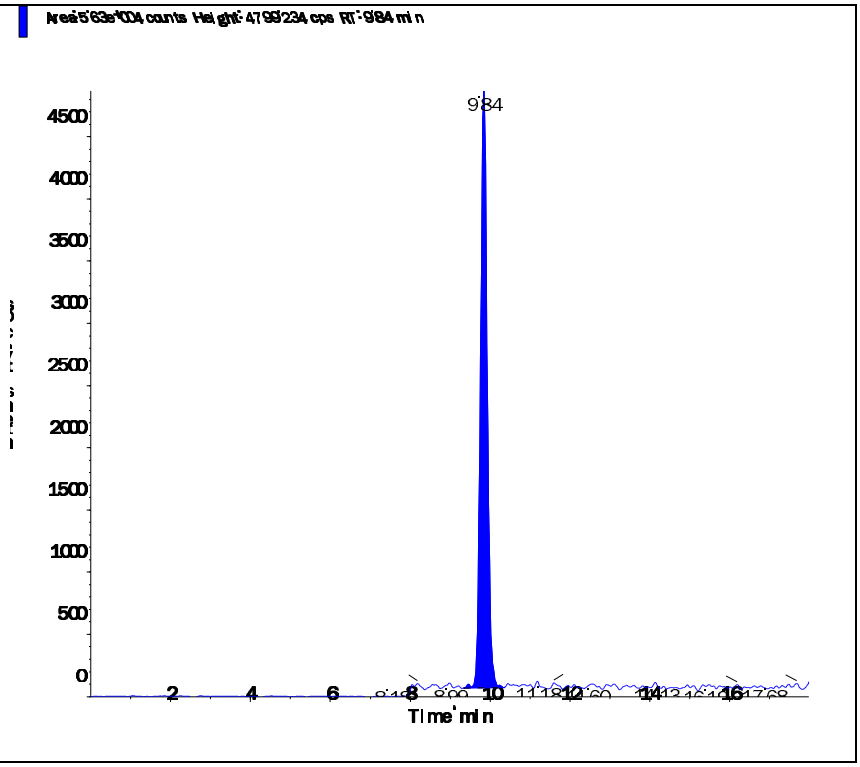

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Printed: 6/12/2016 9:42 PM

Data File	LM35296.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 5:38:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35296.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 5:38:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.960e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.720e+05	9.65	1.00	1.03
Perchlorate conf	5.930e+04	9.64	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

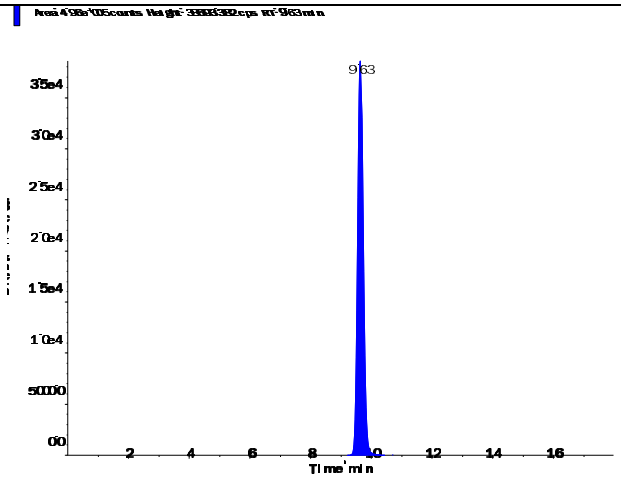

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.65 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.346
Sample Type:	(Quality Control)

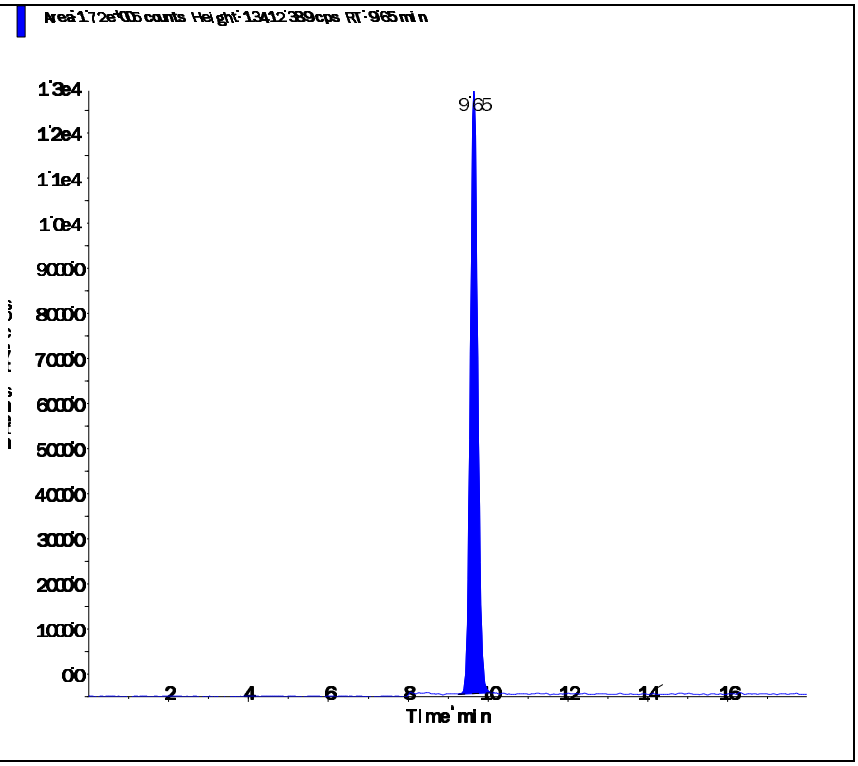

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

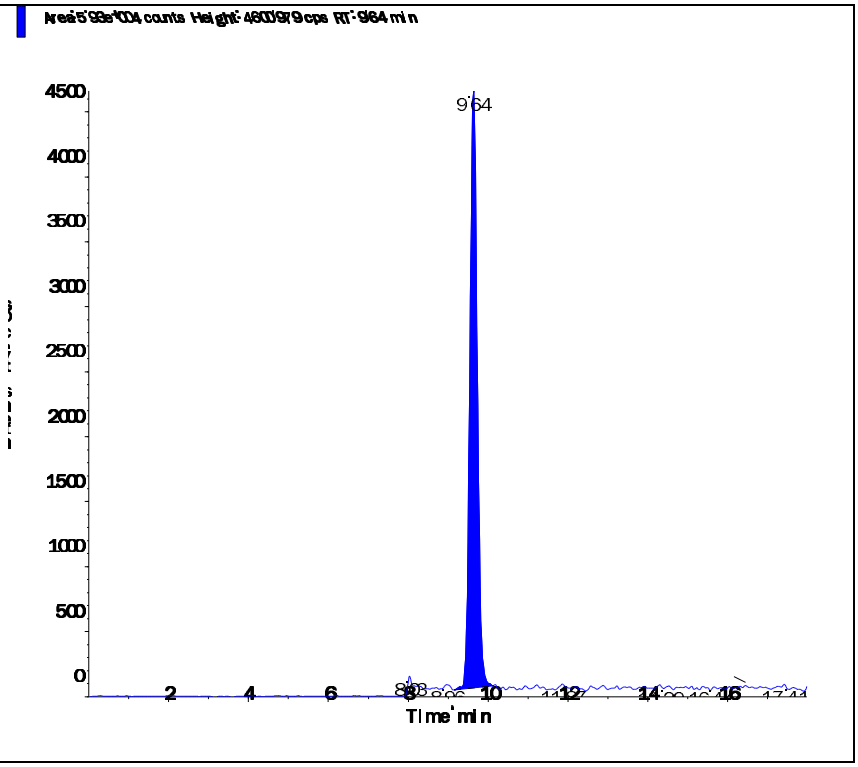

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Data File	LM35310.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 10:03:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35310.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 10:03:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.050e+05	9.62	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.800e+05	9.63	1.00	1.06
Perchlorate conf	6.050e+04	9.62	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.62(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

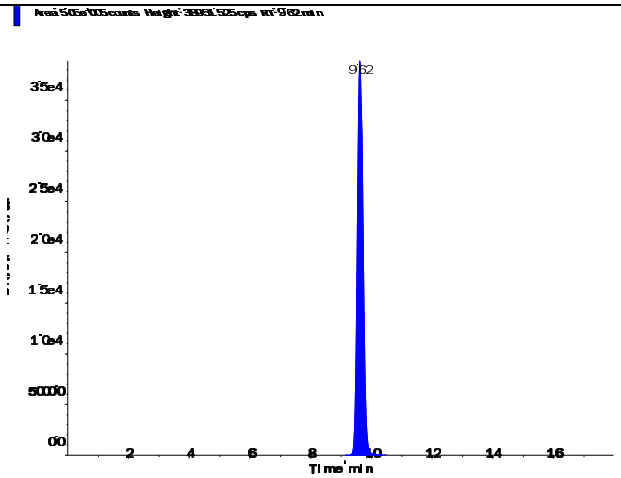

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.357
Sample Type:	(Quality Control)

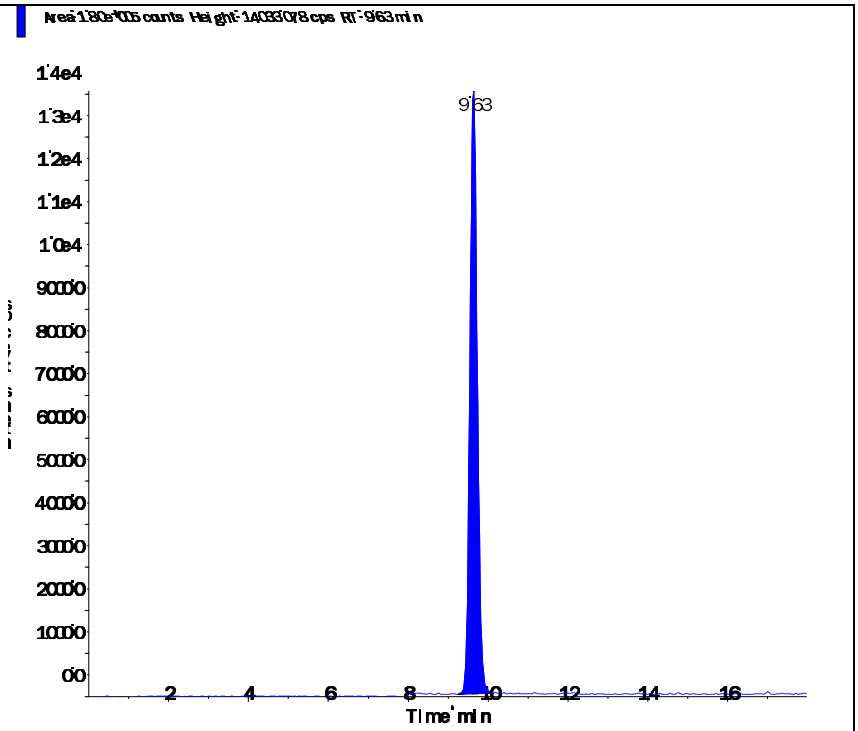

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.62 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.12
Sample Type:	(Quality Control)

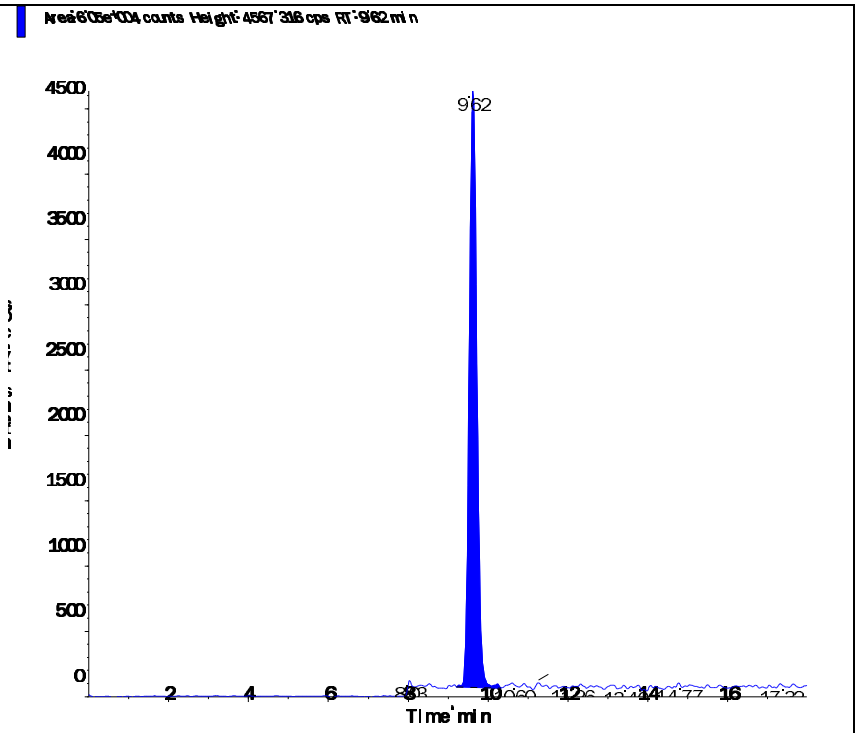

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Data File	LM35318.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/12/2016 12:35:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35318.wiff	**Injection Volume**	10.00
Acquisition Date	6/12/2016 12:35:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.62	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.740e+05	9.63	1.00	1.01
Perchlorate conf	6.160e+04	9.62	1.00	1.06

O18LP (Internal Standard)

RT (Exp. RT): 9.62(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

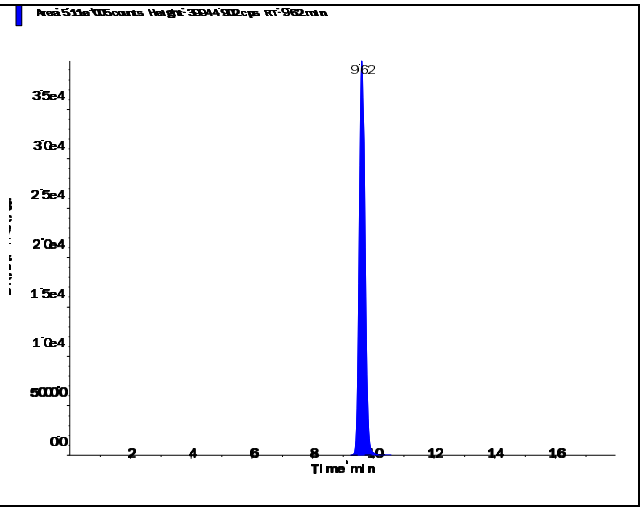

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.341
Sample Type:	(Quality Control)

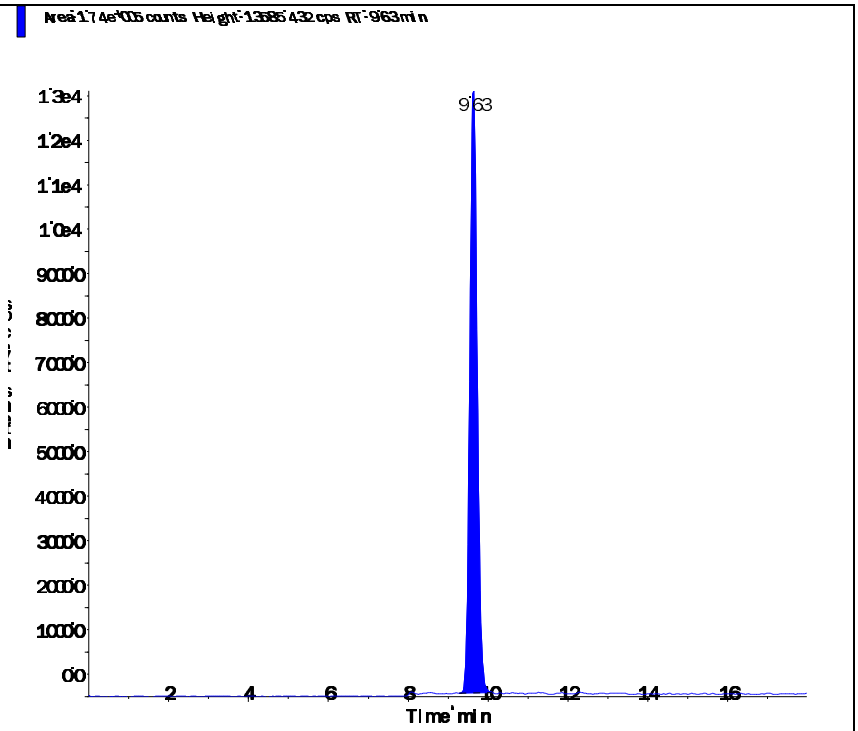

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.62 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.12
Sample Type:	(Quality Control)

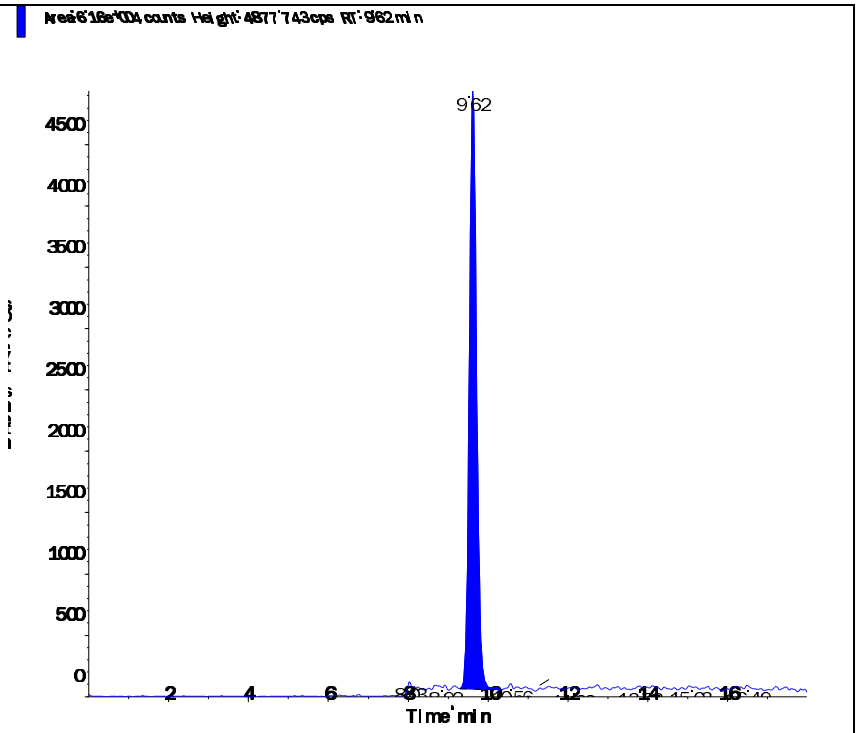

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Data File	LM35322.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/12/2016 9:03:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572372-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35322.wiff	**Injection Volume**	10.00
Acquisition Date	6/12/2016 9:03:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG572372-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.820e+05	9.60	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.660e+05	9.61	1.00	1.02
Perchlorate conf	5.860e+04	9.60	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 9.60(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

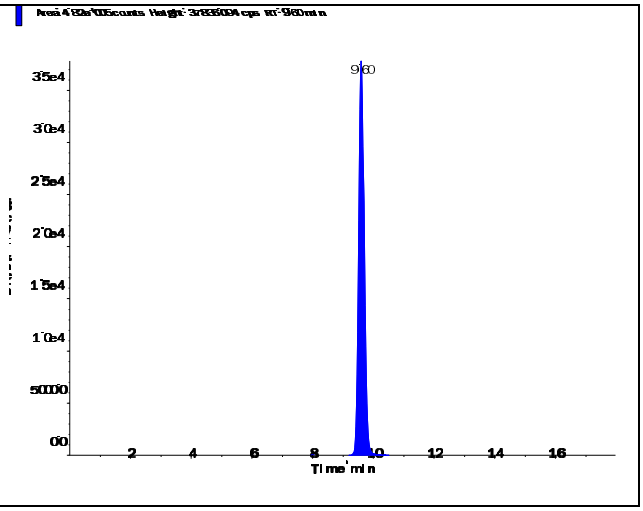

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.61 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.345
Sample Type:	(Quality Control)

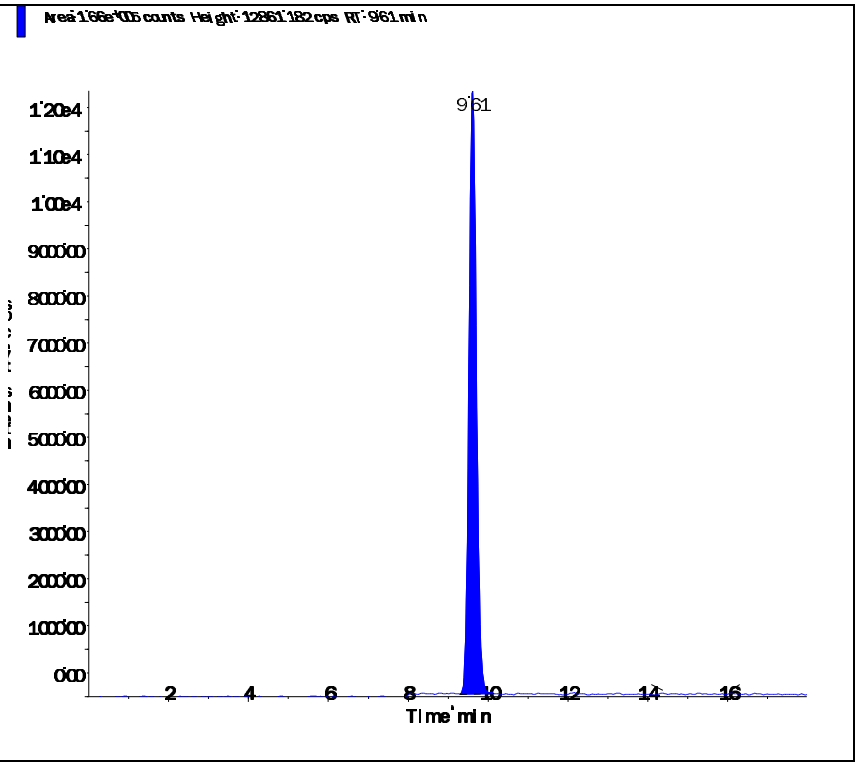

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.60 (9.84) min
Calculated conc:	1.07 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

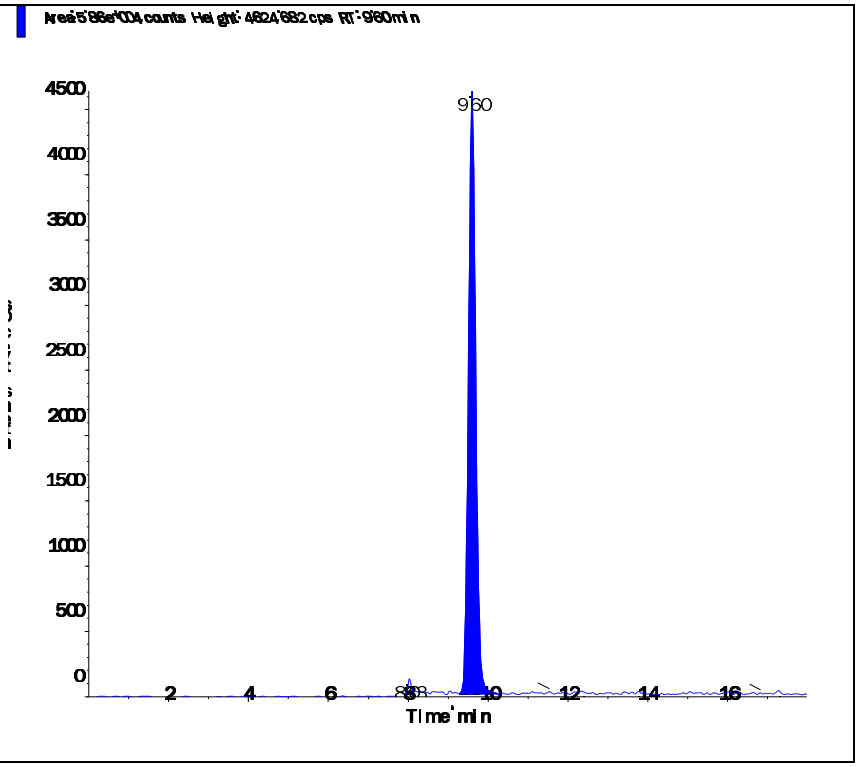

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Data File	LM35334.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/13/2016 12:50:29 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572372-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35334.wiff	**Injection Volume**	10.00
Acquisition Date	6/13/2016 12:50:29 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG572372-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.560e+05	9.60	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.900e+05	9.62	1.00	1.01
Perchlorate conf	6.390e+04	9.60	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.60(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

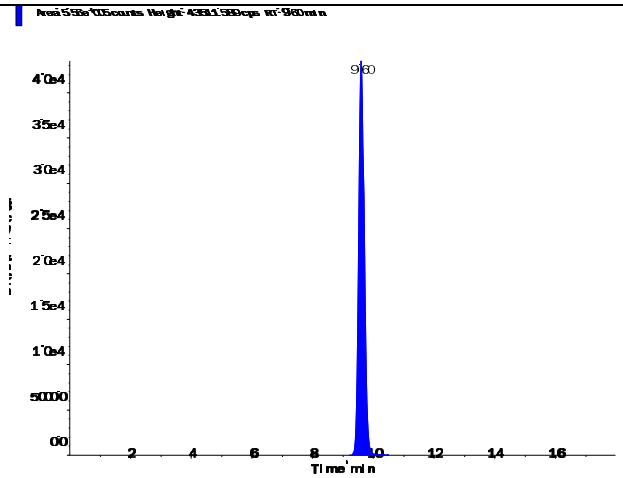

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.62 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.342
Sample Type:	(Quality Control)

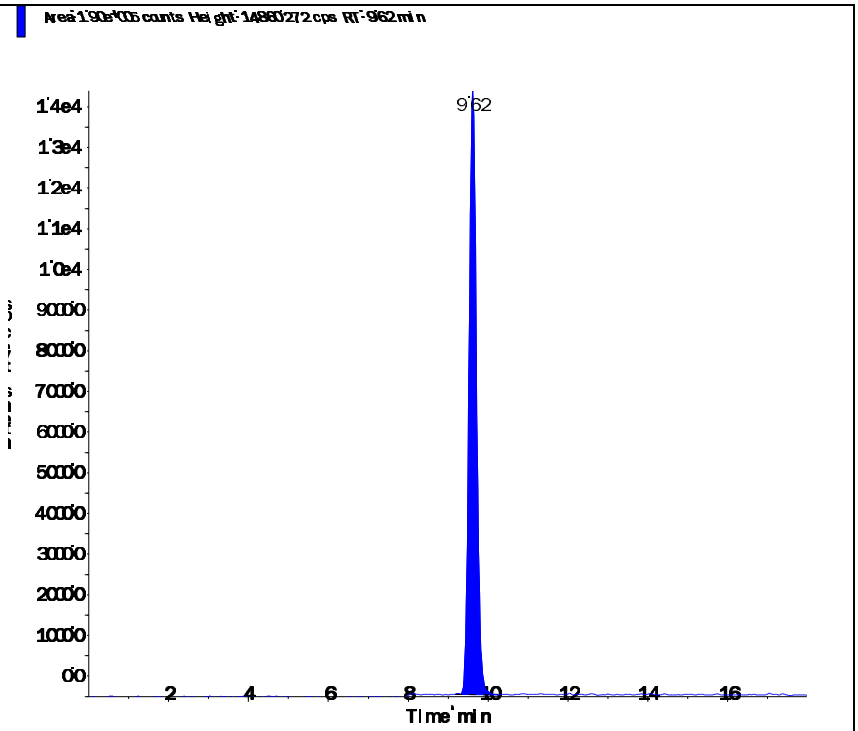

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.60 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.115
Sample Type:	(Quality Control)

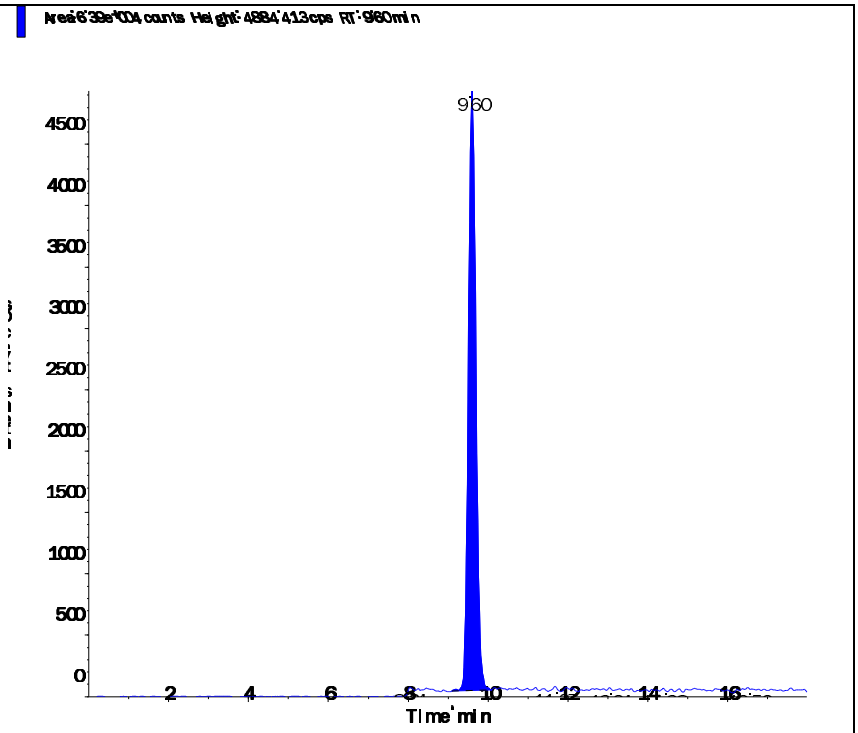

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Data File	LM35338.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/13/2016 8:09:16 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572372-06 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35338.wiff	**Injection Volume**	10.00
Acquisition Date	6/13/2016 8:09:16 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG572372-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.380e+05	9.57	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.890e+05	9.58	1.00	1.04
Perchlorate conf	6.470e+04	9.57	1.00	1.06

O18LP (Internal Standard)

RT (Exp. RT): 9.57(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

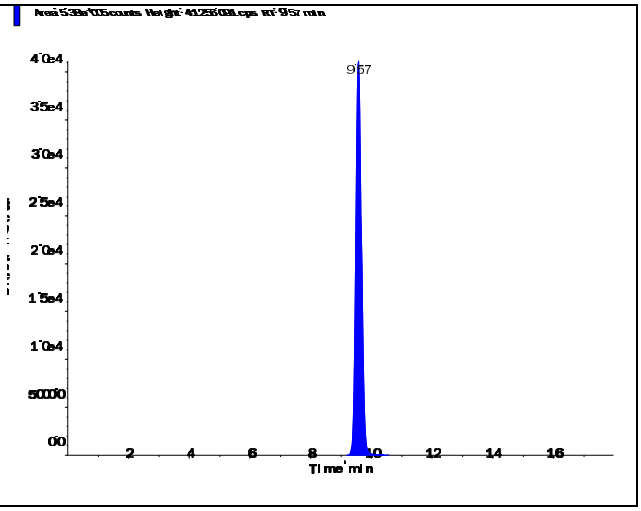

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.58 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.351
Sample Type:	(Quality Control)

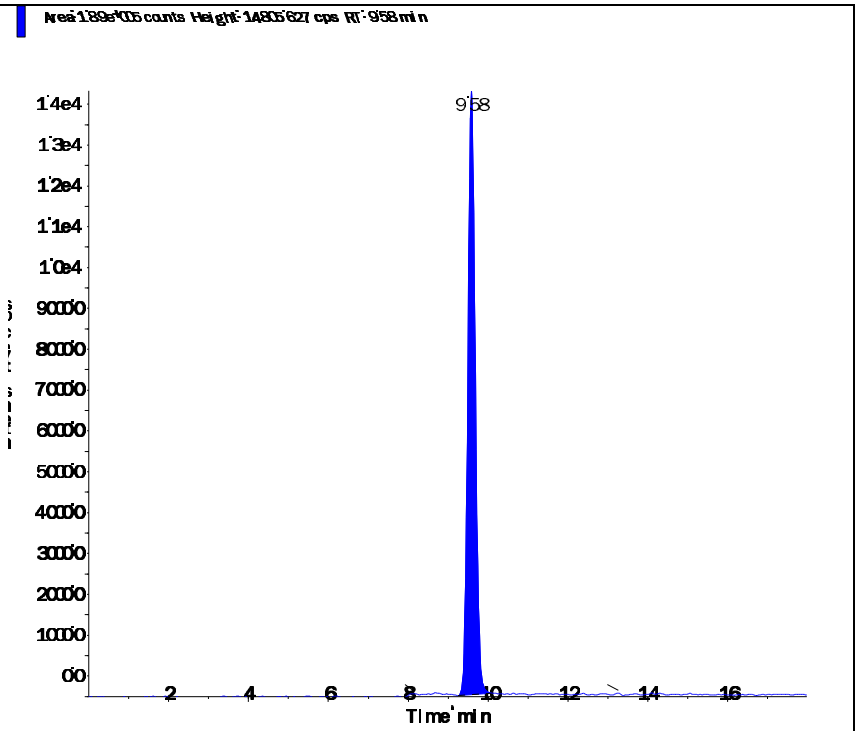

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.57 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.12
Sample Type:	(Quality Control)

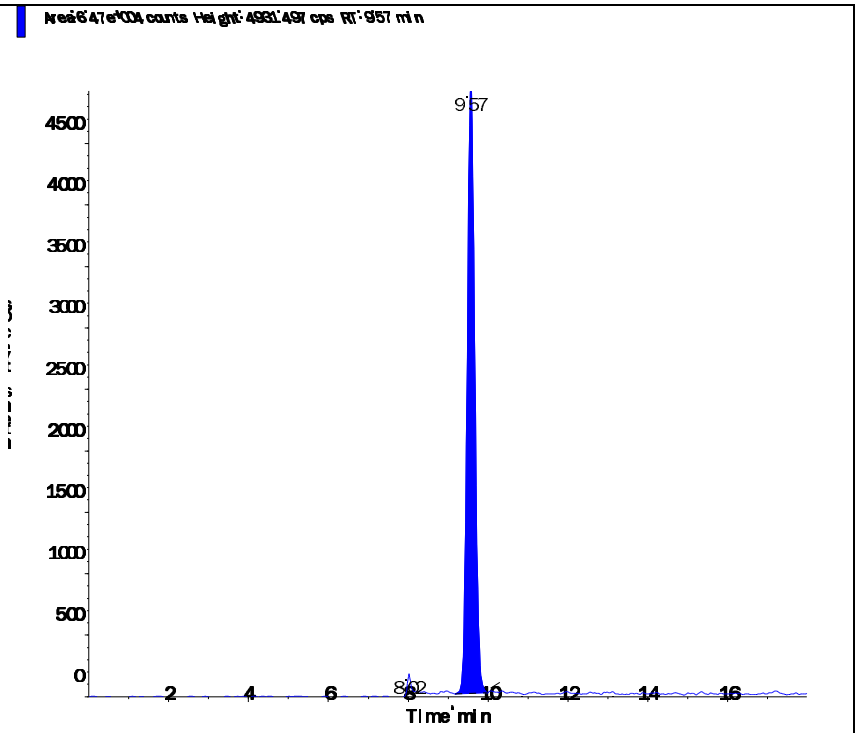

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Data File	LM35341.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/13/2016 9:06:40 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572372-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35341.wiff	**Injection Volume**	10.00
Acquisition Date	6/13/2016 9:06:40 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG572372-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.550e+05	9.59	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.920e+05	9.60	1.00	1.02
Perchlorate conf	6.590e+04	9.59	1.00	1.04

O18LP (Internal Standard)

RT (Exp. RT): 9.59(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

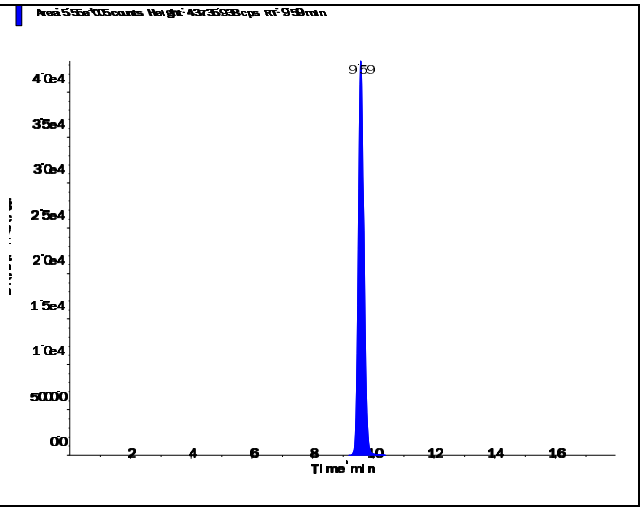

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.60 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.346
Sample Type:	(Quality Control)

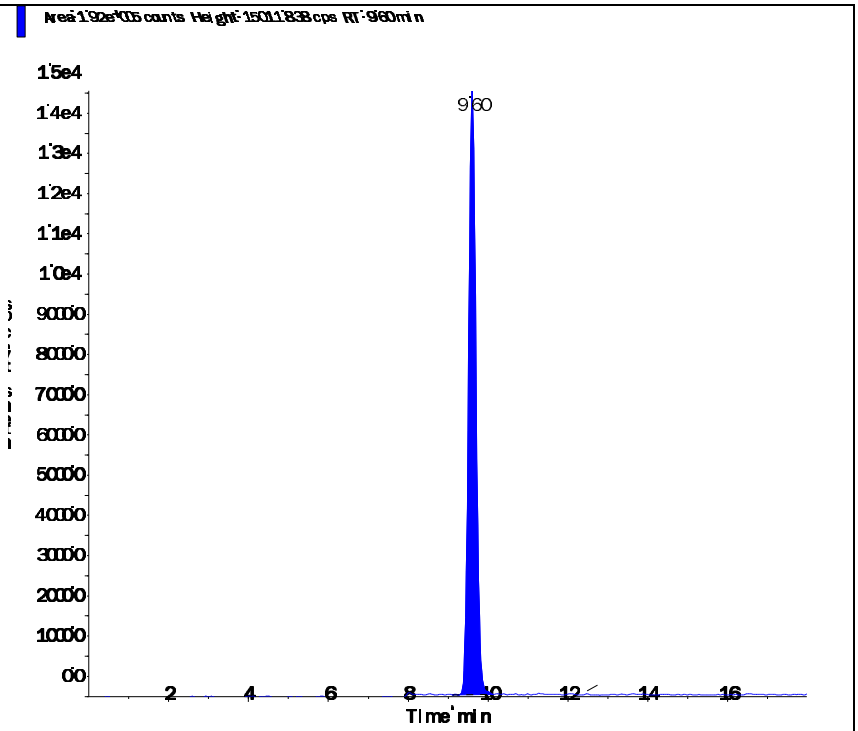

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.59 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

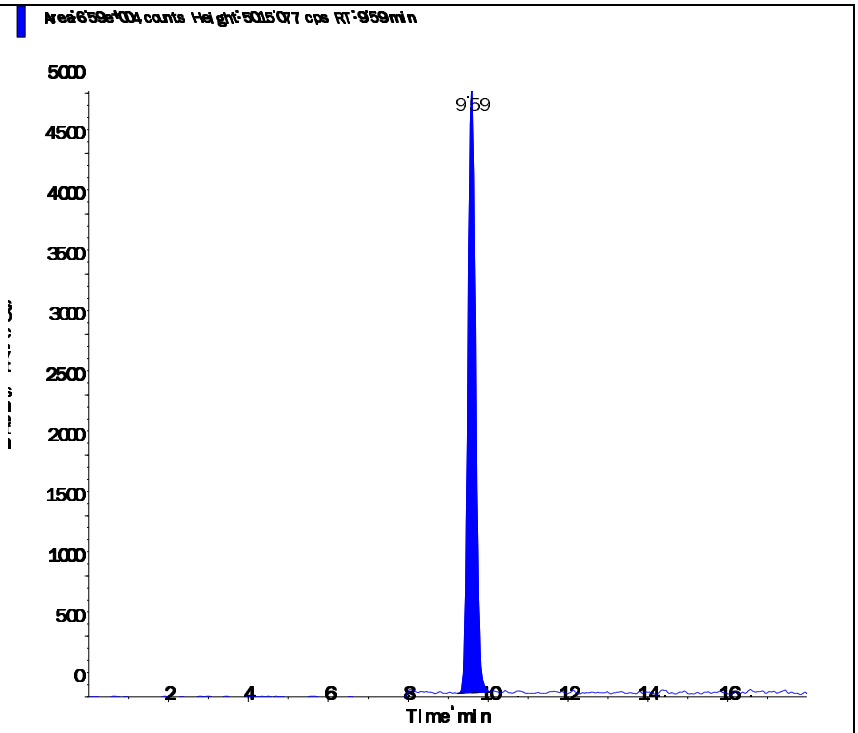

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Data File	LM35299.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 6:35:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572350-05 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35299.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 6:35:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572350-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.960e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.510e+04	9.68	N/A	0.207
Perchlorate conf	1.290e+04	9.67	N/A	0.213

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

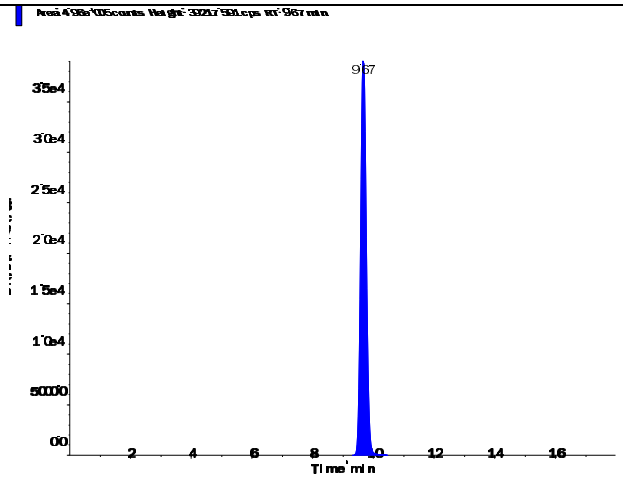

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.68 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

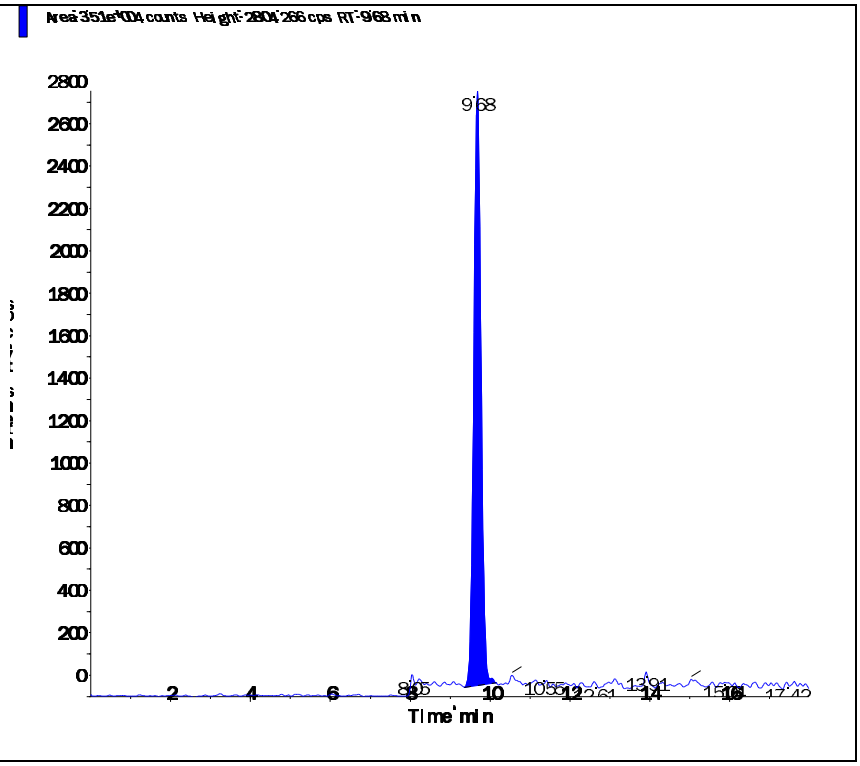

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.67 (9.84) min
Calculated conc:	0.213 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

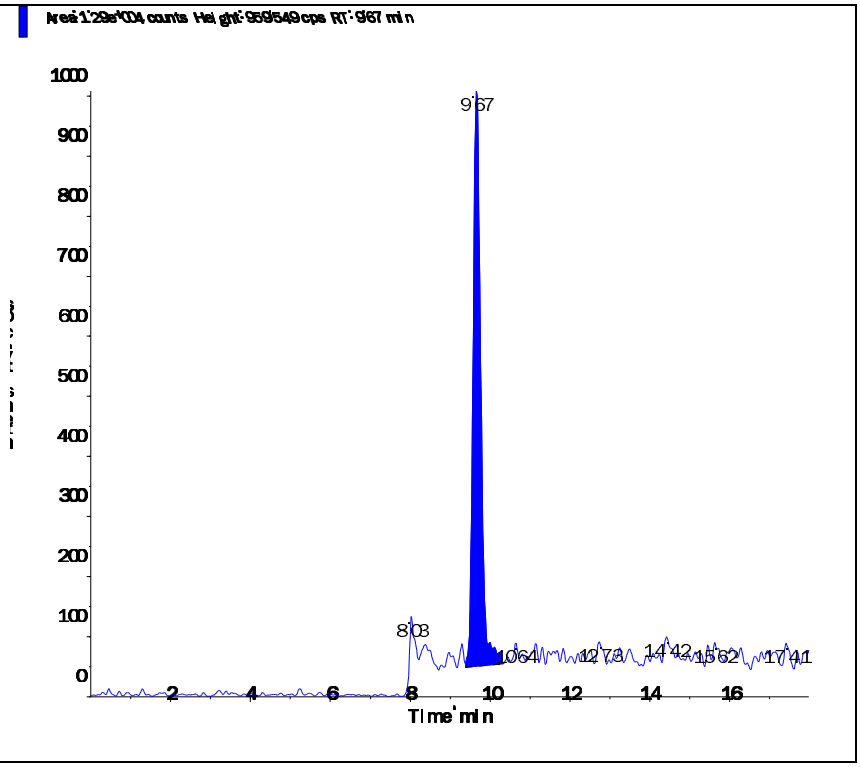

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Data File	LM35311.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 10:22:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572350-06 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35311.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 10:22:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572350-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.090e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.780e+04	9.67	N/A	0.217
Perchlorate conf	1.230e+04	9.67	N/A	0.195

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

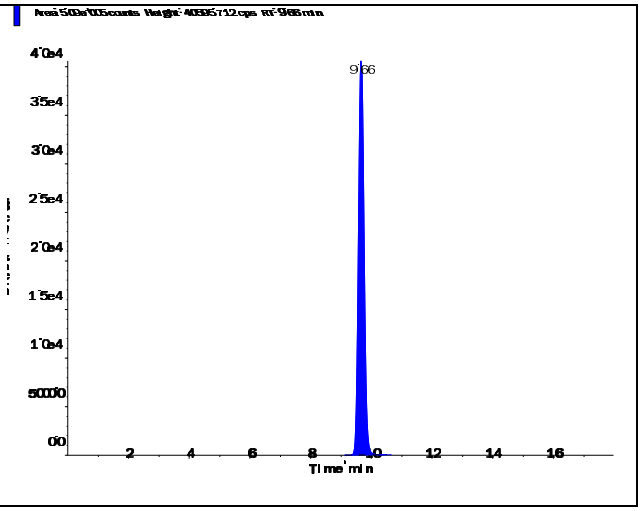

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.67 (9.84) min
Calculated conc:	0.217 ng/ml
Area Ratio:	0.074
Sample Type:	(Unknown)

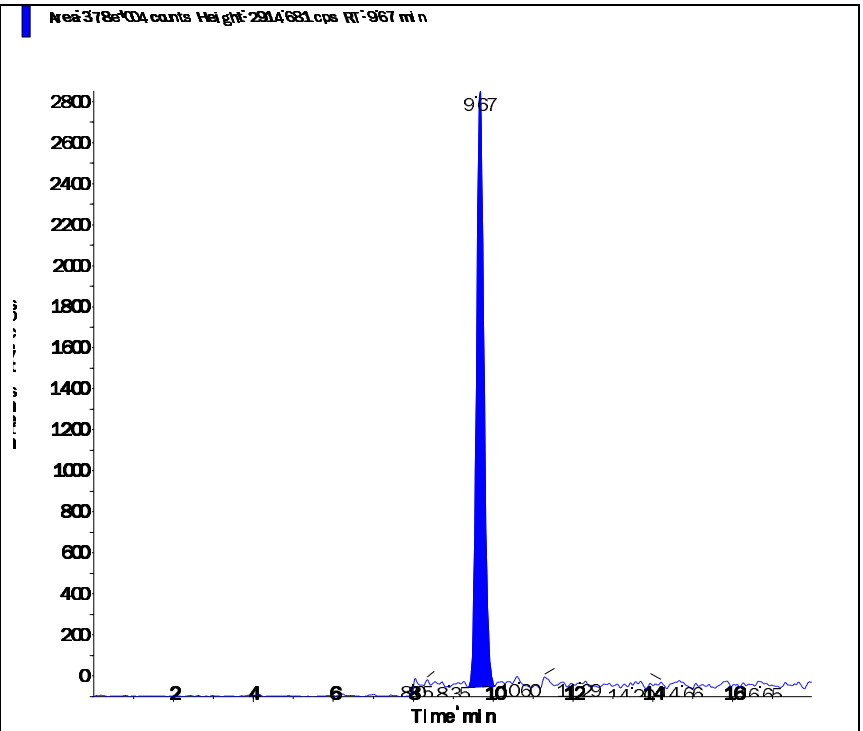

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.67 (9.84) min
Calculated conc:	0.195 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

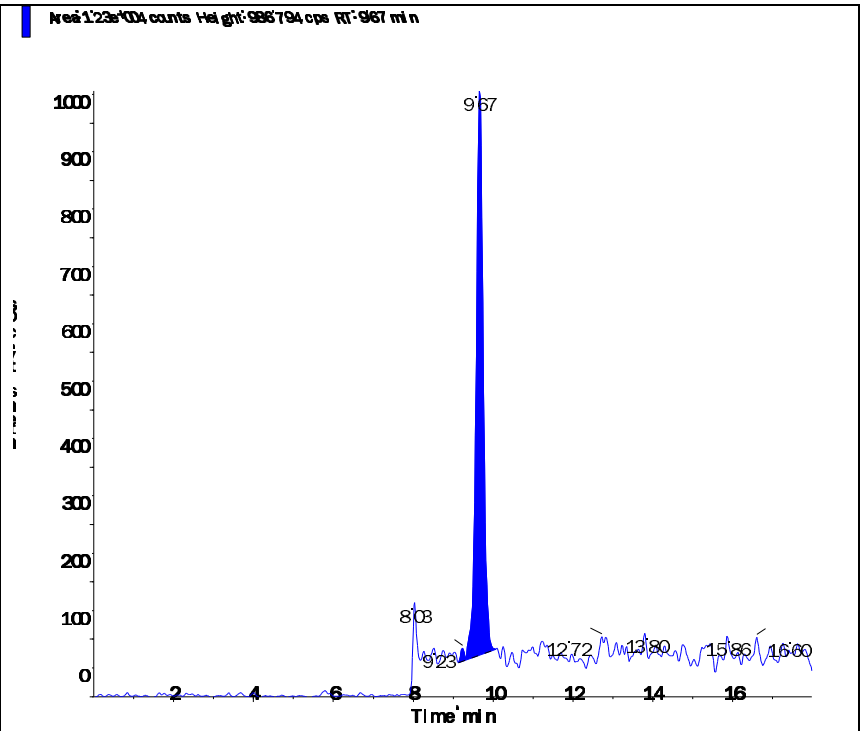

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Data File	LM35319.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/12/2016 12:54:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572350-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35319.wiff	**Injection Volume**	10.00
Acquisition Date	6/12/2016 12:54:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572350-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.810e+04	9.67	N/A	0.219
Perchlorate conf	1.300e+04	9.65	N/A	0.209

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

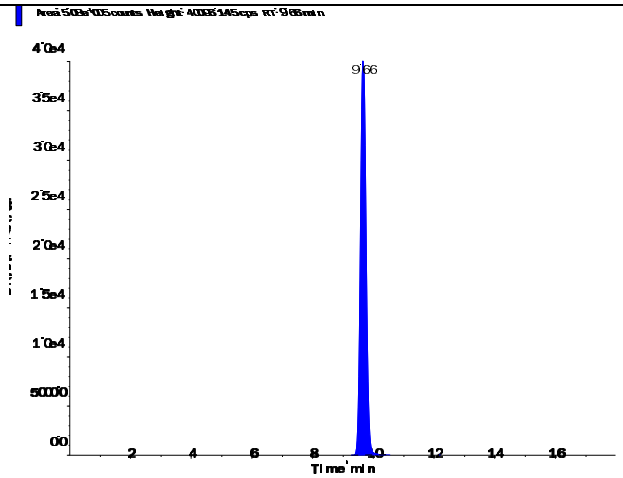

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.67 (9.84) min
Calculated conc:	0.219 ng/ml
Area Ratio:	0.075
Sample Type:	(Unknown)

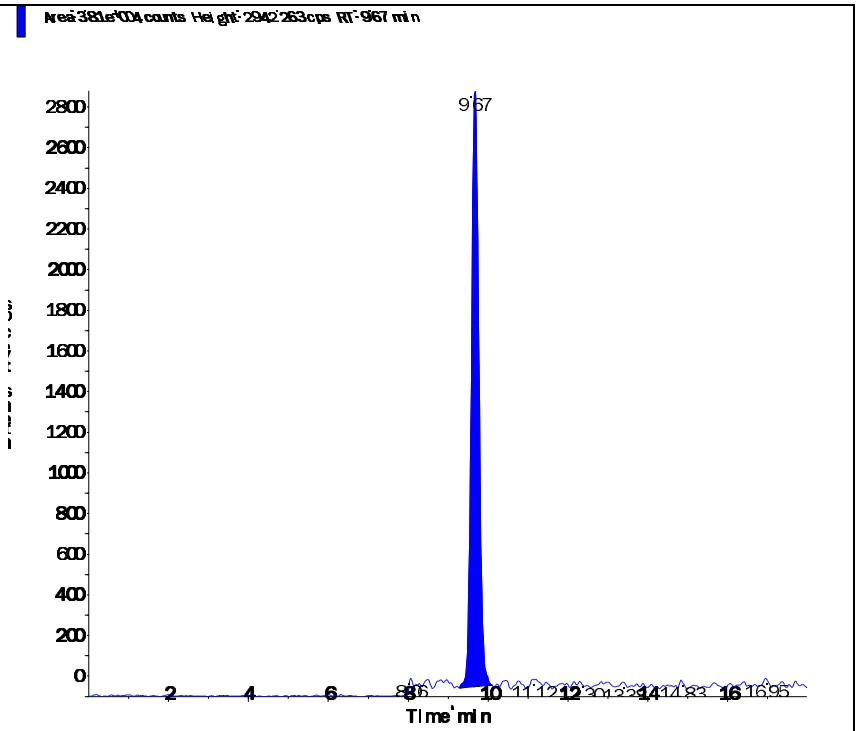

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.65 (9.84) min
Calculated conc:	0.209 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

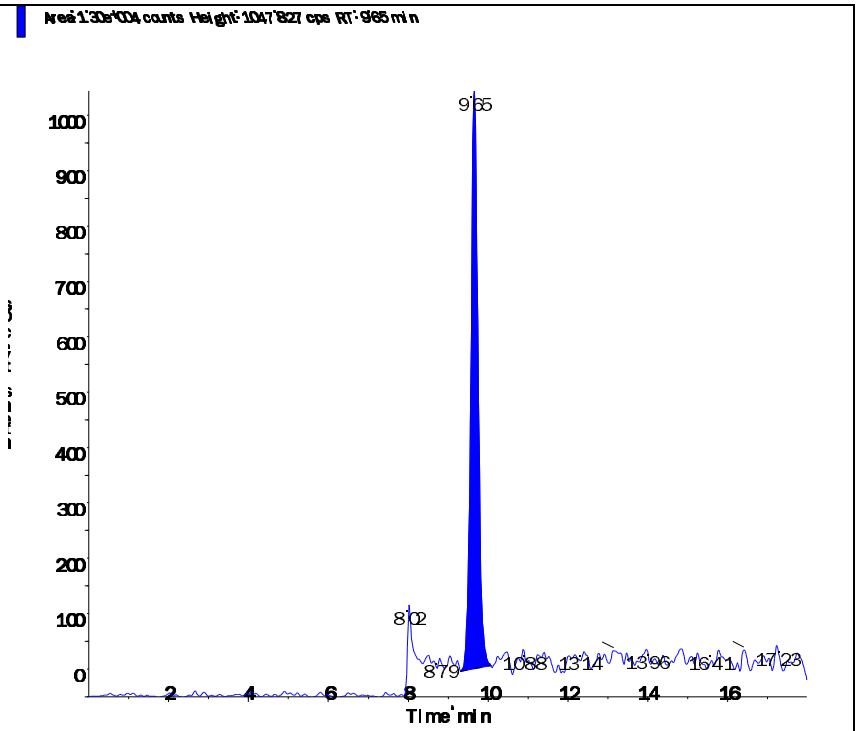

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Data File	LM35323.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/12/2016 9:22:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572350-08 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35323.wiff	**Injection Volume**	10.00
Acquisition Date	6/12/2016 9:22:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG572350-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.920e+05	9.64	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.600e+04	9.65	N/A	0.214
Perchlorate conf	1.210e+04	9.64	N/A	0.199

O18LP (Internal Standard)

RT (Exp. RT): 9.64(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

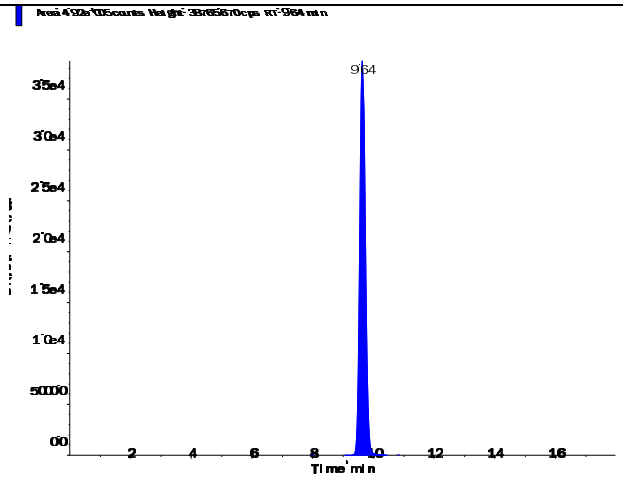

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.65 (9.84) min Calculated conc: 0.214 ng/ml Area Ratio: 0.073 Sample Type: (Unknown)	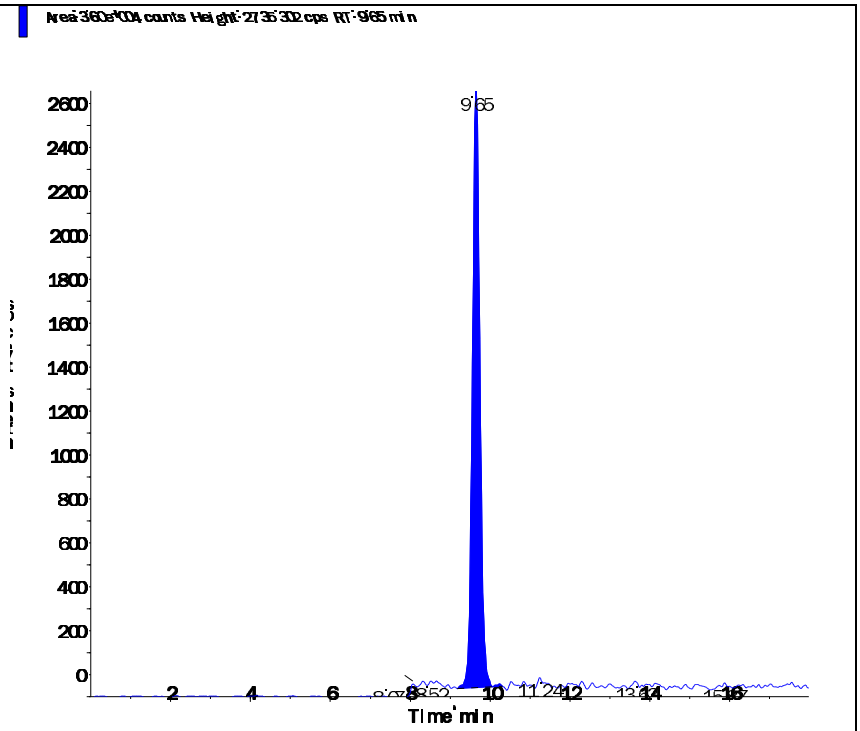
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.64 (9.84) min Calculated conc: 0.199 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	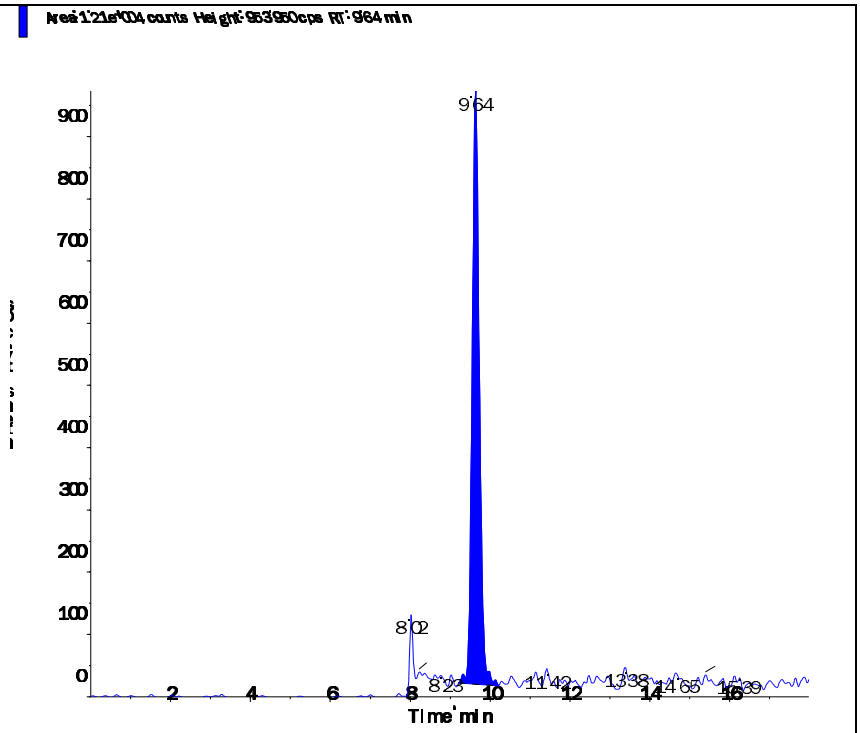

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Data File	LM35335.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/13/2016 1:09:24 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572350-09 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35335.wiff	**Injection Volume**	10.00
Acquisition Date	6/13/2016 1:09:24 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG572350-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.570e+05	9.64	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.120e+04	9.64	N/A	0.216
Perchlorate conf	1.400e+04	9.63	N/A	0.205

O18LP (Internal Standard)

RT (Exp. RT): 9.64(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

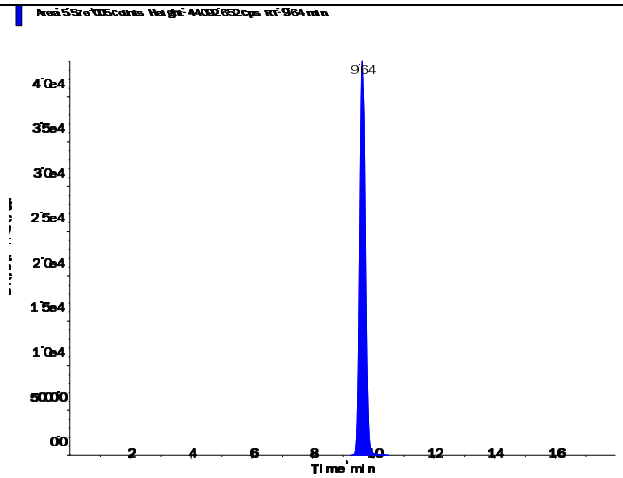

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	0.216 ng/ml
Area Ratio:	0.074
Sample Type:	(Unknown)

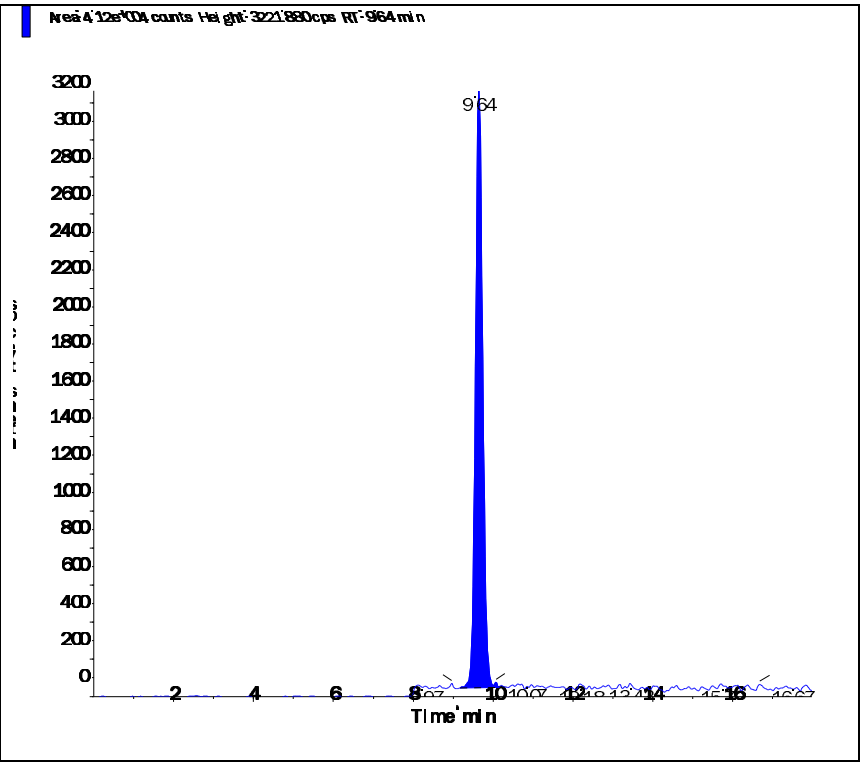

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	0.205 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

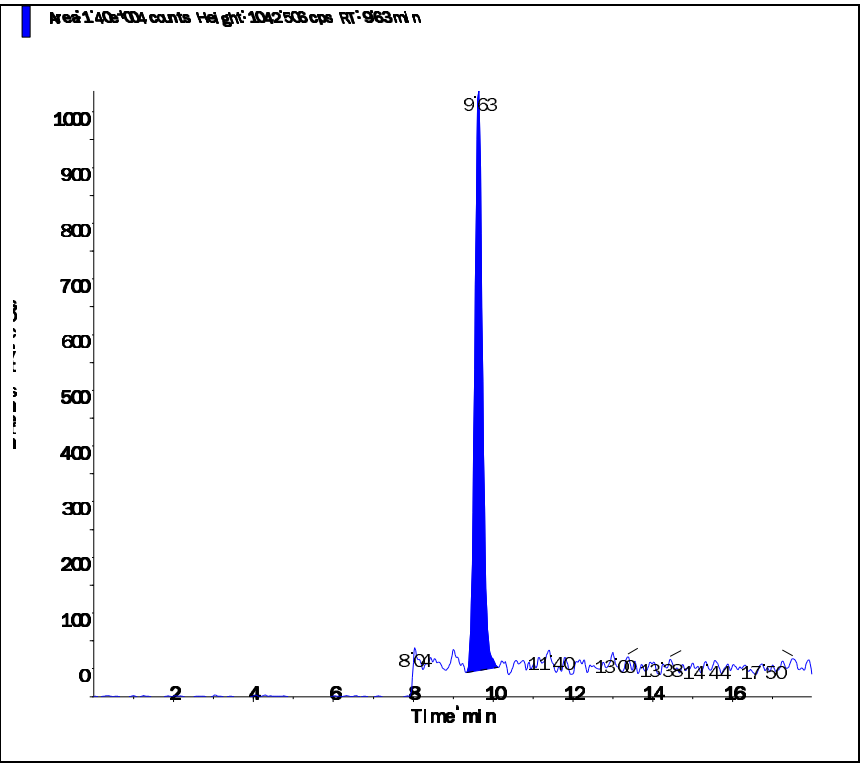

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Printed: 6/13/2016 10:36 AM

Data File	LM35339.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/13/2016 8:28:11 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572350-10 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35339.wiff	**Injection Volume**	10.00
Acquisition Date	6/13/2016 8:28:11 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG572350-10	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.540e+05	9.61	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.990e+04	9.62	N/A	0.21
Perchlorate conf	1.380e+04	9.60	N/A	0.203

O18LP (Internal Standard)

RT (Exp. RT): 9.61(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

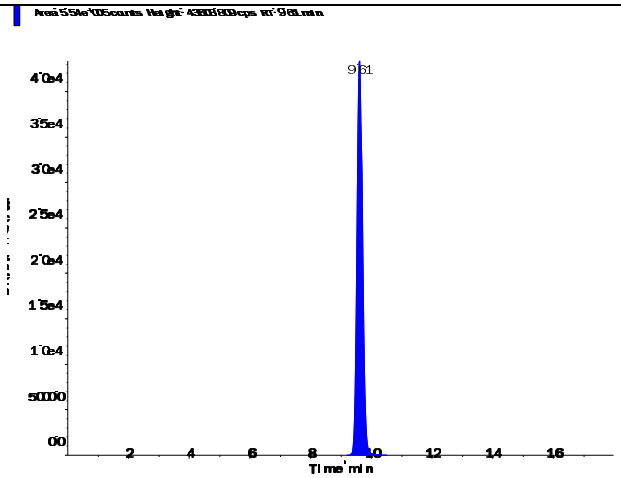

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.62 (9.84) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

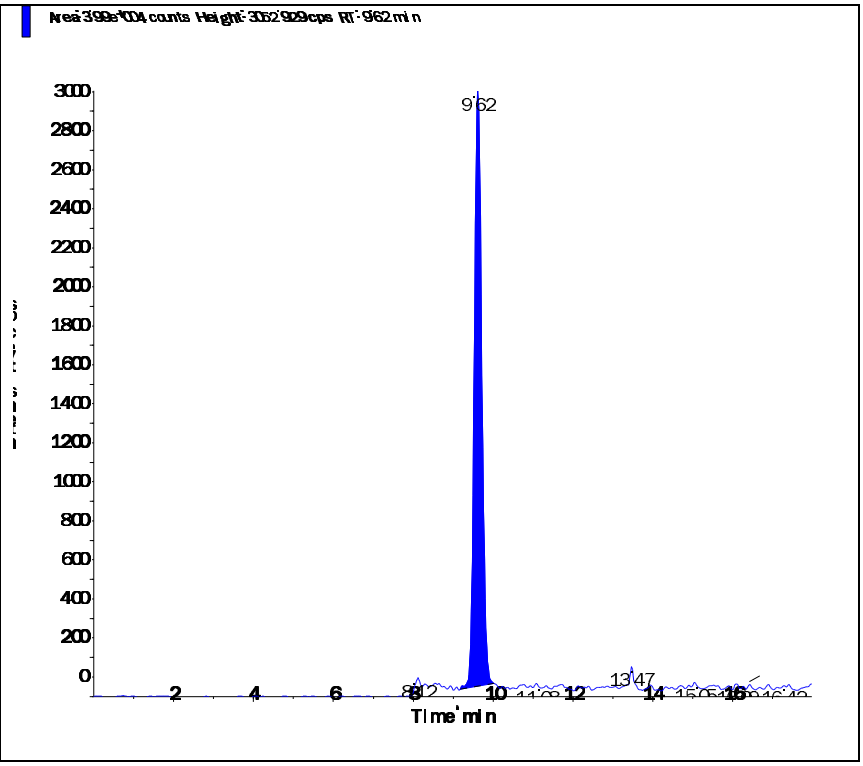

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.60 (9.84) min
Calculated conc:	0.203 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

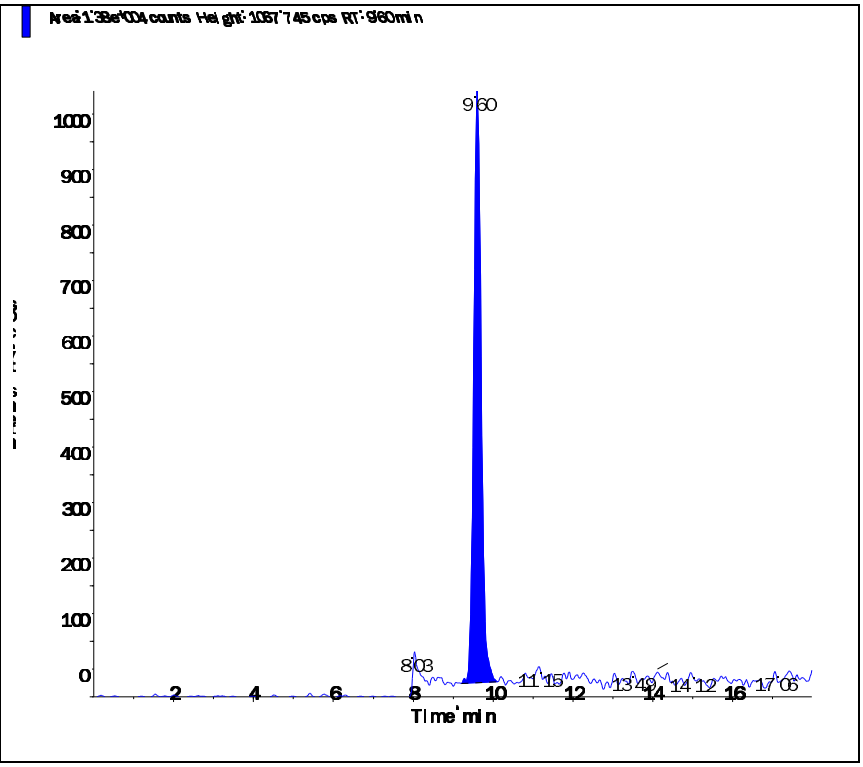

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Printed: 6/13/2016 10:37 AM

Data File	LM35342.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/13/2016 9:25:30 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572350-10 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35342.wiff	**Injection Volume**	10.00
Acquisition Date	6/13/2016 9:25:30 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG572350-10	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.600e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.210e+04	9.64	N/A	0.22
Perchlorate conf	1.430e+04	9.63	N/A	0.209

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

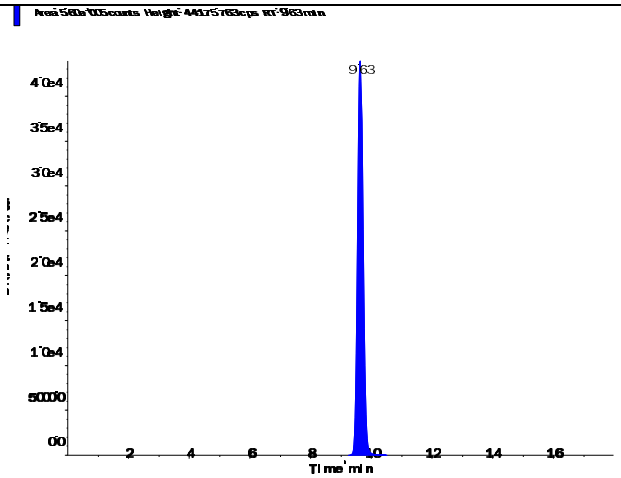

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	0.22 ng/ml
Area Ratio:	0.075
Sample Type:	(Unknown)

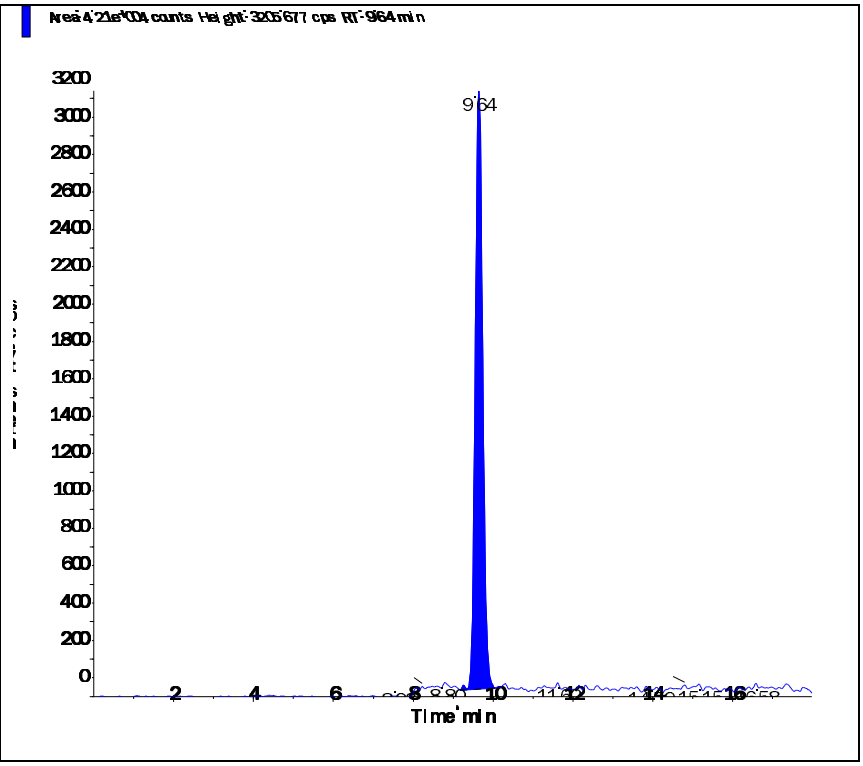

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	0.209 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

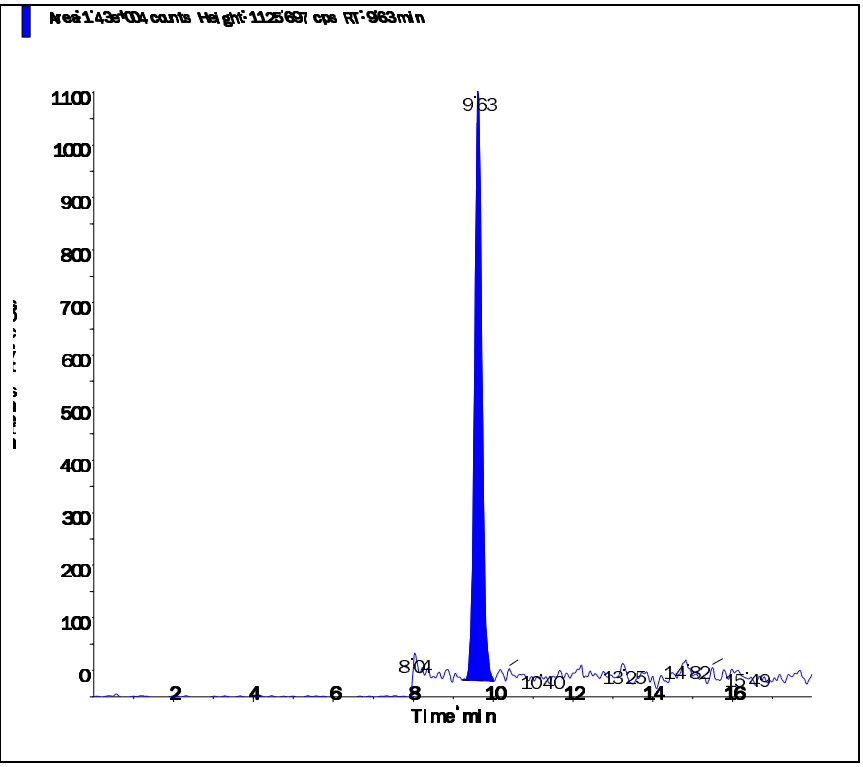

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Data File	LM35298.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 6:16:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-06 CCB	**Injection Vial**	1.00
Data File	LM35298.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 6:16:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.040e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

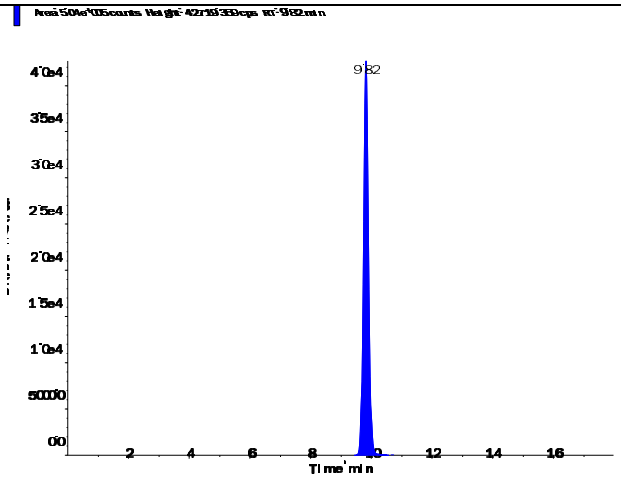

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

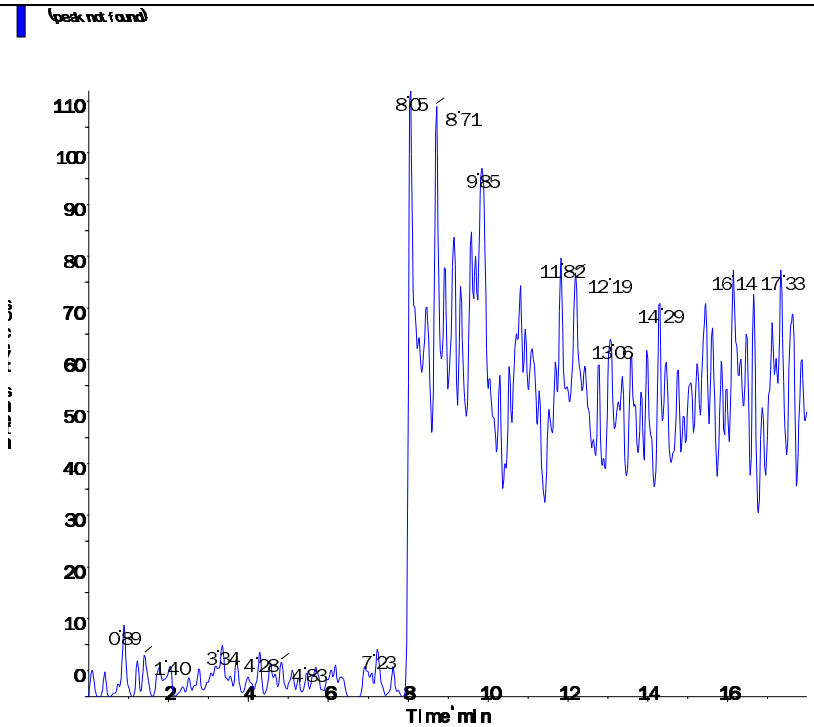

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

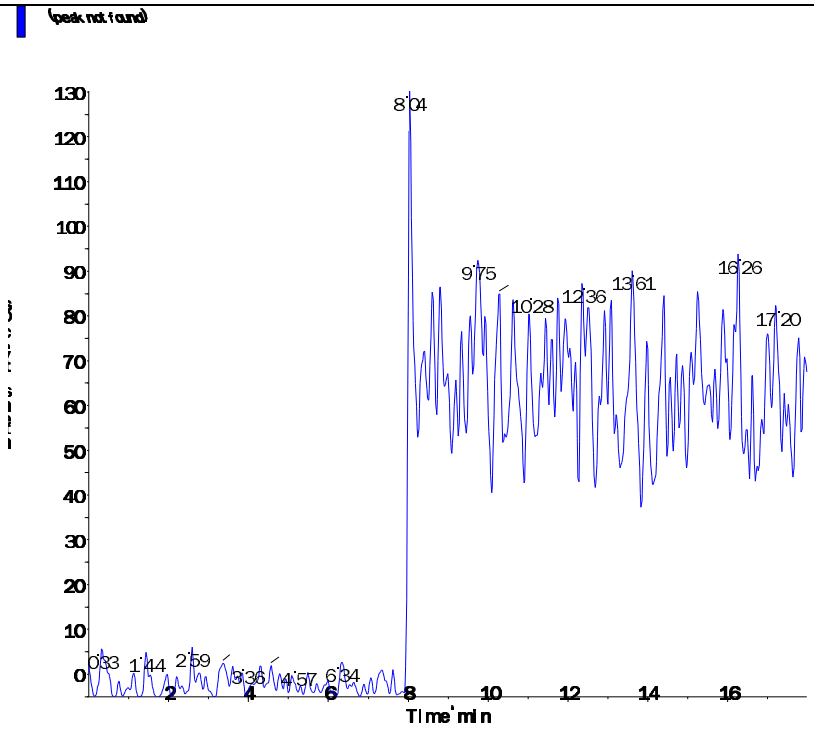

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Data File	LM35312.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 10:41:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-08 CCB	**Injection Vial**	1.00
Data File	LM35312.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 10:41:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.190e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

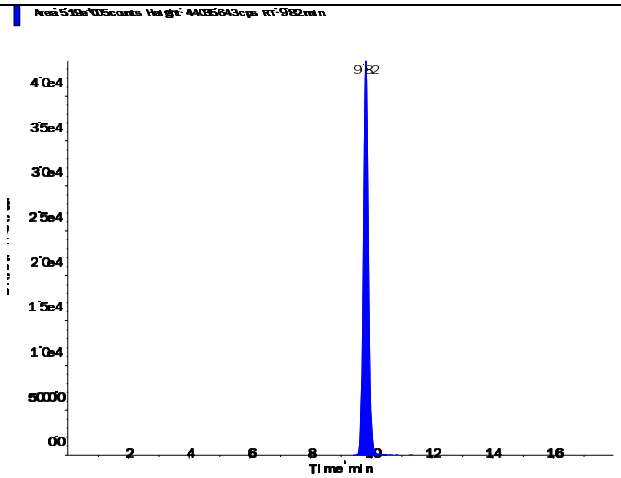

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

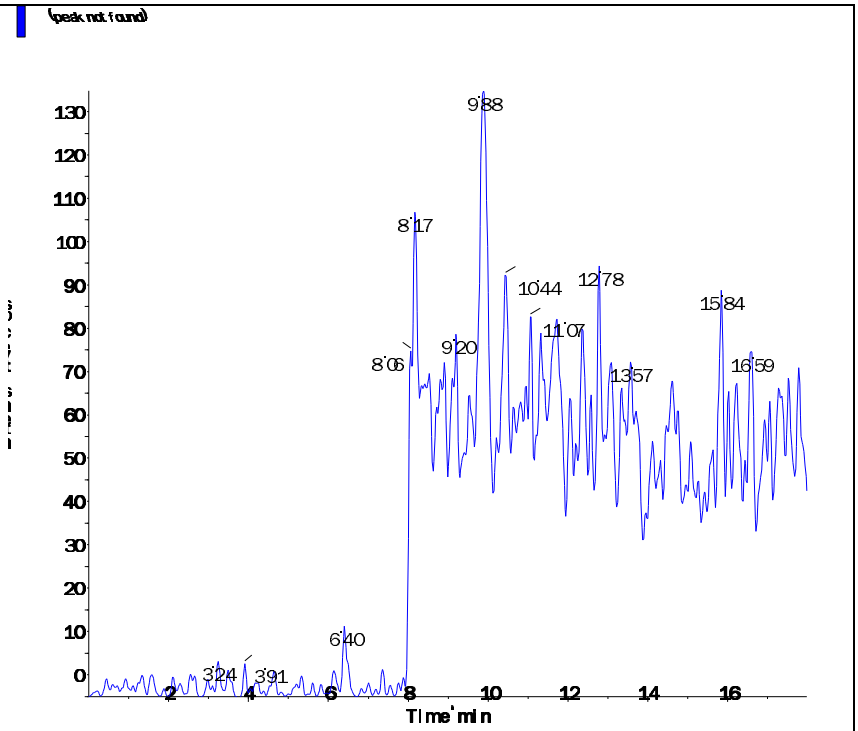

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

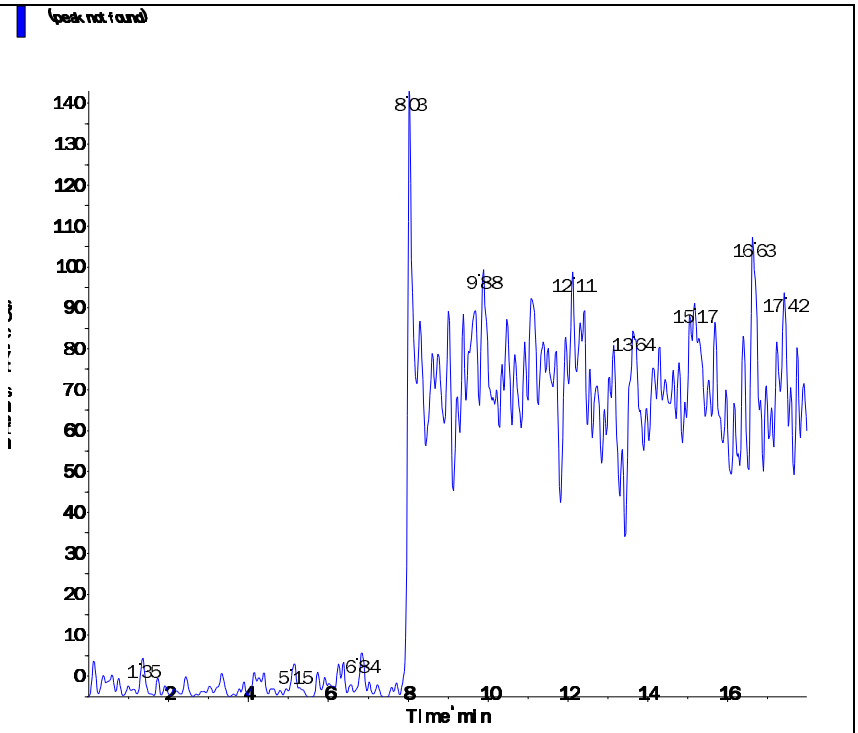

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Created with Analyst Reporter
Printed: 6/12/2016 9:49 PM

Data File	LM35320.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/12/2016 1:13:20 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-10 CCB	**Injection Vial**	1.00
Data File	LM35320.wiff	**Injection Volume**	10.00
Acquisition Date	6/12/2016 1:13:20 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.260e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	6.740e+02	9.81	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

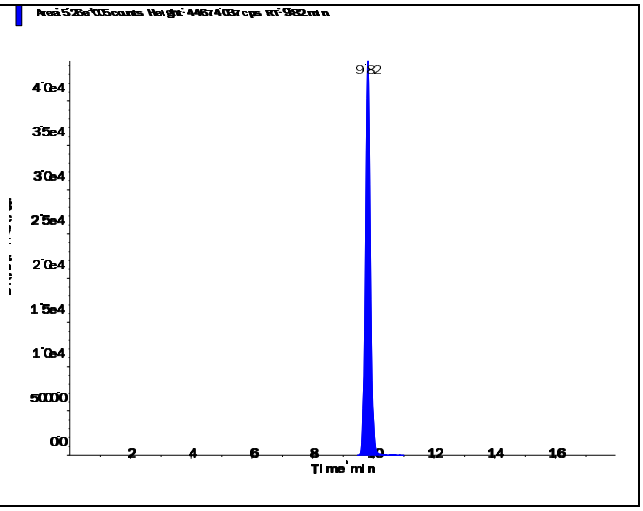

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

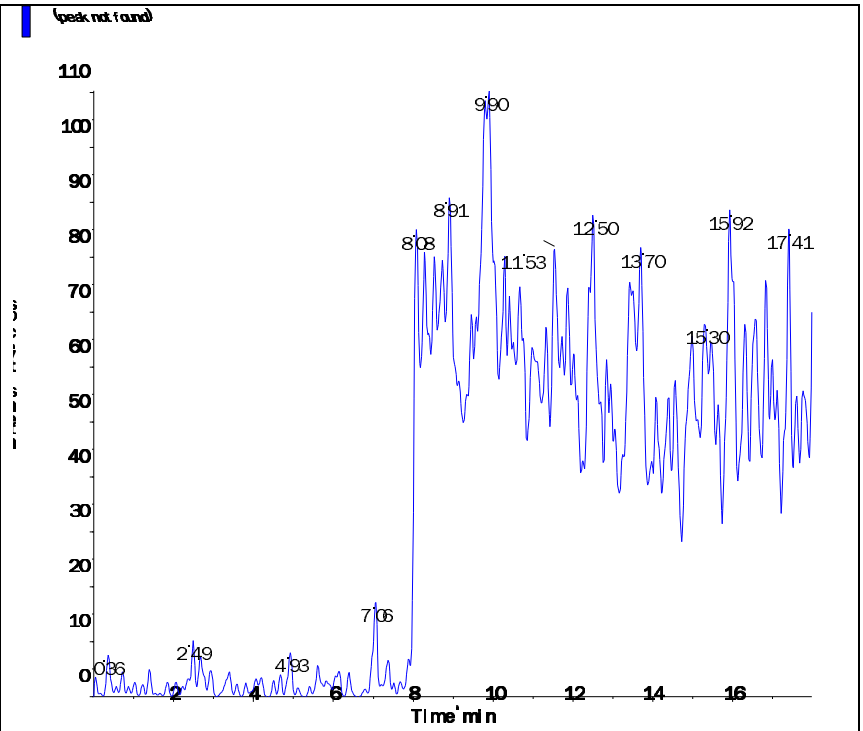

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.81 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

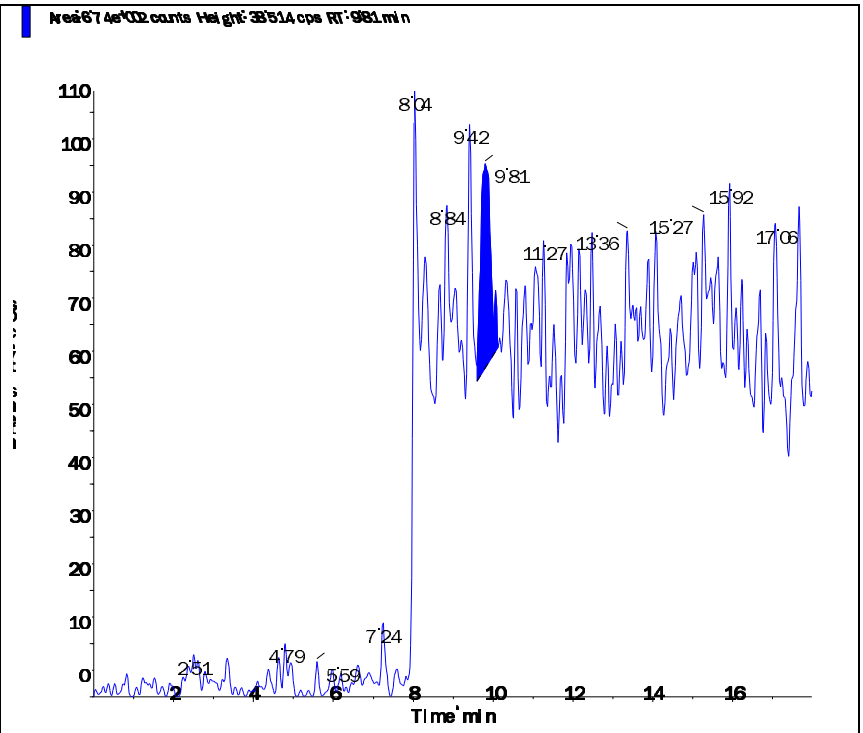

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Created with Analyst Reporter
Printed: 6/13/2016 10:30 AM

Data File	LM35321.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/12/2016 8:44:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572372-01 CCB	**Injection Vial**	1.00
Data File	LM35321.wiff	**Injection Volume**	10.00
Acquisition Date	6/12/2016 8:44:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG572372-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.830e+05	9.79	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.120e+03	9.62	N/A	0.0031
Perchlorate conf	9.060e+02	9.69	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.79(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

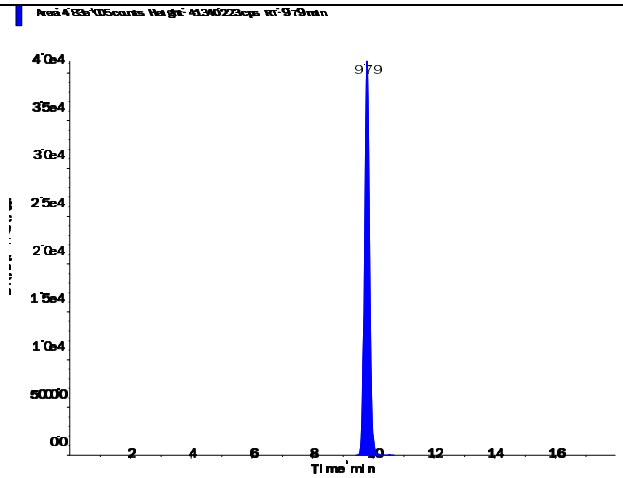

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Printed: 6/13/2016 10:30 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.62 (9.84) min
Calculated conc:	0.0031 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

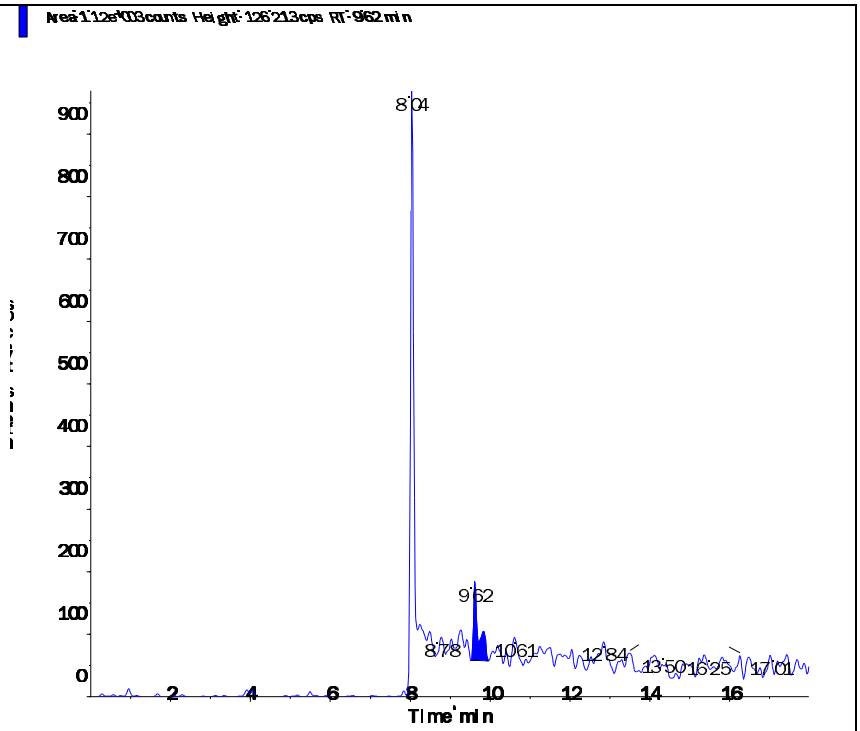

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.69 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

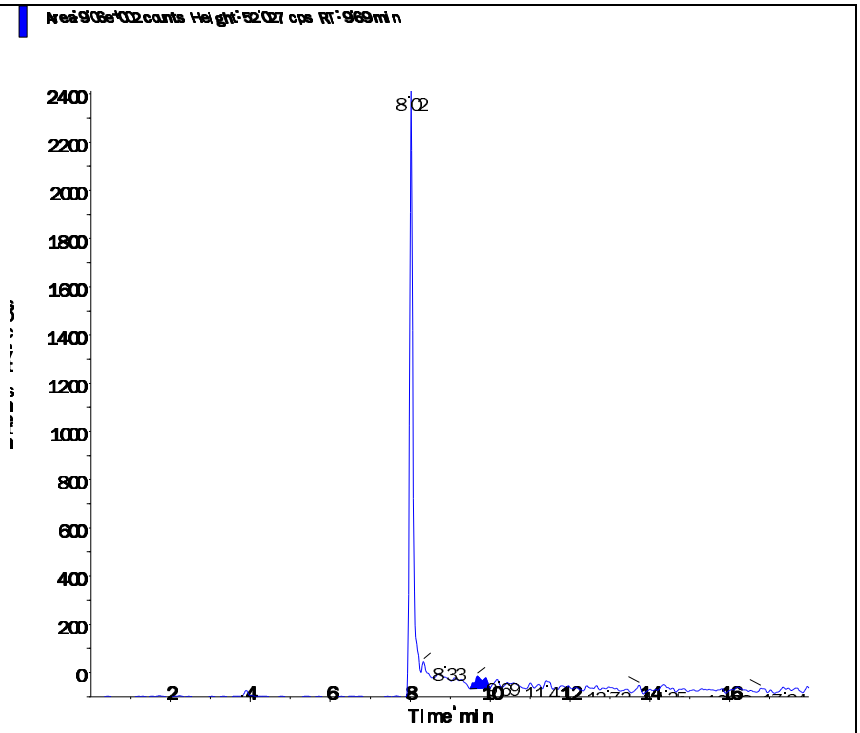

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Created with Analyst Reporter
Printed: 6/13/2016 10:35 AM

Data File	LM35336.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/13/2016 1:28:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572372-04 CCB	**Injection Vial**	1.00
Data File	LM35336.wiff	**Injection Volume**	10.00
Acquisition Date	6/13/2016 1:28:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG572372-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.610e+05	9.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.80(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

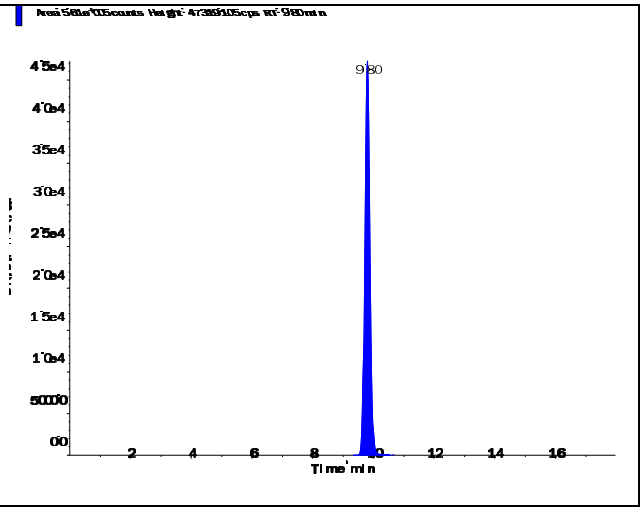

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Printed: 6/13/2016 10:35 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

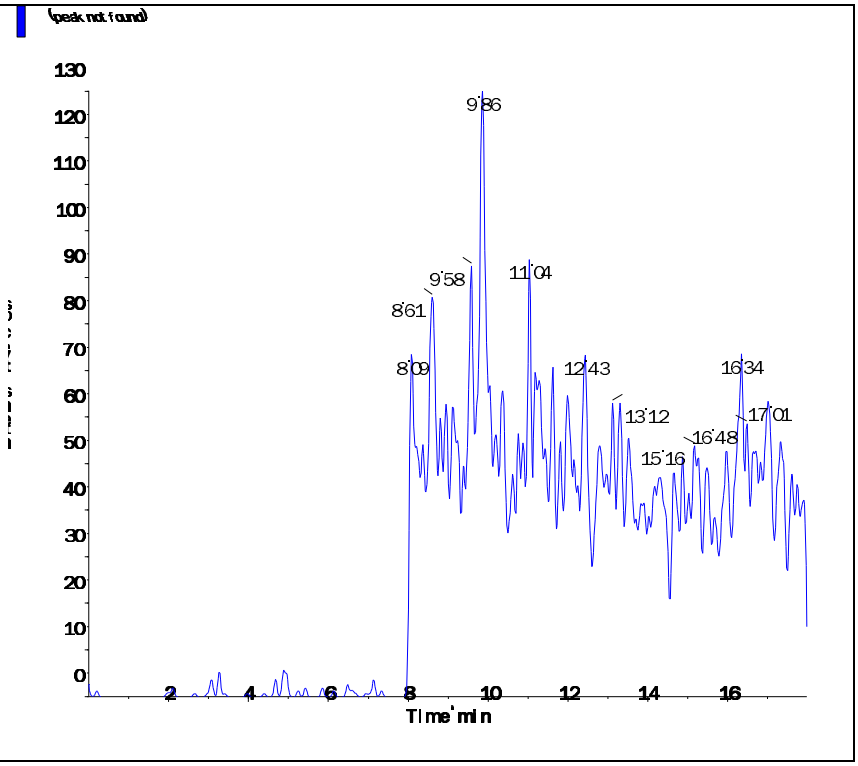

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

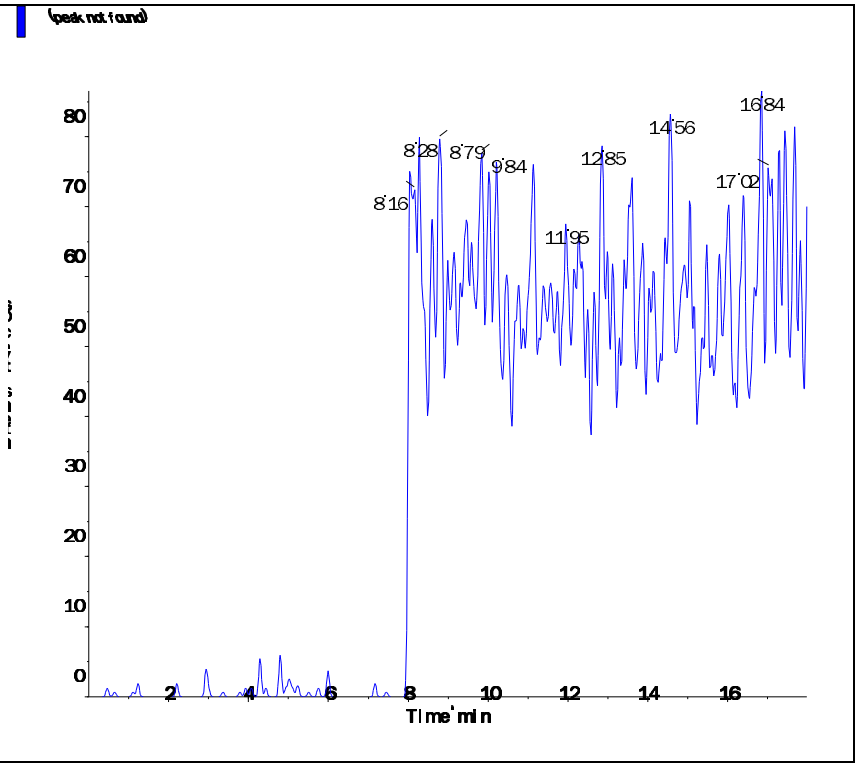

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Created with Analyst Reporter
Printed: 6/13/2016 10:35 AM

Data File	LM35337.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/13/2016 7:50:17 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572372-05 CCB	**Injection Vial**	1.00
Data File	LM35337.wiff	**Injection Volume**	10.00
Acquisition Date	6/13/2016 7:50:17 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG572372-05	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.360e+05	9.79	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.79(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

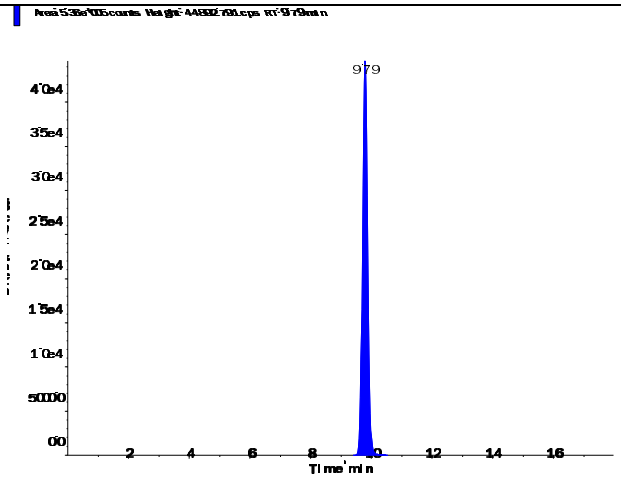

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

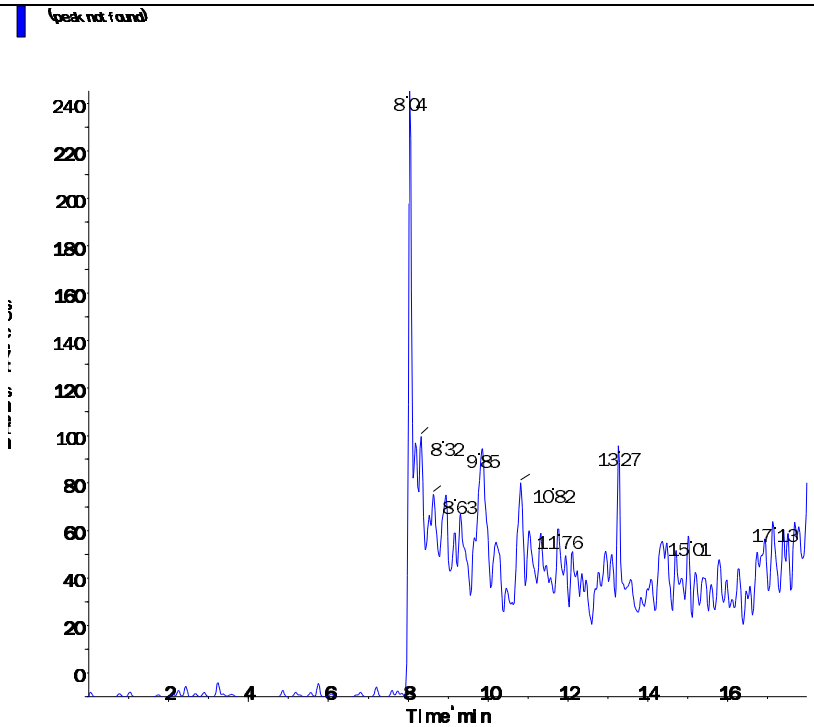

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

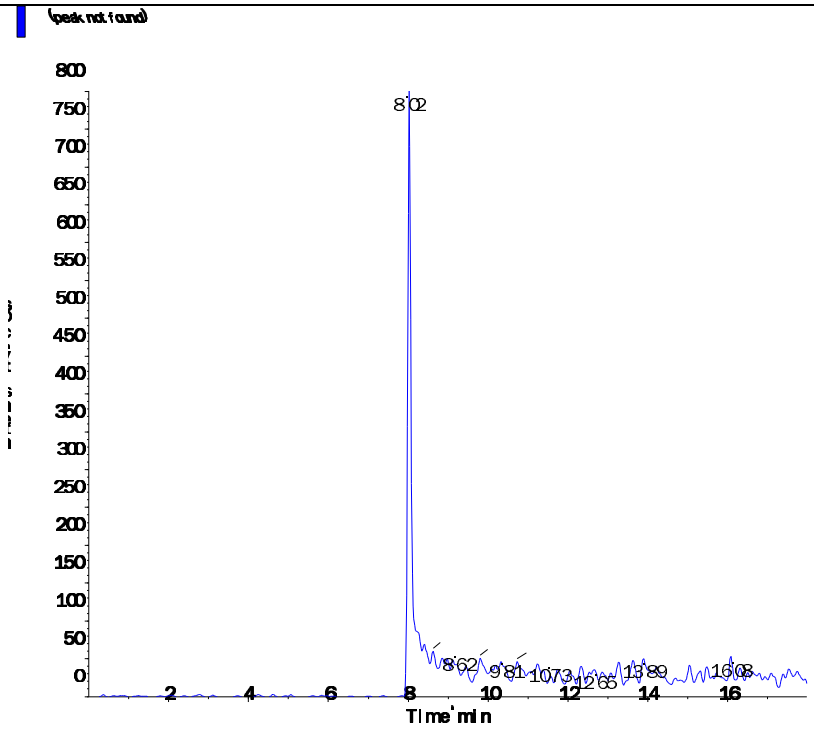

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Created with Analyst Reporter
Printed: 6/13/2016 10:37 AM

Data File	LM35343.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/13/2016 9:44:27 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572372-08 CCB	**Injection Vial**	1.00
Data File	LM35343.wiff	**Injection Volume**	10.00
Acquisition Date	6/13/2016 9:44:27 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG572372-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.710e+05	9.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.80(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

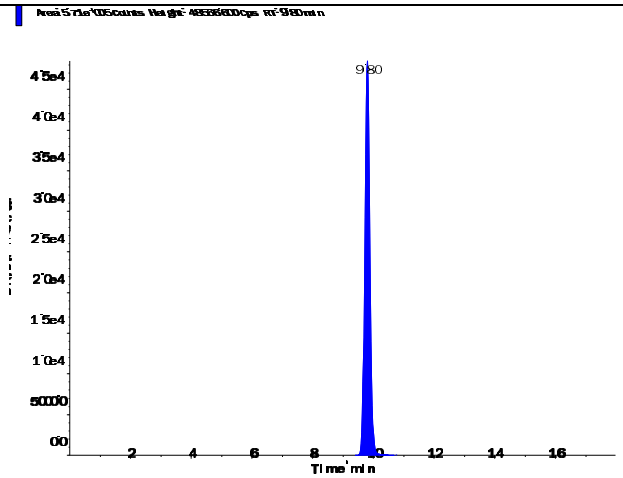

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Created with Analyst Reporter
Printed: 6/13/2016 10:37 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

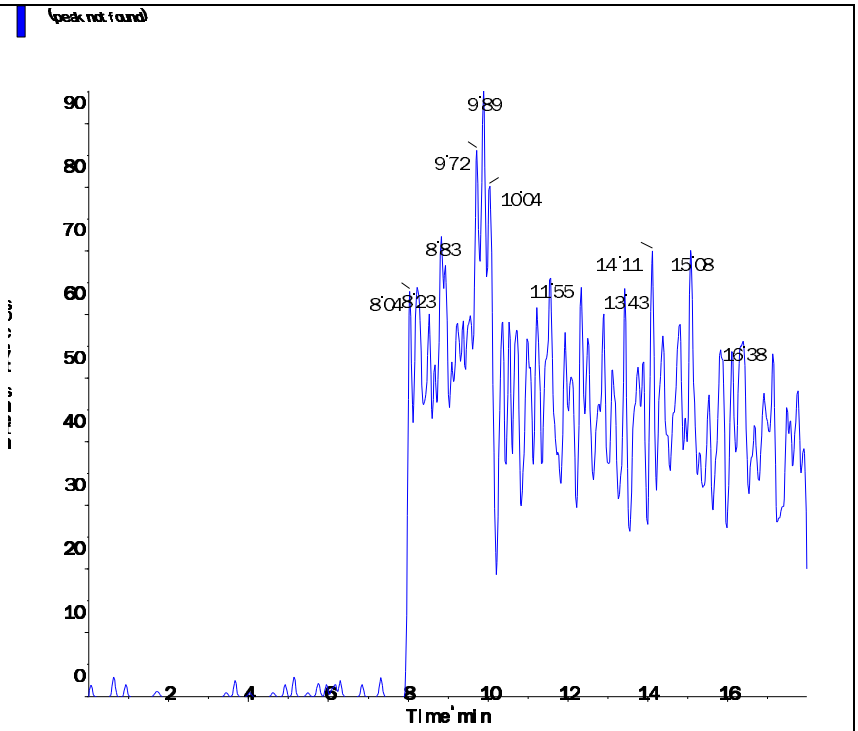

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

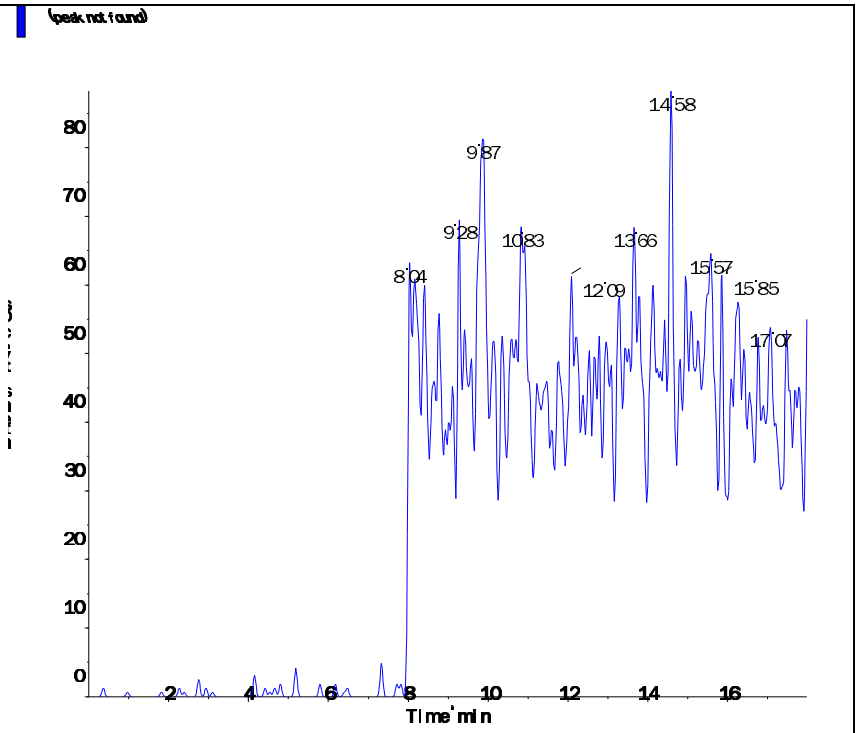

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Created with Analyst Reporter
Printed: 6/12/2016 9:43 PM

Data File	LM35300.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 6:54:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572350-01 MCT (0.2ug/l)	**Injection Vial**	37.00
Data File	LM35300.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 6:54:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572350-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.070e+05	9.15	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.110e+04	9.17	N/A	0.237
Perchlorate conf	1.220e+04	9.15	N/A	0.195

O18LP (Internal Standard)

RT (Exp. RT): 9.15(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

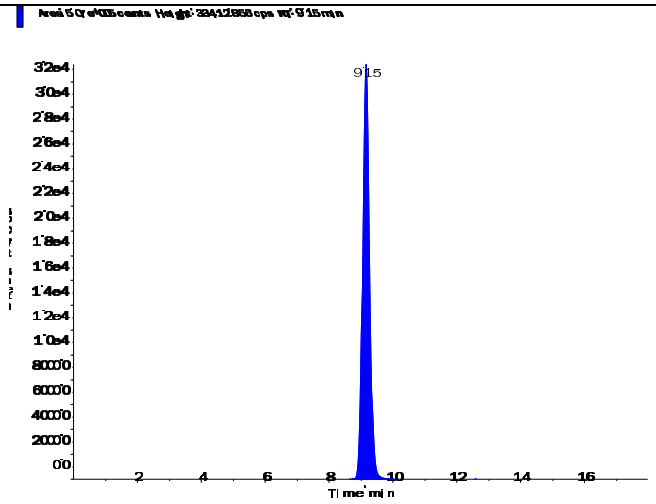

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Created with Analyst Reporter
Printed: 6/12/2016 9:43 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.17 (9.84) min
Calculated conc:	0.237 ng/ml
Area Ratio:	0.081
Sample Type:	(Unknown)

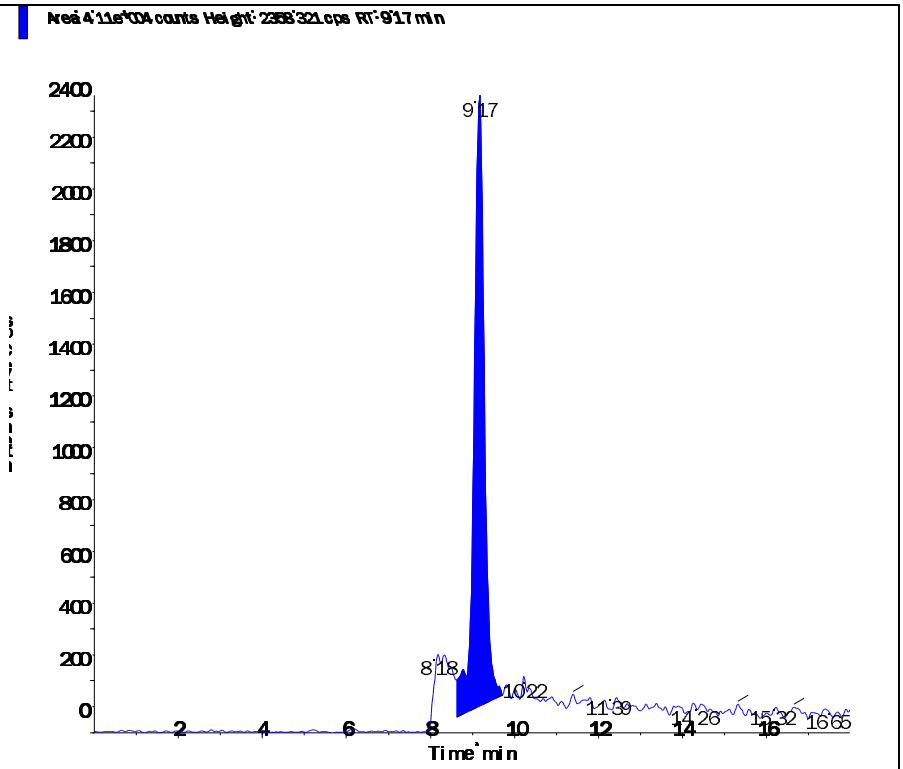

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.15 (9.84) min
Calculated conc:	0.195 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

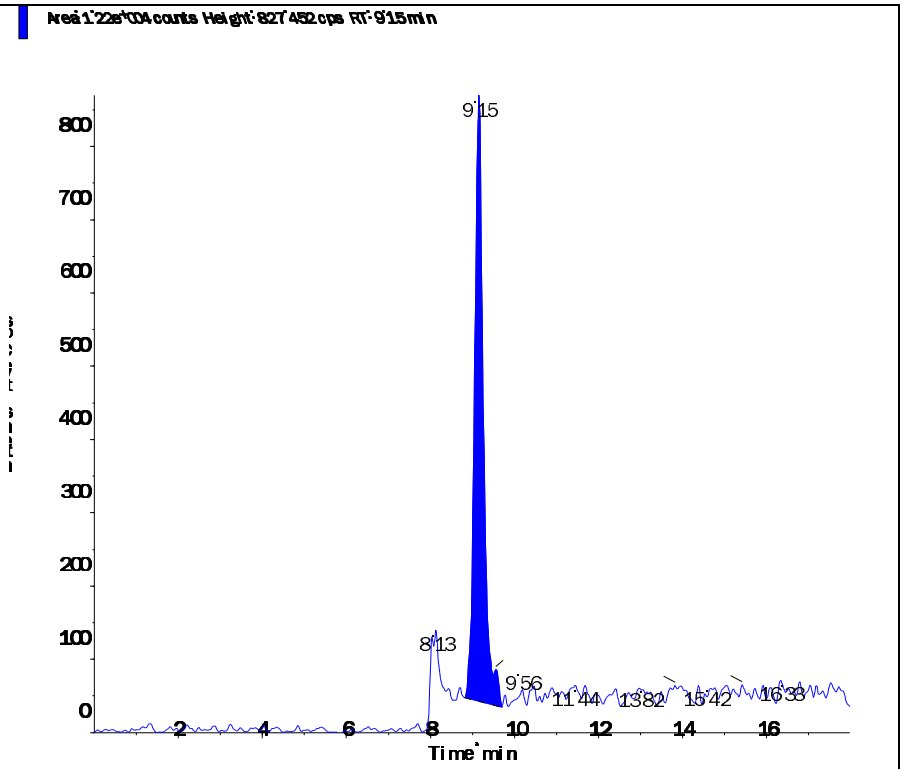

2.2.2.5 Raw QC Data

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Created with Analyst Reporter
Printed: 6/12/2016 9:43 PM

Data File	LM35301.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 7:13:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572350-02 BLANK	**Injection Vial**	38.00
Data File	LM35301.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 7:13:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572350-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.900e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	2.270e+02	9.59	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

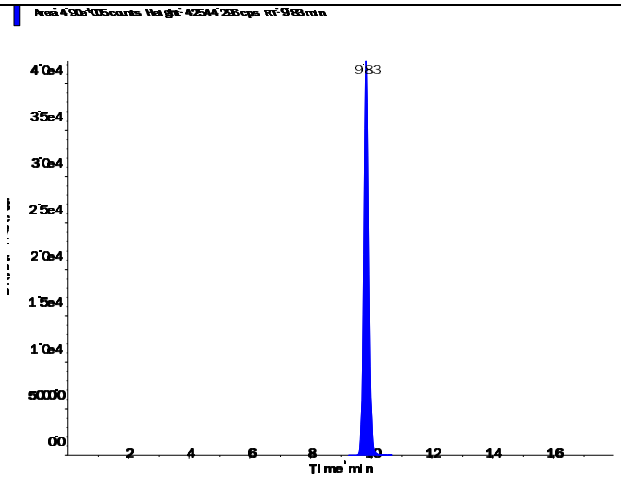

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Created with Analyst Reporter
Printed: 6/12/2016 9:43 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	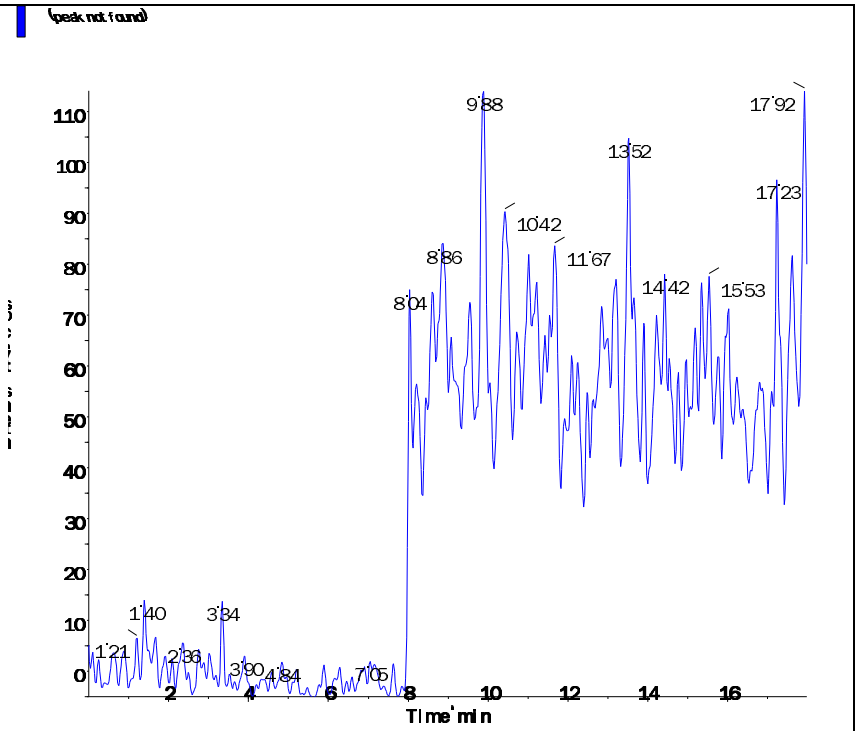
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.59 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	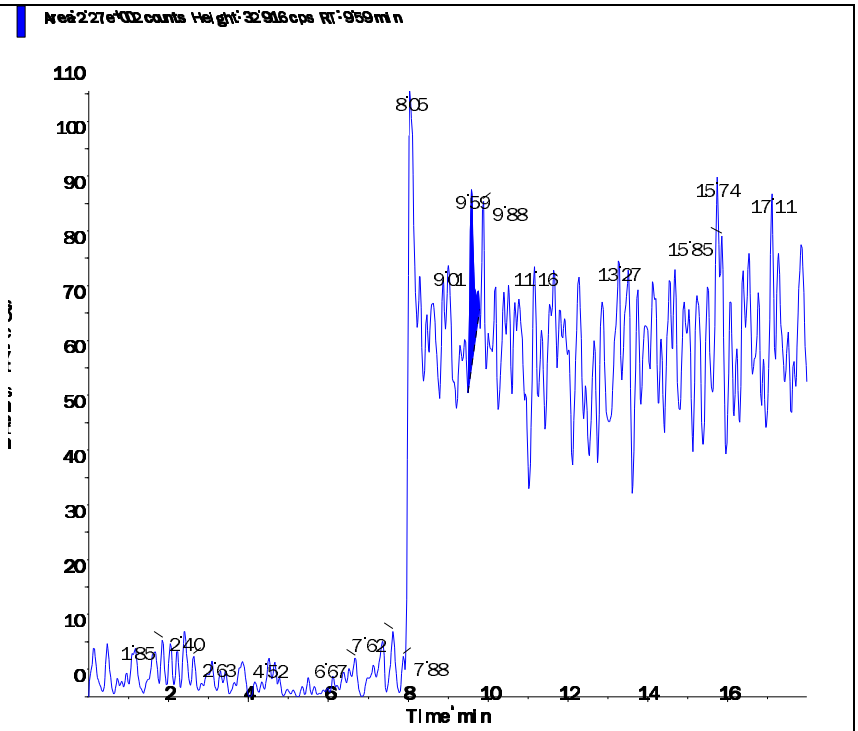

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Created with Analyst Reporter
Printed: 6/12/2016 9:44 PM

Data File	LM35302.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 7:32:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572350-03 LCS (0.2ug/L)	**Injection Vial**	39.00
Data File	LM35302.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 7:32:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572350-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.840e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.500e+04	9.84	N/A	0.211
Perchlorate conf	1.210e+04	9.83	N/A	0.203

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

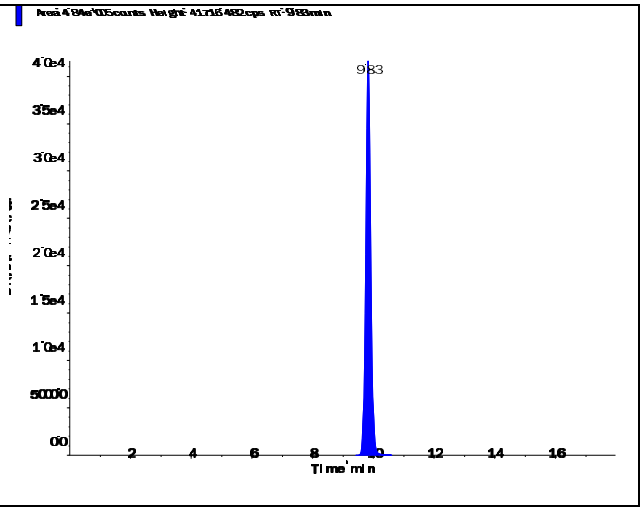

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.211 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

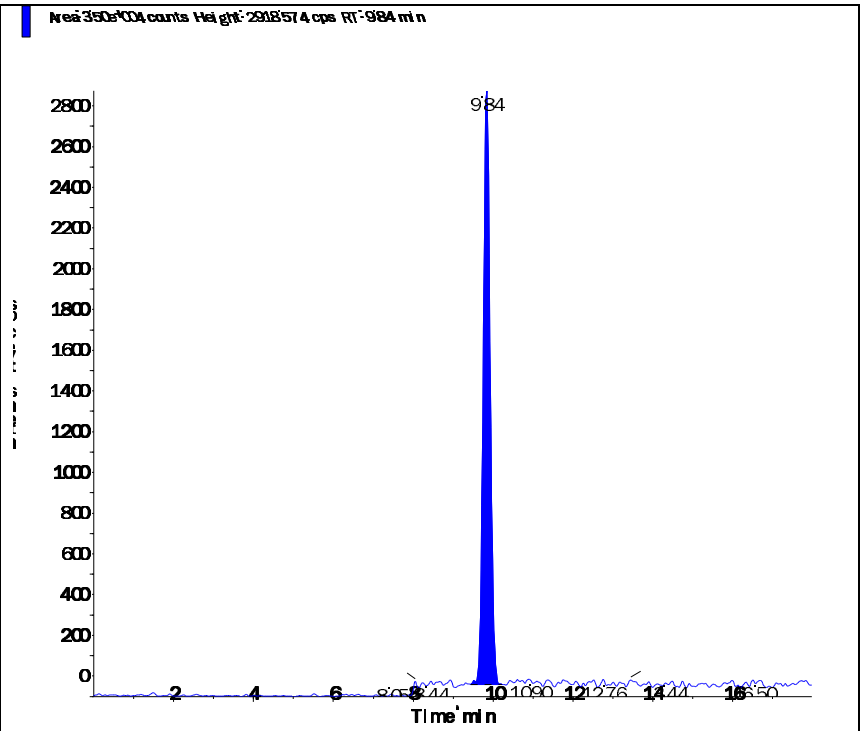

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.203 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

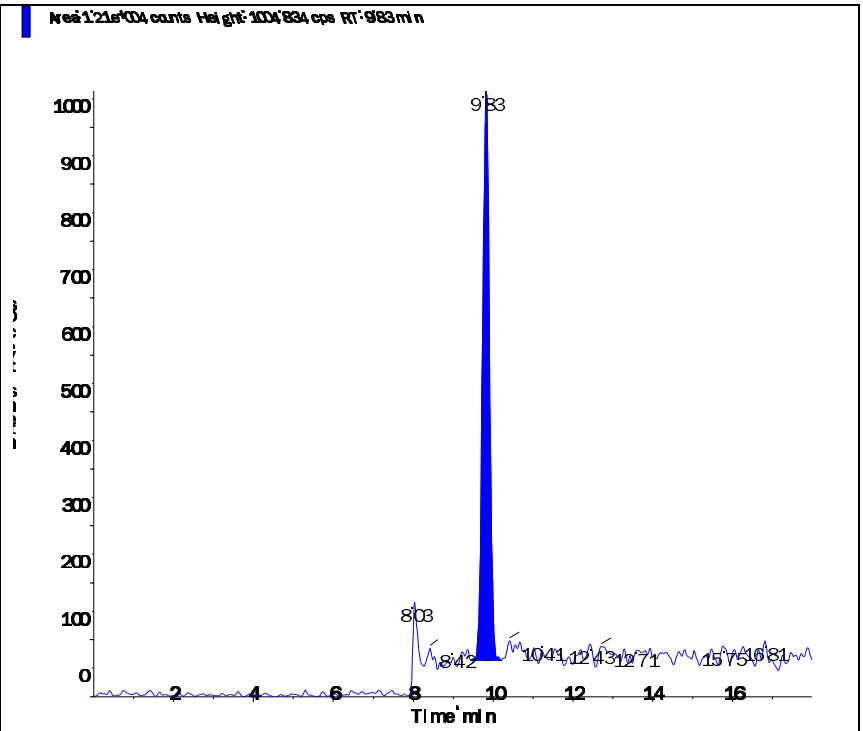

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/12/2016 9:44 PM

Data File	LM35303.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 7:51:23 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572350-03 LCSD (0.2ug/L)	**Injection Vial**	40.00
Data File	LM35303.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 7:51:23 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572350-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.840e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.440e+04	9.84	N/A	0.208
Perchlorate conf	1.190e+04	9.83	N/A	0.20

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

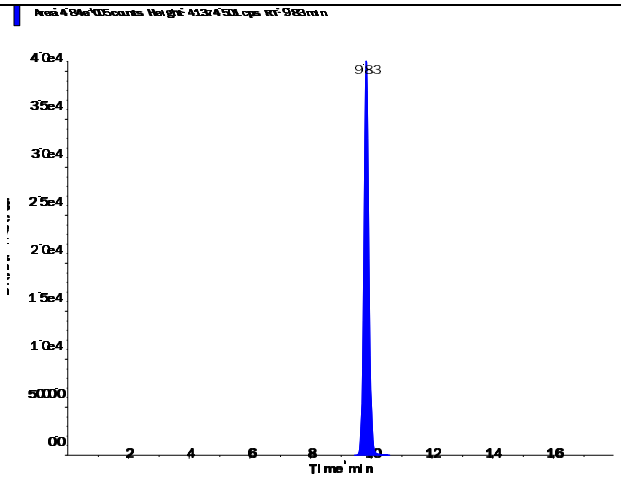

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.208 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

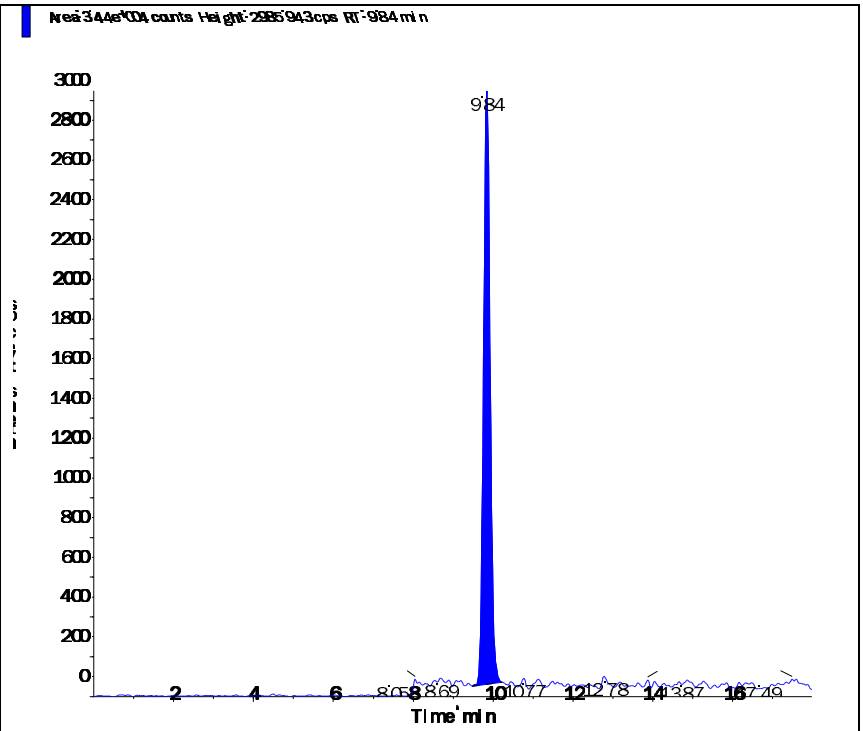

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.20 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

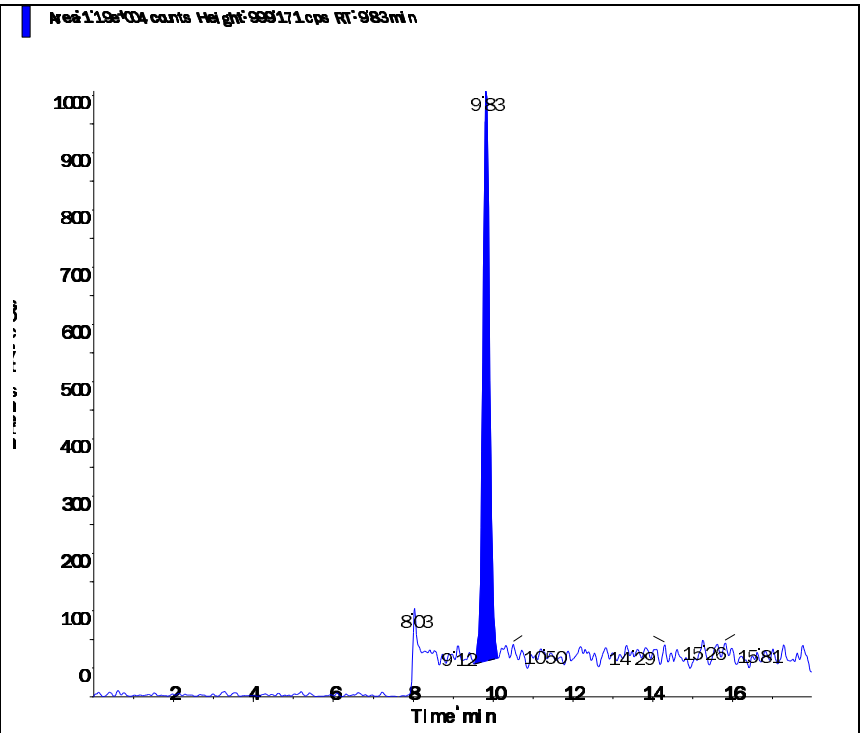

s.dataFile Page 2 of 2

2.3 Metals Data

2.3.1 Metals I C P Data

2.3.1.1 Summary Data

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW8-060916	**Prep Method:**	3015	**Prep Date:**	06/15/2016 10:00
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/17/2016 10:37
Workgroup #:	WG572965	**Analyst:**	JYH	**Run Date:**	06/17/2016 12:00
Collect Date:	06/09/2016 11:00	**Dilution:**	1	**File ID:**	T3.061716.120053
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.122	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	8.30		0.500	0.250	0.125
Iron, Total	7439-89-6	0.888		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	7.45		1.00	0.500	0.250
Potassium, Total	7440-09-7	0.503	J	2.00	1.00	0.500
Selenium, Total	7782-49-2	0.00533	J	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW8-060916	**Prep Method:**	3015	**Prep Date:**	06/15/2016 10:00
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/17/2016 10:37
Workgroup #:	WG572965	**Analyst:**	JYH	**Run Date:**	06/17/2016 12:36
Collect Date:	06/09/2016 11:00	**Dilution:**	100	**File ID:**	T3.061716.123610
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sodium, Total	7440-23-5	191		100	50.0	25.0

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW26SW-060916	**Prep Method:**	3015	**Prep Date:**	06/15/2016 10:00
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/17/2016 10:37
Workgroup #:	WG572965	**Analyst:**	JYH	**Run Date:**	06/17/2016 12:04
Collect Date:	06/09/2016 13:25	**Dilution:**	1	**File ID:**	T3.061716.120445
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.158	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Potassium, Total	7440-09-7	3.46		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.00586	J	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW26SW-060916	**Prep Method:**	3015	**Prep Date:**	06/15/2016 10:00
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/17/2016 10:37
Workgroup #:	WG572965	**Analyst:**	JYH	**Run Date:**	06/17/2016 12:47
Collect Date:	06/09/2016 13:25	**Dilution:**	20	**File ID:**	T3.061716.124747
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	61.4		10.0	5.00	2.50
Iron, Total	7439-89-6	72.2		4.00	2.00	1.00
Magnesium, Total	7439-95-4	34.1		20.0	10.0	5.00
Sodium, Total	7440-23-5	320		20.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW10F-060916	**Prep Method:**	3015	**Prep Date:**	06/15/2016 10:00
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/17/2016 10:37
Workgroup #:	WG572965	**Analyst:**	JYH	**Run Date:**	06/17/2016 12:08
Collect Date:	06/09/2016 14:40	**Dilution:**	1	**File ID:**	T3.061716.120837
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.0804	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	7.72		0.500	0.250	0.125
Iron, Total	7439-89-6	5.73		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	2.22		1.00	0.500	0.250
Potassium, Total	7440-09-7	2.09		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	9.56		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.1.2 QC Summary Data

Example 6010 Calculations
Thermo Scientific iCAP

1.0 Initial Calibration (ICAL) Parameters
For a multi-point calibration, the system performs linear regression from data consisting of a blank and four standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

TCLP Non-Volatile

Analyst(s): AMA/CPD
Date: 06/14/2016
Filter Lot #: 94860030
Microbac SOP: TCLP01 Rev #: 12

Analyst / Date		Analyst / Date	
CPD	6/14/16	AMA	6/15/16
Time On	Temp On °C	Time Off	Temp Off °C
1427	23.8	0827	21.9

Agitator Speed 30 ± 2 rpm ☑

Jug #	Sample #	Tests	Method	Fluid #	Matrix *	% Solid	Pretest pH Initial	Pretest pH Final	Int. Wt. (g)	Fluid Vol. (mL)	Final extract pH
D	06-0670-01	ME	1311	F1-181	S	100	8.12	2.08	7.67	153	5.19
↓	-02	↓	↓	↓	↓	↓	8.98	2.06	100.27	2005	5.79
↓	-03	↓	↓	↓	↓	↓	10.07	4.79	100.14	2003	7.34
↓	-04	↓	↓	↓	↓	↓	9.53	1.65	100.72	2014	5.13
↓	-05	↓	↓	↓	↓	↓	8.98	2.69	100.32	2006	6.67
↓	-06	↓	↓	↓	↓	↓	9.43	1.94	40.43	807	6.79
↓	-07	↓	↓	F2-379	↓	↓	8.10	7.75	25.70	514	8.08
D	06-0731-01	ME pH-L	1311	F2-379	S	100	8.47	5.86	50.46	1009	4.32
↓	-02	↓ ↓	1312	SPLP F2-320	↓	↓	NA	NA	100.62	2012	8.44
NA	FBIK1	ME	1311	F1-181	NA	NA	NA	NA	100	100	4.93
↓	FBIK2	↓ COD pH-L ~~ME~~	↓	F2-379	↓	↓	↓	↓	↓	↓	2.88
↓	SPLP F2-	↓ pH-L	1312	SPLP F2-320	↓	↓	↓	↓	↓	↓	5.05

CPD 6/14/16

*Matrix Code: (S = solid, sand, soil or sludge) (P = paint) (O = organic) (W = water or aqueous waste)
D = Disposable plastic jug
TCLP Pretest weight will be 5.0 g (± 0.1) unless otherwise noted.
Temperature shall be maintained at 23° ± 2 for 18 ± 2 hours unless otherwise noted.

Comments: 5x 06-0670-01 recieved with limited volume.

Peer Review By: [signature]

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG572775
Analyst: ERP
Spike Analyst: ERP
Run Date: 06/15/2016 10:00
Method: 3015
Balance: BAL019
Instrument: MW-1
Instrument Start: 06/15/2016 10:22

SOP: ME407 Revison 19
Spike Solution: STD76255
Spike Witness: VC
HNO3 Lot #: COA18905
HCL Lot #: COA18769
40 & 50 ML. DIGESTION TU COA18772
ICP Filters- fisher-Lot# RGT35619

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG572775-02	BLANK	1	40 mL	50 mL	205.069 g	205.054 g		
2	WG572612-01	FBLK1	17	5 mL	50 mL	206.144 g	206.129 g		
3	WG572612-02	FBLK2	17	5 mL	50 mL	206.415 g	206.441 g		
4	WG572775-03	LCS	1	40 mL	50 mL	210.819 g	210.843 g	5 mL	
5	L16060616-01	SAMP	1	40 mL	50 mL	205.789 g	205.79 g		06/21/16
6	L16060616-02	SAMP	1	40 mL	50 mL	207.381 g	207.384 g		06/21/16
7	L16060616-04	SAMP	1	40 mL	50 mL	206.111 g	206.112 g		06/21/16
8	L16060641-01	SAMP	1	40 mL	50 mL	208.974 g	208.976 g		06/20/16
9	L16060641-02	SAMP	1	40 mL	50 mL	206.828 g	206.836 g		06/20/16
10	L16060641-03	SAMP	1	40 mL	50 mL	206.487 g	206.505 g		06/20/16
11	L16060641-04	SAMP	1	40 mL	50 mL	207.332 g	207.333 g		06/20/16
12	L16060641-05	SAMP	1	40 mL	50 mL	205.747 g	205.749 g		06/20/16
13	L16060641-06	SAMP	1	40 mL	50 mL	205.335 g	205.347 g		06/20/16
14	L16060641-07	SAMP	1	40 mL	50 mL	209.831 g	209.833 g		06/20/16
15	L16060670-01	SAMP	17	5 mL	50 mL	203.994 g	204.008 g		06/17/16
16	L16060670-02	SAMP	17	5 mL	50 mL	205.631 g	205.626 g		06/17/16
17	L16060670-03	SAMP	17	5 mL	50 mL	205.959 g	205.962 g		06/17/16
18	WG572775-01	REF	17	5 mL	50 mL	209.048 g	209.053 g		
19	L16060670-04	SAMP	17	5 mL	50 mL	209.048 g	209.053 g		06/17/16
20	L16060670-05	SAMP	17	5 mL	50 mL	208.402 g	208.418 g		06/17/16
21	L16060670-06	SAMP	17	5 mL	50 mL	206.817 g	206.807 g		06/17/16
22	L16060670-07	SAMP	17	5 mL	50 mL	207.789 g	207.796 g		06/17/16
23	L16060731-01	SAMP	17	5 mL	50 mL	207.38 g	207.372 g		06/17/16
24	WG572775-04	MS	1	5 mL	50 mL	211.133 g	211.133 g	5 mL	
25	WG572775-05	MSD	1	5 mL	50 mL	211.88 g	211.881 g	5 mL	

L16060641-07	filtered digestate

Analyst: Erin Potter

Reviewer: Vicki Collins

MW_DIG - Modified 09/30/2009
PDF ID: 4808455
Report generated: 06/15/2016 11:03

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 061716T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 572965,572145,572626,572900,573214,573149

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.061716.102216	WG573227-01	Calibration Point		1		06/17/16 10:22
2	T3.061716.102614	WG573227-02	Calibration Point		1		06/17/16 10:26
3	T3.061716.103013	WG573227-03	Calibration Point		1		06/17/16 10:30
4	T3.061716.103412	WG573227-04	Calibration Point		1		06/17/16 10:34
5	T3.061716.103749	WG573227-05	Calibration Point		1		06/17/16 10:37
6	T3.061716.104127	WG573227-06	Initial Calibration Verification		1		06/17/16 10:41
7	T3.061716.104504	WG573227-07	Initial Calib Blank		1		06/17/16 10:45
8	T3.061716.104903	WG573227-08	Low Level Initial Calibration V		1		06/17/16 10:49
9	T3.061716.105259	WG573227-09	Low Level Initial Calibration V		1		06/17/16 10:52
10	T3.061716.105653	WG573227-10	Interference Check		1		06/17/16 10:56
11	T3.061716.110046	WG573227-11	Interference Check		1		06/17/16 11:00
12	T3.061716.110429	WG573227-12	CCV		1		06/17/16 11:04
13	T3.061716.110808	WG573227-13	CCB		1		06/17/16 11:08
14	T3.061716.111457	WG572775-02	Method/Prep Blank	40/50	1		06/17/16 11:14
15	T3.061716.111855	WG572775-03	Laboratory Control S	40/50	1		06/17/16 11:18
16	T3.061716.112235	WG572612-01	Fluid Blank 1		1		06/17/16 11:22
17	T3.061716.112634	WG572616-02	Laboratory Control S		1		06/17/16 11:26
18	T3.061716.113033	WG572775-01	Reference Sample		1	L16060670-04	06/17/16 11:30
19	T3.061716.113430	WG572775-04	Matrix Spike	5/50	1	L16060670-04	06/17/16 11:34
20	T3.061716.113810	WG572775-05	Matrix Spike Duplica	5/50	1	L16060670-04	06/17/16 11:38
21	T3.061716.114150	L16060731-01	60500-SSP0041-SSP0041	5/50	1		06/17/16 11:41
22	T3.061716.114541	WG572965-01	Post Digestion Spike		1	L16060731-01	06/17/16 11:45
23	T3.061716.114921	WG572965-02	Serial Dilution		5	L16060731-01	06/17/16 11:49
24	T3.061716.115317	WG573227-14	CCV		1		06/17/16 11:53
25	T3.061716.115654	WG573227-15	CCB		1		06/17/16 11:56
26	T3.061716.120053	L16060616-01	MW8-060916	40/50	1		06/17/16 12:00
27	T3.061716.120445	L16060616-02	18CPTMW26SW-060916	40/50	1		06/17/16 12:04
28	T3.061716.120837	L16060616-04	MW10F-060916	40/50	1		06/17/16 12:08
29	T3.061716.121233	L16060670-01	J6F0497-01	5/50	1		06/17/16 12:12
30	T3.061716.121629	L16060670-02	J6F0497-02	5/50	1		06/17/16 12:16
31	T3.061716.122019	L16060670-03	J6F0497-03	5/50	1		06/17/16 12:20
32	T3.061716.122415	L16060670-05	J6F0497-05	5/50	1		06/17/16 12:24
33	T3.061716.122811	L16060670-06	J6F0497-06	5/50	1		06/17/16 12:28
34	T3.061716.123203	L16060670-07	J6F0497-07	5/50	1		06/17/16 12:32

Page: 1 Approved: June 20, 2016

Kim H. Rhoden

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 061716T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 572965,572145,572626,572900,573214,573149

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.061716.123610	L16060616-01	MW8-060916	40/50	100		06/17/16 12:36
36	T3.061716.124009	WG573227-16	CCV		1		06/17/16 12:40
37	T3.061716.124347	WG573227-17	CCB		1		06/17/16 12:43
38	T3.061716.124747	L16060616-02	18CPTMW26SW-060916	40/50	20		06/17/16 12:47
39	T3.061716.125146	WG573227-18	CCV		1		06/17/16 12:51
40	T3.061716.125524	WG573227-19	CCB		1		06/17/16 12:55
41	T3.061716.125924	WG573227-20	Low Level Continuing Calibra		1		06/17/16 12:59
42	T3.061716.130321	WG573227-21	Low Level Continuing Calibra		1		06/17/16 13:03
43	T3.061716.130713	L16060641-01	6-10-18 W1	40/50	1		06/17/16 13:07
44	T3.061716.131108	L16060641-02	6-10-18 S3	40/50	1		06/17/16 13:11
45	T3.061716.131503	L16060641-03	6-10-18 S4	40/50	1		06/17/16 13:15
46	T3.061716.131859	L16060641-04	6-10-18 S2	40/50	1		06/17/16 13:18
47	T3.061716.132242	L16060641-05	6-10-18 S7	40/50	1		06/17/16 13:22
48	T3.061716.132638	L16060641-06	59-11-10.03 S3	40/50	1		06/17/16 13:26
49	T3.061716.133033	L16060641-07	59-11-10.03 P1	40/50	1		06/17/16 13:30
50	T3.061716.133428	WG573227-22	CCV		1		06/17/16 13:34
51	T3.061716.133805	WG573227-23	CCB		1		06/17/16 13:38
52	T3.061716.134206	L16060376-01	FTB-034-GM-MW12B-06071	40/50	1		06/17/16 13:42
53	T3.061716.134601	L16060376-02	FTB-034-GM-MW1C-060716	40/50	1		06/17/16 13:46
54	T3.061716.134956	L16060376-03	FTB-034-GM-MW07B-06071	40/50	1		06/17/16 13:49
55	T3.061716.135351	L16060376-04	FTB-034-GM-MW13B-06071	40/50	1		06/17/16 13:53
56	T3.061716.135746	WG572145-05	Post Digestion Spike		1	L16060376-04	06/17/16 13:57
57	T3.061716.141229	WG572145-06	Serial Dilution		5	L16060376-04	06/17/16 14:12
58	T3.061716.141625	L16060364-01	27-12-9 RPW3-POST	40/50	100		06/17/16 14:16
59	T3.061716.142024	L16060364-04	27-12-9 RPW3-HT	40/50	100		06/17/16 14:20
60	T3.061716.142422	L16060492-01	SPW_06082016	40/50	1000		06/17/16 14:24
61	T3.061716.142819	WG573227-24	CCV		1		06/17/16 14:28
62	T3.061716.143157	WG573227-25	CCB		1		06/17/16 14:31
63	T3.061716.143556	WG572914-01	Method/Prep Blank	1/50	1		06/17/16 14:35
64	T3.061716.143952	WG572914-02	Laboratory Control S	1/50	1		06/17/16 14:39
65	T3.061716.144332	WG572914-03	Laboratory Control S	1/50	1		06/17/16 14:43
66	T3.061716.144711	L16060793-01	500662-WP-001	1/50	1		06/17/16 14:47
67	T3.061716.145105	WG573214-01	Post Digestion Spike		1	L16060793-01	06/17/16 14:51
68	T3.061716.145458	WG573214-02	Serial Dilution		5	L16060793-01	06/17/16 14:54

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Kim H. Rhoden

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 061716T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 572965,572145,572626,572900,573214,573149

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.061716.145847	WG573214-02	Serial Dilution		25	L16060793-01	06/17/16 14:58
70	T3.061716.150234	WG573227-26	CCV		1		06/17/16 15:02
71	T3.061716.150613	WG573227-27	CCB		1		06/17/16 15:06
72	T3.061716.151012	WG573227-28	Low Level Continuing Calibra		1		06/17/16 15:10
73	T3.061716.151407	WG572637-03	Method/Prep Blank	40/50	1		06/17/16 15:14
74	T3.061716.151806	WG572637-04	Laboratory Control S	40/50	1		06/17/16 15:18
75	T3.061716.152146	WG572637-05	Filter Blank		1		06/17/16 15:21
76	T3.061716.153713	WG573214-01	Post Digestion Spike	1/50	20	L16060793-01	06/17/16 15:37
77	T3.061716.154059	WG573214-02	Serial Dilution		20	L16060793-01	06/17/16 15:40
78	T3.061716.154437	WG573214-02	Serial Dilution		100	L16060793-01	06/17/16 15:44
79	T3.061716.154831	WG573214-01	Post Digestion Spike	1/50	100	L16060793-01	06/17/16 15:48
80	T3.061716.155224	WG573214-02	Serial Dilution		100	L16060793-01	06/17/16 15:52
81	T3.061716.155602	WG573214-02	Serial Dilution		500	L16060793-01	06/17/16 15:56
82	T3.061716.155958	WG573227-29	CCV		1		06/17/16 15:59
83	T3.061716.160335	WG573227-30	CCB		1		06/17/16 16:03
84	T3.061716.160734	WG573227-31	Low Level Continuing Calibra		1		06/17/16 16:07
85	T3.061716.161119	WG572637-01	Reference Sample		100	L16060564-01	06/17/16 16:11
86	T3.061716.161523	WG572637-06	Matrix Spike	40/50	100	L16060564-01	06/17/16 16:15
87	T3.061716.161928	WG572637-07	Matrix Spike Duplica	40/50	100	L16060564-01	06/17/16 16:19
88	T3.061716.162333	L16060590-04	FTB-034-GM-MW26-060916	40/50	1		06/17/16 16:23
89	T3.061716.162727	WG572900-03	Post Digestion Spike		1	L16060590-04	06/17/16 16:27
90	T3.061716.163106	L16060590-04	FTB-034-GM-MW26-060916		5		06/17/16 16:31
91	T3.061716.163501	WG572900-04	Serial Dilution		25	L16060590-04	06/17/16 16:35
92	T3.061716.163900	WG573227-32	CCV		1		06/17/16 16:39
93	T3.061716.164238	WG573227-33	CCB		1		06/17/16 16:42
94	T3.061716.164636	WG572637-02	Reference Sample		100	L16060564-02	06/17/16 16:46
95	T3.061716.165040	L16060564-03	WBW-FD-06092016	40/50	100		06/17/16 16:50
96	T3.061716.165445	L16060564-04	WBW-FD-06092016	40/50	100		06/17/16 16:54
97	T3.061716.165849	WG572637-08	Matrix Spike	40/50	100	L16060564-02	06/17/16 16:58
98	T3.061716.170254	WG572637-09	Matrix Spike Duplica	40/50	100	L16060564-02	06/17/16 17:02
99	T3.061716.170656	L16060535-01	FPL16027	5/50	2		06/17/16 17:06
100	T3.061716.171053	L16060590-05	FTB-034-GM-MW2C-060916	40/50	1		06/17/16 17:10
101	T3.061716.171447	L16060590-06	FTB-034-GM-MW11A-06091	40/50	1		06/17/16 17:14
102	T3.061716.171842	L16060590-07	FTB-034-GM-MW25-060916	40/50	1		06/17/16 17:18

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Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 061716T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 572965,572145,572626,572900,573214,573149

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T3.061716.172237	WG572637-01	Reference Sample		1000	L16060564-01	06/17/16 17:22
104	T3.061716.172633	WG573227-34	CCV		1		06/17/16 17:26
105	T3.061716.173010	WG573227-35	CCB		1		06/17/16 17:30
106	T3.061716.173408	WG572637-06	Matrix Spike	40/50	1000	L16060564-01	06/17/16 17:34
107	T3.061716.173804	WG572637-07	Matrix Spike Duplica	40/50	1000	L16060564-01	06/17/16 17:38
108	T3.061716.174200	L16060564-03	WBW-FD-06092016	40/50	1000		06/17/16 17:42
109	T3.061716.174556	WG573227-36	CCV		1		06/17/16 17:45
110	T3.061716.174934	WG573227-37	CCB		1		06/17/16 17:49
111	T3.061716.175332	WG573227-38	Low Level Continuing Calibra		1		06/17/16 17:53
112	T3.061716.175725	WG572980-02	Method/Prep Blank	40/50	1		06/17/16 17:57
113	T3.061716.180123	WG572980-03	Laboratory Control S	40/50	1		06/17/16 18:01
114	T3.061716.180503	WG572980-01	Reference Sample		1	L16060796-01	06/17/16 18:05
115	T3.061716.180852	WG572980-04	Matrix Spike	5/50	1	L16060796-01	06/17/16 18:08
116	T3.061716.181229	WG572980-05	Matrix Spike Duplica	5/50	1	L16060796-01	06/17/16 18:12
117	T3.061716.181606	L16060732-01	LH18/24-SP650-6371-GRAB		1		06/17/16 18:16
118	T3.061716.181958	L16060732-02	LH18/24-SP650-6371-COMP		1		06/17/16 18:19
119	T3.061716.182353	WG573149-03	Post Digestion Spike		1	L16060732-02	06/17/16 18:23
120	T3.061716.182732	WG573149-04	Serial Dilution		5	L16060732-02	06/17/16 18:27
121	T3.061716.183128	WG573149-04	Serial Dilution		25	L16060732-02	06/17/16 18:31
122	T3.061716.183525	WG573227-39	CCV		1		06/17/16 18:35
123	T3.061716.183904	WG573227-40	CCB		1		06/17/16 18:39
124	T3.061716.184303	L16060794-01	A08-MW06-Y1S2	40/50	1		06/17/16 18:43
125	T3.061716.184656	L16060794-02	A08-MW09-Y1S2	40/50	1		06/17/16 18:46
126	T3.061716.185052	L16060794-03	A09-MW02-Y1S2	40/50	1		06/17/16 18:50
127	T3.061716.185448	L16060794-04	A09-MW07-Y1S2	40/50	1		06/17/16 18:54
128	T3.061716.185840	WG573227-41	CCV		1		06/17/16 18:58
129	T3.061716.190218	WG573227-42	CCB		1		06/17/16 19:02

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Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 17-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 573227
Runlog ID: 75759
Analytical Workgroups: 572965,572145,572626,572900,573214,573149

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	535
Level 4	616,734,376,794,590
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer:

Secondary Reviewer:
20-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-20-2016 12:17:06

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010C

AAB#: WG572965

Login Number: L16060616

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW8-060916	01	06/09/16					06/15/2016	6	180		06/17/16	8	180	
MW8-060916	01	06/09/16					06/15/2016	6	180		06/17/16	8.1	180	
18CPTMW26SW-060916	02	06/09/16					06/15/2016	5.9	180		06/17/16	7.9	180	
18CPTMW26SW-060916	02	06/09/16					06/15/2016	5.9	180		06/17/16	8	180	
MW10F-060916	04	06/09/16					06/15/2016	5.8	180		06/17/16	7.9	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4812878
Report generated 06/17/2016 14:32

METHOD BLANK SUMMARY

Login Number: L16060616
Blank File ID: T3.061716.111457
Prep Date: 06/15/16 10:00
Analyzed Date: 06/17/16 11:14
Analyst: JYH

Work Group: WG572965
Blank Sample ID: WG572775-02
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572775-03	T3.061716.111855	06/17/16 11:18	01
MW8-060916	L16060616-01	T3.061716.120053	06/17/16 12:00	01
18CPTMW26SW-060916	L16060616-02	T3.061716.120445	06/17/16 12:04	01
MW10F-060916	L16060616-04	T3.061716.120837	06/17/16 12:08	01
MW8-060916	L16060616-01	T3.061716.123610	06/17/16 12:36	DL01
18CPTMW26SW-060916	L16060616-02	T3.061716.124747	06/17/16 12:47	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4812879
Report generated 06/17/2016 14:36

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060616 Prep Date: 06/15/16 10:00 Sample ID: WG572775-02
Instrument ID: ICP-THERMO3 Run Date: 06/17/16 11:14 Prep Method: 3015
File ID: T3.061716.111457 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG572965 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-17-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Aluminum, Total	0.0500	0.200	0.0500	1	U
Beryllium, Total	0.00500	0.0200	0.00500	1	U
Calcium, Total	0.125	0.500	0.125	1	U
Iron, Total	0.0500	0.200	0.0500	1	U
Magnesium, Total	0.250	1.00	0.250	1	U
Potassium, Total	0.500	2.00	0.500	1	U
Selenium, Total	0.00500	0.0200	0.00500	1	U
Sodium, Total	0.250	1.00	0.250	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4812880
17-JUN-2016 14:36

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060616 Run Date: 06/17/2016 Sample ID: WG572775-03
Instrument ID: ICP-THERMO3 Run Time: 11:18 Prep Method: 3015
File ID: T3.061716.111855 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG572965 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76255 Cal ID: ICP-TH-17-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Aluminum, Total	6.25	6.78	109	80 - 120	
Beryllium, Total	0.0313	0.0334	107	80 - 120	
Calcium, Total	6.25	6.92	111	80 - 120	
Iron, Total	2.50	2.75	110	80 - 120	
Magnesium, Total	6.25	6.77	108	80 - 120	
Potassium, Total	31.3	33.5	107	80 - 120	
Selenium, Total	0.250	0.264	106	80 - 120	
Sodium, Total	31.3	33.8	108	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4812881
Report generated: 06/17/2016 14:36

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060616 Cal ID: ICP-THERMO3 - Worknum: WG572965
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG572775-01 File ID: T3.061716.113033 Dil: 1 Matrix: WATER
Sample ID: WG572775-04 MS File ID: T3.061716.113430 Dil: 1 Units: mg/L
Sample ID: WG572775-05 MSD File ID: T3.061716.113810 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Aluminum	2.32	50.0	55.2	106	50.0	54.7	105	0.770	80 - 120	20	
Beryllium	ND	0.250	0.265	106	0.250	0.264	106	0.340	80 - 120	20	
Calcium	8.19	50.0	60.6	105	50.0	61.0	106	0.722	80 - 120	20	
Iron	18.0	20.0	39.4	107	20.0	39.5	108	0.241	80 - 120	20	
Magnesium	ND	50.0	54.0	108	50.0	54.5	109	1.07	80 - 120	20	
Potassium	ND	250	264	106	250	267	107	1.15	80 - 120	20	
Selenium	ND	2.00	2.13	107	2.00	2.03	101	4.93	80 - 120	20	
Sodium	1530	250	1770	97.1	250	1770	98.2	0.152	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4812882
Report generated 06/17/2016 14:36

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16060616 **Worknum:** WG572965
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG572965-02 **File ID:** T3.061716.114921 **Dil:** 5 **Units:** ug/L
Sample: L16060731-01 **File ID:** T3.061716.114150 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	136		118		13.30	E
Beryllium	0.0700	X	0.250		257.00	
Calcium	105000		95200		9.32	
Iron	7.35		ND	U		
Magnesium	1890		1450		23.40	E
Potassium	1970		1470		25.60	E
Selenium	7.06		17.4		146.00	E
Sodium	8320		7600		8.68	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4812876
06/17/2016 14:36

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060616 **Worknum:** WG572965
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG572965-01 **File ID:** T3.061716.114541 **Dil:** 1 **Units:** ug/L
Sample ID: L16060731-01 **File ID:** T3.061716.114150 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	5380		136	F	5000	105.2	75 - 125	
BERYLLIUM	26.3		0	U	25	105.0	75 - 125	
CALCIUM	100000		105000		5000	110.4	75 - 125	
IRON	2150		0	U	2000	107.7	75 - 125	
MAGNESIUM	6790		1890		5000	101.8	75 - 125	
POTASSIUM	27800		1970		25000	104.2	75 - 125	
SELENIUM	213		7.06	F	200	103.5	75 - 125	
SODIUM	33800		8320		25000	105.3	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4812877
Report generated: 06/17/2016 14:36

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16060616	Workgroup (AAB#):	WG572965
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG573227	Initial Calibration Date:	17-JUN-2016 10:37

	WG573227-01		WG573227-02		WG573227-03		WG573227-04		WG573227-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000570	.1	0.00122	.2	0.00194	10	0.0836	20	0.166	.999997	
BERYLLIUM	0	0.000480	.0005	0.000970	.001	0.00143	.05	0.0572	.1	0.114	.99998	
CALCIUM	0	-0.000830	.1	0.00293	.2	0.00743	10	0.422	20	0.847	.99986	
IRON	0	0.0000200	.04	0.0000800	.08	0.00108	4	0.0857	8	0.171	.99874	
MAGNESIUM	0	-0.000130	NA	NA	.2	0.000840	10	0.0623	20	0.124	.999997	
POTASSIUM	0	-0.00156	.5	0.0308	1	0.0452	50	3.21	100	6.49	.999881	
SELENIUM	0	-0.0000500	NA	NA	.008	-0.0000100	.4	0.00616	.8	0.0122	.999251	
SODIUM	0	-0.0168	.5	0.0568	1	0.123	50	8.78	100	17.8	.999976	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4812885
Report generated: 17-JUN-2016 14:32

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060616
Run Date: 06/17/2016
Sample ID: WG573227-07
Instrument ID: ICP-THERMO3
Run Time: 10:45
Method: 6010C
File ID: T3.061716.104504
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG572965
Cal ID: ICP-THERI - 17-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	.004	U
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4812887
Report generated 06/17/2016 14:32

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060616
Run Date: 06/17/2016
Sample ID: WG573227-13
Instrument ID: ICP-THERMO3
Run Time: 11:08
Method: 6010C
File ID: T3.061716.110808
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG572965
Cal ID: ICP-TH - 17-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812890
Report generated 06/17/2016 14:32

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060616
Run Date: 06/17/2016
Sample ID: WG573227-15
Instrument ID: ICP-THERMO3
Run Time: 11:56
Method: 6010C
File ID: T3.061716.115654
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG572965
Cal ID: ICP-TH - 17-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00581	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812890
Report generated 06/17/2016 14:32

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060616
Run Date: 06/17/2016
Sample ID: WG573227-17
Instrument ID: ICP-THERMO3
Run Time: 12:43
Method: 6010C
File ID: T3.061716.124347
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG572965
Cal ID: ICP-TH - 17-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00722	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812890
Report generated 06/17/2016 14:32

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060616
Run Date: 06/17/2016
Sample ID: WG573227-19
Instrument ID: ICP-THERMO3
Run Time: 12:55
Method: 6010C
File ID: T3.061716.125524
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG572965
Cal ID: ICP-TH - 17-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812890
Report generated 06/17/2016 14:32

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060616
Run Date: 06/17/2016
Sample ID: WG573227-06
Instrument ID: ICP-THERMO3
Run Time: 10:41
Method: 6010C
File ID: T3.061716.104127
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG572965
Cal ID: ICP-TH - 17-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	10.0	100	90 - 110	
Beryllium		.05	0.0498	99.6	90 - 110	
Calcium		10	9.87	98.7	90 - 110	
Iron		4	4.05	101	90 - 110	
Magnesium		10	9.99	99.9	90 - 110	
Potassium		50	49.7	99.4	90 - 110	
Selenium		.4	0.399	99.8	90 - 110	
Sodium		50	49.6	99.2	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4812886
Report generated 06/17/2016 14:32

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/17/2016
Sample ID: WG573227-12
Instrument ID: ICP-THERMO3
Run Time: 11:04
Method: 6010C
File ID: T3.061716.110429
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG572965
Cal ID: ICP-TH - 17-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.99	mg/L	99.9	90 - 110		
Beryllium		0.0500	0.0500	mg/L	100	90 - 110		
Calcium		10.0	9.93	mg/L	99.3	90 - 110		
Iron		4.00	4.03	mg/L	101	90 - 110		
Magnesium		10.0	9.96	mg/L	99.6	90 - 110		
Potassium		50.0	49.6	mg/L	99.2	90 - 110		
Selenium		0.400	0.407	mg/L	102	90 - 110		
Sodium		50.0	49.4	mg/L	98.9	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812889
Report generated 06/17/2016 14:32

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/17/2016
Sample ID: WG573227-14
Instrument ID: ICP-THERMO3
Run Time: 11:53
Method: 6010C
File ID: T3.061716.115317
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG572965
Cal ID: ICP-TH - 17-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.96	mg/L	99.6	90 - 110		
Beryllium		0.0500	0.0497	mg/L	99.3	90 - 110		
Calcium		10.0	9.78	mg/L	97.8	90 - 110		
Iron		4.00	3.98	mg/L	99.4	90 - 110		
Magnesium		10.0	9.90	mg/L	99.0	90 - 110		
Potassium		50.0	49.2	mg/L	98.5	90 - 110		
Selenium		0.400	0.401	mg/L	100	90 - 110		
Sodium		50.0	49.0	mg/L	98.0	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812889
Report generated 06/17/2016 14:32

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/17/2016
Sample ID: WG573227-16
Instrument ID: ICP-THERMO3
Run Time: 12:40
Method: 6010C
File ID: T3.061716.124009
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG572965
Cal ID: ICP-TH - 17-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.0	mg/L	100	90 - 110		
Beryllium		0.0500	0.0499	mg/L	99.8	90 - 110		
Calcium		10.0	9.90	mg/L	99.0	90 - 110		
Iron		4.00	4.02	mg/L	100	90 - 110		
Magnesium		10.0	9.88	mg/L	98.8	90 - 110		
Potassium		50.0	49.5	mg/L	99.1	90 - 110		
Selenium		0.400	0.400	mg/L	100	90 - 110		
Sodium		50.0	49.3	mg/L	98.6	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812889
Report generated 06/17/2016 14:32

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/17/2016
Sample ID: WG573227-18
Instrument ID: ICP-THERMO3
Run Time: 12:51
Method: 6010C
File ID: T3.061716.125146
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG572965
Cal ID: ICP-TH - 17-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.1	mg/L	101	90 - 110		
Beryllium		0.0500	0.0499	mg/L	99.9	90 - 110		
Calcium		10.0	9.77	mg/L	97.7	90 - 110		
Iron		4.00	3.99	mg/L	99.8	90 - 110		
Magnesium		10.0	9.85	mg/L	98.5	90 - 110		
Potassium		50.0	49.0	mg/L	98.0	90 - 110		
Selenium		0.400	0.401	mg/L	100	90 - 110		
Sodium		50.0	48.8	mg/L	97.6	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812889
Report generated 06/17/2016 14:32

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060616
Run Date: 06/17/2016
Sample ID: WG573227-08
Instrument ID: ICP-THERMO3
Run Time: 10:49
Method: 6010C
File ID: T3.061716.104903
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG572965
Cal ID: ICP-TH - 17-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.167	mg/L	104	70 - 130		
Beryllium		0.00160	0.00154	mg/L	96.3	70 - 130		
Calcium		0.400	0.379	mg/L	94.7	70 - 130		
Iron		0.0800	0.0587	mg/L	73.3	70 - 130		
Magnesium		0.400	0.415	mg/L	104	70 - 130		
Potassium		0.800	0.797	mg/L	99.6	70 - 130		
Selenium		0.0160	0.0163	mg/L	102	70 - 130		
Sodium		0.400	0.410	mg/L	103	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4812891
Report generated 06/17/2016 14:36

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060616
Run Date: 06/17/2016
Sample ID: WG573227-20
Instrument ID: ICP-THERMO3
Run Time: 12:59
Method: 6010C
File ID: T3.061716.125924
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG572965
Cal ID: ICP-TH - 17-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.163	mg/L	102	70 - 130		
Beryllium		0.00160	0.00160	mg/L	100	70 - 130		
Calcium		0.400	0.393	mg/L	98.1	70 - 130		
Iron		0.0800	0.0648	mg/L	80.9	70 - 130		
Magnesium		0.400	0.441	mg/L	110	70 - 130		
Potassium		0.800	0.830	mg/L	104	70 - 130		
Selenium		0.0160	0.0238	mg/L	149	70 - 130		*
Sodium		0.400	0.409	mg/L	102	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4812891
Report generated 06/17/2016 14:36

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060616
Instrument ID: ICP-THERMO3
Sol. A : WG573227-10 **File ID:** T3.061716.105653
Sol. AB : WG573227-11 **File ID:** T3.061716.110046

Workgroup (AAB#): WG572965
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	273	109	250	291	116	
Beryllium	NS	0.0000100	NS	0.250	0.279	112	
Calcium	250	253	101	250	271	108	
Iron	100	102	102	100	108	108	
Magnesium	250	256	102	250	270	108	
Potassium	NS	-0.0536	NS	5.00	5.71	114	
Selenium	NS	-0.000610	NS	0.250	0.277	111	
Sodium	NS	-0.0128	NS	5.00	5.78	116	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4812888
Report generated 06/17/2016 14:32

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060616 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	AG	AL	AS	B	BA
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000410	0	0	0
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0.0115	0	-0.0000800
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0.000260	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	-0.000289	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	-0.0000490	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.0000120	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0.0000300	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4812884
Report generated: 06/17/2016 14:32

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060616 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	BE	CA	CD	CO	CR
ALUMINUM	308.20	0	0	0	-0.000820	0
ANTIMONY	206.80	0	0	0	0	0.0200
ARSENIC	189.00	0	0	0	0	-0.00190
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0.00343	0
CADMIUM	228.80	0	0	0	-0.00390	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	-0.000200
COPPER	224.70	0	0	0	0.0000770	-0.00100
IRON	261.10	0	0	0	0	-0.00100
LEAD	220.30	0	0	0	-0.0000130	-0.000132
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.0000500
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	-0.000860	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0.00000500	0	0	0
THALLIUM	190.80	0	0	0	0.00240	0.000276
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	-0.00480
ZINC	206.20	0	0	0	0	-0.00180
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4812884
Report generated: 06/17/2016 14:32

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060616 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	CU	FE	K	LI	MG
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000560	0	0	0
ARSENIC	189.00	0	-0.0000500	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0.000300	0	0	0
CADMIUM	228.80	0	-0.0000190	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000500	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0.00160	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0.000609	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.00000300
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0.0000420	0	0	0
PHOSPHORUS	214.90	-0.323	0.000900	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000270	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000400	0	0	0
VANADIUM	292.40	0	0.00000700	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	-0.0000300	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4812884
Report generated: 06/17/2016 14:32

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060616 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	MN	MO	NA	NI	P
ALUMINUM	308.20	0	0.0163	0	0	0
ANTIMONY	206.80	0	-0.00310	0	-0.00350	0
ARSENIC	189.00	0	0.00120	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	-0.00190	0	0	0
CADMIUM	228.80	0	0.0000320	0	-0.000770	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0.000360	0	0	0	0
COBALT	228.60	0	-0.00200	0	0.000100	0
COPPER	224.70	0	0.00160	0	-0.0123	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	-0.00210	0	0.000110	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	-0.00290	-0.0230	0	0	0
MANGANESE	257.60	0	0.0000300	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0.00710	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0.000600	0.000580	0	0	0
SILICON	212.40	0	0.0187	0	0	0
SILVER	328.00	0	-0.0000430	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0.00100	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000153	0	0	0
VANADIUM	292.40	-0.000200	-0.00830	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4812884
Report generated: 06/17/2016 14:32

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060616 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	PB	SB	SE	SI	SN
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0	0	0	-0.0220
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0.00440	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4812884
Report generated: 06/17/2016 14:32

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060616 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	SR	TI	TL	V	ZN
ALUMINUM	308.20	0	0	0	0.0950	0
ANTIMONY	206.80	0	0.00110	0	-0.00360	0
ARSENIC	189.00	0	0	0	0.000107	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	-0.00000700	0	0.000990	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0.000102	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000550	0	0	0
COBALT	228.60	0	0.00210	0	0.0000200	0
COPPER	224.70	0	0.000269	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	-0.000126	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	-0.00290	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	-0.000110	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	-0.00100	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000720	0	-0.000260	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.000800	0	-0.00490	0
TIN	189.90	0	-0.00190	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0.000820	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4812884
Report generated: 06/17/2016 14:32

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060616 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	ZR
ALUMINUM	308.20	0
ANTIMONY	206.80	0
ARSENIC	189.00	0
BARIUM	455.40	0
BERYLLIUM	313.10	0
BORON	249.60	0
CADMIUM	228.80	0
CALCIUM	422.60	0
CHROMIUM	267.70	0
COBALT	228.60	0
COPPER	224.70	0
IRON	261.10	0
LEAD	220.30	0
LITHIUM	670.70	0
MAGNESIUM	279.00	0
MANGANESE	257.60	0
MOLYBDENUM	202.00	0
NICKEL	231.60	0
PHOSPHORUS	214.90	0
POTASSIUM	766.40	0
SELENIUM	196.00	0
SILICON	212.40	0
SILVER	328.00	0
SODIUM	589.50	0
STRONTIUM	407.70	0
THALLIUM	190.80	0
TIN	189.90	0
TITANIUM	337.20	0
VANADIUM	292.40	0
ZINC	206.20	0
ZIRCONIUM	339.10	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4812884
Report generated: 06/17/2016 14:32

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16060616 **Date:** 04/29/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	900.0
Antimony	20.00	45.0
Arsenic	10.00	45.0
Barium	10.00	45.0
Beryllium	10.00	1.8
Boron	20.00	45.0
Cadmium	20.00	4.5
Calcium	5.00	270.0
Chromium	20.00	36.0
Cobalt	20.00	45.0
Copper	20.00	180.0
Iron	5.00	720.0
Lead	20.00	225.0
Lithium	5.00	36.0
Magnesium	5.00	900.0
Manganese	10.00	36.0
Molybdenum	20.00	27.0
Nickel	20.00	90.0
Phosphorus	20.00	180.0
Potassium	5.00	450.0
Selenium	20.00	90.0
Silicon	20.00	36.0
Silver	10.00	9.0
Sodium	5.00	270.0
Strontium	5.00	9.0
Thallium	20.00	18.0
Tin	20.00	45.0
Titanium	5.00	36.0
Vanadium	20.00	27.0
Zinc	20.00	45.0
Zirconium	10.00	45.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4812883
Report generated: 06/17/2016 14:32

2.3.1.3 Raw Data

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	0.000008	0.048613	0.000000	1.000000
Al 308.215 {109}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	0.000569	0.008225	0.000000	1.000000
As 189.042 {478}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	0.000075	0.022876	0.000000	1.000000
B 249.678 {135}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	0.000199	0.020764	0.000000	1.000000
Ba 455.403 { 74}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	0.010410	2.005353	0.000000	1.000000
Be 313.107 {108}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	0.000477	1.114502	0.000000	1.000000
Ca 422.673 { 80}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	-0.000826	0.042431	0.000000	1.000000
Cd 228.802 {447}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	-0.000316	0.556382	0.000000	1.000000
Co 228.616 {447}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	-0.000067	0.366842	0.000000	1.000000
Cr 267.716 {126}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	0.000072	0.064813	0.000000	1.000000
Cu 224.700 {450}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	-0.000111	0.124447	0.000000	1.000000
Fe 261.187 {129}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	0.000024	0.021350	0.000000	1.000000
K 766.490 { 44}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	-0.001561	0.064687	0.000000	1.000000
Li 670.784 { 50}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	-0.003748	1.538874	0.000000	1.000000
Mg 279.079 {121}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	-0.000129	0.006244	0.000000	1.000000
Mn 257.610 {131}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	-0.000141	0.267754	0.000000	1.000000
Mo 202.030 {467}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	-0.000100	0.187420	0.000000	1.000000
Na 589.592 { 57}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	-0.016774	0.177496	0.000000	1.000000
Ni 231.604 {446}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	-0.000542	0.140077	0.000000	1.000000
P 214.914 {457}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	-0.000053	0.012369	0.000000	1.000000
Pb 220.353 {453}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	-0.000218	0.063332	0.000000	1.000000
Sb 206.833 {463}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	0.000276	0.029311	0.000000	1.000000
Se 196.090 {472}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	-0.000033	0.015502	0.000000	1.000000
Si 212.412 {459}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	0.000970	0.037842	0.000000	1.000000
Sn 189.989 {477}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	0.000009	0.071890	0.000000	1.000000
Sr 407.771 { 83}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	0.002365	3.314864	0.000000	1.000000
Ti 337.280 {100}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	-0.002018	0.120665	0.000000	1.000000
Tl 190.856 {477}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	-0.000210	0.030171	0.000000	1.000000
V 292.402 {115}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	-0.000052	0.080534	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	0.000210	0.399913	0.000000	1.000000
Zr 339.198 { 99}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	-0.003077	-0.001618	0.000000	1.000000

Approved: June 20, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999843	0.000002	0.002603	0.008677	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999997	0.000001	0.010903	0.036343	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999974	0.000001	0.003672	0.012239	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999912	0.000001	0.003517	0.011723	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999987	0.000066	0.001338	0.004460	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999980	0.000002	0.000103	0.000343	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999860	0.000045	0.051617	0.172056	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999921	0.000002	0.000304	0.001015	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999973	0.000003	0.000442	0.001473	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999938	0.000002	0.001346	0.004487	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999901	0.000006	0.001529	0.005098	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.998740	0.000027	0.026150	0.087166	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999881	0.000317	0.114694	0.382314	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999993	0.000057	0.004532	0.015108	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999997	0.000002	0.098648	0.328826	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999871	0.000014	0.002929	0.009762	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999989	0.000006	0.000458	0.001526	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999976	0.000392	0.036043	0.120143	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999942	0.000005	0.001236	0.004120	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999983	0.000005	0.008630	0.028767	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999767	0.000004	0.003926	0.013086	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999996	0.000001	0.004979	0.016595	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.996668	0.000005	0.007823	0.026075	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999989	0.000006	0.002658	0.008859	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999985	0.000002	0.000962	0.003206	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999997	0.000053	0.000540	0.001800	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999983	0.000004	0.007924	0.026414	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999559	0.000004	0.003281	0.010936	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999994	0.000002	0.001048	0.003494	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999991	0.000011	0.000232	0.000772	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.213377	0.000047	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0

Approved: June 20, 2016

Sample Name: S0 Acquired: 6/17/2016 10:22:16 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00001**	**.00057**	**.00008**	**.00020**	**.01041**	**.00048**	**-.00083**
Stddev	.00002	.00002	.00004	.00002	.00220	.00006	.00211
%RSD	207.65	3.5173	46.641	12.209	21.103	12.123	255.58
#1	.00000	.00059	.00004	.00020	.00867	.00051	-.00132
#2	-.00000	.00057	.00008	.00022	.01288	.00041	-.00265
#3	.00003	.00055	.00010	.00018	.00968	.00051	.00149

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00032**	**-.00007**	**.00007**	**-.00011**	**.00002**	**-.00156**	**-.00375**
Stddev	.00006	.00009	.00005	.00014	.00048	.00589	.00402
%RSD	20.224	129.60	72.135	130.90	1940.3	376.61	107.24
#1	-.00029	-.00008	.00005	-.00011	.00051	-.00789	-.00316
#2	-.00027	.00003	.00013	-.00026	.00000	-.00057	-.00006
#3	-.00039	-.00015	.00004	.00003	-.00044	.00377	-.00803

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00013**	**-.00014**	**-.00010**	**-.01677**	**-.00054**	**-.00005**	**-.00022**
Stddev	.00032	.00112	.00008	.00279	.00004	.00012	.00013
%RSD	248.41	796.93	81.622	16.606	8.0678	220.12	58.575
#1	-.00040	.00103	-.00002	-.01436	-.00051	-.00018	-.00034
#2	-.00020	-.00025	-.00009	-.01982	-.00053	-.00002	-.00023
#3	.00022	-.00121	-.00018	-.01614	-.00059	.00004	-.00008

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00028**	**-.00005**	**.00097**	**.00001**	**.00237**	**-.00202**	**-.00021**
Stddev	.00015	.00004	.00007	.00007	.00130	.00003	.00004
%RSD	53.892	74.805	7.4897	717.66	54.883	1.5947	16.900
#1	.00010	-.00002	.00105	-.00005	.00300	-.00205	-.00020
#2	.00036	-.00004	.00091	.00000	.00323	-.00203	-.00018
#3	.00037	-.00010	.00096	.00008	.00087	-.00198	-.00025

Approved: June 20, 2016

Sample Name: S0 Acquired: 6/17/2016 10:22:16 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**-.00005**	**.00021**	**-.00308**
Stddev	.00004	.00006	.00184
%RSD	76.057	27.589	59.718
#1	-.00006	.00015	-.00504
#2	-.00001	.00027	-.00140
#3	-.00009	.00021	-.00279
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8400.1**	**49112.**	**2703.2**
Stddev	9.4	227.	26.1
%RSD	.11229	.46289	.96555
#1	8408.3	48857.	2680.6
#2	8402.2	49293.	2697.3
#3	8389.8	49186.	2731.8

Approved: June 20, 2016

Sample Name: S1 Acquired: 6/17/2016 10:26:14 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00012**	**.00122**	**.02502**	**.00097**	**.00293**	**-.00011**	**.00057**
Stddev	.00010	.00001	.00222	.00012	.00101	.00018	.00007
%RSD	80.074	.82369	8.8738	12.675	34.490	157.95	12.137
#1	.00023	.00123	.02586	.00084	.00311	.00005	.00064
#2	.00009	.00121	.02670	.00109	.00184	-.00031	.00056
#3	.00004	.00122	.02250	.00099	.00383	-.00009	.00051

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00036**	**.00046**	**.00008**	**.03077**	**.00064**	**.00141**	**.05676**
Stddev	.00003	.00006	.00041	.00367	.00057	.00002	.00564
%RSD	7.3836	13.233	513.47	11.929	88.222	1.5390	9.9450
#1	.00036	.00053	.00035	.03124	.00076	.00142	.05077
#2	.00033	.00045	-.00039	.03417	.00114	.00138	.05755
#3	.00039	.00041	.00029	.02688	.00002	.00142	.06197

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00008**	**.00093**	**-.00004**	**.00057**	**.00244**	**.00054**	**.02769**
Stddev	.00002	.00008	.00009	.00006	.00011	.00003	.00231
%RSD	29.133	8.1567	215.37	10.331	4.6337	5.6671	8.3484
#1	-.00009	.00099	-.00013	.00055	.00237	.00058	.02739
#2	-.00005	.00094	-.00003	.00052	.00257	.00053	.02555
#3	-.00009	.00085	.00004	.00063	.00237	.00052	.03014

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00110**	**.00056**	**.00345**	**-.00408**
Stddev	.00071	.00003	.00004	.00102
%RSD	64.813	5.0845	1.1251	25.077
#1	-.00174	.00056	.00342	-.00460
#2	-.00121	.00059	.00343	-.00474
#3	-.00034	.00053	.00349	-.00290

Approved: June 20, 2016

Sample Name: S1 Acquired: 6/17/2016 10:26:14 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8432.1**	**48987.**	**2678.4**
Stddev	22.4	119.	15.1
%RSD	.26551	.24390	.56407
#1	8444.7	48850.	2666.8
#2	8406.3	49070.	2695.5
#3	8445.4	49041.	2672.9

Approved: June 20, 2016

Sample Name: S2 Acquired: 6/17/2016 10:30:13 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00027	.00194	.00021	.00039	.04167	.00143	.00743
Stddev	.00007	.00007	.00008	.00003	.00033	.00005	.00178
%RSD	25.918	3.5374	37.052	6.8963	.80198	3.7581	24.002
#1	.00035	.00201	.00025	.00036	.04158	.00143	.00734
#2	.00026	.00189	.00012	.00040	.04138	.00149	.00926
#3	.00021	.00191	.00026	.00041	.04204	.00138	.00570

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00025	.00119	.00066	.00100	.00108	.04518	.02085
Stddev	.00011	.00006	.00006	.00011	.00016	.00323	.00744
%RSD	42.666	5.0431	9.1090	10.605	15.090	7.1496	35.674
#1	.00037	.00116	.00059	.00105	.00125	.04159	.02940
#2	.00022	.00126	.00071	.00106	.00104	.04785	.01723
#3	.00016	.00115	.00068	.00088	.00093	.04609	.01591

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00084	.00223	.00295	.12272	.00058	.00188	.00039
Stddev	.00052	.00014	.00011	.00423	.00012	.00010	.00017
%RSD	62.254	6.4538	3.5852	3.4490	20.250	5.3907	43.866
#1	.00143	.00217	.00295	.12008	.00050	.00186	.00031
#2	.00043	.00212	.00285	.12048	.00053	.00179	.00059
#3	.00065	.00239	.00306	.12760	.00071	.00199	.00027

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00083	-.00001	.00401	.00113	.05472	.00003	.00009
Stddev	.00004	.00002	.00003	.00006	.00035	.00036	.00005
%RSD	4.7346	361.18	.81536	5.4083	.63570	1049.0	54.140
#1	.00088	.00001	.00398	.00115	.05479	.00034	.00004
#2	.00081	-.00000	.00404	.00117	.05503	-.00037	.00014
#3	.00081	-.00003	.00401	.00106	.05434	.00013	.00010

Approved: June 20, 2016

Sample Name: S2 Acquired: 6/17/2016 10:30:13 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00120	.00666	-.00391
Stddev	.00003	.00004	.00082
%RSD	2.2375	.59193	20.900
#1	.00120	.00669	-.00453
#2	.00117	.00667	-.00422
#3	.00122	.00661	-.00298
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8441.2	49030.	2710.9
Stddev	8.7	116.	30.6
%RSD	.10342	.23603	1.1291
#1	8451.3	48937.	2702.2
#2	8435.7	49160.	2685.6
#3	8436.8	48994.	2744.9

Approved: June 20, 2016

Sample Name: S3 Acquired: 6/17/2016 10:34:12 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.01930**	**.08358**	**.00910**	**.01037**	**2.0123**	**.05717**	**.42246**
Stddev	.00013	.00014	.00007	.00006	.0064	.00012	.00307
%RSD	.67477	.17229	.80865	.54625	.31760	.21655	.72705
#1	.01945	.08359	.00904	.01041	2.0073	.05712	.42018
#2	.01922	.08372	.00908	.01040	2.0195	.05731	.42595
#3	.01924	.08343	.00918	.01031	2.0100	.05707	.42124

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.02994**	**.07341**	**.03248**	**.06283**	**.08571**	**3.2099**	**1.5269**
Stddev	.00014	.00054	.00019	.00025	.00105	.0090	.0030
%RSD	.46234	.73044	.58379	.39078	1.2268	.27972	.19379
#1	.02987	.07356	.03229	.06303	.08451	3.2008	1.5248
#2	.03010	.07386	.03267	.06290	.08622	3.2102	1.5257
#3	.02985	.07282	.03248	.06256	.08642	3.2187	1.5303

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.06227**	**.13431**	**.18849**	**8.7750**	**.07014**	**.12071**	**.03186**
Stddev	.00033	.00025	.00110	.0083	.00021	.00014	.00037
%RSD	.53492	.18656	.58421	.09438	.30247	.11781	1.1728
#1	.06261	.13402	.18939	8.7732	.07033	.12076	.03166
#2	.06227	.13443	.18882	8.7840	.07018	.12083	.03163
#3	.06194	.13448	.18726	8.7678	.06991	.12056	.03229

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.03482**	**.00616**	**.19206**	**.07213**	**3.3171**	**.11887**	**.01382**
Stddev	.00024	.00009	.00031	.00037	.0159	.00081	.00020
%RSD	.69538	1.4399	.16190	.51030	.47788	.68273	1.4439
#1	.03499	.00620	.19220	.07229	3.2988	.11934	.01385
#2	.03493	.00622	.19227	.07239	3.3269	.11934	.01401
#3	.03455	.00606	.19170	.07171	3.3255	.11794	.01361

Approved: June 20, 2016

Sample Name: S3 Acquired: 6/17/2016 10:34:12 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**.08043**	**.40218**	**-.00502**
Stddev	.00012	.00125	.00107
%RSD	.14379	.30960	21.317
#1	.08041	.40281	-.00622
#2	.08055	.40298	-.00416
#3	.08032	.40075	-.00468
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8262.7**	**47910.**	**2686.5**
Stddev	25.6	57.	15.1
%RSD	.31001	.11869	.56313
#1	8253.3	47969.	2680.8
#2	8243.1	47856.	2675.0
#3	8291.7	47905.	2703.6

Approved: June 20, 2016

Sample Name: S4 Acquired: 6/17/2016 10:37:49 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.03873	.16644	.01835	.02085	4.0269	.11416	.84699
Stddev	.00006	.00042	.00005	.00002	.0149	.00018	.00441
%RSD	.14980	.24984	.27629	.07444	.37075	.15993	.52081
#1	.03873	.16692	.01836	.02083	4.0188	.11433	.84377
#2	.03867	.16625	.01839	.02085	4.0177	.11397	.84518
#3	.03879	.16616	.01829	.02086	4.0441	.11419	.85201

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.06049	.14606	.06486	.12356	.17144	6.4886	3.0822
Stddev	.00028	.00009	.00015	.00043	.00136	.0302	.0121
%RSD	.46188	.06265	.23552	.34851	.79177	.46615	.39339
#1	.06018	.14597	.06500	.12318	.16988	6.4929	3.0806
#2	.06059	.14616	.06489	.12403	.17217	6.4564	3.0710
#3	.06071	.14606	.06470	.12348	.17228	6.5165	3.0951

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.12430	.26723	.37345	17.816	.13899	.24451	.06324
Stddev	.00066	.00128	.00094	.081	.00034	.00027	.00027
%RSD	.52780	.47771	.25255	.45624	.24267	.10953	.43245
#1	.12478	.26627	.37419	17.809	.13863	.24421	.06317
#2	.12355	.26674	.37377	17.738	.13930	.24473	.06301
#3	.12457	.26868	.37239	17.900	.13903	.24458	.06354

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.06934	.01218	.37968	.14322	6.6346	.23851	.02713
Stddev	.00008	.00009	.00067	.00033	.0246	.00134	.00009
%RSD	.11866	.77270	.17777	.22780	.37096	.56077	.33747
#1	.06931	.01228	.37903	.14297	6.6125	.23757	.02720
#2	.06943	.01209	.38037	.14359	6.6301	.23792	.02716
#3	.06927	.01216	.37965	.14311	6.6612	.24004	.02703

Approved: June 20, 2016

Sample Name: S4 Acquired: 6/17/2016 10:37:49 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**.16055**	**.79724**	**-.00419**
Stddev	.00025	.00082	.00069
%RSD	.15800	.10273	16.520
#1	.16085	.79630	-.00435
#2	.16040	.79761	-.00478
#3	.16042	.79781	-.00343
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8140.5**	**47059.**	**2682.8**
Stddev	28.4	145.	16.6
%RSD	.34935	.30715	.61720
#1	8165.6	46968.	2667.2
#2	8109.6	47226.	2700.2
#3	8146.2	46983.	2680.9

Approved: June 20, 2016

Sample Name: ICV Acquired: 6/17/2016 10:41:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39911**	**10.021**	**.39388**	**.50461**	**1.0012**	**.04979**	**9.8705**
Stddev	.00314	.031	.00380	.00285	.0030	.00011	.0549
%RSD	.78578	.30983	.96507	.56485	.30254	.21189	.55606
#1	.40231	10.044	.39813	.50305	.99827	.04985	9.8071
#2	.39605	9.9860	.39273	.50790	1.0009	.04986	9.9009
#3	.39896	10.035	.39079	.50287	1.0043	.04967	9.9035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04976**	**.20054**	**.50022**	**.50469**	**4.0477**	**49.707**	**.99561**
Stddev	.00025	.00028	.00203	.00130	.0808	.023	.00174
%RSD	.49736	.14101	.40673	.25846	1.9960	.04595	.17463
#1	.04967	.20056	.50257	.50389	3.9937	49.684	.99686
#2	.04957	.20082	.49899	.50619	4.0089	49.707	.99634
#3	.05004	.20025	.49911	.50399	4.1406	49.729	.99362
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.9893**	**.50092**	**1.0152**	**49.591**	**.50633**	**9.9254**	**.50490**
Stddev	.0177	.00259	.0034	.235	.00042	.0086	.00191
%RSD	.17708	.51778	.33776	.47301	.08343	.08624	.37888
#1	9.9701	.49811	1.0191	49.496	.50675	9.9277	.50432
#2	9.9931	.50322	1.0138	49.418	.50590	9.9159	.50704
#3	10.005	.50142	1.0126	49.858	.50635	9.9325	.50335
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 20, 2016

Sample Name: ICV Acquired: 6/17/2016 10:41:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2158**	**.39928**	**5.0417**	**1.0050**	**1.0014**	**.99940**	**.50516**
Stddev	.0032	.00713	.0062	.0027	.0038	.00938	.00481
%RSD	.26262	1.7860	.12363	.26842	.38242	.93885	.95257
#1	1.2162	.39633	5.0489	1.0067	.99916	.99571	.51009
#2	1.2124	.40741	5.0376	1.0019	.99914	.99242	.50493
#3	1.2188	.39409	5.0387	1.0064	1.0058	1.0101	.50047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0022**	**1.0041**	F **.18953**
Stddev	.0028	.0009	.40645
%RSD	.28122	.08745	214.45
#1	1.0047	1.0047	.25243
#2	1.0026	1.0031	.56087
#3	.99913	1.0045	-.24470
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-5.0000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8307.4**	**47995.**	**2695.2**
Stddev	17.3	274.	7.7
%RSD	.20847	.57153	.28622
#1	8309.9	47737.	2691.0
#2	8323.4	48283.	2704.1
#3	8289.0	47964.	2690.5

Approved: June 20, 2016

Sample Name: ICB Acquired: 6/17/2016 10:45:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00082	.00384	.00027	.00387	-.00008	.00007	.04038
Stddev	.00067	.00488	.00234	.00277	.00080	.00007	.01819
%RSD	82.253	127.13	867.35	71.633	1015.6	91.932	45.054
#1	.00136	-.00152	-.00039	.00496	-.00076	-.00000	.06040
#2	.00006	.00501	.00287	.00592	.00080	.00010	.02486
#3	.00104	.00803	-.00167	.00072	-.00028	.00013	.03588
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	.00005	.00004	-.00014	-.00505	.02499	-.00283
Stddev	.00017	.00048	.00085	.00095	.02725	.03959	.00349
%RSD	405.62	899.07	1949.2	654.35	540.20	158.46	123.29
#1	-.00011	-.00047	-.00019	-.00046	-.02778	.06847	.00086
#2	-.00016	.00015	-.00066	.00092	-.01253	-.00899	-.00607
#3	.00015	.00048	.00098	-.00089	.02517	.01548	-.00329
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00335	.00002	.00610	.03222	.00073	F .01070	.00088
Stddev	.08931	.00187	.00084	.01686	.00083	.00792	.00310
%RSD	2668.8	8882.6	13.707	52.316	114.43	74.023	353.95
#1	.02205	-.00026	.00541	.03384	-.00021	.00538	-.00158
#2	.08183	-.00169	.00585	.04822	.00139	.01979	.00436
#3	-.09384	.00201	.00703	.01462	.00100	.00691	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						.01000	
Low Limit						-.01000	

Approved: June 20, 2016

Sample Name: ICB Acquired: 6/17/2016 10:45:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00717**	**-.00390**	**.00207**	**-.00015**	**-.00068**	**-.00131**	**.00072**
Stddev	.00633	.00835	.00168	.00042	.00076	.00604	.00079
%RSD	88.271	214.31	80.926	291.50	111.99	459.46	109.47
#1	.00102	-.00442	.00226	-.00044	-.00136	-.00754	.00154
#2	.01365	-.01197	.00365	-.00034	.00014	-.00093	.00066
#3	.00683	.00471	.00031	.00034	-.00082	.00452	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00050**	**.00040**	F **-.45659**
Stddev	.00058	.00013	2.0501
%RSD	115.60	33.347	449.00
#1	.00016	.00043	-1.7391
#2	-.00095	.00052	-1.5385
#3	-.00072	.00026	1.9078
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8339.3**	**48213.**	**2689.4**
Stddev	30.4	204.	8.5
%RSD	.36499	.42257	.31689
#1	8321.5	47983.	2696.3
#2	8322.0	48285.	2692.0
#3	8374.5	48371.	2679.9

Approved: June 20, 2016

Sample Name: LLICV Acquired: 6/17/2016 10:49:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00907	.16696	.00821	.07769	.00682	.00154	.37885
Stddev	.00178	.00620	.00337	.00244	.00142	.00003	.06005
%RSD	19.655	3.7117	40.988	3.1463	20.766	2.0452	15.851
#1	.00939	.16504	.01039	.08041	.00745	.00154	.42364
#2	.00715	.16195	.00434	.07568	.00520	.00151	.31061
#3	.01067	.17389	.00991	.07697	.00782	.00157	.40229
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00062	.00387	.00398	.00530	.05867	.79669	.07640
Stddev	.00007	.00025	.00021	.00073	.01315	.13194	.00539
%RSD	12.076	6.3491	5.2609	13.763	22.419	16.562	7.0495
#1	.00070	.00406	.00379	.00461	.06556	.93519	.07607
#2	.00061	.00395	.00421	.00606	.04350	.78242	.07119
#3	.00055	.00359	.00395	.00524	.06695	.67246	.08194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41475	.00792	.00902	.41041	.01597	.75865	.00849
Stddev	.04733	.00091	.00009	.02401	.00086	.00427	.00406
%RSD	11.412	11.533	.97069	5.8501	5.3743	.56280	47.791
#1	.43027	.00892	.00893	.39923	.01512	.76036	.00459
#2	.36160	.00769	.00903	.39402	.01596	.76179	.01269
#3	.45236	.00714	.00911	.43797	.01683	.75379	.00820
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: LLICV Acquired: 6/17/2016 10:49:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.08183	.01629	.78255	.39539	.03961	.02358	.15529
Stddev	.00275	.00608	.00194	.00239	.00039	.00530	.00046
%RSD	3.3607	37.310	.24816	.60560	.97764	22.483	.29925
#1	.08393	.01572	.78050	.39789	.03916	.02033	.15496
#2	.07872	.02263	.78435	.39516	.03985	.02970	.15583
#3	.08285	.01052	.78281	.39312	.03981	.02072	.15510
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00800	.01656	F -70.405
Stddev	.00022	.00008	.610
%RSD	2.7708	.45554	.86639
#1	.00824	.01664	-70.021
#2	.00780	.01653	-71.109
#3	.00797	.01650	-70.086
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8462.6	49333.	2749.6
Stddev	19.6	332.	6.7
%RSD	.23187	.67258	.24392
#1	8443.1	48951.	2757.1
#2	8482.4	49489.	2744.1
#3	8462.3	49557.	2747.7

Approved: June 20, 2016

Sample Name: LLICV Acquired: 6/17/2016 10:52:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02021	.39901	.01979	.19565	.01919	.00380	1.0341
Stddev	.00027	.01200	.00119	.00027	.00075	.00003	.0324
%RSD	1.3570	3.0086	6.0213	.13952	3.8870	.70319	3.1331
#1	.01990	.40829	.02095	.19533	.01928	.00383	1.0629
#2	.02043	.38546	.01857	.19576	.01841	.00379	1.0404
#3	.02029	.40330	.01987	.19585	.01989	.00378	.99903
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00201	.01007	.01083	.01129	.18441	1.8909	.19159
Stddev	.00010	.00021	.00069	.00058	.01757	.0181	.00403
%RSD	5.0156	2.1067	6.3675	5.0937	9.5253	.95818	2.1056
#1	.00209	.01019	.01162	.01186	.16429	1.9019	.18863
#2	.00205	.00983	.01037	.01071	.19671	1.8699	.19619
#3	.00190	.01020	.01049	.01132	.19222	1.9008	.18996
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.87007	.02123	.01979	.99711	.04022	1.8643	.02055
Stddev	.14381	.00082	.00022	.03556	.00147	.0016	.00161
%RSD	16.529	3.8825	1.1254	3.5660	3.6435	.08357	7.8327
#1	.89525	.02218	.01994	1.0021	.04191	1.8661	.02148
#2	.99962	.02082	.01954	1.0299	.03947	1.8639	.02149
#3	.71533	.02070	.01991	.95930	.03928	1.8630	.01869
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: LLICV Acquired: 6/17/2016 10:52:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19621**	**.04135**	**1.9239**	**.98004**	**.09823**	**.05584**	**.37549**
Stddev	.00188	.00041	.0030	.00151	.00048	.00681	.00254
%RSD	.95953	.99028	.15804	.15411	.49165	12.202	.67516
#1	.19745	.04103	1.9250	.98178	.09794	.05402	.37485
#2	.19714	.04181	1.9205	.97931	.09795	.06338	.37828
#3	.19405	.04121	1.9263	.97903	.09878	.05012	.37333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.01971**	**.04064**	F **-185.86**
Stddev	.00057	.00012	2.19
%RSD	2.8688	.29417	1.1773
#1	.02028	.04065	-187.23
#2	.01915	.04075	-187.02
#3	.01971	.04052	-183.34
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8433.3**	**48922.**	**2732.6**
Stddev	10.2	178.	5.7
%RSD	.12039	.36410	.20851
#1	8428.6	48940.	2729.6
#2	8445.0	49091.	2729.1
#3	8426.4	48736.	2739.2

Approved: June 20, 2016

Sample Name: ICSA Acquired: 6/17/2016 10:56:53 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00382	273.46	.00302	.06474	-.00054	.00001	253.25
Stddev	.00200	.44	.00370	.00281	.00085	.00011	.80
%RSD	52.297	.16074	122.77	4.3380	158.26	1692.4	.31698
#1	.00468	273.62	.00519	.06781	-.00146	.00001	253.94
#2	.00524	272.97	.00512	.06231	-.00038	.00012	252.37
#3	.00153	273.80	-.00126	.06409	.00022	-.00011	253.44
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	-.00128	-.00141	-.00348	102.14	-.05359	.00530
Stddev	.00009	.00016	.00068	.00360	.41	.05470	.00305
%RSD	123.87	12.448	48.378	103.44	.40072	102.07	57.517
#1	-.00006	-.00116	-.00178	-.00412	102.53	-.04272	.00776
#2	-.00017	-.00146	-.00062	.00039	101.72	-.11290	.00627
#3	.00001	-.00122	-.00183	-.00673	102.17	-.00514	.00189
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	256.49	.00205	-.00078	-.01280	.00042	.04582	.00091
Stddev	.23	.00246	.00010	.01300	.00048	.00590	.00271
%RSD	.09059	120.01	12.694	101.59	114.48	12.867	298.54
#1	256.71	.00146	-.00075	.00208	.00009	.05031	-.00222
#2	256.25	.00474	-.00070	-.01850	.00020	.04802	.00243
#3	256.51	-.00007	-.00089	-.02198	.00097	.03915	.00252
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: ICSA Acquired: 6/17/2016 10:56:53 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00175**	**-.00061**	**.01003**	**-.00028**	**.00015**	**-.00856**	**.00554**
Stddev	.00484	.00964	.00095	.00035	.00059	.00405	.00409
%RSD	276.58	1574.1	9.4537	127.05	403.24	47.252	73.877
#1	-.00719	.00595	.00900	-.00022	-.00039	-.00392	.00531
#2	.00207	.00390	.01022	-.00065	.00005	-.01135	.00157
#3	-.00013	-.01169	.01087	.00004	.00078	-.01042	.00974
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00772**	**-.00515**	F **14.353**
Stddev	.00034	.00004	.250
%RSD	4.4636	.79565	1.7434
#1	-.00809	-.00515	14.552
#2	-.00766	-.00511	14.434
#3	-.00741	-.00519	14.072
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02000
Low Limit			-.02000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7691.8**	**43982.**	**2571.7**
Stddev	33.8	184.	17.5
%RSD	.43937	.41817	.67997
#1	7726.6	43771.	2551.5
#2	7659.1	44067.	2580.6
#3	7689.6	44108.	2582.9

Approved: June 20, 2016

Sample Name: ICSAB Acquired: 6/17/2016 11:00:46 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.58193	291.44	.28300	.07012	.27807	.27881	270.93
Stddev	.00080	.40	.00242	.00228	.00030	.00032	.59
%RSD	.13695	.13711	.85472	3.2512	.10654	.11619	.21851
#1	.58174	291.10	.28414	.06886	.27834	.27867	271.53
#2	.58280	291.88	.28022	.06874	.27776	.27918	270.91
#3	.58125	291.34	.28464	.07275	.27813	.27857	270.35
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.54421	.26175	.27563	.26472	107.51	5.7074	.00899
Stddev	.00158	.00059	.00128	.00100	.13	.0288	.00149
%RSD	.28967	.22454	.46554	.37726	.12015	.50461	16.573
#1	.54559	.26230	.27416	.26366	107.65	5.7014	.01042
#2	.54249	.26113	.27646	.26564	107.51	5.7387	.00912
#3	.54453	.26184	.27629	.26485	107.39	5.6820	.00744
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	269.88	.27034	-.00033	5.7782	.52632	.13694	.53746
Stddev	.50	.00310	.00020	.0134	.00213	.01527	.00486
%RSD	.18586	1.1477	61.714	.23222	.40438	11.149	.90369
#1	269.87	.27363	-.00045	5.7902	.52878	.13524	.53462
#2	270.39	.26747	-.00043	5.7808	.52511	.15298	.53470
#3	269.39	.26992	-.00009	5.7637	.52508	.12259	.54307
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: ICSAB Acquired: 6/17/2016 11:00:46 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.56183**	**.27693**	**.01224**	**.00073**	**.00094**	**-.01378**	**.50427**
Stddev	.00631	.00654	.00164	.00029	.00016	.00628	.00287
%RSD	1.1229	2.3632	13.393	39.162	17.110	45.594	.56970
#1	.56909	.28431	.01408	.00057	.00102	-.00656	.50690
#2	.55766	.27183	.01170	.00056	.00105	-.01799	.50470
#3	.55875	.27466	.01094	.00106	.00076	-.01680	.50120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.27184**	**.52176**	F **15.775**
Stddev	.00048	.00136	.913
%RSD	.17669	.26072	5.7860
#1	.27214	.52311	16.427
#2	.27209	.52039	14.732
#3	.27129	.52179	16.167
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02500
Low Limit			-.02500

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7291.4**	**41814.**	**2482.9**
Stddev	6.5	75.	7.6
%RSD	.08902	.17901	.30585
#1	7286.2	41849.	2475.9
#2	7298.7	41728.	2491.0
#3	7289.3	41865.	2481.9

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 11:04:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39765	9.9886	.39574	.49967	.99394	.05003	9.9272
Stddev	.00155	.0246	.00243	.00498	.00634	.00037	.0435
%RSD	.38946	.24670	.61353	.99687	.63779	.73287	.43870
#1	.39706	10.012	.39657	.50345	.98728	.05020	9.8792
#2	.39941	9.9628	.39764	.50153	.99464	.05029	9.9643
#3	.39648	9.9911	.39300	.49402	.99990	.04961	9.9380
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04969	.20033	.50258	.50345	4.0283	49.582	.99193
Stddev	.00010	.00074	.00241	.00118	.0355	.161	.00242
%RSD	.19132	.36854	.48050	.23520	.88058	.32450	.24381
#1	.04960	.20089	.50434	.50481	3.9891	49.439	.98931
#2	.04979	.20061	.50357	.50278	4.0378	49.551	.99241
#3	.04969	.19949	.49983	.50275	4.0581	49.756	.99408
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.9575	.49754	1.0061	49.443	.50447	9.9145	.50553
Stddev	.0734	.00182	.0060	.290	.00311	.0101	.00231
%RSD	.73742	.36607	.59171	.58715	.61702	.10138	.45671
#1	9.9304	.49718	1.0115	49.206	.50559	9.9220	.50815
#2	9.9015	.49592	1.0070	49.355	.50687	9.9184	.50377
#3	10.041	.49951	.99971	49.766	.50096	9.9031	.50468
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 11:04:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1984**	**.40671**	**5.0324**	**1.0017**	**.99494**	**.98888**	**.50725**
Stddev	.0065	.00394	.0136	.0017	.00396	.00413	.00192
%RSD	.54520	.96900	.27058	.16805	.39828	.41805	.37894
#1	1.2057	.41062	5.0393	1.0015	.99194	.99304	.50649
#2	1.1931	.40274	5.0413	1.0035	.99346	.98477	.50943
#3	1.1964	.40677	5.0168	1.0001	.99943	.98882	.50582
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0043**	**1.0030**	F **-1.6655**
Stddev	.0074	.0027	1.3606
%RSD	.74054	.26397	81.693
#1	1.0090	1.0040	-1.5964
#2	1.0081	1.0050	-3.0594
#3	.99571	.99999	-.34081
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8327.3**	**48295.**	**2716.9**
Stddev	16.2	245.	12.4
%RSD	.19490	.50805	.45719
#1	8321.0	48312.	2729.9
#2	8315.1	48531.	2715.7
#3	8345.7	48041.	2705.1

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 11:08:08 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00039**	**.00161**	**-.00084**	**.00092**	**.00019**	**-.00006**	**-.02998**
Stddev	.00090	.00839	.00178	.00093	.00078	.00001	.03337
%RSD	231.33	521.76	212.17	100.62	409.59	18.585	111.34
#1	-.00092	.00977	-.00187	.00167	.00103	-.00007	-.03090
#2	.00065	.00205	-.00187	-.00012	-.00052	-.00005	-.06288
#3	-.00089	-.00700	.00122	.00122	.00006	-.00006	.00385
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.00034**	**.00025**	**.00167**	**-.00649**	**.00403**	**.00157**
Stddev	.00008	.00062	.00108	.00118	.00640	.13140	.00592
%RSD	46.024	182.19	425.52	70.735	98.629	3256.9	376.67
#1	-.00014	.00078	.00144	.00067	-.00571	-.11016	.00416
#2	-.00025	-.00037	-.00001	.00298	-.01325	-.02539	.00575
#3	-.00011	.00060	-.00067	.00136	-.00051	.14765	-.00520
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.03031**	**.00218**	**.00387**	**.02983**	**-.00084**	**-.00119**	**-.00045**
Stddev	.05585	.00278	.00038	.01657	.00075	.00418	.00207
%RSD	184.28	127.82	9.9003	55.554	89.342	350.78	460.68
#1	.01607	.00396	.00347	.03752	-.00168	-.00575	.00181
#2	-.01468	.00360	.00392	.04116	-.00063	-.00028	-.00091
#3	-.09231	-.00103	.00423	.01081	-.00022	.00246	-.00225
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 11:08:08 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00400**	**.00315**	**.00110**	**-.00020**	**-.00008**	**-.00379**	**.00127**
Stddev	.00209	.00736	.00120	.00024	.00024	.00995	.00300
%RSD	52.283	233.54	108.58	118.63	307.74	262.37	236.52
#1	.00195	-.00527	.00092	-.00016	-.00005	-.01521	.00064
#2	.00391	.00838	.00001	.00001	.00015	.00074	.00453
#3	.00613	.00635	.00238	-.00046	-.00033	.00308	-.00136
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00059**	**-.00010**	F **-.99863**
Stddev	.00026	.00014	1.0695
%RSD	44.531	141.11	107.09
#1	-.00032	.00005	.23106
#2	-.00085	-.00012	-1.5151
#3	-.00060	-.00022	-1.7119
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8460.9**	**49284.**	**2742.8**
Stddev	6.2	160.	21.7
%RSD	.07367	.32448	.79182
#1	8467.7	49265.	2753.3
#2	8459.6	49453.	2757.3
#3	8455.5	49135.	2717.9

Approved: June 20, 2016

Sample Name: PBW B2 Acquired: 6/17/2016 11:14:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572775-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00078**	**.00285**	**.00135**	**.00271**	**-.00030**	**-.00002**	**-.00473**
Stddev	.00170	.00488	.00338	.00283	.00085	.00009	.01327
%RSD	218.52	171.13	250.51	104.38	281.97	415.23	280.56
#1	.00118	.00072	.00090	-.00039	-.00011	-.00006	.01007
#2	-.00174	-.00060	-.00178	.00516	.00044	-.00008	-.00870
#3	-.00177	.00843	.00493	.00336	-.00124	.00008	-.01556
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**.00003**	**.00017**	**.00142**	**-.00616**	**.04654**	**.00291**
Stddev	.00007	.00039	.00071	.00053	.02705	.12024	.00052
%RSD	342.90	1262.2	423.78	37.411	439.13	258.37	17.909
#1	-.00002	-.00025	-.00012	.00162	-.03108	.10689	.00256
#2	.00010	-.00013	.00098	.00082	.02261	.12465	.00351
#3	-.00002	.00048	-.00035	.00182	-.01001	-.09192	.00266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05294**	**-.00044**	**.00079**	**-.02850**	**-.00024**	**.00172**	**.00232**
Stddev	.06326	.00449	.00018	.02314	.00073	.00368	.00262
%RSD	119.51	1013.6	23.212	81.191	303.88	214.71	113.03
#1	.09812	.00463	.00060	-.01478	.00035	.00597	.00414
#2	.08006	-.00391	.00096	-.05521	-.00105	-.00030	.00351
#3	-.01936	-.00204	.00080	-.01550	-.00001	-.00052	-.00069
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: PBW B2 Acquired: 6/17/2016 11:14:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572775-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00236**	**-.00228**	**.00155**	**-.00026**	**.00013**	**.00367**	**.00183**
Stddev	.00429	.00156	.00223	.00034	.00031	.00403	.00208
%RSD	181.34	68.275	144.50	130.13	236.98	109.87	113.75
#1	-.00470	-.00113	-.00001	-.00002	-.00021	.00831	.00019
#2	.00258	-.00166	.00054	-.00011	.00021	.00150	.00417
#3	-.00498	-.00406	.00411	-.00065	.00040	.00118	.00113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00046**	**.00046**	F **-.81615**
Stddev	.00073	.00012	1.3591
%RSD	156.89	25.397	166.53
#1	-.00114	.00038	.19517
#2	.00031	.00041	-2.3611
#3	-.00056	.00059	-.28255
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8592.4**	**49856.**	**2756.3**
Stddev	9.2	294.	7.5
%RSD	.10658	.58982	.27283
#1	8602.9	50093.	2761.6
#2	8586.1	49949.	2747.7
#3	8588.1	49527.	2759.6

Approved: June 20, 2016

Sample Name: LCSW B2 Acquired: 6/17/2016 11:18:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572775-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21842	5.4259	.21404	1.0938	.54867	.02669	5.5341	.02687
Stddev	.00172	.0159	.00302	.0019	.00046	.00008	.0439	.00025
%RSD	.78555	.29395	1.4108	.17070	.08455	.29687	.79273	.91367
#1	.21807	5.4442	.21088	1.0959	.54897	.02672	5.5842	.02715
#2	.22029	5.4189	.21435	1.0922	.54892	.02660	5.5156	.02677
#3	.21691	5.4146	.21690	1.0933	.54814	.02676	5.5026	.02669
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10911	.27338	.27313	2.2034	26.813	.54456	5.4191	.27451
Stddev	.00034	.00267	.00067	.0197	.104	.00497	.0843	.00072
%RSD	.31364	.97681	.24628	.89300	.38769	.91274	1.5546	.26262
#1	.10873	.27515	.27240	2.2011	26.776	.54742	5.3284	.27381
#2	.10919	.27031	.27328	2.1850	26.733	.54745	5.4341	.27447
#3	.10940	.27468	.27372	2.2241	26.930	.53882	5.4949	.27525
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.55634	27.060	.27722	5.2393	.27384	.65475	.21131	2.7572
Stddev	.00118	.091	.00132	.0059	.00327	.00403	.01050	.0061
%RSD	.21244	.33656	.47792	.11281	1.1931	.61611	4.9691	.22266
#1	.55747	27.160	.27781	5.2457	.27677	.65369	.22255	2.7589
#2	.55511	27.041	.27814	5.2380	.27031	.65135	.20176	2.7504
#3	.55643	26.981	.27570	5.2341	.27445	.65921	.20960	2.7623
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 20, 2016

Sample Name: LCSW B2 Acquired: 6/17/2016 11:18:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572775-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.54263	.55380	.53761	.27833	.54332	.54115	-.00394
Stddev	.00091	.00324	.00939	.00214	.00178	.00041	1.7598
%RSD	.16793	.58490	1.7474	.76902	.32819	.07555	44611.
#1	.54330	.55742	.54785	.27822	.54537	.54159	-1.7733
#2	.54299	.55118	.52939	.28052	.54230	.54079	.01533
#3	.54159	.55279	.53560	.27625	.54227	.54105	1.7462
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7806.1	45484.	2587.1
Stddev	27.3	270.	22.2
%RSD	.35009	.59263	.85769
#1	7779.2	45298.	2561.7
#2	7805.5	45360.	2596.9
#3	7833.8	45793.	2602.6

Approved: June 20, 2016

Sample Name: F BLANK Acquired: 6/17/2016 11:22:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572612-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**.02668**	**.00229**	**.00593**	**-.00081**	**.00010**	**.03625**
Stddev	.00092	.00455	.00282	.00147	.00099	.00016	.07275
%RSD	329.90	17.073	123.10	24.704	121.69	161.45	200.72
#1	-.00004	.02788	.00354	.00696	.00020	.00002	.00264
#2	.00050	.02164	.00427	.00658	-.00087	-.00000	.11973
#3	-.00130	.03051	-.00094	.00426	-.00178	.00029	-.01363
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.00061**	**-.00019**	**.00060**	**.00755**	**.06357**	**-.00139**
Stddev	.00032	.00038	.00093	.00084	.03408	.05432	.00207
%RSD	457.82	61.602	488.48	140.06	451.15	85.459	148.91
#1	-.00011	.00084	-.00041	.00005	.04533	.03165	-.00281
#2	-.00037	.00081	-.00099	.00018	-.00178	.03276	-.00234
#3	.00027	.00018	.00083	.00158	-.02089	.12629	.00098
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00451**	**.00271**	**.00107**	**151.94**	**-.00033**	**-.01043**	**-.00065**
Stddev	.09544	.00253	.00019	.62	.00083	.00567	.00155
%RSD	2114.9	93.616	17.625	.40968	254.84	54.413	239.04
#1	.01851	.00116	.00124	152.58	.00057	-.01452	.00016
#2	.09218	.00133	.00087	151.34	-.00046	-.01281	-.00244
#3	-.09715	.00563	.00110	151.90	-.00109	-.00395	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: F BLANK Acquired: 6/17/2016 11:22:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572612-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00045	.00779	.00761	.00075	.00048	-.00489	.00091
Stddev	.00246	.00502	.00245	.00073	.00022	.00187	.00088
%RSD	542.43	64.490	32.147	97.375	46.273	38.242	97.544
#1	.00035	.01275	.00680	.00151	.00074	-.00375	.00014
#2	-.00321	.00270	.00568	.00066	.00036	-.00705	.00070
#3	.00150	.00792	.01036	.00007	.00035	-.00388	.00187
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00069	.00361	F -1.3740
Stddev	.00047	.00023	1.2722
%RSD	68.077	6.4282	92.592
#1	-.00072	.00350	-1.8400
#2	-.00114	.00346	-2.3474
#3	-.00020	.00388	.06552
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7847.9	45269.	2606.5
Stddev	8.6	189.	36.1
%RSD	.10905	.41666	1.3845
#1	7838.9	45053.	2564.9
#2	7855.9	45347.	2626.6
#3	7849.0	45406.	2628.1

Approved: June 20, 2016

Sample Name: F BLANK Acquired: 6/17/2016 11:26:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572616-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.00435**	**-.00077**	**.00354**	**-.00054**	**.00005**	**.00287**
Stddev	.00058	.00698	.00088	.00067	.00085	.00010	.02363
%RSD	419.02	160.51	113.84	18.844	159.44	217.75	823.15
#1	-.00014	.01216	-.00090	.00411	-.00145	-.00007	.00784
#2	-.00072	-.00128	-.00158	.00371	.00024	.00010	.02362
#3	.00044	.00216	.00016	.00281	-.00040	.00011	-.02285
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**-.00005**	**-.00036**	**.00093**	F **-.02722**	**.04347**	**-.00152**
Stddev	.00033	.00047	.00032	.00177	.00694	.10984	.00286
%RSD	332.67	963.18	88.697	191.04	25.490	252.70	188.62
#1	.00048	-.00036	-.00072	.00007	-.01921	.16910	-.00476
#2	-.00012	-.00028	-.00017	-.00025	-.03110	-.00431	.00064
#3	-.00006	.00050	-.00018	.00297	-.03135	-.03439	-.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.07032**	**.00208**	**.00038**	**5.5089**	**.00068**	**.00223**	**.00284**
Stddev	.02815	.00160	.00044	.0524	.00050	.00171	.00245
%RSD	40.035	76.959	116.62	.95025	73.774	76.586	86.157
#1	-.09816	.00393	-.00009	5.5446	.00015	.00026	.00082
#2	-.07095	.00100	.00045	5.5332	.00114	.00333	.00556
#3	-.04186	.00133	.00078	5.4488	.00075	.00308	.00215
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: F BLANK Acquired: 6/17/2016 11:26:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572616-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00103**	**.00564**	**.00483**	**.00057**	**.00034**	**-.00105**	**.00312**
Stddev	.00365	.00748	.00145	.00082	.00032	.00412	.00219
%RSD	353.03	132.73	30.044	144.09	94.612	392.99	70.177
#1	-.00291	.00118	.00449	-.00011	.00004	-.00580	.00137
#2	.00430	.00146	.00642	.00034	.00030	.00123	.00558
#3	.00171	.01428	.00358	.00148	.00068	.00142	.00241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00113**	**.00525**	F **-.60071**
Stddev	.00088	.00009	1.0723
%RSD	78.564	1.6853	178.50
#1	.00011	.00528	-.90863
#2	.00157	.00515	-1.4854
#3	.00170	.00532	.59185
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8118.1**	**47308.**	**2642.8**
Stddev	12.4	191.	4.7
%RSD	.15265	.40321	.17713
#1	8117.9	47475.	2637.4
#2	8105.9	47349.	2644.9
#3	8130.7	47100.	2646.0

Approved: June 20, 2016

Sample Name: L1606067004 Acquired: 6/17/2016 11:30:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572775-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00032	.23187	-.00088	.01872	.03830	.00001	.81863	.00600
Stddev	.00224	.00436	.00245	.00366	.00111	.00011	.04597	.00022
%RSD	704.72	1.8803	278.19	19.542	2.8899	734.85	5.6150	3.6188
#1	.00117	.23546	.00181	.02018	.03914	.00006	.82805	.00601
#2	.00077	.23313	-.00146	.02142	.03872	-.00011	.76869	.00578
#3	-.00290	.22702	-.00299	.01456	.03705	.00009	.85916	.00621
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00062	.00241	.04619	1.8026	.27314	-.00045	.11219	.01726
Stddev	.00013	.00117	.00084	.0226	.12809	.00339	.05215	.00032
%RSD	20.536	48.294	1.8105	1.2511	46.897	749.00	46.483	1.8797
#1	.00077	.00299	.04591	1.8174	.27449	-.00436	.17107	.01757
#2	.00054	.00318	.04713	1.7766	.40056	.00177	.09365	.01729
#3	.00056	.00107	.04553	1.8137	.14438	.00123	.07184	.01692
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00253	152.79	.00692	.00861	.03678	.00147	-.00216	.07661
Stddev	.00039	.76	.00083	.00267	.00188	.00739	.00432	.00135
%RSD	15.580	.49522	11.964	30.977	5.1084	503.43	199.88	1.7686
#1	.00212	153.58	.00775	.01160	.03676	.00672	-.00361	.07543
#2	.00290	152.70	.00692	.00646	.03491	.00467	-.00557	.07809
#3	.00257	152.08	.00609	.00778	.03866	-.00698	.00270	.07630
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 20, 2016

Sample Name: L1606067004 Acquired: 6/17/2016 11:30:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572775-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	.00191	.00203	.00255	-.00022	.47243	.35233
Stddev	.00079	.00015	.00583	.00247	.00052	.00074	.96645
%RSD	129.18	7.9756	288.01	96.878	232.83	.15767	274.30
#1	-.00028	.00186	.00420	.00540	-.00081	.47315	1.4678
#2	.00091	.00179	-.00458	.00102	-.00003	.47246	-.17745
#3	.00121	.00208	.00646	.00123	.00017	.47167	-.23338
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7875.1	45692.	2611.7
Stddev	10.7	219.	37.9
%RSD	.13600	.47961	1.4516
#1	7863.3	45579.	2570.3
#2	7884.2	45945.	2620.3
#3	7877.9	45553.	2644.6

Approved: June 20, 2016

Sample Name: L1606067004S Acquired: 6/17/2016 11:34:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572775-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21130**	**5.5159**	**.21294**	**1.0547**	**.57029**	**.02652**	**6.0610**	**.03194**
Stddev	.00029	.0219	.00441	.0025	.00675	.00015	.0391	.00045
%RSD	.13775	.39667	2.0714	.23677	1.1842	.56452	.64572	1.4166
#1	.21119	5.5088	.21307	1.0575	.57693	.02638	6.0965	.03144
#2	.21107	5.5404	.21728	1.0535	.56343	.02668	6.0676	.03230
#3	.21162	5.4984	.20846	1.0530	.57052	.02652	6.0190	.03209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10661**	**.26984**	**.31167**	**3.9436**	**26.413**	**.53379**	**5.3966**	**.27980**
Stddev	.00029	.00065	.00177	.0481	.266	.00329	.0722	.00454
%RSD	.27662	.24083	.56948	1.2201	1.0081	.61701	1.3386	1.6225
#1	.10652	.26924	.31371	3.9982	26.718	.53230	5.4785	.28011
#2	.10694	.27053	.31054	3.9073	26.223	.53150	5.3693	.27511
#3	.10637	.26975	.31075	3.9254	26.299	.53757	5.3420	.28417
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.54912**	**177.06**	**.27421**	**5.2035**	**.29947**	**.63879**	**.21318**	**2.7817**
Stddev	.00018	1.25	.00176	.0025	.00445	.00432	.00649	.0035
%RSD	.03246	.70543	.64091	.04872	1.4844	.67583	3.0428	.12492
#1	.54929	178.44	.27260	5.2017	.29456	.63389	.21348	2.7791
#2	.54914	175.99	.27608	5.2025	.30322	.64201	.21951	2.7804
#3	.54894	176.76	.27396	5.2064	.30062	.64047	.20655	2.7856
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 20, 2016

Sample Name: L1606067004S Acquired: 6/17/2016 11:34:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572775-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53004	.53883	.53869	.25942	.53554	.98549	.33698
Stddev	.00083	.00275	.00539	.00111	.00180	.00094	.19366
%RSD	.15613	.50973	1.0006	.42781	.33599	.09561	57.468
#1	.52913	.54154	.53925	.26024	.53598	.98474	.14515
#2	.53075	.53605	.53304	.25816	.53709	.98655	.33338
#3	.53022	.53889	.54378	.25987	.53357	.98518	.53242
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7830.8	45331.	2635.4
Stddev	19.5	162.	29.4
%RSD	.24953	.35681	1.1163
#1	7845.9	45495.	2602.6
#2	7808.7	45172.	2659.6
#3	7837.7	45325.	2643.9

Approved: June 20, 2016

Sample Name: L1606067004SD Acquired: 6/17/2016 11:38:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572775-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21305**	**5.4736**	**.21136**	**1.0489**	**.57209**	**.02643**	**6.1049**	**.03162**
Stddev	.00372	.0183	.00188	.0041	.00334	.00007	.0185	.00014
%RSD	1.7463	.33485	.88901	.38728	.58445	.24961	.30340	.45241
#1	.21222	5.4872	.21127	1.0528	.56885	.02639	6.1213	.03162
#2	.20982	5.4808	.21328	1.0492	.57190	.02651	6.0848	.03177
#3	.21712	5.4527	.20952	1.0447	.57553	.02639	6.1087	.03148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10608**	**.26805**	**.31095**	**3.9531**	**26.719**	**.53696**	**5.4547**	**.28112**
Stddev	.00026	.00035	.00101	.0094	.034	.00162	.0659	.00066
%RSD	.24322	.12991	.32629	.23756	.12785	.30155	1.2072	.23424
#1	.10581	.26777	.31087	3.9639	26.717	.53830	5.3805	.28067
#2	.10612	.26844	.30998	3.9482	26.686	.53741	5.4776	.28082
#3	.10632	.26793	.31201	3.9472	26.754	.53516	5.5061	.28187
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.54839**	**177.33**	**.27131**	**5.1711**	**.29793**	**.63518**	**.20293**	**2.7713**
Stddev	.00040	.37	.00041	.0121	.00336	.00164	.00883	.0060
%RSD	.07228	.21037	.14932	.23332	1.1268	.25897	4.3529	.21516
#1	.54877	177.27	.27102	5.1812	.29839	.63391	.19380	2.7748
#2	.54843	176.99	.27178	5.1744	.29437	.63704	.21143	2.7644
#3	.54798	177.73	.27114	5.1577	.30103	.63460	.20356	2.7746
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 20, 2016

Sample Name: L1606067004SD Acquired: 6/17/2016 11:38:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572775-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52775**	**.54038**	**.53506**	**.26150**	**.53372**	**.97783**	**.27341**
Stddev	.00154	.00118	.00498	.00380	.00114	.00146	.31883
%RSD	.29252	.21883	.93045	1.4532	.21376	.14913	116.61
#1	.52854	.54071	.52972	.26435	.53356	.97753	.11714
#2	.52874	.53907	.53587	.25718	.53494	.97941	.64022
#3	.52597	.54136	.53958	.26296	.53267	.97654	.06286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7841.7**	**45376.**	**2602.3**
Stddev	11.7	127.	8.5
%RSD	.14877	.27962	.32726
#1	7833.1	45252.	2596.1
#2	7837.0	45371.	2598.8
#3	7855.0	45506.	2612.0

Approved: June 20, 2016

Sample Name: L1606073101 Acquired: 6/17/2016 11:41:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00092**	**.13586**	**.00819**	**.03721**	**.10351**	**.00007**	**104.93**
Stddev	.00124	.00569	.00215	.00252	.00160	.00005	.28
%RSD	134.06	4.1868	26.312	6.7732	1.5416	71.116	.26933
#1	-.00048	.14213	.00761	.03518	.10418	.00010	105.24
#2	.00140	.13102	.00638	.03643	.10465	.00001	104.84
#3	.00186	.13445	.01058	.04003	.10168	.00010	104.70
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00963**	**.00040**	**.00049**	**1.7707**	**.00735**	**1.9727**	**.00503**
Stddev	.00014	.00010	.00094	.0015	.01998	.0587	.00167
%RSD	1.4536	23.633	189.90	.08419	271.95	2.9776	33.218
#1	.00951	.00040	.00069	1.7719	.03003	1.9301	.00424
#2	.00959	.00031	-.00052	1.7691	-.00033	2.0397	.00390
#3	.00978	.00050	.00132	1.7713	-.00766	1.9483	.00695
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.8918**	**.18768**	**.00109**	**8.3182**	**.00298**	**.66463**	**.04333**
Stddev	.0244	.00125	.00064	.0765	.00096	.00533	.00111
%RSD	1.2909	.66837	58.765	.91969	32.311	.80151	2.5600
#1	1.8789	.18901	.00036	8.4050	.00194	.66969	.04385
#2	1.9200	.18752	.00138	8.2890	.00316	.65907	.04205
#3	1.8766	.18652	.00153	8.2606	.00384	.66515	.04408
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606073101 Acquired: 6/17/2016 11:41:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00181**	**.00706**	**1.0704**	**-.00009**	**.27344**	**-.01539**	**-.00050**
Stddev	.00478	.00133	.0029	.00074	.00062	.00398	.00065
%RSD	264.51	18.859	.27154	797.83	.22501	25.849	129.80
#1	.00281	.00643	1.0726	-.00041	.27406	-.01999	-.00125
#2	-.00672	.00616	1.0671	-.00062	.27283	-.01306	-.00020
#3	-.00151	.00859	1.0716	.00075	.27343	-.01313	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00035**	**.26380**	F **-.66330**
Stddev	.00095	.00015	1.2395
%RSD	268.68	.05546	186.87
#1	.00019	.26384	-.60571
#2	.00020	.26392	.54638
#3	-.00145	.26363	-1.9306
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7969.9**	**46592.**	**2647.0**
Stddev	21.9	113.	20.7
%RSD	.27519	.24220	.78140
#1	7945.4	46602.	2623.1
#2	7976.8	46474.	2658.8
#3	7987.6	46699.	2659.1

Approved: June 20, 2016

Sample Name: L1606073101PS Acquired: 6/17/2016 11:45:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572965-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21464**	**5.3838**	**.22422**	**1.0585**	**.62534**	**.02625**	**99.958**
Stddev	.00013	.0040	.00194	.0008	.00065	.00006	.372
%RSD	.06261	.07415	.86701	.07884	.10320	.21505	.37239
#1	.21452	5.3805	.22345	1.0577	.62470	.02619	99.959
#2	.21479	5.3883	.22279	1.0584	.62533	.02630	99.586
#3	.21461	5.3828	.22643	1.0593	.62599	.02625	100.33
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03497**	**.10652**	**.26678**	**1.8408**	**2.1529**	**27.832**	**.54075**
Stddev	.00012	.00058	.00162	.0050	.0225	.120	.00221
%RSD	.35525	.54899	.60851	.27101	1.0458	.43246	.40921
#1	.03511	.10641	.26574	1.8446	2.1283	27.891	.53917
#2	.03494	.10599	.26595	1.8351	2.1578	27.694	.54328
#3	.03486	.10715	.26865	1.8426	2.1725	27.912	.53980
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**6.7933**	**.43549**	**.54851**	**33.809**	**.26672**	**5.8710**	**.30268**
Stddev	.1130	.00306	.00157	.096	.00184	.0278	.00081
%RSD	1.6641	.70234	.28626	.28366	.68849	.47323	.26843
#1	6.9038	.43243	.54952	33.766	.26733	5.8969	.30272
#2	6.6779	.43550	.54670	33.742	.26465	5.8416	.30185
#3	6.7982	.43855	.54931	33.919	.26817	5.8744	.30347
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606073101PS Acquired: 6/17/2016 11:45:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572965-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.64030**	**.21339**	**3.6872**	**.53032**	**.77047**	**.52104**	**.26381**
Stddev	.00292	.00683	.0125	.00044	.00279	.00814	.00095
%RSD	.45618	3.2028	.33799	.08299	.36157	1.5617	.35898
#1	.63713	.22006	3.7004	.52996	.77365	.52503	.26484
#2	.64089	.21370	3.6756	.53019	.76924	.51168	.26297
#3	.64288	.20641	3.6855	.53081	.76850	.52641	.26363
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.53315**	**.75393**	F **-.89409**
Stddev	.00078	.00063	1.6656
%RSD	.14635	.08346	186.29
#1	.53353	.75461	.08834
#2	.53225	.75379	-2.8172
#3	.53367	.75338	.04658
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7863.2**	**46060.**	**2642.2**
Stddev	5.9	201.	28.2
%RSD	.07520	.43567	1.0675
#1	7862.3	46280.	2646.6
#2	7869.5	46011.	2667.9
#3	7857.8	45888.	2612.0

Approved: June 20, 2016

Sample Name: L1606073101SDL Acquired: 6/17/2016 11:49:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG572965-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00046	.02355	.00082	.00664	.01751	.00005	19.031	.00195
Stddev	.00017	.00629	.00294	.00246	.00119	.00009	.207	.00020
%RSD	36.394	26.689	360.03	37.023	6.7834	176.06	1.0893	10.142
#1	-.00033	.01678	-.00246	.00850	.01879	-.00005	19.127	.00189
#2	-.00065	.02466	.00171	.00385	.01730	.00011	18.793	.00218
#3	-.00040	.02921	.00321	.00758	.01644	.00010	19.173	.00180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.00010	.33168	-.00516	.29354	.00554	.28987	.03541
Stddev	.00052	.00066	.00072	.04065	.01520	.00113	.07761	.00406
%RSD	695.08	634.84	.21807	787.98	5.1776	20.342	26.772	11.478
#1	-.00015	.00070	.33110	-.01282	.28846	.00683	.30681	.03803
#2	-.00029	-.00061	.33249	.03878	.28154	.00472	.20520	.03748
#3	.00067	.00022	.33145	-.04143	.31063	.00507	.35762	.03073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00104	1.5192	.00010	.12502	.00902	-.00065	.00348	.19626
Stddev	.00039	.0111	.00046	.00758	.00145	.00083	.00448	.00059
%RSD	37.384	.73158	483.73	6.0616	16.118	126.80	128.72	.29952
#1	.00065	1.5143	-.00021	.12783	.00735	-.00070	-.00128	.19679
#2	.00105	1.5319	.00063	.11644	.00999	-.00146	.00411	.19563
#3	.00143	1.5113	-.00013	.13079	.00971	.00020	.00760	.19638
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 20, 2016

Sample Name: L1606073101SDL Acquired: 6/17/2016 11:49:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG572965-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00079	.04867	-.00022	.00151	-.00034	.04983	.93778
Stddev	.00081	.00095	.00827	.00256	.00083	.00038	.97810
%RSD	102.67	1.9423	3796.1	169.47	243.67	.76489	104.30
#1	.00071	.04763	-.00349	.00371	.00061	.04957	.11938
#2	.00002	.04894	-.00635	.00213	-.00088	.04964	.67292
#3	.00163	.04946	.00919	-.00130	-.00075	.05026	2.0210
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8673.3	50670.	2813.5
Stddev	18.3	180.	14.1
%RSD	.21102	.35552	.50094
#1	8674.3	50779.	2815.0
#2	8691.0	50769.	2826.7
#3	8654.4	50462.	2798.6

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 11:53:17 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39637	9.9607	.39370	.50001	.99341	.04965	9.7813
Stddev	.00103	.0264	.00259	.00380	.00186	.00018	.0330
%RSD	.26054	.26514	.65884	.76053	.18696	.37196	.33691
#1	.39569	9.9616	.39366	.50115	.99297	.04975	9.7479
#2	.39756	9.9867	.39632	.50311	.99545	.04976	9.8138
#3	.39586	9.9339	.39113	.49576	.99181	.04943	9.7820
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04954	.19935	.49838	.50121	3.9762	49.235	.99004
Stddev	.00017	.00028	.00107	.00110	.0293	.081	.00604
%RSD	.34331	.14230	.21382	.21943	.73780	.16459	.60964
#1	.04944	.19905	.49835	.50043	3.9716	49.149	.98632
#2	.04973	.19962	.49946	.50247	3.9495	49.244	.99700
#3	.04943	.19939	.49733	.50073	4.0076	49.311	.98680
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.9047	.49886	1.0034	49.017	.50243	9.8608	.50352
Stddev	.1391	.00145	.0024	.047	.00100	.0115	.00062
%RSD	1.4039	.28995	.23464	.09575	.19892	.11661	.12222
#1	9.8335	.49782	1.0060	48.986	.50347	9.8520	.50405
#2	9.8157	.49825	1.0026	49.071	.50147	9.8738	.50285
#3	10.065	.50051	1.0015	48.994	.50235	9.8566	.50366
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 11:53:17 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1923**	**.40075**	**5.0165**	**.99950**	**.99347**	**.99712**	**.50700**
Stddev	.0043	.00921	.0062	.00166	.00205	.00720	.00267
%RSD	.35728	2.2989	.12301	.16641	.20678	.72224	.52714
#1	1.1967	.39118	5.0096	.99830	.99144	.99318	.50996
#2	1.1919	.40956	5.0213	1.0014	.99555	.99275	.50476
#3	1.1882	.40152	5.0187	.99881	.99343	1.0054	.50629
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.99604**	**.99584**	F **.73405**
Stddev	.00181	.00116	1.2265
%RSD	.18155	.11609	167.09
#1	.99645	.99664	1.8442
#2	.99762	.99451	.94064
#3	.99407	.99636	-.58267
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8389.5**	**48425.**	**2745.0**
Stddev	8.0	309.	12.4
%RSD	.09533	.63817	.45070
#1	8387.8	48297.	2733.1
#2	8382.5	48200.	2757.8
#3	8398.3	48777.	2744.1

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 11:56:54 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00135**	**.00466**	**.00068**	**.00429**	**-.00067**	**.00001**	**.00733**
Stddev	.00046	.00249	.00388	.00056	.00048	.00012	.03371
%RSD	33.817	53.488	568.99	13.111	71.324	1211.7	460.25
#1	-.00085	.00698	-.00326	.00494	-.00078	.00015	.00154
#2	-.00174	.00496	.00450	.00404	-.00107	-.00003	-.02312
#3	-.00146	.00203	.00081	.00390	-.00014	-.00008	.04356
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**.00024**	**-.00017**	**.00065**	**-.02289**	**.01618**	**-.00260**
Stddev	.00032	.00029	.00114	.00074	.00803	.07586	.00478
%RSD	333.49	119.40	664.24	113.20	35.064	468.88	183.96
#1	-.00013	.00006	.00079	-.00020	-.02295	.03156	-.00798
#2	-.00004	.00009	.00012	.00101	-.03089	.08318	.00117
#3	.00047	.00057	-.00143	.00114	-.01484	-.06620	-.00099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00715**	**-.00232**	**.00423**	**.04189**	**.00062**	**.00072**	**-.00039**
Stddev	.03487	.00029	.00048	.02082	.00033	.00437	.00490
%RSD	487.40	12.727	11.323	49.704	53.049	610.04	1251.6
#1	-.01780	-.00261	.00369	.06547	.00034	-.00379	.00469
#2	.03180	-.00233	.00442	.03413	.00099	.00099	-.00509
#3	-.03546	-.00202	.00459	.02606	.00053	.00495	-.00078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 11:56:54 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00161**	**.00581**	**-.00094**	**-.00027**	**.00038**	**-.00230**	**.00326**
Stddev	.00045	.00926	.00035	.00043	.00015	.00560	.00170
%RSD	28.098	159.23	36.800	161.19	40.264	243.61	52.249
#1	.00204	.00104	-.00122	-.00069	.00056	.00386	.00423
#2	.00165	.01649	-.00055	.00017	.00029	-.00368	.00425
#3	.00114	-.00009	-.00105	-.00028	.00029	-.00708	.00129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00008**	**.00010**	F **-.19438**
Stddev	.00087	.00014	1.1427
%RSD	1063.2	146.41	587.89
#1	.00074	.00026	-1.4068
#2	.00001	.00003	-.03918
#3	-.00099	.00000	.86283
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8492.1**	**49298.**	**2742.4**
Stddev	39.3	139.	5.8
%RSD	.46293	.28224	.21193
#1	8536.3	49402.	2739.7
#2	8461.0	49351.	2749.0
#3	8479.1	49140.	2738.4

Approved: June 20, 2016

Sample Name: L1606061601 Acquired: 6/17/2016 12:00:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00072**	**.09799**	**-.00121**	**.01489**	**.12849**	**.00107**	**6.6364**	**.00049**
Stddev	.00289	.00874	.00312	.00183	.00081	.00008	.0163	.00034
%RSD	400.16	8.9139	257.97	12.263	.62827	7.5237	.24543	69.649
#1	.00066	.08951	.00239	.01491	.12766	.00116	6.6540	.00011
#2	-.00404	.10696	-.00287	.01306	.12855	.00100	6.6333	.00060
#3	.00122	.09750	-.00315	.01671	.12927	.00106	6.6218	.00076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03413**	**.23473**	**.01570**	**.71033**	**.40217**	**.02297**	**5.9625**	**.28685**
Stddev	.00030	.00047	.00107	.01737	.07968	.00253	.0583	.00635
%RSD	.86752	.19919	6.8264	2.4450	19.812	11.018	.97735	2.2126
#1	.03441	.23421	.01449	.70477	.34663	.02519	5.9980	.29292
#2	.03382	.23511	.01653	.72980	.49347	.02352	5.8952	.28736
#3	.03416	.23487	.01608	.69642	.36643	.02021	5.9942	.28026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00366**	**148.38**	**.40415**	**.01431**	**.00032**	**-.00019**	**.00426**	**18.279**
Stddev	.00035	.54	.00140	.00511	.00224	.00307	.00654	.031
%RSD	9.5109	.36059	.34747	35.689	706.32	1631.5	153.35	.17008
#1	.00343	148.86	.40482	.00871	.00003	-.00203	-.00303	18.293
#2	.00350	147.80	.40509	.01870	-.00176	-.00190	.00621	18.301
#3	.00406	148.48	.40253	.01551	.00268	.00336	.00960	18.244
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 20, 2016

Sample Name: L1606061601 Acquired: 6/17/2016 12:00:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.15150	-.00276	.00224	.00039	.02129	.64258
Stddev	.00010	.00116	.00902	.00317	.00132	.00010	.99819
%RSD	332.64	.76474	327.51	141.29	336.64	.45753	155.34
#1	.00008	.15281	-.01316	.00137	.00168	.02124	1.5163
#2	.00010	.15108	.00300	.00575	.00047	.02123	-.44533
#3	-.00009	.15060	.00189	-.00040	-.00097	.02140	.85678
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7783.1	45045.	2571.8
Stddev	23.4	189.	2.8
%RSD	.30090	.41902	.10805
#1	7772.6	44829.	2569.1
#2	7766.8	45127.	2571.6
#3	7809.9	45179.	2574.7

Approved: June 20, 2016

Sample Name: L1606061602 Acquired: 6/17/2016 12:04:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00324	.12679	-.00273	.17267	.63123	.00008	56.156
Stddev	.00204	.02061	.00186	.00432	.00352	.00003	.206
%RSD	62.870	16.256	68.182	2.5043	.55789	41.131	.36613
#1	.00506	.14002	-.00351	.17738	.63526	.00011	56.371
#2	.00104	.13732	-.00060	.16887	.62965	.00005	55.962
#3	.00362	.10304	-.00406	.17177	.62877	.00007	56.135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00090	-.00090	-.00140	65.724	2.7698	.03721
Stddev	.00008	.00008	.00113	.00054	.239	.0696	.00487
%RSD	91.780	8.4775	125.20	38.370	.36383	2.5120	13.079
#1	.00015	.00088	-.00193	-.00195	66.000	2.7358	.03565
#2	-.00000	.00083	-.00107	-.00088	65.576	2.8498	.03332
#3	.00011	.00098	.00030	-.00137	65.597	2.7237	.04267
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	29.797	1.4964	.00120	F 296.51	.00144	.02573	.00198
Stddev	.110	.0099	.00028	1.43	.00106	.00885	.00152
%RSD	.37038	.66176	23.730	.48295	73.691	34.372	76.606
#1	29.871	1.5076	.00137	298.15	.00037	.03575	.00228
#2	29.670	1.4927	.00087	295.88	.00250	.01900	.00334
#3	29.850	1.4889	.00136	295.50	.00145	.02245	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 20, 2016

Sample Name: L1606061602 Acquired: 6/17/2016 12:04:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00551	.00469	12.887	.00203	1.3416	.01437	.00176
Stddev	.00289	.00073	.015	.00070	.0059	.00445	.00264
%RSD	52.476	15.520	.11650	34.601	.43768	30.943	149.87
#1	.00278	.00388	12.899	.00284	1.3484	.01326	.00035
#2	.00855	.00529	12.870	.00168	1.3384	.01927	.00012
#3	.00521	.00491	12.892	.00157	1.3381	.01059	.00480
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00312	.00532	9.2621
Stddev	.00086	.00007	.0917
%RSD	27.695	1.2954	.99021
#1	-.00259	.00535	9.1766
#2	-.00411	.00525	9.3590
#3	-.00264	.00538	9.2508
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7619.3	43883.	2584.9
Stddev	35.8	97.	26.2
%RSD	.47019	.22102	1.0123
#1	7578.0	43882.	2555.8
#2	7642.6	43981.	2592.5
#3	7637.2	43787.	2606.5

Approved: June 20, 2016

Sample Name: L1606061604 Acquired: 6/17/2016 12:08:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00056**	**.06435**	**-.00032**	**.01748**	**.04450**	**-.00001**	**6.1754**
Stddev	.00216	.01010	.00181	.00597	.00077	.00002	.0260
%RSD	388.51	15.698	563.50	34.173	1.7293	115.73	.42161
#1	.00074	.05290	-.00215	.02278	.04537	-.00001	6.1482
#2	.00262	.06815	.00147	.01100	.04419	-.00003	6.2001
#3	-.00169	.07201	-.00028	.01865	.04392	.00000	6.1780
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00032**	**.00098**	**.00086**	**.00137**	**4.5852**	**1.6735**	**.00043**
Stddev	.00022	.00026	.00112	.00083	.0237	.1271	.00308
%RSD	68.891	26.572	130.08	60.639	.51728	7.5924	710.48
#1	.00049	.00118	.00122	.00042	4.5939	1.7545	.00158
#2	.00007	.00107	.00174	.00194	4.5583	1.5271	.00277
#3	.00039	.00069	-.00040	.00175	4.6033	1.7390	-.00305
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.7721**	**.27165**	**.00035**	**7.6501**	**.00404**	**.01796**	**.00035**
Stddev	.0621	.00147	.00024	.1171	.00120	.00637	.00222
%RSD	3.5019	.54155	67.799	1.5302	29.811	35.448	641.43
#1	1.8239	.26997	.00008	7.7844	.00397	.02460	-.00144
#2	1.7033	.27225	.00046	7.5962	.00288	.01736	-.00035
#3	1.7891	.27273	.00051	7.5697	.00528	.01191	.00283
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606061604 Acquired: 6/17/2016 12:08:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00251	.00396	5.9333	.00068	.10362	.00465	.00286
Stddev	.00224	.00310	.0115	.00046	.00044	.00153	.00118
%RSD	89.176	78.311	.19356	67.706	.42805	32.875	41.211
#1	.00136	.00667	5.9340	.00081	.10412	.00587	.00368
#2	.00508	.00465	5.9444	.00017	.10350	.00294	.00151
#3	.00108	.00057	5.9214	.00107	.10326	.00514	.00339
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00055	.00310	F -.04552
Stddev	.00042	.00029	.79066
%RSD	76.196	9.2600	1736.9
#1	-.00036	.00294	.58409
#2	-.00104	.00293	.21224
#3	-.00026	.00343	-.93289
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7963.9	46635.	2622.5
Stddev	32.1	77.	12.3
%RSD	.40318	.16556	.46709
#1	7994.0	46559.	2608.4
#2	7930.1	46632.	2630.6
#3	7967.5	46714.	2628.6

Approved: June 20, 2016

Sample Name: L1606067001 Acquired: 6/17/2016 12:12:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00138**	**.03051**	**-.00242**	**2.0535**	**.03506**	**-.00002**	**3.3507**
Stddev	.00074	.00638	.00036	.0053	.00248	.00000	.0507
%RSD	53.900	20.915	15.072	.25861	7.0796	9.4143	1.5143
#1	-.00201	.02317	-.00238	2.0593	.03734	-.00002	3.3993
#2	-.00056	.03368	-.00281	2.0489	.03242	-.00002	3.2980
#3	-.00156	.03469	-.00208	2.0522	.03544	-.00002	3.3548
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00680**	**.01707**	**.00068**	**.08363**	**.31719**	**.90374**	**.00377**
Stddev	.00013	.00010	.00067	.00094	.01795	.05655	.00413
%RSD	1.8852	.58090	97.717	1.1185	5.6603	6.2573	109.66
#1	.00684	.01699	.00003	.08471	.30964	.95399	.00066
#2	.00666	.01705	.00136	.08308	.30425	.91472	.00219
#3	.00690	.01718	.00065	.08310	.33769	.84250	.00845
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.34692**	**.01862**	**.00962**	**161.72**	**.00464**	**.05384**	**.00236**
Stddev	.06794	.00116	.00036	.63	.00055	.00152	.00151
%RSD	19.583	6.2378	3.7322	.38753	11.816	2.8200	63.892
#1	.30122	.01983	.00940	162.15	.00454	.05221	.00076
#2	.42499	.01752	.00942	161.00	.00415	.05521	.00376
#3	.31456	.01851	.01003	162.02	.00523	.05410	.00256
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606067001 Acquired: 6/17/2016 12:12:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00099**	**.00446**	**.28138**	**.00021**	**.01508**	**-.00300**	**-.00178**
Stddev	.00561	.00397	.00337	.00063	.00007	.00181	.00090
%RSD	564.76	89.151	1.1976	298.77	.46075	60.257	50.451
#1	.00461	.00086	.27930	.00071	.01514	-.00337	-.00075
#2	-.00660	.00872	.28527	.00042	.01510	-.00460	-.00242
#3	-.00099	.00379	.27958	-.00049	.01501	-.00104	-.00216
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00081**	**1.1446**	F **-.43614**
Stddev	.00050	.0031	.84838
%RSD	62.022	.27294	194.52
#1	-.00076	1.1463	-1.4155
#2	-.00033	1.1465	.03308
#3	-.00133	1.1410	.07397
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7941.2**	**46277.**	**2697.2**
Stddev	6.4	100.	31.9
%RSD	.08045	.21669	1.1830
#1	7934.3	46242.	2679.7
#2	7942.5	46199.	2734.0
#3	7946.9	46390.	2677.8

Approved: June 20, 2016

Sample Name: L1606067002 Acquired: 6/17/2016 12:16:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00155	.05880	-.00082	.04015	.05108	.00006	24.577	.00031
Stddev	.00034	.00580	.00131	.00038	.00098	.00004	.305	.00026
%RSD	21.865	9.8641	160.05	.94685	1.9259	78.550	1.2418	85.073
#1	.00189	.06549	-.00224	.04035	.05083	.00001	24.904	.00009
#2	.00154	.05549	-.00058	.03971	.05217	.00007	24.528	.00024
#3	.00121	.05541	.00036	.04038	.05025	.00009	24.300	.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00696	.00241	.00345	22.450	.22207	.00057	1.2845	.16283
Stddev	.00008	.00103	.00097	.230	.06141	.00238	.0890	.00589
%RSD	1.1049	42.698	27.978	1.0254	27.651	421.21	6.9276	3.6177
#1	.00703	.00205	.00256	22.711	.19226	-.00185	1.1827	.16844
#2	.00697	.00160	.00332	22.361	.18126	.00291	1.3234	.16336
#3	.00688	.00356	.00448	22.277	.29270	.00063	1.3475	.15670
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00300	152.85	.17549	.00009	.00178	.00081	.00388	.88538
Stddev	.00016	1.54	.00080	.00389	.00218	.00347	.00468	.00451
%RSD	5.3346	1.0079	.45734	4264.0	122.44	429.37	120.46	.50915
#1	.00283	154.37	.17513	-.00135	-.00037	-.00314	.00422	.88146
#2	.00302	152.88	.17493	-.00287	.00172	.00337	.00839	.89031
#3	.00314	151.29	.17641	.00449	.00399	.00219	-.00095	.88438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 20, 2016

Sample Name: L1606067002 Acquired: 6/17/2016 12:16:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	.13121	-.00128	.00112	-.00154	.50528	2.7527
Stddev	.00034	.00140	.00497	.00287	.00064	.00087	1.0430
%RSD	60.645	1.0647	388.24	255.80	41.815	.17190	37.889
#1	.00021	.13281	.00027	-.00014	-.00144	.50444	3.9489
#2	.00089	.13021	.00273	-.00090	-.00223	.50617	2.2757
#3	.00056	.13062	-.00684	.00440	-.00095	.50524	2.0336
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7893.4	45571.	2616.3
Stddev	38.6	127.	30.6
%RSD	.48950	.27775	1.1687
#1	7937.5	45436.	2581.1
#2	7865.4	45686.	2635.6
#3	7877.4	45591.	2632.3

Approved: June 20, 2016

Sample Name: L1606067003 Acquired: 6/17/2016 12:20:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	.01385	.00161	.05048	.06068	-.00001	3.7138	.00019
Stddev	.00190	.00455	.00223	.00433	.00162	.00002	.0866	.00010
%RSD	418.66	32.817	138.57	8.5741	2.6775	170.38	2.3310	51.761
#1	.00252	.00865	.00282	.04584	.06212	.00001	3.8100	.00008
#2	.00008	.01708	-.00097	.05121	.06101	-.00003	3.6421	.00025
#3	-.00123	.01583	.00298	.05440	.05892	-.00002	3.6894	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00608	.00072	.00078	3.8538	1.9027	.00308	30.154	.15818
Stddev	.00031	.00111	.00137	.0549	.0750	.00380	.338	.00162
%RSD	5.0180	153.86	175.32	1.4239	3.9399	123.34	1.1195	1.0244
#1	.00593	.00071	-.00079	3.8787	1.9655	.00181	30.472	.15854
#2	.00644	-.00038	.00145	3.7909	1.8197	.00736	29.800	.15640
#3	.00589	.00183	.00169	3.8918	1.9227	.00008	30.191	.15958
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02022	150.89	.03466	.01034	.00366	-.00118	-.00160	1.2642
Stddev	.00025	1.41	.00082	.00899	.00106	.00630	.00426	.0015
%RSD	1.2202	.93337	2.3562	86.955	28.928	532.01	266.24	.12222
#1	.01993	152.36	.03527	.02067	.00471	-.00678	.00188	1.2656
#2	.02036	149.55	.03373	.00438	.00259	-.00240	-.00636	1.2645
#3	.02035	150.76	.03498	.00595	.00367	.00563	-.00032	1.2625
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 20, 2016

Sample Name: L1606067003 Acquired: 6/17/2016 12:20:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00049**	**.01440**	**-.00042**	**.00134**	**-.00072**	**.48135**	**.20887**
Stddev	.00101	.00045	.00813	.00215	.00035	.00035	.34186
%RSD	206.19	3.1547	1930.2	161.26	48.087	.07233	163.67
#1	-.00150	.01413	-.00926	.00116	-.00097	.48098	.47523
#2	-.00050	.01493	.00125	.00357	-.00033	.48167	-.17662
#3	.00052	.01416	.00675	-.00073	-.00087	.48140	.32799
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7908.4**	**45757.**	**2628.9**
Stddev	3.3	124.	36.2
%RSD	.04138	.27062	1.3781
#1	7912.1	45620.	2592.1
#2	7905.9	45861.	2664.5
#3	7907.2	45791.	2630.0

Approved: June 20, 2016

Sample Name: L1606067005 Acquired: 6/17/2016 12:24:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00455	.01819	-.00096	.05832	.27991	-.00004	2.2462	.00004
Stddev	.00108	.00693	.00214	.00068	.00085	.00009	.0310	.00035
%RSD	23.829	38.106	223.74	1.1738	.30483	228.21	1.3797	930.32
#1	.00458	.02252	.00126	.05859	.28041	-.00002	2.2788	-.00030
#2	.00562	.01019	-.00111	.05883	.28039	-.00014	2.2171	.00040
#3	.00345	.02186	-.00302	.05754	.27892	.00004	2.2428	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	-.00125	-.00164	59.421	1.9849	.00693	.19294	1.4913
Stddev	.00045	.00092	.00078	.403	.0543	.00245	.08432	.0124
%RSD	70.869	73.682	47.671	.67883	2.7352	35.309	43.703	.82788
#1	.00012	-.00228	-.00191	59.733	1.9470	.00423	.23987	1.5054
#2	.00095	-.00094	-.00076	59.565	2.0471	.00757	.09559	1.4829
#3	.00084	-.00052	-.00226	58.966	1.9606	.00899	.24334	1.4855
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00029	156.41	.00179	-.00019	.00326	.00140	.00316	.09588
Stddev	.00025	1.10	.00040	.00313	.00367	.00217	.00391	.00242
%RSD	85.657	.70431	22.374	1641.3	112.71	155.43	123.64	2.5275
#1	-.00049	157.44	.00168	.00336	.00540	.00365	.00635	.09400
#2	-.00035	156.52	.00145	-.00141	-.00098	.00124	-.00120	.09503
#3	-.00001	155.25	.00223	-.00252	.00536	-.00069	.00433	.09862
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 20, 2016

Sample Name: L1606067005 Acquired: 6/17/2016 12:24:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	.01594	.01809	.00245	-.00306	.01367	8.8463
Stddev	.00074	.00055	.00888	.00221	.00081	.00017	.3767
%RSD	129.63	3.4651	49.103	90.326	26.562	1.2785	4.2585
#1	.00088	.01653	.02470	.00473	-.00226	.01376	8.4131
#2	-.00027	.01544	.00799	.00032	-.00388	.01378	9.0973
#3	.00110	.01586	.02159	.00229	-.00304	.01346	9.0285
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7892.2	45637.	2646.1
Stddev	6.7	42.	23.8
%RSD	.08478	.09265	.90077
#1	7899.9	45638.	2618.6
#2	7887.9	45595.	2659.7
#3	7888.8	45680.	2660.1

Approved: June 20, 2016

Sample Name: L1606067006 Acquired: 6/17/2016 12:28:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00226**	**.05749**	**-.00386**	**.18678**	**.01053**	**.00004**	**58.720**
Stddev	.00244	.01120	.00189	.00131	.00193	.00011	.732
%RSD	108.17	19.485	48.956	.69869	18.359	302.46	1.2465
#1	-.00267	.04579	-.00270	.18576	.01171	.00003	59.300
#2	-.00447	.05857	-.00284	.18825	.00830	.00015	58.963
#3	.00036	.06811	-.00605	.18633	.01159	-.00007	57.897
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00527**	**.06476**	**.00232**	**.06377**	**-.01000**	**28.533**	**.03166**
Stddev	.00025	.00027	.00055	.00155	.01919	.199	.00413
%RSD	4.7049	.42361	23.570	2.4364	191.85	.69573	13.048
#1	.00509	.06458	.00219	.06210	-.01502	28.667	.03623
#2	.00555	.06508	.00292	.06402	-.02619	28.626	.02818
#3	.00517	.06462	.00186	.06518	.01120	28.304	.03058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.5750**	**.22090**	**6.5316**	**178.40**	**.06587**	**.02974**	**.00395**
Stddev	.1465	.00162	.0110	.72	.00021	.00408	.00345
%RSD	1.9338	.73236	.16809	.40091	.32225	13.715	87.484
#1	7.7275	.21949	6.5348	179.20	.06563	.03312	.00205
#2	7.5621	.22267	6.5406	177.81	.06593	.02521	.00794
#3	7.4354	.22055	6.5194	178.20	.06604	.03091	.00186
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606067006 Acquired: 6/17/2016 12:28:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.01248**	**.00358**	**1.8585**	**.00003**	**.36215**	**-.00125**	**.00194**
Stddev	.00104	.00640	.0057	.00040	.00305	.00663	.00114
%RSD	8.3527	178.89	.30852	1224.6	.84180	528.49	58.982
#1	-.01343	-.00272	1.8522	-.00023	.36567	.00639	.00124
#2	-.01136	.01007	1.8635	-.00017	.36028	-.00481	.00326
#3	-.01265	.00338	1.8597	.00049	.36051	-.00534	.00132
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00752**	**22.441**	F **-2.9257**
Stddev	.00058	.031	.7034
%RSD	7.6638	.13644	24.042
#1	-.00765	22.417	-3.0594
#2	-.00802	22.476	-2.1650
#3	-.00689	22.430	-3.5526
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7806.9**	**45129.**	**2623.8**
Stddev	9.6	200.	9.0
%RSD	.12236	.44298	.34290
#1	7806.9	45316.	2627.8
#2	7816.4	44918.	2613.5
#3	7797.3	45154.	2630.2

Approved: June 20, 2016

Sample Name: L1606067007 Acquired: 6/17/2016 12:32:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00093	.04231	.00120	.01307	.01733	.00002	.60157
Stddev	.00152	.00802	.00228	.00241	.00179	.00005	.03440
%RSD	163.01	18.965	189.81	18.423	10.354	217.49	5.7190
#1	-.00015	.04964	.00043	.01030	.01553	-.00001	.56822
#2	.00027	.04355	-.00060	.01418	.01735	.00008	.59957
#3	.00267	.03374	.00377	.01472	.01912	.00000	.63694
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	.00208	.00152	.00096	.00365	.16595	.00621
Stddev	.00031	.00022	.00070	.00038	.03602	.13503	.00233
%RSD	2598.1	10.506	46.245	39.072	988.17	81.368	37.582
#1	-.00011	.00211	.00168	.00054	-.03779	.07109	.00654
#2	.00033	.00185	.00212	.00126	.02121	.10621	.00836
#3	-.00026	.00228	.00075	.00109	.02752	.32054	.00373
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02121	.00366	.01581	F 1307.0	-.00013	.00844	.00361
Stddev	.05791	.00015	.00134	14.7	.00113	.00740	.00187
%RSD	273.01	4.1662	8.5005	1.1273	881.12	87.711	51.804
#1	-.02718	.00354	.01426	1296.4	-.00110	.00452	.00251
#2	.08537	.00383	.01653	1300.8	-.00040	.01697	.00255
#3	.00545	.00360	.01665	1323.8	.00112	.00382	.00576
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 20, 2016

Sample Name: L1606067007 Acquired: 6/17/2016 12:32:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00251**	**.00845**	**.03115**	**.00037**	**.00096**	**.00038**	**-.00034**
Stddev	.00522	.00701	.00253	.00046	.00010	.00416	.00140
%RSD	207.48	82.965	8.1231	122.53	10.594	1082.7	413.12
#1	-.00294	.00336	.03139	-.00010	.00093	.00159	-.00195
#2	.00290	.00554	.03355	.00041	.00107	.00381	.00051
#3	-.00750	.01644	.02851	.00081	.00087	-.00424	.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00070**	**.00843**	F **-1.2781**
Stddev	.00147	.00006	.2773
%RSD	211.46	.75238	21.697
#1	.00054	.00838	-1.5084
#2	-.00232	.00850	-.97026
#3	-.00030	.00841	-1.3555
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7452.5**	**42093.**	**2599.6**
Stddev	14.1	103.	8.2
%RSD	.18885	.24483	.31723
#1	7462.2	42201.	2606.2
#2	7458.8	41996.	2602.1
#3	7436.3	42082.	2590.3

Approved: June 20, 2016

Sample Name: L1606061601 Acquired: 6/17/2016 12:36:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	-.00413	.00049	.00152	.00046	.00007	.05455
Stddev	.00050	.01396	.00195	.00223	.00115	.00003	.05186
%RSD	225.35	338.45	401.35	147.22	250.91	43.566	95.082
#1	.00080	-.01946	-.00100	.00229	-.00009	.00004	.11136
#2	-.00007	-.00077	.00269	.00326	.00179	.00010	.00975
#3	-.00006	.00786	-.00023	-.00100	-.00031	.00007	.04253
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.00061	.00169	.00189	.00393	.02488	.00232
Stddev	.00025	.00034	.00102	.00063	.01875	.11264	.00040
%RSD	2970.6	56.175	60.092	33.501	477.21	452.66	17.239
#1	.00030	.00033	.00285	.00129	-.01401	-.10427	.00248
#2	-.00012	.00052	.00126	.00183	.02340	.07613	.00186
#3	-.00015	.00099	.00096	.00255	.00239	.10280	.00261
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05225	.00210	.00182	1.5251	.00394	.00658	.00147
Stddev	.01373	.00109	.00036	.0231	.00159	.00854	.00198
%RSD	26.278	51.883	19.648	1.5174	40.346	129.78	135.29
#1	.06542	.00315	.00142	1.5257	.00211	.00465	.00020
#2	.03802	.00098	.00212	1.5480	.00475	.01593	.00044
#3	.05331	.00216	.00191	1.5017	.00497	-.00083	.00375
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606061601 Acquired: 6/17/2016 12:36:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00368**	**.00706**	**.17005**	**-.00037**	**.00098**	**.00642**	**.00427**
Stddev	.00120	.00460	.00042	.00013	.00014	.00750	.00118
%RSD	32.607	65.247	.24576	35.405	13.834	116.82	27.618
#1	-.00289	.01121	.16958	-.00052	.00091	.01504	.00458
#2	-.00308	.00210	.17022	-.00031	.00114	.00272	.00296
#3	-.00506	.00787	.17036	-.00028	.00091	.00149	.00525
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00037**	**.00078**	F **-1.3475**
Stddev	.00088	.00010	.2777
%RSD	237.27	13.358	20.607
#1	-.00138	.00090	-1.3751
#2	.00002	.00073	-1.0570
#3	.00024	.00071	-1.6103
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8663.3**	**50331.**	**2762.2**
Stddev	31.1	174.	28.9
%RSD	.35924	.34495	1.0470
#1	8691.7	50513.	2795.2
#2	8668.1	50168.	2750.0
#3	8630.0	50311.	2741.3

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 12:40:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40259	10.034	.39707	.50358	1.0008	.04990	9.8983
Stddev	.00151	.017	.00317	.00792	.0026	.00051	.0232
%RSD	.37613	.16949	.79746	1.5718	.25611	1.0232	.23423
#1	.40127	10.017	.40053	.49643	1.0031	.04960	9.9036
#2	.40225	10.051	.39432	.50224	.99807	.04962	9.9183
#3	.40424	10.034	.39636	.51209	1.0012	.05049	9.8729
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05023	.20196	.50156	.50755	4.0176	49.539	.99433
Stddev	.00028	.00015	.00463	.00059	.0210	.071	.00337
%RSD	.55521	.07216	.92328	.11554	.52294	.14348	.33903
#1	.05032	.20198	.50094	.50687	4.0313	49.539	.99179
#2	.05045	.20181	.49726	.50792	3.9934	49.467	.99304
#3	.04991	.20210	.50646	.50785	4.0281	49.609	.99815
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.8756	.50002	1.0130	49.307	.50754	9.9892	.50540
Stddev	.0696	.00355	.0025	.244	.00053	.0098	.00144
%RSD	.70456	.71056	.25114	.49558	.10449	.09789	.28482
#1	9.9266	.49702	1.0158	49.513	.50703	9.9937	.50654
#2	9.7963	.49909	1.0109	49.037	.50750	9.9780	.50378
#3	9.9038	.50394	1.0122	49.370	.50809	9.9959	.50589
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 12:40:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1998**	**.39997**	**5.0616**	**1.0076**	**.99807**	**.99269**	**.51194**
Stddev	.0017	.00582	.0045	.0024	.00234	.00668	.00169
%RSD	.13832	1.4545	.08867	.24129	.23439	.67335	.33053
#1	1.2014	.39394	5.0607	1.0074	.99911	.99424	.51372
#2	1.1981	.40043	5.0576	1.0053	.99539	.98537	.51036
#3	1.1999	.40555	5.0665	1.0101	.99971	.99847	.51173
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0066**	**1.0069**	F **-.20276**
Stddev	.0073	.0004	.59121
%RSD	.72477	.03572	291.58
#1	1.0008	1.0072	-.88256
#2	1.0041	1.0065	.08301
#3	1.0148	1.0069	.19127
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8312.9**	**48244.**	**2734.5**
Stddev	25.0	170.	4.7
%RSD	.30110	.35229	.17317
#1	8284.0	48062.	2730.3
#2	8326.3	48271.	2733.5
#3	8328.3	48399.	2739.7

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 12:43:47 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.00465	.00279	.00333	-.00001	.00004	.00520
Stddev	.00060	.00705	.00119	.00045	.00064	.00007	.03896
%RSD	435.03	151.56	42.736	13.392	6847.7	180.83	749.44
#1	.00016	-.00337	.00416	.00309	.00048	.00012	-.03108
#2	.00073	.00747	.00212	.00304	-.00074	.00001	.04637
#3	-.00048	.00985	.00207	.00384	.00023	-.00001	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00000	.00039	.00011	.00051	.00447	.08752	.00125
Stddev	.00018	.00013	.00148	.00108	.02769	.06716	.00416
%RSD	4348.2	33.960	1329.5	213.76	618.95	76.742	331.78
#1	.00021	.00049	-.00144	-.00047	.02848	.10099	-.00243
#2	-.00012	.00045	.00027	.00031	-.02582	.14693	.00044
#3	-.00008	.00024	.00150	.00167	.01075	.01464	.00576
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	-.00112	.00436	.01965	.00067	.00347	-.00106
Stddev	.08495	.00228	.00040	.02101	.00056	.00756	.00480
%RSD	68385.	204.23	9.2142	106.94	83.402	217.93	451.92
#1	-.03797	.00066	.00393	.01528	.00056	.00623	-.00657
#2	.09745	-.00369	.00443	.04251	.00128	.00926	.00223
#3	-.05912	-.00033	.00472	.00117	.00018	-.00508	.00116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 12:43:47 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00299**	**.00722**	**.00388**	**-.00022**	**-.00026**	**-.00404**	**.00231**
Stddev	.00516	.00577	.00149	.00027	.00020	.00554	.00224
%RSD	172.65	79.938	38.532	123.27	76.736	136.95	96.981
#1	.00795	.00533	.00544	-.00005	-.00012	.00096	.00030
#2	-.00235	.01371	.00373	-.00008	-.00018	-.01000	.00191
#3	.00337	.00263	.00247	-.00054	-.00049	-.00309	.00473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00008**	**-.00009**	F **-.65716**
Stddev	.00087	.00011	1.2876
%RSD	1054.2	123.19	195.93
#1	-.00108	-.00022	-.14397
#2	.00033	-.00004	-2.1222
#3	.00050	-.00001	.29468
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8540.1**	**49363.**	**2759.6**
Stddev	14.3	131.	21.0
%RSD	.16752	.26598	.75970
#1	8539.0	49214.	2735.6
#2	8554.9	49414.	2773.8
#3	8526.3	49462.	2769.5

Approved: June 20, 2016

Sample Name: L1606061602 Acquired: 6/17/2016 12:47:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00012	.00999	-.00070	.00871	.02669	.00003	2.4577	.00016
Stddev	.00110	.01245	.00210	.00151	.00074	.00003	.0256	.00014
%RSD	891.84	124.61	299.44	17.350	2.7562	119.40	1.0410	88.202
#1	-.00051	.00528	-.00249	.00719	.02693	.00001	2.4283	.00019
#2	.00112	.02411	-.00122	.01021	.02586	.00001	2.4755	.00001
#3	-.00098	.00059	.00161	.00874	.02727	.00007	2.4691	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.00043	.00152	2.8869	.08506	.00090	1.3655	.06382
Stddev	.00015	.00110	.00074	.0135	.07620	.00337	.1522	.00178
%RSD	29.674	256.33	48.736	.46623	89.583	375.67	11.142	2.7952
#1	.00041	-.00052	.00223	2.8950	.16469	.00403	1.1908	.06204
#2	.00069	.00163	.00158	2.8714	.07764	-.00266	1.4364	.06381
#3	.00044	.00018	.00075	2.8943	.01284	.00132	1.4693	.06561
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	12.791	.00066	.01183	.00031	-.00248	-.00116	.56616
Stddev	.00018	.070	.00093	.00658	.00357	.00635	.00591	.00549
%RSD	22.960	.54543	142.17	55.645	1167.1	256.56	509.97	.97044
#1	.00060	12.722	-.00033	.00764	.00414	.00437	.00319	.56005
#2	.00095	12.862	.00078	.01942	-.00292	-.00817	-.00789	.56774
#3	.00077	12.789	.00152	.00843	-.00031	-.00363	.00123	.57070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 20, 2016

Sample Name: L1606061602 Acquired: 6/17/2016 12:47:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	.05935	.00269	.00495	.00051	.00088	.00945
Stddev	.00046	.00019	.01122	.00265	.00096	.00008	.94538
%RSD	223.50	.31760	416.74	53.629	186.89	9.4826	10002.
#1	.00064	.05914	.01435	.00577	.00119	.00093	.53652
#2	.00027	.05941	-.00804	.00198	.00093	.00092	.57381
#3	-.00028	.05950	.00178	.00710	-.00058	.00078	-1.0820
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8657.9	50038.	2787.4
Stddev	24.1	125.	10.2
%RSD	.27858	.25061	.36584
#1	8681.8	49989.	2782.1
#2	8658.3	50181.	2780.9
#3	8633.5	49945.	2799.1

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 12:51:46 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40321	10.065	.39762	.49765	.99188	.04994	9.7685
Stddev	.00157	.019	.00176	.00258	.00705	.00017	.0179
%RSD	.38924	.18584	.44295	.51852	.71118	.34253	.18370
#1	.40389	10.054	.39840	.49698	.98374	.05014	9.7632
#2	.40142	10.087	.39561	.49547	.99570	.04982	9.7538
#3	.40433	10.055	.39886	.50050	.99620	.04987	9.7885
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04967	.20043	.50391	.50540	3.9918	49.017	.98795
Stddev	.00040	.00107	.00125	.00376	.0294	.277	.00723
%RSD	.80224	.53546	.24765	.74364	.73521	.56512	.73224
#1	.05007	.20119	.50519	.50967	3.9657	48.697	.98176
#2	.04968	.19920	.50385	.50260	3.9862	49.171	.99590
#3	.04927	.20088	.50269	.50393	4.0235	49.182	.98620
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.8468	.49592	1.0088	48.786	.50505	9.9594	.50500
Stddev	.0418	.00213	.0074	.198	.00079	.0662	.00113
%RSD	.42421	.42896	.73557	.40500	.15545	.66509	.22414
#1	9.8038	.49373	1.0174	48.612	.50569	10.035	.50630
#2	9.8873	.49605	1.0050	49.001	.50417	9.9327	.50443
#3	9.8492	.49797	1.0041	48.747	.50528	9.9106	.50426
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 12:51:46 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2065**	**.40096**	**5.0465**	**1.0060**	**.98842**	**.98924**	**.51100**
Stddev	.0059	.00459	.0226	.0055	.00372	.00572	.00177
%RSD	.48470	1.1452	.44712	.55067	.37633	.57817	.34647
#1	1.2089	.39861	5.0724	1.0120	.98438	.99302	.51295
#2	1.2107	.39803	5.0361	1.0049	.99171	.99204	.50949
#3	1.1998	.40626	5.0310	1.0011	.98917	.98266	.51057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0049**	**1.0033**	F **.41612**
Stddev	.0015	.0038	1.1661
%RSD	.14560	.38263	280.24
#1	1.0036	1.0076	1.6653
#2	1.0065	1.0022	-.64378
#3	1.0046	1.0002	.22685
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8400.8**	**48148.**	**2777.2**
Stddev	39.9	150.	16.1
%RSD	.47452	.31222	.57794
#1	8355.7	47987.	2790.8
#2	8415.3	48285.	2759.5
#3	8431.4	48171.	2781.3

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 12:55:24 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00087**	**-.00262**	**-.00076**	**.00349**	**-.00150**	**-.00000**	**-.01068**
Stddev	.00044	.00910	.00209	.00251	.00048	.00002	.03141
%RSD	50.097	347.86	275.26	71.866	31.785	506.93	294.22
#1	-.00072	-.01182	.00139	.00429	-.00134	-.00002	.01158
#2	-.00136	-.00241	-.00278	.00551	-.00204	.00002	-.04661
#3	-.00053	.00638	-.00088	.00068	-.00113	-.00002	.00300
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00011**	**.00029**	**.00048**	**.00100**	**-.00487**	**.02597**	**.00310**
Stddev	.00010	.00017	.00048	.00037	.01799	.06993	.00410
%RSD	94.022	59.092	100.85	37.272	369.77	269.27	132.44
#1	.00005	.00047	.00102	.00069	-.00800	-.03335	.00085
#2	.00023	.00012	.00008	.00090	-.02109	.00819	.00061
#3	.00005	.00028	.00034	.00142	.01449	.10307	.00783
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03187**	**-.00036**	**.00466**	**.03053**	**.00044**	**.00448**	**-.00065**
Stddev	.06017	.00223	.00024	.00814	.00079	.00818	.00432
%RSD	188.80	614.90	5.1364	26.674	180.81	182.58	661.89
#1	.07996	-.00286	.00443	.03667	.00060	.01009	.00025
#2	.05126	.00035	.00491	.02129	-.00042	.00826	.00315
#3	-.03561	.00143	.00463	.03363	.00114	-.00491	-.00536
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 12:55:24 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00379**	**-.00035**	**.00078**	**.00046**	**-.00030**	**.00242**	**.00130**
Stddev	.00447	.00602	.00205	.00059	.00021	.00768	.00303
%RSD	117.74	1742.4	261.77	128.51	69.584	317.90	233.75
#1	.00761	-.00691	-.00156	.00029	-.00053	.00854	.00297
#2	-.00112	.00096	.00169	-.00003	-.00025	.00490	-.00220
#3	.00488	.00491	.00222	.00111	-.00012	-.00620	.00313
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00015**	**-.00007**	F **-.46665**
Stddev	.00090	.00022	.59934
%RSD	617.89	311.98	128.44
#1	-.00084	-.00001	-.14621
#2	.00087	-.00032	-.09564
#3	-.00047	.00011	-1.1581
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8553.3**	**49737.**	**2774.9**
Stddev	11.5	70.	15.2
%RSD	.13483	.14137	.54902
#1	8560.8	49754.	2792.4
#2	8559.0	49660.	2764.5
#3	8540.0	49797.	2767.8

Approved: June 20, 2016

Sample Name: LLCCV Acquired: 6/17/2016 12:59:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00763**	**.16329**	**.00674**	**.07950**	**.00850**	**.00160**	**.39252**
Stddev	.00087	.00297	.00088	.00111	.00031	.00001	.03729
%RSD	11.383	1.8194	13.019	1.3910	3.6155	.81412	9.4993
#1	.00664	.16122	.00667	.07843	.00869	.00158	.41491
#2	.00828	.16670	.00591	.07944	.00866	.00160	.41317
#3	.00796	.16195	.00766	.08064	.00815	.00161	.34948
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00070**	**.00418**	**.00341**	**.00461**	**.06475**	**.83042**	**.07956**
Stddev	.00011	.00009	.00040	.00216	.00879	.04857	.00568
%RSD	15.278	2.0592	11.830	46.876	13.580	5.8485	7.1379
#1	.00067	.00411	.00373	.00484	.06539	.78229	.07601
#2	.00062	.00416	.00354	.00234	.07321	.82954	.07656
#3	.00082	.00428	.00296	.00665	.05566	.87942	.08610
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.44075**	**.00943**	**.00830**	**.40927**	**.01572**	**.76113**	**.00688**
Stddev	.07994	.00307	.00015	.02156	.00225	.00670	.00103
%RSD	18.138	32.585	1.7739	5.2681	14.312	.88088	15.016
#1	.50106	.00590	.00820	.40276	.01340	.75524	.00791
#2	.47111	.01091	.00847	.39171	.01789	.76843	.00584
#3	.35007	.01149	.00823	.43333	.01587	.75971	.00691
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: LLCCV Acquired: 6/17/2016 12:59:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.07905	.02381	.78129	.39557	.03967	.02951	.15259
Stddev	.00128	.00351	.00263	.00128	.00026	.00966	.00286
%RSD	1.6230	14.751	.33713	.32479	.66394	32.746	1.8716
#1	.08019	.02751	.78182	.39669	.03940	.04021	.15436
#2	.07930	.02340	.77843	.39585	.03993	.02693	.14929
#3	.07766	.02052	.78361	.39417	.03968	.02141	.15411
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00763	.01676	F -72.684
Stddev	.00123	.00007	.914
%RSD	16.100	.43178	1.2570
#1	.00623	.01681	-73.737
#2	.00853	.01668	-72.111
#3	.00813	.01679	-72.202
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8575.9	49841.	2780.9
Stddev	14.1	178.	31.7
%RSD	.16390	.35779	1.1410
#1	8560.3	49859.	2755.4
#2	8587.5	49655.	2816.4
#3	8579.9	50010.	2770.9

Approved: June 20, 2016

Sample Name: LLCCV Acquired: 6/17/2016 13:03:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01932**	**.39890**	**.01856**	**.19698**	**.01840**	**.00388**	**.97551**
Stddev	.00082	.00371	.00152	.00373	.00087	.00008	.03607
%RSD	4.2512	.92957	8.1990	1.8942	4.7410	1.9913	3.6977
#1	.01887	.40314	.02030	.19962	.01940	.00391	.93393
#2	.01882	.39626	.01795	.19271	.01779	.00379	.99841
#3	.02026	.39730	.01744	.19861	.01800	.00393	.99419
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00205**	**.00988**	**.01025**	**.01095**	**.18108**	**1.9716**	**.19771**
Stddev	.00012	.00010	.00033	.00057	.02403	.0960	.00157
%RSD	5.8488	.96987	3.2076	5.2037	13.268	4.8702	.79536
#1	.00201	.00977	.00990	.01069	.20860	2.0743	.19798
#2	.00195	.00994	.01055	.01161	.16428	1.9562	.19913
#3	.00218	.00993	.01031	.01056	.17037	1.8842	.19602
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.96500**	**.01941**	**.01942**	**1.0075**	**.04035**	**1.8845**	**.01906**
Stddev	.06843	.00120	.00029	.0191	.00053	.0021	.00296
%RSD	7.0910	6.1906	1.4938	1.8973	1.3011	.10989	15.541
#1	.89207	.01810	.01909	1.0014	.04043	1.8834	.02206
#2	1.0278	.01965	.01956	1.0289	.03979	1.8833	.01897
#3	.97515	.02046	.01961	.99208	.04083	1.8869	.01614
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: LLCCV Acquired: 6/17/2016 13:03:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19274**	**.04290**	**1.9251**	**.97894**	**.09808**	**.06108**	**.37557**
Stddev	.00269	.00209	.0052	.00109	.00083	.00323	.00305
%RSD	1.3981	4.8674	.26763	.11133	.84904	5.2959	.81211
#1	.19578	.04123	1.9201	.97845	.09896	.06045	.37437
#2	.19179	.04224	1.9247	.98018	.09795	.06458	.37330
#3	.19065	.04524	1.9304	.97817	.09731	.05820	.37903
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.01958**	**.04048**	F **-186.68**
Stddev	.00055	.00027	1.52
%RSD	2.7914	.66854	.81469
#1	.01896	.04025	-188.42
#2	.01980	.04043	-185.98
#3	.01998	.04078	-185.63
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8559.0**	**49632.**	**2773.7**
Stddev	41.1	137.	21.0
%RSD	.47996	.27536	.75624
#1	8554.1	49528.	2754.2
#2	8602.3	49581.	2771.0
#3	8520.6	49786.	2795.9

Approved: June 20, 2016

Sample Name: L1606064101 Acquired: 6/17/2016 13:07:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00033**	**.05648**	**.00204**	**.01560**	**.07561**	**-.00007**	**46.338**
Stddev	.00088	.01127	.00089	.00022	.00127	.00008	.273
%RSD	264.63	19.956	43.823	1.3884	1.6757	118.97	.58909
#1	-.00104	.05948	.00305	.01578	.07416	-.00012	46.630
#2	-.00061	.04401	.00134	.01536	.07617	-.00010	46.295
#3	.00065	.06595	.00173	.01566	.07650	.00002	46.089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**-.00023**	**.00127**	**.00143**	**.21251**	**1.5925**	**.00639**
Stddev	.00019	.00002	.00079	.00076	.01733	.0248	.00144
%RSD	123.71	9.6721	62.187	53.145	8.1528	1.5552	22.584
#1	-.00006	-.00021	.00215	.00202	.20854	1.6140	.00796
#2	.00022	-.00024	.00102	.00057	.23147	1.5980	.00512
#3	.00029	-.00025	.00063	.00170	.19751	1.5654	.00609
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.5382**	**.00900**	**.00100**	**4.3492**	**-.00117**	**.03525**	**-.00165**
Stddev	.0305	.00182	.00020	.0207	.00055	.01034	.00238
%RSD	.40448	20.171	20.252	.47525	47.370	29.341	144.64
#1	7.5030	.00790	.00119	4.3708	-.00070	.04676	.00094
#2	7.5556	.01110	.00079	4.3296	-.00178	.03228	-.00376
#3	7.5560	.00801	.00103	4.3473	-.00104	.02672	-.00212
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606064101 Acquired: 6/17/2016 13:07:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00260**	**.00249**	**5.6608**	**.00095**	**.21645**	**-.00735**	**.00238**
Stddev	.00217	.00769	.0142	.00080	.00133	.00615	.00330
%RSD	83.140	308.32	.25138	84.070	.61352	83.675	138.33
#1	.00140	-.00606	5.6772	.00133	.21750	-.01367	-.00105
#2	.00510	.00470	5.6524	.00003	.21690	-.00139	.00552
#3	.00131	.00884	5.6527	.00148	.21496	-.00698	.00267
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00100**	**.00413**	F **-.20609**
Stddev	.00069	.00009	1.2956
%RSD	68.589	2.1552	628.66
#1	-.00179	.00416	.23416
#2	-.00054	.00402	.81201
#3	-.00067	.00419	-1.6644
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7917.8**	**45938.**	**2625.3**
Stddev	26.8	103.	14.0
%RSD	.33814	.22454	.53205
#1	7904.1	45847.	2609.3
#2	7900.6	46050.	2631.5
#3	7948.6	45916.	2635.1

Approved: June 20, 2016

Sample Name: L1606064102 Acquired: 6/17/2016 13:11:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00074**	**.19802**	**-.00045**	**.02052**	**.05829**	**.00000**	**47.828**
Stddev	.00067	.00944	.00191	.00040	.00103	.00004	.102
%RSD	91.520	4.7660	427.25	1.9500	1.7705	815.14	.21393
#1	-.00149	.18728	-.00149	.02097	.05938	-.00004	47.938
#2	-.00051	.20497	.00175	.02039	.05816	.00003	47.737
#3	-.00021	.20182	-.00160	.02020	.05732	.00002	47.809
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00006**	**.00018**	**.00032**	**.00135**	**.23921**	**1.0317**	**.00592**
Stddev	.00040	.00046	.00046	.00195	.04165	.0384	.00385
%RSD	688.34	249.69	144.85	144.52	17.410	3.7208	65.039
#1	.00023	-.00034	.00074	.00317	.28018	1.0743	.01012
#2	.00034	.00035	-.00017	.00157	.24055	1.0212	.00509
#3	-.00040	.00054	.00038	-.00070	.19692	.99971	.00255
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**8.9909**	**.00717**	**.00092**	**4.3333**	**-.00079**	**.01073**	**.00128**
Stddev	.0888	.00192	.00035	.0513	.00079	.00671	.00276
%RSD	.98817	26.764	37.513	1.1841	99.449	62.584	215.46
#1	9.0912	.00932	.00119	4.3532	-.00140	.00916	.00264
#2	8.9219	.00563	.00053	4.2750	-.00109	.01808	.00309
#3	8.9598	.00656	.00105	4.3717	.00010	.00493	-.00189
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606064102 Acquired: 6/17/2016 13:11:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00354	.00568	4.7764	.00021	.27948	-.00567	.00039
Stddev	.00255	.00458	.0186	.00094	.00145	.00878	.00275
%RSD	72.182	80.635	.38852	437.29	.52025	154.71	705.23
#1	.00326	.00332	4.7940	-.00051	.27999	-.00520	-.00132
#2	.00113	.00275	4.7780	-.00012	.28061	-.01468	.00356
#3	.00622	.01095	4.7570	.00128	.27784	.00286	-.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00032	.00358	F -1.4203
Stddev	.00071	.00005	.8582
%RSD	219.43	1.2623	60.424
#1	-.00054	.00361	-1.4684
#2	.00047	.00360	-.53905
#3	-.00089	.00352	-2.2534
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7939.2	46257.	2633.2
Stddev	26.7	28.	11.8
%RSD	.33643	.06014	.44637
#1	7924.1	46230.	2620.1
#2	7970.1	46285.	2637.1
#3	7923.5	46255.	2642.6

Approved: June 20, 2016

Sample Name: L1606064103 Acquired: 6/17/2016 13:15:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00049**	**.19986**	**-.00014**	**.02424**	**.06128**	**.00006**	**49.398**
Stddev	.00033	.00366	.00096	.00179	.00127	.00004	.163
%RSD	66.465	1.8289	666.89	7.3940	2.0734	58.015	.33042
#1	.00015	.19568	-.00024	.02220	.06251	.00006	49.584
#2	.00080	.20145	-.00105	.02494	.05997	.00003	49.277
#3	.00053	.20246	.00086	.02558	.06137	.00010	49.334
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00011**	**-.00013**	**.00026**	**.00141**	**.22968**	**.90140**	**.00726**
Stddev	.00036	.00030	.00108	.00213	.01302	.04169	.00385
%RSD	320.33	230.97	410.02	151.09	5.6691	4.6253	53.042
#1	.00052	-.00030	.00111	.00360	.22633	.91588	.00507
#2	-.00002	-.00031	.00062	-.00066	.21866	.85440	.01170
#3	-.00017	.00022	-.00095	.00129	.24405	.93392	.00500
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.4354**	**.00578**	**.00051**	**4.4770**	**-.00009**	**.00994**	**.00182**
Stddev	.1642	.00175	.00052	.0387	.00050	.00512	.00076
%RSD	1.7404	30.253	102.11	.86360	568.56	51.502	41.861
#1	9.5972	.00486	.00068	4.5203	-.00033	.01477	.00117
#2	9.2689	.00467	.00092	4.4647	-.00043	.01046	.00266
#3	9.4401	.00779	-.00008	4.4460	.00049	.00458	.00164
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606064103 Acquired: 6/17/2016 13:15:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00394	4.9300	.00027	.28984	-.00325	.00158
Stddev	.00494	.00678	.0059	.00129	.00141	.00509	.00137
%RSD	2751.6	171.97	.11960	481.42	.48480	156.72	86.647
#1	.00587	.01175	4.9349	.00152	.29145	-.00731	.00294
#2	-.00303	-.00050	4.9315	-.00106	.28887	-.00490	.00158
#3	-.00230	.00058	4.9234	.00035	.28919	.00246	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00064	.00256	F -.71501
Stddev	.00034	.00020	.86712
%RSD	53.948	7.8520	121.27
#1	.00027	.00275	.27709
#2	.00094	.00259	-1.0939
#3	.00070	.00235	-1.3282
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7920.9	46256.	2631.8
Stddev	23.0	140.	16.1
%RSD	.28988	.30261	.60997
#1	7947.4	46415.	2613.3
#2	7909.3	46199.	2642.4
#3	7906.1	46153.	2639.7

Approved: June 20, 2016

Sample Name: L1606064104 Acquired: 6/17/2016 13:18:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00159**	**.20655**	**-.00131**	**.01284**	**.08629**	**.00006**	**48.702**
Stddev	.00114	.00245	.00056	.00180	.00096	.00004	.138
%RSD	71.225	1.1851	42.742	13.985	1.1142	71.876	.28435
#1	-.00181	.20561	-.00178	.01090	.08518	.00010	48.798
#2	-.00037	.20933	-.00146	.01445	.08683	.00002	48.766
#3	-.00261	.20470	-.00069	.01318	.08686	.00006	48.543
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.00007**	**.00137**	**.00245**	**.28015**	**.72186**	**.00655**
Stddev	.00032	.00039	.00090	.00108	.01669	.09816	.00211
%RSD	635.93	582.50	65.701	44.231	5.9560	13.598	32.185
#1	-.00019	.00042	.00066	.00319	.26988	.83487	.00692
#2	-.00027	.00015	.00238	.00121	.29940	.67284	.00845
#3	.00031	-.00036	.00106	.00296	.27116	.65787	.00428
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.6502**	**.03400**	**.00076**	**2.4374**	**-.00005**	**.01888**	**-.00069**
Stddev	.1201	.00317	.00069	.0186	.00069	.00447	.00430
%RSD	2.5829	9.3180	90.708	.76096	1270.5	23.670	623.52
#1	4.5790	.03036	-.00001	2.4182	.00030	.02008	-.00534
#2	4.5827	.03552	.00096	2.4552	.00039	.01394	.00314
#3	4.7889	.03613	.00133	2.4388	-.00084	.02263	.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606064104 Acquired: 6/17/2016 13:18:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00228**	**.00338**	**4.8984**	**-.00006**	**.16923**	**-.00609**	**.00163**
Stddev	.00498	.00192	.0173	.00041	.00111	.00506	.00107
%RSD	218.27	56.926	.35278	713.73	.65407	83.091	65.336
#1	.00294	.00555	4.9132	-.00021	.17036	-.01168	.00068
#2	-.00281	.00271	4.9025	-.00037	.16917	-.00181	.00144
#3	-.00697	.00188	4.8794	.00041	.16815	-.00479	.00278
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00025**	**.00217**	F **-.44120**
Stddev	.00032	.00003	.90934
%RSD	125.97	1.3346	206.11
#1	-.00018	.00219	-1.0403
#2	.00003	.00218	-.88842
#3	-.00060	.00214	.60515
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7968.4**	**46430.**	**2631.7**
Stddev	6.0	168.	21.6
%RSD	.07558	.36102	.82186
#1	7962.4	46330.	2608.2
#2	7968.3	46623.	2636.1
#3	7974.5	46335.	2650.7

Approved: June 20, 2016

Sample Name: L1606064105 Acquired: 6/17/2016 13:22:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**.47157**	**-.00096**	**.01225**	**.08682**	**.00004**	**45.589**
Stddev	.00089	.01102	.00487	.00224	.00189	.00004	.271
%RSD	403.63	2.3376	509.53	18.295	2.1819	106.96	.59474
#1	-.00009	.47735	-.00325	.01479	.08898	.00008	45.901
#2	.00060	.47850	-.00426	.01142	.08604	.00001	45.411
#3	-.00116	.45886	.00464	.01055	.08544	.00002	45.454
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00056**	**.00049**	**.00220**	**.00123**	**.80365**	**.72227**	**.00959**
Stddev	.00004	.00004	.00101	.00085	.02270	.02567	.00145
%RSD	6.2961	9.1194	46.166	68.990	2.8249	3.5536	15.159
#1	.00052	.00049	.00332	.00046	.79019	.74973	.01086
#2	.00058	.00044	.00195	.00214	.79089	.71818	.00991
#3	.00057	.00053	.00133	.00110	.82986	.69889	.00801
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.5339**	**.05926**	**.00045**	**2.3780**	**.00126**	**.04069**	**.00396**
Stddev	.0379	.00116	.00003	.0111	.00013	.00322	.00189
%RSD	.83632	1.9524	5.6034	.46695	10.512	7.9095	47.741
#1	4.5179	.05899	.00043	2.3801	.00120	.04440	.00552
#2	4.5772	.05826	.00045	2.3879	.00117	.03859	.00449
#3	4.5065	.06053	.00048	2.3660	.00141	.03909	.00186
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606064105 Acquired: 6/17/2016 13:22:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00159	.01011	4.9025	.00024	.15933	.00317	.00227
Stddev	.00249	.00420	.0052	.00066	.00055	.00636	.00269
%RSD	156.29	41.595	.10620	271.15	.34281	200.77	118.53
#1	-.00093	.01022	4.8988	.00032	.15979	-.00116	.00022
#2	.00404	.00585	4.9084	.00085	.15948	.01046	.00532
#3	.00167	.01426	4.9002	-.00045	.15873	.00019	.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00006	.01480	F -.09882
Stddev	.00039	.00020	.13023
%RSD	619.42	1.3755	131.79
#1	-.00009	.01487	.05155
#2	.00051	.01495	-.17595
#3	-.00022	.01457	-.17205
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7976.4	46539.	2638.2
Stddev	6.9	133.	14.2
%RSD	.08658	.28627	.53997
#1	7976.3	46640.	2625.9
#2	7969.6	46388.	2635.0
#3	7983.4	46589.	2653.8

Approved: June 20, 2016

Sample Name: L1606064106 Acquired: 6/17/2016 13:26:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	.02838	.00013	.00927	.12466	-.00007	105.37	.00016
Stddev	.00289	.00454	.00179	.00244	.00125	.00003	.58	.00020
%RSD	1100.4	15.995	1369.9	26.279	1.0003	42.308	.55368	123.41
#1	.00182	.02906	.00186	.01051	.12600	-.00005	105.89	.00011
#2	-.00307	.03254	-.00172	.00646	.12354	-.00010	105.49	.00039
#3	.00204	.02354	.00026	.01084	.12445	-.00006	104.74	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.00054	.00201	.00445	.83679	.00683	6.0363	.00487
Stddev	.00038	.00049	.00114	.02181	.06428	.00233	.0892	.00336
%RSD	1003.7	89.676	56.518	489.99	7.6823	34.173	1.4772	69.045
#1	.00015	.00095	.00092	.02903	.80375	.00511	6.1061	.00099
#2	-.00039	.00068	.00319	-.01257	.91088	.00589	5.9358	.00672
#3	.00035	.00000	.00192	-.00311	.79576	.00948	6.0670	.00691
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	7.6446	.00033	.00367	-.00262	.00025	.00776	3.9880
Stddev	.00052	.1458	.00117	.00119	.00181	.00082	.00852	.0104
%RSD	125.48	1.9074	352.08	32.326	68.954	331.92	109.75	.25995
#1	.00096	7.8123	.00040	.00499	-.00393	-.00048	.01193	3.9814
#2	-.00006	7.5739	-.00087	.00332	-.00338	.00008	.01340	4.0000
#3	.00033	7.5477	.00146	.00269	-.00056	.00114	-.00204	3.9827
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 20, 2016

Sample Name: L1606064106 Acquired: 6/17/2016 13:26:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.25690	-.01758	.00171	-.00050	.00201	.06090
Stddev	.00058	.00161	.00410	.00031	.00067	.00017	.86036
%RSD	6363.9	.62701	23.338	17.892	134.03	8.2694	1412.9
#1	-.00023	.25773	-.02043	.00193	.00003	.00190	.69542
#2	-.00041	.25791	-.01288	.00184	-.00027	.00194	.40564
#3	.00067	.25504	-.01944	.00136	-.00125	.00220	-.91838
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7885.9	45940.	2630.8
Stddev	6.1	147.	23.8
%RSD	.07788	.31975	.90425
#1	7891.3	45858.	2612.3
#2	7887.2	46110.	2622.4
#3	7879.3	45853.	2657.6

Approved: June 20, 2016

Sample Name: L1606064107 Acquired: 6/17/2016 13:30:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00039**	**1.2812**	**.00120**	**.03469**	**.12839**	**.00017**	**92.244**
Stddev	.00076	.0108	.00118	.00046	.00227	.00000	.516
%RSD	193.51	.84566	97.959	1.3390	1.7668	2.3476	.55925
#1	-.00043	1.2937	.00247	.03475	.13100	.00017	92.836
#2	.00054	1.2746	.00014	.03511	.12688	.00017	91.891
#3	.00106	1.2753	.00100	.03419	.12729	.00017	92.004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**.00069**	**.00277**	**.00465**	**1.8801**	**2.2837**	**.00251**
Stddev	.00044	.00029	.00016	.00113	.0191	.0890	.00205
%RSD	473.46	41.549	5.7680	24.225	1.0138	3.8957	81.618
#1	.00039	.00097	.00281	.00336	1.9020	2.2825	.00109
#2	-.00047	.00071	.00291	.00521	1.8670	2.3733	.00486
#3	-.00020	.00040	.00260	.00539	1.8714	2.1954	.00158
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**6.7488**	**.19243**	**.00228**	**22.093**	**.00333**	**.10004**	**.00277**
Stddev	.2123	.00043	.00022	.156	.00106	.00588	.00231
%RSD	3.1463	.22363	9.7081	.70591	31.961	5.8775	83.638
#1	6.7242	.19255	.00254	22.265	.00212	.09326	.00363
#2	6.5499	.19279	.00216	21.959	.00410	.10327	.00014
#3	6.9724	.19196	.00215	22.056	.00378	.10360	.00452
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606064107 Acquired: 6/17/2016 13:30:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.00478**	**4.1303**	**-.00038**	**.23593**	**.00760**	**.00326**
Stddev	.00429	.00455	.0111	.00020	.00212	.00249	.00043
%RSD	37592.	95.065	.26764	52.924	.89723	32.694	13.216
#1	.00457	.00484	4.1332	-.00034	.23837	.00951	.00375
#2	-.00394	.00021	4.1181	-.00059	.23476	.00851	.00311
#3	-.00066	.00930	4.1397	-.00020	.23465	.00479	.00293
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00189**	**.03603**	F **-1.6555**
Stddev	.00041	.00004	2.4026
%RSD	21.867	.11223	145.13
#1	.00221	.03607	-1.0138
#2	.00142	.03599	.36109
#3	.00202	.03605	-4.3138
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7898.3**	**46152.**	**2637.4**
Stddev	11.9	160.	22.7
%RSD	.15117	.34759	.86190
#1	7909.3	46173.	2612.9
#2	7900.1	45982.	2657.8
#3	7885.6	46300.	2641.4

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 13:34:28 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40048	9.9849	.39522	.49977	.98951	.04951	9.8633
Stddev	.00129	.0284	.00157	.00436	.00330	.00024	.0039
%RSD	.32300	.28405	.39807	.87273	.33329	.47979	.03902
#1	.40147	10.017	.39377	.50415	.98574	.04978	9.8604
#2	.40095	9.9642	.39690	.49972	.99092	.04943	9.8619
#3	.39901	9.9733	.39500	.49543	.99187	.04932	9.8677
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04963	.20012	.49878	.50511	4.0051	49.291	.98830
Stddev	.00008	.00056	.00112	.00095	.0078	.093	.00326
%RSD	.16998	.28093	.22486	.18870	.19369	.18812	.33006
#1	.04966	.19947	.49844	.50438	4.0015	49.349	.98531
#2	.04970	.20044	.49788	.50619	4.0140	49.184	.99178
#3	.04954	.20045	.50004	.50475	3.9997	49.340	.98781
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.9276	.49714	1.0076	48.941	.50557	9.9569	.50531
Stddev	.0460	.00222	.0043	.081	.00152	.0250	.00097
%RSD	.46312	.44695	.42612	.16616	.30012	.25089	.19226
#1	9.8788	.49920	1.0112	48.854	.50397	9.9473	.50514
#2	9.9340	.49479	1.0086	48.953	.50698	9.9853	.50443
#3	9.9701	.49743	1.0028	49.015	.50576	9.9382	.50635
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 13:34:28 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2012**	**.40069**	**5.0422**	**1.0043**	**.98881**	**.98732**	**.50784**
Stddev	.0034	.00013	.0080	.0023	.00273	.00976	.00543
%RSD	.28578	.03132	.15842	.23245	.27581	.98843	1.0690
#1	1.2015	.40062	5.0330	1.0037	.98574	.97635	.50171
#2	1.2045	.40083	5.0468	1.0068	.99096	.99503	.51207
#3	1.1977	.40061	5.0469	1.0023	.98974	.99059	.50973
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.99772**	**1.0033**	F **-1.6859**
Stddev	.00186	.0020	.4745
%RSD	.18677	.20238	28.146
#1	.99972	1.0009	-1.7675
#2	.99740	1.0045	-2.1144
#3	.99604	1.0044	-1.1759
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8463.0**	**49213.**	**2794.6**
Stddev	37.3	322.	13.8
%RSD	.44113	.65453	.49258
#1	8500.7	49059.	2784.4
#2	8426.0	48997.	2810.3
#3	8462.4	49583.	2789.1

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 13:38:05 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00057	-.00860	-.00045	.00181	-.00017	-.00005	.01151
Stddev	.00222	.00982	.00261	.00109	.00011	.00010	.02694
%RSD	386.72	114.15	579.20	60.252	60.190	205.94	234.00
#1	.00190	-.00057	.00195	.00080	-.00018	-.00005	-.00196
#2	-.00122	-.00569	-.00007	.00297	-.00007	-.00014	-.00603
#3	-.00240	-.01955	-.00323	.00167	-.00028	.00005	.04252
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00049	.00014	.00079	-.01861	.00638	.00228
Stddev	.00021	.00036	.00081	.00092	.03157	.11128	.00373
%RSD	173.13	73.332	592.35	116.40	169.60	1745.1	163.69
#1	.00022	.00070	-.00077	.00123	-.01638	-.12115	.00653
#2	-.00012	.00071	.00079	.00140	.01178	.05647	.00072
#3	.00027	.00008	.00039	-.00027	-.05123	.08381	-.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.03065	.00024	.00421	-.00208	-.00064	.00358	-.00319
Stddev	.07012	.00116	.00009	.03359	.00032	.01200	.00401
%RSD	228.81	491.65	2.2346	1617.6	50.779	335.03	126.01
#1	-.00192	-.00058	.00412	.02733	-.00101	-.01015	.00129
#2	-.11057	-.00027	.00431	-.03868	-.00047	.00886	-.00436
#3	.02055	.00156	.00420	.00512	-.00043	.01204	-.00648
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 13:38:05 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00254	.00199	.00254	.00042	.00010	.00684	.00089
Stddev	.00568	.00036	.00056	.00075	.00009	.00747	.00237
%RSD	223.72	17.919	22.062	179.41	86.103	109.19	265.52
#1	-.00264	.00234	.00216	-.00028	.00017	.00001	.00098
#2	.00165	.00200	.00318	.00033	.00001	.00570	.00322
#3	.00861	.00163	.00228	.00121	.00012	.01482	-.00152
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00010	.00018	F .19082
Stddev	.00065	.00004	.77652
%RSD	678.09	23.057	406.94
#1	.00024	.00019	-.03771
#2	.00032	.00023	1.0560
#3	-.00085	.00014	-.44579
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8594.2	50186.	2795.4
Stddev	12.4	65.	16.9
%RSD	.14459	.13021	.60367
#1	8579.9	50122.	2805.7
#2	8602.3	50182.	2804.6
#3	8600.5	50253.	2775.9

Approved: June 20, 2016

Sample Name: L1606037601 Acquired: 6/17/2016 13:42:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00012**	**.01707**	**-.00145**	**.04768**	**.03532**	**-.00005**	**70.684**
Stddev	.00160	.00923	.00251	.00155	.00147	.00004	.658
%RSD	1335.5	54.058	172.54	3.2543	4.1696	74.862	.93037
#1	-.00089	.01351	.00022	.04598	.03427	-.00001	71.394
#2	.00172	.01016	-.00433	.04902	.03469	-.00006	70.562
#3	-.00119	.02755	-.00024	.04803	.03700	-.00008	70.096
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**.00022**	**.00165**	**.00171**	**-.00426**	**1.3437**	**.00236**
Stddev	.00033	.00055	.00047	.00105	.01189	.0063	.00484
%RSD	428.18	255.39	28.391	61.275	278.93	.47121	205.53
#1	-.00014	-.00025	.00171	.00074	-.01742	1.3403	.00463
#2	.00045	.00007	.00115	.00157	.00572	1.3398	-.00320
#3	-.00008	.00082	.00208	.00283	-.00109	1.3510	.00564
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**23.759**	**.03137**	**.00533**	**28.386**	**.00045**	**.01063**	**.00189**
Stddev	.078	.00163	.00036	.228	.00059	.00463	.00127
%RSD	.32687	5.1988	6.7417	.80375	133.24	43.544	66.890
#1	23.783	.03174	.00544	28.644	.00110	.01190	.00132
#2	23.822	.02958	.00561	28.302	-.00005	.00550	.00101
#3	23.672	.03278	.00492	28.211	.00028	.01450	.00334
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606037601 Acquired: 6/17/2016 13:42:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00206**	**.00919**	**7.9875**	**-.00018**	**1.4467**	**-.01184**	**.00274**
Stddev	.00331	.00159	.0076	.00048	.0148	.01112	.00051
%RSD	160.47	17.325	.09579	260.96	1.0247	93.937	18.639
#1	-.00142	.00879	7.9961	.00025	1.4638	.00095	.00240
#2	.00245	.00784	7.9849	-.00010	1.4368	-.01720	.00332
#3	.00516	.01095	7.9815	-.00070	1.4396	-.01927	.00248
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00057**	**.02745**	F **-.65548**
Stddev	.00034	.00007	.35098
%RSD	60.113	.26891	53.546
#1	-.00027	.02751	-.70226
#2	-.00049	.02748	-.98072
#3	-.00094	.02737	-.28345
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7884.3**	**45809.**	**2623.7**
Stddev	3.7	75.	37.8
%RSD	.04733	.16375	1.4411
#1	7886.3	45760.	2595.4
#2	7886.5	45772.	2609.1
#3	7879.9	45896.	2666.7

Approved: June 20, 2016

Sample Name: L1606037602 Acquired: 6/17/2016 13:46:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	.03388	.00232	.04772	.03768	.00006	71.871	-.00004
Stddev	.00162	.00782	.00351	.00143	.00075	.00015	.416	.00011
%RSD	179.31	23.067	150.92	2.9983	1.9882	245.28	.57914	283.14
#1	.00208	.02789	.00275	.04787	.03791	-.00009	72.333	-.00007
#2	.00159	.04273	-.00138	.04907	.03684	.00021	71.757	.00009
#3	-.00095	.03103	.00559	.04622	.03829	.00006	71.524	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.00096	.00254	.18139	1.4779	.00852	25.660	.02695
Stddev	.00017	.00217	.00037	.01447	.0695	.00163	.238	.00174
%RSD	24.500	224.98	14.481	7.9762	4.7014	19.094	.92816	6.4709
#1	.00078	-.00074	.00212	.16891	1.5415	.00892	25.877	.02542
#2	.00049	.00341	.00281	.19725	1.4037	.00990	25.405	.02658
#3	.00079	.00023	.00271	.17801	1.4884	.00673	25.699	.02885
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00400	27.298	.00097	.01562	.00040	-.00054	.00670	8.0647
Stddev	.00019	.182	.00110	.00661	.00034	.00436	.00187	.0306
%RSD	4.7594	.66605	113.15	42.312	83.322	808.16	27.923	.37930
#1	.00378	27.502	.00157	.02260	.00004	.00176	.00880	8.0999
#2	.00412	27.240	-.00030	.01478	.00070	-.00557	.00521	8.0446
#3	.00410	27.152	.00165	.00947	.00048	.00220	.00609	8.0496
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 20, 2016

Sample Name: L1606037602 Acquired: 6/17/2016 13:46:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00062	1.5131	-.01240	.00467	.00004	.01649	.21370
Stddev	.00092	.0115	.00317	.00438	.00121	.00004	.67124
%RSD	148.68	.76275	25.542	93.820	2841.8	.21639	314.11
#1	.00103	1.5262	-.01354	.00570	-.00079	.01647	.15960
#2	-.00043	1.5085	-.01484	-.00013	-.00051	.01653	-.42886
#3	.00126	1.5046	-.00882	.00845	.00143	.01648	.91035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7880.1	45627.	2621.8
Stddev	13.5	285.	23.6
%RSD	.17190	.62516	.89957
#1	7872.8	45448.	2594.6
#2	7871.8	45476.	2635.6
#3	7895.8	45956.	2635.2

Approved: June 20, 2016

Sample Name: L1606037603 Acquired: 6/17/2016 13:49:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.02105**	**.00218**	**.07997**	**.10788**	**.00006**	**100.30**
Stddev	.00139	.00697	.00667	.00248	.00328	.00003	.71
%RSD	7935.4	33.101	306.11	3.1019	3.0363	55.707	.70506
#1	-.00150	.02238	.00812	.07870	.11165	.00005	101.01
#2	.00019	.01352	.00344	.08283	.10633	.00003	100.29
#3	.00126	.02726	-.00503	.07838	.10567	.00010	99.591
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.00085**	**.00154**	**.00169**	**.21482**	**2.3175**	**.01152**
Stddev	.00007	.00013	.00115	.00101	.03966	.0867	.00223
%RSD	72.009	15.067	74.743	60.091	18.464	3.7392	19.377
#1	-.00010	.00092	.00022	.00268	.25560	2.3285	.01408
#2	-.00003	.00092	.00208	.00065	.21247	2.2258	.01001
#3	-.00016	.00070	.00232	.00173	.17638	2.3981	.01047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**53.039**	**.15471**	**.00370**	**85.837**	**-.00067**	**.00761**	**-.00110**
Stddev	.467	.00283	.00011	.706	.00066	.00559	.00333
%RSD	.88130	1.8269	2.9348	.82281	97.981	73.427	301.99
#1	53.368	.15274	.00379	86.618	-.00084	.00162	-.00252
#2	53.245	.15344	.00374	85.650	.00006	.01267	.00270
#3	52.504	.15795	.00358	85.242	-.00122	.00853	-.00349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606037603 Acquired: 6/17/2016 13:49:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00200**	**.00287**	**9.7852**	**-.00077**	**1.5189**	**-.00973**	**.00076**
Stddev	.00252	.00528	.0082	.00028	.0116	.00304	.00188
%RSD	125.76	183.91	.08379	36.871	.76471	31.193	248.50
#1	.00076	.00896	9.7786	-.00052	1.5293	-.01030	-.00126
#2	.00035	-.00042	9.7944	-.00108	1.5210	-.01245	.00106
#3	.00490	.00007	9.7826	-.00070	1.5064	-.00645	.00248
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00112**	**.00246**	F **-.76087**
Stddev	.00039	.00022	1.2931
%RSD	34.795	9.0955	169.95
#1	-.00154	.00260	.64773
#2	-.00103	.00257	-1.8941
#3	-.00078	.00220	-1.0363
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7741.6**	**45065.**	**2604.3**
Stddev	3.1	63.	29.7
%RSD	.04069	.13951	1.1398
#1	7741.9	45137.	2572.2
#2	7744.6	45022.	2610.1
#3	7738.3	45035.	2630.7

Approved: June 20, 2016

Sample Name: L1606037604 Acquired: 6/17/2016 13:53:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.06881	.00204	.04577	.03627	.00008	103.06
Stddev	.00319	.00049	.00323	.00222	.00157	.00009	.67
%RSD	8815.3	.71424	158.52	4.8507	4.3250	119.98	.64932
#1	.00255	.06847	.00252	.04322	.03667	.00011	103.03
#2	-.00356	.06859	.00501	.04726	.03760	.00015	102.41
#3	.00112	.06938	-.00141	.04682	.03454	-.00003	103.74
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00038	.00092	.00084	.01855	1.8287	.00846
Stddev	.00007	.00036	.00127	.00136	.02462	.0958	.00054
%RSD	62.244	93.898	137.28	160.73	132.72	5.2389	6.4182
#1	.00008	.00056	.00234	.00239	.03079	1.7913	.00785
#2	.00007	-.00003	-.00011	.00026	-.00979	1.9376	.00889
#3	.00020	.00062	.00055	-.00012	.03465	1.7573	.00864
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	14.961	.41274	.00086	43.875	-.00018	.03598	.00021
Stddev	.100	.00233	.00038	.235	.00052	.01654	.00097
%RSD	.67058	.56516	43.936	.53574	289.88	45.971	451.33
#1	14.995	.41543	.00088	43.831	-.00003	.03294	.00106
#2	14.848	.41145	.00123	43.665	.00025	.05382	.00043
#3	15.040	.41134	.00047	44.129	-.00075	.02116	-.00084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606037604 Acquired: 6/17/2016 13:53:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00143**	**.00203**	**9.0682**	**-.00075**	**.53111**	**-.01231**	**.00078**
Stddev	.00477	.00517	.0108	.00047	.00130	.00773	.00541
%RSD	333.24	254.69	.11940	63.274	.24568	62.809	697.23
#1	.00102	.00107	9.0694	-.00121	.53057	-.02097	-.00078
#2	-.00693	.00762	9.0785	-.00026	.53017	-.00988	-.00368
#3	.00162	-.00260	9.0569	-.00078	.53260	-.00609	.00680
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00046**	**.01254**	F **-.04001**
Stddev	.00063	.00008	1.3798
%RSD	137.56	.66123	3448.9
#1	-.00001	.01253	1.4070
#2	.00118	.01263	-1.3410
#3	.00021	.01247	-.18603
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7844.5**	**45497.**	**2632.8**
Stddev	38.3	103.	18.7
%RSD	.48789	.22554	.71186
#1	7843.3	45568.	2621.3
#2	7806.8	45379.	2654.4
#3	7883.4	45543.	2622.7

Approved: June 20, 2016

Sample Name: L1606037604PS Acquired: 6/17/2016 13:57:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572145-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21881**	**5.4440**	**.21670**	**1.1084**	**.57306**	**.02689**	**98.395**
Stddev	.00373	.0158	.00490	.0038	.00448	.00005	.322
%RSD	1.7056	.28996	2.2611	.34474	.78168	.19103	.32683
#1	.21976	5.4355	.22097	1.1074	.57783	.02689	98.709
#2	.21469	5.4342	.21135	1.1052	.56894	.02694	98.066
#3	.22197	5.4622	.21777	1.1127	.57243	.02684	98.411
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02668**	**.10707**	**.26988**	**.26789**	**2.2130**	**28.166**	**.55537**
Stddev	.00027	.00049	.00041	.00119	.0184	.203	.00262
%RSD	.99779	.45908	.15166	.44260	.83026	.72100	.47228
#1	.02638	.10714	.26971	.26919	2.2279	28.378	.55247
#2	.02677	.10752	.26958	.26760	2.2186	27.974	.55758
#3	.02690	.10654	.27035	.26688	2.1925	28.144	.55607
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**18.730**	**.63446**	**.55608**	**66.330**	**.26705**	**5.4364**	**.27328**
Stddev	.175	.00518	.00136	.310	.00153	.0234	.00132
%RSD	.93372	.81664	.24420	.46661	.57331	.43029	.48188
#1	18.841	.63949	.55540	66.673	.26573	5.4516	.27251
#2	18.529	.63475	.55765	66.071	.26671	5.4095	.27481
#3	18.821	.62914	.55520	66.248	.26873	5.4481	.27254
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606037604PS Acquired: 6/17/2016 13:57:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572145-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.65336**	**.21702**	**10.986**	**.54196**	**.99936**	**.52284**	**.26908**
Stddev	.00616	.00039	.011	.00018	.00663	.00368	.00349
%RSD	.94261	.17852	.10054	.03284	.66357	.70401	1.2957
#1	.64689	.21746	10.992	.54209	1.0070	.51946	.26511
#2	.65916	.21673	10.993	.54175	.99583	.52676	.27045
#3	.65404	.21687	10.973	.54203	.99524	.52229	.27166
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.54407**	**.54289**	F **-.50456**
Stddev	.00106	.00065	.48572
%RSD	.19427	.11962	96.264
#1	.54409	.54258	-.78216
#2	.54299	.54364	.05628
#3	.54511	.54245	-.78781
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7780.8**	**45204.**	**2603.3**
Stddev	8.7	69.	12.2
%RSD	.11214	.15157	.46949
#1	7785.4	45156.	2591.6
#2	7786.2	45174.	2616.0
#3	7770.7	45282.	2602.4

Approved: June 20, 2016

Sample Name: L1606037604SDL Acquired: 6/17/2016 14:12:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG572145-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00233**	**.00742**	**-.00098**	**.00895**	**.00498**	**-.00003**	**18.852**
Stddev	.00178	.00540	.00042	.00217	.00138	.00011	.086
%RSD	76.302	72.714	42.916	24.221	27.707	397.15	.45587
#1	-.00234	.01175	-.00077	.00971	.00579	-.00013	18.755
#2	-.00411	.00137	-.00071	.00651	.00339	.00008	18.882
#3	-.00055	.00914	-.00147	.01064	.00577	-.00003	18.919
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00006**	**.00016**	**-.00059**	**.00099**	**-.00138**	**.35253**	**.00119**
Stddev	.00024	.00025	.00021	.00044	.01516	.03349	.00634
%RSD	424.63	161.47	35.326	44.059	1099.9	9.4993	531.22
#1	-.00008	.00002	-.00057	.00049	.01499	.35345	.00351
#2	.00033	-.00000	-.00039	.00125	-.00418	.38555	.00605
#3	-.00008	.00045	-.00081	.00124	-.01494	.31859	-.00598
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.7148**	**.07612**	**.00056**	**7.8313**	**.00001**	**.00427**	**.00023**
Stddev	.1074	.00282	.00029	.0503	.00027	.00318	.00214
%RSD	3.9553	3.7051	50.965	.64195	2634.1	74.292	925.14
#1	2.8364	.07722	.00087	7.8161	.00008	.00314	-.00182
#2	2.6749	.07823	.00031	7.8875	-.00029	.00182	.00244
#3	2.6330	.07292	.00050	7.7905	.00024	.00786	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606037604SDL Acquired: 6/17/2016 14:12:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG572145-06

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00054**	**.00137**	**1.6282**	**-.00060**	**.09373**	**.00060**	**.00151**
Stddev	.00579	.00545	.0048	.00057	.00034	.00956	.00010
%RSD	1073.5	399.01	.29250	95.851	.35769	1602.5	6.3633
#1	-.00133	.00732	1.6236	-.00125	.09342	-.01033	.00140
#2	-.00589	.00014	1.6331	-.00019	.09367	.00469	.00155
#3	.00560	-.00337	1.6279	-.00035	.09409	.00744	.00157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00003**	**.00290**	F **-.15220**
Stddev	.00127	.00005	.78828
%RSD	4629.3	1.5868	517.93
#1	-.00084	.00294	-.98880
#2	-.00057	.00285	-.04448
#3	.00149	.00291	.57669
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8751.8**	**50406.**	**2816.3**
Stddev	12.0	86.	12.0
%RSD	.13715	.17004	.42519
#1	8765.1	50414.	2823.7
#2	8741.9	50488.	2802.5
#3	8748.2	50317.	2822.8

Approved: June 20, 2016

Sample Name: L1606036401 Acquired: 6/17/2016 14:16:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.00374	-.00234	.00398	.01301	.00009	.58270	.00004
Stddev	.00038	.00833	.00239	.00341	.00085	.00006	.00985	.00019
%RSD	74.405	222.96	102.08	85.686	6.5105	71.008	1.6904	476.97
#1	.00007	-.00524	-.00076	.00574	.01387	.00002	.57147	.00018
#2	.00071	.00523	-.00117	.00005	.01300	.00011	.58985	-.00017
#3	.00075	.01123	-.00508	.00615	.01217	.00014	.58678	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	-.00066	.00067	.01012	-.03357	.00344	.01711	-.00070
Stddev	.00023	.00139	.00045	.03298	.08244	.00053	.02925	.00175
%RSD	117.20	210.31	67.136	326.02	245.61	15.397	170.93	250.43
#1	.00028	-.00096	.00087	.04766	.06155	.00405	-.01614	-.00118
#2	.00037	-.00187	.00099	-.01414	-.07768	.00313	.02863	-.00217
#3	-.00006	.00085	.00016	-.00318	-.08456	.00314	.03884	.00124
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	6.4226	-.00044	.00546	-.00064	-.00293	-.00324	.03402
Stddev	.00014	.0150	.00087	.00554	.00439	.00338	.00748	.00095
%RSD	24.023	.23440	200.68	101.45	691.68	115.23	230.83	2.7963
#1	.00049	6.4305	-.00144	-.00092	.00282	.00080	-.00769	.03447
#2	.00049	6.4053	-.00002	.00904	.00085	-.00579	.00540	.03292
#3	.00073	6.4321	.00015	.00825	-.00558	-.00380	-.00743	.03465
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 20, 2016

Sample Name: L1606036401 Acquired: 6/17/2016 14:16:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	.01648	-.00308	.00322	.00000	.00097	.63832
Stddev	.00059	.00013	.00673	.00110	.00124	.00023	.46404
%RSD	9982.9	.75890	218.73	34.173	86170.	23.761	72.696
#1	-.00058	.01662	-.00152	.00270	.00133	.00092	.15663
#2	.00060	.01645	.00274	.00248	-.00018	.00077	1.0824
#3	-.00004	.01637	-.01045	.00449	-.00114	.00123	.67592
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8705.6	50296.	2775.6
Stddev	20.0	191.	4.7
%RSD	.22944	.38050	.17109
#1	8700.7	50493.	2775.2
#2	8727.5	50285.	2771.1
#3	8688.5	50110.	2780.6

Approved: June 20, 2016

Sample Name: L1606036404 Acquired: 6/17/2016 14:20:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	-.00197	-.00221	-.00049	.01384	.00003	.60010	.00004
Stddev	.00051	.00840	.00351	.00366	.00058	.00007	.03071	.00028
%RSD	341.63	426.86	158.79	751.95	4.2198	228.29	5.1167	753.51
#1	.00045	-.00608	-.00442	-.00044	.01318	-.00003	.63510	-.00000
#2	-.00044	.00770	-.00406	.00315	.01431	.00001	.58748	-.00022
#3	.00042	-.00752	.00184	-.00418	.01402	.00011	.57771	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	.00021	-.00041	-.01320	-.03340	-.00092	.08241	-.00240
Stddev	.00020	.00117	.00156	.02629	.02512	.00474	.08082	.00243
%RSD	188.25	556.05	376.81	199.15	75.221	515.41	98.061	101.33
#1	-.00011	.00130	.00134	-.02861	-.05686	.00032	.03202	-.00188
#2	.00029	-.00103	-.00095	.01715	-.00689	-.00616	.03959	-.00505
#3	.00015	.00037	-.00164	-.02814	-.03646	.00308	.17563	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	6.2920	-.00071	.00483	-.00112	-.00045	-.00094	.03652
Stddev	.00025	.0261	.00137	.00455	.00198	.00105	.00781	.00068
%RSD	65.921	.41535	193.94	94.297	177.16	232.41	832.60	1.8739
#1	.00013	6.2698	-.00227	.00710	.00063	-.00163	-.00333	.03624
#2	.00063	6.3208	-.00008	-.00041	-.00327	-.00006	.00779	.03730
#3	.00038	6.2854	.00024	.00780	-.00072	.00035	-.00727	.03602
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 20, 2016

Sample Name: L1606036404 Acquired: 6/17/2016 14:20:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00054**	**.01595**	**-.00509**	**.00429**	**-.00042**	**.00063**	**.22647**
Stddev	.00026	.00061	.00428	.00169	.00040	.00011	.62138
%RSD	48.642	3.8296	84.087	39.373	95.493	17.430	274.38
#1	-.00024	.01618	-.00166	.00623	-.00071	.00070	-.38661
#2	-.00070	.01642	-.00988	.00319	.00004	.00050	.21018
#3	-.00067	.01526	-.00373	.00345	-.00058	.00069	.85583
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8690.2**	**50071.**	**2789.8**
Stddev	17.6	236.	21.2
%RSD	.20215	.47039	.75844
#1	8691.0	50330.	2796.5
#2	8672.3	50010.	2766.1
#3	8707.4	49871.	2806.8

Approved: June 20, 2016

Sample Name: L1606049201 Acquired: 6/17/2016 14:24:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00152**	**.00818**	**-.00035**	**.09472**	**.27203**	**.00004**	**18.248**
Stddev	.00238	.01488	.00426	.00051	.00121	.00013	.071
%RSD	156.17	181.97	1210.9	.54105	.44300	337.54	.39152
#1	.00292	.00321	.00399	.09460	.27147	-.00010	18.272
#2	-.00122	.02491	-.00051	.09428	.27342	.00006	18.304
#3	.00287	-.00358	-.00454	.09529	.27121	.00015	18.168
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**.00028**	**.00065**	**.00097**	**.05463**	**1.2940**	**.05657**
Stddev	.00019	.00010	.00038	.00067	.02659	.0161	.00640
%RSD	294.67	35.842	58.239	69.510	48.672	1.2472	11.316
#1	-.00007	.00017	.00109	.00089	.06779	1.3039	.06140
#2	.00029	.00033	.00050	.00034	.07207	1.3028	.04931
#3	-.00002	.00036	.00037	.00168	.02403	1.2754	.05900
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.7618**	**.01015**	**.00008**	**39.562**	**-.00030**	**-.00012**	**-.00269**
Stddev	.1366	.00235	.00033	.147	.00012	.00954	.00219
%RSD	7.7567	23.121	423.48	.37044	40.182	7947.6	81.328
#1	1.9195	.01220	.00015	39.710	-.00043	.00666	-.00521
#2	1.6805	.01066	.00037	39.560	-.00030	.00401	-.00158
#3	1.6853	.00759	-.00029	39.417	-.00018	-.01103	-.00128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606049201 Acquired: 6/17/2016 14:24:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	-.00337	.00911	-.00033	3.4621	-.00114	.00424
Stddev	.00207	.00464	.00161	.00097	.0053	.00421	.00293
%RSD	5828.6	137.47	17.732	293.22	.15204	368.57	69.185
#1	.00104	.00084	.00934	-.00137	3.4668	-.00474	.00186
#2	.00142	-.00834	.00739	-.00015	3.4631	-.00219	.00334
#3	-.00235	-.00262	.01059	.00054	3.4564	.00350	.00752
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00037	.00035	F -.53112
Stddev	.00090	.00027	.60232
%RSD	247.38	75.916	113.41
#1	-.00050	.00054	.00384
#2	-.00119	.00046	-1.1835
#3	.00060	.00005	-.41370
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8619.8	49457.	2792.2
Stddev	21.0	192.	11.8
%RSD	.24411	.38764	.42210
#1	8636.9	49667.	2783.3
#2	8596.3	49412.	2805.5
#3	8626.2	49291.	2787.7

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 14:28:19 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40361	10.037	.39897	.50172	.99482	.05040	9.8703
Stddev	.00204	.017	.00550	.00245	.00058	.00038	.0686
%RSD	.50447	.16718	1.3779	.48891	.05811	.75848	.69499
#1	.40344	10.032	.40488	.50454	.99506	.05048	9.8021
#2	.40573	10.055	.39803	.50057	.99416	.04999	9.8695
#3	.40167	10.023	.39400	.50007	.99524	.05074	9.9393
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04983	.20125	.50798	.50476	4.0036	49.176	.99068
Stddev	.00018	.00092	.00071	.00247	.0165	.241	.00294
%RSD	.36521	.45947	.14045	.48885	.41187	.48990	.29659
#1	.04962	.20162	.50827	.50760	4.0219	48.909	.98755
#2	.04997	.20194	.50716	.50310	3.9989	49.377	.99113
#3	.04990	.20020	.50849	.50359	3.9900	49.242	.99337
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.9046	.49966	1.0094	48.957	.50508	9.9463	.50461
Stddev	.1044	.00164	.0075	.225	.00195	.0367	.00566
%RSD	1.0535	.32836	.74628	.45889	.38624	.36928	1.1220
#1	9.9426	.49921	1.0165	48.744	.50572	9.9837	.51103
#2	9.7865	.49829	1.0102	49.192	.50664	9.9448	.50248
#3	9.9846	.50148	1.0015	48.937	.50290	9.9103	.50033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 14:28:19 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1934**	**.39949**	**5.0376**	**1.0072**	**.99570**	**.99701**	**.51068**
Stddev	.0080	.00653	.0053	.0041	.00203	.02132	.00440
%RSD	.66662	1.6345	.10510	.41093	.20425	2.1389	.86189
#1	1.1907	.40686	5.0435	1.0114	.99337	.97355	.51520
#2	1.2024	.39718	5.0360	1.0073	.99715	1.0152	.50641
#3	1.1872	.39443	5.0333	1.0031	.99656	1.0023	.51043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0114**	**1.0015**	F **-.37639**
Stddev	.0044	.0031	.51417
%RSD	.43634	.30411	136.61
#1	1.0145	1.0047	-.45232
#2	1.0063	1.0011	-.84837
#3	1.0132	.99860	.17152
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8429.1**	**48443.**	**2776.2**
Stddev	26.5	153.	5.8
%RSD	.31457	.31481	.20834
#1	8409.4	48390.	2770.6
#2	8418.7	48325.	2782.2
#3	8459.2	48616.	2775.8

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 14:31:57 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00127	.00801	-.00040	.00229	-.00122	-.00003	.02815
Stddev	.00229	.00753	.00110	.00282	.00084	.00004	.01441
%RSD	180.12	93.942	274.93	123.04	69.145	132.56	51.168
#1	-.00129	.01002	-.00025	-.00048	-.00029	-.00007	.04471
#2	.00310	-.00031	-.00156	.00220	-.00194	.00001	.01848
#3	.00200	.01434	.00062	.00516	-.00143	-.00003	.02127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00025	.00106	.00202	-.02229	.12649	-.00168
Stddev	.00027	.00018	.00117	.00177	.01557	.08475	.00234
%RSD	217.80	70.766	110.48	87.217	69.869	67.001	139.09
#1	-.00015	.00042	-.00028	.00357	-.02377	.04189	.00006
#2	.00039	.00007	.00189	.00240	-.00603	.12619	-.00076
#3	.00012	.00024	.00156	.00010	-.03706	.21138	-.00434
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.08937	.00155	.00438	-.00034	-.00061	.00207	-.00011
Stddev	.02413	.00154	.00035	.01378	.00077	.00836	.00066
%RSD	27.006	99.699	7.9673	3997.0	126.34	403.53	601.59
#1	.06620	.00288	.00398	-.00930	.00021	-.00751	.00032
#2	.11437	-.00014	.00452	.01552	-.00131	.00583	-.00087
#3	.08754	.00190	.00463	-.00726	-.00072	.00789	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 14:31:57 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00171	.00513	.00214	.00044	-.00009	.00119	.00268
Stddev	.00148	.00480	.00299	.00065	.00059	.00629	.00104
%RSD	86.915	93.582	139.70	145.60	635.33	530.60	38.839
#1	.00014	.01014	-.00094	.00000	.00054	.00681	.00213
#2	.00309	.00057	.00232	.00118	-.00020	.00236	.00204
#3	.00190	.00467	.00504	.00014	-.00061	-.00561	.00389
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00001	.00016	F .65506
Stddev	.00093	.00027	.51106
%RSD	6856.6	167.06	78.017
#1	.00031	.00017	1.2422
#2	.00071	.00042	.31041
#3	-.00106	-.00011	.41253
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8605.2	49992.	2805.9
Stddev	16.3	192.	8.1
%RSD	.18893	.38471	.28995
#1	8608.7	50111.	2800.2
#2	8587.5	50094.	2802.2
#3	8619.4	49770.	2815.2

Approved: June 20, 2016

Sample Name: PBS 6P Acquired: 6/17/2016 14:35:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572914-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00046**	**.04159**	**.02141**	**.00957**	**.00294**	**-.00002**	**1.1289**
Stddev	.00089	.00187	.00316	.00271	.00056	.00004	.0117
%RSD	194.61	4.4895	14.735	28.294	19.072	275.79	1.0392
#1	.00031	.03976	.02505	.00887	.00280	-.00004	1.1233
#2	-.00143	.04150	.01943	.01256	.00356	.00003	1.1424
#3	-.00025	.04349	.01976	.00728	.00246	-.00004	1.1210
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00055**	**-.00009**	**.00208**	**.03225**	**.08205**	**.91045**	**-.00004**
Stddev	.00011	.00015	.00099	.00089	.00709	.04057	.00145
%RSD	19.782	162.89	47.455	2.7485	8.6409	4.4559	3469.9
#1	.00044	.00002	.00243	.03323	.08637	.86558	-.00012
#2	.00056	-.00026	.00097	.03203	.08591	.94455	-.00145
#3	.00066	-.00003	.00285	.03150	.07387	.92122	.00145
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.5497**	**.00584**	**.00301**	**1.2712**	**.00169**	**.53367**	**.00269**
Stddev	.0916	.00283	.00045	.0209	.00071	.00214	.00110
%RSD	3.5919	48.485	14.980	1.6430	41.845	.40120	40.745
#1	2.5607	.00313	.00249	1.2903	.00116	.53613	.00383
#2	2.6352	.00878	.00326	1.2489	.00250	.53224	.00164
#3	2.4531	.00560	.00329	1.2744	.00142	.53264	.00260
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: PBS 6P Acquired: 6/17/2016 14:35:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572914-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00732**	**.06018**	**.66260**	**.00726**	**.00512**	**.00136**	**-.01218**
Stddev	.00181	.00454	.00174	.00123	.00019	.00416	.00184
%RSD	24.794	7.5482	.26324	16.992	3.6830	305.08	15.118
#1	.00880	.05908	.66325	.00867	.00495	-.00327	-.01429
#2	.00529	.05629	.66393	.00639	.00509	.00257	-.01128
#3	.00787	.06517	.66063	.00672	.00532	.00478	-.01096
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00039**	**1.5485**	F **-2.2396**
Stddev	.00060	.0034	.4971
%RSD	156.06	.21884	22.195
#1	-.00009	1.5495	-1.7658
#2	.00001	1.5513	-2.1960
#3	-.00108	1.5448	-2.7571
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8454.4**	**50211.**	**2939.5**
Stddev	21.0	153.	12.5
%RSD	.24895	.30509	.42642
#1	8439.8	50048.	2932.5
#2	8444.9	50234.	2932.0
#3	8478.6	50352.	2953.9

Approved: June 20, 2016

Sample Name: LCSS 6P Acquired: 6/17/2016 14:39:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572914-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19253**	**4.5767**	**.23968**	**.95174**	**.52185**	**.02589**	**6.0735**
Stddev	.00200	.0138	.00270	.00459	.00523	.00005	.0935
%RSD	1.0398	.30189	1.1283	.48274	1.0026	.20332	1.5398
#1	.19029	4.5920	.23701	.95555	.52707	.02585	6.1383
#2	.19413	4.5651	.24242	.94664	.52187	.02595	6.1160
#3	.19318	4.5731	.23962	.95304	.51660	.02588	5.9663
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02441**	**.10227**	**.25756**	**.27828**	**2.1237**	**25.101**	**.51928**
Stddev	.00014	.00020	.00109	.00193	.0083	.250	.00667
%RSD	.57219	.19120	.42401	.69253	.39104	.99553	1.2844
#1	.02445	.10206	.25871	.27679	2.1150	25.323	.52619
#2	.02453	.10232	.25653	.28045	2.1245	25.150	.51876
#3	.02426	.10244	.25744	.27759	2.1316	24.831	.51288
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.5967**	**.25722**	**.54132**	**25.742**	**.25642**	**5.5272**	**.24562**
Stddev	.0956	.00128	.00056	.174	.00174	.0088	.00243
%RSD	1.2581	.49944	.10303	.67548	.67894	.15992	.99005
#1	7.6568	.25816	.54134	25.914	.25755	5.5368	.24500
#2	7.6468	.25775	.54186	25.745	.25729	5.5254	.24356
#3	7.4865	.25576	.54075	25.566	.25441	5.5194	.24830
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: LCSS 6P Acquired: 6/17/2016 14:39:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572914-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.59324	.30627	3.1068	.49985	.52955	.51756	.23478
Stddev	.00528	.01190	.0060	.00104	.00413	.00912	.00104
%RSD	.88947	3.8866	.19386	.20814	.78021	1.7617	.44217
#1	.59862	.31136	3.1088	.50103	.53389	.52706	.23454
#2	.58808	.31479	3.1115	.49946	.52909	.51675	.23388
#3	.59301	.29267	3.1000	.49906	.52566	.50887	.23592
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.51446	2.0066	F -1.4827
Stddev	.00250	.0043	.7219
%RSD	.48666	.21629	48.685
#1	.51708	2.0041	-2.2921
#2	.51209	2.0116	-1.2506
#3	.51422	2.0041	-.90548
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8360.5	49435.	2956.1
Stddev	22.8	279.	41.6
%RSD	.27306	.56464	1.4062
#1	8345.1	49146.	2911.1
#2	8349.6	49703.	2964.1
#3	8386.7	49456.	2993.0

Approved: June 20, 2016

Sample Name: LCSS DP Acquired: 6/17/2016 14:43:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572914-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19250**	**4.5574**	**.23035**	**.93112**	**.51490**	**.02592**	**5.9204**
Stddev	.00204	.0055	.00206	.00698	.00335	.00006	.0423
%RSD	1.0573	.11973	.89333	.74945	.65113	.22113	.71458
#1	.19467	4.5518	.22873	.93326	.51846	.02588	5.9384
#2	.19063	4.5627	.23267	.92332	.51181	.02599	5.8720
#3	.19221	4.5576	.22965	.93678	.51443	.02589	5.9507
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02442**	**.10234**	**.25980**	**.27735**	**2.1056**	**24.818**	**.51270**
Stddev	.00021	.00032	.00114	.00085	.0445	.172	.00638
%RSD	.85218	.31383	.43981	.30560	2.1110	.69158	1.2441
#1	.02421	.10235	.25894	.27833	2.1345	24.979	.52006
#2	.02443	.10265	.26110	.27681	2.0544	24.637	.50930
#3	.02462	.10201	.25936	.27691	2.1279	24.839	.50874
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.5589**	**.25493**	**.54354**	**25.523**	**.25632**	**5.4584**	**.24782**
Stddev	.0436	.00217	.00067	.137	.00062	.0031	.00243
%RSD	.57728	.85112	.12245	.53575	.24269	.05714	.97966
#1	7.5974	.25730	.54284	25.681	.25583	5.4607	.24547
#2	7.5115	.25444	.54416	25.436	.25610	5.4597	.24769
#3	7.5678	.25304	.54364	25.454	.25702	5.4549	.25032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: LCSS DP Acquired: 6/17/2016 14:43:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572914-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.58863**	**.29450**	**3.0130**	**.50025**	**.52574**	**.51796**	**.23348**
Stddev	.00472	.00756	.0019	.00060	.00394	.00346	.00077
%RSD	.80267	2.5663	.06194	.11905	.74950	.66793	.32989
#1	.58361	.30245	3.0133	.49981	.53029	.51985	.23347
#2	.59298	.29367	3.0111	.50093	.52352	.51397	.23426
#3	.58930	.28740	3.0148	.50002	.52341	.52007	.23272
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.51847**	**1.8734**	F **-1.7228**
Stddev	.00072	.0006	.8151
%RSD	.13944	.03039	47.314
#1	.51797	1.8735	-.99823
#2	.51813	1.8739	-2.6054
#3	.51930	1.8728	-1.5649
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8384.4**	**49518.**	**2982.0**
Stddev	19.5	332.	19.6
%RSD	.23278	.67143	.65803
#1	8364.1	49334.	2960.9
#2	8403.0	49318.	2999.8
#3	8386.3	49902.	2985.3

Approved: June 20, 2016

Sample Name: L1606079301 Acquired: 6/17/2016 14:47:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.31207**	**30.479**	**.06014**	**.66408**	F **74.905**	**.00452**	**157.90**
Stddev	.00289	.089	.00277	.00242	.935	.00005	.82
%RSD	.92756	.29329	4.6039	.36506	1.2482	1.0540	.51676
#1	.30998	30.563	.06059	.66219	74.133	.00454	158.33
#2	.31085	30.385	.05717	.66681	75.945	.00455	156.96
#3	.31537	30.489	.06266	.66324	74.638	.00447	158.41
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					45.000		
Low Limit					-.00500		

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.91777**	**.59091**	**2.5824**	**8.4481**	**52.984**	**13.998**	**.21653**
Stddev	.00064	.00058	.0065	.0094	.339	.190	.00493
%RSD	.06944	.09792	.25294	.11140	.63959	1.3539	2.2771
#1	.91712	.59072	2.5856	8.4378	53.303	14.045	.22222
#2	.91781	.59156	2.5748	8.4502	52.628	13.790	.21363
#3	.91839	.59045	2.5866	8.4563	53.021	14.161	.21374
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**43.801**	**3.7250**	**.04204**	**26.808**	**.72729**	F **348.04**	**18.678**
Stddev	.255	.0153	.00009	.138	.00096	.25	.009
%RSD	.58255	.41073	.22030	.51350	.13148	.07262	.04743
#1	44.078	3.7420	.04203	26.877	.72756	347.87	18.669
#2	43.575	3.7124	.04195	26.649	.72622	347.93	18.680
#3	43.750	3.7206	.04213	26.898	.72808	348.33	18.686
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						180.00	
Low Limit						-.10000	

Approved: June 20, 2016

Sample Name: L1606079301 Acquired: 6/17/2016 14:47:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**8.6818**	**.05575**	**14.772**	**3.3456**	F **95.624**	**.85856**	**-.00337**
Stddev	.0104	.00321	.044	.0032	.903	.01266	.00414
%RSD	.12042	5.7652	.29909	.09593	.94395	1.4744	122.80
#1	8.6701	.05386	14.745	3.3488	94.942	.86241	.00124
#2	8.6900	.05947	14.748	3.3424	96.647	.84443	-.00677
#3	8.6854	.05394	14.823	3.3454	95.282	.86886	-.00459
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.11945**	**26.711**	F **-172.35**
Stddev	.00078	.008	1.80
%RSD	.65254	.02826	1.0437
#1	.11857	26.719	-172.10
#2	.12005	26.706	-170.68
#3	.11973	26.707	-174.26
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8661.8**	**51982.**	**3173.7**
Stddev	23.6	40.	25.1
%RSD	.27260	.07720	.79048
#1	8644.2	51950.	3157.6
#2	8688.7	51970.	3202.6
#3	8652.6	52027.	3161.0

Approved: June 20, 2016

Sample Name: L1606079301PS Acquired: 6/17/2016 14:51:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573214-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48524**	**32.802**	**.26619**	**1.5587**	F **69.207**	**.02913**	**149.15**
Stddev	.00150	.021	.00770	.0050	.836	.00006	.42
%RSD	.30969	.06254	2.8945	.32425	1.2084	.19963	.28059
#1	.48629	32.811	.26492	1.5629	69.906	.02911	149.62
#2	.48590	32.778	.27444	1.5602	69.434	.02908	149.02
#3	.48352	32.816	.25919	1.5531	68.280	.02919	148.81
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					45.000		
Low Limit					-.00500		

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.85693**	**.62944**	**2.6024**	**7.8942**	**50.212**	**37.723**	**.71341**
Stddev	.00102	.00214	.0017	.0114	.161	.059	.00669
%RSD	.11928	.34069	.06515	.14416	.32023	.15730	.93765
#1	.85807	.63192	2.6044	7.9055	50.376	37.664	.71637
#2	.85661	.62826	2.6015	7.8942	50.204	37.782	.71811
#3	.85610	.62815	2.6013	7.8828	50.055	37.724	.70575
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**44.798**	**3.6167**	**.56457**	**49.569**	**.90972**	F **321.56**	**17.119**
Stddev	.312	.0093	.00208	.118	.00183	.56	.034
%RSD	.69731	.25625	.36929	.23816	.20154	.17338	.19640
#1	44.480	3.6235	.56634	49.621	.91138	322.20	17.156
#2	44.812	3.6204	.56509	49.651	.90775	321.34	17.091
#3	45.104	3.6061	.56227	49.434	.91003	321.15	17.112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						180.00	
Low Limit						-.10000	

Approved: June 20, 2016

Sample Name: L1606079301PS Acquired: 6/17/2016 14:51:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573214-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**8.4731**	**.27535**	**16.467**	**3.5293**	F **87.788**	**1.2869**	**.24663**
Stddev	.0163	.00508	.015	.0041	.458	.0046	.00131
%RSD	.19266	1.8435	.09037	.11708	.52120	.35512	.53258
#1	8.4894	.27043	16.479	3.5340	87.286	1.2922	.24559
#2	8.4568	.27504	16.450	3.5275	88.183	1.2847	.24811
#3	8.4731	.28057	16.471	3.5263	87.894	1.2839	.24620
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.61618**	**24.722**	F **-155.70**
Stddev	.00155	.048	.41
%RSD	.25139	.19278	.26279
#1	.61492	24.777	-155.36
#2	.61572	24.698	-155.58
#3	.61791	24.691	-156.15
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8597.4**	**51295.**	**3116.8**
Stddev	18.4	112.	3.4
%RSD	.21458	.21765	.11060
#1	8576.1	51374.	3118.3
#2	8608.5	51167.	3112.8
#3	8607.6	51344.	3119.2

Approved: June 20, 2016

Sample Name: L1606079301SDL Acquired: 6/17/2016 14:54:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573214-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.06054**	**5.9911**	**.01067**	**.13268**	**14.237**	**.00082**	**30.163**
Stddev	.00281	.0093	.00200	.00071	.069	.00011	.118
%RSD	4.6380	.15535	18.759	.53363	.48761	13.355	.38997
#1	.06313	5.9805	.00838	.13220	14.177	.00070	30.087
#2	.06094	5.9948	.01207	.13349	14.313	.00091	30.299
#3	.05756	5.9980	.01156	.13235	14.222	.00085	30.105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.17561**	**.11191**	**.50072**	**1.6361**	**10.248**	**2.7352**	**.04502**
Stddev	.00070	.00053	.00284	.0023	.052	.1075	.00201
%RSD	.39783	.47148	.56695	.14186	.50893	3.9297	4.4713
#1	.17505	.11187	.49829	1.6384	10.200	2.6797	.04718
#2	.17639	.11246	.50384	1.6362	10.303	2.6667	.04320
#3	.17538	.11141	.50003	1.6338	10.241	2.8590	.04469
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**8.6599**	**.70900**	**.00781**	**5.1586**	**.13965**	**63.953**	**3.6642**
Stddev	.0996	.00248	.00025	.0247	.00098	.094	.0124
%RSD	1.1496	.34911	3.2520	.47835	.69845	.14751	.33982
#1	8.5700	.70620	.00773	5.1436	.14077	63.899	3.6617
#2	8.7669	.70991	.00760	5.1871	.13901	64.062	3.6777
#3	8.6427	.71089	.00809	5.1451	.13916	63.898	3.6532
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606079301SDL Acquired: 6/17/2016 14:54:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573214-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.6248**	**.01288**	**2.7227**	**.63785**	F **18.926**	**.16291**	**.00267**
Stddev	.0069	.00488	.0081	.00300	.293	.00596	.00214
%RSD	.42604	37.852	.29758	.47082	1.5471	3.6587	80.272
#1	1.6176	.01573	2.7170	.63920	18.602	.16283	.00108
#2	1.6313	.01566	2.7320	.63994	19.171	.16890	.00182
#3	1.6256	.00725	2.7192	.63441	19.005	.15698	.00510
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.02221**	**5.2631**	F **-34.315**
Stddev	.00097	.0063	.188
%RSD	4.3781	.11964	.54644
#1	.02276	5.2620	-34.528
#2	.02278	5.2698	-34.176
#3	.02109	5.2574	-34.240
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9159.6**	**53448.**	**3039.2**
Stddev	5.6	64.	13.1
%RSD	.06167	.11912	.42984
#1	9162.8	53392.	3053.5
#2	9163.0	53517.	3036.2
#3	9153.1	53435.	3027.9

Approved: June 20, 2016

Sample Name: L1606079301SDL Acquired: 6/17/2016 14:58:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573214-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01202**	**1.2626**	**.00318**	**.03010**	**2.8619**	**.00025**	**6.1667**
Stddev	.00110	.0128	.00219	.00193	.0071	.00005	.0039
%RSD	9.1908	1.0148	68.721	6.4262	.24801	20.399	.06289
#1	.01146	1.2574	.00109	.03205	2.8668	.00030	6.1709
#2	.01131	1.2533	.00299	.03009	2.8651	.00025	6.1658
#3	.01329	1.2772	.00545	.02818	2.8537	.00020	6.1633
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03682**	**.02322**	**.10381**	**.34424**	**2.0925**	**.58809**	**.01038**
Stddev	.00023	.00038	.00037	.00019	.0323	.13210	.00314
%RSD	.63069	1.6463	.35980	.05443	1.5417	22.463	30.209
#1	.03706	.02320	.10338	.34434	2.0770	.67756	.01359
#2	.03679	.02362	.10406	.34403	2.0710	.65035	.01024
#3	.03660	.02286	.10398	.34437	2.1296	.43636	.00732
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.9185**	**.14861**	**.00150**	**1.0335**	**.02831**	**13.239**	**.76064**
Stddev	.1140	.00219	.00033	.0285	.00020	.009	.00257
%RSD	5.9419	1.4713	22.024	2.7623	.70556	.06579	.33778
#1	2.0500	.14673	.00143	1.0023	.02828	13.245	.76131
#2	1.8579	.14808	.00186	1.0583	.02813	13.229	.75780
#3	1.8476	.15101	.00121	1.0399	.02852	13.244	.76280
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606079301SDL Acquired: 6/17/2016 14:58:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573214-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.33121**	**.00714**	**.55800**	**.12281**	**3.8835**	**.04094**	**.00329**
Stddev	.00559	.00371	.00225	.00207	.0126	.00650	.00307
%RSD	1.6868	51.953	.40260	1.6839	.32425	15.868	93.411
#1	.33151	.00428	.56019	.12501	3.8933	.03578	.00139
#2	.33664	.00581	.55810	.12249	3.8879	.04823	.00164
#3	.32548	.01133	.55570	.12091	3.8693	.03880	.00683
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00437**	**1.1054**	F **-6.8687**
Stddev	.00012	.0013	.2291
%RSD	2.7606	.12044	3.3357
#1	.00449	1.1069	-6.9609
#2	.00425	1.1049	-6.6078
#3	.00438	1.1044	-7.0373
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8854.3**	**51289.**	**2880.1**
Stddev	30.8	212.	30.7
%RSD	.34740	.41373	1.0660
#1	8819.2	51469.	2893.3
#2	8876.6	51343.	2845.0
#3	8867.1	51055.	2902.0

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 15:02:34 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40179**	**10.022**	**.39313**	**.49418**	**.98511**	**.04976**	**9.8066**
Stddev	.00247	.005	.00304	.00258	.00427	.00008	.0746
%RSD	.61582	.04555	.77304	.52164	.43316	.17052	.76028
#1	.39922	10.018	.39555	.49439	.98120	.04975	9.8360
#2	.40415	10.020	.38972	.49665	.98447	.04985	9.7219
#3	.40201	10.027	.39412	.49150	.98966	.04969	9.8620
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04958**	**.19924**	**.50081**	**.50233**	**3.9576**	**48.656**	**.98219**
Stddev	.00014	.00017	.00265	.00176	.0164	.115	.00460
%RSD	.28192	.08753	.52902	.35036	.41315	.23686	.46872
#1	.04950	.19941	.50062	.50408	3.9756	48.555	.98142
#2	.04974	.19906	.50355	.50235	3.9436	48.782	.98713
#3	.04949	.19925	.49826	.50056	3.9536	48.631	.97802
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.9270**	**.49529**	**1.0035**	**48.427**	**.50155**	**9.8795**	**.49965**
Stddev	.0316	.00287	.0064	.075	.00301	.0426	.00176
%RSD	.31789	.57995	.63842	.15480	.60022	.43100	.35249
#1	9.8909	.49274	1.0097	48.359	.50337	9.8974	.50046
#2	9.9492	.49472	1.0039	48.414	.50320	9.9102	.50086
#3	9.9410	.49840	.99693	48.507	.49807	9.8309	.49763
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 15:02:34 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1896**	**.40094**	**5.0266**	**1.0019**	**.98594**	**.98352**	**.50526**
Stddev	.0046	.00644	.0177	.0037	.00194	.00730	.00067
%RSD	.38209	1.6051	.35186	.36802	.19680	.74256	.13213
#1	1.1937	.39358	5.0424	1.0054	.98374	.98608	.50490
#2	1.1902	.40369	5.0301	1.0023	.98668	.97528	.50485
#3	1.1847	.40553	5.0075	.99805	.98740	.98919	.50603
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0018**	**.99403**	F **-.08877**
Stddev	.0014	.00267	1.2586
%RSD	.14076	.26820	1417.8
#1	1.0002	.99693	-.23380
#2	1.0028	.99169	1.2361
#3	1.0023	.99346	-1.2686
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8482.7**	**48857.**	**2796.5**
Stddev	18.7	198.	8.2
%RSD	.22022	.40606	.29391
#1	8473.3	49028.	2801.4
#2	8504.2	48902.	2787.0
#3	8470.6	48640.	2801.2

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 15:06:13 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00078**	**.00105**	**-.00318**	**.00506**	**-.00105**	**.00009**	**-.02252**
Stddev	.00120	.00938	.00382	.00507	.00116	.00000	.03878
%RSD	155.20	889.74	120.19	100.06	109.83	4.8087	172.19
#1	-.00140	.00947	.00077	.00935	-.00121	.00008	-.06581
#2	.00061	-.00905	-.00686	.00637	.00018	.00009	-.01078
#3	-.00154	.00274	-.00346	-.00053	-.00212	.00009	.00903
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**-.00009**	**.00027**	**.00094**	**-.03892**	**.03819**	**.00203**
Stddev	.00010	.00012	.00072	.00022	.02631	.06771	.00238
%RSD	106.46	127.07	261.53	23.680	67.612	177.28	117.33
#1	.00007	.00004	.00084	.00119	-.06542	.05385	.00086
#2	.00001	-.00012	-.00053	.00086	-.01280	.09670	.00478
#3	.00020	-.00020	.00052	.00077	-.03854	-.03597	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.05214**	**.00179**	**.00447**	**-.00578**	**-.00030**	**.00379**	**-.00074**
Stddev	.12870	.00137	.00064	.01950	.00028	.00553	.00064
%RSD	246.85	76.447	14.245	337.29	92.786	145.74	87.071
#1	-.06521	.00325	.00374	.00017	-.00024	.00920	-.00133
#2	-.17380	.00053	.00474	.01005	-.00061	.00402	-.00006
#3	.08260	.00160	.00493	-.02757	-.00006	-.00185	-.00083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 15:06:13 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00288**	**.00808**	**.00891**	**.00050**	**-.00006**	**.00293**	**.00349**
Stddev	.00051	.01049	.00066	.00024	.00053	.00374	.00036
%RSD	17.647	129.76	7.4587	47.396	880.33	127.72	10.435
#1	.00319	-.00347	.00966	.00069	.00048	.00384	.00332
#2	.00230	.01701	.00865	.00023	-.00057	-.00118	.00391
#3	.00316	.01070	.00841	.00058	-.00008	.00613	.00324
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00006**	**.00001**	F **-.62196**
Stddev	.00029	.00008	.58556
%RSD	459.83	645.15	94.147
#1	.00022	-.00007	-.12897
#2	.00025	.00002	-.46771
#3	-.00027	.00009	-1.2692
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8678.0**	**49913.**	**2799.0**
Stddev	19.3	153.	17.5
%RSD	.22289	.30669	.62615
#1	8695.8	49935.	2791.6
#2	8657.4	49751.	2819.1
#3	8680.8	50054.	2786.4

Approved: June 20, 2016

Sample Name: LLCCV Acquired: 6/17/2016 15:10:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00837**	**.16222**	**.00824**	**.08067**	**.00615**	**.00156**	**.39593**
Stddev	.00091	.00372	.00230	.00127	.00122	.00012	.02920
%RSD	10.869	2.2940	27.957	1.5802	19.898	7.4987	7.3753
#1	.00874	.16356	.00879	.07987	.00718	.00151	.40248
#2	.00734	.16509	.00571	.08214	.00480	.00147	.36401
#3	.00905	.15801	.01022	.08000	.00649	.00169	.42130
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00074**	**.00374**	**.00436**	**.00520**	**.07296**	**.72116**	**.08366**
Stddev	.00003	.00026	.00053	.00051	.02011	.11490	.00331
%RSD	3.7956	6.8976	12.168	9.7959	27.562	15.933	3.9619
#1	.00075	.00347	.00483	.00508	.06637	.59217	.07988
#2	.00076	.00377	.00379	.00576	.09554	.75871	.08607
#3	.00071	.00398	.00445	.00476	.05697	.81258	.08503
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39089**	**.00707**	**.00861**	**.36629**	**.01591**	**.76106**	**.00819**
Stddev	.04302	.00163	.00030	.02581	.00093	.00442	.00075
%RSD	11.007	23.125	3.5383	7.0456	5.8315	.58122	9.1301
#1	.39079	.00625	.00840	.34453	.01678	.75612	.00880
#2	.43397	.00600	.00896	.39480	.01602	.76467	.00735
#3	.34792	.00895	.00847	.35955	.01493	.76238	.00841
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: LLCCV Acquired: 6/17/2016 15:10:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.07705	.01536	.77675	.39285	.03881	.02468	.15424
Stddev	.00509	.00332	.00357	.00089	.00069	.00372	.00211
%RSD	6.6108	21.634	.45971	.22570	1.7682	15.083	1.3675
#1	.07858	.01195	.77336	.39251	.03840	.02039	.15644
#2	.07136	.01555	.78048	.39385	.03842	.02664	.15403
#3	.08120	.01859	.77641	.39218	.03960	.02702	.15224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00759	.01694	F -70.315
Stddev	.00062	.00020	2.511
%RSD	8.1815	1.1872	3.5703
#1	.00830	.01671	-71.960
#2	.00718	.01704	-71.559
#3	.00728	.01707	-67.425
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8645.8	50434.	2810.1
Stddev	10.5	242.	14.5
%RSD	.12185	.47909	.51588
#1	8638.3	50172.	2825.3
#2	8657.8	50649.	2796.5
#3	8641.3	50481.	2808.3

Approved: June 20, 2016

Sample Name: PBW H4 Acquired: 6/17/2016 15:14:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572637-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	.00166	-.00022	.00130	-.00095	-.00000	.04106	.00008
Stddev	.00202	.00288	.00074	.00199	.00040	.00005	.02400	.00021
%RSD	274.48	173.60	338.99	153.22	42.578	3344.6	58.453	269.09
#1	-.00139	-.00150	-.00019	.00301	-.00060	.00002	.02637	.00008
#2	.00263	.00235	.00050	.00178	-.00086	.00004	.06876	.00029
#3	.00096	.00413	-.00097	-.00089	-.00139	-.00006	.02805	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	.00053	.00041	-.01892	-.00569	.00251	-.07230	-.00037
Stddev	.00012	.00076	.00029	.01471	.02896	.00202	.10811	.00203
%RSD	241.84	145.52	71.870	77.729	508.64	80.523	149.53	547.50
#1	-.00018	.00138	.00070	-.00252	.02576	.00482	-.12002	-.00070
#2	.00006	-.00008	.00012	-.02329	-.01160	.00107	.05146	-.00222
#3	-.00003	.00027	.00040	-.03094	-.03125	.00164	-.14833	.00180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	.00329	-.00032	.00562	.00008	-.00060	.00613	.00337
Stddev	.00024	.02820	.00050	.00873	.00367	.00205	.00380	.00150
%RSD	55.792	857.81	155.68	155.23	4669.2	340.50	61.885	44.549
#1	.00045	.01534	.00023	-.00376	.00037	.00106	.00447	.00444
#2	.00064	.02346	-.00047	.01351	-.00372	.00002	.00345	.00400
#3	.00017	-.02894	-.00073	.00712	.00359	-.00289	.01047	.00165
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 20, 2016

Sample Name: PBW H4 Acquired: 6/17/2016 15:14:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572637-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	-.00001	.00264	.00299	-.00050	.00076	.22160
Stddev	.00064	.00035	.00202	.00203	.00108	.00016	.93199
%RSD	235.05	3031.7	76.295	67.792	216.06	20.580	420.58
#1	-.00095	.00020	.00268	.00279	-.00173	.00094	-.65518
#2	-.00021	.00019	.00464	.00107	.00029	.00065	.11956
#3	.00034	-.00042	.00061	.00511	-.00006	.00069	1.2004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8761.8	50571.	2829.6
Stddev	15.0	212.	15.3
%RSD	.17102	.41945	.54091
#1	8779.0	50351.	2842.5
#2	8755.0	50587.	2812.7
#3	8751.4	50774.	2833.5

Approved: June 20, 2016

Sample Name: LCSW H4 Acquired: 6/17/2016 15:18:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572637-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.22197	5.4230	.21513	1.0660	.55117	.02691	5.4982
Stddev	.00080	.0116	.00213	.0056	.00099	.00012	.0420
%RSD	.35946	.21341	.99089	.52523	.17986	.45089	.76291
#1	.22257	5.4109	.21690	1.0638	.55077	.02694	5.5459
#2	.22228	5.4340	.21277	1.0619	.55044	.02678	5.4815
#3	.22107	5.4241	.21573	1.0724	.55230	.02702	5.4672
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02706	.11115	.27406	.27905	2.2139	26.929	.55747
Stddev	.00032	.00063	.00176	.00151	.0159	.083	.00475
%RSD	1.1745	.56664	.64113	.53956	.71959	.30902	.85291
#1	.02670	.11045	.27297	.27984	2.2021	26.929	.56181
#2	.02722	.11132	.27313	.27731	2.2076	26.846	.55239
#3	.02727	.11168	.27609	.27999	2.2320	27.013	.55822
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.4483	.27830	.56264	27.153	.27822	5.3235	.28040
Stddev	.1242	.00170	.00040	.141	.00196	.0128	.00213
%RSD	2.2790	.61254	.07162	.51986	.70491	.24034	.75835
#1	5.3091	.28021	.56290	27.212	.27603	5.3097	.28046
#2	5.5476	.27693	.56284	26.991	.27880	5.3257	.27824
#3	5.4881	.27776	.56217	27.254	.27982	5.3350	.28249
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: LCSW H4 Acquired: 6/17/2016 15:18:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572637-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.66318**	**.21560**	**2.8083**	**.55322**	**.55644**	**.55104**	**.28067**
Stddev	.00339	.00523	.0053	.00136	.00305	.00064	.00507
%RSD	.51049	2.4262	.18687	.24505	.54843	.11586	1.8063
#1	.66440	.22092	2.8023	.55479	.55311	.55161	.28381
#2	.66579	.21046	2.8103	.55240	.55709	.55117	.28337
#3	.65935	.21544	2.8122	.55248	.55911	.55035	.27482
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.54683**	**.55402**	F **-2.5670**
Stddev	.00147	.00032	1.0640
%RSD	.26888	.05778	41.448
#1	.54647	.55367	-2.9270
#2	.54557	.55410	-3.4043
#3	.54844	.55430	-1.3697
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7898.8**	**45730.**	**2610.6**
Stddev	4.2	237.	3.6
%RSD	.05359	.51851	.13617
#1	7898.3	45512.	2606.6
#2	7903.3	45694.	2613.3
#3	7894.9	45982.	2612.0

Approved: June 20, 2016

Sample Name: F BLANK Acquired: 6/17/2016 15:21:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572637-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**.01225**	**-.00515**	**.00674**	**-.00158**	**.00011**	**.03187**
Stddev	.00290	.00776	.00290	.00070	.00052	.00004	.02687
%RSD	2106.8	63.342	56.284	10.420	32.860	36.691	84.333
#1	-.00316	.01858	-.00182	.00633	-.00098	.00010	.03067
#2	.00128	.01458	-.00711	.00634	-.00190	.00008	.05932
#3	.00230	.00359	-.00653	.00755	-.00186	.00015	.00561
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00028**	**.00026**	**.00011**	**.00052**	**.00473**	**.04205**	**.00390**
Stddev	.00004	.00040	.00106	.00150	.00737	.09767	.00215
%RSD	15.842	154.33	980.22	291.40	155.81	232.27	55.172
#1	.00024	.00067	.00127	-.00070	.00386	-.00261	.00142
#2	.00027	.00025	-.00013	.00220	.01249	-.02531	.00494
#3	.00032	-.00014	-.00081	.00005	-.00216	.15406	.00533
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.06354**	**-.00101**	**.00081**	**.01050**	**.00014**	**.00115**	**-.00067**
Stddev	.04357	.00280	.00028	.01982	.00015	.00722	.00130
%RSD	68.564	276.94	33.970	188.80	107.98	625.48	193.53
#1	-.09422	-.00423	.00056	-.01238	.00025	-.00086	-.00208
#2	-.08273	.00034	.00111	.02240	-.00003	.00917	.00050
#3	-.01367	.00086	.00078	.02147	.00019	-.00485	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: F BLANK Acquired: 6/17/2016 15:21:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572637-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.00380	.00997	.00036	.00050	-.00154	.00259
Stddev	.00254	.00471	.00041	.00084	.00055	.00735	.00135
%RSD	1608.6	123.94	4.0705	231.55	109.61	478.37	52.130
#1	.00039	-.00030	.00952	-.00050	.00082	.00477	.00167
#2	-.00249	.00894	.01008	.00118	.00081	.00024	.00414
#3	.00258	.00275	.01031	.00041	-.00013	-.00962	.00196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00035	.00295	F -.48683
Stddev	.00007	.00010	1.3517
%RSD	21.223	3.2938	277.65
#1	-.00040	.00302	-1.1249
#2	-.00038	.00299	1.0658
#3	-.00026	.00284	-1.4014
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8007.8	46661.	2617.0
Stddev	7.1	72.	23.0
%RSD	.08898	.15482	.87942
#1	8015.8	46737.	2592.1
#2	8002.2	46652.	2621.5
#3	8005.5	46593.	2637.4

Approved: June 20, 2016

Sample Name: L1606079301 Acquired: 6/17/2016 15:37:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573214-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01480**	**1.5630**	**.00141**	**.03595**	**3.5787**	**.00020**	**7.6693**
Stddev	.00169	.0017	.00140	.00340	.0120	.00006	.0271
%RSD	11.392	.11081	99.843	9.4594	.33488	29.760	.35280
#1	.01530	1.5636	-.00002	.03979	3.5917	.00026	7.7004
#2	.01617	1.5643	.00278	.03332	3.5681	.00016	7.6566
#3	.01292	1.5610	.00146	.03474	3.5763	.00016	7.6510
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04548**	**.02901**	**.12765**	**.42772**	**2.6186**	**.64094**	**.01161**
Stddev	.00043	.00040	.00050	.00057	.0135	.13428	.00053
%RSD	.95238	1.3691	.38976	.13429	.51473	20.950	4.5888
#1	.04524	.02865	.12764	.42722	2.6201	.51686	.01150
#2	.04523	.02895	.12815	.42835	2.6312	.62244	.01114
#3	.04598	.02944	.12716	.42758	2.6044	.78350	.01219
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.1815**	**.18018**	**.00210**	**1.2671**	**.03548**	**16.447**	**.94309**
Stddev	.0808	.00251	.00046	.0167	.00092	.033	.00428
%RSD	3.7028	1.3928	21.850	1.3214	2.6009	.19915	.45364
#1	2.1277	.18308	.00239	1.2479	.03653	16.413	.94469
#2	2.1425	.17876	.00157	1.2751	.03481	16.450	.94633
#3	2.2744	.17871	.00234	1.2783	.03511	16.479	.93824
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606079301 Acquired: 6/17/2016 15:37:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573214-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41406**	**.00137**	**.68309**	**.15314**	**4.8583**	**.04455**	**.00412**
Stddev	.00281	.00162	.00189	.00194	.0074	.00268	.00280
%RSD	.67801	118.58	.27726	1.2640	.15292	6.0112	67.995
#1	.41543	.00320	.68176	.15533	4.8668	.04583	.00663
#2	.41083	.00012	.68226	.15245	4.8545	.04147	.00462
#3	.41591	.00079	.68526	.15164	4.8535	.04635	.00110
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00534**	**1.3729**	F **-9.3146**
Stddev	.00068	.0021	.5612
%RSD	12.803	.15439	6.0250
#1	.00529	1.3704	-8.9633
#2	.00468	1.3737	-9.9619
#3	.00604	1.3744	-9.0187
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8881.4**	**51469.**	**2850.1**
Stddev	24.1	144.	18.7
%RSD	.27109	.27889	.65681
#1	8898.5	51590.	2845.9
#2	8853.9	51310.	2833.8
#3	8891.9	51507.	2870.6

Approved: June 20, 2016

Sample Name: L1606079301PS Acquired: 6/17/2016 15:40:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573214-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20932**	**6.3030**	**.19276**	**.97307**	**4.0059**	**.02416**	**12.279**
Stddev	.00138	.0150	.00055	.00380	.0092	.00003	.112
%RSD	.65931	.23881	.28756	.39038	.23083	.13538	.91378
#1	.20884	6.3059	.19221	.97283	3.9963	.02412	12.171
#2	.20825	6.3163	.19275	.97699	4.0067	.02416	12.395
#3	.21088	6.2867	.19332	.96940	4.0147	.02419	12.270
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.06852**	**.12418**	**.36162**	**.66349**	**4.4649**	**24.217**	**.49231**
Stddev	.00029	.00010	.00141	.00120	.0300	.040	.00104
%RSD	.42002	.08124	.38988	.18031	.67081	.16666	.21101
#1	.06844	.12408	.36023	.66438	4.4409	24.215	.49152
#2	.06828	.12418	.36305	.66213	4.4553	24.259	.49349
#3	.06884	.12428	.36159	.66396	4.4985	24.178	.49192
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**6.9590**	**.41411**	**.48136**	**24.864**	**.27673**	**21.243**	**1.1538**
Stddev	.1267	.00239	.00095	.033	.00120	.051	.0020
%RSD	1.8207	.57817	.19835	.13217	.43525	.23858	.17587
#1	6.8414	.41226	.48154	24.830	.27547	21.214	1.1557
#2	6.9424	.41327	.48033	24.896	.27684	21.213	1.1517
#3	7.0931	.41681	.48221	24.865	.27788	21.301	1.1541
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606079301PS Acquired: 6/17/2016 15:40:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573214-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.98515**	**.19898**	**3.0699**	**.63724**	**5.2511**	**.50846**	**.24393**
Stddev	.00399	.00400	.0081	.00092	.0126	.00575	.00184
%RSD	.40480	2.0101	.26360	.14435	.24035	1.1316	.75365
#1	.98055	.19436	3.0720	.63633	5.2393	.50424	.24326
#2	.98716	.20125	3.0610	.63722	5.2495	.50614	.24252
#3	.98772	.20133	3.0768	.63817	5.2644	.51502	.24601
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.47703**	**1.8165**	F **-8.3085**
Stddev	.00035	.0043	.4780
%RSD	.07351	.23772	5.7526
#1	.47719	1.8136	-8.3928
#2	.47663	1.8145	-7.7939
#3	.47727	1.8215	-8.7386
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8820.3**	**51204.**	**2900.9**
Stddev	11.5	108.	28.2
%RSD	.13055	.21035	.97072
#1	8808.2	51329.	2933.2
#2	8831.2	51140.	2881.9
#3	8821.4	51145.	2887.5

Approved: June 20, 2016

Sample Name: L1606079301SDL Acquired: 6/17/2016 15:44:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG573214-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00299**	**.31211**	**.00195**	**.00928**	**.72191**	**.00007**	**1.5813**
Stddev	.00390	.00391	.00202	.00269	.00133	.00008	.0290
%RSD	130.55	1.2537	103.54	28.971	.18478	114.57	1.8361
#1	-.00110	.30762	-.00020	.00800	.72326	.00003	1.6147
#2	.00338	.31477	.00382	.00747	.72188	.00002	1.5675
#3	.00668	.31395	.00224	.01238	.72060	.00016	1.5618
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00940**	**.00614**	**.02581**	**.08930**	**.51800**	**.18525**	**.00132**
Stddev	.00023	.00015	.00009	.00092	.01041	.14831	.00082
%RSD	2.4563	2.4608	.35889	1.0290	2.0091	80.058	62.246
#1	.00964	.00626	.02591	.08993	.52530	.10802	.00144
#2	.00918	.00597	.02573	.08824	.52263	.09149	.00207
#3	.00939	.00619	.02579	.08972	.50609	.35623	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.33625**	**.03741**	**.00108**	**.26052**	**.00669**	**3.3435**	**.19212**
Stddev	.04286	.00213	.00019	.02167	.00119	.0091	.00667
%RSD	12.747	5.6961	17.805	8.3179	17.863	.27232	3.4713
#1	.38575	.03534	.00121	.25430	.00615	3.3500	.19874
#2	.31161	.03731	.00117	.24264	.00586	3.3331	.19220
#3	.31140	.03960	.00086	.28462	.00806	3.3473	.18541
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606079301SDL Acquired: 6/17/2016 15:44:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG573214-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.08538	.00027	.14185	.02379	.97836	.00762	.00299
Stddev	.00136	.00397	.00157	.00193	.00539	.00721	.00255
%RSD	1.5960	1495.1	1.1103	8.1134	.55048	94.528	85.303
#1	.08568	.00347	.14364	.02517	.98417	.01149	.00579
#2	.08389	.00150	.14121	.02462	.97737	-.00069	.00081
#3	.08656	-.00418	.14069	.02158	.97353	.01208	.00235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00060	.28638	F -1.8538
Stddev	.00165	.00085	.6530
%RSD	275.33	.29772	35.225
#1	-.00017	.28562	-1.1001
#2	-.00053	.28621	-2.2098
#3	.00250	.28730	-2.2513
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8809.7	51129.	2837.0
Stddev	32.1	199.	29.8
%RSD	.36420	.38924	1.0503
#1	8826.4	51314.	2817.8
#2	8830.0	50918.	2871.3
#3	8772.7	51154.	2821.8

Approved: June 20, 2016

Sample Name: L1606079301 Acquired: 6/17/2016 15:48:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG573214-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00250	.31651	.00024	.00836	.72192	.00006	1.5811
Stddev	.00114	.00605	.00154	.00295	.00244	.00002	.0317
%RSD	45.611	1.9126	630.98	35.322	.33806	38.287	2.0036
#1	.00324	.32286	.00084	.01079	.72441	.00006	1.5446
#2	.00308	.31081	-.00150	.00921	.72183	.00003	1.5981
#3	.00119	.31585	.00140	.00507	.71953	.00008	1.6007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00909	.00583	.02577	.08770	.50956	.19089	.00266
Stddev	.00021	.00056	.00065	.00068	.01493	.05239	.00058
%RSD	2.3279	9.6642	2.5163	.77232	2.9308	27.445	21.805
#1	.00925	.00590	.02646	.08798	.49235	.20557	.00213
#2	.00917	.00636	.02567	.08693	.51908	.23437	.00257
#3	.00885	.00524	.02517	.08819	.51726	.13272	.00328
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.44883	.03766	.00057	.26197	.00718	3.3264	.18843
Stddev	.02465	.00266	.00011	.00596	.00049	.0049	.00330
%RSD	5.4923	7.0570	20.170	2.2761	6.7708	.14623	1.7499
#1	.42301	.03495	.00054	.26764	.00756	3.3313	.19072
#2	.47212	.03778	.00069	.25575	.00663	3.3263	.18992
#3	.45137	.04027	.00047	.26252	.00734	3.3216	.18465
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606079301 Acquired: 6/17/2016 15:48:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG573214-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.08444	.00511	.13857	.02396	.97646	.01159	.00331
Stddev	.00141	.00503	.00101	.00176	.00589	.00535	.00040
%RSD	1.6649	98.573	.73029	7.3510	.60351	46.185	11.959
#1	.08373	.00150	.13895	.02568	.98100	.00715	.00352
#2	.08353	.00296	.13933	.02403	.97858	.01754	.00285
#3	.08606	.01086	.13742	.02216	.96980	.01009	.00356
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00116	.28500	F -.20349
Stddev	.00068	.00015	.91863
%RSD	58.799	.05408	451.43
#1	.00060	.28515	-.11199
#2	.00095	.28485	-1.1644
#3	.00191	.28499	.66596
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8790.6	50790.	2833.5
Stddev	16.7	76.	17.7
%RSD	.19017	.14938	.62331
#1	8799.2	50862.	2816.3
#2	8801.2	50711.	2832.6
#3	8771.3	50799.	2851.5

Approved: June 20, 2016

Sample Name: L1606079301PS Acquired: 6/17/2016 15:52:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG573214-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19712**	**5.1467**	**.19291**	**.96999**	**1.1824**	**.02415**	**6.2995**
Stddev	.00169	.0303	.00186	.00516	.0014	.00001	.0083
%RSD	.85568	.58808	.96367	.53235	.11555	.03815	.13156
#1	.19530	5.1122	.19412	.97593	1.1839	.02416	6.2899
#2	.19742	5.1686	.19384	.96660	1.1813	.02415	6.3038
#3	.19863	5.1594	.19077	.96743	1.1820	.02414	6.3047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03322**	**.10264**	**.26613**	**.33365**	**2.4197**	**23.866**	**.48463**
Stddev	.00025	.00061	.00064	.00202	.0195	.067	.00377
%RSD	.76506	.59731	.24105	.60518	.80430	.27885	.77705
#1	.03293	.10210	.26580	.33378	2.4404	23.937	.48059
#2	.03336	.10250	.26572	.33559	2.4018	23.805	.48526
#3	.03338	.10331	.26687	.33156	2.4168	23.856	.48805
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.2030**	**.27494**	**.47928**	**24.017**	**.25073**	**8.1893**	**.43270**
Stddev	.0166	.00295	.00214	.076	.00245	.0139	.00213
%RSD	.31820	1.0747	.44730	.31816	.97777	.16967	.49211
#1	5.1839	.27570	.48139	24.104	.25064	8.1838	.43499
#2	5.2139	.27744	.47935	23.984	.24833	8.2051	.43078
#3	5.2111	.27168	.47711	23.962	.25323	8.1790	.43232
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606079301PS Acquired: 6/17/2016 15:52:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG573214-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.66555**	**.19817**	**2.5342**	**.51480**	**1.4219**	**.48595**	**.24397**
Stddev	.00226	.00738	.0069	.00054	.0029	.01132	.00374
%RSD	.33896	3.7222	.27394	.10456	.20630	2.3297	1.5339
#1	.66796	.19150	2.5282	.51528	1.4244	.49357	.24442
#2	.66518	.20609	2.5418	.51422	1.4187	.49134	.24747
#3	.66349	.19692	2.5326	.51490	1.4227	.47294	.24002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.47612**	**.76492**	F **-2.3661**
Stddev	.00219	.00048	.9891
%RSD	.46039	.06273	41.802
#1	.47621	.76449	-3.1828
#2	.47389	.76482	-2.6492
#3	.47827	.76544	-1.2664
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8726.8**	**50435.**	**2849.2**
Stddev	10.8	237.	26.1
%RSD	.12430	.46927	.91589
#1	8726.0	50703.	2821.6
#2	8738.0	50254.	2852.5
#3	8716.4	50349.	2873.5

Approved: June 20, 2016

Sample Name: L1606079301SDL Acquired: 6/17/2016 15:56:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 500 Custom ID2: Custom ID3:
Comment: WG573214-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00123	.05971	-.00148	.00695	.13307	-.00004	.31251
Stddev	.00132	.00836	.00366	.00241	.00043	.00003	.03307
%RSD	107.58	13.996	247.02	34.668	.32527	63.950	10.583
#1	-.00008	.06604	-.00065	.00419	.13294	-.00008	.27976
#2	.00120	.06286	-.00549	.00799	.13271	-.00003	.34589
#3	.00256	.05024	.00169	.00866	.13355	-.00003	.31189
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00198	.00105	.00441	.01656	.06612	.05760	.00087
Stddev	.00036	.00011	.00054	.00172	.00673	.02355	.00233
%RSD	18.118	10.253	12.222	10.413	10.181	40.879	268.52
#1	.00161	.00094	.00497	.01563	.07152	.03228	-.00080
#2	.00233	.00107	.00389	.01855	.06826	.07884	-.00013
#3	.00198	.00115	.00438	.01550	.05858	.06170	.00353
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04270	.00713	.00162	.02526	.00097	.60847	.02311
Stddev	.06359	.00375	.00028	.02922	.00058	.00384	.00029
%RSD	148.92	52.683	17.000	115.68	59.517	.63123	1.2501
#1	.01501	.00701	.00150	.04782	.00164	.60624	.02329
#2	-.00235	.00343	.00143	-.00775	.00064	.61291	.02328
#3	.11544	.01094	.00194	.03570	.00064	.60626	.02278
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606079301SDL Acquired: 6/17/2016 15:56:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 500 Custom ID2: Custom ID3:
Comment: WG573214-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01451**	**.00583**	**.02927**	**.00270**	**.18367**	**.00149**	**.00418**
Stddev	.00273	.00701	.00031	.00082	.00144	.00984	.00152
%RSD	18.796	120.30	1.0541	30.259	.78513	661.76	36.418
#1	.01691	-.00174	.02907	.00330	.18204	-.00939	.00285
#2	.01154	.01210	.02911	.00301	.18419	.00407	.00584
#3	.01508	.00712	.02963	.00177	.18478	.00978	.00385
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00029**	**.05258**	F **-.18722**
Stddev	.00017	.00010	.27239
%RSD	59.683	.18657	145.49
#1	.00010	.05265	-.49874
#2	.00045	.05262	-.06907
#3	.00032	.05247	.00615
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8751.6**	**50374.**	**2805.7**
Stddev	20.9	125.	35.3
%RSD	.23903	.24857	1.2571
#1	8775.7	50411.	2782.7
#2	8738.6	50234.	2788.0
#3	8740.4	50476.	2846.3

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 15:59:58 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40088	10.004	.39802	.50078	.99047	.04977	9.7831	.04984
Stddev	.00276	.016	.00203	.00591	.00576	.00014	.0446	.00039
%RSD	.68802	.16319	.51042	1.1802	.58184	.27794	.45575	.79136
#1	.40092	9.9964	.39586	.50712	.98595	.04989	9.7317	.05009
#2	.39811	9.9920	.39989	.49979	.98849	.04981	9.8119	.04938
#3	.40363	10.022	.39832	.49542	.99696	.04962	9.8056	.05005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20025	.50127	.50377	3.9883	49.161	.99001	9.8097	.49745
Stddev	.00053	.00085	.00175	.0094	.216	.00752	.0402	.00232
%RSD	.26581	.16883	.34684	.23652	.44016	.75948	.41008	.46658
#1	.19964	.50116	.50269	3.9986	49.058	.98183	9.8551	.49559
#2	.20053	.50049	.50579	3.9800	49.015	.99155	9.7784	.49670
#3	.20059	.50217	.50283	3.9863	49.409	.99663	9.7955	.50005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0060	48.966	.50520	9.9480	.50395	1.1969	.40146	5.0433
Stddev	.0026	.250	.00079	.0068	.00225	.0048	.01015	.0108
%RSD	.25737	.50967	.15555	.06805	.44724	.40229	2.5271	.21387
#1	1.0083	48.832	.50517	9.9405	.50459	1.1927	.39484	5.0309
#2	1.0063	48.811	.50443	9.9536	.50145	1.2022	.41314	5.0481
#3	1.0032	49.254	.50600	9.9499	.50582	1.1958	.39640	5.0509
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 15:59:58 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0043**	**.98896**	**.99120**	**.50664**	**.99974**	**1.0002**	**1.0260**
Stddev	.0029	.00505	.00929	.00372	.00091	.0025	.8504
%RSD	.29223	.51042	.93760	.73470	.09052	.24615	82.883
#1	1.0010	.98484	.98247	.50270	.99952	.99794	.06316
#2	1.0051	.98745	1.0010	.50711	.99896	.99984	1.6744
#3	1.0067	.99459	.99016	.51010	1.0007	1.0028	1.3406
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8464.8**	**48796.**	**2787.0**
Stddev	23.6	137.	17.9
%RSD	.27904	.28091	.64252
#1	8451.4	48680.	2774.0
#2	8492.1	48947.	2807.5
#3	8451.0	48760.	2779.6

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 16:03:35 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00073**	**.00306**	**-.00169**	**.00108**	**-.00234**	**.00004**	**.03479**
Stddev	.00159	.00396	.00140	.00124	.00036	.00007	.03364
%RSD	218.87	129.52	83.096	115.49	15.212	155.23	96.679
#1	-.00075	.00695	-.00298	-.00027	-.00193	-.00003	.00166
#2	.00242	-.00096	-.00190	.00218	-.00251	.00005	.03380
#3	.00051	.00318	-.00019	.00132	-.00258	.00010	.06891
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**.00003**	**.00034**	**.00040**	**.00112**	**.06739**	**.00136**
Stddev	.00010	.00059	.00043	.00075	.03060	.02868	.00146
%RSD	114.22	2075.4	126.86	188.52	2730.9	42.561	107.23
#1	.00020	-.00064	.00071	.00125	.03090	.09837	.00046
#2	.00005	.00027	-.00012	-.00018	-.03023	.06203	.00304
#3	.00001	.00046	.00042	.00013	.00269	.04176	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.05961**	**-.00024**	**.00445**	**.01255**	**-.00006**	**.00121**	**.00127**
Stddev	.01166	.00166	.00059	.02017	.00074	.00433	.00096
%RSD	19.568	697.80	13.288	160.68	1136.8	357.07	75.798
#1	-.05215	.00163	.00388	.02414	.00074	.00053	.00114
#2	-.05363	-.00080	.00441	.02426	-.00022	-.00274	.00229
#3	-.07305	-.00155	.00506	-.01074	-.00071	.00584	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 16:03:35 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00606**	**.00330**	**.00470**	**.00064**	**-.00025**	**-.00047**	**.00184**
Stddev	.00263	.00271	.00123	.00051	.00033	.00696	.00066
%RSD	43.422	82.097	26.200	79.835	130.79	1473.1	35.813
#1	.00859	.00604	.00613	.00077	-.00028	-.00522	.00229
#2	.00334	.00062	.00401	.00008	-.00057	-.00372	.00108
#3	.00624	.00325	.00398	.00107	.00009	.00752	.00215
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00013**	**-.00017**	F **-.67454**
Stddev	.00040	.00024	1.4683
%RSD	314.52	145.04	217.67
#1	-.00017	.00004	-2.2306
#2	-.00003	-.00010	.68651
#3	.00058	-.00043	-.47954
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8667.8**	**50369.**	**2822.1**
Stddev	18.0	251.	2.6
%RSD	.20739	.49780	.09326
#1	8657.2	50086.	2825.0
#2	8688.6	50460.	2821.3
#3	8657.8	50562.	2819.9

Approved: June 20, 2016

Sample Name: LLCCV Acquired: 6/17/2016 16:07:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00636	.16699	.00597	.07955	.00621	.00154	.38982
Stddev	.00224	.00593	.00259	.00157	.00149	.00008	.02564
%RSD	35.253	3.5500	43.295	1.9749	23.944	5.0938	6.5763
#1	.00595	.16024	.00338	.07976	.00729	.00162	.36463
#2	.00878	.17134	.00855	.08100	.00682	.00147	.38895
#3	.00435	.16940	.00599	.07788	.00451	.00154	.41587
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00101	.00412	.00352	.00499	.06925	.73968	.08307
Stddev	.00025	.00018	.00108	.00104	.00999	.10810	.00479
%RSD	24.609	4.3027	30.582	20.789	14.422	14.614	5.7617
#1	.00120	.00409	.00260	.00576	.05838	.86438	.08102
#2	.00073	.00396	.00326	.00381	.07135	.68211	.08854
#3	.00108	.00431	.00471	.00540	.07802	.67255	.07965
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.42109	.00972	.00848	.41303	.01495	.75269	.01105
Stddev	.02151	.00205	.00050	.01547	.00051	.00737	.00196
%RSD	5.1077	21.127	5.8922	3.7443	3.3986	.97953	17.731
#1	.41932	.01117	.00821	.40894	.01546	.76034	.01006
#2	.40053	.01062	.00906	.43013	.01445	.75209	.01331
#3	.44343	.00737	.00818	.40002	.01495	.74563	.00979
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: LLCCV Acquired: 6/17/2016 16:07:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.07595	.01997	.77311	.39092	.03872	.02402	.15095
Stddev	.00356	.00688	.00142	.00147	.00042	.00335	.00245
%RSD	4.6858	34.465	.18402	.37658	1.0920	13.931	1.6236
#1	.08002	.01421	.77231	.39233	.03887	.02148	.15342
#2	.07343	.01810	.77227	.38939	.03905	.02781	.14851
#3	.07439	.02759	.77475	.39105	.03824	.02277	.15091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00757	.01689	F -68.912
Stddev	.00069	.00024	1.371
%RSD	9.0541	1.4312	1.9896
#1	.00679	.01662	-70.493
#2	.00806	.01695	-68.044
#3	.00787	.01710	-68.199
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8654.2	50178.	2833.8
Stddev	5.6	302.	15.2
%RSD	.06521	.60169	.53795
#1	8660.6	50369.	2817.7
#2	8650.2	49830.	2848.0
#3	8651.7	50336.	2835.9

Approved: June 20, 2016

Sample Name: L1606056401 Acquired: 6/17/2016 16:11:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG572637-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00071	.00351	.00064	.40460	7.1095	.00001	121.04
Stddev	.00162	.00138	.00170	.00108	.0262	.00003	.46
%RSD	227.66	39.453	264.60	.26621	.36844	347.38	.37951
#1	.00018	.00372	-.00122	.40338	7.1190	.00004	121.19
#2	-.00259	.00478	.00212	.40503	7.1296	-.00002	121.41
#3	.00027	.00203	.00103	.40541	7.0799	.00001	120.53
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.00125	.00089	.00074	.70841	5.8136	.49804
Stddev	.00020	.00025	.00065	.00114	.03877	.2740	.00379
%RSD	629.21	19.863	72.422	153.66	5.4727	4.7131	.76103
#1	-.00017	.00098	.00015	.00074	.75112	5.8318	.49737
#2	.00024	.00147	.00134	.00188	.69864	6.0780	.50212
#3	.00003	.00129	.00119	-.00039	.67546	5.5309	.49463
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.369	.07780	.00063	F 282.38	-.00075	.01032	-.00221
Stddev	.093	.00194	.00041	1.18	.00114	.00514	.00163
%RSD	.75550	2.4965	64.832	.41931	152.33	49.841	73.605
#1	12.334	.07963	.00091	283.06	-.00066	.00949	-.00376
#2	12.475	.07577	.00081	283.07	-.00193	.00564	-.00236
#3	12.298	.07800	.00016	281.01	.00035	.01583	-.00052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 20, 2016

Sample Name: L1606056401 Acquired: 6/17/2016 16:11:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG572637-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00377	.00303	.08542	-.00084	F 19.258	-.01443	.00347
Stddev	.00313	.00131	.00212	.00048	.113	.00570	.00215
%RSD	83.093	43.270	2.4765	56.413	.58434	39.499	61.900
#1	-.00078	.00401	.08676	-.00042	19.310	-.01943	.00101
#2	-.00703	.00355	.08298	-.00136	19.129	-.01562	.00441
#3	-.00351	.00154	.08652	-.00076	19.334	-.00823	.00498
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00149	.00211	.83554
Stddev	.00102	.00018	1.0530
%RSD	68.631	8.2887	126.03
#1	-.00211	.00193	-.24866
#2	-.00031	.00228	1.8543
#3	-.00206	.00213	.90096
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8339.3	47799.	2789.6
Stddev	8.0	138.	8.5
%RSD	.09652	.28962	.30427
#1	8340.8	47825.	2799.4
#2	8330.7	47922.	2783.9
#3	8346.5	47649.	2785.5

Approved: June 20, 2016

Sample Name: L1606056405S Acquired: 6/17/2016 16:15:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG572637-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00160**	**.05376**	**.00557**	**.42893**	**7.1670**	**.00024**	**121.63**
Stddev	.00044	.01744	.00247	.00594	.0815	.00006	1.40
%RSD	27.440	32.445	44.291	1.3851	1.1371	24.370	1.1540
#1	.00201	.04048	.00497	.42392	7.0753	.00019	120.11
#2	.00114	.07352	.00346	.42737	7.1943	.00030	121.89
#3	.00165	.04728	.00828	.43549	7.2313	.00023	122.88
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**.00198**	**.00249**	**.00338**	**.74638**	**6.2030**	**.50996**
Stddev	.00030	.00036	.00112	.00076	.01348	.0881	.00480
%RSD	297.26	18.293	45.003	22.412	1.8054	1.4195	.94030
#1	-.00007	.00214	.00197	.00378	.73341	6.1017	.50443
#2	.00044	.00223	.00377	.00251	.76031	6.2460	.51292
#3	-.00008	.00156	.00172	.00386	.74541	6.2612	.51253
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**12.650**	**.07981**	**.00360**	F **284.04**	**.00125**	**.05965**	**.00451**
Stddev	.098	.00135	.00036	2.88	.00025	.00492	.00229
%RSD	.77453	1.6953	9.9866	1.0139	19.732	8.2448	50.654
#1	12.727	.08012	.00387	280.84	.00100	.06060	.00646
#2	12.540	.08098	.00374	284.83	.00124	.05432	.00509
#3	12.684	.07833	.00319	286.43	.00149	.06402	.00200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 20, 2016

Sample Name: L1606056405S Acquired: 6/17/2016 16:15:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG572637-06

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00480**	**-.00123**	**.11351**	**.00291**	F **19.147**	**-.02004**	**.00392**
Stddev	.00153	.00573	.00331	.00058	.189	.00623	.00209
%RSD	31.747	466.26	2.9150	19.801	.98655	31.111	53.398
#1	.00525	-.00624	.10976	.00332	18.929	-.02706	.00466
#2	.00606	-.00247	.11600	.00316	19.258	-.01790	.00553
#3	.00311	.00502	.11478	.00225	19.253	-.01515	.00155
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00493**	**.00876**	F **-.32603**
Stddev	.00083	.00041	.29623
%RSD	16.799	4.6422	90.860
#1	.00481	.00854	-.58730
#2	.00582	.00851	-.00420
#3	.00417	.00923	-.38657
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8301.4**	**47696.**	**2790.4**
Stddev	9.8	4.	24.5
%RSD	.11860	.00850	.87786
#1	8290.2	47699.	2816.9
#2	8305.7	47691.	2785.7
#3	8308.4	47697.	2768.6

Approved: June 20, 2016

Sample Name: L1606056407SD Acquired: 6/17/2016 16:19:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG572637-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00158**	**.05782**	**.00602**	**.41310**	**6.9604**	**.00020**	**118.13**
Stddev	.00279	.01094	.00359	.00375	.0334	.00001	.75
%RSD	176.92	18.919	59.675	.90870	.48050	5.2915	.63851
#1	.00013	.07045	.00194	.40977	6.9231	.00021	117.26
#2	.00479	.05151	.00869	.41237	6.9707	.00019	118.61
#3	-.00019	.05149	.00743	.41717	6.9876	.00020	118.51
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.00200**	**.00261**	**.00461**	**.70383**	**5.9326**	**.49586**
Stddev	.00015	.00024	.00085	.00039	.02132	.1483	.00288
%RSD	90.080	11.785	32.525	8.4679	3.0298	2.4996	.58026
#1	-.00004	.00214	.00175	.00469	.70573	5.7738	.49303
#2	-.00032	.00173	.00264	.00495	.72414	6.0674	.49879
#3	-.00012	.00214	.00344	.00419	.68162	5.9565	.49575
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**12.207**	**.07775**	**.00344**	F **275.83**	**.00135**	**.05536**	**.00399**
Stddev	.093	.00158	.00029	1.80	.00093	.00502	.00356
%RSD	.76349	2.0333	8.5237	.65277	68.728	9.0719	89.367
#1	12.289	.07901	.00370	273.75	.00179	.05284	.00478
#2	12.106	.07828	.00349	276.76	.00199	.05210	.00708
#3	12.227	.07598	.00312	276.98	.00029	.06114	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 20, 2016

Sample Name: L1606056407SD Acquired: 6/17/2016 16:19:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG572637-07

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	.00841	.11149	.00291	F 18.564	-.01356	.00602
Stddev	.00292	.00353	.00343	.00144	.304	.00645	.00249
%RSD	1301.2	41.967	3.0744	49.512	1.6387	47.591	41.385
#1	.00306	.00482	.10755	.00228	18.213	-.01977	.00460
#2	-.00119	.00854	.11378	.00456	18.726	-.01403	.00890
#3	-.00254	.01188	.11315	.00190	18.754	-.00689	.00457
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00354	.00720	F -.41791
Stddev	.00048	.00027	1.5795
%RSD	13.474	3.7357	377.95
#1	.00341	.00698	-1.0212
#2	.00314	.00750	-1.6068
#3	.00407	.00712	1.3743
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8332.5	47737.	2811.9
Stddev	2.9	160.	15.9
%RSD	.03425	.33561	.56400
#1	8335.7	47678.	2811.8
#2	8331.8	47918.	2796.1
#3	8330.1	47614.	2827.8

Approved: June 20, 2016

Sample Name: L1606059004 Acquired: 6/17/2016 16:23:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.02362**	**.24953**	**.05023**	**.33712**	**-.00002**	**129.18**	**.00033**
Stddev	.00074	.00743	.00461	.00506	.00247	.00006	.87	.00016
%RSD	373.62	31.447	1.8478	10.080	.73156	391.93	.67406	49.936
#1	-.00040	.02639	.24447	.05192	.33986	-.00005	130.13	.00041
#2	.00063	.01520	.25348	.04453	.33643	-.00005	128.97	.00044
#3	-.00082	.02926	.25065	.05422	.33508	.00006	128.43	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00127**	**.00104**	**.00130**	**9.1064**	**.93613**	**.00766**	**15.685**	**3.4681**
Stddev	.00038	.00178	.00061	.0516	.09459	.00501	.025	.0092
%RSD	29.787	171.23	46.997	.56619	10.104	65.444	.15935	.26497
#1	.00096	.00309	.00064	9.1656	.84769	.00587	15.656	3.4736
#2	.00170	.00008	.00142	9.0819	.92484	.00378	15.702	3.4733
#3	.00116	-.00006	.00185	9.0716	1.0359	.01331	15.698	3.4575
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00450**	**41.248**	**.00073**	**.02294**	**.00267**	**.00064**	**.00565**	**12.064**
Stddev	.00014	.308	.00114	.00420	.00310	.00287	.01055	.015
%RSD	3.1913	.74687	156.80	18.327	115.99	445.04	186.69	.12114
#1	.00466	41.553	.00130	.02151	.00049	.00367	.01355	12.052
#2	.00446	41.255	.00147	.02768	.00130	.00031	-.00633	12.080
#3	.00438	40.937	-.00059	.01964	.00621	-.00204	.00975	12.060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 20, 2016

Sample Name: L1606059004 Acquired: 6/17/2016 16:23:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00144	.54563	-.01435	.00165	-.00067	.02123	.91986
Stddev	.00078	.00425	.00265	.00304	.00085	.00007	.35659
%RSD	53.703	.77903	18.470	184.35	125.78	.33952	38.766
#1	.00063	.54967	-.01720	.00204	-.00014	.02116	1.0162
#2	.00217	.54603	-.01389	.00447	-.00165	.02123	.52500
#3	.00153	.54119	-.01196	-.00157	-.00023	.02130	1.2184
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7808.1	45267.	2618.1
Stddev	3.8	92.	34.0
%RSD	.04848	.20376	1.2993
#1	7805.1	45244.	2588.1
#2	7806.8	45369.	2655.1
#3	7812.3	45189.	2611.2

Approved: June 20, 2016

Sample Name: L1606059004PS Acquired: 6/17/2016 16:27:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572900-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.22018**	**5.4525**	**.44502**	**1.1187**	**.84544**	**.02711**	**122.83**
Stddev	.00309	.0261	.00076	.0031	.00669	.00002	.78
%RSD	1.4046	.47771	.17075	.27482	.79127	.05615	.63352
#1	.22375	5.4239	.44557	1.1191	.84996	.02712	123.31
#2	.21834	5.4590	.44533	1.1155	.84860	.02709	123.25
#3	.21845	5.4748	.44415	1.1216	.83775	.02712	121.93
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02715**	**.10816**	**.27112**	**.26642**	**10.452**	**27.659**	**.55820**
Stddev	.00015	.00048	.00111	.00119	.065	.113	.00202
%RSD	.55605	.44183	.40945	.44787	.62069	.41001	.36144
#1	.02732	.10834	.26987	.26507	10.507	27.785	.56036
#2	.02709	.10762	.27200	.26689	10.467	27.566	.55786
#3	.02704	.10852	.27149	.26731	10.380	27.624	.55637
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**19.453**	**3.4004**	**.56189**	**64.183**	**.26787**	**5.4552**	**.27211**
Stddev	.256	.0150	.00104	.451	.00090	.0104	.00204
%RSD	1.3171	.44258	.18533	.70289	.33550	.19098	.74832
#1	19.721	3.4173	.56287	64.512	.26845	5.4434	.27130
#2	19.427	3.3886	.56201	64.369	.26684	5.4591	.27061
#3	19.211	3.3951	.56080	63.669	.26833	5.4631	.27443
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606059004PS Acquired: 6/17/2016 16:27:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572900-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.65974	.21491	13.681	.54352	1.0118	.53191	.26923
Stddev	.00116	.00477	.018	.00102	.0078	.00297	.00195
%RSD	.17586	2.2206	.13341	.18799	.77308	.55894	.72429
#1	.65987	.21873	13.702	.54367	1.0185	.52885	.26739
#2	.66083	.21644	13.668	.54243	1.0137	.53209	.26903
#3	.65852	.20956	13.674	.54446	1.0032	.53479	.27127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.54698	.55071	F -2.5081
Stddev	.00125	.00084	.0338
%RSD	.22783	.15225	1.3482
#1	.54583	.55145	-2.4868
#2	.54679	.55089	-2.4904
#3	.54830	.54980	-2.5471
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7769.8	44909.	2608.7
Stddev	11.4	311.	31.9
%RSD	.14686	.69178	1.2217
#1	7766.8	44556.	2588.0
#2	7760.2	45027.	2592.7
#3	7782.5	45143.	2645.4

Approved: June 20, 2016

Sample Name: L1606059004SDL Acquired: 6/17/2016 16:31:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG572900-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**.00689**	**.04380**	**.01200**	**.05673**	**.00005**	**22.981**
Stddev	.00156	.00622	.00198	.00130	.00125	.00003	.099
%RSD	548.84	90.202	4.5171	10.863	2.1977	60.632	.42999
#1	-.00163	.01271	.04572	.01224	.05767	.00008	22.912
#2	-.00065	.00763	.04391	.01059	.05720	.00003	23.094
#3	.00142	.00034	.04177	.01316	.05532	.00003	22.936
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.00042**	**.00011**	**.00097**	**1.6119**	**.23603**	**.00413**
Stddev	.00005	.00034	.00085	.00065	.0456	.08477	.00261
%RSD	116.66	80.326	805.96	66.826	2.8304	35.917	63.232
#1	-.00004	.00036	.00108	.00023	1.5776	.32546	.00543
#2	.00000	.00078	-.00033	.00125	1.5945	.22577	.00584
#3	-.00010	.00011	-.00044	.00143	1.6637	.15685	.00112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.7470**	**.61491**	**.00111**	**7.3509**	**.00009**	**.00996**	**.00104**
Stddev	.1300	.00307	.00014	.0592	.00057	.01130	.00055
%RSD	4.7323	.49880	13.054	.80520	607.06	113.47	52.660
#1	2.6042	.61152	.00114	7.3942	-.00032	.01509	.00149
#2	2.8584	.61749	.00124	7.3750	.00075	.01778	.00119
#3	2.7785	.61573	.00095	7.2835	-.00015	-.00300	.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606059004SDL Acquired: 6/17/2016 16:31:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG572900-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00114**	**-.00330**	**2.1468**	**-.00003**	**.09391**	**-.00633**	**.00362**
Stddev	.00801	.00449	.0035	.00035	.00081	.00404	.00084
%RSD	702.92	136.19	.16504	1148.1	.85874	63.825	23.319
#1	-.00332	.00097	2.1434	.00028	.09340	-.00796	.00386
#2	-.00365	-.00799	2.1465	.00004	.09348	-.00173	.00431
#3	.01039	-.00288	2.1505	-.00041	.09484	-.00929	.00268
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00100**	**.00416**	F **-.53942**
Stddev	.00026	.00027	.83728
%RSD	26.028	6.5423	155.22
#1	-.00112	.00386	-1.4051
#2	-.00070	.00423	-.47929
#3	-.00117	.00439	.26619
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8773.4**	**50789.**	**2847.2**
Stddev	44.5	301.	32.1
%RSD	.50710	.59228	1.1278
#1	8819.1	50589.	2857.5
#2	8770.9	50643.	2811.2
#3	8730.3	51135.	2872.9

Approved: June 20, 2016

Sample Name: L1606059004SDL Acquired: 6/17/2016 16:35:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG572900-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00222	-.00239	.00785	.00478	.01039	.00006	4.8244
Stddev	.00154	.00453	.00215	.00396	.00112	.00002	.0234
%RSD	69.704	189.17	27.437	82.950	10.777	31.418	.48578
#1	.00373	.00227	.00545	.00556	.00911	.00004	4.8034
#2	.00228	-.00268	.00960	.00829	.01092	.00007	4.8202
#3	.00064	-.00677	.00849	.00048	.01115	.00008	4.8497
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	.00018	-.00044	.00101	.30422	-.03809	.00260
Stddev	.00016	.00046	.00023	.00032	.00697	.05415	.00462
%RSD	71.141	261.67	51.442	31.409	2.2914	142.19	177.52
#1	.00009	.00031	-.00070	.00102	.29700	-.09150	-.00266
#2	.00041	.00055	-.00026	.00069	.31091	-.03953	.00599
#3	.00020	-.00034	-.00037	.00132	.30475	.01678	.00449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.58022	.12667	.00029	1.4850	-.00074	.00643	-.00069
Stddev	.06353	.00088	.00003	.0437	.00153	.00311	.00197
%RSD	10.949	.69753	8.9090	2.9425	208.24	48.408	286.90
#1	.57865	.12613	.00027	1.4469	-.00101	.00661	-.00145
#2	.51749	.12769	.00027	1.4754	.00092	.00945	.00155
#3	.64453	.12618	.00031	1.5327	-.00211	.00323	-.00216
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606059004SDL Acquired: 6/17/2016 16:35:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG572900-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00347**	**.00895**	**.45953**	**-.00036**	**.01916**	**.00013**	**.00429**
Stddev	.00198	.00346	.00749	.00030	.00036	.00272	.00209
%RSD	57.251	38.640	1.6306	83.354	1.8602	2096.4	48.814
#1	-.00121	.00531	.45114	-.00002	.01889	.00031	.00571
#2	-.00496	.00934	.46189	-.00057	.01956	-.00268	.00189
#3	-.00422	.01220	.46556	-.00050	.01903	.00276	.00527
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00010**	**.00178**	F **-.07660**
Stddev	.00069	.00006	.64918
%RSD	666.83	3.3655	847.54
#1	.00059	.00179	.60790
#2	.00040	.00171	-.68348
#3	-.00068	.00183	-.15421
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8743.9**	**50681.**	**2826.5**
Stddev	21.5	143.	13.4
%RSD	.24631	.28304	.47402
#1	8745.4	50837.	2827.6
#2	8721.6	50651.	2812.7
#3	8764.6	50554.	2839.4

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 16:39:00 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39995	9.9922	.39657	.50906	.98752	.05001	9.7807	.04985
Stddev	.00152	.0067	.00186	.00538	.00333	.00040	.0715	.00009
%RSD	.38049	.06726	.46965	1.0560	.33745	.80956	.73115	.19058
#1	.40010	9.9993	.39691	.50538	.98367	.04986	9.7154	.04990
#2	.40138	9.9914	.39824	.50657	.98937	.04971	9.8571	.04974
#3	.39835	9.9860	.39456	.51523	.98952	.05047	9.7694	.04990
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20058	.50309	.50739	3.9942	49.476	.99000	9.7900	.49820
Stddev	.00019	.00319	.00029	.0205	.153	.00397	.0724	.00265
%RSD	.09515	.63485	.05660	.51340	.30855	.40126	.73989	.53286
#1	.20067	.50097	.50747	3.9706	49.643	.99389	9.8088	.50006
#2	.20072	.50154	.50707	4.0079	49.444	.99015	9.7101	.49516
#3	.20037	.50677	.50762	4.0041	49.342	.98595	9.8512	.49938
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0093	49.224	.50751	9.9920	.50807	1.2079	.40153	5.0686
Stddev	.0034	.120	.00050	.0139	.00437	.0069	.00231	.0094
%RSD	.33386	.24423	.09828	.13879	.86092	.57431	.57473	.18587
#1	1.0119	49.280	.50709	9.9814	.51217	1.2088	.39937	5.0612
#2	1.0106	49.306	.50806	10.008	.50856	1.2144	.40126	5.0792
#3	1.0055	49.086	.50736	9.9869	.50347	1.2006	.40396	5.0654
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 16:39:00 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0068**	**.98422**	**1.0035**	**.50990**	**1.0051**	**1.0071**	**1.0693**
Stddev	.0004	.00315	.0048	.00510	.0090	.0024	.6519
%RSD	.03513	.31990	.47393	.99948	.89481	.23783	60.963
#1	1.0065	.98412	1.0007	.50913	1.0028	1.0090	1.1843
#2	1.0072	.98742	1.0090	.50524	.99751	1.0078	1.6560
#3	1.0069	.98113	1.0009	.51534	1.0150	1.0044	.36758
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8464.7**	**49033.**	**2782.4**
Stddev	21.8	109.	18.3
%RSD	.25801	.22330	.65616
#1	8439.7	49130.	2764.1
#2	8474.5	49054.	2782.4
#3	8479.9	48914.	2800.7

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 16:42:38 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00137**	**-.00055**	**-.00294**	**.00640**	**-.00103**	**.00005**	**-.00751**
Stddev	.00171	.00995	.00344	.00038	.00118	.00005	.06485
%RSD	125.25	1795.6	116.86	6.0102	114.15	94.499	863.46
#1	.00053	-.00741	-.00662	.00666	-.00191	.00008	-.08220
#2	-.00184	.01086	.00019	.00657	-.00150	-.00000	.02520
#3	-.00280	-.00511	-.00239	.00595	.00031	.00008	.03447
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**.00011**	**-.00039**	**.00178**	**-.00793**	**.03356**	**.00065**
Stddev	.00020	.00015	.00079	.00103	.01440	.04352	.00650
%RSD	193.27	132.94	203.54	58.159	181.65	129.65	1004.3
#1	.00032	-.00005	-.00121	.00111	-.02455	.07524	-.00403
#2	-.00006	.00024	.00036	.00125	-.00004	-.01159	-.00210
#3	.00004	.00013	-.00031	.00297	.00080	.03704	.00807
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03756**	**.00130**	**.00451**	**.01311**	**.00001**	**-.00109**	**.00003**
Stddev	.03203	.00221	.00053	.03637	.00046	.00720	.00340
%RSD	85.284	169.26	11.689	277.50	4738.4	660.36	10784.
#1	.06037	.00216	.00404	.02402	.00020	.00530	-.00387
#2	.05137	-.00120	.00442	.04277	-.00051	.00032	.00165
#3	.00094	.00295	.00508	-.02747	.00034	-.00890	.00232
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 16:42:38 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00292**	**-.00123**	**.00375**	**-.00013**	**.00009**	**.00142**	**.00091**
Stddev	.00484	.00417	.00060	.00086	.00052	.00485	.00215
%RSD	165.56	339.67	16.026	643.77	581.53	340.90	235.52
#1	.00762	-.00403	.00352	-.00054	-.00005	.00386	-.00077
#2	.00318	.00357	.00443	-.00071	.00066	.00457	.00017
#3	-.00204	-.00323	.00329	.00085	-.00034	-.00416	.00333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00030**	**-.00007**	F **-.60663**
Stddev	.00095	.00005	.77697
%RSD	317.05	67.528	128.08
#1	.00103	-.00011	-.83717
#2	-.00077	-.00010	-1.2422
#3	.00064	-.00002	.25952
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8632.2**	**49916.**	**2797.7**
Stddev	33.1	298.	20.8
%RSD	.38289	.59734	.74362
#1	8599.0	49714.	2813.0
#2	8632.7	50258.	2806.2
#3	8665.0	49775.	2774.0

Approved: June 20, 2016

Sample Name: L1606056402 Acquired: 6/17/2016 16:46:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG572637-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00197**	**.00642**	**.00164**	**.40522**	**7.2782**	**-.00004**	**122.64**
Stddev	.00197	.01087	.00100	.00215	.0199	.00002	.40
%RSD	100.12	169.34	61.459	.52977	.27300	37.911	.32813
#1	.00308	.01057	.00059	.40318	7.2815	-.00006	122.84
#2	-.00031	.01461	.00259	.40746	7.2569	-.00003	122.18
#3	.00313	-.00592	.00173	.40502	7.2962	-.00003	122.91
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.00130**	**.00106**	**.00083**	**.53182**	**5.7768**	**.51164**
Stddev	.00026	.00012	.00041	.00082	.01709	.0235	.00252
%RSD	67.845	8.9930	38.332	99.181	3.2129	.40605	.49332
#1	-.00061	.00124	.00142	-.00007	.51210	5.7556	.50873
#2	-.00010	.00123	.00116	.00154	.54200	5.8020	.51318
#3	-.00043	.00144	.00062	.00100	.54137	5.7727	.51300
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**12.609**	**.07814**	**.00065**	F **286.64**	**-.00150**	**.00657**	**.00078**
Stddev	.116	.00184	.00022	.54	.00133	.00704	.00223
%RSD	.91793	2.3561	34.766	.18884	88.299	107.06	287.26
#1	12.742	.07892	.00047	286.84	-.00155	.01257	.00300
#2	12.551	.07604	.00090	286.03	-.00281	.00832	.00079
#3	12.534	.07947	.00057	287.06	-.00015	-.00117	-.00146
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 20, 2016

Sample Name: L1606056402 Acquired: 6/17/2016 16:46:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG572637-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00248**	**.00573**	**.07087**	**-.00176**	F **19.152**	**-.01736**	**.00341**
Stddev	.00494	.00855	.00329	.00040	.247	.00816	.00262
%RSD	198.83	149.23	4.6396	22.910	1.2888	47.001	76.878
#1	-.00449	-.00413	.07260	-.00166	19.063	-.02678	.00550
#2	.00314	.01105	.06708	-.00220	19.430	-.01236	.00425
#3	-.00610	.01028	.07294	-.00141	18.962	-.01295	.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00136**	**.00188**	**.26018**
Stddev	.00062	.00010	.12527
%RSD	45.462	5.3176	48.147
#1	-.00065	.00193	.11648
#2	-.00167	.00176	.31771
#3	-.00177	.00193	.34635
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8329.8**	**47710.**	**2797.0**
Stddev	7.7	99.	23.3
%RSD	.09275	.20810	.83406
#1	8333.5	47755.	2777.9
#2	8320.9	47779.	2790.1
#3	8335.0	47596.	2823.0

Approved: June 20, 2016

Sample Name: L1606056403 Acquired: 6/17/2016 16:50:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00126**	**.01052**	**.00159**	**.39664**	**6.7501**	**.00006**	**114.79**
Stddev	.00147	.00383	.00290	.00189	.0055	.00011	.15
%RSD	117.27	36.431	182.18	.47747	.08120	178.73	.13135
#1	.00294	.00915	.00494	.39675	6.7449	.00007	114.62
#2	.00019	.00755	-.00023	.39847	6.7558	-.00005	114.90
#3	.00064	.01484	.00007	.39469	6.7495	.00016	114.86
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.00100**	**-.00030**	**.00084**	**.68508**	**5.5480**	**.48145**
Stddev	.00047	.00036	.00011	.00060	.01732	.0338	.00175
%RSD	308.24	35.807	38.538	71.396	2.5284	.60884	.36318
#1	-.00019	.00099	-.00028	.00022	.70158	5.5830	.48151
#2	.00034	.00065	-.00042	.00142	.66704	5.5454	.48316
#3	-.00061	.00137	-.00019	.00087	.68662	5.5156	.47967
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**11.856**	**.06994**	**.00040**	F **271.22**	**-.00115**	**.00793**	**.00170**
Stddev	.128	.00156	.00030	.58	.00101	.00653	.00079
%RSD	1.0816	2.2296	73.614	.21252	88.182	82.320	46.204
#1	11.726	.07164	.00020	270.59	-.00015	.00786	.00258
#2	11.982	.06857	.00074	271.71	-.00113	.01450	.00106
#3	11.859	.06963	.00026	271.37	-.00218	.00144	.00147
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 20, 2016

Sample Name: L1606056403 Acquired: 6/17/2016 16:50:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00253	.00095	.08301	-.00076	F 18.031	-.02106	.00487
Stddev	.00042	.00928	.00412	.00097	.248	.00433	.00179
%RSD	16.513	976.76	4.9624	127.76	1.3772	20.583	36.726
#1	.00241	-.00931	.07855	-.00188	17.751	-.01656	.00521
#2	.00300	.00877	.08380	-.00030	18.225	-.02521	.00294
#3	.00219	.00339	.08668	-.00011	18.117	-.02142	.00646
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00051	.00193	F -.47559
Stddev	.00097	.00011	1.2082
%RSD	189.69	5.7088	254.04
#1	-.00096	.00200	-1.1611
#2	.00060	.00200	-1.1851
#3	-.00118	.00181	.91945
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8323.5	47789.	2816.4
Stddev	31.7	97.	19.3
%RSD	.38089	.20226	.68601
#1	8353.4	47732.	2827.1
#2	8290.3	47735.	2794.1
#3	8326.9	47901.	2828.1

Approved: June 20, 2016

Sample Name: L1606056404 Acquired: 6/17/2016 16:54:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00030**	**.00638**	**.00101**	**.41082**	**7.3350**	**.00002**	**123.56**
Stddev	.00172	.00613	.00121	.00259	.0563	.00011	.95
%RSD	569.20	96.070	119.14	.63030	.76819	653.59	.76571
#1	.00094	.01312	.00082	.41218	7.2701	.00012	122.49
#2	.00042	.00115	-.00008	.40784	7.3715	.00002	124.26
#3	-.00227	.00486	.00231	.41245	7.3634	-.00009	123.94
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**.00141**	**.00080**	**.00097**	**.58371**	**5.9646**	**.51200**
Stddev	.00017	.00061	.00047	.00120	.01543	.0236	.00436
%RSD	158.31	43.315	59.146	122.69	2.6432	.39547	.85119
#1	-.00022	.00184	.00044	.00089	.56611	5.9802	.50914
#2	.00009	.00071	.00063	-.00018	.59491	5.9762	.51702
#3	-.00020	.00168	.00133	.00221	.59010	5.9375	.50985
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**12.722**	**.07926**	**.00025**	F **287.19**	**-.00103**	**.00738**	**.00152**
Stddev	.178	.00217	.00020	1.56	.00061	.00657	.00538
%RSD	1.3960	2.7372	80.224	.54400	59.963	89.088	353.76
#1	12.925	.07794	.00023	285.42	-.00162	.01280	-.00280
#2	12.597	.07807	.00045	288.38	-.00107	.00926	.00754
#3	12.643	.08176	.00006	287.77	-.00039	.00007	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 20, 2016

Sample Name: L1606056404 Acquired: 6/17/2016 16:54:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00075	.00300	.06825	-.00048	F 19.444	-.01415	.00611
Stddev	.00291	.00318	.00216	.00059	.397	.00295	.00068
%RSD	387.45	106.13	3.1715	123.96	2.0396	20.846	11.200
#1	.00174	-.00061	.06594	-.00115	19.022	-.01222	.00609
#2	-.00004	.00421	.07024	-.00028	19.808	-.01754	.00543
#3	-.00394	.00540	.06857	-.00001	19.501	-.01268	.00680
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00084	.00193	.50821
Stddev	.00017	.00007	.31836
%RSD	19.701	3.8145	62.643
#1	-.00070	.00186	.84507
#2	-.00102	.00192	.46725
#3	-.00080	.00200	.21231
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8302.9	47648.	2774.0
Stddev	12.3	291.	5.8
%RSD	.14826	.61124	.20915
#1	8312.9	47565.	2772.6
#2	8289.2	47972.	2780.3
#3	8306.6	47408.	2769.0

Approved: June 20, 2016

Sample Name: L1606056406S Acquired: 6/17/2016 16:58:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG572637-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00450**	**.05512**	**.00397**	**.40928**	**6.9475**	**.00029**	**116.84**
Stddev	.00038	.00855	.00302	.00316	.0503	.00007	.94
%RSD	8.4062	15.505	75.871	.77161	.72463	22.636	.80277
#1	.00442	.05449	.00330	.40749	6.9054	.00030	116.01
#2	.00417	.06397	.00727	.40742	6.9339	.00022	116.66
#3	.00491	.04691	.00135	.41292	7.0033	.00035	117.86
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00000**	**.00182**	**.00216**	**.00345**	**.55059**	**5.7496**	**.48978**
Stddev	.00021	.00006	.00171	.00082	.01027	.0827	.00232
%RSD	4605.9	3.3543	78.989	23.827	1.8658	1.4385	.47424
#1	-.00010	.00181	.00187	.00291	.56026	5.6808	.48725
#2	.00025	.00188	.00062	.00305	.55170	5.7266	.49025
#3	-.00013	.00176	.00400	.00440	.53981	5.8413	.49183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**12.106**	**.07737**	**.00335**	F **272.76**	**.00190**	**.05862**	**.00321**
Stddev	.040	.00282	.00031	2.17	.00054	.00885	.00401
%RSD	.33390	3.6384	9.1193	.79522	28.448	15.096	124.84
#1	12.087	.07812	.00360	270.95	.00132	.05226	.00660
#2	12.079	.07426	.00343	272.17	.00239	.05488	.00423
#3	12.153	.07974	.00301	275.17	.00200	.06873	-.00121
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 20, 2016

Sample Name: L1606056406S Acquired: 6/17/2016 16:58:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG572637-08

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00225**	**.00576**	**.09213**	**.00234**	F **18.408**	**-.01376**	**.00664**
Stddev	.00237	.00559	.00099	.00061	.396	.00428	.00257
%RSD	105.31	97.039	1.0710	25.877	2.1525	31.126	38.668
#1	.00497	.01193	.09179	.00302	17.999	-.01813	.00675
#2	.00061	.00105	.09136	.00216	18.436	-.00957	.00402
#3	.00118	.00429	.09325	.00185	18.790	-.01358	.00915
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00380**	**.00683**	F **-.24930**
Stddev	.00063	.00014	.89248
%RSD	16.672	2.0358	357.99
#1	.00308	.00671	-1.0729
#2	.00402	.00680	.69896
#3	.00429	.00698	-.37398
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8309.5**	**47559.**	**2785.5**
Stddev	12.0	320.	25.6
%RSD	.14416	.67333	.91861
#1	8314.9	47214.	2812.6
#2	8317.9	47847.	2781.9
#3	8295.8	47615.	2761.8

Approved: June 20, 2016

Sample Name: L1606056408SD Acquired: 6/17/2016 17:02:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG572637-09

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00197**	**.06610**	**.00495**	**.41252**	**7.0247**	**.00029**	**118.16**
Stddev	.00191	.00489	.00262	.00675	.0723	.00007	1.03
%RSD	96.939	7.3914	52.893	1.6352	1.0291	24.908	.87558
#1	.00417	.07174	.00756	.40473	6.9421	.00035	116.99
#2	.00083	.06343	.00233	.41624	7.0762	.00029	118.97
#3	.00090	.06312	.00496	.41658	7.0558	.00021	118.51
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.00214**	**.00340**	**.00477**	**.56320**	**5.9362**	**.49645**
Stddev	.00029	.00025	.00031	.00195	.02376	.0345	.00473
%RSD	822.16	11.895	9.1002	40.839	4.2191	.58061	.95195
#1	-.00035	.00213	.00373	.00659	.58759	5.9746	.49139
#2	.00003	.00189	.00312	.00272	.56188	5.9081	.49721
#3	.00021	.00240	.00333	.00499	.54012	5.9259	.50076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**12.119**	**.07647**	**.00368**	F **275.79**	**.00176**	**.06011**	**.00373**
Stddev	.169	.00172	.00004	2.22	.00090	.00531	.00128
%RSD	1.3962	2.2524	.96016	.80470	50.804	8.8299	34.243
#1	11.979	.07833	.00371	273.33	.00280	.06192	.00417
#2	12.307	.07615	.00369	277.65	.00129	.06427	.00229
#3	12.071	.07493	.00364	276.38	.00120	.05413	.00473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 20, 2016

Sample Name: L1606056408SD Acquired: 6/17/2016 17:02:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG572637-09

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00615**	**-.00054**	**.09578**	**.00321**	F **18.621**	**-.01014**	**.00626**
Stddev	.00270	.00825	.00283	.00089	.180	.00462	.00307
%RSD	43.892	1530.0	2.9517	27.736	.96675	45.580	49.013
#1	.00887	.00733	.09370	.00312	18.600	-.01536	.00979
#2	.00347	.00018	.09463	.00237	18.811	-.00657	.00477
#3	.00611	-.00913	.09900	.00414	18.452	-.00849	.00422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00525**	**.00704**	F **-.56720**
Stddev	.00061	.00031	.43432
%RSD	11.560	4.3824	76.573
#1	.00535	.00669	-.13035
#2	.00460	.00715	-.57230
#3	.00580	.00727	-.99894
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8294.8**	**47510.**	**2801.4**
Stddev	39.9	88.	20.7
%RSD	.48071	.18576	.73912
#1	8314.7	47546.	2788.6
#2	8320.8	47574.	2790.3
#3	8248.9	47409.	2825.3

Approved: June 20, 2016

Sample Name: L1606053501 Acquired: 6/17/2016 17:06:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00102**	**-.00688**	**.02733**	**.00676**	**.00179**	**-.00019**	**.06372**
Stddev	.00125	.00806	.00133	.00231	.00102	.00007	.01579
%RSD	122.51	117.13	4.8680	34.193	56.928	38.948	24.776
#1	-.00047	-.01250	.02887	.00673	.00296	-.00028	.07124
#2	-.00245	-.01049	.02651	.00909	.00110	-.00016	.04558
#3	-.00014	.00235	.02662	.00447	.00131	-.00014	.07433
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00006**	**.00242**	**.00016**	**.00459**	**-.00012**	**.16215**	**.00199**
Stddev	.00015	.00041	.00025	.00148	.01260	.01836	.00390
%RSD	231.76	16.830	150.29	32.209	10239.	11.321	196.18
#1	-.00011	.00196	.00037	.00301	-.01408	.15273	.00137
#2	.00014	.00271	.00023	.00480	.00328	.15040	.00615
#3	.00015	.00260	-.00011	.00595	.01043	.18330	-.00157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.15873**	**.00282**	**.00195**	**9.3983**	**.00143**	**.12851**	**.00258**
Stddev	.02206	.00019	.00010	.0591	.00071	.00324	.00196
%RSD	13.899	6.6379	4.9790	.62914	49.378	2.5230	75.786
#1	.16358	.00273	.00186	9.4665	.00067	.12654	.00484
#2	.17796	.00304	.00206	9.3665	.00156	.12673	.00137
#3	.13465	.00271	.00193	9.3618	.00206	.13225	.00154
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606053501 Acquired: 6/17/2016 17:06:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00367**	**.09355**	**1.9998**	**.01058**	**.00416**	**.00716**	**-.02346**
Stddev	.00127	.00728	.0048	.00084	.00184	.00452	.00291
%RSD	34.497	7.7797	.23801	7.9605	44.114	63.057	12.381
#1	.00449	.08723	1.9969	.01042	.00621	.00828	-.02682
#2	.00221	.10151	1.9971	.01149	.00361	.01102	-.02188
#3	.00431	.09191	2.0053	.00983	.00266	.00219	-.02170
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00002**	**.05511**	F **-.65340**
Stddev	.00037	.00020	.98577
%RSD	1535.5	.36440	150.87
#1	-.00013	.05531	-.12547
#2	-.00025	.05512	-1.7907
#3	.00045	.05491	-.04404
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10929.**	**65655.**	**4206.8**
Stddev	29.	202.	34.9
%RSD	.26736	.30712	.82862
#1	10959.	65880.	4171.4
#2	10927.	65593.	4241.1
#3	10901.	65491.	4208.1

Approved: June 20, 2016

Sample Name: L1606059005 Acquired: 6/17/2016 17:10:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00158**	**.03102**	**.25335**	**.04990**	**.34090**	**.00001**	**128.29**	**.00052**
Stddev	.00223	.00317	.00374	.00185	.00135	.00004	.34	.00031
%RSD	141.27	10.205	1.4753	3.7167	.39627	250.64	.26131	59.357
#1	-.00008	.02858	.25014	.05190	.33934	.00000	127.95	.00021
#2	-.00051	.03460	.25247	.04959	.34173	-.00001	128.29	.00082
#3	-.00414	.02987	.25745	.04823	.34163	.00006	128.62	.00052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00116**	**.00046**	**.00240**	**9.1329**	**.97412**	**.01303**	**15.621**	**3.4497**
Stddev	.00046	.00042	.00142	.0185	.14160	.00475	.095	.0111
%RSD	39.876	91.979	59.011	.20227	14.536	36.461	.60961	.32162
#1	.00063	.00094	.00401	9.1541	1.0179	.00865	15.532	3.4374
#2	.00136	.00022	.00131	9.1240	1.0887	.01235	15.722	3.4527
#3	.00149	.00020	.00190	9.1205	.81581	.01808	15.608	3.4589
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00413**	**41.270**	**.00073**	**.01345**	**.00402**	**.00318**	**.00743**	**12.441**
Stddev	.00014	.137	.00031	.01339	.00137	.00682	.00479	.031
%RSD	3.3542	.33264	41.713	99.560	34.194	214.10	64.511	.25224
#1	.00417	41.141	.00055	.02829	.00463	.00156	.01296	12.405
#2	.00425	41.256	.00056	.00228	.00498	.01067	.00474	12.462
#3	.00398	41.414	.00109	.00977	.00245	-.00268	.00459	12.456
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 20, 2016

Sample Name: L1606059005 Acquired: 6/17/2016 17:10:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.54505	-.02036	.00276	-.00138	.02723	.28908
Stddev	.00040	.00234	.00204	.00284	.00046	.00019	.32840
%RSD	299.20	.43012	10.023	103.03	33.593	.68912	113.60
#1	.00011	.54323	-.01800	.00230	-.00099	.02742	.15845
#2	.00054	.54770	-.02157	.00017	-.00125	.02705	.04609
#3	-.00025	.54422	-.02149	.00580	-.00189	.02722	.66269
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7933.1	46759.	2799.4
Stddev	10.2	101.	8.9
%RSD	.12901	.21635	.31693
#1	7943.7	46645.	2809.6
#2	7923.2	46839.	2795.2
#3	7932.3	46792.	2793.4

Approved: June 20, 2016

Sample Name: L1606059006 Acquired: 6/17/2016 17:14:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00184**	**.04181**	**-.00018**	**.03461**	**.02035**	**-.00004**	**102.44**
Stddev	.00061	.00364	.00287	.00119	.00065	.00004	.41
%RSD	33.417	8.6963	1551.4	3.4491	3.1922	99.752	.40136
#1	.00253	.03779	.00313	.03381	.02096	.00000	102.90
#2	.00136	.04280	-.00176	.03598	.01966	-.00008	102.31
#3	.00162	.04485	-.00192	.03403	.02043	-.00004	102.10
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00054**	**.00138**	**.00063**	**.00216**	**.05283**	**1.2651**	**.01667**
Stddev	.00021	.00011	.00113	.00006	.01064	.0512	.00215
%RSD	39.243	7.6707	178.97	2.7514	20.135	4.0453	12.895
#1	.00044	.00129	.00083	.00219	.06351	1.2822	.01539
#2	.00041	.00150	-.00058	.00219	.04224	1.3055	.01547
#3	.00079	.00135	.00165	.00209	.05272	1.2075	.01915
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**17.153**	**2.6706**	**.00082**	**48.447**	**.00596**	**.00170**	**.00226**
Stddev	.051	.0144	.00033	.160	.00169	.00346	.00103
%RSD	.29842	.53866	40.400	.32992	28.419	203.71	45.431
#1	17.203	2.6746	.00121	48.620	.00737	.00234	.00140
#2	17.155	2.6825	.00064	48.305	.00644	-.00204	.00199
#3	17.101	2.6546	.00063	48.415	.00408	.00480	.00339
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606059006 Acquired: 6/17/2016 17:14:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00057**	**.00289**	**14.216**	**-.00002**	**.31513**	**-.01489**	**.00359**
Stddev	.00174	.00465	.047	.00103	.00157	.00411	.00103
%RSD	308.24	161.05	.33285	5745.7	.49909	27.627	28.621
#1	.00160	.00373	14.260	-.00092	.31686	-.01829	.00414
#2	.00154	.00706	14.223	-.00024	.31472	-.01032	.00240
#3	-.00145	-.00213	14.166	.00111	.31380	-.01606	.00421
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00061**	**.01256**	F **-1.0339**
Stddev	.00151	.00007	.6104
%RSD	247.36	.54329	59.035
#1	.00175	.01248	-1.6199
#2	-.00110	.01258	-.40175
#3	.00118	.01262	-1.0801
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7893.1**	**46046.**	**2698.2**
Stddev	5.8	116.	21.2
%RSD	.07321	.25272	.78483
#1	7891.3	46158.	2674.2
#2	7888.5	46055.	2706.0
#3	7899.6	45925.	2714.3

Approved: June 20, 2016

Sample Name: L1606059007 Acquired: 6/17/2016 17:18:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	.01835	.00192	.03851	.16885	-.00001	128.45	.00035
Stddev	.00104	.00774	.00418	.00208	.00161	.00006	.33	.00021
%RSD	140.97	42.184	217.61	5.3896	.95392	817.27	.25644	61.569
#1	.00146	.02682	.00183	.03611	.17038	-.00007	128.79	.00026
#2	.00121	.01164	.00614	.03977	.16901	.00002	128.13	.00019
#3	-.00046	.01659	-.00221	.03963	.16717	.00003	128.44	.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00126	.00122	.00245	.03832	1.3143	.01143	14.884	2.6597
Stddev	.00027	.00089	.00024	.01821	.0460	.00424	.232	.0098
%RSD	21.097	72.689	9.8861	47.505	3.5011	37.115	1.5582	.36992
#1	.00118	.00216	.00267	.05463	1.3632	.00659	15.044	2.6535
#2	.00156	.00040	.00219	.04166	1.2718	.01320	14.990	2.6546
#3	.00104	.00110	.00248	.01868	1.3079	.01450	14.618	2.6711
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00095	45.116	.00181	-.00001	.00412	.00187	.01016	10.579
Stddev	.00012	.216	.00161	.00732	.00162	.00678	.00527	.032
%RSD	12.116	.47840	89.113	61722.	39.278	362.59	51.894	.30250
#1	.00092	45.362	.00025	.00795	.00234	-.00273	.01387	10.604
#2	.00086	45.032	.00347	-.00153	.00451	.00966	.01248	10.591
#3	.00108	44.955	.00171	-.00645	.00551	-.00132	.00412	10.543
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 20, 2016

Sample Name: L1606059007 Acquired: 6/17/2016 17:18:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.47912	-.01714	.00305	-.00002	.00590	.83714
Stddev	.00024	.00065	.00622	.00061	.00013	.00011	.97971
%RSD	49.978	.13466	36.313	19.864	632.58	1.9289	117.03
#1	.00055	.47950	-.01554	.00372	.00007	.00598	.62718
#2	.00067	.47837	-.02401	.00291	.00004	.00596	-.02057
#3	.00021	.47949	-.01187	.00253	-.00017	.00577	1.9048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7796.5	45567.	2636.9
Stddev	18.1	137.	21.1
%RSD	.23246	.30146	.79922
#1	7783.3	45454.	2621.0
#2	7817.2	45720.	2660.8
#3	7789.1	45528.	2628.8

Approved: June 20, 2016

Sample Name: L1606056401 Acquired: 6/17/2016 17:22:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment: WG572637-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00070	-.00326	.00103	.04552	.77715	-.00000	13.272
Stddev	.00246	.00217	.00313	.00451	.00381	.00008	.024
%RSD	350.92	66.550	303.15	9.8992	.48975	1918.3	.18101
#1	.00309	-.00485	.00408	.04258	.77572	-.00010	13.256
#2	-.00183	-.00415	-.00217	.04328	.77427	.00002	13.300
#3	.00084	-.00079	.00118	.05071	.78146	.00006	13.261
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.00022	-.00005	.00084	.03303	.70307	.05398
Stddev	.00018	.00016	.00074	.00192	.02322	.03417	.00393
%RSD	3037.9	73.599	1405.5	229.00	70.292	4.8607	7.2785
#1	.00005	.00020	-.00087	-.00038	.05968	.70809	.05103
#2	.00015	.00039	.00055	.00305	.02222	.66666	.05248
#3	-.00019	.00007	.00017	-.00016	.01719	.73445	.05844
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.3682	.00771	-.00018	30.730	.00024	.00588	.00072
Stddev	.0197	.00115	.00021	.196	.00061	.00691	.00363
%RSD	1.4363	14.923	119.05	.63779	247.88	117.45	505.53
#1	1.3603	.00845	-.00016	30.528	-.00023	.00958	.00465
#2	1.3537	.00639	.00003	30.743	.00004	.01016	.00002
#3	1.3905	.00831	-.00040	30.920	.00093	-.00209	-.00251
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606056401 Acquired: 6/17/2016 17:22:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment: WG572637-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00132**	**-.00008**	**.02610**	**-.00014**	**2.1108**	**.00026**	**.00286**
Stddev	.00266	.00546	.00179	.00022	.0141	.00024	.00095
%RSD	201.97	6582.1	6.8673	165.32	.67012	94.077	33.213
#1	-.00074	.00483	.02777	-.00014	2.0972	.00052	.00393
#2	.00100	-.00596	.02421	.00009	2.1100	.00003	.00211
#3	-.00422	.00088	.02633	-.00036	2.1254	.00023	.00254
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00032**	**.00056**	F **-.62187**
Stddev	.00024	.00009	1.3010
%RSD	75.214	16.755	209.20
#1	.00059	.00064	.76839
#2	.00024	.00059	-.82410
#3	.00013	.00046	-1.8099
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8748.1**	**50784.**	**2862.7**
Stddev	26.7	293.	9.0
%RSD	.30497	.57739	.31330
#1	8776.1	51121.	2853.5
#2	8723.0	50651.	2871.4
#3	8745.1	50582.	2863.1

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 17:26:33 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40269	10.024	.39478	.50225	.99731	.05007	9.8228
Stddev	.00143	.003	.00257	.00343	.00249	.00040	.1074
%RSD	.35624	.02990	.65220	.68328	.24985	.78996	1.0935
#1	.40428	10.021	.39246	.50292	.99494	.04988	9.7224
#2	.40232	10.023	.39755	.50530	.99707	.05053	9.8099
#3	.40148	10.027	.39432	.49854	.99991	.04981	9.9360
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05013	.20105	.50651	.50669	4.0575	49.488	.99306
Stddev	.00016	.00074	.00530	.00163	.0255	.172	.00843
%RSD	.31794	.36671	1.0469	.32152	.62777	.34659	.84876
#1	.04996	.20020	.50447	.50772	4.0469	49.335	.98625
#2	.05016	.20143	.51253	.50754	4.0866	49.456	.99045
#3	.05027	.20152	.50252	.50482	4.0390	49.673	1.0025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.9935	.49537	1.0058	49.296	.50741	10.012	.51202
Stddev	.1224	.00387	.0041	.219	.00039	.025	.00553
%RSD	1.2248	.78085	.41154	.44431	.07720	.25026	1.0798
#1	10.105	.49150	1.0091	49.104	.50786	9.9859	.50686
#2	10.013	.49924	1.0071	49.249	.50712	10.036	.51135
#3	9.8626	.49536	1.0012	49.534	.50726	10.014	.51786
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 17:26:33 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2064**	**.39877**	**5.1133**	**1.0038**	**.99348**	**.99656**	**.50612**
Stddev	.0017	.00313	.0149	.0020	.00654	.00652	.00263
%RSD	.14145	.78416	.29044	.19653	.65815	.65445	.51895
#1	1.2079	.40234	5.0965	1.0026	.98719	.99260	.50331
#2	1.2068	.39739	5.1247	1.0061	.99300	.99299	.50851
#3	1.2046	.39656	5.1186	1.0027	1.0002	1.0041	.50656
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0077**	**1.0074**	F **-.31623**
Stddev	.0081	.0012	.14053
%RSD	.80897	.11842	44.439
#1	1.0045	1.0060	-.39906
#2	1.0170	1.0082	-.39567
#3	1.0016	1.0079	-.15398
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8437.6**	**48610.**	**2782.5**
Stddev	6.7	85.	19.2
%RSD	.07991	.17464	.69028
#1	8440.4	48537.	2764.2
#2	8442.6	48589.	2780.9
#3	8430.0	48703.	2802.5

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 17:30:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00060**	**.00021**	**-.00050**	**.00346**	**-.00156**	**-.00001**	**-.02975**
Stddev	.00099	.01304	.00237	.00137	.00113	.00002	.03202
%RSD	165.28	6143.1	476.34	39.643	72.532	300.17	107.64
#1	.00167	.00867	-.00035	.00426	-.00065	-.00002	-.05531
#2	-.00027	.00677	.00179	.00425	-.00282	-.00002	.00617
#3	.00040	-.01481	-.00294	.00188	-.00121	.00002	-.04010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**-.00003**	**.00051**	**.00143**	**-.01872**	**.01793**	**.00322**
Stddev	.00018	.00036	.00092	.00021	.00865	.07281	.00509
%RSD	3521.1	1458.3	179.89	14.595	46.209	406.00	158.01
#1	.00003	.00028	.00057	.00120	-.00942	.09673	-.00074
#2	-.00019	.00007	.00141	.00160	-.02022	.00394	.00896
#3	.00017	-.00043	-.00044	.00150	-.02653	-.04687	.00145
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.12151**	**-.00038**	**.00424**	**-.00706**	**-.00112**	**-.00047**	**-.00113**
Stddev	.02042	.00067	.00078	.02813	.00089	.00472	.00188
%RSD	16.801	178.23	18.299	398.39	79.991	1004.7	166.05
#1	-.10157	-.00081	.00336	-.02579	-.00203	.00082	-.00128
#2	-.14237	-.00071	.00481	.02528	-.00106	-.00571	-.00294
#3	-.12059	.00040	.00455	-.02068	-.00025	.00347	.00082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 17:30:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00508**	**.00016**	**.01434**	**.00041**	**-.00001**	**.00061**	**.00264**
Stddev	.00186	.00778	.00242	.00069	.00018	.00505	.00276
%RSD	36.602	4893.8	16.902	167.11	3293.7	822.68	104.61
#1	.00299	.00758	.01709	-.00017	.00018	.00640	.00530
#2	.00656	-.00794	.01252	.00117	-.00019	-.00293	.00285
#3	.00570	.00084	.01341	.00024	-.00001	-.00162	-.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00016**	**.00001**	F **-.09049**
Stddev	.00045	.00024	1.9608
%RSD	281.42	1574.7	2166.7
#1	.00029	.00011	-.05874
#2	.00053	-.00025	1.8542
#3	-.00034	.00019	-2.0669
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8594.3**	**50015.**	**2804.3**
Stddev	13.4	143.	13.6
%RSD	.15640	.28689	.48610
#1	8590.2	50173.	2789.4
#2	8609.3	49978.	2807.4
#3	8583.3	49894.	2816.2

Approved: June 20, 2016

Sample Name: L1606056405S Acquired: 6/17/2016 17:34:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment: WG572637-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00144**	**.00425**	**-.00146**	**.04708**	**.85020**	**.00015**	**14.475**
Stddev	.00128	.00843	.00145	.00200	.00481	.00005	.020
%RSD	88.598	198.56	99.689	4.2448	.56583	30.103	.13915
#1	-.00081	-.00292	-.00238	.04782	.85354	.00013	14.492
#2	-.00292	.01353	-.00221	.04860	.84469	.00012	14.453
#3	-.00061	.00213	.00022	.04482	.85238	.00020	14.482
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.00014**	**.00066**	**.00087**	**.04396**	**.81745**	**.06238**
Stddev	.00032	.00036	.00026	.00057	.03151	.04631	.00316
%RSD	1938.3	252.60	39.599	65.595	71.684	5.6650	5.0693
#1	.00029	-.00017	.00095	.00120	.08020	.86168	.06586
#2	.00001	.00006	.00059	.00021	.02865	.82135	.05969
#3	-.00035	.00053	.00045	.00121	.02303	.76931	.06159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.4433**	**.00950**	**.00085**	**33.582**	**-.00108**	**.00818**	**.00005**
Stddev	.0988	.00055	.00019	.134	.00023	.00244	.00311
%RSD	6.8428	5.7692	22.244	.39808	21.236	29.843	6867.3
#1	1.5437	.01008	.00106	33.690	-.00084	.01024	.00152
#2	1.3463	.00943	.00070	33.432	-.00110	.00548	-.00353
#3	1.4397	.00899	.00078	33.623	-.00130	.00882	.00215
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606056405S Acquired: 6/17/2016 17:34:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment: WG572637-06

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00552**	**-.00357**	**.01977**	**-.00079**	**2.3049**	**-.00095**	**.00245**
Stddev	.00232	.00649	.00132	.00042	.0107	.00482	.00171
%RSD	41.952	181.95	6.6814	53.794	.46395	507.86	69.688
#1	.00435	-.00767	.02130	-.00080	2.3104	-.00582	.00395
#2	.00818	.00391	.01897	-.00120	2.2926	.00382	.00059
#3	.00402	-.00695	.01905	-.00036	2.3118	-.00085	.00280
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00032**	**.00133**	F **-1.0112**
Stddev	.00035	.00012	1.4770
%RSD	109.28	8.9640	146.07
#1	.00002	.00121	-1.9803
#2	-.00069	.00133	.68878
#3	-.00030	.00144	-1.7421
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8570.3**	**49324.**	**2780.0**
Stddev	20.7	313.	15.8
%RSD	.24156	.63425	.56897
#1	8568.9	48995.	2766.0
#2	8591.6	49359.	2797.1
#3	8550.3	49617.	2776.8

Approved: June 20, 2016

Sample Name: L1606056407SD Acquired: 6/17/2016 17:38:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment: WG572637-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**.01378**	**.00055**	**.04703**	**.81484**	**.00010**	**13.808**
Stddev	.00011	.00224	.00216	.00481	.00606	.00006	.124
%RSD	46.933	16.250	395.45	10.224	.74357	61.694	.89927
#1	-.00024	.01632	.00120	.04939	.80832	.00013	13.667
#2	-.00013	.01291	.00231	.04150	.81590	.00014	13.901
#3	-.00036	.01210	-.00187	.05021	.82029	.00003	13.855
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**-.00003**	**-.00006**	**.00166**	**.05160**	**.67703**	**.05963**
Stddev	.00027	.00047	.00091	.00048	.00959	.03364	.00225
%RSD	271.77	1589.6	1558.0	28.645	18.580	4.9689	3.7753
#1	.00001	-.00018	.00078	.00172	.04391	.64946	.05849
#2	-.00011	-.00040	.00007	.00116	.06234	.66711	.06222
#3	.00040	.00050	-.00103	.00211	.04854	.71451	.05818
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.5122**	**.00814**	**.00068**	**32.114**	**-.00030**	**.01467**	**.00208**
Stddev	.1525	.00212	.00006	.142	.00032	.01134	.00435
%RSD	10.086	26.036	8.9481	.44360	106.29	77.335	208.57
#1	1.5369	.01037	.00074	31.954	-.00007	.02273	-.00000
#2	1.6508	.00791	.00062	32.157	-.00017	.00170	-.00083
#3	1.3488	.00615	.00068	32.229	-.00067	.01957	.00708
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606056407SD Acquired: 6/17/2016 17:38:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment: WG572637-07

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00048**	**.00385**	**.01694**	**.00013**	**2.1996**	**-.00085**	**.00361**
Stddev	.00093	.00455	.00110	.00110	.0138	.00616	.00152
%RSD	194.50	118.16	6.4904	823.82	.62532	723.46	42.123
#1	-.00031	-.00139	.01821	.00007	2.1849	-.00786	.00196
#2	.00025	.00623	.01627	.00126	2.2017	.00161	.00391
#3	.00150	.00670	.01635	-.00093	2.2121	.00369	.00495
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00005**	**.00113**	F **-.96014**
Stddev	.00053	.00007	.28139
%RSD	998.00	6.5681	29.307
#1	.00027	.00115	-.95829
#2	-.00067	.00104	-1.2424
#3	.00023	.00119	-.67968
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8582.8**	**49304.**	**2799.9**
Stddev	35.0	157.	34.0
%RSD	.40803	.31763	1.2137
#1	8614.6	49177.	2839.0
#2	8588.6	49256.	2782.2
#3	8545.3	49479.	2778.3

Approved: June 20, 2016

Sample Name: L1606056403 Acquired: 6/17/2016 17:42:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00041**	**-.00081**	**-.00026**	**.04424**	**.75010**	**.00006**	**12.734**
Stddev	.00081	.01046	.00149	.00112	.00183	.00009	.030
%RSD	197.90	1292.1	571.34	2.5333	.24366	157.86	.23415
#1	-.00086	.00290	-.00182	.04426	.74809	-.00003	12.717
#2	-.00089	.00729	-.00010	.04311	.75055	.00005	12.717
#3	.00053	-.01262	.00114	.04535	.75166	.00014	12.769
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.00050**	**-.00042**	**.00100**	**.05463**	**.67082**	**.05204**
Stddev	.00011	.00011	.00089	.00053	.01303	.03529	.00076
%RSD	118.48	21.638	214.20	53.185	23.843	5.2615	1.4605
#1	-.00017	.00048	.00002	.00043	.06312	.67262	.05140
#2	-.00015	.00061	-.00144	.00148	.06114	.63466	.05288
#3	.00004	.00040	.00017	.00109	.03963	.70518	.05183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2924**	**.00778**	**.00015**	**29.667**	**-.00047**	**.00601**	**.00082**
Stddev	.1007	.00142	.00011	.110	.00148	.00322	.00157
%RSD	7.7923	18.279	72.657	.36992	314.58	53.597	190.59
#1	1.3999	.00674	.00014	29.540	-.00105	.00839	.00264
#2	1.2769	.00940	.00004	29.726	.00121	.00234	-.00010
#3	1.2003	.00720	.00026	29.734	-.00158	.00730	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606056403 Acquired: 6/17/2016 17:42:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00045**	**.00051**	**.01309**	**-.00055**	**2.0350**	**.00331**	**.00502**
Stddev	.00371	.00267	.00105	.00038	.0087	.01096	.00136
%RSD	818.96	520.70	8.0376	69.417	.42760	330.88	27.169
#1	-.00470	-.00231	.01210	-.00017	2.0267	.00460	.00348
#2	.00119	.00299	.01296	-.00093	2.0343	-.00823	.00554
#3	.00215	.00086	.01419	-.00054	2.0440	.01357	.00606
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00004**	**.00063**	F **-.71902**
Stddev	.00060	.00004	.99859
%RSD	1514.9	6.8104	138.88
#1	-.00004	.00067	-1.4362
#2	-.00052	.00062	-1.1423
#3	.00068	.00059	.42149
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8575.0**	**49362.**	**2789.3**
Stddev	14.6	215.	12.8
%RSD	.16989	.43546	.46066
#1	8558.7	49209.	2789.2
#2	8586.9	49608.	2776.4
#3	8579.4	49268.	2802.1

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 17:45:56 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39821	9.9710	.39369	.50169	.98371	.04955	9.6983
Stddev	.00099	.0122	.00391	.00340	.00416	.00018	.0716
%RSD	.24928	.12216	.99332	.67826	.42256	.35355	.73833
#1	.39770	9.9590	.39073	.50218	.97951	.04940	9.6259
#2	.39936	9.9705	.39813	.50481	.98782	.04974	9.7691
#3	.39758	9.9834	.39222	.49806	.98380	.04952	9.6998
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04972	.20100	.49824	.50531	3.9861	49.318	.98765
Stddev	.00044	.00002	.00261	.00033	.0359	.087	.00217
%RSD	.87606	.01188	.52366	.06513	.90012	.17553	.22005
#1	.05021	.20099	.49631	.50493	4.0218	49.224	.98525
#2	.04938	.20103	.50121	.50552	3.9501	49.335	.98821
#3	.04957	.20098	.49720	.50547	3.9865	49.395	.98949
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.7955	.49641	1.0054	49.198	.50831	9.9862	.50590
Stddev	.1952	.00197	.0038	.177	.00114	.0289	.00413
%RSD	1.9928	.39736	.37786	.35922	.22374	.28920	.81732
#1	9.5929	.49734	1.0093	48.994	.50829	9.9742	.50927
#2	9.9823	.49775	1.0052	49.296	.50946	10.019	.50715
#3	9.8114	.49415	1.0017	49.305	.50719	9.9652	.50129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 17:45:56 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2064**	**.39964**	**5.0705**	**1.0052**	**.98103**	**.99282**	**.51073**
Stddev	.0049	.00295	.0088	.0024	.00565	.00835	.00363
%RSD	.40288	.73774	.17442	.24308	.57631	.84118	.71147
#1	1.2104	.40230	5.0680	1.0038	.97469	.98934	.51219
#2	1.2078	.40014	5.0804	1.0080	.98286	1.0023	.51341
#3	1.2010	.39647	5.0632	1.0037	.98555	.98677	.50659
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0006**	**1.0064**	F **-.79648**
Stddev	.0014	.0018	.64951
%RSD	.14212	.18193	81.547
#1	.99893	1.0043	-1.4167
#2	1.0014	1.0076	-.12118
#3	1.0014	1.0073	-.85159
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8391.9**	**48459.**	**2771.1**
Stddev	13.5	117.	22.5
%RSD	.16052	.24098	.81095
#1	8407.4	48593.	2746.9
#2	8382.8	48383.	2791.4
#3	8385.6	48400.	2774.8

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 17:49:34 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00039**	**.00191**	**-.00075**	**.00171**	**-.00085**	**.00011**	**.01548**
Stddev	.00114	.00089	.00096	.00197	.00100	.00004	.05199
%RSD	289.79	46.829	128.92	115.01	117.87	35.004	335.95
#1	.00098	.00088	-.00105	.00052	-.00051	.00010	-.01707
#2	-.00092	.00232	-.00152	.00063	-.00006	.00007	-.01194
#3	.00112	.00252	.00033	.00398	-.00198	.00015	.07543
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00024**	**.00042**	**.00088**	**.00085**	**.00365**	**.05575**	**.00526**
Stddev	.00008	.00018	.00020	.00143	.02429	.07645	.00419
%RSD	32.708	42.470	22.551	168.96	664.55	137.13	79.692
#1	.00018	.00054	.00095	.00177	.00568	-.02842	.00044
#2	.00033	.00021	.00104	-.00080	.02687	.12088	.00727
#3	.00022	.00050	.00066	.00157	-.02158	.07477	.00805
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.03211**	**-.00038**	**.00450**	**.00630**	**-.00039**	**-.00001**	**-.00028**
Stddev	.13442	.00127	.00055	.01658	.00092	.00411	.00055
%RSD	418.63	331.86	12.239	263.36	235.09	65400.	194.50
#1	.11750	-.00184	.00390	.01906	.00035	.00359	-.00055
#2	-.07110	.00035	.00462	-.01245	-.00010	.00088	-.00064
#3	-.14272	.00035	.00498	.01227	-.00143	-.00448	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 17:49:34 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00326**	**.00170**	**.00629**	**.00072**	**-.00001**	**-.00652**	**.00054**
Stddev	.00209	.00508	.00270	.00085	.00049	.00355	.00297
%RSD	64.141	298.28	42.967	117.91	4201.4	54.460	551.25
#1	.00257	.00614	.00921	.00025	.00052	-.00246	.00383
#2	.00160	.00282	.00578	.00171	-.00044	-.00803	-.00026
#3	.00561	-.00384	.00388	.00021	-.00012	-.00907	-.00195
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00034**	**-.00011**	F **-.32099**
Stddev	.00048	.00024	.18379
%RSD	140.31	209.29	57.256
#1	.00001	.00002	-.24894
#2	-.00015	.00002	-.52988
#3	-.00088	-.00039	-.18414
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8512.3**	**49413.**	**2785.2**
Stddev	10.2	301.	7.8
%RSD	.11972	.60868	.27981
#1	8515.2	49712.	2785.0
#2	8501.0	49110.	2777.5
#3	8520.7	49418.	2793.0

Approved: June 20, 2016

Sample Name: LLCCV Acquired: 6/17/2016 17:53:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02070	.39461	.01605	.19545	.01823	.00388	.96939
Stddev	.00051	.00327	.00135	.00304	.00116	.00009	.03208
%RSD	2.4516	.82755	8.4187	1.5561	6.3716	2.3649	3.3090
#1	.02118	.39616	.01626	.19896	.01956	.00383	.99881
#2	.02017	.39085	.01728	.19377	.01766	.00398	.93519
#3	.02073	.39680	.01460	.19362	.01746	.00382	.97418
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00194	.00991	.00908	.01031	.16971	1.9850	.19741
Stddev	.00016	.00031	.00045	.00023	.03274	.0401	.00443
%RSD	8.5181	3.1670	5.0093	2.1932	19.290	2.0173	2.2464
#1	.00212	.01023	.00912	.01056	.18922	2.0121	.19814
#2	.00181	.00960	.00951	.01011	.13192	1.9390	.20144
#3	.00188	.00989	.00861	.01026	.18800	2.0041	.19266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.89960	.01988	.01948	.98009	.03901	1.8923	.01977
Stddev	.01635	.00180	.00013	.00528	.00206	.0058	.00310
%RSD	1.8179	9.0298	.65878	.53883	5.2819	.30864	15.693
#1	.88200	.01808	.01934	.98471	.03694	1.8894	.02334
#2	.90245	.02167	.01957	.97433	.03904	1.8884	.01768
#3	.91434	.01990	.01954	.98122	.04106	1.8990	.01829
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: LLCCV Acquired: 6/17/2016 17:53:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19749**	**.04636**	**1.9360**	**.98003**	**.09684**	**.06560**	**.37379**
Stddev	.00253	.00197	.0040	.00075	.00074	.00809	.00148
%RSD	1.2811	4.2438	.20543	.07639	.76357	12.339	.39727
#1	.19552	.04708	1.9336	.98021	.09731	.07434	.37551
#2	.19662	.04787	1.9338	.97921	.09599	.06411	.37302
#3	.20035	.04414	1.9406	.98067	.09722	.05836	.37286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.01980**	**.04087**	F **-185.47**
Stddev	.00085	.00016	2.33
%RSD	4.3180	.40346	1.2537
#1	.02071	.04080	-186.40
#2	.01967	.04076	-187.19
#3	.01902	.04106	-182.83
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8531.9**	**49817.**	**2766.4**
Stddev	36.8	250.	18.3
%RSD	.43122	.50204	.66200
#1	8536.9	49722.	2757.4
#2	8565.9	50101.	2754.2
#3	8492.9	49629.	2787.4

Approved: June 20, 2016

Sample Name: PBW 61 Acquired: 6/17/2016 17:57:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00024**	**.00747**	**-.00226**	**.00211**	**-.00066**	**.00013**	**.04186**
Stddev	.00126	.00419	.00076	.00201	.00030	.00004	.02380
%RSD	519.86	56.117	33.400	95.110	45.511	31.648	56.867
#1	-.00063	.00803	-.00148	.00425	-.00082	.00014	.06912
#2	-.00034	.01135	-.00231	.00027	-.00084	.00008	.02519
#3	.00169	.00302	-.00299	.00180	-.00031	.00016	.03127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00017**	**.00013**	**-.00106**	**.00068**	**-.00877**	**-.03842**	**.00044**
Stddev	.00023	.00026	.00069	.00082	.01607	.09662	.00266
%RSD	137.15	196.32	65.455	121.44	183.18	251.48	603.58
#1	.00019	.00016	-.00028	.00163	-.00184	.04093	.00299
#2	-.00007	-.00014	-.00130	.00020	.00267	-.01017	-.00231
#3	.00038	.00038	-.00160	.00020	-.02715	-.14601	.00064
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00545**	**-.00092**	**.00082**	**.02691**	**.00068**	**.00375**	**.00100**
Stddev	.03383	.00312	.00014	.03718	.00026	.00354	.00238
%RSD	620.18	339.42	17.480	138.15	39.162	94.524	237.75
#1	-.01684	-.00380	.00097	-.01499	.00065	.00205	.00375
#2	.04438	.00239	.00068	.03978	.00042	.00782	-.00019
#3	-.01117	-.00134	.00082	.05595	.00095	.00137	-.00054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: PBW 61 Acquired: 6/17/2016 17:57:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00078**	**.00289**	**.00833**	**.00112**	**-.00052**	**.00202**	**.00316**
Stddev	.00155	.00706	.00074	.00012	.00068	.00231	.00353
%RSD	199.87	244.11	8.9102	10.286	131.66	114.73	111.69
#1	-.00054	.00855	.00832	.00105	-.00123	-.00065	.00454
#2	.00064	.00514	.00907	.00106	.00013	.00337	-.00085
#3	-.00243	-.00502	.00759	.00125	-.00045	.00333	.00580
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00015**	**.00128**	F **-.23653**
Stddev	.00038	.00026	.93073
%RSD	249.20	20.065	393.50
#1	.00046	.00150	.73142
#2	-.00027	.00134	-.31605
#3	.00027	.00100	-1.1249
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7881.5**	**46104.**	**2577.1**
Stddev	29.4	144.	40.3
%RSD	.37366	.31185	1.5655
#1	7862.3	46089.	2531.1
#2	7866.8	45968.	2606.2
#3	7915.4	46254.	2594.1

Approved: June 20, 2016

Sample Name: LCSW 61 Acquired: 6/17/2016 18:01:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.22311**	**5.4716**	**.21575**	**1.0716**	**.54950**	**.02719**	**5.5055**
Stddev	.00092	.0152	.00165	.0033	.00136	.00008	.0296
%RSD	.41229	.27770	.76463	.31059	.24688	.29209	.53806
#1	.22409	5.4882	.21605	1.0719	.55044	.02724	5.5193
#2	.22227	5.4681	.21723	1.0681	.55012	.02710	5.5257
#3	.22298	5.4584	.21397	1.0747	.54795	.02724	5.4715
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02706**	**.11162**	**.27763**	**.28060**	**2.2328**	**27.087**	**.56030**
Stddev	.00022	.00027	.00136	.00109	.0395	.210	.00296
%RSD	.79699	.23895	.48853	.38953	1.7697	.77629	.52908
#1	.02685	.11171	.27888	.27939	2.2550	27.315	.56237
#2	.02704	.11132	.27782	.28087	2.2563	27.046	.56162
#3	.02728	.11182	.27619	.28153	2.1872	26.900	.55690
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.6060**	**.27557**	**.56352**	**27.317**	**.28114**	**5.3488**	**.28212**
Stddev	.1084	.00528	.00047	.166	.00220	.0104	.00090
%RSD	1.9336	1.9178	.08266	.60723	.78162	.19445	.31805
#1	5.6760	.28094	.56403	27.486	.28302	5.3413	.28118
#2	5.6609	.27037	.56312	27.311	.27873	5.3443	.28296
#3	5.4811	.27541	.56341	27.154	.28168	5.3607	.28222
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: LCSW 61 Acquired: 6/17/2016 18:01:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.66213	.21469	2.8132	.55357	.55768	.54674	.27957
Stddev	.00349	.00202	.0088	.00121	.00382	.00353	.00292
%RSD	.52694	.93868	.31327	.21946	.68486	.64535	1.0440
#1	.66192	.21700	2.8081	.55424	.56209	.55081	.27815
#2	.65875	.21327	2.8080	.55217	.55548	.54482	.27764
#3	.66572	.21379	2.8233	.55430	.55547	.54458	.28293
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.55303	.55186	F -3.3190
Stddev	.00134	.00147	1.1905
%RSD	.24264	.26558	35.868
#1	.55410	.55204	-1.9752
#2	.55153	.55032	-3.7401
#3	.55348	.55323	-4.2417
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7832.6	45413.	2577.1
Stddev	23.2	55.	37.8
%RSD	.29572	.12068	1.4661
#1	7807.0	45352.	2542.4
#2	7852.2	45459.	2571.7
#3	7838.4	45428.	2617.4

Approved: June 20, 2016

Sample Name: L1606079601 Acquired: 6/17/2016 18:05:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00004**	**3.3964**	**.00116**	**1.3797**	**.04865**	**.00195**	**188.99**
Stddev	.00173	.0125	.00261	.0018	.00095	.00005	1.15
%RSD	4002.0	.36863	226.19	.12762	1.9619	2.8221	.61049
#1	.00170	3.4108	-.00186	1.3783	.04970	.00197	190.19
#2	-.00175	3.3901	.00264	1.3791	.04782	.00188	188.91
#3	.00017	3.3883	.00269	1.3817	.04844	.00198	187.89
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.24490**	**.00838**	**.00912**	**.47250**	**1.3262**	**3.2706**	**.03939**
Stddev	.00046	.00034	.00188	.00180	.0049	.0610	.00255
%RSD	.18633	4.0090	20.612	.38171	.36998	1.8659	6.4720
#1	.24532	.00816	.01101	.47166	1.3237	3.3404	.03754
#2	.24441	.00877	.00909	.47128	1.3319	3.2440	.03834
#3	.24496	.00822	.00725	.47458	1.3231	3.2274	.04230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**31.864**	**3.1847**	**.00356**	**11.498**	**.03596**	**.45084**	**1.4821**
Stddev	.193	.0248	.00041	.081	.00128	.00900	.0041
%RSD	.60634	.78007	11.568	.70666	3.5481	1.9969	.27812
#1	31.971	3.2075	.00310	11.552	.03457	.45088	1.4815
#2	31.980	3.1883	.00369	11.536	.03626	.44182	1.4783
#3	31.641	3.1582	.00389	11.404	.03707	.45982	1.4865
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606079601 Acquired: 6/17/2016 18:05:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.29487	.00180	33.611	.00673	.48347	.01753	.00227
Stddev	.00279	.00247	.007	.00017	.00346	.00425	.00263
%RSD	.94497	137.02	.02214	2.4957	.71551	24.253	115.88
#1	.29809	.00456	33.611	.00691	.48722	.01821	.00048
#2	.29320	-.00023	33.619	.00668	.48276	.01298	.00529
#3	.29333	.00108	33.604	.00659	.48041	.02141	.00103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00087	9.4386	F -2.9156
Stddev	.00025	.0054	1.0645
%RSD	29.306	.05764	36.512
#1	.00080	9.4401	-2.1341
#2	.00066	9.4431	-4.1281
#3	.00115	9.4326	-2.4846
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7866.5	45883.	2631.0
Stddev	14.4	47.	27.1
%RSD	.18256	.10247	1.0303
#1	7880.8	45918.	2604.1
#2	7852.0	45901.	2630.7
#3	7866.8	45830.	2658.3

Approved: June 20, 2016

Sample Name: L1606079602S Acquired: 6/17/2016 18:08:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21455**	**8.7890**	**.21667**	**2.4556**	**.56209**	**.02858**	**212.56**
Stddev	.00128	.0183	.00495	.0069	.00492	.00019	1.34
%RSD	.59684	.20795	2.2847	.27942	.87463	.66849	.63013
#1	.21586	8.8004	.22152	2.4598	.56747	.02861	214.10
#2	.21448	8.7987	.21686	2.4594	.56095	.02876	211.99
#3	.21331	8.7679	.21162	2.4477	.55784	.02838	211.61
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.23534**	**.11222**	**.27425**	**.37363**	**3.9935**	**30.236**	**.58994**
Stddev	.00061	.00025	.00212	.00069	.0328	.057	.00404
%RSD	.26128	.21968	.77325	.18363	.82156	.18783	.68503
#1	.23556	.11217	.27541	.37440	4.0305	30.294	.59436
#2	.23465	.11248	.27554	.37309	3.9680	30.234	.58644
#3	.23582	.11200	.27181	.37341	3.9819	30.181	.58901
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**39.557**	**3.7947**	**.54661**	**36.244**	**.28259**	**5.6297**	**1.4227**
Stddev	.149	.0273	.00239	.350	.00080	.0086	.0042
%RSD	.37666	.71816	.43759	.96435	.28340	.15324	.29247
#1	39.724	3.8213	.54911	36.635	.28284	5.6324	1.4255
#2	39.439	3.7669	.54435	36.134	.28170	5.6366	1.4179
#3	39.507	3.7960	.54636	35.962	.28324	5.6200	1.4247
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606079602S Acquired: 6/17/2016 18:08:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.85064**	**.21101**	F **40.910**	**.53640**	**1.0210**	**.53613**	**.26290**
Stddev	.00310	.01035	.098	.00071	.0095	.00069	.00474
%RSD	.36501	4.9030	.23860	.13302	.93395	.12831	1.8021
#1	.85167	.20134	41.002	.53569	1.0320	.53616	.26748
#2	.85309	.22192	40.807	.53637	1.0155	.53543	.26319
#3	.84715	.20977	40.920	.53712	1.0155	.53680	.25802
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-1.0000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.53546**	**9.2913**	F **-4.6740**
Stddev	.00069	.0116	1.7852
%RSD	.12849	.12506	38.195
#1	.53606	9.3025	-3.8957
#2	.53561	9.2793	-3.4101
#3	.53471	9.2920	-6.7163
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7800.5**	**45406.**	**2635.0**
Stddev	1.7	120.	29.7
%RSD	.02121	.26351	1.1255
#1	7799.1	45394.	2608.0
#2	7802.3	45532.	2630.3
#3	7800.0	45293.	2666.8

Approved: June 20, 2016

Sample Name: L1606079603SD Acquired: 6/17/2016 18:12:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21775**	**8.7414**	**.21642**	**2.4511**	**.56448**	**.02860**	**212.88**
Stddev	.00292	.0252	.00478	.0053	.00576	.00013	1.88
%RSD	1.3412	.28807	2.2085	.21470	1.0208	.44518	.88099
#1	.21705	8.7686	.21651	2.4479	.57098	.02874	215.01
#2	.22095	8.7190	.22116	2.4572	.56001	.02858	211.50
#3	.21524	8.7365	.21160	2.4483	.56244	.02848	212.11
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.23448**	**.11227**	**.27314**	**.37328**	**4.0113**	**30.209**	**.59289**
Stddev	.00035	.00072	.00109	.00093	.0581	.144	.00714
%RSD	.14913	.64446	.39841	.24859	1.4474	.47713	1.2036
#1	.23447	.11293	.27326	.37391	4.0680	30.362	.59489
#2	.23484	.11150	.27199	.37370	3.9520	30.076	.58497
#3	.23414	.11239	.27416	.37221	4.0140	30.188	.59882
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**39.642**	**3.7838**	**.54888**	**36.278**	**.28419**	**5.6368**	**1.4210**
Stddev	.420	.0366	.00090	.310	.00056	.0034	.0054
%RSD	1.0597	.96803	.16484	.85338	.19612	.06112	.37701
#1	40.122	3.8171	.54812	36.629	.28355	5.6379	1.4159
#2	39.345	3.7446	.54988	36.044	.28449	5.6396	1.4203
#3	39.457	3.7897	.54865	36.160	.28453	5.6330	1.4266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606079603SD Acquired: 6/17/2016 18:12:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.85771**	**.20873**	F **40.500**	**.53753**	**1.0250**	**.53956**	**.26363**
Stddev	.00243	.00417	.025	.00115	.0126	.01611	.00394
%RSD	.28320	1.9988	.06287	.21365	1.2245	2.9851	1.4947
#1	.86051	.20399	40.475	.53621	1.0391	.55752	.25914
#2	.85611	.21185	40.526	.53805	1.0150	.52640	.26528
#3	.85653	.21034	40.499	.53833	1.0209	.53477	.26648
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-1.0000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.53723**	**9.2510**	F **-4.5838**
Stddev	.00015	.0077	.1279
%RSD	.02797	.08359	2.7899
#1	.53739	9.2464	-4.4943
#2	.53710	9.2599	-4.7303
#3	.53721	9.2466	-4.5269
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7799.8**	**45175.**	**2625.5**
Stddev	5.4	108.	38.4
%RSD	.06903	.23907	1.4622
#1	7802.5	45184.	2581.3
#2	7793.6	45278.	2644.7
#3	7803.3	45062.	2650.5

Approved: June 20, 2016

Sample Name: L1606073201 Acquired: 6/17/2016 18:16:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	.02735	-.00003	.04445	.26254	.00012	30.035
Stddev	.00137	.00887	.00448	.00095	.00105	.00013	.233
%RSD	256.17	32.428	13915.	2.1285	.40184	104.00	.77443
#1	.00208	.03275	.00120	.04521	.26346	.00024	30.191
#2	.00004	.01711	-.00500	.04339	.26139	-.00001	29.768
#3	-.00051	.03218	.00370	.04475	.26277	.00015	30.146
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00215	.00728	.00193	.14991	1.4835	.02644
Stddev	.00010	.00034	.00049	.00095	.02265	.0272	.00367
%RSD	82.276	15.804	6.7558	49.325	15.109	1.8353	13.884
#1	.00001	.00212	.00755	.00273	.12883	1.5058	.02960
#2	.00015	.00250	.00671	.00088	.14705	1.4532	.02730
#3	.00020	.00183	.00757	.00218	.17386	1.4917	.02241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	41.944	.04923	.00076	F 378.40	.00290	1.6938	.00109
Stddev	.293	.00227	.00035	1.85	.00091	.0119	.00019
%RSD	.69851	4.6140	45.776	.48963	31.294	.70354	17.869
#1	42.254	.04771	.00036	380.22	.00186	1.6858	.00092
#2	41.672	.04813	.00099	376.51	.00353	1.7075	.00130
#3	41.905	.05184	.00094	378.46	.00332	1.6882	.00105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 20, 2016

Sample Name: L1606073201 Acquired: 6/17/2016 18:16:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00179**	**.01088**	**16.975**	**-.00044**	**.55986**	**-.00391**	**.00060**
Stddev	.00191	.00878	.019	.00092	.00207	.00123	.00109
%RSD	107.08	80.751	.11239	208.27	.36903	31.414	180.23
#1	.00371	.01866	16.979	-.00077	.56116	-.00264	-.00045
#2	-.00011	.00135	16.992	.00060	.55747	-.00400	.00172
#3	.00177	.01262	16.955	-.00116	.56094	-.00509	.00054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00089**	**.11839**	F **-.14854**
Stddev	.00046	.00027	.51513
%RSD	51.772	.23013	346.79
#1	-.00056	.11849	.39433
#2	-.00069	.11861	-.20944
#3	-.00141	.11809	-.63051
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7573.2**	**43634.**	**2550.5**
Stddev	19.9	123.	18.2
%RSD	.26333	.28290	.71333
#1	7555.9	43603.	2534.2
#2	7595.0	43530.	2570.1
#3	7568.6	43770.	2547.1

Approved: June 20, 2016

Sample Name: L1606073202 Acquired: 6/17/2016 18:19:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.02031	.00071	.03763	.22851	.00005	25.667
Stddev	.00206	.00338	.00364	.00285	.00369	.00004	.249
%RSD	649.63	16.633	512.56	7.5713	1.6155	72.204	.96975
#1	.00072	.01649	-.00347	.04018	.23236	.00009	25.936
#2	-.00192	.02289	.00246	.03455	.22817	.00006	25.620
#3	.00215	.02156	.00314	.03816	.22500	.00001	25.444
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.00203	.00519	.00365	.14692	1.5092	.02656
Stddev	.00026	.00014	.00077	.00085	.04898	.1044	.00557
%RSD	913.02	7.1354	14.770	23.226	33.341	6.9140	20.978
#1	.00008	.00190	.00434	.00269	.20041	1.4593	.02212
#2	.00026	.00200	.00538	.00431	.13608	1.6292	.02475
#3	-.00025	.00218	.00584	.00394	.10426	1.4393	.03281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	36.556	.04234	.00051	F 361.00	.00280	1.7252	.00307
Stddev	.341	.00161	.00026	3.72	.00076	.0045	.00436
%RSD	.93331	3.8106	51.115	1.0309	27.170	.25864	142.24
#1	36.949	.04282	.00022	365.30	.00341	1.7256	.00553
#2	36.335	.04054	.00057	358.96	.00195	1.7295	-.00197
#3	36.384	.04365	.00073	358.76	.00306	1.7206	.00565
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 20, 2016

Sample Name: L1606073202 Acquired: 6/17/2016 18:19:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00098	.00422	15.529	-.00012	.48191	-.00897	.00123
Stddev	.00680	.00745	.031	.00024	.00203	.00149	.00258
%RSD	692.59	176.71	.19892	197.02	.42021	16.564	210.38
#1	.00004	-.00392	15.494	.00012	.48424	-.01034	.00096
#2	-.00530	.00586	15.542	-.00013	.48097	-.00919	.00393
#3	.00820	.01071	15.551	-.00035	.48053	-.00739	-.00121
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00093	.05168	.00489
Stddev	.00139	.00010	.19223
%RSD	149.29	.18723	3932.8
#1	-.00232	.05157	.21562
#2	.00045	.05173	-.16085
#3	-.00091	.05174	-.04011
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7642.6	43930.	2576.9
Stddev	11.5	40.	43.2
%RSD	.15056	.09016	1.6771
#1	7629.5	43950.	2531.5
#2	7650.9	43956.	2617.5
#3	7647.6	43884.	2581.8

Approved: June 20, 2016

Sample Name: L1606073202PS Acquired: 6/17/2016 18:23:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573149-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21646	5.4401	.21755	1.1104	.74436	.02722	28.528
Stddev	.00067	.0142	.00468	.0030	.00767	.00018	.296
%RSD	.30779	.26115	2.1499	.27058	1.0298	.66629	1.0380
#1	.21631	5.4553	.21303	1.1081	.75321	.02743	28.858
#2	.21588	5.4377	.22237	1.1093	.74009	.02714	28.440
#3	.21719	5.4272	.21724	1.1138	.73979	.02709	28.286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02675	.10879	.27468	.26929	2.3055	28.591	.57076
Stddev	.00016	.00049	.00117	.00148	.0089	.124	.00299
%RSD	.57986	.44782	.42417	.54788	.38452	.43215	.52399
#1	.02693	.10830	.27343	.26986	2.3050	28.733	.57327
#2	.02668	.10927	.27574	.27040	2.3147	28.534	.56745
#3	.02665	.10878	.27486	.26762	2.2969	28.507	.57155
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	38.299	.30241	.55189	F 354.01	.27066	6.9904	.26990
Stddev	.412	.00197	.00025	2.72	.00090	.0222	.00342
%RSD	1.0745	.65060	.04487	.76765	.33264	.31778	1.2681
#1	38.751	.30450	.55191	357.09	.27039	7.0156	.26833
#2	38.203	.30060	.55213	352.97	.27166	6.9736	.27383
#3	37.945	.30214	.55164	351.96	.26992	6.9820	.26754
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 20, 2016

Sample Name: L1606073202PS Acquired: 6/17/2016 18:23:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573149-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.66097**	**.22014**	**16.870**	**.54233**	**.95701**	**.54114**	**.26123**
Stddev	.00225	.00178	.014	.00057	.01164	.00932	.00345
%RSD	.34081	.80808	.08579	.10446	1.2161	1.7226	1.3222
#1	.65852	.21952	16.881	.54251	.97036	.53037	.26397
#2	.66146	.22214	16.875	.54279	.95170	.54652	.25735
#3	.66294	.21875	16.854	.54170	.94898	.54652	.26237
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.54951**	**.58913**	F **-.76903**
Stddev	.00117	.00109	.62541
%RSD	.21217	.18556	81.324
#1	.55085	.58983	-.04817
#2	.54888	.58968	-1.1670
#3	.54879	.58787	-1.0919
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7603.3**	**43746.**	**2551.8**
Stddev	6.3	121.	30.8
%RSD	.08290	.27677	1.2058
#1	7606.9	43669.	2517.1
#2	7607.0	43886.	2562.5
#3	7596.0	43683.	2575.8

Approved: June 20, 2016

Sample Name: L1606073202SDL Acquired: 6/17/2016 18:27:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573149-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00113	.00168	.00007	.01175	.03828	.00008	4.5093	-.00007
Stddev	.00237	.00908	.00398	.00324	.00219	.00008	.0291	.00033
%RSD	209.11	541.55	5893.5	27.593	5.7343	109.63	.64455	499.13
#1	-.00265	-.00838	-.00333	.00801	.03939	.00001	4.5117	.00010
#2	.00160	.00414	.00444	.01374	.03575	.00005	4.5371	.00015
#3	-.00234	.00927	-.00091	.01351	.03969	.00017	4.4791	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	.00051	.00078	.02285	.29872	.00664	6.5393	.00640
Stddev	.00005	.00133	.00033	.02267	.05995	.00379	.1671	.00142
%RSD	10.732	258.32	42.751	99.179	20.068	57.124	2.5553	22.229
#1	.00046	.00023	.00108	.04700	.26901	.00259	6.3834	.00577
#2	.00052	-.00065	.00042	.01953	.36772	.00721	6.5189	.00540
#3	.00043	.00196	.00083	.00204	.25943	.01012	6.7157	.00803
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	63.843	.00103	.31650	.00003	-.00252	.01152	2.8456
Stddev	.00022	.203	.00056	.00840	.00217	.00382	.00509	.0333
%RSD	34.395	.31788	54.465	2.6556	6819.1	151.59	44.217	1.1690
#1	.00064	63.728	.00108	.30696	-.00246	.00184	.00574	2.8074
#2	.00042	63.725	.00157	.31975	.00101	-.00413	.01534	2.8617
#3	.00086	64.078	.00045	.32280	.00154	-.00527	.01348	2.8678
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 20, 2016

Sample Name: L1606073202SDL Acquired: 6/17/2016 18:27:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573149-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**.08360**	**-.00261**	**.00251**	**-.00028**	**.01013**	**.07129**
Stddev	.00121	.00034	.00179	.00215	.00033	.00021	.34947
%RSD	6303.2	.40876	68.625	85.312	114.87	2.1150	490.22
#1	.00108	.08336	-.00055	.00397	.00005	.00997	-.08373
#2	.00029	.08345	-.00344	.00352	-.00029	.01006	-.17386
#3	-.00131	.08399	-.00383	.00005	-.00061	.01038	.47146
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8557.3**	**49916.**	**2791.3**
Stddev	24.8	263.	2.9
%RSD	.29009	.52746	.10551
#1	8585.5	49837.	2788.0
#2	8539.0	50210.	2793.7
#3	8547.2	49702.	2792.2

Approved: June 20, 2016

Sample Name: L1606073202SDL Acquired: 6/17/2016 18:31:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573149-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	-.00257	.00055	.00302	.00624	.00009	.87925
Stddev	.00142	.00773	.00034	.00083	.00112	.00007	.02916
%RSD	759.10	300.28	61.141	27.379	17.879	73.110	3.3161
#1	.00054	-.00197	.00093	.00243	.00735	.00014	.84684
#2	.00140	.00484	.00029	.00268	.00625	.00001	.88754
#3	-.00138	-.01058	.00043	.00397	.00512	.00012	.90336
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00006	.00002	-.00026	.00088	.00054	.08590	.00161
Stddev	.00006	.00025	.00027	.00080	.00984	.12400	.00297
%RSD	99.783	1147.1	104.13	90.905	1826.1	144.35	184.62
#1	-.00009	.00009	-.00005	.00177	.01045	.01255	.00499
#2	-.00010	-.00025	-.00016	.00022	-.00923	.01609	.00044
#3	.00001	.00023	-.00056	.00066	.00040	.22907	-.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2644	.00021	.00058	12.678	.00003	.06746	.00172
Stddev	.1044	.00118	.00021	.056	.00012	.00600	.00090
%RSD	8.2574	548.93	35.797	.44474	443.23	8.9013	52.410
#1	1.3535	.00146	.00081	12.656	.00003	.06152	.00071
#2	1.1495	.00006	.00050	12.742	-.00010	.07353	.00243
#3	1.2902	-.00088	.00042	12.636	.00015	.06732	.00202
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606073202SDL Acquired: 6/17/2016 18:31:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573149-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00250**	**-.00113**	**.56551**	**-.00048**	**.01637**	**-.00514**	**.00183**
Stddev	.00116	.00542	.00608	.00100	.00072	.00252	.00338
%RSD	46.531	481.89	1.0760	209.83	4.3674	48.946	184.69
#1	.00174	-.00121	.56020	-.00049	.01708	-.00738	-.00158
#2	.00193	.00434	.56418	.00053	.01565	-.00242	.00517
#3	.00384	-.00651	.57215	-.00147	.01639	-.00563	.00190
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00014**	**.00250**	F **-.85771**
Stddev	.00052	.00007	.98424
%RSD	374.71	2.6862	114.75
#1	-.00030	.00253	-.62572
#2	.00044	.00254	-1.9372
#3	-.00055	.00242	-.01019
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8591.8**	**49781.**	**2745.1**
Stddev	.2	158.	25.4
%RSD	.00284	.31769	.92592
#1	8591.7	49623.	2754.4
#2	8592.0	49939.	2716.4
#3	8591.5	49782.	2764.6

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 18:35:25 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40472**	**10.128**	**.40028**	**.51209**	**1.0059**	**.05030**	**9.8998**
Stddev	.00181	.016	.00527	.00417	.0044	.00002	.1544
%RSD	.44638	.16196	1.3154	.81417	.43415	.03367	1.5599
#1	.40397	10.141	.40051	.51311	1.0063	.05032	9.7232
#2	.40678	10.109	.40543	.50750	1.0013	.05030	9.9665
#3	.40340	10.133	.39490	.51565	1.0100	.05029	10.010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05054**	**.20348**	**.50724**	**.51252**	**4.0829**	**50.408**	**1.0061**
Stddev	.00047	.00072	.00067	.00141	.0222	.300	.0038
%RSD	.92039	.35150	.13160	.27454	.54441	.59436	.38170
#1	.05107	.20426	.50767	.51371	4.0712	50.434	1.0067
#2	.05031	.20331	.50759	.51289	4.0689	50.096	1.0096
#3	.05023	.20286	.50647	.51097	4.1085	50.693	1.0020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.045**	**.50831**	**1.0196**	**50.369**	**.51605**	**10.138**	**.51445**
Stddev	.109	.00697	.0056	.193	.00098	.023	.00184
%RSD	1.0868	1.3711	.54527	.38405	.18996	.22522	.35794
#1	10.137	.50034	1.0244	50.384	.51633	10.157	.51587
#2	9.9245	.51132	1.0208	50.168	.51686	10.144	.51510
#3	10.074	.51326	1.0135	50.554	.51496	10.113	.51237
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 18:35:25 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2254**	**.40453**	**5.1464**	**1.0215**	**1.0012**	**1.0118**	**.51621**
Stddev	.0006	.01133	.0112	.0032	.0033	.0048	.00187
%RSD	.05017	2.8004	.21704	.31092	.32546	.47440	.36266
#1	1.2255	.39234	5.1517	1.0217	1.0007	1.0082	.51486
#2	1.2247	.40652	5.1539	1.0246	.99818	1.0099	.51543
#3	1.2259	.41473	5.1336	1.0182	1.0047	1.0172	.51835
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0138**	**1.0231**	F **.31943**
Stddev	.0024	.0029	.98548
%RSD	.24168	.28150	308.51
#1	1.0166	1.0251	-.76296
#2	1.0130	1.0243	.55652
#3	1.0119	1.0198	1.1647
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8317.2**	**48096.**	**2704.3**
Stddev	28.3	166.	31.2
%RSD	.34051	.34605	1.1541
#1	8332.7	47957.	2669.6
#2	8284.5	48280.	2730.0
#3	8334.4	48050.	2713.4

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 18:39:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00147**	**-.00205**	**-.00075**	**.00560**	**-.00122**	**.00014**	**.00515**
Stddev	.00088	.00770	.00250	.00090	.00040	.00002	.01713
%RSD	59.888	375.32	333.48	16.023	32.392	15.856	332.60
#1	.00074	-.00498	.00133	.00660	-.00168	.00015	-.01461
#2	.00244	.00668	-.00006	.00535	-.00106	.00012	.01577
#3	.00121	-.00785	-.00352	.00486	-.00094	.00016	.01429
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00012**	**-.00008**	**-.00013**	**.00052**	**-.03872**	**.03897**	**.00054**
Stddev	.00005	.00027	.00048	.00081	.00913	.07224	.00047
%RSD	43.419	331.94	361.08	154.26	23.583	185.37	88.134
#1	.00017	-.00001	.00005	.00089	-.02862	-.04395	.00100
#2	.00008	-.00038	.00023	.00108	-.04116	.07257	.00056
#3	.00010	.00015	-.00068	-.00040	-.04639	.08828	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.04821**	**.00163**	**.00483**	**.02654**	**.00032**	**.00154**	**.00067**
Stddev	.01445	.00284	.00101	.01311	.00081	.00352	.00433
%RSD	29.982	174.04	20.920	49.398	255.63	228.91	649.50
#1	-.03525	-.00138	.00371	.01289	.00089	.00431	.00224
#2	-.04558	.00201	.00511	.03903	-.00061	-.00243	-.00423
#3	-.06380	.00426	.00567	.02771	.00068	.00274	.00399
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 18:39:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00433**	**-.00039**	**.00283**	**-.00018**	**-.00004**	**.00067**	**.00416**
Stddev	.00580	.00470	.00204	.00025	.00040	.00679	.00173
%RSD	133.82	1201.9	72.112	138.40	987.40	1009.8	41.482
#1	.00571	-.00048	.00106	.00010	.00003	.00496	.00304
#2	.00933	-.00505	.00506	-.00029	-.00048	-.00716	.00329
#3	-.00203	.00435	.00237	-.00035	.00032	.00422	.00615
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00072**	**.00004**	F **-.26082**
Stddev	.00044	.00010	1.9253
%RSD	60.757	278.84	738.16
#1	-.00031	-.00002	-1.5304
#2	-.00067	.00015	1.9544
#3	-.00119	-.00003	-1.2065
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8460.9**	**49360.**	**2750.0**
Stddev	38.7	194.	18.7
%RSD	.45729	.39202	.67968
#1	8502.6	49423.	2743.9
#2	8454.0	49143.	2771.0
#3	8426.2	49515.	2735.1

Approved: June 20, 2016

Sample Name: L1606079401 Acquired: 6/17/2016 18:43:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.42019	.00239	.09299	.24033	.00010	45.033	.00035
Stddev	.00117	.01547	.00379	.00215	.00182	.00009	.305	.00007
%RSD	1358.0	3.6822	158.70	2.3150	.75838	83.223	.67703	20.786
#1	.00037	.43671	.00437	.09419	.24243	.00019	45.334	.00043
#2	.00079	.40603	.00478	.09427	.23935	.00011	44.725	.00031
#3	-.00142	.41784	-.00198	.09050	.23920	.00001	45.042	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03234	.00133	.00221	14.910	4.0528	-.00391	7.2570	3.9829
Stddev	.00033	.00021	.00095	.042	.0912	.00327	.0487	.0052
%RSD	1.0356	16.007	42.797	.28198	2.2494	83.572	.67104	.13061
#1	.03205	.00157	.00209	14.958	3.9612	-.00745	7.2361	3.9836
#2	.03270	.00117	.00321	14.885	4.1436	-.00326	7.2223	3.9774
#3	.03226	.00125	.00133	14.886	4.0537	-.00101	7.3127	3.9878
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00124	9.9432	.00613	.06117	.00446	.00254	.00697	7.1492
Stddev	.00029	.0782	.00094	.00399	.00219	.00214	.00651	.0455
%RSD	23.755	.78645	15.273	6.5154	49.099	84.054	93.392	.63610
#1	.00092	10.015	.00547	.05990	.00597	.00038	.00566	7.1849
#2	.00130	9.8599	.00720	.06563	.00195	.00465	.00122	7.0980
#3	.00150	9.9546	.00572	.05797	.00545	.00260	.01404	7.1648
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 20, 2016

Sample Name: L1606079401 Acquired: 6/17/2016 18:43:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.64644	.01118	.00063	.00050	.00575	2.1256
Stddev	.00069	.00401	.00216	.00322	.00080	.00035	.7208
%RSD	1449.3	.61980	19.365	511.07	160.48	6.1407	33.911
#1	-.00046	.65030	.01356	.00388	.00132	.00551	2.8051
#2	-.00023	.64230	.01064	.00056	.00047	.00615	1.3696
#3	.00083	.64672	.00934	-.00255	-.00029	.00558	2.2020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7873.6	45551.	2563.5
Stddev	7.6	290.	21.9
%RSD	.09659	.63622	.85388
#1	7879.9	45218.	2538.4
#2	7865.2	45691.	2578.6
#3	7875.8	45745.	2573.5

Approved: June 20, 2016

Sample Name: L1606079402 Acquired: 6/17/2016 18:46:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	.07821	-.00295	.00897	.07266	.00026	3.3941	.00033
Stddev	.00084	.00459	.00251	.00169	.00041	.00012	.0510	.00010
%RSD	570.91	5.8664	85.289	18.849	.56338	45.398	1.5027	29.157
#1	-.00086	.07511	-.00500	.00719	.07228	.00019	3.4287	.00028
#2	-.00037	.07604	-.00014	.00917	.07262	.00020	3.4182	.00044
#3	.00078	.08348	-.00369	.01056	.07309	.00040	3.3356	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00124	.00110	.00257	.06914	3.9989	.00404	2.0711	.01265
Stddev	.00023	.00090	.00046	.02737	.0590	.00784	.1411	.00237
%RSD	18.324	82.171	18.064	39.588	1.4745	194.01	6.8123	18.751
#1	.00104	.00212	.00250	.07966	4.0551	.00723	2.1738	.01535
#2	.00149	.00076	.00214	.08970	3.9375	-.00489	2.1292	.01092
#3	.00120	.00041	.00306	.03807	4.0041	.00978	1.9102	.01166
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	7.8523	.00191	.00338	-.00008	-.00198	.00440	6.3609
Stddev	.00070	.1282	.00074	.00297	.00152	.00608	.00360	.0233
%RSD	156.69	1.6331	38.628	87.810	1814.9	306.60	81.787	.36616
#1	-.00028	8.0004	.00203	.00093	.00113	-.00097	.00166	6.3716
#2	.00113	7.7754	.00112	.00253	.00041	.00353	.00306	6.3769
#3	.00049	7.7813	.00257	.00668	-.00179	-.00851	.00848	6.3342
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 20, 2016

Sample Name: L1606079402 Acquired: 6/17/2016 18:46:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00128**	**.02341**	**.00469**	**.00148**	**-.00010**	**.00851**	**.34629**
Stddev	.00123	.00034	.00827	.00232	.00063	.00018	.63711
%RSD	96.473	1.4616	176.54	156.86	626.27	2.1029	183.98
#1	.00105	.02377	.00780	.00098	-.00018	.00864	-.23588
#2	.00261	.02339	.01095	-.00055	.00056	.00859	1.0269
#3	.00018	.02308	-.00469	.00401	-.00068	.00831	.24787
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7927.5**	**46262.**	**2558.7**
Stddev	14.5	42.	30.1
%RSD	.18291	.09026	1.1761
#1	7910.9	46218.	2524.3
#2	7937.6	46268.	2579.7
#3	7934.1	46301.	2572.3

Approved: June 20, 2016

Sample Name: L1606079403 Acquired: 6/17/2016 18:50:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.25811	-.00193	.01285	.08081	.00026	6.3590
Stddev	.00060	.01135	.00346	.00180	.00019	.00009	.0201
%RSD	178.72	4.3963	178.81	14.021	.23199	36.669	.31570
#1	.00075	.27113	-.00017	.01254	.08089	.00015	6.3822
#2	.00061	.25290	.00029	.01122	.08059	.00031	6.3471
#3	-.00035	.25030	-.00592	.01478	.08094	.00031	6.3477
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	.00097	.00220	.00096	.95240	2.8511	.00397
Stddev	.00024	.00044	.00137	.00031	.01474	.0931	.00495
%RSD	39.424	45.205	62.178	32.524	1.5481	3.2643	124.66
#1	.00049	.00049	.00099	.00131	.93634	2.9310	.00959
#2	.00089	.00106	.00368	.00089	.96533	2.7489	.00026
#3	.00045	.00135	.00191	.00069	.95552	2.8735	.00206
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.8987	.48671	.00025	13.278	.00365	.01237	-.00046
Stddev	.0606	.00428	.00013	.126	.00072	.00130	.00209
%RSD	2.0918	.87875	52.981	.94742	19.685	10.493	454.82
#1	2.9686	.49096	.00010	13.419	.00286	.01386	-.00197
#2	2.8602	.48241	.00033	13.178	.00425	.01170	-.00133
#3	2.8673	.48675	.00033	13.236	.00384	.01154	.00192
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606079403 Acquired: 6/17/2016 18:50:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00057**	**.00448**	**6.8646**	**-.00033**	**.04917**	**.01205**	**.00218**
Stddev	.00324	.00639	.0174	.00113	.00123	.00314	.00327
%RSD	571.06	142.77	.25303	337.09	2.5074	26.050	150.33
#1	-.00297	.00213	6.8581	-.00107	.05030	.01539	.00544
#2	.00312	-.00041	6.8843	.00096	.04785	.00916	.00221
#3	-.00185	.01171	6.8514	-.00090	.04936	.01160	-.00111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00102**	**.00677**	F **-.78279**
Stddev	.00036	.00023	1.0679
%RSD	35.685	3.3464	136.43
#1	.00100	.00681	-2.0031
#2	.00067	.00698	-.01873
#3	.00139	.00653	-.32659
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7929.0**	**46202.**	**2579.7**
Stddev	12.0	168.	23.8
%RSD	.15169	.36310	.92347
#1	7917.5	46073.	2553.2
#2	7941.5	46392.	2586.4
#3	7928.0	46142.	2599.4

Approved: June 20, 2016

Sample Name: L1606079404 Acquired: 6/17/2016 18:54:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00083**	**.45442**	**-.00213**	**.19355**	**.14242**	**.00013**	**12.950**
Stddev	.00013	.00594	.00325	.00416	.00089	.00002	.094
%RSD	15.186	1.3065	152.37	2.1497	.62189	17.672	.72804
#1	-.00096	.44772	-.00584	.18921	.14257	.00012	13.008
#2	-.00084	.45902	.00026	.19394	.14322	.00015	13.000
#3	-.00070	.45654	-.00083	.19751	.14147	.00011	12.841
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00040**	**.05766**	**.00170**	**.00273**	**1.9502**	**4.6082**	**.00427**
Stddev	.00012	.00073	.00202	.00037	.0206	.0540	.00182
%RSD	28.836	1.2586	118.48	13.502	1.0554	1.1714	42.744
#1	.00029	.05846	.00209	.00271	1.9713	4.6153	.00281
#2	.00040	.05704	.00350	.00237	1.9490	4.6582	.00632
#3	.00052	.05748	-.00048	.00311	1.9302	4.5510	.00368
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.254**	**3.2924**	**.00016**	**17.946**	**.01486**	**.01059**	**.00565**
Stddev	.163	.0255	.00023	.149	.00109	.00265	.00165
%RSD	1.5875	.77551	144.84	.83303	7.3432	25.028	29.238
#1	10.179	3.3069	.00035	18.080	.01539	.00833	.00751
#2	10.440	3.3073	-.00010	17.973	.01360	.01351	.00512
#3	10.142	3.2629	.00022	17.784	.01558	.00993	.00434
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606079404 Acquired: 6/17/2016 18:54:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00193**	**.00257**	**5.3899**	**.00048**	**.11422**	**.01787**	**.00240**
Stddev	.00363	.00562	.0027	.00090	.00104	.00667	.00186
%RSD	188.00	218.88	.05018	188.29	.90659	37.341	77.679
#1	.00057	.00296	5.3927	.00015	.11454	.01036	.00080
#2	-.00609	.00798	5.3873	.00149	.11506	.02310	.00195
#3	-.00027	-.00324	5.3897	-.00021	.11307	.02015	.00444
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00038**	**.01348**	F **-1.5938**
Stddev	.00048	.00009	.2219
%RSD	127.21	.63717	13.920
#1	.00021	.01343	-1.8428
#2	.00000	.01343	-1.5217
#3	.00092	.01358	-1.4170
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7914.8**	**46053.**	**2578.3**
Stddev	28.5	192.	15.7
%RSD	.36038	.41697	.60957
#1	7909.5	45846.	2565.7
#2	7889.3	46225.	2573.3
#3	7945.6	46088.	2595.9

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 18:58:40 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40184	10.110	.39617	.50732	1.0016	.05032	9.8180
Stddev	.00291	.029	.00272	.00268	.0079	.00041	.1040
%RSD	.72413	.28601	.68596	.52922	.78579	.81852	1.0591
#1	.40514	10.143	.39890	.50755	.99381	.04997	9.7305
#2	.40074	10.098	.39615	.50989	1.0095	.05078	9.9329
#3	.39964	10.088	.39347	.50453	1.0013	.05023	9.7904
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05014	.20278	.50784	.51133	4.0301	49.958	.99570
Stddev	.00027	.00028	.00335	.00169	.0107	.174	.00631
%RSD	.53020	.13891	.65924	.33031	.26543	.34776	.63393
#1	.05039	.20306	.50572	.51266	4.0256	49.815	.98848
#2	.05017	.20277	.51170	.51190	4.0424	50.152	1.0002
#3	.04986	.20250	.50611	.50943	4.0225	49.909	.99845
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.019	.50299	1.0147	49.884	.51253	10.049	.51074
Stddev	.227	.00494	.0055	.292	.00230	.021	.00220
%RSD	2.2651	.98164	.54574	.58535	.44840	.20693	.43090
#1	9.7570	.49866	1.0195	49.598	.51159	10.070	.51256
#2	10.154	.50194	1.0161	50.181	.51515	10.046	.51136
#3	10.146	.50837	1.0086	49.872	.51084	10.029	.50829
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 18:58:40 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2121**	**.40496**	**5.1040**	**1.0150**	**.99413**	**1.0050**	**.51342**
Stddev	.0092	.00152	.0065	.0039	.00700	.0025	.00455
%RSD	.75611	.37630	.12653	.38571	.70438	.24802	.88581
#1	1.2106	.40665	5.1086	1.0163	.98695	1.0024	.51722
#2	1.2220	.40457	5.1067	1.0180	1.0009	1.0053	.51466
#3	1.2039	.40368	5.0966	1.0105	.99450	1.0073	.50838
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0169**	**1.0182**	F **.56607**
Stddev	.0047	.0009	.33902
%RSD	.46554	.08949	59.889
#1	1.0167	1.0172	.50955
#2	1.0217	1.0190	.25888
#3	1.0122	1.0183	.92980
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8346.7**	**48197.**	**2724.8**
Stddev	20.8	155.	15.4
%RSD	.24933	.32058	.56426
#1	8359.6	48242.	2727.1
#2	8322.7	48324.	2708.4
#3	8357.9	48025.	2738.9

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 19:02:18 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00133**	**.00306**	**-.00182**	**.00301**	**-.00115**	**.00001**	**-.01439**
Stddev	.00138	.00912	.00192	.00201	.00161	.00006	.04798
%RSD	103.79	297.74	105.69	66.585	139.67	397.54	333.48
#1	-.00260	.01347	-.00189	.00269	-.00006	-.00005	.02018
#2	-.00151	-.00073	.00014	.00516	-.00300	.00003	-.06917
#3	.00013	-.00355	-.00371	.00119	-.00040	.00006	.00582
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**.00011**	**.00004**	**.00167**	**-.01600**	**.09368**	**.00401**
Stddev	.00018	.00024	.00045	.00084	.01909	.13466	.00296
%RSD	522.66	216.42	1005.3	50.274	119.32	143.75	73.807
#1	-.00009	-.00009	.00010	.00071	-.00640	.04813	.00319
#2	.00024	.00004	-.00043	.00225	-.03798	.24521	.00154
#3	-.00005	.00037	.00046	.00205	-.00362	-.01230	.00728
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03961**	**.00052**	**.00448**	**-.00339**	**-.00041**	**-.00103**	**.00164**
Stddev	.02153	.00459	.00053	.01250	.00019	.00763	.00087
%RSD	54.364	885.60	11.914	368.55	45.582	741.14	53.295
#1	.02721	.00030	.00386	.00337	-.00022	-.00464	.00064
#2	.02715	-.00396	.00482	-.01781	-.00041	.00773	.00223
#3	.06447	.00521	.00475	.00427	-.00059	-.00618	.00205
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 19:02:18 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00543**	**.00210**	**.00348**	**.00003**	**-.00012**	**.00003**	**.00368**
Stddev	.00198	.00322	.00166	.00066	.00032	.00402	.00238
%RSD	36.493	153.08	47.650	1924.7	255.18	14835.	64.754
#1	.00590	.00549	.00167	.00077	-.00005	-.00247	.00145
#2	.00325	.00173	.00492	-.00049	-.00047	-.00211	.00341
#3	.00713	-.00091	.00384	-.00018	.00015	.00466	.00619
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00027**	**-.00004**	F **-.33753**
Stddev	.00091	.00015	1.0266
%RSD	337.84	323.53	304.15
#1	-.00040	.00012	-.82012
#2	-.00110	-.00013	-1.0339
#3	.00070	-.00013	.84143
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8517.8**	**49372.**	**2728.5**
Stddev	33.8	148.	7.8
%RSD	.39720	.29985	.28567
#1	8552.3	49227.	2727.4
#2	8516.4	49366.	2721.3
#3	8484.7	49523.	2736.8

Approved: June 20, 2016

2.3.2 Metals ICP-MS Data

2.3.2.1 Summary Data

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW8-060916	**Prep Method:**	3015	**Prep Date:**	06/21/2016 07:48
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/21/2016 12:44
Workgroup #:	WG573557	**Analyst:**	BKT	**Run Date:**	06/21/2016 15:22
Collect Date:	06/09/2016 11:00	**Dilution:**	1	**File ID:**	NI.062116.152226
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.144		0.00600	0.00300	0.00150
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW8-060916	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 19:47
Collect Date:	06/09/2016 11:00	**Dilution:**	1	**File ID:**	NI.061616.194738
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00171	J	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000344	J	0.00120	0.000600	0.000300
Cobalt, Total	7440-48-4	0.0414		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.0107		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000105	J	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0267	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW8-060916	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 21:13
Collect Date:	06/09/2016 11:00	**Dilution:**	10	**File ID:**	NI.061616.211326
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chromium, Total	7440-47-3	0.278		0.0400	0.0200	0.0100
Manganese, Total	7439-96-5	0.350		0.0400	0.0200	0.0100
Nickel, Total	7440-02-0	0.447		0.0800	0.0400	0.0200

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW26SW-060916	**Prep Method:**	3015	**Prep Date:**	06/21/2016 07:48
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/21/2016 12:44
Workgroup #:	WG573557	**Analyst:**	BKT	**Run Date:**	06/21/2016 15:25
Collect Date:	06/09/2016 13:25	**Dilution:**	1	**File ID:**	NI.062116.152538
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Arsenic, Total	7440-38-2	0.00640		0.00200	0.00100	0.000500
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW26SW-060916	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 19:50
Collect Date:	06/09/2016 13:25	**Dilution:**	1	**File ID:**	NI.061616.195050
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00237	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.000803	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00116	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.00238	J	0.00800	0.00400	0.00200
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00101	J	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW26SW-060916	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 21:16
Collect Date:	06/09/2016 13:25	**Dilution:**	10	**File ID:**	NI.061616.211638
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.635		0.0600	0.0300	0.0150
Manganese, Total	7439-96-5	1.70		0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW10F-060916	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 19:54
Collect Date:	06/09/2016 14:40	**Dilution:**	1	**File ID:**	NI.061616.195401
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00100	U	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000376	J	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00283	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00127	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00144	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.00494	J	0.00800	0.00400	0.00200
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW10F-060916	**Prep Method:**	3015	**Prep Date:**	06/21/2016 07:48
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/21/2016 12:44
Workgroup #:	WG573557	**Analyst:**	BKT	**Run Date:**	06/21/2016 15:28
Collect Date:	06/09/2016 14:40	**Dilution:**	1	**File ID:**	NI.062116.152849
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.0526		0.00600	0.00300	0.00150
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW10F-060916	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 21:19
Collect Date:	06/09/2016 14:40	**Dilution:**	10	**File ID:**	NI.061616.211949
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Total	7439-96-5	0.300		0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer NexION 300X

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	100
Vi = Initial volume	40
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/L)	0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	200
Vi = Initial volume	0.5
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/kg)	40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	40
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	50

50 ug/kg = 0.050 mg/kg

Perkin Elmer NexION ICP/MS

STANDARDS KEY

QC Std 1 - ICV
QC Std 2 - ICB
QC Std 3 - LLICV
QC Std 4 - ICSA
QC Std 5 - ICSAB
QC Std 6 - CCV
QC Std 7 - CCB
QC Std 8 - LLCCV

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.00005	0.05	0.1
Sb	10	0	0.00005	0.05	0.1
As	10	0	0.00005	0.05	0.1
Ba	10	0	0.00005	0.05	0.1
Be	10	0	0.00005	0.05	0.1
Ca	1000	0	0.005	5	10
Cd	10	0	0.0005	0.05	0.1
Cr	10	0	0.0005	0.05	0.1
Co	10	0	0.0005	0.05	0.1
Cu	10	0	0.0005	0.05	0.1
Fe	1000	0	0.005	5	10
Pb	10	0	0.00005	0.05	0.1
Mg	1000	0	0.005	5	10
Mn	10	0	0.00005	0.05	0.1
Ni	10	0	0.00005	0.05	0.1
K	1000	0	0.005	5	10
Se	10	0	0.00005	0.05	0.1
Ag	10	0	0.00005	0.05	0.1
Na	1000	0	0.005	5	10
Tl	10	0	0.00005	0.05	0.1
V	10	0	0.00005	0.05	0.1
U	1000	0	0.00005	0.05	0.1
Zn	10	0	0.00005	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG573483
Analyst: VC
Spike Analyst: VC
Run Date: 06/21/2016 07:48
Method: 3015
Balance: BAL016
Instrument: MW-4
Instrument Start: 06/21/2016 08:19

SOP: ME407 Revison 19
Spike Solution: STD75998
Spike Witness: ERP
40 & 50 ML. DIGESTION TU COA18987
MS Filters- fisher-Lot#R RGT35621
HNO3 Lot #: COA18905

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG573483-02	BLANK	1	20 mL	50 mL	184.315 g	184.299 g		
2	WG572662-01	FBLK2	18	20 mL	50 mL	182.12 g	182.115 g		
3	WG573483-03	LCS	1	20 mL	50 mL	182.488 g	182.467 g	.25 mL	
4	L16060616-01	SAMP	1	20 mL	50 mL	183.726 g	183.7 g		06/21/16
5	L16060616-02	SAMP	1	20 mL	50 mL	182.782 g	182.769 g		06/21/16
6	L16060616-04	SAMP	1	20 mL	50 mL	182.01 g	181.989 g		06/21/16
7	L16060650-01	SAMP	1	20 mL	50 mL	182.593 g	182.584 g		06/24/16
8	L16060650-02	SAMP	1	20 mL	50 mL	182.881 g	182.855 g		06/24/16
9	L16060650-03	SAMP	1	20 mL	50 mL	182.342 g	182.296 g		06/24/16
10	L16060650-08	SAMP	1	20 mL	50 mL	182.009 g	181.997 g		06/24/16
11	L16060729-02	SAMP	1	20 mL	50 mL	183.948 g	183.941 g		06/24/16
12	L16060729-03	SAMP	1	20 mL	50 mL	180.366 g	180.368 g		06/24/16
13	L16060730-01	SAMP	1	20 mL	50 mL	180.5 g	180.493 g		06/24/16
14	L16060730-02	SAMP	1	20 mL	50 mL	182.181 g	182.183 g		06/24/16
15	L16060730-03	SAMP	1	20 mL	50 mL	181.455 g	181.446 g		06/24/16
16	L16060731-02	SAMP	18	20 mL	50 mL	183.631 g	183.62 g		06/17/16
17	L16060961-01	SAMP	1	20 mL	50 mL	184.464 g	184.461 g		06/24/16
18	L16060961-02	SAMP	1	20 mL	50 mL	182.66 g	182.651 g		06/24/16
19	WG573483-01	REF	1	20 mL	50 mL	181.648 g	181.642 g		
20	L16060961-03	SAMP	1	20 mL	50 mL	181.648 g	181.642 g		06/24/16
21	L16060995-01	SAMP	1	20 mL	50 mL	183.365 g	183.359 g		06/24/16
22	L16060995-02	SAMP	1	20 mL	50 mL	185.146 g	185.151 g		06/24/16
23	WG573483-04	MS	1	20 mL	50 mL	181.067 g	181.054 g	.25 mL	
24	WG573483-05	MSD	1	20 mL	50 mL	183.356 g	183.356 g	.25 mL	

L16060995-01	ph adj
L16060995-02	ph adj

Analyst: Vicki Collins

Reviewer: Erin Potter

MW_DIG - Modified 09/30/2009
PDF ID: 4815646
Report generated: 06/21/2016 09:07

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG572730
Analyst: VC
Spike Analyst: VC
Run Date: 06/15/2016 07:54
Method: 3015
Balance: BAL016
Instrument: MW-3
Instrument Start: 06/15/2016 07:59

SOP: ME407 Revison 19
Spike Solution: STD75998
Spike Witness: ERP
40 & 50 ML. DIGESTION TU COA18772
HNO3 Lot #: COA18905
MS Filters- fisher-Lot#R RGT35621

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG572730-03	BLANK	1	20 mL	50 mL	182.294 g	182.284 g		
2	WG572662-01	FBLK2	18	20 mL	50 mL	180.913 g	180.919 g		
3	WG572730-04	LCS	1	20 mL	50 mL	182.621 g	182.604 g	.25 mL	
4	L16060616-01	SAMP	1	20 mL	50 mL	181.592 g	181.591 g		06/21/16
5	L16060616-02	SAMP	1	20 mL	50 mL	183.537 g	183.546 g		06/21/16
6	L16060616-04	SAMP	1	20 mL	50 mL	183.852 g	183.819 g		06/21/16
7	L16060649-01	SAMP	2	20 mL	50 mL	183.221 g	183.203 g		06/20/16
8	L16060650-01	SAMP	1	20 mL	50 mL	182.311 g	182.309 g		06/24/16
9	L16060650-02	SAMP	1	20 mL	50 mL	183.087 g	183.085 g		06/24/16
10	L16060650-03	SAMP	1	20 mL	50 mL	181.652 g	181.65 g		06/24/16
11	L16060650-08	SAMP	1	20 mL	50 mL	184.579 g	184.558 g		06/24/16
12	WG572730-01	REF	2	20 mL	50 mL	182.936 g	182.92 g		
13	L16060664-01	SAMP	2	20 mL	50 mL	182.936 g	182.92 g		06/17/16
14	L16060724-01	SAMP	1	20 mL	50 mL	187.236 g	187.232 g		06/24/16
15	L16060729-01	SAMP	1	20 mL	50 mL	182.146 g	182.149 g		06/24/16
16	L16060729-02	SAMP	1	20 mL	50 mL	181.631 g	181.644 g		06/24/16
17	WG572730-02	REF	1	20 mL	50 mL	183.736 g	183.731 g		
18	L16060729-03	SAMP	1	20 mL	50 mL	183.736 g	183.731 g		06/24/16
19	L16060730-01	SAMP	1	20 mL	50 mL	184.668 g	184.674 g		06/24/16
20	L16060730-02	SAMP	1	20 mL	50 mL	182.686 g	182.675 g		06/24/16
21	L16060730-03	SAMP	1	20 mL	50 mL	181.928 g	181.933 g		06/24/16
22	L16060731-02	SAMP	18	20 mL	50 mL	183.292 g	183.277 g		06/17/16
23	L16060754-01	SAMP	2	20 mL	50 mL	182.824 g	182.823 g		06/21/16
24	WG572730-05	DUP	1	20 mL	50 mL	181.184 g	181.19 g		
25	WG572730-06	MS	1	20 mL	50 mL	183.99 g	183.994 g	.25 mL	
26	WG572730-07	MSD	1	20 mL	50 mL	183.548 g	183.523 g	.25 mL	

L16060650-03	FILTERED DIGESTATE
L16060729-01	FILTERED DIGESTATE
L16060754-01	FILTERED DIGESTATE
L16060731-02	FILTERED DIGESTATE

Analyst: Vicki Collins

Reviewer: Erin Potter

MW_DIG - Modified 09/30/2009
PDF ID: 4807921
Report generated: 06/15/2016 11:11

Microbac

TCLP Non-Volatile

Analyst(s): AMA/CPD
Date: 06/14/2016
Filter Lot #: 94860030
Microbac SOP: TCLP01 Rev #: 12

Analyst / Date		Analyst / Date	
CPD 6/14/16		AMA 6/15/16	
Time On	Temp On °C	Time Off	Temp Off °C
1427	23.8	0827	21.9

Agitator Speed 30 ± 2 rpm ☑

Jug #	Sample #	Tests	Method	Fluid #	Matrix *	% Solid	Pretest pH Initial	Pretest pH Final	Int. Wt. (g)	Fluid Vol. (mL)	Final extract pH
D	06-0670-01	ME	1311	F1-181	S	100	8.12	2.08	7.67	153	5.19
↓	-02	↓	↓	↓	↓	↓	8.98	2.06	100.27	2005	5.79
↓	-03	↓	↓	↓	↓	↓	10.07	4.79	100.14	2003	7.34
↓	-04	↓	↓	↓	↓	↓	9.53	1.65	100.72	2014	5.13
↓	-05	↓	↓	↓	↓	↓	8.98	2.69	100.32	2006	6.67
↓	-06	↓	↓	↓	↓	↓	9.43	1.94	40.43	807	6.79
↓	-07	↓	↓	F2-379	↓	↓	8.10	7.75	25.70	514	8.08
D	06-0731-01	ME pH-L	1311	F2-379	S	100	8.47	5.86	50.46	1009	4.32
↓	-02	↓ ↓	1312	SPLP F2-320	↓	↓	NA	NA	100.62	2012	8.44
NA	FBIK1	ME	1311	F1-181	NA	NA	NA	NA	100	100	4.93
↓	FBIK2	↓ COD ~~pH-L ME~~ pH-L	↓	F2-379	↓	↓	↓	↓	↓	↓	2.88
↓	SPLP F2-	↓ pH-L	1312	SPLP F2-320	↓	↓	↓	↓	↓	↓	5.05

CPD 6/14/16

*Matrix Code: (S = solid, sand, soil or sludge) (P = paint) (O = organic) (W = water or aqueous waste)
D = Disposable plastic jug
TCLP Pretest weight will be 5.0 g (± 0.1) unless otherwise noted.
Temperature shall be maintained at 23° ± 2 for 18 ± 2 hours unless otherwise noted.

Comments: 5x 06-0670-01 recieved with limited volume.

Peer Review By: [signature]

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 061616A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573083,572869,572085,572184

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.061616.153014	Blank	Blank		1		06/16/16 15:30
2	NI.061616.153326	WG573095-01	Calibration Point		1		06/16/16 15:33
3	NI.061616.153637	WG573095-02	Calibration Point		1		06/16/16 15:36
4	NI.061616.153949	WG573095-03	Calibration Point		1		06/16/16 15:39
5	NI.061616.154300	WG573095-04	Calibration Point		1		06/16/16 15:43
6	NI.061616.154613	WG573095-05	ICV		1		06/16/16 15:46
7	NI.061616.154926	WG573095-06	ICB		1		06/16/16 15:49
8	NI.061616.155239	WG573095-07	Low Level Initial Calibration V		1		06/16/16 15:52
9	NI.061616.155746	WG573095-08	Initial Calibration Verification		1		06/16/16 15:57
10	NI.061616.160355	WG573095-09	Initial Calib Blank		1		06/16/16 16:03
11	NI.061616.160740	WG573095-10	Interference Check		1		06/16/16 16:07
12	NI.061616.162201	WG573095-11	Interference Check		1		06/16/16 16:22
13	NI.061616.162516	WG573095-12	CCV		1		06/16/16 16:25
14	NI.061616.163850	WG573095-13	CCB		1		06/16/16 16:38
15	NI.061616.173543	WG572432-04	Method/Prep Blank	20/50	1		06/16/16 17:35
16	NI.061616.173854	WG572432-05	Laboratory Control S	20/50	1		06/16/16 17:38
17	NI.061616.174206	WG572432-01	Reference Sample		1	L16060540-06	06/16/16 17:42
18	NI.061616.174517	WG572432-06	Matrix Spike	20/50	1	L16060540-06	06/16/16 17:45
19	NI.061616.174829	WG572432-07	Matrix Spike Duplica	20/50	1	L16060540-06	06/16/16 17:48
20	NI.061616.175140	L16060533-01	16F0399-01	20/50	1		06/16/16 17:51
21	NI.061616.175452	L16060540-03	AG4573	20/50	1		06/16/16 17:54
22	NI.061616.175803	WG573083-01	Post Digestion Spike		1	L16060540-03	06/16/16 17:58
23	NI.061616.180115	WG573083-02	Serial Dilution		5	L16060540-03	06/16/16 18:01
24	NI.061616.180426	WG573083-02	Serial Dilution		25	L16060540-03	06/16/16 18:04
25	NI.061616.180739	WG573095-14	CCV		1		06/16/16 18:07
26	NI.061616.181051	WG573095-15	CCB		1		06/16/16 18:10
27	NI.061616.181404	L16060540-09	AG4578	20/50	1		06/16/16 18:14
28	NI.061616.181715	L16060540-10	AG4579	20/50	1		06/16/16 18:17
29	NI.061616.182027	L16060540-11	AG4580	20/50	1		06/16/16 18:20
30	NI.061616.182338	L16060540-14	AG4584	20/50	1		06/16/16 18:23
31	NI.061616.182650	L16060540-15	AG4587	20/50	1		06/16/16 18:26
32	NI.061616.183001	L16060540-16	AG4589	20/50	1		06/16/16 18:30
33	NI.061616.183313	L16060549-01	J6F0164-01	20/50	1		06/16/16 18:33
34	NI.061616.183624	L16060614-01	WATER PLANT B/W	20/50	1		06/16/16 18:36

Page: 1 Approved: June 20, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 061616A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573083,572869,572085,572184

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.061616.183936	L16060624-01	16F1312-03	20/50	1		06/16/16 18:39
36	NI.061616.184247	WG572432-03	Reference Sample		1	L16060630-01	06/16/16 18:42
37	NI.061616.184600	WG573095-16	CCV		1		06/16/16 18:46
38	NI.061616.184912	WG573095-17	CCB		1		06/16/16 18:49
39	NI.061616.185225	WG572432-10	Duplicate	20/50	1	L16060630-01	06/16/16 18:52
40	NI.061616.185538	WG573095-18	CCV		1		06/16/16 18:55
41	NI.061616.185850	WG573095-19	CCB		1		06/16/16 18:58
42	NI.061616.190202	WG573095-20	Low Level Continuing Calibra		1		06/16/16 19:02
43	NI.061616.190516	WG572730-03	Method/Prep Blank	20/50	1		06/16/16 19:05
44	NI.061616.190828	WG572730-04	Laboratory Control S	20/50	1		06/16/16 19:08
45	NI.061616.191230	WG572730-01	Reference Sample		1	L16060664-01	06/16/16 19:12
46	NI.061616.191541	WG572730-05	Duplicate	20/50	1	L16060664-01	06/16/16 19:15
47	NI.061616.191852	WG572730-02	Reference Sample		1	L16060729-03	06/16/16 19:18
48	NI.061616.192204	WG572730-06	Matrix Spike	20/50	1	L16060729-03	06/16/16 19:22
49	NI.061616.192515	WG572730-07	Matrix Spike Duplica	20/50	1	L16060729-03	06/16/16 19:25
50	NI.061616.192827	L16060754-01	V6F0103-02	20/50	1		06/16/16 19:28
51	NI.061616.193138	WG572869-01	Post Digestion Spike		1	L16060754-01	06/16/16 19:31
52	NI.061616.193450	L16060754-01	V6F0103-02		5		06/16/16 19:34
53	NI.061616.193803	WG573095-21	CCV		1		06/16/16 19:38
54	NI.061616.194114	WG573095-22	CCB		1		06/16/16 19:41
55	NI.061616.194427	WG572869-02	Serial Dilution		25	L16060754-01	06/16/16 19:44
56	NI.061616.194738	L16060616-01	MW8-060916	20/50	1		06/16/16 19:47
57	NI.061616.195050	L16060616-02	18CPTMW26SW-060916	20/50	1		06/16/16 19:50
58	NI.061616.195401	L16060616-04	MW10F-060916	20/50	1		06/16/16 19:54
59	NI.061616.195713	L16060649-01	V6F0102-02	20/50	1		06/16/16 19:57
60	NI.061616.200024	L16060650-01	MW1-061016	20/50	1		06/16/16 20:00
61	NI.061616.200336	L16060650-02	MW3-061016	20/50	1		06/16/16 20:03
62	NI.061616.200647	L16060650-03	17WW08-061016	20/50	1		06/16/16 20:06
63	NI.061616.201257	L16060650-08	18WW24F-061016	20/50	1		06/16/16 20:12
64	NI.061616.201608	L16060729-01	A09-MW10-Y1S2	20/50	1		06/16/16 20:16
65	NI.061616.201921	WG573095-23	CCV		1		06/16/16 20:19
66	NI.061616.202232	WG573095-24	CCB		1		06/16/16 20:22
67	NI.061616.202638	L16060729-02	A09-MW11-Y1S2	20/50	1		06/16/16 20:26
68	NI.061616.202950	L16060730-01	18CPTMW14-061316	20/50	1		06/16/16 20:29

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Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 061616A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573083,572869,572085,572184

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.061616.204020	L16060730-02	18CPTMW14FD-061316	20/50	1		06/16/16 20:40
70	NI.061616.204331	L16060730-03	18CPTMW24-061316	20/50	1		06/16/16 20:43
71	NI.061616.204643	L16060731-02	60500-SSP0041-SSP0041	20/50	1		06/16/16 20:46
72	NI.061616.204954	L16060731-02	60500-SSP0041-SSP0041	20/50	10		06/16/16 20:49
73	NI.061616.205306	L16060540-09	AG4578	20/50	100		06/16/16 20:53
74	NI.061616.205727	L16060540-10	AG4579	20/50	10		06/16/16 20:57
75	NI.061616.210039	L16060540-11	AG4580	20/50	10		06/16/16 21:00
76	NI.061616.210350	L16060540-14	AG4584	20/50	100		06/16/16 21:03
77	NI.061616.210702	WG573095-25	CCV		1		06/16/16 21:07
78	NI.061616.211014	WG573095-26	CCB		1		06/16/16 21:10
79	NI.061616.211326	L16060616-01	MW8-060916	20/50	10		06/16/16 21:13
80	NI.061616.211638	L16060616-02	18CPTMW26SW-060916	20/50	10		06/16/16 21:16
81	NI.061616.211949	L16060616-04	MW10F-060916	20/50	10		06/16/16 21:19
82	NI.061616.212301	L16060650-01	MW1-061016	20/50	50		06/16/16 21:23
83	NI.061616.212612	L16060650-02	MW3-061016	20/50	10		06/16/16 21:26
84	NI.061616.212923	L16060650-03	17WW08-061016	20/50	10		06/16/16 21:29
85	NI.061616.213235	L16060650-08	18WW24F-061016	20/50	10		06/16/16 21:32
86	NI.061616.213546	L16060730-01	18CPTMW14-061316	20/50	50		06/16/16 21:35
87	NI.061616.213859	L16060730-02	18CPTMW14FD-061316	20/50	50		06/16/16 21:38
88	NI.061616.214210	L16060730-03	18CPTMW24-061316	20/50	50		06/16/16 21:42
89	NI.061616.214523	WG573095-27	CCV		1		06/16/16 21:45
90	NI.061616.214835	WG573095-28	CCB		1		06/16/16 21:48
91	NI.061616.215148	WG573095-29	Low Level Continuing Calibra		1		06/16/16 21:51
92	NI.061616.215500	WG571964-02	Method/Prep Blank	20/50	1		06/16/16 21:55
93	NI.061616.215811	WG571964-03	Laboratory Control S	20/50	1		06/16/16 21:58
94	NI.061616.220123	WG571964-01	Reference Sample		5	L16060428-01	06/16/16 22:01
95	NI.061616.220434	WG571964-05	Matrix Spike	20/50	5	L16060428-01	06/16/16 22:04
96	NI.061616.220746	WG571964-06	Matrix Spike Duplica	20/50	5	L16060428-01	06/16/16 22:07
97	NI.061616.221057	L16060411-03	AWD4T-060716	20/50	1		06/16/16 22:10
98	NI.061616.221409	L16060411-04	AWD4B-060716	20/50	1		06/16/16 22:14
99	NI.061616.221720	WG572085-03	Post Digestion Spike		1	L16060411-04	06/16/16 22:17
100	NI.061616.222032	L16060411-04	AWD4B-060716		5		06/16/16 22:20
101	NI.061616.222343	WG572085-04	Serial Dilution		25	L16060411-04	06/16/16 22:23
102	NI.061616.222656	WG573095-30	CCV		1		06/16/16 22:26

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Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 061616A.REP

Analyst1: BKT Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705

ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607

CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345

Stannous : Hydroxylamine :

Workgroups: 573083,572869,572085,572184

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.061616.223007	WG573095-31	CCB		1		06/16/16 22:30
104	NI.061616.223320	WG571834-02	Method/Prep Blank	20/50	1		06/16/16 22:33
105	NI.061616.223632	WG571834-03	Laboratory Control S	20/50	1		06/16/16 22:36
106	NI.061616.223943	WG571834-01	Reference Sample		1	L16060337-02	06/16/16 22:39
107	NI.061616.224254	WG571834-04	Matrix Spike	20/50	1	L16060337-02	06/16/16 22:42
108	NI.061616.224606	WG571834-05	Matrix Spike Duplica	20/50	1	L16060337-02	06/16/16 22:46
109	NI.061616.224917	L16060303-01	LH18/24-SP650-6368-GRAB	20/50	1		06/16/16 22:49
110	NI.061616.225229	L16060303-02	LH18/24-SP650-6368-COMP	20/50	1		06/16/16 22:52
111	NI.061616.225540	L16060304-02	LH18/24-SP650-6369-GRAB	20/50	1		06/16/16 22:55
112	NI.061616.225852	WG572184-03	Post Digestion Spike		1	L16060304-02	06/16/16 22:58
113	NI.061616.230203	WG572184-04	Serial Dilution		5	L16060304-02	06/16/16 23:02
114	NI.061616.230516	WG573095-32	CCV		1		06/16/16 23:05
115	NI.061616.230827	WG573095-33	CCB		1		06/16/16 23:08
116	NI.061616.231140	WG573095-34	Low Level Continuing Calibra		1		06/16/16 23:11

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Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062116A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573557,573473,573475

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.062116.123136	Blank	Blank		1		06/21/16 12:31
2	NI.062116.123447	WG573631-01	Calibration Point		1		06/21/16 12:34
3	NI.062116.123759	WG573631-02	Calibration Point		1		06/21/16 12:37
4	NI.062116.124110	WG573631-03	Calibration Point		1		06/21/16 12:41
5	NI.062116.124422	WG573631-04	Calibration Point		1		06/21/16 12:44
6	NI.062116.124735	WG573631-05	Initial Calibration Verification		1		06/21/16 12:47
7	NI.062116.125048	WG573631-06	Initial Calib Blank		1		06/21/16 12:50
8	NI.062116.125401	WG573631-07	Low Level Initial Calibration V		1		06/21/16 12:54
9	NI.062116.125712	WG573631-08	Interference Check		1		06/21/16 12:57
10	NI.062116.130024	WG573631-09	Interference Check		1		06/21/16 13:00
11	NI.062116.130337	WG573631-10	CCV		1		06/21/16 13:03
12	NI.062116.130648	WG573631-11	CCB		1		06/21/16 13:06
13	NI.062116.131000	WG573483-02	Method/Prep Blank	20/50	1		06/21/16 13:10
14	NI.062116.131312	WG573483-03	Laboratory Control S		1		06/21/16 13:13
15	NI.062116.131623	WG573483-01	Reference Sample		1	L16060961-03	06/21/16 13:16
16	NI.062116.131935	WG573483-04	Matrix Spike	20/50	1	L16060961-03	06/21/16 13:19
17	NI.062116.132247	WG573483-05	Matrix Spike Duplica	20/50	1	L16060961-03	06/21/16 13:22
18	NI.062116.132558	L16060731-02	60500-SSP0041-SSP0041	20/50	1		06/21/16 13:25
19	NI.062116.132910	WG573557-01	Post Digestion Spike		1	L16060731-02	06/21/16 13:29
20	NI.062116.133221	WG573557-02	Serial Dilution		5	L16060731-02	06/21/16 13:32
21	NI.062116.133650	WG573662-01	Reference Sample	20/50	1	L16060907-14	06/21/16 13:36
22	NI.062116.134003	WG573631-12	CCV		1		06/21/16 13:40
23	NI.062116.134314	WG573631-13	CCB		1		06/21/16 13:43
24	NI.062116.152226	L16060616-01	MW8-060916	20/50	1		06/21/16 15:22
25	NI.062116.152538	L16060616-02	18CPTMW26SW-060916	20/50	1		06/21/16 15:25
26	NI.062116.152849	L16060616-04	MW10F-060916	20/50	1		06/21/16 15:28
27	NI.062116.153201	L16060650-01	MW1-061016	20/50	1		06/21/16 15:32
28	NI.062116.153512	L16060650-02	MW3-061016	20/50	1		06/21/16 15:35
29	NI.062116.153823	L16060650-03	17WW08-061016	20/50	1		06/21/16 15:38
30	NI.062116.154135	L16060650-08	18WW24F-061016	20/50	1		06/21/16 15:41
31	NI.062116.154446	L16060729-02	A09-MW11-Y1S2	20/50	1		06/21/16 15:44
32	NI.062116.154758	L16060729-03	A09-MW12-Y1S2	20/50	1	WG572730-02	06/21/16 15:47
33	NI.062116.155109	L16060730-01	18CPTMW14-061316	20/50	1		06/21/16 15:51
34	NI.062116.155422	WG573631-14	CCV		1		06/21/16 15:54

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Maren Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062116A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573557,573473,573475

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.062116.155734	WG573631-15	CCB		1		06/21/16 15:57
36	NI.062116.160047	L16060730-02	18CPTMW14FD-061316	20/50	1		06/21/16 16:00
37	NI.062116.160358	L16060730-03	18CPTMW24-061316	20/50	1		06/21/16 16:03
38	NI.062116.160710	L16060961-01	GH58HS_MELZER_03-03-0	20/50	1		06/21/16 16:07
39	NI.062116.161021	L16060961-02	GH58HS_MELZER_03-03-0	20/50	1		06/21/16 16:10
40	NI.062116.161333	L16060995-01	UNTREATED	20/50	50		06/21/16 16:13
41	NI.062116.161644	L16060995-02	AFTER	20/50	50		06/21/16 16:16
42	NI.062116.161957	WG573631-16	CCV		1		06/21/16 16:19
43	NI.062116.162309	WG573631-17	CCB		1		06/21/16 16:23
44	NI.062116.171200	WG573111-04	Method/Prep Blank	20/50	1		06/21/16 17:12
45	NI.062116.171512	WG573111-05	Laboratory Control S	20/50	1		06/21/16 17:15
46	NI.062116.171823	WG573111-03	Reference Sample		1	L16060540-06	06/21/16 17:18
47	NI.062116.172135	WG573111-09	Matrix Spike	20/50	1	L16060540-06	06/21/16 17:21
48	NI.062116.172446	WG573111-10	Matrix Spike Duplica	20/50	1	L16060540-06	06/21/16 17:24
49	NI.062116.172758	L16060624-01	16F1312-03	20/50	1		06/21/16 17:27
50	NI.062116.173109	WG573473-01	Post Digestion Spike		1	L16060624-01	06/21/16 17:31
51	NI.062116.173421	WG573473-02	Serial Dilution		5	L16060624-01	06/21/16 17:34
52	NI.062116.173732	WG573473-02	Serial Dilution		25	L16060624-01	06/21/16 17:37
53	NI.062116.174045	WG573631-18	CCV		1		06/21/16 17:40
54	NI.062116.174357	WG573631-19	CCB		1		06/21/16 17:43
55	NI.062116.174710	L16060533-01	16F0399-01	20/50	1		06/21/16 17:47
56	NI.062116.175021	L16060784-03	J6E1050-02	20/50	5		06/21/16 17:50
57	NI.062116.175333	WG573111-01	Reference Sample		1	L16060787-09	06/21/16 17:53
58	NI.062116.175644	L16060787-10	U517TW006C	20/50	1		06/21/16 17:56
59	NI.062116.175956	WG573111-06	Matrix Spike	20/50	1	L16060787-09	06/21/16 17:59
60	NI.062116.180307	WG573111-07	Matrix Spike Duplica	20/50	1	L16060787-09	06/21/16 18:03
61	NI.062116.180619	L16060787-18	U517TW008A	20/50	1		06/21/16 18:06
62	NI.062116.180930	WG573111-02	Reference Sample		1	L16060862-01	06/21/16 18:09
63	NI.062116.181242	WG573111-08	Duplicate	20/50	1	L16060862-01	06/21/16 18:12
64	NI.062116.181553	L16060883-02	WC02	20/50	1		06/21/16 18:15
65	NI.062116.181906	WG573631-20	CCV		1		06/21/16 18:19
66	NI.062116.182218	WG573631-21	CCB		1		06/21/16 18:22
67	NI.062116.182531	L16060896-01	A08-MW02-Y1S2	20/50	1		06/21/16 18:25
68	NI.062116.182842	L16060896-02	A08-MW03-Y1S2	20/50	1		06/21/16 18:28

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Maren Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062116A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573557,573473,573475

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.062116.183154	L16060896-03	A08-MW10-Y1S2	20/50	1		06/21/16 18:31
70	NI.062116.183505	L16060896-04	FD-01	20/50	1		06/21/16 18:35
71	NI.062116.183817	L16060896-05	FD-03	20/50	1		06/21/16 18:38
72	NI.062116.184128	L16060896-07	RB01-06-15-16	20/50	1		06/21/16 18:41
73	NI.062116.184440	L16060916-01	PHL 1 FRESHWATER IMPO	20/50	1		06/21/16 18:44
74	NI.062116.184751	L16060916-02	DS TYGERT RIVER	20/50	1		06/21/16 18:47
75	NI.062116.185104	WG573631-22	CCV		1		06/21/16 18:51
76	NI.062116.185415	WG573631-23	CCB		1		06/21/16 18:54
77	NI.062116.191207	WG573631-24	Low Level Continuing Calibra		1		06/21/16 19:12
78	NI.062116.193457	L16060995-01	UNTREATED	20/50	500		06/21/16 19:34
79	NI.062116.193809	L16060995-02	AFTER	20/50	500		06/21/16 19:38
80	NI.062116.194121	WG573631-25	CCV		1		06/21/16 19:41
81	NI.062116.194433	WG573631-26	CCB		1		06/21/16 19:44
82	NI.062116.194745	WG573333-03	Method/Prep Blank	.25/100	1		06/21/16 19:47
83	NI.062116.195057	WG573333-04	Laboratory Control S	.25/100	1		06/21/16 19:50
84	NI.062116.195408	L16061053-01	GS042QDCF01SB061716S-I		1	WG573333-02	06/21/16 19:54
85	NI.062116.195720	L16061053-02	GS042QDCF01SB061716S-I	.253/100	1	WG573333-07	06/21/16 19:57
86	NI.062116.200031	L16061053-03	GS042QDCF01SB061716S-I	.252/100	1	WG573333-08	06/21/16 20:00
87	NI.062116.200343	L16061054-01	GS037QBCF01XB061616S-E	.254/100	1		06/21/16 20:03
88	NI.062116.200654	WG573475-01	Post Digestion Spike		1	L16061054-01	06/21/16 20:06
89	NI.062116.201006	WG573475-02	Serial Dilution		5	L16061054-01	06/21/16 20:10
90	NI.062116.201317	WG573475-02	Serial Dilution		25	L16061054-01	06/21/16 20:13
91	NI.062116.201631	WG573631-27	CCV		1		06/21/16 20:16
92	NI.062116.201942	WG573631-28	CCB		1		06/21/16 20:19
93	NI.062116.202255	L16060787-03	U517SS00510A		1	WG573333-01	06/21/16 20:22
94	NI.062116.202607	L16060787-04	U517SS00510MS	.256/100	1	WG573333-05	06/21/16 20:26
95	NI.062116.202918	L16060787-05	U517SS00510MSD	.253/100	1	WG573333-06	06/21/16 20:29
96	NI.062116.203230	L16060787-06	U517SS00512A	.256/100	1		06/21/16 20:32
97	NI.062116.203541	L16060787-07	U517SS006010A	.256/100	1		06/21/16 20:35
98	NI.062116.203853	L16060787-08	U517SS00612A	.254/100	1		06/21/16 20:38
99	NI.062116.204204	L16060787-13	U517SS00708A	.252/100	1		06/21/16 20:42
100	NI.062116.204516	L16060787-14	U517SS00710A	.259/100	1		06/21/16 20:45
101	NI.062116.204827	L16060787-15	U517SS00808A	.257/100	1		06/21/16 20:48
102	NI.062116.205139	L16060787-16	U517SS00808C	.255/100	1		06/21/16 20:51

Page: 3 Approved: June 22, 2016

Maren Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062116A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573557,573473,573475

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.062116.205452	WG573631-29	CCV		1		06/21/16 20:54
104	NI.062116.205803	WG573631-30	CCB		1		06/21/16 20:58
105	NI.062116.210116	L16060787-17	U517SS00810A	.259/100	1		06/21/16 21:01
106	NI.062116.210428	L16060964-01	GH5-01	.252/100	1		06/21/16 21:04
107	NI.062116.210739	L16060964-02	GH5-02	.259/100	1		06/21/16 21:07
108	NI.062116.211051	L16060964-03	GH5-03	.254/100	1		06/21/16 21:10
109	NI.062116.211402	L16060964-04	GH5-04	.249/100	1		06/21/16 21:14
110	NI.062116.211714	L16060964-05	GH5-05	.252/100	1		06/21/16 21:17
111	NI.062116.212025	L16060964-06	GH5-06	.258/100	1		06/21/16 21:20
112	NI.062116.212337	L16061048-01	TR0062	.252/100	1		06/21/16 21:23
113	NI.062116.212649	WG573631-31	CCV		1		06/21/16 21:26
114	NI.062116.213001	WG573631-32	CCB		1		06/21/16 21:30

Page: 4 Approved: June 22, 2016

Maren Berry

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 16-JUN-2016
Analyst: BKT
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 573095
Runlog ID: 75740
Analytical Workgroups: 573083,572869,572085,572184

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	
Level 4	303,304,411,540,616,650,729,730,731
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BKT
Secondary Reviewer	KHR
Comments	

Primary Reviewer:
20-JUN-2016

Secondary Reviewer:
20-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-20-2016 14:36:34

Microbac Laboratories Inc.

Data Checklist

Date: 21-JUN-2016
Analyst: BKT
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 573631
Runlog ID: 75827
Analytical Workgroups: 573557,573473,573475

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	
Level 4	540,616,624,650,729,730,731,787
Level 4	883,896,1053,1054
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BKT
Secondary Reviewer	MMB
Comments	

Primary Reviewer:
21-JUN-2016

Secondary Reviewer:
22-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-22-2016 13:22:13

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG572869

Login Number: L16060616

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW8-060916	01	06/09/16					06/15/2016	5.9	180		06/16/16	7.4	180	
MW8-060916	01	06/09/16					06/15/2016	5.9	180		06/16/16	7.4	180	
18CPTMW26SW-060916	02	06/09/16					06/15/2016	5.8	180		06/16/16	7.3	180	
18CPTMW26SW-060916	02	06/09/16					06/15/2016	5.8	180		06/16/16	7.3	180	
MW10F-060916	04	06/09/16					06/15/2016	5.7	180		06/16/16	7.3	180	
MW10F-060916	04	06/09/16					06/15/2016	5.7	180		06/16/16	7.2	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4812131
Report generated 06/21/2016 18:21

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG573557

Login Number: L16060616

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW8-060916	01	06/09/16					06/21/2016	11.9	180		06/21/16	12.2	180	
18CPTMW26SW-060916	02	06/09/16					06/21/2016	11.8	180		06/21/16	12.1	180	
MW10F-060916	04	06/09/16					06/21/2016	11.7	180		06/21/16	12	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4812131
Report generated 06/21/2016 18:21

METHOD BLANK SUMMARY

Login Number: L16060616
Blank File ID: NI.061616.190516
Prep Date: 06/15/16 07:54
Analyzed Date: 06/16/16 19:05
Analyst: BKT

Work Group: WG572869
Blank Sample ID: WG572730-03
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572730-04	NI.061616.190828	06/16/16 19:08	01
DUP	WG572730-05	NI.061616.191541	06/16/16 19:15	01
MW8-060916	L16060616-01	NI.061616.194738	06/16/16 19:47	01
18CPTMW26SW-060916	L16060616-02	NI.061616.195050	06/16/16 19:50	01
MW10F-060916	L16060616-04	NI.061616.195401	06/16/16 19:54	01
MW8-060916	L16060616-01	NI.061616.211326	06/16/16 21:13	DL01
18CPTMW26SW-060916	L16060616-02	NI.061616.211638	06/16/16 21:16	DL01
MW10F-060916	L16060616-04	NI.061616.211949	06/16/16 21:19	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4812132
Report generated 06/21/2016 18:21

METHOD BLANK SUMMARY

Login Number: L16060616
Blank File ID: NI.062116.131000
Prep Date: 06/21/16 07:48
Analyzed Date: 06/21/16 13:10
Analyst: BKT

Work Group: WG573557
Blank Sample ID: WG573483-02
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573483-03	NI.062116.133650	06/21/16 13:36	01
MW8-060916	L16060616-01	NI.062116.152226	06/21/16 15:22	02
18CPTMW26SW-060916	L16060616-02	NI.062116.152538	06/21/16 15:25	02
MW10F-060916	L16060616-04	NI.062116.152849	06/21/16 15:28	02

Report Name: BLANK_SUMMARY
PDF File ID: 4812132
Report generated 06/21/2016 18:21

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060616 Prep Date: 06/15/16 07:54 Sample ID: WG572730-03
Instrument ID: ICP-MS2 Run Date: 06/16/16 19:05 Prep Method: 3015
File ID: NI.061616.190516 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG572869 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-16-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Antimony, Total	0.000500	0.00200	0.000500	1	U
Arsenic, Total	0.000500	0.00200	0.00354	1	*
Barium, Total	0.00150	0.00600	0.0283	1	*
Cadmium, Total	0.000300	0.00120	0.000300	1	U
Chromium, Total	0.00100	0.00400	0.00100	1	U
Cobalt, Total	0.000500	0.00200	0.000500	1	U
Copper, Total	0.00100	0.00400	0.00100	1	U
Lead, Total	0.000500	0.00200	0.000500	1	U
Manganese, Total	0.00100	0.00400	0.00100	1	U
Nickel, Total	0.00200	0.00800	0.00200	1	U
Thallium, Total	0.000100	0.000400	0.000100	1	U
Vanadium, Total	0.000500	0.00200	0.000500	1	U
Zinc, Total	0.0125	0.0500	0.0125	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4812133
21-JUN-2016 18:21

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060616 Prep Date: 06/21/16 07:48 Sample ID: WG573483-02
Instrument ID: ICP-MS2 Run Date: 06/21/16 13:10 Prep Method: 3015
File ID: NI.062116.131000 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG573557 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-21-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Arsenic, Total	0.000500	0.00200	0.000500	1	U
Barium, Total	0.00150	0.00600	0.00150	1	U
Silver, Total	0.000500	0.00200	0.000500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4812133
21-JUN-2016 18:21

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060616 Run Date: 06/16/2016 Sample ID: WG572730-04
Instrument ID: ICP-MS2 Run Time: 19:08 Prep Method: 3015
File ID: NI.061616.190828 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG572869 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD75998 Cal ID: ICP-MS-16-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Antimony, Total	0.125	0.118	94.6	80 - 120	
Arsenic, Total	0.125	0.122	97.8	80 - 120	
Barium, Total	0.125	0.122	97.3	80 - 120	
Cadmium, Total	0.125	0.122	97.9	80 - 120	
Chromium, Total	0.125	0.126	100	80 - 120	
Cobalt, Total	0.125	0.133	106	80 - 120	
Copper, Total	0.125	0.124	99.5	80 - 120	
Lead, Total	0.125	0.124	99.2	80 - 120	
Manganese, Total	0.125	0.136	109	80 - 120	
Nickel, Total	0.125	0.124	99.1	80 - 120	
Thallium, Total	0.125	0.118	94.7	80 - 120	
Vanadium, Total	0.125	0.127	102	80 - 120	
Zinc, Total	0.125	0.126	101	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4812134
Report generated: 06/21/2016 18:21

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060616 Run Date: 06/21/2016 Sample ID: WG573483-03
Instrument ID: ICP-MS2 Run Time: 13:36 Prep Method: 3015
File ID: NI.062116.133650 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG573557 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD75998 Cal ID: ICP-MS-21-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Arsenic, Total	0.125	0.125	100	80 - 120	
Barium, Total	0.125	0.127	101	80 - 120	
Silver, Total	0.125	0.130	104	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4812134
Report generated: 06/21/2016 18:21

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060616 Cal ID: ICP-MS2- Worknum: WG572869
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG572730-02 File ID: NI.061616.191852 Dil: 1 Matrix: WATER
Sample ID: WG572730-06 MS File ID: NI.061616.192204 Dil: 1 Units: mg/L
Sample ID: WG572730-07 MSD File ID: NI.061616.192515 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Antimony	0.000748	0.125	0.117	93.0	0.125	0.120	95.4	2.48	80 - 120	20	
Arsenic	ND	0.125	0.124	99.1	0.125	0.135	108	8.40	80 - 120	20	
Barium	0.0532	0.125	0.163	87.8	0.125	0.360	246	75.4	80 - 120	20	*#
Cadmium	0.000380	0.125	0.118	94.3	0.125	0.118	94.5	0.202	80 - 120	20	
Chromium	0.00126	0.125	0.122	96.2	0.125	0.128	101	5.15	80 - 120	20	
Cobalt	0.0627	0.125	0.194	105	0.125	0.210	118	8.06	80 - 120	20	
Copper	0.00880	0.125	0.129	96.3	0.125	0.134	100	3.48	80 - 120	20	
Lead	0.00276	0.125	0.122	95.5	0.125	0.128	100	4.87	80 - 120	20	
Manganese	0.984	0.125	1.12	108	0.125	1.21	177	7.43	80 - 120	20	*
Nickel	0.0243	0.125	0.144	95.7	0.125	0.150	100	4.07	80 - 120	20	
Thallium	ND	0.125	0.117	93.4	0.125	0.122	97.3	4.07	80 - 120	20	
Vanadium	ND	0.125	0.127	101	0.125	0.135	108	6.40	80 - 120	20	
Zinc	0.0715	0.125	0.193	97.4	0.125	0.203	105	4.74	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4812135
Report generated 06/21/2016 18:21

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060616 Cal ID: ICP-MS2- Worknum: WG573557
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG573483-01 File ID: NI.062116.131623 Dil: 1 Matrix: WATER
Sample ID: WG573483-04 MS File ID: NI.062116.131935 Dil: 1 Units: mg/L
Sample ID: WG573483-05 MSD File ID: NI.062116.132247 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Arsenic	ND	0.125	0.128	103	0.125	0.125	100	2.26	80 - 120	20	
Barium	0.0370	0.125	0.156	95.4	0.125	0.159	97.5	1.73	80 - 120	20	
Silver	ND	0.125	0.119	95.1	0.125	0.123	98.5	3.53	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4812135
Report generated 06/21/2016 18:21

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16060616 **Worknum:** WG572869
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG572869-02 **File ID:** NI.061616.193450 **Dil:** 5 **Units:** ug/L
Sample: L16060754-01 **File ID:** NI.061616.192827 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	ND	U	2.27	F	1100.00	
Arsenic	0.304	F	ND	U		
Barium	21.4	X	20.8	X	2.86	
Cadmium	ND	U	ND	U		
Chromium	1.95	X	2.11	F	8.12	
Cobalt	0.616	F	ND	U		
Copper	104		107		2.99	
Lead	1.81	X	1.85	F	2.23	
Manganese	18.1	X	17.9	X	0.86	
Nickel	2.91	F	ND	U		
Silver	ND	U	ND	U		
Thallium	ND	U	ND	U		
Vanadium	1.81	X	2.04	F	12.90	
Zinc	97.6	X	100	X	2.53	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4812129
06/21/2016 18:21

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16060616 **Worknum:** WG573557
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG573557-02 **File ID:** NI.062116.133221 **Dil:** 5 **Units:** ug/L
Sample: L16060731-02 **File ID:** NI.062116.132558 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	1.14		ND			
Arsenic	12.2	X	12.5	X	2.14	
Barium	10.8	X	11.8	F	9.87	
Cadmium	0.267		ND			
Chromium	1.95		ND			
Cobalt	0.370		ND			
Copper	147		ND			
Lead	9.25		ND			
Manganese	21.0		ND			
Nickel	1.17		ND			
Silver	ND	U	ND	U		
Thallium	0.0436		ND			
Vanadium	5.28		ND			
Zinc	18.4		ND			

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4812129
06/21/2016 18:21

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16060616 **Worknum:** WG572869
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG572869-02 **File ID:** NI.061616.194427 **Dil:** 25 **Units:** ug/L
Sample: L16060754-01 **File ID:** NI.061616.193450 **Dil:** 5

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	2.27	F	ND	U		
Arsenic	ND	U	ND	U		
Barium	20.8	X	20.9	F	0.70	
Cadmium	ND	U	ND	U		
Chromium	2.11	F	ND	U		
Cobalt	ND	U	ND	U		
Copper	107	X	110	X	2.54	
Lead	1.85	F	ND	U		
Manganese	17.9	X	18.9	F	5.54	
Nickel	ND	U	ND	U		
Silver	ND	U	ND	U		
Thallium	ND	U	ND	U		
Vanadium	2.04	F	ND	U		
Zinc	100	X	ND	U		

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4812129
06/21/2016 18:21

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060616 **Worknum:** WG572869
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG572869-01 **File ID:** NI.061616.193138 **Dil:** 1 **Units:** ug/L
Sample ID: L16060754-01 **File ID:** NI.061616.192827 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	51.2		0	U	50	102.4	75 - 125	
ARSENIC	49.9		0.304	F	50	99.2	75 - 125	
BARIUM	70.7		21.4		50	98.7	75 - 125	
CADMIUM	50.8		0	U	50	101.5	75 - 125	
CHROMIUM	49.7		1.95		50	95.5	75 - 125	
COBALT	53.8		0.616	F	50	106.4	75 - 125	
COPPER	146		104		50	84.8	75 - 125	
LEAD	47.6		1.81		50	91.6	75 - 125	
MANGANESE	68.2		18.1		50	100.2	75 - 125	
NICKEL	49.4		2.91	F	50	92.9	75 - 125	
SILVER	50.6		0	U	50	101.2	75 - 125	
THALLIUM	44.4		0	U	50	88.7	75 - 125	
VANADIUM	53.4		1.81		50	103.2	75 - 125	
ZINC	139		97.6		50	83.0	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4812130
Report generated: 06/21/2016 18:21

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060616 **Worknum:** WG573557
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG573557-01 **File ID:** NI.062116.132910 **Dil:** 1 **Units:** ug/L
Sample ID: L16060731-02 **File ID:** NI.062116.132558 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	50.4		1.14		50	98.5	75 - 125	
ARSENIC	64.0		12.2		50	103.6	75 - 125	
BARIUM	60.7		10.8		50	99.9	75 - 125	
CADMIUM	51.9		0.267	F	50	103.2	75 - 125	
CHROMIUM	52.8		1.95		50	101.7	75 - 125	
COBALT	53.2		0.370	F	50	105.7	75 - 125	
COPPER	195		147		50	96.4	75 - 125	
LEAD	60.3		9.25		50	102.0	75 - 125	
MANGANESE	72.2		21.0		50	102.4	75 - 125	
NICKEL	51.1		1.17	F	50	99.8	75 - 125	
SILVER	50.1		0	U	50	100.3	75 - 125	
THALLIUM	49.7		0.0436	F	50	99.4	75 - 125	
VANADIUM	57.1		5.28		50	103.6	75 - 125	
ZINC	70.3		18.4	F	50	103.8	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4812130
Report generated: 06/21/2016 18:21

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16060616	Workgroup (AAB#):	WG572869
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG573095	Initial Calibration Date:	16-JUN-2016 15:43

	WG573095-01		WG573095-02		WG573095-03		WG573095-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	44.3	.4	294	50	219000	100	429000	.999808	
ARSENIC	0	72.1	.4	27.4	50	55400	100	107000	.999975	
BARIUM	0	17.0	.4	202	50	90500	100	179000	.999915	
CADMIUM	0	3.70	.4	107	50	96700	100	192000	.999929	
CHROMIUM	0	2890	.4	7150	50	370000	100	726000	.999966	
COBALT	0	263	.4	583	50	321000	100	621000	.999989	
COPPER	0	79.7	.4	217	50	93700	100	182000	.999999	
LEAD	0	828	.4	1800	50	831000	100	1630000	.999997	
MANGANESE	0	613	.4	1040	50	296000	100	576000	1	
NICKEL	0	108	.4	245	50	96000	100	187000	1	
SILVER	0	82.7	.4	386	50	301000	100	584000	.999738	
THALLIUM	0	10.0	.4	392	50	373000	100	729000	.999991	
VANADIUM	0	581	.4	1540	50	356000	100	688000	.999992	
ZINC	0	145	.4	311	50	55400	100	108000	1	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4812138
Report generated: 21-JUN-2016 18:21

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16060616	Workgroup (AAB#):	WG573557
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG573631	Initial Calibration Date:	21-JUN-2016 12:44

	WG573631-01		WG573631-02		WG573631-03		WG573631-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	43.1	.4	245	50	207000	100	404000	.999913	
ARSENIC	0	-25.5	.4	16.4	50	52300	100	101000	.999973	
BARIUM	0	106	.4	194	50	89200	100	176000	.999962	
CADMIUM	0	9.30	.4	103	50	91400	100	179000	.999944	
CHROMIUM	0	5910	.4	6080	50	320000	100	622000	.999997	
COBALT	0	269	.4	583	50	304000	100	585000	.999971	
COPPER	0	156	.4	255	50	88900	100	173000	.999998	
LEAD	0	792	.4	1730	50	793000	100	1540000	.999869	
MANGANESE	0	1210	.4	1640	50	319000	100	618000	.999993	
NICKEL	0	292	.4	417	50	89800	100	174000	.999991	
SILVER	0	92.7	.4	386	50	288000	100	561000	.999911	
THALLIUM	0	11.0	.4	386	50	361000	100	706000	.999917	
VANADIUM	0	1010	.4	1270	50	298000	100	571000	.999958	
ZINC	0	143	.4	285	50	51700	100	100000	.999996	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4812138
Report generated: 21-JUN-2016 18:21

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573095-09
Instrument ID: ICP-MS2
Run Time: 16:03
Method: 6020A
File ID: NI.061616.160355
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572869
Cal ID: ICP-MS2 - 16-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
COPPER	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.268	F
THALLIUM	.04	.16	.04	U
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4812140
Report generated 06/21/2016 18:21

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060616
Run Date: 06/21/2016
Sample ID: WG573631-06
Instrument ID: ICP-MS2
Run Time: 12:50
Method: 6020A
File ID: NI.062116.125048
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG573557
Cal ID: ICP-MS2 - 21-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4812140
Report generated 06/21/2016 18:21

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573095-13
Instrument ID: ICP-MS2
Run Time: 16:38
Method: 6020A
File ID: NI.061616.163850
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812143
Report generated 06/21/2016 18:21

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573095-19
Instrument ID: ICP-MS2
Run Time: 18:58
Method: 6020A
File ID: NI.061616.185850
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812143
Report generated 06/21/2016 18:21

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573095-22
Instrument ID: ICP-MS2
Run Time: 19:41
Method: 6020A
File ID: NI.061616.194114
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812143
Report generated 06/21/2016 18:21

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573095-24
Instrument ID: ICP-MS2
Run Time: 20:22
Method: 6020A
File ID: NI.061616.202232
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812143
Report generated 06/21/2016 18:21

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573095-26
Instrument ID: ICP-MS2
Run Time: 21:10
Method: 6020A
File ID: NI.061616.211014
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812143
Report generated 06/21/2016 18:21

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573095-28
Instrument ID: ICP-MS2
Run Time: 21:48
Method: 6020A
File ID: NI.061616.214835
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812143
Report generated 06/21/2016 18:21

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060616
Run Date: 06/21/2016
Sample ID: WG573631-11
Instrument ID: ICP-MS2
Run Time: 13:06
Method: 6020A
File ID: NI.062116.130648
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Silver	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812143
Report generated 06/21/2016 18:21

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060616
Run Date: 06/21/2016
Sample ID: WG573631-13
Instrument ID: ICP-MS2
Run Time: 13:43
Method: 6020A
File ID: NI.062116.134314
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Silver	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812143
Report generated 06/21/2016 18:21

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060616
Run Date: 06/21/2016
Sample ID: WG573631-15
Instrument ID: ICP-MS2
Run Time: 15:57
Method: 6020A
File ID: NI.062116.155734
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Silver	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812143
Report generated 06/21/2016 18:21

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573095-08
Instrument ID: ICP-MS2
Run Time: 15:57
Method: 6020A
File ID: NI.061616.155746
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	46.9	93.8	90 - 110	
Arsenic		50	49.9	99.8	90 - 110	
Barium		50	47.7	95.3	90 - 110	
Cadmium		50	48.1	96.2	90 - 110	
Chromium		50	50.4	101	90 - 110	
Cobalt		50	49.2	98.4	90 - 110	
Copper		50	50.2	100	90 - 110	
Lead		50	48.5	96.9	90 - 110	
Manganese		50	51.6	103	90 - 110	
Nickel		50	50.1	100	90 - 110	
Thallium		50	47.8	95.7	90 - 110	
Vanadium		50	48.7	97.3	90 - 110	
Zinc		50	50.0	100	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4812139
Report generated 06/21/2016 18:21

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060616
Run Date: 06/21/2016
Sample ID: WG573631-05
Instrument ID: ICP-MS2
Run Time: 12:47
Method: 6020A
File ID: NI.062116.124735
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Arsenic		50	50.4	101	90 - 110	
Barium		50	49.0	98.1	90 - 110	
Silver		50	49.8	99.6	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4812139
Report generated 06/21/2016 18:21

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573095-12
Instrument ID: ICP-MS2
Run Time: 16:25
Method: 6020A
File ID: NI.061616.162516
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0492	mg/L	98.4	90 - 110		
Arsenic		0.0500	0.0498	mg/L	99.6	90 - 110		
Barium		0.0500	0.0480	mg/L	96.0	90 - 110		
Cadmium		0.0500	0.0483	mg/L	96.7	90 - 110		
Chromium		0.0500	0.0497	mg/L	99.4	90 - 110		
Cobalt		0.0500	0.0504	mg/L	101	90 - 110		
Copper		0.0500	0.0502	mg/L	100	90 - 110		
Lead		0.0500	0.0490	mg/L	98.0	90 - 110		
Manganese		0.0500	0.0514	mg/L	103	90 - 110		
Nickel		0.0500	0.0501	mg/L	100	90 - 110		
Thallium		0.0500	0.0491	mg/L	98.2	90 - 110		
Vanadium		0.0500	0.0497	mg/L	99.3	90 - 110		
Zinc		0.0500	0.0499	mg/L	99.7	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812142
Report generated 06/21/2016 18:21

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573095-18
Instrument ID: ICP-MS2
Run Time: 18:55
Method: 6020A
File ID: NI.061616.185538
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0494	mg/L	98.8	90 - 110		
Arsenic		0.0500	0.0496	mg/L	99.2	90 - 110		
Barium		0.0500	0.0486	mg/L	97.2	90 - 110		
Cadmium		0.0500	0.0500	mg/L	100	90 - 110		
Chromium		0.0500	0.0500	mg/L	100	90 - 110		
Cobalt		0.0500	0.0532	mg/L	106	90 - 110		
Copper		0.0500	0.0496	mg/L	99.2	90 - 110		
Lead		0.0500	0.0501	mg/L	100	90 - 110		
Manganese		0.0500	0.0540	mg/L	108	90 - 110		
Nickel		0.0500	0.0492	mg/L	98.5	90 - 110		
Thallium		0.0500	0.0493	mg/L	98.6	90 - 110		
Vanadium		0.0500	0.0506	mg/L	101	90 - 110		
Zinc		0.0500	0.0496	mg/L	99.2	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573095-21
Instrument ID: ICP-MS2
Run Time: 19:38
Method: 6020A
File ID: NI.061616.193803
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0512	mg/L	102	90 - 110		
Arsenic		0.0500	0.0488	mg/L	97.6	90 - 110		
Barium		0.0500	0.0486	mg/L	97.1	90 - 110		
Cadmium		0.0500	0.0503	mg/L	101	90 - 110		
Chromium		0.0500	0.0490	mg/L	98.0	90 - 110		
Cobalt		0.0500	0.0548	mg/L	110	90 - 110		
Copper		0.0500	0.0486	mg/L	97.2	90 - 110		
Lead		0.0500	0.0517	mg/L	103	90 - 110		
Manganese		0.0500	0.0527	mg/L	105	90 - 110		
Nickel		0.0500	0.0487	mg/L	97.4	90 - 110		
Thallium		0.0500	0.0499	mg/L	99.9	90 - 110		
Vanadium		0.0500	0.0515	mg/L	103	90 - 110		
Zinc		0.0500	0.0495	mg/L	98.9	90 - 110		

* Exceeds LIMITS Criteria

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Report generated 06/21/2016 18:21

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573095-23
Instrument ID: ICP-MS2
Run Time: 20:19
Method: 6020A
File ID: NI.061616.201921
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0477	mg/L	95.4	90 - 110		
Arsenic		0.0500	0.0484	mg/L	96.8	90 - 110		
Barium		0.0500	0.0467	mg/L	93.3	90 - 110		
Cadmium		0.0500	0.0485	mg/L	96.9	90 - 110		
Chromium		0.0500	0.0490	mg/L	97.9	90 - 110		
Cobalt		0.0500	0.0524	mg/L	105	90 - 110		
Copper		0.0500	0.0483	mg/L	96.5	90 - 110		
Lead		0.0500	0.0502	mg/L	100	90 - 110		
Manganese		0.0500	0.0530	mg/L	106	90 - 110		
Nickel		0.0500	0.0478	mg/L	95.6	90 - 110		
Thallium		0.0500	0.0479	mg/L	95.7	90 - 110		
Vanadium		0.0500	0.0501	mg/L	100	90 - 110		
Zinc		0.0500	0.0480	mg/L	95.9	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Report generated 06/21/2016 18:21

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573095-25
Instrument ID: ICP-MS2
Run Time: 21:07
Method: 6020A
File ID: NI.061616.210702
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0484	mg/L	96.9	90 - 110		
Arsenic		0.0500	0.0488	mg/L	97.5	90 - 110		
Barium		0.0500	0.0477	mg/L	95.4	90 - 110		
Cadmium		0.0500	0.0483	mg/L	96.7	90 - 110		
Chromium		0.0500	0.0499	mg/L	99.8	90 - 110		
Cobalt		0.0500	0.0494	mg/L	98.8	90 - 110		
Copper		0.0500	0.0496	mg/L	99.2	90 - 110		
Lead		0.0500	0.0494	mg/L	98.8	90 - 110		
Manganese		0.0500	0.0534	mg/L	107	90 - 110		
Nickel		0.0500	0.0496	mg/L	99.2	90 - 110		
Thallium		0.0500	0.0475	mg/L	95.0	90 - 110		
Vanadium		0.0500	0.0503	mg/L	101	90 - 110		
Zinc		0.0500	0.0497	mg/L	99.4	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573095-27
Instrument ID: ICP-MS2
Run Time: 21:45
Method: 6020A
File ID: NI.061616.214523
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0479	mg/L	95.7	90 - 110		
Arsenic		0.0500	0.0498	mg/L	99.7	90 - 110		
Barium		0.0500	0.0478	mg/L	95.6	90 - 110		
Cadmium		0.0500	0.0483	mg/L	96.6	90 - 110		
Chromium		0.0500	0.0507	mg/L	101	90 - 110		
Cobalt		0.0500	0.0512	mg/L	102	90 - 110		
Copper		0.0500	0.0503	mg/L	101	90 - 110		
Lead		0.0500	0.0512	mg/L	102	90 - 110		
Manganese		0.0500	0.0553	mg/L	111	90 - 110		*
Nickel		0.0500	0.0504	mg/L	101	90 - 110		
Thallium		0.0500	0.0492	mg/L	98.4	90 - 110		
Vanadium		0.0500	0.0507	mg/L	101	90 - 110		
Zinc		0.0500	0.0501	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/21/2016
Sample ID: WG573631-10
Instrument ID: ICP-MS2
Run Time: 13:03
Method: 6020A
File ID: NI.062116.130337
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Arsenic		0.0500	0.0504	mg/L	101	90 - 110		
Barium		0.0500	0.0495	mg/L	99.0	90 - 110		
Silver		0.0500	0.0492	mg/L	98.4	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/21/2016
Sample ID: WG573631-12
Instrument ID: ICP-MS2
Run Time: 13:40
Method: 6020A
File ID: NI.062116.134003
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Arsenic		0.0500	0.0508	mg/L	102	90 - 110		
Barium		0.0500	0.0493	mg/L	98.6	90 - 110		
Silver		0.0500	0.0497	mg/L	99.3	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/21/2016
Sample ID: WG573631-14
Instrument ID: ICP-MS2
Run Time: 15:54
Method: 6020A
File ID: NI.062116.155422
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Arsenic		0.0500	0.0505	mg/L	101	90 - 110		
Barium		0.0500	0.0508	mg/L	102	90 - 110		
Silver		0.0500	0.0514	mg/L	103	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812142
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Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573095-07
Instrument ID: ICP-MS2
Run Time: 15:52
Method: 6020A
File ID: NI.061616.155239
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.437	ug/L	109	70 - 130		
Arsenic		0.400	0.412	ug/L	103	70 - 130		
Barium		0.750	0.670	ug/L	89.4	70 - 130		
Cadmium		0.240	0.237	ug/L	98.6	70 - 130		
Chromium		0.800	0.723	ug/L	90.4	70 - 130		
Cobalt		0.400	0.380	ug/L	95.0	70 - 130		
Copper		0.800	0.790	ug/L	98.7	70 - 130		
Lead		0.200	0.183	ug/L	91.4	70 - 130		
Manganese		0.500	0.452	ug/L	90.4	70 - 130		
Nickel		1.60	1.54	ug/L	96.1	70 - 130		
Thallium		0.0800	0.0818	ug/L	102	70 - 130		
Vanadium		0.400	0.354	ug/L	88.5	70 - 130		
Zinc		6.25	6.72	ug/L	107	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4812144
Report generated 06/22/2016 13:40

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573095-20
Instrument ID: ICP-MS2
Run Time: 19:02
Method: 6020A
File ID: NI.061616.190202
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.394	ug/L	98.5	70 - 130		
Arsenic		0.400	0.383	ug/L	95.8	70 - 130		
Barium		0.750	0.633	ug/L	84.4	70 - 130		
Cadmium		0.240	0.238	ug/L	99.0	70 - 130		
Chromium		0.800	0.710	ug/L	88.8	70 - 130		
Cobalt		0.400	0.391	ug/L	97.6	70 - 130		
Copper		0.800	0.779	ug/L	97.4	70 - 130		
Lead		0.200	0.185	ug/L	92.4	70 - 130		
Manganese		0.500	0.600	ug/L	120	70 - 130		
Nickel		1.60	1.49	ug/L	93.1	70 - 130		
Thallium		0.0800	0.0829	ug/L	104	70 - 130		
Vanadium		0.400	0.360	ug/L	90.1	70 - 130		
Zinc		6.25	6.68	ug/L	107	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4812144
Report generated 06/22/2016 13:40

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573095-29
Instrument ID: ICP-MS2
Run Time: 21:51
Method: 6020A
File ID: NI.061616.215148
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.379	ug/L	94.7	70 - 130		
Arsenic		0.400	0.373	ug/L	93.3	70 - 130		
Barium		0.750	0.661	ug/L	88.1	70 - 130		
Cadmium		0.240	0.222	ug/L	92.4	70 - 130		
Chromium		0.800	0.719	ug/L	89.8	70 - 130		
Cobalt		0.400	0.364	ug/L	91.0	70 - 130		
Copper		0.800	0.802	ug/L	100	70 - 130		
Lead		0.200	0.176	ug/L	88.2	70 - 130		
Manganese		0.500	0.484	ug/L	96.8	70 - 130		
Nickel		1.60	1.55	ug/L	96.6	70 - 130		
Thallium		0.0800	0.0736	ug/L	92.0	70 - 130		
Vanadium		0.400	0.363	ug/L	90.7	70 - 130		
Zinc		6.25	6.31	ug/L	101	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4812144
Report generated 06/22/2016 13:40

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060616
Run Date: 06/21/2016
Sample ID: WG573631-07
Instrument ID: ICP-MS2
Run Time: 12:54
Method: 6020A
File ID: NI.062116.125401
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Arsenic		0.400	0.431	ug/L	108	70 - 130		
Barium		0.750	0.681	ug/L	90.8	70 - 130		
Silver		0.400	0.401	ug/L	100	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4812144
Report generated 06/22/2016 13:40

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060616
Run Date: 06/21/2016
Sample ID: WG573631-24
Instrument ID: ICP-MS2
Run Time: 19:12
Method: 6020A
File ID: NI.062116.191207
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Arsenic		0.400	0.388	ug/L	97.1	70 - 130		
Barium		0.750	0.690	ug/L	92.0	70 - 130		
Silver		0.400	0.394	ug/L	98.6	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4812144
Report generated 06/22/2016 13:40

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060616
Instrument ID: ICP-MS2
Sol. A : WG573095-10 **File ID:** NI.061616.160740
Sol. AB : WG573095-11 **File ID:** NI.061616.162201

Workgroup (AAB#): WG572869
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.0793	NS	100	94.6	94.6	
Arsenic	NS	-0.0113	NS	100	102	102	
Barium	NS	0.0676	NS	100	94.7	94.7	
Cadmium	NS	-0.0599	NS	100	96.1	96.1	
Chromium	NS	0.0900	NS	100	99.8	99.8	
Cobalt	NS	0.0224	NS	100	104	104	
Copper	NS	0.277	NS	100	99.9	99.9	
Lead	NS	0.0928	NS	100	98.9	98.9	
Manganese	NS	0.0620	NS	100	106	106	
Nickel	NS	0.326	NS	100	99.4	99.4	
Thallium	NS	0.113	NS	100	98.0	98.0	
Vanadium	NS	0.00810	NS	100	100	100	
Zinc	NS	1.37	NS	100	102	102	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

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Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060616
Instrument ID: ICP-MS2
Sol. A : WG573631-08 **File ID:** NI.062116.125712
Sol. AB : WG573631-09 **File ID:** NI.062116.130024

Workgroup (AAB#): WG572869
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.0947	NS	100	101	101	
Arsenic	NS	0.00630	NS	100	101	101	
Barium	NS	0.186	NS	100	100	100	
Cadmium	NS	-0.0833	NS	100	103	103	
Chromium	NS	0.141	NS	100	97.4	97.4	
Cobalt	NS	0.0458	NS	100	101	101	
Copper	NS	0.288	NS	100	97.2	97.2	
Lead	NS	0.0771	NS	100	102	102	
Manganese	NS	0.0891	NS	100	101	101	
Nickel	NS	0.306	NS	100	96.1	96.1	
Thallium	NS	0.0461	NS	100	99.0	99.0	
Vanadium	NS	0.0465	NS	100	97.8	97.8	
Zinc	NS	1.91	NS	100	99.8	99.8	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

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Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060616
Instrument ID: ICP-MS2
Sol. A : WG573095-10 **File ID:** NI.061616.160740
Sol. AB : WG573095-11 **File ID:** NI.061616.162201

Workgroup (AAB#): WG573557
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Arsenic	NS	-0.0113	NS	100	102	102	
Barium	NS	0.0676	NS	100	94.7	94.7	
Silver	NS	0.0163	NS	100	85.5	85.5	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

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Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060616
Instrument ID: ICP-MS2
Sol. A : WG573631-08 **File ID:** NI.062116.125712
Sol. AB : WG573631-09 **File ID:** NI.062116.130024

Workgroup (AAB#): WG573557
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Arsenic	NS	0.00630	NS	100	101	101	
Barium	NS	0.186	NS	100	100	100	
Silver	NS	0.0339	NS	100	95.1	95.1	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

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Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060616 **Analytical Method:** 6020
Analytical Workgroup: WG572869 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 16-JUN-2016 15:33

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060616-01	SAMP	16-JUN-2016 19:47	94.107	94.012	97.737
L16060616-01	SAMP	16-JUN-2016 21:13	97.727	96.646	103.59
L16060616-02	SAMP	16-JUN-2016 19:50	93.673	95.369	95.007
L16060616-02	SAMP	16-JUN-2016 21:16	94.36	97.822	99.92
L16060616-04	SAMP	16-JUN-2016 19:54	102.827	96.941	106.505
L16060616-04	SAMP	16-JUN-2016 21:19	99.554	102.327	99.573
WG572730-03	BLANK	16-JUN-2016 19:05	100.216	99.081	102.939
WG572730-04	LCS	16-JUN-2016 19:08	101.421	99.849	103.204
WG572869-01	PSPK	16-JUN-2016 19:31	112.105	100.336	99.705
WG572869-02	SERIAL	16-JUN-2016 19:34	109.035	99.586	107.45
WG572869-02	SERIAL	16-JUN-2016 19:44	102.137	96.905	105.944
WG573095-07	LLICV	16-JUN-2016 15:52	96.13	93.157	96.318
WG573095-08	ICV	16-JUN-2016 15:57	97.13	96.114	99.927
WG573095-09	ICB	16-JUN-2016 16:03	97.661	96.107	100.676
WG573095-10	ICS	16-JUN-2016 16:07	96.606	97.591	98.938
WG573095-11	ICS	16-JUN-2016 16:22	96.039	94.231	101.38
WG573095-12	CCV	16-JUN-2016 16:25	96.818	96.058	101.069
WG573095-13	CCB	16-JUN-2016 16:38	95.395	96.878	98.817
WG573095-18	CCV	16-JUN-2016 18:55	100.879	98.942	103.257
WG573095-19	CCB	16-JUN-2016 18:58	100.363	100.186	103.213
WG573095-20	LLCCV	16-JUN-2016 19:02	98.621	96.559	99.934
WG573095-21	CCV	16-JUN-2016 19:38	99.655	98.678	100.997
WG573095-22	CCB	16-JUN-2016 19:41	103.251	98.035	102.526
WG573095-23	CCV	16-JUN-2016 20:19	102.275	100.766	107.12
WG573095-24	CCB	16-JUN-2016 20:22	101.002	103.79	104.368
WG573095-25	CCV	16-JUN-2016 21:07	98.791	98.968	101.902
WG573095-26	CCB	16-JUN-2016 21:10	98.056	96.18	104.938
WG573095-27	CCV	16-JUN-2016 21:45	94.877	96.278	101.991
WG573095-28	CCB	16-JUN-2016 21:48	95.773	98.51	99.349
WG573095-29	LLCCV	16-JUN-2016 21:51	96.58	95.236	98.152

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4812137
Report generated: 06/21/2016 18:21

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060616 **Analytical Method:** 6020
Analytical Workgroup: WG572869 **Matrix:** 18
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 16-JUN-2016 15:33

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060731-02	SAMP	16-JUN-2016 20:46	98.985	103.449	100.756
L16060731-02	SAMP	16-JUN-2016 20:49	100.189	99.166	103.967

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4812137
Report generated: 06/21/2016 18:21

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060616 **Analytical Method:** 6020
Analytical Workgroup: WG572869 **Matrix:** 2
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 16-JUN-2016 15:33

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060754-01	SAMP	16-JUN-2016 19:28	110.371	97.831	102.475
L16060754-01	SAMP	16-JUN-2016 19:34	109.035	99.586	107.45

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4812137
Report generated: 06/21/2016 18:21

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060616 **Analytical Method:** 6020
Analytical Workgroup: WG573557 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 21-JUN-2016 12:34

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060616-01	SAMP	21-JUN-2016 15:22	93.272	98.601	93.704
L16060616-02	SAMP	21-JUN-2016 15:25	91.995	98.033	94.561
L16060616-04	SAMP	21-JUN-2016 15:28	97.137	100.95	100.603
WG573483-02	BLANK	21-JUN-2016 13:10	95.679	98.524	97.195
WG573483-03	LCS	21-JUN-2016 13:36	94.921	99.695	97.281
WG573557-01	PSPK	21-JUN-2016 13:29	98.084	98.955	98.448
WG573557-02	SERIAL	21-JUN-2016 13:32	97.19	102.137	97.153
WG573631-05	ICV	21-JUN-2016 12:47	96.069	98.452	97.355
WG573631-06	ICB	21-JUN-2016 12:50	96.354	99.72	98.43
WG573631-07	LLICV	21-JUN-2016 12:54	94.241	93.729	96.647
WG573631-08	ICS	21-JUN-2016 12:57	94.267	96.671	98.81
WG573631-09	ICS	21-JUN-2016 13:00	96.004	99.918	95.904
WG573631-10	CCV	21-JUN-2016 13:03	94.215	98.219	98.362
WG573631-11	CCB	21-JUN-2016 13:06	96.643	100.438	97.789
WG573631-12	CCV	21-JUN-2016 13:40	96.239	97.396	98.415
WG573631-13	CCB	21-JUN-2016 13:43	94.78	98.379	99.644
WG573631-14	CCV	21-JUN-2016 15:54	98.094	101.613	99.232
WG573631-15	CCB	21-JUN-2016 15:57	98.876	97.92	103.15

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4812137
Report generated: 06/21/2016 18:21

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060616 **Analytical Method:** 6020
Analytical Workgroup: WG573557 **Matrix:** 18
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 21-JUN-2016 12:34

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060731-02	SAMP	21-JUN-2016 13:25	97.415	97.241	100.268
WG572662-01	FBLK2	21-JUN-2016 13:13	96.669	99.978	97.284

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4812137
Report generated: 06/21/2016 18:21

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16060616 **Date:** 04/19/2016
Insturment ID: ICP-MS2 **Method:** 6020A

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Uranium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4812136
Report generated: 06/21/2016 18:21

2.3.2.3 Raw Data

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Thursday, June 16, 2016 14:07:39

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1326	2024	0.708	
Mg	23.985	23.975	4498	2020	0.704	
Co	58.933	58.975	11692	2022	0.692	
In	114.904	114.875	22859	2028	0.691	
U	238.050	238.075	47457	2043	0.702	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	7.436
5.575	8.287
5.625	3.892
5.675	4.802
5.725	2.185
5.775	3.031
5.825	4.638
5.875	2.806
5.925	2.266
5.975	4.757
6.025	3.190
6.075	3.669
6.125	3.622
6.175	3.148
6.225	8.886
6.275	33.166
6.325	46.481
6.375	46.566
6.425	40.745
6.475	56.845
6.525	15.768
6.575	18.835
6.625	3.774
6.675	4.099
6.725	2.150
6.775	4.632
6.825	1.659

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6.875	4.657
6.925	1.715
6.975	2.467
7.025	2.458
7.075	2.433
7.125	2.586
7.175	4.875
7.225	1.268
7.275	2.064
7.325	10.536
7.375	54.398
7.425	60.990
7.475	63.888
7.525	51.618
7.575	39.529
7.625	69.722
7.675	47.507
7.725	16.110
7.775	58.685
7.825	58.330
7.875	66.667
7.925	61.450
7.975	55.902
8.025	102.740
8.075	55.902
8.125	38.401
8.175	63.949
8.225	43.853
8.275	60.858
8.325	45.079
8.375	40.074
8.425	40.074
8.475	54.149
22.525	
22.575	50.619
22.625	33.641
22.675	51.618
22.725	55.902
22.775	25.951
22.825	27.809
22.875	40.946
22.925	49.701
22.975	18.923
23.025	32.442
23.075	23.055
23.125	25.635
23.175	20.888

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23.225	21.374
23.275	25.000
23.325	45.400
23.375	27.285
23.425	30.987
23.475	25.476
23.525	13.045
23.575	6.296
23.625	2.182
23.675	2.995
23.725	2.713
23.775	2.035
23.825	1.176
23.875	0.613
23.925	0.955
23.975	1.904
24.025	1.612
24.075	1.077
24.125	1.787
24.175	1.904
24.225	1.298
24.275	1.635
24.325	13.413
24.375	39.123
24.425	39.529
24.475	21.077
24.525	2.911
24.575	3.152
24.625	1.254
24.675	1.656
24.725	1.429
24.775	1.818
24.825	1.348
24.875	0.955
24.925	1.650
24.975	0.624
25.025	1.148
25.075	1.394
25.125	0.398
25.175	1.878
25.225	3.006
25.275	5.326
25.325	42.950
25.375	30.619
25.425	70.613
25.475	32.723
57.525	12.330

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57.575	7.587
57.625	2.112
57.675	3.255
57.725	2.490
57.775	2.165
57.825	1.108
57.875	2.141
57.925	2.456
57.975	1.875
58.025	3.007
58.075	2.288
58.125	0.909
58.175	2.980
58.225	2.412
58.275	3.761
58.325	25.824
58.375	36.748
58.425	23.570
58.475	18.248
58.525	7.221
58.575	2.071
58.625	1.712
58.675	1.278
58.725	1.414
58.775	1.870
58.825	1.537
58.875	1.904
58.925	2.989
58.975	2.279
59.025	1.504
59.075	1.307
59.125	2.089
59.175	2.055
59.225	1.826
59.275	4.437
59.325	13.359
59.375	41.110
59.425	58.736
59.475	26.307
59.525	11.352
59.575	4.879
59.625	5.862
59.675	3.367
59.725	2.650
59.775	4.079
59.825	1.668
59.875	2.310

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59.925	1.238
59.975	3.774
60.025	3.677
60.075	1.742
60.125	2.822
60.175	4.864
60.225	4.103
60.275	3.750
60.325	18.054
60.375	31.623
60.425	49.739
60.475	56.723
113.525	6.653
113.575	1.927
113.625	2.838
113.675	2.697
113.725	2.195
113.775	4.236
113.825	2.523
113.875	1.968
113.925	2.426
113.975	2.953
114.025	1.676
114.075	1.976
114.125	1.813
114.175	2.440
114.225	7.942
114.275	11.452
114.325	42.061
114.375	20.163
114.425	13.593
114.475	1.983
114.525	1.683
114.575	2.531
114.625	0.874
114.675	1.279
114.725	0.891
114.775	1.779
114.825	1.186
114.875	1.029
114.925	1.564
114.975	0.950
115.025	1.530
115.075	1.114
115.125	2.208
115.175	3.123
115.225	4.486

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115.275	7.177
115.325	14.172
115.375	54.799
115.425	53.420
115.475	16.011
115.525	12.692
115.575	2.883
115.625	6.251
115.675	4.509
115.725	4.245
115.775	1.283
115.825	4.008
115.875	1.211
115.925	2.114
115.975	7.687
116.025	5.271
116.075	5.578
116.125	4.248
116.175	11.979
116.225	16.277
116.275	30.596
116.325	24.845
116.375	28.284
116.425	54.149
116.475	40.000
236.525	
236.575	23.855
236.625	34.401
236.675	27.422
236.725	35.668
236.775	39.989
236.825	18.757
236.875	23.077
236.925	20.761
236.975	14.650
237.025	36.943
237.075	27.109
237.125	25.586
237.175	42.799
237.225	24.325
237.275	21.429
237.325	30.129
237.375	15.267
237.425	4.597
237.475	48.577
237.525	19.963
237.575	13.238

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237.625	6.730
237.675	7.800
237.725	2.904
237.775	1.428
237.825	2.396
237.875	1.255
237.925	0.555
237.975	1.682
238.025	0.745
238.075	0.906
238.125	0.901
238.175	0.264
238.225	0.953
238.275	0.886
238.325	1.395
238.375	2.556
238.425	2.763
238.475	2.183
238.525	12.890
238.575	14.452
238.625	38.797
238.675	16.933
238.725	6.952
238.775	20.328
238.825	29.472
238.875	37.989
238.925	27.140
238.975	18.731
239.025	17.049
239.075	5.454
239.125	29.410
239.175	29.569
239.225	22.608
239.275	13.847
239.325	15.978
239.375	4.980
239.425	11.111
239.475	34.914

Approved: June 20, 2016

SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\ReportOutput\a.swz

Start Time: 6/16/2016 3:04:36 PM
End Time: 6/16/2016 3:07:03 PM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 4248.80
        Obtained Intensity (Mg 23.985): 62852.37
        Obtained Intensity (In 114.904): 59263.95
        Obtained Intensity (U 238.05): 123631.92
        Obtained Intensity (Bkgd 220): 0.53
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.020 (=3505.01 / 175287.61)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.005 (=894.29 / 175287.61)
```


Approved: June 20, 2016

SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\ReportOutput\a.swz

Optimization Status

Start Time: 6/16/2016 3:04:36 PM

Daily Performance Check
        Optimization Settings:
                Method: Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 1
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 4248.80
                Obtained Intensity (Mg 23.985): 62852.37
                Obtained Intensity (In 114.904): 59263.95
                Obtained Intensity (U 238.05): 123631.92
                Obtained Intensity (Bkgd 220): 0.53
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.020 (=3505.01 / 175287.61)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.005 (=894.29 / 175287.61)
[Passed]  Optimum value(s): N/A

End Time: 6/16/2016 3:07:03 PM
```


Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Thursday, June 16, 2016 15:30:14
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51024.1	2.3				ug/L		Standard
	Be	9	6.7	43.3				ug/L		Standard
	Al	27	625.0	8.5				ug/L		Standard
	Sc	45	29647.3	3.2				ug/L		Standard
	Ti	47	57.3	8.1				ug/L		Standard
	V	51	1141.9	1.8				ug/L		Standard
	Cr	52	6628.1	1.7				ug/L		Standard
	Cr	53	430.0	9.1				ug/L		Standard
	Mn	55	603.3	5.5				ug/L		Standard
	Co	59	237.3	7.6				ug/L		Standard
	Ni	60	141.0	3.9				ug/L		Standard
	Cu	65	109.0	10.8				ug/L		Standard
	Zn	66	159.0	8.8				ug/L		Standard
>	**Ge**	72	474053.1	1.2				ug/L		Standard
	As	75	-34.2	89.8				ug/L		Standard
	Se	82	14.4	39.0				ug/L		Standard
	Se-1	77	55.3	3.8				ug/L		Standard
>	**Ga**	71	50.0	36.1				mg/L		Standard
	Rb	85	20.0	43.3				ug/L		Standard
	Y	89	376601.7	1.2				ug/L		Standard
>	**Rh**	103	16.7	69.3				ug/L		Standard
	Mo	98	8.0	17.7				ug/L		Standard
	Ag	107	80.7	16.9				ug/L		Standard
	Cd	111	3.0	0.1				mg/L		Standard
	Cd	114	7.5	153.9				ug/L		Standard
>	**In**	115	524721.8	2.2				ug/L		Standard
	Sn	118	715.0	18.5				ug/L		Standard
	Sb	123	200.9	30.1				ug/L		Standard
	Ba	135	107.7	7.0				ug/L		Standard
	Ce	140	30.0	0.0				ug/L		Standard
>	**Tb**	159	792236.5	1.3				ug/L		Standard
	Ho	165	6.7	43.3				ug/L		Standard
	Tl	203	9.0	50.9				ug/L		Standard
	Tl	205	0.0					ug/L		Standard
	Pb	206	216.0	6.4				ug/L		Standard
	Pb	207	179.7	5.8				ug/L		Standard
	Pb	208	717.3	4.2				ug/L		Standard
	U	238	3.7	15.7				ug/L		Standard
>	**Bi**	209	460342.9	1.5				ug/L		Standard

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	Na	23	0.0		mg/L	Standard
	Mg	24	20.0	50.0	mg/L	Standard
	K	39	21.7	26.6	mg/L	Standard
	Ca	43	46.7	27.0	mg/L	Standard
	Fe	54	151.0	18.9	mg/L	Standard
	Fe	57	195.0	11.2	mg/L	Standard
>	**Sc-1**	45	29647.3	3.2	mg/L	Standard
	Cl	35	154151.6	0.9	ug/L	Standard
	Kr	83	3.3	17.3	ug/L	Standard
	Br	81	1606.8	11.7	ug/L	Standard
	P	31	22752.1	1.8	ug/L	Standard
	S	34	5049.2	1.8	ug/L	Standard
	Sr	88	86.7	6.7	ug/L	Standard
	C	12	46.7	24.7	mg/L	Standard
	N	14	0.0		mg/L	Standard
	Hg	202	0.0		mg/L	Standard
	Dy	164	9.8	99.2	mg/L	Standard
	Ho-1	165	6.7	43.3	mg/L	Standard
	Er	166	3.3	173.2	mg/L	Standard
	I	127	841.7	10.5	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Thursday, June 16, 2016 15:33:26
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61336.5	17.7				ug/L	51024	Standard
	Be	9	5.0	100.0				ug/L	7	Standard
	Al	27	221.7	31.9				ug/L	625	Standard
	Sc	45	28802.5	9.9				ug/L	29647	Standard
	Ti	47	62.3	33.0				ug/L	57	Standard
	V	51	580.8	14.0				ug/L	1142	Standard
	Cr	52	2885.9	3.7				ug/L	6628	Standard
	Cr	53	203.3	7.5				ug/L	430	Standard
	Mn	55	613.3	37.8				ug/L	603	Standard
	Co	59	262.7	10.4				ug/L	237	Standard
	Ni	60	108.3	5.6				ug/L	141	Standard
	Cu	65	79.7	10.1				ug/L	109	Standard
	Zn	66	145.3	10.1				ug/L	159	Standard
>	**Ge**	72	493610.1	8.2				ug/L	474053	Standard
	As	75	72.1	70.6				ug/L	-34	Standard
	Se	82	46.9	37.4				ug/L	14	Standard
	Se-1	77	47.7	12.6				ug/L	55	Standard
>	**Ga**	71	35.0	37.8				mg/L	50	Standard
	Rb	85	20.0	0.0				ug/L	20	Standard
	Y	89	401482.6	6.9				ug/L	376602	Standard
>	**Rh**	103	11.7	107.9				ug/L	17	Standard
	Mo	98	7.8	54.6				ug/L	8	Standard
	Ag	107	82.7	18.8				ug/L	81	Standard
	Cd	111	3.7	15.8				mg/L	3	Standard
	Cd	114	6.4	91.9				ug/L	7	Standard
>	**In**	115	555148.6	6.0				ug/L	524722	Standard
	Sn	118	256.7	2.2				ug/L	715	Standard
	Sb	123	44.3	25.6				ug/L	201	Standard
	Ba	135	17.0	5.9				ug/L	108	Standard
	Ce	140	18.3	15.7				ug/L	30	Standard
>	**Tb**	159	901198.6	13.9				ug/L	792236	Standard
	Ho	165	1.7	173.2				ug/L	7	Standard
	Tl	203	10.0	75.5				ug/L	9	Standard
	Tl	205	8.3	124.9				ug/L	0	Standard
	Pb	206	256.7	23.8				ug/L	216	Standard
	Pb	207	208.0	18.4				ug/L	180	Standard
	Pb	208	827.7	17.4				ug/L	717	Standard
	U	238	2.7	21.7				ug/L	4	Standard
>	**Bi**	209	546132.2	18.5				ug/L	460343	Standard

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	Na	23	0.0		mg/L	0	Standard
	Mg	24	28.3	10.2	mg/L	20	Standard
	K	39	15.0	33.3	mg/L	22	Standard
	Ca	43	50.0	17.3	mg/L	47	Standard
	Fe	54	136.0	58.3	mg/L	151	Standard
	Fe	57	195.0	23.5	mg/L	195	Standard
>	**Sc-1**	45	28802.5	9.9	mg/L	29647	Standard
	Cl	35	67826.3	3.7	ug/L	154152	Standard
	Kr	83	1.7	34.6	ug/L	3	Standard
	Br	81	586.7	16.8	ug/L	1607	Standard
	P	31	15342.0	42.1	ug/L	22752	Standard
	S	34	2116.8	1.5	ug/L	5049	Standard
	Sr	88	106.7	39.0	ug/L	87	Standard
	C	12	23.3	24.7	mg/L	47	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	3.3	173.2	mg/L	0	Standard
	Dy	164	9.5	5.0	mg/L	10	Standard
	Ho-1	165	1.7	173.2	mg/L	7	Standard
	Er	166	10.0	100.0	mg/L	3	Standard
	I	127	316.7	10.7	mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Thursday, June 16, 2016 15:36:37
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48482.4	0.7				ug/L	51024	Standard
	Be	9	56.7	51.7				ug/L	7	Standard
	Al	27	8083.8	2.1				ug/L	625	Standard
	Sc	45	30706.1	1.7				ug/L	29647	Standard
	Ti	47	79.3	15.6				ug/L	57	Standard
	V	51	1543.2	4.3				ug/L	1142	Standard
	Cr	52	7153.0	1.0				ug/L	6628	Standard
	Cr	53	445.0	12.2				ug/L	430	Standard
	Mn	55	1041.0	0.8				ug/L	603	Standard
	Co	59	583.0	7.0				ug/L	237	Standard
	Ni	60	245.0	4.3				ug/L	141	Standard
	Cu	65	217.0	8.3				ug/L	109	Standard
	Zn	66	310.7	2.1				ug/L	159	Standard
>	**Ge**	72	471168.8	0.1				ug/L	474053	Standard
	As	75	27.4	88.1				ug/L	-34	Standard
	Se	82	24.1	10.8				ug/L	14	Standard
	Se-1	77	60.7	6.2				ug/L	55	Standard
>	**Ga**	71	60.0	28.9				mg/L	50	Standard
	Rb	85	21.7	26.6				ug/L	20	Standard
	Y	89	408481.5	2.2				ug/L	376602	Standard
>	**Rh**	103	23.3	24.7				ug/L	17	Standard
	Mo	98	258.4	4.9				ug/L	8	Standard
	Ag	107	385.7	3.9				ug/L	81	Standard
	Cd	111	107.2	4.8				mg/L	3	Standard
	Cd	114	267.5	8.7				ug/L	7	Standard
>	**In**	115	544133.0	1.6				ug/L	524722	Standard
	Sn	118	778.4	8.1				ug/L	715	Standard
	Sb	123	293.5	11.5				ug/L	201	Standard
	Ba	135	202.3	5.5				ug/L	108	Standard
	Ce	140	46.7	80.4				ug/L	30	Standard
>	**Tb**	159	788761.6	1.1				ug/L	792236	Standard
	Ho	165	18.3	56.8				ug/L	7	Standard
	Tl	203	392.3	6.9				ug/L	9	Standard
	Tl	205	366.7	20.5				ug/L	0	Standard
	Pb	206	479.7	4.5				ug/L	216	Standard
	Pb	207	426.3	6.0				ug/L	180	Standard
	Pb	208	1798.4	0.2				ug/L	717	Standard
	U	238	349.3	5.8				ug/L	4	Standard
>	**Bi**	209	449760.6	0.7				ug/L	460343	Standard

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Na	23	3.3	86.6	mg/L	0	Standard
Mg	24	38.3	27.2	mg/L	20	Standard
K	39	31.7	24.1	mg/L	22	Standard
Ca	43	58.3	21.6	mg/L	47	Standard
Fe	54	152.6	18.2	mg/L	151	Standard
Fe	57	218.3	10.3	mg/L	195	Standard
> **Sc-1**	45	30706.1	1.7	mg/L	29647	Standard
Cl	35	159978.9	1.3	ug/L	154152	Standard
Kr	83	1.3	43.3	ug/L	3	Standard
Br	81	1600.1	10.1	ug/L	1607	Standard
P	31	22997.4	1.5	ug/L	22752	Standard
S	34	5302.6	1.3	ug/L	5049	Standard
Sr	88	58.3	27.6	ug/L	87	Standard
C	12	23.3	65.5	mg/L	47	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	0.0		mg/L	0	Standard
Dy	164	2.7	234.8	mg/L	10	Standard
Ho-1	165	18.3	56.8	mg/L	7	Standard
Er	166	13.3	86.6	mg/L	3	Standard
I	127	928.4	11.9	mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 2
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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Thursday, June 16, 2016 15:39:49
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50565.9	1.8				ug/L	51024	Standard
	Be	9	42044.9	2.0	**50.0000**	1.656	3.3	ug/L	7	Standard
	Al	27	7094492.1	1.7	**50.0000**	0.240	0.5	ug/L	625	Standard
	Sc	45	29363.4	3.4				ug/L	29647	Standard
	Ti	47	29759.2	1.6	**100.0000**	1.722	1.7	ug/L	57	Standard
	V	51	356139.2	0.8	**50.0000**	0.331	0.7	ug/L	1142	Standard
	Cr	52	369550.1	0.3	**50.0000**	0.347	0.7	ug/L	6628	Standard
	Cr	53	46382.6	2.2	**50.0000**	0.884	1.8	ug/L	430	Standard
	Mn	55	295860.1	0.8	**50.0000**	0.768	1.5	ug/L	603	Standard
	Co	59	321303.4	0.4	**50.0000**	0.569	1.1	ug/L	237	Standard
	Ni	60	95975.7	0.7	**50.0000**	0.220	0.4	ug/L	141	Standard
	Cu	65	93739.7	0.2	**50.0000**	0.238	0.5	ug/L	109	Standard
	Zn	66	55396.4	0.5	**50.0000**	0.181	0.4	ug/L	159	Standard
>	**Ge**	72	471316.6	0.7				ug/L	474053	Standard
	As	75	55401.6	1.7	**50.0000**	1.157	2.3	ug/L	-34	Standard
	Se	82	5512.4	2.0	**50.0000**	1.370	2.7	ug/L	14	Standard
	Se-1	77	3915.5	0.9	**50.0000**	0.786	1.6	ug/L	55	Standard
>	**Ga**	71	120.0	8.3				mg/L	50	Standard
	Rb	85	818.4	2.5				ug/L	20	Standard
	Y	89	383423.6	1.9				ug/L	376602	Standard
>	**Rh**	103	26.7	39.0				ug/L	17	Standard
	Mo	98	238525.6	1.7	**100.0000**	2.248	2.2	ug/L	8	Standard
	Ag	107	300586.5	1.0	**50.0000**	0.931	1.9	ug/L	81	Standard
	Cd	111	96734.5	0.7	**50.0000**	0.446	0.9	mg/L	3	Standard
	Cd	114	239222.4	0.8	**50.0000**	0.320	0.6	ug/L	7	Standard
>	**In**	115	516883.8	1.3				ug/L	524722	Standard
	Sn	118	269170.5	1.9	**50.0000**	0.357	0.7	ug/L	715	Standard
	Sb	123	219395.1	0.6	**50.0000**	0.615	1.2	ug/L	201	Standard
	Ba	135	90538.0	0.9	**50.0000**	0.240	0.5	ug/L	108	Standard
	Ce	140	98.3	33.1				ug/L	30	Standard
>	**Tb**	159	780626.5	1.3				ug/L	792236	Standard
	Ho	165	5.0	0.0				ug/L	7	Standard
	Tl	203	372504.5	0.5	**50.0000**	0.339	0.7	ug/L	9	Standard
	Tl	205	316386.0	0.8	**50.0000**	0.414	0.8	ug/L	0	Standard
	Pb	206	225338.3	0.7	**50.0000**	0.467	0.9	ug/L	216	Standard
	Pb	207	205697.6	0.7	**50.0000**	0.491	1.0	ug/L	180	Standard
	Pb	208	831229.4	0.5	**50.0000**	0.375	0.7	ug/L	717	Standard
	U	238	300295.4	0.8	**50.0000**	0.316	0.6	ug/L	4	Standard
>	**Bi**	209	447053.1	1.0				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.0000**	10.302	206.0	mg/L	0	Standard
Mg	24	3705.5	6.1	**5.0000**	0.367	7.3	mg/L	20	Standard
K	39	671.7	7.3	**5.0000**	0.265	5.3	mg/L	22	Standard
Ca	43	63.3	43.5	**5.0000**	18.565	371.3	mg/L	47	Standard
Fe	54	6334.8	3.3	**5.0000**	0.319	6.4	mg/L	151	Standard
Fe	57	1861.8	5.0	**5.0000**	0.466	9.3	mg/L	195	Standard
> **Sc-1**	45	29363.4	3.4				mg/L	29647	Standard
Cl	35	161698.3	1.0				ug/L	154152	Standard
Kr	83	2.7	21.7				ug/L	3	Standard
Br	81	1496.7	10.1				ug/L	1607	Standard
P	31	25361.3	5.9				ug/L	22752	Standard
S	34	5722.8	8.3				ug/L	5049	Standard
Sr	88	76.7	13.6				ug/L	87	Standard
C	12	36.7	41.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.3	126.2				mg/L	10	Standard
Ho-1	165	5.0	0.0				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	6142.9	1.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 3
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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Thursday, June 16, 2016 15:43:00
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50435.5	1.6				ug/L	51024	Standard
	Be	9	82346.5	1.2	**99.0819**	1.677	1.7	ug/L	7	Standard
	Al	27	13992181.1	1.0	**99.4387**	0.736	0.7	ug/L	625	Standard
	Sc	45	30006.4	2.8				ug/L	29647	Standard
	Ti	47	58505.4	1.0	**200.8925**	5.085	2.5	ug/L	57	Standard
	V	51	687977.3	0.6	**99.6029**	0.871	0.9	ug/L	1142	Standard
	Cr	52	725902.3	0.9	**100.8293**	2.361	2.3	ug/L	6628	Standard
	Cr	53	91049.5	2.4	**100.5343**	1.118	1.1	ug/L	430	Standard
	Mn	55	576461.1	0.2	**100.0121**	1.485	1.5	ug/L	603	Standard
	Co	59	620596.3	0.4	**99.5359**	1.816	1.8	ug/L	237	Standard
	Ni	60	187359.0	1.0	**100.0839**	1.180	1.2	ug/L	141	Standard
	Cu	65	182121.9	1.8	**99.8326**	0.584	0.6	ug/L	109	Standard
	Zn	66	107693.4	1.7	**99.9466**	0.229	0.2	ug/L	159	Standard
>	**Ge**	72	459665.5	1.5				ug/L	474053	Standard
	As	75	106571.4	0.3	**99.2933**	1.200	1.2	ug/L	-34	Standard
	Se	82	10745.6	0.0	**100.0548**	1.484	1.5	ug/L	14	Standard
	Se-1	77	7418.5	2.3	**98.9131**	3.363	3.4	ug/L	55	Standard
>	**Ga**	71	103.3	32.2				mg/L	50	Standard
	Rb	85	1393.4	13.3				ug/L	20	Standard
	Y	89	377187.2	0.3				ug/L	376602	Standard
>	**Rh**	103	38.3	45.8				ug/L	17	Standard
	Mo	98	461069.8	0.9	**194.9574**	1.968	1.0	ug/L	8	Standard
	Ag	107	583703.5	0.6	**97.7109**	0.535	0.5	ug/L	81	Standard
	Cd	111	192033.7	0.5	**98.8117**	0.100	0.1	mg/L	3	Standard
	Cd	114	474593.2	1.8	**98.7794**	1.465	1.5	ug/L	7	Standard
>	**In**	115	525374.3	0.4				ug/L	524722	Standard
	Sn	118	532965.7	1.1	**98.7299**	1.022	1.0	ug/L	715	Standard
	Sb	123	428817.2	1.1	**98.0404**	1.345	1.4	ug/L	201	Standard
	Ba	135	179232.3	1.1	**98.7001**	1.049	1.1	ug/L	108	Standard
	Ce	140	138.3	11.0				ug/L	30	Standard
>	**Tb**	159	777561.5	1.7				ug/L	792236	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	728897.3	1.0	**99.5734**	0.952	1.0	ug/L	9	Standard
	Tl	205	620686.4	2.0	**99.7030**	1.645	1.6	ug/L	0	Standard
	Pb	206	440868.6	1.2	**99.5956**	1.751	1.8	ug/L	216	Standard
	Pb	207	400234.3	1.0	**99.3185**	1.537	1.5	ug/L	180	Standard
	Pb	208	1631531.3	1.4	**99.7532**	0.911	0.9	ug/L	717	Standard
	U	238	597917.2	1.3	**100.4447**	0.594	0.6	ug/L	4	Standard
>	**Bi**	209	441150.8	1.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	7450.2	2.2	**9.9373**	0.220	2.2	mg/L	20	Standard
K	39	1375.1	15.8	**10.1223**	1.524	15.1	mg/L	22	Standard
Ca	43	130.0	15.4	**16.7571**	3.894	23.2	mg/L	47	Standard
Fe	54	12357.9	4.2	**9.8157**	0.430	4.4	mg/L	151	Standard
Fe	57	3355.4	5.1	**9.6321**	0.814	8.4	mg/L	195	Standard
Sc-1	45	30006.4	2.8				mg/L	29647	Standard
Cl	35	163219.8	1.1				ug/L	154152	Standard
Kr	83	2.3	99.0				ug/L	3	Standard
Br	81	1446.7	4.9				ug/L	1607	Standard
P	31	26878.8	3.1				ug/L	22752	Standard
S	34	5969.5	3.7				ug/L	5049	Standard
Sr	88	53.3	21.7				ug/L	87	Standard
C	12	56.7	36.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	16.2	33.1				mg/L	10	Standard
Ho-1	165	8.3	69.3				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	6194.6	1.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998
Corr. Coef.	Ca	43	Correlation coefficient < 0.998

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Thursday, June 16, 2016 15:46:13
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48900.5	1.4				ug/L	51024	Standard
	Be	9	40029.5	1.7	**49.6695**	1.322	2.7	ug/L	7	Standard
	Al	27	6807595.1	1.1	**49.8931**	0.613	1.2	ug/L	625	Standard
	Sc	45	29859.4	2.2				ug/L	29647	Standard
	Ti	47	30234.8	0.9	**101.5179**	0.557	0.5	ug/L	57	Standard
	V	51	345968.9	0.4	**48.9414**	0.135	0.3	ug/L	1142	Standard
	Cr	52	361268.5	1.4	**48.6339**	0.583	1.2	ug/L	6628	Standard
	Cr	53	44796.1	1.2	**48.2008**	0.799	1.7	ug/L	430	Standard
	Mn	55	290150.7	1.7	**49.2058**	0.854	1.7	ug/L	603	Standard
	Co	59	308353.8	2.9	**48.3820**	1.390	2.9	ug/L	237	Standard
	Ni	60	93264.8	0.6	**48.7266**	0.581	1.2	ug/L	141	Standard
	Cu	65	92121.6	1.1	**49.4021**	0.815	1.6	ug/L	109	Standard
	Zn	66	55388.4	1.1	**50.2077**	0.826	1.6	ug/L	159	Standard
>	**Ge**	72	469579.4	0.6				ug/L	474053	Standard
	As	75	54025.0	1.0	**49.2819**	0.719	1.5	ug/L	-34	Standard
	Se	82	5305.3	2.4	**48.2613**	1.119	2.3	ug/L	14	Standard
	Se-1	77	3733.1	1.8	**48.3299**	0.600	1.2	ug/L	55	Standard
>	**Ga**	71	121.7	8.6				mg/L	50	Standard
	Rb	85	516.7	11.5				ug/L	20	Standard
	Y	89	375718.4	2.6				ug/L	376602	Standard
>	**Rh**	103	33.3	67.6				ug/L	17	Standard
	Mo	98	242646.9	2.2	**104.6905**	2.943	2.8	ug/L	8	Standard
	Ag	107	289971.5	0.6	**49.5201**	0.189	0.4	ug/L	81	Standard
	Cd	111	93046.4	0.5	**48.8483**	0.170	0.3	mg/L	3	Standard
	Cd	114	230715.9	0.2	**48.9961**	0.373	0.8	ug/L	7	Standard
>	**In**	115	514920.2	0.6				ug/L	524722	Standard
	Sn	118	284710.7	1.9	**53.7768**	1.357	2.5	ug/L	715	Standard
	Sb	123	208688.7	0.3	**48.6728**	0.184	0.4	ug/L	201	Standard
	Ba	135	85799.9	0.5	**48.1785**	0.093	0.2	ug/L	108	Standard
	Ce	140	120.0	21.7				ug/L	30	Standard
>	**Tb**	159	776088.7	0.5				ug/L	792236	Standard
	Ho	165	16.7	45.8				ug/L	7	Standard
	Tl	203	358537.1	1.1	**48.0462**	0.455	0.9	ug/L	9	Standard
	Tl	205	307552.3	1.7	**48.4612**	0.738	1.5	ug/L	0	Standard
	Pb	206	224129.9	0.7	**49.6400**	0.561	1.1	ug/L	216	Standard
	Pb	207	195303.0	0.4	**47.5147**	0.574	1.2	ug/L	180	Standard
	Pb	208	802915.7	0.1	**48.1309**	0.507	1.1	ug/L	717	Standard
	U	238	288986.2	0.3	**47.6224**	0.342	0.7	ug/L	4	Standard
>	**Bi**	209	449693.2	1.0				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3802.1	3.0	**5.0768**	0.262	5.2	mg/L	20	Standard
K	39	675.0	17.5	**4.8950**	0.999	20.4	mg/L	22	Standard
Ca	43	53.3	10.8	**-0.7985**	1.553	194.4	mg/L	47	Standard
Fe	54	5993.9	4.1	**4.7227**	0.110	2.3	mg/L	151	Standard
Fe	57	1776.8	6.7	**4.8135**	0.313	6.5	mg/L	195	Standard
Sc-1	45	29859.4	2.2				mg/L	29647	Standard
Cl	35	159749.2	1.5				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	1490.1	3.7				ug/L	1607	Standard
P	31	25977.3	1.4				ug/L	22752	Standard
S	34	5996.2	1.4				ug/L	5049	Standard
Sr	88	60.0	22.0				ug/L	87	Standard
C	12	80.0	66.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	13.3	43.3				mg/L	10	Standard
Ho-1	165	16.7	45.8				mg/L	7	Standard
Er	166	0.0					mg/L	3	Standard
I	127	935.0	3.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	99.339		
Al	27	99.786		
Sc	45			
Ti	47	101.518		
V	51	97.883		
Cr	52	97.268		
Cr	53			
Mn	55	98.412		
Co	59	96.764		
Ni	60	97.453		
Cu	65	98.804		
Zn	66	100.415		
Ge	72		99.056	
As	75	98.564		
Se	82	96.523		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	104.691		
Ag	107	99.040		
Cd	111	97.697		
Cd	114			
In	115		98.132	
Sn	118	107.554		
Sb	123	97.346		
Ba	135	96.357		
Ce	140			
Tb	159			
Ho	165			
Tl	203	96.092		
Tl	205			
Pb	206	99.280		
Pb	207	95.029		
Pb	208	96.262		
U	238	95.245		
Bi	209		97.687	
Na	23	209.044		
Mg	24	101.535		
K	39	97.901		
Ca	43	-15.971		
Fe	54	94.453		
Fe	57	96.269		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	K	39	
QC Std 1	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Thursday, June 16, 2016 15:49:26
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48778.4	0.5				ug/L	51024	Standard
	Be	9	35.0	28.6	**0.0225**	0.013	56.3	ug/L	7	Standard
	Al	27	2908.6	43.3	**0.0116**	0.009	80.6	ug/L	625	Standard
	Sc	45	29670.7	2.3				ug/L	29647	Standard
	Ti	47	66.7	16.0	**0.0643**	0.036	55.5	ug/L	57	Standard
	V	51	1072.6	10.6	**-0.0119**	0.017	142.0	ug/L	1142	Standard
	Cr	52	6126.6	0.6	**-0.0646**	0.004	6.2	ug/L	6628	Standard
	Cr	53	356.7	16.1	**-0.0336**	0.065	194.5	ug/L	430	Standard
	Mn	55	698.3	6.8	**-0.0044**	0.009	209.1	ug/L	603	Standard
	Co	59	364.0	15.3	**0.0175**	0.009	54.1	ug/L	237	Standard
	Ni	60	154.7	17.5	**0.0055**	0.015	280.7	ug/L	141	Standard
	Cu	65	145.3	17.7	**0.0141**	0.015	104.9	ug/L	109	Standard
	Zn	66	148.7	11.8	**-0.0929**	0.016	17.2	ug/L	159	Standard
>	**Ge**	72	457105.8	0.9				ug/L	474053	Standard
	As	75	54.4	52.5	**0.0762**	0.027	35.8	ug/L	-34	Standard
	Se	82	25.8	22.3	**0.0738**	0.056	76.3	ug/L	14	Standard
	Se-1	77	51.3	21.0	**-0.0508**	0.151	296.8	ug/L	55	Standard
>	**Ga**	71	53.3	14.3				mg/L	50	Standard
	Rb	85	23.3	65.5				ug/L	20	Standard
	Y	89	386808.9	0.9				ug/L	376602	Standard
>	**Rh**	103	15.0	88.2				ug/L	17	Standard
	Mo	98	421.2	15.5	**0.1736**	0.026	15.2	ug/L	8	Standard
	Ag	107	183.0	26.0	**0.0185**	0.008	41.8	ug/L	81	Standard
	Cd	111	25.9	54.3	**0.0101**	0.007	70.6	mg/L	3	Standard
	Cd	114	76.1	40.9	**0.0121**	0.006	52.7	ug/L	7	Standard
>	**In**	115	521804.6	1.0				ug/L	524722	Standard
	Sn	118	1013.4	16.6	**0.0999**	0.033	32.7	ug/L	715	Standard
	Sb	123	1969.5	19.3	**0.4392**	0.092	20.9	ug/L	201	Standard
	Ba	135	122.3	18.3	**0.0101**	0.012	117.5	ug/L	108	Standard
	Ce	140	26.7	10.8				ug/L	30	Standard
>	**Tb**	159	767907.3	1.3				ug/L	792236	Standard
	Ho	165	6.7	173.2				ug/L	7	Standard
	Tl	203	152.0	42.0	**0.0183**	0.009	47.5	ug/L	9	Standard
	Tl	205	141.7	44.8	**0.0150**	0.010	67.4	ug/L	0	Standard
	Pb	206	285.3	8.6	**0.0085**	0.005	61.9	ug/L	216	Standard
	Pb	207	228.0	15.9	**0.0031**	0.009	284.7	ug/L	180	Standard
	Pb	208	1006.0	13.7	**0.0040**	0.008	208.4	ug/L	717	Standard
	U	238	107.3	30.4	**0.0105**	0.005	51.5	ug/L	4	Standard
>	**Bi**	209	438481.4	0.6				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	33.3	31.2	**-0.0002**	0.013	6870.4	mg/L	20	Standard
K	39	25.0	20.0	**-0.0379**	0.034	91.0	mg/L	22	Standard
Ca	43	46.7	37.6	**-2.2322**	4.367	195.6	mg/L	47	Standard
Fe	54	197.5	14.9	**0.0458**	0.026	57.7	mg/L	151	Standard
Fe	57	191.7	16.8	**-0.0529**	0.109	205.7	mg/L	195	Standard
Sc-1	45	29670.7	2.3				mg/L	29647	Standard
Cl	35	161750.4	2.1				ug/L	154152	Standard
Kr	83	2.7	21.7				ug/L	3	Standard
Br	81	1533.4	11.2				ug/L	1607	Standard
P	31	25499.8	1.3				ug/L	22752	Standard
S	34	5937.8	4.1				ug/L	5049	Standard
Sr	88	66.7	35.4				ug/L	87	Standard
C	12	33.3	75.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.0	187.0				mg/L	10	Standard
Ho-1	165	6.7	173.2				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	1050.0	3.1				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.425	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.444
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.251
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Na	23	
QC Std 2	Ca	43	

Sample ID: QC Std 2
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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Thursday, June 16, 2016 15:52:39
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	47293.7	2.4				ug/L	51024	Standard
	Be	9	145.0	20.7	**0.1655**	0.042	25.4	ug/L	7	Standard
	Al	27	1435.1	31.2	**0.0012**	0.004	314.1	ug/L	625	Standard
	Sc	45	28264.7	3.0				ug/L	29647	Standard
	Ti	47	62.3	15.2	**0.0569**	0.033	58.3	ug/L	57	Standard
	V	51	3460.4	3.6	**0.3540**	0.018	5.2	ug/L	1142	Standard
	Cr	52	11315.9	0.6	**0.7230**	0.033	4.5	ug/L	6628	Standard
	Cr	53	1030.0	4.2	**0.7573**	0.039	5.1	ug/L	430	Standard
	Mn	55	3199.7	2.3	**0.4520**	0.007	1.5	ug/L	603	Standard
	Co	59	2520.2	3.3	**0.3798**	0.019	5.0	ug/L	237	Standard
	Ni	60	2902.6	0.9	**1.5376**	0.034	2.2	ug/L	141	Standard
	Cu	65	1498.7	1.3	**0.7897**	0.019	2.5	ug/L	109	Standard
	Zn	66	7175.7	0.5	**6.7167**	0.069	1.0	ug/L	159	Standard
>	**Ge**	72	441612.7	1.4				ug/L	474053	Standard
	As	75	399.1	9.4	**0.4120**	0.037	8.9	ug/L	-34	Standard
	Se	82	50.3	13.1	**0.3188**	0.059	18.5	ug/L	14	Standard
	Se-1	77	79.7	18.1	**0.3705**	0.214	57.7	ug/L	55	Standard
>	**Ga**	71	46.7	22.3				mg/L	50	Standard
	Rb	85	16.7	96.4				ug/L	20	Standard
	Y	89	357595.4	2.3				ug/L	376602	Standard
>	**Rh**	103	11.7	49.5				ug/L	17	Standard
	Mo	98	140.4	6.4	**0.0562**	0.004	6.6	ug/L	8	Standard
	Ag	107	2290.2	1.1	**0.3863**	0.009	2.4	ug/L	81	Standard
	Cd	111	448.4	2.4	**0.2366**	0.001	0.5	mg/L	3	Standard
	Cd	114	1122.4	5.7	**0.2391**	0.015	6.2	ug/L	7	Standard
>	**In**	115	505402.5	2.0				ug/L	524722	Standard
	Sn	118	471.7	16.6	**0.0014**	0.014	1036.4	ug/L	715	Standard
	Sb	123	1900.7	8.3	**0.4366**	0.030	6.9	ug/L	201	Standard
	Ba	135	1270.4	2.8	**0.6703**	0.033	4.9	ug/L	108	Standard
	Ce	140	16.7	62.4				ug/L	30	Standard
>	**Tb**	159	761635.7	0.6				ug/L	792236	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	619.3	5.8	**0.0818**	0.004	5.4	ug/L	9	Standard
	Tl	205	548.3	4.7	**0.0800**	0.003	4.2	ug/L	0	Standard
	Pb	206	1103.4	2.4	**0.1922**	0.004	2.3	ug/L	216	Standard
	Pb	207	900.7	2.9	**0.1691**	0.006	3.6	ug/L	180	Standard
	Pb	208	3946.5	2.5	**0.1828**	0.006	3.5	ug/L	717	Standard
	U	238	2295.5	1.9	**0.3769**	0.006	1.5	ug/L	4	Standard
>	**Bi**	209	442529.2	1.0				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	23.3	12.4	**-0.0120**	0.004	34.9	mg/L	20	Standard
K	39	20.0	25.0	**-0.0675**	0.043	63.8	mg/L	22	Standard
Ca	43	46.7	52.9	**-1.7510**	6.062	346.2	mg/L	47	Standard
Fe	54	119.0	25.4	**-0.0137**	0.024	175.0	mg/L	151	Standard
Fe	57	175.0	35.1	**-0.0751**	0.210	280.1	mg/L	195	Standard
Sc-1	45	28264.7	3.0				mg/L	29647	Standard
Cl	35	154177.8	0.4				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	1336.7	4.9				ug/L	1607	Standard
P	31	17880.5	2.1				ug/L	22752	Standard
S	34	5776.1	4.1				ug/L	5049	Standard
Sr	88	76.7	43.4				ug/L	87	Standard
C	12	16.7	69.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.4	191.0				mg/L	10	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	3	Standard
I	127	743.4	2.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	82.727		
Al	27	0.117		
Sc	45			
Ti	47			
V	51	88.501		
Cr	52	90.378		
Cr	53			
Mn	55	90.403		
Co	59	94.938		
Ni	60	96.097		
Cu	65	98.718		
Zn	66	107.467		
Ge	72		93.157	
As	75	103.009		
Se	82	79.699		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	96.587		
Cd	111	98.585		
Cd	114			
> In	115			96.318
Sn	118			
Sb	123	109.162		
Ba	135	89.380		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	102.188		
Tl	205			
Pb	206			
Pb	207			
Pb	208	91.390		
U	238	94.214		
> Bi	209			96.130
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Thursday, June 16, 2016 15:57:46
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49537.5	0.6				ug/L	51024	Standard
	Be	9	39588.3	1.2	**48.4820**	0.764	1.6	ug/L	7	Standard
	Al	27	6811607.5	1.0	**49.2765**	0.287	0.6	ug/L	625	Standard
	Sc	45	29944.6	0.9				ug/L	29647	Standard
	Ti	47	30600.5	1.8	**105.9033**	0.546	0.5	ug/L	57	Standard
	V	51	333819.4	1.0	**48.6741**	0.557	1.1	ug/L	1142	Standard
	Cr	52	362624.9	0.8	**50.3521**	0.653	1.3	ug/L	6628	Standard
	Cr	53	44669.1	0.6	**49.5578**	1.018	2.1	ug/L	430	Standard
	Mn	55	295010.7	1.9	**51.5679**	0.147	0.3	ug/L	603	Standard
	Co	59	304256.6	2.3	**49.2031**	0.778	1.6	ug/L	237	Standard
	Ni	60	92980.9	2.3	**50.0643**	0.335	0.7	ug/L	141	Standard
	Cu	65	90826.1	1.2	**50.2022**	0.411	0.8	ug/L	109	Standard
	Zn	66	53553.2	3.1	**50.0191**	0.561	1.1	ug/L	159	Standard
>	**Ge**	72	455630.4	2.0				ug/L	474053	Standard
	As	75	53060.3	1.3	**49.8858**	0.388	0.8	ug/L	-34	Standard
	Se	82	5361.3	1.9	**50.2739**	0.522	1.0	ug/L	14	Standard
	Se-1	77	3719.8	1.8	**49.6698**	1.476	3.0	ug/L	55	Standard
>	**Ga**	71	106.7	19.5				mg/L	50	Standard
	Rb	85	516.7	9.1				ug/L	20	Standard
	Y	89	378420.4	2.1				ug/L	376602	Standard
>	**Rh**	103	21.7	74.2				ug/L	17	Standard
	Mo	98	235943.4	1.8	**99.9874**	3.042	3.0	ug/L	8	Standard
	Ag	107	287193.3	1.4	**48.1797**	1.433	3.0	ug/L	81	Standard
	Cd	111	93247.5	0.8	**48.0828**	0.885	1.8	mg/L	3	Standard
	Cd	114	229861.4	1.2	**47.9476**	1.147	2.4	ug/L	7	Standard
>	**In**	115	524337.5	1.6				ug/L	524722	Standard
	Sn	118	280407.9	1.2	**52.0144**	1.090	2.1	ug/L	715	Standard
	Sb	123	204641.1	2.4	**46.8900**	1.860	4.0	ug/L	201	Standard
	Ba	135	86406.7	0.9	**47.6572**	1.015	2.1	ug/L	108	Standard
	Ce	140	135.0	7.4				ug/L	30	Standard
>	**Tb**	159	786784.4	0.3				ug/L	792236	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	354843.5	0.6	**47.8254**	0.499	1.0	ug/L	9	Standard
	Tl	205	306407.3	0.5	**48.5592**	0.423	0.9	ug/L	0	Standard
	Pb	206	218264.7	1.4	**48.6127**	0.167	0.3	ug/L	216	Standard
	Pb	207	191093.3	1.2	**46.7522**	0.112	0.2	ug/L	180	Standard
	Pb	208	804010.8	0.5	**48.4716**	0.281	0.6	ug/L	717	Standard
	U	238	288392.8	0.3	**47.7978**	0.457	1.0	ug/L	4	Standard
>	**Bi**	209	447132.2	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3715.5	2.1	**4.9417**	0.061	1.2	mg/L	20	Standard
K	39	701.7	9.7	**5.0672**	0.500	9.9	mg/L	22	Standard
Ca	43	61.7	24.8	**1.0552**	3.413	323.4	mg/L	47	Standard
Fe	54	6212.5	1.3	**4.8866**	0.105	2.2	mg/L	151	Standard
Fe	57	1778.4	8.4	**4.8076**	0.510	10.6	mg/L	195	Standard
> **Sc-1**	45	29944.6	0.9				mg/L	29647	Standard
Cl	35	161455.3	2.4				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	1416.7	8.8				ug/L	1607	Standard
P	31	25623.3	0.9				ug/L	22752	Standard
S	34	5979.5	3.9				ug/L	5049	Standard
Sr	88	73.3	41.7				ug/L	87	Standard
C	12	33.3	69.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.0	37.7				mg/L	10	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	1055.0	6.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	96.964		
Al	27	98.553		
Sc	45			
Ti	47	105.903		
V	51	97.348		
Cr	52	100.704		
Cr	53			
Mn	55	103.136		
Co	59	98.406		
Ni	60	100.129		
Cu	65	100.404		
Zn	66	100.038		
> Ge	72		96.114	
As	75	99.772		
Se	82	100.548		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	99.987		
Ag	107	96.359		
Cd	111	96.166		
Cd	114			
> In	115		99.927	
Sn	118	104.029		
Sb	123	93.780		
Ba	135	95.314		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	95.651		
Tl	205			
Pb	206	97.225		
Pb	207	93.504		
Pb	208	96.943		
U	238	95.596		
> Bi	209		97.130	
Na	23	209.044		
Mg	24	98.834		
K	39	101.344		
Ca	43	21.103		
Fe	54	97.732		
Fe	57	96.152		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Thursday, June 16, 2016 16:03:55
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48694.8	0.2				ug/L	51024	Standard
	Be	9	11.7	24.7	**-0.0065**	0.004	55.1	ug/L	7	Standard
	Al	27	941.7	10.9	**-0.0028**	0.001	26.9	ug/L	625	Standard
	Sc	45	29877.8	0.9				ug/L	29647	Standard
	Ti	47	54.3	5.3	**0.0224**	0.010	44.8	ug/L	57	Standard
	V	51	957.2	10.4	**-0.0283**	0.014	48.1	ug/L	1142	Standard
	Cr	52	6138.9	3.0	**-0.0600**	0.025	41.4	ug/L	6628	Standard
	Cr	53	340.0	7.8	**-0.0510**	0.030	59.6	ug/L	430	Standard
	Mn	55	634.3	2.6	**-0.0152**	0.003	19.9	ug/L	603	Standard
	Co	59	238.0	8.6	**-0.0027**	0.004	132.9	ug/L	237	Standard
	Ni	60	130.0	7.3	**-0.0077**	0.005	63.8	ug/L	141	Standard
	Cu	65	103.7	15.4	**-0.0087**	0.009	107.0	ug/L	109	Standard
	Zn	66	127.0	5.2	**-0.1127**	0.007	6.0	ug/L	159	Standard
>	**Ge**	72	455597.3	0.8				ug/L	474053	Standard
	As	75	-43.2	74.2	**-0.0157**	0.030	193.2	ug/L	-34	Standard
	Se	82	18.2	18.4	**0.0019**	0.030	1563.3	ug/L	14	Standard
	Se-1	77	53.3	8.5	**-0.0219**	0.067	305.9	ug/L	55	Standard
>	**Ga**	71	65.0	20.4				mg/L	50	Standard
	Rb	85	26.7	39.0				ug/L	20	Standard
	Y	89	385670.5	2.5				ug/L	376602	Standard
>	**Rh**	103	21.7	48.0				ug/L	17	Standard
	Mo	98	109.5	11.0	**0.0404**	0.004	10.6	ug/L	8	Standard
	Ag	107	89.3	19.3	**0.0026**	0.003	126.0	ug/L	81	Standard
	Cd	111	7.4	34.0	**0.0006**	0.001	222.3	mg/L	3	Standard
	Cd	114	19.0	7.1	**0.0001**	0.000	161.5	ug/L	7	Standard
>	**In**	115	528269.6	2.4				ug/L	524722	Standard
	Sn	118	783.4	18.1	**0.0547**	0.023	42.9	ug/L	715	Standard
	Sb	123	1248.5	31.3	**0.2679**	0.083	31.1	ug/L	201	Standard
	Ba	135	101.3	11.9	**-0.0020**	0.008	395.1	ug/L	108	Standard
	Ce	140	18.3	56.8				ug/L	30	Standard
>	**Tb**	159	789316.7	0.7				ug/L	792236	Standard
	Ho	165	3.3	173.2				ug/L	7	Standard
	Tl	203	34.3	9.4	**0.0020**	0.000	19.3	ug/L	9	Standard
	Tl	205	23.3	61.9	**-0.0042**	0.002	53.7	ug/L	0	Standard
	Pb	206	215.0	9.3	**-0.0087**	0.004	50.2	ug/L	216	Standard
	Pb	207	177.7	3.1	**-0.0106**	0.001	10.4	ug/L	180	Standard
	Pb	208	745.3	3.0	**-0.0132**	0.001	9.1	ug/L	717	Standard
	U	238	19.7	20.5	**-0.0043**	0.001	15.7	ug/L	4	Standard
>	**Bi**	209	449575.7	0.9				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	26.7	60.3	**-0.0094**	0.021	228.0	mg/L	20	Standard
K	39	16.7	45.8	**-0.1015**	0.059	58.3	mg/L	22	Standard
Ca	43	35.0	0.0	**-5.0734**	0.077	1.5	mg/L	47	Standard
Fe	54	139.4	7.2	**-0.0024**	0.009	374.1	mg/L	151	Standard
Fe	57	198.3	8.1	**-0.0375**	0.053	141.8	mg/L	195	Standard
Sc-1	45	29877.8	0.9				mg/L	29647	Standard
Cl	35	160882.5	1.9				ug/L	154152	Standard
Kr	83	1.0	0.0				ug/L	3	Standard
Br	81	1510.1	12.6				ug/L	1607	Standard
P	31	25673.4	1.5				ug/L	22752	Standard
S	34	5894.5	3.2				ug/L	5049	Standard
Sr	88	76.7	32.2				ug/L	87	Standard
C	12	23.3	49.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.4	107.5				mg/L	10	Standard
Ho-1	165	3.3	173.2				mg/L	7	Standard
Er	166	13.3	173.2				mg/L	3	Standard
I	127	965.0	3.2				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.107	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.676	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.661	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Na	23	
QC Std 2	K	39	

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QC Std 2	Ca	43

Sample ID: QC Std 2
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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Thursday, June 16, 2016 16:07:40
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	55474.7	2.1				ug/L	51024	Standard
	Be	9	18.3	15.7	**-0.0010**	0.003	338.2	ug/L	7	Standard
	Al	27	6905396.8	2.8	**44.6071**	0.703	1.6	ug/L	625	Standard
	Sc	45	29577.2	0.8				ug/L	29647	Standard
	Ti	47	31418.2	1.3	**107.0966**	1.877	1.8	ug/L	57	Standard
	V	51	1222.8	22.4	**0.0081**	0.041	507.7	ug/L	1142	Standard
	Cr	52	7310.1	0.7	**0.0900**	0.007	8.1	ug/L	6628	Standard
	Cr	53	3288.7	9.3	**3.1897**	0.292	9.2	ug/L	430	Standard
	Mn	55	1091.7	3.2	**0.0620**	0.006	9.4	ug/L	603	Standard
	Co	59	399.3	5.7	**0.0224**	0.003	12.6	ug/L	237	Standard
	Ni	60	759.0	2.6	**0.3255**	0.016	4.9	ug/L	141	Standard
	Cu	65	628.7	2.7	**0.2766**	0.010	3.8	ug/L	109	Standard
	Zn	66	1729.4	2.6	**1.3663**	0.021	1.6	ug/L	159	Standard
>	Ge	72	462633.9	1.3				ug/L	474053	Standard
	As	75	-39.5	207.4	**-0.0113**	0.076	672.8	ug/L	-34	Standard
	Se	82	21.1	40.5	**0.0261**	0.078	299.6	ug/L	14	Standard
	Se-1	77	277.0	14.2	**2.9476**	0.479	16.2	ug/L	55	Standard
>	Ga	71	155.0	16.8				mg/L	50	Standard
	Rb	85	810.0	10.2				ug/L	20	Standard
	Y	89	382532.7	1.4				ug/L	376602	Standard
>	Rh	103	13.3	57.3				ug/L	17	Standard
	Mo	98	234826.0	1.7	**100.4857**	2.149	2.1	ug/L	8	Standard
	Ag	107	169.0	8.6	**0.0163**	0.002	15.1	ug/L	81	Standard
	Cd	111	-108.8	6.6	**-0.0599**	0.004	5.9	mg/L	3	Standard
	Cd	114	586.7	17.3	**0.1197**	0.021	17.4	ug/L	7	Standard
>	In	115	519149.4	0.5				ug/L	524722	Standard
	Sn	118	681.7	7.9	**0.0385**	0.011	27.7	ug/L	715	Standard
	Sb	123	406.1	34.2	**0.0793**	0.032	41.0	ug/L	201	Standard
	Ba	135	224.7	3.6	**0.0676**	0.005	7.3	ug/L	108	Standard
	Ce	140	145.0	18.2				ug/L	30	Standard
>	Tb	159	796726.8	0.9				ug/L	792236	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	851.7	23.5	**0.1131**	0.029	25.4	ug/L	9	Standard
	Tl	205	813.4	19.5	**0.1220**	0.027	21.9	ug/L	0	Standard
	Pb	206	671.0	13.8	**0.0943**	0.023	24.1	ug/L	216	Standard
	Pb	207	610.0	7.6	**0.0965**	0.013	13.8	ug/L	180	Standard
	Pb	208	2481.7	5.9	**0.0928**	0.011	11.7	ug/L	717	Standard
	U	238	11.0	24.1	**-0.0057**	0.000	8.1	ug/L	4	Standard
>	Bi	209	444717.2	1.3				ug/L	460343	Standard

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Na	23	1.7	173.2	**4.9320**	9.561	193.9	mg/L	0	Standard
Mg	24	9214.5	2.3	**12.4761**	0.188	1.5	mg/L	20	Standard
K	39	665.0	6.6	**4.8546**	0.351	7.2	mg/L	22	Standard
Ca	43	148.3	13.6	**21.5299**	4.516	21.0	mg/L	47	Standard
Fe	54	14427.7	3.0	**11.6428**	0.306	2.6	mg/L	151	Standard
Fe	57	3798.8	1.5	**11.1428**	0.194	1.7	mg/L	195	Standard
> **Sc-1**	45	29577.2	0.8				mg/L	29647	Standard
Cl	35	176475.5	2.2				ug/L	154152	Standard
Kr	83	2.0	86.6				ug/L	3	Standard
Br	81	1553.4	2.3				ug/L	1607	Standard
P	31	23887.2	3.9				ug/L	22752	Standard
S	34	5340.9	1.7				ug/L	5049	Standard
Sr	88	58.3	9.9				ug/L	87	Standard
C	12	96.7	58.8				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	30.0	0.0				mg/L	0	Standard
Dy	164	2.4	262.3				mg/L	10	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	3	Standard
I	127	1410.1	5.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27	0.892		
Sc	45			
Ti	47	107.097		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.591	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	100.486		
Ag	107			
Cd	111			
Cd	114			
In	115			98.938
Sn	118			
Sb	123			
Ba	135			
Ce	140			
Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
Bi	209			96.606
Na	23	39.456		
Mg	24	249.521		
K	39	97.091		
Ca	43	143.533		
Fe	54	93.142		
Fe	57	89.142		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Tl	203	
QC Std 4	Na	23	

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QC Std 4	Mg	24
QC Std 4	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Thursday, June 16, 2016 16:22:01
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	58477.6	0.2				ug/L	51024	Standard
	Be	9	88548.0	0.3	**91.8774**	0.469	0.5	ug/L	7	Standard
	Al	27	7648485.8	0.8	**46.8715**	0.352	0.8	ug/L	625	Standard
	Sc	45	29133.0	2.0				ug/L	29647	Standard
	Ti	47	33470.3	2.4	**118.1657**	2.723	2.3	ug/L	57	Standard
	V	51	673843.7	0.9	**100.3884**	1.672	1.7	ug/L	1142	Standard
	Cr	52	698679.1	1.4	**99.8305**	1.037	1.0	ug/L	6628	Standard
	Cr	53	90290.0	2.1	**102.5975**	1.386	1.4	ug/L	430	Standard
	Mn	55	596300.3	1.2	**106.4457**	0.466	0.4	ug/L	603	Standard
	Co	59	629938.1	1.8	**103.9511**	1.908	1.8	ug/L	237	Standard
	Ni	60	180922.1	0.3	**99.4431**	0.584	0.6	ug/L	141	Standard
	Cu	65	177067.3	0.6	**99.8815**	0.324	0.3	ug/L	109	Standard
	Zn	66	106852.8	0.0	**102.0554**	0.902	0.9	ug/L	159	Standard
>	Ge	72	446706.3	0.8				ug/L	474053	Standard
	As	75	106615.2	0.2	**102.2086**	1.049	1.0	ug/L	-34	Standard
	Se	82	10642.5	1.1	**101.9658**	1.771	1.7	ug/L	14	Standard
	Se-1	77	7567.2	2.1	**103.8353**	2.380	2.3	ug/L	55	Standard
>	Ga	71	153.3	10.5				mg/L	50	Standard
	Rb	85	808.4	8.9				ug/L	20	Standard
	Y	89	396492.9	1.1				ug/L	376602	Standard
>	Rh	103	48.3	15.8				ug/L	17	Standard
	Mo	98	245151.1	0.7	**102.3761**	1.234	1.2	ug/L	8	Standard
	Ag	107	517251.9	0.7	**85.5144**	0.680	0.8	ug/L	81	Standard
	Cd	111	189019.4	1.2	**96.0637**	1.742	1.8	mg/L	3	Standard
	Cd	114	457330.5	1.6	**94.0204**	2.156	2.3	ug/L	7	Standard
>	In	115	531964.2	0.7				ug/L	524722	Standard
	Sn	118	896.7	15.7	**0.0749**	0.027	35.8	ug/L	715	Standard
	Sb	123	419181.5	1.0	**94.6488**	1.016	1.1	ug/L	201	Standard
	Ba	135	174129.5	0.2	**94.7022**	0.497	0.5	ug/L	108	Standard
	Ce	140	123.3	45.2				ug/L	30	Standard
>	Tb	159	792285.1	1.1				ug/L	792236	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	718957.1	0.3	**98.0117**	1.579	1.6	ug/L	9	Standard
	Tl	205	627537.4	1.6	**100.6124**	3.065	3.0	ug/L	0	Standard
	Pb	206	453228.9	0.3	**102.1662**	1.141	1.1	ug/L	216	Standard
	Pb	207	393799.0	0.5	**97.5071**	0.924	0.9	ug/L	180	Standard
	Pb	208	1620914.8	1.9	**98.9101**	2.956	3.0	ug/L	717	Standard
	U	238	599569.3	0.5	**100.5173**	1.718	1.7	ug/L	4	Standard
>	Bi	209	442109.9	1.4				ug/L	460343	Standard

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Na	23	1.7	173.2	**4.7867**	9.813	205.0	mg/L	0	Standard
Mg	24	10183.4	1.3	**14.0071**	0.241	1.7	mg/L	20	Standard
K	39	573.3	13.1	**4.2150**	0.510	12.1	mg/L	22	Standard
Ca	43	138.3	13.7	**19.6561**	3.893	19.8	mg/L	47	Standard
Fe	54	15280.5	1.4	**12.5337**	0.416	3.3	mg/L	151	Standard
Fe	57	4085.6	2.5	**12.2326**	0.552	4.5	mg/L	195	Standard
Sc-1	45	29133.0	2.0				mg/L	29647	Standard
Cl	35	179327.8	1.3				ug/L	154152	Standard
Kr	83	1.3	114.6				ug/L	3	Standard
Br	81	1623.4	4.9				ug/L	1607	Standard
P	31	23591.7	0.4				ug/L	22752	Standard
S	34	5254.2	2.3				ug/L	5049	Standard
Sr	88	70.0	42.9				ug/L	87	Standard
C	12	133.3	4.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	15.9	94.6				mg/L	10	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	3	Standard
I	127	930.0	5.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	91.877		
Al	27	0.937		
Sc	45			
Ti	47	118.166		
V	51	100.388		
Cr	52	99.830		
Cr	53			
Mn	55	106.446		
Co	59	103.951		
Ni	60	99.443		
Cu	65	99.882		
Zn	66	102.055		
Ge	72		94.231	
As	75	102.209		
Se	82	101.966		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	102.376		
Ag	107	85.514		
Cd	111	96.064		
Cd	114			
In	115		101.380	
Sn	118			
Sb	123	94.649		
Ba	135	94.702		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.012		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.910		
U	238	100.517		
Bi	209		96.039	
Na	23	38.294		
Mg	24	280.142		
K	39	84.299		
Ca	43	131.041		
Fe	54	100.269		
Fe	57	97.861		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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QC Std 5	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 16:25:16
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	55603.6	4.4				ug/L	51024	Standard
	Be	9	43453.9	2.4	**47.4947**	3.006	6.3	ug/L	7	Standard
	Al	27	7054078.0	1.0	**45.5100**	1.586	3.5	ug/L	625	Standard
	Sc	45	29373.5	1.7				ug/L	29647	Standard
	Ti	47	28713.9	1.4	**99.4855**	3.895	3.9	ug/L	57	Standard
	V	51	340364.3	1.3	**49.6680**	0.932	1.9	ug/L	1142	Standard
	Cr	52	357828.9	0.7	**49.7225**	1.608	3.2	ug/L	6628	Standard
	Cr	53	43806.6	0.8	**48.6374**	1.665	3.4	ug/L	430	Standard
	Mn	55	293651.9	1.1	**51.3908**	1.852	3.6	ug/L	603	Standard
	Co	59	311248.9	1.6	**50.3908**	1.771	3.5	ug/L	237	Standard
	Ni	60	92893.9	1.1	**50.0647**	1.079	2.2	ug/L	141	Standard
	Cu	65	90724.2	1.5	**50.1802**	0.633	1.3	ug/L	109	Standard
	Zn	66	53344.1	1.6	**49.8682**	0.504	1.0	ug/L	159	Standard
>	Ge	72	455364.8	2.6				ug/L	474053	Standard
	As	75	52938.3	1.1	**49.8092**	0.820	1.6	ug/L	-34	Standard
	Se	82	5329.6	1.7	**50.0105**	0.490	1.0	ug/L	14	Standard
	Se-1	77	3723.8	2.6	**49.7421**	0.784	1.6	ug/L	55	Standard
>	Ga	71	95.0	22.9				mg/L	50	Standard
	Rb	85	726.7	4.9				ug/L	20	Standard
	Y	89	384472.0	0.6				ug/L	376602	Standard
>	Rh	103	16.7	62.4				ug/L	17	Standard
	Mo	98	232118.8	0.3	**97.2358**	1.022	1.1	ug/L	8	Standard
	Ag	107	290638.3	1.3	**48.1940**	0.630	1.3	ug/L	81	Standard
	Cd	111	94793.4	0.9	**48.3272**	1.004	2.1	mg/L	3	Standard
	Cd	114	234828.4	1.3	**48.4291**	1.209	2.5	ug/L	7	Standard
>	In	115	530331.4	1.3				ug/L	524722	Standard
	Sn	118	263139.7	2.6	**48.2596**	1.845	3.8	ug/L	715	Standard
	Sb	123	217327.7	1.3	**49.2164**	0.579	1.2	ug/L	201	Standard
	Ba	135	88067.5	0.7	**48.0226**	0.952	2.0	ug/L	108	Standard
	Ce	140	81.7	18.7				ug/L	30	Standard
>	Tb	159	794129.5	1.0				ug/L	792236	Standard
	Ho	165	6.7	86.6				ug/L	7	Standard
	Tl	203	362843.1	1.0	**49.0795**	1.497	3.1	ug/L	9	Standard
	Tl	205	310212.2	1.3	**49.3427**	1.712	3.5	ug/L	0	Standard
	Pb	206	222989.0	0.9	**49.8435**	1.206	2.4	ug/L	216	Standard
	Pb	207	201083.3	0.8	**49.3722**	1.064	2.2	ug/L	180	Standard
	Pb	208	809454.4	0.8	**48.9759**	1.413	2.9	ug/L	717	Standard
	U	238	299066.7	0.4	**49.7396**	1.132	2.3	ug/L	4	Standard
>	Bi	209	445696.2	2.2				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3647.1	3.0	**4.9460**	0.155	3.1	mg/L	20	Standard
K	39	621.7	4.7	**4.5576**	0.277	6.1	mg/L	22	Standard
Ca	43	53.3	19.5	**-0.5868**	2.635	449.0	mg/L	47	Standard
Fe	54	5858.9	4.9	**4.6943**	0.261	5.6	mg/L	151	Standard
Fe	57	1763.4	1.3	**4.8648**	0.124	2.5	mg/L	195	Standard
Sc-1	45	29373.5	1.7				mg/L	29647	Standard
Cl	35	157950.4	0.4				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	1363.4	1.1				ug/L	1607	Standard
P	31	23531.6	2.3				ug/L	22752	Standard
S	34	5542.7	3.1				ug/L	5049	Standard
Sr	88	65.0	38.5				ug/L	87	Standard
C	12	56.7	71.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.4	50.3				mg/L	10	Standard
Ho-1	165	6.7	86.6				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	3	Standard
I	127	1150.0	8.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	94.989		
Al	27	91.020		
Sc	45			
Ti	47	99.485		
V	51	99.336		
Cr	52	99.445		
Cr	53			
Mn	55	102.782		
Co	59	100.782		
Ni	60	100.129		
Cu	65	100.360		
Zn	66	99.736		
Ge	72		96.058	
As	75	99.618		
Se	82	100.021		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	97.236		
Ag	107	96.388		
Cd	111	96.654		
Cd	114			
In	115			101.069
Sn	118	96.519		
Sb	123	98.433		
Ba	135	96.045		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.159		
Tl	205			
Pb	206			
Pb	207			
Pb	208	97.952		
U	238	99.479		
Bi	209			96.818
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 16:38:50
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52378.7	2.1				ug/L	51024	Standard
	Be	9	15.0	120.2	**-0.0040**	0.020	512.1	ug/L	7	Standard
	Al	27	540.0	3.7	**-0.0061**	0.000	3.2	ug/L	625	Standard
	Sc	45	28712.2	1.8				ug/L	29647	Standard
	Ti	47	44.7	11.0	**-0.0123**	0.017	140.3	ug/L	57	Standard
	V	51	1065.6	4.8	**-0.0136**	0.008	61.5	ug/L	1142	Standard
	Cr	52	6160.3	1.0	**-0.0638**	0.013	21.0	ug/L	6628	Standard
	Cr	53	386.7	19.4	**-0.0026**	0.081	3156.3	ug/L	430	Standard
	Mn	55	621.0	4.1	**-0.0185**	0.004	21.4	ug/L	603	Standard
	Co	59	231.0	6.0	**-0.0042**	0.002	52.0	ug/L	237	Standard
	Ni	60	109.7	8.8	**-0.0191**	0.005	25.2	ug/L	141	Standard
	Cu	65	97.3	15.8	**-0.0127**	0.008	65.1	ug/L	109	Standard
	Zn	66	133.3	9.4	**-0.1078**	0.012	11.3	ug/L	159	Standard
>	**Ge**	72	459252.1	0.6				ug/L	474053	Standard
	As	75	-47.4	46.6	**-0.0192**	0.021	107.9	ug/L	-34	Standard
	Se	82	15.8	37.3	**-0.0216**	0.055	252.4	ug/L	14	Standard
	Se-1	77	46.7	11.0	**-0.1173**	0.072	61.6	ug/L	55	Standard
>	**Ga**	71	35.0	14.3				mg/L	50	Standard
	Rb	85	20.0	43.3				ug/L	20	Standard
	Y	89	388770.9	2.1				ug/L	376602	Standard
>	**Rh**	103	16.7	62.4				ug/L	17	Standard
	Mo	98	68.1	14.3	**0.0237**	0.004	18.9	ug/L	8	Standard
	Ag	107	85.7	13.7	**0.0022**	0.002	97.9	ug/L	81	Standard
	Cd	111	2.9	60.6	**-0.0017**	0.001	51.5	mg/L	3	Standard
	Cd	114	9.5	115.0	**-0.0018**	0.002	124.6	ug/L	7	Standard
>	**In**	115	518516.6	1.3				ug/L	524722	Standard
	Sn	118	641.7	18.0	**0.0313**	0.023	74.8	ug/L	715	Standard
	Sb	123	920.4	35.2	**0.1991**	0.078	39.0	ug/L	201	Standard
	Ba	135	100.7	10.0	**-0.0014**	0.006	433.1	ug/L	108	Standard
	Ce	140	18.3	78.7				ug/L	30	Standard
>	**Tb**	159	769102.4	0.6				ug/L	792236	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	15.7	25.8	**-0.0004**	0.001	125.3	ug/L	9	Standard
	Tl	205	10.0	50.0	**-0.0062**	0.001	13.5	ug/L	0	Standard
	Pb	206	207.3	13.7	**-0.0092**	0.007	79.6	ug/L	216	Standard
	Pb	207	175.3	4.3	**-0.0101**	0.002	22.2	ug/L	180	Standard
	Pb	208	743.7	4.7	**-0.0122**	0.003	22.5	ug/L	717	Standard
	U	238	8.7	35.3	**-0.0061**	0.000	8.0	ug/L	4	Standard
>	**Bi**	209	439141.9	1.8				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	28.3	66.8	**-0.0053**	0.027	522.2	mg/L	20	Standard
K	39	10.0	86.6	**-0.1489**	0.068	45.9	mg/L	22	Standard
Ca	43	36.7	47.9	**-4.3876**	4.095	93.3	mg/L	47	Standard
Fe	54	152.8	18.0	**0.0136**	0.026	187.8	mg/L	151	Standard
Fe	57	166.7	14.2	**-0.1136**	0.080	70.6	mg/L	195	Standard
> **Sc-1**	45	28712.2	1.8				mg/L	29647	Standard
Cl	35	160111.2	2.5				ug/L	154152	Standard
Kr	83	2.3	89.2				ug/L	3	Standard
Br	81	1460.1	8.4				ug/L	1607	Standard
P	31	22964.1	2.3				ug/L	22752	Standard
S	34	5249.2	1.7				ug/L	5049	Standard
Sr	88	68.3	27.7				ug/L	87	Standard
C	12	40.0	66.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	13.0	113.4				mg/L	10	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	3	Standard
I	127	923.4	1.6				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.878	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.817	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	95.395	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW B7 WG572432-04
Sample Date/Time: Thursday, June 16, 2016 17:35:43
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50888.7	1.4				ug/L	51024	Standard
	Be	9	10.0	50.0	**-0.0092**	0.006	65.8	ug/L	7	Standard
	Al	27	7250.1	1.6	**0.0413**	0.001	3.2	ug/L	625	Standard
	Sc	45	27620.2	1.5				ug/L	29647	Standard
	Ti	47	62.3	15.4	**0.0529**	0.035	66.0	ug/L	57	Standard
	V	51	1096.4	11.0	**-0.0060**	0.018	297.3	ug/L	1142	Standard
	Cr	52	7148.7	0.7	**0.0949**	0.009	9.1	ug/L	6628	Standard
	Cr	53	635.0	13.1	**0.2873**	0.091	31.7	ug/L	430	Standard
	Mn	55	19861.3	0.9	**3.3957**	0.050	1.5	ug/L	603	Standard
	Co	59	181.7	9.8	**-0.0115**	0.003	26.7	ug/L	237	Standard
	Ni	60	180.7	8.3	**0.0208**	0.008	36.7	ug/L	141	Standard
	Cu	65	122.3	7.7	**0.0024**	0.006	234.7	ug/L	109	Standard
	Zn	66	1100.0	2.9	**0.8128**	0.032	3.9	ug/L	159	Standard
>	**Ge**	72	450229.5	0.6				ug/L	474053	Standard
	As	75	-42.0	42.9	**-0.0149**	0.017	113.9	ug/L	-34	Standard
	Se	82	9.3	47.0	**-0.0801**	0.042	52.5	ug/L	14	Standard
	Se-1	77	64.0	16.5	**0.1328**	0.147	110.5	ug/L	55	Standard
>	**Ga**	71	50.0	26.5				mg/L	50	Standard
	Rb	85	73.3	20.8				ug/L	20	Standard
	Y	89	383468.8	0.7				ug/L	376602	Standard
>	**Rh**	103	13.3	21.7				ug/L	17	Standard
	Mo	98	675.4	5.9	**0.2913**	0.019	6.7	ug/L	8	Standard
	Ag	107	79.3	11.9	**0.0015**	0.002	113.9	ug/L	81	Standard
	Cd	111	2.4	24.1	**-0.0019**	0.000	15.9	mg/L	3	Standard
	Cd	114	32.5	70.3	**0.0032**	0.005	153.9	ug/L	7	Standard
>	**In**	115	505606.7	0.8				ug/L	524722	Standard
	Sn	118	778.4	13.1	**0.0606**	0.021	34.0	ug/L	715	Standard
	Sb	123	423.2	31.6	**0.0859**	0.032	37.8	ug/L	201	Standard
	Ba	135	197.0	6.6	**0.0551**	0.008	14.5	ug/L	108	Standard
	Ce	140	71.7	20.1				ug/L	30	Standard
>	**Tb**	159	761176.8	0.6				ug/L	792236	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	45.0	11.1	**0.0037**	0.001	19.6	ug/L	9	Standard
	Tl	205	38.3	27.2	**-0.0016**	0.002	107.0	ug/L	0	Standard
	Pb	206	207.0	9.6	**-0.0086**	0.005	56.9	ug/L	216	Standard
	Pb	207	183.0	3.8	**-0.0075**	0.002	22.0	ug/L	180	Standard
	Pb	208	773.7	0.5	**-0.0097**	0.001	6.3	ug/L	717	Standard
	U	238	7.0	14.3	**-0.0064**	0.000	2.5	ug/L	4	Standard
>	**Bi**	209	432877.1	0.8				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	46.7	37.6	**0.0228**	0.026	113.0	mg/L	20	Standard
K	39	25.0	20.0	**-0.0231**	0.042	181.8	mg/L	22	Standard
Ca	43	38.3	19.9	**-3.5551**	2.049	57.6	mg/L	47	Standard
Fe	54	166.0	7.2	**0.0299**	0.009	28.8	mg/L	151	Standard
Fe	57	193.3	5.4	**-0.0042**	0.043	1021.8	mg/L	195	Standard
Sc-1	45	27620.2	1.5				mg/L	29647	Standard
Cl	35	157510.0	2.0				ug/L	154152	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	1796.8	8.2				ug/L	1607	Standard
P	31	21511.9	1.4				ug/L	22752	Standard
S	34	4927.5	1.4				ug/L	5049	Standard
Sr	88	76.7	10.0				ug/L	87	Standard
C	12	53.3	47.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	18.7	50.9				mg/L	10	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	26.7	57.3				mg/L	3	Standard
I	127	1125.0	8.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.734	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.974	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.357
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.034
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW B7 WG572432-05
Sample Date/Time: Thursday, June 16, 2016 17:38:54
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51783.3	1.2				ug/L	51024	Standard
	Be	9	41423.2	1.3	**48.5300**	0.724	1.5	ug/L	7	Standard
	Al	27	8105.5	5.6	**0.0464**	0.004	7.6	ug/L	625	Standard
	Sc	45	29290.0	1.1				ug/L	29647	Standard
	Ti	47	66.0	28.8	**0.0608**	0.069	114.0	ug/L	57	Standard
	V	51	347988.7	1.1	**50.1052**	0.398	0.8	ug/L	1142	Standard
	Cr	52	363767.8	1.3	**49.8723**	1.265	2.5	ug/L	6628	Standard
	Cr	53	46272.2	1.3	**50.7068**	1.549	3.1	ug/L	430	Standard
	Mn	55	322059.4	1.1	**55.6120**	1.299	2.3	ug/L	603	Standard
	Co	59	318198.3	0.5	**50.8192**	0.688	1.4	ug/L	237	Standard
	Ni	60	95145.8	1.0	**50.6010**	1.153	2.3	ug/L	141	Standard
	Cu	65	93949.4	0.3	**51.2847**	1.031	2.0	ug/L	109	Standard
	Zn	66	55650.7	0.4	**51.3490**	0.838	1.6	ug/L	159	Standard
>	**Ge**	72	461424.2	1.8				ug/L	474053	Standard
	As	75	53752.8	0.6	**49.9059**	0.739	1.5	ug/L	-34	Standard
	Se	82	5332.6	1.0	**49.3792**	0.829	1.7	ug/L	14	Standard
	Se-1	77	3747.5	1.7	**49.4072**	1.506	3.0	ug/L	55	Standard
>	**Ga**	71	81.7	30.2				mg/L	50	Standard
	Rb	85	53.3	23.6				ug/L	20	Standard
	Y	89	377535.8	0.4				ug/L	376602	Standard
>	**Rh**	103	36.7	31.5				ug/L	17	Standard
	Mo	98	750.8	4.4	**0.3174**	0.017	5.4	ug/L	8	Standard
	Ag	107	297266.0	1.0	**50.6052**	0.925	1.8	ug/L	81	Standard
	Cd	111	95234.0	1.1	**49.8345**	0.593	1.2	mg/L	3	Standard
	Cd	114	234836.7	1.4	**49.7088**	0.798	1.6	ug/L	7	Standard
>	**In**	115	516621.5	1.2				ug/L	524722	Standard
	Sn	118	736.7	13.8	**0.0494**	0.018	37.2	ug/L	715	Standard
	Sb	123	208987.1	0.3	**48.5849**	0.463	1.0	ug/L	201	Standard
	Ba	135	88485.0	1.6	**49.5270**	0.847	1.7	ug/L	108	Standard
	Ce	140	93.3	22.3				ug/L	30	Standard
>	**Tb**	159	786575.0	1.5				ug/L	792236	Standard
	Ho	165	15.0	120.2				ug/L	7	Standard
	Tl	203	367143.4	1.3	**48.6717**	0.655	1.3	ug/L	9	Standard
	Tl	205	311332.9	0.6	**48.5309**	0.337	0.7	ug/L	0	Standard
	Pb	206	233648.2	1.0	**51.1920**	0.365	0.7	ug/L	216	Standard
	Pb	207	204781.6	0.5	**49.2852**	0.113	0.2	ug/L	180	Standard
	Pb	208	826562.7	0.6	**49.0156**	0.301	0.6	ug/L	717	Standard
	U	238	299484.9	0.7	**48.8217**	0.244	0.5	ug/L	4	Standard
>	**Bi**	209	454561.3	0.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	50.0	17.3	**0.0233**	0.011	48.4	mg/L	20	Standard
K	39	26.7	28.6	**-0.0218**	0.061	278.8	mg/L	22	Standard
Ca	43	35.0	75.6	**-4.9193**	6.254	127.1	mg/L	47	Standard
Fe	54	111.6	12.4	**-0.0232**	0.011	46.2	mg/L	151	Standard
Fe	57	160.0	10.8	**-0.1456**	0.055	37.5	mg/L	195	Standard
> **Sc-1**	45	29290.0	1.1				mg/L	29647	Standard
Cl	35	154390.7	1.3				ug/L	154152	Standard
Kr	83	3.3	45.8				ug/L	3	Standard
Br	81	1633.4	8.8				ug/L	1607	Standard
P	31	21568.7	2.2				ug/L	22752	Standard
S	34	5032.5	1.0				ug/L	5049	Standard
Sr	88	65.0	15.4				ug/L	87	Standard
C	12	66.7	17.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	23.2	25.5				mg/L	10	Standard
Ho-1	165	15.0	120.2				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	1071.7	9.3				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		101.488	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.336	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.456
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.744
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW B7 WG572432-05
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Method 6020 - Summary Report

Sample ID: L1606054006 WG572432-01
Sample Date/Time: Thursday, June 16, 2016 17:42:06
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52547.6	1.2				ug/L	51024	Standard
	Be	9	281.7	11.8	**0.3044**	0.040	13.2	ug/L	7	Standard
	Al	27	1816487.4	0.8	**12.3812**	0.043	0.4	ug/L	625	Standard
	Sc	45	29675.7	4.3				ug/L	29647	Standard
	Ti	47	527.0	16.5	**1.6748**	0.301	18.0	ug/L	57	Standard
	V	51	3476.6	2.8	**0.3441**	0.007	2.0	ug/L	1142	Standard
	Cr	52	8938.3	3.6	**0.3455**	0.039	11.3	ug/L	6628	Standard
	Cr	53	901.7	9.0	**0.5864**	0.111	18.9	ug/L	430	Standard
	Mn	55	80134.4	1.0	**14.0253**	0.252	1.8	ug/L	603	Standard
	Co	59	25491.1	1.0	**4.1165**	0.049	1.2	ug/L	237	Standard
	Ni	60	8570.8	3.1	**4.5794**	0.092	2.0	ug/L	141	Standard
	Cu	65	650.0	5.0	**0.2962**	0.012	4.0	ug/L	109	Standard
	Zn	66	3464.7	2.4	**3.0444**	0.035	1.2	ug/L	159	Standard
>	**Ge**	72	452166.6	1.8				ug/L	474053	Standard
	As	75	1182.5	5.5	**1.1442**	0.046	4.0	ug/L	-34	Standard
	Se	82	46.0	21.8	**0.2663**	0.087	32.8	ug/L	14	Standard
	Se-1	77	85.7	5.5	**0.4258**	0.086	20.3	ug/L	55	Standard
>	**Ga**	71	278.3	3.7				mg/L	50	Standard
	Rb	85	4193.9	3.2				ug/L	20	Standard
	Y	89	416460.7	2.0				ug/L	376602	Standard
>	**Rh**	103	23.3	12.4				ug/L	17	Standard
	Mo	98	357.6	5.0	**0.1457**	0.008	5.8	ug/L	8	Standard
	Ag	107	158.3	24.9	**0.0142**	0.007	47.6	ug/L	81	Standard
	Cd	111	270.7	5.4	**0.1360**	0.007	5.2	mg/L	3	Standard
	Cd	114	622.1	11.8	**0.1257**	0.017	13.1	ug/L	7	Standard
>	**In**	115	525525.2	1.0				ug/L	524722	Standard
	Sn	118	728.4	8.0	**0.0455**	0.009	20.8	ug/L	715	Standard
	Sb	123	2010.9	21.8	**0.4446**	0.099	22.2	ug/L	201	Standard
	Ba	135	37719.2	0.5	**20.7210**	0.204	1.0	ug/L	108	Standard
	Ce	140	135002.2	1.6				ug/L	30	Standard
>	**Tb**	159	783120.3	1.3				ug/L	792236	Standard
	Ho	165	2456.9	1.5				ug/L	7	Standard
	Tl	203	253.7	10.2	**0.0320**	0.003	10.8	ug/L	9	Standard
	Tl	205	226.7	16.3	**0.0285**	0.006	20.3	ug/L	0	Standard
	Pb	206	765.0	5.7	**0.1161**	0.008	6.7	ug/L	216	Standard
	Pb	207	652.7	5.5	**0.1078**	0.008	7.7	ug/L	180	Standard
	Pb	208	2766.1	3.6	**0.1109**	0.007	6.4	ug/L	717	Standard
	U	238	1954.1	0.9	**0.3200**	0.006	1.9	ug/L	4	Standard
>	**Bi**	209	442196.1	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1238.4	6.5	**1.6323**	0.087	5.4	mg/L	20	Standard
K	39	41.7	36.7	**0.0889**	0.112	125.7	mg/L	22	Standard
Ca	43	68.3	11.2	**2.8122**	2.229	79.3	mg/L	47	Standard
Fe	54	837.8	5.1	**0.5655**	0.012	2.1	mg/L	151	Standard
Fe	57	411.7	13.3	**0.6277**	0.175	27.9	mg/L	195	Standard
Sc-1	45	29675.7	4.3				mg/L	29647	Standard
Cl	35	169997.1	1.0				ug/L	154152	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	5057.5	1.3				ug/L	1607	Standard
P	31	24386.3	0.9				ug/L	22752	Standard
S	34	5092.5	0.4				ug/L	5049	Standard
Sr	88	103.3	7.4				ug/L	87	Standard
C	12	76.7	60.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	3712.9	1.1				mg/L	10	Standard
Ho-1	165	2456.9	1.5				mg/L	7	Standard
Er	166	2246.8	5.2				mg/L	3	Standard
I	127	9703.1	8.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.986	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.383	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.153
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.058
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606054007S WG572432-06
Sample Date/Time: Thursday, June 16, 2016 17:45:17
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53706.7	0.9				ug/L	51024	Standard
	Be	9	43749.7	1.2	**49.4168**	0.266	0.5	ug/L	7	Standard
	Al	27	1932307.9	0.8	**12.8870**	0.144	1.1	ug/L	625	Standard
	Sc	45	29268.3	2.3				ug/L	29647	Standard
	Ti	47	482.3	20.5	**1.5217**	0.334	21.9	ug/L	57	Standard
	V	51	343151.9	1.8	**50.5559**	1.238	2.4	ug/L	1142	Standard
	Cr	52	356598.9	0.1	**50.0133**	0.323	0.6	ug/L	6628	Standard
	Cr	53	44079.0	0.2	**49.3948**	0.256	0.5	ug/L	430	Standard
	Mn	55	413833.9	0.6	**73.1363**	0.045	0.1	ug/L	603	Standard
	Co	59	348825.8	0.4	**56.9989**	0.424	0.7	ug/L	237	Standard
	Ni	60	100519.4	0.8	**54.6907**	0.393	0.7	ug/L	141	Standard
	Cu	65	91430.0	0.8	**51.0559**	0.663	1.3	ug/L	109	Standard
	Zn	66	56968.2	0.3	**53.7844**	0.273	0.5	ug/L	159	Standard
>	**Ge**	72	450975.6	0.7				ug/L	474053	Standard
	As	75	55730.0	0.9	**52.9297**	0.224	0.4	ug/L	-34	Standard
	Se	82	5454.0	1.2	**51.6747**	0.725	1.4	ug/L	14	Standard
	Se-1	77	3763.1	1.1	**50.7665**	0.264	0.5	ug/L	55	Standard
>	**Ga**	71	263.3	20.3				mg/L	50	Standard
	Rb	85	4255.6	2.8				ug/L	20	Standard
	Y	89	417195.5	2.9				ug/L	376602	Standard
>	**Rh**	103	30.0	16.7				ug/L	17	Standard
	Mo	98	249.7	0.8	**0.1017**	0.004	4.1	ug/L	8	Standard
	Ag	107	291868.5	0.9	**49.6480**	2.126	4.3	ug/L	81	Standard
	Cd	111	96723.0	1.0	**50.5615**	1.461	2.9	mg/L	3	Standard
	Cd	114	235539.9	2.1	**49.7930**	0.984	2.0	ug/L	7	Standard
>	**In**	115	517505.1	3.8				ug/L	524722	Standard
	Sn	118	1476.7	5.3	**0.1884**	0.005	2.4	ug/L	715	Standard
	Sb	123	206896.8	0.8	**48.0521**	1.564	3.3	ug/L	201	Standard
	Ba	135	127540.2	0.0	**71.3559**	2.754	3.9	ug/L	108	Standard
	Ce	140	139925.0	2.0				ug/L	30	Standard
>	**Tb**	159	770775.9	3.8				ug/L	792236	Standard
	Ho	165	2476.9	1.1				ug/L	7	Standard
	Tl	203	360327.5	0.9	**50.2317**	2.202	4.4	ug/L	9	Standard
	Tl	205	316813.0	0.1	**51.9255**	1.944	3.7	ug/L	0	Standard
	Pb	206	230620.2	0.3	**53.1250**	1.777	3.3	ug/L	216	Standard
	Pb	207	202090.2	0.6	**51.1482**	2.204	4.3	ug/L	180	Standard
	Pb	208	841767.9	0.1	**52.4861**	1.864	3.6	ug/L	717	Standard
	U	238	302598.3	0.9	**51.8585**	1.621	3.1	ug/L	4	Standard
>	**Bi**	209	432715.9	3.6				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1251.7	2.3	**1.6745**	0.059	3.5	mg/L	20	Standard
K	39	36.7	20.8	**0.0560**	0.065	115.4	mg/L	22	Standard
Ca	43	53.3	32.9	**-0.5302**	4.352	820.7	mg/L	47	Standard
Fe	54	1026.3	1.7	**0.7308**	0.034	4.6	mg/L	151	Standard
Fe	57	418.3	7.7	**0.6667**	0.128	19.3	mg/L	195	Standard
> **Sc-1**	45	29268.3	2.3				mg/L	29647	Standard
Cl	35	169666.9	1.9				ug/L	154152	Standard
Kr	83	2.0	100.0				ug/L	3	Standard
Br	81	2960.3	5.9				ug/L	1607	Standard
P	31	24135.9	2.5				ug/L	22752	Standard
S	34	4849.1	3.1				ug/L	5049	Standard
Sr	88	106.7	33.9				ug/L	87	Standard
C	12	40.0	50.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	0	Standard
Dy	164	3819.4	7.1				mg/L	10	Standard
Ho-1	165	2476.9	1.1				mg/L	7	Standard
Er	166	2390.2	5.9				mg/L	3	Standard
I	127	12700.3	5.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.257	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.132	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.625	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	93.999	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606054008SD WG572432-07
Sample Date/Time: Thursday, June 16, 2016 17:48:29
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54998.0	2.9				ug/L	51024	Standard
	Be	9	42282.3	1.6	**46.6702**	1.847	4.0	ug/L	7	Standard
	Al	27	1853346.2	1.8	**12.0720**	0.192	1.6	ug/L	625	Standard
	Sc	45	28618.7	1.6				ug/L	29647	Standard
	Ti	47	438.7	18.4	**1.3101**	0.274	20.9	ug/L	57	Standard
	V	51	339071.1	1.2	**47.9811**	0.898	1.9	ug/L	1142	Standard
	Cr	52	348951.5	0.9	**46.9627**	0.693	1.5	ug/L	6628	Standard
	Cr	53	43296.8	2.2	**46.5875**	1.128	2.4	ug/L	430	Standard
	Mn	55	386934.9	1.9	**65.6847**	1.414	2.2	ug/L	603	Standard
	Co	59	342375.5	0.7	**53.7459**	0.809	1.5	ug/L	237	Standard
	Ni	60	97792.2	0.5	**51.1109**	0.332	0.6	ug/L	141	Standard
	Cu	65	89033.2	0.9	**47.7559**	0.143	0.3	ug/L	109	Standard
	Zn	66	55887.9	0.5	**50.6770**	0.331	0.7	ug/L	159	Standard
>	**Ge**	72	469439.2	1.1				ug/L	474053	Standard
	As	75	54484.6	0.9	**49.7143**	0.277	0.6	ug/L	-34	Standard
	Se	82	5325.5	1.9	**48.4642**	1.024	2.1	ug/L	14	Standard
	Se-1	77	3702.8	2.9	**47.9415**	0.927	1.9	ug/L	55	Standard
>	**Ga**	71	271.7	17.7				mg/L	50	Standard
	Rb	85	4088.9	2.2				ug/L	20	Standard
	Y	89	413416.3	1.0				ug/L	376602	Standard
>	**Rh**	103	41.7	30.2				ug/L	17	Standard
	Mo	98	249.2	1.7	**0.1026**	0.001	1.4	ug/L	8	Standard
	Ag	107	286615.9	0.3	**49.2507**	0.777	1.6	ug/L	81	Standard
	Cd	111	93885.9	0.7	**49.5954**	0.904	1.8	mg/L	3	Standard
	Cd	114	226454.5	0.3	**48.3871**	0.650	1.3	ug/L	7	Standard
>	**In**	115	511810.4	1.2				ug/L	524722	Standard
	Sn	118	701.7	6.8	**0.0441**	0.009	19.5	ug/L	715	Standard
	Sb	123	206600.1	0.8	**48.4856**	0.964	2.0	ug/L	201	Standard
	Ba	135	122408.2	0.7	**69.1850**	1.061	1.5	ug/L	108	Standard
	Ce	140	131819.3	0.1				ug/L	30	Standard
>	**Tb**	159	776885.2	2.2				ug/L	792236	Standard
	Ho	165	2331.8	5.4				ug/L	7	Standard
	Tl	203	352123.1	0.6	**47.6812**	0.707	1.5	ug/L	9	Standard
	Tl	205	309331.5	1.9	**49.2466**	0.608	1.2	ug/L	0	Standard
	Pb	206	228474.4	0.6	**51.1335**	0.852	1.7	ug/L	216	Standard
	Pb	207	200368.2	0.3	**49.2580**	0.755	1.5	ug/L	180	Standard
	Pb	208	813075.7	0.6	**49.2521**	0.923	1.9	ug/L	717	Standard
	U	238	295399.0	1.0	**49.1860**	0.564	1.1	ug/L	4	Standard
>	**Bi**	209	445087.6	1.7				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1281.7	3.9	**1.7556**	0.088	5.0	mg/L	20	Standard
K	39	31.7	63.8	**0.0238**	0.162	681.6	mg/L	22	Standard
Ca	43	90.0	29.4	**8.6263**	6.605	76.6	mg/L	47	Standard
Fe	54	882.7	7.0	**0.6290**	0.061	9.7	mg/L	151	Standard
Fe	57	415.0	3.6	**0.6838**	0.030	4.4	mg/L	195	Standard
Sc-1	45	28618.7	1.6				mg/L	29647	Standard
Cl	35	164516.5	1.8				ug/L	154152	Standard
Kr	83	2.7	78.1				ug/L	3	Standard
Br	81	3177.0	4.4				ug/L	1607	Standard
P	31	23216.1	2.6				ug/L	22752	Standard
S	34	4752.4	2.2				ug/L	5049	Standard
Sr	88	88.3	40.2				ug/L	87	Standard
C	12	76.7	30.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	3671.9	4.0				mg/L	10	Standard
Ho-1	165	2331.8	5.4				mg/L	7	Standard
Er	166	2266.8	11.6				mg/L	3	Standard
I	127	12179.9	5.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.788	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.027	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606054008SD WG572432-07
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.539
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.686
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606053301
Sample Date/Time: Thursday, June 16, 2016 17:51:40
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60559.2	3.2				ug/L	51024	Standard
	Be	9	28.3	10.2	**0.0074**	0.004	49.8	ug/L	7	Standard
	Al	27	7003612.2	2.3	**41.4514**	0.476	1.1	ug/L	625	Standard
	Sc	45	30053.2	5.5				ug/L	29647	Standard
	Ti	47	795.7	5.5	**2.5457**	0.146	5.8	ug/L	57	Standard
	V	51	2693.3	6.1	**0.2191**	0.025	11.3	ug/L	1142	Standard
	Cr	52	8930.0	3.3	**0.3138**	0.057	18.2	ug/L	6628	Standard
	Cr	53	2155.2	15.7	**1.9427**	0.407	21.0	ug/L	430	Standard
	Mn	55	115337.0	0.2	**19.7464**	0.327	1.7	ug/L	603	Standard
	Co	59	1383.4	9.3	**0.1788**	0.018	10.2	ug/L	237	Standard
	Ni	60	2905.3	1.7	**1.4630**	0.043	2.9	ug/L	141	Standard
	Cu	65	10476.6	1.4	**5.6346**	0.098	1.7	ug/L	109	Standard
	Zn	66	21460.2	1.0	**19.5697**	0.101	0.5	ug/L	159	Standard
>	**Ge**	72	463434.7	1.4				ug/L	474053	Standard
	As	75	3767.1	1.6	**3.5052**	0.045	1.3	ug/L	-34	Standard
	Se	82	163.8	10.0	**1.3482**	0.174	12.9	ug/L	14	Standard
	Se-1	77	257.3	5.7	**2.6846**	0.227	8.5	ug/L	55	Standard
>	**Ga**	71	133.3	15.6				mg/L	50	Standard
	Rb	85	28246.3	1.8				ug/L	20	Standard
	Y	89	371509.9	1.1				ug/L	376602	Standard
>	**Rh**	103	53.3	54.1				ug/L	17	Standard
	Mo	98	1868.0	0.8	**0.7966**	0.012	1.5	ug/L	8	Standard
	Ag	107	323.0	60.8	**0.0424**	0.033	77.8	ug/L	81	Standard
	Cd	111	115.7	21.0	**0.0572**	0.012	21.6	mg/L	3	Standard
	Cd	114	360.8	28.5	**0.0723**	0.021	29.2	ug/L	7	Standard
>	**In**	115	517402.5	1.9				ug/L	524722	Standard
	Sn	118	1711.8	7.1	**0.2327**	0.020	8.5	ug/L	715	Standard
	Sb	123	4614.0	12.3	**1.0551**	0.113	10.7	ug/L	201	Standard
	Ba	135	35141.4	1.4	**19.6067**	0.326	1.7	ug/L	108	Standard
	Ce	140	703.4	25.4				ug/L	30	Standard
>	**Tb**	159	794129.4	2.7				ug/L	792236	Standard
	Ho	165	41.7	38.6				ug/L	7	Standard
	Tl	203	449.0	60.2	**0.0569**	0.035	62.3	ug/L	9	Standard
	Tl	205	276.7	17.7	**0.0354**	0.008	22.9	ug/L	0	Standard
	Pb	206	1738.1	4.6	**0.3254**	0.021	6.4	ug/L	216	Standard
	Pb	207	1473.7	6.2	**0.3016**	0.022	7.3	ug/L	180	Standard
	Pb	208	5917.1	2.4	**0.2937**	0.008	2.7	ug/L	717	Standard
	U	238	273.7	21.5	**0.0370**	0.009	24.9	ug/L	4	Standard
>	**Bi**	209	454186.9	1.7				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.2936**	8.935	168.8	mg/L	0	Standard
Mg	24	24845.4	1.6	**33.2336**	1.348	4.1	mg/L	20	Standard
K	39	435.0	8.7	**3.0600**	0.462	15.1	mg/L	22	Standard
Ca	43	158.3	13.1	**23.4759**	6.234	26.6	mg/L	47	Standard
Fe	54	199.1	33.0	**0.0465**	0.059	127.4	mg/L	151	Standard
Fe	57	291.7	13.3	**0.2501**	0.172	68.9	mg/L	195	Standard
> **Sc-1**	45	30053.2	5.5				mg/L	29647	Standard
Cl	35	199161.9	1.2				ug/L	154152	Standard
Kr	83	2.3	49.5				ug/L	3	Standard
Br	81	12578.6	3.0				ug/L	1607	Standard
P	31	24539.9	2.1				ug/L	22752	Standard
S	34	5079.2	4.0				ug/L	5049	Standard
Sr	88	208.3	14.7				ug/L	87	Standard
C	12	96.7	36.3				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	0	Standard
Dy	164	61.3	25.3				mg/L	10	Standard
Ho-1	165	41.7	38.6				mg/L	7	Standard
Er	166	43.3	13.3				mg/L	3	Standard
I	127	46957.7	3.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.687	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.760	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.605
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.663
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606054003
Sample Date/Time: Thursday, June 16, 2016 17:54:52
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69060.4	2.1				ug/L	51024	Standard
	Be	9	195.0	15.6	**0.1507**	0.030	20.2	ug/L	7	Standard
	Al	27	5538034.2	2.1	**28.7382**	0.596	2.1	ug/L	625	Standard
	Sc	45	34442.5	3.5				ug/L	29647	Standard
	Ti	47	14518.0	3.2	**50.5821**	0.898	1.8	ug/L	57	Standard
	V	51	33577.2	0.6	**4.7869**	0.070	1.5	ug/L	1142	Standard
	Cr	52	33773.6	0.6	**3.8889**	0.037	1.0	ug/L	6628	Standard
	Cr	53	7016.6	2.1	**7.4876**	0.191	2.6	ug/L	430	Standard
	Mn	55	504059.4	0.9	**88.9661**	0.527	0.6	ug/L	603	Standard
	Co	59	17512.8	1.2	**2.8178**	0.022	0.8	ug/L	237	Standard
	Ni	60	10317.5	0.9	**5.5347**	0.034	0.6	ug/L	141	Standard
	Cu	65	2208.5	1.2	**1.1669**	0.032	2.7	ug/L	109	Standard
	Zn	66	8517.7	1.0	**7.8315**	0.096	1.2	ug/L	159	Standard
>	**Ge**	72	451723.4	1.4				ug/L	474053	Standard
	As	75	12920.2	3.5	**12.2750**	0.581	4.7	ug/L	-34	Standard
	Se	82	2961.0	4.8	**27.9437**	1.699	6.1	ug/L	14	Standard
	Se-1	77	326.3	1.4	**3.7149**	0.003	0.1	ug/L	55	Standard
>	**Ga**	71	2480.2	6.2				mg/L	50	Standard
	Rb	85	38117.9	1.8				ug/L	20	Standard
	Y	89	421962.4	2.5				ug/L	376602	Standard
>	**Rh**	103	78.3	24.2				ug/L	17	Standard
	Mo	98	3944.4	0.7	**1.6261**	0.009	0.6	ug/L	8	Standard
	Ag	107	112.0	6.7	**0.0060**	0.001	21.5	ug/L	81	Standard
	Cd	111	53.6	6.7	**0.0237**	0.002	7.8	mg/L	3	Standard
	Cd	114	133.4	41.0	**0.0233**	0.011	47.5	ug/L	7	Standard
>	**In**	115	537036.3	0.3				ug/L	524722	Standard
	Sn	118	2543.5	1.4	**0.3719**	0.007	2.0	ug/L	715	Standard
	Sb	123	798.0	25.2	**0.1636**	0.044	27.1	ug/L	201	Standard
	Ba	135	340692.9	0.8	**183.5929**	1.953	1.1	ug/L	108	Standard
	Ce	140	164779.7	1.7				ug/L	30	Standard
>	**Tb**	159	813065.5	1.9				ug/L	792236	Standard
	Ho	165	2875.3	7.5				ug/L	7	Standard
	Tl	203	422.0	6.7	**0.0538**	0.003	6.1	ug/L	9	Standard
	Tl	205	353.3	13.4	**0.0477**	0.007	15.2	ug/L	0	Standard
	Pb	206	3737.8	1.9	**0.7699**	0.010	1.3	ug/L	216	Standard
	Pb	207	3100.7	1.2	**0.6991**	0.004	0.6	ug/L	180	Standard
	Pb	208	12994.2	0.7	**0.7197**	0.013	1.8	ug/L	717	Standard
	U	238	1498.4	1.2	**0.2387**	0.006	2.5	ug/L	4	Standard
>	**Bi**	209	451028.7	1.3				ug/L	460343	Standard

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Na	23	6.7	114.6	**-8.8575**	22.422	253.1	mg/L	0	Standard
Mg	24	23361.3	1.7	**27.2407**	1.080	4.0	mg/L	20	Standard
K	39	78.3	19.5	**0.2883**	0.117	40.4	mg/L	22	Standard
Ca	43	363.3	8.7	**59.9201**	6.518	10.9	mg/L	47	Standard
Fe	54	6234.3	4.5	**4.2529**	0.273	6.4	mg/L	151	Standard
Fe	57	2021.8	6.4	**4.7439**	0.351	7.4	mg/L	195	Standard
> **Sc-1**	45	34442.5	3.5				mg/L	29647	Standard
Cl	35	236460.3	1.1				ug/L	154152	Standard
Kr	83	2.0	0.0				ug/L	3	Standard
Br	81	708935.6	4.3				ug/L	1607	Standard
P	31	40141.4	0.8				ug/L	22752	Standard
S	34	5004.2	5.7				ug/L	5049	Standard
Sr	88	448.3	5.6				ug/L	87	Standard
C	12	160.0	16.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	4859.0	3.9				mg/L	10	Standard
Ho-1	165	2875.3	7.5				mg/L	7	Standard
Er	166	2543.5	9.9				mg/L	3	Standard
I	127	141220.9	4.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		135.349	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.290	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.347	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.977	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606054003PS WG573083-01
Sample Date/Time: Thursday, June 16, 2016 17:58:03
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70691.2	0.9				ug/L	51024	Standard
	Be	9	50693.0	1.7	**43.5062**	1.094	2.5	ug/L	7	Standard
	Al	27	5657732.1	0.5	**28.6796**	0.340	1.2	ug/L	625	Standard
	Sc	45	32850.6	4.5				ug/L	29647	Standard
	Ti	47	14458.2	2.7	**49.6930**	1.695	3.4	ug/L	57	Standard
	V	51	385117.2	0.8	**55.8774**	0.585	1.0	ug/L	1142	Standard
	Cr	52	382916.9	0.3	**52.9297**	0.331	0.6	ug/L	6628	Standard
	Cr	53	51097.7	0.4	**56.4380**	0.261	0.5	ug/L	430	Standard
	Mn	55	810895.8	0.8	**141.2253**	1.951	1.4	ug/L	603	Standard
	Co	59	346570.3	0.8	**55.7548**	0.081	0.1	ug/L	237	Standard
	Ni	60	100953.5	0.6	**54.0794**	0.195	0.4	ug/L	141	Standard
	Cu	65	91462.3	1.6	**50.2871**	1.080	2.1	ug/L	109	Standard
	Zn	66	61341.3	0.6	**57.0367**	0.769	1.3	ug/L	159	Standard
>	**Ge**	72	458036.5	0.7				ug/L	474053	Standard
	As	75	68674.9	0.5	**64.2143**	0.182	0.3	ug/L	-34	Standard
	Se	82	8569.6	1.8	**80.0280**	0.981	1.2	ug/L	14	Standard
	Se-1	77	4022.5	4.5	**53.4821**	2.795	5.2	ug/L	55	Standard
>	**Ga**	71	2441.9	7.4				mg/L	50	Standard
	Rb	85	38290.0	2.9				ug/L	20	Standard
	Y	89	428743.2	0.3				ug/L	376602	Standard
>	**Rh**	103	91.7	35.1				ug/L	17	Standard
	Mo	98	3923.8	0.2	**1.6525**	0.023	1.4	ug/L	8	Standard
	Ag	107	276547.4	3.6	**46.2633**	2.008	4.3	ug/L	81	Standard
	Cd	111	96223.0	0.5	**49.4786**	0.725	1.5	mg/L	3	Standard
	Cd	114	238042.9	1.3	**49.5078**	0.331	0.7	ug/L	7	Standard
>	**In**	115	525777.0	1.3				ug/L	524722	Standard
	Sn	118	2560.2	3.5	**0.3851**	0.023	6.0	ug/L	715	Standard
	Sb	123	215296.5	0.5	**49.1839**	0.834	1.7	ug/L	201	Standard
	Ba	135	428635.4	1.2	**235.9452**	0.924	0.4	ug/L	108	Standard
	Ce	140	165650.7	1.3				ug/L	30	Standard
>	**Tb**	159	801648.7	1.5				ug/L	792236	Standard
	Ho	165	2957.0	2.0				ug/L	7	Standard
	Tl	203	362265.3	0.3	**49.7124**	0.432	0.9	ug/L	9	Standard
	Tl	205	324753.6	0.8	**52.4032**	0.722	1.4	ug/L	0	Standard
	Pb	206	240535.6	0.4	**54.5563**	0.254	0.5	ug/L	216	Standard
	Pb	207	210550.9	0.8	**52.4580**	0.578	1.1	ug/L	180	Standard
	Pb	208	845714.1	0.6	**51.9167**	0.481	0.9	ug/L	717	Standard
	U	238	316985.2	0.3	**53.4916**	0.510	1.0	ug/L	4	Standard
>	**Bi**	209	439144.9	0.6				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.2953**	8.932	168.7	mg/L	0	Standard
Mg	24	23556.6	1.1	**28.8162**	1.308	4.5	mg/L	20	Standard
K	39	103.3	22.9	**0.4849**	0.170	35.0	mg/L	22	Standard
Ca	43	350.0	13.1	**60.9958**	12.902	21.2	mg/L	47	Standard
Fe	54	6036.8	1.7	**4.3211**	0.223	5.2	mg/L	151	Standard
Fe	57	2113.5	3.5	**5.2621**	0.189	3.6	mg/L	195	Standard
Sc-1	45	32850.6	4.5				mg/L	29647	Standard
Cl	35	237983.9	1.1				ug/L	154152	Standard
Kr	83	0.0					ug/L	3	Standard
Br	81	723069.8	1.3				ug/L	1607	Standard
P	31	40273.5	4.5				ug/L	22752	Standard
S	34	4915.8	1.6				ug/L	5049	Standard
Sr	88	436.7	3.5				ug/L	87	Standard
C	12	133.3	4.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	4443.9	9.4				mg/L	10	Standard
Ho-1	165	2957.0	2.0				mg/L	7	Standard
Er	166	2646.9	6.4				mg/L	3	Standard
I	127	140910.6	0.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		138.545	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.621	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.201	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	95.395	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606054003PS WG573083-01
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Method 6020 - Summary Report

Sample ID: L1606054003SDL WG573083-02
Sample Date/Time: Thursday, June 16, 2016 18:01:15
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67421.4	2.2				ug/L	51024	Standard
	Be	9	65.0	23.1	**0.0373**	0.012	33.1	ug/L	7	Standard
	Al	27	1133068.0	1.4	**6.0172**	0.214	3.6	ug/L	625	Standard
	Sc	45	29907.8	2.2				ug/L	29647	Standard
	Ti	47	2896.9	2.4	**9.4986**	0.237	2.5	ug/L	57	Standard
	V	51	8118.9	1.6	**0.9749**	0.019	2.0	ug/L	1142	Standard
	Cr	52	11547.7	1.7	**0.6435**	0.029	4.5	ug/L	6628	Standard
	Cr	53	2378.5	3.7	**2.1298**	0.095	4.5	ug/L	430	Standard
	Mn	55	103741.0	1.9	**17.3694**	0.315	1.8	ug/L	603	Standard
	Co	59	3838.8	2.5	**0.5567**	0.015	2.6	ug/L	237	Standard
	Ni	60	2235.5	2.6	**1.0826**	0.031	2.9	ug/L	141	Standard
	Cu	65	647.7	4.8	**0.2788**	0.016	5.8	ug/L	109	Standard
	Zn	66	2803.6	0.9	**2.3005**	0.025	1.1	ug/L	159	Standard
>	**Ge**	72	473393.6	0.2				ug/L	474053	Standard
	As	75	2692.6	2.6	**2.4601**	0.062	2.5	ug/L	-34	Standard
	Se	82	639.2	5.1	**5.6193**	0.300	5.3	ug/L	14	Standard
	Se-1	77	131.7	10.1	**0.9721**	0.173	17.8	ug/L	55	Standard
>	**Ga**	71	563.3	2.9				mg/L	50	Standard
	Rb	85	7626.9	1.4				ug/L	20	Standard
	Y	89	387376.2	0.4				ug/L	376602	Standard
>	**Rh**	103	25.0	34.6				ug/L	17	Standard
	Mo	98	784.5	4.4	**0.3255**	0.017	5.2	ug/L	8	Standard
	Ag	107	1243.4	2.6	**0.1954**	0.006	3.2	ug/L	81	Standard
	Cd	111	29.9	54.1	**0.0121**	0.008	67.3	mg/L	3	Standard
	Cd	114	69.0	67.7	**0.0105**	0.010	91.0	ug/L	7	Standard
>	**In**	115	526626.8	0.9				ug/L	524722	Standard
	Sn	118	845.0	11.0	**0.0669**	0.018	26.5	ug/L	715	Standard
	Sb	123	2277.2	24.6	**0.5055**	0.132	26.2	ug/L	201	Standard
	Ba	135	69797.7	0.8	**38.3133**	0.615	1.6	ug/L	108	Standard
	Ce	140	34238.6	1.3				ug/L	30	Standard
>	**Tb**	159	801692.0	0.8				ug/L	792236	Standard
	Ho	165	618.3	9.3				ug/L	7	Standard
	Tl	203	344.7	8.1	**0.0429**	0.004	8.5	ug/L	9	Standard
	Tl	205	311.7	8.8	**0.0405**	0.004	10.8	ug/L	0	Standard
	Pb	206	1064.0	3.5	**0.1759**	0.009	4.9	ug/L	216	Standard
	Pb	207	867.0	6.7	**0.1540**	0.013	8.6	ug/L	180	Standard
	Pb	208	3581.5	3.9	**0.1537**	0.009	6.2	ug/L	717	Standard
	U	238	339.0	2.5	**0.0474**	0.001	2.9	ug/L	4	Standard
>	**Bi**	209	456914.2	0.6				ug/L	460343	Standard

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Na	23	5.0	173.2	**-5.5106**	27.648	501.7	mg/L	0	Standard
Mg	24	4740.7	2.0	**6.3283**	0.198	3.1	mg/L	20	Standard
K	39	31.7	32.9	**0.0103**	0.074	719.1	mg/L	22	Standard
Ca	43	96.7	10.8	**9.2099**	2.490	27.0	mg/L	47	Standard
Fe	54	1310.9	5.1	**0.9427**	0.077	8.2	mg/L	151	Standard
Fe	57	518.3	4.8	**0.9451**	0.104	11.0	mg/L	195	Standard
Sc-1	45	29907.8	2.2				mg/L	29647	Standard
Cl	35	171537.6	0.9				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	154143.7	2.2				ug/L	1607	Standard
P	31	26042.4	2.9				ug/L	22752	Standard
S	34	4889.1	5.0				ug/L	5049	Standard
Sr	88	148.3	17.0				ug/L	87	Standard
C	12	73.3	47.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	929.7	4.3				mg/L	10	Standard
Ho-1	165	618.3	9.3				mg/L	7	Standard
Er	166	563.3	6.2				mg/L	3	Standard
I	127	30853.1	2.8				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.136	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.861	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.363
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.255
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606054003SDL WG573083-02
Sample Date/Time: Thursday, June 16, 2016 18:04:26
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65921.5	1.7				ug/L	51024	Standard
	Be	9	28.3	10.2	**0.0050**	0.002	49.4	ug/L	7	Standard
	Al	27	234588.9	1.0	**1.2659**	0.010	0.8	ug/L	625	Standard
	Sc	45	29675.7	0.4				ug/L	29647	Standard
	Ti	47	693.0	13.8	**2.1806**	0.270	12.4	ug/L	57	Standard
	V	51	2547.4	1.6	**0.1965**	0.004	2.1	ug/L	1142	Standard
	Cr	52	7577.9	0.6	**0.1209**	0.025	20.3	ug/L	6628	Standard
	Cr	53	1020.0	10.6	**0.6861**	0.125	18.2	ug/L	430	Standard
	Mn	55	22549.8	0.3	**3.7420**	0.091	2.4	ug/L	603	Standard
	Co	59	941.7	6.4	**0.1080**	0.010	9.7	ug/L	237	Standard
	Ni	60	563.3	5.9	**0.2199**	0.025	11.2	ug/L	141	Standard
	Cu	65	269.3	8.9	**0.0800**	0.016	20.5	ug/L	109	Standard
	Zn	66	1451.4	2.3	**1.1019**	0.057	5.2	ug/L	159	Standard
>	**Ge**	72	465567.5	2.4				ug/L	474053	Standard
	As	75	572.2	6.7	**0.5515**	0.039	7.1	ug/L	-34	Standard
	Se	82	153.8	5.1	**1.2486**	0.091	7.3	ug/L	14	Standard
	Se-1	77	80.7	9.5	**0.3264**	0.123	37.8	ug/L	55	Standard
>	**Ga**	71	155.0	27.6				mg/L	50	Standard
	Rb	85	1620.1	5.6				ug/L	20	Standard
	Y	89	390804.2	2.3				ug/L	376602	Standard
>	**Rh**	103	10.0	50.0				ug/L	17	Standard
	Mo	98	177.1	5.2	**0.0674**	0.004	5.5	ug/L	8	Standard
	Ag	107	160.0	23.9	**0.0138**	0.006	46.0	ug/L	81	Standard
	Cd	111	25.4	77.5	**0.0095**	0.010	103.8	mg/L	3	Standard
	Cd	114	52.9	101.2	**0.0069**	0.011	156.6	ug/L	7	Standard
>	**In**	115	539456.4	0.6				ug/L	524722	Standard
	Sn	118	513.3	2.8	**0.0033**	0.003	95.9	ug/L	715	Standard
	Sb	123	668.0	33.5	**0.1338**	0.049	36.9	ug/L	201	Standard
	Ba	135	14458.9	2.3	**7.7012**	0.163	2.1	ug/L	108	Standard
	Ce	140	7036.6	6.6				ug/L	30	Standard
>	**Tb**	159	818023.3	1.0				ug/L	792236	Standard
	Ho	165	115.0	27.2				ug/L	7	Standard
	Tl	203	200.0	22.5	**0.0231**	0.006	25.9	ug/L	9	Standard
	Tl	205	161.7	23.6	**0.0166**	0.006	35.1	ug/L	0	Standard
	Pb	206	434.7	9.5	**0.0360**	0.009	24.6	ug/L	216	Standard
	Pb	207	375.3	3.2	**0.0337**	0.004	10.7	ug/L	180	Standard
	Pb	208	1515.7	5.1	**0.0292**	0.005	17.5	ug/L	717	Standard
	U	238	114.7	29.0	**0.0105**	0.005	51.2	ug/L	4	Standard
>	**Bi**	209	469475.2	1.0				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1023.4	7.3	**1.3409**	0.102	7.6	mg/L	20	Standard
K	39	6.7	43.3	**-0.1772**	0.022	12.3	mg/L	22	Standard
Ca	43	43.3	46.6	**-3.0610**	4.758	155.5	mg/L	47	Standard
Fe	54	379.2	10.8	**0.1931**	0.034	17.8	mg/L	151	Standard
Fe	57	256.7	21.5	**0.1469**	0.171	116.2	mg/L	195	Standard
Sc-1	45	29675.7	0.4				mg/L	29647	Standard
Cl	35	160581.2	1.2				ug/L	154152	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	34599.5	0.7				ug/L	1607	Standard
P	31	23708.5	0.9				ug/L	22752	Standard
S	34	4770.8	0.4				ug/L	5049	Standard
Sr	88	63.3	39.7				ug/L	87	Standard
C	12	46.7	44.6				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	195.8	8.2				mg/L	10	Standard
Ho-1	165	115.0	27.2				mg/L	7	Standard
Er	166	156.7	19.5				mg/L	3	Standard
I	127	7458.5	3.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.197	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.210	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.808
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.984
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 18:07:39
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64746.4	0.3				ug/L	51024	Standard
	Be	9	46935.9	0.9	**43.9752**	0.492	1.1	ug/L	7	Standard
	Al	27	7535309.9	1.9	**41.7048**	0.653	1.6	ug/L	625	Standard
	Sc	45	31043.5	4.7				ug/L	29647	Standard
	Ti	47	28772.6	0.9	**96.6294**	1.169	1.2	ug/L	57	Standard
	V	51	348687.3	1.9	**49.3361**	0.535	1.1	ug/L	1142	Standard
	Cr	52	360685.6	0.1	**48.5749**	1.035	2.1	ug/L	6628	Standard
	Cr	53	45317.7	1.7	**48.7728**	0.185	0.4	ug/L	430	Standard
	Mn	55	312229.0	0.7	**52.9756**	0.740	1.4	ug/L	603	Standard
	Co	59	328785.3	1.7	**51.5998**	0.220	0.4	ug/L	237	Standard
	Ni	60	92818.4	0.9	**48.5066**	0.760	1.6	ug/L	141	Standard
	Cu	65	91019.6	1.6	**48.8181**	0.503	1.0	ug/L	109	Standard
	Zn	66	54227.6	1.6	**49.1583**	0.511	1.0	ug/L	159	Standard
>	Ge	72	469521.9	2.1				ug/L	474053	Standard
	As	75	53936.9	1.2	**49.2114**	0.450	0.9	ug/L	-34	Standard
	Se	82	5505.5	2.6	**50.0972**	0.955	1.9	ug/L	14	Standard
	Se-1	77	3726.1	1.9	**48.2480**	0.384	0.8	ug/L	55	Standard
>	Ga	71	78.3	14.7				mg/L	50	Standard
	Rb	85	671.7	4.5				ug/L	20	Standard
	Y	89	383452.4	1.6				ug/L	376602	Standard
>	Rh	103	25.0	0.0				ug/L	17	Standard
	Mo	98	247423.8	2.1	**101.1140**	2.305	2.3	ug/L	8	Standard
	Ag	107	299585.0	1.0	**48.4657**	0.725	1.5	ug/L	81	Standard
	Cd	111	97195.1	1.0	**48.3387**	0.865	1.8	mg/L	3	Standard
	Cd	114	237825.0	2.4	**47.8442**	1.314	2.7	ug/L	7	Standard
>	In	115	543596.8	0.8				ug/L	524722	Standard
	Sn	118	268878.5	1.5	**48.0977**	1.025	2.1	ug/L	715	Standard
	Sb	123	216173.0	0.7	**47.7614**	0.695	1.5	ug/L	201	Standard
	Ba	135	89328.2	0.9	**47.5171**	0.807	1.7	ug/L	108	Standard
	Ce	140	83.3	25.0				ug/L	30	Standard
>	Tb	159	826706.5	0.3				ug/L	792236	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	368647.9	0.4	**47.0636**	0.889	1.9	ug/L	9	Standard
	Tl	205	321431.2	2.0	**48.2447**	0.798	1.7	ug/L	0	Standard
	Pb	206	230222.8	1.5	**48.5740**	1.152	2.4	ug/L	216	Standard
	Pb	207	209229.9	1.3	**48.4917**	1.019	2.1	ug/L	180	Standard
	Pb	208	835767.1	0.5	**47.7236**	0.588	1.2	ug/L	717	Standard
	U	238	311255.6	0.4	**48.8622**	0.739	1.5	ug/L	4	Standard
>	Bi	209	472106.5	1.5				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3973.9	4.2	**5.1144**	0.463	9.1	mg/L	20	Standard
K	39	603.3	5.9	**4.1749**	0.393	9.4	mg/L	22	Standard
Ca	43	58.3	34.6	**-0.2925**	4.036	1380.2	mg/L	47	Standard
Fe	54	5929.6	4.5	**4.5027**	0.427	9.5	mg/L	151	Standard
Fe	57	1646.8	4.1	**4.2259**	0.199	4.7	mg/L	195	Standard
Sc-1	45	31043.5	4.7				mg/L	29647	Standard
Cl	35	162653.1	0.8				ug/L	154152	Standard
Kr	83	1.0	0.0				ug/L	3	Standard
Br	81	4067.2	17.6				ug/L	1607	Standard
P	31	24251.1	1.7				ug/L	22752	Standard
S	34	5482.7	3.7				ug/L	5049	Standard
Sr	88	45.0	33.3				ug/L	87	Standard
C	12	60.0	28.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	22.5	26.8				mg/L	10	Standard
Ho-1	165	8.3	69.3				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	3	Standard
I	127	1428.4	5.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	87.950		
Al	27	83.410		
Sc	45			
Ti	47	96.629		
V	51	98.672		
Cr	52	97.150		
Cr	53			
Mn	55	105.951		
Co	59	103.200		
Ni	60	97.013		
Cu	65	97.636		
Zn	66	98.317		
Ge	72		99.044	
As	75	98.423		
Se	82	100.194		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.114		
Ag	107	96.931		
Cd	111	96.677		
Cd	114			
In	115		103.597	
Sn	118	96.195		
Sb	123	95.523		
Ba	135	95.034		
Ce	140			
Tb	159			
Ho	165			
Tl	203	94.127		
Tl	205			
Pb	206			
Pb	207			
Pb	208	95.447		
U	238	97.724		
Bi	209		102.555	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 18:10:51
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61896.2	1.1				ug/L	51024	Standard
	Be	9	18.3	56.8	**-0.0031**	0.010	331.6	ug/L	7	Standard
	Al	27	1523.4	19.5	**-0.0009**	0.002	172.8	ug/L	625	Standard
	Sc	45	30746.2	4.2				ug/L	29647	Standard
	Ti	47	48.7	24.0	**0.0041**	0.040	983.7	ug/L	57	Standard
	V	51	1096.5	7.2	**-0.0066**	0.011	164.7	ug/L	1142	Standard
	Cr	52	6114.9	1.9	**-0.0559**	0.020	35.8	ug/L	6628	Standard
	Cr	53	420.0	14.4	**0.0427**	0.071	166.6	ug/L	430	Standard
	Mn	55	696.3	8.0	**-0.0034**	0.009	280.9	ug/L	603	Standard
	Co	59	257.0	3.7	**0.0007**	0.001	190.7	ug/L	237	Standard
	Ni	60	98.3	19.1	**-0.0243**	0.010	42.2	ug/L	141	Standard
	Cu	65	138.3	15.9	**0.0111**	0.013	114.3	ug/L	109	Standard
	Zn	66	155.0	9.1	**-0.0853**	0.013	14.8	ug/L	159	Standard
>	**Ge**	72	451752.5	0.6				ug/L	474053	Standard
	As	75	-25.7	89.3	**0.0007**	0.022	2895.4	ug/L	-34	Standard
	Se	82	22.8	34.8	**0.0475**	0.075	158.2	ug/L	14	Standard
	Se-1	77	56.0	11.7	**0.0207**	0.094	453.1	ug/L	55	Standard
>	**Ga**	71	41.7	18.3				mg/L	50	Standard
	Rb	85	23.3	32.7				ug/L	20	Standard
	Y	89	396184.8	0.8				ug/L	376602	Standard
>	**Rh**	103	16.7	45.8				ug/L	17	Standard
	Mo	98	276.1	23.5	**0.1082**	0.027	25.2	ug/L	8	Standard
	Ag	107	114.0	9.8	**0.0063**	0.002	31.9	ug/L	81	Standard
	Cd	111	11.2	11.3	**0.0024**	0.001	28.4	mg/L	3	Standard
	Cd	114	27.7	73.8	**0.0018**	0.004	228.8	ug/L	7	Standard
>	**In**	115	539405.0	1.3				ug/L	524722	Standard
	Sn	118	770.0	23.8	**0.0496**	0.033	67.2	ug/L	715	Standard
	Sb	123	621.2	30.2	**0.1235**	0.042	34.0	ug/L	201	Standard
	Ba	135	117.7	23.5	**0.0055**	0.015	275.0	ug/L	108	Standard
	Ce	140	10.0	50.0				ug/L	30	Standard
>	**Tb**	159	804197.7	0.7				ug/L	792236	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	67.0	31.6	**0.0062**	0.003	43.0	ug/L	9	Standard
	Tl	205	75.0	13.3	**0.0038**	0.001	37.5	ug/L	0	Standard
	Pb	206	240.0	10.9	**-0.0040**	0.005	132.8	ug/L	216	Standard
	Pb	207	198.7	7.7	**-0.0062**	0.004	60.3	ug/L	180	Standard
	Pb	208	866.3	5.4	**-0.0067**	0.003	50.1	ug/L	717	Standard
	U	238	48.0	12.7	**0.0002**	0.001	508.3	ug/L	4	Standard
>	**Bi**	209	456732.7	1.5				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	38.3	82.8	**0.0048**	0.041	858.7	mg/L	20	Standard
K	39	21.7	87.4	**-0.0684**	0.138	202.1	mg/L	22	Standard
Ca	43	51.7	45.7	**-1.4837**	5.565	375.1	mg/L	47	Standard
Fe	54	127.7	12.6	**-0.0146**	0.015	100.1	mg/L	151	Standard
Fe	57	163.3	30.7	**-0.1626**	0.130	79.6	mg/L	195	Standard
> **Sc-1**	45	30746.2	4.2				mg/L	29647	Standard
Cl	35	165606.2	1.3				ug/L	154152	Standard
Kr	83	3.0	57.7				ug/L	3	Standard
Br	81	2933.6	13.2				ug/L	1607	Standard
P	31	25216.0	5.8				ug/L	22752	Standard
S	34	5477.7	2.3				ug/L	5049	Standard
Sr	88	56.7	33.4				ug/L	87	Standard
C	12	36.7	41.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.9	86.8				mg/L	10	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	10.0	173.2				mg/L	3	Standard
I	127	1125.0	7.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.296	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.798	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.216	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606054009
Sample Date/Time: Thursday, June 16, 2016 18:14:04
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62868.5	2.1				ug/L	51024	Standard
	Be	9	25.0	40.0	**0.0030**	0.010	320.4	ug/L	7	Standard
	Al	27	3263361.8	1.6	**18.5978**	0.187	1.0	ug/L	625	Standard
	Sc	45	30816.3	0.3				ug/L	29647	Standard
	Ti	47	176.7	8.1	**0.4336**	0.054	12.4	ug/L	57	Standard
	V	51	2352.6	1.3	**0.1685**	0.004	2.6	ug/L	1142	Standard
	Cr	52	8208.2	0.8	**0.2076**	0.006	3.1	ug/L	6628	Standard
	Cr	53	778.4	12.3	**0.4216**	0.115	27.4	ug/L	430	Standard
	Mn	55	6000883.1	1.3	**1028.9465**	25.297	2.5	ug/L	603	Standard
	Co	59	5272.3	0.9	**0.7938**	0.018	2.3	ug/L	237	Standard
	Ni	60	2681.9	0.9	**1.3375**	0.018	1.4	ug/L	141	Standard
	Cu	65	979.4	2.5	**0.4642**	0.012	2.6	ug/L	109	Standard
	Zn	66	3790.8	1.0	**3.2497**	0.077	2.4	ug/L	159	Standard
>	**Ge**	72	465659.8	1.3				ug/L	474053	Standard
	As	75	5887.6	1.1	**5.4382**	0.057	1.1	ug/L	-34	Standard
	Se	82	141.8	7.0	**1.1369**	0.108	9.5	ug/L	14	Standard
	Se-1	77	74.7	2.0	**0.2451**	0.023	9.4	ug/L	55	Standard
>	**Ga**	71	296.7	5.1				mg/L	50	Standard
	Rb	85	53373.9	1.9				ug/L	20	Standard
	Y	89	385477.9	2.9				ug/L	376602	Standard
>	**Rh**	103	46.7	16.4				ug/L	17	Standard
	Mo	98	1798.6	2.7	**0.7471**	0.020	2.7	ug/L	8	Standard
	Ag	107	110.0	13.7	**0.0059**	0.003	44.0	ug/L	81	Standard
	Cd	111	71.5	14.9	**0.0332**	0.006	17.6	mg/L	3	Standard
	Cd	114	137.0	6.5	**0.0244**	0.002	7.2	ug/L	7	Standard
>	**In**	115	530892.7	1.2				ug/L	524722	Standard
	Sn	118	731.7	10.0	**0.0448**	0.013	28.2	ug/L	715	Standard
	Sb	123	625.1	16.6	**0.1265**	0.022	17.3	ug/L	201	Standard
	Ba	135	131604.4	0.3	**71.7085**	0.676	0.9	ug/L	108	Standard
	Ce	140	6654.8	2.0				ug/L	30	Standard
>	**Tb**	159	816377.9	1.5				ug/L	792236	Standard
	Ho	165	238.3	11.6				ug/L	7	Standard
	Tl	203	76.0	23.3	**0.0075**	0.002	32.6	ug/L	9	Standard
	Tl	205	63.3	64.3	**0.0021**	0.006	310.8	ug/L	0	Standard
	Pb	206	386.0	5.1	**0.0283**	0.005	18.8	ug/L	216	Standard
	Pb	207	347.0	4.2	**0.0297**	0.005	15.2	ug/L	180	Standard
	Pb	208	1437.7	3.0	**0.0274**	0.003	12.5	ug/L	717	Standard
	U	238	4379.0	0.5	**0.7057**	0.012	1.8	ug/L	4	Standard
>	**Bi**	209	455069.1	1.2				ug/L	460343	Standard

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Na	23	5.0	100.0	**-5.2765**	15.737	298.3	mg/L	0	Standard
Mg	24	9816.5	6.9	**12.7603**	0.918	7.2	mg/L	20	Standard
K	39	4015.5	6.3	**29.2188**	1.778	6.1	mg/L	22	Standard
Ca	43	165.0	35.7	**23.9101**	13.280	55.5	mg/L	47	Standard
Fe	54	13256.8	2.9	**10.2548**	0.305	3.0	mg/L	151	Standard
Fe	57	3875.5	1.1	**10.8966**	0.106	1.0	mg/L	195	Standard
> **Sc-1**	45	30816.3	0.3				mg/L	29647	Standard
Cl	35	225833.9	0.4				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	25945.6	7.7				ug/L	1607	Standard
P	31	26763.6	2.0				ug/L	22752	Standard
S	34	5200.9	3.2				ug/L	5049	Standard
Sr	88	240.0	9.1				ug/L	87	Standard
C	12	193.3	18.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	262.1	17.3				mg/L	10	Standard
Ho-1	165	238.3	11.6				mg/L	7	Standard
Er	166	303.3	18.2				mg/L	3	Standard
I	127	75002.8	8.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.213	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.229	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.176	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.854	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606054010
Sample Date/Time: Thursday, June 16, 2016 18:17:15
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65588.3	0.4				ug/L	51024	Standard
	Be	9	30.0	60.1	**0.0066**	0.017	249.6	ug/L	7	Standard
	Al	27	2526422.5	0.3	**13.7972**	0.064	0.5	ug/L	625	Standard
	Sc	45	30417.2	3.2				ug/L	29647	Standard
	Ti	47	2810.3	3.2	**9.9401**	0.380	3.8	ug/L	57	Standard
	V	51	10857.2	0.9	**1.4795**	0.027	1.9	ug/L	1142	Standard
	Cr	52	13448.6	1.8	**1.0447**	0.048	4.6	ug/L	6628	Standard
	Cr	53	1738.4	6.6	**1.5855**	0.118	7.5	ug/L	430	Standard
	Mn	55	662471.2	0.9	**120.2964**	1.474	1.2	ug/L	603	Standard
	Co	59	2699.2	0.2	**0.4120**	0.004	0.9	ug/L	237	Standard
	Ni	60	3377.4	1.2	**1.8118**	0.036	2.0	ug/L	141	Standard
	Cu	65	1366.7	4.1	**0.7187**	0.039	5.4	ug/L	109	Standard
	Zn	66	9779.2	1.9	**9.2895**	0.243	2.6	ug/L	159	Standard
>	**Ge**	72	439226.0	0.9				ug/L	474053	Standard
	As	75	11053.2	2.0	**10.7998**	0.276	2.6	ug/L	-34	Standard
	Se	82	3723.6	2.4	**36.1764**	1.076	3.0	ug/L	14	Standard
	Se-1	77	120.3	17.9	**0.9478**	0.313	33.0	ug/L	55	Standard
>	**Ga**	71	653.3	7.7				mg/L	50	Standard
	Rb	85	17974.0	0.9				ug/L	20	Standard
	Y	89	392749.3	1.5				ug/L	376602	Standard
>	**Rh**	103	83.3	30.2				ug/L	17	Standard
	Mo	98	4323.3	0.4	**1.8596**	0.045	2.4	ug/L	8	Standard
	Ag	107	99.7	3.2	**0.0047**	0.001	17.3	ug/L	81	Standard
	Cd	111	51.2	16.5	**0.0236**	0.004	17.1	mg/L	3	Standard
	Cd	114	147.6	10.0	**0.0276**	0.004	13.0	ug/L	7	Standard
>	**In**	115	515115.8	2.2				ug/L	524722	Standard
	Sn	118	1333.4	7.7	**0.1626**	0.017	10.4	ug/L	715	Standard
	Sb	123	590.9	5.0	**0.1232**	0.010	8.0	ug/L	201	Standard
	Ba	135	57030.1	1.1	**31.9969**	0.347	1.1	ug/L	108	Standard
	Ce	140	21293.3	3.8				ug/L	30	Standard
>	**Tb**	159	786053.3	2.1				ug/L	792236	Standard
	Ho	165	341.7	14.7				ug/L	7	Standard
	Tl	203	337.7	6.2	**0.0450**	0.003	7.2	ug/L	9	Standard
	Tl	205	321.7	3.2	**0.0455**	0.003	5.8	ug/L	0	Standard
	Pb	206	1862.1	0.7	**0.3774**	0.005	1.2	ug/L	216	Standard
	Pb	207	1577.4	0.7	**0.3498**	0.004	1.2	ug/L	180	Standard
	Pb	208	6669.9	1.5	**0.3627**	0.014	3.8	ug/L	717	Standard
	U	238	10873.6	0.3	**1.8752**	0.033	1.8	ug/L	4	Standard
>	**Bi**	209	428106.7	1.8				ug/L	460343	Standard

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Na	23	6.7	114.6	**-10.3208**	23.457	227.3	mg/L	0	Standard
Mg	24	48188.2	2.0	**63.6943**	3.015	4.7	mg/L	20	Standard
K	39	553.3	6.8	**3.8849**	0.281	7.2	mg/L	22	Standard
Ca	43	321.7	16.0	**60.3557**	13.874	23.0	mg/L	47	Standard
Fe	54	1808.8	3.2	**1.3200**	0.080	6.1	mg/L	151	Standard
Fe	57	981.7	5.4	**2.3180**	0.200	8.6	mg/L	195	Standard
> **Sc-1**	45	30417.2	3.2				mg/L	29647	Standard
Cl	35	209372.7	0.6				ug/L	154152	Standard
Kr	83	0.7	173.2				ug/L	3	Standard
Br	81	933072.6	1.4				ug/L	1607	Standard
P	31	28264.7	0.7				ug/L	22752	Standard
S	34	4879.1	1.2				ug/L	5049	Standard
Sr	88	365.0	15.8				ug/L	87	Standard
C	12	160.0	28.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	522.9	18.7				mg/L	10	Standard
Ho-1	165	341.7	14.7				mg/L	7	Standard
Er	166	356.7	9.8				mg/L	3	Standard
I	127	158946.5	8.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.544	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.653	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.169
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.997
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606054011
Sample Date/Time: Thursday, June 16, 2016 18:20:27
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66415.2	0.8				ug/L	51024	Standard
	Be	9	31.7	92.5	**0.0080**	0.027	339.9	ug/L	7	Standard
	Al	27	2599405.0	0.8	**14.0190**	0.029	0.2	ug/L	625	Standard
	Sc	45	30612.6	1.1				ug/L	29647	Standard
	Ti	47	3388.4	4.8	**11.4676**	0.712	6.2	ug/L	57	Standard
	V	51	11365.4	1.1	**1.4778**	0.020	1.3	ug/L	1142	Standard
	Cr	52	14126.6	0.8	**1.0496**	0.030	2.9	ug/L	6628	Standard
	Cr	53	1888.5	10.3	**1.6589**	0.194	11.7	ug/L	430	Standard
	Mn	55	683276.7	0.4	**118.4238**	2.389	2.0	ug/L	603	Standard
	Co	59	2752.6	2.0	**0.3999**	0.015	3.8	ug/L	237	Standard
	Ni	60	3356.7	1.2	**1.7147**	0.043	2.5	ug/L	141	Standard
	Cu	65	1350.7	3.3	**0.6741**	0.033	5.0	ug/L	109	Standard
	Zn	66	8668.5	0.7	**7.8234**	0.178	2.3	ug/L	159	Standard
>	**Ge**	72	460253.4	1.6				ug/L	474053	Standard
	As	75	11667.3	1.2	**10.8800**	0.252	2.3	ug/L	-34	Standard
	Se	82	3942.6	1.6	**36.5587**	0.912	2.5	ug/L	14	Standard
	Se-1	77	129.7	8.5	**0.9935**	0.130	13.1	ug/L	55	Standard
>	**Ga**	71	686.7	16.0				mg/L	50	Standard
	Rb	85	19050.3	3.1				ug/L	20	Standard
	Y	89	381859.4	1.4				ug/L	376602	Standard
>	**Rh**	103	103.3	43.9				ug/L	17	Standard
	Mo	98	4373.4	1.2	**1.9146**	0.031	1.6	ug/L	8	Standard
	Ag	107	74.0	18.9	**0.0005**	0.002	456.1	ug/L	81	Standard
	Cd	111	45.0	20.2	**0.0208**	0.005	23.5	mg/L	3	Standard
	Cd	114	116.5	10.2	**0.0214**	0.003	12.0	ug/L	7	Standard
>	**In**	115	506011.1	0.4				ug/L	524722	Standard
	Sn	118	1185.0	3.8	**0.1387**	0.010	6.9	ug/L	715	Standard
	Sb	123	571.9	4.2	**0.1210**	0.005	4.2	ug/L	201	Standard
	Ba	135	57088.3	0.4	**32.6025**	0.223	0.7	ug/L	108	Standard
	Ce	140	20652.4	1.0				ug/L	30	Standard
>	**Tb**	159	785323.2	1.2				ug/L	792236	Standard
	Ho	165	306.7	8.0				ug/L	7	Standard
	Tl	203	332.3	7.5	**0.0441**	0.003	7.8	ug/L	9	Standard
	Tl	205	303.3	2.5	**0.0423**	0.001	2.9	ug/L	0	Standard
	Pb	206	1906.8	2.4	**0.3865**	0.007	1.8	ug/L	216	Standard
	Pb	207	1585.1	0.2	**0.3506**	0.006	1.6	ug/L	180	Standard
	Pb	208	6566.9	1.1	**0.3550**	0.006	1.8	ug/L	717	Standard
	U	238	10922.6	1.0	**1.8784**	0.027	1.4	ug/L	4	Standard
>	**Bi**	209	429255.9	1.2				ug/L	460343	Standard

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Na	23	10.0		**-21.2549**	0.358	1.7	mg/L	0	Standard
Mg	24	49766.6	0.9	**65.3028**	0.773	1.2	mg/L	20	Standard
K	39	513.3	10.0	**3.5605**	0.354	9.9	mg/L	22	Standard
Ca	43	375.0	2.3	**71.6613**	1.832	2.6	mg/L	47	Standard
Fe	54	1685.6	3.3	**1.2127**	0.057	4.7	mg/L	151	Standard
Fe	57	868.4	4.3	**1.9576**	0.137	7.0	mg/L	195	Standard
> **Sc-1**	45	30612.6	1.1				mg/L	29647	Standard
Cl	35	212698.7	1.3				ug/L	154152	Standard
Kr	83	1.3	114.6				ug/L	3	Standard
Br	81	930543.4	1.3				ug/L	1607	Standard
P	31	28647.1	1.3				ug/L	22752	Standard
S	34	4877.5	1.7				ug/L	5049	Standard
Sr	88	360.0	7.7				ug/L	87	Standard
C	12	163.3	18.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	0	Standard
Dy	164	512.3	22.5				mg/L	10	Standard
Ho-1	165	306.7	8.0				mg/L	7	Standard
Er	166	300.0	28.9				mg/L	3	Standard
I	127	165895.7	6.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		130.164	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.089	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.434
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.247
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606054014
Sample Date/Time: Thursday, June 16, 2016 18:23:38
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68457.7	1.1				ug/L	51024	Standard
	Be	9	223.3	18.0	**0.1767**	0.033	18.9	ug/L	7	Standard
	Al	27	3707488.9	1.7	**19.4017**	0.122	0.6	ug/L	625	Standard
	Sc	45	30515.7	3.4				ug/L	29647	Standard
	Ti	47	294.7	2.2	**0.8253**	0.029	3.5	ug/L	57	Standard
	V	51	3410.3	2.9	**0.3157**	0.010	3.3	ug/L	1142	Standard
	Cr	52	8854.9	2.4	**0.2871**	0.040	14.1	ug/L	6628	Standard
	Cr	53	1000.0	7.8	**0.6537**	0.075	11.4	ug/L	430	Standard
	Mn	55	12117646.4	0.4	**2060.2552**	13.775	0.7	ug/L	603	Standard
	Co	59	1473.7	1.2	**0.1902**	0.002	1.2	ug/L	237	Standard
	Ni	60	5603.4	1.0	**2.8548**	0.061	2.1	ug/L	141	Standard
	Cu	65	1122.7	1.8	**0.5367**	0.010	1.8	ug/L	109	Standard
	Zn	66	11386.6	1.1	**10.1370**	0.058	0.6	ug/L	159	Standard
>	**Ge**	72	469570.6	1.1				ug/L	474053	Standard
	As	75	14849.9	0.4	**13.5649**	0.144	1.1	ug/L	-34	Standard
	Se	82	356.9	5.3	**3.0899**	0.192	6.2	ug/L	14	Standard
	Se-1	77	81.7	2.5	**0.3287**	0.021	6.5	ug/L	55	Standard
>	**Ga**	71	528.3	9.7				mg/L	50	Standard
	Rb	85	19908.1	1.7				ug/L	20	Standard
	Y	89	397696.3	3.0				ug/L	376602	Standard
>	**Rh**	103	73.3	28.4				ug/L	17	Standard
	Mo	98	1099.6	1.0	**0.4465**	0.011	2.4	ug/L	8	Standard
	Ag	107	113.3	53.3	**0.0062**	0.010	164.1	ug/L	81	Standard
	Cd	111	46.4	117.1	**0.0203**	0.028	137.1	mg/L	3	Standard
	Cd	114	110.7	115.4	**0.0188**	0.026	140.1	ug/L	7	Standard
>	**In**	115	540492.7	1.5				ug/L	524722	Standard
	Sn	118	843.4	3.6	**0.0625**	0.003	5.4	ug/L	715	Standard
	Sb	123	260.9	5.7	**0.0432**	0.004	9.7	ug/L	201	Standard
	Ba	135	85652.2	2.1	**45.8145**	0.326	0.7	ug/L	108	Standard
	Ce	140	2418.5	4.8				ug/L	30	Standard
>	**Tb**	159	825063.1	0.9				ug/L	792236	Standard
	Ho	165	370.0	15.3				ug/L	7	Standard
	Tl	203	165.0	77.7	**0.0187**	0.017	89.0	ug/L	9	Standard
	Tl	205	83.3	48.9	**0.0048**	0.006	129.6	ug/L	0	Standard
	Pb	206	781.7	2.4	**0.1102**	0.005	4.7	ug/L	216	Standard
	Pb	207	661.7	6.1	**0.1011**	0.010	10.0	ug/L	180	Standard
	Pb	208	2756.1	3.9	**0.1010**	0.006	6.3	ug/L	717	Standard
	U	238	69.7	29.4	**0.0035**	0.003	95.7	ug/L	4	Standard
>	**Bi**	209	467941.3	0.6				ug/L	460343	Standard

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Na	23	1.7	173.2	**4.9367**	9.553	193.5	mg/L	0	Standard
Mg	24	7730.3	2.8	**10.1412**	0.303	3.0	mg/L	20	Standard
K	39	158.3	7.9	**0.9473**	0.128	13.5	mg/L	22	Standard
Ca	43	168.3	19.8	**24.8759**	6.392	25.7	mg/L	47	Standard
Fe	54	6384.0	2.9	**4.9326**	0.253	5.1	mg/L	151	Standard
Fe	57	1760.1	6.1	**4.6585**	0.505	10.8	mg/L	195	Standard
Sc-1	45	30515.7	3.4				mg/L	29647	Standard
Cl	35	207881.0	0.4				ug/L	154152	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	77943.4	2.4				ug/L	1607	Standard
P	31	27538.3	2.1				ug/L	22752	Standard
S	34	5344.3	4.3				ug/L	5049	Standard
Sr	88	228.3	5.5				ug/L	87	Standard
C	12	153.3	22.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	364.7	19.0				mg/L	10	Standard
Ho-1	165	370.0	15.3				mg/L	7	Standard
Er	166	390.0	7.7				mg/L	3	Standard
I	127	96865.7	4.2				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		134.167	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.054	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.006
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.651
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606054015
Sample Date/Time: Thursday, June 16, 2016 18:26:50
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70212.3	1.0				ug/L	51024	Standard
	Be	9	93.3	11.2	**0.0596**	0.009	14.8	ug/L	7	Standard
	Al	27	2156794.6	1.5	**11.0022**	0.244	2.2	ug/L	625	Standard
	Sc	45	32787.1	2.8				ug/L	29647	Standard
	Ti	47	872.7	1.5	**2.8741**	0.038	1.3	ug/L	57	Standard
	V	51	4953.3	2.7	**0.5601**	0.025	4.5	ug/L	1142	Standard
	Cr	52	12535.5	0.5	**0.8533**	0.007	0.8	ug/L	6628	Standard
	Cr	53	3772.1	6.1	**3.8114**	0.290	7.6	ug/L	430	Standard
	Mn	55	223713.2	0.6	**39.2731**	0.557	1.4	ug/L	603	Standard
	Co	59	2453.9	1.1	**0.3579**	0.004	1.1	ug/L	237	Standard
	Ni	60	3886.2	1.3	**2.0286**	0.038	1.9	ug/L	141	Standard
	Cu	65	32893.7	0.8	**18.2296**	0.262	1.4	ug/L	109	Standard
	Zn	66	61284.4	0.6	**57.5727**	0.568	1.0	ug/L	159	Standard
>	**Ge**	72	453357.9	0.8				ug/L	474053	Standard
	As	75	5903.1	1.9	**5.6002**	0.148	2.6	ug/L	-34	Standard
	Se	82	1422.0	3.2	**13.2789**	0.537	4.0	ug/L	14	Standard
	Se-1	77	189.7	16.8	**1.8389**	0.442	24.1	ug/L	55	Standard
>	**Ga**	71	225.0	13.5				mg/L	50	Standard
	Rb	85	13973.1	2.8				ug/L	20	Standard
	Y	89	404441.3	1.8				ug/L	376602	Standard
>	**Rh**	103	65.0	38.5				ug/L	17	Standard
	Mo	98	294.7	2.2	**0.1146**	0.002	2.0	ug/L	8	Standard
	Ag	107	105.0	9.1	**0.0046**	0.002	33.3	ug/L	81	Standard
	Cd	111	122.5	4.2	**0.0575**	0.003	4.7	mg/L	3	Standard
	Cd	114	252.7	21.3	**0.0469**	0.011	22.8	ug/L	7	Standard
>	**In**	115	544955.5	0.5				ug/L	524722	Standard
	Sn	118	895.0	4.4	**0.0706**	0.008	11.3	ug/L	715	Standard
	Sb	123	270.4	10.2	**0.0448**	0.006	14.2	ug/L	201	Standard
	Ba	135	146088.3	0.9	**77.5484**	1.011	1.3	ug/L	108	Standard
	Ce	140	17523.5	3.1				ug/L	30	Standard
>	**Tb**	159	819658.6	1.6				ug/L	792236	Standard
	Ho	165	628.3	0.5				ug/L	7	Standard
	Tl	203	235.3	10.6	**0.0288**	0.003	9.6	ug/L	9	Standard
	Tl	205	200.0	25.0	**0.0236**	0.008	34.4	ug/L	0	Standard
	Pb	206	6489.4	1.2	**1.3771**	0.042	3.0	ug/L	216	Standard
	Pb	207	5497.7	0.5	**1.2800**	0.026	2.0	ug/L	180	Standard
	Pb	208	22985.2	1.3	**1.3164**	0.041	3.1	ug/L	717	Standard
	U	238	227.3	4.1	**0.0298**	0.002	7.0	ug/L	4	Standard
>	**Bi**	209	451512.8	1.8				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.4796**	8.613	157.2	mg/L	0	Standard
Mg	24	16031.8	1.4	**19.6235**	0.803	4.1	mg/L	20	Standard
K	39	240.0	3.6	**1.4284**	0.103	7.2	mg/L	22	Standard
Ca	43	188.3	18.1	**26.5601**	6.775	25.5	mg/L	47	Standard
Fe	54	2702.3	1.1	**1.8725**	0.045	2.4	mg/L	151	Standard
Fe	57	970.0	7.1	**2.0665**	0.116	5.6	mg/L	195	Standard
> **Sc-1**	45	32787.1	2.8				mg/L	29647	Standard
Cl	35	187497.7	0.8				ug/L	154152	Standard
Kr	83	2.3	49.5				ug/L	3	Standard
Br	81	349533.5	4.1				ug/L	1607	Standard
P	31	41573.8	6.0				ug/L	22752	Standard
S	34	4967.5	2.6				ug/L	5049	Standard
Sr	88	208.3	5.5				ug/L	87	Standard
C	12	116.7	26.2				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	870.5	12.8				mg/L	10	Standard
Ho-1	165	628.3	0.5				mg/L	7	Standard
Er	166	616.7	28.8				mg/L	3	Standard
I	127	319694.7	6.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		137.606	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.634	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.856	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.082	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606054016
Sample Date/Time: Thursday, June 16, 2016 18:30:01
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68176.4	1.2				ug/L	51024	Standard
	Be	9	21.7	13.3	**-0.0018**	0.003	143.7	ug/L	7	Standard
	Al	27	2075359.9	0.4	**10.9025**	0.136	1.2	ug/L	625	Standard
	Sc	45	31050.1	1.7				ug/L	29647	Standard
	Ti	47	887.4	5.3	**2.8528**	0.151	5.3	ug/L	57	Standard
	V	51	3806.8	2.6	**0.3783**	0.010	2.7	ug/L	1142	Standard
	Cr	52	10637.4	1.5	**0.5485**	0.036	6.6	ug/L	6628	Standard
	Cr	53	1405.1	2.8	**1.1115**	0.040	3.6	ug/L	430	Standard
	Mn	55	486178.5	1.9	**83.5032**	2.235	2.7	ug/L	603	Standard
	Co	59	1054.7	3.8	**0.1263**	0.008	6.2	ug/L	237	Standard
	Ni	60	11529.4	0.9	**6.0257**	0.114	1.9	ug/L	141	Standard
	Cu	65	2707.2	1.0	**1.4044**	0.012	0.8	ug/L	109	Standard
	Zn	66	9083.1	1.3	**8.1357**	0.169	2.1	ug/L	159	Standard
>	**Ge**	72	464207.3	1.0				ug/L	474053	Standard
	As	75	2758.8	3.0	**2.5691**	0.059	2.3	ug/L	-34	Standard
	Se	82	1024.4	2.4	**9.2906**	0.197	2.1	ug/L	14	Standard
	Se-1	77	98.0	6.2	**0.5580**	0.071	12.7	ug/L	55	Standard
>	**Ga**	71	195.0	23.5				mg/L	50	Standard
	Rb	85	7673.6	3.9				ug/L	20	Standard
	Y	89	397515.6	2.3				ug/L	376602	Standard
>	**Rh**	103	68.3	30.5				ug/L	17	Standard
	Mo	98	786.7	1.9	**0.3292**	0.014	4.4	ug/L	8	Standard
	Ag	107	78.0	2.6	**0.0008**	0.000	5.5	ug/L	81	Standard
	Cd	111	30.9	35.5	**0.0127**	0.005	42.9	mg/L	3	Standard
	Cd	114	65.2	1.1	**0.0098**	0.000	2.0	ug/L	7	Standard
>	**In**	115	522465.9	2.4				ug/L	524722	Standard
	Sn	118	738.4	3.7	**0.0483**	0.008	17.1	ug/L	715	Standard
	Sb	123	275.0	16.0	**0.0486**	0.012	23.8	ug/L	201	Standard
	Ba	135	25240.0	1.7	**13.9295**	0.222	1.6	ug/L	108	Standard
	Ce	140	3872.2	6.3				ug/L	30	Standard
>	**Tb**	159	782878.6	0.7				ug/L	792236	Standard
	Ho	165	290.0	15.0				ug/L	7	Standard
	Tl	203	118.7	19.0	**0.0136**	0.003	22.8	ug/L	9	Standard
	Tl	205	133.3	20.7	**0.0136**	0.004	32.8	ug/L	0	Standard
	Pb	206	2356.5	1.5	**0.4750**	0.007	1.6	ug/L	216	Standard
	Pb	207	2055.5	1.9	**0.4553**	0.008	1.8	ug/L	180	Standard
	Pb	208	8501.6	2.4	**0.4610**	0.013	2.9	ug/L	717	Standard
	U	238	331.0	4.1	**0.0479**	0.002	5.0	ug/L	4	Standard
>	**Bi**	209	442159.2	0.2				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.1730**	9.144	176.8	mg/L	0	Standard
Mg	24	10690.4	1.9	**13.7935**	0.084	0.6	mg/L	20	Standard
K	39	96.7	13.0	**0.4748**	0.079	16.7	mg/L	22	Standard
Ca	43	233.3	8.9	**38.9201**	5.419	13.9	mg/L	47	Standard
Fe	54	3334.2	1.9	**2.4739**	0.064	2.6	mg/L	151	Standard
Fe	57	1251.7	5.3	**3.0560**	0.253	8.3	mg/L	195	Standard
> **Sc-1**	45	31050.1	1.7				mg/L	29647	Standard
Cl	35	170093.6	1.6				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	245182.8	3.5				ug/L	1607	Standard
P	31	32394.6	2.5				ug/L	22752	Standard
S	34	5009.2	1.9				ug/L	5049	Standard
Sr	88	261.7	17.8				ug/L	87	Standard
C	12	140.0	12.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	323.0	18.5				mg/L	10	Standard
Ho-1	165	290.0	15.0				mg/L	7	Standard
Er	166	216.7	25.4				mg/L	3	Standard
I	127	55511.6	2.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		133.616	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.923	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.570
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.050
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606054901
Sample Date/Time: Thursday, June 16, 2016 18:33:13
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72709.1	1.6				ug/L	51024	Standard
	Be	9	15.0	88.2	**-0.0087**	0.011	126.1	ug/L	7	Standard
	Al	27	11667015.3	1.5	**57.5082**	0.540	0.9	ug/L	625	Standard
	Sc	45	28668.8	2.1				ug/L	29647	Standard
	Ti	47	148.7	19.1	**0.3823**	0.104	27.3	ug/L	57	Standard
	V	51	2595.6	16.9	**0.2356**	0.067	28.4	ug/L	1142	Standard
	Cr	52	17123.0	0.8	**1.6486**	0.049	3.0	ug/L	6628	Standard
	Cr	53	9336.3	15.0	**10.6848**	1.682	15.7	ug/L	430	Standard
	Mn	55	18549.3	0.3	**3.3327**	0.052	1.6	ug/L	603	Standard
	Co	59	5007.8	1.9	**0.8213**	0.019	2.4	ug/L	237	Standard
	Ni	60	15512.9	1.9	**8.8253**	0.199	2.3	ug/L	141	Standard
	Cu	65	297329.3	1.3	**175.0473**	3.650	2.1	ug/L	109	Standard
	Zn	66	4856.4	2.5	**4.6181**	0.121	2.6	ug/L	159	Standard
>	**Ge**	72	428183.3	1.3				ug/L	474053	Standard
	As	75	2686.3	8.7	**2.7111**	0.235	8.7	ug/L	-34	Standard
	Se	82	880.4	5.1	**8.6464**	0.479	5.5	ug/L	14	Standard
	Se-1	77	1273.7	6.1	**17.6237**	1.226	7.0	ug/L	55	Standard
>	**Ga**	71	535.0	8.9				mg/L	50	Standard
	Rb	85	254257.5	1.2				ug/L	20	Standard
	Y	89	359721.9	0.6				ug/L	376602	Standard
>	**Rh**	103	140.0	9.4				ug/L	17	Standard
	Mo	98	3488.6	3.7	**1.5905**	0.067	4.2	ug/L	8	Standard
	Ag	107	123.7	2.8	**0.0101**	0.001	6.2	ug/L	81	Standard
	Cd	111	15.6	26.6	**0.0055**	0.002	42.5	mg/L	3	Standard
	Cd	114	44.2	40.8	**0.0061**	0.004	65.8	ug/L	7	Standard
>	**In**	115	485628.6	0.5				ug/L	524722	Standard
	Sn	118	1148.4	1.8	**0.1409**	0.005	3.6	ug/L	715	Standard
	Sb	123	1921.7	1.1	**0.4606**	0.007	1.6	ug/L	201	Standard
	Ba	135	96043.1	1.3	**57.1923**	0.511	0.9	ug/L	108	Standard
	Ce	140	93.3	49.8				ug/L	30	Standard
>	**Tb**	159	766976.5	0.2				ug/L	792236	Standard
	Ho	165	5.0	173.2				ug/L	7	Standard
	Tl	203	328.3	20.2	**0.0463**	0.010	21.2	ug/L	9	Standard
	Tl	205	263.3	14.0	**0.0383**	0.006	16.9	ug/L	0	Standard
	Pb	206	413.7	9.2	**0.0455**	0.009	20.2	ug/L	216	Standard
	Pb	207	380.0	6.3	**0.0489**	0.006	12.7	ug/L	180	Standard
	Pb	208	1519.7	11.6	**0.0434**	0.011	26.5	ug/L	717	Standard
	U	238	31.3	49.5	**-0.0018**	0.003	153.2	ug/L	4	Standard
>	**Bi**	209	404872.2	0.7				ug/L	460343	Standard

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Na	23	10.0	86.6	**-23.4566**	29.384	125.3	mg/L	0	Standard
Mg	24	267948.6	0.7	**375.7604**	9.820	2.6	mg/L	20	Standard
K	39	5807.8	3.4	**45.5805**	2.203	4.8	mg/L	22	Standard
Ca	43	638.3	3.5	**141.1529**	8.616	6.1	mg/L	47	Standard
Fe	54	146.9	19.8	**0.0083**	0.022	270.3	mg/L	151	Standard
Fe	57	816.7	4.9	**1.9694**	0.159	8.1	mg/L	195	Standard
> **Sc-1**	45	28668.8	2.1				mg/L	29647	Standard
Cl	35	417643.9	1.4				ug/L	154152	Standard
Kr	83	3.0	57.7				ug/L	3	Standard
Br	81	229759.6	2.4				ug/L	1607	Standard
P	31	23254.5	2.6				ug/L	22752	Standard
S	34	4967.5	4.2				ug/L	5049	Standard
Sr	88	355.0	7.8				ug/L	87	Standard
C	12	183.3	32.0				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	56.7	27.0				mg/L	0	Standard
Dy	164	9.8	2.8				mg/L	10	Standard
Ho-1	165	5.0	173.2				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	1031517.8	6.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		142.499	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.324	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	92.550
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	87.950
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: L1606061401
Sample Date/Time: Thursday, June 16, 2016 18:36:24
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67849.9	1.1				ug/L	51024	Standard
	Be	9	10.0	100.0	**-0.0122**	0.009	72.4	ug/L	7	Standard
	Al	27	7374370.7	1.4	**38.9545**	0.953	2.4	ug/L	625	Standard
	Sc	45	31795.0	3.3				ug/L	29647	Standard
	Ti	47	313.7	6.8	**0.9174**	0.076	8.3	ug/L	57	Standard
	V	51	2621.7	2.2	**0.2138**	0.007	3.4	ug/L	1142	Standard
	Cr	52	11091.1	1.0	**0.6343**	0.009	1.4	ug/L	6628	Standard
	Cr	53	2283.5	15.4	**2.1128**	0.383	18.1	ug/L	430	Standard
	Mn	55	22885192.4	0.4	**3995.0920**	30.113	0.8	ug/L	603	Standard
	Co	59	1232.4	2.0	**0.1575**	0.003	2.1	ug/L	237	Standard
	Ni	60	2098.5	2.4	**1.0496**	0.022	2.1	ug/L	141	Standard
	Cu	65	1216.4	7.2	**0.6044**	0.045	7.4	ug/L	109	Standard
	Zn	66	2288.2	0.5	**1.9075**	0.018	1.0	ug/L	159	Standard
>	**Ge**	72	457333.9	0.5				ug/L	474053	Standard
	As	75	909.5	3.9	**0.8764**	0.032	3.6	ug/L	-34	Standard
	Se	82	87.0	7.9	**0.6466**	0.066	10.1	ug/L	14	Standard
	Se-1	77	157.0	28.6	**1.3726**	0.597	43.5	ug/L	55	Standard
>	**Ga**	71	960.0	12.3				mg/L	50	Standard
	Rb	85	5015.8	1.4				ug/L	20	Standard
	Y	89	394642.7	2.8				ug/L	376602	Standard
>	**Rh**	103	63.3	16.4				ug/L	17	Standard
	Mo	98	105.8	7.3	**0.0386**	0.003	8.5	ug/L	8	Standard
	Ag	107	76.0	8.0	**0.0002**	0.001	446.5	ug/L	81	Standard
	Cd	111	105.5	11.4	**0.0504**	0.007	13.1	mg/L	3	Standard
	Cd	114	217.3	8.1	**0.0408**	0.003	7.9	ug/L	7	Standard
>	**In**	115	532134.8	0.9				ug/L	524722	Standard
	Sn	118	536.7	2.8	**0.0088**	0.003	34.6	ug/L	715	Standard
	Sb	123	277.5	10.8	**0.0479**	0.007	15.3	ug/L	201	Standard
	Ba	135	159442.6	1.1	**86.6865**	1.387	1.6	ug/L	108	Standard
	Ce	140	1033.4	5.7				ug/L	30	Standard
>	**Tb**	159	812600.2	1.7				ug/L	792236	Standard
	Ho	165	136.7	12.8				ug/L	7	Standard
	Tl	203	148.0	12.8	**0.0171**	0.003	14.9	ug/L	9	Standard
	Tl	205	111.7	14.4	**0.0097**	0.003	26.2	ug/L	0	Standard
	Pb	206	315.7	1.6	**0.0132**	0.001	8.8	ug/L	216	Standard
	Pb	207	263.7	2.5	**0.0100**	0.002	15.2	ug/L	180	Standard
	Pb	208	1172.4	3.4	**0.0120**	0.002	19.7	ug/L	717	Standard
	U	238	803.7	2.6	**0.1241**	0.003	2.8	ug/L	4	Standard
>	**Bi**	209	452405.5	0.1				ug/L	460343	Standard

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Na	23	10.0	50.0	**-19.9609**	15.153	75.9	mg/L	0	Standard
Mg	24	11375.9	2.6	**14.3383**	0.138	1.0	mg/L	20	Standard
K	39	516.7	6.4	**3.4516**	0.346	10.0	mg/L	22	Standard
Ca	43	308.3	25.1	**54.1698**	18.153	33.5	mg/L	47	Standard
Fe	54	4619.7	1.0	**3.3894**	0.094	2.8	mg/L	151	Standard
Fe	57	1538.4	4.2	**3.7997**	0.290	7.6	mg/L	195	Standard
> **Sc-1**	45	31795.0	3.3				mg/L	29647	Standard
Cl	35	183919.6	1.0				ug/L	154152	Standard
Kr	83	2.3	89.2				ug/L	3	Standard
Br	81	17553.5	2.0				ug/L	1607	Standard
P	31	29355.1	2.7				ug/L	22752	Standard
S	34	5200.9	1.9				ug/L	5049	Standard
Sr	88	190.0	11.5				ug/L	87	Standard
C	12	103.3	53.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	152.8	48.1				mg/L	10	Standard
Ho-1	165	136.7	12.8				mg/L	7	Standard
Er	166	150.0	34.6				mg/L	3	Standard
I	127	70208.0	15.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.976	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.473	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.413	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.276	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606062401
Sample Date/Time: Thursday, June 16, 2016 18:39:36
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69110.6	0.2				ug/L	51024	Standard
	Be	9	15.0	33.3	**-0.0079**	0.004	55.0	ug/L	7	Standard
	Al	27	7936210.1	0.6	**41.1512**	0.274	0.7	ug/L	625	Standard
	Sc	45	30823.0	3.2				ug/L	29647	Standard
	Ti	47	221.7	9.7	**0.5979**	0.081	13.6	ug/L	57	Standard
	V	51	218784.0	0.6	**31.6314**	0.474	1.5	ug/L	1142	Standard
	Cr	52	16406.2	1.4	**1.3767**	0.046	3.3	ug/L	6628	Standard
	Cr	53	3238.7	7.2	**3.1676**	0.244	7.7	ug/L	430	Standard
	Mn	55	47582.7	4.0	**8.1574**	0.347	4.3	ug/L	603	Standard
	Co	59	6337.0	0.6	**0.9777**	0.004	0.4	ug/L	237	Standard
	Ni	60	16455.3	0.3	**8.7388**	0.105	1.2	ug/L	141	Standard
	Cu	65	7946.8	1.2	**4.3032**	0.079	1.8	ug/L	109	Standard
	Zn	66	49099.1	1.5	**45.5445**	0.480	1.1	ug/L	159	Standard
>	**Ge**	72	458635.0	1.0				ug/L	474053	Standard
	As	75	1613.9	2.7	**1.5315**	0.033	2.1	ug/L	-34	Standard
	Se	82	632.2	1.0	**5.7396**	0.015	0.3	ug/L	14	Standard
	Se-1	77	198.0	8.1	**1.9191**	0.191	10.0	ug/L	55	Standard
>	**Ga**	71	478.3	12.6				mg/L	50	Standard
	Rb	85	15694.8	4.0				ug/L	20	Standard
	Y	89	402857.7	1.3				ug/L	376602	Standard
>	**Rh**	103	55.0	41.7				ug/L	17	Standard
	Mo	98	250973.6	0.6	**101.4589**	1.305	1.3	ug/L	8	Standard
	Ag	107	107.3	16.2	**0.0049**	0.003	57.8	ug/L	81	Standard
	Cd	111	-120.2	20.3	**-0.0625**	0.013	20.5	mg/L	3	Standard
	Cd	114	568.4	5.3	**0.1093**	0.006	5.7	ug/L	7	Standard
>	**In**	115	549544.5	1.2				ug/L	524722	Standard
	Sn	118	805.0	7.3	**0.0532**	0.009	16.5	ug/L	715	Standard
	Sb	123	561.0	5.0	**0.1078**	0.005	5.0	ug/L	201	Standard
	Ba	135	33980.1	2.6	**17.8424**	0.439	2.5	ug/L	108	Standard
	Ce	140	471.7	1.2				ug/L	30	Standard
>	**Tb**	159	820522.7	2.1				ug/L	792236	Standard
	Ho	165	20.0	25.0				ug/L	7	Standard
	Tl	203	251.3	7.2	**0.0306**	0.002	5.8	ug/L	9	Standard
	Tl	205	235.0	7.7	**0.0286**	0.002	7.0	ug/L	0	Standard
	Pb	206	1733.1	4.4	**0.3220**	0.019	5.8	ug/L	216	Standard
	Pb	207	1553.1	3.0	**0.3188**	0.020	6.4	ug/L	180	Standard
	Pb	208	6433.5	1.7	**0.3223**	0.016	4.9	ug/L	717	Standard
	U	238	255.3	11.3	**0.0338**	0.004	11.1	ug/L	4	Standard
>	**Bi**	209	456920.5	2.4				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.0019**	9.440	188.7	mg/L	0	Standard
Mg	24	19250.6	2.3	**25.0636**	0.292	1.2	mg/L	20	Standard
K	39	168.3	17.4	**1.0102**	0.242	24.0	mg/L	22	Standard
Ca	43	145.0	18.2	**19.2916**	5.015	26.0	mg/L	47	Standard
Fe	54	151.8	11.3	**0.0041**	0.017	409.5	mg/L	151	Standard
Fe	57	315.0	7.3	**0.2903**	0.041	14.1	mg/L	195	Standard
> **Sc-1**	45	30823.0	3.2				mg/L	29647	Standard
Cl	35	228215.4	1.2				ug/L	154152	Standard
Kr	83	1.7	124.9				ug/L	3	Standard
Br	81	147558.5	1.4				ug/L	1607	Standard
P	31	26561.6	1.8				ug/L	22752	Standard
S	34	5117.5	2.5				ug/L	5049	Standard
Sr	88	270.0	14.7				ug/L	87	Standard
C	12	100.0	17.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	70.0	24.7				mg/L	0	Standard
Dy	164	58.9	45.9				mg/L	10	Standard
Ho-1	165	20.0	25.0				mg/L	7	Standard
Er	166	23.3	49.5				mg/L	3	Standard
I	127	16912.8	6.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		135.447	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.748	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	104.731	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.257	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	

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Method 6020 - Summary Report

Sample ID: L1606063001 WG572432-03
Sample Date/Time: Thursday, June 16, 2016 18:42:47
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69631.3	1.0				ug/L	51024	Standard
	Be	9	8.3	34.6	**-0.0138**	0.003	18.5	ug/L	7	Standard
	Al	27	1739354.1	0.6	**8.9445**	0.105	1.2	ug/L	625	Standard
	Sc	45	30928.2	2.9				ug/L	29647	Standard
	Ti	47	665.7	3.5	**2.0953**	0.107	5.1	ug/L	57	Standard
	V	51	2109.1	2.9	**0.1339**	0.005	3.7	ug/L	1142	Standard
	Cr	52	7651.6	0.5	**0.1320**	0.020	15.0	ug/L	6628	Standard
	Cr	53	2638.6	11.3	**2.4577**	0.289	11.8	ug/L	430	Standard
	Mn	55	27736.7	1.0	**4.6358**	0.114	2.5	ug/L	603	Standard
	Co	59	815.4	0.8	**0.0880**	0.002	1.9	ug/L	237	Standard
	Ni	60	1350.7	2.9	**0.6359**	0.022	3.4	ug/L	141	Standard
	Cu	65	5230.6	1.3	**2.7695**	0.021	0.8	ug/L	109	Standard
	Zn	66	9220.1	0.6	**8.2452**	0.069	0.8	ug/L	159	Standard
>	**Ge**	72	465111.5	1.4				ug/L	474053	Standard
	As	75	269.2	8.8	**0.2730**	0.025	9.0	ug/L	-34	Standard
	Se	82	49.8	13.6	**0.2903**	0.068	23.4	ug/L	14	Standard
	Se-1	77	173.0	5.2	**1.5506**	0.090	5.8	ug/L	55	Standard
>	**Ga**	71	241.7	10.4				mg/L	50	Standard
	Rb	85	36829.7	1.3				ug/L	20	Standard
	Y	89	384374.8	2.5				ug/L	376602	Standard
>	**Rh**	103	41.7	25.0				ug/L	17	Standard
	Mo	98	728.3	12.5	**0.3031**	0.038	12.6	ug/L	8	Standard
	Ag	107	82.0	10.4	**0.0014**	0.002	110.2	ug/L	81	Standard
	Cd	111	14.7	18.3	**0.0044**	0.001	34.2	mg/L	3	Standard
	Cd	114	39.2	43.5	**0.0044**	0.004	82.7	ug/L	7	Standard
>	**In**	115	524227.9	1.2				ug/L	524722	Standard
	Sn	118	960.0	3.9	**0.0890**	0.009	10.3	ug/L	715	Standard
	Sb	123	670.5	6.9	**0.1389**	0.011	8.0	ug/L	201	Standard
	Ba	135	8761.5	1.0	**4.7811**	0.086	1.8	ug/L	108	Standard
	Ce	140	878.4	8.1				ug/L	30	Standard
>	**Tb**	159	793064.4	3.2				ug/L	792236	Standard
	Ho	165	38.3	19.9				ug/L	7	Standard
	Tl	203	150.0	18.8	**0.0177**	0.004	22.6	ug/L	9	Standard
	Tl	205	133.3	15.6	**0.0133**	0.003	25.5	ug/L	0	Standard
	Pb	206	508.3	5.7	**0.0571**	0.007	12.3	ug/L	216	Standard
	Pb	207	414.7	10.5	**0.0477**	0.010	21.1	ug/L	180	Standard
	Pb	208	1771.7	0.4	**0.0490**	0.001	1.6	ug/L	717	Standard
	U	238	19.0	24.1	**-0.0044**	0.001	16.6	ug/L	4	Standard
>	**Bi**	209	447050.8	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	28164.5	1.9	**36.5804**	1.386	3.8	mg/L	20	Standard
K	39	385.0	0.0	**2.5870**	0.080	3.1	mg/L	22	Standard
Ca	43	85.0	20.4	**5.9218**	4.410	74.5	mg/L	47	Standard
Fe	54	182.6	15.8	**0.0273**	0.022	80.2	mg/L	151	Standard
Fe	57	225.0	0.0	**0.0211**	0.019	90.5	mg/L	195	Standard
Sc-1	45	30928.2	2.9				mg/L	29647	Standard
Cl	35	213453.3	1.7				ug/L	154152	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	8942.7	8.2				ug/L	1607	Standard
P	31	31840.1	1.6				ug/L	22752	Standard
S	34	5007.5	0.9				ug/L	5049	Standard
Sr	88	131.7	11.6				ug/L	87	Standard
C	12	73.3	34.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	40.5	49.2				mg/L	10	Standard
Ho-1	165	38.3	19.9				mg/L	7	Standard
Er	166	60.0	33.3				mg/L	3	Standard
I	127	51039.4	6.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		136.467	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.114	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.906
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.113
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 18:46:00
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68225.0	3.2				ug/L	51024	Standard
	Be	9	50708.1	3.5	**45.0847**	0.435	1.0	ug/L	7	Standard
	Al	27	7858332.7	1.5	**41.2907**	0.687	1.7	ug/L	625	Standard
	Sc	45	30560.8	2.3				ug/L	29647	Standard
	Ti	47	29370.1	1.8	**100.7639**	1.653	1.6	ug/L	57	Standard
	V	51	355260.2	0.6	**51.3611**	0.501	1.0	ug/L	1142	Standard
	Cr	52	364134.0	1.1	**50.1157**	0.189	0.4	ug/L	6628	Standard
	Cr	53	45359.5	2.1	**49.8880**	1.306	2.6	ug/L	430	Standard
	Mn	55	315438.4	1.3	**54.6794**	1.132	2.1	ug/L	603	Standard
	Co	59	335779.3	1.2	**53.8409**	0.832	1.5	ug/L	237	Standard
	Ni	60	93086.4	0.8	**49.6929**	0.140	0.3	ug/L	141	Standard
	Cu	65	91127.3	1.4	**49.9327**	0.679	1.4	ug/L	109	Standard
	Zn	66	54195.8	1.1	**50.1944**	0.353	0.7	ug/L	159	Standard
>	Ge	72	459562.3	0.8				ug/L	474053	Standard
	As	75	53571.2	0.7	**49.9335**	0.666	1.3	ug/L	-34	Standard
	Se	82	5527.7	0.4	**51.3922**	0.186	0.4	ug/L	14	Standard
	Se-1	77	3740.1	0.8	**49.4994**	0.726	1.5	ug/L	55	Standard
>	Ga	71	238.3	8.5				mg/L	50	Standard
	Rb	85	728.4	8.0				ug/L	20	Standard
	Y	89	403863.1	2.0				ug/L	376602	Standard
>	Rh	103	30.0	16.7				ug/L	17	Standard
	Mo	98	249432.2	1.4	**100.2684**	1.541	1.5	ug/L	8	Standard
	Ag	107	296071.6	1.7	**47.1134**	0.851	1.8	ug/L	81	Standard
	Cd	111	98641.2	1.4	**48.2538**	0.726	1.5	mg/L	3	Standard
	Cd	114	241419.7	2.8	**47.7722**	1.408	2.9	ug/L	7	Standard
>	In	115	552610.2	0.1				ug/L	524722	Standard
	Sn	118	274943.9	0.8	**48.3767**	0.444	0.9	ug/L	715	Standard
	Sb	123	217314.9	1.3	**47.2274**	0.669	1.4	ug/L	201	Standard
	Ba	135	89302.7	0.5	**46.7236**	0.287	0.6	ug/L	108	Standard
	Ce	140	61.7	32.8				ug/L	30	Standard
>	Tb	159	816119.0	0.8				ug/L	792236	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	369419.3	1.5	**48.6376**	0.510	1.0	ug/L	9	Standard
	Tl	205	333866.9	0.9	**51.6890**	0.388	0.8	ug/L	0	Standard
	Pb	206	232126.7	1.0	**50.5119**	0.450	0.9	ug/L	216	Standard
	Pb	207	210545.8	0.6	**50.3290**	0.336	0.7	ug/L	180	Standard
	Pb	208	855972.8	0.6	**50.4191**	0.795	1.6	ug/L	717	Standard
	U	238	320948.2	1.1	**51.9636**	0.277	0.5	ug/L	4	Standard
>	Bi	209	457695.0	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	4200.6	2.8	**5.4815**	0.198	3.6	mg/L	20	Standard
K	39	558.3	18.4	**3.8970**	0.711	18.2	mg/L	22	Standard
Ca	43	60.0	25.0	**0.3745**	3.188	851.1	mg/L	47	Standard
Fe	54	6005.7	4.5	**4.6268**	0.322	7.0	mg/L	151	Standard
Fe	57	1721.8	7.2	**4.5229**	0.315	7.0	mg/L	195	Standard
> **Sc-1**	45	30560.8	2.3				mg/L	29647	Standard
Cl	35	169117.3	1.2				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	2713.6	7.9				ug/L	1607	Standard
P	31	25114.1	2.9				ug/L	22752	Standard
S	34	5354.3	6.7				ug/L	5049	Standard
Sr	88	73.3	32.2				ug/L	87	Standard
C	12	66.7	67.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	23.0	67.5				mg/L	10	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	3423.7	23.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	90.169		
Al	27	82.581		
Sc	45			
Ti	47	100.764		
V	51	102.722		
Cr	52	100.231		
Cr	53			
Mn	55	109.359		
Co	59	107.682		
Ni	60	99.386		
Cu	65	99.865		
Zn	66	100.389		
> Ge	72		96.943	
As	75	99.867		
Se	82	102.784		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	100.268		
Ag	107	94.227		
Cd	111	96.508		
Cd	114			
> In	115		105.315	
Sn	118	96.753		
Sb	123	94.455		
Ba	135	93.447		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	97.275		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.838		
U	238	103.927		
> Bi	209		99.425	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 18:49:12
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64312.9	1.7				ug/L	51024	Standard
	Be	9	10.0	100.0	**-0.0116**	0.009	81.0	ug/L	7	Standard
	Al	27	1253.4	11.0	**-0.0028**	0.001	25.9	ug/L	625	Standard
	Sc	45	30213.4	2.2				ug/L	29647	Standard
	Ti	47	46.7	13.1	**-0.0109**	0.022	201.6	ug/L	57	Standard
	V	51	1033.9	3.5	**-0.0234**	0.008	34.0	ug/L	1142	Standard
	Cr	52	6122.9	0.9	**-0.0987**	0.025	25.4	ug/L	6628	Standard
	Cr	53	575.0	8.8	**0.1852**	0.063	34.2	ug/L	430	Standard
	Mn	55	1171.4	5.3	**0.0703**	0.014	19.8	ug/L	603	Standard
	Co	59	202.3	7.7	**-0.0099**	0.003	28.8	ug/L	237	Standard
	Ni	60	113.3	11.9	**-0.0193**	0.006	33.6	ug/L	141	Standard
	Cu	65	139.7	5.5	**0.0080**	0.006	71.9	ug/L	109	Standard
	Zn	66	162.0	9.1	**-0.0865**	0.010	11.9	ug/L	159	Standard
>	**Ge**	72	475844.7	2.3				ug/L	474053	Standard
	As	75	5.3	48.7	**0.0299**	0.002	7.8	ug/L	-34	Standard
	Se	82	21.3	16.5	**0.0231**	0.034	148.8	ug/L	14	Standard
	Se-1	77	70.7	7.0	**0.1723**	0.070	40.6	ug/L	55	Standard
>	**Ga**	71	140.0	34.1				mg/L	50	Standard
	Rb	85	38.3	49.4				ug/L	20	Standard
	Y	89	392359.8	3.0				ug/L	376602	Standard
>	**Rh**	103	15.0	57.7				ug/L	17	Standard
	Mo	98	303.5	29.0	**0.1205**	0.035	28.8	ug/L	8	Standard
	Ag	107	88.3	9.9	**0.0022**	0.001	58.2	ug/L	81	Standard
	Cd	111	9.2	17.1	**0.0014**	0.001	58.9	mg/L	3	Standard
	Cd	114	26.1	34.4	**0.0015**	0.002	118.0	ug/L	7	Standard
>	**In**	115	533517.8	1.4				ug/L	524722	Standard
	Sn	118	766.7	17.2	**0.0508**	0.026	51.1	ug/L	715	Standard
	Sb	123	454.0	26.6	**0.0877**	0.028	32.4	ug/L	201	Standard
	Ba	135	106.0	9.4	**-0.0001**	0.006	3944.8	ug/L	108	Standard
	Ce	140	23.3	44.6				ug/L	30	Standard
>	**Tb**	159	792169.2	1.1				ug/L	792236	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	62.3	2.5	**0.0057**	0.000	2.0	ug/L	9	Standard
	Tl	205	51.7	49.7	**0.0003**	0.004	1341.8	ug/L	0	Standard
	Pb	206	226.7	8.4	**-0.0062**	0.005	76.5	ug/L	216	Standard
	Pb	207	203.3	4.0	**-0.0045**	0.002	40.0	ug/L	180	Standard
	Pb	208	845.7	5.1	**-0.0073**	0.002	33.6	ug/L	717	Standard
	U	238	36.0	10.0	**-0.0017**	0.001	31.3	ug/L	4	Standard
>	**Bi**	209	451238.0	1.2				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	41.7	38.6	**0.0104**	0.022	211.4	mg/L	20	Standard
K	39	10.0	50.0	**-0.1532**	0.037	24.4	mg/L	22	Standard
Ca	43	38.3	32.8	**-4.4370**	2.704	60.9	mg/L	47	Standard
Fe	54	137.9	7.6	**-0.0050**	0.006	124.9	mg/L	151	Standard
Fe	57	133.3	7.8	**-0.2416**	0.038	15.5	mg/L	195	Standard
Sc-1	45	30213.4	2.2				mg/L	29647	Standard
Cl	35	167592.0	1.8				ug/L	154152	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	2426.9	7.0				ug/L	1607	Standard
P	31	25579.9	2.0				ug/L	22752	Standard
S	34	5439.3	0.7				ug/L	5049	Standard
Sr	88	61.7	9.4				ug/L	87	Standard
C	12	56.7	56.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.0	93.6				mg/L	10	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	2145.2	8.8				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.378	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.676	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.022	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606063001DP WG572432-10
Sample Date/Time: Thursday, June 16, 2016 18:52:25
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68712.2	2.1				ug/L	51024	Standard
	Be	9	13.3	57.3	**-0.0092**	0.007	74.2	ug/L	7	Standard
	Al	27	1694606.4	2.1	**8.8301**	0.029	0.3	ug/L	625	Standard
	Sc	45	32870.6	1.4				ug/L	29647	Standard
	Ti	47	632.0	2.3	**1.9902**	0.036	1.8	ug/L	57	Standard
	V	51	2183.1	15.2	**0.1462**	0.049	33.7	ug/L	1142	Standard
	Cr	52	8437.7	0.6	**0.2463**	0.014	5.5	ug/L	6628	Standard
	Cr	53	3582.1	45.8	**3.5137**	1.806	51.4	ug/L	430	Standard
	Mn	55	25959.2	3.5	**4.3517**	0.184	4.2	ug/L	603	Standard
	Co	59	780.0	4.2	**0.0830**	0.005	6.3	ug/L	237	Standard
	Ni	60	1265.7	3.1	**0.5941**	0.019	3.2	ug/L	141	Standard
	Cu	65	4964.1	2.1	**2.6377**	0.034	1.3	ug/L	109	Standard
	Zn	66	7744.6	0.4	**6.9226**	0.090	1.3	ug/L	159	Standard
>	**Ge**	72	462903.9	0.9				ug/L	474053	Standard
	As	75	268.6	20.8	**0.2737**	0.054	19.7	ug/L	-34	Standard
	Se	82	41.2	34.5	**0.2137**	0.136	63.4	ug/L	14	Standard
	Se-1	77	155.7	4.3	**1.3316**	0.104	7.8	ug/L	55	Standard
>	**Ga**	71	160.0	9.4				mg/L	50	Standard
	Rb	85	36001.1	1.5				ug/L	20	Standard
	Y	89	387483.8	2.3				ug/L	376602	Standard
>	**Rh**	103	38.3	41.9				ug/L	17	Standard
	Mo	98	602.0	7.2	**0.2407**	0.015	6.4	ug/L	8	Standard
	Ag	107	97.7	12.0	**0.0035**	0.002	49.5	ug/L	81	Standard
	Cd	111	14.9	82.6	**0.0042**	0.006	147.6	mg/L	3	Standard
	Cd	114	54.8	20.5	**0.0072**	0.002	30.8	ug/L	7	Standard
>	**In**	115	542940.9	1.2				ug/L	524722	Standard
	Sn	118	1003.4	7.5	**0.0905**	0.011	12.7	ug/L	715	Standard
	Sb	123	760.6	4.7	**0.1535**	0.006	4.0	ug/L	201	Standard
	Ba	135	8458.7	1.6	**4.4523**	0.053	1.2	ug/L	108	Standard
	Ce	140	761.7	12.9				ug/L	30	Standard
>	**Tb**	159	813941.2	0.6				ug/L	792236	Standard
	Ho	165	46.7	60.9				ug/L	7	Standard
	Tl	203	213.3	5.0	**0.0252**	0.001	4.7	ug/L	9	Standard
	Tl	205	173.3	1.7	**0.0188**	0.000	1.2	ug/L	0	Standard
	Pb	206	486.7	2.6	**0.0486**	0.003	6.9	ug/L	216	Standard
	Pb	207	410.0	4.9	**0.0433**	0.005	11.5	ug/L	180	Standard
	Pb	208	1804.7	2.7	**0.0475**	0.003	5.4	ug/L	717	Standard
	U	238	45.0	13.3	**-0.0004**	0.001	279.8	ug/L	4	Standard
>	**Bi**	209	462206.0	0.8				ug/L	460343	Standard

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Na	23	5.0	100.0	**-4.2590**	14.576	342.2	mg/L	0	Standard
Mg	24	26429.7	2.8	**32.2858**	1.354	4.2	mg/L	20	Standard
K	39	396.7	3.9	**2.4991**	0.082	3.3	mg/L	22	Standard
Ca	43	96.7	7.9	**7.1952**	1.844	25.6	mg/L	47	Standard
Fe	54	180.8	15.4	**0.0178**	0.022	121.6	mg/L	151	Standard
Fe	57	203.3	16.0	**-0.0787**	0.096	122.2	mg/L	195	Standard
> **Sc-1**	45	32870.6	1.4				mg/L	29647	Standard
Cl	35	203581.4	1.3				ug/L	154152	Standard
Kr	83	2.0	0.0				ug/L	3	Standard
Br	81	6207.9	4.2				ug/L	1607	Standard
P	31	32229.2	1.5				ug/L	22752	Standard
S	34	4830.8	4.5				ug/L	5049	Standard
Sr	88	108.3	30.0				ug/L	87	Standard
C	12	86.7	6.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	47.3	42.6				mg/L	10	Standard
Ho-1	165	46.7	60.9				mg/L	7	Standard
Er	166	56.7	81.5				mg/L	3	Standard
I	127	39314.5	7.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		134.666	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.648	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.472
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.405
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 18:55:38
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67264.1	3.2				ug/L	51024	Standard
	Be	9	51087.7	3.5	**46.0740**	0.786	1.7	ug/L	7	Standard
	Al	27	7974693.7	0.5	**42.5107**	1.182	2.8	ug/L	625	Standard
	Sc	45	31289.0	2.9				ug/L	29647	Standard
	Ti	47	29983.3	1.5	**100.8099**	2.621	2.6	ug/L	57	Standard
	V	51	356976.4	1.6	**50.5633**	0.626	1.2	ug/L	1142	Standard
	Cr	52	371000.0	2.2	**50.0293**	1.004	2.0	ug/L	6628	Standard
	Cr	53	45682.1	3.1	**49.2179**	1.406	2.9	ug/L	430	Standard
	Mn	55	318039.5	1.1	**54.0099**	0.158	0.3	ug/L	603	Standard
	Co	59	338391.0	1.1	**53.1626**	0.493	0.9	ug/L	237	Standard
	Ni	60	94145.4	2.5	**49.2417**	1.028	2.1	ug/L	141	Standard
	Cu	65	92379.1	1.4	**49.5948**	0.289	0.6	ug/L	109	Standard
	Zn	66	54668.5	1.5	**49.6081**	0.589	1.2	ug/L	159	Standard
>	Ge	72	469038.3	1.3				ug/L	474053	Standard
	As	75	54293.6	1.3	**49.5816**	0.207	0.4	ug/L	-34	Standard
	Se	82	5559.0	0.1	**50.6424**	0.722	1.4	ug/L	14	Standard
	Se-1	77	3786.5	1.3	**49.0965**	0.931	1.9	ug/L	55	Standard
>	Ga	71	158.3	25.7				mg/L	50	Standard
	Rb	85	761.7	7.0				ug/L	20	Standard
	Y	89	395591.6	1.3				ug/L	376602	Standard
>	Rh	103	25.0	80.0				ug/L	17	Standard
	Mo	98	251383.1	0.4	**103.0718**	1.215	1.2	ug/L	8	Standard
	Ag	107	306968.8	0.5	**49.8241**	0.634	1.3	ug/L	81	Standard
	Cd	111	100215.1	0.7	**50.0041**	0.742	1.5	mg/L	3	Standard
	Cd	114	243336.5	2.3	**49.1181**	1.543	3.1	ug/L	7	Standard
>	In	115	541813.2	0.8				ug/L	524722	Standard
	Sn	118	281669.0	0.4	**50.5528**	0.296	0.6	ug/L	715	Standard
	Sb	123	222839.5	0.9	**49.3972**	0.805	1.6	ug/L	201	Standard
	Ba	135	91045.1	0.4	**48.5895**	0.562	1.2	ug/L	108	Standard
	Ce	140	61.7	12.4				ug/L	30	Standard
>	Tb	159	817844.5	0.4				ug/L	792236	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	379786.0	0.6	**49.2821**	0.368	0.7	ug/L	9	Standard
	Tl	205	336318.4	0.5	**51.3165**	0.323	0.6	ug/L	0	Standard
	Pb	206	235111.2	1.0	**50.4225**	0.567	1.1	ug/L	216	Standard
	Pb	207	213294.2	0.5	**50.2491**	0.369	0.7	ug/L	180	Standard
	Pb	208	862915.5	0.7	**50.0892**	0.286	0.6	ug/L	717	Standard
	U	238	324915.2	0.1	**51.8469**	0.100	0.2	ug/L	4	Standard
>	Bi	209	464391.0	0.2				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	4073.9	4.4	**5.1949**	0.373	7.2	mg/L	20	Standard
K	39	616.7	11.0	**4.2379**	0.622	14.7	mg/L	22	Standard
Ca	43	71.7	38.4	**2.7208**	6.257	230.0	mg/L	47	Standard
Fe	54	6184.7	3.6	**4.6538**	0.266	5.7	mg/L	151	Standard
Fe	57	1603.4	6.3	**4.0588**	0.310	7.6	mg/L	195	Standard
> **Sc-1**	45	31289.0	2.9				mg/L	29647	Standard
Cl	35	168092.6	0.3				ug/L	154152	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	1803.4	11.3				ug/L	1607	Standard
P	31	25418.0	3.0				ug/L	22752	Standard
S	34	5476.0	0.8				ug/L	5049	Standard
Sr	88	68.3	36.1				ug/L	87	Standard
C	12	76.7	30.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.5	122.8				mg/L	10	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	3	Standard
I	127	2120.2	19.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	92.148		
Al	27	85.021		
Sc	45			
Ti	47	100.810		
V	51	101.127		
Cr	52	100.059		
Cr	53			
Mn	55	108.020		
Co	59	106.325		
Ni	60	98.483		
Cu	65	99.190		
Zn	66	99.216		
> Ge	72		98.942	
As	75	99.163		
Se	82	101.285		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	103.072		
Ag	107	99.648		
Cd	111	100.008		
Cd	114			
> In	115		103.257	
Sn	118	101.106		
Sb	123	98.794		
Ba	135	97.179		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.564		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.178		
U	238	103.694		
> Bi	209		100.879	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 18:58:50
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65086.2	2.0				ug/L	51024	Standard
	Be	9	21.7	58.1	**-0.0010**	0.011	1171.7	ug/L	7	Standard
	Al	27	2008.5	34.3	**0.0013**	0.004	284.1	ug/L	625	Standard
	Sc	45	30751.2	2.4				ug/L	29647	Standard
	Ti	47	41.3	24.7	**-0.0285**	0.034	119.2	ug/L	57	Standard
	V	51	1096.5	3.2	**-0.0144**	0.004	27.7	ug/L	1142	Standard
	Cr	52	6076.9	0.1	**-0.1037**	0.008	7.3	ug/L	6628	Standard
	Cr	53	488.3	13.0	**0.0929**	0.070	75.6	ug/L	430	Standard
	Mn	55	1470.4	24.5	**0.1211**	0.063	51.8	ug/L	603	Standard
	Co	59	206.0	14.6	**-0.0092**	0.005	53.2	ug/L	237	Standard
	Ni	60	120.7	4.2	**-0.0153**	0.002	15.6	ug/L	141	Standard
	Cu	65	142.0	16.7	**0.0093**	0.013	141.3	ug/L	109	Standard
	Zn	66	152.7	7.5	**-0.0944**	0.011	12.1	ug/L	159	Standard
>	**Ge**	72	474934.0	0.8				ug/L	474053	Standard
	As	75	-45.5	82.0	**-0.0158**	0.033	212.2	ug/L	-34	Standard
	Se	82	16.2	50.9	**-0.0227**	0.076	333.7	ug/L	14	Standard
	Se-1	77	66.0	6.9	**0.1132**	0.063	55.7	ug/L	55	Standard
>	**Ga**	71	136.7	9.2				mg/L	50	Standard
	Rb	85	30.0	28.9				ug/L	20	Standard
	Y	89	402114.5	0.5				ug/L	376602	Standard
>	**Rh**	103	21.7	35.3				ug/L	17	Standard
	Mo	98	281.3	33.4	**0.1095**	0.037	34.1	ug/L	8	Standard
	Ag	107	96.3	13.1	**0.0033**	0.002	62.1	ug/L	81	Standard
	Cd	111	10.2	38.2	**0.0019**	0.002	104.1	mg/L	3	Standard
	Cd	114	23.6	19.2	**0.0010**	0.001	99.3	ug/L	7	Standard
>	**In**	115	541583.6	1.8				ug/L	524722	Standard
	Sn	118	860.0	27.1	**0.0652**	0.041	63.3	ug/L	715	Standard
	Sb	123	479.5	22.9	**0.0918**	0.026	27.9	ug/L	201	Standard
	Ba	135	123.3	8.3	**0.0082**	0.005	60.8	ug/L	108	Standard
	Ce	140	23.3	65.5				ug/L	30	Standard
>	**Tb**	159	792193.7	1.1				ug/L	792236	Standard
	Ho	165	13.3	78.1				ug/L	7	Standard
	Tl	203	66.0	21.2	**0.0060**	0.002	29.5	ug/L	9	Standard
	Tl	205	46.7	12.4	**-0.0007**	0.001	132.6	ug/L	0	Standard
	Pb	206	228.3	5.2	**-0.0071**	0.002	32.1	ug/L	216	Standard
	Pb	207	200.3	2.5	**-0.0063**	0.001	19.4	ug/L	180	Standard
	Pb	208	858.7	6.2	**-0.0078**	0.003	36.1	ug/L	717	Standard
	U	238	38.3	37.5	**-0.0014**	0.002	161.1	ug/L	4	Standard
>	**Bi**	209	462016.2	0.6				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	36.7	70.0	**0.0029**	0.034	1195.5	mg/L	20	Standard
K	39	18.3	56.8	**-0.0943**	0.072	76.9	mg/L	22	Standard
Ca	43	45.0	22.2	**-3.0781**	2.040	66.3	mg/L	47	Standard
Fe	54	114.4	7.6	**-0.0252**	0.008	31.9	mg/L	151	Standard
Fe	57	173.3	9.3	**-0.1300**	0.041	31.6	mg/L	195	Standard
Sc-1	45	30751.2	2.4				mg/L	29647	Standard
Cl	35	167486.4	2.8				ug/L	154152	Standard
Kr	83	2.0	86.6				ug/L	3	Standard
Br	81	1856.8	2.2				ug/L	1607	Standard
P	31	26229.4	1.8				ug/L	22752	Standard
S	34	5394.3	3.3				ug/L	5049	Standard
Sr	88	46.7	37.6				ug/L	87	Standard
C	12	50.0	20.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.9	187.9				mg/L	10	Standard
Ho-1	165	13.3	78.1				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	1466.7	5.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.186	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.213
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.363
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, June 16, 2016 19:02:02
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62105.4	2.6				ug/L	51024	Standard
	Be	9	230.0	20.7	**0.2030**	0.041	20.0	ug/L	7	Standard
	Al	27	2411.9	57.3	**0.0040**	0.008	188.2	ug/L	625	Standard
	Sc	45	29320.0	1.0				ug/L	29647	Standard
	Ti	47	44.0	15.9	**-0.0143**	0.023	160.1	ug/L	57	Standard
	V	51	3629.6	1.0	**0.3604**	0.013	3.7	ug/L	1142	Standard
	Cr	52	11639.8	0.7	**0.7104**	0.026	3.6	ug/L	6628	Standard
	Cr	53	1218.4	6.6	**0.9247**	0.069	7.5	ug/L	430	Standard
	Mn	55	4165.6	11.2	**0.6000**	0.079	13.2	ug/L	603	Standard
	Co	59	2679.2	3.3	**0.3905**	0.015	4.0	ug/L	237	Standard
	Ni	60	2918.9	1.9	**1.4896**	0.048	3.2	ug/L	141	Standard
	Cu	65	1533.7	1.1	**0.7788**	0.010	1.3	ug/L	109	Standard
	Zn	66	7393.8	1.4	**6.6758**	0.118	1.8	ug/L	159	Standard
>	**Ge**	72	457738.9	1.6				ug/L	474053	Standard
	As	75	382.8	8.7	**0.3830**	0.030	7.9	ug/L	-34	Standard
	Se	82	57.3	9.5	**0.3683**	0.054	14.6	ug/L	14	Standard
	Se-1	77	79.7	6.9	**0.3297**	0.074	22.6	ug/L	55	Standard
>	**Ga**	71	103.3	23.9				mg/L	50	Standard
	Rb	85	18.3	41.7				ug/L	20	Standard
	Y	89	375631.5	1.4				ug/L	376602	Standard
>	**Rh**	103	10.0	86.6				ug/L	17	Standard
	Mo	98	122.4	54.4	**0.0465**	0.029	61.8	ug/L	8	Standard
	Ag	107	2330.2	1.4	**0.3786**	0.008	2.1	ug/L	81	Standard
	Cd	111	467.2	1.7	**0.2376**	0.006	2.6	mg/L	3	Standard
	Cd	114	1116.8	1.3	**0.2291**	0.004	1.8	ug/L	7	Standard
>	**In**	115	524377.5	1.0				ug/L	524722	Standard
	Sn	118	430.0	17.1	**-0.0096**	0.013	134.4	ug/L	715	Standard
	Sb	123	1783.9	4.5	**0.3940**	0.022	5.6	ug/L	201	Standard
	Ba	135	1250.7	1.9	**0.6328**	0.015	2.4	ug/L	108	Standard
	Ce	140	8.3	91.7				ug/L	30	Standard
>	**Tb**	159	782327.7	0.6				ug/L	792236	Standard
	Ho	165	11.7	107.9				ug/L	7	Standard
	Tl	203	644.0	4.6	**0.0829**	0.005	5.6	ug/L	9	Standard
	Tl	205	603.3	8.3	**0.0864**	0.009	9.9	ug/L	0	Standard
	Pb	206	1176.0	6.8	**0.2020**	0.018	8.8	ug/L	216	Standard
	Pb	207	1021.4	8.8	**0.1927**	0.023	12.1	ug/L	180	Standard
	Pb	208	4081.2	6.5	**0.1848**	0.017	9.4	ug/L	717	Standard
	U	238	2503.2	1.2	**0.4011**	0.007	1.8	ug/L	4	Standard
>	**Bi**	209	453995.6	0.8				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	40.0	25.0	**0.0095**	0.013	138.3	mg/L	20	Standard
K	39	13.3	43.3	**-0.1249**	0.045	36.2	mg/L	22	Standard
Ca	43	35.0	28.6	**-4.9048**	2.432	49.6	mg/L	47	Standard
Fe	54	120.6	31.6	**-0.0158**	0.032	201.6	mg/L	151	Standard
Fe	57	148.3	13.6	**-0.1825**	0.065	35.6	mg/L	195	Standard
Sc-1	45	29320.0	1.0				mg/L	29647	Standard
Cl	35	160593.3	0.6				ug/L	154152	Standard
Kr	83	0.3	173.2				ug/L	3	Standard
Br	81	1753.4	6.3				ug/L	1607	Standard
P	31	18406.2	0.9				ug/L	22752	Standard
S	34	5287.6	2.4				ug/L	5049	Standard
Sr	88	66.7	18.9				ug/L	87	Standard
C	12	56.7	36.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	13.0	46.6				mg/L	10	Standard
Ho-1	165	11.7	107.9				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	3	Standard
I	127	1111.7	9.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	101.480		
Al	27			
Sc	45			
Ti	47			
V	51	90.091		
Cr	52	88.800		
Cr	53			
Mn	55	120.007		
Co	59	97.613		
Ni	60	93.098		
Cu	65	97.350		
Zn	66	106.813		
Ge	72		96.559	
As	75	95.761		
Se	82	92.069		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	94.641		
Cd	111	99.021		
Cd	114			
> In	115			99.934
Sn	118			
Sb	123	98.503		
Ba	135	84.376		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	103.666		
Tl	205			
Pb	206			
Pb	207			
Pb	208	92.383		
U	238	100.273		
> Bi	209			98.621
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
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Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: PBW 42 WG572730-03
Sample Date/Time: Thursday, June 16, 2016 19:05:16
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62749.7	0.4				ug/L	51024	Standard
	Be	9	18.3	95.8	**-0.0034**	0.017	498.2	ug/L	7	Standard
	Al	27	45563.5	4.1	**0.2505**	0.010	4.1	ug/L	625	Standard
	Sc	45	30499.0	0.2				ug/L	29647	Standard
	Ti	47	51.3	19.1	**0.0066**	0.033	492.2	ug/L	57	Standard
	V	51	1097.4	4.3	**-0.0126**	0.007	55.7	ug/L	1142	Standard
	Cr	52	7963.4	1.0	**0.1642**	0.013	7.9	ug/L	6628	Standard
	Cr	53	896.7	4.5	**0.5418**	0.048	8.8	ug/L	430	Standard
	Mn	55	2548.5	1.6	**0.3068**	0.006	2.0	ug/L	603	Standard
	Co	59	285.7	3.7	**0.0036**	0.002	42.0	ug/L	237	Standard
	Ni	60	410.7	8.1	**0.1371**	0.018	13.2	ug/L	141	Standard
	Cu	65	253.3	2.8	**0.0699**	0.004	5.6	ug/L	109	Standard
	Zn	66	1271.7	3.2	**0.9258**	0.037	4.0	ug/L	159	Standard
>	**Ge**	72	469694.2	0.4				ug/L	474053	Standard
	As	75	1524.9	4.2	**1.4151**	0.063	4.5	ug/L	-34	Standard
	Se	82	670.0	3.5	**5.9461**	0.237	4.0	ug/L	14	Standard
	Se-1	77	66.0	18.4	**0.1230**	0.163	132.4	ug/L	55	Standard
>	**Ga**	71	123.3	16.4				mg/L	50	Standard
	Rb	85	295.0	3.4				ug/L	20	Standard
	Y	89	394476.0	3.2				ug/L	376602	Standard
>	**Rh**	103	20.0	66.1				ug/L	17	Standard
	Mo	98	84.7	10.3	**0.0293**	0.004	12.7	ug/L	8	Standard
	Ag	107	83.0	7.9	**0.0012**	0.001	88.8	ug/L	81	Standard
	Cd	111	13.9	21.7	**0.0037**	0.001	39.9	mg/L	3	Standard
	Cd	114	54.3	34.3	**0.0072**	0.004	52.7	ug/L	7	Standard
>	**In**	115	540141.2	0.4				ug/L	524722	Standard
	Sn	118	648.3	6.2	**0.0275**	0.007	26.0	ug/L	715	Standard
	Sb	123	144.9	16.0	**0.0174**	0.005	30.4	ug/L	201	Standard
	Ba	135	21260.9	1.4	**11.3366**	0.117	1.0	ug/L	108	Standard
	Ce	140	155.0	8.5				ug/L	30	Standard
>	**Tb**	159	801981.8	0.8				ug/L	792236	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	205.7	5.0	**0.0243**	0.001	5.5	ug/L	9	Standard
	Tl	205	185.0	17.7	**0.0206**	0.005	24.4	ug/L	0	Standard
	Pb	206	277.0	10.2	**0.0035**	0.006	164.3	ug/L	216	Standard
	Pb	207	230.3	3.9	**0.0008**	0.002	210.4	ug/L	180	Standard
	Pb	208	975.0	1.4	**-0.0009**	0.000	49.0	ug/L	717	Standard
	U	238	16.3	25.5	**-0.0050**	0.001	13.9	ug/L	4	Standard
>	**Bi**	209	461335.7	0.7				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	403.3	18.0	**0.4864**	0.096	19.7	mg/L	20	Standard
K	39	18.3	56.8	**-0.0922**	0.077	83.3	mg/L	22	Standard
Ca	43	38.3	27.2	**-4.4783**	2.388	53.3	mg/L	47	Standard
Fe	54	151.1	15.7	**0.0044**	0.018	419.9	mg/L	151	Standard
Fe	57	180.0	9.6	**-0.1053**	0.052	49.8	mg/L	195	Standard
> **Sc-1**	45	30499.0	0.2				mg/L	29647	Standard
Cl	35	167221.1	1.1				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	161399.3	3.9				ug/L	1607	Standard
P	31	23832.1	1.6				ug/L	22752	Standard
S	34	5314.3	4.0				ug/L	5049	Standard
Sr	88	105.0	12.6				ug/L	87	Standard
C	12	53.3	43.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.5	177.6				mg/L	10	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	4855.8	5.9				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		122.980	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.081	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.939
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.216
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: PBW 42 WG572730-03
Report Date/Time: Thursday, June 16, 2016 19:07:33
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Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: LCSW 42 WG572730-04
Sample Date/Time: Thursday, June 16, 2016 19:08:28
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	62985.7	0.9				ug/L	51024	Standard
	Be	9	48407.2	1.0	**46.6239**	0.599	1.3	ug/L	7	Standard
	Al	27	15242.7	3.1	**0.0770**	0.003	4.2	ug/L	625	Standard
	Sc	45	31167.0	1.6				ug/L	29647	Standard
	Ti	47	51.0	3.9	**0.0042**	0.006	137.2	ug/L	57	Standard
	V	51	362150.1	1.2	**50.8470**	1.498	2.9	ug/L	1142	Standard
	Cr	52	375631.9	0.2	**50.2056**	0.853	1.7	ug/L	6628	Standard
	Cr	53	46496.2	1.5	**49.6449**	0.253	0.5	ug/L	430	Standard
	Mn	55	324366.5	2.3	**54.5814**	0.385	0.7	ug/L	603	Standard
	Co	59	341108.8	1.8	**53.1006**	0.301	0.6	ug/L	237	Standard
	Ni	60	95614.1	1.0	**49.5608**	0.383	0.8	ug/L	141	Standard
	Cu	65	93513.4	0.6	**49.7560**	0.725	1.5	ug/L	109	Standard
	Zn	66	55921.0	0.3	**50.2961**	0.929	1.8	ug/L	159	Standard
>	Ge	72	473336.6	1.7				ug/L	474053	Standard
	As	75	54052.4	0.1	**48.9231**	0.858	1.8	ug/L	-34	Standard
	Se	82	5549.3	0.5	**50.0944**	0.667	1.3	ug/L	14	Standard
	Se-1	77	3851.2	1.4	**49.4942**	1.249	2.5	ug/L	55	Standard
>	Ga	71	148.3	5.1				mg/L	50	Standard
	Rb	85	50.0	45.8				ug/L	20	Standard
	Y	89	393664.1	1.4				ug/L	376602	Standard
>	Rh	103	30.0	66.7				ug/L	17	Standard
	Mo	98	67.7	16.2	**0.0222**	0.004	19.7	ug/L	8	Standard
	Ag	107	9538.7	1.3	**1.5370**	0.009	0.6	ug/L	81	Standard
	Cd	111	98094.4	0.8	**48.9748**	0.877	1.8	mg/L	3	Standard
	Cd	114	242274.5	1.2	**48.9293**	1.051	2.1	ug/L	7	Standard
>	In	115	541531.8	1.4				ug/L	524722	Standard
	Sn	118	718.4	12.9	**0.0399**	0.018	44.4	ug/L	715	Standard
	Sb	123	213208.4	0.4	**47.2901**	0.830	1.8	ug/L	201	Standard
	Ba	135	91061.5	0.2	**48.6273**	0.710	1.5	ug/L	108	Standard
	Ce	140	75.0	30.6				ug/L	30	Standard
>	Tb	159	801949.7	1.3				ug/L	792236	Standard
	Ho	165	15.0	66.7				ug/L	7	Standard
	Tl	203	366890.3	0.3	**47.3558**	0.332	0.7	ug/L	9	Standard
	Tl	205	325136.0	2.3	**49.3487**	1.280	2.6	ug/L	0	Standard
	Pb	206	237911.3	0.3	**50.7518**	0.233	0.5	ug/L	216	Standard
	Pb	207	208877.0	1.0	**48.9436**	0.182	0.4	ug/L	180	Standard
	Pb	208	858938.6	1.3	**49.5964**	0.972	2.0	ug/L	717	Standard
	U	238	311185.8	0.3	**49.3920**	0.274	0.6	ug/L	4	Standard
>	Bi	209	466882.1	0.8				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	43.3	37.1	**0.0108**	0.021	197.0	mg/L	20	Standard
K	39	21.7	26.6	**-0.0712**	0.040	55.8	mg/L	22	Standard
Ca	43	35.0	37.8	**-5.4027**	2.947	54.5	mg/L	47	Standard
Fe	54	122.0	30.6	**-0.0208**	0.028	132.3	mg/L	151	Standard
Fe	57	123.3	18.3	**-0.2836**	0.067	23.8	mg/L	195	Standard
Sc-1	45	31167.0	1.6				mg/L	29647	Standard
Cl	35	163506.3	1.5				ug/L	154152	Standard
Kr	83	0.3	173.2				ug/L	3	Standard
Br	81	5531.1	27.3				ug/L	1607	Standard
P	31	23947.2	1.0				ug/L	22752	Standard
S	34	5137.5	2.8				ug/L	5049	Standard
Sr	88	76.7	46.3				ug/L	87	Standard
C	12	70.0	14.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	13.2	44.9				mg/L	10	Standard
Ho-1	165	15.0	66.7				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	1283.4	6.1				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		123.443	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.849	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: LCSW 42 WG572730-04
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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.204
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.421
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606066401 WG572730-01
Sample Date/Time: Thursday, June 16, 2016 19:12:30
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75454.2	2.8				ug/L	51024	Standard
	Be	9	20.0	90.1	**-0.0048**	0.015	318.2	ug/L	7	Standard
	Al	27	11047678.0	1.9	**52.4883**	1.233	2.3	ug/L	625	Standard
	Sc	45	29264.9	1.3				ug/L	29647	Standard
	Ti	47	190.7	4.0	**0.5084**	0.037	7.3	ug/L	57	Standard
	V	51	1712.7	18.3	**0.0872**	0.046	52.6	ug/L	1142	Standard
	Cr	52	16604.1	1.9	**1.4659**	0.021	1.4	ug/L	6628	Standard
	Cr	53	9623.1	1.9	**10.5512**	0.372	3.5	ug/L	430	Standard
	Mn	55	18349.1	1.7	**3.1531**	0.090	2.8	ug/L	603	Standard
	Co	59	837.4	4.2	**0.0969**	0.005	4.7	ug/L	237	Standard
	Ni	60	47686.6	1.9	**26.1478**	0.400	1.5	ug/L	141	Standard
	Cu	65	35936.9	2.3	**20.2125**	0.174	0.9	ug/L	109	Standard
	Zn	66	7845.4	2.5	**7.2754**	0.080	1.1	ug/L	159	Standard
>	**Ge**	72	446804.8	1.5				ug/L	474053	Standard
	As	75	226.8	62.9	**0.2410**	0.135	55.9	ug/L	-34	Standard
	Se	82	88.3	14.1	**0.6770**	0.108	16.0	ug/L	14	Standard
	Se-1	77	1010.0	4.4	**13.2164**	0.770	5.8	ug/L	55	Standard
>	**Ga**	71	121.7	4.7				mg/L	50	Standard
	Rb	85	9374.6	1.9				ug/L	20	Standard
	Y	89	379651.4	1.2				ug/L	376602	Standard
>	**Rh**	103	176.7	43.0				ug/L	17	Standard
	Mo	98	6942.1	1.1	**3.0258**	0.008	0.3	ug/L	8	Standard
	Ag	107	107.7	10.4	**0.0063**	0.002	31.0	ug/L	81	Standard
	Cd	111	16.0	28.8	**0.0053**	0.002	45.3	mg/L	3	Standard
	Cd	114	155.3	55.3	**0.0296**	0.019	62.9	ug/L	7	Standard
>	**In**	115	508746.6	0.9				ug/L	524722	Standard
	Sn	118	32234.3	2.4	**6.0825**	0.133	2.2	ug/L	715	Standard
	Sb	123	2505.0	15.1	**0.5762**	0.084	14.6	ug/L	201	Standard
	Ba	135	56364.3	0.3	**32.0167**	0.382	1.2	ug/L	108	Standard
	Ce	140	273.3	12.5				ug/L	30	Standard
>	**Tb**	159	786168.7	0.3				ug/L	792236	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	162.7	17.5	**0.0211**	0.005	21.6	ug/L	9	Standard
	Tl	205	136.7	17.3	**0.0156**	0.004	27.5	ug/L	0	Standard
	Pb	206	51660.3	0.9	**12.3691**	0.134	1.1	ug/L	216	Standard
	Pb	207	43372.0	1.0	**11.4048**	0.082	0.7	ug/L	180	Standard
	Pb	208	183979.7	0.6	**11.9203**	0.168	1.4	ug/L	717	Standard
	U	238	40.0	22.9	**-0.0004**	0.002	429.9	ug/L	4	Standard
>	**Bi**	209	414575.6	1.7				ug/L	460343	Standard

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Na	23	3.3	173.2	**-0.6680**	19.261	2883.4	mg/L	0	Standard
Mg	24	393015.0	2.1	**539.7437**	8.154	1.5	mg/L	20	Standard
K	39	755.0	20.2	**5.6021**	1.177	21.0	mg/L	22	Standard
Ca	43	273.3	16.4	**51.4216**	9.712	18.9	mg/L	47	Standard
Fe	54	153.2	8.8	**0.0113**	0.013	111.5	mg/L	151	Standard
Fe	57	410.0	9.5	**0.6384**	0.113	17.7	mg/L	195	Standard
> **Sc-1**	45	29264.9	1.3				mg/L	29647	Standard
Cl	35	947330.3	0.6				ug/L	154152	Standard
Kr	83	2.7	86.6				ug/L	3	Standard
Br	81	16345.5	3.0				ug/L	1607	Standard
P	31	24364.6	0.6				ug/L	22752	Standard
S	34	5329.3	1.4				ug/L	5049	Standard
Sr	88	195.0	4.4				ug/L	87	Standard
C	12	283.3	24.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	0	Standard
Dy	164	16.0	130.4				mg/L	10	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	339108.5	7.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		147.879	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.252	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.955
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.058
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606066401DP WG572730-05
Sample Date/Time: Thursday, June 16, 2016 19:15:41
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82599.5	0.8				ug/L	51024	Standard
	Be	9	18.3	31.5	**-0.0076**	0.004	53.8	ug/L	7	Standard
	Al	27	12101738.6	2.4	**52.5022**	0.943	1.8	ug/L	625	Standard
	Sc	45	29381.8	2.9				ug/L	29647	Standard
	Ti	47	224.3	6.3	**0.6337**	0.051	8.1	ug/L	57	Standard
	V	51	1757.9	10.9	**0.0962**	0.030	31.3	ug/L	1142	Standard
	Cr	52	17254.5	0.4	**1.5806**	0.019	1.2	ug/L	6628	Standard
	Cr	53	9484.6	4.9	**10.4776**	0.447	4.3	ug/L	430	Standard
	Mn	55	18275.7	1.8	**3.1668**	0.077	2.4	ug/L	603	Standard
	Co	59	934.4	2.3	**0.1143**	0.005	4.1	ug/L	237	Standard
	Ni	60	50219.4	0.9	**27.7712**	0.300	1.1	ug/L	141	Standard
	Cu	65	38180.1	1.8	**21.6588**	0.226	1.0	ug/L	109	Standard
	Zn	66	9011.3	2.3	**8.4634**	0.126	1.5	ug/L	159	Standard
>	**Ge**	72	443106.2	0.8				ug/L	474053	Standard
	As	75	276.8	42.6	**0.2919**	0.111	38.1	ug/L	-34	Standard
	Se	82	109.2	13.4	**0.8866**	0.132	14.9	ug/L	14	Standard
	Se-1	77	1030.4	1.0	**13.6099**	0.054	0.4	ug/L	55	Standard
>	**Ga**	71	125.0	10.6				mg/L	50	Standard
	Rb	85	9914.9	0.9				ug/L	20	Standard
	Y	89	378132.1	0.5				ug/L	376602	Standard
>	**Rh**	103	276.7	11.8				ug/L	17	Standard
	Mo	98	7350.8	1.1	**3.1941**	0.056	1.8	ug/L	8	Standard
	Ag	107	113.3	9.2	**0.0072**	0.002	27.2	ug/L	81	Standard
	Cd	111	7.2	44.2	**0.0006**	0.002	301.0	mg/L	3	Standard
	Cd	114	112.0	53.6	**0.0203**	0.013	64.2	ug/L	7	Standard
>	**In**	115	510414.8	1.0				ug/L	524722	Standard
	Sn	118	31860.1	0.6	**5.9914**	0.071	1.2	ug/L	715	Standard
	Sb	123	1301.1	10.9	**0.2913**	0.031	10.6	ug/L	201	Standard
	Ba	135	58474.3	1.0	**33.1066**	0.180	0.5	ug/L	108	Standard
	Ce	140	143.3	4.0				ug/L	30	Standard
>	**Tb**	159	793633.3	0.5				ug/L	792236	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	126.3	11.6	**0.0156**	0.002	13.8	ug/L	9	Standard
	Tl	205	108.3	7.1	**0.0105**	0.001	12.1	ug/L	0	Standard
	Pb	206	55773.5	1.1	**13.2134**	0.113	0.9	ug/L	216	Standard
	Pb	207	47080.7	0.8	**12.2506**	0.066	0.5	ug/L	180	Standard
	Pb	208	190215.8	0.7	**12.1921**	0.079	0.7	ug/L	717	Standard
	U	238	29.3	17.2	**-0.0024**	0.001	37.4	ug/L	4	Standard
>	**Bi**	209	419055.7	0.3				ug/L	460343	Standard

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Na	23	10.0	50.0	**-22.7084**	17.142	75.5	mg/L	0	Standard
Mg	24	418232.9	1.5	**572.3635**	15.570	2.7	mg/L	20	Standard
K	39	648.3	17.8	**4.7577**	0.876	18.4	mg/L	22	Standard
Ca	43	226.7	8.4	**40.2176**	3.679	9.1	mg/L	47	Standard
Fe	54	135.1	14.9	**-0.0042**	0.016	368.6	mg/L	151	Standard
Fe	57	428.3	6.4	**0.6912**	0.080	11.6	mg/L	195	Standard
Sc-1	45	29381.8	2.9				mg/L	29647	Standard
Cl	35	974394.4	0.6				ug/L	154152	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	16325.5	4.8				ug/L	1607	Standard
P	31	25179.2	0.8				ug/L	22752	Standard
S	34	5427.6	0.7				ug/L	5049	Standard
Sr	88	171.7	19.8				ug/L	87	Standard
C	12	336.7	27.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	12.9	93.1				mg/L	10	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	345162.2	8.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		161.883	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.472	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.273
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.031
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606072903 WG572730-02
Sample Date/Time: Thursday, June 16, 2016 19:18:52
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83167.6	0.4				ug/L	51024	Standard
	Be	9	1595.1	11.9	**1.1433**	0.143	12.5	ug/L	7	Standard
	Al	27	12508760.9	0.4	**53.9014**	0.277	0.5	ug/L	625	Standard
	Sc	45	32636.8	2.2				ug/L	29647	Standard
	Ti	47	734.7	25.1	**2.2005**	0.603	27.4	ug/L	57	Standard
	V	51	2647.4	9.7	**0.1914**	0.035	18.3	ug/L	1142	Standard
	Cr	52	10901.3	2.2	**0.5035**	0.035	7.0	ug/L	6628	Standard
	Cr	53	1756.8	5.0	**1.3940**	0.093	6.7	ug/L	430	Standard
	Mn	55	2418538.1	0.3	**393.4562**	2.564	0.7	ug/L	603	Standard
	Co	59	167227.2	1.2	**25.0953**	0.408	1.6	ug/L	237	Standard
	Ni	60	19549.3	0.9	**9.7135**	0.121	1.2	ug/L	141	Standard
	Cu	65	6980.3	2.4	**3.5215**	0.098	2.8	ug/L	109	Standard
	Zn	66	33084.1	0.4	**28.6038**	0.229	0.8	ug/L	159	Standard
>	**Ge**	72	490606.8	0.4				ug/L	474053	Standard
	As	75	126.0	22.9	**0.1350**	0.026	18.9	ug/L	-34	Standard
	Se	82	91.9	23.2	**0.6344**	0.188	29.7	ug/L	14	Standard
	Se-1	77	154.7	9.2	**1.2017**	0.186	15.5	ug/L	55	Standard
>	**Ga**	71	938.4	4.7				mg/L	50	Standard
	Rb	85	17583.5	1.7				ug/L	20	Standard
	Y	89	717044.0	1.5				ug/L	376602	Standard
>	**Rh**	103	161.7	28.1				ug/L	17	Standard
	Mo	98	55.5	8.7	**0.0173**	0.002	11.5	ug/L	8	Standard
	Ag	107	113.0	9.4	**0.0061**	0.002	26.4	ug/L	81	Standard
	Cd	111	309.2	2.3	**0.1520**	0.004	2.4	mg/L	3	Standard
	Cd	114	755.2	14.7	**0.1496**	0.023	15.3	ug/L	7	Standard
>	**In**	115	538550.6	0.6				ug/L	524722	Standard
	Sn	118	861.7	3.5	**0.0664**	0.005	7.2	ug/L	715	Standard
	Sb	123	1408.2	6.3	**0.2992**	0.018	6.0	ug/L	201	Standard
	Ba	135	39659.2	1.6	**21.2618**	0.456	2.1	ug/L	108	Standard
	Ce	140	1381297.9	0.5				ug/L	30	Standard
>	**Tb**	159	851012.3	2.0				ug/L	792236	Standard
	Ho	165	27889.0	1.7				ug/L	7	Standard
	Tl	203	294.7	3.0	**0.0347**	0.002	6.0	ug/L	9	Standard
	Tl	205	265.0	1.9	**0.0316**	0.001	3.8	ug/L	0	Standard
	Pb	206	5868.1	0.6	**1.1726**	0.027	2.3	ug/L	216	Standard
	Pb	207	4864.8	1.2	**1.0656**	0.042	4.0	ug/L	180	Standard
	Pb	208	20514.5	1.0	**1.1052**	0.038	3.5	ug/L	717	Standard
	U	238	2495.2	0.6	**0.3809**	0.010	2.6	ug/L	4	Standard
>	**Bi**	209	476253.4	2.7				ug/L	460343	Standard

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Na	23	11.7	24.7	**-24.3418**	9.212	37.8	mg/L	0	Standard
Mg	24	2530.2	1.8	**3.0712**	0.030	1.0	mg/L	20	Standard
K	39	120.0	8.3	**0.6043**	0.087	14.3	mg/L	22	Standard
Ca	43	210.0	28.9	**31.2136**	11.780	37.7	mg/L	47	Standard
Fe	54	1764.1	4.7	**1.1881**	0.059	5.0	mg/L	151	Standard
Fe	57	758.4	15.5	**1.4817**	0.281	18.9	mg/L	195	Standard
Sc-1	45	32636.8	2.2				mg/L	29647	Standard
Cl	35	300327.3	0.4				ug/L	154152	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	5971.2	0.5				ug/L	1607	Standard
P	31	27339.7	3.0				ug/L	22752	Standard
S	34	4589.0	1.4				ug/L	5049	Standard
Sr	88	426.7	18.4				ug/L	87	Standard
C	12	223.3	9.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	48154.5	2.6				mg/L	10	Standard
Ho-1	165	27889.0	1.7				mg/L	7	Standard
Er	166	24125.9	1.2				mg/L	3	Standard
I	127	233033.3	7.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		162.997	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.492	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606072903 WG572730-02
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.635
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.456
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606072903 WG572730-02
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Method 6020 - Summary Report

Sample ID: L1606072903S WG572730-06
Sample Date/Time: Thursday, June 16, 2016 19:22:04
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84593.9	1.7				ug/L	51024	Standard
	Be	9	63747.2	1.4	**45.7285**	1.409	3.1	ug/L	7	Standard
	Al	27	12163442.1	0.7	**51.5412**	1.132	2.2	ug/L	625	Standard
	Sc	45	33602.2	1.6				ug/L	29647	Standard
	Ti	47	659.7	12.0	**2.0785**	0.257	12.4	ug/L	57	Standard
	V	51	353641.1	0.6	**50.6609**	2.238	4.4	ug/L	1142	Standard
	Cr	52	356717.6	1.1	**48.6215**	2.101	4.3	ug/L	6628	Standard
	Cr	53	45185.6	0.4	**49.2470**	2.494	5.1	ug/L	430	Standard
	Mn	55	2601278.5	0.7	**447.6689**	18.661	4.2	ug/L	603	Standard
	Co	59	487177.6	1.1	**77.4106**	2.935	3.8	ug/L	237	Standard
	Ni	60	108783.5	0.6	**57.5580**	2.469	4.3	ug/L	141	Standard
	Cu	65	95167.6	1.2	**51.6700**	2.084	4.0	ug/L	109	Standard
	Zn	66	84097.8	1.1	**77.2971**	3.015	3.9	ug/L	159	Standard
>	**Ge**	72	464397.8	4.8				ug/L	474053	Standard
	As	75	53679.2	1.0	**49.5736**	2.027	4.1	ug/L	-34	Standard
	Se	82	5551.8	0.7	**51.1533**	2.421	4.7	ug/L	14	Standard
	Se-1	77	3791.1	3.4	**49.6831**	1.424	2.9	ug/L	55	Standard
>	**Ga**	71	958.4	5.4				mg/L	50	Standard
	Rb	85	16624.1	3.0				ug/L	20	Standard
	Y	89	707625.8	0.5				ug/L	376602	Standard
>	**Rh**	103	125.0	8.0				ug/L	17	Standard
	Mo	98	62.1	4.6	**0.0194**	0.002	8.1	ug/L	8	Standard
	Ag	107	8913.6	1.8	**1.4061**	0.009	0.7	ug/L	81	Standard
	Cd	111	96671.0	1.6	**47.2862**	1.085	2.3	mg/L	3	Standard
	Cd	114	237983.0	1.9	**47.0816**	0.696	1.5	ug/L	7	Standard
>	**In**	115	552753.1	1.8				ug/L	524722	Standard
	Sn	118	638.3	15.9	**0.0231**	0.018	79.7	ug/L	715	Standard
	Sb	123	215408.0	1.4	**46.8023**	0.239	0.5	ug/L	201	Standard
	Ba	135	124502.1	0.5	**65.1569**	0.974	1.5	ug/L	108	Standard
	Ce	140	1314417.9	1.3				ug/L	30	Standard
>	**Tb**	159	881280.8	1.9				ug/L	792236	Standard
	Ho	165	27413.1	3.0				ug/L	7	Standard
	Tl	203	374882.9	0.8	**46.6863**	0.358	0.8	ug/L	9	Standard
	Tl	205	338218.3	0.5	**49.5337**	0.988	2.0	ug/L	0	Standard
	Pb	206	247963.0	0.9	**51.0419**	0.964	1.9	ug/L	216	Standard
	Pb	207	216265.5	0.6	**48.8980**	0.689	1.4	ug/L	180	Standard
	Pb	208	876968.0	0.5	**48.8596**	0.973	2.0	ug/L	717	Standard
	U	238	329321.5	0.3	**50.4388**	0.916	1.8	ug/L	4	Standard
>	**Bi**	209	483914.0	1.5				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.7187**	8.199	143.4	mg/L	0	Standard
Mg	24	2360.2	1.3	**2.7784**	0.056	2.0	mg/L	20	Standard
K	39	110.0	31.5	**0.5143**	0.242	47.0	mg/L	22	Standard
Ca	43	180.0	27.4	**23.8358**	9.598	40.3	mg/L	47	Standard
Fe	54	1737.6	2.8	**1.1314**	0.022	1.9	mg/L	151	Standard
Fe	57	686.7	6.3	**1.2285**	0.107	8.7	mg/L	195	Standard
Sc-1	45	33602.2	1.6				mg/L	29647	Standard
Cl	35	293323.6	1.0				ug/L	154152	Standard
Kr	83	1.7	124.9				ug/L	3	Standard
Br	81	5094.2	9.2				ug/L	1607	Standard
P	31	27336.3	1.5				ug/L	22752	Standard
S	34	4702.4	5.5				ug/L	5049	Standard
Sr	88	400.0	11.5				ug/L	87	Standard
C	12	270.0	13.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	45484.4	2.9				mg/L	10	Standard
Ho-1	165	27413.1	3.0				mg/L	7	Standard
Er	166	23461.5	1.2				mg/L	3	Standard
I	127	221641.3	5.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		165.792	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.963	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	105.342
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	105.120
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606072903SD WG572730-07
Sample Date/Time: Thursday, June 16, 2016 19:25:15
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86461.0	1.0				ug/L	51024	Standard
	Be	9	64063.5	1.0	**44.9486**	0.413	0.9	ug/L	7	Standard
	Al	27	12456061.3	1.7	**51.6274**	0.457	0.9	ug/L	625	Standard
	Sc	45	32062.2	2.4				ug/L	29647	Standard
	Ti	47	858.4	8.8	**2.9028**	0.272	9.4	ug/L	57	Standard
	V	51	359033.7	1.5	**54.0078**	1.033	1.9	ug/L	1142	Standard
	Cr	52	357394.7	0.2	**51.1915**	0.354	0.7	ug/L	6628	Standard
	Cr	53	45598.6	3.3	**52.1815**	1.498	2.9	ug/L	430	Standard
	Mn	55	2668759.8	1.0	**482.1929**	4.954	1.0	ug/L	603	Standard
	Co	59	502894.6	1.2	**83.9097**	1.409	1.7	ug/L	237	Standard
	Ni	60	107927.8	1.4	**59.9510**	0.489	0.8	ug/L	141	Standard
	Cu	65	93853.1	1.2	**53.5019**	0.490	0.9	ug/L	109	Standard
	Zn	66	83974.7	0.9	**81.0494**	0.217	0.3	ug/L	159	Standard
>	**Ge**	72	441763.7	0.6				ug/L	474053	Standard
	As	75	55613.6	0.2	**53.9212**	0.243	0.5	ug/L	-34	Standard
	Se	82	6086.3	0.3	**58.8898**	0.200	0.3	ug/L	14	Standard
	Se-1	77	3831.8	0.4	**52.8020**	0.183	0.3	ug/L	55	Standard
>	**Ga**	71	981.7	7.0				mg/L	50	Standard
	Rb	85	19140.4	1.5				ug/L	20	Standard
	Y	89	713271.6	1.4				ug/L	376602	Standard
>	**Rh**	103	201.7	43.7				ug/L	17	Standard
	Mo	98	570.8	5.1	**0.2183**	0.009	3.9	ug/L	8	Standard
	Ag	107	9150.1	1.0	**1.4089**	0.031	2.2	ug/L	81	Standard
	Cd	111	99261.8	1.0	**47.3819**	0.778	1.6	mg/L	3	Standard
	Cd	114	244188.0	1.4	**47.1444**	0.226	0.5	ug/L	7	Standard
>	**In**	115	566399.8	1.8				ug/L	524722	Standard
	Sn	118	1108.4	1.6	**0.1012**	0.003	3.2	ug/L	715	Standard
	Sb	123	226221.3	0.0	**47.9756**	0.857	1.8	ug/L	201	Standard
	Ba	135	281949.2	0.1	**144.0743**	2.519	1.7	ug/L	108	Standard
	Ce	140	1344322.7	0.7				ug/L	30	Standard
>	**Tb**	159	856521.4	0.5				ug/L	792236	Standard
	Ho	165	27917.4	1.4				ug/L	7	Standard
	Tl	203	379214.9	0.1	**48.6259**	0.229	0.5	ug/L	9	Standard
	Tl	205	341701.9	0.7	**51.5229**	0.634	1.2	ug/L	0	Standard
	Pb	206	250400.5	0.4	**53.0698**	0.469	0.9	ug/L	216	Standard
	Pb	207	218768.7	0.4	**50.9304**	0.424	0.8	ug/L	180	Standard
	Pb	208	894325.1	0.6	**51.3006**	0.445	0.9	ug/L	717	Standard
	U	238	333573.8	0.7	**52.6006**	0.628	1.2	ug/L	4	Standard
>	**Bi**	209	469954.5	0.6				ug/L	460343	Standard

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Na	23	3.3	173.2	**0.1020**	17.927	17574.6	mg/L	0	Standard
Mg	24	6119.6	7.0	**7.6313**	0.602	7.9	mg/L	20	Standard
K	39	128.3	31.7	**0.6738**	0.269	39.8	mg/L	22	Standard
Ca	43	203.3	13.5	**30.6746**	5.036	16.4	mg/L	47	Standard
Fe	54	1790.2	1.0	**1.2312**	0.019	1.5	mg/L	151	Standard
Fe	57	780.0	10.9	**1.5831**	0.191	12.1	mg/L	195	Standard
> **Sc-1**	45	32062.2	2.4				mg/L	29647	Standard
Cl	35	296539.1	0.3				ug/L	154152	Standard
Kr	83	1.0	0.0				ug/L	3	Standard
Br	81	116096.7	2.9				ug/L	1607	Standard
P	31	27080.9	1.8				ug/L	22752	Standard
S	34	4614.0	1.1				ug/L	5049	Standard
Sr	88	778.4	3.2				ug/L	87	Standard
C	12	196.7	22.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	46630.2	1.4				mg/L	10	Standard
Ho-1	165	27917.4	1.4				mg/L	7	Standard
Er	166	24322.8	2.2				mg/L	3	Standard
I	127	176317.1	2.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		169.451	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.189	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.943
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.088
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606075401
Sample Date/Time: Thursday, June 16, 2016 19:28:27
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82366.7	2.1				ug/L	51024	Standard
	Be	9	51.7	14.8	**0.0170**	0.006	32.8	ug/L	7	Standard
	Al	27	17891826.3	2.7	**77.8692**	2.435	3.1	ug/L	625	Standard
	Sc	45	30427.2	1.9				ug/L	29647	Standard
	Ti	47	2820.9	1.0	**9.4421**	0.167	1.8	ug/L	57	Standard
	V	51	13745.3	1.6	**1.8076**	0.041	2.3	ug/L	1142	Standard
	Cr	52	20733.8	0.8	**1.9525**	0.033	1.7	ug/L	6628	Standard
	Cr	53	4984.2	5.0	**5.0448**	0.169	3.3	ug/L	430	Standard
	Mn	55	105692.4	1.8	**18.0774**	0.683	3.8	ug/L	603	Standard
	Co	59	4134.2	4.3	**0.6164**	0.033	5.4	ug/L	237	Standard
	Ni	60	5645.1	0.8	**2.9135**	0.034	1.2	ug/L	141	Standard
	Cu	65	191176.6	0.9	**103.9111**	2.891	2.8	ug/L	109	Standard
	Zn	66	106024.3	0.8	**97.5572**	2.630	2.7	ug/L	159	Standard
>	**Ge**	72	463769.1	2.0				ug/L	474053	Standard
	As	75	301.2	25.5	**0.3039**	0.075	24.6	ug/L	-34	Standard
	Se	82	127.3	9.6	**1.0095**	0.134	13.3	ug/L	14	Standard
	Se-1	77	289.7	4.6	**3.1103**	0.134	4.3	ug/L	55	Standard
>	**Ga**	71	440.0	5.9				mg/L	50	Standard
	Rb	85	66395.2	1.7				ug/L	20	Standard
	Y	89	407745.6	2.4				ug/L	376602	Standard
>	**Rh**	103	96.7	20.9				ug/L	17	Standard
	Mo	98	1561.5	1.4	**0.6398**	0.014	2.1	ug/L	8	Standard
	Ag	107	747.4	3.8	**0.1101**	0.008	7.2	ug/L	81	Standard
	Cd	111	185.0	11.1	**0.0900**	0.013	14.1	mg/L	3	Standard
	Cd	114	453.1	6.4	**0.0885**	0.009	9.7	ug/L	7	Standard
>	**In**	115	537707.7	3.1				ug/L	524722	Standard
	Sn	118	4545.7	5.8	**0.7338**	0.032	4.3	ug/L	715	Standard
	Sb	123	909.7	21.3	**0.1892**	0.048	25.1	ug/L	201	Standard
	Ba	135	39811.9	1.6	**21.3825**	0.338	1.6	ug/L	108	Standard
	Ce	140	8849.3	2.5				ug/L	30	Standard
>	**Tb**	159	810136.1	3.5				ug/L	792236	Standard
	Ho	165	230.0	24.5				ug/L	7	Standard
	Tl	203	286.7	27.5	**0.0315**	0.010	30.7	ug/L	9	Standard
	Tl	205	228.3	32.9	**0.0241**	0.011	44.8	ug/L	0	Standard
	Pb	206	10175.4	0.5	**1.9406**	0.024	1.2	ug/L	216	Standard
	Pb	207	8305.3	0.7	**1.7365**	0.026	1.5	ug/L	180	Standard
	Pb	208	35130.3	0.9	**1.8082**	0.024	1.3	ug/L	717	Standard
	U	238	1915.5	3.0	**0.2719**	0.010	3.6	ug/L	4	Standard
>	**Bi**	209	508087.3	0.9				ug/L	460343	Standard

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Na	23	3.3	86.6	**-0.2885**	9.302	3224.4	mg/L	0	Standard
Mg	24	30961.6	1.7	**40.8617**	0.835	2.0	mg/L	20	Standard
K	39	656.7	18.1	**4.6487**	0.870	18.7	mg/L	22	Standard
Ca	43	158.3	34.8	**22.7292**	12.064	53.1	mg/L	47	Standard
Fe	54	990.1	10.0	**0.6701**	0.088	13.2	mg/L	151	Standard
Fe	57	505.0	3.4	**0.8773**	0.078	8.8	mg/L	195	Standard
Sc-1	45	30427.2	1.9				mg/L	29647	Standard
Cl	35	217230.9	2.7				ug/L	154152	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	12551.9	10.7				ug/L	1607	Standard
P	31	26334.5	1.0				ug/L	22752	Standard
S	34	4555.7	2.6				ug/L	5049	Standard
Sr	88	170.0	8.8				ug/L	87	Standard
C	12	793.4	8.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	96.7	15.8				mg/L	0	Standard
Dy	164	343.6	11.4				mg/L	10	Standard
Ho-1	165	230.0	24.5				mg/L	7	Standard
Er	166	203.3	15.0				mg/L	3	Standard
I	127	19776.3	5.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		161.427	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.831	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.475
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.371
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606075401PS WG572869-01
Sample Date/Time: Thursday, June 16, 2016 19:31:38
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83402.3	0.7				ug/L	51024	Standard
	Be	9	63124.6	1.4	**45.9169**	0.909	2.0	ug/L	7	Standard
	Al	27	17971744.4	2.8	**77.2382**	2.615	3.4	ug/L	625	Standard
	Sc	45	30682.7	4.2				ug/L	29647	Standard
	Ti	47	2792.9	5.6	**9.1051**	0.451	5.0	ug/L	57	Standard
	V	51	382253.4	0.5	**53.4006**	0.320	0.6	ug/L	1142	Standard
	Cr	52	373919.2	1.3	**49.7147**	0.405	0.8	ug/L	6628	Standard
	Cr	53	49711.5	2.7	**52.8478**	1.467	2.8	ug/L	430	Standard
	Mn	55	406935.5	0.9	**68.1780**	0.090	0.1	ug/L	603	Standard
	Co	59	347435.1	1.8	**53.8207**	0.541	1.0	ug/L	237	Standard
	Ni	60	95683.2	0.8	**49.3519**	0.338	0.7	ug/L	141	Standard
	Cu	65	276145.4	0.3	**146.3258**	0.986	0.7	ug/L	109	Standard
	Zn	66	154951.3	0.2	**139.0713**	0.812	0.6	ug/L	159	Standard
>	Ge	72	475646.5	0.8				ug/L	474053	Standard
	As	75	55395.2	0.9	**49.8846**	0.262	0.5	ug/L	-34	Standard
	Se	82	5840.3	1.9	**52.4634**	0.711	1.4	ug/L	14	Standard
	Se-1	77	4138.2	1.9	**52.9629**	0.853	1.6	ug/L	55	Standard
>	Ga	71	441.7	10.5				mg/L	50	Standard
	Rb	85	63605.0	2.6				ug/L	20	Standard
	Y	89	384934.5	2.9				ug/L	376602	Standard
>	Rh	103	75.0	30.6				ug/L	17	Standard
	Mo	98	1506.0	0.6	**0.6341**	0.012	1.9	ug/L	8	Standard
	Ag	107	301051.6	0.9	**50.6101**	0.914	1.8	ug/L	81	Standard
	Cd	111	98227.5	0.6	**50.7616**	0.701	1.4	mg/L	3	Standard
	Cd	114	243020.5	0.8	**50.8000**	0.654	1.3	ug/L	7	Standard
>	In	115	523174.3	1.7				ug/L	524722	Standard
	Sn	118	4532.3	4.2	**0.7549**	0.047	6.3	ug/L	715	Standard
	Sb	123	222938.5	1.8	**51.1866**	1.325	2.6	ug/L	201	Standard
	Ba	135	127885.1	0.6	**70.7164**	1.199	1.7	ug/L	108	Standard
	Ce	140	8752.5	5.4				ug/L	30	Standard
>	Tb	159	809108.6	3.0				ug/L	792236	Standard
	Ho	165	236.7	12.0				ug/L	7	Standard
	Tl	203	379894.9	0.9	**44.3716**	1.016	2.3	ug/L	9	Standard
	Tl	205	341979.7	0.7	**46.9709**	1.246	2.7	ug/L	0	Standard
	Pb	206	255943.3	0.4	**49.4070**	1.138	2.3	ug/L	216	Standard
	Pb	207	222866.5	0.7	**47.2585**	1.195	2.5	ug/L	180	Standard
	Pb	208	910678.1	0.7	**47.5815**	1.216	2.6	ug/L	717	Standard
	U	238	341419.2	0.1	**49.0368**	0.922	1.9	ug/L	4	Standard
>	Bi	209	516066.4	2.0				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.2328**	9.040	172.8	mg/L	0	Standard
Mg	24	30580.8	0.9	**40.0684**	1.906	4.8	mg/L	20	Standard
K	39	683.3	11.4	**4.8016**	0.478	10.0	mg/L	22	Standard
Ca	43	166.7	18.3	**24.6755**	8.602	34.9	mg/L	47	Standard
Fe	54	991.6	6.4	**0.6639**	0.031	4.7	mg/L	151	Standard
Fe	57	553.3	10.9	**1.0152**	0.249	24.5	mg/L	195	Standard
> **Sc-1**	45	30682.7	4.2				mg/L	29647	Standard
Cl	35	218863.4	0.6				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	11077.4	2.3				ug/L	1607	Standard
P	31	26757.0	3.2				ug/L	22752	Standard
S	34	4704.1	1.5				ug/L	5049	Standard
Sr	88	165.0	10.9				ug/L	87	Standard
C	12	693.3	9.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	90.0	50.9				mg/L	0	Standard
Dy	164	284.7	30.5				mg/L	10	Standard
Ho-1	165	236.7	12.0				mg/L	7	Standard
Er	166	180.0	22.2				mg/L	3	Standard
I	127	17368.3	4.1				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		163.456	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.336	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.705	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	112.105	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1606075401SDL WG572869-02
Sample Date/Time: Thursday, June 16, 2016 19:34:50
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84174.9	1.5				ug/L	51024	Standard
	Be	9	35.0	14.3	**0.0042**	0.004	88.5	ug/L	7	Standard
	Al	27	3660235.8	1.3	**15.5808**	0.435	2.8	ug/L	625	Standard
	Sc	45	32820.5	2.8				ug/L	29647	Standard
	Ti	47	607.7	5.7	**1.8669**	0.107	5.7	ug/L	57	Standard
	V	51	4082.9	1.0	**0.4082**	0.006	1.6	ug/L	1142	Standard
	Cr	52	9894.2	1.7	**0.4222**	0.007	1.6	ug/L	6628	Standard
	Cr	53	1803.4	1.6	**1.5160**	0.013	0.8	ug/L	430	Standard
	Mn	55	21935.9	0.6	**3.5843**	0.077	2.1	ug/L	603	Standard
	Co	59	994.0	3.5	**0.1140**	0.003	2.9	ug/L	237	Standard
	Ni	60	1361.1	4.8	**0.6305**	0.026	4.2	ug/L	141	Standard
	Cu	65	40184.2	0.6	**21.4035**	0.546	2.6	ug/L	109	Standard
	Zn	66	22341.5	1.6	**20.0059**	0.236	1.2	ug/L	159	Standard
>	**Ge**	72	472090.7	2.0				ug/L	474053	Standard
	As	75	70.8	22.3	**0.0894**	0.015	16.6	ug/L	-34	Standard
	Se	82	38.3	18.3	**0.1793**	0.069	38.5	ug/L	14	Standard
	Se-1	77	126.7	16.1	**0.9154**	0.302	33.0	ug/L	55	Standard
>	**Ga**	71	170.0	15.6				mg/L	50	Standard
	Rb	85	13192.4	0.8				ug/L	20	Standard
	Y	89	392636.4	3.5				ug/L	376602	Standard
>	**Rh**	103	25.0	69.3				ug/L	17	Standard
	Mo	98	328.6	6.7	**0.1240**	0.011	8.7	ug/L	8	Standard
	Ag	107	258.3	8.0	**0.0280**	0.003	12.2	ug/L	81	Standard
	Cd	111	44.1	38.1	**0.0179**	0.008	45.4	mg/L	3	Standard
	Cd	114	91.6	47.0	**0.0140**	0.009	61.0	ug/L	7	Standard
>	**In**	115	563812.4	1.7				ug/L	524722	Standard
	Sn	118	1306.7	7.2	**0.1365**	0.020	14.5	ug/L	715	Standard
	Sb	123	2201.6	19.8	**0.4534**	0.085	18.8	ug/L	201	Standard
	Ba	135	8201.6	0.8	**4.1541**	0.077	1.9	ug/L	108	Standard
	Ce	140	1823.4	12.4				ug/L	30	Standard
>	**Tb**	159	855756.3	0.3				ug/L	792236	Standard
	Ho	165	45.0	11.1				ug/L	7	Standard
	Tl	203	135.3	4.5	**0.0137**	0.001	4.2	ug/L	9	Standard
	Tl	205	115.0	7.5	**0.0084**	0.001	13.4	ug/L	0	Standard
	Pb	206	2315.2	1.8	**0.4035**	0.003	0.8	ug/L	216	Standard
	Pb	207	1893.5	0.7	**0.3593**	0.003	0.7	ug/L	180	Standard
	Pb	208	7952.2	1.5	**0.3697**	0.005	1.4	ug/L	717	Standard
	U	238	417.0	3.9	**0.0540**	0.002	3.2	ug/L	4	Standard
>	**Bi**	209	501935.6	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	6119.6	2.2	**7.4516**	0.184	2.5	mg/L	20	Standard
K	39	163.3	26.0	**0.8923**	0.268	30.1	mg/L	22	Standard
Ca	43	58.3	13.1	**-0.8716**	1.621	186.0	mg/L	47	Standard
Fe	54	338.9	14.2	**0.1347**	0.043	31.9	mg/L	151	Standard
Fe	57	201.7	14.9	**-0.0843**	0.069	82.1	mg/L	195	Standard
> **Sc-1**	45	32820.5	2.8				mg/L	29647	Standard
Cl	35	191817.3	0.7				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	3760.5	5.3				ug/L	1607	Standard
P	31	26361.2	0.5				ug/L	22752	Standard
S	34	5075.9	2.0				ug/L	5049	Standard
Sr	88	91.7	22.0				ug/L	87	Standard
C	12	203.3	19.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	124.9				mg/L	0	Standard
Dy	164	57.6	17.4				mg/L	10	Standard
Ho-1	165	45.0	11.1				mg/L	7	Standard
Er	166	50.0	34.6				mg/L	3	Standard
I	127	5225.9	3.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		164.971	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.586	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.450
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.035
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 19:38:03
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75524.5	1.6				ug/L	51024	Standard
	Be	9	58757.1	2.5	**47.1905**	0.427	0.9	ug/L	7	Standard
	Al	27	8592238.6	0.7	**40.7782**	0.896	2.2	ug/L	625	Standard
	Sc	45	30089.9	1.6				ug/L	29647	Standard
	Ti	47	29681.7	0.7	**100.0625**	1.696	1.7	ug/L	57	Standard
	V	51	362295.0	0.1	**51.4700**	1.097	2.1	ug/L	1142	Standard
	Cr	52	362530.7	0.7	**49.0151**	1.305	2.7	ug/L	6628	Standard
	Cr	53	44988.4	1.6	**48.6083**	1.321	2.7	ug/L	430	Standard
	Mn	55	309292.7	1.9	**52.6874**	2.042	3.9	ug/L	603	Standard
	Co	59	348007.0	1.3	**54.8425**	1.822	3.3	ug/L	237	Standard
	Ni	60	92789.3	1.3	**48.6823**	1.578	3.2	ug/L	141	Standard
	Cu	65	90263.4	0.9	**48.6062**	1.434	3.0	ug/L	109	Standard
	Zn	66	54352.7	0.8	**49.4652**	1.123	2.3	ug/L	159	Standard
>	Ge	72	467786.9	2.0				ug/L	474053	Standard
	As	75	53262.0	0.4	**48.7810**	0.849	1.7	ug/L	-34	Standard
	Se	82	5640.4	1.6	**51.5356**	1.525	3.0	ug/L	14	Standard
	Se-1	77	3823.8	0.2	**49.7310**	1.059	2.1	ug/L	55	Standard
>	Ga	71	100.0	10.0				mg/L	50	Standard
	Rb	85	738.4	4.8				ug/L	20	Standard
	Y	89	389211.3	4.2				ug/L	376602	Standard
>	Rh	103	41.7	45.4				ug/L	17	Standard
	Mo	98	258410.6	0.4	**108.3200**	0.551	0.5	ug/L	8	Standard
	Ag	107	305258.5	0.7	**50.6525**	0.191	0.4	ug/L	81	Standard
	Cd	111	98577.0	0.6	**50.2856**	0.543	1.1	mg/L	3	Standard
	Cd	114	240956.8	0.8	**49.7198**	0.544	1.1	ug/L	7	Standard
>	In	115	529955.9	0.8				ug/L	524722	Standard
	Sn	118	279031.2	1.4	**51.1979**	0.292	0.6	ug/L	715	Standard
	Sb	123	225733.2	0.6	**51.1556**	0.269	0.5	ug/L	201	Standard
	Ba	135	88992.9	0.5	**48.5568**	0.564	1.2	ug/L	108	Standard
	Ce	140	98.3	54.8				ug/L	30	Standard
>	Tb	159	792501.9	1.8				ug/L	792236	Standard
	Ho	165	15.0	57.7				ug/L	7	Standard
	Tl	203	380190.8	0.8	**49.9446**	0.519	1.0	ug/L	9	Standard
	Tl	205	340670.7	0.6	**52.6256**	0.733	1.4	ug/L	0	Standard
	Pb	206	240176.7	0.8	**52.1541**	1.146	2.2	ug/L	216	Standard
	Pb	207	218112.4	0.3	**52.0255**	0.882	1.7	ug/L	180	Standard
	Pb	208	878933.8	0.7	**51.6572**	1.015	2.0	ug/L	717	Standard
	U	238	331188.2	0.5	**53.5069**	0.993	1.9	ug/L	4	Standard
>	Bi	209	458755.1	1.5				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	4233.9	2.0	**5.6123**	0.183	3.3	mg/L	20	Standard
K	39	481.7	4.2	**3.3891**	0.102	3.0	mg/L	22	Standard
Ca	43	51.7	40.3	**-1.3433**	4.578	340.8	mg/L	47	Standard
Fe	54	6013.8	2.7	**4.7022**	0.066	1.4	mg/L	151	Standard
Fe	57	1661.8	4.6	**4.4228**	0.232	5.3	mg/L	195	Standard
> **Sc-1**	45	30089.9	1.6				mg/L	29647	Standard
Cl	35	174583.8	2.5				ug/L	154152	Standard
Kr	83	2.7	108.3				ug/L	3	Standard
Br	81	1656.8	6.5				ug/L	1607	Standard
P	31	26137.5	2.6				ug/L	22752	Standard
S	34	5366.0	2.6				ug/L	5049	Standard
Sr	88	61.7	56.9				ug/L	87	Standard
C	12	73.3	56.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.5	105.0				mg/L	10	Standard
Ho-1	165	15.0	57.7				mg/L	7	Standard
Er	166	10.0					mg/L	3	Standard
I	127	1988.5	11.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	94.381		
Al	27	81.556		
Sc	45			
Ti	47	100.063		
V	51	102.940		
Cr	52	98.030		
Cr	53			
Mn	55	105.375		
Co	59	109.685		
Ni	60	97.365		
Cu	65	97.212		
Zn	66	98.930		
> Ge	72		98.678	
As	75	97.562		
Se	82	103.071		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	108.320		
Ag	107	101.305		
Cd	111	100.571		
Cd	114			
In	115		100.997	
Sn	118	102.396		
Sb	123	102.311		
Ba	135	97.114		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.889		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.314		
U	238	107.014		
Bi	209		99.655	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
Report Date/Time: Thursday, June 16, 2016 19:40:20
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Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 19:41:14
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75737.2	0.8				ug/L	51024	Standard
	Be	9	36.7	64.4	**0.0082**	0.019	228.1	ug/L	7	Standard
	Al	27	2361.9	43.7	**0.0014**	0.005	343.6	ug/L	625	Standard
	Sc	45	30985.0	1.8				ug/L	29647	Standard
	Ti	47	35.3	4.3	**-0.0458**	0.006	13.8	ug/L	57	Standard
	V	51	1037.4	10.2	**-0.0196**	0.013	66.8	ug/L	1142	Standard
	Cr	52	6028.9	1.0	**-0.0922**	0.013	14.2	ug/L	6628	Standard
	Cr	53	500.0	1.7	**0.1170**	0.007	5.6	ug/L	430	Standard
	Mn	55	801.0	1.0	**0.0112**	0.003	28.0	ug/L	603	Standard
	Co	59	242.3	16.2	**-0.0028**	0.006	218.5	ug/L	237	Standard
	Ni	60	194.3	2.8	**0.0250**	0.004	15.2	ug/L	141	Standard
	Cu	65	159.3	5.3	**0.0203**	0.005	24.2	ug/L	109	Standard
	Zn	66	178.7	4.3	**-0.0675**	0.009	14.0	ug/L	159	Standard
>	**Ge**	72	464739.5	1.5				ug/L	474053	Standard
	As	75	7.6	225.8	**0.0322**	0.016	48.9	ug/L	-34	Standard
	Se	82	25.4	8.4	**0.0649**	0.020	31.4	ug/L	14	Standard
	Se-1	77	61.7	15.6	**0.0734**	0.117	159.7	ug/L	55	Standard
>	**Ga**	71	83.3	36.7				mg/L	50	Standard
	Rb	85	23.3	44.6				ug/L	20	Standard
	Y	89	383264.6	3.0				ug/L	376602	Standard
>	**Rh**	103	33.3	8.7				ug/L	17	Standard
	Mo	98	271.3	23.3	**0.1065**	0.026	24.6	ug/L	8	Standard
	Ag	107	117.3	15.5	**0.0068**	0.003	41.5	ug/L	81	Standard
	Cd	111	10.2	68.0	**0.0019**	0.003	183.2	mg/L	3	Standard
	Cd	114	44.5	65.5	**0.0053**	0.006	115.1	ug/L	7	Standard
>	**In**	115	537976.2	1.6				ug/L	524722	Standard
	Sn	118	825.0	17.9	**0.0600**	0.027	44.4	ug/L	715	Standard
	Sb	123	661.4	27.1	**0.1329**	0.040	29.8	ug/L	201	Standard
	Ba	135	101.0	9.8	**-0.0033**	0.006	183.9	ug/L	108	Standard
	Ce	140	31.7	79.5				ug/L	30	Standard
>	**Tb**	159	808787.7	0.7				ug/L	792236	Standard
	Ho	165	10.0					ug/L	7	Standard
	Tl	203	70.0	26.5	**0.0063**	0.002	37.5	ug/L	9	Standard
	Tl	205	83.3	42.1	**0.0046**	0.005	114.0	ug/L	0	Standard
	Pb	206	238.3	5.7	**-0.0064**	0.003	45.5	ug/L	216	Standard
	Pb	207	219.3	6.5	**-0.0033**	0.003	100.2	ug/L	180	Standard
	Pb	208	893.7	3.3	**-0.0072**	0.002	24.1	ug/L	717	Standard
	U	238	52.0	44.7	**0.0005**	0.004	686.7	ug/L	4	Standard
>	**Bi**	209	475308.5	0.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	48.3	26.0	**0.0174**	0.016	91.5	mg/L	20	Standard
K	39	13.3	114.6	**-0.1319**	0.110	83.1	mg/L	22	Standard
Ca	43	30.0	33.3	**-6.4628**	2.334	36.1	mg/L	47	Standard
Fe	54	156.0	6.5	**0.0065**	0.010	153.3	mg/L	151	Standard
Fe	57	171.7	23.4	**-0.1375**	0.125	91.1	mg/L	195	Standard
Sc-1	45	30985.0	1.8				mg/L	29647	Standard
Cl	35	175790.7	1.2				ug/L	154152	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	1680.1	2.7				ug/L	1607	Standard
P	31	26980.7	1.7				ug/L	22752	Standard
S	34	5335.9	0.5				ug/L	5049	Standard
Sr	88	53.3	19.5				ug/L	87	Standard
C	12	106.7	44.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.8	173.2				mg/L	10	Standard
Ho-1	165	10.0					mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	1423.4	7.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.035	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.526
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.251
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606075401SDL WG572869-02
Sample Date/Time: Thursday, June 16, 2016 19:44:27
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75285.0	2.4				ug/L	51024	Standard
	Be	9	28.3	27.0	**0.0018**	0.006	349.7	ug/L	7	Standard
	Al	27	678933.6	1.5	**3.2237**	0.074	2.3	ug/L	625	Standard
	Sc	45	30959.9	1.5				ug/L	29647	Standard
	Ti	47	147.0	11.8	**0.3390**	0.053	15.6	ug/L	57	Standard
	V	51	1608.8	3.2	**0.0651**	0.007	11.5	ug/L	1142	Standard
	Cr	52	6858.9	5.4	**0.0335**	0.040	118.0	ug/L	6628	Standard
	Cr	53	711.7	14.1	**0.3581**	0.110	30.8	ug/L	430	Standard
	Mn	55	5081.9	4.1	**0.7566**	0.025	3.3	ug/L	603	Standard
	Co	59	396.3	6.0	**0.0224**	0.003	13.2	ug/L	237	Standard
	Ni	60	495.3	27.9	**0.1866**	0.070	37.6	ug/L	141	Standard
	Cu	65	8119.8	4.3	**4.3896**	0.136	3.1	ug/L	109	Standard
	Zn	66	5396.3	4.5	**4.7897**	0.160	3.3	ug/L	159	Standard
>	**Ge**	72	459379.8	1.3				ug/L	474053	Standard
	As	75	30.4	143.6	**0.0532**	0.040	75.8	ug/L	-34	Standard
	Se	82	25.8	13.6	**0.0723**	0.035	48.4	ug/L	14	Standard
	Se-1	77	72.3	3.5	**0.2270**	0.021	9.3	ug/L	55	Standard
>	**Ga**	71	85.0	20.4				mg/L	50	Standard
	Rb	85	2591.9	3.3				ug/L	20	Standard
	Y	89	395811.5	2.1				ug/L	376602	Standard
>	**Rh**	103	21.7	48.0				ug/L	17	Standard
	Mo	98	145.0	5.9	**0.0524**	0.004	7.4	ug/L	8	Standard
	Ag	107	135.7	35.4	**0.0092**	0.008	85.2	ug/L	81	Standard
	Cd	111	32.4	102.6	**0.0126**	0.016	129.9	mg/L	3	Standard
	Cd	114	75.7	59.7	**0.0111**	0.009	81.1	ug/L	7	Standard
>	**In**	115	555911.8	0.9				ug/L	524722	Standard
	Sn	118	780.0	12.2	**0.0473**	0.018	37.9	ug/L	715	Standard
	Sb	123	369.0	35.2	**0.0651**	0.029	44.3	ug/L	201	Standard
	Ba	135	1717.1	2.7	**0.8366**	0.031	3.7	ug/L	108	Standard
	Ce	140	485.0	42.7				ug/L	30	Standard
>	**Tb**	159	813354.7	3.1				ug/L	792236	Standard
	Ho	165	18.3	87.7				ug/L	7	Standard
	Tl	203	138.7	62.7	**0.0153**	0.011	74.9	ug/L	9	Standard
	Tl	205	61.7	4.7	**0.0015**	0.001	38.9	ug/L	0	Standard
	Pb	206	674.3	7.5	**0.0868**	0.013	15.5	ug/L	216	Standard
	Pb	207	582.7	6.3	**0.0820**	0.010	12.7	ug/L	180	Standard
	Pb	208	2365.1	0.5	**0.0779**	0.003	3.7	ug/L	717	Standard
	U	238	97.7	25.6	**0.0079**	0.004	53.7	ug/L	4	Standard
>	**Bi**	209	470182.7	2.2				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1275.1	3.2	**1.6099**	0.030	1.9	mg/L	20	Standard
K	39	51.7	39.1	**0.1491**	0.148	99.3	mg/L	22	Standard
Ca	43	31.7	9.1	**-6.0988**	0.709	11.6	mg/L	47	Standard
Fe	54	199.5	21.2	**0.0405**	0.034	83.1	mg/L	151	Standard
Fe	57	250.0	6.0	**0.0939**	0.035	37.2	mg/L	195	Standard
> **Sc-1**	45	30959.9	1.5				mg/L	29647	Standard
Cl	35	180506.2	0.5				ug/L	154152	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	1983.5	10.4				ug/L	1607	Standard
P	31	26828.7	3.3				ug/L	22752	Standard
S	34	5309.3	3.4				ug/L	5049	Standard
Sr	88	65.0	13.3				ug/L	87	Standard
C	12	93.3	12.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	25.5	47.4				mg/L	10	Standard
Ho-1	165	18.3	87.7				mg/L	7	Standard
Er	166	23.3	49.5				mg/L	3	Standard
I	127	1906.8	3.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		147.548	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.905	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.944
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.137
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606061601
Sample Date/Time: Thursday, June 16, 2016 19:47:38
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76809.2	0.5				ug/L	51024	Standard
	Be	9	595.0	11.7	**0.4492**	0.056	12.5	ug/L	7	Standard
	Al	27	4369598.1	0.7	**20.3813**	0.060	0.3	ug/L	625	Standard
	Sc	45	31414.2	1.5				ug/L	29647	Standard
	Ti	47	432.0	2.5	**1.3649**	0.030	2.2	ug/L	57	Standard
	V	51	-3320.7	72.4	**-0.6635**	0.356	53.6	ug/L	1142	Standard
	Cr	52	750024.0	0.5	**107.4925**	0.659	0.6	ug/L	6628	Standard
	Cr	53	103144.9	1.1	**117.5491**	0.704	0.6	ug/L	430	Standard
	Mn	55	749735.1	1.9	**134.2073**	3.843	2.9	ug/L	603	Standard
	Co	59	100276.4	1.1	**16.5512**	0.155	0.9	ug/L	237	Standard
	Ni	60	309778.2	0.7	**170.7218**	1.330	0.8	ug/L	141	Standard
	Cu	65	7659.6	1.1	**4.2680**	0.087	2.0	ug/L	109	Standard
	Zn	66	11362.9	1.9	**10.6718**	0.281	2.6	ug/L	159	Standard
>	**Ge**	72	445665.4	0.9				ug/L	474053	Standard
	As	75	686.6	13.7	**0.6845**	0.089	13.0	ug/L	-34	Standard
	Se	82	286.4	5.1	**2.5855**	0.133	5.1	ug/L	14	Standard
	Se-1	77	537.0	3.8	**6.6929**	0.237	3.5	ug/L	55	Standard
>	**Ga**	71	176.7	15.6				mg/L	50	Standard
	Rb	85	2721.9	5.5				ug/L	20	Standard
	Y	89	383236.3	0.5				ug/L	376602	Standard
>	**Rh**	103	50.0	36.1				ug/L	17	Standard
	Mo	98	2500.1	3.0	**1.0779**	0.045	4.2	ug/L	8	Standard
	Ag	107	102.0	12.9	**0.0051**	0.002	37.3	ug/L	81	Standard
	Cd	111	267.3	12.2	**0.1375**	0.014	10.4	mg/L	3	Standard
	Cd	114	603.9	11.8	**0.1249**	0.014	11.6	ug/L	7	Standard
>	**In**	115	512847.6	2.1				ug/L	524722	Standard
	Sn	118	1035.0	6.1	**0.1070**	0.008	7.4	ug/L	715	Standard
	Sb	123	393.5	17.2	**0.0775**	0.017	21.9	ug/L	201	Standard
	Ba	135	97635.9	1.0	**55.0639**	0.765	1.4	ug/L	108	Standard
	Ce	140	12988.9	1.1				ug/L	30	Standard
>	**Tb**	159	771242.3	0.7				ug/L	792236	Standard
	Ho	165	400.0	11.9				ug/L	7	Standard
	Tl	203	321.0	11.6	**0.0421**	0.006	13.3	ug/L	9	Standard
	Tl	205	538.3	98.5	**0.0807**	0.088	108.8	ug/L	0	Standard
	Pb	206	832.7	2.1	**0.1353**	0.003	2.1	ug/L	216	Standard
	Pb	207	700.3	3.6	**0.1232**	0.007	5.6	ug/L	180	Standard
	Pb	208	3407.2	29.9	**0.1547**	0.065	42.3	ug/L	717	Standard
	U	238	614.7	59.9	**0.0979**	0.064	65.5	ug/L	4	Standard
>	**Bi**	209	433217.0	0.9				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.3851**	8.776	163.0	mg/L	0	Standard
Mg	24	53123.0	1.4	**67.9338**	1.263	1.9	mg/L	20	Standard
K	39	26.7	39.0	**-0.0366**	0.073	198.4	mg/L	22	Standard
Ca	43	46.7	27.0	**-2.9236**	2.617	89.5	mg/L	47	Standard
Fe	54	466.9	13.1	**0.2433**	0.047	19.5	mg/L	151	Standard
Fe	57	296.7	18.2	**0.2213**	0.168	75.8	mg/L	195	Standard
Sc-1	45	31414.2	1.5				mg/L	29647	Standard
Cl	35	180426.0	1.3				ug/L	154152	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	63948.0	2.0				ug/L	1607	Standard
P	31	35653.6	1.9				ug/L	22752	Standard
S	34	4944.1	4.8				ug/L	5049	Standard
Sr	88	168.3	28.8				ug/L	87	Standard
C	12	176.7	33.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	644.2	6.3				mg/L	10	Standard
Ho-1	165	400.0	11.9				mg/L	7	Standard
Er	166	330.0	18.9				mg/L	3	Standard
I	127	86114.1	2.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		150.535	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.012	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	97.737	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	94.107	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
V 51 Lower	V	51	
Cr 52 Upper, S, EEE	Cr	52	

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Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Ni 60 Upper, S, EEE	Ni	60

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606061602
Sample Date/Time: Thursday, June 16, 2016 19:50:50
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75748.9	1.4				ug/L	51024	Standard
	Be	9	48.3	39.2	**0.0176**	0.015	86.0	ug/L	7	Standard
	Al	27	19995852.4	2.5	**94.6007**	1.188	1.3	ug/L	625	Standard
	Sc	45	30053.1	1.9				ug/L	29647	Standard
	Ti	47	826.4	6.6	**2.7223**	0.220	8.1	ug/L	57	Standard
	V	51	3891.9	11.8	**0.4057**	0.069	17.0	ug/L	1142	Standard
	Cr	52	13157.7	1.1	**0.9469**	0.019	2.0	ug/L	6628	Standard
	Cr	53	8188.9	18.5	**8.8148**	1.816	20.6	ug/L	430	Standard
	Mn	55	3666201.0	1.1	**647.3586**	10.609	1.6	ug/L	603	Standard
	Co	59	2221.5	3.8	**0.3212**	0.018	5.6	ug/L	237	Standard
	Ni	60	1892.5	1.4	**0.9508**	0.014	1.5	ug/L	141	Standard
	Cu	65	951.0	2.0	**0.4643**	0.013	2.7	ug/L	109	Standard
	Zn	66	2843.9	2.3	**2.4576**	0.033	1.3	ug/L	159	Standard
>	**Ge**	72	452100.4	1.1				ug/L	474053	Standard
	As	75	2291.3	4.3	**2.1952**	0.104	4.7	ug/L	-34	Standard
	Se	82	731.9	2.7	**6.7722**	0.229	3.4	ug/L	14	Standard
	Se-1	77	824.7	4.7	**10.5195**	0.619	5.9	ug/L	55	Standard
>	**Ga**	71	260.0	5.8				mg/L	50	Standard
	Rb	85	20994.5	2.7				ug/L	20	Standard
	Y	89	374644.2	1.4				ug/L	376602	Standard
>	**Rh**	103	175.0	2.9				ug/L	17	Standard
	Mo	98	1524.1	2.8	**0.6737**	0.024	3.5	ug/L	8	Standard
	Ag	107	85.0	16.3	**0.0027**	0.002	93.3	ug/L	81	Standard
	Cd	111	31.4	24.1	**0.0138**	0.004	30.8	mg/L	3	Standard
	Cd	114	85.3	56.7	**0.0150**	0.011	72.0	ug/L	7	Standard
>	**In**	115	498521.0	0.9				ug/L	524722	Standard
	Sn	118	2845.3	2.5	**0.4666**	0.019	4.0	ug/L	715	Standard
	Sb	123	273.4	5.3	**0.0511**	0.003	6.4	ug/L	201	Standard
	Ba	135	433999.4	0.6	**251.9694**	2.189	0.9	ug/L	108	Standard
	Ce	140	9039.4	2.4				ug/L	30	Standard
>	**Tb**	159	767594.4	2.3				ug/L	792236	Standard
	Ho	165	158.3	4.8				ug/L	7	Standard
	Tl	203	240.0	18.3	**0.0311**	0.007	21.8	ug/L	9	Standard
	Tl	205	225.0	23.4	**0.0292**	0.009	30.5	ug/L	0	Standard
	Pb	206	742.7	3.3	**0.1155**	0.009	7.8	ug/L	216	Standard
	Pb	207	635.7	4.8	**0.1077**	0.010	9.0	ug/L	180	Standard
	Pb	208	2598.4	5.5	**0.1049**	0.012	11.7	ug/L	717	Standard
	U	238	474.7	5.4	**0.0741**	0.006	7.6	ug/L	4	Standard
>	**Bi**	209	431218.2	2.1				ug/L	460343	Standard

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Na	23	3.3	86.6	**-0.3991**	9.400	2355.4	mg/L	0	Standard
Mg	24	98133.5	1.2	**131.2521**	3.929	3.0	mg/L	20	Standard
K	39	131.7	7.9	**0.7615**	0.060	7.9	mg/L	22	Standard
Ca	43	168.3	4.5	**25.6161**	1.859	7.3	mg/L	47	Standard
Fe	54	29671.0	1.6	**23.6871**	0.442	1.9	mg/L	151	Standard
Fe	57	7898.7	1.9	**23.4845**	0.677	2.9	mg/L	195	Standard
> **Sc-1**	45	30053.1	1.9				mg/L	29647	Standard
Cl	35	175045.0	2.3				ug/L	154152	Standard
Kr	83	2.7	43.3				ug/L	3	Standard
Br	81	182091.9	3.5				ug/L	1607	Standard
P	31	33082.7	1.0				ug/L	22752	Standard
S	34	5377.6	4.5				ug/L	5049	Standard
Sr	88	866.7	3.5				ug/L	87	Standard
C	12	170.0	42.4				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	258.0	17.6				mg/L	10	Standard
Ho-1	165	158.3	4.8				mg/L	7	Standard
Er	166	180.0	25.5				mg/L	3	Standard
I	127	271715.3	7.5				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		148.457	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.369	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.007
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.673
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606061604
Sample Date/Time: Thursday, June 16, 2016 19:54:01
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73209.8	0.9				ug/L	51024	Standard
	Be	9	28.3	50.9	**0.0025**	0.012	495.3	ug/L	7	Standard
	Al	27	1228067.5	0.3	**6.0032**	0.043	0.7	ug/L	625	Standard
	Sc	45	32386.3	3.3				ug/L	29647	Standard
	Ti	47	334.0	17.6	**0.9832**	0.212	21.6	ug/L	57	Standard
	V	51	1789.1	4.9	**0.0914**	0.018	19.4	ug/L	1142	Standard
	Cr	52	14674.8	1.1	**1.1301**	0.065	5.7	ug/L	6628	Standard
	Cr	53	2643.6	3.1	**2.5012**	0.083	3.3	ug/L	430	Standard
	Mn	55	705467.3	1.0	**122.4541**	1.381	1.1	ug/L	603	Standard
	Co	59	3430.7	0.7	**0.5095**	0.015	2.8	ug/L	237	Standard
	Ni	60	3839.5	0.3	**1.9758**	0.045	2.3	ug/L	141	Standard
	Cu	65	1168.4	5.1	**0.5751**	0.034	5.9	ug/L	109	Standard
	Zn	66	2259.5	2.7	**1.8718**	0.099	5.3	ug/L	159	Standard
>	**Ge**	72	459550.4	2.1				ug/L	474053	Standard
	As	75	131.8	16.1	**0.1477**	0.018	12.1	ug/L	-34	Standard
	Se	82	59.0	11.8	**0.3811**	0.061	16.1	ug/L	14	Standard
	Se-1	77	99.0	11.6	**0.5837**	0.132	22.6	ug/L	55	Standard
>	**Ga**	71	130.0	11.5				mg/L	50	Standard
	Rb	85	9683.1	3.7				ug/L	20	Standard
	Y	89	395829.7	1.7				ug/L	376602	Standard
>	**Rh**	103	50.0	26.5				ug/L	17	Standard
	Mo	98	129.8	4.6	**0.0461**	0.003	6.2	ug/L	8	Standard
	Ag	107	119.7	9.2	**0.0065**	0.002	28.9	ug/L	81	Standard
	Cd	111	317.1	3.2	**0.1502**	0.006	3.9	mg/L	3	Standard
	Cd	114	681.4	6.2	**0.1296**	0.010	7.4	ug/L	7	Standard
>	**In**	115	558854.3	1.4				ug/L	524722	Standard
	Sn	118	820.0	7.6	**0.0535**	0.012	21.9	ug/L	715	Standard
	Sb	123	282.5	7.4	**0.0459**	0.004	9.0	ug/L	201	Standard
	Ba	135	35268.3	1.2	**18.2144**	0.408	2.2	ug/L	108	Standard
	Ce	140	2163.5	3.8				ug/L	30	Standard
>	**Tb**	159	825700.5	0.4				ug/L	792236	Standard
	Ho	165	51.7	14.8				ug/L	7	Standard
	Tl	203	156.7	22.7	**0.0174**	0.005	26.5	ug/L	9	Standard
	Tl	205	173.3	46.6	**0.0182**	0.012	67.6	ug/L	0	Standard
	Pb	206	424.7	5.7	**0.0331**	0.006	16.7	ug/L	216	Standard
	Pb	207	356.0	3.9	**0.0286**	0.004	13.3	ug/L	180	Standard
	Pb	208	1553.0	4.6	**0.0306**	0.005	14.8	ug/L	717	Standard
	U	238	81.0	68.7	**0.0051**	0.009	171.7	ug/L	4	Standard
>	**Bi**	209	473355.3	0.7				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.6238**	8.363	148.7	mg/L	0	Standard
Mg	24	2843.6	1.0	**3.4857**	0.082	2.3	mg/L	20	Standard
K	39	78.3	14.7	**0.3207**	0.096	29.9	mg/L	22	Standard
Ca	43	50.0	20.0	**-2.4661**	2.354	95.5	mg/L	47	Standard
Fe	54	2460.3	3.7	**1.7187**	0.119	6.9	mg/L	151	Standard
Fe	57	721.7	11.5	**1.4022**	0.269	19.2	mg/L	195	Standard
Sc-1	45	32386.3	3.3				mg/L	29647	Standard
Cl	35	167245.3	0.7				ug/L	154152	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	10406.9	6.9				ug/L	1607	Standard
P	31	27868.9	1.7				ug/L	22752	Standard
S	34	4945.8	3.9				ug/L	5049	Standard
Sr	88	151.7	1.9				ug/L	87	Standard
C	12	130.0	26.6				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	93.0	49.2				mg/L	10	Standard
Ho-1	165	51.7	14.8				mg/L	7	Standard
Er	166	76.7	32.8				mg/L	3	Standard
I	127	108192.1	4.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		143.481	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.941	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.505
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.827
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606064901
Sample Date/Time: Thursday, June 16, 2016 19:57:13
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73899.8	1.9				ug/L	51024	Standard
	Be	9	28.3	20.4	**0.0021**	0.004	205.1	ug/L	7	Standard
	Al	27	17068640.1	0.5	**82.8031**	1.944	2.3	ug/L	625	Standard
	Sc	45	31098.6	0.8				ug/L	29647	Standard
	Ti	47	2220.5	15.6	**7.6952**	1.219	15.8	ug/L	57	Standard
	V	51	3330.6	5.2	**0.3294**	0.025	7.6	ug/L	1142	Standard
	Cr	52	12294.7	1.4	**0.8476**	0.021	2.5	ug/L	6628	Standard
	Cr	53	3545.4	12.3	**3.6195**	0.491	13.6	ug/L	430	Standard
	Mn	55	65149.4	0.9	**11.5346**	0.133	1.2	ug/L	603	Standard
	Co	59	1855.8	3.0	**0.2656**	0.010	3.6	ug/L	237	Standard
	Ni	60	2852.6	1.9	**1.4936**	0.030	2.0	ug/L	141	Standard
	Cu	65	55047.8	0.2	**31.0509**	0.094	0.3	ug/L	109	Standard
	Zn	66	20763.6	1.9	**19.6724**	0.380	1.9	ug/L	159	Standard
>	**Ge**	72	446059.8	0.2				ug/L	474053	Standard
	As	75	230.9	30.1	**0.2467**	0.067	27.2	ug/L	-34	Standard
	Se	82	114.1	10.5	**0.9274**	0.115	12.4	ug/L	14	Standard
	Se-1	77	255.7	12.3	**2.7929**	0.427	15.3	ug/L	55	Standard
>	**Ga**	71	203.3	6.2				mg/L	50	Standard
	Rb	85	64731.4	2.1				ug/L	20	Standard
	Y	89	406326.7	3.3				ug/L	376602	Standard
>	**Rh**	103	48.3	21.5				ug/L	17	Standard
	Mo	98	623.5	1.9	**0.2468**	0.013	5.5	ug/L	8	Standard
	Ag	107	134.0	13.8	**0.0091**	0.002	26.2	ug/L	81	Standard
	Cd	111	49.6	6.5	**0.0211**	0.001	3.6	mg/L	3	Standard
	Cd	114	143.2	27.3	**0.0245**	0.007	27.9	ug/L	7	Standard
>	**In**	115	549535.8	3.5				ug/L	524722	Standard
	Sn	118	1373.4	4.5	**0.1543**	0.017	10.8	ug/L	715	Standard
	Sb	123	311.5	9.8	**0.0535**	0.009	17.0	ug/L	201	Standard
	Ba	135	22377.2	0.2	**11.7401**	0.432	3.7	ug/L	108	Standard
	Ce	140	280.0	11.2				ug/L	30	Standard
>	**Tb**	159	815853.8	2.8				ug/L	792236	Standard
	Ho	165	18.3	95.8				ug/L	7	Standard
	Tl	203	193.0	9.7	**0.0237**	0.002	10.2	ug/L	9	Standard
	Tl	205	165.0	24.1	**0.0186**	0.007	36.0	ug/L	0	Standard
	Pb	206	1296.1	2.0	**0.2354**	0.004	1.8	ug/L	216	Standard
	Pb	207	1110.4	3.4	**0.2207**	0.006	2.5	ug/L	180	Standard
	Pb	208	4630.9	2.3	**0.2243**	0.008	3.6	ug/L	717	Standard
	U	238	1289.4	2.5	**0.2082**	0.002	1.1	ug/L	4	Standard
>	**Bi**	209	442943.4	2.1				ug/L	460343	Standard

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Na	23	6.7	86.6	**-10.3108**	17.983	174.4	mg/L	0	Standard
Mg	24	29769.2	2.1	**38.4319**	0.806	2.1	mg/L	20	Standard
K	39	731.7	8.5	**5.0889**	0.443	8.7	mg/L	22	Standard
Ca	43	196.7	13.0	**30.5875**	5.364	17.5	mg/L	47	Standard
Fe	54	365.7	3.5	**0.1685**	0.008	4.7	mg/L	151	Standard
Fe	57	391.7	14.9	**0.5082**	0.163	32.1	mg/L	195	Standard
> **Sc-1**	45	31098.6	0.8				mg/L	29647	Standard
Cl	35	222953.8	0.9				ug/L	154152	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	17977.3	3.7				ug/L	1607	Standard
P	31	27297.9	1.8				ug/L	22752	Standard
S	34	5117.5	2.7				ug/L	5049	Standard
Sr	88	170.0	7.8				ug/L	87	Standard
C	12	300.0	21.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	86.6				mg/L	0	Standard
Dy	164	34.9	61.4				mg/L	10	Standard
Ho-1	165	18.3	95.8				mg/L	7	Standard
Er	166	36.7	41.7				mg/L	3	Standard
I	127	36641.0	3.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		144.833	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.095	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.729
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.220
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606065001
Sample Date/Time: Thursday, June 16, 2016 20:00:24
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72946.9	1.0				ug/L	51024	Standard
	Be	9	18.3	31.5	**-0.0058**	0.005	85.0	ug/L	7	Standard
	Al	27	25893242.1	1.3	**127.2227**	1.176	0.9	ug/L	625	Standard
	Sc	45	31297.3	0.7				ug/L	29647	Standard
	Ti	47	363.0	6.9	**1.0820**	0.092	8.5	ug/L	57	Standard
	V	51	26598.7	23.4	**3.6881**	0.888	24.1	ug/L	1142	Standard
	Cr	52	3600275.3	0.7	**503.8543**	2.642	0.5	ug/L	6628	Standard
	Cr	53	441968.5	0.3	**489.9131**	0.755	0.2	ug/L	430	Standard
	Mn	55	3750356.5	0.6	**651.5298**	1.262	0.2	ug/L	603	Standard
	Co	59	140636.7	1.1	**22.5301**	0.278	1.2	ug/L	237	Standard
	Ni	60	1491493.6	1.2	**797.5118**	6.177	0.8	ug/L	141	Standard
	Cu	65	3267.0	3.0	**1.7266**	0.047	2.7	ug/L	109	Standard
	Zn	66	3425.7	1.8	**2.9563**	0.067	2.3	ug/L	159	Standard
>	**Ge**	72	459475.2	0.5				ug/L	474053	Standard
	As	75	556.7	15.6	**0.5440**	0.082	15.1	ug/L	-34	Standard
	Se	82	222.9	6.2	**1.9114**	0.137	7.2	ug/L	14	Standard
	Se-1	77	721.0	7.2	**8.9403**	0.656	7.3	ug/L	55	Standard
>	**Ga**	71	291.7	10.5				mg/L	50	Standard
	Rb	85	7967.1	5.2				ug/L	20	Standard
	Y	89	376366.8	3.1				ug/L	376602	Standard
>	**Rh**	103	188.3	17.7				ug/L	17	Standard
	Mo	98	4038.0	0.7	**1.7616**	0.010	0.6	ug/L	8	Standard
	Ag	107	92.0	19.6	**0.0036**	0.003	90.6	ug/L	81	Standard
	Cd	111	324.1	6.9	**0.1694**	0.013	7.5	mg/L	3	Standard
	Cd	114	819.8	8.2	**0.1728**	0.014	8.3	ug/L	7	Standard
>	**In**	115	507645.2	1.3				ug/L	524722	Standard
	Sn	118	691.7	9.8	**0.0432**	0.012	27.3	ug/L	715	Standard
	Sb	123	362.3	12.4	**0.0710**	0.011	16.1	ug/L	201	Standard
	Ba	135	933624.2	0.5	**532.4126**	8.811	1.7	ug/L	108	Standard
	Ce	140	3360.4	5.9				ug/L	30	Standard
>	**Tb**	159	768822.1	0.7				ug/L	792236	Standard
	Ho	165	56.7	48.6				ug/L	7	Standard
	Tl	203	246.7	11.1	**0.0318**	0.003	11.0	ug/L	9	Standard
	Tl	205	253.3	31.2	**0.0337**	0.013	38.1	ug/L	0	Standard
	Pb	206	530.7	3.2	**0.0660**	0.004	5.7	ug/L	216	Standard
	Pb	207	474.0	4.9	**0.0662**	0.005	7.1	ug/L	180	Standard
	Pb	208	1991.7	8.7	**0.0664**	0.011	16.6	ug/L	717	Standard
	U	238	2713.6	2.5	**0.4575**	0.014	3.0	ug/L	4	Standard
>	**Bi**	209	432460.1	1.2				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.2420**	9.024	172.2	mg/L	0	Standard
Mg	24	90814.7	0.4	**116.5891**	0.672	0.6	mg/L	20	Standard
K	39	136.7	18.8	**0.7598**	0.192	25.3	mg/L	22	Standard
Ca	43	113.3	24.3	**11.8769**	5.966	50.2	mg/L	47	Standard
Fe	54	8598.8	2.1	**6.5077**	0.130	2.0	mg/L	151	Standard
Fe	57	2420.2	4.0	**6.4526**	0.333	5.2	mg/L	195	Standard
> **Sc-1**	45	31297.3	0.7				mg/L	29647	Standard
Cl	35	172318.1	2.4				ug/L	154152	Standard
Kr	83	2.7	43.3				ug/L	3	Standard
Br	81	54798.9	1.9				ug/L	1607	Standard
P	31	33010.9	0.2				ug/L	22752	Standard
S	34	5099.2	1.3				ug/L	5049	Standard
Sr	88	600.0	8.0				ug/L	87	Standard
C	12	176.7	34.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	96.6	30.8				mg/L	10	Standard
Ho-1	165	56.7	48.6				mg/L	7	Standard
Er	166	70.0	14.3				mg/L	3	Standard
I	127	400706.8	6.8				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		142.965	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.925	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.746
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.943
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Cr 52 Upper, S, EEE	Cr	52	

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Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Ni 60 Upper, S, EEE	Ni	60
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606065002
Sample Date/Time: Thursday, June 16, 2016 20:03:36
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74923.1	0.9				ug/L	51024	Standard
	Be	9	10.0	86.6	**-0.0129**	0.007	54.5	ug/L	7	Standard
	Al	27	11445723.9	1.0	**54.7538**	1.040	1.9	ug/L	625	Standard
	Sc	45	33881.2	2.3				ug/L	29647	Standard
	Ti	47	432.3	7.3	**1.3384**	0.080	6.0	ug/L	57	Standard
	V	51	2150.8	34.9	**0.1495**	0.116	77.8	ug/L	1142	Standard
	Cr	52	17737.4	0.6	**1.5921**	0.067	4.2	ug/L	6628	Standard
	Cr	53	10231.8	13.3	**11.0925**	1.758	15.8	ug/L	430	Standard
	Mn	55	1115003.1	1.6	**196.2265**	7.080	3.6	ug/L	603	Standard
	Co	59	2902.3	1.7	**0.4307**	0.009	2.2	ug/L	237	Standard
	Ni	60	3566.1	4.1	**1.8534**	0.037	2.0	ug/L	141	Standard
	Cu	65	1206.0	1.3	**0.6044**	0.011	1.8	ug/L	109	Standard
	Zn	66	2690.2	1.2	**2.3054**	0.087	3.8	ug/L	159	Standard
>	**Ge**	72	453598.8	2.2				ug/L	474053	Standard
	As	75	280.7	13.7	**0.2904**	0.040	13.9	ug/L	-34	Standard
	Se	82	128.1	7.4	**1.0434**	0.112	10.7	ug/L	14	Standard
	Se-1	77	619.3	6.2	**7.6936**	0.694	9.0	ug/L	55	Standard
>	**Ga**	71	105.0	17.2				mg/L	50	Standard
	Rb	85	9451.3	1.9				ug/L	20	Standard
	Y	89	391791.6	1.5				ug/L	376602	Standard
>	**Rh**	103	140.0	6.2				ug/L	17	Standard
	Mo	98	235.6	9.4	**0.0929**	0.011	11.9	ug/L	8	Standard
	Ag	107	90.7	15.8	**0.0026**	0.002	86.9	ug/L	81	Standard
	Cd	111	142.6	5.5	**0.0692**	0.005	7.6	mg/L	3	Standard
	Cd	114	324.8	13.1	**0.0629**	0.009	15.1	ug/L	7	Standard
>	**In**	115	532666.5	2.0				ug/L	524722	Standard
	Sn	118	630.0	6.3	**0.0258**	0.009	33.7	ug/L	715	Standard
	Sb	123	425.3	4.8	**0.0811**	0.005	5.7	ug/L	201	Standard
	Ba	135	317814.3	1.2	**172.6789**	1.361	0.8	ug/L	108	Standard
	Ce	140	4260.6	3.9				ug/L	30	Standard
>	**Tb**	159	822106.7	0.8				ug/L	792236	Standard
	Ho	165	98.3	10.6				ug/L	7	Standard
	Tl	203	236.3	5.5	**0.0291**	0.002	5.8	ug/L	9	Standard
	Tl	205	180.0	7.3	**0.0206**	0.002	9.9	ug/L	0	Standard
	Pb	206	404.0	5.2	**0.0334**	0.005	14.3	ug/L	216	Standard
	Pb	207	342.3	3.2	**0.0297**	0.003	8.7	ug/L	180	Standard
	Pb	208	1396.4	3.4	**0.0260**	0.003	10.6	ug/L	717	Standard
	U	238	1612.4	1.0	**0.2586**	0.003	1.2	ug/L	4	Standard
>	**Bi**	209	449004.5	0.2				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	75132.5	1.7	**89.1275**	2.931	3.3	mg/L	20	Standard
K	39	103.3	14.8	**0.4601**	0.085	18.5	mg/L	22	Standard
Ca	43	118.3	6.5	**11.0359**	2.111	19.1	mg/L	47	Standard
Fe	54	299.8	4.4	**0.0986**	0.014	14.4	mg/L	151	Standard
Fe	57	295.0	19.5	**0.1539**	0.166	108.1	mg/L	195	Standard
> **Sc-1**	45	33881.2	2.3				mg/L	29647	Standard
Cl	35	177255.5	0.3				ug/L	154152	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	27852.3	4.5				ug/L	1607	Standard
P	31	36888.2	1.8				ug/L	22752	Standard
S	34	5134.2	5.6				ug/L	5049	Standard
Sr	88	336.7	12.1				ug/L	87	Standard
C	12	236.7	6.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	125.5	16.3				mg/L	10	Standard
Ho-1	165	98.3	10.6				mg/L	7	Standard
Er	166	93.3	16.4				mg/L	3	Standard
I	127	795775.9	5.4				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		146.839	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.685	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.514	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.537	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606065003
Sample Date/Time: Thursday, June 16, 2016 20:06:47
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73049.1	2.8				ug/L	51024	Standard
	Be	9	56.7	53.2	**0.0258**	0.025	96.4	ug/L	7	Standard
	Al	27	6795723.2	1.7	**33.3429**	0.423	1.3	ug/L	625	Standard
	Sc	45	32349.5	2.7				ug/L	29647	Standard
	Ti	47	1362.4	1.5	**4.5490**	0.135	3.0	ug/L	57	Standard
	V	51	-1621.9	225.1	**-0.4056**	0.530	130.6	ug/L	1142	Standard
	Cr	52	1449129.7	0.3	**203.6270**	3.465	1.7	ug/L	6628	Standard
	Cr	53	186956.4	0.3	**208.3861**	2.811	1.3	ug/L	430	Standard
	Mn	55	969240.4	1.1	**169.4166**	2.152	1.3	ug/L	603	Standard
	Co	59	17799.4	0.3	**2.8346**	0.031	1.1	ug/L	237	Standard
	Ni	60	82918.9	0.7	**44.5655**	0.800	1.8	ug/L	141	Standard
	Cu	65	12426.8	2.2	**6.7981**	0.081	1.2	ug/L	109	Standard
	Zn	66	16815.7	1.7	**15.5225**	0.331	2.1	ug/L	159	Standard
>	Ge	72	456450.5	1.3				ug/L	474053	Standard
	As	75	1966.3	2.2	**1.8692**	0.017	0.9	ug/L	-34	Standard
	Se	82	293.5	2.7	**2.5875**	0.085	3.3	ug/L	14	Standard
	Se-1	77	432.0	3.1	**5.0994**	0.235	4.6	ug/L	55	Standard
>	Ga	71	736.7	9.9				mg/L	50	Standard
	Rb	85	15683.1	2.3				ug/L	20	Standard
	Y	89	407716.2	0.3				ug/L	376602	Standard
>	Rh	103	95.0	13.9				ug/L	17	Standard
	Mo	98	6403.0	2.3	**2.6056**	0.071	2.7	ug/L	8	Standard
	Ag	107	109.7	3.7	**0.0054**	0.001	15.4	ug/L	81	Standard
	Cd	111	1059.3	1.9	**0.5225**	0.015	2.8	mg/L	3	Standard
	Cd	114	2761.6	6.2	**0.5508**	0.040	7.3	ug/L	7	Standard
>	In	115	544816.8	1.1				ug/L	524722	Standard
	Sn	118	1191.7	7.7	**0.1237**	0.018	14.6	ug/L	715	Standard
	Sb	123	304.1	8.3	**0.0523**	0.006	10.7	ug/L	201	Standard
	Ba	135	110831.6	1.3	**58.8309**	0.136	0.2	ug/L	108	Standard
	Ce	140	24424.7	1.3				ug/L	30	Standard
>	Tb	159	809371.8	1.0				ug/L	792236	Standard
	Ho	165	351.7	3.0				ug/L	7	Standard
	Tl	203	219.0	7.6	**0.0268**	0.002	7.8	ug/L	9	Standard
	Tl	205	185.0	24.8	**0.0214**	0.007	34.0	ug/L	0	Standard
	Pb	206	2753.6	3.0	**0.5549**	0.011	2.0	ug/L	216	Standard
	Pb	207	2285.2	1.4	**0.5035**	0.014	2.7	ug/L	180	Standard
	Pb	208	9786.6	1.2	**0.5303**	0.014	2.6	ug/L	717	Standard
	U	238	353.7	1.7	**0.0508**	0.000	0.5	ug/L	4	Standard
>	Bi	209	449128.9	1.4				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	37974.2	2.9	**47.1394**	0.683	1.4	mg/L	20	Standard
K	39	91.7	3.1	**0.4128**	0.025	6.0	mg/L	22	Standard
Ca	43	75.0	26.7	**2.9551**	4.725	159.9	mg/L	47	Standard
Fe	54	5125.4	2.8	**3.7060**	0.149	4.0	mg/L	151	Standard
Fe	57	1555.1	4.8	**3.7648**	0.143	3.8	mg/L	195	Standard
> **Sc-1**	45	32349.5	2.7				mg/L	29647	Standard
Cl	35	176741.0	1.5				ug/L	154152	Standard
Kr	83	1.3	86.6				ug/L	3	Standard
Br	81	69459.0	3.9				ug/L	1607	Standard
P	31	30123.3	2.4				ug/L	22752	Standard
S	34	4967.5	1.4				ug/L	5049	Standard
Sr	88	190.0	9.5				ug/L	87	Standard
C	12	126.7	12.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	637.1	0.5				mg/L	10	Standard
Ho-1	165	351.7	3.0				mg/L	7	Standard
Er	166	340.0	15.3				mg/L	3	Standard
I	127	176369.6	3.2				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		143.166	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.287	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.830	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.564	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
V 51 Lower	V	51	
Cr 52 Upper, S, EEE	Cr	52	

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Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55

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Method 6020 - Summary Report

Sample ID: L1606065008
Sample Date/Time: Thursday, June 16, 2016 20:12:57
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72941.9	1.7				ug/L	51024	Standard
	Be	9	75.0	11.5	**0.0413**	0.007	17.1	ug/L	7	Standard
	Al	27	2553806.5	1.0	**12.5408**	0.102	0.8	ug/L	625	Standard
	Sc	45	32038.9	2.8				ug/L	29647	Standard
	Ti	47	722.7	5.7	**2.2554**	0.110	4.9	ug/L	57	Standard
	V	51	3819.2	3.9	**0.3720**	0.024	6.3	ug/L	1142	Standard
	Cr	52	10926.9	1.1	**0.5663**	0.038	6.8	ug/L	6628	Standard
	Cr	53	5912.8	6.8	**5.9618**	0.341	5.7	ug/L	430	Standard
	Mn	55	1386219.7	0.5	**234.7938**	4.744	2.0	ug/L	603	Standard
	Co	59	5557.7	1.4	**0.8285**	0.006	0.8	ug/L	237	Standard
	Ni	60	17011.5	0.7	**8.7950**	0.195	2.2	ug/L	141	Standard
	Cu	65	1618.4	1.4	**0.8000**	0.013	1.6	ug/L	109	Standard
	Zn	66	33299.6	0.0	**29.9907**	0.453	1.5	ug/L	159	Standard
>	**Ge**	72	471205.0	1.5				ug/L	474053	Standard
	As	75	966.9	5.2	**0.9032**	0.033	3.6	ug/L	-34	Standard
	Se	82	311.0	2.5	**2.6600**	0.029	1.1	ug/L	14	Standard
	Se-1	77	329.3	6.4	**3.5702**	0.277	7.8	ug/L	55	Standard
>	**Ga**	71	258.3	15.5				mg/L	50	Standard
	Rb	85	8330.6	3.2				ug/L	20	Standard
	Y	89	401951.6	2.1				ug/L	376602	Standard
>	**Rh**	103	36.7	43.8				ug/L	17	Standard
	Mo	98	105.4	14.0	**0.0382**	0.006	14.8	ug/L	8	Standard
	Ag	107	90.7	18.0	**0.0026**	0.003	103.7	ug/L	81	Standard
	Cd	111	115.2	13.8	**0.0550**	0.008	14.6	mg/L	3	Standard
	Cd	114	259.1	8.3	**0.0492**	0.005	9.4	ug/L	7	Standard
>	**In**	115	535100.4	1.1				ug/L	524722	Standard
	Sn	118	718.4	7.1	**0.0413**	0.008	20.4	ug/L	715	Standard
	Sb	123	448.1	4.2	**0.0858**	0.005	5.4	ug/L	201	Standard
	Ba	135	68982.0	0.6	**37.2626**	0.244	0.7	ug/L	108	Standard
	Ce	140	25868.7	1.1				ug/L	30	Standard
>	**Tb**	159	806521.0	1.2				ug/L	792236	Standard
	Ho	165	500.0	12.5				ug/L	7	Standard
	Tl	203	215.0	12.2	**0.0260**	0.004	15.1	ug/L	9	Standard
	Tl	205	150.0	6.7	**0.0156**	0.002	10.9	ug/L	0	Standard
	Pb	206	509.0	3.9	**0.0556**	0.003	5.6	ug/L	216	Standard
	Pb	207	432.0	1.7	**0.0505**	0.001	2.1	ug/L	180	Standard
	Pb	208	1819.0	0.9	**0.0504**	0.002	3.5	ug/L	717	Standard
	U	238	230.0	2.3	**0.0300**	0.001	2.2	ug/L	4	Standard
>	**Bi**	209	453449.6	1.5				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	38452.1	0.8	**48.2252**	1.630	3.4	mg/L	20	Standard
K	39	58.3	38.7	**0.1852**	0.162	87.6	mg/L	22	Standard
Ca	43	35.0	51.5	**-5.6048**	3.899	69.6	mg/L	47	Standard
Fe	54	249.0	20.9	**0.0731**	0.044	60.8	mg/L	151	Standard
Fe	57	205.0	6.5	**-0.0599**	0.029	47.9	mg/L	195	Standard
> **Sc-1**	45	32038.9	2.8				mg/L	29647	Standard
Cl	35	205402.9	2.6				ug/L	154152	Standard
Kr	83	2.3	24.7				ug/L	3	Standard
Br	81	66452.1	2.3				ug/L	1607	Standard
P	31	28505.1	1.9				ug/L	22752	Standard
S	34	4827.4	1.0				ug/L	5049	Standard
Sr	88	103.3	7.4				ug/L	87	Standard
C	12	290.0	39.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	843.5	10.6				mg/L	10	Standard
Ho-1	165	500.0	12.5				mg/L	7	Standard
Er	166	483.3	20.9				mg/L	3	Standard
I	127	65771.0	5.3				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		142.956	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.399	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.978	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.503	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606072901
Sample Date/Time: Thursday, June 16, 2016 20:16:08
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71451.4	0.2				ug/L	51024	Standard
	Be	9	156.7	13.3	**0.1120**	0.018	15.8	ug/L	7	Standard
	Al	27	1783026.0	1.0	**8.9350**	0.113	1.3	ug/L	625	Standard
	Sc	45	33488.6	0.2				ug/L	29647	Standard
	Ti	47	3847.8	0.7	**12.4804**	0.276	2.2	ug/L	57	Standard
	V	51	20969.4	1.8	**2.7398**	0.019	0.7	ug/L	1142	Standard
	Cr	52	17305.9	0.3	**1.3919**	0.032	2.3	ug/L	6628	Standard
	Cr	53	2988.6	7.9	**2.7405**	0.281	10.3	ug/L	430	Standard
	Mn	55	363989.8	1.4	**60.3519**	1.596	2.6	ug/L	603	Standard
	Co	59	13842.7	0.2	**2.0829**	0.032	1.5	ug/L	237	Standard
	Ni	60	5649.1	2.1	**2.8101**	0.018	0.6	ug/L	141	Standard
	Cu	65	2744.6	2.9	**1.3736**	0.022	1.6	ug/L	109	Standard
	Zn	66	21962.9	1.2	**19.3089**	0.151	0.8	ug/L	159	Standard
>	**Ge**	72	480623.4	1.5				ug/L	474053	Standard
	As	75	604.0	4.6	**0.5630**	0.022	3.9	ug/L	-34	Standard
	Se	82	62.7	5.3	**0.3902**	0.037	9.5	ug/L	14	Standard
	Se-1	77	114.3	16.4	**0.7262**	0.260	35.8	ug/L	55	Standard
>	**Ga**	71	1213.4	6.6				mg/L	50	Standard
	Rb	85	49025.9	0.6				ug/L	20	Standard
	Y	89	427519.3	0.4				ug/L	376602	Standard
>	**Rh**	103	33.3	37.7				ug/L	17	Standard
	Mo	98	183.9	8.3	**0.0677**	0.006	8.8	ug/L	8	Standard
	Ag	107	84.7	15.9	**0.0010**	0.002	216.4	ug/L	81	Standard
	Cd	111	55.6	11.8	**0.0237**	0.003	13.7	mg/L	3	Standard
	Cd	114	123.4	16.9	**0.0204**	0.004	20.0	ug/L	7	Standard
>	**In**	115	557933.4	0.7				ug/L	524722	Standard
	Sn	118	618.3	8.9	**0.0185**	0.009	49.1	ug/L	715	Standard
	Sb	123	180.1	11.3	**0.0240**	0.004	17.3	ug/L	201	Standard
	Ba	135	83499.8	1.0	**43.2656**	0.170	0.4	ug/L	108	Standard
	Ce	140	144607.0	2.1				ug/L	30	Standard
>	**Tb**	159	830815.8	1.2				ug/L	792236	Standard
	Ho	165	2081.8	4.4				ug/L	7	Standard
	Tl	203	322.3	0.4	**0.0385**	0.000	1.0	ug/L	9	Standard
	Tl	205	275.0	3.6	**0.0334**	0.001	4.5	ug/L	0	Standard
	Pb	206	5048.5	0.5	**1.0085**	0.002	0.2	ug/L	216	Standard
	Pb	207	4178.9	1.8	**0.9144**	0.020	2.2	ug/L	180	Standard
	Pb	208	17525.7	1.4	**0.9427**	0.011	1.1	ug/L	717	Standard
	U	238	621.3	3.2	**0.0898**	0.003	3.0	ug/L	4	Standard
>	**Bi**	209	472687.9	0.6				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.6311**	8.350	148.3	mg/L	0	Standard
Mg	24	3158.7	1.3	**3.7460**	0.051	1.3	mg/L	20	Standard
K	39	215.0	8.1	**1.2230**	0.115	9.4	mg/L	22	Standard
Ca	43	38.3	27.2	**-5.2593**	2.154	41.0	mg/L	47	Standard
Fe	54	3415.5	7.7	**2.3435**	0.190	8.1	mg/L	151	Standard
Fe	57	1036.7	4.4	**2.1944**	0.121	5.5	mg/L	195	Standard
> **Sc-1**	45	33488.6	0.2				mg/L	29647	Standard
Cl	35	164707.7	0.4				ug/L	154152	Standard
Kr	83	3.0	33.3				ug/L	3	Standard
Br	81	11457.7	7.7				ug/L	1607	Standard
P	31	28214.6	1.7				ug/L	22752	Standard
S	34	4967.5	1.9				ug/L	5049	Standard
Sr	88	113.3	6.7				ug/L	87	Standard
C	12	80.0	12.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	0	Standard
Dy	164	3722.9	5.4				mg/L	10	Standard
Ho-1	165	2081.8	4.4				mg/L	7	Standard
Er	166	1966.8	4.6				mg/L	3	Standard
I	127	28066.0	3.2				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		140.035	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.386	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.329
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.682
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 20:19:21
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	70359.7	1.3				ug/L	51024	Standard
	Be	9	53312.1	5.5	**45.9476**	1.930	4.2	ug/L	7	Standard
	Al	27	8077611.0	1.8	**41.1433**	0.785	1.9	ug/L	625	Standard
	Sc	45	32289.4	1.8				ug/L	29647	Standard
	Ti	47	30321.3	1.6	**100.0769**	1.272	1.3	ug/L	57	Standard
	V	51	360120.0	0.4	**50.0825**	0.106	0.2	ug/L	1142	Standard
	Cr	52	369947.6	1.5	**48.9622**	0.470	1.0	ug/L	6628	Standard
	Cr	53	47002.8	0.4	**49.7282**	0.165	0.3	ug/L	430	Standard
	Mn	55	317711.3	0.7	**52.9755**	0.531	1.0	ug/L	603	Standard
	Co	59	339862.8	0.3	**52.4255**	0.355	0.7	ug/L	237	Standard
	Ni	60	93112.6	1.0	**47.8173**	0.235	0.5	ug/L	141	Standard
	Cu	65	91542.1	0.9	**48.2534**	0.241	0.5	ug/L	109	Standard
	Zn	66	53846.5	0.5	**47.9689**	0.154	0.3	ug/L	159	Standard
>	Ge	72	477686.4	0.6				ug/L	474053	Standard
	As	75	53954.1	0.4	**48.3818**	0.469	1.0	ug/L	-34	Standard
	Se	82	5528.9	1.3	**49.4502**	0.921	1.9	ug/L	14	Standard
	Se-1	77	3768.1	3.4	**47.9498**	1.532	3.2	ug/L	55	Standard
>	Ga	71	96.7	3.0				mg/L	50	Standard
	Rb	85	860.0	3.6				ug/L	20	Standard
	Y	89	407805.9	2.6				ug/L	376602	Standard
>	Rh	103	38.3	19.9				ug/L	17	Standard
	Mo	98	251849.5	0.7	**99.5336**	0.343	0.3	ug/L	8	Standard
	Ag	107	302942.0	0.9	**47.3977**	0.787	1.7	ug/L	81	Standard
	Cd	111	100743.2	0.5	**48.4530**	0.464	1.0	mg/L	3	Standard
	Cd	114	243706.8	2.6	**47.4138**	1.351	2.8	ug/L	7	Standard
>	In	115	562084.3	0.9				ug/L	524722	Standard
	Sn	118	283917.6	1.7	**49.1130**	0.500	1.0	ug/L	715	Standard
	Sb	123	223152.0	0.8	**47.6804**	0.566	1.2	ug/L	201	Standard
	Ba	135	90693.3	1.2	**46.6526**	0.606	1.3	ug/L	108	Standard
	Ce	140	95.0	24.1				ug/L	30	Standard
>	Tb	159	823567.8	1.3				ug/L	792236	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	373875.5	0.8	**47.8522**	0.141	0.3	ug/L	9	Standard
	Tl	205	338247.8	1.5	**50.9083**	0.885	1.7	ug/L	0	Standard
	Pb	206	233315.4	0.7	**49.3532**	0.331	0.7	ug/L	216	Standard
	Pb	207	211841.0	0.3	**49.2260**	0.469	1.0	ug/L	180	Standard
	Pb	208	876269.3	0.6	**50.1725**	0.549	1.1	ug/L	717	Standard
	U	238	329535.1	0.3	**51.8676**	0.341	0.7	ug/L	4	Standard
>	Bi	209	470816.3	0.6				ug/L	460343	Standard

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Na	23	3.3	86.6	**0.5093**	8.613	1691.0	mg/L	0	Standard
Mg	24	4180.6	4.5	**5.1574**	0.149	2.9	mg/L	20	Standard
K	39	543.3	5.4	**3.5784**	0.272	7.6	mg/L	22	Standard
Ca	43	63.3	12.1	**0.3907**	1.523	389.8	mg/L	47	Standard
Fe	54	5922.9	1.4	**4.3077**	0.105	2.4	mg/L	151	Standard
Fe	57	1828.4	2.7	**4.5503**	0.051	1.1	mg/L	195	Standard
> **Sc-1**	45	32289.4	1.8				mg/L	29647	Standard
Cl	35	173385.8	0.9				ug/L	154152	Standard
Kr	83	1.3	114.6				ug/L	3	Standard
Br	81	2136.8	4.6				ug/L	1607	Standard
P	31	26322.9	2.1				ug/L	22752	Standard
S	34	5514.3	2.6				ug/L	5049	Standard
Sr	88	65.0	27.7				ug/L	87	Standard
C	12	70.0	24.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	23.3	89.2				mg/L	10	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	0.0					mg/L	3	Standard
I	127	3703.8	16.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	91.895		
Al	27	82.287		
Sc	45			
Ti	47	100.077		
V	51	100.165		
Cr	52	97.924		
Cr	53			
Mn	55	105.951		
Co	59	104.851		
Ni	60	95.635		
Cu	65	96.507		
Zn	66	95.938		
> Ge	72		100.766	
As	75	96.764		
Se	82	98.900		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	99.534		
Ag	107	94.795		
Cd	111	96.906		
Cd	114			
In	115		107.120	
Sn	118	98.226		
Sb	123	95.361		
Ba	135	93.305		
Ce	140			
Tb	159			
Ho	165			
Tl	203	95.704		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.345		
U	238	103.735		
Bi	209		102.275	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 20:22:32
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67637.3	2.1				ug/L	51024	Standard
	Be	9	18.3	83.3	**-0.0045**	0.014	309.1	ug/L	7	Standard
	Al	27	1391.7	16.0	**-0.0024**	0.001	50.0	ug/L	625	Standard
	Sc	45	30764.5	1.2				ug/L	29647	Standard
	Ti	47	37.3	15.2	**-0.0462**	0.017	37.4	ug/L	57	Standard
	V	51	1089.5	9.5	**-0.0208**	0.013	60.2	ug/L	1142	Standard
	Cr	52	6209.3	0.8	**-0.1150**	0.004	3.7	ug/L	6628	Standard
	Cr	53	621.7	6.5	**0.2124**	0.037	17.6	ug/L	430	Standard
	Mn	55	764.0	5.2	**-0.0024**	0.006	259.9	ug/L	603	Standard
	Co	59	234.0	4.1	**-0.0062**	0.002	27.4	ug/L	237	Standard
	Ni	60	152.7	14.0	**-0.0015**	0.011	728.7	ug/L	141	Standard
	Cu	65	133.0	12.1	**0.0021**	0.009	425.3	ug/L	109	Standard
	Zn	66	146.0	6.6	**-0.1051**	0.009	8.1	ug/L	159	Standard
>	**Ge**	72	492018.2	1.0				ug/L	474053	Standard
	As	75	-9.0	401.0	**0.0170**	0.032	186.2	ug/L	-34	Standard
	Se	82	25.4	15.9	**0.0523**	0.034	65.9	ug/L	14	Standard
	Se-1	77	66.3	19.1	**0.0882**	0.166	188.3	ug/L	55	Standard
>	**Ga**	71	71.7	20.1				mg/L	50	Standard
	Rb	85	26.7	43.3				ug/L	20	Standard
	Y	89	407999.6	2.7				ug/L	376602	Standard
>	**Rh**	103	20.0	50.0				ug/L	17	Standard
	Mo	98	257.9	34.0	**0.0988**	0.034	34.5	ug/L	8	Standard
	Ag	107	107.0	12.6	**0.0049**	0.002	46.8	ug/L	81	Standard
	Cd	111	7.2	23.1	**0.0003**	0.001	264.5	mg/L	3	Standard
	Cd	114	32.4	23.6	**0.0026**	0.001	54.7	ug/L	7	Standard
>	**In**	115	547642.1	1.6				ug/L	524722	Standard
	Sn	118	781.7	18.0	**0.0498**	0.026	53.2	ug/L	715	Standard
	Sb	123	445.8	26.8	**0.0832**	0.027	32.7	ug/L	201	Standard
	Ba	135	126.0	4.8	**0.0089**	0.003	29.7	ug/L	108	Standard
	Ce	140	16.7	34.6				ug/L	30	Standard
>	**Tb**	159	805057.6	1.1				ug/L	792236	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	50.7	17.0	**0.0040**	0.001	27.9	ug/L	9	Standard
	Tl	205	33.3	22.9	**-0.0027**	0.001	41.6	ug/L	0	Standard
	Pb	206	245.3	6.9	**-0.0038**	0.003	90.3	ug/L	216	Standard
	Pb	207	206.3	2.8	**-0.0052**	0.002	29.4	ug/L	180	Standard
	Pb	208	876.0	4.6	**-0.0071**	0.002	32.4	ug/L	717	Standard
	U	238	36.7	27.6	**-0.0017**	0.002	94.5	ug/L	4	Standard
>	**Bi**	209	464955.7	0.5				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.1330**	9.213	179.5	mg/L	0	Standard
Mg	24	40.0	21.7	**0.0070**	0.011	155.9	mg/L	20	Standard
K	39	16.7	69.3	**-0.1055**	0.085	80.5	mg/L	22	Standard
Ca	43	30.0	66.7	**-6.3982**	4.581	71.6	mg/L	47	Standard
Fe	54	159.4	19.4	**0.0098**	0.023	233.9	mg/L	151	Standard
Fe	57	178.3	15.9	**-0.1151**	0.084	72.7	mg/L	195	Standard
> **Sc-1**	45	30764.5	1.2				mg/L	29647	Standard
Cl	35	172678.1	2.2				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	1756.8	6.0				ug/L	1607	Standard
P	31	26713.5	1.7				ug/L	22752	Standard
S	34	5486.0	1.1				ug/L	5049	Standard
Sr	88	68.3	25.7				ug/L	87	Standard
C	12	46.7	12.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	13.0	43.3				mg/L	10	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	2433.5	7.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.790	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.368
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.002
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606072902
Sample Date/Time: Thursday, June 16, 2016 20:26:38
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67597.1	1.4				ug/L	51024	Standard
	Be	9	58.3	13.1	**0.0313**	0.007	23.7	ug/L	7	Standard
	Al	27	1447794.1	2.6	**7.6674**	0.177	2.3	ug/L	625	Standard
	Sc	45	31928.7	4.9				ug/L	29647	Standard
	Ti	47	305.7	12.8	**0.8104**	0.145	17.9	ug/L	57	Standard
	V	51	1674.4	15.6	**0.0568**	0.033	58.1	ug/L	1142	Standard
	Cr	52	9700.4	2.0	**0.3335**	0.001	0.4	ug/L	6628	Standard
	Cr	53	1893.5	6.0	**1.5168**	0.108	7.1	ug/L	430	Standard
	Mn	55	246384.5	0.3	**39.5930**	0.878	2.2	ug/L	603	Standard
	Co	59	7588.2	2.4	**1.0889**	0.047	4.3	ug/L	237	Standard
	Ni	60	3526.1	1.5	**1.6717**	0.049	2.9	ug/L	141	Standard
	Cu	65	954.7	5.5	**0.4196**	0.020	4.8	ug/L	109	Standard
	Zn	66	5586.0	1.4	**4.5915**	0.148	3.2	ug/L	159	Standard
>	**Ge**	72	495383.3	1.9				ug/L	474053	Standard
	As	75	235.4	13.4	**0.2282**	0.025	10.7	ug/L	-34	Standard
	Se	82	130.5	4.3	**0.9599**	0.027	2.8	ug/L	14	Standard
	Se-1	77	93.7	12.4	**0.4210**	0.125	29.6	ug/L	55	Standard
>	**Ga**	71	108.3	13.3				mg/L	50	Standard
	Rb	85	27304.6	1.0				ug/L	20	Standard
	Y	89	392736.9	2.5				ug/L	376602	Standard
>	**Rh**	103	11.7	49.5				ug/L	17	Standard
	Mo	98	87.5	12.2	**0.0306**	0.004	14.1	ug/L	8	Standard
	Ag	107	101.0	6.0	**0.0042**	0.001	22.2	ug/L	81	Standard
	Cd	111	59.5	14.3	**0.0266**	0.004	15.1	mg/L	3	Standard
	Cd	114	114.2	30.2	**0.0194**	0.007	35.4	ug/L	7	Standard
>	**In**	115	538147.1	0.9				ug/L	524722	Standard
	Sn	118	776.7	8.0	**0.0512**	0.012	24.3	ug/L	715	Standard
	Sb	123	200.6	27.1	**0.0300**	0.012	40.3	ug/L	201	Standard
	Ba	135	61289.0	0.7	**32.9142**	0.504	1.5	ug/L	108	Standard
	Ce	140	11052.4	2.4				ug/L	30	Standard
>	**Tb**	159	799876.8	2.9				ug/L	792236	Standard
	Ho	165	190.0	13.9				ug/L	7	Standard
	Tl	203	282.0	7.3	**0.0338**	0.003	8.0	ug/L	9	Standard
	Tl	205	280.0	6.2	**0.0347**	0.004	10.5	ug/L	0	Standard
	Pb	206	401.7	3.5	**0.0294**	0.002	8.2	ug/L	216	Standard
	Pb	207	341.0	0.8	**0.0262**	0.002	6.1	ug/L	180	Standard
	Pb	208	1409.0	1.3	**0.0235**	0.001	4.4	ug/L	717	Standard
	U	238	76.0	25.2	**0.0044**	0.003	61.0	ug/L	4	Standard
>	**Bi**	209	466934.5	2.6				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3003.6	5.4	**3.7365**	0.119	3.2	mg/L	20	Standard
K	39	200.0	11.5	**1.1940**	0.224	18.7	mg/L	22	Standard
Ca	43	26.7	78.1	**-7.2758**	4.881	67.1	mg/L	47	Standard
Fe	54	197.9	11.4	**0.0352**	0.024	69.0	mg/L	151	Standard
Fe	57	201.7	10.0	**-0.0646**	0.087	134.0	mg/L	195	Standard
> **Sc-1**	45	31928.7	4.9				mg/L	29647	Standard
Cl	35	168064.3	0.8				ug/L	154152	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	30467.4	7.1				ug/L	1607	Standard
P	31	27221.1	1.9				ug/L	22752	Standard
S	34	4829.1	7.9				ug/L	5049	Standard
Sr	88	71.7	28.2				ug/L	87	Standard
C	12	70.0	24.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	346.6	23.4				mg/L	10	Standard
Ho-1	165	190.0	13.9				mg/L	7	Standard
Er	166	140.0	21.4				mg/L	3	Standard
I	127	19342.3	3.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.481	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.500	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.559
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.432
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606073001
Sample Date/Time: Thursday, June 16, 2016 20:29:50
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77603.4	4.1				ug/L	51024	Standard
	Be	9	23.3	32.7	**-0.0030**	0.005	179.3	ug/L	7	Standard
	Al	27	6597541.3	1.1	**30.4895**	0.983	3.2	ug/L	625	Standard
	Sc	45	30666.0	3.0				ug/L	29647	Standard
	Ti	47	203.3	18.0	**0.5694**	0.126	22.1	ug/L	57	Standard
	V	51	19344.1	1.4	**2.7880**	0.060	2.2	ug/L	1142	Standard
	Cr	52	223704.1	0.9	**32.1116**	0.253	0.8	ug/L	6628	Standard
	Cr	53	32680.2	2.6	**37.7577**	0.692	1.8	ug/L	430	Standard
	Mn	55	14764.2	0.6	**2.5761**	0.037	1.5	ug/L	603	Standard
	Co	59	8421.3	1.4	**1.3825**	0.016	1.2	ug/L	237	Standard
	Ni	60	8389.0	3.1	**4.6470**	0.087	1.9	ug/L	141	Standard
	Cu	65	2908.6	1.9	**1.6151**	0.017	1.1	ug/L	109	Standard
	Zn	66	3204.0	4.7	**2.9081**	0.114	3.9	ug/L	159	Standard
>	**Ge**	72	436204.2	1.2				ug/L	474053	Standard
	As	75	2688.1	1.6	**2.6639**	0.074	2.8	ug/L	-34	Standard
	Se	82	851.2	1.0	**8.1974**	0.187	2.3	ug/L	14	Standard
	Se-1	77	1137.0	6.7	**15.3552**	1.225	8.0	ug/L	55	Standard
>	**Ga**	71	1600.1	10.1				mg/L	50	Standard
	Rb	85	221561.7	1.4				ug/L	20	Standard
	Y	89	371828.3	2.0				ug/L	376602	Standard
>	**Rh**	103	3242.0	4.8				ug/L	17	Standard
	Mo	98	4562.5	2.6	**2.0314**	0.078	3.9	ug/L	8	Standard
	Ag	107	113.7	11.8	**0.0078**	0.003	32.8	ug/L	81	Standard
	Cd	111	55.8	15.1	**0.0271**	0.005	18.3	mg/L	3	Standard
	Cd	114	143.3	18.4	**0.0277**	0.006	20.9	ug/L	7	Standard
>	**In**	115	497749.4	1.4				ug/L	524722	Standard
	Sn	118	1183.4	2.0	**0.1421**	0.001	1.0	ug/L	715	Standard
	Sb	123	552.4	7.7	**0.1185**	0.008	7.1	ug/L	201	Standard
	Ba	135	1629969.1	1.1	**947.9397**	3.697	0.4	ug/L	108	Standard
	Ce	140	661.7	1.6				ug/L	30	Standard
>	**Tb**	159	768724.3	1.9				ug/L	792236	Standard
	Ho	165	30.0	0.0				ug/L	7	Standard
	Tl	203	273.3	11.0	**0.0373**	0.004	11.6	ug/L	9	Standard
	Tl	205	236.7	11.6	**0.0327**	0.005	13.9	ug/L	0	Standard
	Pb	206	593.0	4.8	**0.0867**	0.006	6.8	ug/L	216	Standard
	Pb	207	503.3	3.4	**0.0795**	0.004	4.6	ug/L	180	Standard
	Pb	208	2099.4	1.6	**0.0791**	0.001	1.5	ug/L	717	Standard
	U	238	272.3	8.1	**0.0412**	0.004	8.8	ug/L	4	Standard
>	**Bi**	209	413369.8	0.7				ug/L	460343	Standard

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Na	23	10.0	86.6	**-20.6958**	26.075	126.0	mg/L	0	Standard
Mg	24	97695.6	0.1	**128.0820**	3.805	3.0	mg/L	20	Standard
K	39	1235.1	6.0	**8.8773**	0.558	6.3	mg/L	22	Standard
Ca	43	1178.4	7.9	**253.1572**	23.304	9.2	mg/L	47	Standard
Fe	54	176.5	19.0	**0.0234**	0.022	95.0	mg/L	151	Standard
Fe	57	1151.7	8.5	**2.8063**	0.366	13.0	mg/L	195	Standard
> **Sc-1**	45	30666.0	3.0				mg/L	29647	Standard
Cl	35	183619.3	0.2				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	216976.2	1.6				ug/L	1607	Standard
P	31	27466.6	2.5				ug/L	22752	Standard
S	34	5401.0	3.5				ug/L	5049	Standard
Sr	88	13359.2	2.8				ug/L	87	Standard
C	12	236.7	14.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	16.2	35.8				mg/L	10	Standard
Ho-1	165	30.0	0.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	172255.5	10.3				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		152.092	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		92.016	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.860
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	89.796
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606073002
Sample Date/Time: Thursday, June 16, 2016 20:40:20
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72672.3	2.9				ug/L	51024	Standard
	Be	9	10.0	50.0	**-0.0128**	0.004	30.9	ug/L	7	Standard
	Al	27	6776653.7	2.4	**33.4181**	0.221	0.7	ug/L	625	Standard
	Sc	45	30878.1	3.6				ug/L	29647	Standard
	Ti	47	191.7	10.9	**0.5384**	0.079	14.6	ug/L	57	Standard
	V	51	18320.5	2.2	**2.6731**	0.088	3.3	ug/L	1142	Standard
	Cr	52	218082.0	0.6	**31.7558**	0.128	0.4	ug/L	6628	Standard
	Cr	53	32453.1	2.0	**38.0586**	0.990	2.6	ug/L	430	Standard
	Mn	55	14793.6	1.2	**2.6216**	0.060	2.3	ug/L	603	Standard
	Co	59	8007.4	2.3	**1.3327**	0.045	3.4	ug/L	237	Standard
	Ni	60	8064.8	0.9	**4.5323**	0.032	0.7	ug/L	141	Standard
	Cu	65	2976.0	2.0	**1.6794**	0.017	1.0	ug/L	109	Standard
	Zn	66	2008.5	3.5	**1.7659**	0.064	3.6	ug/L	159	Standard
>	**Ge**	72	429862.6	1.0				ug/L	474053	Standard
	As	75	2572.0	0.4	**2.5869**	0.037	1.4	ug/L	-34	Standard
	Se	82	825.8	3.3	**8.0685**	0.355	4.4	ug/L	14	Standard
	Se-1	77	1141.7	4.7	**15.6522**	0.781	5.0	ug/L	55	Standard
>	**Ga**	71	1611.8	8.9				mg/L	50	Standard
	Rb	85	218102.3	2.0				ug/L	20	Standard
	Y	89	377604.2	0.7				ug/L	376602	Standard
>	**Rh**	103	3075.3	2.3				ug/L	17	Standard
	Mo	98	4376.1	1.3	**1.9206**	0.018	0.9	ug/L	8	Standard
	Ag	107	101.3	11.9	**0.0053**	0.002	42.4	ug/L	81	Standard
	Cd	111	44.3	10.0	**0.0205**	0.002	10.6	mg/L	3	Standard
	Cd	114	101.2	2.7	**0.0181**	0.001	4.2	ug/L	7	Standard
>	**In**	115	504775.6	2.2				ug/L	524722	Standard
	Sn	118	1261.7	9.4	**0.1538**	0.018	12.0	ug/L	715	Standard
	Sb	123	527.5	2.2	**0.1107**	0.000	0.3	ug/L	201	Standard
	Ba	135	1636843.5	1.3	**938.7853**	9.854	1.0	ug/L	108	Standard
	Ce	140	583.3	14.6				ug/L	30	Standard
>	**Tb**	159	772745.6	1.2				ug/L	792236	Standard
	Ho	165	13.3	57.3				ug/L	7	Standard
	Tl	203	237.3	15.4	**0.0328**	0.005	15.8	ug/L	9	Standard
	Tl	205	210.0	10.4	**0.0290**	0.003	11.9	ug/L	0	Standard
	Pb	206	512.7	7.1	**0.0701**	0.008	10.9	ug/L	216	Standard
	Pb	207	440.7	8.2	**0.0656**	0.009	13.2	ug/L	180	Standard
	Pb	208	1827.0	4.1	**0.0642**	0.006	9.9	ug/L	717	Standard
	U	238	243.3	3.8	**0.0371**	0.002	4.2	ug/L	4	Standard
>	**Bi**	209	404002.1	1.1				ug/L	460343	Standard

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Na	23	10.0	86.6	**-20.5285**	26.005	126.7	mg/L	0	Standard
Mg	24	96717.8	1.8	**126.0145**	6.791	5.4	mg/L	20	Standard
K	39	1353.4	2.3	**9.6820**	0.217	2.2	mg/L	22	Standard
Ca	43	1160.0	11.2	**246.7324**	22.672	9.2	mg/L	47	Standard
Fe	54	173.0	8.5	**0.0201**	0.009	45.9	mg/L	151	Standard
Fe	57	1218.4	5.2	**2.9735**	0.072	2.4	mg/L	195	Standard
> **Sc-1**	45	30878.1	3.6				mg/L	29647	Standard
Cl	35	185979.3	1.4				ug/L	154152	Standard
Kr	83	2.7	43.3				ug/L	3	Standard
Br	81	209002.2	2.5				ug/L	1607	Standard
P	31	27092.5	3.1				ug/L	22752	Standard
S	34	5509.3	2.9				ug/L	5049	Standard
Sr	88	11921.4	3.3				ug/L	87	Standard
C	12	216.7	14.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	29.4	59.5				mg/L	10	Standard
Ho-1	165	13.3	57.3				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	173148.1	13.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		142.427	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.678	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.199
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.761
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606073003
Sample Date/Time: Thursday, June 16, 2016 20:43:31
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66295.0	5.6				ug/L	51024	Standard
	Be	9	56.7	36.7	**0.0315**	0.022	69.3	ug/L	7	Standard
	Al	27	140324062.6	0.9	**759.9749**	34.895	4.6	ug/L	625	Standard
	Sc	45	30973.3	2.2				ug/L	29647	Standard
	Ti	47	544.3	4.3	**1.8537**	0.066	3.6	ug/L	57	Standard
	V	51	5988.0	12.5	**0.7695**	0.117	15.2	ug/L	1142	Standard
	Cr	52	16952.1	2.7	**1.6378**	0.039	2.4	ug/L	6628	Standard
	Cr	53	39053.8	8.0	**46.3217**	3.179	6.9	ug/L	430	Standard
	Mn	55	1211107.1	0.8	**227.1129**	4.279	1.9	ug/L	603	Standard
	Co	59	15513.3	2.2	**2.6477**	0.097	3.6	ug/L	237	Standard
	Ni	60	11454.7	1.9	**6.5356**	0.059	0.9	ug/L	141	Standard
	Cu	65	2107.5	3.2	**1.1824**	0.030	2.5	ug/L	109	Standard
	Zn	66	3534.1	3.7	**3.3182**	0.082	2.5	ug/L	159	Standard
>	**Ge**	72	425577.5	1.4				ug/L	474053	Standard
	As	75	6875.0	1.9	**6.9431**	0.226	3.3	ug/L	-34	Standard
	Se	82	1838.5	2.4	**18.3557**	0.698	3.8	ug/L	14	Standard
	Se-1	77	5651.1	6.0	**81.1945**	3.892	4.8	ug/L	55	Standard
>	**Ga**	71	298.3	8.3				mg/L	50	Standard
	Rb	85	18603.1	3.0				ug/L	20	Standard
	Y	89	364931.5	1.6				ug/L	376602	Standard
>	**Rh**	103	1093.4	10.5				ug/L	17	Standard
	Mo	98	426.7	6.4	**0.1986**	0.013	6.7	ug/L	8	Standard
	Ag	107	75.7	8.8	**0.0020**	0.001	63.5	ug/L	81	Standard
	Cd	111	101.2	16.3	**0.0557**	0.010	17.5	mg/L	3	Standard
	Cd	114	239.7	20.6	**0.0526**	0.011	21.7	ug/L	7	Standard
>	**In**	115	464316.0	0.4				ug/L	524722	Standard
	Sn	118	820.0	6.0	**0.0826**	0.010	12.0	ug/L	715	Standard
	Sb	123	404.3	9.7	**0.0898**	0.011	11.7	ug/L	201	Standard
	Ba	135	7189623.7	0.9	**4482.5615**	58.524	1.3	ug/L	108	Standard
	Ce	140	11556.1	1.6				ug/L	30	Standard
>	**Tb**	159	738740.3	1.0				ug/L	792236	Standard
	Ho	165	163.3	8.8				ug/L	7	Standard
	Tl	203	154.3	14.2	**0.0220**	0.003	15.0	ug/L	9	Standard
	Tl	205	155.0	9.7	**0.0212**	0.003	13.2	ug/L	0	Standard
	Pb	206	489.3	5.2	**0.0725**	0.006	7.9	ug/L	216	Standard
	Pb	207	420.0	7.6	**0.0677**	0.009	13.2	ug/L	180	Standard
	Pb	208	1652.4	1.4	**0.0599**	0.003	5.3	ug/L	717	Standard
	U	238	9935.9	1.3	**1.9381**	0.028	1.4	ug/L	4	Standard
>	**Bi**	209	378492.4	1.3				ug/L	460343	Standard

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Na	23	20.0	43.3	**-51.8526**	25.479	49.1	mg/L	0	Standard
Mg	24	304205.5	1.3	**394.7766**	3.601	0.9	mg/L	20	Standard
K	39	283.3	22.2	**1.8451**	0.491	26.6	mg/L	22	Standard
Ca	43	1023.4	14.5	**216.1479**	37.325	17.3	mg/L	47	Standard
Fe	54	3507.0	4.8	**2.6133**	0.070	2.7	mg/L	151	Standard
Fe	57	2098.5	3.6	**5.5706**	0.094	1.7	mg/L	195	Standard
> **Sc-1**	45	30973.3	2.2				mg/L	29647	Standard
Cl	35	171200.0	3.8				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	477807.6	1.2				ug/L	1607	Standard
P	31	31030.1	3.4				ug/L	22752	Standard
S	34	5537.7	3.1				ug/L	5049	Standard
Sr	88	3852.2	4.1				ug/L	87	Standard
C	12	250.0	32.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	197.9	47.2				mg/L	10	Standard
Ho-1	165	163.3	8.8				mg/L	7	Standard
Er	166	183.3	6.3				mg/L	3	Standard
I	127	159354.2	8.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.929	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		89.774	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	88.488
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	82.220
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606073102
Sample Date/Time: Thursday, June 16, 2016 20:46:43
Number of Replicates: 3
Autosampler Position: 346
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55473.1	2.7				ug/L	51024	Standard
	Be	9	55.0	36.4	**0.0390**	0.022	55.7	ug/L	7	Standard
	Al	27	942566.4	1.5	**6.0840**	0.204	3.4	ug/L	625	Standard
	Sc	45	34049.9	0.9				ug/L	29647	Standard
	Ti	47	5731.8	2.0	**18.2913**	0.196	1.1	ug/L	57	Standard
	V	51	32065.1	2.5	**4.1901**	0.107	2.6	ug/L	1142	Standard
	Cr	52	17242.5	0.8	**1.3371**	0.009	0.7	ug/L	6628	Standard
	Cr	53	5039.2	15.0	**4.8012**	0.726	15.1	ug/L	430	Standard
	Mn	55	115479.5	1.7	**18.6730**	0.120	0.6	ug/L	603	Standard
	Co	59	2037.1	3.8	**0.2650**	0.009	3.4	ug/L	237	Standard
	Ni	60	2031.8	4.8	**0.9400**	0.039	4.2	ug/L	141	Standard
	Cu	65	266456.7	0.9	**136.9469**	2.046	1.5	ug/L	109	Standard
	Zn	66	37165.9	1.0	**32.1770**	0.480	1.5	ug/L	159	Standard
>	**Ge**	72	490402.9	1.1				ug/L	474053	Standard
	As	75	12459.1	0.9	**10.9020**	0.085	0.8	ug/L	-34	Standard
	Se	82	127.6	3.2	**0.9465**	0.028	3.0	ug/L	14	Standard
	Se-1	77	270.0	15.8	**2.6503**	0.495	18.7	ug/L	55	Standard
>	**Ga**	71	1921.8	2.3				mg/L	50	Standard
	Rb	85	35595.1	1.8				ug/L	20	Standard
	Y	89	404147.8	1.0				ug/L	376602	Standard
>	**Rh**	103	85.0	15.6				ug/L	17	Standard
	Mo	98	4328.7	1.5	**1.8133**	0.020	1.1	ug/L	8	Standard
	Ag	107	869.7	0.1	**0.1324**	0.001	0.5	ug/L	81	Standard
	Cd	111	482.3	7.8	**0.2434**	0.019	8.0	mg/L	3	Standard
	Cd	114	1335.6	3.6	**0.2724**	0.009	3.3	ug/L	7	Standard
>	**In**	115	528691.1	0.6				ug/L	524722	Standard
	Sn	118	4765.7	3.3	**0.7887**	0.031	4.0	ug/L	715	Standard
	Sb	123	3183.9	1.5	**0.7087**	0.011	1.6	ug/L	201	Standard
	Ba	135	17225.1	3.1	**9.3751**	0.336	3.6	ug/L	108	Standard
	Ce	140	48213.3	1.0				ug/L	30	Standard
>	**Tb**	159	793657.4	1.6				ug/L	792236	Standard
	Ho	165	775.0	7.8				ug/L	7	Standard
	Tl	203	260.0	6.4	**0.0318**	0.003	8.6	ug/L	9	Standard
	Tl	205	233.3	20.4	**0.0285**	0.008	27.8	ug/L	0	Standard
	Pb	206	39704.6	1.2	**8.6323**	0.072	0.8	ug/L	216	Standard
	Pb	207	34342.9	1.0	**8.2030**	0.203	2.5	ug/L	180	Standard
	Pb	208	145934.1	1.3	**8.5861**	0.079	0.9	ug/L	717	Standard
	U	238	420.0	4.3	**0.0608**	0.004	7.1	ug/L	4	Standard
>	**Bi**	209	455671.4	2.1				ug/L	460343	Standard

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Na	23	3.3	173.2	**0.8644**	16.607	1921.3	mg/L	0	Standard
Mg	24	12667.0	1.0	**14.9085**	0.215	1.4	mg/L	20	Standard
K	39	335.0	19.1	**1.9967**	0.430	21.5	mg/L	22	Standard
Ca	43	88.3	18.2	**4.8010**	3.416	71.1	mg/L	47	Standard
Fe	54	995.1	5.6	**0.5893**	0.033	5.5	mg/L	151	Standard
Fe	57	445.0	16.6	**0.5516**	0.188	34.0	mg/L	195	Standard
> **Sc-1**	45	34049.9	0.9				mg/L	29647	Standard
Cl	35	173758.3	2.1				ug/L	154152	Standard
Kr	83	3.3	91.7				ug/L	3	Standard
Br	81	6371.4	18.0				ug/L	1607	Standard
P	31	28039.3	2.8				ug/L	22752	Standard
S	34	5270.9	3.8				ug/L	5049	Standard
Sr	88	90.0	5.6				ug/L	87	Standard
C	12	76.7	58.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	56.8				mg/L	0	Standard
Dy	164	1215.7	9.2				mg/L	10	Standard
Ho-1	165	775.0	7.8				mg/L	7	Standard
Er	166	786.7	6.4				mg/L	3	Standard
I	127	21140.1	20.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.719	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.449	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.756
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.985
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: L1606073102
Sample Date/Time: Thursday, June 16, 2016 20:49:54
Number of Replicates: 3
Autosampler Position: 347
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59153.6	1.2				ug/L	51024	Standard
	Be	9	8.3	34.6	**-0.0125**	0.003	23.9	ug/L	7	Standard
	Al	27	100448.6	1.0	**0.5989**	0.007	1.2	ug/L	625	Standard
	Sc	45	33126.2	1.2				ug/L	29647	Standard
	Ti	47	644.7	2.1	**2.0007**	0.071	3.6	ug/L	57	Standard
	V	51	4289.2	6.3	**0.4402**	0.044	10.0	ug/L	1142	Standard
	Cr	52	8064.5	2.5	**0.1771**	0.010	5.7	ug/L	6628	Standard
	Cr	53	1751.8	6.1	**1.4679**	0.099	6.8	ug/L	430	Standard
	Mn	55	12501.5	0.4	**1.9975**	0.048	2.4	ug/L	603	Standard
	Co	59	371.3	7.0	**0.0170**	0.003	18.0	ug/L	237	Standard
	Ni	60	380.0	10.9	**0.1207**	0.019	15.5	ug/L	141	Standard
	Cu	65	26879.2	2.3	**14.3517**	0.162	1.1	ug/L	109	Standard
	Zn	66	5034.5	0.7	**4.3493**	0.122	2.8	ug/L	159	Standard
>	Ge	72	470100.0	2.4				ug/L	474053	Standard
	As	75	1188.6	1.5	**1.1081**	0.042	3.8	ug/L	-34	Standard
	Se	82	31.1	20.0	**0.1142**	0.055	48.5	ug/L	14	Standard
	Se-1	77	110.7	11.2	**0.7077**	0.148	20.9	ug/L	55	Standard
>	Ga	71	223.3	5.6				mg/L	50	Standard
	Rb	85	3760.5	5.0				ug/L	20	Standard
	Y	89	401153.8	1.8				ug/L	376602	Standard
>	Rh	103	35.0	28.6				ug/L	17	Standard
	Mo	98	446.2	5.1	**0.1763**	0.012	6.9	ug/L	8	Standard
	Ag	107	132.3	3.7	**0.0090**	0.001	8.3	ug/L	81	Standard
	Cd	111	53.4	17.3	**0.0233**	0.005	21.5	mg/L	3	Standard
	Cd	114	111.5	28.2	**0.0185**	0.006	33.2	ug/L	7	Standard
>	In	115	545539.1	1.6				ug/L	524722	Standard
	Sn	118	1001.7	15.4	**0.0892**	0.025	28.5	ug/L	715	Standard
	Sb	123	390.2	5.8	**0.0711**	0.004	6.2	ug/L	201	Standard
	Ba	135	2004.1	4.2	**1.0056**	0.035	3.5	ug/L	108	Standard
	Ce	140	4912.5	3.1				ug/L	30	Standard
>	Tb	159	820295.3	0.5				ug/L	792236	Standard
	Ho	165	85.0	35.8				ug/L	7	Standard
	Tl	203	81.3	9.9	**0.0080**	0.001	12.7	ug/L	9	Standard
	Tl	205	81.7	7.1	**0.0047**	0.001	18.7	ug/L	0	Standard
	Pb	206	4339.0	0.8	**0.8817**	0.013	1.4	ug/L	216	Standard
	Pb	207	3847.8	0.9	**0.8599**	0.011	1.3	ug/L	180	Standard
	Pb	208	15987.3	1.8	**0.8776**	0.022	2.5	ug/L	717	Standard
	U	238	37.0	13.5	**-0.0016**	0.001	51.1	ug/L	4	Standard
>	Bi	209	461213.2	0.5				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1265.1	9.3	**1.4911**	0.161	10.8	mg/L	20	Standard
K	39	51.7	11.2	**0.1245**	0.037	30.0	mg/L	22	Standard
Ca	43	36.7	20.8	**-5.5323**	1.502	27.2	mg/L	47	Standard
Fe	54	272.3	11.9	**0.0834**	0.026	30.8	mg/L	151	Standard
Fe	57	213.3	13.3	**-0.0553**	0.084	152.6	mg/L	195	Standard
> **Sc-1**	45	33126.2	1.2				mg/L	29647	Standard
Cl	35	168674.4	1.0				ug/L	154152	Standard
Kr	83	2.7	57.3				ug/L	3	Standard
Br	81	3067.0	8.5				ug/L	1607	Standard
P	31	24656.7	3.1				ug/L	22752	Standard
S	34	5190.9	0.5				ug/L	5049	Standard
Sr	88	70.0	31.1				ug/L	87	Standard
C	12	56.7	40.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	128.2	29.2				mg/L	10	Standard
Ho-1	165	85.0	35.8				mg/L	7	Standard
Er	166	106.7	19.5				mg/L	3	Standard
I	127	4907.5	9.2				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.933	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.166	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.967
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.189
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606054009
Sample Date/Time: Thursday, June 16, 2016 20:53:06
Number of Replicates: 3
Autosampler Position: 348
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57167.7	1.8				ug/L	51024	Standard
	Be	9	16.7	34.6	**-0.0033**	0.006	191.0	ug/L	7	Standard
	Al	27	40703.4	11.7	**0.2452**	0.025	10.3	ug/L	625	Standard
	Sc	45	31935.3	3.8				ug/L	29647	Standard
	Ti	47	33.3	7.5	**-0.0541**	0.007	12.4	ug/L	57	Standard
	V	51	1267.4	7.9	**0.0110**	0.011	98.7	ug/L	1142	Standard
	Cr	52	6813.9	0.7	**0.0049**	0.027	550.7	ug/L	6628	Standard
	Cr	53	1183.4	2.1	**0.8507**	0.047	5.5	ug/L	430	Standard
	Mn	55	63841.2	0.9	**10.7040**	0.156	1.5	ug/L	603	Standard
	Co	59	241.7	8.6	**-0.0034**	0.003	78.7	ug/L	237	Standard
	Ni	60	170.7	5.3	**0.0113**	0.004	35.5	ug/L	141	Standard
	Cu	65	185.7	9.3	**0.0334**	0.011	32.3	ug/L	109	Standard
	Zn	66	1221.7	3.3	**0.8784**	0.051	5.8	ug/L	159	Standard
>	**Ge**	72	470712.9	2.2				ug/L	474053	Standard
	As	75	30.8	16.5	**0.0530**	0.004	7.8	ug/L	-34	Standard
	Se	82	25.1	14.7	**0.0591**	0.030	51.4	ug/L	14	Standard
	Se-1	77	77.3	7.8	**0.2686**	0.059	22.0	ug/L	55	Standard
>	**Ga**	71	51.7	31.1				mg/L	50	Standard
	Rb	85	646.7	20.2				ug/L	20	Standard
	Y	89	396670.0	2.0				ug/L	376602	Standard
>	**Rh**	103	36.7	47.9				ug/L	17	Standard
	Mo	98	41.6	28.6	**0.0117**	0.005	41.7	ug/L	8	Standard
	Ag	107	95.3	39.9	**0.0032**	0.006	177.8	ug/L	81	Standard
	Cd	111	10.6	141.7	**0.0020**	0.007	372.2	mg/L	3	Standard
	Cd	114	31.1	47.0	**0.0025**	0.003	110.7	ug/L	7	Standard
>	**In**	115	535879.5	3.0				ug/L	524722	Standard
	Sn	118	518.3	19.7	**0.0045**	0.016	347.9	ug/L	715	Standard
	Sb	123	86.0	15.9	**0.0044**	0.002	55.3	ug/L	201	Standard
	Ba	135	3179.4	70.5	**1.6371**	1.141	69.7	ug/L	108	Standard
	Ce	140	118.3	56.3				ug/L	30	Standard
>	**Tb**	159	791577.1	1.4				ug/L	792236	Standard
	Ho	165	16.7	62.4				ug/L	7	Standard
	Tl	203	82.0	86.0	**0.0083**	0.009	108.7	ug/L	9	Standard
	Tl	205	38.3	39.8	**-0.0018**	0.002	122.7	ug/L	0	Standard
	Pb	206	276.0	8.2	**0.0051**	0.003	58.8	ug/L	216	Standard
	Pb	207	225.0	9.4	**0.0012**	0.004	310.7	ug/L	180	Standard
	Pb	208	961.3	4.7	**0.0001**	0.001	957.0	ug/L	717	Standard
	U	238	50.7	3.0	**0.0008**	0.000	45.3	ug/L	4	Standard
>	**Bi**	209	447174.4	3.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	178.3	23.3	**0.1782**	0.044	24.8	mg/L	20	Standard
K	39	75.0	0.0	**0.3034**	0.020	6.6	mg/L	22	Standard
Ca	43	26.7	39.0	**-7.4067**	2.216	29.9	mg/L	47	Standard
Fe	54	296.0	2.0	**0.1085**	0.005	4.5	mg/L	151	Standard
Fe	57	203.3	7.1	**-0.0621**	0.045	71.7	mg/L	195	Standard
> **Sc-1**	45	31935.3	3.8				mg/L	29647	Standard
Cl	35	168415.6	1.0				ug/L	154152	Standard
Kr	83	1.0	0.0				ug/L	3	Standard
Br	81	2343.5	14.9				ug/L	1607	Standard
P	31	24079.1	0.8				ug/L	22752	Standard
S	34	5175.9	6.6				ug/L	5049	Standard
Sr	88	91.7	20.7				ug/L	87	Standard
C	12	60.0	28.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	7.9	115.0				mg/L	10	Standard
Ho-1	165	16.7	62.4				mg/L	7	Standard
Er	166	43.3	70.5				mg/L	3	Standard
I	127	3628.8	3.8				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.040	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.295	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.126	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.139	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606054010
Sample Date/Time: Thursday, June 16, 2016 20:57:27
Number of Replicates: 3
Autosampler Position: 349
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56434.9	2.3				ug/L	51024	Standard
	Be	9	8.3	34.6	**-0.0121**	0.003	26.4	ug/L	7	Standard
	Al	27	252906.9	1.5	**1.5971**	0.043	2.7	ug/L	625	Standard
	Sc	45	31920.3	2.1				ug/L	29647	Standard
	Ti	47	312.3	10.2	**0.8821**	0.111	12.6	ug/L	57	Standard
	V	51	2253.7	7.5	**0.1509**	0.028	18.3	ug/L	1142	Standard
	Cr	52	7388.1	1.0	**0.0829**	0.016	19.3	ug/L	6628	Standard
	Cr	53	1196.7	7.3	**0.8649**	0.109	12.6	ug/L	430	Standard
	Mn	55	73740.7	1.7	**12.3802**	0.357	2.9	ug/L	603	Standard
	Co	59	450.0	4.0	**0.0292**	0.003	10.6	ug/L	237	Standard
	Ni	60	555.0	6.8	**0.2120**	0.023	10.8	ug/L	141	Standard
	Cu	65	367.0	6.1	**0.1304**	0.011	8.6	ug/L	109	Standard
	Zn	66	2607.2	1.1	**2.1362**	0.049	2.3	ug/L	159	Standard
>	**Ge**	72	470838.7	1.1				ug/L	474053	Standard
	As	75	1057.7	4.9	**0.9866**	0.037	3.7	ug/L	-34	Standard
	Se	82	371.4	5.2	**3.2111**	0.141	4.4	ug/L	14	Standard
	Se-1	77	82.0	5.3	**0.3308**	0.069	21.0	ug/L	55	Standard
>	**Ga**	71	95.0	21.1				mg/L	50	Standard
	Rb	85	2080.1	6.3				ug/L	20	Standard
	Y	89	394550.0	1.4				ug/L	376602	Standard
>	**Rh**	103	40.0	12.5				ug/L	17	Standard
	Mo	98	432.1	5.5	**0.1778**	0.013	7.4	ug/L	8	Standard
	Ag	107	89.3	6.8	**0.0027**	0.001	34.2	ug/L	81	Standard
	Cd	111	10.8	29.5	**0.0024**	0.002	71.8	mg/L	3	Standard
	Cd	114	7.3	63.1	**-0.0023**	0.001	40.5	ug/L	7	Standard
>	**In**	115	524122.9	2.0				ug/L	524722	Standard
	Sn	118	475.0	16.9	**-0.0012**	0.015	1226.6	ug/L	715	Standard
	Sb	123	126.7	16.7	**0.0143**	0.005	37.6	ug/L	201	Standard
	Ba	135	6164.6	3.3	**3.3481**	0.133	4.0	ug/L	108	Standard
	Ce	140	2293.5	2.9				ug/L	30	Standard
>	**Tb**	159	771498.5	0.9				ug/L	792236	Standard
	Ho	165	40.0	33.1				ug/L	7	Standard
	Tl	203	178.3	6.6	**0.0218**	0.002	7.9	ug/L	9	Standard
	Tl	205	168.3	19.8	**0.0193**	0.006	28.8	ug/L	0	Standard
	Pb	206	424.0	1.9	**0.0396**	0.002	4.6	ug/L	216	Standard
	Pb	207	350.0	3.8	**0.0332**	0.004	10.7	ug/L	180	Standard
	Pb	208	1524.0	3.5	**0.0355**	0.004	11.4	ug/L	717	Standard
	U	238	1126.4	2.3	**0.1820**	0.006	3.2	ug/L	4	Standard
>	**Bi**	209	440459.4	0.9				ug/L	460343	Standard

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Na	23	3.3	86.6	**0.3515**	8.752	2490.2	mg/L	0	Standard
Mg	24	5054.2	1.6	**6.3217**	0.207	3.3	mg/L	20	Standard
K	39	60.0	38.2	**0.1962**	0.161	82.1	mg/L	22	Standard
Ca	43	58.3	27.6	**-0.5341**	3.483	652.1	mg/L	47	Standard
Fe	54	351.0	19.9	**0.1502**	0.054	35.8	mg/L	151	Standard
Fe	57	258.3	13.7	**0.0974**	0.116	119.4	mg/L	195	Standard
> **Sc-1**	45	31920.3	2.1				mg/L	29647	Standard
Cl	35	170598.8	2.4				ug/L	154152	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	89319.4	3.8				ug/L	1607	Standard
P	31	24377.9	0.5				ug/L	22752	Standard
S	34	5239.2	6.6				ug/L	5049	Standard
Sr	88	133.3	15.6				ug/L	87	Standard
C	12	30.0	33.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	52.1	28.7				mg/L	10	Standard
Ho-1	165	40.0	33.1				mg/L	7	Standard
Er	166	26.7	57.3				mg/L	3	Standard
I	127	17059.6	8.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.604	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.322	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.886
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.681
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606054011
Sample Date/Time: Thursday, June 16, 2016 21:00:39
Number of Replicates: 3
Autosampler Position: 350
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58251.8	0.7				ug/L	51024	Standard
	Be	9	10.0	100.0	**-0.0107**	0.010	96.5	ug/L	7	Standard
	Al	27	254779.3	0.3	**1.5580**	0.016	1.0	ug/L	625	Standard
	Sc	45	32790.5	2.0				ug/L	29647	Standard
	Ti	47	354.0	6.1	**1.0202**	0.064	6.3	ug/L	57	Standard
	V	51	2227.5	5.1	**0.1471**	0.023	15.7	ug/L	1142	Standard
	Cr	52	7531.2	1.8	**0.1020**	0.041	40.4	ug/L	6628	Standard
	Cr	53	1105.0	6.8	**0.7629**	0.054	7.1	ug/L	430	Standard
	Mn	55	71367.7	1.1	**11.9661**	0.226	1.9	ug/L	603	Standard
	Co	59	417.3	0.3	**0.0241**	0.001	5.5	ug/L	237	Standard
	Ni	60	538.0	5.0	**0.2029**	0.019	9.2	ug/L	141	Standard
	Cu	65	370.3	6.0	**0.1319**	0.008	6.1	ug/L	109	Standard
	Zn	66	2431.9	0.9	**1.9749**	0.035	1.8	ug/L	159	Standard
>	**Ge**	72	471306.4	2.3				ug/L	474053	Standard
	As	75	1059.1	3.3	**0.9871**	0.024	2.5	ug/L	-34	Standard
	Se	82	374.1	5.5	**3.2332**	0.174	5.4	ug/L	14	Standard
	Se-1	77	74.7	4.7	**0.2331**	0.038	16.2	ug/L	55	Standard
>	**Ga**	71	103.3	15.6				mg/L	50	Standard
	Rb	85	1920.1	7.2				ug/L	20	Standard
	Y	89	383902.2	1.9				ug/L	376602	Standard
>	**Rh**	103	25.0	87.2				ug/L	17	Standard
	Mo	98	436.7	9.1	**0.1748**	0.015	8.7	ug/L	8	Standard
	Ag	107	65.0	9.2	**-0.0017**	0.001	50.8	ug/L	81	Standard
	Cd	111	7.9	14.5	**0.0007**	0.001	83.6	mg/L	3	Standard
	Cd	114	24.6	49.4	**0.0012**	0.002	206.6	ug/L	7	Standard
>	**In**	115	537640.9	1.1				ug/L	524722	Standard
	Sn	118	573.3	39.0	**0.0145**	0.041	281.6	ug/L	715	Standard
	Sb	123	111.2	8.6	**0.0100**	0.002	20.8	ug/L	201	Standard
	Ba	135	6046.2	1.0	**3.1982**	0.060	1.9	ug/L	108	Standard
	Ce	140	2091.8	0.8				ug/L	30	Standard
>	**Tb**	159	809758.8	0.4				ug/L	792236	Standard
	Ho	165	41.7	18.3				ug/L	7	Standard
	Tl	203	180.3	6.1	**0.0211**	0.001	6.1	ug/L	9	Standard
	Tl	205	173.3	24.0	**0.0189**	0.006	33.1	ug/L	0	Standard
	Pb	206	420.3	5.1	**0.0350**	0.005	15.0	ug/L	216	Standard
	Pb	207	374.0	2.6	**0.0354**	0.003	8.0	ug/L	180	Standard
	Pb	208	1541.7	1.3	**0.0327**	0.002	5.1	ug/L	717	Standard
	U	238	1137.0	2.8	**0.1760**	0.006	3.3	ug/L	4	Standard
>	**Bi**	209	459070.7	0.7				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.4041**	8.743	161.8	mg/L	0	Standard
Mg	24	4977.5	2.7	**6.0561**	0.102	1.7	mg/L	20	Standard
K	39	71.7	10.7	**0.2668**	0.063	23.4	mg/L	22	Standard
Ca	43	53.3	10.8	**-1.9274**	1.113	57.7	mg/L	47	Standard
Fe	54	318.9	6.3	**0.1195**	0.015	12.9	mg/L	151	Standard
Fe	57	250.0	29.5	**0.0557**	0.223	399.4	mg/L	195	Standard
Sc-1	45	32790.5	2.0				mg/L	29647	Standard
Cl	35	169793.5	0.8				ug/L	154152	Standard
Kr	83	2.0	0.0				ug/L	3	Standard
Br	81	89396.4	2.9				ug/L	1607	Standard
P	31	24319.5	2.4				ug/L	22752	Standard
S	34	5012.5	5.2				ug/L	5049	Standard
Sr	88	106.7	17.7				ug/L	87	Standard
C	12	46.7	32.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	51.6	38.3				mg/L	10	Standard
Ho-1	165	41.7	18.3				mg/L	7	Standard
Er	166	36.7	63.0				mg/L	3	Standard
I	127	17585.2	6.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.165	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.421	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.462
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.724
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606054014
Sample Date/Time: Thursday, June 16, 2016 21:03:50
Number of Replicates: 3
Autosampler Position: 351
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57943.9	0.3				ug/L	51024	Standard
	Be	9	10.0	50.0	**-0.0106**	0.005	49.0	ug/L	7	Standard
	Al	27	40494.2	7.5	**0.2408**	0.019	8.1	ug/L	625	Standard
	Sc	45	33099.4	0.9				ug/L	29647	Standard
	Ti	47	40.0	11.5	**-0.0319**	0.013	41.5	ug/L	57	Standard
	V	51	1267.4	3.9	**0.0110**	0.004	33.2	ug/L	1142	Standard
	Cr	52	6912.6	1.0	**0.0177**	0.023	132.2	ug/L	6628	Standard
	Cr	53	750.0	9.0	**0.3802**	0.071	18.6	ug/L	430	Standard
	Mn	55	124087.1	1.1	**20.9134**	0.521	2.5	ug/L	603	Standard
	Co	59	211.7	10.1	**-0.0081**	0.004	46.5	ug/L	237	Standard
	Ni	60	248.0	1.5	**0.0516**	0.002	4.7	ug/L	141	Standard
	Cu	65	221.0	10.6	**0.0522**	0.012	22.6	ug/L	109	Standard
	Zn	66	3791.1	1.2	**3.2112**	0.103	3.2	ug/L	159	Standard
>	**Ge**	72	470993.8	1.9				ug/L	474053	Standard
	As	75	110.5	40.9	**0.1251**	0.040	31.9	ug/L	-34	Standard
	Se	82	16.7	56.8	**-0.0174**	0.085	487.8	ug/L	14	Standard
	Se-1	77	66.3	16.1	**0.1259**	0.151	119.8	ug/L	55	Standard
>	**Ga**	71	63.3	27.7				mg/L	50	Standard
	Rb	85	276.7	10.3				ug/L	20	Standard
	Y	89	385833.8	2.0				ug/L	376602	Standard
>	**Rh**	103	31.7	50.8				ug/L	17	Standard
	Mo	98	31.0	14.9	**0.0074**	0.002	27.3	ug/L	8	Standard
	Ag	107	68.0	4.4	**-0.0012**	0.000	32.0	ug/L	81	Standard
	Cd	111	10.9	18.2	**0.0023**	0.001	41.2	mg/L	3	Standard
	Cd	114	35.3	7.7	**0.0034**	0.001	15.7	ug/L	7	Standard
>	**In**	115	534994.4	1.2				ug/L	524722	Standard
	Sn	118	486.7	6.0	**-0.0009**	0.004	488.6	ug/L	715	Standard
	Sb	123	88.5	13.6	**0.0050**	0.002	48.6	ug/L	201	Standard
	Ba	135	1149.4	10.0	**0.5638**	0.054	9.6	ug/L	108	Standard
	Ce	140	73.3	33.6				ug/L	30	Standard
>	**Tb**	159	801412.4	0.6				ug/L	792236	Standard
	Ho	165	16.7	17.3				ug/L	7	Standard
	Tl	203	39.7	22.9	**0.0026**	0.001	46.4	ug/L	9	Standard
	Tl	205	23.3	75.3	**-0.0042**	0.003	64.0	ug/L	0	Standard
	Pb	206	288.7	4.7	**0.0060**	0.003	43.9	ug/L	216	Standard
	Pb	207	232.0	1.6	**0.0012**	0.001	74.1	ug/L	180	Standard
	Pb	208	996.7	1.1	**0.0003**	0.001	274.4	ug/L	717	Standard
	U	238	6.3	48.2	**-0.0066**	0.000	7.5	ug/L	4	Standard
>	**Bi**	209	461918.2	0.5				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.5408**	8.507	153.5	mg/L	0	Standard
Mg	24	155.0	19.6	**0.1428**	0.035	24.6	mg/L	20	Standard
K	39	20.0	75.0	**-0.0919**	0.101	110.1	mg/L	22	Standard
Ca	43	28.3	36.7	**-7.2551**	2.201	30.3	mg/L	47	Standard
Fe	54	217.7	12.7	**0.0436**	0.021	47.7	mg/L	151	Standard
Fe	57	210.0	21.4	**-0.0640**	0.129	201.3	mg/L	195	Standard
> **Sc-1**	45	33099.4	0.9				mg/L	29647	Standard
Cl	35	168257.1	0.3				ug/L	154152	Standard
Kr	83	2.0	86.6				ug/L	3	Standard
Br	81	3430.4	12.2				ug/L	1607	Standard
P	31	24144.2	1.0				ug/L	22752	Standard
S	34	5209.2	2.8				ug/L	5049	Standard
Sr	88	75.0	43.7				ug/L	87	Standard
C	12	36.7	63.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.1	43.3				mg/L	10	Standard
Ho-1	165	16.7	17.3				mg/L	7	Standard
Er	166	26.7	43.3				mg/L	3	Standard
I	127	3078.6	10.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.562	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.355	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.958
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.342
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 21:07:02
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57216.2	1.8				ug/L	51024	Standard
	Be	9	44266.2	0.8	**46.9448**	1.086	2.3	ug/L	7	Standard
	Al	27	7280291.9	1.0	**45.6137**	1.287	2.8	ug/L	625	Standard
	Sc	45	32309.4	1.7				ug/L	29647	Standard
	Ti	47	30197.4	0.3	**101.5240**	2.598	2.6	ug/L	57	Standard
	V	51	355347.4	0.9	**50.3294**	0.808	1.6	ug/L	1142	Standard
	Cr	52	370024.2	0.4	**49.8980**	1.109	2.2	ug/L	6628	Standard
	Cr	53	45872.7	0.6	**49.4285**	1.135	2.3	ug/L	430	Standard
	Mn	55	314239.7	1.6	**53.3617**	1.128	2.1	ug/L	603	Standard
	Co	59	314388.6	0.3	**49.3919**	1.176	2.4	ug/L	237	Standard
	Ni	60	94820.1	0.2	**49.5997**	1.101	2.2	ug/L	141	Standard
	Cu	65	92383.2	1.4	**49.5924**	0.629	1.3	ug/L	109	Standard
	Zn	66	54761.8	0.6	**49.6923**	0.878	1.8	ug/L	159	Standard
>	**Ge**	72	469160.5	2.3				ug/L	474053	Standard
	As	75	53380.1	0.9	**48.7528**	1.227	2.5	ug/L	-34	Standard
	Se	82	5320.4	1.7	**48.4684**	1.778	3.7	ug/L	14	Standard
	Se-1	77	3692.8	2.0	**47.8512**	0.716	1.5	ug/L	55	Standard
>	**Ga**	71	61.7	70.8				mg/L	50	Standard
	Rb	85	808.4	9.3				ug/L	20	Standard
	Y	89	383560.2	1.8				ug/L	376602	Standard
>	**Rh**	103	35.0	42.9				ug/L	17	Standard
	Mo	98	232242.3	1.1	**96.5061**	2.361	2.4	ug/L	8	Standard
	Ag	107	292582.7	0.8	**48.1206**	0.391	0.8	ug/L	81	Standard
	Cd	111	95603.2	0.1	**48.3402**	0.694	1.4	mg/L	3	Standard
	Cd	114	235634.1	0.2	**48.1942**	0.648	1.3	ug/L	7	Standard
>	**In**	115	534700.6	1.5				ug/L	524722	Standard
	Sn	118	264473.5	1.3	**48.1050**	1.306	2.7	ug/L	715	Standard
	Sb	123	215670.2	0.6	**48.4479**	0.874	1.8	ug/L	201	Standard
	Ba	135	88155.7	0.1	**47.6769**	0.763	1.6	ug/L	108	Standard
	Ce	140	101.7	19.9				ug/L	30	Standard
>	**Tb**	159	793079.8	1.0				ug/L	792236	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	358440.3	1.1	**47.4951**	0.142	0.3	ug/L	9	Standard
	Tl	205	312266.9	1.0	**48.6540**	0.130	0.3	ug/L	0	Standard
	Pb	206	224283.0	1.3	**49.1202**	0.907	1.8	ug/L	216	Standard
	Pb	207	204302.6	0.7	**49.1523**	0.806	1.6	ug/L	180	Standard
	Pb	208	833504.1	0.4	**49.4087**	0.646	1.3	ug/L	717	Standard
	U	238	304654.1	0.2	**49.6463**	0.682	1.4	ug/L	4	Standard
>	**Bi**	209	454777.5	1.2				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.3475**	8.842	165.3	mg/L	0	Standard
Mg	24	4015.5	1.7	**4.9520**	0.163	3.3	mg/L	20	Standard
K	39	633.3	0.9	**4.2037**	0.116	2.8	mg/L	22	Standard
Ca	43	71.7	28.2	**2.1962**	4.389	199.9	mg/L	47	Standard
Fe	54	5816.1	3.6	**4.2263**	0.216	5.1	mg/L	151	Standard
Fe	57	1691.8	3.9	**4.1585**	0.125	3.0	mg/L	195	Standard
> **Sc-1**	45	32309.4	1.7				mg/L	29647	Standard
Cl	35	165447.9	1.5				ug/L	154152	Standard
Kr	83	3.0	33.3				ug/L	3	Standard
Br	81	2063.5	3.6				ug/L	1607	Standard
P	31	25169.2	0.8				ug/L	22752	Standard
S	34	5737.8	0.7				ug/L	5049	Standard
Sr	88	55.0	15.7				ug/L	87	Standard
C	12	53.3	47.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.2	93.3				mg/L	10	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	10.0					mg/L	3	Standard
I	127	1655.1	3.8				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	93.890		
Al	27	91.227		
Sc	45			
Ti	47	101.524		
V	51	100.659		
Cr	52	99.796		
Cr	53			
Mn	55	106.723		
Co	59	98.784		
Ni	60	99.199		
Cu	65	99.185		
Zn	66	99.385		
> Ge	72		98.968	
As	75	97.506		
Se	82	96.937		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	96.506		
Ag	107	96.241		
Cd	111	96.680		
Cd	114			
In	115			101.902
Sn	118	96.210		
Sb	123	96.896		
Ba	135	95.354		
Ce	140			
Tb	159			
Ho	165			
Tl	203	94.990		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.817		
U	238	99.293		
Bi	209			98.791
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 21:10:14
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55944.8	2.0				ug/L	51024	Standard
	Be	9	16.7	34.6	**-0.0030**	0.006	212.8	ug/L	7	Standard
	Al	27	1526.8	38.2	**-0.0000**	0.004	16917.9	ug/L	625	Standard
	Sc	45	31897.0	7.4				ug/L	29647	Standard
	Ti	47	31.0	8.5	**-0.0586**	0.008	13.1	ug/L	57	Standard
	V	51	1141.1	6.7	**-0.0015**	0.010	648.2	ug/L	1142	Standard
	Cr	52	6326.0	1.2	**-0.0342**	0.003	8.9	ug/L	6628	Standard
	Cr	53	638.3	5.1	**0.2820**	0.027	9.6	ug/L	430	Standard
	Mn	55	672.3	5.7	**-0.0087**	0.006	71.9	ug/L	603	Standard
	Co	59	229.3	15.7	**-0.0042**	0.005	126.3	ug/L	237	Standard
	Ni	60	153.7	14.0	**0.0051**	0.012	235.2	ug/L	141	Standard
	Cu	65	131.3	12.6	**0.0065**	0.009	132.4	ug/L	109	Standard
	Zn	66	145.0	12.1	**-0.0961**	0.015	15.1	ug/L	159	Standard
>	**Ge**	72	455945.8	1.4				ug/L	474053	Standard
	As	75	-22.0	198.7	**0.0041**	0.041	1009.9	ug/L	-34	Standard
	Se	82	27.4	26.2	**0.0880**	0.066	75.2	ug/L	14	Standard
	Se-1	77	76.0	21.7	**0.2852**	0.231	80.9	ug/L	55	Standard
>	**Ga**	71	41.7	42.1				mg/L	50	Standard
	Rb	85	23.3	75.3				ug/L	20	Standard
	Y	89	400519.5	2.1				ug/L	376602	Standard
>	**Rh**	103	30.0	57.7				ug/L	17	Standard
	Mo	98	251.1	32.5	**0.0955**	0.032	33.2	ug/L	8	Standard
	Ag	107	99.3	31.3	**0.0035**	0.005	136.7	ug/L	81	Standard
	Cd	111	14.1	69.7	**0.0037**	0.005	129.5	mg/L	3	Standard
	Cd	114	31.9	76.8	**0.0025**	0.005	193.5	ug/L	7	Standard
>	**In**	115	550633.2	1.2				ug/L	524722	Standard
	Sn	118	735.0	12.4	**0.0407**	0.017	42.7	ug/L	715	Standard
	Sb	123	412.2	18.4	**0.0753**	0.017	23.2	ug/L	201	Standard
	Ba	135	126.7	6.0	**0.0089**	0.003	36.5	ug/L	108	Standard
	Ce	140	13.3	43.3				ug/L	30	Standard
>	**Tb**	159	804256.0	1.8				ug/L	792236	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	62.7	29.5	**0.0058**	0.002	40.2	ug/L	9	Standard
	Tl	205	55.0	15.7	**0.0008**	0.001	147.2	ug/L	0	Standard
	Pb	206	234.3	12.8	**-0.0047**	0.006	120.1	ug/L	216	Standard
	Pb	207	197.7	8.5	**-0.0059**	0.003	52.6	ug/L	180	Standard
	Pb	208	861.7	7.3	**-0.0064**	0.003	48.7	ug/L	717	Standard
	U	238	32.7	49.0	**-0.0022**	0.003	112.0	ug/L	4	Standard
>	**Bi**	209	451393.6	2.0				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.7600**	8.127	141.1	mg/L	0	Standard
Mg	24	66.7	18.9	**0.0383**	0.010	25.0	mg/L	20	Standard
K	39	15.0	66.7	**-0.1191**	0.074	61.9	mg/L	22	Standard
Ca	43	28.3	36.7	**-7.1219**	1.762	24.7	mg/L	47	Standard
Fe	54	147.9	22.4	**-0.0038**	0.019	492.3	mg/L	151	Standard
Fe	57	200.0	17.5	**-0.0677**	0.127	187.5	mg/L	195	Standard
Sc-1	45	31897.0	7.4				mg/L	29647	Standard
Cl	35	166760.1	1.1				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	1793.4	4.2				ug/L	1607	Standard
P	31	26206.0	1.2				ug/L	22752	Standard
S	34	5832.8	0.3				ug/L	5049	Standard
Sr	88	61.7	26.1				ug/L	87	Standard
C	12	43.3	35.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.9	118.8				mg/L	10	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	10.0					mg/L	3	Standard
I	127	1290.1	6.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.180	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	104.938	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.056	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606061601
Sample Date/Time: Thursday, June 16, 2016 21:13:26
Number of Replicates: 3
Autosampler Position: 352
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57249.6	1.2				ug/L	51024	Standard
	Be	9	55.0	9.1	**0.0372**	0.006	15.0	ug/L	7	Standard
	Al	27	393587.4	1.7	**2.4548**	0.057	2.3	ug/L	625	Standard
	Sc	45	32406.3	3.0				ug/L	29647	Standard
	Ti	47	74.0	10.7	**0.0892**	0.028	31.0	ug/L	57	Standard
	V	51	636.6	76.8	**-0.0758**	0.071	93.6	ug/L	1142	Standard
	Cr	52	85601.8	0.6	**11.1086**	0.082	0.7	ug/L	6628	Standard
	Cr	53	11320.9	1.4	**12.1647**	0.172	1.4	ug/L	430	Standard
	Mn	55	80985.9	0.3	**13.9862**	0.035	0.3	ug/L	603	Standard
	Co	59	9834.2	0.6	**1.5416**	0.010	0.6	ug/L	237	Standard
	Ni	60	33446.9	0.3	**17.8603**	0.057	0.3	ug/L	141	Standard
	Cu	65	1052.4	3.7	**0.5130**	0.021	4.2	ug/L	109	Standard
	Zn	66	2617.6	1.1	**2.2110**	0.025	1.1	ug/L	159	Standard
>	**Ge**	72	458154.0	0.1				ug/L	474053	Standard
	As	75	49.8	49.2	**0.0716**	0.023	32.0	ug/L	-34	Standard
	Se	82	42.6	32.1	**0.2293**	0.128	56.0	ug/L	14	Standard
	Se-1	77	102.7	16.6	**0.6383**	0.227	35.6	ug/L	55	Standard
>	**Ga**	71	63.3	35.6				mg/L	50	Standard
	Rb	85	306.7	30.8				ug/L	20	Standard
	Y	89	402460.8	1.4				ug/L	376602	Standard
>	**Rh**	103	15.0	0.0				ug/L	17	Standard
	Mo	98	305.2	3.6	**0.1192**	0.004	3.0	ug/L	8	Standard
	Ag	107	82.0	8.5	**0.0009**	0.001	110.4	ug/L	81	Standard
	Cd	111	31.7	1.8	**0.0126**	0.000	1.7	mg/L	3	Standard
	Cd	114	86.0	11.3	**0.0135**	0.002	15.6	ug/L	7	Standard
>	**In**	115	543559.4	0.9				ug/L	524722	Standard
	Sn	118	521.7	5.3	**0.0040**	0.005	126.9	ug/L	715	Standard
	Sb	123	172.0	20.3	**0.0232**	0.008	34.4	ug/L	201	Standard
	Ba	135	10412.6	2.3	**5.4875**	0.099	1.8	ug/L	108	Standard
	Ce	140	1425.1	2.1				ug/L	30	Standard
>	**Tb**	159	802846.0	2.9				ug/L	792236	Standard
	Ho	165	38.3	49.4				ug/L	7	Standard
	Tl	203	181.0	5.8	**0.0217**	0.002	7.1	ug/L	9	Standard
	Tl	205	158.3	6.6	**0.0171**	0.002	12.3	ug/L	0	Standard
	Pb	206	323.7	3.9	**0.0154**	0.001	9.1	ug/L	216	Standard
	Pb	207	297.3	15.5	**0.0184**	0.010	54.3	ug/L	180	Standard
	Pb	208	1247.7	4.4	**0.0169**	0.002	11.0	ug/L	717	Standard
	U	238	59.7	21.2	**0.0022**	0.002	84.4	ug/L	4	Standard
>	**Bi**	209	449878.2	2.0				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	5219.2	4.5	**6.4369**	0.460	7.1	mg/L	20	Standard
K	39	20.0	25.0	**-0.0887**	0.033	37.4	mg/L	22	Standard
Ca	43	31.7	48.2	**-6.3893**	3.387	53.0	mg/L	47	Standard
Fe	54	173.5	30.0	**0.0146**	0.041	283.6	mg/L	151	Standard
Fe	57	193.3	26.5	**-0.1009**	0.133	132.3	mg/L	195	Standard
Sc-1	45	32406.3	3.0				mg/L	29647	Standard
Cl	35	165598.8	1.0				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	7865.4	1.7				ug/L	1607	Standard
P	31	25877.1	1.5				ug/L	22752	Standard
S	34	5332.6	2.3				ug/L	5049	Standard
Sr	88	75.0	53.3				ug/L	87	Standard
C	12	26.7	86.6				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	38.2	28.0				mg/L	10	Standard
Ho-1	165	38.3	49.4				mg/L	7	Standard
Er	166	36.7	41.7				mg/L	3	Standard
I	127	9661.4	1.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.201	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.646	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.590
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.727
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606061602
Sample Date/Time: Thursday, June 16, 2016 21:16:38
Number of Replicates: 3
Autosampler Position: 353
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54740.4	1.6				ug/L	51024	Standard
	Be	9	13.3	78.1	**-0.0064**	0.011	174.7	ug/L	7	Standard
	Al	27	1805152.0	1.4	**11.8114**	0.177	1.5	ug/L	625	Standard
	Sc	45	31105.2	2.7				ug/L	29647	Standard
	Ti	47	145.3	36.9	**0.3297**	0.185	56.3	ug/L	57	Standard
	V	51	1187.4	9.5	**0.0023**	0.015	668.9	ug/L	1142	Standard
	Cr	52	6910.6	1.9	**0.0321**	0.023	70.2	ug/L	6628	Standard
	Cr	53	2121.8	8.3	**1.9016**	0.204	10.7	ug/L	430	Standard
	Mn	55	395363.0	1.6	**67.9452**	1.352	2.0	ug/L	603	Standard
	Co	59	396.7	9.1	**0.0219**	0.006	27.5	ug/L	237	Standard
	Ni	60	325.0	2.7	**0.0944**	0.004	4.0	ug/L	141	Standard
	Cu	65	328.0	3.2	**0.1122**	0.006	5.3	ug/L	109	Standard
	Zn	66	1614.8	2.3	**1.2569**	0.027	2.1	ug/L	159	Standard
>	**Ge**	72	463730.0	0.5				ug/L	474053	Standard
	As	75	191.5	27.2	**0.2018**	0.048	23.7	ug/L	-34	Standard
	Se	82	80.2	8.7	**0.5721**	0.064	11.1	ug/L	14	Standard
	Se-1	77	154.3	3.1	**1.3098**	0.068	5.2	ug/L	55	Standard
>	**Ga**	71	83.3	12.5				mg/L	50	Standard
	Rb	85	2255.2	4.8				ug/L	20	Standard
	Y	89	395085.6	4.8				ug/L	376602	Standard
>	**Rh**	103	30.0	44.1				ug/L	17	Standard
	Mo	98	187.4	6.4	**0.0739**	0.005	6.8	ug/L	8	Standard
	Ag	107	74.0	13.7	**0.0001**	0.002	2155.8	ug/L	81	Standard
	Cd	111	4.7	21.2	**-0.0008**	0.000	58.4	mg/L	3	Standard
	Cd	114	23.6	85.5	**0.0011**	0.004	381.8	ug/L	7	Standard
>	**In**	115	524300.8	1.8				ug/L	524722	Standard
	Sn	118	675.0	7.1	**0.0361**	0.011	30.7	ug/L	715	Standard
	Sb	123	147.3	26.2	**0.0191**	0.009	49.7	ug/L	201	Standard
	Ba	135	46098.7	0.3	**25.3994**	0.381	1.5	ug/L	108	Standard
	Ce	140	986.7	3.2				ug/L	30	Standard
>	**Tb**	159	774505.0	2.0				ug/L	792236	Standard
	Ho	165	13.3	94.4				ug/L	7	Standard
	Tl	203	220.3	5.0	**0.0280**	0.002	6.1	ug/L	9	Standard
	Tl	205	203.3	19.9	**0.0253**	0.006	25.4	ug/L	0	Standard
	Pb	206	323.3	2.8	**0.0179**	0.002	12.9	ug/L	216	Standard
	Pb	207	301.7	4.5	**0.0222**	0.003	14.6	ug/L	180	Standard
	Pb	208	1220.4	3.0	**0.0179**	0.003	14.6	ug/L	717	Standard
	U	238	72.3	70.3	**0.0048**	0.009	183.1	ug/L	4	Standard
>	**Bi**	209	434377.4	0.6				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	9573.0	1.2	**12.3290**	0.229	1.9	mg/L	20	Standard
K	39	33.3	22.9	**0.0143**	0.056	391.5	mg/L	22	Standard
Ca	43	41.7	42.1	**-3.8937**	4.020	103.2	mg/L	47	Standard
Fe	54	3391.5	3.3	**2.5135**	0.063	2.5	mg/L	151	Standard
Fe	57	1036.7	3.7	**2.4151**	0.178	7.4	mg/L	195	Standard
> **Sc-1**	45	31105.2	2.7				mg/L	29647	Standard
Cl	35	163124.3	2.0				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	18861.8	5.5				ug/L	1607	Standard
P	31	25780.2	1.2				ug/L	22752	Standard
S	34	5427.6	1.2				ug/L	5049	Standard
Sr	88	133.3	17.7				ug/L	87	Standard
C	12	63.3	48.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	29.4	2.5				mg/L	10	Standard
Ho-1	165	13.3	94.4				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	3	Standard
I	127	27164.5	9.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.283	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.822	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.920
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.360
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606061604
Sample Date/Time: Thursday, June 16, 2016 21:19:49
Number of Replicates: 3
Autosampler Position: 354
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54814.0	0.5				ug/L	51024	Standard
	Be	9	6.7	86.6	**-0.0137**	0.006	46.5	ug/L	7	Standard
	Al	27	110436.2	2.3	**0.7124**	0.018	2.6	ug/L	625	Standard
	Sc	45	32459.7	0.6				ug/L	29647	Standard
	Ti	47	55.7	9.0	**0.0154**	0.018	115.7	ug/L	57	Standard
	V	51	1190.0	8.3	**-0.0046**	0.017	376.0	ug/L	1142	Standard
	Cr	52	7226.1	2.7	**0.0323**	0.047	144.2	ug/L	6628	Standard
	Cr	53	801.7	5.0	**0.4109**	0.034	8.3	ug/L	430	Standard
	Mn	55	73546.8	1.3	**11.9804**	0.177	1.5	ug/L	603	Standard
	Co	59	487.0	1.6	**0.0328**	0.001	4.1	ug/L	237	Standard
	Ni	60	526.7	1.8	**0.1891**	0.010	5.0	ug/L	141	Standard
	Cu	65	380.0	8.6	**0.1312**	0.013	9.7	ug/L	109	Standard
	Zn	66	2004.8	2.3	**1.5353**	0.023	1.5	ug/L	159	Standard
>	**Ge**	72	485083.0	2.2				ug/L	474053	Standard
	As	75	-27.5	85.1	**0.0005**	0.021	4240.8	ug/L	-34	Standard
	Se	82	14.1	16.8	**-0.0441**	0.023	53.0	ug/L	14	Standard
	Se-1	77	56.3	6.2	**-0.0281**	0.039	138.2	ug/L	55	Standard
>	**Ga**	71	65.0	27.7				mg/L	50	Standard
	Rb	85	975.0	3.7				ug/L	20	Standard
	Y	89	385735.6	1.3				ug/L	376602	Standard
>	**Rh**	103	33.3	48.2				ug/L	17	Standard
	Mo	98	31.0	17.9	**0.0076**	0.002	32.0	ug/L	8	Standard
	Ag	107	69.3	9.6	**-0.0007**	0.001	178.9	ug/L	81	Standard
	Cd	111	35.6	7.1	**0.0152**	0.001	9.3	mg/L	3	Standard
	Cd	114	78.6	33.7	**0.0126**	0.006	43.8	ug/L	7	Standard
>	**In**	115	522479.0	0.6				ug/L	524722	Standard
	Sn	118	488.3	12.5	**0.0016**	0.012	727.2	ug/L	715	Standard
	Sb	123	114.8	19.9	**0.0116**	0.005	46.5	ug/L	201	Standard
	Ba	135	3662.8	1.7	**1.9717**	0.029	1.5	ug/L	108	Standard
	Ce	140	251.7	12.1				ug/L	30	Standard
>	**Tb**	159	792180.5	1.3				ug/L	792236	Standard
	Ho	165	13.3	21.7				ug/L	7	Standard
	Tl	203	47.3	14.4	**0.0036**	0.001	25.0	ug/L	9	Standard
	Tl	205	38.3	27.2	**-0.0019**	0.002	86.2	ug/L	0	Standard
	Pb	206	262.0	5.8	**0.0007**	0.003	518.6	ug/L	216	Standard
	Pb	207	237.7	10.4	**0.0030**	0.006	203.7	ug/L	180	Standard
	Pb	208	979.3	1.2	**-0.0002**	0.001	232.5	ug/L	717	Standard
	U	238	9.3	43.3	**-0.0061**	0.001	10.8	ug/L	4	Standard
>	**Bi**	209	458288.4	0.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	298.3	19.4	**0.3240**	0.070	21.6	mg/L	20	Standard
K	39	26.7	65.8	**-0.0419**	0.123	294.6	mg/L	22	Standard
Ca	43	43.3	52.0	**-3.9540**	4.787	121.1	mg/L	47	Standard
Fe	54	369.3	3.6	**0.1593**	0.010	6.3	mg/L	151	Standard
Fe	57	236.7	13.4	**0.0219**	0.086	394.4	mg/L	195	Standard
Sc-1	45	32459.7	0.6				mg/L	29647	Standard
Cl	35	161744.2	1.3				ug/L	154152	Standard
Kr	83	2.7	78.1				ug/L	3	Standard
Br	81	2450.2	3.6				ug/L	1607	Standard
P	31	25593.3	1.9				ug/L	22752	Standard
S	34	5534.3	4.3				ug/L	5049	Standard
Sr	88	81.7	34.8				ug/L	87	Standard
C	12	56.7	40.8				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.2	113.9				mg/L	10	Standard
Ho-1	165	13.3	21.7				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	3	Standard
I	127	11324.2	2.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		107.428	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.327	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.573
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.554
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606065001
Sample Date/Time: Thursday, June 16, 2016 21:23:01
Number of Replicates: 3
Autosampler Position: 355
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56128.8	1.5				ug/L	51024	Standard
	Be	9	8.3	34.6	**-0.0121**	0.003	26.6	ug/L	7	Standard
	Al	27	482122.3	0.7	**3.0698**	0.068	2.2	ug/L	625	Standard
	Sc	45	32641.8	1.6				ug/L	29647	Standard
	Ti	47	45.3	15.0	**-0.0118**	0.021	178.3	ug/L	57	Standard
	V	51	499.2	13.7	**-0.0967**	0.009	9.3	ug/L	1142	Standard
	Cr	52	82458.1	0.9	**10.5208**	0.076	0.7	ug/L	6628	Standard
	Cr	53	10431.9	1.2	**11.0318**	0.293	2.7	ug/L	430	Standard
	Mn	55	79305.3	0.7	**13.5203**	0.175	1.3	ug/L	603	Standard
	Co	59	2974.6	1.7	**0.4315**	0.004	1.0	ug/L	237	Standard
	Ni	60	33369.4	1.4	**17.5928**	0.059	0.3	ug/L	141	Standard
	Cu	65	207.3	9.4	**0.0465**	0.009	20.2	ug/L	109	Standard
	Zn	66	1251.4	5.4	**0.9209**	0.049	5.4	ug/L	159	Standard
>	**Ge**	72	464010.1	1.4				ug/L	474053	Standard
	As	75	2.0	650.9	**0.0269**	0.012	45.0	ug/L	-34	Standard
	Se	82	23.1	30.3	**0.0449**	0.067	148.0	ug/L	14	Standard
	Se-1	77	78.7	3.2	**0.3022**	0.048	15.8	ug/L	55	Standard
>	**Ga**	71	63.3	32.9				mg/L	50	Standard
	Rb	85	220.0	4.5				ug/L	20	Standard
	Y	89	399793.1	1.3				ug/L	376602	Standard
>	**Rh**	103	18.3	103.3				ug/L	17	Standard
	Mo	98	108.7	5.3	**0.0384**	0.002	6.3	ug/L	8	Standard
	Ag	107	73.7	11.4	**-0.0005**	0.001	257.8	ug/L	81	Standard
	Cd	111	9.8	27.0	**0.0016**	0.001	82.1	mg/L	3	Standard
	Cd	114	29.3	22.9	**0.0020**	0.001	66.1	ug/L	7	Standard
>	**In**	115	548875.7	0.2				ug/L	524722	Standard
	Sn	118	460.0	8.7	**-0.0078**	0.007	89.3	ug/L	715	Standard
	Sb	123	86.5	15.7	**0.0041**	0.003	71.3	ug/L	201	Standard
	Ba	135	20540.6	0.3	**10.7757**	0.041	0.4	ug/L	108	Standard
	Ce	140	105.0	17.2				ug/L	30	Standard
>	**Tb**	159	820934.6	1.9				ug/L	792236	Standard
	Ho	165	20.0	25.0				ug/L	7	Standard
	Tl	203	96.0	11.0	**0.0101**	0.002	16.2	ug/L	9	Standard
	Tl	205	83.3	24.2	**0.0050**	0.003	58.6	ug/L	0	Standard
	Pb	206	282.0	1.9	**0.0050**	0.002	36.7	ug/L	216	Standard
	Pb	207	225.3	3.3	**-0.0000**	0.001	53500.0	ug/L	180	Standard
	Pb	208	968.3	3.8	**-0.0009**	0.003	322.0	ug/L	717	Standard
	U	238	52.7	14.0	**0.0010**	0.001	142.8	ug/L	4	Standard
>	**Bi**	209	458406.1	1.9				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1866.8	2.0	**2.2543**	0.080	3.6	mg/L	20	Standard
K	39	16.7	96.4	**-0.1137**	0.109	95.5	mg/L	22	Standard
Ca	43	30.0	44.1	**-6.8062**	2.881	42.3	mg/L	47	Standard
Fe	54	329.9	10.2	**0.1288**	0.026	20.3	mg/L	151	Standard
Fe	57	233.3	15.5	**0.0097**	0.106	1102.3	mg/L	195	Standard
> **Sc-1**	45	32641.8	1.6				mg/L	29647	Standard
Cl	35	163083.7	0.8				ug/L	154152	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	2766.9	2.7				ug/L	1607	Standard
P	31	25266.1	2.8				ug/L	22752	Standard
S	34	5369.3	3.4				ug/L	5049	Standard
Sr	88	88.3	8.6				ug/L	87	Standard
C	12	30.0	57.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.9	122.5				mg/L	10	Standard
Ho-1	165	20.0	25.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	9619.7	7.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.004	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.881	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.603
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.579
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606065002
Sample Date/Time: Thursday, June 16, 2016 21:26:12
Number of Replicates: 3
Autosampler Position: 356
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	54365.7	1.4				ug/L	51024	Standard
	Be	9	15.0	57.7	**-0.0044**	0.010	217.8	ug/L	7	Standard
	Al	27	1025103.4	0.5	**6.7495**	0.066	1.0	ug/L	625	Standard
	Sc	45	32087.3	3.3				ug/L	29647	Standard
	Ti	47	91.0	58.5	**0.1440**	0.181	125.8	ug/L	57	Standard
	V	51	1237.3	4.1	**0.0097**	0.009	93.5	ug/L	1142	Standard
	Cr	52	7747.0	1.2	**0.1491**	0.005	3.5	ug/L	6628	Standard
	Cr	53	1525.1	10.3	**1.2446**	0.145	11.6	ug/L	430	Standard
	Mn	55	121524.7	0.0	**20.8162**	0.350	1.7	ug/L	603	Standard
	Co	59	489.3	10.2	**0.0367**	0.008	22.6	ug/L	237	Standard
	Ni	60	546.0	2.6	**0.2119**	0.012	5.8	ug/L	141	Standard
	Cu	65	411.0	3.0	**0.1575**	0.006	3.6	ug/L	109	Standard
	Zn	66	2195.8	1.8	**1.7944**	0.008	0.5	ug/L	159	Standard
>	Ge	72	463367.3	1.7				ug/L	474053	Standard
	As	75	18.1	195.3	**0.0420**	0.032	77.3	ug/L	-34	Standard
	Se	82	30.0	13.1	**0.1083**	0.035	32.1	ug/L	14	Standard
	Se-1	77	106.3	6.3	**0.6711**	0.066	9.8	ug/L	55	Standard
>	Ga	71	40.0	54.5				mg/L	50	Standard
	Rb	85	1018.4	11.8				ug/L	20	Standard
	Y	89	407107.2	1.0				ug/L	376602	Standard
>	Rh	103	23.3	12.4				ug/L	17	Standard
	Mo	98	59.9	56.3	**0.0195**	0.014	72.7	ug/L	8	Standard
	Ag	107	115.7	63.4	**0.0068**	0.012	179.6	ug/L	81	Standard
	Cd	111	19.6	16.6	**0.0067**	0.002	24.0	mg/L	3	Standard
	Cd	114	62.3	30.6	**0.0090**	0.004	42.7	ug/L	7	Standard
>	In	115	532203.3	2.6				ug/L	524722	Standard
	Sn	118	596.7	23.5	**0.0202**	0.028	136.6	ug/L	715	Standard
	Sb	123	167.7	43.4	**0.0231**	0.017	71.6	ug/L	201	Standard
	Ba	135	32786.1	2.0	**17.7838**	0.579	3.3	ug/L	108	Standard
	Ce	140	491.7	8.2				ug/L	30	Standard
>	Tb	159	779044.5	1.2				ug/L	792236	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	239.0	44.6	**0.0304**	0.015	49.0	ug/L	9	Standard
	Tl	205	176.7	20.9	**0.0208**	0.006	27.7	ug/L	0	Standard
	Pb	206	322.7	21.3	**0.0173**	0.016	92.8	ug/L	216	Standard
	Pb	207	291.0	18.0	**0.0192**	0.014	70.8	ug/L	180	Standard
	Pb	208	1188.0	5.2	**0.0154**	0.003	22.6	ug/L	717	Standard
	U	238	183.3	6.3	**0.0235**	0.002	9.7	ug/L	4	Standard
>	Bi	209	437003.3	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	7120.0	1.8	**8.8768**	0.151	1.7	mg/L	20	Standard
K	39	41.7	27.7	**0.0654**	0.079	121.4	mg/L	22	Standard
Ca	43	41.7	42.1	**-4.2187**	3.620	85.8	mg/L	47	Standard
Fe	54	137.5	7.6	**-0.0117**	0.005	43.2	mg/L	151	Standard
Fe	57	181.7	19.3	**-0.1275**	0.097	75.8	mg/L	195	Standard
> **Sc-1**	45	32087.3	3.3				mg/L	29647	Standard
Cl	35	166481.1	1.4				ug/L	154152	Standard
Kr	83	1.0	0.0				ug/L	3	Standard
Br	81	4110.6	4.2				ug/L	1607	Standard
P	31	25599.9	1.8				ug/L	22752	Standard
S	34	5374.3	5.2				ug/L	5049	Standard
Sr	88	101.7	24.3				ug/L	87	Standard
C	12	36.7	41.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.4	106.9				mg/L	10	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	76002.0	4.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.549	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.746	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.426	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	94.930	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606065003
Sample Date/Time: Thursday, June 16, 2016 21:29:23
Number of Replicates: 3
Autosampler Position: 357
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54541.3	1.2				ug/L	51024	Standard
	Be	9	8.3	124.9	**-0.0119**	0.012	97.1	ug/L	7	Standard
	Al	27	606559.5	1.5	**3.9772**	0.101	2.5	ug/L	625	Standard
	Sc	45	31063.5	1.7				ug/L	29647	Standard
	Ti	47	165.3	5.8	**0.3810**	0.031	8.1	ug/L	57	Standard
	V	51	733.0	77.1	**-0.0659**	0.079	120.2	ug/L	1142	Standard
	Cr	52	157074.9	2.2	**20.2677**	0.514	2.5	ug/L	6628	Standard
	Cr	53	20141.7	1.4	**21.0752**	0.347	1.6	ug/L	430	Standard
	Mn	55	101750.2	1.1	**16.8892**	0.212	1.3	ug/L	603	Standard
	Co	59	1910.5	3.6	**0.2538**	0.010	4.1	ug/L	237	Standard
	Ni	60	8863.6	2.0	**4.4841**	0.097	2.2	ug/L	141	Standard
	Cu	65	1674.4	2.3	**0.8182**	0.022	2.7	ug/L	109	Standard
	Zn	66	2740.2	2.8	**2.2224**	0.074	3.3	ug/L	159	Standard
>	**Ge**	72	477422.4	0.2				ug/L	474053	Standard
	As	75	139.6	40.2	**0.1503**	0.051	33.7	ug/L	-34	Standard
	Se	82	42.3	11.2	**0.2113**	0.043	20.3	ug/L	14	Standard
	Se-1	77	93.0	6.5	**0.4578**	0.081	17.7	ug/L	55	Standard
>	**Ga**	71	101.7	37.2				mg/L	50	Standard
	Rb	85	1565.1	2.0				ug/L	20	Standard
	Y	89	382720.6	3.5				ug/L	376602	Standard
>	**Rh**	103	20.0	66.1				ug/L	17	Standard
	Mo	98	639.1	4.3	**0.2676**	0.013	4.7	ug/L	8	Standard
	Ag	107	90.7	24.5	**0.0030**	0.004	127.1	ug/L	81	Standard
	Cd	111	110.9	7.8	**0.0545**	0.005	9.0	mg/L	3	Standard
	Cd	114	275.8	13.3	**0.0542**	0.008	14.0	ug/L	7	Standard
>	**In**	115	519830.3	1.0				ug/L	524722	Standard
	Sn	118	653.3	27.4	**0.0332**	0.035	105.0	ug/L	715	Standard
	Sb	123	127.7	28.4	**0.0147**	0.009	58.6	ug/L	201	Standard
	Ba	135	11175.1	0.7	**6.1659**	0.078	1.3	ug/L	108	Standard
	Ce	140	2495.2	5.2				ug/L	30	Standard
>	**Tb**	159	780545.7	0.5				ug/L	792236	Standard
	Ho	165	53.3	48.1				ug/L	7	Standard
	Tl	203	163.0	29.4	**0.0195**	0.006	33.3	ug/L	9	Standard
	Tl	205	135.0	9.8	**0.0137**	0.002	15.9	ug/L	0	Standard
	Pb	206	547.3	5.3	**0.0663**	0.008	11.4	ug/L	216	Standard
	Pb	207	444.0	2.8	**0.0555**	0.004	6.9	ug/L	180	Standard
	Pb	208	1903.7	3.0	**0.0576**	0.005	8.4	ug/L	717	Standard
	U	238	51.3	38.7	**0.0010**	0.003	341.9	ug/L	4	Standard
>	**Bi**	209	444975.8	1.2				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3707.1	1.1	**4.7531**	0.132	2.8	mg/L	20	Standard
K	39	33.3	17.3	**0.0146**	0.042	286.2	mg/L	22	Standard
Ca	43	30.0	57.7	**-6.5001**	3.854	59.3	mg/L	47	Standard
Fe	54	681.6	4.0	**0.4140**	0.022	5.2	mg/L	151	Standard
Fe	57	318.3	7.1	**0.2945**	0.082	27.9	mg/L	195	Standard
Sc-1	45	31063.5	1.7				mg/L	29647	Standard
Cl	35	164261.1	1.5				ug/L	154152	Standard
Kr	83	2.0	86.6				ug/L	3	Standard
Br	81	7888.7	5.8				ug/L	1607	Standard
P	31	24920.5	3.3				ug/L	22752	Standard
S	34	5307.6	1.0				ug/L	5049	Standard
Sr	88	88.3	8.6				ug/L	87	Standard
C	12	40.0	25.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	74.8	18.4				mg/L	10	Standard
Ho-1	165	53.3	48.1				mg/L	7	Standard
Er	166	40.0	90.1				mg/L	3	Standard
I	127	17526.8	1.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.893	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.711	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.068
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.662
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606065008
Sample Date/Time: Thursday, June 16, 2016 21:32:35
Number of Replicates: 3
Autosampler Position: 358
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55971.5	1.2				ug/L	51024	Standard
	Be	9	16.7	121.2	**-0.0030**	0.022	732.0	ug/L	7	Standard
	Al	27	227217.9	1.2	**1.4454**	0.014	1.0	ug/L	625	Standard
	Sc	45	33091.1	0.4				ug/L	29647	Standard
	Ti	47	93.0	12.2	**0.1482**	0.035	23.3	ug/L	57	Standard
	V	51	1468.9	10.6	**0.0412**	0.020	48.4	ug/L	1142	Standard
	Cr	52	7242.7	0.8	**0.0709**	0.012	17.1	ug/L	6628	Standard
	Cr	53	1168.4	6.4	**0.8438**	0.086	10.2	ug/L	430	Standard
	Mn	55	143314.1	1.9	**24.3672**	0.286	1.2	ug/L	603	Standard
	Co	59	707.7	4.5	**0.0704**	0.004	5.3	ug/L	237	Standard
	Ni	60	1968.1	3.3	**0.9574**	0.026	2.8	ug/L	141	Standard
	Cu	65	534.7	8.0	**0.2223**	0.018	8.2	ug/L	109	Standard
	Zn	66	4633.0	0.1	**4.0098**	0.079	2.0	ug/L	159	Standard
>	**Ge**	72	467157.4	1.9				ug/L	474053	Standard
	As	75	68.4	19.1	**0.0878**	0.012	13.9	ug/L	-34	Standard
	Se	82	42.7	11.5	**0.2237**	0.049	22.1	ug/L	14	Standard
	Se-1	77	88.3	9.6	**0.4216**	0.095	22.5	ug/L	55	Standard
>	**Ga**	71	53.3	28.6				mg/L	50	Standard
	Rb	85	821.7	8.3				ug/L	20	Standard
	Y	89	390712.9	1.8				ug/L	376602	Standard
>	**Rh**	103	16.7	96.4				ug/L	17	Standard
	Mo	98	26.7	10.2	**0.0055**	0.001	23.5	ug/L	8	Standard
	Ag	107	72.3	16.0	**-0.0005**	0.002	422.0	ug/L	81	Standard
	Cd	111	13.3	4.3	**0.0034**	0.000	6.8	mg/L	3	Standard
	Cd	114	40.2	32.3	**0.0044**	0.003	63.9	ug/L	7	Standard
>	**In**	115	538841.7	2.0				ug/L	524722	Standard
	Sn	118	488.3	14.9	**-0.0013**	0.012	965.6	ug/L	715	Standard
	Sb	123	100.5	11.8	**0.0076**	0.002	30.8	ug/L	201	Standard
	Ba	135	7028.6	0.9	**3.7196**	0.097	2.6	ug/L	108	Standard
	Ce	140	2670.2	3.1				ug/L	30	Standard
>	**Tb**	159	805010.7	0.6				ug/L	792236	Standard
	Ho	165	43.3	40.5				ug/L	7	Standard
	Tl	203	119.0	4.4	**0.0131**	0.001	5.7	ug/L	9	Standard
	Tl	205	95.0	22.9	**0.0069**	0.003	48.8	ug/L	0	Standard
	Pb	206	254.0	2.5	**-0.0008**	0.002	244.2	ug/L	216	Standard
	Pb	207	226.3	9.4	**0.0004**	0.004	982.1	ug/L	180	Standard
	Pb	208	875.0	3.9	**-0.0061**	0.002	39.4	ug/L	717	Standard
	U	238	28.3	19.4	**-0.0030**	0.001	30.6	ug/L	4	Standard
>	**Bi**	209	456325.9	1.4				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3722.1	3.3	**4.4755**	0.132	3.0	mg/L	20	Standard
K	39	21.7	48.0	**-0.0800**	0.071	88.6	mg/L	22	Standard
Ca	43	38.3	49.4	**-5.1655**	3.960	76.7	mg/L	47	Standard
Fe	54	149.3	20.9	**-0.0062**	0.023	370.8	mg/L	151	Standard
Fe	57	191.7	19.2	**-0.1152**	0.104	90.0	mg/L	195	Standard
> **Sc-1**	45	33091.1	0.4				mg/L	29647	Standard
Cl	35	167461.1	1.4				ug/L	154152	Standard
Kr	83	2.3	49.5				ug/L	3	Standard
Br	81	7938.7	3.1				ug/L	1607	Standard
P	31	24910.5	1.2				ug/L	22752	Standard
S	34	5120.9	0.9				ug/L	5049	Standard
Sr	88	83.3	3.5				ug/L	87	Standard
C	12	63.3	48.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	67.9	15.4				mg/L	10	Standard
Ho-1	165	43.3	40.5				mg/L	7	Standard
Er	166	43.3	26.6				mg/L	3	Standard
I	127	7648.6	2.6				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		109.696	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.545	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.691	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.127	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606073001
Sample Date/Time: Thursday, June 16, 2016 21:35:46
Number of Replicates: 3
Autosampler Position: 359
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55371.0	2.2				ug/L	51024	Standard
	Be	9	11.7	65.5	**-0.0084**	0.008	97.7	ug/L	7	Standard
	Al	27	132096.8	1.8	**0.8455**	0.012	1.5	ug/L	625	Standard
	Sc	45	31868.5	4.0				ug/L	29647	Standard
	Ti	47	30.0	17.3	**-0.0614**	0.019	31.4	ug/L	57	Standard
	V	51	1455.6	7.2	**0.0453**	0.013	29.6	ug/L	1142	Standard
	Cr	52	11040.4	2.7	**0.6383**	0.023	3.6	ug/L	6628	Standard
	Cr	53	1623.4	8.3	**1.3902**	0.129	9.3	ug/L	430	Standard
	Mn	55	1201.0	0.7	**0.0848**	0.004	4.7	ug/L	603	Standard
	Co	59	375.7	2.3	**0.0198**	0.001	6.0	ug/L	237	Standard
	Ni	60	312.3	3.4	**0.0912**	0.004	4.7	ug/L	141	Standard
	Cu	65	236.3	2.7	**0.0651**	0.002	3.6	ug/L	109	Standard
	Zn	66	1941.8	2.7	**1.5970**	0.055	3.5	ug/L	159	Standard
>	**Ge**	72	454022.4	1.2				ug/L	474053	Standard
	As	75	11.9	146.3	**0.0364**	0.016	45.2	ug/L	-34	Standard
	Se	82	31.4	12.8	**0.1281**	0.041	32.3	ug/L	14	Standard
	Se-1	77	87.7	5.7	**0.4469**	0.060	13.4	ug/L	55	Standard
>	**Ga**	71	95.0	18.2				mg/L	50	Standard
	Rb	85	4872.5	2.9				ug/L	20	Standard
	Y	89	404770.5	0.6				ug/L	376602	Standard
>	**Rh**	103	80.0	22.5				ug/L	17	Standard
	Mo	98	116.6	2.8	**0.0416**	0.002	4.6	ug/L	8	Standard
	Ag	107	61.3	24.5	**-0.0025**	0.002	96.4	ug/L	81	Standard
	Cd	111	8.1	43.0	**0.0008**	0.002	229.5	mg/L	3	Standard
	Cd	114	29.0	53.2	**0.0020**	0.003	156.6	ug/L	7	Standard
>	**In**	115	550074.8	1.6				ug/L	524722	Standard
	Sn	118	596.7	39.8	**0.0158**	0.040	254.1	ug/L	715	Standard
	Sb	123	117.4	4.2	**0.0108**	0.001	9.0	ug/L	201	Standard
	Ba	135	36971.7	2.1	**19.3982**	0.128	0.7	ug/L	108	Standard
	Ce	140	30.0	16.7				ug/L	30	Standard
>	**Tb**	159	802021.2	1.6				ug/L	792236	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	154.7	7.4	**0.0182**	0.001	7.8	ug/L	9	Standard
	Tl	205	128.3	9.0	**0.0124**	0.002	14.8	ug/L	0	Standard
	Pb	206	255.7	10.1	**0.0005**	0.007	1256.9	ug/L	216	Standard
	Pb	207	236.0	8.3	**0.0037**	0.003	93.0	ug/L	180	Standard
	Pb	208	980.3	1.1	**0.0011**	0.002	149.5	ug/L	717	Standard
	U	238	28.0	18.9	**-0.0030**	0.001	29.7	ug/L	4	Standard
>	**Bi**	209	448836.9	2.3				ug/L	460343	Standard

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Na	23	5.0	100.0	**-5.1594**	15.986	309.8	mg/L	0	Standard
Mg	24	1993.5	3.8	**2.4733**	0.176	7.1	mg/L	20	Standard
K	39	58.3	21.6	**0.1865**	0.091	48.6	mg/L	22	Standard
Ca	43	45.0	19.2	**-3.3710**	2.098	62.2	mg/L	47	Standard
Fe	54	141.5	17.4	**-0.0075**	0.021	284.9	mg/L	151	Standard
Fe	57	231.7	13.9	**0.0185**	0.068	366.5	mg/L	195	Standard
> **Sc-1**	45	31868.5	4.0				mg/L	29647	Standard
Cl	35	162650.5	1.3				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	5611.0	3.8				ug/L	1607	Standard
P	31	25164.2	0.9				ug/L	22752	Standard
S	34	5320.9	2.9				ug/L	5049	Standard
Sr	88	361.7	6.2				ug/L	87	Standard
C	12	50.0	20.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.0	107.3				mg/L	10	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	3	Standard
I	127	5254.2	4.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.519	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.775	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.832
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.501
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606073002
Sample Date/Time: Thursday, June 16, 2016 21:38:59
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52860.4	2.3				ug/L	51024	Standard
	Be	9	10.0	50.0	**-0.0095**	0.006	63.2	ug/L	7	Standard
	Al	27	137711.4	1.6	**0.9241**	0.007	0.7	ug/L	625	Standard
	Sc	45	31095.2	1.2				ug/L	29647	Standard
	Ti	47	32.7	23.2	**-0.0560**	0.026	46.7	ug/L	57	Standard
	V	51	1546.7	3.7	**0.0511**	0.010	20.5	ug/L	1142	Standard
	Cr	52	11025.0	1.4	**0.5840**	0.055	9.5	ug/L	6628	Standard
	Cr	53	1463.4	4.0	**1.1555**	0.040	3.5	ug/L	430	Standard
	Mn	55	1410.7	11.5	**0.1137**	0.033	29.0	ug/L	603	Standard
	Co	59	359.7	1.9	**0.0152**	0.002	14.6	ug/L	237	Standard
	Ni	60	319.3	6.2	**0.0894**	0.014	15.7	ug/L	141	Standard
	Cu	65	200.0	1.3	**0.0412**	0.002	3.9	ug/L	109	Standard
	Zn	66	1969.1	2.4	**1.5596**	0.014	0.9	ug/L	159	Standard
>	**Ge**	72	469994.3	2.3				ug/L	474053	Standard
	As	75	0.5	7482.9	**0.0251**	0.035	138.8	ug/L	-34	Standard
	Se	82	28.5	7.3	**0.0908**	0.014	15.4	ug/L	14	Standard
	Se-1	77	88.7	18.3	**0.4207**	0.218	51.8	ug/L	55	Standard
>	**Ga**	71	73.3	28.4				mg/L	50	Standard
	Rb	85	4865.8	1.3				ug/L	20	Standard
	Y	89	399171.5	2.3				ug/L	376602	Standard
>	**Rh**	103	93.3	12.4				ug/L	17	Standard
	Mo	98	101.9	16.6	**0.0370**	0.006	16.6	ug/L	8	Standard
	Ag	107	61.3	18.0	**-0.0021**	0.002	98.0	ug/L	81	Standard
	Cd	111	6.5	18.0	**0.0001**	0.001	960.6	mg/L	3	Standard
	Cd	114	23.1	68.6	**0.0010**	0.003	344.6	ug/L	7	Standard
>	**In**	115	531069.9	2.8				ug/L	524722	Standard
	Sn	118	445.0	10.3	**-0.0078**	0.009	112.2	ug/L	715	Standard
	Sb	123	65.7	14.2	**0.0001**	0.002	2926.8	ug/L	201	Standard
	Ba	135	36371.9	1.1	**19.7762**	0.433	2.2	ug/L	108	Standard
	Ce	140	41.7	50.0				ug/L	30	Standard
>	**Tb**	159	774515.8	2.9				ug/L	792236	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	160.3	8.2	**0.0195**	0.002	8.6	ug/L	9	Standard
	Tl	205	130.0	21.4	**0.0133**	0.005	36.0	ug/L	0	Standard
	Pb	206	254.0	4.2	**0.0016**	0.003	201.3	ug/L	216	Standard
	Pb	207	204.3	4.4	**-0.0027**	0.002	57.9	ug/L	180	Standard
	Pb	208	941.7	3.4	**0.0002**	0.002	1048.9	ug/L	717	Standard
	U	238	8.3	85.1	**-0.0062**	0.001	19.1	ug/L	4	Standard
>	**Bi**	209	437592.9	1.4				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1953.5	4.1	**2.4795**	0.082	3.3	mg/L	20	Standard
K	39	41.7	13.9	**0.0748**	0.041	54.3	mg/L	22	Standard
Ca	43	46.7	6.2	**-2.7971**	0.513	18.3	mg/L	47	Standard
Fe	54	137.1	22.1	**-0.0088**	0.022	251.4	mg/L	151	Standard
Fe	57	218.3	25.5	**-0.0034**	0.160	4703.1	mg/L	195	Standard
> **Sc-1**	45	31095.2	1.2				mg/L	29647	Standard
Cl	35	164376.3	1.5				ug/L	154152	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	5667.7	1.8				ug/L	1607	Standard
P	31	24892.1	1.3				ug/L	22752	Standard
S	34	5330.9	2.9				ug/L	5049	Standard
Sr	88	315.0	7.3				ug/L	87	Standard
C	12	43.3	26.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.7	100.8				mg/L	10	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	5250.9	7.1				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.599	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.144	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.210
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.058
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606073003
Sample Date/Time: Thursday, June 16, 2016 21:42:10
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53594.6	1.1				ug/L	51024	Standard
	Be	9	3.3	86.6	**-0.0173**	0.003	18.9	ug/L	7	Standard
	Al	27	2979001.9	0.3	**19.9155**	0.253	1.3	ug/L	625	Standard
	Sc	45	31315.7	0.8				ug/L	29647	Standard
	Ti	47	43.0	24.6	**-0.0251**	0.035	139.3	ug/L	57	Standard
	V	51	1280.4	1.3	**0.0086**	0.002	24.3	ug/L	1142	Standard
	Cr	52	6976.3	2.4	**0.0037**	0.022	588.3	ug/L	6628	Standard
	Cr	53	1470.1	6.4	**1.1220**	0.096	8.5	ug/L	430	Standard
	Mn	55	27960.5	2.4	**4.5016**	0.120	2.7	ug/L	603	Standard
	Co	59	554.3	12.3	**0.0435**	0.010	24.1	ug/L	237	Standard
	Ni	60	395.0	5.1	**0.1235**	0.010	8.4	ug/L	141	Standard
	Cu	65	173.0	8.3	**0.0243**	0.008	31.2	ug/L	109	Standard
	Zn	66	1439.4	0.7	**1.0440**	0.007	0.7	ug/L	159	Standard
>	**Ge**	72	482360.2	0.2				ug/L	474053	Standard
	As	75	84.5	59.0	**0.1001**	0.044	44.2	ug/L	-34	Standard
	Se	82	47.5	19.6	**0.2529**	0.082	32.5	ug/L	14	Standard
	Se-1	77	132.0	7.2	**0.9443**	0.119	12.5	ug/L	55	Standard
>	**Ga**	71	60.0	14.4				mg/L	50	Standard
	Rb	85	475.0	12.1				ug/L	20	Standard
	Y	89	391203.2	1.3				ug/L	376602	Standard
>	**Rh**	103	55.0	9.1				ug/L	17	Standard
	Mo	98	37.9	67.6	**0.0106**	0.011	103.7	ug/L	8	Standard
	Ag	107	71.3	16.2	**-0.0003**	0.002	600.9	ug/L	81	Standard
	Cd	111	5.3	57.7	**-0.0005**	0.002	303.0	mg/L	3	Standard
	Cd	114	27.8	51.3	**0.0020**	0.003	149.5	ug/L	7	Standard
>	**In**	115	521847.0	1.7				ug/L	524722	Standard
	Sn	118	455.0	13.4	**-0.0046**	0.010	225.0	ug/L	715	Standard
	Sb	123	77.8	11.7	**0.0031**	0.002	74.2	ug/L	201	Standard
	Ba	135	148771.2	0.6	**82.4802**	0.932	1.1	ug/L	108	Standard
	Ce	140	300.0	8.7				ug/L	30	Standard
>	**Tb**	159	770703.6	1.1				ug/L	792236	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	215.7	6.2	**0.0270**	0.001	5.4	ug/L	9	Standard
	Tl	205	208.3	27.6	**0.0257**	0.009	34.8	ug/L	0	Standard
	Pb	206	272.0	3.0	**0.0054**	0.003	50.7	ug/L	216	Standard
	Pb	207	232.3	12.8	**0.0041**	0.008	195.9	ug/L	180	Standard
	Pb	208	1012.0	13.3	**0.0042**	0.007	176.0	ug/L	717	Standard
	U	238	232.3	16.7	**0.0315**	0.006	19.1	ug/L	4	Standard
>	**Bi**	209	439553.9	1.5				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	6086.2	1.7	**7.7675**	0.192	2.5	mg/L	20	Standard
K	39	18.3	56.8	**-0.0957**	0.075	77.9	mg/L	22	Standard
Ca	43	40.0	37.5	**-4.3545**	3.269	75.1	mg/L	47	Standard
Fe	54	265.9	15.1	**0.0898**	0.032	35.5	mg/L	151	Standard
Fe	57	201.7	20.0	**-0.0564**	0.115	204.5	mg/L	195	Standard
> **Sc-1**	45	31315.7	0.8				mg/L	29647	Standard
Cl	35	164992.2	0.7				ug/L	154152	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	10840.5	3.2				ug/L	1607	Standard
P	31	25164.2	3.4				ug/L	22752	Standard
S	34	5275.9	3.2				ug/L	5049	Standard
Sr	88	133.3	20.7				ug/L	87	Standard
C	12	53.3	57.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.2	49.6				mg/L	10	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	3	Standard
I	127	4810.8	4.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.038	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.752	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.452
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.484
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 21:45:23
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	52964.1	3.2				ug/L	51024	Standard
	Be	9	42168.6	0.7	**48.3246**	1.216	2.5	ug/L	7	Standard
	Al	27	7159091.1	2.4	**48.4492**	0.473	1.0	ug/L	625	Standard
	Sc	45	31200.4	3.4				ug/L	29647	Standard
	Ti	47	30099.2	0.4	**103.9852**	0.489	0.5	ug/L	57	Standard
	V	51	348173.2	0.9	**50.6797**	0.340	0.7	ug/L	1142	Standard
	Cr	52	366090.7	0.6	**50.7470**	0.566	1.1	ug/L	6628	Standard
	Cr	53	45820.9	1.2	**50.7491**	0.901	1.8	ug/L	430	Standard
	Mn	55	317011.4	2.2	**55.3295**	1.324	2.4	ug/L	603	Standard
	Co	59	316851.8	0.1	**51.1533**	0.313	0.6	ug/L	237	Standard
	Ni	60	93845.8	1.6	**50.4491**	1.080	2.1	ug/L	141	Standard
	Cu	65	91207.1	1.9	**50.3255**	1.210	2.4	ug/L	109	Standard
	Zn	66	53728.8	0.5	**50.1071**	0.516	1.0	ug/L	159	Standard
>	Ge	72	456409.0	0.5				ug/L	474053	Standard
	As	75	53094.6	1.6	**49.8317**	1.034	2.1	ug/L	-34	Standard
	Se	82	5335.2	1.1	**49.9428**	0.782	1.6	ug/L	14	Standard
	Se-1	77	3694.5	1.3	**49.2280**	0.868	1.8	ug/L	55	Standard
>	Ga	71	73.3	28.4				mg/L	50	Standard
	Rb	85	751.7	9.7				ug/L	20	Standard
	Y	89	395355.6	1.3				ug/L	376602	Standard
>	Rh	103	41.7	60.4				ug/L	17	Standard
	Mo	98	229935.7	1.0	**95.4610**	1.901	2.0	ug/L	8	Standard
	Ag	107	284501.2	0.4	**46.7556**	0.793	1.7	ug/L	81	Standard
	Cd	111	95579.3	0.6	**48.2915**	1.096	2.3	mg/L	3	Standard
	Cd	114	235319.3	0.3	**48.0921**	0.943	2.0	ug/L	7	Standard
>	In	115	535171.0	1.8				ug/L	524722	Standard
	Sn	118	268883.3	0.8	**48.8581**	0.478	1.0	ug/L	715	Standard
	Sb	123	213216.9	1.1	**47.8524**	0.650	1.4	ug/L	201	Standard
	Ba	135	88420.6	0.7	**47.7774**	0.620	1.3	ug/L	108	Standard
	Ce	140	60.0	52.0				ug/L	30	Standard
>	Tb	159	778568.6	0.9				ug/L	792236	Standard
	Ho	165	13.3	43.3				ug/L	7	Standard
	Tl	203	356552.0	0.9	**49.1981**	0.525	1.1	ug/L	9	Standard
	Tl	205	312384.5	1.4	**50.6927**	1.380	2.7	ug/L	0	Standard
	Pb	206	221782.7	0.3	**50.5795**	0.697	1.4	ug/L	216	Standard
	Pb	207	201563.9	0.5	**50.4967**	0.774	1.5	ug/L	180	Standard
	Pb	208	829379.7	0.4	**51.1985**	0.900	1.8	ug/L	717	Standard
	U	238	307681.0	0.4	**52.2118**	0.917	1.8	ug/L	4	Standard
>	Bi	209	436760.9	1.5				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.2513**	9.008	171.5	mg/L	0	Standard
Mg	24	3917.2	3.4	**5.0034**	0.184	3.7	mg/L	20	Standard
K	39	655.0	10.8	**4.5166**	0.488	10.8	mg/L	22	Standard
Ca	43	65.0	20.4	**1.3136**	3.422	260.5	mg/L	47	Standard
Fe	54	6192.2	4.0	**4.6769**	0.351	7.5	mg/L	151	Standard
Fe	57	1618.4	6.7	**4.1237**	0.452	11.0	mg/L	195	Standard
Sc-1	45	31200.4	3.4				mg/L	29647	Standard
Cl	35	163997.6	1.9				ug/L	154152	Standard
Kr	83	3.7	15.7				ug/L	3	Standard
Br	81	1766.8	4.0				ug/L	1607	Standard
P	31	25599.9	0.9				ug/L	22752	Standard
S	34	5862.8	2.2				ug/L	5049	Standard
Sr	88	68.3	41.6				ug/L	87	Standard
C	12	33.3	34.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	-1.0	50.0				mg/L	10	Standard
Ho-1	165	13.3	43.3				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	3	Standard
I	127	1488.4	8.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	96.649		
Al	27	96.898		
Sc	45			
Ti	47	103.985		
V	51	101.359		
Cr	52	101.494		
Cr	53			
Mn	55	110.659		
Co	59	102.307		
Ni	60	100.898		
Cu	65	100.651		
Zn	66	100.214		
Ge	72		96.278	
As	75	99.663		
Se	82	99.886		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	95.461		
Ag	107	93.511		
Cd	111	96.583		
Cd	114			
> In	115		101.991	
Sn	118	97.716		
Sb	123	95.705		
Ba	135	95.555		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.396		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.397		
U	238	104.424		
> Bi	209		94.877	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Mn	55	

Sample ID: QC Std 6
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Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 21:48:35
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51738.2	1.1				ug/L	51024	Standard
	Be	9	8.3	91.7	**-0.0112**	0.009	80.5	ug/L	7	Standard
	Al	27	1365.1	16.8	**-0.0003**	0.002	478.2	ug/L	625	Standard
	Sc	45	32252.6	1.6				ug/L	29647	Standard
	Ti	47	29.0	17.2	**-0.0677**	0.018	26.3	ug/L	57	Standard
	V	51	928.8	10.2	**-0.0358**	0.012	34.3	ug/L	1142	Standard
	Cr	52	6199.9	1.6	**-0.0728**	0.006	8.7	ug/L	6628	Standard
	Cr	53	526.7	17.6	**0.1435**	0.102	70.8	ug/L	430	Standard
	Mn	55	679.7	4.7	**-0.0102**	0.006	62.4	ug/L	603	Standard
	Co	59	222.0	2.4	**-0.0062**	0.001	15.3	ug/L	237	Standard
	Ni	60	127.3	4.5	**-0.0108**	0.003	24.1	ug/L	141	Standard
	Cu	65	129.3	11.3	**0.0037**	0.008	218.4	ug/L	109	Standard
	Zn	66	156.3	8.5	**-0.0888**	0.012	14.0	ug/L	159	Standard
>	**Ge**	72	466990.8	0.9				ug/L	474053	Standard
	As	75	-31.2	100.9	**-0.0035**	0.029	815.0	ug/L	-34	Standard
	Se	82	18.5	27.4	**0.0013**	0.046	3640.7	ug/L	14	Standard
	Se-1	77	60.7	5.3	**0.0572**	0.045	77.9	ug/L	55	Standard
>	**Ga**	71	66.7	41.3				mg/L	50	Standard
	Rb	85	25.0	20.0				ug/L	20	Standard
	Y	89	391075.9	3.9				ug/L	376602	Standard
>	**Rh**	103	35.0	49.5				ug/L	17	Standard
	Mo	98	246.2	31.0	**0.0990**	0.031	31.0	ug/L	8	Standard
	Ag	107	92.0	11.3	**0.0032**	0.002	60.7	ug/L	81	Standard
	Cd	111	9.2	30.0	**0.0015**	0.001	89.3	mg/L	3	Standard
	Cd	114	8.4	58.3	**-0.0021**	0.001	50.3	ug/L	7	Standard
>	**In**	115	521304.7	2.1				ug/L	524722	Standard
	Sn	118	806.7	12.6	**0.0616**	0.022	35.5	ug/L	715	Standard
	Sb	123	413.8	23.7	**0.0808**	0.024	30.2	ug/L	201	Standard
	Ba	135	135.0	17.1	**0.0173**	0.012	72.2	ug/L	108	Standard
	Ce	140	18.3	78.7				ug/L	30	Standard
>	**Tb**	159	770403.7	2.0				ug/L	792236	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	53.3	21.7	**0.0047**	0.002	33.8	ug/L	9	Standard
	Tl	205	41.7	25.0	**-0.0011**	0.002	147.7	ug/L	0	Standard
	Pb	206	231.3	3.6	**-0.0040**	0.002	55.2	ug/L	216	Standard
	Pb	207	191.7	4.4	**-0.0062**	0.002	38.0	ug/L	180	Standard
	Pb	208	830.7	1.5	**-0.0071**	0.001	9.5	ug/L	717	Standard
	U	238	32.3	17.6	**-0.0021**	0.001	45.2	ug/L	4	Standard
>	**Bi**	209	440882.3	0.7				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	40.0	45.1	**0.0046**	0.022	483.5	mg/L	20	Standard
K	39	21.7	13.3	**-0.0762**	0.019	24.7	mg/L	22	Standard
Ca	43	16.7	62.4	**-9.5897**	2.277	23.7	mg/L	47	Standard
Fe	54	154.6	3.2	**0.0006**	0.004	679.4	mg/L	151	Standard
Fe	57	181.7	39.0	**-0.1287**	0.205	159.3	mg/L	195	Standard
Sc-1	45	32252.6	1.6				mg/L	29647	Standard
Cl	35	162535.6	2.7				ug/L	154152	Standard
Kr	83	2.0	100.0				ug/L	3	Standard
Br	81	1583.4	15.5				ug/L	1607	Standard
P	31	25920.5	3.4				ug/L	22752	Standard
S	34	5491.0	2.1				ug/L	5049	Standard
Sr	88	78.3	13.3				ug/L	87	Standard
C	12	43.3	13.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	2.9	173.2				mg/L	10	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	10.0	173.2				mg/L	3	Standard
I	127	951.7	4.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.510	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.349
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.773
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, June 16, 2016 21:51:48
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51025.8	1.8				ug/L	51024	Standard
	Be	9	158.3	20.5	**0.1674**	0.039	23.3	ug/L	7	Standard
	Al	27	703.4	27.7	**-0.0048**	0.001	26.9	ug/L	625	Standard
	Sc	45	32324.5	3.0				ug/L	29647	Standard
	Ti	47	27.3	27.7	**-0.0704**	0.026	37.0	ug/L	57	Standard
	V	51	3596.4	1.1	**0.3627**	0.006	1.6	ug/L	1142	Standard
	Cr	52	11538.7	0.6	**0.7185**	0.004	0.5	ug/L	6628	Standard
	Cr	53	1191.7	2.4	**0.9142**	0.036	4.0	ug/L	430	Standard
	Mn	55	3452.4	2.2	**0.4841**	0.013	2.6	ug/L	603	Standard
	Co	59	2481.5	3.2	**0.3641**	0.012	3.2	ug/L	237	Standard
	Ni	60	2983.6	1.9	**1.5460**	0.025	1.6	ug/L	141	Standard
	Cu	65	1554.1	2.2	**0.8018**	0.018	2.3	ug/L	109	Standard
	Zn	66	6904.6	0.5	**6.3076**	0.040	0.6	ug/L	159	Standard
>	**Ge**	72	451469.6	0.4				ug/L	474053	Standard
	As	75	367.1	3.5	**0.3732**	0.012	3.2	ug/L	-34	Standard
	Se	82	52.6	5.1	**0.3307**	0.024	7.1	ug/L	14	Standard
	Se-1	77	86.0	19.2	**0.4314**	0.229	53.1	ug/L	55	Standard
>	**Ga**	71	36.7	56.8				mg/L	50	Standard
	Rb	85	15.0	145.3				ug/L	20	Standard
	Y	89	372929.0	2.6				ug/L	376602	Standard
>	**Rh**	103	21.7	58.1				ug/L	17	Standard
	Mo	98	53.2	25.4	**0.0175**	0.006	35.6	ug/L	8	Standard
	Ag	107	2191.8	2.9	**0.3621**	0.015	4.2	ug/L	81	Standard
	Cd	111	428.6	3.0	**0.2218**	0.010	4.4	mg/L	3	Standard
	Cd	114	1072.7	8.3	**0.2242**	0.022	10.0	ug/L	7	Standard
>	**In**	115	515022.5	1.7				ug/L	524722	Standard
	Sn	118	460.0	21.8	**-0.0026**	0.018	670.4	ug/L	715	Standard
	Sb	123	1687.6	0.2	**0.3789**	0.008	2.0	ug/L	201	Standard
	Ba	135	1278.4	5.4	**0.6611**	0.044	6.7	ug/L	108	Standard
	Ce	140	11.7	89.2				ug/L	30	Standard
>	**Tb**	159	775692.8	2.1				ug/L	792236	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	561.7	1.8	**0.0736**	0.001	1.5	ug/L	9	Standard
	Tl	205	431.7	7.1	**0.0610**	0.005	8.2	ug/L	0	Standard
	Pb	206	1089.0	2.6	**0.1879**	0.008	4.3	ug/L	216	Standard
	Pb	207	883.7	5.5	**0.1638**	0.011	6.9	ug/L	180	Standard
	Pb	208	3859.2	0.5	**0.1764**	0.003	1.5	ug/L	717	Standard
	U	238	2254.8	1.2	**0.3683**	0.007	1.9	ug/L	4	Standard
>	**Bi**	209	444599.6	0.7				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.3150**	8.898	167.4	mg/L	0	Standard
Mg	24	30.0	16.7	**-0.0079**	0.006	76.0	mg/L	20	Standard
K	39	21.7	66.6	**-0.0767**	0.101	131.3	mg/L	22	Standard
Ca	43	30.0	28.9	**-6.7278**	2.028	30.1	mg/L	47	Standard
Fe	54	87.5	4.0	**-0.0496**	0.004	9.0	mg/L	151	Standard
Fe	57	195.0	9.2	**-0.0929**	0.056	60.4	mg/L	195	Standard
Sc-1	45	32324.5	3.0				mg/L	29647	Standard
Cl	35	156288.7	1.2				ug/L	154152	Standard
Kr	83	3.3	17.3				ug/L	3	Standard
Br	81	1266.7	10.3				ug/L	1607	Standard
P	31	17852.2	2.6				ug/L	22752	Standard
S	34	5659.4	1.8				ug/L	5049	Standard
Sr	88	65.0	40.7				ug/L	87	Standard
C	12	20.0	0.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.2	100.1				mg/L	10	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	985.0	8.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	83.676		
Al	27			
Sc	45			
Ti	47			
V	51	90.668		
Cr	52	89.809		
Cr	53			
Mn	55	96.822		
Co	59	91.014		
Ni	60	96.626		
Cu	65	100.227		
Zn	66	100.922		
Ge	72		95.236	
As	75	93.291		
Se	82	82.669		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	90.533		
Cd	111	92.425		
Cd	114			
> In	115			98.152
Sn	118			
Sb	123	94.728		
Ba	135	88.151		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	91.941		
Tl	205			
Pb	206			
Pb	207			
Pb	208	88.177		
U	238	92.081		
> Bi	209			96.580
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW 58 WG571964-02
Sample Date/Time: Thursday, June 16, 2016 21:55:00
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51882.0	0.7				ug/L	51024	Standard
	Be	9	8.3	91.7	**-0.0113**	0.009	79.6	ug/L	7	Standard
	Al	27	7225.1	1.7	**0.0402**	0.001	2.5	ug/L	625	Standard
	Sc	45	32848.9	2.3				ug/L	29647	Standard
	Ti	47	51.0	25.0	**0.0065**	0.044	672.4	ug/L	57	Standard
	V	51	1196.1	1.0	**0.0022**	0.004	185.3	ug/L	1142	Standard
	Cr	52	7726.6	1.1	**0.1365**	0.019	13.7	ug/L	6628	Standard
	Cr	53	648.3	14.3	**0.2747**	0.094	34.1	ug/L	430	Standard
	Mn	55	2688.6	3.0	**0.3326**	0.014	4.1	ug/L	603	Standard
	Co	59	223.3	5.2	**-0.0060**	0.001	19.7	ug/L	237	Standard
	Ni	60	306.7	5.4	**0.0833**	0.005	5.7	ug/L	141	Standard
	Cu	65	369.3	3.4	**0.1332**	0.011	8.3	ug/L	109	Standard
	Zn	66	1524.4	0.8	**1.1625**	0.045	3.9	ug/L	159	Standard
>	**Ge**	72	467701.0	2.5				ug/L	474053	Standard
	As	75	-29.1	18.5	**-0.0015**	0.005	304.8	ug/L	-34	Standard
	Se	82	20.2	33.1	**0.0162**	0.062	379.4	ug/L	14	Standard
	Se-1	77	49.0	28.8	**-0.1009**	0.171	169.5	ug/L	55	Standard
>	**Ga**	71	70.0	25.8				mg/L	50	Standard
	Rb	85	63.3	19.9				ug/L	20	Standard
	Y	89	385228.3	1.7				ug/L	376602	Standard
>	**Rh**	103	13.3	43.3				ug/L	17	Standard
	Mo	98	91.6	20.6	**0.0329**	0.008	25.1	ug/L	8	Standard
	Ag	107	70.0	10.3	**-0.0007**	0.001	169.4	ug/L	81	Standard
	Cd	111	7.2	21.3	**0.0004**	0.001	191.2	mg/L	3	Standard
	Cd	114	8.6	219.6	**-0.0020**	0.004	198.4	ug/L	7	Standard
>	**In**	115	529391.3	2.2				ug/L	524722	Standard
	Sn	118	1728.4	4.6	**0.2287**	0.017	7.5	ug/L	715	Standard
	Sb	123	139.5	23.6	**0.0168**	0.007	40.4	ug/L	201	Standard
	Ba	135	108.3	10.8	**0.0016**	0.007	433.3	ug/L	108	Standard
	Ce	140	70.0	18.9				ug/L	30	Standard
>	**Tb**	159	807450.9	1.8				ug/L	792236	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	22.0	12.0	**0.0003**	0.000	106.9	ug/L	9	Standard
	Tl	205	30.0	28.9	**-0.0032**	0.001	42.5	ug/L	0	Standard
	Pb	206	253.7	10.4	**-0.0009**	0.006	689.0	ug/L	216	Standard
	Pb	207	220.0	2.1	**-0.0010**	0.001	126.8	ug/L	180	Standard
	Pb	208	877.3	3.6	**-0.0060**	0.002	33.1	ug/L	717	Standard
	U	238	8.7	63.5	**-0.0062**	0.001	14.5	ug/L	4	Standard
>	**Bi**	209	455782.1	0.2				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.5393**	8.509	153.6	mg/L	0	Standard
Mg	24	36.7	7.9	**-0.0004**	0.003	710.4	mg/L	20	Standard
K	39	8.3	34.6	**-0.1703**	0.021	12.2	mg/L	22	Standard
Ca	43	33.3	8.7	**-6.1652**	0.476	7.7	mg/L	47	Standard
Fe	54	150.7	24.4	**-0.0047**	0.025	526.5	mg/L	151	Standard
Fe	57	176.7	14.2	**-0.1527**	0.076	49.6	mg/L	195	Standard
> **Sc-1**	45	32848.9	2.3				mg/L	29647	Standard
Cl	35	161385.0	1.1				ug/L	154152	Standard
Kr	83	3.3	34.6				ug/L	3	Standard
Br	81	1680.1	1.8				ug/L	1607	Standard
P	31	24029.0	2.1				ug/L	22752	Standard
S	34	5571.0	3.7				ug/L	5049	Standard
Sr	88	66.7	56.3				ug/L	87	Standard
C	12	53.3	94.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.2	100.1				mg/L	10	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	1201.7	0.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.681	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.660	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.890
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.009
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 58 WG571964-02
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Method 6020 - Summary Report

Sample ID: LCSW 58 WG571964-03
Sample Date/Time: Thursday, June 16, 2016 21:58:11
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	53618.1	1.9				ug/L	51024	Standard
	Be	9	43223.2	1.9	**48.9062**	0.701	1.4	ug/L	7	Standard
	Al	27	16045.2	3.1	**0.0975**	0.001	1.5	ug/L	625	Standard
	Sc	45	33034.3	2.7				ug/L	29647	Standard
	Ti	47	54.7	14.9	**0.0208**	0.027	130.9	ug/L	57	Standard
	V	51	357626.2	0.2	**51.4076**	0.356	0.7	ug/L	1142	Standard
	Cr	52	377061.2	0.6	**51.6273**	0.257	0.5	ug/L	6628	Standard
	Cr	53	46803.9	1.6	**51.1933**	1.124	2.2	ug/L	430	Standard
	Mn	55	326931.8	1.1	**56.3462**	0.565	1.0	ug/L	603	Standard
	Co	59	321699.5	0.9	**51.2838**	0.209	0.4	ug/L	237	Standard
	Ni	60	96180.4	1.7	**51.0507**	0.482	0.9	ug/L	141	Standard
	Cu	65	95306.5	1.4	**51.9244**	0.344	0.7	ug/L	109	Standard
	Zn	66	56208.1	0.9	**51.7682**	0.278	0.5	ug/L	159	Standard
>	Ge	72	462203.6	0.8				ug/L	474053	Standard
	As	75	54677.4	1.3	**50.6686**	0.319	0.6	ug/L	-34	Standard
	Se	82	5471.8	2.6	**50.5742**	0.951	1.9	ug/L	14	Standard
	Se-1	77	3817.1	0.9	**50.2380**	0.317	0.6	ug/L	55	Standard
>	Ga	71	60.0	22.0				mg/L	50	Standard
	Rb	85	115.0	15.7				ug/L	20	Standard
	Y	89	401062.4	1.0				ug/L	376602	Standard
>	Rh	103	33.3	37.7				ug/L	17	Standard
	Mo	98	55.7	12.6	**0.0170**	0.003	16.7	ug/L	8	Standard
	Ag	107	298947.0	1.2	**47.9637**	0.316	0.7	ug/L	81	Standard
	Cd	111	99244.6	1.4	**48.9502**	0.549	1.1	mg/L	3	Standard
	Cd	114	239743.2	0.7	**47.8326**	0.248	0.5	ug/L	7	Standard
>	In	115	548071.7	0.8				ug/L	524722	Standard
	Sn	118	1466.7	2.8	**0.1712**	0.008	4.6	ug/L	715	Standard
	Sb	123	213065.5	1.1	**46.6859**	0.143	0.3	ug/L	201	Standard
	Ba	135	90504.9	1.1	**47.7484**	0.750	1.6	ug/L	108	Standard
	Ce	140	71.7	4.0				ug/L	30	Standard
>	Tb	159	809470.0	2.7				ug/L	792236	Standard
	Ho	165	10.0	100.0				ug/L	7	Standard
	Tl	203	363003.7	1.1	**48.3987**	0.635	1.3	ug/L	9	Standard
	Tl	205	319279.0	0.6	**50.0661**	1.366	2.7	ug/L	0	Standard
	Pb	206	230746.8	0.4	**50.8528**	1.062	2.1	ug/L	216	Standard
	Pb	207	202045.2	0.4	**48.9160**	1.313	2.7	ug/L	180	Standard
	Pb	208	862693.1	0.1	**51.4643**	1.296	2.5	ug/L	717	Standard
	U	238	307882.3	0.1	**50.4881**	1.234	2.4	ug/L	4	Standard
>	Bi	209	452058.0	2.3				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.4002**	8.750	162.0	mg/L	0	Standard
Mg	24	33.3	8.7	**-0.0046**	0.004	92.7	mg/L	20	Standard
K	39	38.3	32.8	**0.0349**	0.087	249.1	mg/L	22	Standard
Ca	43	31.7	48.2	**-6.5426**	3.175	48.5	mg/L	47	Standard
Fe	54	129.8	11.6	**-0.0203**	0.010	51.0	mg/L	151	Standard
Fe	57	178.3	5.8	**-0.1508**	0.042	28.0	mg/L	195	Standard
> **Sc-1**	45	33034.3	2.7				mg/L	29647	Standard
Cl	35	160489.1	2.1				ug/L	154152	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	1963.5	7.4				ug/L	1607	Standard
P	31	24446.4	2.0				ug/L	22752	Standard
S	34	5609.4	5.5				ug/L	5049	Standard
Sr	88	61.7	16.9				ug/L	87	Standard
C	12	83.3	59.2				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	16.2	127.9				mg/L	10	Standard
Ho-1	165	10.0	100.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	1580.1	4.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.084	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.500	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.450
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.200
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 58 WG571964-03
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Method 6020 - Summary Report

Sample ID: L1606042801 WG571964-01
Sample Date/Time: Thursday, June 16, 2016 22:01:23
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53056.1	0.8				ug/L	51024	Standard
	Be	9	15.0	120.2	**-0.0038**	0.021	544.4	ug/L	7	Standard
	Al	27	757403.8	1.6	**5.1075**	0.106	2.1	ug/L	625	Standard
	Sc	45	31754.9	2.5				ug/L	29647	Standard
	Ti	47	165.7	8.9	**0.3896**	0.046	11.7	ug/L	57	Standard
	V	51	1511.6	6.0	**0.0457**	0.014	31.1	ug/L	1142	Standard
	Cr	52	8164.9	0.8	**0.1892**	0.010	5.5	ug/L	6628	Standard
	Cr	53	1656.8	10.3	**1.3626**	0.187	13.8	ug/L	430	Standard
	Mn	55	17190.1	1.5	**2.7889**	0.065	2.3	ug/L	603	Standard
	Co	59	391.7	5.3	**0.0201**	0.004	18.4	ug/L	237	Standard
	Ni	60	11431.6	1.7	**5.8888**	0.134	2.3	ug/L	141	Standard
	Cu	65	74287.3	0.4	**39.7191**	0.286	0.7	ug/L	109	Standard
	Zn	66	6798.2	0.6	**5.9426**	0.080	1.3	ug/L	159	Standard
>	**Ge**	72	470820.2	0.8				ug/L	474053	Standard
	As	75	23.4	122.6	**0.0464**	0.026	56.6	ug/L	-34	Standard
	Se	82	24.3	11.2	**0.0524**	0.025	47.2	ug/L	14	Standard
	Se-1	77	121.0	4.3	**0.8414**	0.059	7.0	ug/L	55	Standard
>	**Ga**	71	111.7	6.8				mg/L	50	Standard
	Rb	85	8439.0	5.7				ug/L	20	Standard
	Y	89	394979.4	1.5				ug/L	376602	Standard
>	**Rh**	103	30.0	0.0				ug/L	17	Standard
	Mo	98	18900.0	0.6	**7.8902**	0.142	1.8	ug/L	8	Standard
	Ag	107	1050.7	1.6	**0.1614**	0.000	0.2	ug/L	81	Standard
	Cd	111	8.7	19.0	**0.0012**	0.001	76.4	mg/L	3	Standard
	Cd	114	173.0	66.1	**0.0315**	0.023	73.0	ug/L	7	Standard
>	**In**	115	531861.1	1.7				ug/L	524722	Standard
	Sn	118	33005.9	1.3	**5.9570**	0.142	2.4	ug/L	715	Standard
	Sb	123	2285.8	18.9	**0.5027**	0.106	21.1	ug/L	201	Standard
	Ba	135	21266.9	0.9	**11.5188**	0.132	1.1	ug/L	108	Standard
	Ce	140	228.3	16.1				ug/L	30	Standard
>	**Tb**	159	787998.7	1.7				ug/L	792236	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	150.7	22.9	**0.0182**	0.005	26.8	ug/L	9	Standard
	Tl	205	115.0	41.5	**0.0108**	0.008	72.2	ug/L	0	Standard
	Pb	206	32589.3	0.1	**7.3677**	0.062	0.8	ug/L	216	Standard
	Pb	207	27351.7	1.3	**6.7905**	0.113	1.7	ug/L	180	Standard
	Pb	208	116700.7	0.9	**7.1377**	0.028	0.4	ug/L	717	Standard
	U	238	60.7	30.6	**0.0027**	0.003	116.1	ug/L	4	Standard
>	**Bi**	209	437691.5	0.7				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.5017**	8.575	155.9	mg/L	0	Standard
Mg	24	12460.1	1.8	**15.7356**	0.595	3.8	mg/L	20	Standard
K	39	611.7	9.8	**4.1225**	0.361	8.8	mg/L	22	Standard
Ca	43	61.7	24.8	**0.2569**	3.325	1294.5	mg/L	47	Standard
Fe	54	123.9	25.0	**-0.0210**	0.023	110.5	mg/L	151	Standard
Fe	57	213.3	11.8	**-0.0300**	0.077	258.2	mg/L	195	Standard
Sc-1	45	31754.9	2.5				mg/L	29647	Standard
Cl	35	194533.7	1.6				ug/L	154152	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	3240.3	4.0				ug/L	1607	Standard
P	31	24090.8	3.3				ug/L	22752	Standard
S	34	5104.2	4.8				ug/L	5049	Standard
Sr	88	81.7	19.7				ug/L	87	Standard
C	12	96.7	6.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.5	179.6				mg/L	10	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	13282.5	4.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.982	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.318	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.361	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	95.079	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606042801S WG571964-05
Sample Date/Time: Thursday, June 16, 2016 22:04:34
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55394.4	1.8				ug/L	51024	Standard
	Be	9	8934.3	3.4	**9.7660**	0.194	2.0	ug/L	7	Standard
	Al	27	748355.5	1.6	**4.8346**	0.168	3.5	ug/L	625	Standard
	Sc	45	32691.9	1.0				ug/L	29647	Standard
	Ti	47	168.3	4.0	**0.3836**	0.024	6.2	ug/L	57	Standard
	V	51	72192.1	1.7	**9.7775**	0.188	1.9	ug/L	1142	Standard
	Cr	52	79707.4	0.5	**9.6848**	0.014	0.1	ug/L	6628	Standard
	Cr	53	10453.6	1.1	**10.5826**	0.158	1.5	ug/L	430	Standard
	Mn	55	79152.9	1.5	**12.9343**	0.146	1.1	ug/L	603	Standard
	Co	59	63320.4	0.7	**9.6094**	0.039	0.4	ug/L	237	Standard
	Ni	60	29840.4	0.9	**15.0769**	0.185	1.2	ug/L	141	Standard
	Cu	65	88796.8	0.4	**46.2088**	0.054	0.1	ug/L	109	Standard
	Zn	66	17201.8	0.7	**14.9707**	0.150	1.0	ug/L	159	Standard
>	**Ge**	72	483837.9	0.4				ug/L	474053	Standard
	As	75	10943.5	1.9	**9.7081**	0.171	1.8	ug/L	-34	Standard
	Se	82	1071.8	4.1	**9.3269**	0.380	4.1	ug/L	14	Standard
	Se-1	77	883.4	1.7	**10.5260**	0.205	1.9	ug/L	55	Standard
>	**Ga**	71	61.7	18.7				mg/L	50	Standard
	Rb	85	8238.9	4.0				ug/L	20	Standard
	Y	89	381877.6	0.5				ug/L	376602	Standard
>	**Rh**	103	51.7	55.9				ug/L	17	Standard
	Mo	98	18040.5	0.2	**7.6113**	0.126	1.7	ug/L	8	Standard
	Ag	107	57677.6	1.0	**9.6285**	0.084	0.9	ug/L	81	Standard
	Cd	111	18876.2	0.3	**9.6948**	0.114	1.2	mg/L	3	Standard
	Cd	114	46340.2	1.4	**9.6280**	0.249	2.6	ug/L	7	Standard
>	**In**	115	526253.2	1.5				ug/L	524722	Standard
	Sn	118	29871.1	0.9	**5.4406**	0.094	1.7	ug/L	715	Standard
	Sb	123	44200.6	1.7	**10.0749**	0.023	0.2	ug/L	201	Standard
	Ba	135	37005.8	1.2	**20.2992**	0.061	0.3	ug/L	108	Standard
	Ce	140	223.3	9.3				ug/L	30	Standard
>	**Tb**	159	800388.6	1.7				ug/L	792236	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	71293.7	0.6	**9.5115**	0.043	0.5	ug/L	9	Standard
	Tl	205	61241.9	1.8	**9.6035**	0.196	2.0	ug/L	0	Standard
	Pb	206	76986.8	0.6	**16.9419**	0.160	0.9	ug/L	216	Standard
	Pb	207	66311.8	0.8	**16.0284**	0.098	0.6	ug/L	180	Standard
	Pb	208	275320.9	0.6	**16.3962**	0.155	0.9	ug/L	717	Standard
	U	238	60579.2	0.6	**9.9347**	0.056	0.6	ug/L	4	Standard
>	**Bi**	209	451597.7	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	12333.4	0.5	**15.1192**	0.089	0.6	mg/L	20	Standard
K	39	615.0	5.3	**4.0231**	0.203	5.0	mg/L	22	Standard
Ca	43	28.3	10.2	**-7.1884**	0.556	7.7	mg/L	47	Standard
Fe	54	187.4	26.5	**0.0230**	0.035	154.6	mg/L	151	Standard
Fe	57	198.3	19.1	**-0.0900**	0.107	118.9	mg/L	195	Standard
> **Sc-1**	45	32691.9	1.0				mg/L	29647	Standard
Cl	35	191462.1	0.2				ug/L	154152	Standard
Kr	83	1.7	124.9				ug/L	3	Standard
Br	81	2590.2	10.5				ug/L	1607	Standard
P	31	24189.3	1.6				ug/L	22752	Standard
S	34	5244.2	0.9				ug/L	5049	Standard
Sr	88	83.3	24.2				ug/L	87	Standard
C	12	146.7	23.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	13.3	114.6				mg/L	10	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	0.0					mg/L	3	Standard
I	127	11335.9	2.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.565	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.064	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.292	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.100	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606042801SD WG571964-06
Sample Date/Time: Thursday, June 16, 2016 22:07:46
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56861.5	1.0				ug/L	51024	Standard
	Be	9	9379.6	0.6	**9.9907**	0.123	1.2	ug/L	7	Standard
	Al	27	791197.5	0.6	**4.9782**	0.076	1.5	ug/L	625	Standard
	Sc	45	33405.1	3.0				ug/L	29647	Standard
	Ti	47	189.0	15.7	**0.4621**	0.100	21.6	ug/L	57	Standard
	V	51	73275.8	0.5	**10.1068**	0.150	1.5	ug/L	1142	Standard
	Cr	52	82693.4	0.6	**10.2789**	0.155	1.5	ug/L	6628	Standard
	Cr	53	11009.0	1.3	**11.3764**	0.331	2.9	ug/L	430	Standard
	Mn	55	80077.1	1.3	**13.3217**	0.087	0.6	ug/L	603	Standard
	Co	59	64342.3	1.0	**9.9396**	0.081	0.8	ug/L	237	Standard
	Ni	60	30668.0	0.6	**15.7751**	0.244	1.5	ug/L	141	Standard
	Cu	65	102903.3	0.9	**54.5140**	0.360	0.7	ug/L	109	Standard
	Zn	66	17903.6	1.4	**15.8728**	0.283	1.8	ug/L	159	Standard
>	**Ge**	72	475415.3	1.6				ug/L	474053	Standard
	As	75	11042.5	1.9	**9.9692**	0.144	1.4	ug/L	-34	Standard
	Se	82	1111.2	2.5	**9.8543**	0.398	4.0	ug/L	14	Standard
	Se-1	77	817.4	1.4	**9.8699**	0.196	2.0	ug/L	55	Standard
>	**Ga**	71	86.7	39.3				mg/L	50	Standard
	Rb	85	8222.2	4.2				ug/L	20	Standard
	Y	89	394850.6	0.8				ug/L	376602	Standard
>	**Rh**	103	35.0	28.6				ug/L	17	Standard
	Mo	98	19398.6	1.2	**8.0048**	0.167	2.1	ug/L	8	Standard
	Ag	107	59697.4	0.4	**9.7470**	0.052	0.5	ug/L	81	Standard
	Cd	111	19317.1	0.2	**9.7032**	0.092	0.9	mg/L	3	Standard
	Cd	114	47826.5	0.6	**9.7171**	0.080	0.8	ug/L	7	Standard
>	**In**	115	538049.7	0.9				ug/L	524722	Standard
	Sn	118	39536.5	1.2	**7.0684**	0.038	0.5	ug/L	715	Standard
	Sb	123	45183.1	0.7	**10.0737**	0.100	1.0	ug/L	201	Standard
	Ba	135	43743.7	0.4	**23.4783**	0.172	0.7	ug/L	108	Standard
	Ce	140	316.7	16.7				ug/L	30	Standard
>	**Tb**	159	823661.0	0.7				ug/L	792236	Standard
	Ho	165	16.7	69.3				ug/L	7	Standard
	Tl	203	73870.7	1.0	**9.7275**	0.120	1.2	ug/L	9	Standard
	Tl	205	62943.8	1.2	**9.7425**	0.171	1.8	ug/L	0	Standard
	Pb	206	79783.5	0.3	**17.3303**	0.067	0.4	ug/L	216	Standard
	Pb	207	68152.3	0.6	**16.2608**	0.196	1.2	ug/L	180	Standard
	Pb	208	286237.0	1.1	**16.8270**	0.286	1.7	ug/L	717	Standard
	U	238	62126.1	0.8	**10.0567**	0.149	1.5	ug/L	4	Standard
>	**Bi**	209	457529.8	0.7				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	13005.6	1.2	**15.6137**	0.541	3.5	mg/L	20	Standard
K	39	631.7	11.7	**4.0527**	0.574	14.2	mg/L	22	Standard
Ca	43	45.0	29.4	**-3.9018**	2.447	62.7	mg/L	47	Standard
Fe	54	151.2	21.8	**-0.0055**	0.026	477.7	mg/L	151	Standard
Fe	57	191.7	21.7	**-0.1180**	0.127	107.5	mg/L	195	Standard
> **Sc-1**	45	33405.1	3.0				mg/L	29647	Standard
Cl	35	198754.5	0.5				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	2900.3	3.8				ug/L	1607	Standard
P	31	24661.7	2.9				ug/L	22752	Standard
S	34	5152.5	2.9				ug/L	5049	Standard
Sr	88	78.3	9.8				ug/L	87	Standard
C	12	96.7	43.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.9	187.9				mg/L	10	Standard
Ho-1	165	16.7	69.3				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	11145.8	3.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.440	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.287	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606042801SD WG571964-06
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.540
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.389
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606042801SD WG571964-06
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Method 6020 - Summary Report

Sample ID: L1606041103
Sample Date/Time: Thursday, June 16, 2016 22:10:57
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62574.0	2.3				ug/L	51024	Standard
	Be	9	160.0	11.3	**0.1339**	0.015	11.0	ug/L	7	Standard
	Al	27	3612417.3	0.5	**20.6888**	0.380	1.8	ug/L	625	Standard
	Sc	45	41445.0	4.1				ug/L	29647	Standard
	Ti	47	11430.0	1.2	**38.8931**	0.503	1.3	ug/L	57	Standard
	V	51	49465.6	5.9	**6.9654**	0.407	5.8	ug/L	1142	Standard
	Cr	52	278119.6	1.2	**37.8421**	0.634	1.7	ug/L	6628	Standard
	Cr	53	35835.7	1.3	**39.0973**	0.639	1.6	ug/L	430	Standard
	Mn	55	108739.8	1.1	**18.6585**	0.168	0.9	ug/L	603	Standard
	Co	59	16555.0	2.3	**2.6001**	0.043	1.6	ug/L	237	Standard
	Ni	60	172929.3	0.8	**91.8635**	0.500	0.5	ug/L	141	Standard
	Cu	65	6358.3	3.5	**3.4028**	0.118	3.5	ug/L	109	Standard
	Zn	66	15282.7	1.5	**13.9075**	0.137	1.0	ug/L	159	Standard
>	**Ge**	72	462157.8	0.7				ug/L	474053	Standard
	As	75	708.4	1.9	**0.6813**	0.015	2.2	ug/L	-34	Standard
	Se	82	305.6	0.9	**2.6661**	0.043	1.6	ug/L	14	Standard
	Se-1	77	262.0	4.6	**2.7550**	0.165	6.0	ug/L	55	Standard
>	**Ga**	71	6034.5	4.8				mg/L	50	Standard
	Rb	85	47790.3	0.2				ug/L	20	Standard
	Y	89	408920.9	2.9				ug/L	376602	Standard
>	**Rh**	103	41.7	34.6				ug/L	17	Standard
	Mo	98	2172.6	4.5	**0.8781**	0.030	3.5	ug/L	8	Standard
	Ag	107	219.7	70.0	**0.0229**	0.024	105.6	ug/L	81	Standard
	Cd	111	75.9	34.7	**0.0343**	0.013	36.7	mg/L	3	Standard
	Cd	114	241.8	20.0	**0.0446**	0.009	20.8	ug/L	7	Standard
>	**In**	115	546080.6	1.7				ug/L	524722	Standard
	Sn	118	1300.1	5.7	**0.1424**	0.011	7.6	ug/L	715	Standard
	Sb	123	571.3	25.0	**0.1106**	0.030	26.8	ug/L	201	Standard
	Ba	135	154749.6	0.9	**81.9842**	0.666	0.8	ug/L	108	Standard
	Ce	140	87014.2	1.0				ug/L	30	Standard
>	**Tb**	159	814427.9	0.6				ug/L	792236	Standard
	Ho	165	750.0	9.7				ug/L	7	Standard
	Tl	203	378.3	10.9	**0.0480**	0.006	11.9	ug/L	9	Standard
	Tl	205	368.3	33.6	**0.0501**	0.020	39.4	ug/L	0	Standard
	Pb	206	5985.2	3.5	**1.2661**	0.051	4.1	ug/L	216	Standard
	Pb	207	4992.8	4.4	**1.1580**	0.058	5.0	ug/L	180	Standard
	Pb	208	21391.6	3.3	**1.2214**	0.047	3.9	ug/L	717	Standard
	U	238	1095.4	14.1	**0.1724**	0.026	15.1	ug/L	4	Standard
>	**Bi**	209	451292.0	0.4				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	20841.0	1.9	**20.1926**	1.006	5.0	mg/L	20	Standard
K	39	73.3	37.6	**0.1715**	0.145	84.8	mg/L	22	Standard
Ca	43	58.3	64.9	**-3.6032**	6.066	168.3	mg/L	47	Standard
Fe	54	4110.0	2.2	**2.2769**	0.060	2.6	mg/L	151	Standard
Fe	57	1281.7	3.9	**2.1921**	0.046	2.1	mg/L	195	Standard
Sc-1	45	41445.0	4.1				mg/L	29647	Standard
Cl	35	174319.7	0.6				ug/L	154152	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	22139.5	6.4				ug/L	1607	Standard
P	31	56868.2	1.9				ug/L	22752	Standard
S	34	4735.7	5.8				ug/L	5049	Standard
Sr	88	138.3	8.3				ug/L	87	Standard
C	12	140.0	24.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	71.3				mg/L	0	Standard
Dy	164	1332.7	14.4				mg/L	10	Standard
Ho-1	165	750.0	9.7				mg/L	7	Standard
Er	166	710.0	11.5				mg/L	3	Standard
I	127	202127.9	4.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		122.636	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.491	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	104.070	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.034	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606041104
Sample Date/Time: Thursday, June 16, 2016 22:14:09
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64240.9	1.6				ug/L	51024	Standard
	Be	9	136.7	22.1	**0.1078**	0.027	24.9	ug/L	7	Standard
	Al	27	3763925.2	1.3	**20.9934**	0.276	1.3	ug/L	625	Standard
	Sc	45	40464.0	1.9				ug/L	29647	Standard
	Ti	47	8699.5	0.7	**27.3016**	0.630	2.3	ug/L	57	Standard
	V	51	38467.6	1.3	**4.9573**	0.087	1.7	ug/L	1142	Standard
	Cr	52	284248.5	0.2	**35.6883**	1.177	3.3	ug/L	6628	Standard
	Cr	53	35927.6	2.1	**36.1893**	1.342	3.7	ug/L	430	Standard
	Mn	55	133272.7	1.8	**21.1444**	0.498	2.4	ug/L	603	Standard
	Co	59	18921.1	3.5	**2.7470**	0.050	1.8	ug/L	237	Standard
	Ni	60	221247.9	1.4	**108.5931**	1.677	1.5	ug/L	141	Standard
	Cu	65	5825.8	2.3	**2.8698**	0.029	1.0	ug/L	109	Standard
	Zn	66	12440.8	1.3	**10.4031**	0.253	2.4	ug/L	159	Standard
>	**Ge**	72	500409.8	2.9				ug/L	474053	Standard
	As	75	551.3	12.2	**0.4975**	0.064	12.9	ug/L	-34	Standard
	Se	82	300.3	5.4	**2.4053**	0.175	7.3	ug/L	14	Standard
	Se-1	77	256.7	3.5	**2.4250**	0.195	8.0	ug/L	55	Standard
>	**Ga**	71	4735.7	2.7				mg/L	50	Standard
	Rb	85	38717.8	2.3				ug/L	20	Standard
	Y	89	413643.0	2.8				ug/L	376602	Standard
>	**Rh**	103	26.7	28.6				ug/L	17	Standard
	Mo	98	7867.7	1.9	**3.2136**	0.028	0.9	ug/L	8	Standard
	Ag	107	99.3	12.1	**0.0038**	0.002	50.7	ug/L	81	Standard
	Cd	111	46.8	16.9	**0.0200**	0.004	18.8	mg/L	3	Standard
	Cd	114	206.0	6.6	**0.0377**	0.003	7.1	ug/L	7	Standard
>	**In**	115	542917.1	1.0				ug/L	524722	Standard
	Sn	118	1081.7	2.4	**0.1046**	0.003	3.0	ug/L	715	Standard
	Sb	123	436.3	12.1	**0.0817**	0.011	13.3	ug/L	201	Standard
	Ba	135	146593.2	1.4	**78.1037**	0.328	0.4	ug/L	108	Standard
	Ce	140	75445.7	1.8				ug/L	30	Standard
>	**Tb**	159	801118.6	3.0				ug/L	792236	Standard
	Ho	165	633.3	15.1				ug/L	7	Standard
	Tl	203	300.0	6.5	**0.0378**	0.003	8.4	ug/L	9	Standard
	Tl	205	321.7	21.6	**0.0433**	0.012	28.2	ug/L	0	Standard
	Pb	206	5087.9	2.5	**1.0767**	0.011	1.0	ug/L	216	Standard
	Pb	207	4144.6	1.8	**0.9603**	0.027	2.8	ug/L	180	Standard
	Pb	208	18065.6	1.4	**1.0314**	0.029	2.8	ug/L	717	Standard
	U	238	874.7	4.0	**0.1374**	0.011	7.8	ug/L	4	Standard
>	**Bi**	209	447824.2	3.4				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	22872.3	0.6	**22.6806**	0.473	2.1	mg/L	20	Standard
K	39	35.0	51.5	**-0.0329**	0.100	305.7	mg/L	22	Standard
Ca	43	48.3	31.6	**-4.9013**	2.699	55.1	mg/L	47	Standard
Fe	54	3361.7	4.8	**1.8885**	0.113	6.0	mg/L	151	Standard
Fe	57	1078.4	5.6	**1.8011**	0.173	9.6	mg/L	195	Standard
> **Sc-1**	45	40464.0	1.9				mg/L	29647	Standard
Cl	35	177669.3	2.1				ug/L	154152	Standard
Kr	83	2.3	24.7				ug/L	3	Standard
Br	81	20991.2	6.6				ug/L	1607	Standard
P	31	55948.1	2.2				ug/L	22752	Standard
S	34	4435.6	2.7				ug/L	5049	Standard
Sr	88	156.7	18.7				ug/L	87	Standard
C	12	160.0	47.2				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	0	Standard
Dy	164	1259.3	5.9				mg/L	10	Standard
Ho-1	165	633.3	15.1				mg/L	7	Standard
Er	166	573.3	7.3				mg/L	3	Standard
I	127	221985.7	5.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		125.903	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.560	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.468
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.281
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ni 60 Upper, S, EEE	Ni	60	

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606041104PS WG572085-03
Sample Date/Time: Thursday, June 16, 2016 22:17:20
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68479.5	2.8				ug/L	51024	Standard
	Be	9	53798.7	2.5	**47.6621**	0.433	0.9	ug/L	7	Standard
	Al	27	3774638.8	2.0	**19.7508**	0.180	0.9	ug/L	625	Standard
	Sc	45	41744.1	0.5				ug/L	29647	Standard
	Ti	47	8543.7	1.2	**27.1926**	0.351	1.3	ug/L	57	Standard
	V	51	416323.5	0.8	**56.1020**	0.898	1.6	ug/L	1142	Standard
	Cr	52	661415.5	1.7	**85.4827**	2.467	2.9	ug/L	6628	Standard
	Cr	53	82886.1	1.6	**85.2548**	2.351	2.8	ug/L	430	Standard
	Mn	55	455226.4	0.8	**73.5653**	0.461	0.6	ug/L	603	Standard
	Co	59	356626.6	0.3	**53.2845**	0.717	1.3	ug/L	237	Standard
	Ni	60	319608.9	1.5	**159.1819**	4.226	2.7	ug/L	141	Standard
	Cu	65	101931.1	1.4	**52.0544**	1.323	2.5	ug/L	109	Standard
	Zn	66	69708.7	0.9	**60.2129**	1.260	2.1	ug/L	159	Standard
>	**Ge**	72	493214.1	1.2				ug/L	474053	Standard
	As	75	57487.0	0.2	**49.9285**	0.540	1.1	ug/L	-34	Standard
	Se	82	5945.0	0.7	**51.5039**	0.559	1.1	ug/L	14	Standard
	Se-1	77	4052.2	2.0	**49.9708**	0.414	0.8	ug/L	55	Standard
>	**Ga**	71	4670.7	3.3				mg/L	50	Standard
	Rb	85	37354.3	0.9				ug/L	20	Standard
	Y	89	401490.0	0.7				ug/L	376602	Standard
>	**Rh**	103	51.7	24.4				ug/L	17	Standard
	Mo	98	7837.2	0.6	**3.1623**	0.111	3.5	ug/L	8	Standard
	Ag	107	304891.6	0.9	**48.7677**	0.989	2.0	ug/L	81	Standard
	Cd	111	99959.3	1.1	**49.1537**	1.231	2.5	mg/L	3	Standard
	Cd	114	244744.0	1.6	**48.6729**	0.677	1.4	ug/L	7	Standard
>	**In**	115	549981.7	2.9				ug/L	524722	Standard
	Sn	118	1156.7	4.0	**0.1154**	0.002	1.9	ug/L	715	Standard
	Sb	123	225529.7	0.1	**49.2752**	1.450	2.9	ug/L	201	Standard
	Ba	135	235280.0	1.6	**123.8168**	1.916	1.5	ug/L	108	Standard
	Ce	140	72287.1	1.8				ug/L	30	Standard
>	**Tb**	159	836927.2	1.6				ug/L	792236	Standard
	Ho	165	618.3	2.8				ug/L	7	Standard
	Tl	203	374508.5	1.3	**47.9478**	0.598	1.2	ug/L	9	Standard
	Tl	205	331693.7	1.7	**49.9323**	0.614	1.2	ug/L	0	Standard
	Pb	206	246855.7	0.5	**52.2356**	0.118	0.2	ug/L	216	Standard
	Pb	207	213815.1	0.2	**49.6985**	0.193	0.4	ug/L	180	Standard
	Pb	208	877795.6	1.2	**50.2714**	0.366	0.7	ug/L	717	Standard
	U	238	322334.9	1.2	**50.7465**	0.349	0.7	ug/L	4	Standard
>	**Bi**	209	470679.1	0.5				ug/L	460343	Standard

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Na	23	3.3	173.2	**2.6916**	13.442	499.4	mg/L	0	Standard
Mg	24	22820.5	2.3	**21.9277**	0.463	2.1	mg/L	20	Standard
K	39	55.0	32.8	**0.0700**	0.098	140.3	mg/L	22	Standard
Ca	43	53.3	28.6	**-4.3313**	2.572	59.4	mg/L	47	Standard
Fe	54	3487.5	4.4	**1.8989**	0.090	4.7	mg/L	151	Standard
Fe	57	1048.4	8.2	**1.6588**	0.199	12.0	mg/L	195	Standard
> **Sc-1**	45	41744.1	0.5				mg/L	29647	Standard
Cl	35	171137.1	0.1				ug/L	154152	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	19926.4	2.2				ug/L	1607	Standard
P	31	55093.4	2.6				ug/L	22752	Standard
S	34	4375.6	3.4				ug/L	5049	Standard
Sr	88	146.7	22.7				ug/L	87	Standard
C	12	130.0	35.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	69.3				mg/L	0	Standard
Dy	164	1135.3	6.0				mg/L	10	Standard
Ho-1	165	618.3	2.8				mg/L	7	Standard
Er	166	516.7	11.3				mg/L	3	Standard
I	127	228888.4	2.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		134.210	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.042	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.814
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.245
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ni 60 Upper, S, EEE	Ni	60	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606041104PS WG572085-03
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Method 6020 - Summary Report

Sample ID: L1606041104SDL WG572085-04
Sample Date/Time: Thursday, June 16, 2016 22:20:32
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64080.3	2.7				ug/L	51024	Standard
	Be	9	40.0	12.5	**0.0168**	0.005	27.3	ug/L	7	Standard
	Al	27	710132.3	2.2	**3.9635**	0.097	2.4	ug/L	625	Standard
	Sc	45	34213.6	1.2				ug/L	29647	Standard
	Ti	47	1665.1	3.3	**5.5149**	0.188	3.4	ug/L	57	Standard
	V	51	8406.9	2.7	**1.0425**	0.044	4.3	ug/L	1142	Standard
	Cr	52	60396.1	0.7	**7.4773**	0.032	0.4	ug/L	6628	Standard
	Cr	53	7433.5	0.9	**7.7546**	0.056	0.7	ug/L	430	Standard
	Mn	55	26233.4	1.3	**4.3983**	0.064	1.4	ug/L	603	Standard
	Co	59	3790.1	2.7	**0.5627**	0.022	4.0	ug/L	237	Standard
	Ni	60	42759.9	1.8	**22.6189**	0.287	1.3	ug/L	141	Standard
	Cu	65	1312.1	2.0	**0.6485**	0.012	1.8	ug/L	109	Standard
	Zn	66	4020.5	0.7	**3.4822**	0.054	1.5	ug/L	159	Standard
>	**Ge**	72	462909.1	1.0				ug/L	474053	Standard
	As	75	127.1	1.3	**0.1426**	0.002	1.2	ug/L	-34	Standard
	Se	82	76.1	4.5	**0.5359**	0.031	5.8	ug/L	14	Standard
	Se-1	77	88.7	7.5	**0.4371**	0.078	17.8	ug/L	55	Standard
>	**Ga**	71	933.4	4.3				mg/L	50	Standard
	Rb	85	7380.1	1.8				ug/L	20	Standard
	Y	89	399286.8	1.5				ug/L	376602	Standard
>	**Rh**	103	10.0	50.0				ug/L	17	Standard
	Mo	98	1500.2	2.7	**0.5970**	0.016	2.6	ug/L	8	Standard
	Ag	107	118.7	15.0	**0.0065**	0.003	41.2	ug/L	81	Standard
	Cd	111	28.9	34.9	**0.0109**	0.005	45.1	mg/L	3	Standard
	Cd	114	79.5	41.7	**0.0119**	0.007	55.5	ug/L	7	Standard
>	**In**	115	553072.6	0.8				ug/L	524722	Standard
	Sn	118	576.7	14.8	**0.0122**	0.016	129.0	ug/L	715	Standard
	Sb	123	2178.3	21.1	**0.4589**	0.103	22.5	ug/L	201	Standard
	Ba	135	28213.6	0.4	**14.7104**	0.164	1.1	ug/L	108	Standard
	Ce	140	14325.1	2.6				ug/L	30	Standard
>	**Tb**	159	808125.3	1.3				ug/L	792236	Standard
	Ho	165	128.3	18.0				ug/L	7	Standard
	Tl	203	157.0	14.8	**0.0183**	0.003	16.5	ug/L	9	Standard
	Tl	205	128.3	27.4	**0.0122**	0.005	43.6	ug/L	0	Standard
	Pb	206	1207.7	4.1	**0.2094**	0.008	3.9	ug/L	216	Standard
	Pb	207	969.0	2.2	**0.1805**	0.006	3.4	ug/L	180	Standard
	Pb	208	4243.2	2.0	**0.1949**	0.007	3.7	ug/L	717	Standard
	U	238	239.0	4.0	**0.0315**	0.002	6.6	ug/L	4	Standard
>	**Bi**	209	453005.7	1.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	4389.0	3.6	**5.1101**	0.132	2.6	mg/L	20	Standard
K	39	13.3	78.1	**-0.1402**	0.068	48.2	mg/L	22	Standard
Ca	43	36.7	43.8	**-5.7822**	3.171	54.8	mg/L	47	Standard
Fe	54	812.9	7.6	**0.4581**	0.050	11.0	mg/L	151	Standard
Fe	57	373.3	8.7	**0.3544**	0.083	23.5	mg/L	195	Standard
> **Sc-1**	45	34213.6	1.2				mg/L	29647	Standard
Cl	35	155114.0	1.0				ug/L	154152	Standard
Kr	83	1.3	114.6				ug/L	3	Standard
Br	81	5447.6	5.1				ug/L	1607	Standard
P	31	29535.4	3.0				ug/L	22752	Standard
S	34	4345.6	4.1				ug/L	5049	Standard
Sr	88	98.3	16.3				ug/L	87	Standard
C	12	66.7	69.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	223.5	3.8				mg/L	10	Standard
Ho-1	165	128.3	18.0				mg/L	7	Standard
Er	166	136.7	22.4				mg/L	3	Standard
I	127	47285.3	1.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		125.588	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.649	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	105.403
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.406
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606041104SDL WG572085-04
Sample Date/Time: Thursday, June 16, 2016 22:23:43
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60699.7	1.4				ug/L	51024	Standard
	Be	9	26.7	65.8	**0.0056**	0.018	312.0	ug/L	7	Standard
	Al	27	141309.4	1.9	**0.8247**	0.016	2.0	ug/L	625	Standard
	Sc	45	31491.0	2.2				ug/L	29647	Standard
	Ti	47	381.3	5.6	**1.1251**	0.055	4.9	ug/L	57	Standard
	V	51	2585.2	5.7	**0.2016**	0.028	14.1	ug/L	1142	Standard
	Cr	52	17170.4	0.5	**1.4445**	0.049	3.4	ug/L	6628	Standard
	Cr	53	1966.8	5.0	**1.7199**	0.140	8.1	ug/L	430	Standard
	Mn	55	5874.1	1.6	**0.8794**	0.018	2.1	ug/L	603	Standard
	Co	59	918.7	1.3	**0.1040**	0.001	1.4	ug/L	237	Standard
	Ni	60	8671.8	1.0	**4.4921**	0.067	1.5	ug/L	141	Standard
	Cu	65	375.3	1.5	**0.1368**	0.002	1.4	ug/L	109	Standard
	Zn	66	1553.7	2.6	**1.1927**	0.020	1.7	ug/L	159	Standard
>	**Ge**	72	466371.9	2.3				ug/L	474053	Standard
	As	75	-6.1	252.7	**0.0197**	0.014	72.2	ug/L	-34	Standard
	Se	82	31.9	14.9	**0.1250**	0.051	40.6	ug/L	14	Standard
	Se-1	77	67.3	8.6	**0.1479**	0.098	66.2	ug/L	55	Standard
>	**Ga**	71	236.7	12.4				mg/L	50	Standard
	Rb	85	1530.1	6.8				ug/L	20	Standard
	Y	89	398351.9	2.2				ug/L	376602	Standard
>	**Rh**	103	20.0	90.1				ug/L	17	Standard
	Mo	98	309.3	4.7	**0.1235**	0.007	5.8	ug/L	8	Standard
	Ag	107	82.7	3.5	**0.0013**	0.000	30.9	ug/L	81	Standard
	Cd	111	8.8	17.3	**0.0012**	0.001	68.5	mg/L	3	Standard
	Cd	114	33.8	15.5	**0.0031**	0.001	31.5	ug/L	7	Standard
>	**In**	115	532767.1	1.5				ug/L	524722	Standard
	Sn	118	478.3	5.3	**-0.0020**	0.004	179.1	ug/L	715	Standard
	Sb	123	535.3	25.6	**0.1062**	0.033	30.9	ug/L	201	Standard
	Ba	135	5770.1	0.9	**3.0781**	0.059	1.9	ug/L	108	Standard
	Ce	140	2811.9	5.2				ug/L	30	Standard
>	**Tb**	159	784308.2	0.8				ug/L	792236	Standard
	Ho	165	41.7	18.3				ug/L	7	Standard
	Tl	203	52.7	23.4	**0.0046**	0.002	36.5	ug/L	9	Standard
	Tl	205	35.0	14.3	**-0.0022**	0.001	34.5	ug/L	0	Standard
	Pb	206	411.7	5.6	**0.0360**	0.005	12.9	ug/L	216	Standard
	Pb	207	350.0	3.5	**0.0324**	0.003	8.3	ug/L	180	Standard
	Pb	208	1486.7	0.5	**0.0323**	0.001	2.8	ug/L	717	Standard
	U	238	58.7	16.8	**0.0022**	0.002	75.4	ug/L	4	Standard
>	**Bi**	209	444600.9	0.5				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.3313**	8.870	166.4	mg/L	0	Standard
Mg	24	840.0	10.8	**1.0281**	0.127	12.3	mg/L	20	Standard
K	39	15.0	88.2	**-0.1198**	0.096	80.2	mg/L	22	Standard
Ca	43	18.3	83.3	**-9.1765**	3.343	36.4	mg/L	47	Standard
Fe	54	272.4	14.1	**0.0939**	0.032	34.1	mg/L	151	Standard
Fe	57	256.7	4.9	**0.1011**	0.032	31.4	mg/L	195	Standard
> **Sc-1**	45	31491.0	2.2				mg/L	29647	Standard
Cl	35	151247.9	1.3				ug/L	154152	Standard
Kr	83	3.3	69.3				ug/L	3	Standard
Br	81	2453.5	11.0				ug/L	1607	Standard
P	31	23077.6	3.5				ug/L	22752	Standard
S	34	4429.0	4.8				ug/L	5049	Standard
Sr	88	73.3	21.9				ug/L	87	Standard
C	12	63.3	24.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	47.6	24.3				mg/L	10	Standard
Ho-1	165	41.7	18.3				mg/L	7	Standard
Er	166	50.0	91.7				mg/L	3	Standard
I	127	10970.6	2.1				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		118.963	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.380	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.533	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.580	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 22:26:56
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59001.4	3.1				ug/L	51024	Standard
	Be	9	47251.9	1.9	**48.5958**	0.632	1.3	ug/L	7	Standard
	Al	27	7707900.4	0.6	**46.8442**	1.367	2.9	ug/L	625	Standard
	Sc	45	32042.2	2.5				ug/L	29647	Standard
	Ti	47	31108.6	0.8	**106.3533**	1.301	1.2	ug/L	57	Standard
	V	51	354930.5	0.4	**51.1260**	0.515	1.0	ug/L	1142	Standard
	Cr	52	373996.6	0.2	**51.3100**	0.429	0.8	ug/L	6628	Standard
	Cr	53	46528.0	1.9	**50.9890**	0.660	1.3	ug/L	430	Standard
	Mn	55	313560.0	0.4	**54.1496**	0.181	0.3	ug/L	603	Standard
	Co	59	324218.3	1.5	**51.7917**	0.391	0.8	ug/L	237	Standard
	Ni	60	95070.0	1.4	**50.5665**	0.352	0.7	ug/L	141	Standard
	Cu	65	93181.7	1.5	**50.8709**	0.430	0.8	ug/L	109	Standard
	Zn	66	54868.9	1.6	**50.6327**	0.507	1.0	ug/L	159	Standard
>	**Ge**	72	461242.2	0.7				ug/L	474053	Standard
	As	75	53786.6	0.6	**49.9506**	0.524	1.0	ug/L	-34	Standard
	Se	82	5398.5	1.3	**50.0080**	1.035	2.1	ug/L	14	Standard
	Se-1	77	3763.8	1.7	**49.6296**	0.770	1.6	ug/L	55	Standard
>	**Ga**	71	83.3	29.6				mg/L	50	Standard
	Rb	85	758.4	8.6				ug/L	20	Standard
	Y	89	392635.2	3.0				ug/L	376602	Standard
>	**Rh**	103	40.0	45.1				ug/L	17	Standard
	Mo	98	239363.5	0.3	**97.9544**	0.320	0.3	ug/L	8	Standard
	Ag	107	297613.5	1.2	**48.2150**	0.880	1.8	ug/L	81	Standard
	Cd	111	96257.9	0.7	**47.9363**	0.352	0.7	mg/L	3	Standard
	Cd	114	237569.3	0.8	**47.8568**	0.430	0.9	ug/L	7	Standard
>	**In**	115	542829.4	0.6				ug/L	524722	Standard
	Sn	118	271504.8	1.8	**48.6303**	0.573	1.2	ug/L	715	Standard
	Sb	123	221602.7	1.2	**49.0302**	0.874	1.8	ug/L	201	Standard
	Ba	135	89759.4	0.9	**47.8096**	0.296	0.6	ug/L	108	Standard
	Ce	140	83.3	15.1				ug/L	30	Standard
>	**Tb**	159	805068.8	1.3				ug/L	792236	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	366179.1	0.5	**49.0753**	0.770	1.6	ug/L	9	Standard
	Tl	205	320780.3	0.9	**50.5527**	0.981	1.9	ug/L	0	Standard
	Pb	206	226792.4	0.6	**50.2313**	0.545	1.1	ug/L	216	Standard
	Pb	207	206205.4	0.5	**50.1728**	0.804	1.6	ug/L	180	Standard
	Pb	208	828355.0	0.6	**49.6609**	0.844	1.7	ug/L	717	Standard
	U	238	311232.5	0.6	**51.2945**	0.952	1.9	ug/L	4	Standard
>	**Bi**	209	449694.2	1.3				ug/L	460343	Standard

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Na	23	3.3	173.2	**0.2298**	17.706	7704.3	mg/L	0	Standard
Mg	24	4013.9	1.6	**4.9932**	0.201	4.0	mg/L	20	Standard
K	39	691.7	2.2	**4.6523**	0.139	3.0	mg/L	22	Standard
Ca	43	66.7	18.9	**1.1897**	2.387	200.6	mg/L	47	Standard
Fe	54	5963.7	3.1	**4.3749**	0.232	5.3	mg/L	151	Standard
Fe	57	1775.1	6.5	**4.4411**	0.377	8.5	mg/L	195	Standard
> **Sc-1**	45	32042.2	2.5				mg/L	29647	Standard
Cl	35	154194.0	0.8				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	1553.4	2.0				ug/L	1607	Standard
P	31	22800.5	1.3				ug/L	22752	Standard
S	34	4925.8	3.9				ug/L	5049	Standard
Sr	88	71.7	8.1				ug/L	87	Standard
C	12	50.0	40.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.7	108.3				mg/L	10	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	3	Standard
I	127	1866.8	9.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	97.192		
Al	27	93.688		
Sc	45			
Ti	47	106.353		
V	51	102.252		
Cr	52	102.620		
Cr	53			
Mn	55	108.299		
Co	59	103.583		
Ni	60	101.133		
Cu	65	101.742		
Zn	66	101.265		
> Ge	72		97.298	
As	75	99.901		
Se	82	100.016		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	97.954		
Ag	107	96.430		
Cd	111	95.873		
Cd	114			
In	115			103.451
Sn	118	97.261		
Sb	123	98.060		
Ba	135	95.619		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.151		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.322		
U	238	102.589		
Bi	209			97.687
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 22:30:07
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57406.9	2.2				ug/L	51024	Standard
	Be	9	13.3	86.6	**-0.0071**	0.012	172.1	ug/L	7	Standard
	Al	27	1425.1	26.0	**-0.0009**	0.002	242.5	ug/L	625	Standard
	Sc	45	31355.8	2.5				ug/L	29647	Standard
	Ti	47	24.7	20.0	**-0.0813**	0.017	20.7	ug/L	57	Standard
	V	51	1120.2	2.3	**-0.0061**	0.006	100.1	ug/L	1142	Standard
	Cr	52	6392.0	0.4	**-0.0333**	0.015	44.8	ug/L	6628	Standard
	Cr	53	548.3	18.8	**0.1770**	0.124	70.1	ug/L	430	Standard
	Mn	55	724.0	4.6	**-0.0007**	0.008	1032.9	ug/L	603	Standard
	Co	59	242.7	2.3	**-0.0024**	0.000	19.9	ug/L	237	Standard
	Ni	60	130.3	12.7	**-0.0081**	0.010	124.4	ug/L	141	Standard
	Cu	65	128.7	7.9	**0.0044**	0.007	154.7	ug/L	109	Standard
	Zn	66	153.3	8.3	**-0.0894**	0.013	14.8	ug/L	159	Standard
>	**Ge**	72	460344.2	1.9				ug/L	474053	Standard
	As	75	-26.8	68.7	**0.0000**	0.017	51664.1	ug/L	-34	Standard
	Se	82	13.1	41.0	**-0.0473**	0.049	102.7	ug/L	14	Standard
	Se-1	77	56.7	10.8	**0.0148**	0.078	525.1	ug/L	55	Standard
>	**Ga**	71	50.0	36.1				mg/L	50	Standard
	Rb	85	33.3	8.7				ug/L	20	Standard
	Y	89	391660.9	0.1				ug/L	376602	Standard
>	**Rh**	103	21.7	58.1				ug/L	17	Standard
	Mo	98	296.5	33.7	**0.1177**	0.040	33.6	ug/L	8	Standard
	Ag	107	114.3	9.9	**0.0065**	0.002	24.1	ug/L	81	Standard
	Cd	111	13.8	22.3	**0.0038**	0.001	39.2	mg/L	3	Standard
	Cd	114	58.6	51.2	**0.0082**	0.006	72.9	ug/L	7	Standard
>	**In**	115	532413.4	1.7				ug/L	524722	Standard
	Sn	118	798.4	13.3	**0.0568**	0.021	36.2	ug/L	715	Standard
	Sb	123	522.7	25.9	**0.1035**	0.032	31.2	ug/L	201	Standard
	Ba	135	112.0	12.3	**0.0031**	0.006	206.8	ug/L	108	Standard
	Ce	140	18.3	63.0				ug/L	30	Standard
>	**Tb**	159	782152.3	0.6				ug/L	792236	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	55.3	28.1	**0.0050**	0.002	40.9	ug/L	9	Standard
	Tl	205	48.3	6.0	**-0.0000**	0.000	944.3	ug/L	0	Standard
	Pb	206	239.7	3.4	**-0.0020**	0.002	107.0	ug/L	216	Standard
	Pb	207	204.0	6.9	**-0.0031**	0.003	92.9	ug/L	180	Standard
	Pb	208	866.0	6.6	**-0.0048**	0.003	59.0	ug/L	717	Standard
	U	238	38.3	34.4	**-0.0011**	0.002	189.9	ug/L	4	Standard
>	**Bi**	209	440050.2	1.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	41.7	6.9	**0.0082**	0.003	39.8	mg/L	20	Standard
K	39	13.3	21.7	**-0.1321**	0.019	14.2	mg/L	22	Standard
Ca	43	21.7	53.3	**-8.4223**	2.469	29.3	mg/L	47	Standard
Fe	54	134.4	12.8	**-0.0117**	0.012	103.5	mg/L	151	Standard
Fe	57	178.3	16.9	**-0.1234**	0.101	82.1	mg/L	195	Standard
Sc-1	45	31355.8	2.5				mg/L	29647	Standard
Cl	35	154796.2	1.9				ug/L	154152	Standard
Kr	83	1.3	86.6				ug/L	3	Standard
Br	81	1420.1	12.0				ug/L	1607	Standard
P	31	23807.0	1.6				ug/L	22752	Standard
S	34	4767.4	2.9				ug/L	5049	Standard
Sr	88	76.7	22.9				ug/L	87	Standard
C	12	50.0	60.0				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	6.5	179.6				mg/L	10	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	1236.7	11.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.108	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.466	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	95.592	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW 41 WG571834-02
Sample Date/Time: Thursday, June 16, 2016 22:33:20
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57729.8	2.4				ug/L	51024	Standard
	Be	9	15.0	66.7	**-0.0052**	0.011	207.3	ug/L	7	Standard
	Al	27	10453.6	1.9	**0.0552**	0.003	5.0	ug/L	625	Standard
	Sc	45	33299.9	2.5				ug/L	29647	Standard
	Ti	47	35.7	25.1	**-0.0492**	0.028	57.5	ug/L	57	Standard
	V	51	1262.4	5.5	**0.0063**	0.008	133.6	ug/L	1142	Standard
	Cr	52	7466.2	1.6	**0.0706**	0.026	36.2	ug/L	6628	Standard
	Cr	53	643.3	12.9	**0.2497**	0.092	36.8	ug/L	430	Standard
	Mn	55	1616.1	2.8	**0.1414**	0.004	2.6	ug/L	603	Standard
	Co	59	253.0	6.6	**-0.0025**	0.002	79.5	ug/L	237	Standard
	Ni	60	378.3	5.2	**0.1151**	0.008	6.8	ug/L	141	Standard
	Cu	65	209.0	6.0	**0.0433**	0.007	15.3	ug/L	109	Standard
	Zn	66	1638.4	1.5	**1.2227**	0.044	3.6	ug/L	159	Standard
>	**Ge**	72	481770.3	1.5				ug/L	474053	Standard
	As	75	-7.3	61.8	**0.0186**	0.004	21.3	ug/L	-34	Standard
	Se	82	21.7	38.5	**0.0252**	0.078	309.4	ug/L	14	Standard
	Se-1	77	49.7	10.3	**-0.1081**	0.069	63.9	ug/L	55	Standard
>	**Ga**	71	81.7	19.7				mg/L	50	Standard
	Rb	85	50.0	17.3				ug/L	20	Standard
	Y	89	391456.0	1.0				ug/L	376602	Standard
>	**Rh**	103	15.0	33.3				ug/L	17	Standard
	Mo	98	98.4	20.8	**0.0355**	0.009	26.7	ug/L	8	Standard
	Ag	107	94.7	3.7	**0.0032**	0.001	16.1	ug/L	81	Standard
	Cd	111	15.5	31.8	**0.0046**	0.003	57.0	mg/L	3	Standard
	Cd	114	31.0	41.6	**0.0025**	0.003	104.4	ug/L	7	Standard
>	**In**	115	534892.9	2.4				ug/L	524722	Standard
	Sn	118	895.0	10.2	**0.0734**	0.014	18.9	ug/L	715	Standard
	Sb	123	243.3	24.4	**0.0397**	0.012	30.7	ug/L	201	Standard
	Ba	135	132.3	7.6	**0.0140**	0.006	42.8	ug/L	108	Standard
	Ce	140	126.7	2.3				ug/L	30	Standard
>	**Tb**	159	808648.5	2.5				ug/L	792236	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	39.3	24.7	**0.0026**	0.001	49.6	ug/L	9	Standard
	Tl	205	40.0	50.0	**-0.0017**	0.003	183.3	ug/L	0	Standard
	Pb	206	250.7	8.4	**-0.0022**	0.005	210.3	ug/L	216	Standard
	Pb	207	220.7	4.6	**-0.0015**	0.003	191.8	ug/L	180	Standard
	Pb	208	931.3	4.0	**-0.0035**	0.003	80.4	ug/L	717	Standard
	U	238	32.0	46.7	**-0.0024**	0.002	99.2	ug/L	4	Standard
>	**Bi**	209	461825.2	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	43.3	46.6	**0.0073**	0.026	347.9	mg/L	20	Standard
K	39	21.7	35.3	**-0.0805**	0.053	65.7	mg/L	22	Standard
Ca	43	33.3	31.2	**-6.2262**	2.322	37.3	mg/L	47	Standard
Fe	54	132.8	30.7	**-0.0183**	0.032	174.0	mg/L	151	Standard
Fe	57	186.7	24.3	**-0.1330**	0.122	92.1	mg/L	195	Standard
Sc-1	45	33299.9	2.5				mg/L	29647	Standard
Cl	35	150658.7	1.1				ug/L	154152	Standard
Kr	83	2.3	24.7				ug/L	3	Standard
Br	81	2026.8	3.8				ug/L	1607	Standard
P	31	21810.7	2.4				ug/L	22752	Standard
S	34	4620.7	1.9				ug/L	5049	Standard
Sr	88	70.0	14.3				ug/L	87	Standard
C	12	86.7	40.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.2	111.3				mg/L	10	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	3	Standard
I	127	2880.3	5.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.142	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.628	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.938
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.322
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: LCSW 41 WG571834-03
Sample Date/Time: Thursday, June 16, 2016 22:36:32
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58134.7	1.4				ug/L	51024	Standard
	Be	9	47481.0	1.2	**49.5549**	1.040	2.1	ug/L	7	Standard
	Al	27	11848.2	29.8	**0.0633**	0.022	34.2	ug/L	625	Standard
	Sc	45	33760.9	2.8				ug/L	29647	Standard
	Ti	47	60.7	19.3	**0.0386**	0.038	99.0	ug/L	57	Standard
	V	51	364743.8	0.9	**51.7833**	1.598	3.1	ug/L	1142	Standard
	Cr	52	384565.8	0.9	**52.0063**	1.376	2.6	ug/L	6628	Standard
	Cr	53	46865.7	2.2	**50.6129**	1.593	3.1	ug/L	430	Standard
	Mn	55	323505.6	0.5	**55.0551**	1.092	2.0	ug/L	603	Standard
	Co	59	330925.6	0.6	**52.1042**	1.547	3.0	ug/L	237	Standard
	Ni	60	98420.3	0.4	**51.5920**	1.168	2.3	ug/L	141	Standard
	Cu	65	96735.2	0.8	**52.0474**	1.195	2.3	ug/L	109	Standard
	Zn	66	60428.3	1.1	**54.9708**	1.052	1.9	ug/L	159	Standard
>	**Ge**	72	468206.5	2.5				ug/L	474053	Standard
	As	75	53251.7	1.1	**48.7274**	0.650	1.3	ug/L	-34	Standard
	Se	82	5558.2	1.1	**50.7386**	1.287	2.5	ug/L	14	Standard
	Se-1	77	3779.1	1.8	**49.0879**	0.350	0.7	ug/L	55	Standard
>	**Ga**	71	95.0	5.3				mg/L	50	Standard
	Rb	85	148.3	20.6				ug/L	20	Standard
	Y	89	410210.7	3.1				ug/L	376602	Standard
>	**Rh**	103	26.7	28.6				ug/L	17	Standard
	Mo	98	76.7	14.4	**0.0250**	0.004	16.4	ug/L	8	Standard
	Ag	107	306600.5	0.9	**48.2949**	0.124	0.3	ug/L	81	Standard
	Cd	111	98706.0	0.5	**47.7973**	0.198	0.4	mg/L	3	Standard
	Cd	114	240379.3	1.1	**47.0837**	0.284	0.6	ug/L	7	Standard
>	**In**	115	558260.1	0.9				ug/L	524722	Standard
	Sn	118	793.4	5.7	**0.0490**	0.008	17.0	ug/L	715	Standard
	Sb	123	217861.1	1.5	**46.8696**	0.887	1.9	ug/L	201	Standard
	Ba	135	91054.1	0.9	**47.1604**	0.551	1.2	ug/L	108	Standard
	Ce	140	330.0	6.6				ug/L	30	Standard
>	**Tb**	159	829912.3	0.8				ug/L	792236	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	372803.8	0.5	**48.2082**	0.596	1.2	ug/L	9	Standard
	Tl	205	323995.9	0.8	**49.2672**	0.912	1.9	ug/L	0	Standard
	Pb	206	236745.0	0.6	**50.5944**	0.255	0.5	ug/L	216	Standard
	Pb	207	206177.7	0.9	**48.4046**	0.929	1.9	ug/L	180	Standard
	Pb	208	859668.8	0.2	**49.7270**	0.479	1.0	ug/L	717	Standard
	U	238	310255.0	0.3	**49.3362**	0.627	1.3	ug/L	4	Standard
>	**Bi**	209	466041.0	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	161.7	12.9	**0.1477**	0.029	19.8	mg/L	20	Standard
K	39	16.7	17.3	**-0.1160**	0.022	19.3	mg/L	22	Standard
Ca	43	33.3	31.2	**-6.3847**	1.928	30.2	mg/L	47	Standard
Fe	54	164.9	14.3	**0.0027**	0.015	570.4	mg/L	151	Standard
Fe	57	196.7	21.3	**-0.1103**	0.128	116.3	mg/L	195	Standard
Sc-1	45	33760.9	2.8				mg/L	29647	Standard
Cl	35	149762.7	1.8				ug/L	154152	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	1560.1	10.1				ug/L	1607	Standard
P	31	22984.1	3.6				ug/L	22752	Standard
S	34	4315.6	2.6				ug/L	5049	Standard
Sr	88	53.3	28.6				ug/L	87	Standard
C	12	83.3	18.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	5.9	86.7				mg/L	10	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	16.7	91.7				mg/L	3	Standard
I	127	1323.4	9.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.936	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.767	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.392
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.238
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606033702 WG571834-01
Sample Date/Time: Thursday, June 16, 2016 22:39:43
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64441.8	2.3				ug/L	51024	Standard
	Be	9	20.0	25.0	**-0.0022**	0.005	232.0	ug/L	7	Standard
	Al	27	60114.2	4.5	**0.3246**	0.014	4.3	ug/L	625	Standard
	Sc	45	31512.8	4.2				ug/L	29647	Standard
	Ti	47	128.0	6.2	**0.2921**	0.031	10.5	ug/L	57	Standard
	V	51	53503.8	0.8	**7.9103**	0.048	0.6	ug/L	1142	Standard
	Cr	52	15505.3	1.8	**1.3346**	0.030	2.3	ug/L	6628	Standard
	Cr	53	2881.9	1.2	**2.8964**	0.027	0.9	ug/L	430	Standard
	Mn	55	1707.4	4.0	**0.1824**	0.014	7.5	ug/L	603	Standard
	Co	59	1839.8	1.0	**0.2661**	0.003	1.0	ug/L	237	Standard
	Ni	60	5162.5	5.3	**2.7953**	0.140	5.0	ug/L	141	Standard
	Cu	65	169344.1	2.3	**96.6524**	1.757	1.8	ug/L	109	Standard
	Zn	66	2344.5	2.7	**2.0388**	0.050	2.4	ug/L	159	Standard
>	**Ge**	72	441453.2	0.5				ug/L	474053	Standard
	As	75	1218.2	9.1	**1.2061**	0.101	8.4	ug/L	-34	Standard
	Se	82	116.0	12.5	**0.9573**	0.138	14.4	ug/L	14	Standard
	Se-1	77	201.7	7.0	**2.0760**	0.211	10.2	ug/L	55	Standard
>	**Ga**	71	926.7	11.5				mg/L	50	Standard
	Rb	85	12571.9	3.7				ug/L	20	Standard
	Y	89	399117.1	1.0				ug/L	376602	Standard
>	**Rh**	103	173.3	1.7				ug/L	17	Standard
	Mo	98	29352.9	0.6	**12.3636**	0.369	3.0	ug/L	8	Standard
	Ag	107	149.7	54.9	**0.0129**	0.015	112.8	ug/L	81	Standard
	Cd	111	24.8	238.3	**0.0100**	0.031	310.7	mg/L	3	Standard
	Cd	114	161.6	48.9	**0.0300**	0.017	58.2	ug/L	7	Standard
>	**In**	115	527437.4	2.5				ug/L	524722	Standard
	Sn	118	1430.1	3.9	**0.1747**	0.010	5.4	ug/L	715	Standard
	Sb	123	2404.5	19.4	**0.5345**	0.118	22.0	ug/L	201	Standard
	Ba	135	29634.3	0.9	**16.2125**	0.353	2.2	ug/L	108	Standard
	Ce	140	185.0	4.7				ug/L	30	Standard
>	**Tb**	159	786743.9	2.6				ug/L	792236	Standard
	Ho	165	16.7	105.4				ug/L	7	Standard
	Tl	203	226.3	39.8	**0.0295**	0.013	45.5	ug/L	9	Standard
	Tl	205	155.0	25.2	**0.0180**	0.007	37.6	ug/L	0	Standard
	Pb	206	685.3	11.7	**0.1039**	0.021	20.6	ug/L	216	Standard
	Pb	207	574.0	3.7	**0.0935**	0.008	8.7	ug/L	180	Standard
	Pb	208	2394.4	2.6	**0.0935**	0.004	4.7	ug/L	717	Standard
	U	238	81.3	17.9	**0.0066**	0.003	42.7	ug/L	4	Standard
>	**Bi**	209	426956.6	1.8				ug/L	460343	Standard

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Na	23	5.0	100.0	**-4.6650**	15.246	326.8	mg/L	0	Standard
Mg	24	23326.3	4.3	**29.7226**	1.184	4.0	mg/L	20	Standard
K	39	571.7	12.7	**3.8838**	0.629	16.2	mg/L	22	Standard
Ca	43	926.7	6.8	**191.1093**	22.294	11.7	mg/L	47	Standard
Fe	54	142.0	8.4	**-0.0064**	0.005	79.6	mg/L	151	Standard
Fe	57	988.4	6.7	**2.2303**	0.090	4.0	mg/L	195	Standard
> **Sc-1**	45	31512.8	4.2				mg/L	29647	Standard
Cl	35	486390.1	1.5				ug/L	154152	Standard
Kr	83	3.0	33.3				ug/L	3	Standard
Br	81	9422.9	2.9				ug/L	1607	Standard
P	31	23089.2	1.2				ug/L	22752	Standard
S	34	5072.5	3.6				ug/L	5049	Standard
Sr	88	663.3	3.8				ug/L	87	Standard
C	12	73.3	41.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	0	Standard
Dy	164	22.4	24.2				mg/L	10	Standard
Ho-1	165	16.7	105.4				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	3	Standard
I	127	47469.3	4.2				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		126.297	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		93.123	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.518
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	92.748
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606033702S WG571834-04
Sample Date/Time: Thursday, June 16, 2016 22:42:54
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68019.0	1.4				ug/L	51024	Standard
	Be	9	52452.3	2.6	**46.7932**	1.722	3.7	ug/L	7	Standard
	Al	27	59786.1	1.3	**0.3053**	0.006	2.1	ug/L	625	Standard
	Sc	45	30205.1	3.4				ug/L	29647	Standard
	Ti	47	100.0	14.5	**0.1859**	0.054	29.0	ug/L	57	Standard
	V	51	400824.3	1.2	**59.3044**	1.295	2.2	ug/L	1142	Standard
	Cr	52	361100.0	0.4	**50.8503**	0.412	0.8	ug/L	6628	Standard
	Cr	53	45675.4	2.3	**51.3868**	0.642	1.2	ug/L	430	Standard
	Mn	55	307080.3	1.9	**54.4520**	1.620	3.0	ug/L	603	Standard
	Co	59	323604.2	1.1	**53.0793**	1.177	2.2	ug/L	237	Standard
	Ni	60	93445.6	0.1	**51.0299**	0.526	1.0	ug/L	141	Standard
	Cu	65	247263.6	0.1	**138.7095**	1.722	1.2	ug/L	109	Standard
	Zn	66	54519.2	0.7	**51.6612**	0.952	1.8	ug/L	159	Standard
>	**Ge**	72	449299.9	1.1				ug/L	474053	Standard
	As	75	56719.6	0.9	**54.0778**	1.049	1.9	ug/L	-34	Standard
	Se	82	5785.5	2.0	**55.0413**	1.675	3.0	ug/L	14	Standard
	Se-1	77	3927.8	1.2	**53.2304**	1.135	2.1	ug/L	55	Standard
>	**Ga**	71	895.0	4.4				mg/L	50	Standard
	Rb	85	12290.0	5.9				ug/L	20	Standard
	Y	89	386361.5	1.5				ug/L	376602	Standard
>	**Rh**	103	176.7	6.5				ug/L	17	Standard
	Mo	98	28613.4	1.5	**12.4123**	0.434	3.5	ug/L	8	Standard
	Ag	107	279613.9	0.6	**48.0280**	1.230	2.6	ug/L	81	Standard
	Cd	111	93716.1	1.7	**49.4705**	0.238	0.5	mg/L	3	Standard
	Cd	114	229714.0	2.7	**49.0468**	0.741	1.5	ug/L	7	Standard
>	**In**	115	512129.2	2.1				ug/L	524722	Standard
	Sn	118	1266.7	5.0	**0.1514**	0.007	4.6	ug/L	715	Standard
	Sb	123	219270.1	0.1	**51.4357**	1.142	2.2	ug/L	201	Standard
	Ba	135	113634.2	0.4	**64.1909**	1.164	1.8	ug/L	108	Standard
	Ce	140	183.3	35.2				ug/L	30	Standard
>	**Tb**	159	767306.4	2.1				ug/L	792236	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	352266.3	0.4	**50.2886**	0.147	0.3	ug/L	9	Standard
	Tl	205	319230.0	1.5	**53.5879**	0.832	1.6	ug/L	0	Standard
	Pb	206	230082.1	0.2	**54.2895**	0.055	0.1	ug/L	216	Standard
	Pb	207	199935.5	0.5	**51.8202**	0.151	0.3	ug/L	180	Standard
	Pb	208	828887.7	1.4	**52.9349**	0.572	1.1	ug/L	717	Standard
	U	238	314710.8	1.3	**55.2472**	0.560	1.0	ug/L	4	Standard
>	**Bi**	209	422116.6	0.3				ug/L	460343	Standard

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Na	23	8.3	34.6	**-16.4613**	9.729	59.1	mg/L	0	Standard
Mg	24	22338.1	2.7	**29.6923**	0.787	2.7	mg/L	20	Standard
K	39	545.0	6.6	**3.8545**	0.326	8.5	mg/L	22	Standard
Ca	43	843.4	10.1	**180.3649**	20.489	11.4	mg/L	47	Standard
Fe	54	148.7	22.1	**0.0032**	0.023	711.1	mg/L	151	Standard
Fe	57	781.7	6.7	**1.7339**	0.242	13.9	mg/L	195	Standard
> **Sc-1**	45	30205.1	3.4				mg/L	29647	Standard
Cl	35	476373.7	2.1				ug/L	154152	Standard
Kr	83	2.3	89.2				ug/L	3	Standard
Br	81	9679.8	3.3				ug/L	1607	Standard
P	31	23531.6	1.5				ug/L	22752	Standard
S	34	4985.8	2.7				ug/L	5049	Standard
Sr	88	643.3	5.9				ug/L	87	Standard
C	12	83.3	54.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	100.0				mg/L	0	Standard
Dy	164	9.7	103.3				mg/L	10	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	46467.9	3.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		133.308	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.778	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.600
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.696
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: L1606033702SD WG571834-05
Sample Date/Time: Thursday, June 16, 2016 22:46:06
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69477.3	1.8				ug/L	51024	Standard
	Be	9	51502.4	2.4	**44.9684**	0.786	1.7	ug/L	7	Standard
	Al	27	70351.3	0.6	**0.3532**	0.005	1.3	ug/L	625	Standard
	Sc	45	29879.4	2.7				ug/L	29647	Standard
	Ti	47	116.3	8.0	**0.2444**	0.037	15.0	ug/L	57	Standard
	V	51	388223.7	1.2	**57.5908**	0.764	1.3	ug/L	1142	Standard
	Cr	52	347952.9	2.2	**49.1031**	1.033	2.1	ug/L	6628	Standard
	Cr	53	43768.2	2.9	**49.3632**	1.152	2.3	ug/L	430	Standard
	Mn	55	286009.9	1.4	**50.8380**	0.394	0.8	ug/L	603	Standard
	Co	59	307889.4	1.2	**50.6347**	0.555	1.1	ug/L	237	Standard
	Ni	60	89481.8	1.5	**48.9952**	0.439	0.9	ug/L	141	Standard
	Cu	65	241814.9	1.2	**136.0209**	1.038	0.8	ug/L	109	Standard
	Zn	66	51913.8	0.8	**49.3151**	0.405	0.8	ug/L	159	Standard
>	**Ge**	72	448036.8	0.9				ug/L	474053	Standard
	As	75	54590.9	0.7	**52.1892**	0.176	0.3	ug/L	-34	Standard
	Se	82	5464.5	2.1	**52.1104**	0.678	1.3	ug/L	14	Standard
	Se-1	77	3736.5	2.4	**50.7332**	0.775	1.5	ug/L	55	Standard
>	**Ga**	71	880.0	7.8				mg/L	50	Standard
	Rb	85	11956.4	0.5				ug/L	20	Standard
	Y	89	354548.8	0.8				ug/L	376602	Standard
>	**Rh**	103	176.7	9.9				ug/L	17	Standard
	Mo	98	28019.9	1.2	**12.5852**	0.199	1.6	ug/L	8	Standard
	Ag	107	268450.3	0.3	**47.7483**	0.458	1.0	ug/L	81	Standard
	Cd	111	88694.5	1.0	**48.4950**	0.379	0.8	mg/L	3	Standard
	Cd	114	219923.4	1.6	**48.6380**	0.413	0.8	ug/L	7	Standard
>	**In**	115	494421.9	1.1				ug/L	524722	Standard
	Sn	118	1316.7	9.7	**0.1699**	0.024	14.2	ug/L	715	Standard
	Sb	123	211754.6	0.6	**51.4377**	0.300	0.6	ug/L	201	Standard
	Ba	135	110652.9	0.5	**64.7326**	0.425	0.7	ug/L	108	Standard
	Ce	140	260.0	20.0				ug/L	30	Standard
>	**Tb**	159	762292.0	2.0				ug/L	792236	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	342694.3	1.4	**48.0097**	0.052	0.1	ug/L	9	Standard
	Tl	205	304091.9	1.8	**50.0920**	0.270	0.5	ug/L	0	Standard
	Pb	206	222070.0	1.1	**51.4209**	0.338	0.7	ug/L	216	Standard
	Pb	207	193776.6	0.8	**49.2893**	0.546	1.1	ug/L	180	Standard
	Pb	208	789689.1	0.4	**49.4955**	0.776	1.6	ug/L	717	Standard
	U	238	302421.4	0.6	**52.1051**	0.540	1.0	ug/L	4	Standard
>	**Bi**	209	430141.1	1.5				ug/L	460343	Standard

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Na	23	11.7	24.7	**-27.5524**	10.035	36.4	mg/L	0	Standard
Mg	24	22465.0	1.9	**30.1800**	0.330	1.1	mg/L	20	Standard
K	39	500.0	5.0	**3.5529**	0.109	3.1	mg/L	22	Standard
Ca	43	825.0	4.8	**178.0126**	5.766	3.2	mg/L	47	Standard
Fe	54	141.0	25.7	**-0.0008**	0.031	4097.7	mg/L	151	Standard
Fe	57	861.7	4.4	**2.0033**	0.182	9.1	mg/L	195	Standard
> **Sc-1**	45	29879.4	2.7				mg/L	29647	Standard
Cl	35	471095.3	0.9				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	9509.7	3.3				ug/L	1607	Standard
P	31	23573.3	1.7				ug/L	22752	Standard
S	34	4992.5	2.6				ug/L	5049	Standard
Sr	88	646.7	10.1				ug/L	87	Standard
C	12	96.7	31.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	41.7				mg/L	0	Standard
Dy	164	15.7	76.3				mg/L	10	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	3	Standard
I	127	49629.6	4.5				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		136.166	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		94.512	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.226
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.439
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

Sample ID: L1606033702SD WG571834-05
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Method 6020 - Summary Report

Sample ID: L1606030301
Sample Date/Time: Thursday, June 16, 2016 22:49:17
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75542.9	1.1				ug/L	51024	Standard
	Be	9	35.0	14.3	**0.0070**	0.004	53.8	ug/L	7	Standard
	Al	27	29747316.4	1.2	**141.1560**	2.929	2.1	ug/L	625	Standard
	Sc	45	33087.8	1.2				ug/L	29647	Standard
	Ti	47	864.4	0.5	**2.9151**	0.077	2.6	ug/L	57	Standard
	V	51	2646.8	15.2	**0.2300**	0.062	27.0	ug/L	1142	Standard
	Cr	52	10730.1	1.6	**0.6326**	0.065	10.2	ug/L	6628	Standard
	Cr	53	13055.7	9.8	**14.6159**	1.842	12.6	ug/L	430	Standard
	Mn	55	149866.6	1.0	**26.8754**	0.469	1.7	ug/L	603	Standard
	Co	59	3157.0	1.2	**0.4841**	0.012	2.4	ug/L	237	Standard
	Ni	60	2562.6	1.9	**1.3439**	0.063	4.7	ug/L	141	Standard
	Cu	65	1783.1	4.8	**0.9478**	0.026	2.7	ug/L	109	Standard
	Zn	66	4720.1	0.9	**4.3229**	0.088	2.0	ug/L	159	Standard
>	**Ge**	72	443259.0	2.7				ug/L	474053	Standard
	As	75	1196.5	7.5	**1.1797**	0.057	4.8	ug/L	-34	Standard
	Se	82	433.0	3.3	**4.0226**	0.239	5.9	ug/L	14	Standard
	Se-1	77	945.4	12.5	**12.4569**	1.980	15.9	ug/L	55	Standard
>	**Ga**	71	90.0	14.7				mg/L	50	Standard
	Rb	85	8912.6	1.9				ug/L	20	Standard
	Y	89	372910.9	1.8				ug/L	376602	Standard
>	**Rh**	103	138.3	9.1				ug/L	17	Standard
	Mo	98	418.3	6.0	**0.1743**	0.012	6.8	ug/L	8	Standard
	Ag	107	142.7	27.1	**0.0119**	0.006	53.9	ug/L	81	Standard
	Cd	111	58.8	59.4	**0.0275**	0.018	65.5	mg/L	3	Standard
	Cd	114	163.0	53.7	**0.0306**	0.018	59.7	ug/L	7	Standard
>	**In**	115	516818.9	0.6				ug/L	524722	Standard
	Sn	118	633.3	5.7	**0.0299**	0.006	20.2	ug/L	715	Standard
	Sb	123	884.4	13.0	**0.1907**	0.026	13.4	ug/L	201	Standard
	Ba	135	210091.9	0.7	**117.6212**	0.688	0.6	ug/L	108	Standard
	Ce	140	548.3	4.6				ug/L	30	Standard
>	**Tb**	159	797833.7	0.3				ug/L	792236	Standard
	Ho	165	23.3	68.9				ug/L	7	Standard
	Tl	203	225.3	33.3	**0.0286**	0.011	36.9	ug/L	9	Standard
	Tl	205	156.7	26.6	**0.0177**	0.007	39.2	ug/L	0	Standard
	Pb	206	343.3	6.6	**0.0221**	0.005	23.5	ug/L	216	Standard
	Pb	207	295.0	6.1	**0.0203**	0.005	24.8	ug/L	180	Standard
	Pb	208	1172.7	3.5	**0.0147**	0.003	21.3	ug/L	717	Standard
	U	238	2550.2	1.4	**0.4258**	0.006	1.3	ug/L	4	Standard
>	**Bi**	209	436094.8	0.8				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.5341**	8.518	153.9	mg/L	0	Standard
Mg	24	135567.2	1.0	**164.6662**	3.386	2.1	mg/L	20	Standard
K	39	101.7	25.2	**0.4668**	0.178	38.1	mg/L	22	Standard
Ca	43	143.3	8.8	**16.8014**	2.330	13.9	mg/L	47	Standard
Fe	54	210.5	7.2	**0.0385**	0.013	33.1	mg/L	151	Standard
Fe	57	346.7	4.4	**0.3147**	0.041	13.0	mg/L	195	Standard
> **Sc-1**	45	33087.8	1.2				mg/L	29647	Standard
Cl	35	252380.3	1.6				ug/L	154152	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	100794.6	4.5				ug/L	1607	Standard
P	31	32519.9	1.3				ug/L	22752	Standard
S	34	4837.4	4.7				ug/L	5049	Standard
Sr	88	436.7	6.9				ug/L	87	Standard
C	12	223.3	5.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	28.7	92.1				mg/L	10	Standard
Ho-1	165	23.3	68.9				mg/L	7	Standard
Er	166	26.7	57.3				mg/L	3	Standard
I	127	617066.8	8.9				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		148.053	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		93.504	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.494
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.733
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606030302
Sample Date/Time: Thursday, June 16, 2016 22:52:29
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73040.7	1.9				ug/L	51024	Standard
	Be	9	40.0	45.1	**0.0120**	0.014	119.9	ug/L	7	Standard
	Al	27	29071018.9	1.5	**142.6695**	1.976	1.4	ug/L	625	Standard
	Sc	45	31137.0	3.2				ug/L	29647	Standard
	Ti	47	896.0	0.6	**3.1347**	0.013	0.4	ug/L	57	Standard
	V	51	2628.5	16.8	**0.2400**	0.066	27.6	ug/L	1142	Standard
	Cr	52	11569.4	2.8	**0.8104**	0.048	5.9	ug/L	6628	Standard
	Cr	53	14446.9	3.6	**16.7439**	0.524	3.1	ug/L	430	Standard
	Mn	55	152328.9	0.4	**28.2404**	0.204	0.7	ug/L	603	Standard
	Co	59	3172.7	3.4	**0.5045**	0.021	4.1	ug/L	237	Standard
	Ni	60	2824.9	2.2	**1.5411**	0.022	1.4	ug/L	141	Standard
	Cu	65	1634.1	4.2	**0.8948**	0.038	4.3	ug/L	109	Standard
	Zn	66	5209.6	4.4	**4.9636**	0.220	4.4	ug/L	159	Standard
>	**Ge**	72	428745.2	1.0				ug/L	474053	Standard
	As	75	1258.8	1.9	**1.2822**	0.036	2.8	ug/L	-34	Standard
	Se	82	439.1	3.6	**4.2227**	0.199	4.7	ug/L	14	Standard
	Se-1	77	1078.4	5.9	**14.7842**	0.963	6.5	ug/L	55	Standard
>	**Ga**	71	70.0	25.8				mg/L	50	Standard
	Rb	85	9496.3	1.9				ug/L	20	Standard
	Y	89	380626.7	0.4				ug/L	376602	Standard
>	**Rh**	103	98.3	11.7				ug/L	17	Standard
	Mo	98	479.8	3.7	**0.2023**	0.007	3.6	ug/L	8	Standard
	Ag	107	174.0	68.0	**0.0174**	0.020	114.9	ug/L	81	Standard
	Cd	111	83.1	60.8	**0.0404**	0.026	64.8	mg/L	3	Standard
	Cd	114	224.6	76.7	**0.0439**	0.036	82.5	ug/L	7	Standard
>	**In**	115	512708.3	1.5				ug/L	524722	Standard
	Sn	118	761.7	9.5	**0.0552**	0.012	21.8	ug/L	715	Standard
	Sb	123	807.2	10.7	**0.1743**	0.019	11.1	ug/L	201	Standard
	Ba	135	209488.0	1.0	**118.2448**	2.471	2.1	ug/L	108	Standard
	Ce	140	541.7	9.3				ug/L	30	Standard
>	**Tb**	159	775209.0	3.4				ug/L	792236	Standard
	Ho	165	25.0	20.0				ug/L	7	Standard
	Tl	203	254.0	67.1	**0.0340**	0.024	70.2	ug/L	9	Standard
	Tl	205	180.0	38.9	**0.0228**	0.011	49.8	ug/L	0	Standard
	Pb	206	477.0	17.2	**0.0581**	0.017	29.8	ug/L	216	Standard
	Pb	207	417.0	19.6	**0.0560**	0.019	34.6	ug/L	180	Standard
	Pb	208	1674.7	14.6	**0.0509**	0.014	27.2	ug/L	717	Standard
	U	238	2253.2	2.5	**0.3950**	0.010	2.6	ug/L	4	Standard
>	**Bi**	209	414870.7	2.1				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.0844**	9.297	182.9	mg/L	0	Standard
Mg	24	134474.1	0.2	**173.6638**	5.440	3.1	mg/L	20	Standard
K	39	88.3	19.9	**0.4121**	0.119	28.8	mg/L	22	Standard
Ca	43	171.7	13.8	**24.9409**	4.511	18.1	mg/L	47	Standard
Fe	54	188.7	7.0	**0.0310**	0.006	19.6	mg/L	151	Standard
Fe	57	286.7	15.2	**0.1978**	0.124	62.9	mg/L	195	Standard
Sc-1	45	31137.0	3.2				mg/L	29647	Standard
Cl	35	236218.5	0.5				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	103082.9	2.1				ug/L	1607	Standard
P	31	32710.3	0.4				ug/L	22752	Standard
S	34	4897.5	3.2				ug/L	5049	Standard
Sr	88	453.3	14.0				ug/L	87	Standard
C	12	190.0	18.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	21.9	52.8				mg/L	10	Standard
Ho-1	165	25.0	20.0				mg/L	7	Standard
Er	166	30.0	33.3				mg/L	3	Standard
I	127	617957.6	6.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		143.149	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		90.442	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.710
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.122
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606030402
Sample Date/Time: Thursday, June 16, 2016 22:55:40
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71156.7	0.3				ug/L	51024	Standard
	Be	9	20.0	50.0	**-0.0040**	0.009	211.0	ug/L	7	Standard
	Al	27	27285286.1	1.5	**137.4375**	2.316	1.7	ug/L	625	Standard
	Sc	45	31798.3	2.5				ug/L	29647	Standard
	Ti	47	833.7	1.4	**2.8012**	0.055	2.0	ug/L	57	Standard
	V	51	2537.6	8.1	**0.2132**	0.036	16.9	ug/L	1142	Standard
	Cr	52	12018.1	1.3	**0.8169**	0.043	5.3	ug/L	6628	Standard
	Cr	53	14870.6	5.1	**16.6424**	0.566	3.4	ug/L	430	Standard
	Mn	55	153406.0	0.3	**27.4780**	0.629	2.3	ug/L	603	Standard
	Co	59	3042.6	1.6	**0.4644**	0.013	2.9	ug/L	237	Standard
	Ni	60	2834.9	0.9	**1.4924**	0.050	3.3	ug/L	141	Standard
	Cu	65	1512.4	1.9	**0.7934**	0.029	3.7	ug/L	109	Standard
	Zn	66	12243.6	1.2	**11.5661**	0.178	1.5	ug/L	159	Standard
>	**Ge**	72	443839.5	2.3				ug/L	474053	Standard
	As	75	1046.3	4.7	**1.0354**	0.070	6.7	ug/L	-34	Standard
	Se	82	370.0	2.6	**3.4056**	0.089	2.6	ug/L	14	Standard
	Se-1	77	1056.7	5.5	**13.9459**	0.499	3.6	ug/L	55	Standard
>	**Ga**	71	63.3	29.9				mg/L	50	Standard
	Rb	85	8789.2	0.9				ug/L	20	Standard
	Y	89	374101.9	2.2				ug/L	376602	Standard
>	**Rh**	103	100.0	39.7				ug/L	17	Standard
	Mo	98	414.8	3.1	**0.1799**	0.005	3.0	ug/L	8	Standard
	Ag	107	91.0	19.0	**0.0038**	0.003	80.6	ug/L	81	Standard
	Cd	111	38.9	24.2	**0.0179**	0.005	27.8	mg/L	3	Standard
	Cd	114	124.8	37.3	**0.0236**	0.010	41.9	ug/L	7	Standard
>	**In**	115	496787.9	1.5				ug/L	524722	Standard
	Sn	118	751.7	3.4	**0.0580**	0.007	12.3	ug/L	715	Standard
	Sb	123	699.9	9.2	**0.1546**	0.018	11.7	ug/L	201	Standard
	Ba	135	200966.0	0.6	**117.0693**	2.247	1.9	ug/L	108	Standard
	Ce	140	703.3	2.3				ug/L	30	Standard
>	**Tb**	159	757626.8	0.4				ug/L	792236	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	132.7	7.8	**0.0167**	0.001	8.9	ug/L	9	Standard
	Tl	205	95.0	31.6	**0.0084**	0.005	62.5	ug/L	0	Standard
	Pb	206	531.7	2.2	**0.0713**	0.003	3.6	ug/L	216	Standard
	Pb	207	455.3	6.2	**0.0663**	0.009	13.1	ug/L	180	Standard
	Pb	208	1923.0	1.8	**0.0670**	0.003	4.3	ug/L	717	Standard
	U	238	1986.8	1.8	**0.3469**	0.010	2.8	ug/L	4	Standard
>	**Bi**	209	415441.7	1.2				ug/L	460343	Standard

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Na	23	5.0	0.0	**-4.8155**	0.394	8.2	mg/L	0	Standard
Mg	24	122585.6	0.8	**154.9558**	2.818	1.8	mg/L	20	Standard
K	39	68.3	27.7	**0.2568**	0.128	49.9	mg/L	22	Standard
Ca	43	118.3	20.0	**12.5323**	4.646	37.1	mg/L	47	Standard
Fe	54	188.9	8.2	**0.0283**	0.012	41.6	mg/L	151	Standard
Fe	57	303.3	9.9	**0.2303**	0.108	46.9	mg/L	195	Standard
> **Sc-1**	45	31798.3	2.5				mg/L	29647	Standard
Cl	35	229346.8	0.7				ug/L	154152	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	83539.7	2.1				ug/L	1607	Standard
P	31	32606.7	1.9				ug/L	22752	Standard
S	34	4827.4	4.1				ug/L	5049	Standard
Sr	88	453.3	10.5				ug/L	87	Standard
C	12	170.0	0.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	51.9	21.5				mg/L	10	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	30.0	33.3				mg/L	3	Standard
I	127	562279.3	5.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		139.457	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.627	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.676
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.246
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606030402
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Method 6020 - Summary Report

Sample ID: L1606030402PS WG572184-03
Sample Date/Time: Thursday, June 16, 2016 22:58:52
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73075.8	1.3				ug/L	51024	Standard
	Be	9	53890.7	1.6	**44.7456**	1.235	2.8	ug/L	7	Standard
	Al	27	27168938.9	0.8	**133.2737**	2.450	1.8	ug/L	625	Standard
	Sc	45	32783.8	3.0				ug/L	29647	Standard
	Ti	47	859.4	2.1	**2.8540**	0.076	2.7	ug/L	57	Standard
	V	51	356764.3	1.1	**52.7436**	0.694	1.3	ug/L	1142	Standard
	Cr	52	356493.8	0.1	**50.1744**	0.746	1.5	ug/L	6628	Standard
	Cr	53	58201.6	1.0	**65.5911**	1.486	2.3	ug/L	430	Standard
	Mn	55	450920.3	1.1	**79.9871**	1.948	2.4	ug/L	603	Standard
	Co	59	316431.5	0.7	**51.8775**	0.422	0.8	ug/L	237	Standard
	Ni	60	89734.3	1.3	**48.9891**	1.257	2.6	ug/L	141	Standard
	Cu	65	87088.6	0.9	**48.7984**	1.056	2.2	ug/L	109	Standard
	Zn	66	59430.7	0.2	**56.3137**	0.736	1.3	ug/L	159	Standard
>	**Ge**	72	449467.4	1.3				ug/L	474053	Standard
	As	75	54174.2	0.7	**51.6333**	0.928	1.8	ug/L	-34	Standard
	Se	82	5615.8	0.7	**53.3981**	0.963	1.8	ug/L	14	Standard
	Se-1	77	4643.7	1.4	**63.0355**	0.461	0.7	ug/L	55	Standard
>	**Ga**	71	86.7	6.7				mg/L	50	Standard
	Rb	85	8584.1	2.2				ug/L	20	Standard
	Y	89	362129.9	0.6				ug/L	376602	Standard
>	**Rh**	103	126.7	12.1				ug/L	17	Standard
	Mo	98	423.7	5.1	**0.1836**	0.012	6.4	ug/L	8	Standard
	Ag	107	266853.3	1.0	**47.1390**	0.674	1.4	ug/L	81	Standard
	Cd	111	91252.6	1.2	**49.5561**	0.951	1.9	mg/L	3	Standard
	Cd	114	222037.4	0.3	**48.7752**	0.696	1.4	ug/L	7	Standard
>	**In**	115	497860.4	1.7				ug/L	524722	Standard
	Sn	118	795.0	4.5	**0.0661**	0.005	7.0	ug/L	715	Standard
	Sb	123	212175.4	1.5	**51.1854**	0.593	1.2	ug/L	201	Standard
	Ba	135	282462.3	0.7	**164.2013**	1.778	1.1	ug/L	108	Standard
	Ce	140	631.7	10.3				ug/L	30	Standard
>	**Tb**	159	772720.2	0.9				ug/L	792236	Standard
	Ho	165	25.0	72.1				ug/L	7	Standard
	Tl	203	348021.0	0.8	**48.9171**	0.207	0.4	ug/L	9	Standard
	Tl	205	307292.3	1.9	**50.7847**	0.486	1.0	ug/L	0	Standard
	Pb	206	227366.6	0.7	**52.8212**	0.283	0.5	ug/L	216	Standard
	Pb	207	198570.4	0.5	**50.6733**	0.216	0.4	ug/L	180	Standard
	Pb	208	808970.2	1.0	**50.8658**	0.381	0.7	ug/L	717	Standard
	U	238	316899.9	0.9	**54.7755**	0.248	0.5	ug/L	4	Standard
>	**Bi**	209	428726.0	0.9				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.3595**	8.821	164.6	mg/L	0	Standard
Mg	24	124008.8	1.6	**152.0535**	3.346	2.2	mg/L	20	Standard
K	39	85.0	11.8	**0.3592**	0.081	22.7	mg/L	22	Standard
Ca	43	100.0	5.0	**7.9645**	1.532	19.2	mg/L	47	Standard
Fe	54	177.2	11.1	**0.0154**	0.015	95.9	mg/L	151	Standard
Fe	57	351.7	12.7	**0.3402**	0.148	43.6	mg/L	195	Standard
> **Sc-1**	45	32783.8	3.0				mg/L	29647	Standard
Cl	35	226771.8	0.7				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	82051.8	3.7				ug/L	1607	Standard
P	31	32553.3	0.7				ug/L	22752	Standard
S	34	4877.5	2.7				ug/L	5049	Standard
Sr	88	468.3	17.3				ug/L	87	Standard
C	12	143.3	17.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	28.9	106.4				mg/L	10	Standard
Ho-1	165	25.0	72.1				mg/L	7	Standard
Er	166	23.3	65.5				mg/L	3	Standard
I	127	560436.2	7.8				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		143.218	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.814	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.881
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.132
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606030402SDL WG572184-04
Sample Date/Time: Thursday, June 16, 2016 23:02:03
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70743.1	1.8				ug/L	51024	Standard
	Be	9	28.3	50.9	**0.0034**	0.013	384.2	ug/L	7	Standard
	Al	27	5919809.8	1.5	**29.9860**	0.193	0.6	ug/L	625	Standard
	Sc	45	33931.3	4.9				ug/L	29647	Standard
	Ti	47	210.3	4.5	**0.5323**	0.026	4.9	ug/L	57	Standard
	V	51	1736.1	7.7	**0.0751**	0.020	26.8	ug/L	1142	Standard
	Cr	52	8517.7	1.3	**0.2257**	0.018	7.8	ug/L	6628	Standard
	Cr	53	4512.3	4.3	**4.4067**	0.273	6.2	ug/L	430	Standard
	Mn	55	34493.9	0.5	**5.6636**	0.053	0.9	ug/L	603	Standard
	Co	59	857.0	3.0	**0.0916**	0.004	4.4	ug/L	237	Standard
	Ni	60	815.4	3.7	**0.3434**	0.013	3.8	ug/L	141	Standard
	Cu	65	609.0	2.8	**0.2567**	0.008	3.3	ug/L	109	Standard
	Zn	66	2631.2	2.5	**2.1339**	0.077	3.6	ug/L	159	Standard
>	**Ge**	72	475670.8	1.3				ug/L	474053	Standard
	As	75	259.9	19.5	**0.2591**	0.046	17.8	ug/L	-34	Standard
	Se	82	96.9	9.6	**0.7044**	0.090	12.8	ug/L	14	Standard
	Se-1	77	278.3	6.3	**2.8660**	0.190	6.6	ug/L	55	Standard
>	**Ga**	71	100.0	13.2				mg/L	50	Standard
	Rb	85	1971.8	2.2				ug/L	20	Standard
	Y	89	399368.2	0.1				ug/L	376602	Standard
>	**Rh**	103	31.7	55.5				ug/L	17	Standard
	Mo	98	97.2	8.5	**0.0330**	0.003	8.8	ug/L	8	Standard
	Ag	107	194.3	8.7	**0.0182**	0.002	12.0	ug/L	81	Standard
	Cd	111	22.8	26.6	**0.0078**	0.003	35.8	mg/L	3	Standard
	Cd	114	48.7	59.7	**0.0057**	0.006	99.0	ug/L	7	Standard
>	**In**	115	559725.5	1.9				ug/L	524722	Standard
	Sn	118	606.7	7.7	**0.0162**	0.009	56.8	ug/L	715	Standard
	Sb	123	2363.7	19.9	**0.4914**	0.092	18.7	ug/L	201	Standard
	Ba	135	43798.6	2.4	**22.5929**	0.145	0.6	ug/L	108	Standard
	Ce	140	198.3	9.5				ug/L	30	Standard
>	**Tb**	159	842868.7	1.3				ug/L	792236	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	155.3	20.7	**0.0174**	0.004	24.2	ug/L	9	Standard
	Tl	205	138.3	25.4	**0.0131**	0.005	41.5	ug/L	0	Standard
	Pb	206	331.7	5.4	**0.0143**	0.004	25.7	ug/L	216	Standard
	Pb	207	291.7	3.0	**0.0144**	0.002	12.4	ug/L	180	Standard
	Pb	208	1219.7	5.8	**0.0124**	0.004	35.2	ug/L	717	Standard
	U	238	456.0	5.1	**0.0646**	0.005	7.0	ug/L	4	Standard
>	**Bi**	209	468142.9	1.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	26463.1	2.5	**31.3785**	2.343	7.5	mg/L	20	Standard
K	39	26.7	78.1	**-0.0526**	0.134	255.5	mg/L	22	Standard
Ca	43	43.3	17.6	**-4.3735**	1.225	28.0	mg/L	47	Standard
Fe	54	169.2	3.0	**0.0053**	0.003	52.6	mg/L	151	Standard
Fe	57	196.7	11.5	**-0.1160**	0.038	32.8	mg/L	195	Standard
Sc-1	45	33931.3	4.9				mg/L	29647	Standard
Cl	35	196142.1	0.3				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	19616.0	5.5				ug/L	1607	Standard
P	31	27376.4	1.1				ug/L	22752	Standard
S	34	5225.9	4.8				ug/L	5049	Standard
Sr	88	161.7	12.5				ug/L	87	Standard
C	12	53.3	21.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	18.9	105.9				mg/L	10	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	23.3	24.7				mg/L	3	Standard
I	127	136986.5	1.1				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		138.646	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.341	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.671
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.694
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 23:05:16
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65141.5	3.2				ug/L	51024	Standard
	Be	9	52703.2	1.3	**49.1153**	1.764	3.6	ug/L	7	Standard
	Al	27	8228815.5	2.2	**45.2824**	0.920	2.0	ug/L	625	Standard
	Sc	45	32498.2	4.1				ug/L	29647	Standard
	Ti	47	31345.1	0.7	**103.5318**	1.343	1.3	ug/L	57	Standard
	V	51	367453.1	0.4	**51.1407**	0.777	1.5	ug/L	1142	Standard
	Cr	52	375913.5	0.3	**49.8070**	1.076	2.2	ug/L	6628	Standard
	Cr	53	47646.5	1.3	**50.4578**	1.488	2.9	ug/L	430	Standard
	Mn	55	329100.4	0.4	**54.9171**	0.971	1.8	ug/L	603	Standard
	Co	59	349269.0	1.0	**53.9203**	1.421	2.6	ug/L	237	Standard
	Ni	60	96531.2	0.8	**49.6170**	1.272	2.6	ug/L	141	Standard
	Cu	65	93924.6	0.9	**49.5504**	1.188	2.4	ug/L	109	Standard
	Zn	66	55518.9	0.1	**49.5011**	0.851	1.7	ug/L	159	Standard
>	Ge	72	477444.4	1.8				ug/L	474053	Standard
	As	75	55141.7	0.8	**49.4767**	0.656	1.3	ug/L	-34	Standard
	Se	82	5701.1	0.6	**51.0288**	1.000	2.0	ug/L	14	Standard
	Se-1	77	3881.8	1.1	**49.4608**	1.267	2.6	ug/L	55	Standard
>	Ga	71	65.0	13.3				mg/L	50	Standard
	Rb	85	788.4	3.5				ug/L	20	Standard
	Y	89	405958.4	2.3				ug/L	376602	Standard
>	Rh	103	46.7	6.2				ug/L	17	Standard
	Mo	98	255980.2	1.6	**104.9334**	3.174	3.0	ug/L	8	Standard
	Ag	107	304085.1	0.1	**49.3379**	0.777	1.6	ug/L	81	Standard
	Cd	111	100650.6	0.4	**50.2032**	0.894	1.8	mg/L	3	Standard
	Cd	114	247889.3	0.9	**50.0095**	0.397	0.8	ug/L	7	Standard
>	In	115	542056.8	1.5				ug/L	524722	Standard
	Sn	118	285272.3	0.9	**51.1841**	0.960	1.9	ug/L	715	Standard
	Sb	123	227314.1	0.8	**50.3702**	0.881	1.7	ug/L	201	Standard
	Ba	135	91208.0	0.4	**48.6598**	0.850	1.7	ug/L	108	Standard
	Ce	140	63.3	32.9				ug/L	30	Standard
>	Tb	159	789070.3	2.3				ug/L	792236	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	377602.8	0.5	**50.2279**	0.920	1.8	ug/L	9	Standard
	Tl	205	337371.9	1.4	**52.7729**	1.437	2.7	ug/L	0	Standard
	Pb	206	238042.0	0.2	**52.3320**	0.779	1.5	ug/L	216	Standard
	Pb	207	215459.6	1.1	**52.0360**	1.192	2.3	ug/L	180	Standard
	Pb	208	891326.9	0.5	**53.0399**	0.951	1.8	ug/L	717	Standard
	U	238	333407.3	1.0	**54.5375**	1.116	2.0	ug/L	4	Standard
>	Bi	209	453096.7	1.3				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.3907**	8.767	162.6	mg/L	0	Standard
Mg	24	4200.6	2.3	**5.1529**	0.111	2.2	mg/L	20	Standard
K	39	616.7	6.8	**4.0727**	0.447	11.0	mg/L	22	Standard
Ca	43	71.7	17.6	**2.1532**	3.105	144.2	mg/L	47	Standard
Fe	54	6037.6	3.3	**4.3664**	0.172	3.9	mg/L	151	Standard
Fe	57	1763.4	0.4	**4.3392**	0.195	4.5	mg/L	195	Standard
Sc-1	45	32498.2	4.1				mg/L	29647	Standard
Cl	35	179833.9	2.1				ug/L	154152	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	2146.8	4.2				ug/L	1607	Standard
P	31	26813.7	2.2				ug/L	22752	Standard
S	34	5724.4	0.6				ug/L	5049	Standard
Sr	88	70.0	14.3				ug/L	87	Standard
C	12	63.3	50.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.0	50.0				mg/L	10	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	3	Standard
I	127	9479.8	26.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	98.231		
Al	27	90.565		
Sc	45			
Ti	47	103.532		
V	51	102.281		
Cr	52	99.614		
Cr	53			
Mn	55	109.834		
Co	59	107.841		
Ni	60	99.234		
Cu	65	99.101		
Zn	66	99.002		
Ge	72		100.715	
As	75	98.953		
Se	82	102.058		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	104.933		
Ag	107	98.676		
Cd	111	100.406		
Cd	114			
In	115		103.304	
Sn	118	102.368		
Sb	123	100.740		
Ba	135	97.320		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.456		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.080		
U	238	109.075		
Bi	209		98.426	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 23:08:27
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65521.4	0.4				ug/L	51024	Standard
	Be	9	23.3	99.0	**0.0005**	0.021	4564.3	ug/L	7	Standard
	Al	27	5681.9	111.4	**0.0212**	0.034	162.2	ug/L	625	Standard
	Sc	45	34061.6	0.4				ug/L	29647	Standard
	Ti	47	31.0	31.1	**-0.0658**	0.030	46.1	ug/L	57	Standard
	V	51	1137.0	4.8	**-0.0132**	0.008	58.0	ug/L	1142	Standard
	Cr	52	6409.0	1.1	**-0.0829**	0.007	8.9	ug/L	6628	Standard
	Cr	53	666.7	9.6	**0.2639**	0.061	23.2	ug/L	430	Standard
	Mn	55	712.4	6.8	**-0.0100**	0.007	70.1	ug/L	603	Standard
	Co	59	233.0	15.5	**-0.0061**	0.005	85.2	ug/L	237	Standard
	Ni	60	159.3	10.8	**0.0024**	0.008	354.6	ug/L	141	Standard
	Cu	65	160.3	16.8	**0.0166**	0.013	81.1	ug/L	109	Standard
	Zn	66	162.7	11.7	**-0.0896**	0.016	17.5	ug/L	159	Standard
>	**Ge**	72	488521.2	0.7				ug/L	474053	Standard
	As	75	-18.2	245.0	**0.0090**	0.039	433.3	ug/L	-34	Standard
	Se	82	22.9	33.5	**0.0317**	0.066	209.0	ug/L	14	Standard
	Se-1	77	61.7	10.8	**0.0347**	0.088	253.1	ug/L	55	Standard
>	**Ga**	71	43.3	6.7				mg/L	50	Standard
	Rb	85	21.7	26.6				ug/L	20	Standard
	Y	89	392497.9	1.5				ug/L	376602	Standard
>	**Rh**	103	15.0	66.7				ug/L	17	Standard
	Mo	98	290.0	34.9	**0.1112**	0.040	35.6	ug/L	8	Standard
	Ag	107	124.3	21.0	**0.0075**	0.004	51.6	ug/L	81	Standard
	Cd	111	11.5	16.4	**0.0024**	0.001	34.9	mg/L	3	Standard
	Cd	114	37.6	64.7	**0.0036**	0.005	130.1	ug/L	7	Standard
>	**In**	115	550836.3	1.7				ug/L	524722	Standard
	Sn	118	835.0	15.5	**0.0583**	0.023	39.6	ug/L	715	Standard
	Sb	123	699.1	30.0	**0.1378**	0.046	33.4	ug/L	201	Standard
	Ba	135	132.0	3.9	**0.0117**	0.003	27.6	ug/L	108	Standard
	Ce	140	11.7	24.7				ug/L	30	Standard
>	**Tb**	159	819426.3	1.1				ug/L	792236	Standard
	Ho	165	6.7	86.6				ug/L	7	Standard
	Tl	203	74.7	34.7	**0.0068**	0.003	47.8	ug/L	9	Standard
	Tl	205	90.0	77.2	**0.0055**	0.010	186.7	ug/L	0	Standard
	Pb	206	270.7	9.3	**0.0000**	0.005	33114.8	ug/L	216	Standard
	Pb	207	219.0	11.0	**-0.0037**	0.006	150.6	ug/L	180	Standard
	Pb	208	961.7	14.2	**-0.0037**	0.008	206.3	ug/L	717	Standard
	U	238	71.3	83.4	**0.0035**	0.009	266.3	ug/L	4	Standard
>	**Bi**	209	478835.9	0.7				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.7236**	8.190	143.1	mg/L	0	Standard
Mg	24	78.3	36.3	**0.0471**	0.033	70.4	mg/L	20	Standard
K	39	20.0	50.0	**-0.0950**	0.067	70.5	mg/L	22	Standard
Ca	43	16.7	62.4	**-9.7998**	2.111	21.5	mg/L	47	Standard
Fe	54	162.8	19.9	**0.0003**	0.023	7301.8	mg/L	151	Standard
Fe	57	211.7	11.2	**-0.0764**	0.066	86.3	mg/L	195	Standard
> **Sc-1**	45	34061.6	0.4				mg/L	29647	Standard
Cl	35	176482.8	2.0				ug/L	154152	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	1700.1	5.3				ug/L	1607	Standard
P	31	27343.0	0.9				ug/L	22752	Standard
S	34	5614.4	3.8				ug/L	5049	Standard
Sr	88	68.3	27.7				ug/L	87	Standard
C	12	56.7	44.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	16.0	95.0				mg/L	10	Standard
Ho-1	165	6.7	86.6				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	4402.3	12.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.052	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.977
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.017
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, June 16, 2016 23:11:40
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62197.5	2.7				ug/L	51024	Standard
	Be	9	238.3	13.6	**0.2121**	0.037	17.6	ug/L	7	Standard
	Al	27	1466.7	24.6	**-0.0013**	0.002	173.1	ug/L	625	Standard
	Sc	45	31464.3	3.4				ug/L	29647	Standard
	Ti	47	25.0	41.8	**-0.0793**	0.036	45.5	ug/L	57	Standard
	V	51	3787.9	2.1	**0.3855**	0.011	2.8	ug/L	1142	Standard
	Cr	52	11607.4	0.4	**0.7122**	0.016	2.2	ug/L	6628	Standard
	Cr	53	1381.7	1.4	**1.1136**	0.035	3.1	ug/L	430	Standard
	Mn	55	3485.4	2.1	**0.4840**	0.015	3.1	ug/L	603	Standard
	Co	59	2688.9	0.3	**0.3937**	0.004	0.9	ug/L	237	Standard
	Ni	60	3045.6	2.3	**1.5635**	0.022	1.4	ug/L	141	Standard
	Cu	65	1580.4	3.3	**0.8079**	0.030	3.7	ug/L	109	Standard
	Zn	66	7167.0	0.7	**6.4903**	0.095	1.5	ug/L	159	Standard
>	**Ge**	72	455928.4	0.9				ug/L	474053	Standard
	As	75	370.6	7.7	**0.3732**	0.030	8.0	ug/L	-34	Standard
	Se	82	61.3	17.8	**0.4078**	0.107	26.4	ug/L	14	Standard
	Se-1	77	90.3	17.8	**0.4781**	0.216	45.1	ug/L	55	Standard
>	**Ga**	71	55.0	24.1				mg/L	50	Standard
	Rb	85	15.0	57.7				ug/L	20	Standard
	Y	89	401919.6	0.8				ug/L	376602	Standard
>	**Rh**	103	13.3	43.3				ug/L	17	Standard
	Mo	98	54.9	10.1	**0.0169**	0.002	11.0	ug/L	8	Standard
	Ag	107	2304.2	2.4	**0.3610**	0.011	3.1	ug/L	81	Standard
	Cd	111	463.2	4.6	**0.2274**	0.011	4.7	mg/L	3	Standard
	Cd	114	1100.0	5.3	**0.2180**	0.017	7.9	ug/L	7	Standard
>	**In**	115	543008.1	2.6				ug/L	524722	Standard
	Sn	118	436.7	6.3	**-0.0111**	0.004	33.6	ug/L	715	Standard
	Sb	123	1825.0	3.3	**0.3894**	0.024	6.1	ug/L	201	Standard
	Ba	135	1282.7	6.8	**0.6257**	0.032	5.1	ug/L	108	Standard
	Ce	140	18.3	41.7				ug/L	30	Standard
>	**Tb**	159	786449.8	2.4				ug/L	792236	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	625.7	5.7	**0.0805**	0.004	5.1	ug/L	9	Standard
	Tl	205	541.7	4.7	**0.0768**	0.002	3.0	ug/L	0	Standard
	Pb	206	1119.4	3.0	**0.1897**	0.004	2.2	ug/L	216	Standard
	Pb	207	980.4	3.9	**0.1828**	0.004	2.1	ug/L	180	Standard
	Pb	208	4169.9	1.1	**0.1903**	0.004	2.3	ug/L	717	Standard
	U	238	2499.2	1.6	**0.4009**	0.009	2.3	ug/L	4	Standard
>	**Bi**	209	453610.3	2.8				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	55.0	15.7	**0.0251**	0.011	43.4	mg/L	20	Standard
K	39	8.3	91.7	**-0.1668**	0.057	33.9	mg/L	22	Standard
Ca	43	21.7	66.6	**-8.4026**	3.204	38.1	mg/L	47	Standard
Fe	54	104.1	4.5	**-0.0352**	0.004	10.9	mg/L	151	Standard
Fe	57	183.3	11.0	**-0.1131**	0.042	36.8	mg/L	195	Standard
Sc-1	45	31464.3	3.4				mg/L	29647	Standard
Cl	35	173373.0	1.2				ug/L	154152	Standard
Kr	83	0.7	173.2				ug/L	3	Standard
Br	81	1516.7	7.1				ug/L	1607	Standard
P	31	19057.0	2.5				ug/L	22752	Standard
S	34	5394.3	1.5				ug/L	5049	Standard
Sr	88	70.0	24.7				ug/L	87	Standard
C	12	66.7	82.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	3.2	173.2				mg/L	10	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	3055.3	5.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	106.050		
Al	27			
Sc	45			
Ti	47			
V	51	96.369		
Cr	52	89.022		
Cr	53			
Mn	55	96.796		
Co	59	98.420		
Ni	60	97.718		
Cu	65	100.991		
Zn	66	103.844		
Ge	72		96.177	
As	75	93.302		
Se	82	101.945		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	90.256		
Cd	111	94.767		
Cd	114			
> In	115			103.485
Sn	118			
Sb	123	97.340		
Ba	135	83.430		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.678		
Tl	205			
Pb	206			
Pb	207			
Pb	208	95.126		
U	238	100.222		
> Bi	209			98.537
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Tuesday, June 21, 2016 12:07:41

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1329	2024	0.712	
Mg	23.985	23.975	4501	2020	0.694	
Co	58.933	58.925	11686	2022	0.702	
In	114.904	114.925	22861	2028	0.687	
U	238.050	238.075	47460	2043	0.684	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	6.556
5.575	2.909
5.625	3.124
5.675	4.542
5.725	2.516
5.775	3.133
5.825	3.034
5.875	2.659
5.925	3.116
5.975	0.663
6.025	3.021
6.075	4.431
6.125	3.101
6.175	3.302
6.225	9.989
6.275	25.913
6.325	61.237
6.375	37.268
6.425	95.831
6.475	39.218
6.525	13.045
6.575	6.056
6.625	3.694
6.675	1.639
6.725	2.760
6.775	1.475
6.825	2.174

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6.875	1.150
6.925	1.430
6.975	2.330
7.025	1.255
7.075	0.705
7.125	2.295
7.175	1.271
7.225	3.628
7.275	4.494
7.325	27.694
7.375	63.888
7.425	39.123
7.475	88.928
7.525	69.869
7.575	37.268
7.625	63.191
7.675	69.869
7.725	86.603
7.775	99.381
7.825	121.967
7.875	83.853
7.925	72.436
7.975	99.381
8.025	50.000
8.075	34.233
8.125	100.000
8.175	38.030
8.225	40.825
8.275	22.822
8.325	138.332
8.375	39.123
8.425	79.057
8.475	43.853
22.525	223.607
22.575	38.030
22.625	43.853
22.675	32.401
22.725	43.376
22.775	49.793
22.825	52.408
22.875	27.407
22.925	16.563
22.975	20.412
23.025	28.315
23.075	34.881
23.125	25.951
23.175	32.541

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23.225	14.650
23.275	27.809
23.325	19.174
23.375	43.122
23.425	29.487
23.475	18.506
23.525	5.966
23.575	3.055
23.625	1.534
23.675	1.817
23.725	1.183
23.775	0.960
23.825	1.298
23.875	1.103
23.925	0.675
23.975	1.038
24.025	1.417
24.075	0.260
24.125	0.656
24.175	1.631
24.225	1.863
24.275	3.146
24.325	28.710
24.375	26.307
24.425	30.292
24.475	13.327
24.525	4.037
24.575	1.007
24.625	3.057
24.675	2.129
24.725	1.137
24.775	1.370
24.825	1.603
24.875	1.801
24.925	0.625
24.975	1.310
25.025	1.635
25.075	1.412
25.125	1.115
25.175	1.388
25.225	1.212
25.275	14.200
25.325	57.334
25.375	84.265
25.425	42.127
25.475	10.037
57.525	5.453

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57.575	2.202
57.625	3.035
57.675	1.654
57.725	3.803
57.775	1.264
57.825	1.936
57.875	2.815
57.925	1.641
57.975	2.107
58.025	2.389
58.075	2.038
58.125	0.977
58.175	4.405
58.225	4.049
58.275	3.597
58.325	15.526
58.375	17.815
58.425	26.131
58.475	8.281
58.525	1.499
58.575	1.606
58.625	2.262
58.675	1.232
58.725	2.036
58.775	0.724
58.825	1.502
58.875	1.471
58.925	1.251
58.975	1.106
59.025	1.762
59.075	1.429
59.125	1.832
59.175	2.462
59.225	2.138
59.275	14.258
59.325	45.166
59.375	47.140
59.425	44.721
59.475	23.904
59.525	10.883
59.575	9.409
59.625	4.974
59.675	2.777
59.725	1.421
59.775	3.138
59.825	1.163
59.875	1.334

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59.925	3.822
59.975	1.863
60.025	1.945
60.075	2.122
60.125	3.418
60.175	2.126
60.225	8.067
60.275	17.408
60.325	50.619
60.375	35.355
60.425	52.705
60.475	30.842
113.525	13.070
113.575	7.506
113.625	5.331
113.675	1.010
113.725	3.027
113.775	2.098
113.825	2.123
113.875	2.206
113.925	2.127
113.975	2.183
114.025	0.695
114.075	2.493
114.125	1.430
114.175	1.596
114.225	3.899
114.275	3.770
114.325	17.743
114.375	38.065
114.425	24.241
114.475	10.721
114.525	4.779
114.575	3.301
114.625	1.042
114.675	2.599
114.725	2.253
114.775	2.049
114.825	0.960
114.875	1.817
114.925	1.355
114.975	1.378
115.025	1.472
115.075	1.260
115.125	2.051
115.175	2.855
115.225	2.482

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115.275	6.639
115.325	11.285
115.375	27.524
115.425	38.030
115.475	48.445
115.525	22.628
115.575	8.442
115.625	5.335
115.675	3.400
115.725	5.123
115.775	2.482
115.825	4.190
115.875	5.728
115.925	4.930
115.975	5.489
116.025	3.368
116.075	2.667
116.125	3.465
116.175	4.332
116.225	4.691
116.275	14.225
116.325	24.781
116.375	59.266
116.425	74.689
116.475	76.697
236.525	
236.575	42.229
236.625	43.069
236.675	30.822
236.725	19.846
236.775	17.801
236.825	35.067
236.875	14.286
236.925	33.026
236.975	31.044
237.025	23.207
237.075	28.152
237.125	38.870
237.175	48.879
237.225	33.159
237.275	29.116
237.325	14.542
237.375	23.458
237.425	19.563
237.475	25.573
237.525	41.592
237.575	22.988

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237.625	9.655
237.675	3.555
237.725	2.204
237.775	2.335
237.825	2.878
237.875	1.983
237.925	0.860
237.975	1.594
238.025	1.305
238.075	0.963
238.125	1.566
238.175	1.319
238.225	0.999
238.275	0.949
238.325	1.610
238.375	2.604
238.425	0.685
238.475	5.782
238.525	6.276
238.575	21.121
238.625	40.982
238.675	25.226
238.725	31.270
238.775	24.717
238.825	36.014
238.875	26.854
238.925	18.372
238.975	35.067
239.025	35.209
239.075	29.613
239.125	29.155
239.175	13.847
239.225	32.341
239.275	28.917
239.325	41.445
239.375	36.361
239.425	32.530
239.475	31.439

Approved: June 22, 2016

SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\ReportOutput\a.swz

Start Time: 6/21/2016 12:13:16 PM
End Time: 6/21/2016 12:15:43 PM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 4257.87
        Obtained Intensity (Mg 23.985): 91046.81
        Obtained Intensity (In 114.904): 67007.59
        Obtained Intensity (U 238.05): 138801.86
        Obtained Intensity (Bkgd 220): 0.27
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.018 (=3833.82 / 209522.60)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.006 (=1202.25 / 209522.60)
```


Approved: June 22, 2016

SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\ReportOutput\a.swz

Optimization Status

Start Time: 6/21/2016 12:13:16 PM

Daily Performance Check
        Optimization Settings:
                Method: Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 1
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 4257.87
                Obtained Intensity (Mg 23.985): 91046.81
                Obtained Intensity (In 114.904): 67007.59
                Obtained Intensity (U 238.05): 138801.86
                Obtained Intensity (Bkgd 220): 0.27
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.018 (=3833.82 / 209522.60)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.006 (=1202.25 / 209522.60)
[Passed]  Optimum value(s): N/A

End Time: 6/21/2016 12:15:43 PM
```


Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Tuesday, June 21, 2016 12:31:36
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60175.9	0.2				ug/L		Standard
	Be	9	5.0	0.0				ug/L		Standard
	Al	27	831.7	9.4				ug/L		Standard
	Sc	45	25065.7	2.2				ug/L		Standard
	Ti	47	37.7	15.6				ug/L		Standard
	V	51	974.0	7.7				ug/L		Standard
	Cr	52	5792.4	1.5				ug/L		Standard
	Cr	53	346.7	9.8				ug/L		Standard
	Mn	55	1164.0	4.2				ug/L		Standard
	Co	59	303.3	8.1				ug/L		Standard
	Ni	60	290.7	6.8				ug/L		Standard
	Cu	65	172.7	6.7				ug/L		Standard
	Zn	66	130.3	5.4				ug/L		Standard
>	Ge	72	491723.5	1.3				ug/L		Standard
	As	75	-24.7	79.1				ug/L		Standard
	Se	82	11.5	37.2				ug/L		Standard
	Se-1	77	57.0	6.3				ug/L		Standard
>	Ga	71	148.3	7.8				mg/L		Standard
	Rb	85	18.3	41.7				ug/L		Standard
	Y	89	401844.8	1.4				ug/L		Standard
>	Rh	103	10.0	50.0				ug/L		Standard
	Mo	98	11.9	33.1				ug/L		Standard
	Ag	107	97.7	16.8				ug/L		Standard
	Cd	111	10.7	42.3				mg/L		Standard
	Cd	114	21.3	80.2				ug/L		Standard
>	In	115	547486.6	2.6				ug/L		Standard
	Sn	118	450.0	16.8				ug/L		Standard
	Sb	123	105.2	26.0				ug/L		Standard
	Ba	135	111.3	14.6				ug/L		Standard
	Ce	140	106.7	44.3				ug/L		Standard
>	Tb	159	890342.4	1.4				ug/L		Standard
	Ho	165	10.0	50.0				ug/L		Standard
	Tl	203	19.3	72.5				ug/L		Standard
	Tl	205	16.7	62.4				ug/L		Standard
	Pb	206	247.0	5.1				ug/L		Standard
	Pb	207	215.0	4.1				ug/L		Standard
	Pb	208	770.0	5.2				ug/L		Standard
	U	238	13.3	42.6				ug/L		Standard
>	Bi	209	503142.7	1.4				ug/L		Standard

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Na	23	1.7	173.2	mg/L	Standard
Mg	24	35.0	14.3	mg/L	Standard
K	39	25.0	52.9	mg/L	Standard
Ca	43	38.3	19.9	mg/L	Standard
Fe	54	126.1	27.3	mg/L	Standard
Fe	57	245.0	30.1	mg/L	Standard
Sc-1	45	25065.7	2.2	mg/L	Standard
Cl	35	125857.3	1.3	ug/L	Standard
Kr	83	1.0	100.0	ug/L	Standard
Br	81	1350.1	4.5	ug/L	Standard
P	31	18392.8	1.6	ug/L	Standard
S	34	3738.8	6.0	ug/L	Standard
Sr	88	78.3	24.2	ug/L	Standard
C	12	53.3	60.3	mg/L	Standard
N	14	0.0		mg/L	Standard
Hg	202	0.0		mg/L	Standard
Dy	164	2.2	286.4	mg/L	Standard
Ho-1	165	10.0	50.0	mg/L	Standard
Er	166	23.3	65.5	mg/L	Standard
I	127	1145.0	4.2	mg/L	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Tuesday, June 21, 2016 12:34:47
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60488.9	1.3				ug/L	60176	Standard
	Be	9	11.7	65.5				ug/L	5	Standard
	Al	27	836.7	4.8				ug/L	832	Standard
	Sc	45	24878.7	2.2				ug/L	25066	Standard
	Ti	47	35.3	20.5				ug/L	38	Standard
	V	51	1014.5	7.5				ug/L	974	Standard
	Cr	52	5913.2	2.9				ug/L	5792	Standard
	Cr	53	315.0	19.3				ug/L	347	Standard
	Mn	55	1207.0	3.4				ug/L	1164	Standard
	Co	59	269.3	1.8				ug/L	303	Standard
	Ni	60	292.0	1.9				ug/L	291	Standard
	Cu	65	155.7	6.3				ug/L	173	Standard
	Zn	66	143.3	11.1				ug/L	130	Standard
>	**Ge**	72	484278.1	1.8				ug/L	491724	Standard
	As	75	-25.5	164.8				ug/L	-25	Standard
	Se	82	11.6	54.6				ug/L	12	Standard
	Se-1	77	49.7	15.1				ug/L	57	Standard
>	**Ga**	71	168.3	18.1				mg/L	148	Standard
	Rb	85	21.7	48.0				ug/L	18	Standard
	Y	89	409346.3	1.0				ug/L	401845	Standard
>	**Rh**	103	26.7	10.8				ug/L	10	Standard
	Mo	98	8.3	17.9				ug/L	12	Standard
	Ag	107	92.7	12.5				ug/L	98	Standard
	Cd	111	9.3	34.5				mg/L	11	Standard
	Cd	114	15.1	46.6				ug/L	21	Standard
>	**In**	115	551450.0	0.7				ug/L	547487	Standard
	Sn	118	430.0	8.1				ug/L	450	Standard
	Sb	123	43.1	45.3				ug/L	105	Standard
	Ba	135	105.7	9.3				ug/L	111	Standard
	Ce	140	71.7	83.2				ug/L	107	Standard
>	**Tb**	159	897003.4	2.0				ug/L	890342	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	11.0	72.2				ug/L	19	Standard
	Tl	205	10.0	132.3				ug/L	17	Standard
	Pb	206	238.0	4.2				ug/L	247	Standard
	Pb	207	219.3	4.9				ug/L	215	Standard
	Pb	208	792.0	5.9				ug/L	770	Standard
	U	238	10.0	75.5				ug/L	13	Standard
>	**Bi**	209	496302.2	1.2				ug/L	503143	Standard

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	Na	23	0.0		mg/L	2	Standard
	Mg	24	31.7	24.1	mg/L	35	Standard
	K	39	33.3	43.3	mg/L	25	Standard
	Ca	43	26.7	10.8	mg/L	38	Standard
	Fe	54	132.9	5.9	mg/L	126	Standard
	Fe	57	250.0	24.0	mg/L	245	Standard
>	**Sc-1**	45	24878.7	2.2	mg/L	25066	Standard
	Cl	35	129128.6	0.4	ug/L	125857	Standard
	Kr	83	1.7	124.9	ug/L	1	Standard
	Br	81	1190.0	4.4	ug/L	1350	Standard
	P	31	18840.0	2.5	ug/L	18393	Standard
	S	34	3955.5	5.6	ug/L	3739	Standard
	Sr	88	98.3	22.9	ug/L	78	Standard
	C	12	73.3	28.4	mg/L	53	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	3.3	173.2	mg/L	0	Standard
	Dy	164	6.2	93.6	mg/L	2	Standard
	Ho-1	165	8.3	69.3	mg/L	10	Standard
	Er	166	10.0	100.0	mg/L	23	Standard
	I	127	1046.7	2.3	mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 1
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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Tuesday, June 21, 2016 12:37:59
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	58902.6	2.2				ug/L	60176	Standard
	Be	9	41.7	36.7				ug/L	5	Standard
	Al	27	7506.9	2.0				ug/L	832	Standard
	Sc	45	24807.0	1.7				ug/L	25066	Standard
	Ti	47	57.3	17.5				ug/L	38	Standard
	V	51	1265.4	5.8				ug/L	974	Standard
	Cr	52	6084.9	2.1				ug/L	5792	Standard
	Cr	53	365.0	11.9				ug/L	347	Standard
	Mn	55	1636.8	0.3				ug/L	1164	Standard
	Co	59	583.0	6.7				ug/L	303	Standard
	Ni	60	417.3	3.9				ug/L	291	Standard
	Cu	65	254.7	1.5				ug/L	173	Standard
	Zn	66	285.3	6.4				ug/L	130	Standard
>	Ge	72	474091.1	0.6				ug/L	491724	Standard
	As	75	16.4	175.0				ug/L	-25	Standard
	Se	82	14.3	35.4				ug/L	12	Standard
	Se-1	77	47.7	3.2				ug/L	57	Standard
>	Ga	71	163.3	20.8				mg/L	148	Standard
	Rb	85	21.7	35.3				ug/L	18	Standard
	Y	89	421814.2	2.0				ug/L	401845	Standard
>	Rh	103	33.3	45.8				ug/L	10	Standard
	Mo	98	251.2	2.5				ug/L	12	Standard
	Ag	107	386.0	1.2				ug/L	98	Standard
	Cd	111	102.9	11.3				mg/L	11	Standard
	Cd	114	249.4	9.6				ug/L	21	Standard
>	In	115	548120.3	1.1				ug/L	547487	Standard
	Sn	118	645.0	5.6				ug/L	450	Standard
	Sb	123	245.0	3.3				ug/L	105	Standard
	Ba	135	194.0	3.9				ug/L	111	Standard
	Ce	140	15.0	57.7				ug/L	107	Standard
>	Tb	159	869696.1	0.6				ug/L	890342	Standard
	Ho	165	1.7	173.2				ug/L	10	Standard
	Tl	203	386.3	6.2				ug/L	19	Standard
	Tl	205	290.0	6.0				ug/L	17	Standard
	Pb	206	486.7	5.5				ug/L	247	Standard
	Pb	207	430.7	8.6				ug/L	215	Standard
	Pb	208	1734.7	2.5				ug/L	770	Standard
	U	238	291.0	3.0				ug/L	13	Standard
>	Bi	209	480303.9	0.6				ug/L	503143	Standard

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	Na	23	0.0		mg/L	2	Standard
	Mg	24	31.7	32.9	mg/L	35	Standard
	K	39	23.3	32.7	mg/L	25	Standard
	Ca	43	26.7	43.3	mg/L	38	Standard
	Fe	54	147.5	2.0	mg/L	126	Standard
	Fe	57	275.0	5.5	mg/L	245	Standard
>	**Sc-1**	45	24807.0	1.7	mg/L	25066	Standard
	Cl	35	127847.2	1.5	ug/L	125857	Standard
	Kr	83	2.0	0.0	ug/L	1	Standard
	Br	81	1250.1	12.9	ug/L	1350	Standard
	P	31	18074.1	2.7	ug/L	18393	Standard
	S	34	3720.5	1.6	ug/L	3739	Standard
	Sr	88	101.7	31.6	ug/L	78	Standard
	C	12	43.3	48.0	mg/L	53	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	0.0		mg/L	0	Standard
	Dy	164	22.2	64.8	mg/L	2	Standard
	Ho-1	165	1.7	173.2	mg/L	10	Standard
	Er	166	23.3	89.2	mg/L	23	Standard
	I	127	1036.7	8.6	mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Tuesday, June 21, 2016 12:41:10
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	56823.0	1.6				ug/L	60176	Standard
	Be	9	34135.1	0.9	**50.0000**	0.642	1.3	ug/L	5	Standard
	Al	27	6273208.6	1.1	**50.0000**	0.818	1.6	ug/L	832	Standard
	Sc	45	23723.6	2.6				ug/L	25066	Standard
	Ti	47	19074.3	0.3	**100.0000**	1.640	1.6	ug/L	38	Standard
	V	51	298222.0	1.3	**50.0000**	0.132	0.3	ug/L	974	Standard
	Cr	52	320017.6	0.3	**50.0000**	0.524	1.0	ug/L	5792	Standard
	Cr	53	40928.5	1.7	**50.0000**	0.225	0.4	ug/L	347	Standard
	Mn	55	319441.0	1.9	**50.0000**	0.827	1.7	ug/L	1164	Standard
	Co	59	304089.0	1.5	**50.0000**	1.058	2.1	ug/L	303	Standard
	Ni	60	89819.8	1.0	**50.0000**	0.212	0.4	ug/L	291	Standard
	Cu	65	88932.2	0.8	**50.0000**	0.449	0.9	ug/L	173	Standard
	Zn	66	51748.9	0.1	**50.0000**	0.578	1.2	ug/L	130	Standard
>	Ge	72	487193.0	1.3				ug/L	491724	Standard
	As	75	52343.3	1.1	**50.0000**	0.143	0.3	ug/L	-25	Standard
	Se	82	5108.3	0.1	**50.0000**	0.635	1.3	ug/L	12	Standard
	Se-1	77	3568.4	3.1	**50.0000**	1.152	2.3	ug/L	57	Standard
>	Ga	71	203.3	5.1				mg/L	148	Standard
	Rb	85	696.7	7.2				ug/L	18	Standard
	Y	89	396857.0	0.8				ug/L	401845	Standard
>	Rh	103	46.7	30.9				ug/L	10	Standard
	Mo	98	234863.2	0.4	**100.0000**	1.015	1.0	ug/L	12	Standard
	Ag	107	287635.1	1.1	**50.0000**	0.173	0.3	ug/L	98	Standard
	Cd	111	91412.4	1.2	**50.0000**	0.269	0.5	mg/L	11	Standard
	Cd	114	221759.1	0.4	**50.0000**	0.185	0.4	ug/L	21	Standard
>	In	115	526904.6	0.8				ug/L	547487	Standard
	Sn	118	252169.7	1.4	**50.0000**	0.512	1.0	ug/L	450	Standard
	Sb	123	207104.5	0.9	**50.0000**	0.294	0.6	ug/L	105	Standard
	Ba	135	89208.5	1.1	**50.0000**	0.205	0.4	ug/L	111	Standard
	Ce	140	53.3	43.3				ug/L	107	Standard
>	Tb	159	848207.6	0.5				ug/L	890342	Standard
	Ho	165	15.0	33.3				ug/L	10	Standard
	Tl	203	360672.2	1.4	**50.0000**	0.148	0.3	ug/L	19	Standard
	Tl	205	296087.7	2.3	**50.0000**	0.563	1.1	ug/L	17	Standard
	Pb	206	233966.3	0.1	**50.0000**	0.511	1.0	ug/L	247	Standard
	Pb	207	213337.5	0.5	**50.0000**	0.319	0.6	ug/L	215	Standard
	Pb	208	792528.2	1.3	**50.0000**	0.762	1.5	ug/L	770	Standard
	U	238	284703.0	1.6	**50.0000**	0.560	1.1	ug/L	13	Standard
>	Bi	209	474262.1	1.1				ug/L	503143	Standard

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Na	23	0.0					mg/L	2	Standard
Mg	24	3497.1	1.9	**5.0000**	0.218	4.4	mg/L	35	Standard
K	39	948.4	2.7	**5.0000**	0.233	4.7	mg/L	25	Standard
Ca	43	43.3	43.7	**5.0000**	5.602	112.0	mg/L	38	Standard
Fe	54	5101.0	4.4	**5.0000**	0.298	6.0	mg/L	126	Standard
Fe	57	1468.4	4.8	**5.0000**	0.320	6.4	mg/L	245	Standard
> **Sc-1**	45	23723.6	2.6				mg/L	25066	Standard
Cl	35	130578.9	0.5				ug/L	125857	Standard
Kr	83	3.3	45.8				ug/L	1	Standard
Br	81	1203.4	13.8				ug/L	1350	Standard
P	31	19414.1	1.7				ug/L	18393	Standard
S	34	4177.2	1.3				ug/L	3739	Standard
Sr	88	70.0	21.4				ug/L	78	Standard
C	12	46.7	53.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	15.9	37.5				mg/L	2	Standard
Ho-1	165	15.0	33.3				mg/L	10	Standard
Er	166	16.7	91.7				mg/L	23	Standard
I	127	1070.0	6.4				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Tuesday, June 21, 2016 12:44:22
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57683.0	3.4				ug/L	60176	Standard
	Be	9	68243.4	3.2	**99.2986**	6.394	6.4	ug/L	5	Standard
	Al	27	12435861.2	1.2	**98.8482**	4.005	4.1	ug/L	832	Standard
	Sc	45	23635.1	1.4				ug/L	25066	Standard
	Ti	47	37614.3	1.3	**201.0526**	7.758	3.9	ug/L	38	Standard
	V	51	571041.3	1.0	**99.0826**	2.797	2.8	ug/L	974	Standard
	Cr	52	622374.2	0.8	**100.2480**	3.517	3.5	ug/L	5792	Standard
	Cr	53	79243.4	1.4	**99.7703**	3.986	4.0	ug/L	347	Standard
	Mn	55	617908.9	0.6	**99.6157**	3.115	3.1	ug/L	1164	Standard
	Co	59	584748.3	1.1	**99.2336**	3.268	3.3	ug/L	303	Standard
	Ni	60	173682.2	0.7	**99.5871**	3.225	3.2	ug/L	291	Standard
	Cu	65	172904.7	0.9	**99.8122**	3.300	3.3	ug/L	173	Standard
	Zn	66	100294.9	0.4	**99.7166**	2.796	2.8	ug/L	130	Standard
>	**Ge**	72	476090.8	2.6				ug/L	491724	Standard
	As	75	100801.1	0.2	**99.2690**	2.816	2.8	ug/L	-25	Standard
	Se	82	10056.7	0.8	**100.4354**	3.397	3.4	ug/L	12	Standard
	Se-1	77	6841.5	0.8	**99.3844**	2.883	2.9	ug/L	57	Standard
>	**Ga**	71	273.3	16.9				mg/L	148	Standard
	Rb	85	1416.7	3.8				ug/L	18	Standard
	Y	89	395351.6	0.3				ug/L	401845	Standard
>	**Rh**	103	41.7	25.0				ug/L	10	Standard
	Mo	98	456031.3	1.3	**196.8782**	2.248	1.1	ug/L	12	Standard
	Ag	107	560896.5	1.5	**98.6698**	2.452	2.5	ug/L	98	Standard
	Cd	111	179284.5	0.8	**98.9447**	0.201	0.2	mg/L	11	Standard
	Cd	114	437441.6	1.4	**99.2289**	0.388	0.4	ug/L	21	Standard
>	**In**	115	527764.9	1.0				ug/L	547487	Standard
	Sn	118	497084.9	1.2	**99.2341**	1.596	1.6	ug/L	450	Standard
	Sb	123	404041.2	0.9	**98.6832**	1.399	1.4	ug/L	105	Standard
	Ba	135	175539.8	1.5	**99.1323**	0.709	0.7	ug/L	111	Standard
	Ce	140	116.7	19.8				ug/L	107	Standard
>	**Tb**	159	866248.1	0.4				ug/L	890342	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	705654.1	0.9	**98.7126**	1.568	1.6	ug/L	19	Standard
	Tl	205	578679.2	0.9	**98.6617**	1.804	1.8	ug/L	17	Standard
	Pb	206	450208.6	0.6	**97.9011**	1.428	1.5	ug/L	247	Standard
	Pb	207	407952.9	0.7	**97.5890**	1.592	1.6	ug/L	215	Standard
	Pb	208	1539751.2	0.8	**98.3858**	1.719	1.7	ug/L	770	Standard
	U	238	563509.1	0.5	**99.2888**	1.369	1.4	ug/L	13	Standard
>	**Bi**	209	476118.1	0.9				ug/L	503143	Standard

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Na	23	1.7	173.2	**19.9850**	34.606	173.2	mg/L	2	Standard
Mg	24	6833.2	0.7	**9.9179**	0.081	0.8	mg/L	35	Standard
K	39	1956.8	10.6	**10.2282**	1.035	10.1	mg/L	25	Standard
Ca	43	85.0	45.9	**12.4591**	8.230	66.1	mg/L	38	Standard
Fe	54	10109.9	3.0	**10.0367**	0.163	1.6	mg/L	126	Standard
Fe	57	2636.9	7.0	**9.9408**	0.844	8.5	mg/L	245	Standard
Sc-1	45	23635.1	1.4				mg/L	25066	Standard
Cl	35	128334.7	1.7				ug/L	125857	Standard
Kr	83	2.0	132.3				ug/L	1	Standard
Br	81	1193.4	13.5				ug/L	1350	Standard
P	31	19429.1	2.9				ug/L	18393	Standard
S	34	4115.6	1.9				ug/L	3739	Standard
Sr	88	65.0	15.4				ug/L	78	Standard
C	12	73.3	67.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	18.7	93.3				mg/L	2	Standard
Ho-1	165	8.3	91.7				mg/L	10	Standard
Er	166	26.7	57.3				mg/L	23	Standard
I	127	1098.4	3.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998
Corr. Coef.	Ca	43	Correlation coefficient < 0.998

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Tuesday, June 21, 2016 12:47:35
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56476.7	1.6				ug/L	60176	Standard
	Be	9	33926.3	3.5	**50.3337**	0.983	2.0	ug/L	5	Standard
	Al	27	6239013.2	0.4	**50.6129**	1.022	2.0	ug/L	832	Standard
	Sc	45	23940.6	0.8				ug/L	25066	Standard
	Ti	47	19415.4	2.2	**101.8802**	1.438	1.4	ug/L	38	Standard
	V	51	297179.3	0.9	**50.6032**	0.136	0.3	ug/L	974	Standard
	Cr	52	318615.5	0.4	**49.9739**	0.554	1.1	ug/L	5792	Standard
	Cr	53	40926.9	0.9	**50.4413**	0.865	1.7	ug/L	347	Standard
	Mn	55	316181.4	1.9	**50.0005**	1.281	2.6	ug/L	1164	Standard
	Co	59	298771.6	1.9	**49.8177**	1.314	2.6	ug/L	303	Standard
	Ni	60	88672.0	0.3	**49.8796**	0.328	0.7	ug/L	291	Standard
	Cu	65	89405.3	0.8	**50.6805**	0.441	0.9	ug/L	173	Standard
	Zn	66	52396.1	1.0	**51.0914**	0.187	0.4	ug/L	130	Standard
>	**Ge**	72	484110.7	0.9				ug/L	491724	Standard
	As	75	52053.9	0.4	**50.4073**	0.437	0.9	ug/L	-25	Standard
	Se	82	5137.2	2.1	**50.3854**	1.416	2.8	ug/L	12	Standard
	Se-1	77	3484.7	1.5	**49.4329**	0.431	0.9	ug/L	57	Standard
>	**Ga**	71	218.3	24.7				mg/L	148	Standard
	Rb	85	558.3	1.9				ug/L	18	Standard
	Y	89	399672.1	1.8				ug/L	401845	Standard
>	**Rh**	103	33.3	45.8				ug/L	10	Standard
	Mo	98	243135.2	2.2	**103.9589**	3.579	3.4	ug/L	12	Standard
	Ag	107	285914.9	0.7	**49.7940**	0.941	1.9	ug/L	98	Standard
	Cd	111	90046.3	0.9	**49.2056**	0.320	0.7	mg/L	11	Standard
	Cd	114	222130.6	2.1	**49.8897**	0.705	1.4	ug/L	21	Standard
>	**In**	115	533007.6	1.2				ug/L	547487	Standard
	Sn	118	273659.7	1.6	**54.0588**	0.839	1.6	ug/L	450	Standard
	Sb	123	202430.4	0.7	**48.9552**	0.900	1.8	ug/L	105	Standard
	Ba	135	87724.9	0.8	**49.0309**	0.637	1.3	ug/L	111	Standard
	Ce	140	115.0	26.4				ug/L	107	Standard
>	**Tb**	159	857166.0	1.1				ug/L	890342	Standard
	Ho	165	13.3	43.3				ug/L	10	Standard
	Tl	203	356396.7	0.7	**49.1066**	0.742	1.5	ug/L	19	Standard
	Tl	205	297731.8	0.4	**49.9971**	0.245	0.5	ug/L	17	Standard
	Pb	206	236852.3	0.9	**50.7035**	0.443	0.9	ug/L	247	Standard
	Pb	207	206236.5	0.5	**48.5659**	0.259	0.5	ug/L	215	Standard
	Pb	208	787029.8	0.1	**49.5023**	0.368	0.7	ug/L	770	Standard
	U	238	277599.7	0.5	**48.1782**	0.616	1.3	ug/L	13	Standard
>	**Bi**	209	483361.7	0.8				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3418.7	4.6	**4.8797**	0.255	5.2	mg/L	35	Standard
K	39	995.0	4.8	**5.0805**	0.235	4.6	mg/L	25	Standard
Ca	43	51.7	43.6	**5.3124**	4.563	85.9	mg/L	38	Standard
Fe	54	5233.0	6.0	**5.0647**	0.353	7.0	mg/L	126	Standard
Fe	57	1536.7	1.5	**5.2538**	0.069	1.3	mg/L	245	Standard
> **Sc-1**	45	23940.6	0.8				mg/L	25066	Standard
Cl	35	125636.8	0.9				ug/L	125857	Standard
Kr	83	2.0	0.0				ug/L	1	Standard
Br	81	1126.7	10.0				ug/L	1350	Standard
P	31	18713.2	1.4				ug/L	18393	Standard
S	34	3855.5	6.1				ug/L	3739	Standard
Sr	88	63.3	32.9				ug/L	78	Standard
C	12	76.7	19.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	5.5	203.3				mg/L	2	Standard
Ho-1	165	13.3	43.3				mg/L	10	Standard
Er	166	23.3	49.5				mg/L	23	Standard
I	127	955.0	1.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	100.667		
Al	27	101.226		
Sc	45			
Ti	47	101.880		
V	51	101.206		
Cr	52	99.948		
Cr	53			
Mn	55	100.001		
Co	59	99.635		
Ni	60	99.759		
Cu	65	101.361		
Zn	66	102.183		
> Ge	72		98.452	
As	75	100.815		
Se	82	100.771		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	103.959		
Ag	107	99.588		
Cd	111	98.411		
Cd	114			
> In	115		97.355	
Sn	118	108.118		
Sb	123	97.910		
Ba	135	98.062		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.213		
Tl	205			
Pb	206	101.407		
Pb	207	97.132		
Pb	208	99.005		
U	238	96.356		
> Bi	209		96.069	
Na	23	0.100		
Mg	24	97.595		
K	39	101.610		
Ca	43	106.247		
Fe	54	101.294		
Fe	57	105.077		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Tuesday, June 21, 2016 12:50:48
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57199.5	1.7				ug/L	60176	Standard
	Be	9	16.7	75.5	**0.0155**	0.019	119.7	ug/L	5	Standard
	Al	27	2038.5	13.7	**0.0079**	0.002	25.0	ug/L	832	Standard
	Sc	45	24297.8	0.5				ug/L	25066	Standard
	Ti	47	32.3	12.5	**-0.0396**	0.023	58.6	ug/L	38	Standard
	V	51	922.0	9.4	**-0.0151**	0.016	107.2	ug/L	974	Standard
	Cr	52	5344.9	2.1	**-0.0994**	0.028	28.6	ug/L	5792	Standard
	Cr	53	318.3	8.7	**-0.0227**	0.028	125.4	ug/L	347	Standard
	Mn	55	1227.7	2.1	**-0.0229**	0.006	27.8	ug/L	1164	Standard
	Co	59	382.3	8.7	**0.0137**	0.006	44.1	ug/L	303	Standard
	Ni	60	312.0	6.8	**-0.0166**	0.014	83.6	ug/L	291	Standard
	Cu	65	170.3	13.8	**-0.0020**	0.015	715.5	ug/L	173	Standard
	Zn	66	185.7	7.5	**-0.0559**	0.012	21.0	ug/L	130	Standard
>	**Ge**	72	490344.5	1.5				ug/L	491724	Standard
	As	75	12.4	235.8	**0.0460**	0.028	60.7	ug/L	-25	Standard
	Se	82	19.0	38.1	**0.0914**	0.071	78.1	ug/L	12	Standard
	Se-1	77	55.0	15.5	**0.1320**	0.132	99.9	ug/L	57	Standard
>	**Ga**	71	143.3	7.3				mg/L	148	Standard
	Rb	85	13.3	43.3				ug/L	18	Standard
	Y	89	406629.8	1.3				ug/L	401845	Standard
>	**Rh**	103	30.0	33.3				ug/L	10	Standard
	Mo	98	318.1	10.6	**0.1300**	0.014	10.8	ug/L	12	Standard
	Ag	107	139.3	8.5	**0.0086**	0.002	23.1	ug/L	98	Standard
	Cd	111	28.1	12.1	**0.0105**	0.002	17.2	mg/L	11	Standard
	Cd	114	75.1	5.3	**0.0122**	0.001	6.8	ug/L	21	Standard
>	**In**	115	538890.5	0.3				ug/L	547487	Standard
	Sn	118	866.7	26.5	**0.0956**	0.046	47.6	ug/L	450	Standard
	Sb	123	1357.6	21.6	**0.3172**	0.071	22.4	ug/L	105	Standard
	Ba	135	122.7	6.5	**0.0123**	0.005	37.7	ug/L	111	Standard
	Ce	140	16.7	124.9				ug/L	107	Standard
>	**Tb**	159	856476.7	1.5				ug/L	890342	Standard
	Ho	165	11.7	107.9				ug/L	10	Standard
	Tl	203	98.3	24.6	**0.0099**	0.003	33.6	ug/L	19	Standard
	Tl	205	75.0	34.6	**0.0135**	0.004	31.4	ug/L	17	Standard
	Pb	206	275.0	3.1	**0.0038**	0.002	58.9	ug/L	247	Standard
	Pb	207	245.0	14.3	**0.0055**	0.009	157.6	ug/L	215	Standard
	Pb	208	917.0	5.8	**-0.0023**	0.004	151.0	ug/L	770	Standard
	U	238	60.7	16.0	**0.0097**	0.002	16.7	ug/L	13	Standard
>	**Bi**	209	484798.8	0.7				ug/L	503143	Standard

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Na	23	1.7	173.2	**19.2545**	33.341	173.2	mg/L	2	Standard
Mg	24	31.7	9.1	**0.0060**	0.004	64.4	mg/L	35	Standard
K	39	31.7	39.7	**0.0506**	0.065	128.8	mg/L	25	Standard
Ca	43	26.7	60.3	**0.0987**	3.281	3325.6	mg/L	38	Standard
Fe	54	137.7	14.6	**-0.0017**	0.019	1127.9	mg/L	126	Standard
Fe	57	235.0	2.1	**-0.1342**	0.025	18.7	mg/L	245	Standard
> **Sc-1**	45	24297.8	0.5				mg/L	25066	Standard
Cl	35	123923.5	2.0				ug/L	125857	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	1190.0	11.8				ug/L	1350	Standard
P	31	19601.0	4.8				ug/L	18393	Standard
S	34	3848.8	8.3				ug/L	3739	Standard
Sr	88	63.3	32.9				ug/L	78	Standard
C	12	46.7	32.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	19.4	53.0				mg/L	2	Standard
Ho-1	165	11.7	107.9				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	1073.4	5.6				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.720	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.430
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.354
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Na	23	
QC Std 2	Fe	57	

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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Tuesday, June 21, 2016 12:54:01
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54655.2	5.0				ug/L	60176	Standard
	Be	9	166.7	9.2	**0.2464**	0.016	6.5	ug/L	5	Standard
	Al	27	3600.6	78.3	**0.0211**	0.022	102.5	ug/L	832	Standard
	Sc	45	22989.1	1.7				ug/L	25066	Standard
	Ti	47	44.3	25.7	**0.0370**	0.061	164.4	ug/L	38	Standard
	V	51	3236.7	8.3	**0.4098**	0.039	9.6	ug/L	974	Standard
	Cr	52	10252.8	1.1	**0.7782**	0.013	1.7	ug/L	5792	Standard
	Cr	53	963.4	10.4	**0.8456**	0.146	17.3	ug/L	347	Standard
	Mn	55	4198.9	8.1	**0.4847**	0.049	10.1	ug/L	1164	Standard
	Co	59	2734.9	12.7	**0.4297**	0.055	12.9	ug/L	303	Standard
	Ni	60	3023.6	2.6	**1.6026**	0.022	1.4	ug/L	291	Standard
	Cu	65	1528.7	5.1	**0.8141**	0.035	4.3	ug/L	173	Standard
	Zn	66	6997.6	1.0	**6.9667**	0.165	2.4	ug/L	130	Standard
>	**Ge**	72	460888.7	1.9				ug/L	491724	Standard
	As	75	390.1	8.4	**0.4307**	0.036	8.3	ug/L	-25	Standard
	Se	82	49.3	11.7	**0.4157**	0.051	12.3	ug/L	12	Standard
	Se-1	77	73.3	5.5	**0.4585**	0.082	18.0	ug/L	57	Standard
>	**Ga**	71	193.3	33.8				mg/L	148	Standard
	Rb	85	25.0	72.1				ug/L	18	Standard
	Y	89	391940.6	1.7				ug/L	401845	Standard
>	**Rh**	103	18.3	31.5				ug/L	10	Standard
	Mo	98	268.6	80.2	**0.1109**	0.092	82.8	ug/L	12	Standard
	Ag	107	2373.9	3.4	**0.4011**	0.013	3.1	ug/L	98	Standard
	Cd	111	418.7	2.5	**0.2258**	0.005	2.2	mg/L	11	Standard
	Cd	114	1058.7	2.4	**0.2351**	0.005	2.1	ug/L	21	Standard
>	**In**	115	529129.7	0.8				ug/L	547487	Standard
	Sn	118	546.7	13.3	**0.0350**	0.015	44.2	ug/L	450	Standard
	Sb	123	1860.1	4.7	**0.4457**	0.025	5.6	ug/L	105	Standard
	Ba	135	1306.7	5.0	**0.6811**	0.043	6.3	ug/L	111	Standard
	Ce	140	71.7	45.4				ug/L	107	Standard
>	**Tb**	159	840369.4	1.8				ug/L	890342	Standard
	Ho	165	3.3	86.6				ug/L	10	Standard
	Tl	203	677.3	13.0	**0.0915**	0.012	13.1	ug/L	19	Standard
	Tl	205	673.3	28.8	**0.1162**	0.033	28.2	ug/L	17	Standard
	Pb	206	1332.4	14.3	**0.2361**	0.041	17.4	ug/L	247	Standard
	Pb	207	1139.0	15.8	**0.2215**	0.042	19.1	ug/L	215	Standard
	Pb	208	4327.3	17.0	**0.2178**	0.046	21.3	ug/L	770	Standard
	U	238	2258.5	8.8	**0.3988**	0.036	8.9	ug/L	13	Standard
>	**Bi**	209	474166.4	1.0				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	13.3	**0.0260**	0.009	33.4	mg/L	35	Standard
K	39	35.0	14.3	**0.0782**	0.031	39.0	mg/L	25	Standard
Ca	43	33.3	45.8	**1.8021**	3.150	174.8	mg/L	38	Standard
Fe	54	89.0	20.5	**-0.0447**	0.017	38.6	mg/L	126	Standard
Fe	57	240.0	23.5	**-0.0557**	0.261	468.1	mg/L	245	Standard
> **Sc-1**	45	22989.1	1.7				mg/L	25066	Standard
Cl	35	119419.5	1.1				ug/L	125857	Standard
Kr	83	3.3	75.5				ug/L	1	Standard
Br	81	1160.0	4.6				ug/L	1350	Standard
P	31	12982.2	1.5				ug/L	18393	Standard
S	34	3700.5	6.7				ug/L	3739	Standard
Sr	88	70.0	7.1				ug/L	78	Standard
C	12	50.0	60.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.2	86.7				mg/L	2	Standard
Ho-1	165	3.3	86.6				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	760.0	5.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	123.200		
Al	27	2.108		
Sc	45			
Ti	47			
V	51	102.440		
Cr	52	97.277		
Cr	53			
Mn	55	96.934		
Co	59	107.430		
Ni	60	100.161		
Cu	65	101.757		
Zn	66	111.467		
> Ge	72		93.729	
As	75	107.669		
Se	82	103.926		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	100.275		
Cd	111	94.072		
Cd	114			
> In	115			96.647
Sn	118			
Sb	123	111.413		
Ba	135	90.816		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	114.430		
Tl	205			
Pb	206			
Pb	207			
Pb	208	108.881		
U	238	99.694		
> Bi	209			94.241
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Tuesday, June 21, 2016 12:57:12
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59928.3	1.0				ug/L	60176	Standard
	Be	9	13.3	78.1	**0.0097**	0.015	152.2	ug/L	5	Standard
	Al	27	6442669.1	1.9	**49.2453**	0.871	1.8	ug/L	832	Standard
	Sc	45	24813.6	2.8				ug/L	25066	Standard
	Ti	47	19998.2	2.1	**106.8973**	2.582	2.4	ug/L	38	Standard
	V	51	1246.2	25.8	**0.0465**	0.058	124.9	ug/L	974	Standard
	Cr	52	6657.1	2.4	**0.1405**	0.025	17.7	ug/L	5792	Standard
	Cr	53	1993.5	6.1	**2.1090**	0.143	6.8	ug/L	347	Standard
	Mn	55	1883.1	3.1	**0.0891**	0.008	8.9	ug/L	1164	Standard
	Co	59	559.7	6.4	**0.0458**	0.006	12.2	ug/L	303	Standard
	Ni	60	864.0	5.1	**0.3063**	0.026	8.5	ug/L	291	Standard
	Cu	65	667.0	6.9	**0.2880**	0.024	8.5	ug/L	173	Standard
	Zn	66	2146.2	5.5	**1.9055**	0.111	5.8	ug/L	130	Standard
>	Ge	72	475353.7	1.0				ug/L	491724	Standard
	As	75	-27.8	154.3	**0.0063**	0.042	673.6	ug/L	-25	Standard
	Se	82	18.3	27.0	**0.0905**	0.048	53.4	ug/L	12	Standard
	Se-1	77	292.0	12.5	**3.6225**	0.508	14.0	ug/L	57	Standard
>	Ga	71	251.7	1.1				mg/L	148	Standard
	Rb	85	916.7	3.2				ug/L	18	Standard
	Y	89	407553.9	0.9				ug/L	401845	Standard
>	Rh	103	21.7	13.3				ug/L	10	Standard
	Mo	98	227701.2	0.8	**95.9028**	0.590	0.6	ug/L	12	Standard
	Ag	107	287.3	17.5	**0.0339**	0.008	24.1	ug/L	98	Standard
	Cd	111	-145.8	9.1	**-0.0833**	0.008	9.6	mg/L	11	Standard
	Cd	114	464.9	14.1	**0.0986**	0.016	15.9	ug/L	21	Standard
>	In	115	540970.5	1.1				ug/L	547487	Standard
	Sn	118	813.4	12.5	**0.0844**	0.019	22.3	ug/L	450	Standard
	Sb	123	429.7	19.0	**0.0947**	0.019	20.0	ug/L	105	Standard
	Ba	135	438.7	7.4	**0.1861**	0.015	8.2	ug/L	111	Standard
	Ce	140	421.7	17.3				ug/L	107	Standard
>	Tb	159	869535.9	1.7				ug/L	890342	Standard
	Ho	165	25.0	72.1				ug/L	10	Standard
	Tl	203	354.0	26.0	**0.0461**	0.013	27.8	ug/L	19	Standard
	Tl	205	328.3	30.2	**0.0571**	0.017	29.2	ug/L	17	Standard
	Pb	206	641.0	8.2	**0.0850**	0.011	12.9	ug/L	247	Standard
	Pb	207	546.0	4.3	**0.0790**	0.005	6.1	ug/L	215	Standard
	Pb	208	2135.1	6.6	**0.0771**	0.009	11.7	ug/L	770	Standard
	U	238	92.3	51.3	**0.0155**	0.008	54.0	ug/L	13	Standard
>	Bi	209	474298.1	0.6				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.5792**	32.172	173.2	mg/L	2	Standard
Mg	24	8645.8	1.7	**11.9633**	0.233	1.9	mg/L	35	Standard
K	39	950.0	10.3	**4.6748**	0.512	11.0	mg/L	25	Standard
Ca	43	120.0	27.3	**18.4950**	6.097	33.0	mg/L	38	Standard
Fe	54	12543.1	1.5	**11.8952**	0.445	3.7	mg/L	126	Standard
Fe	57	3418.7	4.3	**12.5234**	0.241	1.9	mg/L	245	Standard
> **Sc-1**	45	24813.6	2.8				mg/L	25066	Standard
Cl	35	133729.6	1.1				ug/L	125857	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	1173.4	5.8				ug/L	1350	Standard
P	31	17748.7	0.7				ug/L	18393	Standard
S	34	3328.7	3.9				ug/L	3739	Standard
Sr	88	88.3	27.9				ug/L	78	Standard
C	12	106.7	14.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	33.3				mg/L	0	Standard
Dy	164	29.4	56.6				mg/L	2	Standard
Ho-1	165	25.0	72.1				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	1626.8	8.4				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27	0.985		
	Sc	45			
	Ti	47	106.897		
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.671	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	95.903		
Ag	107			
Cd	111			
Cd	114			
> In	115			98.810
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209			94.267
Na	23	148.634		
Mg	24	239.267		
K	39	93.495		
Ca	43	123.300		
Fe	54	95.162		
Fe	57	100.187		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Tl	203	
QC Std 4	Na	23	

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QC Std 4	Mg	24
QC Std 4	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Tuesday, June 21, 2016 13:00:24
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61313.8	1.9				ug/L	60176	Standard
	Be	9	72875.0	3.4	**99.6031**	1.781	1.8	ug/L	5	Standard
	Al	27	6936241.6	2.7	**51.8339**	1.804	3.5	ug/L	832	Standard
	Sc	45	23489.9	0.9				ug/L	25066	Standard
	Ti	47	21276.6	0.7	**110.0520**	2.192	2.0	ug/L	38	Standard
	V	51	582101.9	0.7	**97.8399**	1.870	1.9	ug/L	974	Standard
	Cr	52	624654.9	1.1	**97.4149**	0.832	0.9	ug/L	5792	Standard
	Cr	53	80558.6	0.3	**98.2182**	1.167	1.2	ug/L	347	Standard
	Mn	55	645844.3	0.9	**100.8477**	1.253	1.2	ug/L	1164	Standard
	Co	59	617389.8	0.7	**101.4766**	0.663	0.7	ug/L	303	Standard
	Ni	60	173011.2	0.8	**96.0705**	0.455	0.5	ug/L	291	Standard
	Cu	65	173942.1	0.9	**97.2491**	1.211	1.2	ug/L	173	Standard
	Zn	66	103580.5	0.6	**99.7581**	1.812	1.8	ug/L	130	Standard
>	**Ge**	72	491319.1	1.3				ug/L	491724	Standard
	As	75	106169.7	0.7	**101.2696**	0.638	0.6	ug/L	-25	Standard
	Se	82	10505.5	0.8	**101.6127**	0.832	0.8	ug/L	12	Standard
	Se-1	77	7353.1	1.7	**103.4898**	1.990	1.9	ug/L	57	Standard
>	**Ga**	71	335.0	6.5				mg/L	148	Standard
	Rb	85	808.4	4.6				ug/L	18	Standard
	Y	89	401288.7	1.4				ug/L	401845	Standard
>	**Rh**	103	43.3	24.0				ug/L	10	Standard
	Mo	98	244397.7	1.3	**106.0540**	1.465	1.4	ug/L	12	Standard
	Ag	107	538144.7	0.3	**95.1434**	0.773	0.8	ug/L	98	Standard
	Cd	111	185622.1	1.2	**102.9756**	1.700	1.7	mg/L	11	Standard
	Cd	114	445028.4	2.2	**101.4874**	3.011	3.0	ug/L	21	Standard
>	**In**	115	525063.0	0.9				ug/L	547487	Standard
	Sn	118	885.0	4.3	**0.1037**	0.009	8.6	ug/L	450	Standard
	Sb	123	410344.2	0.6	**100.7382**	1.315	1.3	ug/L	105	Standard
	Ba	135	176777.0	0.5	**100.3551**	1.267	1.3	ug/L	111	Standard
	Ce	140	53.3	5.4				ug/L	107	Standard
>	**Tb**	159	870528.1	1.1				ug/L	890342	Standard
	Ho	165	10.0	86.6				ug/L	10	Standard
	Tl	203	717855.7	0.6	**98.9861**	1.545	1.6	ug/L	19	Standard
	Tl	205	613661.1	1.7	**103.1465**	3.224	3.1	ug/L	17	Standard
	Pb	206	474569.5	1.2	**101.7199**	1.074	1.1	ug/L	247	Standard
	Pb	207	412085.1	0.4	**97.1656**	1.063	1.1	ug/L	215	Standard
	Pb	208	1621535.0	0.8	**102.1386**	2.136	2.1	ug/L	770	Standard
	U	238	576318.6	1.3	**100.1091**	2.735	2.7	ug/L	13	Standard
>	**Bi**	209	483038.3	1.5				ug/L	503143	Standard

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Na	23	1.7	173.2	**19.9124**	34.481	173.2	mg/L	2	Standard
Mg	24	9276.2	1.0	**13.5616**	0.245	1.8	mg/L	35	Standard
K	39	1035.0	5.9	**5.3939**	0.335	6.2	mg/L	25	Standard
Ca	43	95.0	18.2	**14.6391**	3.459	23.6	mg/L	38	Standard
Fe	54	13234.0	0.1	**13.2653**	0.121	0.9	mg/L	126	Standard
Fe	57	3633.8	1.9	**14.1986**	0.233	1.6	mg/L	245	Standard
> **Sc-1**	45	23489.9	0.9				mg/L	25066	Standard
Cl	35	135528.8	0.9				ug/L	125857	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	1296.7	11.2				ug/L	1350	Standard
P	31	17078.0	3.3				ug/L	18393	Standard
S	34	3508.7	2.5				ug/L	3739	Standard
Sr	88	66.7	8.7				ug/L	78	Standard
C	12	133.3	22.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.2	93.3				mg/L	2	Standard
Ho-1	165	10.0	86.6				mg/L	10	Standard
Er	166	10.0					mg/L	23	Standard
I	127	985.0	5.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	99.603		
Al	27	1.037		
Sc	45			
Ti	47	110.052		
V	51	97.840		
Cr	52	97.415		
Cr	53			
Mn	55	100.848		
Co	59	101.477		
Ni	60	96.070		
Cu	65	97.249		
Zn	66	99.758		
> Ge	72		99.918	
As	75	101.270		
Se	82	101.613		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	106.054		
Ag	107	95.143		
Cd	111	102.976		
Cd	114			
> In	115		95.904	
Sn	118			
Sb	123	100.738		
Ba	135	100.355		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.986		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.139		
U	238	100.109		
> Bi	209		96.004	
Na	23	159.300		
Mg	24	271.232		
K	39	107.878		
Ca	43	97.594		
Fe	54	106.123		
Fe	57	113.589		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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QC Std 5	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 13:03:37
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60077.3	2.7				ug/L	60176	Standard
	Be	9	36198.2	1.7	**50.5140**	1.282	2.5	ug/L	5	Standard
	Al	27	6376898.0	1.9	**48.6310**	0.871	1.8	ug/L	832	Standard
	Sc	45	23925.5	1.1				ug/L	25066	Standard
	Ti	47	18736.6	0.9	**98.5507**	0.836	0.8	ug/L	38	Standard
	V	51	296150.3	0.5	**50.5471**	0.213	0.4	ug/L	974	Standard
	Cr	52	313728.4	0.3	**49.3090**	0.221	0.4	ug/L	5792	Standard
	Cr	53	39496.4	3.0	**48.7745**	1.414	2.9	ug/L	347	Standard
	Mn	55	317457.2	0.2	**50.3163**	0.163	0.3	ug/L	1164	Standard
	Co	59	310517.1	1.0	**51.8939**	0.567	1.1	ug/L	303	Standard
	Ni	60	88251.3	0.9	**49.7584**	0.471	0.9	ug/L	291	Standard
	Cu	65	88383.0	0.6	**50.2173**	0.264	0.5	ug/L	173	Standard
	Zn	66	51386.7	1.3	**50.2219**	0.654	1.3	ug/L	130	Standard
>	Ge	72	482967.1	0.2				ug/L	491724	Standard
	As	75	51917.7	0.5	**50.3921**	0.181	0.4	ug/L	-25	Standard
	Se	82	5239.5	1.1	**51.5049**	0.485	0.9	ug/L	12	Standard
	Se-1	77	3545.7	2.3	**50.4312**	1.129	2.2	ug/L	57	Standard
>	Ga	71	213.3	29.9				mg/L	148	Standard
	Rb	85	683.3	10.3				ug/L	18	Standard
	Y	89	409717.0	1.9				ug/L	401845	Standard
>	Rh	103	31.7	50.8				ug/L	10	Standard
	Mo	98	232285.6	0.4	**98.2916**	1.691	1.7	ug/L	12	Standard
	Ag	107	285420.0	0.6	**49.1961**	0.526	1.1	ug/L	98	Standard
	Cd	111	92777.6	1.2	**50.1831**	0.862	1.7	mg/L	11	Standard
	Cd	114	226030.0	0.7	**50.2543**	0.780	1.6	ug/L	21	Standard
>	In	115	538520.1	1.5				ug/L	547487	Standard
	Sn	118	254569.4	1.6	**49.7699**	0.919	1.8	ug/L	450	Standard
	Sb	123	208380.8	0.8	**49.8815**	1.089	2.2	ug/L	105	Standard
	Ba	135	89491.5	0.9	**49.5071**	0.604	1.2	ug/L	111	Standard
	Ce	140	65.0	33.5				ug/L	107	Standard
>	Tb	159	844342.7	0.8				ug/L	890342	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	362962.1	0.5	**50.9927**	0.530	1.0	ug/L	19	Standard
	Tl	205	304433.0	0.1	**52.1279**	0.337	0.6	ug/L	17	Standard
	Pb	206	233807.2	0.0	**51.0365**	0.279	0.5	ug/L	247	Standard
	Pb	207	211565.2	0.5	**50.8037**	0.504	1.0	ug/L	215	Standard
	Pb	208	809571.0	0.8	**51.9240**	0.557	1.1	ug/L	770	Standard
	U	238	290163.7	1.3	**51.3453**	0.563	1.1	ug/L	13	Standard
>	Bi	209	474036.7	0.5				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3508.7	4.9	**5.0100**	0.196	3.9	mg/L	35	Standard
K	39	841.7	3.8	**4.2829**	0.143	3.3	mg/L	25	Standard
Ca	43	70.0	25.8	**9.1073**	3.560	39.1	mg/L	38	Standard
Fe	54	5170.4	1.1	**5.0040**	0.054	1.1	mg/L	126	Standard
Fe	57	1545.1	3.9	**5.2918**	0.217	4.1	mg/L	245	Standard
> **Sc-1**	45	23925.5	1.1				mg/L	25066	Standard
Cl	35	126968.4	0.5				ug/L	125857	Standard
Kr	83	2.7	21.7				ug/L	1	Standard
Br	81	1253.4	5.1				ug/L	1350	Standard
P	31	17353.3	2.1				ug/L	18393	Standard
S	34	3680.4	9.2				ug/L	3739	Standard
Sr	88	66.7	11.5				ug/L	78	Standard
C	12	53.3	10.8				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.5	86.7				mg/L	2	Standard
Ho-1	165	8.3	69.3				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	23	Standard
I	127	1191.7	5.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	101.028		
Al	27	97.262		
Sc	45			
Ti	47	98.551		
V	51	101.094		
Cr	52	98.618		
Cr	53			
Mn	55	100.633		
Co	59	103.788		
Ni	60	99.517		
Cu	65	100.435		
Zn	66	100.444		
> Ge	72		98.219	
As	75	100.784		
Se	82	103.010		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.292		
Ag	107	98.392		
Cd	111	100.366		
Cd	114			
> In	115			98.362
Sn	118	99.540		
Sb	123	99.763		
Ba	135	99.014		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.985		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.848		
U	238	102.691		
> Bi	209			94.215
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 13:06:48
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59220.5	2.2				ug/L	60176	Standard
	Be	9	21.7	113.8	**0.0219**	0.035	161.5	ug/L	5	Standard
	Al	27	2657.0	57.6	**0.0122**	0.012	99.2	ug/L	832	Standard
	Sc	45	23930.6	3.3				ug/L	25066	Standard
	Ti	47	35.7	25.9	**-0.0239**	0.047	197.1	ug/L	38	Standard
	V	51	1146.6	35.4	**0.0212**	0.067	317.9	ug/L	974	Standard
	Cr	52	5554.4	3.9	**-0.0728**	0.035	47.8	ug/L	5792	Standard
	Cr	53	378.3	10.0	**0.0477**	0.045	93.6	ug/L	347	Standard
	Mn	55	1370.7	12.3	**-0.0021**	0.026	1218.8	ug/L	1164	Standard
	Co	59	513.7	41.1	**0.0346**	0.034	98.9	ug/L	303	Standard
	Ni	60	343.7	8.0	**-0.0004**	0.015	3446.4	ug/L	291	Standard
	Cu	65	177.3	6.6	**0.0010**	0.006	620.6	ug/L	173	Standard
	Zn	66	178.7	18.3	**-0.0639**	0.031	48.4	ug/L	130	Standard
>	**Ge**	72	493877.2	0.3				ug/L	491724	Standard
	As	75	17.2	53.9	**0.0502**	0.009	17.4	ug/L	-25	Standard
	Se	82	20.0	19.9	**0.1000**	0.038	37.8	ug/L	12	Standard
	Se-1	77	45.3	7.1	**-0.0109**	0.047	434.0	ug/L	57	Standard
>	**Ga**	71	238.3	11.9				mg/L	148	Standard
	Rb	85	26.7	10.8				ug/L	18	Standard
	Y	89	397655.2	1.8				ug/L	401845	Standard
>	**Rh**	103	25.0	20.0				ug/L	10	Standard
	Mo	98	421.6	47.5	**0.1748**	0.084	48.3	ug/L	12	Standard
	Ag	107	433.3	112.5	**0.0596**	0.084	141.2	ug/L	98	Standard
	Cd	111	31.1	76.1	**0.0122**	0.013	105.0	mg/L	11	Standard
	Cd	114	71.1	92.6	**0.0114**	0.015	128.1	ug/L	21	Standard
>	**In**	115	535380.0	0.4				ug/L	547487	Standard
	Sn	118	765.0	11.6	**0.0766**	0.017	22.1	ug/L	450	Standard
	Sb	123	1104.8	53.2	**0.2581**	0.140	54.4	ug/L	105	Standard
	Ba	135	133.3	33.1	**0.0186**	0.024	130.4	ug/L	111	Standard
	Ce	140	16.7	17.3				ug/L	107	Standard
>	**Tb**	159	863928.7	0.9				ug/L	890342	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	400.0	138.2	**0.0504**	0.074	147.0	ug/L	19	Standard
	Tl	205	160.0	86.7	**0.0274**	0.022	81.9	ug/L	17	Standard
	Pb	206	498.3	73.3	**0.0503**	0.075	149.6	ug/L	247	Standard
	Pb	207	424.0	75.0	**0.0464**	0.072	155.4	ug/L	215	Standard
	Pb	208	1164.7	36.5	**0.0127**	0.025	198.3	ug/L	770	Standard
	U	238	130.0	106.6	**0.0213**	0.023	109.2	ug/L	13	Standard
>	**Bi**	209	486251.4	1.7				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	33.3	8.7	**0.0092**	0.006	61.0	mg/L	35	Standard
K	39	15.0	33.3	**-0.0334**	0.028	84.6	mg/L	25	Standard
Ca	43	26.7	39.0	**0.2255**	2.276	1009.5	mg/L	38	Standard
Fe	54	141.1	12.6	**0.0041**	0.021	506.6	mg/L	126	Standard
Fe	57	250.0	10.4	**-0.0592**	0.073	123.1	mg/L	245	Standard
> **Sc-1**	45	23930.6	3.3				mg/L	25066	Standard
Cl	35	125381.4	1.2				ug/L	125857	Standard
Kr	83	2.7	43.3				ug/L	1	Standard
Br	81	1060.0	3.8				ug/L	1350	Standard
P	31	17481.7	2.2				ug/L	18393	Standard
S	34	3750.5	3.0				ug/L	3739	Standard
Sr	88	66.7	8.7				ug/L	78	Standard
C	12	66.7	48.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	6.2	186.8				mg/L	2	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	1055.0	11.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.438	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.789
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.643
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	
QC Std 7	Tl	203	

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Method 6020 - Summary Report

Sample ID: PBW 7Q WG573483-02
Sample Date/Time: Tuesday, June 21, 2016 13:10:00
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58444.2	0.7				ug/L	60176	Standard
	Be	9	26.7	47.2	**0.0292**	0.018	60.9	ug/L	5	Standard
	Al	27	23049.2	3.8	**0.1723**	0.008	4.5	ug/L	832	Standard
	Sc	45	24202.7	2.5				ug/L	25066	Standard
	Ti	47	43.7	14.7	**0.0218**	0.034	156.7	ug/L	38	Standard
	V	51	1023.3	8.4	**0.0039**	0.014	347.8	ug/L	974	Standard
	Cr	52	7324.1	2.0	**0.2266**	0.020	8.6	ug/L	5792	Standard
	Cr	53	578.3	3.5	**0.3051**	0.025	8.2	ug/L	347	Standard
	Mn	55	2461.2	1.9	**0.1751**	0.005	2.7	ug/L	1164	Standard
	Co	59	428.7	8.1	**0.0221**	0.005	24.1	ug/L	303	Standard
	Ni	60	482.7	6.5	**0.0817**	0.017	21.3	ug/L	291	Standard
	Cu	65	326.0	2.1	**0.0873**	0.005	5.3	ug/L	173	Standard
	Zn	66	1189.0	5.1	**0.9283**	0.052	5.6	ug/L	130	Standard
>	**Ge**	72	484464.0	0.7				ug/L	491724	Standard
	As	75	-14.6	23.2	**0.0198**	0.003	16.3	ug/L	-25	Standard
	Se	82	17.0	20.8	**0.0742**	0.035	47.7	ug/L	12	Standard
	Se-1	77	51.3	11.4	**0.0873**	0.080	91.1	ug/L	57	Standard
>	**Ga**	71	196.7	5.9				mg/L	148	Standard
	Rb	85	100.0	27.8				ug/L	18	Standard
	Y	89	408879.8	3.6				ug/L	401845	Standard
>	**Rh**	103	25.0	52.9				ug/L	10	Standard
	Mo	98	122.8	14.6	**0.0481**	0.008	16.4	ug/L	12	Standard
	Ag	107	156.0	19.3	**0.0119**	0.005	46.1	ug/L	98	Standard
	Cd	111	26.1	40.8	**0.0096**	0.006	61.9	mg/L	11	Standard
	Cd	114	50.9	19.0	**0.0070**	0.002	32.2	ug/L	21	Standard
>	**In**	115	532128.9	0.9				ug/L	547487	Standard
	Sn	118	586.7	9.1	**0.0422**	0.011	26.5	ug/L	450	Standard
	Sb	123	401.0	34.8	**0.0897**	0.034	38.3	ug/L	105	Standard
	Ba	135	228.3	6.6	**0.0724**	0.009	12.2	ug/L	111	Standard
	Ce	140	110.0	22.7				ug/L	107	Standard
>	**Tb**	159	840904.1	1.3				ug/L	890342	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	87.0	51.2	**0.0084**	0.006	71.8	ug/L	19	Standard
	Tl	205	86.7	76.8	**0.0155**	0.011	71.5	ug/L	17	Standard
	Pb	206	333.0	6.3	**0.0167**	0.004	25.8	ug/L	247	Standard
	Pb	207	290.7	9.1	**0.0166**	0.006	33.9	ug/L	215	Standard
	Pb	208	1101.3	4.9	**0.0097**	0.003	31.1	ug/L	770	Standard
	U	238	73.3	48.0	**0.0119**	0.006	50.6	ug/L	13	Standard
>	**Bi**	209	481400.6	1.0				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	38.3	41.9	**0.0153**	0.022	142.7	mg/L	35	Standard
K	39	23.3	53.9	**0.0092**	0.068	740.5	mg/L	25	Standard
Ca	43	21.7	58.1	**-0.8598**	2.697	313.7	mg/L	38	Standard
Fe	54	130.8	28.3	**-0.0077**	0.038	495.4	mg/L	126	Standard
Fe	57	285.0	4.6	**0.0748**	0.079	105.8	mg/L	245	Standard
> **Sc-1**	45	24202.7	2.5				mg/L	25066	Standard
Cl	35	126348.0	1.3				ug/L	125857	Standard
Kr	83	1.0	173.2				ug/L	1	Standard
Br	81	1470.1	6.5				ug/L	1350	Standard
P	31	16710.9	1.6				ug/L	18393	Standard
S	34	3748.8	2.6				ug/L	3739	Standard
Sr	88	75.0	11.5				ug/L	78	Standard
C	12	26.7	57.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.0	94.2				mg/L	2	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	656.7	5.8				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		97.122	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.524	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: PBW 7Q WG573483-02
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.195
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.679
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: LCSW 7Q WG573483-03
Sample Date/Time: Tuesday, June 21, 2016 13:13:12
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59597.0	1.4				ug/L	60176	Standard
	Be	9	26.7	28.6	**0.0284**	0.010	36.7	ug/L	5	Standard
	Al	27	123378.7	0.8	**0.9401**	0.007	0.7	ug/L	832	Standard
	Sc	45	24184.3	4.6				ug/L	25066	Standard
	Ti	47	45.0	25.6	**0.0250**	0.057	229.9	ug/L	38	Standard
	V	51	1068.6	8.7	**0.0091**	0.015	170.4	ug/L	974	Standard
	Cr	52	7727.3	2.4	**0.2731**	0.024	8.9	ug/L	5792	Standard
	Cr	53	576.7	16.1	**0.2921**	0.109	37.2	ug/L	347	Standard
	Mn	55	3288.0	1.8	**0.2988**	0.009	3.0	ug/L	1164	Standard
	Co	59	442.3	9.5	**0.0233**	0.007	28.1	ug/L	303	Standard
	Ni	60	549.7	6.7	**0.1150**	0.019	16.8	ug/L	291	Standard
	Cu	65	1533.7	1.8	**0.7602**	0.018	2.4	ug/L	173	Standard
	Zn	66	3561.1	0.5	**3.2002**	0.053	1.7	ug/L	130	Standard
>	**Ge**	72	491613.1	1.0				ug/L	491724	Standard
	As	75	67.8	11.4	**0.0986**	0.008	8.2	ug/L	-25	Standard
	Se	82	49.8	19.1	**0.3887**	0.090	23.1	ug/L	12	Standard
	Se-1	77	49.0	15.9	**0.0445**	0.115	258.9	ug/L	57	Standard
>	**Ga**	71	185.0	23.4				mg/L	148	Standard
	Rb	85	243.3	21.6				ug/L	18	Standard
	Y	89	394619.8	1.0				ug/L	401845	Standard
>	**Rh**	103	30.0	44.1				ug/L	10	Standard
	Mo	98	108.2	38.9	**0.0419**	0.018	43.1	ug/L	12	Standard
	Ag	107	146.7	33.6	**0.0102**	0.009	84.7	ug/L	98	Standard
	Cd	111	29.5	45.9	**0.0114**	0.007	64.9	mg/L	11	Standard
	Cd	114	80.9	41.5	**0.0138**	0.008	55.0	ug/L	21	Standard
>	**In**	115	532617.2	0.2				ug/L	547487	Standard
	Sn	118	588.3	10.2	**0.0424**	0.012	28.7	ug/L	450	Standard
	Sb	123	334.8	20.5	**0.0734**	0.016	22.4	ug/L	105	Standard
	Ba	135	9299.9	0.5	**5.1515**	0.018	0.3	ug/L	111	Standard
	Ce	140	778.4	11.1				ug/L	107	Standard
>	**Tb**	159	856842.4	1.3				ug/L	890342	Standard
	Ho	165	25.0	20.0				ug/L	10	Standard
	Tl	203	92.3	45.4	**0.0091**	0.006	63.1	ug/L	19	Standard
	Tl	205	91.7	74.5	**0.0163**	0.011	69.8	ug/L	17	Standard
	Pb	206	607.0	7.8	**0.0743**	0.010	14.0	ug/L	247	Standard
	Pb	207	493.7	5.6	**0.0635**	0.006	9.8	ug/L	215	Standard
	Pb	208	1980.7	5.5	**0.0640**	0.007	10.5	ug/L	770	Standard
	U	238	71.0	67.4	**0.0114**	0.008	72.1	ug/L	13	Standard
>	**Bi**	209	486381.9	0.6				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.3778**	31.823	173.2	mg/L	2	Standard
Mg	24	1595.1	7.2	**2.2306**	0.060	2.7	mg/L	35	Standard
K	39	30.0	44.1	**0.0441**	0.075	168.9	mg/L	25	Standard
Ca	43	33.3	45.8	**1.5391**	3.367	218.8	mg/L	38	Standard
Fe	54	139.5	48.2	**-0.0011**	0.059	5464.9	mg/L	126	Standard
Fe	57	250.0	17.8	**-0.0719**	0.146	202.6	mg/L	245	Standard
> **Sc-1**	45	24184.3	4.6				mg/L	25066	Standard
Cl	35	130065.3	1.4				ug/L	125857	Standard
Kr	83	1.0	0.0				ug/L	1	Standard
Br	81	9623.1	5.0				ug/L	1350	Standard
P	31	16951.1	1.1				ug/L	18393	Standard
S	34	3743.8	4.5				ug/L	3739	Standard
Sr	88	116.7	20.3				ug/L	78	Standard
C	12	46.7	96.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.2	94.4				mg/L	2	Standard
Ho-1	165	25.0	20.0				mg/L	10	Standard
Er	166	10.0					mg/L	23	Standard
I	127	1343.4	6.5				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.038	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.978	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: LCSW 7Q WG573483-03
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	97.284	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.669	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606096103 WG573483-01
Sample Date/Time: Tuesday, June 21, 2016 13:16:23
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61047.7	0.6				ug/L	60176	Standard
	Be	9	15.0	33.3	**0.0116**	0.007	59.6	ug/L	5	Standard
	Al	27	9341973.6	1.7	**70.1047**	1.594	2.3	ug/L	832	Standard
	Sc	45	24823.7	1.2				ug/L	25066	Standard
	Ti	47	196.3	14.4	**0.8437**	0.163	19.3	ug/L	38	Standard
	V	51	1520.3	9.2	**0.0937**	0.027	28.5	ug/L	974	Standard
	Cr	52	9129.1	2.7	**0.5414**	0.059	10.9	ug/L	5792	Standard
	Cr	53	738.4	5.5	**0.5207**	0.064	12.4	ug/L	347	Standard
	Mn	55	11081.1	1.1	**1.5747**	0.043	2.7	ug/L	1164	Standard
	Co	59	619.0	4.0	**0.0557**	0.005	8.5	ug/L	303	Standard
	Ni	60	1274.1	1.2	**0.5411**	0.006	1.2	ug/L	291	Standard
	Cu	65	459.3	3.5	**0.1677**	0.009	5.7	ug/L	173	Standard
	Zn	66	1745.8	2.8	**1.5038**	0.023	1.6	ug/L	130	Standard
>	**Ge**	72	475973.6	1.5				ug/L	491724	Standard
	As	75	98.0	38.5	**0.1307**	0.038	29.4	ug/L	-25	Standard
	Se	82	59.0	18.3	**0.4974**	0.116	23.2	ug/L	12	Standard
	Se-1	77	72.0	13.9	**0.4016**	0.131	32.6	ug/L	57	Standard
>	**Ga**	71	200.0	13.9				mg/L	148	Standard
	Rb	85	3465.4	3.7				ug/L	18	Standard
	Y	89	402121.2	2.1				ug/L	401845	Standard
>	**Rh**	103	56.7	44.4				ug/L	10	Standard
	Mo	98	1248.8	2.4	**0.5212**	0.009	1.6	ug/L	12	Standard
	Ag	107	87.0	10.2	**-0.0005**	0.001	301.6	ug/L	98	Standard
	Cd	111	21.3	35.2	**0.0068**	0.004	60.3	mg/L	11	Standard
	Cd	114	36.7	39.5	**0.0037**	0.003	87.9	ug/L	21	Standard
>	**In**	115	541289.4	0.8				ug/L	547487	Standard
	Sn	118	620.0	15.4	**0.0468**	0.019	41.6	ug/L	450	Standard
	Sb	123	250.2	30.2	**0.0519**	0.018	34.1	ug/L	105	Standard
	Ba	135	26997.7	0.3	**14.8192**	0.144	1.0	ug/L	111	Standard
	Ce	140	1078.4	4.8				ug/L	107	Standard
>	**Tb**	159	866683.9	0.6				ug/L	890342	Standard
	Ho	165	30.0	33.3				ug/L	10	Standard
	Tl	203	79.7	2.6	**0.0074**	0.000	3.9	ug/L	19	Standard
	Tl	205	76.7	3.8	**0.0139**	0.000	3.0	ug/L	17	Standard
	Pb	206	354.3	0.4	**0.0212**	0.001	5.4	ug/L	247	Standard
	Pb	207	308.0	4.4	**0.0207**	0.003	15.8	ug/L	215	Standard
	Pb	208	1235.0	2.9	**0.0181**	0.002	9.8	ug/L	770	Standard
	U	238	2800.3	1.8	**0.4867**	0.012	2.5	ug/L	13	Standard
>	**Bi**	209	481870.9	1.1				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3122.0	2.6	**4.2928**	0.138	3.2	mg/L	35	Standard
K	39	116.7	8.9	**0.4746**	0.046	9.7	mg/L	25	Standard
Ca	43	158.3	7.9	**26.2024**	2.672	10.2	mg/L	38	Standard
Fe	54	139.3	11.0	**-0.0029**	0.016	532.1	mg/L	126	Standard
Fe	57	351.7	4.3	**0.3106**	0.078	25.0	mg/L	245	Standard
> **Sc-1**	45	24823.7	1.2				mg/L	25066	Standard
Cl	35	140998.6	2.1				ug/L	125857	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	3500.4	2.8				ug/L	1350	Standard
P	31	19117.1	2.2				ug/L	18393	Standard
S	34	3825.5	3.2				ug/L	3739	Standard
Sr	88	203.3	12.4				ug/L	78	Standard
C	12	103.3	45.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	55.1	19.0				mg/L	2	Standard
Ho-1	165	30.0	33.3				mg/L	10	Standard
Er	166	33.3	75.5				mg/L	23	Standard
I	127	4417.3	4.0				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.449	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.797	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.868
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.772
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606096103S WG573483-04
Sample Date/Time: Tuesday, June 21, 2016 13:19:35
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60085.6	1.7				ug/L	60176	Standard
	Be	9	35418.0	1.7	**49.4123**	1.273	2.6	ug/L	5	Standard
	Al	27	9553806.1	0.1	**72.8510**	1.232	1.7	ug/L	832	Standard
	Sc	45	24382.9	1.2				ug/L	25066	Standard
	Ti	47	190.0	4.7	**0.8162**	0.021	2.5	ug/L	38	Standard
	V	51	287859.7	1.7	**50.2556**	0.599	1.2	ug/L	974	Standard
	Cr	52	311117.1	1.3	**50.0342**	0.746	1.5	ug/L	5792	Standard
	Cr	53	39177.3	2.9	**49.4856**	0.624	1.3	ug/L	347	Standard
	Mn	55	324372.6	0.9	**52.6072**	1.077	2.0	ug/L	1164	Standard
	Co	59	291577.0	1.6	**49.8422**	0.595	1.2	ug/L	303	Standard
	Ni	60	85207.9	1.0	**49.1473**	1.009	2.1	ug/L	291	Standard
	Cu	65	84645.8	0.5	**49.2054**	1.253	2.5	ug/L	173	Standard
	Zn	66	51645.2	1.3	**51.6401**	0.793	1.5	ug/L	130	Standard
>	**Ge**	72	472256.1	2.8				ug/L	491724	Standard
	As	75	51695.2	1.6	**51.3245**	0.593	1.2	ug/L	-25	Standard
	Se	82	5173.1	1.2	**52.0219**	0.822	1.6	ug/L	12	Standard
	Se-1	77	3476.7	1.4	**50.5984**	1.532	3.0	ug/L	57	Standard
>	**Ga**	71	260.0	28.7				mg/L	148	Standard
	Rb	85	3562.1	2.1				ug/L	18	Standard
	Y	89	407263.7	1.8				ug/L	401845	Standard
>	**Rh**	103	68.3	30.5				ug/L	10	Standard
	Mo	98	1317.0	3.1	**0.5537**	0.021	3.9	ug/L	12	Standard
	Ag	107	275415.2	1.3	**47.5488**	1.124	2.4	ug/L	98	Standard
	Cd	111	88696.0	0.6	**48.0474**	0.431	0.9	mg/L	11	Standard
	Cd	114	213461.1	1.2	**47.5387**	1.278	2.7	ug/L	21	Standard
>	**In**	115	537694.2	1.5				ug/L	547487	Standard
	Sn	118	585.0	5.9	**0.0407**	0.007	17.4	ug/L	450	Standard
	Sb	123	193980.1	0.3	**46.5021**	0.680	1.5	ug/L	105	Standard
	Ba	135	112772.5	1.0	**62.4946**	0.514	0.8	ug/L	111	Standard
	Ce	140	1368.4	17.9				ug/L	107	Standard
>	**Tb**	159	852959.3	0.9				ug/L	890342	Standard
	Ho	165	35.0	37.8				ug/L	10	Standard
	Tl	203	345111.3	0.9	**48.9395**	0.677	1.4	ug/L	19	Standard
	Tl	205	293390.1	0.8	**50.7100**	0.765	1.5	ug/L	17	Standard
	Pb	206	227814.4	1.2	**50.1915**	0.357	0.7	ug/L	247	Standard
	Pb	207	198202.5	1.7	**48.0341**	0.475	1.0	ug/L	215	Standard
	Pb	208	774653.3	0.9	**50.1464**	0.296	0.6	ug/L	770	Standard
	U	238	276162.4	0.2	**49.3292**	0.615	1.2	ug/L	13	Standard
>	**Bi**	209	469650.7	1.1				ug/L	503143	Standard

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Na	23	3.3	86.6	**38.0335**	32.935	86.6	mg/L	2	Standard
Mg	24	3283.7	5.8	**4.5981**	0.247	5.4	mg/L	35	Standard
K	39	128.3	19.2	**0.5454**	0.127	23.3	mg/L	25	Standard
Ca	43	110.0	16.4	**16.9725**	3.680	21.7	mg/L	38	Standard
Fe	54	154.7	12.2	**0.0146**	0.020	138.4	mg/L	126	Standard
Fe	57	370.0	1.4	**0.4097**	0.022	5.4	mg/L	245	Standard
> **Sc-1**	45	24382.9	1.2				mg/L	25066	Standard
Cl	35	147069.0	0.9				ug/L	125857	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	2353.5	2.8				ug/L	1350	Standard
P	31	18783.3	1.7				ug/L	18393	Standard
S	34	3680.4	2.3				ug/L	3739	Standard
Sr	88	195.0	15.4				ug/L	78	Standard
C	12	110.0	36.4				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	61.9	82.6				mg/L	2	Standard
Ho-1	165	35.0	37.8				mg/L	10	Standard
Er	166	30.0	57.7				mg/L	23	Standard
I	127	4779.1	3.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.850	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.041	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606096103S WG573483-04
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.211
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.343
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606096103SD WG573483-05
Sample Date/Time: Tuesday, June 21, 2016 13:22:47
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61462.8	1.9				ug/L	60176	Standard
	Be	9	36453.8	2.4	**49.7327**	2.122	4.3	ug/L	5	Standard
	Al	27	9453301.8	0.8	**70.4658**	0.824	1.2	ug/L	832	Standard
	Sc	45	24409.6	0.4				ug/L	25066	Standard
	Ti	47	344.0	66.5	**1.5970**	1.182	74.0	ug/L	38	Standard
	V	51	289238.2	2.5	**49.3099**	0.828	1.7	ug/L	974	Standard
	Cr	52	318109.2	0.9	**49.9609**	0.437	0.9	ug/L	5792	Standard
	Cr	53	40479.0	3.1	**49.9452**	1.314	2.6	ug/L	347	Standard
	Mn	55	314057.7	2.4	**49.7210**	0.754	1.5	ug/L	1164	Standard
	Co	59	290318.9	2.9	**48.4610**	0.991	2.0	ug/L	303	Standard
	Ni	60	87273.0	1.1	**49.1559**	0.393	0.8	ug/L	291	Standard
	Cu	65	85527.1	2.3	**48.5400**	0.760	1.6	ug/L	173	Standard
	Zn	66	51755.6	2.3	**50.5302**	0.778	1.5	ug/L	130	Standard
>	**Ge**	72	483447.8	0.9				ug/L	491724	Standard
	As	75	51749.9	1.4	**50.1783**	0.327	0.7	ug/L	-25	Standard
	Se	82	5053.4	1.0	**49.6285**	0.930	1.9	ug/L	12	Standard
	Se-1	77	3472.4	4.6	**49.3184**	2.029	4.1	ug/L	57	Standard
>	**Ga**	71	256.7	20.0				mg/L	148	Standard
	Rb	85	3362.0	2.8				ug/L	18	Standard
	Y	89	401293.0	3.1				ug/L	401845	Standard
>	**Rh**	103	56.7	10.2				ug/L	10	Standard
	Mo	98	1289.5	8.7	**0.5470**	0.043	7.9	ug/L	12	Standard
	Ag	107	282626.7	0.7	**49.2593**	0.185	0.4	ug/L	98	Standard
	Cd	111	89595.6	1.1	**49.0014**	0.114	0.2	mg/L	11	Standard
	Cd	114	217595.8	1.3	**48.9159**	0.226	0.5	ug/L	21	Standard
>	**In**	115	532522.5	0.9				ug/L	547487	Standard
	Sn	118	533.3	7.5	**0.0316**	0.009	27.6	ug/L	450	Standard
	Sb	123	199986.0	1.4	**48.4014**	0.599	1.2	ug/L	105	Standard
	Ba	135	113635.9	0.8	**63.5855**	0.778	1.2	ug/L	111	Standard
	Ce	140	1038.4	8.3				ug/L	107	Standard
>	**Tb**	159	861213.7	0.8				ug/L	890342	Standard
	Ho	165	33.3	45.8				ug/L	10	Standard
	Tl	203	354994.0	0.6	**48.9345**	0.505	1.0	ug/L	19	Standard
	Tl	205	289401.6	1.8	**48.6253**	1.171	2.4	ug/L	17	Standard
	Pb	206	230028.8	1.2	**49.2668**	0.831	1.7	ug/L	247	Standard
	Pb	207	199754.3	1.2	**47.0633**	0.908	1.9	ug/L	215	Standard
	Pb	208	767538.1	0.5	**48.2969**	0.306	0.6	ug/L	770	Standard
	U	238	277842.3	0.1	**48.2419**	0.411	0.9	ug/L	13	Standard
>	**Bi**	209	483136.4	0.9				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3075.3	4.3	**4.3000**	0.197	4.6	mg/L	35	Standard
K	39	133.3	11.5	**0.5703**	0.080	14.0	mg/L	25	Standard
Ca	43	143.3	12.3	**23.6865**	3.499	14.8	mg/L	38	Standard
Fe	54	131.9	32.2	**-0.0079**	0.042	522.5	mg/L	126	Standard
Fe	57	375.0	17.0	**0.4278**	0.255	59.7	mg/L	245	Standard
> **Sc-1**	45	24409.6	0.4				mg/L	25066	Standard
Cl	35	148355.5	1.1				ug/L	125857	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	1950.1	13.4				ug/L	1350	Standard
P	31	18893.5	3.9				ug/L	18393	Standard
S	34	3878.8	5.1				ug/L	3739	Standard
Sr	88	180.0	4.8				ug/L	78	Standard
C	12	116.7	49.5				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	94.6	15.9				mg/L	2	Standard
Ho-1	165	33.3	45.8				mg/L	10	Standard
Er	166	43.3	13.3				mg/L	23	Standard
I	127	4419.0	9.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.138	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.317	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.267
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.024
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606096103SD WG573483-05
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Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606073102
Sample Date/Time: Tuesday, June 21, 2016 13:25:58
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62050.2	2.7				ug/L	60176	Standard
	Be	9	105.0	8.2	**0.1327**	0.009	6.8	ug/L	5	Standard
	Al	27	1013016.4	2.3	**7.4716**	0.030	0.4	ug/L	832	Standard
	Sc	45	25413.0	0.7				ug/L	25066	Standard
	Ti	47	11689.2	3.8	**62.0270**	2.447	3.9	ug/L	38	Standard
	V	51	31514.4	0.8	**5.2807**	0.054	1.0	ug/L	974	Standard
	Cr	52	17882.9	0.9	**1.9504**	0.032	1.6	ug/L	5792	Standard
	Cr	53	2040.1	2.3	**2.1533**	0.055	2.6	ug/L	347	Standard
	Mn	55	131913.8	0.6	**20.9934**	0.153	0.7	ug/L	1164	Standard
	Co	59	2483.5	3.2	**0.3703**	0.015	3.9	ug/L	303	Standard
	Ni	60	2377.5	1.9	**1.1685**	0.022	1.9	ug/L	291	Standard
	Cu	65	255994.2	0.7	**147.1034**	1.372	0.9	ug/L	173	Standard
	Zn	66	18744.6	0.9	**18.3555**	0.182	1.0	ug/L	130	Standard
>	**Ge**	72	478159.2	0.3				ug/L	491724	Standard
	As	75	12450.5	0.9	**12.2318**	0.086	0.7	ug/L	-25	Standard
	Se	82	110.0	5.3	**1.0009**	0.058	5.8	ug/L	12	Standard
	Se-1	77	115.3	7.0	**1.0288**	0.120	11.7	ug/L	57	Standard
>	**Ga**	71	2798.6	0.4				mg/L	148	Standard
	Rb	85	49900.4	1.1				ug/L	18	Standard
	Y	89	416526.1	0.5				ug/L	401845	Standard
>	**Rh**	103	41.7	13.9				ug/L	10	Standard
	Mo	98	4437.9	0.6	**1.8377**	0.013	0.7	ug/L	12	Standard
	Ag	107	916.0	2.3	**0.1396**	0.005	3.7	ug/L	98	Standard
	Cd	111	512.1	2.9	**0.2671**	0.011	4.2	mg/L	11	Standard
	Cd	114	1211.6	3.0	**0.2598**	0.006	2.2	ug/L	21	Standard
>	**In**	115	548951.9	1.2				ug/L	547487	Standard
	Sn	118	5657.7	4.2	**1.0127**	0.047	4.7	ug/L	450	Standard
	Sb	123	4885.2	8.8	**1.1392**	0.095	8.3	ug/L	105	Standard
	Ba	135	19928.1	1.6	**10.7709**	0.169	1.6	ug/L	111	Standard
	Ce	140	57480.5	1.9				ug/L	107	Standard
>	**Tb**	159	878774.2	1.0				ug/L	890342	Standard
	Ho	165	1093.4	18.2				ug/L	10	Standard
	Tl	203	347.3	5.3	**0.0436**	0.002	4.8	ug/L	19	Standard
	Tl	205	276.7	3.8	**0.0468**	0.002	4.8	ug/L	17	Standard
	Pb	206	43154.7	0.9	**9.0669**	0.187	2.1	ug/L	247	Standard
	Pb	207	37803.4	1.8	**8.7363**	0.108	1.2	ug/L	215	Standard
	Pb	208	149908.5	0.2	**9.2509**	0.144	1.6	ug/L	770	Standard
	U	238	690.7	5.1	**0.1174**	0.005	4.3	ug/L	13	Standard
>	**Bi**	209	490138.0	1.5				ug/L	503143	Standard

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Na	23	3.3	86.6	**36.6395**	31.728	86.6	mg/L	2	Standard
Mg	24	11255.8	2.0	**15.2140**	0.309	2.0	mg/L	35	Standard
K	39	513.3	5.7	**2.4114**	0.137	5.7	mg/L	25	Standard
Ca	43	73.3	31.5	**8.9140**	4.383	49.2	mg/L	38	Standard
Fe	54	1193.7	6.4	**0.9809**	0.074	7.6	mg/L	126	Standard
Fe	57	501.7	10.9	**0.8612**	0.218	25.3	mg/L	245	Standard
> **Sc-1**	45	25413.0	0.7				mg/L	25066	Standard
Cl	35	147490.5	1.3				ug/L	125857	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	2373.5	6.5				ug/L	1350	Standard
P	31	25653.5	10.8				ug/L	18393	Standard
S	34	3847.2	1.9				ug/L	3739	Standard
Sr	88	95.0	22.9				ug/L	78	Standard
C	12	80.0	43.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	100.0				mg/L	0	Standard
Dy	164	1461.7	2.4				mg/L	2	Standard
Ho-1	165	1093.4	18.2				mg/L	10	Standard
Er	166	1010.0	4.3				mg/L	23	Standard
I	127	10345.2	3.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.115	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.241	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.268	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.415	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cu 65 Upper, S, EEE	Cu	65	

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606073102PS WG573557-01
Sample Date/Time: Tuesday, June 21, 2016 13:29:10
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	62836.7	1.0				ug/L	60176	Standard
	Be	9	38405.3	1.0	**51.2242**	0.495	1.0	ug/L	5	Standard
	Al	27	986754.3	0.7	**7.1861**	0.032	0.4	ug/L	832	Standard
	Sc	45	25206.0	4.0				ug/L	25066	Standard
	Ti	47	12380.1	4.7	**64.5662**	3.180	4.9	ug/L	38	Standard
	V	51	336761.7	1.5	**57.0716**	0.650	1.1	ug/L	974	Standard
	Cr	52	338031.4	0.9	**52.7987**	0.435	0.8	ug/L	5792	Standard
	Cr	53	42471.1	2.2	**52.0846**	0.966	1.9	ug/L	347	Standard
	Mn	55	458391.3	1.7	**72.2107**	1.483	2.1	ug/L	1164	Standard
	Co	59	320824.6	0.9	**53.2201**	0.682	1.3	ug/L	303	Standard
	Ni	60	91216.4	1.1	**51.0539**	0.706	1.4	ug/L	291	Standard
	Cu	65	345800.3	0.7	**195.2967**	1.049	0.5	ug/L	173	Standard
	Zn	66	72342.6	1.4	**70.2705**	0.971	1.4	ug/L	130	Standard
>	Ge	72	486585.9	0.4				ug/L	491724	Standard
	As	75	66468.7	1.6	**64.0258**	0.932	1.5	ug/L	-25	Standard
	Se	82	5473.3	1.5	**53.4097**	0.960	1.8	ug/L	12	Standard
	Se-1	77	3758.5	2.1	**53.0932**	1.114	2.1	ug/L	57	Standard
>	Ga	71	2930.3	6.6				mg/L	148	Standard
	Rb	85	50851.9	2.6				ug/L	18	Standard
	Y	89	422665.5	2.8				ug/L	401845	Standard
>	Rh	103	43.3	13.3				ug/L	10	Standard
	Mo	98	4548.7	3.3	**1.9199**	0.104	5.4	ug/L	12	Standard
	Ag	107	291098.5	1.4	**50.1491**	1.656	3.3	ug/L	98	Standard
	Cd	111	96011.5	1.2	**51.8878**	0.482	0.9	mg/L	11	Standard
	Cd	114	228852.1	1.3	**50.8404**	0.872	1.7	ug/L	21	Standard
>	In	115	538990.3	2.1				ug/L	547487	Standard
	Sn	118	6059.6	11.2	**1.1120**	0.140	12.6	ug/L	450	Standard
	Sb	123	210648.2	0.5	**50.3883**	1.297	2.6	ug/L	105	Standard
	Ba	135	109800.4	0.6	**60.7142**	1.334	2.2	ug/L	111	Standard
	Ce	140	59162.4	7.7				ug/L	107	Standard
>	Tb	159	872877.7	0.3				ug/L	890342	Standard
	Ho	165	1188.4	22.2				ug/L	10	Standard
	Tl	203	368407.8	0.3	**49.7173**	0.416	0.8	ug/L	19	Standard
	Tl	205	314960.3	1.3	**51.8065**	0.923	1.8	ug/L	17	Standard
	Pb	206	286269.8	0.5	**60.0352**	0.497	0.8	ug/L	247	Standard
	Pb	207	250420.9	0.8	**57.7692**	0.376	0.7	ug/L	215	Standard
	Pb	208	977924.5	0.9	**60.2632**	1.112	1.8	ug/L	770	Standard
	U	238	292324.4	0.4	**49.6915**	0.547	1.1	ug/L	13	Standard
>	Bi	209	493501.4	1.0				ug/L	503143	Standard

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Na	23	3.3	86.6	**37.0547**	32.164	86.8	mg/L	2	Standard
Mg	24	11367.6	3.6	**15.5226**	1.170	7.5	mg/L	35	Standard
K	39	491.7	4.1	**2.3285**	0.165	7.1	mg/L	25	Standard
Ca	43	61.7	32.8	**6.7120**	3.782	56.4	mg/L	38	Standard
Fe	54	1050.3	3.7	**0.8567**	0.077	8.9	mg/L	126	Standard
Fe	57	553.3	6.8	**1.0850**	0.222	20.5	mg/L	245	Standard
> **Sc-1**	45	25206.0	4.0				mg/L	25066	Standard
Cl	35	141394.7	1.2				ug/L	125857	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	2206.8	11.9				ug/L	1350	Standard
P	31	23750.3	1.6				ug/L	18393	Standard
S	34	3492.1	3.7				ug/L	3739	Standard
Sr	88	91.7	19.2				ug/L	78	Standard
C	12	96.7	39.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	65.5				mg/L	0	Standard
Dy	164	1514.9	12.9				mg/L	2	Standard
Ho-1	165	1188.4	22.2				mg/L	10	Standard
Er	166	1083.4	11.0				mg/L	23	Standard
I	127	10306.8	3.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.422	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.955	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606073102PS WG573557-01
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.448
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.084
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cu 65 Upper, S, EEE	Cu	65	

Sample ID: L1606073102PS WG573557-01
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Method 6020 - Summary Report

Sample ID: L1606073102SDL WG573557-02
Sample Date/Time: Tuesday, June 21, 2016 13:32:21
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62607.4	1.3				ug/L	60176	Standard
	Be	9	25.0	34.6	**0.0244**	0.011	45.5	ug/L	5	Standard
	Al	27	212439.0	0.9	**1.5464**	0.033	2.1	ug/L	832	Standard
	Sc	45	24628.3	0.4				ug/L	25066	Standard
	Ti	47	2784.9	3.0	**13.9086**	0.389	2.8	ug/L	38	Standard
	V	51	7566.4	0.8	**1.0756**	0.023	2.2	ug/L	974	Standard
	Cr	52	8980.0	0.9	**0.4405**	0.021	4.7	ug/L	5792	Standard
	Cr	53	745.0	5.8	**0.4791**	0.044	9.2	ug/L	347	Standard
	Mn	55	27746.4	1.2	**4.0322**	0.081	2.0	ug/L	1164	Standard
	Co	59	770.7	3.6	**0.0747**	0.006	7.8	ug/L	303	Standard
	Ni	60	728.0	3.3	**0.2056**	0.009	4.5	ug/L	291	Standard
	Cu	65	55112.7	1.2	**30.0755**	0.388	1.3	ug/L	173	Standard
	Zn	66	4901.5	0.7	**4.3932**	0.053	1.2	ug/L	130	Standard
>	**Ge**	72	502229.8	1.2				ug/L	491724	Standard
	As	75	2641.7	1.6	**2.4986**	0.070	2.8	ug/L	-25	Standard
	Se	82	37.4	7.9	**0.2610**	0.029	11.1	ug/L	12	Standard
	Se-1	77	65.3	16.9	**0.2568**	0.164	63.9	ug/L	57	Standard
>	**Ga**	71	860.0	7.0				mg/L	148	Standard
	Rb	85	10418.6	2.0				ug/L	18	Standard
	Y	89	399994.5	0.5				ug/L	401845	Standard
>	**Rh**	103	30.0	33.3				ug/L	10	Standard
	Mo	98	925.4	2.8	**0.3921**	0.014	3.7	ug/L	12	Standard
	Ag	107	297.0	13.1	**0.0365**	0.007	19.3	ug/L	98	Standard
	Cd	111	115.6	4.7	**0.0586**	0.003	5.9	mg/L	11	Standard
	Cd	114	279.1	9.6	**0.0584**	0.006	10.2	ug/L	21	Standard
>	**In**	115	531899.2	0.8				ug/L	547487	Standard
	Sn	118	1896.8	36.6	**0.3027**	0.141	46.7	ug/L	450	Standard
	Sb	123	2351.8	13.2	**0.5620**	0.071	12.7	ug/L	105	Standard
	Ba	135	4320.6	0.3	**2.3669**	0.016	0.7	ug/L	111	Standard
	Ce	140	11052.4	4.5				ug/L	107	Standard
>	**Tb**	159	858576.5	0.7				ug/L	890342	Standard
	Ho	165	216.7	10.7				ug/L	10	Standard
	Tl	203	116.0	17.5	**0.0123**	0.003	24.6	ug/L	19	Standard
	Tl	205	98.3	11.7	**0.0173**	0.002	12.0	ug/L	17	Standard
	Pb	206	9169.1	1.7	**1.8876**	0.041	2.2	ug/L	247	Standard
	Pb	207	7982.8	0.7	**1.8083**	0.035	1.9	ug/L	215	Standard
	Pb	208	31008.6	0.6	**1.8704**	0.021	1.1	ug/L	770	Standard
	U	238	168.3	3.3	**0.0281**	0.001	3.9	ug/L	13	Standard
>	**Bi**	209	489002.3	1.5				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	2341.8	1.1	**3.2356**	0.024	0.7	mg/L	35	Standard
K	39	118.3	20.0	**0.4878**	0.118	24.2	mg/L	25	Standard
Ca	43	43.3	17.6	**3.3707**	1.559	46.2	mg/L	38	Standard
Fe	54	377.4	16.5	**0.2279**	0.059	26.1	mg/L	126	Standard
Fe	57	345.0	9.5	**0.2940**	0.127	43.1	mg/L	245	Standard
> **Sc-1**	45	24628.3	0.4				mg/L	25066	Standard
Cl	35	138476.6	0.9				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	1490.1	4.7				ug/L	1350	Standard
P	31	19304.0	1.2				ug/L	18393	Standard
S	34	3498.7	5.5				ug/L	3739	Standard
Sr	88	68.3	18.4				ug/L	78	Standard
C	12	46.7	44.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	337.2	15.6				mg/L	2	Standard
Ho-1	165	216.7	10.7				mg/L	10	Standard
Er	166	196.7	28.9				mg/L	23	Standard
I	127	3045.3	3.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.041	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.137	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606073102SDL WG573557-02
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.153
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.190
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: FBLANK 7Q WG573662-01
Sample Date/Time: Tuesday, June 21, 2016 13:36:50
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60862.0	1.5				ug/L	60176	Standard
	Be	9	37583.2	1.6	**51.7542**	0.552	1.1	ug/L	5	Standard
	Al	27	21697.9	26.0	**0.1552**	0.044	28.5	ug/L	832	Standard
	Sc	45	23591.7	4.2				ug/L	25066	Standard
	Ti	47	83.7	108.0	**0.2200**	0.454	206.3	ug/L	38	Standard
	V	51	305889.4	1.3	**51.4535**	1.008	2.0	ug/L	974	Standard
	Cr	52	330929.6	0.4	**51.2983**	1.178	2.3	ug/L	5792	Standard
	Cr	53	41528.5	0.6	**50.5645**	1.478	2.9	ug/L	347	Standard
	Mn	55	328303.3	1.1	**51.2988**	1.820	3.5	ug/L	1164	Standard
	Co	59	315656.4	1.0	**52.0010**	1.804	3.5	ug/L	303	Standard
	Ni	60	91664.8	1.0	**50.9431**	1.373	2.7	ug/L	291	Standard
	Cu	65	92045.1	0.9	**51.5472**	1.356	2.6	ug/L	173	Standard
	Zn	66	54111.8	0.2	**52.1307**	1.195	2.3	ug/L	130	Standard
>	**Ge**	72	490225.8	2.5				ug/L	491724	Standard
	As	75	52438.9	0.3	**50.1639**	1.182	2.4	ug/L	-25	Standard
	Se	82	5295.6	0.8	**51.3116**	1.607	3.1	ug/L	12	Standard
	Se-1	77	3616.8	1.2	**50.6984**	1.048	2.1	ug/L	57	Standard
>	**Ga**	71	186.7	10.8				mg/L	148	Standard
	Rb	85	61.7	12.4				ug/L	18	Standard
	Y	89	408507.2	0.7				ug/L	401845	Standard
>	**Rh**	103	48.3	15.8				ug/L	10	Standard
	Mo	98	52.1	23.1	**0.0179**	0.005	29.8	ug/L	12	Standard
	Ag	107	297940.9	0.5	**51.9244**	0.468	0.9	ug/L	98	Standard
	Cd	111	93406.3	0.2	**51.0848**	0.731	1.4	mg/L	11	Standard
	Cd	114	226390.7	0.3	**50.8926**	0.677	1.3	ug/L	21	Standard
>	**In**	115	532598.8	1.2				ug/L	547487	Standard
	Sn	118	560.0	13.9	**0.0370**	0.017	45.0	ug/L	450	Standard
	Sb	123	206757.3	1.1	**50.0344**	0.431	0.9	ug/L	105	Standard
	Ba	135	90690.6	0.8	**50.7329**	0.993	2.0	ug/L	111	Standard
	Ce	140	146.7	19.4				ug/L	107	Standard
>	**Tb**	159	846206.7	1.1				ug/L	890342	Standard
	Ho	165	13.3	86.6				ug/L	10	Standard
	Tl	203	364672.7	1.1	**50.8514**	0.648	1.3	ug/L	19	Standard
	Tl	205	306373.3	0.5	**52.0688**	0.058	0.1	ug/L	17	Standard
	Pb	206	242442.7	0.5	**52.5299**	0.446	0.8	ug/L	247	Standard
	Pb	207	211276.6	0.7	**50.3548**	0.226	0.4	ug/L	215	Standard
	Pb	208	820675.9	0.4	**52.2445**	0.286	0.5	ug/L	770	Standard
	U	238	287466.1	0.1	**50.4910**	0.234	0.5	ug/L	13	Standard
>	**Bi**	209	477588.3	0.5				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	65.0	26.6	**0.0558**	0.025	43.9	mg/L	35	Standard
K	39	33.3	31.2	**0.0629**	0.047	74.5	mg/L	25	Standard
Ca	43	28.3	50.9	**0.5321**	2.713	509.8	mg/L	38	Standard
Fe	54	102.3	13.6	**-0.0329**	0.018	54.0	mg/L	126	Standard
Fe	57	231.7	21.8	**-0.1150**	0.242	210.0	mg/L	245	Standard
> **Sc-1**	45	23591.7	4.2				mg/L	25066	Standard
Cl	35	136517.0	1.3				ug/L	125857	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	1383.4	10.5				ug/L	1350	Standard
P	31	16972.8	0.8				ug/L	18393	Standard
S	34	3713.8	2.7				ug/L	3739	Standard
Sr	88	61.7	9.4				ug/L	78	Standard
C	12	53.3	47.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	19.8	49.2				mg/L	2	Standard
Ho-1	165	13.3	86.6				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	23	Standard
I	127	1001.7	6.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.140	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.695	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.281
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.921
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 13:40:03
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61031.0	0.7				ug/L	60176	Standard
	Be	9	36594.2	3.2	**50.2545**	1.736	3.5	ug/L	5	Standard
	Al	27	6613287.8	2.3	**49.6387**	1.327	2.7	ug/L	832	Standard
	Sc	45	24596.6	1.9				ug/L	25066	Standard
	Ti	47	19478.9	2.3	**103.3937**	4.517	4.4	ug/L	38	Standard
	V	51	296612.7	2.3	**51.0859**	2.216	4.3	ug/L	974	Standard
	Cr	52	329696.2	2.1	**52.3442**	2.253	4.3	ug/L	5792	Standard
	Cr	53	41729.1	0.9	**52.0173**	1.592	3.1	ug/L	347	Standard
	Mn	55	310317.0	2.6	**49.6295**	2.343	4.7	ug/L	1164	Standard
	Co	59	303689.4	2.7	**51.2154**	2.491	4.9	ug/L	303	Standard
	Ni	60	90715.2	2.4	**51.6193**	2.335	4.5	ug/L	291	Standard
	Cu	65	89623.1	3.1	**51.3920**	2.693	5.2	ug/L	173	Standard
	Zn	66	52311.5	3.1	**51.6008**	2.673	5.2	ug/L	130	Standard
>	**Ge**	72	478918.3	2.1				ug/L	491724	Standard
	As	75	51909.7	2.4	**50.8415**	2.263	4.5	ug/L	-25	Standard
	Se	82	5184.4	2.6	**51.4278**	2.428	4.7	ug/L	12	Standard
	Se-1	77	3510.4	2.6	**50.3835**	2.410	4.8	ug/L	57	Standard
>	**Ga**	71	205.0	20.8				mg/L	148	Standard
	Rb	85	766.7	4.6				ug/L	18	Standard
	Y	89	405836.1	1.8				ug/L	401845	Standard
>	**Rh**	103	35.0	42.9				ug/L	10	Standard
	Mo	98	227649.5	2.0	**96.2656**	2.103	2.2	ug/L	12	Standard
	Ag	107	288372.2	1.1	**49.6724**	0.252	0.5	ug/L	98	Standard
	Cd	111	92130.2	0.9	**49.8016**	0.575	1.2	mg/L	11	Standard
	Cd	114	225554.0	0.3	**50.1162**	0.425	0.8	ug/L	21	Standard
>	**In**	115	538810.9	0.6				ug/L	547487	Standard
	Sn	118	247773.3	1.9	**48.4123**	1.160	2.4	ug/L	450	Standard
	Sb	123	211050.2	2.3	**50.4816**	1.038	2.1	ug/L	105	Standard
	Ba	135	89213.6	0.7	**49.3244**	0.656	1.3	ug/L	111	Standard
	Ce	140	93.3	16.4				ug/L	107	Standard
>	**Tb**	159	860595.9	0.4				ug/L	890342	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	362174.3	0.8	**49.8195**	1.053	2.1	ug/L	19	Standard
	Tl	205	305739.0	0.6	**51.2583**	0.985	1.9	ug/L	17	Standard
	Pb	206	230874.7	1.7	**49.3431**	1.266	2.6	ug/L	247	Standard
	Pb	207	208855.0	2.0	**49.1070**	1.530	3.1	ug/L	215	Standard
	Pb	208	795788.6	1.4	**49.9753**	1.375	2.8	ug/L	770	Standard
	U	238	286489.2	0.6	**49.6372**	0.898	1.8	ug/L	13	Standard
>	**Bi**	209	484221.4	1.4				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3497.1	3.8	**4.8581**	0.197	4.1	mg/L	35	Standard
K	39	931.7	4.0	**4.6234**	0.265	5.7	mg/L	25	Standard
Ca	43	35.0	62.3	**1.6854**	4.328	256.8	mg/L	38	Standard
Fe	54	5344.8	3.0	**5.0352**	0.242	4.8	mg/L	126	Standard
Fe	57	1481.7	2.1	**4.8642**	0.109	2.2	mg/L	245	Standard
Sc-1	45	24596.6	1.9				mg/L	25066	Standard
Cl	35	138959.7	0.4				ug/L	125857	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	1233.4	20.2				ug/L	1350	Standard
P	31	18719.9	0.8				ug/L	18393	Standard
S	34	4417.3	5.9				ug/L	3739	Standard
Sr	88	70.0	32.7				ug/L	78	Standard
C	12	46.7	53.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	-0.6	114.6				mg/L	2	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	1176.7	6.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	100.509		
Al	27	99.277		
Sc	45			
Ti	47	103.394		
V	51	102.172		
Cr	52	104.688		
Cr	53			
Mn	55	99.259		
Co	59	102.431		
Ni	60	103.239		
Cu	65	102.784		
Zn	66	103.202		
> Ge	72		97.396	
As	75	101.683		
Se	82	102.856		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
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Rb	85			
Y	89			
Rh	103			
Mo	98	96.266		
Ag	107	99.345		
Cd	111	99.603		
Cd	114			
In	115			98.415
Sn	118	96.825		
Sb	123	100.963		
Ba	135	98.649		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.639		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.951		
U	238	99.274		
Bi	209			96.239
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 13:43:14
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59649.0	4.4				ug/L	60176	Standard
	Be	9	41.7	69.3	**0.0484**	0.037	76.6	ug/L	5	Standard
	Al	27	4266.0	98.6	**0.0235**	0.030	128.4	ug/L	832	Standard
	Sc	45	24342.9	3.0				ug/L	25066	Standard
	Ti	47	33.3	27.1	**-0.0321**	0.048	148.9	ug/L	38	Standard
	V	51	1086.3	15.0	**0.0151**	0.028	186.7	ug/L	974	Standard
	Cr	52	6084.9	2.7	**0.0304**	0.025	82.0	ug/L	5792	Standard
	Cr	53	316.7	20.3	**-0.0194**	0.077	400.2	ug/L	347	Standard
	Mn	55	1292.4	23.2	**-0.0102**	0.046	450.7	ug/L	1164	Standard
	Co	59	507.7	41.8	**0.0353**	0.035	98.0	ug/L	303	Standard
	Ni	60	317.3	24.7	**-0.0115**	0.043	371.7	ug/L	291	Standard
	Cu	65	214.0	56.1	**0.0236**	0.067	282.9	ug/L	173	Standard
	Zn	66	173.7	20.6	**-0.0653**	0.034	51.4	ug/L	130	Standard
>	**Ge**	72	483753.8	2.3				ug/L	491724	Standard
	As	75	6.9	624.5	**0.0407**	0.041	101.6	ug/L	-25	Standard
	Se	82	18.5	29.1	**0.0893**	0.056	62.8	ug/L	12	Standard
	Se-1	77	55.0	3.6	**0.1421**	0.045	31.6	ug/L	57	Standard
>	**Ga**	71	175.0	10.3				mg/L	148	Standard
	Rb	85	30.0	44.1				ug/L	18	Standard
	Y	89	416072.0	2.1				ug/L	401845	Standard
>	**Rh**	103	28.3	27.0				ug/L	10	Standard
	Mo	98	258.2	21.7	**0.1033**	0.023	21.8	ug/L	12	Standard
	Ag	107	212.0	65.6	**0.0205**	0.023	112.4	ug/L	98	Standard
	Cd	111	49.9	119.2	**0.0217**	0.031	143.8	mg/L	11	Standard
	Cd	114	138.9	94.3	**0.0258**	0.028	109.1	ug/L	21	Standard
>	**In**	115	545536.5	1.5				ug/L	547487	Standard
	Sn	118	786.7	5.1	**0.0781**	0.009	11.7	ug/L	450	Standard
	Sb	123	893.7	15.1	**0.2036**	0.032	15.8	ug/L	105	Standard
	Ba	135	155.0	26.2	**0.0290**	0.021	73.2	ug/L	111	Standard
	Ce	140	46.7	89.9				ug/L	107	Standard
>	**Tb**	159	851423.1	1.4				ug/L	890342	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	204.7	101.3	**0.0248**	0.028	114.4	ug/L	19	Standard
	Tl	205	236.7	112.3	**0.0410**	0.044	108.4	ug/L	17	Standard
	Pb	206	322.0	34.4	**0.0148**	0.023	155.8	ug/L	247	Standard
	Pb	207	278.7	40.6	**0.0143**	0.026	182.5	ug/L	215	Standard
	Pb	208	1396.0	53.4	**0.0288**	0.046	160.2	ug/L	770	Standard
	U	238	214.3	118.3	**0.0365**	0.044	119.9	ug/L	13	Standard
>	**Bi**	209	476880.3	2.0				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	25.0	52.9	**-0.0037**	0.018	500.1	mg/L	35	Standard
K	39	18.3	56.8	**-0.0172**	0.057	329.7	mg/L	25	Standard
Ca	43	26.7	47.2	**0.1406**	2.740	1948.1	mg/L	38	Standard
Fe	54	132.6	9.5	**-0.0068**	0.014	206.9	mg/L	126	Standard
Fe	57	211.7	5.5	**-0.2294**	0.073	31.8	mg/L	245	Standard
Sc-1	45	24342.9	3.0				mg/L	25066	Standard
Cl	35	143897.4	0.2				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	1373.4	16.1				ug/L	1350	Standard
P	31	19679.4	1.3				ug/L	18393	Standard
S	34	4449.0	1.1				ug/L	3739	Standard
Sr	88	78.3	19.5				ug/L	78	Standard
C	12	66.7	22.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.3	179.8				mg/L	2	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	23	Standard
I	127	996.7	2.4				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.379	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.644
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.780
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

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Method 6020 - Summary Report

Sample ID: L1606061601
Sample Date/Time: Tuesday, June 21, 2016 15:22:26
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61906.2	1.7				ug/L	60176	Standard
	Be	9	353.3	21.2	**0.4684**	0.095	20.2	ug/L	5	Standard
	Al	27	3358447.2	1.6	**24.8506**	0.581	2.3	ug/L	832	Standard
	Sc	45	24973.9	2.3				ug/L	25066	Standard
	Ti	47	298.0	14.4	**1.3564**	0.221	16.3	ug/L	38	Standard
	V	51	-5189.4	20.1	**-1.0574**	0.187	17.7	ug/L	974	Standard
	Cr	52	703390.4	0.3	**111.3019**	1.587	1.4	ug/L	5792	Standard
	Cr	53	93571.6	3.2	**115.6494**	2.048	1.8	ug/L	347	Standard
	Mn	55	821479.7	1.9	**130.0789**	4.283	3.3	ug/L	1164	Standard
	Co	59	94839.6	1.2	**15.7576**	0.403	2.6	ug/L	303	Standard
	Ni	60	304442.7	1.6	**171.4532**	1.376	0.8	ug/L	291	Standard
	Cu	65	7661.9	1.9	**4.2471**	0.033	0.8	ug/L	173	Standard
	Zn	66	10599.0	2.6	**10.1313**	0.186	1.8	ug/L	130	Standard
>	**Ge**	72	484843.6	1.4				ug/L	491724	Standard
	As	75	570.7	9.1	**0.5858**	0.057	9.7	ug/L	-25	Standard
	Se	82	251.1	0.8	**2.3709**	0.055	2.3	ug/L	12	Standard
	Se-1	77	415.7	8.5	**5.3115**	0.417	7.8	ug/L	57	Standard
>	**Ga**	71	288.3	8.9				mg/L	148	Standard
	Rb	85	2623.6	2.0				ug/L	18	Standard
	Y	89	398713.2	0.8				ug/L	401845	Standard
>	**Rh**	103	56.7	27.0				ug/L	10	Standard
	Mo	98	2419.6	2.5	**1.0703**	0.029	2.7	ug/L	12	Standard
	Ag	107	130.0	2.3	**0.0081**	0.001	10.1	ug/L	98	Standard
	Cd	111	262.1	7.2	**0.1442**	0.012	8.3	mg/L	11	Standard
	Cd	114	609.6	2.6	**0.1378**	0.003	2.4	ug/L	21	Standard
>	**In**	115	513017.2	1.6				ug/L	547487	Standard
	Sn	118	821.7	9.2	**0.0947**	0.014	14.3	ug/L	450	Standard
	Sb	123	733.0	25.0	**0.1761**	0.043	24.6	ug/L	105	Standard
	Ba	135	99016.2	1.6	**57.5032**	0.291	0.5	ug/L	111	Standard
	Ce	140	12887.1	3.7				ug/L	107	Standard
>	**Tb**	159	848478.4	1.1				ug/L	890342	Standard
	Ho	165	410.0	18.2				ug/L	10	Standard
	Tl	203	359.3	6.1	**0.0475**	0.004	8.4	ug/L	19	Standard
	Tl	205	305.0	1.6	**0.0538**	0.002	3.7	ug/L	17	Standard
	Pb	206	880.4	2.3	**0.1394**	0.005	3.8	ug/L	247	Standard
	Pb	207	741.7	1.8	**0.1280**	0.007	5.6	ug/L	215	Standard
	Pb	208	2788.1	1.1	**0.1210**	0.006	4.6	ug/L	770	Standard
	U	238	430.0	8.6	**0.0762**	0.008	10.9	ug/L	13	Standard
>	**Bi**	209	469289.0	2.2				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	44893.1	1.4	**61.8782**	1.088	1.8	mg/L	35	Standard
K	39	80.0	10.8	**0.2875**	0.036	12.5	mg/L	25	Standard
Ca	43	58.3	34.6	**6.1586**	3.723	60.4	mg/L	38	Standard
Fe	54	459.2	2.0	**0.3009**	0.006	1.9	mg/L	126	Standard
Fe	57	306.7	6.6	**0.1228**	0.057	46.4	mg/L	245	Standard
> **Sc-1**	45	24973.9	2.3				mg/L	25066	Standard
Cl	35	156643.7	1.7				ug/L	125857	Standard
Kr	83	2.7	43.3				ug/L	1	Standard
Br	81	58328.8	2.2				ug/L	1350	Standard
P	31	28678.8	2.1				ug/L	18393	Standard
S	34	4364.0	4.4				ug/L	3739	Standard
Sr	88	118.3	19.1				ug/L	78	Standard
C	12	100.0	72.1				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	613.2	2.5				mg/L	2	Standard
Ho-1	165	410.0	18.2				mg/L	10	Standard
Er	166	350.0	12.5				mg/L	23	Standard
I	127	70092.1	5.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.875	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.601	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.704
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.272
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Lower	V	51	
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	

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Mn 55 Upper, S, EEE	Mn	55
Ni 60 Upper, S, EEE	Ni	60

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Method 6020 - Summary Report

Sample ID: L1606061602
Sample Date/Time: Tuesday, June 21, 2016 15:25:38
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62282.9	3.9				ug/L	60176	Standard
	Be	9	13.3	78.1	**0.0089**	0.014	158.6	ug/L	5	Standard
	Al	27	17049432.7	0.9	**125.5063**	3.981	3.2	ug/L	832	Standard
	Sc	45	25169.2	3.4				ug/L	25066	Standard
	Ti	47	807.7	16.8	**4.0608**	0.742	18.3	ug/L	38	Standard
	V	51	2867.2	4.6	**0.3212**	0.020	6.3	ug/L	974	Standard
	Cr	52	13094.0	1.7	**1.1584**	0.021	1.8	ug/L	5792	Standard
	Cr	53	5707.8	16.6	**6.7038**	1.131	16.9	ug/L	347	Standard
	Mn	55	4214750.0	1.0	**671.9640**	7.527	1.1	ug/L	1164	Standard
	Co	59	2363.5	2.5	**0.3468**	0.009	2.6	ug/L	303	Standard
	Ni	60	2095.5	4.7	**0.9976**	0.054	5.4	ug/L	291	Standard
	Cu	65	827.0	5.3	**0.3740**	0.026	7.0	ug/L	173	Standard
	Zn	66	2898.6	2.7	**2.6166**	0.093	3.5	ug/L	130	Standard
>	**Ge**	72	482049.8	0.7				ug/L	491724	Standard
	As	75	2600.5	3.1	**2.5615**	0.093	3.7	ug/L	-25	Standard
	Se	82	880.4	1.9	**8.5951**	0.224	2.6	ug/L	12	Standard
	Se-1	77	853.7	1.5	**11.6729**	0.213	1.8	ug/L	57	Standard
>	**Ga**	71	506.7	6.6				mg/L	148	Standard
	Rb	85	23870.5	3.1				ug/L	18	Standard
	Y	89	394978.3	1.9				ug/L	401845	Standard
>	**Rh**	103	256.7	27.0				ug/L	10	Standard
	Mo	98	1604.0	4.5	**0.7016**	0.035	5.0	ug/L	12	Standard
	Ag	107	79.0	13.3	**-0.0012**	0.002	164.6	ug/L	98	Standard
	Cd	111	16.1	12.6	**0.0044**	0.001	27.5	mg/L	11	Standard
	Cd	114	59.0	10.1	**0.0092**	0.001	13.1	ug/L	21	Standard
>	**In**	115	517707.0	1.4				ug/L	547487	Standard
	Sn	118	2710.2	6.3	**0.4777**	0.029	6.0	ug/L	450	Standard
	Sb	123	297.7	21.5	**0.0665**	0.016	23.7	ug/L	105	Standard
	Ba	135	499345.8	0.5	**287.6104**	2.831	1.0	ug/L	111	Standard
	Ce	140	10685.4	3.5				ug/L	107	Standard
>	**Tb**	159	859857.7	0.6				ug/L	890342	Standard
	Ho	165	171.7	6.7				ug/L	10	Standard
	Tl	203	147.0	7.7	**0.0176**	0.002	10.6	ug/L	19	Standard
	Tl	205	131.7	9.6	**0.0241**	0.002	10.1	ug/L	17	Standard
	Pb	206	806.4	2.2	**0.1255**	0.005	3.9	ug/L	247	Standard
	Pb	207	665.0	1.0	**0.1116**	0.004	3.1	ug/L	215	Standard
	Pb	208	2632.8	1.6	**0.1132**	0.001	0.6	ug/L	770	Standard
	U	238	475.7	3.2	**0.0854**	0.003	3.7	ug/L	13	Standard
>	**Bi**	209	462865.3	1.2				ug/L	503143	Standard

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Na	23	5.0	100.0	**54.7235**	55.001	100.5	mg/L	2	Standard
Mg	24	92887.3	2.9	**127.2146**	7.642	6.0	mg/L	35	Standard
K	39	313.3	13.8	**1.4400**	0.167	11.6	mg/L	25	Standard
Ca	43	165.0	21.9	**27.2389**	8.231	30.2	mg/L	38	Standard
Fe	54	29519.0	1.0	**27.7809**	0.908	3.3	mg/L	126	Standard
Fe	57	8005.4	3.0	**30.3493**	0.303	1.0	mg/L	245	Standard
Sc-1	45	25169.2	3.4				mg/L	25066	Standard
Cl	35	152557.1	2.2				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	221629.9	2.5				ug/L	1350	Standard
P	31	26778.6	1.5				ug/L	18393	Standard
S	34	4655.7	4.3				ug/L	3739	Standard
Sr	88	723.4	3.8				ug/L	78	Standard
C	12	93.3	22.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	0	Standard
Dy	164	336.0	12.3				mg/L	2	Standard
Ho-1	165	171.7	6.7				mg/L	10	Standard
Er	166	153.3	19.9				mg/L	23	Standard
I	127	284517.0	8.4				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		103.501	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.033	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.561
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	91.995
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606061602
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Method 6020 - Summary Report

Sample ID: L1606061604
Sample Date/Time: Tuesday, June 21, 2016 15:28:49
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57020.4	1.0				ug/L	60176	Standard
	Be	9	11.7	24.7	**0.0081**	0.004	51.2	ug/L	5	Standard
	Al	27	1079402.9	2.6	**8.6639**	0.184	2.1	ug/L	832	Standard
	Sc	45	25052.4	2.1				ug/L	25066	Standard
	Ti	47	402.3	58.5	**1.8535**	1.201	64.8	ug/L	38	Standard
	V	51	1463.1	9.7	**0.0731**	0.024	32.4	ug/L	974	Standard
	Cr	52	14139.6	1.7	**1.2608**	0.045	3.6	ug/L	5792	Standard
	Cr	53	2088.5	7.6	**2.1170**	0.178	8.4	ug/L	347	Standard
	Mn	55	835676.7	0.8	**129.2089**	1.084	0.8	ug/L	1164	Standard
	Co	59	3523.1	1.4	**0.5240**	0.006	1.1	ug/L	303	Standard
	Ni	60	4025.9	3.0	**2.0265**	0.074	3.6	ug/L	291	Standard
	Cu	65	706.3	1.2	**0.2935**	0.005	1.8	ug/L	173	Standard
	Zn	66	9224.1	1.2	**8.5777**	0.163	1.9	ug/L	130	Standard
>	**Ge**	72	496394.0	0.7				ug/L	491724	Standard
	As	75	111.7	16.0	**0.1393**	0.017	12.0	ug/L	-25	Standard
	Se	82	53.9	8.6	**0.4236**	0.046	10.9	ug/L	12	Standard
	Se-1	77	90.3	6.8	**0.6163**	0.078	12.7	ug/L	57	Standard
>	**Ga**	71	265.0	3.8				mg/L	148	Standard
	Rb	85	10645.4	6.1				ug/L	18	Standard
	Y	89	419565.3	1.2				ug/L	401845	Standard
>	**Rh**	103	76.7	21.0				ug/L	10	Standard
	Mo	98	94.8	4.8	**0.0348**	0.002	5.0	ug/L	12	Standard
	Ag	107	92.7	8.0	**0.0002**	0.001	504.2	ug/L	98	Standard
	Cd	111	330.1	5.6	**0.1699**	0.010	5.6	mg/L	11	Standard
	Cd	114	763.9	13.9	**0.1615**	0.022	13.6	ug/L	21	Standard
>	**In**	115	550787.3	1.4				ug/L	547487	Standard
	Sn	118	540.0	13.8	**0.0292**	0.013	44.4	ug/L	450	Standard
	Sb	123	257.9	10.5	**0.0527**	0.006	12.1	ug/L	105	Standard
	Ba	135	38973.7	1.1	**21.0479**	0.260	1.2	ug/L	111	Standard
	Ce	140	2586.9	4.8				ug/L	107	Standard
>	**Tb**	159	856869.1	0.8				ug/L	890342	Standard
	Ho	165	58.3	54.4				ug/L	10	Standard
	Tl	203	144.7	17.5	**0.0161**	0.003	20.9	ug/L	19	Standard
	Tl	205	115.0	28.5	**0.0201**	0.005	26.9	ug/L	17	Standard
	Pb	206	457.0	4.6	**0.0419**	0.005	10.8	ug/L	247	Standard
	Pb	207	362.3	5.9	**0.0324**	0.005	16.3	ug/L	215	Standard
	Pb	208	1499.7	3.6	**0.0335**	0.003	9.2	ug/L	770	Standard
	U	238	42.7	10.6	**0.0065**	0.001	11.8	ug/L	13	Standard
>	**Bi**	209	488736.5	0.4				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.7135**	32.404	173.2	mg/L	2	Standard
Mg	24	2508.5	0.8	**3.4105**	0.088	2.6	mg/L	35	Standard
K	39	146.7	2.0	**0.6192**	0.005	0.8	mg/L	25	Standard
Ca	43	36.7	47.9	**1.9276**	3.571	185.3	mg/L	38	Standard
Fe	54	2278.8	4.5	**2.0291**	0.142	7.0	mg/L	126	Standard
Fe	57	766.7	5.8	**1.9335**	0.140	7.2	mg/L	245	Standard
> **Sc-1**	45	25052.4	2.1				mg/L	25066	Standard
Cl	35	147914.5	0.4				ug/L	125857	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	9583.1	14.5				ug/L	1350	Standard
P	31	24017.4	7.0				ug/L	18393	Standard
S	34	4402.3	1.3				ug/L	3739	Standard
Sr	88	115.0	24.2				ug/L	78	Standard
C	12	110.0	15.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	111.3	9.5				mg/L	2	Standard
Ho-1	165	58.3	54.4				mg/L	10	Standard
Er	166	43.3	48.0				mg/L	23	Standard
I	127	122962.9	5.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.756	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.950	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.603
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.137
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606065001
Sample Date/Time: Tuesday, June 21, 2016 15:32:01
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58737.0	2.5				ug/L	60176	Standard
	Be	9	13.3	78.1	**0.0099**	0.015	148.6	ug/L	5	Standard
	Al	27	20311195.1	0.7	**158.4647**	3.057	1.9	ug/L	832	Standard
	Sc	45	24576.6	0.4				ug/L	25066	Standard
	Ti	47	298.3	18.8	**1.3401**	0.257	19.2	ug/L	38	Standard
	V	51	-26804.6	32.1	**-4.7157**	1.536	32.6	ug/L	974	Standard
	Cr	52	3156638.5	1.5	**497.8823**	3.945	0.8	ug/L	5792	Standard
	Cr	53	406838.5	1.2	**499.5299**	10.508	2.1	ug/L	347	Standard
	Mn	55	3878787.1	0.6	**609.0624**	15.870	2.6	ug/L	1164	Standard
	Co	59	134308.5	1.9	**22.1248**	0.836	3.8	ug/L	303	Standard
	Ni	60	1500074.7	0.8	**837.5062**	11.813	1.4	ug/L	291	Standard
	Cu	65	3294.7	4.2	**1.7525**	0.064	3.7	ug/L	173	Standard
	Zn	66	3534.1	0.8	**3.1886**	0.054	1.7	ug/L	130	Standard
>	**Ge**	72	489585.9	2.0				ug/L	491724	Standard
	As	75	619.2	16.7	**0.6262**	0.096	15.3	ug/L	-25	Standard
	Se	82	219.8	7.3	**2.0451**	0.198	9.7	ug/L	12	Standard
	Se-1	77	661.7	6.7	**8.7481**	0.445	5.1	ug/L	57	Standard
>	**Ga**	71	480.0	18.8				mg/L	148	Standard
	Rb	85	7842.0	1.6				ug/L	18	Standard
	Y	89	401986.8	1.4				ug/L	401845	Standard
>	**Rh**	103	255.0	17.1				ug/L	10	Standard
	Mo	98	3790.0	2.1	**1.6493**	0.037	2.3	ug/L	12	Standard
	Ag	107	91.7	12.6	**0.0009**	0.002	229.9	ug/L	98	Standard
	Cd	111	318.1	9.7	**0.1728**	0.018	10.6	mg/L	11	Standard
	Cd	114	767.4	4.0	**0.1715**	0.006	3.7	ug/L	21	Standard
>	**In**	115	522178.8	0.8				ug/L	547487	Standard
	Sn	118	655.0	6.0	**0.0582**	0.008	14.0	ug/L	450	Standard
	Sb	123	316.3	5.2	**0.0705**	0.004	6.2	ug/L	105	Standard
	Ba	135	988361.5	1.0	**564.4491**	9.763	1.7	ug/L	111	Standard
	Ce	140	3193.7	1.3				ug/L	107	Standard
>	**Tb**	159	848147.8	2.2				ug/L	890342	Standard
	Ho	165	61.7	20.4				ug/L	10	Standard
	Tl	203	205.3	8.6	**0.0262**	0.002	9.4	ug/L	19	Standard
	Tl	205	211.7	4.9	**0.0383**	0.002	4.4	ug/L	17	Standard
	Pb	206	552.0	3.0	**0.0694**	0.003	3.8	ug/L	247	Standard
	Pb	207	484.3	2.7	**0.0679**	0.004	6.5	ug/L	215	Standard
	Pb	208	1839.4	3.4	**0.0618**	0.005	8.1	ug/L	770	Standard
	U	238	2510.9	1.9	**0.4572**	0.010	2.2	ug/L	13	Standard
>	**Bi**	209	459869.7	1.0				ug/L	503143	Standard

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Na	23	5.0	0.0	**56.9736**	0.236	0.4	mg/L	2	Standard
Mg	24	79633.7	1.2	**111.5486**	1.739	1.6	mg/L	35	Standard
K	39	216.7	13.5	**0.9891**	0.148	14.9	mg/L	25	Standard
Ca	43	143.3	11.2	**23.4985**	3.298	14.0	mg/L	38	Standard
Fe	54	8009.6	2.0	**7.6156**	0.141	1.9	mg/L	126	Standard
Fe	57	2330.2	7.0	**8.2796**	0.633	7.6	mg/L	245	Standard
> **Sc-1**	45	24576.6	0.4				mg/L	25066	Standard
Cl	35	147026.1	2.2				ug/L	125857	Standard
Kr	83	3.0	33.3				ug/L	1	Standard
Br	81	52694.8	2.4				ug/L	1350	Standard
P	31	26670.1	1.1				ug/L	18393	Standard
S	34	4514.0	2.6				ug/L	3739	Standard
Sr	88	530.0	12.0				ug/L	78	Standard
C	12	150.0	17.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	69.8	80.1				mg/L	2	Standard
Ho-1	165	61.7	20.4				mg/L	10	Standard
Er	166	73.3	47.9				mg/L	23	Standard
I	127	406278.2	6.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.609	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.565	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.377
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	91.399
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
V 51 Lower	V	51	
Cr 52 Upper, S, EEE	Cr	52	

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Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Ni 60 Upper, S, EEE	Ni	60
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606065002
Sample Date/Time: Tuesday, June 21, 2016 15:35:12
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60596.0	1.9				ug/L	60176	Standard
	Be	9	13.3	21.7	**0.0094**	0.004	40.0	ug/L	5	Standard
	Al	27	8739182.4	2.0	**66.0672**	0.799	1.2	ug/L	832	Standard
	Sc	45	26192.6	2.2				ug/L	25066	Standard
	Ti	47	278.7	7.4	**1.2062**	0.081	6.7	ug/L	38	Standard
	V	51	739.9	19.6	**-0.0487**	0.023	48.1	ug/L	974	Standard
	Cr	52	22061.4	0.9	**2.4614**	0.056	2.3	ug/L	5792	Standard
	Cr	53	7727.0	4.4	**8.8615**	0.540	6.1	ug/L	347	Standard
	Mn	55	1194045.7	2.0	**182.8701**	3.213	1.8	ug/L	1164	Standard
	Co	59	2942.3	2.7	**0.4247**	0.011	2.5	ug/L	303	Standard
	Ni	60	3788.5	1.5	**1.8749**	0.030	1.6	ug/L	291	Standard
	Cu	65	823.4	3.2	**0.3537**	0.007	2.1	ug/L	173	Standard
	Zn	66	2433.2	2.0	**2.0660**	0.023	1.1	ug/L	130	Standard
>	**Ge**	72	501409.8	1.7				ug/L	491724	Standard
	As	75	283.2	37.7	**0.2992**	0.102	34.0	ug/L	-25	Standard
	Se	82	131.4	7.4	**1.1550**	0.115	9.9	ug/L	12	Standard
	Se-1	77	578.0	3.8	**7.3693**	0.169	2.3	ug/L	57	Standard
>	**Ga**	71	285.0	6.3				mg/L	148	Standard
	Rb	85	8877.6	3.1				ug/L	18	Standard
	Y	89	394026.5	1.2				ug/L	401845	Standard
>	**Rh**	103	161.7	9.4				ug/L	10	Standard
	Mo	98	195.9	2.8	**0.0813**	0.003	4.3	ug/L	12	Standard
	Ag	107	96.7	5.1	**0.0018**	0.001	33.2	ug/L	98	Standard
	Cd	111	123.0	9.0	**0.0640**	0.005	8.5	mg/L	11	Standard
	Cd	114	254.1	11.5	**0.0540**	0.007	13.5	ug/L	21	Standard
>	**In**	115	520782.3	1.6				ug/L	547487	Standard
	Sn	118	470.0	9.1	**0.0211**	0.009	42.4	ug/L	450	Standard
	Sb	123	310.6	7.2	**0.0693**	0.007	9.8	ug/L	105	Standard
	Ba	135	314668.7	2.2	**180.1229**	1.150	0.6	ug/L	111	Standard
	Ce	140	4312.3	4.3				ug/L	107	Standard
>	**Tb**	159	863525.5	2.8				ug/L	890342	Standard
	Ho	165	90.0	9.6				ug/L	10	Standard
	Tl	203	216.7	3.1	**0.0269**	0.001	4.8	ug/L	19	Standard
	Tl	205	188.3	12.5	**0.0332**	0.005	14.2	ug/L	17	Standard
	Pb	206	400.0	2.1	**0.0323**	0.001	2.6	ug/L	247	Standard
	Pb	207	353.7	7.0	**0.0327**	0.004	13.3	ug/L	215	Standard
	Pb	208	1312.0	2.8	**0.0243**	0.004	16.7	ug/L	770	Standard
	U	238	1391.1	5.3	**0.2449**	0.008	3.4	ug/L	13	Standard
>	**Bi**	209	474675.7	2.0				ug/L	503143	Standard

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Na	23	5.0	100.0	**54.0687**	53.938	99.8	mg/L	2	Standard
Mg	24	62982.4	3.0	**82.7804**	2.551	3.1	mg/L	35	Standard
K	39	133.3	17.7	**0.5224**	0.099	18.9	mg/L	25	Standard
Ca	43	83.3	24.2	**10.4165**	3.976	38.2	mg/L	38	Standard
Fe	54	266.1	10.7	**0.1052**	0.027	25.7	mg/L	126	Standard
Fe	57	355.0	11.2	**0.2514**	0.173	69.0	mg/L	245	Standard
> **Sc-1**	45	26192.6	2.2				mg/L	25066	Standard
Cl	35	150054.1	0.8				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	29669.0	1.2				ug/L	1350	Standard
P	31	28545.2	2.4				ug/L	18393	Standard
S	34	4138.9	4.6				ug/L	3739	Standard
Sr	88	250.0	10.6				ug/L	78	Standard
C	12	156.7	19.5				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	133.3	30.3				mg/L	2	Standard
Ho-1	165	90.0	9.6				mg/L	10	Standard
Er	166	70.0	0.0				mg/L	23	Standard
I	127	661507.8	3.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.698	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.970	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.122
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.342
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606065003
Sample Date/Time: Tuesday, June 21, 2016 15:38:23
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63387.4	2.8				ug/L	60176	Standard
	Be	9	70.0	18.9	**0.0835**	0.017	20.0	ug/L	5	Standard
	Al	27	5157375.6	0.9	**37.2814**	0.808	2.2	ug/L	832	Standard
	Sc	45	26581.6	2.7				ug/L	25066	Standard
	Ti	47	1387.7	9.4	**6.8983**	0.595	8.6	ug/L	38	Standard
	V	51	-9213.7	17.6	**-1.7068**	0.290	17.0	ug/L	974	Standard
	Cr	52	1335310.3	0.9	**206.9695**	2.043	1.0	ug/L	5792	Standard
	Cr	53	177419.5	1.4	**214.3688**	2.599	1.2	ug/L	347	Standard
	Mn	55	997073.2	0.3	**154.0720**	2.167	1.4	ug/L	1164	Standard
	Co	59	16548.7	1.0	**2.6420**	0.067	2.5	ug/L	303	Standard
	Ni	60	80673.3	2.0	**44.1887**	0.256	0.6	ug/L	291	Standard
	Cu	65	12419.1	2.2	**6.7740**	0.077	1.1	ug/L	173	Standard
	Zn	66	5844.5	1.7	**5.3426**	0.029	0.5	ug/L	130	Standard
>	**Ge**	72	496879.0	1.5				ug/L	491724	Standard
	As	75	1809.6	8.9	**1.7401**	0.151	8.7	ug/L	-25	Standard
	Se	82	252.2	9.4	**2.3215**	0.229	9.8	ug/L	12	Standard
	Se-1	77	378.7	3.2	**4.6535**	0.175	3.8	ug/L	57	Standard
>	**Ga**	71	746.7	6.2				mg/L	148	Standard
	Rb	85	13919.7	1.1				ug/L	18	Standard
	Y	89	410755.2	2.3				ug/L	401845	Standard
>	**Rh**	103	111.7	5.2				ug/L	10	Standard
	Mo	98	5865.4	1.5	**2.4053**	0.027	1.1	ug/L	12	Standard
	Ag	107	135.7	10.3	**0.0074**	0.003	38.1	ug/L	98	Standard
	Cd	111	1056.6	4.0	**0.5506**	0.033	6.0	mg/L	11	Standard
	Cd	114	2556.7	1.3	**0.5477**	0.019	3.4	ug/L	21	Standard
>	**In**	115	554660.2	2.1				ug/L	547487	Standard
	Sn	118	1000.0	6.5	**0.1161**	0.012	10.2	ug/L	450	Standard
	Sb	123	402.1	12.9	**0.0857**	0.010	11.9	ug/L	105	Standard
	Ba	135	110239.6	0.8	**59.2270**	0.804	1.4	ug/L	111	Standard
	Ce	140	24279.4	2.4				ug/L	107	Standard
>	**Tb**	159	911640.4	0.6				ug/L	890342	Standard
	Ho	165	350.0	16.5				ug/L	10	Standard
	Tl	203	434.7	1.5	**0.0538**	0.001	1.7	ug/L	19	Standard
	Tl	205	305.0	7.5	**0.0500**	0.004	7.0	ug/L	17	Standard
	Pb	206	4440.3	0.9	**0.8568**	0.008	1.0	ug/L	247	Standard
	Pb	207	3810.8	1.1	**0.8086**	0.012	1.4	ug/L	215	Standard
	Pb	208	15060.6	1.4	**0.8488**	0.012	1.4	ug/L	770	Standard
	U	238	450.7	0.8	**0.0741**	0.001	0.7	ug/L	13	Standard
>	**Bi**	209	504464.9	0.3				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	31947.0	1.0	**41.3748**	1.485	3.6	mg/L	35	Standard
K	39	130.0	21.4	**0.4999**	0.137	27.3	mg/L	25	Standard
Ca	43	60.0		**5.8324**	0.297	5.1	mg/L	38	Standard
Fe	54	4403.4	0.3	**3.8059**	0.116	3.0	mg/L	126	Standard
Fe	57	1286.7	20.4	**3.6876**	0.933	25.3	mg/L	245	Standard
> **Sc-1**	45	26581.6	2.7				mg/L	25066	Standard
Cl	35	147975.1	1.2				ug/L	125857	Standard
Kr	83	2.7	43.3				ug/L	1	Standard
Br	81	55598.5	2.9				ug/L	1350	Standard
P	31	23972.3	2.6				ug/L	18393	Standard
S	34	4225.6	2.4				ug/L	3739	Standard
Sr	88	170.0	19.3				ug/L	78	Standard
C	12	100.0	10.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	656.9	13.7				mg/L	2	Standard
Ho-1	165	350.0	16.5				mg/L	10	Standard
Er	166	343.3	11.0				mg/L	23	Standard
I	127	145460.0	1.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.337	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.048	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.310
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.263
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Lower	V	51	
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	

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Mn 55 Upper, S, EEE	Mn	55

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Method 6020 - Summary Report

Sample ID: L1606065008
Sample Date/Time: Tuesday, June 21, 2016 15:41:35
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63802.5	2.9				ug/L	60176	Standard
	Be	9	36.7	28.4	**0.0391**	0.013	34.5	ug/L	5	Standard
	Al	27	2078545.0	1.4	**14.9291**	0.633	4.2	ug/L	832	Standard
	Sc	45	25579.9	3.4				ug/L	25066	Standard
	Ti	47	845.0	4.5	**4.1986**	0.233	5.6	ug/L	38	Standard
	V	51	3095.5	13.9	**0.3533**	0.071	20.0	ug/L	974	Standard
	Cr	52	11042.0	0.8	**0.8065**	0.028	3.5	ug/L	5792	Standard
	Cr	53	4624.0	3.3	**5.2817**	0.152	2.9	ug/L	347	Standard
	Mn	55	1458217.0	0.5	**229.3462**	1.807	0.8	ug/L	1164	Standard
	Co	59	5268.2	0.6	**0.8223**	0.014	1.7	ug/L	303	Standard
	Ni	60	16880.1	0.7	**9.2581**	0.054	0.6	ug/L	291	Standard
	Cu	65	1985.8	3.0	**1.0205**	0.041	4.0	ug/L	173	Standard
	Zn	66	32937.1	1.1	**31.7490**	0.128	0.4	ug/L	130	Standard
>	**Ge**	72	488364.0	1.2				ug/L	491724	Standard
	As	75	999.3	3.7	**0.9925**	0.031	3.1	ug/L	-25	Standard
	Se	82	345.9	2.6	**3.2758**	0.047	1.4	ug/L	12	Standard
	Se-1	77	334.7	3.8	**4.1184**	0.171	4.1	ug/L	57	Standard
>	**Ga**	71	493.3	14.2				mg/L	148	Standard
	Rb	85	9207.8	3.6				ug/L	18	Standard
	Y	89	437252.9	0.3				ug/L	401845	Standard
>	**Rh**	103	80.0	18.8				ug/L	10	Standard
	Mo	98	268.9	2.1	**0.1055**	0.004	3.8	ug/L	12	Standard
	Ag	107	76.3	10.0	**-0.0027**	0.001	41.6	ug/L	98	Standard
	Cd	111	118.8	3.8	**0.0574**	0.003	4.7	mg/L	11	Standard
	Cd	114	286.1	7.3	**0.0571**	0.005	9.4	ug/L	21	Standard
>	**In**	115	557575.9	1.6				ug/L	547487	Standard
	Sn	118	580.0	4.0	**0.0356**	0.003	9.3	ug/L	450	Standard
	Sb	123	413.5	12.2	**0.0880**	0.012	14.2	ug/L	105	Standard
	Ba	135	72473.6	0.8	**38.7111**	0.451	1.2	ug/L	111	Standard
	Ce	140	27496.6	2.4				ug/L	107	Standard
>	**Tb**	159	890154.3	0.6				ug/L	890342	Standard
	Ho	165	563.3	4.6				ug/L	10	Standard
	Tl	203	194.0	10.1	**0.0231**	0.003	13.1	ug/L	19	Standard
	Tl	205	155.0	11.6	**0.0269**	0.003	10.3	ug/L	17	Standard
	Pb	206	503.3	4.6	**0.0525**	0.006	12.2	ug/L	247	Standard
	Pb	207	451.7	4.0	**0.0538**	0.003	6.1	ug/L	215	Standard
	Pb	208	1721.0	1.3	**0.0480**	0.002	3.9	ug/L	770	Standard
	U	238	216.3	8.8	**0.0365**	0.003	7.7	ug/L	13	Standard
>	**Bi**	209	485551.6	1.6				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.8740**	30.950	173.2	mg/L	2	Standard
Mg	24	34632.9	0.6	**46.6189**	1.523	3.3	mg/L	35	Standard
K	39	138.3	25.6	**0.5602**	0.155	27.6	mg/L	25	Standard
Ca	43	65.0	13.3	**7.2572**	1.904	26.2	mg/L	38	Standard
Fe	54	279.3	17.0	**0.1243**	0.053	42.6	mg/L	126	Standard
Fe	57	271.7	11.8	**-0.0378**	0.151	397.7	mg/L	245	Standard
> **Sc-1**	45	25579.9	3.4				mg/L	25066	Standard
Cl	35	178666.6	0.8				ug/L	125857	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	80231.9	1.9				ug/L	1350	Standard
P	31	24055.7	0.9				ug/L	18393	Standard
S	34	3798.8	4.0				ug/L	3739	Standard
Sr	88	145.0	11.9				ug/L	78	Standard
C	12	176.7	22.9				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	130.0	23.1				mg/L	0	Standard
Dy	164	829.7	17.8				mg/L	2	Standard
Ho-1	165	563.3	4.6				mg/L	10	Standard
Er	166	563.3	12.6				mg/L	23	Standard
I	127	75514.5	3.5				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.027	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.317	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.843	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.504	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606072902
Sample Date/Time: Tuesday, June 21, 2016 15:44:46
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61000.9	2.3				ug/L	60176	Standard
	Be	9	48.3	31.6	**0.0571**	0.019	34.0	ug/L	5	Standard
	Al	27	1265197.3	0.4	**9.4968**	0.215	2.3	ug/L	832	Standard
	Sc	45	24843.7	5.1				ug/L	25066	Standard
	Ti	47	295.0	39.1	**1.2721**	0.610	48.0	ug/L	38	Standard
	V	51	1662.0	6.7	**0.0984**	0.013	12.9	ug/L	974	Standard
	Cr	52	9640.7	1.5	**0.5183**	0.014	2.7	ug/L	5792	Standard
	Cr	53	1788.4	7.9	**1.6929**	0.129	7.6	ug/L	347	Standard
	Mn	55	269286.4	1.8	**40.3553**	1.271	3.2	ug/L	1164	Standard
	Co	59	7695.6	2.0	**1.1688**	0.020	1.7	ug/L	303	Standard
	Ni	60	3736.8	1.2	**1.8110**	0.042	2.3	ug/L	291	Standard
	Cu	65	1102.4	3.8	**0.4960**	0.012	2.4	ug/L	173	Standard
	Zn	66	5766.8	0.8	**5.1234**	0.095	1.8	ug/L	130	Standard
>	**Ge**	72	510457.8	2.2				ug/L	491724	Standard
	As	75	81.7	14.6	**0.1091**	0.013	11.6	ug/L	-25	Standard
	Se	82	51.2	4.3	**0.3844**	0.013	3.3	ug/L	12	Standard
	Se-1	77	109.3	5.0	**0.8419**	0.100	11.9	ug/L	57	Standard
>	**Ga**	71	216.7	17.3				mg/L	148	Standard
	Rb	85	27894.0	1.5				ug/L	18	Standard
	Y	89	417086.1	2.1				ug/L	401845	Standard
>	**Rh**	103	31.7	24.1				ug/L	10	Standard
	Mo	98	60.3	14.2	**0.0209**	0.003	16.1	ug/L	12	Standard
	Ag	107	152.7	9.2	**0.0108**	0.003	25.1	ug/L	98	Standard
	Cd	111	73.5	21.7	**0.0349**	0.009	26.3	mg/L	11	Standard
	Cd	114	176.5	11.5	**0.0346**	0.004	11.6	ug/L	21	Standard
>	**In**	115	541515.1	1.4				ug/L	547487	Standard
	Sn	118	1061.7	1.2	**0.1327**	0.005	4.0	ug/L	450	Standard
	Sb	123	145.5	4.3	**0.0270**	0.002	7.3	ug/L	105	Standard
	Ba	135	64548.3	2.6	**35.5016**	1.269	3.6	ug/L	111	Standard
	Ce	140	11564.4	2.1				ug/L	107	Standard
>	**Tb**	159	870646.6	1.9				ug/L	890342	Standard
	Ho	165	225.0	10.2				ug/L	10	Standard
	Tl	203	276.7	4.4	**0.0339**	0.001	3.4	ug/L	19	Standard
	Tl	205	246.7	10.4	**0.0416**	0.004	8.7	ug/L	17	Standard
	Pb	206	518.0	0.8	**0.0540**	0.002	3.0	ug/L	247	Standard
	Pb	207	451.0	6.3	**0.0522**	0.006	10.7	ug/L	215	Standard
	Pb	208	1790.0	3.5	**0.0508**	0.006	11.7	ug/L	770	Standard
	U	238	117.7	5.0	**0.0192**	0.001	3.2	ug/L	13	Standard
>	**Bi**	209	492368.0	1.9				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	2613.6	7.0	**3.5946**	0.386	10.7	mg/L	35	Standard
K	39	313.3	2.4	**1.4668**	0.102	6.9	mg/L	25	Standard
Ca	43	40.0	12.5	**2.6700**	1.367	51.2	mg/L	38	Standard
Fe	54	172.6	19.4	**0.0297**	0.037	125.0	mg/L	126	Standard
Fe	57	250.0	16.4	**-0.0882**	0.218	247.4	mg/L	245	Standard
> **Sc-1**	45	24843.7	5.1				mg/L	25066	Standard
Cl	35	141007.2	1.2				ug/L	125857	Standard
Kr	83	3.7	68.6				ug/L	1	Standard
Br	81	8976.0	3.5				ug/L	1350	Standard
P	31	21415.1	1.0				ug/L	18393	Standard
S	34	3635.4	3.8				ug/L	3739	Standard
Sr	88	86.7	23.3				ug/L	78	Standard
C	12	93.3	55.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	321.7	9.0				mg/L	2	Standard
Ho-1	165	225.0	10.2				mg/L	10	Standard
Er	166	173.3	13.3				mg/L	23	Standard
I	127	27626.9	6.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.371	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.810	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.909
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.859
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606072903
Sample Date/Time: Tuesday, June 21, 2016 15:47:58
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65829.4	1.7				ug/L	60176	Standard
	Be	9	1091.7	7.9	**1.3819**	0.122	8.9	ug/L	5	Standard
	Al	27	9658460.6	2.5	**67.2033**	0.573	0.9	ug/L	832	Standard
	Sc	45	26962.3	1.0				ug/L	25066	Standard
	Ti	47	1161.4	44.0	**5.6242**	2.574	45.8	ug/L	38	Standard
	V	51	2955.0	3.3	**0.3108**	0.013	4.1	ug/L	974	Standard
	Cr	52	10847.2	2.6	**0.7108**	0.049	6.9	ug/L	5792	Standard
	Cr	53	1273.4	6.0	**1.0957**	0.073	6.6	ug/L	347	Standard
	Mn	55	2432059.6	0.8	**368.2427**	6.764	1.8	ug/L	1164	Standard
	Co	59	153183.5	0.7	**24.3375**	0.235	1.0	ug/L	303	Standard
	Ni	60	19503.2	0.5	**10.3155**	0.174	1.7	ug/L	291	Standard
	Cu	65	6676.5	1.4	**3.5201**	0.098	2.8	ug/L	173	Standard
	Zn	66	32319.1	1.0	**29.9680**	0.510	1.7	ug/L	130	Standard
>	**Ge**	72	507509.6	1.3				ug/L	491724	Standard
	As	75	65.2	90.0	**0.0946**	0.055	58.4	ug/L	-25	Standard
	Se	82	67.0	5.6	**0.5352**	0.041	7.6	ug/L	12	Standard
	Se-1	77	128.3	9.7	**1.1086**	0.151	13.6	ug/L	57	Standard
>	**Ga**	71	1310.1	5.3				mg/L	148	Standard
	Rb	85	17616.9	2.0				ug/L	18	Standard
	Y	89	727532.8	1.3				ug/L	401845	Standard
>	**Rh**	103	103.3	14.8				ug/L	10	Standard
	Mo	98	67.1	4.9	**0.0233**	0.001	5.8	ug/L	12	Standard
	Ag	107	109.7	4.3	**0.0031**	0.001	41.1	ug/L	98	Standard
	Cd	111	313.2	8.9	**0.1612**	0.018	11.3	mg/L	11	Standard
	Cd	114	738.1	10.6	**0.1561**	0.018	11.8	ug/L	21	Standard
>	**In**	115	550912.0	2.6				ug/L	547487	Standard
	Sn	118	630.0	11.0	**0.0468**	0.016	34.7	ug/L	450	Standard
	Sb	123	137.7	12.6	**0.0246**	0.003	13.1	ug/L	105	Standard
	Ba	135	39985.4	1.7	**21.5966**	0.536	2.5	ug/L	111	Standard
	Ce	140	1423873.1	0.8				ug/L	107	Standard
>	**Tb**	159	928141.2	1.7				ug/L	890342	Standard
	Ho	165	28324.8	1.1				ug/L	10	Standard
	Tl	203	290.7	5.4	**0.0344**	0.003	9.6	ug/L	19	Standard
	Tl	205	235.0	16.9	**0.0383**	0.006	14.9	ug/L	17	Standard
	Pb	206	5921.8	0.5	**1.1479**	0.039	3.4	ug/L	247	Standard
	Pb	207	4990.2	2.0	**1.0630**	0.048	4.5	ug/L	215	Standard
	Pb	208	19749.1	0.7	**1.1186**	0.030	2.7	ug/L	770	Standard
	U	238	2317.5	1.8	**0.3802**	0.005	1.4	ug/L	13	Standard
>	**Bi**	209	510317.8	3.2				ug/L	503143	Standard

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Na	23	5.0	100.0	**52.2757**	52.372	100.2	mg/L	2	Standard
Mg	24	2030.1	7.1	**2.5548**	0.200	7.8	mg/L	35	Standard
K	39	193.3	15.2	**0.7833**	0.132	16.9	mg/L	25	Standard
Ca	43	171.7	8.9	**26.1296**	2.684	10.3	mg/L	38	Standard
Fe	54	1645.5	6.5	**1.3153**	0.096	7.3	mg/L	126	Standard
Fe	57	753.4	12.5	**1.6728**	0.365	21.8	mg/L	245	Standard
> **Sc-1**	45	26962.3	1.0				mg/L	25066	Standard
Cl	35	255018.3	0.9				ug/L	125857	Standard
Kr	83	1.0	0.0				ug/L	1	Standard
Br	81	5220.9	5.0				ug/L	1350	Standard
P	31	21920.9	3.7				ug/L	18393	Standard
S	34	3950.5	6.9				ug/L	3739	Standard
Sr	88	301.7	3.8				ug/L	78	Standard
C	12	83.3	38.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	47352.9	1.1				mg/L	2	Standard
Ho-1	165	28324.8	1.1				mg/L	10	Standard
Er	166	25150.9	2.3				mg/L	23	Standard
I	127	224463.3	10.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.395	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.210	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.626
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.426
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606073001
Sample Date/Time: Tuesday, June 21, 2016 15:51:09
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73917.0	6.1				ug/L	60176	Standard
	Be	9	16.7	45.8	**0.0097**	0.008	79.3	ug/L	5	Standard
	Al	27	5652423.5	6.3	**35.0242**	0.471	1.3	ug/L	832	Standard
	Sc	45	24773.6	1.2				ug/L	25066	Standard
	Ti	47	116.3	10.9	**0.4405**	0.086	19.6	ug/L	38	Standard
	V	51	15193.9	3.1	**2.5748**	0.099	3.8	ug/L	974	Standard
	Cr	52	199468.5	0.9	**32.7681**	0.651	2.0	ug/L	5792	Standard
	Cr	53	29413.5	3.2	**38.2606**	2.147	5.6	ug/L	347	Standard
	Mn	55	16906.8	3.1	**2.6231**	0.046	1.8	ug/L	1164	Standard
	Co	59	8261.3	2.1	**1.4084**	0.013	0.9	ug/L	303	Standard
	Ni	60	7629.3	4.1	**4.3628**	0.068	1.6	ug/L	291	Standard
	Cu	65	2854.9	2.0	**1.6169**	0.031	1.9	ug/L	173	Standard
	Zn	66	2209.5	2.4	**2.0537**	0.064	3.1	ug/L	130	Standard
>	**Ge**	72	457885.1	2.6				ug/L	491724	Standard
	As	75	2538.0	5.5	**2.6341**	0.209	8.0	ug/L	-25	Standard
	Se	82	858.9	4.6	**8.8399**	0.642	7.3	ug/L	12	Standard
	Se-1	77	1191.0	2.5	**17.4647**	0.920	5.3	ug/L	57	Standard
>	**Ga**	71	1676.8	5.5				mg/L	148	Standard
	Rb	85	226016.7	0.7				ug/L	18	Standard
	Y	89	390113.6	0.9				ug/L	401845	Standard
>	**Rh**	103	3238.7	1.2				ug/L	10	Standard
	Mo	98	4439.9	1.2	**1.9618**	0.048	2.5	ug/L	12	Standard
	Ag	107	114.0	9.8	**0.0052**	0.002	36.0	ug/L	98	Standard
	Cd	111	49.0	20.1	**0.0230**	0.005	23.8	mg/L	11	Standard
	Cd	114	113.7	9.0	**0.0220**	0.002	11.3	ug/L	21	Standard
>	**In**	115	514604.2	1.3				ug/L	547487	Standard
	Sn	118	1230.1	8.0	**0.1780**	0.020	11.1	ug/L	450	Standard
	Sb	123	498.9	3.3	**0.1174**	0.004	3.7	ug/L	105	Standard
	Ba	135	1735936.7	1.5	**1005.9141**	2.820	0.3	ug/L	111	Standard
	Ce	140	845.0	14.5				ug/L	107	Standard
>	**Tb**	159	860331.0	2.6				ug/L	890342	Standard
	Ho	165	16.7	17.3				ug/L	10	Standard
	Tl	203	237.3	4.9	**0.0323**	0.002	6.7	ug/L	19	Standard
	Tl	205	226.7	26.3	**0.0425**	0.010	22.8	ug/L	17	Standard
	Pb	206	559.7	1.7	**0.0765**	0.002	3.2	ug/L	247	Standard
	Pb	207	477.3	6.9	**0.0710**	0.005	6.3	ug/L	215	Standard
	Pb	208	1797.7	2.6	**0.0642**	0.006	8.9	ug/L	770	Standard
	U	238	256.3	4.6	**0.0480**	0.003	7.3	ug/L	13	Standard
>	**Bi**	209	441187.4	3.3				ug/L	503143	Standard

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Na	23	6.7	114.6	**75.7212**	86.562	114.3	mg/L	2	Standard
Mg	24	90539.7	1.2	**125.8278**	2.144	1.7	mg/L	35	Standard
K	39	2236.8	7.2	**11.1766**	0.942	8.4	mg/L	25	Standard
Ca	43	748.4	12.6	**144.1070**	20.471	14.2	mg/L	38	Standard
Fe	54	142.0	15.6	**-0.0001**	0.022	16866.3	mg/L	126	Standard
Fe	57	1348.4	5.7	**4.2895**	0.312	7.3	mg/L	245	Standard
> **Sc-1**	45	24773.6	1.2				mg/L	25066	Standard
Cl	35	159146.8	0.8				ug/L	125857	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	209975.2	1.8				ug/L	1350	Standard
P	31	20949.5	2.8				ug/L	18393	Standard
S	34	4584.0	1.1				ug/L	3739	Standard
Sr	88	10782.2	5.2				ug/L	78	Standard
C	12	116.7	32.5				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	5.4	219.6				mg/L	2	Standard
Ho-1	165	16.7	17.3				mg/L	10	Standard
Er	166	26.7	43.3				mg/L	23	Standard
I	127	166779.4	5.0				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		122.835	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.118	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.994
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.686
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 15:54:22
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59968.5	1.3				ug/L	60176	Standard
	Be	9	36398.7	0.5	**50.8713**	0.403	0.8	ug/L	5	Standard
	Al	27	6548192.3	1.8	**50.0297**	1.523	3.0	ug/L	832	Standard
	Sc	45	25387.9	1.8				ug/L	25066	Standard
	Ti	47	20514.5	1.9	**104.3164**	2.213	2.1	ug/L	38	Standard
	V	51	309165.3	1.8	**51.0062**	0.680	1.3	ug/L	974	Standard
	Cr	52	340251.9	0.9	**51.7368**	0.210	0.4	ug/L	5792	Standard
	Cr	53	43082.8	0.7	**51.4506**	0.301	0.6	ug/L	347	Standard
	Mn	55	327886.5	1.7	**50.2320**	0.671	1.3	ug/L	1164	Standard
	Co	59	311341.2	1.1	**50.2912**	0.234	0.5	ug/L	303	Standard
	Ni	60	95005.0	1.3	**51.7832**	0.285	0.6	ug/L	291	Standard
	Cu	65	94085.6	1.9	**51.6732**	0.769	1.5	ug/L	173	Standard
	Zn	66	54162.3	1.8	**51.1699**	0.730	1.4	ug/L	130	Standard
>	Ge	72	499656.0	0.8				ug/L	491724	Standard
	As	75	53793.1	1.5	**50.4679**	0.579	1.1	ug/L	-25	Standard
	Se	82	5297.2	1.4	**50.3360**	1.022	2.0	ug/L	12	Standard
	Se-1	77	3753.1	2.9	**51.6078**	1.108	2.1	ug/L	57	Standard
>	Ga	71	116.7	31.0				mg/L	148	Standard
	Rb	85	846.7	4.4				ug/L	18	Standard
	Y	89	409237.0	1.3				ug/L	401845	Standard
>	Rh	103	43.3	24.0				ug/L	10	Standard
	Mo	98	236019.2	1.3	**98.9883**	1.916	1.9	ug/L	12	Standard
	Ag	107	301027.0	0.2	**51.4292**	0.425	0.8	ug/L	98	Standard
	Cd	111	95327.7	1.4	**51.1098**	1.090	2.1	mg/L	11	Standard
	Cd	114	232932.5	0.7	**51.3315**	0.699	1.4	ug/L	21	Standard
>	In	115	543279.3	0.7				ug/L	547487	Standard
	Sn	118	259515.7	1.7	**50.2935**	1.187	2.4	ug/L	450	Standard
	Sb	123	214686.9	1.2	**50.9350**	0.980	1.9	ug/L	105	Standard
	Ba	135	92608.2	0.1	**50.7811**	0.422	0.8	ug/L	111	Standard
	Ce	140	138.3	43.1				ug/L	107	Standard
>	Tb	159	879645.1	1.9				ug/L	890342	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	374242.2	0.3	**50.5043**	0.815	1.6	ug/L	19	Standard
	Tl	205	312151.2	0.8	**51.3434**	0.975	1.9	ug/L	17	Standard
	Pb	206	237883.3	0.7	**49.8803**	1.009	2.0	ug/L	247	Standard
	Pb	207	215064.7	1.2	**49.6101**	1.233	2.5	ug/L	215	Standard
	Pb	208	825294.1	0.6	**50.8408**	0.434	0.9	ug/L	770	Standard
	U	238	298401.1	0.3	**50.7212**	0.598	1.2	ug/L	13	Standard
>	Bi	209	493553.5	1.4				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3700.5	3.6	**4.9819**	0.214	4.3	mg/L	35	Standard
K	39	1016.7	7.6	**4.8957**	0.446	9.1	mg/L	25	Standard
Ca	43	56.7	13.5	**5.6936**	1.352	23.7	mg/L	38	Standard
Fe	54	5409.1	1.3	**4.9332**	0.148	3.0	mg/L	126	Standard
Fe	57	1620.1	7.8	**5.2229**	0.583	11.2	mg/L	245	Standard
> **Sc-1**	45	25387.9	1.8				mg/L	25066	Standard
Cl	35	151052.7	1.4				ug/L	125857	Standard
Kr	83	2.3	137.8				ug/L	1	Standard
Br	81	3390.4	24.1				ug/L	1350	Standard
P	31	21366.7	3.1				ug/L	18393	Standard
S	34	5074.2	4.4				ug/L	3739	Standard
Sr	88	91.7	22.0				ug/L	78	Standard
C	12	80.0	33.1				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.2	96.3				mg/L	2	Standard
Ho-1	165	8.3	34.6				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	8529.2	32.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	101.743		
Al	27	100.059		
Sc	45			
Ti	47	104.316		
V	51	102.012		
Cr	52	103.474		
Cr	53			
Mn	55	100.464		
Co	59	100.582		
Ni	60	103.566		
Cu	65	103.346		
Zn	66	102.340		
> Ge	72		101.613	
As	75	100.936		
Se	82	100.672		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	98.988		
Ag	107	102.858		
Cd	111	102.220		
Cd	114			
In	115			99.232
Sn	118	100.587		
Sb	123	101.870		
Ba	135	101.562		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.009		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.682		
U	238	101.442		
Bi	209			98.094
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 21, 2016 15:56:39
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 15:57:34
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59362.8	1.8				ug/L	60176	Standard
	Be	9	21.7	93.3	**0.0213**	0.028	130.6	ug/L	5	Standard
	Al	27	10005.1	126.3	**0.0677**	0.095	140.7	ug/L	832	Standard
	Sc	45	25473.1	2.6				ug/L	25066	Standard
	Ti	47	37.3	36.4	**-0.0109**	0.069	630.7	ug/L	38	Standard
	V	51	1039.9	1.7	**0.0080**	0.005	68.5	ug/L	974	Standard
	Cr	52	6459.7	10.1	**0.0942**	0.091	96.2	ug/L	5792	Standard
	Cr	53	603.3	18.3	**0.3396**	0.127	37.3	ug/L	347	Standard
	Mn	55	2162.5	62.6	**0.1280**	0.210	164.2	ug/L	1164	Standard
	Co	59	333.7	16.0	**0.0066**	0.008	124.3	ug/L	303	Standard
	Ni	60	322.7	48.2	**-0.0082**	0.085	1042.9	ug/L	291	Standard
	Cu	65	161.7	29.8	**-0.0056**	0.026	466.7	ug/L	173	Standard
	Zn	66	184.7	16.2	**-0.0537**	0.027	49.9	ug/L	130	Standard
>	**Ge**	72	481495.2	1.4				ug/L	491724	Standard
	As	75	-13.3	88.6	**0.0210**	0.012	54.8	ug/L	-25	Standard
	Se	82	22.2	8.5	**0.1261**	0.021	16.7	ug/L	12	Standard
	Se-1	77	62.0	2.8	**0.2463**	0.018	7.5	ug/L	57	Standard
>	**Ga**	71	106.7	9.8				mg/L	148	Standard
	Rb	85	63.3	43.5				ug/L	18	Standard
	Y	89	417621.1	1.2				ug/L	401845	Standard
>	**Rh**	103	40.0	45.1				ug/L	10	Standard
	Mo	98	240.6	46.2	**0.0925**	0.045	48.3	ug/L	12	Standard
	Ag	107	129.0	44.6	**0.0058**	0.009	162.4	ug/L	98	Standard
	Cd	111	26.5	116.9	**0.0090**	0.016	178.2	mg/L	11	Standard
	Cd	114	62.7	80.7	**0.0088**	0.011	121.2	ug/L	21	Standard
>	**In**	115	564731.0	1.2				ug/L	547487	Standard
	Sn	118	768.4	3.1	**0.0694**	0.006	8.4	ug/L	450	Standard
	Sb	123	399.1	17.4	**0.0835**	0.016	19.6	ug/L	105	Standard
	Ba	135	378.0	72.8	**0.1438**	0.145	100.9	ug/L	111	Standard
	Ce	140	128.3	104.6				ug/L	107	Standard
>	**Tb**	159	890002.5	2.1				ug/L	890342	Standard
	Ho	165	5.0	100.0				ug/L	10	Standard
	Tl	203	105.7	64.2	**0.0104**	0.008	81.6	ug/L	19	Standard
	Tl	205	133.3	103.5	**0.0222**	0.021	96.6	ug/L	17	Standard
	Pb	206	266.0	23.7	**0.0002**	0.011	6809.3	ug/L	247	Standard
	Pb	207	260.7	18.8	**0.0074**	0.009	126.1	ug/L	215	Standard
	Pb	208	1119.4	33.0	**0.0081**	0.020	245.9	ug/L	770	Standard
	U	238	112.3	126.2	**0.0176**	0.023	129.9	ug/L	13	Standard
>	**Bi**	209	497488.5	3.7				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	95.0	109.9	**0.0875**	0.137	156.5	mg/L	35	Standard
K	39	31.7	18.2	**0.0434**	0.031	72.1	mg/L	25	Standard
Ca	43	43.3	26.6	**3.1138**	2.393	76.8	mg/L	38	Standard
Fe	54	134.3	11.0	**-0.0112**	0.012	107.9	mg/L	126	Standard
Fe	57	253.3	12.5	**-0.1072**	0.121	112.7	mg/L	245	Standard
> **Sc-1**	45	25473.1	2.6				mg/L	25066	Standard
Cl	35	154720.7	1.0				ug/L	125857	Standard
Kr	83	2.7	78.1				ug/L	1	Standard
Br	81	2063.5	2.4				ug/L	1350	Standard
P	31	22254.7	2.6				ug/L	18393	Standard
S	34	4942.5	2.2				ug/L	3739	Standard
Sr	88	83.3	19.3				ug/L	78	Standard
C	12	40.0	25.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.5	88.7				mg/L	2	Standard
Ho-1	165	5.0	100.0				mg/L	10	Standard
Er	166	10.0					mg/L	23	Standard
I	127	3717.1	8.4				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.920	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.150	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.876	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606073002
Sample Date/Time: Tuesday, June 21, 2016 16:00:47
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	69308.3	3.7				ug/L	60176	Standard
	Be	9	20.0	50.0	**0.0149**	0.011	75.7	ug/L	5	Standard
	Al	27	6126361.3	1.2	**40.5279**	1.700	4.2	ug/L	832	Standard
	Sc	45	24543.2	3.9				ug/L	25066	Standard
	Ti	47	125.3	13.2	**0.4695**	0.084	17.8	ug/L	38	Standard
	V	51	16629.0	4.3	**2.7512**	0.149	5.4	ug/L	974	Standard
	Cr	52	210588.5	2.1	**33.6543**	0.594	1.8	ug/L	5792	Standard
	Cr	53	31539.5	3.2	**39.8713**	0.997	2.5	ug/L	347	Standard
	Mn	55	23748.6	0.8	**3.6623**	0.062	1.7	ug/L	1164	Standard
	Co	59	8388.0	2.5	**1.3899**	0.039	2.8	ug/L	303	Standard
	Ni	60	8179.5	3.3	**4.5574**	0.124	2.7	ug/L	291	Standard
	Cu	65	2815.6	0.9	**1.5465**	0.029	1.9	ug/L	173	Standard
	Zn	66	2262.5	3.2	**2.0433**	0.069	3.4	ug/L	130	Standard
>	Ge	72	470862.5	0.8				ug/L	491724	Standard
	As	75	2905.3	0.7	**2.9245**	0.023	0.8	ug/L	-25	Standard
	Se	82	925.8	0.9	**9.2587**	0.060	0.6	ug/L	12	Standard
	Se-1	77	1310.7	2.5	**18.7167**	0.330	1.8	ug/L	57	Standard
>	Ga	71	1603.4	3.2				mg/L	148	Standard
	Rb	85	230305.6	1.1				ug/L	18	Standard
	Y	89	379545.1	0.6				ug/L	401845	Standard
>	Rh	103	3307.0	4.1				ug/L	10	Standard
	Mo	98	4638.8	1.0	**2.1857**	0.018	0.8	ug/L	12	Standard
	Ag	107	129.7	17.9	**0.0096**	0.005	47.2	ug/L	98	Standard
	Cd	111	47.1	19.5	**0.0237**	0.006	23.4	mg/L	11	Standard
	Cd	114	88.1	29.6	**0.0174**	0.007	37.3	ug/L	21	Standard
>	In	115	482582.3	0.3				ug/L	547487	Standard
	Sn	118	1188.4	1.3	**0.1856**	0.004	2.1	ug/L	450	Standard
	Sb	123	594.7	6.6	**0.1512**	0.010	6.6	ug/L	105	Standard
	Ba	135	1814565.7	1.4	**1121.2802**	14.912	1.3	ug/L	111	Standard
	Ce	140	778.4	4.7				ug/L	107	Standard
>	Tb	159	825227.5	1.6				ug/L	890342	Standard
	Ho	165	23.3	101.3				ug/L	10	Standard
	Tl	203	227.3	5.1	**0.0315**	0.002	7.2	ug/L	19	Standard
	Tl	205	193.3	12.2	**0.0374**	0.005	13.4	ug/L	17	Standard
	Pb	206	563.7	9.9	**0.0803**	0.015	18.7	ug/L	247	Standard
	Pb	207	484.3	4.2	**0.0757**	0.007	9.4	ug/L	215	Standard
	Pb	208	1753.4	1.0	**0.0637**	0.003	4.2	ug/L	770	Standard
	U	238	254.3	2.6	**0.0486**	0.002	4.1	ug/L	13	Standard
>	Bi	209	431889.8	1.5				ug/L	503143	Standard

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Na	23	15.0	66.7	**174.2413**	120.728	69.3	mg/L	2	Standard
Mg	24	93727.4	0.9	**131.5829**	4.471	3.4	mg/L	35	Standard
K	39	2483.5	4.9	**12.5508**	0.926	7.4	mg/L	25	Standard
Ca	43	885.0	14.1	**173.5278**	30.084	17.3	mg/L	38	Standard
Fe	54	139.9	31.8	**0.0000**	0.04(183799.3		mg/L	126	Standard
Fe	57	1356.7	6.6	**4.3695**	0.153	3.5	mg/L	245	Standard
> **Sc-1**	45	24543.2	3.9				mg/L	25066	Standard
Cl	35	157218.9	1.1				ug/L	125857	Standard
Kr	83	3.7	41.7				ug/L	1	Standard
Br	81	220692.4	1.0				ug/L	1350	Standard
P	31	22506.7	0.5				ug/L	18393	Standard
S	34	4602.4	5.2				ug/L	3739	Standard
Sr	88	10935.6	1.0				ug/L	78	Standard
C	12	216.7	20.8				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	12.9	48.5				mg/L	2	Standard
Ho-1	165	23.3	101.3				mg/L	10	Standard
Er	166	10.0	173.2				mg/L	23	Standard
I	127	172463.4	8.0				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.176	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.758	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		88.145
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		85.838
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606073003
Sample Date/Time: Tuesday, June 21, 2016 16:03:58
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64465.7	7.2				ug/L	60176	Standard
	Be	9	48.3	48.9	**0.0549**	0.035	63.6	ug/L	5	Standard
	Al	27	114115919.1	1.6	**813.1976**	46.881	5.8	ug/L	832	Standard
	Sc	45	25436.3	2.0				ug/L	25066	Standard
	Ti	47	345.7	4.6	**1.8234**	0.101	5.6	ug/L	38	Standard
	V	51	1068.5	35.2	**0.0334**	0.072	216.4	ug/L	974	Standard
	Cr	52	14799.2	0.9	**1.6994**	0.023	1.4	ug/L	5792	Standard
	Cr	53	29695.8	4.6	**40.8112**	1.956	4.8	ug/L	347	Standard
	Mn	55	1183452.9	1.0	**209.7588**	2.233	1.1	ug/L	1164	Standard
	Co	59	14597.4	0.2	**2.6724**	0.007	0.3	ug/L	303	Standard
	Ni	60	10363.9	2.1	**6.3478**	0.146	2.3	ug/L	291	Standard
	Cu	65	1987.5	3.5	**1.1635**	0.045	3.9	ug/L	173	Standard
	Zn	66	3577.8	1.3	**3.6805**	0.061	1.7	ug/L	130	Standard
>	**Ge**	72	433293.9	0.3				ug/L	491724	Standard
	As	75	5927.9	2.2	**6.4431**	0.152	2.4	ug/L	-25	Standard
	Se	82	1611.7	1.7	**17.5991**	0.335	1.9	ug/L	12	Standard
	Se-1	77	5107.5	5.2	**81.3703**	4.339	5.3	ug/L	57	Standard
>	**Ga**	71	338.3	13.7				mg/L	148	Standard
	Rb	85	17830.5	1.3				ug/L	18	Standard
	Y	89	379868.8	3.7				ug/L	401845	Standard
>	**Rh**	103	1205.0	3.7				ug/L	10	Standard
	Mo	98	436.0	6.7	**0.2020**	0.013	6.6	ug/L	12	Standard
	Ag	107	96.0	2.8	**0.0031**	0.001	17.0	ug/L	98	Standard
	Cd	111	101.5	4.0	**0.0568**	0.002	3.9	mg/L	11	Standard
	Cd	114	243.8	21.8	**0.0563**	0.013	23.9	ug/L	21	Standard
>	**In**	115	481162.5	1.1				ug/L	547487	Standard
	Sn	118	790.0	15.5	**0.0989**	0.025	25.1	ug/L	450	Standard
	Sb	123	455.4	4.8	**0.1144**	0.005	4.7	ug/L	105	Standard
	Ba	135	6828454.6	0.9	**4232.2396**	20.556	0.5	ug/L	111	Standard
	Ce	140	12164.9	2.3				ug/L	107	Standard
>	**Tb**	159	829521.0	0.4				ug/L	890342	Standard
	Ho	165	176.7	18.8				ug/L	10	Standard
	Tl	203	129.7	8.2	**0.0170**	0.002	9.5	ug/L	19	Standard
	Tl	205	95.0	19.0	**0.0193**	0.003	17.6	ug/L	17	Standard
	Pb	206	521.0	9.8	**0.0734**	0.012	16.5	ug/L	247	Standard
	Pb	207	417.0	5.1	**0.0609**	0.006	10.2	ug/L	215	Standard
	Pb	208	1676.4	1.8	**0.0615**	0.002	3.3	ug/L	770	Standard
	U	238	9099.4	1.6	**1.8151**	0.034	1.9	ug/L	13	Standard
>	**Bi**	209	420359.8	0.4				ug/L	503143	Standard

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Na	23	15.0	33.3	**164.4381**	51.833	31.5	mg/L	2	Standard
Mg	24	263283.1	1.4	**356.5075**	9.102	2.6	mg/L	35	Standard
K	39	456.7	16.0	**2.1312**	0.355	16.7	mg/L	25	Standard
Ca	43	700.0	3.7	**130.7182**	6.161	4.7	mg/L	38	Standard
Fe	54	3184.3	4.9	**2.8411**	0.129	4.5	mg/L	126	Standard
Fe	57	2041.8	5.4	**6.8401**	0.287	4.2	mg/L	245	Standard
> **Sc-1**	45	25436.3	2.0				mg/L	25066	Standard
Cl	35	151004.1	1.2				ug/L	125857	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	445209.8	0.6				ug/L	1350	Standard
P	31	26399.6	1.7				ug/L	18393	Standard
S	34	4885.8	2.7				ug/L	3739	Standard
Sr	88	3080.3	7.6				ug/L	78	Standard
C	12	203.3	19.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	194.4	40.3				mg/L	2	Standard
Ho-1	165	176.7	18.8				mg/L	10	Standard
Er	166	186.7	8.2				mg/L	23	Standard
I	127	130585.3	6.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.129	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		88.117	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	87.886
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	83.547
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606096101
Sample Date/Time: Tuesday, June 21, 2016 16:07:10
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51179.6	1.3				ug/L	60176	Standard
	Be	9	6.7	43.3	**0.0019**	0.005	248.3	ug/L	5	Standard
	Al	27	50980.9	25.3	**0.4489**	0.121	26.9	ug/L	832	Standard
	Sc	45	25962.2	3.5				ug/L	25066	Standard
	Ti	47	119.0	4.2	**0.4268**	0.032	7.4	ug/L	38	Standard
	V	51	1327.1	7.8	**0.0590**	0.015	25.5	ug/L	974	Standard
	Cr	52	10085.4	1.2	**0.6910**	0.038	5.5	ug/L	5792	Standard
	Cr	53	2786.9	12.0	**3.1009**	0.469	15.1	ug/L	347	Standard
	Mn	55	4068.2	4.6	**0.4397**	0.037	8.5	ug/L	1164	Standard
	Co	59	403.7	6.2	**0.0189**	0.004	21.3	ug/L	303	Standard
	Ni	60	539.0	3.3	**0.1179**	0.012	10.2	ug/L	291	Standard
	Cu	65	14898.0	0.8	**8.4790**	0.067	0.8	ug/L	173	Standard
	Zn	66	3517.4	1.5	**3.2574**	0.058	1.8	ug/L	130	Standard
>	**Ge**	72	477620.4	1.4				ug/L	491724	Standard
	As	75	1519.4	3.8	**1.5239**	0.036	2.3	ug/L	-25	Standard
	Se	82	49.8	7.3	**0.4026**	0.036	8.9	ug/L	12	Standard
	Se-1	77	174.7	19.2	**1.8996**	0.522	27.5	ug/L	57	Standard
>	**Ga**	71	81.7	12.7				mg/L	148	Standard
	Rb	85	1321.7	1.4				ug/L	18	Standard
	Y	89	409645.6	0.4				ug/L	401845	Standard
>	**Rh**	103	80.0	6.3				ug/L	10	Standard
	Mo	98	714.4	3.4	**0.3043**	0.009	3.0	ug/L	12	Standard
	Ag	107	102.7	8.3	**0.0027**	0.002	56.4	ug/L	98	Standard
	Cd	111	14.0	51.5	**0.0031**	0.004	131.5	mg/L	11	Standard
	Cd	114	24.8	60.7	**0.0012**	0.003	284.8	ug/L	21	Standard
>	**In**	115	527134.4	0.6				ug/L	547487	Standard
	Sn	118	2366.9	4.7	**0.3994**	0.023	5.8	ug/L	450	Standard
	Sb	123	152.2	11.5	**0.0296**	0.004	14.7	ug/L	105	Standard
	Ba	135	3191.0	19.6	**1.7498**	0.356	20.3	ug/L	111	Standard
	Ce	140	173.3	23.1				ug/L	107	Standard
>	**Tb**	159	840402.3	0.7				ug/L	890342	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	123.0	17.0	**0.0144**	0.003	21.3	ug/L	19	Standard
	Tl	205	116.7	31.0	**0.0217**	0.006	29.6	ug/L	17	Standard
	Pb	206	3120.0	3.9	**0.6516**	0.026	4.0	ug/L	247	Standard
	Pb	207	2680.2	1.7	**0.6156**	0.006	0.9	ug/L	215	Standard
	Pb	208	10994.6	2.0	**0.6718**	0.014	2.1	ug/L	770	Standard
	U	238	72.3	2.9	**0.0124**	0.000	2.0	ug/L	13	Standard
>	**Bi**	209	457373.4	1.0				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	35125.7	1.1	**46.5846**	1.473	3.2	mg/L	35	Standard
K	39	51.7	5.6	**0.1362**	0.007	5.1	mg/L	25	Standard
Ca	43	31.7	39.7	**0.6865**	2.370	345.2	mg/L	38	Standard
Fe	54	162.3	12.6	**0.0125**	0.021	169.6	mg/L	126	Standard
Fe	57	268.3	4.3	**-0.0679**	0.055	81.1	mg/L	245	Standard
> **Sc-1**	45	25962.2	3.5				mg/L	25066	Standard
Cl	35	155782.8	0.6				ug/L	125857	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	7928.7	7.4				ug/L	1350	Standard
P	31	21842.4	3.3				ug/L	18393	Standard
S	34	4624.0	1.7				ug/L	3739	Standard
Sr	88	61.7	4.7				ug/L	78	Standard
C	12	123.3	54.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	22.5	69.8				mg/L	2	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	16.7	124.9				mg/L	23	Standard
I	127	273253.9	9.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		85.050	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.132	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.283
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.903
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606096102
Sample Date/Time: Tuesday, June 21, 2016 16:10:21
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55466.4	1.7				ug/L	60176	Standard
	Be	9	10.0	50.0	**0.0061**	0.008	123.3	ug/L	5	Standard
	Al	27	3404100.9	2.1	**28.1074**	0.199	0.7	ug/L	832	Standard
	Sc	45	25237.7	1.7				ug/L	25066	Standard
	Ti	47	137.7	20.3	**0.5030**	0.133	26.4	ug/L	38	Standard
	V	51	1824.3	3.0	**0.1361**	0.015	10.9	ug/L	974	Standard
	Cr	52	9639.7	1.2	**0.5728**	0.021	3.6	ug/L	5792	Standard
	Cr	53	2536.9	7.6	**2.6926**	0.311	11.6	ug/L	347	Standard
	Mn	55	410336.5	3.0	**63.9418**	3.504	5.5	ug/L	1164	Standard
	Co	59	771.7	2.6	**0.0774**	0.003	4.5	ug/L	303	Standard
	Ni	60	1278.1	2.9	**0.5199**	0.037	7.2	ug/L	291	Standard
	Cu	65	956.4	1.4	**0.4368**	0.016	3.7	ug/L	173	Standard
	Zn	66	2255.5	3.4	**1.9395**	0.107	5.5	ug/L	130	Standard
>	**Ge**	72	492109.1	2.4				ug/L	491724	Standard
	As	75	628.2	9.2	**0.6327**	0.065	10.2	ug/L	-25	Standard
	Se	82	84.5	5.3	**0.7234**	0.031	4.3	ug/L	12	Standard
	Se-1	77	165.7	4.1	**1.6947**	0.142	8.4	ug/L	57	Standard
>	**Ga**	71	128.3	21.5				mg/L	148	Standard
	Rb	85	1845.1	8.3				ug/L	18	Standard
	Y	89	407649.4	2.2				ug/L	401845	Standard
>	**Rh**	103	66.7	17.3				ug/L	10	Standard
	Mo	98	795.9	1.4	**0.3389**	0.011	3.3	ug/L	12	Standard
	Ag	107	240.3	3.9	**0.0269**	0.002	9.1	ug/L	98	Standard
	Cd	111	25.8	4.4	**0.0095**	0.000	3.6	mg/L	11	Standard
	Cd	114	76.3	38.0	**0.0129**	0.007	53.5	ug/L	21	Standard
>	**In**	115	528415.2	2.1				ug/L	547487	Standard
	Sn	118	820.0	7.2	**0.0898**	0.015	17.0	ug/L	450	Standard
	Sb	123	374.4	4.7	**0.0837**	0.002	2.9	ug/L	105	Standard
	Ba	135	25131.8	1.1	**14.1323**	0.352	2.5	ug/L	111	Standard
	Ce	140	776.7	26.8				ug/L	107	Standard
>	**Tb**	159	852950.8	1.0				ug/L	890342	Standard
	Ho	165	40.0	12.5				ug/L	10	Standard
	Tl	203	322.3	8.3	**0.0415**	0.004	9.0	ug/L	19	Standard
	Tl	205	273.3	11.9	**0.0475**	0.005	11.3	ug/L	17	Standard
	Pb	206	550.0	3.4	**0.0646**	0.004	5.5	ug/L	247	Standard
	Pb	207	494.7	5.4	**0.0662**	0.007	10.5	ug/L	215	Standard
	Pb	208	1825.0	0.9	**0.0567**	0.001	1.9	ug/L	770	Standard
	U	238	550.3	3.0	**0.0961**	0.003	3.3	ug/L	13	Standard
>	**Bi**	209	476377.1	0.5				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	5382.6	8.6	**7.3029**	0.563	7.7	mg/L	35	Standard
K	39	113.3	10.2	**0.4482**	0.048	10.8	mg/L	25	Standard
Ca	43	105.0	23.8	**15.1842**	4.585	30.2	mg/L	38	Standard
Fe	54	182.7	18.3	**0.0355**	0.030	84.2	mg/L	126	Standard
Fe	57	376.7	12.3	**0.3841**	0.168	43.8	mg/L	245	Standard
> **Sc-1**	45	25237.7	1.7				mg/L	25066	Standard
Cl	35	165485.5	0.6				ug/L	125857	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	15875.0	3.1				ug/L	1350	Standard
P	31	18915.1	1.7				ug/L	18393	Standard
S	34	4484.0	2.4				ug/L	3739	Standard
Sr	88	145.0	6.0				ug/L	78	Standard
C	12	53.3	39.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	18.4	111.4				mg/L	2	Standard
Ho-1	165	40.0	12.5				mg/L	10	Standard
Er	166	33.3	75.5				mg/L	23	Standard
I	127	33351.8	7.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.174	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.078	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.517
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.680
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606099501
Sample Date/Time: Tuesday, June 21, 2016 16:13:33
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	168635.9	4.1				ug/L	60176	Standard
	Be	9	6.7	114.6	**-0.0058**	0.004	64.0	ug/L	5	Standard
	Al	27	18474058.8	4.7	**50.2007**	2.075	4.1	ug/L	832	Standard
	Sc	45	25611.7	6.8				ug/L	25066	Standard
	Ti	47	96.0	15.3	**0.3247**	0.061	18.9	ug/L	38	Standard
	V	51	329.6	160.1	**-0.1086**	0.096	88.6	ug/L	974	Standard
	Cr	52	8533.4	2.1	**0.5000**	0.036	7.3	ug/L	5792	Standard
	Cr	53	18279.4	4.6	**23.6005**	0.090	0.4	ug/L	347	Standard
	Mn	55	795230.1	6.4	**133.2539**	3.844	2.9	ug/L	1164	Standard
	Co	59	1757.4	10.4	**0.2603**	0.020	7.8	ug/L	303	Standard
	Ni	60	5918.8	6.2	**3.3415**	0.070	2.1	ug/L	291	Standard
	Cu	65	974.0	13.3	**0.4862**	0.060	12.3	ug/L	173	Standard
	Zn	66	25732.5	3.6	**26.4255**	0.290	1.1	ug/L	130	Standard
>	**Ge**	72	457809.6	4.2				ug/L	491724	Standard
	As	75	24304.8	12.7	**24.8619**	2.381	9.6	ug/L	-25	Standard
	Se	82	10353.3	13.1	**107.2820**	10.769	10.0	ug/L	12	Standard
	Se-1	77	3338.4	7.4	**50.0689**	2.631	5.3	ug/L	57	Standard
>	**Ga**	71	190.0	18.2				mg/L	148	Standard
	Rb	85	67272.7	5.9				ug/L	18	Standard
	Y	89	392267.7	7.8				ug/L	401845	Standard
>	**Rh**	103	6212.9	7.3				ug/L	10	Standard
	Mo	98	66.8	16.5	**0.0261**	0.003	10.8	ug/L	12	Standard
	Ag	107	141.7	8.0	**0.0112**	0.002	19.1	ug/L	98	Standard
	Cd	111	25.2	33.7	**0.0099**	0.004	38.5	mg/L	11	Standard
	Cd	114	42.8	22.6	**0.0058**	0.002	26.8	ug/L	21	Standard
>	**In**	115	495596.9	7.2				ug/L	547487	Standard
	Sn	118	453.3	8.9	**0.0231**	0.015	65.7	ug/L	450	Standard
	Sb	123	307.9	14.7	**0.0722**	0.006	8.8	ug/L	105	Standard
	Ba	135	1737649.7	4.8	**1046.7670**	27.756	2.7	ug/L	111	Standard
	Ce	140	60.0	22.0				ug/L	107	Standard
>	**Tb**	159	833968.6	4.3				ug/L	890342	Standard
	Ho	165	16.7	34.6				ug/L	10	Standard
	Tl	203	93.0	16.9	**0.0113**	0.003	22.9	ug/L	19	Standard
	Tl	205	90.0	16.7	**0.0185**	0.003	15.2	ug/L	17	Standard
	Pb	206	345.7	4.5	**0.0311**	0.007	21.6	ug/L	247	Standard
	Pb	207	301.0	3.7	**0.0302**	0.000	0.9	ug/L	215	Standard
	Pb	208	1072.7	2.8	**0.0184**	0.001	6.1	ug/L	770	Standard
	U	238	4.3	35.3	**0.0001**	0.000	664.3	ug/L	13	Standard
>	**Bi**	209	416771.5	4.0				ug/L	503143	Standard

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Na	23	8.3	91.7	**92.7162**	88.289	95.2	mg/L	2	Standard
Mg	24	248689.5	5.2	**334.6353**	8.738	2.6	mg/L	35	Standard
K	39	770.0	3.9	**3.6624**	0.402	11.0	mg/L	25	Standard
Ca	43	676.7	8.2	**125.1812**	3.636	2.9	mg/L	38	Standard
Fe	54	913.9	19.2	**0.7080**	0.107	15.2	mg/L	126	Standard
Fe	57	1341.7	7.5	**4.0874**	0.184	4.5	mg/L	245	Standard
> **Sc-1**	45	25611.7	6.8				mg/L	25066	Standard
Cl	35	163994.5	4.3				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	2535152.6	9.1				ug/L	1350	Standard
P	31	21693.9	7.1				ug/L	18393	Standard
S	34	5349.3	7.3				ug/L	3739	Standard
Sr	88	17340.0	7.2				ug/L	78	Standard
C	12	46.7	24.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.7	100.4				mg/L	2	Standard
Ho-1	165	16.7	34.6				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	23	Standard
I	127	915873.2	10.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		280.238	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.103	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.522
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		82.834
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Se 82 Upper, S, EEE	Se	82	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606099502
Sample Date/Time: Tuesday, June 21, 2016 16:16:44
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	161934.6	2.9				ug/L	60176	Standard
	Be	9	5.0	0.0	**-0.0064**	0.000	1.1	ug/L	5	Standard
	Al	27	18034095.9	1.2	**51.0410**	1.601	3.1	ug/L	832	Standard
	Sc	45	25640.0	0.6				ug/L	25066	Standard
	Ti	47	101.0	11.2	**0.3353**	0.057	17.0	ug/L	38	Standard
	V	51	557.0	72.8	**-0.0732**	0.071	97.4	ug/L	974	Standard
	Cr	52	8384.0	1.2	**0.4274**	0.017	4.0	ug/L	5792	Standard
	Cr	53	17313.2	4.7	**21.5821**	0.836	3.9	ug/L	347	Standard
	Mn	55	803112.8	0.5	**130.2269**	0.853	0.7	ug/L	1164	Standard
	Co	59	1799.1	3.0	**0.2578**	0.012	4.7	ug/L	303	Standard
	Ni	60	5982.8	1.8	**3.2648**	0.077	2.3	ug/L	291	Standard
	Cu	65	1150.7	3.3	**0.5706**	0.016	2.9	ug/L	173	Standard
	Zn	66	24866.4	0.7	**24.6790**	0.202	0.8	ug/L	130	Standard
>	**Ge**	72	473336.7	1.0				ug/L	491724	Standard
	As	75	25587.3	1.8	**25.3566**	0.273	1.1	ug/L	-25	Standard
	Se	82	10890.0	1.7	**109.3307**	1.159	1.1	ug/L	12	Standard
	Se-1	77	3343.0	3.9	**48.4872**	1.708	3.5	ug/L	57	Standard
>	**Ga**	71	181.7	12.7				mg/L	148	Standard
	Rb	85	66679.8	2.2				ug/L	18	Standard
	Y	89	414678.4	1.0				ug/L	401845	Standard
>	**Rh**	103	6289.6	5.0				ug/L	10	Standard
	Mo	98	37.1	14.9	**0.0122**	0.003	21.4	ug/L	12	Standard
	Ag	107	130.3	5.8	**0.0083**	0.002	18.8	ug/L	98	Standard
	Cd	111	31.2	14.4	**0.0131**	0.003	20.3	mg/L	11	Standard
	Cd	114	39.9	47.6	**0.0049**	0.004	88.5	ug/L	21	Standard
>	**In**	115	510227.1	2.2				ug/L	547487	Standard
	Sn	118	625.0	2.9	**0.0551**	0.005	8.2	ug/L	450	Standard
	Sb	123	301.2	2.3	**0.0685**	0.003	3.9	ug/L	105	Standard
	Ba	135	1706474.6	1.4	**997.5420**	18.016	1.8	ug/L	111	Standard
	Ce	140	70.0	39.8				ug/L	107	Standard
>	**Tb**	159	847245.8	1.6				ug/L	890342	Standard
	Ho	165	16.7	34.6				ug/L	10	Standard
	Tl	203	82.0	5.6	**0.0095**	0.001	7.4	ug/L	19	Standard
	Tl	205	63.3	19.9	**0.0132**	0.002	18.3	ug/L	17	Standard
	Pb	206	2104.8	3.5	**0.4651**	0.017	3.6	ug/L	247	Standard
	Pb	207	1755.4	1.6	**0.4250**	0.008	1.8	ug/L	215	Standard
	Pb	208	6586.6	2.3	**0.4183**	0.011	2.6	ug/L	770	Standard
	U	238	3.3	75.5	**-0.0002**	0.001	311.3	ug/L	13	Standard
>	**Bi**	209	419186.3	0.3				ug/L	503143	Standard

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Na	23	11.7	49.5	**127.1945**	62.567	49.2	mg/L	2	Standard
Mg	24	247534.5	2.1	**332.4511**	8.574	2.6	mg/L	35	Standard
K	39	821.7	11.6	**3.8912**	0.453	11.6	mg/L	25	Standard
Ca	43	693.3	9.8	**128.3410**	13.655	10.6	mg/L	38	Standard
Fe	54	995.6	6.1	**0.7869**	0.051	6.4	mg/L	126	Standard
Fe	57	1348.4	5.9	**4.1068**	0.292	7.1	mg/L	245	Standard
> **Sc-1**	45	25640.0	0.6				mg/L	25066	Standard
Cl	35	170844.7	1.8				ug/L	125857	Standard
Kr	83	3.0	66.7				ug/L	1	Standard
Br	81	2578824.0	0.0				ug/L	1350	Standard
P	31	21972.6	2.3				ug/L	18393	Standard
S	34	5225.9	2.7				ug/L	3739	Standard
Sr	88	16430.6	4.1				ug/L	78	Standard
C	12	46.7	32.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.0	111.0				mg/L	2	Standard
Ho-1	165	16.7	34.6				mg/L	10	Standard
Er	166	20.0	86.6				mg/L	23	Standard
I	127	815214.3	2.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		269.102	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.261	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.194
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		83.314
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Se 82 Upper, S, EEE	Se	82	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 16:19:57
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	53255.1	2.6				ug/L	60176	Standard
	Be	9	34201.9	0.2	**53.8492**	1.444	2.7	ug/L	5	Standard
	Al	27	6443317.1	1.2	**55.4427**	1.386	2.5	ug/L	832	Standard
	Sc	45	29281.6	1.0				ug/L	25066	Standard
	Ti	47	22756.4	2.7	**106.0921**	2.711	2.6	ug/L	38	Standard
	V	51	330023.3	1.9	**49.9178**	0.818	1.6	ug/L	974	Standard
	Cr	52	374935.6	2.1	**52.2804**	1.022	2.0	ug/L	5792	Standard
	Cr	53	48235.0	2.8	**52.8231**	1.387	2.6	ug/L	347	Standard
	Mn	55	352441.5	1.8	**49.5016**	0.742	1.5	ug/L	1164	Standard
	Co	59	322946.3	1.0	**47.8265**	0.311	0.7	ug/L	303	Standard
	Ni	60	103457.1	1.6	**51.7034**	0.790	1.5	ug/L	291	Standard
	Cu	65	102599.3	1.6	**51.6656**	0.731	1.4	ug/L	173	Standard
	Zn	66	58130.6	0.7	**50.3515**	0.428	0.9	ug/L	130	Standard
>	Ge	72	544960.4	0.5				ug/L	491724	Standard
	As	75	57215.3	2.2	**49.2169**	0.986	2.0	ug/L	-25	Standard
	Se	82	5680.0	0.8	**49.4814**	0.520	1.1	ug/L	12	Standard
	Se-1	77	4029.9	3.0	**50.7996**	1.419	2.8	ug/L	57	Standard
>	Ga	71	136.7	2.1				mg/L	148	Standard
	Rb	85	848.4	0.7				ug/L	18	Standard
	Y	89	441171.0	0.9				ug/L	401845	Standard
>	Rh	103	98.3	34.6				ug/L	10	Standard
	Mo	98	240530.6	0.1	**95.5654**	2.386	2.5	ug/L	12	Standard
	Ag	107	314903.2	0.7	**50.9642**	1.103	2.2	ug/L	98	Standard
	Cd	111	99040.2	2.0	**50.2851**	0.336	0.7	mg/L	11	Standard
	Cd	114	242003.9	1.6	**50.5109**	0.771	1.5	ug/L	21	Standard
>	In	115	573676.8	2.4				ug/L	547487	Standard
	Sn	118	268045.3	0.6	**49.2020**	0.945	1.9	ug/L	450	Standard
	Sb	123	224141.2	0.6	**50.3723**	1.071	2.1	ug/L	105	Standard
	Ba	135	96926.4	0.9	**50.3436**	0.859	1.7	ug/L	111	Standard
	Ce	140	86.7	38.4				ug/L	107	Standard
>	Tb	159	919162.1	0.7				ug/L	890342	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	383744.4	1.7	**49.4533**	0.202	0.4	ug/L	19	Standard
	Tl	205	316340.9	2.1	**49.6852**	0.346	0.7	ug/L	17	Standard
	Pb	206	242321.1	0.6	**48.5289**	1.001	2.1	ug/L	247	Standard
	Pb	207	218155.0	0.4	**48.0608**	0.946	2.0	ug/L	215	Standard
	Pb	208	851760.1	1.1	**50.1133**	0.387	0.8	ug/L	770	Standard
	U	238	300943.2	1.1	**48.8537**	0.383	0.8	ug/L	13	Standard
>	Bi	209	516771.8	1.8				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3847.2	2.3	**4.4854**	0.083	1.8	mg/L	35	Standard
K	39	1120.0	5.4	**4.6686**	0.296	6.3	mg/L	25	Standard
Ca	43	61.7	49.5	**5.0777**	5.123	100.9	mg/L	38	Standard
Fe	54	5797.8	2.5	**4.5733**	0.113	2.5	mg/L	126	Standard
Fe	57	1638.4	11.3	**4.4400**	0.621	14.0	mg/L	245	Standard
> **Sc-1**	45	29281.6	1.0				mg/L	25066	Standard
Cl	35	158279.8	0.9				ug/L	125857	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	7785.3	7.0				ug/L	1350	Standard
P	31	24633.3	2.3				ug/L	18393	Standard
S	34	5546.0	5.0				ug/L	3739	Standard
Sr	88	78.3	26.6				ug/L	78	Standard
C	12	36.7	83.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.9	217.0				mg/L	2	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	7436.9	29.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	107.698		
Al	27	110.885		
Sc	45			
Ti	47	106.092		
V	51	99.836		
Cr	52	104.561		
Cr	53			
Mn	55	99.003		
Co	59	95.653		
Ni	60	103.407		
Cu	65	103.331		
Zn	66	100.703		
> Ge	72		110.827	
As	75	98.434		
Se	82	98.963		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	95.565		
Ag	107	101.928		
Cd	111	100.570		
Cd	114			
> In	115		104.784	
Sn	118	98.404		
Sb	123	100.745		
Ba	135	100.687		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.907		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.227		
U	238	97.707		
> Bi	209		102.709	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 16:23:09
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56266.0	2.0				ug/L	60176	Standard
	Be	9	25.0	80.0	**0.0280**	0.030	105.7	ug/L	5	Standard
	Al	27	7918.3	94.7	**0.0560**	0.061	108.1	ug/L	832	Standard
	Sc	45	29356.8	5.8				ug/L	25066	Standard
	Ti	47	35.0	18.7	**-0.0382**	0.028	74.5	ug/L	38	Standard
	V	51	1134.6	16.5	**0.0083**	0.030	365.3	ug/L	974	Standard
	Cr	52	6818.2	1.1	**0.0629**	0.027	42.6	ug/L	5792	Standard
	Cr	53	1238.4	11.1	**1.0052**	0.129	12.8	ug/L	347	Standard
	Mn	55	1320.1	12.1	**-0.0219**	0.024	109.1	ug/L	1164	Standard
	Co	59	310.0	11.8	**-0.0016**	0.006	351.9	ug/L	303	Standard
	Ni	60	235.3	8.6	**-0.0679**	0.011	16.8	ug/L	291	Standard
	Cu	65	177.0	8.0	**-0.0049**	0.008	164.6	ug/L	173	Standard
	Zn	66	177.0	5.2	**-0.0754**	0.007	9.0	ug/L	130	Standard
>	**Ge**	72	524620.7	2.1				ug/L	491724	Standard
	As	75	-13.2	80.2	**0.0220**	0.010	43.5	ug/L	-25	Standard
	Se	82	28.7	3.3	**0.1675**	0.014	8.3	ug/L	12	Standard
	Se-1	77	113.7	8.9	**0.8568**	0.111	13.0	ug/L	57	Standard
>	**Ga**	71	91.7	13.7				mg/L	148	Standard
	Rb	85	53.3	84.0				ug/L	18	Standard
	Y	89	460825.3	1.3				ug/L	401845	Standard
>	**Rh**	103	101.7	25.2				ug/L	10	Standard
	Mo	98	249.0	15.8	**0.0890**	0.015	16.5	ug/L	12	Standard
	Ag	107	151.0	31.3	**0.0077**	0.007	94.9	ug/L	98	Standard
	Cd	111	24.8	83.9	**0.0072**	0.010	139.1	mg/L	11	Standard
	Cd	114	38.5	121.3	**0.0032**	0.009	291.6	ug/L	21	Standard
>	**In**	115	607357.0	0.3				ug/L	547487	Standard
	Sn	118	863.4	16.0	**0.0759**	0.024	32.0	ug/L	450	Standard
	Sb	123	252.1	31.9	**0.0459**	0.017	37.5	ug/L	105	Standard
	Ba	135	755.7	103.5	**0.3163**	0.386	122.0	ug/L	111	Standard
	Ce	140	33.3	70.9				ug/L	107	Standard
>	**Tb**	159	941140.6	1.6				ug/L	890342	Standard
	Ho	165	6.7	114.6				ug/L	10	Standard
	Tl	203	152.0	39.9	**0.0158**	0.008	49.6	ug/L	19	Standard
	Tl	205	98.3	43.8	**0.0163**	0.007	41.4	ug/L	17	Standard
	Pb	206	282.7	4.4	**0.0011**	0.002	198.8	ug/L	247	Standard
	Pb	207	255.7	7.2	**0.0036**	0.003	80.4	ug/L	215	Standard
	Pb	208	1014.3	8.8	**-0.0008**	0.006	712.2	ug/L	770	Standard
	U	238	74.0	54.7	**0.0111**	0.007	59.3	ug/L	13	Standard
>	**Bi**	209	522423.3	2.2				ug/L	503143	Standard

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Na	23	1.7	173.2	**15.5124**	26.860	173.1	mg/L	2	Standard
Mg	24	78.3	48.8	**0.0520**	0.042	80.2	mg/L	35	Standard
K	39	28.3	53.9	**0.0109**	0.074	678.3	mg/L	25	Standard
Ca	43	20.0	25.0	**-1.9217**	1.047	54.5	mg/L	38	Standard
Fe	54	152.7	6.9	**-0.0127**	0.009	69.1	mg/L	126	Standard
Fe	57	248.3	9.9	**-0.2512**	0.109	43.3	mg/L	245	Standard
> **Sc-1**	45	29356.8	5.8				mg/L	25066	Standard
Cl	35	163319.6	1.6				ug/L	125857	Standard
Kr	83	3.3	17.3				ug/L	1	Standard
Br	81	4450.7	3.2				ug/L	1350	Standard
P	31	25079.1	2.0				ug/L	18393	Standard
S	34	5581.0	3.4				ug/L	3739	Standard
Sr	88	80.0	25.0				ug/L	78	Standard
C	12	76.7	7.5				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.2	186.8				mg/L	2	Standard
Ho-1	165	6.7	114.6				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	3778.8	9.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.690	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.935
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.832
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW 17 WG573111-04
Sample Date/Time: Tuesday, June 21, 2016 17:12:00
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54402.5	1.6				ug/L	60176	Standard
	Be	9	5.0	100.0	**-0.0013**	0.008	610.8	ug/L	5	Standard
	Al	27	10618.7	0.6	**0.0810**	0.001	1.1	ug/L	832	Standard
	Sc	45	24893.8	1.7				ug/L	25066	Standard
	Ti	47	40.7	25.8	**0.0061**	0.051	846.2	ug/L	38	Standard
	V	51	1126.6	6.2	**0.0221**	0.007	33.6	ug/L	974	Standard
	Cr	52	8748.9	1.0	**0.4586**	0.027	6.0	ug/L	5792	Standard
	Cr	53	838.4	4.0	**0.6314**	0.050	8.0	ug/L	347	Standard
	Mn	55	1743.4	2.0	**0.0621**	0.003	4.4	ug/L	1164	Standard
	Co	59	260.3	10.0	**-0.0058**	0.005	78.5	ug/L	303	Standard
	Ni	60	358.3	2.1	**0.0122**	0.003	26.6	ug/L	291	Standard
	Cu	65	173.7	5.2	**0.0013**	0.007	572.1	ug/L	173	Standard
	Zn	66	1250.4	1.5	**0.9925**	0.026	2.6	ug/L	130	Standard
>	**Ge**	72	483042.7	2.3				ug/L	491724	Standard
	As	75	-21.6	45.1	**0.0130**	0.009	71.6	ug/L	-25	Standard
	Se	82	20.3	42.3	**0.1056**	0.079	74.7	ug/L	12	Standard
	Se-1	77	60.7	14.0	**0.2232**	0.110	49.2	ug/L	57	Standard
>	**Ga**	71	95.0	27.3				mg/L	148	Standard
	Rb	85	53.3	28.6				ug/L	18	Standard
	Y	89	406515.1	1.2				ug/L	401845	Standard
>	**Rh**	103	40.0	33.1				ug/L	10	Standard
	Mo	98	66.3	12.4	**0.0239**	0.004	16.1	ug/L	12	Standard
	Ag	107	76.0	9.9	**-0.0021**	0.001	70.0	ug/L	98	Standard
	Cd	111	4.2	59.6	**-0.0024**	0.001	56.9	mg/L	11	Standard
	Cd	114	16.2	34.0	**-0.0008**	0.001	148.3	ug/L	21	Standard
>	**In**	115	532744.5	1.4				ug/L	547487	Standard
	Sn	118	578.3	18.2	**0.0405**	0.021	51.9	ug/L	450	Standard
	Sb	123	112.7	14.7	**0.0197**	0.004	21.1	ug/L	105	Standard
	Ba	135	77.3	10.0	**-0.0123**	0.004	33.0	ug/L	111	Standard
	Ce	140	56.7	20.4				ug/L	107	Standard
>	**Tb**	159	863639.0	0.6				ug/L	890342	Standard
	Ho	165	10.0	86.6				ug/L	10	Standard
	Tl	203	20.7	12.2	**-0.0007**	0.000	46.3	ug/L	19	Standard
	Tl	205	13.3	57.3	**0.0032**	0.001	39.6	ug/L	17	Standard
	Pb	206	252.0	6.0	**-0.0014**	0.003	236.2	ug/L	247	Standard
	Pb	207	197.0	9.6	**-0.0061**	0.004	71.2	ug/L	215	Standard
	Pb	208	811.7	2.3	**-0.0092**	0.001	11.3	ug/L	770	Standard
	U	238	4.3	13.3	**-0.0001**	0.000	120.6	ug/L	13	Standard
>	**Bi**	209	487095.8	0.3				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	46.7	22.3	**0.0258**	0.015	59.6	mg/L	35	Standard
K	39	21.7	26.6	**-0.0039**	0.028	718.4	mg/L	25	Standard
Ca	43	25.0	0.0	**-0.3636**	0.085	23.3	mg/L	38	Standard
Fe	54	131.2	2.2	**-0.0111**	0.005	43.5	mg/L	126	Standard
Fe	57	268.3	15.6	**-0.0229**	0.182	793.2	mg/L	245	Standard
Sc-1	45	24893.8	1.7				mg/L	25066	Standard
Cl	35	153737.5	1.5				ug/L	125857	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	1480.1	4.7				ug/L	1350	Standard
P	31	20108.3	1.0				ug/L	18393	Standard
S	34	5007.5	3.6				ug/L	3739	Standard
Sr	88	75.0	24.0				ug/L	78	Standard
C	12	86.7	56.9				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.7	86.6				mg/L	2	Standard
Ho-1	165	10.0	86.6				mg/L	10	Standard
Er	166	0.0					mg/L	23	Standard
I	127	1100.0	6.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.406	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.235	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.307
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.811
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 17 WG573111-05
Sample Date/Time: Tuesday, June 21, 2016 17:15:12
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53402.3	2.8				ug/L	60176	Standard
	Be	9	32992.6	3.7	**51.7865**	1.692	3.3	ug/L	5	Standard
	Al	27	12198.2	3.5	**0.0963**	0.003	3.3	ug/L	832	Standard
	Sc	45	25010.7	4.4				ug/L	25066	Standard
	Ti	47	36.7	19.3	**-0.0127**	0.038	300.5	ug/L	38	Standard
	V	51	309717.1	0.7	**53.3313**	0.527	1.0	ug/L	974	Standard
	Cr	52	342937.1	0.8	**54.4644**	0.576	1.1	ug/L	5792	Standard
	Cr	53	43542.5	1.3	**54.2826**	0.411	0.8	ug/L	347	Standard
	Mn	55	351550.5	1.0	**56.2349**	1.195	2.1	ug/L	1164	Standard
	Co	59	316884.2	0.8	**53.4233**	1.002	1.9	ug/L	303	Standard
	Ni	60	94717.8	1.1	**53.8819**	0.368	0.7	ug/L	291	Standard
	Cu	65	94262.3	0.8	**54.0303**	0.520	1.0	ug/L	173	Standard
	Zn	66	54370.7	1.4	**53.6116**	0.241	0.4	ug/L	130	Standard
>	**Ge**	72	478860.5	1.7				ug/L	491724	Standard
	As	75	54535.7	0.7	**53.3915**	0.571	1.1	ug/L	-25	Standard
	Se	82	5489.3	0.8	**54.4366**	0.730	1.3	ug/L	12	Standard
	Se-1	77	3768.1	1.6	**54.1018**	0.084	0.2	ug/L	57	Standard
>	**Ga**	71	106.7	23.6				mg/L	148	Standard
	Rb	85	70.0	25.8				ug/L	18	Standard
	Y	89	420312.3	1.2				ug/L	401845	Standard
>	**Rh**	103	70.0	14.3				ug/L	10	Standard
	Mo	98	30.2	2.9	**0.0083**	0.001	6.6	ug/L	12	Standard
	Ag	107	9909.6	0.5	**1.6841**	0.042	2.5	ug/L	98	Standard
	Cd	111	95930.4	1.1	**51.6011**	0.537	1.0	mg/L	11	Standard
	Cd	114	231350.0	0.5	**51.1556**	0.846	1.7	ug/L	21	Standard
>	**In**	115	541530.1	2.0				ug/L	547487	Standard
	Sn	118	488.3	3.9	**0.0210**	0.003	13.6	ug/L	450	Standard
	Sb	123	205763.6	0.9	**48.9816**	0.890	1.8	ug/L	105	Standard
	Ba	135	93604.3	1.7	**51.4945**	0.191	0.4	ug/L	111	Standard
	Ce	140	73.3	20.8				ug/L	107	Standard
>	**Tb**	159	860719.0	2.3				ug/L	890342	Standard
	Ho	165	16.7	96.4				ug/L	10	Standard
	Tl	203	369565.4	1.5	**51.2366**	0.305	0.6	ug/L	19	Standard
	Tl	205	309835.9	0.4	**52.3608**	0.657	1.3	ug/L	17	Standard
	Pb	206	243588.1	0.4	**52.4792**	0.634	1.2	ug/L	247	Standard
	Pb	207	213081.9	0.8	**50.5043**	1.123	2.2	ug/L	215	Standard
	Pb	208	848492.0	0.7	**53.7161**	1.109	2.1	ug/L	770	Standard
	U	238	292643.2	0.8	**51.1091**	0.641	1.3	ug/L	13	Standard
>	**Bi**	209	480350.2	1.5				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	53.3	23.6	**0.0350**	0.020	55.8	mg/L	35	Standard
K	39	43.3	24.0	**0.1052**	0.059	55.9	mg/L	25	Standard
Ca	43	38.3	41.9	**2.3482**	3.443	146.6	mg/L	38	Standard
Fe	54	126.6	30.3	**-0.0161**	0.037	230.4	mg/L	126	Standard
Fe	57	250.0	12.5	**-0.1010**	0.134	132.3	mg/L	245	Standard
> **Sc-1**	45	25010.7	4.4				mg/L	25066	Standard
Cl	35	154303.8	1.1				ug/L	125857	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	1753.4	3.7				ug/L	1350	Standard
P	31	20824.3	0.3				ug/L	18393	Standard
S	34	4885.8	3.3				ug/L	3739	Standard
Sr	88	56.7	28.4				ug/L	78	Standard
C	12	36.7	15.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	8.9	8.2				mg/L	2	Standard
Ho-1	165	16.7	96.4				mg/L	10	Standard
Er	166	23.3	65.5				mg/L	23	Standard
I	127	1055.0	7.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.744	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.384	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.912
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.470
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 17 WG573111-05
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Method 6020 - Summary Report

Sample ID: L1606054006 WG573111-03
Sample Date/Time: Tuesday, June 21, 2016 17:18:23
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53768.6	1.8				ug/L	60176	Standard
	Be	9	223.3	5.2	**0.3390**	0.013	4.0	ug/L	5	Standard
	Al	27	1723479.9	1.0	**14.6779**	0.117	0.8	ug/L	832	Standard
	Sc	45	25968.9	1.0				ug/L	25066	Standard
	Ti	47	174.3	23.9	**0.6975**	0.209	30.0	ug/L	38	Standard
	V	51	3187.1	1.0	**0.3676**	0.007	1.8	ug/L	974	Standard
	Cr	52	9962.3	2.2	**0.6307**	0.032	5.0	ug/L	5792	Standard
	Cr	53	1050.0	15.7	**0.8771**	0.206	23.5	ug/L	347	Standard
	Mn	55	96644.7	2.5	**14.9562**	0.439	2.9	ug/L	1164	Standard
	Co	59	26099.5	1.4	**4.2561**	0.058	1.4	ug/L	303	Standard
	Ni	60	9094.4	0.4	**4.8855**	0.040	0.8	ug/L	291	Standard
	Cu	65	962.0	3.3	**0.4423**	0.013	3.0	ug/L	173	Standard
	Zn	66	4916.8	1.4	**4.5256**	0.053	1.2	ug/L	130	Standard
>	**Ge**	72	489760.3	0.8				ug/L	491724	Standard
	As	75	1211.7	3.7	**1.1931**	0.045	3.8	ug/L	-25	Standard
	Se	82	46.7	17.2	**0.3607**	0.079	21.9	ug/L	12	Standard
	Se-1	77	79.0	14.9	**0.4737**	0.176	37.2	ug/L	57	Standard
>	**Ga**	71	271.7	15.3				mg/L	148	Standard
	Rb	85	4263.9	3.2				ug/L	18	Standard
	Y	89	440770.7	2.7				ug/L	401845	Standard
>	**Rh**	103	63.3	12.1				ug/L	10	Standard
	Mo	98	195.2	3.2	**0.0786**	0.003	4.2	ug/L	12	Standard
	Ag	107	113.0	15.1	**0.0042**	0.003	72.0	ug/L	98	Standard
	Cd	111	262.6	11.3	**0.1381**	0.015	10.9	mg/L	11	Standard
	Cd	114	702.5	10.7	**0.1526**	0.016	10.3	ug/L	21	Standard
>	**In**	115	535297.3	0.8				ug/L	547487	Standard
	Sn	118	651.7	5.8	**0.0543**	0.006	11.8	ug/L	450	Standard
	Sb	123	1542.7	18.6	**0.3642**	0.071	19.6	ug/L	105	Standard
	Ba	135	39728.0	0.6	**22.0778**	0.170	0.8	ug/L	111	Standard
	Ce	140	141161.2	0.1				ug/L	107	Standard
>	**Tb**	159	862084.5	1.3				ug/L	890342	Standard
	Ho	165	2525.2	0.9				ug/L	10	Standard
	Tl	203	237.3	1.4	**0.0286**	0.000	1.4	ug/L	19	Standard
	Tl	205	215.0	12.9	**0.0365**	0.005	13.1	ug/L	17	Standard
	Pb	206	988.7	2.5	**0.1535**	0.005	2.9	ug/L	247	Standard
	Pb	207	865.0	0.8	**0.1485**	0.002	1.1	ug/L	215	Standard
	Pb	208	3337.8	2.7	**0.1469**	0.006	4.0	ug/L	770	Standard
	U	238	1870.8	2.8	**0.3187**	0.008	2.5	ug/L	13	Standard
>	**Bi**	209	491187.2	0.5				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.7819**	30.791	173.2	mg/L	2	Standard
Mg	24	1156.7	3.8	**1.4947**	0.043	2.9	mg/L	35	Standard
K	39	66.7	22.9	**0.2083**	0.073	35.0	mg/L	25	Standard
Ca	43	60.0	28.9	**6.0703**	3.171	52.2	mg/L	38	Standard
Fe	54	927.1	5.1	**0.7125**	0.036	5.1	mg/L	126	Standard
Fe	57	453.3	12.5	**0.6351**	0.217	34.1	mg/L	245	Standard
> **Sc-1**	45	25968.9	1.0				mg/L	25066	Standard
Cl	35	162179.5	1.3				ug/L	125857	Standard
Kr	83	1.7	124.9				ug/L	1	Standard
Br	81	3033.6	2.3				ug/L	1350	Standard
P	31	21506.9	0.4				ug/L	18393	Standard
S	34	4834.1	0.8				ug/L	3739	Standard
Sr	88	95.0	26.3				ug/L	78	Standard
C	12	80.0	25.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	3728.6	6.7				mg/L	2	Standard
Ho-1	165	2525.2	0.9				mg/L	10	Standard
Er	166	2266.8	4.7				mg/L	23	Standard
I	127	11339.3	11.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.352	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.601	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.774
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.624
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606054007S WG573111-09
Sample Date/Time: Tuesday, June 21, 2016 17:21:35
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55648.7	1.0				ug/L	60176	Standard
	Be	9	35439.7	1.0	**53.3747**	0.542	1.0	ug/L	5	Standard
	Al	27	1734040.1	1.3	**14.2679**	0.205	1.4	ug/L	832	Standard
	Sc	45	25546.5	2.5				ug/L	25066	Standard
	Ti	47	195.0	1.4	**0.7899**	0.031	3.9	ug/L	38	Standard
	V	51	309925.0	0.5	**51.3311**	0.675	1.3	ug/L	974	Standard
	Cr	52	343998.6	1.2	**52.5323**	1.556	3.0	ug/L	5792	Standard
	Cr	53	43246.7	4.8	**51.8802**	3.426	6.6	ug/L	347	Standard
	Mn	55	421085.3	0.6	**64.8270**	1.302	2.0	ug/L	1164	Standard
	Co	59	336029.8	0.8	**54.5018**	1.427	2.6	ug/L	303	Standard
	Ni	60	104045.4	1.6	**56.9634**	1.904	3.3	ug/L	291	Standard
	Cu	65	95190.8	1.4	**52.4843**	0.914	1.7	ug/L	173	Standard
	Zn	66	58975.9	0.8	**55.9583**	1.065	1.9	ug/L	130	Standard
>	**Ge**	72	497816.0	1.8				ug/L	491724	Standard
	As	75	56479.5	0.3	**53.1942**	0.942	1.8	ug/L	-25	Standard
	Se	82	5338.4	1.1	**50.9267**	1.343	2.6	ug/L	12	Standard
	Se-1	77	3721.8	0.2	**51.3788**	0.854	1.7	ug/L	57	Standard
>	**Ga**	71	246.7	20.3				mg/L	148	Standard
	Rb	85	4018.9	6.2				ug/L	18	Standard
	Y	89	438370.4	1.5				ug/L	401845	Standard
>	**Rh**	103	75.0	20.0				ug/L	10	Standard
	Mo	98	177.1	10.3	**0.0704**	0.007	9.6	ug/L	12	Standard
	Ag	107	25202.6	1.7	**4.3298**	0.014	0.3	ug/L	98	Standard
	Cd	111	95691.9	1.4	**51.7579**	0.175	0.3	mg/L	11	Standard
	Cd	114	231930.1	2.9	**51.5555**	0.701	1.4	ug/L	21	Standard
>	**In**	115	538493.9	1.7				ug/L	547487	Standard
	Sn	118	535.0	0.9	**0.0307**	0.002	8.0	ug/L	450	Standard
	Sb	123	208964.7	1.0	**50.0186**	0.580	1.2	ug/L	105	Standard
	Ba	135	133008.3	1.3	**73.6104**	0.853	1.2	ug/L	111	Standard
	Ce	140	144677.5	1.4				ug/L	107	Standard
>	**Tb**	159	870588.4	1.2				ug/L	890342	Standard
	Ho	165	2515.2	1.4				ug/L	10	Standard
	Tl	203	376132.5	1.2	**50.4480**	0.208	0.4	ug/L	19	Standard
	Tl	205	310457.8	2.2	**50.7488**	0.818	1.6	ug/L	17	Standard
	Pb	206	249489.7	0.6	**51.9992**	0.813	1.6	ug/L	247	Standard
	Pb	207	216108.6	0.2	**49.5458**	0.596	1.2	ug/L	215	Standard
	Pb	208	835970.7	1.9	**51.1849**	0.557	1.1	ug/L	770	Standard
	U	238	296500.2	1.1	**50.0915**	0.324	0.6	ug/L	13	Standard
>	**Bi**	209	496523.1	1.1				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	1253.4	1.0	**1.6514**	0.045	2.7	mg/L	35	Standard
K	39	90.0	24.2	**0.3274**	0.105	31.9	mg/L	25	Standard
Ca	43	50.0	0.0	**4.3487**	0.242	5.6	mg/L	38	Standard
Fe	54	828.2	6.8	**0.6342**	0.039	6.2	mg/L	126	Standard
Fe	57	453.3	3.4	**0.6651**	0.095	14.3	mg/L	245	Standard
Sc-1	45	25546.5	2.5				mg/L	25066	Standard
Cl	35	160715.9	0.9				ug/L	125857	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	6278.0	7.6				ug/L	1350	Standard
P	31	21558.7	3.0				ug/L	18393	Standard
S	34	4647.4	1.5				ug/L	3739	Standard
Sr	88	96.7	16.6				ug/L	78	Standard
C	12	80.0	33.1				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	3942.4	3.7				mg/L	2	Standard
Ho-1	165	2515.2	1.4				mg/L	10	Standard
Er	166	2396.9	12.6				mg/L	23	Standard
I	127	13020.6	8.0				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		92.477	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.239	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.357
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.684
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606054008SD WG573111-10
Sample Date/Time: Tuesday, June 21, 2016 17:24:46
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55279.0	1.9				ug/L	60176	Standard
	Be	9	36627.6	1.2	**55.5439**	1.219	2.2	ug/L	5	Standard
	Al	27	1713238.5	1.0	**14.1936**	0.289	2.0	ug/L	832	Standard
	Sc	45	25197.6	2.6				ug/L	25066	Standard
	Ti	47	199.3	7.4	**0.8424**	0.087	10.4	ug/L	38	Standard
	V	51	309494.1	1.0	**52.7786**	0.658	1.2	ug/L	974	Standard
	Cr	52	347378.1	1.2	**54.6471**	1.197	2.2	ug/L	5792	Standard
	Cr	53	43514.1	2.2	**53.7328**	1.741	3.2	ug/L	347	Standard
	Mn	55	424846.4	0.6	**67.3400**	0.361	0.5	ug/L	1164	Standard
	Co	59	340025.8	0.7	**56.7736**	0.789	1.4	ug/L	303	Standard
	Ni	60	103607.1	1.5	**58.3956**	1.391	2.4	ug/L	291	Standard
	Cu	65	94948.3	1.4	**53.9039**	1.162	2.2	ug/L	173	Standard
	Zn	66	59000.7	0.9	**57.6432**	1.050	1.8	ug/L	130	Standard
>	**Ge**	72	483481.9	1.0				ug/L	491724	Standard
	As	75	55725.2	0.4	**54.0300**	0.345	0.6	ug/L	-25	Standard
	Se	82	5455.4	1.2	**53.5737**	0.261	0.5	ug/L	12	Standard
	Se-1	77	3687.1	2.8	**52.4054**	0.959	1.8	ug/L	57	Standard
>	**Ga**	71	291.7	5.5				mg/L	148	Standard
	Rb	85	3975.5	3.5				ug/L	18	Standard
	Y	89	437768.5	1.6				ug/L	401845	Standard
>	**Rh**	103	73.3	21.9				ug/L	10	Standard
	Mo	98	292.6	1.9	**0.1184**	0.004	3.1	ug/L	12	Standard
	Ag	107	6385.3	1.6	**1.0770**	0.028	2.6	ug/L	98	Standard
	Cd	111	98546.6	1.7	**52.8871**	1.151	2.2	mg/L	11	Standard
	Cd	114	241574.4	2.1	**53.2859**	1.073	2.0	ug/L	21	Standard
>	**In**	115	542760.7	1.3				ug/L	547487	Standard
	Sn	118	570.0	9.9	**0.0368**	0.012	33.4	ug/L	450	Standard
	Sb	123	210832.3	1.1	**50.0678**	0.730	1.5	ug/L	105	Standard
	Ba	135	135047.9	1.1	**74.1546**	1.297	1.7	ug/L	111	Standard
	Ce	140	141782.0	0.7				ug/L	107	Standard
>	**Tb**	159	865701.6	1.6				ug/L	890342	Standard
	Ho	165	2566.9	2.9				ug/L	10	Standard
	Tl	203	382403.7	0.7	**52.5418**	1.098	2.1	ug/L	19	Standard
	Tl	205	317463.1	0.8	**53.1627**	1.073	2.0	ug/L	17	Standard
	Pb	206	248494.2	0.2	**53.0491**	0.826	1.6	ug/L	247	Standard
	Pb	207	215899.1	1.2	**50.7054**	1.283	2.5	ug/L	215	Standard
	Pb	208	857334.8	1.1	**53.7766**	0.992	1.8	ug/L	770	Standard
	U	238	302840.8	1.0	**52.4120**	1.195	2.3	ug/L	13	Standard
>	**Bi**	209	484780.2	1.4				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	1276.7	8.6	**1.7042**	0.107	6.3	mg/L	35	Standard
K	39	51.7	49.7	**0.1459**	0.135	92.5	mg/L	25	Standard
Ca	43	55.0	9.1	**5.4513**	0.801	14.7	mg/L	38	Standard
Fe	54	811.1	8.4	**0.6307**	0.085	13.5	mg/L	126	Standard
Fe	57	461.7	3.8	**0.7224**	0.112	15.4	mg/L	245	Standard
> **Sc-1**	45	25197.6	2.6				mg/L	25066	Standard
Cl	35	161517.7	0.6				ug/L	125857	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	2850.3	4.7				ug/L	1350	Standard
P	31	22705.3	1.8				ug/L	18393	Standard
S	34	4462.3	4.8				ug/L	3739	Standard
Sr	88	113.3	17.8				ug/L	78	Standard
C	12	80.0	25.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	3943.7	6.5				mg/L	2	Standard
Ho-1	165	2566.9	2.9				mg/L	10	Standard
Er	166	2160.2	8.1				mg/L	23	Standard
I	127	12827.1	9.5				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.862	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.324	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.137
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.350
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606062401
Sample Date/Time: Tuesday, June 21, 2016 17:27:58
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58089.5	1.1				ug/L	60176	Standard
	Be	9	30.0	33.3	**0.0342**	0.014	41.0	ug/L	5	Standard
	Al	27	6143141.8	1.0	**48.4472**	0.944	1.9	ug/L	832	Standard
	Sc	45	25180.9	3.0				ug/L	25066	Standard
	Ti	47	164.0	25.9	**0.6648**	0.220	33.1	ug/L	38	Standard
	V	51	185031.3	1.5	**31.8430**	0.072	0.2	ug/L	974	Standard
	Cr	52	18607.9	15.7	**2.0656**	0.441	21.3	ug/L	5792	Standard
	Cr	53	3327.0	10.6	**3.7691**	0.381	10.1	ug/L	347	Standard
	Mn	55	46439.1	0.7	**7.2533**	0.079	1.1	ug/L	1164	Standard
	Co	59	5982.5	1.5	**0.9617**	0.001	0.1	ug/L	303	Standard
	Ni	60	16639.8	1.1	**9.3260**	0.213	2.3	ug/L	291	Standard
	Cu	65	8174.2	0.6	**4.6046**	0.102	2.2	ug/L	173	Standard
	Zn	66	49644.2	2.1	**49.0098**	0.387	0.8	ug/L	130	Standard
>	**Ge**	72	478054.7	1.6				ug/L	491724	Standard
	As	75	1224.7	7.5	**1.2333**	0.072	5.9	ug/L	-25	Standard
	Se	82	472.0	3.9	**4.6028**	0.133	2.9	ug/L	12	Standard
	Se-1	77	207.0	7.7	**2.3618**	0.199	8.4	ug/L	57	Standard
>	**Ga**	71	200.0	23.8				mg/L	148	Standard
	Rb	85	14974.1	2.7				ug/L	18	Standard
	Y	89	411795.2	1.6				ug/L	401845	Standard
>	**Rh**	103	106.7	9.8				ug/L	10	Standard
	Mo	98	231188.7	0.7	**98.5932**	1.267	1.3	ug/L	12	Standard
	Ag	107	131.7	7.2	**0.0075**	0.002	23.5	ug/L	98	Standard
	Cd	111	-78.0	39.1	**-0.0472**	0.016	34.7	mg/L	11	Standard
	Cd	114	617.4	6.3	**0.1339**	0.009	7.0	ug/L	21	Standard
>	**In**	115	534274.2	0.6				ug/L	547487	Standard
	Sn	118	656.7	7.2	**0.0556**	0.010	17.6	ug/L	450	Standard
	Sb	123	2302.2	22.5	**0.5481**	0.126	23.0	ug/L	105	Standard
	Ba	135	32140.4	1.2	**17.8854**	0.296	1.7	ug/L	111	Standard
	Ce	140	261.7	29.6				ug/L	107	Standard
>	**Tb**	159	856456.1	0.5				ug/L	890342	Standard
	Ho	165	20.0	25.0				ug/L	10	Standard
	Tl	203	426.7	20.5	**0.0564**	0.012	21.0	ug/L	19	Standard
	Tl	205	363.3	45.3	**0.0631**	0.028	43.7	ug/L	17	Standard
	Pb	206	788.4	5.3	**0.1175**	0.008	6.8	ug/L	247	Standard
	Pb	207	708.7	4.4	**0.1184**	0.006	5.2	ug/L	215	Standard
	Pb	208	2871.1	13.6	**0.1246**	0.024	18.9	ug/L	770	Standard
	U	238	398.7	34.3	**0.0697**	0.024	33.8	ug/L	13	Standard
>	**Bi**	209	473349.9	0.8				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	16877.7	3.1	**23.0643**	1.225	5.3	mg/L	35	Standard
K	39	280.0	25.0	**1.2812**	0.375	29.2	mg/L	25	Standard
Ca	43	126.7	8.2	**19.5068**	1.380	7.1	mg/L	38	Standard
Fe	54	143.3	6.8	**-0.0010**	0.012	1154.4	mg/L	126	Standard
Fe	57	358.3	9.3	**0.3188**	0.164	51.3	mg/L	245	Standard
> **Sc-1**	45	25180.9	3.0				mg/L	25066	Standard
Cl	35	205780.0	0.7				ug/L	125857	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	97895.4	2.7				ug/L	1350	Standard
P	31	21284.9	2.0				ug/L	18393	Standard
S	34	4504.0	2.9				ug/L	3739	Standard
Sr	88	191.7	4.0				ug/L	78	Standard
C	12	73.3	34.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	88.2				mg/L	0	Standard
Dy	164	29.4	101.4				mg/L	2	Standard
Ho-1	165	20.0	25.0				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	12732.0	2.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		96.533	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.220	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.587
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.079
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606062401PS WG573473-01
Sample Date/Time: Tuesday, June 21, 2016 17:31:09
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59555.2	1.6				ug/L	60176	Standard
	Be	9	38114.6	4.0	**53.6277**	1.538	2.9	ug/L	5	Standard
	Al	27	6236393.4	1.5	**47.9667**	0.190	0.4	ug/L	832	Standard
	Sc	45	25247.7	3.0				ug/L	25066	Standard
	Ti	47	149.7	6.7	**0.5489**	0.064	11.6	ug/L	38	Standard
	V	51	510919.3	1.1	**83.6813**	1.623	1.9	ug/L	974	Standard
	Cr	52	357055.0	1.4	**53.8592**	0.614	1.1	ug/L	5792	Standard
	Cr	53	46658.4	3.1	**55.2620**	1.342	2.4	ug/L	347	Standard
	Mn	55	386237.5	1.3	**58.7100**	1.701	2.9	ug/L	1164	Standard
	Co	59	326523.7	0.8	**52.2967**	1.090	2.1	ug/L	303	Standard
	Ni	60	110932.7	1.4	**59.9730**	0.773	1.3	ug/L	291	Standard
	Cu	65	103725.9	2.2	**56.4780**	0.362	0.6	ug/L	173	Standard
	Zn	66	105350.7	1.8	**98.8815**	0.625	0.6	ug/L	130	Standard
>	**Ge**	72	504099.0	2.3				ug/L	491724	Standard
	As	75	58925.6	0.8	**54.8077**	0.985	1.8	ug/L	-25	Standard
	Se	82	6143.8	2.0	**57.9003**	2.000	3.5	ug/L	12	Standard
	Se-1	77	4049.5	3.3	**55.2355**	0.588	1.1	ug/L	57	Standard
>	**Ga**	71	220.0	17.2				mg/L	148	Standard
	Rb	85	14929.0	0.6				ug/L	18	Standard
	Y	89	406274.5	1.9				ug/L	401845	Standard
>	**Rh**	103	120.0	21.7				ug/L	10	Standard
	Mo	98	233519.6	0.3	**99.7506**	0.946	0.9	ug/L	12	Standard
	Ag	107	294288.6	1.5	**51.2056**	0.387	0.8	ug/L	98	Standard
	Cd	111	97440.1	1.5	**53.2049**	0.652	1.2	mg/L	11	Standard
	Cd	114	237560.5	0.5	**53.3199**	0.438	0.8	ug/L	21	Standard
>	**In**	115	533397.7	0.7				ug/L	547487	Standard
	Sn	118	846.7	2.7	**0.0933**	0.004	4.2	ug/L	450	Standard
	Sb	123	217534.4	0.9	**52.5626**	0.359	0.7	ug/L	105	Standard
	Ba	135	126166.1	0.5	**70.4856**	0.674	1.0	ug/L	111	Standard
	Ce	140	221.7	9.1				ug/L	107	Standard
>	**Tb**	159	863996.7	1.6				ug/L	890342	Standard
	Ho	165	15.0	120.2				ug/L	10	Standard
	Tl	203	388142.4	1.0	**52.8512**	0.991	1.9	ug/L	19	Standard
	Tl	205	322436.9	1.5	**53.5061**	0.715	1.3	ug/L	17	Standard
	Pb	206	253353.0	2.2	**53.5909**	0.163	0.3	ug/L	247	Standard
	Pb	207	220862.2	1.1	**51.4007**	0.713	1.4	ug/L	215	Standard
	Pb	208	859792.8	1.1	**53.4462**	0.779	1.5	ug/L	770	Standard
	U	238	306380.9	1.7	**52.5395**	0.392	0.7	ug/L	13	Standard
>	**Bi**	209	489218.2	2.4				ug/L	503143	Standard

Sample ID: L1606062401PS WG573473-01
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Na	23	1.7	173.2	**17.9600**	31.099	173.2	mg/L	2	Standard
Mg	24	16909.4	2.0	**23.0293**	0.226	1.0	mg/L	35	Standard
K	39	301.7	1.9	**1.3820**	0.071	5.1	mg/L	25	Standard
Ca	43	131.7	14.4	**20.3888**	3.034	14.9	mg/L	38	Standard
Fe	54	166.4	16.9	**0.0199**	0.023	114.5	mg/L	126	Standard
Fe	57	365.0	8.3	**0.3416**	0.157	46.0	mg/L	245	Standard
> **Sc-1**	45	25247.7	3.0				mg/L	25066	Standard
Cl	35	210532.0	1.1				ug/L	125857	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	100099.7	2.0				ug/L	1350	Standard
P	31	21987.6	1.4				ug/L	18393	Standard
S	34	4502.3	2.4				ug/L	3739	Standard
Sr	88	196.7	8.9				ug/L	78	Standard
C	12	86.7	24.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	70.0	37.8				mg/L	0	Standard
Dy	164	33.0	47.1				mg/L	2	Standard
Ho-1	165	15.0	120.2				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	23	Standard
I	127	13005.6	0.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.968	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.517	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.427
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.232
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606062401SDL WG573473-02
Sample Date/Time: Tuesday, June 21, 2016 17:34:21
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60477.2	2.3				ug/L	60176	Standard
	Be	9	20.0	25.0	**0.0187**	0.007	38.3	ug/L	5	Standard
	Al	27	1346077.1	1.4	**10.1901**	0.104	1.0	ug/L	832	Standard
	Sc	45	26165.9	1.8				ug/L	25066	Standard
	Ti	47	53.3	5.7	**0.0577**	0.020	34.3	ug/L	38	Standard
	V	51	40043.4	1.0	**6.2981**	0.105	1.7	ug/L	974	Standard
	Cr	52	9838.2	1.4	**0.5437**	0.034	6.2	ug/L	5792	Standard
	Cr	53	1326.7	4.2	**1.1460**	0.079	6.9	ug/L	347	Standard
	Mn	55	10769.8	1.7	**1.4023**	0.064	4.6	ug/L	1164	Standard
	Co	59	1559.7	6.1	**0.1970**	0.021	10.5	ug/L	303	Standard
	Ni	60	3793.5	0.5	**1.8350**	0.048	2.6	ug/L	291	Standard
	Cu	65	2218.5	2.2	**1.0935**	0.016	1.5	ug/L	173	Standard
	Zn	66	12058.5	0.3	**10.9344**	0.220	2.0	ug/L	130	Standard
>	Ge	72	512114.2	2.3				ug/L	491724	Standard
	As	75	280.0	6.4	**0.2900**	0.014	4.8	ug/L	-25	Standard
	Se	82	125.6	4.8	**1.0748**	0.079	7.4	ug/L	12	Standard
	Se-1	77	81.0	16.3	**0.4492**	0.161	35.8	ug/L	57	Standard
>	Ga	71	110.0	9.1				mg/L	148	Standard
	Rb	85	3283.7	4.5				ug/L	18	Standard
	Y	89	414186.7	0.7				ug/L	401845	Standard
>	Rh	103	43.3	17.6				ug/L	10	Standard
	Mo	98	48312.3	1.7	**19.6814**	0.770	3.9	ug/L	12	Standard
	Ag	107	449.0	12.1	**0.0592**	0.010	17.0	ug/L	98	Standard
	Cd	111	-5.5	192.0	**-0.0076**	0.005	71.9	mg/L	11	Standard
	Cd	114	194.3	6.1	**0.0372**	0.003	7.7	ug/L	21	Standard
>	In	115	559504.5	2.3				ug/L	547487	Standard
	Sn	118	523.3	5.3	**0.0246**	0.006	24.8	ug/L	450	Standard
	Sb	123	2078.0	20.6	**0.4699**	0.089	18.9	ug/L	105	Standard
	Ba	135	6769.2	2.6	**3.5550**	0.174	4.9	ug/L	111	Standard
	Ce	140	83.3	24.2				ug/L	107	Standard
>	Tb	159	903655.8	2.0				ug/L	890342	Standard
	Ho	165	10.0	132.3				ug/L	10	Standard
	Tl	203	191.7	11.3	**0.0211**	0.003	12.7	ug/L	19	Standard
	Tl	205	210.0	24.9	**0.0339**	0.008	25.0	ug/L	17	Standard
	Pb	206	458.3	5.1	**0.0367**	0.005	13.4	ug/L	247	Standard
	Pb	207	386.0	11.6	**0.0328**	0.010	31.6	ug/L	215	Standard
	Pb	208	1615.7	13.4	**0.0350**	0.013	38.0	ug/L	770	Standard
	U	238	122.3	50.4	**0.0190**	0.010	52.9	ug/L	13	Standard
>	Bi	209	518242.9	1.3				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3608.8	2.9	**4.7118**	0.175	3.7	mg/L	35	Standard
K	39	100.0	50.7	**0.3676**	0.247	67.2	mg/L	25	Standard
Ca	43	65.0	7.7	**6.9544**	1.038	14.9	mg/L	38	Standard
Fe	54	147.5	39.4	**-0.0029**	0.051	1721.0	mg/L	126	Standard
Fe	57	251.7	1.1	**-0.1393**	0.026	18.6	mg/L	245	Standard
Sc-1	45	26165.9	1.8				mg/L	25066	Standard
Cl	35	182370.3	0.5				ug/L	125857	Standard
Kr	83	3.3	17.3				ug/L	1	Standard
Br	81	22266.3	0.9				ug/L	1350	Standard
P	31	21655.5	3.7				ug/L	18393	Standard
S	34	4839.1	3.8				ug/L	3739	Standard
Sr	88	88.3	14.2				ug/L	78	Standard
C	12	70.0	14.3				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.2	45.2				mg/L	2	Standard
Ho-1	165	10.0	132.3				mg/L	10	Standard
Er	166	23.3	49.5				mg/L	23	Standard
I	127	3850.5	6.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.501	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.147	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.195
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.001
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606062401SDL WG573473-02
Sample Date/Time: Tuesday, June 21, 2016 17:37:32
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60611.2	5.2				ug/L	60176	Standard
	Be	9	26.7	78.1	**0.0285**	0.030	104.7	ug/L	5	Standard
	Al	27	272431.0	1.2	**2.0536**	0.080	3.9	ug/L	832	Standard
	Sc	45	26581.7	4.6				ug/L	25066	Standard
	Ti	47	32.3	4.7	**-0.0400**	0.007	18.7	ug/L	38	Standard
	V	51	9199.9	0.5	**1.3799**	0.034	2.5	ug/L	974	Standard
	Cr	52	8009.8	1.0	**0.3197**	0.024	7.6	ug/L	5792	Standard
	Cr	53	745.0	1.3	**0.5003**	0.030	5.9	ug/L	347	Standard
	Mn	55	3074.3	2.9	**0.2662**	0.019	7.0	ug/L	1164	Standard
	Co	59	581.3	20.9	**0.0466**	0.022	46.9	ug/L	303	Standard
	Ni	60	942.0	2.2	**0.3340**	0.011	3.2	ug/L	291	Standard
	Cu	65	557.7	1.9	**0.2148**	0.011	5.0	ug/L	173	Standard
	Zn	66	3925.2	1.4	**3.5576**	0.086	2.4	ug/L	130	Standard
>	**Ge**	72	490874.3	1.9				ug/L	491724	Standard
	As	75	56.2	25.4	**0.0878**	0.015	16.7	ug/L	-25	Standard
	Se	82	43.0	3.7	**0.3232**	0.008	2.4	ug/L	12	Standard
	Se-1	77	62.7	10.3	**0.2398**	0.106	44.2	ug/L	57	Standard
>	**Ga**	71	86.7	3.3				mg/L	148	Standard
	Rb	85	633.3	8.9				ug/L	18	Standard
	Y	89	434053.3	1.1				ug/L	401845	Standard
>	**Rh**	103	58.3	43.1				ug/L	10	Standard
	Mo	98	9730.4	1.6	**3.7980**	0.056	1.5	ug/L	12	Standard
	Ag	107	110.7	14.6	**0.0022**	0.003	122.1	ug/L	98	Standard
	Cd	111	25.2	97.4	**0.0080**	0.012	156.2	mg/L	11	Standard
	Cd	114	100.0	105.0	**0.0162**	0.022	134.8	ug/L	21	Standard
>	**In**	115	583063.2	0.9				ug/L	547487	Standard
	Sn	118	498.3	15.0	**0.0160**	0.013	80.4	ug/L	450	Standard
	Sb	123	635.0	36.6	**0.1330**	0.052	39.5	ug/L	105	Standard
	Ba	135	1538.7	3.8	**0.7317**	0.038	5.1	ug/L	111	Standard
	Ce	140	56.7	43.5				ug/L	107	Standard
>	**Tb**	159	902775.5	1.1				ug/L	890342	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	138.3	68.1	**0.0148**	0.013	86.9	ug/L	19	Standard
	Tl	205	111.7	55.3	**0.0190**	0.010	54.2	ug/L	17	Standard
	Pb	206	376.0	13.9	**0.0221**	0.012	55.2	ug/L	247	Standard
	Pb	207	317.0	22.0	**0.0194**	0.017	88.5	ug/L	215	Standard
	Pb	208	1292.4	11.5	**0.0179**	0.010	58.6	ug/L	770	Standard
	U	238	68.7	96.5	**0.0107**	0.011	105.8	ug/L	13	Standard
>	**Bi**	209	506328.7	1.9				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	790.0	5.2	**0.9874**	0.095	9.7	mg/L	35	Standard
K	39	33.3	48.2	**0.0428**	0.071	166.5	mg/L	25	Standard
Ca	43	25.0	20.0	**-0.6943**	0.773	111.4	mg/L	38	Standard
Fe	54	139.1	10.5	**-0.0116**	0.017	151.0	mg/L	126	Standard
Fe	57	223.3	12.7	**-0.2573**	0.129	50.2	mg/L	245	Standard
> **Sc-1**	45	26581.7	4.6				mg/L	25066	Standard
Cl	35	175991.6	1.1				ug/L	125857	Standard
Kr	83	3.0	0.0				ug/L	1	Standard
Br	81	6047.9	4.6				ug/L	1350	Standard
P	31	21570.4	4.4				ug/L	18393	Standard
S	34	4842.4	5.1				ug/L	3739	Standard
Sr	88	105.0	12.6				ug/L	78	Standard
C	12	50.0	52.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	15.7	36.9				mg/L	2	Standard
Ho-1	165	8.3	91.7				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	23	Standard
I	127	1585.1	7.5				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.723	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.827	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.498
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.633
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 17:40:45
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59081.7	2.6				ug/L	60176	Standard
	Be	9	36702.7	2.3	**52.0769**	1.300	2.5	ug/L	5	Standard
	Al	27	6646200.9	1.1	**51.5434**	0.909	1.8	ug/L	832	Standard
	Sc	45	26020.7	3.8				ug/L	25066	Standard
	Ti	47	21214.8	1.7	**108.7289**	0.181	0.2	ug/L	38	Standard
	V	51	316864.2	1.4	**52.6965**	0.283	0.5	ug/L	974	Standard
	Cr	52	348817.6	0.6	**53.4950**	0.696	1.3	ug/L	5792	Standard
	Cr	53	43763.1	2.6	**52.6787**	0.604	1.1	ug/L	347	Standard
	Mn	55	340527.3	1.8	**52.5942**	0.923	1.8	ug/L	1164	Standard
	Co	59	326617.6	0.4	**53.1853**	0.746	1.4	ug/L	303	Standard
	Ni	60	96463.1	1.0	**53.0038**	0.733	1.4	ug/L	291	Standard
	Cu	65	95600.3	0.8	**52.9319**	0.992	1.9	ug/L	173	Standard
	Zn	66	54738.7	1.8	**52.1262**	0.134	0.3	ug/L	130	Standard
>	Ge	72	495763.5	1.8				ug/L	491724	Standard
	As	75	54512.5	0.4	**51.5524**	0.685	1.3	ug/L	-25	Standard
	Se	82	5543.1	2.2	**53.1106**	2.069	3.9	ug/L	12	Standard
	Se-1	77	3720.1	1.9	**51.5619**	0.639	1.2	ug/L	57	Standard
>	Ga	71	110.0	12.0				mg/L	148	Standard
	Rb	85	793.4	4.1				ug/L	18	Standard
	Y	89	412125.4	1.3				ug/L	401845	Standard
>	Rh	103	66.7	11.5				ug/L	10	Standard
	Mo	98	240736.8	1.1	**97.2447**	1.379	1.4	ug/L	12	Standard
	Ag	107	305628.4	1.4	**50.2975**	1.221	2.4	ug/L	98	Standard
	Cd	111	97888.8	1.5	**50.5420**	0.123	0.2	mg/L	11	Standard
	Cd	114	238935.5	1.4	**50.7107**	0.441	0.9	ug/L	21	Standard
>	In	115	564098.2	1.7				ug/L	547487	Standard
	Sn	118	268378.0	1.5	**50.0920**	0.857	1.7	ug/L	450	Standard
	Sb	123	219285.5	1.2	**50.1127**	1.176	2.3	ug/L	105	Standard
	Ba	135	94955.3	0.6	**50.1501**	0.552	1.1	ug/L	111	Standard
	Ce	140	105.0	45.4				ug/L	107	Standard
>	Tb	159	899441.1	1.5				ug/L	890342	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	387085.4	1.3	**50.9741**	0.552	1.1	ug/L	19	Standard
	Tl	205	323757.8	1.2	**51.9659**	0.790	1.5	ug/L	17	Standard
	Pb	206	244011.4	1.2	**49.9245**	0.191	0.4	ug/L	247	Standard
	Pb	207	221667.8	1.0	**49.8940**	0.499	1.0	ug/L	215	Standard
	Pb	208	859541.6	1.0	**51.6749**	0.448	0.9	ug/L	770	Standard
	U	238	309083.0	1.7	**51.2676**	0.733	1.4	ug/L	13	Standard
>	Bi	209	505715.2	0.9				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.6985**	32.378	173.2	mg/L	2	Standard
Mg	24	3983.9	6.0	**5.2438**	0.478	9.1	mg/L	35	Standard
K	39	1098.4	8.7	**5.1786**	0.659	12.7	mg/L	25	Standard
Ca	43	58.3	24.7	**5.7524**	2.702	47.0	mg/L	38	Standard
Fe	54	5616.8	2.9	**5.0026**	0.232	4.6	mg/L	126	Standard
Fe	57	1575.1	5.8	**4.9072**	0.583	11.9	mg/L	245	Standard
> **Sc-1**	45	26020.7	3.8				mg/L	25066	Standard
Cl	35	161905.2	1.1				ug/L	125857	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	1890.1	7.8				ug/L	1350	Standard
P	31	22423.3	2.7				ug/L	18393	Standard
S	34	5154.2	1.4				ug/L	3739	Standard
Sr	88	80.0	16.5				ug/L	78	Standard
C	12	60.0	28.9				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	15.7	132.5				mg/L	2	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	20.0	0.0				mg/L	23	Standard
I	127	1220.0	4.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	104.154		
Al	27	103.087		
Sc	45			
Ti	47	108.729		
V	51	105.393		
Cr	52	106.990		
Cr	53			
Mn	55	105.188		
Co	59	106.371		
Ni	60	106.008		
Cu	65	105.864		
Zn	66	104.252		
> Ge	72		100.822	
As	75	103.105		
Se	82	106.221		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	97.245		
Ag	107	100.595		
Cd	111	101.084		
Cd	114			
> In	115		103.034	
Sn	118	100.184		
Sb	123	100.225		
Ba	135	100.300		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.948		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.350		
U	238	102.535		
> Bi	209		100.511	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 17:43:57
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56721.1	4.5				ug/L	60176	Standard
	Be	9	10.0	86.6	**0.0057**	0.013	221.6	ug/L	5	Standard
	Al	27	1560.1	22.0	**0.0041**	0.002	54.2	ug/L	832	Standard
	Sc	45	25518.2	4.3				ug/L	25066	Standard
	Ti	47	31.0	8.5	**-0.0455**	0.014	30.9	ug/L	38	Standard
	V	51	1025.7	2.6	**0.0036**	0.004	119.2	ug/L	974	Standard
	Cr	52	6145.2	1.0	**0.0342**	0.011	31.8	ug/L	5792	Standard
	Cr	53	456.7	16.4	**0.1515**	0.092	60.5	ug/L	347	Standard
	Mn	55	1042.7	1.9	**-0.0507**	0.003	6.1	ug/L	1164	Standard
	Co	59	294.3	14.4	**-0.0005**	0.007	1510.6	ug/L	303	Standard
	Ni	60	217.3	8.8	**-0.0685**	0.011	15.8	ug/L	291	Standard
	Cu	65	143.7	4.6	**-0.0165**	0.004	23.2	ug/L	173	Standard
	Zn	66	170.7	3.9	**-0.0690**	0.006	9.1	ug/L	130	Standard
>	**Ge**	72	486561.4	0.2				ug/L	491724	Standard
	As	75	-23.1	144.8	**0.0117**	0.032	276.8	ug/L	-25	Standard
	Se	82	19.3	43.3	**0.0963**	0.082	85.2	ug/L	12	Standard
	Se-1	77	61.7	9.5	**0.2322**	0.083	35.8	ug/L	57	Standard
>	**Ga**	71	91.7	11.4				mg/L	148	Standard
	Rb	85	30.0	33.3				ug/L	18	Standard
	Y	89	432565.5	1.6				ug/L	401845	Standard
>	**Rh**	103	56.7	13.5				ug/L	10	Standard
	Mo	98	283.8	18.7	**0.1104**	0.019	17.4	ug/L	12	Standard
	Ag	107	119.7	6.8	**0.0044**	0.001	22.8	ug/L	98	Standard
	Cd	111	7.8	28.1	**-0.0007**	0.001	162.1	mg/L	11	Standard
	Cd	114	30.1	75.3	**0.0019**	0.005	242.3	ug/L	21	Standard
>	**In**	115	561643.0	2.0				ug/L	547487	Standard
	Sn	118	805.0	28.2	**0.0777**	0.045	58.3	ug/L	450	Standard
	Sb	123	547.0	24.1	**0.1184**	0.033	27.7	ug/L	105	Standard
	Ba	135	127.0	2.8	**0.0118**	0.001	5.1	ug/L	111	Standard
	Ce	140	23.3	75.3				ug/L	107	Standard
>	**Tb**	159	876464.1	2.5				ug/L	890342	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	66.0	17.1	**0.0053**	0.001	26.5	ug/L	19	Standard
	Tl	205	63.3	53.7	**0.0113**	0.006	48.9	ug/L	17	Standard
	Pb	206	259.3	8.4	**-0.0008**	0.004	538.8	ug/L	247	Standard
	Pb	207	223.7	7.2	**-0.0007**	0.003	439.4	ug/L	215	Standard
	Pb	208	890.3	1.6	**-0.0052**	0.001	19.5	ug/L	770	Standard
	U	238	44.0	15.7	**0.0066**	0.001	16.4	ug/L	13	Standard
>	**Bi**	209	495284.3	1.2				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	30.0	28.9	**0.0015**	0.011	728.8	mg/L	35	Standard
K	39	26.7	43.3	**0.0178**	0.054	304.4	mg/L	25	Standard
Ca	43	45.0	22.2	**3.3451**	1.602	47.9	mg/L	38	Standard
Fe	54	122.5	43.7	**-0.0227**	0.048	210.0	mg/L	126	Standard
Fe	57	173.3	26.8	**-0.4223**	0.156	36.9	mg/L	245	Standard
Sc-1	45	25518.2	4.3				mg/L	25066	Standard
Cl	35	159927.0	1.4				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	1690.1	11.2				ug/L	1350	Standard
P	31	22770.5	4.5				ug/L	18393	Standard
S	34	5202.6	2.4				ug/L	3739	Standard
Sr	88	78.3	13.3				ug/L	78	Standard
C	12	43.3	35.3				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	-0.3	173.2				mg/L	2	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	6.7	173.2				mg/L	23	Standard
I	127	1065.0	12.4				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.950	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.586	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.438	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606053301
Sample Date/Time: Tuesday, June 21, 2016 17:47:10
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60448.7	2.1				ug/L	60176	Standard
	Be	9	18.3	68.6	**0.0166**	0.018	107.0	ug/L	5	Standard
	Al	27	6338152.4	1.3	**48.0500**	1.591	3.3	ug/L	832	Standard
	Sc	45	26546.6	1.7				ug/L	25066	Standard
	Ti	47	533.3	12.7	**2.5549**	0.399	15.6	ug/L	38	Standard
	V	51	2131.1	5.9	**0.1873**	0.019	10.0	ug/L	974	Standard
	Cr	52	10369.5	2.6	**0.6877**	0.071	10.4	ug/L	5792	Standard
	Cr	53	3198.7	11.9	**3.5005**	0.514	14.7	ug/L	347	Standard
	Mn	55	118129.1	0.7	**18.2372**	0.274	1.5	ug/L	1164	Standard
	Co	59	1318.1	2.7	**0.1671**	0.009	5.6	ug/L	303	Standard
	Ni	60	3116.7	1.4	**1.5404**	0.023	1.5	ug/L	291	Standard
	Cu	65	10605.0	1.7	**5.8283**	0.198	3.4	ug/L	173	Standard
	Zn	66	23001.4	1.8	**21.9280**	0.418	1.9	ug/L	130	Standard
>	**Ge**	72	492237.0	2.0				ug/L	491724	Standard
	As	75	3704.8	1.1	**3.5603**	0.041	1.1	ug/L	-25	Standard
	Se	82	134.6	8.4	**1.2098**	0.136	11.2	ug/L	12	Standard
	Se-1	77	313.3	8.9	**3.7853**	0.480	12.7	ug/L	57	Standard
>	**Ga**	71	193.3	12.2				mg/L	148	Standard
	Rb	85	29528.8	1.8				ug/L	18	Standard
	Y	89	410980.2	2.7				ug/L	401845	Standard
>	**Rh**	103	110.0	23.6				ug/L	10	Standard
	Mo	98	1672.2	1.4	**0.6833**	0.014	2.1	ug/L	12	Standard
	Ag	107	140.0	15.4	**0.0081**	0.004	49.8	ug/L	98	Standard
	Cd	111	117.6	8.0	**0.0571**	0.004	7.3	mg/L	11	Standard
	Cd	114	311.6	20.6	**0.0629**	0.014	22.1	ug/L	21	Standard
>	**In**	115	554117.5	1.9				ug/L	547487	Standard
	Sn	118	1430.1	5.5	**0.1980**	0.011	5.7	ug/L	450	Standard
	Sb	123	2644.4	2.3	**0.6075**	0.008	1.3	ug/L	105	Standard
	Ba	135	35642.9	0.4	**19.1319**	0.401	2.1	ug/L	111	Standard
	Ce	140	641.7	11.6				ug/L	107	Standard
>	**Tb**	159	896083.5	0.2				ug/L	890342	Standard
	Ho	165	56.7	18.4				ug/L	10	Standard
	Tl	203	219.3	9.7	**0.0257**	0.003	10.9	ug/L	19	Standard
	Tl	205	195.0	25.3	**0.0326**	0.008	24.4	ug/L	17	Standard
	Pb	206	1749.1	0.8	**0.3074**	0.003	0.8	ug/L	247	Standard
	Pb	207	1455.7	6.4	**0.2796**	0.021	7.4	ug/L	215	Standard
	Pb	208	5822.8	0.8	**0.2946**	0.003	0.9	ug/L	770	Standard
	U	238	208.3	11.2	**0.0341**	0.004	11.4	ug/L	13	Standard
>	**Bi**	209	499957.7	0.2				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	24221.0	1.0	**31.3840**	0.259	0.8	mg/L	35	Standard
K	39	728.4	13.1	**3.3171**	0.458	13.8	mg/L	25	Standard
Ca	43	125.0	12.0	**17.9391**	2.703	15.1	mg/L	38	Standard
Fe	54	160.7	6.4	**0.0076**	0.011	142.5	mg/L	126	Standard
Fe	57	373.3	9.9	**0.2993**	0.127	42.5	mg/L	245	Standard
> **Sc-1**	45	26546.6	1.7				mg/L	25066	Standard
Cl	35	196436.0	1.5				ug/L	125857	Standard
Kr	83	3.3	45.8				ug/L	1	Standard
Br	81	8072.2	1.9				ug/L	1350	Standard
P	31	22922.3	0.8				ug/L	18393	Standard
S	34	4750.7	1.5				ug/L	3739	Standard
Sr	88	181.7	3.2				ug/L	78	Standard
C	12	106.7	14.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	0	Standard
Dy	164	47.8	39.5				mg/L	2	Standard
Ho-1	165	56.7	18.4				mg/L	10	Standard
Er	166	46.7	68.9				mg/L	23	Standard
I	127	47392.4	2.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.453	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.104	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.211	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.367	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078403
Sample Date/Time: Tuesday, June 21, 2016 17:50:21
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64282.8	1.4				ug/L	60176	Standard
	Be	9	16.7	45.8	**0.0128**	0.010	79.1	ug/L	5	Standard
	Al	27	9496901.0	1.4	**67.6751**	0.189	0.3	ug/L	832	Standard
	Sc	45	26276.1	3.6				ug/L	25066	Standard
	Ti	47	2632.9	0.5	**13.4149**	0.197	1.5	ug/L	38	Standard
	V	51	10654.6	5.7	**1.6202**	0.099	6.1	ug/L	974	Standard
	Cr	52	309449.4	0.1	**47.7126**	0.747	1.6	ug/L	5792	Standard
	Cr	53	43286.8	2.0	**52.4956**	0.461	0.9	ug/L	347	Standard
	Mn	55	415246.8	0.7	**64.6633**	0.642	1.0	ug/L	1164	Standard
	Co	59	14818.2	0.7	**2.3840**	0.050	2.1	ug/L	303	Standard
	Ni	60	13775.3	1.0	**7.4623**	0.106	1.4	ug/L	291	Standard
	Cu	65	2774.3	0.5	**1.4525**	0.017	1.2	ug/L	173	Standard
	Zn	66	6076.9	0.8	**5.6215**	0.043	0.8	ug/L	130	Standard
>	Ge	72	492081.5	1.5				ug/L	491724	Standard
	As	75	14825.6	0.7	**14.1492**	0.153	1.1	ug/L	-25	Standard
	Se	82	184.4	7.2	**1.6910**	0.151	8.9	ug/L	12	Standard
	Se-1	77	407.3	7.4	**5.1069**	0.343	6.7	ug/L	57	Standard
>	Ga	71	388.3	4.9				mg/L	148	Standard
	Rb	85	247976.3	1.2				ug/L	18	Standard
	Y	89	437835.7	1.8				ug/L	401845	Standard
>	Rh	103	111.7	11.3				ug/L	10	Standard
	Mo	98	768.6	2.7	**0.3040**	0.009	3.0	ug/L	12	Standard
	Ag	107	190.7	6.0	**0.0158**	0.002	12.3	ug/L	98	Standard
	Cd	111	45.2	11.2	**0.0185**	0.003	14.3	mg/L	11	Standard
	Cd	114	130.8	33.1	**0.0231**	0.009	39.2	ug/L	21	Standard
>	In	115	567817.1	0.2				ug/L	547487	Standard
	Sn	118	10468.6	2.5	**1.8698**	0.053	2.8	ug/L	450	Standard
	Sb	123	902.4	8.0	**0.1972**	0.016	8.2	ug/L	105	Standard
	Ba	135	51153.2	1.3	**26.8107**	0.405	1.5	ug/L	111	Standard
	Ce	140	2558.5	2.2				ug/L	107	Standard
>	Tb	159	907507.6	0.1				ug/L	890342	Standard
	Ho	165	388.3	9.3				ug/L	10	Standard
	Tl	203	96.3	26.1	**0.0096**	0.003	35.7	ug/L	19	Standard
	Tl	205	85.0	21.2	**0.0151**	0.003	19.8	ug/L	17	Standard
	Pb	206	1399.4	4.9	**0.2426**	0.015	6.0	ug/L	247	Standard
	Pb	207	1257.4	0.9	**0.2420**	0.003	1.1	ug/L	215	Standard
	Pb	208	4943.7	1.7	**0.2490**	0.006	2.2	ug/L	770	Standard
	U	238	308.0	0.9	**0.0522**	0.000	0.8	ug/L	13	Standard
>	Bi	209	487096.1	0.1				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.6640**	30.586	173.2	mg/L	2	Standard
Mg	24	54270.4	1.9	**71.1138**	1.170	1.6	mg/L	35	Standard
K	39	6009.5	3.1	**28.4763**	0.896	3.1	mg/L	25	Standard
Ca	43	55.0	36.4	**4.9932**	3.579	71.7	mg/L	38	Standard
Fe	54	345.1	11.2	**0.1762**	0.038	21.4	mg/L	126	Standard
Fe	57	351.7	7.8	**0.2357**	0.144	61.3	mg/L	245	Standard
> **Sc-1**	45	26276.1	3.6				mg/L	25066	Standard
Cl	35	189873.7	0.5				ug/L	125857	Standard
Kr	83	2.3	99.0				ug/L	1	Standard
Br	81	36477.2	3.1				ug/L	1350	Standard
P	31	23743.6	0.5				ug/L	18393	Standard
S	34	4889.1	0.7				ug/L	3739	Standard
Sr	88	155.0	16.1				ug/L	78	Standard
C	12	456.7	11.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	613.9	9.9				mg/L	2	Standard
Ho-1	165	388.3	9.3				mg/L	10	Standard
Er	166	336.7	6.2				mg/L	23	Standard
I	127	738935.3	7.0				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.825	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.073	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.713
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.811
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078709 WG573111-01
Sample Date/Time: Tuesday, June 21, 2016 17:53:33
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60443.9	5.7				ug/L	60176	Standard
	Be	9	16.7	34.6	**0.0143**	0.009	61.5	ug/L	5	Standard
	Al	27	10305250.8	3.2	**78.3639**	7.053	9.0	ug/L	832	Standard
	Sc	45	26180.9	1.3				ug/L	25066	Standard
	Ti	47	492.3	16.0	**2.2835**	0.397	17.4	ug/L	38	Standard
	V	51	9886.7	1.4	**1.4559**	0.086	5.9	ug/L	974	Standard
	Cr	52	12993.9	3.4	**1.0581**	0.156	14.7	ug/L	5792	Standard
	Cr	53	1368.4	1.8	**1.2241**	0.083	6.8	ug/L	347	Standard
	Mn	55	29966.3	1.1	**4.3673**	0.250	5.7	ug/L	1164	Standard
	Co	59	1096.7	3.0	**0.1268**	0.007	5.7	ug/L	303	Standard
	Ni	60	1721.1	4.7	**0.7463**	0.085	11.4	ug/L	291	Standard
	Cu	65	2142.2	3.0	**1.0742**	0.079	7.3	ug/L	173	Standard
	Zn	66	4731.4	2.1	**4.2285**	0.265	6.3	ug/L	130	Standard
>	**Ge**	72	503481.4	4.3				ug/L	491724	Standard
	As	75	526.8	4.6	**0.5242**	0.012	2.2	ug/L	-25	Standard
	Se	82	62.5	5.9	**0.4971**	0.013	2.6	ug/L	12	Standard
	Se-1	77	73.0	10.9	**0.3585**	0.086	24.0	ug/L	57	Standard
>	**Ga**	71	216.7	13.9				mg/L	148	Standard
	Rb	85	2733.6	1.6				ug/L	18	Standard
	Y	89	422057.6	7.6				ug/L	401845	Standard
>	**Rh**	103	68.3	11.2				ug/L	10	Standard
	Mo	98	279.8	4.4	**0.1129**	0.008	6.7	ug/L	12	Standard
	Ag	107	97.0	11.9	**0.0012**	0.003	216.7	ug/L	98	Standard
	Cd	111	40.5	2.4	**0.0170**	0.000	2.5	mg/L	11	Standard
	Cd	114	71.0	35.0	**0.0113**	0.006	51.4	ug/L	21	Standard
>	**In**	115	544133.8	4.3				ug/L	547487	Standard
	Sn	118	2075.1	3.5	**0.3287**	0.027	8.2	ug/L	450	Standard
	Sb	123	255.1	11.7	**0.0530**	0.009	17.6	ug/L	105	Standard
	Ba	135	71686.9	1.7	**39.2991**	2.336	5.9	ug/L	111	Standard
	Ce	140	6308.0	3.7				ug/L	107	Standard
>	**Tb**	159	874247.6	3.5				ug/L	890342	Standard
	Ho	165	205.0	17.6				ug/L	10	Standard
	Tl	203	72.3	6.8	**0.0062**	0.001	9.3	ug/L	19	Standard
	Tl	205	71.7	24.5	**0.0128**	0.003	22.0	ug/L	17	Standard
	Pb	206	870.4	1.3	**0.1280**	0.008	6.2	ug/L	247	Standard
	Pb	207	718.4	2.5	**0.1139**	0.005	4.4	ug/L	215	Standard
	Pb	208	2829.8	1.2	**0.1148**	0.006	5.6	ug/L	770	Standard
	U	238	125.7	17.0	**0.0206**	0.004	19.0	ug/L	13	Standard
>	**Bi**	209	493218.4	3.0				ug/L	503143	Standard

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Na	23	3.3	173.2	**36.2151**	62.718	173.2	mg/L	2	Standard
Mg	24	1295.1	2.9	**1.6648**	0.058	3.5	mg/L	35	Standard
K	39	110.0	9.1	**0.4127**	0.048	11.7	mg/L	25	Standard
Ca	43	135.0	14.8	**20.1289**	3.508	17.4	mg/L	38	Standard
Fe	54	213.8	22.6	**0.0577**	0.043	74.6	mg/L	126	Standard
Fe	57	361.7	4.2	**0.2754**	0.064	23.3	mg/L	245	Standard
> **Sc-1**	45	26180.9	1.3				mg/L	25066	Standard
Cl	35	162260.9	0.6				ug/L	125857	Standard
Kr	83	2.7	78.1				ug/L	1	Standard
Br	81	10053.3	4.2				ug/L	1350	Standard
P	31	24678.4	1.7				ug/L	18393	Standard
S	34	4714.1	1.8				ug/L	3739	Standard
Sr	88	126.7	12.7				ug/L	78	Standard
C	12	166.7	24.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	368.2	19.7				mg/L	2	Standard
Ho-1	165	205.0	17.6				mg/L	10	Standard
Er	166	176.7	57.8				mg/L	23	Standard
I	127	20693.0	48.0				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.445	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.391	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.388
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.028
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078710
Sample Date/Time: Tuesday, June 21, 2016 17:56:44
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62773.1	1.4				ug/L	60176	Standard
	Be	9	21.7	35.3	**0.0200**	0.011	52.9	ug/L	5	Standard
	Al	27	10724930.9	3.4	**78.2963**	3.661	4.7	ug/L	832	Standard
	Sc	45	27798.8	3.2				ug/L	25066	Standard
	Ti	47	562.7	17.6	**2.6295**	0.538	20.5	ug/L	38	Standard
	V	51	10217.9	0.6	**1.5004**	0.021	1.4	ug/L	974	Standard
	Cr	52	13153.7	0.9	**1.0695**	0.051	4.8	ug/L	5792	Standard
	Cr	53	1371.7	5.1	**1.2177**	0.058	4.8	ug/L	347	Standard
	Mn	55	29369.4	1.6	**4.2499**	0.136	3.2	ug/L	1164	Standard
	Co	59	1080.7	2.1	**0.1233**	0.002	1.9	ug/L	303	Standard
	Ni	60	1737.1	3.4	**0.7483**	0.031	4.2	ug/L	291	Standard
	Cu	65	1924.5	4.8	**0.9481**	0.033	3.5	ug/L	173	Standard
	Zn	66	4372.0	2.4	**3.8638**	0.075	2.0	ug/L	130	Standard
>	**Ge**	72	505797.3	1.7				ug/L	491724	Standard
	As	75	458.2	3.8	**0.4582**	0.009	2.1	ug/L	-25	Standard
	Se	82	38.6	4.6	**0.2705**	0.020	7.4	ug/L	12	Standard
	Se-1	77	65.3	7.6	**0.2495**	0.074	29.7	ug/L	57	Standard
>	**Ga**	71	210.0	13.3				mg/L	148	Standard
	Rb	85	3273.7	1.4				ug/L	18	Standard
	Y	89	418878.8	2.6				ug/L	401845	Standard
>	**Rh**	103	35.0	37.8				ug/L	10	Standard
	Mo	98	238.7	3.0	**0.0929**	0.004	4.0	ug/L	12	Standard
	Ag	107	109.0	6.6	**0.0027**	0.001	44.0	ug/L	98	Standard
	Cd	111	30.9	30.1	**0.0114**	0.005	43.6	mg/L	11	Standard
	Cd	114	87.2	2.7	**0.0142**	0.001	3.7	ug/L	21	Standard
>	**In**	115	559019.1	0.9				ug/L	547487	Standard
	Sn	118	1906.8	4.3	**0.2855**	0.012	4.3	ug/L	450	Standard
	Sb	123	250.1	13.3	**0.0500**	0.007	14.2	ug/L	105	Standard
	Ba	135	73442.9	1.3	**39.1229**	0.172	0.4	ug/L	111	Standard
	Ce	140	6873.2	4.0				ug/L	107	Standard
>	**Tb**	159	901790.2	0.8				ug/L	890342	Standard
	Ho	165	200.0	9.0				ug/L	10	Standard
	Tl	203	57.3	31.4	**0.0039**	0.002	58.7	ug/L	19	Standard
	Tl	205	43.3	35.3	**0.0078**	0.002	30.1	ug/L	17	Standard
	Pb	206	822.7	3.5	**0.1108**	0.007	6.1	ug/L	247	Standard
	Pb	207	701.0	5.6	**0.1033**	0.010	9.4	ug/L	215	Standard
	Pb	208	2697.1	1.4	**0.0998**	0.003	3.5	ug/L	770	Standard
	U	238	127.0	11.9	**0.0199**	0.002	11.8	ug/L	13	Standard
>	**Bi**	209	514062.2	0.8				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.4295**	30.180	173.2	mg/L	2	Standard
Mg	24	1238.4	1.7	**1.4957**	0.025	1.7	mg/L	35	Standard
K	39	105.0	17.2	**0.3595**	0.078	21.6	mg/L	25	Standard
Ca	43	170.0	10.6	**24.9795**	4.201	16.8	mg/L	38	Standard
Fe	54	232.4	2.4	**0.0625**	0.006	9.3	mg/L	126	Standard
Fe	57	421.7	12.1	**0.4086**	0.168	41.1	mg/L	245	Standard
> **Sc-1**	45	27798.8	3.2				mg/L	25066	Standard
Cl	35	170177.7	0.9				ug/L	125857	Standard
Kr	83	2.3	89.2				ug/L	1	Standard
Br	81	3510.4	1.7				ug/L	1350	Standard
P	31	25923.8	0.8				ug/L	18393	Standard
S	34	5000.8	2.7				ug/L	3739	Standard
Sr	88	136.7	27.0				ug/L	78	Standard
C	12	120.0	16.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	299.1	9.0				mg/L	2	Standard
Ho-1	165	200.0	9.0				mg/L	10	Standard
Er	166	226.7	11.1				mg/L	23	Standard
I	127	8357.3	3.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.316	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.862	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.106
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.170
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606078711S WG573111-06
Sample Date/Time: Tuesday, June 21, 2016 17:59:56
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61600.0	1.8				ug/L	60176	Standard
	Be	9	39351.1	3.1	**53.5432**	1.639	3.1	ug/L	5	Standard
	Al	27	10394779.5	1.5	**77.3073**	1.057	1.4	ug/L	832	Standard
	Sc	45	27065.8	3.5				ug/L	25066	Standard
	Ti	47	963.4	10.6	**4.7337**	0.549	11.6	ug/L	38	Standard
	V	51	322757.3	1.8	**53.6046**	1.325	2.5	ug/L	974	Standard
	Cr	52	347982.3	1.9	**53.2836**	1.385	2.6	ug/L	5792	Standard
	Cr	53	43507.5	4.5	**52.3076**	2.705	5.2	ug/L	347	Standard
	Mn	55	375081.4	0.9	**57.8666**	0.893	1.5	ug/L	1164	Standard
	Co	59	321619.4	0.7	**52.2874**	0.580	1.1	ug/L	303	Standard
	Ni	60	93916.6	2.0	**51.5228**	1.331	2.6	ug/L	291	Standard
	Cu	65	93528.8	1.2	**51.7010**	0.970	1.9	ug/L	173	Standard
	Zn	66	57176.0	0.7	**54.3806**	0.702	1.3	ug/L	130	Standard
>	**Ge**	72	496488.3	0.7				ug/L	491724	Standard
	As	75	55790.3	0.6	**52.6752**	0.114	0.2	ug/L	-25	Standard
	Se	82	5538.3	0.8	**52.9638**	0.537	1.0	ug/L	12	Standard
	Se-1	77	3804.5	1.5	**52.6667**	0.727	1.4	ug/L	57	Standard
>	**Ga**	71	466.7	30.8				mg/L	148	Standard
	Rb	85	5205.9	1.3				ug/L	18	Standard
	Y	89	431108.9	0.1				ug/L	401845	Standard
>	**Rh**	103	70.0	18.9				ug/L	10	Standard
	Mo	98	227.0	2.9	**0.0880**	0.002	2.8	ug/L	12	Standard
	Ag	107	10615.7	2.8	**1.7450**	0.050	2.9	ug/L	98	Standard
	Cd	111	99211.0	0.7	**51.6114**	0.445	0.9	mg/L	11	Standard
	Cd	114	241106.1	2.5	**51.5544**	1.220	2.4	ug/L	21	Standard
>	**In**	115	559879.4	0.9				ug/L	547487	Standard
	Sn	118	2130.1	3.8	**0.3270**	0.012	3.7	ug/L	450	Standard
	Sb	123	217940.1	0.9	**50.1700**	0.382	0.8	ug/L	105	Standard
	Ba	135	167521.4	1.0	**89.1738**	0.251	0.3	ug/L	111	Standard
	Ce	140	9182.8	2.4				ug/L	107	Standard
>	**Tb**	159	892825.7	1.7				ug/L	890342	Standard
	Ho	165	245.0	15.9				ug/L	10	Standard
	Tl	203	382126.3	1.7	**51.0936**	0.456	0.9	ug/L	19	Standard
	Tl	205	328005.7	0.3	**53.4587**	0.419	0.8	ug/L	17	Standard
	Pb	206	247016.4	0.8	**51.3212**	0.143	0.3	ug/L	247	Standard
	Pb	207	215416.9	0.8	**49.2334**	0.302	0.6	ug/L	215	Standard
	Pb	208	864247.6	0.1	**52.7618**	0.483	0.9	ug/L	770	Standard
	U	238	310732.3	0.2	**52.3391**	0.578	1.1	ug/L	13	Standard
>	**Bi**	209	498043.4	1.0				ug/L	503143	Standard

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Na	23	1.7	173.2	**16.7109**	28.936	173.2	mg/L	2	Standard
Mg	24	1233.4	1.0	**1.5318**	0.064	4.2	mg/L	35	Standard
K	39	148.3	7.8	**0.5718**	0.033	5.8	mg/L	25	Standard
Ca	43	170.0	28.4	**25.9171**	9.688	37.4	mg/L	38	Standard
Fe	54	322.0	9.5	**0.1473**	0.036	24.5	mg/L	126	Standard
Fe	57	403.3	22.9	**0.3789**	0.313	82.6	mg/L	245	Standard
> **Sc-1**	45	27065.8	3.5				mg/L	25066	Standard
Cl	35	170176.5	1.7				ug/L	125857	Standard
Kr	83	3.0	57.7				ug/L	1	Standard
Br	81	4414.0	4.5				ug/L	1350	Standard
P	31	26219.3	3.1				ug/L	18393	Standard
S	34	5044.2	5.2				ug/L	3739	Standard
Sr	88	135.0	9.8				ug/L	78	Standard
C	12	86.7	17.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	373.8	5.4				mg/L	2	Standard
Ho-1	165	245.0	15.9				mg/L	10	Standard
Er	166	200.0	13.2				mg/L	23	Standard
I	127	7025.0	4.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.367	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.969	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.264	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.987	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606078712SD WG573111-07
Sample Date/Time: Tuesday, June 21, 2016 18:03:07
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61029.3	0.4				ug/L	60176	Standard
	Be	9	38696.0	1.1	**53.1381**	0.388	0.7	ug/L	5	Standard
	Al	27	10635305.8	0.7	**79.8285**	0.406	0.5	ug/L	832	Standard
	Sc	45	27050.8	1.0				ug/L	25066	Standard
	Ti	47	1614.1	5.0	**7.8928**	0.372	4.7	ug/L	38	Standard
	V	51	334955.3	1.2	**54.4598**	1.088	2.0	ug/L	974	Standard
	Cr	52	351881.2	0.4	**52.7321**	0.628	1.2	ug/L	5792	Standard
	Cr	53	43774.8	1.5	**51.5065**	1.170	2.3	ug/L	347	Standard
	Mn	55	501871.8	1.6	**75.8606**	1.449	1.9	ug/L	1164	Standard
	Co	59	333145.1	1.3	**53.0208**	0.897	1.7	ug/L	303	Standard
	Ni	60	94669.2	0.6	**50.8362**	0.710	1.4	ug/L	291	Standard
	Cu	65	95052.6	1.5	**51.4370**	1.187	2.3	ug/L	173	Standard
	Zn	66	58277.2	0.4	**54.2587**	0.599	1.1	ug/L	130	Standard
>	**Ge**	72	507183.4	0.8				ug/L	491724	Standard
	As	75	57125.5	0.7	**52.8022**	0.788	1.5	ug/L	-25	Standard
	Se	82	5703.6	1.6	**53.3992**	1.190	2.2	ug/L	12	Standard
	Se-1	77	3834.5	0.9	**51.9576**	0.800	1.5	ug/L	57	Standard
>	**Ga**	71	908.4	9.4				mg/L	148	Standard
	Rb	85	10995.7	2.2				ug/L	18	Standard
	Y	89	422851.2	3.7				ug/L	401845	Standard
>	**Rh**	103	70.0	14.3				ug/L	10	Standard
	Mo	98	243.6	1.0	**0.0962**	0.001	1.5	ug/L	12	Standard
	Ag	107	9863.9	1.6	**1.6460**	0.047	2.9	ug/L	98	Standard
	Cd	111	99159.1	2.8	**52.3764**	0.965	1.8	mg/L	11	Standard
	Cd	114	235716.4	1.9	**51.1824**	0.756	1.5	ug/L	21	Standard
>	**In**	115	551348.1	1.3				ug/L	547487	Standard
	Sn	118	2651.9	2.8	**0.4332**	0.019	4.4	ug/L	450	Standard
	Sb	123	193703.2	1.2	**45.2835**	0.741	1.6	ug/L	105	Standard
	Ba	135	168991.9	2.6	**91.3544**	2.313	2.5	ug/L	111	Standard
	Ce	140	32860.6	2.6				ug/L	107	Standard
>	**Tb**	159	880118.4	0.8				ug/L	890342	Standard
	Ho	165	470.0	4.9				ug/L	10	Standard
	Tl	203	380545.4	1.6	**50.5209**	0.728	1.4	ug/L	19	Standard
	Tl	205	329715.6	2.7	**53.3513**	1.427	2.7	ug/L	17	Standard
	Pb	206	252108.4	1.5	**52.0068**	0.872	1.7	ug/L	247	Standard
	Pb	207	219746.2	1.1	**49.8641**	0.528	1.1	ug/L	215	Standard
	Pb	208	883612.2	0.6	**53.5586**	0.555	1.0	ug/L	770	Standard
	U	238	309715.2	1.9	**51.7947**	1.152	2.2	ug/L	13	Standard
>	**Bi**	209	501621.6	0.6				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.3130**	29.978	173.2	mg/L	2	Standard
Mg	24	1170.0	3.4	**1.4509**	0.059	4.0	mg/L	35	Standard
K	39	130.0	27.7	**0.4888**	0.170	34.7	mg/L	25	Standard
Ca	43	153.3	12.3	**22.6892**	3.519	15.5	mg/L	38	Standard
Fe	54	591.5	1.7	**0.3836**	0.008	2.1	mg/L	126	Standard
Fe	57	516.7	13.6	**0.7964**	0.241	30.3	mg/L	245	Standard
> **Sc-1**	45	27050.8	1.0				mg/L	25066	Standard
Cl	35	165809.3	2.3				ug/L	125857	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	2850.3	4.1				ug/L	1350	Standard
P	31	26767.0	3.2				ug/L	18393	Standard
S	34	4750.7	2.1				ug/L	3739	Standard
Sr	88	130.0	7.7				ug/L	78	Standard
C	12	126.7	18.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	835.0	2.5				mg/L	2	Standard
Ho-1	165	470.0	4.9				mg/L	10	Standard
Er	166	453.3	25.8				mg/L	23	Standard
I	127	6214.6	6.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.418	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.144	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85	
Y	89	
> Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
> In	115	100.705
Sn	118	
Sb	123	
Ba	135	
Ce	140	
> Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
> Bi	209	99.698
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
> Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606078718
Sample Date/Time: Tuesday, June 21, 2016 18:06:19
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61345.6	1.0				ug/L	60176	Standard
	Be	9	36.7	28.4	**0.0411**	0.014	34.6	ug/L	5	Standard
	Al	27	13853606.9	0.9	**103.4648**	1.981	1.9	ug/L	832	Standard
	Sc	45	26648.4	1.5				ug/L	25066	Standard
	Ti	47	1471.7	1.8	**7.3873**	0.204	2.8	ug/L	38	Standard
	V	51	15922.0	1.1	**2.4991**	0.067	2.7	ug/L	974	Standard
	Cr	52	13836.7	2.0	**1.2265**	0.015	1.2	ug/L	5792	Standard
	Cr	53	1288.4	6.0	**1.1570**	0.071	6.1	ug/L	347	Standard
	Mn	55	329136.0	2.3	**51.0786**	1.557	3.0	ug/L	1164	Standard
	Co	59	3178.0	2.5	**0.4710**	0.005	1.1	ug/L	303	Standard
	Ni	60	3429.7	2.4	**1.7103**	0.073	4.2	ug/L	291	Standard
	Cu	65	2424.9	0.9	**1.2538**	0.023	1.8	ug/L	173	Standard
	Zn	66	21892.8	1.6	**20.8141**	0.673	3.2	ug/L	130	Standard
>	**Ge**	72	493399.5	1.6				ug/L	491724	Standard
	As	75	662.7	6.1	**0.6629**	0.029	4.3	ug/L	-25	Standard
	Se	82	30.1	21.2	**0.1969**	0.058	29.3	ug/L	12	Standard
	Se-1	77	65.0	20.4	**0.2652**	0.174	65.4	ug/L	57	Standard
>	**Ga**	71	763.4	6.3				mg/L	148	Standard
	Rb	85	11562.7	2.6				ug/L	18	Standard
	Y	89	414722.7	0.7				ug/L	401845	Standard
>	**Rh**	103	61.7	26.1				ug/L	10	Standard
	Mo	98	2202.2	2.7	**0.9051**	0.023	2.6	ug/L	12	Standard
	Ag	107	93.7	9.6	**0.0004**	0.002	405.8	ug/L	98	Standard
	Cd	111	36.0	24.1	**0.0143**	0.005	32.0	mg/L	11	Standard
	Cd	114	82.5	18.5	**0.0135**	0.003	24.8	ug/L	21	Standard
>	**In**	115	551654.9	0.3				ug/L	547487	Standard
	Sn	118	1025.0	2.0	**0.1219**	0.003	2.7	ug/L	450	Standard
	Sb	123	1356.4	22.3	**0.3093**	0.070	22.8	ug/L	105	Standard
	Ba	135	129981.5	0.7	**70.2106**	0.381	0.5	ug/L	111	Standard
	Ce	140	35964.3	1.5				ug/L	107	Standard
>	**Tb**	159	898275.8	1.4				ug/L	890342	Standard
	Ho	165	588.3	7.7				ug/L	10	Standard
	Tl	203	129.0	10.2	**0.0136**	0.002	11.4	ug/L	19	Standard
	Tl	205	128.3	28.2	**0.0218**	0.006	27.3	ug/L	17	Standard
	Pb	206	2292.8	1.9	**0.4195**	0.012	2.9	ug/L	247	Standard
	Pb	207	1882.5	1.6	**0.3763**	0.003	0.8	ug/L	215	Standard
	Pb	208	7667.1	0.4	**0.4062**	0.006	1.5	ug/L	770	Standard
	U	238	370.0	8.6	**0.0612**	0.005	8.6	ug/L	13	Standard
>	**Bi**	209	500668.3	1.1				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.6673**	30.592	173.2	mg/L	2	Standard
Mg	24	3412.1	3.5	**4.3714**	0.183	4.2	mg/L	35	Standard
K	39	153.3	13.2	**0.6068**	0.098	16.1	mg/L	25	Standard
Ca	43	170.0	16.4	**26.2488**	5.560	21.2	mg/L	38	Standard
Fe	54	683.7	6.3	**0.4734**	0.029	6.2	mg/L	126	Standard
Fe	57	593.3	9.3	**1.1125**	0.233	21.0	mg/L	245	Standard
> **Sc-1**	45	26648.4	1.5				mg/L	25066	Standard
Cl	35	162659.9	1.3				ug/L	125857	Standard
Kr	83	4.3	81.0				ug/L	1	Standard
Br	81	1856.8	15.6				ug/L	1350	Standard
P	31	25311.1	1.5				ug/L	18393	Standard
S	34	4550.7	1.1				ug/L	3739	Standard
Sr	88	181.7	9.7				ug/L	78	Standard
C	12	63.3	9.1				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	938.6	15.9				mg/L	2	Standard
Ho-1	165	588.3	7.7				mg/L	10	Standard
Er	166	516.7	15.6				mg/L	23	Standard
I	127	3795.5	3.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.944	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.341	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.761
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.508
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606078718
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Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606086201 WG573111-02
Sample Date/Time: Tuesday, June 21, 2016 18:09:30
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70003.4	5.7				ug/L	60176	Standard
	Be	9	36.7	20.8	**0.0348**	0.009	24.5	ug/L	5	Standard
	Al	27	16610862.4	6.4	**108.6830**	1.728	1.6	ug/L	832	Standard
	Sc	45	26531.6	3.2				ug/L	25066	Standard
	Ti	47	79.3	22.9	**0.1919**	0.082	42.6	ug/L	38	Standard
	V	51	2014.4	26.0	**0.1599**	0.083	51.6	ug/L	974	Standard
	Cr	52	10191.1	1.8	**0.6236**	0.029	4.7	ug/L	5792	Standard
	Cr	53	1240.1	4.8	**1.0705**	0.108	10.1	ug/L	347	Standard
	Mn	55	135277.1	2.5	**20.4449**	0.338	1.7	ug/L	1164	Standard
	Co	59	3194.7	8.9	**0.4633**	0.042	9.0	ug/L	303	Standard
	Ni	60	4307.3	3.2	**2.1481**	0.040	1.8	ug/L	291	Standard
	Cu	65	2946.0	3.6	**1.5109**	0.014	0.9	ug/L	173	Standard
	Zn	66	4156.6	3.8	**3.6798**	0.081	2.2	ug/L	130	Standard
>	**Ge**	72	503442.9	2.8				ug/L	491724	Standard
	As	75	284.8	17.5	**0.2994**	0.050	16.6	ug/L	-25	Standard
	Se	82	101.4	8.8	**0.8650**	0.083	9.6	ug/L	12	Standard
	Se-1	77	87.0	7.2	**0.5544**	0.111	20.1	ug/L	57	Standard
>	**Ga**	71	96.7	15.8				mg/L	148	Standard
	Rb	85	10238.5	4.2				ug/L	18	Standard
	Y	89	429610.1	1.8				ug/L	401845	Standard
>	**Rh**	103	65.0	13.3				ug/L	10	Standard
	Mo	98	201.8	61.9	**0.0760**	0.048	63.5	ug/L	12	Standard
	Ag	107	138.7	53.9	**0.0071**	0.012	164.1	ug/L	98	Standard
	Cd	111	55.1	4.5	**0.0236**	0.002	6.5	mg/L	11	Standard
	Cd	114	127.5	35.8	**0.0224**	0.009	41.4	ug/L	21	Standard
>	**In**	115	568273.2	3.6				ug/L	547487	Standard
	Sn	118	590.0	11.4	**0.0352**	0.009	25.4	ug/L	450	Standard
	Sb	123	675.3	25.4	**0.1449**	0.035	24.0	ug/L	105	Standard
	Ba	135	11427.3	2.3	**5.9431**	0.086	1.4	ug/L	111	Standard
	Ce	140	1858.4	6.1				ug/L	107	Standard
>	**Tb**	159	912569.9	2.0				ug/L	890342	Standard
	Ho	165	186.7	6.7				ug/L	10	Standard
	Tl	203	338.7	64.0	**0.0413**	0.028	67.6	ug/L	19	Standard
	Tl	205	318.3	54.7	**0.0526**	0.027	52.2	ug/L	17	Standard
	Pb	206	619.3	45.9	**0.0728**	0.056	77.2	ug/L	247	Standard
	Pb	207	529.7	52.6	**0.0680**	0.061	89.6	ug/L	215	Standard
	Pb	208	1946.1	35.0	**0.0582**	0.039	67.2	ug/L	770	Standard
	U	238	472.3	32.1	**0.0784**	0.024	31.1	ug/L	13	Standard
>	**Bi**	209	499634.8	2.9				ug/L	503143	Standard

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Na	23	3.3	86.6	**35.1997**	30.527	86.7	mg/L	2	Standard
Mg	24	58866.0	4.8	**76.3418**	1.277	1.7	mg/L	35	Standard
K	39	203.3	22.3	**0.8502**	0.245	28.9	mg/L	25	Standard
Ca	43	263.3	12.6	**43.7969**	6.786	15.5	mg/L	38	Standard
Fe	54	172.6	3.6	**0.0183**	0.008	42.0	mg/L	126	Standard
Fe	57	565.0	6.2	**1.0188**	0.198	19.5	mg/L	245	Standard
> **Sc-1**	45	26531.6	3.2				mg/L	25066	Standard
Cl	35	528870.2	4.8				ug/L	125857	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	18100.9	11.2				ug/L	1350	Standard
P	31	22234.7	5.0				ug/L	18393	Standard
S	34	4849.1	0.7				ug/L	3739	Standard
Sr	88	275.0	7.3				ug/L	78	Standard
C	12	93.3	16.4				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	288.4	8.8				mg/L	2	Standard
Ho-1	165	186.7	6.7				mg/L	10	Standard
Er	166	103.3	22.3				mg/L	23	Standard
I	127	6759.8	6.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.331	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.383	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606086201 WG573111-02
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.797	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.303	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606086201 WG573111-02
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Method 6020 - Summary Report

Sample ID: L1606086201DP WG573111-08
Sample Date/Time: Tuesday, June 21, 2016 18:12:42
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77315.1	0.8				ug/L	60176	Standard
	Be	9	36.7	55.1	**0.0306**	0.022	70.8	ug/L	5	Standard
	Al	27	17227028.4	3.4	**102.0589**	2.703	2.6	ug/L	832	Standard
	Sc	45	26312.9	5.4				ug/L	25066	Standard
	Ti	47	92.7	6.6	**0.2625**	0.044	16.8	ug/L	38	Standard
	V	51	1770.2	7.4	**0.1214**	0.033	27.3	ug/L	974	Standard
	Cr	52	10246.5	1.8	**0.6348**	0.045	7.2	ug/L	5792	Standard
	Cr	53	1068.4	4.2	**0.8651**	0.006	0.7	ug/L	347	Standard
	Mn	55	134734.3	3.6	**20.3882**	0.086	0.4	ug/L	1164	Standard
	Co	59	2977.6	2.6	**0.4294**	0.015	3.5	ug/L	303	Standard
	Ni	60	4134.6	6.2	**2.0561**	0.052	2.5	ug/L	291	Standard
	Cu	65	2902.9	3.4	**1.4903**	0.037	2.5	ug/L	173	Standard
	Zn	66	4166.9	2.6	**3.6969**	0.093	2.5	ug/L	130	Standard
>	**Ge**	72	502766.3	3.9				ug/L	491724	Standard
	As	75	231.7	9.5	**0.2502**	0.026	10.3	ug/L	-25	Standard
	Se	82	82.9	12.5	**0.6918**	0.104	15.0	ug/L	12	Standard
	Se-1	77	92.7	5.9	**0.6360**	0.126	19.8	ug/L	57	Standard
>	**Ga**	71	116.7	13.1				mg/L	148	Standard
	Rb	85	10200.1	2.2				ug/L	18	Standard
	Y	89	445666.9	2.4				ug/L	401845	Standard
>	**Rh**	103	83.3	15.1				ug/L	10	Standard
	Mo	98	109.3	3.3	**0.0379**	0.001	2.8	ug/L	12	Standard
	Ag	107	78.3	5.3	**-0.0030**	0.001	22.0	ug/L	98	Standard
	Cd	111	32.1	9.6	**0.0112**	0.002	16.1	mg/L	11	Standard
	Cd	114	61.4	31.5	**0.0081**	0.004	52.2	ug/L	21	Standard
>	**In**	115	588323.0	2.0				ug/L	547487	Standard
	Sn	118	506.7	15.4	**0.0167**	0.013	77.1	ug/L	450	Standard
	Sb	123	391.2	12.5	**0.0783**	0.013	16.1	ug/L	105	Standard
	Ba	135	11417.0	3.2	**5.7308**	0.081	1.4	ug/L	111	Standard
	Ce	140	1880.1	4.4				ug/L	107	Standard
>	**Tb**	159	936011.4	2.7				ug/L	890342	Standard
	Ho	165	181.7	20.8				ug/L	10	Standard
	Tl	203	161.0	14.9	**0.0175**	0.004	20.0	ug/L	19	Standard
	Tl	205	160.0	27.8	**0.0266**	0.008	28.3	ug/L	17	Standard
	Pb	206	452.7	4.8	**0.0372**	0.007	18.1	ug/L	247	Standard
	Pb	207	379.3	5.9	**0.0328**	0.007	22.4	ug/L	215	Standard
	Pb	208	1520.0	3.7	**0.0310**	0.006	19.0	ug/L	770	Standard
	U	238	306.7	5.7	**0.0497**	0.003	6.7	ug/L	13	Standard
>	**Bi**	209	509399.4	2.7				ug/L	503143	Standard

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Na	23	3.3	86.6	**36.1951**	31.438	86.9	mg/L	2	Standard
Mg	24	59695.8	3.9	**78.1443**	2.085	2.7	mg/L	35	Standard
K	39	236.7	11.6	**1.0180**	0.191	18.8	mg/L	25	Standard
Ca	43	230.0	14.3	**37.7841**	4.654	12.3	mg/L	38	Standard
Fe	54	155.5	13.6	**0.0041**	0.017	424.3	mg/L	126	Standard
Fe	57	521.7	15.8	**0.8829**	0.414	46.9	mg/L	245	Standard
> **Sc-1**	45	26312.9	5.4				mg/L	25066	Standard
Cl	35	564291.5	2.7				ug/L	125857	Standard
Kr	83	1.0	0.0				ug/L	1	Standard
Br	81	11614.5	6.5				ug/L	1350	Standard
P	31	22116.2	5.6				ug/L	18393	Standard
S	34	4845.8	1.1				ug/L	3739	Standard
Sr	88	280.0	12.4				ug/L	78	Standard
C	12	113.3	18.4				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	262.8	27.6				mg/L	2	Standard
Ho-1	165	181.7	20.8				mg/L	10	Standard
Er	166	150.0	40.0				mg/L	23	Standard
I	127	6614.8	4.5				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.482	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.246	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.459
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.244
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606088302
Sample Date/Time: Tuesday, June 21, 2016 18:15:53
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72031.1	4.6				ug/L	60176	Standard
	Be	9	43.3	52.0	**0.0410**	0.025	59.9	ug/L	5	Standard
	Al	27	18877330.6	2.8	**120.1329**	2.878	2.4	ug/L	832	Standard
	Sc	45	26508.2	2.8				ug/L	25066	Standard
	Ti	47	1389.4	3.9	**6.9356**	0.221	3.2	ug/L	38	Standard
	V	51	10133.0	2.4	**1.5222**	0.036	2.4	ug/L	974	Standard
	Cr	52	17075.6	2.7	**1.7253**	0.058	3.4	ug/L	5792	Standard
	Cr	53	2106.8	4.1	**2.1475**	0.127	5.9	ug/L	347	Standard
	Mn	55	8659860.5	3.3	**1344.4292**	36.890	2.7	ug/L	1164	Standard
	Co	59	26955.7	4.2	**4.3488**	0.153	3.5	ug/L	303	Standard
	Ni	60	24380.9	3.0	**13.2700**	0.290	2.2	ug/L	291	Standard
	Cu	65	3102.3	3.6	**1.6250**	0.048	3.0	ug/L	173	Standard
	Zn	66	73890.8	2.7	**70.5385**	1.291	1.8	ug/L	130	Standard
>	**Ge**	72	495064.0	0.9				ug/L	491724	Standard
	As	75	7508.6	3.4	**7.1381**	0.186	2.6	ug/L	-25	Standard
	Se	82	88.8	5.6	**0.7604**	0.041	5.3	ug/L	12	Standard
	Se-1	77	104.3	8.0	**0.8163**	0.107	13.1	ug/L	57	Standard
>	**Ga**	71	1203.4	6.0				mg/L	148	Standard
	Rb	85	18631.5	4.9				ug/L	18	Standard
	Y	89	471499.9	4.5				ug/L	401845	Standard
>	**Rh**	103	68.3	23.5				ug/L	10	Standard
	Mo	98	16975.2	1.8	**6.8750**	0.095	1.4	ug/L	12	Standard
	Ag	107	124.7	8.1	**0.0052**	0.002	43.3	ug/L	98	Standard
	Cd	111	354.4	5.3	**0.1790**	0.013	7.3	mg/L	11	Standard
	Cd	114	927.6	4.1	**0.1930**	0.003	1.7	ug/L	21	Standard
>	**In**	115	562376.6	3.1				ug/L	547487	Standard
	Sn	118	4190.6	1.8	**0.7122**	0.033	4.6	ug/L	450	Standard
	Sb	123	1237.0	1.3	**0.2761**	0.009	3.1	ug/L	105	Standard
	Ba	135	323863.4	1.8	**171.7335**	2.697	1.6	ug/L	111	Standard
	Ce	140	34140.1	1.5				ug/L	107	Standard
>	**Tb**	159	897272.3	2.5				ug/L	890342	Standard
	Ho	165	3113.7	2.4				ug/L	10	Standard
	Tl	203	64.7	19.9	**0.0051**	0.002	33.0	ug/L	19	Standard
	Tl	205	68.3	15.2	**0.0121**	0.002	13.5	ug/L	17	Standard
	Pb	206	38821.3	1.4	**8.0108**	0.071	0.9	ug/L	247	Standard
	Pb	207	32359.9	2.0	**7.3434**	0.107	1.5	ug/L	215	Standard
	Pb	208	128351.5	2.3	**7.7758**	0.128	1.6	ug/L	770	Standard
	U	238	8442.7	2.9	**1.4196**	0.032	2.3	ug/L	13	Standard
>	**Bi**	209	498550.4	0.6				ug/L	503143	Standard

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Na	23	5.0	100.0	**53.3736**	52.932	99.2	mg/L	2	Standard
Mg	24	21398.5	5.6	**27.7596**	1.350	4.9	mg/L	35	Standard
K	39	1008.4	11.1	**4.6456**	0.585	12.6	mg/L	25	Standard
Ca	43	186.7	14.8	**29.4057**	4.377	14.9	mg/L	38	Standard
Fe	54	2908.8	2.8	**2.4754**	0.120	4.8	mg/L	126	Standard
Fe	57	1130.0	7.4	**3.1241**	0.310	9.9	mg/L	245	Standard
> **Sc-1**	45	26508.2	2.8				mg/L	25066	Standard
Cl	35	207996.3	4.3				ug/L	125857	Standard
Kr	83	2.7	78.1				ug/L	1	Standard
Br	81	11254.2	3.5				ug/L	1350	Standard
P	31	26543.2	2.6				ug/L	18393	Standard
S	34	4722.4	7.5				ug/L	3739	Standard
Sr	88	290.0	4.6				ug/L	78	Standard
C	12	550.0	9.1				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	4557.8	5.5				mg/L	2	Standard
Ho-1	165	3113.7	2.4				mg/L	10	Standard
Er	166	2983.6	2.5				mg/L	23	Standard
I	127	203725.5	6.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.701	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.679	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.720	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.087	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 18:19:06
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68241.8	3.0				ug/L	60176	Standard
	Be	9	42051.7	3.8	**51.6361**	0.537	1.0	ug/L	5	Standard
	Al	27	6971995.2	1.7	**46.8104**	0.719	1.5	ug/L	832	Standard
	Sc	45	24852.0	1.3				ug/L	25066	Standard
	Ti	47	20097.0	2.7	**107.8691**	2.722	2.5	ug/L	38	Standard
	V	51	307873.7	1.3	**53.6238**	0.489	0.9	ug/L	974	Standard
	Cr	52	328667.5	1.2	**52.7708**	0.685	1.3	ug/L	5792	Standard
	Cr	53	41331.3	2.5	**52.1074**	1.405	2.7	ug/L	347	Standard
	Mn	55	323878.6	1.2	**52.3860**	0.759	1.4	ug/L	1164	Standard
	Co	59	325002.9	1.5	**55.4186**	0.688	1.2	ug/L	303	Standard
	Ni	60	90037.4	0.9	**51.8053**	0.679	1.3	ug/L	291	Standard
	Cu	65	90581.0	1.5	**52.5134**	0.543	1.0	ug/L	173	Standard
	Zn	66	53001.9	0.8	**52.8632**	0.064	0.1	ug/L	130	Standard
>	Ge	72	473368.8	0.8				ug/L	491724	Standard
	As	75	53534.5	0.7	**53.0137**	0.077	0.1	ug/L	-25	Standard
	Se	82	5487.6	1.0	**55.0445**	0.192	0.3	ug/L	12	Standard
	Se-1	77	3650.1	0.8	**53.0021**	0.366	0.7	ug/L	57	Standard
>	Ga	71	215.0	9.3				mg/L	148	Standard
	Rb	85	910.0	6.2				ug/L	18	Standard
	Y	89	416501.3	1.6				ug/L	401845	Standard
>	Rh	103	51.7	20.1				ug/L	10	Standard
	Mo	98	242295.3	0.6	**98.0576**	1.644	1.7	ug/L	12	Standard
	Ag	107	299878.8	2.2	**49.4337**	1.074	2.2	ug/L	98	Standard
	Cd	111	98207.6	0.4	**50.8054**	0.675	1.3	mg/L	11	Standard
	Cd	114	240827.7	3.2	**51.1947**	0.841	1.6	ug/L	21	Standard
>	In	115	563072.6	1.7				ug/L	547487	Standard
	Sn	118	264056.2	0.9	**49.3801**	1.145	2.3	ug/L	450	Standard
	Sb	123	215333.2	1.5	**49.2924**	0.748	1.5	ug/L	105	Standard
	Ba	135	93099.8	1.2	**49.2664**	1.301	2.6	ug/L	111	Standard
	Ce	140	76.7	30.8				ug/L	107	Standard
>	Tb	159	879908.2	1.7				ug/L	890342	Standard
	Ho	165	3.3	173.2				ug/L	10	Standard
	Tl	203	383264.6	0.5	**51.4037**	0.933	1.8	ug/L	19	Standard
	Tl	205	335822.7	2.8	**54.8792**	0.706	1.3	ug/L	17	Standard
	Pb	206	245508.2	1.1	**51.1598**	0.909	1.8	ug/L	247	Standard
	Pb	207	222387.2	0.6	**50.9816**	0.958	1.9	ug/L	215	Standard
	Pb	208	870389.8	0.4	**53.3024**	1.410	2.6	ug/L	770	Standard
	U	238	316954.9	1.4	**53.5444**	1.099	2.1	ug/L	13	Standard
>	Bi	209	496674.2	2.3				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3777.1	3.0	**5.1944**	0.100	1.9	mg/L	35	Standard
K	39	940.0	7.7	**4.6131**	0.347	7.5	mg/L	25	Standard
Ca	43	46.7	27.0	**3.9480**	2.492	63.1	mg/L	38	Standard
Fe	54	5268.6	7.7	**4.9055**	0.368	7.5	mg/L	126	Standard
Fe	57	1598.4	5.2	**5.2665**	0.320	6.1	mg/L	245	Standard
Sc-1	45	24852.0	1.3				mg/L	25066	Standard
Cl	35	163793.4	1.6				ug/L	125857	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	1850.1	19.4				ug/L	1350	Standard
P	31	22236.3	2.1				ug/L	18393	Standard
S	34	4902.5	1.0				ug/L	3739	Standard
Sr	88	91.7	24.6				ug/L	78	Standard
C	12	70.0	0.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	18.9	49.2				mg/L	2	Standard
Ho-1	165	3.3	173.2				mg/L	10	Standard
Er	166	23.3	65.5				mg/L	23	Standard
I	127	5351.1	56.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	103.272		
Al	27	93.621		
Sc	45			
Ti	47	107.869		
V	51	107.248		
Cr	52	105.542		
Cr	53			
Mn	55	104.772		
Co	59	110.837		
Ni	60	103.611		
Cu	65	105.027		
Zn	66	105.726		
Ge	72		96.267	
As	75	106.027		
Se	82	110.089		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	98.058		
Ag	107	98.867		
Cd	111	101.611		
Cd	114			
In	115		102.847	
Sn	118	98.760		
Sb	123	98.585		
Ba	135	98.533		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.807		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.605		
U	238	107.089		
Bi	209		98.714	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Co	59	
QC Std 6	Se	82	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 18:22:18
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67175.3	1.0				ug/L	60176	Standard
	Be	9	20.0	25.0	**0.0159**	0.006	38.1	ug/L	5	Standard
	Al	27	2591.9	21.1	**0.0093**	0.004	40.6	ug/L	832	Standard
	Sc	45	25002.3	1.9				ug/L	25066	Standard
	Ti	47	26.3	8.8	**-0.0730**	0.015	21.1	ug/L	38	Standard
	V	51	1024.0	6.3	**-0.0008**	0.011	1434.1	ug/L	974	Standard
	Cr	52	6027.2	0.6	**-0.0071**	0.031	440.7	ug/L	5792	Standard
	Cr	53	448.3	17.4	**0.1301**	0.110	84.6	ug/L	347	Standard
	Mn	55	1540.7	13.4	**0.0229**	0.038	165.9	ug/L	1164	Standard
	Co	59	299.7	11.6	**-0.0007**	0.007	1063.7	ug/L	303	Standard
	Ni	60	216.7	14.8	**-0.0720**	0.016	21.7	ug/L	291	Standard
	Cu	65	161.7	10.9	**-0.0086**	0.009	106.2	ug/L	173	Standard
	Zn	66	175.3	6.1	**-0.0687**	0.005	7.4	ug/L	130	Standard
>	**Ge**	72	498606.4	3.0				ug/L	491724	Standard
	As	75	-26.7	98.4	**0.0088**	0.025	280.9	ug/L	-25	Standard
	Se	82	16.5	23.4	**0.0653**	0.041	63.0	ug/L	12	Standard
	Se-1	77	55.0	16.7	**0.1158**	0.104	89.8	ug/L	57	Standard
>	**Ga**	71	146.7	26.5				mg/L	148	Standard
	Rb	85	28.3	62.0				ug/L	18	Standard
	Y	89	424941.7	0.7				ug/L	401845	Standard
>	**Rh**	103	51.7	27.9				ug/L	10	Standard
	Mo	98	218.0	16.8	**0.0834**	0.015	17.7	ug/L	12	Standard
	Ag	107	103.3	10.3	**0.0016**	0.002	104.0	ug/L	98	Standard
	Cd	111	15.6	39.7	**0.0033**	0.003	97.5	mg/L	11	Standard
	Cd	114	35.3	50.3	**0.0030**	0.004	124.6	ug/L	21	Standard
>	**In**	115	565960.7	1.0				ug/L	547487	Standard
	Sn	118	921.7	38.3	**0.0980**	0.067	68.7	ug/L	450	Standard
	Sb	123	408.0	24.4	**0.0853**	0.023	26.8	ug/L	105	Standard
	Ba	135	123.7	12.1	**0.0096**	0.008	87.6	ug/L	111	Standard
	Ce	140	18.3	63.0				ug/L	107	Standard
>	**Tb**	159	883902.4	1.6				ug/L	890342	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	63.7	25.9	**0.0050**	0.002	46.4	ug/L	19	Standard
	Tl	205	55.0	39.6	**0.0100**	0.004	36.9	ug/L	17	Standard
	Pb	206	285.3	5.4	**0.0043**	0.004	96.3	ug/L	247	Standard
	Pb	207	231.7	13.5	**0.0008**	0.008	949.4	ug/L	215	Standard
	Pb	208	973.0	3.2	**-0.0006**	0.002	406.9	ug/L	770	Standard
	U	238	35.7	23.5	**0.0052**	0.002	29.1	ug/L	13	Standard
>	**Bi**	209	499145.6	2.0				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.6835**	32.352	173.2	mg/L	2	Standard
Mg	24	31.7	50.8	**0.0049**	0.023	465.6	mg/L	35	Standard
K	39	15.0	33.3	**-0.0372**	0.026	69.8	mg/L	25	Standard
Ca	43	28.3	20.4	**0.2868**	1.247	434.6	mg/L	38	Standard
Fe	54	104.1	41.5	**-0.0380**	0.040	104.4	mg/L	126	Standard
Fe	57	216.7	17.3	**-0.2352**	0.133	56.4	mg/L	245	Standard
> **Sc-1**	45	25002.3	1.9				mg/L	25066	Standard
Cl	35	165048.8	0.9				ug/L	125857	Standard
Kr	83	2.7	21.7				ug/L	1	Standard
Br	81	1623.4	12.1				ug/L	1350	Standard
P	31	22124.5	3.3				ug/L	18393	Standard
S	34	4804.1	3.4				ug/L	3739	Standard
Sr	88	68.3	27.7				ug/L	78	Standard
C	12	66.7	31.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.0	193.9				mg/L	2	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	1761.8	7.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.400	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.374
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.206
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606089601
Sample Date/Time: Tuesday, June 21, 2016 18:25:31
Number of Replicates: 3
Autosampler Position: 346
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70103.6	3.0				ug/L	60176	Standard
	Be	9	30.0	16.7	**0.0268**	0.005	18.6	ug/L	5	Standard
	Al	27	3685234.3	1.1	**24.0854**	0.545	2.3	ug/L	832	Standard
	Sc	45	27947.4	2.4				ug/L	25066	Standard
	Ti	47	382.0	70.3	**1.6605**	1.282	77.2	ug/L	38	Standard
	V	51	1685.0	2.5	**0.0990**	0.013	12.7	ug/L	974	Standard
	Cr	52	9250.2	0.4	**0.4417**	0.034	7.7	ug/L	5792	Standard
	Cr	53	1403.4	4.4	**1.2193**	0.042	3.4	ug/L	347	Standard
	Mn	55	19012124.1	0.6	**2827.7756**	74.302	2.6	ug/L	1164	Standard
	Co	59	222392.0	0.8	**34.7165**	1.037	3.0	ug/L	303	Standard
	Ni	60	2226.5	4.2	**0.9867**	0.048	4.9	ug/L	291	Standard
	Cu	65	381.0	0.5	**0.1050**	0.004	3.5	ug/L	173	Standard
	Zn	66	3054.6	2.1	**2.5666**	0.027	1.1	ug/L	130	Standard
>	**Ge**	72	517022.9	2.2				ug/L	491724	Standard
	As	75	3484.3	1.7	**3.1917**	0.073	2.3	ug/L	-25	Standard
	Se	82	132.5	2.0	**1.1265**	0.041	3.6	ug/L	12	Standard
	Se-1	77	106.3	7.5	**0.7815**	0.106	13.5	ug/L	57	Standard
>	**Ga**	71	960.0	20.1				mg/L	148	Standard
	Rb	85	23004.1	0.8				ug/L	18	Standard
	Y	89	437717.7	0.3				ug/L	401845	Standard
>	**Rh**	103	45.0	38.5				ug/L	10	Standard
	Mo	98	134.7	12.0	**0.0478**	0.006	13.5	ug/L	12	Standard
	Ag	107	109.0	10.4	**0.0018**	0.002	91.3	ug/L	98	Standard
	Cd	111	14.4	47.1	**0.0025**	0.003	137.0	mg/L	11	Standard
	Cd	114	41.9	23.5	**0.0041**	0.002	49.9	ug/L	21	Standard
>	**In**	115	587619.1	1.4				ug/L	547487	Standard
	Sn	118	860.0	5.8	**0.0802**	0.008	9.4	ug/L	450	Standard
	Sb	123	233.8	26.5	**0.0436**	0.013	29.9	ug/L	105	Standard
	Ba	135	48272.8	1.0	**24.4439**	0.117	0.5	ug/L	111	Standard
	Ce	140	18765.0	11.4				ug/L	107	Standard
>	**Tb**	159	938001.0	0.8				ug/L	890342	Standard
	Ho	165	298.3	19.3				ug/L	10	Standard
	Tl	203	150.3	4.3	**0.0152**	0.001	6.0	ug/L	19	Standard
	Tl	205	115.0	15.7	**0.0185**	0.003	14.4	ug/L	17	Standard
	Pb	206	534.3	3.6	**0.0487**	0.004	8.5	ug/L	247	Standard
	Pb	207	488.7	1.3	**0.0521**	0.002	4.0	ug/L	215	Standard
	Pb	208	1952.4	0.5	**0.0513**	0.000	0.7	ug/L	770	Standard
	U	238	255.0	5.1	**0.0392**	0.002	5.2	ug/L	13	Standard
>	**Bi**	209	534128.2	0.7				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	7298.4	1.4	**8.9592**	0.320	3.6	mg/L	35	Standard
K	39	96.7	31.6	**0.3179**	0.126	39.6	mg/L	25	Standard
Ca	43	46.7	16.4	**2.9434**	1.521	51.7	mg/L	38	Standard
Fe	54	23061.8	3.5	**19.5103**	1.160	5.9	mg/L	126	Standard
Fe	57	5869.5	4.4	**19.6834**	1.282	6.5	mg/L	245	Standard
> **Sc-1**	45	27947.4	2.4				mg/L	25066	Standard
Cl	35	163080.4	1.3				ug/L	125857	Standard
Kr	83	4.3	48.0				ug/L	1	Standard
Br	81	26733.6	2.6				ug/L	1350	Standard
P	31	26311.2	1.3				ug/L	18393	Standard
S	34	4997.5	0.8				ug/L	3739	Standard
Sr	88	113.3	12.7				ug/L	78	Standard
C	12	230.0	4.3				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	393.7	7.8				mg/L	2	Standard
Ho-1	165	298.3	19.3				mg/L	10	Standard
Er	166	270.0	19.2				mg/L	23	Standard
I	127	1056071.3	10.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.498	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.145	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.330
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.158
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606089602
Sample Date/Time: Tuesday, June 21, 2016 18:28:42
Number of Replicates: 3
Autosampler Position: 347
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66890.7	2.2				ug/L	60176	Standard
	Be	9	23.3	24.7	**0.0201**	0.007	32.5	ug/L	5	Standard
	Al	27	149805.7	3.0	**1.0175**	0.011	1.1	ug/L	832	Standard
	Sc	45	26154.2	3.3				ug/L	25066	Standard
	Ti	47	179.3	10.3	**0.7022**	0.105	15.0	ug/L	38	Standard
	V	51	1401.7	5.1	**0.0601**	0.011	18.8	ug/L	974	Standard
	Cr	52	10512.0	0.7	**0.6764**	0.028	4.1	ug/L	5792	Standard
	Cr	53	1416.7	9.0	**1.2841**	0.157	12.2	ug/L	347	Standard
	Mn	55	10409.3	6.2	**1.3787**	0.114	8.3	ug/L	1164	Standard
	Co	59	540.0	3.3	**0.0375**	0.003	8.6	ug/L	303	Standard
	Ni	60	844.0	0.2	**0.2688**	0.005	1.8	ug/L	291	Standard
	Cu	65	296.7	5.6	**0.0648**	0.011	17.1	ug/L	173	Standard
	Zn	66	1902.8	4.1	**1.5621**	0.096	6.1	ug/L	130	Standard
>	**Ge**	72	502257.1	1.3				ug/L	491724	Standard
	As	75	8.2	485.9	**0.0416**	0.037	88.7	ug/L	-25	Standard
	Se	82	33.9	33.4	**0.2274**	0.104	45.7	ug/L	12	Standard
	Se-1	77	70.7	24.9	**0.3292**	0.242	73.5	ug/L	57	Standard
>	**Ga**	71	326.7	26.3				mg/L	148	Standard
	Rb	85	8215.6	2.7				ug/L	18	Standard
	Y	89	444333.1	2.2				ug/L	401845	Standard
>	**Rh**	103	31.7	48.2				ug/L	10	Standard
	Mo	98	46.8	15.4	**0.0138**	0.002	17.7	ug/L	12	Standard
	Ag	107	73.3	4.4	**-0.0037**	0.000	8.2	ug/L	98	Standard
	Cd	111	8.2	45.8	**-0.0006**	0.002	305.8	mg/L	11	Standard
	Cd	114	19.1	24.5	**-0.0005**	0.001	199.0	ug/L	21	Standard
>	**In**	115	583126.7	2.0				ug/L	547487	Standard
	Sn	118	593.3	2.7	**0.0333**	0.003	10.0	ug/L	450	Standard
	Sb	123	144.2	19.6	**0.0243**	0.007	28.0	ug/L	105	Standard
	Ba	135	7469.5	3.8	**3.7635**	0.074	2.0	ug/L	111	Standard
	Ce	140	1718.4	6.1				ug/L	107	Standard
>	**Tb**	159	899867.4	0.7				ug/L	890342	Standard
	Ho	165	30.0	66.7				ug/L	10	Standard
	Tl	203	67.7	10.9	**0.0053**	0.001	16.4	ug/L	19	Standard
	Tl	205	71.7	22.4	**0.0124**	0.003	20.6	ug/L	17	Standard
	Pb	206	312.7	6.7	**0.0088**	0.004	47.7	ug/L	247	Standard
	Pb	207	252.0	2.7	**0.0044**	0.002	38.0	ug/L	215	Standard
	Pb	208	1132.0	3.9	**0.0079**	0.002	19.1	ug/L	770	Standard
	U	238	82.7	5.0	**0.0128**	0.001	6.4	ug/L	13	Standard
>	**Bi**	209	508030.6	1.7				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.2590**	31.617	173.2	mg/L	2	Standard
Mg	24	2870.3	3.9	**3.7404**	0.081	2.2	mg/L	35	Standard
K	39	155.0	5.6	**0.6292**	0.059	9.4	mg/L	25	Standard
Ca	43	26.7	28.6	**-0.2827**	1.489	526.7	mg/L	38	Standard
Fe	54	167.0	2.0	**0.0156**	0.008	50.9	mg/L	126	Standard
Fe	57	218.3	14.7	**-0.2671**	0.094	35.1	mg/L	245	Standard
> **Sc-1**	45	26154.2	3.3				mg/L	25066	Standard
Cl	35	154406.3	2.1				ug/L	125857	Standard
Kr	83	2.7	21.7				ug/L	1	Standard
Br	81	5824.5	3.9				ug/L	1350	Standard
P	31	26713.5	1.6				ug/L	18393	Standard
S	34	4210.6	7.3				ug/L	3739	Standard
Sr	88	103.3	42.3				ug/L	78	Standard
C	12	70.0	28.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	71.7	36.0				mg/L	2	Standard
Ho-1	165	30.0	66.7				mg/L	10	Standard
Er	166	33.3	75.5				mg/L	23	Standard
I	127	32674.7	51.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.159	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.142	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.510
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.971
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606089603
Sample Date/Time: Tuesday, June 21, 2016 18:31:54
Number of Replicates: 3
Autosampler Position: 348
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70073.3	1.0				ug/L	60176	Standard
	Be	9	81.7	39.4	**0.0886**	0.038	43.1	ug/L	5	Standard
	Al	27	1228150.4	2.6	**8.0209**	0.174	2.2	ug/L	832	Standard
	Sc	45	26367.9	1.0				ug/L	25066	Standard
	Ti	47	312.7	10.6	**1.3625**	0.172	12.6	ug/L	38	Standard
	V	51	2417.3	6.1	**0.2237**	0.026	11.6	ug/L	974	Standard
	Cr	52	10006.0	1.3	**0.5837**	0.012	2.0	ug/L	5792	Standard
	Cr	53	1740.1	6.8	**1.6504**	0.119	7.2	ug/L	347	Standard
	Mn	55	87073.6	2.8	**12.9889**	0.479	3.7	ug/L	1164	Standard
	Co	59	5750.4	2.7	**0.8671**	0.033	3.8	ug/L	303	Standard
	Ni	60	2238.5	3.1	**1.0160**	0.026	2.5	ug/L	291	Standard
	Cu	65	1573.1	4.2	**0.7551**	0.029	3.8	ug/L	173	Standard
	Zn	66	4274.9	3.8	**3.7627**	0.142	3.8	ug/L	130	Standard
>	**Ge**	72	507060.9	1.0				ug/L	491724	Standard
	As	75	114.4	32.4	**0.1397**	0.035	24.9	ug/L	-25	Standard
	Se	82	42.1	12.0	**0.3018**	0.050	16.5	ug/L	12	Standard
	Se-1	77	82.3	10.6	**0.4808**	0.128	26.6	ug/L	57	Standard
>	**Ga**	71	333.3	11.3				mg/L	148	Standard
	Rb	85	29852.7	2.6				ug/L	18	Standard
	Y	89	429423.7	0.4				ug/L	401845	Standard
>	**Rh**	103	41.7	6.9				ug/L	10	Standard
	Mo	98	55.7	3.8	**0.0175**	0.001	6.0	ug/L	12	Standard
	Ag	107	93.7	1.6	**-0.0003**	0.000	76.9	ug/L	98	Standard
	Cd	111	26.6	32.0	**0.0087**	0.004	50.4	mg/L	11	Standard
	Cd	114	73.0	10.0	**0.0107**	0.001	13.2	ug/L	21	Standard
>	**In**	115	577865.9	1.0				ug/L	547487	Standard
	Sn	118	510.0	18.7	**0.0191**	0.018	95.2	ug/L	450	Standard
	Sb	123	155.5	12.6	**0.0270**	0.004	15.1	ug/L	105	Standard
	Ba	135	59410.3	1.7	**30.6085**	0.771	2.5	ug/L	111	Standard
	Ce	140	19626.0	1.7				ug/L	107	Standard
>	**Tb**	159	917847.8	1.6				ug/L	890342	Standard
	Ho	165	385.0	3.4				ug/L	10	Standard
	Tl	203	165.0	14.8	**0.0175**	0.003	17.6	ug/L	19	Standard
	Tl	205	135.0	9.8	**0.0220**	0.002	9.0	ug/L	17	Standard
	Pb	206	734.4	1.2	**0.0910**	0.002	2.3	ug/L	247	Standard
	Pb	207	620.7	4.4	**0.0836**	0.007	8.5	ug/L	215	Standard
	Pb	208	2430.4	2.1	**0.0821**	0.004	5.1	ug/L	770	Standard
	U	238	108.0	7.6	**0.0166**	0.001	8.0	ug/L	13	Standard
>	**Bi**	209	520995.4	0.8				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.6640**	30.586	173.2	mg/L	2	Standard
Mg	24	2681.9	2.8	**3.4633**	0.064	1.8	mg/L	35	Standard
K	39	326.7	9.2	**1.4367**	0.158	11.0	mg/L	25	Standard
Ca	43	23.3	24.7	**-0.9469**	1.132	119.5	mg/L	38	Standard
Fe	54	1418.7	4.6	**1.1433**	0.057	5.0	mg/L	126	Standard
Fe	57	535.0	14.5	**0.9148**	0.284	31.1	mg/L	245	Standard
> **Sc-1**	45	26367.9	1.0				mg/L	25066	Standard
Cl	35	152857.2	1.0				ug/L	125857	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	6364.7	4.2				ug/L	1350	Standard
P	31	24361.2	2.7				ug/L	18393	Standard
S	34	4130.6	1.9				ug/L	3739	Standard
Sr	88	91.7	13.7				ug/L	78	Standard
C	12	86.7	17.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	587.2	3.8				mg/L	2	Standard
Ho-1	165	385.0	3.4				mg/L	10	Standard
Er	166	406.7	11.4				mg/L	23	Standard
I	127	49898.9	6.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.447	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.119	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.549
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.548
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606089604
Sample Date/Time: Tuesday, June 21, 2016 18:35:05
Number of Replicates: 3
Autosampler Position: 349
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68337.1	1.8				ug/L	60176	Standard
	Be	9	20.0	50.0	**0.0155**	0.012	78.6	ug/L	5	Standard
	Al	27	4276567.2	0.3	**28.6693**	0.604	2.1	ug/L	832	Standard
	Sc	45	26610.0	1.8				ug/L	25066	Standard
	Ti	47	192.3	15.6	**0.7599**	0.169	22.2	ug/L	38	Standard
	V	51	1621.9	5.7	**0.0939**	0.019	19.8	ug/L	974	Standard
	Cr	52	9092.7	3.3	**0.4438**	0.038	8.7	ug/L	5792	Standard
	Cr	53	1545.1	7.7	**1.4179**	0.111	7.8	ug/L	347	Standard
	Mn	55	17973806.3	0.6	**2724.7615**	75.997	2.8	ug/L	1164	Standard
	Co	59	227528.7	0.7	**36.1992**	0.876	2.4	ug/L	303	Standard
	Ni	60	2730.6	3.7	**1.2807**	0.043	3.3	ug/L	291	Standard
	Cu	65	354.7	4.1	**0.0946**	0.010	10.1	ug/L	173	Standard
	Zn	66	3333.7	3.1	**2.8812**	0.076	2.6	ug/L	130	Standard
>	**Ge**	72	507285.0	2.2				ug/L	491724	Standard
	As	75	2855.6	3.6	**2.6720**	0.119	4.5	ug/L	-25	Standard
	Se	82	109.9	10.6	**0.9366**	0.098	10.5	ug/L	12	Standard
	Se-1	77	112.3	4.4	**0.8920**	0.086	9.6	ug/L	57	Standard
>	**Ga**	71	996.7	5.1				mg/L	148	Standard
	Rb	85	22107.8	1.5				ug/L	18	Standard
	Y	89	431397.8	1.6				ug/L	401845	Standard
>	**Rh**	103	48.3	74.8				ug/L	10	Standard
	Mo	98	71.9	10.1	**0.0241**	0.003	12.0	ug/L	12	Standard
	Ag	107	78.3	8.7	**-0.0027**	0.001	37.5	ug/L	98	Standard
	Cd	111	9.9	26.7	**0.0003**	0.001	431.1	mg/L	11	Standard
	Cd	114	28.2	29.3	**0.0014**	0.002	118.5	ug/L	21	Standard
>	**In**	115	573974.7	0.6				ug/L	547487	Standard
	Sn	118	751.7	10.6	**0.0641**	0.015	23.9	ug/L	450	Standard
	Sb	123	139.4	12.3	**0.0237**	0.004	16.5	ug/L	105	Standard
	Ba	135	41452.3	0.6	**21.4826**	0.241	1.1	ug/L	111	Standard
	Ce	140	20226.9	8.5				ug/L	107	Standard
>	**Tb**	159	913197.4	0.8				ug/L	890342	Standard
	Ho	165	323.3	19.1				ug/L	10	Standard
	Tl	203	108.7	8.7	**0.0105**	0.001	13.3	ug/L	19	Standard
	Tl	205	98.3	5.9	**0.0165**	0.001	6.6	ug/L	17	Standard
	Pb	206	497.3	2.2	**0.0452**	0.002	5.4	ug/L	247	Standard
	Pb	207	457.7	4.4	**0.0492**	0.003	6.7	ug/L	215	Standard
	Pb	208	1899.7	0.7	**0.0525**	0.001	2.6	ug/L	770	Standard
	U	238	173.0	11.0	**0.0274**	0.003	12.4	ug/L	13	Standard
>	**Bi**	209	514279.4	1.2				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.3614**	30.062	173.2	mg/L	2	Standard
Mg	24	6924.9	3.0	**8.9278**	0.424	4.8	mg/L	35	Standard
K	39	88.3	28.5	**0.3038**	0.126	41.5	mg/L	25	Standard
Ca	43	50.0	26.5	**3.9407**	2.346	59.5	mg/L	38	Standard
Fe	54	22062.2	6.3	**19.5992**	1.505	7.7	mg/L	126	Standard
Fe	57	5569.4	4.3	**19.5983**	0.911	4.6	mg/L	245	Standard
Sc-1	45	26610.0	1.8				mg/L	25066	Standard
Cl	35	158607.9	0.7				ug/L	125857	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	25608.3	1.9				ug/L	1350	Standard
P	31	25134.2	0.8				ug/L	18393	Standard
S	34	4804.1	1.5				ug/L	3739	Standard
Sr	88	91.7	45.7				ug/L	78	Standard
C	12	170.0	11.8				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	416.4	11.7				mg/L	2	Standard
Ho-1	165	323.3	19.1				mg/L	10	Standard
Er	166	283.3	8.9				mg/L	23	Standard
I	127	1043280.7	9.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.562	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.165	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.838
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.213
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606089605
Sample Date/Time: Tuesday, June 21, 2016 18:38:17
Number of Replicates: 3
Autosampler Position: 350
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67501.7	0.2				ug/L	60176	Standard
	Be	9	70.0	12.4	**0.0779**	0.011	14.0	ug/L	5	Standard
	Al	27	1172906.0	1.5	**7.9523**	0.131	1.6	ug/L	832	Standard
	Sc	45	26443.1	2.2				ug/L	25066	Standard
	Ti	47	221.7	20.6	**0.9153**	0.226	24.7	ug/L	38	Standard
	V	51	1454.3	19.9	**0.0686**	0.046	67.3	ug/L	974	Standard
	Cr	52	9092.7	2.6	**0.4577**	0.038	8.3	ug/L	5792	Standard
	Cr	53	1685.1	8.0	**1.6053**	0.165	10.3	ug/L	347	Standard
	Mn	55	65030.3	1.6	**9.7392**	0.204	2.1	ug/L	1164	Standard
	Co	59	5197.2	1.5	**0.7866**	0.010	1.3	ug/L	303	Standard
	Ni	60	1995.5	3.6	**0.8953**	0.033	3.7	ug/L	291	Standard
	Cu	65	1224.4	4.2	**0.5725**	0.026	4.5	ug/L	173	Standard
	Zn	66	3995.9	1.1	**3.5378**	0.062	1.7	ug/L	130	Standard
>	**Ge**	72	502248.6	0.7				ug/L	491724	Standard
	As	75	42.4	33.0	**0.0736**	0.013	18.2	ug/L	-25	Standard
	Se	82	42.1	17.3	**0.3052**	0.067	21.9	ug/L	12	Standard
	Se-1	77	99.7	4.9	**0.7312**	0.071	9.7	ug/L	57	Standard
>	**Ga**	71	340.0	25.1				mg/L	148	Standard
	Rb	85	28431.7	1.0				ug/L	18	Standard
	Y	89	432391.4	0.5				ug/L	401845	Standard
>	**Rh**	103	25.0	0.0				ug/L	10	Standard
	Mo	98	25.1	12.7	**0.0054**	0.001	24.9	ug/L	12	Standard
	Ag	107	84.0	10.6	**-0.0020**	0.001	71.0	ug/L	98	Standard
	Cd	111	29.3	29.0	**0.0099**	0.004	41.4	mg/L	11	Standard
	Cd	114	82.1	22.2	**0.0125**	0.004	31.8	ug/L	21	Standard
>	**In**	115	582868.3	1.2				ug/L	547487	Standard
	Sn	118	541.7	7.4	**0.0239**	0.006	27.0	ug/L	450	Standard
	Sb	123	106.5	7.0	**0.0159**	0.002	12.1	ug/L	105	Standard
	Ba	135	57467.5	1.5	**29.3464**	0.109	0.4	ug/L	111	Standard
	Ce	140	10703.9	25.2				ug/L	107	Standard
>	**Tb**	159	910811.6	2.1				ug/L	890342	Standard
	Ho	165	225.0	13.5				ug/L	10	Standard
	Tl	203	137.0	7.6	**0.0141**	0.001	9.3	ug/L	19	Standard
	Tl	205	136.7	14.8	**0.0225**	0.003	13.7	ug/L	17	Standard
	Pb	206	419.0	1.3	**0.0293**	0.002	5.4	ug/L	247	Standard
	Pb	207	358.0	1.7	**0.0271**	0.002	6.9	ug/L	215	Standard
	Pb	208	1368.0	1.1	**0.0209**	0.001	6.4	ug/L	770	Standard
	U	238	55.7	17.4	**0.0082**	0.002	18.6	ug/L	13	Standard
>	**Bi**	209	515104.9	0.7				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	2638.6	3.2	**3.3993**	0.161	4.7	mg/L	35	Standard
K	39	276.7	19.3	**1.1956**	0.256	21.4	mg/L	25	Standard
Ca	43	21.7	48.0	**-1.2810**	1.922	150.1	mg/L	38	Standard
Fe	54	612.6	5.0	**0.4150**	0.036	8.6	mg/L	126	Standard
Fe	57	326.7	24.2	**0.1354**	0.321	237.0	mg/L	245	Standard
> **Sc-1**	45	26443.1	2.2				mg/L	25066	Standard
Cl	35	151770.4	0.9				ug/L	125857	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	6438.0	7.0				ug/L	1350	Standard
P	31	24865.4	2.6				ug/L	18393	Standard
S	34	4355.6	4.7				ug/L	3739	Standard
Sr	88	85.0	10.2				ug/L	78	Standard
C	12	100.0	20.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	393.3	8.6				mg/L	2	Standard
Ho-1	165	225.0	13.5				mg/L	10	Standard
Er	166	210.0	16.5				mg/L	23	Standard
I	127	49125.0	32.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.174	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.140	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	106.463
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	102.377
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606089607
Sample Date/Time: Tuesday, June 21, 2016 18:41:28
Number of Replicates: 3
Autosampler Position: 351
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64582.3	0.3				ug/L	60176	Standard
	Be	9	10.0	50.0	**0.0040**	0.007	164.6	ug/L	5	Standard
	Al	27	17276.5	1.9	**0.1142**	0.003	2.4	ug/L	832	Standard
	Sc	45	25347.9	2.5				ug/L	25066	Standard
	Ti	47	28.3	10.8	**-0.0659**	0.014	21.5	ug/L	38	Standard
	V	51	1082.8	8.0	**0.0054**	0.014	253.7	ug/L	974	Standard
	Cr	52	8423.3	1.6	**0.3388**	0.029	8.5	ug/L	5792	Standard
	Cr	53	728.4	2.2	**0.4488**	0.025	5.7	ug/L	347	Standard
	Mn	55	3248.4	11.3	**0.2760**	0.059	21.5	ug/L	1164	Standard
	Co	59	268.3	3.6	**-0.0067**	0.002	28.2	ug/L	303	Standard
	Ni	60	364.0	1.4	**0.0051**	0.004	75.7	ug/L	291	Standard
	Cu	65	796.4	1.2	**0.3329**	0.002	0.5	ug/L	173	Standard
	Zn	66	1386.7	3.7	**1.0581**	0.053	5.0	ug/L	130	Standard
>	**Ge**	72	508475.6	0.8				ug/L	491724	Standard
	As	75	-61.1	19.7	**-0.0224**	0.011	51.1	ug/L	-25	Standard
	Se	82	17.3	24.6	**0.0693**	0.041	59.1	ug/L	12	Standard
	Se-1	77	55.3	1.0	**0.1076**	0.014	12.8	ug/L	57	Standard
>	**Ga**	71	210.0	8.2				mg/L	148	Standard
	Rb	85	103.3	12.2				ug/L	18	Standard
	Y	89	417086.5	1.0				ug/L	401845	Standard
>	**Rh**	103	30.0	16.7				ug/L	10	Standard
	Mo	98	23.7	24.8	**0.0052**	0.002	45.5	ug/L	12	Standard
	Ag	107	74.0	14.1	**-0.0031**	0.002	58.5	ug/L	98	Standard
	Cd	111	3.6	42.1	**-0.0028**	0.001	28.2	mg/L	11	Standard
	Cd	114	4.0	390.1	**-0.0036**	0.003	93.1	ug/L	21	Standard
>	**In**	115	557380.8	0.4				ug/L	547487	Standard
	Sn	118	1653.4	11.4	**0.2386**	0.035	14.5	ug/L	450	Standard
	Sb	123	101.0	13.9	**0.0157**	0.003	21.0	ug/L	105	Standard
	Ba	135	275.0	12.7	**0.0916**	0.019	21.0	ug/L	111	Standard
	Ce	140	46.7	27.0				ug/L	107	Standard
>	**Tb**	159	881433.0	0.7				ug/L	890342	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	15.3	24.7	**-0.0015**	0.001	32.6	ug/L	19	Standard
	Tl	205	18.3	41.7	**0.0039**	0.001	30.9	ug/L	17	Standard
	Pb	206	260.7	4.2	**-0.0017**	0.002	99.9	ug/L	247	Standard
	Pb	207	227.7	1.7	**-0.0009**	0.001	146.9	ug/L	215	Standard
	Pb	208	867.3	2.7	**-0.0078**	0.002	22.4	ug/L	770	Standard
	U	238	4.7	24.7	**-0.0001**	0.000	377.0	ug/L	13	Standard
>	**Bi**	209	506624.8	1.1				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.8980**	30.992	173.2	mg/L	2	Standard
Mg	24	78.3	16.1	**0.0675**	0.017	24.9	mg/L	35	Standard
K	39	31.7	24.1	**0.0432**	0.033	77.4	mg/L	25	Standard
Ca	43	33.3	45.8	**1.2167**	3.121	256.5	mg/L	38	Standard
Fe	54	130.8	25.6	**-0.0136**	0.033	239.4	mg/L	126	Standard
Fe	57	228.3	19.7	**-0.1998**	0.177	88.7	mg/L	245	Standard
> **Sc-1**	45	25347.9	2.5				mg/L	25066	Standard
Cl	35	151435.7	0.5				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	1560.1	4.4				ug/L	1350	Standard
P	31	20533.9	2.0				ug/L	18393	Standard
S	34	4339.0	6.0				ug/L	3739	Standard
Sr	88	95.0	38.0				ug/L	78	Standard
C	12	73.3	34.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.4	106.9				mg/L	2	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	7471.9	14.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.323	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.407	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.807
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.692
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606091601
Sample Date/Time: Tuesday, June 21, 2016 18:44:40
Number of Replicates: 3
Autosampler Position: 352
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67190.3	1.4				ug/L	60176	Standard
	Be	9	13.3	57.3	**0.0077**	0.010	125.6	ug/L	5	Standard
	Al	27	4059977.7	0.1	**27.6783**	0.411	1.5	ug/L	832	Standard
	Sc	45	26110.8	1.4				ug/L	25066	Standard
	Ti	47	49.3	11.2	**0.0353**	0.029	83.4	ug/L	38	Standard
	V	51	1268.5	6.0	**0.0323**	0.015	45.0	ug/L	974	Standard
	Cr	52	9251.5	2.7	**0.4413**	0.053	12.0	ug/L	5792	Standard
	Cr	53	838.4	6.1	**0.5622**	0.063	11.2	ug/L	347	Standard
	Mn	55	71645.4	5.8	**10.4299**	0.498	4.8	ug/L	1164	Standard
	Co	59	506.7	18.5	**0.0297**	0.014	46.5	ug/L	303	Standard
	Ni	60	855.0	1.3	**0.2614**	0.011	4.1	ug/L	291	Standard
	Cu	65	780.7	0.8	**0.3173**	0.002	0.5	ug/L	173	Standard
	Zn	66	4612.7	3.9	**3.9937**	0.147	3.7	ug/L	130	Standard
>	**Ge**	72	517216.1	1.1				ug/L	491724	Standard
	As	75	82.9	23.2	**0.1089**	0.017	15.4	ug/L	-25	Standard
	Se	82	25.8	18.1	**0.1443**	0.045	31.4	ug/L	12	Standard
	Se-1	77	58.3	9.4	**0.1352**	0.074	54.8	ug/L	57	Standard
>	**Ga**	71	198.3	18.6				mg/L	148	Standard
	Rb	85	8013.8	3.9				ug/L	18	Standard
	Y	89	419780.8	0.6				ug/L	401845	Standard
>	**Rh**	103	95.0	13.9				ug/L	10	Standard
	Mo	98	354.8	11.3	**0.1391**	0.018	13.1	ug/L	12	Standard
	Ag	107	124.3	40.3	**0.0052**	0.009	167.0	ug/L	98	Standard
	Cd	111	42.3	55.1	**0.0173**	0.012	72.3	mg/L	11	Standard
	Cd	114	113.9	89.0	**0.0200**	0.022	110.6	ug/L	21	Standard
>	**In**	115	563906.1	1.5				ug/L	547487	Standard
	Sn	118	1531.7	4.6	**0.2123**	0.010	4.8	ug/L	450	Standard
	Sb	123	210.1	8.4	**0.0405**	0.005	11.6	ug/L	105	Standard
	Ba	135	162094.5	0.7	**85.6790**	1.283	1.5	ug/L	111	Standard
	Ce	140	216.7	26.5				ug/L	107	Standard
>	**Tb**	159	900794.6	1.8				ug/L	890342	Standard
	Ho	165	15.0	57.7				ug/L	10	Standard
	Tl	203	104.3	57.0	**0.0100**	0.008	79.7	ug/L	19	Standard
	Tl	205	83.3	27.1	**0.0141**	0.004	26.2	ug/L	17	Standard
	Pb	206	391.3	13.8	**0.0236**	0.012	51.7	ug/L	247	Standard
	Pb	207	338.7	17.1	**0.0227**	0.014	61.6	ug/L	215	Standard
	Pb	208	1279.0	4.7	**0.0155**	0.005	30.6	ug/L	770	Standard
	U	238	198.3	8.7	**0.0314**	0.003	10.7	ug/L	13	Standard
>	**Bi**	209	516668.6	1.7				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.8980**	30.992	173.2	mg/L	2	Standard
Mg	24	4872.5	2.7	**6.3892**	0.242	3.8	mg/L	35	Standard
K	39	126.7	27.7	**0.4955**	0.176	35.6	mg/L	25	Standard
Ca	43	53.3	5.4	**4.7635**	0.439	9.2	mg/L	38	Standard
Fe	54	177.6	14.5	**0.0254**	0.024	95.7	mg/L	126	Standard
Fe	57	276.7	15.4	**-0.0443**	0.146	329.7	mg/L	245	Standard
> **Sc-1**	45	26110.8	1.4				mg/L	25066	Standard
Cl	35	176149.6	1.9				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	3207.0	11.6				ug/L	1350	Standard
P	31	23131.2	13.3				ug/L	18393	Standard
S	34	4474.0	0.8				ug/L	3739	Standard
Sr	88	226.7	10.9				ug/L	78	Standard
C	12	83.3	25.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	16.2	38.3				mg/L	2	Standard
Ho-1	165	15.0	57.7				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	28196.2	4.0				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.657	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.184	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.999
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.688
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606091602
Sample Date/Time: Tuesday, June 21, 2016 18:47:51
Number of Replicates: 3
Autosampler Position: 353
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67906.9	1.3				ug/L	60176	Standard
	Be	9	10.0	50.0	**0.0033**	0.006	187.8	ug/L	5	Standard
	Al	27	2296072.1	1.5	**15.4843**	0.344	2.2	ug/L	832	Standard
	Sc	45	25872.1	5.5				ug/L	25066	Standard
	Ti	47	62.3	24.1	**0.1098**	0.081	73.9	ug/L	38	Standard
	V	51	1552.5	12.5	**0.0855**	0.031	36.6	ug/L	974	Standard
	Cr	52	9142.1	3.0	**0.4684**	0.023	4.9	ug/L	5792	Standard
	Cr	53	858.4	6.3	**0.6172**	0.055	8.8	ug/L	347	Standard
	Mn	55	243622.7	0.7	**37.1709**	0.798	2.1	ug/L	1164	Standard
	Co	59	1785.4	6.9	**0.2386**	0.020	8.4	ug/L	303	Standard
	Ni	60	1792.4	0.5	**0.7874**	0.016	2.0	ug/L	291	Standard
	Cu	65	962.4	1.2	**0.4305**	0.012	2.7	ug/L	173	Standard
	Zn	66	2184.5	1.1	**1.8327**	0.052	2.8	ug/L	130	Standard
>	**Ge**	72	501058.6	1.4				ug/L	491724	Standard
	As	75	100.6	11.3	**0.1281**	0.012	9.4	ug/L	-25	Standard
	Se	82	31.7	15.7	**0.2087**	0.052	24.7	ug/L	12	Standard
	Se-1	77	73.3	7.9	**0.3696**	0.094	25.6	ug/L	57	Standard
>	**Ga**	71	198.3	2.9				mg/L	148	Standard
	Rb	85	8319.0	2.0				ug/L	18	Standard
	Y	89	432620.5	1.7				ug/L	401845	Standard
>	**Rh**	103	35.0	14.3				ug/L	10	Standard
	Mo	98	238.4	19.0	**0.0874**	0.016	18.4	ug/L	12	Standard
	Ag	107	135.0	77.0	**0.0057**	0.016	279.8	ug/L	98	Standard
	Cd	111	47.6	114.6	**0.0185**	0.026	142.4	mg/L	11	Standard
	Cd	114	128.6	115.8	**0.0214**	0.030	138.7	ug/L	21	Standard
>	**In**	115	590384.4	2.1				ug/L	547487	Standard
	Sn	118	671.7	10.1	**0.0460**	0.013	27.4	ug/L	450	Standard
	Sb	123	237.2	55.9	**0.0439**	0.028	63.9	ug/L	105	Standard
	Ba	135	31177.4	0.9	**15.6954**	0.181	1.2	ug/L	111	Standard
	Ce	140	1276.7	10.5				ug/L	107	Standard
>	**Tb**	159	916339.4	2.6				ug/L	890342	Standard
	Ho	165	70.0	7.1				ug/L	10	Standard
	Tl	203	237.7	124.8	**0.0268**	0.038	140.4	ug/L	19	Standard
	Tl	205	80.0	33.1	**0.0135**	0.004	29.6	ug/L	17	Standard
	Pb	206	429.0	29.5	**0.0310**	0.024	78.2	ug/L	247	Standard
	Pb	207	341.7	30.1	**0.0231**	0.022	93.1	ug/L	215	Standard
	Pb	208	1332.4	10.6	**0.0186**	0.008	40.8	ug/L	770	Standard
	U	238	141.3	19.4	**0.0221**	0.004	18.5	ug/L	13	Standard
>	**Bi**	209	515955.1	1.9				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	2985.3	1.9	**3.9427**	0.232	5.9	mg/L	35	Standard
K	39	105.0	19.0	**0.3991**	0.123	30.7	mg/L	25	Standard
Ca	43	45.0	29.4	**3.3646**	2.869	85.3	mg/L	38	Standard
Fe	54	322.3	15.6	**0.1588**	0.032	20.1	mg/L	126	Standard
Fe	57	316.7	8.7	**0.1231**	0.144	117.2	mg/L	245	Standard
Sc-1	45	25872.1	5.5				mg/L	25066	Standard
Cl	35	186002.7	0.3				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	3327.0	4.9				ug/L	1350	Standard
P	31	21338.4	3.1				ug/L	18393	Standard
S	34	4454.0	2.0				ug/L	3739	Standard
Sr	88	85.0	75.1				ug/L	78	Standard
C	12	86.7	40.5				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	102.7	23.6				mg/L	2	Standard
Ho-1	165	70.0	7.1				mg/L	10	Standard
Er	166	83.3	45.4				mg/L	23	Standard
I	127	15337.8	5.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.847	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.898	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.835
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.546
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 18:51:04
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63442.7	3.5				ug/L	60176	Standard
	Be	9	40860.0	2.2	**54.0020**	1.449	2.7	ug/L	5	Standard
	Al	27	6937882.5	1.0	**50.1277**	1.614	3.2	ug/L	832	Standard
	Sc	45	25438.0	2.5				ug/L	25066	Standard
	Ti	47	21024.9	0.5	**106.0299**	0.919	0.9	ug/L	38	Standard
	V	51	323750.5	1.3	**52.9773**	0.236	0.4	ug/L	974	Standard
	Cr	52	348011.5	1.4	**52.4939**	0.728	1.4	ug/L	5792	Standard
	Cr	53	43766.5	1.1	**51.8369**	0.281	0.5	ug/L	347	Standard
	Mn	55	333840.5	2.1	**50.7327**	1.510	3.0	ug/L	1164	Standard
	Co	59	335417.2	1.0	**53.7424**	1.033	1.9	ug/L	303	Standard
	Ni	60	95144.1	1.0	**51.4310**	0.379	0.7	ug/L	291	Standard
	Cu	65	94656.8	0.9	**51.5587**	0.282	0.5	ug/L	173	Standard
	Zn	66	55176.0	1.3	**51.7065**	1.118	2.2	ug/L	130	Standard
>	**Ge**	72	503835.9	1.3				ug/L	491724	Standard
	As	75	55580.2	0.8	**51.7148**	0.495	1.0	ug/L	-25	Standard
	Se	82	5649.2	1.5	**53.2452**	1.272	2.4	ug/L	12	Standard
	Se-1	77	3911.5	2.0	**53.3712**	1.215	2.3	ug/L	57	Standard
>	**Ga**	71	175.0	20.6				mg/L	148	Standard
	Rb	85	773.4	10.9				ug/L	18	Standard
	Y	89	413055.9	4.2				ug/L	401845	Standard
>	**Rh**	103	48.3	15.8				ug/L	10	Standard
	Mo	98	250127.2	1.6	**103.9799**	1.624	1.6	ug/L	12	Standard
	Ag	107	312907.8	0.6	**52.9908**	0.412	0.8	ug/L	98	Standard
	Cd	111	99454.2	0.8	**52.8512**	0.382	0.7	mg/L	11	Standard
	Cd	114	242360.3	0.7	**52.9421**	0.765	1.4	ug/L	21	Standard
>	**In**	115	548076.9	0.7				ug/L	547487	Standard
	Sn	118	267254.9	1.1	**51.3363**	0.470	0.9	ug/L	450	Standard
	Sb	123	224264.3	0.4	**52.7378**	0.174	0.3	ug/L	105	Standard
	Ba	135	94718.1	0.7	**51.4823**	0.153	0.3	ug/L	111	Standard
	Ce	140	61.7	16.9				ug/L	107	Standard
>	**Tb**	159	872886.8	0.5				ug/L	890342	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	392549.7	0.9	**52.0956**	0.443	0.9	ug/L	19	Standard
	Tl	205	335218.3	1.5	**54.2215**	0.823	1.5	ug/L	17	Standard
	Pb	206	250297.8	0.3	**51.6123**	0.097	0.2	ug/L	247	Standard
	Pb	207	226489.3	0.6	**51.3765**	0.302	0.6	ug/L	215	Standard
	Pb	208	880738.1	0.5	**53.3625**	0.244	0.5	ug/L	770	Standard
	U	238	319048.1	0.1	**53.3329**	0.065	0.1	ug/L	13	Standard
>	**Bi**	209	501806.7	0.2				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.2483**	31.598	173.2	mg/L	2	Standard
Mg	24	3748.8	3.4	**5.0383**	0.218	4.3	mg/L	35	Standard
K	39	870.0	3.5	**4.1632**	0.196	4.7	mg/L	25	Standard
Ca	43	66.7	30.3	**7.5630**	3.627	48.0	mg/L	38	Standard
Fe	54	5462.5	1.6	**4.9747**	0.206	4.1	mg/L	126	Standard
Fe	57	1633.4	3.9	**5.2565**	0.210	4.0	mg/L	245	Standard
> **Sc-1**	45	25438.0	2.5				mg/L	25066	Standard
Cl	35	159590.9	1.7				ug/L	125857	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	1526.7	9.8				ug/L	1350	Standard
P	31	21814.0	0.5				ug/L	18393	Standard
S	34	4879.1	3.9				ug/L	3739	Standard
Sr	88	73.3	10.4				ug/L	78	Standard
C	12	60.0	33.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.9	218.3				mg/L	2	Standard
Ho-1	165	8.3	91.7				mg/L	10	Standard
Er	166	10.0	173.2				mg/L	23	Standard
I	127	2962.0	13.4				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	108.004		
Al	27	100.255		
Sc	45			
Ti	47	106.030		
V	51	105.955		
Cr	52	104.988		
Cr	53			
Mn	55	101.465		
Co	59	107.485		
Ni	60	102.862		
Cu	65	103.117		
Zn	66	103.413		
> Ge	72		102.463	
As	75	103.430		
Se	82	106.490		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	103.980		
Ag	107	105.982		
Cd	111	105.702		
Cd	114			
In	115		100.108	
Sn	118	102.673		
Sb	123	105.476		
Ba	135	102.965		
Ce	140			
Tb	159			
Ho	165			
Tl	203	104.191		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.725		
U	238	106.666		
Bi	209		99.734	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 18:54:15
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65759.1	2.1				ug/L	60176	Standard
	Be	9	15.0	66.7	**0.0099**	0.012	124.3	ug/L	5	Standard
	Al	27	1593.4	26.8	**0.0027**	0.003	102.5	ug/L	832	Standard
	Sc	45	26474.8	1.5				ug/L	25066	Standard
	Ti	47	28.3	23.5	**-0.0655**	0.031	47.5	ug/L	38	Standard
	V	51	963.9	7.8	**-0.0130**	0.015	114.8	ug/L	974	Standard
	Cr	52	6015.5	0.7	**-0.0229**	0.022	97.4	ug/L	5792	Standard
	Cr	53	381.7	7.2	**0.0411**	0.039	93.9	ug/L	347	Standard
	Mn	55	1197.4	3.7	**-0.0335**	0.005	13.8	ug/L	1164	Standard
	Co	59	265.0	7.5	**-0.0071**	0.002	35.3	ug/L	303	Standard
	Ni	60	191.7	2.1	**-0.0870**	0.003	3.6	ug/L	291	Standard
	Cu	65	137.7	10.1	**-0.0230**	0.006	27.4	ug/L	173	Standard
	Zn	66	181.3	7.5	**-0.0653**	0.015	22.7	ug/L	130	Standard
>	**Ge**	72	506005.0	1.8				ug/L	491724	Standard
	As	75	-35.7	74.2	**0.0007**	0.025	3529.5	ug/L	-25	Standard
	Se	82	12.6	16.6	**0.0250**	0.018	72.8	ug/L	12	Standard
	Se-1	77	54.3	13.9	**0.0968**	0.095	97.8	ug/L	57	Standard
>	**Ga**	71	158.3	20.3				mg/L	148	Standard
	Rb	85	20.0	86.6				ug/L	18	Standard
	Y	89	416660.0	4.4				ug/L	401845	Standard
>	**Rh**	103	31.7	32.9				ug/L	10	Standard
	Mo	98	234.4	23.9	**0.0897**	0.024	26.8	ug/L	12	Standard
	Ag	107	96.7	10.2	**0.0004**	0.002	455.9	ug/L	98	Standard
	Cd	111	9.2	48.8	**0.0000**	0.002	5096.5	mg/L	11	Standard
	Cd	114	32.6	31.9	**0.0024**	0.002	93.4	ug/L	21	Standard
>	**In**	115	568592.5	1.7				ug/L	547487	Standard
	Sn	118	836.7	13.7	**0.0809**	0.019	23.3	ug/L	450	Standard
	Sb	123	401.8	23.4	**0.0833**	0.020	24.4	ug/L	105	Standard
	Ba	135	112.3	11.3	**0.0034**	0.008	222.2	ug/L	111	Standard
	Ce	140	18.3	63.0				ug/L	107	Standard
>	**Tb**	159	905312.2	2.3				ug/L	890342	Standard
	Ho	165	11.7	89.2				ug/L	10	Standard
	Tl	203	52.3	30.0	**0.0031**	0.002	64.6	ug/L	19	Standard
	Tl	205	41.7	48.5	**0.0075**	0.003	42.3	ug/L	17	Standard
	Pb	206	259.3	16.5	**-0.0033**	0.009	264.4	ug/L	247	Standard
	Pb	207	233.3	11.4	**-0.0010**	0.006	617.4	ug/L	215	Standard
	Pb	208	889.0	1.3	**-0.0079**	0.001	10.4	ug/L	770	Standard
	U	238	29.3	61.9	**0.0039**	0.003	75.3	ug/L	13	Standard
>	**Bi**	209	519697.2	0.3				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	35.0	89.2	**0.0068**	0.041	600.8	mg/L	35	Standard
K	39	33.3	31.2	**0.0452**	0.050	110.3	mg/L	25	Standard
Ca	43	33.3	34.6	**0.8931**	2.150	240.8	mg/L	38	Standard
Fe	54	140.9	5.6	**-0.0098**	0.009	91.5	mg/L	126	Standard
Fe	57	233.3	13.1	**-0.2195**	0.109	49.4	mg/L	245	Standard
> **Sc-1**	45	26474.8	1.5				mg/L	25066	Standard
Cl	35	159066.0	0.9				ug/L	125857	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	1636.8	3.9				ug/L	1350	Standard
P	31	22371.5	1.8				ug/L	18393	Standard
S	34	4974.2	4.8				ug/L	3739	Standard
Sr	88	65.0	23.1				ug/L	78	Standard
C	12	46.7	44.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.8	2.8				mg/L	2	Standard
Ho-1	165	11.7	89.2				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	23	Standard
I	127	2216.8	9.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.904	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.855
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.290
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Tuesday, June 21, 2016 19:12:07
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61166.6	1.6				ug/L	60176	Standard
	Be	9	150.0	15.3	**0.1967**	0.033	16.9	ug/L	5	Standard
	Al	27	1561.8	56.4	**0.0032**	0.006	196.8	ug/L	832	Standard
	Sc	45	24875.4	2.5				ug/L	25066	Standard
	Ti	47	28.0	12.9	**-0.0630**	0.020	31.8	ug/L	38	Standard
	V	51	3300.5	1.2	**0.3830**	0.004	1.1	ug/L	974	Standard
	Cr	52	10916.3	1.5	**0.7699**	0.022	2.9	ug/L	5792	Standard
	Cr	53	1001.7	7.0	**0.8086**	0.075	9.2	ug/L	347	Standard
	Mn	55	4162.9	6.9	**0.4342**	0.055	12.7	ug/L	1164	Standard
	Co	59	2663.9	2.0	**0.3873**	0.016	4.1	ug/L	303	Standard
	Ni	60	2996.6	2.6	**1.4705**	0.019	1.3	ug/L	291	Standard
	Cu	65	1480.7	6.8	**0.7275**	0.043	6.0	ug/L	173	Standard
	Zn	66	7406.5	4.4	**6.8860**	0.205	3.0	ug/L	130	Standard
>	**Ge**	72	493083.1	1.6				ug/L	491724	Standard
	As	75	372.9	12.0	**0.3882**	0.043	11.0	ug/L	-25	Standard
	Se	82	55.9	23.6	**0.4460**	0.125	27.9	ug/L	12	Standard
	Se-1	77	84.3	6.0	**0.5409**	0.079	14.6	ug/L	57	Standard
>	**Ga**	71	103.3	2.8				mg/L	148	Standard
	Rb	85	41.7	13.9				ug/L	18	Standard
	Y	89	400269.9	3.2				ug/L	401845	Standard
>	**Rh**	103	43.3	17.6				ug/L	10	Standard
	Mo	98	42.1	20.5	**0.0135**	0.004	31.1	ug/L	12	Standard
	Ag	107	2361.9	2.4	**0.3942**	0.010	2.6	ug/L	98	Standard
	Cd	111	441.3	5.1	**0.2353**	0.012	5.1	mg/L	11	Standard
	Cd	114	1071.7	9.3	**0.2353**	0.024	10.2	ug/L	21	Standard
>	**In**	115	535559.2	2.7				ug/L	547487	Standard
	Sn	118	436.7	24.1	**0.0116**	0.019	163.3	ug/L	450	Standard
	Sb	123	1772.8	0.2	**0.4193**	0.011	2.7	ug/L	105	Standard
	Ba	135	1338.4	0.9	**0.6899**	0.014	2.0	ug/L	111	Standard
	Ce	140	35.0	28.6				ug/L	107	Standard
>	**Tb**	159	857160.6	2.1				ug/L	890342	Standard
	Ho	165	6.7	86.6				ug/L	10	Standard
	Tl	203	591.3	5.4	**0.0761**	0.006	7.9	ug/L	19	Standard
	Tl	205	471.7	10.6	**0.0783**	0.008	10.5	ug/L	17	Standard
	Pb	206	1188.7	1.6	**0.1938**	0.006	3.2	ug/L	247	Standard
	Pb	207	1022.4	5.0	**0.1831**	0.010	5.7	ug/L	215	Standard
	Pb	208	4003.9	0.8	**0.1862**	0.005	2.6	ug/L	770	Standard
	U	238	2368.9	2.6	**0.4007**	0.018	4.4	ug/L	13	Standard
>	**Bi**	209	495170.9	2.1				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	50.0	10.0	**0.0302**	0.005	18.0	mg/L	35	Standard
K	39	30.0	44.1	**0.0395**	0.069	175.4	mg/L	25	Standard
Ca	43	31.7	65.7	**1.0148**	4.252	419.0	mg/L	38	Standard
Fe	54	92.2	19.0	**-0.0485**	0.015	30.9	mg/L	126	Standard
Fe	57	215.0	14.5	**-0.2376**	0.102	43.0	mg/L	245	Standard
> **Sc-1**	45	24875.4	2.5				mg/L	25066	Standard
Cl	35	148704.8	0.2				ug/L	125857	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	1456.7	4.5				ug/L	1350	Standard
P	31	15039.1	1.7				ug/L	18393	Standard
S	34	4490.7	1.0				ug/L	3739	Standard
Sr	88	73.3	19.7				ug/L	78	Standard
C	12	26.7	21.7				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	2.9	202.3				mg/L	2	Standard
Ho-1	165	6.7	86.6				mg/L	10	Standard
Er	166	10.0					mg/L	23	Standard
I	127	996.7	4.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	98.360		
Al	27			
Sc	45			
Ti	47			
V	51	95.739		
Cr	52	96.237		
Cr	53			
Mn	55	86.841		
Co	59	96.822		
Ni	60	91.905		
Cu	65	90.940		
Zn	66	110.176		
> Ge	72		100.276	
As	75	97.059		
Se	82	111.510		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	98.538		
Cd	111	98.062		
Cd	114			
> In	115			97.821
Sn	118			
Sb	123	104.817		
Ba	135	91.990		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	95.070		
Tl	205			
Pb	206			
Pb	207			
Pb	208	93.123		
U	238	100.174		
> Bi	209			98.416
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
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Method 6020 - Summary Report

Sample ID: L1606099501
Sample Date/Time: Tuesday, June 21, 2016 19:34:57
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 500
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77633.4	0.8				ug/L	60176	Standard
	Be	9	6.7	43.3	**-0.0018**	0.003	172.4	ug/L	5	Standard
	Al	27	2026217.7	0.7	**11.9496**	0.150	1.3	ug/L	832	Standard
	Sc	45	26748.6	2.3				ug/L	25066	Standard
	Ti	47	31.7	17.4	**-0.0462**	0.030	65.2	ug/L	38	Standard
	V	51	1275.8	6.9	**0.0404**	0.016	40.4	ug/L	974	Standard
	Cr	52	6655.1	6.4	**0.0875**	0.082	93.8	ug/L	5792	Standard
	Cr	53	1963.5	8.8	**1.9476**	0.188	9.6	ug/L	347	Standard
	Mn	55	84988.4	1.3	**12.8494**	0.068	0.5	ug/L	1164	Standard
	Co	59	386.7	8.6	**0.0132**	0.006	45.9	ug/L	303	Standard
	Ni	60	675.3	7.4	**0.1784**	0.024	13.2	ug/L	291	Standard
	Cu	65	195.7	5.7	**0.0100**	0.008	78.4	ug/L	173	Standard
	Zn	66	3591.1	3.1	**3.1695**	0.063	2.0	ug/L	130	Standard
>	**Ge**	72	500114.1	1.6				ug/L	491724	Standard
	As	75	1657.7	10.0	**1.5886**	0.178	11.2	ug/L	-25	Standard
	Se	82	741.5	7.8	**6.9659**	0.657	9.4	ug/L	12	Standard
	Se-1	77	304.7	3.4	**3.5912**	0.205	5.7	ug/L	57	Standard
>	**Ga**	71	115.0	17.4				mg/L	148	Standard
	Rb	85	6904.9	3.3				ug/L	18	Standard
	Y	89	413732.9	0.8				ug/L	401845	Standard
>	**Rh**	103	540.0	15.3				ug/L	10	Standard
	Mo	98	33.8	20.7	**0.0095**	0.003	31.4	ug/L	12	Standard
	Ag	107	87.7	13.3	**-0.0007**	0.002	269.3	ug/L	98	Standard
	Cd	111	5.3	39.3	**-0.0019**	0.001	57.9	mg/L	11	Standard
	Cd	114	4.9	315.7	**-0.0034**	0.003	99.4	ug/L	21	Standard
>	**In**	115	553729.7	2.2				ug/L	547487	Standard
	Sn	118	500.0	18.4	**0.0210**	0.015	73.8	ug/L	450	Standard
	Sb	123	98.6	22.2	**0.0153**	0.005	30.1	ug/L	105	Standard
	Ba	135	188976.6	0.6	**101.7485**	2.043	2.0	ug/L	111	Standard
	Ce	140	20.0	25.0				ug/L	107	Standard
>	**Tb**	159	898084.0	1.2				ug/L	890342	Standard
	Ho	165	3.3	86.6				ug/L	10	Standard
	Tl	203	185.0	4.6	**0.0209**	0.001	6.4	ug/L	19	Standard
	Tl	205	168.3	27.6	**0.0281**	0.008	27.5	ug/L	17	Standard
	Pb	206	327.0	2.4	**0.0122**	0.002	14.3	ug/L	247	Standard
	Pb	207	273.3	4.9	**0.0096**	0.003	26.1	ug/L	215	Standard
	Pb	208	1042.0	2.7	**0.0030**	0.001	37.4	ug/L	770	Standard
	U	238	6.0	16.7	**0.0002**	0.000	92.5	ug/L	13	Standard
>	**Bi**	209	503950.2	0.9				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	24992.3	2.5	**32.1567**	1.409	4.4	mg/L	35	Standard
K	39	90.0	5.6	**0.3081**	0.023	7.4	mg/L	25	Standard
Ca	43	76.7	13.6	**8.8158**	1.657	18.8	mg/L	38	Standard
Fe	54	192.9	22.1	**0.0345**	0.034	98.8	mg/L	126	Standard
Fe	57	315.0	9.9	**0.0759**	0.141	185.8	mg/L	245	Standard
> **Sc-1**	45	26748.6	2.3				mg/L	25066	Standard
Cl	35	159695.2	0.9				ug/L	125857	Standard
Kr	83	2.3	107.9				ug/L	1	Standard
Br	81	185783.8	10.6				ug/L	1350	Standard
P	31	21602.1	2.2				ug/L	18393	Standard
S	34	4462.3	2.7				ug/L	3739	Standard
Sr	88	1885.1	4.1				ug/L	78	Standard
C	12	60.0	16.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	29.2	70.1				mg/L	2	Standard
Ho-1	165	3.3	86.6				mg/L	10	Standard
Er	166	16.7	69.3				mg/L	23	Standard
I	127	135026.1	16.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.011	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.706	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.140	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.160	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606099502
Sample Date/Time: Tuesday, June 21, 2016 19:38:09
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 500
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74226.4	2.4				ug/L	60176	Standard
	Be	9	8.3	34.6	**0.0004**	0.003	782.1	ug/L	5	Standard
	Al	27	1964045.2	2.9	**12.1146**	0.244	2.0	ug/L	832	Standard
	Sc	45	24970.6	3.4				ug/L	25066	Standard
	Ti	47	32.7	9.4	**-0.0368**	0.015	40.8	ug/L	38	Standard
	V	51	1262.9	8.3	**0.0439**	0.016	36.9	ug/L	974	Standard
	Cr	52	7258.4	0.5	**0.2111**	0.007	3.1	ug/L	5792	Standard
	Cr	53	1968.5	11.3	**2.0221**	0.300	14.8	ug/L	347	Standard
	Mn	55	84493.3	0.7	**13.1339**	0.146	1.1	ug/L	1164	Standard
	Co	59	367.0	1.6	**0.0116**	0.000	3.3	ug/L	303	Standard
	Ni	60	734.0	4.8	**0.2217**	0.019	8.5	ug/L	291	Standard
	Cu	65	234.0	5.0	**0.0345**	0.007	20.2	ug/L	173	Standard
	Zn	66	3577.4	1.6	**3.2515**	0.080	2.4	ug/L	130	Standard
>	Ge	72	486612.8	1.0				ug/L	491724	Standard
	As	75	1897.2	6.2	**1.8600**	0.104	5.6	ug/L	-25	Standard
	Se	82	847.2	4.6	**8.1876**	0.359	4.4	ug/L	12	Standard
	Se-1	77	299.3	6.6	**3.6325**	0.324	8.9	ug/L	57	Standard
>	Ga	71	111.7	23.0				mg/L	148	Standard
	Rb	85	6951.6	2.7				ug/L	18	Standard
	Y	89	428541.2	1.0				ug/L	401845	Standard
>	Rh	103	660.0	4.2				ug/L	10	Standard
	Mo	98	28.1	25.8	**0.0071**	0.003	41.3	ug/L	12	Standard
	Ag	107	72.0	3.7	**-0.0033**	0.000	11.5	ug/L	98	Standard
	Cd	111	5.6	20.7	**-0.0018**	0.001	33.9	mg/L	11	Standard
	Cd	114	12.2	78.3	**-0.0018**	0.002	112.9	ug/L	21	Standard
>	In	115	554225.0	0.6				ug/L	547487	Standard
	Sn	118	540.0	14.7	**0.0287**	0.015	53.8	ug/L	450	Standard
	Sb	123	76.2	13.8	**0.0101**	0.003	24.8	ug/L	105	Standard
	Ba	135	188355.6	0.6	**101.2959**	0.460	0.5	ug/L	111	Standard
	Ce	140	40.0	33.1				ug/L	107	Standard
>	Tb	159	890237.5	1.2				ug/L	890342	Standard
	Ho	165	21.7	35.3				ug/L	10	Standard
	Tl	203	179.7	2.8	**0.0212**	0.001	5.5	ug/L	19	Standard
	Tl	205	150.0	6.7	**0.0261**	0.001	4.6	ug/L	17	Standard
	Pb	206	498.3	4.9	**0.0517**	0.004	7.7	ug/L	247	Standard
	Pb	207	466.3	5.0	**0.0577**	0.006	10.6	ug/L	215	Standard
	Pb	208	1786.7	1.0	**0.0525**	0.002	3.4	ug/L	770	Standard
	U	238	3.0	33.3	**-0.0003**	0.000	60.1	ug/L	13	Standard
>	Bi	209	483891.9	2.0				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.7247**	32.424	173.2	mg/L	2	Standard
Mg	24	25317.8	3.2	**34.8845**	0.795	2.3	mg/L	35	Standard
K	39	93.3	22.3	**0.3528**	0.090	25.6	mg/L	25	Standard
Ca	43	91.7	8.3	**12.8496**	1.996	15.5	mg/L	38	Standard
Fe	54	224.3	18.2	**0.0779**	0.045	57.5	mg/L	126	Standard
Fe	57	341.7	9.5	**0.2646**	0.154	58.2	mg/L	245	Standard
Sc-1	45	24970.6	3.4				mg/L	25066	Standard
Cl	35	171948.2	0.2				ug/L	125857	Standard
Kr	83	2.3	49.5				ug/L	1	Standard
Br	81	210718.6	1.3				ug/L	1350	Standard
P	31	22428.3	0.3				ug/L	18393	Standard
S	34	4655.7	1.8				ug/L	3739	Standard
Sr	88	1866.8	5.5				ug/L	78	Standard
C	12	56.7	36.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	45.9	45.5				mg/L	2	Standard
Ho-1	165	21.7	35.3				mg/L	10	Standard
Er	166	16.7	124.9				mg/L	23	Standard
I	127	109731.2	3.5				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.349	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.961	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.231	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.174	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606099502
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 19:41:21
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60753.2	0.7				ug/L	60176	Standard
	Be	9	38719.4	2.5	**53.4127**	1.268	2.4	ug/L	5	Standard
	Al	27	6711778.9	2.1	**50.6033**	0.899	1.8	ug/L	832	Standard
	Sc	45	25728.5	2.1				ug/L	25066	Standard
	Ti	47	20982.5	0.5	**104.3242**	1.357	1.3	ug/L	38	Standard
	V	51	321053.2	1.0	**51.7981**	0.934	1.8	ug/L	974	Standard
	Cr	52	344201.5	0.6	**51.1636**	0.287	0.6	ug/L	5792	Standard
	Cr	53	44291.3	1.7	**51.7172**	0.682	1.3	ug/L	347	Standard
	Mn	55	339218.4	3.0	**50.8246**	1.874	3.7	ug/L	1164	Standard
	Co	59	329430.6	2.2	**52.0390**	1.531	2.9	ug/L	303	Standard
	Ni	60	95047.5	0.5	**50.6545**	0.643	1.3	ug/L	291	Standard
	Cu	65	94430.7	0.6	**50.7104**	0.485	1.0	ug/L	173	Standard
	Zn	66	54795.6	0.3	**50.6166**	0.334	0.7	ug/L	130	Standard
>	**Ge**	72	511027.8	0.9				ug/L	491724	Standard
	As	75	54737.8	0.8	**50.2171**	0.828	1.6	ug/L	-25	Standard
	Se	82	5522.7	2.1	**51.3173**	1.540	3.0	ug/L	12	Standard
	Se-1	77	3859.5	2.0	**51.9063**	1.447	2.8	ug/L	57	Standard
>	**Ga**	71	95.0	18.2				mg/L	148	Standard
	Rb	85	715.0	4.2				ug/L	18	Standard
	Y	89	414601.0	3.0				ug/L	401845	Standard
>	**Rh**	103	75.0	29.1				ug/L	10	Standard
	Mo	98	246703.9	0.8	**102.5745**	0.981	1.0	ug/L	12	Standard
	Ag	107	305467.2	1.3	**51.7401**	0.890	1.7	ug/L	98	Standard
	Cd	111	97736.3	0.7	**51.9469**	0.458	0.9	mg/L	11	Standard
	Cd	114	235851.4	0.5	**51.5266**	0.472	0.9	ug/L	21	Standard
>	**In**	115	547985.7	0.4				ug/L	547487	Standard
	Sn	118	265904.1	2.8	**51.0890**	1.611	3.2	ug/L	450	Standard
	Sb	123	218330.5	1.3	**51.3521**	0.839	1.6	ug/L	105	Standard
	Ba	135	93431.9	0.4	**50.7920**	0.422	0.8	ug/L	111	Standard
	Ce	140	66.7	18.9				ug/L	107	Standard
>	**Tb**	159	878645.9	1.2				ug/L	890342	Standard
	Ho	165	16.7	34.6				ug/L	10	Standard
	Tl	203	382593.3	0.6	**51.2166**	0.851	1.7	ug/L	19	Standard
	Tl	205	319855.9	0.2	**52.1860**	0.686	1.3	ug/L	17	Standard
	Pb	206	245809.9	0.3	**51.1253**	0.527	1.0	ug/L	247	Standard
	Pb	207	223379.0	0.7	**51.1100**	0.660	1.3	ug/L	215	Standard
	Pb	208	860209.0	0.8	**52.5732**	1.026	2.0	ug/L	770	Standard
	U	238	310063.3	0.9	**52.2791**	0.641	1.2	ug/L	13	Standard
>	**Bi**	209	497537.7	1.2				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.4323**	31.917	173.2	mg/L	2	Standard
Mg	24	3723.8	3.0	**4.9453**	0.109	2.2	mg/L	35	Standard
K	39	950.0	8.5	**4.5034**	0.416	9.2	mg/L	25	Standard
Ca	43	46.7	24.7	**3.6078**	2.004	55.6	mg/L	38	Standard
Fe	54	5363.4	1.0	**4.8229**	0.058	1.2	mg/L	126	Standard
Fe	57	1550.1	5.1	**4.8704**	0.425	8.7	mg/L	245	Standard
Sc-1	45	25728.5	2.1				mg/L	25066	Standard
Cl	35	153211.6	2.0				ug/L	125857	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	3267.0	14.6				ug/L	1350	Standard
P	31	22256.3	1.2				ug/L	18393	Standard
S	34	4787.4	1.1				ug/L	3739	Standard
Sr	88	73.3	34.3				ug/L	78	Standard
C	12	40.0	25.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	0.0					mg/L	2	Standard
Ho-1	165	16.7	34.6				mg/L	10	Standard
Er	166	0.0					mg/L	23	Standard
I	127	2020.1	11.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	106.825		
Al	27	101.207		
Sc	45			
Ti	47	104.324		
V	51	103.596		
Cr	52	102.327		
Cr	53			
Mn	55	101.649		
Co	59	104.078		
Ni	60	101.309		
Cu	65	101.421		
Zn	66	101.233		
Ge	72		103.926	
As	75	100.434		
Se	82	102.635		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	102.575		
Ag	107	103.480		
Cd	111	103.894		
Cd	114			
> In	115		100.091	
Sn	118	102.178		
Sb	123	102.704		
Ba	135	101.584		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	102.433		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.146		
U	238	104.558		
> Bi	209		98.886	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 19:44:33
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61186.7	3.6				ug/L	60176	Standard
	Be	9	33.3	121.2	**0.0354**	0.053	148.9	ug/L	5	Standard
	Al	27	5501.8	106.7	**0.0318**	0.042	131.0	ug/L	832	Standard
	Sc	45	26701.8	2.0				ug/L	25066	Standard
	Ti	47	30.3	33.2	**-0.0533**	0.048	90.9	ug/L	38	Standard
	V	51	1141.6	4.7	**0.0186**	0.005	28.0	ug/L	974	Standard
	Cr	52	6134.6	2.3	**0.0092**	0.003	30.8	ug/L	5792	Standard
	Cr	53	388.3	9.1	**0.0563**	0.051	89.9	ug/L	347	Standard
	Mn	55	1080.7	12.0	**-0.0490**	0.017	33.8	ug/L	1164	Standard
	Co	59	305.0	13.6	**0.0000**	0.006	21511.9	ug/L	303	Standard
	Ni	60	217.7	16.0	**-0.0715**	0.017	23.3	ug/L	291	Standard
	Cu	65	178.3	13.0	**0.0005**	0.011	2056.8	ug/L	173	Standard
	Zn	66	169.7	10.0	**-0.0741**	0.013	17.6	ug/L	130	Standard
>	**Ge**	72	498463.8	2.0				ug/L	491724	Standard
	As	75	-12.2	286.7	**0.0221**	0.033	148.3	ug/L	-25	Standard
	Se	82	23.6	25.6	**0.1314**	0.054	41.3	ug/L	12	Standard
	Se-1	77	53.0	11.3	**0.0906**	0.088	97.6	ug/L	57	Standard
>	**Ga**	71	131.7	28.5				mg/L	148	Standard
	Rb	85	18.3	15.7				ug/L	18	Standard
	Y	89	417929.1	0.8				ug/L	401845	Standard
>	**Rh**	103	38.3	41.9				ug/L	10	Standard
	Mo	98	257.5	28.1	**0.0990**	0.027	27.2	ug/L	12	Standard
	Ag	107	163.0	35.8	**0.0113**	0.009	79.0	ug/L	98	Standard
	Cd	111	38.5	98.3	**0.0148**	0.019	127.2	mg/L	11	Standard
	Cd	114	81.0	86.9	**0.0125**	0.014	115.3	ug/L	21	Standard
>	**In**	115	565101.8	2.2				ug/L	547487	Standard
	Sn	118	831.7	11.4	**0.0814**	0.021	25.5	ug/L	450	Standard
	Sb	123	393.5	15.0	**0.0823**	0.015	18.3	ug/L	105	Standard
	Ba	135	200.7	38.6	**0.0498**	0.038	76.8	ug/L	111	Standard
	Ce	140	16.7	45.8				ug/L	107	Standard
>	**Tb**	159	889533.7	0.9				ug/L	890342	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	149.3	78.6	**0.0159**	0.015	94.6	ug/L	19	Standard
	Tl	205	106.7	80.7	**0.0179**	0.013	75.0	ug/L	17	Standard
	Pb	206	292.0	13.2	**0.0046**	0.007	158.0	ug/L	247	Standard
	Pb	207	254.3	15.6	**0.0049**	0.008	166.3	ug/L	215	Standard
	Pb	208	1008.7	14.9	**0.0005**	0.008	1674.4	ug/L	770	Standard
	U	238	103.0	92.1	**0.0161**	0.015	95.6	ug/L	13	Standard
>	**Bi**	209	507542.0	1.3				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.1949**	29.774	173.2	mg/L	2	Standard
Mg	24	48.3	76.3	**0.0231**	0.046	200.6	mg/L	35	Standard
K	39	25.0	20.0	**0.0046**	0.023	492.5	mg/L	25	Standard
Ca	43	23.3	32.7	**-1.0097**	1.396	138.2	mg/L	38	Standard
Fe	54	150.9	27.6	**-0.0016**	0.040	2494.1	mg/L	126	Standard
Fe	57	210.0	10.9	**-0.3128**	0.084	26.9	mg/L	245	Standard
Sc-1	45	26701.8	2.0				mg/L	25066	Standard
Cl	35	151455.2	0.3				ug/L	125857	Standard
Kr	83	2.0	0.0				ug/L	1	Standard
Br	81	2233.5	7.9				ug/L	1350	Standard
P	31	22777.1	4.3				ug/L	18393	Standard
S	34	4777.4	2.0				ug/L	3739	Standard
Sr	88	61.7	4.7				ug/L	78	Standard
C	12	53.3	10.8				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.3	94.7				mg/L	2	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	23	Standard
I	127	1440.1	11.4				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.371	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.217
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.874
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBS M7 WG573333-03
Sample Date/Time: Tuesday, June 21, 2016 19:47:45
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60333.2	0.9				ug/L	60176	Standard
	Be	9	8.3	91.7	**0.0026**	0.011	413.6	ug/L	5	Standard
	Al	27	13747.9	0.9	**0.0960**	0.002	1.6	ug/L	832	Standard
	Sc	45	26165.9	1.6				ug/L	25066	Standard
	Ti	47	33.7	12.0	**-0.0319**	0.021	67.5	ug/L	38	Standard
	V	51	1023.7	5.2	**0.0030**	0.011	364.3	ug/L	974	Standard
	Cr	52	8476.0	2.1	**0.4019**	0.015	3.7	ug/L	5792	Standard
	Cr	53	670.0	10.4	**0.4130**	0.076	18.4	ug/L	347	Standard
	Mn	55	1695.4	1.7	**0.0519**	0.001	2.7	ug/L	1164	Standard
	Co	59	1288.1	1.7	**0.1641**	0.005	3.0	ug/L	303	Standard
	Ni	60	726.0	6.3	**0.2167**	0.030	13.9	ug/L	291	Standard
	Cu	65	492.3	1.6	**0.1799**	0.004	2.2	ug/L	173	Standard
	Zn	66	1621.4	0.7	**1.3419**	0.027	2.0	ug/L	130	Standard
>	**Ge**	72	487560.8	1.2				ug/L	491724	Standard
	As	75	-5.7	503.0	**0.0282**	0.028	98.0	ug/L	-25	Standard
	Se	82	31.9	19.2	**0.2175**	0.056	25.7	ug/L	12	Standard
	Se-1	77	56.0	15.9	**0.1503**	0.133	88.5	ug/L	57	Standard
>	**Ga**	71	95.0	13.9				mg/L	148	Standard
	Rb	85	66.7	31.2				ug/L	18	Standard
	Y	89	416805.6	1.1				ug/L	401845	Standard
>	**Rh**	103	40.0	45.1				ug/L	10	Standard
	Mo	98	145.3	0.5	**0.0548**	0.001	1.4	ug/L	12	Standard
	Ag	107	81.0	9.6	**-0.0019**	0.001	72.0	ug/L	98	Standard
	Cd	111	25.4	13.8	**0.0085**	0.002	23.0	mg/L	11	Standard
	Cd	114	59.1	56.7	**0.0083**	0.007	88.4	ug/L	21	Standard
>	**In**	115	559026.1	1.1				ug/L	547487	Standard
	Sn	118	593.3	6.4	**0.0378**	0.006	15.8	ug/L	450	Standard
	Sb	123	135.0	11.3	**0.0235**	0.003	13.5	ug/L	105	Standard
	Ba	135	280.0	9.7	**0.0939**	0.016	17.3	ug/L	111	Standard
	Ce	140	105.0	29.7				ug/L	107	Standard
>	**Tb**	159	875434.1	1.1				ug/L	890342	Standard
	Ho	165	11.7	49.5				ug/L	10	Standard
	Tl	203	36.0	5.6	**0.0012**	0.000	21.8	ug/L	19	Standard
	Tl	205	30.0	44.1	**0.0059**	0.002	36.7	ug/L	17	Standard
	Pb	206	339.0	5.6	**0.0154**	0.004	24.7	ug/L	247	Standard
	Pb	207	271.0	5.6	**0.0097**	0.003	34.8	ug/L	215	Standard
	Pb	208	1160.0	0.8	**0.0108**	0.001	6.7	ug/L	770	Standard
	U	238	14.3	35.8	**0.0016**	0.001	55.1	ug/L	13	Standard
>	**Bi**	209	499087.6	0.6				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	61.6	**0.0157**	0.033	209.3	mg/L	35	Standard
K	39	23.3	49.5	**-0.0010**	0.055	5424.9	mg/L	25	Standard
Ca	43	25.0	60.0	**-0.6344**	2.755	434.3	mg/L	38	Standard
Fe	54	119.2	14.8	**-0.0282**	0.015	51.5	mg/L	126	Standard
Fe	57	218.3	7.4	**-0.2659**	0.051	19.0	mg/L	245	Standard
> **Sc-1**	45	26165.9	1.6				mg/L	25066	Standard
Cl	35	151596.6	0.8				ug/L	125857	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	4757.4	26.7				ug/L	1350	Standard
P	31	21740.6	1.1				ug/L	18393	Standard
S	34	4795.8	1.6				ug/L	3739	Standard
Sr	88	51.7	5.6				ug/L	78	Standard
C	12	43.3	66.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	22.9	66.8				mg/L	2	Standard
Ho-1	165	11.7	49.5				mg/L	10	Standard
Er	166	10.0					mg/L	23	Standard
I	127	1155.0	7.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.261	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.153	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.108	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.194	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSS M7 WG573333-04
Sample Date/Time: Tuesday, June 21, 2016 19:50:57
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59225.5	1.2				ug/L	60176	Standard
	Be	9	19609.4	3.0	**27.7420**	0.614	2.2	ug/L	5	Standard
	Al	27	12795.4	2.0	**0.0906**	0.002	1.9	ug/L	832	Standard
	Sc	45	25735.2	2.3				ug/L	25066	Standard
	Ti	47	30.7	8.2	**-0.0502**	0.013	25.4	ug/L	38	Standard
	V	51	161756.0	0.9	**26.8215**	0.191	0.7	ug/L	974	Standard
	Cr	52	180807.8	1.0	**27.2779**	0.436	1.6	ug/L	5792	Standard
	Cr	53	22388.2	0.3	**26.7556**	0.203	0.8	ug/L	347	Standard
	Mn	55	175657.5	1.4	**27.0317**	0.594	2.2	ug/L	1164	Standard
	Co	59	169342.1	1.0	**27.5546**	0.491	1.8	ug/L	303	Standard
	Ni	60	48725.6	1.2	**26.6820**	0.407	1.5	ug/L	291	Standard
	Cu	65	49148.3	1.6	**27.1675**	0.617	2.3	ug/L	173	Standard
	Zn	66	29121.0	0.5	**27.6282**	0.375	1.4	ug/L	130	Standard
>	**Ge**	72	495668.9	0.8				ug/L	491724	Standard
	As	75	28447.7	0.7	**26.9212**	0.272	1.0	ug/L	-25	Standard
	Se	82	2857.7	1.2	**27.3299**	0.423	1.5	ug/L	12	Standard
	Se-1	77	1990.5	1.7	**27.2946**	0.705	2.6	ug/L	57	Standard
>	**Ga**	71	91.7	12.6				mg/L	148	Standard
	Rb	85	58.3	27.6				ug/L	18	Standard
	Y	89	417893.5	1.2				ug/L	401845	Standard
>	**Rh**	103	40.0	37.5				ug/L	10	Standard
	Mo	98	60.5	14.8	**0.0204**	0.004	18.1	ug/L	12	Standard
	Ag	107	157370.8	1.5	**26.3596**	0.160	0.6	ug/L	98	Standard
	Cd	111	50266.8	1.9	**26.4266**	0.395	1.5	mg/L	11	Standard
	Cd	114	119121.9	1.8	**25.7414**	0.327	1.3	ug/L	21	Standard
>	**In**	115	553936.9	1.0				ug/L	547487	Standard
	Sn	118	550.0	18.4	**0.0307**	0.020	63.7	ug/L	450	Standard
	Sb	123	113724.8	2.0	**26.4550**	0.324	1.2	ug/L	105	Standard
	Ba	135	48233.0	1.1	**25.9109**	0.064	0.2	ug/L	111	Standard
	Ce	140	93.3	12.4				ug/L	107	Standard
>	**Tb**	159	874780.4	1.3				ug/L	890342	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	196062.2	1.5	**26.2005**	0.206	0.8	ug/L	19	Standard
	Tl	205	168222.2	1.4	**27.4028**	0.377	1.4	ug/L	17	Standard
	Pb	206	128186.0	1.2	**26.5918**	0.160	0.6	ug/L	247	Standard
	Pb	207	111720.4	1.6	**25.4940**	0.201	0.8	ug/L	215	Standard
	Pb	208	451907.4	0.9	**27.5458**	0.346	1.3	ug/L	770	Standard
	U	238	157122.5	0.9	**26.4506**	0.287	1.1	ug/L	13	Standard
>	**Bi**	209	498294.3	0.9				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	30.0	60.1	**0.0016**	0.025	1578.9	mg/L	35	Standard
K	39	23.3	32.7	**0.0007**	0.036	5216.6	mg/L	25	Standard
Ca	43	21.7	48.0	**-1.1391**	2.056	180.5	mg/L	38	Standard
Fe	54	127.8	14.4	**-0.0186**	0.014	76.0	mg/L	126	Standard
Fe	57	258.3	19.9	**-0.0963**	0.212	219.9	mg/L	245	Standard
> **Sc-1**	45	25735.2	2.3				mg/L	25066	Standard
Cl	35	150456.8	1.7				ug/L	125857	Standard
Kr	83	3.0	57.7				ug/L	1	Standard
Br	81	2710.2	6.8				ug/L	1350	Standard
P	31	21206.5	4.7				ug/L	18393	Standard
S	34	4460.7	1.3				ug/L	3739	Standard
Sr	88	63.3	9.1				ug/L	78	Standard
C	12	43.3	13.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.7	118.3				mg/L	2	Standard
Ho-1	165	8.3	91.7				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	998.4	16.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.421	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.802	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.178
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.036
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606105301 WG573333-02
Sample Date/Time: Tuesday, June 21, 2016 19:54:08
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59553.5	1.0				ug/L	60176	Standard
	Be	9	135.0	13.4	**0.1809**	0.024	13.0	ug/L	5	Standard
	Al	27	390493.3	0.9	**2.9960**	0.057	1.9	ug/L	832	Standard
	Sc	45	27242.8	2.6				ug/L	25066	Standard
	Ti	47	6465.0	1.2	**32.1311**	0.140	0.4	ug/L	38	Standard
	V	51	48073.7	0.3	**7.6430**	0.089	1.2	ug/L	974	Standard
	Cr	52	34364.9	0.8	**4.2815**	0.091	2.1	ug/L	5792	Standard
	Cr	53	4007.2	3.0	**4.3239**	0.170	3.9	ug/L	347	Standard
	Mn	55	232477.7	0.8	**34.9054**	0.509	1.5	ug/L	1164	Standard
	Co	59	7863.0	1.3	**1.1989**	0.016	1.3	ug/L	303	Standard
	Ni	60	6025.5	1.1	**3.0464**	0.076	2.5	ug/L	291	Standard
	Cu	65	4433.0	2.2	**2.2972**	0.044	1.9	ug/L	173	Standard
	Zn	66	19225.9	1.6	**17.6815**	0.348	2.0	ug/L	130	Standard
>	**Ge**	72	508937.9	1.5				ug/L	491724	Standard
	As	75	2936.1	0.9	**2.7370**	0.053	1.9	ug/L	-25	Standard
	Se	82	55.2	23.4	**0.4222**	0.115	27.2	ug/L	12	Standard
	Se-1	77	65.0	8.1	**0.2394**	0.078	32.6	ug/L	57	Standard
>	**Ga**	71	5164.2	2.6				mg/L	148	Standard
	Rb	85	19092.0	2.2				ug/L	18	Standard
	Y	89	428438.9	1.5				ug/L	401845	Standard
>	**Rh**	103	26.7	39.0				ug/L	10	Standard
	Mo	98	5911.8	1.7	**2.4389**	0.038	1.6	ug/L	12	Standard
	Ag	107	147.0	13.6	**0.0094**	0.003	37.1	ug/L	98	Standard
	Cd	111	206.9	4.5	**0.1046**	0.005	4.6	mg/L	11	Standard
	Cd	114	472.4	6.6	**0.0981**	0.006	6.3	ug/L	21	Standard
>	**In**	115	551287.4	0.7				ug/L	547487	Standard
	Sn	118	468.3	5.4	**0.0155**	0.005	29.4	ug/L	450	Standard
	Sb	123	357.0	11.8	**0.0759**	0.010	13.0	ug/L	105	Standard
	Ba	135	38678.0	0.4	**20.8682**	0.219	1.0	ug/L	111	Standard
	Ce	140	306495.9	1.2				ug/L	107	Standard
>	**Tb**	159	890380.5	0.6				ug/L	890342	Standard
	Ho	165	2116.8	9.4				ug/L	10	Standard
	Tl	203	519.3	6.1	**0.0646**	0.004	6.1	ug/L	19	Standard
	Tl	205	458.3	12.0	**0.0743**	0.009	11.8	ug/L	17	Standard
	Pb	206	124187.6	1.0	**25.2798**	0.148	0.6	ug/L	247	Standard
	Pb	207	103763.8	0.7	**23.2336**	0.104	0.4	ug/L	215	Standard
	Pb	208	419261.0	0.7	**25.0733**	0.105	0.4	ug/L	770	Standard
	U	238	1623.1	2.0	**0.2673**	0.004	1.6	ug/L	13	Standard
>	**Bi**	209	507748.9	0.4				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	18.3	**0.0137**	0.009	65.1	mg/L	35	Standard
K	39	28.3	27.0	**0.0171**	0.033	190.3	mg/L	25	Standard
Ca	43	28.3	62.0	**-0.2390**	3.080	1288.3	mg/L	38	Standard
Fe	54	3298.0	4.5	**2.7434**	0.115	4.2	mg/L	126	Standard
Fe	57	1085.0	10.1	**2.8415**	0.310	10.9	mg/L	245	Standard
> **Sc-1**	45	27242.8	2.6				mg/L	25066	Standard
Cl	35	140674.8	1.7				ug/L	125857	Standard
Kr	83	1.7	124.9				ug/L	1	Standard
Br	81	2630.2	14.1				ug/L	1350	Standard
P	31	19367.4	0.5				ug/L	18393	Standard
S	34	4402.3	3.5				ug/L	3739	Standard
Sr	88	81.7	12.7				ug/L	78	Standard
C	12	100.0	40.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	63.3	18.2				mg/L	0	Standard
Dy	164	3670.9	4.8				mg/L	2	Standard
Ho-1	165	2116.8	9.4				mg/L	10	Standard
Er	166	1800.1	7.0				mg/L	23	Standard
I	127	6793.2	6.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.966	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.501	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.694
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.915
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606105302S WG573333-07
Sample Date/Time: Tuesday, June 21, 2016 19:57:20
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60433.6	2.0				ug/L	60176	Standard
	Be	9	19427.5	2.3	**26.9397**	0.549	2.0	ug/L	5	Standard
	Al	27	396251.5	0.8	**2.9962**	0.054	1.8	ug/L	832	Standard
	Sc	45	27251.2	1.0				ug/L	25066	Standard
	Ti	47	7488.9	1.0	**38.3195**	0.066	0.2	ug/L	38	Standard
	V	51	191501.2	1.3	**31.8425**	0.616	1.9	ug/L	974	Standard
	Cr	52	197050.6	1.4	**29.8680**	0.710	2.4	ug/L	5792	Standard
	Cr	53	24456.4	1.3	**29.3202**	0.727	2.5	ug/L	347	Standard
	Mn	55	384294.1	1.4	**59.4969**	1.333	2.2	ug/L	1164	Standard
	Co	59	160969.3	2.7	**26.2367**	0.889	3.4	ug/L	303	Standard
	Ni	60	52090.7	1.5	**28.5899**	0.703	2.5	ug/L	291	Standard
	Cu	65	51279.0	0.4	**28.3978**	0.401	1.4	ug/L	173	Standard
	Zn	66	44812.5	1.1	**42.7178**	0.864	2.0	ug/L	130	Standard
>	**Ge**	72	494830.5	1.2				ug/L	491724	Standard
	As	75	25971.2	2.1	**24.6250**	0.687	2.8	ug/L	-25	Standard
	Se	82	2412.0	4.7	**23.0968**	1.223	5.3	ug/L	12	Standard
	Se-1	77	1649.1	1.6	**22.5387**	0.314	1.4	ug/L	57	Standard
>	**Ga**	71	4899.1	4.8				mg/L	148	Standard
	Rb	85	15933.4	0.2				ug/L	18	Standard
	Y	89	434672.4	2.3				ug/L	401845	Standard
>	**Rh**	103	26.7	57.3				ug/L	10	Standard
	Mo	98	16958.8	1.3	**6.8221**	0.110	1.6	ug/L	12	Standard
	Ag	107	140602.8	1.2	**23.0461**	0.295	1.3	ug/L	98	Standard
	Cd	111	48424.2	1.0	**24.9141**	0.334	1.3	mg/L	11	Standard
	Cd	114	117338.3	1.3	**24.8149**	0.406	1.6	ug/L	21	Standard
>	**In**	115	566048.4	0.4				ug/L	547487	Standard
	Sn	118	788.4	48.0	**0.0729**	0.071	97.4	ug/L	450	Standard
	Sb	123	59314.2	1.3	**13.4999**	0.209	1.5	ug/L	105	Standard
	Ba	135	85875.1	2.0	**45.1887**	1.009	2.2	ug/L	111	Standard
	Ce	140	311360.4	1.3				ug/L	107	Standard
>	**Tb**	159	893299.7	0.4				ug/L	890342	Standard
	Ho	165	1725.1	3.4				ug/L	10	Standard
	Tl	203	188251.6	0.6	**24.7136**	0.342	1.4	ug/L	19	Standard
	Tl	205	158225.3	1.5	**25.3203**	0.563	2.2	ug/L	17	Standard
	Pb	206	385483.0	0.9	**78.6614**	0.775	1.0	ug/L	247	Standard
	Pb	207	325540.1	1.2	**73.0713**	0.789	1.1	ug/L	215	Standard
	Pb	208	1297632.0	1.2	**77.8091**	1.554	2.0	ug/L	770	Standard
	U	238	149860.0	2.2	**24.7839**	0.724	2.9	ug/L	13	Standard
>	**Bi**	209	507277.4	0.8				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	53.3	21.7	**0.0285**	0.014	50.4	mg/L	35	Standard
K	39	40.0	33.1	**0.0713**	0.062	86.8	mg/L	25	Standard
Ca	43	30.0	60.1	**0.1178**	3.297	2798.2	mg/L	38	Standard
Fe	54	2785.6	1.9	**2.2951**	0.053	2.3	mg/L	126	Standard
Fe	57	871.7	5.6	**2.0708**	0.165	8.0	mg/L	245	Standard
> **Sc-1**	45	27251.2	1.0				mg/L	25066	Standard
Cl	35	136548.5	0.2				ug/L	125857	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	2690.2	5.6				ug/L	1350	Standard
P	31	18896.8	0.3				ug/L	18393	Standard
S	34	3938.8	2.0				ug/L	3739	Standard
Sr	88	90.0	36.4				ug/L	78	Standard
C	12	110.0					mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	12.4				mg/L	0	Standard
Dy	164	3247.3	7.3				mg/L	2	Standard
Ho-1	165	1725.1	3.4				mg/L	10	Standard
Er	166	1386.7	5.1				mg/L	23	Standard
I	127	5004.2	4.5				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.428	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.632	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.390
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.822
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606105303SD WG573333-08
Sample Date/Time: Tuesday, June 21, 2016 20:00:31
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60791.8	2.4				ug/L	60176	Standard
	Be	9	19442.5	1.7	**26.8023**	0.232	0.9	ug/L	5	Standard
	Al	27	432728.9	2.0	**3.2535**	0.080	2.4	ug/L	832	Standard
	Sc	45	26972.3	0.6				ug/L	25066	Standard
	Ti	47	8101.2	1.8	**41.8095**	0.489	1.2	ug/L	38	Standard
	V	51	194533.2	1.3	**32.6143**	0.536	1.6	ug/L	974	Standard
	Cr	52	196269.4	0.6	**29.9955**	0.469	1.6	ug/L	5792	Standard
	Cr	53	24483.1	0.2	**29.5930**	0.323	1.1	ug/L	347	Standard
	Mn	55	386351.2	0.3	**60.3048**	0.743	1.2	ug/L	1164	Standard
	Co	59	166196.9	0.5	**27.3090**	0.232	0.8	ug/L	303	Standard
	Ni	60	51605.4	0.6	**28.5533**	0.418	1.5	ug/L	291	Standard
	Cu	65	50075.0	1.9	**27.9529**	0.367	1.3	ug/L	173	Standard
	Zn	66	57353.7	1.8	**55.1795**	0.640	1.2	ug/L	130	Standard
>	**Ge**	72	490809.7	1.0				ug/L	491724	Standard
	As	75	25714.1	1.9	**24.5757**	0.229	0.9	ug/L	-25	Standard
	Se	82	2487.9	0.6	**24.0190**	0.366	1.5	ug/L	12	Standard
	Se-1	77	1747.8	2.5	**24.1314**	0.805	3.3	ug/L	57	Standard
>	**Ga**	71	5157.5	2.7				mg/L	148	Standard
	Rb	85	18523.0	3.1				ug/L	18	Standard
	Y	89	444017.8	1.4				ug/L	401845	Standard
>	**Rh**	103	46.7	16.4				ug/L	10	Standard
	Mo	98	5808.7	0.6	**2.3126**	0.026	1.1	ug/L	12	Standard
	Ag	107	143200.7	1.9	**23.2569**	0.246	1.1	ug/L	98	Standard
	Cd	111	48312.1	2.0	**24.6294**	0.423	1.7	mg/L	11	Standard
	Cd	114	117421.2	1.2	**24.6058**	0.205	0.8	ug/L	21	Standard
>	**In**	115	571242.8	0.9				ug/L	547487	Standard
	Sn	118	516.7	19.9	**0.0212**	0.018	86.9	ug/L	450	Standard
	Sb	123	58163.3	1.0	**13.1170**	0.064	0.5	ug/L	105	Standard
	Ba	135	91445.8	0.5	**47.6850**	0.197	0.4	ug/L	111	Standard
	Ce	140	283441.9	1.3				ug/L	107	Standard
>	**Tb**	159	890644.6	2.9				ug/L	890342	Standard
	Ho	165	1641.8	1.4				ug/L	10	Standard
	Tl	203	186726.4	1.3	**24.8727**	0.635	2.6	ug/L	19	Standard
	Tl	205	159870.8	1.7	**25.9629**	0.965	3.7	ug/L	17	Standard
	Pb	206	345180.0	0.3	**71.4786**	2.166	3.0	ug/L	247	Standard
	Pb	207	289788.0	0.4	**66.0118**	2.154	3.3	ug/L	215	Standard
	Pb	208	1193141.1	0.7	**72.6045**	2.586	3.6	ug/L	770	Standard
	U	238	151251.6	0.9	**25.3870**	0.985	3.9	ug/L	13	Standard
>	**Bi**	209	500148.8	3.1				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	29.0	**0.0164**	0.016	96.8	mg/L	35	Standard
K	39	21.7	35.3	**-0.0118**	0.036	304.9	mg/L	25	Standard
Ca	43	35.0	28.6	**1.0832**	1.815	167.6	mg/L	38	Standard
Fe	54	3124.4	3.6	**2.6191**	0.111	4.2	mg/L	126	Standard
Fe	57	1018.4	7.4	**2.6406**	0.258	9.8	mg/L	245	Standard
Sc-1	45	26972.3	0.6				mg/L	25066	Standard
Cl	35	135993.6	0.3				ug/L	125857	Standard
Kr	83	2.3	49.5				ug/L	1	Standard
Br	81	2136.8	9.1				ug/L	1350	Standard
P	31	18498.0	3.5				ug/L	18393	Standard
S	34	3852.2	5.6				ug/L	3739	Standard
Sr	88	71.7	38.4				ug/L	78	Standard
C	12	123.3	4.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	66.7	52.7				mg/L	0	Standard
Dy	164	3021.0	3.5				mg/L	2	Standard
Ho-1	165	1641.8	1.4				mg/L	10	Standard
Er	166	1586.8	8.2				mg/L	23	Standard
I	127	4954.1	6.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		101.023	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.814	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.339
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.405
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606105401
Sample Date/Time: Tuesday, June 21, 2016 20:03:43
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61720.5	1.6				ug/L	60176	Standard
	Be	9	93.3	26.4	**0.1174**	0.032	27.0	ug/L	5	Standard
	Al	27	303416.2	0.1	**2.2442**	0.038	1.7	ug/L	832	Standard
	Sc	45	26598.3	1.8				ug/L	25066	Standard
	Ti	47	5974.5	1.1	**29.4612**	0.106	0.4	ug/L	38	Standard
	V	51	29615.8	0.7	**4.6079**	0.038	0.8	ug/L	974	Standard
	Cr	52	34301.5	0.5	**4.2336**	0.017	0.4	ug/L	5792	Standard
	Cr	53	4075.5	5.3	**4.3682**	0.220	5.0	ug/L	347	Standard
	Mn	55	67679.2	0.7	**9.9350**	0.149	1.5	ug/L	1164	Standard
	Co	59	5795.4	0.6	**0.8641**	0.012	1.4	ug/L	303	Standard
	Ni	60	7058.0	2.5	**3.5727**	0.066	1.8	ug/L	291	Standard
	Cu	65	1680.8	0.8	**0.8038**	0.014	1.8	ug/L	173	Standard
	Zn	66	13813.0	1.2	**12.5434**	0.154	1.2	ug/L	130	Standard
>	**Ge**	72	512622.2	0.8				ug/L	491724	Standard
	As	75	1326.1	3.7	**1.2458**	0.045	3.6	ug/L	-25	Standard
	Se	82	58.4	19.9	**0.4492**	0.112	25.0	ug/L	12	Standard
	Se-1	77	88.3	8.0	**0.5495**	0.098	17.9	ug/L	57	Standard
>	**Ga**	71	5431.0	3.2				mg/L	148	Standard
	Rb	85	11375.9	1.4				ug/L	18	Standard
	Y	89	433671.4	3.3				ug/L	401845	Standard
>	**Rh**	103	16.7	62.4				ug/L	10	Standard
	Mo	98	2147.6	0.7	**0.8712**	0.013	1.5	ug/L	12	Standard
	Ag	107	162.0	7.3	**0.0115**	0.002	16.1	ug/L	98	Standard
	Cd	111	42.4	7.2	**0.0174**	0.001	7.5	mg/L	11	Standard
	Cd	114	99.9	11.8	**0.0170**	0.002	13.5	ug/L	21	Standard
>	**In**	115	558893.7	1.3				ug/L	547487	Standard
	Sn	118	561.7	17.7	**0.0319**	0.019	59.1	ug/L	450	Standard
	Sb	123	749.1	15.9	**0.1654**	0.030	17.9	ug/L	105	Standard
	Ba	135	29348.7	0.5	**15.6055**	0.116	0.7	ug/L	111	Standard
	Ce	140	146646.3	1.1				ug/L	107	Standard
>	**Tb**	159	887966.0	1.1				ug/L	890342	Standard
	Ho	165	671.7	6.3				ug/L	10	Standard
	Tl	203	235.7	12.3	**0.0279**	0.004	14.4	ug/L	19	Standard
	Tl	205	173.3	14.5	**0.0291**	0.004	14.7	ug/L	17	Standard
	Pb	206	14922.0	0.9	**3.0381**	0.064	2.1	ug/L	247	Standard
	Pb	207	12398.4	1.3	**2.7752**	0.080	2.9	ug/L	215	Standard
	Pb	208	50203.5	0.7	**2.9980**	0.064	2.1	ug/L	770	Standard
	U	238	2316.2	1.5	**0.3880**	0.011	2.7	ug/L	13	Standard
>	**Bi**	209	499818.9	1.6				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	56.7	18.4	**0.0343**	0.012	35.9	mg/L	35	Standard
K	39	40.0	12.5	**0.0758**	0.026	33.7	mg/L	25	Standard
Ca	43	33.3	31.2	**0.8816**	2.026	229.8	mg/L	38	Standard
Fe	54	1087.4	2.8	**0.8360**	0.027	3.2	mg/L	126	Standard
Fe	57	525.0	12.5	**0.8590**	0.218	25.3	mg/L	245	Standard
> **Sc-1**	45	26598.3	1.8				mg/L	25066	Standard
Cl	35	134133.2	1.4				ug/L	125857	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	2273.5	6.1				ug/L	1350	Standard
P	31	19075.3	1.6				ug/L	18393	Standard
S	34	3665.4	1.3				ug/L	3739	Standard
Sr	88	76.7	10.0				ug/L	78	Standard
C	12	130.0	48.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	63.3	24.1				mg/L	0	Standard
Dy	164	1323.8	7.9				mg/L	2	Standard
Ho-1	165	671.7	6.3				mg/L	10	Standard
Er	166	686.7	8.0				mg/L	23	Standard
I	127	2676.9	2.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.567	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.250	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.084
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.339
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L160105401PS WG573475-01
Sample Date/Time: Tuesday, June 21, 2016 20:06:54
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62794.9	0.3				ug/L	60176	Standard
	Be	9	39553.2	1.1	**52.7892**	0.596	1.1	ug/L	5	Standard
	Al	27	307971.8	0.5	**2.2385**	0.019	0.8	ug/L	832	Standard
	Sc	45	26882.2	1.8				ug/L	25066	Standard
	Ti	47	6129.2	0.9	**30.0854**	0.443	1.5	ug/L	38	Standard
	V	51	350807.1	1.1	**56.1596**	0.484	0.9	ug/L	974	Standard
	Cr	52	380685.2	0.7	**56.2324**	0.702	1.2	ug/L	5792	Standard
	Cr	53	47479.3	2.5	**55.0311**	1.483	2.7	ug/L	347	Standard
	Mn	55	401711.5	2.2	**59.7429**	1.526	2.6	ug/L	1164	Standard
	Co	59	335117.7	1.9	**52.5149**	1.178	2.2	ug/L	303	Standard
	Ni	60	103584.6	0.9	**54.7808**	0.581	1.1	ug/L	291	Standard
	Cu	65	100044.2	0.8	**53.3041**	0.495	0.9	ug/L	173	Standard
	Zn	66	69784.7	1.2	**64.0109**	0.350	0.5	ug/L	130	Standard
>	**Ge**	72	515100.8	0.7				ug/L	491724	Standard
	As	75	57585.9	1.4	**52.4062**	0.728	1.4	ug/L	-25	Standard
	Se	82	5557.0	0.5	**51.2198**	0.370	0.7	ug/L	12	Standard
	Se-1	77	3824.8	2.7	**51.0178**	1.538	3.0	ug/L	57	Standard
>	**Ga**	71	5406.0	3.1				mg/L	148	Standard
	Rb	85	11310.9	0.9				ug/L	18	Standard
	Y	89	430615.8	1.3				ug/L	401845	Standard
>	**Rh**	103	35.0	14.3				ug/L	10	Standard
	Mo	98	2082.6	2.7	**0.8357**	0.016	1.9	ug/L	12	Standard
	Ag	107	313560.0	0.3	**51.5352**	0.570	1.1	ug/L	98	Standard
	Cd	111	99080.1	0.8	**51.0986**	0.459	0.9	mg/L	11	Standard
	Cd	114	240574.4	0.6	**50.9998**	0.581	1.1	ug/L	21	Standard
>	**In**	115	564766.8	1.3				ug/L	547487	Standard
	Sn	118	651.7	3.5	**0.0476**	0.003	5.8	ug/L	450	Standard
	Sb	123	219038.4	0.6	**49.9905**	0.624	1.2	ug/L	105	Standard
	Ba	135	122799.3	0.6	**64.7923**	0.643	1.0	ug/L	111	Standard
	Ce	140	145608.1	1.7				ug/L	107	Standard
>	**Tb**	159	891761.9	1.6				ug/L	890342	Standard
	Ho	165	680.0	5.1				ug/L	10	Standard
	Tl	203	390727.1	0.9	**51.0556**	0.307	0.6	ug/L	19	Standard
	Tl	205	332957.0	0.5	**53.0280**	0.386	0.7	ug/L	17	Standard
	Pb	206	268736.3	0.4	**54.5663**	0.473	0.9	ug/L	247	Standard
	Pb	207	234417.6	1.0	**52.3635**	1.055	2.0	ug/L	215	Standard
	Pb	208	909782.4	1.0	**54.2774**	0.756	1.4	ug/L	770	Standard
	U	238	311618.6	0.6	**51.2899**	0.366	0.7	ug/L	13	Standard
>	**Bi**	209	509666.6	1.1				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	56.7	67.4	**0.0334**	0.048	143.9	mg/L	35	Standard
K	39	28.3	88.8	**0.0206**	0.119	576.6	mg/L	25	Standard
Ca	43	23.3	68.9	**-1.0431**	2.962	283.9	mg/L	38	Standard
Fe	54	984.0	1.5	**0.7343**	0.012	1.7	mg/L	126	Standard
Fe	57	478.3	10.2	**0.6676**	0.161	24.2	mg/L	245	Standard
Sc-1	45	26882.2	1.8				mg/L	25066	Standard
Cl	35	130277.0	0.6				ug/L	125857	Standard
Kr	83	3.3	45.8				ug/L	1	Standard
Br	81	2190.2	10.3				ug/L	1350	Standard
P	31	18941.8	1.3				ug/L	18393	Standard
S	34	3468.7	2.9				ug/L	3739	Standard
Sr	88	81.7	9.4				ug/L	78	Standard
C	12	83.3	6.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	60.0	16.7				mg/L	0	Standard
Dy	164	1430.7	6.9				mg/L	2	Standard
Ho-1	165	680.0	5.1				mg/L	10	Standard
Er	166	613.3	13.6				mg/L	23	Standard
I	127	2793.6	5.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.352	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.754	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.156
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.297
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606105401SDL WG573475-02
Sample Date/Time: Tuesday, June 21, 2016 20:10:06
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63462.7	2.8				ug/L	60176	Standard
	Be	9	43.3	6.7	**0.0483**	0.005	10.7	ug/L	5	Standard
	Al	27	62110.4	1.6	**0.4402**	0.014	3.1	ug/L	832	Standard
	Sc	45	27483.2	2.5				ug/L	25066	Standard
	Ti	47	1202.7	6.4	**5.8283**	0.361	6.2	ug/L	38	Standard
	V	51	6687.6	0.7	**0.9204**	0.038	4.1	ug/L	974	Standard
	Cr	52	11970.1	2.2	**0.8833**	0.051	5.8	ug/L	5792	Standard
	Cr	53	1118.4	3.2	**0.9142**	0.068	7.4	ug/L	347	Standard
	Mn	55	14114.2	2.6	**1.9239**	0.035	1.8	ug/L	1164	Standard
	Co	59	1371.4	3.2	**0.1692**	0.010	5.9	ug/L	303	Standard
	Ni	60	1550.7	0.7	**0.6455**	0.028	4.3	ug/L	291	Standard
	Cu	65	526.7	2.9	**0.1880**	0.015	7.9	ug/L	173	Standard
	Zn	66	4240.9	4.2	**3.7282**	0.034	0.9	ug/L	130	Standard
>	**Ge**	72	507330.3	3.4				ug/L	491724	Standard
	As	75	245.5	8.2	**0.2605**	0.014	5.3	ug/L	-25	Standard
	Se	82	25.7	28.8	**0.1499**	0.077	51.5	ug/L	12	Standard
	Se-1	77	61.3	9.3	**0.1936**	0.101	52.0	ug/L	57	Standard
>	**Ga**	71	1146.7	6.4				mg/L	148	Standard
	Rb	85	2321.8	7.4				ug/L	18	Standard
	Y	89	429962.5	1.2				ug/L	401845	Standard
>	**Rh**	103	40.0	66.1				ug/L	10	Standard
	Mo	98	429.5	5.0	**0.1645**	0.007	4.1	ug/L	12	Standard
	Ag	107	155.3	11.0	**0.0095**	0.003	29.8	ug/L	98	Standard
	Cd	111	24.9	56.2	**0.0078**	0.007	90.6	mg/L	11	Standard
	Cd	114	64.8	37.7	**0.0090**	0.005	57.8	ug/L	21	Standard
>	**In**	115	579213.8	1.2				ug/L	547487	Standard
	Sn	118	441.7	2.4	**0.0064**	0.003	44.2	ug/L	450	Standard
	Sb	123	1595.3	21.7	**0.3472**	0.075	21.7	ug/L	105	Standard
	Ba	135	5942.5	1.1	**3.0045**	0.068	2.3	ug/L	111	Standard
	Ce	140	29104.6	2.4				ug/L	107	Standard
>	**Tb**	159	919049.1	0.8				ug/L	890342	Standard
	Ho	165	130.0	6.7				ug/L	10	Standard
	Tl	203	140.3	32.1	**0.0144**	0.006	39.9	ug/L	19	Standard
	Tl	205	131.7	30.7	**0.0215**	0.006	29.1	ug/L	17	Standard
	Pb	206	3187.3	2.3	**0.5784**	0.013	2.3	ug/L	247	Standard
	Pb	207	2652.9	2.4	**0.5278**	0.013	2.5	ug/L	215	Standard
	Pb	208	10854.5	0.5	**0.5739**	0.002	0.3	ug/L	770	Standard
	U	238	529.3	8.9	**0.0844**	0.008	9.0	ug/L	13	Standard
>	**Bi**	209	521218.5	0.3				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	45.0	11.1	**0.0175**	0.006	35.9	mg/L	35	Standard
K	39	30.0	44.1	**0.0243**	0.061	252.8	mg/L	25	Standard
Ca	43	23.3	24.7	**-1.1467**	0.924	80.6	mg/L	38	Standard
Fe	54	317.1	0.9	**0.1380**	0.006	4.5	mg/L	126	Standard
Fe	57	253.3	19.5	**-0.1775**	0.188	106.2	mg/L	245	Standard
> **Sc-1**	45	27483.2	2.5				mg/L	25066	Standard
Cl	35	130060.6	1.2				ug/L	125857	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	1580.1	15.4				ug/L	1350	Standard
P	31	19601.0	6.2				ug/L	18393	Standard
S	34	3312.0	2.4				ug/L	3739	Standard
Sr	88	70.0	14.3				ug/L	78	Standard
C	12	53.3	57.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	173.2				mg/L	0	Standard
Dy	164	306.8	2.4				mg/L	2	Standard
Ho-1	165	130.0	6.7				mg/L	10	Standard
Er	166	136.7	23.5				mg/L	23	Standard
I	127	1430.1	5.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.462	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.174	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.795
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.593
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606105401SDL WG573475-02
Sample Date/Time: Tuesday, June 21, 2016 20:13:17
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62075.3	3.4				ug/L	60176	Standard
	Be	9	16.7	17.3	**0.0135**	0.004	29.0	ug/L	5	Standard
	Al	27	12923.8	2.2	**0.0871**	0.004	4.8	ug/L	832	Standard
	Sc	45	27139.3	3.8				ug/L	25066	Standard
	Ti	47	272.0	8.8	**1.1730**	0.126	10.8	ug/L	38	Standard
	V	51	2230.3	1.0	**0.1971**	0.010	5.1	ug/L	974	Standard
	Cr	52	7378.1	1.3	**0.1951**	0.026	13.6	ug/L	5792	Standard
	Cr	53	530.0	5.7	**0.2224**	0.032	14.3	ug/L	347	Standard
	Mn	55	4071.2	2.2	**0.4086**	0.019	4.6	ug/L	1164	Standard
	Co	59	492.0	9.6	**0.0300**	0.009	29.8	ug/L	303	Standard
	Ni	60	471.3	1.5	**0.0663**	0.008	11.5	ug/L	291	Standard
	Cu	65	217.0	2.6	**0.0213**	0.005	21.6	ug/L	173	Standard
	Zn	66	1805.8	2.4	**1.4723**	0.069	4.7	ug/L	130	Standard
>	**Ge**	72	501702.6	1.7				ug/L	491724	Standard
	As	75	24.3	87.9	**0.0566**	0.020	35.2	ug/L	-25	Standard
	Se	82	18.9	18.3	**0.0867**	0.033	37.9	ug/L	12	Standard
	Se-1	77	53.3	8.5	**0.0899**	0.058	64.7	ug/L	57	Standard
>	**Ga**	71	313.3	3.3				mg/L	148	Standard
	Rb	85	476.7	7.4				ug/L	18	Standard
	Y	89	438752.1	0.6				ug/L	401845	Standard
>	**Rh**	103	30.0	16.7				ug/L	10	Standard
	Mo	98	110.3	7.5	**0.0392**	0.004	9.8	ug/L	12	Standard
	Ag	107	108.0	10.5	**0.0020**	0.002	98.3	ug/L	98	Standard
	Cd	111	10.8	70.1	**0.0008**	0.004	499.4	mg/L	11	Standard
	Cd	114	43.9	46.7	**0.0047**	0.004	91.7	ug/L	21	Standard
>	**In**	115	576504.1	1.5				ug/L	547487	Standard
	Sn	118	475.0	15.9	**0.0128**	0.014	109.1	ug/L	450	Standard
	Sb	123	463.6	29.1	**0.0963**	0.031	32.6	ug/L	105	Standard
	Ba	135	1313.4	3.2	**0.6237**	0.012	1.9	ug/L	111	Standard
	Ce	140	5786.1	4.9				ug/L	107	Standard
>	**Tb**	159	898389.3	2.3				ug/L	890342	Standard
	Ho	165	30.0	16.7				ug/L	10	Standard
	Tl	203	55.0	70.9	**0.0037**	0.005	139.1	ug/L	19	Standard
	Tl	205	41.7	70.3	**0.0077**	0.005	61.7	ug/L	17	Standard
	Pb	206	916.0	4.2	**0.1339**	0.009	6.5	ug/L	247	Standard
	Pb	207	747.7	4.4	**0.1174**	0.008	6.7	ug/L	215	Standard
	Pb	208	3092.8	3.0	**0.1274**	0.006	5.0	ug/L	770	Standard
	U	238	143.3	18.2	**0.0231**	0.004	19.3	ug/L	13	Standard
>	**Bi**	209	502532.6	0.4				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	53.3	47.2	**0.0289**	0.033	114.0	mg/L	35	Standard
K	39	30.0	60.1	**0.0244**	0.079	325.6	mg/L	25	Standard
Ca	43	30.0	33.3	**0.1797**	1.980	1101.9	mg/L	38	Standard
Fe	54	180.9	6.6	**0.0219**	0.004	19.7	mg/L	126	Standard
Fe	57	280.0	8.2	**-0.0692**	0.099	143.2	mg/L	245	Standard
> **Sc-1**	45	27139.3	3.8				mg/L	25066	Standard
Cl	35	132798.2	1.3				ug/L	125857	Standard
Kr	83	2.7	78.1				ug/L	1	Standard
Br	81	1633.4	13.0				ug/L	1350	Standard
P	31	18716.6	3.2				ug/L	18393	Standard
S	34	3410.4	2.5				ug/L	3739	Standard
Sr	88	51.7	22.3				ug/L	78	Standard
C	12	60.0	57.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	91.1	51.3				mg/L	2	Standard
Ho-1	165	30.0	16.7				mg/L	10	Standard
Er	166	46.7	32.7				mg/L	23	Standard
I	127	1188.4	6.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.156	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.029	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.300
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.879
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 20:16:31
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61809.3	4.5				ug/L	60176	Standard
	Be	9	36245.0	0.8	**49.1988**	1.805	3.7	ug/L	5	Standard
	Al	27	6582318.8	1.8	**48.8210**	1.363	2.8	ug/L	832	Standard
	Sc	45	26551.6	2.9				ug/L	25066	Standard
	Ti	47	20307.3	0.8	**104.7366**	0.864	0.8	ug/L	38	Standard
	V	51	307773.1	2.0	**51.5001**	0.172	0.3	ug/L	974	Standard
	Cr	52	332161.2	0.7	**51.2294**	1.226	2.4	ug/L	5792	Standard
	Cr	53	42405.9	1.2	**51.3640**	0.276	0.5	ug/L	347	Standard
	Mn	55	325172.6	1.2	**50.5298**	0.233	0.5	ug/L	1164	Standard
	Co	59	317920.3	2.4	**52.0831**	0.431	0.8	ug/L	303	Standard
	Ni	60	91403.9	0.5	**50.5335**	0.688	1.4	ug/L	291	Standard
	Cu	65	91169.5	0.8	**50.7905**	0.667	1.3	ug/L	173	Standard
	Zn	66	52960.1	1.1	**50.7498**	0.564	1.1	ug/L	130	Standard
>	**Ge**	72	492646.8	1.7				ug/L	491724	Standard
	As	75	53122.0	0.6	**50.5540**	0.557	1.1	ug/L	-25	Standard
	Se	82	5355.6	0.4	**51.6204**	0.769	1.5	ug/L	12	Standard
	Se-1	77	3659.1	2.5	**51.0370**	1.490	2.9	ug/L	57	Standard
>	**Ga**	71	103.3	24.8				mg/L	148	Standard
	Rb	85	821.7	11.1				ug/L	18	Standard
	Y	89	426804.9	1.0				ug/L	401845	Standard
>	**Rh**	103	46.7	62.8				ug/L	10	Standard
	Mo	98	240578.5	1.9	**95.7566**	1.752	1.8	ug/L	12	Standard
	Ag	107	293672.5	0.8	**47.6191**	0.728	1.5	ug/L	98	Standard
	Cd	111	97148.2	0.4	**49.4310**	0.396	0.8	mg/L	11	Standard
	Cd	114	238273.1	1.3	**49.8334**	0.670	1.3	ug/L	21	Standard
>	**In**	115	572423.0	0.8				ug/L	547487	Standard
	Sn	118	262319.8	0.9	**48.2447**	0.796	1.6	ug/L	450	Standard
	Sb	123	211959.4	1.1	**47.7258**	0.723	1.5	ug/L	105	Standard
	Ba	135	92131.9	0.5	**47.9464**	0.632	1.3	ug/L	111	Standard
	Ce	140	101.7	44.6				ug/L	107	Standard
>	**Tb**	159	884901.8	0.8				ug/L	890342	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	370454.0	0.8	**49.8033**	0.613	1.2	ug/L	19	Standard
	Tl	205	319179.0	1.6	**52.3013**	1.096	2.1	ug/L	17	Standard
	Pb	206	236235.7	0.3	**49.3439**	0.398	0.8	ug/L	247	Standard
	Pb	207	215467.7	0.9	**49.5115**	0.712	1.4	ug/L	215	Standard
	Pb	208	846194.0	1.4	**51.9369**	0.988	1.9	ug/L	770	Standard
	U	238	302895.4	0.7	**51.2919**	0.606	1.2	ug/L	13	Standard
>	**Bi**	209	495377.4	0.6				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3608.8	3.4	**4.6428**	0.152	3.3	mg/L	35	Standard
K	39	930.0	9.8	**4.2620**	0.368	8.6	mg/L	25	Standard
Ca	43	71.7	28.2	**7.9807**	3.539	44.3	mg/L	38	Standard
Fe	54	5416.4	5.0	**4.7205**	0.325	6.9	mg/L	126	Standard
Fe	57	1530.1	9.9	**4.6008**	0.459	10.0	mg/L	245	Standard
> **Sc-1**	45	26551.6	2.9				mg/L	25066	Standard
Cl	35	138136.9	1.0				ug/L	125857	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	1570.1	5.7				ug/L	1350	Standard
P	31	19352.4	2.2				ug/L	18393	Standard
S	34	4222.3	4.4				ug/L	3739	Standard
Sr	88	46.7	16.4				ug/L	78	Standard
C	12	56.7	36.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	2.5	222.5				mg/L	2	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	16.7	34.6				mg/L	23	Standard
I	127	1088.4	5.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	98.398		
Al	27	97.642		
Sc	45			
Ti	47	104.737		
V	51	103.000		
Cr	52	102.459		
Cr	53			
Mn	55	101.060		
Co	59	104.166		
Ni	60	101.067		
Cu	65	101.581		
Zn	66	101.500		
> Ge	72		100.188	
As	75	101.108		
Se	82	103.241		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	95.757		
Ag	107	95.238		
Cd	111	98.862		
Cd	114			
> In	115		104.555	
Sn	118	96.489		
Sb	123	95.452		
Ba	135	95.893		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.607		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.874		
U	238	102.584		
> Bi	209		98.457	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 20:19:42
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59004.7	2.4				ug/L	60176	Standard
	Be	9	15.0	33.3	**0.0123**	0.007	55.9	ug/L	5	Standard
	Al	27	1221.7	22.8	**0.0011**	0.002	184.4	ug/L	832	Standard
	Sc	45	26162.6	2.8				ug/L	25066	Standard
	Ti	47	22.7	22.2	**-0.0938**	0.025	26.7	ug/L	38	Standard
	V	51	1096.4	3.1	**0.0083**	0.006	72.4	ug/L	974	Standard
	Cr	52	6080.6	0.6	**-0.0141**	0.009	60.7	ug/L	5792	Standard
	Cr	53	428.3	8.2	**0.0958**	0.044	45.6	ug/L	347	Standard
	Mn	55	922.7	7.2	**-0.0753**	0.011	14.0	ug/L	1164	Standard
	Co	59	276.0	8.7	**-0.0053**	0.004	76.6	ug/L	303	Standard
	Ni	60	181.3	7.1	**-0.0927**	0.007	8.0	ug/L	291	Standard
	Cu	65	115.7	15.5	**-0.0349**	0.010	27.6	ug/L	173	Standard
	Zn	66	146.0	12.6	**-0.0986**	0.018	18.2	ug/L	130	Standard
>	**Ge**	72	506500.5	0.5				ug/L	491724	Standard
	As	75	-18.9	142.2	**0.0164**	0.025	151.4	ug/L	-25	Standard
	Se	82	22.3	20.3	**0.1163**	0.042	36.4	ug/L	12	Standard
	Se-1	77	50.7	8.0	**0.0466**	0.058	125.4	ug/L	57	Standard
>	**Ga**	71	98.3	22.9				mg/L	148	Standard
	Rb	85	25.0	34.6				ug/L	18	Standard
	Y	89	420472.2	1.7				ug/L	401845	Standard
>	**Rh**	103	21.7	35.3				ug/L	10	Standard
	Mo	98	215.9	20.5	**0.0836**	0.015	18.1	ug/L	12	Standard
	Ag	107	100.3	2.3	**0.0013**	0.000	16.9	ug/L	98	Standard
	Cd	111	12.6	20.4	**0.0019**	0.001	66.8	mg/L	11	Standard
	Cd	114	36.9	35.9	**0.0034**	0.003	76.6	ug/L	21	Standard
>	**In**	115	556898.8	3.2				ug/L	547487	Standard
	Sn	118	736.7	14.7	**0.0659**	0.025	37.6	ug/L	450	Standard
	Sb	123	429.7	33.8	**0.0926**	0.037	39.4	ug/L	105	Standard
	Ba	135	112.0	12.9	**0.0043**	0.007	160.0	ug/L	111	Standard
	Ce	140	35.0	14.3				ug/L	107	Standard
>	**Tb**	159	887182.6	2.1				ug/L	890342	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	50.3	23.7	**0.0032**	0.002	49.1	ug/L	19	Standard
	Tl	205	48.3	29.9	**0.0089**	0.002	26.7	ug/L	17	Standard
	Pb	206	283.7	6.5	**0.0042**	0.003	82.4	ug/L	247	Standard
	Pb	207	216.0	8.2	**-0.0026**	0.004	153.1	ug/L	215	Standard
	Pb	208	914.3	7.2	**-0.0039**	0.004	93.9	ug/L	770	Standard
	U	238	37.3	13.5	**0.0055**	0.001	14.8	ug/L	13	Standard
>	**Bi**	209	496398.1	0.7				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	48.5	**0.0163**	0.028	170.7	mg/L	35	Standard
K	39	28.3	36.7	**0.0223**	0.046	208.0	mg/L	25	Standard
Ca	43	28.3	36.7	**0.0638**	2.140	3353.3	mg/L	38	Standard
Fe	54	134.3	7.3	**-0.0145**	0.007	47.3	mg/L	126	Standard
Fe	57	193.3	4.0	**-0.3592**	0.042	11.6	mg/L	245	Standard
> **Sc-1**	45	26162.6	2.8				mg/L	25066	Standard
Cl	35	138431.0	1.7				ug/L	125857	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	1586.7	3.9				ug/L	1350	Standard
P	31	19664.4	2.7				ug/L	18393	Standard
S	34	4130.6	2.1				ug/L	3739	Standard
Sr	88	75.0	46.7				ug/L	78	Standard
C	12	43.3	26.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	16.0	75.7				mg/L	2	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	13.3	173.2				mg/L	23	Standard
I	127	915.0	6.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.005	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.719	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.659	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606078703 WG573333-01
Sample Date/Time: Tuesday, June 21, 2016 20:22:55
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61250.2	0.8				ug/L	60176	Standard
	Be	9	533.3	8.2	**0.7208**	0.059	8.2	ug/L	5	Standard
	Al	27	4739129.5	0.9	**35.4392**	0.186	0.5	ug/L	832	Standard
	Sc	45	29605.6	2.9				ug/L	25066	Standard
	Ti	47	1339.7	3.2	**6.7020**	0.132	2.0	ug/L	38	Standard
	V	51	71406.4	1.8	**11.7973**	0.190	1.6	ug/L	974	Standard
	Cr	52	50888.7	1.6	**7.0346**	0.128	1.8	ug/L	5792	Standard
	Cr	53	6126.2	1.1	**7.0553**	0.185	2.6	ug/L	347	Standard
	Mn	55	2507110.3	0.7	**390.3777**	5.993	1.5	ug/L	1164	Standard
	Co	59	38304.0	1.2	**6.2221**	0.122	2.0	ug/L	303	Standard
	Ni	60	20980.2	1.2	**11.4317**	0.218	1.9	ug/L	291	Standard
	Cu	65	14716.8	0.9	**8.1026**	0.157	1.9	ug/L	173	Standard
	Zn	66	18330.8	1.8	**17.3802**	0.302	1.7	ug/L	130	Standard
>	**Ge**	72	493512.5	1.4				ug/L	491724	Standard
	As	75	1782.0	5.4	**1.7250**	0.073	4.2	ug/L	-25	Standard
	Se	82	35.6	28.1	**0.2511**	0.099	39.3	ug/L	12	Standard
	Se-1	77	88.0	14.2	**0.5919**	0.186	31.4	ug/L	57	Standard
>	**Ga**	71	8470.7	1.2				mg/L	148	Standard
	Rb	85	77419.0	1.7				ug/L	18	Standard
	Y	89	632239.1	1.1				ug/L	401845	Standard
>	**Rh**	103	36.7	31.5				ug/L	10	Standard
	Mo	98	157.1	8.2	**0.0590**	0.005	8.3	ug/L	12	Standard
	Ag	107	274.7	4.4	**0.0299**	0.003	9.4	ug/L	98	Standard
	Cd	111	187.0	6.5	**0.0920**	0.008	8.8	mg/L	11	Standard
	Cd	114	444.1	15.9	**0.0897**	0.014	15.2	ug/L	21	Standard
>	**In**	115	563958.4	1.8				ug/L	547487	Standard
	Sn	118	591.7	12.1	**0.0367**	0.014	39.0	ug/L	450	Standard
	Sb	123	220.2	26.8	**0.0429**	0.014	33.7	ug/L	105	Standard
	Ba	135	144715.5	0.6	**76.4840**	1.276	1.7	ug/L	111	Standard
	Ce	140	988223.5	0.5				ug/L	107	Standard
>	**Tb**	159	908188.9	1.2				ug/L	890342	Standard
	Ho	165	17219.8	2.5				ug/L	10	Standard
	Tl	203	463.3	4.4	**0.0586**	0.002	4.2	ug/L	19	Standard
	Tl	205	378.3	13.4	**0.0628**	0.008	12.5	ug/L	17	Standard
	Pb	206	45384.9	0.3	**9.4112**	0.053	0.6	ug/L	247	Standard
	Pb	207	36832.4	1.0	**8.3986**	0.095	1.1	ug/L	215	Standard
	Pb	208	155922.4	1.7	**9.4964**	0.166	1.7	ug/L	770	Standard
	U	238	2728.6	1.4	**0.4601**	0.009	2.0	ug/L	13	Standard
>	**Bi**	209	496638.4	0.7				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	93.3	11.2	**0.0696**	0.011	15.8	mg/L	35	Standard
K	39	126.7	21.7	**0.4205**	0.104	24.7	mg/L	25	Standard
Ca	43	46.7	44.6	**2.5335**	3.744	147.8	mg/L	38	Standard
Fe	54	5828.7	1.9	**4.5504**	0.210	4.6	mg/L	126	Standard
Fe	57	1691.8	7.2	**4.5640**	0.493	10.8	mg/L	245	Standard
> **Sc-1**	45	29605.6	2.9				mg/L	25066	Standard
Cl	35	137167.4	0.3				ug/L	125857	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	1823.4	14.0				ug/L	1350	Standard
P	31	18519.7	3.3				ug/L	18393	Standard
S	34	4015.5	1.1				ug/L	3739	Standard
Sr	88	103.3	12.2				ug/L	78	Standard
C	12	66.7	31.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	100.0				mg/L	0	Standard
Dy	164	29188.4	3.4				mg/L	2	Standard
Ho-1	165	17219.8	2.5				mg/L	10	Standard
Er	166	15471.2	3.8				mg/L	23	Standard
I	127	8429.0	7.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.785	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.364	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606078703 WG573333-01
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.009
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.707
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606078703 WG573333-01
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Method 6020 - Summary Report

Sample ID: L1606078704S WG573333-05
Sample Date/Time: Tuesday, June 21, 2016 20:26:07
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60795.1	1.7				ug/L	60176	Standard
	Be	9	19584.3	1.1	**26.9961**	0.342	1.3	ug/L	5	Standard
	Al	27	4567931.7	1.1	**34.4185**	0.489	1.4	ug/L	832	Standard
	Sc	45	29006.1	1.6				ug/L	25066	Standard
	Ti	47	3165.0	3.9	**15.7145**	0.722	4.6	ug/L	38	Standard
	V	51	242137.7	0.6	**39.4045**	0.713	1.8	ug/L	974	Standard
	Cr	52	226731.6	0.9	**33.7129**	0.272	0.8	ug/L	5792	Standard
	Cr	53	28276.4	2.1	**33.1977**	1.054	3.2	ug/L	347	Standard
	Mn	55	2051282.4	3.3	**311.4080**	12.009	3.9	ug/L	1164	Standard
	Co	59	195015.9	1.5	**31.0844**	0.761	2.4	ug/L	303	Standard
	Ni	60	65648.6	0.3	**35.2674**	0.363	1.0	ug/L	291	Standard
	Cu	65	58144.4	1.1	**31.4896**	0.412	1.3	ug/L	173	Standard
	Zn	66	44983.4	1.5	**41.9115**	0.217	0.5	ug/L	130	Standard
>	**Ge**	72	506139.8	1.3				ug/L	491724	Standard
	As	75	25341.1	0.4	**23.4909**	0.303	1.3	ug/L	-25	Standard
	Se	82	2045.3	2.1	**19.1312**	0.577	3.0	ug/L	12	Standard
	Se-1	77	1519.4	1.8	**20.2366**	0.146	0.7	ug/L	57	Standard
>	**Ga**	71	9184.5	4.0				mg/L	148	Standard
	Rb	85	70028.1	1.4				ug/L	18	Standard
	Y	89	627632.4	1.5				ug/L	401845	Standard
>	**Rh**	103	40.0	45.1				ug/L	10	Standard
	Mo	98	594.6	6.7	**0.2447**	0.017	7.1	ug/L	12	Standard
	Ag	107	147727.7	1.0	**25.2040**	0.390	1.5	ug/L	98	Standard
	Cd	111	48105.2	0.3	**25.7603**	0.320	1.2	mg/L	11	Standard
	Cd	114	117496.3	0.5	**25.8635**	0.442	1.7	ug/L	21	Standard
>	**In**	115	543890.8	1.3				ug/L	547487	Standard
	Sn	118	720.0	10.8	**0.0655**	0.015	23.0	ug/L	450	Standard
	Sb	123	21224.1	1.3	**5.0226**	0.049	1.0	ug/L	105	Standard
	Ba	135	168787.7	0.9	**92.5008**	1.371	1.5	ug/L	111	Standard
	Ce	140	900741.5	2.1				ug/L	107	Standard
>	**Tb**	159	881875.5	1.1				ug/L	890342	Standard
	Ho	165	17471.7	0.7				ug/L	10	Standard
	Tl	203	184074.8	0.7	**24.8291**	0.438	1.8	ug/L	19	Standard
	Tl	205	156804.0	1.7	**25.7832**	0.724	2.8	ug/L	17	Standard
	Pb	206	159776.4	0.6	**33.4695**	0.581	1.7	ug/L	247	Standard
	Pb	207	136948.1	0.2	**31.5548**	0.325	1.0	ug/L	215	Standard
	Pb	208	552723.2	0.9	**34.0190**	0.677	2.0	ug/L	770	Standard
	U	238	155414.7	0.8	**26.4072**	0.520	2.0	ug/L	13	Standard
>	**Bi**	209	493745.3	1.2				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	76.7	29.4	**0.0523**	0.028	52.7	mg/L	35	Standard
K	39	121.7	41.6	**0.4123**	0.220	53.4	mg/L	25	Standard
Ca	43	56.7	5.1	**4.3235**	0.342	7.9	mg/L	38	Standard
Fe	54	6910.1	1.7	**5.5303**	0.066	1.2	mg/L	126	Standard
Fe	57	2031.8	2.9	**5.8339**	0.224	3.8	mg/L	245	Standard
> **Sc-1**	45	29006.1	1.6				mg/L	25066	Standard
Cl	35	131188.4	2.4				ug/L	125857	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	1806.8	7.4				ug/L	1350	Standard
P	31	18918.5	1.6				ug/L	18393	Standard
S	34	3765.5	5.6				ug/L	3739	Standard
Sr	88	86.7	23.3				ug/L	78	Standard
C	12	36.7	83.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	28039.5	3.1				mg/L	2	Standard
Ho-1	165	17471.7	0.7				mg/L	10	Standard
Er	166	14914.0	2.5				mg/L	23	Standard
I	127	7893.7	1.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.029	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.932	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.343
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.132
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606078705SD WG573333-06
Sample Date/Time: Tuesday, June 21, 2016 20:29:18
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63216.6	1.8				ug/L	60176	Standard
	Be	9	19696.1	2.2	**26.1120**	0.714	2.7	ug/L	5	Standard
	Al	27	5659138.5	0.3	**41.0133**	0.799	1.9	ug/L	832	Standard
	Sc	45	30033.1	1.0				ug/L	25066	Standard
	Ti	47	2763.3	27.2	**13.8639**	4.139	29.9	ug/L	38	Standard
	V	51	237607.5	1.1	**38.9988**	0.497	1.3	ug/L	974	Standard
	Cr	52	248636.6	1.2	**37.3971**	0.891	2.4	ug/L	5792	Standard
	Cr	53	30921.5	0.6	**36.6639**	1.024	2.8	ug/L	347	Standard
	Mn	55	2410492.6	0.5	**369.1780**	8.479	2.3	ug/L	1164	Standard
	Co	59	185271.5	0.5	**29.7851**	0.497	1.7	ug/L	303	Standard
	Ni	60	67071.8	1.3	**36.3557**	0.915	2.5	ug/L	291	Standard
	Cu	65	60322.2	1.1	**32.9575**	0.383	1.2	ug/L	173	Standard
	Zn	66	45873.7	1.3	**43.1216**	0.385	0.9	ug/L	130	Standard
>	**Ge**	72	501820.8	2.1				ug/L	491724	Standard
	As	75	24039.7	1.9	**22.4789**	0.430	1.9	ug/L	-25	Standard
	Se	82	1972.7	2.1	**18.6056**	0.284	1.5	ug/L	12	Standard
	Se-1	77	1402.7	4.3	**18.8146**	1.203	6.4	ug/L	57	Standard
>	**Ga**	71	9417.9	5.5				mg/L	148	Standard
	Rb	85	66410.2	0.3				ug/L	18	Standard
	Y	89	617512.5	0.5				ug/L	401845	Standard
>	**Rh**	103	50.0	62.5				ug/L	10	Standard
	Mo	98	1524.5	3.3	**0.6151**	0.019	3.1	ug/L	12	Standard
	Ag	107	143879.3	0.9	**23.8137**	0.379	1.6	ug/L	98	Standard
	Cd	111	47710.7	0.7	**24.7847**	0.177	0.7	mg/L	11	Standard
	Cd	114	115961.3	1.6	**24.7605**	0.346	1.4	ug/L	21	Standard
>	**In**	115	560614.7	0.8				ug/L	547487	Standard
	Sn	118	1535.1	5.3	**0.2146**	0.013	6.3	ug/L	450	Standard
	Sb	123	23888.4	1.7	**5.4855**	0.117	2.1	ug/L	105	Standard
	Ba	135	184639.0	1.2	**98.1607**	0.543	0.6	ug/L	111	Standard
	Ce	140	908579.6	1.8				ug/L	107	Standard
>	**Tb**	159	921260.1	0.5				ug/L	890342	Standard
	Ho	165	17002.9	1.2				ug/L	10	Standard
	Tl	203	180601.4	1.1	**23.7143**	0.543	2.3	ug/L	19	Standard
	Tl	205	152330.3	0.3	**24.3789**	0.252	1.0	ug/L	17	Standard
	Pb	206	161923.0	0.9	**33.0139**	0.142	0.4	ug/L	247	Standard
	Pb	207	139326.0	1.1	**31.2477**	0.234	0.7	ug/L	215	Standard
	Pb	208	558215.4	0.7	**33.4396**	0.224	0.7	ug/L	770	Standard
	U	238	149906.9	0.4	**24.7925**	0.215	0.9	ug/L	13	Standard
>	**Bi**	209	507223.5	1.3				ug/L	503143	Standard

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Na	23	1.7	173.2	**15.4815**	26.806	173.1	mg/L	2	Standard
Mg	24	46.7	52.9	**0.0145**	0.028	192.1	mg/L	35	Standard
K	39	158.3	18.5	**0.5456**	0.116	21.3	mg/L	25	Standard
Ca	43	41.7	6.9	**1.5279**	0.454	29.7	mg/L	38	Standard
Fe	54	7213.6	3.5	**5.5758**	0.146	2.6	mg/L	126	Standard
Fe	57	1996.8	3.3	**5.4816**	0.233	4.3	mg/L	245	Standard
> **Sc-1**	45	30033.1	1.0				mg/L	25066	Standard
Cl	35	129762.7	0.8				ug/L	125857	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	1876.8	4.3				ug/L	1350	Standard
P	31	18274.3	0.2				ug/L	18393	Standard
S	34	3732.1	1.2				ug/L	3739	Standard
Sr	88	110.0	27.6				ug/L	78	Standard
C	12	66.7	37.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	29098.6	2.2				mg/L	2	Standard
Ho-1	165	17002.9	1.2				mg/L	10	Standard
Er	166	15394.5	3.5				mg/L	23	Standard
I	127	7451.8	4.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.053	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.053	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.398
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.811
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606078705SD WG573333-06
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Method 6020 - Summary Report

Sample ID: L1606078706
Sample Date/Time: Tuesday, June 21, 2016 20:32:30
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61503.1	4.4				ug/L	60176	Standard
	Be	9	190.0	11.5	**0.2498**	0.027	10.8	ug/L	5	Standard
	Al	27	2161096.6	2.0	**16.1023**	0.467	2.9	ug/L	832	Standard
	Sc	45	27194.4	2.9				ug/L	25066	Standard
	Ti	47	1729.4	29.8	**8.8301**	2.712	30.7	ug/L	38	Standard
	V	51	40719.4	1.5	**6.7406**	0.118	1.7	ug/L	974	Standard
	Cr	52	22743.1	1.4	**2.6675**	0.051	1.9	ug/L	5792	Standard
	Cr	53	2448.5	3.6	**2.6090**	0.103	4.0	ug/L	347	Standard
	Mn	55	1260041.1	0.2	**198.5616**	0.943	0.5	ug/L	1164	Standard
	Co	59	12600.6	0.8	**2.0396**	0.022	1.1	ug/L	303	Standard
	Ni	60	7512.5	0.9	**4.0234**	0.036	0.9	ug/L	291	Standard
	Cu	65	5352.3	2.1	**2.9221**	0.069	2.3	ug/L	173	Standard
	Zn	66	8532.4	1.5	**8.0679**	0.130	1.6	ug/L	130	Standard
>	**Ge**	72	487322.6	0.2				ug/L	491724	Standard
	As	75	1559.9	2.0	**1.5334**	0.026	1.7	ug/L	-25	Standard
	Se	82	35.2	29.3	**0.2510**	0.100	39.8	ug/L	12	Standard
	Se-1	77	72.7	4.2	**0.3880**	0.045	11.7	ug/L	57	Standard
>	**Ga**	71	2870.3	6.0				mg/L	148	Standard
	Rb	85	28276.4	2.7				ug/L	18	Standard
	Y	89	521144.4	0.3				ug/L	401845	Standard
>	**Rh**	103	45.0	19.2				ug/L	10	Standard
	Mo	98	116.0	7.3	**0.0415**	0.003	6.9	ug/L	12	Standard
	Ag	107	230.3	3.7	**0.0218**	0.002	8.7	ug/L	98	Standard
	Cd	111	115.8	1.7	**0.0540**	0.002	4.0	mg/L	11	Standard
	Cd	114	274.3	6.0	**0.0527**	0.005	8.7	ug/L	21	Standard
>	**In**	115	575128.8	2.3				ug/L	547487	Standard
	Sn	118	336.7	3.7	**-0.0123**	0.001	7.1	ug/L	450	Standard
	Sb	123	176.1	18.8	**0.0320**	0.008	25.7	ug/L	105	Standard
	Ba	135	86694.7	1.9	**44.9082**	1.004	2.2	ug/L	111	Standard
	Ce	140	436433.2	2.1				ug/L	107	Standard
>	**Tb**	159	887156.7	2.0				ug/L	890342	Standard
	Ho	165	7937.1	1.0				ug/L	10	Standard
	Tl	203	162.7	11.2	**0.0183**	0.003	15.7	ug/L	19	Standard
	Tl	205	140.0	3.6	**0.0238**	0.000	1.8	ug/L	17	Standard
	Pb	206	19692.8	1.3	**4.0500**	0.140	3.5	ug/L	247	Standard
	Pb	207	16290.1	1.3	**3.6832**	0.128	3.5	ug/L	215	Standard
	Pb	208	67765.1	1.3	**4.0908**	0.139	3.4	ug/L	770	Standard
	U	238	859.4	4.8	**0.1442**	0.009	5.9	ug/L	13	Standard
>	**Bi**	209	497164.1	2.1				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	45.0	19.2	**0.0180**	0.010	57.8	mg/L	35	Standard
K	39	71.7	24.5	**0.2186**	0.091	41.5	mg/L	25	Standard
Ca	43	31.7	65.7	**0.4222**	3.721	881.3	mg/L	38	Standard
Fe	54	2730.0	8.4	**2.2488**	0.134	6.0	mg/L	126	Standard
Fe	57	905.0	11.2	**2.1941**	0.285	13.0	mg/L	245	Standard
> **Sc-1**	45	27194.4	2.9				mg/L	25066	Standard
Cl	35	130552.0	0.6				ug/L	125857	Standard
Kr	83	3.7	83.3				ug/L	1	Standard
Br	81	1476.7	11.6				ug/L	1350	Standard
P	31	18608.1	3.2				ug/L	18393	Standard
S	34	3705.5	6.0				ug/L	3739	Standard
Sr	88	98.3	19.3				ug/L	78	Standard
C	12	70.0	14.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	13334.9	2.3				mg/L	2	Standard
Ho-1	165	7937.1	1.0				mg/L	10	Standard
Er	166	6914.9	5.3				mg/L	23	Standard
I	127	2945.3	1.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.205	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.105	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	105.049	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.812	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606078706
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Method 6020 - Summary Report

Sample ID: L1606078707
Sample Date/Time: Tuesday, June 21, 2016 20:35:41
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59709.1	1.3				ug/L	60176	Standard
	Be	9	200.0	10.9	**0.2718**	0.032	11.7	ug/L	5	Standard
	Al	27	1683075.1	1.4	**12.9055**	0.048	0.4	ug/L	832	Standard
	Sc	45	26478.1	4.1				ug/L	25066	Standard
	Ti	47	1140.4	8.0	**5.5902**	0.464	8.3	ug/L	38	Standard
	V	51	39686.8	0.8	**6.3850**	0.023	0.4	ug/L	974	Standard
	Cr	52	23499.9	2.1	**2.6878**	0.064	2.4	ug/L	5792	Standard
	Cr	53	2666.9	3.2	**2.7908**	0.107	3.8	ug/L	347	Standard
	Mn	55	420579.8	1.9	**64.3639**	1.562	2.4	ug/L	1164	Standard
	Co	59	13033.6	2.2	**2.0538**	0.057	2.8	ug/L	303	Standard
	Ni	60	7165.7	0.5	**3.7215**	0.035	0.9	ug/L	291	Standard
	Cu	65	5197.9	1.7	**2.7564**	0.034	1.2	ug/L	173	Standard
	Zn	66	9135.4	1.5	**8.4176**	0.173	2.1	ug/L	130	Standard
>	**Ge**	72	500708.0	0.5				ug/L	491724	Standard
	As	75	1463.5	3.3	**1.4032**	0.042	3.0	ug/L	-25	Standard
	Se	82	24.1	45.1	**0.1358**	0.103	76.2	ug/L	12	Standard
	Se-1	77	77.3	6.1	**0.4249**	0.062	14.6	ug/L	57	Standard
>	**Ga**	71	2593.6	3.7				mg/L	148	Standard
	Rb	85	26549.9	1.6				ug/L	18	Standard
	Y	89	508383.7	2.6				ug/L	401845	Standard
>	**Rh**	103	26.7	47.2				ug/L	10	Standard
	Mo	98	828.3	1.8	**0.3404**	0.004	1.3	ug/L	12	Standard
	Ag	107	171.0	8.6	**0.0136**	0.003	19.8	ug/L	98	Standard
	Cd	111	92.1	6.3	**0.0443**	0.003	7.2	mg/L	11	Standard
	Cd	114	165.6	20.7	**0.0318**	0.007	23.1	ug/L	21	Standard
>	**In**	115	547256.3	0.7				ug/L	547487	Standard
	Sn	118	725.0	5.0	**0.0656**	0.007	10.8	ug/L	450	Standard
	Sb	123	144.6	14.9	**0.0264**	0.005	18.6	ug/L	105	Standard
	Ba	135	55231.2	0.4	**30.0426**	0.229	0.8	ug/L	111	Standard
	Ce	140	414286.0	0.6				ug/L	107	Standard
>	**Tb**	159	881412.3	0.9				ug/L	890342	Standard
	Ho	165	7586.9	2.2				ug/L	10	Standard
	Tl	203	135.7	11.8	**0.0147**	0.002	16.0	ug/L	19	Standard
	Tl	205	110.0	20.8	**0.0190**	0.004	20.0	ug/L	17	Standard
	Pb	206	19007.2	0.5	**3.9191**	0.061	1.6	ug/L	247	Standard
	Pb	207	15601.7	1.7	**3.5366**	0.107	3.0	ug/L	215	Standard
	Pb	208	64611.6	1.1	**3.9100**	0.093	2.4	ug/L	770	Standard
	U	238	755.0	4.6	**0.1270**	0.005	3.6	ug/L	13	Standard
>	**Bi**	209	495487.3	1.3				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	35.0	14.3	**0.0067**	0.007	106.5	mg/L	35	Standard
K	39	83.3	21.1	**0.2797**	0.073	26.3	mg/L	25	Standard
Ca	43	25.0	20.0	**-0.6389**	1.092	170.9	mg/L	38	Standard
Fe	54	2467.8	3.0	**2.0838**	0.134	6.4	mg/L	126	Standard
Fe	57	820.0	4.2	**1.9775**	0.256	13.0	mg/L	245	Standard
> **Sc-1**	45	26478.1	4.1				mg/L	25066	Standard
Cl	35	128995.5	1.3				ug/L	125857	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	1503.4	13.0				ug/L	1350	Standard
P	31	17358.3	0.2				ug/L	18393	Standard
S	34	3645.4	0.9				ug/L	3739	Standard
Sr	88	81.7	14.1				ug/L	78	Standard
C	12	60.0	28.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	12318.4	0.4				mg/L	2	Standard
Ho-1	165	7586.9	2.2				mg/L	10	Standard
Er	166	6754.8	0.3				mg/L	23	Standard
I	127	2638.6	9.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.224	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.827	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.958
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.478
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606078708
Sample Date/Time: Tuesday, June 21, 2016 20:38:53
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61146.5	1.9				ug/L	60176	Standard
	Be	9	295.0	11.1	**0.3957**	0.048	12.2	ug/L	5	Standard
	Al	27	10005765.0	2.2	**74.9914**	2.825	3.8	ug/L	832	Standard
	Sc	45	28378.2	1.3				ug/L	25066	Standard
	Ti	47	1581.7	9.8	**7.8186**	0.716	9.2	ug/L	38	Standard
	V	51	56293.6	0.1	**9.1158**	0.120	1.3	ug/L	974	Standard
	Cr	52	35520.9	2.0	**4.5387**	0.182	4.0	ug/L	5792	Standard
	Cr	53	4120.6	4.1	**4.5322**	0.272	6.0	ug/L	347	Standard
	Mn	55	2245242.9	0.6	**344.0555**	5.834	1.7	ug/L	1164	Standard
	Co	59	20048.6	2.0	**3.1815**	0.095	3.0	ug/L	303	Standard
	Ni	60	12750.7	0.7	**6.7615**	0.141	2.1	ug/L	291	Standard
	Cu	65	8350.6	0.8	**4.4816**	0.075	1.7	ug/L	173	Standard
	Zn	66	13186.1	1.0	**12.2373**	0.257	2.1	ug/L	130	Standard
>	**Ge**	72	501445.8	1.4				ug/L	491724	Standard
	As	75	1545.9	0.8	**1.4785**	0.032	2.1	ug/L	-25	Standard
	Se	82	27.4	13.1	**0.1674**	0.035	21.2	ug/L	12	Standard
	Se-1	77	71.0	5.1	**0.3358**	0.056	16.6	ug/L	57	Standard
>	**Ga**	71	4512.3	1.6				mg/L	148	Standard
	Rb	85	37980.9	3.4				ug/L	18	Standard
	Y	89	531850.3	0.5				ug/L	401845	Standard
>	**Rh**	103	33.3	31.2				ug/L	10	Standard
	Mo	98	272.4	0.4	**0.1086**	0.001	1.4	ug/L	12	Standard
	Ag	107	226.3	10.4	**0.0229**	0.005	19.8	ug/L	98	Standard
	Cd	111	165.5	1.0	**0.0831**	0.002	1.9	mg/L	11	Standard
	Cd	114	397.0	5.6	**0.0822**	0.006	7.3	ug/L	21	Standard
>	**In**	115	548993.1	1.6				ug/L	547487	Standard
	Sn	118	608.3	15.7	**0.0426**	0.017	39.0	ug/L	450	Standard
	Sb	123	116.3	12.7	**0.0197**	0.003	15.4	ug/L	105	Standard
	Ba	135	96057.9	1.5	**52.1296**	0.874	1.7	ug/L	111	Standard
	Ce	140	548131.6	1.4				ug/L	107	Standard
>	**Tb**	159	898753.5	0.5				ug/L	890342	Standard
	Ho	165	10386.9	3.9				ug/L	10	Standard
	Tl	203	211.0	1.6	**0.0248**	0.001	2.7	ug/L	19	Standard
	Tl	205	218.3	11.3	**0.0367**	0.005	12.3	ug/L	17	Standard
	Pb	206	25132.8	0.9	**5.1923**	0.133	2.6	ug/L	247	Standard
	Pb	207	20495.2	0.8	**4.6546**	0.102	2.2	ug/L	215	Standard
	Pb	208	84035.9	0.8	**5.0950**	0.088	1.7	ug/L	770	Standard
	U	238	1374.4	2.1	**0.2316**	0.009	3.8	ug/L	13	Standard
>	**Bi**	209	496285.1	1.7				ug/L	503143	Standard

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Na	23	3.3	86.6	**32.9382**	28.528	86.6	mg/L	2	Standard
Mg	24	73.3	41.7	**0.0503**	0.037	74.4	mg/L	35	Standard
K	39	123.3	26.1	**0.4304**	0.140	32.4	mg/L	25	Standard
Ca	43	121.7	6.3	**15.8707**	1.562	9.8	mg/L	38	Standard
Fe	54	4051.3	3.4	**3.2588**	0.079	2.4	mg/L	126	Standard
Fe	57	1385.1	8.4	**3.7369**	0.455	12.2	mg/L	245	Standard
> **Sc-1**	45	28378.2	1.3				mg/L	25066	Standard
Cl	35	136882.9	1.1				ug/L	125857	Standard
Kr	83	3.7	78.7				ug/L	1	Standard
Br	81	1383.4	11.9				ug/L	1350	Standard
P	31	18684.9	2.6				ug/L	18393	Standard
S	34	4252.3	2.8				ug/L	3739	Standard
Sr	88	103.3	17.0				ug/L	78	Standard
C	12	63.3	18.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	17242.5	4.5				mg/L	2	Standard
Ho-1	165	10386.9	3.9				mg/L	10	Standard
Er	166	9069.4	1.8				mg/L	23	Standard
I	127	2725.2	5.2				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		101.613	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.977	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.275
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.637
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606078708
Report Date/Time: Tuesday, June 21, 2016 20:41:10
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Method 6020 - Summary Report

Sample ID: L1606078713
Sample Date/Time: Tuesday, June 21, 2016 20:42:04
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60470.5	2.4				ug/L	60176	Standard
	Be	9	438.3	14.7	**0.5976**	0.076	12.8	ug/L	5	Standard
	Al	27	3860251.5	0.5	**29.2500**	0.787	2.7	ug/L	832	Standard
	Sc	45	28167.8	2.6				ug/L	25066	Standard
	Ti	47	839.4	7.8	**4.1705**	0.369	8.8	ug/L	38	Standard
	V	51	70285.4	1.1	**11.7386**	0.317	2.7	ug/L	974	Standard
	Cr	52	48052.7	0.7	**6.6720**	0.165	2.5	ug/L	5792	Standard
	Cr	53	5747.8	3.9	**6.6668**	0.221	3.3	ug/L	347	Standard
	Mn	55	997665.2	0.2	**156.8856**	2.297	1.5	ug/L	1164	Standard
	Co	59	33501.7	1.1	**5.4941**	0.026	0.5	ug/L	303	Standard
	Ni	60	15742.2	0.8	**8.6243**	0.198	2.3	ug/L	291	Standard
	Cu	65	11171.8	1.1	**6.1943**	0.139	2.2	ug/L	173	Standard
	Zn	66	15290.4	1.0	**14.6175**	0.267	1.8	ug/L	130	Standard
>	**Ge**	72	488278.2	1.6				ug/L	491724	Standard
	As	75	2112.2	1.3	**2.0606**	0.030	1.5	ug/L	-25	Standard
	Se	82	33.4	20.1	**0.2323**	0.063	27.1	ug/L	12	Standard
	Se-1	77	80.7	13.6	**0.4996**	0.152	30.5	ug/L	57	Standard
>	**Ga**	71	6092.9	3.0				mg/L	148	Standard
	Rb	85	50096.0	1.4				ug/L	18	Standard
	Y	89	562308.7	3.4				ug/L	401845	Standard
>	**Rh**	103	20.0	25.0				ug/L	10	Standard
	Mo	98	281.8	18.1	**0.1097**	0.019	17.6	ug/L	12	Standard
	Ag	107	279.0	13.7	**0.0307**	0.006	19.7	ug/L	98	Standard
	Cd	111	205.9	9.5	**0.1020**	0.009	9.3	mg/L	11	Standard
	Cd	114	469.4	17.1	**0.0956**	0.016	17.2	ug/L	21	Standard
>	**In**	115	561794.7	1.8				ug/L	547487	Standard
	Sn	118	1265.1	3.6	**0.1635**	0.012	7.3	ug/L	450	Standard
	Sb	123	114.2	20.1	**0.0186**	0.005	27.0	ug/L	105	Standard
	Ba	135	154704.2	1.6	**82.0962**	2.614	3.2	ug/L	111	Standard
	Ce	140	714982.4	2.2				ug/L	107	Standard
>	**Tb**	159	886704.0	1.2				ug/L	890342	Standard
	Ho	165	12760.4	3.9				ug/L	10	Standard
	Tl	203	335.3	19.3	**0.0422**	0.009	20.6	ug/L	19	Standard
	Tl	205	363.3	52.8	**0.0613**	0.032	51.4	ug/L	17	Standard
	Pb	206	36098.0	0.9	**7.6025**	0.113	1.5	ug/L	247	Standard
	Pb	207	29342.1	0.5	**6.7946**	0.072	1.1	ug/L	215	Standard
	Pb	208	123673.5	2.1	**7.6482**	0.125	1.6	ug/L	770	Standard
	U	238	1531.4	12.8	**0.2621**	0.032	12.3	ug/L	13	Standard
>	**Bi**	209	488339.2	0.8				ug/L	503143	Standard

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Na	23	3.3	86.6	**33.1333**	28.719	86.7	mg/L	2	Standard
Mg	24	66.7	18.9	**0.0424**	0.013	31.2	mg/L	35	Standard
K	39	120.0	27.3	**0.4177**	0.133	31.7	mg/L	25	Standard
Ca	43	43.3	24.0	**2.2723**	1.810	79.7	mg/L	38	Standard
Fe	54	5259.3	3.5	**4.3093**	0.268	6.2	mg/L	126	Standard
Fe	57	1548.4	3.1	**4.3481**	0.308	7.1	mg/L	245	Standard
> **Sc-1**	45	28167.8	2.6				mg/L	25066	Standard
Cl	35	136558.6	0.5				ug/L	125857	Standard
Kr	83	1.3	86.6				ug/L	1	Standard
Br	81	1756.8	8.8				ug/L	1350	Standard
P	31	20071.6	3.8				ug/L	18393	Standard
S	34	4248.9	1.9				ug/L	3739	Standard
Sr	88	81.7	3.5				ug/L	78	Standard
C	12	66.7	8.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	0	Standard
Dy	164	21009.1	0.9				mg/L	2	Standard
Ho-1	165	12760.4	3.9				mg/L	10	Standard
Er	166	11264.2	4.0				mg/L	23	Standard
I	127	3685.4	6.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.489	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.299	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.613
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.058
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606078713
Report Date/Time: Tuesday, June 21, 2016 20:44:21
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Method 6020 - Summary Report

Sample ID: L1606078714
Sample Date/Time: Tuesday, June 21, 2016 20:45:16
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59354.4	2.2				ug/L	60176	Standard
	Be	9	183.3	13.7	**0.2501**	0.038	15.2	ug/L	5	Standard
	Al	27	1653362.7	0.4	**12.7568**	0.239	1.9	ug/L	832	Standard
	Sc	45	26840.4	0.7				ug/L	25066	Standard
	Ti	47	1195.7	15.7	**5.8965**	0.875	14.8	ug/L	38	Standard
	V	51	41857.8	0.9	**6.7842**	0.171	2.5	ug/L	974	Standard
	Cr	52	24805.0	0.8	**2.9115**	0.058	2.0	ug/L	5792	Standard
	Cr	53	2718.6	7.9	**2.8685**	0.201	7.0	ug/L	347	Standard
	Mn	55	271171.7	1.9	**41.6625**	1.227	2.9	ug/L	1164	Standard
	Co	59	15078.2	2.2	**2.3974**	0.058	2.4	ug/L	303	Standard
	Ni	60	7281.1	1.4	**3.8071**	0.071	1.9	ug/L	291	Standard
	Cu	65	4899.5	2.2	**2.6079**	0.059	2.3	ug/L	173	Standard
	Zn	66	8848.9	2.1	**8.1949**	0.270	3.3	ug/L	130	Standard
>	**Ge**	72	497940.3	1.9				ug/L	491724	Standard
	As	75	1399.2	6.8	**1.3498**	0.075	5.6	ug/L	-25	Standard
	Se	82	26.2	42.1	**0.1563**	0.101	64.4	ug/L	12	Standard
	Se-1	77	61.7	13.8	**0.2133**	0.129	60.7	ug/L	57	Standard
>	**Ga**	71	2935.3	6.3				mg/L	148	Standard
	Rb	85	27302.9	4.2				ug/L	18	Standard
	Y	89	493083.8	2.1				ug/L	401845	Standard
>	**Rh**	103	30.0	57.7				ug/L	10	Standard
	Mo	98	274.8	4.9	**0.1086**	0.006	5.1	ug/L	12	Standard
	Ag	107	202.7	17.3	**0.0186**	0.006	33.7	ug/L	98	Standard
	Cd	111	68.6	11.9	**0.0313**	0.004	13.1	mg/L	11	Standard
	Cd	114	186.8	21.1	**0.0360**	0.009	24.8	ug/L	21	Standard
>	**In**	115	553874.2	2.5				ug/L	547487	Standard
	Sn	118	1548.4	4.9	**0.2207**	0.012	5.3	ug/L	450	Standard
	Sb	123	134.4	14.6	**0.0237**	0.005	22.2	ug/L	105	Standard
	Ba	135	62896.3	0.8	**33.8185**	0.569	1.7	ug/L	111	Standard
	Ce	140	379145.7	1.3				ug/L	107	Standard
>	**Tb**	159	877738.6	2.8				ug/L	890342	Standard
	Ho	165	6044.5	3.3				ug/L	10	Standard
	Tl	203	194.0	17.9	**0.0229**	0.005	21.1	ug/L	19	Standard
	Tl	205	156.7	23.5	**0.0270**	0.006	23.3	ug/L	17	Standard
	Pb	206	17434.0	1.8	**3.6406**	0.072	2.0	ug/L	247	Standard
	Pb	207	14230.3	0.5	**3.2661**	0.036	1.1	ug/L	215	Standard
	Pb	208	59458.2	1.1	**3.6438**	0.066	1.8	ug/L	770	Standard
	U	238	818.0	4.9	**0.1396**	0.007	5.0	ug/L	13	Standard
>	**Bi**	209	488685.1	0.9				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	78.3	31.5	**0.0617**	0.032	51.7	mg/L	35	Standard
K	39	63.3	44.9	**0.1830**	0.135	73.6	mg/L	25	Standard
Ca	43	26.7	10.8	**-0.4193**	0.505	120.5	mg/L	38	Standard
Fe	54	2855.0	4.8	**2.3943**	0.139	5.8	mg/L	126	Standard
Fe	57	875.0	9.5	**2.1335**	0.331	15.5	mg/L	245	Standard
> **Sc-1**	45	26840.4	0.7				mg/L	25066	Standard
Cl	35	130769.3	1.1				ug/L	125857	Standard
Kr	83	0.3	173.2				ug/L	1	Standard
Br	81	1500.1	12.5				ug/L	1350	Standard
P	31	18306.1	4.6				ug/L	18393	Standard
S	34	3878.8	1.9				ug/L	3739	Standard
Sr	88	100.0	8.7				ug/L	78	Standard
C	12	53.3	43.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	10446.8	2.5				mg/L	2	Standard
Ho-1	165	6044.5	3.3				mg/L	10	Standard
Er	166	5364.3	4.3				mg/L	23	Standard
I	127	2471.9	4.1				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		98.635	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.264	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.167
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.127
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078715
Sample Date/Time: Tuesday, June 21, 2016 20:48:27
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64098.6	1.3				ug/L	60176	Standard
	Be	9	823.4	5.6	**1.0673**	0.048	4.5	ug/L	5	Standard
	Al	27	10125297.3	0.4	**72.3681**	0.913	1.3	ug/L	832	Standard
	Sc	45	30844.7	0.4				ug/L	25066	Standard
	Ti	47	1823.8	2.8	**8.7940**	0.274	3.1	ug/L	38	Standard
	V	51	98074.0	0.7	**15.5570**	0.191	1.2	ug/L	974	Standard
	Cr	52	104674.3	0.6	**14.7577**	0.248	1.7	ug/L	5792	Standard
	Cr	53	12927.2	2.0	**14.6613**	0.237	1.6	ug/L	347	Standard
	Mn	55	2973780.0	0.5	**443.0559**	7.216	1.6	ug/L	1164	Standard
	Co	59	58943.8	0.5	**9.1837**	0.119	1.3	ug/L	303	Standard
	Ni	60	38767.5	1.4	**20.3577**	0.493	2.4	ug/L	291	Standard
	Cu	65	24378.9	0.7	**12.8976**	0.065	0.5	ug/L	173	Standard
	Zn	66	41125.4	0.4	**37.5786**	0.477	1.3	ug/L	130	Standard
>	**Ge**	72	515810.5	1.2				ug/L	491724	Standard
	As	75	2841.8	1.6	**2.6150**	0.042	1.6	ug/L	-25	Standard
	Se	82	45.8	14.7	**0.3299**	0.064	19.5	ug/L	12	Standard
	Se-1	77	92.3	7.0	**0.5967**	0.101	16.9	ug/L	57	Standard
>	**Ga**	71	16957.8	0.2				mg/L	148	Standard
	Rb	85	162914.6	1.1				ug/L	18	Standard
	Y	89	615099.4	2.7				ug/L	401845	Standard
>	**Rh**	103	20.0	43.3				ug/L	10	Standard
	Mo	98	203.9	5.6	**0.0800**	0.004	4.8	ug/L	12	Standard
	Ag	107	382.7	10.1	**0.0492**	0.007	13.9	ug/L	98	Standard
	Cd	111	298.0	2.2	**0.1531**	0.002	1.3	mg/L	11	Standard
	Cd	114	666.5	15.5	**0.1406**	0.023	16.0	ug/L	21	Standard
>	**In**	115	550118.7	1.2				ug/L	547487	Standard
	Sn	118	753.4	4.7	**0.0703**	0.007	9.3	ug/L	450	Standard
	Sb	123	98.5	12.2	**0.0154**	0.003	16.9	ug/L	105	Standard
	Ba	135	241514.0	0.7	**130.8807**	1.833	1.4	ug/L	111	Standard
	Ce	140	1155859.2	0.5				ug/L	107	Standard
>	**Tb**	159	899979.5	1.4				ug/L	890342	Standard
	Ho	165	17680.3	2.0				ug/L	10	Standard
	Tl	203	858.7	0.6	**0.1099**	0.001	1.0	ug/L	19	Standard
	Tl	205	755.0	8.0	**0.1226**	0.012	9.4	ug/L	17	Standard
	Pb	206	60941.6	0.3	**12.4665**	0.202	1.6	ug/L	247	Standard
	Pb	207	50135.5	0.2	**11.2791**	0.161	1.4	ug/L	215	Standard
	Pb	208	203300.5	0.7	**12.2136**	0.108	0.9	ug/L	770	Standard
	U	238	2361.2	2.6	**0.3920**	0.006	1.5	ug/L	13	Standard
>	**Bi**	209	504223.9	1.5				ug/L	503143	Standard

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Na	23	3.3	86.6	**30.2029**	26.152	86.6	mg/L	2	Standard
Mg	24	81.7	17.7	**0.0523**	0.016	31.2	mg/L	35	Standard
K	39	335.0	10.4	**1.2451**	0.147	11.8	mg/L	25	Standard
Ca	43	41.7	13.9	**1.3488**	0.931	69.0	mg/L	38	Standard
Fe	54	13937.7	1.7	**10.6123**	0.221	2.1	mg/L	126	Standard
Fe	57	3708.8	2.8	**10.7946**	0.379	3.5	mg/L	245	Standard
> **Sc-1**	45	30844.7	0.4				mg/L	25066	Standard
Cl	35	127408.8	0.7				ug/L	125857	Standard
Kr	83	2.3	49.5				ug/L	1	Standard
Br	81	1913.5	1.6				ug/L	1350	Standard
P	31	18252.7	1.0				ug/L	18393	Standard
S	34	3877.2	0.8				ug/L	3739	Standard
Sr	88	116.7	13.1				ug/L	78	Standard
C	12	63.3	24.1				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	0	Standard
Dy	164	29223.1	3.8				mg/L	2	Standard
Ho-1	165	17680.3	2.0				mg/L	10	Standard
Er	166	15514.6	3.9				mg/L	23	Standard
I	127	5479.3	4.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.519	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.898	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.481
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.215
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606078716
Sample Date/Time: Tuesday, June 21, 2016 20:51:39
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63156.4	1.5				ug/L	60176	Standard
	Be	9	671.7	2.1	**0.8826**	0.026	3.0	ug/L	5	Standard
	Al	27	8487404.7	1.9	**61.5729**	1.740	2.8	ug/L	832	Standard
	Sc	45	31963.7	1.0				ug/L	25066	Standard
	Ti	47	787.0	5.2	**3.8622**	0.259	6.7	ug/L	38	Standard
	V	51	41199.8	0.5	**6.7490**	0.110	1.6	ug/L	974	Standard
	Cr	52	73420.2	2.1	**10.5882**	0.090	0.9	ug/L	5792	Standard
	Cr	53	8865.9	1.6	**10.4143**	0.113	1.1	ug/L	347	Standard
	Mn	55	3069080.0	1.7	**478.8131**	2.454	0.5	ug/L	1164	Standard
	Co	59	44326.4	0.3	**7.2228**	0.137	1.9	ug/L	303	Standard
	Ni	60	28414.3	2.4	**15.5776**	0.153	1.0	ug/L	291	Standard
	Cu	65	26490.5	2.7	**14.6878**	0.116	0.8	ug/L	173	Standard
	Zn	66	29868.4	0.5	**28.5277**	0.483	1.7	ug/L	130	Standard
>	**Ge**	72	492563.3	2.0				ug/L	491724	Standard
	As	75	705.4	3.6	**0.7048**	0.021	3.0	ug/L	-25	Standard
	Se	82	43.0	1.8	**0.3227**	0.009	2.7	ug/L	12	Standard
	Se-1	77	107.0	6.1	**0.8613**	0.072	8.3	ug/L	57	Standard
>	**Ga**	71	11926.4	3.1				mg/L	148	Standard
	Rb	85	71819.9	2.8				ug/L	18	Standard
	Y	89	651603.7	2.1				ug/L	401845	Standard
>	**Rh**	103	30.0	0.0				ug/L	10	Standard
	Mo	98	68.5	8.4	**0.0231**	0.003	12.2	ug/L	12	Standard
	Ag	107	420.7	8.6	**0.0536**	0.006	11.6	ug/L	98	Standard
	Cd	111	560.2	2.6	**0.2833**	0.005	1.6	mg/L	11	Standard
	Cd	114	1323.3	4.1	**0.2753**	0.012	4.2	ug/L	21	Standard
>	**In**	115	566534.2	2.2				ug/L	547487	Standard
	Sn	118	563.3	6.8	**0.0309**	0.009	30.5	ug/L	450	Standard
	Sb	123	100.4	11.4	**0.0152**	0.002	14.0	ug/L	105	Standard
	Ba	135	283911.4	0.6	**149.4331**	2.900	1.9	ug/L	111	Standard
	Ce	140	1002744.9	0.8				ug/L	107	Standard
>	**Tb**	159	926505.2	0.9				ug/L	890342	Standard
	Ho	165	19863.0	1.4				ug/L	10	Standard
	Tl	203	430.7	7.9	**0.0532**	0.005	8.6	ug/L	19	Standard
	Tl	205	353.3	5.9	**0.0577**	0.003	4.9	ug/L	17	Standard
	Pb	206	69734.1	0.6	**14.2349**	0.089	0.6	ug/L	247	Standard
	Pb	207	57132.8	0.4	**12.8273**	0.185	1.4	ug/L	215	Standard
	Pb	208	238392.7	1.0	**14.2947**	0.123	0.9	ug/L	770	Standard
	U	238	2332.8	0.7	**0.3863**	0.003	0.7	ug/L	13	Standard
>	**Bi**	209	505510.9	1.2				ug/L	503143	Standard

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Na	23	1.7	173.2	**14.5012**	25.108	173.1	mg/L	2	Standard
Mg	24	86.7	20.3	**0.0546**	0.020	36.4	mg/L	35	Standard
K	39	190.0	17.3	**0.6305**	0.128	20.3	mg/L	25	Standard
Ca	43	63.3	24.1	**4.4800**	2.465	55.0	mg/L	38	Standard
Fe	54	5380.7	2.2	**3.8682**	0.114	2.9	mg/L	126	Standard
Fe	57	1575.1	5.6	**3.7787**	0.227	6.0	mg/L	245	Standard
> **Sc-1**	45	31963.7	1.0				mg/L	25066	Standard
Cl	35	132139.0	0.5				ug/L	125857	Standard
Kr	83	3.3	45.8				ug/L	1	Standard
Br	81	1810.1	9.6				ug/L	1350	Standard
P	31	17954.0	0.5				ug/L	18393	Standard
S	34	3857.2	2.7				ug/L	3739	Standard
Sr	88	100.0	20.0				ug/L	78	Standard
C	12	70.0	14.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	65.5				mg/L	0	Standard
Dy	164	33584.1	0.1				mg/L	2	Standard
Ho-1	165	19863.0	1.4				mg/L	10	Standard
Er	166	16942.8	1.2				mg/L	23	Standard
I	127	7925.4	6.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.953	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.171	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.479
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.471
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606078716
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 20:54:52
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60883.8	1.2				ug/L	60176	Standard
	Be	9	37452.9	1.8	**51.5526**	0.424	0.8	ug/L	5	Standard
	Al	27	6689358.8	1.2	**50.3342**	1.000	2.0	ug/L	832	Standard
	Sc	45	26605.0	1.1				ug/L	25066	Standard
	Ti	47	21026.9	2.2	**105.9022**	3.978	3.8	ug/L	38	Standard
	V	51	311223.1	1.0	**50.8529**	1.359	2.7	ug/L	974	Standard
	Cr	52	341954.8	0.5	**51.4858**	0.949	1.8	ug/L	5792	Standard
	Cr	53	42792.0	0.9	**50.5973**	0.849	1.7	ug/L	347	Standard
	Mn	55	320340.3	1.3	**48.6001**	1.462	3.0	ug/L	1164	Standard
	Co	59	314843.1	1.0	**50.3634**	1.025	2.0	ug/L	303	Standard
	Ni	60	93552.6	1.1	**50.5030**	1.634	3.2	ug/L	291	Standard
	Cu	65	92967.7	0.8	**50.5704**	1.475	2.9	ug/L	173	Standard
	Zn	66	53414.3	0.4	**49.9687**	0.924	1.8	ug/L	130	Standard
>	**Ge**	72	504684.6	2.1				ug/L	491724	Standard
	As	75	53717.6	0.4	**49.9128**	1.219	2.4	ug/L	-25	Standard
	Se	82	5331.3	0.9	**50.1675**	1.278	2.5	ug/L	12	Standard
	Se-1	77	3711.8	3.5	**50.5254**	1.616	3.2	ug/L	57	Standard
>	**Ga**	71	126.7	4.6				mg/L	148	Standard
	Rb	85	895.0	15.1				ug/L	18	Standard
	Y	89	404245.1	2.3				ug/L	401845	Standard
>	**Rh**	103	30.0	72.6				ug/L	10	Standard
	Mo	98	234676.4	0.3	**98.0864**	1.853	1.9	ug/L	12	Standard
	Ag	107	298634.4	0.6	**50.8442**	0.767	1.5	ug/L	98	Standard
	Cd	111	95655.4	0.7	**51.1097**	1.126	2.2	mg/L	11	Standard
	Cd	114	231347.5	1.0	**50.8153**	1.523	3.0	ug/L	21	Standard
>	**In**	115	545250.3	2.0				ug/L	547487	Standard
	Sn	118	260351.2	0.6	**50.2848**	1.264	2.5	ug/L	450	Standard
	Sb	123	214346.2	0.6	**50.6758**	0.746	1.5	ug/L	105	Standard
	Ba	135	92176.2	0.3	**50.3714**	0.906	1.8	ug/L	111	Standard
	Ce	140	526.7	81.3				ug/L	107	Standard
>	**Tb**	159	882908.4	0.6				ug/L	890342	Standard
	Ho	165	28.3	27.0				ug/L	10	Standard
	Tl	203	374935.9	0.9	**50.1205**	0.165	0.3	ug/L	19	Standard
	Tl	205	318674.8	0.7	**51.9217**	0.204	0.4	ug/L	17	Standard
	Pb	206	235754.0	0.4	**48.9660**	0.280	0.6	ug/L	247	Standard
	Pb	207	213881.4	0.3	**48.8706**	0.570	1.2	ug/L	215	Standard
	Pb	208	834513.3	1.3	**50.9306**	0.866	1.7	ug/L	770	Standard
	U	238	300874.8	0.8	**50.6644**	0.698	1.4	ug/L	13	Standard
>	**Bi**	209	498178.2	0.8				ug/L	503143	Standard

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Na	23	3.3	86.6	**34.8841**	30.207	86.6	mg/L	2	Standard
Mg	24	3477.1	4.4	**4.4607**	0.153	3.4	mg/L	35	Standard
K	39	961.7	14.3	**4.4091**	0.698	15.8	mg/L	25	Standard
Ca	43	43.3	69.6	**2.7007**	5.576	206.5	mg/L	38	Standard
Fe	54	5435.3	1.5	**4.7229**	0.037	0.8	mg/L	126	Standard
Fe	57	1608.4	5.4	**4.8844**	0.305	6.2	mg/L	245	Standard
> **Sc-1**	45	26605.0	1.1				mg/L	25066	Standard
Cl	35	135935.1	1.3				ug/L	125857	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	1366.7	10.0				ug/L	1350	Standard
P	31	19796.3	3.2				ug/L	18393	Standard
S	34	4318.9	4.3				ug/L	3739	Standard
Sr	88	66.7	4.3				ug/L	78	Standard
C	12	60.0	66.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	36.0	84.1				mg/L	2	Standard
Ho-1	165	28.3	27.0				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	1233.4	10.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	103.105		
Al	27	100.668		
Sc	45			
Ti	47	105.902		
V	51	101.706		
Cr	52	102.972		
Cr	53			
Mn	55	97.200		
Co	59	100.727		
Ni	60	101.006		
Cu	65	101.141		
Zn	66	99.937		
> Ge	72		102.636	
As	75	99.826		
Se	82	100.335		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	98.086		
Ag	107	101.688		
Cd	111	102.219		
Cd	114			
In	115			99.592
Sn	118	100.570		
Sb	123	101.352		
Ba	135	100.743		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.241		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.861		
U	238	101.329		
Bi	209			99.013
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 20:58:03
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60304.9	3.7				ug/L	60176	Standard
	Be	9	20.0	25.0	**0.0187**	0.006	34.5	ug/L	5	Standard
	Al	27	2683.6	13.5	**0.0119**	0.002	17.0	ug/L	832	Standard
	Sc	45	27745.4	2.3				ug/L	25066	Standard
	Ti	47	26.3	7.9	**-0.0698**	0.006	9.1	ug/L	38	Standard
	V	51	1025.5	6.6	**0.0041**	0.015	373.0	ug/L	974	Standard
	Cr	52	5980.2	0.4	**0.0103**	0.035	341.4	ug/L	5792	Standard
	Cr	53	358.3	2.9	**0.0313**	0.025	80.8	ug/L	347	Standard
	Mn	55	1307.7	11.4	**-0.0089**	0.015	168.5	ug/L	1164	Standard
	Co	59	319.0	5.2	**0.0037**	0.001	16.8	ug/L	303	Standard
	Ni	60	213.7	10.1	**-0.0706**	0.007	10.2	ug/L	291	Standard
	Cu	65	176.0	45.3	**0.0009**	0.040	4571.7	ug/L	173	Standard
	Zn	66	197.3	32.7	**-0.0440**	0.055	125.2	ug/L	130	Standard
>	**Ge**	72	485859.0	4.1				ug/L	491724	Standard
	As	75	-7.9	564.3	**0.0257**	0.042	164.8	ug/L	-25	Standard
	Se	82	20.6	52.0	**0.1089**	0.105	96.6	ug/L	12	Standard
	Se-1	77	51.3	4.9	**0.0854**	0.006	7.0	ug/L	57	Standard
>	**Ga**	71	96.7	26.5				mg/L	148	Standard
	Rb	85	53.3	75.8				ug/L	18	Standard
	Y	89	428893.2	2.6				ug/L	401845	Standard
>	**Rh**	103	21.7	35.3				ug/L	10	Standard
	Mo	98	267.7	20.3	**0.1004**	0.022	21.8	ug/L	12	Standard
	Ag	107	154.3	36.0	**0.0093**	0.009	97.1	ug/L	98	Standard
	Cd	111	33.1	68.4	**0.0119**	0.011	96.1	mg/L	11	Standard
	Cd	114	72.5	60.2	**0.0105**	0.009	86.3	ug/L	21	Standard
>	**In**	115	582185.2	0.5				ug/L	547487	Standard
	Sn	118	775.0	15.8	**0.0663**	0.022	32.6	ug/L	450	Standard
	Sb	123	370.4	13.0	**0.0743**	0.010	13.7	ug/L	105	Standard
	Ba	135	185.0	36.1	**0.0393**	0.035	88.5	ug/L	111	Standard
	Ce	140	261.7	98.8				ug/L	107	Standard
>	**Tb**	159	909104.3	2.8				ug/L	890342	Standard
	Ho	165	13.3	21.7				ug/L	10	Standard
	Tl	203	110.3	66.1	**0.0108**	0.009	83.7	ug/L	19	Standard
	Tl	205	71.7	63.3	**0.0123**	0.007	55.7	ug/L	17	Standard
	Pb	206	312.7	18.6	**0.0088**	0.010	110.7	ug/L	247	Standard
	Pb	207	257.0	12.9	**0.0056**	0.006	101.8	ug/L	215	Standard
	Pb	208	984.0	5.5	**-0.0008**	0.002	247.7	ug/L	770	Standard
	U	238	62.3	31.4	**0.0094**	0.003	31.0	ug/L	13	Standard
>	**Bi**	209	506036.5	3.2				ug/L	503143	Standard

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Na	23	1.7	173.2	**16.4456**	28.476	173.2	mg/L	2	Standard
Mg	24	31.7	48.2	**0.0006**	0.019	3169.4	mg/L	35	Standard
K	39	28.3	44.4	**0.0148**	0.056	376.7	mg/L	25	Standard
Ca	43	30.0	16.7	**0.0246**	0.947	3845.4	mg/L	38	Standard
Fe	54	152.6	13.3	**-0.0059**	0.014	243.4	mg/L	126	Standard
Fe	57	205.0	29.6	**-0.3585**	0.221	61.6	mg/L	245	Standard
Sc-1	45	27745.4	2.3				mg/L	25066	Standard
Cl	35	137127.8	1.4				ug/L	125857	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	1390.1	15.1				ug/L	1350	Standard
P	31	20685.8	4.9				ug/L	18393	Standard
S	34	4127.2	9.0				ug/L	3739	Standard
Sr	88	78.3	54.3				ug/L	78	Standard
C	12	46.7	12.4				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	13.0	115.8				mg/L	2	Standard
Ho-1	165	13.3	21.7				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	23	Standard
I	127	885.0	8.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.807	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.338
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.575
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078717
Sample Date/Time: Tuesday, June 21, 2016 21:01:16
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58967.9	1.9				ug/L	60176	Standard
	Be	9	248.3	8.1	**0.3438**	0.024	6.9	ug/L	5	Standard
	Al	27	2227874.3	0.9	**17.3042**	0.322	1.9	ug/L	832	Standard
	Sc	45	26897.2	2.2				ug/L	25066	Standard
	Ti	47	1431.7	18.6	**6.8597**	1.258	18.3	ug/L	38	Standard
	V	51	47458.5	2.5	**7.4476**	0.204	2.7	ug/L	974	Standard
	Cr	52	32459.4	0.3	**3.9305**	0.054	1.4	ug/L	5792	Standard
	Cr	53	3765.5	1.9	**3.9831**	0.119	3.0	ug/L	347	Standard
	Mn	55	1239543.3	1.8	**184.7250**	3.779	2.0	ug/L	1164	Standard
	Co	59	18572.0	2.0	**2.8625**	0.053	1.9	ug/L	303	Standard
	Ni	60	10124.4	1.0	**5.1808**	0.100	1.9	ug/L	291	Standard
	Cu	65	6785.9	0.8	**3.5234**	0.059	1.7	ug/L	173	Standard
	Zn	66	12295.0	0.6	**11.0803**	0.079	0.7	ug/L	130	Standard
>	**Ge**	72	515286.4	0.8				ug/L	491724	Standard
	As	75	1394.4	4.3	**1.3016**	0.051	3.9	ug/L	-25	Standard
	Se	82	20.2	35.8	**0.0940**	0.067	71.3	ug/L	12	Standard
	Se-1	77	68.7	3.7	**0.2777**	0.038	13.8	ug/L	57	Standard
>	**Ga**	71	3877.2	6.5				mg/L	148	Standard
	Rb	85	33081.1	0.9				ug/L	18	Standard
	Y	89	491266.4	1.3				ug/L	401845	Standard
>	**Rh**	103	30.0	50.0				ug/L	10	Standard
	Mo	98	552.0	0.6	**0.2299**	0.004	1.9	ug/L	12	Standard
	Ag	107	180.0	16.1	**0.0157**	0.005	31.4	ug/L	98	Standard
	Cd	111	82.7	5.7	**0.0401**	0.003	6.4	mg/L	11	Standard
	Cd	114	155.0	26.9	**0.0301**	0.009	30.6	ug/L	21	Standard
>	**In**	115	536864.3	1.3				ug/L	547487	Standard
	Sn	118	871.7	22.7	**0.0970**	0.038	39.0	ug/L	450	Standard
	Sb	123	155.5	16.1	**0.0297**	0.006	20.1	ug/L	105	Standard
	Ba	135	92951.9	0.7	**51.5816**	0.551	1.1	ug/L	111	Standard
	Ce	140	470743.1	1.1				ug/L	107	Standard
>	**Tb**	159	879768.9	2.5				ug/L	890342	Standard
	Ho	165	7800.3	2.1				ug/L	10	Standard
	Tl	203	213.0	5.0	**0.0249**	0.002	7.3	ug/L	19	Standard
	Tl	205	180.0	7.3	**0.0302**	0.002	7.1	ug/L	17	Standard
	Pb	206	22080.4	1.2	**4.5264**	0.114	2.5	ug/L	247	Standard
	Pb	207	18228.6	0.8	**4.1081**	0.080	1.9	ug/L	215	Standard
	Pb	208	74972.7	0.7	**4.5107**	0.075	1.7	ug/L	770	Standard
	U	238	864.0	6.8	**0.1443**	0.008	5.6	ug/L	13	Standard
>	**Bi**	209	499355.6	1.6				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.5774**	30.436	173.2	mg/L	2	Standard
Mg	24	61.7	40.0	**0.0403**	0.033	80.9	mg/L	35	Standard
K	39	90.0	19.2	**0.3053**	0.077	25.2	mg/L	25	Standard
Ca	43	26.7	43.3	**-0.4112**	2.189	532.4	mg/L	38	Standard
Fe	54	3684.8	2.8	**3.1243**	0.156	5.0	mg/L	126	Standard
Fe	57	1071.7	3.2	**2.8502**	0.193	6.8	mg/L	245	Standard
> **Sc-1**	45	26897.2	2.2				mg/L	25066	Standard
Cl	35	128581.4	1.9				ug/L	125857	Standard
Kr	83	3.3	69.3				ug/L	1	Standard
Br	81	1366.7	14.0				ug/L	1350	Standard
P	31	18504.6	2.4				ug/L	18393	Standard
S	34	3872.2	3.4				ug/L	3739	Standard
Sr	88	98.3	24.0				ug/L	78	Standard
C	12	83.3	13.9				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	0	Standard
Dy	164	13079.9	4.0				mg/L	2	Standard
Ho-1	165	7800.3	2.1				mg/L	10	Standard
Er	166	6874.9	2.4				mg/L	23	Standard
I	127	43099.7	5.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.992	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.792	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.060
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.247
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606096401
Sample Date/Time: Tuesday, June 21, 2016 21:04:28
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	61683.6	0.8				ug/L	60176	Standard
	Be	9	883.4	4.3	**1.1916**	0.058	4.9	ug/L	5	Standard
	Al	27	5178030.7	2.0	**38.4554**	1.068	2.8	ug/L	832	Standard
	Sc	45	30799.6	3.4				ug/L	25066	Standard
	Ti	47	4718.7	1.1	**24.0318**	0.395	1.6	ug/L	38	Standard
	V	51	114345.0	1.6	**18.9116**	0.174	0.9	ug/L	974	Standard
	Cr	52	105274.2	1.9	**15.4891**	0.252	1.6	ug/L	5792	Standard
	Cr	53	13055.6	1.4	**15.4331**	0.322	2.1	ug/L	347	Standard
	Mn	55	7305075.4	0.8	**1132.9355**	7.283	0.6	ug/L	1164	Standard
	Co	59	110053.3	1.1	**17.8911**	0.196	1.1	ug/L	303	Standard
	Ni	60	42512.6	2.1	**23.2560**	0.355	1.5	ug/L	291	Standard
	Cu	65	53072.8	1.3	**29.3454**	0.332	1.1	ug/L	173	Standard
	Zn	66	99122.2	1.6	**94.6103**	1.148	1.2	ug/L	130	Standard
>	Ge	72	495611.5	1.0				ug/L	491724	Standard
	As	75	7905.4	0.5	**7.5070**	0.111	1.5	ug/L	-25	Standard
	Se	82	123.9	10.0	**1.0965**	0.127	11.6	ug/L	12	Standard
	Se-1	77	121.7	4.5	**1.0589**	0.089	8.4	ug/L	57	Standard
>	Ga	71	15628.1	1.2				mg/L	148	Standard
	Rb	85	148601.9	0.8				ug/L	18	Standard
	Y	89	644139.5	2.1				ug/L	401845	Standard
>	Rh	103	43.3	26.6				ug/L	10	Standard
	Mo	98	2523.4	0.5	**1.0118**	0.017	1.7	ug/L	12	Standard
	Ag	107	592.0	2.4	**0.0817**	0.001	1.4	ug/L	98	Standard
	Cd	111	807.3	4.3	**0.4111**	0.024	5.8	mg/L	11	Standard
	Cd	114	1817.8	11.0	**0.3801**	0.041	10.8	ug/L	21	Standard
>	In	115	565837.8	1.4				ug/L	547487	Standard
	Sn	118	1080.0	6.1	**0.1273**	0.013	10.3	ug/L	450	Standard
	Sb	123	319.1	4.8	**0.0651**	0.004	6.6	ug/L	105	Standard
	Ba	135	459850.7	0.5	**242.3294**	2.872	1.2	ug/L	111	Standard
	Ce	140	772197.4	0.7				ug/L	107	Standard
>	Tb	159	924228.8	0.8				ug/L	890342	Standard
	Ho	165	18805.0	1.1				ug/L	10	Standard
	Tl	203	1334.1	2.6	**0.1715**	0.004	2.4	ug/L	19	Standard
	Tl	205	1121.7	11.7	**0.1804**	0.021	11.8	ug/L	17	Standard
	Pb	206	155702.0	1.1	**31.7305**	0.431	1.4	ug/L	247	Standard
	Pb	207	128499.6	0.8	**28.8036**	0.297	1.0	ug/L	215	Standard
	Pb	208	526834.4	0.3	**31.5436**	0.346	1.1	ug/L	770	Standard
	U	238	6774.5	2.8	**1.1193**	0.041	3.6	ug/L	13	Standard
>	Bi	209	507432.9	0.8				ug/L	503143	Standard

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Na	23	1.7	173.2	**14.5920**	25.265	173.1	mg/L	2	Standard
Mg	24	123.3	36.3	**0.0995**	0.052	52.6	mg/L	35	Standard
K	39	286.7	11.6	**1.0529**	0.157	14.9	mg/L	25	Standard
Ca	43	181.7	8.8	**23.8683**	3.171	13.3	mg/L	38	Standard
Fe	54	30681.9	0.6	**23.5794**	0.906	3.8	mg/L	126	Standard
Fe	57	7930.4	3.9	**24.3571**	0.437	1.8	mg/L	245	Standard
Sc-1	45	30799.6	3.4				mg/L	25066	Standard
Cl	35	140264.3	0.6				ug/L	125857	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	4600.7	5.6				ug/L	1350	Standard
P	31	20849.3	1.5				ug/L	18393	Standard
S	34	4297.3	6.2				ug/L	3739	Standard
Sr	88	158.3	6.6				ug/L	78	Standard
C	12	330.0	10.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	140.0	7.1				mg/L	0	Standard
Dy	164	30992.7	0.4				mg/L	2	Standard
Ho-1	165	18805.0	1.1				mg/L	10	Standard
Er	166	16085.2	2.6				mg/L	23	Standard
I	127	12078.2	5.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		102.506	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.791	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.352
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.853
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606096402
Sample Date/Time: Tuesday, June 21, 2016 21:07:39
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60443.7	2.3				ug/L	60176	Standard
	Be	9	858.4	6.1	**1.1817**	0.077	6.5	ug/L	5	Standard
	Al	27	6826154.4	0.3	**51.7504**	1.316	2.5	ug/L	832	Standard
	Sc	45	29154.7	2.0				ug/L	25066	Standard
	Ti	47	4436.6	0.7	**23.0756**	0.146	0.6	ug/L	38	Standard
	V	51	102185.5	0.5	**17.2535**	0.167	1.0	ug/L	974	Standard
	Cr	52	95353.4	0.7	**14.2638**	0.044	0.3	ug/L	5792	Standard
	Cr	53	11679.5	2.1	**14.0700**	0.355	2.5	ug/L	347	Standard
	Mn	55	7652551.6	0.6	**1212.6036**	11.003	0.9	ug/L	1164	Standard
	Co	59	114240.4	1.3	**18.9785**	0.353	1.9	ug/L	303	Standard
	Ni	60	37577.9	2.9	**20.9856**	0.630	3.0	ug/L	291	Standard
	Cu	65	36514.3	2.8	**20.5993**	0.606	2.9	ug/L	173	Standard
	Zn	66	77328.8	1.2	**75.3661**	1.101	1.5	ug/L	130	Standard
>	**Ge**	72	485083.6	0.6				ug/L	491724	Standard
	As	75	9274.5	0.6	**8.9907**	0.056	0.6	ug/L	-25	Standard
	Se	82	68.6	8.2	**0.5801**	0.058	10.0	ug/L	12	Standard
	Se-1	77	100.0	6.2	**0.7851**	0.097	12.4	ug/L	57	Standard
>	**Ga**	71	13681.2	0.5				mg/L	148	Standard
	Rb	85	107244.9	1.0				ug/L	18	Standard
	Y	89	606939.5	0.4				ug/L	401845	Standard
>	**Rh**	103	73.3	15.7				ug/L	10	Standard
	Mo	98	2763.0	0.4	**1.1251**	0.031	2.8	ug/L	12	Standard
	Ag	107	389.0	4.8	**0.0494**	0.004	8.4	ug/L	98	Standard
	Cd	111	497.8	7.0	**0.2554**	0.018	7.1	mg/L	11	Standard
	Cd	114	1250.0	4.5	**0.2640**	0.013	4.9	ug/L	21	Standard
>	**In**	115	557635.5	2.9				ug/L	547487	Standard
	Sn	118	808.4	8.9	**0.0790**	0.017	21.2	ug/L	450	Standard
	Sb	123	238.7	4.1	**0.0476**	0.003	6.2	ug/L	105	Standard
	Ba	135	379584.7	0.5	**203.0712**	6.745	3.3	ug/L	111	Standard
	Ce	140	697160.9	0.9				ug/L	107	Standard
>	**Tb**	159	886275.1	1.2				ug/L	890342	Standard
	Ho	165	14727.2	5.5				ug/L	10	Standard
	Tl	203	896.7	2.2	**0.1223**	0.004	3.1	ug/L	19	Standard
	Tl	205	745.0	8.4	**0.1283**	0.009	7.2	ug/L	17	Standard
	Pb	206	178412.3	0.6	**38.8786**	0.719	1.8	ug/L	247	Standard
	Pb	207	147399.5	0.7	**35.3313**	0.706	2.0	ug/L	215	Standard
	Pb	208	606573.9	0.8	**38.8359**	0.746	1.9	ug/L	770	Standard
	U	238	7105.3	1.3	**1.2549**	0.033	2.7	ug/L	13	Standard
>	**Bi**	209	474753.1	1.4				ug/L	503143	Standard

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Na	23	8.3	34.6	**79.6978**	26.468	33.2	mg/L	2	Standard
Mg	24	110.0	7.9	**0.0911**	0.012	13.1	mg/L	35	Standard
K	39	256.7	19.5	**0.9885**	0.219	22.1	mg/L	25	Standard
Ca	43	411.7	11.5	**64.4783**	8.203	12.7	mg/L	38	Standard
Fe	54	35968.6	1.2	**29.2125**	0.258	0.9	mg/L	126	Standard
Fe	57	9513.0	2.7	**31.1720**	1.290	4.1	mg/L	245	Standard
Sc-1	45	29154.7	2.0				mg/L	25066	Standard
Cl	35	139874.1	1.4				ug/L	125857	Standard
Kr	83	2.3	107.9				ug/L	1	Standard
Br	81	2370.2	14.6				ug/L	1350	Standard
P	31	20196.8	1.6				ug/L	18393	Standard
S	34	4530.7	2.9				ug/L	3739	Standard
Sr	88	208.3	7.3				ug/L	78	Standard
C	12	226.7	16.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	76.7	52.7				mg/L	0	Standard
Dy	164	23848.2	0.8				mg/L	2	Standard
Ho-1	165	14727.2	5.5				mg/L	10	Standard
Er	166	12765.4	0.8				mg/L	23	Standard
I	127	5762.8	6.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.445	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.650	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.854	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	94.358	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606096403
Sample Date/Time: Tuesday, June 21, 2016 21:10:51
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59725.8	1.2				ug/L	60176	Standard
	Be	9	1065.0	7.1	**1.4856**	0.101	6.8	ug/L	5	Standard
	Al	27	6735770.9	2.1	**51.6724**	1.686	3.3	ug/L	832	Standard
	Sc	45	31080.2	2.4				ug/L	25066	Standard
	Ti	47	4731.4	2.9	**23.5917**	1.146	4.9	ug/L	38	Standard
	V	51	159656.7	1.1	**25.9167**	0.803	3.1	ug/L	974	Standard
	Cr	52	150620.2	2.4	**22.0767**	0.911	4.1	ug/L	5792	Standard
	Cr	53	18673.2	1.5	**21.7771**	0.815	3.7	ug/L	347	Standard
	Mn	55	23162167.1	2.5	**3518.0721**	158.797	4.5	ug/L	1164	Standard
	Co	59	153465.2	2.3	**24.4482**	1.075	4.4	ug/L	303	Standard
	Ni	60	66553.2	1.2	**35.7474**	1.066	3.0	ug/L	291	Standard
	Cu	65	62739.7	1.9	**33.9798**	1.174	3.5	ug/L	173	Standard
	Zn	66	111779.9	1.3	**104.4821**	3.185	3.0	ug/L	130	Standard
>	**Ge**	72	506423.5	2.2				ug/L	491724	Standard
	As	75	13400.8	1.3	**12.4352**	0.374	3.0	ug/L	-25	Standard
	Se	82	118.6	7.2	**1.0218**	0.099	9.7	ug/L	12	Standard
	Se-1	77	153.7	9.5	**1.4639**	0.226	15.5	ug/L	57	Standard
>	**Ga**	71	25104.1	4.5				mg/L	148	Standard
	Rb	85	212398.7	1.8				ug/L	18	Standard
	Y	89	707988.0	2.1				ug/L	401845	Standard
>	**Rh**	103	40.0	21.7				ug/L	10	Standard
	Mo	98	3597.9	2.4	**1.5414**	0.022	1.4	ug/L	12	Standard
	Ag	107	833.4	3.0	**0.1305**	0.003	2.1	ug/L	98	Standard
	Cd	111	780.1	2.5	**0.4239**	0.014	3.3	mg/L	11	Standard
	Cd	114	1837.3	7.4	**0.4101**	0.024	5.8	ug/L	21	Standard
>	**In**	115	530289.5	1.6				ug/L	547487	Standard
	Sn	118	726.7	5.9	**0.0704**	0.006	9.1	ug/L	450	Standard
	Sb	123	189.3	5.2	**0.0384**	0.003	7.9	ug/L	105	Standard
	Ba	135	438353.8	1.0	**246.4838**	2.881	1.2	ug/L	111	Standard
	Ce	140	990763.4	1.4				ug/L	107	Standard
>	**Tb**	159	873474.7	0.7				ug/L	890342	Standard
	Ho	165	24511.5	2.8				ug/L	10	Standard
	Tl	203	1762.8	2.6	**0.2422**	0.010	4.3	ug/L	19	Standard
	Tl	205	1573.4	6.4	**0.2681**	0.014	5.1	ug/L	17	Standard
	Pb	206	175441.6	1.0	**37.9831**	0.971	2.6	ug/L	247	Standard
	Pb	207	144605.2	1.4	**34.4368**	0.983	2.9	ug/L	215	Standard
	Pb	208	588641.2	1.8	**37.4440**	1.195	3.2	ug/L	770	Standard
	U	238	9588.7	2.3	**1.6828**	0.058	3.5	ug/L	13	Standard
>	**Bi**	209	477887.7	1.6				ug/L	503143	Standard

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Na	23	3.3	86.6	**29.6244**	25.651	86.6	mg/L	2	Standard
Mg	24	100.0	32.8	**0.0724**	0.039	53.5	mg/L	35	Standard
K	39	251.7	22.0	**0.8997**	0.220	24.5	mg/L	25	Standard
Ca	43	298.3	10.8	**42.0685**	4.357	10.4	mg/L	38	Standard
Fe	54	46609.4	1.9	**35.5544**	1.340	3.8	mg/L	126	Standard
Fe	57	12280.0	1.7	**37.9835**	1.542	4.1	mg/L	245	Standard
> **Sc-1**	45	31080.2	2.4				mg/L	25066	Standard
Cl	35	131632.1	1.5				ug/L	125857	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	2233.5	9.3				ug/L	1350	Standard
P	31	19908.1	1.2				ug/L	18393	Standard
S	34	4282.3	3.5				ug/L	3739	Standard
Sr	88	186.7	10.8				ug/L	78	Standard
C	12	196.7	7.8				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	28.4				mg/L	0	Standard
Dy	164	39222.5	1.3				mg/L	2	Standard
Ho-1	165	24511.5	2.8				mg/L	10	Standard
Er	166	21451.8	2.5				mg/L	23	Standard
I	127	11184.1	5.0				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.252	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.989	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.859
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.981
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606096403
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Method 6020 - Summary Report

Sample ID: L1606096404
Sample Date/Time: Tuesday, June 21, 2016 21:14:02
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65608.5	2.4				ug/L	60176	Standard
	Be	9	978.4	9.3	**1.2397**	0.091	7.3	ug/L	5	Standard
	Al	27	20276434.3	2.1	**141.6733**	6.192	4.4	ug/L	832	Standard
	Sc	45	32165.8	0.5				ug/L	25066	Standard
	Ti	47	4298.9	2.0	**22.5280**	0.481	2.1	ug/L	38	Standard
	V	51	146058.2	0.9	**24.9272**	0.315	1.3	ug/L	974	Standard
	Cr	52	151598.3	0.6	**23.4255**	0.607	2.6	ug/L	5792	Standard
	Cr	53	18476.3	1.4	**22.6814**	0.785	3.5	ug/L	347	Standard
	Mn	55	9420566.7	0.7	**1504.6626**	40.210	2.7	ug/L	1164	Standard
	Co	59	121066.1	1.2	**20.2709**	0.323	1.6	ug/L	303	Standard
	Ni	60	72261.9	0.3	**40.8509**	0.828	2.0	ug/L	291	Standard
	Cu	65	54807.6	0.9	**31.2098**	0.512	1.6	ug/L	173	Standard
	Zn	66	122838.6	0.9	**120.7890**	1.613	1.3	ug/L	130	Standard
>	**Ge**	72	481416.0	1.9				ug/L	491724	Standard
	As	75	16765.9	1.3	**16.3502**	0.164	1.0	ug/L	-25	Standard
	Se	82	200.1	3.3	**1.8846**	0.080	4.3	ug/L	12	Standard
	Se-1	77	165.3	6.7	**1.7419**	0.196	11.3	ug/L	57	Standard
>	**Ga**	71	21279.9	1.7				mg/L	148	Standard
	Rb	85	212211.0	1.6				ug/L	18	Standard
	Y	89	668598.8	3.4				ug/L	401845	Standard
>	**Rh**	103	146.7	13.8				ug/L	10	Standard
	Mo	98	6675.4	3.0	**2.8530**	0.135	4.7	ug/L	12	Standard
	Ag	107	751.4	7.2	**0.1157**	0.012	10.3	ug/L	98	Standard
	Cd	111	870.3	3.3	**0.4716**	0.024	5.2	mg/L	11	Standard
	Cd	114	2091.4	3.2	**0.4659**	0.020	4.4	ug/L	21	Standard
>	**In**	115	532573.7	1.9				ug/L	547487	Standard
	Sn	118	885.0	9.3	**0.1010**	0.014	13.8	ug/L	450	Standard
	Sb	123	194.5	1.0	**0.0395**	0.001	2.8	ug/L	105	Standard
	Ba	135	1163510.0	0.9	**651.5400**	6.396	1.0	ug/L	111	Standard
	Ce	140	906567.9	0.7				ug/L	107	Standard
>	**Tb**	159	883392.7	1.4				ug/L	890342	Standard
	Ho	165	22286.4	1.5				ug/L	10	Standard
	Tl	203	2482.5	0.8	**0.3521**	0.004	1.0	ug/L	19	Standard
	Tl	205	1881.8	2.0	**0.3296**	0.010	3.2	ug/L	17	Standard
	Pb	206	158091.9	0.8	**35.1738**	0.401	1.1	ug/L	247	Standard
	Pb	207	129834.2	0.5	**31.7739**	0.359	1.1	ug/L	215	Standard
	Pb	208	527254.9	0.3	**34.4662**	0.500	1.5	ug/L	770	Standard
	U	238	16067.5	1.1	**2.8987**	0.040	1.4	ug/L	13	Standard
>	**Bi**	209	464873.7	1.2				ug/L	503143	Standard

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Na	23	13.3	78.1	**115.9288**	90.093	77.7	mg/L	2	Standard
Mg	24	990.0	4.0	**1.0209**	0.038	3.7	mg/L	35	Standard
K	39	433.3	22.9	**1.5710**	0.385	24.5	mg/L	25	Standard
Ca	43	1288.4	2.4	**192.5985**	3.798	2.0	mg/L	38	Standard
Fe	54	42265.6	1.7	**31.1194**	0.570	1.8	mg/L	126	Standard
Fe	57	11794.6	0.9	**35.1500**	0.244	0.7	mg/L	245	Standard
> **Sc-1**	45	32165.8	0.5				mg/L	25066	Standard
Cl	35	147961.0	1.0				ug/L	125857	Standard
Kr	83	2.7	57.3				ug/L	1	Standard
Br	81	8902.6	11.5				ug/L	1350	Standard
P	31	19879.7	1.0				ug/L	18393	Standard
S	34	4369.0	3.9				ug/L	3739	Standard
Sr	88	638.3	9.0				ug/L	78	Standard
C	12	266.7	53.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	80.0	25.0				mg/L	0	Standard
Dy	164	35429.3	3.3				mg/L	2	Standard
Ho-1	165	22286.4	1.5				mg/L	10	Standard
Er	166	19993.2	2.6				mg/L	23	Standard
I	127	41665.6	4.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.028	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.904	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.276
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	92.394
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606096405
Sample Date/Time: Tuesday, June 21, 2016 21:17:14
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61603.3	1.5				ug/L	60176	Standard
	Be	9	600.0	13.8	**0.8067**	0.103	12.7	ug/L	5	Standard
	Al	27	6725691.5	0.7	**50.0139**	0.453	0.9	ug/L	832	Standard
	Sc	45	29426.9	0.5				ug/L	25066	Standard
	Ti	47	3385.7	1.8	**17.9264**	0.361	2.0	ug/L	38	Standard
	V	51	99171.8	1.0	**17.0872**	0.169	1.0	ug/L	974	Standard
	Cr	52	93106.5	0.5	**14.2111**	0.046	0.3	ug/L	5792	Standard
	Cr	53	11137.4	1.5	**13.6811**	0.187	1.4	ug/L	347	Standard
	Mn	55	4849349.2	0.5	**784.1366**	4.043	0.5	ug/L	1164	Standard
	Co	59	77636.7	0.7	**13.1472**	0.104	0.8	ug/L	303	Standard
	Ni	60	35771.2	0.8	**20.3821**	0.193	0.9	ug/L	291	Standard
	Cu	65	33083.4	0.4	**19.0401**	0.116	0.6	ug/L	173	Standard
	Zn	66	62395.9	0.5	**62.0204**	0.339	0.5	ug/L	130	Standard
>	**Ge**	72	475299.6	0.2				ug/L	491724	Standard
	As	75	7138.4	0.3	**7.0696**	0.031	0.4	ug/L	-25	Standard
	Se	82	72.9	6.9	**0.6363**	0.050	7.8	ug/L	12	Standard
	Se-1	77	94.7	8.2	**0.7362**	0.114	15.4	ug/L	57	Standard
>	**Ga**	71	13139.0	2.4				mg/L	148	Standard
	Rb	85	122434.4	1.4				ug/L	18	Standard
	Y	89	560272.6	0.4				ug/L	401845	Standard
>	**Rh**	103	85.0	10.2				ug/L	10	Standard
	Mo	98	2829.3	0.9	**1.2062**	0.019	1.6	ug/L	12	Standard
	Ag	107	451.3	3.3	**0.0633**	0.003	4.5	ug/L	98	Standard
	Cd	111	585.9	3.4	**0.3157**	0.009	2.8	mg/L	11	Standard
	Cd	114	1338.5	8.1	**0.2966**	0.027	9.2	ug/L	21	Standard
>	**In**	115	532548.5	0.9				ug/L	547487	Standard
	Sn	118	618.3	6.2	**0.0484**	0.008	15.8	ug/L	450	Standard
	Sb	123	149.8	7.0	**0.0287**	0.003	9.9	ug/L	105	Standard
	Ba	135	747435.4	0.3	**418.5133**	3.169	0.8	ug/L	111	Standard
	Ce	140	560557.9	2.3				ug/L	107	Standard
>	**Tb**	159	866879.8	2.2				ug/L	890342	Standard
	Ho	165	12675.3	1.6				ug/L	10	Standard
	Tl	203	1043.0	2.4	**0.1481**	0.005	3.4	ug/L	19	Standard
	Tl	205	948.4	1.9	**0.1690**	0.003	2.0	ug/L	17	Standard
	Pb	206	83575.9	1.0	**18.8379**	0.180	1.0	ug/L	247	Standard
	Pb	207	68735.9	0.3	**17.0411**	0.225	1.3	ug/L	215	Standard
	Pb	208	284935.0	0.5	**18.8685**	0.292	1.5	ug/L	770	Standard
	U	238	6592.4	0.9	**1.2061**	0.023	1.9	ug/L	13	Standard
>	**Bi**	209	458241.8	1.1				ug/L	503143	Standard

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Na	23	16.7	75.5	**158.9499**	120.668	75.9	mg/L	2	Standard
Mg	24	601.7	3.7	**0.6653**	0.030	4.4	mg/L	35	Standard
K	39	206.7	8.5	**0.7650**	0.071	9.3	mg/L	25	Standard
Ca	43	960.0	3.6	**155.9005**	6.175	4.0	mg/L	38	Standard
Fe	54	23834.6	0.7	**19.1304**	0.220	1.1	mg/L	126	Standard
Fe	57	7443.5	4.6	**23.9100**	1.153	4.8	mg/L	245	Standard
> **Sc-1**	45	29426.9	0.5				mg/L	25066	Standard
Cl	35	144441.3	1.4				ug/L	125857	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	2490.2	5.4				ug/L	1350	Standard
P	31	20085.0	2.1				ug/L	18393	Standard
S	34	4562.4	2.9				ug/L	3739	Standard
Sr	88	393.3	4.5				ug/L	78	Standard
C	12	153.3	3.8				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	75.0				mg/L	0	Standard
Dy	164	20473.5	4.3				mg/L	2	Standard
Ho-1	165	12675.3	1.6				mg/L	10	Standard
Er	166	10737.1	4.1				mg/L	23	Standard
I	127	13227.4	3.4				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.372	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.660	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.272
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	91.076
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606096406
Sample Date/Time: Tuesday, June 21, 2016 21:20:25
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60848.7	3.4				ug/L	60176	Standard
	Be	9	848.4	7.1	**1.1616**	0.108	9.3	ug/L	5	Standard
	Al	27	6018452.6	1.5	**45.3266**	0.962	2.1	ug/L	832	Standard
	Sc	45	29640.6	1.5				ug/L	25066	Standard
	Ti	47	4099.9	2.1	**21.1801**	0.616	2.9	ug/L	38	Standard
	V	51	132165.3	0.9	**22.2298**	0.427	1.9	ug/L	974	Standard
	Cr	52	138324.2	0.9	**20.9859**	0.510	2.4	ug/L	5792	Standard
	Cr	53	16679.2	2.2	**20.1440**	0.532	2.6	ug/L	347	Standard
	Mn	55	5769097.8	1.9	**908.7457**	30.297	3.3	ug/L	1164	Standard
	Co	59	130326.2	1.6	**21.5282**	0.614	2.9	ug/L	303	Standard
	Ni	60	50019.1	0.7	**27.8281**	0.578	2.1	ug/L	291	Standard
	Cu	65	47838.4	0.9	**26.8518**	0.165	0.6	ug/L	173	Standard
	Zn	66	97149.5	0.7	**94.1665**	1.182	1.3	ug/L	130	Standard
>	**Ge**	72	488085.6	1.5				ug/L	491724	Standard
	As	75	10945.8	1.2	**10.5404**	0.129	1.2	ug/L	-25	Standard
	Se	82	126.3	7.0	**1.1371**	0.072	6.3	ug/L	12	Standard
	Se-1	77	119.7	5.4	**1.0557**	0.069	6.6	ug/L	57	Standard
>	**Ga**	71	21567.0	2.2				mg/L	148	Standard
	Rb	85	186239.4	1.0				ug/L	18	Standard
	Y	89	601057.7	2.4				ug/L	401845	Standard
>	**Rh**	103	81.7	23.2				ug/L	10	Standard
	Mo	98	3186.2	0.9	**1.3649**	0.035	2.5	ug/L	12	Standard
	Ag	107	455.7	8.5	**0.0644**	0.006	9.6	ug/L	98	Standard
	Cd	111	524.0	6.4	**0.2832**	0.020	7.0	mg/L	11	Standard
	Cd	114	1252.9	3.3	**0.2784**	0.006	2.0	ug/L	21	Standard
>	**In**	115	530301.4	1.7				ug/L	547487	Standard
	Sn	118	516.7	6.3	**0.0287**	0.006	19.5	ug/L	450	Standard
	Sb	123	143.3	12.6	**0.0273**	0.005	17.6	ug/L	105	Standard
	Ba	135	1292682.2	0.4	**727.0559**	14.238	2.0	ug/L	111	Standard
	Ce	140	693916.1	1.8				ug/L	107	Standard
>	**Tb**	159	864495.5	2.4				ug/L	890342	Standard
	Ho	165	16118.6	0.6				ug/L	10	Standard
	Tl	203	1937.1	6.9	**0.2725**	0.018	6.6	ug/L	19	Standard
	Tl	205	1651.8	5.8	**0.2879**	0.017	5.8	ug/L	17	Standard
	Pb	206	129961.3	0.5	**28.7585**	0.109	0.4	ug/L	247	Standard
	Pb	207	107597.0	0.6	**26.1888**	0.063	0.2	ug/L	215	Standard
	Pb	208	436286.5	1.1	**28.3645**	0.441	1.6	ug/L	770	Standard
	U	238	5730.8	1.3	**1.0282**	0.019	1.9	ug/L	13	Standard
>	**Bi**	209	467215.7	0.6				ug/L	503143	Standard

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Na	23	5.0	100.0	**47.5230**	47.311	99.6	mg/L	2	Standard
Mg	24	1591.8	6.0	**1.8117**	0.138	7.6	mg/L	35	Standard
K	39	305.0	4.3	**1.1740**	0.072	6.1	mg/L	25	Standard
Ca	43	253.3	7.5	**36.8883**	2.607	7.1	mg/L	38	Standard
Fe	54	39612.5	0.8	**31.6600**	0.733	2.3	mg/L	126	Standard
Fe	57	9963.3	0.7	**32.1373**	0.629	2.0	mg/L	245	Standard
> **Sc-1**	45	29640.6	1.5				mg/L	25066	Standard
Cl	35	134083.4	1.7				ug/L	125857	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	10510.3	5.8				ug/L	1350	Standard
P	31	21156.4	3.0				ug/L	18393	Standard
S	34	4474.0	1.7				ug/L	3739	Standard
Sr	88	380.0	15.2				ug/L	78	Standard
C	12	116.7	24.7				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	50.0	87.2				mg/L	0	Standard
Dy	164	26535.5	1.2				mg/L	2	Standard
Ho-1	165	16118.6	0.6				mg/L	10	Standard
Er	166	14313.4	2.0				mg/L	23	Standard
I	127	12621.9	3.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.118	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.260	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.861
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.859
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606104801
Sample Date/Time: Tuesday, June 21, 2016 21:23:37
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59245.6	2.3				ug/L	60176	Standard
	Be	9	998.4	8.4	**1.4039**	0.121	8.6	ug/L	5	Standard
	Al	27	6367880.3	0.6	**49.2460**	0.840	1.7	ug/L	832	Standard
	Sc	45	32329.5	1.7				ug/L	25066	Standard
	Ti	47	1382.7	2.8	**6.7449**	0.291	4.3	ug/L	38	Standard
	V	51	119247.6	0.5	**19.3078**	0.442	2.3	ug/L	974	Standard
	Cr	52	109311.3	1.0	**15.7582**	0.462	2.9	ug/L	5792	Standard
	Cr	53	12982.2	1.5	**15.0048**	0.147	1.0	ug/L	347	Standard
	Mn	55	705485.5	0.6	**106.8784**	1.202	1.1	ug/L	1164	Standard
	Co	59	37775.0	1.2	**5.9772**	0.123	2.1	ug/L	303	Standard
	Ni	60	47756.8	1.1	**25.5883**	0.496	1.9	ug/L	291	Standard
	Cu	65	71575.7	0.3	**38.7654**	0.772	2.0	ug/L	173	Standard
	Zn	66	100398.2	0.5	**93.7869**	1.723	1.8	ug/L	130	Standard
>	**Ge**	72	506494.1	1.7				ug/L	491724	Standard
	As	75	1385.3	0.4	**1.3154**	0.019	1.4	ug/L	-25	Standard
	Se	82	173.9	2.4	**1.5403**	0.020	1.3	ug/L	12	Standard
	Se-1	77	199.0	5.6	**2.0859**	0.187	9.0	ug/L	57	Standard
>	**Ga**	71	14914.0	1.3				mg/L	148	Standard
	Rb	85	75430.7	1.8				ug/L	18	Standard
	Y	89	760970.7	1.5				ug/L	401845	Standard
>	**Rh**	103	35.0	42.9				ug/L	10	Standard
	Mo	98	1188.3	0.2	**0.4982**	0.006	1.3	ug/L	12	Standard
	Ag	107	1544.4	4.3	**0.2507**	0.008	3.1	ug/L	98	Standard
	Cd	111	2357.3	1.5	**1.2699**	0.003	0.2	mg/L	11	Standard
	Cd	114	5698.6	3.2	**1.2625**	0.055	4.3	ug/L	21	Standard
>	**In**	115	538711.6	1.4				ug/L	547487	Standard
	Sn	118	1520.1	9.1	**0.2236**	0.029	13.1	ug/L	450	Standard
	Sb	123	745.4	2.0	**0.1708**	0.006	3.3	ug/L	105	Standard
	Ba	135	233929.7	0.2	**129.4576**	1.611	1.2	ug/L	111	Standard
	Ce	140	1443759.2	1.4				ug/L	107	Standard
>	**Tb**	159	888846.2	1.9				ug/L	890342	Standard
	Ho	165	27959.1	1.2				ug/L	10	Standard
	Tl	203	902.7	2.9	**0.1193**	0.002	2.1	ug/L	19	Standard
	Tl	205	766.7	7.0	**0.1281**	0.008	6.1	ug/L	17	Standard
	Pb	206	138959.0	0.2	**29.3640**	0.336	1.1	ug/L	247	Standard
	Pb	207	113827.0	0.5	**26.4558**	0.247	0.9	ug/L	215	Standard
	Pb	208	467592.1	0.8	**29.0276**	0.195	0.7	ug/L	770	Standard
	U	238	27116.9	1.5	**4.6480**	0.064	1.4	ug/L	13	Standard
>	**Bi**	209	489310.6	0.9				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	71.7	14.5	**0.0373**	0.010	27.1	mg/L	35	Standard
K	39	178.3	19.1	**0.5783**	0.141	24.4	mg/L	25	Standard
Ca	43	95.0	10.5	**9.2082**	1.716	18.6	mg/L	38	Standard
Fe	54	10385.0	3.9	**7.5064**	0.345	4.6	mg/L	126	Standard
Fe	57	2965.3	4.1	**7.9807**	0.521	6.5	mg/L	245	Standard
> **Sc-1**	45	32329.5	1.7				mg/L	25066	Standard
Cl	35	130217.9	1.6				ug/L	125857	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	2376.9	10.6				ug/L	1350	Standard
P	31	19497.5	2.1				ug/L	18393	Standard
S	34	4082.2	1.2				ug/L	3739	Standard
Sr	88	118.3	16.0				ug/L	78	Standard
C	12	216.7	11.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	116.7	26.2				mg/L	0	Standard
Dy	164	44057.9	0.3				mg/L	2	Standard
Ho-1	165	27959.1	1.2				mg/L	10	Standard
Er	166	24553.2	1.7				mg/L	23	Standard
I	127	4534.0	1.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.454	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.004	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.397
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.251
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 21:26:49
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58117.9	1.9				ug/L	60176	Standard
	Be	9	35621.8	0.6	**51.3767**	0.746	1.5	ug/L	5	Standard
	Al	27	6444420.2	2.2	**50.7919**	0.548	1.1	ug/L	832	Standard
	Sc	45	27070.9	3.8				ug/L	25066	Standard
	Ti	47	20949.1	1.3	**109.9419**	1.971	1.8	ug/L	38	Standard
	V	51	311526.8	1.1	**53.0494**	0.891	1.7	ug/L	974	Standard
	Cr	52	336768.4	1.0	**52.8658**	0.756	1.4	ug/L	5792	Standard
	Cr	53	42255.5	1.3	**52.0803**	0.758	1.5	ug/L	347	Standard
	Mn	55	329477.3	1.5	**52.0991**	0.877	1.7	ug/L	1164	Standard
	Co	59	312334.4	0.0	**52.0675**	0.408	0.8	ug/L	303	Standard
	Ni	60	91099.4	0.7	**51.2423**	0.593	1.2	ug/L	291	Standard
	Cu	65	91621.9	0.6	**51.9330**	0.724	1.4	ug/L	173	Standard
	Zn	66	52807.9	0.3	**51.4877**	0.269	0.5	ug/L	130	Standard
>	**Ge**	72	484191.6	0.8				ug/L	491724	Standard
	As	75	53524.2	1.1	**51.8184**	0.213	0.4	ug/L	-25	Standard
	Se	82	5349.2	1.5	**52.4511**	0.359	0.7	ug/L	12	Standard
	Se-1	77	3620.4	0.5	**51.3775**	0.420	0.8	ug/L	57	Standard
>	**Ga**	71	158.3	20.1				mg/L	148	Standard
	Rb	85	848.4	15.5				ug/L	18	Standard
	Y	89	427339.9	1.3				ug/L	401845	Standard
>	**Rh**	103	25.0	52.9				ug/L	10	Standard
	Mo	98	233982.7	0.9	**95.3240**	1.240	1.3	ug/L	12	Standard
	Ag	107	293588.5	0.2	**48.7224**	0.264	0.5	ug/L	98	Standard
	Cd	111	95530.5	0.8	**49.7490**	0.284	0.6	mg/L	11	Standard
	Cd	114	235659.9	1.2	**50.4432**	0.294	0.6	ug/L	21	Standard
>	**In**	115	559275.1	0.7				ug/L	547487	Standard
	Sn	118	260234.3	0.9	**48.9865**	0.748	1.5	ug/L	450	Standard
	Sb	123	209964.5	0.6	**48.3856**	0.196	0.4	ug/L	105	Standard
	Ba	135	91831.8	1.3	**48.9125**	0.680	1.4	ug/L	111	Standard
	Ce	140	770.0	93.3				ug/L	107	Standard
>	**Tb**	159	881548.3	1.4				ug/L	890342	Standard
	Ho	165	23.3	101.3				ug/L	10	Standard
	Tl	203	366327.0	0.5	**50.7112**	0.180	0.4	ug/L	19	Standard
	Tl	205	314340.8	1.0	**53.0357**	0.359	0.7	ug/L	17	Standard
	Pb	206	230993.2	0.2	**49.6830**	0.169	0.3	ug/L	247	Standard
	Pb	207	210145.0	1.0	**49.7218**	0.386	0.8	ug/L	215	Standard
	Pb	208	829897.6	0.4	**52.4503**	0.511	1.0	ug/L	770	Standard
	U	238	292600.4	0.9	**51.0190**	0.183	0.4	ug/L	13	Standard
>	**Bi**	209	481073.7	0.6				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3695.5	9.2	**4.6760**	0.585	12.5	mg/L	35	Standard
K	39	1030.0	1.3	**4.6474**	0.224	4.8	mg/L	25	Standard
Ca	43	45.0	50.9	**2.9507**	4.449	150.8	mg/L	38	Standard
Fe	54	5550.5	2.5	**4.7422**	0.063	1.3	mg/L	126	Standard
Fe	57	1498.4	8.9	**4.3770**	0.384	8.8	mg/L	245	Standard
> **Sc-1**	45	27070.9	3.8				mg/L	25066	Standard
Cl	35	132009.2	0.2				ug/L	125857	Standard
Kr	83	3.0	33.3				ug/L	1	Standard
Br	81	1363.4	15.7				ug/L	1350	Standard
P	31	20323.6	3.2				ug/L	18393	Standard
S	34	4162.2	3.1				ug/L	3739	Standard
Sr	88	85.0	27.0				ug/L	78	Standard
C	12	60.0	33.3				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	58.4	103.7				mg/L	2	Standard
Ho-1	165	23.3	101.3				mg/L	10	Standard
Er	166	33.3	17.3				mg/L	23	Standard
I	127	1211.7	9.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	102.753		
Al	27	101.584		
Sc	45			
Ti	47	109.942		
V	51	106.099		
Cr	52	105.732		
Cr	53			
Mn	55	104.198		
Co	59	104.135		
Ni	60	102.485		
Cu	65	103.866		
Zn	66	102.975		
> Ge	72		98.468	
As	75	103.637		
Se	82	104.902		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	95.324		
Ag	107	97.445		
Cd	111	99.498		
Cd	114			
> In	115		102.153	
Sn	118	97.973		
Sb	123	96.771		
Ba	135	97.825		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.422		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.901		
U	238	102.038		
> Bi	209		95.614	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 21:30:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57000.4	1.8				ug/L	60176	Standard
	Be	9	11.7	89.2	**0.0083**	0.015	186.0	ug/L	5	Standard
	Al	27	2620.3	47.2	**0.0127**	0.010	80.8	ug/L	832	Standard
	Sc	45	26027.3	2.6				ug/L	25066	Standard
	Ti	47	31.7	11.1	**-0.0438**	0.018	40.1	ug/L	38	Standard
	V	51	1068.5	10.9	**0.0089**	0.018	206.9	ug/L	974	Standard
	Cr	52	5732.8	2.3	**-0.0411**	0.022	53.1	ug/L	5792	Standard
	Cr	53	288.3	8.2	**-0.0602**	0.031	51.8	ug/L	347	Standard
	Mn	55	2013.2	47.5	**0.0986**	0.147	148.9	ug/L	1164	Standard
	Co	59	286.0	4.2	**-0.0024**	0.002	79.0	ug/L	303	Standard
	Ni	60	134.0	14.7	**-0.1162**	0.011	9.1	ug/L	291	Standard
	Cu	65	138.7	6.2	**-0.0202**	0.005	23.4	ug/L	173	Standard
	Zn	66	178.0	11.4	**-0.0638**	0.018	28.8	ug/L	130	Standard
>	**Ge**	72	491825.9	0.7				ug/L	491724	Standard
	As	75	-42.4	64.1	**-0.0065**	0.026	398.9	ug/L	-25	Standard
	Se	82	14.2	62.7	**0.0442**	0.085	192.5	ug/L	12	Standard
	Se-1	77	51.7	16.5	**0.0814**	0.121	148.7	ug/L	57	Standard
>	**Ga**	71	160.0	5.4				mg/L	148	Standard
	Rb	85	65.0	55.5				ug/L	18	Standard
	Y	89	420079.4	1.3				ug/L	401845	Standard
>	**Rh**	103	20.0	43.3				ug/L	10	Standard
	Mo	98	229.1	28.0	**0.0908**	0.025	27.9	ug/L	12	Standard
	Ag	107	121.7	14.1	**0.0053**	0.003	59.9	ug/L	98	Standard
	Cd	111	14.3	8.4	**0.0029**	0.001	24.4	mg/L	11	Standard
	Cd	114	32.1	64.9	**0.0026**	0.005	175.9	ug/L	21	Standard
>	**In**	115	546820.4	1.4				ug/L	547487	Standard
	Sn	118	666.7	23.3	**0.0548**	0.031	57.4	ug/L	450	Standard
	Sb	123	349.2	26.6	**0.0749**	0.023	30.5	ug/L	105	Standard
	Ba	135	222.0	49.7	**0.0657**	0.061	93.2	ug/L	111	Standard
	Ce	140	125.0	70.8				ug/L	107	Standard
>	**Tb**	159	852501.8	2.1				ug/L	890342	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	60.0	17.6	**0.0048**	0.001	29.7	ug/L	19	Standard
	Tl	205	38.3	39.8	**0.0075**	0.003	35.3	ug/L	17	Standard
	Pb	206	294.3	6.3	**0.0089**	0.003	35.8	ug/L	247	Standard
	Pb	207	245.7	12.3	**0.0066**	0.007	110.7	ug/L	215	Standard
	Pb	208	963.3	10.3	**0.0016**	0.007	416.4	ug/L	770	Standard
	U	238	48.0	16.7	**0.0076**	0.001	18.1	ug/L	13	Standard
>	**Bi**	209	476870.2	2.1				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	46.6	**0.0185**	0.027	145.6	mg/L	35	Standard
K	39	13.3	108.3	**-0.0485**	0.069	142.0	mg/L	25	Standard
Ca	43	36.7	20.8	**1.6572**	1.618	97.6	mg/L	38	Standard
Fe	54	138.9	10.0	**-0.0095**	0.014	151.2	mg/L	126	Standard
Fe	57	211.7	11.2	**-0.2847**	0.108	38.1	mg/L	245	Standard
> **Sc-1**	45	26027.3	2.6				mg/L	25066	Standard
Cl	35	131985.8	1.3				ug/L	125857	Standard
Kr	83	3.0	33.3				ug/L	1	Standard
Br	81	1333.4	5.0				ug/L	1350	Standard
P	31	20615.7	2.9				ug/L	18393	Standard
S	34	4127.2	2.0				ug/L	3739	Standard
Sr	88	78.3	32.8				ug/L	78	Standard
C	12	23.3	49.5				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.9	86.8				mg/L	2	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	10.0	173.2				mg/L	23	Standard
I	127	953.4	9.0				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.021	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.878
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.778
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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2.3.3 Metals CVAA Data (Mercury)

2.3.3.1 Summary Data

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-01	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW8-060916	**Prep Method:**	7470A	**Prep Date:**	06/14/2016 10:23
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/16/2016 14:15
Workgroup #:	WG573072	**Analyst:**	PDM	**Run Date:**	06/16/2016 15:03
Collect Date:	06/09/2016 11:00	**Dilution:**	1	**File ID:**	M7.061616.150321
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-02	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18CPTMW26SW-060916	**Prep Method:**	7470A	**Prep Date:**	06/14/2016 10:23
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/16/2016 14:15
Workgroup #:	WG573072	**Analyst:**	PDM	**Run Date:**	06/16/2016 15:05
Collect Date:	06/09/2016 13:25	**Dilution:**	1	**File ID:**	M7.061616.150552
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-04	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW10F-060916	**Prep Method:**	7470A	**Prep Date:**	06/14/2016 10:23
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/16/2016 14:15
Workgroup #:	WG573072	**Analyst:**	PDM	**Run Date:**	06/16/2016 15:08
Collect Date:	06/09/2016 14:40	**Dilution:**	1	**File ID:**	M7.061616.150822
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.3.3.2 QC Summary

Example Cold Vapor Mercury Calculations
Hydra AA Mercury Analyzer / CETAC M-7600 Quick Trace Mercury Analyzer

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and five standards.

2.0 Calculating the concentration (C) of an element in water using data from run log and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to Volume (mL)	40
Vi = Aliquot Volume (mL)	40
D = Manual dilution factor, if required (10X = 10)	1
Cx = Concentration of element in ppb (ug/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Ws} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to volume (mL)	40
Ws = Aliquot weight (g)	0.6
D = Manual dilution factor	1
Cx = Concentration of element in ug/kg	6.67

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

1 Cx = Concentration calculated as received (wet basis)	6.67
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	8.33

8.33 ug/kg = 0.00833 mg/kg

TCLP Non-Volatile

Analyst(s): AMA
Date: 06/13/16
Filter Lot #: 9486030
Microbac SOP: TCLP01 Rev #: 12

Analyst / Date		Analyst / Date	
AMA	6/13/16	CPD	6/14/16
Time On	Temp On °C	Time Off	Temp Off °C
1430	23.2	0817	21.9

Agitator Speed 30 ± 2 rpm ☑

Jug #	Sample #	Tests	Method	Fluid #	Matrix *	% Solid	Pretest pH Initial	Pretest pH Final	Int. Wt. (g)	Fluid Vol. (mL)	Final extract pH
14	06-0550-01	ME, SV, Pest, Herb	1311	FI-180	S	100	6.75	3.03	100.79	2016	5.23
D	06-0531-01	300	1312	SPLPFI			NA	NA	100.64	2012	9.60
	06-0532-01	300							50.77	1015	10.00
	-02	300							50.35	1007	9.95
	-03	300							50.70	1014	10.04
	-04	300							50.27	1005	9.95
25	06-0620-01	SV	1311	FI-180			8.84	1.86	100.78	2015	5.35
G-12	-02	SV		FI-180			10.25	1.96	100.48	2009	6.85
D	06-0633-01	ME		F2379			12.44	11.94	25.41	508	11.79
	06-0629-01	ME		FI-180			10.08	1.66	100.60	2012	5.14
NA	06-0537-01	ME, SV	1311	Fi 1	O	<0.5	NA	NA	100	100	6.00
NA	06-0535-01	ME, SV, Pest, Herb	1311	Fi 1	W	<0.5					10.00
NA	FBlk 1	ME, SV, Pest, Herb	1311	FI-180	NA	NA	NA	NA	100	100	4.88
	SPLPBlk 1	300	1312	SFI-62							4.22
	FBlk 2	ME	1311	F2-379							2.90

CPD 6/14/16

*Matrix Code: (S = solid, sand, soil or sludge) (P = paint) (O = organic) (W = water or aqueous waste)
D = Disposable plastic jug
TCLP Pretest weight will be 5.0 g (± 0.1) unless otherwise noted.
Temperature shall be maintained at 23° ± 2 for 18 ± 2 hours unless otherwise noted.

Comments: SX 06-0537-01 strong volatile odor, and 06-0535-01 soap odor.

Peer Review By: [signature]

Microbac Laboratories Inc.
Metals Digest Log

Workgroup: WG572607
Analyst: REK
Spike Analyst: REK
Method: 7470A
Run Date: 06/14/2016 10:23
Hotblock Start Temp: 94.98 @ 10:15
Hotblock End Temp: 94.9 @ 12:15
Instrument: HB2

SOP: ME404 Revison 17
Spike Solution: STD76587
Spike Witness: EMW
H2SO4 Lot #: COA18359
40 & 50 ML. DIGESTION TU COA18772
HNO3 Lot #: COA18905
KMnO4 1:1 Lot #: RGT37006
K2S2O8 1:1 Lot #: RGT37046
Mercury Water ICV Lot #: STD76589
HG H2O STDS 10PPM Lot #: STD76595

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Spike Amount	Due Date
1	WG572607-03	BLANK	1	40 mL	40 mL		
2	WG572434-01	FBLK1	17	4 mL	40 mL		
3	WG572434-02	FBLK2	17	4 mL	40 mL		
4	WG572607-04	LCS	1	40 mL	40 mL	4 mL	
5	L16060535-01	SAMP	17	4 mL	40 mL		06/20/16
6	L16060537-01	SAMP	17	1 mL	40 mL		06/20/16
7	L16060550-01	SAMP	17	4 mL	40 mL		06/16/16
8	WG572607-01	REF	1	40 mL	40 mL		
9	L16060564-01	RS01	1	40 mL	40 mL		06/20/16
10	L16060564-03	SAMP	1	40 mL	40 mL		06/20/16
11	WG572607-05	MS	1	36 mL	40 mL	4 mL	
12	L16060564-05	MS01	1	36 mL	40 mL	4 mL	06/20/16
13	WG572607-06	MSD	1	36 mL	40 mL	4 mL	
14	L16060564-07	SD01	1	36 mL	40 mL	4 mL	06/20/16
15	L16060616-01	SAMP	1	40 mL	40 mL		06/21/16
16	L16060616-02	SAMP	1	40 mL	40 mL		06/21/16
17	L16060616-04	SAMP	1	40 mL	40 mL		06/21/16
18	L16060629-01	SAMP	17	4 mL	40 mL		06/17/16
19	L16060633-01	SAMP	17	4 mL	40 mL		06/17/16
20	WG572607-02	REF	2	40 mL	40 mL		
21	L16060635-01	SAMP	2	40 mL	40 mL		06/21/16
22	L16060635-02	SAMP	2	40 mL	40 mL		06/21/16
23	L16060635-03	SAMP	2	40 mL	40 mL		06/21/16
24	L16060650-01	SAMP	1	40 mL	40 mL		06/24/16
25	L16060650-02	SAMP	1	40 mL	40 mL		06/24/16
26	L16060650-03	SAMP	1	40 mL	40 mL		06/24/16
27	L16060650-08	SAMP	1	40 mL	40 mL		06/24/16
28	WG572607-07	DUP	1	40 mL	40 mL		

L16060537-01	FILT. OIL

Analyst: [signature]

Reviewer: [signature]

HB_DIG - Modified 07/26/2012
PDF ID: 4807350
Report generated: 06/14/2016 14:08

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 061616B.CSV

Analyst1: PDM Analyst2: N/A

Method: 7470A/245.1 SOP: ME404 Rev: 17

Maintenance Log ID:

Calibration Std: STD76595 ICV Std: STD76589 Post Spike: STD76595

ICSA: N/A ICSAB: N/A Int. Std:

CCV: LLCCV: Tuning Sol :

Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 573072

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	M7.061616.140228	WG573073-01	Calibration Point		1		06/16/16 14:02
2	M7.061616.140459	WG573073-02	Calibration Point		1		06/16/16 14:04
3	M7.061616.140731	WG573073-03	Calibration Point		1		06/16/16 14:07
4	M7.061616.141003	WG573073-04	Calibration Point		1		06/16/16 14:10
5	M7.061616.141237	WG573073-05	Calibration Point		1		06/16/16 14:12
6	M7.061616.141510	WG573073-06	Calibration Point		1		06/16/16 14:15
7	M7.061616.141744	WG573073-07	Initial Calibration Verification		1		06/16/16 14:17
8	M7.061616.142015	WG573073-08	Initial Calib Blank		1		06/16/16 14:20
9	M7.061616.142248	WG573073-09	CCV		1		06/16/16 14:22
10	M7.061616.142518	WG573073-10	CCB		1		06/16/16 14:25
11	M7.061616.142749	WG572607-03	Method/Prep Blank	40/40	1		06/16/16 14:27
12	M7.061616.143020	WG572607-04	Laboratory Control S	40/40	1		06/16/16 14:30
13	M7.061616.143252	WG572434-01	Fluid Blank 1		1		06/16/16 14:32
14	M7.061616.143523	WG572434-02	Fluid Blank 2		1		06/16/16 14:35
15	M7.061616.143755	L16060535-01	FPL16027	4/40	1		06/16/16 14:37
16	M7.061616.144028	L16060537-01	FPL16026	1/40	1		06/16/16 14:40
17	M7.061616.144300	L16060550-01	J6F0362-01	4/40	1		06/16/16 14:43
18	M7.061616.144533	WG573072-01	Post Digestion Spike		1	L16060550-01	06/16/16 14:45
19	M7.061616.144806	WG572607-01	Reference Sample	40/40	1	L16060564-01	06/16/16 14:48
20	M7.061616.145040	L16060564-03	WBW-FD-06092016	40/40	1		06/16/16 14:50
21	M7.061616.145312	WG573073-11	CCV		1		06/16/16 14:53
22	M7.061616.145543	WG573073-12	CCB		1		06/16/16 14:55
23	M7.061616.145817	L16060564-05	WBW-MS-06092016	36/40	1	WG572607-05	06/16/16 14:58
24	M7.061616.150051	L16060564-07	WBW-MSD-06092016	36/40	1	WG572607-06	06/16/16 15:00
25	M7.061616.150321	L16060616-01	MW8-060916	40/40	1		06/16/16 15:03
26	M7.061616.150552	L16060616-02	18CPTMW26SW-060916	40/40	1		06/16/16 15:05
27	M7.061616.150822	L16060616-04	MW10F-060916	40/40	1		06/16/16 15:08
28	M7.061616.151053	L16060629-01	S6F0380-01	4/40	1		06/16/16 15:10
29	M7.061616.151325	L16060633-01	ALAN 17 BAGS	4/40	1		06/16/16 15:13
30	M7.061616.151557	WG572607-02	Reference Sample	40/40	1	L16060635-01	06/16/16 15:15
31	M7.061616.151829	WG572607-07	Duplicate	40/40	1	L16060635-01	06/16/16 15:18
32	M7.061616.152101	L16060635-02	OUTFALL 001	40/40	1		06/16/16 15:21
33	M7.061616.152333	WG573073-13	CCV		1		06/16/16 15:23
34	M7.061616.152604	WG573073-14	CCB		1		06/16/16 15:26

Page: 1 Approved: June 17, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 061616B.CSV

Analyst1: PDM Analyst2: N/A

Method: 7470A/245.1 SOP: ME404 Rev: 17

Maintenance Log ID:

Calibration Std: STD76595 ICV Std: STD76589 Post Spike: STD76595

ICSA: N/A ICSAB: N/A Int. Std:

CCV: LLCCV: Tuning Sol :

Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 573072

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	M7.061616.152837	L16060635-03	CATCH BASIN 29	40/40	1		06/16/16 15:28
36	M7.061616.153110	L16060650-01	MW1-061016	40/40	1		06/16/16 15:31
37	M7.061616.153343	L16060650-02	MW3-061016	40/40	1		06/16/16 15:33
38	M7.061616.153616	L16060650-03	17WW08-061016	40/40	1		06/16/16 15:36
39	M7.061616.153847	L16060650-08	18WW24F-061016	40/40	1		06/16/16 15:38
40	M7.061616.154405	WG573072-02	Post Digestion Spike		1	L16060650-08	06/16/16 15:44
41	M7.061616.154636	WG573072-03	Post Digestion Spike		1	L16060564-01	06/16/16 15:46
42	M7.061616.154908	WG573073-15	CCV		1		06/16/16 15:49
43	M7.061616.155139	WG573073-16	CCB		1		06/16/16 15:51

Page: 2 Approved: June 17, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 16-JUN-2016
Analyst: AMA
Analyst: NA
Method: 7470A/245.1
Instrument: CVAA1
Curve Workgroup: 573073
Runlog ID: 75732
Analytical Workgroups: 573072

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	0535, 0537, 0616, 0650
Client Forms	X
Level X	
Level 3	0535, 0537
Level 4	0616, 0650
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	AMA
Secondary Reviewer	KHR
Comments	

Primary Reviewer:
17-JUN-2016
Alexandra M. Alfred

Secondary Reviewer:
17-JUN-2016
Kym H. Rhoden

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-17-2016 14:46:02

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 7470A

AAB#: WG573072

Login Number: L16060616

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW8-060916	01	06/09/16					06/14/2016	5	28		06/16/16	7.2	28	
18CPTMW26SW-060916	02	06/09/16					06/14/2016	4.9	28		06/16/16	7.1	28	
MW10F-060916	04	06/09/16					06/14/2016	4.8	28		06/16/16	7	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4812741
Report generated 06/17/2016 13:48

METHOD BLANK SUMMARY

Login Number: L16060616
Blank File ID: M7.061616.142749
Prep Date: 06/14/16 10:23
Analyzed Date: 06/16/16 14:27
Analyst: PDM

Work Group: WG573072
Blank Sample ID: WG572607-03
Instrument ID: CVAA1
Method: 7470A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572607-04	M7.061616.143020	06/16/16 14:30	01
MW8-060916	L16060616-01	M7.061616.150321	06/16/16 15:03	01
18CPTMW26SW-060916	L16060616-02	M7.061616.150552	06/16/16 15:05	01
MW10F-060916	L16060616-04	M7.061616.150822	06/16/16 15:08	01
DUP	WG572607-07	M7.061616.151829	06/16/16 15:18	01

Report Name: BLANK_SUMMARY
PDF File ID: 4812742
Report generated 06/17/2016 13:48

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060616 Prep Date: 06/14/16 10:23 Sample ID: WG572607-03
Instrument ID: CVAA1 Run Date: 06/16/16 14:27 Prep Method: 7470A
File ID: M7.061616.142749 Analyst: PDM Method: 7470A
Workgroup (AAB#): WG573072 Matrix: Water Units: mg/L
Contract #: Cal ID: CVAA1-16-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Mercury	0.000100	0.000400	0.000100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4812743
17-JUN-2016 13:48

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060616 Run Date: 06/16/2016 Sample ID: WG572607-04
Instrument ID: CVAA1 Run Time: 14:30 Prep Method: 7470A
File ID: M7.061616.143020 Analyst: PDM Method: 7470A
Workgroup (AAB#): WG573072 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76587 Cal ID: CVAA1-16-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Mercury	0.00400	0.00443	111	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4812744
Report generated: 06/17/2016 13:48

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060616 Cal ID: CVAA1 - Worknum: WG573072
Instrument ID: CVAA1 Contract #: Method: 7470A
Parent ID: WG572607-01 File ID: M7.061616.144806 Dil: 1 Matrix: WATER
Sample ID: WG572607-05 MS File ID: M7.061616.145817 Dil: 1 Units: mg/L
Sample ID: WG572607-06 MSD File ID: M7.061616.150051 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Mercury	ND	0.00444	- 0.00000478	-0.108	0.00444	- 0.00000422	-0.0950	-12.3	80 - 120	20	*

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4812745
Report generated 06/17/2016 13:48

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060616 **Worknum:** WG573072
Instrument ID: CVAA1 **Method:** 7470A
Post Spike ID: WG573072-02 **File ID:** M7.061616.154405 **Dil:** 1 **Units:** ug/L
Sample ID: L16060650-08 **File ID:** M7.061616.153847 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MERCURY	1.04		0	U	1	103.9	85 - 115	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4812740
Report generated: 06/17/2016 13:48

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060616
Analytical Method: 7470A
ICAL Worknum: WG573073

Workgroup (AAB#): WG573072
Instrument ID: CVAA1
Initial Calibration Date: 06/16/2016 14:15

Analyte	WG573073-01		WG573073-02		WG573073-03		WG573073-04		WG573073-05		WG573073-06	
	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT
Mercury	0	77.17	0.200	3002	1.00	14230	2.00	28260	5.00	69600	10.0	132600

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4812746
Report generated 06/17/2016 13:48

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060616
Analytical Method: 7470A
ICAL Worknum: WG573073

Workgroup (AAB#): WG573072
Instrument ID: CVAA1
Initial Calibration Date: 06/16/2016 14:15

Analyte	R	Q
Mercury	0.9995	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4812746
Report generated 06/17/2016 13:48

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060616
Instrument ID: CVAA1
File ID: M7.061616.142015
Workgroup (AAB#): WG573072
Matrix: WATER

Run Date: 06/16/2016
Run Time: 14:20
Analyst: PDM
Cal ID: CVAA1 - 16-JUN-16

Sample ID: WG573073-08
Method: 7470A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
MERCURY	.1	.4	.1	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4812748
Report generated 06/17/2016 13:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573073-10
Instrument ID: CVAA1
Run Time: 14:25
Method: 7470A
File ID: M7.061616.142518
Analyst: PDM
Units: ug/L
Workgroup (AAB#): WG573072
Cal ID: CVAA1 - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812750
Report generated 06/17/2016 13:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573073-12
Instrument ID: CVAA1
Run Time: 14:55
Method: 7470A
File ID: M7.061616.145543
Analyst: PDM
Units: ug/L
Workgroup (AAB#): WG573072
Cal ID: CVAA1 - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812750
Report generated 06/17/2016 13:48

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573073-14
Instrument ID: CVAA1
Run Time: 15:26
Method: 7470A
File ID: M7.061616.152604
Analyst: PDM
Units: ug/L
Workgroup (AAB#): WG573072
Cal ID: CVAA1 - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812750
Report generated 06/17/2016 13:48

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573073-16
Instrument ID: CVAA1
Run Time: 15:51
Method: 7470A
File ID: M7.061616.155139
Analyst: PDM
Units: ug/L
Workgroup (AAB#): WG573072
Cal ID: CVAA1 - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812750
Report generated 06/17/2016 13:48

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573073-07
Instrument ID: CVAA1
Run Time: 14:17
Method: 7470A
File ID: M7.061616.141744
Analyst: PDM
Units: ug/L
Workgroup (AAB#): WG573072
Cal ID: CVAA1 - 16-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Mercury		2	2.07	103	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4812747
Report generated 06/17/2016 13:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573073-09
Instrument ID: CVAA1
Run Time: 14:22
Method: 7470A
File ID: M7.061616.142248
Analyst: PDM
QC Key: DOD4
Workgroup (AAB#): WG573072
Cal ID: CVAA1 - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00205	mg/L	103	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812749
Report generated 06/17/2016 13:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573073-11
Instrument ID: CVAA1
Run Time: 14:53
Method: 7470A
File ID: M7.061616.145312
Analyst: PDM
QC Key: DOD4
Workgroup (AAB#): WG573072
Cal ID: CVAA1 - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00215	mg/L	107	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812749
Report generated 06/17/2016 13:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573073-13
Instrument ID: CVAA1
Run Time: 15:23
Method: 7470A
File ID: M7.061616.152333
Analyst: PDM
QC Key: DOD4
Workgroup (AAB#): WG573072
Cal ID: CVAA1 - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00195	mg/L	97.3	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812749
Report generated 06/17/2016 13:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573073-15
Instrument ID: CVAA1
Run Time: 15:49
Method: 7470A
File ID: M7.061616.154908
Analyst: PDM
QC Key: DOD4
Workgroup (AAB#): WG573072
Cal ID: CVAA1 - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00199	mg/L	99.5	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812749
Report generated 06/17/2016 13:48

2.3.3.3 Raw Data

PDM CVAA1 245.1/7470/7471

Report Generated By CETAC QuickTrace
Analyst: VOA
Worksheet file: C:\Program Files (x86)\QuickTrace\Worksheets\061616B.wsz
Date Started: 6/16/2016 1:56:48 PM
Comment:

Results

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
Standard #0					STD	06/16/16 02:02:28 pm	0.0000	77	17.70		1.00
Replicates	68.6	96.4	77.4	66.4							
Standard #1 (0.2 ug/L)					STD	06/16/16 02:04:59 pm	0.2000	3002	1.37		1.00
Replicates	2957.3	2985.0	3013.7	3053.4							
Standard #2 (1.0 ug/L)					STD	06/16/16 02:07:31 pm	1.0000	14233	2.74		1.00
Replicates	13767.0	14078.2	14436.7	14650.8							
Standard #3 (2.0 ug/L)					STD	06/16/16 02:10:03 pm	2.0000	28260	0.21		1.00
Replicates	28177.4	28303.2	28307.2	28254.1							
Standard #4 (5.0 ug/L)					STD	06/16/16 02:12:37 pm	5.0000	69596	0.17		1.00
Replicates	69421.7	69619.7	69676.5	69664.9							
Standard #5 (10.0 ug/L)					STD	06/16/16 02:15:10 pm	10.0000	132584	0.59		1.00
Replicates	131524.8	132472.7	133031.0	133307.0							

Calibration

Equation: A = 1014.787 + 13278.240C
R2: 0.99939
SEE: 1420.4820
Flags:

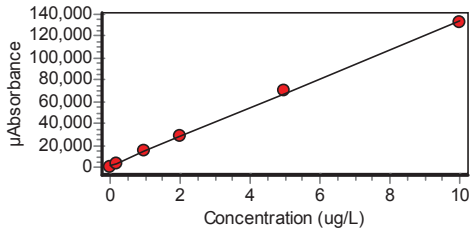

ICV					ICV	06/16/16 02:17:44 pm	2.0690	28486	0.15		1.00
Replicates	28443.8	28541.8	28496.7	28462.5							
% Recovery	103.45										

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Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
ICB					ICB	06/16/16 02:20:15 pm	-0.0754	13	100.37		1.00
Replicates	11.1	5.2	3.7	32.1							
CCV					CCV	06/16/16 02:22:48 pm	2.0500	28237	0.36		1.00
Replicates	28092.3	28241.2	28295.4	28317.5							
% Recovery	102.51										
CCB					CCB	06/16/16 02:25:18 pm	-0.0729	47	22.22		1.00
Replicates	35.9	47.2	61.2	44.7							
WG572607-03					MB	06/16/16 02:27:49 pm	-0.0727	49	17.41		1.00
Replicates	52.1	59.2	47.4	38.7							
WG572607-04					LCS	06/16/16 02:30:20 pm	4.4320	59866	0.24		1.00
Replicates	59655.9	59896.4	59975.4	59936.9							
% Recovery	110.80										
WG572434-01					UNK	06/16/16 02:32:52 pm	-0.0787	-31	48.70		1.00
Replicates	-39.9	-19.2	-46.4	-16.5							
WG572434-02					UNK	06/16/16 02:35:23 pm	-0.0744	27	34.73		1.00
Replicates	40.7	19.6	21.9	26.7							
L1606053501					UNK	06/16/16 02:37:55 pm	-0.0638	168	9.75		1.00
Replicates	151.8	185.4	157.1	179.1							
L1606053701					UNK	06/16/16 02:40:28 pm	0.1418	2897	5.42		1.00
Replicates	2705.0	2847.6	2967.3	3069.4							
L1606055001					UNK	06/16/16 02:43:00 pm	-0.0827	-83	19.72		1.00
Replicates	-81.4	-60.8	-98.4	-91.3							
WG572					SPK	06/16/16 02:45:33 pm	1.0590	15072	0.80		1.00
Replicates	15161.4	15167.3	15052.5	14908.7							
% Recovery	114.14										
L1606056401					UNK	06/16/16 02:48:06 pm	-0.0308	606	3.59		1.00
Replicates	581.4	597.1	612.3	632.5							

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Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1606056403					UNK	06/16/16 02:50:40 pm	-0.0344	558	1.89		1.00
Replicates	573.2	551.1	551.6	554.6							
CCV					CCV	06/16/16 02:53:12 pm	2.1450	29498	0.49		1.00
Replicates	29285.9	29529.8	29606.5	29570.2							
% Recovery	107.26										
CCB					CCB	06/16/16 02:55:43 pm	-0.0721	57	24.06		1.00
Replicates	59.0	41.5	75.0	54.5							
WG572607-05					MSK	06/16/16 02:58:17 pm	-0.0043	958	1.62	N	1.00
Replicates	945.6	946.5	962.0	978.5							
% Recovery	0.75										
WG572607-06					MSDUP	06/16/16 03:00:51 pm	-0.0038	964	1.56	D	1.00
Replicates	946.2	973.6	958.1	979.3							
% Recovery	0.77	RPD -11.47									
L1606061601					UNK	06/16/16 03:03:21 pm	-0.0689	99	17.37		1.00
Replicates	76.3	118.1	101.6	101.5							
L1606061602					UNK	06/16/16 03:05:52 pm	-0.0694	93	4.93		1.00
Replicates	99.1	94.7	91.2	88.4							
L1606061604					UNK	06/16/16 03:08:22 pm	-0.0715	65	21.79		1.00
Replicates	61.5	51.2	85.0	63.4							
L1606062901					UNK	06/16/16 03:10:53 pm	-0.0738	34	37.19		1.00
Replicates	41.7	26.8	47.8	20.4							
L1606063301					UNK	06/16/16 03:13:25 pm	-0.0700	85	13.73		1.00
Replicates	100.7	75.3	77.3	88.1							
L1606063501					UNK	06/16/16 03:15:57 pm	-0.0720	59	32.38		1.00
Replicates	53.2	53.4	85.8	41.8							
WG572607-07					DUP	06/16/16 03:18:29 pm	-0.0725	52	18.54		1.00
Replicates	49.4	44.9	46.9	65.9							
		RPD 0.00									

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Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1606063502					UNK	06/16/16 03:21:01 pm	-0.0713	68	28.27		1.00
Replicates	55.2	78.1	49.8	90.9							
CCV					CCV	06/16/16 03:23:33 pm	1.9450	26837	0.60		1.00
Replicates	26641.3	26776.5	26924.3	27006.6							
% Recovery	97.24										
CCB					CCB	06/16/16 03:26:04 pm	-0.0744	27	70.36		1.00
Replicates	22.1	47.2	3.0	35.4							
L1606063503					UNK	06/16/16 03:28:37 pm	-0.0667	129	5.00		1.00
Replicates	125.1	122.7	137.2	130.5							
L1606065001					UNK	06/16/16 03:31:10 pm	-0.0698	89	6.05		1.00
Replicates	86.0	84.9	96.5	87.0							
L1606065002					UNK	06/16/16 03:33:43 pm	-0.0674	120	12.89		1.00
Replicates	114.1	141.9	118.9	105.7							
L1606065003					UNK	06/16/16 03:36:16 pm	-0.0667	129	3.60		1.00
Replicates	131.1	132.7	122.2	128.3							
L1606065008					UNK	06/16/16 03:38:47 pm	-0.0732	42	37.91		1.00
Replicates	24.8	48.9	34.2	61.2							
WG572-02					SPK	06/16/16 03:44:05 pm	1.0390	14814	0.54		1.00
Replicates	14719.8	14774.9	14876.4	14885.8							
% Recovery	111.25										
WG572-02					SPK	06/16/16 03:46:36 pm	0.5972	8945	1.15	W	1.00
Replicates	8796.5	8955.3	9019.5	9007.8							
% Recovery	67.05										
CCV					CCV	06/16/16 03:49:08 pm	1.9900	27442	0.33		1.00
Replicates	27310.5	27453.2	27488.6	27515.4							
% Recovery	99.51										
CCB					CCB	06/16/16 03:51:39 pm	-0.0754	14	170.01		1.00
Replicates	21.6	41.6	-15.3	8.2							

Approved: June 17, 2016
Alexandra M. Alfred

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
June 27, 2016

001 - BIO-CHEM TESTING WVDEP 220	002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental	004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES	006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES	008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND	AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER	ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS	ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED	AWE - ANDREW W. ESSIG
AZH - AFTER HOURS	BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE	BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY	CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS	CEB - CHAD E. BARNES
CJQ - Cameron J. Quick	CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD	CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS	CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL	DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE	DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON	DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE	DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR	ECL - ERIC C. LAWSON
EMW - ERIC M. WILKEN	ENY - EMILY N. YOAK
ERP - ERIN R. PORTER	FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY	JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH	JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS	JLD - JESSICA L. DELONG
JLL - JOHN L. LENT	JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON	JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES	JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON	KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH	KEB - KATIE E. BARNES
KHR - KIM H. RHODES	KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON	KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS	LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF	LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA	MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON	MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN	MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE	MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR	MSW - MATT S. WILSON
NPH - Natalie P. Hart	PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE	PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB	QX - QIN XU
RAH - ROY A. HALSTEAD	REK - BOB E. KYER
RLB - BOB BUCHANAN	RM - RAYMOND MALEKE
RNP - RICK N. PETTY	RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG	SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY	SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF	TB - TODD BOYLE
TGF - TIM G. FELTON	TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS	VC - VICKI COLLIER
WJB - WILL J. BEASLEY	WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG	XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
June 27, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
June 27, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Stephanie Mossburg	Project Manager: Debra Richmann	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): Scott Beesinger	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205			
Turn Around Time: STANDARD	pH:	Program:	
Project Name/Location: Longhorn			
Project Number: 60274185.0013BH 1824 MR10			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Total Metals	1,4 - DIOXANE					SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 18/24	MW8-060916			6/9/16	1100		✓	W	7	✓	✓	✓	✓									
	18CPTMW26SW-060916			6/9/16	1325		✓	W	7	✓	✓	✓	✓									
	MW10-060916			6/9/16	1430		✓	W	6	✓	✓		✓									
	MW10F-060916			6/9/16	1430		✓	W	1			✓										
	TRIP BLANK			6/9/16			✓	W	2	✓												

Comments: **STANDARD TAT**

Relinquished by: (Signature) Scott Beesinger	Date 6/9/16	Time 1545	Received by: (Signature)	Received by: (Signature)	Date	Time Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory (Signature)			Remarks:

*Homogenize all composite samples prior to analysis

Microbac OVD
Received: 06/10/2016 10:46
By: BRENDA GREGORY
221000087048
Brenda Gregory

QC Manager

00667112

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060616
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 21-JUN-2016

Samplenum	Container ID	Products
L16060616-01	758415	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:09	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	
3	STORE	ORG4	A1	24-JUN-2016 07:32	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:09	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	
3	STORE	ORG4	A1	24-JUN-2016 07:32	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:09	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	
3	STORE	ORG4	A1	24-JUN-2016 07:32	CLS	AWE	

Samplenum	Container ID	Products
L16060616-01	758416	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	10-JUN-2016 15:09	CLS		
2	PREP	W1	EXT	13-JUN-2016 15:30	CPD	BRG	
3	SUBBED	EXT	DISP	14-JUN-2016 10:05	BJO	BJO	
4	ANALYZ*	EXT	SEMI	20-JUN-2016 12:17	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	10-JUN-2016 15:09	CLS		
2	STORE	W1	A1	24-JUN-2016 08:22	BRG	BRG	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060616
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 21-JUN-2016

Samplenum	Container ID	Products
L16060616-01	758417	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	10-JUN-2016 15:09	CLS		
2	ANALYZ	W1	SEM	11-JUN-2016 10:50	WTD	CLS	
3	STORE	SEM	A1	12-JUN-2016 22:06	AZH	WTD	

Samplenum	Container ID	Products
L16060616-01	758418	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	10-JUN-2016 15:09	CLS		
2	PREP	W1	DIG	10-JUN-2016 17:04	AC	BRG	
3	STORE	DIG	A1	15-JUN-2016 13:43	BRG	ERP	
4	ANALYZ*	DIG	METALS	16-JUN-2016 09:44	JYH	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060616-02	758419	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:09	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	
3	STORE	ORG4	A1	24-JUN-2016 07:32	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:09	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	
3	STORE	ORG4	A1	24-JUN-2016 07:32	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:09	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	
3	STORE	ORG4	A1	24-JUN-2016 07:32	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060616
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 21-JUN-2016

Samplenum	Container ID	Products
L16060616-02	758420	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	10-JUN-2016 15:09	CLS		
2	PREP	W1	EXT	13-JUN-2016 15:30	CPD	BRG	
3	SUBBED	EXT	DISP	14-JUN-2016 10:02	BJO	BJO	
4	ANALYZ*	EXT	SEMI	20-JUN-2016 12:17	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	10-JUN-2016 15:09	CLS		
2	STORE	W1	A1	24-JUN-2016 08:45	BRG	BRG	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060616-02	758421	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	10-JUN-2016 15:09	CLS		
2	ANALYZ	W1	SEM	11-JUN-2016 10:50	WTD	CLS	
3	STORE	SEM	A1	12-JUN-2016 22:05	AZH	WTD	

Samplenum	Container ID	Products
L16060616-02	758422	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	10-JUN-2016 15:09	CLS		
2	PREP	W1	DIG	10-JUN-2016 17:04	AC	BRG	
3	STORE	DIG	A1	15-JUN-2016 13:43	BRG	ERP	
4	ANALYZ*	DIG	METALS	16-JUN-2016 09:44	JYH	AC	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060616
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 21-JUN-2016

Samplenum	Container ID	Products
L16060616-03	758423	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:09	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	
3	STORE	ORG4	A1	24-JUN-2016 07:32	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:09	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	
3	STORE	ORG4	A1	24-JUN-2016 07:32	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:09	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	
3	STORE	ORG4	A1	24-JUN-2016 07:32	CLS	AWE	

Samplenum	Container ID	Products
L16060616-03	758424	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	10-JUN-2016 15:09	CLS		
2	PREP	W1	EXT	13-JUN-2016 15:30	CPD	BRG	
3	SUBBED	EXT	DISP	14-JUN-2016 10:03	BJO	BJO	
4	ANALYZ*	EXT	SEMI	20-JUN-2016 12:17	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	10-JUN-2016 15:09	CLS		
2	STORE	W1	A1	24-JUN-2016 08:23	BRG	BRG	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060616
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 21-JUN-2016

Samplenum	Container ID	Products
L16060616-03	758425	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	10-JUN-2016 15:09	CLS		
2	ANALYZ	W1	SEM	11-JUN-2016 10:50	WTD	CLS	
3	STORE	SEM	A1	12-JUN-2016 22:05	AZH	WTD	

Samplenum	Container ID	Products
L16060616-04	758426	CD-MS CO-MS CR-MS CU-MS FE HG K MG MN-MS NA NI

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	10-JUN-2016 15:09	CLS		
2	PREP	W1	DIG	10-JUN-2016 17:04	AC	BRG	
3	STORE	DIG	A1	15-JUN-2016 13:43	BRG	ERP	
4	ANALYZ*	DIG	METALS	16-JUN-2016 09:44	JYH	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060616-05	758427	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:09	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	
3	STORE	ORG4	A1	24-JUN-2016 07:32	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:09	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	
3	STORE	ORG4	A1	24-JUN-2016 07:32	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16060650

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Michelle Taylor – Client Services Specialist
(740) 373-4071
Michelle.Taylor@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on July 01 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
0014197	H	4.0		J2317165045	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
MW1-061016	L16060650-01	06/10/2016 07:55	06/11/2016 11:18
MW3-061016	L16060650-02	06/10/2016 09:05	06/11/2016 11:18
17WW08-061016	L16060650-03	06/10/2016 10:10	06/11/2016 11:18
130-061016	L16060650-04	06/10/2016 11:05	06/11/2016 11:18
130FD-061016	L16060650-05	06/10/2016 11:05	06/11/2016 11:18
MW12-061016	L16060650-06	06/10/2016 13:30	06/11/2016 11:18
18WW24-061016	L16060650-07	06/10/2016 14:40	06/11/2016 11:18
18WW24F-061016	L16060650-08	06/10/2016 14:40	06/11/2016 11:18
TRIP BLANK	L16060650-09	06/10/2016 00:01	06/11/2016 11:18

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16060650
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.1 Narratives 6
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2.1.1.3 Sample Data 175
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2.2.1.5 Raw QC Data 584
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1.0 Summary Data

1.1 Narratives

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	8260
Prep Batch Number(s):	572855, 573051, 573259	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-06-23 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden	Franci Bolden	Analyst I	2016-06-23 18:56:19

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	8260
Prep Batch Number(s):	572855, 573051, 573259	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-06-23 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	8260
Prep Batch Number(s):	572855, 573051, 573259	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-06-23 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	8260
Prep Batch Number(s):	572855, 573051, 573259	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-06-23 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	8260
Prep Batch Number(s):	572855, 573051, 573259	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-06-23 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	8260
Prep Batch Number(s):	572855, 573051, 573259	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-06-23 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1)2-Hexanone exceeded the UCL in the CCV analyzed 06/17/2016 on HPMS11.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG573791	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-24 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Wade DeLong	Wade DeLong	Chemist I	2016-06-24 15:07:27

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG573791	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-24 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG573791	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-24 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG573791	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-24 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG573791	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-24 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG573791	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-24 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572929	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-07-01 00:24:40

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572929	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?		X			ER#2
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572929	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572929	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			ER#1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572929	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572929	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - The low level continuing calibration verification analyzed on 23-Jun-2016 at 15:12 yielded a recovery for selenium that was above the acceptance criteria. However, all client samples yielded results for selenium that were below the reporting detection limit. With permission from project manager, no further action was taken.

ER#2 - Client sample 01 required dilution analysis in order to obtain results for calcium, iron, magnesium, and sodium within the calibration range. Client sample 02 required dilution analysis in order to obtain results for calcium and sodium within the calibration range. Client sample 03 required dilution analysis in order to obtain results for iron and sodium within the calibration range. Client sample 08 required dilution analysis in order to obtain a result for sodium within the calibration range.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG572730,WG573483	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-07-01 00:20:24

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG572730,WG573483	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?		X			ER#3
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?		X			ER#1
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG572730,WG573483	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		X			ER#2
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG572730,WG573483	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG572730,WG573483	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG572730,WG573483	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - The method blank on 16-JUN-2016 yielded results for arsenic and barium that exceeded the reporting detection limit. All QA/QC and client samples 03 and 08 were redigested and reanalyzed for arsenic and barium with a compliant method blank. The latter results were reported under WG573483.

ER#2 - The laboratory control sample analysis performed on 16-JUN-2016 yielded a noncompliant result for silver. All QA/QC and client samples were redigested and reanalyzed for silver with a compliant LCS. The latter results were reported under WG573483.

ER#3 - Client sample 01 required dilution analyses in order to obtain results for barium, chromium, manganese, and nickel within the calibration range. Client sample 02 required dilution analyses in order to obtain results for barium and manganese within the calibration range. Client sample 03 required dilution analyses in order to obtain results for chromium and manganese within the calibration range. Client sample 08 required dilution analysis in order to obtain a result for manganese within the calibration range.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572607	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-07-01 00:19:10

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572607	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572607	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572607	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572607	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572607	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	MW1-061016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG572855	**Analyst:**	JDS	**Run Date:**	06/16/2016 01:56
Collect Date:	06/10/2016 07:55	**Dilution:**	10	**File ID:**	11M12671
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	50.0	U	100	50.0	25.0
Benzene	71-43-2	2.09	J	10.0	2.50	1.25
Bromobenzene	108-86-1	2.50	U	10.0	2.50	1.25
Bromochloromethane	74-97-5	4.00	U	10.0	4.00	2.00
Bromodichloromethane	75-27-4	5.00	U	10.0	5.00	2.50
Bromoform	75-25-2	10.0	U	20.0	10.0	5.00
Bromomethane	74-83-9	10.0	U	20.0	10.0	5.00
2-Butanone	78-93-3	50.0	U	100	50.0	25.0
n-Butylbenzene	104-51-8	5.00	U	10.0	5.00	2.50
sec-Butylbenzene	135-98-8	5.00	U	10.0	5.00	2.50
tert-Butylbenzene	98-06-6	5.00	U	10.0	5.00	2.50
Carbon disulfide	75-15-0	10.0	U	20.0	10.0	5.00
Carbon tetrachloride	56-23-5	5.00	U	10.0	5.00	2.50
Chlorobenzene	108-90-7	2.50	U	10.0	2.50	1.25
Chlorodibromomethane	124-48-1	5.00	U	10.0	5.00	2.50
Chloroethane	75-00-3	10.0	U	20.0	10.0	5.00
Chloromethane	74-87-3	10.0	U	20.0	10.0	5.00
2-Chlorotoluene	95-49-8	2.50	U	10.0	2.50	1.25
4-Chlorotoluene	106-43-4	5.00	U	10.0	5.00	2.50
1,2-Dibromo-3-chloropropane	96-12-8	20.0	U	50.0	20.0	10.0
1,2-Dibromoethane	106-93-4	5.00	U	10.0	5.00	2.50
Dibromomethane	74-95-3	5.00	U	10.0	5.00	2.50
1,2-Dichlorobenzene	95-50-1	2.50	U	10.0	2.50	1.25
1,3-Dichlorobenzene	541-73-1	5.00	U	10.0	5.00	2.50
1,4-Dichlorobenzene	106-46-7	2.50	U	10.0	2.50	1.25
Dichlorodifluoromethane	75-71-8	5.00	U	10.0	5.00	2.50
1,1-Dichloroethane	75-34-3	2.50	U	10.0	2.50	1.25
1,2-Dichloroethane	107-06-2	138		10.0	5.00	2.50
1,1-Dichloroethene	75-35-4	7.50	J	20.0	10.0	5.00
cis-1,2-Dichloroethene	156-59-2	1120		10.0	5.00	2.50
trans-1,2-Dichloroethene	156-60-5	3.11	J	10.0	5.00	2.50
1,2-Dichloropropane	78-87-5	4.00	U	10.0	4.00	2.00

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,3-Dichloropropane	142-28-9	4.00	U	10.0	4.00	2.00
2,2-Dichloropropane	594-20-7	5.00	U	10.0	5.00	2.50
cis-1,3-Dichloropropene	10061-01-5	5.00	U	10.0	5.00	2.50
trans-1,3-Dichloropropene	10061-02-6	10.0	U	20.0	10.0	5.00
1,1-Dichloropropene	563-58-6	5.00	U	10.0	5.00	2.50
Ethylbenzene	100-41-4	5.00	U	10.0	5.00	2.50
2-Hexanone	591-78-6	50.0	U	100	50.0	25.0
Hexachlorobutadiene	87-68-3	5.00	U	10.0	5.00	2.50
Isopropylbenzene	98-82-8	5.00	U	10.0	5.00	2.50
p-Isopropyltoluene	99-87-6	5.00	U	10.0	5.00	2.50
4-Methyl-2-pentanone	108-10-1	50.0	U	100	50.0	25.0
Methylene chloride	75-09-2	5.00	U	10.0	5.00	2.50
Naphthalene	91-20-3	4.00	U	10.0	4.00	2.00
n-Propylbenzene	103-65-1	2.50	U	10.0	2.50	1.25
Styrene	100-42-5	2.50	U	10.0	2.50	1.25
1,1,1,2-Tetrachloroethane	630-20-6	5.00	U	10.0	5.00	2.50
1,1,2,2-Tetrachloroethane	79-34-5	4.00	U	10.0	4.00	2.00
Tetrachloroethene	127-18-4	5.00	U	10.0	5.00	2.50
Toluene	108-88-3	5.00	U	10.0	5.00	2.50
1,2,3-Trichlorobenzene	87-61-6	3.00	U	10.0	3.00	1.50
1,2,4-Trichlorobenzene	120-82-1	4.00	U	10.0	4.00	2.00
1,1,1-Trichloroethane	71-55-6	5.00	U	10.0	5.00	2.50
1,1,2-Trichloroethane	79-00-5	5.00	U	10.0	5.00	2.50
1,2,3-Trichloropropane	96-18-4	10.0	U	20.0	10.0	5.00
1,2,4-Trimethylbenzene	95-63-6	5.00	U	10.0	5.00	2.50
1,3,5-Trimethylbenzene	108-67-8	5.00	U	10.0	5.00	2.50
Vinyl chloride	75-01-4	6.08	J	10.0	5.00	2.50
o-Xylene	95-47-6	5.00	U	10.0	5.00	2.50
m-,p-Xylene	179601-23-1	10.0	U	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.8	85	115	
1,2-Dichloroethane-d4	93.0	70	120	
Toluene-d8	99.4	85	120	
4-Bromofluorobenzene	107	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	MW1-061016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573259	**Analyst:**	JDS	**Run Date:**	06/17/2016 19:33
Collect Date:	06/10/2016 07:55	**Dilution:**	20	**File ID:**	11M12724
Sample Tag:	DL02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloroform	67-66-3	5.62	J	20.0	5.00	2.50
Trichloroethene	79-01-6	3620		20.0	10.0	5.00
Trichlorofluoromethane	75-69-4	10.0	U	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.3	85	115	
1,2-Dichloroethane-d4	91.5	70	120	
Toluene-d8	95.5	85	120	
4-Bromofluorobenzene	102	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW1-061016	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/22/2016 20:16
Collect Date:	06/10/2016 07:55	**Dilution:**	10000	**File ID:**	1LM.LM35426
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	14800		4000	2000	1000

Certificate of Analysis

Sample #:	L16060650-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW1-061016	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 11:57
Collect Date:	06/10/2016 07:55	**Dilution:**	1	**File ID:**	T3.062316.115734
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.0763	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Potassium, Total	7440-09-7	3.24		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW1-061016	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 14:09
Collect Date:	06/10/2016 07:55	**Dilution:**	10	**File ID:**	T3.062316.140930
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	47.2		5.00	2.50	1.25
Iron, Total	7439-89-6	20.2		2.00	1.00	0.500
Magnesium, Total	7439-95-4	41.4		10.0	5.00	2.50
Sodium, Total	7440-23-5	299		10.0	5.00	2.50

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW1-061016	**Prep Method:**	3015	**Prep Date:**	06/21/2016 07:48
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/21/2016 12:44
Workgroup #:	WG573557	**Analyst:**	BKT	**Run Date:**	06/21/2016 15:32
Collect Date:	06/10/2016 07:55	**Dilution:**	1	**File ID:**	NI.062116.153201
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW1-061016	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 20:00
Collect Date:	06/10/2016 07:55	**Dilution:**	1	**File ID:**	NI.061616.200024
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00136	J	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000424	J	0.00120	0.000600	0.000300
Cobalt, Total	7440-48-4	0.0563		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00432		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00922		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW1-061016	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 21:23
Collect Date:	06/10/2016 07:55	**Dilution:**	50	**File ID:**	NI.061616.212301
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	1.35		0.300	0.150	0.0750
Chromium, Total	7440-47-3	1.32		0.200	0.100	0.0500
Manganese, Total	7439-96-5	1.69		0.200	0.100	0.0500
Nickel, Total	7440-02-0	2.20		0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-01	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW1-061016	**Prep Method:**	7470A	**Prep Date:**	06/14/2016 10:23
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/16/2016 14:15
Workgroup #:	WG573072	**Analyst:**	PDM	**Run Date:**	06/16/2016 15:31
Collect Date:	06/10/2016 07:55	**Dilution:**	1	**File ID:**	M7.061616.153110
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	MW3-061016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573259	**Analyst:**	JDS	**Run Date:**	06/17/2016 20:05
Collect Date:	06/10/2016 09:05	**Dilution:**	2.5	**File ID:**	11M12725
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	48.4		25.0	12.5	6.25
Benzene	71-43-2	0.626	U	2.50	0.626	0.313
Bromobenzene	108-86-1	0.626	U	2.50	0.626	0.313
Bromochloromethane	74-97-5	1.00	U	2.50	1.00	0.500
Bromodichloromethane	75-27-4	1.25	U	2.50	1.25	0.625
Bromoform	75-25-2	2.50	U	5.00	2.50	1.25
Bromomethane	74-83-9	2.50	U	5.00	2.50	1.25
2-Butanone	78-93-3	12.5	U	25.0	12.5	6.25
n-Butylbenzene	104-51-8	1.25	U	2.50	1.25	0.625
sec-Butylbenzene	135-98-8	1.25	U	2.50	1.25	0.625
tert-Butylbenzene	98-06-6	1.25	U	2.50	1.25	0.625
Carbon disulfide	75-15-0	2.50	U	5.00	2.50	1.25
Carbon tetrachloride	56-23-5	1.25	U	2.50	1.25	0.625
Chlorobenzene	108-90-7	0.626	U	2.50	0.626	0.313
Chlorodibromomethane	124-48-1	1.25	U	2.50	1.25	0.625
Chloroethane	75-00-3	2.50	U	5.00	2.50	1.25
Chloroform	67-66-3	1.96	J	2.50	0.626	0.313
Chloromethane	74-87-3	2.50	U	5.00	2.50	1.25
2-Chlorotoluene	95-49-8	0.626	U	2.50	0.626	0.313
4-Chlorotoluene	106-43-4	1.25	U	2.50	1.25	0.625
1,2-Dibromo-3-chloropropane	96-12-8	5.00	U	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	2.50	1.25	0.625
Dibromomethane	74-95-3	1.25	U	2.50	1.25	0.625
1,2-Dichlorobenzene	95-50-1	0.626	U	2.50	0.626	0.313
1,3-Dichlorobenzene	541-73-1	1.25	U	2.50	1.25	0.625
1,4-Dichlorobenzene	106-46-7	0.626	U	2.50	0.626	0.313
Dichlorodifluoromethane	75-71-8	2.56		2.50	1.25	0.625
1,1-Dichloroethane	75-34-3	4.57		2.50	0.626	0.313
1,2-Dichloroethane	107-06-2	1.25	U	2.50	1.25	0.625
1,1-Dichloroethene	75-35-4	32.8		5.00	2.50	1.25
cis-1,2-Dichloroethene	156-59-2	85.2		2.50	1.25	0.625

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	3.30		2.50	1.25	0.625
1,2-Dichloropropane	78-87-5	1.00	U	2.50	1.00	0.500
1,3-Dichloropropane	142-28-9	1.00	U	2.50	1.00	0.500
2,2-Dichloropropane	594-20-7	1.25	U	2.50	1.25	0.625
cis-1,3-Dichloropropene	10061-01-5	1.25	U	2.50	1.25	0.625
trans-1,3-Dichloropropene	10061-02-6	2.50	U	5.00	2.50	1.25
1,1-Dichloropropene	563-58-6	1.25	U	2.50	1.25	0.625
Ethylbenzene	100-41-4	1.25	U	2.50	1.25	0.625
2-Hexanone	591-78-6	12.5	Q	25.0	12.5	6.25
Hexachlorobutadiene	87-68-3	1.25	U	2.50	1.25	0.625
Isopropylbenzene	98-82-8	1.25	U	2.50	1.25	0.625
p-Isopropyltoluene	99-87-6	1.25	U	2.50	1.25	0.625
4-Methyl-2-pentanone	108-10-1	12.5	U	25.0	12.5	6.25
Methylene chloride	75-09-2	1.25	U	2.50	1.25	0.625
Naphthalene	91-20-3	1.00	U	2.50	1.00	0.500
n-Propylbenzene	103-65-1	0.626	U	2.50	0.626	0.313
Styrene	100-42-5	0.626	U	2.50	0.626	0.313
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	2.50	1.25	0.625
1,1,2,2-Tetrachloroethane	79-34-5	1.00	U	2.50	1.00	0.500
Tetrachloroethene	127-18-4	0.992	J	2.50	1.25	0.625
Toluene	108-88-3	1.25	U	2.50	1.25	0.625
1,2,3-Trichlorobenzene	87-61-6	0.750	U	2.50	0.750	0.375
1,2,4-Trichlorobenzene	120-82-1	1.00	U	2.50	1.00	0.500
1,1,1-Trichloroethane	71-55-6	1.25	U	2.50	1.25	0.625
1,1,2-Trichloroethane	79-00-5	1.25	U	2.50	1.25	0.625
Trichloroethene	79-01-6	491		2.50	1.25	0.625
Trichlorofluoromethane	75-69-4	0.740	J	2.50	1.25	0.625
1,2,3-Trichloropropane	96-18-4	2.50	U	5.00	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	2.50	1.25	0.625
1,3,5-Trimethylbenzene	108-67-8	1.25	U	2.50	1.25	0.625
Vinyl chloride	75-01-4	10.2		2.50	1.25	0.625
o-Xylene	95-47-6	1.25	U	2.50	1.25	0.625
m-,p-Xylene	179601-23-1	2.50	U	5.00	2.50	1.25

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.4	85	115	
1,2-Dichloroethane-d4	91.6	70	120	
Toluene-d8	95.8	85	120	
4-Bromofluorobenzene	103	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW3-061016	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/22/2016 20:35
Collect Date:	06/10/2016 09:05	**Dilution:**	10000	**File ID:**	1LM.LM35427
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	15400		4000	2000	1000

Certificate of Analysis

Sample #:	L16060650-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW3-061016	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 12:01
Collect Date:	06/10/2016 09:05	**Dilution:**	1	**File ID:**	T3.062316.120126
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.100	U	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	0.418		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	20.3		1.00	0.500	0.250
Potassium, Total	7440-09-7	2.10		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW3-061016	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 14:13
Collect Date:	06/10/2016 09:05	**Dilution:**	10	**File ID:**	T3.062316.141326
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	30.2		5.00	2.50	1.25
Sodium, Total	7440-23-5	260		10.0	5.00	2.50

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW3-061016	**Prep Method:**	3015	**Prep Date:**	06/21/2016 07:48
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/21/2016 12:44
Workgroup #:	WG573557	**Analyst:**	BKT	**Run Date:**	06/21/2016 15:35
Collect Date:	06/10/2016 09:05	**Dilution:**	1	**File ID:**	NI.062116.153512
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW3-061016	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 20:03
Collect Date:	06/10/2016 09:05	**Dilution:**	1	**File ID:**	NI.061616.200336
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.000726	J	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00398	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00108	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00151	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.00463	J	0.00800	0.00400	0.00200
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW3-061016	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 21:26
Collect Date:	06/10/2016 09:05	**Dilution:**	10	**File ID:**	NI.061616.212612
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.445		0.0600	0.0300	0.0150
Manganese, Total	7439-96-5	0.520		0.0400	0.0200	0.0100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-02	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW3-061016	**Prep Method:**	7470A	**Prep Date:**	06/14/2016 10:23
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/16/2016 14:15
Workgroup #:	WG573072	**Analyst:**	PDM	**Run Date:**	06/16/2016 15:33
Collect Date:	06/10/2016 09:05	**Dilution:**	1	**File ID:**	M7.061616.153343
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	17WW08-061016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573051	**Analyst:**	JDS	**Run Date:**	06/16/2016 19:42
Collect Date:	06/10/2016 10:10	**Dilution:**	1	**File ID:**	11M12693
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.321	B	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.3	85	115	
1,2-Dichloroethane-d4	88.3	70	120	
Toluene-d8	97.6	85	120	
4-Bromofluorobenzene	104	75	120	

B	The reported result is associated with a contaminated method blank.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	17WW08-061016	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/22/2016 21:50
Collect Date:	06/10/2016 10:10	**Dilution:**	1	**File ID:**	1LM.LM35431
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	7.13		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16060650-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	17WW08-061016	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 12:12
Collect Date:	06/10/2016 10:10	**Dilution:**	1	**File ID:**	T3.062316.121258
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	1.01		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	20.5		0.500	0.250	0.125
Magnesium, Total	7439-95-4	12.3		1.00	0.500	0.250
Potassium, Total	7440-09-7	1.94	J	2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	17WW08-061016	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 14:17
Collect Date:	06/10/2016 10:10	**Dilution:**	10	**File ID:**	T3.062316.141723
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	12.8		2.00	1.00	0.500
Sodium, Total	7440-23-5	136		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	17WW08-061016	**Prep Method:**	3015	**Prep Date:**	06/21/2016 07:48
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/21/2016 12:44
Workgroup #:	WG573557	**Analyst:**	BKT	**Run Date:**	06/21/2016 15:38
Collect Date:	06/10/2016 10:10	**Dilution:**	1	**File ID:**	NI.062116.153823
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Arsenic, Total	7440-38-2	0.00435		0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.148		0.00600	0.00300	0.00150
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	17WW08-061016	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 20:06
Collect Date:	06/10/2016 10:10	**Dilution:**	1	**File ID:**	NI.061616.200647
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.00131		0.00120	0.000600	0.000300
Cobalt, Total	7440-48-4	0.00709		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.0170		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00133	J	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.111		0.00800	0.00400	0.00200
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0388	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	17WW08-061016	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 21:29
Collect Date:	06/10/2016 10:10	**Dilution:**	10	**File ID:**	NI.061616.212923
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chromium, Total	7440-47-3	0.507		0.0400	0.0200	0.0100
Manganese, Total	7439-96-5	0.422		0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-03	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	17WW08-061016	**Prep Method:**	7470A	**Prep Date:**	06/14/2016 10:23
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/16/2016 14:15
Workgroup #:	WG573072	**Analyst:**	PDM	**Run Date:**	06/16/2016 15:36
Collect Date:	06/10/2016 10:10	**Dilution:**	1	**File ID:**	M7.061616.153616
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	130-061016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573051	**Analyst:**	JDS	**Run Date:**	06/16/2016 20:14
Collect Date:	06/10/2016 11:05	**Dilution:**	1	**File ID:**	11M12694
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	1.17		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.260	B	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.0	85	115	
1,2-Dichloroethane-d4	90.0	70	120	
Toluene-d8	98.3	85	120	
4-Bromofluorobenzene	104	75	120	

B	The reported result is associated with a contaminated method blank.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	130-061016	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/23/2016 12:46
Collect Date:	06/10/2016 11:05	**Dilution:**	50	**File ID:**	1LM.LM35452
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	64.5		20.0	10.0	5.00

Certificate of Analysis

Sample #:	L16060650-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	130FD-061016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573051	**Analyst:**	JDS	**Run Date:**	06/16/2016 20:46
Collect Date:	06/10/2016 11:05	**Dilution:**	1	**File ID:**	11M12695
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	1.19		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.301	B	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.2	85	115	
1,2-Dichloroethane-d4	89.0	70	120	
Toluene-d8	96.5	85	120	
4-Bromofluorobenzene	100	75	120	

B	The reported result is associated with a contaminated method blank.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	130FD-061016	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/23/2016 13:05
Collect Date:	06/10/2016 11:05	**Dilution:**	50	**File ID:**	1LM.LM35453
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	62.5		20.0	10.0	5.00

Certificate of Analysis

Sample #:	L16060650-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	MW12-061016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573051	**Analyst:**	JDS	**Run Date:**	06/17/2016 00:29
Collect Date:	06/10/2016 13:30	**Dilution:**	2	**File ID:**	11M12702
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	10.0	U	20.0	10.0	5.00
Benzene	71-43-2	0.500	U	2.00	0.500	0.250
Bromobenzene	108-86-1	0.500	U	2.00	0.500	0.250
Bromochloromethane	74-97-5	0.800	U	2.00	0.800	0.400
Bromodichloromethane	75-27-4	1.00	U	2.00	1.00	0.500
Bromoform	75-25-2	2.00	U	4.00	2.00	1.00
Bromomethane	74-83-9	2.00	U	4.00	2.00	1.00
2-Butanone	78-93-3	10.0	U	20.0	10.0	5.00
n-Butylbenzene	104-51-8	1.00	U	2.00	1.00	0.500
sec-Butylbenzene	135-98-8	1.00	U	2.00	1.00	0.500
tert-Butylbenzene	98-06-6	1.00	U	2.00	1.00	0.500
Carbon disulfide	75-15-0	2.00	U	4.00	2.00	1.00
Carbon tetrachloride	56-23-5	1.00	U	2.00	1.00	0.500
Chlorobenzene	108-90-7	0.500	U	2.00	0.500	0.250
Chlorodibromomethane	124-48-1	1.00	U	2.00	1.00	0.500
Chloroethane	75-00-3	2.00	U	4.00	2.00	1.00
Chloroform	67-66-3	0.500	U	2.00	0.500	0.250
Chloromethane	74-87-3	2.00	U	4.00	2.00	1.00
2-Chlorotoluene	95-49-8	0.500	U	2.00	0.500	0.250
4-Chlorotoluene	106-43-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	4.00	U	10.0	4.00	2.00
1,2-Dibromoethane	106-93-4	1.00	U	2.00	1.00	0.500
Dibromomethane	74-95-3	1.00	U	2.00	1.00	0.500
1,2-Dichlorobenzene	95-50-1	0.500	U	2.00	0.500	0.250
1,3-Dichlorobenzene	541-73-1	1.00	U	2.00	1.00	0.500
1,4-Dichlorobenzene	106-46-7	0.500	U	2.00	0.500	0.250
Dichlorodifluoromethane	75-71-8	1.00	U	2.00	1.00	0.500
1,1-Dichloroethane	75-34-3	1.71	J	2.00	0.500	0.250
1,2-Dichloroethane	107-06-2	1.82	J	2.00	1.00	0.500
1,1-Dichloroethene	75-35-4	3.41	J	4.00	2.00	1.00
cis-1,2-Dichloroethene	156-59-2	42.6		2.00	1.00	0.500
trans-1,2-Dichloroethene	156-60-5	0.758	J	2.00	1.00	0.500
1,2-Dichloropropane	78-87-5	0.800	U	2.00	0.800	0.400
1,3-Dichloropropane	142-28-9	0.800	U	2.00	0.800	0.400
2,2-Dichloropropane	594-20-7	1.00	U	2.00	1.00	0.500
cis-1,3-Dichloropropene	10061-01-5	1.00	U	2.00	1.00	0.500
trans-1,3-Dichloropropene	10061-02-6	2.00	U	4.00	2.00	1.00
1,1-Dichloropropene	563-58-6	1.00	U	2.00	1.00	0.500
Ethylbenzene	100-41-4	1.00	U	2.00	1.00	0.500
2-Hexanone	591-78-6	10.0	U	20.0	10.0	5.00
Hexachlorobutadiene	87-68-3	1.00	U	2.00	1.00	0.500
Isopropylbenzene	98-82-8	1.00	U	2.00	1.00	0.500
p-Isopropyltoluene	99-87-6	1.00	U	2.00	1.00	0.500
4-Methyl-2-pentanone	108-10-1	10.0	U	20.0	10.0	5.00
Methylene chloride	75-09-2	1.00	U	2.00	1.00	0.500
Naphthalene	91-20-3	0.800	U	2.00	0.800	0.400
n-Propylbenzene	103-65-1	0.500	U	2.00	0.500	0.250
Styrene	100-42-5	0.500	U	2.00	0.500	0.250
1,1,1,2-Tetrachloroethane	630-20-6	1.00	U	2.00	1.00	0.500
1,1,2,2-Tetrachloroethane	79-34-5	0.800	U	2.00	0.800	0.400
Tetrachloroethene	127-18-4	1.00	U	2.00	1.00	0.500
Toluene	108-88-3	1.00	U	2.00	1.00	0.500
1,2,3-Trichlorobenzene	87-61-6	0.600	U	2.00	0.600	0.300
1,2,4-Trichlorobenzene	120-82-1	0.800	U	2.00	0.800	0.400
1,1,1-Trichloroethane	71-55-6	1.00	U	2.00	1.00	0.500
1,1,2-Trichloroethane	79-00-5	1.00	U	2.00	1.00	0.500
Trichloroethene	79-01-6	294		2.00	1.00	0.500
Trichlorofluoromethane	75-69-4	0.598	B	2.00	1.00	0.500
1,2,3-Trichloropropane	96-18-4	2.00	U	4.00	2.00	1.00

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.00	U	2.00	1.00	0.500
1,3,5-Trimethylbenzene	108-67-8	1.00	U	2.00	1.00	0.500
Vinyl chloride	75-01-4	1.00	U	2.00	1.00	0.500
o-Xylene	95-47-6	1.00	U	2.00	1.00	0.500
m-,p-Xylene	179601-23-1	2.00	U	4.00	2.00	1.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.6	85	115	
1,2-Dichloroethane-d4	90.7	70	120	
Toluene-d8	95.7	85	120	
4-Bromofluorobenzene	102	75	120	

B	The reported result is associated with a contaminated method blank.
J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW12-061016	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/23/2016 13:23
Collect Date:	06/10/2016 13:30	**Dilution:**	1	**File ID:**	1LM.LM35454
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	18WW24-061016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573051	**Analyst:**	JDS	**Run Date:**	06/16/2016 21:18
Collect Date:	06/10/2016 14:40	**Dilution:**	1	**File ID:**	11M12696
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.9	85	115	
1,2-Dichloroethane-d4	90.6	70	120	
Toluene-d8	96.4	85	120	
4-Bromofluorobenzene	104	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW24-061016	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/22/2016 23:06
Collect Date:	06/10/2016 14:40	**Dilution:**	1	**File ID:**	1LM.LM35435
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.228	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW24F-061016	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 12:16
Collect Date:	06/10/2016 14:40	**Dilution:**	1	**File ID:**	T3.062316.121653
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.466		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	6.94		0.500	0.250	0.125
Iron, Total	7439-89-6	0.284		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	4.40		1.00	0.500	0.250
Potassium, Total	7440-09-7	1.58	J	2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW24F-061016	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 14:21
Collect Date:	06/10/2016 14:40	**Dilution:**	10	**File ID:**	T3.062316.142120
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sodium, Total	7440-23-5	131		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW24F-061016	**Prep Method:**	3015	**Prep Date:**	06/21/2016 07:48
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/21/2016 12:44
Workgroup #:	WG573557	**Analyst:**	BKT	**Run Date:**	06/21/2016 15:41
Collect Date:	06/10/2016 14:40	**Dilution:**	1	**File ID:**	NI.062116.154135
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Arsenic, Total	7440-38-2	0.00248		0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.0968		0.00600	0.00300	0.00150
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW24F-061016	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 20:12
Collect Date:	06/10/2016 14:40	**Dilution:**	1	**File ID:**	NI.061616.201257
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00142	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00207		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00200	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0220		0.00800	0.00400	0.00200
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.000930	J	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0750		0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW24F-061016	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 21:32
Collect Date:	06/10/2016 14:40	**Dilution:**	10	**File ID:**	NI.061616.213235
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Total	7439-96-5	0.609		0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-08	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18WW24F-061016	**Prep Method:**	7470A	**Prep Date:**	06/14/2016 10:23
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/16/2016 14:15
Workgroup #:	WG573072	**Analyst:**	PDM	**Run Date:**	06/16/2016 15:38
Collect Date:	06/10/2016 14:40	**Dilution:**	1	**File ID:**	M7.061616.153847
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573051	**Analyst:**	JDS	**Run Date:**	06/16/2016 18:38
Collect Date:	06/10/2016 00:01	**Dilution:**	1	**File ID:**	11M12691
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.251	B	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.3	85	115	
1,2-Dichloroethane-d4	88.0	70	120	
Toluene-d8	96.0	85	120	
4-Bromofluorobenzene	102	75	120	

B	The reported result is associated with a contaminated method blank.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	MW1-061016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG572855	**Analyst:**	JDS	**Run Date:**	06/16/2016 01:56
Collect Date:	06/10/2016 07:55	**Dilution:**	10	**File ID:**	11M12671
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	50.0	U	100	50.0	25.0
Benzene	71-43-2	2.09	J	10.0	2.50	1.25
Bromobenzene	108-86-1	2.50	U	10.0	2.50	1.25
Bromochloromethane	74-97-5	4.00	U	10.0	4.00	2.00
Bromodichloromethane	75-27-4	5.00	U	10.0	5.00	2.50
Bromoform	75-25-2	10.0	U	20.0	10.0	5.00
Bromomethane	74-83-9	10.0	U	20.0	10.0	5.00
2-Butanone	78-93-3	50.0	U	100	50.0	25.0
n-Butylbenzene	104-51-8	5.00	U	10.0	5.00	2.50
sec-Butylbenzene	135-98-8	5.00	U	10.0	5.00	2.50
tert-Butylbenzene	98-06-6	5.00	U	10.0	5.00	2.50
Carbon disulfide	75-15-0	10.0	U	20.0	10.0	5.00
Carbon tetrachloride	56-23-5	5.00	U	10.0	5.00	2.50
Chlorobenzene	108-90-7	2.50	U	10.0	2.50	1.25
Chlorodibromomethane	124-48-1	5.00	U	10.0	5.00	2.50
Chloroethane	75-00-3	10.0	U	20.0	10.0	5.00
Chloromethane	74-87-3	10.0	U	20.0	10.0	5.00
2-Chlorotoluene	95-49-8	2.50	U	10.0	2.50	1.25
4-Chlorotoluene	106-43-4	5.00	U	10.0	5.00	2.50
1,2-Dibromo-3-chloropropane	96-12-8	20.0	U	50.0	20.0	10.0
1,2-Dibromoethane	106-93-4	5.00	U	10.0	5.00	2.50
Dibromomethane	74-95-3	5.00	U	10.0	5.00	2.50
1,2-Dichlorobenzene	95-50-1	2.50	U	10.0	2.50	1.25
1,3-Dichlorobenzene	541-73-1	5.00	U	10.0	5.00	2.50
1,4-Dichlorobenzene	106-46-7	2.50	U	10.0	2.50	1.25
Dichlorodifluoromethane	75-71-8	5.00	U	10.0	5.00	2.50
1,1-Dichloroethane	75-34-3	2.50	U	10.0	2.50	1.25
1,2-Dichloroethane	107-06-2	138		10.0	5.00	2.50
1,1-Dichloroethene	75-35-4	7.50	J	20.0	10.0	5.00
cis-1,2-Dichloroethene	156-59-2	1120		10.0	5.00	2.50
trans-1,2-Dichloroethene	156-60-5	3.11	J	10.0	5.00	2.50
1,2-Dichloropropane	78-87-5	4.00	U	10.0	4.00	2.00

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,3-Dichloropropane	142-28-9	4.00	U	10.0	4.00	2.00
2,2-Dichloropropane	594-20-7	5.00	U	10.0	5.00	2.50
cis-1,3-Dichloropropene	10061-01-5	5.00	U	10.0	5.00	2.50
trans-1,3-Dichloropropene	10061-02-6	10.0	U	20.0	10.0	5.00
1,1-Dichloropropene	563-58-6	5.00	U	10.0	5.00	2.50
Ethylbenzene	100-41-4	5.00	U	10.0	5.00	2.50
2-Hexanone	591-78-6	50.0	U	100	50.0	25.0
Hexachlorobutadiene	87-68-3	5.00	U	10.0	5.00	2.50
Isopropylbenzene	98-82-8	5.00	U	10.0	5.00	2.50
p-Isopropyltoluene	99-87-6	5.00	U	10.0	5.00	2.50
4-Methyl-2-pentanone	108-10-1	50.0	U	100	50.0	25.0
Methylene chloride	75-09-2	5.00	U	10.0	5.00	2.50
Naphthalene	91-20-3	4.00	U	10.0	4.00	2.00
n-Propylbenzene	103-65-1	2.50	U	10.0	2.50	1.25
Styrene	100-42-5	2.50	U	10.0	2.50	1.25
1,1,1,2-Tetrachloroethane	630-20-6	5.00	U	10.0	5.00	2.50
1,1,2,2-Tetrachloroethane	79-34-5	4.00	U	10.0	4.00	2.00
Tetrachloroethene	127-18-4	5.00	U	10.0	5.00	2.50
Toluene	108-88-3	5.00	U	10.0	5.00	2.50
1,2,3-Trichlorobenzene	87-61-6	3.00	U	10.0	3.00	1.50
1,2,4-Trichlorobenzene	120-82-1	4.00	U	10.0	4.00	2.00
1,1,1-Trichloroethane	71-55-6	5.00	U	10.0	5.00	2.50
1,1,2-Trichloroethane	79-00-5	5.00	U	10.0	5.00	2.50
1,2,3-Trichloropropane	96-18-4	10.0	U	20.0	10.0	5.00
1,2,4-Trimethylbenzene	95-63-6	5.00	U	10.0	5.00	2.50
1,3,5-Trimethylbenzene	108-67-8	5.00	U	10.0	5.00	2.50
Vinyl chloride	75-01-4	6.08	J	10.0	5.00	2.50
o-Xylene	95-47-6	5.00	U	10.0	5.00	2.50
m-,p-Xylene	179601-23-1	10.0	U	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.8	85	115	
1,2-Dichloroethane-d4	93.0	70	120	
Toluene-d8	99.4	85	120	
4-Bromofluorobenzene	107	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	MW1-061016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573259	**Analyst:**	JDS	**Run Date:**	06/17/2016 19:33
Collect Date:	06/10/2016 07:55	**Dilution:**	20	**File ID:**	11M12724
Sample Tag:	DL02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloroform	67-66-3	5.62	J	20.0	5.00	2.50
Trichloroethene	79-01-6	3620		20.0	10.0	5.00
Trichlorofluoromethane	75-69-4	10.0	U	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.3	85	115	
1,2-Dichloroethane-d4	91.5	70	120	
Toluene-d8	95.5	85	120	
4-Bromofluorobenzene	102	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	MW3-061016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573259	**Analyst:**	JDS	**Run Date:**	06/17/2016 20:05
Collect Date:	06/10/2016 09:05	**Dilution:**	2.5	**File ID:**	11M12725
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	48.4		25.0	12.5	6.25
Benzene	71-43-2	0.626	U	2.50	0.626	0.313
Bromobenzene	108-86-1	0.626	U	2.50	0.626	0.313
Bromochloromethane	74-97-5	1.00	U	2.50	1.00	0.500
Bromodichloromethane	75-27-4	1.25	U	2.50	1.25	0.625
Bromoform	75-25-2	2.50	U	5.00	2.50	1.25
Bromomethane	74-83-9	2.50	U	5.00	2.50	1.25
2-Butanone	78-93-3	12.5	U	25.0	12.5	6.25
n-Butylbenzene	104-51-8	1.25	U	2.50	1.25	0.625
sec-Butylbenzene	135-98-8	1.25	U	2.50	1.25	0.625
tert-Butylbenzene	98-06-6	1.25	U	2.50	1.25	0.625
Carbon disulfide	75-15-0	2.50	U	5.00	2.50	1.25
Carbon tetrachloride	56-23-5	1.25	U	2.50	1.25	0.625
Chlorobenzene	108-90-7	0.626	U	2.50	0.626	0.313
Chlorodibromomethane	124-48-1	1.25	U	2.50	1.25	0.625
Chloroethane	75-00-3	2.50	U	5.00	2.50	1.25
Chloroform	67-66-3	1.96	J	2.50	0.626	0.313
Chloromethane	74-87-3	2.50	U	5.00	2.50	1.25
2-Chlorotoluene	95-49-8	0.626	U	2.50	0.626	0.313
4-Chlorotoluene	106-43-4	1.25	U	2.50	1.25	0.625
1,2-Dibromo-3-chloropropane	96-12-8	5.00	U	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	2.50	1.25	0.625
Dibromomethane	74-95-3	1.25	U	2.50	1.25	0.625
1,2-Dichlorobenzene	95-50-1	0.626	U	2.50	0.626	0.313
1,3-Dichlorobenzene	541-73-1	1.25	U	2.50	1.25	0.625
1,4-Dichlorobenzene	106-46-7	0.626	U	2.50	0.626	0.313
Dichlorodifluoromethane	75-71-8	2.56		2.50	1.25	0.625
1,1-Dichloroethane	75-34-3	4.57		2.50	0.626	0.313
1,2-Dichloroethane	107-06-2	1.25	U	2.50	1.25	0.625
1,1-Dichloroethene	75-35-4	32.8		5.00	2.50	1.25
cis-1,2-Dichloroethene	156-59-2	85.2		2.50	1.25	0.625

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	3.30		2.50	1.25	0.625
1,2-Dichloropropane	78-87-5	1.00	U	2.50	1.00	0.500
1,3-Dichloropropane	142-28-9	1.00	U	2.50	1.00	0.500
2,2-Dichloropropane	594-20-7	1.25	U	2.50	1.25	0.625
cis-1,3-Dichloropropene	10061-01-5	1.25	U	2.50	1.25	0.625
trans-1,3-Dichloropropene	10061-02-6	2.50	U	5.00	2.50	1.25
1,1-Dichloropropene	563-58-6	1.25	U	2.50	1.25	0.625
Ethylbenzene	100-41-4	1.25	U	2.50	1.25	0.625
2-Hexanone	591-78-6	12.5	Q	25.0	12.5	6.25
Hexachlorobutadiene	87-68-3	1.25	U	2.50	1.25	0.625
Isopropylbenzene	98-82-8	1.25	U	2.50	1.25	0.625
p-Isopropyltoluene	99-87-6	1.25	U	2.50	1.25	0.625
4-Methyl-2-pentanone	108-10-1	12.5	U	25.0	12.5	6.25
Methylene chloride	75-09-2	1.25	U	2.50	1.25	0.625
Naphthalene	91-20-3	1.00	U	2.50	1.00	0.500
n-Propylbenzene	103-65-1	0.626	U	2.50	0.626	0.313
Styrene	100-42-5	0.626	U	2.50	0.626	0.313
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	2.50	1.25	0.625
1,1,2,2-Tetrachloroethane	79-34-5	1.00	U	2.50	1.00	0.500
Tetrachloroethene	127-18-4	0.992	J	2.50	1.25	0.625
Toluene	108-88-3	1.25	U	2.50	1.25	0.625
1,2,3-Trichlorobenzene	87-61-6	0.750	U	2.50	0.750	0.375
1,2,4-Trichlorobenzene	120-82-1	1.00	U	2.50	1.00	0.500
1,1,1-Trichloroethane	71-55-6	1.25	U	2.50	1.25	0.625
1,1,2-Trichloroethane	79-00-5	1.25	U	2.50	1.25	0.625
Trichloroethene	79-01-6	491		2.50	1.25	0.625
Trichlorofluoromethane	75-69-4	0.740	J	2.50	1.25	0.625
1,2,3-Trichloropropane	96-18-4	2.50	U	5.00	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	2.50	1.25	0.625
1,3,5-Trimethylbenzene	108-67-8	1.25	U	2.50	1.25	0.625
Vinyl chloride	75-01-4	10.2		2.50	1.25	0.625
o-Xylene	95-47-6	1.25	U	2.50	1.25	0.625
m-,p-Xylene	179601-23-1	2.50	U	5.00	2.50	1.25

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.4	85	115	
1,2-Dichloroethane-d4	91.6	70	120	
Toluene-d8	95.8	85	120	
4-Bromofluorobenzene	103	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	17WW08-061016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573051	**Analyst:**	JDS	**Run Date:**	06/16/2016 19:42
Collect Date:	06/10/2016 10:10	**Dilution:**	1	**File ID:**	11M12693
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.321	B	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.3	85	115	
1,2-Dichloroethane-d4	88.3	70	120	
Toluene-d8	97.6	85	120	
4-Bromofluorobenzene	104	75	120	

B	The reported result is associated with a contaminated method blank.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	130-061016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573051	**Analyst:**	JDS	**Run Date:**	06/16/2016 20:14
Collect Date:	06/10/2016 11:05	**Dilution:**	1	**File ID:**	11M12694
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

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Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	1.17		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.260	B	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.0	85	115	
1,2-Dichloroethane-d4	90.0	70	120	
Toluene-d8	98.3	85	120	
4-Bromofluorobenzene	104	75	120	

B	The reported result is associated with a contaminated method blank.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	130FD-061016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573051	**Analyst:**	JDS	**Run Date:**	06/16/2016 20:46
Collect Date:	06/10/2016 11:05	**Dilution:**	1	**File ID:**	11M12695
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	1.19		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.301	B	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.2	85	115	
1,2-Dichloroethane-d4	89.0	70	120	
Toluene-d8	96.5	85	120	
4-Bromofluorobenzene	100	75	120	

B	The reported result is associated with a contaminated method blank.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	MW12-061016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573051	**Analyst:**	JDS	**Run Date:**	06/17/2016 00:29
Collect Date:	06/10/2016 13:30	**Dilution:**	2	**File ID:**	11M12702
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	10.0	U	20.0	10.0	5.00
Benzene	71-43-2	0.500	U	2.00	0.500	0.250
Bromobenzene	108-86-1	0.500	U	2.00	0.500	0.250
Bromochloromethane	74-97-5	0.800	U	2.00	0.800	0.400
Bromodichloromethane	75-27-4	1.00	U	2.00	1.00	0.500
Bromoform	75-25-2	2.00	U	4.00	2.00	1.00
Bromomethane	74-83-9	2.00	U	4.00	2.00	1.00
2-Butanone	78-93-3	10.0	U	20.0	10.0	5.00
n-Butylbenzene	104-51-8	1.00	U	2.00	1.00	0.500
sec-Butylbenzene	135-98-8	1.00	U	2.00	1.00	0.500
tert-Butylbenzene	98-06-6	1.00	U	2.00	1.00	0.500
Carbon disulfide	75-15-0	2.00	U	4.00	2.00	1.00
Carbon tetrachloride	56-23-5	1.00	U	2.00	1.00	0.500
Chlorobenzene	108-90-7	0.500	U	2.00	0.500	0.250
Chlorodibromomethane	124-48-1	1.00	U	2.00	1.00	0.500
Chloroethane	75-00-3	2.00	U	4.00	2.00	1.00
Chloroform	67-66-3	0.500	U	2.00	0.500	0.250
Chloromethane	74-87-3	2.00	U	4.00	2.00	1.00
2-Chlorotoluene	95-49-8	0.500	U	2.00	0.500	0.250
4-Chlorotoluene	106-43-4	1.00	U	2.00	1.00	0.500
1,2-Dibromo-3-chloropropane	96-12-8	4.00	U	10.0	4.00	2.00
1,2-Dibromoethane	106-93-4	1.00	U	2.00	1.00	0.500
Dibromomethane	74-95-3	1.00	U	2.00	1.00	0.500
1,2-Dichlorobenzene	95-50-1	0.500	U	2.00	0.500	0.250
1,3-Dichlorobenzene	541-73-1	1.00	U	2.00	1.00	0.500
1,4-Dichlorobenzene	106-46-7	0.500	U	2.00	0.500	0.250
Dichlorodifluoromethane	75-71-8	1.00	U	2.00	1.00	0.500
1,1-Dichloroethane	75-34-3	1.71	J	2.00	0.500	0.250
1,2-Dichloroethane	107-06-2	1.82	J	2.00	1.00	0.500
1,1-Dichloroethene	75-35-4	3.41	J	4.00	2.00	1.00
cis-1,2-Dichloroethene	156-59-2	42.6		2.00	1.00	0.500

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.758	J	2.00	1.00	0.500
1,2-Dichloropropane	78-87-5	0.800	U	2.00	0.800	0.400
1,3-Dichloropropane	142-28-9	0.800	U	2.00	0.800	0.400
2,2-Dichloropropane	594-20-7	1.00	U	2.00	1.00	0.500
cis-1,3-Dichloropropene	10061-01-5	1.00	U	2.00	1.00	0.500
trans-1,3-Dichloropropene	10061-02-6	2.00	U	4.00	2.00	1.00
1,1-Dichloropropene	563-58-6	1.00	U	2.00	1.00	0.500
Ethylbenzene	100-41-4	1.00	U	2.00	1.00	0.500
2-Hexanone	591-78-6	10.0	U	20.0	10.0	5.00
Hexachlorobutadiene	87-68-3	1.00	U	2.00	1.00	0.500
Isopropylbenzene	98-82-8	1.00	U	2.00	1.00	0.500
p-Isopropyltoluene	99-87-6	1.00	U	2.00	1.00	0.500
4-Methyl-2-pentanone	108-10-1	10.0	U	20.0	10.0	5.00
Methylene chloride	75-09-2	1.00	U	2.00	1.00	0.500
Naphthalene	91-20-3	0.800	U	2.00	0.800	0.400
n-Propylbenzene	103-65-1	0.500	U	2.00	0.500	0.250
Styrene	100-42-5	0.500	U	2.00	0.500	0.250
1,1,1,2-Tetrachloroethane	630-20-6	1.00	U	2.00	1.00	0.500
1,1,2,2-Tetrachloroethane	79-34-5	0.800	U	2.00	0.800	0.400
Tetrachloroethene	127-18-4	1.00	U	2.00	1.00	0.500
Toluene	108-88-3	1.00	U	2.00	1.00	0.500
1,2,3-Trichlorobenzene	87-61-6	0.600	U	2.00	0.600	0.300
1,2,4-Trichlorobenzene	120-82-1	0.800	U	2.00	0.800	0.400
1,1,1-Trichloroethane	71-55-6	1.00	U	2.00	1.00	0.500
1,1,2-Trichloroethane	79-00-5	1.00	U	2.00	1.00	0.500
Trichloroethene	79-01-6	294		2.00	1.00	0.500
Trichlorofluoromethane	75-69-4	0.598	B	2.00	1.00	0.500
1,2,3-Trichloropropane	96-18-4	2.00	U	4.00	2.00	1.00
1,2,4-Trimethylbenzene	95-63-6	1.00	U	2.00	1.00	0.500
1,3,5-Trimethylbenzene	108-67-8	1.00	U	2.00	1.00	0.500
Vinyl chloride	75-01-4	1.00	U	2.00	1.00	0.500
o-Xylene	95-47-6	1.00	U	2.00	1.00	0.500
m-,p-Xylene	179601-23-1	2.00	U	4.00	2.00	1.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.6	85	115	
1,2-Dichloroethane-d4	90.7	70	120	
Toluene-d8	95.7	85	120	
4-Bromofluorobenzene	102	75	120	

B	The reported result is associated with a contaminated method blank.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	18WW24-061016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573051	**Analyst:**	JDS	**Run Date:**	06/16/2016 21:18
Collect Date:	06/10/2016 14:40	**Dilution:**	1	**File ID:**	11M12696
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.9	85	115	
1,2-Dichloroethane-d4	90.6	70	120	
Toluene-d8	96.4	85	120	
4-Bromofluorobenzene	104	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573051	**Analyst:**	JDS	**Run Date:**	06/16/2016 18:38
Collect Date:	06/10/2016 00:01	**Dilution:**	1	**File ID:**	11M12691
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.251	B	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.3	85	115	
1,2-Dichloroethane-d4	88.0	70	120	
Toluene-d8	96.0	85	120	
4-Bromofluorobenzene	102	75	120	

B	The reported result is associated with a contaminated method blank.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 061415
Analyst1: TMB Analyst2: DLW
Method: 8260B SOP: MSV01 Rev: 22
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD70890 Surrogate Standard: STD70872
CCV: STD70883 LCS: STD70514 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG527475

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M08234	WG527475-01 50ng BFB STD	NA	1	1	STD70707	06/14/15 09:34
11M08235	WG527475-02 5ug/L STD8260	NA	1	1	STD70883	06/14/15 09:58
11M08236	WG527475-03 20ug/L STD8260	NA	1	1	STD70883	06/14/15 10:30
11M08237	WG527475-04 50ug/L STD8260	NA	1	1	STD70883	06/14/15 11:02
11M08238	WG527475-05 100ug/L STD8260	NA	1	1	STD70883	06/14/15 11:34
11M08239	WG527475-06 200ug/L STD8260	NA	1	1	STD70883	06/14/15 12:06
11M08240	WG527475-07 300ug/L STD8260	NA	1	1	STD70883	06/14/15 12:38
11M08241	WG527475-08 400ug/L STD8260	NA	1	1	STD70883	06/14/15 13:10
11M08242	WG527475-09 500ug/L STD8260	NA	1	1	STD70883	06/14/15 13:42
11M08243	RINSE	NA	1	1		06/14/15 14:14
11M08244	RINSE	NA	1	1		06/14/15 14:46
11M08245	WG527475-10 100ug/L ALT STD8260	NA	1	1	STD70514	06/14/15 15:18

Approved: September 15, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 051316
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 / OVAP MSV01 Rev: 23 / 0
Method: 5030B/5030C/5035A SOP: PAT01 / OVAP PAT01 Rev: 18 / 0
Method: 624 SOP: MSV10 Rev: 14
Maintenance Log ID:

Internal Standard: STD76110 Surrogate Standard: STD75929
CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG568769

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M11835	RINSE	NA	1	1		05/13/16 11:59
11M11836	WG568769-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 14:15
11M11837	WG568769-02 0.3ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 14:40
11M11838	WG568769-03 0.4ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 15:12
11M11839	WG568769-04 1.0ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 15:43
11M11840	WG568769-05 2.0ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 16:15
11M11841	WG568769-06 5.0ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 16:47
11M11842	WG568769-07 20ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 17:19
11M11843	WG568769-08 50ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 17:51
11M11844	WG568769-09 100ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 18:22
11M11845	WG568769-10 200ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 18:54
11M11846	WG568769-11 300ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 19:26
11M11847	RINSE	NA	1	1		05/13/16 19:58
11M11848	WG568769-12 50ug/L ALT SRC STD 8260	NA	1	1	STD76109	05/13/16 20:30
11M11849	RINSE	NA	1	1		05/13/16 21:02
11M11850	RINSE	NA	1	1		05/13/16 21:34

Approved: May 23, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 061516
Analyst1: JDS Analyst2: NA
Method: 8260 SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Method: 624 SOP: MSV10 Rev: 14
Maintenance Log ID:

Internal Standard: STD76597 Surrogate Standard: STD76383
CCV: STD76405 LCS: STD76540 MS/MSD: STD76540

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG572855

Comments: Samples 650-01, 830-02, 834-04, -05, -06, -07 all require dilution reanalysis for compounds over the calibration limit.
Sample 650-01 also has suspected carryover of trichlorofluoromethane and chloroform and is rerunning.
Samples 650-02, -03, -04, -05, -06, -07, 834-08, -09 have suspected carryover and are rerunning and are not reported from this workgroup.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M12650	WG572854-01 50ng BFB STD 8260	NA	1	1	STD76496	06/15/16 14:48
11M12651	WG572854-02 50ug/L CCV STD 8260	NA	1	1	STD76405	06/15/16 15:12
11M12652	WG572854-02 50ug/L CCV STD 8260	NA	1	1	STD76405	06/15/16 15:49
11M12653	WGXXXXXX-01 100ug/L A9-CCV STD 826	NA	1	1	STDXXXXX	06/15/16 16:21
11M12654	WG572855-01 BLANK STD 8260	NA	1	1		06/15/16 16:53
11M12655	WG572855-02 20ug/L LCS STD 8260	NA	1	1	STD76540	06/15/16 17:25
11M12656	L16060834-02 A MS 826-SPE	<2	1	1	STD76540	06/15/16 17:57
11M12657	L16060834-03 A MSD 826-SPE	<2	1	1	STD76540	06/15/16 18:29
11M12658	RINSE	NA	1	1	STD76540	06/15/16 19:01
11M12659	L16060834-01 A REF 826-SPE	<2	1	1		06/15/16 19:33
11M12660	L16060834-08 A TB 826-SPE	<2	1	1		06/15/16 20:05
11M12661	L16060650-03 A 826-LOW	<2	1	1		06/15/16 20:37
11M12662	L16060650-04 A 826-LOW	<2	1	1		06/15/16 21:09
11M12663	L16060650-05 A 826-LOW	<2	1	1		06/15/16 21:41
11M12664	L16060650-07 A 826-LOW	<2	1	1		06/15/16 22:13
11M12665	L16060834-04 A 826-SPE	<2	1	1	SED	06/15/16 22:45
11M12666	L16060834-05 A 826-SPE	<2	1	1	SED	06/15/16 23:16
11M12667	L16060834-06 A 826-SPE	<2	1	1		06/15/16 23:48
11M12668	L16060834-07 A 826-SPE	<2	1	1		06/16/16 00:20
11M12669	L16060834-09 A 826-SPE	<2	1	1		06/16/16 00:52
11M12670	L16060650-02 A 2.5X 826-LOW	<2	1	2.5		06/16/16 01:24
11M12671	L16060650-01 A 10X 826-LOW	<2	1	10		06/16/16 01:56
11M12672	L16060650-06 A 10X 826-LOW	<2	1	10		06/16/16 02:28
11M12673	RINSE	NA	1	1		06/16/16 03:00
11M12674	WG572855-06 BLANK2 STD 624	NA	2	1		06/16/16 03:31
11M12675	L16060828-01 A 624-SPE2	<2	2	1		06/16/16 04:03
11M12676	L16060828-02 A 624-SPE	<2	2	1		06/16/16 04:35
11M12677	L16060830-01 A 624-SPE	<2	2	1		06/16/16 05:07
11M12678	L16060830-02 A 624-SPE	<2	2	1		06/16/16 05:39
11M12679	CCV	NA	1	1		06/16/16 06:11

Approved: June 21, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 061516

Analyst1: JDS Analyst2: NA

Method: 8260 SOP: MSV01 Rev: 23

Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Method: 624 SOP: MSV10 Rev: 14

Maintenance Log ID:

Internal Standard: STD76597 Surrogate Standard: STD76383

CCV: STD76405 LCS: STD76540 MS/MSD: STD76540

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG572855

Comments: Samples 650-01, 830-02, 834-04, -05, -06, -07 all require dilution reanalysis for compounds over the calibration limit.
Sample 650-01 also has suspected carryover of trichlorofluoromethane and chloroform and is rerunning.
Samples 650-02, -03, -04, -05, -06, -07, 834-08, -09 have suspected carryover and are rerunning and are not reported from this workgroup.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M12680	RINSE	NA	1	1		06/16/16 06:43
11M12681	RINSE	NA	1	1		06/16/16 07:15

Approved: June 21, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 061616
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID: 53787

Internal Standard: STD76597 Surrogate Standard: STD76383
CCV: STD76405 LCS: STD76540 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG573051

Comments: Samples 834-01, -04, -05, -06, -07 require further dilution.
Samples 650-01, -02 require reanalysis for carryover.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M12682	RINSE	NA	1	1		06/16/16 12:34
11M12683	WG573050-01 50ng BFB STD 8260	NA	1	1	STD76496	06/16/16 14:30
11M12684	WG573050-02 50ug/L CCV STD 8260	NA	1	1	STD76405	06/16/16 14:54
11M12685	WG573050-02 50ug/L CCV STD 8260	NA	1	1	STD76405	06/16/16 15:27
11M12686	WGXXXXXX-01 100ug/L A9-CCV STD 826	NA	1	1	STDXXXXX	06/16/16 15:59
11M12687	WG573051-01 BLANK STD 8260	NA	1	1		06/16/16 16:31
11M12688	WG573051-02 20ug/L LCS STD 8260	NA	1	1	STD76540	06/16/16 17:03
11M12689	WG573051-03 20ug/L LCS2 STD 8260	NA	1	1	STD76540	06/16/16 17:35
11M12690	RINSE	NA	1	1		06/16/16 18:07
11M12691	L16060650-09 A TB A1 826-LOW	<2	1	1		06/16/16 18:38
11M12692	L16060834-08 B TB A1 826-SPE	<2	1	1		06/16/16 19:10
11M12693	L16060650-03 B A1 826-LOW	<2	1	1		06/16/16 19:42
11M12694	L16060650-04 B A1 826-LOW	<2	1	1		06/16/16 20:14
11M12695	L16060650-05 B A1 826-LOW	<2	1	1		06/16/16 20:46
11M12696	L16060650-07 B A1 826-LOW	<2	1	1		06/16/16 21:18
11M12697	L16060834-09 B A1 826-SPE	<2	1	1		06/16/16 21:50
11M12698	L16060834-06 B D1 20X 826-SPE	<2	1	20		06/16/16 22:22
11M12699	L16060834-07 B D1 20X 826-SPE	<2	1	20		06/16/16 22:54
11M12700	L16060650-01 B D1 20X 826-LOW	<2	1	20		06/16/16 23:26
11M12701	L16060650-02 B D1 2.5X 826-LOW	<2	1	2.5		06/16/16 23:58
11M12702	L16060650-06 B D1 2X 826-LOW	<2	1	2		06/17/16 00:29
11M12703	L16060834-01 B D1 20X 826-SPE	<2	1	20		06/17/16 01:01
11M12704	L16060834-04 B D1 20X 826-SPE	<2	1	20		06/17/16 01:33
11M12705	L16060834-05 B D1 20X 826-SPE	<2	1	20		06/17/16 02:05
11M12706	RINSE	NA	1	1		06/17/16 02:37
11M12707	WG573051-04 BLANK2 STD 624	NA	2	1		06/17/16 03:09
11M12708	L16060830-02 B D1 10X 624-SPE	<2	2	10		06/17/16 03:41
11M12709	RINSE	NA	1	1		06/17/16 04:12
11M12710	L16060910-01 A 624-SPE	10	2	1		06/17/16 04:44
11M12711	L16060910-02 A 624-SPE	10	2	1		06/17/16 05:16
11M12712	L16060910-03 A 624-SPE	7	2	1		06/17/16 05:48
11M12713	L16060910-04 A 624-SPE	5	2	1		06/17/16 06:20
11M12714	CCV	NA	1	1		06/17/16 06:52

Approved: June 21, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 061616

Analyst1: JDS Analyst2: NA

Method: 8260B SOP: MSV01 Rev: 23

Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID: 53787

Internal Standard: STD76597 Surrogate Standard: STD76383

CCV: STD76405 LCS: STD76540 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG573051

Comments: Samples 834-01, -04, -05, -06, -07 require further dilution.
Samples 650-01, -02 require reanalysis for carryover.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M12715	RINSE	NA	1	1		06/17/16 07:24
11M12716	RINSE	NA	1	1		06/17/16 07:56

Approved: June 21, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 061716
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD76597 Surrogate Standard: STD76383
CCV: STD76405 LCS: STD76540 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG573259

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M12717	WG573258-01 50ng BFB STD 8260	NA	1	1	STD76496	06/17/16 15:52
11M12718	WG573258-02 50ug/L CCV STD 8260	NA	1	1	STD76405	06/17/16 16:21
11M12719	WGXXXXXX-01 100ug/L A9-CCV STD 826	NA	1	1	STDXXXXX	06/17/16 16:53
11M12720	WG573259-01 BLANK STD 8260	NA	1	1		06/17/16 17:25
11M12721	WG573259-02 20ug/L LCS STD 8260	NA	1	1	STD76540	06/17/16 17:57
11M12722	WG573259-03 20ug/L LCS2 STD 8260	NA	1	1	STD76540	06/17/16 18:29
11M12723	L16060834-07 C D2 826-SPE	<2	1	100		06/17/16 19:01
11M12724	L16060650-01 C D1 20X 826-LOW	<2	1	20		06/17/16 19:33
11M12725	L16060650-02 C 00 2.5X 826-LOW	<2	1	2.5		06/17/16 20:05
11M12726	L16060834-06 C D2 500X 826-SPE	<2	1	500		06/17/16 20:37
11M12727	L16060834-01 C D2 200X 826-SPE	<2	1	200		06/17/16 21:09
11M12728	L16060834-04 C D2 200X 826-SPE	<2	1	200		06/17/16 21:41
11M12729	L16060834-05 C D2 200X 826-SPE	<2	1	200		06/17/16 22:13
11M12730	L16060900-04 A 826-SPE	<2	1	1		06/17/16 22:45
11M12731	L16060900-05 A 826-SPE	<2	1	1		06/17/16 23:16
11M12732	L16060900-06 A 826-SPE	<2	1	1		06/17/16 23:48
11M12733	L16060900-07 A 826-SPE	<2	1	1		06/18/16 00:20
11M12734	L16060900-08 A 826-SPE	<2	1	1		06/18/16 00:52
11M12735	L16060900-09 A 826-SPE	<2	1	1		06/18/16 01:24
11M12736	L16060787-10 A 826-SPE	<2	1	1		06/18/16 01:56
11M12737	L16060787-18 A 826-SPE	<2	1	1		06/18/16 02:28
11M12738	L16060787-19 A 826-SPE	<2	1	1		06/18/16 03:00
11M12739	L16060787-20 A 826-SPE	<2	1	1		06/18/16 03:31
11M12740	CCV	NA	1	1		06/18/16 04:03
11M12741	RINSE	NA	1	1		06/18/16 04:35
11M12742	RINSE	NA	1	1		06/18/16 05:07

Approved: June 23, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Data Checklist

Date: 14-JUN-2015
Analyst: TMB
Analyst: DLW
Method: 8260B/624
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 69930
Analytical Workgroups: WG527475

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
20-AUG-2015
Tiffany Bailey

Secondary Reviewer:
15-SEP-2015

CHECKLIST1 - Modified 03/05/2008
Generated: SEP-15-2015 14:33:53

Microbac Laboratories Inc.

Data Checklist

Date: 13-MAY-2016
Analyst: JDS
Analyst: NA
Method: 8260B
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 75133
Analytical Workgroups: WG568769

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	X
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
23-MAY-2016

Secondary Reviewer:
23-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-23-2016 15:39:32

Microbac Laboratories Inc.

Data Checklist

Date: 15-JUN-2016
Analyst: JDS
Analyst: NA
Method: 8260B/624
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 75734
Analytical Workgroups: WG572855

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	X
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	FJB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
21-JUN-2016

Secondary Reviewer:
21-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-21-2016 14:53:06

Microbac Laboratories Inc.

Data Checklist

Date: 16-JUN-2016
Analyst: JDS
Analyst: NA
Method: 8260B/624
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 75784
Analytical Workgroups: WG573051

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	FJB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	FJB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
21-JUN-2016

Secondary Reviewer:
21-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-21-2016 16:31:11

Microbac Laboratories Inc.

Data Checklist

Date: 17-JUN-2016
Analyst: JDS
Analyst: NA
Method: 8260B
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 75830
Analytical Workgroups: WG573259

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	FJB/WTD
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	FJB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
23-JUN-2016

Secondary Reviewer:
23-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-23-2016 14:53:12

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG572855

Login Number: L16060650

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW1-061016	01	06/10/16					06/16/2016	5.8	14		06/16/16	5.8	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4821289
Report generated 06/23/2016 14:51

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG573051

Login Number: L16060650

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
17WW08-061016	03	06/10/16					06/16/2016	6.4	14		06/16/16	6.4	14	
130-061016	04	06/10/16					06/16/2016	6.4	14		06/16/16	6.4	14	
130FD-061016	05	06/10/16					06/16/2016	6.4	14		06/16/16	6.4	14	
MW12-061016	06	06/10/16					06/17/2016	6.5	14		06/17/16	6.5	14	
18WW24-061016	07	06/10/16					06/16/2016	6.3	14		06/16/16	6.3	14	
TRIP BLANK	09	06/10/16					06/16/2016	6.8	14		06/16/16	6.8	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4821289
Report generated 06/23/2016 14:51

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG573259

Login Number: L16060650

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW1-061016	01	06/10/16					06/17/2016	7.5	14		06/17/16	7.5	14	
MW3-061016	02	06/10/16					06/17/2016	7.5	14		06/17/16	7.5	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4821289
Report generated 06/23/2016 14:51

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060650
Instrument Id: HPMS11
Workgroup (AAB#): WG573259

Method: 8260
CAL ID: HPMS11-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16060650-01	20.0	DL02	91.5	95.3	102	95.5
L16060650-02	2.50	DL01	91.6	97.4	103	95.8
WG573259-01	1.00	01	91.5	94.4	105	97.3
WG573259-02	1.00	01	95.1	99.3	102	99.5
WG573259-03	1.00	01	94.3	98.1	103	95.9

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4821297
Report generated: 06/23/2016 14:51

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060650
Instrument Id: HPMS11
Workgroup (AAB#): WG572855

Method: 8260
CAL ID: HPMS11-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16060650-01	10.0	DL01	93.0	98.8	107	99.4
WG572855-01	1.00	01	88.7	93.4	105	99.2
WG572855-02	1.00	01	90.0	97.5	102	98.2
WG572855-06	1.00	01	94.0	99.1	106	98.4

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4821297
Report generated: 06/23/2016 14:51

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060650
Instrument Id: HPMS11
Workgroup (AAB#): WG573051

Method: 8260
CAL ID: HPMS11-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16060650-03	1.00	01	88.3	93.3	104	97.6
L16060650-04	1.00	01	90.0	98.0	104	98.3
L16060650-05	1.00	01	89.0	95.2	100	96.5
L16060650-06	2.00	DL01	90.7	94.6	102	95.7
L16060650-07	1.00	01	90.6	95.9	104	96.4
L16060650-09	1.00	01	88.0	94.3	102	96.0
WG573051-01	1.00	01	90.3	94.2	104	98.2
WG573051-02	1.00	01	90.4	97.5	104	98.1
WG573051-03	1.00	01	90.4	96.7	99.9	98.5
WG573051-04	1.00	01	96.9	97.6	104	98.1

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4821297
Report generated: 06/23/2016 14:51

METHOD BLANK SUMMARY

Login Number: L16060650
Blank File ID: 11M12654
Prep Date: 06/15/16 16:53
Analyzed Date: 06/15/16 16:53
Analyst: JDS

Work Group: WG572855
Blank Sample ID: WG572855-01
Instrument ID: HPMS11
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572855-02	11M12655	06/15/16 17:25	01
MW1-061016	L16060650-01	11M12671	06/16/16 01:56	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4821290
Report generated 06/23/2016 14:51

METHOD BLANK SUMMARY

Login Number: L16060650
Blank File ID: 11M12687
Prep Date: 06/16/16 16:31
Analyzed Date: 06/16/16 16:31
Analyst: JDS

Work Group: WG573051
Blank Sample ID: WG573051-01
Instrument ID: HPMS11
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573051-02	11M12688	06/16/16 17:03	01
LCS2	WG573051-03	11M12689	06/16/16 17:35	01
TRIP BLANK	L16060650-09	11M12691	06/16/16 18:38	01
17WW08-061016	L16060650-03	11M12693	06/16/16 19:42	01
130-061016	L16060650-04	11M12694	06/16/16 20:14	01
130FD-061016	L16060650-05	11M12695	06/16/16 20:46	01
18WW24-061016	L16060650-07	11M12696	06/16/16 21:18	01
MW12-061016	L16060650-06	11M12702	06/17/16 00:29	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4821290
Report generated 06/23/2016 14:51

METHOD BLANK SUMMARY

Login Number: L16060650
Blank File ID: 11M12720
Prep Date: 06/17/16 17:25
Analyzed Date: 06/17/16 17:25
Analyst: JDS

Work Group: WG573259
Blank Sample ID: WG573259-01
Instrument ID: HPMS11
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573259-02	11M12721	06/17/16 17:57	01
LCS2	WG573259-03	11M12722	06/17/16 18:29	01
MW1-061016	L16060650-01	11M12724	06/17/16 19:33	DL02
MW3-061016	L16060650-02	11M12725	06/17/16 20:05	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4821290
Report generated 06/23/2016 14:51

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060650 Prep Date: 06/15/16 16:53 Sample ID: WG572855-01
Instrument ID: HPMS11 Run Date: 06/15/16 16:53 Prep Method: 5030B/5030C/503
File ID: 11M12654 Analyst: JDS Method: 8260B
Workgroup (AAB#): WG572855 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.343	1	J
Isopropylbenzene	0.250	1.00	0.250	1	U
p-Isopropyltoluene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 4821291
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Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060650 Prep Date: 06/15/16 16:53 Sample ID: WG572855-01
Instrument ID: HPMS11 Run Date: 06/15/16 16:53 Prep Method: 5030B/5030C/503
File ID: 11M12654 Analyst: JDS Method: 8260B
Workgroup (AAB#): WG572855 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	93.4	85 - 115	PASS
1,2-Dichloroethane-d4	88.7	70 - 120	PASS
Toluene-d8	99.2	85 - 120	PASS
4-Bromofluorobenzene	105	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4821291
23-JUN-2016 14:51

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16060650 Prep Date: 06/16/16 16:31 Sample ID: WG573051-01
Instrument ID: HPMS11 Run Date: 06/16/16 16:31 Prep Method: 5030B/5030C/503
File ID: 11M12687 Analyst: JDS Method: 8260B
Workgroup (AAB#): WG573051 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
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Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16060650 Prep Date: 06/16/16 16:31 Sample ID: WG573051-01
Instrument ID: HPMS11 Run Date: 06/16/16 16:31 Prep Method: 5030B/5030C/503
File ID: 11M12687 Analyst: JDS Method: 8260B
Workgroup (AAB#): WG573051 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.353	1	J
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	94.2	85 - 115	PASS
1,2-Dichloroethane-d4	90.3	70 - 120	PASS
Toluene-d8	98.2	85 - 120	PASS
4-Bromofluorobenzene	104	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4821291
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Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16060650 Prep Date: 06/17/16 17:25 Sample ID: WG573259-01
Instrument ID: HPMS11 Run Date: 06/17/16 17:25 Prep Method: 5030B/5030C/503
File ID: 11M12720 Analyst: JDS Method: 8260B
Workgroup (AAB#): WG573259 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
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Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060650 Prep Date: 06/17/16 17:25 Sample ID: WG573259-01
Instrument ID: HPMS11 Run Date: 06/17/16 17:25 Prep Method: 5030B/5030C/503
File ID: 11M12720 Analyst: JDS Method: 8260B
Workgroup (AAB#): WG573259 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	94.4	85 - 115	PASS
1,2-Dichloroethane-d4	91.5	70 - 120	PASS
Toluene-d8	97.3	85 - 120	PASS
4-Bromofluorobenzene	105	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4821291
23-JUN-2016 14:51

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060650 | Run Date: 06/15/2016 | Sample ID: WG572855-02
Instrument ID: HPMS11 | Run Time: 17:25 | Prep Method: 5030B/5030C/503
File ID: 11M12655 | Analyst: JDS | Method: 8260B
Workgroup (AAB#): WG572855 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD76540 | Cal ID: HPMS11-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	18.7	93.7	40 - 140	
Benzene	20.0	18.9	94.6	80 - 120	
Bromobenzene	20.0	20.2	101	75 - 125	
Bromochloromethane	20.0	21.6	108	65 - 130	
Bromodichloromethane	20.0	20.0	100	75 - 120	
Bromoform	20.0	21.0	105	70 - 130	
Bromomethane	20.0	21.3	106	30 - 145	
2-Butanone	20.0	18.6	93.0	30 - 150	
n-Butylbenzene	20.0	18.0	90.1	70 - 135	
sec-Butylbenzene	20.0	19.6	97.8	70 - 125	
tert-Butylbenzene	20.0	21.0	105	70 - 130	
Carbon disulfide	20.0	17.5	87.5	35 - 160	
Carbon tetrachloride	20.0	19.2	96.0	65 - 140	
Chlorobenzene	20.0	20.9	104	80 - 120	
Chlorodibromomethane	20.0	21.6	108	60 - 135	
Chloroethane	20.0	20.2	101	60 - 135	
Chloromethane	20.0	16.9	84.4	40 - 125	
2-Chlorotoluene	20.0	19.9	99.7	75 - 125	
4-Chlorotoluene	20.0	20.6	103	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	18.1	90.6	50 - 130	
1,2-Dibromoethane	20.0	21.2	106	80 - 120	
Dibromomethane	20.0	19.8	98.9	75 - 125	
1,2-Dichlorobenzene	20.0	21.0	105	70 - 120	
1,3-Dichlorobenzene	20.0	20.5	102	75 - 125	
1,4-Dichlorobenzene	20.0	20.7	103	75 - 125	
Dichlorodifluoromethane	20.0	17.8	89.1	30 - 155	
1,1-Dichloroethane	20.0	17.9	89.7	70 - 135	
1,2-Dichloroethane	20.0	19.9	99.3	70 - 130	
1,1-Dichloroethene	20.0	17.4	87.2	70 - 130	
cis-1,2-Dichloroethene	20.0	19.9	99.6	70 - 125	
trans-1,2-Dichloroethene	20.0	19.6	98.0	60 - 140	
1,2-Dichloropropane	20.0	19.4	97.2	75 - 125	
1,3-Dichloropropane	20.0	22.0	110	75 - 125	
2,2-Dichloropropane	20.0	19.5	97.4	70 - 135	
cis-1,3-Dichloropropene	20.0	22.1	111	70 - 130	
trans-1,3-Dichloropropene	20.0	20.5	102	55 - 140	
1,1-Dichloropropene	20.0	18.8	93.9	75 - 130	
Ethylbenzene	20.0	20.6	103	75 - 125	
2-Hexanone	20.0	17.1	85.5	55 - 130	
Hexachlorobutadiene	20.0	16.5	82.7	50 - 140	
Isopropylbenzene	20.0	20.5	103	75 - 125	

LCS - Modified 03/06/2008
PDF File ID: 4821534
Report generated: 06/23/2016 15:00

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060650 Run Date: 06/15/2016 Sample ID: WG572855-02
Instrument ID: HPMS11 Run Time: 17:25 Prep Method: 5030B/5030C/503
File ID: 11M12655 Analyst: JDS Method: 8260B
Workgroup (AAB#): WG572855 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD76540 Cal ID: HPMS11-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
p-Isopropyltoluene	20.0	19.8	99.0	75 - 130	
4-Methyl-2-pentanone	20.0	18.5	92.6	60 - 135	
Methylene chloride	20.0	19.4	97.2	55 - 140	
Naphthalene	20.0	17.7	88.5	55 - 140	
n-Propylbenzene	20.0	20.2	101	70 - 130	
Styrene	20.0	21.3	106	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	21.2	106	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	19.3	96.6	65 - 130	
Tetrachloroethene	20.0	20.2	101	45 - 150	
Toluene	20.0	20.2	101	75 - 120	
1,2,3-Trichlorobenzene	20.0	19.2	95.9	55 - 140	
1,2,4-Trichlorobenzene	20.0	19.3	96.5	65 - 135	
1,1,1-Trichloroethane	20.0	19.5	97.4	65 - 130	
1,1,2-Trichloroethane	20.0	21.0	105	75 - 125	
1,2,3-Trichloropropane	20.0	20.7	103	75 - 125	
1,2,4-Trimethylbenzene	20.0	20.3	102	75 - 130	
1,3,5-Trimethylbenzene	20.0	20.1	101	75 - 130	
Vinyl chloride	20.0	20.1	101	50 - 145	
o-Xylene	20.0	20.9	105	80 - 120	
m-,p-Xylene	40.0	41.1	103	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	97.5	85 - 115	PASS
1,2-Dichloroethane-d4	90.0	70 - 120	PASS
Toluene-d8	98.2	85 - 120	PASS
4-Bromofluorobenzene	102	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4821534
Report generated: 06/23/2016 15:00

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060650 Analyst: JDS Prep Method: 5030B/5030C/503
Instrument ID: HPMS11 Matrix: Water Method: 8260B
Workgroup (AAB#): WG573051 Units: ug/L
QC Key: DOD4 Lot #: STD76540

Sample ID: WG573051-02 LCS File ID: 11M12688 Run Date: 06/16/2016 17:03
Sample ID: WG573051-03 LCS2 File ID: 11M12689 Run Date: 06/16/2016 17:35

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	21.2	106	20.0	21.2	106	0.235	80 - 130	30	
1,1,1-Trichloroethane	20.0	19.9	99.7	20.0	19.4	97.0	2.74	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	19.1	95.5	20.0	19.3	96.4	0.905	65 - 130	30	
1,1,2-Trichloroethane	20.0	21.0	105	20.0	21.1	106	0.630	75 - 125	30	
1,1-Dichloroethane	20.0	18.4	91.9	20.0	18.2	91.0	0.924	70 - 135	30	
1,1-Dichloroethene	20.0	17.6	88.1	20.0	17.2	86.0	2.46	70 - 130	30	
1,1-Dichloropropene	20.0	19.7	98.4	20.0	18.9	94.7	3.86	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	20.6	103	20.0	20.4	102	0.512	55 - 140	30	
1,2,3-Trichloropropane	20.0	21.6	108	20.0	21.7	109	0.683	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	20.9	105	20.0	20.8	104	0.411	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	20.7	104	20.0	20.1	101	2.98	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	18.3	91.4	20.0	18.9	94.4	3.22	50 - 130	30	
1,2-Dibromoethane	20.0	21.3	106	20.0	21.6	108	1.38	80 - 120	30	
1,2-Dichlorobenzene	20.0	21.3	106	20.0	21.3	106	0.0894	70 - 120	30	
1,2-Dichloroethane	20.0	20.2	101	20.0	20.3	102	0.532	70 - 130	30	
1,2-Dichloropropane	20.0	19.4	97.2	20.0	19.2	95.8	1.48	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	20.7	104	20.0	20.3	101	2.08	75 - 130	30	
1,3-Dichlorobenzene	20.0	21.2	106	20.0	20.7	103	2.50	75 - 125	30	
1,3-Dichloropropane	20.0	21.7	108	20.0	22.2	111	2.41	75 - 125	30	
1,4-Dichlorobenzene	20.0	21.1	106	20.0	20.7	104	1.78	75 - 125	30	
2,2-Dichloropropane	20.0	20.0	99.8	20.0	19.2	96.2	3.66	70 - 135	30	
2-Butanone	20.0	18.8	93.9	20.0	19.7	98.5	4.78	30 - 150	30	
2-Chlorotoluene	20.0	20.2	101	20.0	19.7	98.6	2.66	75 - 125	30	
2-Hexanone	20.0	17.2	86.0	20.0	18.3	91.4	6.08	55 - 130	30	
4-Chlorotoluene	20.0	20.9	105	20.0	20.2	101	3.41	75 - 130	30	
4-Methyl-2-pentanone	20.0	19.1	95.7	20.0	19.4	97.0	1.38	60 - 135	30	
Acetone	20.0	18.9	94.6	20.0	20.5	102	7.97	40 - 140	30	
Benzene	20.0	19.2	95.8	20.0	18.9	94.3	1.64	80 - 120	30	
Bromobenzene	20.0	20.3	102	20.0	20.4	102	0.311	75 - 125	30	
Bromochloromethane	20.0	22.2	111	20.0	21.9	109	1.38	65 - 130	30	
Bromodichloromethane	20.0	20.2	101	20.0	20.4	102	1.16	75 - 120	30	
Bromoform	20.0	21.1	105	20.0	21.8	109	3.42	70 - 130	30	
Bromomethane	20.0	21.1	106	20.0	19.9	99.3	6.30	30 - 145	30	
Carbon disulfide	20.0	17.3	86.4	20.0	17.6	87.9	1.75	35 - 160	30	
Carbon tetrachloride	20.0	20.4	102	20.0	19.5	97.7	4.22	65 - 140	30	
Chlorobenzene	20.0	21.3	106	20.0	21.1	105	1.03	80 - 120	30	
Chloroethane	20.0	20.3	102	20.0	20.8	104	2.44	60 - 135	30	
Chloroform	20.0	19.2	95.9	20.0	19.1	95.7	0.173	65 - 135	30	
Chloromethane	20.0	18.7	93.4	20.0	18.8	94.0	0.663	40 - 125	30	
cis-1,2-Dichloroethene	20.0	20.3	102	20.0	19.7	98.7	2.78	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4821292
Report generated: 06/23/2016 14:51

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060650 Analyst: JDS Prep Method: 5030B/5030C/503
Instrument ID: HPMS11 Matrix: Water Method: 8260B
Workgroup (AAB#): WG573051 Units: ug/L
QC Key: DOD4 Lot #: STD76540

Sample ID: WG573051-02 LCS File ID: 11M12688 Run Date: 06/16/2016 17:03
Sample ID: WG573051-03 LCS2 File ID: 11M12689 Run Date: 06/16/2016 17:35

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	22.1	111	20.0	22.1	111	0.0207	70 - 130	30	
Chlorodibromomethane	20.0	22.0	110	20.0	21.9	110	0.217	60 - 135	30	
Dibromomethane	20.0	19.5	97.6	20.0	19.7	98.5	0.921	75 - 125	30	
Dichlorodifluoromethane	20.0	18.5	92.6	20.0	18.5	92.7	0.0933	30 - 155	30	
Ethylbenzene	20.0	20.1	101	20.0	20.4	102	1.26	75 - 125	30	
Hexachlorobutadiene	20.0	19.6	97.9	20.0	18.6	93.1	4.95	50 - 140	30	
Isopropylbenzene	20.0	21.3	107	20.0	21.0	105	1.57	75 - 125	30	
m-,p-Xylene	40.0	42.1	105	40.0	41.3	103	2.02	75 - 130	30	
Methylene chloride	20.0	19.0	95.1	20.0	19.3	96.4	1.44	55 - 140	30	
n-Butylbenzene	20.0	19.8	99.1	20.0	19.1	95.3	3.91	70 - 135	30	
n-Propylbenzene	20.0	21.2	106	20.0	20.5	103	3.21	70 - 130	30	
Naphthalene	20.0	19.0	94.9	20.0	19.8	98.9	4.11	55 - 140	30	
o-Xylene	20.0	21.1	106	20.0	21.3	107	1.05	80 - 120	30	
p-Isopropyltoluene	20.0	21.2	106	20.0	20.3	102	4.36	75 - 130	30	
sec-Butylbenzene	20.0	21.1	106	20.0	20.2	101	4.27	70 - 125	30	
Styrene	20.0	21.4	107	20.0	21.4	107	0.247	65 - 135	30	
tert-Butylbenzene	20.0	22.1	110	20.0	20.7	103	6.69	70 - 130	30	
Tetrachloroethene	20.0	21.0	105	20.0	21.0	105	0.198	45 - 150	30	
Toluene	20.0	20.4	102	20.0	20.2	101	1.02	75 - 120	30	
trans-1,2-Dichloroethene	20.0	20.1	101	20.0	19.4	96.8	3.93	60 - 140	30	
trans-1,3-Dichloropropene	20.0	20.5	103	20.0	20.5	103	0.0312	55 - 140	30	
Trichloroethene	20.0	21.7	108	20.0	21.7	109	0.207	70 - 125	30	
Trichlorofluoromethane	20.0	19.8	99.0	20.0	19.8	99.0	0.0045	60 - 145	30	
Vinyl chloride	20.0	21.0	105	20.0	21.4	107	1.57	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	90.4	90.4	70 - 120	PASS
Dibromofluoromethane	97.5	96.7	85 - 115	PASS
4-Bromofluorobenzene	104	99.9	75 - 120	PASS
Toluene-d8	98.1	98.5	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4821292
Report generated: 06/23/2016 14:51

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060650 Analyst: JDS Prep Method: 5030B/5030C/503
Instrument ID: HPMS11 Matrix: Water Method: 8260B
Workgroup (AAB#): WG573259 Units: ug/L
QC Key: DOD4 Lot #: STD76540

Sample ID: WG573259-02 LCS File ID: 11M12721 Run Date: 06/17/2016 17:57
Sample ID: WG573259-03 LCS2 File ID: 11M12722 Run Date: 06/17/2016 18:29

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	22.8	114	20.0	21.4	107	6.59	80 - 130	30	
1,1,1-Trichloroethane	20.0	21.5	108	20.0	20.6	103	4.39	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	18.8	94.1	20.0	19.9	99.5	5.54	65 - 130	30	
1,1,2-Trichloroethane	20.0	22.3	112	20.0	21.4	107	4.04	75 - 125	30	
1,1-Dichloroethane	20.0	18.8	93.8	20.0	18.1	90.4	3.62	70 - 135	30	
1,1-Dichloroethene	20.0	18.1	90.6	20.0	16.6	83.0	8.76	70 - 130	30	
1,1-Dichloropropene	20.0	19.6	97.9	20.0	19.0	95.1	2.85	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	21.6	108	20.0	21.2	106	1.75	55 - 140	30	
1,2,3-Trichloropropane	20.0	22.4	112	20.0	22.8	114	1.79	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	20.2	101	20.0	20.9	105	3.39	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	21.2	106	20.0	20.8	104	1.77	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	19.8	99.2	20.0	20.3	102	2.34	50 - 130	30	
1,2-Dibromoethane	20.0	22.2	111	20.0	22.2	111	0.251	80 - 120	30	
1,2-Dichlorobenzene	20.0	21.9	109	20.0	21.9	109	0.138	70 - 120	30	
1,2-Dichloroethane	20.0	22.3	112	20.0	22.1	110	1.15	70 - 130	30	
1,2-Dichloropropane	20.0	20.5	102	20.0	19.7	98.7	3.58	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	21.1	105	20.0	21.1	105	0.166	75 - 130	30	
1,3-Dichlorobenzene	20.0	21.3	107	20.0	21.2	106	0.808	75 - 125	30	
1,3-Dichloropropane	20.0	23.2	116	20.0	22.3	112	4.04	75 - 125	30	
1,4-Dichlorobenzene	20.0	21.4	107	20.0	21.2	106	0.988	75 - 125	30	
2,2-Dichloropropane	20.0	20.0	100	20.0	18.7	93.4	7.06	70 - 135	30	
2-Butanone	20.0	20.2	101	20.0	21.6	108	6.58	30 - 150	30	
2-Chlorotoluene	20.0	21.1	105	20.0	21.2	106	0.258	75 - 125	30	
2-Hexanone	20.0	18.5	92.5	20.0	18.7	93.5	1.01	55 - 130	30	
4-Chlorotoluene	20.0	20.3	102	20.0	20.4	102	0.468	75 - 130	30	
4-Methyl-2-pentanone	20.0	19.8	99.0	20.0	20.9	105	5.46	60 - 135	30	
Acetone	20.0	22.2	111	20.0	23.5	117	5.60	40 - 140	30	
Benzene	20.0	19.7	98.3	20.0	18.8	94.1	4.40	80 - 120	30	
Bromobenzene	20.0	20.7	103	20.0	20.6	103	0.179	75 - 125	30	
Bromochloromethane	20.0	23.4	117	20.0	22.2	111	5.21	65 - 130	30	
Bromodichloromethane	20.0	22.0	110	20.0	21.6	108	1.89	75 - 120	30	
Bromoform	20.0	23.4	117	20.0	23.1	116	1.13	70 - 130	30	
Bromomethane	20.0	21.0	105	20.0	19.3	96.7	8.27	30 - 145	30	
Carbon disulfide	20.0	17.7	88.3	20.0	17.1	85.6	3.18	35 - 160	30	
Carbon tetrachloride	20.0	22.2	111	20.0	21.0	105	5.66	65 - 140	30	
Chlorobenzene	20.0	22.2	111	20.0	21.0	105	5.53	80 - 120	30	
Chloroethane	20.0	20.5	103	20.0	20.2	101	1.61	60 - 135	30	
Chloroform	20.0	20.5	102	20.0	19.7	98.5	3.94	65 - 135	30	
Chloromethane	20.0	19.6	97.8	20.0	19.3	96.3	1.56	40 - 125	30	
cis-1,2-Dichloroethene	20.0	20.9	105	20.0	20.0	99.8	4.81	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4821292
Report generated: 06/23/2016 14:51

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060650 Analyst: JDS Prep Method: 5030B/5030C/503
Instrument ID: HPMS11 Matrix: Water Method: 8260B
Workgroup (AAB#): WG573259 Units: ug/L
QC Key: DOD4 Lot #: STD76540

Sample ID: WG573259-02 LCS File ID: 11M12721 Run Date: 06/17/2016 17:57
Sample ID: WG573259-03 LCS2 File ID: 11M12722 Run Date: 06/17/2016 18:29

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	22.6	113	20.0	21.5	108	5.08	70 - 130	30	
Chlorodibromomethane	20.0	23.4	117	20.0	23.3	116	0.551	60 - 135	30	
Dibromomethane	20.0	21.9	109	20.0	21.1	105	3.60	75 - 125	30	
Dichlorodifluoromethane	20.0	19.0	95.2	20.0	18.7	93.6	1.70	30 - 155	30	
Ethylbenzene	20.0	21.3	107	20.0	20.2	101	5.52	75 - 125	30	
Hexachlorobutadiene	20.0	19.8	98.8	20.0	19.6	98.2	0.529	50 - 140	30	
Isopropylbenzene	20.0	22.6	113	20.0	21.4	107	5.33	75 - 125	30	
m-,p-Xylene	40.0	43.2	108	40.0	41.4	104	4.24	75 - 130	30	
Methylene chloride	20.0	19.9	99.3	20.0	19.2	95.8	3.60	55 - 140	30	
n-Butylbenzene	20.0	19.8	99.1	20.0	19.8	99.0	0.160	70 - 135	30	
n-Propylbenzene	20.0	21.4	107	20.0	21.1	105	1.32	70 - 130	30	
Naphthalene	20.0	19.7	98.3	20.0	20.2	101	2.74	55 - 140	30	
o-Xylene	20.0	21.9	110	20.0	20.5	102	6.66	80 - 120	30	
p-Isopropyltoluene	20.0	21.4	107	20.0	21.3	107	0.449	75 - 130	30	
sec-Butylbenzene	20.0	21.3	107	20.0	21.0	105	1.26	70 - 125	30	
Styrene	20.0	22.4	112	20.0	21.5	107	4.26	65 - 135	30	
tert-Butylbenzene	20.0	21.9	110	20.0	22.2	111	1.28	70 - 130	30	
Tetrachloroethene	20.0	21.9	109	20.0	20.3	102	7.40	45 - 150	30	
Toluene	20.0	21.0	105	20.0	20.0	100	4.61	75 - 120	30	
trans-1,2-Dichloroethene	20.0	19.9	99.4	20.0	19.1	95.5	4.03	60 - 140	30	
trans-1,3-Dichloropropene	20.0	21.2	106	20.0	20.8	104	2.10	55 - 140	30	
Trichloroethene	20.0	23.5	117	20.0	22.4	112	4.65	70 - 125	30	
Trichlorofluoromethane	20.0	21.8	109	20.0	20.9	105	4.14	60 - 145	30	
Vinyl chloride	20.0	22.9	114	20.0	22.1	111	3.38	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	95.1	94.3	70 - 120	PASS
Dibromofluoromethane	99.3	98.1	85 - 115	PASS
4-Bromofluorobenzene	102	103	75 - 120	PASS
Toluene-d8	99.5	95.9	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4821292
Report generated: 06/23/2016 14:51

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060650
Instrument: HPMS11
Analyst: TMB /DLW
Workgroup: WG527475

Tune ID: WG527475-01
Run Date: 06/14/2015
Run Time: 09:34
File ID: 11M08234
Cal ID: HPMS11 - 14-JUN-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.9	7754	PASS
75.0	95.0	30.0	60.0	49.9	19472	PASS
95.0	95.0	100	100	100	38997	PASS
96.0	95.0	5.00	9.00	7.00	2731	PASS
173	174	0	2.00	0.338	111	PASS
174	95.0	50.0	100	84.2	32837	PASS
175	174	5.00	9.00	7.18	2357	PASS
176	174	95.0	101	97.9	32146	PASS
177	176	5.00	9.00	7.11	2284	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG527475-02	STD	01	06/14/2015 09:58	
WG527475-03	STD	01	06/14/2015 10:30	
WG527475-04	STD	01	06/14/2015 11:02	
WG527475-05	STD-CCV	01	06/14/2015 11:34	
WG527475-06	STD	01	06/14/2015 12:06	
WG527475-07	STD	01	06/14/2015 12:38	
WG527475-08	STD	01	06/14/2015 13:10	
WG527475-09	STD	01	06/14/2015 13:42	
WG527475-10	SSCV	01	06/14/2015 15:18	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4821294
Report generated 06/23/2016 14:51

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060650
Instrument: HPMS11
Analyst: JDS
Workgroup: WG568769

Tune ID: WG568769-01
Run Date: 05/13/2016
Run Time: 14:15
File ID: 11M11836
Cal ID: HPMS11 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	24.2	11638	PASS
75.0	95.0	30.0	60.0	50.2	24088	PASS
95.0	95.0	100	100	100	48016	PASS
96.0	95.0	5.00	9.00	6.26	3008	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	86.2	41402	PASS
175	174	5.00	9.00	8.26	3421	PASS
176	174	95.0	101	97.3	40288	PASS
177	176	5.00	9.00	6.92	2789	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG568769-02	STD	01	05/13/2016 14:40	
WG568769-03	STD	01	05/13/2016 15:12	
WG568769-04	STD	01	05/13/2016 15:43	
WG568769-05	STD	01	05/13/2016 16:15	
WG568769-06	STD	01	05/13/2016 16:47	
WG568769-07	STD	01	05/13/2016 17:19	
WG568769-08	STD-CCV	01	05/13/2016 17:51	
WG568769-09	STD	01	05/13/2016 18:22	
WG568769-10	STD	01	05/13/2016 18:54	
WG568769-11	STD	01	05/13/2016 19:26	
WG568769-12	SSCV	01	05/13/2016 20:30	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4821294
Report generated 06/23/2016 14:51

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060650
Instrument: HPMS11
Analyst: JDS
Workgroup: WG572854

Tune ID: WG572854-01
Run Date: 06/15/2016
Run Time: 14:48
File ID: 11M12650
Cal ID: HPMS11 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.6	10714	PASS
75.0	95.0	30.0	60.0	49.2	24408	PASS
95.0	95.0	100	100	100	49597	PASS
96.0	95.0	5.00	9.00	6.88	3414	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	88.1	43714	PASS
175	174	5.00	9.00	7.13	3117	PASS
176	174	95.0	101	97.9	42776	PASS
177	176	5.00	9.00	6.50	2781	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG572854-02	CCV	01	06/15/2016 15:49	
WG572855-01	BLANK	01	06/15/2016 16:53	
WG572855-02	LCS	01	06/15/2016 17:25	
L16060650-01	MW1-061016	DL01	06/16/2016 01:56	
WG572855-06	BLANK2	01	06/16/2016 03:31	*

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4821294
Report generated 06/23/2016 14:51

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060650
Instrument: HPMS11
Analyst: JDS
Workgroup: WG573050

Tune ID: WG573050-01
Run Date: 06/16/2016
Run Time: 14:30
File ID: 11M12683
Cal ID: HPMS11 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.8	5543	PASS
75.0	95.0	30.0	60.0	50.3	12778	PASS
95.0	95.0	100	100	100	25380	PASS
96.0	95.0	5.00	9.00	6.91	1754	PASS
173	174	0	2.00	0.423	107	PASS
174	95.0	50.0	100	99.6	25285	PASS
175	174	5.00	9.00	8.06	2037	PASS
176	174	95.0	101	96.6	24437	PASS
177	176	5.00	9.00	6.11	1493	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573050-02	CCV	01	06/16/2016 15:27	
WG573051-01	BLANK	01	06/16/2016 16:31	
WG573051-02	LCS	01	06/16/2016 17:03	
WG573051-03	LCS2	01	06/16/2016 17:35	
L16060650-09	TRIP BLANK	01	06/16/2016 18:38	
L16060650-03	17WW08-061016	01	06/16/2016 19:42	
L16060650-04	130-061016	01	06/16/2016 20:14	
L16060650-05	130FD-061016	01	06/16/2016 20:46	
L16060650-07	18WW24-061016	01	06/16/2016 21:18	
L16060650-06	MW12-061016	DL01	06/17/2016 00:29	
WG573051-04	BLANK2	01	06/17/2016 03:09	*

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4821294
Report generated 06/23/2016 14:51

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060650
Instrument: HPMS11
Analyst: JDS
Workgroup: WG573258

Tune ID: WG573258-01
Run Date: 06/17/2016
Run Time: 15:52
File ID: 11M12717
Cal ID: HPMS11 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.1	6774	PASS
75.0	95.0	30.0	60.0	49.8	16790	PASS
95.0	95.0	100	100	100	33736	PASS
96.0	95.0	5.00	9.00	6.67	2249	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	93.7	31597	PASS
175	174	5.00	9.00	7.80	2463	PASS
176	174	95.0	101	98.7	31186	PASS
177	176	5.00	9.00	6.80	2122	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573258-02	CCV	01	06/17/2016 16:21	
WG573259-01	BLANK	01	06/17/2016 17:25	
WG573259-02	LCS	01	06/17/2016 17:57	
WG573259-03	LCS2	01	06/17/2016 18:29	
L16060650-01	MW1-061016	DL02	06/17/2016 19:33	
L16060650-02	MW3-061016	DL01	06/17/2016 20:05	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4821294
Report generated 06/23/2016 14:51

Calibration Table Report
Method: A9FOOWT.M
Title: Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Calibration: Thu Aug 20 11:41:47 2015
Curve: WG527475
Calibration Files

	Compound	5 11M08235.D	20 11M08236.D	50 11M08237.D	100 11M08238.D	200 11M08239.D	300 11M08240.D	400 11M08241.D	500 11M08242.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD											
T	Acetonitrile	0.024	0.022	0.018	0.018	0.018	0.018	0.018	0.018	0.019	13.425		
T	3-Chloro-1-propene	0.380	0.372	0.371	0.380	0.375	0.379	0.368	0.385	0.376	1.470		
T	2-Chloro-1,3-butadiene	0.421	0.418	0.426	0.444	0.450	0.482	0.477	0.496	0.452	6.648		
T	Methacrylonitrile	0.124	0.115	0.112	0.114	0.112	0.114	0.120	0.119	0.116	3.530		
T	Isobutyl Alcohol		0.006	0.006	0.006	0.005	0.006	0.006	0.006	0.006	5.929		
T	1-Butanol			0.003	0.003	0.003	0.003	0.003	0.003	0.003	5.214		
T	Cyclohexanone		0.031	0.028	0.031	0.030	0.027	0.028	0.026	0.029	6.768		
T	2-Nitropropane			0.028	0.032	0.035	0.039	0.042	0.044	0.037	16.955	0.996	
T	Ethyl Acetate	0.133	0.145	0.133	0.140	0.137	0.136	0.141	0.139	0.138	3.039		
T	Methyl methacrylate	0.151	0.161	0.151	0.158	0.158	0.161	0.170	0.172	0.160	4.681		
I	Chlorobenzene-d5	ISTD											
I	1,4-Dichlorobenzene-d4	ISTD											

Thu Aug 20 11:49:17 2015

Calibration Table Report
Method: 8260WT.M
Title: 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Calibration: Sat May 14 18:45:57 2016
Curve: WG568769
Calibration Files

	Compound	0.3 11M11837.D	0.4 11M11838.D	1 11M11839.D	2 11M11840.D	5 11M11841.D	20 11M11842.D	50 11M11843.D	100 11M11844.D	200 11M11845.D	300 11M11846.D	Avg	%RSD	Linear	Quadratic
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.345	0.368	0.326	0.431	0.400	0.424	0.417	0.424	0.392	10.308		
P	Chloromethane			0.348	0.363	0.289	0.310	0.276	0.296	0.305	0.324	0.314	9.474		
C	Vinyl Chloride		0.275	0.241	0.249	0.244	0.268	0.250	0.271	0.271	0.276	0.261	5.458		
T	1,3-Butadiene					0.242	0.284	0.269	0.264	0.256	0.240	0.259	6.530		
T	Bromomethane			0.167	0.174	0.164	0.180	0.165	0.182	0.194	0.206	0.179	8.292		
T	Chloroethane			0.164	0.165	0.151	0.174	0.161	0.171	0.173	0.181	0.167	5.524		
T	Trichlorofluoromethane		0.514	0.523	0.537	0.496	0.552	0.498	0.524	0.514	0.514	0.519	3.376		
T	Diethyl ether			0.189	0.191	0.195	0.196	0.188	0.193		0.192	0.192	1.552		
T	Isoprene					0.299	0.331	0.317	0.323	0.325	0.325	0.320	3.522		
T	Acrolein			0.013	0.022	0.024	0.024	0.024	0.025		0.027	0.023	19.436	0.999	
T	1,1,2-Trichloro-1,2,2-Trifluor			0.261	0.245	0.234	0.268	0.245	0.252	0.254	0.257	0.252	4.225		
T	Acetone					0.063	0.067	0.058	0.057	0.057	0.054	0.059	7.931		
C	1,1-Dichloroethene		0.459	0.452	0.460	0.429	0.492	0.441	0.464	0.461	0.461	0.458	3.810		
T	Tert-Butyl Alcohol			0.014	0.015	0.017	0.018	0.017	0.017		0.017	0.016	9.673		
T	Dimethyl Sulfide					0.169	0.185	0.186	0.185	0.188	0.184	0.183	3.765		
T	Iodomethane				0.043	0.072	0.164	0.206	0.217	0.219	0.208	0.162	45.603		0.999
T	Methyl acetate				0.182	0.317	0.215	0.178	0.176	0.169	0.168	0.201	26.745		1.000
T	Methylene Chloride			0.239	0.256	0.230	0.243	0.224	0.232	0.234	0.238	0.237	4.076		
T	Carbon Disulfide			0.737	0.762	0.714	0.798	0.783	0.783	0.782	0.770	0.766	3.624		
T	Acrylonitrile			0.072	0.069	0.075	0.085	0.081	0.085		0.090	0.080	9.576		
T	Methyl Tert Butyl Ether			0.568	0.546	0.564	0.650	0.585	0.606	0.612	0.595	0.591	5.543		
T	trans-1,2-Dichloroethene		0.288	0.230	0.264	0.229	0.263	0.242	0.251	0.254	0.260	0.253	7.263		
T	n-Hexane				0.424	0.377	0.450	0.431	0.426	0.424	0.422	0.422	5.186		
T	Diisopropyl ether			1.034	1.075	1.083	1.055	1.046	1.062		1.015	1.053	2.218		
T	Vinyl Acetate					0.235	0.391	0.393	0.395	0.430	0.431	0.379	19.260	0.999	
P	1,1-Dichloroethane		0.463	0.517	0.527	0.505	0.535	0.495	0.513	0.511	0.508	0.508	4.023		
T	Ethyl-Tert-Butyl ether			0.815	0.854	0.881	0.876	0.855	0.873		0.844	0.857	2.667		
T	2-Butanone					0.079	0.097	0.087	0.092	0.092	0.091	0.090	6.720		
T	Propionitrile			0.023	0.025	0.026	0.029	0.027	0.027		0.027	0.026	7.381		
T	2,2-Dichloropropane		0.325	0.372	0.435	0.395	0.406	0.386	0.422	0.418	0.419	0.398	8.479		
T	cis-1,2-Dichloroethene		0.276	0.266	0.289	0.269	0.294	0.271	0.280	0.284	0.285	0.279	3.456		
C	Chloroform	0.587	0.483	0.491	0.514	0.480	0.509	0.470	0.486	0.489	0.482	0.499	6.767		
T	1-Bromopropane			0.014	0.041	0.045	0.047	0.048	0.049	0.050	0.050	0.043	28.190	1.000	
T	Bromochloromethane		0.115	0.140	0.169	0.167	0.188	0.172	0.179	0.180	0.181	0.166	14.065		
T	Tetrahydrofuran			0.074	0.061	0.058	0.067	0.061	0.062		0.059	0.063	8.769		
S	Dibromofluoromethane				0.251	0.266	0.284	0.268	0.284	0.285	0.278	0.274	4.605		
T	1,1,1-Trichloroethane		0.475	0.478	0.508	0.471	0.515	0.477	0.502	0.499	0.495	0.491	3.293		
T	Cyclohexane		0.477	0.485	0.547	0.509	0.574	0.551	0.560	0.558	0.556	0.535	6.606		
T	1,1-Dichloropropene		0.342	0.350	0.346	0.332	0.370	0.339	0.358	0.359	0.362	0.351	3.562		
T	Carbon Tetrachloride		0.409	0.457	0.522	0.465	0.518	0.473	0.496	0.492	0.486	0.480	7.177		
T	Tert-Amyl-Methyl ether			0.565	0.596	0.603	0.611	0.588	0.605		0.6	0.59537	2.5818		
S	1,2-Dichloroethane-d4			0.315	0.304	0.32	0.326	0.303	0.319	0.31	0.298	0.31197	3.15125		
T	1,2-Dichloroethane		0.388	0.391	0.419	0.395	0.441	0.402	0.413	0.409	0.391	0.40536	4.2274		
T	Benzene		1.058	0.952	1.016	0.923	0.996	0.908	0.943	0.931	0.914	0.96002	5.38884		
T	Trichloroethene		0.308	0.317	0.329	0.306	0.322	0.294	0.313	0.309	0.311	0.31204	3.21019		
T	Methylcyclohexane		0.332	0.37	0.389	0.35	0.411	0.401	0.4	0.405	0.407	0.3851	7.28708		
C	1,2-Dichloropropane		0.259	0.262	0.273	0.254	0.276	0.257	0.268	0.27	0.273	0.26575	2.95636		
T	1,4-Dioxane				0.001	0.001	0.002	0.001	0.002		0.002	0.0014	19.4617	0.999	
T	Bromodichloromethane		0.346	0.346	0.373	0.362	0.4	0.369	0.387	0.389	0.385	0.37307	5.09783		
T	Dibromomethane		0.118	0.136	0.135	0.137	0.149	0.137	0.146	0.145	0.144	0.13848	6.69192		
T	2-Chloroethyl Vinyl Ether					0.112	0.138	0.128	0.136	0.138	0.135	0.13098	7.7176		
T	4-Methyl-2-Pentanone					0.06	0.08	0.073	0.076	0.077	0.077	0.07387	9.67651		
T	cis-1,3-Dichloropropene		0.326	0.338	0.358	0.357	0.406	0.379	0.395	0.401	0.399	0.37315	7.91395		
T	Dimethyl Disulfide					0.185	0.229	0.227	0.233	0.238	0.235	0.22454	8.74309		

I	Chlorobenzene-d5	ISTD												
S	Toluene-d8				1.101	1.093	1.115	1.056	1.103	1.092	1.044	1.08625	2.42896	
C	Toluene		1.309	1.253	1.287	1.269	1.347	1.249	1.287	1.241	1.149	1.2656	4.33323	
T	Ethyl Methacrylate			0.234	0.233	0.25	0.299	0.285	0.289	0.291	0.281	0.27024	9.93745	
T	trans-1,3-Dichloropropene			0.335	0.388	0.387	0.448	0.418	0.432	0.43	0.412	0.40623	8.82781	
T	1,1,2-Trichloroethane		0.222	0.201	0.243	0.21	0.246	0.221	0.228	0.227	0.221	0.22442	6.30977	
T	2-Hexanone					0.137	0.179	0.165	0.172	0.172	0.165	0.16482	8.91224	
T	1,3-Dichloropropane		0.337	0.338	0.351	0.355	0.396	0.361	0.374	0.373	0.358	0.36039	5.16222	
T	Tetrachloroethene		0.274	0.287	0.317	0.286	0.306	0.286	0.3	0.299	0.294	0.29431	4.41886	
T	Dibromochloromethane		0.283	0.297	0.336	0.33	0.378	0.354	0.372	0.372	0.359	0.3423	9.88235	
T	1,2-Dibromoethane		0.232	0.182	0.228	0.214	0.243	0.224	0.233	0.235	0.232	0.22485	7.92714	
T	1-Chlorohexane		0.37	0.399	0.414	0.391	0.442	0.429	0.44	0.438	0.432	0.41726	6.09034	
P	Chlorobenzene		0.927	0.917	0.998	0.932	0.976	0.909	0.93	0.902	0.853	0.92715	4.48215	
T	1,1,1,2-Tetrachloroethane		0.341	0.361	0.405	0.366	0.388	0.371	0.384	0.385	0.376	0.37515	4.87731	
C	Ethylbenzene		0.453	0.457	0.512	0.463	0.495	0.466	0.482	0.479	0.472	0.47542	3.94078	
T	m-,p-Xylene		0.619	0.583	0.605	0.564	0.604	0.568	0.579	0.559	0.522	0.57798	5.08853	
T	o-Xylene		0.539	0.549	0.574	0.539	0.6	0.561	0.574	0.57	0.557	0.56249	3.43829	
T	Styrene		0.865	0.848	0.897	0.918	1.018	0.955	0.985	0.959	0.917	0.92933	5.96246	
P	Bromoform			0.172	0.189	0.185	0.226	0.21	0.225	0.226	0.228	0.20747	10.9157	
T	Isopropylbenzene		1.515	1.456	1.567	1.46	1.592	1.493	1.534	1.449	1.323	1.48754	5.34769	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.288	0.357	0.369	0.371	0.441	0.396	0.412	0.428	0.442	0.38931	12.6902	
S	p-Bromofluorobenzene				0.772	0.784	0.794	0.716	0.767	0.789	0.773	0.77065	3.38935	
T	1,2,3-Trichloropropane			0.087	0.129	0.138	0.151	0.137	0.142	0.148	0.148	0.13515	15.3522	0.999
T	trans-1,4-Dichloro-2-Butene			0.105	0.117	0.124	0.177	0.178	0.184	0.192	0.193	0.15883	23.0996	0.999
T	n-Propylbenzene		2.87	2.8	3.077	2.949	3.134	2.886	2.979	2.836	2.526	2.89527	6.10377	
T	Bromobenzene	0.663	0.778	0.81	0.798	0.765	0.784	0.718	0.752	0.769	0.76	0.75973	5.57443	
T	1,3,5-Trimethylbenzene		2.338	2.056	2.263	2.172	2.357	2.166	2.252	2.223	2.059	2.20939	4.86261	
T	2-Chlorotoluene		2.158	2.096	2.122	2.033	2.128	1.936	2.002	1.954	1.82	2.0279	5.4704	
T	4-Chlorotoluene		1.782	1.755	1.937	1.808	1.916	1.763	1.832	1.838	1.717	1.8165	4.03452	
T	a-Methylstyrene			1	1.066	1.101	1.241	1.231	1.235	1.242	1.208	1.16555	8.18507	
T	tert-Butylbenzene		0.378	0.44	0.48	0.489	0.498	0.458	0.483	0.49	0.497	0.46809	8.31778	
T	1,2,4-Trimethylbenzene		2.159	2.195	2.274	2.295	2.472	2.234	2.309	2.244	2.067	2.24981	4.97706	
T	sec-Butylbenzene			2.593	2.734	2.647	2.87	2.634	2.723	2.617	2.404	2.65291	5.05975	
T	p-Isopropyltoluene			2.247	2.592	2.45	2.641	2.43	2.506	2.404	2.226	2.43674	6.05243	
T	1,3-Dichlorobenzene		1.487	1.488	1.538	1.46	1.53	1.398	1.451	1.446	1.406	1.46732	3.33475	
T	1,4-Dichlorobenzene	1.482	1.601	1.511	1.569	1.484	1.538	1.404	1.456	1.434	1.395	1.4873	4.59741	
T	n-Butylbenzene		2.048	2.099	2.295	2.049	2.32	2.134	2.224	2.136	2.021	2.14721	5.09289	
T	1,2-Dichlorobenzene	1.33	1.26	1.333	1.432	1.33	1.406	1.296	1.343	1.326	1.31	1.33665	3.71841	
T	1,2-Dibromo-3-Chloropropane				0.057	0.079	0.096	0.081	0.086	0.087	0.091	0.08248	15.3444	0.999
T	1,2,4-Trichlorobenzene		0.927	0.903	0.957	0.956	1.042	0.972	0.998	1.002	1.047	0.97808	4.96993	
T	Hexachlorobutadiene		0.393	0.381	0.451	0.418	0.447	0.415	0.441	0.442	0.49	0.43089	7.64497	
T	Naphthalene		1.885	1.633	1.765	1.712	2.026	1.824	1.878	1.821	1.794	1.81543	6.15168	
T	1,2,3-Trichlorobenzene	0.854	0.957	0.865	0.918	0.834	0.946	0.86	0.889	0.912	0.943	0.89764	4.8559	

Tue May 17 13:57:02 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060650 Run Date: 05/13/2016 Sample ID: WG568769-12
Instrument ID: HPMS11 Run Time: 20:30 Method: 8260B
File ID: 11M11848 Analyst: JDS QC Key: DOD4
ICal Workgroup: WG568769 Cal ID: HPMS11 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.6	ug/L	0.475	4.80	20	
1,1-Dichloroethene	CCC	50.0	47.5	ug/L	0.435	4.90	20	
1,2-Dichloropropane	CCC	50.0	52.8	ug/L	0.281	5.60	20	
Ethylbenzene	CCC	50.0	52.4	ug/L	0.498	4.80	20	
Toluene	CCC	50.0	53.8	ug/L	1.36	7.50	20	
Vinyl Chloride	CCC	50.0	56.1	ug/L	0.292	12.2	20	
Bromoform	SPCC	50.0	49.8	ug/L	0.207	0.300	20	
Chlorobenzene	SPCC	50.0	53.3	ug/L	0.988	6.60	20	
Chloromethane	SPCC	50.0	55.1	ug/L	0.346	10.2	20	
1,1-Dichloroethane	SPCC	50.0	48.5	ug/L	0.493	3.00	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	54.9	ug/L	0.428	9.90	20	
Acetone		50.0	49.7	ug/L	0.0590	0.700	20	
Benzene		50.0	51.2	ug/L	0.983	2.40	20	
Bromobenzene		50.0	51.6	ug/L	0.785	3.30	20	
Bromochloromethane		50.0	53.9	ug/L	0.179	7.80	20	
Bromodichloromethane		50.0	49.5	ug/L	0.370	0.900	20	
Bromomethane		50.0	50.5	ug/L	0.181	1.00	20	
2-Butanone		50.0	50.3	ug/L	0.0904	0.700	20	
n-Butylbenzene		50.0	53.9	ug/L	2.31	7.80	20	
sec-Butylbenzene		50.0	55.9	ug/L	2.97	11.8	20	
tert-Butylbenzene		50.0	56.5	ug/L	0.529	13.1	20	
Carbon Disulfide		50.0	44.7	ug/L	0.685	10.6	20	
Carbon Tetrachloride		50.0	47.3	ug/L	0.454	5.30	20	
Dibromochloromethane		50.0	52.5	ug/L	0.360	5.10	20	
Chloroethane		50.0	58.9	ug/L	0.197	17.7	20	
2-Chlorotoluene		50.0	52.8	ug/L	2.14	5.50	20	
4-Chlorotoluene		50.0	55.4	ug/L	2.01	10.8	20	
1,2-Dibromo-3-Chloropropane		50.0	48.1	ug/L	0.0844	3.80	20	
1,2-Dibromoethane		50.0	52.6	ug/L	0.237	5.30	20	
Dibromomethane		50.0	48.0	ug/L	0.133	3.90	20	
1,2-Dichlorobenzene		50.0	53.6	ug/L	1.43	7.20	20	
1,3-Dichlorobenzene		50.0	52.7	ug/L	1.55	5.40	20	
1,4-Dichlorobenzene		50.0	53.0	ug/L	1.58	6.10	20	
Dichlorodifluoromethane		50.0	56.6	ug/L	0.443	13.2	20	
1,2-Dichloroethane		50.0	47.9	ug/L	0.388	4.20	20	
cis-1,2-Dichloroethene		50.0	53.2	ug/L	0.297	6.30	20	
trans-1,2-Dichloroethene		50.0	52.1	ug/L	0.264	4.30	20	
1,3-Dichloropropane		50.0	56.3	ug/L	0.406	12.6	20	
2,2-Dichloropropane		50.0	45.6	ug/L	0.362	8.90	20	
cis-1,3-Dichloropropene		50.0	57.6	ug/L	0.430	15.2	20	
trans-1,3-Dichloropropene		50.0	52.1	ug/L	0.423	4.20	20	
1,1-Dichloropropene		50.0	50.1	ug/L	0.352	0.200	20	

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Version 1.5 PDF File ID: 4821293
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Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060650 Run Date: 05/13/2016 Sample ID: WG568769-12
Instrument ID: HPMS11 Run Time: 20:30 Method: 8260B
File ID: 11M11848 Analyst: JDS QC Key: DOD4
ICal Workgroup: WG568769 Cal ID: HPMS11 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	52.2	ug/L	0.172	4.40	20	
Hexachlorobutadiene		50.0	55.9	ug/L	0.482	11.8	20	
Isopropylbenzene		50.0	54.2	ug/L	1.61	8.50	20	
p-Isopropyltoluene		50.0	54.7	ug/L	2.67	9.40	20	
4-Methyl-2-Pentanone		50.0	52.6	ug/L	0.0777	5.10	20	
Methylene Chloride		50.0	52.0	ug/L	0.246	4.00	20	
Naphthalene		50.0	51.1	ug/L	1.86	2.30	20	
n-Propylbenzene		50.0	56.6	ug/L	3.28	13.2	20	
Styrene		50.0	55.0	ug/L	1.02	9.90	20	
1,1,1,2-Tetrachloroethane		50.0	51.0	ug/L	0.383	2.10	20	
Tetrachloroethene		50.0	52.2	ug/L	0.307	4.40	20	
1,2,3-Trichlorobenzene		50.0	54.1	ug/L	0.971	8.10	20	
1,2,4-Trichlorobenzene		50.0	55.4	ug/L	1.08	10.9	20	
1,1,1-Trichloroethane		50.0	48.1	ug/L	0.472	3.90	20	
1,1,2-Trichloroethane		50.0	52.8	ug/L	0.237	5.50	20	
Trichloroethene		50.0	52.3	ug/L	0.327	4.60	20	
Trichlorofluoromethane		50.0	47.5	ug/L	0.494	4.90	20	
1,2,3-Trichloropropane		50.0	50.1	ug/L	0.147	0.300	20	
1,2,4-Trimethylbenzene		50.0	53.8	ug/L	2.42	7.70	20	
1,3,5-Trimethylbenzene		50.0	55.1	ug/L	2.44	10.3	20	
o-Xylene		50.0	54.7	ug/L	0.615	9.40	20	
m-,p-Xylene		100	107	ug/L	0.620	7.20	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

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Version 1.5 PDF File ID: 4821293
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Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650 Run Date: 06/15/2016 Sample ID: WG572854-02
Instrument ID: HPMS11 Run Time: 15:49 Method: 8260B
File ID: 11M12652 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG572855 Cal ID: HPMS11 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	46.4	ug/L	0.463	7.15	20	
1,1-Dichloroethene	CCC	50.0	46.3	ug/L	0.424	7.35	20	
1,2-Dichloropropane	CCC	50.0	46.2	ug/L	0.245	7.66	20	
Ethylbenzene	CCC	50.0	49.3	ug/L	0.469	1.40	20	
Toluene	CCC	50.0	49.6	ug/L	1.26	0.721	20	
Vinyl Chloride	CCC	50.0	48.1	ug/L	0.251	3.79	20	
Bromoform	SPCC	50.0	53.6	ug/L	0.222	7.10	20	
Chlorobenzene	SPCC	50.0	50.0	ug/L	0.928	0.0866	20	
Chloromethane	SPCC	50.0	42.8	ug/L	0.268	14.5	20	
1,1-Dichloroethane	SPCC	50.0	46.2	ug/L	0.470	7.63	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.3	ug/L	0.384	1.34	20	
Xylenes		150	149	ug/L	0.565	0.844	20	
Acetone		50.0	42.1	ug/L	0.0500	15.8	20	
Benzene		50.0	46.5	ug/L	0.893	7.02	20	
Bromobenzene		50.0	50.1	ug/L	0.761	0.177	20	
Bromochloromethane		50.0	54.5	ug/L	0.181	8.98	20	
Bromodichloromethane		50.0	48.2	ug/L	0.360	3.56	20	
Bromomethane		50.0	46.6	ug/L	0.167	6.81	20	
2-Butanone		50.0	42.8	ug/L	0.0769	14.3	20	
n-Butylbenzene		50.0	45.5	ug/L	1.96	8.93	20	
sec-Butylbenzene		50.0	47.5	ug/L	2.52	4.98	20	
tert-Butylbenzene		50.0	50.0	ug/L	0.468	0.0246	20	
Carbon Disulfide		50.0	46.6	ug/L	0.714	6.84	20	
Carbon Tetrachloride		50.0	49.9	ug/L	0.479	0.204	20	
Dibromochloromethane		50.0	53.1	ug/L	0.364	6.26	20	
Chloroethane		50.0	47.7	ug/L	0.160	4.66	20	
2-Chlorotoluene		50.0	48.0	ug/L	1.95	3.96	20	
4-Chlorotoluene		50.0	47.6	ug/L	1.73	4.71	20	
1,2-Dibromo-3-Chloropropane		50.0	43.1	ug/L	0.0755	13.8	20	
1,2-Dibromoethane		50.0	51.1	ug/L	0.230	2.20	20	
Dibromomethane		50.0	48.5	ug/L	0.134	3.06	20	
1,2-Dichlorobenzene		50.0	49.6	ug/L	1.33	0.841	20	
1,3-Dichlorobenzene		50.0	49.1	ug/L	1.44	1.85	20	
1,4-Dichlorobenzene		50.0	48.4	ug/L	1.44	3.12	20	
Dichlorodifluoromethane		50.0	46.5	ug/L	0.364	7.04	20	
1,2-Dichloroethane		50.0	47.0	ug/L	0.381	6.08	20	
cis-1,2-Dichloroethene		50.0	48.9	ug/L	0.273	2.11	20	
trans-1,2-Dichloroethene		50.0	48.0	ug/L	0.243	3.94	20	
1,3-Dichloropropane		50.0	49.5	ug/L	0.357	1.09	20	
2,2-Dichloropropane		50.0	50.0	ug/L	0.398	0.0792	20	
cis-1,3-Dichloropropene		50.0	49.9	ug/L	0.372	0.225	20	
trans-1,3-Dichloropropene		50.0	50.4	ug/L	0.410	0.860	20	

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Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/15/2016
Sample ID: WG572854-02
Instrument ID: HPMS11
Run Time: 15:49
Method: 8260B
File ID: 11M12652
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG572855
Cal ID: HPMS11 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	48.6	ug/L	0.341	2.74	20	
2-Hexanone		50.0	43.2	ug/L	0.143	13.5	20	
Hexachlorobutadiene		50.0	42.5	ug/L	0.366	15.0	20	
Isopropylbenzene		50.0	50.1	ug/L	1.49	0.246	20	
p-Isopropyltoluene		50.0	48.6	ug/L	2.37	2.77	20	
4-Methyl-2-Pentanone		50.0	45.3	ug/L	0.0669	9.41	20	
Methylene Chloride		50.0	46.8	ug/L	0.222	6.45	20	
Naphthalene		50.0	47.9	ug/L	1.74	4.21	20	
n-Propylbenzene		50.0	48.9	ug/L	2.83	2.26	20	
Styrene		50.0	51.2	ug/L	0.951	2.30	20	
1,1,1,2-Tetrachloroethane		50.0	51.0	ug/L	0.383	2.08	20	
Tetrachloroethene		50.0	52.3	ug/L	0.308	4.52	20	
1,2,3-Trichlorobenzene		50.0	46.9	ug/L	0.843	6.11	20	
1,2,4-Trichlorobenzene		50.0	48.4	ug/L	0.948	3.13	20	
1,1,1-Trichloroethane		50.0	48.5	ug/L	0.477	2.92	20	
1,1,2-Trichloroethane		50.0	49.5	ug/L	0.222	0.973	20	
1,2,3-Trichloropropane		50.0	48.4	ug/L	0.142	3.11	20	
1,2,4-Trimethylbenzene		50.0	49.4	ug/L	2.22	1.13	20	
1,3,5-Trimethylbenzene		50.0	49.0	ug/L	2.16	2.04	20	
o-Xylene		50.0	49.4	ug/L	0.555	1.27	20	
m-,p-Xylene		100	99.4	ug/L	0.574	0.631	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

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Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650 Run Date: 06/16/2016 Sample ID: WG573050-02
Instrument ID: HPMS11 Run Time: 15:27 Method: 8260B
File ID: 11M12685 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG573051 Cal ID: HPMS11 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.8	ug/L	0.477	4.48	20	
1,1-Dichloroethene	CCC	50.0	46.5	ug/L	0.425	7.09	20	
1,2-Dichloropropane	CCC	50.0	45.7	ug/L	0.243	8.68	20	
Ethylbenzene	CCC	50.0	49.5	ug/L	0.471	0.971	20	
Toluene	CCC	50.0	48.9	ug/L	1.24	2.24	20	
Vinyl Chloride	CCC	50.0	50.3	ug/L	0.262	0.644	20	
Bromoform	SPCC	50.0	56.7	ug/L	0.235	13.4	20	
Chlorobenzene	SPCC	50.0	49.8	ug/L	0.924	0.303	20	
Chloromethane	SPCC	50.0	43.9	ug/L	0.276	12.2	20	
1,1-Dichloroethane	SPCC	50.0	46.7	ug/L	0.475	6.61	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.9	ug/L	0.388	0.280	20	
Xylenes		150	149	ug/L	0.565	0.990	20	
Acetone		50.0	45.7	ug/L	0.0543	8.58	20	
Benzene		50.0	46.0	ug/L	0.884	7.93	20	
Bromobenzene		50.0	49.7	ug/L	0.755	0.591	20	
Bromochloromethane		50.0	55.5	ug/L	0.184	11.0	20	
Bromodichloromethane		50.0	49.9	ug/L	0.373	0.144	20	
Bromomethane		50.0	46.3	ug/L	0.166	7.37	20	
2-Butanone		50.0	46.8	ug/L	0.0841	6.31	20	
n-Butylbenzene		50.0	46.7	ug/L	2.00	6.67	20	
sec-Butylbenzene		50.0	47.6	ug/L	2.52	4.88	20	
tert-Butylbenzene		50.0	50.3	ug/L	0.471	0.685	20	
Carbon Disulfide		50.0	46.0	ug/L	0.705	8.04	20	
Carbon Tetrachloride		50.0	51.5	ug/L	0.494	3.01	20	
Dibromochloromethane		50.0	55.5	ug/L	0.380	11.0	20	
Chloroethane		50.0	46.6	ug/L	0.156	6.70	20	
2-Chlorotoluene		50.0	46.3	ug/L	1.88	7.44	20	
4-Chlorotoluene		50.0	48.1	ug/L	1.75	3.74	20	
1,2-Dibromo-3-Chloropropane		50.0	49.5	ug/L	0.0869	0.924	20	
1,2-Dibromoethane		50.0	52.7	ug/L	0.237	5.37	20	
Dibromomethane		50.0	52.4	ug/L	0.145	4.81	20	
1,2-Dichlorobenzene		50.0	50.0	ug/L	1.34	0.0432	20	
1,3-Dichlorobenzene		50.0	49.4	ug/L	1.45	1.22	20	
1,4-Dichlorobenzene		50.0	48.4	ug/L	1.44	3.15	20	
Dichlorodifluoromethane		50.0	47.8	ug/L	0.374	4.44	20	
1,2-Dichloroethane		50.0	50.4	ug/L	0.408	0.724	20	
cis-1,2-Dichloroethene		50.0	49.3	ug/L	0.275	1.42	20	
trans-1,2-Dichloroethene		50.0	47.8	ug/L	0.242	4.41	20	
1,3-Dichloropropane		50.0	50.5	ug/L	0.364	1.07	20	
2,2-Dichloropropane		50.0	52.2	ug/L	0.415	4.33	20	
cis-1,3-Dichloropropene		50.0	50.7	ug/L	0.379	1.43	20	
trans-1,3-Dichloropropene		50.0	51.9	ug/L	0.422	3.78	20	

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650 Run Date: 06/16/2016 Sample ID: WG573050-02
Instrument ID: HPMS11 Run Time: 15:27 Method: 8260B
File ID: 11M12685 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG573051 Cal ID: HPMS11 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	48.3	ug/L	0.339	3.34	20	
2-Hexanone		50.0	45.6	ug/L	0.150	8.83	20	
Hexachlorobutadiene		50.0	45.0	ug/L	0.388	9.93	20	
Isopropylbenzene		50.0	50.7	ug/L	1.51	1.35	20	
p-Isopropyltoluene		50.0	49.2	ug/L	2.40	1.50	20	
4-Methyl-2-Pentanone		50.0	48.5	ug/L	0.0716	3.02	20	
Methylene Chloride		50.0	46.4	ug/L	0.220	7.11	20	
Naphthalene		50.0	53.1	ug/L	1.93	6.19	20	
n-Propylbenzene		50.0	48.3	ug/L	2.80	3.35	20	
Styrene		50.0	51.7	ug/L	0.962	3.48	20	
1,1,1,2-Tetrachloroethane		50.0	51.8	ug/L	0.389	3.60	20	
Tetrachloroethene		50.0	51.7	ug/L	0.304	3.39	20	
1,2,3-Trichlorobenzene		50.0	49.6	ug/L	0.890	0.884	20	
1,2,4-Trichlorobenzene		50.0	50.4	ug/L	0.986	0.818	20	
1,1,1-Trichloroethane		50.0	50.2	ug/L	0.493	0.443	20	
1,1,2-Trichloroethane		50.0	51.5	ug/L	0.231	3.01	20	
Trichloroethene		50.0	50.3	ug/L	0.314	0.673	20	
Trichlorofluoromethane		50.0	50.7	ug/L	0.526	1.33	20	
1,2,3-Trichloropropane		50.0	51.0	ug/L	0.149	2.02	20	
1,2,4-Trimethylbenzene		50.0	49.2	ug/L	2.21	1.68	20	
1,3,5-Trimethylbenzene		50.0	48.7	ug/L	2.15	2.69	20	
o-Xylene		50.0	49.6	ug/L	0.559	0.710	20	
m-,p-Xylene		100	98.9	ug/L	0.571	1.13	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

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Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650 Run Date: 06/17/2016 Sample ID: WG573258-02
Instrument ID: HPMS11 Run Time: 16:21 Method: 8260B
File ID: 11M12718 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG573259 Cal ID: HPMS11 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.0	ug/L	0.499	0.0116	20	
1,1-Dichloroethene	CCC	50.0	49.3	ug/L	0.452	1.35	20	
1,2-Dichloropropane	CCC	50.0	46.5	ug/L	0.247	7.00	20	
Ethylbenzene	CCC	50.0	49.7	ug/L	0.473	0.607	20	
Toluene	CCC	50.0	49.2	ug/L	1.25	1.63	20	
Vinyl Chloride	CCC	50.0	51.9	ug/L	0.271	3.85	20	
Bromoform	SPCC	50.0	53.4	ug/L	0.222	6.83	20	
Chlorobenzene	SPCC	50.0	50.5	ug/L	0.936	0.976	20	
Chloromethane	SPCC	50.0	45.6	ug/L	0.286	8.87	20	
1,1-Dichloroethane	SPCC	50.0	48.7	ug/L	0.495	2.67	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	42.8	ug/L	0.333	14.5	20	
Xylenes		150	150	ug/L	0.570	0.123	20	
Acetone		50.0	49.1	ug/L	0.0582	1.90	20	
Benzene		50.0	47.3	ug/L	0.909	5.36	20	
Bromobenzene		50.0	48.6	ug/L	0.738	2.84	20	
Bromochloromethane		50.0	56.7	ug/L	0.188	13.4	20	
Bromodichloromethane		50.0	52.0	ug/L	0.388	3.99	20	
Bromomethane		50.0	47.6	ug/L	0.171	4.81	20	
2-Butanone		50.0	42.8	ug/L	0.0768	14.4	20	
n-Butylbenzene		50.0	48.0	ug/L	2.06	4.02	20	
sec-Butylbenzene		50.0	49.0	ug/L	2.60	1.90	20	
tert-Butylbenzene		50.0	51.2	ug/L	0.479	2.35	20	
Carbon Disulfide		50.0	49.6	ug/L	0.760	0.844	20	
Carbon Tetrachloride		50.0	55.7	ug/L	0.534	11.3	20	
Dibromochloromethane		50.0	54.2	ug/L	0.371	8.49	20	
Chloroethane		50.0	47.4	ug/L	0.159	5.21	20	
2-Chlorotoluene		50.0	47.9	ug/L	1.94	4.29	20	
4-Chlorotoluene		50.0	47.2	ug/L	1.72	5.50	20	
1,2-Dibromo-3-Chloropropane		50.0	42.2	ug/L	0.0740	15.5	20	
1,2-Dibromoethane		50.0	49.7	ug/L	0.224	0.516	20	
Dibromomethane		50.0	51.4	ug/L	0.143	2.87	20	
1,2-Dichlorobenzene		50.0	49.4	ug/L	1.32	1.12	20	
1,3-Dichlorobenzene		50.0	49.1	ug/L	1.44	1.83	20	
1,4-Dichlorobenzene		50.0	48.5	ug/L	1.44	3.10	20	
Dichlorodifluoromethane		50.0	48.3	ug/L	0.379	3.37	20	
1,2-Dichloroethane		50.0	51.5	ug/L	0.418	3.09	20	
cis-1,2-Dichloroethene		50.0	49.7	ug/L	0.278	0.514	20	
trans-1,2-Dichloroethene		50.0	49.0	ug/L	0.248	1.96	20	
1,3-Dichloropropane		50.0	48.2	ug/L	0.348	3.53	20	
2,2-Dichloropropane		50.0	52.1	ug/L	0.414	4.13	20	
cis-1,3-Dichloropropene		50.0	50.5	ug/L	0.377	1.10	20	
trans-1,3-Dichloropropene		50.0	50.1	ug/L	0.407	0.226	20	

CCV - Modified 03/05/2008
PDF File ID: 4821295
Report generated 06/23/2016 14:51

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650 Run Date: 06/17/2016 Sample ID: WG573258-02
Instrument ID: HPMS11 Run Time: 16:21 Method: 8260B
File ID: 11M12718 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG573259 Cal ID: HPMS11 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	50.3	ug/L	0.353	0.573	20	
2-Hexanone		50.0	39.3	ug/L	0.130	21.4	20	*
Hexachlorobutadiene		50.0	45.2	ug/L	0.389	9.64	20	
Isopropylbenzene		50.0	51.8	ug/L	1.54	3.53	20	
p-Isopropyltoluene		50.0	50.4	ug/L	2.46	0.801	20	
4-Methyl-2-Pentanone		50.0	42.2	ug/L	0.0623	15.6	20	
Methylene Chloride		50.0	47.9	ug/L	0.227	4.18	20	
Naphthalene		50.0	46.1	ug/L	1.67	7.75	20	
n-Propylbenzene		50.0	48.7	ug/L	2.82	2.69	20	
Styrene		50.0	51.9	ug/L	0.964	3.70	20	
1,1,1,2-Tetrachloroethane		50.0	53.2	ug/L	0.399	6.34	20	
Tetrachloroethene		50.0	51.8	ug/L	0.305	3.59	20	
1,2,3-Trichlorobenzene		50.0	47.3	ug/L	0.850	5.37	20	
1,2,4-Trichlorobenzene		50.0	48.6	ug/L	0.951	2.79	20	
1,1,1-Trichloroethane		50.0	52.9	ug/L	0.519	5.71	20	
1,1,2-Trichloroethane		50.0	48.9	ug/L	0.220	2.13	20	
Trichloroethene		50.0	52.8	ug/L	0.330	5.69	20	
Trichlorofluoromethane		50.0	57.8	ug/L	0.601	15.7	20	
1,2,3-Trichloropropane		50.0	45.9	ug/L	0.134	8.26	20	
1,2,4-Trimethylbenzene		50.0	49.8	ug/L	2.24	0.365	20	
1,3,5-Trimethylbenzene		50.0	49.2	ug/L	2.18	1.53	20	
o-Xylene		50.0	50.2	ug/L	0.565	0.471	20	
m-,p-Xylene		100	99.6	ug/L	0.576	0.419	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4821295
Report generated 06/23/2016 14:51

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060650
Instrument ID: HPMS11
Workgroup (AAB#): WG572855

ICAL CCV Number: WG568769-08
CAL ID: HPMS11-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568769-08	NA	NA	263885	438582	521583
Upper Limit	NA	NA	527770	877164	1043166
Lower Limit	NA	NA	131943	219291	260792
L16060650-01	10.0	DL01	253236	443298	520653
WG572855-01	1.00	01	317152	552203	665654
WG572855-02	1.00	01	339839	566282	665946

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4821296
Report generated 06/23/2016 14:51

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060650
Instrument ID: HPMS11
Workgroup (AAB#): WG573051

ICAL CCV Number: WG568769-08
CAL ID: HPMS11-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568769-08	NA	NA	263885	438582	521583
Upper Limit	NA	NA	527770	877164	1043166
Lower Limit	NA	NA	131943	219291	260792
L16060650-03	1.00	01	272718	466822	553146
L16060650-04	1.00	01	264811	451388	532841
L16060650-05	1.00	01	270373	450055	530657
L16060650-06	2.00	DL01	252727	439489	511766
L16060650-07	1.00	01	259575	446643	525360
L16060650-09	1.00	01	262354	452147	528256
WG573051-01	1.00	01	271231	464305	545582
WG573051-02	1.00	01	281763	469128	546376
WG573051-03	1.00	01	289001	475469	554739

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4821296
Report generated 06/23/2016 14:51

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060650
Instrument ID: HPMS11
Workgroup (AAB#): WG573259

ICAL CCV Number: WG568769-08
CAL ID: HPMS11-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568769-08	NA	NA	263885	438582	521583
Upper Limit	NA	NA	527770	877164	1043166
Lower Limit	NA	NA	131943	219291	260792
L16060650-01	20.0	DL02	247344	417858	491782
L16060650-02	2.50	DL01	240882	412545	485977
WG573259-01	1.00	01	245830	417622	495046
WG573259-02	1.00	01	271227	427304	493317
WG573259-03	1.00	01	262941	434135	496891

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4821296
Report generated 06/23/2016 14:51

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060650
Instrument ID: HPMS11
Workgroup (AAB#): WG572855

ICAL CCV Number: WG568769-08
CAL ID: HPMS11-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568769-08	NA	NA	17.06	14.25	10.61
Upper Limit	NA	NA	17.56	14.75	11.11
Lower Limit	NA	NA	16.56	13.75	10.11
L16060650-01	10.0	DL01	17.06	14.25	10.61
WG572855-01	1.00	01	17.06	14.25	10.61
WG572855-02	1.00	01	17.06	14.25	10.61

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4821298
Report generated: 06/23/2016 14:51

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060650
Instrument ID: HPMS11
Workgroup (AAB#): WG573051

ICAL CCV Number: WG568769-08
CAL ID: HPMS11-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568769-08	NA	NA	17.06	14.25	10.61
Upper Limit	NA	NA	17.56	14.75	11.11
Lower Limit	NA	NA	16.56	13.75	10.11
L16060650-03	1.00	01	17.06	14.25	10.61
L16060650-04	1.00	01	17.06	14.25	10.61
L16060650-05	1.00	01	17.06	14.25	10.61
L16060650-06	2.00	DL01	17.06	14.25	10.61
L16060650-07	1.00	01	17.06	14.25	10.61
L16060650-09	1.00	01	17.06	14.25	10.61
WG573051-01	1.00	01	17.06	14.25	10.61
WG573051-02	1.00	01	17.06	14.25	10.61
WG573051-03	1.00	01	17.06	14.25	10.61

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4821298
Report generated: 06/23/2016 14:51

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060650
Instrument ID: HPMS11
Workgroup (AAB#): WG573259

ICAL CCV Number: WG568769-08
CAL ID: HPMS11-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568769-08	NA	NA	17.06	14.25	10.61
Upper Limit	NA	NA	17.56	14.75	11.11
Lower Limit	NA	NA	16.56	13.75	10.11
L16060650-01	20.0	DL02	17.06	14.25	10.61
L16060650-02	2.50	DL01	17.06	14.25	10.61
WG573259-01	1.00	01	17.06	14.25	10.61
WG573259-02	1.00	01	17.06	14.25	10.61
WG573259-03	1.00	01	17.06	14.25	10.61

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4821298
Report generated: 06/23/2016 14:51

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061516\11M12671.D Vial: 22
Acq On : 16 Jun 2016 1:56 Operator: JDS
Sample : L16060650-01 A 10X 826-LOW Inst : hpms11
Misc : 1,10 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 14:39:07 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	520653	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	443298	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	253236	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	140814	24.7124 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.84%		
43) 1,2-Dichloroethane-d4	10.23	65	151033	23.2461 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 93.00%		
57) Toluene-d8	12.47	98	478563	24.8458 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.40%		
78) p-Bromofluorobenzene	15.64	95	208413	26.6982 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 106.80%		

Target Compounds

					Qvalue
4) Vinyl Chloride	3.95	62	3300	0.6082 ug/L	96
8) Trichlorofluoromethane	5.49	101	36453	3.3708 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	354231	67.5050 ug/L	94
13) Acetone	6.36	43	443	0.3583 ug/L #	49
14) 1,1-Dichloroethene	6.56	61	7148	0.7499 ug/L	95
23) trans-1,2-Dichloroethene	7.75	96	1642	0.3113 ug/L	79
32) cis-1,2-Dichloroethene	9.15	96	653194	112.3023 ug/L	80
33) Chloroform	9.35	83	9915	0.9539 ug/L	99
36) Tetrahydrofuran	9.58	42	1640	1.2426 ug/L #	59
44) 1,2-Dichloroethane	10.34	62	116134	13.7564 ug/L	90
45) Benzene	10.39	78	4172	0.2087 ug/L #	80
46) Trichloroethene	11.09	130	2268415	349.0598 ug/L	98
47) Methylcyclohexane	11.08	83	24980	3.1147 ug/L #	1

(#) = qualifier out of range (m) = manual integration
11M12671.D 8260WT.M Thu Jun 16 14:39:08 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061516\11M12671.D Vial: 22
Acq On : 16 Jun 2016 1:56 Operator: JDS
Sample : L16060650-01 A 10X 826-LOW Inst : hpms11
Misc : 1,10 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 14:39 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

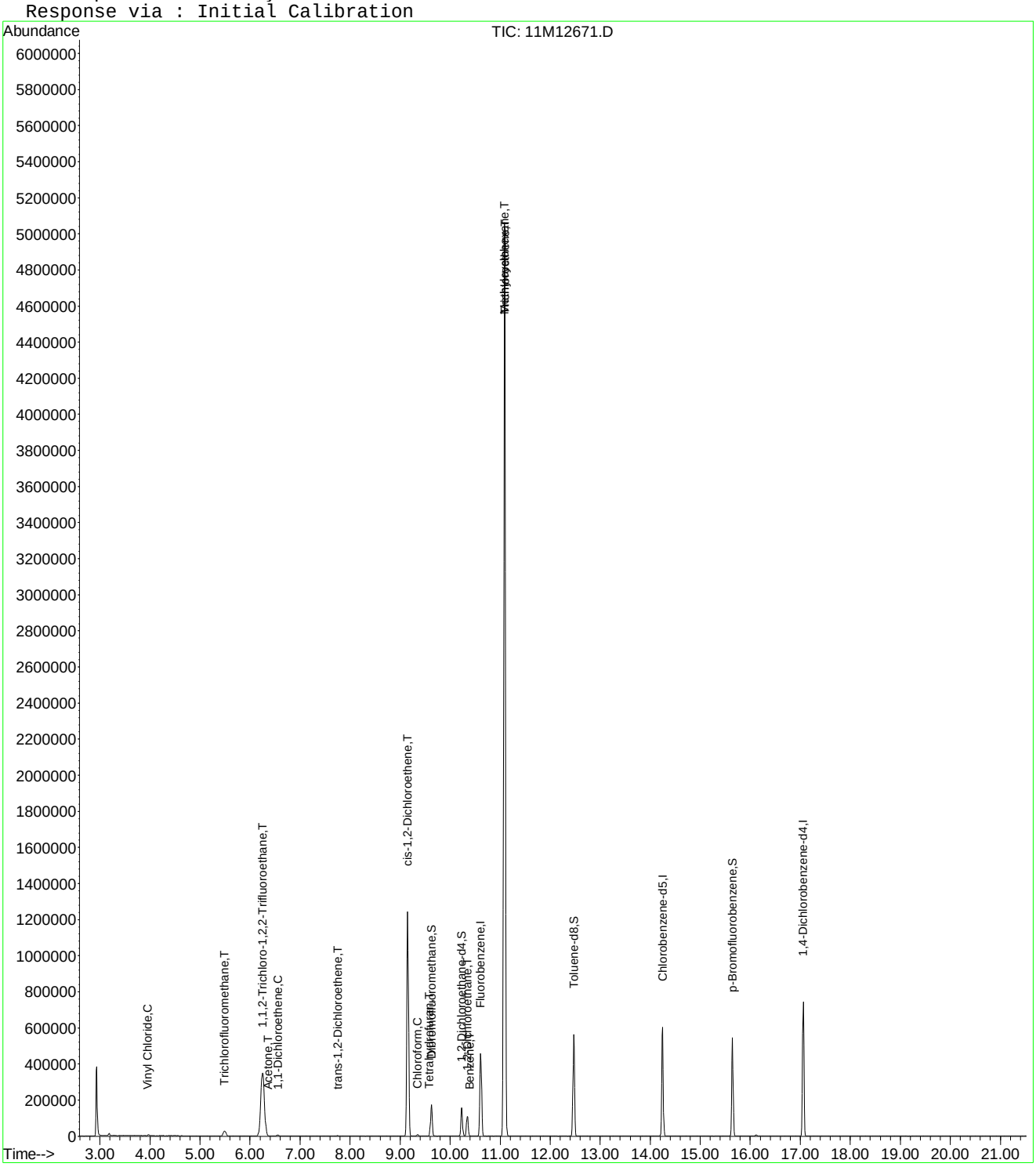

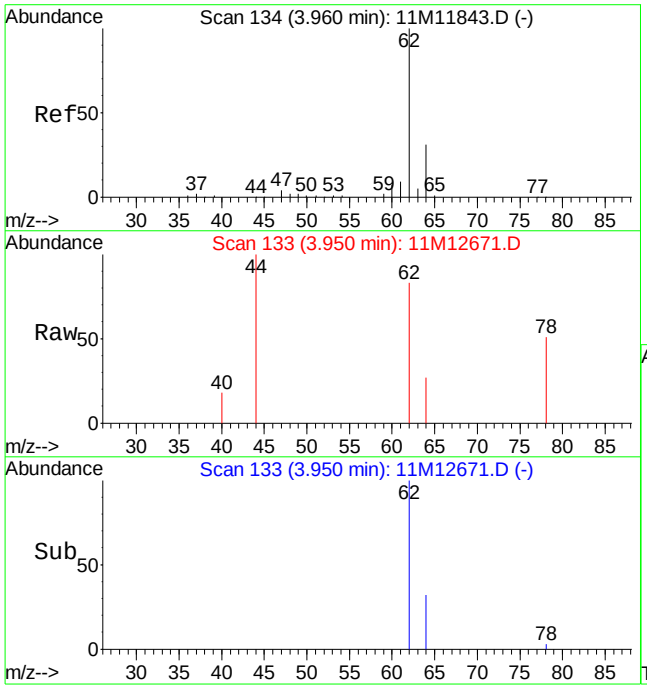

#4
Vinyl Chloride
Concen: 0.61 ug/L
RT: 3.95 min Scan# 133
Delta R.T. -0.01 min
Lab File: 11M12671.D
Acq: 16 Jun 2016 1:56

Tgt Ion: 62 Resp: 3300

Ion	Ratio	Lower	Upper
62	100		
64	28.3	18.4	43.0

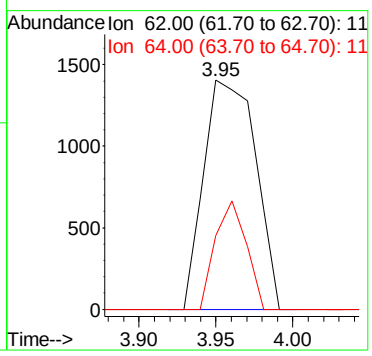

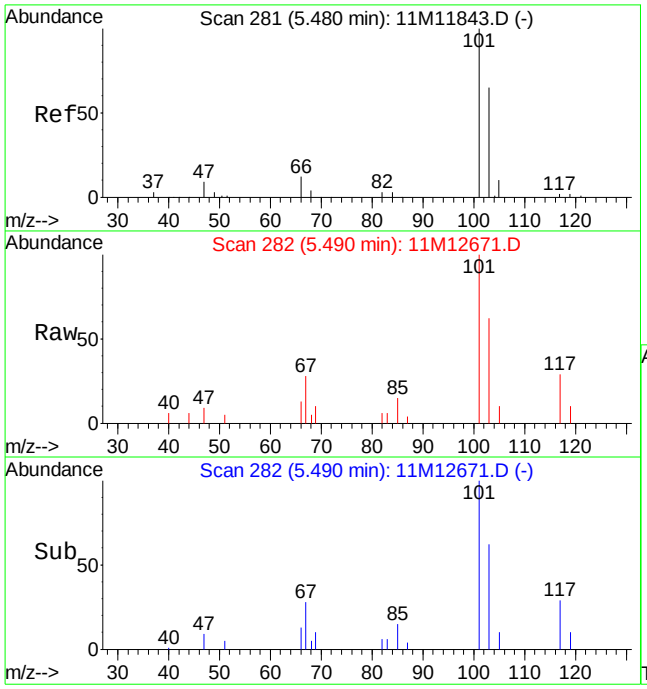

#8
Trichlorofluoromethane
Concen: 3.37 ug/L
RT: 5.49 min Scan# 282
Delta R.T. 0.01 min
Lab File: 11M12671.D
Acq: 16 Jun 2016 1:56

Tgt Ion:101 Resp: 36453

Ion	Ratio	Lower	Upper
101	100		
103	65.6	39.1	91.3

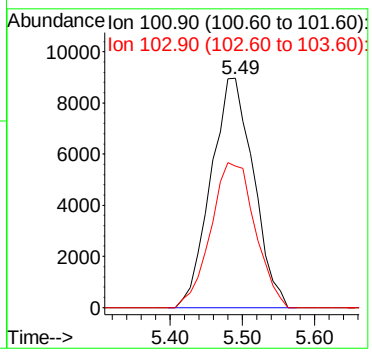

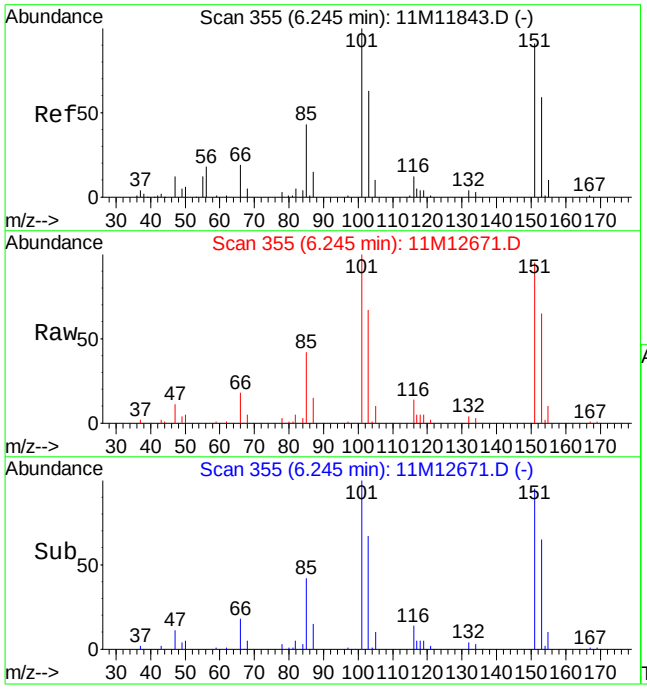

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 67.51 ug/L
RT: 6.25 min Scan# 355
Delta R.T. 0.00 min
Lab File: 11M12671.D
Acq: 16 Jun 2016 1:56

Tgt Ion:101 Resp: 354231

Ion	Ratio	Lower	Upper
101	100		
151	96.2	50.7	130.7

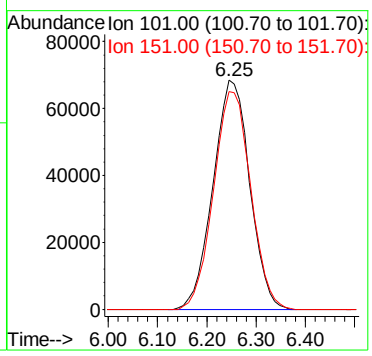

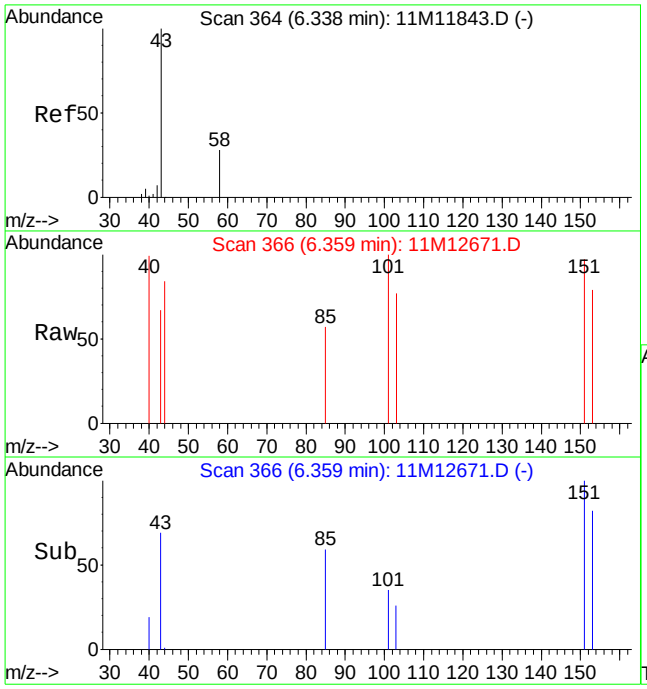

#13
Acetone
Concen: 0.36 ug/L
RT: 6.36 min Scan# 366
Delta R.T. 0.02 min
Lab File: 11M12671.D
Acq: 16 Jun 2016 1:56

Tgt Ion: 43 Resp: 443

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

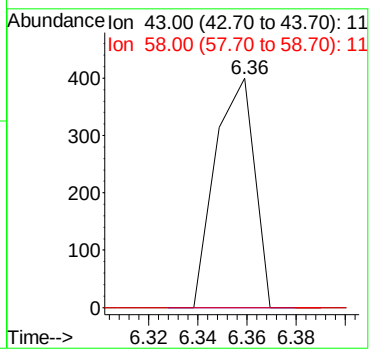

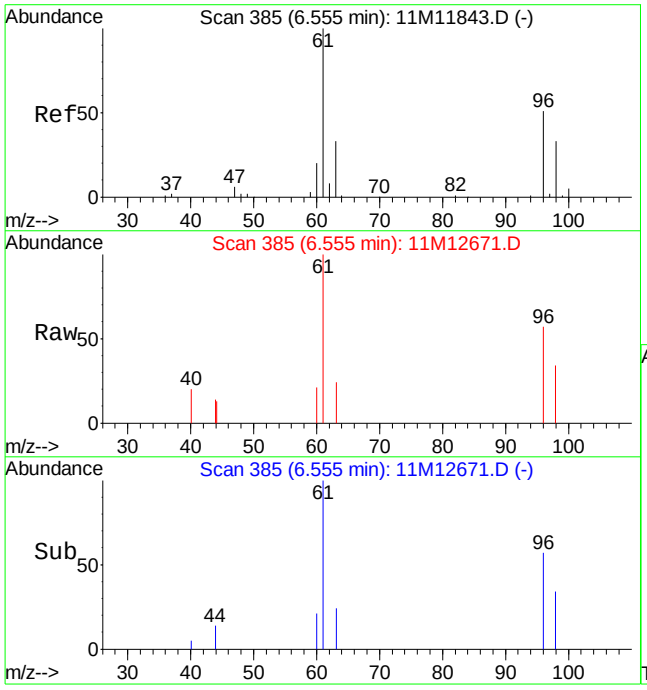

#14
1,1-Dichloroethene
Concen: 0.75 ug/L
RT: 6.56 min Scan# 385
Delta R.T. 0.00 min
Lab File: 11M12671.D
Acq: 16 Jun 2016 1:56

Tgt Ion: 61 Resp: 7148

Ion	Ratio	Lower	Upper
61	100		
96	47.0	30.1	70.3

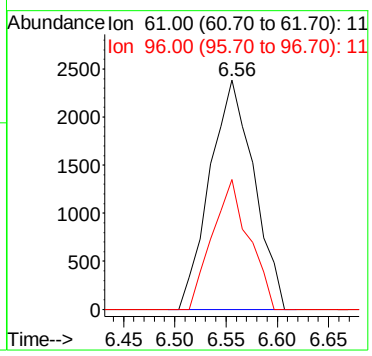

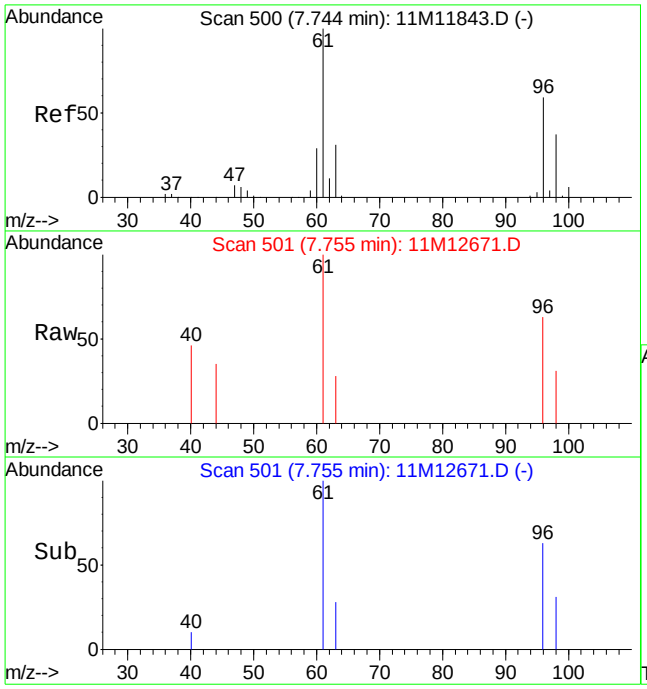

#23
trans-1,2-Dichloroethene
Concen: 0.31 ug/L
RT: 7.75 min Scan# 501
Delta R.T. 0.01 min
Lab File: 11M12671.D
Acq: 16 Jun 2016 1:56

Tgt Ion: 96 Resp: 1642

Ion	Ratio	Lower	Upper
96	100		
61	138.8	100.6	234.6

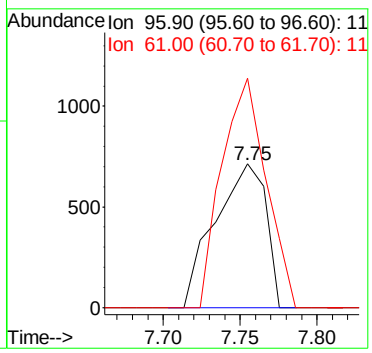

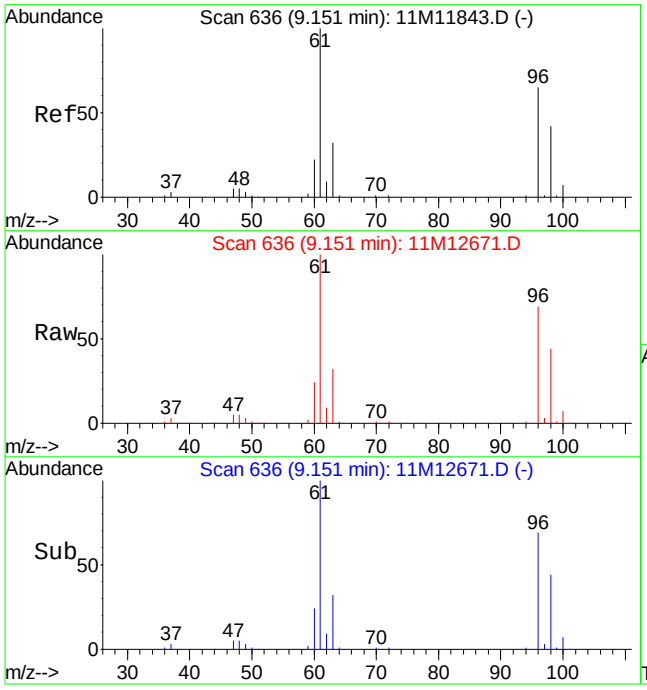

#32
cis-1,2-Dichloroethene
Concen: 112.30 ug/L
RT: 9.15 min Scan# 636
Delta R.T. 0.00 min
Lab File: 11M12671.D
Acq: 16 Jun 2016 1:56

Tgt Ion: 96 Resp: 653194

Ion	Ratio	Lower	Upper
96	100		
61	146.8	105.2	245.6

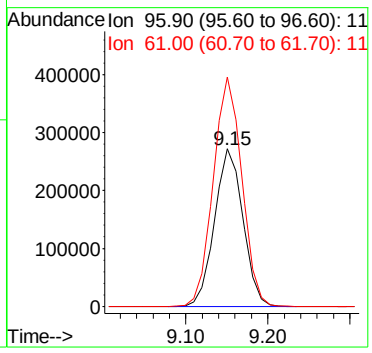

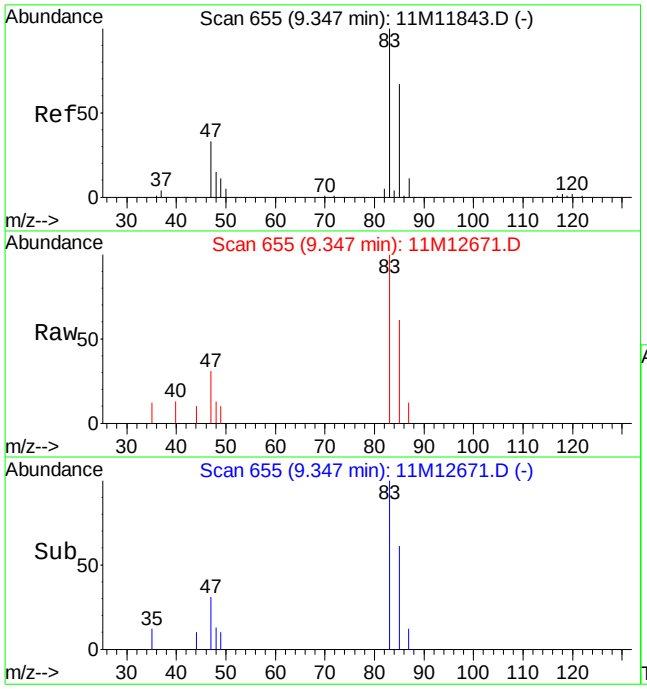

#33
Chloroform
Concen: 0.95 ug/L
RT: 9.35 min Scan# 655
Delta R.T. 0.00 min
Lab File: 11M12671.D
Acq: 16 Jun 2016 1:56

Tgt Ion: 83 Resp: 9915

Ion	Ratio	Lower	Upper
83	100		
85	64.3	39.2	91.4

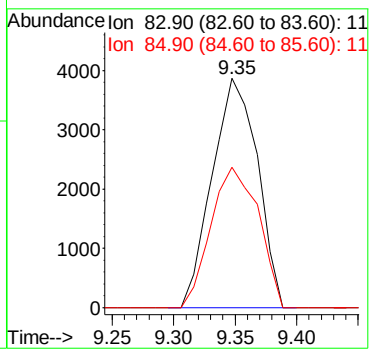

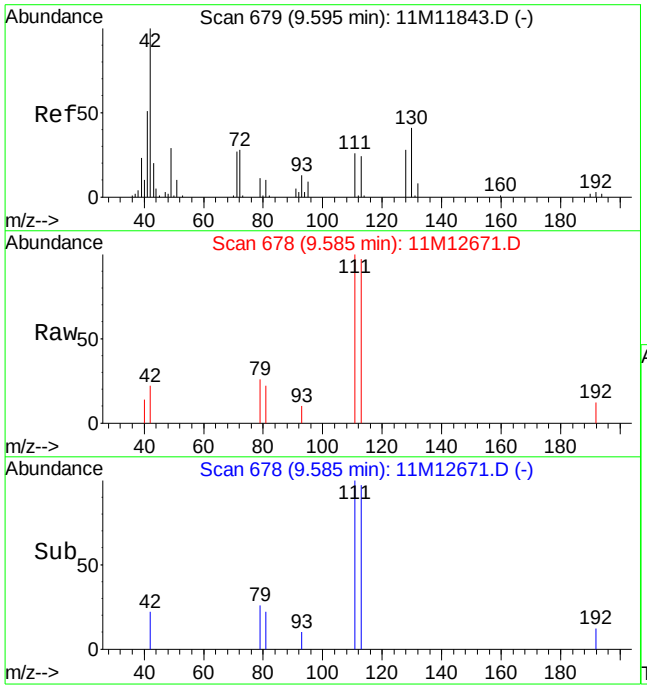

#36
Tetrahydrofuran
Concen: 1.24 ug/L
RT: 9.58 min Scan# 678
Delta R.T. -0.01 min
Lab File: 11M12671.D
Acq: 16 Jun 2016 1:56

Tgt Ion: 42 Resp: 1640

Ion	Ratio	Lower	Upper
42	100		
71	0.0	16.4	38.2#
72	12.0	16.6	38.8#

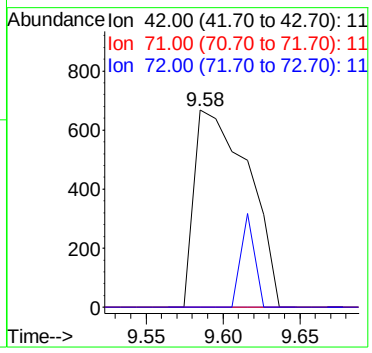

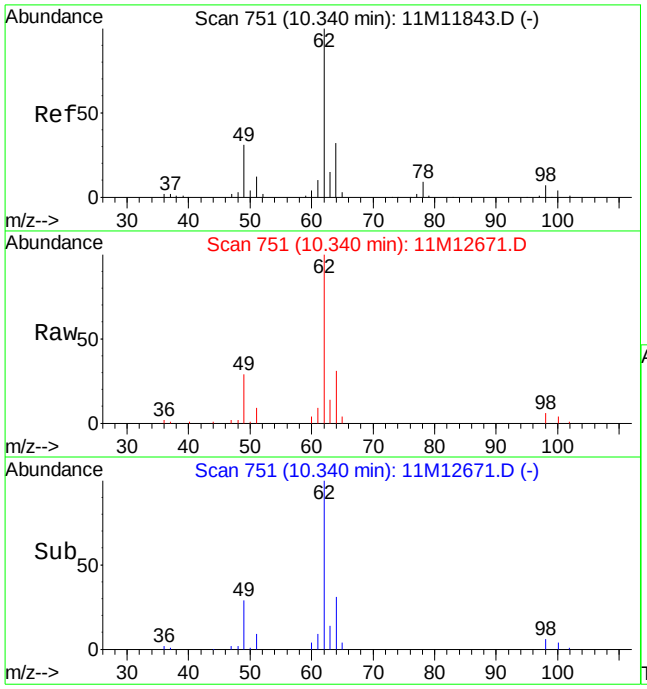

#44
1,2-Dichloroethane
Concen: 13.76 ug/L
RT: 10.34 min Scan# 751
Delta R.T. 0.00 min
Lab File: 11M12671.D
Acq: 16 Jun 2016 1:56

Tgt Ion: 62 Resp: 116134

Ion	Ratio	Lower	Upper
62	100		
64	32.4	18.7	43.7
49	27.8	22.3	52.1

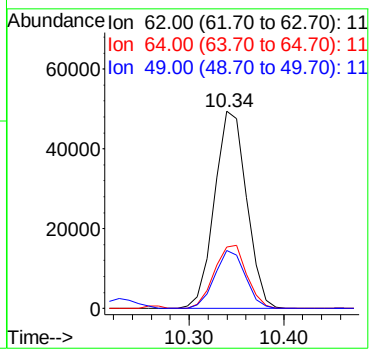

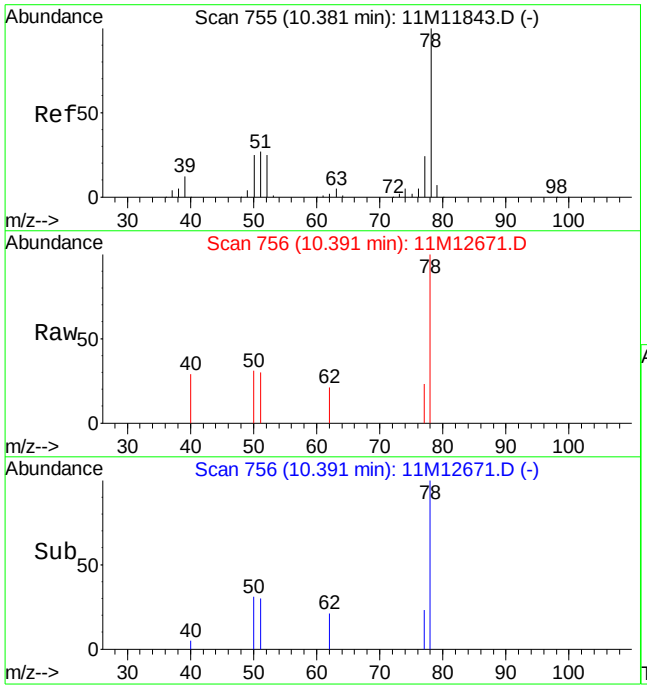

#45
Benzene
Concen: 0.21 ug/L
RT: 10.39 min Scan# 756
Delta R.T. 0.01 min
Lab File: 11M12671.D
Acq: 16 Jun 2016 1:56

Tgt Ion: 78 Resp: 4172

Ion	Ratio	Lower	Upper
78	100		
77	14.0	14.3	33.5#

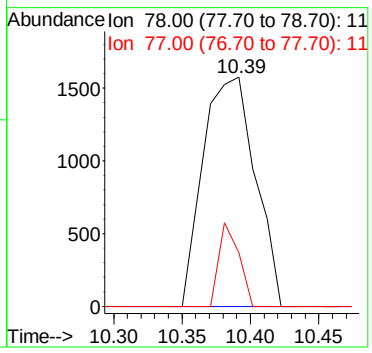

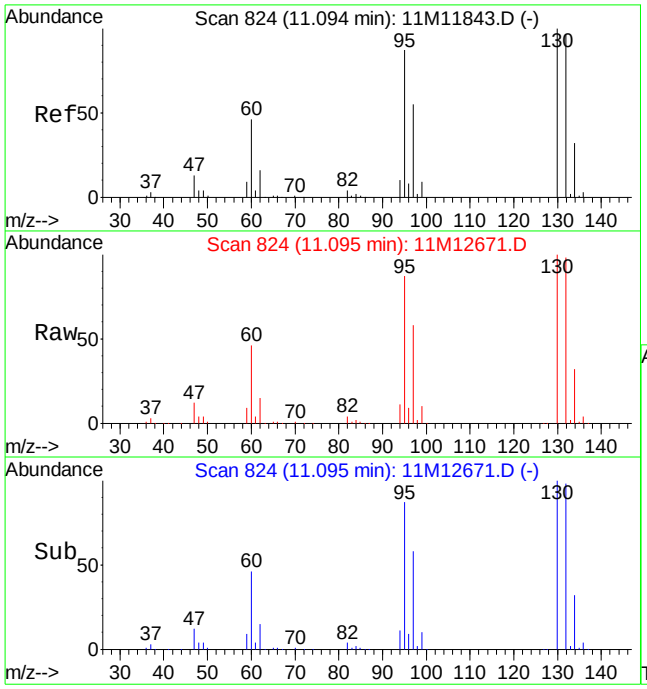

#46
Trichloroethene
Concen: 349.06 ug/L
RT: 11.09 min Scan# 824
Delta R.T. 0.00 min
Lab File: 11M12671.D
Acq: 16 Jun 2016 1:56

Tgt Ion:130 Resp: 2268415

Ion	Ratio	Lower	Upper
130	100		
132	97.6	58.3	136.1
95	90.0	55.6	129.8

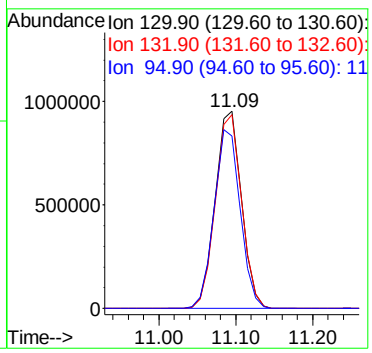

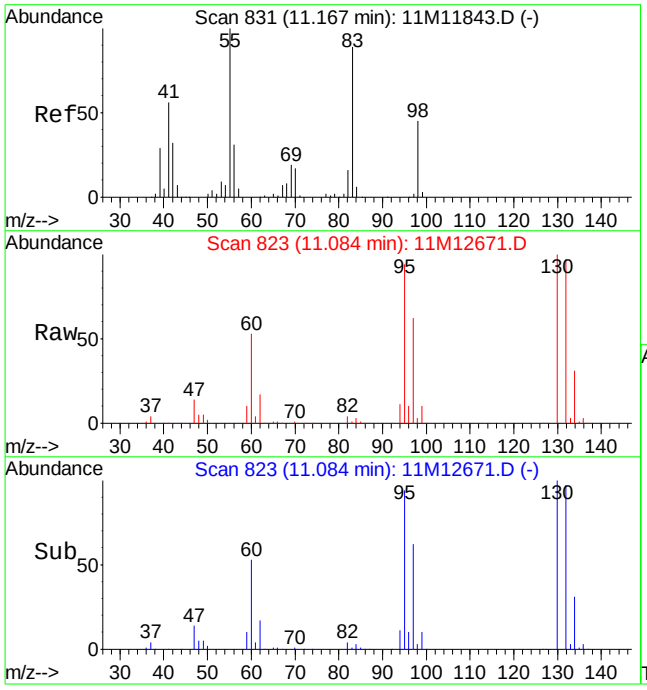

#47
Methylcyclohexane
Concen: 3.11 ug/L
RT: 11.08 min Scan# 823
Delta R.T. -0.08 min
Lab File: 11M12671.D
Acq: 16 Jun 2016 1:56

Tgt Ion: 83 Resp: 24980

Ion	Ratio	Lower	Upper
83	100		
55	0.0	66.5	155.1#
98	225.2	29.9	69.7#

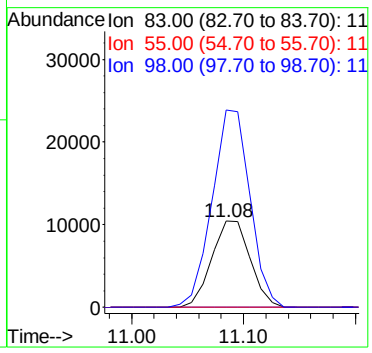

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061716\11M12724.D Vial: 8
Acq On : 17 Jun 2016 19:33 Operator: JDS
Sample : L16060650-01 C D1 20X 826-LOW Inst : hpms11
Misc : 1,20 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 20 11:34:49 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	491782	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	417858	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	247344	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	128170	23.8139 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.24%		
43) 1,2-Dichloroethane-d4	10.23	65	140401	22.8784 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 91.52%		
57) Toluene-d8	12.47	98	433524	23.8778 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 95.52%		
78) p-Bromofluorobenzene	15.64	95	195122	25.5910 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.36%		

Target Compounds

					Qvalue
3) Chloromethane	3.72	50	1294	0.2097 ug/L #	69
4) Vinyl Chloride	3.96	62	1872	0.3653 ug/L #	44
8) Trichlorofluoromethane	5.48	101	2151	0.2106 ug/L	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	170922	34.4844 ug/L	93
13) Acetone	6.25	43	1127	0.9651 ug/L #	49
14) 1,1-Dichloroethene	6.56	61	3205	0.3560 ug/L	90
32) cis-1,2-Dichloroethene	9.15	96	307640	55.9970 ug/L	80
33) Chloroform	9.36	83	2761	0.2812 ug/L	96
44) 1,2-Dichloroethane	10.34	62	57645	7.2291 ug/L	90
46) Trichloroethene	11.08	130	1111595	181.0922 ug/L	97
47) Methylcyclohexane	11.08	83	10779	1.4229 ug/L #	1

(#) = qualifier out of range (m) = manual integration
11M12724.D 8260WT.M Mon Jun 20 11:34:50 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061716\11M12724.D Vial: 8
Acq On : 17 Jun 2016 19:33 Operator: JDS
Sample : L16060650-01 C D1 20X 826-LOW Inst : hpms11
Misc : 1,20 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 20 11:34 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

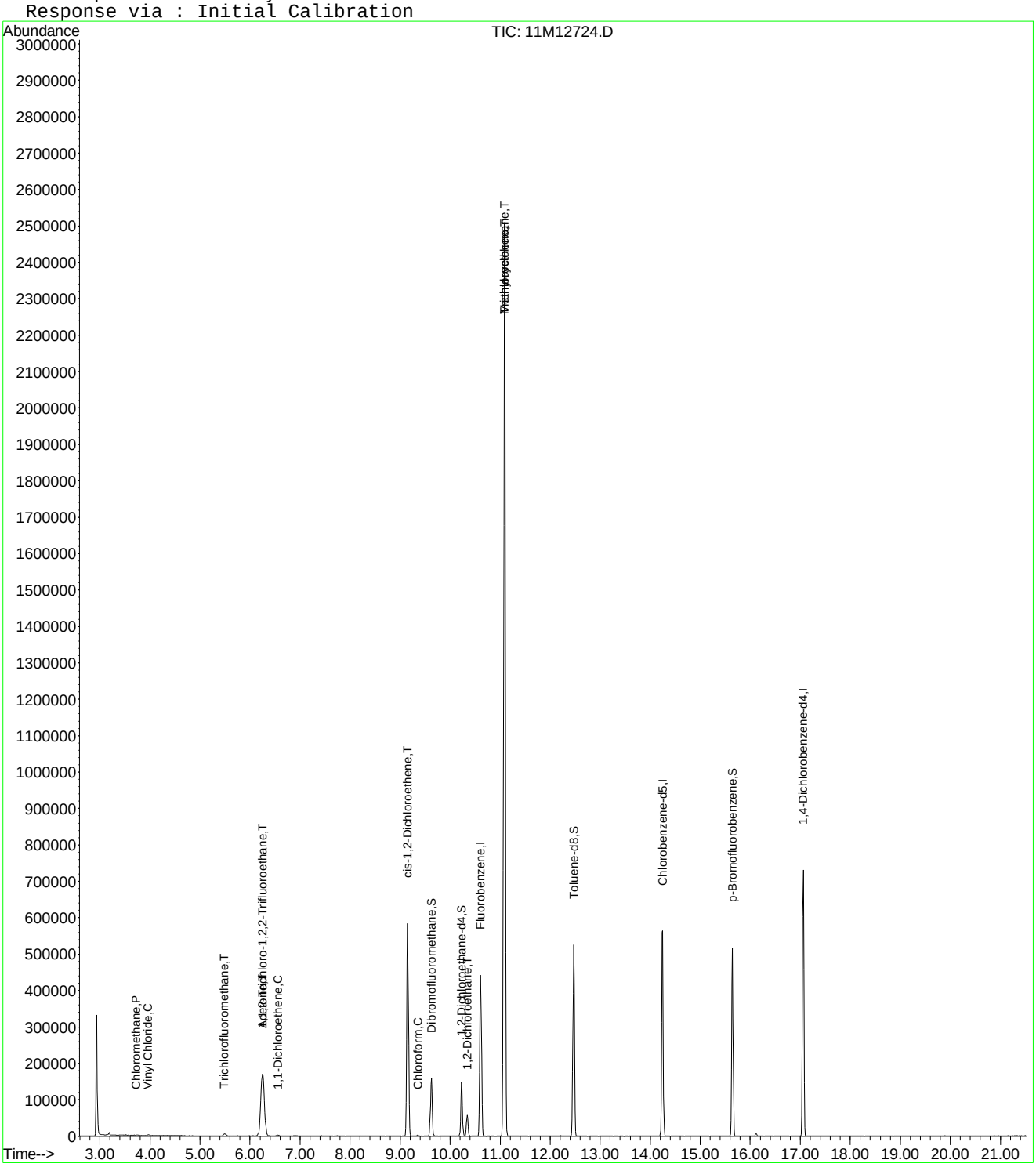

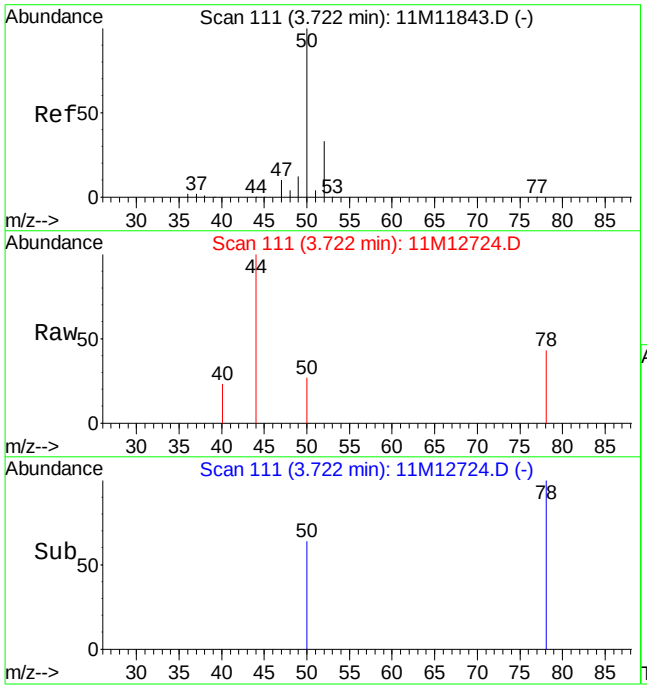

#3
Chloromethane
Concen: 0.21 ug/L
RT: 3.72 min Scan# 111
Delta R.T. -0.00 min
Lab File: 11M12724.D
Acq: 17 Jun 2016 19:33

Tgt Ion: 50 Resp: 1294

Ion	Ratio	Lower	Upper
50	100		
52	15.5	20.0	46.6#

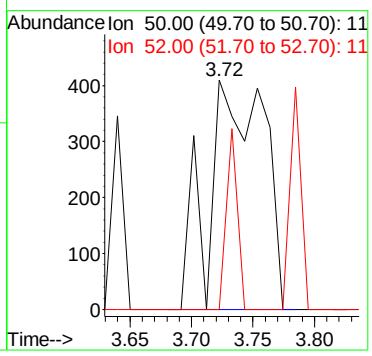

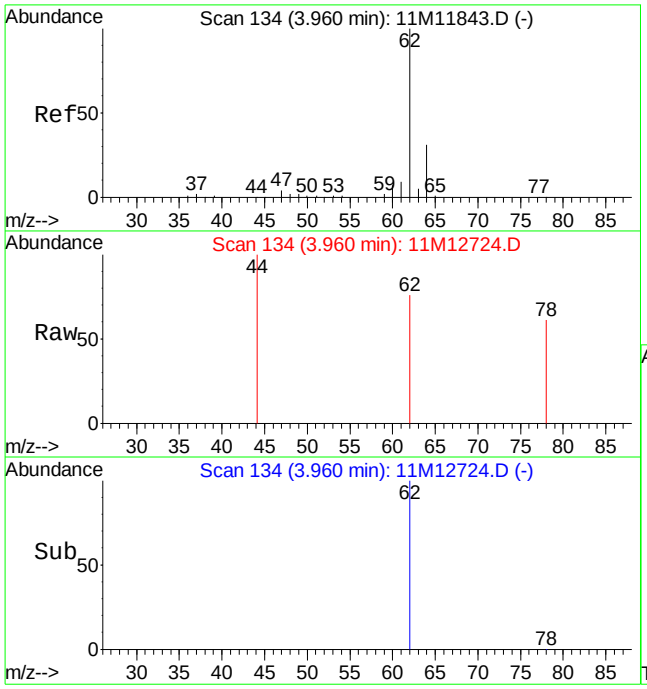

#4
Vinyl Chloride
Concen: 0.37 ug/L
RT: 3.96 min Scan# 134
Delta R.T. -0.00 min
Lab File: 11M12724.D
Acq: 17 Jun 2016 19:33

Tgt Ion: 62 Resp: 1872

Ion	Ratio	Lower	Upper
62	100		
64	0.0	18.4	43.0#

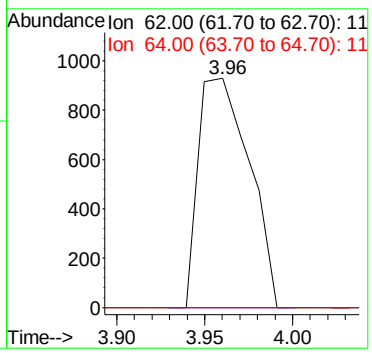

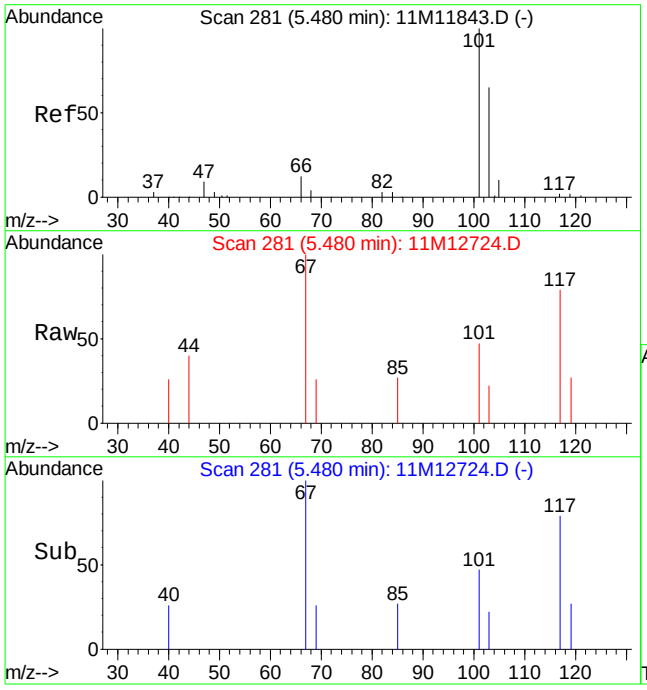

#8
Trichlorofluoromethane
Concen: 0.21 ug/L
RT: 5.48 min Scan# 281
Delta R.T. -0.00 min
Lab File: 11M12724.D
Acq: 17 Jun 2016 19:33

Tgt Ion:101 Resp: 2151

Ion	Ratio	Lower	Upper
101	100		
103	60.5	39.1	91.3

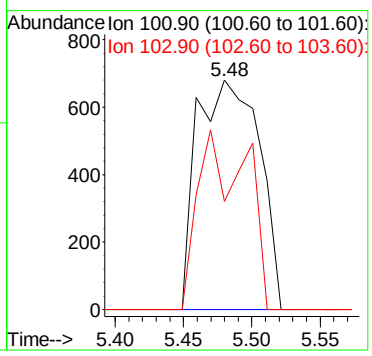

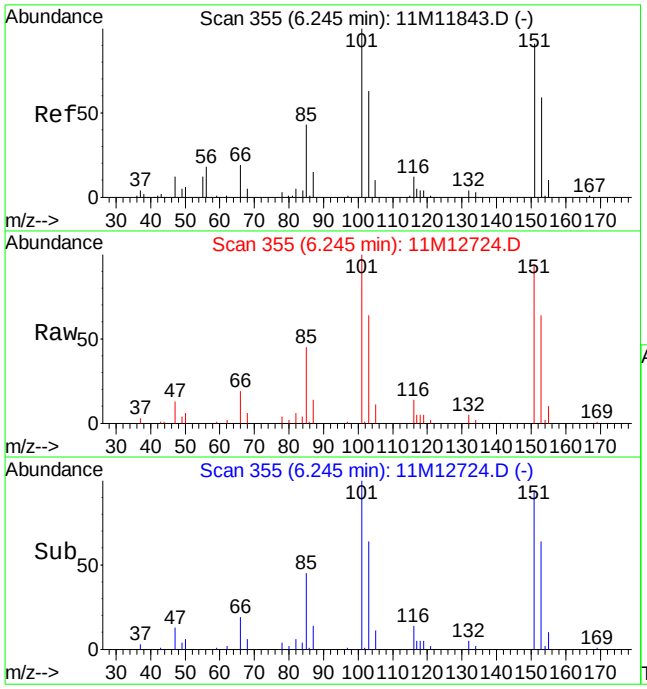

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 34.48 ug/L
RT: 6.25 min Scan# 355
Delta R.T. -0.00 min
Lab File: 11M12724.D
Acq: 17 Jun 2016 19:33

Tgt Ion:101 Resp: 170922

Ion	Ratio	Lower	Upper
101	100		
151	96.9	50.7	130.7

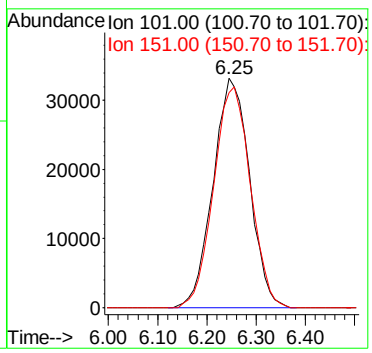

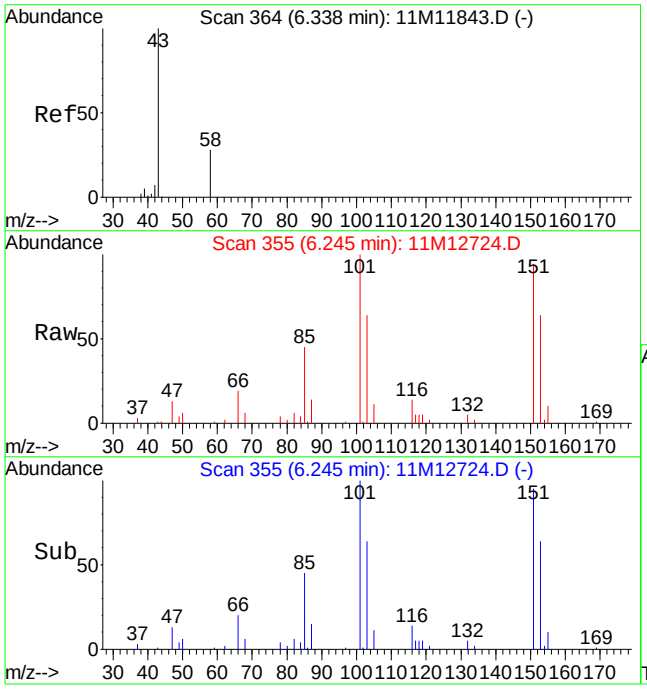

#13
Acetone
Concen: 0.97 ug/L
RT: 6.25 min Scan# 355
Delta R.T. -0.09 min
Lab File: 11M12724.D
Acq: 17 Jun 2016 19:33

Tgt Ion: 43 Resp: 1127

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

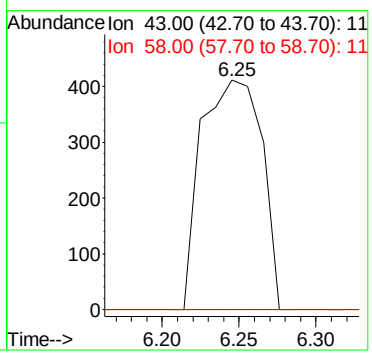

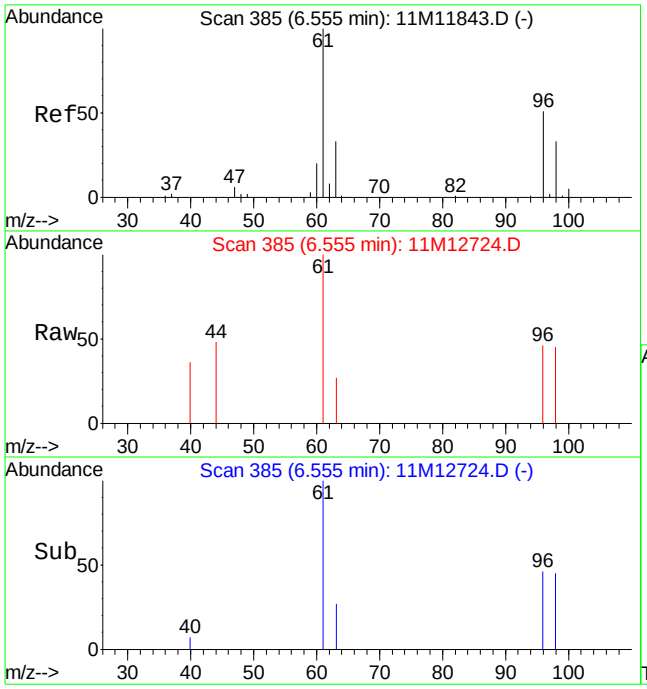

#14
1,1-Dichloroethene
Concen: 0.36 ug/L
RT: 6.56 min Scan# 385
Delta R.T. -0.00 min
Lab File: 11M12724.D
Acq: 17 Jun 2016 19:33

Tgt Ion: 61 Resp: 3205

Ion	Ratio	Lower	Upper
61	100		
96	43.3	30.1	70.3

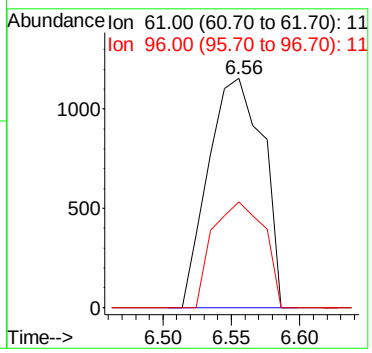

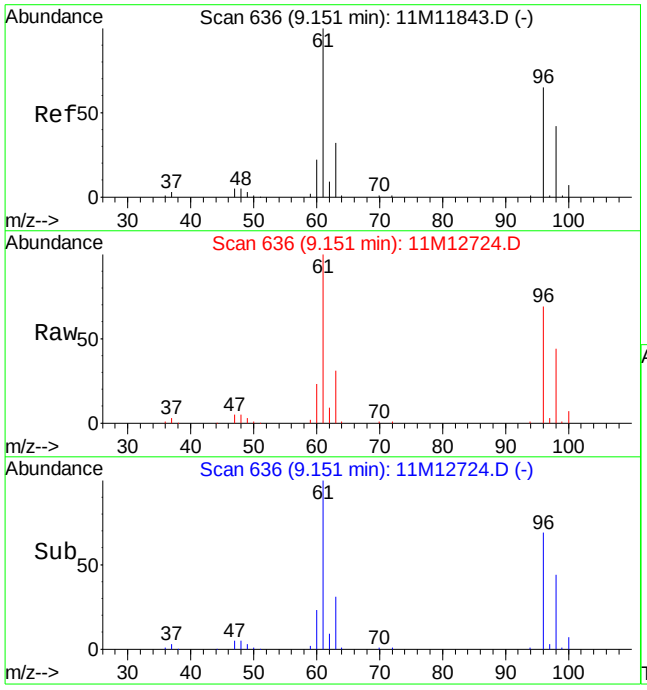

#32
cis-1,2-Dichloroethene
Concen: 56.00 ug/L
RT: 9.15 min Scan# 636
Delta R.T. -0.00 min
Lab File: 11M12724.D
Acq: 17 Jun 2016 19:33

Tgt Ion: 96 Resp: 307640

Ion	Ratio	Lower	Upper
96	100		
61	147.2	105.2	245.6

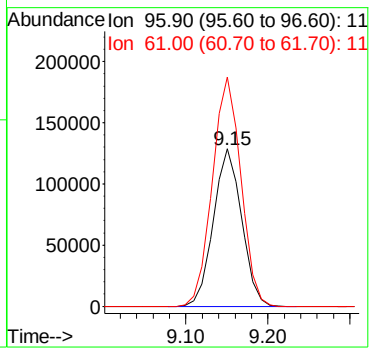

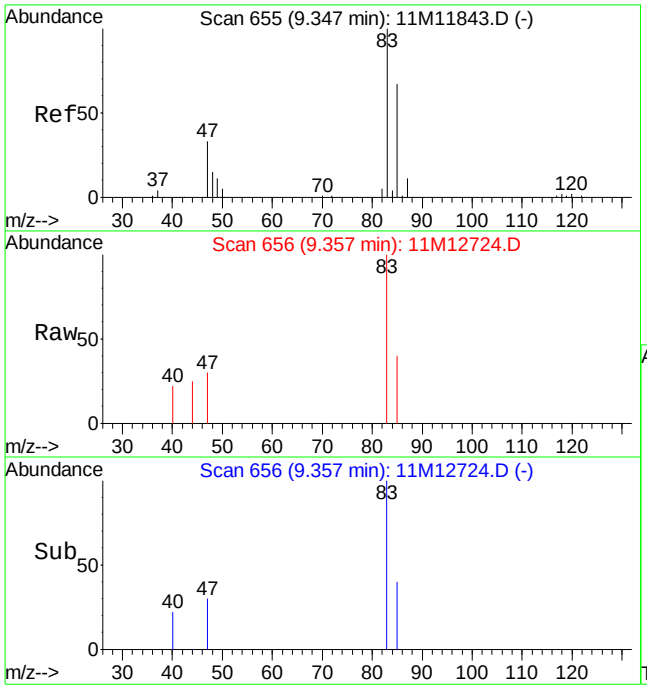

#33
Chloroform
Concen: 0.28 ug/L
RT: 9.36 min Scan# 656
Delta R.T. 0.01 min
Lab File: 11M12724.D
Acq: 17 Jun 2016 19:33

Tgt Ion: 83 Resp: 2761

Ion	Ratio	Lower	Upper
83	100		
85	62.3	39.2	91.4

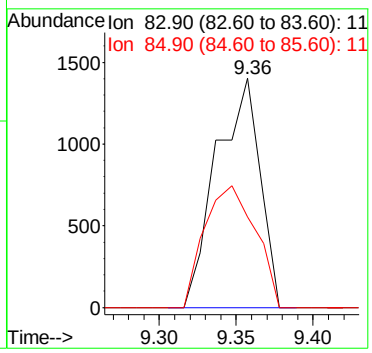

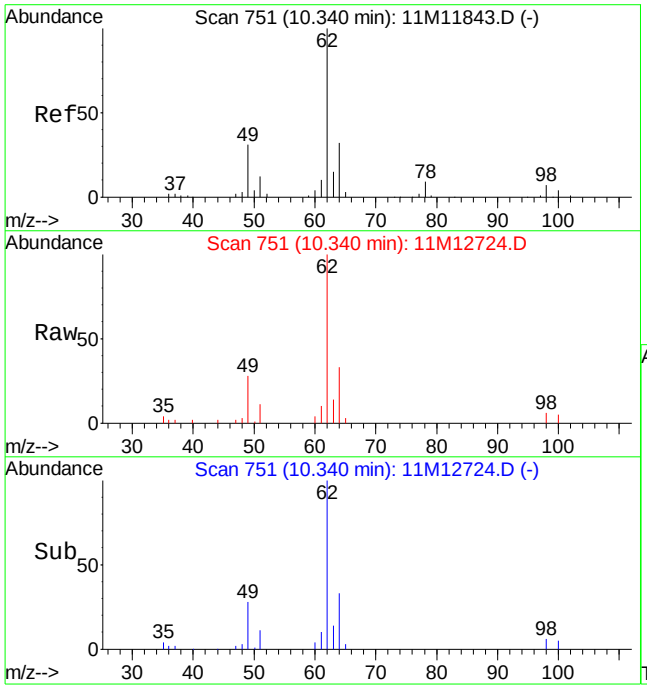

#44
1,2-Dichloroethane
Concen: 7.23 ug/L
RT: 10.34 min Scan# 751
Delta R.T. -0.00 min
Lab File: 11M12724.D
Acq: 17 Jun 2016 19:33

Tgt Ion: 62 Resp: 57645

Ion	Ratio	Lower	Upper
62	100		
64	31.3	18.7	43.7
49	26.6	22.3	52.1

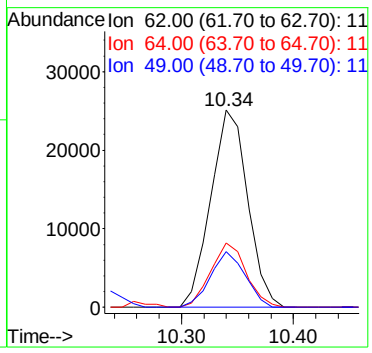

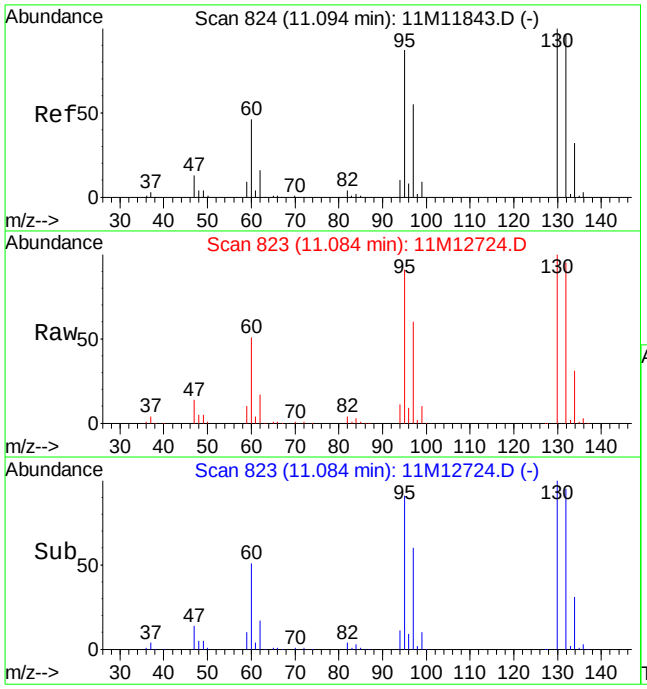

#46
Trichloroethene
Concen: 181.09 ug/L
RT: 11.08 min Scan# 823
Delta R.T. -0.01 min
Lab File: 11M12724.D
Acq: 17 Jun 2016 19:33

Tgt Ion:130 Resp: 1111595

Ion	Ratio	Lower	Upper
130	100		
132	95.9	58.3	136.1
95	88.7	55.6	129.8

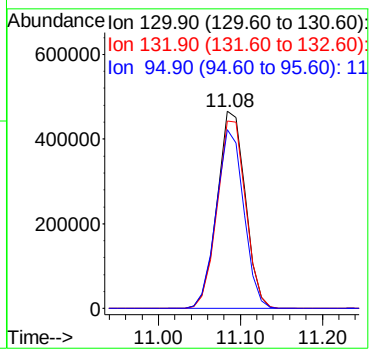

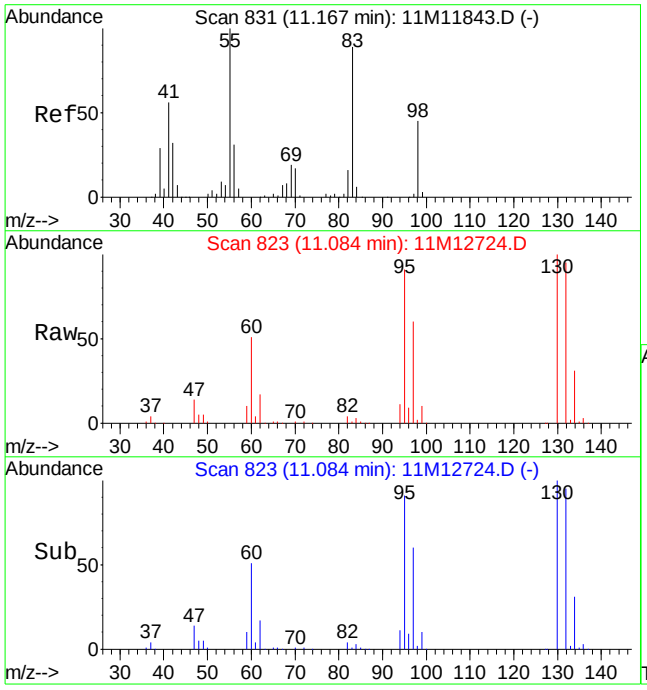

#47
Methylcyclohexane
Concen: 1.42 ug/L
RT: 11.08 min Scan# 823
Delta R.T. -0.08 min
Lab File: 11M12724.D
Acq: 17 Jun 2016 19:33

Tgt Ion: 83 Resp: 10779

Ion	Ratio	Lower	Upper
83	100		
55	0.0	66.5	155.1#
98	245.8	29.9	69.7#

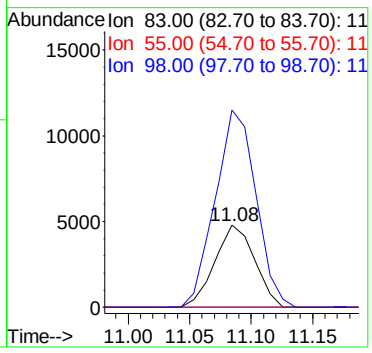

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061716\11M12725.D Vial: 9
Acq On : 17 Jun 2016 20:05 Operator: JDS
Sample : L16060650-02 C D1 2.5X 826-LOW Inst : hpms11
Misc : 1,2.5 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 20 11:34:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	485977	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	412545	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	240882	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	129484	24.3454 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.40%		
43) 1,2-Dichloroethane-d4	10.23	65	138832	22.8929 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 91.56%		
57) Toluene-d8	12.47	98	429441	23.9575 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 95.84%		
78) p-Bromofluorobenzene	15.64	95	191376	25.7731 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.08%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.18	85	7788	1.0228 ug/L #	48
3) Chloromethane	3.73	50	761	0.1248 ug/L	84
4) Vinyl Chloride	3.96	62	20748	4.0969 ug/L	97
8) Trichlorofluoromethane	5.47	101	2989	0.2961 ug/L	88
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	1818431	371.2607 ug/L	95
13) Acetone	6.25	43	22346	19.3643 ug/L #	78
14) 1,1-Dichloroethene	6.56	61	116842	13.1332 ug/L	97
15) Tert-Butyl Alcohol	6.57	59	4153	13.0108 ug/L #	56
23) trans-1,2-Dichloroethene	7.74	96	6495	1.3191 ug/L	97
27) 1,1-Dichloroethane	8.34	63	18062	1.8282 ug/L	98
32) cis-1,2-Dichloroethene	9.15	96	185057	34.0867 ug/L	83
33) Chloroform	9.35	83	7612	0.7846 ug/L	84
39) Cyclohexane	9.88	56	20868	2.0055 ug/L	97
46) Trichloroethene	11.08	130	1192005	196.5115 ug/L	99
47) Methylcyclohexane	11.08	83	12940	1.7286 ug/L #	1
64) Tetrachloroethene	13.33	164	1927	0.3968 ug/L	89

(#) = qualifier out of range (m) = manual integration
11M12725.D 8260WT.M Mon Jun 20 11:34:53 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061716\11M12725.D Vial: 9
Acq On : 17 Jun 2016 20:05 Operator: JDS
Sample : L16060650-02 C D1 2.5X 826-LOW Inst : hpms11
Misc : 1,2.5 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 20 11:34 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

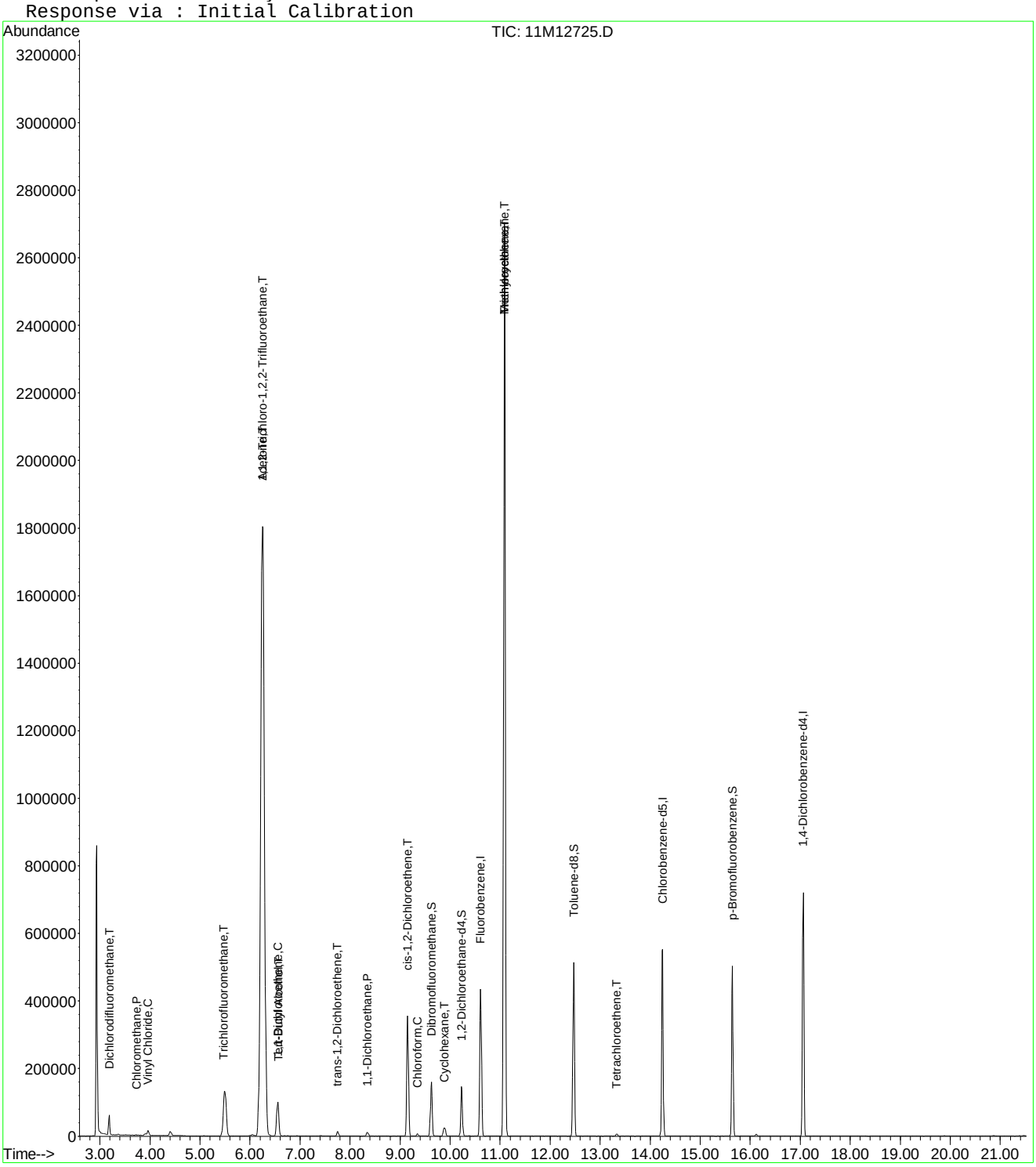

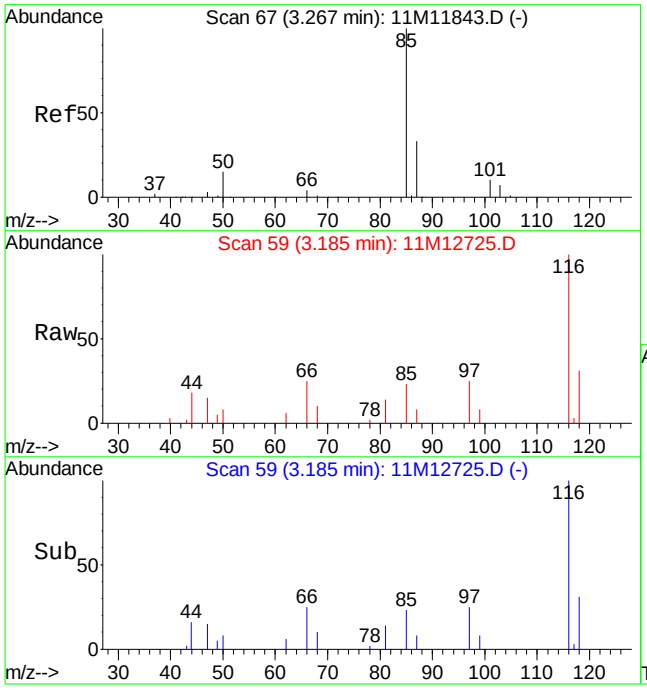

#2
Dichlorodifluoromethane
Concen: 1.02 ug/L
RT: 3.18 min Scan# 59
Delta R.T. -0.08 min
Lab File: 11M12725.D
Acq: 17 Jun 2016 20:05

Tgt Ion: 85 Resp: 7788

Ion	Ratio	Lower	Upper
85	100		
50	35.2	8.5	19.7#

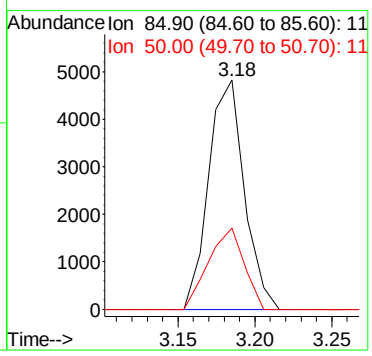

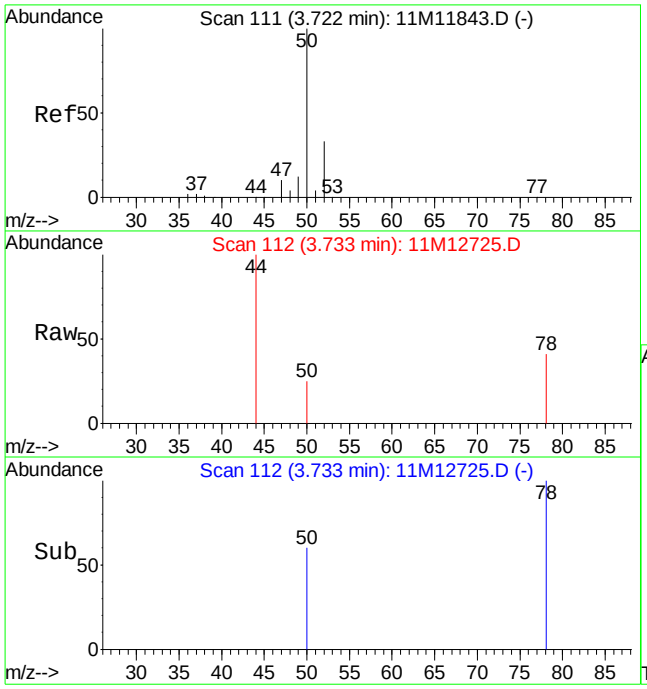

#3
Chloromethane
Concen: 0.12 ug/L
RT: 3.73 min Scan# 112
Delta R.T. 0.01 min
Lab File: 11M12725.D
Acq: 17 Jun 2016 20:05

Tgt Ion: 50 Resp: 761

Ion	Ratio	Lower	Upper
50	100		
52	24.4	20.0	46.6

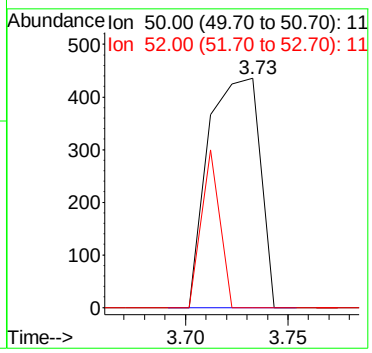

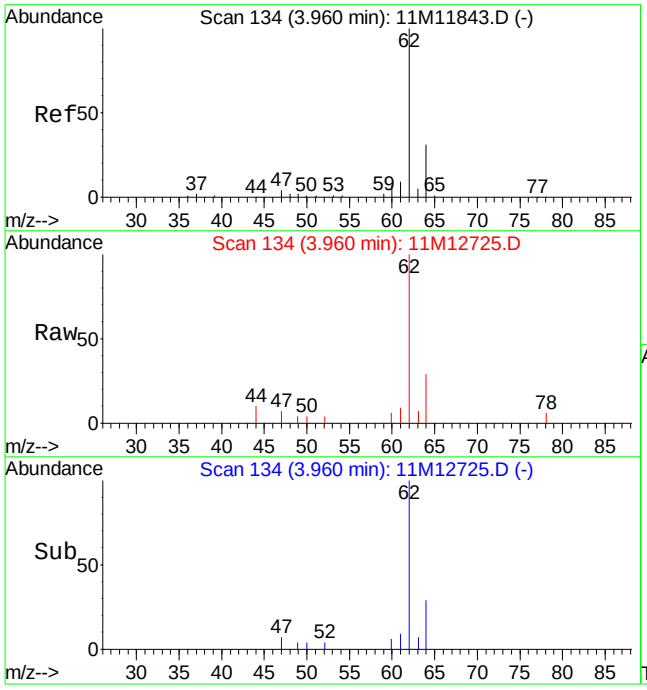

#4
Vinyl Chloride
Concen: 4.10 ug/L
RT: 3.96 min Scan# 134
Delta R.T. 0.00 min
Lab File: 11M12725.D
Acq: 17 Jun 2016 20:05

Tgt Ion: 62 Resp: 20748

Ion	Ratio	Lower	Upper
62	100		
64	32.5	18.4	43.0

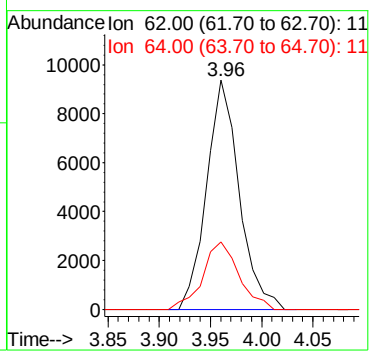

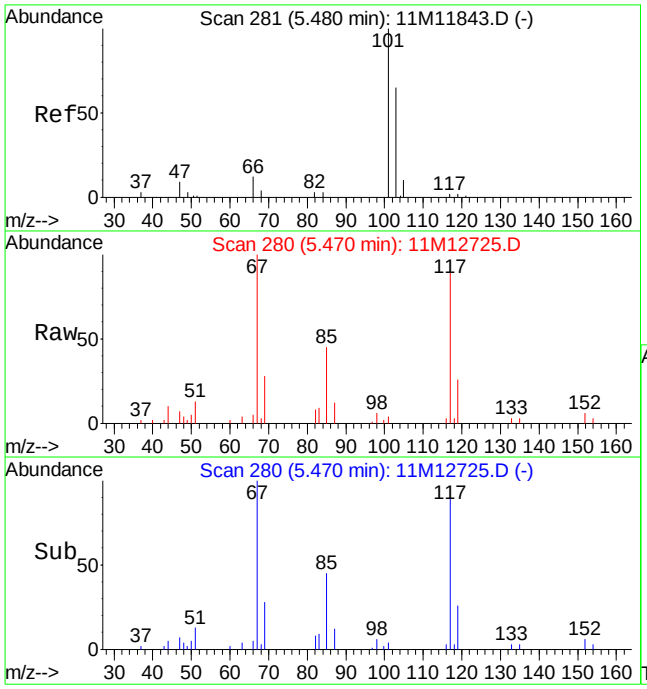

#8
Trichlorofluoromethane
Concen: 0.30 ug/L
RT: 5.47 min Scan# 280
Delta R.T. -0.01 min
Lab File: 11M12725.D
Acq: 17 Jun 2016 20:05

Tgt Ion:101 Resp: 2989

Ion	Ratio	Lower	Upper
101	100		
103	56.0	39.1	91.3

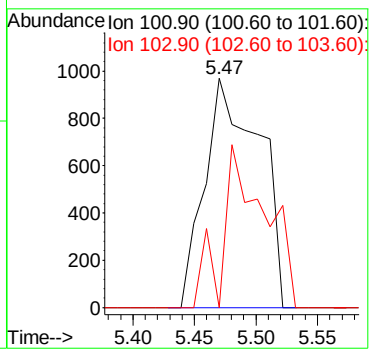

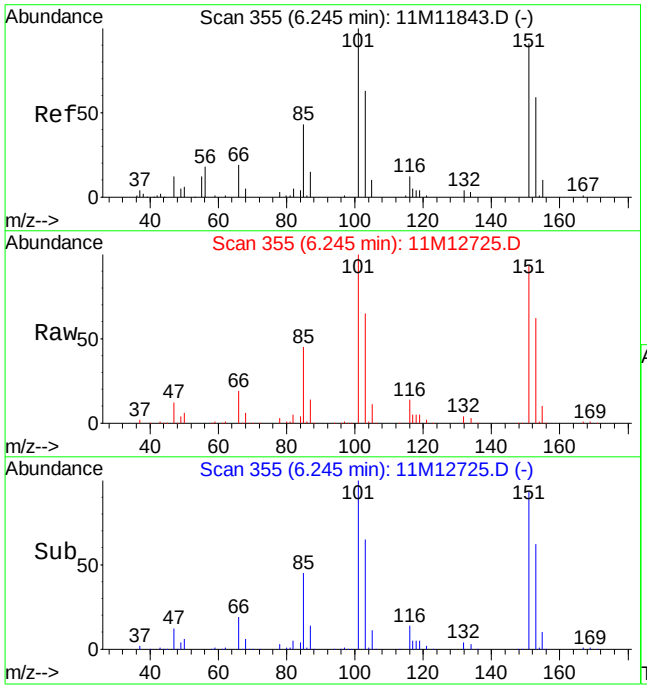

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 371.26 ug/L
RT: 6.25 min Scan# 355
Delta R.T. 0.00 min
Lab File: 11M12725.D
Acq: 17 Jun 2016 20:05

Tgt Ion:101 Resp: 1818431

Ion	Ratio	Lower	Upper
101	100		
151	95.2	50.7	130.7

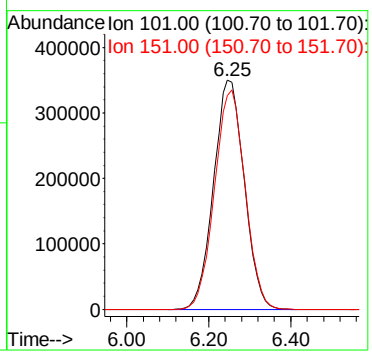

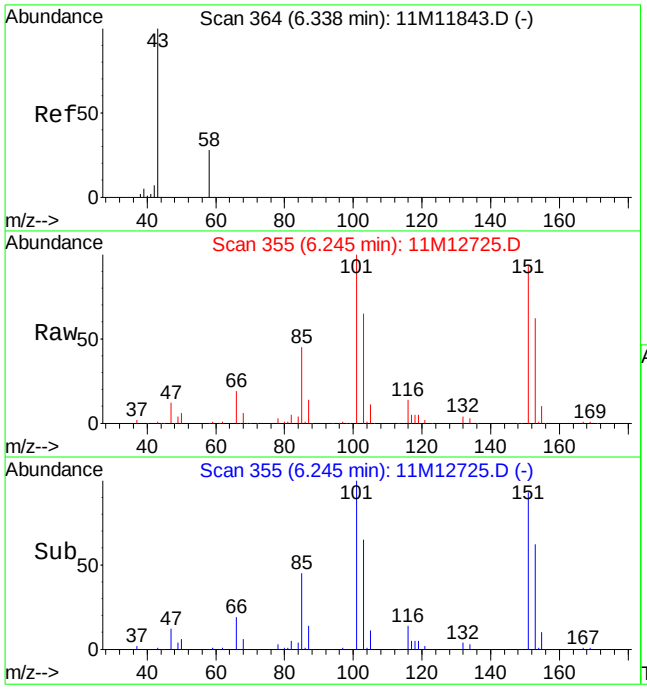

#13
Acetone
Concen: 19.36 ug/L
RT: 6.25 min Scan# 355
Delta R.T. -0.09 min
Lab File: 11M12725.D
Acq: 17 Jun 2016 20:05

Tgt Ion: 43 Resp: 22346

Ion	Ratio	Lower	Upper
43	100		
58	15.2	15.8	36.8#

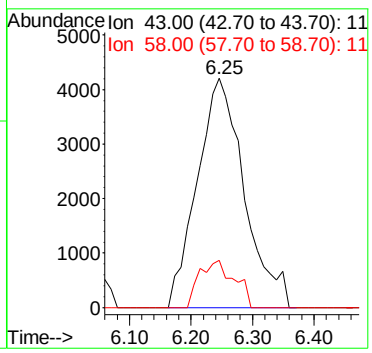

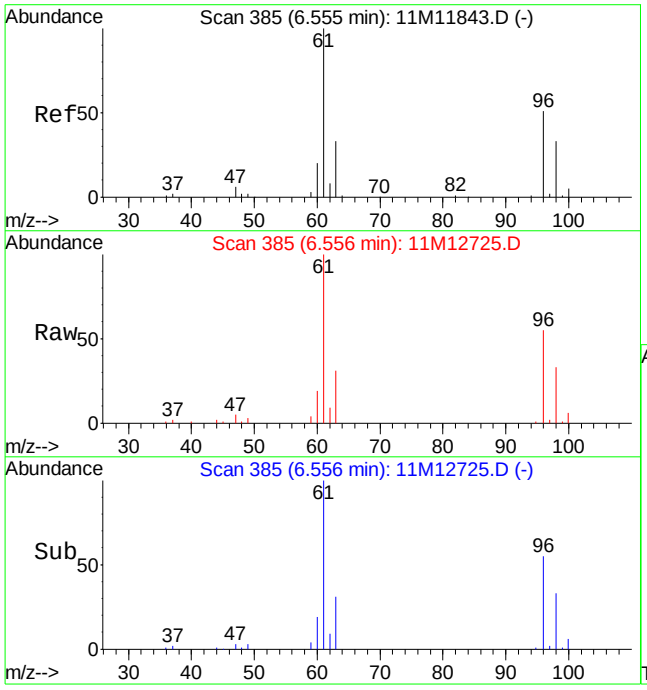

#14
1,1-Dichloroethene
Concen: 13.13 ug/L
RT: 6.56 min Scan# 385
Delta R.T. 0.00 min
Lab File: 11M12725.D
Acq: 17 Jun 2016 20:05

Tgt Ion: 61 Resp: 116842

Ion	Ratio	Lower	Upper
61	100		
96	52.0	30.1	70.3

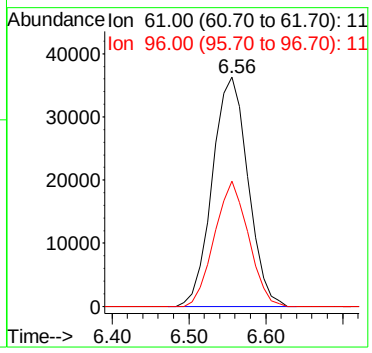

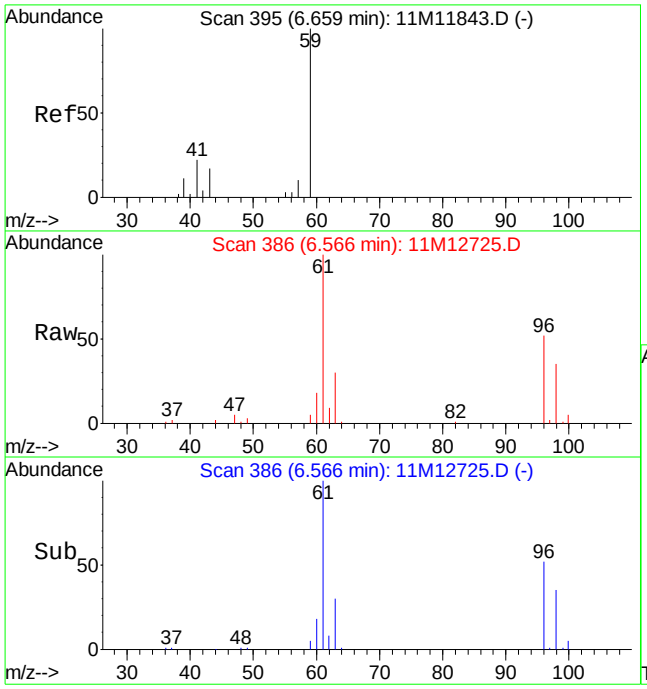

#15
Tert-Butyl Alcohol
Concen: 13.01 ug/L
RT: 6.57 min Scan# 386
Delta R.T. -0.09 min
Lab File: 11M12725.D
Acq: 17 Jun 2016 20:05

Tgt Ion: 59 Resp: 4153

Ion	Ratio	Lower	Upper
59	100		
41	0.0	15.3	35.7#
57	0.0	6.2	14.4#

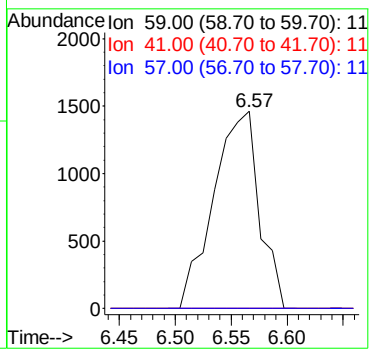

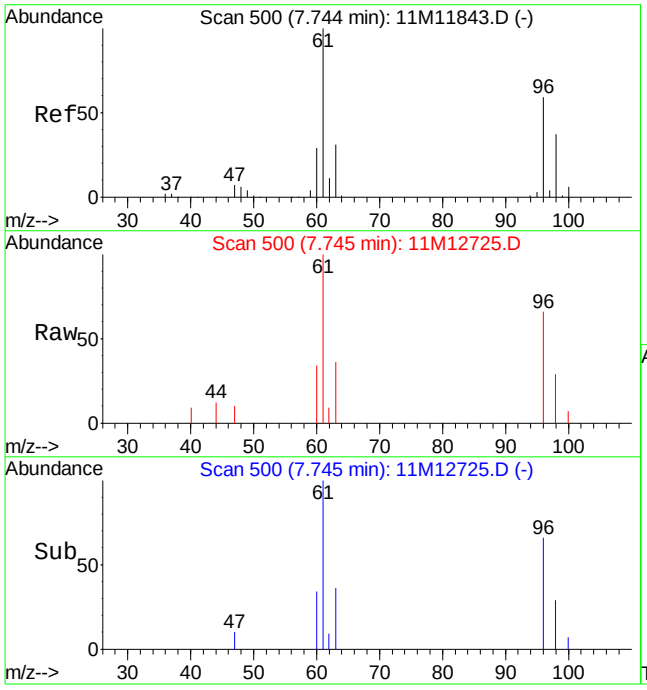

#23
trans-1,2-Dichloroethene
Concen: 1.32 ug/L
RT: 7.74 min Scan# 500
Delta R.T. 0.00 min
Lab File: 11M12725.D
Acq: 17 Jun 2016 20:05

Tgt Ion: 96 Resp: 6495

Ion	Ratio	Lower	Upper
96	100		
61	171.1	100.6	234.6

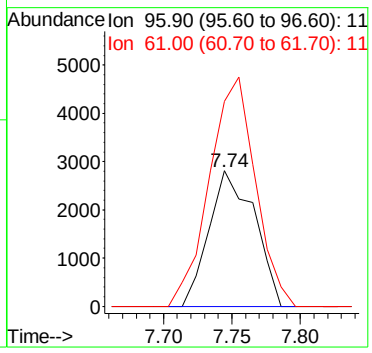

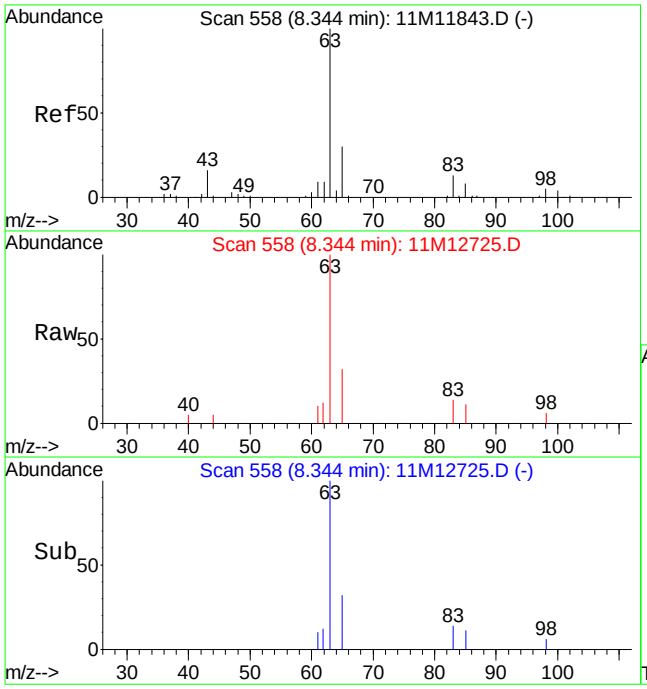

#27
1,1-Dichloroethane
Concen: 1.83 ug/L
RT: 8.34 min Scan# 558
Delta R.T. 0.00 min
Lab File: 11M12725.D
Acq: 17 Jun 2016 20:05

Tgt Ion: 63 Resp: 18062

Ion	Ratio	Lower	Upper
63	100		
65	31.3	17.8	41.6
83	12.6	7.4	17.4

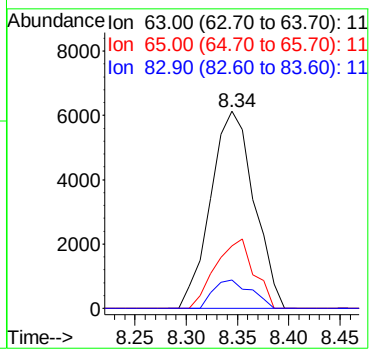

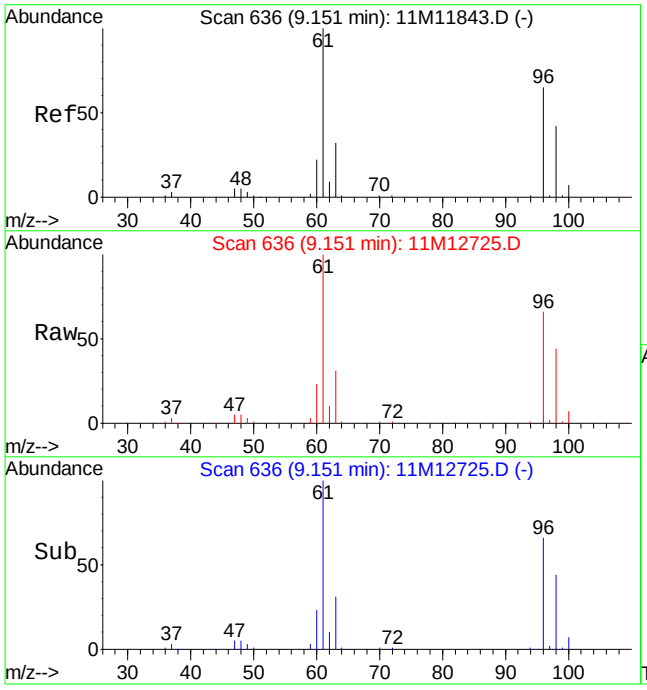

#32
cis-1,2-Dichloroethene
Concen: 34.09 ug/L
RT: 9.15 min Scan# 636
Delta R.T. 0.00 min
Lab File: 11M12725.D
Acq: 17 Jun 2016 20:05

Tgt Ion: 96 Resp: 185057

Ion	Ratio	Lower	Upper
96	100		
61	151.4	105.2	245.6

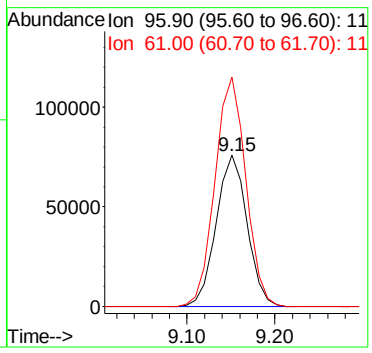

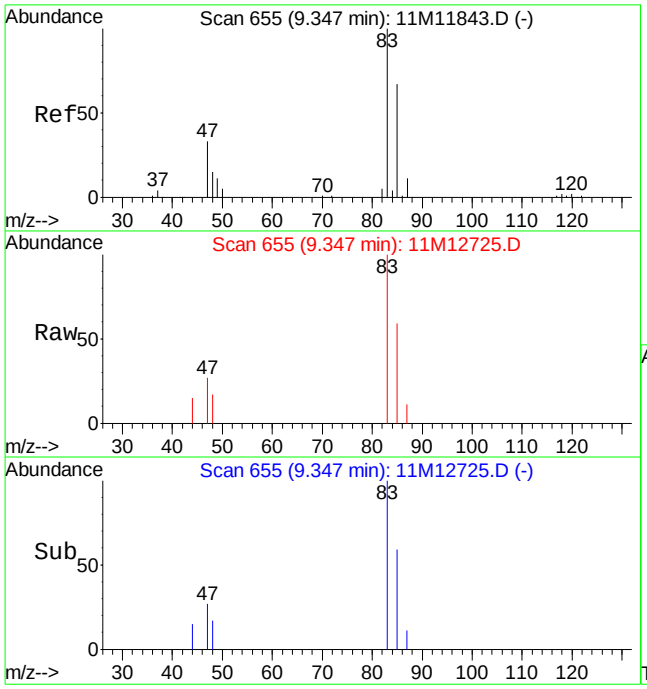

#33
Chloroform
Concen: 0.78 ug/L
RT: 9.35 min Scan# 655
Delta R.T. 0.00 min
Lab File: 11M12725.D
Acq: 17 Jun 2016 20:05

Tgt Ion: 83 Resp: 7612

Ion	Ratio	Lower	Upper
83	100		
85	52.3	39.2	91.4

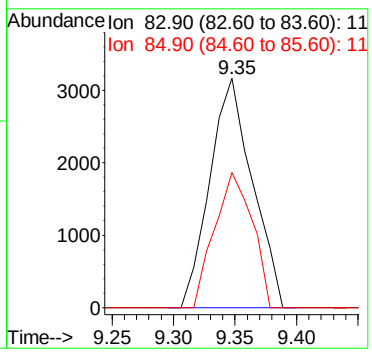

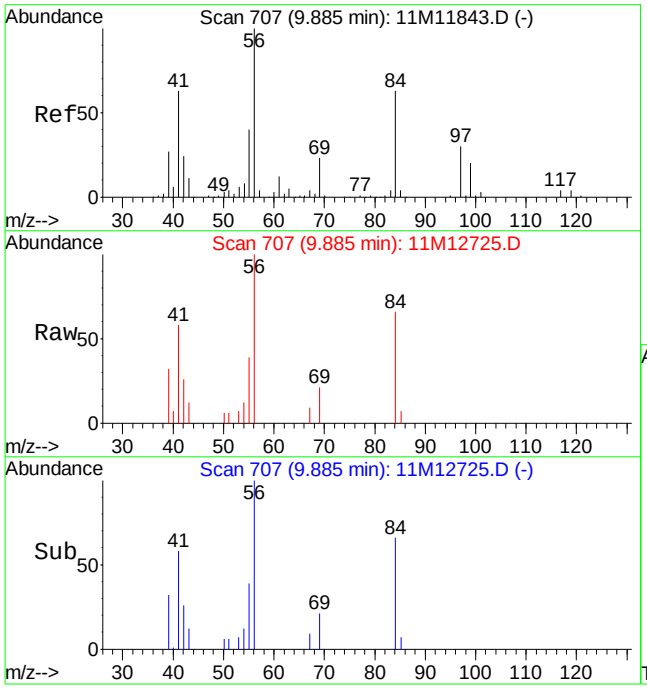

#39
Cyclohexane
Concen: 2.01 ug/L
RT: 9.88 min Scan# 707
Delta R.T. 0.00 min
Lab File: 11M12725.D
Acq: 17 Jun 2016 20:05

Tgt Ion: 56 Resp: 20868

Ion	Ratio	Lower	Upper
56	100		
69	21.1	13.7	31.9
84	61.7	38.5	89.7

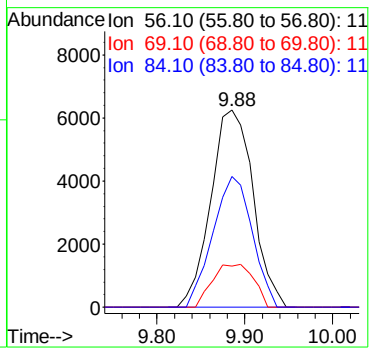

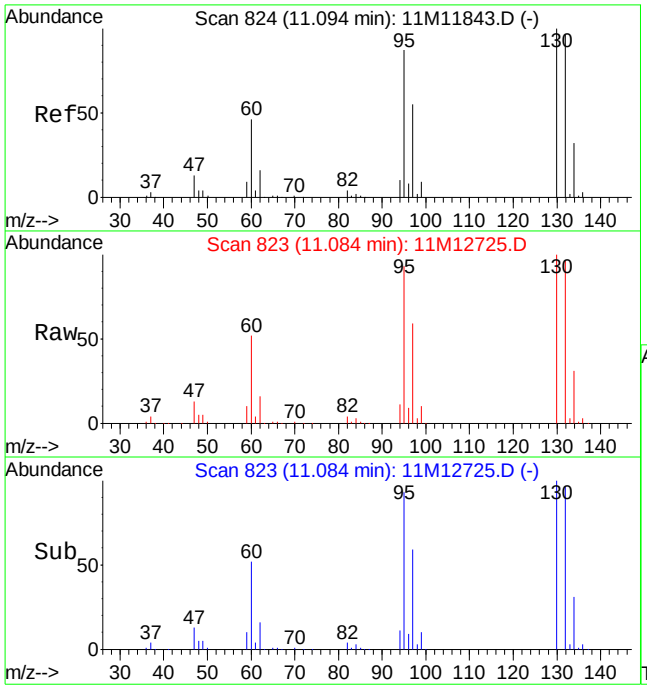

#46
Trichloroethene
Concen: 196.51 ug/L
RT: 11.08 min Scan# 823
Delta R.T. -0.01 min
Lab File: 11M12725.D
Acq: 17 Jun 2016 20:05

Tgt Ion:130 Resp: 1192005

Ion	Ratio	Lower	Upper
130	100		
132	97.3	58.3	136.1
95	89.9	55.6	129.8

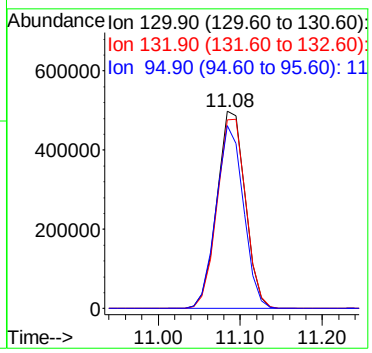

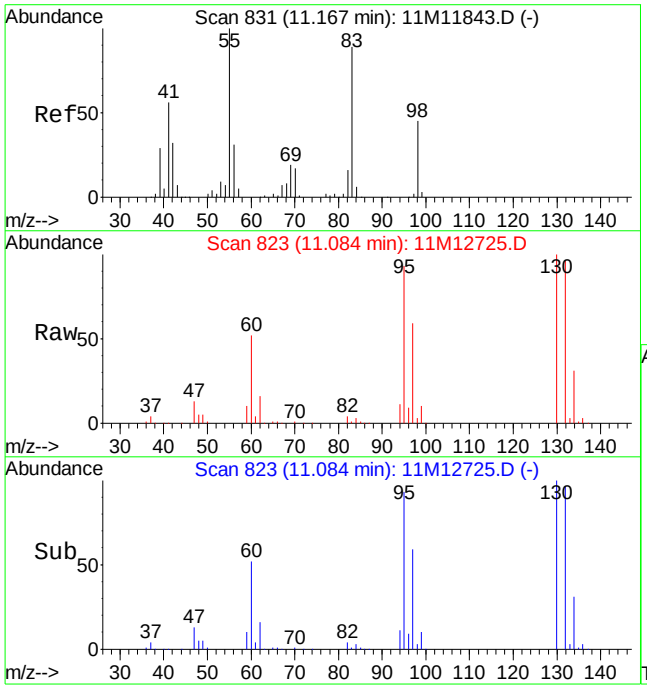

#47
Methylcyclohexane
Concen: 1.73 ug/L
RT: 11.08 min Scan# 823
Delta R.T. -0.08 min
Lab File: 11M12725.D
Acq: 17 Jun 2016 20:05

Tgt Ion: 83 Resp: 12940

Ion	Ratio	Lower	Upper
83	100		
55	0.0	66.5	155.1#
98	220.1	29.9	69.7#

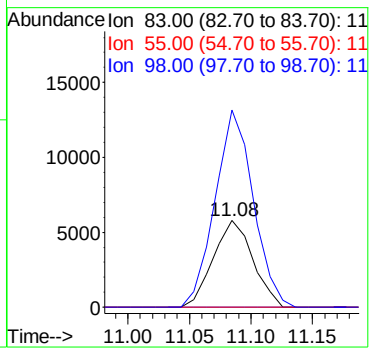

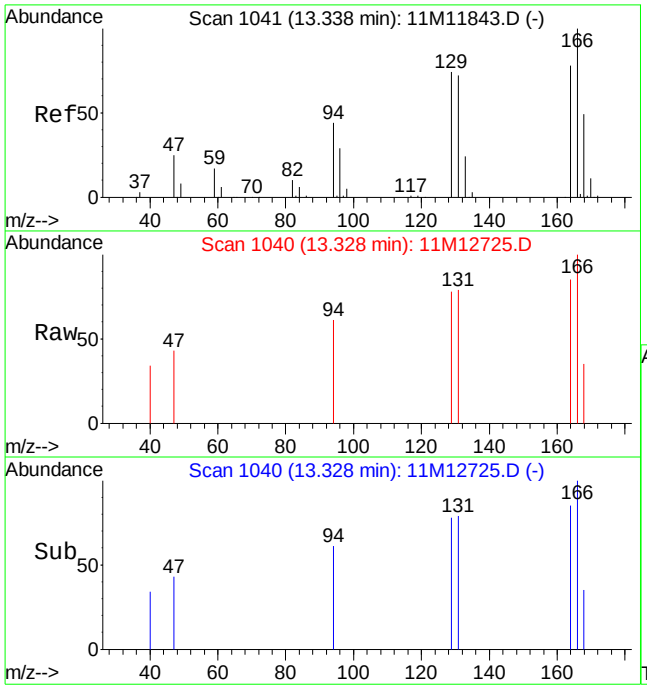

#64
Tetrachloroethene
Concen: 0.40 ug/L
RT: 13.33 min Scan# 1040
Delta R.T. -0.01 min
Lab File: 11M12725.D
Acq: 17 Jun 2016 20:05

Tgt Ion:164 Resp: 1927

Ion	Ratio	Lower	Upper
164	100		
129	107.5	57.9	135.1

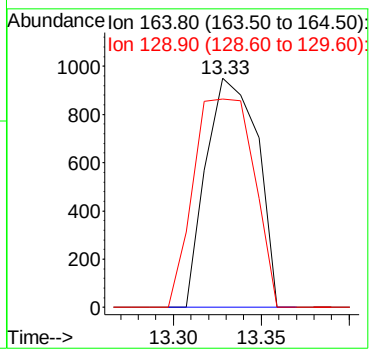

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12693.D Vial: 11
Acq On : 16 Jun 2016 19:42 Operator: JDS
Sample : L16060650-03 B A1 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 20 11:32:46 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	553146	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	466822	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	272718	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	141237	23.3306 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.32%		
43) 1,2-Dichloroethane-d4	10.23	65	152432	22.0833 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 88.32%		
57) Toluene-d8	12.47	98	494784	24.3935 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.56%		
78) p-Bromofluorobenzene	15.64	95	219622	26.1243 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.48%		
Target Compounds					Qvalue
3) Chloromethane	3.73	50	1513	0.2180 ug/L #	69
8) Trichlorofluoromethane	5.48	101	3693	0.3214 ug/L	73
13) Acetone	6.33	43	2017	1.5356 ug/L #	49

(#) = qualifier out of range (m) = manual integration
11M12693.D 8260WT.M Mon Jun 20 11:32:47 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12693.D Vial: 11
Acq On : 16 Jun 2016 19:42 Operator: JDS
Sample : L16060650-03 B A1 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 20 11:32 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

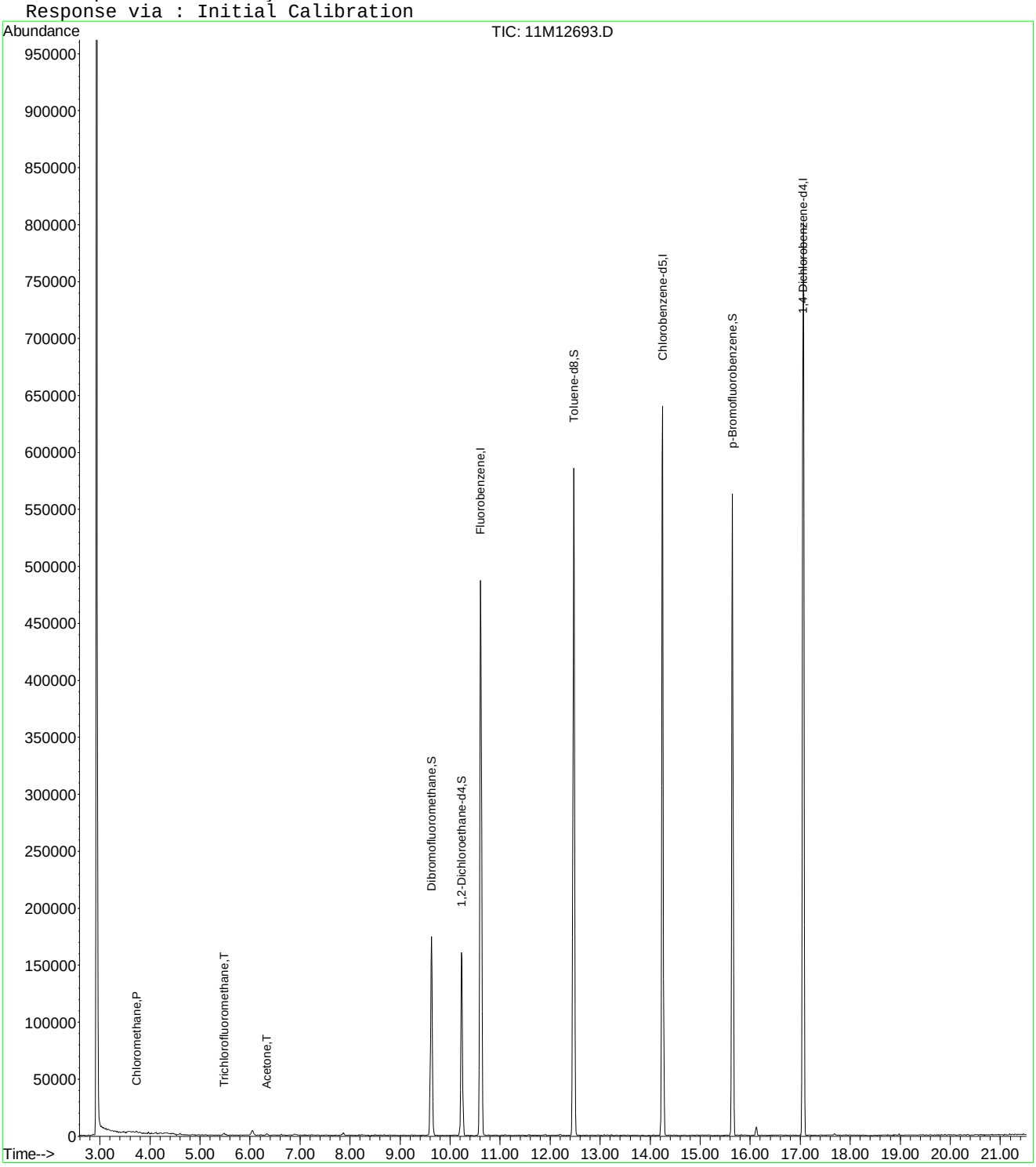

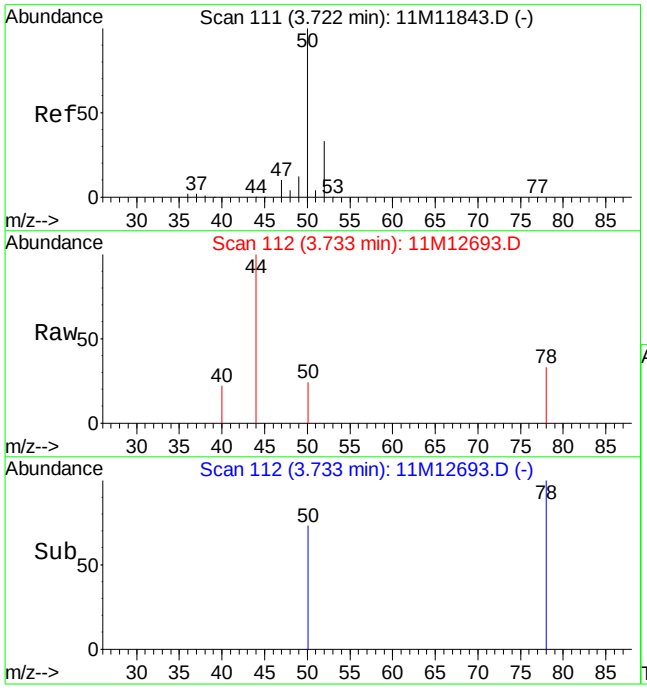

#3
Chloromethane
Concen: 0.22 ug/L
RT: 3.73 min Scan# 112
Delta R.T. 0.01 min
Lab File: 11M12693.D
Acq: 16 Jun 2016 19:42

Tgt Ion: 50 Resp: 1513

Ion	Ratio	Lower	Upper
50	100		
52	15.5	20.0	46.6#

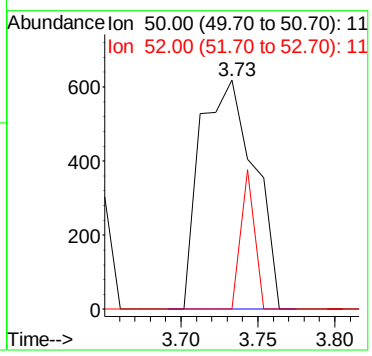

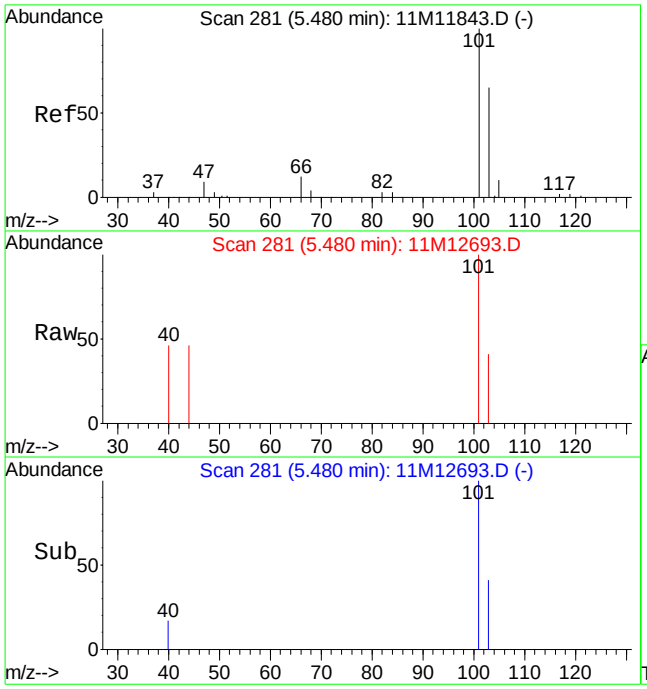

#8
Trichlorofluoromethane
Concen: 0.32 ug/L
RT: 5.48 min Scan# 281
Delta R.T. 0.00 min
Lab File: 11M12693.D
Acq: 16 Jun 2016 19:42

Tgt Ion:101 Resp: 3693

Ion	Ratio	Lower	Upper
101	100		
103	43.8	39.1	91.3

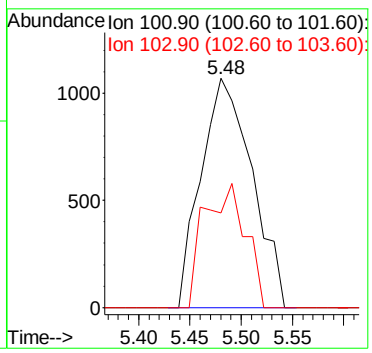

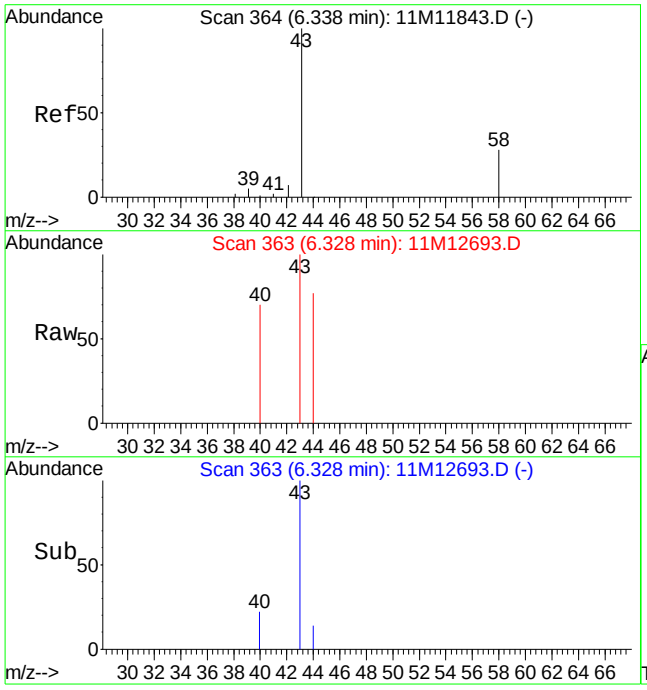

#13
Acetone
Concen: 1.54 ug/L
RT: 6.33 min Scan# 363
Delta R.T. -0.01 min
Lab File: 11M12693.D
Acq: 16 Jun 2016 19:42

Tgt Ion: 43 Resp: 2017

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

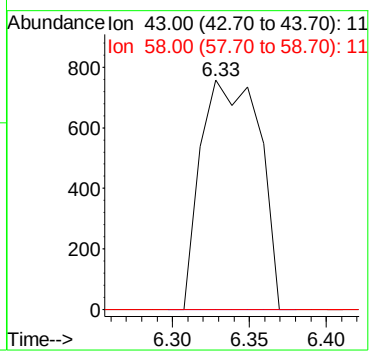

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12694.D Vial: 12
Acq On : 16 Jun 2016 20:14 Operator: JDS
Sample : L16060650-04 B A1 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 20 11:32:48 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	532841	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	451388	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	264811	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	142898	24.5045 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.00%		
43) 1,2-Dichloroethane-d4	10.23	65	149605	22.4997 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 90.00%		
57) Toluene-d8	12.47	98	481806	24.5659 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.28%		
78) p-Bromofluorobenzene	15.64	95	211939	25.9632 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.84%		

Target Compounds

					Qvalue
3) Chloromethane	3.72	50	1161	0.1736 ug/L #	71
8) Trichlorofluoromethane	5.48	101	2876	0.2599 ug/L	99
13) Acetone	6.34	43	1788	1.4131 ug/L #	49
36) Tetrahydrofuran	9.60	42	194	0.1436 ug/L #	47
46) Trichloroethene	11.09	130	7779	1.1696 ug/L	97

(#) = qualifier out of range (m) = manual integration
11M12694.D 8260WT.M Mon Jun 20 11:32:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12694.D Vial: 12
Acq On : 16 Jun 2016 20:14 Operator: JDS
Sample : L16060650-04 B A1 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 20 11:32 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

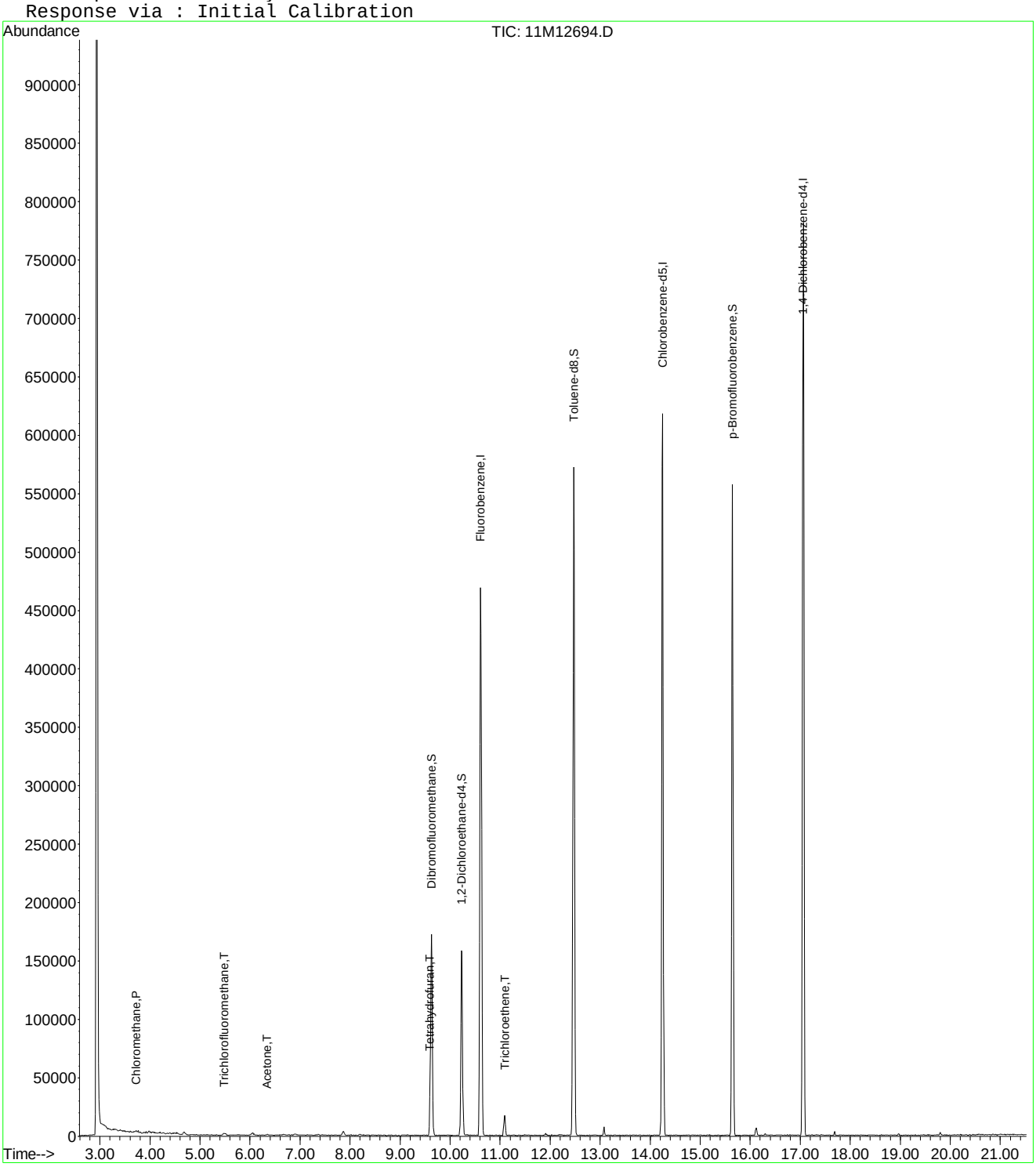

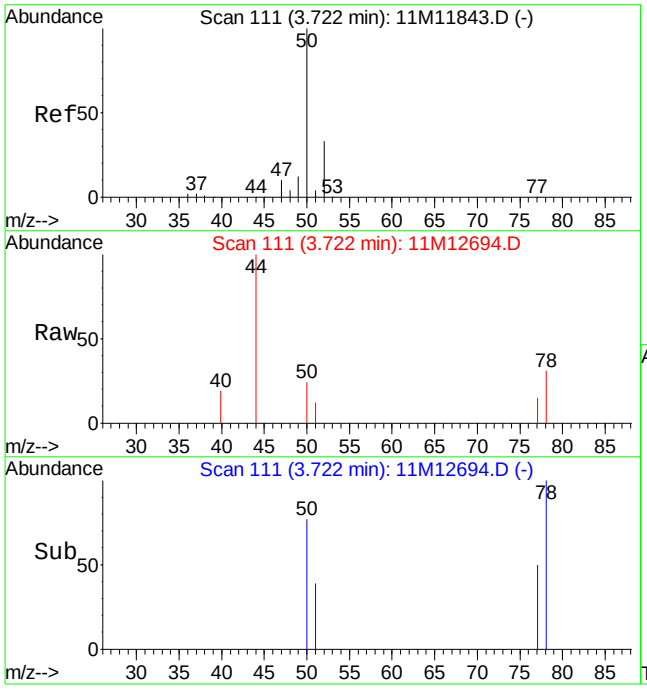

#3
Chloromethane
Concen: 0.17 ug/L
RT: 3.72 min Scan# 111
Delta R.T. 0.00 min
Lab File: 11M12694.D
Acq: 16 Jun 2016 20:14

Tgt Ion: 50 Resp: 1161

Ion	Ratio	Lower	Upper
50	100		
52	16.7	20.0	46.6#

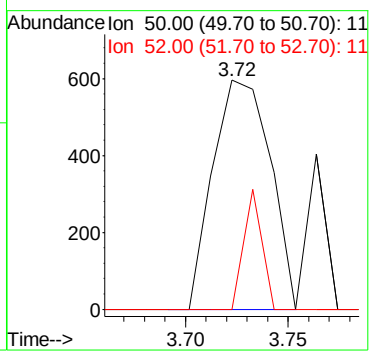

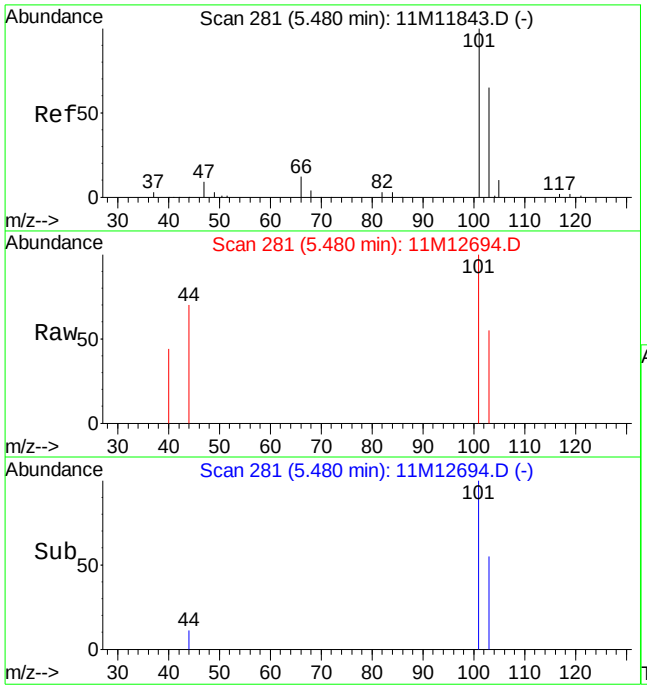

#8
Trichlorofluoromethane
Concen: 0.26 ug/L
RT: 5.48 min Scan# 281
Delta R.T. 0.00 min
Lab File: 11M12694.D
Acq: 16 Jun 2016 20:14

Tgt Ion:101 Resp: 2876

Ion	Ratio	Lower	Upper
101	100		
103	66.3	39.1	91.3

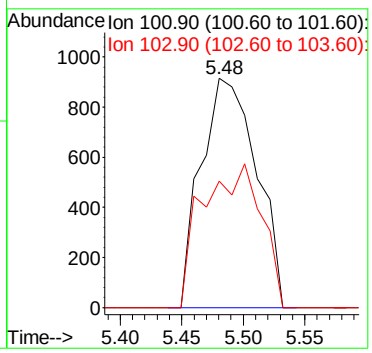

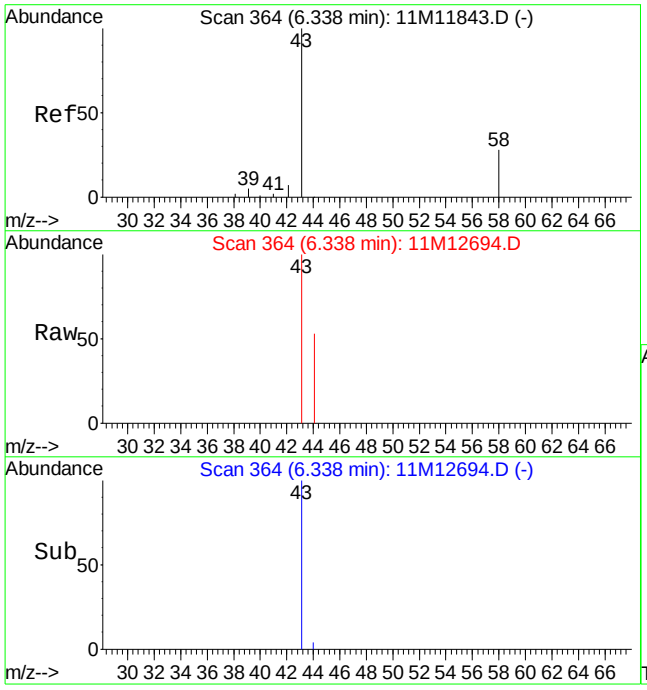

#13
Acetone
Concen: 1.41 ug/L
RT: 6.34 min Scan# 364
Delta R.T. 0.00 min
Lab File: 11M12694.D
Acq: 16 Jun 2016 20:14

Tgt Ion: 43 Resp: 1788

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

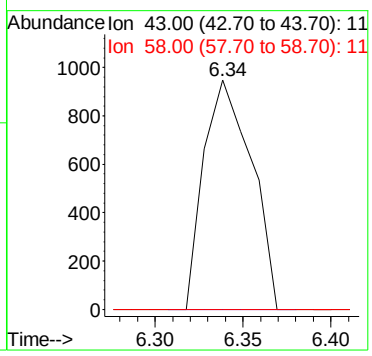

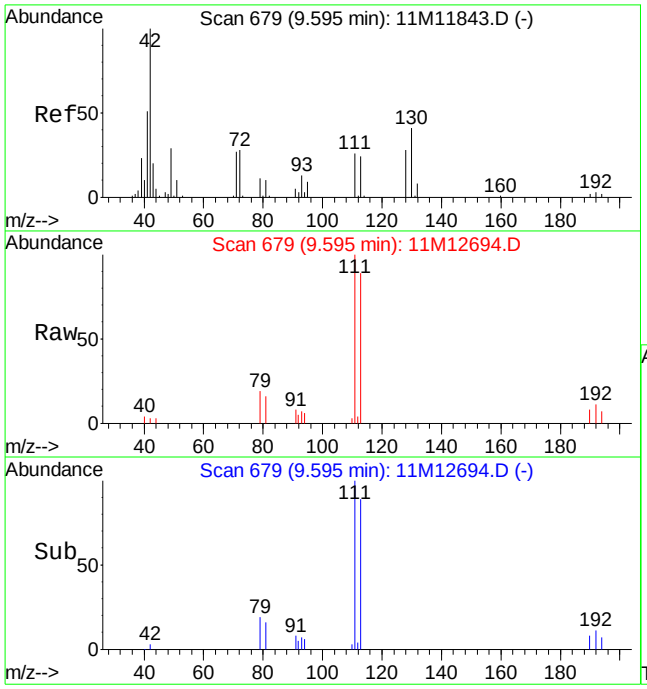

#36
Tetrahydrofuran
Concen: 0.14 ug/L
RT: 9.60 min Scan# 679
Delta R.T. 0.00 min
Lab File: 11M12694.D
Acq: 16 Jun 2016 20:14

Tgt Ion: 42 Resp: 194

Ion	Ratio	Lower	Upper
42	100		
71	0.0	16.4	38.2#
72	0.0	16.6	38.8#

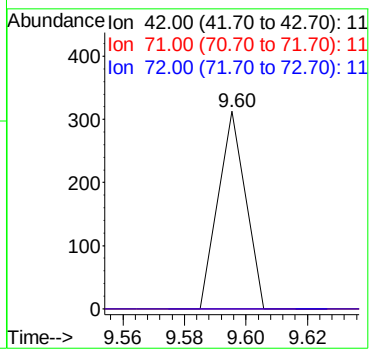

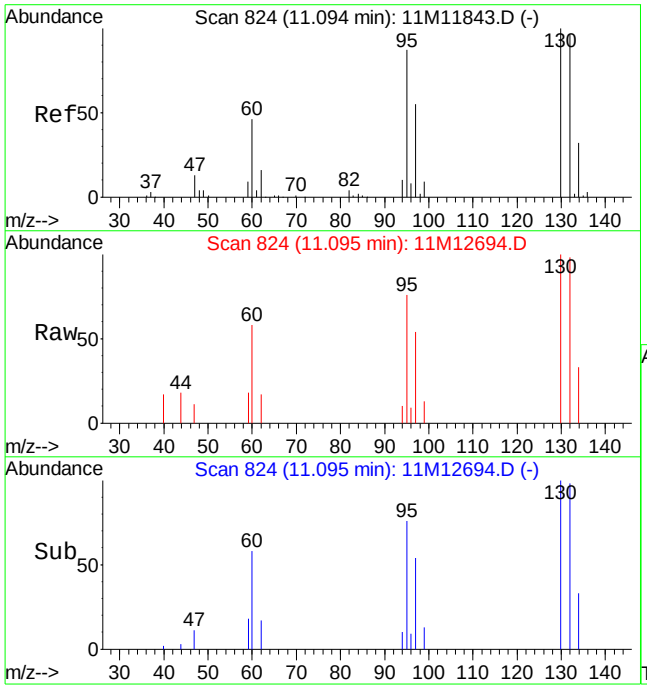

#46
Trichloroethene
Concen: 1.17 ug/L
RT: 11.09 min Scan# 824
Delta R.T. 0.00 min
Lab File: 11M12694.D
Acq: 16 Jun 2016 20:14

Tgt Ion:130 Resp: 7779

Ion	Ratio	Lower	Upper
130	100		
132	101.6	58.3	136.1
95	91.4	55.6	129.8

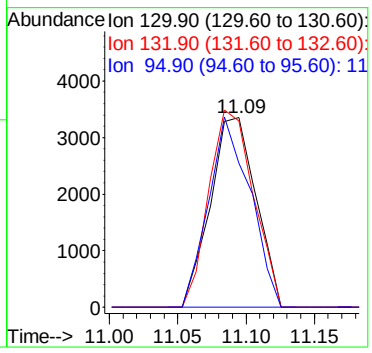

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12695.D Vial: 13
Acq On : 16 Jun 2016 20:46 Operator: JDS
Sample : L16060650-05 B A1 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 20 11:32:51 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	530657	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	450055	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	270373	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	138201	23.7966 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.20%		
43) 1,2-Dichloroethane-d4	10.24	65	147383	22.2567 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 89.04%		
57) Toluene-d8	12.47	98	471522	24.1127 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.44%		
78) p-Bromofluorobenzene	15.64	95	208431	25.0082 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.04%		

Target Compounds

					Qvalue
8) Trichlorofluoromethane	5.50	101	3322	0.3014 ug/L	92
13) Acetone	6.34	43	1076	0.8539 ug/L #	49
36) Tetrahydrofuran	9.60	42	400	0.2974 ug/L #	47
46) Trichloroethene	11.08	130	7880	1.1897 ug/L	94

(#) = qualifier out of range (m) = manual integration
11M12695.D 8260WT.M Mon Jun 20 11:32:52 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12695.D Vial: 13
Acq On : 16 Jun 2016 20:46 Operator: JDS
Sample : L16060650-05 B A1 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 20 11:32 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

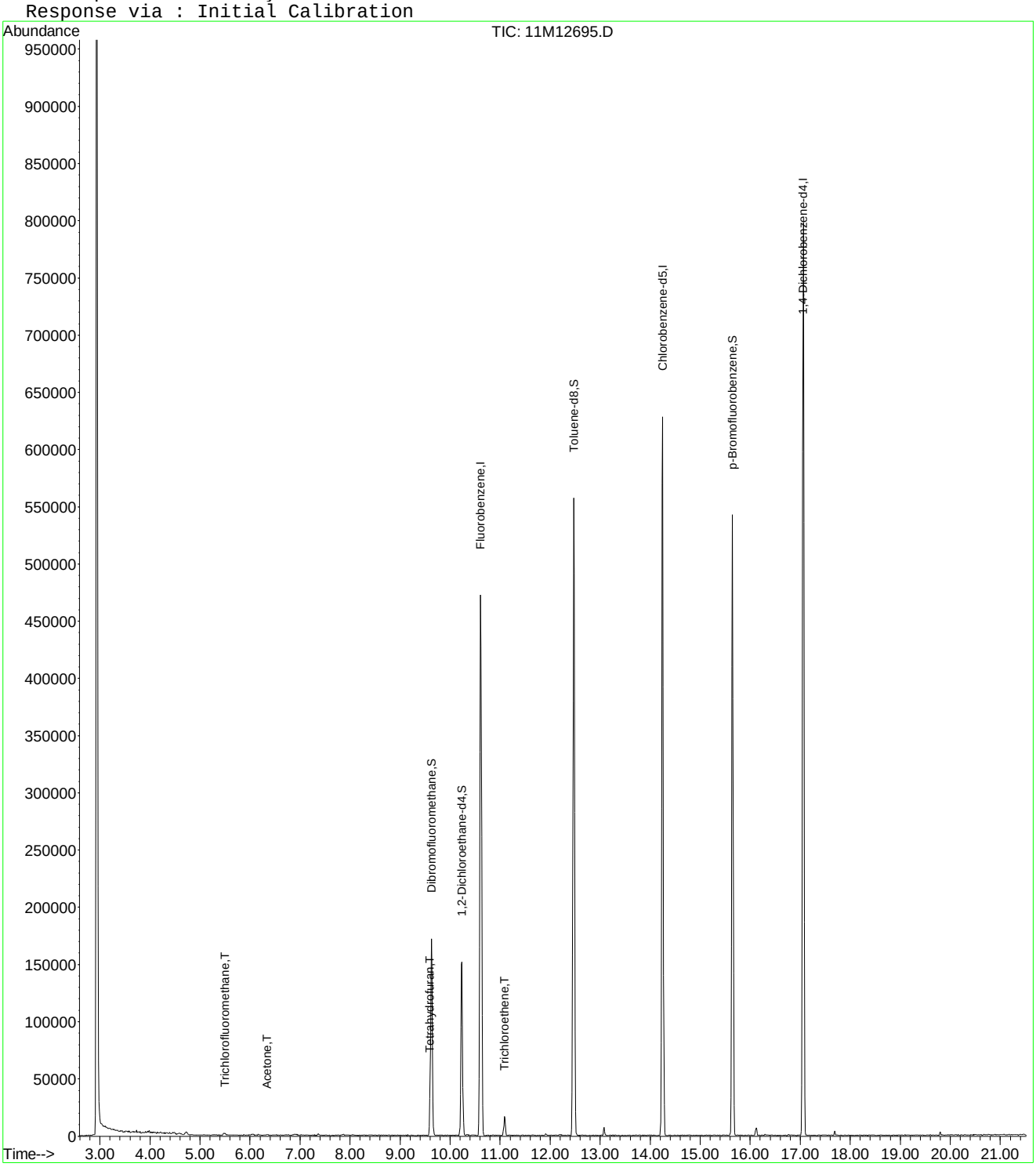

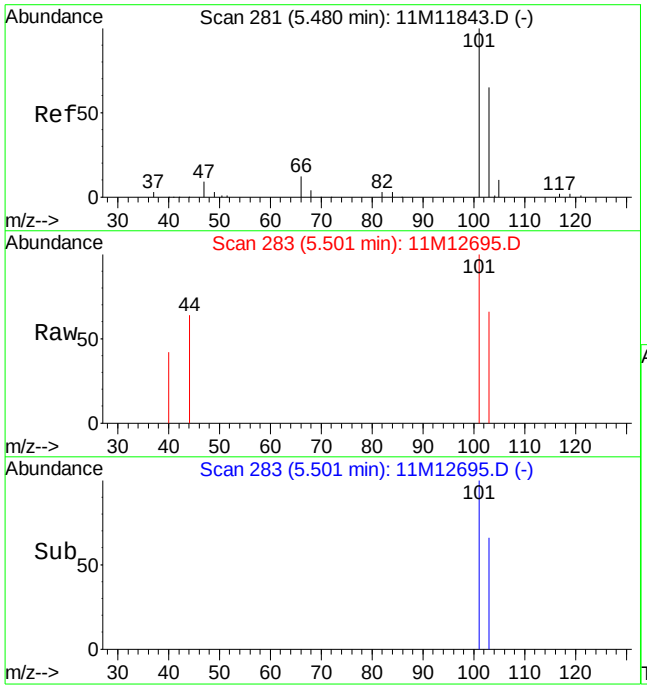

#8
Trichlorofluoromethane
Concen: 0.30 ug/L
RT: 5.50 min Scan# 283
Delta R.T. 0.02 min
Lab File: 11M12695.D
Acq: 16 Jun 2016 20:46

Tgt Ion:101 Resp: 3322

Ion	Ratio	Lower	Upper
101	100		
103	59.2	39.1	91.3

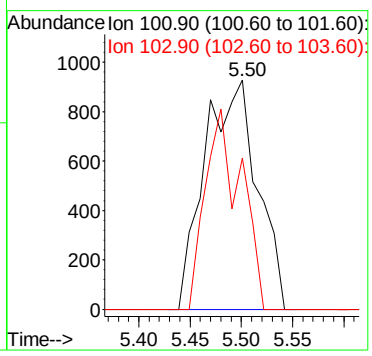

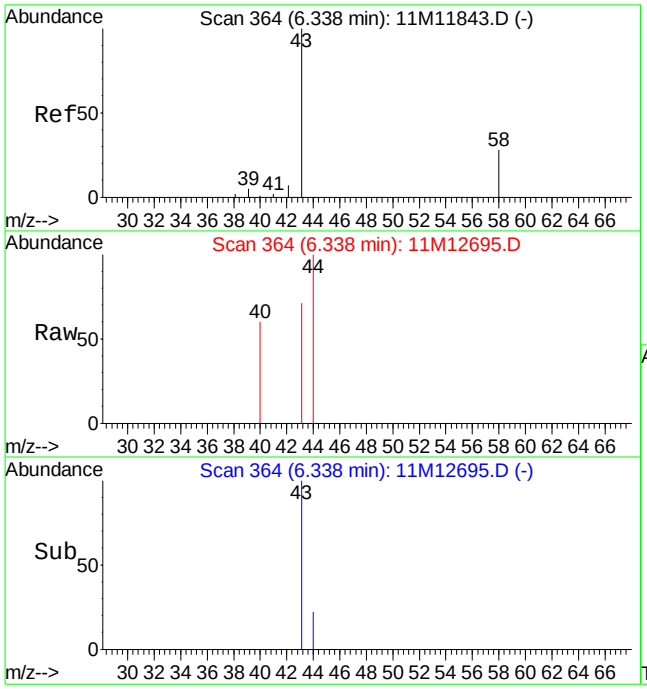

#13
Acetone
Concen: 0.85 ug/L
RT: 6.34 min Scan# 364
Delta R.T. 0.00 min
Lab File: 11M12695.D
Acq: 16 Jun 2016 20:46

Tgt Ion: 43 Resp: 1076

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

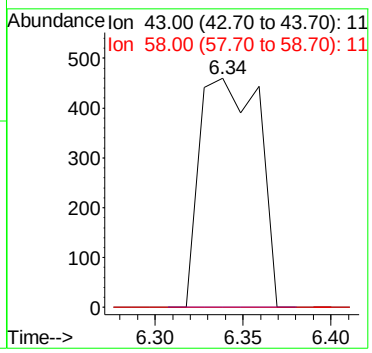

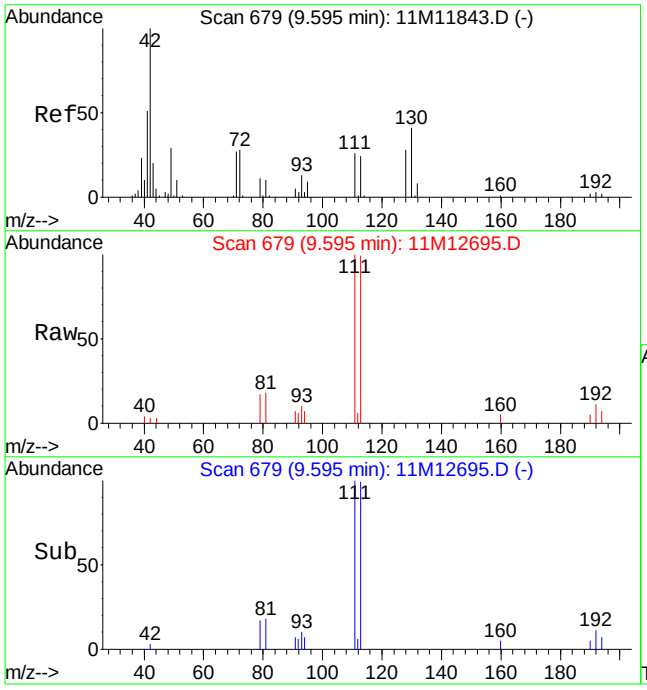

#36
Tetrahydrofuran
Concen: 0.30 ug/L
RT: 9.60 min Scan# 679
Delta R.T. 0.00 min
Lab File: 11M12695.D
Acq: 16 Jun 2016 20:46

Tgt Ion: 42 Resp: 400

Ion	Ratio	Lower	Upper
42	100		
71	0.0	16.4	38.2#
72	0.0	16.6	38.8#

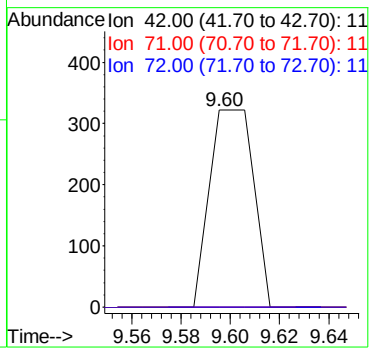

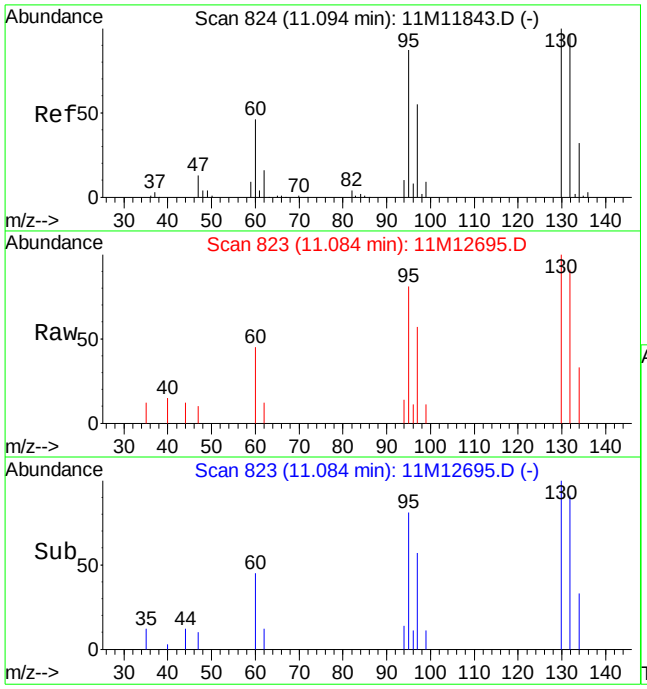

#46
Trichloroethene
Concen: 1.19 ug/L
RT: 11.08 min Scan# 823
Delta R.T. -0.01 min
Lab File: 11M12695.D
Acq: 16 Jun 2016 20:46

Tgt Ion:130 Resp: 7880

Ion	Ratio	Lower	Upper
130	100		
132	93.7	58.3	136.1
95	83.7	55.6	129.8

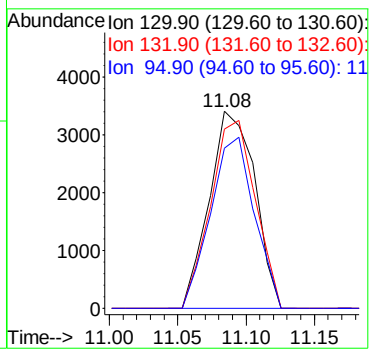

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12702.D Vial: 20
Acq On : 17 Jun 2016 00:29 Operator: JDS
Sample : L16060650-06 B D1 2X 826-LOW Inst : hpms11
Misc : 1,2 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 20 11:33:12 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	511766	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	439489	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	252727	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	132465	23.6509 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.60%		
43) 1,2-Dichloroethane-d4	10.24	65	144741	22.6646 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 90.64%		
57) Toluene-d8	12.47	98	456920	23.9278 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 95.72%		
78) p-Bromofluorobenzene	15.64	95	198595	25.4917 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.96%		

Target Compounds

					Qvalue
4) Vinyl Chloride	3.96	62	1320	0.2475 ug/L #	73
8) Trichlorofluoromethane	5.48	101	3180	0.2992 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	5140	0.9965 ug/L	94
13) Acetone	6.36	43	1029	0.8468 ug/L #	49
14) 1,1-Dichloroethene	6.56	61	15989	1.7066 ug/L	98
23) trans-1,2-Dichloroethene	7.77	96	1965	0.3790 ug/L	83
27) 1,1-Dichloroethane	8.34	63	8886	0.8541 ug/L #	95
32) cis-1,2-Dichloroethene	9.15	96	121710	21.2887 ug/L	81
44) 1,2-Dichloroethane	10.34	62	7566	0.9118 ug/L	87
46) Trichloroethene	11.09	130	937930	146.8333 ug/L	98
47) Methylcyclohexane	11.08	83	9485	1.2032 ug/L #	1
49) 1,4-Dioxane	11.56	88	537	38.7606 ug/L #	39

(#) = qualifier out of range (m) = manual integration
11M12702.D 8260WT.M Mon Jun 20 11:33:13 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12702.D Vial: 20
Acq On : 17 Jun 2016 00:29 Operator: JDS
Sample : L16060650-06 B D1 2X 826-LOW Inst : hpms11
Misc : 1,2 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 20 11:33 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

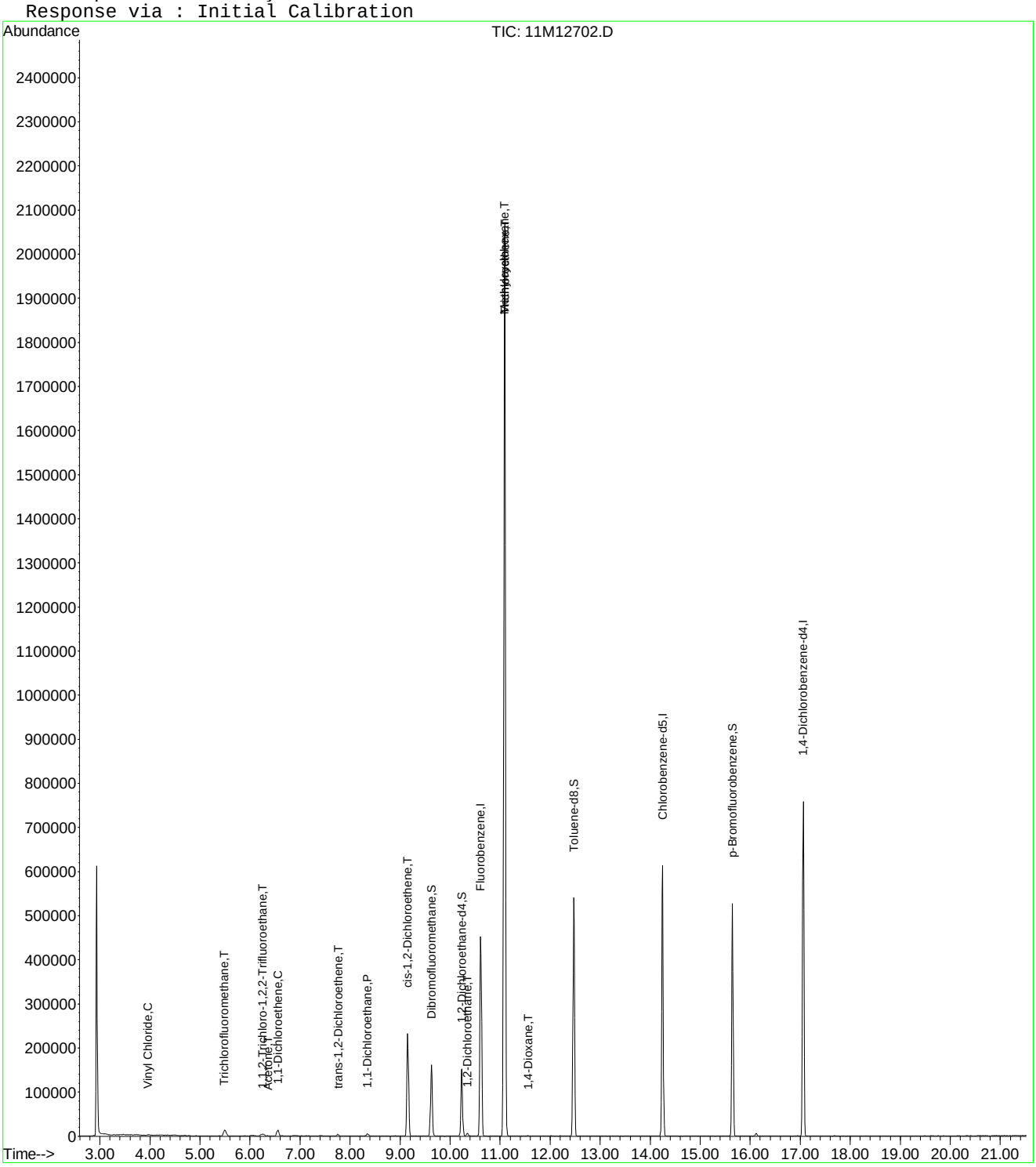

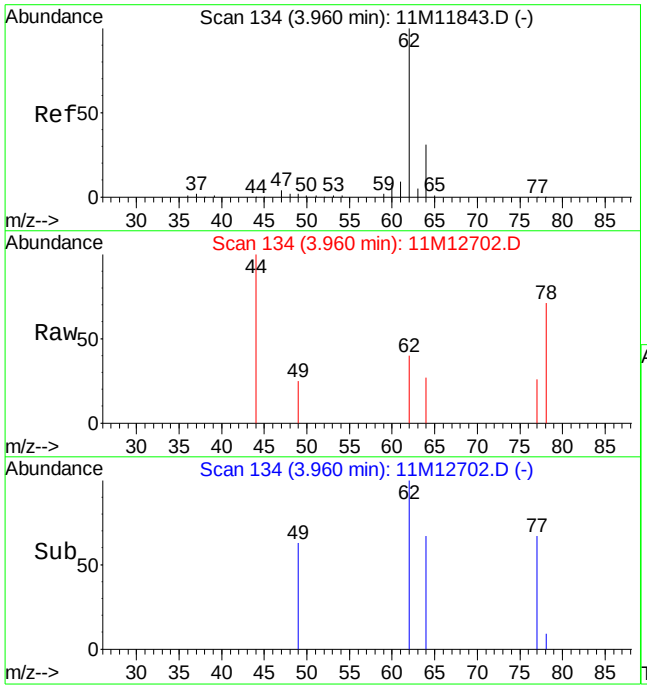

#4
Vinyl Chloride
Concen: 0.25 ug/L
RT: 3.96 min Scan# 134
Delta R.T. 0.00 min
Lab File: 11M12702.D
Acq: 17 Jun 2016 00:29

Tgt Ion: 62 Resp: 1320

Ion	Ratio	Lower	Upper
62	100		
64	15.9	18.4	43.0#

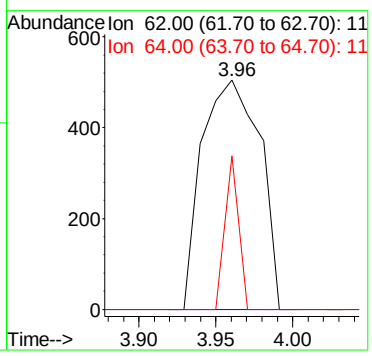

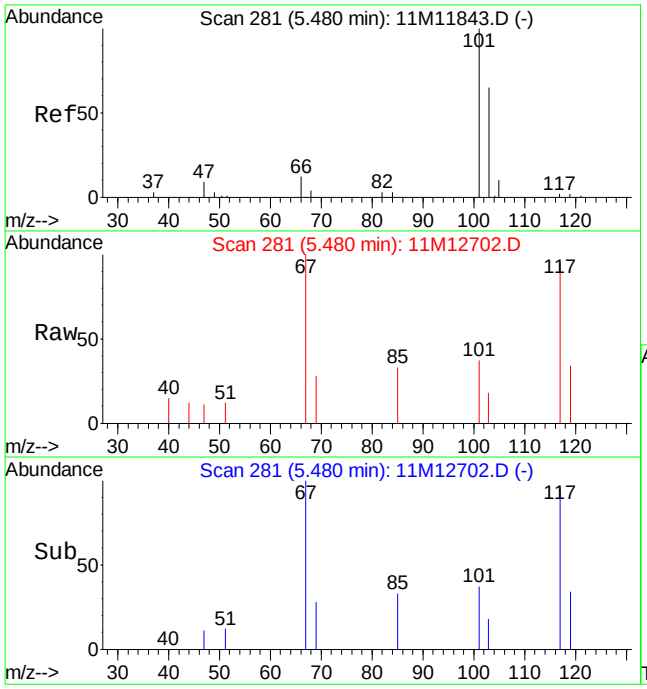

#8
Trichlorofluoromethane
Concen: 0.30 ug/L
RT: 5.48 min Scan# 281
Delta R.T. 0.00 min
Lab File: 11M12702.D
Acq: 17 Jun 2016 00:29

Tgt Ion:101 Resp: 3180

Ion	Ratio	Lower	Upper
101	100		
103	59.5	39.1	91.3

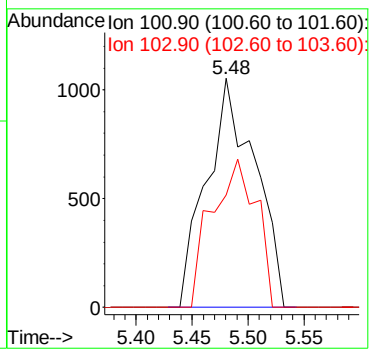

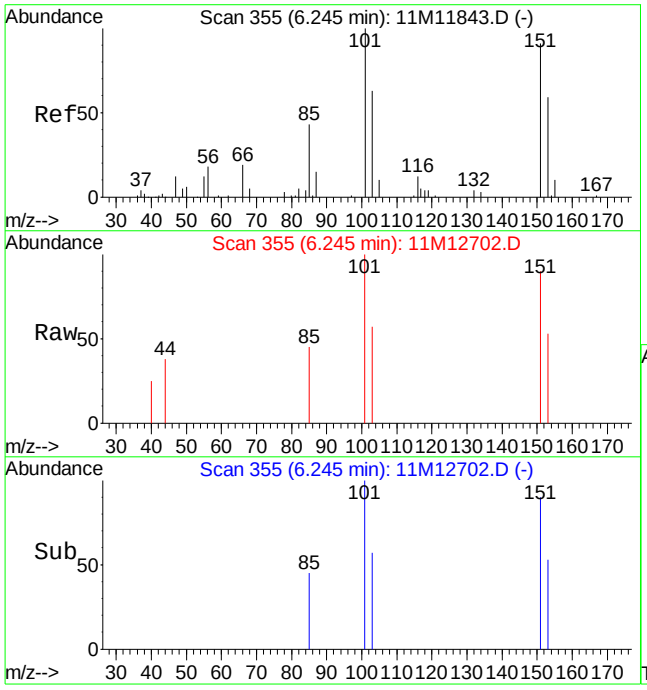

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 1.00 ug/L
RT: 6.25 min Scan# 355
Delta R.T. 0.00 min
Lab File: 11M12702.D
Acq: 17 Jun 2016 00:29

Tgt Ion:101 Resp: 5140

Ion	Ratio	Lower	Upper
101	100		
151	96.7	50.7	130.7

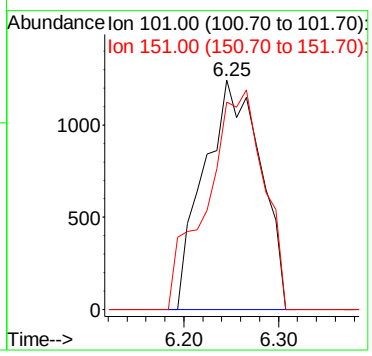

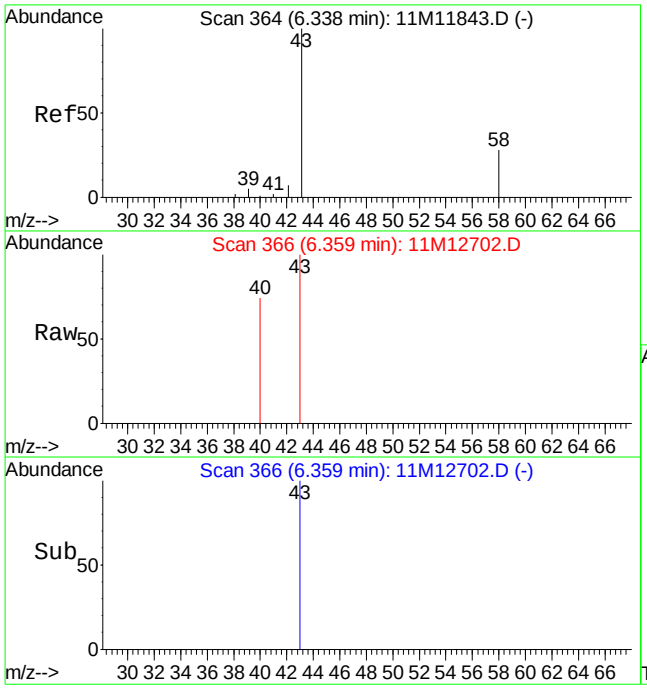

#13
Acetone
Concen: 0.85 ug/L
RT: 6.36 min Scan# 366
Delta R.T. 0.02 min
Lab File: 11M12702.D
Acq: 17 Jun 2016 00:29

Tgt Ion: 43 Resp: 1029

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

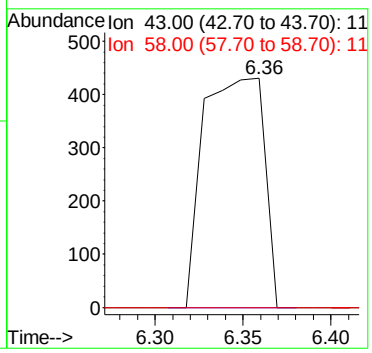

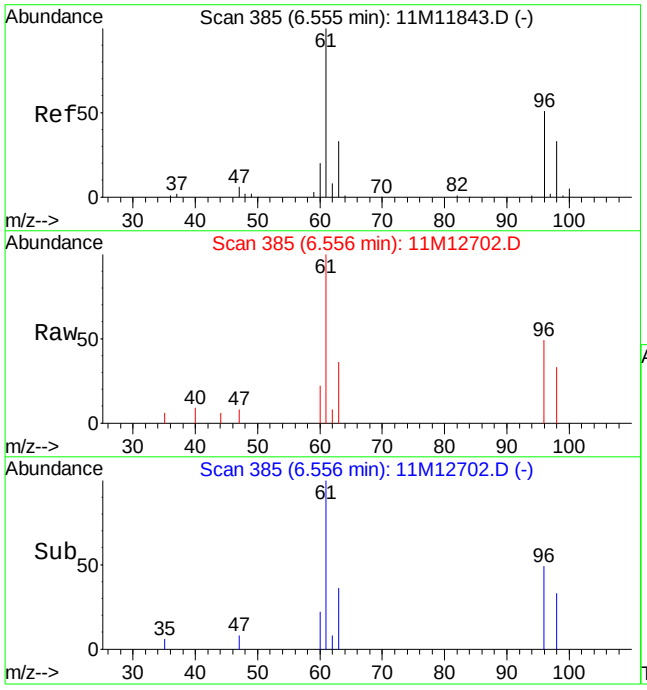

#14
1,1-Dichloroethene
Concen: 1.71 ug/L
RT: 6.56 min Scan# 385
Delta R.T. 0.00 min
Lab File: 11M12702.D
Acq: 17 Jun 2016 00:29

Tgt Ion: 61 Resp: 15989

Ion	Ratio	Lower	Upper
61	100		
96	51.3	30.1	70.3

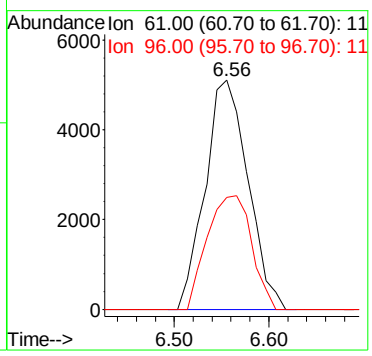

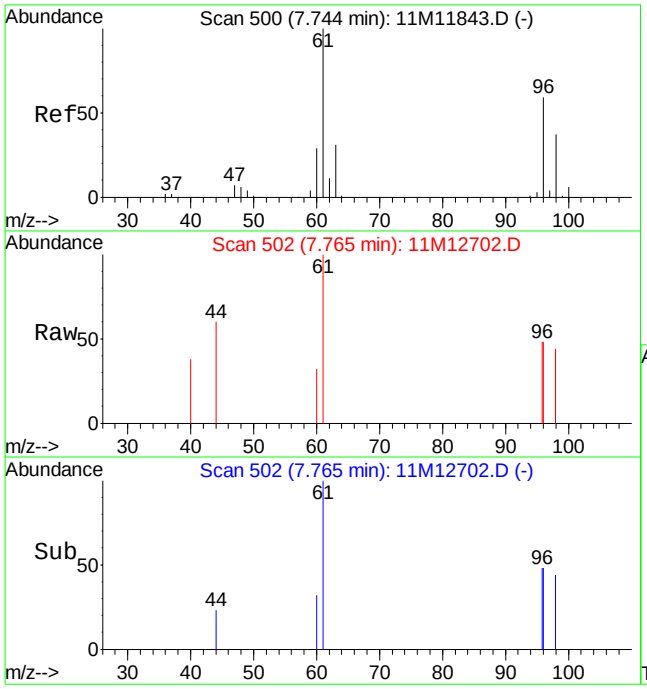

#23
trans-1,2-Dichloroethene
Concen: 0.38 ug/L
RT: 7.77 min Scan# 502
Delta R.T. 0.02 min
Lab File: 11M12702.D
Acq: 17 Jun 2016 00:29

Tgt Ion: 96 Resp: 1965

Ion	Ratio	Lower	Upper
96	100		
61	144.0	100.6	234.6

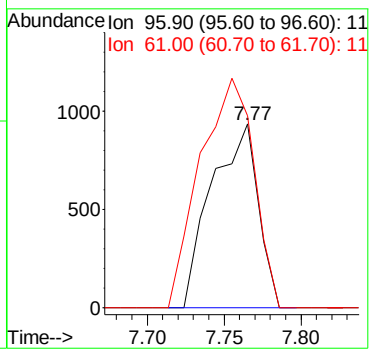

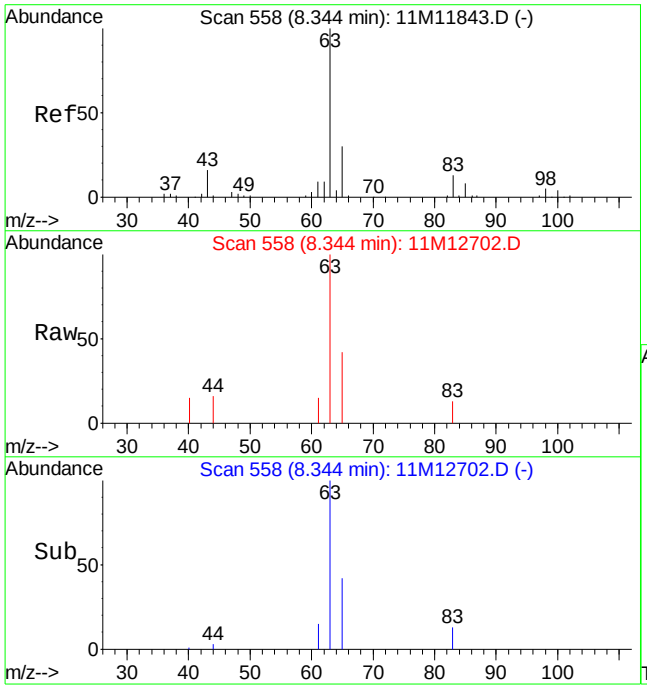

#27
1,1-Dichloroethane
Concen: 0.85 ug/L
RT: 8.34 min Scan# 558
Delta R.T. 0.00 min
Lab File: 11M12702.D
Acq: 17 Jun 2016 00:29

Tgt Ion: 63 Resp: 8886

Ion	Ratio	Lower	Upper
63	100		
65	30.9	17.8	41.6
83	7.3	7.4	17.4#

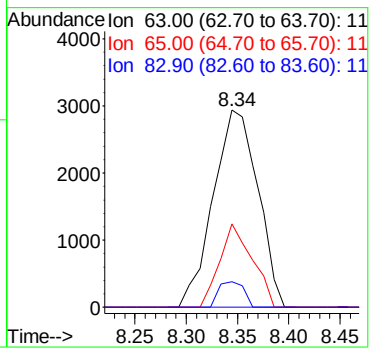

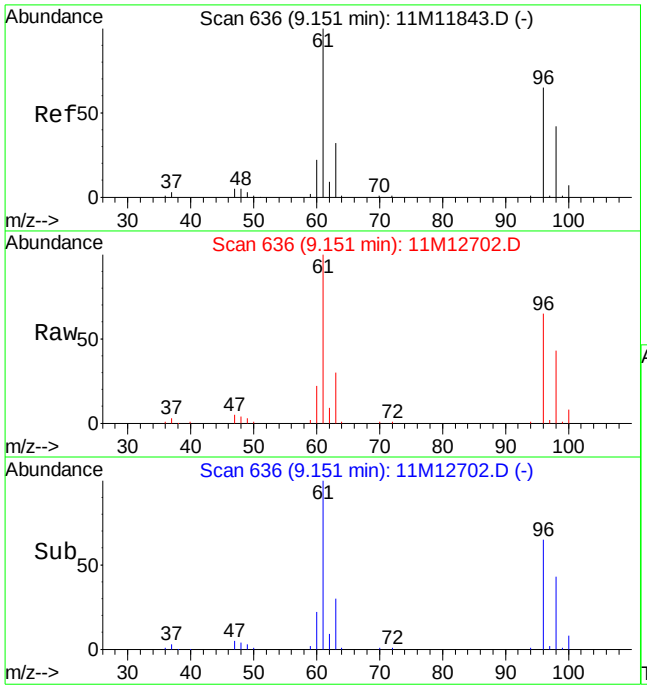

#32
cis-1,2-Dichloroethene
Concen: 21.29 ug/L
RT: 9.15 min Scan# 636
Delta R.T. 0.00 min
Lab File: 11M12702.D
Acq: 17 Jun 2016 00:29

Tgt Ion: 96 Resp: 121710

Ion	Ratio	Lower	Upper
96	100		
61	148.9	105.2	245.6

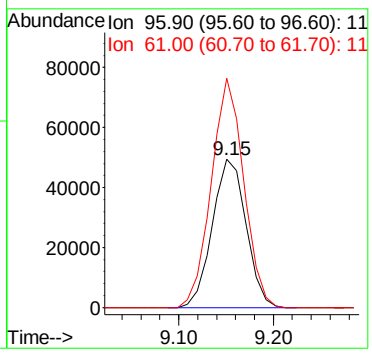

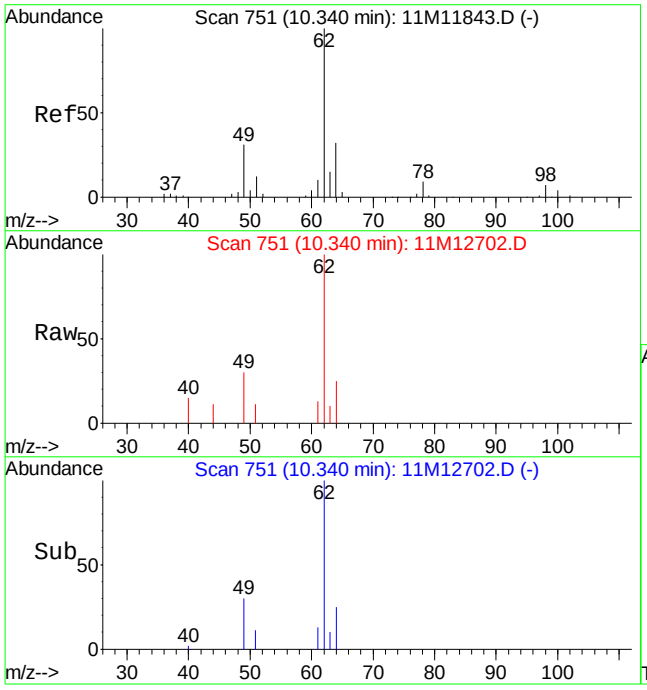

#44
1,2-Dichloroethane
Concen: 0.91 ug/L
RT: 10.34 min Scan# 751
Delta R.T. 0.00 min
Lab File: 11M12702.D
Acq: 17 Jun 2016 00:29

Tgt Ion: 62 Resp: 7566

Ion	Ratio	Lower	Upper
62	100		
64	30.7	18.7	43.7
49	22.9	22.3	52.1

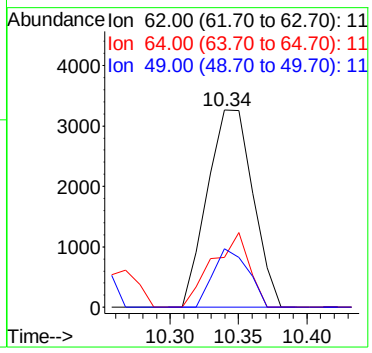

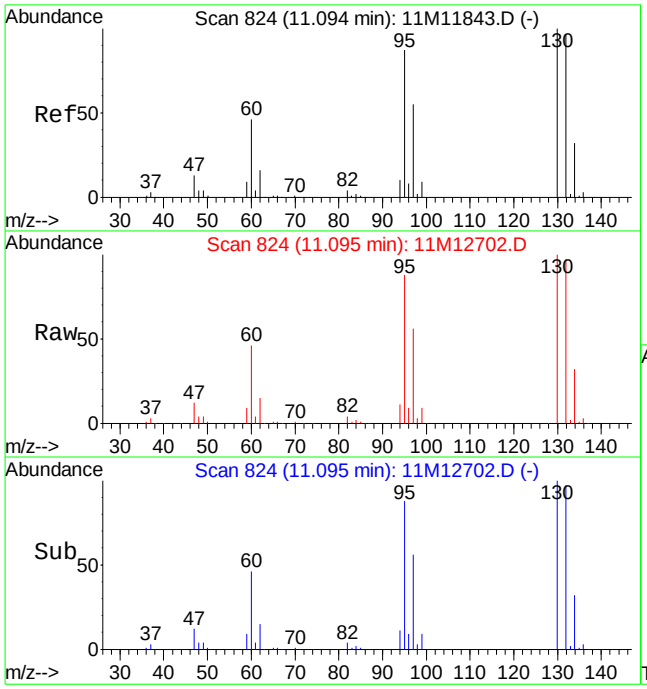

#46
Trichloroethene
Concen: 146.83 ug/L
RT: 11.09 min Scan# 824
Delta R.T. 0.00 min
Lab File: 11M12702.D
Acq: 17 Jun 2016 00:29

Tgt Ion:130 Resp: 937930

Ion	Ratio	Lower	Upper
130	100		
132	97.6	58.3	136.1
95	89.6	55.6	129.8

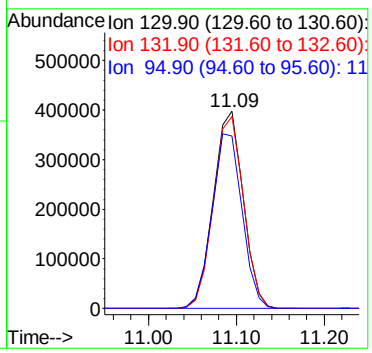

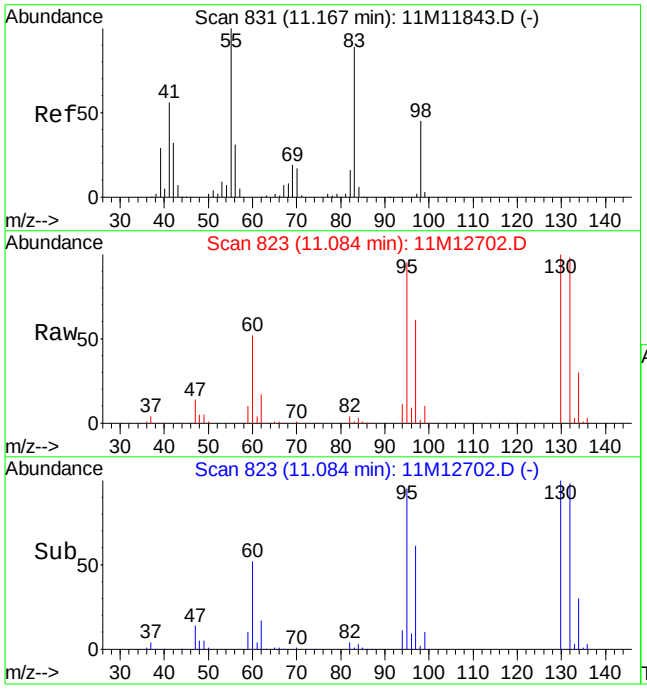

#47
Methylcyclohexane
Concen: 1.20 ug/L
RT: 11.08 min Scan# 823
Delta R.T. -0.08 min
Lab File: 11M12702.D
Acq: 17 Jun 2016 00:29

Tgt Ion: 83 Resp: 9485

Ion	Ratio	Lower	Upper
83	100		
55	0.0	66.5	155.1#
98	246.7	29.9	69.7#

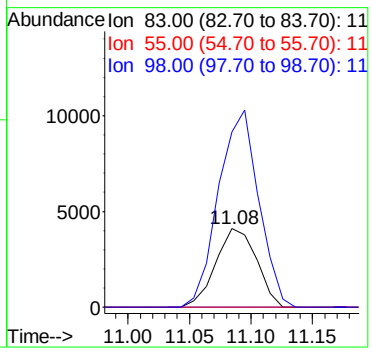

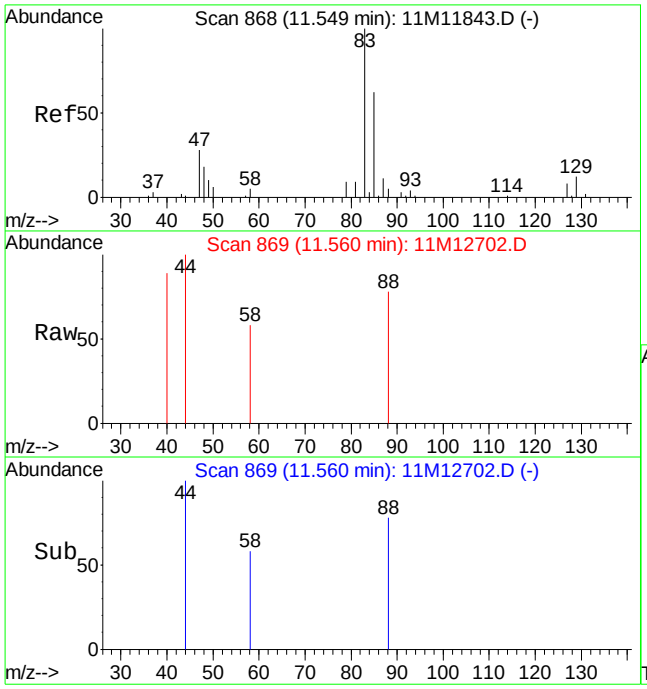

#49
1,4-Dioxane
Concen: 38.76 ug/L
RT: 11.56 min Scan# 869
Delta R.T. 0.01 min
Lab File: 11M12702.D
Acq: 17 Jun 2016 00:29

Tgt Ion: 88 Resp: 537

Ion	Ratio	Lower	Upper
88	100		
58	137.4	49.7	116.1#

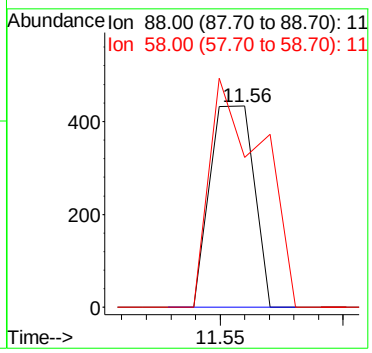

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12696.D Vial: 14
Acq On : 16 Jun 2016 21:18 Operator: JDS
Sample : L16060650-07 B A1 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 20 11:32:53 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	525360	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	446643	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	259575	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	137789	23.9649 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.84%		
43) 1,2-Dichloroethane-d4	10.23	65	148510	22.6530 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 90.60%		
57) Toluene-d8	12.47	98	467586	24.0941 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.36%		
78) p-Bromofluorobenzene	15.64	95	207982	25.9924 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.96%		

Target Compounds					Qvalue
3) Chloromethane	3.74	50	1214	0.1841 ug/L #	71
8) Trichlorofluoromethane	5.48	101	2618	0.2399 ug/L	69
13) Acetone	6.36	43	1625	1.3026 ug/L #	71

(#) = qualifier out of range (m) = manual integration
11M12696.D 8260WT.M Mon Jun 20 11:32:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12696.D Vial: 14
Acq On : 16 Jun 2016 21:18 Operator: JDS
Sample : L16060650-07 B A1 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 20 11:32 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

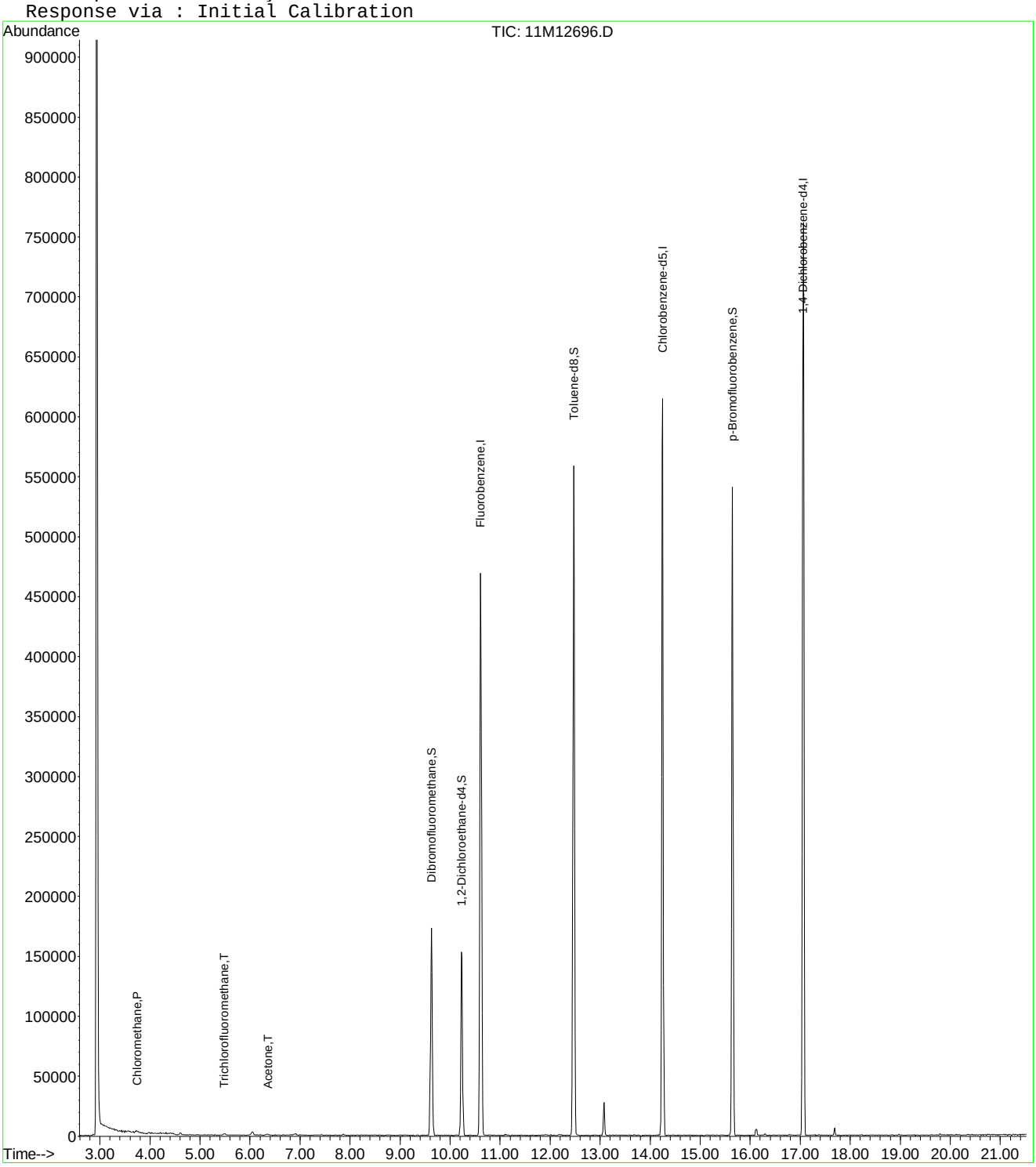

11M12696.D 8260WT.M Mon Jun 20 11:32:54 2016 Page 2

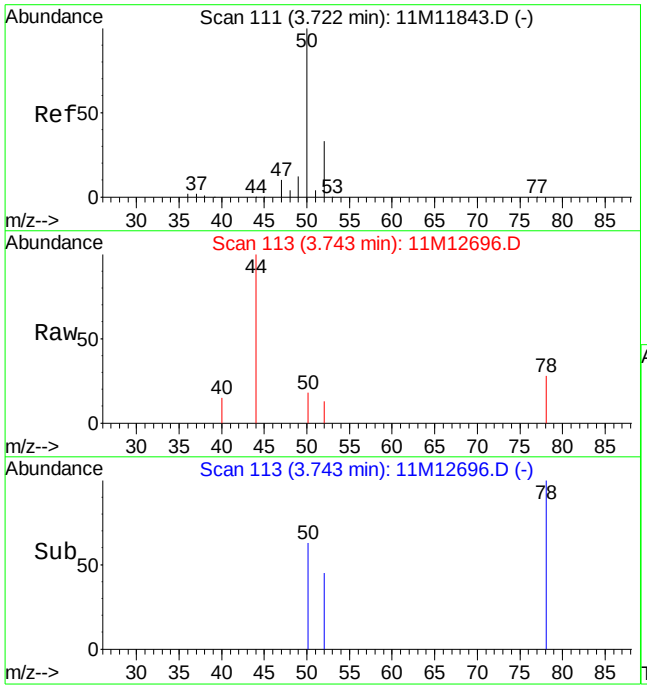

#3
Chloromethane
Concen: 0.18 ug/L
RT: 3.74 min Scan# 113
Delta R.T. 0.02 min
Lab File: 11M12696.D
Acq: 16 Jun 2016 21:18

Tgt Ion: 50 Resp: 1214

Ion	Ratio	Lower	Upper
50	100		
52	50.0	20.0	46.6#

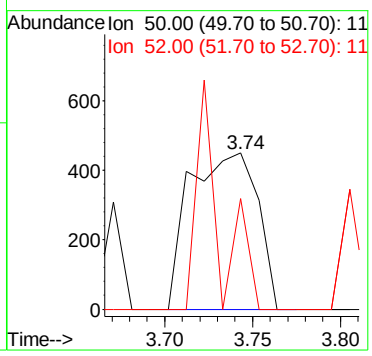

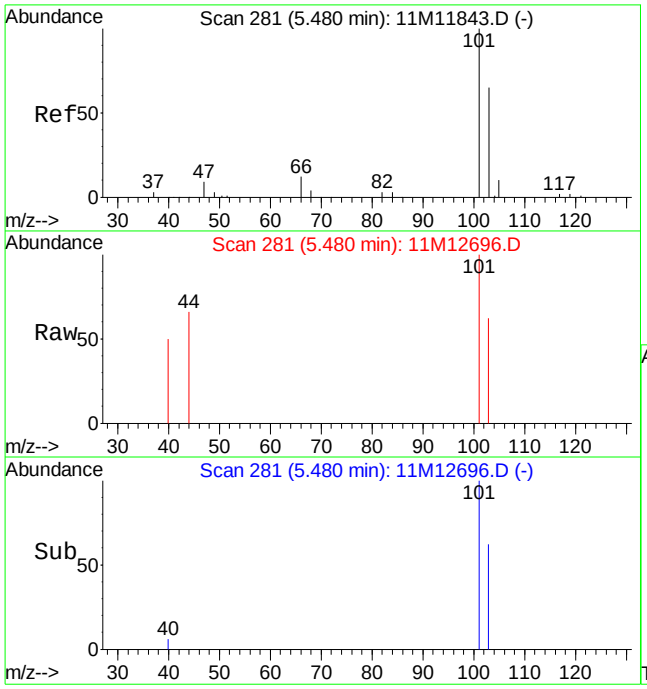

#8
Trichlorofluoromethane
Concen: 0.24 ug/L
RT: 5.48 min Scan# 281
Delta R.T. 0.00 min
Lab File: 11M12696.D
Acq: 16 Jun 2016 21:18

Tgt Ion:101 Resp: 2618

Ion	Ratio	Lower	Upper
101	100		
103	40.5	39.1	91.3

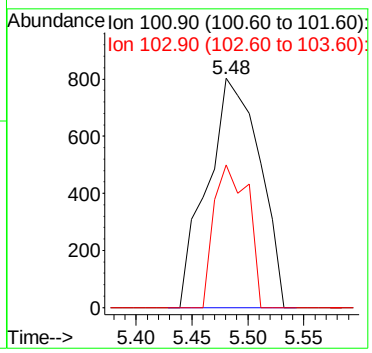

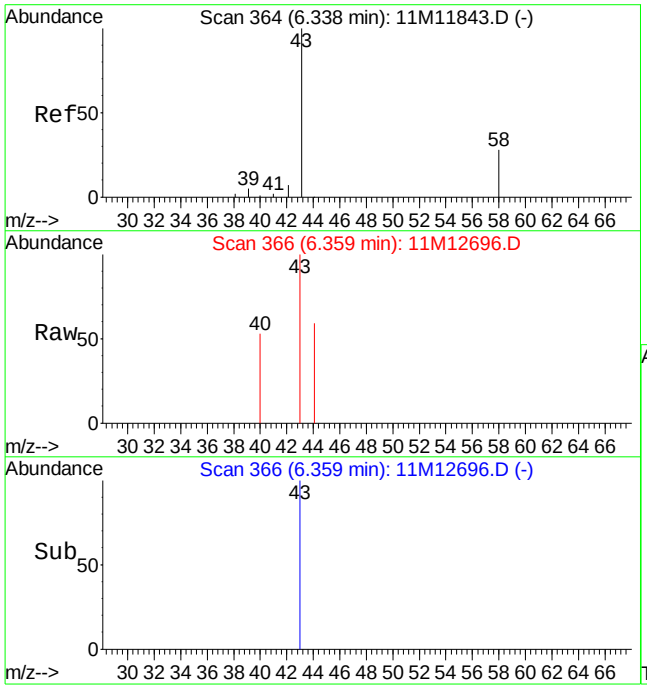

#13
Acetone
Concen: 1.30 ug/L
RT: 6.36 min Scan# 366
Delta R.T. 0.02 min
Lab File: 11M12696.D
Acq: 16 Jun 2016 21:18

Tgt Ion: 43 Resp: 1625

Ion	Ratio	Lower	Upper
43	100		
58	41.1	15.8	36.8#

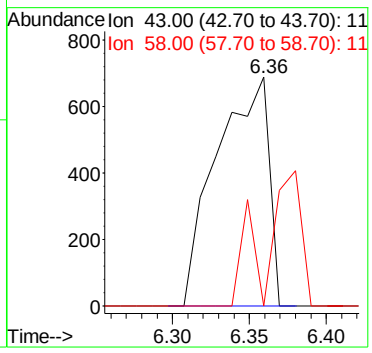

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12691.D Vial: 9
Acq On : 16 Jun 2016 18:38 Operator: JDS
Sample : L16060650-09 A TB A1 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 20 11:32:42 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	528256	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	452147	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	262354	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	136330	23.5811 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.32%		
43) 1,2-Dichloroethane-d4	10.23	65	144991	21.9950 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 88.00%		
57) Toluene-d8	12.47	98	471607	24.0055 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.04%		
78) p-Bromofluorobenzene	15.64	95	205723	25.4377 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.76%		

Target Compounds

					Qvalue
8) Trichlorofluoromethane	5.49	101	2751	0.2507 ug/L	87
13) Acetone	6.34	43	694	0.5533 ug/L #	49
36) Tetrahydrofuran	9.61	42	2212	1.6518 ug/L #	65

(#) = qualifier out of range (m) = manual integration
11M12691.D 8260WT.M Mon Jun 20 11:32:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12691.D Vial: 9
Acq On : 16 Jun 2016 18:38 Operator: JDS
Sample : L16060650-09 A TB A1 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 20 11:32 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

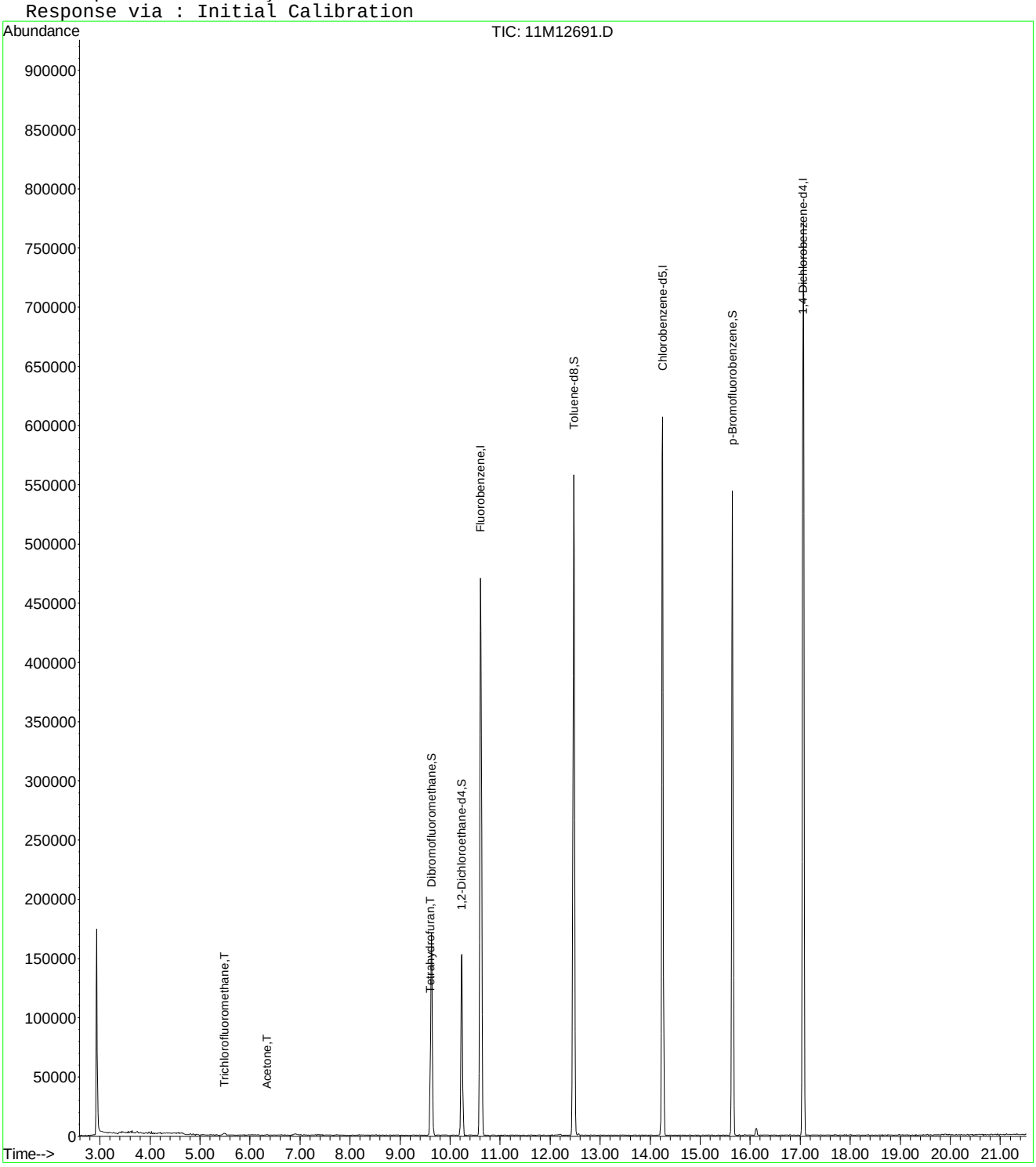

11M12691.D 8260WT.M Mon Jun 20 11:32:43 2016 Page 2

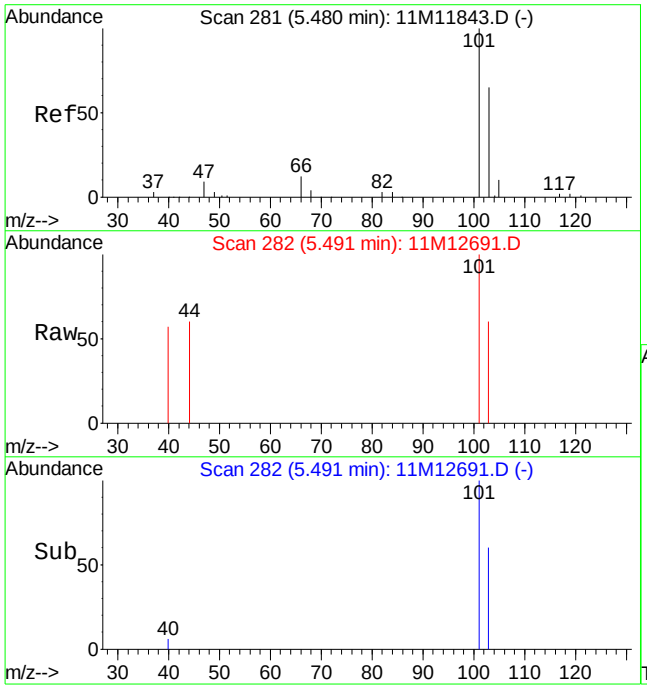

#8
Trichlorofluoromethane
Concen: 0.25 ug/L
RT: 5.49 min Scan# 282
Delta R.T. 0.01 min
Lab File: 11M12691.D
Acq: 16 Jun 2016 18:38

Tgt Ion:101 Resp: 2751

Ion	Ratio	Lower	Upper
101	100		
103	75.6	39.1	91.3

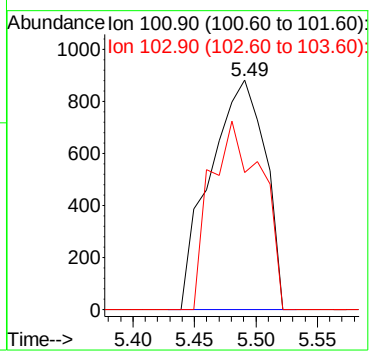

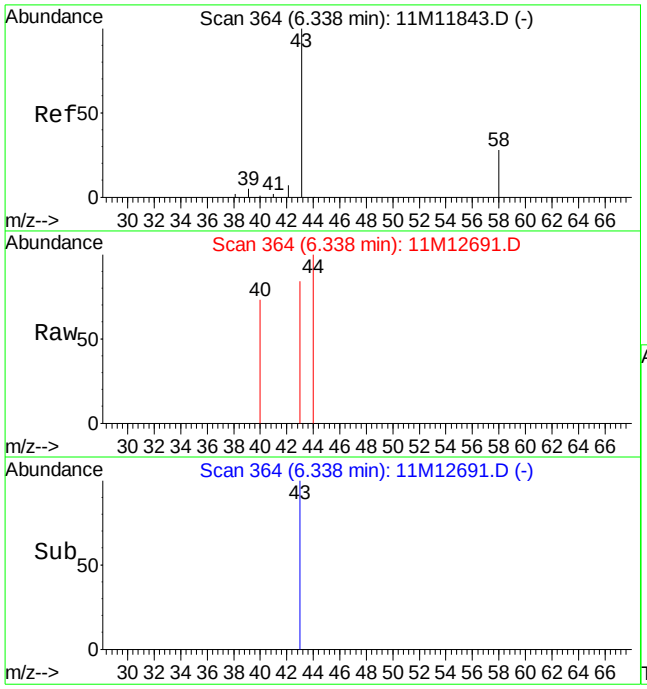

#13
Acetone
Concen: 0.55 ug/L
RT: 6.34 min Scan# 364
Delta R.T. 0.00 min
Lab File: 11M12691.D
Acq: 16 Jun 2016 18:38

Tgt Ion: 43 Resp: 694

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

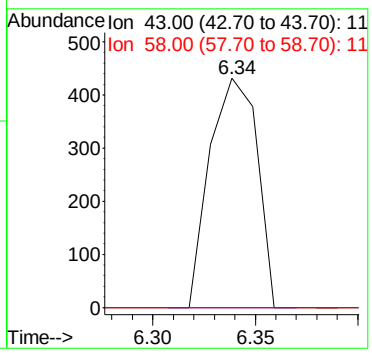

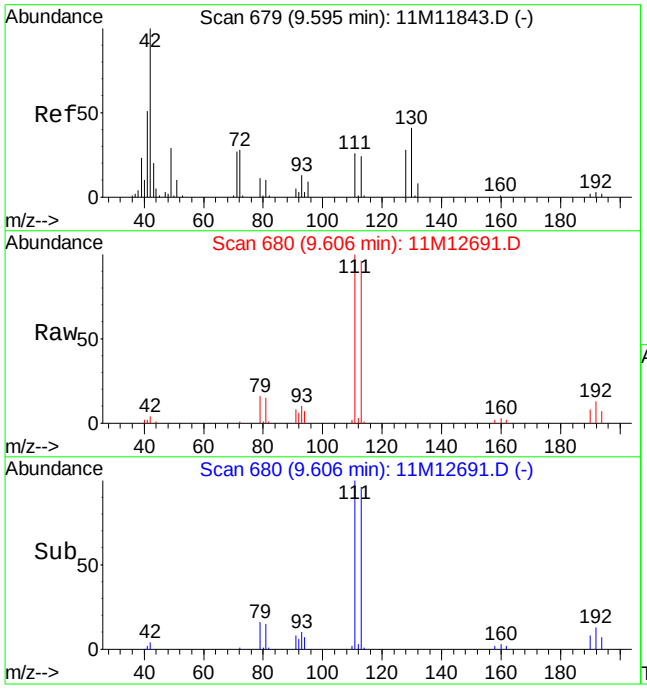

#36
Tetrahydrofuran
Concen: 1.65 ug/L
RT: 9.61 min Scan# 680
Delta R.T. 0.01 min
Lab File: 11M12691.D
Acq: 16 Jun 2016 18:38

Tgt Ion: 42 Resp: 2212

Ion	Ratio	Lower	Upper
42	100		
71	0.0	16.4	38.2#
72	18.4	16.6	38.8

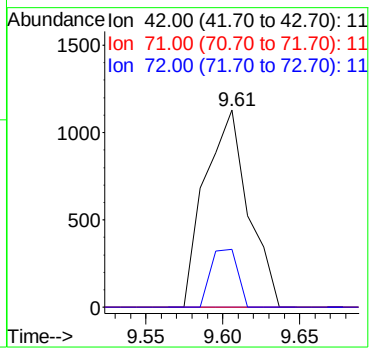

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 10:20:26 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	665958	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.19	117	486224	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.01	152	252862	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	169215	22.8906 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 91.56%		
43) 1,2-Dichloroethane-d4	10.17	65	154962	19.2999 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 77.20%#		
57) Toluene-d8	12.42	98	584744	28.4742 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 113.88%#		
78) p-Bromofluorobenzene	15.58	95	202664	25.0472 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.20%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.23	85	8067	0.8041 ug/L #	81
3) Chloromethane	3.68	50	5797	0.5011 ug/L	91
4) Vinyl Chloride	3.91	62	15554	1.9132 ug/L	97
5) 1,3-Butadiene	3.96	54	11402	1.8745 ug/L	83
6) Bromomethane	4.80	94	1566	0.4085 ug/L	98
7) Chloroethane	4.96	64	1797	0.3015 ug/L #	43
8) Trichlorofluoromethane	5.43	101	4457	0.3306 ug/L	92
10) Isoprene	5.99	67	2109	0.2044 ug/L #	51
12) 1,1,2-Trichloro-1,2,2-Trif	6.23	101	1597	0.2057 ug/L	98
13) Acetone	6.30	43	3590	1.8309 ug/L #	60
14) 1,1-Dichloroethene	6.50	61	4933	0.3633 ug/L	96
19) Methylene Chloride	7.28	84	2287	0.2902 ug/L	89
20) Carbon Disulfide	7.31	76	24059	1.0619 ug/L	98
23) trans-1,2-Dichloroethene	7.69	96	3973	0.5072 ug/L	81
24) n-Hexane	7.78	57	5925	0.4871 ug/L #	85
32) cis-1,2-Dichloroethene	9.10	96	2970	0.3509 ug/L	71
33) Chloroform	9.30	83	1689	0.1200 ug/L	78
35) Bromochloromethane	9.51	130	597	0.1244 ug/L #	66
36) Tetrahydrofuran	9.56	42	405	0.1826 ug/L #	44
39) Cyclohexane	9.83	56	2167	0.1307 ug/L	90
40) 1,1-Dichloropropene	9.99	75	3207	0.2986 ug/L	86
45) Benzene	10.32	78	3922	0.1286 ug/L	88
46) Trichloroethene	11.03	130	3473	0.3872 ug/L	90
47) Methylcyclohexane	11.10	83	2708	0.2333 ug/L #	77
51) Dibromomethane	11.60	93	782	0.1870 ug/L	62
54) cis-1,3-Dichloropropene	12.11	75	1452	0.1277 ug/L #	41
58) Toluene	12.51	91	4350	0.1662 ug/L	83
60) trans-1,3-Dichloropropene	12.68	75	1450	0.1811 ug/L #	47
64) Tetrachloroethene	13.28	164	1514	0.2507 ug/L	75
66) 1,2-Dibromoethane	13.77	107	783	0.1520 ug/L	82
67) 1-Chlorohexane	13.83	91	2267	0.2766 ug/L	67
68) Chlorobenzene	14.24	112	4044	0.2287 ug/L	88
70) Ethylbenzene	14.25	106	1461	0.1464 ug/L	62
71) m-,p-Xylene	14.34	106	3596	0.3050 ug/L #	47
73) Styrene	14.90	104	2784	0.1479 ug/L	80
75) Isopropylbenzene	15.25	105	4163	0.1408 ug/L #	74
81) n-Propylbenzene	15.73	91	6395	0.2079 ug/L #	73
82) Bromobenzene	15.86	156	1681	0.2112 ug/L	100
83) 1,3,5-Trimethylbenzene	15.90	105	3253	0.1356 ug/L	100
84) 2-Chlorotoluene	16.00	91	3395	0.1597 ug/L	86

(#) = qualifier out of range (m) = manual integration
11M08235.D 8260WTR.M Sun Jun 14 10:20:27 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 10:20:26 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
85)	4-Chlorotoluene	16.03	91	4746	0.2598 ug/L	84
86)	a-Methylstyrene	16.27	118	1776	0.1452 ug/L	76
88)	1,2,4-Trimethylbenzene	16.39	105	3776	0.1571 ug/L	77
89)	sec-Butylbenzene	16.58	105	5834	0.2044 ug/L #	77
90)	p-Isopropyltoluene	16.73	119	5149	0.2137 ug/L	87
91)	1,3-Dichlorobenzene	16.93	146	3649	0.2531 ug/L	97
92)	1,4-Dichlorobenzene	17.04	146	5213	0.3507 ug/L #	7
93)	n-Butylbenzene	17.23	91	5778	0.3036 ug/L #	78
94)	1,2-Dichlorobenzene	17.51	146	2232	0.1581 ug/L	92
96)	1,2,4-Trichlorobenzene	19.49	180	1750	0.2281 ug/L #	64
97)	Hexachlorobutadiene	19.62	225	1771	0.4493 ug/L	86
98)	Naphthalene	19.84	128	2058	0.1572 ug/L #	63
99)	1,2,3-Trichlorobenzene	20.13	180	1072	0.1483 ug/L #	40

(#) = qualifier out of range (m) = manual integration
11M08235.D 8260WTR.M Sun Jun 14 10:20:27 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 10:20 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration

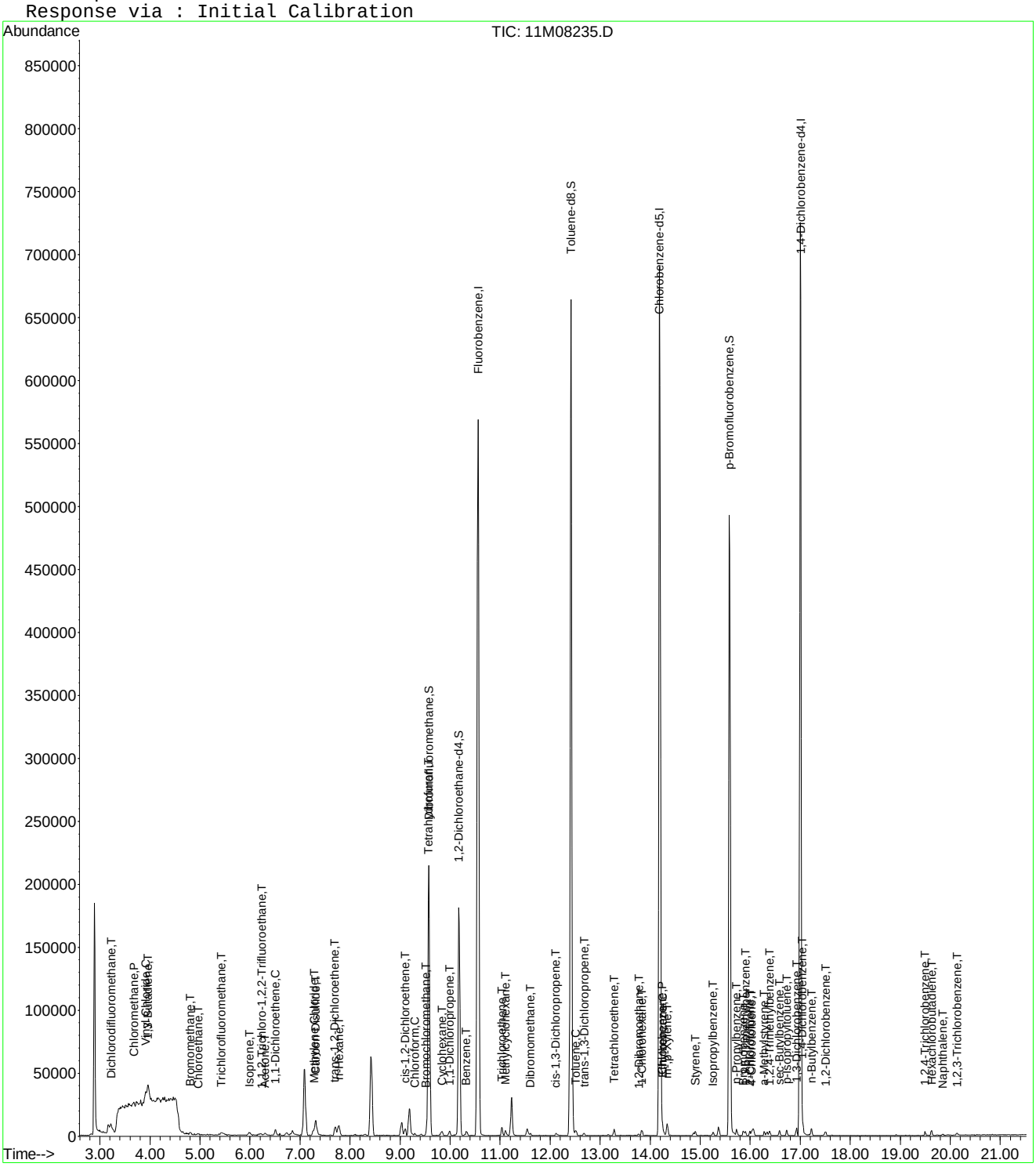

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 09:43:53 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	665958	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	486224	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.01	152	252862	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	6.73	41	3211	6.0366 ug/L	70
3) 3-Chloro-1-propene	7.08	41	50601	4.3748 ug/L	86
4) 2-Chloro-1,3-butadiene	8.42	53	56035	4.7289 ug/L	97
5) Methacrylonitrile	9.18	41	16495	5.1749 ug/L	91
6) Isobutyl Alcohol	9.21	43	2014	16.4797 ug/L #	1
8) Cyclohexanone	15.36	55	3979	4.5232 ug/L	98
9) 2-Nitropropane	11.54	43	3915	3.2057 ug/L #	72
10) Ethyl Acetate	9.03	43	17657	4.5044 ug/L	95
11) Methyl methacrylate	11.22	41	20122	4.7597 ug/L	95

(#) = qualifier out of range (m) = manual integration
11M08235.D A9FOOWT.M Tue Jun 16 09:43:53 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 9:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration

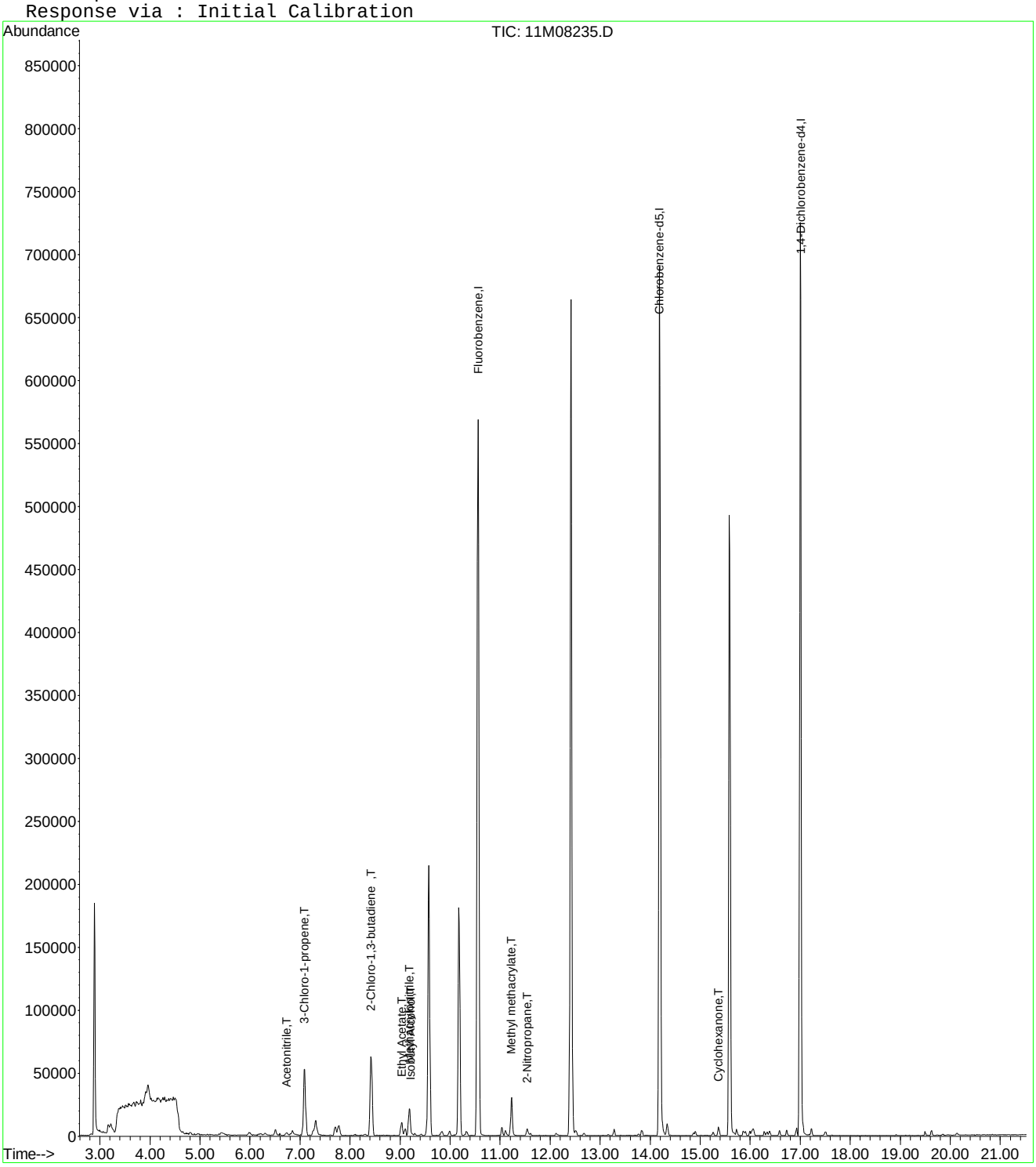

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28:04 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	665958	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	486224	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.01	152	252862	25.00 ug/L	-0.02

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M08235.D A9FOOWT.M Thu Aug 20 11:28:04 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration

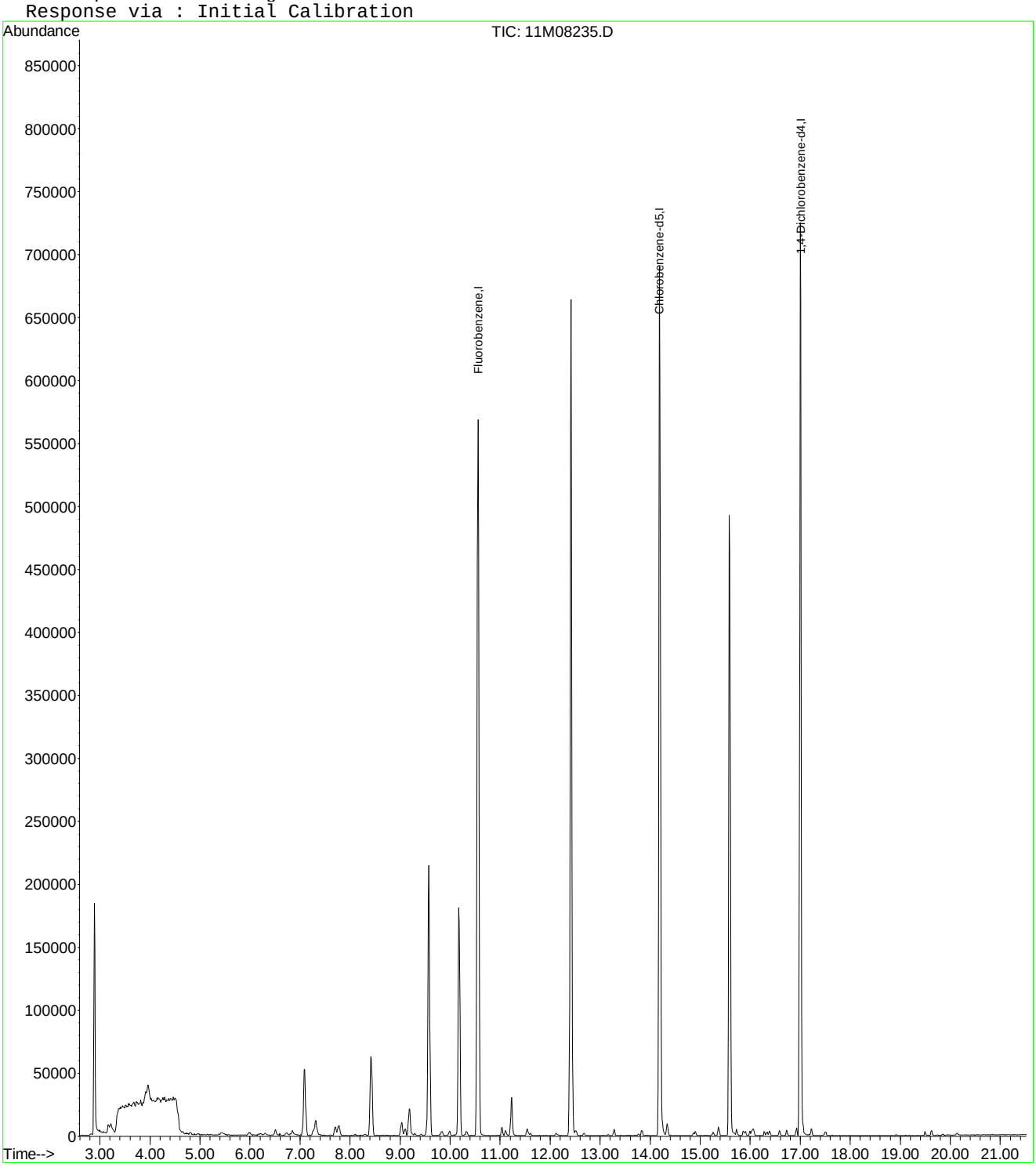

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43:46 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	665958	25.00 ug/L	0.00
12) Chlorobenzene-d5	14.19	117	486224	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.01	152	252862	25.00 ug/L	0.01

Target Compounds					Qvalue
2) Acetonitrile	6.73	41	3211	6.2865 ug/L	70
3) 3-Chloro-1-propene	7.08	41	50601	5.0485 ug/L	86
4) 2-Chloro-1,3-butadiene	8.42	53	56035	4.6571 ug/L	97
5) Methacrylonitrile	9.18	41	16495	5.3246 ug/L	91
6) Isobutyl Alcohol	9.21	43	2014	12.6338 ug/L #	1
7) 1-Butanol	9.83	56	2167	25.6978 ug/L #	47
8) Cyclohexanone	15.36	55	3979	5.1947 ug/L	98
9) 2-Nitropropane	11.54	43	3915	35.7530 ug/L #	72
10) Ethyl Acetate	9.03	43	17657	4.8057 ug/L	95
11) Methyl methacrylate	11.22	41	20122	4.7099 ug/L	95

(#) = qualifier out of range (m) = manual integration
11M08235.D A9FOOWT.M Thu Aug 20 11:43:47 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration

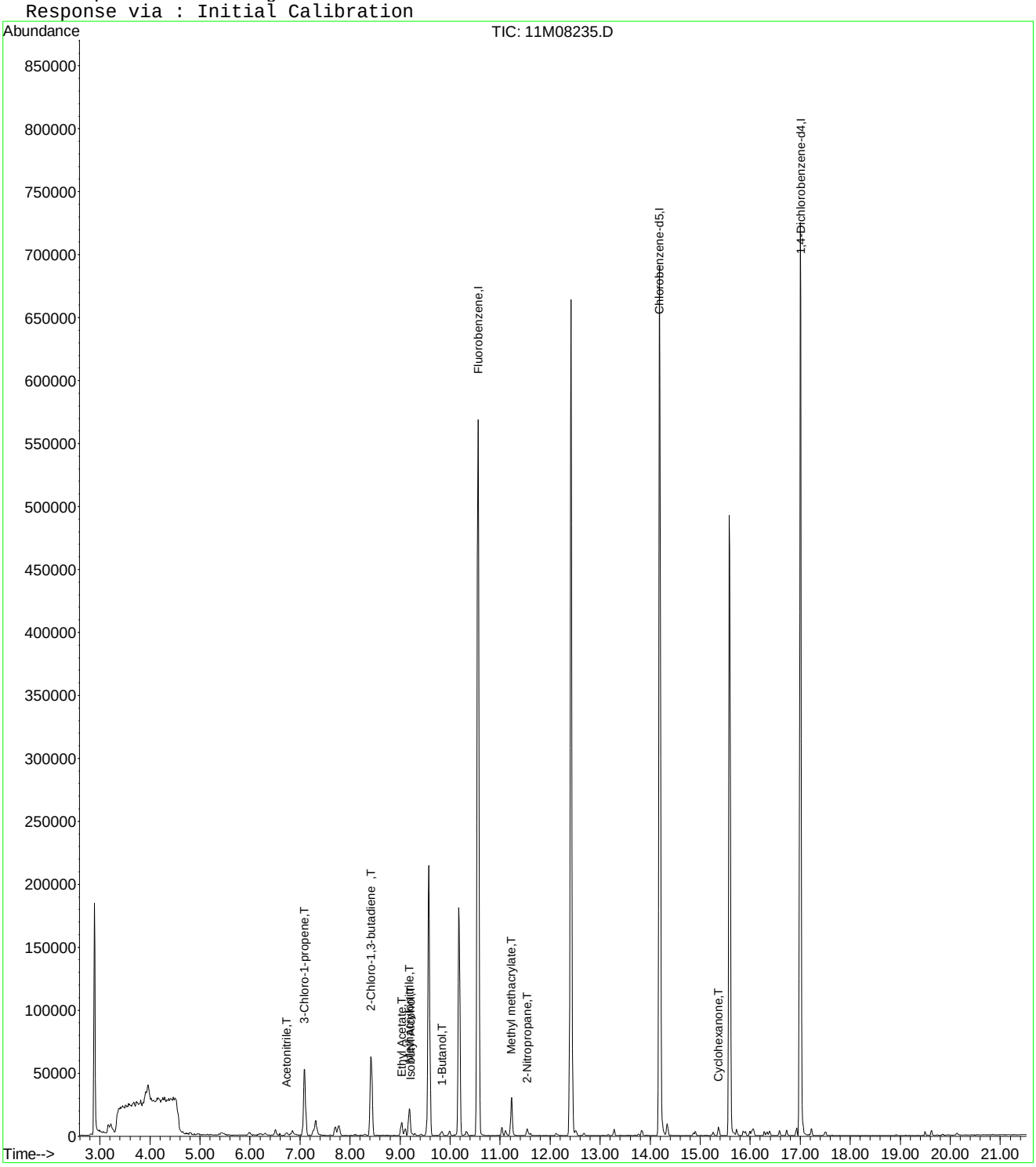

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	5.0000	6.2866	-25.7	100	0.01
3	T	3-Chloro-1-propene	5.0000	5.0485	-1.0	100	-0.01
4	T	2-Chloro-1,3-butadiene	5.0000	4.6571	6.9	100	0.00
5	T	Methacrylonitrile	5.0000	5.3246	-6.5	100	0.00
6	T	Isobutyl Alcohol	-1.0000	12.6338	0.0	100	0.02
7	T	1-Butanol	-1.0000	25.6978	0.0	0	-0.24
8	T	Cyclohexanone	-1.0000	5.1947	0.0	100	0.00
9	T	2-Nitropropane	-1.0000	35.7530	0.0	0	0.00
10	T	Ethyl Acetate	5.0000	4.8057	3.9	100	0.00
11	T	Methyl methacrylate	5.0000	4.7099	5.8	100	0.00
12	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
13	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M08235.D A9FOOWT.M Thu Aug 20 11:44:19 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08236.D Vial: 3
Acq On : 14 Jun 2015 10:30 Operator: TMB /DLW
Sample : WG527475-03 20ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 10:52:27 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	610715	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.19	117	451165	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.00	152	232233	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	159209	23.4852 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.96%		
43) 1,2-Dichloroethane-d4	10.17	65	149549	20.3105 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 81.24%		
57) Toluene-d8	12.42	98	551790	28.9575 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 115.84%#		
78) p-Bromofluorobenzene	15.58	95	193663	26.0609 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.24%		

Target Compounds					Qvalue
3) Chloromethane	3.68	50	2560	0.2413 ug/L	85
5) 1,3-Butadiene	3.94	54	1485	0.2662 ug/L #	60
13) Acetone	6.30	43	3499	1.9459 ug/L #	49

(#) = qualifier out of range (m) = manual integration
11M08236.D 8260WTR.M Sun Jun 14 10:52:28 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08236.D Vial: 3
Acq On : 14 Jun 2015 10:30 Operator: TMB /DLW
Sample : WG527475-03 20ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 10:52 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration

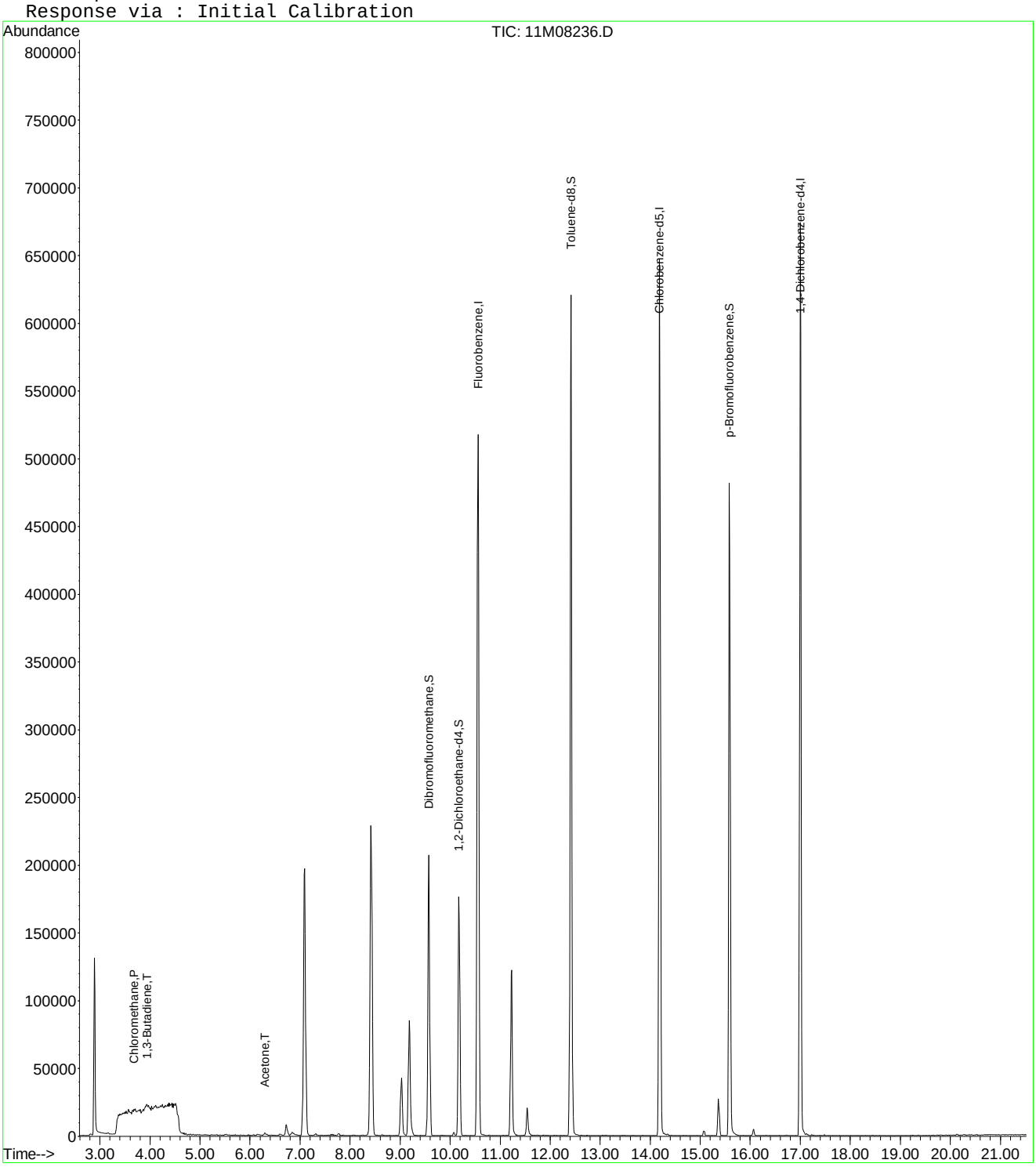

11M08236.D 8260WTR.M Sun Jun 14 10:52:28 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08236.D Vial: 3
Acq On : 14 Jun 2015 10:30 Operator: TMB /DLW
Sample : WG527475-03 20ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 09:43:55 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	610715	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	451165	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	232233	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	10965	22.4787 ug/L	99
3) 3-Chloro-1-propene	7.09	41	181745	17.1344 ug/L	86
4) 2-Chloro-1,3-butadiene	8.42	53	204133	18.7856 ug/L	96
5) Methacrylonitrile	9.18	41	56411	19.2984 ug/L	84
6) Isobutyl Alcohol	9.19	43	6275	55.9901 ug/L	85
7) 1-Butanol	10.07	56	1474	31.3751 ug/L	93
8) Cyclohexanone	15.36	55	15226	18.8740 ug/L	98
9) 2-Nitropropane	11.54	43	14015	12.5138 ug/L #	72
10) Ethyl Acetate	9.03	43	70834	19.7046 ug/L	96
11) Methyl methacrylate	11.22	41	78843	20.3367 ug/L	93

(#) = qualifier out of range (m) = manual integration
11M08236.D A9FOOWT.M Tue Jun 16 09:43:55 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08236.D Vial: 3
Acq On : 14 Jun 2015 10:30 Operator: TMB /DLW
Sample : WG527475-03 20ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 9:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration

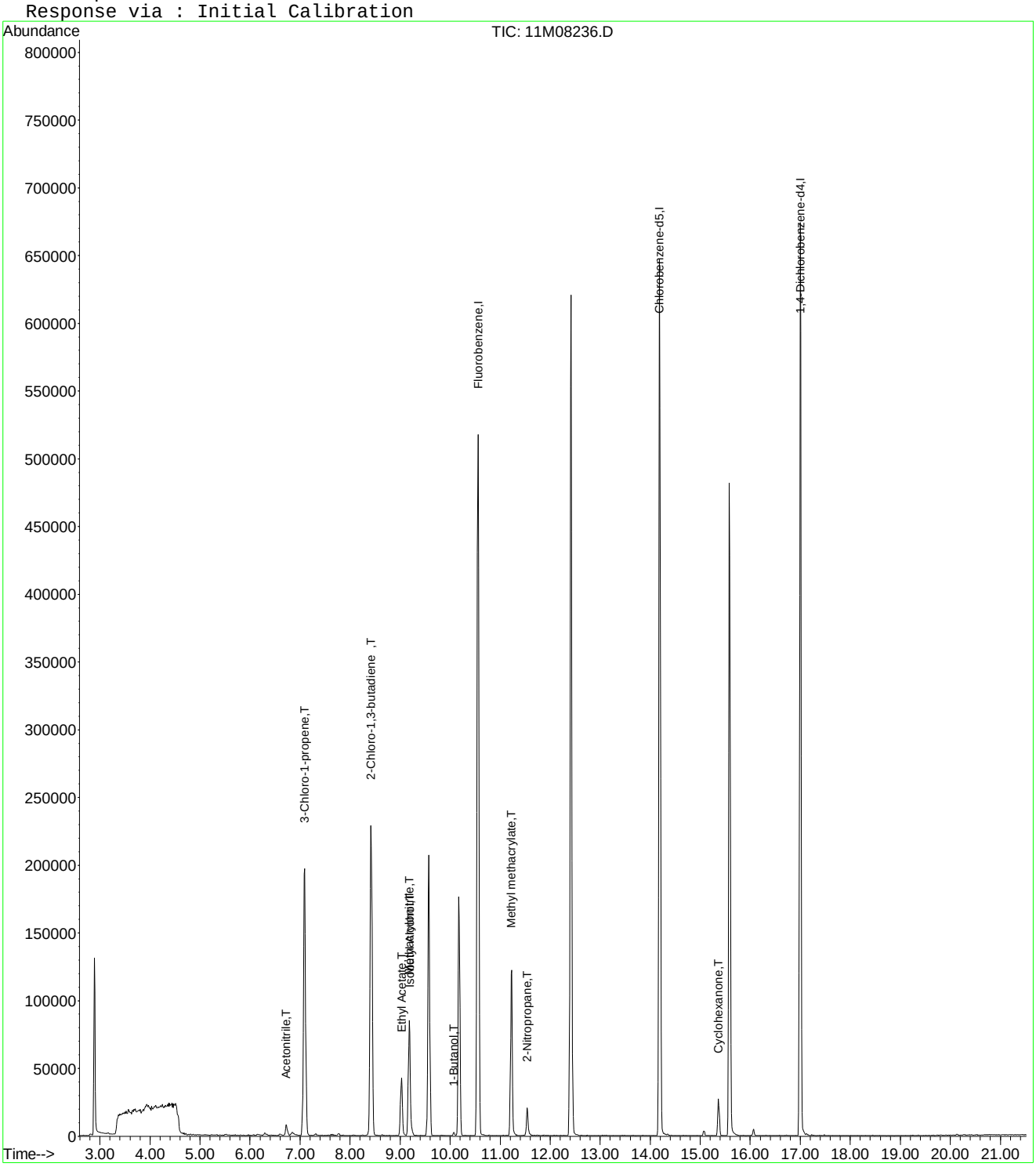

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08236.D Vial: 3
Acq On : 14 Jun 2015 10:30 Operator: TMB /DLW
Sample : WG527475-03 20ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28:06 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	610715	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	451165	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	232233	25.00 ug/L	-0.03

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M08236.D A9FOOWT.M Thu Aug 20 11:28:07 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08236.D Vial: 3
Acq On : 14 Jun 2015 10:30 Operator: TMB /DLW
Sample : WG527475-03 20ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration

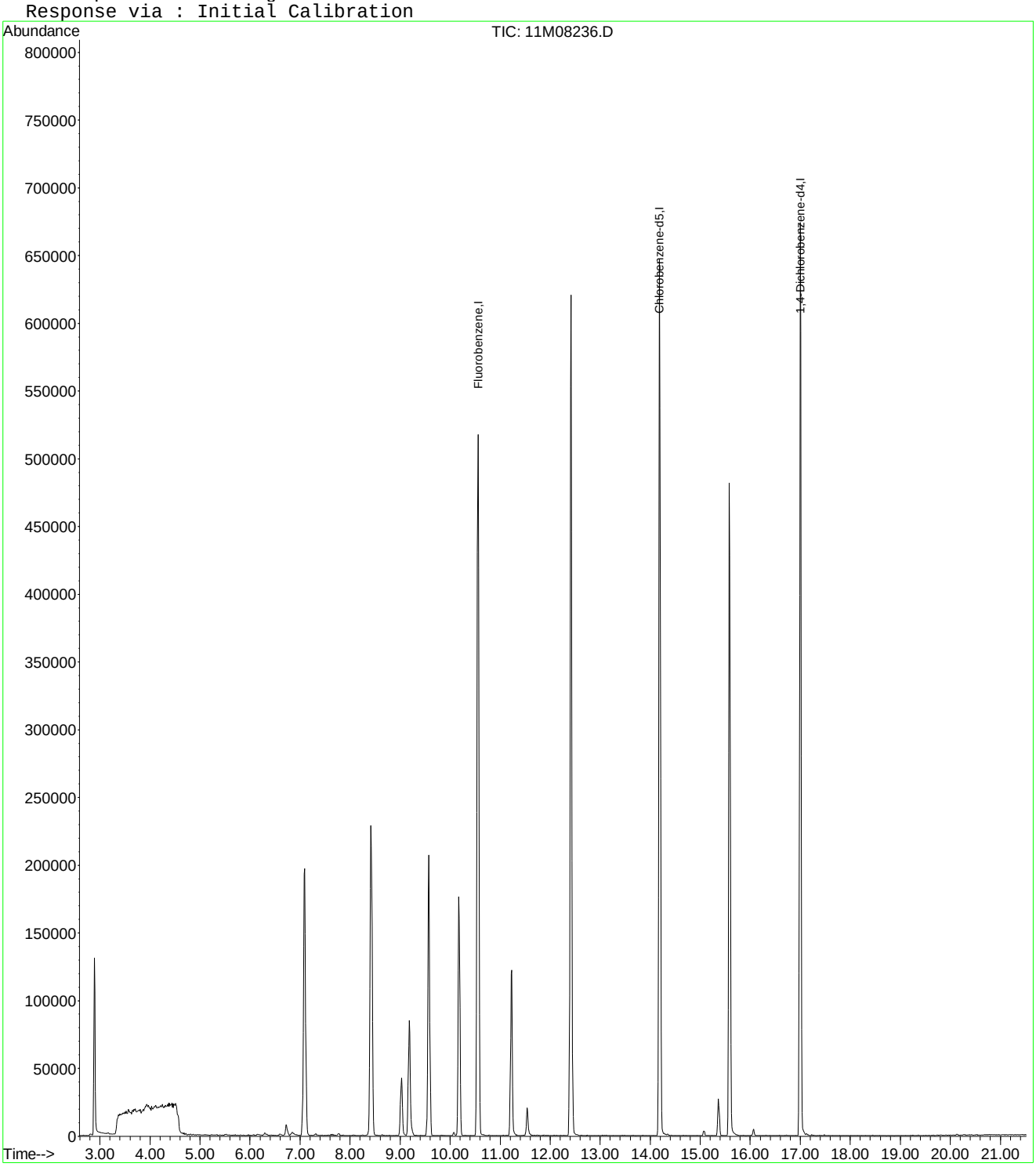

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08236.D Vial: 3
Acq On : 14 Jun 2015 10:30 Operator: TMB /DLW
Sample : WG527475-03 20ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43:48 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	610715	25.00 ug/L	0.00
12) Chlorobenzene-d5	14.19	117	451165	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.00	152	232233	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	10965	23.4093 ug/L	99
3) 3-Chloro-1-propene	7.09	41	181745	19.7730 ug/L	86
4) 2-Chloro-1,3-butadiene	8.42	53	204133	18.5003 ug/L	96
5) Methacrylonitrile	9.18	41	56411	19.8567 ug/L	84
6) Isobutyl Alcohol	9.19	43	6275	42.9238 ug/L	85
7) 1-Butanol	10.07	56	1474	19.0608 ug/L	93
8) Cyclohexanone	15.36	55	15226	21.6762 ug/L	98
9) 2-Nitropropane	11.54	43	14015	45.0214 ug/L #	72
10) Ethyl Acetate	9.03	43	70834	21.0227 ug/L	96
11) Methyl methacrylate	11.22	41	78843	20.1239 ug/L	93

(#) = qualifier out of range (m) = manual integration
11M08236.D A9FOOWT.M Thu Aug 20 11:43:48 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08236.D Vial: 3
Acq On : 14 Jun 2015 10:30 Operator: TMB /DLW
Sample : WG527475-03 20ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration

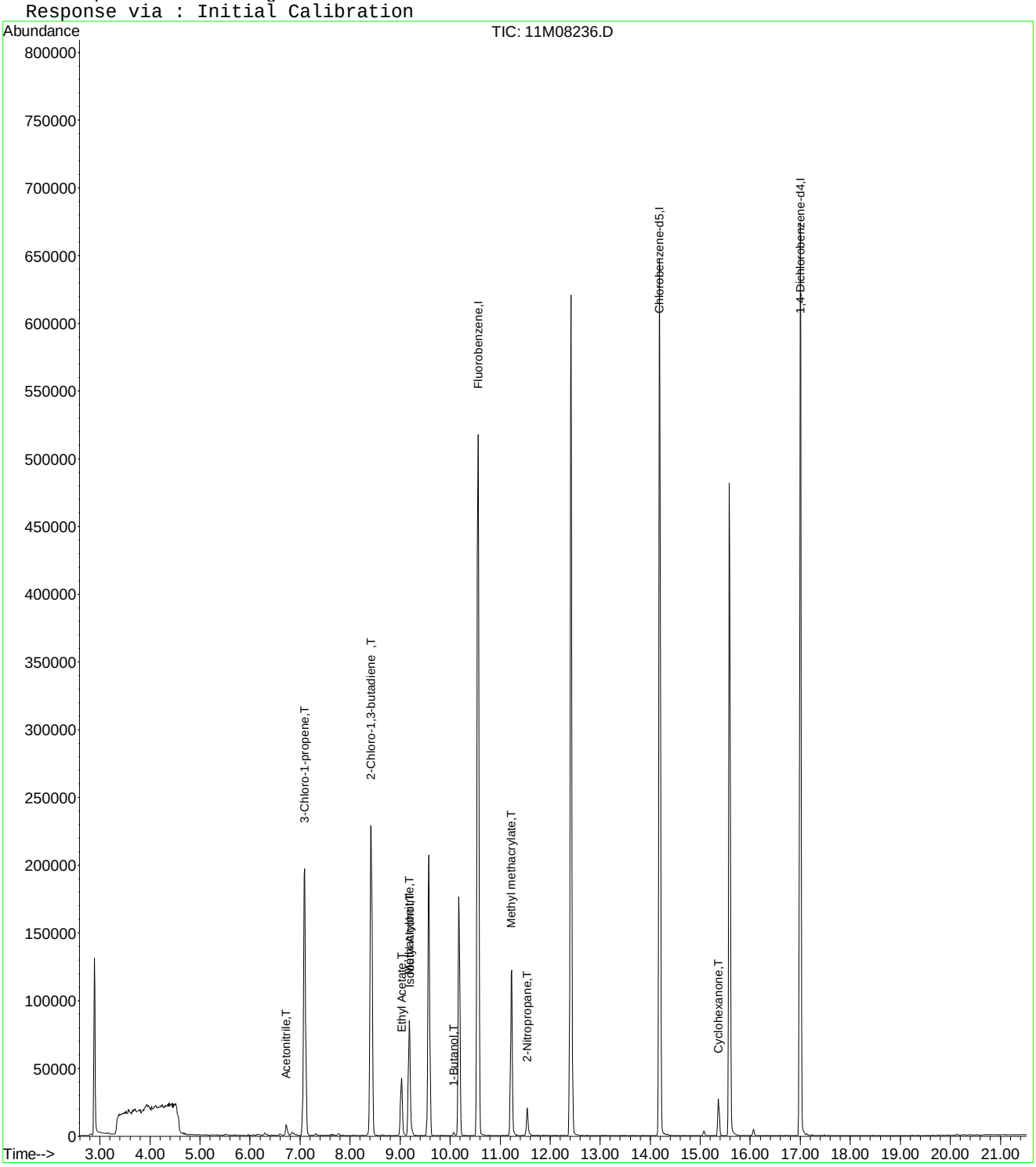

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061415\11M08236.D Vial: 3
Acq On : 14 Jun 2015 10:30 Operator: TMB /DLW
Sample : WG527475-03 20ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	23.4093	-17.0	100	0.00
3	T	3-Chloro-1-propene	20.0000	19.7730	1.1	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	18.5003	7.5	100	0.00
5	T	Methacrylonitrile	20.0000	19.8567	0.7	100	0.00
6	T	Isobutyl Alcohol	40.0000	42.9238	-7.3	100	0.00
7	T	1-Butanol	-1.0000	19.0608	0.0	100	0.00
8	T	Cyclohexanone	20.0000	21.6762	-8.4	100	0.00
9	T	2-Nitropropane	-1.0000	45.0214	0.0	0	0.00
10	T	Ethyl Acetate	20.0000	21.0227	-5.1	100	0.00
11	T	Methyl methacrylate	20.0000	20.1239	-0.6	100	0.00
12	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
13	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M08236.D A9FOOWT.M Thu Aug 20 11:44:30 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08237.D Vial: 4
Acq On : 14 Jun 2015 11:02 Operator: TMB /DLW
Sample : WG527475-04 50ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 11:24:26 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	593911	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.19	117	439398	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.00	152	227606	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	153812	23.3311 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.32%		
43) 1,2-Dichloroethane-d4	10.17	65	141347	19.7397 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 78.96%#		
57) Toluene-d8	12.42	98	530398	28.5803 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 114.32%#		
78) p-Bromofluorobenzene	15.58	95	184116	25.2799 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.12%		

Target Compounds					Qvalue
3) Chloromethane	3.68	50	1722	0.1669 ug/L #	66
13) Acetone	6.30	43	6340	3.6256 ug/L	95

(#) = qualifier out of range (m) = manual integration
11M08237.D 8260WTR.M Sun Jun 14 11:24:27 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08237.D Vial: 4
Acq On : 14 Jun 2015 11:02 Operator: TMB /DLW
Sample : WG527475-04 50ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 11:24 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration

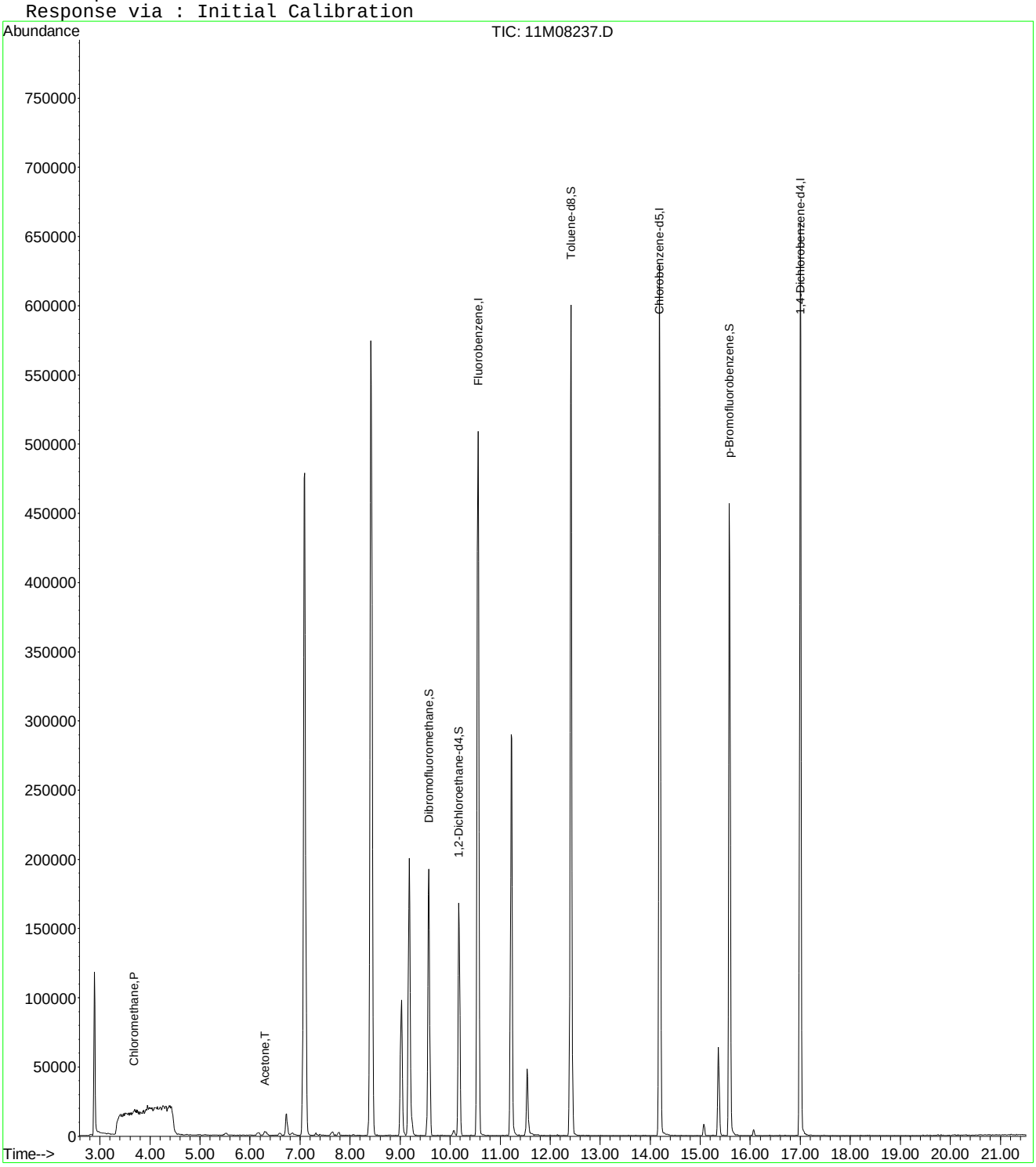

11M08237.D 8260WTR.M Sun Jun 14 11:24:27 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08237.D Vial: 4
Acq On : 14 Jun 2015 11:02 Operator: TMB /DLW
Sample : WG527475-04 50ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 09:43:56 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	593911	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	439398	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	227606	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	6.73	41	21370	45.0489 ug/L	93
3) 3-Chloro-1-propene	7.08	41	441208	42.7727 ug/L	85
4) 2-Chloro-1,3-butadiene	8.42	53	506427	47.9232 ug/L	96
5) Methacrylonitrile	9.18	41	133439	46.9416 ug/L	86
6) Isobutyl Alcohol	9.19	43	13722	125.9019 ug/L	88
7) 1-Butanol	10.06	56	3449	75.4914 ug/L #	8
8) Cyclohexanone	15.36	55	33575	42.7968 ug/L	96
9) 2-Nitropropane	11.54	43	32837	30.1492 ug/L #	75
10) Ethyl Acetate	9.03	43	158260	45.2705 ug/L	95
11) Methyl methacrylate	11.22	41	179947	47.7287 ug/L	89

(#) = qualifier out of range (m) = manual integration
11M08237.D A9FOOWT.M Tue Jun 16 09:43:57 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08237.D Vial: 4
Acq On : 14 Jun 2015 11:02 Operator: TMB /DLW
Sample : WG527475-04 50ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 9:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration

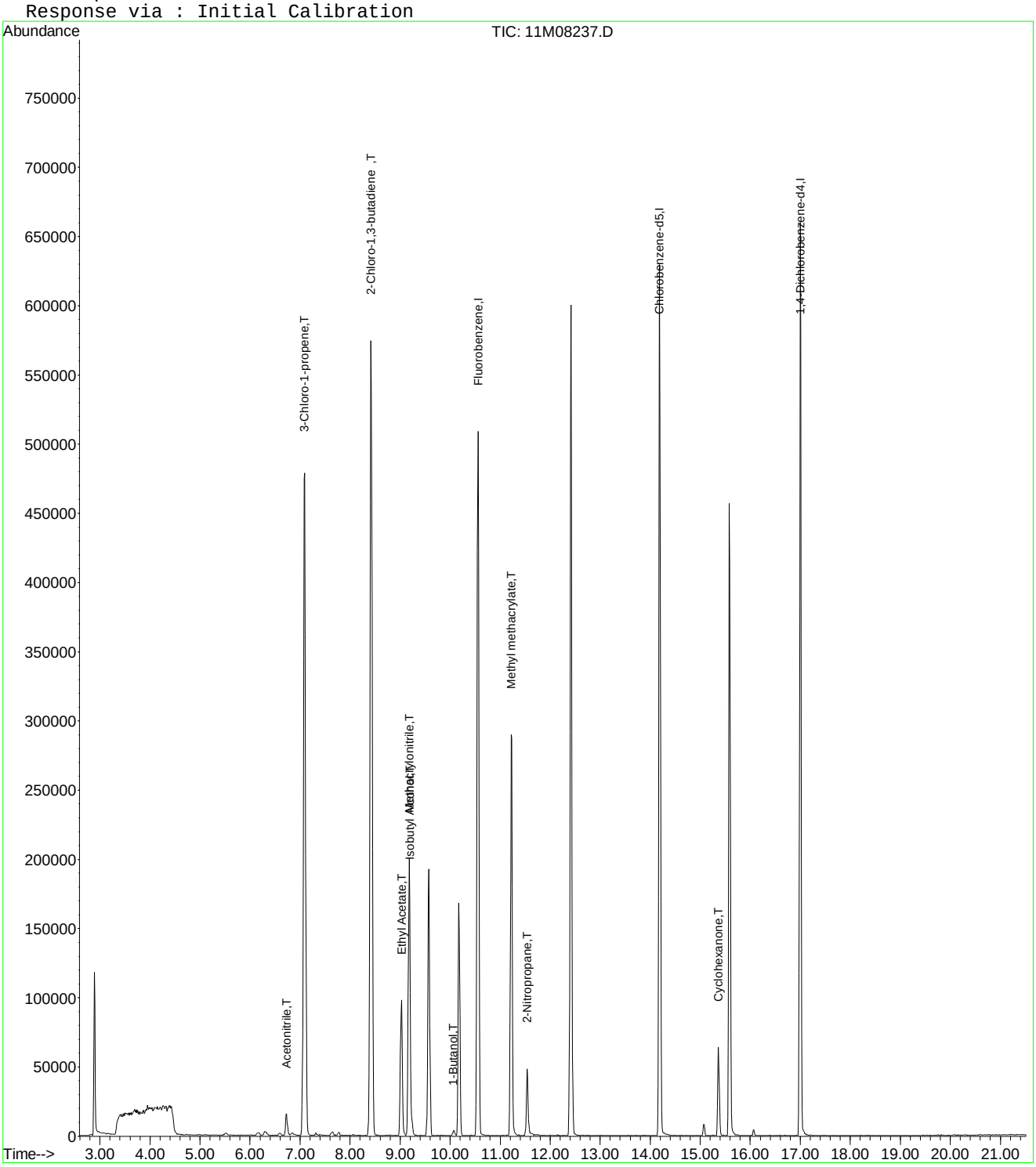

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08237.D Vial: 4
Acq On : 14 Jun 2015 11:02 Operator: TMB /DLW
Sample : WG527475-04 50ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28:07 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	593911	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	439398	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	227606	25.00 ug/L	-0.03

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M08237.D A9FOOWT.M Thu Aug 20 11:28:08 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08237.D Vial: 4
Acq On : 14 Jun 2015 11:02 Operator: TMB /DLW
Sample : WG527475-04 50ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration

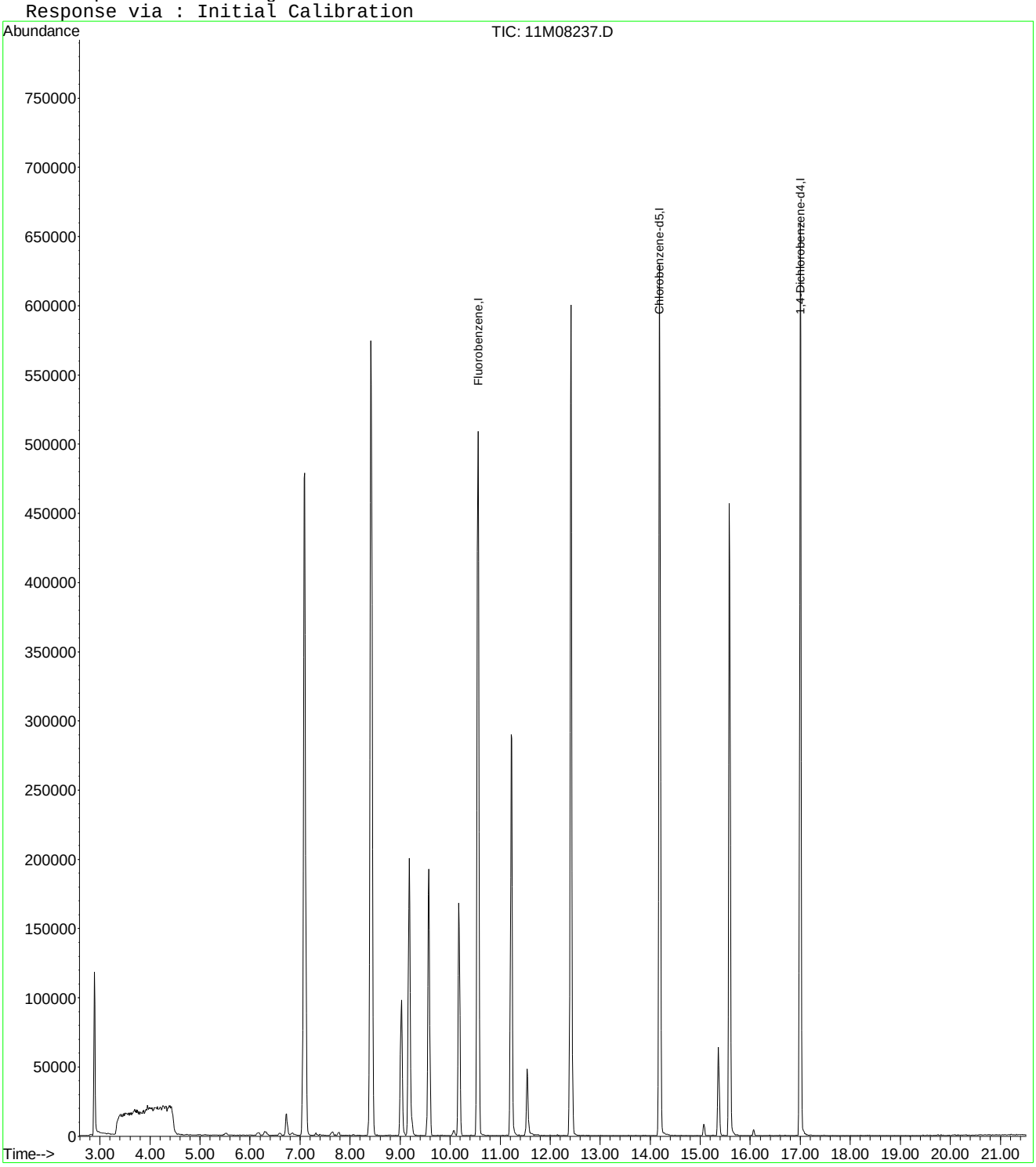

11M08237.D A9FOOWT.M Thu Aug 20 11:28:08 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08237.D Vial: 4
Acq On : 14 Jun 2015 11:02 Operator: TMB /DLW
Sample : WG527475-04 50ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43:49 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	593911	25.00 ug/L	0.00
12) Chlorobenzene-d5	14.19	117	439398	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.00	152	227606	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.73	41	21370	46.9139 ug/L	93
3) 3-Chloro-1-propene	7.08	41	441208	49.3594 ug/L	85
4) 2-Chloro-1,3-butadiene	8.42	53	506427	47.1955 ug/L	96
5) Methacrylonitrile	9.18	41	133439	48.2996 ug/L	86
6) Isobutyl Alcohol	9.19	43	13722	96.5203 ug/L	88
7) 1-Butanol	10.06	56	3449	45.8622 ug/L #	8
8) Cyclohexanone	15.36	55	33575	49.1507 ug/L	96
9) 2-Nitropropane	11.54	43	32837	62.5818 ug/L #	75
10) Ethyl Acetate	9.03	43	158260	48.2986 ug/L	95
11) Methyl methacrylate	11.22	41	179947	47.2293 ug/L	89

(#) = qualifier out of range (m) = manual integration
11M08237.D A9FOOWT.M Thu Aug 20 11:43:49 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08237.D Vial: 4
Acq On : 14 Jun 2015 11:02 Operator: TMB /DLW
Sample : WG527475-04 50ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration

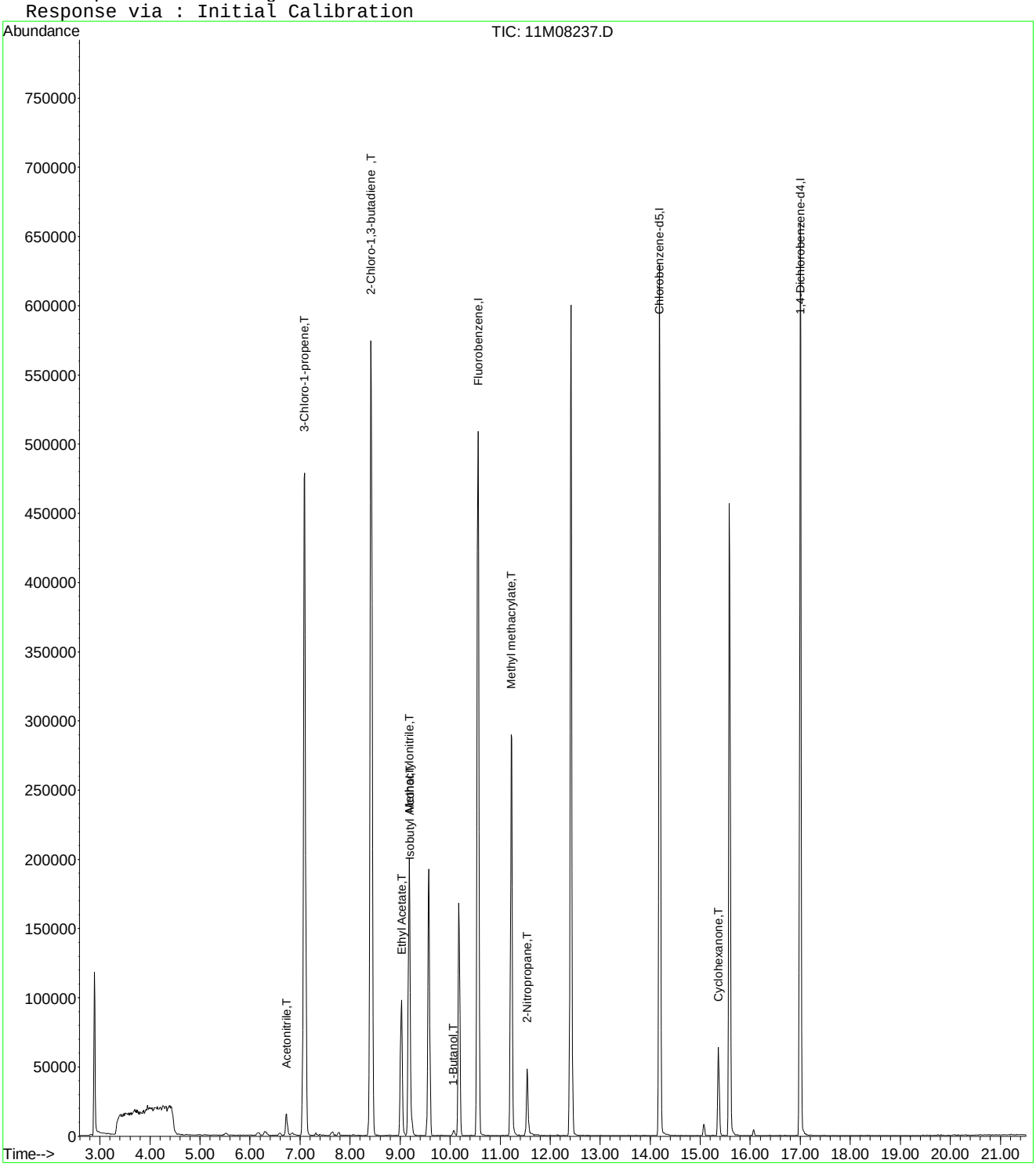

11M08237.D A9FOOWT.M Thu Aug 20 11:43:49 2015 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061415\11M08237.D Vial: 4
Acq On : 14 Jun 2015 11:02 Operator: TMB /DLW
Sample : WG527475-04 50ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	46.9140	6.2	100	0.01
3	T	3-Chloro-1-propene	50.0000	49.3594	1.3	100	-0.01
4	T	2-Chloro-1,3-butadiene	50.0000	47.1955	5.6	100	0.00
5	T	Methacrylonitrile	50.0000	48.2996	3.4	100	0.00
6	T	Isobutyl Alcohol	100.0000	96.5203	3.5	100	0.00
7	T	1-Butanol	50.0000	45.8622	8.3	100	-0.01
8	T	Cyclohexanone	50.0000	49.1508	1.7	100	0.00
9	T	2-Nitropropane	50.0000	62.5818	-25.2	100	0.00
10	T	Ethyl Acetate	50.0000	48.2986	3.4	100	0.00
11	T	Methyl methacrylate	50.0000	47.2293	5.5	100	0.00
12	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
13	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M08237.D A9FOOWT.M Thu Aug 20 11:44:41 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08238.D Vial: 5
Acq On : 14 Jun 2015 11:34 Operator: TMB /DLW
Sample : WG527475-05 100ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 11:56:24 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	593660	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.19	117	435951	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.00	152	224898	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	154015	23.3717 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.48%		
43) 1,2-Dichloroethane-d4	10.17	65	141727	19.8012 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 79.20%#		
57) Toluene-d8	12.42	98	525710	28.5517 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 114.20%#		
78) p-Bromofluorobenzene	15.58	95	182017	25.2926 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.16%		

Target Compounds					Qvalue
3) Chloromethane	3.68	50	2521	0.2445 ug/L	100
13) Acetone	6.30	43	8631	4.9378 ug/L	80
24) n-Hexane	7.78	57	2688	0.2479 ug/L #	72
29) 2-Butanone	8.85	43	412	0.1450 ug/L #	77

(#) = qualifier out of range (m) = manual integration
11M08238.D 8260WTR.M Sun Jun 14 11:56:26 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08238.D Vial: 5
Acq On : 14 Jun 2015 11:34 Operator: TMB /DLW
Sample : WG527475-05 100ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 11:56 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration

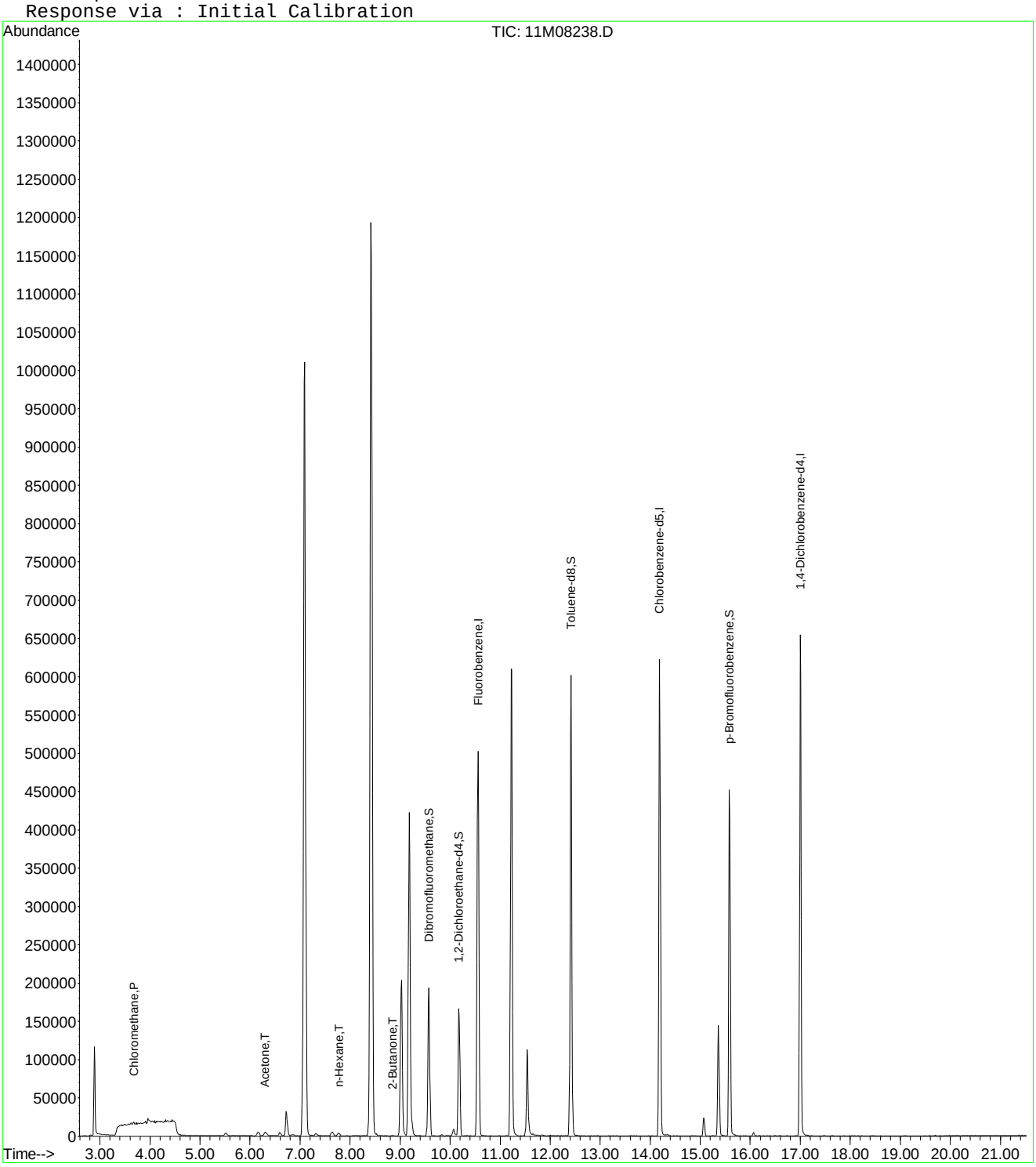

11M08238.D 8260WTR.M Sun Jun 14 11:56:26 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08238.D Vial: 5
Acq On : 14 Jun 2015 11:34 Operator: TMB /DLW
Sample : WG527475-05 100ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 09:43:58 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	593660	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	435951	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	224898	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	41783	88.1177 ug/L	97
3) 3-Chloro-1-propene	7.09	41	901667	87.4486 ug/L	84
4) 2-Chloro-1,3-butadiene	8.42	53	1055196	99.8955 ug/L	96
5) Methacrylonitrile	9.18	41	269812	94.9555 ug/L	83
6) Isobutyl Alcohol	9.19	43	28965	265.8717 ug/L	87
7) 1-Butanol	10.07	56	7719	169.0243 ug/L	87
8) Cyclohexanone	15.36	55	72878	92.9342 ug/L	95
9) 2-Nitropropane	11.54	43	76568	70.3304 ug/L	82
10) Ethyl Acetate	9.03	43	331707	94.9253 ug/L	95
11) Methyl methacrylate	11.22	41	375863	99.7350 ug/L	89

(#) = qualifier out of range (m) = manual integration
11M08238.D A9FOOWT.M Tue Jun 16 09:43:58 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08238.D Vial: 5
Acq On : 14 Jun 2015 11:34 Operator: TMB /DLW
Sample : WG527475-05 100ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 9:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration

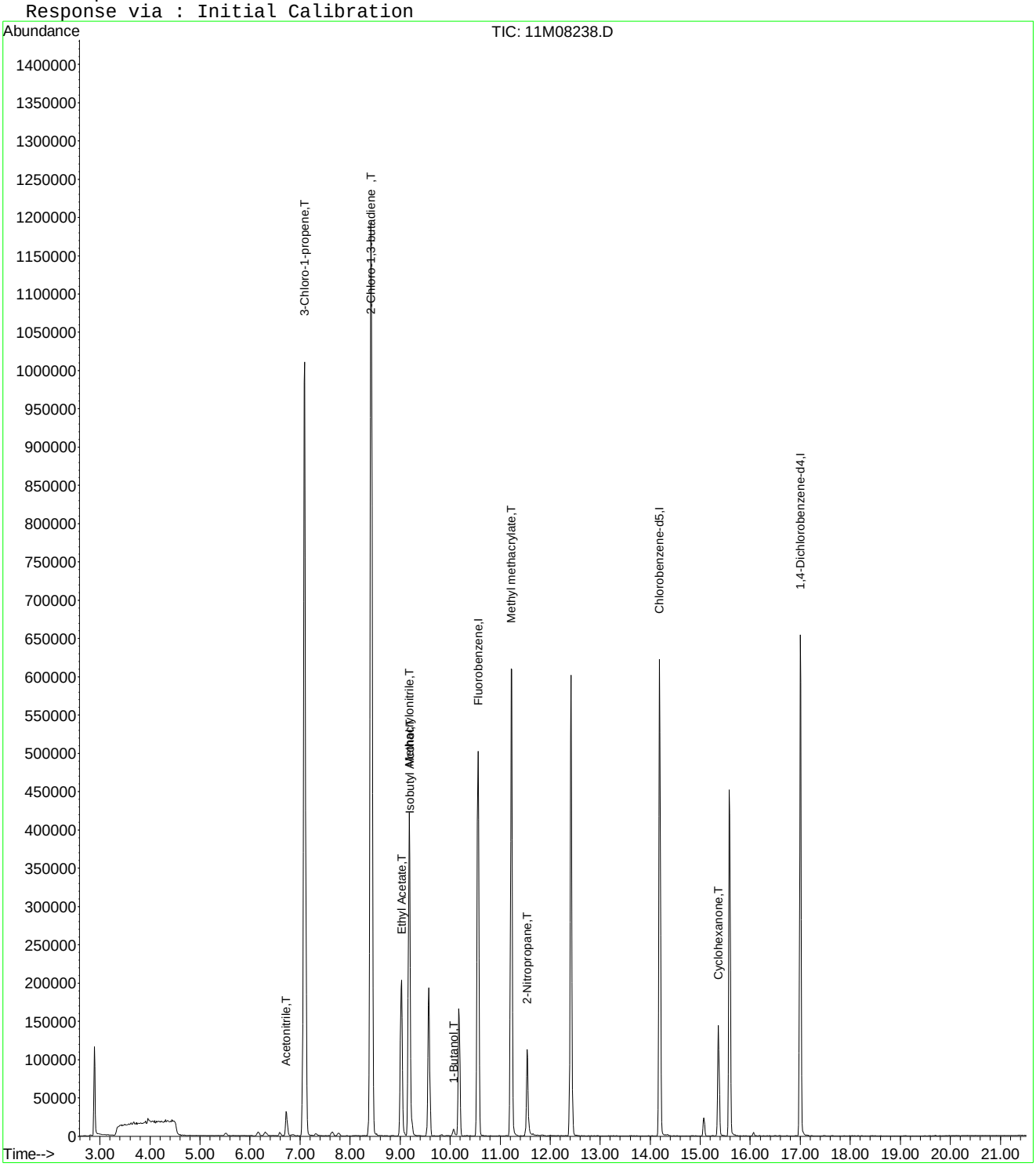

11M08238.D A9FOOWT.M Tue Jun 16 09:43:58 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08238.D Vial: 5
Acq On : 14 Jun 2015 11:34 Operator: TMB /DLW
Sample : WG527475-05 100ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28:09 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	593660	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	435951	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	224898	25.00 ug/L	-0.03

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M08238.D A9FOOWT.M Thu Aug 20 11:28:10 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08238.D Vial: 5
Acq On : 14 Jun 2015 11:34 Operator: TMB /DLW
Sample : WG527475-05 100ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration

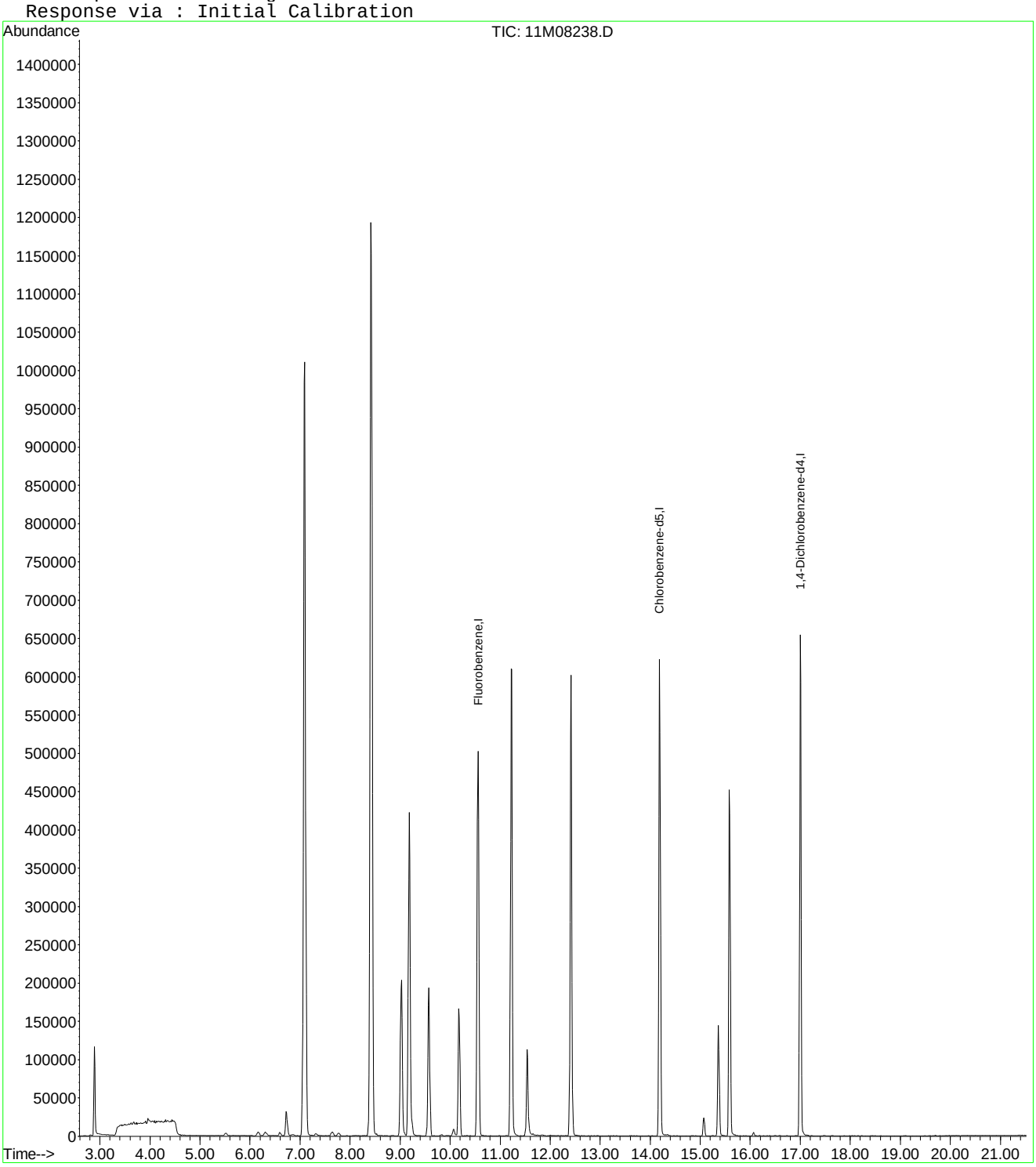

11M08238.D A9FOOWT.M Thu Aug 20 11:28:10 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08238.D Vial: 5
Acq On : 14 Jun 2015 11:34 Operator: TMB /DLW
Sample : WG527475-05 100ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43:50 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.56	96	593660	25.00	ug/L	0.00
12) Chlorobenzene-d5	14.19	117	435951	25.00	ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.00	152	224898	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.72	41	41783	91.7658	ug/L	97
3) 3-Chloro-1-propene	7.09	41	901667	100.9151	ug/L	84
4) 2-Chloro-1,3-butadiene	8.42	53	1055196	98.3785	ug/L	96
5) Methacrylonitrile	9.18	41	269812	97.7026	ug/L	83
6) Isobutyl Alcohol	9.19	43	28965	203.8255	ug/L	87
7) 1-Butanol	10.07	56	7719	102.6849	ug/L	87
8) Cyclohexanone	15.36	55	72878	106.7319	ug/L	95
9) 2-Nitropropane	11.54	43	76568	102.5921	ug/L	82
10) Ethyl Acetate	9.03	43	331707	101.2749	ug/L	95
11) Methyl methacrylate	11.22	41	375863	98.6916	ug/L	89

(#) = qualifier out of range (m) = manual integration
11M08238.D A9FOOWT.M Thu Aug 20 11:43:50 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08238.D Vial: 5
Acq On : 14 Jun 2015 11:34 Operator: TMB /DLW
Sample : WG527475-05 100ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration

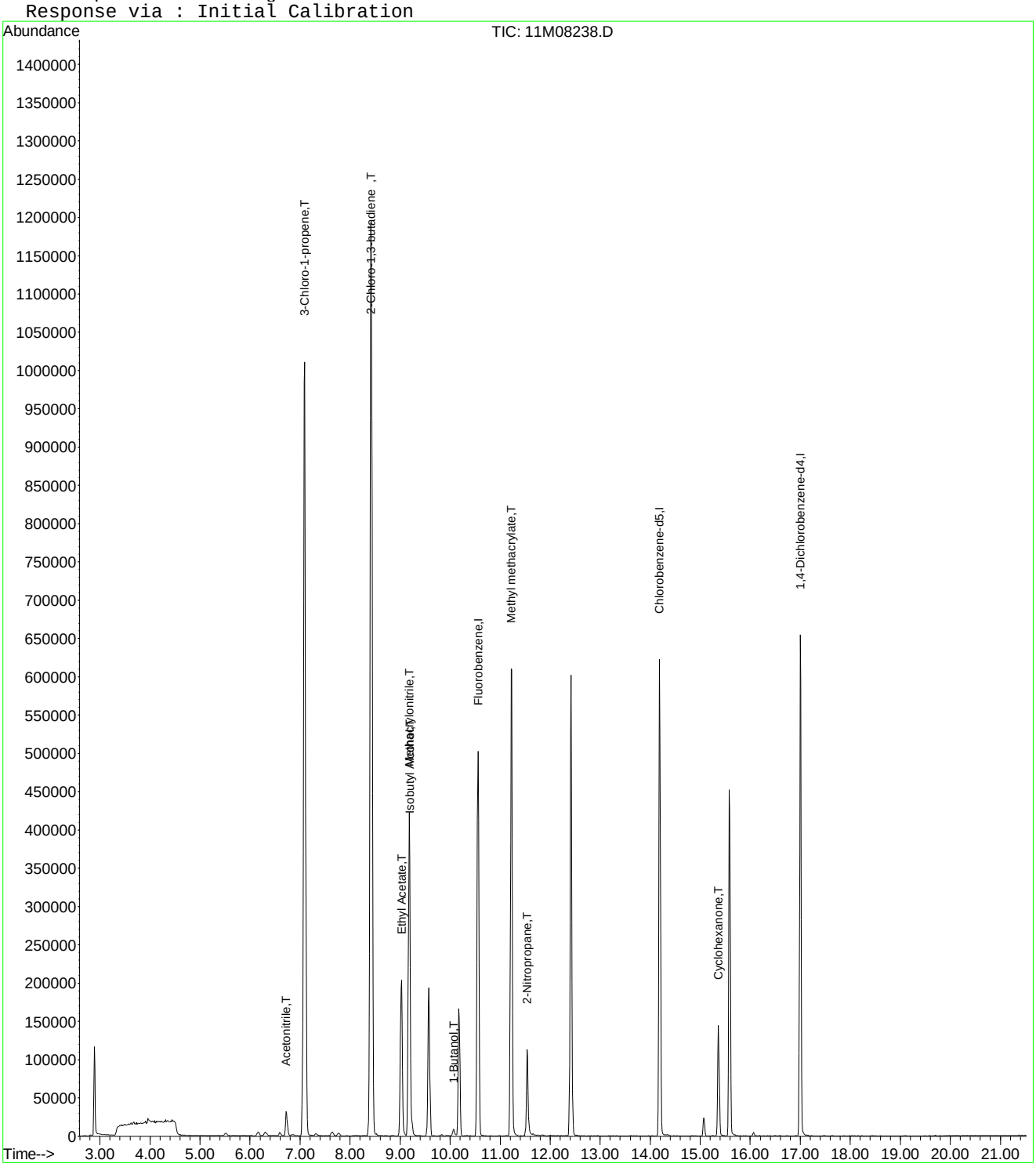

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061415\11M08238.D Vial: 5
Acq On : 14 Jun 2015 11:34 Operator: TMB /DLW
Sample : WG527475-05 100ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	91.7658	8.2	100	0.00
3	T	3-Chloro-1-propene	100.0000	100.9152	-0.9	100	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	98.3785	1.6	100	0.00
5	T	Methacrylonitrile	100.0000	97.7026	2.3	100	0.00
6	T	Isobutyl Alcohol	200.0000	203.8255	-1.9	100	0.00
7	T	1-Butanol	100.0000	102.6849	-2.7	100	0.00
8	T	Cyclohexanone	100.0000	106.7319	-6.7	100	0.00
9	T	2-Nitropropane	100.0000	102.5921	-2.6	100	0.00
10	T	Ethyl Acetate	100.0000	101.2749	-1.3	100	0.00
11	T	Methyl methacrylate	100.0000	98.6916	1.3	100	0.00
12	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
13	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M08238.D A9FOOWT.M Thu Aug 20 11:44:51 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08239.D Vial: 6
Acq On : 14 Jun 2015 12:06 Operator: TMB /DLW
Sample : WG527475-06 200ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 12:28:24 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	594644	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.19	117	435974	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.00	152	229058	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	154998	23.4820 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.92%		
43) 1,2-Dichloroethane-d4	10.17	65	140981	19.6644 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 78.64%#		
57) Toluene-d8	12.42	98	523704	28.4412 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 113.76%#		
78) p-Bromofluorobenzene	15.58	95	185106	25.2547 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.00%		

Target Compounds

					Qvalue
3) Chloromethane	3.68	50	2432	0.2354 ug/L #	41
6) Bromomethane	4.80	94	741	0.2165 ug/L	88
13) Acetone	6.30	43	14437	8.2458 ug/L	88
24) n-Hexane	7.78	57	4836	0.4453 ug/L #	80
29) 2-Butanone	8.84	43	1521	0.5342 ug/L #	77
39) Cyclohexane	9.83	56	2702	0.1826 ug/L #	90
47) Methylcyclohexane	11.23	83	2411	0.2326 ug/L #	1
70) Ethylbenzene	14.34	106	1287	0.1439 ug/L	84
71) m-,p-Xylene	14.34	106	1287	0.1218 ug/L #	4

(#) = qualifier out of range (m) = manual integration
11M08239.D 8260WTR.M Sun Jun 14 12:28:25 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08239.D Vial: 6
Acq On : 14 Jun 2015 12:06 Operator: TMB /DLW
Sample : WG527475-06 200ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 12:28 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration

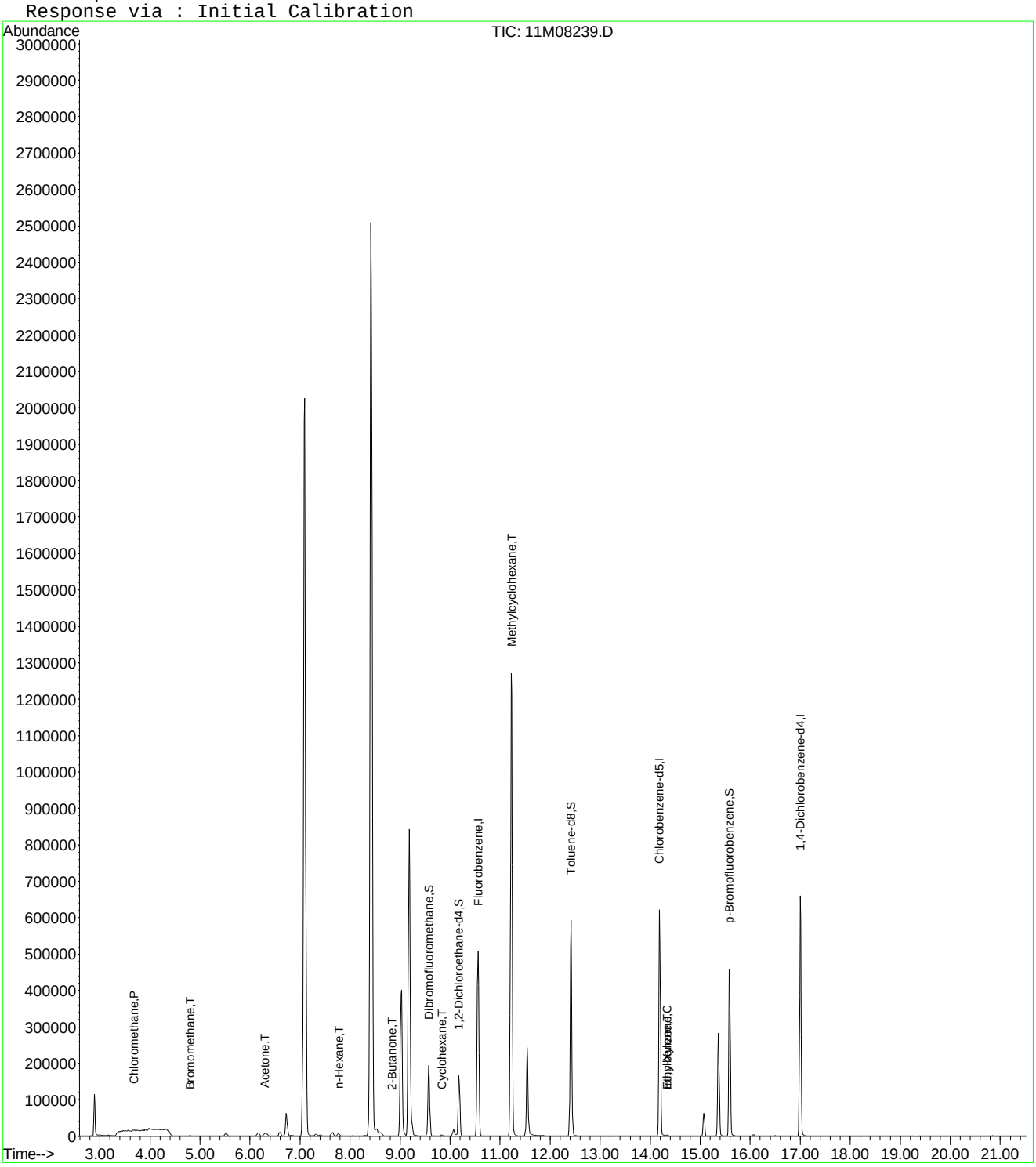

11M08239.D 8260WTR.M Sun Jun 14 12:28:25 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08239.D Vial: 6
Acq On : 14 Jun 2015 12:06 Operator: TMB /DLW
Sample : WG527475-06 200ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 09:43:59 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.56	96	594644	25.00	ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	435974	25.00	ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	229058	25.00	ug/L	-0.03

Target Compounds						Qvalue
2) Acetonitrile	6.72	41	84573	178.0639	ug/L	99
3) 3-Chloro-1-propene	7.09	41	1784664	172.8000	ug/L	83
4) 2-Chloro-1,3-butadiene	8.42	53	2139008	202.1651	ug/L	95
5) Methacrylonitrile	9.18	41	534300	187.7261	ug/L	82
6) Isobutyl Alcohol	9.19	43	51366	470.7117	ug/L	98
7) 1-Butanol	10.07	56	15596	340.9432	ug/L #	87
8) Cyclohexanone	15.36	55	142194	181.0260	ug/L	95
9) 2-Nitropropane	11.54	43	168554	154.5666	ug/L	84
10) Ethyl Acetate	9.03	43	649446	185.5458	ug/L	94
11) Methyl methacrylate	11.22	41	751654	199.1209	ug/L	88

(#) = qualifier out of range (m) = manual integration
11M08239.D A9FOOWT.M Tue Jun 16 09:43:59 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08239.D Vial: 6
Acq On : 14 Jun 2015 12:06 Operator: TMB /DLW
Sample : WG527475-06 200ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 9:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration

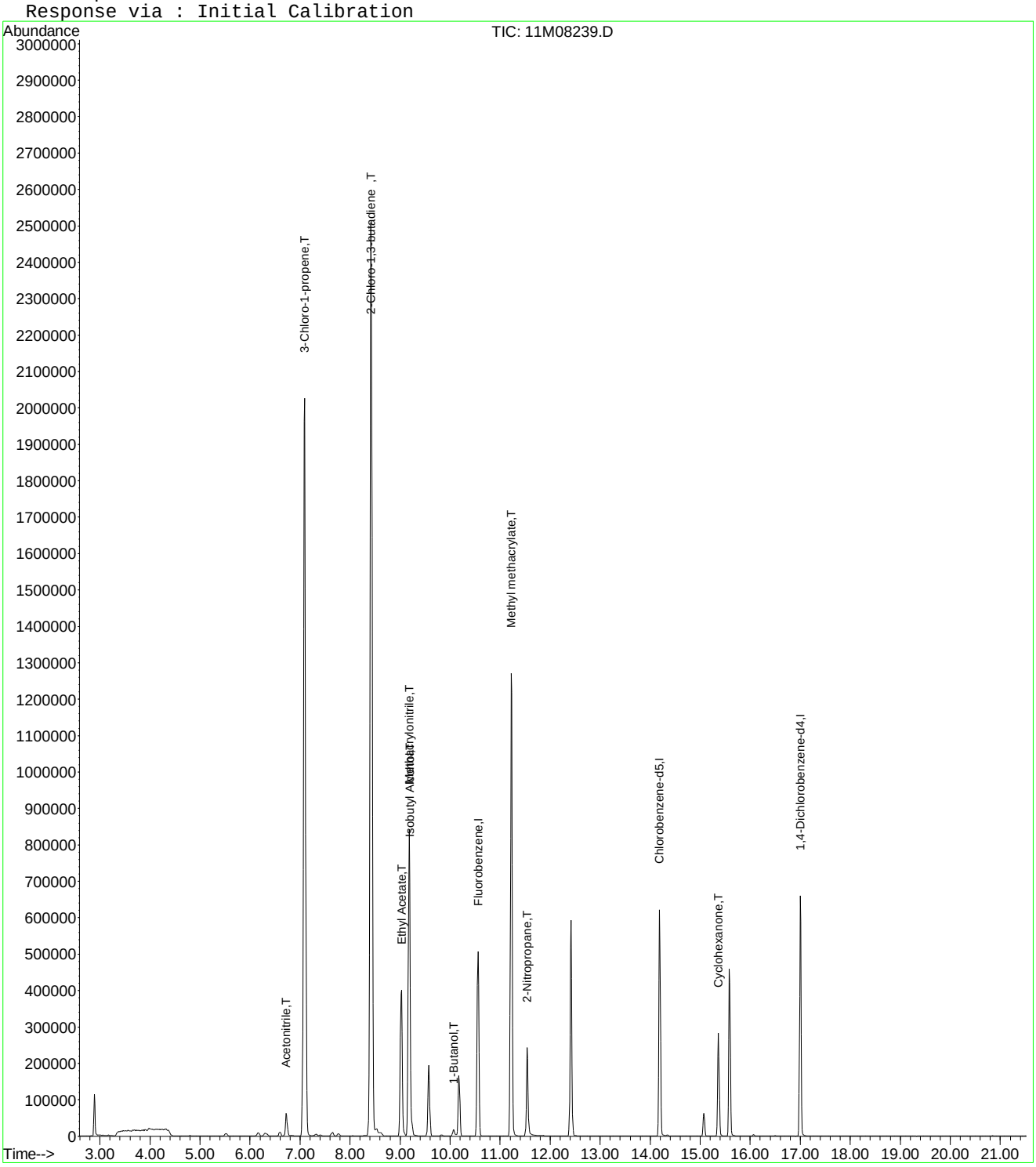

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08239.D Vial: 6
Acq On : 14 Jun 2015 12:06 Operator: TMB /DLW
Sample : WG527475-06 200ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28:11 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	594644	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	435974	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	229058	25.00 ug/L	-0.03

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M08239.D A9FOOWT.M Thu Aug 20 11:28:11 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08239.D Vial: 6
Acq On : 14 Jun 2015 12:06 Operator: TMB /DLW
Sample : WG527475-06 200ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration

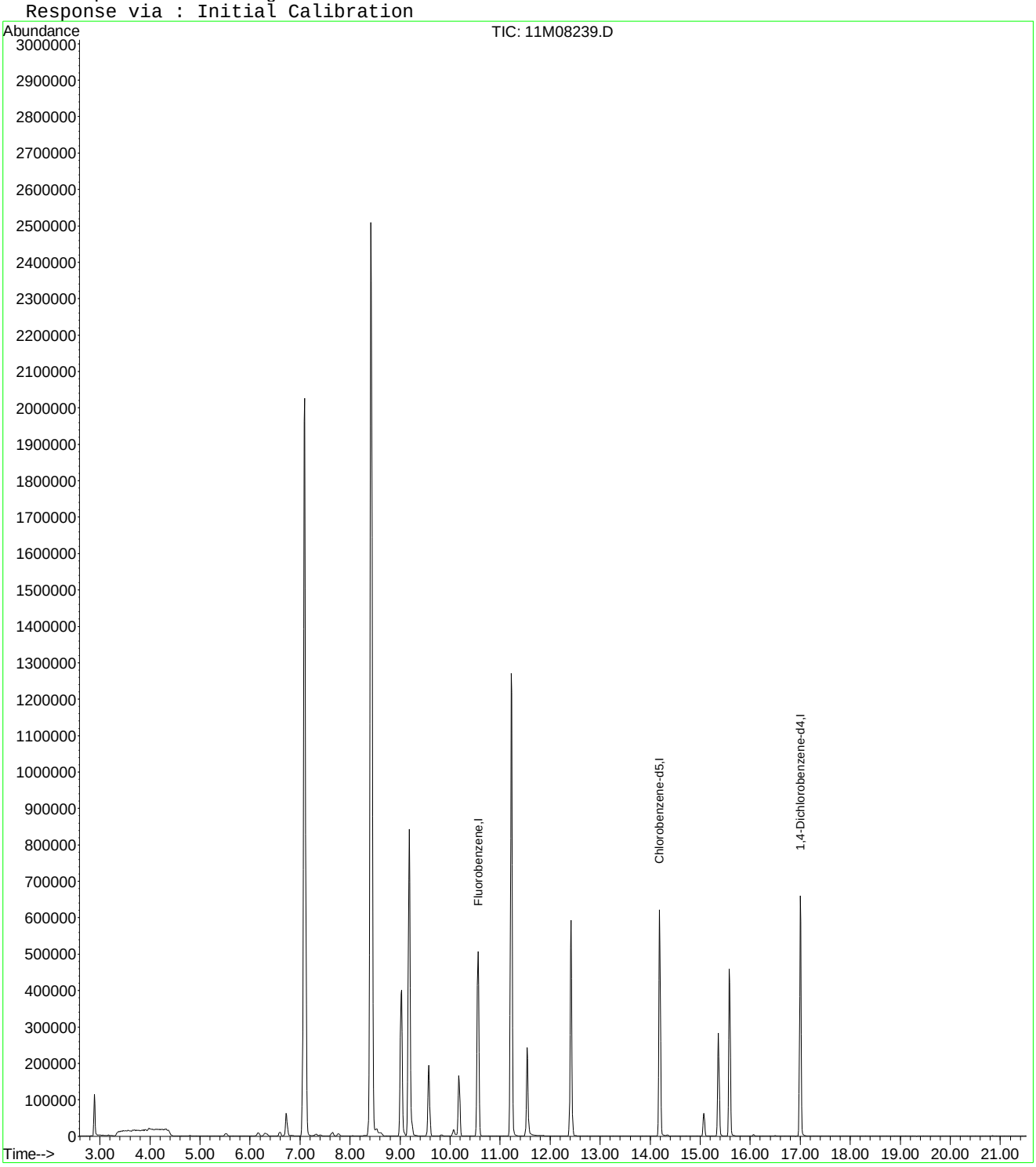

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08239.D Vial: 6
Acq On : 14 Jun 2015 12:06 Operator: TMB /DLW
Sample : WG527475-06 200ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43:51 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	594644	25.00 ug/L	0.00
12) Chlorobenzene-d5	14.19	117	435974	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.00	152	229058	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	84573	185.4358 ug/L	99
3) 3-Chloro-1-propene	7.09	41	1784664	199.4102 ug/L	83
4) 2-Chloro-1,3-butadiene	8.42	53	2139008	199.0949 ug/L	95
5) Methacrylonitrile	9.18	41	534300	193.1571 ug/L	82
6) Isobutyl Alcohol	9.19	43	51337	360.6585 ug/L	98
7) 1-Butanol	10.07	56	15596	207.1283 ug/L #	87
8) Cyclohexanone	15.36	55	142194	207.9025 ug/L	95
9) 2-Nitropropane	11.54	43	168554	186.4698 ug/L	84
10) Ethyl Acetate	9.03	43	649446	197.9570 ug/L	94
11) Methyl methacrylate	11.22	41	751654	197.0377 ug/L	88

(#) = qualifier out of range (m) = manual integration
11M08239.D A9FOOWT.M Thu Aug 20 11:43:51 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08239.D Vial: 6
Acq On : 14 Jun 2015 12:06 Operator: TMB /DLW
Sample : WG527475-06 200ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration

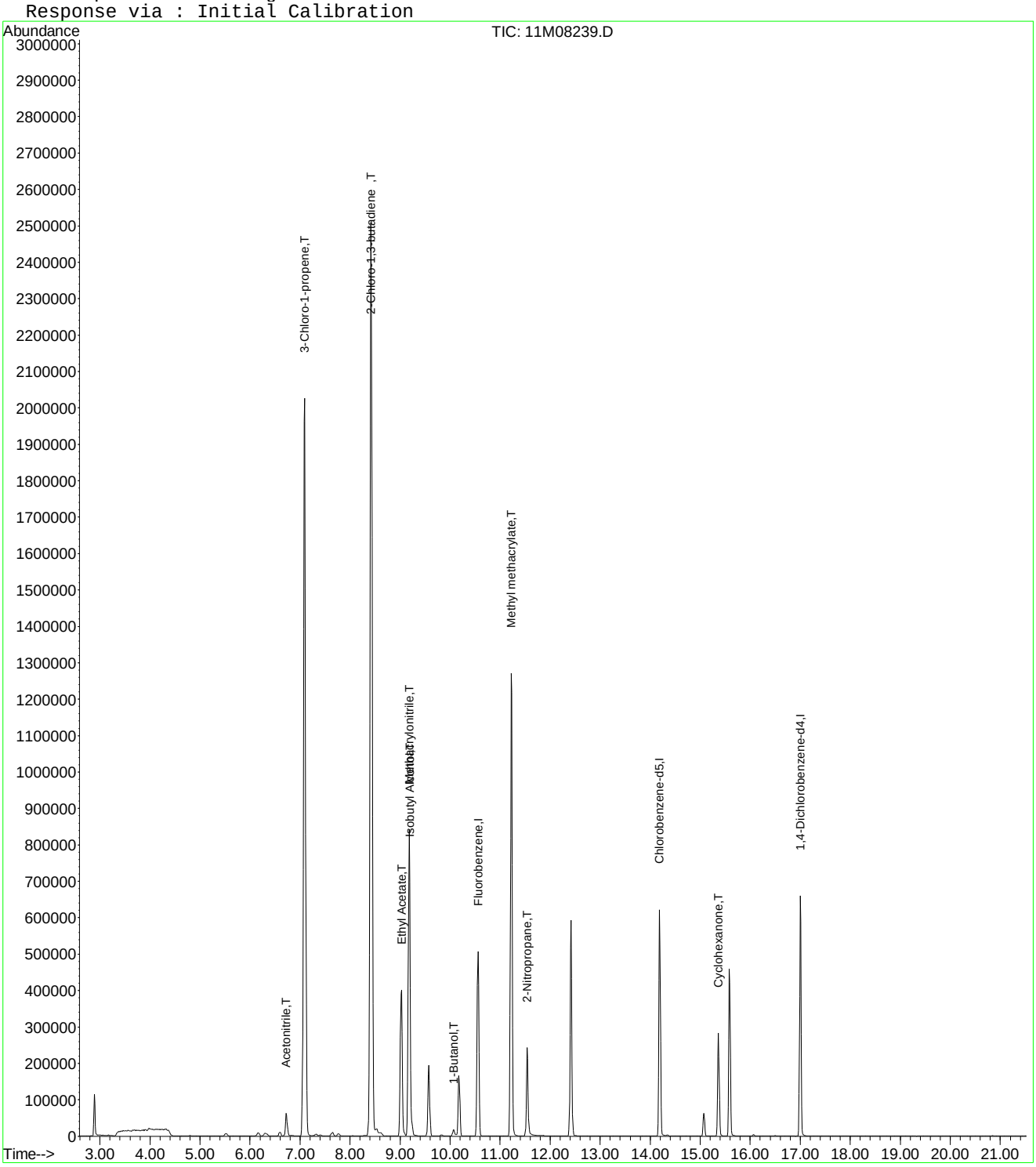

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08240.D Vial: 7
Acq On : 14 Jun 2015 12:38 Operator: TMB /DLW
Sample : WG527475-07 300ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 13:00:23 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	590021	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.19	117	427539	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.00	152	226251	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	154989	23.6646 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.64%		
43) 1,2-Dichloroethane-d4	10.17	65	137616	19.3454 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 77.40%#		
57) Toluene-d8	12.42	98	526940	29.1815 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 116.72%#		
78) p-Bromofluorobenzene	15.58	95	183651	25.3670 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.48%		

Target Compounds

					Qvalue
3) Chloromethane	3.68	50	4067	0.3968 ug/L	98
6) Bromomethane	4.81	94	1456	0.4286 ug/L	94
11) Acrolein	6.23	56	2665	2.6647 ug/L #	63
13) Acetone	6.30	43	17405	10.0188 ug/L	87
18) Methyl acetate	7.03	43	1109	0.1829 ug/L #	67
20) Carbon Disulfide	7.31	76	3126	0.1557 ug/L #	88
24) n-Hexane	7.78	57	7639	0.7089 ug/L #	89
29) 2-Butanone	8.84	43	1699	0.6014 ug/L #	77
30) Propionitrile	9.00	54	221	0.2481 ug/L #	1
39) Cyclohexane	9.84	56	3351	0.2282 ug/L #	68
71) m-,p-Xylene	14.34	106	1591	0.1535 ug/L #	17

(#) = qualifier out of range (m) = manual integration
11M08240.D 8260WTR.M Sun Jun 14 13:00:23 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08240.D Vial: 7
Acq On : 14 Jun 2015 12:38 Operator: TMB /DLW
Sample : WG527475-07 300ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 13:00 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration

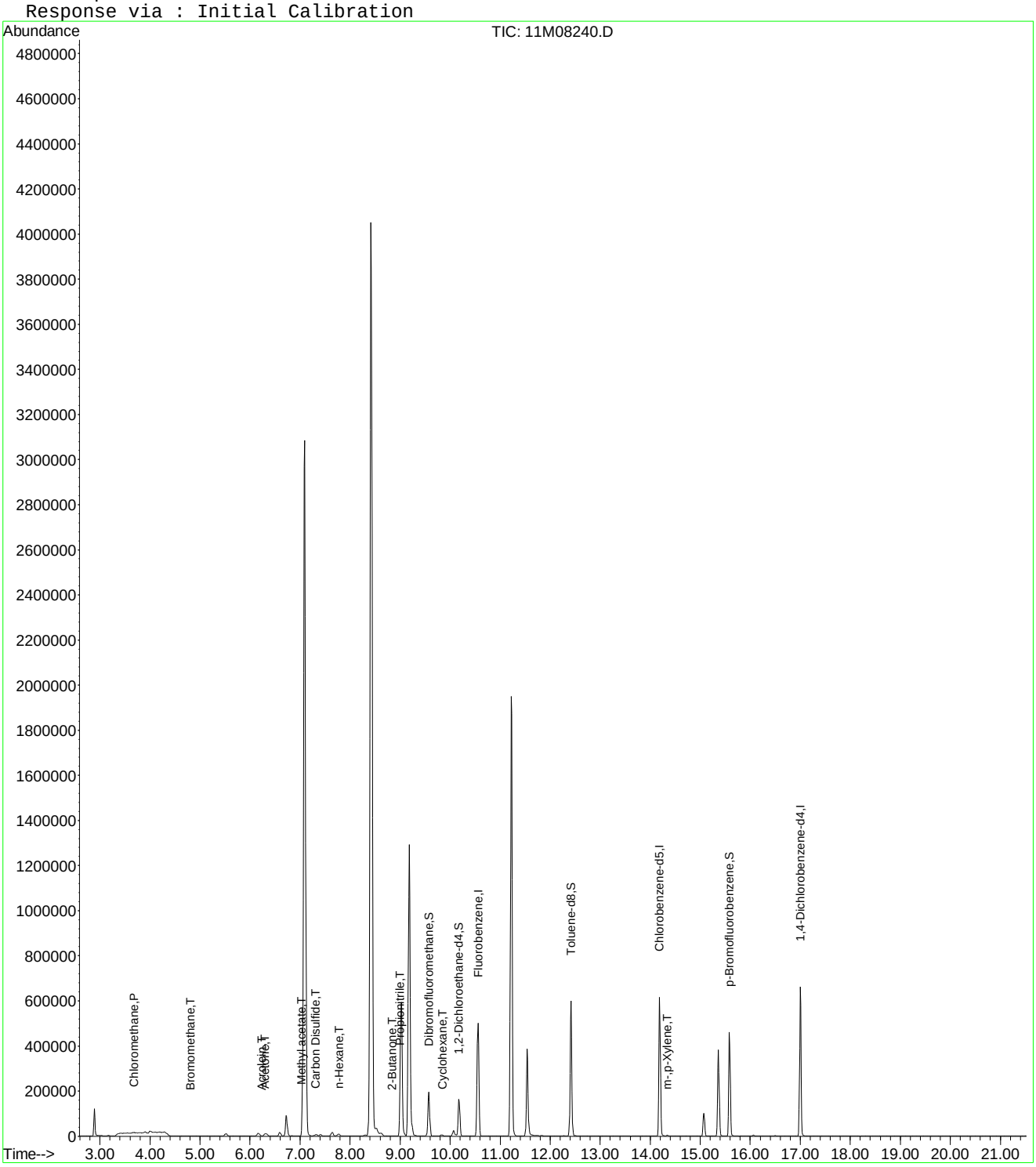

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08240.D Vial: 7
Acq On : 14 Jun 2015 12:38 Operator: TMB /DLW
Sample : WG527475-07 300ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 09:44:00 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.56	96	590021	25.00	ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	427539	25.00	ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	226251	25.00	ug/L	-0.03

Target Compounds						Qvalue
2) Acetonitrile	6.72	41	124797	264.8121	ug/L	99
3) 3-Chloro-1-propene	7.09	41	2683921	261.9067	ug/L	83
4) 2-Chloro-1,3-butadiene	8.42	53	3409409	324.7599	ug/L	95
5) Methacrylonitrile	9.18	41	809195	286.5380	ug/L	82
6) Isobutyl Alcohol	9.19	43	83440	770.6251	ug/L	88
7) 1-Butanol	10.07	56	21640	476.7773	ug/L	91
8) Cyclohexanone	15.36	55	191378	245.5507	ug/L	95
9) 2-Nitropropane	11.54	43	277273	256.2558	ug/L	85
10) Ethyl Acetate	9.03	43	962378	277.1043	ug/L #	93
11) Methyl methacrylate	11.22	41	1142167	304.9426	ug/L	88

(#) = qualifier out of range (m) = manual integration
11M08240.D A9FOOWT.M Tue Jun 16 09:44:01 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08240.D Vial: 7
Acq On : 14 Jun 2015 12:38 Operator: TMB /DLW
Sample : WG527475-07 300ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 9:44 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration

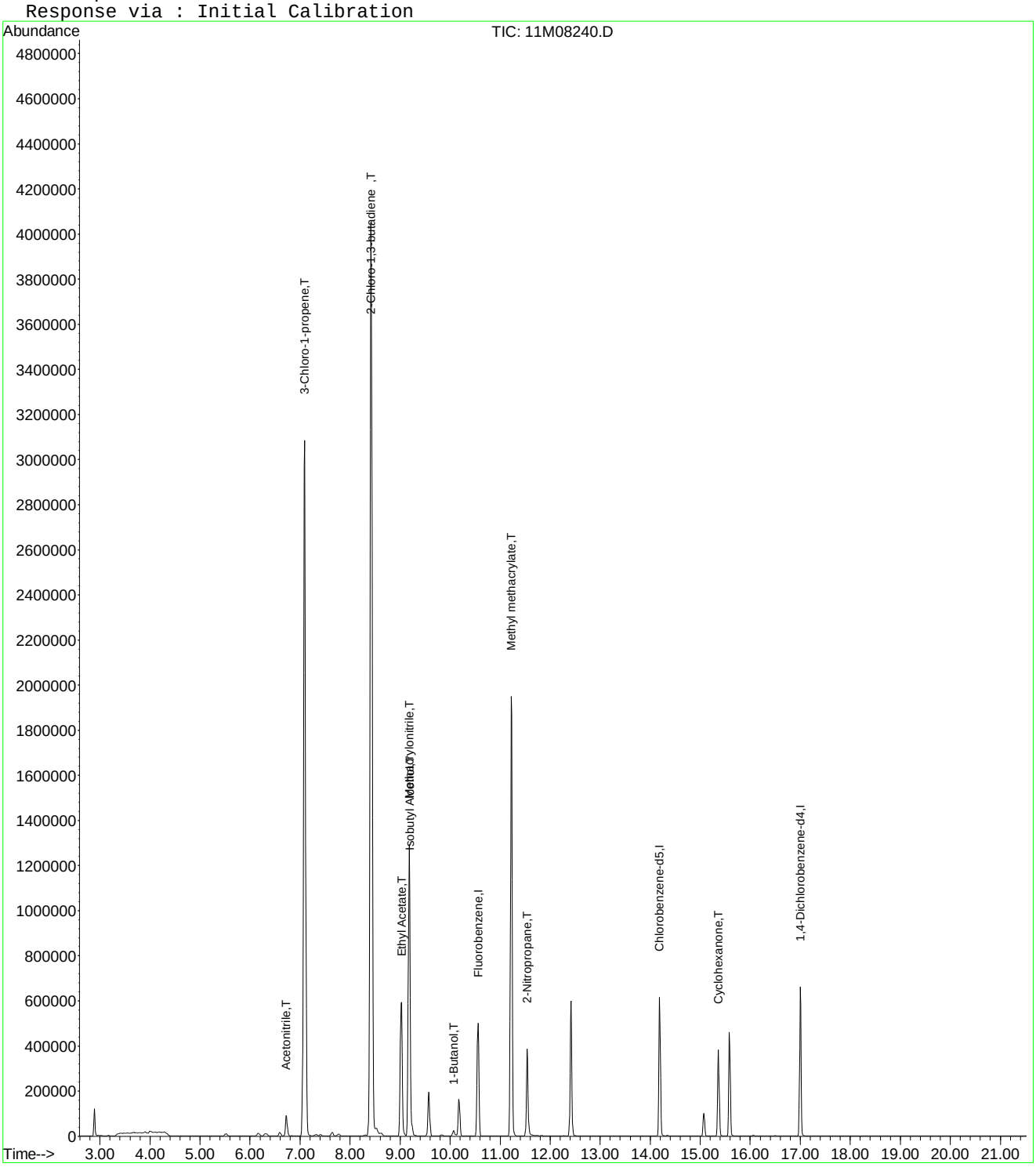

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08240.D Vial: 7
Acq On : 14 Jun 2015 12:38 Operator: TMB /DLW
Sample : WG527475-07 300ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28:12 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	590021	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	427539	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	226251	25.00 ug/L	-0.03

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M08240.D A9FOOWT.M Thu Aug 20 11:28:12 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08240.D Vial: 7
Acq On : 14 Jun 2015 12:38 Operator: TMB /DLW
Sample : WG527475-07 300ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration

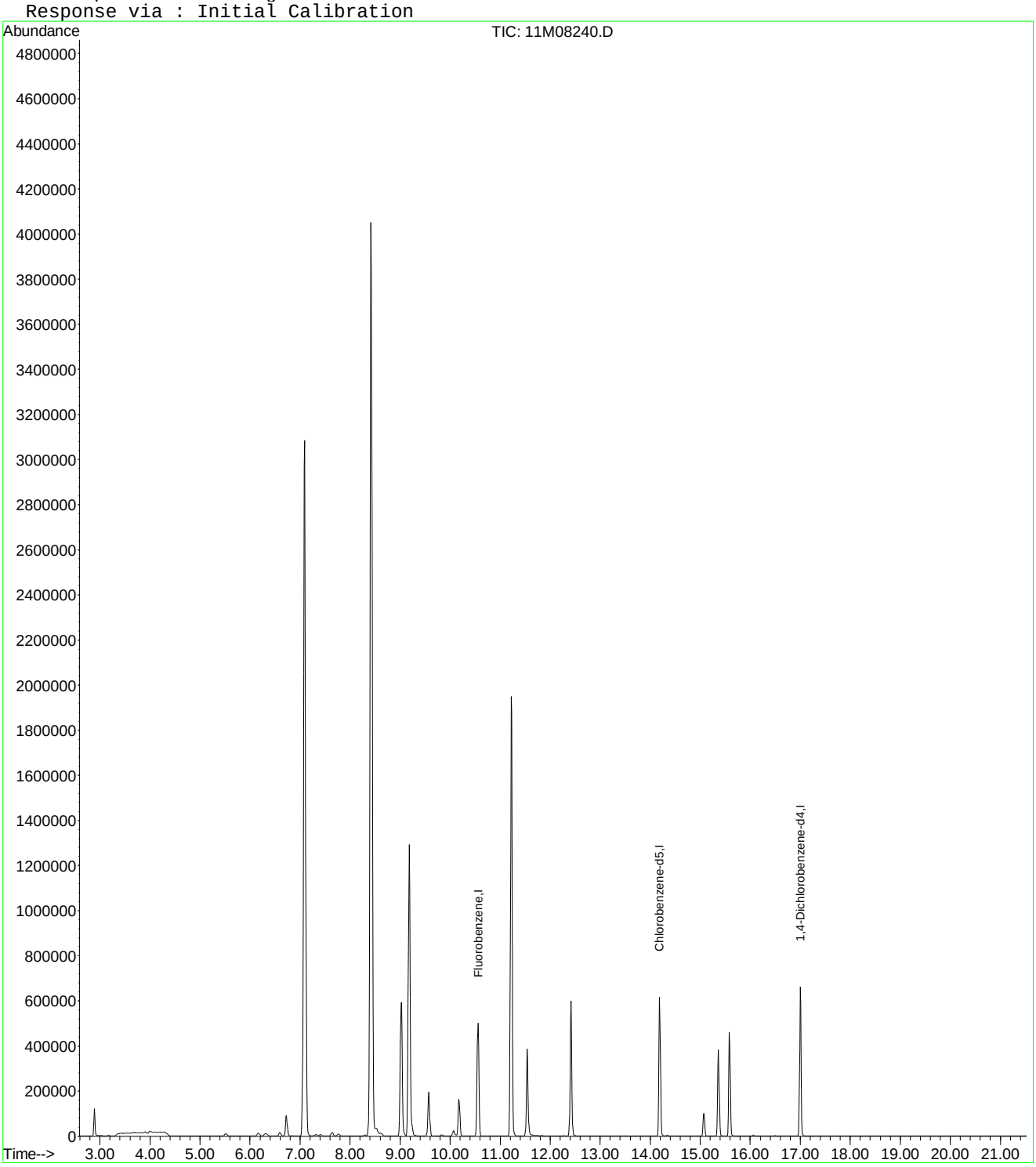

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08240.D Vial: 7
Acq On : 14 Jun 2015 12:38 Operator: TMB /DLW
Sample : WG527475-07 300ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43:52 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.56	96	590021	25.00	ug/L	0.00
12) Chlorobenzene-d5	14.19	117	427539	25.00	ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.00	152	226251	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.72	41	124797	275.7754	ug/L	99
3) 3-Chloro-1-propene	7.09	41	2683921	302.2388	ug/L	83
4) 2-Chloro-1,3-butadiene	8.42	53	3409409	319.8280	ug/L	95
5) Methacrylonitrile	9.18	41	809195	294.8276	ug/L	82
6) Isobutyl Alcohol	9.19	43	83440	590.7851	ug/L	88
7) 1-Butanol	10.07	56	21640	289.6496	ug/L	91
8) Cyclohexanone	15.36	55	191378	282.0071	ug/L	95
9) 2-Nitropropane	11.54	43	277273	287.7263	ug/L	85
10) Ethyl Acetate	9.03	43	962378	295.6400	ug/L #	93
11) Methyl methacrylate	11.22	41	1142167	301.7522	ug/L	88

(#) = qualifier out of range (m) = manual integration
11M08240.D A9FOOWT.M Thu Aug 20 11:43:53 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08240.D Vial: 7
Acq On : 14 Jun 2015 12:38 Operator: TMB /DLW
Sample : WG527475-07 300ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration

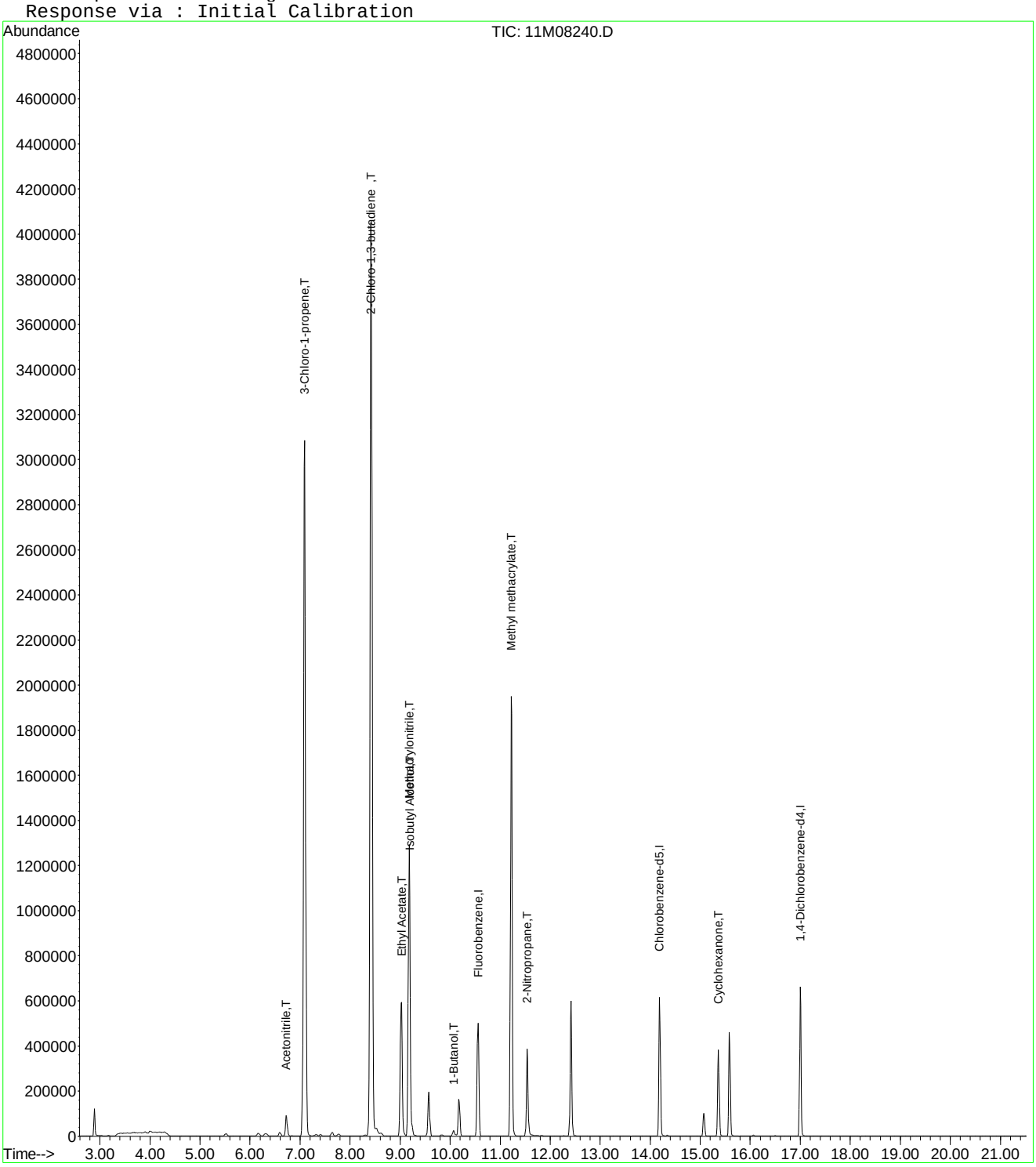

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08241.D Vial: 8
Acq On : 14 Jun 2015 13:10 Operator: TMB /DLW
Sample : WG527475-08 400ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 13:32:12 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	602921	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.19	117	438769	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.00	152	234608	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	157490	23.5320 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.12%		
43) 1,2-Dichloroethane-d4	10.17	65	142445	19.5958 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 78.40%#		
57) Toluene-d8	12.42	98	529319	28.5630 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 114.24%#		
78) p-Bromofluorobenzene	15.58	95	184124	24.5264 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.12%		

Target Compounds

					Qvalue
3) Chloromethane	3.67	50	5951	0.5682 ug/L	86
4) Vinyl Chloride	3.90	62	1145	0.1556 ug/L #	42
6) Bromomethane	4.81	94	1631	0.4699 ug/L #	56
11) Acrolein	6.25	56	3616	3.5382 ug/L #	49
13) Acetone	6.30	43	20681	11.6499 ug/L	94
18) Methyl acetate	7.02	43	2450	0.3954 ug/L #	67
19) Methylene Chloride	7.28	84	869	0.1218 ug/L #	49
20) Carbon Disulfide	7.31	76	4210	0.2052 ug/L	97
24) n-Hexane	7.77	57	9223	0.8376 ug/L #	93
29) 2-Butanone	8.83	43	2572	0.8910 ug/L #	77
31) 2,2-Dichloropropane	9.03	77	1535	0.1632 ug/L #	41
39) Cyclohexane	9.83	56	5053	0.3367 ug/L	91
71) m-,p-Xylene	14.34	106	2254	0.2119 ug/L #	36

(#) = qualifier out of range (m) = manual integration
11M08241.D 8260WTR.M Sun Jun 14 13:32:14 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08241.D Vial: 8
Acq On : 14 Jun 2015 13:10 Operator: TMB /DLW
Sample : WG527475-08 400ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 13:32 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration

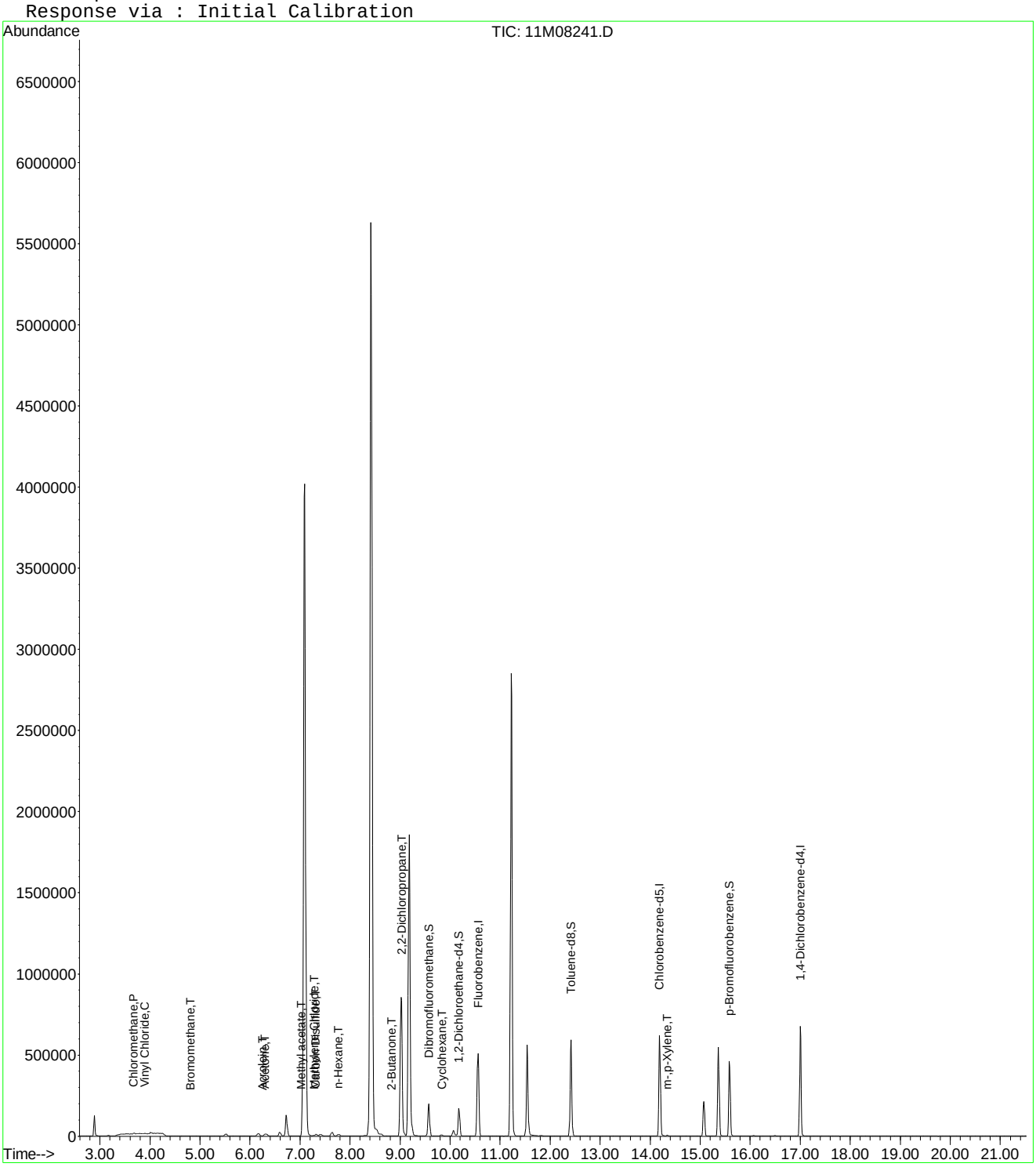

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08241.D Vial: 8
Acq On : 14 Jun 2015 13:10 Operator: TMB /DLW
Sample : WG527475-08 400ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 09:44:01 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	602921	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	438769	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	234608	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	173440	360.1555 ug/L	100
3) 3-Chloro-1-propene	7.09	41	3550959	339.1014 ug/L	82
4) 2-Chloro-1,3-butadiene	8.42	53	4600620	428.8513 ug/L	94
5) Methacrylonitrile	9.18	41	1153886	399.8518 ug/L	82
6) Isobutyl Alcohol	9.19	43	123004	1111.7192 ug/L	89
7) 1-Butanol	10.07	56	32355	697.6005 ug/L #	86
8) Cyclohexanone	15.36	55	274055	344.1074 ug/L	95
9) 2-Nitropropane	11.54	43	405951	367.1528 ug/L	87
10) Ethyl Acetate	9.02	43	1363919	384.3202 ug/L #	93
11) Methyl methacrylate	11.22	41	1637406	427.8110 ug/L	87

(#) = qualifier out of range (m) = manual integration
11M08241.D A9FOOWT.M Tue Jun 16 09:44:02 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08241.D Vial: 8
Acq On : 14 Jun 2015 13:10 Operator: TMB /DLW
Sample : WG527475-08 400ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 9:44 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration

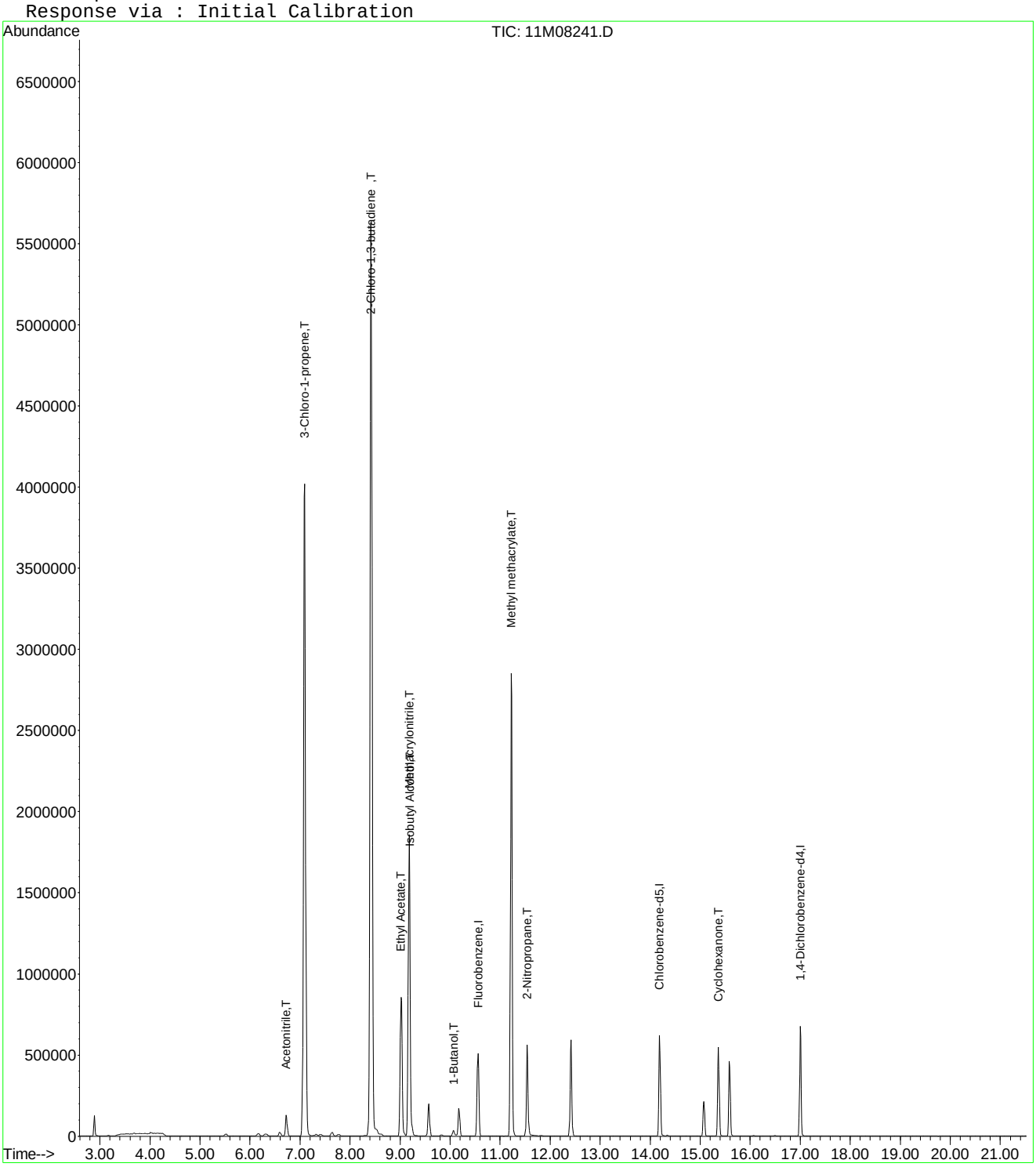

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08241.D Vial: 8
Acq On : 14 Jun 2015 13:10 Operator: TMB /DLW
Sample : WG527475-08 400ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28:13 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	602921	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	438769	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	234608	25.00 ug/L	-0.03

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M08241.D A9FOOWT.M Thu Aug 20 11:28:14 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08241.D Vial: 8
Acq On : 14 Jun 2015 13:10 Operator: TMB /DLW
Sample : WG527475-08 400ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration

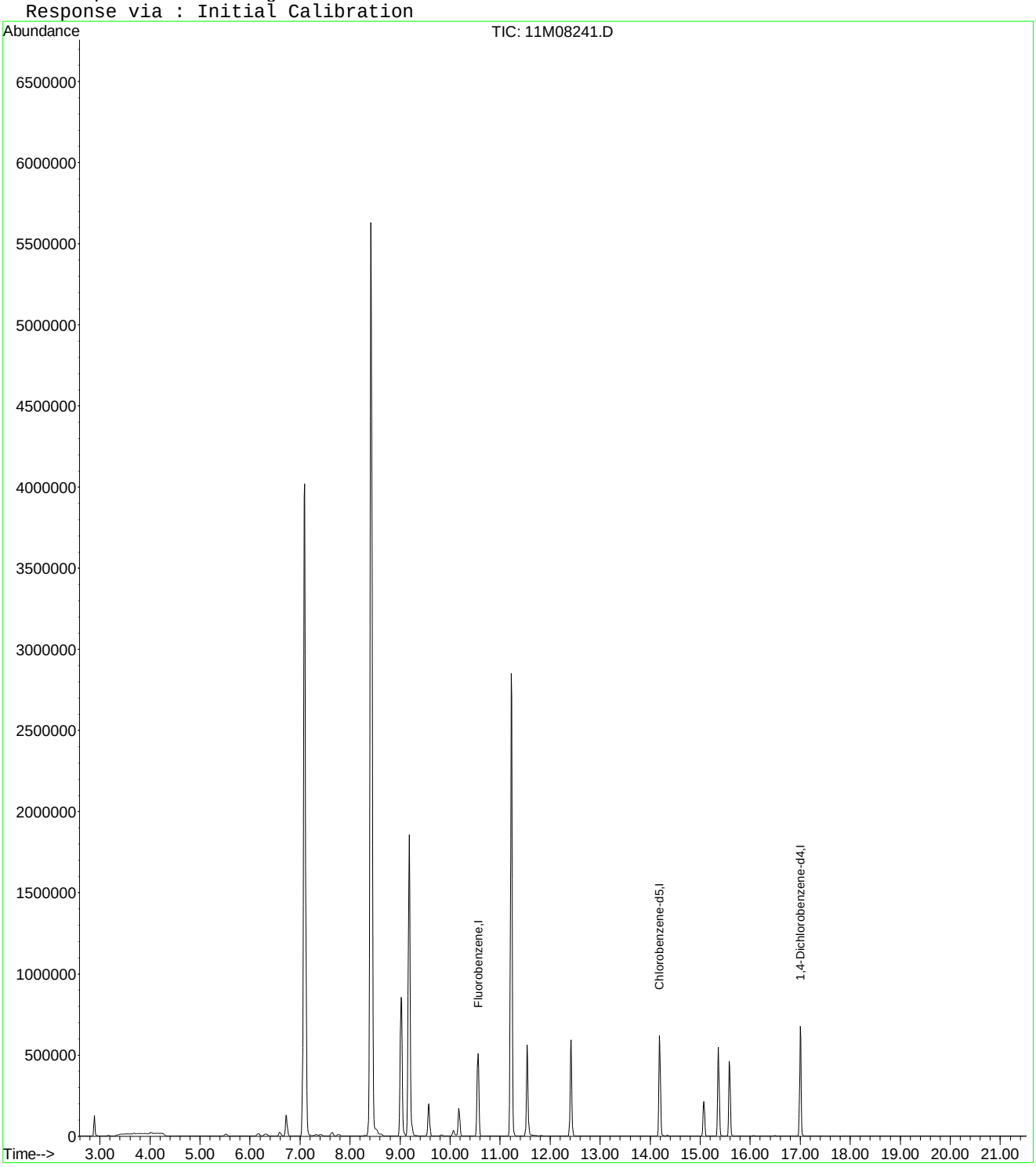

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08241.D Vial: 8
Acq On : 14 Jun 2015 13:10 Operator: TMB /DLW
Sample : WG527475-08 400ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43:53 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	602921	25.00 ug/L	0.00
12) Chlorobenzene-d5	14.19	117	438769	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.00	152	234608	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	173440	375.0660 ug/L	100
3) 3-Chloro-1-propene	7.09	41	3550959	391.3211 ug/L	82
4) 2-Chloro-1,3-butadiene	8.42	53	4600620	422.3386 ug/L	94
5) Methacrylonitrile	9.18	41	1153886	411.4196 ug/L	82
6) Isobutyl Alcohol	9.19	43	123004	852.2785 ug/L	89
7) 1-Butanol	10.07	56	32355	423.8032 ug/L #	86
8) Cyclohexanone	15.36	55	274055	395.1962 ug/L	95
9) 2-Nitropropane	11.54	43	405951	398.1514 ug/L	87
10) Ethyl Acetate	9.02	43	1363919	410.0276 ug/L #	93
11) Methyl methacrylate	11.22	41	1637406	423.3352 ug/L	87

(#) = qualifier out of range (m) = manual integration
11M08241.D A9FOOWT.M Thu Aug 20 11:43:54 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08241.D Vial: 8
Acq On : 14 Jun 2015 13:10 Operator: TMB /DLW
Sample : WG527475-08 400ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration

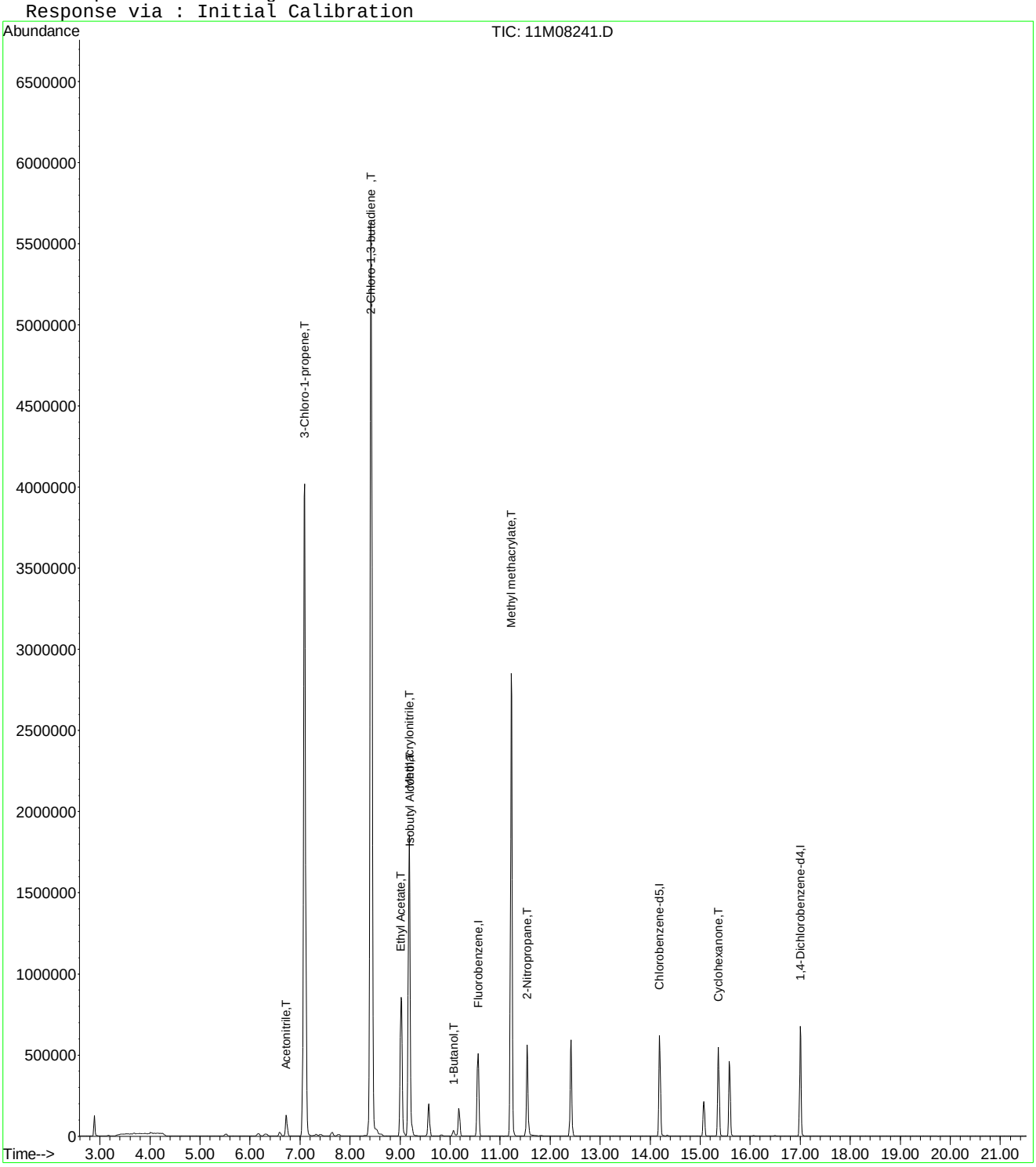

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08242.D Vial: 9
Acq On : 14 Jun 2015 13:42 Operator: TMB /DLW
Sample : WG527475-09 500ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 14:04:11 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	597347	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.19	117	436979	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.00	152	232858	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	155779	23.4935 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.96%		
43) 1,2-Dichloroethane-d4	10.17	65	141894	19.7022 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 78.80%#		
57) Toluene-d8	12.42	98	528602	28.6412 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 114.56%#		
78) p-Bromofluorobenzene	15.58	95	185769	24.9315 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.72%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.22	85	1211	0.1346 ug/L #	65
3) Chloromethane	3.68	50	8612	0.8299 ug/L	97
4) Vinyl Chloride	3.90	62	1110	0.1522 ug/L #	42
6) Bromomethane	4.80	94	872	0.2536 ug/L	68
11) Acrolein	6.25	56	4513	4.4571 ug/L	75
13) Acetone	6.30	43	20816	11.8354 ug/L	98
18) Methyl acetate	7.02	43	2826	0.4604 ug/L #	67
19) Methylene Chloride	7.26	84	1446	0.2045 ug/L	95
20) Carbon Disulfide	7.31	76	5502	0.2707 ug/L #	81
24) n-Hexane	7.77	57	12135	1.1123 ug/L #	96
29) 2-Butanone	8.83	43	2711	0.9479 ug/L #	77
30) Propionitrile	9.00	54	625	0.6931 ug/L #	1
31) 2,2-Dichloropropane	9.03	77	1917	0.2057 ug/L #	41
39) Cyclohexane	9.84	56	6427	0.4323 ug/L	96
71) m-,p-Xylene	14.34	106	3239	0.3057 ug/L	58

(#) = qualifier out of range (m) = manual integration
11M08242.D 8260WTR.M Sun Jun 14 14:04:12 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08242.D Vial: 9
Acq On : 14 Jun 2015 13:42 Operator: TMB /DLW
Sample : WG527475-09 500ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 14:04 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration

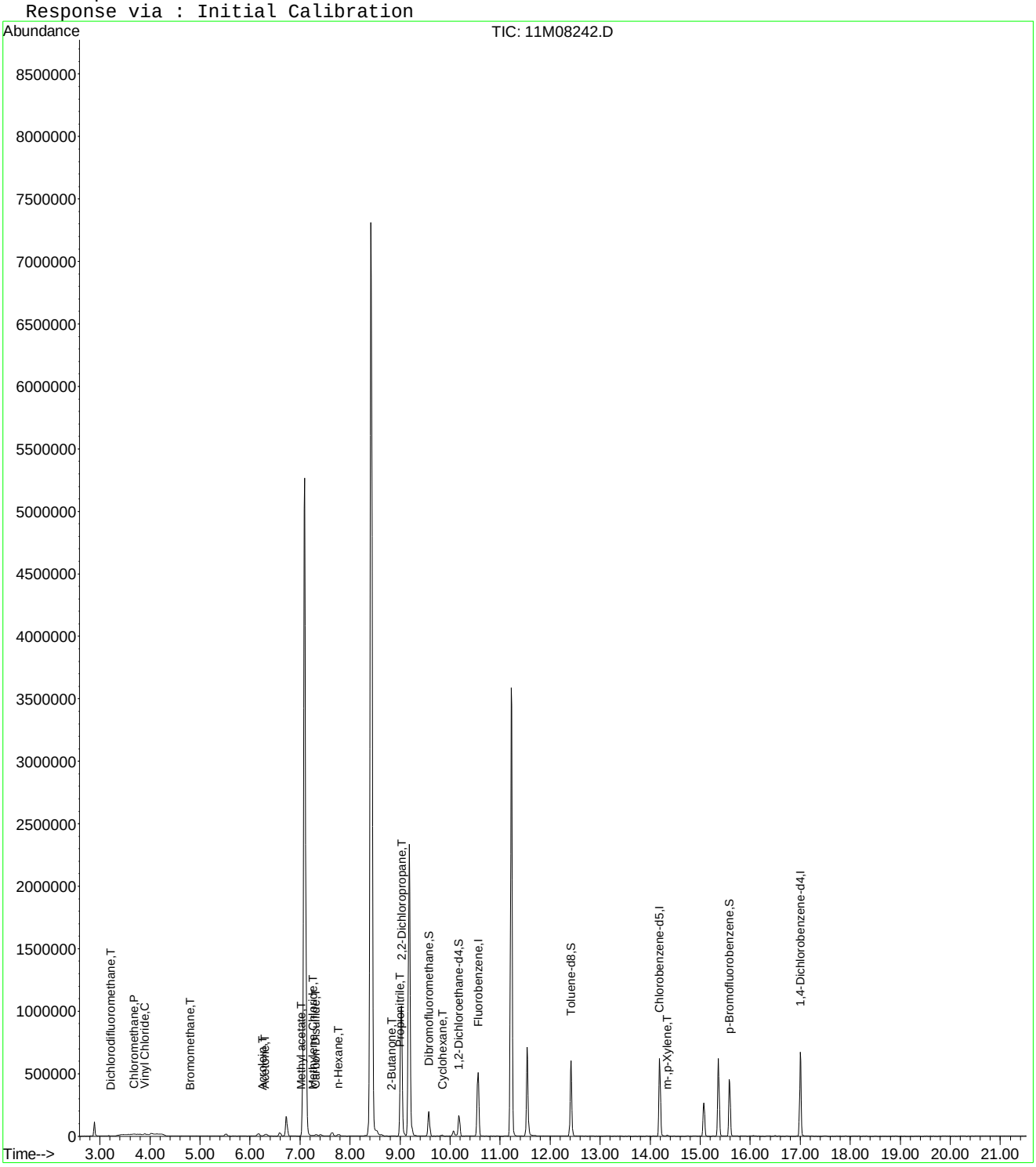

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08242.D Vial: 9
Acq On : 14 Jun 2015 13:42 Operator: TMB /DLW
Sample : WG527475-09 500ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 09:44:02 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	597347	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	436979	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	232858	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	213542	447.5667 ug/L	100
3) 3-Chloro-1-propene	7.09	41	4596340	443.0265 ug/L	80
4) 2-Chloro-1,3-butadiene	8.42	53	5927514	557.6949 ug/L	92
5) Methacrylonitrile	9.18	41	1420105	496.6956 ug/L	79
6) Isobutyl Alcohol	9.19	43	141621	1291.9249 ug/L	95
7) 1-Butanol	10.07	56	37640	819.1222 ug/L	86
8) Cyclohexanone	15.36	55	308601	391.0996 ug/L	95
9) 2-Nitropropane	11.54	43	527973	481.9685 ug/L	88
10) Ethyl Acetate	9.03	43	1662142	472.7227 ug/L #	93
11) Methyl methacrylate	11.22	41	2052004	541.1374 ug/L	86

(#) = qualifier out of range (m) = manual integration
11M08242.D A9FOOWT.M Tue Jun 16 09:44:03 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08242.D Vial: 9
Acq On : 14 Jun 2015 13:42 Operator: TMB /DLW
Sample : WG527475-09 500ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 9:44 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration

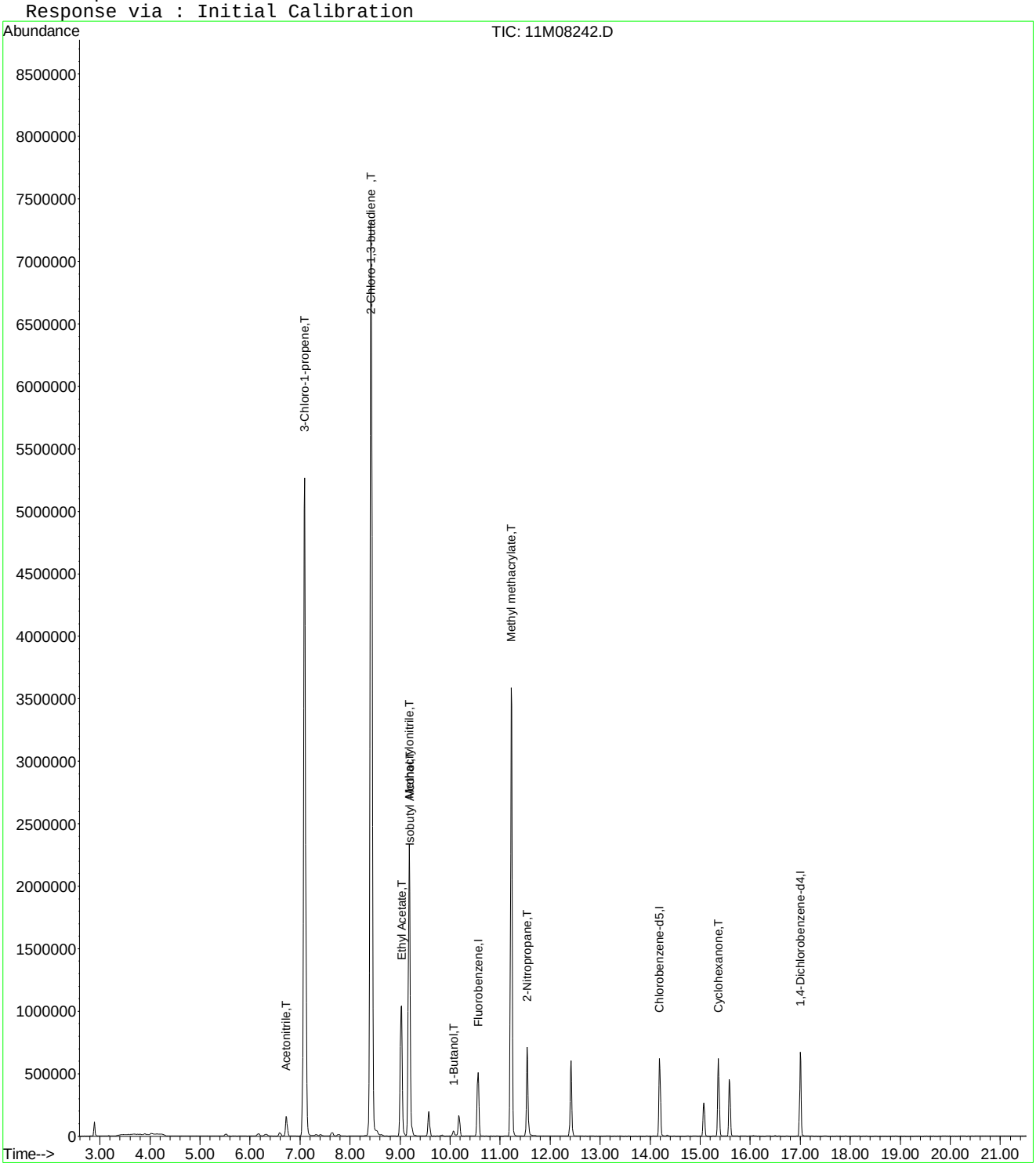

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08242.D Vial: 9
Acq On : 14 Jun 2015 13:42 Operator: TMB /DLW
Sample : WG527475-09 500ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28:15 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.56	96	597347	25.00	ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	436979	25.00	ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	232858	25.00	ug/L	-0.03

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M08242.D A9FOOWT.M Thu Aug 20 11:28:15 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08242.D Vial: 9
Acq On : 14 Jun 2015 13:42 Operator: TMB /DLW
Sample : WG527475-09 500ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration

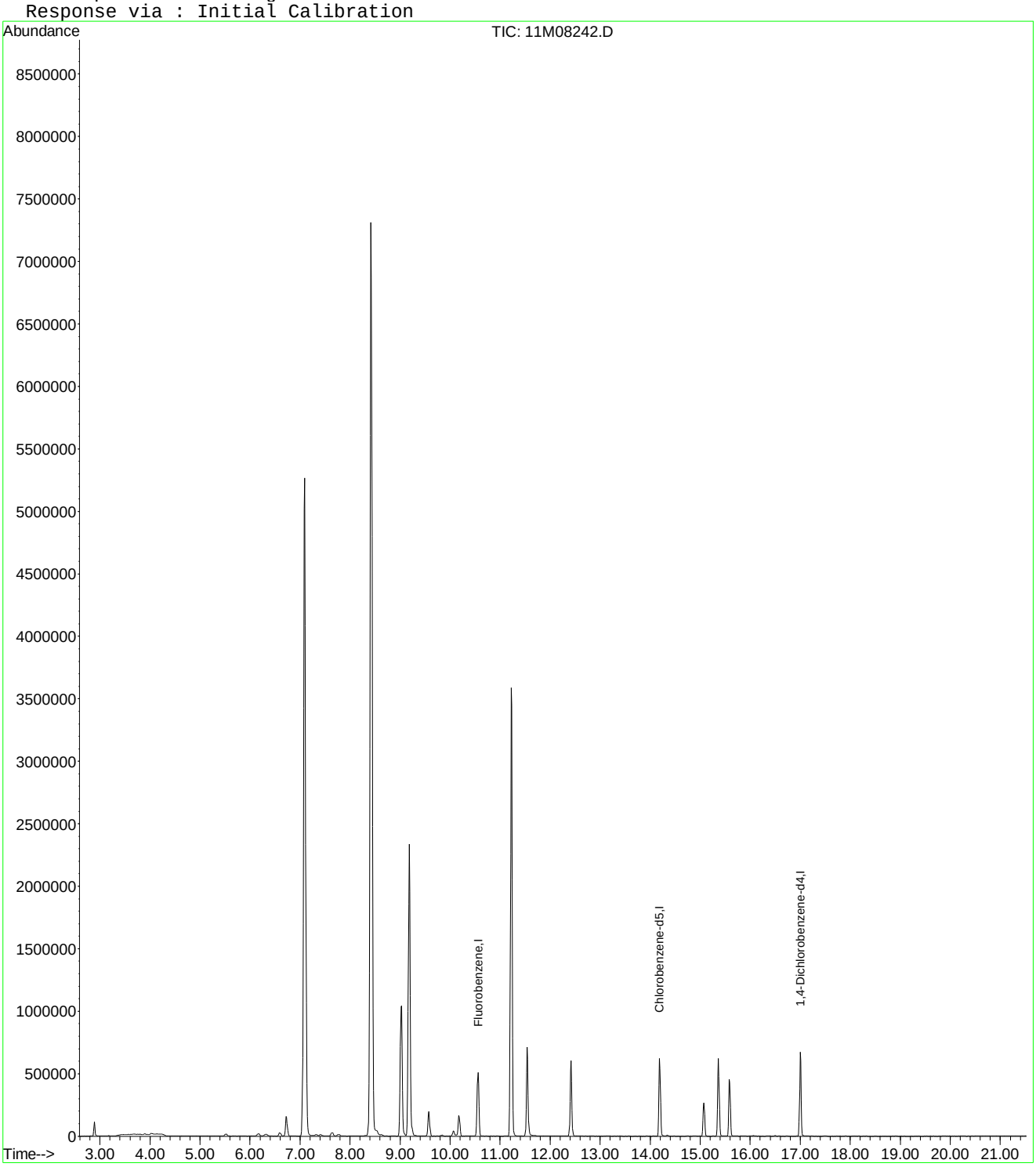

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08242.D Vial: 9
Acq On : 14 Jun 2015 13:42 Operator: TMB /DLW
Sample : WG527475-09 500ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43:54 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.56	96	597347	25.00	ug/L	0.00
12) Chlorobenzene-d5	14.19	117	436979	25.00	ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.00	152	232858	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.72	41	213542	466.0961	ug/L	100
3) 3-Chloro-1-propene	7.09	41	4596340	511.2501	ug/L	80
4) 2-Chloro-1,3-butadiene	8.42	53	5927514	549.2255	ug/L	92
5) Methacrylonitrile	9.18	41	1420105	511.0651	ug/L	79
6) Isobutyl Alcohol	9.19	43	141574	990.1011	ug/L	95
7) 1-Butanol	10.07	56	37640	497.6295	ug/L	86
8) Cyclohexanone	15.36	55	308601	449.1652	ug/L	95
9) 2-Nitropropane	11.54	43	527973	512.4786	ug/L	88
10) Ethyl Acetate	9.03	43	1662142	504.3435	ug/L #	93
11) Methyl methacrylate	11.22	41	2052004	535.4759	ug/L	86

(#) = qualifier out of range (m) = manual integration
11M08242.D A9FOOWT.M Thu Aug 20 11:43:55 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08242.D Vial: 9
Acq On : 14 Jun 2015 13:42 Operator: TMB /DLW
Sample : WG527475-09 500ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration

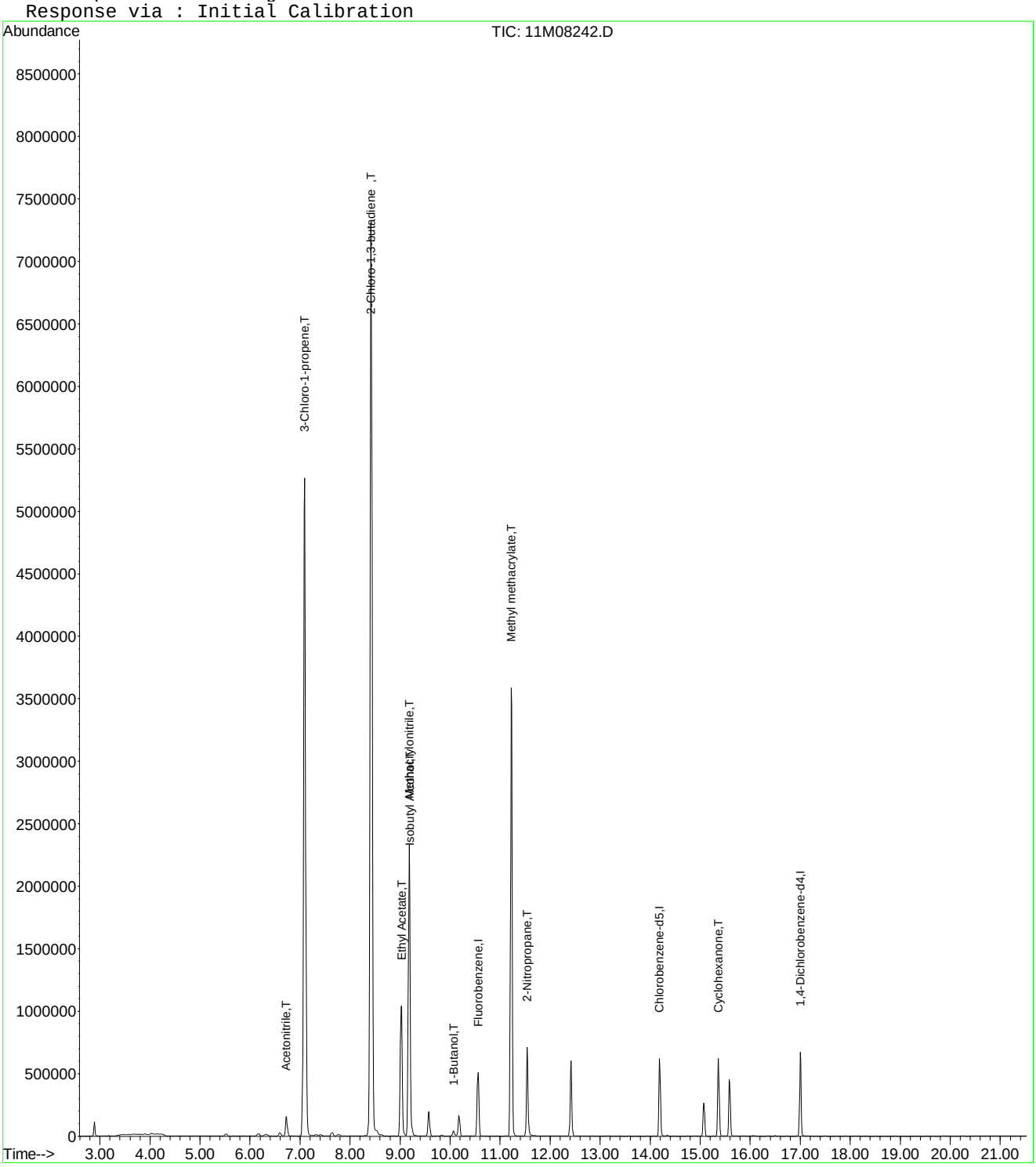

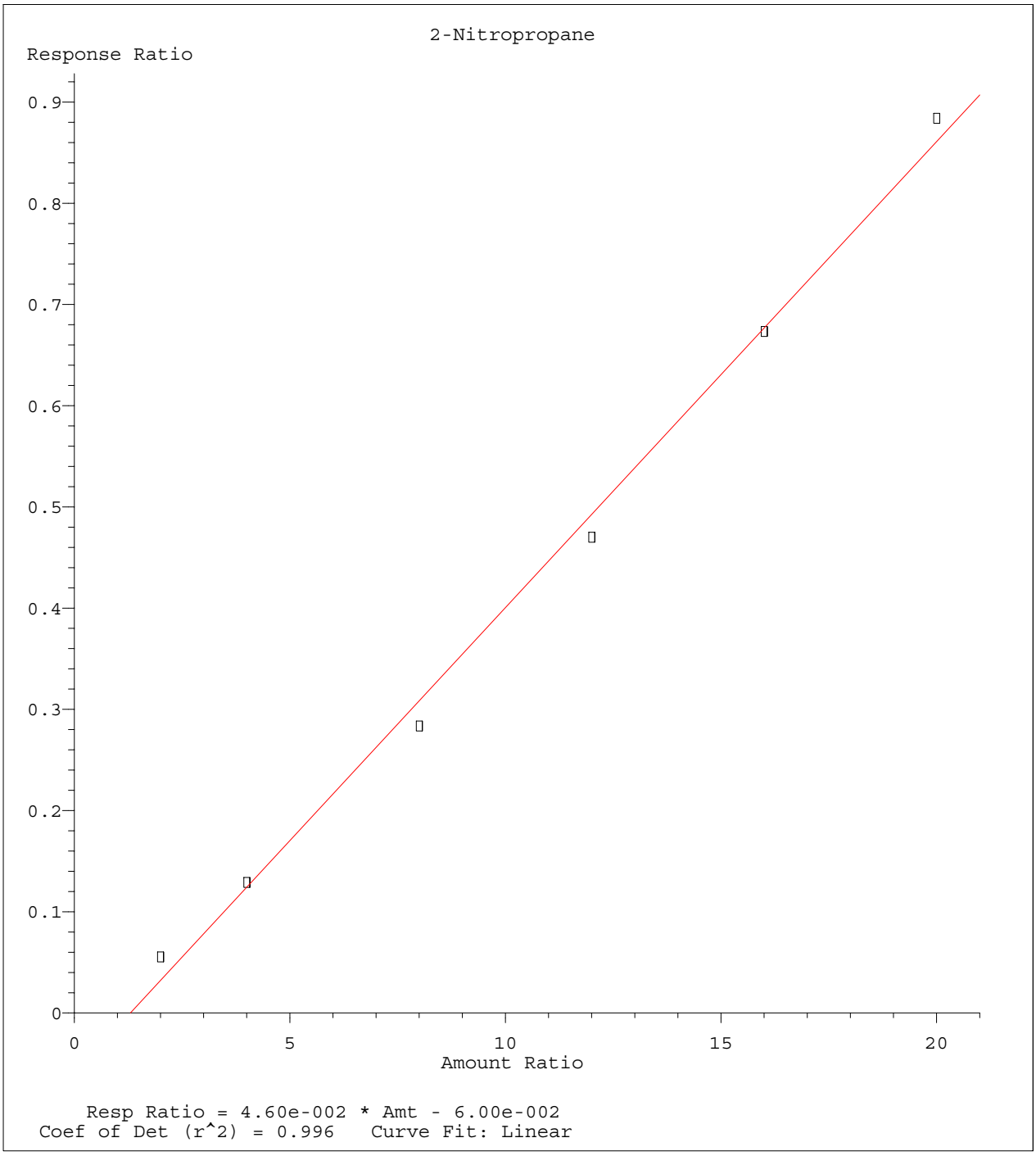

Method Name: C:\MSDCHEM\1\METHODS\A9FOOWT.M
Calibration Table Last Updated: Thu Aug 20 11:44:55 2015

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08245.D Vial: 12
Acq On : 14 Jun 2015 15:18 Operator: TMB /DLW
Sample : WG527475-10 100ug/L ALT STD8260 Inst : hpms11
Misc : 1,1 STD70514 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 15:40:10 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	543635	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.19	117	396503	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.01	152	206025	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	140300	23.2496 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.00%		
43) 1,2-Dichloroethane-d4	10.17	65	129308	19.7285 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 78.92%#		
57) Toluene-d8	12.42	98	479748	28.6477 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 114.60%#		
78) p-Bromofluorobenzene	15.58	95	164471	24.9480 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.80%		

Target Compounds					Qvalue
3) Chloromethane	3.67	50	1708	0.1809 ug/L #	64
5) 1,3-Butadiene	3.96	54	337713	68.0129 ug/L	95
9) Diethyl ether	5.96	59	421860	68.0021 ug/L	82
13) Acetone	6.30	43	8473	5.2935 ug/L	79
29) 2-Butanone	8.83	43	2399	0.9217 ug/L #	77
30) Propionitrile	8.93	54	45537	55.4849 ug/L	96
49) 1,4-Dioxane	11.51	88	6417	143.4316 ug/L	93
77) 1,1,2,2-Tetrachloroethane	15.38	83	1792	0.4132 ug/L #	17

(#) = qualifier out of range (m) = manual integration
11M08245.D 8260WTR.M Sun Jun 14 15:40:11 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08245.D Vial: 12
Acq On : 14 Jun 2015 15:18 Operator: TMB /DLW
Sample : WG527475-10 100ug/L ALT STD8260 Inst : hpms11
Misc : 1,1 STD70514 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 15:40 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration

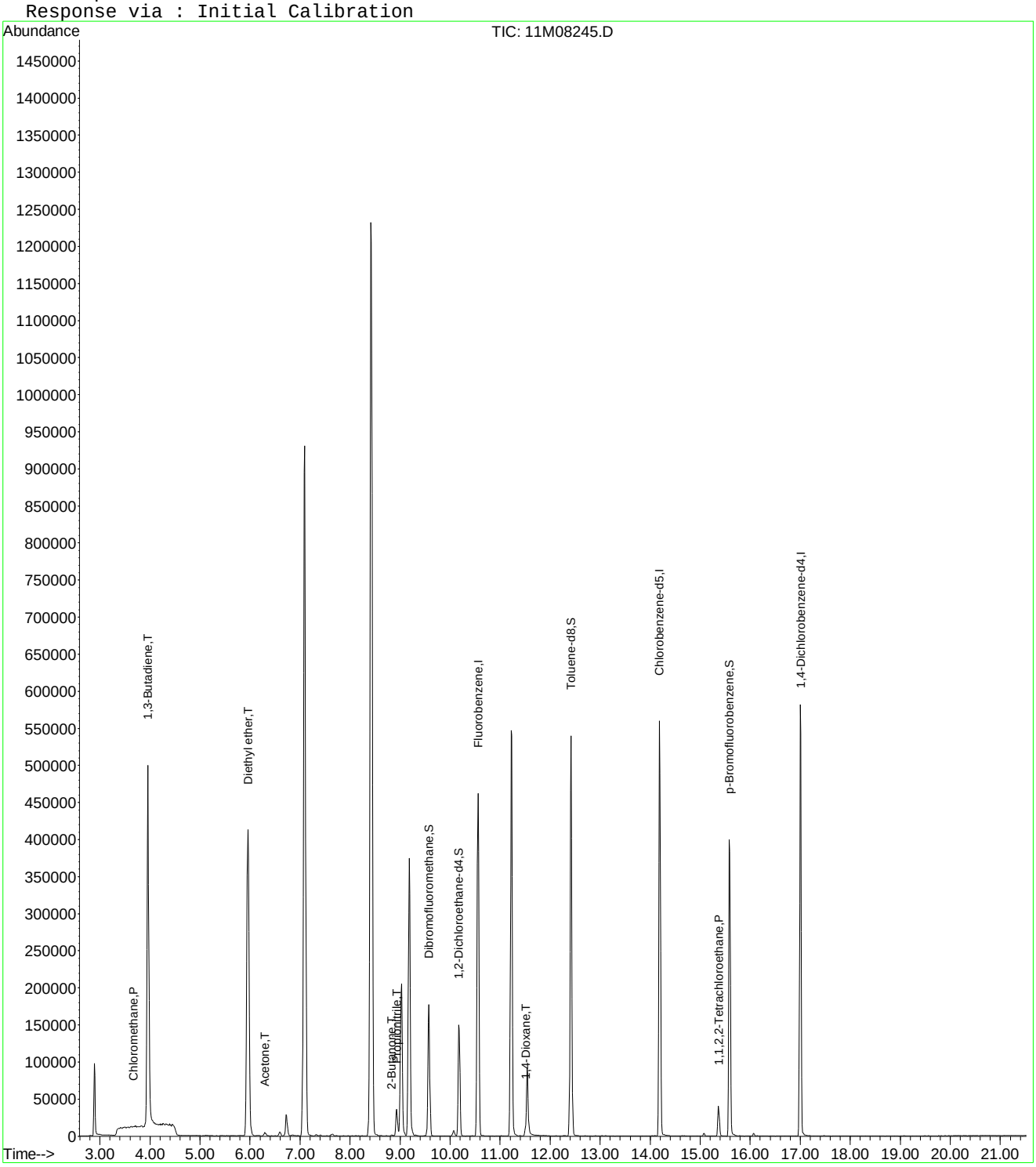

11M08245.D 8260WTR.M Sun Jun 14 15:40:11 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08245.D Vial: 12
Acq On : 14 Jun 2015 15:18 Operator: TMB /DLW
Sample : WG527475-10 100ug/L ALT STD8260 Inst : hpms11
Misc : 1,1 STD70514 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28:16 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	543635	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	396503	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.01	152	206025	25.00 ug/L	-0.02

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M08245.D A9FOOWT.M Thu Aug 20 11:28:17 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08245.D Vial: 12
Acq On : 14 Jun 2015 15:18 Operator: TMB /DLW
Sample : WG527475-10 100ug/L ALT STD8260 Inst : hpms11
Misc : 1,1 STD70514 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration

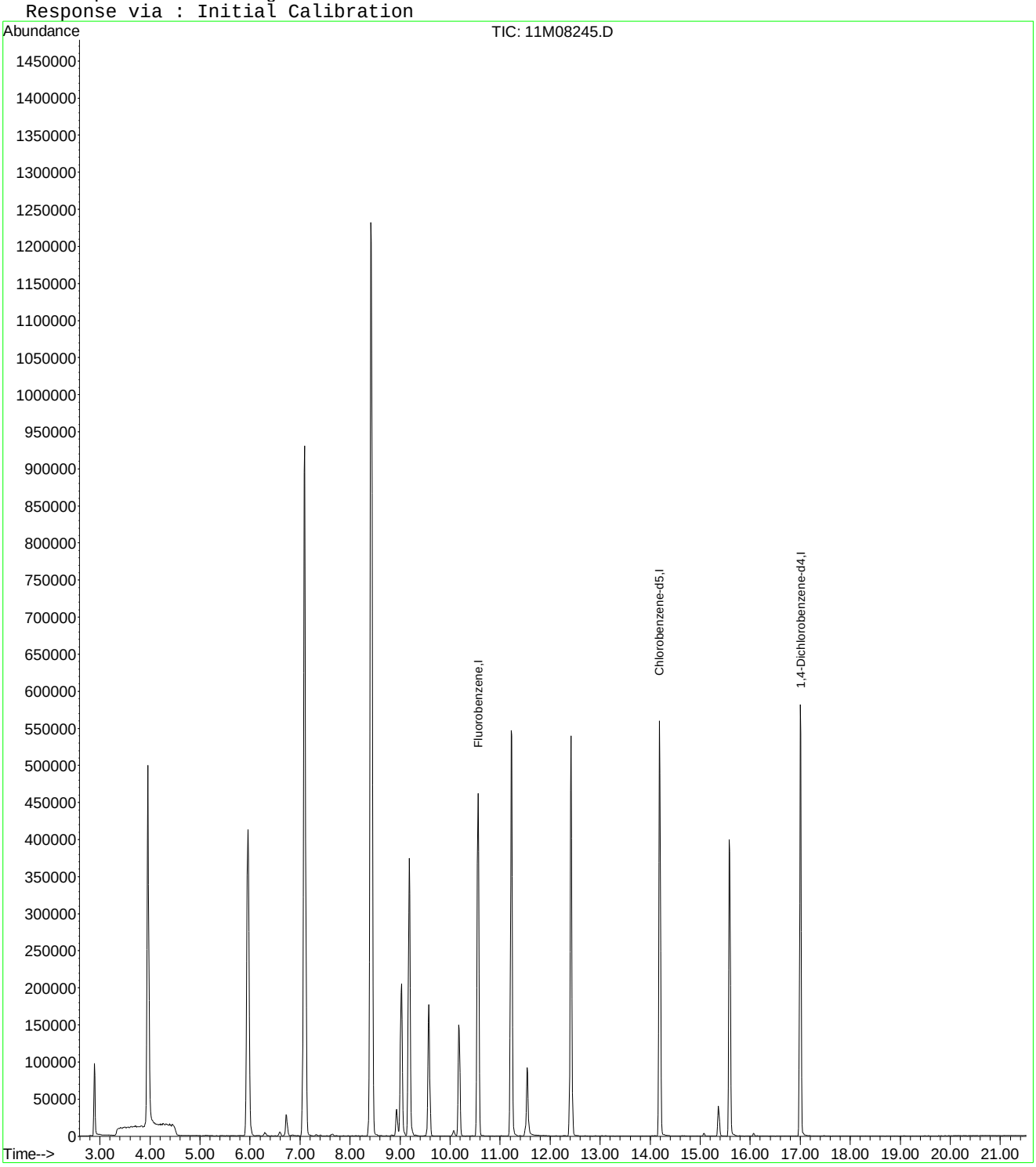

11M08245.D A9FOOWT.M Thu Aug 20 11:28:17 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08245.D Vial: 12
Acq On : 14 Jun 2015 15:18 Operator: TMB /DLW
Sample : WG527475-10 100ug/L ALT STD8260 Inst : hpms11
Misc : 1,1 STD70514 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43:56 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.56	96	543635	25.00	ug/L	0.00
12) Chlorobenzene-d5	14.19	117	396503	25.00	ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.01	152	206025	25.00	ug/L	0.01

Target Compounds						Qvalue
2) Acetonitrile	6.72	41	38243	91.7199	ug/L	100
3) 3-Chloro-1-propene	7.09	41	808581	98.8244	ug/L	82
4) 2-Chloro-1,3-butadiene	8.42	53	1078924	109.8470	ug/L	94
5) Methacrylonitrile	9.18	41	233249	92.2348	ug/L	79
6) Isobutyl Alcohol	9.19	43	24110	185.2732	ug/L	90
7) 1-Butanol	10.07	56	6038	87.7140	ug/L #	79
8) Cyclohexanone	15.36	55	22693	36.2928	ug/L	98
9) 2-Nitropropane	11.54	43	62961	95.4458	ug/L	82
10) Ethyl Acetate	9.03	43	328836	109.6369	ug/L #	93
11) Methyl methacrylate	11.22	41	327033	93.7719	ug/L	87

(#) = qualifier out of range (m) = manual integration
11M08245.D A9FOOWT.M Thu Aug 20 11:43:56 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08245.D Vial: 12
Acq On : 14 Jun 2015 15:18 Operator: TMB /DLW
Sample : WG527475-10 100ug/L ALT STD8260 Inst : hpms11
Misc : 1,1 STD70514 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration

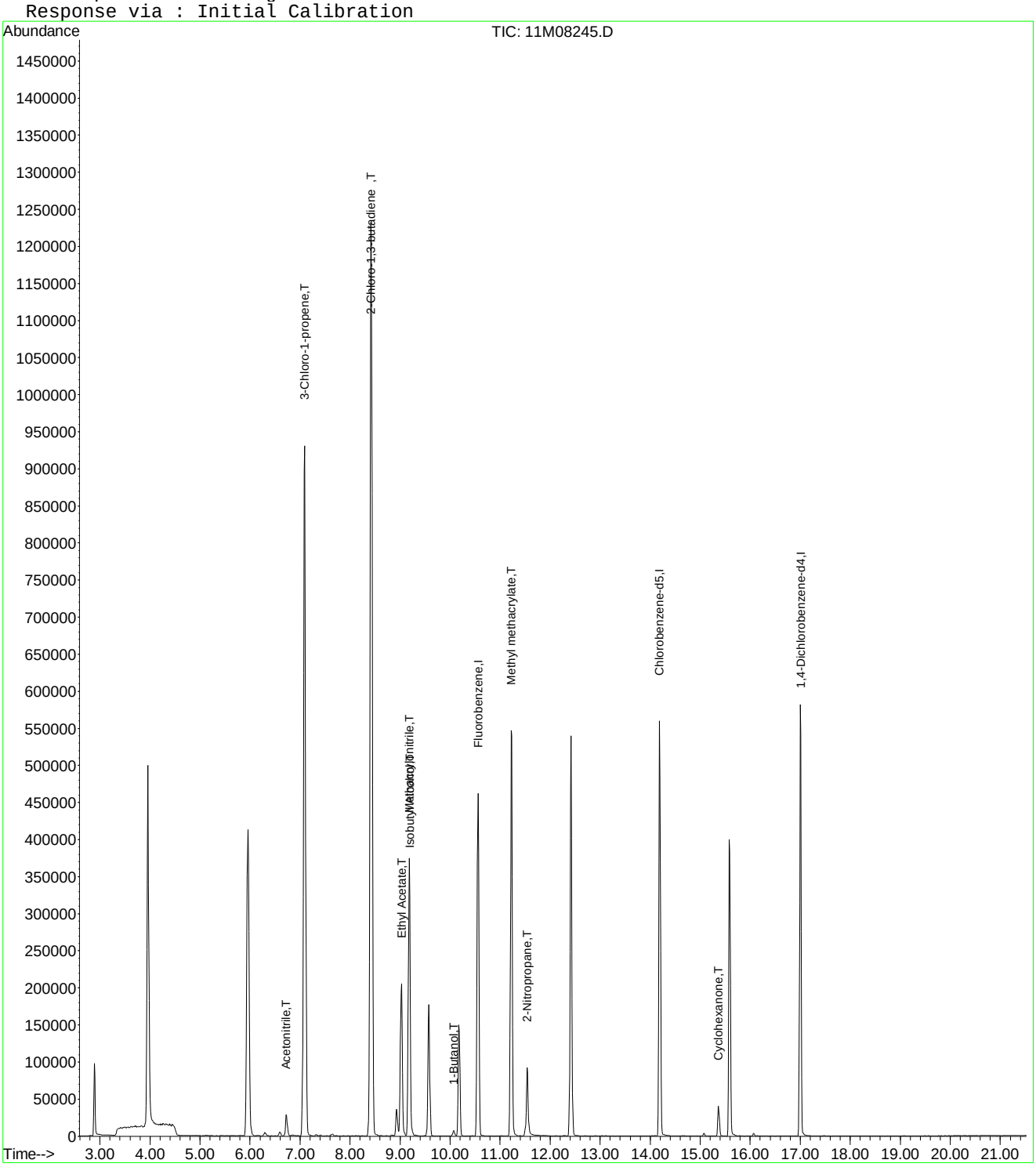

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061415\11M08245.D Vial: 12
Acq On : 14 Jun 2015 15:18 Operator: TMB /DLW
Sample : WG527475-10 100ug/L ALT STD8260 Inst : hpms11
Misc : 1,1 STD70514 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	92	0.00
2	T	Acetonitrile	100.0000	91.7199	8.3	92	0.00
3	T	3-Chloro-1-propene	100.0000	98.8244	1.2	90	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	109.8470	-9.8	102	0.00
5	T	Methacrylonitrile	100.0000	92.2348	7.8	86	0.00
6	T	Isobutyl Alcohol	200.0000	185.2732	7.4	83	0.00
7	T	1-Butanol	100.0000	87.7140	12.3	78	0.00
8	T	Cyclohexanone	100.0000	36.2928	63.7	31	0.00
9	T	2-Nitropropane	100.0000	95.4458	4.6	82	0.00
10	T	Ethyl Acetate	100.0000	109.6369	-9.6	99	0.00
11	T	Methyl methacrylate	100.0000	93.7719	6.2	87	0.00
12	I	Chlorobenzene-d5	25.0000	25.0000	0.0	91	0.00
13	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	92	0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M08245.D A9FOOWT.M Thu Aug 20 11:45:26 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:20 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	538041	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	450050	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	251600	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
57) Toluene-d8	12.47	98	210	0.0099 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.04%#	
78) p-Bromofluorobenzene	15.64	95	566	0.0689 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	2475	0.3135 ug/L #	66
3) Chloromethane	3.72	50	4639	0.6471 ug/L	91
4) Vinyl Chloride	3.96	62	1882	0.3288 ug/L #	44
5) 1,3-Butadiene	4.01	54	1564	0.2900 ug/L #	19
6) Bromomethane	4.84	94	1717	0.4723 ug/L	83
7) Chloroethane	5.00	64	616	0.1589 ug/L #	45
8) Trichlorofluoromethane	5.49	101	3531	0.3330 ug/L	97
10) Isoprene	6.04	67	1746	0.2381 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	1344	0.2515 ug/L	96
13) Acetone	6.34	43	2389	1.4850 ug/L #	45
14) 1,1-Dichloroethene	6.56	61	3780	0.3817 ug/L	78
16) Dimethyl Sulfide	6.80	62	762	0.1697 ug/L	78
18) Methyl acetate	7.02	43	24685	4.4975 ug/L #	70
19) Methylene Chloride	7.31	84	1766	0.3184 ug/L	74
20) Carbon Disulfide	7.36	76	5848	0.3373 ug/L	92
22) Methyl Tert Butyl Ether	7.54	73	3068	0.2131 ug/L #	48
23) trans-1,2-Dichloroethene	7.75	96	1449	0.2556 ug/L	91
24) n-Hexane	7.82	57	3745	0.4031 ug/L #	73
26) Vinyl Acetate	8.30	43	2410	0.6995 ug/L #	78
27) 1,1-Dichloroethane	8.35	63	3312	0.2969 ug/L #	76
31) 2,2-Dichloropropane	9.10	77	2449	0.3040 ug/L #	42
32) cis-1,2-Dichloroethene	9.15	96	1729	0.2748 ug/L	96
33) Chloroform	9.35	83	3792	0.3639 ug/L	92
35) Bromochloromethane	9.56	130	948	0.2355 ug/L #	68
38) 1,1,1-Trichloroethane	9.85	97	3449	0.3423 ug/L #	79
39) Cyclohexane	9.88	56	3639	0.2986 ug/L #	84
40) 1,1-Dichloropropene	10.04	75	2365	0.3106 ug/L #	53
41) Carbon Tetrachloride	10.17	117	2613	0.2748 ug/L	87
44) 1,2-Dichloroethane	10.35	62	2493	0.2788 ug/L #	73
45) Benzene	10.38	78	7133	0.3275 ug/L	99
46) Trichloroethene	11.09	130	1973	0.2780 ug/L	93
47) Methylcyclohexane	11.17	83	2570	0.2986 ug/L	84
48) 1,2-Dichloropropane	11.29	63	1665	0.2692 ug/L	87
50) Bromodichloromethane	11.57	83	2418	0.2950 ug/L #	82
51) Dibromomethane	11.65	93	756	0.2331 ug/L	88
54) cis-1,3-Dichloropropene	12.17	75	1869	0.2166 ug/L #	82
55) Dimethyl Disulfide	12.42	79	1028	0.1910 ug/L	95
58) Toluene	12.57	91	7355	0.3156 ug/L	91
59) Ethyl Methacrylate	12.64	69	1041	0.1887 ug/L	88
60) trans-1,3-Dichloropropene	12.72	75	1951	0.2556 ug/L #	51

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:20 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
61) 1,1,2-Trichloroethane	12.92	97	1087	0.2492 ug/L	87
62) 2-Hexanone	12.86	43	687	0.1910 ug/L #	29
63) 1,3-Dichloropropane	13.21	76	1673	0.2309 ug/L	94
64) Tetrachloroethene	13.34	164	1703	0.3238 ug/L	94
65) Dibromochloromethane	13.59	129	1515	0.2406 ug/L	92
66) 1,2-Dibromoethane	13.82	107	966	0.2181 ug/L	98
67) 1-Chlorohexane	13.89	91	2128	0.2784 ug/L	97
68) Chlorobenzene	14.29	112	5248	0.3062 ug/L	99
69) 1,1,1,2-Tetrachloroethane	14.32	131	2025	0.3082 ug/L	98
70) Ethylbenzene	14.31	106	2602	0.2992 ug/L	88
71) m-,p-Xylene	14.40	106	6296	0.6083 ug/L	82
72) o-Xylene	14.92	106	3032	0.2937 ug/L	95
73) Styrene	14.95	104	4953	0.2828 ug/L	95
75) Isopropylbenzene	15.31	105	7848	0.3006 ug/L	93
77) 1,1,2,2-Tetrachloroethane	15.52	83	1145	0.2759 ug/L	68
81) n-Propylbenzene	15.79	91	9421	0.3332 ug/L	94
82) Bromobenzene	15.92	156	2002	0.2551 ug/L	66
83) 1,3,5-Trimethylbenzene	15.95	105	6742	0.3138 ug/L	91
84) 2-Chlorotoluene	16.05	91	6735	0.3228 ug/L	96
85) 4-Chlorotoluene	16.09	91	6023	0.3518 ug/L	99
86) a-Methylstyrene	16.34	118	2850	0.2387 ug/L	95
87) tert-Butylbenzene	16.39	134	1197	0.2539 ug/L	64
88) 1,2,4-Trimethylbenzene	16.44	105	6992	0.3180 ug/L	88
89) sec-Butylbenzene	16.65	105	8335	0.3278 ug/L	97
90) p-Isopropyltoluene	16.79	119	7094	0.3065 ug/L	96
91) 1,3-Dichlorobenzene	16.98	146	4505	0.3090 ug/L	96
92) 1,4-Dichlorobenzene	17.10	146	4475	0.3006 ug/L #	1
93) n-Butylbenzene	17.28	91	7076	0.3396 ug/L #	93
94) 1,2-Dichlorobenzene	17.56	146	4016	0.2922 ug/L	100
96) 1,2,4-Trichlorobenzene	19.55	180	2964	0.2902 ug/L	99
97) Hexachlorobutadiene	19.69	225	1160	0.2796 ug/L #	71
98) Naphthalene	19.90	128	4679	0.2394 ug/L #	93
99) 1,2,3-Trichlorobenzene	20.19	180	2578	0.2696 ug/L	87

(#) = qualifier out of range (m) = manual integration
11M11837.D 8260WT.M Fri May 13 17:04:21 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration

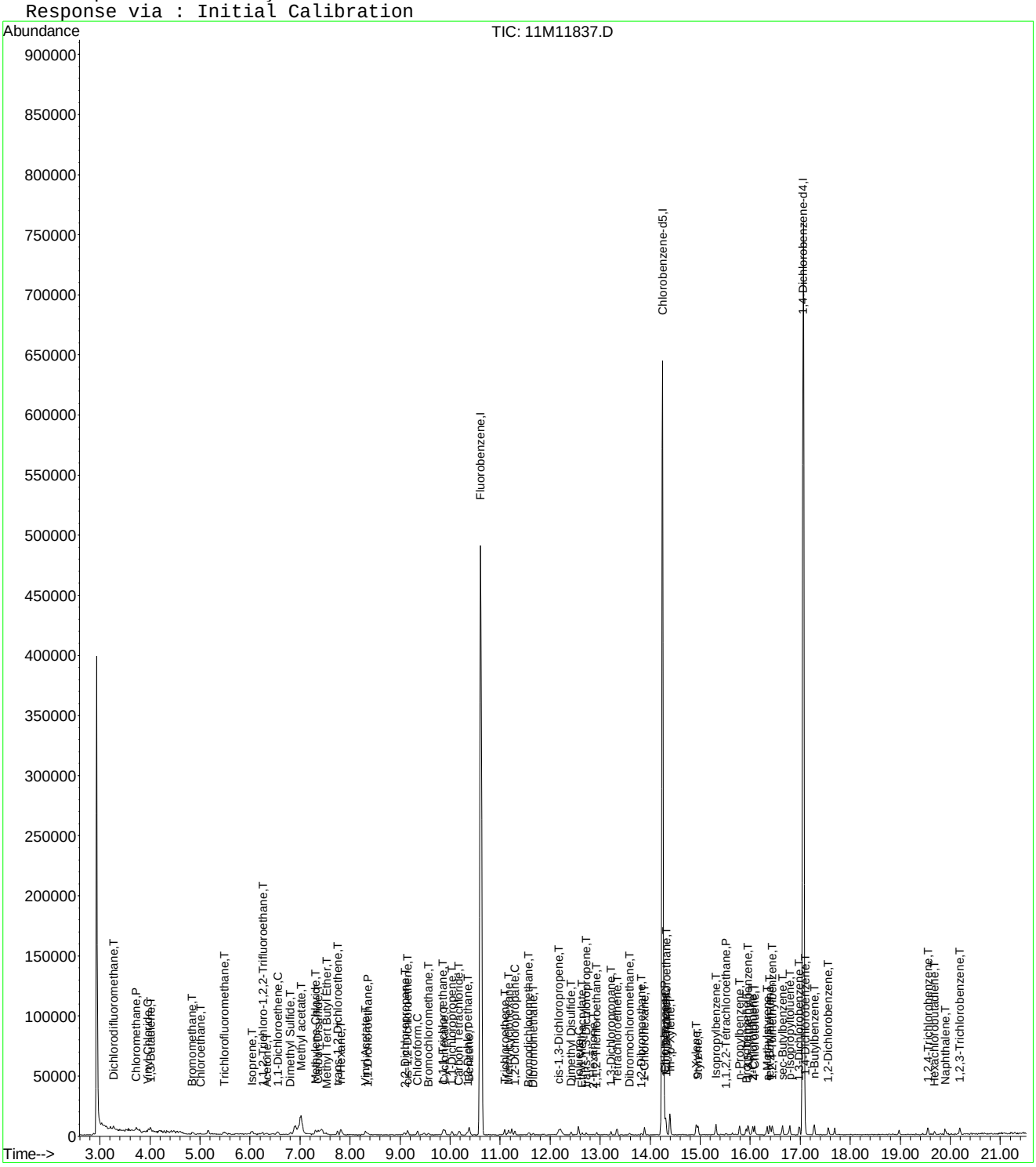

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:40:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2936	0.0	0	0.00
3	P	Chloromethane	-1.0000	0.6871	0.0	0	0.00
4	C	Vinyl Chloride	-1.0000	0.3357	0.0	0	0.00
5	T	1,3-Butadiene	-1.0000	0.2805	0.0	0	0.01
6	T	Bromomethane	-1.0000	0.4454	0.0	0	-0.01
7	T	Chloroethane	-1.0000	0.1710	0.0	0	0.00
8	T	Trichlorofluoromethane	-1.0000	0.3160	0.0	0	0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.01#
10	T	Isoprene	-1.0000	0.2535	0.0	0	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.23#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2478	0.0	0	0.01
13	T	Acetone	-1.0000	1.8699	0.0	0	0.00
14	C	1,1-Dichloroethene	-1.0000	0.3838	0.0	0	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.66#
16	T	Dimethyl Sulfide	-1.0000	0.1937	0.0	0	-0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.06#
18	T	Methyl acetate	-1.0000	5.1442	0.0	0	-0.04
19	T	Methylene Chloride	-1.0000	0.3464	0.0	0	0.00
20	T	Carbon Disulfide	-1.0000	0.3546	0.0	0	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.49#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2413	0.0	0	0.02
23	T	trans-1,2-Dichloroethene	-1.0000	0.2658	0.0	0	0.01
24	T	n-Hexane	-1.0000	0.4125	0.0	0	0.00
25	T	Diisopropyl ether	-1.0000	0.0083	0.0	0	0.08
26	T	Vinyl Acetate	-1.0000	2.6933	0.0	0	-0.01
27	P	1,1-Dichloroethane	-1.0000	0.3028	0.0	0	0.01
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.70#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.87#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.97#
31	T	2,2-Dichloropropane	-1.0000	0.2862	0.0	0	0.01
32	T	cis-1,2-Dichloroethene	-1.0000	0.2877	0.0	0	0.00
33	C	Chloroform	0.3000	0.3530	-17.7	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.48#
35	T	Bromochloromethane	-1.0000	0.2656	0.0	0	-0.01
36	T	Tetrahydrofuran	-1.0000	0.0000	0.0	0	-9.60#
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.63#
38	T	1,1,1-Trichloroethane	-1.0000	0.3263	0.0	0	0.00
39	T	Cyclohexane	-1.0000	0.3159	0.0	0	0.00
40	T	1,1-Dichloropropene	-1.0000	0.3134	0.0	0	0.00
41	T	Carbon Tetrachloride	-1.0000	0.2532	0.0	0	-0.01
42	T	Tert-Amyl-Methyl ether	-1.0000	0.0152	0.0	0	-0.09
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.23#
44	T	1,2-Dichloroethane	-1.0000	0.2858	0.0	0	0.01
45	T	Benzene	-1.0000	0.3452	0.0	0	0.00
46	T	Trichloroethene	-1.0000	0.2938	0.0	0	0.00
47	T	Methylcyclohexane	-1.0000	0.3101	0.0	0	0.00
48	C	1,2-Dichloropropane	-1.0000	0.2911	0.0	0	0.00
49	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.55#
50	T	Bromodichloromethane	-1.0000	0.3012	0.0	0	0.00
51	T	Dibromomethane	-1.0000	0.2537	0.0	0	0.00
52	T	2-Chloroethyl Vinyl Ether	-1.0000	0.0000	0.0	0	-11.84#
53	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-11.87#
54	T	cis-1,3-Dichloropropene	-1.0000	0.2327	0.0	0	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:40:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	-1.0000	0.2127	0.0	0	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	-1.0000	0.0107	0.0	0	0.00
58	C	Toluene	-1.0000	0.3228	0.0	0	0.01
59	T	Ethyl Methacrylate	-1.0000	0.2140	0.0	0	-0.01
60	T	trans-1,3-Dichloropropene	-1.0000	0.2668	0.0	0	-0.01
61	T	1,1,2-Trichloroethane	-1.0000	0.2691	0.0	0	-0.01
62	T	2-Hexanone	-1.0000	0.2315	0.0	0	0.00
63	T	1,3-Dichloropropane	-1.0000	0.2579	0.0	0	0.00
64	T	Tetrachloroethene	-1.0000	0.3214	0.0	0	0.00
65	T	Dibromochloromethane	-1.0000	0.2459	0.0	0	0.00
66	T	1,2-Dibromoethane	-1.0000	0.2387	0.0	0	0.00
67	T	1-Chlorohexane	-1.0000	0.2833	0.0	0	0.00
68	P	Chlorobenzene	-1.0000	0.3144	0.0	0	0.00
69	T	1,1,1,2-Tetrachloroethane	-1.0000	0.2998	0.0	0	0.00
70	C	Ethylbenzene	-1.0000	0.3040	0.0	0	0.00
71	T	m-,p-Xylene	-1.0000	0.6051	0.0	0	0.01
72	T	o-Xylene	-1.0000	0.2994	0.0	0	0.00
73	T	Styrene	-1.0000	0.2961	0.0	0	0.00
74	P	Bromoform	-1.0000	0.0798	0.0	0	-0.01
75	T	Isopropylbenzene	-1.0000	0.2931	0.0	0	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2922	0.0	0	0.00
78	S	p-Bromofluorobenzene	-1.0000	0.0730	0.0	0	0.00
79	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-15.70#
80	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-15.74#
81	T	n-Propylbenzene	-1.0000	0.3233	0.0	0	0.00
82	T	Bromobenzene	0.3000	0.2618	12.7	100	0.00
83	T	1,3,5-Trimethylbenzene	-1.0000	0.3032	0.0	0	-0.01
84	T	2-Chlorotoluene	-1.0000	0.3300	0.0	0	0.00
85	T	4-Chlorotoluene	-1.0000	0.3295	0.0	0	0.00
86	T	a-Methylstyrene	-1.0000	0.2430	0.0	0	0.00
87	T	tert-Butylbenzene	-1.0000	0.2541	0.0	0	-0.01
88	T	1,2,4-Trimethylbenzene	-1.0000	0.3088	0.0	0	0.00
89	T	sec-Butylbenzene	-1.0000	0.3122	0.0	0	0.00
90	T	p-Isopropyltoluene	-1.0000	0.2893	0.0	0	0.00
91	T	1,3-Dichlorobenzene	-1.0000	0.3051	0.0	0	0.00
92	T	1,4-Dichlorobenzene	0.3000	0.2990	0.3	100	0.00
93	T	n-Butylbenzene	-1.0000	0.3274	0.0	0	0.00
94	T	1,2-Dichlorobenzene	0.3000	0.2985	0.5	100	-0.01
95	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-18.49#
96	T	1,2,4-Trichlorobenzene	-1.0000	0.3011	0.0	0	0.00
97	T	Hexachlorobutadiene	-1.0000	0.2675	0.0	0	0.00
98	T	Naphthalene	-1.0000	0.2561	0.0	0	0.00
99	T	1,2,3-Trichlorobenzene	0.3000	0.2854	4.9	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11837.D 8260WT.M Sat May 14 18:41:07 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11838.D Vial: 4
Acq On : 13 May 2016 15:12 Operator: JDS
Sample : WG568769-03 0.4ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:23 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	515473	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	435266	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	244818	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
57) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
78) p-Bromofluorobenzene	15.64	95	236	0.0295 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	2765	0.3656 ug/L #	66
3) Chloromethane	3.72	50	4021	0.5854 ug/L #	77
4) Vinyl Chloride	3.96	62	2267	0.4134 ug/L #	64
5) 1,3-Butadiene	4.01	54	2044	0.3956 ug/L #	18
6) Bromomethane	4.85	94	1571	0.4511 ug/L	89
7) Chloroethane	5.01	64	1496	0.4029 ug/L #	45
8) Trichlorofluoromethane	5.49	101	4241	0.4175 ug/L	96
10) Isoprene	6.03	67	2394	0.3408 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	1439	0.2811 ug/L #	23
13) Acetone	6.33	43	1125	0.7299 ug/L #	45
14) 1,1-Dichloroethene	6.56	61	3786	0.3990 ug/L	77
16) Dimethyl Sulfide	6.80	62	1622	0.3769 ug/L	59
18) Methyl acetate	7.01	43	21364	4.0629 ug/L #	70
19) Methylene Chloride	7.32	84	2266	0.4265 ug/L	97
20) Carbon Disulfide	7.35	76	6628	0.3991 ug/L #	82
22) Methyl Tert Butyl Ether	7.52	73	4808	0.3486 ug/L #	74
23) trans-1,2-Dichloroethene	7.74	96	2372	0.4368 ug/L	93
24) n-Hexane	7.83	57	4212	0.4732 ug/L #	73
26) Vinyl Acetate	8.34	43	434	0.1315 ug/L #	78
27) 1,1-Dichloroethane	8.34	63	3822	0.3576 ug/L #	89
29) 2-Butanone	8.88	43	484	0.2099 ug/L #	60
31) 2,2-Dichloropropane	9.09	77	2680	0.3472 ug/L #	55
32) cis-1,2-Dichloroethene	9.15	96	2277	0.3777 ug/L	91
33) Chloroform	9.35	83	3981	0.3988 ug/L	89
35) Bromochloromethane	9.57	130	952	0.2468 ug/L	57
36) Tetrahydrofuran	9.59	42	212	0.1340 ug/L #	46
38) 1,1,1-Trichloroethane	9.85	97	3917	0.4058 ug/L #	84
39) Cyclohexane	9.88	56	3935	0.3371 ug/L #	80
40) 1,1-Dichloropropene	10.04	75	2817	0.3862 ug/L	82
41) Carbon Tetrachloride	10.18	117	3373	0.3702 ug/L #	88
44) 1,2-Dichloroethane	10.35	62	3201	0.3737 ug/L #	78
45) Benzene	10.39	78	8729	0.4184 ug/L	90
46) Trichloroethene	11.08	130	2537	0.3731 ug/L	93
47) Methylcyclohexane	11.17	83	2742	0.3325 ug/L	90
48) 1,2-Dichloropropane	11.29	63	2133	0.3600 ug/L	84
50) Bromodichloromethane	11.58	83	2857	0.3638 ug/L #	84
51) Dibromomethane	11.65	93	972	0.3128 ug/L	81
52) 2-Chloroethyl Vinyl Ether	11.85	63	791	0.2560 ug/L #	50
54) cis-1,3-Dichloropropene	12.17	75	2689	0.3253 ug/L	99
55) Dimethyl Disulfide	12.42	79	1113	0.2158 ug/L	74

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11838.D Vial: 4
Acq On : 13 May 2016 15:12 Operator: JDS
Sample : WG568769-03 0.4ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:23 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
58)	Toluene	12.56	91	9113	0.4043 ug/L		99
59)	Ethyl Methacrylate	12.65	69	1556	0.2916 ug/L		96
60)	trans-1,3-Dichloropropene	12.73	75	2303	0.3119 ug/L		86
61)	1,1,2-Trichloroethane	12.94	97	1549	0.3672 ug/L		85
62)	2-Hexanone	12.86	43	840	0.2415 ug/L	#	11
63)	1,3-Dichloropropane	13.21	76	2345	0.3346 ug/L		82
64)	Tetrachloroethene	13.34	164	1905	0.3745 ug/L		88
65)	Dibromochloromethane	13.59	129	1972	0.3238 ug/L		89
66)	1,2-Dibromoethane	13.82	107	1617	0.3776 ug/L		69
67)	1-Chlorohexane	13.89	91	2578	0.3487 ug/L		77
68)	Chlorobenzene	14.29	112	6458	0.3896 ug/L		93
69)	1,1,1,2-Tetrachloroethane	14.31	131	2374	0.3736 ug/L		98
70)	Ethylbenzene	14.31	106	3158	0.3754 ug/L		79
71)	m-,p-Xylene	14.39	106	8621	0.8613 ug/L		93
72)	o-Xylene	14.93	106	3752	0.3758 ug/L		96
73)	Styrene	14.95	104	6027	0.3558 ug/L		90
74)	Bromoform	15.44	173	931	0.2454 ug/L		87
75)	Isopropylbenzene	15.31	105	10551	0.4179 ug/L		95
77)	1,1,2,2-Tetrachloroethane	15.52	83	1129	0.2796 ug/L		84
79)	1,2,3-Trichloropropane	15.71	110	200	0.1341 ug/L	#	28
81)	n-Propylbenzene	15.79	91	11244	0.4087 ug/L		98
82)	Bromobenzene	15.91	156	3048	0.3991 ug/L		95
83)	1,3,5-Trimethylbenzene	15.96	105	9158	0.4381 ug/L		92
84)	2-Chlorotoluene	16.05	91	8455	0.4164 ug/L		96
85)	4-Chlorotoluene	16.09	91	6979	0.4189 ug/L		92
86)	a-Methylstyrene	16.34	118	4052	0.3488 ug/L		74
87)	tert-Butylbenzene	16.40	134	1479	0.3224 ug/L		63
88)	1,2,4-Trimethylbenzene	16.45	105	8457	0.3953 ug/L		95
89)	sec-Butylbenzene	16.65	105	10479	0.4236 ug/L		93
90)	p-Isopropyltoluene	16.79	119	9613	0.4269 ug/L		93
91)	1,3-Dichlorobenzene	16.98	146	5826	0.4107 ug/L		93
92)	1,4-Dichlorobenzene	17.10	146	6273	0.4331 ug/L	#	74
93)	n-Butylbenzene	17.28	91	8021	0.3956 ug/L	#	91
94)	1,2-Dichlorobenzene	17.57	146	4937	0.3691 ug/L		97
96)	1,2,4-Trichlorobenzene	19.55	180	3632	0.3655 ug/L		95
97)	Hexachlorobutadiene	19.69	225	1539	0.3812 ug/L		96
98)	Naphthalene	19.90	128	7383	0.3882 ug/L		97
99)	1,2,3-Trichlorobenzene	20.19	180	3748	0.4028 ug/L		84

(#) = qualifier out of range (m) = manual integration
11M11838.D 8260WT.M Fri May 13 17:04:24 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11838.D Vial: 4
Acq On : 13 May 2016 15:12 Operator: JDS
Sample : WG568769-03 0.4ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration

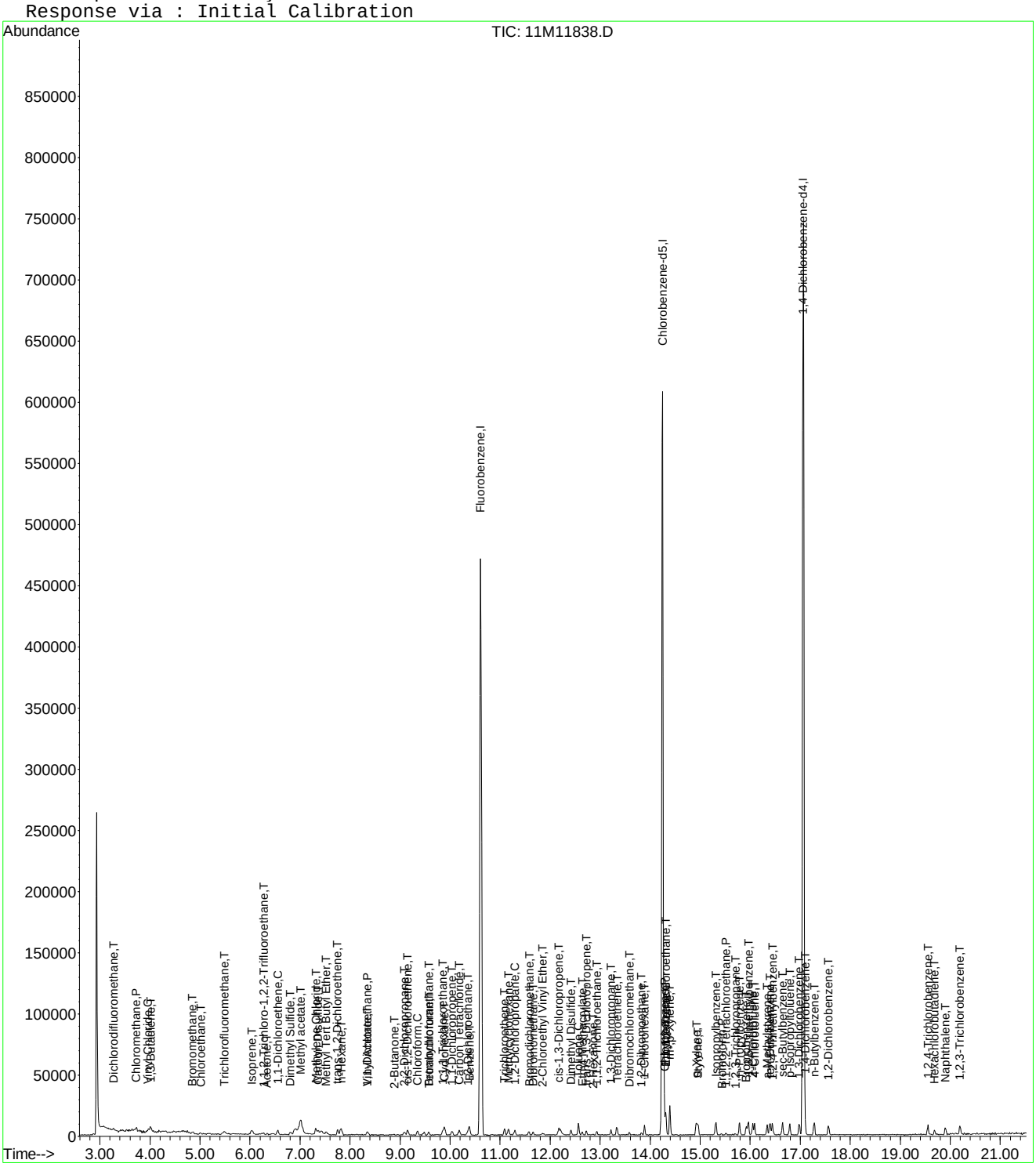

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:25 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	523425	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	440574	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	249989	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	1729	0.2910 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.16%#	
43) 1,2-Dichloroethane-d4	10.23	65	3301	0.4585 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	1.84%#	
57) Toluene-d8	12.47	98	9307	0.4494 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	1.80%#	
78) p-Bromofluorobenzene	15.64	95	4047	0.4956 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	7215	0.9394 ug/L	98
3) Chloromethane	3.72	50	7292	1.0455 ug/L	80
4) Vinyl Chloride	3.96	62	5040	0.9051 ug/L	92
5) 1,3-Butadiene	4.02	54	5876	1.1198 ug/L #	76
6) Bromomethane	4.85	94	3488	0.9862 ug/L	94
7) Chloroethane	4.99	64	3425	0.9083 ug/L #	57
8) Trichlorofluoromethane	5.49	101	10960	1.0625 ug/L	95
9) Diethyl ether	6.01	59	19830	4.2253 ug/L	90
10) Isoprene	6.04	67	6121	0.8582 ug/L	94
11) Acrolein	6.25	56	697	1.2730 ug/L	65
12) 1,1,2-Trichloro-1,2,2-Trif	6.27	101	5456	1.0497 ug/L	90
13) Acetone	6.34	43	1782	1.1386 ug/L #	45
14) 1,1-Dichloroethene	6.55	61	9456	0.9814 ug/L	91
15) Tert-Butyl Alcohol	6.67	59	2848	6.8484 ug/L #	67
16) Dimethyl Sulfide	6.80	62	3631	0.8310 ug/L	93
18) Methyl acetate	7.01	43	20953	3.9242 ug/L #	70
19) Methylene Chloride	7.31	84	5001	0.9270 ug/L	97
20) Carbon Disulfide	7.36	76	15438	0.9154 ug/L	99
21) Acrylonitrile	7.50	53	3780	1.8795 ug/L	89
22) Methyl Tert Butyl Ether	7.53	73	11891	0.8490 ug/L	90
23) trans-1,2-Dichloroethene	7.75	96	4815	0.8732 ug/L	95
24) n-Hexane	7.82	57	9213	1.0194 ug/L #	81
25) Diisopropyl ether	8.15	45	108233	4.5267 ug/L	99
26) Vinyl Acetate	8.31	43	1723	0.5141 ug/L #	78
27) 1,1-Dichloroethane	8.34	63	10818	0.9968 ug/L	95
28) Ethyl-Tert-Butyl ether	8.70	59	85288	4.3548 ug/L	99
29) 2-Butanone	8.88	43	1368	0.5844 ug/L #	60
30) Propionitrile	8.99	54	2406	3.5185 ug/L #	60
31) 2,2-Dichloropropane	9.09	77	7787	0.9935 ug/L	90
32) cis-1,2-Dichloroethene	9.15	96	5567	0.9095 ug/L	94
33) Chloroform	9.35	83	10278	1.0139 ug/L	96
34) 1-Bromopropane	9.48	122	295	0.2934 ug/L	49
35) Bromochloromethane	9.57	130	2941	0.7509 ug/L	88
36) Tetrahydrofuran	9.60	42	7790	4.8493 ug/L	92
38) 1,1,1-Trichloroethane	9.85	97	10000	1.0202 ug/L #	90
39) Cyclohexane	9.88	56	10164	0.8574 ug/L	98
40) 1,1-Dichloropropene	10.04	75	7321	0.9884 ug/L	92
41) Carbon Tetrachloride	10.18	117	9558	1.0331 ug/L	98
42) Tert-Amyl-Methyl ether	10.13	73	59107	4.2417 ug/L	97
44) 1,2-Dichloroethane	10.34	62	8181	0.9406 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:25 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	Benzene	10.38	78	19924	0.9404 ug/L		95
46)	Trichloroethene	11.08	130	6636	0.9611 ug/L		92
47)	Methylcyclohexane	11.18	83	7740	0.9243 ug/L		94
48)	1,2-Dichloropropane	11.29	63	5477	0.9103 ug/L		99
49)	1,4-Dioxane	11.55	88	187	5.1264 ug/L	#	10
50)	Bromodichloromethane	11.57	83	7238	0.9076 ug/L		94
51)	Dibromomethane	11.65	93	2839	0.8997 ug/L		97
52)	2-Chloroethyl Vinyl Ether	11.84	63	1934	0.6164 ug/L	#	72
53)	4-Methyl-2-Pentanone	11.87	58	1016	0.5282 ug/L	#	42
54)	cis-1,3-Dichloropropene	12.17	75	7078	0.8432 ug/L		99
55)	Dimethyl Disulfide	12.42	79	3514	0.6710 ug/L		93
58)	Toluene	12.56	91	22074	0.9676 ug/L		96
59)	Ethyl Methacrylate	12.64	69	4130	0.7646 ug/L		88
60)	trans-1,3-Dichloropropene	12.73	75	5897	0.7891 ug/L		90
61)	1,1,2-Trichloroethane	12.94	97	3547	0.8307 ug/L		96
62)	2-Hexanone	12.87	43	2461	0.6990 ug/L	#	63
63)	1,3-Dichloropropane	13.21	76	5965	0.8410 ug/L		87
64)	Tetrachloroethene	13.34	164	5050	0.9809 ug/L		94
65)	Dibromochloromethane	13.59	129	5237	0.8497 ug/L		90
66)	1,2-Dibromoethane	13.82	107	3214	0.7414 ug/L		91
67)	1-Chlorohexane	13.89	91	7025	0.9387 ug/L		91
68)	Chlorobenzene	14.29	112	16160	0.9630 ug/L		95
69)	1,1,1,2-Tetrachloroethane	14.32	131	6361	0.9889 ug/L		97
70)	Ethylbenzene	14.31	106	8050	0.9455 ug/L		93
71)	m-,p-Xylene	14.39	106	20545	2.0278 ug/L		95
72)	o-Xylene	14.92	106	9683	0.9581 ug/L		96
73)	Styrene	14.96	104	14946	0.8716 ug/L		98
74)	Bromoform	15.43	173	3024	0.7876 ug/L		97
75)	Isopropylbenzene	15.31	105	25656	1.0039 ug/L		92
77)	1,1,2,2-Tetrachloroethane	15.52	83	3569	0.8655 ug/L		89
79)	1,2,3-Trichloropropane	15.71	110	872	0.5724 ug/L		84
80)	trans-1,4-Dichloro-2-Buten	15.74	53	1048	0.6163 ug/L	#	44
81)	n-Propylbenzene	15.79	91	27998	0.9967 ug/L		98
82)	Bromobenzene	15.92	156	8101	1.0388 ug/L		89
83)	1,3,5-Trimethylbenzene	15.96	105	20563	0.9633 ug/L		98
84)	2-Chlorotoluene	16.05	91	20962	1.0111 ug/L		96
85)	4-Chlorotoluene	16.09	91	17553	1.0318 ug/L		100
86)	a-Methylstyrene	16.34	118	10002	0.8431 ug/L		97
87)	tert-Butylbenzene	16.40	134	4396	0.9384 ug/L		84
88)	1,2,4-Trimethylbenzene	16.44	105	21945	1.0045 ug/L		96
89)	sec-Butylbenzene	16.65	105	25927	1.0263 ug/L		100
90)	p-Isopropyltoluene	16.79	119	22467	0.9771 ug/L		96
91)	1,3-Dichlorobenzene	16.98	146	14883	1.0274 ug/L		96
92)	1,4-Dichlorobenzene	17.10	146	15106	1.0213 ug/L	#	67
93)	n-Butylbenzene	17.28	91	20991	1.0139 ug/L		98
94)	1,2-Dichlorobenzene	17.57	146	13331	0.9762 ug/L		99
95)	1,2-Dibromo-3-Chloropropan	18.49	75	493	0.5750 ug/L		75
96)	1,2,4-Trichlorobenzene	19.55	180	9030	0.8899 ug/L		96
97)	Hexachlorobutadiene	19.69	225	3810	0.9242 ug/L		95
98)	Naphthalene	19.90	128	16333	0.8410 ug/L		99
99)	1,2,3-Trichlorobenzene	20.19	180	8645	0.9098 ug/L		88

(#) = qualifier out of range (m) = manual integration
11M11839.D 8260WT.M Fri May 13 17:04:25 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration

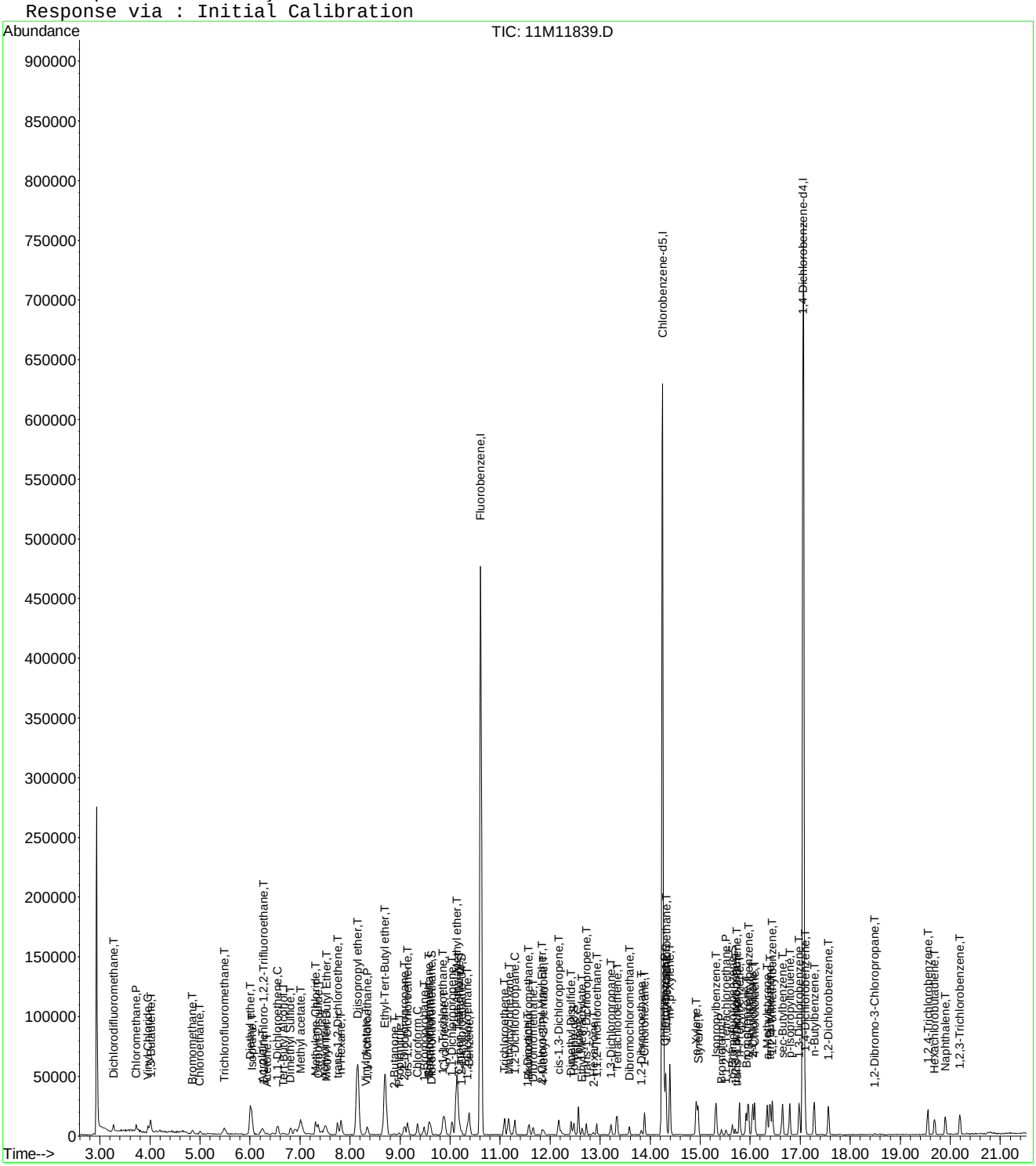

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:40:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.8798	12.0	100	0.00
3	P	Chloromethane	1.0000	1.1102	-11.0	100	0.00
4	C	Vinyl Chloride	1.0000	0.9240	7.6	100	0.00
5	T	1,3-Butadiene	-1.0000	1.0834	0.0	100	0.02
6	T	Bromomethane	1.0000	0.9301	7.0	100	0.00
7	T	Chloroethane	1.0000	0.9773	2.3	100	-0.01
8	T	Trichlorofluoromethane	1.0000	1.0081	-0.8	100	0.01
9	T	Diethyl ether	5.0000	4.9318	1.4	100	0.00
10	T	Isoprene	-1.0000	0.9134	0.0	100	0.00
11	T	Acrolein	2.5000	2.7854	-11.4	100	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0342	-3.4	100	0.02
13	T	Acetone	-1.0000	1.4337	0.0	0	0.00
14	C	1,1-Dichloroethene	1.0000	0.9868	1.3	100	-0.01
15	T	Tert-Butyl Alcohol	10.0000	8.2841	17.2	100	0.01
16	T	Dimethyl Sulfide	-1.0000	0.9488	0.0	100	-0.01
17	T	Iodomethane	-1.0000	2.2962	0.0	0	0.01
18	T	Methyl acetate	-1.0000	4.2835	0.0	0	-0.05
19	T	Methylene Chloride	1.0000	1.0084	-0.8	100	0.00
20	T	Carbon Disulfide	1.0000	0.9624	3.8	100	0.00
21	T	Acrylonitrile	2.5000	2.2683	9.3	100	0.01
22	T	Methyl Tert Butyl Ether	1.0000	0.9614	3.9	100	0.01
23	T	trans-1,2-Dichloroethene	1.0000	0.9079	9.2	100	0.01
24	T	n-Hexane	-1.0000	1.0430	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	4.9106	1.8	100	0.00
26	T	Vinyl Acetate	-1.0000	2.6242	0.0	0	0.00
27	P	1,1-Dichloroethane	1.0000	1.0166	-1.7	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.7543	4.9	100	0.00
29	T	2-Butanone	-1.0000	0.7280	0.0	0	0.01
30	T	Propionitrile	5.0000	4.3718	12.6	100	0.01
31	T	2,2-Dichloropropane	1.0000	0.9353	6.5	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	0.9520	4.8	100	0.00
33	C	Chloroform	1.0000	0.9836	1.6	100	0.00
34	T	1-Bromopropane	1.0000	0.9106	8.9	100	0.00
35	T	Bromochloromethane	1.0000	0.8469	15.3	100	0.00
36	T	Tetrahydrofuran	5.0000	5.8710	-17.4	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.3018	0.0	100	0.00
38	T	1,1,1-Trichloroethane	1.0000	0.9725	2.8	100	0.00
39	T	Cyclohexane	1.0000	0.9069	9.3	100	0.00
40	T	1,1-Dichloropropene	1.0000	0.9971	0.3	100	0.00
41	T	Carbon Tetrachloride	1.0000	0.9518	4.8	100	0.00
42	T	Tert-Amyl-Methyl ether	5.0000	4.7417	5.2	100	0.00
43	S	1,2-Dichloroethane-d4	0.5000	0.5054	-1.1	100	0.00
44	T	1,2-Dichloroethane	1.0000	0.9639	3.6	100	0.00
45	T	Benzene	1.0000	0.9912	0.9	100	0.00
46	T	Trichloroethene	1.0000	1.0157	-1.6	100	-0.01
47	T	Methylcyclohexane	1.0000	0.9600	4.0	100	0.01
48	C	1,2-Dichloropropane	1.0000	0.9844	1.6	100	0.00
49	T	1,4-Dioxane	-1.0000	28.5532	0.0	0	0.00
50	T	Bromodichloromethane	1.0000	0.9266	7.3	100	0.00
51	T	Dibromomethane	1.0000	0.9792	2.1	100	0.00
52	T	2-Chloroethyl Vinyl Ether	-1.0000	0.7053	0.0	100	0.00
53	T	4-Methyl-2-Pentanone	-1.0000	0.6569	0.0	0	0.00
54	T	cis-1,3-Dichloropropene	1.0000	0.9060	9.4	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:40:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	-1.0000	0.7475	0.0	100	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	-1.0000	0.4862	0.0	100	0.00
58	C	Toluene	1.0000	0.9897	1.0	100	0.00
59	T	Ethyl Methacrylate	1.0000	0.8672	13.3	100	-0.01
60	T	trans-1,3-Dichloropropene	1.0000	0.8237	17.6	100	0.00
61	T	1,1,2-Trichloroethane	1.0000	0.8969	10.3	100	0.00
62	T	2-Hexanone	-1.0000	0.8473	0.0	100	0.01
63	T	1,3-Dichloropropane	1.0000	0.9392	6.1	100	0.00
64	T	Tetrachloroethene	1.0000	0.9737	2.6	100	0.00
65	T	Dibromochloromethane	1.0000	0.8681	13.2	100	0.00
66	T	1,2-Dibromoethane	1.0000	0.8111	18.9	100	0.00
67	T	1-Chlorohexane	1.0000	0.9554	4.5	100	0.00
68	P	Chlorobenzene	1.0000	0.9890	1.1	100	0.00
69	T	1,1,1,2-Tetrachloroethane	1.0000	0.9621	3.8	100	0.00
70	C	Ethylbenzene	1.0000	0.9608	3.9	100	0.00
71	T	m-,p-Xylene	2.0000	2.0170	-0.9	100	0.00
72	T	o-Xylene	1.0000	0.9768	2.3	100	0.00
73	T	Styrene	1.0000	0.9126	8.7	100	0.01
74	P	Bromoform	1.0000	0.8271	17.3	100	0.00
75	T	Isopropylbenzene	1.0000	0.9787	2.1	100	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	1.0000	0.9168	8.3	100	0.00
78	S	p-Bromofluorobenzene	-1.0000	0.5252	0.0	100	0.00
79	T	1,2,3-Trichloropropane	1.0000	0.9573	4.3	100	0.01
80	T	trans-1,4-Dichloro-2-Butene	1.0000	1.2934	-29.3#	100	0.00
81	T	n-Propylbenzene	1.0000	0.9671	3.3	100	0.00
82	T	Bromobenzene	1.0000	1.0663	-6.6	100	0.00
83	T	1,3,5-Trimethylbenzene	1.0000	0.9307	6.9	100	0.00
84	T	2-Chlorotoluene	1.0000	1.0337	-3.4	100	0.00
85	T	4-Chlorotoluene	1.0000	0.9664	3.4	100	0.00
86	T	a-Methylstyrene	1.0000	0.8582	14.2	100	0.00
87	T	tert-Butylbenzene	1.0000	0.9392	6.1	100	0.00
88	T	1,2,4-Trimethylbenzene	1.0000	0.9755	2.5	100	0.00
89	T	sec-Butylbenzene	1.0000	0.9774	2.3	100	0.00
90	T	p-Isopropyltoluene	1.0000	0.9221	7.8	100	0.00
91	T	1,3-Dichlorobenzene	1.0000	1.0144	-1.4	100	0.00
92	T	1,4-Dichlorobenzene	1.0000	1.0157	-1.6	100	0.00
93	T	n-Butylbenzene	1.0000	0.9776	2.2	100	0.00
94	T	1,2-Dichlorobenzene	1.0000	0.9974	0.3	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.1961	0.0	100	0.00
96	T	1,2,4-Trichlorobenzene	1.0000	0.9233	7.7	100	0.00
97	T	Hexachlorobutadiene	1.0000	0.8843	11.6	100	0.00
98	T	Naphthalene	1.0000	0.8997	10.0	100	0.00
99	T	1,2,3-Trichlorobenzene	1.0000	0.9631	3.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11839.D 8260WT.M Sat May 14 18:41:49 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:26 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	504626	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	418265	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	241104	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	5067	0.8846 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.52%#	
43) 1,2-Dichloroethane-d4	10.23	65	6143	0.8851 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.56%#	
57) Toluene-d8	12.47	98	18425	0.9371 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	3.76%#	
78) p-Bromofluorobenzene	15.64	95	7442	0.9449 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	3.76%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	14866	2.0077 ug/L	98
3) Chloromethane	3.72	50	14641	2.1775 ug/L	94
4) Vinyl Chloride	3.96	62	10045	1.8711 ug/L	99
5) 1,3-Butadiene	4.01	54	10590	2.0934 ug/L	82
6) Bromomethane	4.85	94	7024	2.0600 ug/L	94
7) Chloroethane	4.99	64	6661	1.8324 ug/L	97
8) Trichlorofluoromethane	5.49	101	21690	2.1811 ug/L	99
9) Diethyl ether	6.01	59	96350	21.2945 ug/L	97
10) Isoprene	6.04	67	12682	1.8443 ug/L	94
11) Acrolein	6.23	56	5531	10.4784 ug/L	91
12) 1,1,2-Trichloro-1,2,2-Trif	6.23	101	9909	1.9774 ug/L	96
13) Acetone	6.35	43	3346	2.2176 ug/L #	68
14) 1,1-Dichloroethene	6.56	61	18584	2.0007 ug/L	98
15) Tert-Butyl Alcohol	6.66	59	15203	37.9194 ug/L #	93
16) Dimethyl Sulfide	6.81	62	7308	1.7348 ug/L	98
17) Iodomethane	7.06	142	1747	0.4335 ug/L #	49
18) Methyl acetate	7.01	43	17794	3.4567 ug/L #	75
19) Methylene Chloride	7.31	84	10330	1.9861 ug/L	99
20) Carbon Disulfide	7.36	76	30745	1.8910 ug/L	99
21) Acrylonitrile	7.49	53	17499	9.0252 ug/L	91
22) Methyl Tert Butyl Ether	7.52	73	22031	1.6315 ug/L	97
23) trans-1,2-Dichloroethene	7.74	96	10660	2.0051 ug/L	95
24) n-Hexane	7.82	57	17125	1.9654 ug/L #	94
25) Diisopropyl ether	8.15	45	542272	23.5246 ug/L	99
26) Vinyl Acetate	8.31	43	6813	2.1084 ug/L #	84
27) 1,1-Dichloroethane	8.34	63	21278	2.0336 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	431080	22.8311 ug/L	100
29) 2-Butanone	8.87	43	3175	1.4068 ug/L #	60
30) Propionitrile	8.99	54	12529	19.0049 ug/L	98
31) 2,2-Dichloropropane	9.09	77	17576	2.3259 ug/L	94
32) cis-1,2-Dichloroethene	9.15	96	11652	1.9746 ug/L	96
33) Chloroform	9.35	83	20769	2.1252 ug/L	96
34) 1-Bromopropane	9.48	122	1648	1.7003 ug/L	70
35) Bromochloromethane	9.57	130	6812	1.8040 ug/L	100
36) Tetrahydrofuran	9.60	42	30834	19.9093 ug/L	96
38) 1,1,1-Trichloroethane	9.84	97	20518	2.1713 ug/L #	94
39) Cyclohexane	9.88	56	22087	1.9325 ug/L	98
40) 1,1-Dichloropropene	10.04	75	13954	1.9542 ug/L	98
41) Carbon Tetrachloride	10.18	117	21054	2.3604 ug/L	98
42) Tert-Amyl-Methyl ether	10.13	73	300593	22.3753 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M11840.D 8260WT.M Fri May 13 17:04:27 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:26 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
44)	1,2-Dichloroethane	10.34	62	16928	2.0188 ug/L		98
45)	Benzene	10.38	78	41004	2.0075 ug/L		97
46)	Trichloroethene	11.08	130	13283	1.9954 ug/L		96
47)	Methylcyclohexane	11.17	83	15711	1.9461 ug/L		95
48)	1,2-Dichloropropane	11.29	63	11010	1.8980 ug/L		91
49)	1,4-Dioxane	11.55	88	898	25.5347 ug/L		88
50)	Bromodichloromethane	11.57	83	15058	1.9584 ug/L		100
51)	Dibromomethane	11.66	93	5461	1.7952 ug/L		97
52)	2-Chloroethyl Vinyl Ether	11.84	63	4894	1.6180 ug/L		83
53)	4-Methyl-2-Pentanone	11.87	58	2173	1.1717 ug/L	#	65
54)	cis-1,3-Dichloropropene	12.17	75	14440	1.7842 ug/L		91
55)	Dimethyl Disulfide	12.42	79	7378	1.4613 ug/L		97
58)	Toluene	12.56	91	43051	1.9877 ug/L		98
59)	Ethyl Methacrylate	12.64	69	7792	1.5195 ug/L		95
60)	trans-1,3-Dichloropropene	12.73	75	12991	1.8310 ug/L		98
61)	1,1,2-Trichloroethane	12.93	97	8138	2.0075 ug/L		91
62)	2-Hexanone	12.86	43	4715	1.4106 ug/L	#	61
63)	1,3-Dichloropropane	13.21	76	11740	1.7434 ug/L		95
64)	Tetrachloroethene	13.34	164	10610	2.1708 ug/L		90
65)	Dibromochloromethane	13.59	129	11236	1.9202 ug/L		96
66)	1,2-Dibromoethane	13.82	107	7613	1.8499 ug/L		99
67)	1-Chlorohexane	13.89	91	13853	1.9499 ug/L		96
68)	Chlorobenzene	14.29	112	33381	2.0954 ug/L		99
69)	1,1,1,2-Tetrachloroethane	14.32	131	13541	2.2175 ug/L		97
70)	Ethylbenzene	14.31	106	17116	2.1175 ug/L		98
71)	m-,p-Xylene	14.39	106	40469	4.2073 ug/L		95
72)	o-Xylene	14.92	106	19196	2.0006 ug/L		99
73)	Styrene	14.96	104	30019	1.8440 ug/L		92
74)	Bromoform	15.43	173	6309	1.7308 ug/L		96
75)	Isopropylbenzene	15.31	105	52419	2.1605 ug/L		98
77)	1,1,2,2-Tetrachloroethane	15.51	83	7118	1.7898 ug/L		100
79)	1,2,3-Trichloropropane	15.70	110	2487	1.6927 ug/L		98
80)	trans-1,4-Dichloro-2-Buten	15.74	53	2265	1.3810 ug/L		68
81)	n-Propylbenzene	15.79	91	59353	2.1908 ug/L		100
82)	Bromobenzene	15.91	156	15393	2.0465 ug/L		97
83)	1,3,5-Trimethylbenzene	15.95	105	43641	2.1197 ug/L		98
84)	2-Chlorotoluene	16.05	91	40923	2.0467 ug/L		96
85)	4-Chlorotoluene	16.09	91	37360	2.2771 ug/L		97
86)	a-Methylstyrene	16.34	118	20567	1.7976 ug/L		92
87)	tert-Butylbenzene	16.40	134	9253	2.0481 ug/L		89
88)	1,2,4-Trimethylbenzene	16.44	105	43857	2.0815 ug/L		99
89)	sec-Butylbenzene	16.65	105	52733	2.1643 ug/L		99
90)	p-Isopropyltoluene	16.79	119	49990	2.2541 ug/L		98
91)	1,3-Dichlorobenzene	16.98	146	29674	2.1240 ug/L		99
92)	1,4-Dichlorobenzene	17.10	146	30258	2.1211 ug/L		87
93)	n-Butylbenzene	17.28	91	44260	2.2167 ug/L		98
94)	1,2-Dichlorobenzene	17.57	146	27619	2.0969 ug/L		95
95)	1,2-Dibromo-3-Chloropropan	18.49	75	1094	1.3229 ug/L		60
96)	1,2,4-Trichlorobenzene	19.55	180	18455	1.8857 ug/L		98
97)	Hexachlorobutadiene	19.69	225	8691	2.1858 ug/L		89
98)	Naphthalene	19.90	128	34041	1.8174 ug/L	#	95
99)	1,2,3-Trichlorobenzene	20.19	180	17703	1.9318 ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration

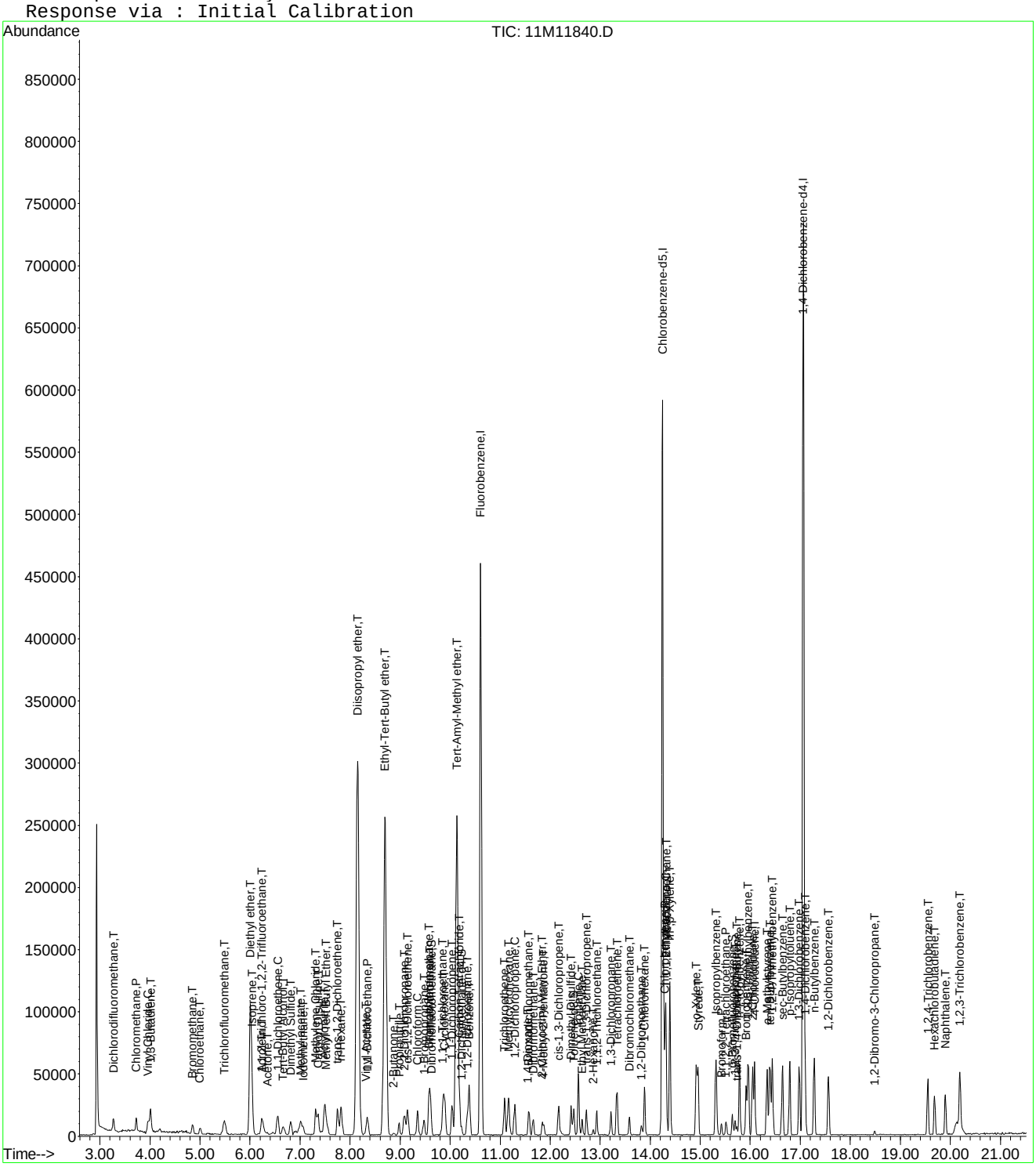

11M11840.D 8260WT.M Fri May 13 17:04:28 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.8802	6.0	100	0.00
3	P	Chloromethane	2.0000	2.3121	-15.6	100	0.00
4	C	Vinyl Chloride	2.0000	1.9102	4.5	100	0.00
5	T	1,3-Butadiene	-1.0000	2.0253	0.0	100	0.01
6	T	Bromomethane	2.0000	1.9427	2.9	100	0.00
7	T	Chloroethane	2.0000	1.9714	1.4	100	-0.01
8	T	Trichlorofluoromethane	2.0000	2.0694	-3.5	100	0.01
9	T	Diethyl ether	25.0000	24.8555	0.6	100	0.00
10	T	Isoprene	-1.0000	1.9630	0.0	100	0.00
11	T	Acrolein	12.5000	12.0322	3.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.9483	2.6	100	-0.01
13	T	Acetone	-1.0000	2.7924	0.0	100	0.01
14	C	1,1-Dichloroethene	2.0000	2.0117	-0.6	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	45.8688	8.3	100	0.00
16	T	Dimethyl Sulfide	-1.0000	1.9809	0.0	100	0.00
17	T	Iodomethane	2.0000	2.6580	-32.9#	100	0.00
18	T	Methyl acetate	2.0000	0.8555	57.2#	100	0.00
19	T	Methylene Chloride	2.0000	2.1606	-8.0	100	0.00
20	T	Carbon Disulfide	2.0000	1.9879	0.6	100	0.00
21	T	Acrylonitrile	12.5000	10.8919	12.9	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.8475	7.6	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	2.0850	-4.2	100	0.00
24	T	n-Hexane	2.0000	2.0110	-0.6	100	0.00
25	T	Diisopropyl ether	25.0000	25.5200	-2.1	100	0.00
26	T	Vinyl Acetate	-1.0000	3.2184	0.0	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.0741	-3.7	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	24.9254	0.3	100	0.00
29	T	2-Butanone	-1.0000	1.7527	0.0	0	0.00
30	T	Propionitrile	25.0000	23.6140	5.5	100	0.01
31	T	2,2-Dichloropropane	2.0000	2.1897	-9.5	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0669	-3.3	100	0.00
33	C	Chloroform	2.0000	2.0616	-3.1	100	0.00
34	T	1-Bromopropane	2.0000	2.2551	-12.8	100	0.00
35	T	Bromochloromethane	2.0000	2.0347	-1.7	100	0.00
36	T	Tetrahydrofuran	25.0000	24.1040	3.6	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9175	8.3	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	2.0696	-3.5	100	-0.01
39	T	Cyclohexane	2.0000	2.0442	-2.2	100	0.00
40	T	1,1-Dichloropropene	2.0000	1.9713	1.4	100	0.00
41	T	Carbon Tetrachloride	2.0000	2.1748	-8.7	100	0.00
42	T	Tert-Amyl-Methyl ether	25.0000	25.0128	-0.1	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	0.9755	2.4	100	0.00
44	T	1,2-Dichloroethane	2.0000	2.0689	-3.4	100	0.00
45	T	Benzene	2.0000	2.1160	-5.8	100	0.00
46	T	Trichloroethene	2.0000	2.1089	-5.4	100	-0.01
47	T	Methylcyclohexane	2.0000	2.0212	-1.1	100	0.00
48	C	1,2-Dichloropropane	2.0000	2.0525	-2.6	100	0.00
49	T	1,4-Dioxane	50.0000	49.5313	0.9	100	0.00
50	T	Bromodichloromethane	2.0000	1.9996	0.0	100	0.00
51	T	Dibromomethane	2.0000	1.9537	2.3	100	0.01
52	T	2-Chloroethyl Vinyl Ether	-1.0000	1.8512	0.0	100	0.00
53	T	4-Methyl-2-Pentanone	-1.0000	1.4573	0.0	100	0.00
54	T	cis-1,3-Dichloropropene	2.0000	1.9172	4.1	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	-1.0000	1.6278	0.0	100	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	1.0000	1.0138	-1.4	100	0.00
58	C	Toluene	2.0000	2.0332	-1.7	100	0.00
59	T	Ethyl Methacrylate	2.0000	1.7234	13.8	100	-0.01
60	T	trans-1,3-Dichloropropene	2.0000	1.9114	4.4	100	0.00
61	T	1,1,2-Trichloroethane	2.0000	2.1674	-8.4	100	0.00
62	T	2-Hexanone	-1.0000	1.7098	0.0	100	0.00
63	T	1,3-Dichloropropane	2.0000	1.9471	2.6	100	0.00
64	T	Tetrachloroethene	2.0000	2.1547	-7.7	100	0.00
65	T	Dibromochloromethane	2.0000	1.9620	1.9	100	0.00
66	T	1,2-Dibromoethane	2.0000	2.0238	-1.2	100	0.00
67	T	1-Chlorohexane	2.0000	1.9844	0.8	100	0.00
68	P	Chlorobenzene	2.0000	2.1520	-7.6	100	0.00
69	T	1,1,1,2-Tetrachloroethane	2.0000	2.1574	-7.9	100	0.00
70	C	Ethylbenzene	2.0000	2.1518	-7.6	100	0.00
71	T	m-,p-Xylene	4.0000	4.1851	-4.6	100	0.00
72	T	o-Xylene	2.0000	2.0398	-2.0	100	0.00
73	T	Styrene	2.0000	1.9307	3.5	100	0.01
74	P	Bromoform	2.0000	1.8176	9.1	100	0.00
75	T	Isopropylbenzene	2.0000	2.1063	-5.3	100	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	2.0000	1.8958	5.2	100	-0.01
78	S	p-Bromofluorobenzene	1.0000	1.0013	-0.1	100	0.00
79	T	1,2,3-Trichloropropane	2.0000	2.1172	-5.9	100	0.00
80	T	trans-1,4-Dichloro-2-Butene	2.0000	1.9762	1.2	100	0.00
81	T	n-Propylbenzene	2.0000	2.1256	-6.3	100	0.00
82	T	Bromobenzene	2.0000	2.1009	-5.0	100	-0.01
83	T	1,3,5-Trimethylbenzene	2.0000	2.0481	-2.4	100	-0.01
84	T	2-Chlorotoluene	2.0000	2.0925	-4.6	100	0.00
85	T	4-Chlorotoluene	2.0000	2.1326	-6.6	100	0.00
86	T	a-Methylstyrene	2.0000	1.8297	8.5	100	0.00
87	T	tert-Butylbenzene	2.0000	2.0497	-2.5	100	0.00
88	T	1,2,4-Trimethylbenzene	2.0000	2.0213	-1.1	100	0.00
89	T	sec-Butylbenzene	2.0000	2.0611	-3.1	100	0.00
90	T	p-Isopropyltoluene	2.0000	2.1272	-6.4	100	0.00
91	T	1,3-Dichlorobenzene	2.0000	2.0970	-4.8	100	0.00
92	T	1,4-Dichlorobenzene	2.0000	2.1095	-5.5	100	0.00
93	T	n-Butylbenzene	2.0000	2.1373	-6.9	100	0.00
94	T	1,2-Dichlorobenzene	2.0000	2.1425	-7.1	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	2.0000	1.9175	4.1	100	0.00
96	T	1,2,4-Trichlorobenzene	2.0000	1.9565	2.2	100	0.00
97	T	Hexachlorobutadiene	2.0000	2.0914	-4.6	100	0.00
98	T	Naphthalene	2.0000	1.9443	2.8	100	0.00
99	T	1,2,3-Trichlorobenzene	2.0000	2.0449	-2.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11840.D 8260WT.M Sat May 14 18:46:53 2016 Page 2

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:46 2016 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Single Level Calibration

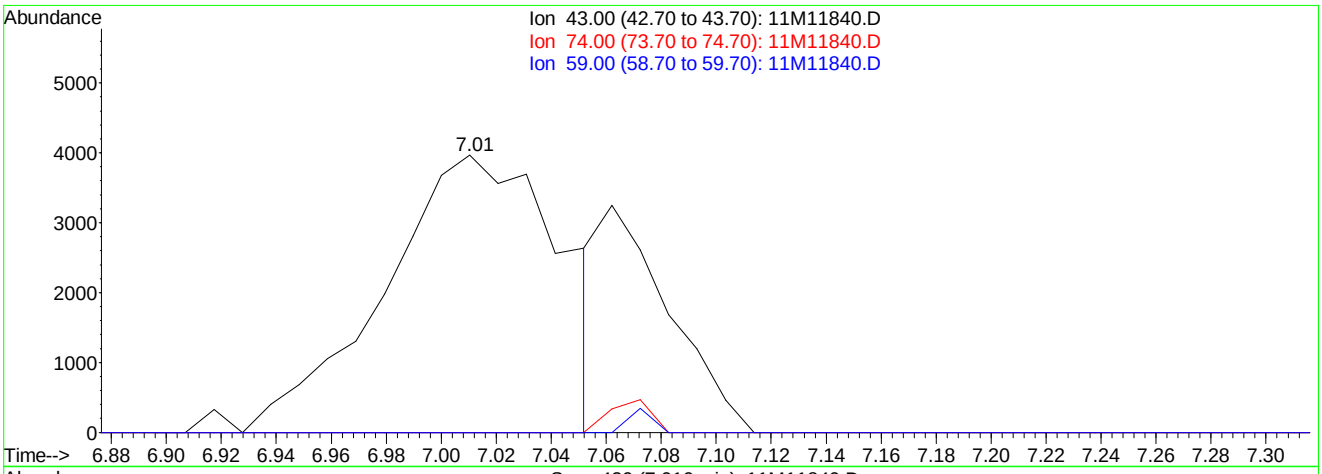

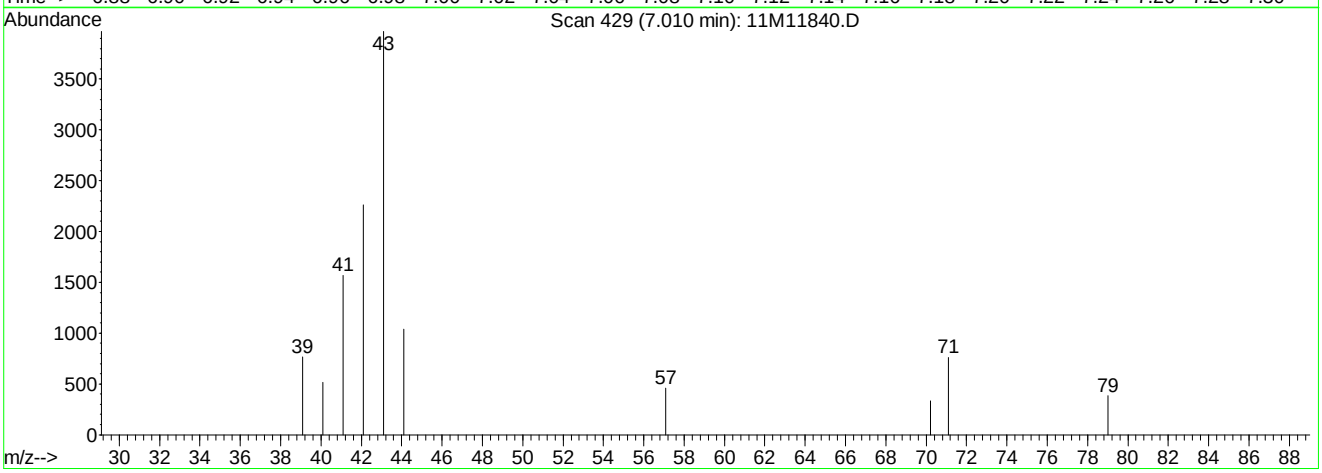

TIC: 11M11840.D

(18) Methyl acetate (T)

7.01min 3.69ug/L

response 17794

Ion	Exp%	Act%
43.00	100	100
74.00	13.60	2.82#
59.00	6.50	1.21#
0.00	0.00	0.00

11M11840.D 8260WT.M Sat May 14 18:46:34 2016

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:46 2016 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Single Level Calibration

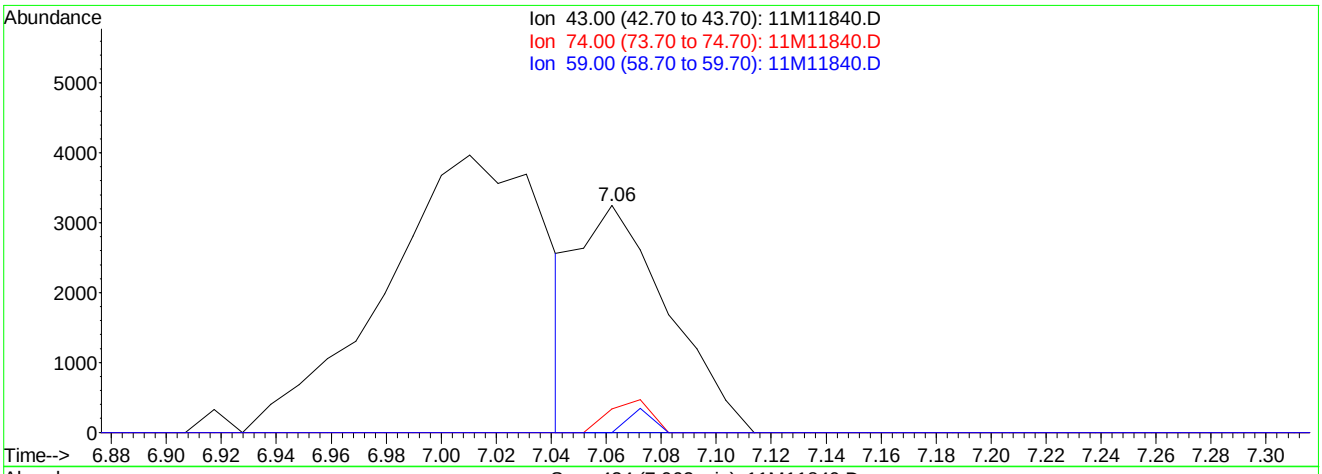

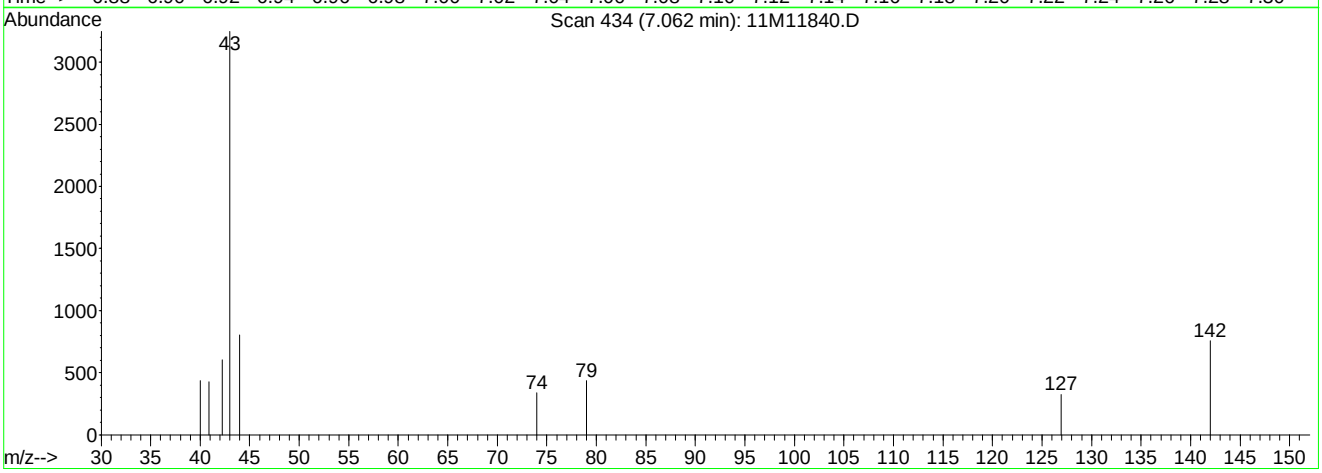

TIC: 11M11840.D

(18) Methyl acetate (T)

7.06min 0.86ug/L mint

response 7344

Ion	Exp%	Act%
43.00	100	100
74.00	13.60	6.84#
59.00	6.50	2.93#
0.00	0.00	0.00

11M11840.D 8260WT.M Sat May 14 18:46:39 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:12:58 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 17:07:56 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	510485	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	424113	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	244127	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	13577	2.3093 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	9.24%#	
43) 1,2-Dichloroethane-d4	10.23	65	16340	2.3640 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	9.44%#	
57) Toluene-d8	12.47	98	46369	2.3570 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	9.44%#	
78) p-Bromofluorobenzene	15.64	95	19139	2.4218 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	9.68%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	33260	4.2909 ug/L	97
3) Chloromethane	3.72	50	29484	4.2588 ug/L	100
4) Vinyl Chloride	3.96	62	24947	4.6446 ug/L	98
5) 1,3-Butadiene	4.00	54	24704	4.8274 ug/L	87
6) Bromomethane	4.85	94	16794	4.7876 ug/L	96
7) Chloroethane	5.00	64	15417	4.1982 ug/L	96
8) Trichlorofluoromethane	5.48	101	50663	4.8750 ug/L	98
9) Diethyl ether	6.01	59	199353	45.0064 ug/L	100
10) Isoprene	6.04	67	30513	4.3864 ug/L	99
11) Acrolein	6.25	56	12345	23.3877 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	23865	4.5585 ug/L	97
13) Acetone	6.35	43	6439	4.2186 ug/L	86
14) 1,1-Dichloroethene	6.56	61	43769	4.6158 ug/L	96
15) Tert-Butyl Alcohol	6.66	59	34212	87.4805 ug/L	100
16) Dimethyl Sulfide	6.81	62	17251	4.0482 ug/L	99
17) Iodomethane	7.06	142	7385	2.0684 ug/L	94
18) Methyl acetate	7.06	43	32363	5.4250 ug/L #	83
19) Methylene Chloride	7.31	84	23476	4.4707 ug/L	98
20) Carbon Disulfide	7.36	76	72931	4.4715 ug/L	98
21) Acrylonitrile	7.49	53	38039	20.0847 ug/L	96
22) Methyl Tert Butyl Ether	7.52	73	57597	4.3071 ug/L	98
23) trans-1,2-Dichloroethene	7.74	96	23369	4.3390 ug/L	99
24) n-Hexane	7.82	57	38507	4.3615 ug/L	99
25) Diisopropyl ether	8.15	45	1105208	48.2180 ug/L	99
26) Vinyl Acetate	8.31	43	24007	7.3442 ug/L	97
27) 1,1-Dichloroethane	8.34	63	51535	4.8316 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	899266	48.1312 ug/L	99
29) 2-Butanone	8.88	43	8098	3.5469 ug/L	98
30) Propionitrile	8.98	54	26204	41.2561 ug/L	97
31) 2,2-Dichloropropane	9.09	77	40285	5.2526 ug/L	97
32) cis-1,2-Dichloroethene	9.15	96	27456	4.6081 ug/L	91
33) Chloroform	9.35	83	48958	4.7306 ug/L	97
34) 1-Bromopropane	9.47	122	4632	4.9482 ug/L	88
35) Bromochloromethane	9.57	130	17073	4.6807 ug/L	99
36) Tetrahydrofuran	9.60	42	59638	39.6839 ug/L	99
38) 1,1,1-Trichloroethane	9.85	97	48123	4.8983 ug/L	100
39) Cyclohexane	9.88	56	51945	4.5931 ug/L	98
40) 1,1-Dichloropropene	10.04	75	33867	4.6344 ug/L	99
41) Carbon Tetrachloride	10.17	117	47434	5.0851 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	615710	46.3601 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M11841.D 8260WT.M Fri May 13 17:12:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:12:58 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 17:07:56 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	40281	4.6727 ug/L	99
45)	Benzene	10.38	78	94223	4.6151 ug/L	99
46)	Trichloroethene	11.08	130	31195	4.7740 ug/L	96
47)	Methylcyclohexane	11.17	83	35731	4.4100 ug/L	96
48)	1,2-Dichloropropane	11.29	63	25973	4.4921 ug/L	93
49)	1,4-Dioxane	11.56	88	2747	80.2363 ug/L	93
50)	Bromodichloromethane	11.57	83	36997	4.7467 ug/L	99
51)	Dibromomethane	11.65	93	13963	4.5774 ug/L	97
52)	2-Chloroethyl Vinyl Ether	11.84	63	11417	3.7313 ug/L	95
53)	4-Methyl-2-Pentanone	11.87	58	6133	3.2690 ug/L	90
54)	cis-1,3-Dichloropropene	12.17	75	36461	4.5343 ug/L	100
55)	Dimethyl Disulfide	12.42	79	18914	3.7032 ug/L	99
58)	Toluene	12.56	91	107617	4.9467 ug/L	100
59)	Ethyl Methacrylate	12.65	69	21187	4.1021 ug/L	99
60)	trans-1,3-Dichloropropene	12.73	75	32824	4.5778 ug/L	99
61)	1,1,2-Trichloroethane	12.94	97	17791	4.3060 ug/L	98
62)	2-Hexanone	12.86	43	11606	3.4244 ug/L	99
63)	1,3-Dichloropropane	13.21	76	30121	4.5460 ug/L	97
64)	Tetrachloroethene	13.33	164	24241	4.8819 ug/L	95
65)	Dibromochloromethane	13.59	129	27989	4.7024 ug/L	95
66)	1,2-Dibromoethane	13.82	107	18147	4.4382 ug/L	96
67)	1-Chlorohexane	13.89	91	33195	4.6591 ug/L	97
68)	Chlorobenzene	14.29	112	79059	4.9583 ug/L	98
69)	1,1,1,2-Tetrachloroethane	14.32	131	31047	4.8956 ug/L	97
70)	Ethylbenzene	14.31	106	39304	4.8168 ug/L	95
71)	m-,p-Xylene	14.39	106	95751	9.7273 ug/L	95
72)	o-Xylene	14.92	106	45759	4.7228 ug/L	96
73)	Styrene	14.95	104	77900	4.8227 ug/L	98
74)	Bromoform	15.43	173	15663	4.1856 ug/L	97
75)	Isopropylbenzene	15.31	105	123883	4.9827 ug/L	99
77)	1,1,2,2-Tetrachloroethane	15.51	83	18105	4.4049 ug/L	100
79)	1,2,3-Trichloropropane	15.70	110	6717	4.7266 ug/L	85
80)	trans-1,4-Dichloro-2-Buten	15.74	53	6067	3.6507 ug/L	69
81)	n-Propylbenzene	15.79	91	143972	5.2435 ug/L	99
82)	Bromobenzene	15.92	156	37345	4.9800 ug/L	93
83)	1,3,5-Trimethylbenzene	15.95	105	106030	5.0309 ug/L	100
84)	2-Chlorotoluene	16.05	91	99279	4.9734 ug/L	100
85)	4-Chlorotoluene	16.09	91	88275	5.1992 ug/L	98
86)	a-Methylstyrene	16.34	118	53766	4.7153 ug/L	98
87)	tert-Butylbenzene	16.39	134	23868	5.2956 ug/L	97
88)	1,2,4-Trimethylbenzene	16.44	105	112072	5.2401 ug/L	99
89)	sec-Butylbenzene	16.65	105	129249	5.1810 ug/L	99
90)	p-Isopropyltoluene	16.79	119	119605	5.2524 ug/L	98
91)	1,3-Dichlorobenzene	16.98	146	71265	5.0271 ug/L	99
92)	1,4-Dichlorobenzene	17.10	146	72437	5.0122 ug/L	96
93)	n-Butylbenzene	17.28	91	100062	4.9277 ug/L	99
94)	1,2-Dichlorobenzene	17.57	146	64925	4.9520 ug/L	98
95)	1,2-Dibromo-3-Chloropropan	18.49	75	3875	4.6567 ug/L	87
96)	1,2,4-Trichlorobenzene	19.55	180	46664	4.8629 ug/L	97
97)	Hexachlorobutadiene	19.69	225	20419	5.1319 ug/L	96
98)	Naphthalene	19.90	128	83612	4.4869 ug/L	99
99)	1,2,3-Trichlorobenzene	20.19	180	40714	4.5323 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M11841.D 8260WT.M Fri May 13 17:12:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:12 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 17:07:56 2016
Response via : Initial Calibration

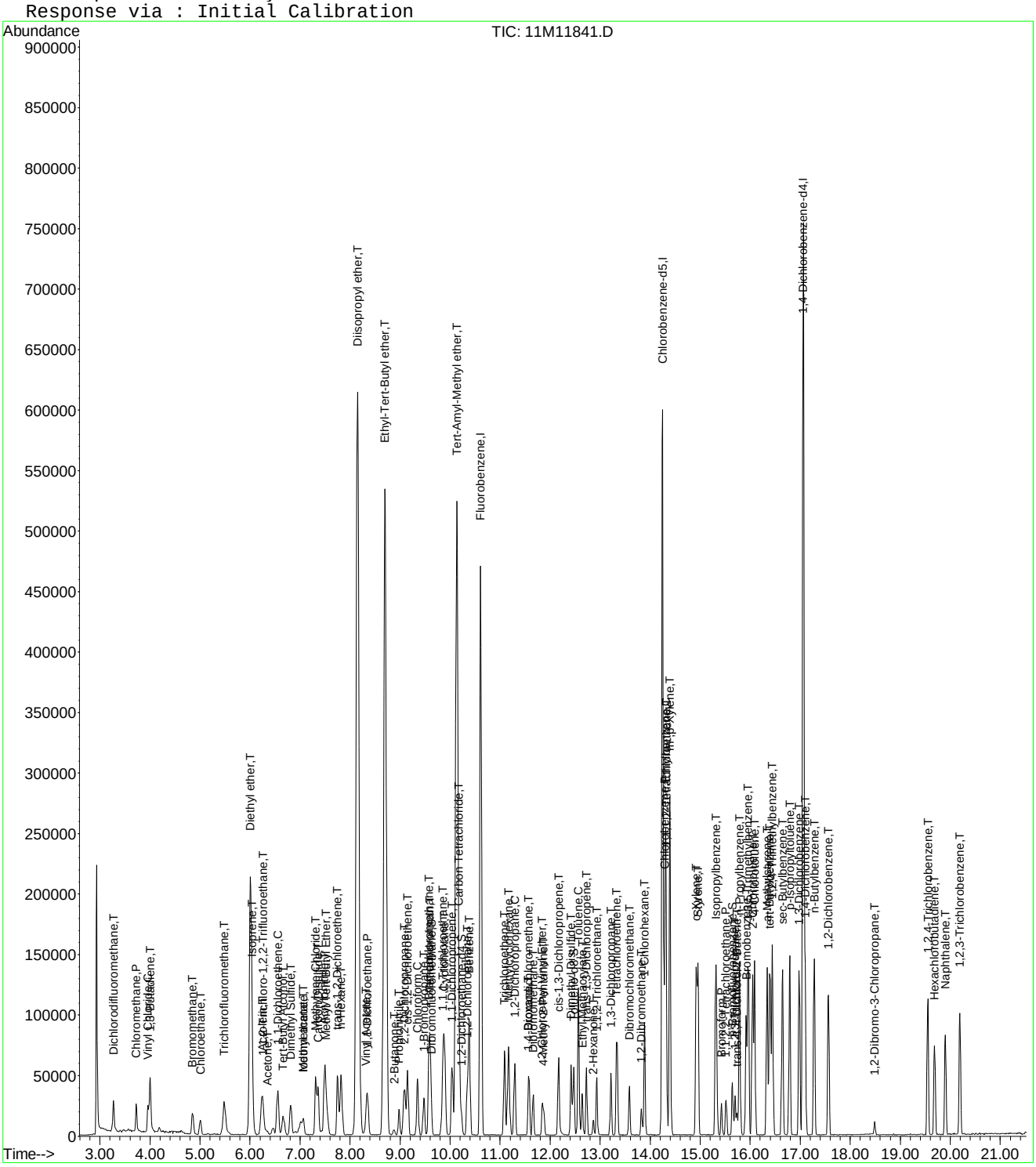

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.1584	16.8	100	0.00
3	P	Chloromethane	5.0000	4.6027	7.9	100	0.00
4	C	Vinyl Chloride	5.0000	4.6895	6.2	100	0.00
5	T	1,3-Butadiene	5.0000	4.6702	6.6	100	0.00
6	T	Bromomethane	5.0000	4.5915	8.2	100	0.00
7	T	Chloroethane	5.0000	4.5105	9.8	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.7781	4.4	100	0.00
9	T	Diethyl ether	50.0000	50.8371	-1.7	100	0.00
10	T	Isoprene	5.0000	4.6688	6.6	100	0.00
11	T	Acrolein	25.0000	24.7297	1.1	100	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.6385	7.2	100	0.01
13	T	Acetone	5.0000	5.3120	-6.2	100	0.01
14	C	1,1-Dichloroethene	5.0000	4.6835	6.3	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	102.0360	-2.0	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.6223	7.6	100	0.00
17	T	Iodomethane	5.0000	3.9124	21.8	100	0.00
18	T	Methyl acetate	5.0000	7.5474	-50.9#	100	0.00
19	T	Methylene Chloride	5.0000	4.8539	2.9	100	0.00
20	T	Carbon Disulfide	5.0000	4.6615	6.8	100	0.00
21	T	Acrylonitrile	25.0000	23.4049	6.4	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.7747	4.5	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.5182	9.6	100	0.00
24	T	n-Hexane	5.0000	4.4700	10.6	100	0.00
25	T	Diisopropyl ether	50.0000	51.4154	-2.8	100	0.00
26	T	Vinyl Acetate	5.0000	5.1698	-3.4	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.9658	0.7	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	51.3996	-2.8	100	0.00
29	T	2-Butanone	5.0000	4.4190	11.6	100	0.01
30	T	Propionitrile	50.0000	48.8210	2.4	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.9614	0.8	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.8145	3.7	100	0.00
33	C	Chloroform	5.0000	4.8039	3.9	100	0.00
34	T	1-Bromopropane	5.0000	5.1449	-2.9	100	0.00
35	T	Bromochloromethane	5.0000	5.0410	-0.8	100	0.00
36	T	Tetrahydrofuran	50.0000	46.0861	7.8	100	0.00
37	S	Dibromofluoromethane	2.5000	2.4302	2.8	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.7984	4.0	100	0.00
39	T	Cyclohexane	5.0000	4.7526	4.9	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.7295	5.4	100	0.00
41	T	Carbon Tetrachloride	5.0000	4.8435	3.1	100	-0.01
42	T	Tert-Amyl-Methyl ether	50.0000	50.6462	-1.3	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.5650	-2.6	100	0.00
44	T	1,2-Dichloroethane	5.0000	4.8665	2.7	100	0.00
45	T	Benzene	5.0000	4.8065	3.9	100	0.00
46	T	Trichloroethene	5.0000	4.8959	2.1	100	-0.01
47	T	Methylcyclohexane	5.0000	4.5439	9.1	100	0.00
48	C	1,2-Dichloropropane	5.0000	4.7864	4.3	100	0.00
49	T	1,4-Dioxane	100.0000	102.6541	-2.7	100	0.01
50	T	Bromodichloromethane	5.0000	4.8566	2.9	100	0.00
51	T	Dibromomethane	5.0000	4.9379	1.2	100	0.00
52	T	2-Chloroethyl Vinyl Ether	5.0000	4.2689	14.6	100	0.00
53	T	4-Methyl-2-Pentanone	5.0000	4.0658	18.7	100	0.00
54	T	cis-1,3-Dichloropropene	5.0000	4.7853	4.3	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	5.0000	4.1252	17.5	100	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	2.5000	2.5163	-0.7	100	0.00
58	C	Toluene	5.0000	5.0124	-0.2	100	0.00
59	T	Ethyl Methacrylate	5.0000	4.6214	7.6	100	0.00
60	T	trans-1,3-Dichloropropene	5.0000	4.7629	4.7	100	0.00
61	T	1,1,2-Trichloroethane	5.0000	4.6730	6.5	100	0.00
62	T	2-Hexanone	5.0000	4.1507	17.0	100	0.00
63	T	1,3-Dichloropropane	5.0000	4.9267	1.5	100	0.00
64	T	Tetrachloroethene	5.0000	4.8551	2.9	100	-0.01
65	T	Dibromochloromethane	5.0000	4.8199	3.6	100	0.00
66	T	1,2-Dibromoethane	5.0000	4.7575	4.8	100	0.00
67	T	1-Chlorohexane	5.0000	4.6895	6.2	100	0.00
68	P	Chlorobenzene	5.0000	5.0264	-0.5	100	0.00
69	T	1,1,1,2-Tetrachloroethane	5.0000	4.8783	2.4	100	0.00
70	C	Ethylbenzene	5.0000	4.8732	2.5	100	0.00
71	T	m-,p-Xylene	10.0000	9.7654	2.3	100	0.00
72	T	o-Xylene	5.0000	4.7954	4.1	100	0.00
73	T	Styrene	5.0000	4.9411	1.2	100	0.00
74	P	Bromoform	5.0000	4.4503	11.0	100	0.00
75	T	Isopropylbenzene	5.0000	4.9091	1.8	100	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	5.0000	4.7624	4.8	100	-0.01
78	S	p-Bromofluorobenzene	2.5000	2.5432	-1.7	100	0.00
79	T	1,2,3-Trichloropropane	5.0000	5.0393	-0.8	100	0.00
80	T	trans-1,4-Dichloro-2-Butene	5.0000	4.0050	19.9	100	0.00
81	T	n-Propylbenzene	5.0000	5.0923	-1.8	100	0.00
82	T	Bromobenzene	5.0000	5.0338	-0.7	100	0.00
83	T	1,3,5-Trimethylbenzene	5.0000	4.9145	1.7	100	-0.01
84	T	2-Chlorotoluene	5.0000	5.0134	-0.3	100	0.00
85	T	4-Chlorotoluene	5.0000	4.9765	0.5	100	0.00
86	T	a-Methylstyrene	5.0000	4.7239	5.5	100	0.00
87	T	tert-Butylbenzene	5.0000	5.2217	-4.4	100	-0.01
88	T	1,2,4-Trimethylbenzene	5.0000	5.1012	-2.0	100	0.00
89	T	sec-Butylbenzene	5.0000	4.9892	0.2	100	0.00
90	T	p-Isopropyltoluene	5.0000	5.0265	-0.5	100	0.00
91	T	1,3-Dichlorobenzene	5.0000	4.9737	0.5	100	0.00
92	T	1,4-Dichlorobenzene	5.0000	4.9875	0.2	100	0.00
93	T	n-Butylbenzene	5.0000	4.7722	4.6	100	0.00
94	T	1,2-Dichlorobenzene	5.0000	4.9741	0.5	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	5.0000	5.1051	-2.1	100	0.00
96	T	1,2,4-Trichlorobenzene	5.0000	4.8858	2.3	100	0.00
97	T	Hexachlorobutadiene	5.0000	4.8528	2.9	100	0.00
98	T	Naphthalene	5.0000	4.7164	5.7	100	0.00
99	T	1,2,3-Trichlorobenzene	5.0000	4.6448	7.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11841.D 8260WT.M Sat May 14 18:48:20 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11842.D Vial: 7
Acq On : 13 May 2016 17:19 Operator: JDS
Sample : WG568769-07 20ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:53 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	512017	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	433937	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	255524	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	58089	10.3664 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 41.48%#		
43) 1,2-Dichloroethane-d4	10.23	65	66804	10.4555 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 41.84%#		
57) Toluene-d8	12.47	98	193532	10.2645 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 41.04%#		
78) p-Bromofluorobenzene	15.64	95	81186	10.3070 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 41.24%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	176636	22.0179 ug/L	99
3) Chloromethane	3.72	50	126901	19.7510 ug/L	98
4) Vinyl Chloride	3.96	62	109592	20.5394 ug/L	98
5) 1,3-Butadiene	4.00	54	116317	21.9237 ug/L	96
6) Bromomethane	4.85	94	73878	20.1380 ug/L	93
7) Chloroethane	5.00	64	71103	20.7401 ug/L	100
8) Trichlorofluoromethane	5.49	101	225913	21.2425 ug/L	99
9) Diethyl ether	6.01	59	321203	81.6650 ug/L	99
10) Isoprene	6.04	67	135641	20.6925 ug/L	98
11) Acrolein	6.24	56	19366	37.8284 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	109792	21.2757 ug/L	99
13) Acetone	6.34	43	27399	22.5356 ug/L	96
14) 1,1-Dichloroethene	6.56	61	201658	21.5139 ug/L	98
15) Tert-Butyl Alcohol	6.67	59	60081	178.6532 ug/L	99
16) Dimethyl Sulfide	6.81	62	75759	20.2383 ug/L	97
17) Iodomethane	7.06	142	67280	17.2594 ug/L	97
18) Methyl acetate	7.07	43	87945	22.4983 ug/L	96
19) Methylene Chloride	7.31	84	99453	20.5013 ug/L	100
20) Carbon Disulfide	7.36	76	327043	20.8410 ug/L	100
21) Acrylonitrile	7.49	53	69618	42.7070 ug/L	95
22) Methyl Tert Butyl Ether	7.52	73	266288	22.0086 ug/L	99
23) trans-1,2-Dichloroethene	7.75	96	107858	20.7912 ug/L	99
24) n-Hexane	7.82	57	184135	21.3111 ug/L	99
25) Diisopropyl ether	8.15	45	1729257	80.2062 ug/L	99
26) Vinyl Acetate	8.31	43	160029	20.6235 ug/L	99
27) 1,1-Dichloroethane	8.34	63	218994	21.0387 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1435318	81.7933 ug/L	100
29) 2-Butanone	8.87	43	39878	21.6958 ug/L	99
30) Propionitrile	8.97	54	47221	87.7149 ug/L	99
31) 2,2-Dichloropropane	9.09	77	166427	20.4352 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	120620	21.0877 ug/L	99
33) Chloroform	9.35	83	208615	20.4085 ug/L	99
34) 1-Bromopropane	9.48	122	19153	19.2424 ug/L	96
35) Bromochloromethane	9.57	130	77189	22.7226 ug/L	99
36) Tetrahydrofuran	9.60	42	109362	84.2581 ug/L	100
38) 1,1,1-Trichloroethane	9.85	97	210871	20.9631 ug/L	98
39) Cyclohexane	9.88	56	235071	21.4428 ug/L	99
40) 1,1-Dichloropropene	10.04	75	151682	21.1188 ug/L	99
41) Carbon Tetrachloride	10.17	117	212111	21.5941 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	1001790	82.1572 ug/L	100

(#) = qualifier out of range (m) = manual integration
11M11842.D 8260WT.M Sat May 14 18:50:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11842.D Vial: 7
Acq On : 13 May 2016 17:19 Operator: JDS
Sample : WG568769-07 20ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:53 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	180438	21.7339	ug/L	99
45)	Benzene	10.38	78	407777	20.7394	ug/L	100
46)	Trichloroethene	11.08	130	132094	20.6692	ug/L	99
47)	Methylcyclohexane	11.17	83	168355	21.3455	ug/L	98
48)	1,2-Dichloropropane	11.29	63	112875	20.7388	ug/L	99
49)	1,4-Dioxane	11.56	88	4948	165.8209	ug/L	99
50)	Bromodichloromethane	11.57	83	163762	21.4329	ug/L	98
51)	Dibromomethane	11.65	93	61028	21.5174	ug/L	98
52)	2-Chloroethyl Vinyl Ether	11.84	63	56664	21.1238	ug/L	99
53)	4-Methyl-2-Pentanone	11.87	58	32621	21.5609	ug/L	99
54)	cis-1,3-Dichloropropene	12.17	75	166399	21.7735	ug/L	100
55)	Dimethyl Disulfide	12.42	79	93808	20.3984	ug/L	99
58)	Toluene	12.56	91	467769	21.2936	ug/L	99
59)	Ethyl Methacrylate	12.64	69	103892	22.1484	ug/L	98
60)	trans-1,3-Dichloropropene	12.73	75	155661	22.0759	ug/L	100
61)	1,1,2-Trichloroethane	12.94	97	85297	21.8971	ug/L	100
62)	2-Hexanone	12.86	43	62113	21.7109	ug/L	99
63)	1,3-Dichloropropane	13.21	76	137448	21.9726	ug/L	98
64)	Tetrachloroethene	13.34	164	106368	20.8217	ug/L	99
65)	Dibromochloromethane	13.59	129	131143	22.0723	ug/L	99
66)	1,2-Dibromoethane	13.82	107	84381	21.6209	ug/L	99
67)	1-Chlorohexane	13.89	91	153420	21.1830	ug/L	100
68)	Chlorobenzene	14.29	112	338669	21.0446	ug/L	99
69)	1,1,1,2-Tetrachloroethane	14.32	131	134571	20.6660	ug/L	98
70)	Ethylbenzene	14.31	106	171752	20.8130	ug/L	97
71)	m-,p-Xylene	14.39	106	419228	41.7882	ug/L	99
72)	o-Xylene	14.92	106	208125	21.3170	ug/L	99
73)	Styrene	14.95	104	353452	21.9116	ug/L	98
74)	Bromoform	15.43	173	78592	21.8247	ug/L	100
75)	Isopropylbenzene	15.31	105	552747	21.4078	ug/L	99
77)	1,1,2,2-Tetrachloroethane	15.52	83	90122	22.6486	ug/L	98
79)	1,2,3-Trichloropropane	15.70	110	30969	20.9562	ug/L	97
80)	trans-1,4-Dichloro-2-Buten	15.74	53	36190	19.3325	ug/L	86
81)	n-Propylbenzene	15.79	91	640711	21.6512	ug/L	100
82)	Bromobenzene	15.92	156	160227	20.6340	ug/L	100
83)	1,3,5-Trimethylbenzene	15.95	105	481759	21.3337	ug/L	100
84)	2-Chlorotoluene	16.05	91	435100	20.9919	ug/L	99
85)	4-Chlorotoluene	16.09	91	391759	21.1004	ug/L	100
86)	a-Methylstyrene	16.34	118	253642	21.2911	ug/L	99
87)	tert-Butylbenzene	16.39	134	101859	21.2903	ug/L	99
88)	1,2,4-Trimethylbenzene	16.44	105	505239	21.9714	ug/L	98
89)	sec-Butylbenzene	16.65	105	586770	21.6398	ug/L	100
90)	p-Isopropyltoluene	16.79	119	539795	21.6735	ug/L	100
91)	1,3-Dichlorobenzene	16.98	146	312832	20.8591	ug/L	99
92)	1,4-Dichlorobenzene	17.10	146	314339	20.6779	ug/L	99
93)	n-Butylbenzene	17.28	91	474312	21.6121	ug/L	99
94)	1,2-Dichlorobenzene	17.57	146	287316	21.0305	ug/L	100
95)	1,2-Dibromo-3-Chloropropan	18.49	75	19607	22.2193	ug/L	89
96)	1,2,4-Trichlorobenzene	19.55	180	212916	21.2982	ug/L	100
97)	Hexachlorobutadiene	19.69	225	91388	20.7507	ug/L	99
98)	Naphthalene	19.90	128	414073	22.3154	ug/L	99
99)	1,2,3-Trichlorobenzene	20.19	180	193437	21.0836	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11842.D Vial: 7
Acq On : 13 May 2016 17:19 Operator: JDS
Sample : WG568769-07 20ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

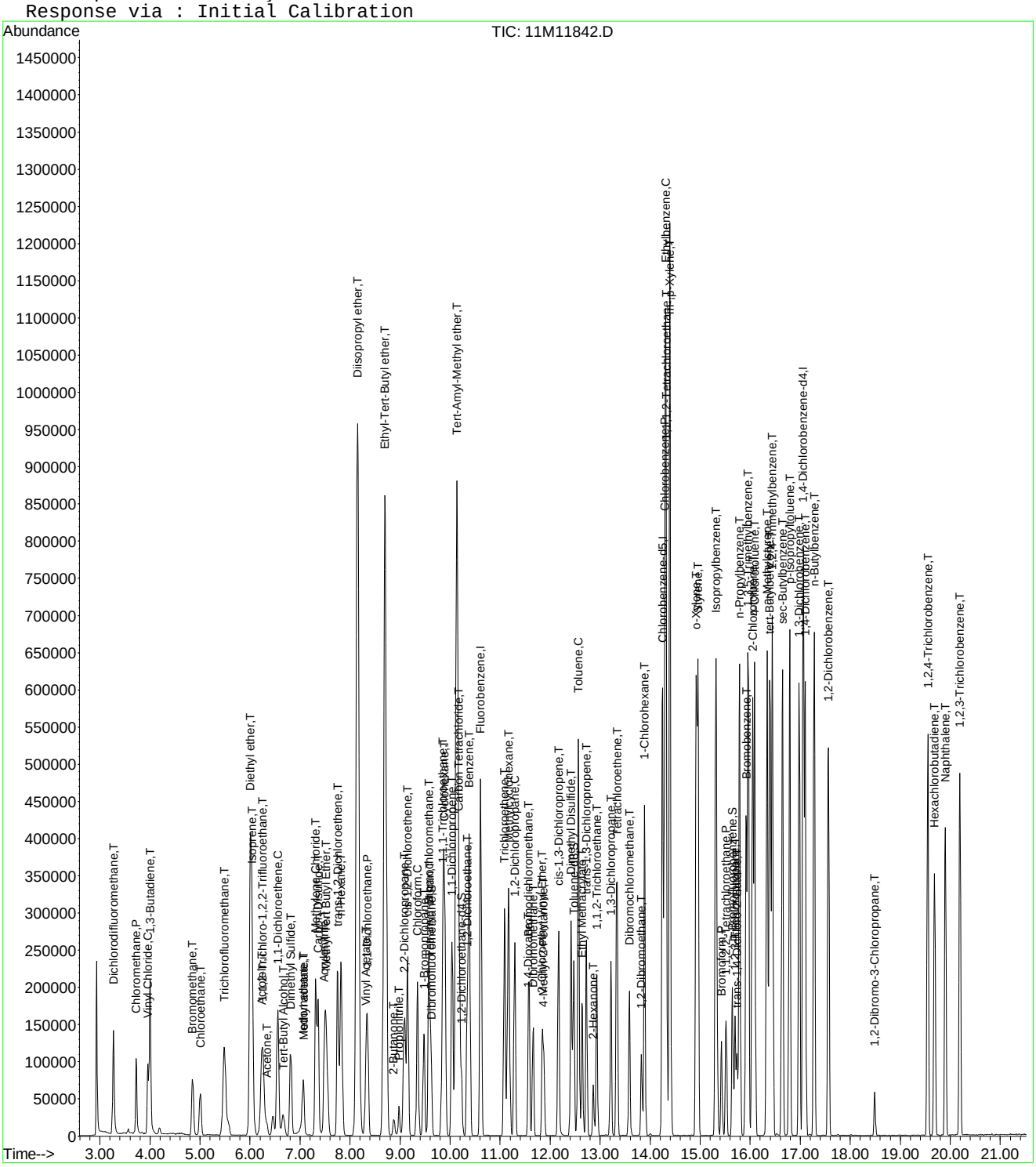

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11843.D Vial: 8
Acq On : 13 May 2016 17:51 Operator: JDS
Sample : WG568769-08 50ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:56 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	521583	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	438582	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	263885	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	139784	24.4879 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.96%		
43) 1,2-Dichloroethane-d4	10.23	65	158200	24.3058 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.24%		
57) Toluene-d8	12.47	98	462969	24.2947 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.16%		
78) p-Bromofluorobenzene	15.64	95	188875	23.2189 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.88%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	416971	51.0228 ug/L	100
3) Chloromethane	3.72	50	287508	43.9273 ug/L	100
4) Vinyl Chloride	3.96	62	261024	48.0232 ug/L	100
5) 1,3-Butadiene	4.00	54	280913	51.9760 ug/L	100
6) Bromomethane	4.85	94	172294	46.1032 ug/L	100
7) Chloroethane	5.00	64	167978	48.0991 ug/L	100
8) Trichlorofluoromethane	5.48	101	519806	47.9806 ug/L	100
9) Diethyl ether	6.01	59	391891	97.8098 ug/L	100
10) Isoprene	6.04	67	331169	49.5943 ug/L	100
11) Acrolein	6.23	56	25228	47.9550 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	255341	48.5730 ug/L	100
13) Acetone	6.34	43	57896	46.7459 ug/L	98
14) 1,1-Dichloroethene	6.56	61	459793	48.1534 ug/L	100
15) Tert-Butyl Alcohol	6.66	59	69395	202.5643 ug/L	100
16) Dimethyl Sulfide	6.81	62	193959	50.8640 ug/L	100
17) Iodomethane	7.06	142	214554	49.3519 ug/L	100
18) Methyl acetate	7.06	43	185465	48.1983 ug/L	100
19) Methylene Chloride	7.31	84	233601	47.2715 ug/L	100
20) Carbon Disulfide	7.36	76	816514	51.0786 ug/L	100
21) Acrylonitrile	7.49	53	84821	51.0789 ug/L	100
22) Methyl Tert Butyl Ether	7.52	73	610666	49.5457 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	252405	47.7624 ug/L	100
24) n-Hexane	7.82	57	449694	51.0913 ug/L	100
25) Diisopropyl ether	8.15	45	2181723	99.3365 ug/L	100
26) Vinyl Acetate	8.31	43	410275	48.2141 ug/L	100
27) 1,1-Dichloroethane	8.34	63	516691	48.7281 ug/L	100
28) Ethyl-Tert-Butyl ether	8.70	59	1783350	99.7625 ug/L	100
29) 2-Butanone	8.87	43	91238	48.7281 ug/L	100
30) Propionitrile	8.97	54	56538	103.0954 ug/L	100
31) 2,2-Dichloropropane	9.09	77	402511	48.5170 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	282222	48.4353 ug/L	100
33) Chloroform	9.35	83	489993	47.0562 ug/L	100
34) 1-Bromopropane	9.48	122	50180	48.4991 ug/L	100
35) Bromochloromethane	9.57	130	179921	51.9932 ug/L	100
36) Tetrahydrofuran	9.60	42	127999	96.8083 ug/L	100
38) 1,1,1-Trichloroethane	9.85	97	497667	48.5667 ug/L	100
39) Cyclohexane	9.88	56	575045	51.4928 ug/L	100
40) 1,1-Dichloropropene	10.04	75	353148	48.2674 ug/L	100
41) Carbon Tetrachloride	10.18	117	493225	49.2921 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	1227500	98.8215 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11843.D Vial: 8
Acq On : 13 May 2016 17:51 Operator: JDS
Sample : WG568769-08 50ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:56 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	419000	49.5434	ug/L	100
45)	Benzene	10.38	78	947514	47.3064	ug/L	100
46)	Trichloroethene	11.09	130	307211	47.1888	ug/L	100
47)	Methylcyclohexane	11.17	83	418631	52.1043	ug/L	100
48)	1,2-Dichloropropane	11.29	63	268423	48.4136	ug/L	100
49)	1,4-Dioxane	11.55	88	5866	189.1665	ug/L	100
50)	Bromodichloromethane	11.57	83	385292	49.5015	ug/L	100
51)	Dibromomethane	11.65	93	142910	49.4635	ug/L	100
52)	2-Chloroethyl Vinyl Ether	11.84	63	133225	48.7541	ug/L	100
53)	4-Methyl-2-Pentanone	11.87	58	75720	49.1295	ug/L	100
54)	cis-1,3-Dichloropropene	12.17	75	394857	50.7199	ug/L	100
55)	Dimethyl Disulfide	12.42	79	236984	50.5867	ug/L	100
58)	Toluene	12.56	91	1095397	49.3360	ug/L	100
59)	Ethyl Methacrylate	12.65	69	249821	52.6944	ug/L	100
60)	trans-1,3-Dichloropropene	12.73	75	366443	51.4187	ug/L	100
61)	1,1,2-Trichloroethane	12.93	97	194150	49.3135	ug/L	100
62)	2-Hexanone	12.86	43	144364	49.9264	ug/L	100
63)	1,3-Dichloropropane	13.21	76	316783	50.1049	ug/L	100
64)	Tetrachloroethene	13.34	164	251037	48.6205	ug/L	100
65)	Dibromochloromethane	13.59	129	310662	51.7330	ug/L	100
66)	1,2-Dibromoethane	13.82	107	196704	49.8676	ug/L	100
67)	1-Chlorohexane	13.89	91	376690	51.4596	ug/L	100
68)	Chlorobenzene	14.29	112	797442	49.0276	ug/L	100
69)	1,1,1,2-Tetrachloroethane	14.32	131	325801	49.5033	ug/L	100
70)	Ethylbenzene	14.31	106	408749	49.0078	ug/L	100
71)	m-,p-Xylene	14.39	106	996141	98.2427	ug/L	100
72)	o-Xylene	14.92	106	492043	49.8632	ug/L	100
73)	Styrene	14.95	104	838125	51.4077	ug/L	100
74)	Bromoform	15.43	173	184100	50.5823	ug/L	100
75)	Isopropylbenzene	15.31	105	1309383	50.1751	ug/L	100
77)	1,1,2,2-Tetrachloroethane	15.52	83	208930	50.8426	ug/L	100
79)	1,2,3-Trichloropropane	15.70	110	72411	46.9859	ug/L	100
80)	trans-1,4-Dichloro-2-Buten	15.74	53	94075	47.5347	ug/L	100
81)	n-Propylbenzene	15.79	91	1522917	49.8325	ug/L	100
82)	Bromobenzene	15.92	156	379178	47.2834	ug/L	100
83)	1,3,5-Trimethylbenzene	15.96	105	1143246	49.0221	ug/L	100
84)	2-Chlorotoluene	16.05	91	1021921	47.7415	ug/L	100
85)	4-Chlorotoluene	16.09	91	930690	48.5394	ug/L	100
86)	a-Methylstyrene	16.34	118	649847	52.8208	ug/L	100
87)	tert-Butylbenzene	16.40	134	241955	48.9705	ug/L	100
88)	1,2,4-Trimethylbenzene	16.44	105	1178963	49.6454	ug/L	100
89)	sec-Butylbenzene	16.65	105	1390388	49.6522	ug/L	100
90)	p-Isopropyltoluene	16.79	119	1282252	49.8529	ug/L	100
91)	1,3-Dichlorobenzene	16.98	146	737967	47.6473	ug/L	100
92)	1,4-Dichlorobenzene	17.10	146	740977	47.1987	ug/L	100
93)	n-Butylbenzene	17.28	91	1126170	49.6883	ug/L	100
94)	1,2-Dichlorobenzene	17.57	146	684016	48.4812	ug/L	100
95)	1,2-Dibromo-3-Chloropropan	18.49	75	42848	46.3023	ug/L	100
96)	1,2,4-Trichlorobenzene	19.55	180	512927	49.6830	ug/L	100
97)	Hexachlorobutadiene	19.69	225	219129	48.1793	ug/L	100
98)	Naphthalene	19.90	128	962852	50.2463	ug/L	100
99)	1,2,3-Trichlorobenzene	20.19	180	453828	47.8975	ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11843.D Vial: 8
Acq On : 13 May 2016 17:51 Operator: JDS
Sample : WG568769-08 50ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

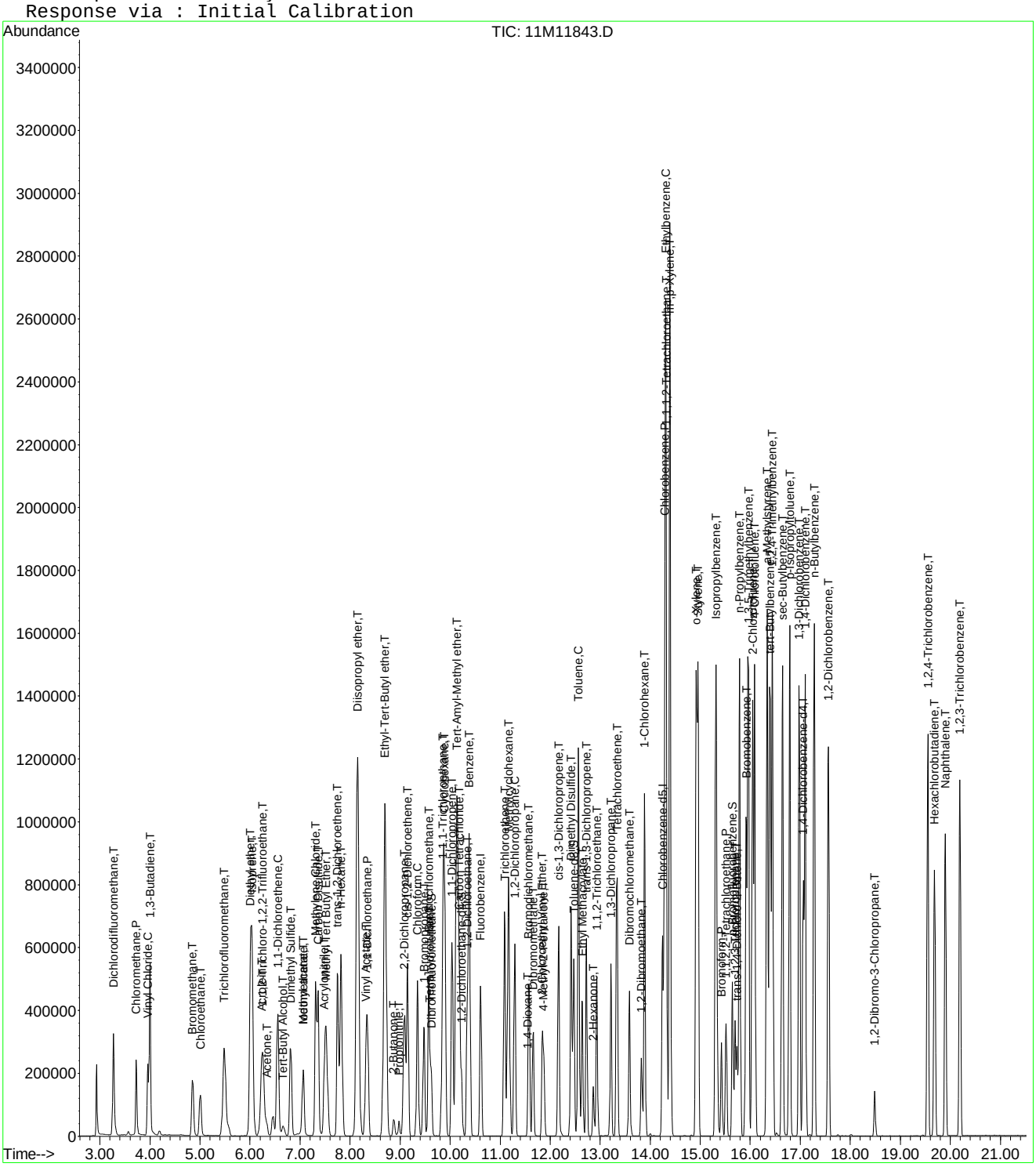

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11844.D Vial: 9
Acq On : 13 May 2016 18:22 Operator: JDS
Sample : WG568769-09 100ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:57 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	541540	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	458522	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	275719	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	307700	51.9175 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 207.68%#		
43) 1,2-Dichloroethane-d4	10.23	65	345779	51.1676 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 204.68%#		
57) Toluene-d8	12.47	98	1011334	50.7627 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 203.04%#		
78) p-Bromofluorobenzene	15.64	95	423157	49.7872 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 199.16%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	918088	108.2020 ug/L	100
3) Chloromethane	3.72	50	641242	94.3625 ug/L	99
4) Vinyl Chloride	3.95	62	586615	103.9481 ug/L	100
5) 1,3-Butadiene	3.99	54	571156	101.7838 ug/L	99
6) Bromomethane	4.85	94	394826	101.7560 ug/L	99
7) Chloroethane	5.00	64	370541	102.1913 ug/L	99
8) Trichlorofluoromethane	5.48	101	1135647	100.9627 ug/L	98
9) Diethyl ether	6.01	59	836495	201.0821 ug/L	99
10) Isoprene	6.04	67	699724	100.9257 ug/L	100
11) Acrolein	6.24	56	55228	99.4421 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	545013	99.8560 ug/L	100
13) Acetone	6.34	43	123799	96.2731 ug/L	95
14) 1,1-Dichloroethene	6.56	61	1004294	101.3022 ug/L	100
15) Tert-Butyl Alcohol	6.66	59	148134	416.4687 ug/L	98
16) Dimethyl Sulfide	6.81	62	401237	101.3432 ug/L	100
17) Iodomethane	7.06	142	471112	102.3553 ug/L	100
18) Methyl acetate	7.07	43	381031	98.0957 ug/L	99
19) Methylene Chloride	7.31	84	501609	97.7649 ug/L	99
20) Carbon Disulfide	7.36	76	1695322	102.1458 ug/L	100
21) Acrylonitrile	7.49	53	184461	106.9881 ug/L	99
22) Methyl Tert Butyl Ether	7.52	73	1312901	102.5951 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	542907	98.9478 ug/L	98
24) n-Hexane	7.82	57	921942	100.8849 ug/L	99
25) Diisopropyl ether	8.15	45	4599625	201.7086 ug/L	99
26) Vinyl Acetate	8.31	43	855488	94.3763 ug/L	99
27) 1,1-Dichloroethane	8.34	63	1111115	100.9254 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	3780769	203.7060 ug/L	100
29) 2-Butanone	8.87	43	198511	102.1130 ug/L	100
30) Propionitrile	8.98	54	118699	208.4678 ug/L	97
31) 2,2-Dichloropropane	9.09	77	914695	106.1904 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	606774	100.2977 ug/L	99
33) Chloroform	9.35	83	1053766	97.4685 ug/L	100
34) 1-Bromopropane	9.48	122	106914	98.8615 ug/L	100
35) Bromochloromethane	9.57	130	387239	107.7795 ug/L	100
36) Tetrahydrofuran	9.60	42	270148	196.7890 ug/L	99
38) 1,1,1-Trichloroethane	9.85	97	1088263	102.2884 ug/L	99
39) Cyclohexane	9.88	56	1213186	104.6320 ug/L	100
40) 1,1-Dichloropropene	10.04	75	775674	102.1101 ug/L	98
41) Carbon Tetrachloride	10.18	117	1074698	103.4456 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	2619501	203.1147 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11844.D Vial: 9
Acq On : 13 May 2016 18:22 Operator: JDS
Sample : WG568769-09 100ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:57 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	895394	101.9714 ug/L	100
45)	Benzene	10.38	78	2041856	98.1867 ug/L	100
46)	Trichloroethene	11.08	130	677193	100.1861 ug/L	99
47)	Methylcyclohexane	11.17	83	867487	103.9915 ug/L	100
48)	1,2-Dichloropropane	11.29	63	580562	100.8530 ug/L	98
49)	1,4-Dioxane	11.56	88	13651	395.0901 ug/L	100
50)	Bromodichloromethane	11.57	83	837797	103.6717 ug/L	99
51)	Dibromomethane	11.65	93	315786	105.2707 ug/L	99
52)	2-Chloroethyl Vinyl Ether	11.84	63	293822	103.5626 ug/L	100
53)	4-Methyl-2-Pentanone	11.87	58	164890	103.0430 ug/L	98
54)	cis-1,3-Dichloropropene	12.17	75	854611	105.7305 ug/L	99
55)	Dimethyl Disulfide	12.42	79	505463	103.9202 ug/L	99
58)	Toluene	12.56	91	2361378	101.7300 ug/L	100
59)	Ethyl Methacrylate	12.65	69	529740	106.8782 ug/L	98
60)	trans-1,3-Dichloropropene	12.73	75	793063	106.4420 ug/L	99
61)	1,1,2-Trichloroethane	12.94	97	418327	101.6330 ug/L	99
62)	2-Hexanone	12.86	43	314588	104.0648 ug/L	99
63)	1,3-Dichloropropane	13.21	76	685844	103.7610 ug/L	100
64)	Tetrachloroethene	13.34	164	550335	101.9528 ug/L	99
65)	Dibromochloromethane	13.59	129	681591	108.5659 ug/L	100
66)	1,2-Dibromoethane	13.82	107	427945	103.7729 ug/L	99
67)	1-Chlorohexane	13.89	91	807177	105.4730 ug/L	98
68)	Chlorobenzene	14.29	112	1705646	100.3046 ug/L	99
69)	1,1,1,2-Tetrachloroethane	14.32	131	704959	102.4557 ug/L	100
70)	Ethylbenzene	14.31	106	883839	101.3614 ug/L	99
71)	m-,p-Xylene	14.39	106	2123651	200.3333 ug/L	98
72)	o-Xylene	14.92	106	1053682	102.1356 ug/L	100
73)	Styrene	14.95	104	1807222	106.0282 ug/L	99
74)	Bromoform	15.43	173	412378	108.3755 ug/L	100
75)	Isopropylbenzene	15.31	105	2813193	103.1127 ug/L	99
77)	1,1,2,2-Tetrachloroethane	15.52	83	454052	105.7501 ug/L	99
79)	1,2,3-Trichloropropane	15.70	110	156532	96.8210 ug/L	100
80)	trans-1,4-Dichloro-2-Buten	15.74	53	203327	97.5343 ug/L	96
81)	n-Propylbenzene	15.79	91	3285915	102.9061 ug/L	99
82)	Bromobenzene	15.92	156	828973	98.9359 ug/L	99
83)	1,3,5-Trimethylbenzene	15.96	105	2483230	101.9102 ug/L	100
84)	2-Chlorotoluene	16.05	91	2208423	98.7437 ug/L	100
85)	4-Chlorotoluene	16.09	91	2020827	100.8710 ug/L	100
86)	a-Methylstyrene	16.34	118	1361545	105.9190 ug/L	99
87)	tert-Butylbenzene	16.40	134	532522	103.1540 ug/L	98
88)	1,2,4-Trimethylbenzene	16.44	105	2546912	102.6457 ug/L	100
89)	sec-Butylbenzene	16.65	105	3003570	102.6569 ug/L	99
90)	p-Isopropyltoluene	16.79	119	2763313	102.8241 ug/L	99
91)	1,3-Dichlorobenzene	16.98	146	1600684	98.9134 ug/L	100
92)	1,4-Dichlorobenzene	17.10	146	1605475	97.8762 ug/L	100
93)	n-Butylbenzene	17.28	91	2452438	103.5609 ug/L	100
94)	1,2-Dichlorobenzene	17.57	146	1481276	100.4827 ug/L	100
95)	1,2-Dibromo-3-Chloropropan	18.49	75	95062	97.5959 ug/L	99
96)	1,2,4-Trichlorobenzene	19.55	180	1100416	102.0133 ug/L	100
97)	Hexachlorobutadiene	19.69	225	486893	102.4572 ug/L	100
98)	Naphthalene	19.90	128	2071229	103.4477 ug/L	100
99)	1,2,3-Trichlorobenzene	20.19	180	980181	99.0092 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M11844.D 8260WT.M Sat May 14 18:50:58 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11844.D Vial: 9
Acq On : 13 May 2016 18:22 Operator: JDS
Sample : WG568769-09 100ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

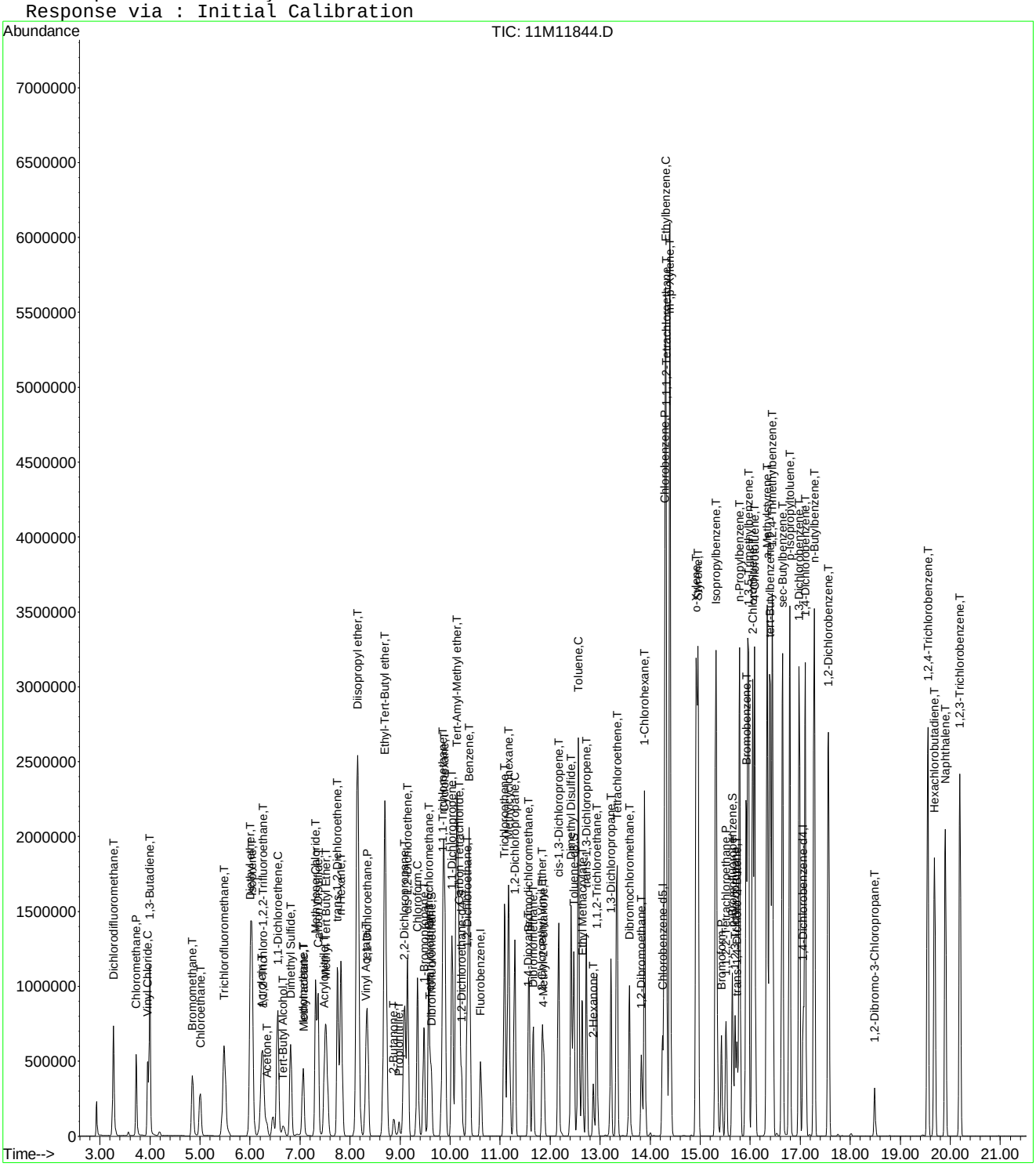

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11845.D Vial: 10
Acq On : 13 May 2016 18:54 Operator: JDS
Sample : WG568769-10 200ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:59 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	552905	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	473364	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	274188	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	629894	104.0960 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 416.40%#		
43) 1,2-Dichloroethane-d4	10.23	65	684792	99.2511 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 397.00%#		
57) Toluene-d8	12.47	98	2068111	100.5516 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 402.20%#		
78) p-Bromofluorobenzene	15.64	95	864999	102.3411 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 409.36%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	1843265	212.7741 ug/L	99
3) Chloromethane	3.72	50	1346993	194.1434 ug/L	100
4) Vinyl Chloride	3.95	62	1199147	208.1209 ug/L	100
5) 1,3-Butadiene	3.99	54	1131910	197.5677 ug/L	97
6) Bromomethane	4.85	94	859963	217.0771 ug/L	100
7) Chloroethane	5.00	64	764060	206.3883 ug/L	100
8) Trichlorofluoromethane	5.48	101	2275404	198.1327 ug/L	100
9) Diethyl ether	6.03	59	2592	0.6103 ug/L #	21
10) Isoprene	6.04	67	1435794	202.8369 ug/L	97
11) Acrolein	6.25	56	3061	6.8231 ug/L	88
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	1123889	201.6837 ug/L	99
13) Acetone	6.34	43	254053	193.5049 ug/L	96
14) 1,1-Dichloroethene	6.56	61	2040432	201.5858 ug/L	99
15) Tert-Butyl Alcohol	6.67	59	7729	21.2829 ug/L #	82
16) Dimethyl Sulfide	6.81	62	830179	205.3739 ug/L	99
17) Iodomethane	7.06	142	969857	206.1133 ug/L	99
18) Methyl acetate	7.07	43	749575	196.5068 ug/L	97
19) Methylene Chloride	7.31	84	1035656	197.7029 ug/L	97
20) Carbon Disulfide	7.36	76	3459748	204.1704 ug/L	99
21) Acrylonitrile	7.52	53	35662	20.2589 ug/L #	39
22) Methyl Tert Butyl Ether	7.52	73	2706665	207.1616 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	1121963	200.2808 ug/L	99
24) n-Hexane	7.82	57	1873652	200.8128 ug/L	99
25) Diisopropyl ether	8.16	45	16567	0.7116 ug/L #	87
26) Vinyl Acetate	8.31	43	1904053	202.8645 ug/L	100
27) 1,1-Dichloroethane	8.34	63	2261904	201.2314 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	9063	0.4783 ug/L	90
29) 2-Butanone	8.87	43	407543	205.3288 ug/L	99
30) Propionitrile	8.97	54	4182	7.1938 ug/L #	60
31) 2,2-Dichloropropane	9.09	77	1850091	210.3692 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	1257477	203.5843 ug/L	100
33) Chloroform	9.35	83	2160999	195.7739 ug/L	100
34) 1-Bromopropane	9.48	122	222798	201.1267 ug/L	98
35) Bromochloromethane	9.57	130	798076	217.5612 ug/L	99
36) Tetrahydrofuran	9.60	42	9110	6.4998 ug/L	97
38) 1,1,1-Trichloroethane	9.85	97	2208198	203.2875 ug/L	99
39) Cyclohexane	9.88	56	2467804	208.4625 ug/L	100
40) 1,1-Dichloropropene	10.04	75	1587009	204.6205 ug/L	99
41) Carbon Tetrachloride	10.18	117	2174730	205.0269 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	6538	0.4965 ug/L #	83

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11845.D Vial: 10
Acq On : 13 May 2016 18:54 Operator: JDS
Sample : WG568769-10 200ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:59 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
44)	1,2-Dichloroethane	10.34	62	1808450	201.7209 ug/L		99
45)	Benzene	10.38	78	4119227	194.0096 ug/L		99
46)	Trichloroethene	11.09	130	1367103	198.0963 ug/L		100
47)	Methylcyclohexane	11.17	83	1789256	210.0812 ug/L		99
48)	1,2-Dichloropropane	11.29	63	1196100	203.5109 ug/L		99
49)	1,4-Dioxane	11.57	88	2656	94.1370 ug/L	#	31
50)	Bromodichloromethane	11.58	83	1721733	208.6734 ug/L		99
51)	Dibromomethane	11.66	93	641583	209.4825 ug/L		100
52)	2-Chloroethyl Vinyl Ether	11.84	63	608231	209.9748 ug/L		99
53)	4-Methyl-2-Pentanone	11.87	58	342251	209.4831 ug/L		99
54)	cis-1,3-Dichloropropene	12.17	75	1772737	214.8108 ug/L		100
55)	Dimethyl Disulfide	12.42	79	1052498	211.9395 ug/L		98
58)	Toluene	12.56	91	4699240	196.0993 ug/L		98
59)	Ethyl Methacrylate	12.65	69	1101451	215.2567 ug/L		97
60)	trans-1,3-Dichloropropene	12.73	75	1627488	211.5866 ug/L		99
61)	1,1,2-Trichloroethane	12.93	97	860113	202.4133 ug/L		99
62)	2-Hexanone	12.86	43	651287	208.6888 ug/L		99
63)	1,3-Dichloropropane	13.21	76	1412360	206.9756 ug/L		99
64)	Tetrachloroethene	13.34	164	1133410	203.3874 ug/L		99
65)	Dibromochloromethane	13.59	129	1409248	217.4313 ug/L		99
66)	1,2-Dibromoethane	13.82	107	889951	209.0389 ug/L		99
67)	1-Chlorohexane	13.89	91	1659272	210.0173 ug/L		97
68)	Chlorobenzene	14.29	112	3416597	194.6214 ug/L		98
69)	1,1,1,2-Tetrachloroethane	14.32	131	1457008	205.1158 ug/L		100
70)	Ethylbenzene	14.31	106	1814385	201.5551 ug/L		91
71)	m-,p-Xylene	14.39	106	4230307	386.5510 ug/L		85
72)	o-Xylene	14.92	106	2156790	202.5071 ug/L		96
73)	Styrene	14.96	104	3630570	206.3240 ug/L		98
74)	Bromoform	15.43	173	854308	217.4778 ug/L		100
75)	Isopropylbenzene	15.31	105	5485636	194.7621 ug/L		97
77)	1,1,2,2-Tetrachloroethane	15.52	83	939708	220.0830 ug/L		98
79)	1,2,3-Trichloropropane	15.70	110	325518	202.0716 ug/L		99
80)	trans-1,4-Dichloro-2-Buten	15.74	53	421012	202.2796 ug/L		97
81)	n-Propylbenzene	15.79	91	6220435	195.8952 ug/L		95
82)	Bromobenzene	15.92	156	1685980	202.3412 ug/L		99
83)	1,3,5-Trimethylbenzene	15.96	105	4875063	201.1866 ug/L		97
84)	2-Chlorotoluene	16.05	91	4287026	192.7532 ug/L		98
85)	4-Chlorotoluene	16.09	91	4030756	202.3214 ug/L		98
86)	a-Methylstyrene	16.34	118	2724122	213.1015 ug/L		98
87)	tert-Butylbenzene	16.40	134	1075661	209.5280 ug/L		96
88)	1,2,4-Trimethylbenzene	16.44	105	4921395	199.4496 ug/L		97
89)	sec-Butylbenzene	16.65	105	5740919	197.3104 ug/L		97
90)	p-Isopropyltoluene	16.79	119	5274037	197.3451 ug/L		95
91)	1,3-Dichlorobenzene	16.98	146	3171808	197.0945 ug/L		99
92)	1,4-Dichlorobenzene	17.10	146	3145357	192.8244 ug/L		99
93)	n-Butylbenzene	17.28	91	4684496	198.9203 ug/L		97
94)	1,2-Dichlorobenzene	17.57	146	2909224	198.4498 ug/L		99
95)	1,2-Dibromo-3-Chloropropan	18.49	75	191088	196.6217 ug/L		99
96)	1,2,4-Trichlorobenzene	19.55	180	2198003	204.9021 ug/L		99
97)	Hexachlorobutadiene	19.69	225	969160	205.0797 ug/L		99
98)	Naphthalene	19.90	128	3994903	200.6399 ug/L		98
99)	1,2,3-Trichlorobenzene	20.19	180	1999949	203.1452 ug/L		99

(#) = qualifier out of range (m) = manual integration
11M11845.D 8260WT.M Sat May 14 18:51:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11845.D Vial: 10
Acq On : 13 May 2016 18:54 Operator: JDS
Sample : WG568769-10 200ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

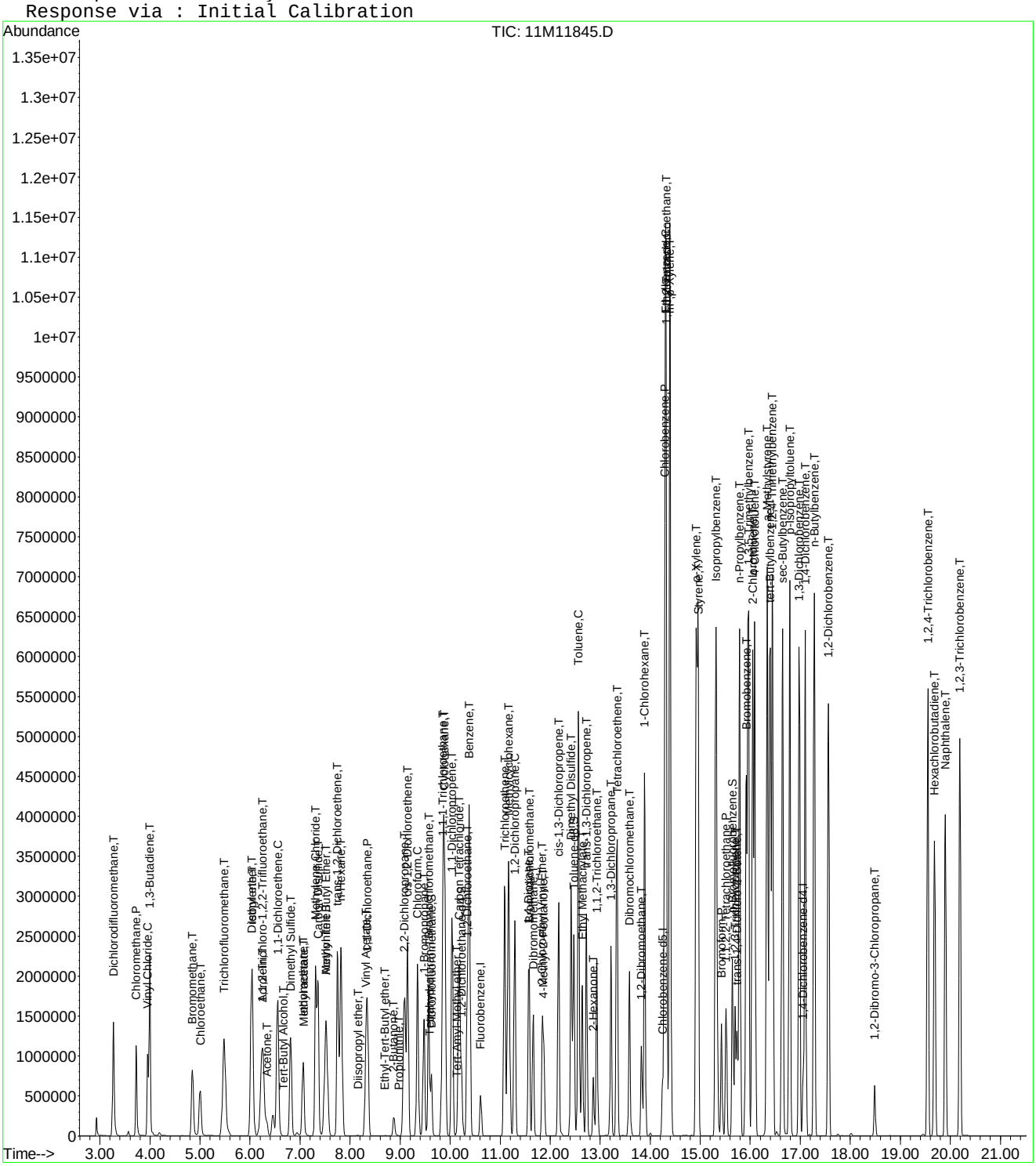

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11846.D Vial: 11
Acq On : 13 May 2016 19:26 Operator: JDS
Sample : WG568769-11 300ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:51:01 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	543599	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	479542	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	277309	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	905755	152.2472 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 609.00%#		
43) 1,2-Dichloroethane-d4	10.23	65	970758	143.1066 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 572.44%#		
57) Toluene-d8	12.47	98	3002456	144.0987 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 576.40%#		
78) p-Bromofluorobenzene	15.64	95	1285822	150.4179 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 601.68%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	2762707	324.3678 ug/L	99
3) Chloromethane	3.72	50	2113477	309.8323 ug/L	100
4) Vinyl Chloride	3.95	62	1802126	318.1269 ug/L	100
5) 1,3-Butadiene	3.99	54	1562377	277.3715 ug/L	98
6) Bromomethane	4.85	94	1341865	344.5204 ug/L	100
7) Chloroethane	5.00	64	1181546	324.6236 ug/L	100
8) Trichlorofluoromethane	5.48	101	3351045	296.7904 ug/L	99
9) Diethyl ether	6.01	59	1250668	299.5049 ug/L	97
10) Isoprene	6.04	67	2121830	304.8859 ug/L	97
11) Acrolein	6.23	56	87016	155.2272 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	1679276	306.5076 ug/L	99
13) Acetone	6.34	43	352141	272.8074 ug/L	95
14) 1,1-Dichloroethene	6.56	61	3009080	302.3733 ug/L	98
15) Tert-Butyl Alcohol	6.67	59	227782	637.9680 ug/L	97
16) Dimethyl Sulfide	6.81	62	1199487	301.8151 ug/L	96
17) Iodomethane	7.06	142	1359092	295.3515 ug/L	96
18) Methyl acetate	7.07	43	1093862	303.3719 ug/L	97
19) Methylene Chloride	7.31	84	1550974	301.1438 ug/L	91
20) Carbon Disulfide	7.36	76	5025219	301.6304 ug/L	99
21) Acrylonitrile	7.49	53	292311	168.8994 ug/L	94
22) Methyl Tert Butyl Ether	7.52	73	3880019	302.0512 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	1693308	307.4459 ug/L	98
24) n-Hexane	7.82	57	2752540	300.0599 ug/L	99
25) Diisopropyl ether	8.15	45	6621718	289.2841 ug/L	99
26) Vinyl Acetate	8.31	43	2814279	303.7518 ug/L	99
27) 1,1-Dichloroethane	8.34	63	3313473	299.8312 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	5508427	295.6672 ug/L	99
29) 2-Butanone	8.87	43	590742	302.7235 ug/L	97
30) Propionitrile	8.99	54	177454	310.4771 ug/L	98
31) 2,2-Dichloropropane	9.09	77	2735421	316.3626 ug/L	99
32) cis-1,2-Dichloroethene	9.15	96	1856543	305.7181 ug/L	98
33) Chloroform	9.35	83	3144758	289.7739 ug/L	100
34) 1-Bromopropane	9.48	122	329211	301.9597 ug/L	98
35) Bromochloromethane	9.57	130	1179409	327.0194 ug/L	97
36) Tetrahydrofuran	9.60	42	386389	280.3985 ug/L	96
38) 1,1,1-Trichloroethane	9.85	97	3227247	302.1877 ug/L	99
39) Cyclohexane	9.88	56	3625895	311.5332 ug/L	99
40) 1,1-Dichloropropene	10.04	75	2360605	309.5743 ug/L	100
41) Carbon Tetrachloride	10.18	117	3172921	304.2542 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	3912691	302.2388 ug/L	97

(#) = qualifier out of range (m) = manual integration
11M11846.D 8260WT.M Sat May 14 18:51:02 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11846.D Vial: 11
Acq On : 13 May 2016 19:26 Operator: JDS
Sample : WG568769-11 300ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:51:01 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
44)	1,2-Dichloroethane	10.34	62	2551762	289.5052 ug/L		98
45)	Benzene	10.38	78	5961793	285.5987 ug/L		97
46)	Trichloroethene	11.09	130	2025948	298.5901 ug/L		99
47)	Methylcyclohexane	11.17	83	2657028	317.3092 ug/L		98
48)	1,2-Dichloropropane	11.29	63	1781372	308.2809 ug/L		96
49)	1,4-Dioxane	11.56	88	21540	607.7372 ug/L		100
50)	Bromodichloromethane	11.57	83	2511276	309.5762 ug/L		100
51)	Dibromomethane	11.65	93	939605	312.0413 ug/L		99
52)	2-Chloroethyl Vinyl Ether	11.84	63	879534	308.8327 ug/L		100
53)	4-Methyl-2-Pentanone	11.87	58	505191	314.5081 ug/L		99
54)	cis-1,3-Dichloropropene	12.17	75	2604960	321.0589 ug/L		99
55)	Dimethyl Disulfide	12.42	79	1529785	313.3234 ug/L		99
58)	Toluene	12.56	91	6613670	272.4329 ug/L		95
59)	Ethyl Methacrylate	12.65	69	1618015	312.1351 ug/L		94
60)	trans-1,3-Dichloropropene	12.73	75	2369133	304.0383 ug/L		98
61)	1,1,2-Trichloroethane	12.93	97	1271039	295.2644 ug/L		98
62)	2-Hexanone	12.86	43	950079	300.5074 ug/L		97
63)	1,3-Dichloropropane	13.21	76	2062188	298.3119 ug/L		97
64)	Tetrachloroethene	13.34	164	1691190	299.5697 ug/L		98
65)	Dibromochloromethane	13.59	129	2065480	314.5750 ug/L		100
66)	1,2-Dibromoethane	13.82	107	1334668	309.4588 ug/L		99
67)	1-Chlorohexane	13.89	91	2483371	310.2757 ug/L		95
68)	Chlorobenzene	14.29	112	4911463	276.1698 ug/L		96
69)	1,1,1,2-Tetrachloroethane	14.32	131	2161701	300.4009 ug/L		100
70)	Ethylbenzene	14.31	106	2715675	297.7904 ug/L		79
71)	m-,p-Xylene	14.39	106	6004062	541.5626 ug/L		73
72)	o-Xylene	14.92	106	3202500	296.8179 ug/L		90
73)	Styrene	14.96	104	5278134	296.0902 ug/L		96
74)	Bromoform	15.43	173	1313245	330.0007 ug/L		100
75)	Isopropylbenzene	15.31	105	7610374	266.7178 ug/L		92
77)	1,1,2,2-Tetrachloroethane	15.52	83	1470787	340.5868 ug/L		97
79)	1,2,3-Trichloropropane	15.70	110	494041	303.0514 ug/L		98
80)	trans-1,4-Dichloro-2-Buten	15.74	53	640812	304.0444 ug/L		94
81)	n-Propylbenzene	15.79	91	8405785	261.7374 ug/L		88
82)	Bromobenzene	15.92	156	2530711	300.3025 ug/L		98
83)	1,3,5-Trimethylbenzene	15.96	105	6851753	279.5793 ug/L		93
84)	2-Chlorotoluene	16.05	91	6055423	269.1996 ug/L		95
85)	4-Chlorotoluene	16.09	91	5712933	283.5299 ug/L		94
86)	a-Methylstyrene	16.34	118	4020347	310.9625 ug/L		96
87)	tert-Butylbenzene	16.40	134	1654009	318.5583 ug/L		89
88)	1,2,4-Trimethylbenzene	16.44	105	6879061	275.6504 ug/L		91
89)	sec-Butylbenzene	16.65	105	7999374	271.8373 ug/L		92
90)	p-Isopropyltoluene	16.79	119	7406083	274.0036 ug/L		90
91)	1,3-Dichlorobenzene	16.98	146	4679194	287.4903 ug/L		97
92)	1,4-Dichlorobenzene	17.10	146	4642399	281.3967 ug/L		96
93)	n-Butylbenzene	17.28	91	6723928	282.3084 ug/L		93
94)	1,2-Dichlorobenzene	17.57	146	4360022	294.0672 ug/L		96
95)	1,2-Dibromo-3-Chloropropan	18.49	75	302346	307.2381 ug/L		100
96)	1,2,4-Trichlorobenzene	19.55	180	3482946	321.0328 ug/L		97
97)	Hexachlorobutadiene	19.69	225	1629665	340.9652 ug/L		98
98)	Naphthalene	19.90	128	5970381	296.4815 ug/L	#	96
99)	1,2,3-Trichlorobenzene	20.19	180	3137470	315.1025 ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11846.D Vial: 11
Acq On : 13 May 2016 19:26 Operator: JDS
Sample : WG568769-11 300ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:51 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

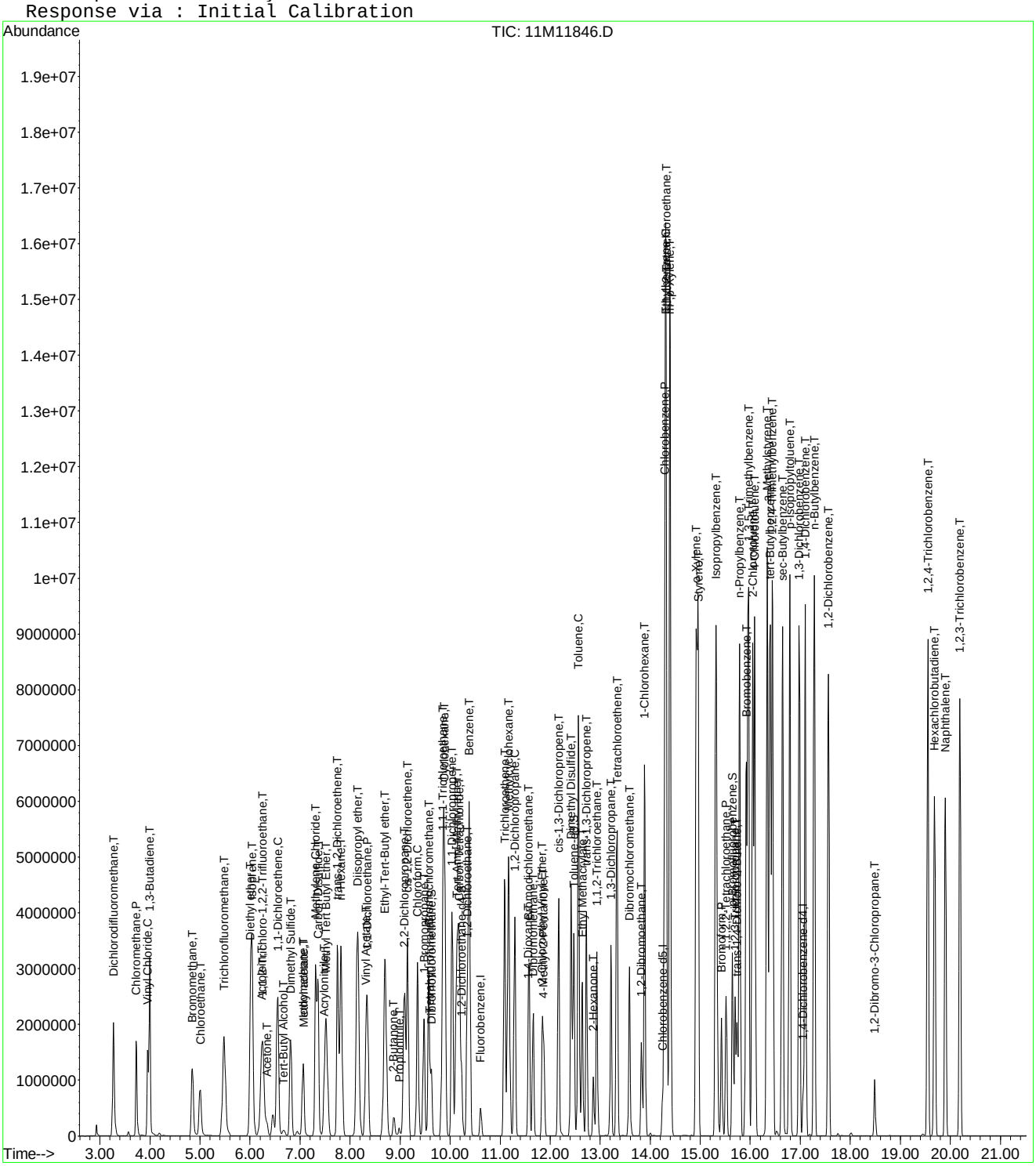

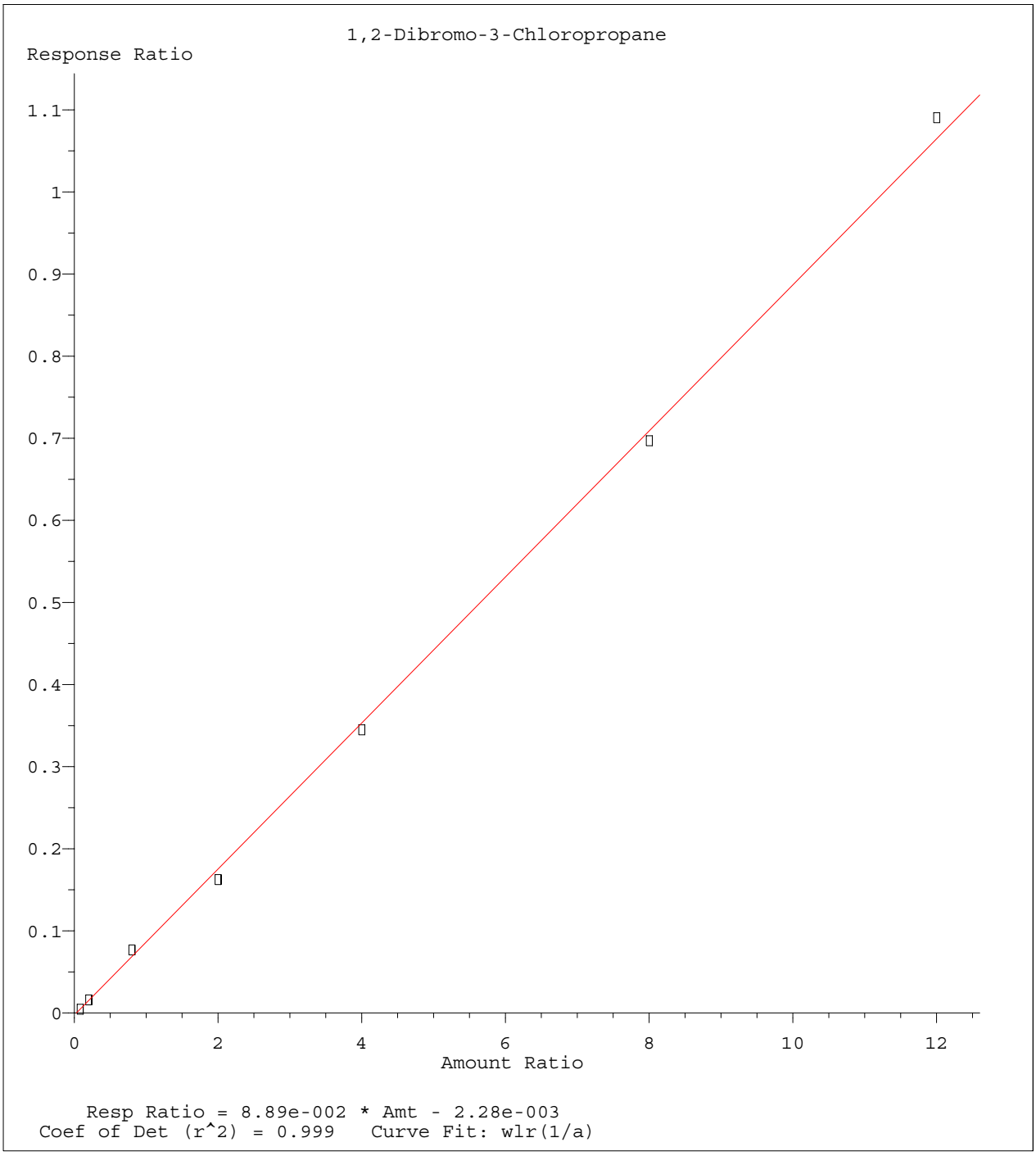

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

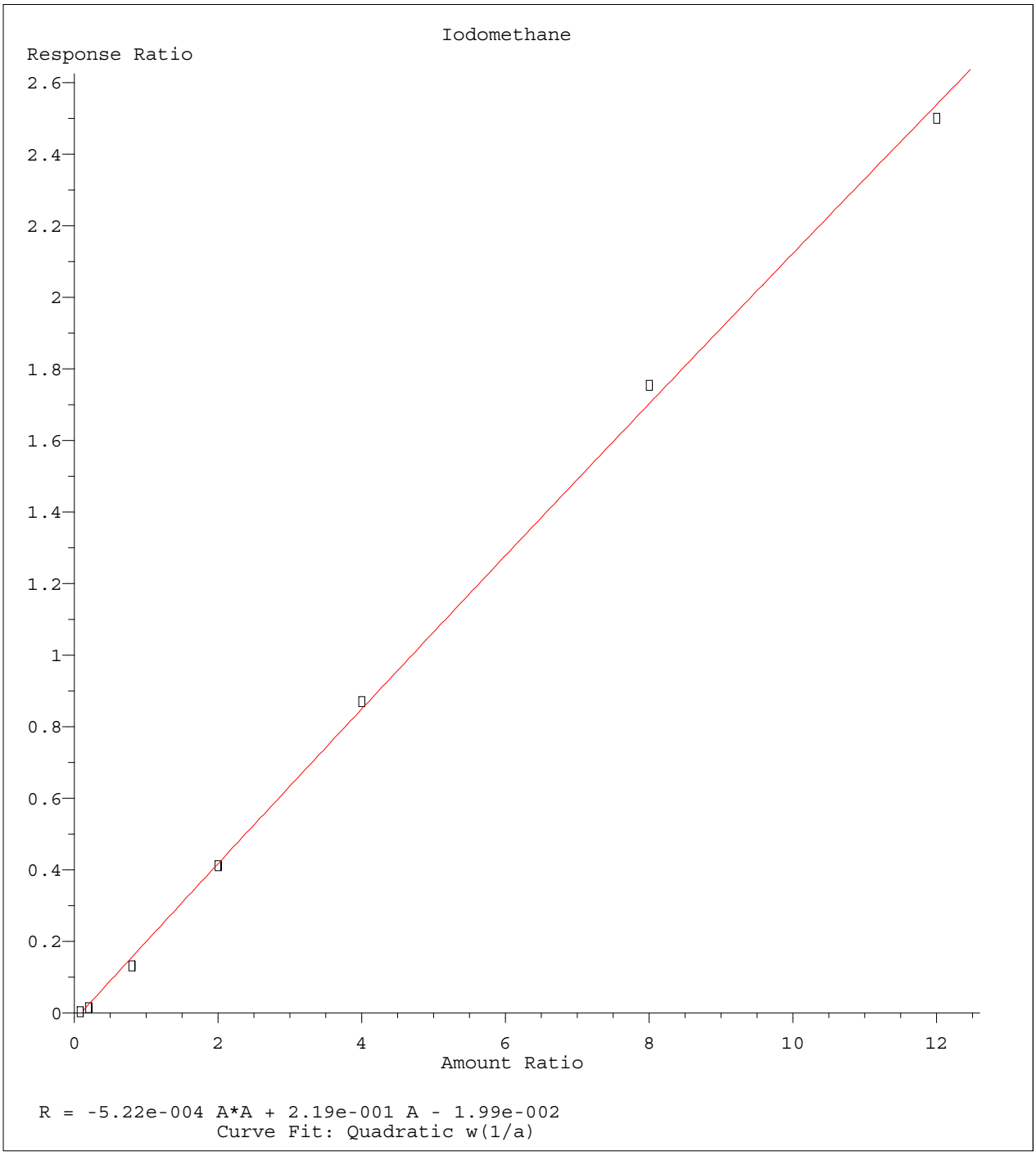

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

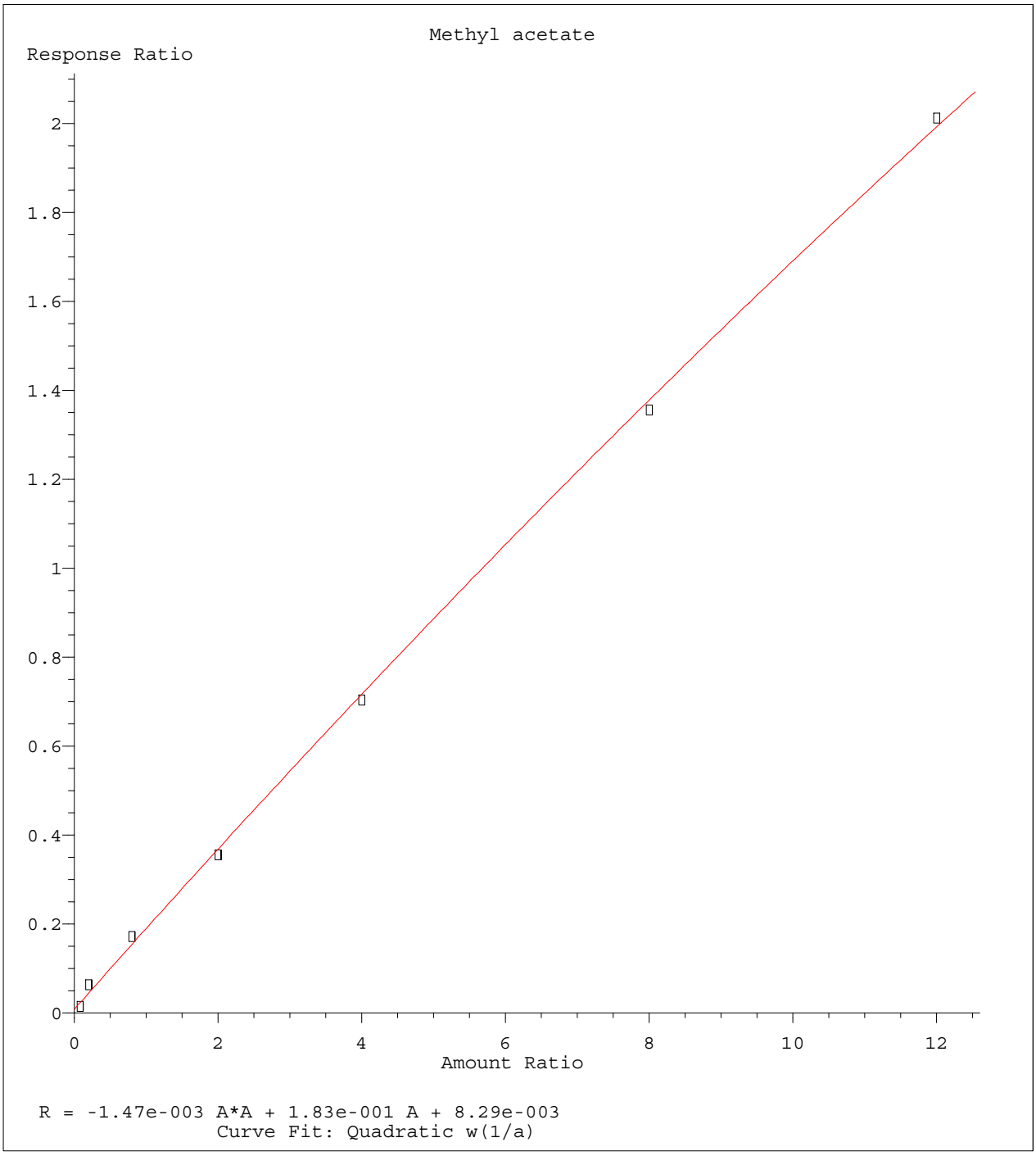

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

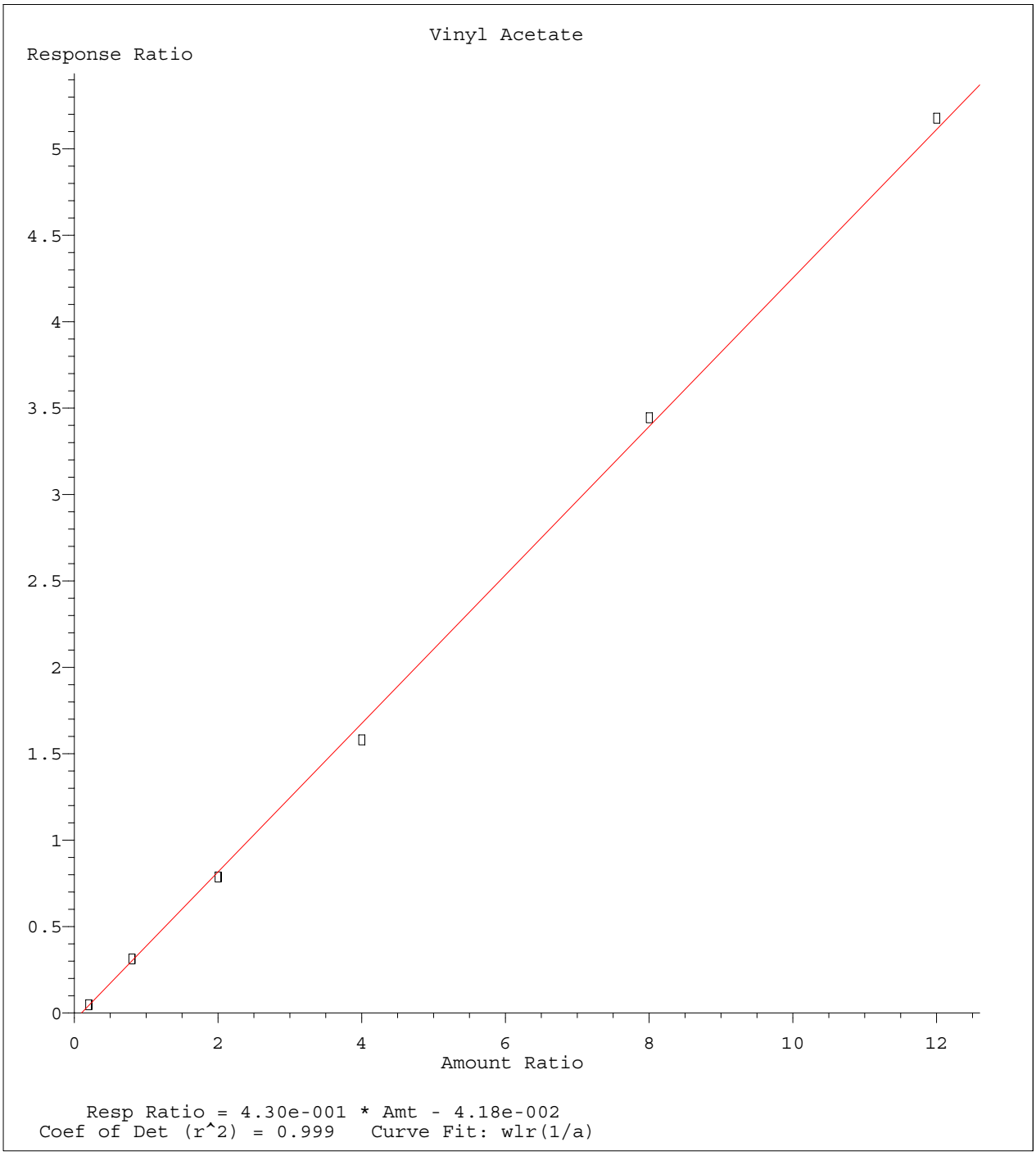

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

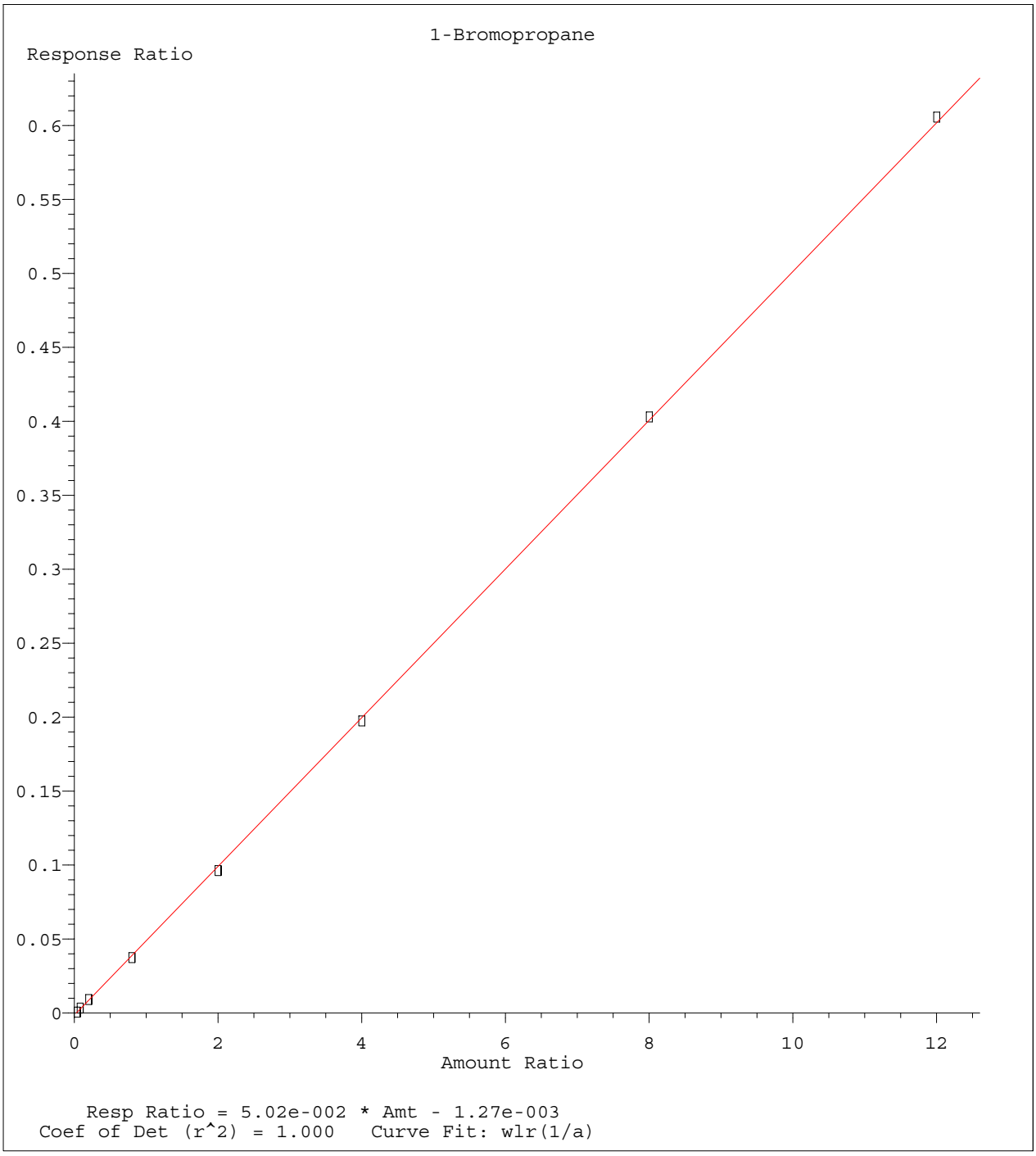

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

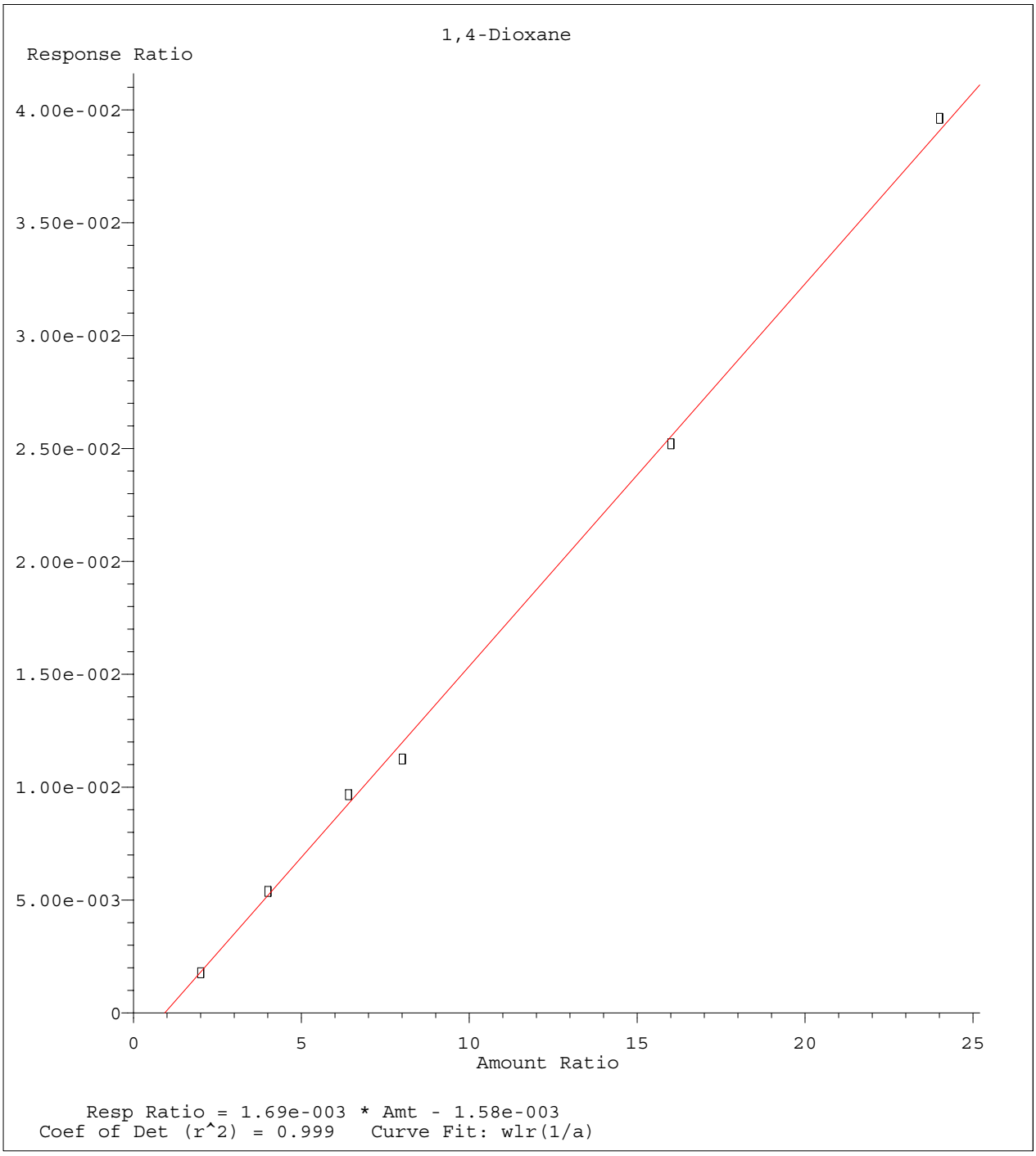

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

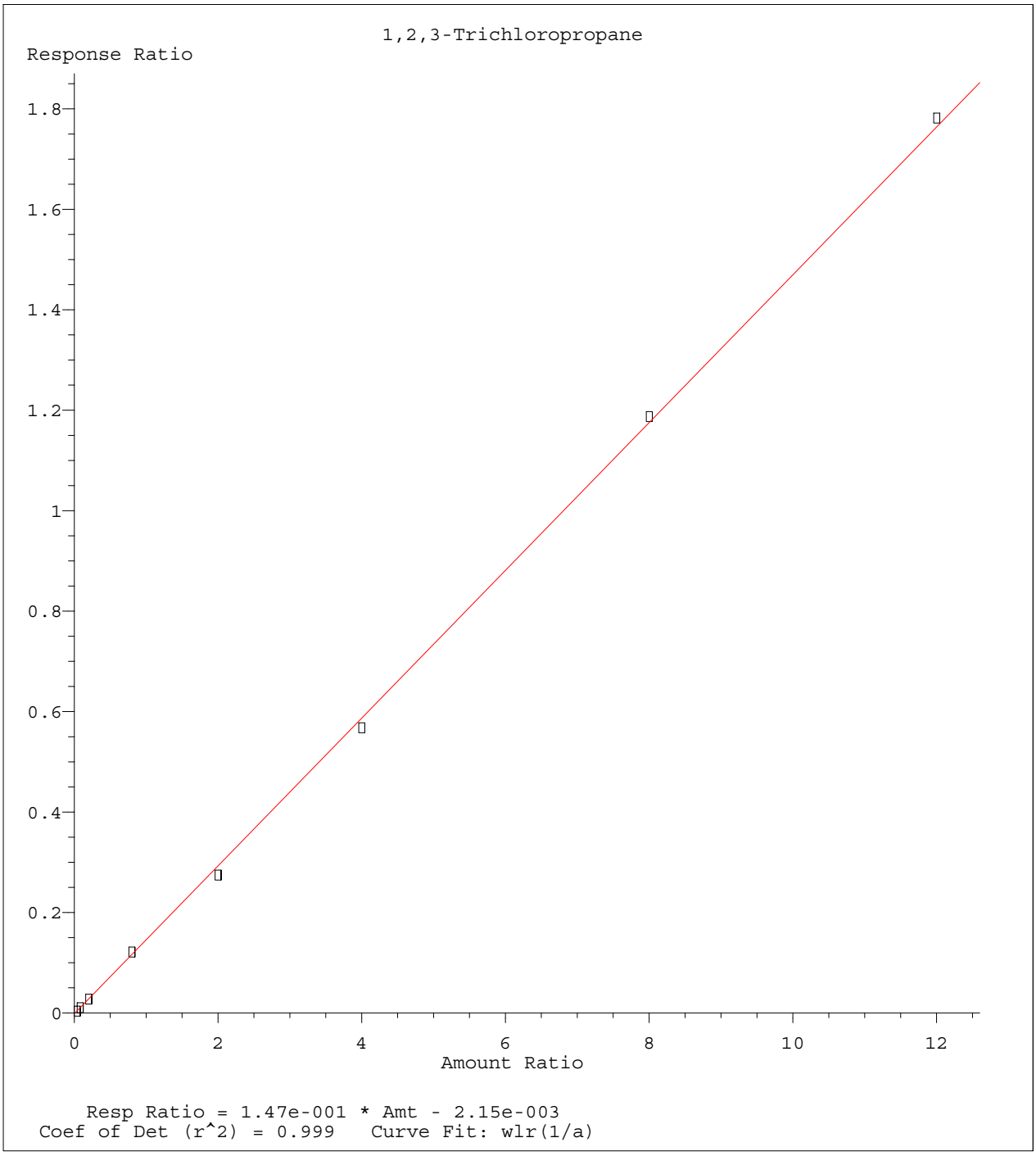

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

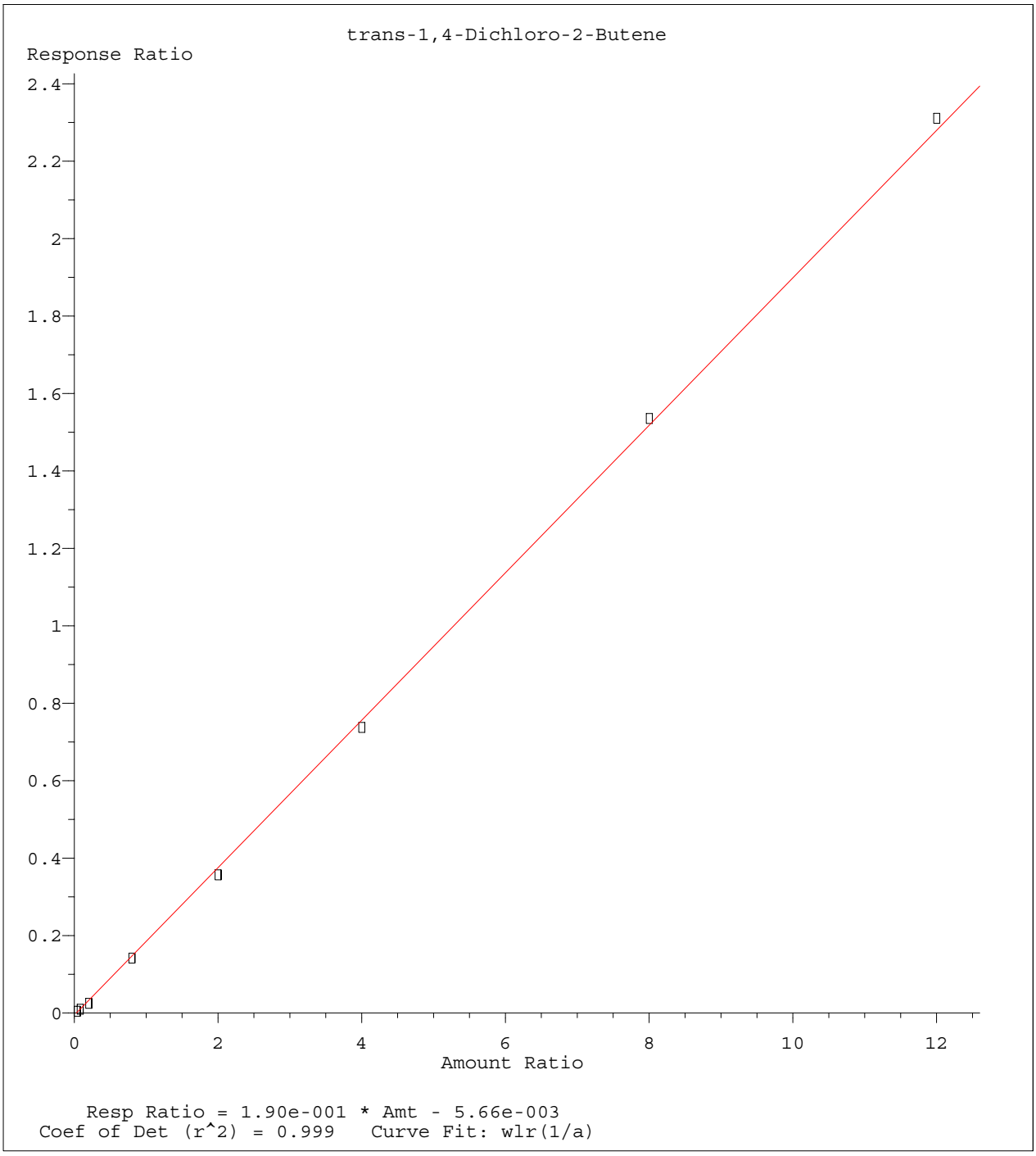

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

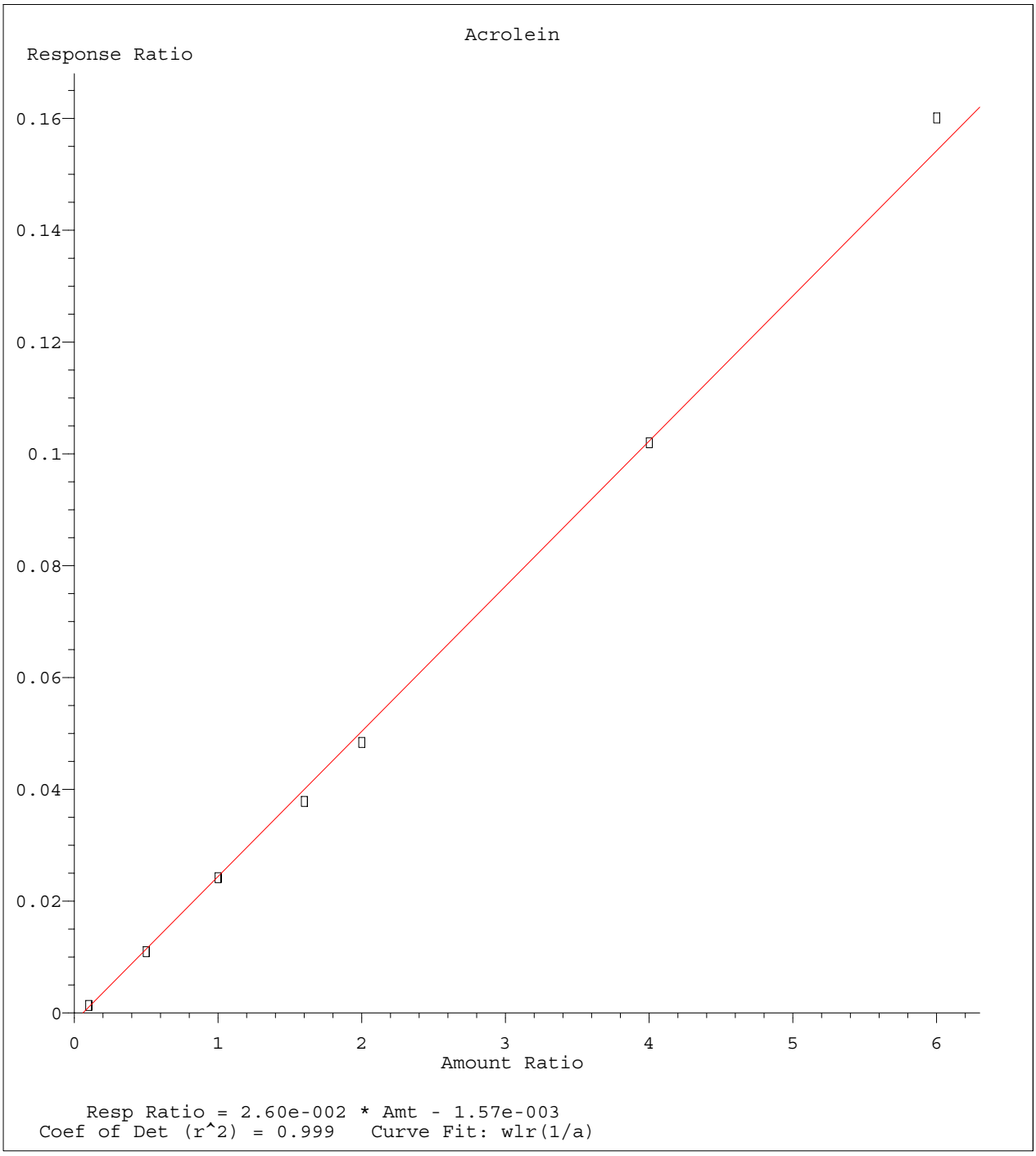

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:47:09 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	559172	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	461765	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	267551	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	155853	25.4675 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.88%		
43) 1,2-Dichloroethane-d4	10.23	65	160000	22.9299 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 91.72%		
57) Toluene-d8	12.47	98	531547	26.4930 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.96%		
78) p-Bromofluorobenzene	15.64	95	203747	24.7040 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.80%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	495777	56.5878 ug/L	98
3) Chloromethane	3.72	50	386673	55.1069 ug/L	100
4) Vinyl Chloride	3.95	62	326996	56.1165 ug/L	100
5) 1,3-Butadiene	3.99	54	212443	36.6650 ug/L	98
6) Bromomethane	4.84	94	202280	50.4885 ug/L	99
7) Chloroethane	5.00	64	220373	58.8601 ug/L	99
8) Trichlorofluoromethane	5.48	101	552017	47.5286 ug/L	99
9) Diethyl ether	6.01	59	453011	105.4639 ug/L	97
10) Isoprene	6.04	67	388108	54.2141 ug/L	93
11) Acrolein	6.23	56	56029	97.7296 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	292836	51.9609 ug/L	99
13) Acetone	6.35	43	65954	49.6723 ug/L	97
14) 1,1-Dichloroethene	6.55	61	486567	47.5319 ug/L	96
15) Tert-Butyl Alcohol	6.67	59	79387	216.1534 ug/L	96
16) Dimethyl Sulfide	6.81	62	290204	70.9875 ug/L	94
17) Iodomethane	7.06	142	176766	38.4128 ug/L	92
18) Methyl acetate	7.07	43	200985	48.7416 ug/L	98
19) Methylene Chloride	7.31	84	275442	51.9916 ug/L	91
20) Carbon Disulfide	7.35	76	765803	44.6859 ug/L	99
21) Acrylonitrile	7.49	53	93674	52.6181 ug/L	100
22) Methyl Tert Butyl Ether	7.52	73	687029	51.9942 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	295337	52.1295 ug/L	97
24) n-Hexane	7.82	57	420811	44.5959 ug/L	99
25) Diisopropyl ether	8.15	45	2449232	104.0201 ug/L	98
26) Vinyl Acetate	8.31	43	395913	43.6417 ug/L	99
27) 1,1-Dichloroethane	8.34	63	551372	48.5033 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1884917	98.3560 ug/L	99
29) 2-Butanone	8.87	43	101045	50.3380 ug/L	98
30) Propionitrile	8.99	54	62190	105.7785 ug/L	98
31) 2,2-Dichloropropane	9.09	77	405332	45.5727 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	332086	53.1618 ug/L	94
33) Chloroform	9.35	83	531122	47.5773 ug/L	100
34) 1-Bromopropane	9.48	122	76460	68.6656 ug/L	96
35) Bromochloromethane	9.57	130	199933	53.8923 ug/L	96
36) Tetrahydrofuran	9.60	42	131835	93.0068 ug/L	96
38) 1,1,1-Trichloroethane	9.85	97	527857	48.0501 ug/L	99
39) Cyclohexane	9.88	56	601180	50.2142 ug/L	99
40) 1,1-Dichloropropene	10.04	75	393057	50.1107 ug/L	100
41) Carbon Tetrachloride	10.18	117	507914	47.3479 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	1406419	105.6143 ug/L	97

(#) = qualifier out of range (m) = manual integration
11M11848.D 8260WT.M Sat May 14 18:47:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:47:09 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	434117	47.8802	ug/L	99
45)	Benzene	10.38	78	1098993	51.1808	ug/L	100
46)	Trichloroethene	11.08	130	365193	52.3242	ug/L	99
47)	Methylcyclohexane	11.17	83	450581	52.3110	ug/L	97
48)	1,2-Dichloropropane	11.29	63	313901	52.8102	ug/L	94
49)	1,4-Dioxane	11.56	88	6366	191.2043	ug/L	95
50)	Bromodichloromethane	11.57	83	413329	49.5339	ug/L	99
51)	Dibromomethane	11.65	93	148822	48.0471	ug/L	97
52)	2-Chloroethyl Vinyl Ether	11.84	63	152083	51.9140	ug/L	99
53)	4-Methyl-2-Pentanone	11.87	58	86849	52.5623	ug/L	99
54)	cis-1,3-Dichloropropene	12.17	75	480729	57.5993	ug/L	99
55)	Dimethyl Disulfide	12.42	79	261188	52.0055	ug/L	96
58)	Toluene	12.56	91	1256481	53.7500	ug/L	100
59)	Ethyl Methacrylate	12.65	69	284944	57.0854	ug/L	90
60)	trans-1,3-Dichloropropene	12.73	75	391013	52.1118	ug/L	97
61)	1,1,2-Trichloroethane	12.93	97	218717	52.7643	ug/L	99
62)	2-Hexanone	12.86	43	158873	52.1857	ug/L	98
63)	1,3-Dichloropropane	13.21	76	374611	56.2767	ug/L	95
64)	Tetrachloroethene	13.34	164	283714	52.1906	ug/L	97
65)	Dibromochloromethane	13.59	129	332092	52.5252	ug/L	99
66)	1,2-Dibromoethane	13.82	107	218604	52.6373	ug/L	99
67)	1-Chlorohexane	13.89	91	420217	54.5237	ug/L	92
68)	Chlorobenzene	14.29	112	912650	53.2936	ug/L	100
69)	1,1,1,2-Tetrachloroethane	14.32	131	353663	51.0389	ug/L	98
70)	Ethylbenzene	14.31	106	460093	52.3943	ug/L	99
71)	m-,p-Xylene	14.39	106	1144896	107.2445	ug/L	98
72)	o-Xylene	14.92	106	568307	54.7003	ug/L	100
73)	Styrene	14.95	104	943635	54.9735	ug/L	98
74)	Bromoform	15.43	173	190959	49.8328	ug/L	99
75)	Isopropylbenzene	15.31	105	1490416	54.2449	ug/L	100
77)	1,1,2,2-Tetrachloroethane	15.52	83	228913	54.9422	ug/L	100
79)	1,2,3-Trichloropropane	15.70	110	78385	50.1407	ug/L	92
80)	trans-1,4-Dichloro-2-Buten	15.74	53	73730	36.9129	ug/L	62
81)	n-Propylbenzene	15.79	91	1753049	56.5769	ug/L	99
82)	Bromobenzene	15.92	156	419932	51.6479	ug/L	99
83)	1,3,5-Trimethylbenzene	15.95	105	1303495	55.1277	ug/L	99
84)	2-Chlorotoluene	16.05	91	1145029	52.7599	ug/L	99
85)	4-Chlorotoluene	16.09	91	1077116	55.4064	ug/L	99
86)	a-Methylstyrene	16.34	118	741671	59.4584	ug/L	99
87)	tert-Butylbenzene	16.40	134	283244	56.5417	ug/L	95
88)	1,2,4-Trimethylbenzene	16.44	105	1296091	53.8297	ug/L	99
89)	sec-Butylbenzene	16.65	105	1586978	55.8961	ug/L	100
90)	p-Isopropyltoluene	16.79	119	1426648	54.7069	ug/L	99
91)	1,3-Dichlorobenzene	16.98	146	827515	52.6969	ug/L	98
92)	1,4-Dichlorobenzene	17.10	146	844174	53.0354	ug/L	98
93)	n-Butylbenzene	17.28	91	1238500	53.8957	ug/L	99
94)	1,2-Dichlorobenzene	17.57	146	766416	53.5772	ug/L	98
95)	1,2-Dibromo-3-Chloropropan	18.49	75	45158	48.1046	ug/L	97
96)	1,2,4-Trichlorobenzene	19.55	180	580278	55.4365	ug/L	99
97)	Hexachlorobutadiene	19.69	225	257859	55.9180	ug/L	98
98)	Naphthalene	19.90	128	993390	51.1296	ug/L	100
99)	1,2,3-Trichlorobenzene	20.19	180	519374	54.0642	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:47 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

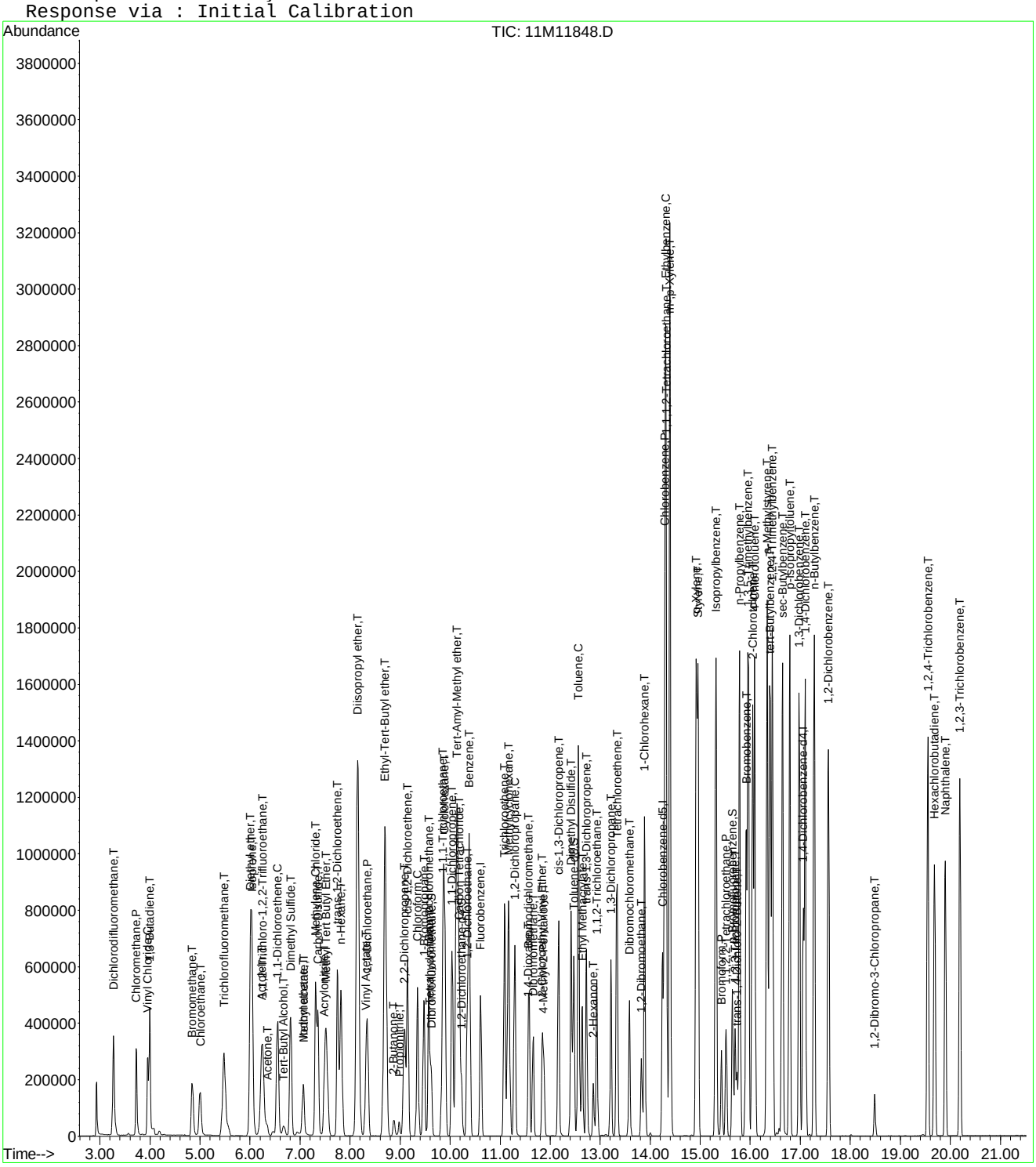

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	107	0.00
2	T	Dichlorodifluoromethane	50.0000	56.5878	-13.2	119	0.00
3	P	Chloromethane	50.0000	55.1069	-10.2	134	0.00
4	C	Vinyl Chloride	50.0000	56.1165	-12.2	125	-0.01
5	T	1,3-Butadiene	50.0000	36.6650	26.7#	76	-0.01
6	T	Bromomethane	50.0000	50.4885	-1.0	117	-0.01
7	T	Chloroethane	50.0000	58.8601	-17.7	131	0.00
8	T	Trichlorofluoromethane	50.0000	47.5286	4.9	106	0.00
9	T	Diethyl ether	100.0000	105.4639	-5.5	116	0.00
10	T	Isoprene	50.0000	54.2141	-8.4	117	0.00
11	T	Acrolein	50.0000	97.7296	-95.5#	222	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	51.9609	-3.9	115	0.00
13	T	Acetone	50.0000	49.6723	0.7	110	0.01
14	C	1,1-Dichloroethene	50.0000	47.5320	4.9	106	-0.01
15	T	Tert-Butyl Alcohol	200.0000	216.1534	-8.1	114	0.01
16	T	Dimethyl Sulfide	50.0000	70.9875	-42.0#	150	0.00
17	T	Iodomethane	50.0000	38.4128	23.2	82	0.00
18	T	Methyl acetate	50.0000	48.7416	2.5	108	0.01
19	T	Methylene Chloride	50.0000	51.9916	-4.0	118	0.00
20	T	Carbon Disulfide	50.0000	44.6859	10.6	94	-0.01
21	T	Acrylonitrile	50.0000	52.6181	-5.2	110	0.00
22	T	Methyl Tert Butyl Ether	50.0000	51.9942	-4.0	113	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.1295	-4.3	117	0.00
24	T	n-Hexane	50.0000	44.5959	10.8	94	0.00
25	T	Diisopropyl ether	100.0000	104.0201	-4.0	112	0.00
26	T	Vinyl Acetate	50.0000	43.6417	12.7	96	0.00
27	P	1,1-Dichloroethane	50.0000	48.5033	3.0	107	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.3560	1.6	106	0.00
29	T	2-Butanone	50.0000	50.3381	-0.7	111	0.00
30	T	Propionitrile	100.0000	105.7786	-5.8	110	0.01
31	T	2,2-Dichloropropane	50.0000	45.5727	8.9	101	0.00
32	T	cis-1,2-Dichloroethene	50.0000	53.1618	-6.3	118	0.00
33	C	Chloroform	50.0000	47.5773	4.8	108	0.00
34	T	1-Bromopropane	50.0000	68.6656	-37.3#	152	0.00
35	T	Bromochloromethane	50.0000	53.8923	-7.8	111	0.00
36	T	Tetrahydrofuran	100.0000	93.0068	7.0	103	0.00
37	S	Dibromofluoromethane	25.0000	25.4675	-1.9	111	0.00
38	T	1,1,1-Trichloroethane	50.0000	48.0501	3.9	106	0.00
39	T	Cyclohexane	50.0000	50.2142	-0.4	105	0.00
40	T	1,1-Dichloropropene	50.0000	50.1107	-0.2	111	0.00
41	T	Carbon Tetrachloride	50.0000	47.3479	5.3	103	0.00
42	T	Tert-Amyl-Methyl ether	100.0000	105.6143	-5.6	115	0.00
43	S	1,2-Dichloroethane-d4	25.0000	22.9299	8.3	101	0.00
44	T	1,2-Dichloroethane	50.0000	47.8802	4.2	104	0.00
45	T	Benzene	50.0000	51.1809	-2.4	116	0.00
46	T	Trichloroethene	50.0000	52.3242	-4.6	119	-0.01
47	T	Methylcyclohexane	50.0000	52.3110	-4.6	108	0.00
48	C	1,2-Dichloropropane	50.0000	52.8102	-5.6	117	0.00
49	T	1,4-Dioxane	200.0000	191.2043	4.4	109	0.01
50	T	Bromodichloromethane	50.0000	49.5339	0.9	107	0.00
51	T	Dibromomethane	50.0000	48.0471	3.9	104	0.00
52	T	2-Chloroethyl Vinyl Ether	50.0000	51.9140	-3.8	114	0.00
53	T	4-Methyl-2-Pentanone	50.0000	52.5623	-5.1	115	0.00
54	T	cis-1,3-Dichloropropene	50.0000	57.5993	-15.2	122	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	50.0000	52.0055	-4.0	110	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	105	0.00
57	S	Toluene-d8	25.0000	26.4930	-6.0	115	0.00
58	C	Toluene	50.0000	53.7500	-7.5	115	0.00
59	T	Ethyl Methacrylate	50.0000	57.0854	-14.2	114	0.00
60	T	trans-1,3-Dichloropropene	50.0000	52.1118	-4.2	107	0.00
61	T	1,1,2-Trichloroethane	50.0000	52.7643	-5.5	113	0.00
62	T	2-Hexanone	50.0000	52.1857	-4.4	110	0.00
63	T	1,3-Dichloropropane	50.0000	56.2767	-12.6	118	0.00
64	T	Tetrachloroethene	50.0000	52.1906	-4.4	113	0.00
65	T	Dibromochloromethane	50.0000	52.5251	-5.1	107	0.00
66	T	1,2-Dibromoethane	50.0000	52.6373	-5.3	111	0.00
67	T	1-Chlorohexane	50.0000	54.5237	-9.0	112	0.00
68	P	Chlorobenzene	50.0000	53.2936	-6.6	114	0.00
69	T	1,1,1,2-Tetrachloroethane	50.0000	51.0388	-2.1	109	0.00
70	C	Ethylbenzene	50.0000	52.3943	-4.8	113	0.00
71	T	m-,p-Xylene	100.0000	107.2445	-7.2	115	0.00
72	T	o-Xylene	50.0000	54.7003	-9.4	115	0.00
73	T	Styrene	50.0000	54.9735	-9.9	113	0.00
74	P	Bromoform	50.0000	49.8327	0.3	104	0.00
75	T	Isopropylbenzene	50.0000	54.2449	-8.5	114	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	101	0.00
77	P	1,1,2,2-Tetrachloroethane	50.0000	54.9422	-9.9	110	0.00
78	S	p-Bromofluorobenzene	25.0000	24.7040	1.2	108	0.00
79	T	1,2,3-Trichloropropane	50.0000	50.1407	-0.3	108	0.00
80	T	trans-1,4-Dichloro-2-Butene	50.0000	36.9129	26.2#	78	0.00
81	T	n-Propylbenzene	50.0000	56.5769	-13.2	115	0.00
82	T	Bromobenzene	50.0000	51.6479	-3.3	111	0.00
83	T	1,3,5-Trimethylbenzene	50.0000	55.1277	-10.3	114	-0.01
84	T	2-Chlorotoluene	50.0000	52.7599	-5.5	112	0.00
85	T	4-Chlorotoluene	50.0000	55.4064	-10.8	116	0.00
86	T	a-Methylstyrene	50.0000	59.4584	-18.9	114	0.00
87	T	tert-Butylbenzene	50.0000	56.5417	-13.1	117	0.00
88	T	1,2,4-Trimethylbenzene	50.0000	53.8297	-7.7	110	0.00
89	T	sec-Butylbenzene	50.0000	55.8961	-11.8	114	0.00
90	T	p-Isopropyltoluene	50.0000	54.7069	-9.4	111	0.00
91	T	1,3-Dichlorobenzene	50.0000	52.6969	-5.4	112	0.00
92	T	1,4-Dichlorobenzene	50.0000	53.0354	-6.1	114	0.00
93	T	n-Butylbenzene	50.0000	53.8957	-7.8	110	0.00
94	T	1,2-Dichlorobenzene	50.0000	53.5772	-7.2	112	0.00
95	T	1,2-Dibromo-3-Chloropropane	50.0000	48.1046	3.8	105	0.00
96	T	1,2,4-Trichlorobenzene	50.0000	55.4365	-10.9	113	0.00
97	T	Hexachlorobutadiene	50.0000	55.9180	-11.8	118	0.00
98	T	Naphthalene	50.0000	51.1296	-2.3	103	0.00
99	T	1,2,3-Trichlorobenzene	50.0000	54.0642	-8.1	114	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11848.D 8260WT.M Sat May 14 18:47:20 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061516\11M12652.D Vial: 3
Acq On : 15 Jun 2016 15:49 Operator: JDS
Sample : WG572854-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 15 16:29:19 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	728374	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	610875	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	361229	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	193464	24.2696 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.08%		
43) 1,2-Dichloroethane-d4	10.23	65	200571	22.0669 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 88.28%		
57) Toluene-d8	12.47	98	660650	24.8903 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.56%		
78) p-Bromofluorobenzene	15.64	95	289414	25.9908 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.96%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	530465	46.4819 ug/L	96
3) Chloromethane	3.72	50	390778	42.7547 ug/L	98
4) Vinyl Chloride	3.96	62	365127	48.1042 ug/L	99
5) 1,3-Butadiene	4.00	54	349561	46.3152 ug/L	99
6) Bromomethane	4.85	94	243178	46.5966 ug/L	99
7) Chloroethane	5.00	64	232491	47.6716 ug/L	99
8) Trichlorofluoromethane	5.48	101	741449	49.0089 ug/L	99
9) Diethyl ether	6.01	59	539085	96.3482 ug/L	93
10) Isoprene	6.04	67	403994	43.3237 ug/L	93
11) Acrolein	6.23	56	38648	52.4613 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	358741	48.8680 ug/L	95
13) Acetone	6.34	43	72829	42.1083 ug/L	94
14) 1,1-Dichloroethene	6.56	61	617692	46.3240 ug/L	96
15) Tert-Butyl Alcohol	6.67	59	89952	188.0245 ug/L	98
16) Dimethyl Sulfide	6.81	62	229028	43.0089 ug/L	89
17) Iodomethane	7.06	142	280881	46.3947 ug/L	95
18) Methyl acetate	7.07	43	200568	36.9296 ug/L	94
19) Methylene Chloride	7.31	84	322798	46.7762 ug/L	83
20) Carbon Disulfide	7.36	76	1039759	46.5776 ug/L	100
21) Acrylonitrile	7.49	53	108769	46.9043 ug/L	99
22) Methyl Tert Butyl Ether	7.52	73	838375	48.7090 ug/L	96
23) trans-1,2-Dichloroethene	7.75	96	354437	48.0282 ug/L	94
24) n-Hexane	7.82	57	513401	41.7691 ug/L	98
25) Diisopropyl ether	8.15	45	2591481	84.4941 ug/L	97
26) Vinyl Acetate	8.31	43	544679	45.9562 ug/L	98
27) 1,1-Dichloroethane	8.34	63	683913	46.1869 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	2345132	93.9436 ug/L	98
29) 2-Butanone	8.88	43	112031	42.8460 ug/L	93
30) Propionitrile	8.97	54	69817	91.1652 ug/L	100
31) 2,2-Dichloropropane	9.09	77	579734	50.0396 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	398270	48.9461 ug/L	92
33) Chloroform	9.35	83	675051	46.4230 ug/L	99
34) 1-Bromopropane	9.48	122	68579	47.4773 ug/L	98
35) Bromochloromethane	9.57	130	263325	54.4911 ug/L	86
36) Tetrahydrofuran	9.60	42	150410	81.4614 ug/L	90
38) 1,1,1-Trichloroethane	9.85	97	694594	48.5400 ug/L	96
39) Cyclohexane	9.88	56	668521	42.8675 ug/L	94
40) 1,1-Dichloropropene	10.04	75	496855	48.6290 ug/L	98
41) Carbon Tetrachloride	10.18	117	697237	49.8979 ug/L	98
42) Tert-Amyl-Methyl ether	10.13	73	1703991	98.2350 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061516\11M12652.D Vial: 3
Acq On : 15 Jun 2016 15:49 Operator: JDS
Sample : WG572854-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 15 16:29:19 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.34	62	554618	46.9607 ug/L	96
45) Benzene	10.38	78	1300385	46.4917 ug/L	99
46) Trichloroethene	11.09	130	449619	49.4556 ug/L	98
47) Methylcyclohexane	11.17	83	503406	44.8672 ug/L	94
48) 1,2-Dichloropropane	11.29	63	357476	46.1703 ug/L	100
49) 1,4-Dioxane	11.56	88	8485	195.1063 ug/L	88
50) Bromodichloromethane	11.58	83	524120	48.2201 ug/L	99
51) Dibromomethane	11.65	93	195558	48.4693 ug/L	94
52) 2-Chloroethyl Vinyl Ether	11.84	63	164867	43.2045 ug/L	96
53) 4-Methyl-2-Pentanone	11.87	58	97492	45.2970 ug/L	93
54) cis-1,3-Dichloropropene	12.17	75	542356	49.8876 ug/L	100
55) Dimethyl Disulfide	12.42	79	303299	46.3615 ug/L	97
58) Toluene	12.56	91	1535102	49.6396 ug/L	99
59) Ethyl Methacrylate	12.65	69	329139	49.8441 ug/L	86
60) trans-1,3-Dichloropropene	12.73	75	500583	50.4300 ug/L	98
61) 1,1,2-Trichloroethane	12.93	97	271518	49.5137 ug/L	98
62) 2-Hexanone	12.86	43	174093	43.2266 ug/L	93
63) 1,3-Dichloropropane	13.21	76	435523	49.4570 ug/L	88
64) Tetrachloroethene	13.34	164	375823	52.2593 ug/L	97
65) Dibromochloromethane	13.59	129	444371	53.1280 ug/L	100
66) 1,2-Dibromoethane	13.82	107	280754	51.1011 ug/L	99
67) 1-Chlorohexane	13.89	91	476032	46.6892 ug/L	91
68) Chlorobenzene	14.29	112	1133722	50.0433 ug/L	100
69) 1,1,1,2-Tetrachloroethane	14.32	131	467858	51.0380 ug/L	100
70) Ethylbenzene	14.31	106	572726	49.3008 ug/L	99
71) m-,p-Xylene	14.39	106	1403367	99.3686 ug/L	96
72) o-Xylene	14.92	106	678505	49.3660 ug/L	100
73) Styrene	14.95	104	1161554	51.1514 ug/L	98
74) Bromoform	15.43	173	271472	53.5511 ug/L	99
75) Isopropylbenzene	15.31	105	1821861	50.1228 ug/L	99
77) 1,1,2,2-Tetrachloroethane	15.52	83	277499	49.3311 ug/L	99
79) 1,2,3-Trichloropropane	15.70	110	102230	48.4475 ug/L	90
80) trans-1,4-Dichloro-2-Buten	15.74	53	93892	34.8588 ug/L	64
81) n-Propylbenzene	15.79	91	2044412	48.8694 ug/L	98
82) Bromobenzene	15.92	156	549844	50.0884 ug/L	90
83) 1,3,5-Trimethylbenzene	15.95	105	1563604	48.9792 ug/L	99
84) 2-Chlorotoluene	16.05	91	1407005	48.0183 ug/L	97
85) 4-Chlorotoluene	16.09	91	1250524	47.6445 ug/L	98
86) a-Methylstyrene	16.34	118	811742	48.1996 ug/L	97
87) tert-Butylbenzene	16.39	134	338089	49.9877 ug/L	93
88) 1,2,4-Trimethylbenzene	16.44	105	1607021	49.4347 ug/L	99
89) sec-Butylbenzene	16.65	105	1821208	47.5110 ug/L	98
90) p-Isopropyltoluene	16.79	119	1711733	48.6166 ug/L	98
91) 1,3-Dichlorobenzene	16.98	146	1040467	49.0752 ug/L	98
92) 1,4-Dichlorobenzene	17.10	146	1040998	48.4404 ug/L	99
93) n-Butylbenzene	17.28	91	1412673	45.5327 ug/L	97
94) 1,2-Dichlorobenzene	17.57	146	957557	49.5797 ug/L	98
95) 1,2-Dibromo-3-Chloropropan	18.49	75	54526	43.0887 ug/L	97
96) 1,2,4-Trichlorobenzene	19.55	180	684533	48.4371 ug/L	99
97) Hexachlorobutadiene	19.69	225	264617	42.5021 ug/L	97
98) Naphthalene	19.90	128	1256393	47.8964 ug/L	100
99) 1,2,3-Trichlorobenzene	20.19	180	608912	46.9470 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M12652.D 8260WT.M Wed Jun 15 16:29:20 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061516\11M12652.D Vial: 3
Acq On : 15 Jun 2016 15:49 Operator: JDS
Sample : WG572854-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 15 16:29 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

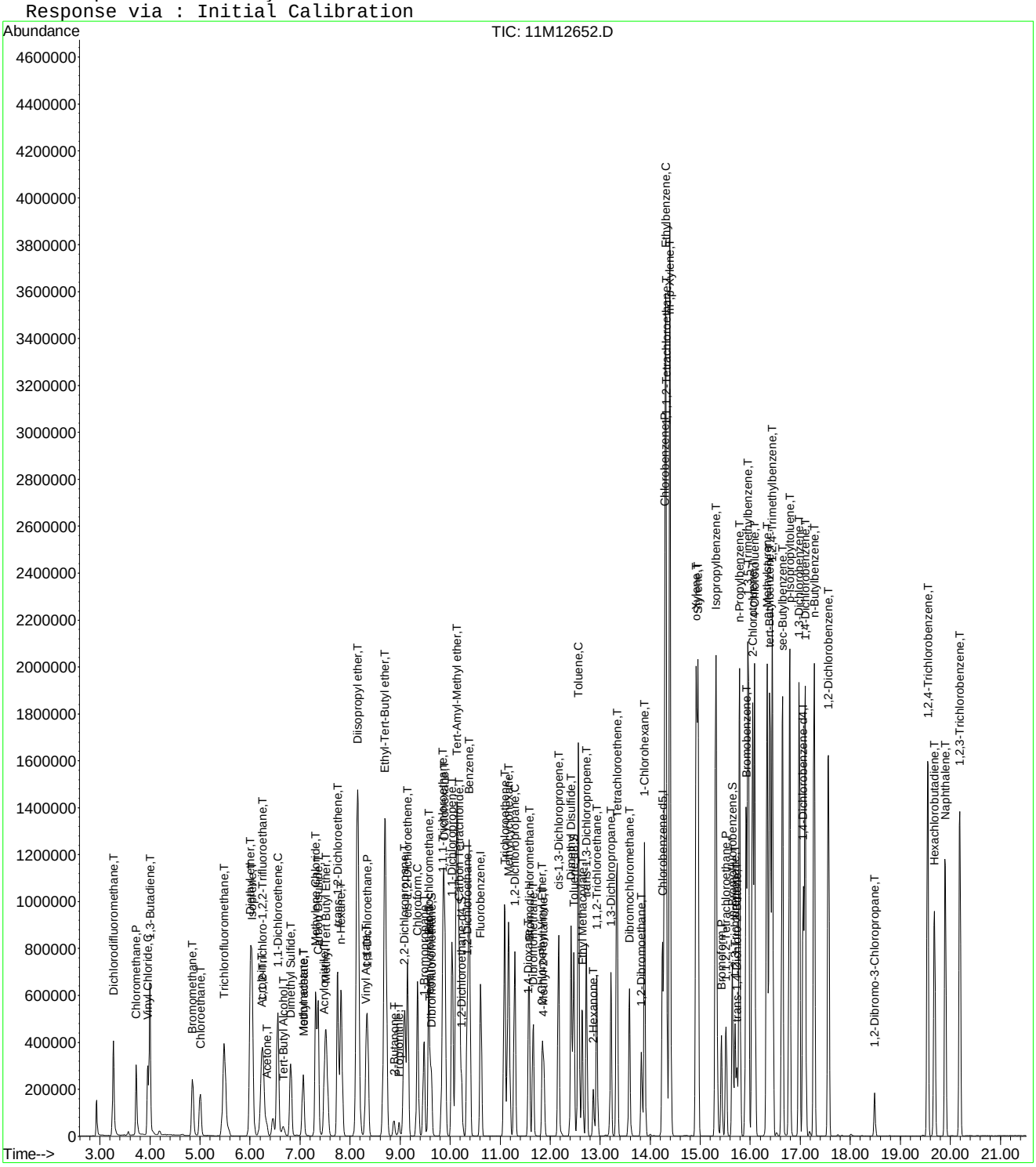

11M12652.D 8260WT.M Wed Jun 15 16:29:20 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061516\11M12652.D Vial: 3
Acq On : 15 Jun 2016 15:49 Operator: JDS
Sample : WG572854-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	140	0.00
2	T	Dichlorodifluoromethane	0.3917	0.3641	7.0	127	0.00
3	P	Chloromethane	0.3137	0.2682	14.5	136	0.00
4	C	Vinyl Chloride	0.2605	0.2506	3.8	140	0.00
5	T	1,3-Butadiene	0.2591	0.2400	7.4	124	0.00
6	T	Bromomethane	0.1791	0.1669	6.8	141	0.00
7	T	Chloroethane	0.1674	0.1596	4.7	138	0.00
8	T	Trichlorofluoromethane	0.5193	0.5090	2.0	143	0.00
9	T	Diethyl ether	0.1920	0.1850	3.7	138	0.00
10	T	Isoprene	0.3201	0.2773	13.4	122	0.00
11	T	Acrolein	0.0228	0.0265	-16.5	153#	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2520	0.2463	2.3	140	0.00
13	T	Acetone	0.0594	0.0500	15.8	121	0.00
14	C	1,1-Dichloroethene	0.4577	0.4240	7.4	134	0.00
15	T	Tert-Butyl Alcohol	0.0164	0.0154	6.0	130	0.01
16	T	Dimethyl Sulfide	0.1828	0.1572	14.0	118	0.00
17	T	Iodomethane	0.1615	0.1928	-19.4	131	0.00
18	T	Methyl acetate	0.2006	0.1377	31.4#	108	0.01
19	T	Methylene Chloride	0.2369	0.2216	6.4	138	0.00
20	T	Carbon Disulfide	0.7662	0.7138	6.8	127	0.00
21	T	Acrylonitrile	0.0796	0.0747	6.2	128	0.00
22	T	Methyl Tert Butyl Ether	0.5908	0.5755	2.6	137	0.00
23	T	trans-1,2-Dichloroethene	0.2533	0.2433	3.9	140	0.01
24	T	n-Hexane	0.4219	0.3524	16.5	114	0.00
25	T	Diisopropyl ether	1.0527	0.8895	15.5	119	0.00
26	T	Vinyl Acetate	0.3793	0.3739	1.4	133	0.00
27	P	1,1-Dichloroethane	0.5082	0.4695	7.6	132	0.00
28	T	Ethyl-Tert-Butyl ether	0.8568	0.8049	6.1	132	0.00
29	T	2-Butanone	0.0897	0.0769	14.3	123	0.01
30	T	Propionitrile	0.0263	0.0240	8.9	123	0.00
31	T	2,2-Dichloropropane	0.3977	0.3980	-0.1	144	0.00
32	T	cis-1,2-Dichloroethene	0.2793	0.2734	2.1	141	0.00
33	C	Chloroform	0.4991	0.4634	7.2	138	0.00
34	T	1-Bromopropane	0.0432	0.0471	-9.1	137	0.00
35	T	Bromochloromethane	0.1659	0.1808	-9.0	146	0.00
36	T	Tetrahydrofuran	0.0634	0.0516	18.5	118	0.00
37	S	Dibromofluoromethane	0.2736	0.2656	2.9	138	0.00
38	T	1,1,1-Trichloroethane	0.4911	0.4768	2.9	140	0.00
39	T	Cyclohexane	0.5353	0.4589	14.3	116	0.00
40	T	1,1-Dichloropropene	0.3507	0.3411	2.7	141	0.00
41	T	Carbon Tetrachloride	0.4796	0.4786	0.2	141	0.00
42	T	Tert-Amyl-Methyl ether	0.5954	0.5849	1.8	139	0.00
43	S	1,2-Dichloroethane-d4	0.3120	0.2754	11.7	127	0.00
44	T	1,2-Dichloroethane	0.4054	0.3807	6.1	132	0.00
45	T	Benzene	0.9600	0.8927	7.0	137	0.00
46	T	Trichloroethene	0.3120	0.3086	1.1	146	0.00
47	T	Methylcyclohexane	0.3851	0.3456	10.3	120	0.00
48	C	1,2-Dichloropropane	0.2657	0.2454	7.7	133	0.00
49	T	1,4-Dioxane	0.0014	0.0015	-4.3	145	0.01
50	T	Bromodichloromethane	0.3731	0.3598	3.6	136	0.01
51	T	Dibromomethane	0.1385	0.1342	3.1	137	0.00
52	T	2-Chloroethyl Vinyl Ether	0.1310	0.1132	13.6	124	0.00
53	T	4-Methyl-2-Pentanone	0.0739	0.0669	9.4	129	0.00
54	T	cis-1,3-Dichloropropene	0.3731	0.3723	0.2	137	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061516\11M12652.D Vial: 3
Acq On : 15 Jun 2016 15:49 Operator: JDS
Sample : WG572854-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	0.2245	0.2082	7.3	128	0.00
56	I	Chlorobenzene-d5	1.0000	1.0000	0.0	139	0.00
57	S	Toluene-d8	1.0862	1.0815	0.4	143	0.00
58	C	Toluene	1.2656	1.2565	0.7	140	0.00
59	T	Ethyl Methacrylate	0.2702	0.2694	0.3	132	0.00
60	T	trans-1,3-Dichloropropene	0.4062	0.4097	-0.9	137	0.00
61	T	1,1,2-Trichloroethane	0.2244	0.2222	1.0	140	0.00
62	T	2-Hexanone	0.1648	0.1425	13.5	121	0.00
63	T	1,3-Dichloropropane	0.3604	0.3565	1.1	137	0.00
64	T	Tetrachloroethene	0.2943	0.3076	-4.5	150	0.00
65	T	Dibromochloromethane	0.3423	0.3637	-6.3	143	0.00
66	T	1,2-Dibromoethane	0.2248	0.2298	-2.2	143	0.00
67	T	1-Chlorohexane	0.4173	0.3896	6.6	126	0.00
68	P	Chlorobenzene	0.9272	0.9280	-0.1	142	0.00
69	T	1,1,1,2-Tetrachloroethane	0.3751	0.3829	-2.1	144	0.00
70	C	Ethylbenzene	0.4754	0.4688	1.4	140	0.00
71	T	m-,p-Xylene	0.5780	0.5743	0.6	141	0.00
72	T	o-Xylene	0.5625	0.5554	1.3	138	0.00
73	T	Styrene	0.9293	0.9507	-2.3	139	0.00
74	P	Bromoform	0.2075	0.2222	-7.1	147	0.00
75	T	Isopropylbenzene	1.4875	1.4912	-0.2	139	0.00
76	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	137	0.00
77	P	1,1,2,2-Tetrachloroethane	0.3893	0.3841	1.3	133	0.00
78	S	p-Bromofluorobenzene	0.7706	0.8012	-4.0	153#	0.00
79	T	1,2,3-Trichloropropane	0.1351	0.1415	-4.7	141	0.00
80	T	trans-1,4-Dichloro-2-Butene	0.1588	0.1300	18.2	100	0.00
81	T	n-Propylbenzene	2.8953	2.8298	2.3	134	0.00
82	T	Bromobenzene	0.7597	0.7611	-0.2	145	0.00
83	T	1,3,5-Trimethylbenzene	2.2094	2.1643	2.0	137	-0.01
84	T	2-Chlorotoluene	2.0279	1.9475	4.0	138	0.00
85	T	4-Chlorotoluene	1.8165	1.7309	4.7	134	0.00
86	T	a-Methylstyrene	1.1656	1.1236	3.6	125	0.00
87	T	tert-Butylbenzene	0.4681	0.4680	0.0	140	-0.01
88	T	1,2,4-Trimethylbenzene	2.2498	2.2244	1.1	136	0.00
89	T	sec-Butylbenzene	2.6529	2.5208	5.0	131	0.00
90	T	p-Isopropyltoluene	2.4367	2.3693	2.8	133	0.00
91	T	1,3-Dichlorobenzene	1.4673	1.4402	1.8	141	0.00
92	T	1,4-Dichlorobenzene	1.4873	1.4409	3.1	140	0.00
93	T	n-Butylbenzene	2.1472	1.9554	8.9	125	0.00
94	T	1,2-Dichlorobenzene	1.3366	1.3254	0.8	140	0.00
95	T	1,2-Dibromo-3-Chloropropane	0.0825	0.0755	8.5	127	0.00
96	T	1,2,4-Trichlorobenzene	0.9781	0.9475	3.1	133	0.00
97	T	Hexachlorobutadiene	0.4309	0.3663	15.0	121	0.00
98	T	Naphthalene	1.8154	1.7391	4.2	130	0.00
99	T	1,2,3-Trichlorobenzene	0.8976	0.8428	6.1	134	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M12652.D 8260WT.M Wed Jun 15 16:29:27 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061516\11M12652.D Vial: 3
Acq On : 15 Jun 2016 15:49 Operator: JDS
Sample : WG572854-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	140	0.00
2	T	Dichlorodifluoromethane	50.0000	46.4819	7.0	127	0.00
3	P	Chloromethane	50.0000	42.7547	14.5	136	0.00
4	C	Vinyl Chloride	50.0000	48.1042	3.8	140	0.00
5	T	1,3-Butadiene	50.0000	46.3152	7.4	124	0.00
6	T	Bromomethane	50.0000	46.5966	6.8	141	0.00
7	T	Chloroethane	50.0000	47.6716	4.7	138	0.00
8	T	Trichlorofluoromethane	50.0000	49.0089	2.0	143	0.00
9	T	Diethyl ether	100.0000	96.3482	3.7	138	0.00
10	T	Isoprene	50.0000	43.3237	13.4	122	0.00
11	T	Acrolein	50.0000	52.4613	-4.9	153	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	48.8680	2.3	140	0.00
13	T	Acetone	50.0000	42.1083	15.8	121	0.00
14	C	1,1-Dichloroethene	50.0000	46.3240	7.4	134	0.00
15	T	Tert-Butyl Alcohol	200.0000	188.0245	6.0	130	0.01
16	T	Dimethyl Sulfide	50.0000	43.0089	14.0	118	0.00
17	T	Iodomethane	50.0000	46.3947	7.2	131	0.00
18	T	Methyl acetate	50.0000	36.9297	26.1#	108	0.01
19	T	Methylene Chloride	50.0000	46.7762	6.4	138	0.00
20	T	Carbon Disulfide	50.0000	46.5776	6.8	127	0.00
21	T	Acrylonitrile	50.0000	46.9043	6.2	128	0.00
22	T	Methyl Tert Butyl Ether	50.0000	48.7090	2.6	137	0.00
23	T	trans-1,2-Dichloroethene	50.0000	48.0282	3.9	140	0.01
24	T	n-Hexane	50.0000	41.7691	16.5	114	0.00
25	T	Diisopropyl ether	100.0000	84.4941	15.5	119	0.00
26	T	Vinyl Acetate	50.0000	45.9562	8.1	133	0.00
27	P	1,1-Dichloroethane	50.0000	46.1869	7.6	132	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	93.9436	6.1	132	0.00
29	T	2-Butanone	50.0000	42.8460	14.3	123	0.01
30	T	Propionitrile	100.0000	91.1652	8.8	123	0.00
31	T	2,2-Dichloropropane	50.0000	50.0396	-0.1	144	0.00
32	T	cis-1,2-Dichloroethene	50.0000	48.9461	2.1	141	0.00
33	C	Chloroform	50.0000	46.4230	7.2	138	0.00
34	T	1-Bromopropane	50.0000	47.4773	5.0	137	0.00
35	T	Bromochloromethane	50.0000	54.4911	-9.0	146	0.00
36	T	Tetrahydrofuran	100.0000	81.4614	18.5	118	0.00
37	S	Dibromofluoromethane	25.0000	24.2696	2.9	138	0.00
38	T	1,1,1-Trichloroethane	50.0000	48.5400	2.9	140	0.00
39	T	Cyclohexane	50.0000	42.8675	14.3	116	0.00
40	T	1,1-Dichloropropene	50.0000	48.6290	2.7	141	0.00
41	T	Carbon Tetrachloride	50.0000	49.8979	0.2	141	0.00
42	T	Tert-Amyl-Methyl ether	100.0000	98.2350	1.8	139	0.00
43	S	1,2-Dichloroethane-d4	25.0000	22.0669	11.7	127	0.00
44	T	1,2-Dichloroethane	50.0000	46.9607	6.1	132	0.00
45	T	Benzene	50.0000	46.4917	7.0	137	0.00
46	T	Trichloroethene	50.0000	49.4556	1.1	146	0.00
47	T	Methylcyclohexane	50.0000	44.8672	10.3	120	0.00
48	C	1,2-Dichloropropane	50.0000	46.1703	7.7	133	0.00
49	T	1,4-Dioxane	200.0000	195.1063	2.4	145	0.01
50	T	Bromodichloromethane	50.0000	48.2201	3.6	136	0.01
51	T	Dibromomethane	50.0000	48.4693	3.1	137	0.00
52	T	2-Chloroethyl Vinyl Ether	50.0000	43.2045	13.6	124	0.00
53	T	4-Methyl-2-Pentanone	50.0000	45.2970	9.4	129	0.00
54	T	cis-1,3-Dichloropropene	50.0000	49.8876	0.2	137	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061516\11M12652.D Vial: 3
Acq On : 15 Jun 2016 15:49 Operator: JDS
Sample : WG572854-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	50.0000	46.3615	7.3	128	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	139	0.00
57	S	Toluene-d8	25.0000	24.8903	0.4	143	0.00
58	C	Toluene	50.0000	49.6396	0.7	140	0.00
59	T	Ethyl Methacrylate	50.0000	49.8441	0.3	132	0.00
60	T	trans-1,3-Dichloropropene	50.0000	50.4300	-0.9	137	0.00
61	T	1,1,2-Trichloroethane	50.0000	49.5137	1.0	140	0.00
62	T	2-Hexanone	50.0000	43.2266	13.5	121	0.00
63	T	1,3-Dichloropropane	50.0000	49.4570	1.1	137	0.00
64	T	Tetrachloroethene	50.0000	52.2593	-4.5	150	0.00
65	T	Dibromochloromethane	50.0000	53.1280	-6.3	143	0.00
66	T	1,2-Dibromoethane	50.0000	51.1011	-2.2	143	0.00
67	T	1-Chlorohexane	50.0000	46.6892	6.6	126	0.00
68	P	Chlorobenzene	50.0000	50.0433	-0.1	142	0.00
69	T	1,1,1,2-Tetrachloroethane	50.0000	51.0380	-2.1	144	0.00
70	C	Ethylbenzene	50.0000	49.3008	1.4	140	0.00
71	T	m-,p-Xylene	100.0000	99.3686	0.6	141	0.00
72	T	o-Xylene	50.0000	49.3660	1.3	138	0.00
73	T	Styrene	50.0000	51.1514	-2.3	139	0.00
74	P	Bromoform	50.0000	53.5511	-7.1	147	0.00
75	T	Isopropylbenzene	50.0000	50.1228	-0.2	139	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	137	0.00
77	P	1,1,2,2-Tetrachloroethane	50.0000	49.3311	1.3	133	0.00
78	S	p-Bromofluorobenzene	25.0000	25.9908	-4.0	153	0.00
79	T	1,2,3-Trichloropropane	50.0000	48.4475	3.1	141	0.00
80	T	trans-1,4-Dichloro-2-Butene	50.0000	34.8588	30.3#	100	0.00
81	T	n-Propylbenzene	50.0000	48.8694	2.3	134	0.00
82	T	Bromobenzene	50.0000	50.0884	-0.2	145	0.00
83	T	1,3,5-Trimethylbenzene	50.0000	48.9792	2.0	137	-0.01
84	T	2-Chlorotoluene	50.0000	48.0183	4.0	138	0.00
85	T	4-Chlorotoluene	50.0000	47.6446	4.7	134	0.00
86	T	a-Methylstyrene	50.0000	48.1996	3.6	125	0.00
87	T	tert-Butylbenzene	50.0000	49.9877	0.0	140	-0.01
88	T	1,2,4-Trimethylbenzene	50.0000	49.4348	1.1	136	0.00
89	T	sec-Butylbenzene	50.0000	47.5110	5.0	131	0.00
90	T	p-Isopropyltoluene	50.0000	48.6167	2.8	133	0.00
91	T	1,3-Dichlorobenzene	50.0000	49.0752	1.8	141	0.00
92	T	1,4-Dichlorobenzene	50.0000	48.4404	3.1	140	0.00
93	T	n-Butylbenzene	50.0000	45.5327	8.9	125	0.00
94	T	1,2-Dichlorobenzene	50.0000	49.5797	0.8	140	0.00
95	T	1,2-Dibromo-3-Chloropropane	50.0000	43.0887	13.8	127	0.00
96	T	1,2,4-Trichlorobenzene	50.0000	48.4371	3.1	133	0.00
97	T	Hexachlorobutadiene	50.0000	42.5021	15.0	121	0.00
98	T	Naphthalene	50.0000	47.8963	4.2	130	0.00
99	T	1,2,3-Trichlorobenzene	50.0000	46.9470	6.1	134	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M12652.D 8260WT.M Wed Jun 15 16:29:30 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12685.D Vial: 3
Acq On : 16 Jun 2016 15:27 Operator: JDS
Sample : WG573050-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 17:35:27 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	543662	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	464956	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	284484	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	146149	24.5632 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.24%		
43) 1,2-Dichloroethane-d4	10.24	65	155086	22.8597 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 91.44%		
57) Toluene-d8	12.47	98	503584	24.9270 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.72%		
78) p-Bromofluorobenzene	15.64	95	224375	25.5858 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.36%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	406987	47.7786 ug/L	96
3) Chloromethane	3.72	50	299554	43.9090 ug/L	99
4) Vinyl Chloride	3.96	62	285096	50.3218 ug/L	99
5) 1,3-Butadiene	4.00	54	271351	48.1678 ug/L	98
6) Bromomethane	4.85	94	180415	46.3157 ug/L	99
7) Chloroethane	5.00	64	169812	46.6496 ug/L	99
8) Trichlorofluoromethane	5.49	101	572102	50.6632 ug/L	100
9) Diethyl ether	6.01	59	410565	98.3091 ug/L	93
10) Isoprene	6.04	67	299151	42.9800 ug/L	95
11) Acrolein	6.25	56	28306	51.5056 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	263199	48.0345 ug/L	94
13) Acetone	6.34	43	59010	45.7104 ug/L	95
14) 1,1-Dichloroethene	6.56	61	462355	46.4553 ug/L	98
15) Tert-Butyl Alcohol	6.66	59	76547	214.3667 ug/L	97
16) Dimethyl Sulfide	6.81	62	169483	42.6404 ug/L	95
17) Iodomethane	7.06	142	210406	46.5543 ug/L	98
18) Methyl acetate	7.07	43	162363	40.1917 ug/L	94
19) Methylene Chloride	7.31	84	239243	46.4471 ug/L	86
20) Carbon Disulfide	7.36	76	766152	45.9817 ug/L	100
21) Acrylonitrile	7.49	53	86599	50.0317 ug/L	99
22) Methyl Tert Butyl Ether	7.52	73	653454	50.8641 ug/L	95
23) trans-1,2-Dichloroethene	7.75	96	263265	47.7942 ug/L	95
24) n-Hexane	7.82	57	387169	42.2012 ug/L	98
25) Diisopropyl ether	8.15	45	2018844	88.1874 ug/L	98
26) Vinyl Acetate	8.31	43	415107	46.8722 ug/L	98
27) 1,1-Dichloroethane	8.34	63	516114	46.6970 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1816721	97.5020 ug/L	98
29) 2-Butanone	8.87	43	91425	46.8450 ug/L	95
30) Propionitrile	8.99	54	57427	100.4638 ug/L	97
31) 2,2-Dichloropropane	9.09	77	451088	52.1641 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	299366	49.2911 ug/L	94
33) Chloroform	9.35	83	518393	47.7618 ug/L	99
34) 1-Bromopropane	9.48	122	51025	47.3284 ug/L	99
35) Bromochloromethane	9.57	130	200256	55.5193 ug/L	88
36) Tetrahydrofuran	9.60	42	123167	89.3707 ug/L	90
38) 1,1,1-Trichloroethane	9.85	97	536409	50.2216 ug/L	96
39) Cyclohexane	9.88	56	510666	43.8708 ug/L	96
40) 1,1-Dichloropropene	10.04	75	368569	48.3292 ug/L	99
41) Carbon Tetrachloride	10.18	117	537204	51.5070 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	1318788	101.8590 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M12685.D 8260WT.M Thu Jun 16 17:35:27 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12685.D Vial: 3
Acq On : 16 Jun 2016 15:27 Operator: JDS
Sample : WG573050-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 17:35:27 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.35	62	443952	50.3619 ug/L	97
45) Benzene	10.38	78	961058	46.0340 ug/L	100
46) Trichloroethene	11.09	130	341574	50.3363 ug/L	98
47) Methylcyclohexane	11.17	83	382542	45.6789 ug/L	95
48) 1,2-Dichloropropane	11.29	63	263883	45.6618 ug/L	95
49) 1,4-Dioxane	11.56	88	7030	214.0094 ug/L	95
50) Bromodichloromethane	11.58	83	405061	49.9279 ug/L	99
51) Dibromomethane	11.66	93	157825	52.4073 ug/L	97
52) 2-Chloroethyl Vinyl Ether	11.84	63	136375	47.8801 ug/L	97
53) 4-Methyl-2-Pentanone	11.87	58	77895	48.4881 ug/L	94
54) cis-1,3-Dichloropropene	12.17	75	411519	50.7135 ug/L	99
55) Dimethyl Disulfide	12.42	79	235698	48.2690 ug/L	97
58) Toluene	12.56	91	1150518	48.8793 ug/L	99
59) Ethyl Methacrylate	12.65	69	253948	50.5265 ug/L	91
60) trans-1,3-Dichloropropene	12.73	75	392046	51.8908 ug/L	97
61) 1,1,2-Trichloroethane	12.93	97	214974	51.5054 ug/L	96
62) 2-Hexanone	12.86	43	139732	45.5833 ug/L #	97
63) 1,3-Dichloropropane	13.21	76	338700	50.5327 ug/L	90
64) Tetrachloroethene	13.34	164	282961	51.6948 ug/L	97
65) Dibromochloromethane	13.59	129	353385	55.5094 ug/L	99
66) 1,2-Dibromoethane	13.82	107	220306	52.6830 ug/L	98
67) 1-Chlorohexane	13.89	91	365423	47.0887 ug/L	92
68) Chlorobenzene	14.29	112	859549	49.8484 ug/L	99
69) 1,1,1,2-Tetrachloroethane	14.32	131	361414	51.7995 ug/L	98
70) Ethylbenzene	14.31	106	437811	49.5147 ug/L	98
71) m-,p-Xylene	14.39	106	1062784	98.8697 ug/L	99
72) o-Xylene	14.92	106	519351	49.6451 ug/L	100
73) Styrene	14.96	104	894238	51.7382 ug/L	98
74) Bromoform	15.43	173	218771	56.6988 ug/L	98
75) Isopropylbenzene	15.31	105	1401984	50.6762 ug/L	100
77) 1,1,2,2-Tetrachloroethane	15.52	83	220886	49.8600 ug/L	99
79) 1,2,3-Trichloropropane	15.70	110	84799	51.0086 ug/L	87
80) trans-1,4-Dichloro-2-Buten	15.74	53	83254	39.1541 ug/L	76
81) n-Propylbenzene	15.79	91	1592055	48.3228 ug/L	98
82) Bromobenzene	15.92	156	429706	49.7043 ug/L	90
83) 1,3,5-Trimethylbenzene	15.96	105	1223270	48.6555 ug/L	100
84) 2-Chlorotoluene	16.05	91	1068016	46.2822 ug/L	98
85) 4-Chlorotoluene	16.09	91	994885	48.1303 ug/L	98
86) a-Methylstyrene	16.34	118	623971	47.0452 ug/L	99
87) tert-Butylbenzene	16.40	134	268151	50.3427 ug/L	91
88) 1,2,4-Trimethylbenzene	16.44	105	1258537	49.1588 ug/L	99
89) sec-Butylbenzene	16.65	105	1435723	47.5587 ug/L	98
90) p-Isopropyltoluene	16.79	119	1365569	49.2479 ug/L	99
91) 1,3-Dichlorobenzene	16.98	146	824640	49.3881 ug/L	98
92) 1,4-Dichlorobenzene	17.10	146	819532	48.4226 ug/L	99
93) n-Butylbenzene	17.28	91	1140151	46.6626 ug/L	98
94) 1,2-Dichlorobenzene	17.57	146	760183	49.9784 ug/L	99
95) 1,2-Dibromo-3-Chloropropan	18.49	75	49466	49.5379 ug/L	98
96) 1,2,4-Trichlorobenzene	19.55	180	561045	50.4088 ug/L	100
97) Hexachlorobutadiene	19.69	225	220828	45.0373 ug/L	98
98) Naphthalene	19.90	128	1096836	53.0938 ug/L	100
99) 1,2,3-Trichlorobenzene	20.19	180	506218	49.5582 ug/L	100

(#) = qualifier out of range (m) = manual integration
11M12685.D 8260WT.M Thu Jun 16 17:35:28 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12685.D Vial: 3
Acq On : 16 Jun 2016 15:27 Operator: JDS
Sample : WG573050-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 17:35 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

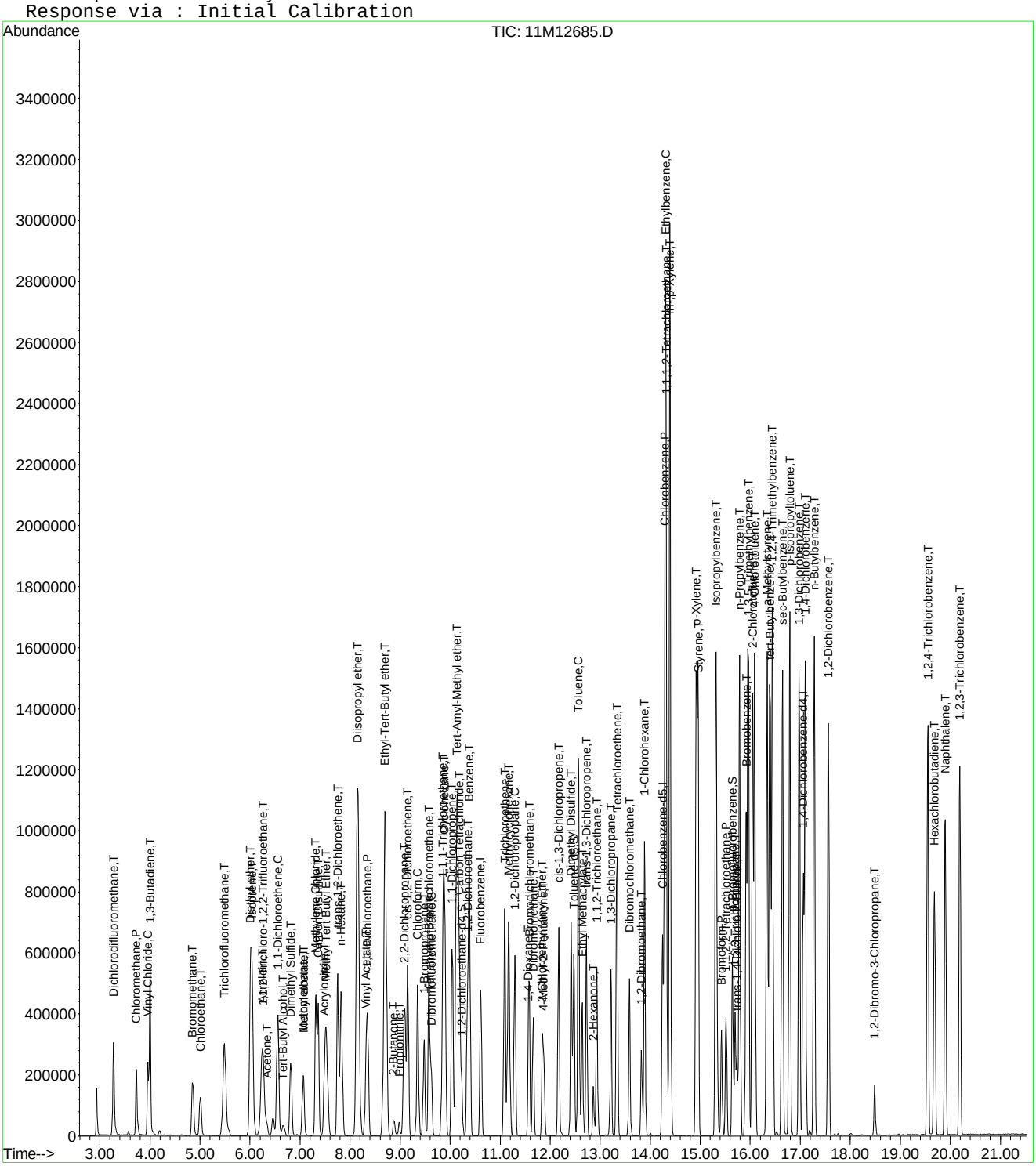
Abundance
TIC: 11M12685.D
Time-->
Dichlorodifluoromethane,T
Chloromethane,P
Vinyl Chloride,C
1,3-Butadiene,T
Bromomethane,T
Chloroethane,T
Trichlorofluoromethane,T
Acetone,T
Tert-Butyl Alcohol,T
Diisopropyl ether,T
Vinyl Acetate,P
Ethyl-Tert-Butyl ether,T
Chloroform,C
Benzene,T
Fluorobenzene,I
Toluene,C
1,2-Dibromo-3-Chloropropane,T
Hexachlorobutadiene,T
Naphthalene,T
1,2,4-Trichlorobenzene,T
1,2,3-Trichlorobenzene,T
Chlorobenzene,P
Styrene,T
p-Xylene,T
Isopropylbenzene,T
n-Propylbenzene,T
Bromobenzene,T
sec-Butylbenzene,T
n-Butylbenzene,T
1,2-Dichlorobenzene,T
1,3-Dichlorobenzene,T
1,4-Dichlorobenzene,T
1,4-Dichlorobenzene-d4,I
1-Chlorohexane,T
Chlorobenzene-d5,I
Ethylbenzene,C
1,1,2-Tetrachloroethane,T
m,p-Xylene,T
Tetrachloroethene,T
1,2-Dibromoethane,T
Dibromochloromethane,T
1,1,1-Trichloroethane,T
1,3-Dichloropropane,T
2-Hexanone,T
Tert-Amyl-Methyl ether,T
Tert-Butyl Ethyl Ether,T
Methyl Sulfide,T
Acrylonitrile,T
n-Hexane,T
1,2-Dichloroethene,T
Vinyl Acetate,P
2-Butanone,T
2-Pentanone,T
1,2-Dichloroethane,T
Bromochloromethane,T
1,1-Dichloroethane,T
1,1,2-Trichloroethane,T
1,1-Dichloroethene,C
Carbon Tetrachloride,T
1,2-Dichloroethane-d4,I
1,2-Dichloropropane,T
1,4-Dichlorobutane,T
1,4-Dichlorobutane-d8,I
Methyl Methacrylate,T
Ethyl Methacrylate,T
Methyl Disulfide,T
cis-1,3-Dichloropropene,T
Ethyl Ether,T
Methyl Tert-Butyl Ether,T
Methyl Acrylate,T
Methyl Methacrylate,T
Ethyl Methacrylate,T
Methyl Disulfide,T
Methyl Methacrylate,T
Ethyl Methacrylate,T
Methyl Acrylate,T
Methyl Methacrylate,T
Methyl Methacrylate,T
Methyl Methac

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061616\11M12685.D Vial: 3
Acq On : 16 Jun 2016 15:27 Operator: JDS
Sample : WG573050-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	104	0.00
2	T	Dichlorodifluoromethane	0.3917	0.3743	4.4	98	0.00
3	P	Chloromethane	0.3137	0.2755	12.2	104	0.00
4	C	Vinyl Chloride	0.2605	0.2622	-0.6	109	0.00
5	T	1,3-Butadiene	0.2591	0.2496	3.7	97	0.00
6	T	Bromomethane	0.1791	0.1659	7.4	105	0.00
7	T	Chloroethane	0.1674	0.1562	6.7	101	0.00
8	T	Trichlorofluoromethane	0.5193	0.5262	-1.3	110	0.01
9	T	Diethyl ether	0.1920	0.1888	1.7	105	0.00
10	T	Isoprene	0.3201	0.2751	14.0	90	0.00
11	T	Acrolein	0.0228	0.0260	-14.3	112	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2520	0.2421	3.9	103	0.01
13	T	Acetone	0.0594	0.0543	8.6	98	0.00
14	C	1,1-Dichloroethene	0.4577	0.4252	7.1	101	0.00
15	T	Tert-Butyl Alcohol	0.0164	0.0176	-7.2	110	0.00
16	T	Dimethyl Sulfide	0.1828	0.1559	14.7	87	0.00
17	T	Iodomethane	0.1615	0.1935	-19.8	98	0.00
18	T	Methyl acetate	0.2006	0.1493	25.6#	88	0.01
19	T	Methylene Chloride	0.2369	0.2200	7.1	102	0.00
20	T	Carbon Disulfide	0.7662	0.7046	8.0	94	0.00
21	T	Acrylonitrile	0.0796	0.0796	-0.1	102	0.00
22	T	Methyl Tert Butyl Ether	0.5908	0.6010	-1.7	107	0.00
23	T	trans-1,2-Dichloroethene	0.2533	0.2421	4.4	104	0.01
24	T	n-Hexane	0.4219	0.3561	15.6	86	0.00
25	T	Diisopropyl ether	1.0527	0.9284	11.8	93	0.00
26	T	Vinyl Acetate	0.3793	0.3818	-0.6	101	0.00
27	P	1,1-Dichloroethane	0.5082	0.4747	6.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	0.8568	0.8354	2.5	102	0.00
29	T	2-Butanone	0.0897	0.0841	6.3	100	0.00
30	T	Propionitrile	0.0263	0.0264	-0.5	102	0.01
31	T	2,2-Dichloropropane	0.3977	0.4149	-4.3	112	0.00
32	T	cis-1,2-Dichloroethene	0.2793	0.2753	1.4	106	0.00
33	C	Chloroform	0.4991	0.4768	4.5	106	0.00
34	T	1-Bromopropane	0.0432	0.0469	-8.7	102	0.00
35	T	Bromochloromethane	0.1659	0.1842	-11.0	111	0.00
36	T	Tetrahydrofuran	0.0634	0.0566	10.6	96	0.00
37	S	Dibromofluoromethane	0.2736	0.2688	1.7	105	0.00
38	T	1,1,1-Trichloroethane	0.4911	0.4933	-0.4	108	0.00
39	T	Cyclohexane	0.5353	0.4697	12.3	89	0.00
40	T	1,1-Dichloropropene	0.3507	0.3390	3.3	104	0.00
41	T	Carbon Tetrachloride	0.4796	0.4941	-3.0	109	0.00
42	T	Tert-Amyl-Methyl ether	0.5954	0.6064	-1.9	107	0.00
43	S	1,2-Dichloroethane-d4	0.3120	0.2853	8.6	98	0.01
44	T	1,2-Dichloroethane	0.4054	0.4083	-0.7	106	0.01
45	T	Benzene	0.9600	0.8839	7.9	101	0.00
46	T	Trichloroethene	0.3120	0.3141	-0.7	111	0.00
47	T	Methylcyclohexane	0.3851	0.3518	8.6	91	0.00
48	C	1,2-Dichloropropane	0.2657	0.2427	8.7	98	0.00
49	T	1,4-Dioxane	0.0014	0.0016	-15.7	120	0.01
50	T	Bromodichloromethane	0.3731	0.3725	0.1	105	0.01
51	T	Dibromomethane	0.1385	0.1452	-4.8	110	0.01
52	T	2-Chloroethyl Vinyl Ether	0.1310	0.1254	4.2	102	0.00
53	T	4-Methyl-2-Pentanone	0.0739	0.0716	3.0	103	0.00
54	T	cis-1,3-Dichloropropene	0.3731	0.3785	-1.4	104	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061616\11M12685.D Vial: 3
Acq On : 16 Jun 2016 15:27 Operator: JDS
Sample : WG573050-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	0.2245	0.2168	3.5	99	0.00
56	I	Chlorobenzene-d5	1.0000	1.0000	0.0	106	0.00
57	S	Toluene-d8	1.0862	1.0831	0.3	109	0.00
58	C	Toluene	1.2656	1.2372	2.2	105	0.00
59	T	Ethyl Methacrylate	0.2702	0.2731	-1.1	102	0.00
60	T	trans-1,3-Dichloropropene	0.4062	0.4216	-3.8	107	0.00
61	T	1,1,2-Trichloroethane	0.2244	0.2312	-3.0	111	0.00
62	T	2-Hexanone	0.1648	0.1503	8.8	97	0.00
63	T	1,3-Dichloropropane	0.3604	0.3642	-1.1	107	0.00
64	T	Tetrachloroethene	0.2943	0.3043	-3.4	113	0.00
65	T	Dibromochloromethane	0.3423	0.3800	-11.0	114	0.00
66	T	1,2-Dibromoethane	0.2248	0.2369	-5.4	112	0.00
67	T	1-Chlorohexane	0.4173	0.3930	5.8	97	0.00
68	P	Chlorobenzene	0.9272	0.9243	0.3	108	0.00
69	T	1,1,1,2-Tetrachloroethane	0.3751	0.3887	-3.6	111	0.00
70	C	Ethylbenzene	0.4754	0.4708	1.0	107	0.00
71	T	m-,p-Xylene	0.5780	0.5714	1.1	107	0.00
72	T	o-Xylene	0.5625	0.5585	0.7	106	0.00
73	T	Styrene	0.9293	0.9616	-3.5	107	0.01
74	P	Bromoform	0.2075	0.2353	-13.4	119	0.00
75	T	Isopropylbenzene	1.4875	1.5076	-1.4	107	0.00
76	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	108	0.00
77	P	1,1,2,2-Tetrachloroethane	0.3893	0.3882	0.3	106	0.00
78	S	p-Bromofluorobenzene	0.7706	0.7887	-2.3	119	0.00
79	T	1,2,3-Trichloropropane	0.1351	0.1490	-10.3	117	0.00
80	T	trans-1,4-Dichloro-2-Butene	0.1588	0.1463	7.9	88	0.00
81	T	n-Propylbenzene	2.8953	2.7982	3.4	105	0.00
82	T	Bromobenzene	0.7597	0.7552	0.6	113	0.00
83	T	1,3,5-Trimethylbenzene	2.2094	2.1500	2.7	107	0.00
84	T	2-Chlorotoluene	2.0279	1.8771	7.4	105	0.00
85	T	4-Chlorotoluene	1.8165	1.7486	3.7	107	0.00
86	T	a-Methylstyrene	1.1656	1.0967	5.9	96	0.00
87	T	tert-Butylbenzene	0.4681	0.4713	-0.7	111	0.00
88	T	1,2,4-Trimethylbenzene	2.2498	2.2120	1.7	107	0.00
89	T	sec-Butylbenzene	2.6529	2.5234	4.9	103	0.00
90	T	p-Isopropyltoluene	2.4367	2.4001	1.5	106	0.00
91	T	1,3-Dichlorobenzene	1.4673	1.4494	1.2	112	0.00
92	T	1,4-Dichlorobenzene	1.4873	1.4404	3.2	111	0.00
93	T	n-Butylbenzene	2.1472	2.0039	6.7	101	0.00
94	T	1,2-Dichlorobenzene	1.3366	1.3361	0.0	111	0.00
95	T	1,2-Dibromo-3-Chloropropane	0.0825	0.0869	-5.4	115	0.00
96	T	1,2,4-Trichlorobenzene	0.9781	0.9861	-0.8	109	0.00
97	T	Hexachlorobutadiene	0.4309	0.3881	9.9	101	0.00
98	T	Naphthalene	1.8154	1.9278	-6.2	114	0.00
99	T	1,2,3-Trichlorobenzene	0.8976	0.8897	0.9	112	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M12685.D 8260WT.M Thu Jun 16 17:38:01 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061616\11M12685.D Vial: 3
Acq On : 16 Jun 2016 15:27 Operator: JDS
Sample : WG573050-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	104	0.00
2	T	Dichlorodifluoromethane	50.0000	47.7786	4.4	98	0.00
3	P	Chloromethane	50.0000	43.9090	12.2	104	0.00
4	C	Vinyl Chloride	50.0000	50.3218	-0.6	109	0.00
5	T	1,3-Butadiene	50.0000	48.1678	3.7	97	0.00
6	T	Bromomethane	50.0000	46.3157	7.4	105	0.00
7	T	Chloroethane	50.0000	46.6496	6.7	101	0.00
8	T	Trichlorofluoromethane	50.0000	50.6632	-1.3	110	0.01
9	T	Diethyl ether	100.0000	98.3091	1.7	105	0.00
10	T	Isoprene	50.0000	42.9800	14.0	90	0.00
11	T	Acrolein	50.0000	51.5056	-3.0	112	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	48.0345	3.9	103	0.01
13	T	Acetone	50.0000	45.7104	8.6	98	0.00
14	C	1,1-Dichloroethene	50.0000	46.4553	7.1	101	0.00
15	T	Tert-Butyl Alcohol	200.0000	214.3667	-7.2	110	0.00
16	T	Dimethyl Sulfide	50.0000	42.6404	14.7	87	0.00
17	T	Iodomethane	50.0000	46.5543	6.9	98	0.00
18	T	Methyl acetate	50.0000	40.1917	19.6	88	0.01
19	T	Methylene Chloride	50.0000	46.4471	7.1	102	0.00
20	T	Carbon Disulfide	50.0000	45.9817	8.0	94	0.00
21	T	Acrylonitrile	50.0000	50.0317	-0.1	102	0.00
22	T	Methyl Tert Butyl Ether	50.0000	50.8641	-1.7	107	0.00
23	T	trans-1,2-Dichloroethene	50.0000	47.7942	4.4	104	0.01
24	T	n-Hexane	50.0000	42.2012	15.6	86	0.00
25	T	Diisopropyl ether	100.0000	88.1874	11.8	93	0.00
26	T	Vinyl Acetate	50.0000	46.8722	6.3	101	0.00
27	P	1,1-Dichloroethane	50.0000	46.6970	6.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	97.5020	2.5	102	0.00
29	T	2-Butanone	50.0000	46.8450	6.3	100	0.00
30	T	Propionitrile	100.0000	100.4638	-0.5	102	0.01
31	T	2,2-Dichloropropane	50.0000	52.1641	-4.3	112	0.00
32	T	cis-1,2-Dichloroethene	50.0000	49.2911	1.4	106	0.00
33	C	Chloroform	50.0000	47.7618	4.5	106	0.00
34	T	1-Bromopropane	50.0000	47.3284	5.3	102	0.00
35	T	Bromochloromethane	50.0000	55.5193	-11.0	111	0.00
36	T	Tetrahydrofuran	100.0000	89.3706	10.6	96	0.00
37	S	Dibromofluoromethane	25.0000	24.5632	1.7	105	0.00
38	T	1,1,1-Trichloroethane	50.0000	50.2216	-0.4	108	0.00
39	T	Cyclohexane	50.0000	43.8708	12.3	89	0.00
40	T	1,1-Dichloropropene	50.0000	48.3293	3.3	104	0.00
41	T	Carbon Tetrachloride	50.0000	51.5070	-3.0	109	0.00
42	T	Tert-Amyl-Methyl ether	100.0000	101.8590	-1.9	107	0.00
43	S	1,2-Dichloroethane-d4	25.0000	22.8597	8.6	98	0.01
44	T	1,2-Dichloroethane	50.0000	50.3619	-0.7	106	0.01
45	T	Benzene	50.0000	46.0340	7.9	101	0.00
46	T	Trichloroethene	50.0000	50.3363	-0.7	111	0.00
47	T	Methylcyclohexane	50.0000	45.6789	8.6	91	0.00
48	C	1,2-Dichloropropane	50.0000	45.6618	8.7	98	0.00
49	T	1,4-Dioxane	200.0000	214.0094	-7.0	120	0.01
50	T	Bromodichloromethane	50.0000	49.9279	0.1	105	0.01
51	T	Dibromomethane	50.0000	52.4074	-4.8	110	0.01
52	T	2-Chloroethyl Vinyl Ether	50.0000	47.8801	4.2	102	0.00
53	T	4-Methyl-2-Pentanone	50.0000	48.4881	3.0	103	0.00
54	T	cis-1,3-Dichloropropene	50.0000	50.7135	-1.4	104	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061616\11M12685.D Vial: 3
Acq On : 16 Jun 2016 15:27 Operator: JDS
Sample : WG573050-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	50.0000	48.2690	3.5	99	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	106	0.00
57	S	Toluene-d8	25.0000	24.9270	0.3	109	0.00
58	C	Toluene	50.0000	48.8793	2.2	105	0.00
59	T	Ethyl Methacrylate	50.0000	50.5266	-1.1	102	0.00
60	T	trans-1,3-Dichloropropene	50.0000	51.8908	-3.8	107	0.00
61	T	1,1,2-Trichloroethane	50.0000	51.5054	-3.0	111	0.00
62	T	2-Hexanone	50.0000	45.5833	8.8	97	0.00
63	T	1,3-Dichloropropane	50.0000	50.5327	-1.1	107	0.00
64	T	Tetrachloroethene	50.0000	51.6948	-3.4	113	0.00
65	T	Dibromochloromethane	50.0000	55.5093	-11.0	114	0.00
66	T	1,2-Dibromoethane	50.0000	52.6830	-5.4	112	0.00
67	T	1-Chlorohexane	50.0000	47.0887	5.8	97	0.00
68	P	Chlorobenzene	50.0000	49.8484	0.3	108	0.00
69	T	1,1,1,2-Tetrachloroethane	50.0000	51.7995	-3.6	111	0.00
70	C	Ethylbenzene	50.0000	49.5147	1.0	107	0.00
71	T	m-,p-Xylene	100.0000	98.8697	1.1	107	0.00
72	T	o-Xylene	50.0000	49.6451	0.7	106	0.00
73	T	Styrene	50.0000	51.7382	-3.5	107	0.01
74	P	Bromoform	50.0000	56.6988	-13.4	119	0.00
75	T	Isopropylbenzene	50.0000	50.6762	-1.4	107	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	108	0.00
77	P	1,1,2,2-Tetrachloroethane	50.0000	49.8600	0.3	106	0.00
78	S	p-Bromofluorobenzene	25.0000	25.5858	-2.3	119	0.00
79	T	1,2,3-Trichloropropane	50.0000	51.0086	-2.0	117	0.00
80	T	trans-1,4-Dichloro-2-Butene	50.0000	39.1541	21.7	88	0.00
81	T	n-Propylbenzene	50.0000	48.3228	3.4	105	0.00
82	T	Bromobenzene	50.0000	49.7043	0.6	113	0.00
83	T	1,3,5-Trimethylbenzene	50.0000	48.6555	2.7	107	0.00
84	T	2-Chlorotoluene	50.0000	46.2822	7.4	105	0.00
85	T	4-Chlorotoluene	50.0000	48.1303	3.7	107	0.00
86	T	a-Methylstyrene	50.0000	47.0452	5.9	96	0.00
87	T	tert-Butylbenzene	50.0000	50.3427	-0.7	111	0.00
88	T	1,2,4-Trimethylbenzene	50.0000	49.1588	1.7	107	0.00
89	T	sec-Butylbenzene	50.0000	47.5587	4.9	103	0.00
90	T	p-Isopropyltoluene	50.0000	49.2479	1.5	106	0.00
91	T	1,3-Dichlorobenzene	50.0000	49.3881	1.2	112	0.00
92	T	1,4-Dichlorobenzene	50.0000	48.4226	3.2	111	0.00
93	T	n-Butylbenzene	50.0000	46.6626	6.7	101	0.00
94	T	1,2-Dichlorobenzene	50.0000	49.9784	0.0	111	0.00
95	T	1,2-Dibromo-3-Chloropropane	50.0000	49.5379	0.9	115	0.00
96	T	1,2,4-Trichlorobenzene	50.0000	50.4088	-0.8	109	0.00
97	T	Hexachlorobutadiene	50.0000	45.0373	9.9	101	0.00
98	T	Naphthalene	50.0000	53.0938	-6.2	114	0.00
99	T	1,2,3-Trichlorobenzene	50.0000	49.5582	0.9	112	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M12685.D 8260WT.M Thu Jun 16 17:38:04 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061716\11M12718.D Vial: 2
Acq On : 17 Jun 2016 16:21 Operator: JDS
Sample : WG573258-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 17 16:52:21 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	544296	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	473466	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	295714	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	146304	24.5606 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.24%		
43) 1,2-Dichloroethane-d4	10.23	65	152286	22.4209 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 89.68%		
57) Toluene-d8	12.47	98	494497	24.0373 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.16%		
78) p-Bromofluorobenzene	15.64	95	226814	24.8817 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.52%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	412040	48.3154 ug/L	98
3) Chloromethane	3.72	50	311199	45.5628 ug/L	99
4) Vinyl Chloride	3.96	62	294517	51.9241 ug/L	99
5) 1,3-Butadiene	4.00	54	306050	54.2640 ug/L	97
6) Bromomethane	4.85	94	185623	47.5972 ug/L	98
7) Chloroethane	5.00	64	172728	47.3954 ug/L	100
8) Trichlorofluoromethane	5.48	101	653864	57.8363 ug/L	99
9) Diethyl ether	6.01	59	395897	94.6864 ug/L	94
10) Isoprene	6.04	67	312555	44.8535 ug/L	98
11) Acrolein	6.23	56	25261	46.0750 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	275447	50.2112 ug/L	94
13) Acetone	6.34	43	63397	49.0514 ug/L	98
14) 1,1-Dichloroethene	6.56	61	491469	49.3230 ug/L	100
15) Tert-Butyl Alcohol	6.65	59	64337	179.9632 ug/L	100
16) Dimethyl Sulfide	6.81	62	184944	46.4760 ug/L	95
17) Iodomethane	7.06	142	222472	49.0508 ug/L	99
18) Methyl acetate	7.06	43	154165	38.0320 ug/L	95
19) Methylene Chloride	7.31	84	247079	47.9125 ug/L	88
20) Carbon Disulfide	7.36	76	827034	49.5778 ug/L	99
21) Acrylonitrile	7.49	53	79149	45.6743 ug/L	98
22) Methyl Tert Butyl Ether	7.52	73	619117	48.1352 ug/L	96
23) trans-1,2-Dichloroethene	7.75	96	270345	49.0224 ug/L	96
24) n-Hexane	7.82	57	410069	44.6452 ug/L	98
25) Diisopropyl ether	8.15	45	2046608	89.2960 ug/L	97
26) Vinyl Acetate	8.31	43	323874	37.0648 ug/L	98
27) 1,1-Dichloroethane	8.34	63	538487	48.6645 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1785514	95.7155 ug/L	98
29) 2-Butanone	8.87	43	83601	42.7862 ug/L	94
30) Propionitrile	8.97	54	51990	90.8463 ug/L	99
31) 2,2-Dichloropropane	9.09	77	450752	52.0646 ug/L	99
32) cis-1,2-Dichloroethene	9.15	96	302463	49.7430 ug/L	97
33) Chloroform	9.35	83	543256	49.9942 ug/L	99
34) 1-Bromopropane	9.48	122	55874	51.7066 ug/L	98
35) Bromochloromethane	9.57	130	204706	56.6870 ug/L	87
36) Tetrahydrofuran	9.60	42	108791	78.8474 ug/L	94
38) 1,1,1-Trichloroethane	9.85	97	565202	52.8557 ug/L	97
39) Cyclohexane	9.88	56	543260	46.6166 ug/L	96
40) 1,1-Dichloropropene	10.04	75	383943	50.2865 ug/L	100
41) Carbon Tetrachloride	10.18	117	581106	55.6514 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	1249609	96.4034 ug/L	100

(#) = qualifier out of range (m) = manual integration
11M12718.D 8260WT.M Fri Jun 17 16:52:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061716\11M12718.D Vial: 2
Acq On : 17 Jun 2016 16:21 Operator: JDS
Sample : WG573258-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 17 16:52:21 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.34	62	454904	51.5442 ug/L	97
45) Benzene	10.38	78	989063	47.3202 ug/L	99
46) Trichloroethene	11.08	130	359003	52.8431 ug/L	97
47) Methylcyclohexane	11.17	83	411562	49.0869 ug/L	96
48) 1,2-Dichloropropane	11.29	63	269038	46.4996 ug/L	92
49) 1,4-Dioxane	11.57	88	6782	207.0668 ug/L	85
50) Bromodichloromethane	11.57	83	422303	51.9925 ug/L	99
51) Dibromomethane	11.65	93	155080	51.4359 ug/L	97
52) 2-Chloroethyl Vinyl Ether	11.84	63	127065	44.5595 ug/L	97
53) 4-Methyl-2-Pentanone	11.87	58	67833	42.1755 ug/L	92
54) cis-1,3-Dichloropropene	12.17	75	410658	50.5484 ug/L	100
55) Dimethyl Disulfide	12.42	79	239908	49.0739 ug/L	98
58) Toluene	12.56	91	1178913	49.1854 ug/L	99
59) Ethyl Methacrylate	12.65	69	238887	46.6757 ug/L	92
60) trans-1,3-Dichloropropene	12.73	75	385543	50.1129 ug/L	99
61) 1,1,2-Trichloroethane	12.93	97	207988	48.9360 ug/L	96
62) 2-Hexanone	12.86	43	122602	39.2763 ug/L	97
63) 1,3-Dichloropropane	13.21	76	329205	48.2333 ug/L	92
64) Tetrachloroethene	13.34	164	288691	51.7937 ug/L	99
65) Dibromochloromethane	13.59	129	351670	54.2471 ug/L	99
66) 1,2-Dibromoethane	13.82	107	211814	49.7419 ug/L	100
67) 1-Chlorohexane	13.89	91	387462	49.0313 ug/L	96
68) Chlorobenzene	14.29	112	886511	50.4879 ug/L	99
69) 1,1,1,2-Tetrachloroethane	14.32	131	377753	53.1681 ug/L	100
70) Ethylbenzene	14.31	106	447460	49.6964 ug/L	100
71) m-,p-Xylene	14.39	106	1090017	99.5806 ug/L	100
72) o-Xylene	14.92	106	535146	50.2355 ug/L	100
73) Styrene	14.95	104	912597	51.8514 ug/L	100
74) Bromoform	15.43	173	209874	53.4153 ug/L	99
75) Isopropylbenzene	15.31	105	1458375	51.7670 ug/L	99
77) 1,1,2,2-Tetrachloroethane	15.52	83	196911	42.7602 ug/L	98
79) 1,2,3-Trichloropropane	15.70	110	79205	45.8713 ug/L	88
80) trans-1,4-Dichloro-2-Buten	15.74	53	76179	34.5551 ug/L	75
81) n-Propylbenzene	15.79	91	1666258	48.6544 ug/L	99
82) Bromobenzene	15.92	156	436557	48.5791 ug/L	91
83) 1,3,5-Trimethylbenzene	15.95	105	1286704	49.2350 ug/L	100
84) 2-Chlorotoluene	16.05	91	1147889	47.8544 ug/L	98
85) 4-Chlorotoluene	16.09	91	1015215	47.2487 ug/L	98
86) a-Methylstyrene	16.34	118	674861	48.9498 ug/L	97
87) tert-Butylbenzene	16.40	134	283341	51.1744 ug/L	92
88) 1,2,4-Trimethylbenzene	16.44	105	1325740	49.8173 ug/L	99
89) sec-Butylbenzene	16.65	105	1539177	49.0494 ug/L	99
90) p-Isopropyltoluene	16.79	119	1452692	50.4003 ug/L	99
91) 1,3-Dichlorobenzene	16.98	146	851925	49.0846 ug/L	98
92) 1,4-Dichlorobenzene	17.10	146	852381	48.4510 ug/L	99
93) n-Butylbenzene	17.28	91	1218876	47.9902 ug/L	97
94) 1,2-Dichlorobenzene	17.57	146	781660	49.4388 ug/L	99
95) 1,2-Dibromo-3-Chloropropan	18.49	75	43738	42.2340 ug/L	99
96) 1,2,4-Trichlorobenzene	19.55	180	562345	48.6069 ug/L	99
97) Hexachlorobutadiene	19.69	225	230283	45.1820 ug/L	99
98) Naphthalene	19.89	128	990505	46.1258 ug/L	100
99) 1,2,3-Trichlorobenzene	20.19	180	502390	47.3157 ug/L	100

(#) = qualifier out of range (m) = manual integration
11M12718.D 8260WT.M Fri Jun 17 16:52:22 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061716\11M12718.D Vial: 2
Acq On : 17 Jun 2016 16:21 Operator: JDS
Sample : WG573258-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 17 16:52 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

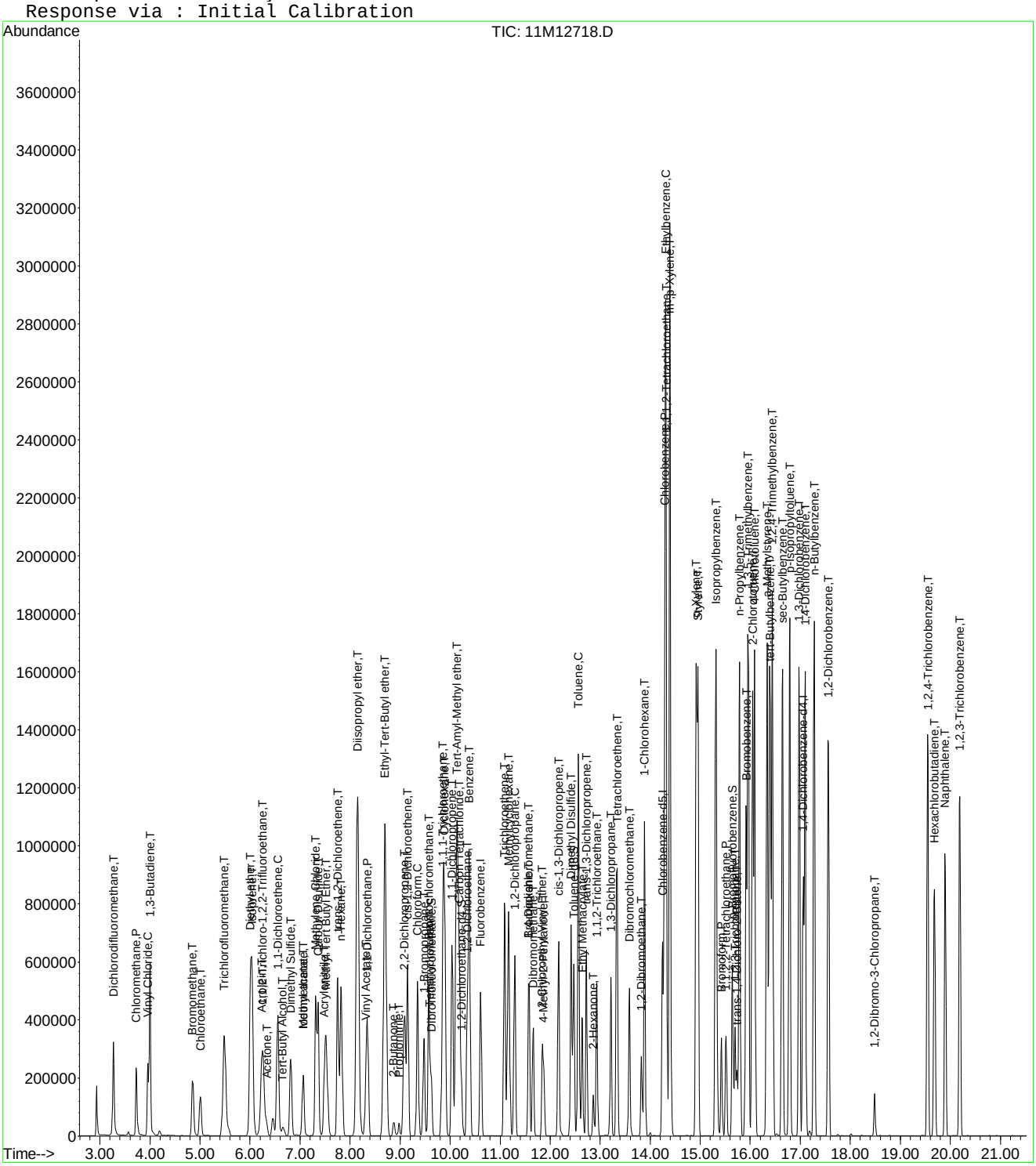

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061716\11M12718.D Vial: 2
Acq On : 17 Jun 2016 16:21 Operator: JDS
Sample : WG573258-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	104	0.00
2	T	Dichlorodifluoromethane	0.3917	0.3785	3.4	99	0.00
3	P	Chloromethane	0.3137	0.2859	8.9	108	0.00
4	C	Vinyl Chloride	0.2605	0.2706	-3.8	113	0.00
5	T	1,3-Butadiene	0.2591	0.2811	-8.5	109	0.00
6	T	Bromomethane	0.1791	0.1705	4.8	108	0.00
7	T	Chloroethane	0.1674	0.1587	5.2	103	0.00
8	T	Trichlorofluoromethane	0.5193	0.6007	-15.7	126	0.00
9	T	Diethyl ether	0.1920	0.1818	5.3	101	0.00
10	T	Isoprene	0.3201	0.2871	10.3	94	0.00
11	T	Acrolein	0.0228	0.0232	-1.9	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2520	0.2530	-0.4	108	0.00
13	T	Acetone	0.0594	0.0582	1.9	105	0.00
14	C	1,1-Dichloroethene	0.4577	0.4515	1.4	107	0.00
15	T	Tert-Butyl Alcohol	0.0164	0.0148	10.0	93	-0.01
16	T	Dimethyl Sulfide	0.1828	0.1699	7.0	95	0.00
17	T	Iodomethane	0.1615	0.2044	-26.5#	104	0.00
18	T	Methyl acetate	0.2006	0.1416	29.4#	83	0.00
19	T	Methylene Chloride	0.2369	0.2270	4.2	106	0.00
20	T	Carbon Disulfide	0.7662	0.7597	0.8	101	0.00
21	T	Acrylonitrile	0.0796	0.0727	8.6	93	0.00
22	T	Methyl Tert Butyl Ether	0.5908	0.5687	3.7	101	0.00
23	T	trans-1,2-Dichloroethene	0.2533	0.2483	2.0	107	0.01
24	T	n-Hexane	0.4219	0.3767	10.7	91	0.00
25	T	Diisopropyl ether	1.0527	0.9400	10.7	94	0.00
26	T	Vinyl Acetate	0.3793	0.2975	21.6	79	0.00
27	P	1,1-Dichloroethane	0.5082	0.4947	2.7	104	0.00
28	T	Ethyl-Tert-Butyl ether	0.8568	0.8201	4.3	100	0.00
29	T	2-Butanone	0.0897	0.0768	14.4	92	0.00
30	T	Propionitrile	0.0263	0.0239	9.2	92	0.00
31	T	2,2-Dichloropropane	0.3977	0.4141	-4.1	112	0.00
32	T	cis-1,2-Dichloroethene	0.2793	0.2778	0.5	107	0.00
33	C	Chloroform	0.4991	0.4990	0.0	111	0.00
34	T	1-Bromopropane	0.0432	0.0513	-18.9	111	0.00
35	T	Bromochloromethane	0.1659	0.1880	-13.4	114	0.00
36	T	Tetrahydrofuran	0.0634	0.0500	21.1	85	0.00
37	S	Dibromofluoromethane	0.2736	0.2688	1.8	105	0.00
38	T	1,1,1-Trichloroethane	0.4911	0.5192	-5.7	114	0.00
39	T	Cyclohexane	0.5353	0.4990	6.8	94	0.00
40	T	1,1-Dichloropropene	0.3507	0.3527	-0.6	109	0.00
41	T	Carbon Tetrachloride	0.4796	0.5338	-11.3	118	0.00
42	T	Tert-Amyl-Methyl ether	0.5954	0.5740	3.6	102	0.00
43	S	1,2-Dichloroethane-d4	0.3120	0.2798	10.3	96	0.00
44	T	1,2-Dichloroethane	0.4054	0.4179	-3.1	109	0.00
45	T	Benzene	0.9600	0.9086	5.4	104	0.00
46	T	Trichloroethene	0.3120	0.3298	-5.7	117	-0.01
47	T	Methylcyclohexane	0.3851	0.3781	1.8	98	0.00
48	C	1,2-Dichloropropane	0.2657	0.2471	7.0	100	0.00
49	T	1,4-Dioxane	0.0014	0.0016	-11.4	116	0.02
50	T	Bromodichloromethane	0.3731	0.3879	-4.0	110	0.00
51	T	Dibromomethane	0.1385	0.1425	-2.9	109	0.00
52	T	2-Chloroethyl Vinyl Ether	0.1310	0.1167	10.9	95	0.00
53	T	4-Methyl-2-Pentanone	0.0739	0.0623	15.6	90	0.00
54	T	cis-1,3-Dichloropropene	0.3731	0.3772	-1.1	104	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061716\11M12718.D Vial: 2
Acq On : 17 Jun 2016 16:21 Operator: JDS
Sample : WG573258-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	0.2245	0.2204	1.9	101	0.00
56	I	Chlorobenzene-d5	1.0000	1.0000	0.0	108	0.00
57	S	Toluene-d8	1.0862	1.0444	3.9	107	0.00
58	C	Toluene	1.2656	1.2450	1.6	108	0.00
59	T	Ethyl Methacrylate	0.2702	0.2523	6.6	96	0.00
60	T	trans-1,3-Dichloropropene	0.4062	0.4072	-0.2	105	0.00
61	T	1,1,2-Trichloroethane	0.2244	0.2196	2.1	107	0.00
62	T	2-Hexanone	0.1648	0.1295	21.4	85	0.00
63	T	1,3-Dichloropropane	0.3604	0.3477	3.5	104	0.00
64	T	Tetrachloroethene	0.2943	0.3049	-3.6	115	0.00
65	T	Dibromochloromethane	0.3423	0.3714	-8.5	113	0.00
66	T	1,2-Dibromoethane	0.2248	0.2237	0.5	108	0.00
67	T	1-Chlorohexane	0.4173	0.4092	1.9	103	0.00
68	P	Chlorobenzene	0.9272	0.9362	-1.0	111	0.00
69	T	1,1,1,2-Tetrachloroethane	0.3751	0.3989	-6.3	116	0.00
70	C	Ethylbenzene	0.4754	0.4725	0.6	109	0.00
71	T	m-,p-Xylene	0.5780	0.5756	0.4	109	0.00
72	T	o-Xylene	0.5625	0.5651	-0.5	109	0.00
73	T	Styrene	0.9293	0.9637	-3.7	109	0.00
74	P	Bromoform	0.2075	0.2216	-6.8	114	0.00
75	T	Isopropylbenzene	1.4875	1.5401	-3.5	111	0.00
76	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	112	0.00
77	P	1,1,2,2-Tetrachloroethane	0.3893	0.3329	14.5	94	0.00
78	S	p-Bromofluorobenzene	0.7706	0.7670	0.5	120	0.00
79	T	1,2,3-Trichloropropane	0.1351	0.1339	0.9	109	0.00
80	T	trans-1,4-Dichloro-2-Butene	0.1588	0.1288	18.9	81	0.00
81	T	n-Propylbenzene	2.8953	2.8173	2.7	109	0.00
82	T	Bromobenzene	0.7597	0.7381	2.8	115	0.00
83	T	1,3,5-Trimethylbenzene	2.2094	2.1756	1.5	113	-0.01
84	T	2-Chlorotoluene	2.0279	1.9409	4.3	112	0.00
85	T	4-Chlorotoluene	1.8165	1.7166	5.5	109	0.00
86	T	a-Methylstyrene	1.1656	1.1411	2.1	104	0.00
87	T	tert-Butylbenzene	0.4681	0.4791	-2.3	117	0.00
88	T	1,2,4-Trimethylbenzene	2.2498	2.2416	0.4	112	0.00
89	T	sec-Butylbenzene	2.6529	2.6025	1.9	111	0.00
90	T	p-Isopropyltoluene	2.4367	2.4562	-0.8	113	0.00
91	T	1,3-Dichlorobenzene	1.4673	1.4405	1.8	115	0.00
92	T	1,4-Dichlorobenzene	1.4873	1.4412	3.1	115	0.00
93	T	n-Butylbenzene	2.1472	2.0609	4.0	108	0.00
94	T	1,2-Dichlorobenzene	1.3366	1.3217	1.1	114	0.00
95	T	1,2-Dibromo-3-Chloropropane	0.0825	0.0740	10.3	102	0.00
96	T	1,2,4-Trichlorobenzene	0.9781	0.9508	2.8	110	0.00
97	T	Hexachlorobutadiene	0.4309	0.3894	9.6	105	0.00
98	T	Naphthalene	1.8154	1.6748	7.7	103	-0.01
99	T	1,2,3-Trichlorobenzene	0.8976	0.8495	5.4	111	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M12718.D 8260WT.M Fri Jun 17 16:52:35 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061716\11M12718.D Vial: 2
Acq On : 17 Jun 2016 16:21 Operator: JDS
Sample : WG573258-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	104	0.00
2	T	Dichlorodifluoromethane	50.0000	48.3154	3.4	99	0.00
3	P	Chloromethane	50.0000	45.5628	8.9	108	0.00
4	C	Vinyl Chloride	50.0000	51.9241	-3.8	113	0.00
5	T	1,3-Butadiene	50.0000	54.2640	-8.5	109	0.00
6	T	Bromomethane	50.0000	47.5972	4.8	108	0.00
7	T	Chloroethane	50.0000	47.3954	5.2	103	0.00
8	T	Trichlorofluoromethane	50.0000	57.8363	-15.7	126	0.00
9	T	Diethyl ether	100.0000	94.6864	5.3	101	0.00
10	T	Isoprene	50.0000	44.8535	10.3	94	0.00
11	T	Acrolein	50.0000	46.0750	7.8	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	50.2112	-0.4	108	0.00
13	T	Acetone	50.0000	49.0514	1.9	105	0.00
14	C	1,1-Dichloroethene	50.0000	49.3230	1.4	107	0.00
15	T	Tert-Butyl Alcohol	200.0000	179.9632	10.0	93	-0.01
16	T	Dimethyl Sulfide	50.0000	46.4760	7.0	95	0.00
17	T	Iodomethane	50.0000	49.0508	1.9	104	0.00
18	T	Methyl acetate	50.0000	38.0320	23.9	83	0.00
19	T	Methylene Chloride	50.0000	47.9125	4.2	106	0.00
20	T	Carbon Disulfide	50.0000	49.5778	0.8	101	0.00
21	T	Acrylonitrile	50.0000	45.6743	8.7	93	0.00
22	T	Methyl Tert Butyl Ether	50.0000	48.1352	3.7	101	0.00
23	T	trans-1,2-Dichloroethene	50.0000	49.0224	2.0	107	0.01
24	T	n-Hexane	50.0000	44.6452	10.7	91	0.00
25	T	Diisopropyl ether	100.0000	89.2960	10.7	94	0.00
26	T	Vinyl Acetate	50.0000	37.0648	25.9#	79	0.00
27	P	1,1-Dichloroethane	50.0000	48.6645	2.7	104	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	95.7155	4.3	100	0.00
29	T	2-Butanone	50.0000	42.7862	14.4	92	0.00
30	T	Propionitrile	100.0000	90.8463	9.2	92	0.00
31	T	2,2-Dichloropropane	50.0000	52.0646	-4.1	112	0.00
32	T	cis-1,2-Dichloroethene	50.0000	49.7430	0.5	107	0.00
33	C	Chloroform	50.0000	49.9943	0.0	111	0.00
34	T	1-Bromopropane	50.0000	51.7066	-3.4	111	0.00
35	T	Bromochloromethane	50.0000	56.6870	-13.4	114	0.00
36	T	Tetrahydrofuran	100.0000	78.8474	21.2	85	0.00
37	S	Dibromofluoromethane	25.0000	24.5606	1.8	105	0.00
38	T	1,1,1-Trichloroethane	50.0000	52.8557	-5.7	114	0.00
39	T	Cyclohexane	50.0000	46.6166	6.8	94	0.00
40	T	1,1-Dichloropropene	50.0000	50.2865	-0.6	109	0.00
41	T	Carbon Tetrachloride	50.0000	55.6514	-11.3	118	0.00
42	T	Tert-Amyl-Methyl ether	100.0000	96.4034	3.6	102	0.00
43	S	1,2-Dichloroethane-d4	25.0000	22.4209	10.3	96	0.00
44	T	1,2-Dichloroethane	50.0000	51.5442	-3.1	109	0.00
45	T	Benzene	50.0000	47.3202	5.4	104	0.00
46	T	Trichloroethene	50.0000	52.8431	-5.7	117	-0.01
47	T	Methylcyclohexane	50.0000	49.0869	1.8	98	0.00
48	C	1,2-Dichloropropane	50.0000	46.4996	7.0	100	0.00
49	T	1,4-Dioxane	200.0000	207.0668	-3.5	116	0.02
50	T	Bromodichloromethane	50.0000	51.9925	-4.0	110	0.00
51	T	Dibromomethane	50.0000	51.4359	-2.9	109	0.00
52	T	2-Chloroethyl Vinyl Ether	50.0000	44.5595	10.9	95	0.00
53	T	4-Methyl-2-Pentanone	50.0000	42.1755	15.6	90	0.00
54	T	cis-1,3-Dichloropropene	50.0000	50.5484	-1.1	104	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061716\11M12718.D Vial: 2
Acq On : 17 Jun 2016 16:21 Operator: JDS
Sample : WG573258-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	50.0000	49.0739	1.9	101	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	108	0.00
57	S	Toluene-d8	25.0000	24.0373	3.9	107	0.00
58	C	Toluene	50.0000	49.1854	1.6	108	0.00
59	T	Ethyl Methacrylate	50.0000	46.6757	6.6	96	0.00
60	T	trans-1,3-Dichloropropene	50.0000	50.1129	-0.2	105	0.00
61	T	1,1,2-Trichloroethane	50.0000	48.9360	2.1	107	0.00
62	T	2-Hexanone	50.0000	39.2763	21.4	85	0.00
63	T	1,3-Dichloropropane	50.0000	48.2332	3.5	104	0.00
64	T	Tetrachloroethene	50.0000	51.7937	-3.6	115	0.00
65	T	Dibromochloromethane	50.0000	54.2471	-8.5	113	0.00
66	T	1,2-Dibromoethane	50.0000	49.7419	0.5	108	0.00
67	T	1-Chlorohexane	50.0000	49.0313	1.9	103	0.00
68	P	Chlorobenzene	50.0000	50.4879	-1.0	111	0.00
69	T	1,1,1,2-Tetrachloroethane	50.0000	53.1681	-6.3	116	0.00
70	C	Ethylbenzene	50.0000	49.6964	0.6	109	0.00
71	T	m-,p-Xylene	100.0000	99.5806	0.4	109	0.00
72	T	o-Xylene	50.0000	50.2355	-0.5	109	0.00
73	T	Styrene	50.0000	51.8514	-3.7	109	0.00
74	P	Bromoform	50.0000	53.4153	-6.8	114	0.00
75	T	Isopropylbenzene	50.0000	51.7670	-3.5	111	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	112	0.00
77	P	1,1,2,2-Tetrachloroethane	50.0000	42.7602	14.5	94	0.00
78	S	p-Bromofluorobenzene	25.0000	24.8817	0.5	120	0.00
79	T	1,2,3-Trichloropropane	50.0000	45.8713	8.3	109	0.00
80	T	trans-1,4-Dichloro-2-Butene	50.0000	34.5551	30.9#	81	0.00
81	T	n-Propylbenzene	50.0000	48.6544	2.7	109	0.00
82	T	Bromobenzene	50.0000	48.5791	2.8	115	0.00
83	T	1,3,5-Trimethylbenzene	50.0000	49.2350	1.5	113	-0.01
84	T	2-Chlorotoluene	50.0000	47.8544	4.3	112	0.00
85	T	4-Chlorotoluene	50.0000	47.2487	5.5	109	0.00
86	T	a-Methylstyrene	50.0000	48.9498	2.1	104	0.00
87	T	tert-Butylbenzene	50.0000	51.1744	-2.3	117	0.00
88	T	1,2,4-Trimethylbenzene	50.0000	49.8173	0.4	112	0.00
89	T	sec-Butylbenzene	50.0000	49.0494	1.9	111	0.00
90	T	p-Isopropyltoluene	50.0000	50.4003	-0.8	113	0.00
91	T	1,3-Dichlorobenzene	50.0000	49.0846	1.8	115	0.00
92	T	1,4-Dichlorobenzene	50.0000	48.4509	3.1	115	0.00
93	T	n-Butylbenzene	50.0000	47.9902	4.0	108	0.00
94	T	1,2-Dichlorobenzene	50.0000	49.4388	1.1	114	0.00
95	T	1,2-Dibromo-3-Chloropropane	50.0000	42.2340	15.5	102	0.00
96	T	1,2,4-Trichlorobenzene	50.0000	48.6069	2.8	110	0.00
97	T	Hexachlorobutadiene	50.0000	45.1820	9.6	105	0.00
98	T	Naphthalene	50.0000	46.1259	7.7	103	-0.01
99	T	1,2,3-Trichlorobenzene	50.0000	47.3157	5.4	111	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

2.1.1.5 Raw QC Data

BFB

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Data File : C:\MSDCHEM\1\DATA\061415\11M08234.D          Vial: 1
Acq On    : 14 Jun 2015   9:34                        Operator: TMB /DLW
Sample    : WG527475-01 50ng BFB STD                  Inst    : hpms11
Misc      : 1,1 STD70707                              Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title     : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
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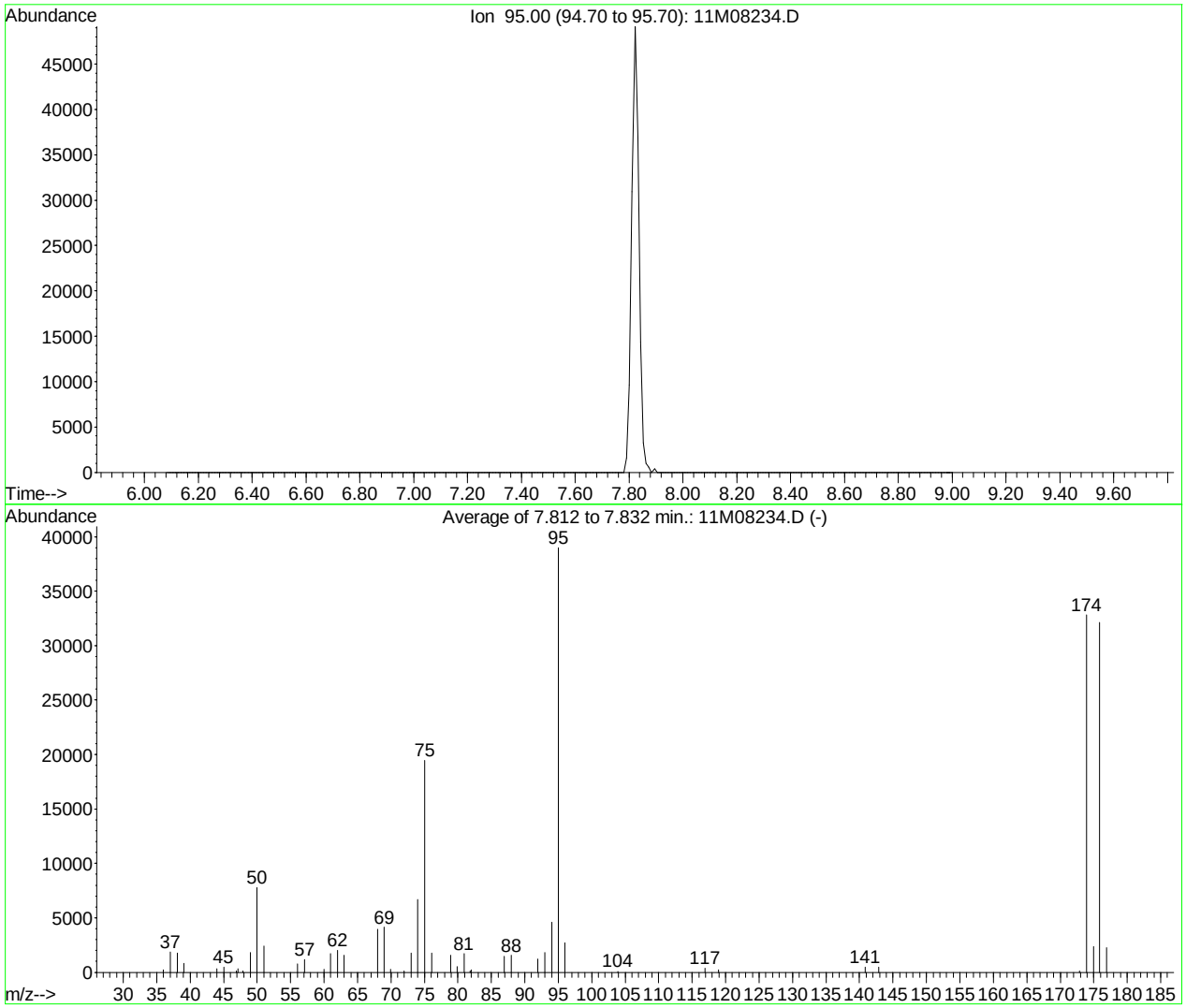

AutoFind: Scans 168, 169, 170; Background Corrected with Scan 163

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.9	7754	PASS
75	95	30	60	49.9	19472	PASS
95	95	100	100	100.0	38997	PASS
96	95	5	9	7.0	2731	PASS
173	174	0.00	2	0.3	111	PASS
174	95	50	100	84.2	32837	PASS
175	174	5	9	7.2	2357	PASS
176	174	95	101	97.9	32146	PASS
177	176	5	9	7.1	2284	PASS

11M08234.D 8260WTR.M Sun Jun 14 09:44:09 2015

BFB

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Data File : C:\MSDCHEM\1\DATA\051316\11M11836.D          Vial: 2
Acq On    : 13 May 2016  14:15                        Operator: JDS
Sample    : WG568769-01 50ng BFB STD 8260             Inst    : hpms11
Misc      : 1,1 STD76034                              Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title     : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
```

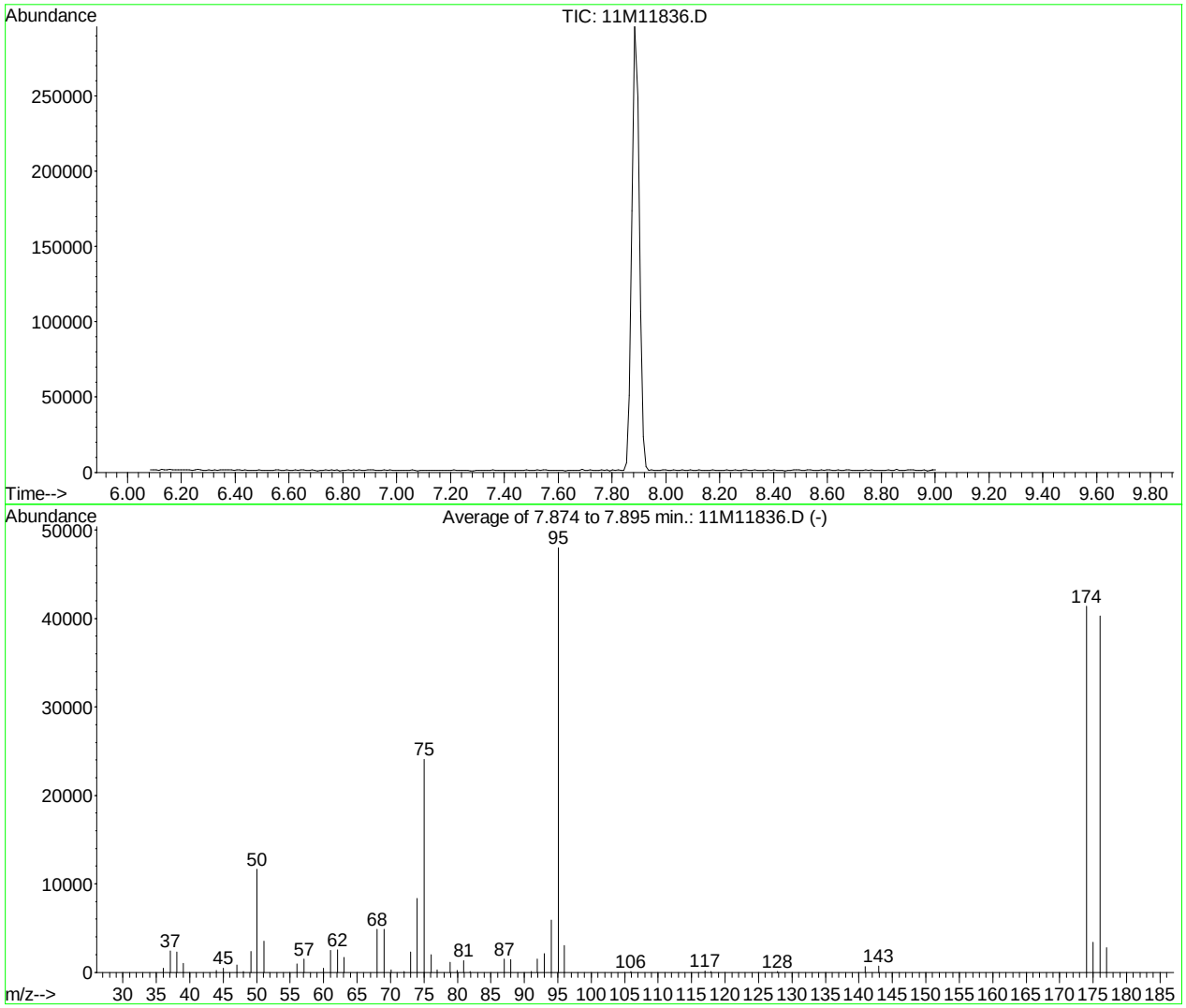

AutoFind: Scans 174, 175, 176; Background Corrected with Scan 169

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	24.2	11638	PASS
75	95	30	60	50.2	24088	PASS
95	95	100	100	100.0	48016	PASS
96	95	5	9	6.3	3008	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	86.2	41402	PASS
175	174	5	9	8.3	3421	PASS
176	174	95	101	97.3	40288	PASS
177	176	5	9	6.9	2789	PASS

11M11836.D 8260WT.M Tue May 17 14:18:03 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\061516\11M12650.D          Vial: 1
Acq On    : 15 Jun 2016  14:48                       Operator: JDS
Sample    : WG572854-01 50ng BFB STD 8260            Inst    : hpms11
Misc      : 1,1 STD76496                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title     : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
```

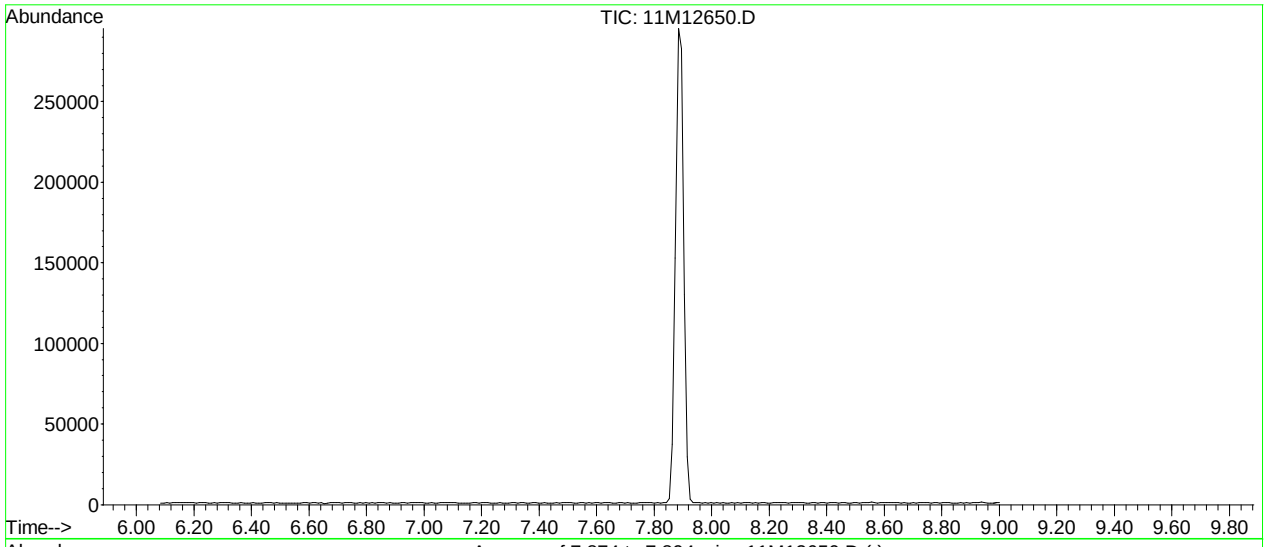

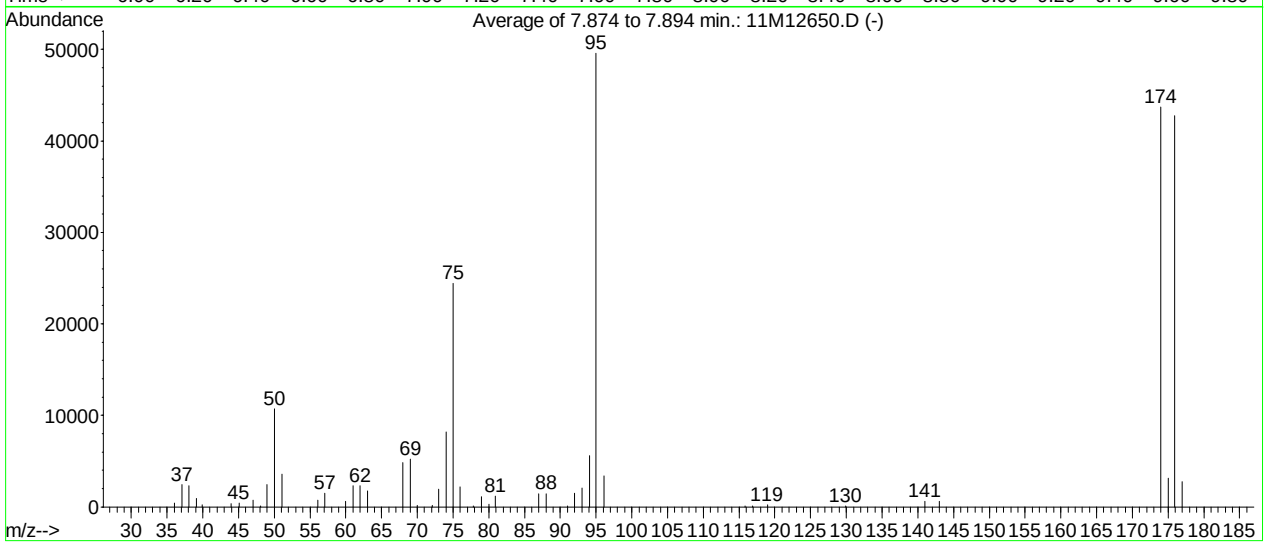

AutoFind: Scans 174, 175, 176; Background Corrected with Scan 169

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.6	10714	PASS
75	95	30	60	49.2	24408	PASS
95	95	100	100	100.0	49597	PASS
96	95	5	9	6.9	3414	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	88.1	43714	PASS
175	174	5	9	7.1	3117	PASS
176	174	95	101	97.9	42776	PASS
177	176	5	9	6.5	2781	PASS

11M12650.D 8260WT.M Wed Jun 15 16:07:37 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\061616\11M12683.D          Vial: 1
Acq On    : 16 Jun 2016  14:30                       Operator: JDS
Sample    : WG573050-01 50ng BFB STD 8260            Inst    : hpms11
Misc      : 1,1 STD76496                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title     : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
```

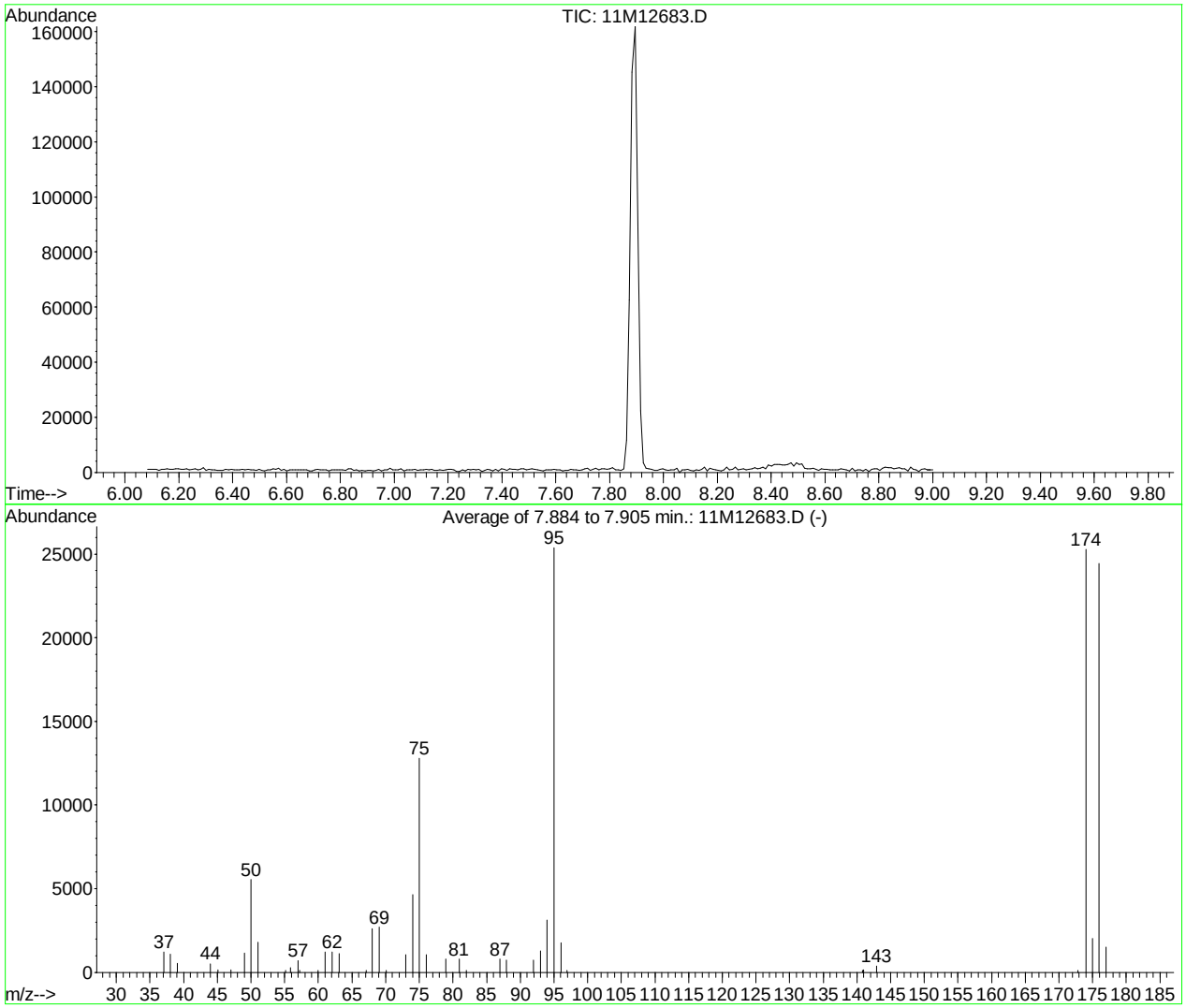

AutoFind: Scans 175, 176, 177; Background Corrected with Scan 169

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.8	5543	PASS
75	95	30	60	50.3	12778	PASS
95	95	100	100	100.0	25380	PASS
96	95	5	9	6.9	1754	PASS
173	174	0.00	2	0.4	107	PASS
174	95	50	100	99.6	25285	PASS
175	174	5	9	8.1	2037	PASS
176	174	95	101	96.6	24437	PASS
177	176	5	9	6.1	1493	PASS

11M12683.D 8260WT.M Thu Jun 16 14:40:12 2016

BFB

Data File : C:\MSDCHEM\1\DATA\061716\11M12717.D Vial: 1
Acq On : 17 Jun 2016 15:52 Operator: JDS
Sample : WG573258-01 50ng BFB STD 8260 Inst : hpms11
Misc : 1,1 STD76496 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11

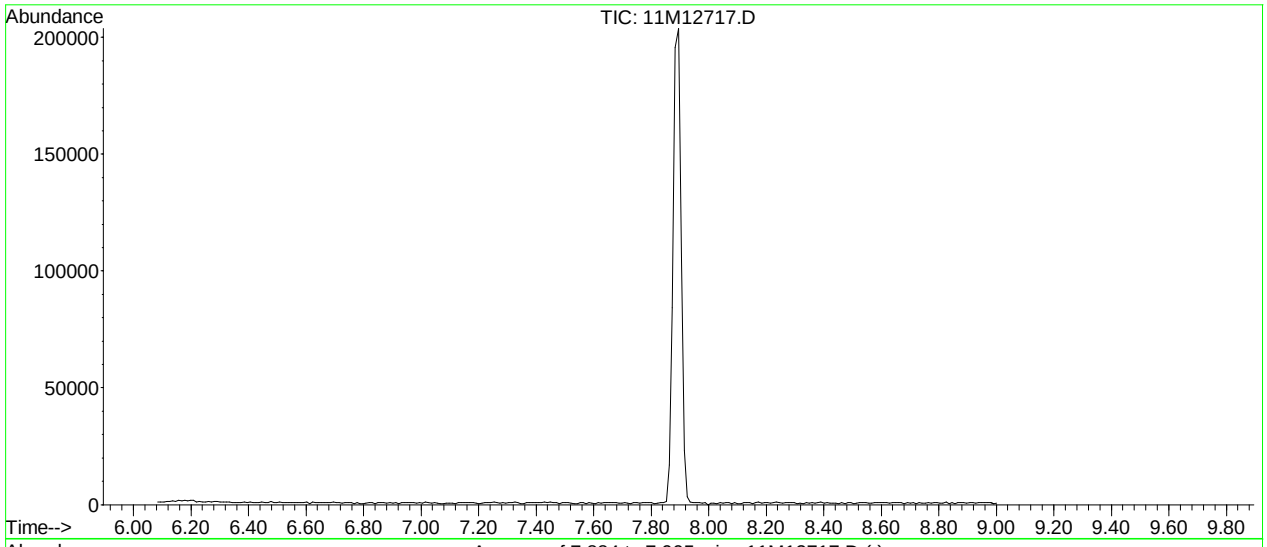

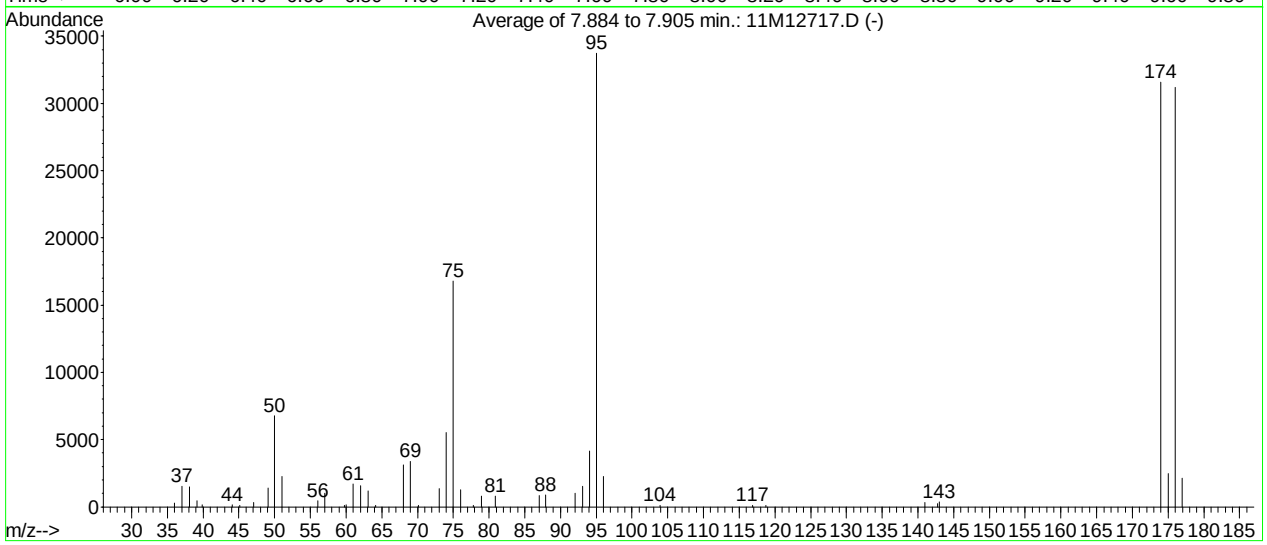

AutoFind: Scans 175, 176, 177; Background Corrected with Scan 169

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.1	6774	PASS
75	95	30	60	49.8	16790	PASS
95	95	100	100	100.0	33736	PASS
96	95	5	9	6.7	2249	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	93.7	31597	PASS
175	174	5	9	7.8	2463	PASS
176	174	95	101	98.7	31186	PASS
177	176	5	9	6.8	2122	PASS

11M12717.D 8260WT.M Mon Jun 20 09:57:36 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061516\11M12654.D Vial: 5
Acq On : 15 Jun 2016 16:53 Operator: JDS
Sample : WG572855-01 BLANK STD 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 14:38:05 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	665654	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	552203	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	317152	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	170062	23.3440 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.36%		
43) 1,2-Dichloroethane-d4	10.23	65	184271	22.1838 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 88.72%		
57) Toluene-d8	12.47	98	595082	24.8021 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.20%		
78) p-Bromofluorobenzene	15.64	95	256495	26.2358 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.96%		

Target Compounds

					Qvalue
3) Chloromethane	3.74	50	1314	0.1573 ug/L	78
6) Bromomethane	4.86	94	1103	0.2313 ug/L	99
17) Iodomethane	7.06	142	214	2.3001 ug/L #	29
36) Tetrahydrofuran	9.60	42	2106	1.2481 ug/L #	67
97) Hexachlorobutadiene	19.69	225	1875	0.3430 ug/L	95

(#) = qualifier out of range (m) = manual integration
11M12654.D 8260WT.M Thu Jun 16 14:38:07 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061516\11M12654.D Vial: 5
Acq On : 15 Jun 2016 16:53 Operator: JDS
Sample : WG572855-01 BLANK STD 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 14:38 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

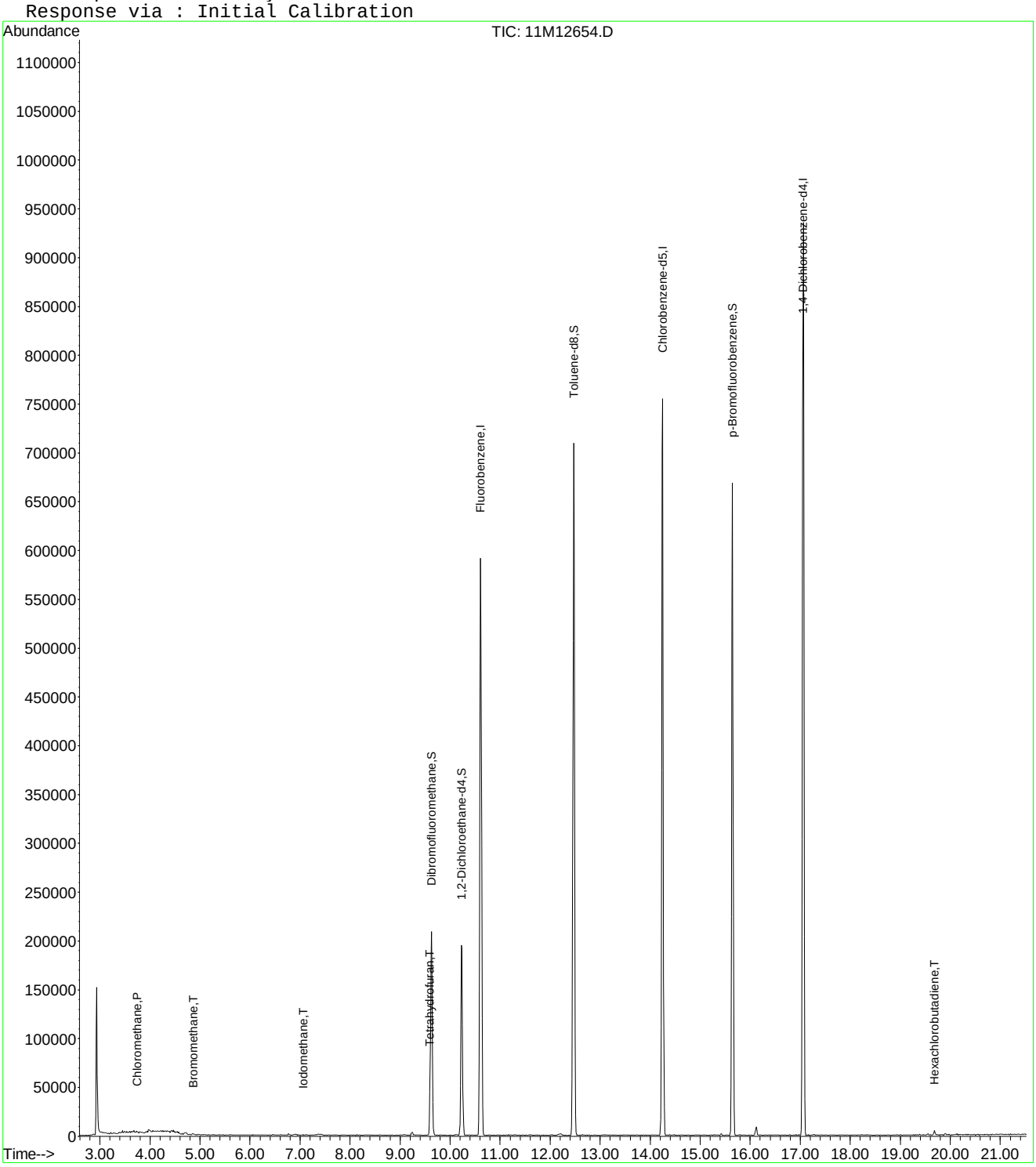

11M12654.D 8260WT.M Thu Jun 16 14:38:07 2016 Page 2

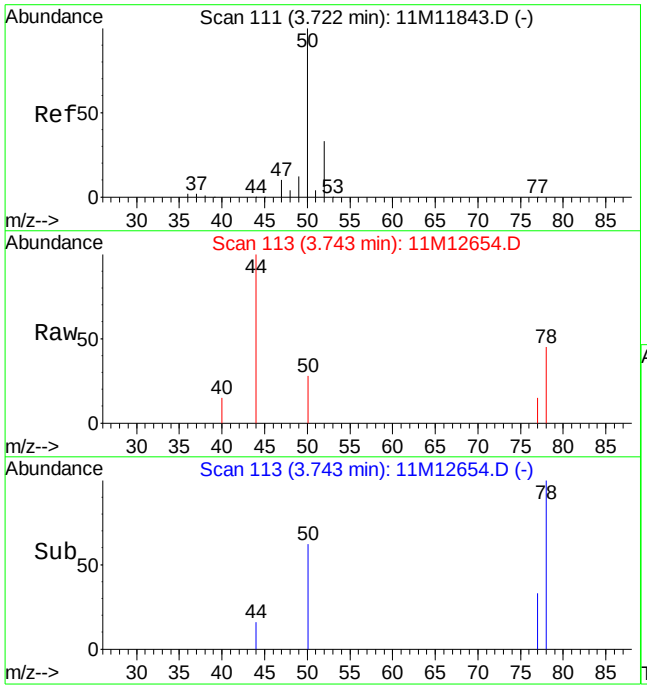

#3
Chloromethane
Concen: 0.16 ug/L
RT: 3.74 min Scan# 113
Delta R.T. 0.02 min
Lab File: 11M12654.D
Acq: 15 Jun 2016 16:53

Tgt Ion: 50 Resp: 1314

Ion	Ratio	Lower	Upper
50	100		
52	21.0	20.0	46.6

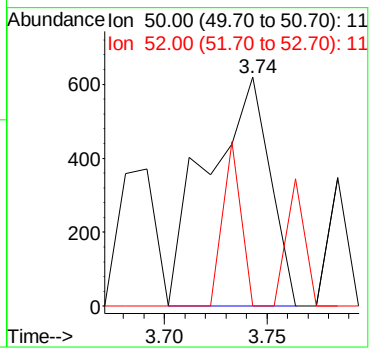

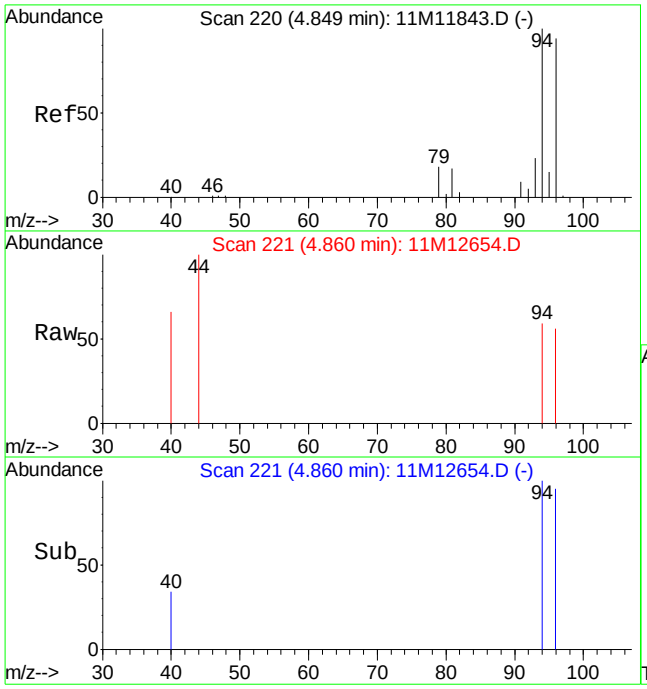

#6
Bromomethane
Concen: 0.23 ug/L
RT: 4.86 min Scan# 221
Delta R.T. 0.01 min
Lab File: 11M12654.D
Acq: 15 Jun 2016 16:53

Tgt Ion: 94 Resp: 1103

Ion	Ratio	Lower	Upper
94	100		
96	94.8	56.5	131.9

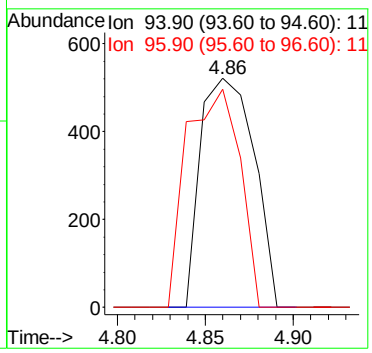

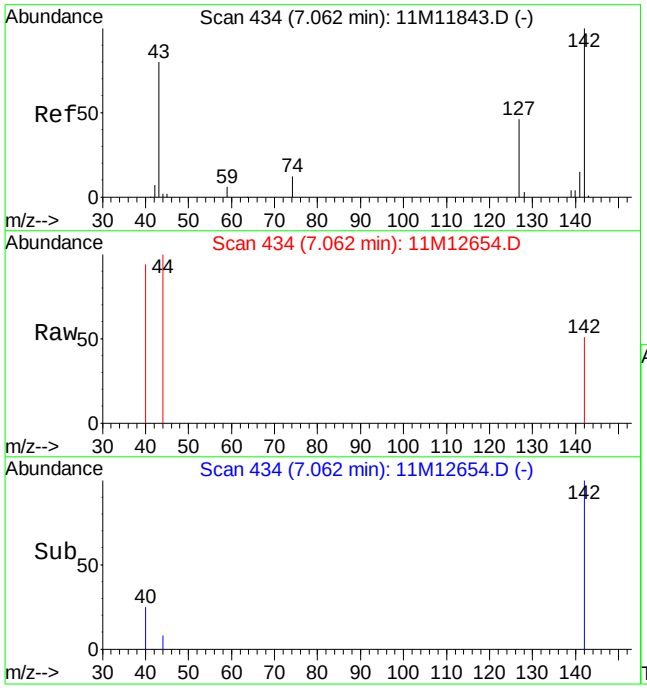

#17
Iodomethane
Concen: 2.30 ug/L
RT: 7.06 min Scan# 434
Delta R.T. 0.00 min
Lab File: 11M12654.D
Acq: 15 Jun 2016 16:53

Tgt Ion:142 Resp: 214

Ion	Ratio	Lower	Upper
142	100		
127	0.0	29.0	67.6#

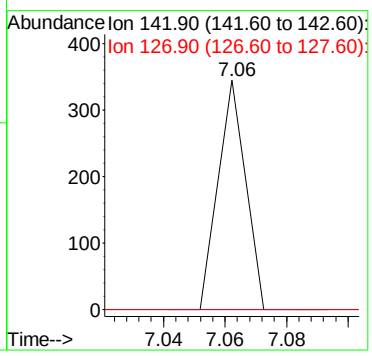

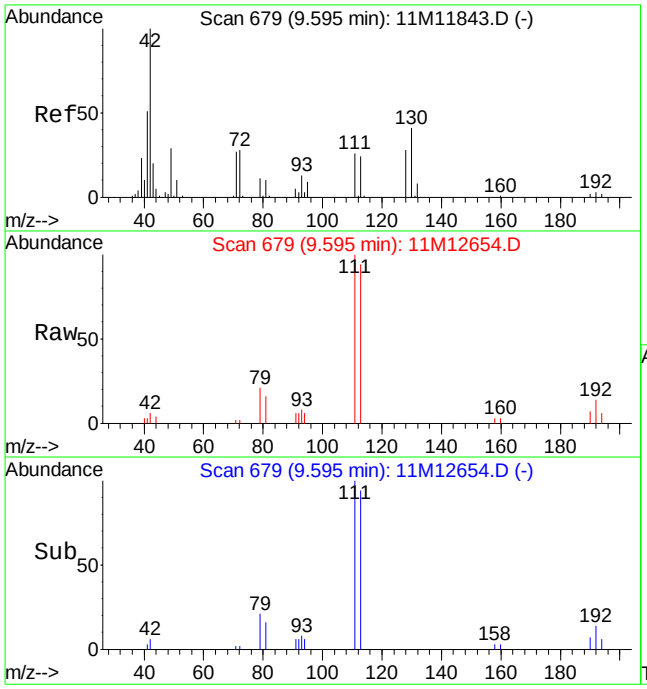

#36
Tetrahydrofuran
Concen: 1.25 ug/L
RT: 9.60 min Scan# 679
Delta R.T. 0.00 min
Lab File: 11M12654.D
Acq: 15 Jun 2016 16:53

Tgt Ion: 42 Resp: 2106

Ion	Ratio	Lower	Upper
42	100		
71	9.7	16.4	38.2#
72	10.5	16.6	38.8#

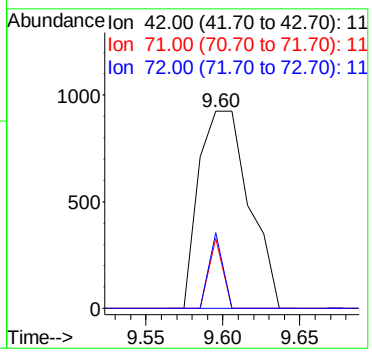

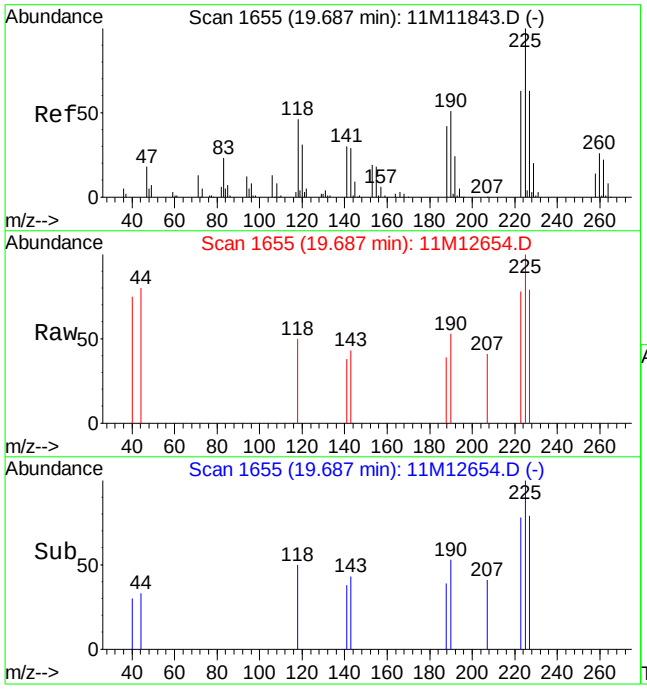

#97
Hexachlorobutadiene
Concen: 0.34 ug/L
RT: 19.69 min Scan# 1655
Delta R.T. 0.00 min
Lab File: 11M12654.D
Acq: 15 Jun 2016 16:53

Tgt Ion:225 Resp: 1875

Ion	Ratio	Lower	Upper
225	100		
227	60.3	38.3	89.3
118	44.0	28.7	66.9

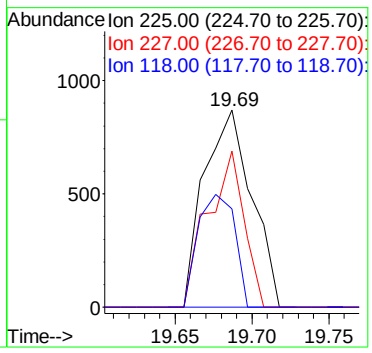

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12687.D Vial: 5
Acq On : 16 Jun 2016 16:31 Operator: JDS
Sample : WG573051-01 BLANK STD 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 20 11:32:39 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	545582	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	464305	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	271231	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	140634	23.5531 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.20%		
43) 1,2-Dichloroethane-d4	10.24	65	153715	22.5779 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 90.32%		
57) Toluene-d8	12.47	98	495127	24.5428 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.16%		
78) p-Bromofluorobenzene	15.64	95	217414	26.0034 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.00%		

Target Compounds

					Qvalue
3) Chloromethane	3.72	50	1438	0.2100 ug/L #	68
6) Bromomethane	4.86	94	758	0.1939 ug/L	88
8) Trichlorofluoromethane	5.49	101	4003	0.3532 ug/L	98
13) Acetone	6.34	43	210	0.1621 ug/L #	49
36) Tetrahydrofuran	9.61	42	1887	1.3644 ug/L #	58

(#) = qualifier out of range (m) = manual integration
11M12687.D 8260WT.M Mon Jun 20 11:32:40 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12687.D Vial: 5
Acq On : 16 Jun 2016 16:31 Operator: JDS
Sample : WG573051-01 BLANK STD 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 20 11:32 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

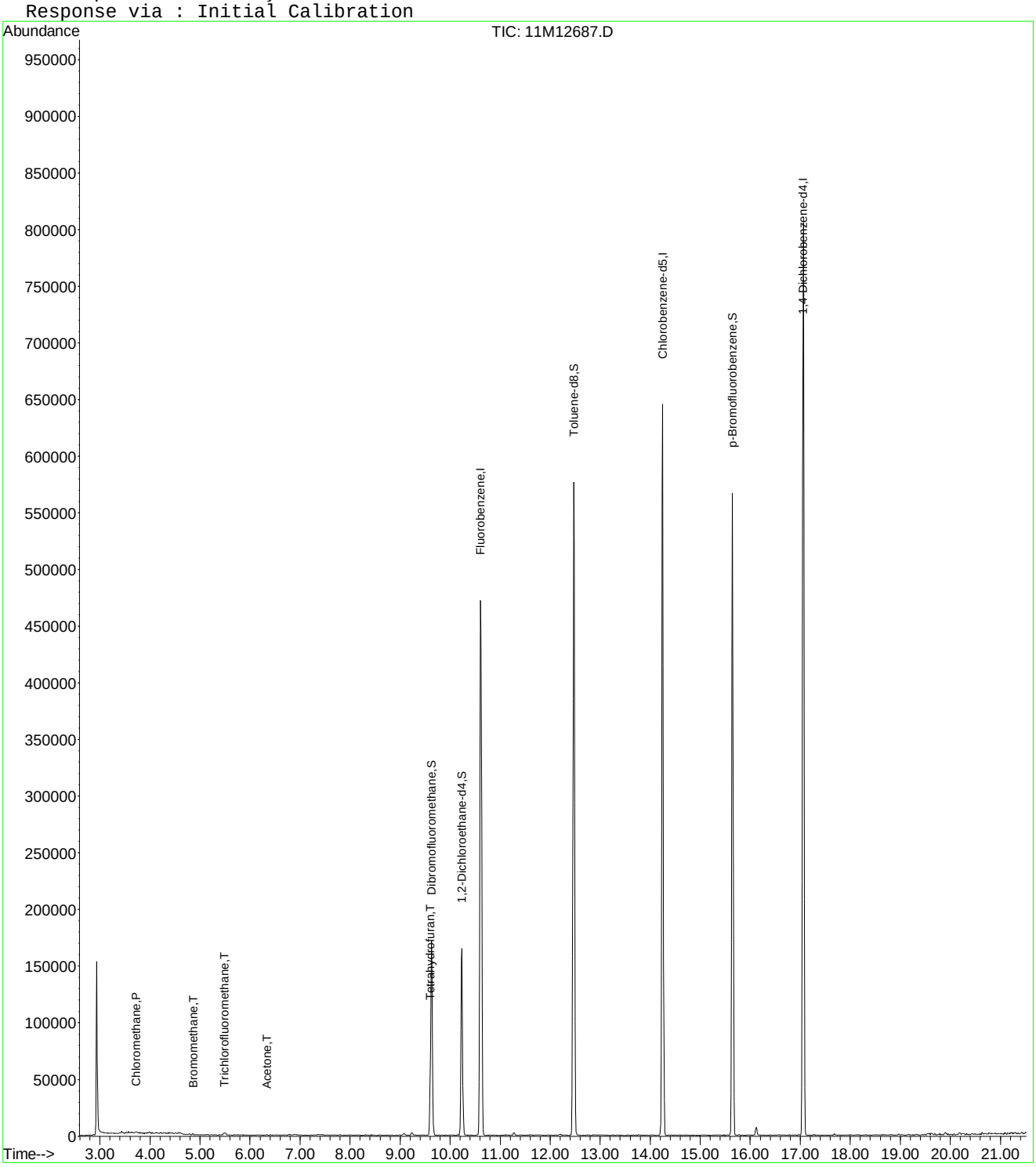

11M12687.D 8260WT.M Mon Jun 20 11:32:40 2016 Page 2

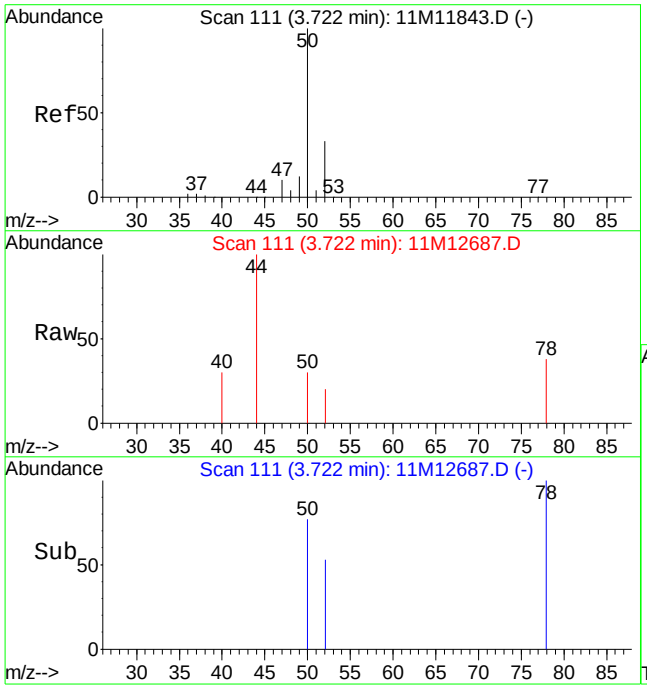

#3
Chloromethane
Concen: 0.21 ug/L
RT: 3.72 min Scan# 111
Delta R.T. -0.00 min
Lab File: 11M12687.D
Acq: 16 Jun 2016 16:31

Tgt Ion: 50 Resp: 1438

Ion	Ratio	Lower	Upper
50	100		
52	15.1	20.0	46.6#

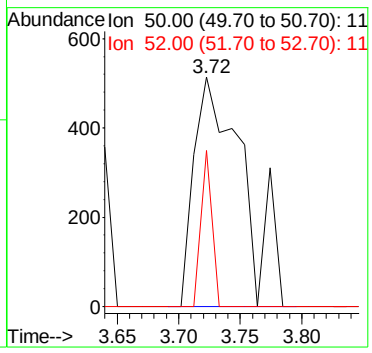

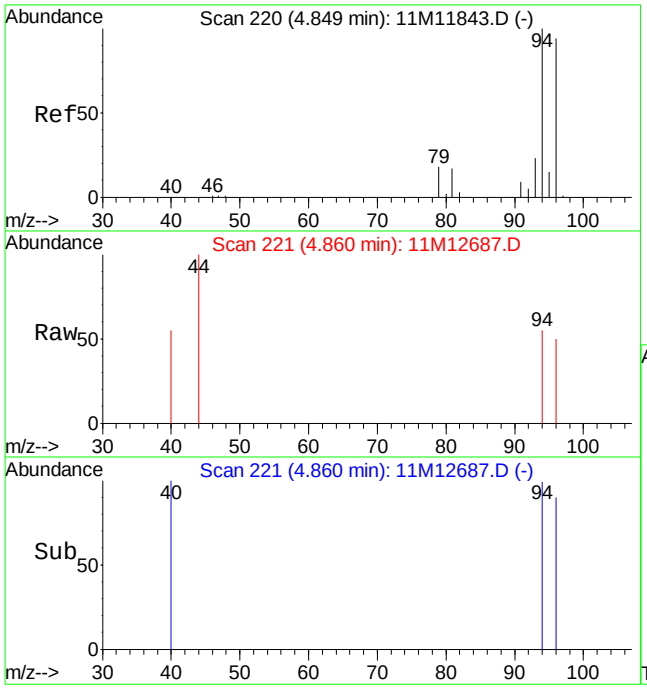

#6
Bromomethane
Concen: 0.19 ug/L
RT: 4.86 min Scan# 221
Delta R.T. 0.01 min
Lab File: 11M12687.D
Acq: 16 Jun 2016 16:31

Tgt Ion: 94 Resp: 758

Ion	Ratio	Lower	Upper
94	100		
96	82.3	56.5	131.9

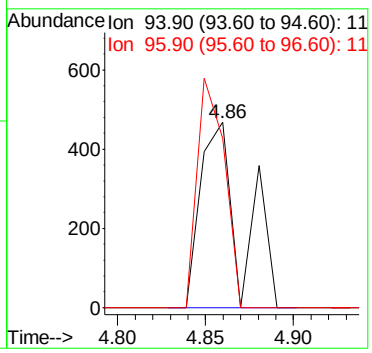

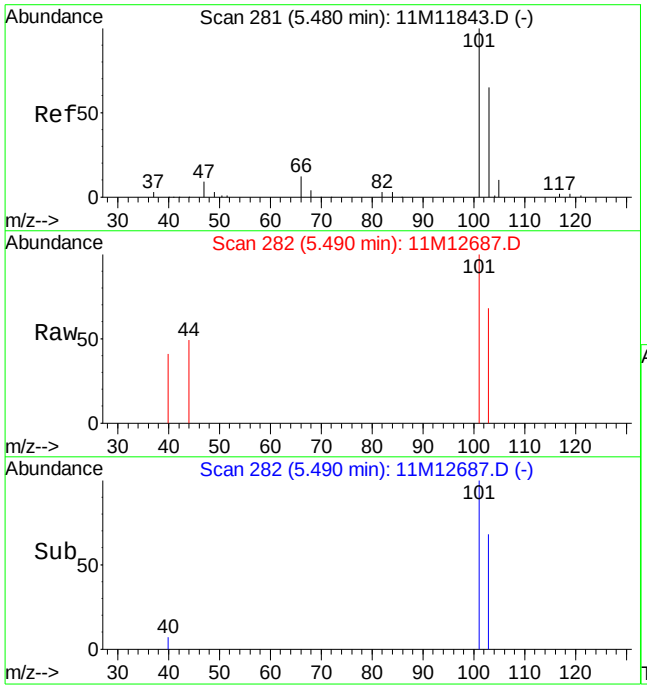

#8
Trichlorofluoromethane
Concen: 0.35 ug/L
RT: 5.49 min Scan# 282
Delta R.T. 0.01 min
Lab File: 11M12687.D
Acq: 16 Jun 2016 16:31

Tgt Ion:101 Resp: 4003

Ion	Ratio	Lower	Upper
101	100		
103	66.9	39.1	91.3

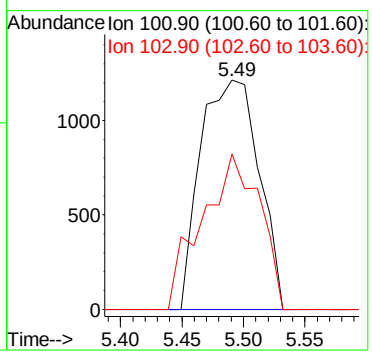

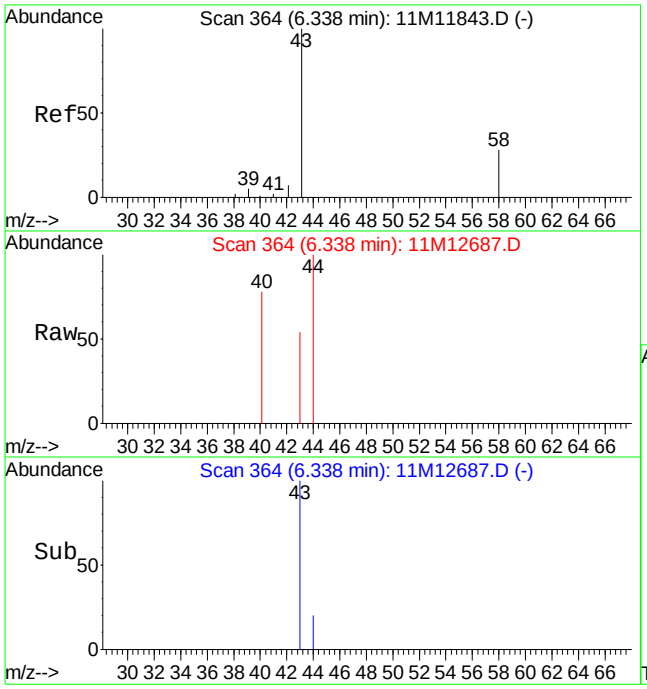

#13
Acetone
Concen: 0.16 ug/L
RT: 6.34 min Scan# 364
Delta R.T. -0.00 min
Lab File: 11M12687.D
Acq: 16 Jun 2016 16:31

Tgt Ion: 43 Resp: 210

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

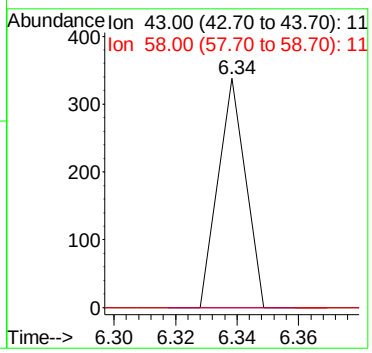

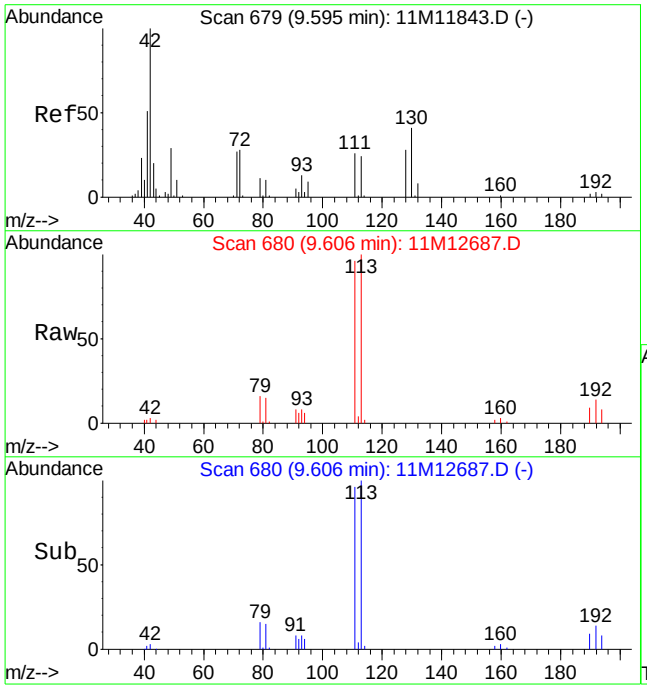

#36
Tetrahydrofuran
Concen: 1.36 ug/L
RT: 9.61 min Scan# 680
Delta R.T. 0.01 min
Lab File: 11M12687.D
Acq: 16 Jun 2016 16:31

Tgt Ion: 42 Resp: 1887

Ion	Ratio	Lower	Upper
42	100		
71	0.0	16.4	38.2#
72	10.7	16.6	38.8#

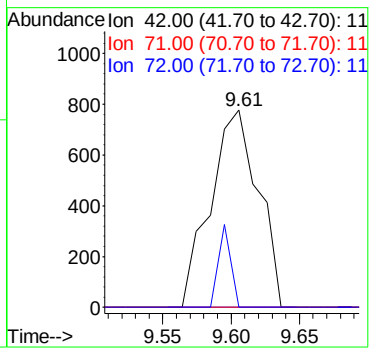

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061716\11M12720.D Vial: 4
Acq On : 17 Jun 2016 17:25 Operator: JDS
Sample : WG573259-01 BLANK STD 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 20 11:34:43 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	495046	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	417622	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	245830	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	127859	23.5995 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.40%		
43) 1,2-Dichloroethane-d4	10.23	65	141322	22.8766 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 91.52%		
57) Toluene-d8	12.47	98	441428	24.3269 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.32%		
78) p-Bromofluorobenzene	15.64	95	198254	26.1619 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.64%		

Target Compounds					Qvalue
6) Bromomethane	4.86	94	772	0.2176 ug/L #	53
19) Methylene Chloride	7.31	84	1021	0.2177 ug/L	92
36) Tetrahydrofuran	9.60	42	1297	1.0335 ug/L #	63

(#) = qualifier out of range (m) = manual integration
11M12720.D 8260WT.M Mon Jun 20 11:34:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061716\11M12720.D Vial: 4
Acq On : 17 Jun 2016 17:25 Operator: JDS
Sample : WG573259-01 BLANK STD 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 20 11:34 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

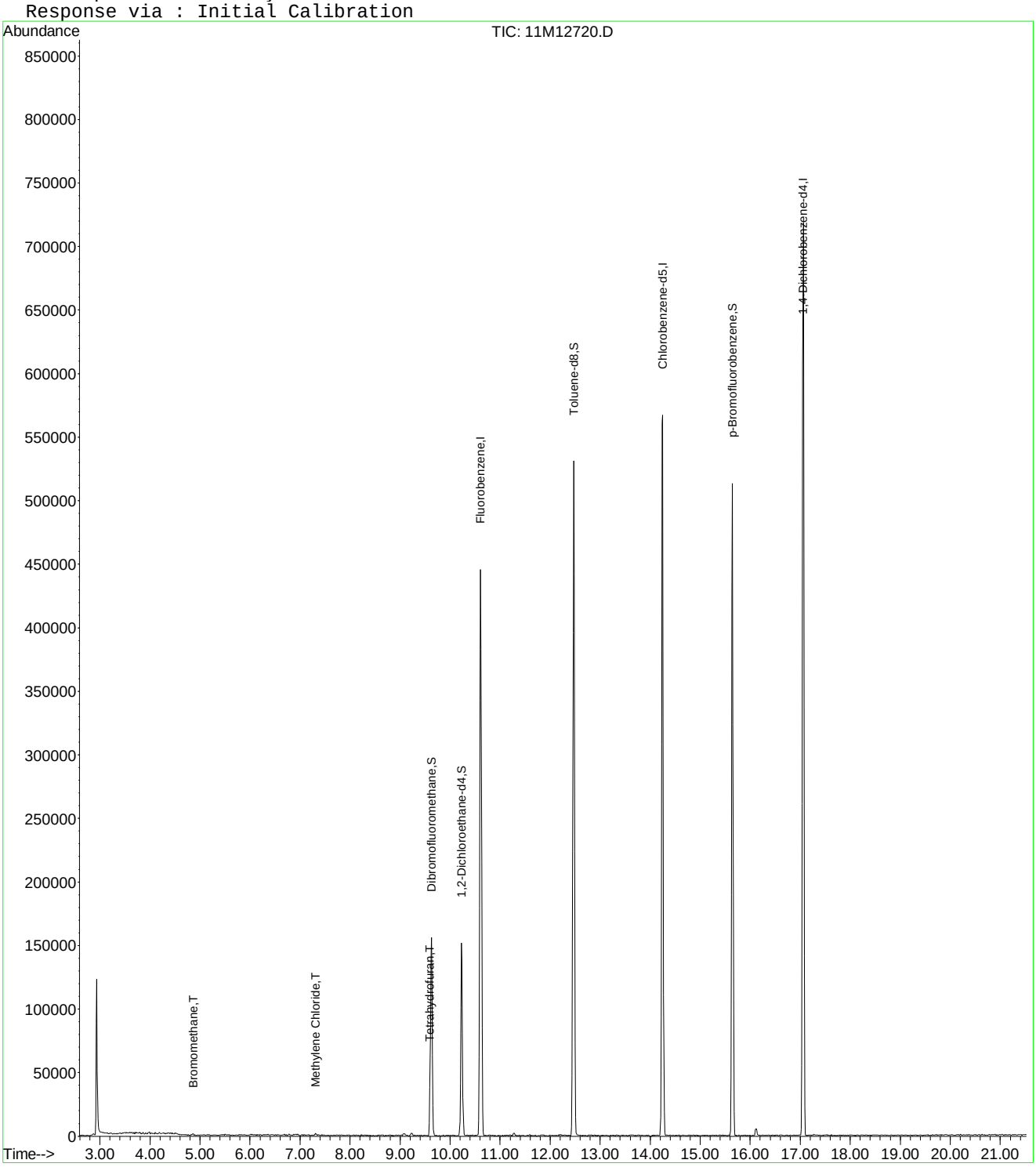

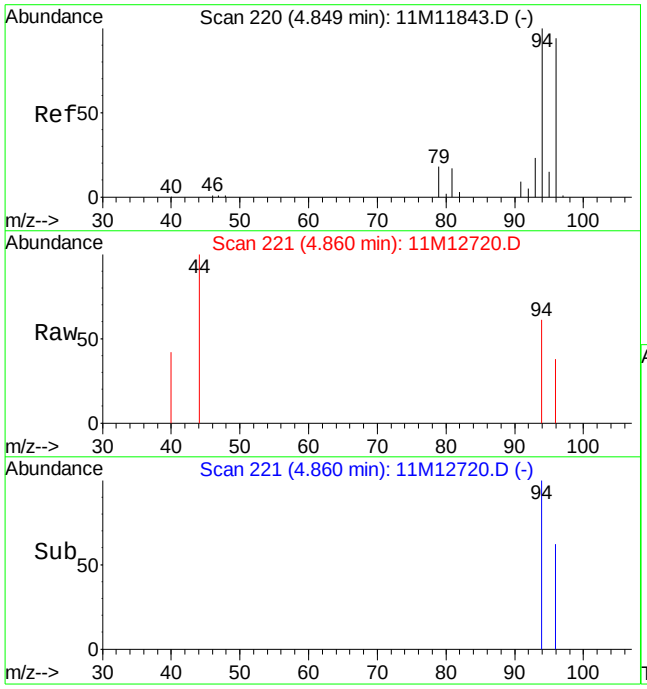

#6
Bromomethane
Concen: 0.22 ug/L
RT: 4.86 min Scan# 221
Delta R.T. 0.01 min
Lab File: 11M12720.D
Acq: 17 Jun 2016 17:25

Tgt Ion: 94 Resp: 772

Ion	Ratio	Lower	Upper
94	100		
96	49.2	56.5	131.9#

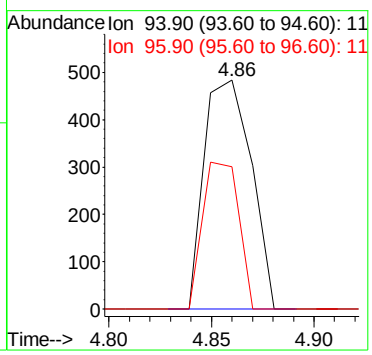

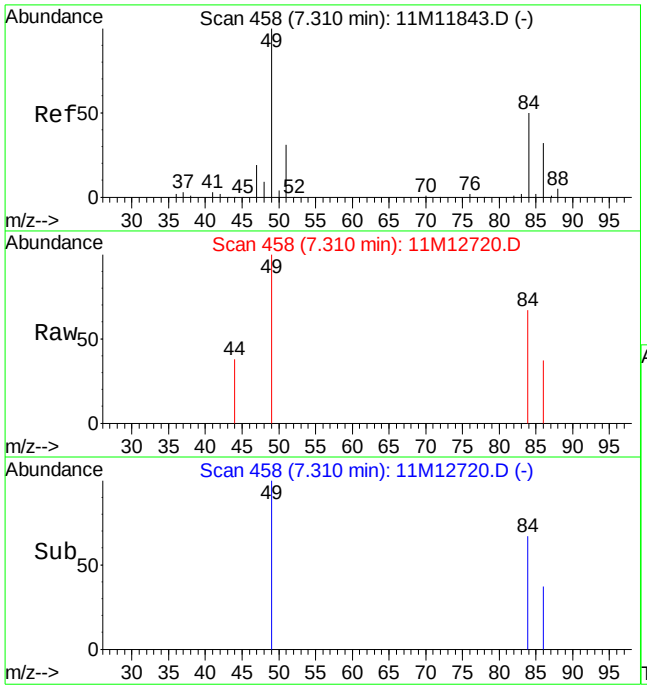

#19
Methylene Chloride
Concen: 0.22 ug/L
RT: 7.31 min Scan# 458
Delta R.T. 0.00 min
Lab File: 11M12720.D
Acq: 17 Jun 2016 17:25

Tgt Ion: 84 Resp: 1021

Ion	Ratio	Lower	Upper
84	100		
49	182.2	116.9	272.7

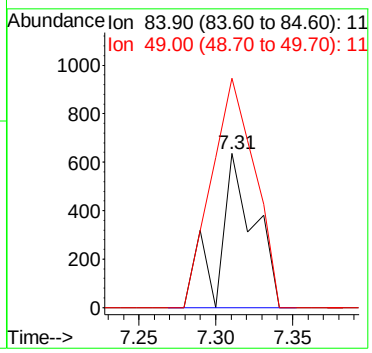

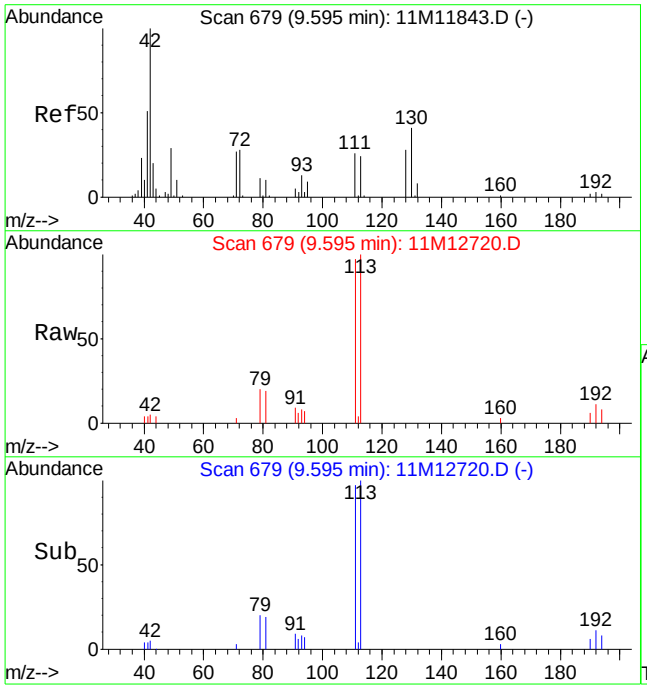

#36
Tetrahydrofuran
Concen: 1.03 ug/L
RT: 9.60 min Scan# 679
Delta R.T. 0.00 min
Lab File: 11M12720.D
Acq: 17 Jun 2016 17:25

Tgt Ion: 42 Resp: 1297

Ion	Ratio	Lower	Upper
42	100		
71	16.4	16.4	38.2
72	0.0	16.6	38.8#

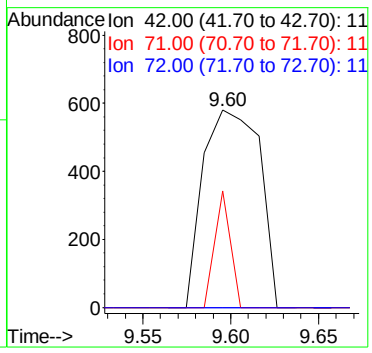

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061516\11M12674.D Vial: 25
Acq On : 16 Jun 2016 3:31 Operator: JDS
Sample : WG572855-06 BLANK2 STD 624 Inst : hpms11
Misc : 2,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 14:39:15 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	484151	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	415058	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	236874	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	131299	24.7798 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.12%		
43) 1,2-Dichloroethane-d4	10.24	65	141906	23.4881 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 93.96%		
57) Toluene-d8	12.47	98	443498	24.5920 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.36%		
78) p-Bromofluorobenzene	15.64	95	192928	26.4217 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.68%		

Target Compounds

					Qvalue
8) Trichlorofluoromethane	5.48	101	17914	1.7814 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	2724	0.5582 ug/L	89
33) Chloroform	9.35	83	1636	0.1693 ug/L	88
36) Tetrahydrofuran	9.60	42	1136	0.9256 ug/L #	47

(#) = qualifier out of range (m) = manual integration
11M12674.D 8260WT.M Thu Jun 16 14:39:16 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061516\11M12674.D Vial: 25
Acq On : 16 Jun 2016 3:31 Operator: JDS
Sample : WG572855-06 BLANK2 STD 624 Inst : hpms11
Misc : 2,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 14:39 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

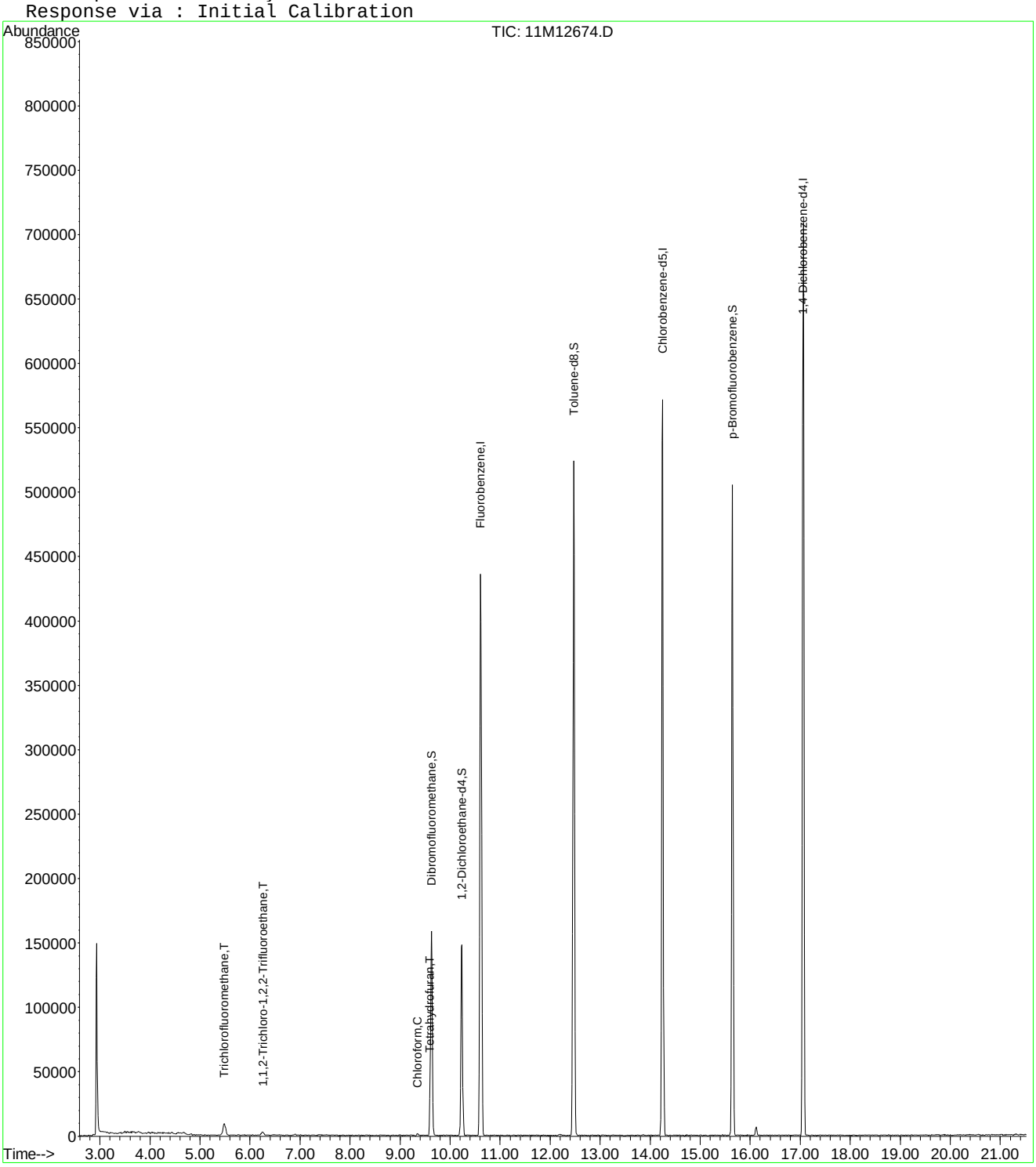

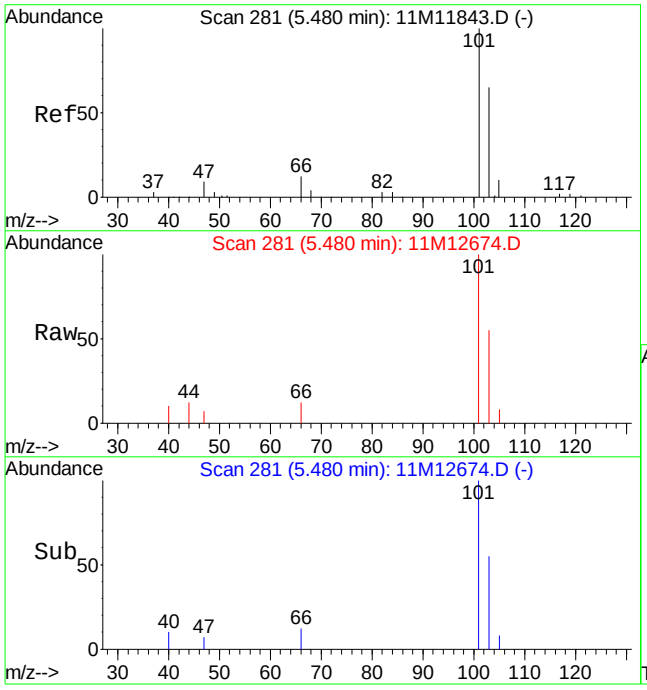

#8
Trichlorofluoromethane
Concen: 1.78 ug/L
RT: 5.48 min Scan# 281
Delta R.T. 0.00 min
Lab File: 11M12674.D
Acq: 16 Jun 2016 3:31

Tgt Ion:101 Resp: 17914

Ion	Ratio	Lower	Upper
101	100		
103	62.4	39.1	91.3

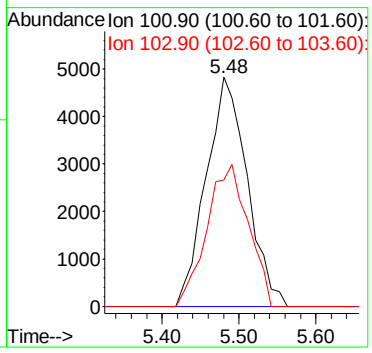

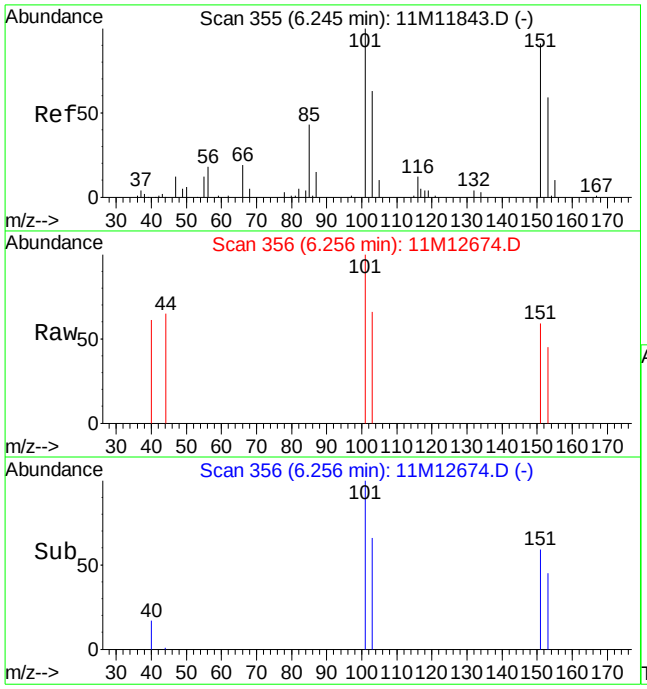

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 0.56 ug/L
RT: 6.26 min Scan# 356
Delta R.T. 0.01 min
Lab File: 11M12674.D
Acq: 16 Jun 2016 3:31

Tgt Ion:101 Resp: 2724

Ion	Ratio	Lower	Upper
101	100		
151	80.7	50.7	130.7

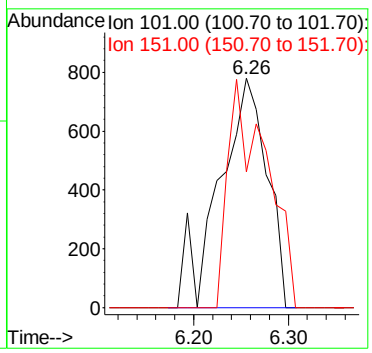

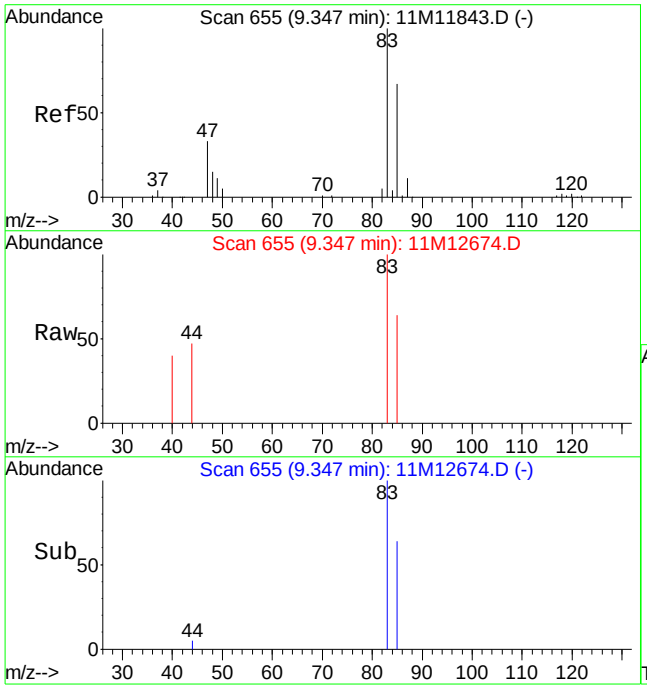

#33
Chloroform
Concen: 0.17 ug/L
RT: 9.35 min Scan# 655
Delta R.T. 0.00 min
Lab File: 11M12674.D
Acq: 16 Jun 2016 3:31

Tgt Ion: 83 Resp: 1636

Ion	Ratio	Lower	Upper
83	100		
85	55.6	39.2	91.4

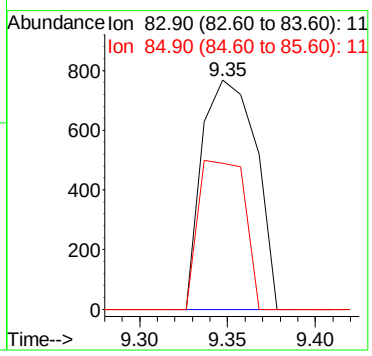

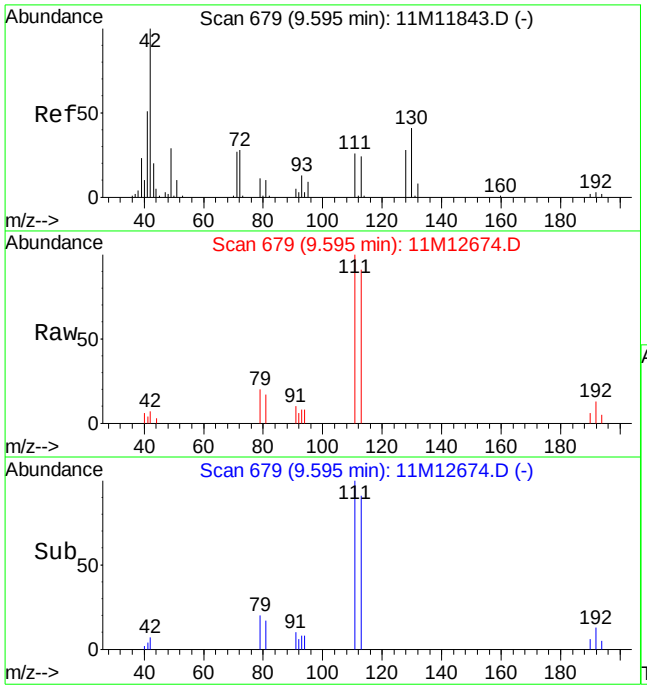

#36
Tetrahydrofuran
Concen: 0.93 ug/L
RT: 9.60 min Scan# 679
Delta R.T. 0.00 min
Lab File: 11M12674.D
Acq: 16 Jun 2016 3:31

Tgt Ion: 42 Resp: 1136

Ion	Ratio	Lower	Upper
42	100		
71	0.0	16.4	38.2#
72	0.0	16.6	38.8#

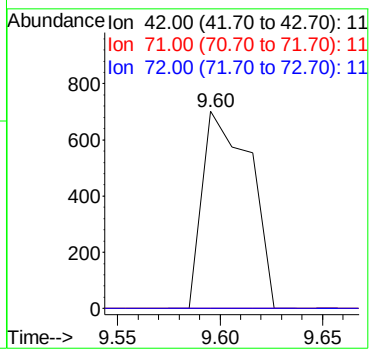

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12707.D Vial: 25
Acq On : 17 Jun 2016 3:09 Operator: JDS
Sample : WG573051-04 BLANK2 STD 624 Inst : hpms11
Misc : 2,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 20 11:33:26 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	475798	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	409939	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	242107	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	127074	24.4035 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.60%		
43) 1,2-Dichloroethane-d4	10.24	65	143783	24.2166 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.88%		
57) Toluene-d8	12.47	98	436632	24.5136 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.04%		
78) p-Bromofluorobenzene	15.64	95	194410	26.0492 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.20%		
Target Compounds					Qvalue
8) Trichlorofluoromethane	5.48	101	4298	0.4349 ug/L	85
36) Tetrahydrofuran	9.61	42	1504	1.2470 ug/L #	60

(#) = qualifier out of range (m) = manual integration
11M12707.D 8260WT.M Mon Jun 20 11:33:27 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12707.D Vial: 25
Acq On : 17 Jun 2016 3:09 Operator: JDS
Sample : WG573051-04 BLANK2 STD 624 Inst : hpms11
Misc : 2,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 20 11:33 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

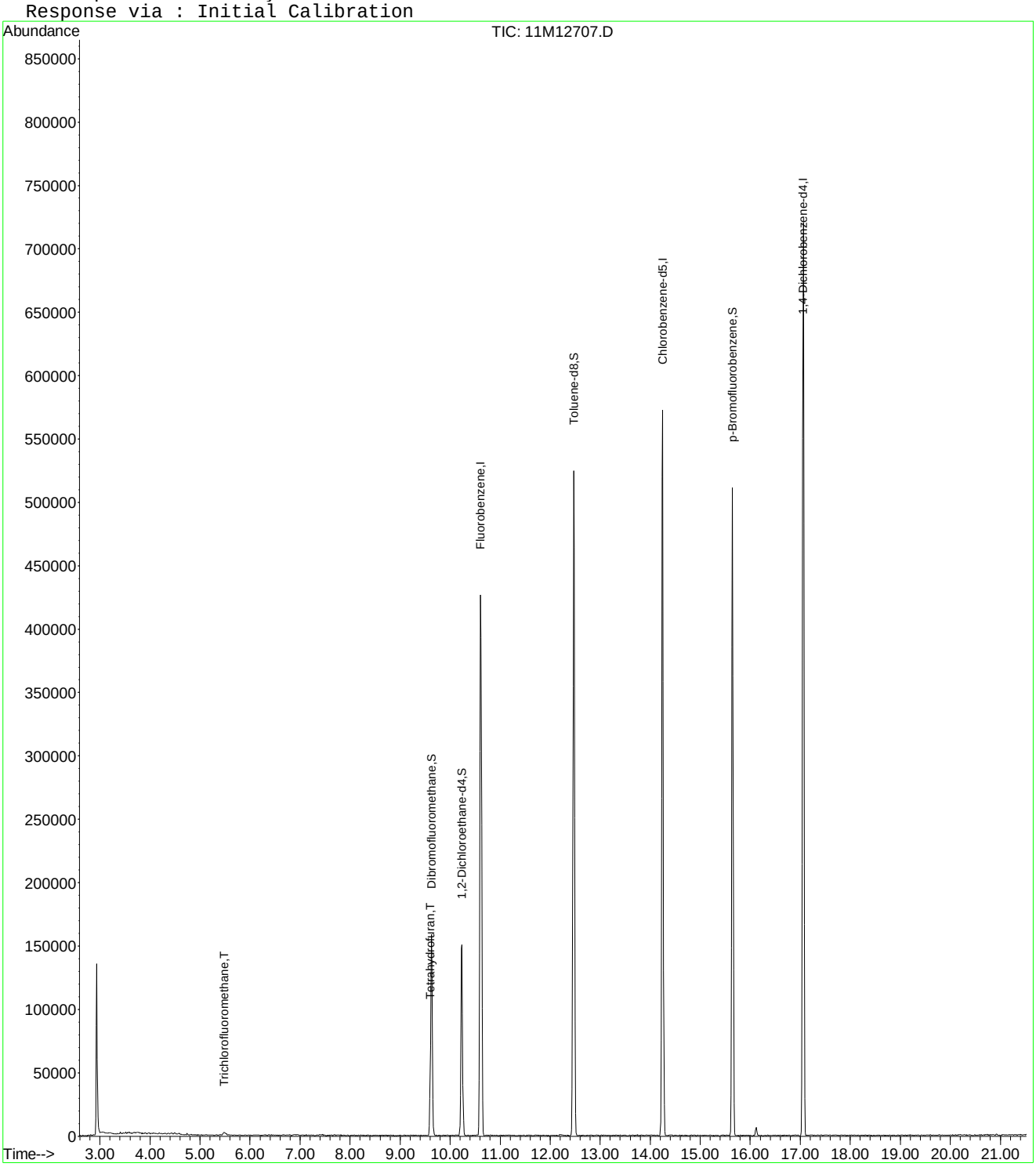

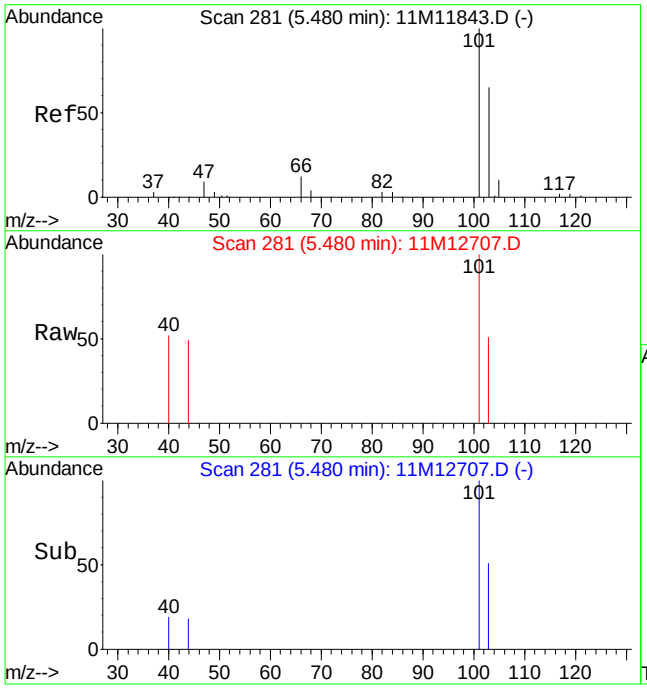

#8
Trichlorofluoromethane
Concen: 0.43 ug/L
RT: 5.48 min Scan# 281
Delta R.T. 0.00 min
Lab File: 11M12707.D
Acq: 17 Jun 2016 3:09

Tgt Ion:101 Resp: 4298

Ion	Ratio	Lower	Upper
101	100		
103	77.4	39.1	91.3

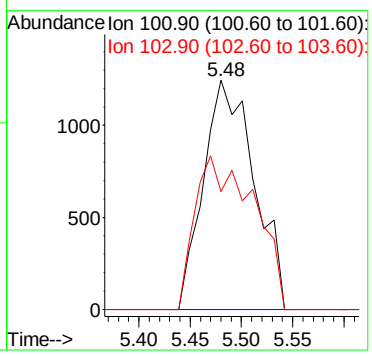

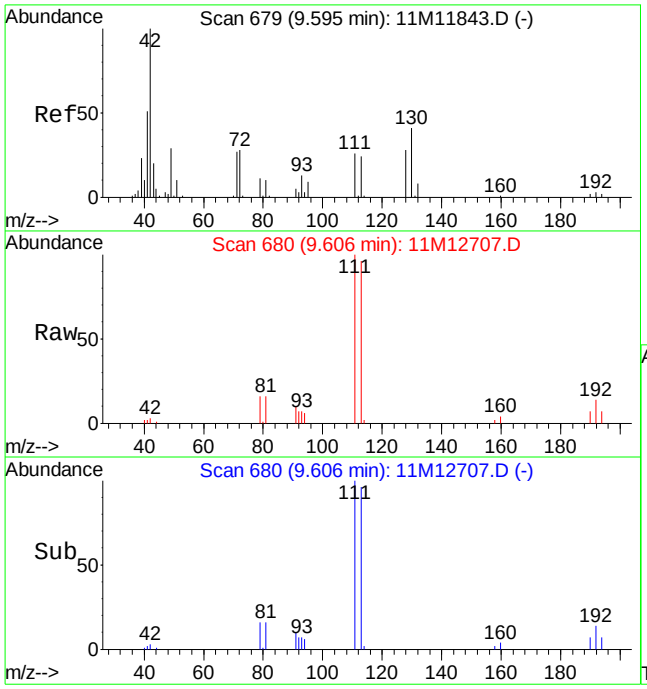

#36
Tetrahydrofuran
Concen: 1.25 ug/L
RT: 9.61 min Scan# 680
Delta R.T. 0.01 min
Lab File: 11M12707.D
Acq: 17 Jun 2016 3:09

Tgt Ion: 42 Resp: 1504

Ion	Ratio	Lower	Upper
42	100		
71	0.0	16.4	38.2#
72	13.2	16.6	38.8#

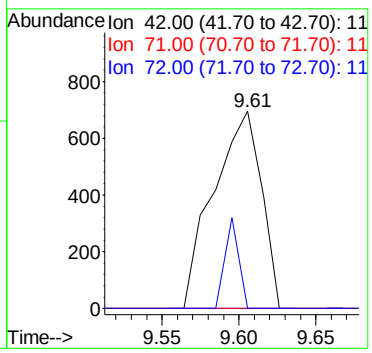

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061516\11M12655.D Vial: 6
Acq On : 15 Jun 2016 17:25 Operator: JDS
Sample : WG572855-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 09:53:48 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	665946	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	566282	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	339839	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	177601	24.3682 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.48%		
43) 1,2-Dichloroethane-d4	10.24	65	187008	22.5034 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 90.00%		
57) Toluene-d8	12.47	98	604279	24.5592 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.24%		
78) p-Bromofluorobenzene	15.64	95	266614	25.4503 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.80%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	186035	17.8294 ug/L	96
3) Chloromethane	3.72	50	141000	16.8728 ug/L	98
4) Vinyl Chloride	3.95	62	139568	20.1113 ug/L	99
5) 1,3-Butadiene	3.99	54	4753	0.6888 ug/L #	60
6) Bromomethane	4.85	94	101517	21.2757 ug/L	100
7) Chloroethane	5.00	64	90120	20.2111 ug/L	98
8) Trichlorofluoromethane	5.48	101	267889	19.3671 ug/L	99
9) Diethyl ether	6.01	59	516783	101.0206 ug/L	93
10) Isoprene	6.04	67	166540	19.5337 ug/L	96
11) Acrolein	6.23	56	70678	103.4260 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	135865	20.2426 ug/L	96
13) Acetone	6.35	43	29630	18.7375 ug/L	95
14) 1,1-Dichloroethene	6.56	61	212517	17.4318 ug/L	96
15) Tert-Butyl Alcohol	6.67	59	76302	174.4436 ug/L	94
16) Dimethyl Sulfide	6.81	62	163509	33.5836 ug/L	91
17) Iodomethane	7.06	142	139989	26.2739 ug/L	93
18) Methyl acetate	7.07	43	87048	16.8179 ug/L	93
19) Methylene Chloride	7.31	84	122669	19.4421 ug/L	84
20) Carbon Disulfide	7.36	76	357149	17.4988 ug/L	100
21) Acrylonitrile	7.50	53	40275	18.9958 ug/L	99
22) Methyl Tert Butyl Ether	7.52	73	336431	21.3787 ug/L	94
23) trans-1,2-Dichloroethene	7.75	96	132194	19.5922 ug/L	93
24) n-Hexane	7.82	57	180602	16.0708 ug/L	97
25) Diisopropyl ether	8.15	45	2542402	90.6646 ug/L	97
26) Vinyl Acetate	8.31	43	102724	11.4105 ug/L	97
27) 1,1-Dichloroethane	8.34	63	242942	17.9447 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	2161236	94.6929 ug/L	98
29) 2-Butanone	8.87	43	44476	18.6043 ug/L	97
30) Propionitrile	8.97	54	64183	91.6650 ug/L	100
31) 2,2-Dichloropropane	9.09	77	206338	19.4796 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	148163	19.9157 ug/L	94
33) Chloroform	9.35	83	250844	18.8675 ug/L	100
34) 1-Bromopropane	9.48	122	36044	27.5604 ug/L	98
35) Bromochloromethane	9.57	130	95595	21.6363 ug/L	87
36) Tetrahydrofuran	9.60	42	134431	79.6324 ug/L	91
38) 1,1,1-Trichloroethane	9.85	97	254854	19.4794 ug/L	96
39) Cyclohexane	9.88	56	253938	17.8097 ug/L	95
40) 1,1-Dichloropropene	10.04	75	175359	18.7719 ug/L	98
41) Carbon Tetrachloride	10.18	117	245260	19.1975 ug/L	98
42) Tert-Amyl-Methyl ether	10.13	73	1647069	103.8547 ug/L	97

(#) = qualifier out of range (m) = manual integration
11M12655.D 8260WT.M Thu Jun 16 09:53:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061516\11M12655.D Vial: 6
Acq On : 15 Jun 2016 17:25 Operator: JDS
Sample : WG572855-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 09:53:48 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.34	62	214412	19.8566 ug/L	97
45) Benzene	10.38	78	483612	18.9111 ug/L	100
46) Trichloroethene	11.09	130	174608	21.0064 ug/L	98
47) Methylcyclohexane	11.17	83	197221	19.2256 ug/L	93
48) 1,2-Dichloropropane	11.29	63	137592	19.4368 ug/L	97
49) 1,4-Dioxane	11.57	88	4192	116.1301 ug/L	91
50) Bromodichloromethane	11.58	83	199181	20.0429 ug/L	98
51) Dibromomethane	11.65	93	72983	19.7846 ug/L	93
52) 2-Chloroethyl Vinyl Ether	11.85	63	61392	17.5963 ug/L	94
53) 4-Methyl-2-Pentanone	11.87	58	36458	18.5272 ug/L	92
54) cis-1,3-Dichloropropene	12.17	75	220107	22.1441 ug/L	99
55) Dimethyl Disulfide	12.42	79	117601	19.6613 ug/L	92
58) Toluene	12.56	91	578472	20.1787 ug/L	99
59) Ethyl Methacrylate	12.65	69	129855	21.2135 ug/L	83
60) trans-1,3-Dichloropropene	12.73	75	188370	20.4713 ug/L	99
61) 1,1,2-Trichloroethane	12.93	97	106903	21.0298 ug/L	97
62) 2-Hexanone	12.86	43	63879	17.1099 ug/L #	96
63) 1,3-Dichloropropane	13.21	76	179735	22.0175 ug/L	88
64) Tetrachloroethene	13.34	164	134774	20.2165 ug/L	97
65) Dibromochloromethane	13.59	129	167228	21.5678 ug/L	100
66) 1,2-Dibromoethane	13.82	107	108159	21.2367 ug/L	99
67) 1-Chlorohexane	13.89	91	185684	19.6460 ug/L	89
68) Chlorobenzene	14.29	112	438419	20.8761 ug/L	99
69) 1,1,1,2-Tetrachloroethane	14.32	131	179895	21.1699 ug/L	99
70) Ethylbenzene	14.31	106	221410	20.5600 ug/L	95
71) m-,p-Xylene	14.39	106	537885	41.0853 ug/L	99
72) o-Xylene	14.92	106	266340	20.9041 ug/L	100
73) Styrene	14.95	104	447756	21.2706 ug/L	97
74) Bromoform	15.43	173	98591	20.9797 ug/L	99
75) Isopropylbenzene	15.31	105	690943	20.5061 ug/L	99
77) 1,1,2,2-Tetrachloroethane	15.52	83	102287	19.3281 ug/L	95
79) 1,2,3-Trichloropropane	15.70	110	40595	20.6599 ug/L	86
80) trans-1,4-Dichloro-2-Buten	15.74	53	25731	10.6810 ug/L #	23
81) n-Propylbenzene	15.79	91	796824	20.2461 ug/L	98
82) Bromobenzene	15.92	156	208214	20.1612 ug/L	91
83) 1,3,5-Trimethylbenzene	15.95	105	604417	20.1248 ug/L	99
84) 2-Chlorotoluene	16.05	91	549511	19.9341 ug/L	98
85) 4-Chlorotoluene	16.09	91	509257	20.6237 ug/L	100
86) a-Methylstyrene	16.34	118	343882	21.7042 ug/L	99
87) tert-Butylbenzene	16.40	134	133726	21.0164 ug/L	93
88) 1,2,4-Trimethylbenzene	16.44	105	622297	20.3478 ug/L	99
89) sec-Butylbenzene	16.65	105	705095	19.5520 ug/L	99
90) p-Isopropyltoluene	16.79	119	656165	19.8094 ug/L	99
91) 1,3-Dichlorobenzene	16.98	146	408809	20.4957 ug/L	98
92) 1,4-Dichlorobenzene	17.10	146	417722	20.6612 ug/L	99
93) n-Butylbenzene	17.28	91	526165	18.0266 ug/L	98
94) 1,2-Dichlorobenzene	17.57	146	381065	20.9724 ug/L	99
95) 1,2-Dibromo-3-Chloropropan	18.49	75	21125	18.1219 ug/L	99
96) 1,2,4-Trichlorobenzene	19.55	180	256701	19.3073 ug/L	100
97) Hexachlorobutadiene	19.69	225	96910	16.5452 ug/L	97
98) Naphthalene	19.90	128	436771	17.6986 ug/L	100
99) 1,2,3-Trichlorobenzene	20.19	180	233969	19.1744 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061516\11M12655.D Vial: 6
Acq On : 15 Jun 2016 17:25 Operator: JDS
Sample : WG572855-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 9:53 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

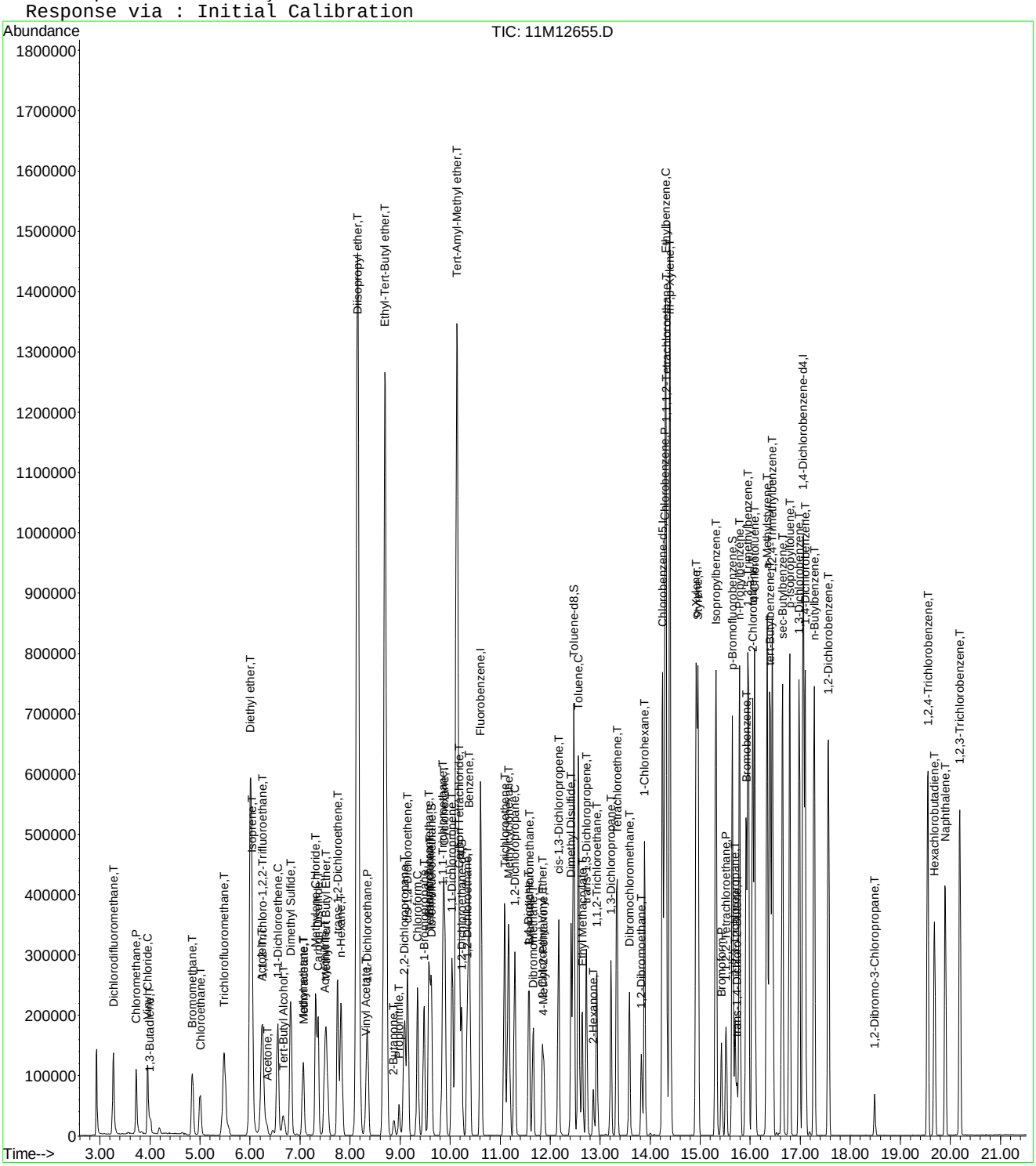

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12688.D Vial: 6
Acq On : 16 Jun 2016 17:03 Operator: JDS
Sample : WG573051-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 17 09:16:11 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	546376	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	469128	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	281763	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	145745	24.3736 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.48%		
43) 1,2-Dichloroethane-d4	10.23	65	154170	22.6118 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 90.44%		
57) Toluene-d8	12.47	98	500024	24.5307 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.12%		
78) p-Bromofluorobenzene	15.64	95	224851	25.8877 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.56%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	158548	18.5204 ug/L	97
3) Chloromethane	3.73	50	128025	18.6729 ug/L	99
4) Vinyl Chloride	3.96	62	119772	21.0357 ug/L	98
5) 1,3-Butadiene	3.99	54	3414	0.6030 ug/L #	68
6) Bromomethane	4.85	94	82794	21.1491 ug/L	99
7) Chloroethane	5.00	64	74318	20.3147 ug/L	99
8) Trichlorofluoromethane	5.48	101	224786	19.8073 ug/L	99
9) Diethyl ether	6.01	59	424001	101.0220 ug/L	93
10) Isoprene	6.04	67	142753	20.4079 ug/L	94
11) Acrolein	6.24	56	56088	100.0868 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	112026	20.3435 ug/L	91
13) Acetone	6.34	43	24555	18.9263 ug/L	98
14) 1,1-Dichloroethene	6.56	61	176244	17.6202 ug/L	96
15) Tert-Butyl Alcohol	6.67	59	75912	211.5324 ug/L	95
16) Dimethyl Sulfide	6.81	62	132207	33.0969 ug/L	93
17) Iodomethane	7.06	142	103010	23.7928 ug/L	96
18) Methyl acetate	7.07	43	70981	16.7072 ug/L	93
19) Methylene Chloride	7.31	84	98420	19.0125 ug/L	85
20) Carbon Disulfide	7.36	76	289353	17.2797 ug/L	99
21) Acrylonitrile	7.50	53	35430	20.3677 ug/L	98
22) Methyl Tert Butyl Ether	7.52	73	267737	20.7368 ug/L	96
23) trans-1,2-Dichloroethene	7.75	96	111519	20.1451 ug/L	91
24) n-Hexane	7.82	57	154725	16.7812 ug/L	98
25) Diisopropyl ether	8.15	45	2098207	91.1988 ug/L	97
26) Vinyl Acetate	8.31	43	68151	9.6923 ug/L	98
27) 1,1-Dichloroethane	8.34	63	204146	18.3790 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1770174	94.5319 ug/L	98
29) 2-Butanone	8.87	43	36822	18.7734 ug/L	95
30) Propionitrile	8.99	54	57022	99.2598 ug/L	99
31) 2,2-Dichloropropane	9.09	77	173464	19.9599 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	123923	20.3028 ug/L	93
33) Chloroform	9.35	83	209223	19.1809 ug/L	100
34) 1-Bromopropane	9.48	122	30265	28.1912 ug/L	96
35) Bromochloromethane	9.57	130	80319	22.1572 ug/L	86
36) Tetrahydrofuran	9.60	42	114277	82.5081 ug/L	91
38) 1,1,1-Trichloroethane	9.85	97	214061	19.9420 ug/L	97
39) Cyclohexane	9.88	56	210661	18.0078 ug/L	94
40) 1,1-Dichloropropene	10.04	75	150804	19.6762 ug/L	99
41) Carbon Tetrachloride	10.18	117	213637	20.3817 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	1343090	103.2207 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M12688.D 8260WT.M Fri Jun 17 09:16:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12688.D Vial: 6
Acq On : 16 Jun 2016 17:03 Operator: JDS
Sample : WG573051-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 17 09:16:11 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	179201	20.2276 ug/L	97
45)	Benzene	10.38	78	402174	19.1682 ug/L	99
46)	Trichloroethene	11.09	130	147970	21.6974 ug/L	98
47)	Methylcyclohexane	11.17	83	166777	19.8157 ug/L	94
48)	1,2-Dichloropropane	11.29	63	112924	19.4431 ug/L	96
49)	1,4-Dioxane	11.56	88	6571	200.6711 ug/L	90
50)	Bromodichloromethane	11.58	83	164478	20.1729 ug/L	99
51)	Dibromomethane	11.66	93	59100	19.5273 ug/L	91
52)	2-Chloroethyl Vinyl Ether	11.84	63	50787	17.7423 ug/L	95
53)	4-Methyl-2-Pentanone	11.87	58	30890	19.1329 ug/L	94
54)	cis-1,3-Dichloropropene	12.17	75	180319	22.1112 ug/L	100
55)	Dimethyl Disulfide	12.42	79	96353	19.6343 ug/L	91
58)	Toluene	12.56	91	484632	20.4063 ug/L	98
59)	Ethyl Methacrylate	12.65	69	102055	20.1247 ug/L	88
60)	trans-1,3-Dichloropropene	12.73	75	156505	20.5306 ug/L	99
61)	1,1,2-Trichloroethane	12.94	97	88431	20.9987 ug/L	97
62)	2-Hexanone	12.86	43	53189	17.1970 ug/L	94
63)	1,3-Dichloropropane	13.21	76	146706	21.6933 ug/L	90
64)	Tetrachloroethene	13.34	164	116239	21.0471 ug/L	97
65)	Dibromochloromethane	13.59	129	141187	21.9803 ug/L	98
66)	1,2-Dibromoethane	13.82	107	89772	21.2768 ug/L	99
67)	1-Chlorohexane	13.89	91	152409	19.4649 ug/L	92
68)	Chlorobenzene	14.29	112	370073	21.2710 ug/L	100
69)	1,1,1,2-Tetrachloroethane	14.32	131	149013	21.1673 ug/L	99
70)	Ethylbenzene	14.31	106	179565	20.1275 ug/L	99
71)	m-,p-Xylene	14.39	106	456695	42.1080 ug/L	99
72)	o-Xylene	14.92	106	222762	21.1046 ug/L	99
73)	Styrene	14.95	104	372965	21.3869 ug/L	99
74)	Bromoform	15.43	173	82099	21.0883 ug/L	100
75)	Isopropylbenzene	15.31	105	595239	21.3242 ug/L	100
77)	1,1,2,2-Tetrachloroethane	15.52	83	83806	19.1000 ug/L	98
79)	1,2,3-Trichloropropane	15.70	110	35141	21.5543 ug/L	82
80)	trans-1,4-Dichloro-2-Buten	15.74	53	23202	11.5512 ug/L #	33
81)	n-Propylbenzene	15.79	91	691363	21.1872 ug/L	99
82)	Bromobenzene	15.92	156	173923	20.3120 ug/L	93
83)	1,3,5-Trimethylbenzene	15.96	105	515882	20.7173 ug/L	98
84)	2-Chlorotoluene	16.05	91	462816	20.2497 ug/L	98
85)	4-Chlorotoluene	16.09	91	428111	20.9111 ug/L	98
86)	a-Methylstyrene	16.34	118	284640	21.6681 ug/L	99
87)	tert-Butylbenzene	16.40	134	116566	22.0955 ug/L	92
88)	1,2,4-Trimethylbenzene	16.44	105	525483	20.7237 ug/L	98
89)	sec-Butylbenzene	16.65	105	631798	21.1306 ug/L	98
90)	p-Isopropyltoluene	16.79	119	582415	21.2070 ug/L	100
91)	1,3-Dichlorobenzene	16.98	146	350679	21.2052 ug/L	97
92)	1,4-Dichlorobenzene	17.10	146	353761	21.1041 ug/L	99
93)	n-Butylbenzene	17.28	91	479614	19.8186 ug/L	98
94)	1,2-Dichlorobenzene	17.57	146	320528	21.2767 ug/L	99
95)	1,2-Dibromo-3-Chloropropan	18.49	75	17683	18.2897 ug/L	92
96)	1,2,4-Trichlorobenzene	19.55	180	230735	20.9313 ug/L	100
97)	Hexachlorobutadiene	19.69	225	95052	19.5728 ug/L	98
98)	Naphthalene	19.90	128	388435	18.9843 ug/L	100
99)	1,2,3-Trichlorobenzene	20.19	180	207930	20.5527 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M12688.D 8260WT.M Fri Jun 17 09:16:12 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12688.D Vial: 6
Acq On : 16 Jun 2016 17:03 Operator: JDS
Sample : WG573051-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 17 9:16 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

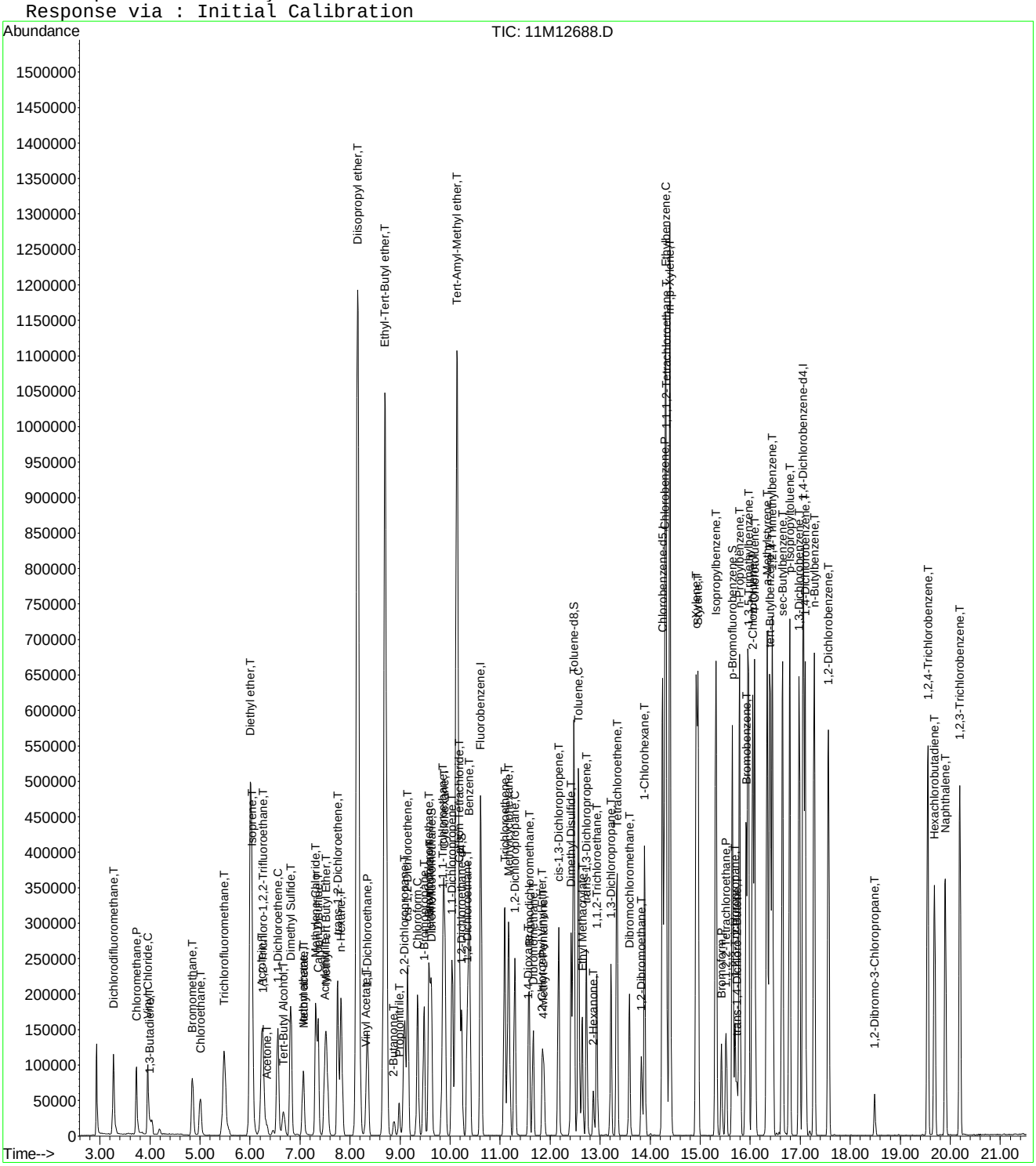

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061716\11M12721.D Vial: 5
Acq On : 17 Jun 2016 17:57 Operator: JDS
Sample : WG573259-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 17 18:19:40 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	493317	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	427304	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	271227	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	134050	24.8289 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.32%		
43) 1,2-Dichloroethane-d4	10.23	65	146396	23.7810 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 95.12%		
57) Toluene-d8	12.47	98	461778	24.8718 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.48%		
78) p-Bromofluorobenzene	15.64	95	213241	25.5047 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.00%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	147125	19.0345 ug/L	97
3) Chloromethane	3.72	50	121099	19.5624 ug/L	100
4) Vinyl Chloride	3.95	62	117564	22.8687 ug/L	99
5) 1,3-Butadiene	3.99	54	3689	0.7217 ug/L #	72
6) Bromomethane	4.85	94	74231	21.0012 ug/L	99
7) Chloroethane	5.00	64	67736	20.5070 ug/L	99
8) Trichlorofluoromethane	5.48	101	223540	21.8161 ug/L	98
9) Diethyl ether	6.01	59	430467	113.5937 ug/L	95
10) Isoprene	6.04	67	130319	20.6342 ug/L	99
11) Acrolein	6.24	56	54163	106.9424 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	108698	21.8622 ug/L	97
13) Acetone	6.34	43	26002	22.1972 ug/L	99
14) 1,1-Dichloroethene	6.56	61	163656	18.1215 ug/L	100
15) Tert-Butyl Alcohol	6.67	59	75451	232.8612 ug/L	98
16) Dimethyl Sulfide	6.81	62	124194	34.4349 ug/L	96
17) Iodomethane	7.06	142	106522	26.9287 ug/L	99
18) Methyl acetate	7.07	43	71594	18.8102 ug/L	93
19) Methylene Chloride	7.31	84	92824	19.8601 ug/L	88
20) Carbon Disulfide	7.36	76	267060	17.6637 ug/L	99
21) Acrylonitrile	7.49	53	33644	21.4212 ug/L	98
22) Methyl Tert Butyl Ether	7.52	73	259354	22.2481 ug/L	96
23) trans-1,2-Dichloroethene	7.74	96	99390	19.8851 ug/L	96
24) n-Hexane	7.82	57	141397	16.9851 ug/L	97
25) Diisopropyl ether	8.15	45	2160907	104.0262 ug/L	97
26) Vinyl Acetate	8.31	43	47795	8.0715 ug/L	98
27) 1,1-Dichloroethane	8.34	63	188097	18.7555 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	1817551	107.5016 ug/L	98
29) 2-Butanone	8.87	43	35761	20.1935 ug/L	97
30) Propionitrile	8.98	54	57873	111.5764 ug/L	98
31) 2,2-Dichloropropane	9.09	77	157313	20.0483 ug/L	99
32) cis-1,2-Dichloroethene	9.15	96	115425	20.9444 ug/L	95
33) Chloroform	9.35	83	201737	20.4838 ug/L	99
34) 1-Bromopropane	9.48	122	28246	29.1192 ug/L	96
35) Bromochloromethane	9.57	130	76574	23.3961 ug/L	89
36) Tetrahydrofuran	9.60	42	120387	96.2682 ug/L	94
38) 1,1,1-Trichloroethane	9.85	97	208517	21.5149 ug/L	98
39) Cyclohexane	9.88	56	199507	18.8886 ug/L	95
40) 1,1-Dichloropropene	10.04	75	135487	19.5791 ug/L	99
41) Carbon Tetrachloride	10.18	117	210074	22.1974 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	1374636	117.0078 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061716\11M12721.D Vial: 5
Acq On : 17 Jun 2016 17:57 Operator: JDS
Sample : WG573259-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 17 18:19:40 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	178622	22.3308 ug/L	96
45)	Benzene	10.38	78	372400	19.6581 ug/L	99
46)	Trichloroethene	11.08	130	144419	23.4544 ug/L	96
47)	Methylcyclohexane	11.17	83	151100	19.8840 ug/L	96
48)	1,2-Dichloropropane	11.29	63	107327	20.4670 ug/L	95
49)	1,4-Dioxane	11.55	88	5995	202.5282 ug/L	97
50)	Bromodichloromethane	11.57	83	162073	22.0159 ug/L	100
51)	Dibromomethane	11.65	93	59759	21.8687 ug/L	96
52)	2-Chloroethyl Vinyl Ether	11.84	63	50927	19.7048 ug/L	97
53)	4-Methyl-2-Pentanone	11.87	58	28850	19.7913 ug/L	96
54)	cis-1,3-Dichloropropene	12.17	75	166700	22.6398 ug/L	100
55)	Dimethyl Disulfide	12.42	79	90200	20.3574 ug/L	89
58)	Toluene	12.56	91	453247	20.9528 ug/L	99
59)	Ethyl Methacrylate	12.64	69	98486	21.3218 ug/L	91
60)	trans-1,3-Dichloropropene	12.73	75	147245	21.2065 ug/L	100
61)	1,1,2-Trichloroethane	12.94	97	85540	22.3003 ug/L	99
62)	2-Hexanone	12.86	43	52139	18.5075 ug/L	97
63)	1,3-Dichloropropane	13.21	76	143053	23.2236 ug/L	93
64)	Tetrachloroethene	13.34	164	110039	21.8747 ug/L	98
65)	Dibromochloromethane	13.59	129	136824	23.3860 ug/L	99
66)	1,2-Dibromoethane	13.82	107	85373	22.2147 ug/L	100
67)	1-Chlorohexane	13.89	91	143357	20.1009 ug/L	94
68)	Chlorobenzene	14.29	112	352329	22.2333 ug/L	99
69)	1,1,1,2-Tetrachloroethane	14.32	131	146367	22.8265 ug/L	99
70)	Ethylbenzene	14.31	106	173433	21.3429 ug/L	100
71)	m-,p-Xylene	14.39	106	427203	43.2442 ug/L	99
72)	o-Xylene	14.92	106	210566	21.9018 ug/L	97
73)	Styrene	14.95	104	355717	22.3943 ug/L	100
74)	Bromoform	15.43	173	83012	23.4099 ug/L	96
75)	Isopropylbenzene	15.31	105	574442	22.5934 ug/L	100
77)	1,1,2,2-Tetrachloroethane	15.52	83	79518	18.8267 ug/L	100
79)	1,2,3-Trichloropropane	15.70	110	35232	22.4345 ug/L	79
80)	trans-1,4-Dichloro-2-Buten	15.73	53	21237	11.0202 ug/L #	23
81)	n-Propylbenzene	15.79	91	670818	21.3562 ug/L	99
82)	Bromobenzene	15.92	156	170399	20.6735 ug/L	92
83)	1,3,5-Trimethylbenzene	15.95	105	505585	21.0925 ug/L	99
84)	2-Chlorotoluene	16.05	91	464173	21.0980 ug/L	99
85)	4-Chlorotoluene	16.09	91	400662	20.3305 ug/L	98
86)	a-Methylstyrene	16.34	118	271092	21.4384 ug/L	98
87)	tert-Butylbenzene	16.39	134	111298	21.9164 ug/L	97
88)	1,2,4-Trimethylbenzene	16.44	105	516795	21.1728 ug/L	99
89)	sec-Butylbenzene	16.65	105	613153	21.3036 ug/L	99
90)	p-Isopropyltoluene	16.79	119	566273	21.4202 ug/L	99
91)	1,3-Dichlorobenzene	16.98	146	339431	21.3223 ug/L	98
92)	1,4-Dichlorobenzene	17.10	146	344996	21.3807 ug/L	100
93)	n-Butylbenzene	17.28	91	461811	19.8242 ug/L	98
94)	1,2-Dichlorobenzene	17.57	146	317375	21.8858 ug/L	98
95)	1,2-Dibromo-3-Chloropropan	18.49	75	18525	19.8482 ug/L	100
96)	1,2,4-Trichlorobenzene	19.55	180	214750	20.2380 ug/L	99
97)	Hexachlorobutadiene	19.69	225	92338	19.7525 ug/L	99
98)	Naphthalene	19.90	128	387137	19.6558 ug/L	99
99)	1,2,3-Trichlorobenzene	20.19	180	210340	21.5986 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M12721.D 8260WT.M Fri Jun 17 18:19:41 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061716\11M12721.D Vial: 5
Acq On : 17 Jun 2016 17:57 Operator: JDS
Sample : WG573259-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 17 18:19 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

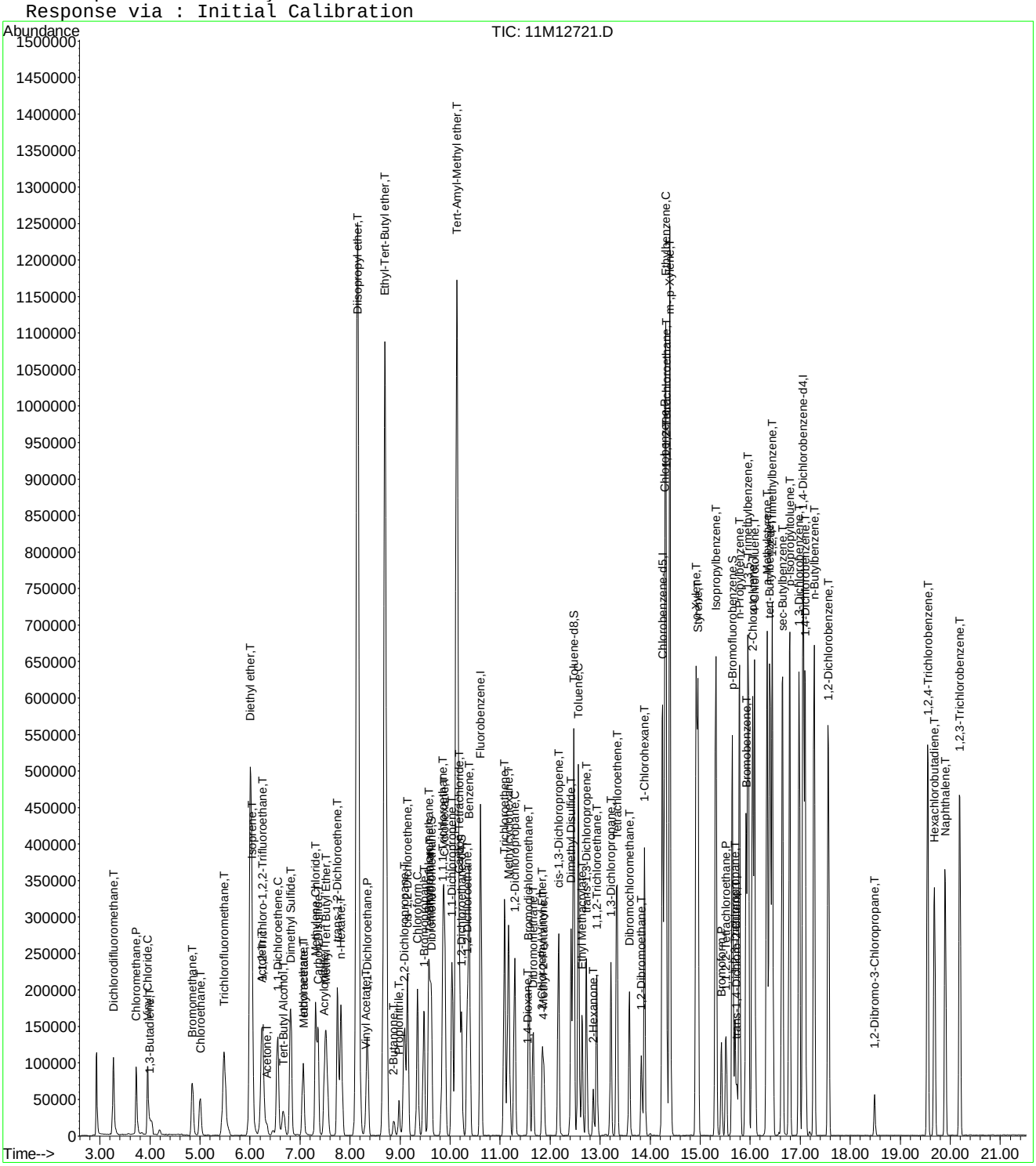

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12689.D Vial: 7
Acq On : 16 Jun 2016 17:35 Operator: JDS
Sample : WG573051-03 20ug/L LCS2 STD 8260 Inst : hpms11
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 17 09:16:12 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	554739	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	475469	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	289001	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	146748	24.1713 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.68%		
43) 1,2-Dichloroethane-d4	10.24	65	156506	22.6084 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 90.44%		
57) Toluene-d8	12.47	98	508606	24.6189 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.48%		
78) p-Bromofluorobenzene	15.64	95	222522	24.9779 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.92%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	161125	18.5377 ug/L	95
3) Chloromethane	3.73	50	130849	18.7970 ug/L	98
4) Vinyl Chloride	3.96	62	123530	21.3687 ug/L	99
5) 1,3-Butadiene	3.99	54	3075	0.5349 ug/L #	48
6) Bromomethane	4.85	94	78926	19.8571 ug/L	98
7) Chloroethane	5.00	64	77322	20.8172 ug/L	99
8) Trichlorofluoromethane	5.48	101	228237	19.8082 ug/L	99
9) Diethyl ether	6.01	59	440955	103.4776 ug/L	93
10) Isoprene	6.04	67	144262	20.3127 ug/L	93
11) Acrolein	6.23	56	62191	109.1656 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	113596	20.3176 ug/L	92
13) Acetone	6.34	43	26999	20.4964 ug/L	98
14) 1,1-Dichloroethene	6.56	61	174598	17.1925 ug/L	96
15) Tert-Butyl Alcohol	6.67	59	84838	232.8412 ug/L	97
16) Dimethyl Sulfide	6.81	62	138489	34.1468 ug/L	91
17) Iodomethane	7.06	142	137573	30.6014 ug/L	95
18) Methyl acetate	7.07	43	77062	17.9513 ug/L	91
19) Methylene Chloride	7.31	84	101378	19.2887 ug/L	84
20) Carbon Disulfide	7.36	76	298974	17.5850 ug/L	99
21) Acrylonitrile	7.50	53	37121	21.0181 ug/L	97
22) Methyl Tert Butyl Ether	7.52	73	283615	21.6354 ug/L	94
23) trans-1,2-Dichloroethene	7.75	96	108863	19.3688 ug/L	94
24) n-Hexane	7.82	57	157784	16.8549 ug/L	98
25) Diisopropyl ether	8.15	45	2161141	92.5182 ug/L	97
26) Vinyl Acetate	8.31	43	73457	10.1396 ug/L	97
27) 1,1-Dichloroethane	8.34	63	205365	18.2100 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1831916	96.3543 ug/L	98
29) 2-Butanone	8.87	43	39215	19.6920 ug/L	96
30) Propionitrile	8.99	54	61530	105.4923 ug/L	98
31) 2,2-Dichloropropane	9.09	77	169784	19.2419 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	122364	19.7451 ug/L	94
33) Chloroform	9.35	83	212058	19.1477 ug/L	99
34) 1-Bromopropane	9.48	122	30373	27.8725 ug/L	96
35) Bromochloromethane	9.57	130	80432	21.8538 ug/L	86
36) Tetrahydrofuran	9.60	42	124650	88.6407 ug/L	91
38) 1,1,1-Trichloroethane	9.85	97	211454	19.4022 ug/L	96
39) Cyclohexane	9.88	56	216470	18.2254 ug/L	94
40) 1,1-Dichloropropene	10.04	75	147314	18.9311 ug/L	100
41) Carbon Tetrachloride	10.18	117	207950	19.5401 ug/L	98
42) Tert-Amyl-Methyl ether	10.13	73	1414650	107.0813 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12689.D Vial: 7
Acq On : 16 Jun 2016 17:35 Operator: JDS
Sample : WG573051-03 20ug/L LCS2 STD 8260 Inst : hpms11
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 17 09:16:12 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.34	62	182915	20.3355 ug/L	97
45) Benzene	10.38	78	401671	18.8556 ug/L	98
46) Trichloroethene	11.09	130	150546	21.7423 ug/L	96
47) Methylcyclohexane	11.17	83	169145	19.7941 ug/L	95
48) 1,2-Dichloropropane	11.29	63	112973	19.1583 ug/L	97
49) 1,4-Dioxane	11.56	88	6947	207.9941 ug/L	99
50) Bromodichloromethane	11.58	83	168945	20.4084 ug/L	99
51) Dibromomethane	11.66	93	60560	19.7080 ug/L	93
52) 2-Chloroethyl Vinyl Ether	11.85	63	55905	19.2358 ug/L	94
53) 4-Methyl-2-Pentanone	11.87	58	31798	19.3984 ug/L	93
54) cis-1,3-Dichloropropene	12.17	75	183117	22.1158 ug/L	99
55) Dimethyl Disulfide	12.42	79	98060	19.6809 ug/L	88
58) Toluene	12.56	91	486203	20.1994 ug/L	99
59) Ethyl Methacrylate	12.65	69	109037	21.2148 ug/L	87
60) trans-1,3-Dichloropropene	12.73	75	158571	20.5242 ug/L	99
61) 1,1,2-Trichloroethane	12.93	97	90193	21.1315 ug/L	99
62) 2-Hexanone	12.86	43	57287	18.2749 ug/L	95
63) 1,3-Dichloropropane	13.21	76	152317	22.2226 ug/L	89
64) Tetrachloroethene	13.34	164	117577	21.0055 ug/L	94
65) Dibromochloromethane	13.59	129	142785	21.9326 ug/L	100
66) 1,2-Dibromoethane	13.82	107	92248	21.5720 ug/L	100
67) 1-Chlorohexane	13.89	91	157121	19.7991 ug/L	90
68) Chlorobenzene	14.29	112	371247	21.0539 ug/L	100
69) 1,1,1,2-Tetrachloroethane	14.32	131	151383	21.2172 ug/L	100
70) Ethylbenzene	14.31	106	184299	20.3826 ug/L	98
71) m-,p-Xylene	14.39	106	453631	41.2677 ug/L	100
72) o-Xylene	14.92	106	228165	21.3282 ug/L	97
73) Styrene	14.95	104	378940	21.4397 ug/L	97
74) Bromoform	15.43	173	86102	21.8216 ug/L	100
75) Isopropylbenzene	15.31	105	593863	20.9912 ug/L	99
77) 1,1,2,2-Tetrachloroethane	15.52	83	86740	19.2736 ug/L	97
79) 1,2,3-Trichloropropane	15.70	110	36295	21.7021 ug/L	89
80) trans-1,4-Dichloro-2-Buten	15.74	53	23953	11.6216 ug/L #	16
81) n-Propylbenzene	15.79	91	686733	20.5182 ug/L	97
82) Bromobenzene	15.92	156	178947	20.3754 ug/L	90
83) 1,3,5-Trimethylbenzene	15.95	105	518224	20.2902 ug/L	99
84) 2-Chlorotoluene	16.05	91	462239	19.7179 ug/L	97
85) 4-Chlorotoluene	16.09	91	424382	20.2098 ug/L	98
86) a-Methylstyrene	16.34	118	287578	21.3435 ug/L	100
87) tert-Butylbenzene	16.40	134	111823	20.6655 ug/L	98
88) 1,2,4-Trimethylbenzene	16.44	105	523177	20.1160 ug/L	98
89) sec-Butylbenzene	16.65	105	620913	20.2464 ug/L	98
90) p-Isopropyltoluene	16.79	119	571877	20.3018 ug/L	99
91) 1,3-Dichlorobenzene	16.98	146	350811	20.6819 ug/L	98
92) 1,4-Dichlorobenzene	17.10	146	356440	20.7313 ug/L	99
93) n-Butylbenzene	17.28	91	473060	19.0582 ug/L	98
94) 1,2-Dichlorobenzene	17.57	146	328468	21.2577 ug/L	99
95) 1,2-Dibromo-3-Chloropropan	18.49	75	18753	18.8889 ug/L	89
96) 1,2,4-Trichlorobenzene	19.55	180	235691	20.8454 ug/L	99
97) Hexachlorobutadiene	19.69	225	92784	18.6273 ug/L	97
98) Naphthalene	19.90	128	415146	19.7816 ug/L	100
99) 1,2,3-Trichlorobenzene	20.19	180	212183	20.4478 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M12689.D 8260WT.M Fri Jun 17 09:16:13 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12689.D Vial: 7
Acq On : 16 Jun 2016 17:35 Operator: JDS
Sample : WG573051-03 20ug/L LCS2 STD 8260 Inst : hpms11
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 17 9:16 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

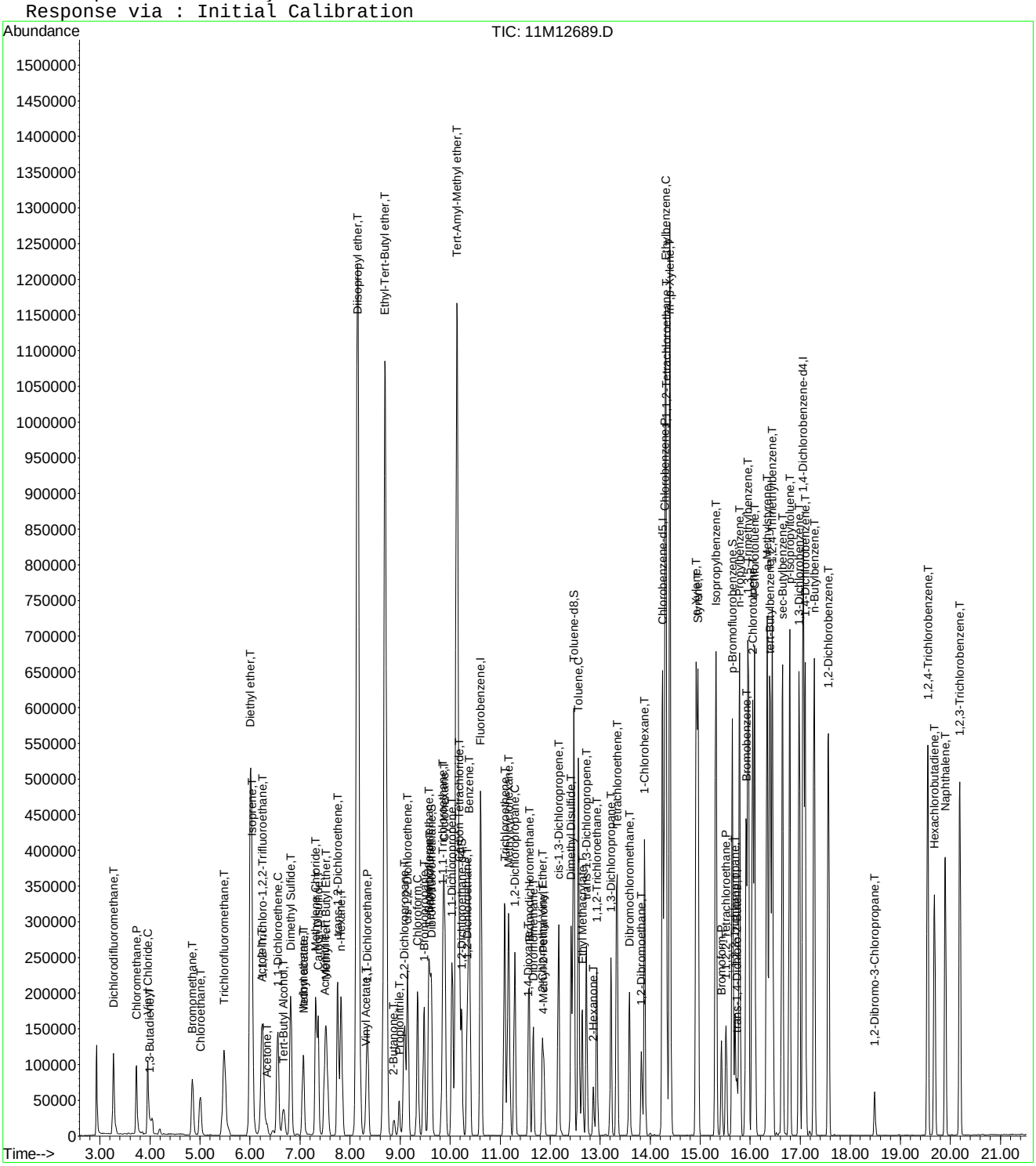

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061716\11M12722.D Vial: 6
Acq On : 17 Jun 2016 18:29 Operator: JDS
Sample : WG573259-03 20ug/L LCS2 STD 8260 Inst : hpms11
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 17 18:51:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	496891	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	434135	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	262941	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	133349	24.5214 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.08%		
43) 1,2-Dichloroethane-d4	10.23	65	146133	23.5676 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.28%		
57) Toluene-d8	12.47	98	452400	23.9832 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 95.92%		
78) p-Bromofluorobenzene	15.64	95	209462	25.8422 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.36%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	145695	18.7139 ug/L	96
3) Chloromethane	3.72	50	120090	19.2599 ug/L	100
4) Vinyl Chloride	3.96	62	114478	22.1083 ug/L	99
5) 1,3-Butadiene	3.99	54	3533	0.6862 ug/L #	71
6) Bromomethane	4.85	94	68832	19.3337 ug/L	100
7) Chloroethane	5.00	64	67135	20.1788 ug/L	98
8) Trichlorofluoromethane	5.48	101	216020	20.9306 ug/L	98
9) Diethyl ether	6.01	59	399130	104.5668 ug/L	95
10) Isoprene	6.04	67	126213	19.8403 ug/L	99
11) Acrolein	6.24	56	53300	104.5162 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	101957	20.3589 ug/L	92
13) Acetone	6.34	43	27700	23.4767 ug/L	99
14) 1,1-Dichloroethene	6.56	61	151010	16.6010 ug/L	99
15) Tert-Butyl Alcohol	6.67	59	77514	237.5074 ug/L	100
16) Dimethyl Sulfide	6.81	62	121109	33.3380 ug/L	98
17) Iodomethane	7.06	142	127650	31.6214 ug/L	99
18) Methyl acetate	7.07	43	74329	19.4272 ug/L	95
19) Methylene Chloride	7.31	84	90194	19.1586 ug/L	86
20) Carbon Disulfide	7.36	76	260582	17.1113 ug/L	99
21) Acrylonitrile	7.49	53	34501	21.8088 ug/L	99
22) Methyl Tert Butyl Ether	7.52	73	261552	22.2752 ug/L	95
23) trans-1,2-Dichloroethene	7.74	96	96160	19.1005 ug/L	96
24) n-Hexane	7.82	57	134522	16.0430 ug/L	98
25) Diisopropyl ether	8.15	45	1992360	95.2224 ug/L	97
26) Vinyl Acetate	8.31	43	50677	8.3686 ug/L	99
27) 1,1-Dichloroethane	8.34	63	182725	18.0888 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	1681318	98.7286 ug/L	98
29) 2-Butanone	8.87	43	38469	21.5664 ug/L	95
30) Propionitrile	8.98	54	57987	110.9921 ug/L	98
31) 2,2-Dichloropropane	9.09	77	147643	18.6806 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	110798	19.9602 ug/L	97
33) Chloroform	9.35	83	195344	19.6920 ug/L	100
34) 1-Bromopropane	9.48	122	27137	27.8037 ug/L	98
35) Bromochloromethane	9.57	130	73215	22.2089 ug/L	88
36) Tetrahydrofuran	9.60	42	117072	92.9440 ug/L	93
38) 1,1,1-Trichloroethane	9.85	97	201011	20.5912 ug/L	98
39) Cyclohexane	9.88	56	194415	18.2741 ug/L	97
40) 1,1-Dichloropropene	10.04	75	132628	19.0280 ug/L	100
41) Carbon Tetrachloride	10.17	117	199959	20.9766 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	1286096	108.6840 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M12722.D 8260WT.M Fri Jun 17 18:51:37 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061716\11M12722.D Vial: 6
Acq On : 17 Jun 2016 18:29 Operator: JDS
Sample : WG573259-03 20ug/L LCS2 STD 8260 Inst : hpms11
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 17 18:51:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.34	62	177864	22.0761 ug/L	96
45) Benzene	10.38	78	358965	18.8126 ug/L	100
46) Trichloroethene	11.08	130	138858	22.3890 ug/L	97
47) Methylcyclohexane	11.17	83	148646	19.4204 ug/L	95
48) 1,2-Dichloropropane	11.29	63	104304	19.7474 ug/L	94
49) 1,4-Dioxane	11.56	88	6211	207.6507 ug/L	97
50) Bromodichloromethane	11.57	83	160196	21.6044 ug/L	98
51) Dibromomethane	11.65	93	58063	21.0952 ug/L	97
52) 2-Chloroethyl Vinyl Ether	11.84	63	50309	19.3256 ug/L	100
53) 4-Methyl-2-Pentanone	11.87	58	30690	20.9021 ug/L	94
54) cis-1,3-Dichloropropene	12.17	75	159593	21.5186 ug/L	98
55) Dimethyl Disulfide	12.42	79	89206	19.9882 ug/L	91
58) Toluene	12.56	91	439744	20.0087 ug/L	99
59) Ethyl Methacrylate	12.64	69	100351	21.3837 ug/L	91
60) trans-1,3-Dichloropropene	12.73	75	146484	20.7650 ug/L	97
61) 1,1,2-Trichloroethane	12.94	97	83470	21.4183 ug/L	99
62) 2-Hexanone	12.86	43	53509	18.6949 ug/L	95
63) 1,3-Dichloropropane	13.21	76	139578	22.3029 ug/L	93
64) Tetrachloroethene	13.34	164	103821	20.3139 ug/L	100
65) Dibromochloromethane	13.59	129	138247	23.2574 ug/L	98
66) 1,2-Dibromoethane	13.82	107	86520	22.1589 ug/L	99
67) 1-Chlorohexane	13.89	91	138818	19.1582 ug/L	97
68) Chlorobenzene	14.29	112	338710	21.0376 ug/L	100
69) 1,1,1,2-Tetrachloroethane	14.32	131	139216	21.3696 ug/L	98
70) Ethylbenzene	14.31	106	166732	20.1955 ug/L	99
71) m-,p-Xylene	14.39	106	415997	41.4472 ug/L	100
72) o-Xylene	14.92	106	200134	20.4891 ug/L	96
73) Styrene	14.95	104	346336	21.4607 ug/L	98
74) Bromoform	15.43	173	83395	23.1479 ug/L	96
75) Isopropylbenzene	15.31	105	553337	21.4209 ug/L	99
77) 1,1,2,2-Tetrachloroethane	15.52	83	81485	19.9004 ug/L	99
79) 1,2,3-Trichloropropane	15.70	110	34783	22.8398 ug/L	84
80) trans-1,4-Dichloro-2-Buten	15.73	53	23614	12.5306 ug/L #	42
81) n-Propylbenzene	15.79	91	641818	21.0768 ug/L	98
82) Bromobenzene	15.91	156	164898	20.6366 ug/L	91
83) 1,3,5-Trimethylbenzene	15.95	105	489325	21.0575 ug/L	100
84) 2-Chlorotoluene	16.05	91	451156	21.1525 ug/L	98
85) 4-Chlorotoluene	16.09	91	390243	20.4259 ug/L	99
86) a-Methylstyrene	16.34	118	260859	21.2792 ug/L	98
87) tert-Butylbenzene	16.39	134	109289	22.1990 ug/L	94
88) 1,2,4-Trimethylbenzene	16.44	105	492211	20.8011 ug/L	98
89) sec-Butylbenzene	16.65	105	586961	21.0362 ug/L	100
90) p-Isopropyltoluene	16.79	119	546514	21.3243 ug/L	98
91) 1,3-Dichlorobenzene	16.98	146	326412	21.1507 ug/L	98
92) 1,4-Dichlorobenzene	17.10	146	331169	21.1705 ug/L	99
93) n-Butylbenzene	17.28	91	446987	19.7925 ug/L	98
94) 1,2-Dichlorobenzene	17.57	146	307254	21.8555 ug/L	100
95) 1,2-Dibromo-3-Chloropropan	18.49	75	18399	20.3187 ug/L	98
96) 1,2,4-Trichlorobenzene	19.55	180	215370	20.9360 ug/L	99
97) Hexachlorobutadiene	19.69	225	89045	19.6484 ug/L	98
98) Naphthalene	19.90	128	385753	20.2028 ug/L	99
99) 1,2,3-Trichlorobenzene	20.19	180	200386	21.2249 ug/L	100

(#) = qualifier out of range (m) = manual integration
11M12722.D 8260WT.M Fri Jun 17 18:51:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061716\11M12722.D Vial: 6
Acq On : 17 Jun 2016 18:29 Operator: JDS
Sample : WG573259-03 20ug/L LCS2 STD 8260 Inst : hpms11
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 17 18:51 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

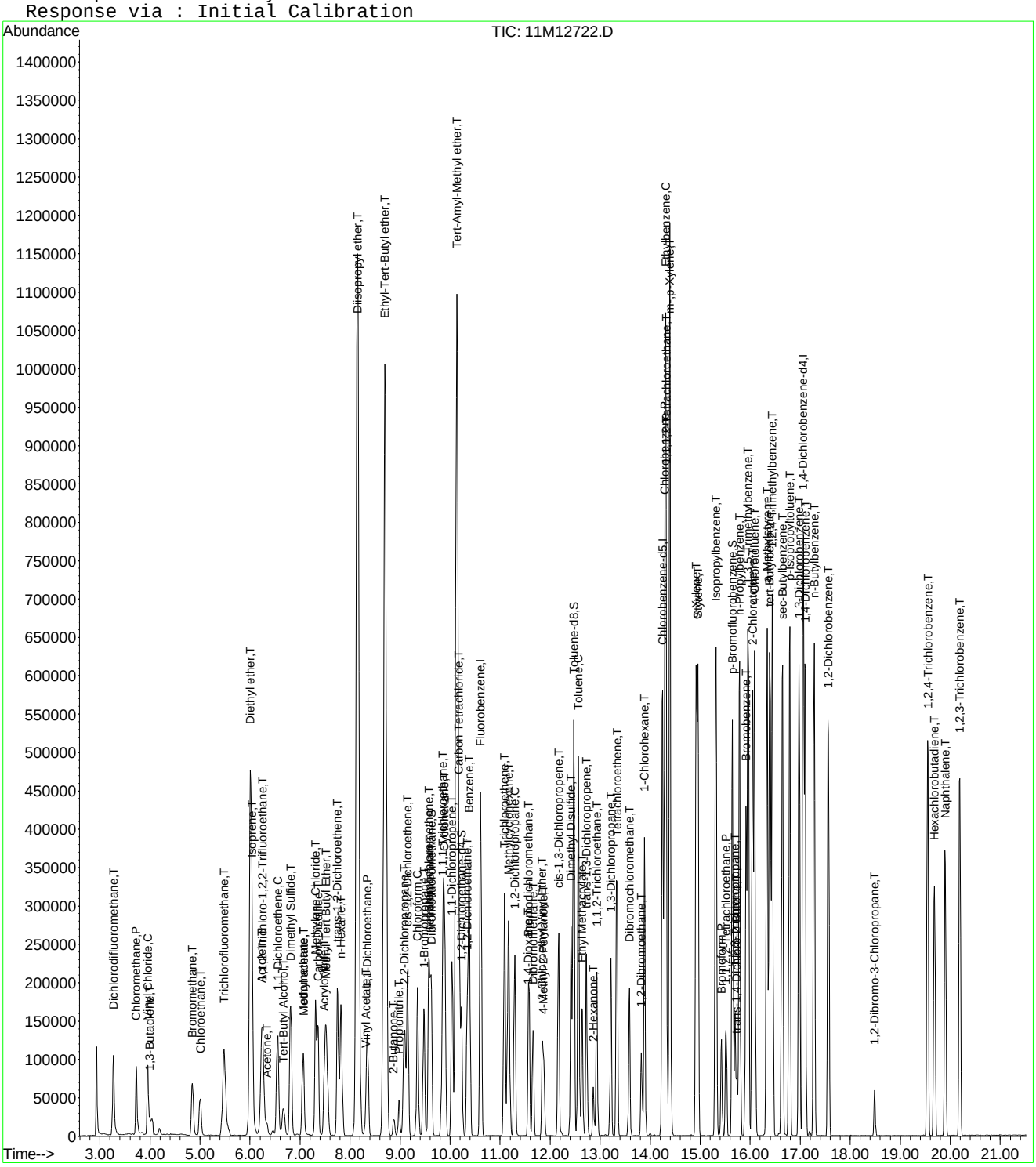

2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW1-061016	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/22/2016 20:16
Collect Date:	06/10/2016 07:55	**Dilution:**	10000	**File ID:**	1LM.LM35426
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	14800		4000	2000	1000

Certificate of Analysis

Sample #:	L16060650-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW3-061016	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/22/2016 20:35
Collect Date:	06/10/2016 09:05	**Dilution:**	10000	**File ID:**	1LM.LM35427
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	15400		4000	2000	1000

Certificate of Analysis

Sample #:	L16060650-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	17WW08-061016	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/22/2016 21:50
Collect Date:	06/10/2016 10:10	**Dilution:**	1	**File ID:**	1LM.LM35431
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	7.13		0.400	0.200	0.100

Certificate of Analysis

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Sample #:	L16060650-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	130-061016	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/23/2016 12:46
Collect Date:	06/10/2016 11:05	**Dilution:**	50	**File ID:**	1LM.LM35452
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	64.5		20.0	10.0	5.00

Certificate of Analysis

Sample #:	L16060650-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	130FD-061016	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/23/2016 13:05
Collect Date:	06/10/2016 11:05	**Dilution:**	50	**File ID:**	1LM.LM35453
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	62.5		20.0	10.0	5.00

Certificate of Analysis

Sample #:	L16060650-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW12-061016	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/23/2016 13:23
Collect Date:	06/10/2016 13:30	**Dilution:**	1	**File ID:**	1LM.LM35454
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW24-061016	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/22/2016 23:06
Collect Date:	06/10/2016 14:40	**Dilution:**	1	**File ID:**	1LM.LM35435
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.228	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1401 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG573791-01 MCT	9,940.	
-02 Blank	0.34	
-03 LCS	0.41	
-04 LCS2	0.42	
L16060650-01	2,500.	
-02	1,505.	
-03	839.	
-04	1,830.	
-05	1,832.	
-06	1,104.	
-07	711.	
L16060730-01	4,900.	
-02	4,930.	
-03	10,050.	
L16060732-01	3,060.	
-02	2,940.	
L16060822-01	627.	
-03	1,199.	
-04	901.	
-05	899.	
L16060854-01	3,040.	
L16061180-01	3,020.	

Analyst: John Richards

Date/Time: 06/23/16 13:33

DCN#119262

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

Page: 1 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

Page: 2 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 062216_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG573791 (waters)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments: All samples were initially analyzed neat or at dilutions based on their historical results.
Samples tagged with (NR) did not conform to their historical results. These samples were reanalyzed on the end of the sequence, either neat or at a dilution, based on the results of their initial analysis.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35415	WG573797-01 CCB	1	1		06/22/16 16:48
2	1LM.LM35416	WG573797-02 CCV (1.0ug/L)	1	1	STD75510	06/22/16 17:06
3	1LM.LM35417	WG573791-05 MRL (0.2ug/L)	1	1	STD75510	06/22/16 17:25
4	1LM.LM35418	WG573791-01 MCT (0.2ug/L)	1	1	STD75512	06/22/16 17:44
5	1LM.LM35419	WG573791-02 BLANK	1	1		06/22/16 18:03
6	1LM.LM35420	WG573791-03 LCS (0.2ug/L)	1	1	STD75512	06/22/16 18:22
7	1LM.LM35421	WG573791-04 LCS2 (0.2ug/L)	1	1	STD75512	06/22/16 18:41
8	1LM.LM35422	L16061180-01	1	1		06/22/16 19:00
9	1LM.LM35423	L16060732-01	1	1		06/22/16 19:19
10	1LM.LM35424	L16060732-02	1	1		06/22/16 19:38
11	1LM.LM35425	L16060854-01	1	1		06/22/16 19:57
12	1LM.LM35426	L16060650-01 (10,000x)	1	10000		06/22/16 20:16
13	1LM.LM35427	L16060650-02 (10,000x)	1	10000		06/22/16 20:35
14	1LM.LM35428	WG573797-03 CCV (1.0ug/L)	1	1	STD75510	06/22/16 20:54
15	1LM.LM35429	WG573791-06 MRL (0.2ug/L)	1	1	STD75510	06/22/16 21:13
16	1LM.LM35430	WG573797-04 CCB	1	1		06/22/16 21:31
17	1LM.LM35431	L16060650-03	1	1		06/22/16 21:50
18	1LM.LM35432	L16060650-04 (5,000x) (NR)	1	5000		06/22/16 22:09
19	1LM.LM35433	L16060650-05 (5,000x) (NR)	1	5000		06/22/16 22:28
20	1LM.LM35434	L16060650-06 (100x) (NR)	1	100		06/22/16 22:47
21	1LM.LM35435	L16060650-07	1	1		06/22/16 23:06
22	1LM.LM35436	L16060730-01 (50x) (NR)	1	50		06/22/16 23:25
23	1LM.LM35437	L16060730-02 (50x) (NR)	1	50		06/22/16 23:44
24	1LM.LM35438	L16060730-03 (50x)	1	50		06/23/16 00:03
25	1LM.LM35439	WG573797-05 CCV (1.0ug/L)	1	1	STD75510	06/23/16 00:22
26	1LM.LM35440	WG573791-07 MRL (0.2ug/L)	1	1	STD75510	06/23/16 00:41
27	1LM.LM35441	WG573797-06 CCB	1	1		06/23/16 01:00
28	1LM.LM35442	L16060822-01	1	1		06/23/16 01:19
29	1LM.LM35443	L16060822-03	1	1		06/23/16 01:38
30	1LM.LM35444	L16060822-04 (NR)	1	1		06/23/16 01:57
31	1LM.LM35445	L16060822-05 (NR)	1	1		06/23/16 02:16
32	1LM.LM35446	WG573797-07 CCV (1.0ug/L)	1	1	STD75510	06/23/16 02:34
33	1LM.LM35447	WG573791-08 MRL (0.2ug/L)	1	1	STD75510	06/23/16 02:53

Page: 1 Approved: 24-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 062216_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:
Column 1 ID: KP-RPPX250 Column 2 ID: NA
Workgroups: Analytical WG573791 (waters)
Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)
CCV STD: STD75510 LCS STD: STD75512 NA

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM35448	WG573797-08 CCB	1	1		06/23/16 03:12
35	1LM.LM35449	WG573797-09 CCV (1.0ug/L)	1	1	STD75510	06/23/16 11:49
36	1LM.LM35450	WG573791-09 MRL (0.2ug/L)	1	1	STD75510	06/23/16 12:08
37	1LM.LM35451	WG573797-10 CCB	1	1		06/23/16 12:27
38	1LM.LM35452	L16060650-04 (RR 50x)	1	50		06/23/16 12:46
39	1LM.LM35453	L16060650-05 (RR 50x)	1	50		06/23/16 13:05
40	1LM.LM35454	L16060650-06 (RR Neat)	1	1		06/23/16 13:23
41	1LM.LM35455	L16060730-01 (RR 500x)	1	500		06/23/16 13:42
42	1LM.LM35456	L16060730-02 (RR 500x)	1	500		06/23/16 14:01
43	1LM.LM35457	L16060822-04 (RR 1000x)	1	1000		06/23/16 14:20
44	1LM.LM35458	L16060822-05 (RR 1000x)	1	1000		06/23/16 14:39
45	1LM.LM35459	WG573797-11 CCV (1.0ug/L)	1	1	STD75510	06/23/16 14:58
46	1LM.LM35460	WG573791-10 MRL (0.2ug/L)	1	1	STD75510	06/23/16 15:17
47	1LM.LM35461	WG573797-12 CCB	1	1		06/23/16 15:36

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 2 Approved: 24-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
04-MAY-2016
John Richards

Secondary Reviewer:
05-MAY-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 22-JUN-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 75891
Analytical Workgroups: L16060650, 0730, 0732, 0822, 0854, 1180

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
24-JUN-2016
John Richards

Secondary Reviewer:
24-JUN-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-24-2016 11:54:16

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG573791

Login Number: L16060650

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW1-061016	01	06/10/16					06/22/2016	12.3	28		06/22/16	.2	28	
MW3-061016	02	06/10/16					06/22/2016	12.3	28		06/22/16	.2	28	
17WW08-061016	03	06/10/16					06/22/2016	12.2	28		06/22/16	.2	28	
130-061016	04	06/10/16					06/22/2016	12.2	28		06/23/16	.9	28	
130FD-061016	05	06/10/16					06/22/2016	12.2	28		06/23/16	.9	28	
MW12-061016	06	06/10/16					06/22/2016	12.1	28		06/23/16	.9	28	
18WW24-061016	07	06/10/16					06/22/2016	12.1	28		06/22/16	.3	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4822411
Report generated 06/27/2016 15:51

METHOD BLANK SUMMARY

Login Number: L16060650
Blank File ID: 1LM.LM35419
Prep Date: 06/22/16 16:00
Analyzed Date: 06/22/16 18:03
Analyst: JWR

Work Group: WG573791
Blank Sample ID: WG573791-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG573791-05	1LM.LM35417	06/22/16 17:25	01
MCT	WG573791-01	1LM.LM35418	06/22/16 17:44	01
LCS	WG573791-03	1LM.LM35420	06/22/16 18:22	01
LCS2	WG573791-04	1LM.LM35421	06/22/16 18:41	01
MW1-061016	L16060650-01	1LM.LM35426	06/22/16 20:16	DL01
MW3-061016	L16060650-02	1LM.LM35427	06/22/16 20:35	DL01
QCMRL	WG573791-06	1LM.LM35429	06/22/16 21:13	01
17WW08-061016	L16060650-03	1LM.LM35431	06/22/16 21:50	01
18WW24-061016	L16060650-07	1LM.LM35435	06/22/16 23:06	01
QCMRL	WG573791-07	1LM.LM35440	06/23/16 00:41	01
QCMRL	WG573791-08	1LM.LM35447	06/23/16 02:53	01
QCMRL	WG573791-09	1LM.LM35450	06/23/16 12:08	01
130-061016	L16060650-04	1LM.LM35452	06/23/16 12:46	DL01
130FD-061016	L16060650-05	1LM.LM35453	06/23/16 13:05	DL01
MW12-061016	L16060650-06	1LM.LM35454	06/23/16 13:23	01
QCMRL	WG573791-10	1LM.LM35460	06/23/16 15:17	01

Report Name: BLANK_SUMMARY
PDF File ID: 4822412
Report generated 06/27/2016 15:51

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060650 Prep Date: 06/22/16 16:00 Sample ID: WG573791-02
Instrument ID: LCMS1 Run Date: 06/22/16 18:03 Prep Method: 6850
File ID: 1LM.LM35419 Analyst: JWR Method: 6850
Workgroup (AAB#): WG573791 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4822413
27-JUN-2016 15:51

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060650 Analyst: JWR Prep Method: 6850
Instrument ID: LCMS1 Matrix: Water Method: 6850
Workgroup (AAB#): WG573791 Units: ug/L
QC Key: DOD4 Lot #: STD75512

Sample ID: WG573791-03 LCS File ID: 1LM.LM35420 Run Date: 06/22/2016 18:22
Sample ID: WG573791-04 LCS2 File ID: 1LM.LM35421 Run Date: 06/22/2016 18:41

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Perchlorate	0.200	0.201	101	0.200	0.215	108	6.73	80 - 120	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4822414
Report generated: 06/27/2016 15:51

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060650
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4822543
Report generated 06/27/2016 15:51

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060650

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4822543
Report generated 06/27/2016 15:51

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060650

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4822543
Report generated 06/27/2016 15:51

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060650

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008

PDF File ID: 4822543

Report generated 06/27/2016 15:51

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060650 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4822544
Report generated 06/27/2016 15:52

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/22/2016
Sample ID: WG573797-01
Instrument ID: LCMS1
Run Time: 16:48
Method: 6850
File ID: 1LM.LM35415
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822417
Report generated 06/27/2016 15:52

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/22/2016
Sample ID: WG573797-04
Instrument ID: LCMS1
Run Time: 21:31
Method: 6850
File ID: 1LM.LM35430
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822417
Report generated 06/27/2016 15:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573797-06
Instrument ID: LCMS1
Run Time: 01:00
Method: 6850
File ID: 1LM.LM35441
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822417
Report generated 06/27/2016 15:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573797-08
Instrument ID: LCMS1
Run Time: 03:12
Method: 6850
File ID: 1LM.LM35448
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822417
Report generated 06/27/2016 15:52

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573797-10
Instrument ID: LCMS1
Run Time: 12:27
Method: 6850
File ID: 1LM.LM35451
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822417
Report generated 06/27/2016 15:52

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573797-12
Instrument ID: LCMS1
Run Time: 15:36
Method: 6850
File ID: 1LM.LM35461
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822417
Report generated 06/27/2016 15:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/22/2016
Sample ID: WG573797-02
Instrument ID: LCMS1
Run Time: 17:06
Method: 6850
File ID: 1LM.LM35416
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.997	ug/L	1.68	0.300	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822416
Report generated 06/27/2016 15:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/22/2016
Sample ID: WG573797-03
Instrument ID: LCMS1
Run Time: 20:54
Method: 6850
File ID: 1LM.LM35428
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.75	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822416
Report generated 06/27/2016 15:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573797-05
Instrument ID: LCMS1
Run Time: 00:22
Method: 6850
File ID: 1LM.LM35439
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.74	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822416
Report generated 06/27/2016 15:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573797-07
Instrument ID: LCMS1
Run Time: 02:34
Method: 6850
File ID: 1LM.LM35446
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.75	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822416
Report generated 06/27/2016 15:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573797-09
Instrument ID: LCMS1
Run Time: 11:49
Method: 6850
File ID: 1LM.LM35449
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.71	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822416
Report generated 06/27/2016 15:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573797-11
Instrument ID: LCMS1
Run Time: 14:58
Method: 6850
File ID: 1LM.LM35459
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.05	ug/L	1.77	5.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822416
Report generated 06/27/2016 15:52

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060650 Run Date: 06/22/2016 Sample ID: WG573791-05
Instrument ID: LCMS1 Run Time: 17:25 Prep Method: 6850
File ID: 1LM.LM35417 Analyst: JWR Method: 6850
Workgroup (AAB#): WG573791 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4822415
Report generated 06/27/2016 15:51

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060650 Run Date: 06/22/2016 Sample ID: WG573791-06
Instrument ID: LCMS1 Run Time: 21:13 Prep Method: 6850
File ID: 1LM.LM35429 Analyst: JWR Method: 6850
Workgroup (AAB#): WG573791 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.204	102	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4822415
Report generated 06/27/2016 15:51

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060650 Run Date: 06/23/2016 Sample ID: WG573791-07
Instrument ID: LCMS1 Run Time: 00:41 Prep Method: 6850
File ID: 1LM.LM35440 Analyst: JWR Method: 6850
Workgroup (AAB#): WG573791 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.210	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4822415
Report generated 06/27/2016 15:51

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060650 Run Date: 06/23/2016 Sample ID: WG573791-08
Instrument ID: LCMS1 Run Time: 02:53 Prep Method: 6850
File ID: 1LM.LM35447 Analyst: JWR Method: 6850
Workgroup (AAB#): WG573791 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.214	107	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4822415
Report generated 06/27/2016 15:51

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060650 Run Date: 06/23/2016 Sample ID: WG573791-09
Instrument ID: LCMS1 Run Time: 12:08 Prep Method: 6850
File ID: 1LM.LM35450 Analyst: JWR Method: 6850
Workgroup (AAB#): WG573791 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.209	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4822415
Report generated 06/27/2016 15:51

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573791-10
Instrument ID: LCMS1
Run Time: 15:17
Prep Method: 6850
File ID: 1LM.LM35460
Analyst: JWR
Method: 6850
Workgroup (AAB#): WG573791
Matrix: Water
Units: ug/L
Contract #:
Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.201	101	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4822415
Report generated 06/27/2016 15:51

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16060650
Instrument ID: LCMS1
Workgroup (AAB#): WG573791

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16060650-01	10000	DL01	440000
L16060650-02	10000	DL01	461000
L16060650-03	1.00	01	375000
L16060650-04	50.0	DL01	418000
L16060650-05	50.0	DL01	430000
L16060650-06	1.00	01	354000
L16060650-07	1.00	01	472000
WG573791-02	1.00	01	436000
WG573791-03	1.00	01	440000
WG573791-04	1.00	01	435000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4822418
Report generated 06/27/2016 15:52

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**	6850	**Samplenum:**	L16060650-01
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35426
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 20:16	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	219000	77900	2.81	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**	6850	**Samplenum:**	L16060650-02
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35427
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 20:35	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	239000	83100	2.88	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**	6850	**Samplenum:**	L16060650-03
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35431
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 21:50	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	901000	310000	2.91	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**	6850	**Samplenum:**	L16060650-04
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35452
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 12:46	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	182000	62800	2.90	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**	6850	**Samplenum:**	L16060650-05
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35453
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 13:05	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	181000	61000	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**	6850	**Samplenum:**	L16060650-06
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35454
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 13:23	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	24200	9100	2.66	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**	6850	**Samplenum:**	L16060650-07
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35435
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 23:06	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36800	12400	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**	6850	**Samplenum:**	WG573791-01
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35418
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 17:44	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	28500	10000	2.85	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**	6850	**Samplenum:**	WG573791-02
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35419
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 18:03	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	505	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**	6850	**Samplenum:**	WG573791-03
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35420
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 18:22	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	30300	11500	2.63	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**	6850	**Samplenum:**	WG573791-04
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35421
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 18:41	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32000	11500	2.78	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**	6850	**Samplenum:**	WG573791-05
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35417
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 17:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	31200	11200	2.79	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**	6850	**Samplenum:**	WG573791-06
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35429
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 21:13	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34500	12500	2.76	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**	6850	**Samplenum:**	WG573791-07
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35440
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 00:41	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36700	12900	2.84	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**	6850	**Samplenum:**	WG573791-08
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35447
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 02:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34800	11700	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**	6850	**Samplenum:**	WG573791-09
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35450
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 12:08	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	30500	11000	2.77	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**	6850	**Samplenum:**	WG573791-10
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35460
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 15:17	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32000	12700	2.52	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**		**Samplenum:**	WG573797-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35415
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 16:48	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	583	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**		**Samplenum:**	WG573797-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35416
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 17:06	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	151000	54200	2.79	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**		**Samplenum:**	WG573797-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35428
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 20:54	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	172000	61400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**		**Samplenum:**	WG573797-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35430
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 21:31	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	223	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**		**Samplenum:**	WG573797-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35439
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 00:22	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	176000	61500	2.86	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**		**Samplenum:**	WG573797-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35441
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 01:00	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**		**Samplenum:**	WG573797-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35446
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 02:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	58500	2.89	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**		**Samplenum:**	WG573797-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35448
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 03:12	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**		**Samplenum:**	WG573797-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35449
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 11:49	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	142000	50700	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**		**Samplenum:**	WG573797-10
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35451
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 12:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	560	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**		**Samplenum:**	WG573797-11
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35459
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 14:58	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	167000	56000	2.98	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**		**Samplenum:**	WG573797-12
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35461
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 15:36	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

2.2.1.3 Sample Data

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Data File	LM35426.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 8:16:15 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060650-01 (10,000x)	**Injection Vial**	12.00
Data File	LM35426.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 8:16:15 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	L16060650-01	**Dilution Factor**	1.00
Sample Comment	1,10000 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.400e+05	9.42	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.190e+05	9.43	N/A	1.48
Perchlorate conf	7.790e+04	9.41	N/A	1.57

O18LP (Internal Standard)

RT (Exp. RT): 9.42(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

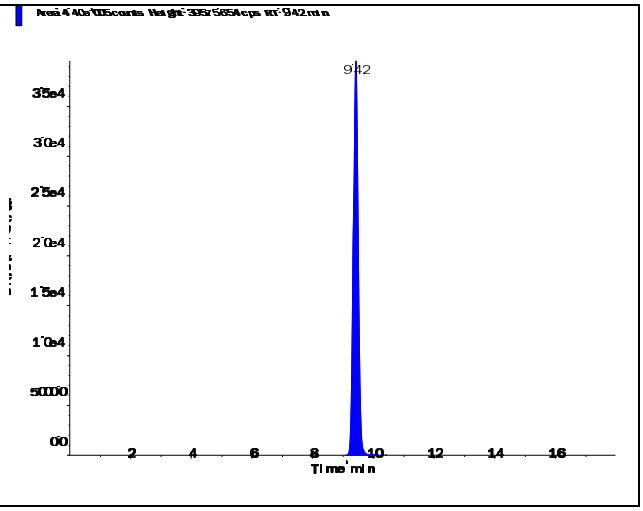

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.43 (9.84) min
Calculated conc:	1.48 ng/ml
Area Ratio:	0.498
Sample Type:	(Unknown)

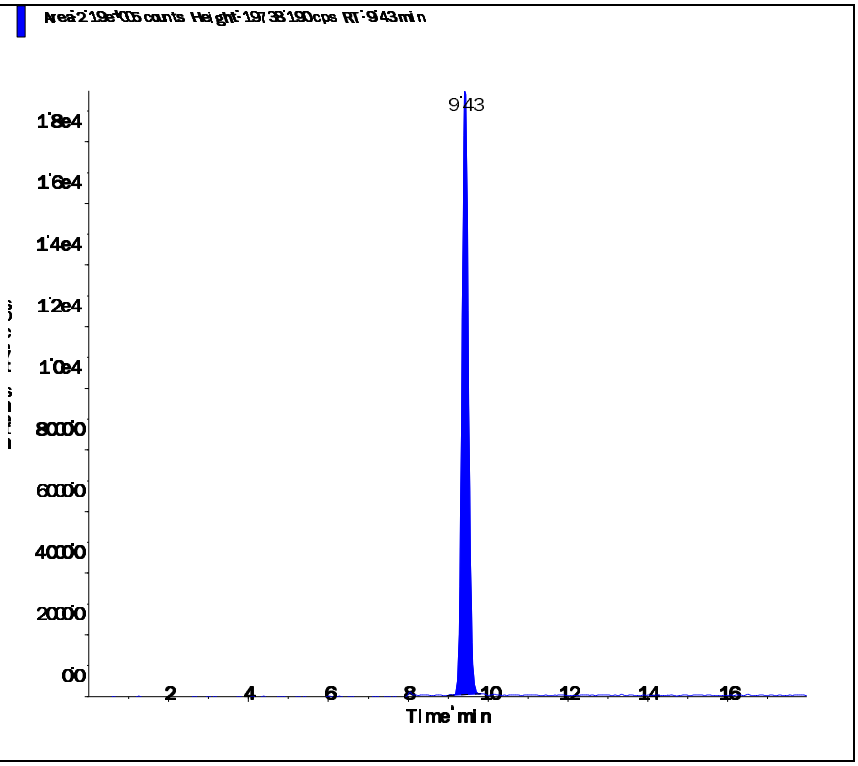

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.41 (9.84) min
Calculated conc:	1.57 ng/ml
Area Ratio:	0.177
Sample Type:	(Unknown)

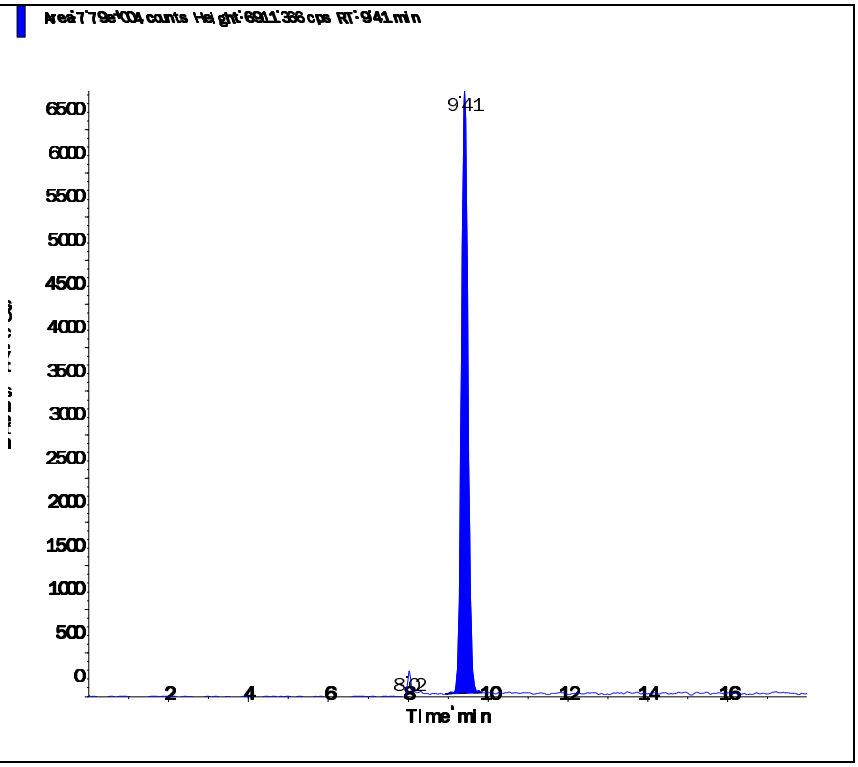

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Data File	LM35427.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 8:35:11 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060650-02 (10,000x)	**Injection Vial**	13.00
Data File	LM35427.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 8:35:11 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	L16060650-02	**Dilution Factor**	1.00
Sample Comment	1,10000 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.610e+05	9.42	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.390e+05	9.44	N/A	1.54
Perchlorate conf	8.310e+04	9.42	N/A	1.60

O18LP (Internal Standard)

RT (Exp. RT): 9.42(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

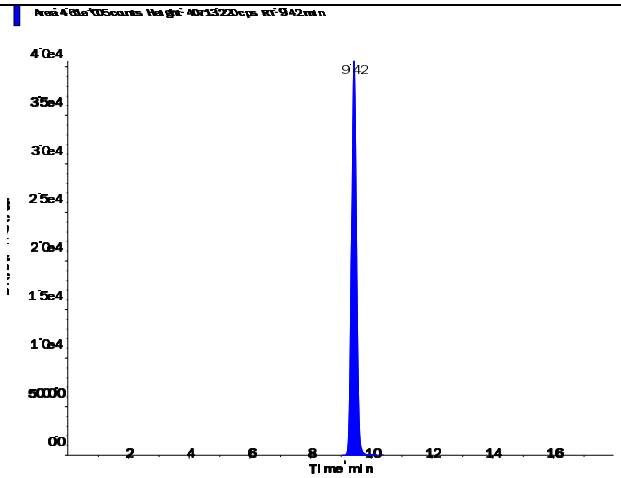

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	1.54 ng/ml
Area Ratio:	0.52
Sample Type:	(Unknown)

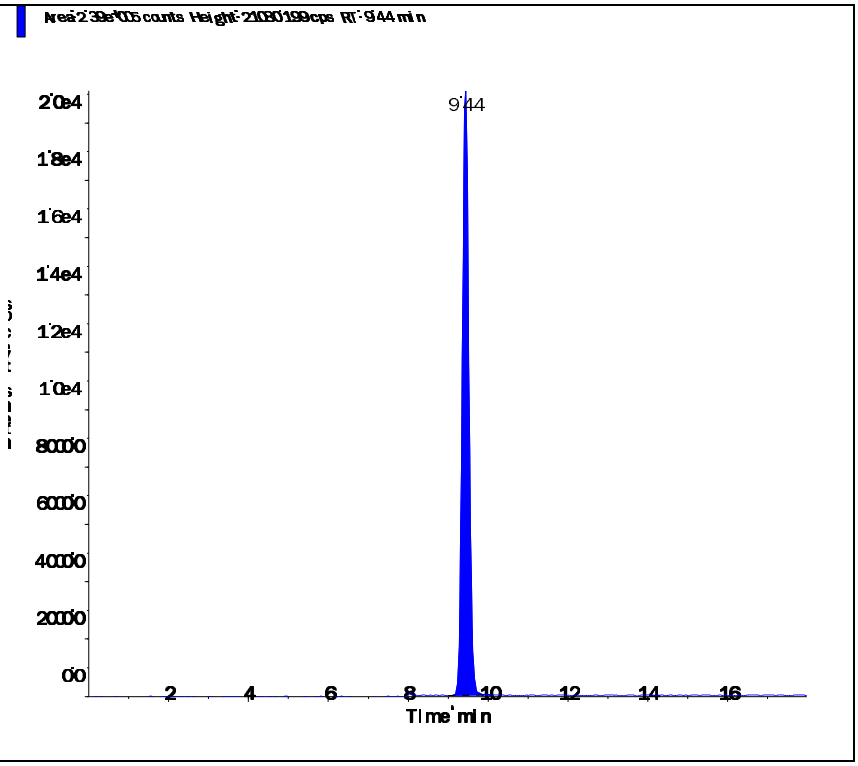

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.42 (9.84) min
Calculated conc:	1.60 ng/ml
Area Ratio:	0.18
Sample Type:	(Unknown)

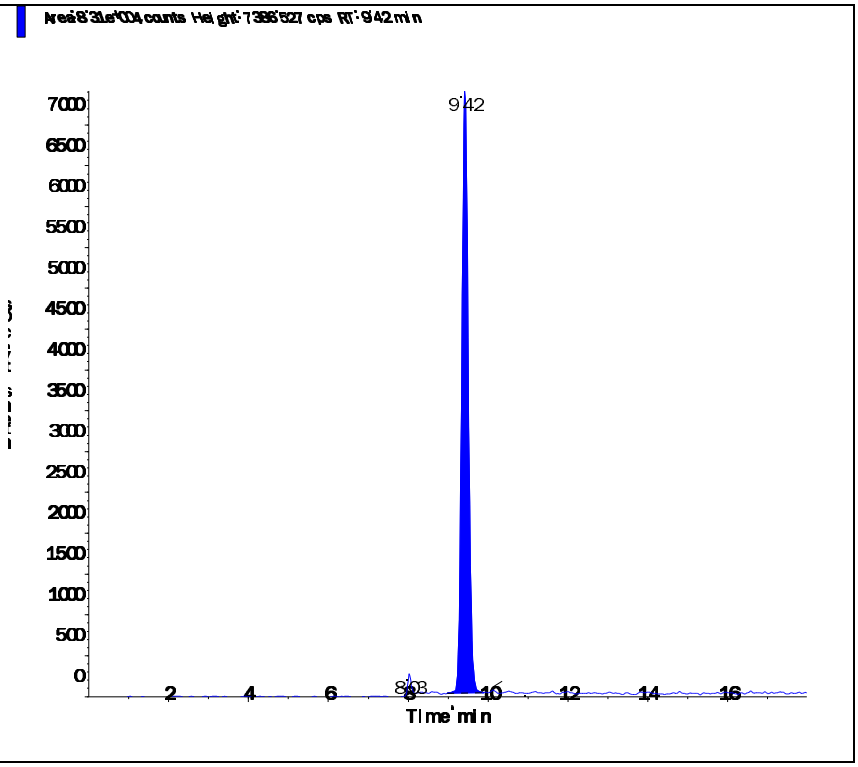

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Data File	LM35431.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 9:50:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060650-03	**Injection Vial**	14.00
Data File	LM35431.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 9:50:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	L16060650-03	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.750e+05	9.17	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	9.010e+05	9.18	N/A	7.13
Perchlorate conf	3.100e+05	9.17	N/A	7.38

O18LP (Internal Standard)

RT (Exp. RT): 9.17(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

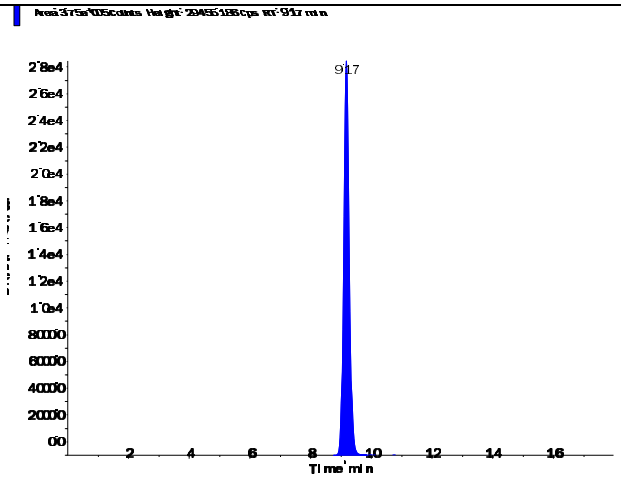

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.18 (9.84) min Calculated conc: 7.13 ng/ml Area Ratio: 2.401 Sample Type: (Unknown)	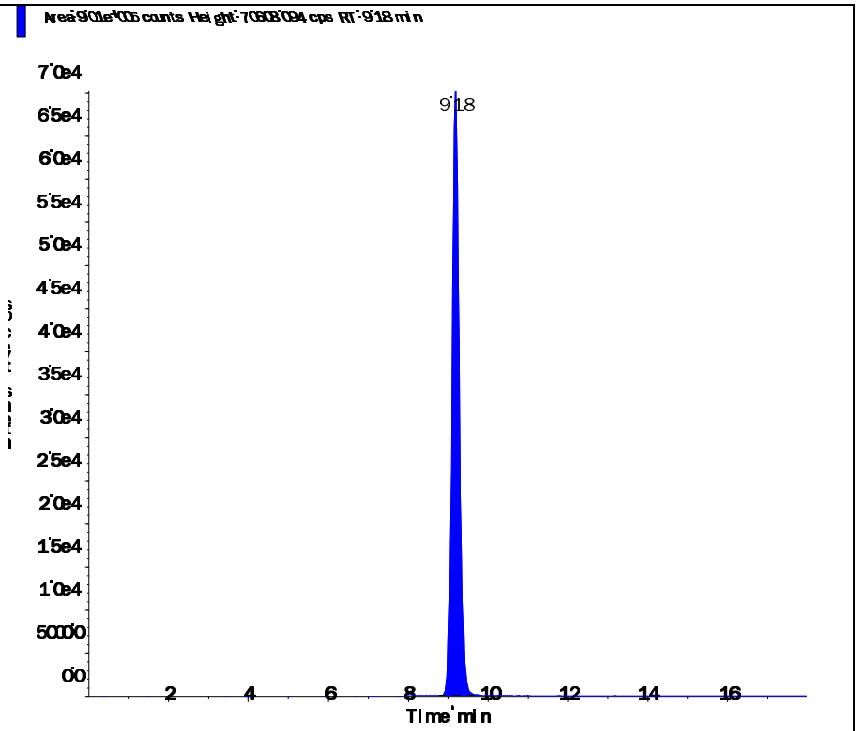
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.17 (9.84) min Calculated conc: 7.38 ng/ml Area Ratio: 0.826 Sample Type: (Unknown)	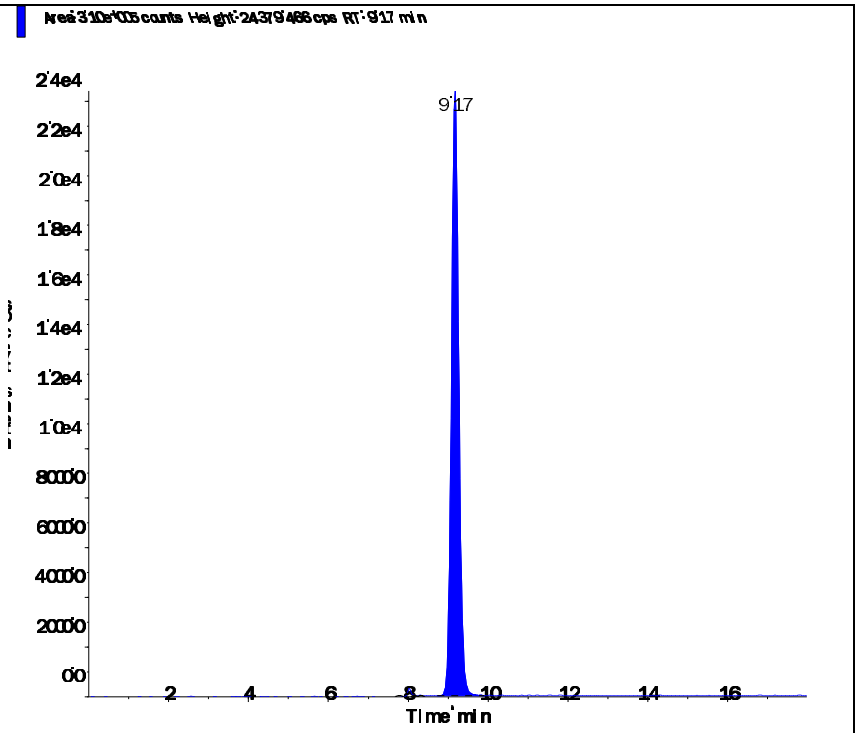

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Data File	LM35452.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 12:46:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060650-04 (RR 50x)	**Injection Vial**	26.00
Data File	LM35452.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 12:46:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	L16060650-04	**Dilution Factor**	1.00
Sample Comment	150.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.180e+05	9.50	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.820e+05	9.51	N/A	1.29
Perchlorate conf	6.280e+04	9.49	N/A	1.33

O18LP (Internal Standard)

RT (Exp. RT): 9.50(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

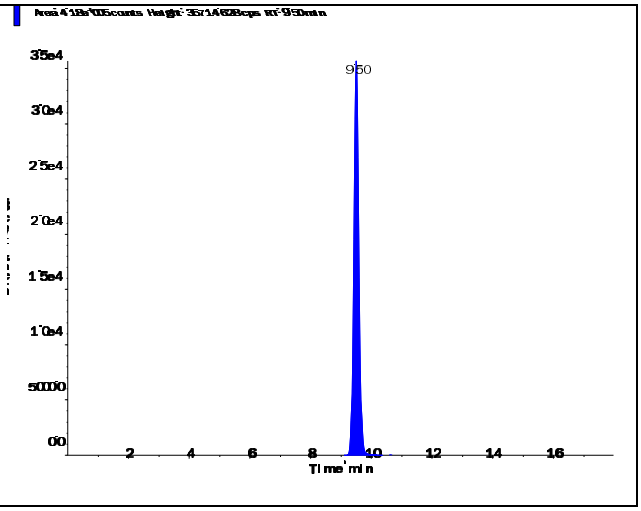

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.51 (9.84) min
Calculated conc:	1.29 ng/ml
Area Ratio:	0.435
Sample Type:	(Unknown)

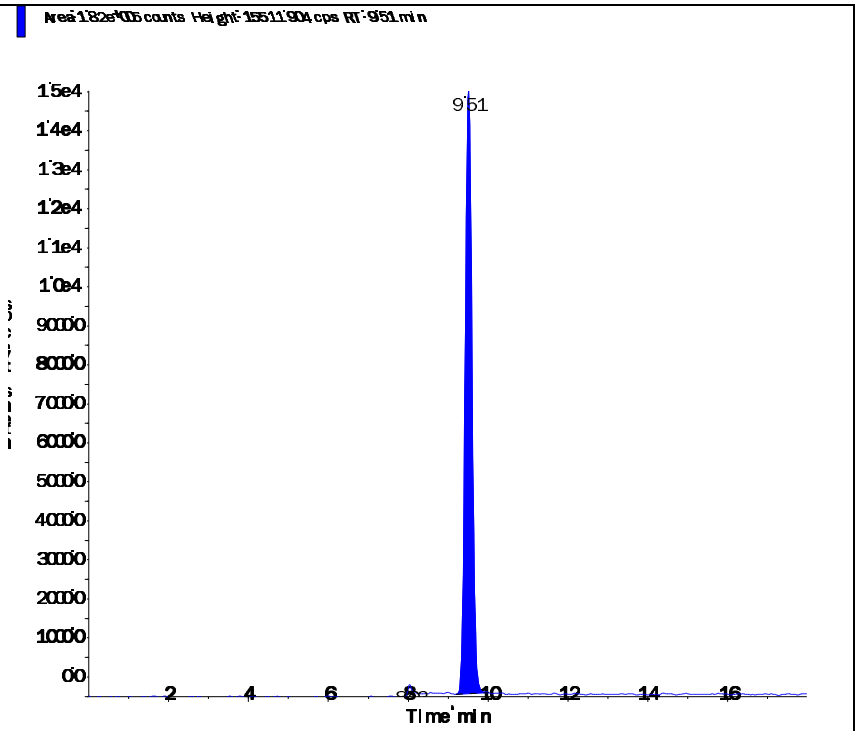

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.49 (9.84) min
Calculated conc:	1.33 ng/ml
Area Ratio:	0.15
Sample Type:	(Unknown)

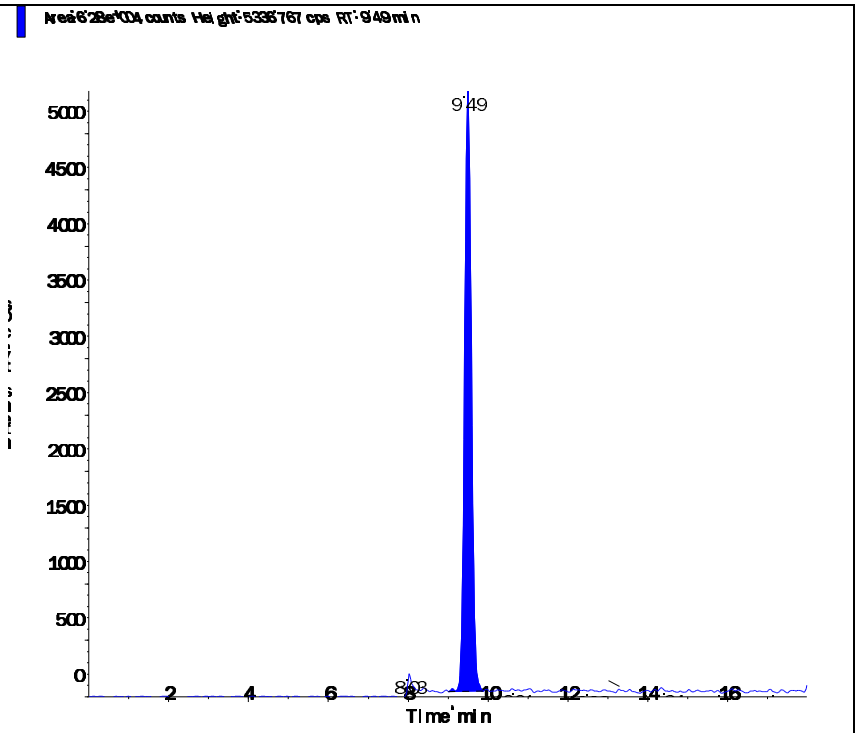

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Data File	LM35453.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 1:05:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060650-05 (RR 50x)	**Injection Vial**	27.00
Data File	LM35453.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 1:05:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	L16060650-05	**Dilution Factor**	1.00
Sample Comment	150.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.300e+05	9.50	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.810e+05	9.51	N/A	1.25
Perchlorate conf	6.100e+04	9.50	N/A	1.25

O18LP (Internal Standard)

RT (Exp. RT): 9.50(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

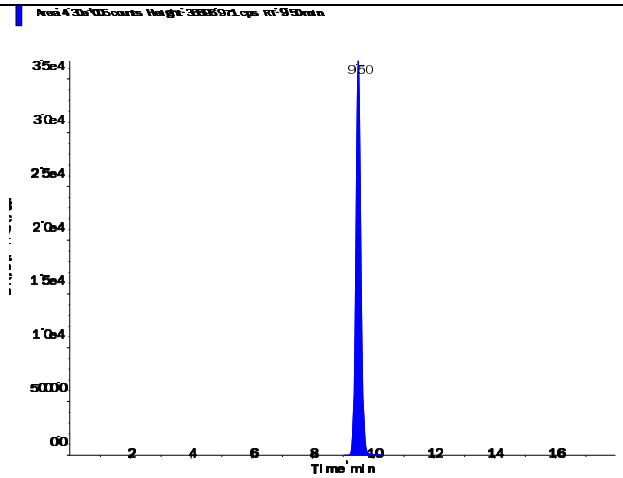

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.51 (9.84) min
Calculated conc:	1.25 ng/ml
Area Ratio:	0.42
Sample Type:	(Unknown)

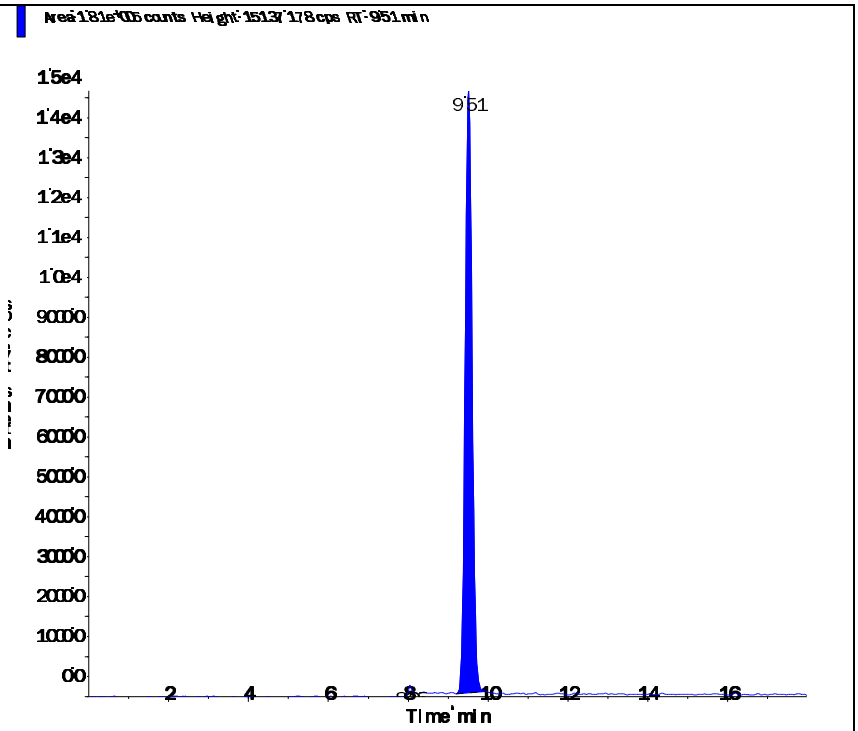

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.50 (9.84) min
Calculated conc:	1.25 ng/ml
Area Ratio:	0.142
Sample Type:	(Unknown)

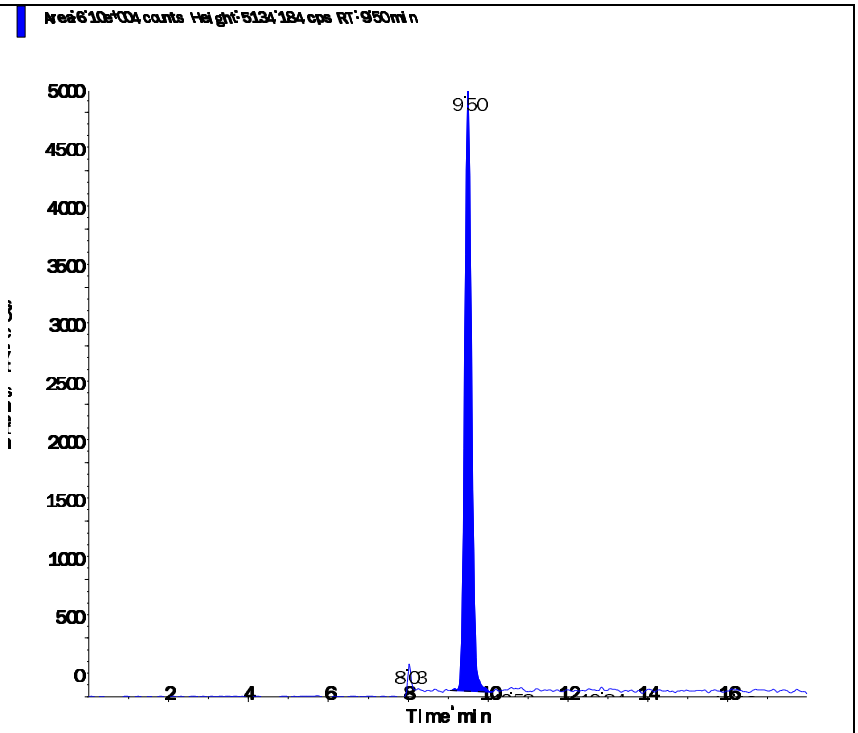

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Data File	LM35454.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 1:23:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060650-06 (RR Neat)	**Injection Vial**	28.00
Data File	LM35454.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 1:23:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	L16060650-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.540e+05	9.20	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.420e+04	9.22	N/A	0.20
Perchlorate conf	9.100e+03	9.20	N/A	0.21

O18LP (Internal Standard)

RT (Exp. RT): 9.20(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

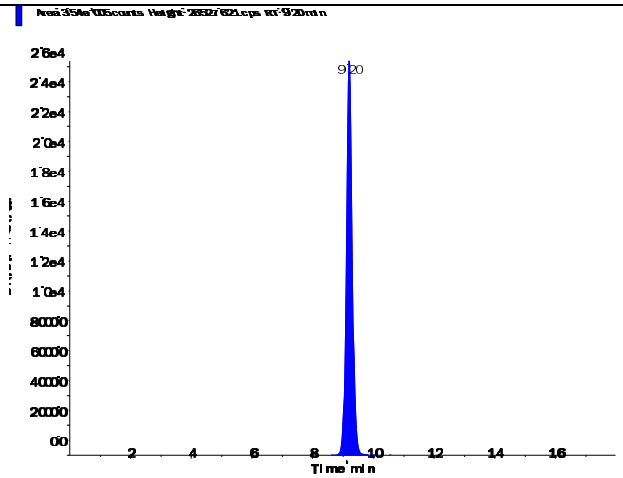

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.22 (9.84) min
Calculated conc:	0.20 ng/ml
Area Ratio:	0.068
Sample Type:	(Unknown)

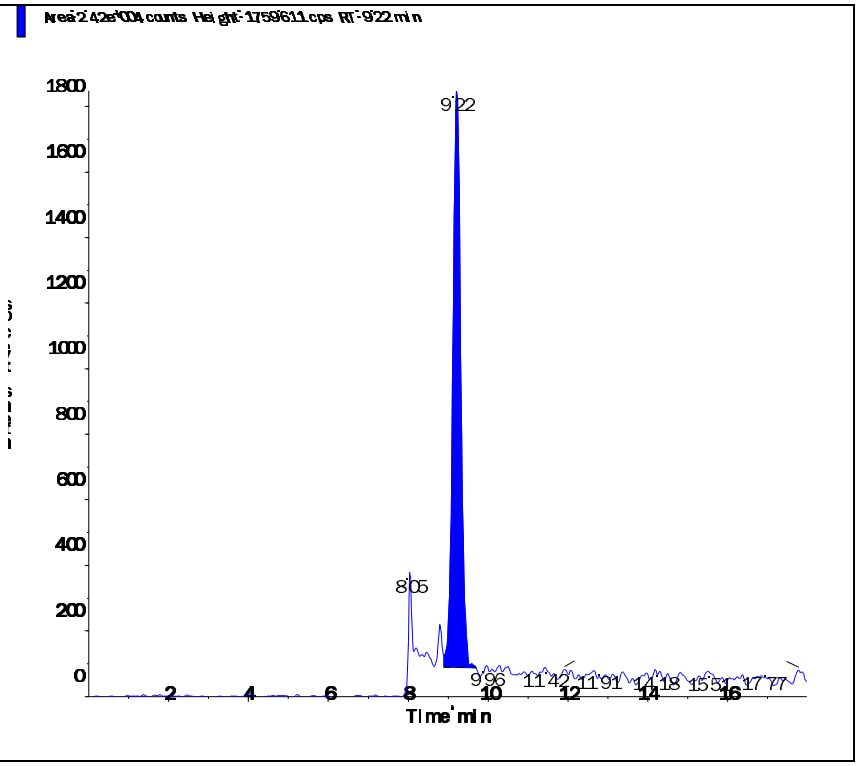

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.20 (9.84) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

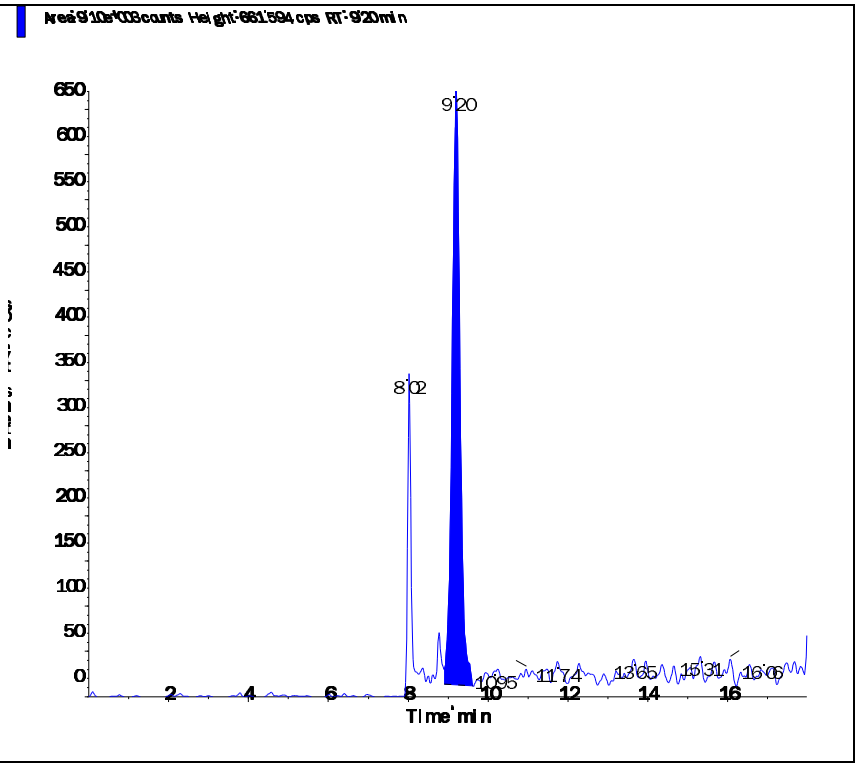

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Data File	LM35435.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 11:06:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060650-07	**Injection Vial**	18.00
Data File	LM35435.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 11:06:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	L16060650-07	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.720e+05	9.29	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.680e+04	9.31	N/A	0.228
Perchlorate conf	1.240e+04	9.29	N/A	0.216

O18LP (Internal Standard)

RT (Exp. RT): 9.29(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

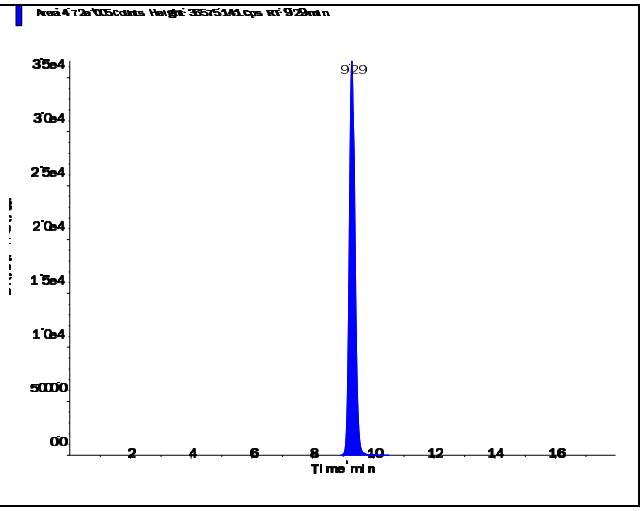

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.31 (9.84) min
Calculated conc:	0.228 ng/ml
Area Ratio:	0.078
Sample Type:	(Unknown)

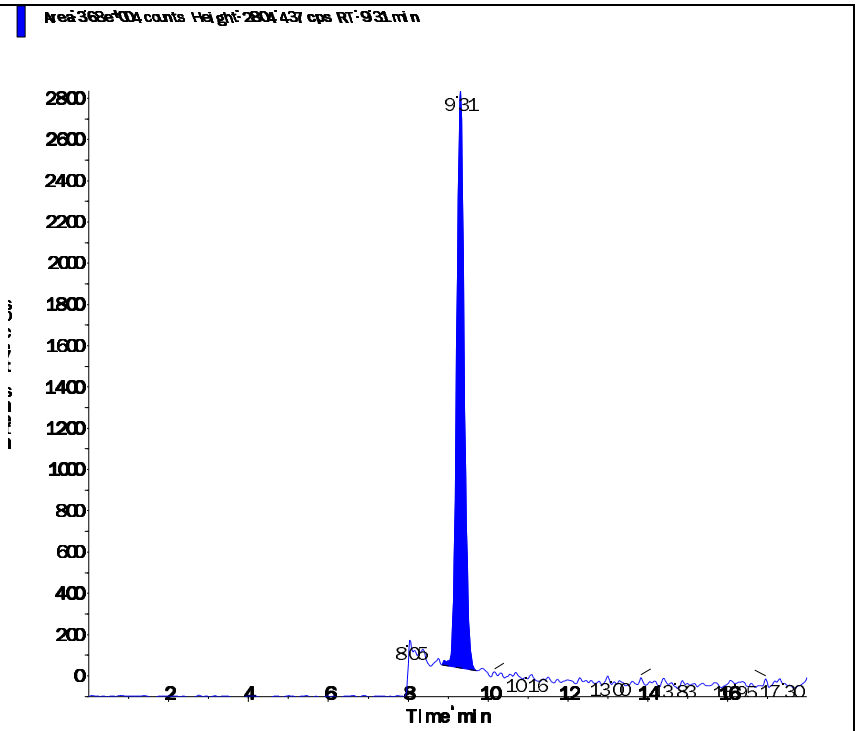

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.29 (9.84) min
Calculated conc:	0.216 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

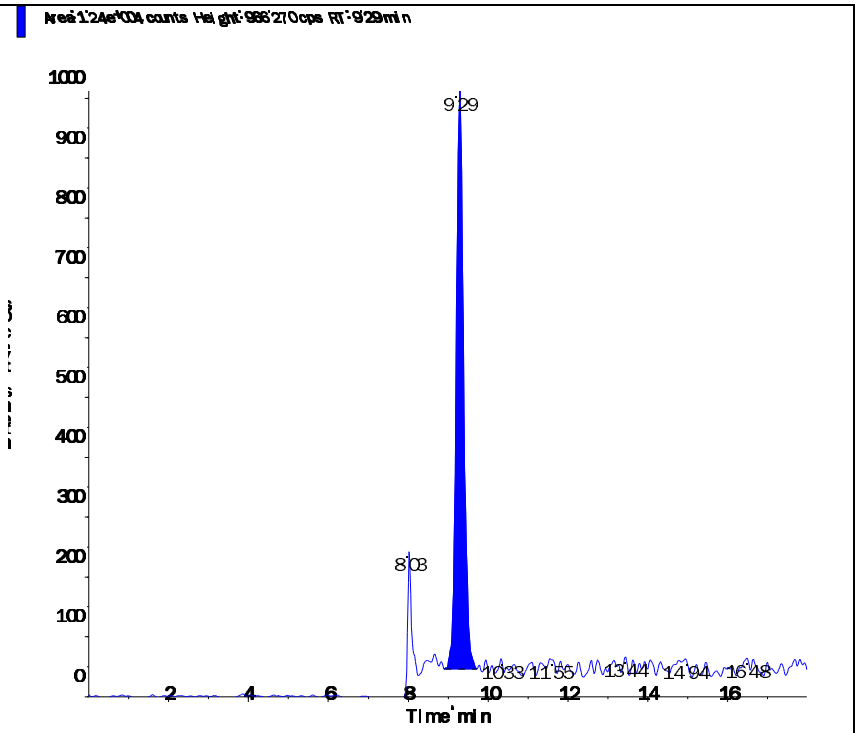

2.2.1.4 Standards Data

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Printed: 6/23/2016 4:49 PM

Data File	LM34686.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

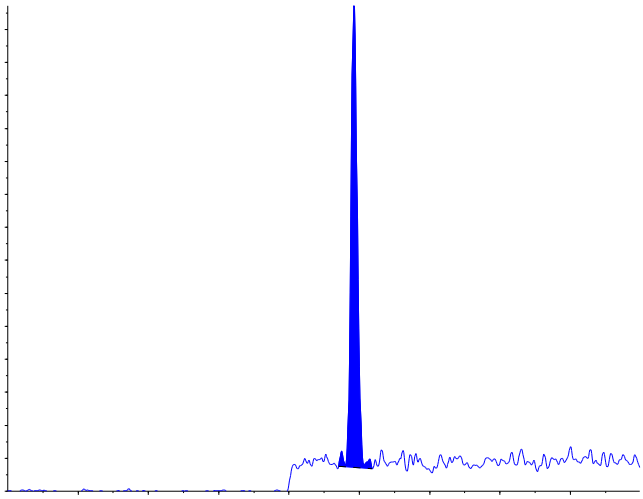

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	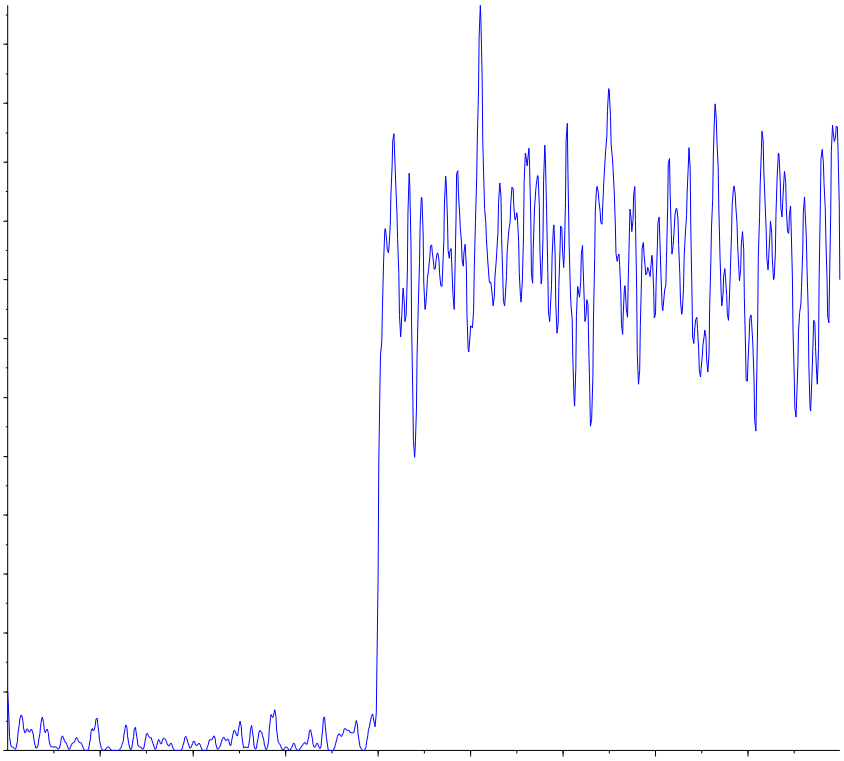
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	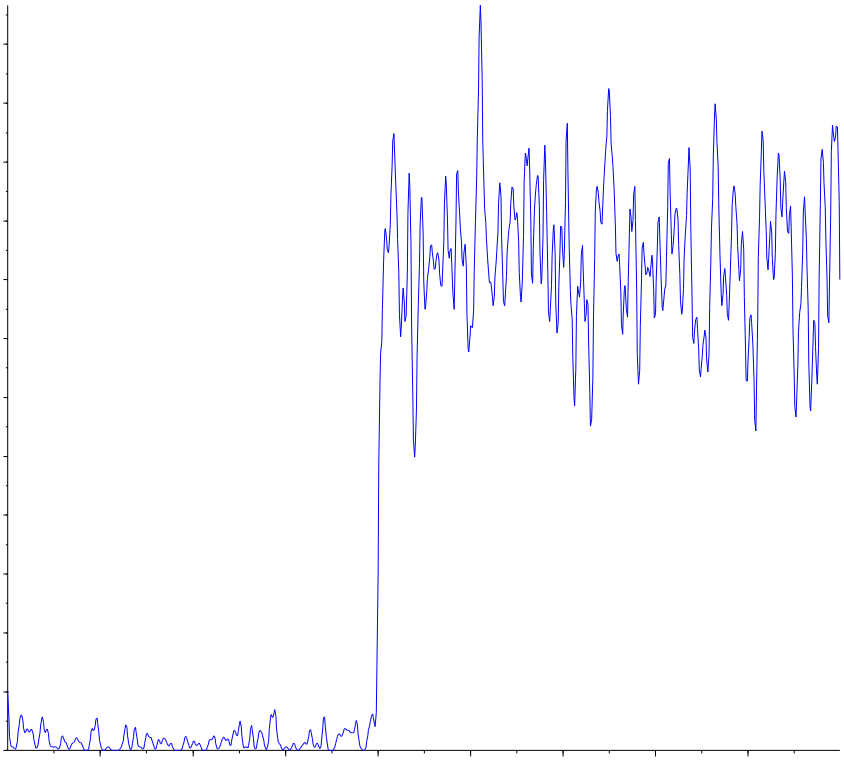

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Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

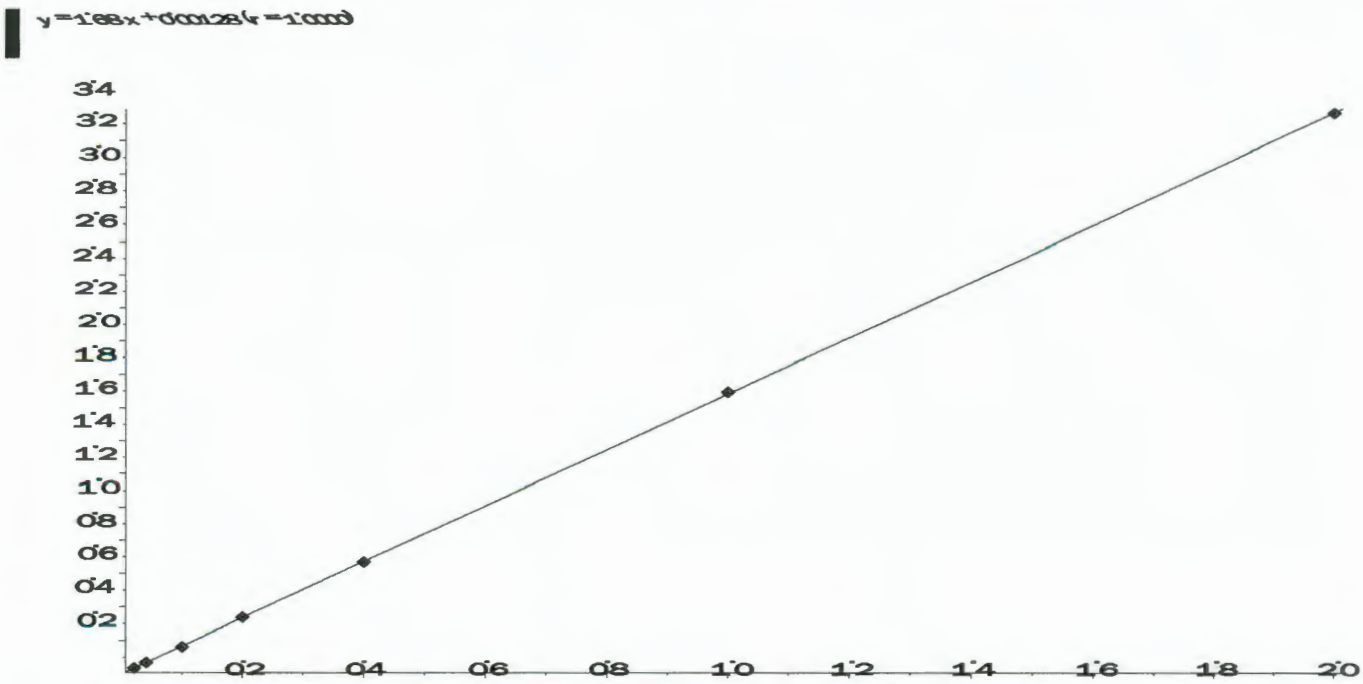

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Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

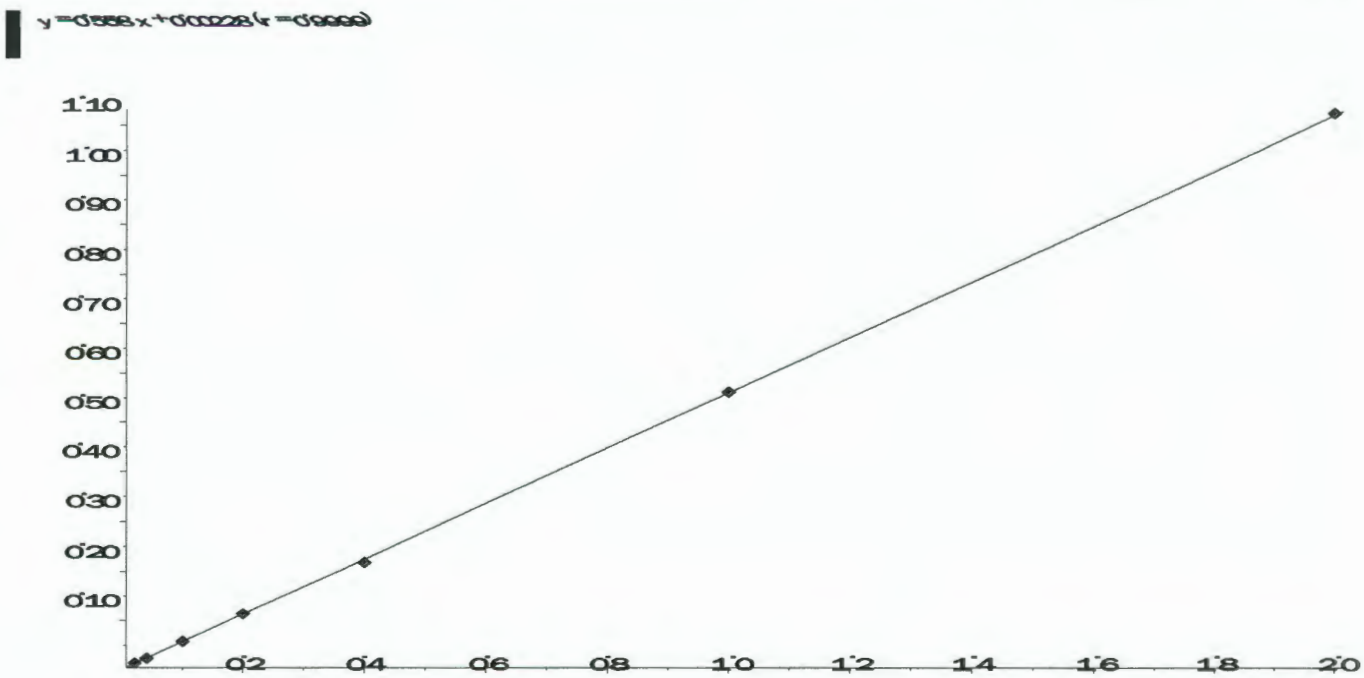

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Data File	LM34687.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

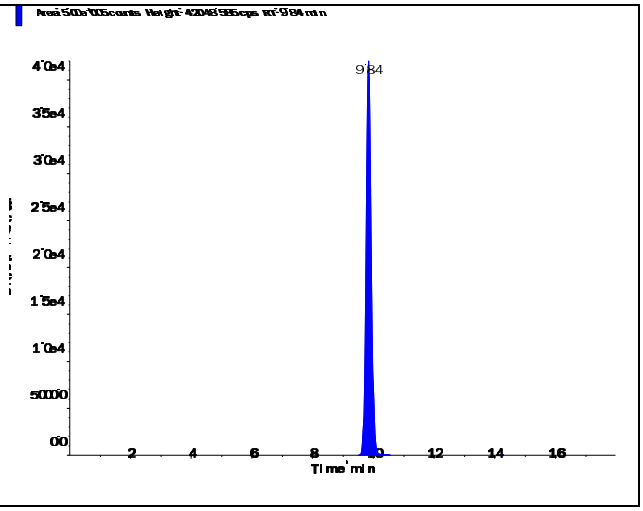

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.103 ng/ml
Area Ratio:	0.036
Sample Type:	(Standard)

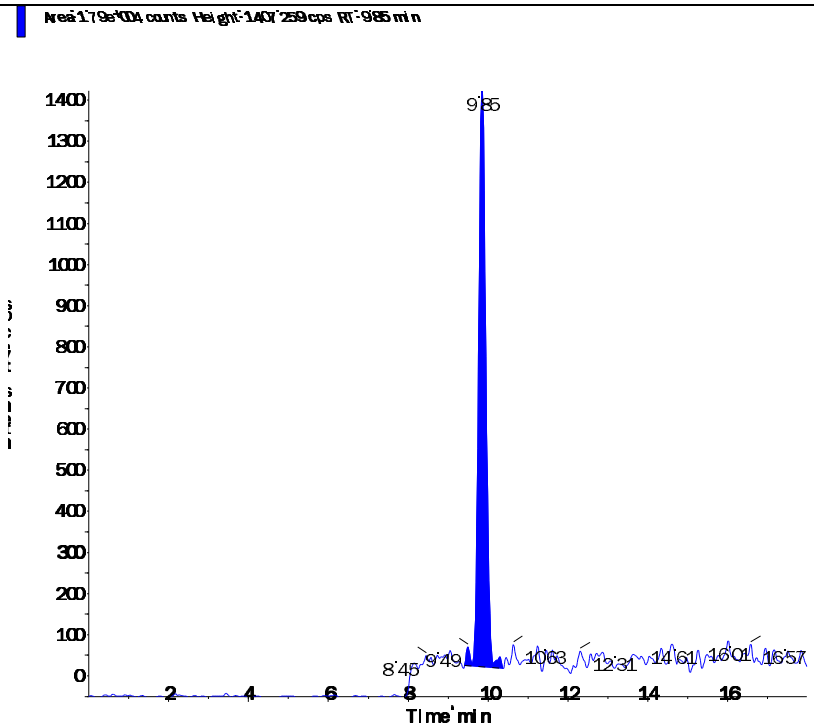

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.104 ng/ml
Area Ratio:	0.014
Sample Type:	(Standard)

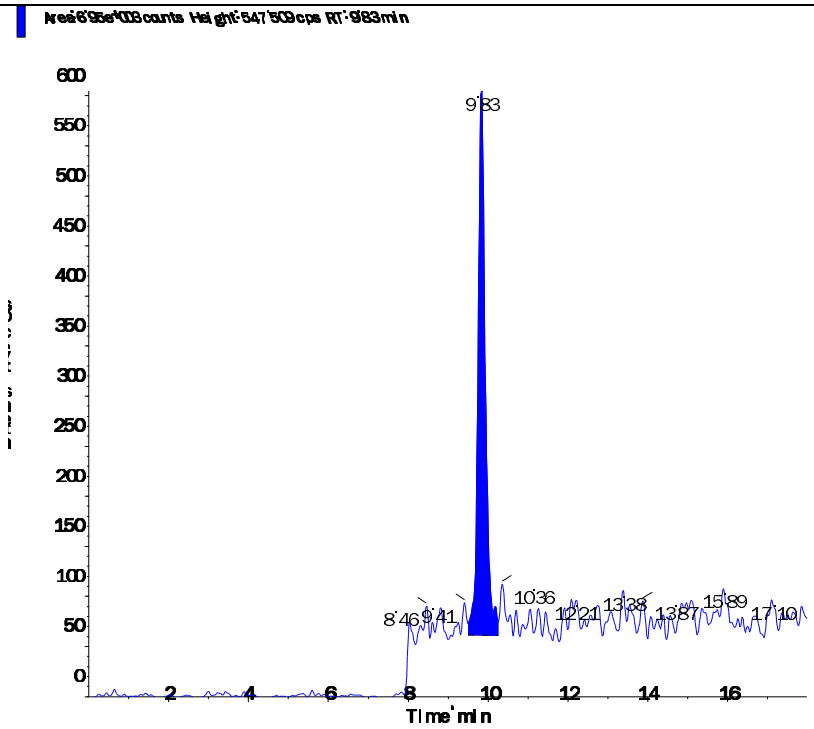

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Data File	LM34688.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

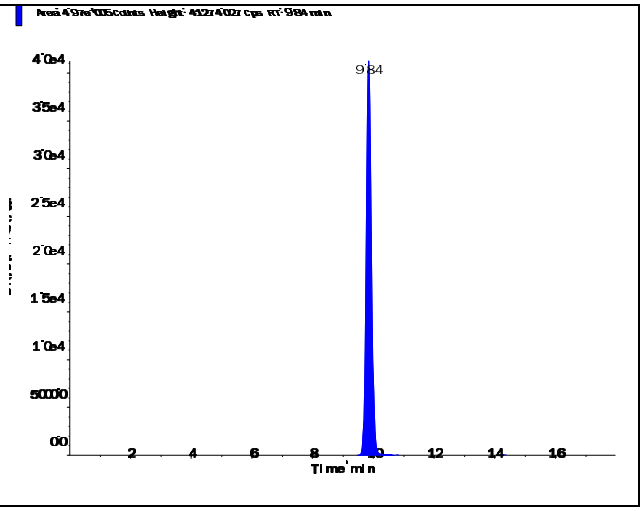

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

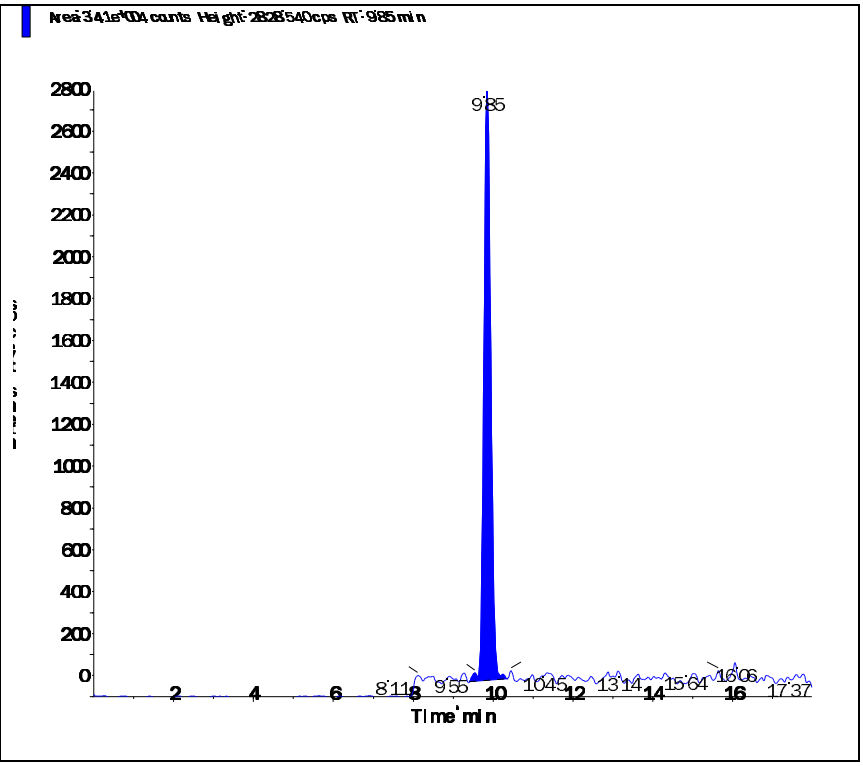

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

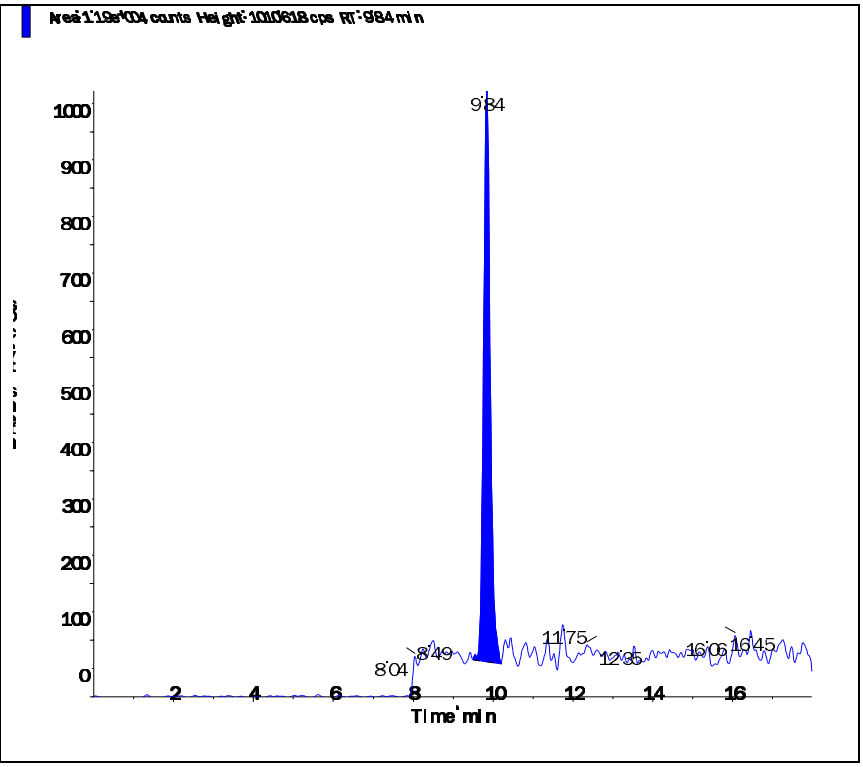

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Data File	LM34689.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

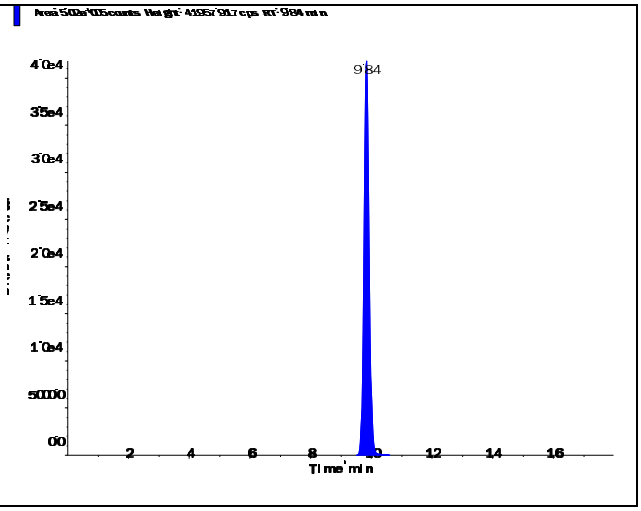

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.483 ng/ml
Area Ratio:	0.164
Sample Type:	(Standard)

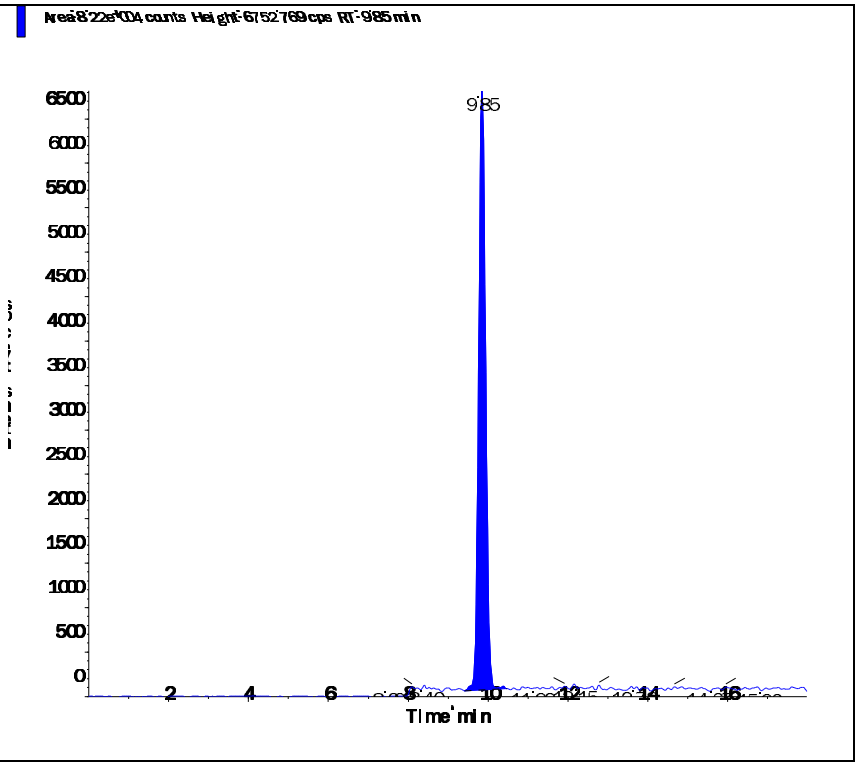

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.503 ng/ml
Area Ratio:	0.058
Sample Type:	(Standard)

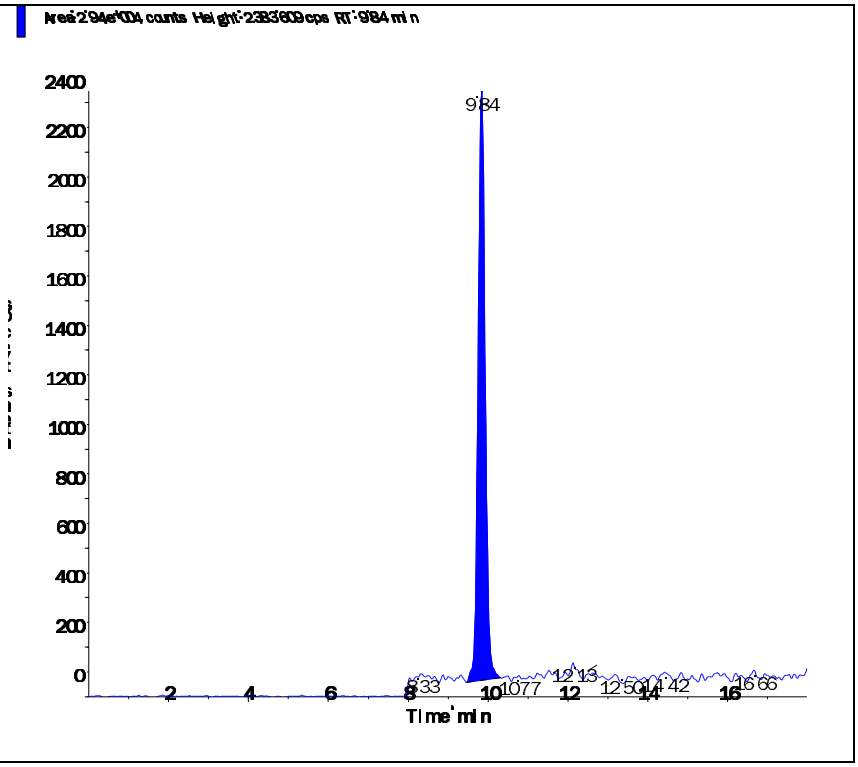

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Data File	LM34690.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

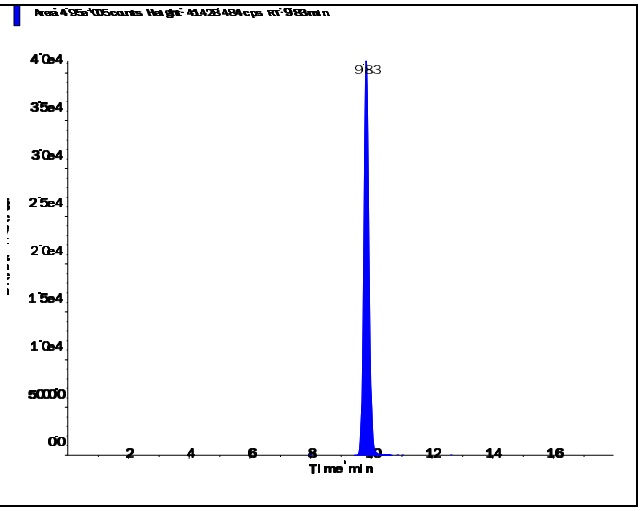

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

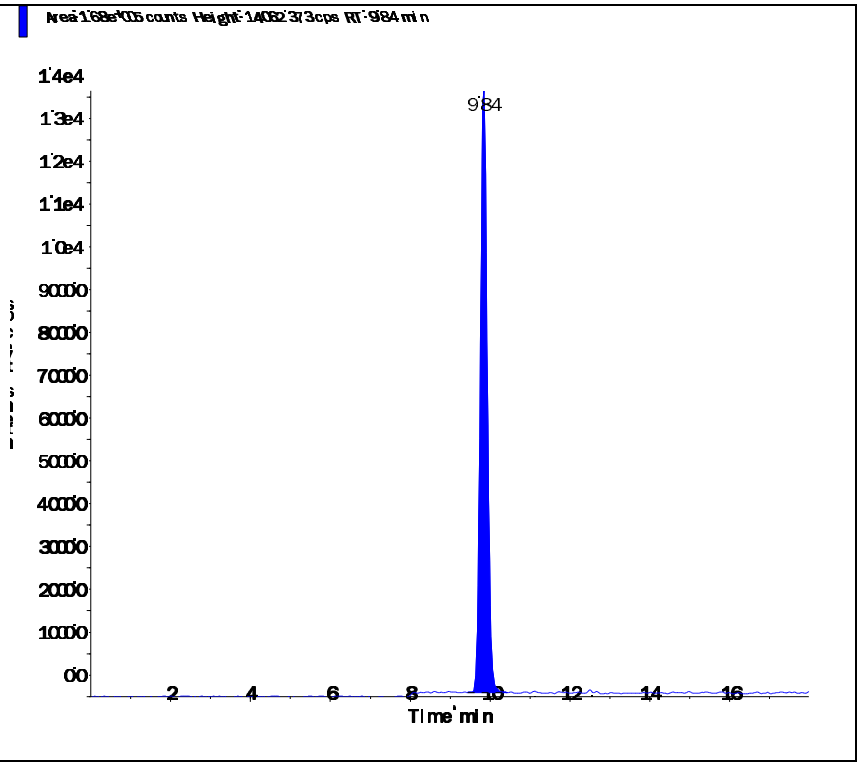

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

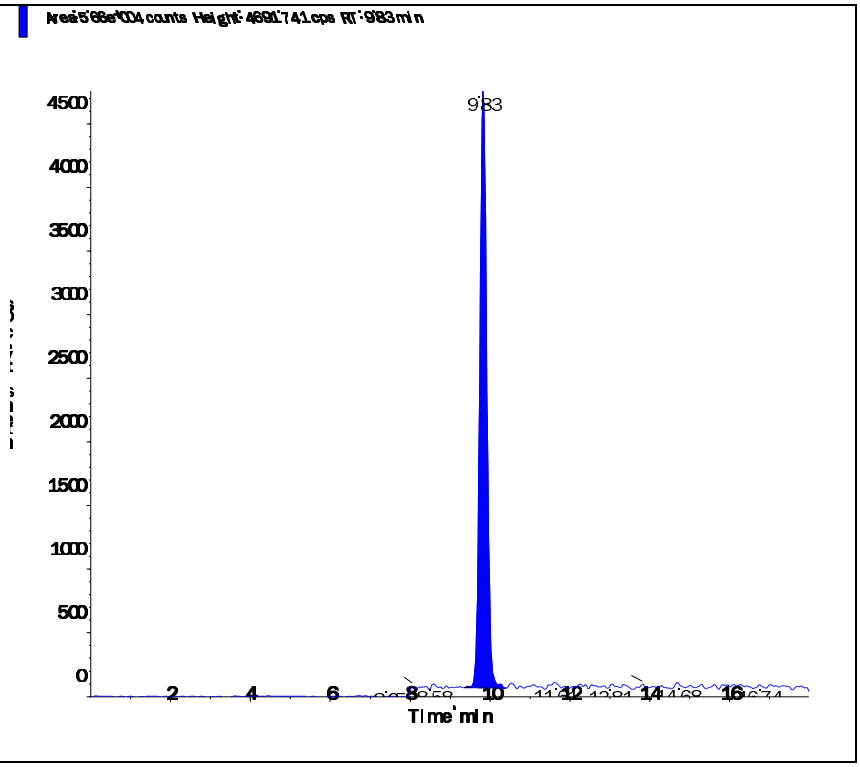

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Data File	LM34691.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

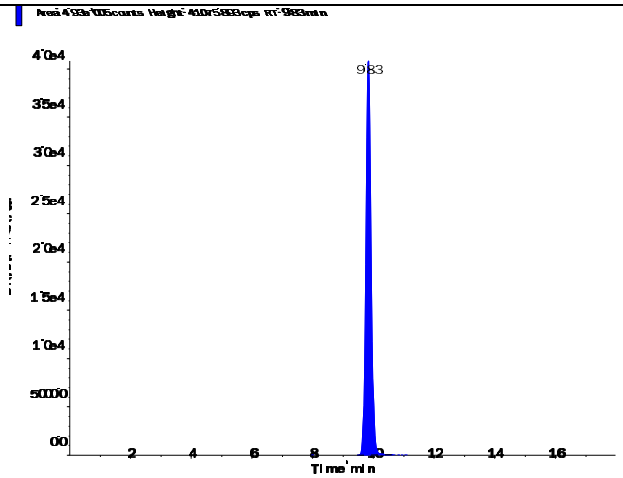

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.99 ng/ml
Area Ratio:	0.669
Sample Type:	(Standard)

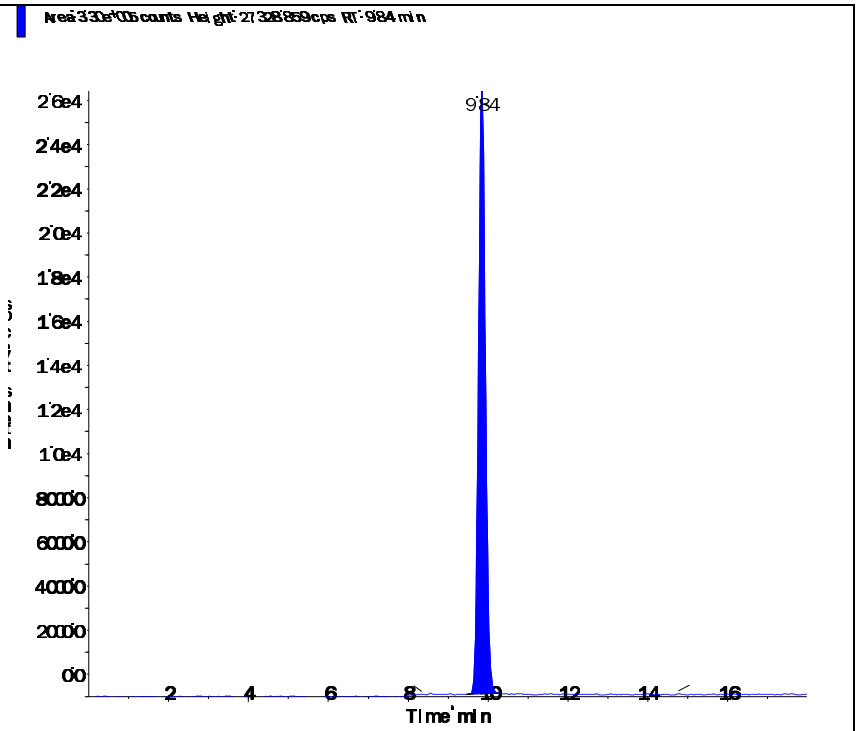

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.94 ng/ml
Area Ratio:	0.219
Sample Type:	(Standard)

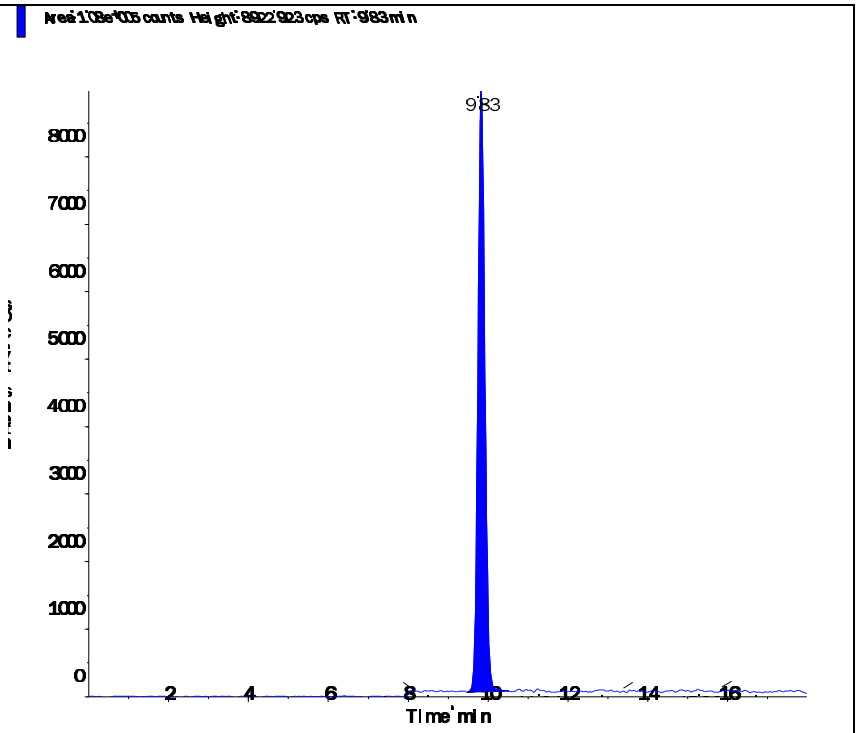

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Data File	LM34692.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

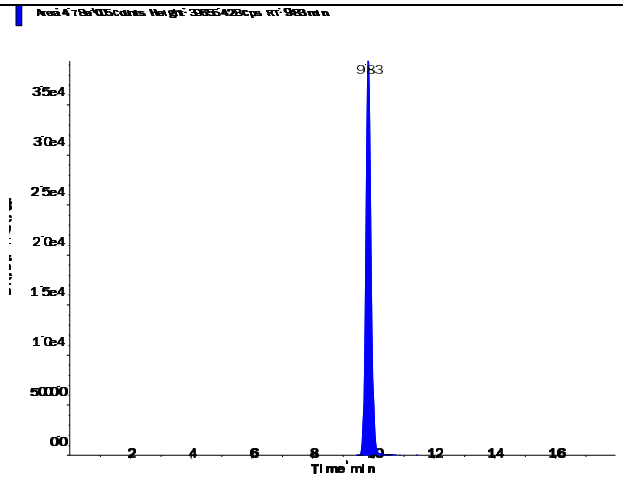

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

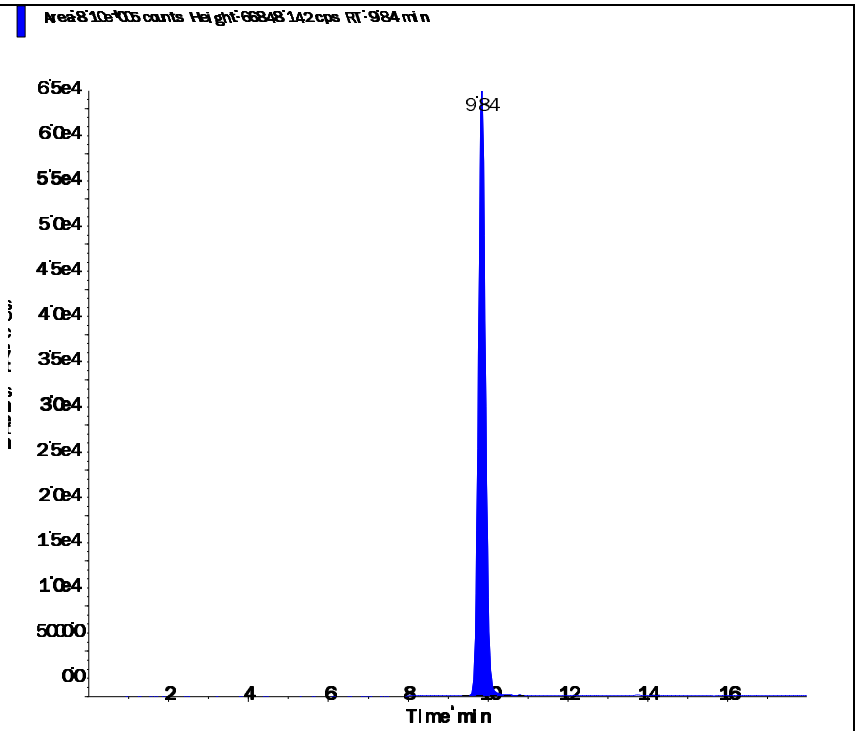

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

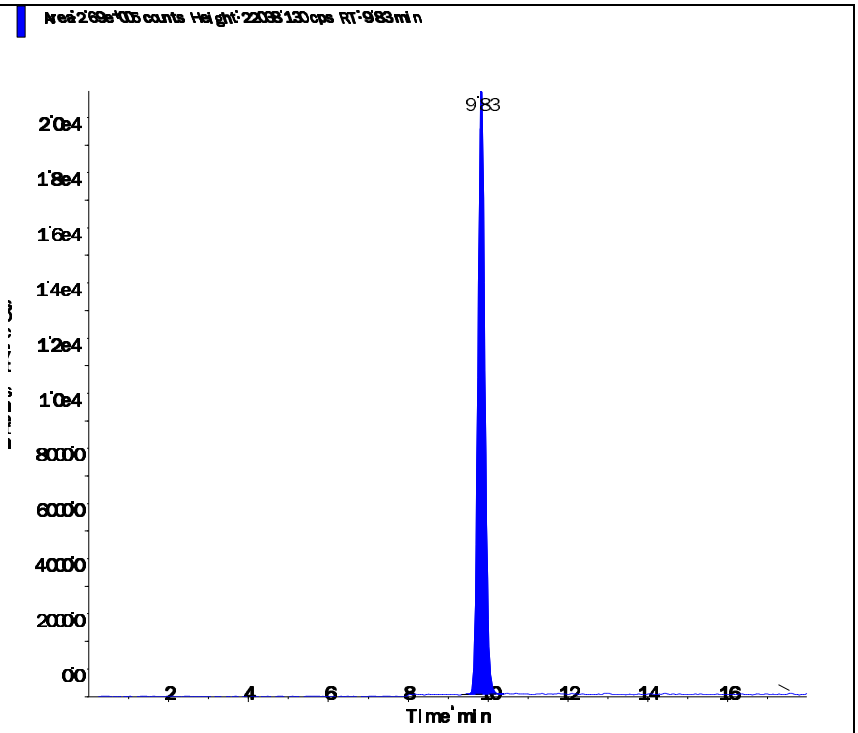

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Printed: 6/23/2016 4:52 PM

Data File	LM34693.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

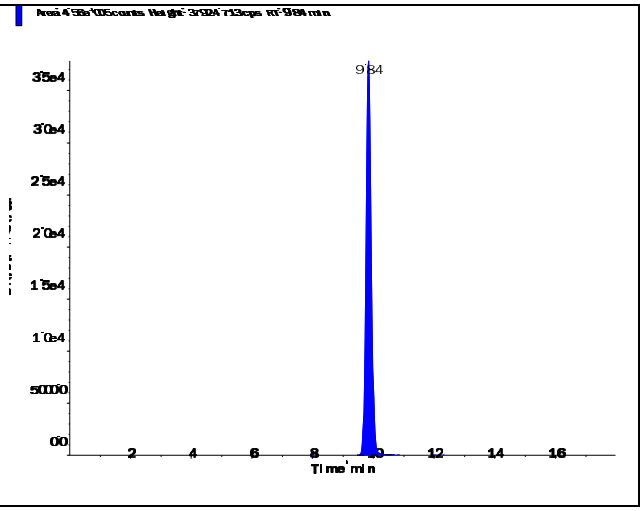

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 9.99 ng/ml Area Ratio: 3.36 Sample Type: (Standard)	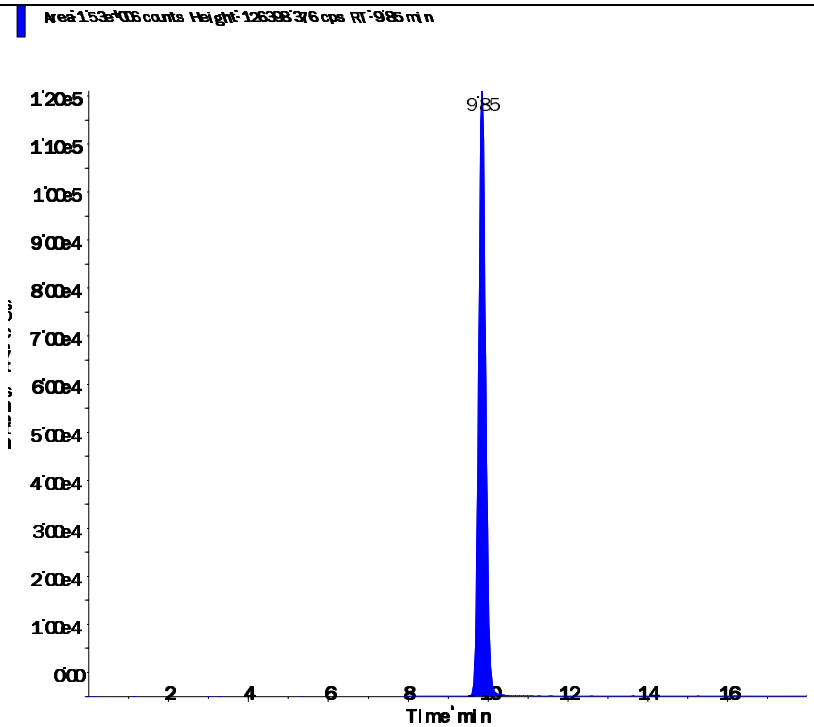
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 10.00 ng/ml Area Ratio: 1.122 Sample Type: (Standard)	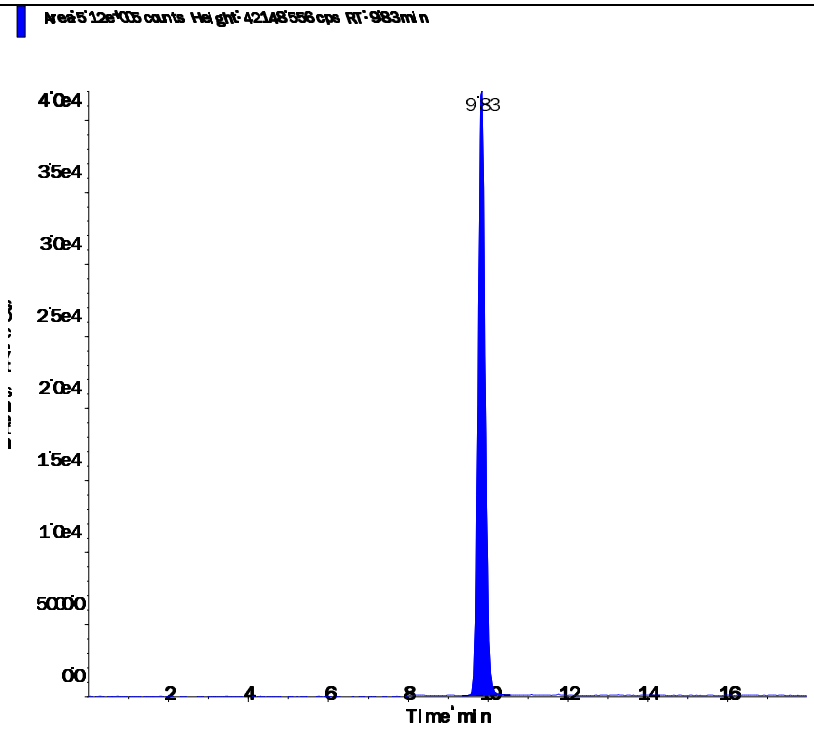

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Printed: 5/4/2016 1:23 PM

Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

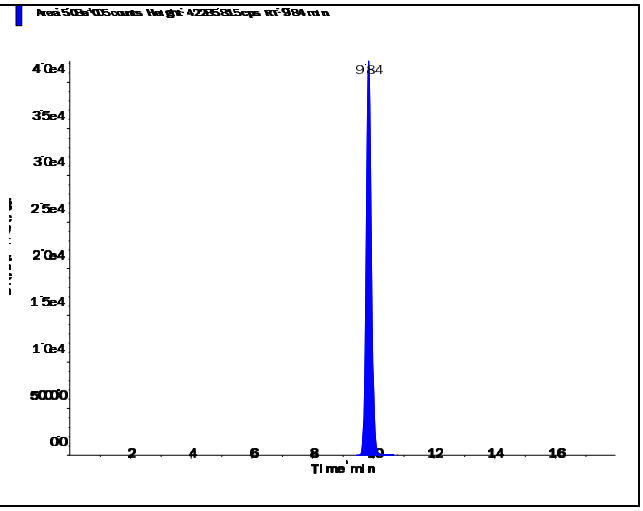

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.332
Sample Type:	(Quality Control)

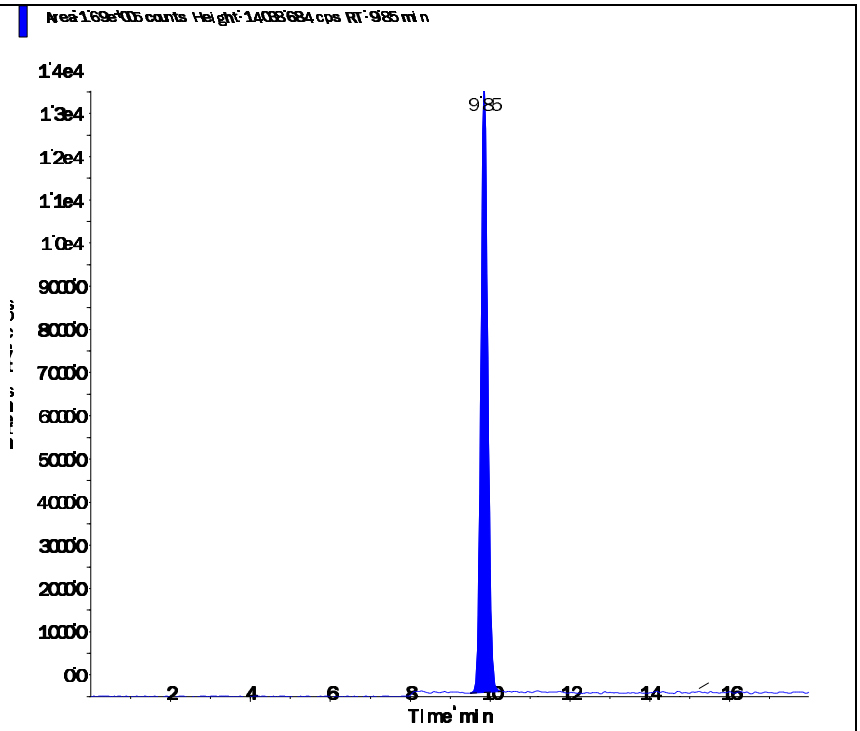

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

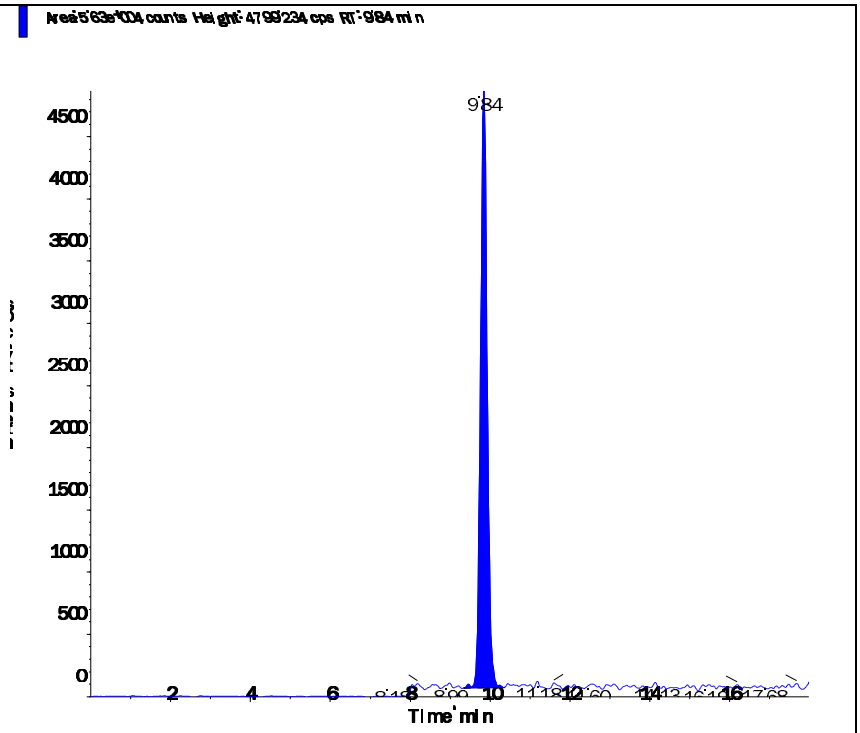

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Data File	LM35416.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 5:06:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35416.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 5:06:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.480e+05	9.13	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.510e+05	9.14	1.00	0.997
Perchlorate conf	5.420e+04	9.13	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 9.13(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

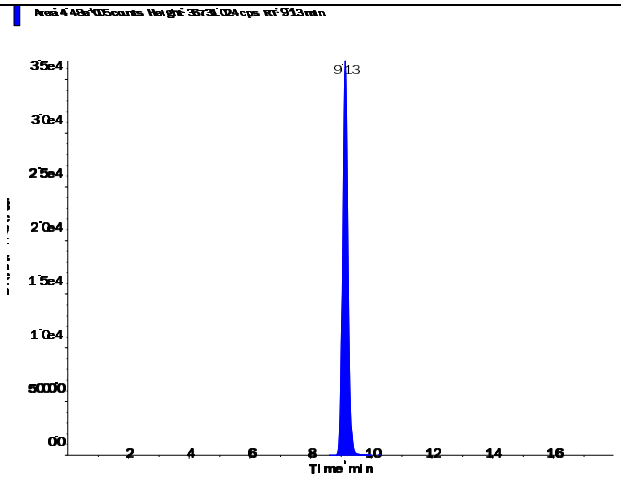

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.14 (9.84) min
Calculated conc:	0.997 ng/ml
Area Ratio:	0.336
Sample Type:	(Quality Control)

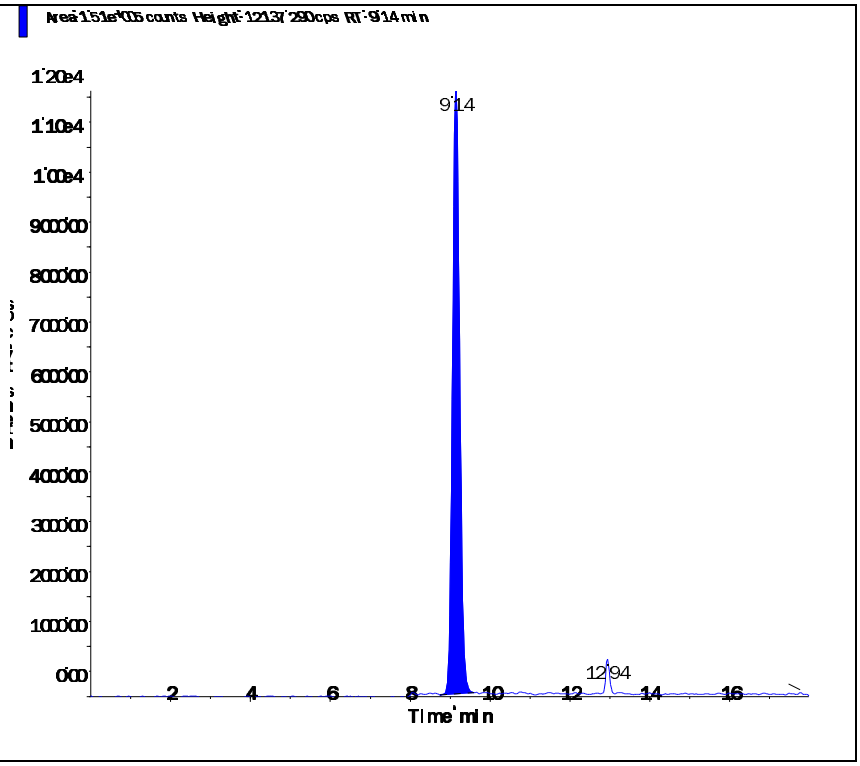

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.13 (9.84) min
Calculated conc:	1.07 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

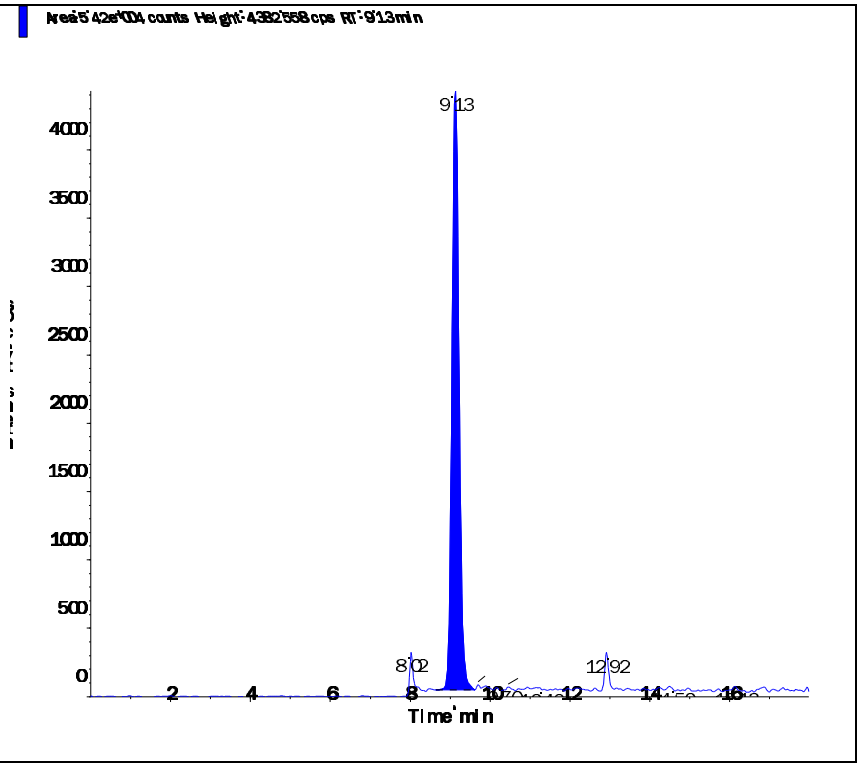

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Data File	LM35428.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 8:54:07 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35428.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 8:54:07 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.900e+05	9.17	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.720e+05	9.18	1.00	1.04
Perchlorate conf	6.140e+04	9.16	1.00	1.10

O18LP (Internal Standard)

RT (Exp. RT): 9.17(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

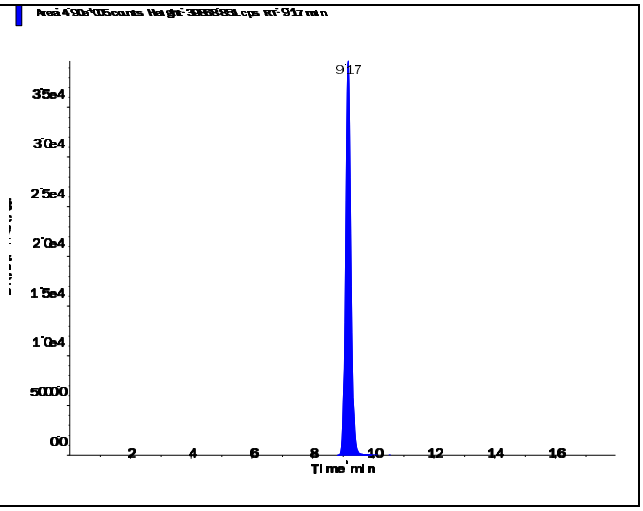

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.18 (9.84) min Calculated conc: 1.04 ng/ml Area Ratio: 0.351 Sample Type: (Quality Control)	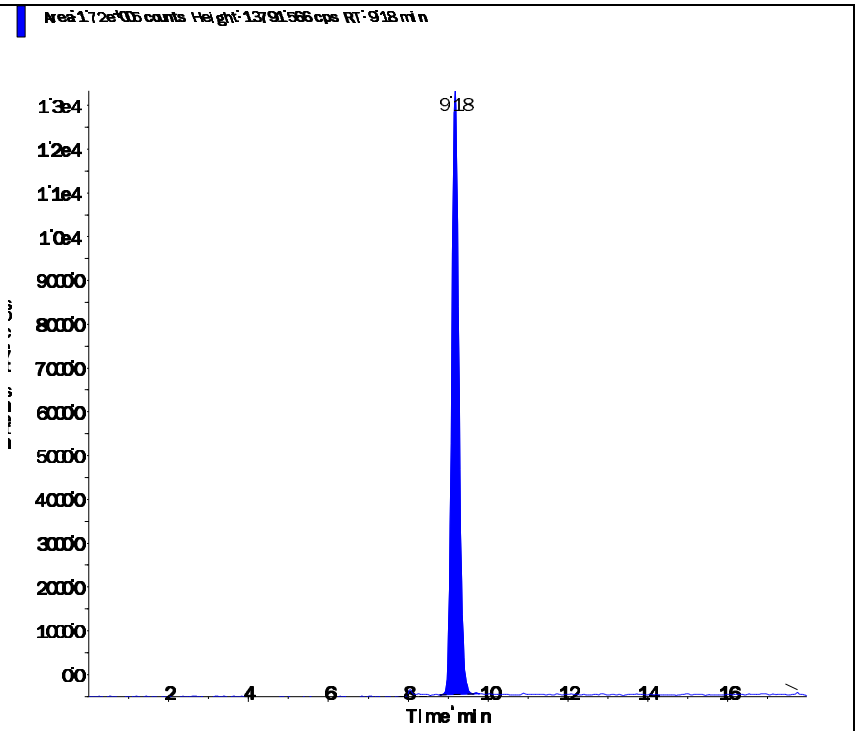
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.16 (9.84) min Calculated conc: 1.10 ng/ml Area Ratio: 0.125 Sample Type: (Quality Control)	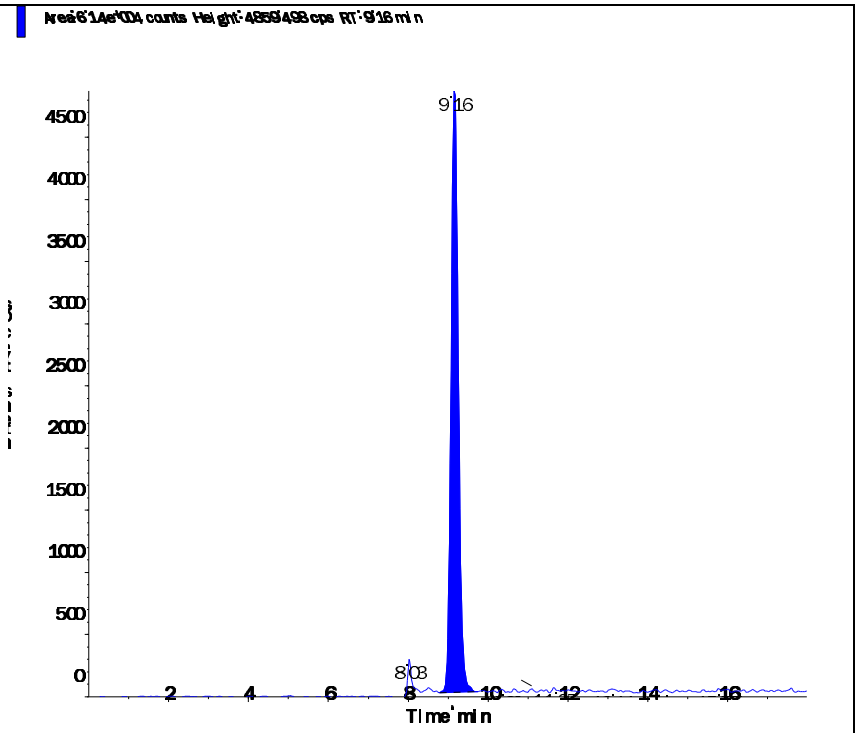

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Data File	LM35439.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 12:22:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35439.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 12:22:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.20	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.760e+05	9.22	1.00	1.03
Perchlorate conf	6.150e+04	9.20	1.00	1.06

O18LP (Internal Standard)

RT (Exp. RT): 9.20(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

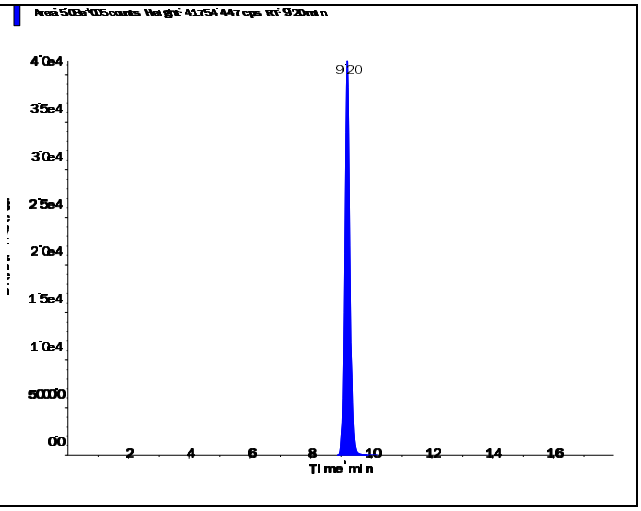

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.22 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.347
Sample Type:	(Quality Control)

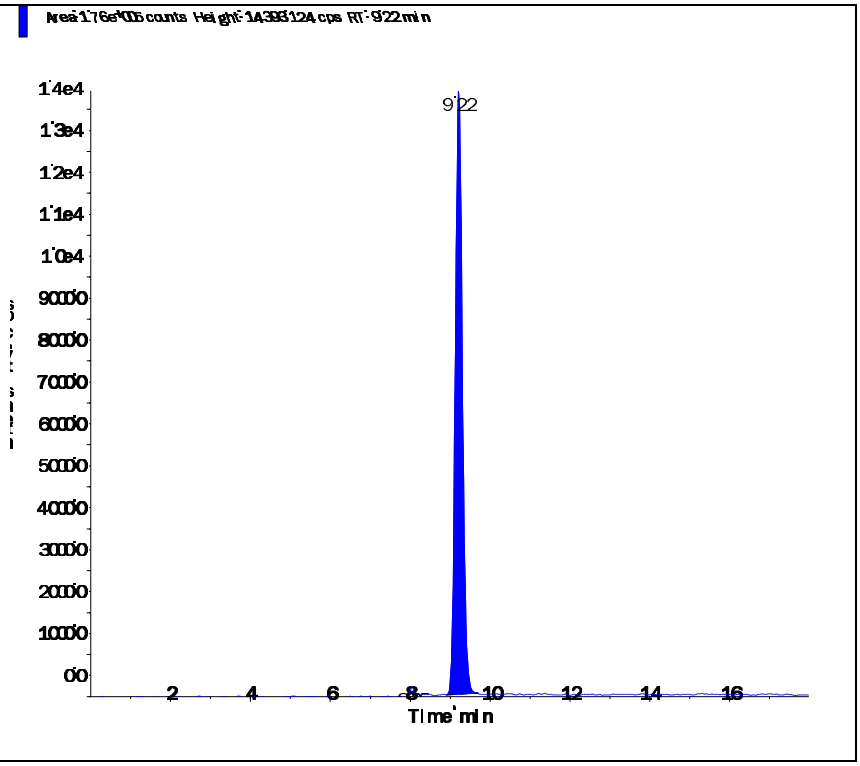

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.20 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

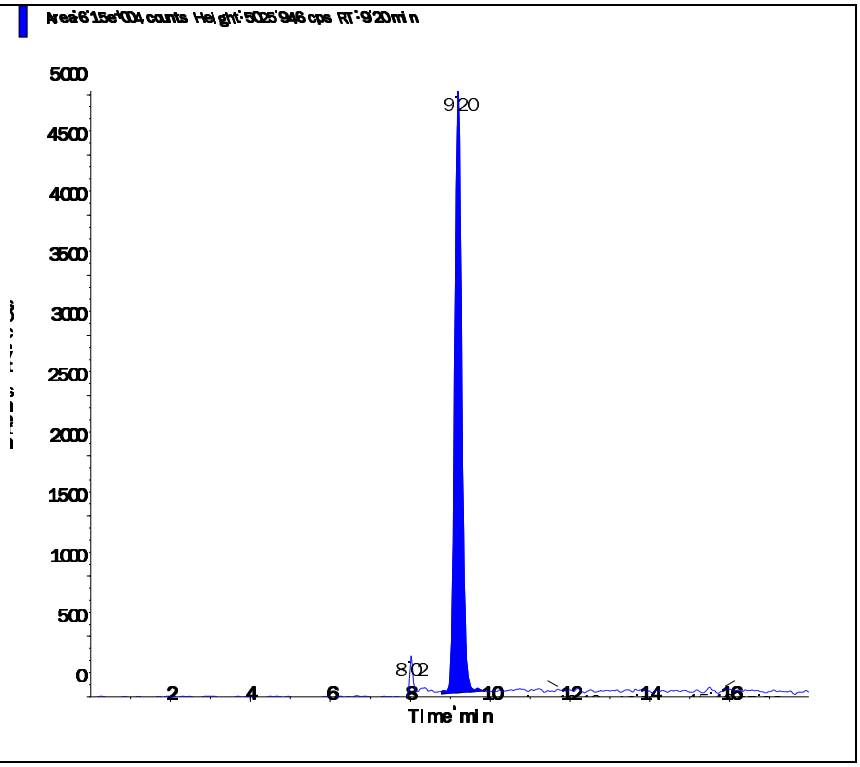

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Data File	LM35446.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 2:34:57 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35446.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 2:34:57 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.820e+05	9.22	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.23	1.00	1.04
Perchlorate conf	5.850e+04	9.22	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 9.22(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

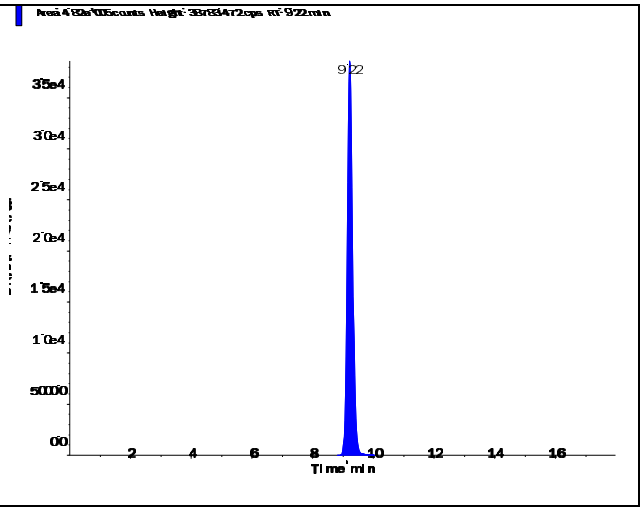

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.23 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.351
Sample Type:	(Quality Control)

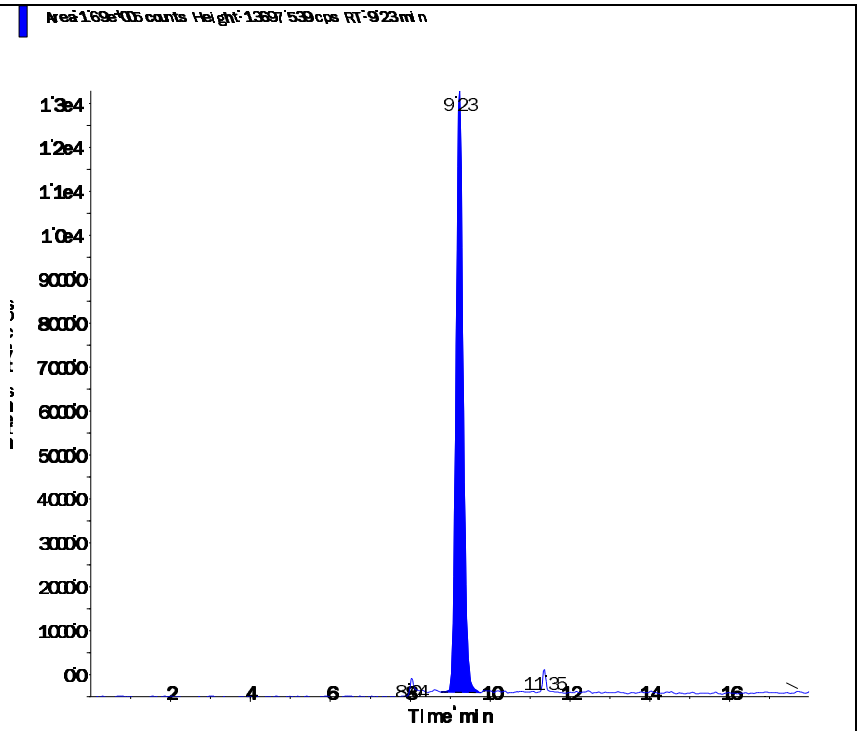

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.22 (9.84) min
Calculated conc:	1.07 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

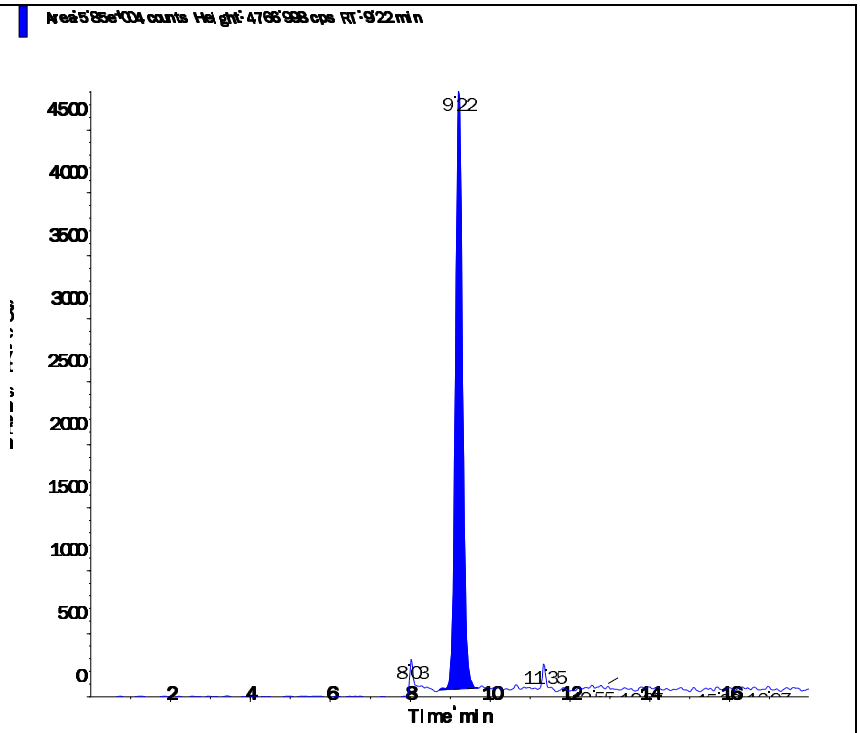

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Data File	LM35449.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 11:49:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35449.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 11:49:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.170e+05	9.26	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.420e+05	9.27	1.00	1.01
Perchlorate conf	5.070e+04	9.25	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 9.26(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

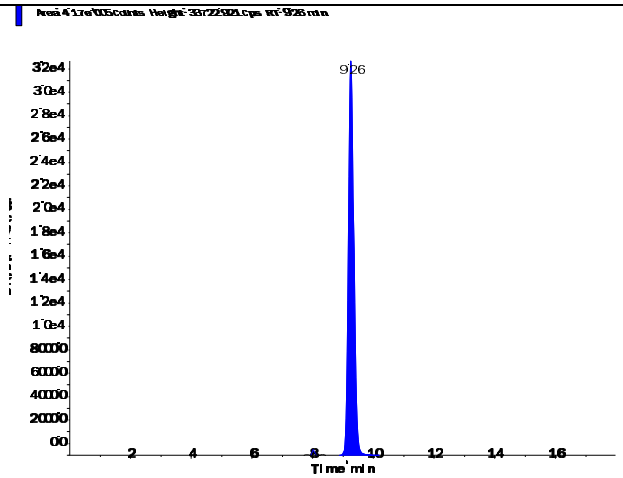

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.27 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.341
Sample Type:	(Quality Control)

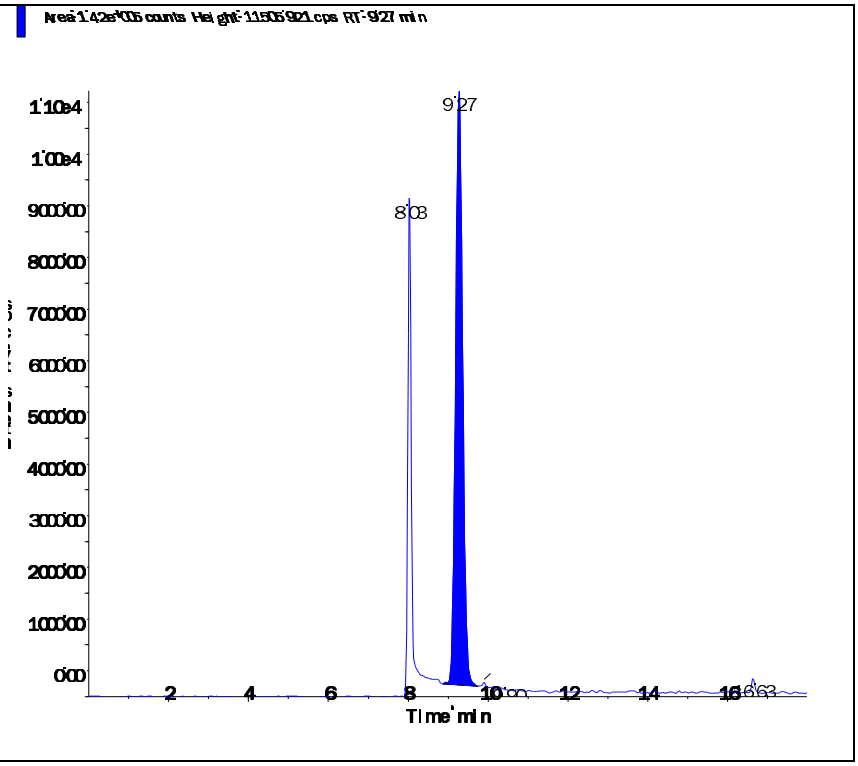

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.25 (9.84) min
Calculated conc:	1.07 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

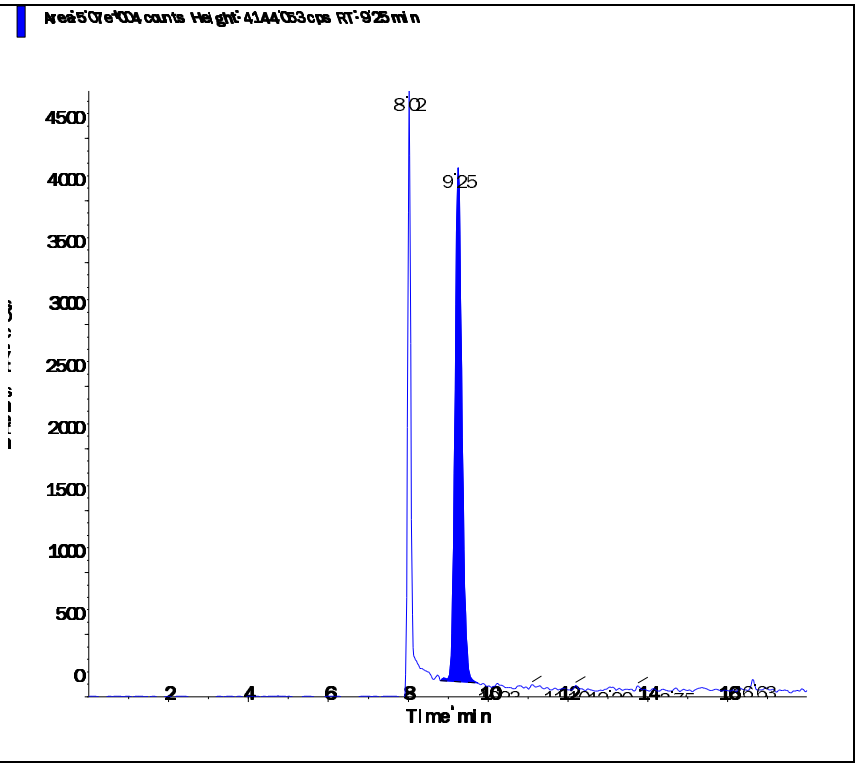

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Data File	LM35459.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 2:58:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-11 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35459.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 2:58:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.720e+05	9.28	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.670e+05	9.29	1.00	1.05
Perchlorate conf	5.600e+04	9.28	1.00	1.04

O18LP (Internal Standard)

RT (Exp. RT): 9.28(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

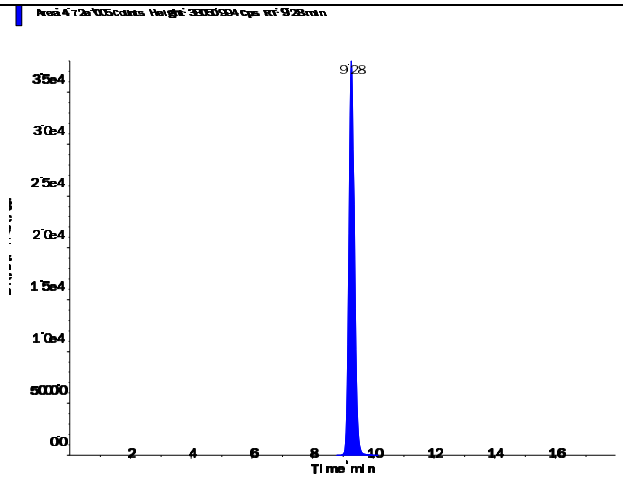

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Created with Analyst Reporter
Printed: 6/23/2016 5:07 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.29 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.354
Sample Type:	(Quality Control)

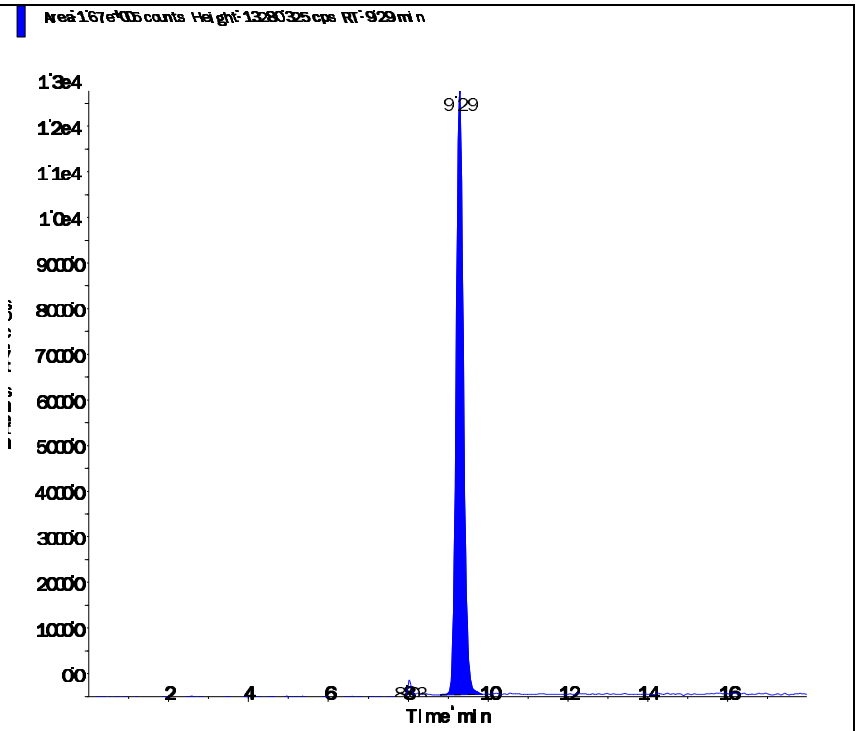

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.28 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

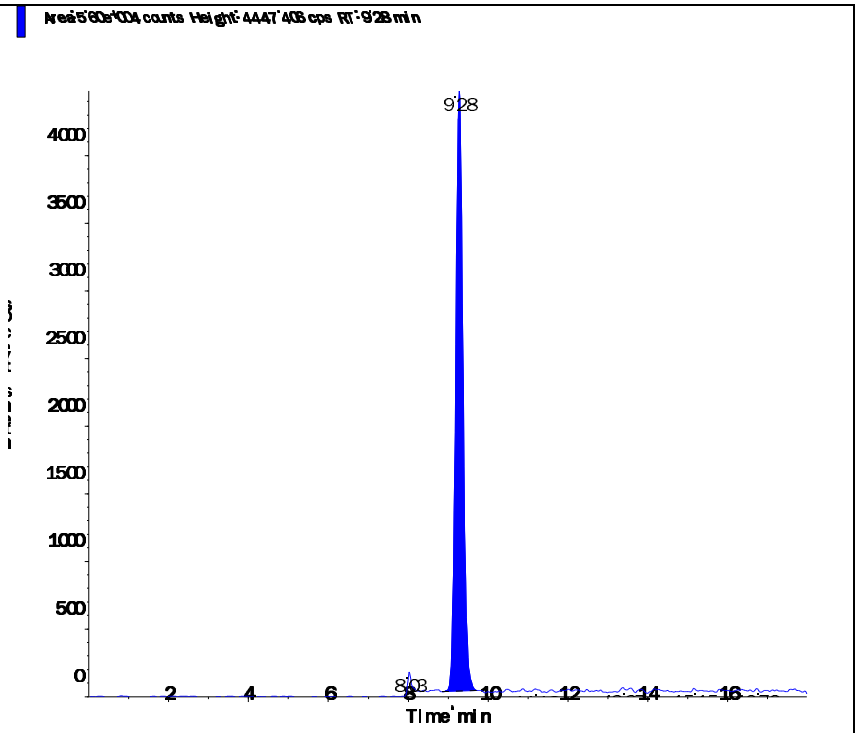

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Printed: 6/23/2016 4:53 PM

Data File	LM35417.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 5:25:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-05 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35417.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 5:25:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.430e+05	9.19	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.120e+04	9.20	N/A	0.206
Perchlorate conf	1.120e+04	9.20	N/A	0.206

O18LP (Internal Standard)

RT (Exp. RT): 9.19(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

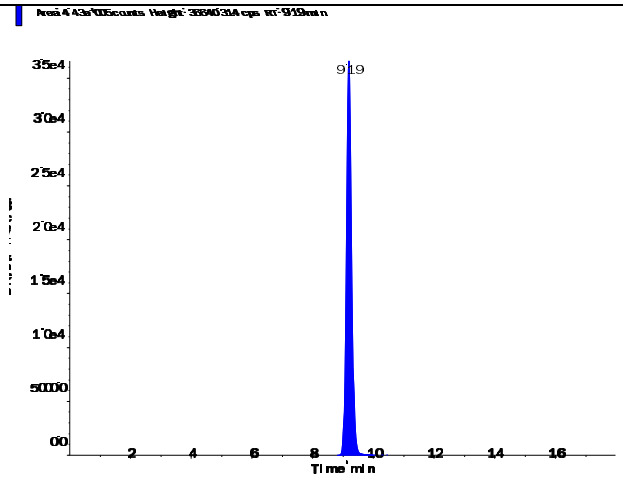

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Created with Analyst Reporter
Printed: 6/23/2016 4:53 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.20 (9.84) min Calculated conc: 0.206 ng/ml Area Ratio: 0.071 Sample Type: (Unknown)	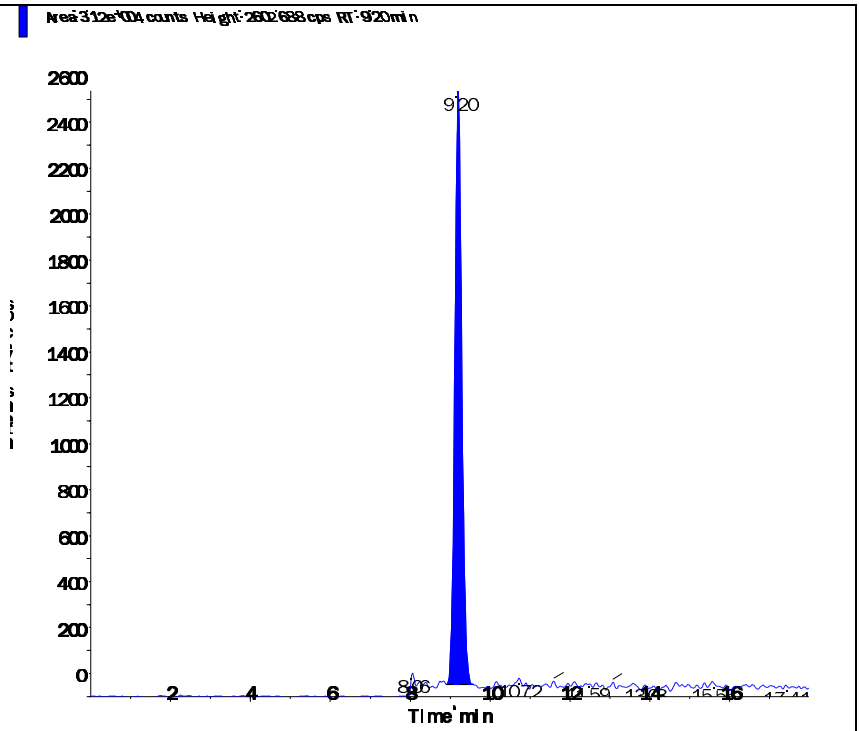
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.20 (9.84) min Calculated conc: 0.206 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	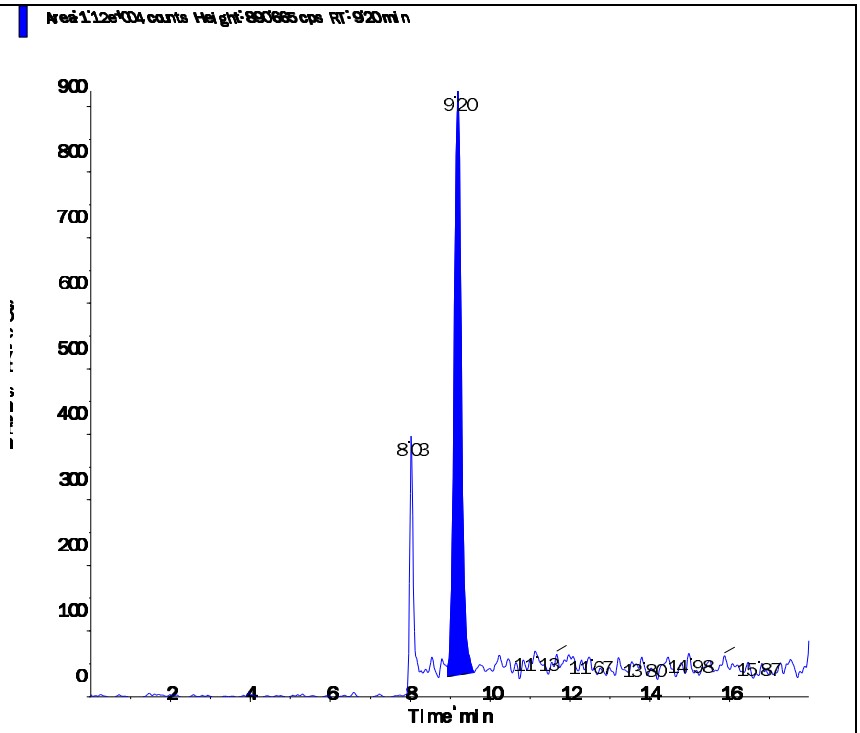

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Created with Analyst Reporter
Printed: 6/23/2016 4:57 PM

Data File	LM35429.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 9:13:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-06 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35429.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 9:13:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.940e+05	9.23	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.450e+04	9.24	N/A	0.204
Perchlorate conf	1.250e+04	9.22	N/A	0.206

O18LP (Internal Standard)

RT (Exp. RT): 9.23(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

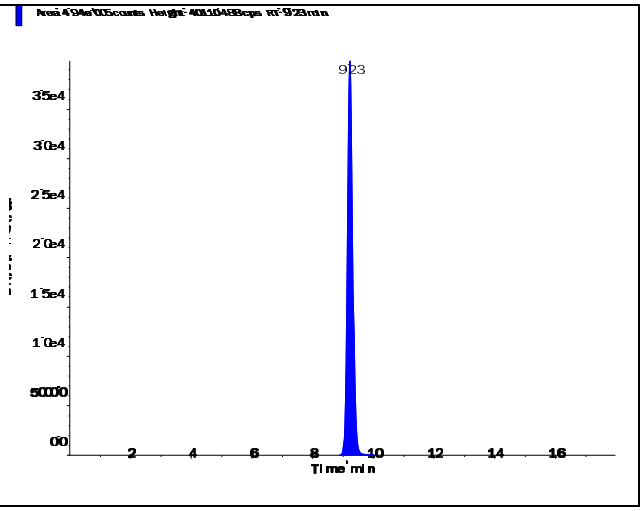

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.24 (9.84) min
Calculated conc:	0.204 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

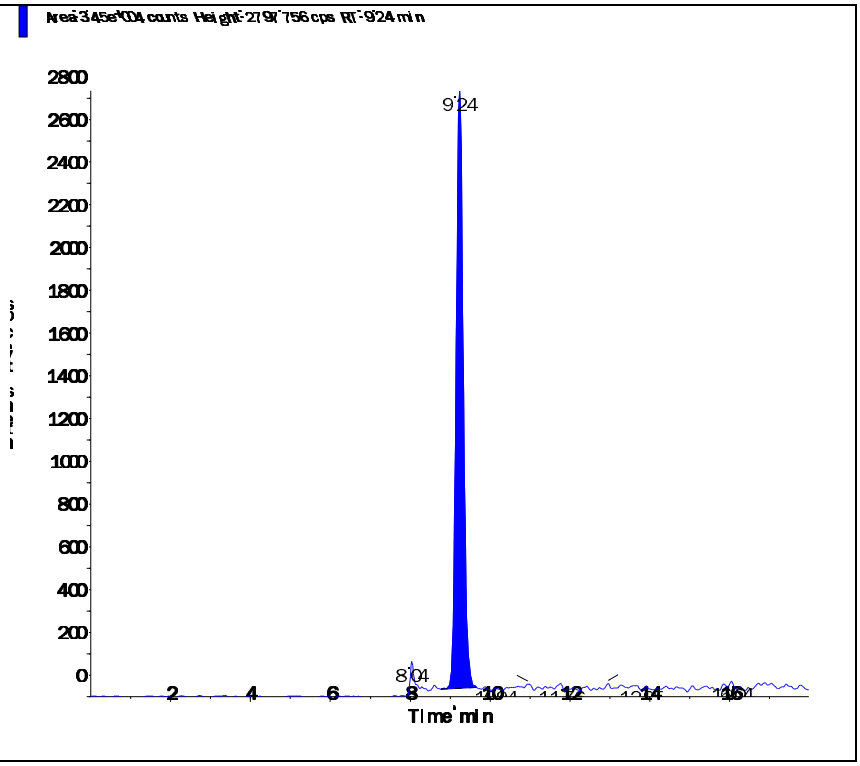

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.22 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

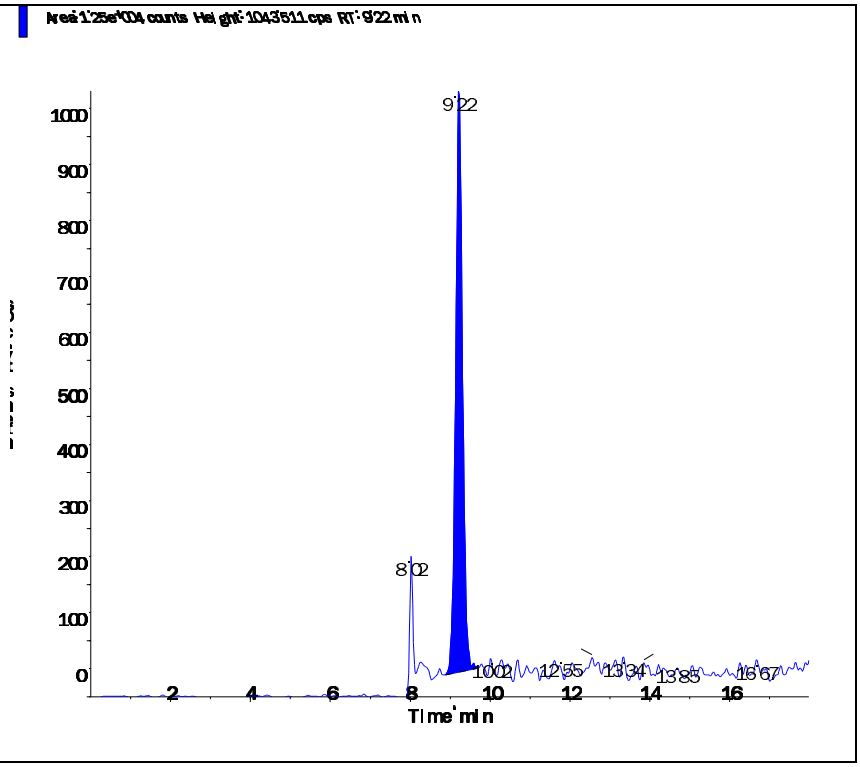

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Printed: 6/23/2016 5:01 PM

Data File	LM35440.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 12:41:19 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35440.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 12:41:19 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.090e+05	9.26	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.670e+04	9.27	N/A	0.21
Perchlorate conf	1.290e+04	9.24	N/A	0.207

O18LP (Internal Standard)

RT (Exp. RT): 9.26(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

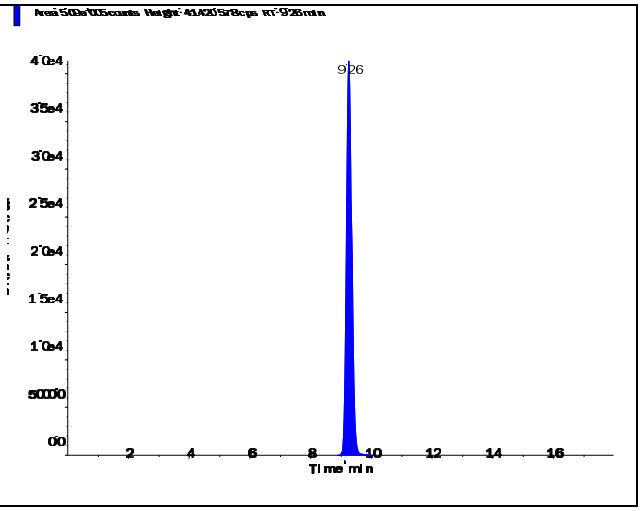

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.27 (9.84) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

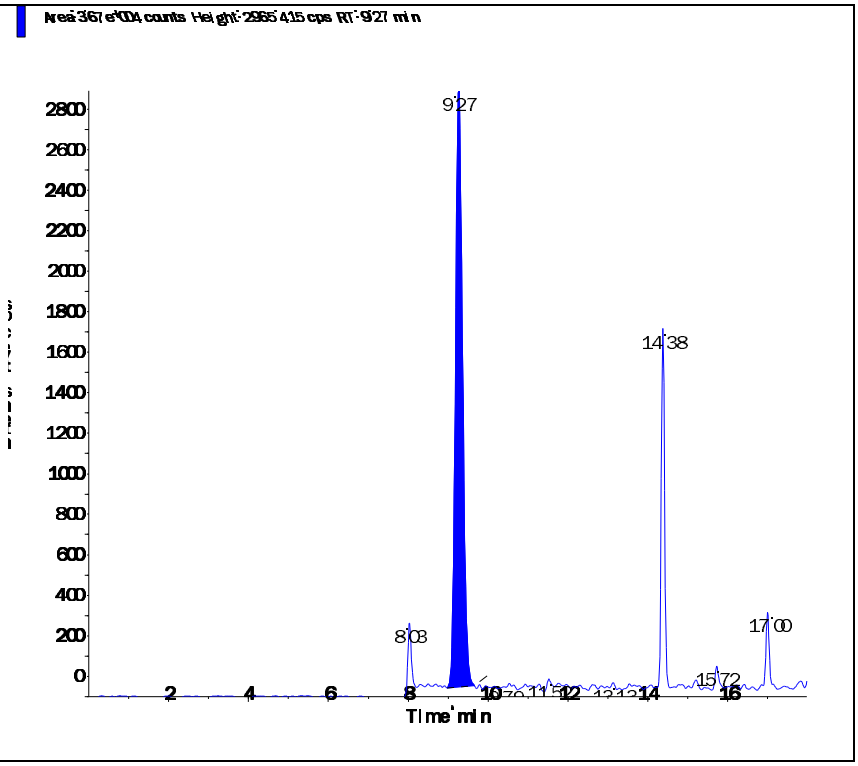

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.24 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

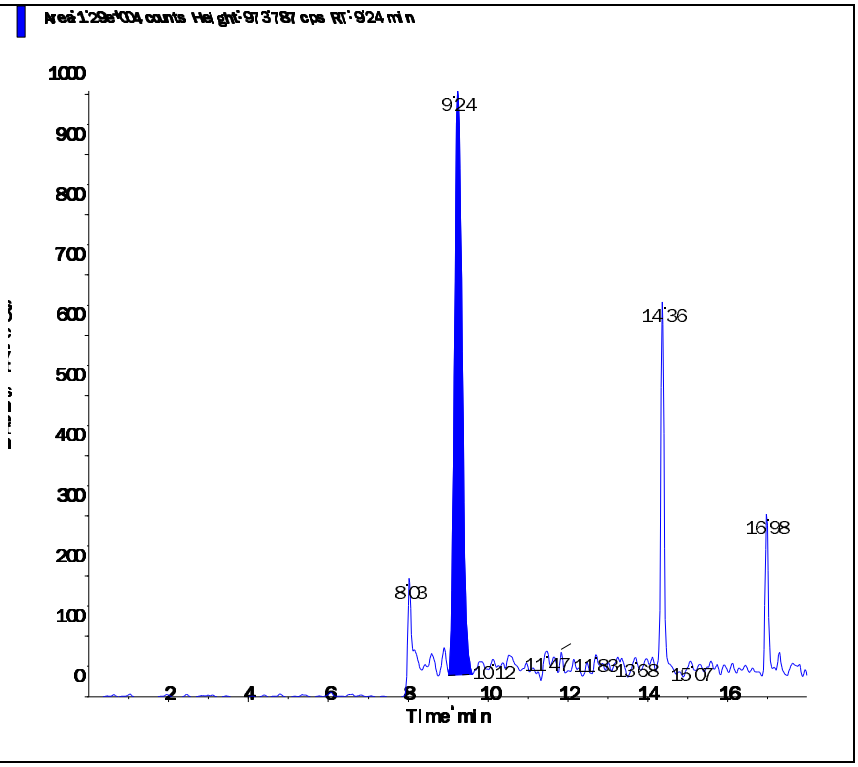

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Data File	LM35447.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 2:53:53 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-08 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35447.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 2:53:53 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.770e+05	9.27	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.480e+04	9.28	N/A	0.214
Perchlorate conf	1.170e+04	9.27	N/A	0.20

O18LP (Internal Standard)

RT (Exp. RT): 9.27(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

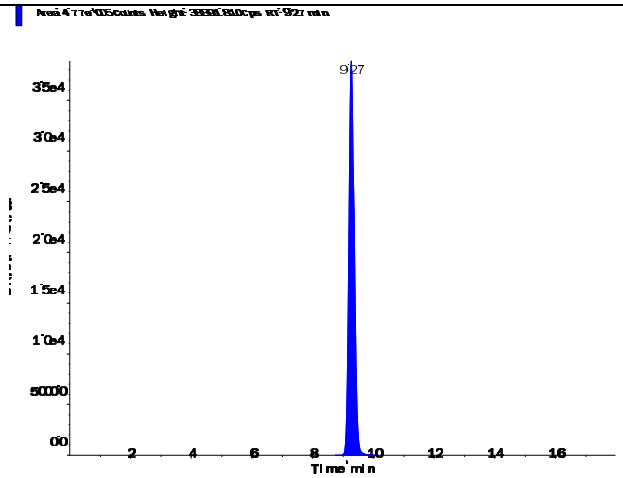

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.28 (9.84) min
Calculated conc:	0.214 ng/ml
Area Ratio:	0.073
Sample Type:	(Unknown)

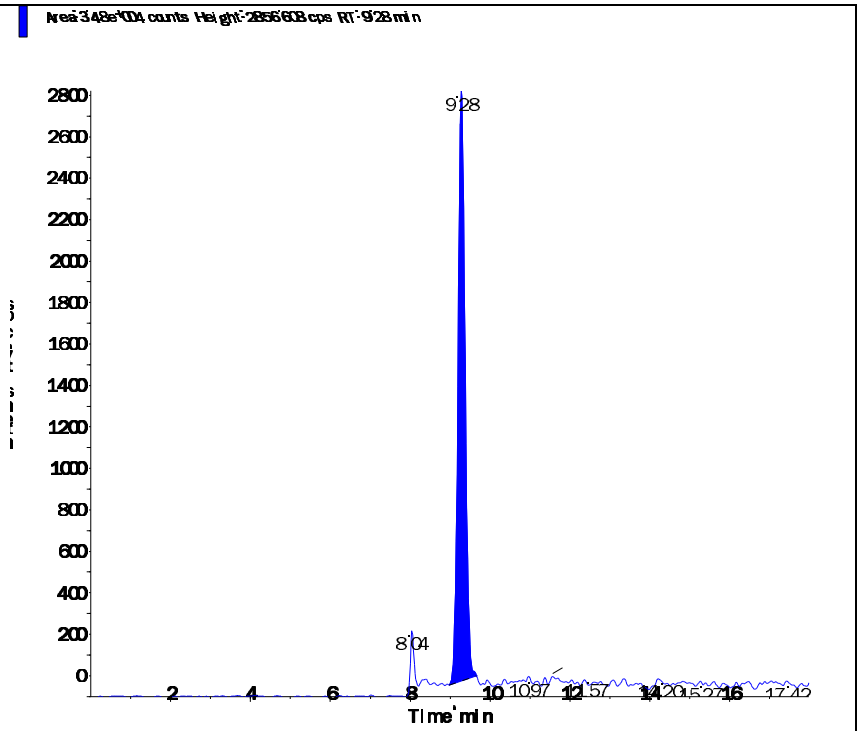

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.27 (9.84) min
Calculated conc:	0.20 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

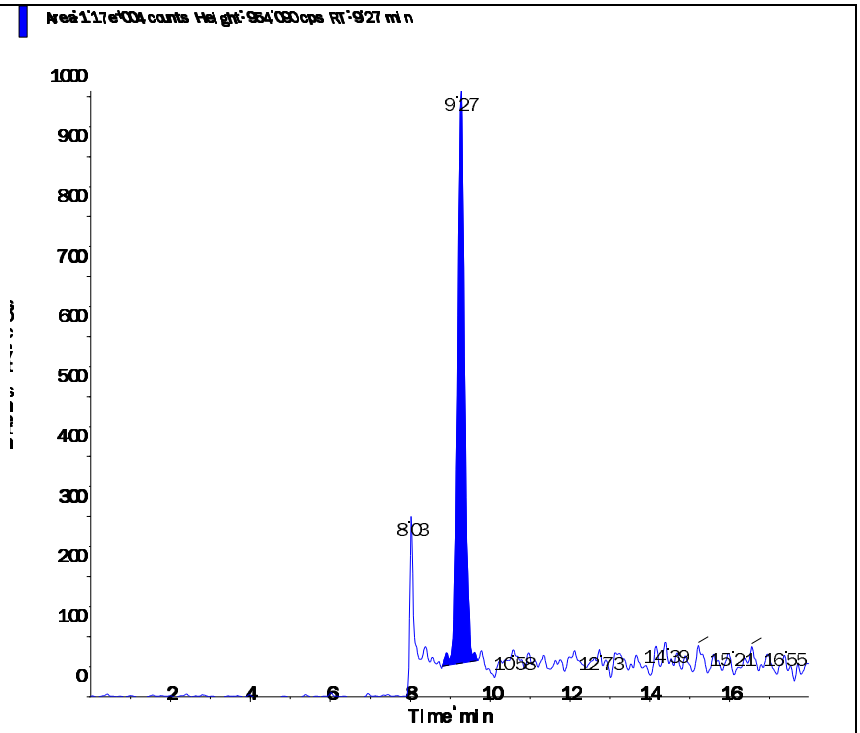

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Data File	LM35450.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 12:08:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-09 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35450.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 12:08:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.250e+05	9.31	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.050e+04	9.32	N/A	0.209
Perchlorate conf	1.100e+04	9.31	N/A	0.211

O18LP (Internal Standard)

RT (Exp. RT): 9.31(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

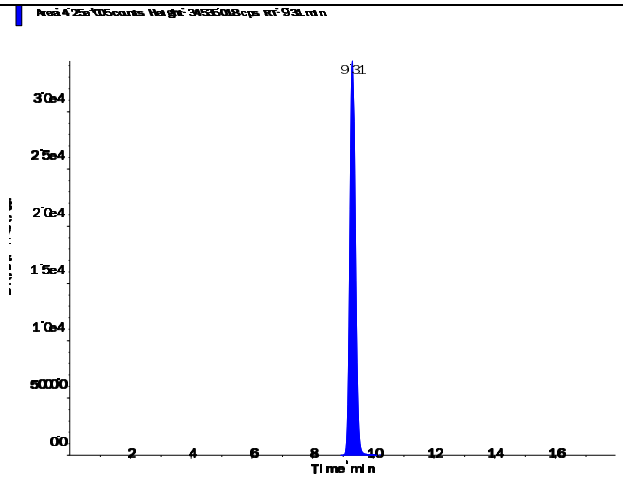

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.32 (9.84) min
Calculated conc:	0.209 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

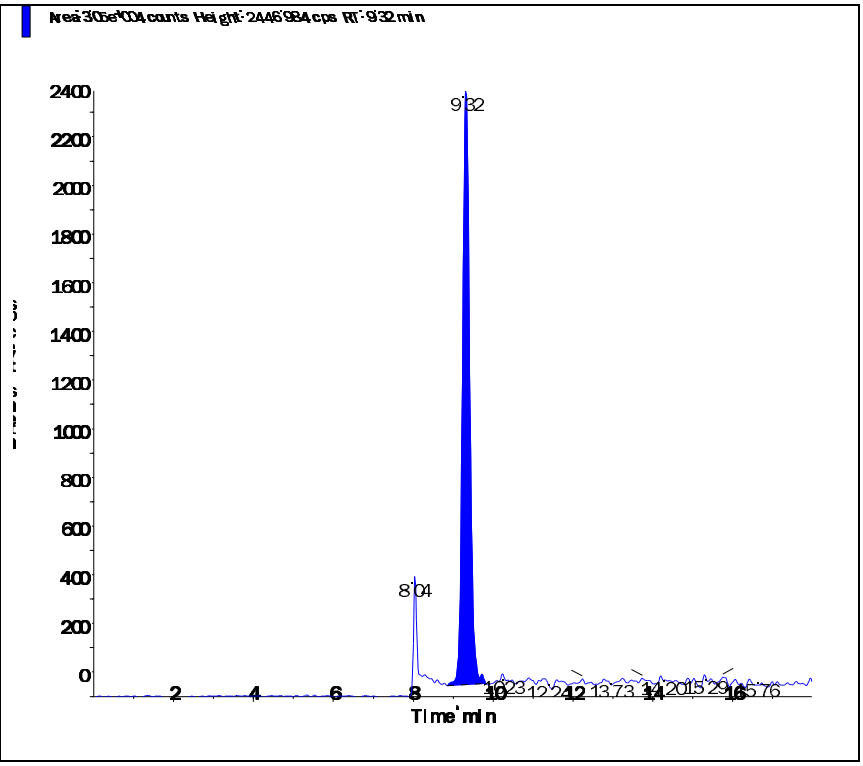

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.31 (9.84) min
Calculated conc:	0.211 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

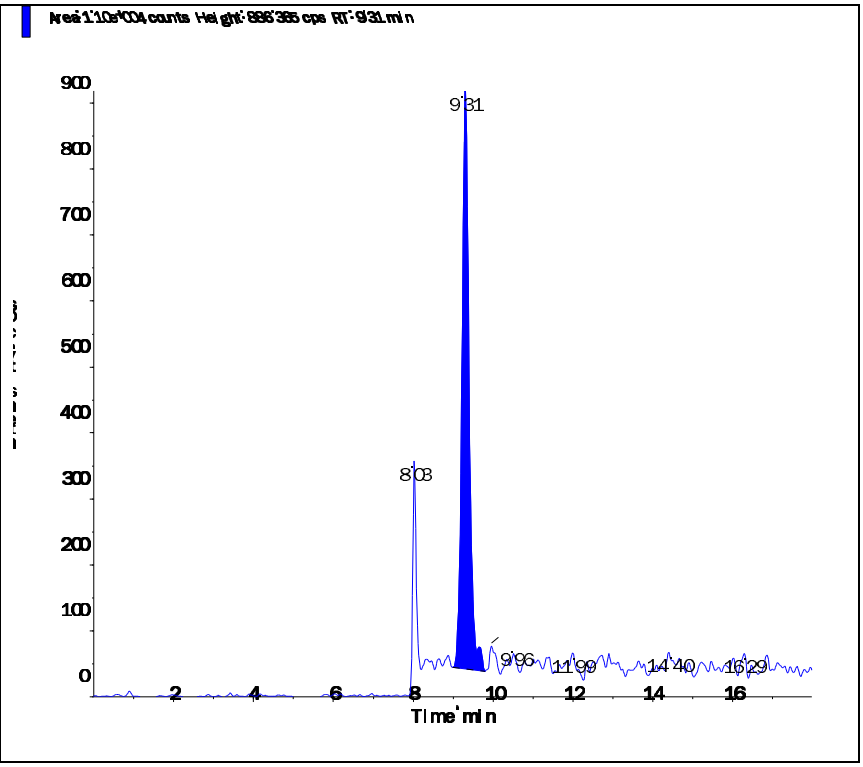

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Data File	LM35460.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 3:17:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-10 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35460.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 3:17:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-10	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.650e+05	9.33	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.200e+04	9.35	N/A	0.201
Perchlorate conf	1.270e+04	9.33	N/A	0.224

O18LP (Internal Standard)

RT (Exp. RT): 9.33(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

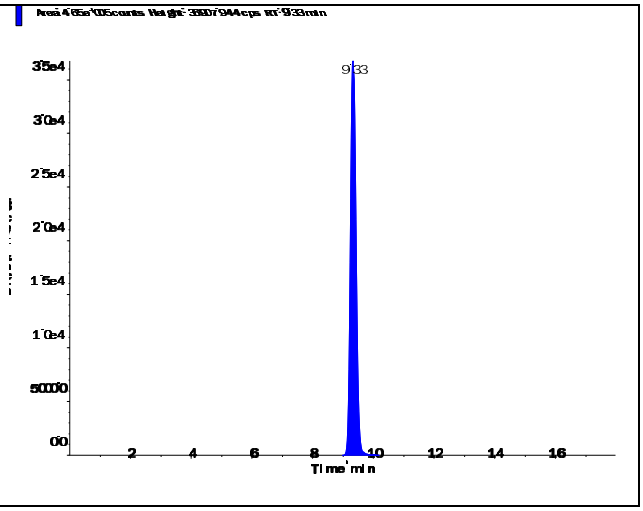

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

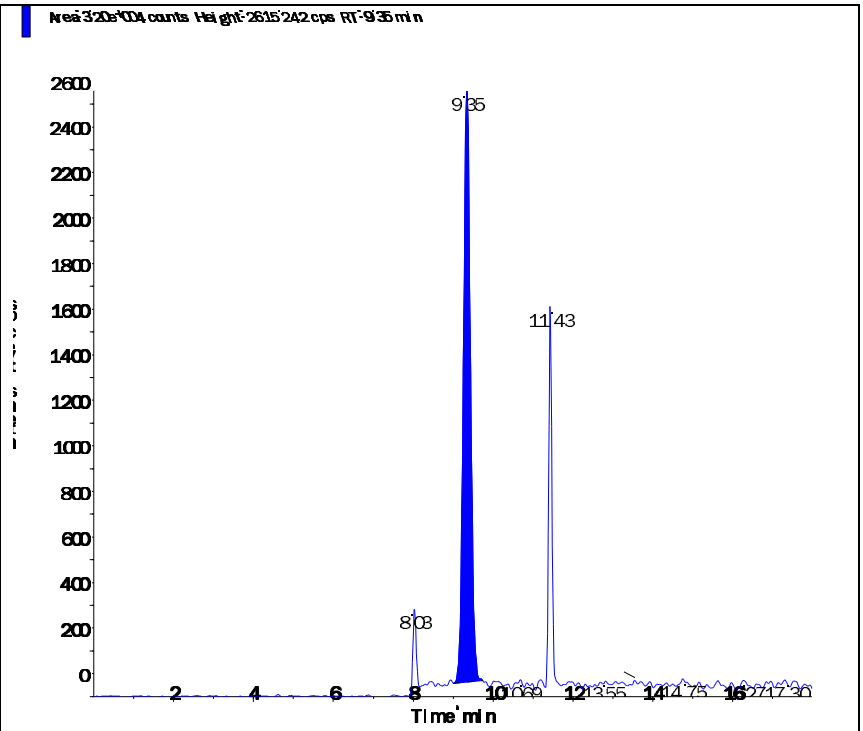

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.33 (9.84) min
Calculated conc:	0.224 ng/ml
Area Ratio:	0.027
Sample Type:	(Unknown)

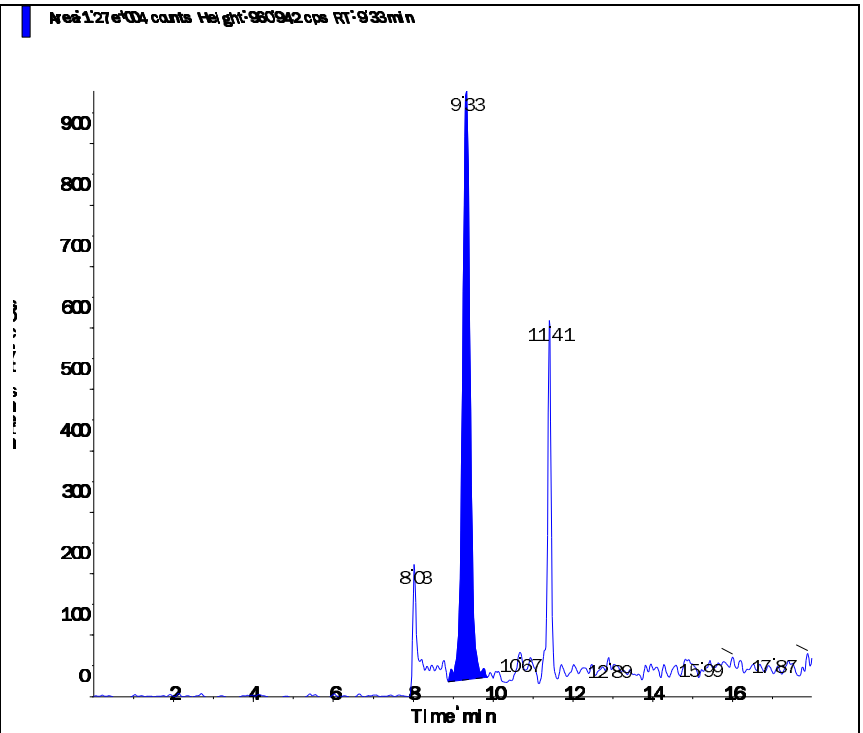

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Data File	LM35415.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 4:48:02 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-01 CCB	**Injection Vial**	1.00
Data File	LM35415.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 4:48:02 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.750e+05	9.37	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	5.830e+02	9.37	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.37(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

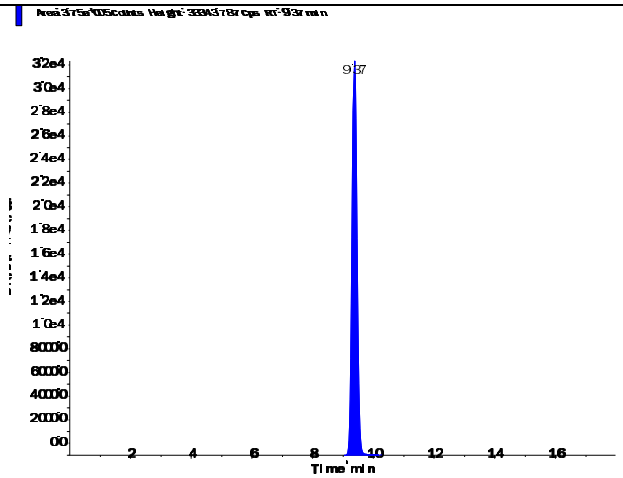

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

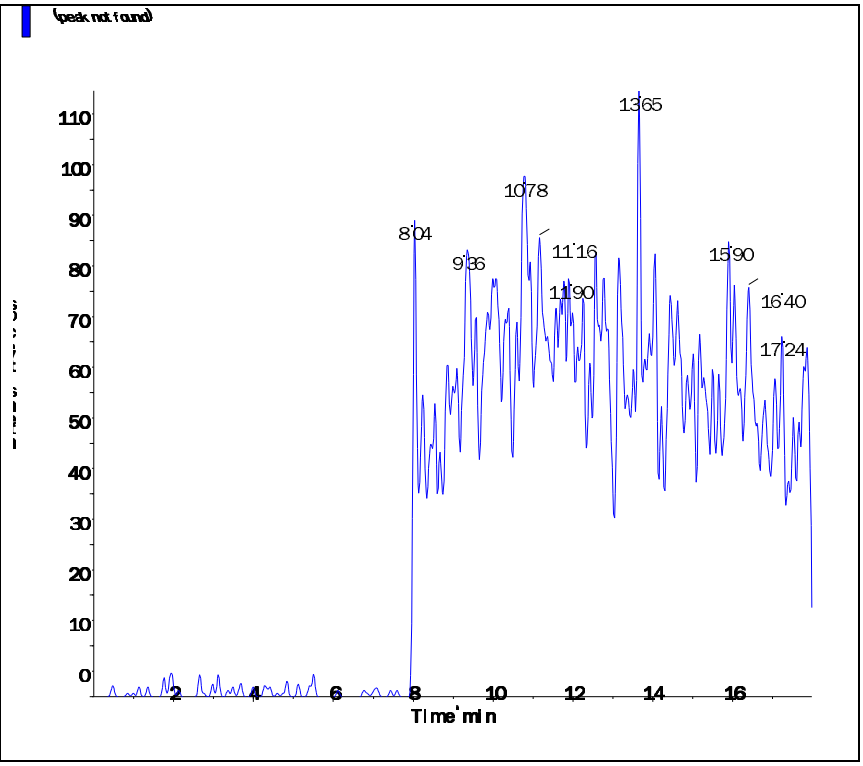

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.37 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

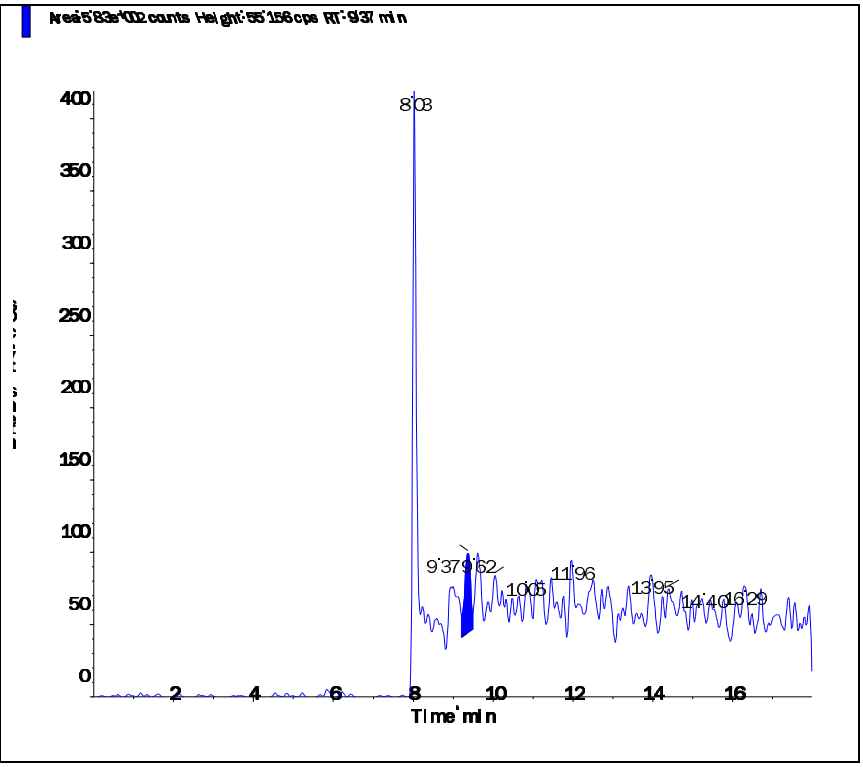

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Printed: 6/23/2016 4:58 PM

Data File	LM35430.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 9:31:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-04 CCB	**Injection Vial**	1.00
Data File	LM35430.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 9:31:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.890e+05	9.42	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	2.230e+02	9.45	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.42(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

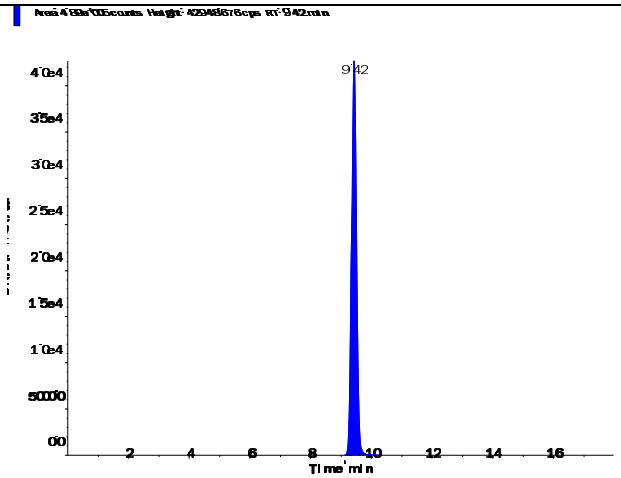

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/23/2016 4:58 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

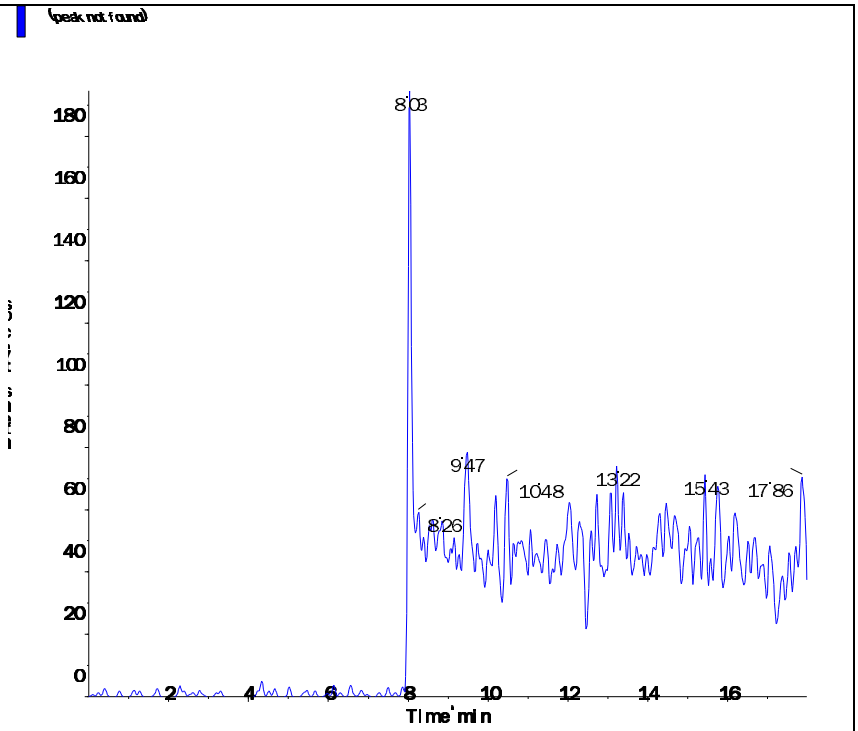

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.45 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

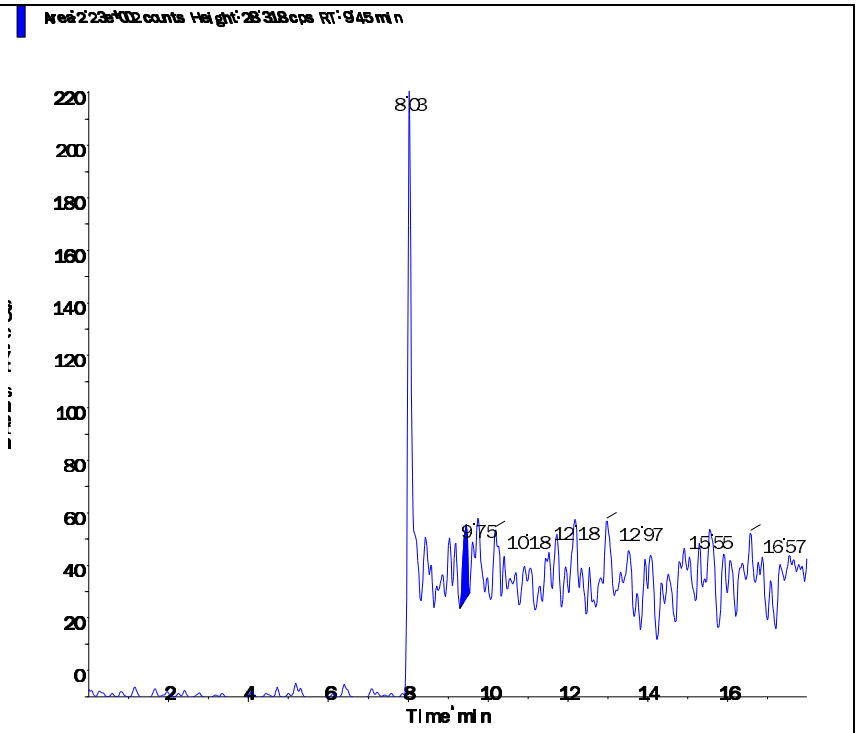

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/23/2016 5:02 PM

Data File	LM35441.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 1:00:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-06 CCB	**Injection Vial**	1.00
Data File	LM35441.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 1:00:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.040e+05	9.46	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.46(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

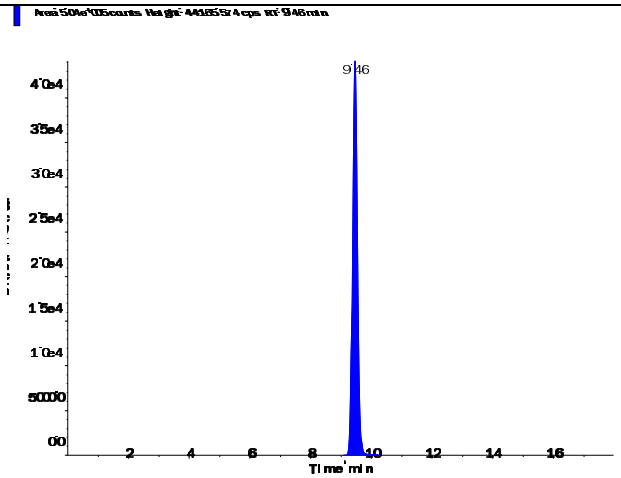

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/23/2016 5:02 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

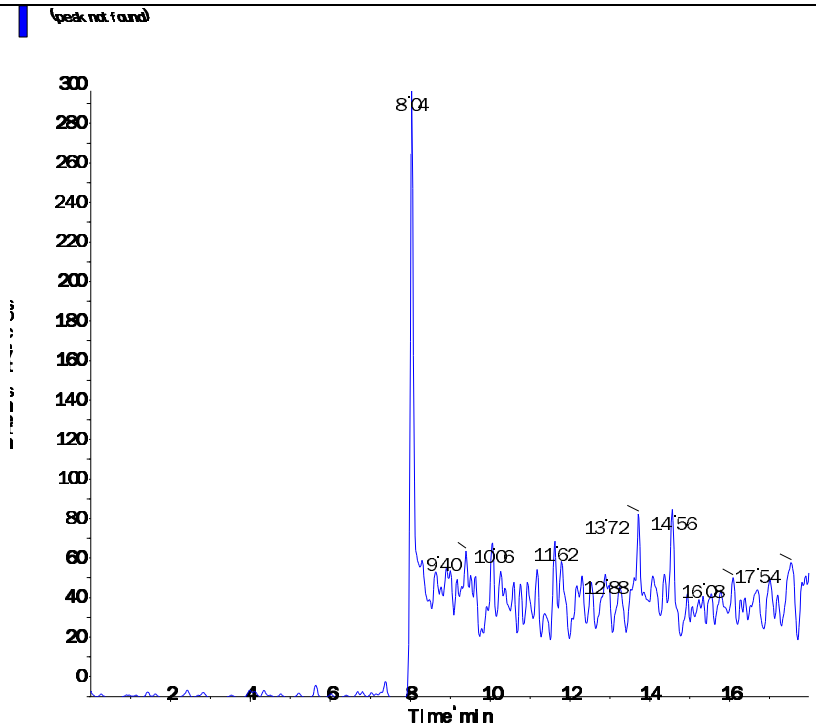

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

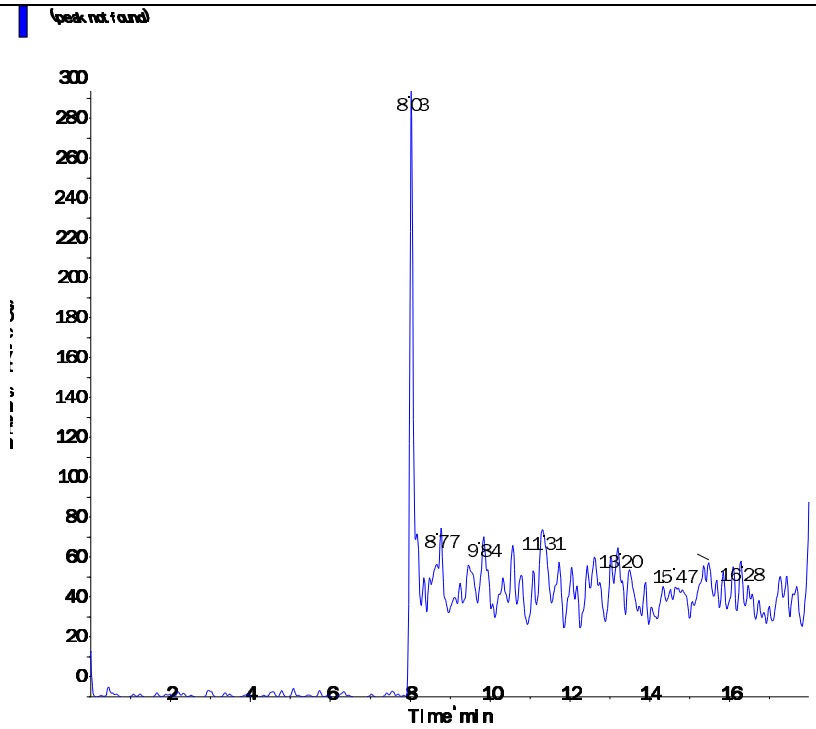

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/23/2016 5:04 PM

Data File	LM35448.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 3:12:48 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-08 CCB	**Injection Vial**	1.00
Data File	LM35448.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 3:12:48 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.850e+05	9.47	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.47(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

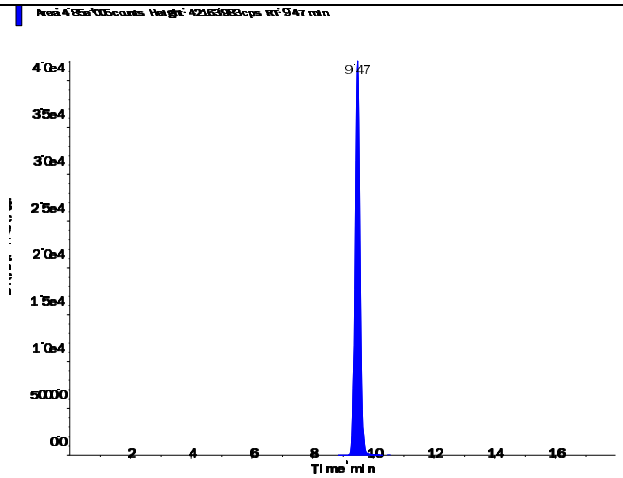

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

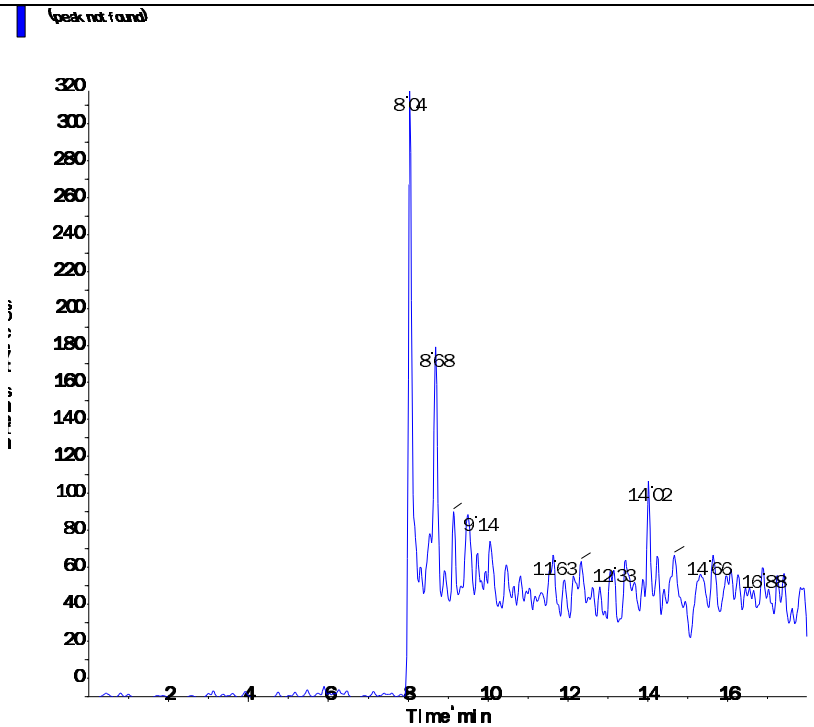

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

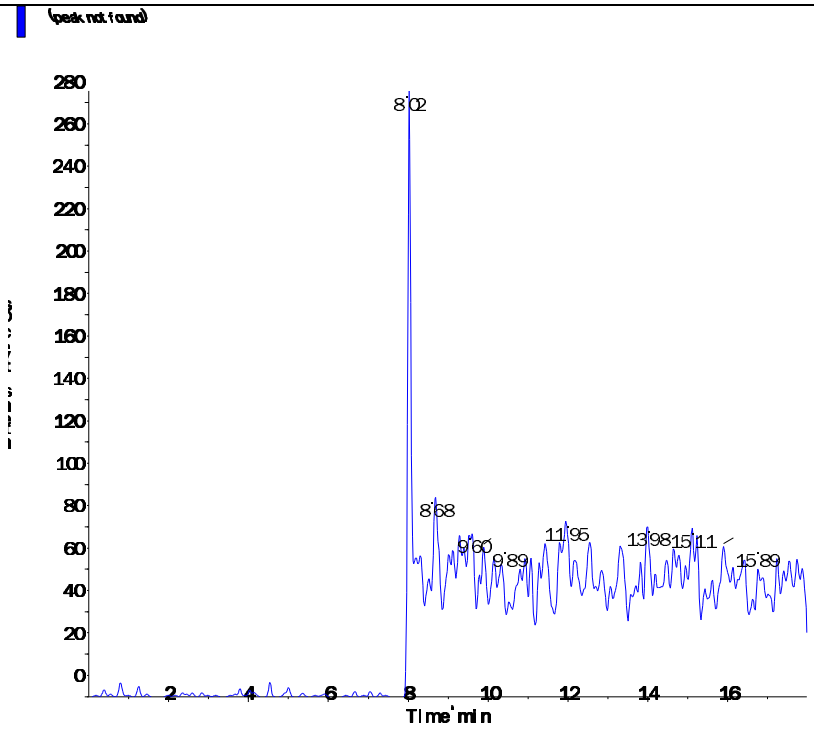

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Created with Analyst Reporter
Printed: 6/23/2016 5:05 PM

Data File	LM35451.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 12:27:11 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-10 CCB	**Injection Vial**	1.00
Data File	LM35451.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 12:27:11 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.370e+05	9.51	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	5.600e+02	9.50	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.51(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

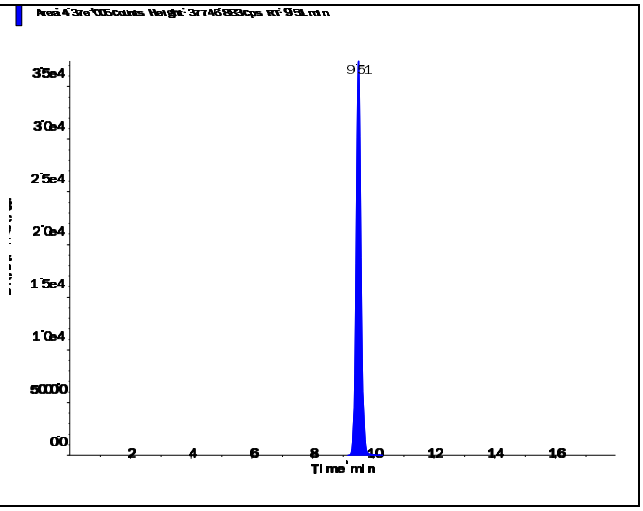

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	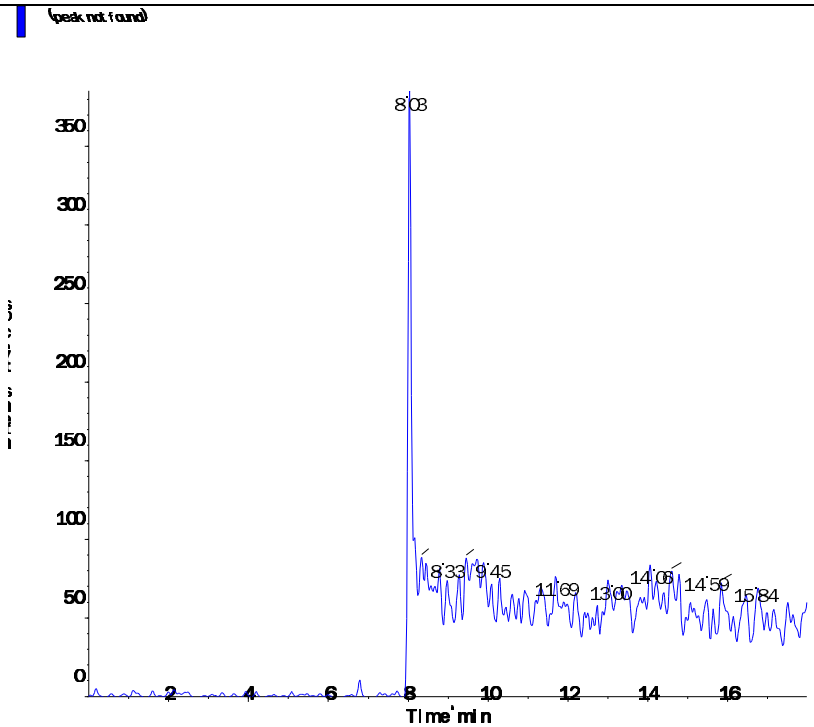
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.50 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	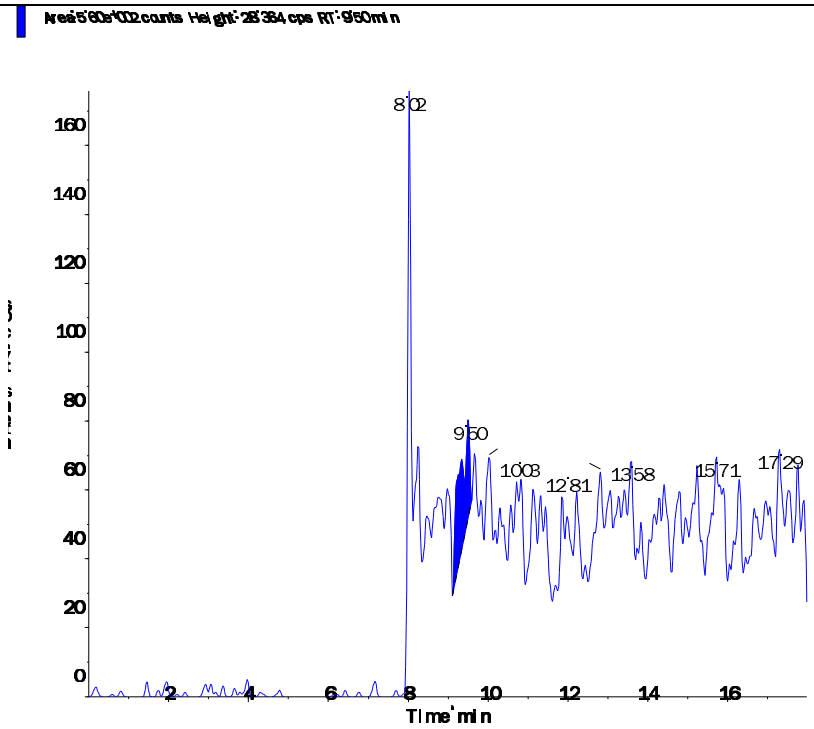

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Created with Analyst Reporter
Printed: 6/23/2016 5:08 PM

Data File	LM35461.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 3:36:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-12 CCB	**Injection Vial**	1.00
Data File	LM35461.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 3:36:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-12	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.660e+05	9.52	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.52(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

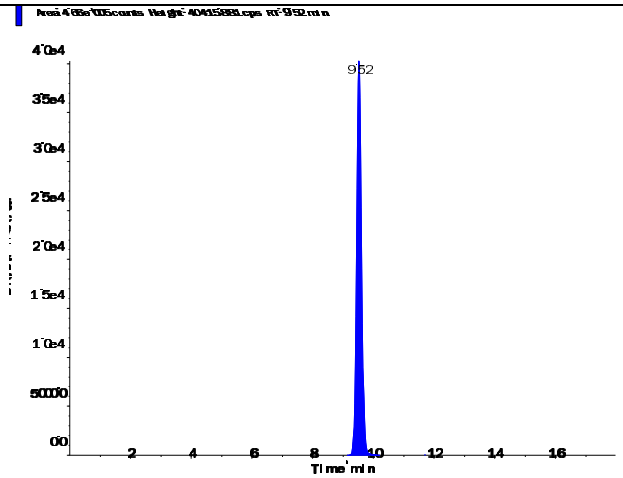

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

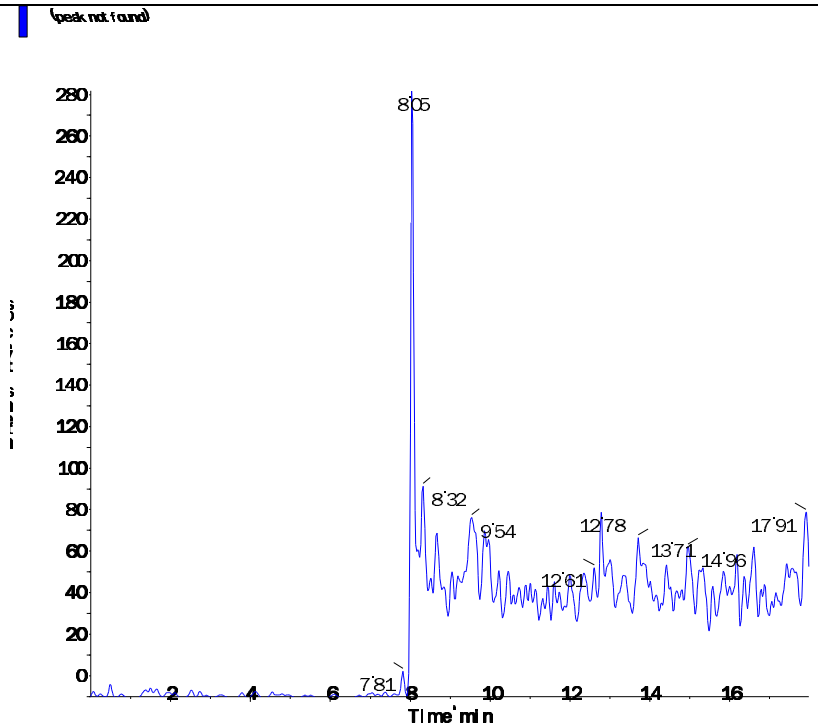

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

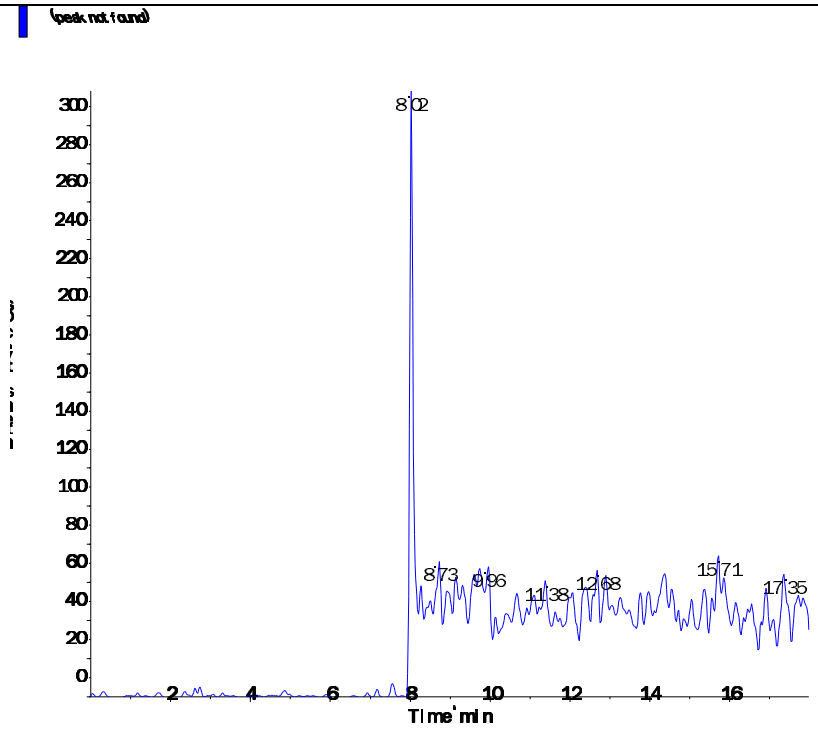

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Created with Analyst Reporter
Printed: 6/23/2016 4:53 PM

Data File	LM35418.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 5:44:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM35418.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 5:44:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.330e+05	8.77	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.850e+04	8.77	N/A	0.192
Perchlorate conf	1.000e+04	8.76	N/A	0.187

O18LP (Internal Standard)

RT (Exp. RT): 8.77(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

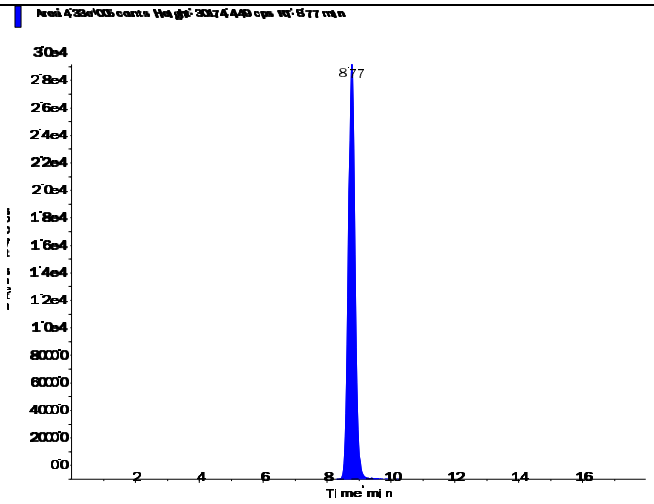

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Created with Analyst Reporter
Printed: 6/23/2016 4:53 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	8.77 (9.84) min
Calculated conc:	0.192 ng/ml
Area Ratio:	0.066
Sample Type:	(Unknown)

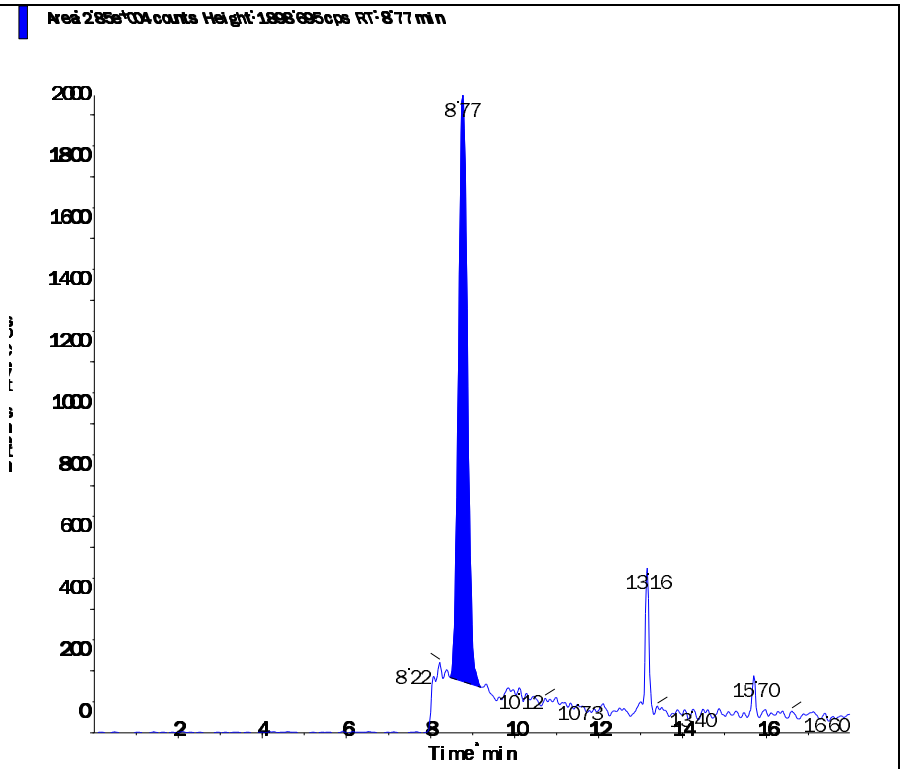

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	8.76 (9.84) min
Calculated conc:	0.187 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

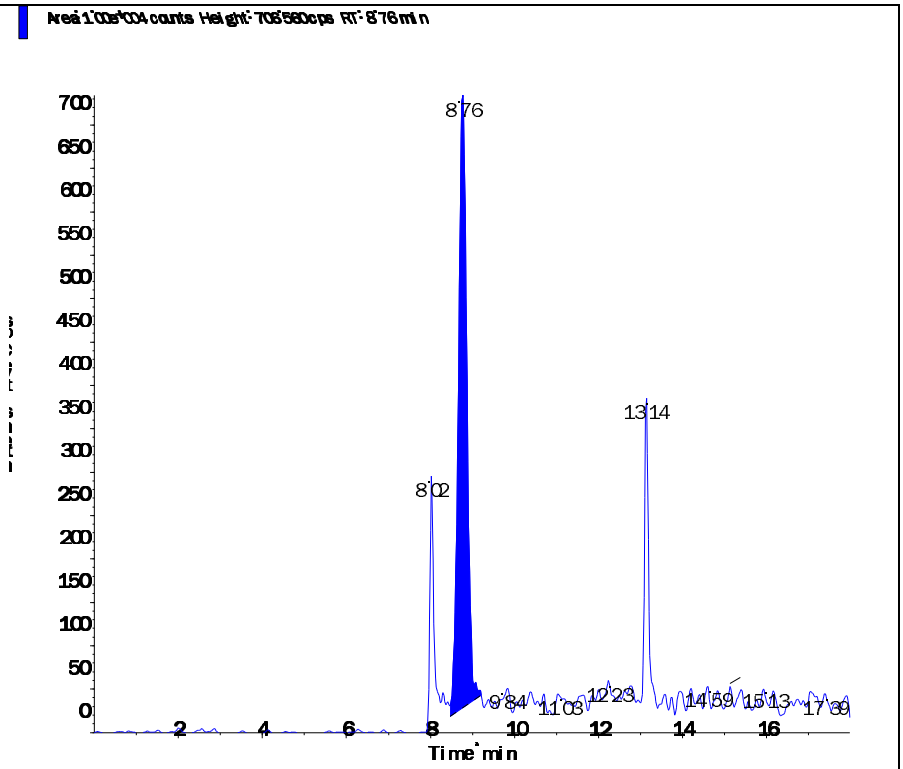

Printing Time: 6:50:16 PM
Printing Date: Wednesday, June 22, 2016

Sample Name: "WG573791-01 MCT (0.2ug/L)" Sample ID: "WG573791-01" File: "LM35418.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index: 1
Sample Type: Unknown
Concentration: N/A
Calculated Conc: 0.230 ug/L
Acq. Date: 6/22/2016
Acq. Time: 5:44:45 PM

Modified: No
Proc. Algorithm: Analyst Classic
Smoothing Factor: 2
Noise Threshold: 18.48 cps
Area Threshold: 92.40 cps
Num. Smooths: 5
Sep. Width: 0.20
Sep. Height: 0.01
Exp. Peak Ratio: 5.00
Exp. Adj. Ratio: 4.00
Exp. Val. Ratio: 3.00
RT Window: 30.000 sec
Expected RT: 9.84 min
Use Relative RT: Yes

Int. Type: Valley
Retention Time: 8.77 min
Area: 3.40e+004 counts
Height: 1990.014 cps
Start Time: 8.303 min
End Time: 9.417 min

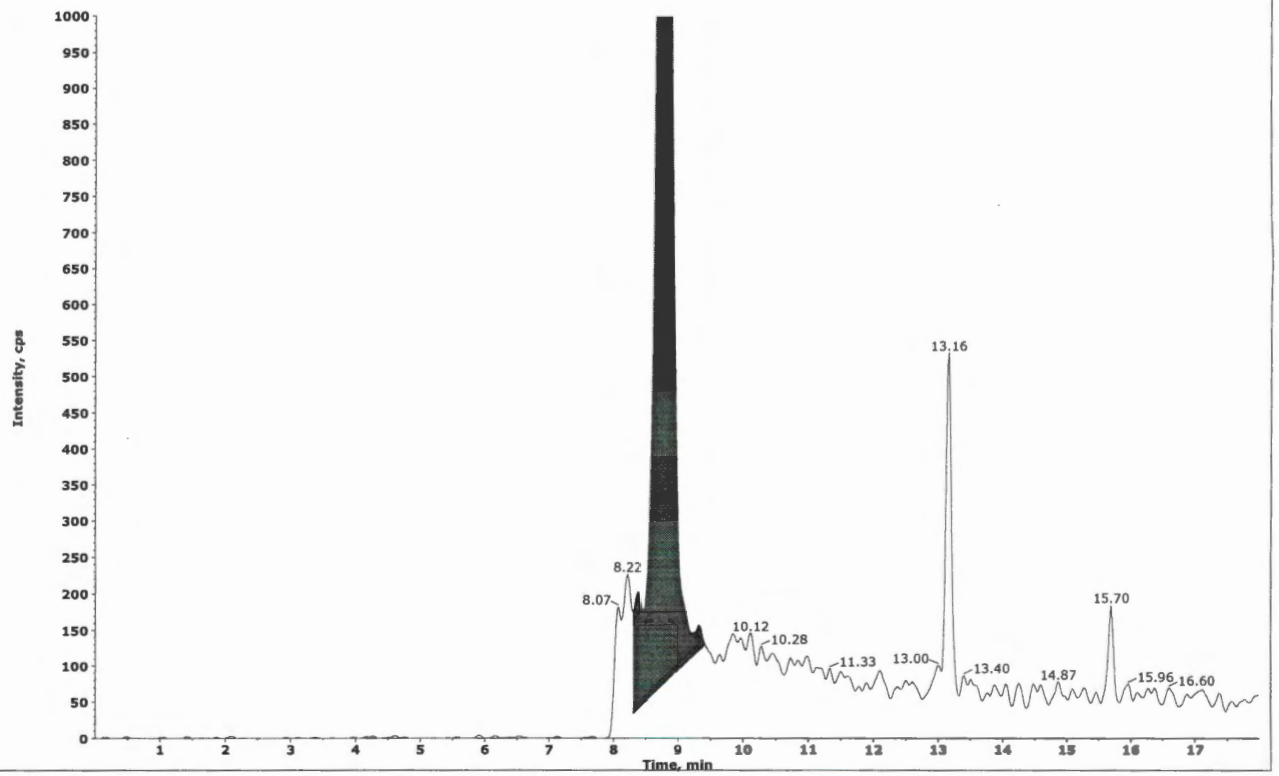

Collected by: N/A
Electronic Signature: no
Operator: lcmsl

Printing Time: 6:52:29 PM
Printing Date: Wednesday, June 22, 2016

Sample Name: "WG573791-01 MCT (0.2ug/L)" Sample ID: "WG573791-01" File: "LM35418.wiff"
Peak Name: "Perchlorate" Mass(es): "98.6/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.192 ug/L
Acq. Date:	6/22/2016
Acq. Time:	5:44:45 PM
Modified:	Yes
Proc. Algorithm:	Analyst Classic
Smoothing Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Sep. Width:	0.20
Sep. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Manual
Retention Time:	8.77 min
Area:	2.85e+004 counts
Height:	1898.695 cps
Start Time:	8.465 min
End Time:	9.194 min

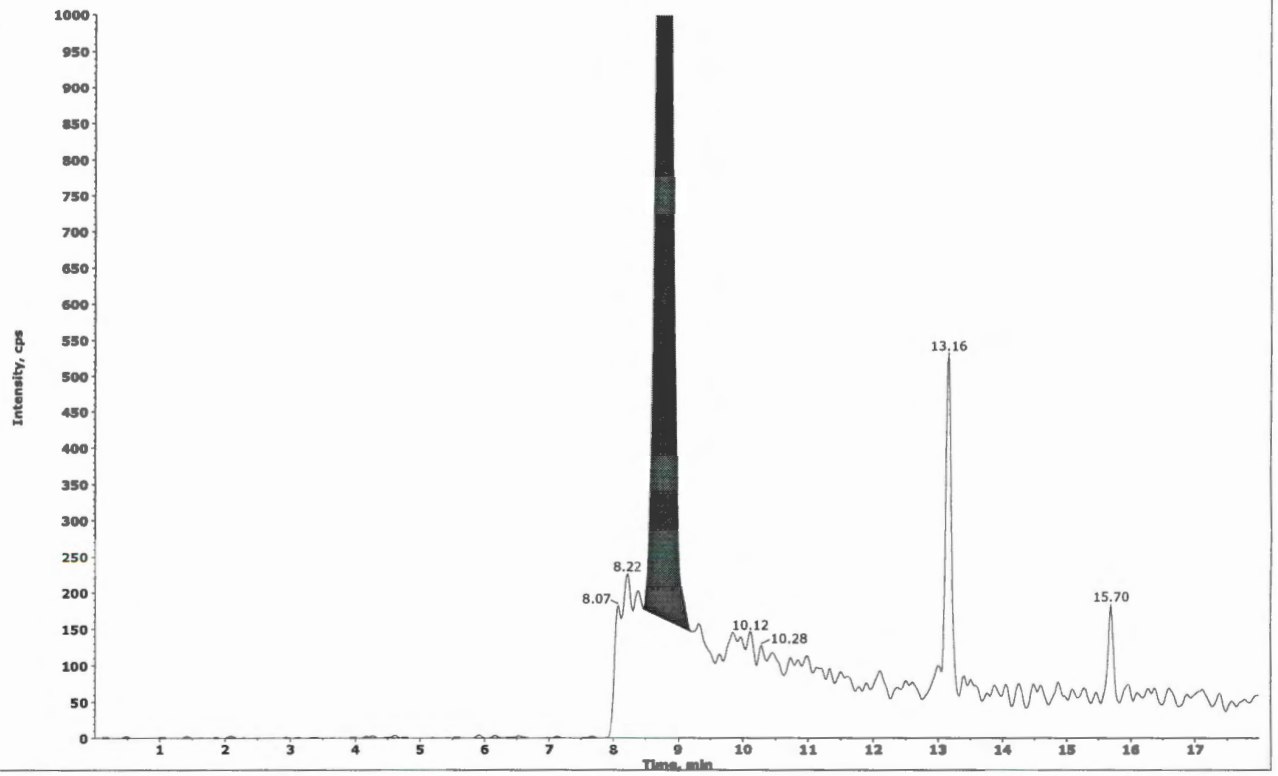

#4
JWR 06/22/16

✓ WD
6-24-16

Collected by: N/A
Electronic Signature: no
Operator: lcms1

2.2.1.5 Raw QC Data

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Created with Analyst Reporter
Printed: 6/23/2016 4:54 PM

Data File	LM35419.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 6:03:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-02 BLANK	**Injection Vial**	5.00
Data File	LM35419.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 6:03:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.360e+05	9.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	5.050e+02	9.25	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.30(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

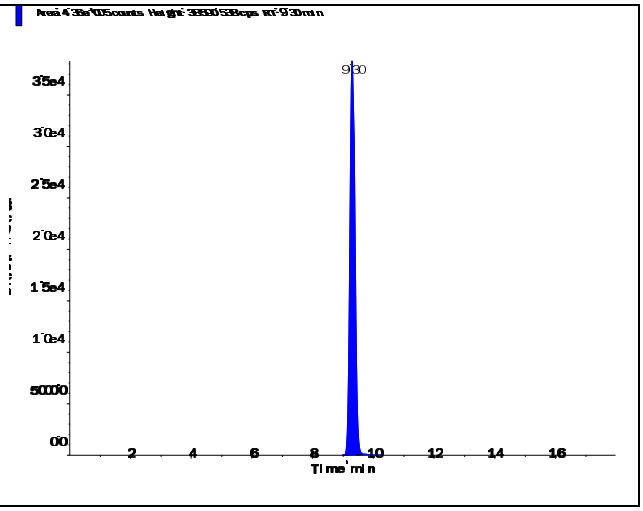

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

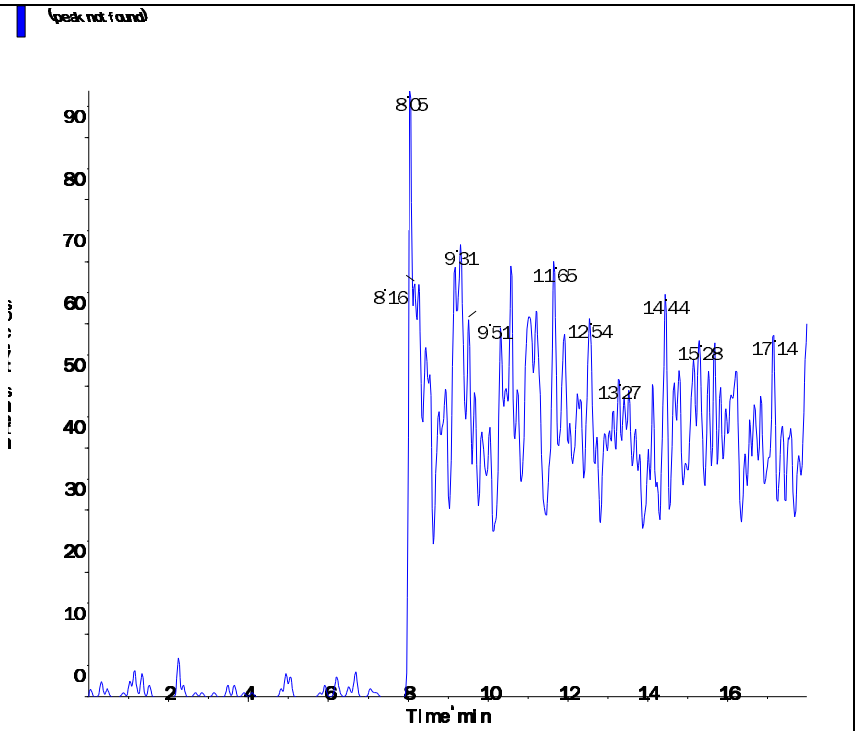

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.25 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

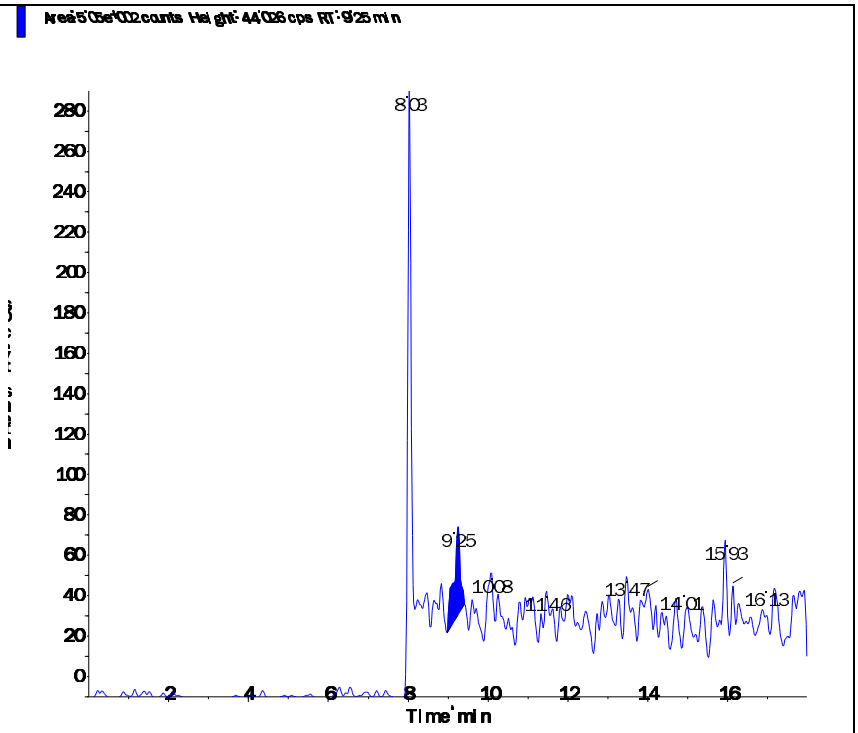

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Created with Analyst Reporter
Printed: 6/23/2016 4:54 PM

Data File	LM35420.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 6:22:36 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM35420.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 6:22:36 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.400e+05	9.33	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.030e+04	9.35	N/A	0.201
Perchlorate conf	1.150e+04	9.33	N/A	0.213

O18LP (Internal Standard)

RT (Exp. RT): 9.33(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

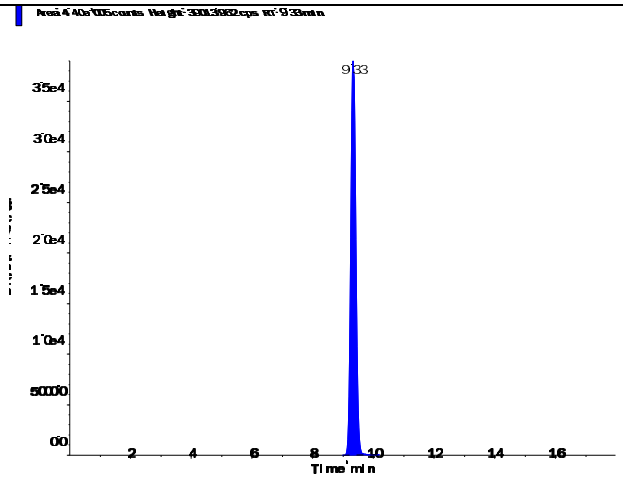

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

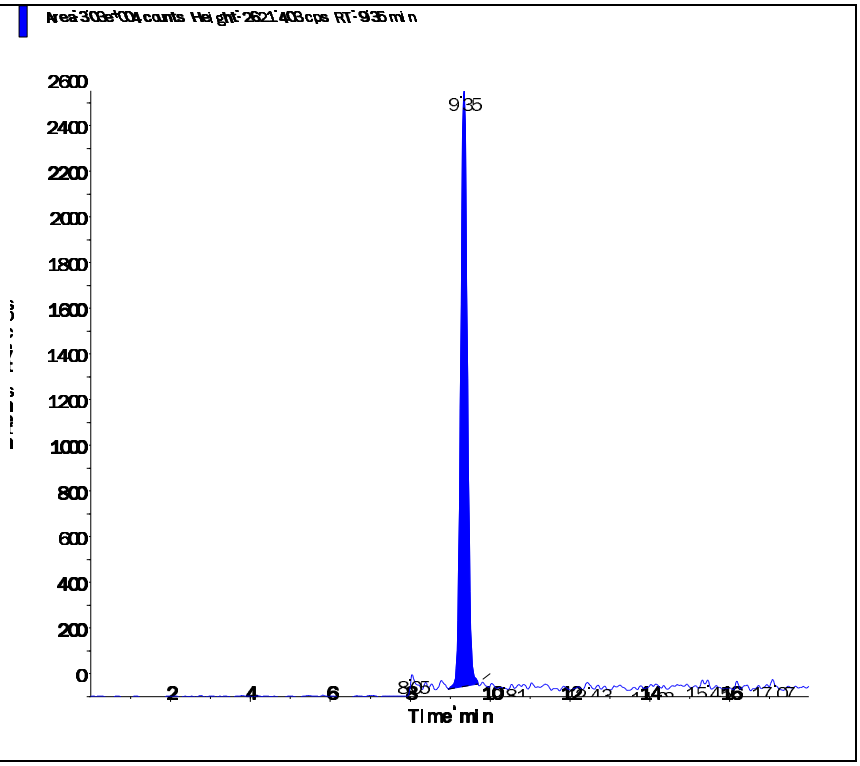

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.33 (9.84) min
Calculated conc:	0.213 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

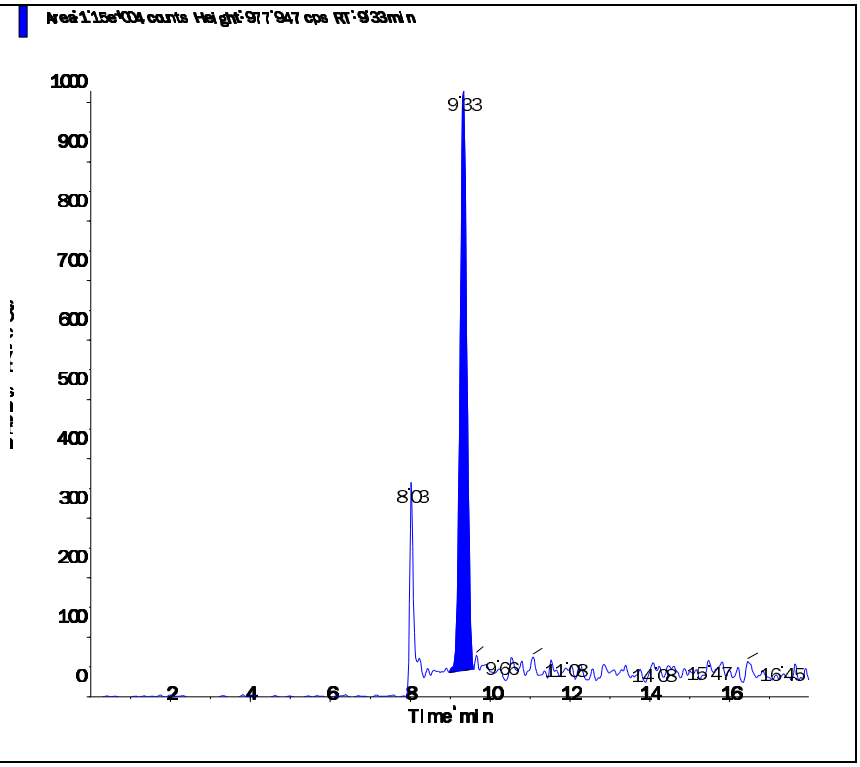

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/23/2016 4:55 PM

Data File	LM35421.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 6:41:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-04 LCS2 (0.2ug/L)	**Injection Vial**	7.00
Data File	LM35421.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 6:41:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.350e+05	9.36	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.200e+04	9.38	N/A	0.215
Perchlorate conf	1.150e+04	9.36	N/A	0.216

O18LP (Internal Standard)

RT (Exp. RT): 9.36(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

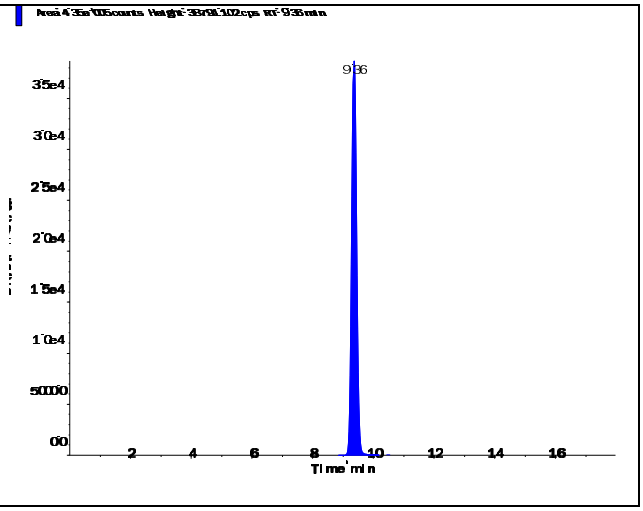

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	0.215 ng/ml
Area Ratio:	0.074
Sample Type:	(Unknown)

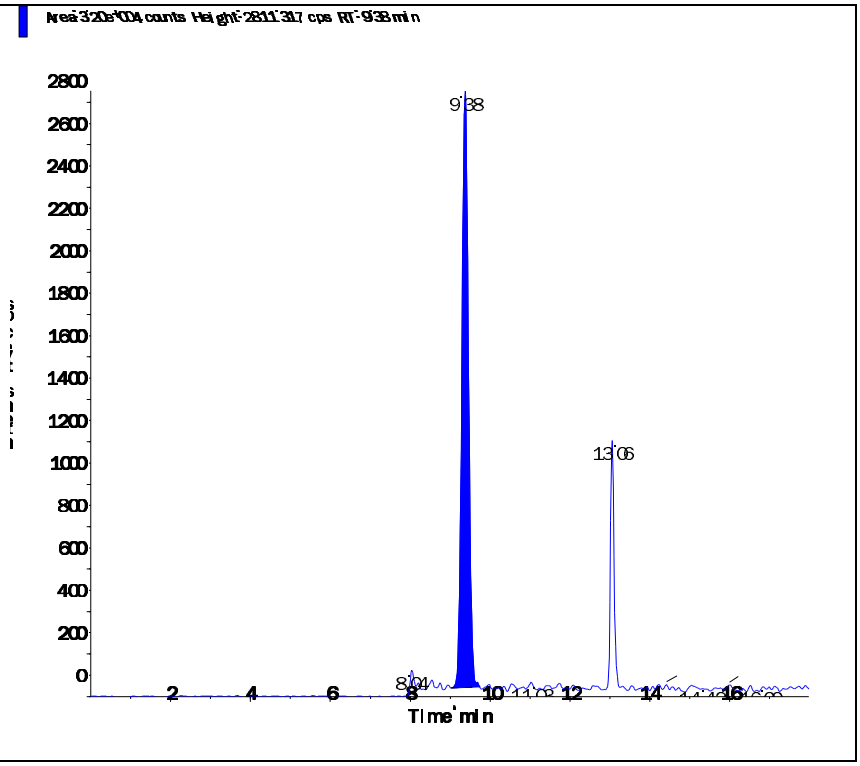

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.36 (9.84) min
Calculated conc:	0.216 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

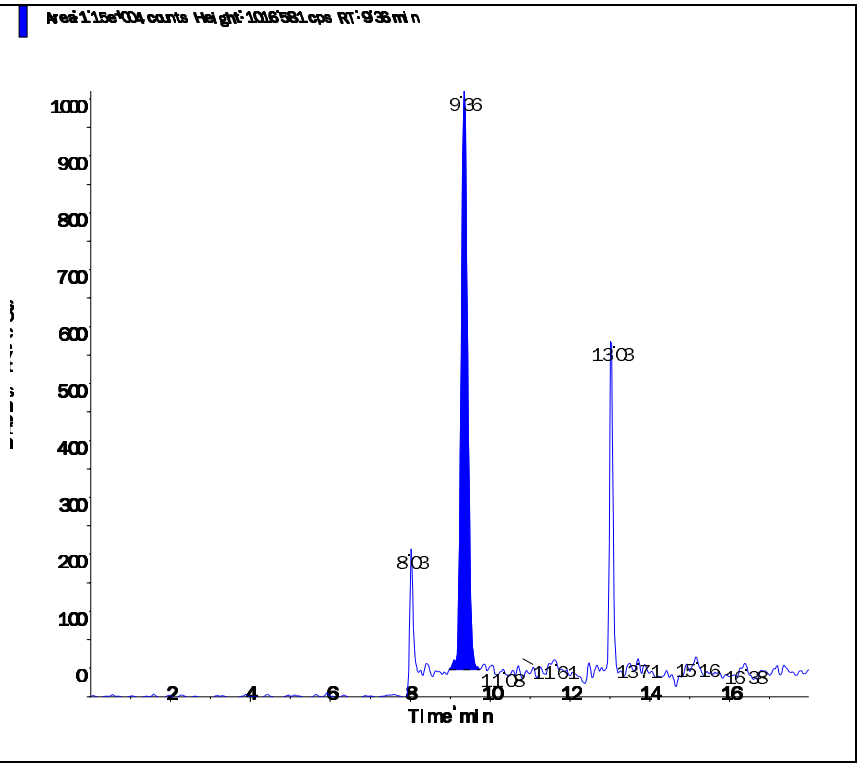

s.dataFile Page 2 of 2

2.3 Metals Data

2.3.1 Metals I C P Data

2.3.1.1 Summary Data

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW1-061016	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 11:57
Collect Date:	06/10/2016 07:55	**Dilution:**	1	**File ID:**	T3.062316.115734
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.0763	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Potassium, Total	7440-09-7	3.24		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW1-061016	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 14:09
Collect Date:	06/10/2016 07:55	**Dilution:**	10	**File ID:**	T3.062316.140930
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	47.2		5.00	2.50	1.25
Iron, Total	7439-89-6	20.2		2.00	1.00	0.500
Magnesium, Total	7439-95-4	41.4		10.0	5.00	2.50
Sodium, Total	7440-23-5	299		10.0	5.00	2.50

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW3-061016	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 12:01
Collect Date:	06/10/2016 09:05	**Dilution:**	1	**File ID:**	T3.062316.120126
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.100	U	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	0.418		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	20.3		1.00	0.500	0.250
Potassium, Total	7440-09-7	2.10		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW3-061016	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 14:13
Collect Date:	06/10/2016 09:05	**Dilution:**	10	**File ID:**	T3.062316.141326
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	30.2		5.00	2.50	1.25
Sodium, Total	7440-23-5	260		10.0	5.00	2.50

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	17WW08-061016	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 12:12
Collect Date:	06/10/2016 10:10	**Dilution:**	1	**File ID:**	T3.062316.121258
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	1.01		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	20.5		0.500	0.250	0.125
Magnesium, Total	7439-95-4	12.3		1.00	0.500	0.250
Potassium, Total	7440-09-7	1.94	J	2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	17WW08-061016	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 14:17
Collect Date:	06/10/2016 10:10	**Dilution:**	10	**File ID:**	T3.062316.141723
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	12.8		2.00	1.00	0.500
Sodium, Total	7440-23-5	136		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW24F-061016	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 12:16
Collect Date:	06/10/2016 14:40	**Dilution:**	1	**File ID:**	T3.062316.121653
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.466		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	6.94		0.500	0.250	0.125
Iron, Total	7439-89-6	0.284		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	4.40		1.00	0.500	0.250
Potassium, Total	7440-09-7	1.58	J	2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW24F-061016	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 14:21
Collect Date:	06/10/2016 14:40	**Dilution:**	10	**File ID:**	T3.062316.142120
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sodium, Total	7440-23-5	131		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.1.2 QC Summary Data

Example 6010 Calculations
Thermo Scientific iCAP

1.0 Initial Calibration (ICAL) Parameters
For a multi-point calibration, the system performs linear regression from data consisting of a blank and four standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG572929
Analyst: AC
Spike Analyst: AC
Run Date: 06/16/2016 09:15
Method: 3015
Balance: BAL019
Instrument: MW-1
Instrument Start: 06/16/2016 09:15

SOP: ME407 Revison 19
Spike Solution: STD76576
Spike Witness: VC
HNO3 Lot #: COA18905
HCL Lot #: COA18769
ICP Filters- fisher-Lot# RGT35619
40 & 50 ML. DIGESTION TU COA18772

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG572929-02	BLANK	1	40 mL	50 mL	206.938 g	206.935 g		
2	WG572929-03	LCS	1	40 mL	50 mL	210.153 g	210.151 g	5 mL	
3	L16060643-01	SAMP	1	40 mL	50 mL	207.856 g	207.852 g		06/20/16
4	L16060643-02	SAMP	1	40 mL	50 mL	204.497 g	204.494 g		06/20/16
5	L16060643-03	SAMP	1	40 mL	50 mL	207.772 g	207.768 g		06/20/16
6	L16060643-04	SAMP	1	40 mL	50 mL	207.139 g	207.134 g		06/20/16
7	L16060643-05	SAMP	1	40 mL	50 mL	205.74 g	205.731 g		06/20/16
8	L16060643-06	SAMP	1	40 mL	50 mL	208.714 g	208.698 g		06/20/16
9	L16060643-07	SAMP	1	40 mL	50 mL	206.348 g	206.336 g		06/20/16
10	L16060643-08	SAMP	1	40 mL	50 mL	207.957 g	207.944 g		06/20/16
11	L16060643-09	SAMP	1	40 mL	50 mL	206.486 g	206.475 g		06/20/16
12	L16060650-01	SAMP	1	40 mL	50 mL	205.084 g	205.057 g		06/24/16
13	L16060650-02	SAMP	1	40 mL	50 mL	208.779 g	208.757 g		06/24/16
14	L16060650-03	SAMP	1	40 mL	50 mL	209.27 g	209.262 g		06/24/16
15	L16060650-08	SAMP	1	40 mL	50 mL	206.678 g	206.659 g		06/24/16
16	L16060729-01	SAMP	1	40 mL	50 mL	207.286 g	207.265 g		06/24/16
17	L16060729-02	SAMP	1	40 mL	50 mL	207.115 g	207.107 g		06/24/16
18	L16060729-03	SAMP	1	40 mL	50 mL	207.445 g	207.43 g		06/24/16
19	L16060730-01	SAMP	1	40 mL	50 mL	206.076 g	206.069 g		06/24/16
20	L16060730-02	SAMP	1	40 mL	50 mL	209.237 g	209.22 g		06/24/16
21	L16060730-03	SAMP	1	40 mL	50 mL	208.764 g	208.758 g		06/24/16
22	WG572929-01	REF	1	40 mL	50 mL	206.882 g	206.875 g		
23	L16060806-01	RS01	1	40 mL	50 mL	206.882 g	206.875 g		06/24/16
24	WG572929-04	MS	1	40 mL	50 mL	213.169 g	213.153 g	5 mL	
25	L16060806-03	MS01	1	40 mL	50 mL	213.169 g	213.153 g	5 mL	06/24/16
26	WG572929-05	MSD	1	40 mL	50 mL	215.158 g	215.146 g	5 mL	
27	L16060806-04	SD01	1	40 mL	50 mL	215.158 g	215.146 g	5 mL	06/24/16

L16060729-01	filtered digestate

Analyst: Andrew R Cochrane

Reviewer:

MW_DIG - Modified 09/30/2009
PDF ID: 4809574
Report generated: 06/16/2016 10:09

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062316T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573560,573561

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.062316.094745	WG573930-01	Calibration Point		1		06/23/16 09:47
2	T3.062316.095145	WG573930-02	Calibration Point		1		06/23/16 09:51
3	T3.062316.095544	WG573930-03	Calibration Point		1		06/23/16 09:55
4	T3.062316.095942	WG573930-04	Calibration Point		1		06/23/16 09:59
5	T3.062316.100322	WG573930-05	Calibration Point		1		06/23/16 10:03
6	T3.062316.100658	WG573930-06	Initial Calibration Verification		1		06/23/16 10:06
7	T3.062316.101036	WG573930-07	Initial Calib Blank		1		06/23/16 10:10
8	T3.062316.101434	WG573930-08	Low Level Initial Calibration V		1		06/23/16 10:14
9	T3.062316.101833	WG573930-09	Low Level Initial Calibration V		1		06/23/16 10:18
10	T3.062316.102228	WG573930-10	Interference Check		1		06/23/16 10:22
11	T3.062316.102622	WG573930-11	Interference Check		1		06/23/16 10:26
12	T3.062316.103007	WG573930-12	CCV		1		06/23/16 10:30
13	T3.062316.103346	WG573930-13	CCB		1		06/23/16 10:33
14	T3.062316.103746	WG572929-02	Method/Prep Blank	40/50	1		06/23/16 10:37
15	T3.062316.104808	WG572929-03	Laboratory Control S	40/50	1		06/23/16 10:48
16	T3.062316.105149	WG572929-01	Reference Sample		1	L16060806-01	06/23/16 10:51
17	T3.062316.105545	WG572929-04	Matrix Spike	40/50	1	L16060806-01	06/23/16 10:55
18	T3.062316.105925	WG572929-05	Matrix Spike Duplica	40/50	1	L16060806-01	06/23/16 10:59
19	T3.062316.110304	L16060643-01	15-13-8 S1	40/50	1		06/23/16 11:03
20	T3.062316.110701	WG573560-01	Post Digestion Spike		1	L16060643-01	06/23/16 11:07
21	T3.062316.111031	WG573560-02	Serial Dilution		5	L16060643-01	06/23/16 11:10
22	T3.062316.111429	WG573560-02	Serial Dilution		25	L16060643-01	06/23/16 11:14
23	T3.062316.111829	WG573930-14	CCV		1		06/23/16 11:18
24	T3.062316.112207	WG573930-15	CCB		1		06/23/16 11:22
25	T3.062316.112606	L16060643-02	15-13-8 S2	40/50	1		06/23/16 11:26
26	T3.062316.113003	L16060643-03	15-13-8 S3	40/50	1		06/23/16 11:30
27	T3.062316.113358	L16060643-04	15-11-1 S1	40/50	1		06/23/16 11:33
28	T3.062316.113754	L16060643-05	2208-118 W2	40/50	1		06/23/16 11:37
29	T3.062316.114150	L16060643-06	2208-118 W1	40/50	1		06/23/16 11:41
30	T3.062316.114545	L16060643-07	2208-118 S1	40/50	1		06/23/16 11:45
31	T3.062316.114943	L16060643-08	2208-118 S2	40/50	1		06/23/16 11:49
32	T3.062316.115338	L16060643-09	2208-118 S3	40/50	1		06/23/16 11:53
33	T3.062316.115734	L16060650-01	MW1-061016	40/50	1		06/23/16 11:57
34	T3.062316.120126	L16060650-02	MW3-061016	40/50	1		06/23/16 12:01

Page: 1 Approved: June 24, 2016

Kim H. Rhoden

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062316T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573560,573561

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.062316.120521	WG573930-16	CCV		1		06/23/16 12:05
36	T3.062316.120859	WG573930-17	CCB		1		06/23/16 12:08
37	T3.062316.121258	L16060650-03	17WW08-061016	40/50	1		06/23/16 12:12
38	T3.062316.121653	L16060650-08	18WW24F-061016	40/50	1		06/23/16 12:16
39	T3.062316.122048	WG573930-18	CCV		1		06/23/16 12:20
40	T3.062316.122427	WG573930-19	CCB		1		06/23/16 12:24
41	T3.062316.122826	WG573102-02	Method/Prep Blank	40/50	1		06/23/16 12:28
42	T3.062316.123225	WG573102-03	Laboratory Control S	40/50	1		06/23/16 12:32
43	T3.062316.123606	WG573102-04	Filter Blank		1		06/23/16 12:36
44	T3.062316.124005	WG573102-01	Reference Sample		1	L16060787-09	06/23/16 12:40
45	T3.062316.124400	WG573102-05	Matrix Spike	40/50	1	L16060787-09	06/23/16 12:44
46	T3.062316.124740	WG573102-06	Matrix Spike Duplica	40/50	1	L16060787-09	06/23/16 12:47
47	T3.062316.125119	L16060947-02	\#2 (EAST END)	40/50	1		06/23/16 12:51
48	T3.062316.125512	WG573561-01	Post Digestion Spike		1	L16060947-02	06/23/16 12:55
49	T3.062316.125851	WG573561-02	Serial Dilution		5	L16060947-02	06/23/16 12:58
50	T3.062316.130248	WG573561-02	Serial Dilution		25	L16060947-02	06/23/16 13:02
51	T3.062316.130647	WG573930-20	CCV		1		06/23/16 13:06
52	T3.062316.131025	WG573930-21	CCB		1		06/23/16 13:10
53	T3.062316.131425	L16060947-05	\#5 (WEST END)	40/50	1		06/23/16 13:14
54	T3.062316.131818	L16060947-08	\#8 (RAILROAD CULVERT)	40/50	1		06/23/16 13:18
55	T3.062316.132213	L16060763-01	WVOG	40/50	100		06/23/16 13:22
56	T3.062316.132618	L16060837-02	INS-WL01-061316	40/50	1		06/23/16 13:26
57	T3.062316.133005	L16060857-01	2204-129A RW2 (B)	40/50	1		06/23/16 13:30
58	T3.062316.133402	L16060857-02	2204-129A RW2 (U)	40/50	1		06/23/16 13:34
59	T3.062316.133759	WG573930-22	CCV		1		06/23/16 13:37
60	T3.062316.134137	WG573930-23	CCB		1		06/23/16 13:41
61	T3.062316.134536	L16060729-01	A09-MW10-Y1S2	40/50	1		06/23/16 13:45
62	T3.062316.134934	L16060729-02	A09-MW11-Y1S2	40/50	1		06/23/16 13:49
63	T3.062316.135331	L16060729-03	A09-MW12-Y1S2	40/50	1		06/23/16 13:53
64	T3.062316.135724	L16060730-01	18CPTMW14-061316	40/50	1		06/23/16 13:57
65	T3.062316.140125	L16060730-02	18CPTMW14FD-061316	40/50	1		06/23/16 14:01
66	T3.062316.140527	L16060730-03	18CPTMW24-061316	40/50	1		06/23/16 14:05
67	T3.062316.140930	L16060650-01	MW1-061016	40/50	10		06/23/16 14:09
68	T3.062316.141326	L16060650-02	MW3-061016	40/50	10		06/23/16 14:13

Page: 2 Approved: June 24, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062316T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573560,573561

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.062316.141723	L16060650-03	17WW08-061016	40/50	10		06/23/16 14:17
70	T3.062316.142120	L16060650-08	18WW24F-061016	40/50	10		06/23/16 14:21
71	T3.062316.142518	WG573930-24	CCV		1		06/23/16 14:25
72	T3.062316.142857	WG573930-25	CCB		1		06/23/16 14:28
73	T3.062316.143257	L16060729-01	A09-MW10-Y1S2	40/50	10		06/23/16 14:32
74	T3.062316.143655	L16060729-03	A09-MW12-Y1S2	40/50	10		06/23/16 14:36
75	T3.062316.144053	L16060730-01	18CPTMW14-061316	40/50	100		06/23/16 14:40
76	T3.062316.144451	L16060730-02	18CPTMW14FD-061316	40/50	100		06/23/16 14:44
77	T3.062316.144849	L16060730-03	18CPTMW24-061316	40/50	100		06/23/16 14:48
78	T3.062316.145248	L16060798-06	N. DOCK FLUME	1/50	1		06/23/16 14:52
79	T3.062316.145646	L16060837-02	INS-WL01-061316	40/50	1		06/23/16 14:56
80	T3.062316.150032	L16060763-01	WVOG	40/50	2000		06/23/16 15:00
81	T3.062316.150429	WG573930-26	CCV		1		06/23/16 15:04
82	T3.062316.150809	WG573930-27	CCB		1		06/23/16 15:08
83	T3.062316.151209	WG573930-28	Low Level Continuing Calibra		1		06/23/16 15:12
84	T3.062316.151607	L16060724-01	ABW_06142016	40/50	100		06/23/16 15:16
85	T3.062316.152011	L16060762-01	MW-24-001	40/50	1		06/23/16 15:20
86	T3.062316.152407	L16060779-18	477-TS02-W0001	40/50	1		06/23/16 15:24
87	T3.062316.152807	L16060787-01	EB04	40/50	1		06/23/16 15:28
88	T3.062316.153205	L16060787-10	U517TW006C	40/50	1		06/23/16 15:32
89	T3.062316.153601	L16060724-02	ABW_06142016	40/50	100		06/23/16 15:36
90	T3.062316.154005	L16060787-18	U517TW008A	40/50	1		06/23/16 15:40
91	T3.062316.154401	L16060787-19	EB05	40/50	1		06/23/16 15:44
92	T3.062316.154800	L16060798-02	PERMEATE	1/50	1		06/23/16 15:48
93	T3.062316.155157	L16060798-04	BLEED	1/50	2		06/23/16 15:51
94	T3.062316.155553	WG573930-29	CCV		1		06/23/16 15:55
95	T3.062316.155920	WG573930-30	CCB		1		06/23/16 15:59
96	T3.062316.160319	WG573930-31	Interference Check		1		06/23/16 16:03
97	T3.062316.160713	WG573930-32	Interference Check		1		06/23/16 16:07
98	T3.062316.161057	WG573930-33	CCV		1		06/23/16 16:10
99	T3.062316.161435	WG573930-34	CCB		1		06/23/16 16:14
100	T3.062316.162045	WG573930-35	Low Level Continuing Calibra		1		06/23/16 16:20

Page: 3 Approved: June 24, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062716T3.5R.TXT

Analyst1: JYH Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 573560,574476

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.062716.162728	WG574461-01	Calibration Point		1		06/27/16 16:27
2	T3.062716.163125	WG574461-02	Calibration Point		1		06/27/16 16:31
3	T3.062716.163522	WG574461-03	Calibration Point		1		06/27/16 16:35
4	T3.062716.163919	WG574461-04	Calibration Point		1		06/27/16 16:39
5	T3.062716.164256	WG574461-05	Calibration Point		1		06/27/16 16:42
6	T3.062716.164633	WG574461-06	Initial Calibration Verification		1		06/27/16 16:46
7	T3.062716.165010	WG574461-07	Initial Calib Blank		1		06/27/16 16:50
8	T3.062716.165407	WG574461-08	Low Level Initial Calibration V		1		06/27/16 16:54
9	T3.062716.165800	WG574461-09	Interference Check		1		06/27/16 16:58
10	T3.062716.170150	WG574461-10	Interference Check		1		06/27/16 17:01
11	T3.062716.170532	WG574461-11	CCV		1		06/27/16 17:05
12	T3.062716.170909	WG574461-12	CCB		1		06/27/16 17:09
13	T3.062716.171308	WG572929-02	Method/Prep Blank	40/50	1		06/27/16 17:13
14	T3.062716.171707	WG572929-03	Laboratory Control S	40/50	1		06/27/16 17:17
15	T3.062716.172046	WG572929-01	Reference Sample		1	L16060806-01	06/27/16 17:20
16	T3.062716.172440	WG572929-04	Matrix Spike	40/50	1	L16060806-01	06/27/16 17:24
17	T3.062716.172819	WG572929-05	Matrix Spike Duplica	40/50	1	L16060806-01	06/27/16 17:28
18	T3.062716.173158	L16060729-01	A09-MW10-Y1S2	40/50	1		06/27/16 17:31
19	T3.062716.173552	L16060729-02	A09-MW11-Y1S2	40/50	1		06/27/16 17:35
20	T3.062716.173946	L16060729-03	A09-MW12-Y1S2	40/50	1		06/27/16 17:39
21	T3.062716.174337	L16060643-03	15-13-8 S3	40/50	1		06/27/16 17:43
22	T3.062716.174728	WG573560-04	Serial Dilution		5	L16060643-03	06/27/16 17:47
23	T3.062716.175126	WG574461-13	CCV		1		06/27/16 17:51
24	T3.062716.175503	WG574461-14	CCB		1		06/27/16 17:55
25	T3.062716.175902	WG573560-03	Post Digestion Spike		1	L16060643-03	06/27/16 17:59
26	T3.062716.180241	WG574461-15	CCV		1		06/27/16 18:02
27	T3.062716.180618	WG574461-16	CCB		1		06/27/16 18:06
28	T3.062716.181016	WG573869-02	Method/Prep Blank	40/50	1		06/27/16 18:10
29	T3.062716.181413	WG573869-03	Laboratory Control S	40/50	1		06/27/16 18:14
30	T3.062716.181752	WG573699-01	Fluid Blank 1		1		06/27/16 18:17
31	T3.062716.182149	L16061068-04	C01-061716	40/50	1		06/27/16 18:21
32	T3.062716.182543	L16061068-05	C01FD-061716	40/50	1		06/27/16 18:25
33	T3.062716.182935	L16061068-11	MW19F-061716	40/50	1		06/27/16 18:29
34	T3.062716.183322	L16061068-13	MW18F-061716		1	WG573869-01	06/27/16 18:33

Page: 1 Approved: June 29, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062716T3.5R.TXT

Analyst1: JYH Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 573560,574476

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.062716.183713	L16061068-15	MW18FMS-061716	40/50	1	WG573869-04	06/27/16 18:37
36	T3.062716.184051	L16061068-17	MW18FMSD-061716	40/50	1	WG573869-05	06/27/16 18:40
37	T3.062716.184428	L16061130-01	MW-23-012	40/50	1		06/27/16 18:44
38	T3.062716.184824	WG574461-17	CCV		1		06/27/16 18:48
39	T3.062716.185157	WG574461-18	CCB		1		06/27/16 18:51
40	T3.062716.185555	L16061130-02	MW-23-003	40/50	1		06/27/16 18:55
41	T3.062716.185947	L16061130-03	MW-23-013	40/50	1		06/27/16 18:59
42	T3.062716.190341	L16061130-04	MW-23-001	40/50	1		06/27/16 19:03
43	T3.062716.190734	L16061130-05	EB (1) WATER A	40/50	1		06/27/16 19:07
44	T3.062716.191132	L16061161-01	062116-PS-CB021	40/50	1		06/27/16 19:11
45	T3.062716.191527	L16061161-02	062116-PS-CB021	40/50	1		06/27/16 19:15
46	T3.062716.191921	L16061161-03	062116-PS-OF2BS	40/50	1		06/27/16 19:19
47	T3.062716.192313	L16061161-04	062116-PS-OF2BS	40/50	1		06/27/16 19:23
48	T3.062716.192706	L16061161-05	062116-PS-CB022	40/50	1		06/27/16 19:27
49	T3.062716.193100	L16061161-06	062116-PS-CB022	40/50	1		06/27/16 19:31
50	T3.062716.193453	WG574461-19	CCV		1		06/27/16 19:34
51	T3.062716.193831	WG574461-20	CCB		1		06/27/16 19:38
52	T3.062716.194227	L16061190-01	USDA / 04/07/16	40/50	1		06/27/16 19:42
53	T3.062716.194623	L16061190-02	USDA / 05/06/16	40/50	1		06/27/16 19:46
54	T3.062716.195012	L16061252-01	35006822000-W-1-06-22-16	40/50	1		06/27/16 19:50
55	T3.062716.195404	L16061164-11	16F1336-11	5/50	1		06/27/16 19:54
56	T3.062716.195756	WG574276-01	Post Digestion Spike		1	L16061130-05	06/27/16 19:57
57	T3.062716.200134	WG574276-02	Serial Dilution		5	L16061130-05	06/27/16 20:01
58	T3.062716.200528	WG574276-02	Serial Dilution		25	L16061130-05	06/27/16 20:05
59	T3.062716.200924	WG574461-21	CCV		1		06/27/16 20:09
60	T3.062716.201301	WG574461-22	CCB		1		06/27/16 20:13
61	T3.062716.201659	WG574461-23	Low Level Continuing Calibra		1		06/27/16 20:16

Page: 2 Approved: June 29, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 23-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 573930
Runlog ID: 75880
Analytical Workgroups: 573560,573561

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	806,762,837
Level 4	650,729,730.779,787
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer:

Secondary Reviewer:
24-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-24-2016 11:23:59

Microbac Laboratories Inc.

Data Checklist

Date: 27-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 574461
Runlog ID: 75972
Analytical Workgroups: 573560,574476

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1130
Level 4	1068,729
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer:

Secondary Reviewer:
29-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-29-2016 13:55:52

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010C

AAB#: WG573560

Login Number: L16060650

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW1-061016	01	06/10/16					06/16/2016	6.1	180		06/23/16	13.2	180	
MW1-061016	01	06/10/16					06/16/2016	6.1	180		06/23/16	13.3	180	
MW3-061016	02	06/10/16					06/16/2016	6	180		06/23/16	13.2	180	
MW3-061016	02	06/10/16					06/16/2016	6	180		06/23/16	13.1	180	
17WW08-061016	03	06/10/16					06/16/2016	6	180		06/23/16	13.2	180	
17WW08-061016	03	06/10/16					06/16/2016	6	180		06/23/16	13.1	180	
18WW24F-061016	08	06/10/16					06/16/2016	5.8	180		06/23/16	13	180	
18WW24F-061016	08	06/10/16					06/16/2016	5.8	180		06/23/16	12.9	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4822227
Report generated 06/24/2016 09:05

METHOD BLANK SUMMARY

Login Number: L16060650
Blank File ID: T3.062316.103746
Prep Date: 06/16/16 09:15
Analyzed Date: 06/23/16 10:37
Analyst: JYH

Work Group: WG573560
Blank Sample ID: WG572929-02
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572929-03	T3.062316.104808	06/23/16 10:48	01
MW1-061016	L16060650-01	T3.062316.115734	06/23/16 11:57	01
MW3-061016	L16060650-02	T3.062316.120126	06/23/16 12:01	01
17WW08-061016	L16060650-03	T3.062316.121258	06/23/16 12:12	01
18WW24F-061016	L16060650-08	T3.062316.121653	06/23/16 12:16	01
MW1-061016	L16060650-01	T3.062316.140930	06/23/16 14:09	DL01
MW3-061016	L16060650-02	T3.062316.141326	06/23/16 14:13	DL01
17WW08-061016	L16060650-03	T3.062316.141723	06/23/16 14:17	DL01
18WW24F-061016	L16060650-08	T3.062316.142120	06/23/16 14:21	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4822228
Report generated 06/24/2016 09:16

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060650 Prep Date: 06/16/16 09:15 Sample ID: WG572929-02
Instrument ID: ICP-THERMO3 Run Date: 06/23/16 10:37 Prep Method: 3015
File ID: T3.062316.103746 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG573560 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-23-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Aluminum, Total	0.0500	0.200	0.0500	1	U
Beryllium, Total	0.00500	0.0200	0.00500	1	U
Calcium, Total	0.125	0.500	0.125	1	U
Iron, Total	0.0500	0.200	0.0500	1	U
Magnesium, Total	0.250	1.00	0.250	1	U
Potassium, Total	0.500	2.00	0.500	1	U
Selenium, Total	0.00500	0.0200	0.00500	1	U
Sodium, Total	0.250	1.00	0.250	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4822229
24-JUN-2016 09:16

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060650 Run Date: 06/23/2016 Sample ID: WG572929-03
Instrument ID: ICP-THERMO3 Run Time: 10:48 Prep Method: 3015
File ID: T3.062316.104808 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG573560 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76576 Cal ID: ICP-TH-23-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Aluminum, Total	6.25	6.69	107	80 - 120	
Beryllium, Total	0.0313	0.0330	106	80 - 120	
Calcium, Total	6.25	6.88	110	80 - 120	
Iron, Total	2.50	2.70	108	80 - 120	
Magnesium, Total	6.25	6.70	107	80 - 120	
Potassium, Total	31.3	33.3	107	80 - 120	
Selenium, Total	0.250	0.256	102	80 - 120	
Sodium, Total	31.3	33.9	108	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4822230
Report generated: 06/24/2016 09:16

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060650 Cal ID: ICP-THERMO3 - Worknum: WG573560
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG572929-01 File ID: T3.062316.105149 Dil: 1 Matrix: WATER
Sample ID: WG572929-04 MS File ID: T3.062316.105545 Dil: 1 Units: mg/L
Sample ID: WG572929-05 MSD File ID: T3.062316.105925 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Aluminum	0.0598	6.25	6.57	104	6.25	6.63	105	0.820	80 - 120	20	
Beryllium	ND	0.0313	0.0323	103	0.0313	0.0327	104	1.04	80 - 120	20	
Calcium	53.8	6.25	58.6	77.4	6.25	59.6	93.0	1.65	80 - 120	20	*
Iron	0.504	2.50	3.14	106	2.50	3.29	112	4.66	80 - 120	20	
Magnesium	9.46	6.25	16.0	105	6.25	15.9	103	0.721	80 - 120	20	
Potassium	3.10	31.3	35.9	105	31.3	36.1	106	0.475	80 - 120	20	
Selenium	ND	0.250	0.254	102	0.250	0.246	98.4	3.13	80 - 120	20	
Sodium	11.0	31.3	44.0	106	31.3	43.1	103	1.97	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4822231
Report generated 06/24/2016 09:16

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16060650 **Worknum:** WG573560
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG573560-02 **File ID:** T3.062316.111031 **Dil:** 5 **Units:** ug/L
Sample: L16060643-01 **File ID:** T3.062316.110304 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	66.2		90.5		36.80	E
Beryllium	ND	U	ND	U		
Calcium	38300		35600		6.95	
Iron	55.1		ND	U		
Magnesium	6970		6480		7.03	
Potassium	822		881		7.15	
Selenium	0.460		33.6		7200.00	E
Sodium	5220		5030		3.52	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4822225
06/24/2016 09:16

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060650 **Worknum:** WG573560
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG573560-01 **File ID:** T3.062316.110701 **Dil:** 1 **Units:** ug/L
Sample ID: L16060643-01 **File ID:** T3.062316.110304 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	5350		66.2	F	5000	105.8	75 - 125	
BERYLLIUM	26.1		0	U	25	104.2	75 - 125	
CALCIUM	39500		38300		5000	100.0	75 - 125	
IRON	2170		55.1	F	2000	106.2	75 - 125	
MAGNESIUM	11700		6970		5000	107.6	75 - 125	
POTASSIUM	27200		822	F	25000	106.0	75 - 125	
SELENIUM	205		0	U	200	102.4	75 - 125	
SODIUM	31300		5220		25000	106.5	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4822226
Report generated: 06/24/2016 09:16

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16060650	Workgroup (AAB#):	WG573560
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG573930	Initial Calibration Date:	23-JUN-2016 10:03

	WG573930-01		WG573930-02		WG573930-03		WG573930-04		WG573930-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.00118	.1	0.00193	.2	0.00268	10	0.0882	20	0.173	.999945	
BERYLLIUM	0	0.000880	.0005	0.00136	.001	0.00170	.05	0.0518	.1	0.101	.999922	
CALCIUM	0	0.00189	.1	0.00547	.2	0.00991	10	0.469	20	0.927	.999971	
IRON	0	-0.0000300	.04	0.000460	.08	0.00112	4	0.0936	8	0.185	.999683	
MAGNESIUM	0	-0.000540	NA	NA	.2	0.000940	10	0.0909	20	0.178	.99993	
POTASSIUM	0	-0.0110	.5	0.0234	1	0.0462	50	3.24	100	6.39	.999797	
SELENIUM	0	-0.000340	NA	NA	.008	-0.000260	.4	0.00638	.8	0.0127	.999812	
SODIUM	0	-0.0674	.5	0.00897	1	0.0787	50	8.98	100	17.7	.999966	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4822234
Report generated: 24-JUN-2016 09:05

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573930-07
Instrument ID: ICP-THERMO3
Run Time: 10:10
Method: 6010C
File ID: T3.062316.101036
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573560
Cal ID: ICP-THERI - 23-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	.004	U
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4822236
Report generated 06/24/2016 09:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573930-13
Instrument ID: ICP-THERMO3
Run Time: 10:33
Method: 6010C
File ID: T3.062316.103346
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822239
Report generated 06/24/2016 09:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573930-15
Instrument ID: ICP-THERMO3
Run Time: 11:22
Method: 6010C
File ID: T3.062316.112207
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822239
Report generated 06/24/2016 09:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573930-17
Instrument ID: ICP-THERMO3
Run Time: 12:08
Method: 6010C
File ID: T3.062316.120859
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00440	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822239
Report generated 06/24/2016 09:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573930-19
Instrument ID: ICP-THERMO3
Run Time: 12:24
Method: 6010C
File ID: T3.062316.122427
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822239
Report generated 06/24/2016 09:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573930-23
Instrument ID: ICP-THERMO3
Run Time: 13:41
Method: 6010C
File ID: T3.062316.134137
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822239
Report generated 06/24/2016 09:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573930-25
Instrument ID: ICP-THERMO3
Run Time: 14:28
Method: 6010C
File ID: T3.062316.142857
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00482	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822239
Report generated 06/24/2016 09:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573930-30
Instrument ID: ICP-THERMO3
Run Time: 15:59
Method: 6010C
File ID: T3.062316.155920
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822239
Report generated 06/24/2016 09:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573930-34
Instrument ID: ICP-THERMO3
Run Time: 16:14
Method: 6010C
File ID: T3.062316.161435
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0440	F
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	-0.00590	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822239
Report generated 06/24/2016 09:05

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573930-06
Instrument ID: ICP-THERMO3
Run Time: 10:06
Method: 6010C
File ID: T3.062316.100658
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	10.1	101	90 - 110	
Beryllium		.05	0.0506	101	90 - 110	
Calcium		10	10.1	101	90 - 110	
Iron		4	4.02	100	90 - 110	
Magnesium		10	10.0	100	90 - 110	
Potassium		50	50.3	101	90 - 110	
Selenium		.4	0.401	100	90 - 110	
Sodium		50	50.2	100	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4822235
Report generated 06/24/2016 09:05

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573930-12
Instrument ID: ICP-THERMO3
Run Time: 10:30
Method: 6010C
File ID: T3.062316.103007
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.0	mg/L	100	90 - 110		
Beryllium		0.0500	0.0499	mg/L	99.7	90 - 110		
Calcium		10.0	10.1	mg/L	101	90 - 110		
Iron		4.00	4.06	mg/L	101	90 - 110		
Magnesium		10.0	9.95	mg/L	99.5	90 - 110		
Potassium		50.0	50.4	mg/L	101	90 - 110		
Selenium		0.400	0.406	mg/L	101	90 - 110		
Sodium		50.0	50.4	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822238
Report generated 06/24/2016 09:05

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573930-14
Instrument ID: ICP-THERMO3
Run Time: 11:18
Method: 6010C
File ID: T3.062316.111829
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.0	mg/L	100	90 - 110		
Beryllium		0.0500	0.0501	mg/L	100	90 - 110		
Calcium		10.0	10.0	mg/L	100	90 - 110		
Iron		4.00	4.02	mg/L	100	90 - 110		
Magnesium		10.0	9.96	mg/L	99.6	90 - 110		
Potassium		50.0	50.3	mg/L	101	90 - 110		
Selenium		0.400	0.404	mg/L	101	90 - 110		
Sodium		50.0	50.3	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573930-16
Instrument ID: ICP-THERMO3
Run Time: 12:05
Method: 6010C
File ID: T3.062316.120521
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.7	mg/L	107	90 - 110		
Beryllium		0.0500	0.0526	mg/L	105	90 - 110		
Calcium		10.0	10.8	mg/L	108	90 - 110		
Iron		4.00	4.37	mg/L	109	90 - 110		
Magnesium		10.0	10.8	mg/L	108	90 - 110		
Potassium		50.0	54.3	mg/L	109	90 - 110		
Selenium		0.400	0.422	mg/L	106	90 - 110		
Sodium		50.0	54.7	mg/L	109	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573930-18
Instrument ID: ICP-THERMO3
Run Time: 12:20
Method: 6010C
File ID: T3.062316.122048
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.4	mg/L	104	90 - 110		
Beryllium		0.0500	0.0510	mg/L	102	90 - 110		
Calcium		10.0	10.4	mg/L	104	90 - 110		
Iron		4.00	4.15	mg/L	104	90 - 110		
Magnesium		10.0	10.4	mg/L	104	90 - 110		
Potassium		50.0	52.2	mg/L	104	90 - 110		
Selenium		0.400	0.416	mg/L	104	90 - 110		
Sodium		50.0	52.4	mg/L	105	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822238
Report generated 06/24/2016 09:05

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573930-22
Instrument ID: ICP-THERMO3
Run Time: 13:37
Method: 6010C
File ID: T3.062316.133759
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.8	mg/L	108	90 - 110		
Beryllium		0.0500	0.0531	mg/L	106	90 - 110		
Calcium		10.0	10.7	mg/L	107	90 - 110		
Iron		4.00	4.33	mg/L	108	90 - 110		
Magnesium		10.0	10.7	mg/L	107	90 - 110		
Potassium		50.0	54.0	mg/L	108	90 - 110		
Selenium		0.400	0.431	mg/L	108	90 - 110		
Sodium		50.0	54.3	mg/L	109	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573930-24
Instrument ID: ICP-THERMO3
Run Time: 14:25
Method: 6010C
File ID: T3.062316.142518
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.3	mg/L	103	90 - 110		
Beryllium		0.0500	0.0508	mg/L	102	90 - 110		
Calcium		10.0	10.2	mg/L	102	90 - 110		
Iron		4.00	4.15	mg/L	104	90 - 110		
Magnesium		10.0	10.4	mg/L	104	90 - 110		
Potassium		50.0	51.8	mg/L	104	90 - 110		
Selenium		0.400	0.408	mg/L	102	90 - 110		
Sodium		50.0	52.0	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573930-29
Instrument ID: ICP-THERMO3
Run Time: 15:55
Method: 6010C
File ID: T3.062316.155553
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.3	mg/L	103	90 - 110		
Beryllium		0.0500	0.0508	mg/L	102	90 - 110		
Calcium		10.0	10.2	mg/L	102	90 - 110		
Iron		4.00	4.08	mg/L	102	90 - 110		
Magnesium		10.0	10.2	mg/L	102	90 - 110		
Potassium		50.0	51.4	mg/L	103	90 - 110		
Selenium		0.400	0.399	mg/L	99.7	90 - 110		
Sodium		50.0	51.6	mg/L	103	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573930-33
Instrument ID: ICP-THERMO3
Run Time: 16:10
Method: 6010C
File ID: T3.062316.161057
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.5	mg/L	105	90 - 110		
Beryllium		0.0500	0.0509	mg/L	102	90 - 110		
Calcium		10.0	10.4	mg/L	104	90 - 110		
Iron		4.00	4.26	mg/L	106	90 - 110		
Magnesium		10.0	10.6	mg/L	106	90 - 110		
Potassium		50.0	51.6	mg/L	103	90 - 110		
Selenium		0.400	0.416	mg/L	104	90 - 110		
Sodium		50.0	52.1	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Report generated 06/24/2016 09:05

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573930-08
Instrument ID: ICP-THERMO3
Run Time: 10:14
Method: 6010C
File ID: T3.062316.101434
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.167	mg/L	104	70 - 130		
Beryllium		0.00160	0.00152	mg/L	95.0	70 - 130		
Calcium		0.400	0.381	mg/L	95.2	70 - 130		
Iron		0.0800	0.0709	mg/L	88.6	70 - 130		
Magnesium		0.400	0.366	mg/L	91.5	70 - 130		
Potassium		1.00	0.792	mg/L	79.2	70 - 130		
Selenium		0.0160	0.0185	mg/L	115	70 - 130		
Sodium		0.400	0.457	mg/L	114	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4822240
Report generated 06/24/2016 11:53

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573930-28
Instrument ID: ICP-THERMO3
Run Time: 15:12
Method: 6010C
File ID: T3.062316.151209
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.191	mg/L	119	70 - 130		
Beryllium		0.00160	0.00164	mg/L	103	70 - 130		
Calcium		0.400	0.374	mg/L	93.5	70 - 130		
Iron		0.0800	0.0850	mg/L	106	70 - 130		
Magnesium		0.400	0.426	mg/L	106	70 - 130		
Potassium		0.800	0.951	mg/L	119	70 - 130		
Selenium		0.0160	0.0211	mg/L	132	70 - 130		*
Sodium		0.400	0.505	mg/L	126	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4822240
Report generated 06/24/2016 11:53

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060650
Instrument ID: ICP-THERMO3
Sol. A : WG573930-10 **File ID:** T3.062316.102228
Sol. AB : WG573930-11 **File ID:** T3.062316.102622

Workgroup (AAB#): WG573560
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	271	108	250	261	104	
Beryllium	NS	-0.0000600	NS	0.250	0.239	95.6	
Calcium	250	260	104	250	250	100	
Iron	100	102	102	100	97.3	97.3	
Magnesium	250	257	103	250	245	98.0	
Potassium	NS	0.0710	NS	5.00	5.20	104	
Selenium	NS	0.00407	NS	0.250	0.253	101	
Sodium	NS	0.00909	NS	5.00	5.24	105	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4822237
Report generated 06/24/2016 09:05

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060650
Instrument ID: ICP-THERMO3
Sol. A : WG573930-31 **File ID:** T3.062316.160319
Sol. AB : WG573930-32 **File ID:** T3.062316.160713

Workgroup (AAB#): WG573560
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	296	118	250	296	118	
Beryllium	NS	0.000100	NS	0.250	0.272	109	
Calcium	250	274	110	250	276	110	
Iron	100	110	110	100	108	108	
Magnesium	250	276	110	250	272	109	
Potassium	NS	0.0525	NS	5.00	5.80	116	
Selenium	NS	0.00521	NS	0.250	0.281	112	
Sodium	NS	0.128	NS	5.00	5.96	119	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4822237
Report generated 06/24/2016 09:05

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060650 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	AG	AL	AS	B	BA
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000410	0	0	0
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0.0115	0	-0.0000800
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0.000260	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	-0.000289	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	-0.0000490	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.0000120	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0.0000300	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4822233
Report generated: 06/24/2016 09:05

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060650 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	BE	CA	CD	CO	CR
ALUMINUM	308.20	0	0	0	-0.000820	0
ANTIMONY	206.80	0	0	0	0	0.0200
ARSENIC	189.00	0	0	0	0	-0.00190
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0.00343	0
CADMIUM	228.80	0	0	0	-0.00390	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	-0.000200
COPPER	224.70	0	0	0	0.0000770	-0.00100
IRON	261.10	0	0	0	0	-0.00100
LEAD	220.30	0	0	0	-0.0000130	-0.000132
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.0000500
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	-0.000860	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0.00000500	0	0	0
THALLIUM	190.80	0	0	0	0.00240	0.000276
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	-0.00480
ZINC	206.20	0	0	0	0	-0.00180
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4822233
Report generated: 06/24/2016 09:05

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060650 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	CU	FE	K	LI	MG
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000560	0	0	0
ARSENIC	189.00	0	-0.0000500	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0.000300	0	0	0
CADMIUM	228.80	0	-0.0000190	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000500	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0.00160	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0.000609	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.00000300
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0.0000420	0	0	0
PHOSPHORUS	214.90	-0.323	0.000900	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000270	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000400	0	0	0
VANADIUM	292.40	0	0.00000700	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	-0.0000300	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4822233
Report generated: 06/24/2016 09:05

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060650 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	MN	MO	NA	NI	P
ALUMINUM	308.20	0	0.0163	0	0	0
ANTIMONY	206.80	0	-0.00310	0	-0.00350	0
ARSENIC	189.00	0	0.00120	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	-0.00190	0	0	0
CADMIUM	228.80	0	0.0000320	0	-0.000770	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0.000360	0	0	0	0
COBALT	228.60	0	-0.00200	0	0.000100	0
COPPER	224.70	0	0.00160	0	-0.0123	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	-0.00210	0	0.000110	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	-0.00290	-0.0230	0	0	0
MANGANESE	257.60	0	0.0000300	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0.00710	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0.000600	0.000580	0	0	0
SILICON	212.40	0	0.0187	0	0	0
SILVER	328.00	0	-0.0000430	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0.00100	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000153	0	0	0
VANADIUM	292.40	-0.000200	-0.00830	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4822233
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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060650 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	PB	SB	SE	SI	SN
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0	0	0	-0.0220
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0.00440	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4822233
Report generated: 06/24/2016 09:05

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060650 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	SR	TI	TL	V	ZN
ALUMINUM	308.20	0	0	0	0.0950	0
ANTIMONY	206.80	0	0.00110	0	-0.00360	0
ARSENIC	189.00	0	0	0	0.000107	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	-0.00000700	0	0.000990	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0.000102	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000550	0	0	0
COBALT	228.60	0	0.00210	0	0.0000200	0
COPPER	224.70	0	0.000269	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	-0.000126	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	-0.00290	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	-0.000110	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	-0.00100	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000720	0	-0.000260	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.000800	0	-0.00490	0
TIN	189.90	0	-0.00190	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0.000820	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4822233
Report generated: 06/24/2016 09:05

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060650 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	ZR
ALUMINUM	308.20	0
ANTIMONY	206.80	0
ARSENIC	189.00	0
BARIUM	455.40	0
BERYLLIUM	313.10	0
BORON	249.60	0
CADMIUM	228.80	0
CALCIUM	422.60	0
CHROMIUM	267.70	0
COBALT	228.60	0
COPPER	224.70	0
IRON	261.10	0
LEAD	220.30	0
LITHIUM	670.70	0
MAGNESIUM	279.00	0
MANGANESE	257.60	0
MOLYBDENUM	202.00	0
NICKEL	231.60	0
PHOSPHORUS	214.90	0
POTASSIUM	766.40	0
SELENIUM	196.00	0
SILICON	212.40	0
SILVER	328.00	0
SODIUM	589.50	0
STRONTIUM	407.70	0
THALLIUM	190.80	0
TIN	189.90	0
TITANIUM	337.20	0
VANADIUM	292.40	0
ZINC	206.20	0
ZIRCONIUM	339.10	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4822233
Report generated: 06/24/2016 09:05

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16060650 **Date:** 04/29/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	900.0
Antimony	20.00	45.0
Arsenic	10.00	45.0
Barium	10.00	45.0
Beryllium	10.00	1.8
Boron	20.00	45.0
Cadmium	20.00	4.5
Calcium	5.00	270.0
Chromium	20.00	36.0
Cobalt	20.00	45.0
Copper	20.00	180.0
Iron	5.00	720.0
Lead	20.00	225.0
Lithium	5.00	36.0
Magnesium	5.00	900.0
Manganese	10.00	36.0
Molybdenum	20.00	27.0
Nickel	20.00	90.0
Phosphorus	20.00	180.0
Potassium	5.00	450.0
Selenium	20.00	90.0
Silicon	20.00	36.0
Silver	10.00	9.0
Sodium	5.00	270.0
Strontium	5.00	9.0
Thallium	20.00	18.0
Tin	20.00	45.0
Titanium	5.00	36.0
Vanadium	20.00	27.0
Zinc	20.00	45.0
Zirconium	10.00	45.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4822232
Report generated: 06/24/2016 09:05

2.3.1.3 Raw Data

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000327	0.050519	0.000000	1.000000
Al 308.215 {109}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.001184	0.008547	0.000000	1.000000
As 189.042 {478}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000022	0.024758	0.000000	1.000000
B 249.678 {135}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.000018	0.023238	0.000000	1.000000
Ba 455.403 { 74}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.027822	2.182359	0.000000	1.000000
Be 313.107 {108}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.000884	0.988895	0.000000	1.000000
Ca 422.673 { 80}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.001888	0.046400	0.000000	1.000000
Cd 228.802 {447}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000259	0.601556	0.000000	1.000000
Co 228.616 {447}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000232	0.375758	0.000000	1.000000
Cr 267.716 {126}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.000258	0.061893	0.000000	1.000000
Cu 224.700 {450}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000097	0.130708	0.000000	1.000000
Fe 261.187 {129}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000026	0.023142	0.000000	1.000000
K 766.490 { 44}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.010983	0.064443	0.000000	1.000000
Li 670.784 { 50}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.012386	1.550598	0.000000	1.000000
Mg 279.079 {121}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000540	0.009018	0.000000	1.000000
Mn 257.610 {131}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.000084	0.292837	0.000000	1.000000
Mo 202.030 {467}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000041	0.187450	0.000000	1.000000
Na 589.592 { 57}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.067361	0.179038	0.000000	1.000000
Ni 231.604 {446}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000824	0.142104	0.000000	1.000000
P 214.914 {457}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000276	0.013786	0.000000	1.000000
Pb 220.353 {453}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000879	0.064979	0.000000	1.000000
Sb 206.833 {463}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.000126	0.031435	0.000000	1.000000
Se 196.090 {472}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000341	0.016453	0.000000	1.000000
Si 212.412 {459}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.001289	0.040464	0.000000	1.000000
Sn 189.989 {477}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.000003	0.072384	0.000000	1.000000
Sr 407.771 { 83}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.002752	3.677062	0.000000	1.000000
Ti 337.280 {100}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.004029	0.126515	0.000000	1.000000
Tl 190.856 {477}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000471	0.029978	0.000000	1.000000
V 292.402 {115}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.000027	0.073239	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.000283	0.432003	0.000000	1.000000
Zr 339.198 { 99}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.017932	0.006978	0.000000	1.000000

Approved: June 24, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.998445	0.000007	0.003073	0.010242	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999945	0.000006	0.012393	0.041310	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999934	0.000001	0.004231	0.014103	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999002	0.000005	0.003935	0.013116	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999924	0.000171	0.001407	0.004691	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999922	0.000004	0.000127	0.000425	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999971	0.000022	0.054850	0.182833	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.998853	0.000010	0.000352	0.001173	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999920	0.000006	0.000541	0.001803	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999763	0.000004	0.001598	0.005328	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999857	0.000007	0.001832	0.006106	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999683	0.000015	0.029884	0.099612	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999797	0.000412	0.125648	0.418826	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999917	0.000196	0.005174	0.017246	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999930	0.000010	0.103664	0.345547	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999861	0.000015	0.003328	0.011094	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999976	0.000008	0.000575	0.001918	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999966	0.000467	0.041906	0.139686	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999837	0.000008	0.001517	0.005055	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999993	0.000003	0.009729	0.032429	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999313	0.000008	0.004814	0.016047	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999370	0.000008	0.005878	0.019595	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999812	0.000001	0.009227	0.030755	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999941	0.000014	0.003128	0.010426	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999956	0.000004	0.001186	0.003953	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999941	0.000254	0.000576	0.001919	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999409	0.000028	0.009099	0.030331	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999772	0.000003	0.004130	0.013767	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999945	0.000005	0.001306	0.004353	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999933	0.000032	0.000269	0.000895	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.532572	0.000070	0.349536	1.165120	OK.	1.000000	0.000000	1	0

Approved: June 24, 2016

Sample Name: S0 Acquired: 6/23/2016 9:47:45 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00033**	**.00118**	**-.00002**	**.00002**	**.02782**	**.00088**	**.00189**
Stddev	.00010	.00002	.00004	.00004	.00180	.00010	.00037
%RSD	30.084	1.4700	181.28	191.91	6.4574	11.181	19.686
#1	-.00044	.00117	-.00006	.00001	.02575	.00088	.00156
#2	-.00029	.00120	.00002	-.00001	.02884	.00079	.00229
#3	-.00025	.00118	-.00002	.00006	.02887	.00098	.00181

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00026**	**-.00023**	**.00026**	**-.00010**	**-.00003**	**-.01099**	**-.01238**
Stddev	.00008	.00017	.00006	.00021	.00051	.00547	.00240
%RSD	31.523	72.312	22.460	216.26	1964.6	49.768	19.397
#1	-.00035	-.00043	.00026	.00013	-.00053	-.01572	-.00962
#2	-.00018	-.00012	.00032	-.00028	-.00004	-.01227	-.01358
#3	-.00025	-.00015	.00020	-.00014	.00049	-.00500	-.01395

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00054**	**.00008**	**-.00004**	**-.06737**	**-.00082**	**-.00028**	**-.00088**
Stddev	.00016	.00103	.00002	.00237	.00014	.00005	.00011
%RSD	30.180	1239.0	43.179	3.5134	16.845	19.474	12.307
#1	-.00053	.00101	-.00002	-.06969	-.00098	-.00024	-.00080
#2	-.00038	-.00103	-.00005	-.06495	-.00077	-.00034	-.00084
#3	-.00071	.00027	-.00005	-.06746	-.00072	-.00025	-.00100

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00013**	**-.00034**	**.00129**	**.00000**	**.00275**	**-.00403**	**-.00047**
Stddev	.00009	.00012	.00012	.00007	.00094	.00048	.00005
%RSD	74.764	35.234	9.2690	2174.4	34.350	11.992	11.038
#1	.00002	-.00027	.00122	.00008	.00316	-.00353	-.00050
#2	.00021	-.00048	.00143	.00000	.00342	-.00407	-.00050
#3	.00014	-.00027	.00122	-.00007	.00167	-.00449	-.00041

Approved: June 24, 2016

Sample Name: S0 Acquired: 6/23/2016 9:47:45 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00003	.00028	-.01793
Stddev	.00001	.00000	.00048
%RSD	29.396	1.4571	2.6643
#1	.00003	.00028	-.01841
#2	.00002	.00029	-.01792
#3	.00003	.00028	-.01745
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7062.2	43492.	2217.3
Stddev	13.5	299.	17.6
%RSD	.19180	.68708	.79492
#1	7077.5	43152.	2210.9
#2	7057.6	43609.	2203.8
#3	7051.6	43714.	2237.3

Approved: June 24, 2016

Sample Name: S1 Acquired: 6/23/2016 9:51:45 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00007	.00193	.04472	.00136	.00547	.00005	.00043
Stddev	.00004	.00003	.00207	.00006	.00204	.00008	.00007
%RSD	56.524	1.3065	4.6190	4.0730	37.359	159.01	16.558
#1	-.00003	.00191	.04691	.00130	.00781	.00011	.00047
#2	-.00008	.00196	.04281	.00138	.00410	-.00004	.00046
#3	-.00011	.00193	.04443	.00141	.00449	.00009	.00034

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00059	.00032	.00046	.02342	.00155	.00151	.00897
Stddev	.00007	.00009	.00056	.00787	.00023	.00007	.00270
%RSD	11.404	26.424	121.46	33.618	14.624	4.5319	30.104
#1	.00058	.00023	.00096	.02094	.00129	.00152	.00901
#2	.00053	.00038	.00056	.01709	.00170	.00144	.01166
#3	.00066	.00037	-.00014	.03224	.00167	.00158	.00625

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00040	.00082	-.00049	.00022	.00287	.00063	.03432
Stddev	.00009	.00018	.00005	.00001	.00008	.00005	.00075
%RSD	22.758	21.588	10.902	6.3689	2.8319	7.2878	2.1904
#1	-.00029	.00077	-.00049	.00024	.00282	.00066	.03350
#2	-.00044	.00068	-.00043	.00023	.00283	.00065	.03448
#3	-.00046	.00102	-.00054	.00021	.00297	.00058	.03498

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00266	.00054	.00367	-.01945
Stddev	.00038	.00007	.00006	.00123
%RSD	14.429	13.089	1.5774	6.3329
#1	-.00239	.00061	.00371	-.01936
#2	-.00310	.00055	.00360	-.01826
#3	-.00250	.00047	.00369	-.02072

Approved: June 24, 2016

Sample Name: S1 Acquired: 6/23/2016 9:51:45 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7054.0**	**43388.**	**2199.2**
Stddev	62.0	91.	19.7
%RSD	.87863	.20992	.89612
#1	6984.1	43368.	2196.9
#2	7102.3	43308.	2180.7
#3	7075.6	43487.	2219.9

Approved: June 24, 2016

Sample Name: S2 Acquired: 6/23/2016 9:55:44 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00012	.00268	.00011	.00031	.06640	.00170	.00991
Stddev	.00004	.00003	.00010	.00004	.00183	.00007	.00177
%RSD	36.212	1.1391	90.972	12.373	2.7523	3.8893	17.859
#1	.00016	.00268	.00007	.00036	.06434	.00170	.01185
#2	.00007	.00271	.00023	.00029	.06706	.00164	.00838
#3	.00014	.00265	.00004	.00029	.06781	.00177	.00951

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00059	.00085	.00081	.00087	.00112	.04623	.01110
Stddev	.00016	.00020	.00005	.00008	.00089	.00284	.00869
%RSD	27.552	23.577	6.6457	8.7488	79.065	6.1346	78.236
#1	.00064	.00098	.00079	.00091	.00182	.04508	.01496
#2	.00040	.00096	.00078	.00078	.00142	.04946	.00116
#3	.00071	.00062	.00088	.00092	.00012	.04415	.01719

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00094	.00246	.00297	.07870	.00040	.00192	-.00019
Stddev	.00041	.00089	.00002	.00483	.00006	.00008	.00022
%RSD	43.863	36.036	.64370	6.1334	16.212	4.2436	118.69
#1	.00052	.00149	.00298	.07468	.00045	.00184	.00001
#2	.00095	.00264	.00298	.08405	.00032	.00200	-.00014
#3	.00134	.00324	.00295	.07737	.00042	.00192	-.00043

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00066	-.00026	.00459	.00125	.06450	-.00121	-.00029
Stddev	.00013	.00008	.00004	.00004	.00129	.00119	.00010
%RSD	19.457	29.683	.78499	3.1517	1.9941	98.413	34.606
#1	.00051	-.00017	.00462	.00123	.06318	-.00004	-.00021
#2	.00075	-.00030	.00455	.00130	.06457	-.00241	-.00026
#3	.00071	-.00030	.00459	.00123	.06575	-.00117	-.00040

Approved: June 24, 2016

Sample Name: S2 Acquired: 6/23/2016 9:55:44 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00118	.00728	-.01880
Stddev	.00006	.00002	.00401
%RSD	5.2111	.25538	21.324
#1	.00123	.00729	-.01658
#2	.00119	.00729	-.01639
#3	.00111	.00726	-.02343
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7107.4	43682.	2201.4
Stddev	34.8	155.	7.4
%RSD	.49001	.35466	.33601
#1	7078.9	43832.	2207.7
#2	7097.0	43694.	2193.3
#3	7146.2	43522.	2203.3

Approved: June 24, 2016

Sample Name: S3 Acquired: 6/23/2016 9:59:42 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.02081	.08821	.00989	.01171	2.2386	.05183	.46857
Stddev	.00017	.00024	.00010	.00001	.0026	.00010	.00097
%RSD	.83671	.27202	1.0425	.08059	.11782	.19029	.20689
#1	.02061	.08793	.00989	.01171	2.2374	.05180	.46784
#2	.02091	.08835	.00979	.01170	2.2369	.05194	.46820
#3	.02092	.08834	.01000	.01171	2.2417	.05175	.46967

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.03287	.07581	.03164	.06652	.09364	3.2368	1.5657
Stddev	.00024	.00015	.00015	.00023	.00074	.0078	.0054
%RSD	.72813	.20127	.46858	.35008	.78498	.23962	.34576
#1	.03272	.07591	.03147	.06677	.09289	3.2281	1.5662
#2	.03276	.07563	.03172	.06647	.09367	3.2431	1.5600
#3	.03315	.07588	.03173	.06631	.09436	3.2393	1.5708

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.09086	.14859	.18912	8.9754	.07142	.13612	.03223
Stddev	.00042	.00056	.00056	.0162	.00020	.00025	.00019
%RSD	.46733	.37813	.29665	.18036	.28541	.18100	.60348
#1	.09126	.14905	.18974	8.9567	.07119	.13585	.03240
#2	.09042	.14875	.18898	8.9850	.07154	.13616	.03226
#3	.09090	.14797	.18865	8.9845	.07154	.13634	.03202

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.03750	.00638	.20745	.07283	3.7282	.12240	.01360
Stddev	.00016	.00015	.00035	.00003	.0056	.00020	.00017
%RSD	.41622	2.3451	.16934	.03924	.14969	.16109	1.2349
#1	.03757	.00651	.20734	.07280	3.7223	.12235	.01340
#2	.03761	.00641	.20784	.07286	3.7289	.12224	.01369
#3	.03732	.00621	.20717	.07284	3.7334	.12262	.01370

Approved: June 24, 2016

Sample Name: S3 Acquired: 6/23/2016 9:59:42 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.07398	.43911	-.01037
Stddev	.00019	.00017	.00164
%RSD	.25546	.03885	15.815
#1	.07379	.43894	-.01027
#2	.07416	.43911	-.01205
#3	.07399	.43928	-.00878
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7072.0	43259.	2224.1
Stddev	14.8	398.	27.4
%RSD	.20991	.91929	1.2319
#1	7082.8	43351.	2233.7
#2	7055.1	43603.	2193.1
#3	7078.2	42824.	2245.4

Approved: June 24, 2016

Sample Name: S4 Acquired: 6/23/2016 10:03:22 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.03877	.17265	.01961	.02296	4.3610	.10110	.92672
Stddev	.00008	.00014	.00002	.00010	.0067	.00020	.00216
%RSD	.20818	.08155	.08575	.43952	.15282	.19359	.23349
#1	.03869	.17274	.01961	.02300	4.3606	.10112	.92440
#2	.03885	.17273	.01960	.02304	4.3545	.10128	.92708
#3	.03877	.17249	.01963	.02285	4.3678	.10089	.92868

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.06477	.14887	.06165	.12967	.18456	6.3934	3.0627
Stddev	.00016	.00033	.00010	.00044	.00066	.0064	.0061
%RSD	.25220	.22294	.15869	.33572	.35572	.09992	.20036
#1	.06467	.14868	.06175	.12936	.18461	6.3967	3.0674
#2	.06468	.14925	.06164	.13017	.18519	6.3860	3.0649
#3	.06496	.14868	.06156	.12949	.18388	6.3974	3.0558

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.17782	.29064	.37302	17.738	.14014	.27047	.06376
Stddev	.00285	.00058	.00143	.015	.00041	.00041	.00046
%RSD	1.6033	.19826	.38353	.08733	.29065	.15216	.72211
#1	.17453	.29011	.37413	17.754	.14007	.27030	.06405
#2	.17968	.29055	.37352	17.723	.14058	.27094	.06323
#3	.17923	.29126	.37140	17.737	.13978	.27016	.06399

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.07413	.01273	.40435	.14378	7.3040	.24741	.02669
Stddev	.00038	.00018	.00048	.00027	.0055	.00191	.00012
%RSD	.50593	1.4245	.11988	.19085	.07511	.77196	.46475
#1	.07456	.01277	.40450	.14408	7.2977	.24715	.02667
#2	.07399	.01288	.40474	.14369	7.3077	.24565	.02658
#3	.07385	.01253	.40380	.14356	7.3065	.24944	.02682

Approved: June 24, 2016

Sample Name: S4 Acquired: 6/23/2016 10:03:22 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.14535	.85675	-.00201
Stddev	.00022	.00106	.00208
%RSD	.14897	.12329	103.46
#1	.14559	.85650	-.00367
#2	.14528	.85790	-.00268
#3	.14518	.85583	.00032
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7025.2	42809.	2247.9
Stddev	16.9	188.	24.0
%RSD	.24090	.44025	1.0680
#1	7039.6	42965.	2221.1
#2	7006.5	42863.	2267.3
#3	7029.4	42600.	2255.4

Approved: June 24, 2016

Sample Name: ICV Acquired: 6/23/2016 10:06:58 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .42174	10.074	.40229	.50598	1.0063	.05063	10.063
Stddev	.00302	.012	.00036	.00324	.0012	.00028	.027
%RSD	.71491	.12338	.09016	.63984	.11621	.54378	.26390
#1	.41978	10.077	.40200	.50965	1.0062	.05031	10.058
#2	.42521	10.061	.40269	.50355	1.0074	.05083	10.039
#3	.42022	10.085	.40217	.50473	1.0051	.05074	10.091
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	.40000						
Range	5.0000%						

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05009	.20240	.50800	.50888	4.0175	50.261	1.0143
Stddev	.00040	.00056	.00279	.00221	.0049	.216	.0029
%RSD	.79974	.27632	.54852	.43436	.12247	.43006	.28626
#1	.04978	.20259	.50648	.50656	4.0165	50.225	1.0113
#2	.04996	.20177	.50630	.51096	4.0228	50.065	1.0171
#3	.05054	.20283	.51122	.50911	4.0132	50.492	1.0143
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.029	.50479	1.0180	50.178	.50855	10.012	.50742
Stddev	.068	.00560	.0013	.103	.00125	.021	.00677
%RSD	.67615	1.1094	.12869	.20500	.24556	.20476	1.3336
#1	9.9507	.49880	1.0193	50.067	.50868	10.009	.51030
#2	10.071	.50989	1.0181	50.197	.50972	10.034	.51227
#3	10.065	.50568	1.0167	50.269	.50723	9.9938	.49969
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 24, 2016

Sample Name: ICV Acquired: 6/23/2016 10:06:58 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2144**	**.40080**	**5.0742**	**1.0050**	**1.0071**	**.99391**	**.50847**
Stddev	.0044	.00712	.0014	.0021	.0017	.00711	.00066
%RSD	.36603	1.7766	.02857	.20562	.16965	.71494	.13049
#1	1.2140	.40749	5.0728	1.0062	1.0051	.99195	.50860
#2	1.2101	.40159	5.0757	1.0062	1.0080	1.0018	.50775
#3	1.2190	.39332	5.0743	1.0026	1.0081	.98799	.50906
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0155**	**1.0131**	F **.12125**
Stddev	.0036	.0007	.25829
%RSD	.34912	.07339	213.01
#1	1.0114	1.0137	.27856
#2	1.0171	1.0134	-.17684
#3	1.0179	1.0123	.26204
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-5.0000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7063.9**	**43324.**	**2262.6**
Stddev	26.9	275.	33.0
%RSD	.38052	.63544	1.4576
#1	7089.7	43277.	2289.4
#2	7065.8	43619.	2272.6
#3	7036.1	43074.	2225.7

Approved: June 24, 2016

Sample Name: ICB Acquired: 6/23/2016 10:10:36 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00017**	**.01239**	**.00168**	**.00784**	**.00108**	**-.00005**	**.01547**
Stddev	.00127	.00323	.00365	.00240	.00081	.00013	.03150
%RSD	761.85	26.074	217.60	30.609	74.419	238.60	203.55
#1	-.00111	.01021	-.00250	.00684	.00033	.00009	.00370
#2	.00143	.01085	.00327	.00609	.00194	-.00008	.05117
#3	.00018	.01610	.00427	.01057	.00098	-.00016	-.00844
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00017**	**-.00011**	**.00215**	**-.00040**	**.00514**	**.14107**	**.00031**
Stddev	.00018	.00062	.00088	.00176	.00928	.02657	.00101
%RSD	104.46	548.40	40.681	436.49	180.68	18.833	322.01
#1	-.00003	-.00011	.00293	-.00229	.01533	.11729	-.00065
#2	.00032	.00051	.00233	.00120	-.00283	.16974	.00136
#3	.00022	-.00074	.00120	-.00012	.00291	.13619	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.01369**	**-.00036**	**.00556**	**.06424**	**-.00091**	**.00285**	**-.00073**
Stddev	.01771	.00468	.00084	.01730	.00010	.01137	.00348
%RSD	129.35	1308.3	15.177	26.932	10.872	399.00	478.06
#1	-.03386	-.00180	.00466	.08422	-.00089	.00224	-.00360
#2	-.00656	-.00415	.00566	.05400	-.00102	-.00820	-.00173
#3	-.00066	.00487	.00634	.05451	-.00082	.01452	.00314
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: ICB Acquired: 6/23/2016 10:10:36 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00450**	**.00319**	**.00546**	**.00160**	**.00011**	**.00807**	**-.00078**
Stddev	.00442	.00503	.00259	.00177	.00005	.00279	.00085
%RSD	98.273	157.51	47.403	111.10	47.857	34.558	108.58
#1	.00423	.00106	.00505	.00225	.00017	.01129	-.00165
#2	.00905	-.00042	.00824	.00295	.00010	.00635	-.00076
#3	.00022	.00893	.00311	-.00041	.00007	.00657	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00061**	**.00048**	F **-.08910**
Stddev	.00075	.00021	.06733
%RSD	122.01	43.386	75.566
#1	.00025	.00070	-.02326
#2	-.00099	.00030	-.08622
#3	-.00109	.00043	-.15783
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7168.4**	**44479.**	**2251.6**
Stddev	29.8	69.	20.9
%RSD	.41618	.15552	.92660
#1	7152.0	44539.	2258.2
#2	7150.4	44494.	2268.3
#3	7202.8	44403.	2228.2

Approved: June 24, 2016

Sample Name: LLICV Acquired: 6/23/2016 10:14:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00871	.16697	.00827	.08217	.00866	.00152	.38076	.00112
Stddev	.00156	.00657	.00044	.00102	.00032	.00007	.06191	.00032
%RSD	17.931	3.9351	5.3040	1.2445	3.7469	4.3059	16.258	28.573
#1	.01035	.17443	.00778	.08312	.00851	.00145	.31159	.00084
#2	.00724	.16440	.00839	.08109	.00903	.00156	.39972	.00146
#3	.00855	.16207	.00864	.08229	.00844	.00156	.43097	.00104
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00394	.00592	.00329	.07090	.79173	.08265	.36584	.00927
Stddev	.00047	.00114	.00160	.01384	.02303	.00937	.05302	.00519
%RSD	12.002	19.186	48.539	19.517	2.9090	11.331	14.493	55.960
#1	.00439	.00498	.00379	.07490	.81829	.09313	.30462	.00415
#2	.00345	.00560	.00150	.08230	.77965	.07511	.39718	.00914
#3	.00398	.00718	.00458	.05550	.77726	.07971	.39573	.01453
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00929	.45743	.01489	.78319	.01009	.07954	.01845	.79603
Stddev	.00043	.03314	.00060	.01825	.00222	.00564	.00326	.00509
%RSD	4.6307	7.2446	4.0153	2.3296	21.973	7.0958	17.681	.63940
#1	.00903	.41933	.01553	.77767	.01192	.08338	.01946	.80191
#2	.00906	.47958	.01480	.80356	.01072	.07306	.02110	.79293
#3	.00979	.47338	.01434	.76834	.00762	.08218	.01481	.79326
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: LLICV Acquired: 6/23/2016 10:14:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39699	.04007	.02977	.14695	.00735	.01649	18.209
Stddev	.00063	.00024	.00357	.00246	.00036	.00018	.750
%RSD	.15976	.60040	11.988	1.6760	4.8581	1.0904	4.1175
#1	.39689	.04033	.03374	.14514	.00762	.01640	19.047
#2	.39766	.04002	.02683	.14975	.00695	.01638	17.976
#3	.39640	.03986	.02874	.14596	.00750	.01670	17.602
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7227.1	44664.	2257.6
Stddev	42.6	520.	1.8
%RSD	.58953	1.1634	.08124
#1	7268.9	45241.	2255.5
#2	7228.6	44516.	2258.4
#3	7183.7	44234.	2258.8

Approved: June 24, 2016

Sample Name: LLICV Acquired: 6/23/2016 10:18:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02171	.39362	.01983	.19823	.01984	.00378	.98794
Stddev	.00126	.00193	.00080	.00319	.00015	.00007	.03627
%RSD	5.8133	.49006	4.0133	1.6108	.73269	1.8430	3.6708
#1	.02039	.39161	.01959	.20114	.01975	.00370	1.0191
#2	.02183	.39546	.02072	.19872	.02001	.00380	.99656
#3	.02291	.39380	.01919	.19482	.01977	.00383	.94814
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00252	.01000	.01184	.01043	.17737	1.9880	.19918
Stddev	.00013	.00031	.00088	.00057	.01113	.0700	.00144
%RSD	5.1534	3.0882	7.4088	5.4266	6.2724	3.5205	.72403
#1	.00266	.01021	.01239	.01023	.18480	2.0647	.20052
#2	.00248	.01015	.01231	.01107	.16458	1.9716	.19765
#3	.00241	.00964	.01083	.01000	.18273	1.9276	.19937
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.1505	.02028	.02021	1.0786	.04040	1.9285	.02515
Stddev	.0090	.00213	.00036	.0105	.00040	.0076	.00902
%RSD	.77857	10.486	1.7929	.97378	.98140	.39154	35.846
#1	1.1570	.02252	.01981	1.0904	.04017	1.9199	.01676
#2	1.1403	.01829	.02029	1.0752	.04017	1.9323	.02401
#3	1.1543	.02002	.02052	1.0702	.04085	1.9335	.03469
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: LLICV Acquired: 6/23/2016 10:18:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21009	.04460	1.9712	.98749	.09965	.06198	.36922
Stddev	.00337	.00699	.0053	.00228	.00021	.00569	.00142
%RSD	1.6035	15.669	.27005	.23094	.20676	9.1750	.38432
#1	.21342	.04410	1.9701	.98953	.09951	.05610	.36818
#2	.21016	.05183	1.9770	.98791	.09956	.06745	.37084
#3	.20668	.03788	1.9665	.98503	.09989	.06237	.36865
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.01894	.04026	F 47.513
Stddev	.00073	.00018	.199
%RSD	3.8495	.44845	.41793
#1	.01826	.04006	47.723
#2	.01884	.04039	47.328
#3	.01971	.04034	47.487
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7163.5	44550.	2290.7
Stddev	23.5	177.	32.2
%RSD	.32766	.39713	1.4074
#1	7153.2	44670.	2264.8
#2	7190.4	44347.	2326.8
#3	7147.1	44633.	2280.6

Approved: June 24, 2016

Sample Name: ICSA Acquired: 6/23/2016 10:22:28 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00351**	**271.49**	**-.00407**	**.01552**	**.00191**	**-.00006**	**259.57**
Stddev	.00173	.32	.00149	.00100	.00131	.00002	.24
%RSD	49.261	.11797	36.681	6.4247	68.399	32.662	.09253
#1	.00498	271.21	-.00491	.01579	.00056	-.00008	259.30
#2	.00393	271.84	-.00495	.01636	.00317	-.00005	259.62
#3	.00161	271.43	-.00235	.01442	.00201	-.00005	259.78
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00073**	**-.00118**	**.00013**	**-.00016**	**102.11**	**.07096**	**.01023**
Stddev	.00043	.00034	.00149	.00197	.27	.10061	.00810
%RSD	59.851	28.800	1110.3	1223.6	.26622	141.78	79.115
#1	.00040	-.00155	.00018	-.00175	102.00	.03056	.01779
#2	.00056	-.00088	.00160	-.00076	101.90	-.00317	.00169
#3	.00122	-.00112	-.00138	.00204	102.42	.18550	.01122
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**257.21**	**-.00249**	**-.00019**	**.00909**	**.00061**	**.04214**	**.00307**
Stddev	.74	.00315	.00022	.02391	.00155	.00873	.00083
%RSD	.28577	126.41	113.88	262.88	255.31	20.716	27.122
#1	256.58	.00103	.00006	.01060	-.00109	.03399	.00215
#2	257.04	-.00505	-.00035	.03221	.00094	.04107	.00329
#3	258.02	-.00345	-.00029	-.01553	.00197	.05136	.00377
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: ICSA Acquired: 6/23/2016 10:22:28 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.01225**	**.00407**	**.01963**	**.00083**	**.00063**	**.00292**	**-.00060**
Stddev	.00264	.01019	.00271	.00011	.00019	.00730	.00391
%RSD	21.585	250.49	13.788	13.141	29.260	250.52	650.88
#1	-.01403	.01308	.02032	.00071	.00052	.00569	.00121
#2	-.00921	-.00698	.01664	.00086	.00053	-.00537	.00208
#3	-.01350	.00610	.02192	.00092	.00085	.00842	-.00509
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00779**	**-.00550**	F **-.47797**
Stddev	.00107	.00025	.21460
%RSD	13.733	4.4540	44.897
#1	-.00663	-.00578	-.66798
#2	-.00800	-.00535	-.52071
#3	-.00874	-.00537	-.24522
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02000
Low Limit			-.02000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6553.6**	**40388.**	**2145.8**
Stddev	12.6	118.	22.2
%RSD	.19296	.29225	1.0362
#1	6564.3	40521.	2171.0
#2	6539.6	40297.	2129.0
#3	6556.7	40345.	2137.4

Approved: June 24, 2016

Sample Name: ICSAB Acquired: 6/23/2016 10:26:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.54642	261.25	.24491	.01461	.25091	.23890	249.80
Stddev	.00252	.21	.00115	.00263	.00040	.00013	.92
%RSD	.46133	.07960	.46840	18.008	.15906	.05602	.36945
#1	.54352	261.03	.24362	.01303	.25053	.23905	249.38
#2	.54809	261.29	.24581	.01315	.25133	.23882	250.86
#3	.54765	261.43	.24530	.01764	.25088	.23882	249.16
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49188	.23744	.24847	.24603	97.291	5.1952	.01399
Stddev	.00064	.00054	.00296	.00107	.562	.0586	.00583
%RSD	.12989	.22676	1.1915	.43492	.57726	1.1288	41.675
#1	.49222	.23763	.24669	.24496	96.756	5.1630	.02072
#2	.49115	.23683	.24683	.24603	97.876	5.1597	.01083
#3	.49229	.23785	.25188	.24710	97.239	5.2629	.01042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	245.45	.24547	-.00016	5.2391	.47688	.02967	.49137
Stddev	.56	.00407	.00020	.0305	.00126	.00679	.00397
%RSD	.22733	1.6582	126.27	.58302	.26435	22.869	.80836
#1	245.09	.24118	.00001	5.2340	.47587	.03596	.48700
#2	246.09	.24596	-.00011	5.2718	.47829	.02248	.49476
#3	245.16	.24927	-.00039	5.2114	.47649	.03058	.49235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: ICSAB Acquired: 6/23/2016 10:26:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49041**	**.25262**	**.01058**	**.00080**	**.00095**	**-.00253**	**.46155**
Stddev	.00461	.00205	.00274	.00118	.00028	.00344	.00419
%RSD	.94074	.81253	25.938	147.62	29.252	135.58	.90806
#1	.49574	.25026	.00741	.00083	.00108	-.00511	.45692
#2	.48787	.25359	.01204	.00197	.00063	.00137	.46508
#3	.48763	.25401	.01228	-.00040	.00114	-.00386	.46266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.24277**	**.47990**	F **-.55726**
Stddev	.00211	.00039	.17760
%RSD	.87023	.08099	31.870
#1	.24037	.47959	-.50386
#2	.24434	.47976	-.75543
#3	.24360	.48033	-.41249
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02500
Low Limit			-.02500

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6867.2**	**42131.**	**2229.4**
Stddev	30.3	59.	27.6
%RSD	.44128	.13923	1.2390
#1	6862.7	42197.	2251.0
#2	6899.5	42109.	2239.0
#3	6839.4	42086.	2198.3

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 10:30:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41972**	**10.006**	**.40325**	**.49964**	**1.0111**	**.04985**	**10.067**
Stddev	.00435	.016	.00112	.00580	.0052	.00034	.068
%RSD	1.0364	.16389	.27665	1.1604	.51834	.67480	.67879
#1	.42011	9.9983	.40199	.50246	1.0058	.05014	10.015
#2	.41519	9.9944	.40364	.50348	1.0162	.04993	10.144
#3	.42386	10.025	.40411	.49297	1.0113	.04948	10.041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05024**	**.20223**	**.50131**	**.50749**	**4.0553**	**50.377**	**1.0226**
Stddev	.00028	.00067	.00274	.00104	.0420	.183	.0017
%RSD	.56269	.33341	.54611	.20417	1.0345	.36293	.16260
#1	.05043	.20278	.50296	.50646	4.0254	50.317	1.0219
#2	.04992	.20244	.50282	.50853	4.0372	50.582	1.0245
#3	.05037	.20148	.49815	.50748	4.1032	50.231	1.0214
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.9528**	**.50477**	**1.0077**	**50.394**	**.50575**	**10.041**	**.50277**
Stddev	.0960	.00398	.0034	.164	.00126	.013	.00300
%RSD	.96419	.78931	.33712	.32583	.24862	.12624	.59574
#1	9.9093	.50065	1.0114	50.208	.50700	10.027	.50104
#2	10.063	.50505	1.0070	50.519	.50448	10.051	.50104
#3	9.8862	.50860	1.0048	50.454	.50576	10.046	.50622
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 10:30:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2122**	**.40567**	**5.0769**	**1.0044**	**1.0093**	**.99371**	**.51032**
Stddev	.0058	.00436	.0044	.0017	.0042	.00390	.00026
%RSD	.47789	1.0749	.08648	.16760	.41078	.39271	.05189
#1	1.2179	.40121	5.0794	1.0059	1.0071	.98947	.51004
#2	1.2063	.40587	5.0795	1.0026	1.0141	.99715	.51035
#3	1.2126	.40993	5.0719	1.0046	1.0067	.99452	.51057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0014**	**1.0107**	F **.71299**
Stddev	.0067	.0004	.23489
%RSD	.66944	.04203	32.944
#1	1.0039	1.0108	.53231
#2	1.0066	1.0110	.97851
#3	.99386	1.0102	.62814
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7133.2**	**43787.**	**2246.1**
Stddev	18.4	184.	8.5
%RSD	.25841	.41964	.37924
#1	7124.4	43972.	2255.6
#2	7154.4	43605.	2239.0
#3	7120.8	43783.	2243.7

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 10:33:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00297**	**-.00189**	**.00289**	**.00380**	**.00027**	**-.00003**	**.02225**
Stddev	.00079	.00779	.00159	.00210	.00139	.00004	.03753
%RSD	26.593	413.32	55.111	55.251	514.31	136.58	168.66
#1	.00334	-.00786	.00273	.00334	.00168	-.00001	-.00921
#2	.00350	.00693	.00139	.00609	.00023	-.00000	.06379
#3	.00206	-.00473	.00457	.00197	-.00110	-.00008	.01218
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00012**	**-.00000**	**.00131**	**.00018**	**-.03277**	**.04923**	**-.00040**
Stddev	.00014	.00031	.00102	.00083	.02068	.05258	.00151
%RSD	114.48	23177.	77.426	468.65	63.118	106.80	379.45
#1	.00007	.00021	.00045	-.00049	-.03402	.00596	.00130
#2	.00028	.00015	.00105	-.00008	-.01149	.03398	-.00091
#3	.00002	-.00036	.00243	.00110	-.05280	.10775	-.00158
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00472**	**-.00040**	**.00398**	**.04186**	**.00037**	**.00183**	**.00092**
Stddev	.07151	.00169	.00086	.03433	.00046	.01093	.00506
%RSD	1514.3	422.40	21.740	82.001	123.50	599.09	550.15
#1	.06340	.00145	.00330	.07571	-.00014	-.00531	.00400
#2	.00162	-.00078	.00368	.00708	.00074	.01441	.00368
#3	-.07919	-.00188	.00495	.04280	.00051	-.00362	-.00492
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 10:33:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.00397**	**.00703**	**.00090**	**.00049**	**-.00046**	**-.00277**
Stddev	.00449	.00153	.00249	.00076	.00019	.00531	.00268
%RSD	1177.2	38.496	35.437	84.023	38.599	1160.2	96.770
#1	-.00383	.00290	.00990	.00168	.00070	-.00540	-.00548
#2	.00470	.00572	.00539	.00016	.00039	.00516	-.00013
#3	-.00201	.00329	.00581	.00086	.00037	-.00113	-.00269
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00047**	**.00010**	F **-.23448**
Stddev	.00129	.00031	.19803
%RSD	273.56	297.44	84.455
#1	-.00071	-.00016	-.44342
#2	.00092	.00044	-.21046
#3	-.00163	.00002	-.04956
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7198.5**	**44410.**	**2298.3**
Stddev	13.1	128.	10.8
%RSD	.18130	.28902	.47010
#1	7213.3	44273.	2294.3
#2	7188.5	44528.	2310.6
#3	7193.7	44429.	2290.1

Approved: June 24, 2016

Sample Name: PBW 02 Acquired: 6/23/2016 10:37:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00243**	**.01289**	**-.00238**	**.00215**	**.00059**	**.00001**	**.00064**	**.00027**
Stddev	.00241	.00507	.00138	.00467	.00018	.00007	.03803	.00006
%RSD	99.217	39.320	57.920	217.09	29.967	855.05	5917.2	21.093
#1	-.00031	.01133	-.00397	.00515	.00054	-.00004	-.00920	.00024
#2	.00421	.01856	-.00155	.00453	.00079	-.00003	-.03149	.00033
#3	.00340	.00879	-.00162	-.00323	.00045	.00009	.04262	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.00191**	**-.00100**	**.00249**	**.04815**	**.00220**	**-.00515**	**-.00126**
Stddev	.00015	.00073	.00043	.01361	.09597	.00221	.11951	.00238
%RSD	73.207	38.022	42.787	546.34	199.31	100.78	2321.3	189.95
#1	-.00025	.00137	-.00123	.01660	-.05245	.00010	.03750	-.00019
#2	-.00003	.00273	-.00051	-.01057	.13870	.00199	-.14013	.00041
#3	-.00031	.00163	-.00126	.00145	.05820	.00451	.08719	-.00399
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00121**	**.04263**	**-.00108**	**-.00736**	**.00241**	**-.00353**	**.00285**	**.00836**
Stddev	.00026	.02816	.00116	.00127	.00261	.00137	.00741	.00138
%RSD	21.618	66.044	107.01	17.201	108.31	38.784	259.67	16.477
#1	.00092	.01185	.00018	-.00596	.00167	-.00350	-.00460	.00969
#2	.00128	.06707	-.00134	-.00769	.00530	-.00218	.01021	.00694
#3	.00142	.04898	-.00208	-.00843	.00025	-.00492	.00294	.00846
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: PBW 02 Acquired: 6/23/2016 10:37:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00109	-.00009	.01096	-.00098	-.00023	.00040	.03142
Stddev	.00065	.00030	.00703	.00449	.00148	.00015	.35769
%RSD	59.540	324.77	64.152	456.40	635.29	36.948	1138.4
#1	.00065	.00022	.01902	.00189	-.00170	.00048	.18768
#2	.00079	-.00037	.00777	-.00616	-.00024	.00050	-.37782
#3	.00184	-.00013	.00609	.00132	.00125	.00023	.28440
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7056.8	44113.	2291.0
Stddev	55.6	316.	27.4
%RSD	.78762	.71710	1.1965
#1	7118.4	44456.	2259.3
#2	7041.7	43832.	2306.7
#3	7010.4	44053.	2306.9

Approved: June 24, 2016

Sample Name: LCSW 02 Acquired: 6/23/2016 10:48:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.22850**	**5.3524**	**.21516**	**1.0428**	**.54496**	**.02642**	**5.5039**	**.02684**
Stddev	.00330	.0076	.00251	.0020	.00025	.00010	.0620	.00020
%RSD	1.4451	.14203	1.1655	.19167	.04529	.37359	1.1259	.73257
#1	.22591	5.3512	.21360	1.0405	.54519	.02650	5.4405	.02701
#2	.23222	5.3454	.21805	1.0440	.54499	.02631	5.5067	.02662
#3	.22739	5.3605	.21382	1.0440	.54470	.02644	5.5644	.02689
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10911**	**.27097**	**.27491**	**2.1584**	**26.630**	**.54834**	**5.3637**	**.26968**
Stddev	.00035	.00159	.00152	.0163	.041	.00364	.0151	.00278
%RSD	.31852	.58817	.55193	.75658	.15361	.66310	.28212	1.0312
#1	.10906	.27197	.27357	2.1714	26.592	.55090	5.3742	.27283
#2	.10880	.26913	.27656	2.1401	26.625	.54418	5.3705	.26757
#3	.10949	.27181	.27460	2.1637	26.673	.54993	5.3463	.26864
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.55353**	**27.101**	**.27454**	**5.1950**	**.27137**	**.65400**	**.20493**	**2.7480**
Stddev	.00112	.080	.00191	.0060	.00219	.00254	.00409	.0055
%RSD	.20253	.29526	.69567	.11494	.80702	.38851	1.9961	.20068
#1	.55266	27.180	.27670	5.1938	.27139	.65193	.20099	2.7458
#2	.55314	27.020	.27307	5.1896	.26916	.65683	.20465	2.7440
#3	.55480	27.102	.27383	5.2014	.27354	.65323	.20916	2.7543
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: LCSW 02 Acquired: 6/23/2016 10:48:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.54136**	**.54956**	**.53774**	**.26798**	**.53756**	**.53807**	**.52263**
Stddev	.00124	.00284	.00655	.00160	.00065	.00111	.08625
%RSD	.22963	.51687	1.2184	.59886	.12008	.20681	16.502
#1	.54178	.55283	.53336	.26631	.53698	.53720	.47858
#2	.53996	.54779	.54527	.26810	.53744	.53770	.62201
#3	.54233	.54805	.53459	.26951	.53826	.53933	.46730
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6751.0**	**41595.**	**2147.5**
Stddev	16.5	417.	15.8
%RSD	.24497	1.0037	.73785
#1	6750.9	41122.	2157.2
#2	6734.6	41910.	2156.0
#3	6767.6	41755.	2129.2

Approved: June 24, 2016

Sample Name: L1606080601 Acquired: 6/23/2016 10:51:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00332	.04783	-.00051	.02919	.02316	-.00001	43.010	.00030
Stddev	.00229	.01237	.00173	.00366	.00041	.00006	.052	.00045
%RSD	69.212	25.855	341.87	12.521	1.7488	512.34	.12116	151.99
#1	.00527	.04741	-.00003	.03341	.02305	.00001	43.043	.00037
#2	.00390	.03568	-.00243	.02723	.02361	.00004	42.950	.00071
#3	.00079	.06040	.00094	.02694	.02283	-.00008	43.037	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.00082	.00144	.40311	2.4797	-.00382	7.5681	.03103
Stddev	.00013	.00101	.00278	.00772	.0470	.00214	.0970	.00130
%RSD	74.032	123.26	193.44	1.9146	1.8949	56.013	1.2820	4.2001
#1	-.00014	.00001	.00047	.41089	2.4255	-.00177	7.5891	.03208
#2	-.00031	.00050	-.00073	.39545	2.5043	-.00366	7.6528	.03142
#3	-.00006	.00195	.00457	.40300	2.5092	-.00604	7.4622	.02957
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00181	8.7753	.00096	-.00180	-.00112	-.00294	.00044	2.4583
Stddev	.00051	.0335	.00050	.00217	.00243	.00750	.00595	.0091
%RSD	27.981	.38181	52.318	121.11	217.36	255.25	1360.5	.36984
#1	.00170	8.7390	.00121	-.00156	.00092	-.00259	.00525	2.4480
#2	.00237	8.7818	.00038	.00025	-.00047	.00438	-.00622	2.4617
#3	.00137	8.8051	.00129	-.00408	-.00381	-.01060	.00229	2.4652
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606080601 Acquired: 6/23/2016 10:51:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00095	.15971	.00244	.00018	-.00142	.00421	.06591
Stddev	.00050	.00036	.01050	.00258	.00131	.00020	.08417
%RSD	52.557	.22648	430.07	1452.4	91.782	4.6676	127.70
#1	.00048	.15994	-.00770	-.00278	-.00014	.00424	.10987
#2	.00148	.15929	.00175	.00136	-.00137	.00439	-.03114
#3	.00090	.15990	.01328	.00196	-.00275	.00400	.11899
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6810.6	42146.	2192.1
Stddev	25.2	266.	18.6
%RSD	.36933	.63096	.84850
#1	6802.0	42073.	2178.6
#2	6790.9	41924.	2184.4
#3	6838.9	42440.	2213.3

Approved: June 24, 2016

Sample Name: L1606080603S Acquired: 6/23/2016 10:55:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.22292**	**5.2580**	**.21233**	**1.0506**	**.56122**	**.02585**	**46.880**	**.02653**
Stddev	.00125	.0051	.00435	.0034	.00394	.00006	.174	.00017
%RSD	.56117	.09779	2.0482	.32163	.70242	.22036	.37102	.65401
#1	.22331	5.2556	.21640	1.0468	.56286	.02591	47.040	.02643
#2	.22392	5.2639	.20775	1.0517	.55673	.02583	46.695	.02642
#3	.22152	5.2545	.21283	1.0533	.56408	.02580	46.905	.02673
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10658**	**.26462**	**.26636**	**2.5134**	**28.758**	**.54406**	**12.811**	**.30027**
Stddev	.00029	.00181	.00051	.0405	.213	.00394	.014	.00457
%RSD	.27356	.68391	.18983	1.6130	.74146	.72467	.10931	1.5227
#1	.10631	.26358	.26675	2.5028	28.880	.54429	12.814	.30476
#2	.10654	.26671	.26655	2.4792	28.512	.54000	12.796	.29562
#3	.10689	.26358	.26579	2.5582	28.882	.54788	12.823	.30041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.55170**	**35.165**	**.26531**	**5.2323**	**.26719**	**.65049**	**.20303**	**5.1631**
Stddev	.00113	.187	.00228	.0061	.00196	.00181	.00446	.0029
%RSD	.20429	.53311	.85843	.11604	.73356	.27771	2.1946	.05639
#1	.55286	35.340	.26794	5.2303	.26915	.64881	.20042	5.1665
#2	.55060	34.967	.26407	5.2275	.26523	.65240	.20818	5.1612
#3	.55165	35.189	.26391	5.2391	.26720	.65026	.20050	5.1617
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606080603S Acquired: 6/23/2016 10:55:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53484**	**.70111**	**.52936**	**.26439**	**.52736**	**.52795**	**.54980**
Stddev	.00124	.00139	.00278	.00080	.00211	.00104	.46028
%RSD	.23260	.19809	.52607	.30199	.39931	.19788	83.718
#1	.53546	.70248	.52994	.26380	.52862	.52807	.30765
#2	.53566	.69970	.52632	.26530	.52854	.52685	.26115
#3	.53341	.70117	.53180	.26408	.52493	.52893	1.0806
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6736.2**	**41946.**	**2187.8**
Stddev	5.1	20.	14.7
%RSD	.07591	.04740	.67015
#1	6730.4	41949.	2172.7
#2	6737.9	41964.	2188.8
#3	6740.2	41924.	2201.9

Approved: June 24, 2016

Sample Name: L1606080604SD Acquired: 6/23/2016 10:59:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.22494**	**5.3013**	**.21407**	**1.0628**	**.56365**	**.02612**	**47.662**	**.02643**
Stddev	.00131	.0093	.00129	.0020	.00234	.00011	.148	.00049
%RSD	.58037	.17470	.60415	.18460	.41544	.41243	.31045	1.8605
#1	.22580	5.3020	.21515	1.0606	.56620	.02606	47.808	.02611
#2	.22344	5.3102	.21442	1.0642	.56160	.02624	47.512	.02700
#3	.22559	5.2917	.21263	1.0637	.56315	.02605	47.665	.02619
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10674**	**.26724**	**.26524**	**2.6333**	**28.895**	**.54557**	**12.719**	**.30439**
Stddev	.00058	.00062	.00038	.0330	.106	.00090	.094	.00619
%RSD	.54609	.23196	.14207	1.2527	.36519	.16505	.74234	2.0338
#1	.10638	.26678	.26533	2.6696	28.991	.54627	12.772	.31139
#2	.10741	.26794	.26557	2.6252	28.782	.54456	12.610	.30217
#3	.10642	.26698	.26483	2.6052	28.913	.54588	12.776	.29962
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.55418**	**34.480**	**.26678**	**5.2501**	**.26985**	**.65141**	**.19677**	**5.1827**
Stddev	.00050	.067	.00127	.0075	.00459	.00504	.00312	.0057
%RSD	.08994	.19311	.47791	.14252	1.7002	.77356	1.5871	.10959
#1	.55380	34.540	.26578	5.2415	.27196	.65020	.19384	5.1876
#2	.55474	34.408	.26821	5.2542	.26459	.64709	.19641	5.1765
#3	.55399	34.491	.26635	5.2546	.27301	.65695	.20005	5.1841
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606080604SD Acquired: 6/23/2016 10:59:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53983**	**.70207**	**.53595**	**.26631**	**.53443**	**.53118**	**.44263**
Stddev	.00237	.00250	.00231	.00541	.00162	.00068	.38887
%RSD	.43894	.35572	.43187	2.0329	.30357	.12798	87.854
#1	.54163	.70459	.53352	.26243	.53589	.53106	.10258
#2	.54071	.69960	.53620	.27250	.53268	.53191	.86662
#3	.53715	.70202	.53813	.26401	.53473	.53057	.35870
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6749.7**	**41983.**	**2189.9**
Stddev	23.3	132.	6.1
%RSD	.34593	.31400	.28075
#1	6735.6	41949.	2183.1
#2	6776.6	41872.	2195.2
#3	6736.8	42129.	2191.3

Approved: June 24, 2016

Sample Name: L1606064301 Acquired: 6/23/2016 11:03:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00122	.06615	-.00143	.02593	.03006	-.00006	38.280	.00032
Stddev	.00204	.01101	.00114	.00145	.00109	.00010	.072	.00020
%RSD	168.05	16.644	79.877	5.6031	3.6139	160.24	.18846	60.547
#1	-.00114	.06914	-.00036	.02742	.03123	.00004	38.219	.00022
#2	.00222	.05395	-.00264	.02452	.02986	-.00006	38.359	.00055
#3	.00256	.07536	-.00129	.02585	.02908	-.00016	38.261	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.00230	.00108	.05505	.82182	.00036	6.9671	.00298
Stddev	.00067	.00063	.00204	.02247	.04972	.00219	.1563	.00230
%RSD	948.74	27.362	188.95	40.824	6.0505	601.29	2.2439	77.255
#1	-.00016	.00300	-.00033	.07041	.79866	.00194	6.8403	.00562
#2	-.00069	.00179	.00342	.06549	.87890	-.00214	7.1417	.00149
#3	.00064	.00211	.00015	.02926	.78791	.00129	6.9192	.00182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	5.2162	-.00040	.00723	.00244	-.00396	.00046	4.1726
Stddev	.00051	.0203	.00014	.00259	.00459	.00187	.00839	.0123
%RSD	44.166	.38819	33.920	35.779	188.07	47.157	1810.3	.29505
#1	.00058	5.2125	-.00024	.00977	-.00208	-.00520	-.00153	4.1806
#2	.00139	5.2380	-.00049	.00460	.00709	-.00487	-.00675	4.1789
#3	.00153	5.1980	-.00046	.00731	.00230	-.00181	.00967	4.1585
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606064301 Acquired: 6/23/2016 11:03:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00078**	**.20451**	**.00530**	**-.00469**	**-.00006**	**.00110**	**.14863**
Stddev	.00121	.00048	.00792	.00091	.00063	.00030	.13987
%RSD	154.61	.23532	149.42	19.355	996.61	27.576	94.109
#1	.00207	.20397	.00166	-.00442	-.00057	.00145	.23839
#2	.00061	.20490	.01439	-.00395	-.00026	.00092	-.01253
#3	-.00033	.20466	-.00014	-.00571	.00064	.00093	.22003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6830.4**	**42508.**	**2171.6**
Stddev	8.5	112.	27.2
%RSD	.12431	.26329	1.2518
#1	6822.3	42542.	2152.2
#2	6839.3	42598.	2160.0
#3	6829.7	42382.	2202.7

Approved: June 24, 2016

Sample Name: L1606064301PS Acquired: 6/23/2016 11:07:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573560-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.22725**	**5.3504**	**.21699**	**1.0586**	**.56235**	**.02606**	**39.453**	**.02652**
Stddev	.00177	.0067	.00179	.0027	.00155	.00012	.197	.00023
%RSD	.77717	.12503	.82531	.25428	.27486	.46212	.49837	.88589
#1	.22925	5.3465	.21509	1.0575	.56204	.02619	39.648	.02660
#2	.22656	5.3582	.21864	1.0616	.56403	.02598	39.456	.02625
#3	.22593	5.3466	.21724	1.0566	.56099	.02599	39.255	.02669
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10707**	**.26636**	**.26786**	**2.1734**	**27.243**	**.54647**	**11.652**	**.26618**
Stddev	.00054	.00055	.00272	.0119	.213	.00192	.041	.00881
%RSD	.50398	.20739	1.0148	.54748	.78325	.35141	.35108	3.3092
#1	.10730	.26671	.26949	2.1869	27.405	.54632	11.608	.27572
#2	.10746	.26572	.26937	2.1646	27.322	.54463	11.688	.26445
#3	.10645	.26665	.26472	2.1686	27.001	.54846	11.659	.25836
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.54977**	**31.311**	**.26618**	**5.2709**	**.26415**	**.65246**	**.20473**	**6.5222**
Stddev	.00116	.147	.00099	.0077	.00299	.00202	.00237	.0133
%RSD	.21115	.46806	.37140	.14598	1.1311	.30884	1.1586	.20363
#1	.55015	31.346	.26545	5.2795	.26421	.65014	.20272	6.5165
#2	.55069	31.436	.26579	5.2647	.26113	.65378	.20735	6.5374
#3	.54846	31.150	.26730	5.2685	.26710	.65345	.20414	6.5128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606064301PS Acquired: 6/23/2016 11:07:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573560-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53985	.72655	.53558	.26570	.53178	.53125	.33122
Stddev	.00086	.00309	.00331	.00043	.00075	.00054	.05932
%RSD	.15906	.42561	.61803	.16301	.14059	.10232	17.910
#1	.53907	.72896	.53270	.26521	.53252	.53085	.28877
#2	.54077	.72764	.53485	.26582	.53103	.53187	.30588
#3	.53972	.72307	.53920	.26605	.53179	.53103	.39900
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6757.9	41916.	2182.6
Stddev	34.8	107.	23.2
%RSD	.51560	.25636	1.0623
#1	6728.7	41855.	2187.7
#2	6796.5	42040.	2157.3
#3	6748.6	41853.	2202.8

Approved: June 24, 2016

Sample Name: L1606064301SDL Acquired: 6/23/2016 11:10:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573560-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00070**	**.01810**	**-.00492**	**.01185**	**.00631**	**-.00000**	**7.1236**
Stddev	.00274	.00839	.00252	.00391	.00222	.00007	.1325
%RSD	392.94	46.334	51.249	32.975	35.103	3513.5	1.8603
#1	-.00235	.00864	-.00244	.01427	.00517	.00007	6.9946
#2	.00149	.02106	-.00747	.01394	.00887	-.00001	7.2594
#3	.00296	.02462	-.00483	.00734	.00490	-.00006	7.1166
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**.00002**	**.00232**	**-.00095**	**-.00610**	**.17611**	**-.00235**
Stddev	.00025	.00059	.00130	.00129	.02126	.10548	.00501
%RSD	155.98	3337.0	56.059	136.53	348.65	59.896	212.68
#1	.00039	.00038	.00248	-.00038	-.02017	.14177	.00306
#2	-.00011	-.00067	.00095	-.00242	-.01648	.29448	-.00331
#3	.00021	.00034	.00353	-.00003	.01836	.09207	-.00681
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2954**	**.00077**	**.00079**	**1.0065**	**-.00075**	**.00450**	**.00141**
Stddev	.1344	.00192	.00039	.0274	.00071	.00539	.00486
%RSD	10.379	247.98	49.311	2.7240	94.064	119.85	344.90
#1	1.2316	-.00060	.00040	1.0091	-.00103	.00495	-.00378
#2	1.4498	.00297	.00118	1.0325	.00005	.00964	.00586
#3	1.2047	-.00004	.00078	.97783	-.00128	-.00111	.00215
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606064301SDL Acquired: 6/23/2016 11:10:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573560-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00658	.00672	.79406	.00083	.03798	.01408	-.00117
Stddev	.00316	.00321	.00147	.00103	.00094	.01087	.00246
%RSD	48.021	47.777	.18462	123.89	2.4756	77.174	209.17
#1	-.00294	.00985	.79575	.00155	.03738	.01337	-.00372
#2	-.00825	.00344	.79333	-.00035	.03907	.00359	.00119
#3	-.00856	.00686	.79311	.00130	.03751	.02529	-.00099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00049	.00087	F -.20818
Stddev	.00030	.00009	.00447
%RSD	61.635	10.403	2.1493
#1	-.00050	.00094	-.20536
#2	-.00079	.00091	-.21334
#3	-.00019	.00077	-.20585
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7139.5	44441.	2238.0
Stddev	50.1	436.	9.4
%RSD	.70115	.98188	.41959
#1	7082.7	44722.	2247.5
#2	7158.3	43938.	2228.7
#3	7177.3	44663.	2237.9

Approved: June 24, 2016

Sample Name: L1606064301SDL Acquired: 6/23/2016 11:14:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573560-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00261	.00791	-.00004	.00376	.00049	.00002	1.3594	.00023
Stddev	.00120	.00238	.00074	.00093	.00141	.00007	.0314	.00034
%RSD	45.945	30.141	1664.4	24.870	290.88	378.58	2.3106	150.85
#1	.00358	.00988	-.00069	.00277	.00038	-.00005	1.3505	.00050
#2	.00297	.00526	.00076	.00387	-.00087	.00008	1.3943	-.00016
#3	.00127	.00858	-.00021	.00463	.00195	.00002	1.3334	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	.00078	-.00032	-.01191	.06875	-.00169	.28703	-.00226
Stddev	.00009	.00052	.00249	.01602	.11639	.00434	.08030	.00304
%RSD	20.872	66.349	784.39	134.58	169.31	257.07	27.975	134.96
#1	.00037	.00028	.00241	-.01207	.19064	.00305	.35886	.00125
#2	.00043	.00131	-.00246	.00420	-.04124	-.00547	.20034	-.00380
#3	.00055	.00075	-.00090	-.02785	.05685	-.00264	.30188	-.00422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	.26228	-.00128	.00562	.00251	-.00194	.00134	.17660
Stddev	.00028	.01679	.00122	.00155	.00558	.00069	.00224	.00148
%RSD	62.629	6.4019	95.033	27.643	222.32	35.685	167.54	.83658
#1	.00015	.27136	-.00120	.00432	.00095	-.00169	.00300	.17609
#2	.00048	.24290	-.00011	.00520	.00870	-.00273	.00222	.17545
#3	.00071	.27258	-.00253	.00734	-.00213	-.00141	-.00121	.17827
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606064301SDL Acquired: 6/23/2016 11:14:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573560-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.00771	.00924	.00187	-.00212	.00023	.10361
Stddev	.00110	.00046	.00454	.00261	.00099	.00022	.04989
%RSD	590.32	5.9848	49.119	139.27	46.532	92.023	48.149
#1	.00142	.00743	.00743	-.00027	-.00305	.00007	.15002
#2	-.00018	.00824	.01440	.00111	-.00224	.00048	.10996
#3	-.00069	.00745	.00588	.00478	-.00108	.00016	.05085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6961.0	42861.	2262.2
Stddev	19.0	128.	28.0
%RSD	.27352	.29900	1.2383
#1	6966.6	42842.	2290.8
#2	6976.7	42744.	2234.8
#3	6939.9	42998.	2261.1

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 11:18:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.42208**	**10.026**	**.40440**	**.50274**	**1.0079**	**.05013**	**10.009**
Stddev	.00403	.034	.00230	.00696	.0010	.00017	.055
%RSD	.95372	.34303	.56808	1.3853	.10403	.33377	.55336
#1	.41788	9.9874	.40287	.49470	1.0087	.04997	10.060
#2	.42245	10.054	.40705	.50702	1.0082	.05030	10.019
#3	.42590	10.037	.40329	.50649	1.0067	.05012	9.9500
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05023**	**.20256**	**.50302**	**.50725**	**4.0199**	**50.275**	**1.0209**
Stddev	.00011	.00027	.00258	.00083	.0198	.052	.0040
%RSD	.22018	.13367	.51361	.16325	.49293	.10377	.39074
#1	.05036	.20253	.50114	.50692	4.0081	50.322	1.0175
#2	.05016	.20231	.50596	.50664	4.0428	50.219	1.0253
#3	.05017	.20285	.50195	.50819	4.0088	50.282	1.0199
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.9566**	**.50840**	**1.0090**	**50.346**	**.50788**	**10.008**	**.50433**
Stddev	.0526	.00612	.0027	.132	.00211	.011	.00390
%RSD	.52863	1.2043	.27275	.26241	.41570	.11030	.77248
#1	9.9739	.51083	1.0117	50.491	.50814	9.9964	.50363
#2	9.9984	.50144	1.0092	50.313	.50565	10.010	.50083
#3	9.8975	.51294	1.0062	50.233	.50985	10.018	.50853
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 11:18:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2091**	**.40397**	**5.0887**	**1.0011**	**1.0108**	**.99757**	**.51228**
Stddev	.0044	.00601	.0108	.0007	.0040	.01110	.00232
%RSD	.36159	1.4875	.21143	.06763	.39423	1.1124	.45377
#1	1.2140	.40998	5.0829	1.0007	1.0113	.98553	.51248
#2	1.2059	.40395	5.0820	1.0019	1.0145	1.0074	.50986
#3	1.2073	.39797	5.1011	1.0007	1.0066	.99981	.51449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0073**	**1.0103**	F **-.07667**
Stddev	.0043	.0010	.16401
%RSD	.42507	.09626	213.92
#1	1.0026	1.0099	.11242
#2	1.0085	1.0096	-.16212
#3	1.0109	1.0114	-.18030
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7112.5**	**44059.**	**2267.2**
Stddev	29.9	13.	7.7
%RSD	.42011	.02930	.33758
#1	7083.9	44050.	2270.1
#2	7143.5	44074.	2273.0
#3	7110.0	44053.	2258.5

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 11:22:07 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00189	.01317	-.00014	.00695	-.00071	.00002	.05005
Stddev	.00207	.00751	.00124	.00172	.00046	.00003	.03317
%RSD	109.38	57.025	881.13	24.753	65.131	192.61	66.278
#1	.00097	.02150	.00128	.00894	-.00027	-.00002	.01183
#2	.00044	.01111	-.00070	.00597	-.00119	.00003	.07135
#3	.00426	.00691	-.00101	.00594	-.00067	.00004	.06697
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.00016	.00124	-.00052	-.01915	.11943	.00219
Stddev	.00022	.00035	.00068	.00139	.00890	.05118	.00124
%RSD	66.393	219.43	54.732	264.88	46.485	42.852	56.612
#1	.00009	-.00001	.00069	-.00028	-.01341	.09118	.00192
#2	.00052	.00056	.00200	-.00202	-.02941	.08860	.00111
#3	.00038	-.00008	.00103	.00073	-.01464	.17850	.00355
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00380	-.00012	.00453	.04304	.00039	.00349	F .00609
Stddev	.12926	.00178	.00020	.00496	.00064	.00646	.00128
%RSD	3404.8	1473.3	4.5001	11.533	165.65	184.97	21.041
#1	-.01541	.00096	.00430	.04248	.00001	.00020	.00607
#2	-.11479	-.00217	.00460	.04826	.00002	.01093	.00482
#3	.14158	.00085	.00469	.03838	.00113	-.00066	.00738
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							.00500
Low Limit							-.00500

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 11:22:07 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00227	.00206	.00558	.00044	.00024	.00228	-.00124
Stddev	.00104	.01111	.00105	.00112	.00019	.00747	.00491
%RSD	45.890	538.56	18.813	256.59	76.427	327.13	397.12
#1	.00114	.01300	.00502	.00065	.00003	.01091	.00178
#2	.00249	-.00921	.00679	.00143	.00031	-.00219	-.00690
#3	.00318	.00239	.00492	-.00077	.00039	-.00187	.00141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00174	.00003	F .09081
Stddev	.00025	.00043	.08933
%RSD	14.138	1286.3	98.377
#1	-.00177	-.00004	.02370
#2	-.00148	-.00035	.05651
#3	-.00197	.00049	.19220
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7200.1	44649.	2270.6
Stddev	37.7	32.	39.2
%RSD	.52300	.07113	1.7243
#1	7240.4	44677.	2277.9
#2	7194.1	44614.	2228.3
#3	7165.8	44655.	2305.6

Approved: June 24, 2016

Sample Name: L1606064302 Acquired: 6/23/2016 11:26:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	.26747	-.00009	.02484	.04254	-.00005	43.396	.00022
Stddev	.00197	.00413	.00272	.00027	.00060	.00012	.324	.00013
%RSD	261.93	1.5424	2949.9	1.0811	1.4178	232.10	.74631	58.986
#1	-.00150	.26752	-.00205	.02509	.04264	-.00019	43.509	.00035
#2	.00218	.26332	.00301	.02456	.04309	.00004	43.649	.00023
#3	.00157	.27158	-.00123	.02486	.04189	-.00000	43.031	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.00266	.00081	.32785	.96194	.00079	5.1860	.01617
Stddev	.00029	.00025	.00240	.01532	.08177	.00339	.1255	.00084
%RSD	88.646	9.5763	296.94	4.6741	8.5002	427.83	2.4202	5.1909
#1	.00048	.00271	-.00046	.32168	1.0234	-.00276	5.2270	.01561
#2	-.00001	.00289	.00357	.31657	.99334	.00400	5.0451	.01713
#3	.00051	.00238	-.00069	.34529	.86913	.00115	5.2859	.01577
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00206	5.2001	.00017	.04611	.00359	-.00067	-.00054	4.1105
Stddev	.00042	.0405	.00053	.00238	.00353	.00387	.00445	.0061
%RSD	20.472	.77885	304.22	5.1573	98.382	575.44	822.83	.14753
#1	.00157	5.1727	-.00037	.04386	.00542	.00182	.00165	4.1139
#2	.00228	5.2466	.00069	.04587	.00581	.00130	-.00566	4.1141
#3	.00232	5.1809	.00021	.04860	-.00048	-.00513	.00239	4.1035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606064302 Acquired: 6/23/2016 11:26:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.15100	-.00290	-.00074	-.00060	.00253	.02492
Stddev	.00012	.00127	.00397	.00016	.00041	.00023	.28447
%RSD	14.883	.83854	137.08	21.805	67.554	9.2827	1141.4
#1	.00091	.14977	-.00056	-.00070	-.00066	.00264	.35267
#2	.00068	.15230	-.00748	-.00091	-.00098	.00269	-.15784
#3	.00086	.15094	-.00065	-.00060	-.00017	.00226	-.12006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6794.5	42752.	2192.4
Stddev	30.7	54.	19.1
%RSD	.45171	.12704	.86965
#1	6781.9	42692.	2170.4
#2	6829.5	42766.	2202.2
#3	6772.1	42798.	2204.6

Approved: June 24, 2016

Sample Name: L1606064303 Acquired: 6/23/2016 11:30:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00032**	**.06602**	**-.00261**	**.01285**	**.08166**	**-.00002**	**70.478**
Stddev	.00222	.00884	.00362	.00367	.00098	.00003	.278
%RSD	699.98	13.390	138.45	28.517	1.2008	166.64	.39496
#1	.00122	.07324	-.00461	.00955	.08278	.00001	70.795
#2	.00069	.05616	.00156	.01680	.08122	-.00005	70.361
#3	-.00286	.06867	-.00478	.01221	.08098	-.00001	70.277
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00043**	**-.00007**	**.00271**	**.00017**	**.04905**	**.61723**	**.00329**
Stddev	.00030	.00015	.00141	.00138	.01853	.06231	.00259
%RSD	71.212	206.71	52.030	794.77	37.781	10.096	78.525
#1	.00025	.00010	.00274	.00099	.03029	.64631	.00522
#2	.00025	-.00017	.00410	-.00142	.06734	.54569	.00035
#3	.00078	-.00014	.00128	.00095	.04951	.65969	.00431
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**6.5197**	**.00210**	**.00114**	**2.3160**	**-.00214**	**.00652**	**.00322**
Stddev	.0292	.00379	.00024	.0359	.00068	.00269	.00233
%RSD	.44719	180.73	20.594	1.5492	31.730	41.293	72.581
#1	6.5530	.00221	.00134	2.3485	-.00249	.00417	.00531
#2	6.5068	.00583	.00121	2.3220	-.00136	.00593	.00363
#3	6.4992	-.00175	.00088	2.2775	-.00258	.00946	.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606064303 Acquired: 6/23/2016 11:30:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00123**	**.00062**	**4.1539**	**.00045**	**.17219**	**-.00442**	**.00006**
Stddev	.00291	.01044	.0062	.00093	.00121	.00598	.00245
%RSD	237.16	1677.3	.14820	204.40	.70469	135.24	4374.1
#1	.00370	.00751	4.1602	.00043	.17312	.00044	-.00181
#2	-.00198	-.01139	4.1479	.00139	.17265	-.01110	.00282
#3	.00197	.00575	4.1535	-.00046	.17082	-.00261	-.00084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00098**	**.00130**	F **-.24913**
Stddev	.00104	.00037	.16574
%RSD	106.16	28.501	66.527
#1	-.00218	.00173	-.34490
#2	-.00050	.00113	-.34473
#3	-.00027	.00105	-.05775
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6742.6**	**42153.**	**2187.5**
Stddev	20.5	148.	11.5
%RSD	.30347	.35129	.52481
#1	6758.7	42081.	2174.4
#2	6749.4	42054.	2192.3
#3	6719.6	42323.	2195.8

Approved: June 24, 2016

Sample Name: L1606064304 Acquired: 6/23/2016 11:33:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00117**	**.04057**	**-.00439**	**.03066**	**.04299**	**.00000**	**34.940**
Stddev	.00339	.00478	.00245	.00191	.00060	.00005	.093
%RSD	290.05	11.772	55.836	6.2346	1.3895	9400.1	.26617
#1	-.00268	.03688	-.00325	.02912	.04367	.00003	34.964
#2	.00250	.03887	-.00272	.03280	.04255	.00003	34.838
#3	.00369	.04596	-.00721	.03006	.04274	-.00006	35.019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**.00024**	**.00105**	**.00014**	**.00854**	**.93624**	**.00350**
Stddev	.00026	.00041	.00147	.00134	.02324	.10226	.00098
%RSD	120.80	169.78	140.19	932.26	272.26	10.922	27.945
#1	-.00008	.00003	-.00057	.00167	.03444	1.0540	.00407
#2	.00043	-.00002	.00230	-.00086	.00162	.87036	.00237
#3	.00030	.00072	.00143	-.00038	-.01046	.88433	.00405
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.1691**	**.00284**	**.00082**	**5.3323**	**.00048**	**.04039**	**.00314**
Stddev	.1006	.00320	.00036	.0155	.00048	.00723	.00588
%RSD	1.4038	112.52	43.945	.29013	100.08	17.911	186.90
#1	7.1974	.00652	.00120	5.3463	-.00005	.04875	.00442
#2	7.2526	.00128	.00078	5.3157	.00059	.03626	.00828
#3	7.0574	.00073	.00048	5.3349	.00088	.03617	-.00327
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606064304 Acquired: 6/23/2016 11:33:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00317**	**.00206**	**4.2290**	**.00011**	**.18686**	**.00008**	**-.00047**
Stddev	.00292	.00547	.0074	.00020	.00078	.00312	.00056
%RSD	92.220	265.53	.17548	181.78	.41674	3781.1	120.08
#1	-.00439	.00616	4.2261	-.00003	.18732	.00329	-.00032
#2	-.00528	.00417	4.2374	.00002	.18596	-.00294	-.00108
#3	.00017	-.00415	4.2234	.00034	.18729	-.00010	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00060**	**.00082**	F **-.17008**
Stddev	.00049	.00010	.27354
%RSD	82.787	12.582	160.83
#1	-.00060	.00070	-.07497
#2	-.00109	.00087	.04322
#3	-.00010	.00088	-.47848
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6776.1**	**42494.**	**2204.9**
Stddev	17.1	133.	21.4
%RSD	.25303	.31335	.97208
#1	6795.0	42645.	2183.8
#2	6771.9	42444.	2226.6
#3	6761.5	42394.	2204.4

Approved: June 24, 2016

Sample Name: L1606064305 Acquired: 6/23/2016 11:37:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	.53186	-.00214	.02175	.03601	-.00010	14.722	.00055
Stddev	.00228	.00247	.00445	.00230	.00094	.00005	.126	.00022
%RSD	421.53	.46389	208.04	10.587	2.6199	44.933	.85596	40.022
#1	.00316	.53012	-.00077	.02401	.03640	-.00014	14.685	.00039
#2	-.00105	.53469	-.00712	.01940	.03493	-.00005	14.619	.00081
#3	-.00048	.53078	.00146	.02185	.03669	-.00011	14.863	.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00006	.00230	.00548	.76832	2.3392	.00621	2.5504	.01694
Stddev	.00042	.00048	.00129	.01630	.0828	.00232	.0808	.00496
%RSD	702.55	20.753	23.604	2.1212	3.5411	37.306	3.1691	29.304
#1	-.00052	.00176	.00693	.75108	2.2935	.00388	2.4729	.01653
#2	.00003	.00248	.00444	.78348	2.4348	.00851	2.5441	.01220
#3	.00031	.00267	.00508	.77041	2.2892	.00625	2.6342	.02210
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	2.3848	.00454	.26337	.00504	-.00323	.00041	3.5594
Stddev	.00025	.0113	.00058	.00316	.00307	.00618	.00461	.0030
%RSD	40.210	.47407	12.866	1.1998	60.786	191.51	1127.1	.08456
#1	.00053	2.3726	.00503	.26642	.00155	-.00695	-.00306	3.5582
#2	.00043	2.3950	.00389	.26358	.00631	.00391	-.00135	3.5572
#3	.00091	2.3868	.00469	.26011	.00728	-.00664	.00563	3.5629
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606064305 Acquired: 6/23/2016 11:37:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00103	.06157	.01102	.00080	.00021	.06676	.17696
Stddev	.00038	.00058	.00530	.00336	.00041	.00009	.30311
%RSD	36.515	.93995	48.116	418.46	190.39	.14087	171.29
#1	.00068	.06155	.01291	.00467	.00037	.06668	-.11953
#2	.00098	.06100	.00503	-.00096	.00052	.06675	.48629
#3	.00143	.06216	.01513	-.00131	-.00025	.06686	.16411
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6948.0	43351.	2270.5
Stddev	24.8	156.	17.3
%RSD	.35679	.35939	.76126
#1	6945.4	43469.	2251.5
#2	6924.6	43410.	2274.7
#3	6973.9	43175.	2285.3

Approved: June 24, 2016

Sample Name: L1606064306 Acquired: 6/23/2016 11:41:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00187	.02354	.00138	.02630	.06121	-.00008	71.332	.00064
Stddev	.00122	.00905	.00134	.00013	.00195	.00003	.346	.00019
%RSD	65.350	38.437	97.369	.47954	3.1785	41.406	.48481	30.029
#1	.00046	.01310	.00189	.02632	.06190	-.00011	71.409	.00076
#2	.00257	.02853	.00239	.02617	.05901	-.00005	71.633	.00073
#3	.00258	.02900	-.00014	.02642	.06272	-.00007	70.954	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.00059	.00886	1.1481	2.4731	.02039	10.652	1.0194
Stddev	.00049	.00045	.00003	.0078	.1060	.00516	.108	.0029
%RSD	101.33	75.377	.29783	.68117	4.2846	25.297	1.0171	.28156
#1	.00039	.00035	.00888	1.1433	2.4250	.01560	10.708	1.0222
#2	.00005	.00111	.00886	1.1572	2.3998	.02585	10.527	1.0197
#3	.00102	.00032	.00883	1.1439	2.5946	.01972	10.720	1.0165
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00199	8.2539	.00024	.00303	.00651	-.00357	.00566	6.8739
Stddev	.00062	.0799	.00153	.00444	.00110	.00639	.00190	.0186
%RSD	31.027	.96777	643.77	146.27	16.949	178.95	33.597	.27005
#1	.00160	8.3389	-.00019	.00365	.00621	.00234	.00382	6.8912
#2	.00167	8.2427	.00194	-.00168	.00558	-.00269	.00762	6.8762
#3	.00270	8.1803	-.00103	.00713	.00773	-.01035	.00554	6.8543
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606064306 Acquired: 6/23/2016 11:41:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	.29195	-.00902	-.00150	-.00167	.02587	-.01653
Stddev	.00023	.00130	.00517	.00042	.00082	.00004	.37226
%RSD	81.741	.44447	57.341	28.330	49.121	.15361	2251.5
#1	.00030	.29340	-.00360	-.00101	-.00198	.02590	-.43514
#2	.00051	.29092	-.00957	-.00177	-.00074	.02587	.10816
#3	.00004	.29152	-.01390	-.00172	-.00228	.02582	.27737
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6886.1	42877.	2263.4
Stddev	11.4	248.	22.5
%RSD	.16521	.57737	.99518
#1	6899.1	43012.	2243.8
#2	6878.0	42591.	2258.4
#3	6881.3	43027.	2288.0

Approved: June 24, 2016

Sample Name: L1606064307 Acquired: 6/23/2016 11:45:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	.46732	-.00367	.03634	.03450	-.00001	48.188
Stddev	.00117	.00622	.00300	.00353	.00021	.00003	.411
%RSD	430.98	1.3308	81.768	9.7232	.60957	380.82	.85283
#1	-.00110	.46077	-.00519	.03387	.03473	-.00002	48.611
#2	.00107	.47315	-.00021	.04039	.03431	.00003	48.163
#3	-.00078	.46803	-.00562	.03477	.03447	-.00003	47.791
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	-.00006	.00258	.00189	.46248	1.2468	.00637
Stddev	.00032	.00044	.00041	.00037	.01357	.0192	.00270
%RSD	64.989	744.12	16.031	19.615	2.9342	1.5408	42.427
#1	.00085	-.00054	.00222	.00176	.46783	1.2648	.00616
#2	.00036	.00033	.00303	.00230	.47255	1.2265	.00378
#3	.00025	.00003	.00249	.00159	.44705	1.2490	.00917
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.690	.00808	.00138	11.004	-.00087	.04505	.00560
Stddev	.220	.00278	.00009	.159	.00078	.00925	.00188
%RSD	1.8858	34.421	6.2970	1.4424	90.051	20.521	33.511
#1	11.824	.01029	.00138	11.101	.00003	.03848	.00352
#2	11.435	.00496	.00146	10.820	-.00139	.05563	.00610
#3	11.810	.00900	.00129	11.090	-.00126	.04106	.00718
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606064307 Acquired: 6/23/2016 11:45:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00150**	**-.00572**	**4.5875**	**.00033**	**.43303**	**.00532**	**-.00050**
Stddev	.00456	.00884	.0072	.00047	.00154	.00872	.00190
%RSD	304.22	154.57	.15713	143.25	.35558	164.00	377.95
#1	-.00440	.00284	4.5857	.00014	.43366	.01418	-.00160
#2	-.00386	-.00518	4.5813	.00086	.43127	-.00326	.00169
#3	.00376	-.01481	4.5954	-.00002	.43415	.00503	-.00160
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00018**	**.00281**	F **-.24796**
Stddev	.00061	.00016	.09171
%RSD	331.24	5.7704	36.987
#1	-.00078	.00270	-.33680
#2	-.00022	.00300	-.15362
#3	.00044	.00274	-.25345
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6781.2**	**42216.**	**2186.7**
Stddev	33.5	59.	32.2
%RSD	.49353	.14055	1.4733
#1	6753.0	42285.	2149.7
#2	6772.5	42188.	2208.2
#3	6818.2	42177.	2202.2

Approved: June 24, 2016

Sample Name: L1606064308 Acquired: 6/23/2016 11:49:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00281	.28274	-.00295	.04314	.05239	-.00005	45.551	.00021
Stddev	.00212	.00598	.00239	.00293	.00113	.00003	.432	.00040
%RSD	75.574	2.1150	81.250	6.7892	2.1640	68.363	.94927	190.87
#1	.00246	.27651	-.00108	.04005	.05186	-.00008	46.037	.00028
#2	.00088	.28328	-.00564	.04350	.05369	-.00006	45.208	.00058
#3	.00508	.28843	-.00211	.04588	.05161	-.00001	45.407	-.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	.00251	-.00039	.27914	1.0523	.00350	9.9548	.00822
Stddev	.00011	.00220	.00108	.00276	.0768	.00421	.0849	.00471
%RSD	51.782	87.665	276.22	.98965	7.2950	120.45	.85241	57.326
#1	.00030	.00492	-.00140	.27833	.96686	.00383	10.029	.00571
#2	.00009	.00201	-.00053	.27688	1.0745	.00754	9.9737	.01366
#3	.00023	.00060	.00075	.28222	1.1155	-.00087	9.8620	.00530
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00143	28.849	.00034	.01859	.00004	-.00158	-.00433	4.2971
Stddev	.00035	.282	.00020	.00238	.00212	.00343	.00783	.0027
%RSD	24.593	.97651	59.389	12.791	4881.5	217.91	180.83	.06385
#1	.00106	29.162	.00024	.02134	-.00032	.00109	.00011	4.2940
#2	.00176	28.616	.00057	.01734	.00232	-.00545	-.01337	4.2982
#3	.00146	28.768	.00020	.01710	-.00187	-.00037	.00027	4.2992
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606064308 Acquired: 6/23/2016 11:49:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00126	.24347	.00339	-.00154	-.00045	.00217	.14987
Stddev	.00049	.00220	.00280	.00105	.00060	.00011	.32468
%RSD	39.037	.90382	82.553	68.121	135.39	4.8880	216.64
#1	.00073	.24601	.00642	-.00066	.00024	.00206	-.08894
#2	.00136	.24221	.00092	-.00270	-.00088	.00228	.51957
#3	.00170	.24219	.00281	-.00126	-.00070	.00217	.01899
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6738.5	42037.	2168.6
Stddev	30.1	232.	22.7
%RSD	.44688	.55143	1.0458
#1	6773.1	41803.	2143.6
#2	6718.5	42041.	2187.9
#3	6723.9	42267.	2174.3

Approved: June 24, 2016

Sample Name: L1606064309 Acquired: 6/23/2016 11:53:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00160	.15661	.00013	.04545	.04682	-.00000	35.419	.00033
Stddev	.00119	.00708	.00146	.00254	.00106	.00005	.240	.00028
%RSD	74.477	4.5233	1123.7	5.5867	2.2675	2104.2	.67865	85.873
#1	.00217	.15152	.00060	.04537	.04715	.00006	35.626	.00060
#2	.00240	.16470	-.00150	.04803	.04768	-.00004	35.476	.00033
#3	.00023	.15362	.00129	.04295	.04564	-.00003	35.155	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	.00123	.00024	.15532	.80097	.00097	6.9091	.00278
Stddev	.00049	.00097	.00034	.01614	.06209	.00454	.1107	.00175
%RSD	317.05	78.958	139.68	10.394	7.7519	469.66	1.6020	63.186
#1	-.00031	.00012	.00055	.17250	.73834	-.00386	6.9993	.00471
#2	.00039	.00163	.00029	.14047	.80205	.00159	6.7856	.00232
#3	-.00055	.00194	-.00012	.15300	.86251	.00516	6.9425	.00129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00431	36.718	-.00063	.01439	.00498	.00086	.00491	3.5590
Stddev	.00071	.056	.00104	.00557	.00152	.00128	.00282	.0044
%RSD	16.376	.15337	164.46	38.729	30.498	148.41	57.449	.12483
#1	.00432	36.703	-.00058	.02081	.00665	.00233	.00794	3.5641
#2	.00361	36.671	.00038	.01159	.00460	-.00005	.00237	3.5559
#3	.00502	36.780	-.00170	.01077	.00369	.00032	.00441	3.5570
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606064309 Acquired: 6/23/2016 11:53:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00076**	**.21143**	**-.00049**	**-.00473**	**-.00081**	**.00436**	**-.03117**
Stddev	.00101	.00052	.00261	.00291	.00072	.00002	.28307
%RSD	133.37	.24546	537.03	61.538	89.522	.51462	908.26
#1	.00054	.21158	-.00030	-.00579	-.00149	.00436	.28801
#2	.00187	.21086	.00202	-.00697	-.00005	.00433	-.12971
#3	-.00012	.21186	-.00319	-.00144	-.00087	.00437	-.25179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6756.8**	**42049.**	**2196.1**
Stddev	2.9	297.	15.9
%RSD	.04298	.70626	.72401
#1	6759.4	42356.	2177.8
#2	6757.4	41764.	2203.9
#3	6753.6	42028.	2206.5

Approved: June 24, 2016

Sample Name: L1606065001 Acquired: 6/23/2016 11:57:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00189**	**.06102**	**.00775**	**.01249**	**1.2363**	**.00005**	**40.010**
Stddev	.00078	.00679	.00307	.00259	.0071	.00016	.172
%RSD	41.259	11.125	39.598	20.763	.57164	292.34	.43096
#1	.00127	.05450	.01048	.01533	1.2439	.00018	40.193
#2	.00276	.06052	.00443	.01188	1.2353	.00011	39.988
#3	.00162	.06805	.00833	.01025	1.2299	-.00012	39.850
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00106**	**.04734**	**1.1335**	**.02781**	**17.038**	**2.5926**	**.01356**
Stddev	.00024	.00012	.0049	.00083	.057	.1423	.00643
%RSD	22.902	.25671	.43407	2.9805	.33217	5.4883	47.388
#1	.00108	.04721	1.1300	.02697	17.098	2.7070	.00680
#2	.00081	.04745	1.1391	.02863	17.031	2.4333	.01959
#3	.00129	.04736	1.1313	.02782	16.986	2.6375	.01430
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**34.850**	**1.3390**	**.00398**	**248.16**	**1.8950**	**.02385**	**.00496**
Stddev	.281	.0074	.00009	1.41	.0047	.00515	.00238
%RSD	.80752	.55545	2.2572	.56977	.24691	21.589	47.930
#1	35.099	1.3471	.00399	249.72	1.8962	.01848	.00456
#2	34.906	1.3375	.00406	247.80	1.8898	.02433	.00751
#3	34.545	1.3325	.00388	246.96	1.8989	.02874	.00281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606065001 Acquired: 6/23/2016 11:57:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.01117**	**-.00066**	**13.554**	**.00005**	**.88403**	**.00483**	**-.00261**
Stddev	.00331	.00370	.031	.00079	.00508	.00193	.00683
%RSD	29.635	565.13	.22672	1633.3	.57500	39.908	261.28
#1	-.00741	-.00127	13.581	-.00068	.88877	.00490	-.00463
#2	-.01242	.00332	13.521	-.00007	.88464	.00672	.00500
#3	-.01367	-.00401	13.560	.00090	.87866	.00287	-.00820
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00250**	**.00586**	F **-.23790**
Stddev	.00044	.00008	.31093
%RSD	17.584	1.3809	130.70
#1	.00210	.00596	-.30620
#2	.00297	.00581	.10150
#3	.00244	.00582	-.50901
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6603.7**	**40805.**	**2163.3**
Stddev	14.6	102.	41.7
%RSD	.22048	.24875	1.9297
#1	6587.1	40899.	2117.7
#2	6609.4	40818.	2172.3
#3	6614.4	40697.	2199.7

Approved: June 24, 2016

Sample Name: L1606065002 Acquired: 6/23/2016 12:01:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.02489	-.00287	.01411	.43644	.00011	25.711	.00088
Stddev	.00364	.00573	.00631	.00070	.00286	.00008	.186	.00056
%RSD	1038.5	23.031	220.06	4.9786	.65436	74.454	.72154	63.369
#1	-.00031	.03150	.00020	.01409	.43459	.00021	25.499	.00071
#2	-.00291	.02178	-.01012	.01482	.43973	.00004	25.845	.00151
#3	.00428	.02138	.00132	.01341	.43501	.00010	25.789	.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00144	.00464	-.00035	.33432	1.6832	.02333	16.223	.45100
Stddev	.00038	.00058	.00206	.02492	.0621	.00804	.060	.00508
%RSD	26.480	12.537	584.16	7.4533	3.6873	34.445	.36916	1.1259
#1	.00136	.00469	.00094	.34179	1.7336	.01773	16.240	.44555
#2	.00111	.00520	-.00272	.35464	1.7021	.03254	16.273	.45559
#3	.00186	.00404	.00072	.30652	1.6139	.01972	16.157	.45185
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	215.70	.00198	.01638	.00394	-.00086	-.00158	21.449
Stddev	.00010	1.30	.00093	.00175	.00302	.00337	.00400	.049
%RSD	19.360	.60478	47.194	10.688	76.721	393.11	253.30	.22739
#1	.00046	214.20	.00219	.01443	.00078	-.00439	-.00479	21.421
#2	.00062	216.54	.00278	.01781	.00680	.00233	-.00284	21.506
#3	.00045	216.35	.00096	.01689	.00423	-.00052	.00290	21.421
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606065002 Acquired: 6/23/2016 12:01:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00135	.47255	.00420	-.00295	-.00075	.00414	-.00270
Stddev	.00119	.00434	.00287	.00338	.00038	.00035	.37159
%RSD	88.287	.91926	68.478	114.54	51.374	8.5564	13768.
#1	.00241	.46832	.00697	.00051	-.00091	.00441	.12398
#2	.00156	.47234	.00440	-.00312	-.00031	.00428	-.42106
#3	.00006	.47700	.00123	-.00625	-.00102	.00374	.28898
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6563.7	40866.	2174.9
Stddev	21.3	148.	21.1
%RSD	.32412	.36219	.97234
#1	6544.5	40970.	2172.5
#2	6586.6	40931.	2155.1
#3	6560.1	40696.	2197.2

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 12:05:21 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .44831	10.703	.43168	.53573	1.0911	.05263	10.796
Stddev	.00175	.017	.00230	.00775	.0043	.00042	.054
%RSD	.39004	.15465	.53180	1.4463	.39478	.79021	.50197
#1	.44828	10.721	.43341	.54048	1.0870	.05303	10.796
#2	.44658	10.689	.42908	.52679	1.0956	.05220	10.850
#3	.45007	10.698	.43256	.53993	1.0905	.05265	10.741
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	.40000						
Range	10.000%						

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05416	.21667	.53159	.54518	4.3683	54.317	1.0928
Stddev	.00040	.00029	.00253	.00167	.0262	.148	.0073
%RSD	.73561	.13516	.47580	.30570	.59939	.27161	.67268
#1	.05371	.21640	.53279	.54635	4.3590	54.209	1.0857
#2	.05447	.21665	.52868	.54327	4.3978	54.485	1.0922
#3	.05430	.21698	.53329	.54592	4.3480	54.255	1.1004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.810	.54923	1.0837	54.737	.54364	10.749	.54374
Stddev	.058	.00364	.0022	.052	.00153	.032	.00832
%RSD	.53876	.66352	.20765	.09464	.28227	.30158	1.5305
#1	10.744	.54558	1.0861	54.703	.54348	10.742	.55291
#2	10.829	.55287	1.0816	54.797	.54220	10.721	.53666
#3	10.856	.54925	1.0832	54.712	.54525	10.784	.54166
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 12:05:21 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.3058**	**.42212**	**5.4532**	**1.0751**	**1.0918**	**1.0815**	**.54219**
Stddev	.0030	.00832	.0055	.0028	.0024	.0066	.00333
%RSD	.22701	1.9705	.10048	.25831	.21941	.61474	.61478
#1	1.3084	.43050	5.4492	1.0747	1.0913	1.0807	.54087
#2	1.3026	.41386	5.4509	1.0725	1.0944	1.0753	.53971
#3	1.3063	.42201	5.4594	1.0780	1.0897	1.0885	.54598
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0620**	**1.0850**	F **.06906**
Stddev	.0098	.0015	.29136
%RSD	.92653	.13908	421.86
#1	1.0688	1.0865	-.26582
#2	1.0507	1.0835	.20859
#3	1.0665	1.0851	.26442
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6761.2**	**42170.**	**2135.6**
Stddev	30.4	254.	38.5
%RSD	.45025	.60227	1.8034
#1	6745.3	42171.	2097.5
#2	6742.0	41916.	2134.8
#3	6796.3	42424.	2174.6

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 12:08:59 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00138**	**.00939**	**.00126**	**.00156**	**-.00034**	**.00001**	**.02965**	**-.00007**
Stddev	.00293	.00768	.00491	.00136	.00065	.00010	.04568	.00027
%RSD	212.42	81.850	390.17	87.175	192.88	1033.2	154.04	411.15
#1	.00109	.01823	-.00438	.00279	-.00065	-.00008	.02210	-.00003
#2	.00444	.00563	.00455	.00010	.00041	.00011	.07863	.00018
#3	-.00140	.00431	.00361	.00180	-.00077	-.00000	-.01178	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00012**	**.00044**	**-.00193**	**-.00150**	**.04686**	**-.00321**	**-.04218**	**.00070**
Stddev	.00023	.00045	.00177	.02531	.06645	.00382	.02089	.00303
%RSD	191.66	103.40	91.906	1685.8	141.79	119.02	49.541	434.91
#1	.00034	.00011	-.00127	.02678	-.00514	-.00396	-.05130	.00224
#2	.00012	.00024	-.00058	-.00927	.02400	-.00661	-.05695	.00264
#3	-.00011	.00095	-.00393	-.02201	.12172	.00093	-.01827	-.00279
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00437**	**.11699**	**-.00061**	**.00269**	**.00423**	**.00051**	**.00440**	**.00901**
Stddev	.00070	.02428	.00128	.00780	.00466	.00512	.00537	.00090
%RSD	15.940	20.756	211.37	290.47	110.16	1005.7	122.02	9.9508
#1	.00357	.11912	.00043	.00283	.00310	-.00541	.01043	.00798
#2	.00471	.09171	-.00204	-.00519	.00936	.00342	.00264	.00957
#3	.00483	.14013	-.00021	.01042	.00024	.00351	.00013	.00949
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 12:08:59 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00104	.00007	.00479	-.00426	-.00086	-.00007	-.03636
Stddev	.00150	.00005	.00475	.00529	.00041	.00006	.17918
%RSD	144.40	81.653	99.036	124.26	48.035	88.430	492.84
#1	.00274	.00004	.00301	.00106	-.00121	-.00001	.10971
#2	.00049	.00013	.01017	-.00952	-.00040	-.00006	.01751
#3	-.00011	.00004	.00120	-.00432	-.00097	-.00013	-.23629
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6787.7	42559.	2189.0
Stddev	42.9	357.	32.2
%RSD	.63217	.83804	1.4713
#1	6836.5	42970.	2162.6
#2	6755.7	42330.	2179.6
#3	6771.0	42377.	2224.9

Approved: June 24, 2016

Sample Name: L1606065003 Acquired: 6/23/2016 12:12:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00370	.80939	.00267	.03223	.15152	.00003	16.410	.00200
Stddev	.00030	.00550	.00231	.00157	.00143	.00010	.167	.00026
%RSD	8.1591	.67996	86.365	4.8792	.94244	399.37	1.0195	13.059
#1	.00343	.80457	.00076	.03228	.15213	-.00008	16.600	.00230
#2	.00403	.81539	.00524	.03063	.14989	.00012	16.345	.00182
#3	.00363	.80821	.00203	.03377	.15254	.00003	16.285	.00188
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00674	.49819	.01602	10.808	1.5538	.01896	9.8126	.38868
Stddev	.00032	.00140	.00090	.095	.1322	.00275	.0110	.00294
%RSD	4.7724	.28078	5.6391	.88079	8.5094	14.512	.11155	.75614
#1	.00646	.49798	.01681	10.917	1.4017	.01883	9.8202	.38995
#2	.00667	.49691	.01621	10.740	1.6187	.01628	9.8000	.38532
#3	.00709	.49968	.01504	10.768	1.6411	.02178	9.8176	.39076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00725	109.71	.11187	.09046	.00426	.00012	-.00167	10.244
Stddev	.00018	.52	.00059	.00282	.00268	.00533	.00876	.010
%RSD	2.4336	.47677	.52734	3.1220	62.780	4272.0	525.12	.09876
#1	.00723	110.29	.11247	.09372	.00362	-.00576	.00638	10.232
#2	.00708	109.28	.11184	.08876	.00720	.00462	-.00039	10.250
#3	.00743	109.56	.11129	.08890	.00196	.00152	-.01099	10.249
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606065003 Acquired: 6/23/2016 12:12:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00113	.28838	.01481	.00147	.00293	.01681	.05048
Stddev	.00051	.00065	.00364	.00241	.00118	.00020	.02831
%RSD	45.019	.22666	24.569	163.44	40.265	1.2003	56.077
#1	.00092	.28836	.01790	.00214	.00241	.01669	.07419
#2	.00172	.28774	.01080	.00348	.00427	.01704	.01914
#3	.00077	.28905	.01573	-.00120	.00209	.01669	.05812
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6730.4	42248.	2219.4
Stddev	36.5	334.	5.6
%RSD	.54199	.79170	.25173
#1	6743.2	42234.	2213.5
#2	6758.8	42590.	2220.1
#3	6689.3	41921.	2224.6

Approved: June 24, 2016

Sample Name: L1606065008 Acquired: 6/23/2016 12:16:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00094**	**.37295**	**-.00050**	**.01100**	**.08991**	**.00014**	**5.5551**
Stddev	.00216	.00586	.00030	.00247	.00137	.00007	.0211
%RSD	231.27	1.5701	60.725	22.464	1.5229	48.760	.37958
#1	-.00155	.37972	-.00076	.00961	.09094	.00017	5.5696
#2	.00239	.36962	-.00058	.00954	.08836	.00019	5.5648
#3	.00197	.36953	-.00016	.01385	.09043	.00006	5.5309
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00045**	**.00183**	**.00276**	**-.00009**	**.22715**	**1.2637**	**.01968**
Stddev	.00019	.00020	.00006	.00175	.01231	.1251	.00398
%RSD	42.655	10.871	2.0726	2042.1	5.4197	9.9030	20.221
#1	.00028	.00168	.00280	.00015	.21454	1.2211	.01991
#2	.00042	.00177	.00269	-.00194	.23914	1.4046	.01559
#3	.00066	.00206	.00277	.00153	.22778	1.1654	.02354
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.5219**	**.51901**	**.00085**	**107.29**	**.02015**	**.05313**	**.00169**
Stddev	.1150	.00477	.00050	.21	.00058	.00814	.00069
%RSD	3.2666	.91942	58.338	.19407	2.8910	15.322	41.005
#1	3.3891	.51379	.00032	107.25	.02066	.04374	.00247
#2	3.5920	.52011	.00129	107.52	.02027	.05752	.00113
#3	3.5845	.52314	.00094	107.12	.01952	.05813	.00149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606065008 Acquired: 6/23/2016 12:16:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00073	-.00197	8.8487	.00069	.11069	.00926	-.00445
Stddev	.00134	.00306	.0099	.00012	.00023	.00236	.00053
%RSD	182.00	155.09	.11148	17.201	.20833	25.534	11.807
#1	-.00192	-.00166	8.8443	.00082	.11048	.00698	-.00505
#2	-.00099	-.00517	8.8600	.00068	.11065	.00910	-.00423
#3	.00071	.00092	8.8417	.00058	.11093	.01170	-.00408
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00059	.06839	F -.19029
Stddev	.00037	.00033	.03412
%RSD	61.583	.48036	17.929
#1	-.00097	.06802	-.15444
#2	-.00057	.06860	-.22235
#3	-.00024	.06857	-.19407
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6652.3	41744.	2157.8
Stddev	13.8	125.	26.3
%RSD	.20808	.30032	1.2206
#1	6636.5	41605.	2128.7
#2	6661.9	41780.	2164.7
#3	6658.6	41848.	2180.0

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 12:20:48 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.43349**	**10.353**	**.41577**	**.50994**	**1.0482**	**.05096**	**10.384**
Stddev	.00485	.010	.00570	.00299	.0008	.00033	.107
%RSD	1.1187	.09724	1.3717	.58537	.07978	.64838	1.0295
#1	.42886	10.350	.41404	.50989	1.0486	.05109	10.397
#2	.43308	10.345	.41113	.51295	1.0488	.05121	10.483
#3	.43854	10.364	.42213	.50698	1.0473	.05059	10.271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05233**	**.21095**	**.51702**	**.52714**	**4.1456**	**52.157**	**1.0519**
Stddev	.00026	.00011	.00231	.00225	.0219	.071	.0095
%RSD	.49939	.05441	.44715	.42771	.52838	.13576	.90262
#1	.05254	.21106	.51692	.52834	4.1708	52.147	1.0521
#2	.05203	.21083	.51937	.52454	4.1342	52.092	1.0614
#3	.05240	.21096	.51475	.52854	4.1317	52.232	1.0424
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.434**	**.52121**	**1.0492**	**52.414**	**.52654**	**10.396**	**.52092**
Stddev	.126	.00385	.0056	.098	.00103	.025	.00769
%RSD	1.2092	.73822	.53418	.18692	.19506	.24476	1.4771
#1	10.317	.51677	1.0555	52.460	.52766	10.404	.52824
#2	10.568	.52362	1.0474	52.480	.52564	10.368	.51290
#3	10.417	.52323	1.0447	52.301	.52632	10.417	.52161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 12:20:48 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2647**	**.41582**	**5.2897**	**1.0426**	**1.0474**	**1.0316**	**.52421**
Stddev	.0085	.00081	.0192	.0024	.0031	.0076	.00494
%RSD	.67132	.19539	.36255	.23353	.29112	.73907	.94263
#1	1.2718	.41524	5.2962	1.0431	1.0449	1.0253	.52700
#2	1.2553	.41547	5.2682	1.0400	1.0508	1.0294	.52712
#3	1.2670	.41675	5.3049	1.0448	1.0466	1.0400	.51850
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0286**	**1.0463**	F **.06116**
Stddev	.0063	.0019	.57133
%RSD	.60756	.18676	934.11
#1	1.0326	1.0469	-.55556
#2	1.0317	1.0441	.57239
#3	1.0214	1.0478	.16666
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6823.1**	**42205.**	**2180.8**
Stddev	45.2	76.	38.1
%RSD	.66310	.18083	1.7449
#1	6824.7	42291.	2143.4
#2	6867.5	42174.	2219.5
#3	6777.1	42148.	2179.5

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 12:24:27 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00060**	**.01492**	**.00161**	**.00461**	**.00327**	**.00005**	**.00493**
Stddev	.00124	.00546	.00218	.00168	.00084	.00006	.03046
%RSD	205.49	36.566	135.28	36.366	25.661	137.48	617.42
#1	-.00032	.00875	-.00044	.00277	.00418	.00002	-.02974
#2	.00047	.01693	.00390	.00501	.00309	.00000	.01715
#3	-.00195	.01909	.00137	.00605	.00253	.00012	.02738
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00044**	**.00010**	**.00142**	**-.00176**	**-.01069**	**.06773**	**-.00268**
Stddev	.00041	.00031	.00160	.00098	.01615	.07990	.00427
%RSD	92.565	296.93	112.74	55.809	151.09	117.97	159.16
#1	.00010	-.00004	.00076	-.00065	.00519	.15988	.00187
#2	.00090	.00046	.00324	-.00253	-.02710	.02546	-.00659
#3	.00034	-.00011	.00025	-.00210	-.01015	.01784	-.00333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.19200**	**.00252**	**.00474**	**.07698**	**-.00084**	**.00528**	**.00057**
Stddev	.12403	.00084	.00094	.02220	.00131	.00743	.00445
%RSD	64.597	33.209	19.832	28.835	155.82	140.76	776.29
#1	-.15567	.00334	.00378	.08323	-.00038	.01004	-.00293
#2	-.33014	.00167	.00566	.09539	.00018	.00907	-.00094
#3	-.09020	.00254	.00476	.05233	-.00233	-.00328	.00559
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 12:24:27 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00066**	**.00330**	**.01008**	**.00122**	**.00049**	**.00291**	**-.00103**
Stddev	.00887	.00211	.00243	.00082	.00040	.00265	.00189
%RSD	1339.0	63.868	24.056	67.357	81.347	91.128	183.66
#1	-.00210	.00463	.00977	.00028	.00054	-.00004	-.00303
#2	.01058	.00087	.01265	.00182	.00007	.00369	.00073
#3	-.00650	.00440	.00783	.00157	.00085	.00509	-.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00060**	**-.00001**	F **-.22691**
Stddev	.00066	.00012	.26976
%RSD	109.33	1826.7	118.88
#1	-.00062	.00005	-.50673
#2	.00007	-.00014	.03151
#3	-.00125	.00007	-.20552
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6792.2**	**42764.**	**2142.0**
Stddev	4.5	206.	11.5
%RSD	.06579	.48263	.53538
#1	6797.0	42989.	2133.7
#2	6788.2	42584.	2155.1
#3	6791.3	42720.	2137.4

Approved: June 24, 2016

Sample Name: PBW 9A Acquired: 6/23/2016 12:28:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00105**	**.02171**	**.00244**	**.00673**	**.00126**	**-.00003**	**-.05439**
Stddev	.00150	.00352	.00258	.00309	.00128	.00008	.04093
%RSD	143.33	16.201	105.76	45.867	102.12	293.70	75.246
#1	-.00069	.02375	.00128	.00392	.00151	.00000	-.08805
#2	.00189	.01765	.00539	.01003	.00240	.00003	-.06629
#3	.00193	.02373	.00064	.00624	-.00013	-.00012	-.00883
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00035**	**.00023**	**.00158**	**-.00096**	**.00709**	**-.07719**	**.00102**
Stddev	.00000	.00019	.00089	.00068	.03049	.03016	.00222
%RSD	.83206	82.958	56.456	70.362	430.31	39.069	216.53
#1	.00035	.00032	.00226	-.00086	.01702	-.04271	.00135
#2	.00035	.00001	.00190	-.00034	.03137	-.09023	.00306
#3	.00036	.00035	.00057	-.00169	-.02713	-.09865	-.00134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03686**	**.00230**	**.00136**	**.11675**	**-.00185**	**-.00459**	**.00215**
Stddev	.08180	.00124	.00032	.02730	.00032	.00543	.00135
%RSD	221.89	54.095	23.684	23.386	17.191	118.48	62.717
#1	.12721	.00089	.00140	.08528	-.00149	-.00676	.00368
#2	.01555	.00324	.00102	.13093	-.00204	.00160	.00111
#3	-.03217	.00276	.00166	.13405	-.00204	-.00860	.00166
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: PBW 9A Acquired: 6/23/2016 12:28:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00174	-.00430	.00801	.00106	.00047	.01231	-.00171
Stddev	.00278	.00332	.00038	.00032	.00078	.00274	.00288
%RSD	160.19	77.122	4.7825	29.796	167.01	22.301	168.53
#1	.00487	-.00373	.00845	.00141	.00114	.01343	-.00071
#2	-.00042	-.00131	.00773	.00098	-.00038	.00918	.00054
#3	.00076	-.00787	.00785	.00079	.00064	.01432	-.00495
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00020	.00177	F -.42567
Stddev	.00050	.00016	.27822
%RSD	254.67	8.9618	65.360
#1	-.00062	.00175	-.67922
#2	-.00032	.00163	-.12805
#3	.00035	.00194	-.46974
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6735.9	42461.	2142.9
Stddev	23.8	190.	19.6
%RSD	.35284	.44797	.91669
#1	6756.3	42258.	2130.8
#2	6741.6	42489.	2132.3
#3	6709.8	42635.	2165.5

Approved: June 24, 2016

Sample Name: LCSW 9A Acquired: 6/23/2016 12:32:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21862**	**5.1749**	**.20706**	**1.0059**	**.52790**	**.02511**	**5.3259**	**.02625**
Stddev	.00105	.0138	.00142	.0053	.00145	.00005	.0730	.00042
%RSD	.47858	.26622	.68661	.52250	.27422	.20554	1.3710	1.6039
#1	.21748	5.1595	.20682	1.0119	.52887	.02505	5.3723	.02617
#2	.21883	5.1861	.20578	1.0037	.52624	.02514	5.2417	.02587
#3	.21954	5.1791	.20859	1.0021	.52860	.02514	5.3636	.02670
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10579**	**.25981**	**.26650**	**2.1153**	**25.949**	**.52615**	**5.2296**	**.26267**
Stddev	.00017	.00166	.00050	.0412	.208	.00546	.1321	.00383
%RSD	.16358	.63829	.18798	1.9496	.80266	1.0377	2.5264	1.4585
#1	.10598	.26003	.26617	2.0972	25.958	.53066	5.1307	.26398
#2	.10575	.26135	.26625	2.0863	25.736	.52008	5.1784	.26568
#3	.10564	.25806	.26708	2.1626	26.152	.52771	5.3796	.25836
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53809**	**26.382**	**.26602**	**5.0505**	**.26442**	**.63942**	**.19862**	**2.6942**
Stddev	.00217	.107	.00132	.0129	.00389	.00289	.00602	.0099
%RSD	.40327	.40576	.49728	.25504	1.4726	.45272	3.0327	.36655
#1	.54058	26.505	.26742	5.0651	.26838	.64232	.20378	2.7053
#2	.53711	26.319	.26585	5.0454	.26059	.63653	.19200	2.6864
#3	.53658	26.320	.26479	5.0409	.26429	.63940	.20007	2.6909
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: LCSW 9A Acquired: 6/23/2016 12:32:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52664	.53638	.53249	.26160	.51512	.52639	.07644
Stddev	.00197	.00221	.00973	.00257	.00134	.00186	.23401
%RSD	.37460	.41251	1.8268	.98264	.26011	.35402	306.16
#1	.52890	.53538	.53798	.26390	.51583	.52848	.32243
#2	.52526	.53485	.52126	.26208	.51596	.52489	-.14341
#3	.52576	.53892	.53824	.25882	.51357	.52581	.05029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6718.1	42029.	2146.1
Stddev	16.8	197.	23.7
%RSD	.24960	.46881	1.1059
#1	6729.4	41993.	2126.8
#2	6726.0	41853.	2138.9
#3	6698.8	42242.	2172.6

Approved: June 24, 2016

Sample Name: F BLANK Acquired: 6/23/2016 12:36:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00169**	**.01329**	**.00117**	**.00521**	**.00090**	**.00004**	**.01184**
Stddev	.00118	.01449	.00247	.00116	.00111	.00005	.05441
%RSD	69.720	109.00	211.84	22.232	123.24	115.17	459.72
#1	.00067	.02586	-.00106	.00446	-.00014	.00007	-.05079
#2	.00143	-.00256	.00382	.00464	.00077	-.00001	.04749
#3	.00299	.01658	.00073	.00655	.00207	.00007	.03881
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00030**	**-.00030**	**.00180**	**-.00037**	F **-.03210**	**.02396**	**.00164**
Stddev	.00007	.00028	.00162	.00173	.01094	.07024	.00113
%RSD	22.944	95.859	89.912	468.65	34.099	293.15	68.927
#1	.00032	-.00035	.00011	.00030	-.01979	.07357	.00037
#2	.00023	.00001	.00195	.00093	-.04072	.05472	.00201
#3	.00037	-.00055	.00335	-.00234	-.03578	-.05641	.00253
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.03159**	**-.00119**	**.00127**	**.14348**	**-.00017**	**-.00302**	**.00279**
Stddev	.05268	.00112	.00015	.00668	.00022	.01538	.00239
%RSD	166.73	93.930	12.134	4.6553	124.39	508.76	85.383
#1	-.06723	-.00247	.00111	.15005	-.00016	-.01729	.00135
#2	.02891	-.00065	.00141	.13670	-.00040	.01327	.00555
#3	-.05646	-.00044	.00131	.14370	.00003	-.00504	.00148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: F BLANK Acquired: 6/23/2016 12:36:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00429**	**.00520**	**.01018**	**.00070**	**.00304**	**.00711**	**-.00371**
Stddev	.00171	.00663	.00080	.00222	.00057	.00751	.00309
%RSD	39.956	127.55	7.8886	317.56	18.898	105.60	83.235
#1	-.00383	.00412	.01000	.00203	.00239	.00988	-.00016
#2	-.00619	-.00083	.00948	.00194	.00326	-.00139	-.00580
#3	-.00286	.01231	.01106	-.00187	.00347	.01285	-.00517
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00052**	**.00247**	**.20188**
Stddev	.00067	.00028	.15109
%RSD	128.14	11.399	74.843
#1	-.00000	.00266	.12763
#2	-.00029	.00260	.10227
#3	-.00128	.00214	.37573
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6848.0**	**43129.**	**2203.6**
Stddev	17.0	116.	40.3
%RSD	.24788	.26822	1.8285
#1	6840.0	43254.	2237.6
#2	6836.5	43026.	2159.1
#3	6867.5	43107.	2214.2

Approved: June 24, 2016

Sample Name: L1606078709 Acquired: 6/23/2016 12:40:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00229	.34423	-.00164	.04501	.09329	-.00010	56.919	.00038
Stddev	.00043	.01247	.00379	.00153	.00209	.00009	.746	.00006
%RSD	18.600	3.6226	230.35	3.4051	2.2355	91.391	1.3098	15.382
#1	.00278	.35810	.00261	.04367	.09569	-.00010	57.776	.00044
#2	.00205	.33394	-.00291	.04468	.09195	-.00001	56.556	.00036
#3	.00205	.34066	-.00463	.04668	.09223	-.00019	56.425	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.00331	.00226	.32551	1.2191	.01307	18.463	.01384
Stddev	.00024	.00045	.00113	.02821	.0343	.00579	.294	.00288
%RSD	163.96	13.717	50.047	8.6673	2.8163	44.290	1.5898	20.829
#1	.00006	.00370	.00148	.35802	1.2200	.00909	18.613	.01575
#2	.00042	.00343	.00356	.31107	1.2530	.01970	18.125	.01052
#3	-.00004	.00281	.00175	.30744	1.1843	.01041	18.651	.01525
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	3.8679	-.00006	.19112	.00273	.00016	.00316	9.5319
Stddev	.00017	.0832	.00169	.00281	.00222	.00426	.01169	.0215
%RSD	33.645	2.1507	2767.7	1.4686	81.412	2635.4	369.49	.22498
#1	.00048	3.9597	.00168	.19419	.00029	-.00139	.00141	9.5100
#2	.00069	3.8464	-.00169	.18868	.00326	-.00310	-.00755	9.5529
#3	.00035	3.7975	-.00017	.19050	.00464	.00498	.01564	9.5328
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606078709 Acquired: 6/23/2016 12:40:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00114**	**.15008**	**.00611**	**.00006**	**.00208**	**.01394**	**.12651**
Stddev	.00029	.00282	.00671	.00130	.00048	.00024	.10058
%RSD	25.142	1.8804	109.74	2091.4	22.807	1.6929	79.498
#1	.00101	.15329	.00841	.00056	.00197	.01393	.23030
#2	.00147	.14797	-.00144	.00104	.00261	.01418	.11976
#3	.00094	.14899	.01136	-.00142	.00168	.01371	.02949
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7008.6**	**44037.**	**2274.6**
Stddev	58.7	90.	58.1
%RSD	.83811	.20335	2.5527
#1	7040.7	44061.	2210.8
#2	6940.8	43938.	2288.9
#3	7044.3	44112.	2324.2

Approved: June 24, 2016

Sample Name: L1606078711S Acquired: 6/23/2016 12:44:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21444**	**5.4597**	**.20422**	**1.0297**	**.60086**	**.02444**	**59.136**	**.02564**
Stddev	.00107	.0321	.00448	.0059	.00240	.00026	.342	.00031
%RSD	.50108	.58738	2.1942	.57168	.39981	1.0599	.57766	1.1894
#1	.21336	5.4646	.19913	1.0298	.60082	.02453	58.978	.02599
#2	.21551	5.4255	.20758	1.0238	.60329	.02415	59.528	.02540
#3	.21444	5.4890	.20595	1.0356	.59848	.02465	58.901	.02554
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10099**	**.25246**	**.25408**	**2.3914**	**26.238**	**.52509**	**22.671**	**.26957**
Stddev	.00096	.00240	.00204	.0378	.190	.00248	.097	.00069
%RSD	.95542	.94955	.80099	1.5812	.72578	.47192	.42611	.25486
#1	.10204	.25175	.25493	2.4019	26.290	.52317	22.742	.26878
#2	.10014	.25050	.25176	2.4230	26.396	.52789	22.561	.27007
#3	.10080	.25513	.25556	2.3495	26.027	.52422	22.709	.26985
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52400**	**29.173**	**.25206**	**5.2009**	**.25684**	**.62111**	**.19336**	**12.135**
Stddev	.00226	.184	.00153	.0264	.00562	.00252	.00475	.045
%RSD	.43200	.63202	.60780	.50841	2.1877	.40638	2.4564	.37093
#1	.52661	29.078	.25383	5.2253	.26309	.62401	.19051	12.187
#2	.52273	29.385	.25133	5.2045	.25220	.61993	.19072	12.105
#3	.52266	29.055	.25104	5.1728	.25523	.61940	.19884	12.114
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606078711S Acquired: 6/23/2016 12:44:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50899**	**.66145**	**.51197**	**.11737**	**.50542**	**.51776**	**.38550**
Stddev	.00093	.00353	.00830	.00250	.00346	.00270	.16244
%RSD	.18257	.53437	1.6211	2.1327	.68550	.52078	42.137
#1	.50929	.65987	.50403	.12026	.50405	.52085	.44171
#2	.50794	.66550	.52059	.11582	.50284	.51657	.20242
#3	.50973	.65898	.51129	.11603	.50936	.51586	.51236
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6896.6**	**43117.**	**2256.9**
Stddev	23.4	149.	25.7
%RSD	.33903	.34585	1.1384
#1	6870.8	43289.	2227.3
#2	6902.4	43043.	2272.5
#3	6916.4	43021.	2271.0

Approved: June 24, 2016

Sample Name: L1606078712SD Acquired: 6/23/2016 12:47:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.22222	6.9091	.21902	1.0835	.63705	.02557	61.949	.02711
Stddev	.00054	.0778	.00270	.0119	.00654	.00033	.627	.00049
%RSD	.24497	1.1267	1.2310	1.0998	1.0260	1.2886	1.0120	1.8122
#1	.22159	6.8203	.22150	1.0711	.64423	.02521	62.665	.02667
#2	.22252	6.9419	.21942	1.0845	.63145	.02585	61.499	.02702
#3	.22255	6.9652	.21615	1.0948	.63547	.02566	61.683	.02764
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10799	.26553	.27324	3.5530	27.834	.54656	24.046	.31995
Stddev	.00068	.00298	.00075	.0652	.258	.00986	.319	.00232
%RSD	.63148	1.1216	.27535	1.8345	.92801	1.8040	1.3284	.72573
#1	.10770	.26210	.27379	3.6282	28.112	.54919	24.403	.32247
#2	.10750	.26697	.27238	3.5140	27.602	.53565	23.948	.31949
#3	.10877	.26750	.27354	3.5167	27.788	.55483	23.787	.31790
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.55768	30.666	.26947	5.5531	.27503	.65875	.20965	15.500
Stddev	.00211	.309	.00314	.0329	.00634	.00222	.00306	.082
%RSD	.37890	1.0085	1.1651	.59314	2.3050	.33734	1.4581	.52959
#1	.55544	31.019	.26645	5.5261	.26776	.65625	.21162	15.429
#2	.55796	30.445	.26924	5.5434	.27796	.66048	.20613	15.482
#3	.55964	30.533	.27272	5.5898	.27938	.65954	.21121	15.590
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606078712SD Acquired: 6/23/2016 12:47:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.54487	.69273	.54313	.20068	.52663	.55357	.81516
Stddev	.00401	.00802	.00413	.00570	.00642	.00315	.20013
%RSD	.73565	1.1579	.75965	2.8389	1.2184	.56876	24.551
#1	.54171	.70191	.54694	.19419	.51929	.55044	.73031
#2	.54352	.68922	.54371	.20484	.52944	.55353	.67143
#3	.54938	.68707	.53875	.20302	.53116	.55674	1.0437
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6712.3	42493.	2227.8
Stddev	15.8	439.	27.4
%RSD	.23544	1.0332	1.2303
#1	6721.1	42996.	2205.4
#2	6721.6	42185.	2219.6
#3	6694.0	42299.	2258.4

Approved: June 24, 2016

Sample Name: L1606094702 Acquired: 6/23/2016 12:51:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00161**	**.72329**	**.00024**	**.04257**	**.02726**	**.00093**	**71.363**
Stddev	.00172	.00564	.00259	.00289	.00077	.00009	.357
%RSD	107.13	.78037	1071.7	6.7912	2.8393	9.5513	.49984
#1	.00263	.72125	.00050	.03924	.02748	.00083	71.550
#2	-.00038	.71895	.00269	.04449	.02790	.00099	71.588
#3	.00257	.72967	-.00247	.04397	.02640	.00097	70.952
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00065**	**.01705**	**.00536**	**.00360**	**.48801**	**4.4714**	**.08505**
Stddev	.00017	.00041	.00004	.00180	.01606	.0806	.00293
%RSD	26.336	2.4191	.69244	50.107	3.2903	1.8030	3.4402
#1	.00062	.01749	.00532	.00198	.49690	4.3787	.08246
#2	.00084	.01697	.00535	.00328	.49765	4.5098	.08447
#3	.00050	.01668	.00540	.00554	.46947	4.5256	.08822
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**49.963**	**2.6850**	**.00051**	**2.6407**	**.10126**	**.02363**	**.00021**
Stddev	.390	.0188	.00060	.0576	.00091	.00614	.00130
%RSD	.78147	.69880	116.71	2.1803	.89694	25.990	626.25
#1	50.021	2.6947	.00017	2.6107	.10203	.01758	.00168
#2	50.320	2.6969	.00120	2.6044	.10149	.02985	-.00027
#3	49.546	2.6634	.00017	2.7071	.10026	.02345	-.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606094702 Acquired: 6/23/2016 12:51:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00117**	**.00780**	**9.0826**	**.00035**	**.15068**	**-.00633**	**-.00126**
Stddev	.00263	.00037	.0069	.00043	.00086	.00191	.00207
%RSD	224.74	4.7068	.07622	124.87	.56783	30.257	164.67
#1	-.00051	.00762	9.0850	-.00014	.15125	-.00686	.00098
#2	.00107	.00823	9.0748	.00049	.15110	-.00792	-.00164
#3	-.00406	.00757	9.0880	.00069	.14970	-.00420	-.00311
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00160**	**.09771**	F **-.16778**
Stddev	.00119	.00040	.51040
%RSD	73.987	.41151	304.20
#1	-.00195	.09817	-.75124
#2	-.00028	.09753	.19603
#3	-.00258	.09742	.05186
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6766.6**	**42365.**	**2163.4**
Stddev	9.2	146.	15.3
%RSD	.13637	.34463	.70577
#1	6775.0	42444.	2166.8
#2	6768.2	42197.	2146.8
#3	6756.7	42455.	2176.8

Approved: June 24, 2016

Sample Name: L1606094702PS Acquired: 6/23/2016 12:55:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573561-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.23131**	**6.0776**	**.22198**	**1.0949**	**.57783**	**.02707**	**68.881**	**.02745**
Stddev	.00261	.0118	.00368	.0042	.00396	.00014	.349	.00034
%RSD	1.1293	.19488	1.6573	.38166	.68564	.52400	.50731	1.2383
#1	.23191	6.0677	.22245	1.0989	.58171	.02694	69.284	.02712
#2	.23358	6.0907	.22540	1.0952	.57379	.02722	68.656	.02780
#3	.22846	6.0743	.21808	1.0905	.57800	.02705	68.704	.02742
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.12357**	**.27001**	**.27410**	**2.6713**	**31.343**	**.63792**	**50.109**	**2.6662**
Stddev	.00057	.00132	.00049	.0829	.141	.00571	.478	.0042
%RSD	.46382	.48739	.18035	3.1046	.45067	.89520	.95447	.15755
#1	.12291	.26993	.27402	2.7447	31.454	.64241	50.655	2.6687
#2	.12395	.26874	.27464	2.5813	31.391	.63149	49.762	2.6614
#3	.12384	.27137	.27366	2.6879	31.184	.63985	49.911	2.6685
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.56440**	**30.139**	**.35952**	**5.4625**	**.27321**	**.67168**	**.20646**	**10.951**
Stddev	.00177	.207	.00084	.0146	.00396	.00325	.00903	.012
%RSD	.31433	.68626	.23364	.26735	1.4480	.48353	4.3731	.11161
#1	.56510	30.360	.35967	5.4483	.26967	.66886	.19608	10.941
#2	.56572	29.950	.36028	5.4775	.27248	.67095	.21077	10.965
#3	.56239	30.107	.35862	5.4616	.27748	.67523	.21252	10.949
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606094702PS Acquired: 6/23/2016 12:55:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573561-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.55207**	**.69512**	**.54416**	**.27151**	**.53992**	**.62316**	**.33455**
Stddev	.00111	.00297	.00646	.00259	.00233	.00135	.21435
%RSD	.20021	.42717	1.1871	.95282	.43173	.21709	64.072
#1	.55091	.69855	.54132	.27429	.53723	.62231	.56787
#2	.55311	.69332	.55155	.27110	.54122	.62472	.28942
#3	.55220	.69350	.53960	.26916	.54131	.62246	.14635
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6701.8**	**41790.**	**2191.5**
Stddev	33.8	212.	30.8
%RSD	.50413	.50847	1.4072
#1	6738.9	41963.	2159.3
#2	6693.9	41855.	2194.4
#3	6672.8	41553.	2220.7

Approved: June 24, 2016

Sample Name: L1606094702SDL Acquired: 6/23/2016 12:58:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573561-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00043**	**.14607**	**-.00240**	**.01522**	**.00533**	**.00018**	**13.829**
Stddev	.00072	.00173	.00155	.00294	.00088	.00007	.014
%RSD	166.60	1.1836	64.638	19.298	16.495	36.775	.10097
#1	.00110	.14802	-.00090	.01555	.00630	.00012	13.821
#2	.00052	.14545	-.00230	.01213	.00459	.00025	13.845
#3	-.00033	.14473	-.00399	.01798	.00509	.00017	13.821
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00040**	**.00301**	**.00202**	**-.00034**	**.09184**	**.97478**	**.01267**
Stddev	.00032	.00048	.00120	.00215	.01151	.12899	.00579
%RSD	79.310	15.784	59.069	637.47	12.537	13.232	45.699
#1	.00047	.00356	.00068	-.00130	.09769	.95678	.00661
#2	.00068	.00280	.00298	.00212	.07858	1.1118	.01326
#3	.00005	.00268	.00241	-.00183	.09927	.85574	.01815
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.9348**	**.52152**	**.00068**	**.59140**	**.01937**	**.00797**	**.00486**
Stddev	.0620	.00623	.00032	.02814	.00066	.00973	.00294
%RSD	.62431	1.1951	47.005	4.7580	3.4076	121.96	60.573
#1	9.8700	.51435	.00105	.60058	.01907	.01776	.00762
#2	9.9936	.52460	.00045	.61381	.01892	-.00169	.00177
#3	9.9409	.52561	.00055	.55982	.02013	.00786	.00517
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606094702SDL Acquired: 6/23/2016 12:58:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573561-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00111**	**.00210**	**1.8002**	**.00040**	**.02959**	**.00055**	**-.00159**
Stddev	.00327	.00710	.0136	.00093	.00013	.00562	.00187
%RSD	293.76	338.69	.75754	236.18	.44358	1015.7	117.61
#1	-.00190	.00513	1.7939	.00073	.02952	.00262	.00008
#2	-.00392	-.00601	1.7909	-.00066	.02974	-.00581	-.00361
#3	.00248	.00718	1.8159	.00112	.02950	.00484	-.00124
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00035**	**.01973**	F **-.13864**
Stddev	.00102	.00027	.24407
%RSD	289.01	1.3729	176.04
#1	.00075	.01955	.08331
#2	-.00055	.02004	-.09920
#3	-.00127	.01961	-.40003
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6855.2**	**43109.**	**2187.1**
Stddev	32.0	303.	16.2
%RSD	.46723	.70314	.73913
#1	6819.8	43433.	2193.1
#2	6882.1	43061.	2199.5
#3	6863.8	42833.	2168.8

Approved: June 24, 2016

Sample Name: L1606094702SDL Acquired: 6/23/2016 13:02:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573561-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00232**	**.02993**	**.00197**	**.00512**	**.00114**	**.00015**	**2.8120**
Stddev	.00313	.00891	.00181	.00244	.00183	.00007	.0500
%RSD	135.12	29.779	91.937	47.607	160.57	48.153	1.7778
#1	-.00063	.02792	.00148	.00724	.00306	.00014	2.7564
#2	.00198	.03967	.00046	.00246	-.00058	.00008	2.8532
#3	.00561	.02219	.00398	.00564	.00094	.00022	2.8264
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**.00072**	**.00245**	**-.00169**	**.00207**	**.15449**	**.00188**
Stddev	.00040	.00049	.00241	.00183	.01789	.14437	.00389
%RSD	284.13	68.360	98.576	108.23	863.70	93.452	207.06
#1	-.00007	.00018	-.00005	-.00315	.01687	.27627	.00638
#2	-.00011	.00115	.00262	-.00229	.00716	-.00499	-.00030
#3	.00060	.00082	.00477	.00036	-.01782	.19218	-.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.8882**	**.10521**	**.00022**	**.13787**	**.00377**	**.01679**	**.00215**
Stddev	.0526	.00189	.00010	.02493	.00067	.01082	.00238
%RSD	2.7846	1.7994	46.937	18.080	17.824	64.431	110.71
#1	1.8378	.10506	.00020	.10917	.00363	.02905	.00396
#2	1.9428	.10340	.00033	.15032	.00318	.01271	-.00055
#3	1.8841	.10717	.00013	.15412	.00450	.00860	.00303
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606094702SDL Acquired: 6/23/2016 13:02:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573561-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00088**	**.00528**	**.39801**	**-.00045**	**.00623**	**.00559**	**-.00232**
Stddev	.00473	.00204	.01013	.00049	.00041	.00837	.00290
%RSD	536.31	38.691	2.5457	109.74	6.5228	149.79	124.78
#1	-.00591	.00761	.38714	-.00061	.00612	.01019	-.00518
#2	-.00021	.00380	.39971	-.00083	.00589	.01064	.00062
#3	.00348	.00443	.40719	.00010	.00668	-.00407	-.00241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00052**	**.00442**	F **-.13647**
Stddev	.00130	.00031	.33809
%RSD	251.32	7.0031	247.74
#1	.00098	.00407	.17426
#2	-.00137	.00451	-.08717
#3	-.00117	.00467	-.49650
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6876.1**	**42408.**	**2136.2**
Stddev	29.1	201.	14.2
%RSD	.42340	.47409	.66281
#1	6864.1	42374.	2128.3
#2	6855.0	42226.	2152.5
#3	6909.3	42624.	2127.7

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 13:06:47 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41931**	**9.9537**	**.39878**	**.50263**	**1.0085**	**.04939**	**10.034**
Stddev	.00164	.0353	.00377	.00336	.0014	.00017	.082
%RSD	.39206	.35430	.94451	.66913	.14275	.35114	.81498
#1	.41760	9.9153	.40299	.50583	1.0078	.04928	9.9769
#2	.42087	9.9846	.39571	.50292	1.0075	.04930	10.128
#3	.41947	9.9613	.39765	.49913	1.0101	.04959	9.9974
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05036**	**.20153**	**.50072**	**.50474**	**4.0678**	**50.366**	**1.0214**
Stddev	.00065	.00037	.00022	.00087	.0271	.102	.0072
%RSD	1.2912	.18249	.04296	.17151	.66491	.20209	.70465
#1	.04968	.20117	.50070	.50536	4.0371	50.471	1.0215
#2	.05045	.20152	.50094	.50375	4.0880	50.359	1.0141
#3	.05097	.20191	.50052	.50511	4.0784	50.267	1.0285
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.079**	**.50366**	**1.0023**	**50.473**	**.50280**	**9.9624**	**.50077**
Stddev	.093	.00324	.0039	.115	.00207	.0072	.00211
%RSD	.92173	.64314	.38539	.22799	.41224	.07221	.42157
#1	10.093	.50472	1.0065	50.555	.50200	9.9547	.50253
#2	9.9799	.50003	1.0015	50.342	.50124	9.9690	.49843
#3	10.164	.50624	.99889	50.523	.50515	9.9635	.50133
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 13:06:47 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2042	.41075	5.0693	.99619	1.0092	1.0079	.50475
Stddev	.0025	.00642	.0043	.00145	.0003	.0022	.00299
%RSD	.20940	1.5623	.08445	.14552	.02557	.21789	.59179
#1	1.2050	.41242	5.0716	.99657	1.0089	1.0078	.50470
#2	1.2061	.40366	5.0643	.99459	1.0094	1.0101	.50180
#3	1.2013	.41616	5.0719	.99741	1.0093	1.0057	.50777
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.99675	1.0031	F .29620
Stddev	.00360	.0019	.08449
%RSD	.36160	.18852	28.526
#1	.99318	1.0044	.28950
#2	.99668	1.0009	.21526
#3	1.0004	1.0040	.38384
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7020.3	43456.	2261.9
Stddev	43.3	359.	17.6
%RSD	.61673	.82524	.77983
#1	6973.3	43726.	2266.4
#2	7058.5	43594.	2276.9
#3	7029.1	43049.	2242.5

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 13:10:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00055**	**.00613**	**-.00044**	**.00485**	**.00148**	**-.00004**	**.00904**
Stddev	.00241	.01049	.00350	.00063	.00079	.00007	.03049
%RSD	433.80	171.08	799.41	13.078	53.619	184.29	337.38
#1	-.00199	-.00292	-.00005	.00421	.00232	-.00011	.00926
#2	.00280	.01763	.00285	.00487	.00075	-.00002	.03942
#3	.00085	.00369	-.00411	.00548	.00136	.00002	-.02156
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**.00004**	**.00060**	**.00022**	**-.00957**	**.04485**	**-.00298**
Stddev	.00016	.00039	.00104	.00109	.01163	.02561	.00513
%RSD	223.78	1017.8	171.83	492.97	121.56	57.110	171.96
#1	-.00011	-.00030	-.00058	.00117	.00113	.06139	.00197
#2	.00019	-.00006	.00135	-.00097	-.02194	.01535	-.00827
#3	.00013	.00047	.00104	.00046	-.00789	.05781	-.00265
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.02645**	**-.00131**	**.00436**	**.08359**	**-.00037**	**.00422**	**.00149**
Stddev	.14321	.00098	.00060	.01032	.00168	.00190	.00276
%RSD	541.38	74.508	13.758	12.343	448.02	44.982	185.09
#1	.05023	-.00131	.00393	.08391	-.00111	.00494	.00032
#2	-.19168	-.00033	.00411	.09375	.00154	.00207	-.00049
#3	.06209	-.00229	.00504	.07312	-.00156	.00566	.00464
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 13:10:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00132**	**.00696**	**.00966**	**.00061**	**.00020**	**.00914**	**.00001**
Stddev	.00299	.00629	.00189	.00100	.00058	.00341	.00099
%RSD	227.17	90.310	19.527	162.70	288.56	37.372	8812.9
#1	-.00215	.00080	.01034	.00060	-.00047	.00937	.00002
#2	.00200	.00671	.00753	.00162	.00050	.00561	-.00099
#3	-.00380	.01337	.01111	-.00038	.00057	.01243	.00100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00102**	**-.00026**	F **-.17576**
Stddev	.00081	.00011	.20815
%RSD	79.559	41.267	118.43
#1	-.00149	-.00038	-.14101
#2	-.00149	-.00024	-.39909
#3	-.00008	-.00017	.01284
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7064.6**	**44034.**	**2255.7**
Stddev	48.2	228.	34.9
%RSD	.68253	.51684	1.5489
#1	7013.3	43791.	2215.4
#2	7071.5	44242.	2278.1
#3	7109.0	44070.	2273.5

Approved: June 24, 2016

Sample Name: L1606094705 Acquired: 6/23/2016 13:14:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00161	.82187	-.00408	.03630	.02684	.00085	72.205
Stddev	.00173	.01481	.00130	.00534	.00064	.00005	.308
%RSD	107.81	1.8022	31.834	14.720	2.3986	5.8394	.42674
#1	-.00022	.80686	-.00282	.03020	.02758	.00091	72.165
#2	.00323	.82228	-.00541	.03856	.02651	.00081	72.531
#3	.00181	.83648	-.00400	.04015	.02642	.00085	71.919
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	.01817	.00093	.00185	1.6458	4.6897	.09158
Stddev	.00025	.00062	.00101	.00048	.0446	.0964	.00336
%RSD	38.480	3.3997	108.34	25.910	2.7105	2.0559	3.6734
#1	.00077	.01886	.00173	.00135	1.5994	4.6337	.09260
#2	.00079	.01766	.00125	.00189	1.6495	4.6344	.09432
#3	.00036	.01800	-.00020	.00230	1.6884	4.8010	.08783
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	50.658	2.7986	.00127	2.6354	.09959	.02662	.00491
Stddev	.427	.0103	.00085	.0371	.00198	.00455	.00524
%RSD	.84271	.36614	66.753	1.4074	1.9871	17.099	106.80
#1	50.468	2.7956	.00072	2.6766	.09863	.02137	.00295
#2	51.146	2.8100	.00085	2.6046	.10186	.02939	.00092
#3	50.358	2.7901	.00225	2.6249	.09827	.02912	.01085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606094705 Acquired: 6/23/2016 13:14:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.00381**	**9.4129**	**.00054**	**.15051**	**.00190**	**-.00354**
Stddev	.00250	.00519	.0092	.00074	.00019	.00454	.00281
%RSD	1434.8	136.33	.09823	136.03	.12621	239.54	79.161
#1	-.00288	.00904	9.4198	-.00014	.15064	-.00000	-.00187
#2	.00032	.00371	9.4024	.00044	.15061	.00708	-.00678
#3	.00204	-.00133	9.4164	.00133	.15030	-.00139	-.00198
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00068**	**.07173**	F **-.37347**
Stddev	.00049	.00031	.18302
%RSD	72.278	.43135	49.004
#1	-.00045	.07207	-.56086
#2	-.00124	.07162	-.19516
#3	-.00034	.07148	-.36439
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6758.8**	**42075.**	**2180.1**
Stddev	19.3	166.	25.7
%RSD	.28529	.39440	1.1777
#1	6737.6	42257.	2166.1
#2	6763.5	42034.	2164.6
#3	6775.3	41933.	2209.8

Approved: June 24, 2016

Sample Name: L1606094708 Acquired: 6/23/2016 13:18:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00164	.06268	-.00080	.04013	.00822	-.00003	60.992	.00016
Stddev	.00030	.00800	.00219	.00082	.00098	.00002	.228	.00037
%RSD	18.102	12.756	272.89	2.0475	11.889	94.254	.37380	237.07
#1	.00189	.06933	.00137	.04011	.00734	-.00001	61.184	-.00008
#2	.00173	.05381	-.00301	.04096	.00805	-.00005	61.053	.00058
#3	.00131	.06491	-.00077	.03932	.00927	-.00001	60.740	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	.00259	.00012	.09008	2.7645	.02265	30.254	.13310
Stddev	.00013	.00099	.00044	.02365	.0093	.00490	.212	.00117
%RSD	25.250	38.264	366.51	26.251	.33582	21.630	.70194	.87906
#1	.00063	.00359	.00008	.09591	2.7684	.02272	30.452	.13445
#2	.00038	.00161	-.00029	.11026	2.7711	.02751	30.282	.13248
#3	.00059	.00256	.00057	.06406	2.7539	.01771	30.030	.13238
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	4.9855	.00127	.00314	.00298	-.00189	-.00265	2.6611
Stddev	.00045	.0199	.00123	.01354	.00332	.00518	.00200	.0079
%RSD	67.573	.39826	96.334	430.54	111.66	274.01	75.517	.29649
#1	.00015	4.9673	.00107	.01537	-.00028	.00407	-.00034	2.6680
#2	.00085	5.0067	.00016	.00547	.00284	-.00527	-.00378	2.6630
#3	.00098	4.9825	.00259	-.01141	.00636	-.00447	-.00382	2.6525
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606094708 Acquired: 6/23/2016 13:18:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.29525	-.00362	-.00167	-.00101	.00597	.05225
Stddev	.00035	.00175	.00389	.00187	.00032	.00015	.18866
%RSD	198.39	.59327	107.39	112.11	31.885	2.5356	361.09
#1	.00059	.29710	-.00450	-.00362	-.00076	.00607	.26218
#2	-.00000	.29505	-.00700	.00012	-.00138	.00604	-.10311
#3	-.00005	.29362	.00063	-.00151	-.00091	.00580	-.00232
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6816.2	42457.	2186.9
Stddev	19.1	323.	21.6
%RSD	.27982	.76080	.98620
#1	6816.0	42426.	2162.1
#2	6835.4	42150.	2201.0
#3	6797.3	42794.	2197.6

Approved: June 24, 2016

Sample Name: L1606076301 Acquired: 6/23/2016 13:22:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00194**	**.02208**	**.02568**	**.43236**	**9.4855**	**-.00003**	**137.11**
Stddev	.00189	.00829	.00398	.00360	.0365	.00003	.72
%RSD	97.559	37.532	15.506	.83185	.38489	98.288	.52423
#1	.00262	.01725	.02946	.42833	9.5136	-.00001	137.41
#2	-.00020	.03164	.02605	.43352	9.4987	-.00002	137.63
#3	.00340	.01734	.02153	.43523	9.4443	-.00007	136.29
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00053**	**.00163**	**.00105**	**.00139**	**1.5590**	**7.9988**	**.72684**
Stddev	.00021	.00016	.00122	.00073	.0278	.0357	.00746
%RSD	39.106	9.9424	116.16	52.795	1.7846	.44566	1.0265
#1	.00076	.00145	.00161	.00122	1.5818	8.0399	.72260
#2	.00035	.00173	-.00035	.00220	1.5671	7.9808	.73546
#3	.00049	.00173	.00189	.00076	1.5280	7.9758	.72247
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**14.574**	**.07725**	**.00038**	F **366.35**	**-.00162**	**.09780**	**.00176**
Stddev	.049	.00319	.00015	1.74	.00116	.00383	.00483
%RSD	.33920	4.1257	40.701	.47471	71.599	3.9136	275.19
#1	14.616	.07580	.00021	367.63	-.00032	.10141	.00318
#2	14.520	.07504	.00050	367.06	-.00199	.09379	.00571
#3	14.587	.08091	.00042	364.37	-.00255	.09822	-.00363
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 24, 2016

Sample Name: L1606076301 Acquired: 6/23/2016 13:22:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00397	-.00149	.10084	.00027	F 24.369	-.01330	.00299
Stddev	.00063	.00465	.00184	.00125	.396	.00152	.00530
%RSD	15.977	312.53	1.8206	463.89	1.6252	11.429	177.27
#1	.00431	-.00566	.10152	.00089	24.651	-.01201	.00898
#2	.00323	-.00233	.09876	.00108	24.539	-.01292	.00105
#3	.00435	.00353	.10223	-.00117	23.916	-.01498	-.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00040	.00607	.08263
Stddev	.00114	.00037	.16823
%RSD	283.06	6.0904	203.59
#1	.00067	.00564	.26003
#2	-.00159	.00627	-.07461
#3	-.00029	.00630	.06248
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6689.4	41180.	2146.8
Stddev	11.2	70.	2.5
%RSD	.16807	.16995	.11474
#1	6693.8	41192.	2144.5
#2	6676.6	41244.	2146.6
#3	6697.7	41105.	2149.4

Approved: June 24, 2016

Sample Name: L1606083702 Acquired: 6/23/2016 13:26:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00431	33.801	.01724	.09854	.41741	.00265	60.826
Stddev	.00281	.289	.00257	.00140	.00133	.00011	.364
%RSD	65.115	.85604	14.900	1.4221	.31977	3.9646	.59912
#1	.00738	33.583	.01584	.09704	.41851	.00273	61.102
#2	.00187	33.691	.02021	.09878	.41592	.00270	60.413
#3	.00369	34.130	.01567	.09981	.41779	.00253	60.962
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00162	.03572	.24908	.16782	92.318	11.517	.04115
Stddev	.00019	.00013	.00143	.00172	.620	.067	.00381
%RSD	11.832	.36436	.57531	1.0249	.67118	.58564	9.2558
#1	.00174	.03587	.24747	.16611	92.764	11.553	.03804
#2	.00172	.03567	.24955	.16781	91.610	11.439	.04540
#3	.00140	.03563	.25022	.16955	92.580	11.558	.04002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	17.028	1.2901	.09338	14.567	.12343	1.5590	.05321
Stddev	.186	.0069	.00072	.078	.00126	.0107	.00374
%RSD	1.0941	.53832	.76698	.53245	1.0197	.68610	7.0268
#1	17.029	1.2886	.09348	14.610	.12229	1.5476	.05746
#2	16.842	1.2841	.09405	14.477	.12322	1.5688	.05046
#3	17.215	1.2977	.09262	14.613	.12478	1.5607	.05169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606083702 Acquired: 6/23/2016 13:26:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00197	.00383	F 49.208	.00874	.24272	.69278	.00268
Stddev	.00187	.00439	.228	.00096	.00102	.00808	.00504
%RSD	94.757	114.53	.46427	10.948	.42123	1.1659	188.15
#1	.00014	.00501	48.946	.00793	.24335	.69156	.00539
#2	-.00342	-.00103	49.367	.00849	.24154	.68538	.00578
#3	-.00263	.00751	49.310	.00980	.24327	.70140	-.00313
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-1.0000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.08021	1.6367	4.1823
Stddev	.00064	.0106	.2507
%RSD	.80102	.64459	5.9933
#1	.07948	1.6246	4.0835
#2	.08071	1.6413	3.9961
#3	.08043	1.6441	4.4673
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6974.3	43179.	2263.8
Stddev	63.4	499.	11.4
%RSD	.90879	1.1550	.50270
#1	7031.6	43179.	2250.8
#2	6985.2	43677.	2268.4
#3	6906.2	42680.	2272.1

Approved: June 24, 2016

Sample Name: L1606085701 Acquired: 6/23/2016 13:30:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00105**	**.01551**	**-.00313**	**.11826**	**.00818**	**-.00000**	**2.0275**
Stddev	.00070	.00234	.00310	.00767	.00196	.00006	.0370
%RSD	66.752	15.097	99.267	6.4869	23.923	1367.3	1.8270
#1	.00059	.01377	-.00395	.11540	.00595	-.00005	1.9946
#2	.00185	.01458	.00031	.11242	.00898	.00006	2.0676
#3	.00071	.01817	-.00574	.12695	.00960	-.00003	2.0203
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00055**	**.00014**	**.00223**	**-.00232**	**-.00256**	**.40790**	**-.00322**
Stddev	.00041	.00028	.00121	.00125	.01666	.12678	.00659
%RSD	74.729	200.06	54.281	54.124	650.75	31.082	205.00
#1	.00103	.00003	.00355	-.00094	.01552	.30288	.00155
#2	.00028	-.00007	.00117	-.00261	-.01729	.37208	-.01074
#3	.00035	.00045	.00197	-.00340	-.00591	.54874	-.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.70908**	**.00231**	**.00078**	**28.050**	**.00489**	**.05231**	**.00240**
Stddev	.08177	.00221	.00088	.079	.00053	.00501	.00051
%RSD	11.531	95.612	113.58	.28080	10.812	9.5863	21.339
#1	.78336	.00106	.00002	28.135	.00550	.05582	.00192
#2	.72241	.00485	.00057	28.034	.00462	.05454	.00234
#3	.62147	.00100	.00175	27.980	.00455	.04656	.00294
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606085701 Acquired: 6/23/2016 13:30:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00069	.00604	.93518	.00155	.06238	-.00090	-.00177
Stddev	.00289	.00426	.00365	.00027	.00056	.00405	.00079
%RSD	416.59	70.572	.39073	17.233	.90476	450.45	44.755
#1	.00258	.00177	.93304	.00161	.06186	-.00521	-.00087
#2	-.00174	.00606	.93311	.00179	.06230	-.00032	-.00237
#3	-.00292	.01029	.93940	.00126	.06298	.00283	-.00205
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00004	.03465	F -.25289
Stddev	.00070	.00017	.21558
%RSD	1777.2	.48633	85.245
#1	.00072	.03457	-.04792
#2	.00009	.03454	-.47771
#3	-.00069	.03485	-.23306
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6771.2	42793.	2185.7
Stddev	16.2	557.	12.6
%RSD	.23870	1.3012	.57582
#1	6760.8	42567.	2172.1
#2	6789.8	43427.	2188.0
#3	6762.9	42385.	2197.0

Approved: June 24, 2016

Sample Name: L1606085702 Acquired: 6/23/2016 13:34:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00033**	**.07270**	**-.00203**	**.14026**	**.07278**	**.00001**	**1.8420**
Stddev	.00276	.01164	.00125	.00065	.00057	.00018	.0327
%RSD	841.02	16.017	61.792	.46587	.78910	3297.7	1.7766
#1	-.00316	.07004	-.00091	.14030	.07212	.00019	1.8290
#2	.00236	.06261	-.00179	.13959	.07316	-.00001	1.8178
#3	-.00019	.08544	-.00338	.14090	.07306	-.00016	1.8792
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00058**	**.00049**	**.00229**	**.00175**	**.01354**	**.82547**	**.00707**
Stddev	.00023	.00070	.00094	.00097	.02857	.04036	.00543
%RSD	39.415	144.45	40.924	55.606	211.01	4.8891	76.883
#1	.00077	.00036	.00132	.00068	-.01924	.84400	.01011
#2	.00033	-.00015	.00319	.00257	.02674	.77917	.01030
#3	.00063	.00124	.00236	.00201	.03312	.85323	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51491**	**.00195**	**.00449**	F **275.14**	**-.00069**	**.03509**	**-.00069**
Stddev	.09772	.00296	.00024	.76	.00123	.00164	.00476
%RSD	18.977	151.69	5.4308	.27666	177.16	4.6788	690.35
#1	.41497	.00336	.00448	275.95	.00072	.03463	.00474
#2	.61024	.00394	.00425	274.44	-.00134	.03372	-.00420
#3	.51952	-.00145	.00474	275.04	-.00146	.03691	-.00261
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 24, 2016

Sample Name: L1606085702 Acquired: 6/23/2016 13:34:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00460**	**-.00060**	**3.0002**	**.00006**	**.09445**	**.00506**	**-.00228**
Stddev	.00222	.00516	.0036	.00068	.00055	.00431	.00386
%RSD	48.324	853.07	.11830	1137.5	.58448	85.182	169.08
#1	-.00698	-.00204	3.0021	-.00036	.09414	.00516	-.00490
#2	-.00424	.00512	3.0025	-.00031	.09412	.00070	-.00411
#3	-.00258	-.00489	2.9961	.00085	.09509	.00931	.00215
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00051**	**.00248**	F **-.05261**
Stddev	.00144	.00019	.29783
%RSD	282.24	7.6734	566.10
#1	.00067	.00238	-.32296
#2	-.00211	.00270	-.10151
#3	-.00009	.00236	.26664
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6545.6**	**40539.**	**2141.5**
Stddev	22.7	279.	19.5
%RSD	.34678	.68833	.90844
#1	6540.8	40596.	2119.8
#2	6570.4	40236.	2147.6
#3	6525.8	40786.	2157.3

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 13:37:59 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .45134	10.807	.43069	.53551	1.0873	.05306	10.734
Stddev	.00120	.042	.00127	.00658	.0048	.00054	.109
%RSD	.26661	.38935	.29560	1.2285	.44392	1.0118	1.0192
#1	.45043	10.780	.43162	.52920	1.0877	.05245	10.843
#2	.45270	10.855	.42924	.53499	1.0919	.05345	10.736
#3	.45088	10.785	.43121	.54233	1.0823	.05328	10.624
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	.40000						
Range	10.000%						

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05377	.21778	.53858	.54577	4.3294	53.973	1.0995
Stddev	.00038	.00023	.00492	.00029	.0324	.101	.0034
%RSD	.70417	.10643	.91354	.05369	.74928	.18648	.31286
#1	.05336	.21804	.53402	.54544	4.2921	53.955	1.0956
#2	.05383	.21761	.54380	.54590	4.3510	54.082	1.1020
#3	.05411	.21768	.53792	.54598	4.3450	53.883	1.1008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.676	.54210	1.0831	54.317	.54570	10.765	.54231
Stddev	.144	.00268	.0045	.237	.00054	.017	.00789
%RSD	1.3465	.49516	.41592	.43723	.09840	.15367	1.4551
#1	10.841	.54173	1.0860	54.234	.54581	10.748	.54167
#2	10.605	.53962	1.0854	54.585	.54511	10.768	.55050
#3	10.581	.54495	1.0779	54.132	.54617	10.781	.53475
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 13:37:59 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.3154**	**.43131**	**5.4716**	**1.0779**	**1.0816**	**1.0682**	**.54041**
Stddev	.0100	.01288	.0063	.0008	.0051	.0038	.00148
%RSD	.76033	2.9867	.11483	.07203	.47288	.35443	.27465
#1	1.3264	.42222	5.4703	1.0779	1.0791	1.0696	.54165
#2	1.3068	.42566	5.4661	1.0786	1.0874	1.0639	.53876
#3	1.3129	.44605	5.4784	1.0771	1.0782	1.0710	.54081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0737**	**1.0856**	F **.15193**
Stddev	.0085	.0016	.28587
%RSD	.79069	.14554	188.16
#1	1.0640	1.0847	.18724
#2	1.0798	1.0846	-.14996
#3	1.0773	1.0874	.41850
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6619.5**	**40889.**	**2120.6**
Stddev	22.8	56.	15.1
%RSD	.34376	.13697	.71393
#1	6636.9	40858.	2120.9
#2	6627.9	40856.	2105.4
#3	6593.8	40954.	2135.6

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 13:41:37 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00158**	**.01770**	**-.00290**	**.00420**	**.00296**	**.00008**	**.00768**
Stddev	.00238	.01297	.00182	.00442	.00097	.00006	.03100
%RSD	150.72	73.266	62.817	105.42	32.973	74.730	403.53
#1	-.00078	.02309	-.00093	.00783	.00184	.00014	-.01510
#2	.00397	.00291	-.00452	.00548	.00340	.00005	-.00484
#3	.00154	.02711	-.00326	-.00073	.00363	.00003	.04298
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00046**	**.00012**	**.00248**	**-.00061**	**-.00542**	**.10552**	**.00074**
Stddev	.00020	.00062	.00070	.00053	.02692	.07766	.00351
%RSD	43.624	499.77	28.448	85.995	496.30	73.597	477.45
#1	.00063	-.00055	.00323	-.00038	-.00888	.03365	.00151
#2	.00024	.00026	.00236	-.00122	-.03045	.09501	.00379
#3	.00052	.00066	.00184	-.00024	.02305	.18790	-.00310
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04199**	**.00149**	**.00473**	**.07384**	**-.00091**	F **.01440**	**.00237**
Stddev	.03372	.00533	.00067	.02566	.00057	.00186	.00194
%RSD	80.305	359.18	14.065	34.748	62.773	12.937	82.124
#1	.06837	.00627	.00403	.06546	-.00149	.01277	.00039
#2	.05361	.00246	.00480	.10263	-.00091	.01643	.00427
#3	.00400	-.00427	.00536	.05341	-.00034	.01399	.00244
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						.01000	
Low Limit						-.01000	

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 13:41:37 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00149**	**.00301**	**.01027**	**.00140**	**.00008**	**.00320**	**.00031**
Stddev	.00130	.00950	.00052	.00086	.00053	.00649	.00310
%RSD	87.162	315.28	5.0885	61.563	705.61	202.89	987.14
#1	.00285	.00014	.00977	.00239	.00066	.00051	.00035
#2	.00026	-.00472	.01081	.00106	-.00039	.01060	-.00281
#3	.00135	.01362	.01022	.00076	-.00004	-.00151	.00340
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00103**	**-.00008**	F **-.23953**
Stddev	.00169	.00028	.04048
%RSD	163.72	371.39	16.899
#1	-.00118	-.00003	-.26217
#2	-.00264	.00018	-.26362
#3	.00073	-.00037	-.19280
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6630.2**	**41602.**	**2070.3**
Stddev	4.8	212.	18.8
%RSD	.07287	.50936	.90799
#1	6631.2	41452.	2049.7
#2	6625.0	41845.	2074.7
#3	6634.5	41510.	2086.6

Approved: June 24, 2016

Sample Name: L1606072901 Acquired: 6/23/2016 13:45:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	1.9022	-.00033	.01275	.10878	.00027	3.3748
Stddev	.00218	.0080	.00247	.00210	.00122	.00005	.0521
%RSD	390.51	.41881	752.84	16.492	1.1199	19.165	1.5437
#1	-.00143	1.9097	.00166	.01339	.10869	.00021	3.3553
#2	.00290	1.9031	-.00310	.01447	.10760	.00029	3.3352
#3	.00021	1.8938	.00045	.01041	.11004	.00031	3.4338
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00070	.00686	.00502	.00274	8.7296	4.0858	.00187
Stddev	.00049	.00031	.00079	.00095	.1044	.1587	.00572
%RSD	70.901	4.5508	15.682	34.818	1.1959	3.8848	306.19
#1	.00013	.00699	.00492	.00271	8.7332	4.1453	-.00456
#2	.00097	.00708	.00585	.00180	8.6235	3.9059	.00638
#3	.00100	.00650	.00428	.00370	8.8322	4.2062	.00378
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.5279	.18987	.00146	8.8883	.00643	.07669	.00585
Stddev	.0806	.00418	.00002	.0264	.00132	.00989	.00345
%RSD	3.1886	2.2032	1.4553	.29688	20.582	12.899	59.068
#1	2.6115	.18525	.00145	8.8787	.00728	.08764	.00219
#2	2.4507	.19098	.00145	8.8681	.00491	.06839	.00629
#3	2.5215	.19340	.00149	8.9182	.00711	.07404	.00906
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606072901 Acquired: 6/23/2016 13:45:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00422**	**.00114**	**7.7009**	**.00094**	**.04165**	**.04528**	**-.00124**
Stddev	.00105	.00887	.0106	.00031	.00116	.00750	.00474
%RSD	24.977	779.78	.13780	33.440	2.7765	16.566	383.19
#1	-.00314	.00770	7.7122	.00125	.04034	.05338	-.00668
#2	-.00426	-.00895	7.6912	.00063	.04213	.04390	.00093
#3	-.00525	.00466	7.6993	.00093	.04250	.03857	.00204
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00695**	**.03769**	F **-.07426**
Stddev	.00021	.00010	.25506
%RSD	3.0434	.26201	343.45
#1	.00719	.03759	-.17879
#2	.00685	.03770	.21646
#3	.00679	.03778	-.26046
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6663.7**	**41447.**	**2124.9**
Stddev	31.4	101.	8.5
%RSD	.47053	.24398	.40015
#1	6635.9	41409.	2127.4
#2	6657.5	41369.	2115.5
#3	6697.7	41561.	2131.9

Approved: June 24, 2016

Sample Name: L1606072902 Acquired: 6/23/2016 13:49:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.08436	-.00231	.01162	.09500	.00024	3.2071	.00025
Stddev	.00068	.00795	.00473	.00261	.00117	.00003	.0288	.00030
%RSD	140.03	9.4206	204.37	22.450	1.2279	13.019	.89891	120.44
#1	.00085	.08971	-.00104	.01189	.09406	.00022	3.1880	.00059
#2	-.00030	.08814	-.00754	.01408	.09631	.00022	3.1929	.00004
#3	.00091	.07523	.00164	.00888	.09463	.00027	3.2402	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00258	.00169	.00001	.09122	4.0554	.00554	2.1514	.10164
Stddev	.00036	.00098	.00083	.01409	.0725	.00749	.0915	.00166
%RSD	13.810	58.028	9389.3	15.450	1.7870	135.26	4.2536	1.6371
#1	.00228	.00185	-.00094	.08293	4.0962	-.00132	2.2029	.09978
#2	.00297	.00064	.00036	.10750	3.9717	.01352	2.0457	.10217
#3	.00249	.00258	.00061	.08324	4.0982	.00441	2.2055	.10298
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00107	9.3347	.00534	-.00760	.00262	-.00247	-.00071	5.8284
Stddev	.00067	.0017	.00059	.00657	.00192	.00656	.00734	.0047
%RSD	62.899	.01851	11.082	86.434	73.407	265.29	1036.5	.08050
#1	.00073	9.3339	.00595	-.01085	.00076	.00233	.00419	5.8231
#2	.00063	9.3335	.00477	-.01192	.00459	.00021	.00283	5.8300
#3	.00184	9.3367	.00529	-.00004	.00250	-.00996	-.00914	5.8320
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606072902 Acquired: 6/23/2016 13:49:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	.04455	.00383	-.00158	-.00117	.01067	.01977
Stddev	.00091	.00048	.00462	.00107	.00115	.00017	.19686
%RSD	195.27	1.0877	120.59	67.563	97.637	1.6384	995.89
#1	.00011	.04507	-.00045	-.00119	-.00123	.01066	.06131
#2	.00150	.04411	.00321	-.00077	-.00229	.01086	-.19455
#3	-.00021	.04447	.00873	-.00279	-.00000	.01051	.19254
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6679.4	41883.	2140.8
Stddev	19.5	115.	21.9
%RSD	.29209	.27528	1.0253
#1	6687.8	41773.	2148.4
#2	6693.3	41873.	2116.0
#3	6657.1	42003.	2157.9

Approved: June 24, 2016

Sample Name: L1606072903 Acquired: 6/23/2016 13:53:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00121	3.1940	-.00317	.05585	.05128	.00272	55.198	.00092
Stddev	.00190	.0150	.00311	.00265	.00071	.00005	.533	.00026
%RSD	157.00	.46804	98.051	4.7403	1.3804	2.0101	.96560	28.456
#1	-.00098	3.2101	-.00297	.05354	.05052	.00274	54.599	.00105
#2	.00226	3.1805	-.00017	.05528	.05192	.00276	55.376	.00062
#3	.00234	3.1916	-.00638	.05874	.05142	.00265	55.619	.00109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05365	.00268	.00557	3.4652	2.3690	.00136	16.189	.87450
Stddev	.00041	.00184	.00156	.0341	.0787	.00738	.191	.00113
%RSD	.76801	68.642	27.990	.98414	3.3240	542.12	1.1778	.12910
#1	.05412	.00147	.00733	3.4487	2.4341	-.00716	16.303	.87482
#2	.05346	.00480	.00435	3.5044	2.2815	.00562	15.968	.87543
#3	.05336	.00178	.00504	3.4424	2.3914	.00562	16.295	.87324
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	6.4254	.02173	.00157	.00749	.00178	.00259	5.9642
Stddev	.00053	.0272	.00078	.00506	.00256	.00308	.00359	.0225
%RSD	256.99	.42327	3.5957	323.06	34.182	173.34	138.86	.37668
#1	-.00034	6.4199	.02259	.00740	.00733	.00347	.00639	5.9884
#2	.00025	6.4014	.02152	-.00148	.00502	-.00178	.00211	5.9601
#3	.00072	6.4549	.02107	-.00122	.01014	.00364	-.00075	5.9440
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606072903 Acquired: 6/23/2016 13:53:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.50021	.00294	-.00570	-.00006	.06538	.14572
Stddev	.00142	.00223	.00346	.00366	.00105	.00038	.27662
%RSD	475.50	.44540	117.77	64.085	1811.6	.58637	189.83
#1	.00193	.49771	.00052	-.00185	-.00105	.06577	-.10106
#2	-.00032	.50094	.00139	-.00614	-.00017	.06537	.09350
#3	-.00070	.50198	.00690	-.00913	.00104	.06500	.44473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6815.5	42583.	2186.5
Stddev	19.4	255.	20.2
%RSD	.28450	.59973	.92196
#1	6828.0	42494.	2188.2
#2	6793.2	42385.	2205.8
#3	6825.4	42871.	2165.6

Approved: June 24, 2016

Sample Name: L1606073001 Acquired: 6/23/2016 13:57:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00256	.31997	.00369	.01015	2.4447	-.00002	F 391.57
Stddev	.00124	.00976	.00345	.00235	.0050	.00008	.92
%RSD	48.609	3.0496	93.533	23.200	.20351	460.90	.23566
#1	.00128	.30999	-.00013	.01225	2.4390	-.00011	390.52
#2	.00376	.32043	.00659	.01060	2.4484	.00003	391.93
#3	.00264	.32949	.00461	.00760	2.4465	.00003	392.25
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	.00332	.07503	.00241	.04789	26.816	.16164
Stddev	.00006	.00025	.00123	.00077	.02971	.128	.00555
%RSD	13.649	7.5530	1.6428	31.776	62.037	.47549	3.4306
#1	.00051	.00360	.07369	.00185	.02298	26.708	.16210
#2	.00039	.00313	.07526	.00328	.03991	26.784	.16695
#3	.00050	.00322	.07612	.00210	.08077	26.957	.15589
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.9869	.00807	.00500	F 300.26	-.00001	.00977	.00319
Stddev	.0805	.00347	.00030	.50	.00088	.00901	.00538
%RSD	.80645	42.987	6.0910	.16764	16745.	92.216	168.62
#1	9.9524	.00517	.00524	299.73	.00074	.00083	.00794
#2	9.9294	.00714	.00465	300.32	.00023	.00962	.00428
#3	10.079	.01192	.00510	300.74	-.00098	.01885	-.00265
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 24, 2016

Sample Name: L1606073001 Acquired: 6/23/2016 13:57:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00030**	**-.00121**	**6.9753**	**.00042**	F **24.468**	F **-.04746**	**-.00176**
Stddev	.00142	.00818	.0038	.00053	.196	.01075	.00131
%RSD	471.93	673.71	.05469	126.13	.80146	22.649	74.343
#1	-.00042	.00785	6.9714	.00042	24.521	-.03746	-.00146
#2	.00194	-.00344	6.9790	-.00011	24.631	-.05883	-.00063
#3	-.00061	-.00804	6.9754	.00096	24.250	-.04608	-.00320
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Pass
High Limit					9.0000	36.000	
Low Limit					-.01000	-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00483**	**.00304**	F **-.25994**
Stddev	.00095	.00011	.47028
%RSD	19.772	3.5436	180.92
#1	.00584	.00296	-.78106
#2	.00471	.00316	.13285
#3	.00394	.00300	-.13161
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6405.8**	**39923.**	**2130.5**
Stddev	43.1	179.	24.3
%RSD	.67309	.44763	1.1394
#1	6423.5	39842.	2147.8
#2	6437.2	39799.	2102.8
#3	6356.6	40127.	2140.9

Approved: June 24, 2016

Sample Name: L1606073002 Acquired: 6/23/2016 14:01:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**.30159**	**.00192**	**.00855**	**2.4572**	**-.00005**	F **391.13**
Stddev	.00178	.00597	.00175	.00180	.0121	.00005	1.72
%RSD	1582.0	1.9801	91.272	21.054	.49021	108.20	.43917
#1	-.00072	.30830	.00395	.00732	2.4525	-.00000	390.34
#2	-.00151	.29959	.00093	.00772	2.4483	-.00011	389.95
#3	.00189	.29687	.00089	.01062	2.4709	-.00004	393.10
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00083**	**.00328**	**.07488**	**.00378**	**.06045**	**26.884**	**.15804**
Stddev	.00045	.00088	.00139	.00327	.02010	.168	.00401
%RSD	53.690	26.823	1.8521	86.444	33.259	.62310	2.5398
#1	.00040	.00331	.07575	.00650	.08326	26.768	.16070
#2	.00129	.00414	.07328	.00469	.04533	26.808	.15342
#3	.00080	.00239	.07560	.00015	.05274	27.076	.15999
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.834**	**.00242**	**.00478**	F **302.91**	**-.00114**	**-.00268**	**.00268**
Stddev	.163	.00322	.00063	1.34	.00044	.00170	.00128
%RSD	1.5067	133.12	13.189	.44217	38.961	63.359	47.782
#1	10.905	-.00130	.00456	302.40	-.00129	-.00108	.00361
#2	10.647	.00422	.00549	301.91	-.00064	-.00447	.00321
#3	10.950	.00435	.00429	304.43	-.00149	-.00251	.00122
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 24, 2016

Sample Name: L1606073002 Acquired: 6/23/2016 14:01:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00058**	**-.00081**	**7.0233**	**.00053**	F **24.522**	F **-.05058**	**-.00421**
Stddev	.00221	.00364	.0004	.00034	.334	.00928	.00168
%RSD	381.72	447.00	.00560	64.571	1.3621	18.354	39.774
#1	-.00268	.00184	7.0238	.00033	24.364	-.04360	-.00542
#2	-.00079	.00069	7.0231	.00033	24.905	-.04702	-.00492
#3	.00173	-.00497	7.0231	.00092	24.296	-.06112	-.00230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Pass
High Limit					9.0000	36.000	
Low Limit					-.01000	-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00622**	**.00213**	F **-.10401**
Stddev	.00097	.00020	.39318
%RSD	15.584	9.3584	378.01
#1	.00524	.00203	.33604
#2	.00625	.00236	-.42076
#3	.00718	.00200	-.22731
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6399.2**	**39605.**	**2125.8**
Stddev	37.9	110.	18.5
%RSD	.59190	.27845	.86813
#1	6440.2	39489.	2146.1
#2	6391.9	39620.	2121.4
#3	6365.5	39708.	2110.0

Approved: June 24, 2016

Sample Name: L1606073003 Acquired: 6/23/2016 14:05:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00163	.08741	.00459	.00740	9.5652	.00021	F 359.97
Stddev	.00290	.01125	.00113	.00556	.0602	.00005	2.32
%RSD	177.98	12.875	24.619	75.211	.62908	22.498	.64513
#1	-.00023	.08788	.00519	.01075	9.5821	.00025	360.68
#2	.00496	.09842	.00329	.01047	9.4984	.00023	357.37
#3	.00015	.07593	.00529	.00098	9.6152	.00016	361.85
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	.00733	.00421	.00132	7.6968	4.6889	.05502
Stddev	.00016	.00040	.00043	.00230	.0700	.1346	.00192
%RSD	17.239	5.4950	10.244	173.72	.90938	2.8698	3.4965
#1	.00083	.00700	.00459	-.00074	7.7485	4.5651	.05658
#2	.00080	.00721	.00429	.00091	7.6172	4.6694	.05560
#3	.00109	.00778	.00374	.00380	7.7248	4.8321	.05287
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	222.02	.46392	.00100	F 907.17	.00310	.02957	.00359
Stddev	1.03	.00590	.00045	6.20	.00060	.00708	.00191
%RSD	.46426	1.2720	45.476	.68347	19.251	23.934	53.290
#1	221.59	.46076	.00151	909.32	.00379	.02554	.00305
#2	221.27	.46028	.00064	912.02	.00275	.02542	.00572
#3	223.20	.47073	.00084	900.19	.00276	.03774	.00201
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 24, 2016

Sample Name: L1606073003 Acquired: 6/23/2016 14:05:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00269**	**-.00290**	**15.510**	**.00105**	**7.7454**	F **-.03815**	**-.00190**
Stddev	.00374	.00479	.014	.00060	.0520	.00404	.00349
%RSD	138.83	165.18	.09191	57.186	.67173	10.600	183.63
#1	.00695	-.00093	15.517	.00160	7.7532	-.03745	.00130
#2	-.00005	-.00836	15.493	.00114	7.6899	-.04250	-.00563
#3	.00117	.00059	15.519	.00041	7.7931	-.03451	-.00138
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00223**	**.00565**	**.20878**
Stddev	.00149	.00017	.22493
%RSD	66.807	3.0725	107.73
#1	-.00382	.00583	-.02471
#2	-.00199	.00565	.22702
#3	-.00087	.00548	.42404
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6192.6**	**37959.**	**2074.6**
Stddev	8.6	172.	6.3
%RSD	.13852	.45191	.30587
#1	6200.5	37983.	2079.7
#2	6183.5	37777.	2076.7
#3	6193.6	38118.	2067.5

Approved: June 24, 2016

Sample Name: L1606065001 Acquired: 6/23/2016 14:09:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00101	.02086	.00078	.00392	.11798	.00010	3.7797
Stddev	.00330	.00981	.00259	.00188	.00093	.00009	.0253
%RSD	325.36	47.024	330.21	48.042	.79125	91.343	.67047
#1	-.00269	.01004	.00280	.00180	.11849	.00006	3.7511
#2	.00211	.02918	.00169	.00456	.11854	.00004	3.7886
#3	.00363	.02335	-.00214	.00540	.11690	.00021	3.7994
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00039	.00473	.11075	.00254	1.6128	.36399	.00052
Stddev	.00015	.00028	.00247	.00153	.0205	.13250	.00682
%RSD	39.437	5.8376	2.2265	59.990	1.2685	36.403	1305.8
#1	.00043	.00442	.10829	.00126	1.6215	.50232	.00839
#2	.00052	.00494	.11323	.00423	1.5894	.35143	-.00365
#3	.00022	.00484	.11072	.00213	1.6275	.23821	-.00317
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.3114	.12820	.00059	23.908	.19913	.01143	.00693
Stddev	.0612	.00234	.00031	.193	.00371	.00816	.00284
%RSD	1.8496	1.8238	52.171	.80626	1.8611	71.384	41.001
#1	3.3128	.13027	.00090	23.692	.19516	.00780	.00543
#2	3.2495	.12566	.00028	24.064	.19975	.00572	.00515
#3	3.3720	.12866	.00059	23.967	.20249	.02078	.01021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606065001 Acquired: 6/23/2016 14:09:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00112**	**.00322**	**1.4139**	**.00021**	**.08513**	**.01184**	**-.00134**
Stddev	.00332	.00894	.0290	.00109	.00058	.00972	.00180
%RSD	295.41	277.65	2.0534	506.07	.67723	82.127	134.05
#1	-.00422	.01348	1.3849	.00054	.08447	.00066	-.00038
#2	.00238	-.00289	1.4138	-.00100	.08552	.01829	-.00023
#3	-.00152	-.00093	1.4430	.00110	.08541	.01657	-.00342
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00159**	**.00105**	F **-.37996**
Stddev	.00053	.00021	.11946
%RSD	33.537	19.605	31.441
#1	-.00120	.00087	-.38083
#2	-.00220	.00100	-.26007
#3	-.00137	.00127	-.49899
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6890.2**	**43019.**	**2167.8**
Stddev	63.1	99.	28.1
%RSD	.91638	.23029	1.2947
#1	6934.3	42909.	2177.8
#2	6918.4	43046.	2136.2
#3	6817.9	43101.	2189.6

Approved: June 24, 2016

Sample Name: L1606065002 Acquired: 6/23/2016 14:13:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00119**	**.00619**	**.00053**	**.00242**	**.04050**	**.00005**	**2.4175**
Stddev	.00153	.00568	.00140	.00436	.00121	.00004	.0565
%RSD	128.35	91.662	266.78	179.97	2.9976	95.253	2.3370
#1	.00059	.00843	.00063	.00739	.04165	.00010	2.4475
#2	.00005	.01040	-.00093	.00068	.04062	.00002	2.3523
#3	.00292	-.00026	.00187	-.00080	.03923	.00002	2.4527
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00018**	**.00062**	**.00128**	**-.00132**	**.01627**	**.11917**	**.00122**
Stddev	.00027	.00046	.00064	.00184	.03317	.08838	.00191
%RSD	149.87	75.230	50.288	139.76	203.80	74.161	156.79
#1	-.00011	.00016	.00101	-.00254	.04806	.14500	.00296
#2	.00022	.00109	.00201	.00080	.01888	.02075	.00151
#3	.00042	.00060	.00081	-.00222	-.01812	.19175	-.00082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.5446**	**.04594**	**.00017**	**20.766**	**.00047**	**.00485**	**.00051**
Stddev	.0763	.00146	.00033	.149	.00143	.00885	.00349
%RSD	4.9423	3.1762	199.14	.71702	303.54	182.41	681.91
#1	1.4640	.04664	-.00012	20.654	.00209	.00163	-.00344
#2	1.6158	.04427	.00054	20.710	-.00006	.01486	.00319
#3	1.5540	.04692	.00009	20.935	-.00062	-.00194	.00178
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606065002 Acquired: 6/23/2016 14:13:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00098**	**-.00033**	**2.1606**	**.00059**	**.04583**	**.00531**	**-.00032**
Stddev	.00451	.00336	.0261	.00086	.00032	.01016	.00354
%RSD	460.69	1017.1	1.2061	145.66	.69478	191.19	1094.5
#1	-.00324	.00342	2.1358	.00154	.04555	.00482	-.00398
#2	.00045	-.00306	2.1582	.00037	.04577	.01571	-.00006
#3	.00573	-.00135	2.1877	-.00014	.04618	-.00459	.00307
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00011**	**.00081**	F **-.25970**
Stddev	.00182	.00018	.14592
%RSD	1638.0	22.380	56.190
#1	.00114	.00078	-.23795
#2	-.00221	.00100	-.41527
#3	.00073	.00064	-.12587
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6847.2**	**42507.**	**2206.5**
Stddev	7.7	174.	27.0
%RSD	.11197	.40941	1.2214
#1	6848.1	42368.	2181.6
#2	6839.1	42451.	2203.0
#3	6854.3	42702.	2235.1

Approved: June 24, 2016

Sample Name: L1606065003 Acquired: 6/23/2016 14:17:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00067	.08910	.00038	.00141	.01681	.00007	1.5698	.00071
Stddev	.00142	.00383	.00422	.00345	.00071	.00002	.0515	.00016
%RSD	211.03	4.2965	1109.5	244.57	4.2236	27.061	3.2785	22.773
#1	.00003	.09101	.00022	.00166	.01758	.00009	1.5296	.00090
#2	-.00230	.08469	-.00376	.00473	.01666	.00008	1.5520	.00061
#3	.00026	.09160	.00468	-.00216	.01619	.00005	1.6278	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00113	.05077	.00085	1.0203	.30376	-.00498	.99295	.03616
Stddev	.00058	.00147	.00210	.0205	.07272	.00068	.07738	.00181
%RSD	51.340	2.8981	247.26	2.0115	23.941	13.727	7.7929	5.0090
#1	.00132	.04948	.00273	.99875	.34266	-.00450	1.0062	.03804
#2	.00048	.05047	.00125	1.0396	.21986	-.00467	.90982	.03602
#3	.00159	.05237	-.00142	1.0224	.34877	-.00576	1.0629	.03443
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	10.870	.01041	.02046	.00421	-.00251	-.00096	1.0575
Stddev	.00071	.065	.00096	.00304	.00222	.00307	.00294	.0121
%RSD	118.73	.59889	9.1817	14.859	52.652	122.13	304.81	1.1477
#1	.00120	10.813	.00941	.02356	.00283	-.00575	.00065	1.0435
#2	.00077	10.857	.01132	.02033	.00676	.00035	-.00435	1.0643
#3	-.00018	10.941	.01050	.01748	.00303	-.00214	.00081	1.0648
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606065003 Acquired: 6/23/2016 14:17:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00018**	**.02812**	**.00927**	**-.00234**	**.00055**	**.00136**	**.26713**
Stddev	.00044	.00045	.01111	.00135	.00029	.00018	.11649
%RSD	247.67	1.5998	119.83	57.833	53.067	13.216	43.608
#1	-.00029	.02761	-.00352	-.00390	.00030	.00141	.14323
#2	.00031	.02844	.01649	-.00165	.00048	.00116	.37443
#3	-.00055	.02832	.01484	-.00148	.00086	.00151	.28371
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6858.1**	**42494.**	**2175.3**
Stddev	42.7	209.	26.7
%RSD	.62293	.49294	1.2285
#1	6902.9	42252.	2201.8
#2	6817.9	42604.	2175.9
#3	6853.5	42625.	2148.4

Approved: June 24, 2016

Sample Name: L1606065008 Acquired: 6/23/2016 14:21:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00167	.05295	-.00138	.00258	.01026	.00007	.47962	.00043
Stddev	.00382	.00591	.00487	.00427	.00085	.00006	.02685	.00034
%RSD	228.87	11.159	352.65	165.38	8.2961	86.535	5.5975	78.751
#1	.00493	.04838	-.00184	.00341	.00986	.00008	.50825	.00064
#2	.00262	.05085	.00370	-.00204	.01124	.00013	.47558	.00004
#3	-.00254	.05962	-.00601	.00637	.00969	.00001	.45502	.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	.00105	.00052	.01114	.23594	.00258	.32831	.04867
Stddev	.00048	.00065	.00211	.02304	.15716	.00476	.03457	.00107
%RSD	72.667	62.238	405.10	206.92	66.612	184.28	10.530	2.1978
#1	.00121	.00147	-.00090	.03051	.27011	.00744	.32906	.04762
#2	.00035	.00030	-.00048	-.01435	.37320	.00238	.29337	.04976
#3	.00041	.00139	.00294	.01725	.06450	-.00207	.36250	.04864
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	10.506	.00237	.01642	.00213	-.00348	-.00290	.95589
Stddev	.00033	.102	.00127	.00194	.00052	.00334	.00341	.02057
%RSD	80.143	.97506	53.506	11.825	24.406	96.118	117.83	2.1518
#1	.00038	10.423	.00381	.01546	.00262	-.00214	.00087	.93512
#2	.00074	10.474	.00146	.01866	.00158	-.00728	-.00579	.95628
#3	.00009	10.620	.00183	.01515	.00217	-.00101	-.00377	.97625
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606065008 Acquired: 6/23/2016 14:21:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**.01016**	**.01408**	**-.00180**	**.00034**	**.00780**	**-.02250**
Stddev	.00029	.00090	.00037	.00226	.00082	.00018	.41195
%RSD	114.07	8.8585	2.5924	125.83	238.75	2.2653	1831.1
#1	.00001	.00914	.01377	-.00283	.00079	.00783	.44684
#2	-.00021	.01085	.01448	.00080	.00083	.00796	-.19010
#3	-.00057	.01049	.01399	-.00336	-.00060	.00761	-.32423
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6841.7**	**42195.**	**2159.0**
Stddev	30.1	205.	11.8
%RSD	.44004	.48548	.54660
#1	6815.4	42021.	2145.6
#2	6874.6	42142.	2163.1
#3	6835.2	42421.	2168.1

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 14:25:18 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.42857**	**10.259**	**.41459**	**.51312**	**1.0377**	**.05083**	**10.240**
Stddev	.00145	.042	.00240	.00208	.0005	.00026	.035
%RSD	.33767	.40774	.57876	.40627	.05142	.51677	.34610
#1	.42691	10.262	.41492	.51075	1.0371	.05053	10.280
#2	.42953	10.299	.41680	.51396	1.0378	.05103	10.216
#3	.42927	10.216	.41204	.51467	1.0381	.05092	10.222
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05153**	**.20713**	**.51313**	**.52122**	**4.1496**	**51.824**	**1.0450**
Stddev	.00053	.00038	.00040	.00239	.0217	.086	.0064
%RSD	1.0374	.18497	.07884	.45778	.52422	.16565	.60961
#1	.05201	.20708	.51297	.51947	4.1602	51.775	1.0391
#2	.05164	.20754	.51283	.52394	4.1246	51.773	1.0517
#3	.05096	.20678	.51359	.52026	4.1640	51.923	1.0442
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.365**	**.51748**	**1.0289**	**52.020**	**.52164**	**10.278**	**.51633**
Stddev	.087	.00146	.0058	.056	.00105	.029	.00388
%RSD	.84013	.28224	.56032	.10741	.20123	.27986	.75206
#1	10.444	.51915	1.0335	51.957	.52178	10.279	.51436
#2	10.378	.51684	1.0308	52.062	.52261	10.306	.52080
#3	10.271	.51645	1.0225	52.042	.52052	10.249	.51381
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 14:25:18 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2446**	**.40802**	**5.2183**	**1.0274**	**1.0363**	**1.0285**	**.51759**
Stddev	.0023	.00604	.0089	.0012	.0017	.0067	.00261
%RSD	.18445	1.4800	.17081	.11732	.16361	.65413	.50434
#1	1.2468	.40186	5.2137	1.0272	1.0367	1.0216	.51819
#2	1.2449	.41392	5.2286	1.0286	1.0377	1.0289	.51985
#3	1.2422	.40829	5.2127	1.0262	1.0344	1.0351	.51473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0241**	**1.0338**	F **-.06192**
Stddev	.0027	.0025	.13680
%RSD	.26305	.23934	220.92
#1	1.0256	1.0347	-.12891
#2	1.0256	1.0357	-.15233
#3	1.0210	1.0310	.09546
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6790.5**	**41937.**	**2171.8**
Stddev	14.3	237.	31.3
%RSD	.21009	.56402	1.4431
#1	6793.6	42002.	2142.6
#2	6774.9	41675.	2204.9
#3	6802.9	42135.	2167.9

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 14:28:57 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00068**	**.00684**	**.00039**	**.00405**	**-.00014**	**-.00001**	**.01111**
Stddev	.00139	.00533	.00047	.00294	.00042	.00014	.05193
%RSD	204.27	77.917	119.96	72.476	307.90	1309.0	467.61
#1	.00203	.00321	.00027	.00312	.00020	.00006	.02540
#2	-.00074	.00435	-.00001	.00734	-.00061	-.00017	.05439
#3	.00075	.01296	.00090	.00169	-.00000	.00008	-.04648
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00006**	**.00013**	**.00175**	**-.00169**	**-.03481**	**.03957**	**-.00259**
Stddev	.00015	.00019	.00125	.00122	.01045	.07332	.00926
%RSD	234.29	139.55	71.393	71.935	30.013	185.30	357.55
#1	.00015	.00011	.00272	-.00149	-.03890	.12238	-.01323
#2	-.00011	-.00004	.00034	-.00059	-.02294	-.01707	.00367
#3	.00015	.00033	.00220	-.00299	-.04259	.01338	.00179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00762**	**.00145**	**.00451**	**.09184**	**.00017**	**-.00187**	**.00393**
Stddev	.06220	.00270	.00068	.03009	.00063	.00768	.00289
%RSD	816.14	186.07	15.116	32.766	369.41	409.76	73.613
#1	.05398	.00182	.00387	.11465	-.00014	-.00570	.00494
#2	-.07042	-.00142	.00443	.05773	-.00024	-.00688	.00067
#3	-.00642	.00395	.00522	.10312	.00090	.00697	.00619
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 14:28:57 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00279**	**.00482**	**.00847**	**.00053**	**.00006**	**.00257**	**-.00411**
Stddev	.00278	.00681	.00116	.00085	.00055	.00504	.00289
%RSD	99.442	141.35	13.644	158.61	926.38	195.66	70.433
#1	-.00026	.01020	.00758	.00147	.00031	.00784	-.00566
#2	.00347	-.00284	.00978	.00031	.00045	.00209	-.00589
#3	.00516	.00708	.00806	-.00018	-.00058	-.00220	-.00077
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00079**	**.00006**	F **-.39260**
Stddev	.00035	.00021	.05919
%RSD	44.671	327.48	15.076
#1	-.00108	.00012	-.33568
#2	-.00040	.00024	-.38830
#3	-.00090	-.00017	-.45382
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6873.8**	**43066.**	**2219.3**
Stddev	24.2	262.	10.6
%RSD	.35168	.60922	.47776
#1	6894.9	42910.	2212.4
#2	6847.5	43369.	2213.9
#3	6879.2	42920.	2231.5

Approved: June 24, 2016

Sample Name: L1606072901 Acquired: 6/23/2016 14:32:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00103**	**.20477**	**-.00132**	**.00218**	**.01021**	**.00012**	**.30745**	**.00047**
Stddev	.00053	.01327	.00471	.00232	.00114	.00003	.02774	.00015
%RSD	51.996	6.4798	356.90	106.25	11.138	25.468	9.0221	31.167
#1	.00051	.19008	.00260	-.00050	.01138	.00015	.32209	.00059
#2	.00157	.20831	-.00655	.00356	.00911	.00010	.32479	.00031
#3	.00100	.21590	-.00002	.00349	.01015	.00010	.27546	.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00053**	**.00267**	**-.00085**	**.77824**	**.42499**	**-.00305**	**.23675**	**.02029**
Stddev	.00027	.00103	.00058	.02700	.08780	.00861	.05586	.00118
%RSD	50.518	38.540	68.845	3.4690	20.660	282.38	23.595	5.8114
#1	.00022	.00290	-.00136	.75084	.33202	.00511	.29331	.01914
#2	.00068	.00356	-.00098	.80482	.50650	-.01205	.18162	.02149
#3	.00070	.00154	-.00021	.77905	.43645	-.00220	.23531	.02024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00083**	**.86266**	**.00042**	**.01404**	**.00097**	**-.00077**	**-.00134**	**.76395**
Stddev	.00051	.02574	.00063	.00375	.00275	.00513	.00230	.00735
%RSD	61.366	2.9839	148.39	26.677	282.93	667.71	172.38	.96211
#1	.00134	.88860	-.00030	.00973	-.00211	.00442	-.00008	.75683
#2	.00082	.86224	.00077	.01648	.00317	-.00089	.00007	.76352
#3	.00032	.83713	.00080	.01592	.00186	-.00583	-.00399	.77151
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606072901 Acquired: 6/23/2016 14:32:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	.00368	.00790	.00091	.00042	.00382	.00650
Stddev	.00078	.00018	.01121	.00106	.00050	.00012	.11639
%RSD	100.57	5.0167	141.79	116.57	120.43	3.0763	1791.7
#1	-.00009	.00388	-.00377	.00178	.00087	.00368	.14066
#2	.00143	.00363	.01857	.00120	-.00012	.00388	-.06741
#3	.00097	.00352	.00891	-.00027	.00049	.00389	-.05376
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6901.1	42979.	2151.2
Stddev	19.2	285.	20.3
%RSD	.27820	.66224	.94575
#1	6910.1	42716.	2144.7
#2	6879.1	42940.	2174.0
#3	6914.2	43281.	2134.9

Approved: June 24, 2016

Sample Name: L1606072903 Acquired: 6/23/2016 14:36:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00094	.33608	-.00131	.00564	.00616	.00028	5.3240	.00024
Stddev	.00198	.00768	.00306	.00252	.00005	.00002	.0535	.00020
%RSD	210.97	2.2849	233.73	44.693	.84156	5.9585	1.0055	83.951
#1	-.00250	.34457	-.00041	.00677	.00622	.00030	5.3370	.00012
#2	-.00160	.33405	.00120	.00275	.00614	.00027	5.2651	.00012
#3	.00129	.32962	-.00472	.00739	.00612	.00029	5.3698	.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00548	.00093	.00024	.32576	.22463	-.00164	1.5833	.08416
Stddev	.00028	.00184	.00153	.03169	.09456	.00642	.0663	.00253
%RSD	5.0708	199.26	630.81	9.7265	42.093	390.50	4.1863	3.0039
#1	.00547	.00063	-.00138	.32125	.31484	-.00892	1.6253	.08128
#2	.00576	-.00075	.00164	.29657	.12626	.00078	1.5069	.08600
#3	.00520	.00290	.00047	.35946	.23280	.00321	1.6177	.08520
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.67183	.00202	.00827	.00144	-.00380	-.00466	.60971
Stddev	.00034	.01528	.00167	.00684	.00325	.00501	.00541	.00733
%RSD	171.43	2.2750	82.664	82.772	226.43	132.11	116.12	1.2017
#1	-.00013	.68370	.00049	.01582	-.00007	-.00544	-.01091	.60649
#2	.00017	.65459	.00380	.00649	.00517	-.00778	-.00164	.60453
#3	.00055	.67721	.00176	.00249	-.00079	.00184	-.00144	.61809
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606072903 Acquired: 6/23/2016 14:36:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	.04758	.01193	-.00049	-.00069	.00682	.19864
Stddev	.00020	.00030	.00301	.00156	.00048	.00021	.25703
%RSD	23.011	.62722	25.235	318.54	70.477	3.0551	129.40
#1	.00102	.04760	.01334	-.00168	-.00078	.00688	-.08790
#2	.00096	.04787	.00847	.00128	-.00112	.00658	.27491
#3	.00065	.04727	.01398	-.00107	-.00016	.00698	.40890
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6965.2	43094.	2177.3
Stddev	15.3	76.	32.6
%RSD	.21966	.17684	1.4974
#1	6962.6	43145.	2141.8
#2	6981.7	43006.	2184.2
#3	6951.4	43131.	2205.9

Approved: June 24, 2016

Sample Name: L1606073001 Acquired: 6/23/2016 14:40:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.00616	.00037	.00349	.02625	.00006	3.9162
Stddev	.00335	.00482	.00309	.00065	.00035	.00006	.0556
%RSD	564.87	78.283	834.66	18.491	1.3216	106.85	1.4210
#1	.00444	.01164	-.00103	.00328	.02619	.00005	3.8953
#2	-.00105	.00259	-.00177	.00422	.02663	.00013	3.8741
#3	-.00161	.00425	.00392	.00298	.02594	.00000	3.9793
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	-.00033	.00192	-.00122	-.01907	.37213	-.00062
Stddev	.00029	.00023	.00070	.00142	.03046	.01397	.00645
%RSD	73.054	68.840	36.466	116.28	159.68	3.7528	1041.9
#1	.00063	-.00043	.00172	-.00275	.00425	.36288	.00114
#2	.00007	-.00007	.00269	.00006	-.05353	.36531	-.00777
#3	.00050	-.00048	.00134	-.00098	-.00794	.38819	.00477
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09432	.00289	.00055	3.0211	-.00098	.01000	.00131
Stddev	.14378	.00050	.00029	.0512	.00050	.00813	.00252
%RSD	152.43	17.247	51.863	1.6958	50.999	81.317	192.75
#1	.19256	.00246	.00087	2.9729	-.00134	.01243	.00264
#2	-.07070	.00277	.00046	3.0155	-.00041	.01663	.00288
#3	.16111	.00343	.00032	3.0749	-.00119	.00093	-.00160
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606073001 Acquired: 6/23/2016 14:40:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00098	.00138	.09081	.00094	.24565	.00908	.00018
Stddev	.00150	.01124	.00206	.00054	.00245	.00487	.00266
%RSD	153.60	812.48	2.2711	57.604	.99651	53.609	1475.0
#1	-.00029	-.00680	.09067	.00035	.24300	.00356	-.00259
#2	.00059	.01419	.08882	.00108	.24613	.01277	.00272
#3	.00264	-.00325	.09294	.00141	.24782	.01091	.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00029	.00054	F -.09488
Stddev	.00071	.00025	.31939
%RSD	242.69	45.791	336.63
#1	-.00028	.00030	.08622
#2	-.00102	.00079	-.46366
#3	.00041	.00053	.09280
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6849.4	42570.	2167.2
Stddev	35.5	125.	28.6
%RSD	.51829	.29286	1.3210
#1	6875.7	42440.	2198.6
#2	6863.4	42689.	2160.4
#3	6809.0	42580.	2142.5

Approved: June 24, 2016

Sample Name: L1606073002 Acquired: 6/23/2016 14:44:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00017**	**.01083**	**-.00205**	**.00068**	**.02540**	**.00015**	**3.8128**
Stddev	.00133	.00120	.00144	.00218	.00124	.00005	.0165
%RSD	768.03	11.069	69.997	322.04	4.8845	32.561	.43336
#1	-.00136	.01193	-.00368	.00286	.02637	.00011	3.8166
#2	.00089	.00955	-.00148	-.00151	.02400	.00020	3.7948
#3	.00099	.01100	-.00099	.00068	.02582	.00013	3.8271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00027**	**.00024**	**.00238**	**-.00072**	**-.00102**	**.33240**	**-.00150**
Stddev	.00031	.00067	.00070	.00078	.03059	.08106	.00543
%RSD	116.50	277.35	29.547	107.87	2985.6	24.386	362.53
#1	.00046	.00097	.00198	-.00007	-.03428	.42140	.00454
#2	-.00009	.00009	.00197	-.00158	.00527	.31296	-.00598
#3	.00042	-.00034	.00320	-.00052	.02593	.26282	-.00305
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.08263**	**-.00127**	**.00011**	**2.9817**	**-.00201**	**.00849**	**.00399**
Stddev	.10700	.00354	.00040	.0541	.00161	.01034	.00729
%RSD	129.49	278.60	368.84	1.8148	80.212	121.72	182.85
#1	.12830	-.00124	.00054	3.0211	-.00070	.02020	-.00010
#2	-.03962	-.00483	-.00026	2.9200	-.00381	.00062	.01240
#3	.15921	.00225	.00005	3.0039	-.00151	.00466	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606073002 Acquired: 6/23/2016 14:44:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00184**	**.00620**	**.08953**	**.00070**	**.24109**	**.00037**	**-.00136**
Stddev	.00446	.00364	.00198	.00084	.00389	.00307	.00210
%RSD	242.07	58.803	2.2141	119.60	1.6120	831.83	154.38
#1	-.00677	.00350	.08733	.00005	.24147	.00226	-.00229
#2	.00192	.01034	.09119	.00040	.23703	.00202	-.00284
#3	-.00067	.00474	.09006	.00164	.24478	-.00317	.00105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00051**	**.00070**	F **-.24102**
Stddev	.00283	.00010	.11806
%RSD	551.12	14.785	48.982
#1	.00158	.00072	-.15363
#2	.00061	.00079	-.19411
#3	-.00373	.00059	-.37532
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6840.3**	**42417.**	**2160.9**
Stddev	59.2	242.	14.5
%RSD	.86491	.56950	.67170
#1	6867.8	42609.	2155.8
#2	6772.3	42497.	2177.3
#3	6880.6	42146.	2149.7

Approved: June 24, 2016

Sample Name: L1606073003 Acquired: 6/23/2016 14:48:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00055**	**.01128**	**-.00360**	**.00095**	**.09229**	**.00002**	**3.4454**
Stddev	.00294	.01174	.00423	.00193	.00276	.00001	.0759
%RSD	534.98	104.10	117.37	203.76	2.9914	63.105	2.2014
#1	.00353	.01187	-.00535	.00225	.08912	.00002	3.3587
#2	-.00235	-.00075	.00122	-.00127	.09417	.00004	3.4781
#3	.00047	.02271	-.00667	.00188	.09358	.00001	3.4994
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00047**	**.00032**	**.00060**	**.00028**	**.05676**	**.04348**	**.00010**
Stddev	.00029	.00040	.00086	.00135	.01517	.10320	.00444
%RSD	60.846	126.16	142.92	481.42	26.736	237.38	4312.3
#1	.00069	.00062	-.00010	.00179	.05340	.16110	-.00312
#2	.00015	.00047	.00034	-.00012	.04354	.00124	.00516
#3	.00058	-.00014	.00157	-.00082	.07333	-.03191	-.00174
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.1211**	**.00612**	**.00035**	**8.7390**	**-.00056**	**.00954**	**.00317**
Stddev	.0586	.00084	.00008	.1820	.00126	.01316	.00361
%RSD	2.7622	13.667	23.949	2.0828	224.18	138.03	114.02
#1	2.0534	.00679	.00028	8.5296	.00086	-.00088	.00724
#2	2.1559	.00518	.00045	8.8598	-.00102	.02433	.00034
#3	2.1538	.00638	.00034	8.8275	-.00152	.00516	.00193
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606073003 Acquired: 6/23/2016 14:48:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00137**	**.00017**	**.16478**	**-.00039**	**.07546**	**.00790**	**-.00140**
Stddev	.00416	.00381	.00381	.00111	.00268	.00448	.00325
%RSD	303.81	2305.1	2.3143	282.95	3.5523	56.785	231.19
#1	.00324	.00456	.16046	-.00122	.07236	.00467	.00171
#2	-.00483	-.00216	.16767	.00087	.07707	.01302	-.00115
#3	-.00252	-.00190	.16622	-.00083	.07693	.00600	-.00477
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00080**	**.00049**	F **-.49766**
Stddev	.00035	.00012	.27901
%RSD	43.847	24.954	56.065
#1	-.00120	.00048	-.66239
#2	-.00070	.00061	-.65508
#3	-.00052	.00037	-.17551
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6909.4**	**42385.**	**2199.2**
Stddev	85.6	560.	44.7
%RSD	1.2389	1.3218	2.0328
#1	6964.9	42416.	2245.9
#2	6810.8	42929.	2156.9
#3	6952.4	41810.	2194.7

Approved: June 24, 2016

Sample Name: L1606079806 Acquired: 6/23/2016 14:52:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00172	.03292	-.00480	.00673	-.00023	.00008	4.1415
Stddev	.00289	.00555	.00057	.00215	.00045	.00003	.0589
%RSD	167.55	16.855	11.845	31.992	189.92	35.476	1.4213
#1	.00229	.02652	-.00539	.00560	-.00013	.00010	4.1840
#2	-.00141	.03586	-.00476	.00921	-.00072	.00005	4.0743
#3	.00429	.03639	-.00425	.00538	.00015	.00009	4.1662
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.00029	.00067	.00027	.03525	.95621	-.00238
Stddev	.00022	.00037	.00038	.00048	.02860	.05109	.00098
%RSD	68.237	128.88	56.635	179.92	81.137	5.3431	41.163
#1	.00025	.00026	.00057	-.00014	.04638	.89722	-.00177
#2	.00015	-.00007	.00109	.00080	.00276	.98490	-.00351
#3	.00057	.00068	.00035	.00015	.05661	.98650	-.00186
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.22291	.04167	.00051	1.6649	-.00058	.11093	.00427
Stddev	.03032	.00317	.00005	.0494	.00129	.00517	.00167
%RSD	13.600	7.6072	9.5760	2.9645	223.14	4.6572	39.196
#1	.19841	.04523	.00053	1.7187	-.00196	.11261	.00621
#2	.25681	.03916	.00045	1.6218	-.00037	.11505	.00330
#3	.21351	.04061	.00054	1.6542	.00060	.10514	.00331
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606079806 Acquired: 6/23/2016 14:52:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00090**	**.00853**	**.10041**	**.00029**	**.00840**	**.00456**	**-.00331**
Stddev	.00606	.00547	.00496	.00066	.00076	.00979	.00385
%RSD	670.85	64.066	4.9419	223.71	9.0388	214.73	116.40
#1	-.00610	.01332	.09874	.00104	.00908	-.00436	-.00335
#2	.00445	.00258	.09649	-.00019	.00758	.01504	-.00714
#3	.00436	.00969	.10599	.00003	.00852	.00300	.00056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00108**	**.00379**	F **-.12134**
Stddev	.00143	.00002	.45676
%RSD	132.69	.64499	376.42
#1	.00048	.00382	-.46260
#2	-.00232	.00377	.39755
#3	-.00139	.00380	-.29898
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6843.0**	**42928.**	**2203.1**
Stddev	10.6	399.	20.9
%RSD	.15555	.92941	.94688
#1	6853.1	43236.	2180.6
#2	6844.0	42477.	2221.8
#3	6831.9	43070.	2207.0

Approved: June 24, 2016

Sample Name: L1606083702 Acquired: 6/23/2016 14:56:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00103	33.857	.01885	.09424	.42276	.00271	61.580
Stddev	.00116	.523	.00142	.00266	.00475	.00005	.605
%RSD	112.59	1.5444	7.5406	2.8236	1.1243	1.9678	.98167
#1	.00045	33.254	.02049	.09497	.42332	.00273	62.020
#2	.00028	34.133	.01796	.09647	.42721	.00276	61.828
#3	.00236	34.185	.01811	.09129	.41775	.00266	60.890
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00158	.03539	.25107	.16869	93.694	11.512	.04006
Stddev	.00031	.00035	.00308	.00084	1.110	.087	.00415
%RSD	19.902	1.0004	1.2276	.49779	1.1849	.75934	10.368
#1	.00164	.03511	.24822	.16866	94.581	11.593	.03794
#2	.00124	.03527	.25434	.16955	94.053	11.523	.04485
#3	.00185	.03578	.25064	.16787	92.449	11.420	.03740
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	17.243	1.3068	.09317	14.697	.12633	1.5684	.05340
Stddev	.403	.0150	.00071	.155	.00154	.0065	.00035
%RSD	2.3401	1.1447	.75952	1.0519	1.2191	.41297	.66412
#1	17.343	1.3237	.09309	14.771	.12800	1.5724	.05368
#2	17.586	1.3015	.09391	14.799	.12602	1.5719	.05300
#3	16.798	1.2953	.09251	14.519	.12497	1.5609	.05351
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606083702 Acquired: 6/23/2016 14:56:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00468	.00688	F 49.401	.00852	.24330	.70184	-.00081
Stddev	.00376	.00767	.188	.00007	.00135	.00911	.00079
%RSD	80.452	111.46	.38077	.81926	.55626	1.2982	97.258
#1	-.00342	.00621	49.502	.00844	.24396	.69824	.00000
#2	-.00171	-.00043	49.517	.00857	.24419	.71220	-.00157
#3	-.00891	.01487	49.184	.00853	.24174	.69507	-.00086
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-1.0000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.07972	1.6548	4.0068
Stddev	.00275	.0052	.2116
%RSD	3.4445	.31177	5.2802
#1	.07661	1.6562	4.1269
#2	.08074	1.6591	4.1310
#3	.08181	1.6490	3.7625
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7040.4	43524.	2280.2
Stddev	23.2	392.	46.0
%RSD	.32915	.90067	2.0194
#1	7044.1	43916.	2252.6
#2	7015.6	43132.	2254.7
#3	7061.5	43525.	2333.4

Approved: June 24, 2016

Sample Name: L1606076301 Acquired: 6/23/2016 15:00:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 2000 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00209**	**.00627**	**.00216**	**.02527**	**.48529**	**.00009**	**6.9887**
Stddev	.00272	.01885	.00159	.00167	.00114	.00009	.0306
%RSD	129.86	300.66	73.428	6.6226	.23547	97.727	.43743
#1	-.00051	.00191	.00231	.02362	.48659	.00008	6.9546
#2	.00491	.02692	.00051	.02696	.48443	.00001	7.0136
#3	.00188	-.01002	.00368	.02522	.48485	.00018	6.9981
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00027**	**-.00007**	**.00164**	**-.00209**	**.05206**	**.55309**	**.03828**
Stddev	.00039	.00053	.00064	.00068	.03153	.15560	.00148
%RSD	147.80	766.58	39.062	32.660	60.562	28.132	3.8546
#1	.00002	-.00006	.00153	-.00135	.08578	.50218	.03687
#2	.00072	.00046	.00106	-.00270	.04705	.72777	.03816
#3	.00005	-.00060	.00232	-.00221	.02333	.42933	.03981
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.80937**	**.00615**	**.00011**	**18.432**	**-.00084**	**.01113**	**.00495**
Stddev	.07243	.00368	.00028	.051	.00072	.00634	.00126
%RSD	8.9487	59.847	241.18	.27432	85.170	57.003	25.523
#1	.74808	.00514	.00035	18.483	-.00005	.01420	.00640
#2	.88929	.00308	-.00019	18.382	-.00145	.01535	.00415
#3	.79073	.01023	.00018	18.430	-.00103	.00383	.00429
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606076301 Acquired: 6/23/2016 15:00:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 2000 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00303	.00197	.01915	.00072	1.2567	.00585	-.00090
Stddev	.00426	.00853	.00295	.00087	.0008	.00852	.00356
%RSD	140.49	432.89	15.427	121.09	.05936	145.65	397.05
#1	.00172	.00221	.01973	.00139	1.2559	-.00393	.00299
#2	-.00650	.01037	.01595	.00103	1.2573	.01163	-.00169
#3	-.00432	-.00668	.02178	-.00026	1.2570	.00985	-.00399
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00051	.00049	F -.04104
Stddev	.00064	.00013	.38903
%RSD	125.10	27.351	948.00
#1	-.00100	.00058	-.48337
#2	.00021	.00033	.24794
#3	-.00075	.00055	.11232
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6956.6	43183.	2199.2
Stddev	54.4	430.	23.1
%RSD	.78258	.99497	1.0493
#1	6897.1	43389.	2175.5
#2	7003.8	42689.	2221.6
#3	6969.0	43471.	2200.5

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 15:04:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.42738	10.225	.42355	.51012	1.0244	.05065	10.091
Stddev	.00539	.091	.00940	.00307	.0059	.00037	.032
%RSD	1.2616	.89220	2.2182	.60127	.57526	.72572	.31685
#1	.43352	10.304	.41275	.51099	1.0233	.05098	10.124
#2	.42518	10.125	.42814	.51265	1.0307	.05026	10.090
#3	.42343	10.245	.42977	.50671	1.0191	.05072	10.060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05206	.21028	.51417	.52677	4.1200	51.074	1.0411
Stddev	.00053	.00344	.00348	.01016	.0524	.111	.0062
%RSD	1.0133	1.6372	.67695	1.9286	1.2706	.21701	.59918
#1	.05150	.20662	.51607	.51557	4.0788	51.072	1.0407
#2	.05215	.21077	.51015	.52936	4.1789	51.186	1.0475
#3	.05254	.21346	.51628	.53538	4.1023	50.964	1.0351
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.113	.51188	1.0430	51.213	.52516	10.399	.52247
Stddev	.033	.00526	.0152	.231	.01144	.198	.01294
%RSD	.32155	1.0286	1.4605	.45051	2.1789	1.9024	2.4764
#1	10.090	.51095	1.0261	51.190	.51316	10.183	.51032
#2	10.100	.51755	1.0473	51.454	.52639	10.443	.52101
#3	10.151	.50715	1.0556	50.995	.53595	10.572	.53607
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 15:04:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2622**	**.41756**	**5.2863**	**1.0398**	**1.0224**	**1.0081**	**.52620**
Stddev	.0172	.01202	.1013	.0212	.0050	.0168	.01061
%RSD	1.3628	2.8782	1.9163	2.0349	.48725	1.6684	2.0157
#1	1.2445	.40471	5.1785	1.0162	1.0221	.99826	.51546
#2	1.2633	.42852	5.3008	1.0459	1.0276	1.0275	.52647
#3	1.2788	.41945	5.3795	1.0572	1.0176	.99852	.53667
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0245**	**1.0446**	F **.30237**
Stddev	.0058	.0191	.11177
%RSD	.56950	1.8236	36.966
#1	1.0294	1.0239	.21395
#2	1.0181	1.0484	.42800
#3	1.0259	1.0614	.26515
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6742.0**	**42317.**	**2192.6**
Stddev	87.2	372.	30.2
%RSD	1.2933	.87896	1.3758
#1	6830.2	42166.	2173.3
#2	6739.8	42741.	2177.1
#3	6655.9	42044.	2227.3

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 15:08:09 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00165**	**.01698**	**.00203**	**.00543**	**.00119**	**.00012**	**-.02429**
Stddev	.00195	.00654	.00152	.00145	.00127	.00007	.00281
%RSD	118.20	38.505	75.033	26.749	107.33	59.090	11.574
#1	-.00044	.01513	.00183	.00559	.00162	.00008	-.02105
#2	.00342	.01157	.00363	.00390	-.00025	.00009	-.02611
#3	.00196	.02425	.00061	.00679	.00218	.00021	-.02570
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.00021**	**.00208**	**-.00115**	**-.00919**	**.13134**	**-.00257**
Stddev	.00022	.00023	.00133	.00177	.02889	.16842	.00681
%RSD	385.67	112.78	63.704	153.40	314.27	128.23	265.13
#1	-.00015	-.00001	.00141	.00076	.02413	.31843	-.00487
#2	-.00022	.00045	.00361	-.00149	-.02726	-.00819	.00509
#3	.00020	.00018	.00123	-.00273	-.02444	.08379	-.00793
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03703**	**.00048**	**.00464**	**.04952**	**-.00087**	**-.00385**	F **.00550**
Stddev	.05363	.00205	.00051	.02064	.00055	.00333	.00438
%RSD	144.81	427.88	10.944	41.670	63.582	86.433	79.629
#1	-.02401	-.00081	.00408	.07276	-.00099	-.00608	.00137
#2	.05854	-.00060	.00478	.04248	-.00135	-.00546	.00504
#3	.07657	.00284	.00507	.03333	-.00027	-.00002	.01010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							.00500
Low Limit							-.00500

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 15:08:09 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00190**	**.00960**	**.00918**	**.00035**	**.00048**	**.00265**	**-.00074**
Stddev	.00634	.00369	.00360	.00070	.00044	.00545	.00148
%RSD	334.41	38.448	39.161	198.03	92.306	205.78	199.13
#1	.00543	.01383	.00505	.00076	.00032	.00705	.00096
#2	-.00566	.00709	.01162	-.00045	.00097	-.00344	-.00148
#3	-.00545	.00786	.01087	.00076	.00014	.00434	-.00171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00082**	**-.00017**	F **-.48223**
Stddev	.00142	.00006	.08088
%RSD	173.58	35.228	16.772
#1	-.00234	-.00022	-.41477
#2	.00049	-.00010	-.46001
#3	-.00061	-.00017	-.57189
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6825.4**	**42257.**	**2184.3**
Stddev	15.3	2149.	8.4
%RSD	.22359	5.0854	.38501
#1	6842.1	43585.	2177.3
#2	6821.7	43408.	2193.6
#3	6812.3	39777.	2182.1

Approved: June 24, 2016

Sample Name: LLCCV Acquired: 6/23/2016 15:12:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00900	.19078	.00767	.08599	.00976	.00164	.37400	.00143
Stddev	.00038	.00658	.00428	.00071	.00082	.00004	.02888	.00026
%RSD	4.2583	3.4477	55.791	.82106	8.4373	2.4498	7.7231	18.189
#1	.00920	.19742	.01158	.08642	.00935	.00167	.34688	.00165
#2	.00925	.18427	.00832	.08637	.00922	.00160	.40437	.00149
#3	.00856	.19065	.00310	.08517	.01071	.00167	.37075	.00114
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00437	.00454	.00423	.08499	.95099	.08309	.42598	.00933
Stddev	.00026	.00120	.00118	.02252	.18201	.00250	.04612	.00260
%RSD	5.9228	26.460	27.815	26.494	19.139	3.0129	10.828	27.902
#1	.00437	.00540	.00558	.10931	.94621	.08030	.47657	.00727
#2	.00411	.00505	.00373	.06486	.77142	.08381	.41507	.00846
#3	.00463	.00317	.00339	.08082	1.1353	.08515	.38628	.01225
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00906	.50543	.01575	.83822	.01206	.08796	.02110	.86437
Stddev	.00045	.01423	.00111	.00843	.00061	.00300	.00981	.00437
%RSD	4.9498	2.8156	7.0712	1.0058	5.0700	3.4062	46.487	.50596
#1	.00855	.48956	.01609	.83135	.01163	.08885	.02568	.86154
#2	.00934	.51706	.01664	.84763	.01276	.09042	.00984	.86217
#3	.00930	.50965	.01450	.83568	.01180	.08462	.02778	.86941
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: LLCCV Acquired: 6/23/2016 15:12:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.42833**	**.04265**	**.02782**	**.15622**	**.00760**	**.01768**	**19.398**
Stddev	.00202	.00078	.00320	.00149	.00082	.00018	.364
%RSD	.47120	1.8184	11.486	.95612	10.759	1.0376	1.8748
#1	.43055	.04189	.02625	.15477	.00737	.01787	19.046
#2	.42783	.04344	.03150	.15612	.00850	.01767	19.773
#3	.42661	.04262	.02572	.15776	.00692	.01750	19.376
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6741.4**	**42149.**	**2154.7**
Stddev	40.7	448.	3.9
%RSD	.60444	1.0621	.18286
#1	6739.4	41643.	2153.9
#2	6701.8	42314.	2159.0
#3	6783.2	42491.	2151.2

Approved: June 24, 2016

Sample Name: L1606072401 Acquired: 6/23/2016 15:16:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00277	.01879	.00029	.96014	2.4170	.00001	173.53
Stddev	.00234	.00416	.00093	.00391	.0133	.00011	.98
%RSD	84.467	22.118	321.95	.40684	.55081	1049.3	.56425
#1	.00226	.02192	.00135	.95713	2.4039	.00010	172.57
#2	.00533	.01408	-.00038	.95873	2.4305	.00004	174.53
#3	.00073	.02039	-.00011	.96455	2.4166	-.00011	173.50
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	.00105	.00268	-.00010	.88444	14.199	.57377
Stddev	.00030	.00019	.00115	.00121	.03836	.163	.00568
%RSD	60.201	18.370	42.910	1155.9	4.3367	1.1492	.98942
#1	.00039	.00127	.00146	.00113	.88346	14.011	.56748
#2	.00027	.00096	.00284	-.00016	.92327	14.311	.57853
#3	.00084	.00091	.00374	-.00128	.84658	14.273	.57529
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	16.994	.07845	.00033	F 412.25	-.00165	.00224	.00196
Stddev	.190	.00271	.00048	2.14	.00067	.00447	.00418
%RSD	1.1178	3.4582	144.78	.51818	40.333	199.28	213.26
#1	16.808	.07648	-.00014	409.89	-.00181	.00740	.00030
#2	16.986	.08154	.00032	414.05	-.00223	-.00047	.00672
#3	17.188	.07731	.00081	412.81	-.00092	-.00020	-.00113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 24, 2016

Sample Name: L1606072401 Acquired: 6/23/2016 15:16:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00083	.00344	.10306	.00025	F 33.286	-.01719	.00197
Stddev	.00660	.01147	.00129	.00070	.662	.00384	.00073
%RSD	796.07	333.14	1.2495	284.34	1.9888	22.354	37.258
#1	.00514	-.00975	.10450	-.00055	33.434	-.01505	.00161
#2	-.00677	.01101	.10202	.00075	32.563	-.02162	.00281
#3	.00412	.00907	.10266	.00054	33.862	-.01489	.00148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00083	.00418	F -.23243
Stddev	.00050	.00012	.29004
%RSD	59.630	2.9539	124.79
#1	-.00137	.00405	-.37729
#2	-.00039	.00420	.10151
#3	-.00074	.00429	-.42150
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6723.1	41417.	2153.6
Stddev	21.6	497.	27.2
%RSD	.32089	1.1995	1.2626
#1	6746.3	40877.	2166.1
#2	6703.6	41854.	2172.4
#3	6719.4	41522.	2122.5

Approved: June 24, 2016

Sample Name: L1606076201 Acquired: 6/23/2016 15:20:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.02536	-.00249	.01844	.00535	.00003	13.112	.00023
Stddev	.00127	.01968	.00199	.00200	.00076	.00010	.093	.00036
%RSD	1210.9	77.601	79.841	10.824	14.251	352.87	.70940	158.39
#1	-.00133	.03591	-.00453	.02010	.00610	.00006	13.202	.00020
#2	.00108	.00266	-.00239	.01899	.00537	.00011	13.118	.00059
#3	.00057	.03753	-.00056	.01623	.00458	-.00009	13.016	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.00194	-.00001	.01450	1.0331	.00146	1.8703	.00269
Stddev	.00018	.00175	.00196	.01085	.0976	.00077	.1297	.00116
%RSD	179.15	90.064	25521.	74.817	9.4452	53.000	6.9359	42.985
#1	-.00008	.00349	.00137	.01074	1.1059	.00167	1.9776	.00278
#2	.00007	.00229	-.00225	.00603	.92218	.00060	1.7261	.00380
#3	-.00029	.00005	.00086	.02673	1.0711	.00210	1.9073	.00149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00119	1.9239	-.00066	-.00546	.00006	-.00042	.00466	2.2221
Stddev	.00030	.0280	.00136	.00908	.00267	.00575	.00011	.0019
%RSD	25.010	1.4533	206.81	166.34	4184.1	1357.9	2.3851	.08626
#1	.00148	1.9518	-.00109	.00488	-.00200	-.00344	.00454	2.2236
#2	.00121	1.8959	-.00174	-.01213	.00308	-.00405	.00474	2.2227
#3	.00089	1.9239	.00086	-.00913	-.00089	.00621	.00472	2.2199
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606076201 Acquired: 6/23/2016 15:20:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00040**	**.04721**	**.00638**	**.00000**	**-.00085**	**.00130**	**.50415**
Stddev	.00136	.00033	.00533	.00127	.00101	.00013	.13507
%RSD	341.17	.70394	83.621	32921.	119.58	10.205	26.791
#1	.00187	.04759	.00544	-.00091	.00031	.00144	.65988
#2	.00015	.04708	.00158	-.00053	-.00127	.00129	.41889
#3	-.00082	.04697	.01212	.00145	-.00158	.00117	.43368
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6705.8**	**41937.**	**2141.7**
Stddev	7.3	291.	9.9
%RSD	.10956	.69290	.46000
#1	6707.2	41673.	2137.5
#2	6697.9	41888.	2134.7
#3	6712.4	42248.	2153.0

Approved: June 24, 2016

Sample Name: L1606077918 Acquired: 6/23/2016 15:24:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00167	.01863	-.00253	.02217	.00148	.00003	.01869	.00029
Stddev	.00214	.00655	.00149	.00110	.00241	.00005	.08144	.00024
%RSD	128.32	35.170	59.064	4.9626	162.98	181.98	435.85	82.700
#1	.00243	.01329	-.00293	.02326	-.00126	.00009	.02943	.00045
#2	-.00075	.02594	-.00088	.02220	.00327	-.00002	.09422	.00001
#3	.00332	.01665	-.00378	.02106	.00243	.00002	-.06760	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	.00192	.00078	-.01653	-.02200	-.00394	-.01131	-.00011
Stddev	.00029	.00013	.00054	.01402	.10641	.00102	.07303	.00282
%RSD	164.29	6.8552	69.534	84.801	483.77	25.969	645.89	2502.9
#1	-.00050	.00178	.00029	-.01912	.09171	-.00295	.07302	-.00190
#2	-.00010	.00204	.00136	-.00140	-.03853	-.00500	-.05410	.00314
#3	.00007	.00193	.00070	-.02907	-.11917	-.00387	-.05284	-.00157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	2.0695	-.00008	-.00529	.00154	-.00212	.00188	.14025
Stddev	.00033	.0606	.00084	.00055	.00138	.00317	.00994	.00166
%RSD	44.530	2.9288	1113.0	10.468	89.385	149.30	528.79	1.1848
#1	.00102	2.1357	.00074	-.00465	.00046	-.00572	.00864	.14193
#2	.00079	2.0167	-.00094	-.00563	.00107	.00028	.00653	.14022
#3	.00038	2.0563	-.00003	-.00558	.00309	-.00094	-.00953	.13861
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606077918 Acquired: 6/23/2016 15:24:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.00126	.00815	-.00353	-.00074	.00157	.11270
Stddev	.00035	.00043	.01205	.00082	.00125	.00009	.15849
%RSD	67.954	34.228	147.85	23.195	169.72	6.0212	140.63
#1	.00087	.00176	-.00539	-.00440	.00069	.00167	-.04429
#2	.00053	.00100	.01768	-.00277	-.00127	.00150	.10974
#3	.00016	.00103	.01216	-.00342	-.00163	.00153	.27265
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6730.2	41984.	2122.6
Stddev	9.9	392.	7.1
%RSD	.14640	.93343	.33457
#1	6723.8	41604.	2115.9
#2	6741.6	41961.	2130.1
#3	6725.4	42387.	2121.9

Approved: June 24, 2016

Sample Name: L1606078701 Acquired: 6/23/2016 15:28:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00134**	**.02016**	**-.00184**	**.00404**	**.00137**	**-.00001**	**.12352**
Stddev	.00329	.00145	.00162	.00051	.00066	.00012	.03646
%RSD	244.80	7.1928	87.867	12.618	48.048	1036.7	29.515
#1	-.00242	.01849	-.00198	.00347	.00108	.00002	.12792
#2	.00278	.02084	-.00338	.00444	.00212	.00009	.08506
#3	.00367	.02114	-.00016	.00420	.00091	-.00014	.15758
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00058**	**.00005**	**.00229**	**.00086**	**-.00893**	**.04033**	**.00067**
Stddev	.00021	.00060	.00129	.00091	.05697	.07103	.00112
%RSD	35.316	1231.2	56.527	104.93	637.77	176.11	168.56
#1	.00081	-.00042	.00094	-.00018	-.06783	.07929	-.00038
#2	.00052	.00072	.00242	.00145	-.00485	.08335	.00053
#3	.00042	-.00015	.00351	.00132	.04588	-.04165	.00185
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00079**	**.00355**	**.00016**	**.51805**	**-.00054**	**-.00239**	**-.00291**
Stddev	.04525	.00184	.00024	.02678	.00082	.01066	.00180
%RSD	5714.9	51.848	157.11	5.1696	151.92	446.68	61.810
#1	.02267	.00374	.00029	.54478	.00032	-.00520	-.00089
#2	-.05296	.00529	-.00013	.51816	-.00062	.00940	-.00435
#3	.02792	.00162	.00030	.49122	-.00131	-.01136	-.00349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606078701 Acquired: 6/23/2016 15:28:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00239**	**.00772**	**.13349**	**.00103**	**.00107**	**.00346**	**-.00334**
Stddev	.00234	.00402	.00019	.00058	.00048	.00641	.00040
%RSD	97.989	52.060	.14358	56.048	44.671	185.55	12.008
#1	-.00270	.00313	.13368	.00129	.00156	.00140	-.00288
#2	.00009	.00942	.13350	.00144	.00060	-.00168	-.00355
#3	-.00456	.01060	.13329	.00037	.00105	.01065	-.00360
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00117**	**.00491**	F **-.21371**
Stddev	.00101	.00036	.39855
%RSD	86.018	7.3434	186.50
#1	-.00212	.00530	.20425
#2	-.00129	.00459	-.25586
#3	-.00011	.00483	-.58951
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6740.9**	**42203.**	**2144.6**
Stddev	38.3	203.	23.0
%RSD	.56823	.48091	1.0724
#1	6770.7	42025.	2119.8
#2	6754.4	42161.	2165.3
#3	6697.7	42424.	2148.7

Approved: June 24, 2016

Sample Name: L1606078710 Acquired: 6/23/2016 15:32:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00084**	**.27296**	**-.00343**	**.04542**	**.09618**	**-.00003**	**57.392**
Stddev	.00117	.00475	.00186	.00269	.00132	.00003	.461
%RSD	138.82	1.7388	54.215	5.9151	1.3771	97.809	.80344
#1	-.00034	.27840	-.00365	.04242	.09771	-.00002	57.856
#2	.00087	.26969	-.00518	.04761	.09539	-.00001	57.384
#3	.00200	.27079	-.00147	.04623	.09544	-.00006	56.934
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00064**	**.00033**	**.00402**	**.00290**	**.23383**	**1.0771**	**.00900**
Stddev	.00017	.00013	.00208	.00129	.01456	.0457	.00428
%RSD	26.807	40.705	51.843	44.530	6.2269	4.2470	47.527
#1	.00083	.00031	.00175	.00376	.24955	1.0260	.00837
#2	.00058	.00047	.00585	.00354	.22081	1.1143	.01355
#3	.00051	.00020	.00444	.00142	.23113	1.0909	.00507
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**18.842**	**.01135**	**.00060**	**3.8640**	**-.00095**	**.19470**	**.00196**
Stddev	.177	.00110	.00029	.0359	.00078	.00332	.00221
%RSD	.93834	9.6581	48.710	.92870	82.442	1.7074	113.18
#1	18.724	.01117	.00027	3.8945	-.00012	.19396	.00367
#2	19.045	.01253	.00081	3.8731	-.00105	.19833	.00275
#3	18.757	.01036	.00074	3.8244	-.00167	.19180	-.00054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606078710 Acquired: 6/23/2016 15:32:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00214**	**.00030**	**9.5395**	**.00090**	**.15048**	**.00322**	**-.00111**
Stddev	.00331	.00448	.0053	.00019	.00007	.00950	.00409
%RSD	154.82	1486.1	.05501	20.991	.04682	294.96	367.19
#1	.00049	-.00485	9.5347	.00098	.15055	-.00075	-.00438
#2	-.00002	.00249	9.5451	.00068	.15047	.01406	-.00244
#3	.00595	.00326	9.5386	.00104	.15041	-.00365	.00348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00310**	**.00611**	F **-.09613**
Stddev	.00083	.00018	.38193
%RSD	26.810	2.9005	397.32
#1	.00381	.00625	.21134
#2	.00329	.00618	-.52366
#3	.00218	.00591	.02394
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6716.0**	**41811.**	**2141.5**
Stddev	20.0	38.	38.3
%RSD	.29820	.09082	1.7907
#1	6697.9	41817.	2120.8
#2	6712.8	41845.	2118.0
#3	6737.5	41770.	2185.8

Approved: June 24, 2016

Sample Name: L1606072402 Acquired: 6/23/2016 15:36:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.02429	.00126	1.0001	2.4553	.00011	175.12
Stddev	.00172	.00751	.00369	.0073	.0182	.00006	1.38
%RSD	1268.7	30.918	292.44	.72550	.74042	57.336	.79024
#1	.00202	.03260	.00295	.99250	2.4346	.00017	173.60
#2	-.00134	.01798	-.00297	1.0008	2.4623	.00013	175.43
#3	-.00027	.02231	.00381	1.0070	2.4689	.00004	176.32
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	.00144	.00224	.00109	.88917	14.331	.57927
Stddev	.00026	.00062	.00123	.00028	.02013	.196	.00713
%RSD	50.087	43.164	55.139	26.047	2.2642	1.3673	1.2310
#1	.00027	.00131	.00262	.00136	.90097	14.105	.57116
#2	.00052	.00089	.00323	.00112	.90061	14.456	.58209
#3	.00080	.00212	.00086	.00079	.86592	14.431	.58456
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	17.314	.07801	.00008	F 417.81	-.00090	.00661	.00485
Stddev	.333	.00169	.00032	3.43	.00062	.00486	.00222
%RSD	1.9225	2.1614	387.14	.82124	68.692	73.506	45.764
#1	16.937	.07635	.00046	413.93	-.00126	.00102	.00356
#2	17.437	.07972	-.00012	419.03	-.00019	.00986	.00358
#3	17.567	.07797	-.00009	420.46	-.00127	.00895	.00741
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 24, 2016

Sample Name: L1606072402 Acquired: 6/23/2016 15:36:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00480**	**-.00067**	**.10759**	**-.00027**	F **33.118**	**-.02215**	**.00020**
Stddev	.00242	.00358	.00424	.00098	.241	.01018	.00271
%RSD	50.361	531.89	3.9427	362.00	.72774	45.960	1351.6
#1	-.00308	.00251	.10307	-.00000	33.152	-.01317	.00188
#2	-.00757	-.00455	.11148	-.00135	33.340	-.02006	-.00293
#3	-.00376	.00003	.10821	.00055	32.862	-.03321	.00165
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00126**	**.00524**	F **-.35646**
Stddev	.00018	.00006	.36766
%RSD	13.956	1.1266	103.14
#1	-.00124	.00517	-.66560
#2	-.00110	.00528	.05011
#3	-.00145	.00527	-.45387
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6700.2**	**41500.**	**2177.0**
Stddev	45.1	267.	16.8
%RSD	.67280	.64386	.77022
#1	6649.2	41642.	2175.9
#2	6734.7	41192.	2160.8
#3	6716.7	41667.	2194.2

Approved: June 24, 2016

Sample Name: L1606078718 Acquired: 6/23/2016 15:40:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00182	1.3663	-.00099	.08602	.17005	.00003	59.339	.00041
Stddev	.00205	.0062	.00401	.00049	.00175	.00016	.521	.00016
%RSD	112.70	.45392	402.94	.56785	1.0290	592.47	.87774	39.098
#1	.00101	1.3731	.00134	.08564	.17098	.00020	59.613	.00026
#2	.00030	1.3649	.00129	.08586	.17113	-.00011	59.666	.00039
#3	.00416	1.3610	-.00562	.08657	.16803	-.00000	58.739	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00139	.00460	.00180	1.4597	1.5559	.01180	24.176	.12500
Stddev	.00034	.00106	.00032	.0390	.1298	.00641	.117	.00150
%RSD	24.411	23.098	17.578	2.6741	8.3397	54.300	.48391	1.1984
#1	.00116	.00569	.00160	1.4736	1.5769	.00880	24.113	.12424
#2	.00123	.00452	.00216	1.4899	1.4170	.01916	24.311	.12672
#3	.00178	.00357	.00163	1.4156	1.6739	.00745	24.105	.12403
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00247	10.893	.00215	.17889	.00449	-.00364	.00139	10.448
Stddev	.00018	.216	.00011	.00508	.00265	.00289	.00135	.018
%RSD	7.2484	1.9792	4.9404	2.8394	59.034	79.479	97.200	.17603
#1	.00258	11.133	.00215	.17389	.00534	-.00034	.00294	10.467
#2	.00258	10.830	.00205	.17875	.00152	-.00482	.00047	10.447
#3	.00227	10.716	.00226	.18404	.00661	-.00574	.00076	10.430
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606078718 Acquired: 6/23/2016 15:40:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00169**	**.24340**	**.01315**	**-.00297**	**.00401**	**.00904**	**.48814**
Stddev	.00049	.00237	.01040	.00495	.00132	.00024	.22160
%RSD	29.225	.97535	79.136	166.53	32.895	2.7044	45.397
#1	.00129	.24607	.02200	-.00597	.00252	.00883	.25296
#2	.00154	.24264	.00169	.00274	.00448	.00931	.69305
#3	.00224	.24151	.01575	-.00569	.00503	.00898	.51840
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6702.6**	**41482.**	**2156.8**
Stddev	7.1	311.	17.9
%RSD	.10622	.74978	.83036
#1	6710.2	41132.	2152.2
#2	6701.7	41728.	2141.6
#3	6696.0	41585.	2176.6

Approved: June 24, 2016

Sample Name: L1606078719 Acquired: 6/23/2016 15:44:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00153**	**.01414**	**-.00427**	**.00486**	**.00226**	**.00005**	**.15369**
Stddev	.00114	.00804	.00087	.00166	.00023	.00001	.02440
%RSD	74.831	56.853	20.359	34.032	10.239	25.333	15.878
#1	.00057	.00685	-.00525	.00587	.00249	.00006	.17540
#2	.00122	.02277	-.00358	.00577	.00203	.00004	.12728
#3	.00280	.01281	-.00399	.00295	.00226	.00006	.15840
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00024**	**.00009**	**.00104**	**.00368**	F **-.03550**	**.01454**	**-.00410**
Stddev	.00019	.00020	.00141	.00160	.02523	.01783	.00666
%RSD	79.976	213.68	135.45	43.472	71.078	122.60	162.48
#1	.00014	-.00002	.00040	.00186	-.05512	-.00480	-.00325
#2	.00046	-.00002	.00006	.00430	-.00703	.01812	.00210
#3	.00012	.00033	.00266	.00487	-.04436	.03031	-.01114
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01439**	**.00113**	**.00041**	**.38527**	**-.00105**	**-.00827**	**.00290**
Stddev	.04149	.00426	.00020	.02060	.00044	.00472	.00131
%RSD	288.35	378.69	48.693	5.3456	41.861	57.039	45.127
#1	-.02539	-.00342	.00053	.37602	-.00131	-.00665	.00229
#2	.05740	.00504	.00053	.40887	-.00054	-.01358	.00201
#3	.01115	.00176	.00018	.37092	-.00129	-.00457	.00440
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606078719 Acquired: 6/23/2016 15:44:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00257	.00690	.07841	.00066	.00220	.00871	-.00196
Stddev	.00414	.01188	.00070	.00073	.00015	.00294	.00454
%RSD	161.26	172.25	.88662	111.70	6.9362	33.794	231.14
#1	-.00606	-.00682	.07920	.00142	.00205	.01122	-.00256
#2	.00201	.01408	.07788	-.00004	.00218	.00943	.00284
#3	-.00366	.01344	.07815	.00059	.00235	.00547	-.00617
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00067	.00557	.08340
Stddev	.00077	.00005	.21806
%RSD	115.62	.88962	261.46
#1	.00022	.00562	.20466
#2	-.00113	.00553	-.16833
#3	-.00110	.00554	.21388
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6728.6	42173.	2145.0
Stddev	41.6	57.	33.9
%RSD	.61795	.13424	1.5810
#1	6776.6	42109.	2106.1
#2	6704.9	42215.	2160.0
#3	6704.4	42195.	2168.8

Approved: June 24, 2016

Sample Name: L1606079802 Acquired: 6/23/2016 15:48:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00144	.03243	-.00074	.01231	.00010	.00002	1.1630	.00027
Stddev	.00109	.01416	.00372	.00189	.00037	.00003	.0162	.00019
%RSD	75.901	43.667	501.02	15.351	392.72	145.15	1.3948	69.324
#1	.00136	.04726	-.00472	.01055	-.00032	.00001	1.1621	.00007
#2	.00258	.03100	.00265	.01431	.00021	-.00000	1.1473	.00030
#3	.00039	.01904	-.00016	.01208	.00040	.00005	1.1797	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.00286	.00149	-.00261	17.582	-.00293	.47862	.00440
Stddev	.00027	.00101	.00088	.00368	.094	.00238	.08717	.00440
%RSD	141.67	35.178	58.815	140.96	.53503	81.061	18.212	99.937
#1	.00006	.00398	.00049	.00163	17.679	-.00560	.55068	.00147
#2	.00001	.00203	.00190	-.00493	17.575	-.00104	.50345	.00946
#3	.00050	.00258	.00210	-.00453	17.491	-.00215	.38174	.00227
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00219	36.621	.00066	2.4466	.00301	.00041	.00081	.25089
Stddev	.00044	.385	.00146	.0064	.00179	.00359	.00845	.00206
%RSD	20.233	1.0507	219.59	.26158	59.557	866.11	1046.1	.82160
#1	.00171	37.035	.00190	2.4473	.00481	.00455	.00656	.25256
#2	.00226	36.553	.00104	2.4526	.00123	-.00173	.00477	.25153
#3	.00259	36.275	-.00094	2.4399	.00298	-.00158	-.00890	.24859
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606079802 Acquired: 6/23/2016 15:48:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00167	.00120	.00799	-.00172	-.00016	.01069	.29290
Stddev	.00023	.00009	.00245	.00171	.00081	.00016	.28737
%RSD	13.614	7.7584	30.718	99.218	509.00	1.4511	98.111
#1	.00185	.00111	.00516	-.00311	.00029	.01070	.29578
#2	.00142	.00129	.00922	-.00223	-.00109	.01053	.00410
#3	.00176	.00121	.00958	.00018	.00032	.01084	.57883
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6875.8	42924.	2217.4
Stddev	18.1	343.	31.5
%RSD	.26359	.79954	1.4211
#1	6874.1	42569.	2185.0
#2	6894.7	43254.	2248.0
#3	6858.5	42948.	2219.2

Approved: June 24, 2016

Sample Name: L1606079804 Acquired: 6/23/2016 15:51:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00292	.06016	-.00090	.00843	.00749	-.00019	45.159	.00037
Stddev	.00241	.00107	.00203	.00073	.00119	.00004	.339	.00018
%RSD	82.468	1.7811	226.97	8.6615	15.818	18.253	.75060	47.525
#1	.00166	.06132	-.00161	.00799	.00886	-.00021	44.779	.00055
#2	.00569	.05995	-.00248	.00928	.00687	-.00015	45.430	.00020
#3	.00140	.05921	.00140	.00803	.00675	-.00022	45.268	.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00296	.00937	.17564	8.4244	.00238	2.2221	.09641
Stddev	.00021	.00105	.00039	.02162	.0287	.00549	.0421	.00186
%RSD	241.35	35.503	4.1089	12.307	.34054	230.82	1.8934	1.9315
#1	.00033	.00354	.00975	.19448	8.4123	.00370	2.2235	.09437
#2	-.00005	.00175	.00939	.18040	8.4572	-.00365	2.1794	.09686
#3	-.00002	.00359	.00898	.15204	8.4038	.00709	2.2635	.09802
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00217	17.774	.00302	26.483	.00590	-.00008	.01034	.16124
Stddev	.00050	.097	.00068	.043	.00269	.00227	.00953	.00054
%RSD	22.837	.54315	22.502	.16325	45.484	2730.6	92.186	.33287
#1	.00202	17.666	.00316	26.440	.00849	.00019	.00360	.16097
#2	.00177	17.854	.00228	26.526	.00313	-.00248	.02125	.16186
#3	.00272	17.800	.00361	26.483	.00609	.00204	.00617	.16089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606079804 Acquired: 6/23/2016 15:51:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	.03109	.00099	.00459	.00006	.08912	.51232
Stddev	.00066	.00080	.00670	.00258	.00048	.00020	.12801
%RSD	85.536	2.5649	674.85	56.182	788.63	.22881	24.986
#1	.00069	.03017	-.00154	.00507	-.00038	.08911	.57216
#2	.00147	.03152	-.00407	.00180	.00057	.08892	.36535
#3	.00016	.03157	.00859	.00690	-.00001	.08933	.59945
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7950.5	48692.	2535.1
Stddev	32.4	365.	7.3
%RSD	.40779	.75001	.28802
#1	7923.5	48270.	2535.8
#2	7986.5	48901.	2542.1
#3	7941.6	48905.	2527.5

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 15:55:53 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.42646	10.279	.41356	.51175	1.0306	.05076	10.205
Stddev	.00204	.051	.00199	.00426	.0086	.00025	.126
%RSD	.47932	.49909	.48079	.83170	.83457	.49984	1.2349
#1	.42434	10.238	.41525	.51584	1.0212	.05048	10.064
#2	.42664	10.336	.41407	.51205	1.0326	.05081	10.244
#3	.42841	10.262	.41137	.50735	1.0380	.05098	10.306
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05186	.20878	.51384	.52434	4.0815	51.382	1.0440
Stddev	.00027	.00087	.00306	.00302	.0649	.432	.0097
%RSD	.52657	.41503	.59534	.57578	1.5889	.84015	.92985
#1	.05202	.20802	.51042	.52115	4.0401	50.884	1.0353
#2	.05201	.20972	.51630	.52716	4.0482	51.628	1.0422
#3	.05154	.20860	.51480	.52470	4.1563	51.635	1.0545
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.201	.51297	1.0355	51.634	.52512	10.356	.52060
Stddev	.133	.00911	.0052	.288	.00329	.031	.00278
%RSD	1.3081	1.7758	.49793	.55755	.62569	.29937	.53373
#1	10.058	.50248	1.0351	51.315	.52328	10.327	.52371
#2	10.223	.51766	1.0408	51.710	.52891	10.389	.51975
#3	10.322	.51879	1.0306	51.876	.52316	10.353	.51835
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 15:55:53 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2590**	**.39898**	**5.2574**	**1.0340**	**1.0272**	**1.0156**	**.52194**
Stddev	.0159	.00202	.0311	.0050	.0078	.0129	.00221
%RSD	1.2636	.50630	.59143	.48329	.76072	1.2706	.42268
#1	1.2594	.39666	5.2283	1.0307	1.0187	1.0008	.51942
#2	1.2746	.40033	5.2902	1.0397	1.0290	1.0249	.52354
#3	1.2428	.39996	5.2537	1.0315	1.0340	1.0209	.52286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0272**	**1.0395**	F **.76977**
Stddev	.0059	.0029	.39400
%RSD	.57455	.27998	51.184
#1	1.0219	1.0379	.54911
#2	1.0336	1.0428	.53555
#3	1.0261	1.0377	1.2247
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6768.6**	**42010.**	**2153.6**
Stddev	37.5	259.	15.3
%RSD	.55402	.61595	.71163
#1	6809.7	41923.	2137.5
#2	6736.2	41806.	2155.3
#3	6760.0	42301.	2168.0

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 15:59:20 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00114**	**.01588**	**.00002**	**.00629**	**.00234**	**.00000**	**.01938**
Stddev	.00137	.00887	.00130	.00592	.00077	.00004	.02910
%RSD	120.04	55.880	5265.1	94.076	32.785	916.73	150.13
#1	-.00044	.02525	-.00001	.00358	.00243	-.00002	-.00373
#2	-.00027	.00761	-.00126	.01308	.00307	.00005	.00982
#3	-.00271	.01478	.00134	.00221	.00154	-.00002	.05206
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00039**	**.00009**	**.00109**	**.00045**	**-.01096**	**.05826**	**-.00107**
Stddev	.00009	.00043	.00020	.00134	.05378	.12671	.00316
%RSD	22.643	485.10	18.341	295.38	490.89	217.49	293.68
#1	.00048	-.00040	.00113	-.00109	-.03258	-.08772	-.00007
#2	.00037	.00043	.00126	.00134	.05027	.12270	.00146
#3	.00031	.00024	.00087	.00110	-.05055	.13981	-.00461
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.01399**	**-.00049**	**.00462**	**.09808**	**.00018**	**.00588**	**.00220**
Stddev	.01908	.00229	.00022	.02974	.00154	.00621	.00597
%RSD	136.32	468.16	4.8140	30.323	833.68	105.64	271.60
#1	.00803	-.00312	.00472	.13145	-.00103	.00102	.00713
#2	-.02479	.00056	.00436	.08842	.00192	.00373	-.00444
#3	-.02522	.00109	.00477	.07438	-.00034	.01288	.00391
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 15:59:20 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00449	.00077	.01037	.00119	.00117	.00814	-.00292
Stddev	.00414	.00612	.00397	.00019	.00046	.00274	.00050
%RSD	92.254	796.98	38.225	16.402	38.885	33.649	17.217
#1	.00912	.00523	.01435	.00110	.00170	.00638	-.00346
#2	.00112	.00328	.01035	.00105	.00095	.01130	-.00286
#3	.00323	-.00621	.00642	.00141	.00087	.00675	-.00246
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00013	.00000	F -.15928
Stddev	.00082	.00025	.25243
%RSD	624.25	8432.5	158.48
#1	-.00065	.00025	-.37693
#2	-.00056	.00001	-.21836
#3	.00082	-.00025	.11745
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6764.3	42214.	2158.6
Stddev	9.8	206.	11.6
%RSD	.14426	.48768	.53511
#1	6758.9	42034.	2168.0
#2	6758.3	42168.	2162.1
#3	6775.5	42439.	2145.7

Approved: June 24, 2016

Sample Name: ICSA Acquired: 6/23/2016 16:03:19 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00208**	**295.58**	**-.00325**	**.00908**	**.00322**	**.00010**	**273.70**
Stddev	.00236	.85	.00199	.00346	.00101	.00006	.86
%RSD	113.23	.28674	61.144	38.103	31.523	65.751	.31303
#1	.00087	294.66	-.00312	.00644	.00421	.00014	272.77
#2	.00058	296.32	-.00531	.01300	.00326	.00002	273.88
#3	.00480	295.77	-.00133	.00781	.00219	.00012	274.45
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **.00108**	**-.00082**	**.00022**	**.00233**	**109.50**	**.05250**	**.01009**
Stddev	.00041	.00021	.00182	.00181	.40	.12252	.00125
%RSD	38.111	25.991	813.25	77.633	.36960	233.38	12.428
#1	.00063	-.00102	.00055	.00411	109.23	.16966	.01044
#2	.00119	-.00085	.00185	.00240	109.30	.06259	.01113
#3	.00143	-.00059	-.00174	.00049	109.96	-.07475	.00869
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.00080						
Low Limit	-.00080						

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**275.93**	**-.00030**	**.00008**	**.12765**	**-.00145**	**.04923**	**-.00110**
Stddev	1.32	.00231	.00021	.02109	.00124	.00453	.00380
%RSD	.47822	758.84	259.08	16.521	85.657	9.2005	344.88
#1	275.22	-.00113	-.00014	.12709	-.00019	.05367	-.00530
#2	275.12	-.00209	.00012	.10685	-.00149	.04941	.00209
#3	277.45	.00230	.00027	.14901	-.00267	.04462	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: ICSA Acquired: 6/23/2016 16:03:19 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00743**	**.00521**	**.02728**	**.00048**	**-.00001**	**-.00737**	**-.00248**
Stddev	.00821	.01356	.00232	.00057	.00068	.00415	.00352
%RSD	110.59	260.10	8.4896	119.75	7500.7	56.273	141.97
#1	-.01603	-.01035	.02586	-.00018	.00063	-.00272	-.00224
#2	-.00656	.01449	.02603	.00085	-.00072	-.01069	-.00611
#3	.00032	.01150	.02995	.00076	.00006	-.00870	.00092
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00690**	**-.00237**	F **-.97047**
Stddev	.00125	.00006	.13443
%RSD	18.064	2.5689	13.852
#1	-.00564	-.00236	-.99205
#2	-.00813	-.00244	-.82655
#3	-.00692	-.00232	-1.0928
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02000
Low Limit			-.02000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6096.7**	**36985.**	**2032.0**
Stddev	12.3	450.	10.8
%RSD	.20106	1.2158	.52965
#1	6103.4	37299.	2022.3
#2	6104.2	36470.	2043.6
#3	6082.6	37186.	2030.0

Approved: June 24, 2016

Sample Name: ICSAB Acquired: 6/23/2016 16:07:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .61513	295.58	.27616	.01273	.28137	.27182	275.51
Stddev	.00198	.38	.00201	.00218	.00168	.00055	1.53
%RSD	.32189	.12856	.72891	17.114	.59730	.20172	.55467
#1	.61497	295.92	.27748	.01189	.28331	.27245	275.46
#2	.61718	295.65	.27385	.01520	.28043	.27144	277.05
#3	.61323	295.17	.27716	.01109	.28038	.27158	274.00
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.60000						
Low Limit	.40000						

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.55626	.27017	.28219	.28373	108.00	5.8031	.00521
Stddev	.00061	.00065	.00106	.00040	.65	.1899	.00170
%RSD	.11032	.23929	.37563	.14179	.60589	3.2730	32.651
#1	.55696	.26965	.28228	.28330	107.97	6.0146	.00625
#2	.55595	.27089	.28320	.28380	108.66	5.6472	.00613
#3	.55585	.26995	.28108	.28409	107.35	5.7474	.00325
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	271.98	.27321	-.00023	5.9645	.54441	.04388	.55597
Stddev	2.18	.00652	.00054	.0491	.00210	.01228	.00315
%RSD	.80074	2.3850	241.03	.82254	.38502	27.985	.56724
#1	272.14	.26889	-.00078	5.9321	.54658	.05666	.55621
#2	274.08	.28070	-.00020	6.0209	.54240	.04283	.55270
#3	269.73	.27002	.00030	5.9405	.54426	.03216	.55899
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: ICSAB Acquired: 6/23/2016 16:07:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.57108**	**.28123**	**.01867**	**.00174**	**.00066**	**-.00797**	**.51622**
Stddev	.00496	.00708	.00561	.00106	.00040	.00629	.00401
%RSD	.86857	2.5171	30.040	61.006	60.094	78.897	.77665
#1	.57104	.28924	.01660	.00101	.00062	-.00170	.51236
#2	.57607	.27580	.01440	.00296	.00029	-.00794	.51594
#3	.56615	.27865	.02503	.00126	.00108	-.01427	.52036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.27940**	**.53906**	F **-.81686**
Stddev	.00128	.00109	.34524
%RSD	.45637	.20272	42.264
#1	.27986	.54025	-1.1980
#2	.28038	.53883	-.52512
#3	.27796	.53810	-.72746
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02500
Low Limit			-.02500

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6104.6**	**37638.**	**2051.0**
Stddev	15.8	242.	6.9
%RSD	.25938	.64230	.33869
#1	6108.4	37412.	2052.5
#2	6087.2	37610.	2043.5
#3	6118.1	37893.	2057.1

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 16:10:57 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.43129**	**10.465**	**.41985**	**.51183**	**1.0374**	**.05092**	**10.407**
Stddev	.00445	.028	.00287	.00388	.0073	.00042	.026
%RSD	1.0329	.26646	.68377	.75830	.70356	.82022	.24998
#1	.42682	10.482	.41977	.51138	1.0308	.05130	10.385
#2	.43573	10.433	.42276	.50819	1.0362	.05047	10.436
#3	.43133	10.481	.41702	.51591	1.0453	.05100	10.400
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05246**	**.21061**	**.51727**	**.52836**	**4.2555**	**51.648**	**1.0430**
Stddev	.00029	.00045	.00402	.00070	.0398	.269	.0074
%RSD	.55057	.21557	.77762	.13161	.93496	.52018	.70576
#1	.05215	.21014	.51884	.52835	4.2096	51.387	1.0369
#2	.05272	.21105	.51270	.52767	4.2768	51.634	1.0410
#3	.05250	.21063	.52027	.52906	4.2800	51.924	1.0512
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.577**	**.51661**	**1.0426**	**52.094**	**.52783**	**10.433**	**.52665**
Stddev	.150	.00290	.0022	.352	.00290	.019	.00347
%RSD	1.4156	.56079	.21295	.67529	.54945	.18081	.65799
#1	10.619	.51942	1.0445	51.788	.52449	10.416	.52747
#2	10.411	.51363	1.0430	52.016	.52940	10.454	.52285
#3	10.702	.51679	1.0402	52.478	.52961	10.429	.52963
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 16:10:57 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2640**	**.41613**	**5.2942**	**1.0415**	**1.0304**	**1.0283**	**.52107**
Stddev	.0044	.01334	.0124	.0017	.0086	.0107	.00377
%RSD	.35114	3.2062	.23333	.16484	.83471	1.0423	.72377
#1	1.2686	.40846	5.2802	1.0399	1.0214	1.0160	.51721
#2	1.2597	.43154	5.2989	1.0413	1.0313	1.0359	.52475
#3	1.2639	.40840	5.3034	1.0433	1.0385	1.0329	.52124
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0304**	**1.0488**	F **.29466**
Stddev	.0079	.0015	.06908
%RSD	.76862	.14614	23.443
#1	1.0334	1.0473	.27743
#2	1.0214	1.0504	.37072
#3	1.0364	1.0487	.23582
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6660.8**	**41217.**	**2108.1**
Stddev	24.6	274.	21.9
%RSD	.36920	.66571	1.0385
#1	6682.2	40900.	2084.4
#2	6666.3	41370.	2127.6
#3	6633.9	41380.	2112.3

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 16:14:35 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00225	.04402	.00120	.00288	.00212	.00005	.04105
Stddev	.00247	.00546	.00401	.00265	.00105	.00005	.01088
%RSD	109.69	12.401	335.85	91.781	49.695	106.37	26.511
#1	.00264	.03779	-.00184	.00082	.00333	.00011	.04148
#2	-.00039	.04798	.00575	.00587	.00163	.00003	.02996
#3	.00452	.04628	-.00032	.00196	.00140	.00001	.05171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	-.00042	.00226	-.00066	.00784	.06373	-.00051
Stddev	.00005	.00021	.00058	.00060	.02162	.10751	.00583
%RSD	20.013	50.707	25.816	91.619	275.57	168.69	1147.8
#1	.00030	-.00043	.00166	-.00039	.01889	.18696	.00620
#2	.00022	-.00062	.00283	-.00023	-.01706	-.01092	-.00339
#3	.00021	-.00020	.00228	-.00134	.02170	.01516	-.00434
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04546	.00321	.00476	.11079	-.00088	F .01576	.00302
Stddev	.04418	.00204	.00076	.03712	.00083	.00331	.00267
%RSD	97.174	63.563	15.884	33.504	94.324	21.016	88.554
#1	-.00366	.00528	.00394	.15162	-.00140	.01748	.00600
#2	.08192	.00317	.00491	.07909	-.00132	.01194	.00083
#3	.05813	.00119	.00544	.10165	.00008	.01785	.00223
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						.01000	
Low Limit						-.01000	

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 16:14:35 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00279	-.00590	.01388	.00065	.00123	.00606	-.00259
Stddev	.00212	.00283	.00309	.00091	.00070	.00181	.00112
%RSD	76.170	48.036	22.277	139.45	57.067	29.854	43.106
#1	.00170	-.00623	.01064	.00170	.00200	.00788	-.00300
#2	.00143	-.00291	.01422	.00003	.00104	.00602	-.00344
#3	.00524	-.00855	.01680	.00024	.00064	.00427	-.00133
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00022	.00017	F .06648
Stddev	.00100	.00012	.34706
%RSD	463.52	73.720	522.02
#1	-.00068	.00013	-.10679
#2	.00003	.00007	-.15982
#3	.00130	.00030	.46606
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6703.4	41700.	2173.4
Stddev	27.2	93.	18.4
%RSD	.40511	.22371	.84726
#1	6715.0	41593.	2190.3
#2	6672.4	41748.	2176.3
#3	6722.9	41760.	2153.8

Approved: June 24, 2016

Sample Name: LLCCV Acquired: 6/23/2016 16:20:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01226**	**.19306**	**.00822**	**.08713**	**.00934**	**.00170**	**.37434**	**.00095**
Stddev	.00226	.00994	.00221	.00050	.00037	.00009	.04623	.00012
%RSD	18.429	5.1483	26.863	.57673	4.0055	5.3752	12.349	12.607
#1	.01082	.20416	.01018	.08727	.00945	.00181	.33947	.00090
#2	.01110	.18498	.00583	.08754	.00964	.00166	.35679	.00108
#3	.01487	.19005	.00866	.08657	.00892	.00164	.42678	.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00443**	**.00621**	**.00343**	**.09684**	**.99841**	**.08574**	**.39422**	**.00845**
Stddev	.00015	.00101	.00090	.02371	.01980	.00431	.04579	.00352
%RSD	3.4357	16.173	26.179	24.486	1.9832	5.0254	11.615	41.733
#1	.00426	.00573	.00262	.11113	1.0142	.08076	.38626	.00758
#2	.00456	.00737	.00329	.06947	.97621	.08821	.44347	.01232
#3	.00447	.00555	.00440	.10992	1.0048	.08824	.35294	.00543
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00955**	**.49049**	**.01642**	**.85294**	**.00895**	**.08691**	**.01959**	**.86370**
Stddev	.00058	.01009	.00122	.01011	.00086	.00285	.00820	.00122
%RSD	6.1041	2.0577	7.4378	1.1851	9.5578	3.2817	41.869	.14090
#1	.01021	.48064	.01558	.85568	.00909	.08424	.02576	.86506
#2	.00910	.50081	.01782	.84175	.00972	.08991	.01028	.86335
#3	.00933	.49002	.01586	.86141	.00803	.08657	.02274	.86270
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: LLCCV Acquired: 6/23/2016 16:20:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.42813**	**.04307**	**.03712**	**.15993**	**.00773**	**.01869**	**19.866**
Stddev	.00098	.00025	.00768	.00135	.00073	.00033	.441
%RSD	.22912	.58060	20.685	.84107	9.4794	1.7749	2.2219
#1	.42871	.04302	.03075	.15935	.00749	.01905	19.528
#2	.42868	.04335	.04565	.16146	.00715	.01864	20.366
#3	.42700	.04285	.03498	.15896	.00855	.01839	19.706
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6737.1**	**42185.**	**2135.3**
Stddev	26.5	284.	28.1
%RSD	.39354	.67345	1.3174
#1	6718.8	41884.	2154.3
#2	6767.5	42448.	2103.0
#3	6725.1	42222.	2148.5

Approved: June 24, 2016

2.3.2 Metals ICP-MS Data

2.3.2.1 Summary Data

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW1-061016	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 20:00
Collect Date:	06/10/2016 07:55	**Dilution:**	1	**File ID:**	NI.061616.200024
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00136	J	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000424	J	0.00120	0.000600	0.000300
Cobalt, Total	7440-48-4	0.0563		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00432		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00922		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW1-061016	**Prep Method:**	3015	**Prep Date:**	06/21/2016 07:48
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/21/2016 12:44
Workgroup #:	WG573557	**Analyst:**	BKT	**Run Date:**	06/21/2016 15:32
Collect Date:	06/10/2016 07:55	**Dilution:**	1	**File ID:**	NI.062116.153201
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW1-061016	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 21:23
Collect Date:	06/10/2016 07:55	**Dilution:**	50	**File ID:**	NI.061616.212301
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	1.35		0.300	0.150	0.0750
Chromium, Total	7440-47-3	1.32		0.200	0.100	0.0500
Manganese, Total	7439-96-5	1.69		0.200	0.100	0.0500
Nickel, Total	7440-02-0	2.20		0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW3-061016	**Prep Method:**	3015	**Prep Date:**	06/21/2016 07:48
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/21/2016 12:44
Workgroup #:	WG573557	**Analyst:**	BKT	**Run Date:**	06/21/2016 15:35
Collect Date:	06/10/2016 09:05	**Dilution:**	1	**File ID:**	NI.062116.153512
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW3-061016	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 20:03
Collect Date:	06/10/2016 09:05	**Dilution:**	1	**File ID:**	NI.061616.200336
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.000726	J	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00398	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00108	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00151	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.00463	J	0.00800	0.00400	0.00200
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW3-061016	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 21:26
Collect Date:	06/10/2016 09:05	**Dilution:**	10	**File ID:**	NI.061616.212612
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.445		0.0600	0.0300	0.0150
Manganese, Total	7439-96-5	0.520		0.0400	0.0200	0.0100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	17WW08-061016	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 20:06
Collect Date:	06/10/2016 10:10	**Dilution:**	1	**File ID:**	NI.061616.200647
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.00131		0.00120	0.000600	0.000300
Cobalt, Total	7440-48-4	0.00709		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.0170		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00133	J	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.111		0.00800	0.00400	0.00200
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0388	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	17WW08-061016	**Prep Method:**	3015	**Prep Date:**	06/21/2016 07:48
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/21/2016 12:44
Workgroup #:	WG573557	**Analyst:**	BKT	**Run Date:**	06/21/2016 15:38
Collect Date:	06/10/2016 10:10	**Dilution:**	1	**File ID:**	NI.062116.153823
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Arsenic, Total	7440-38-2	0.00435		0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.148		0.00600	0.00300	0.00150
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	17WW08-061016	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 21:29
Collect Date:	06/10/2016 10:10	**Dilution:**	10	**File ID:**	NI.061616.212923
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chromium, Total	7440-47-3	0.507		0.0400	0.0200	0.0100
Manganese, Total	7439-96-5	0.422		0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW24F-061016	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 20:12
Collect Date:	06/10/2016 14:40	**Dilution:**	1	**File ID:**	NI.061616.201257
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00142	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00207		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00200	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0220		0.00800	0.00400	0.00200
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.000930	J	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0750		0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW24F-061016	**Prep Method:**	3015	**Prep Date:**	06/21/2016 07:48
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/21/2016 12:44
Workgroup #:	WG573557	**Analyst:**	BKT	**Run Date:**	06/21/2016 15:41
Collect Date:	06/10/2016 14:40	**Dilution:**	1	**File ID:**	NI.062116.154135
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Arsenic, Total	7440-38-2	0.00248		0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.0968		0.00600	0.00300	0.00150
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW24F-061016	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 21:32
Collect Date:	06/10/2016 14:40	**Dilution:**	10	**File ID:**	NI.061616.213235
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Total	7439-96-5	0.609		0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer NexION 300X

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	100
Vi = Initial volume	40
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/L)	0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	200
Vi = Initial volume	0.5
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/kg)	40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	40
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	50

50 ug/kg = 0.050 mg/kg

Perkin Elmer NexION ICP/MS

STANDARDS KEY

QC Std 1 - ICV
QC Std 2 - ICB
QC Std 3 - LLICV
QC Std 4 - ICSA
QC Std 5 - ICSAB
QC Std 6 - CCV
QC Std 7 - CCB
QC Std 8 - LLCCV

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.00005	0.05	0.1
Sb	10	0	0.00005	0.05	0.1
As	10	0	0.00005	0.05	0.1
Ba	10	0	0.00005	0.05	0.1
Be	10	0	0.00005	0.05	0.1
Ca	1000	0	0.005	5	10
Cd	10	0	0.0005	0.05	0.1
Cr	10	0	0.0005	0.05	0.1
Co	10	0	0.0005	0.05	0.1
Cu	10	0	0.0005	0.05	0.1
Fe	1000	0	0.005	5	10
Pb	10	0	0.00005	0.05	0.1
Mg	1000	0	0.005	5	10
Mn	10	0	0.00005	0.05	0.1
Ni	10	0	0.00005	0.05	0.1
K	1000	0	0.005	5	10
Se	10	0	0.00005	0.05	0.1
Ag	10	0	0.00005	0.05	0.1
Na	1000	0	0.005	5	10
Tl	10	0	0.00005	0.05	0.1
V	10	0	0.00005	0.05	0.1
U	1000	0	0.00005	0.05	0.1
Zn	10	0	0.00005	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG573483
Analyst: VC
Spike Analyst: VC
Run Date: 06/21/2016 07:48
Method: 3015
Balance: BAL016
Instrument: MW-4
Instrument Start: 06/21/2016 08:19

SOP: ME407 Revison 19
Spike Solution: STD75998
Spike Witness: ERP
40 & 50 ML. DIGESTION TU COA18987
MS Filters- fisher-Lot#R RGT35621
HNO3 Lot #: COA18905

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG573483-02	BLANK	1	20 mL	50 mL	184.315 g	184.299 g		
2	WG572662-01	FBLK2	18	20 mL	50 mL	182.12 g	182.115 g		
3	WG573483-03	LCS	1	20 mL	50 mL	182.488 g	182.467 g	.25 mL	
4	L16060616-01	SAMP	1	20 mL	50 mL	183.726 g	183.7 g		06/21/16
5	L16060616-02	SAMP	1	20 mL	50 mL	182.782 g	182.769 g		06/21/16
6	L16060616-04	SAMP	1	20 mL	50 mL	182.01 g	181.989 g		06/21/16
7	L16060650-01	SAMP	1	20 mL	50 mL	182.593 g	182.584 g		06/24/16
8	L16060650-02	SAMP	1	20 mL	50 mL	182.881 g	182.855 g		06/24/16
9	L16060650-03	SAMP	1	20 mL	50 mL	182.342 g	182.296 g		06/24/16
10	L16060650-08	SAMP	1	20 mL	50 mL	182.009 g	181.997 g		06/24/16
11	L16060729-02	SAMP	1	20 mL	50 mL	183.948 g	183.941 g		06/24/16
12	L16060729-03	SAMP	1	20 mL	50 mL	180.366 g	180.368 g		06/24/16
13	L16060730-01	SAMP	1	20 mL	50 mL	180.5 g	180.493 g		06/24/16
14	L16060730-02	SAMP	1	20 mL	50 mL	182.181 g	182.183 g		06/24/16
15	L16060730-03	SAMP	1	20 mL	50 mL	181.455 g	181.446 g		06/24/16
16	L16060731-02	SAMP	18	20 mL	50 mL	183.631 g	183.62 g		06/17/16
17	L16060961-01	SAMP	1	20 mL	50 mL	184.464 g	184.461 g		06/24/16
18	L16060961-02	SAMP	1	20 mL	50 mL	182.66 g	182.651 g		06/24/16
19	WG573483-01	REF	1	20 mL	50 mL	181.648 g	181.642 g		
20	L16060961-03	SAMP	1	20 mL	50 mL	181.648 g	181.642 g		06/24/16
21	L16060995-01	SAMP	1	20 mL	50 mL	183.365 g	183.359 g		06/24/16
22	L16060995-02	SAMP	1	20 mL	50 mL	185.146 g	185.151 g		06/24/16
23	WG573483-04	MS	1	20 mL	50 mL	181.067 g	181.054 g	.25 mL	
24	WG573483-05	MSD	1	20 mL	50 mL	183.356 g	183.356 g	.25 mL	

L16060995-01	ph adj
L16060995-02	ph adj

Analyst: Vicki Collins

Reviewer: Erin Potter

MW_DIG - Modified 09/30/2009
PDF ID: 4815639
Report generated: 06/21/2016 09:07

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG572730
Analyst: VC
Spike Analyst: VC
Run Date: 06/15/2016 07:54
Method: 3015
Balance: BAL016
Instrument: MW-3
Instrument Start: 06/15/2016 07:59

SOP: ME407 Revison 19
Spike Solution: STD75998
Spike Witness: ERP
40 & 50 ML. DIGESTION TU COA18772
HNO3 Lot #: COA18905
MS Filters- fisher-Lot#R RGT35621

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG572730-03	BLANK	1	20 mL	50 mL	182.294 g	182.284 g		
2	WG572662-01	FBLK2	18	20 mL	50 mL	180.913 g	180.919 g		
3	WG572730-04	LCS	1	20 mL	50 mL	182.621 g	182.604 g	.25 mL	
4	L16060616-01	SAMP	1	20 mL	50 mL	181.592 g	181.591 g		06/21/16
5	L16060616-02	SAMP	1	20 mL	50 mL	183.537 g	183.546 g		06/21/16
6	L16060616-04	SAMP	1	20 mL	50 mL	183.852 g	183.819 g		06/21/16
7	L16060649-01	SAMP	2	20 mL	50 mL	183.221 g	183.203 g		06/20/16
8	L16060650-01	SAMP	1	20 mL	50 mL	182.311 g	182.309 g		06/24/16
9	L16060650-02	SAMP	1	20 mL	50 mL	183.087 g	183.085 g		06/24/16
10	L16060650-03	SAMP	1	20 mL	50 mL	181.652 g	181.65 g		06/24/16
11	L16060650-08	SAMP	1	20 mL	50 mL	184.579 g	184.558 g		06/24/16
12	WG572730-01	REF	2	20 mL	50 mL	182.936 g	182.92 g		
13	L16060664-01	SAMP	2	20 mL	50 mL	182.936 g	182.92 g		06/17/16
14	L16060724-01	SAMP	1	20 mL	50 mL	187.236 g	187.232 g		06/24/16
15	L16060729-01	SAMP	1	20 mL	50 mL	182.146 g	182.149 g		06/24/16
16	L16060729-02	SAMP	1	20 mL	50 mL	181.631 g	181.644 g		06/24/16
17	WG572730-02	REF	1	20 mL	50 mL	183.736 g	183.731 g		
18	L16060729-03	SAMP	1	20 mL	50 mL	183.736 g	183.731 g		06/24/16
19	L16060730-01	SAMP	1	20 mL	50 mL	184.668 g	184.674 g		06/24/16
20	L16060730-02	SAMP	1	20 mL	50 mL	182.686 g	182.675 g		06/24/16
21	L16060730-03	SAMP	1	20 mL	50 mL	181.928 g	181.933 g		06/24/16
22	L16060731-02	SAMP	18	20 mL	50 mL	183.292 g	183.277 g		06/17/16
23	L16060754-01	SAMP	2	20 mL	50 mL	182.824 g	182.823 g		06/21/16
24	WG572730-05	DUP	1	20 mL	50 mL	181.184 g	181.19 g		
25	WG572730-06	MS	1	20 mL	50 mL	183.99 g	183.994 g	.25 mL	
26	WG572730-07	MSD	1	20 mL	50 mL	183.548 g	183.523 g	.25 mL	

L16060650-03	FILTERED DIGESTATE
L16060729-01	FILTERED DIGESTATE
L16060754-01	FILTERED DIGESTATE
L16060731-02	FILTERED DIGESTATE

Analyst: Vicki Collins

Reviewer: Erin Potter

MW_DIG - Modified 09/30/2009
PDF ID: 4807920
Report generated: 06/15/2016 11:11

Microbac

TCLP Non-Volatile

Analyst(s): AMA/CPD
Date: 06/14/2016
Filter Lot #: 94860030
Microbac SOP: TCLP01 Rev #: 12

Analyst / Date		Analyst / Date	
CPD 6/14/16		AMA 6/15/16	
Time On	Temp On °C	Time Off	Temp Off °C
1427	23.8	0827	21.9

Agitator Speed 30 ± 2 rpm ☑

Jug #	Sample #	Tests	Method	Fluid #	Matrix *	% Solid	Pretest pH Initial	Pretest pH Final	Int. Wt. (g)	Fluid Vol. (mL)	Final extract pH
D	06-0670-01	ME	1311	F1-181	S	100	8.12	2.08	7.67	153	5.19
	-02						8.98	2.06	100.27	2005	5.79
	-03						10.07	4.79	100.14	2003	7.34
	-04						9.53	1.65	100.72	2014	5.13
	-05						8.98	2.69	100.32	2006	6.67
	-06						9.43	1.94	40.43	807	6.79
	-07			F2-379			8.10	7.75	25.70	514	8.08
D	06-0731-01	ME pH-L	1311	F2-379	S	100	8.47	5.86	50.46	1009	4.32
	-02		1312	SPLP F2-326			NA	NA	100.62	2012	8.44
NA	FBIK1	ME	1311	F1-181	NA	NA	NA	NA	100	100	4.93
	FBIK2	COD pH-L ~~ME~~		F2-379							2.88
	SPLP F2-	pH-L	1312	SPLP F2-326							5.05

CPD 6/14/16

*Matrix Code: (S = solid, sand, soil or sludge) (P = paint) (O = organic) (W = water or aqueous waste)
D = Disposable plastic jug
TCLP Pretest weight will be 5.0 g (± 0.1) unless otherwise noted.
Temperature shall be maintained at 23° ± 2 for 18 ± 2 hours unless otherwise noted.

Comments: 5x 06-0670-01 recieved with limited volume.

Peer Review By: [signature]

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 061616A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573083,572869,572085,572184

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.061616.153014	Blank	Blank		1		06/16/16 15:30
2	NI.061616.153326	WG573095-01	Calibration Point		1		06/16/16 15:33
3	NI.061616.153637	WG573095-02	Calibration Point		1		06/16/16 15:36
4	NI.061616.153949	WG573095-03	Calibration Point		1		06/16/16 15:39
5	NI.061616.154300	WG573095-04	Calibration Point		1		06/16/16 15:43
6	NI.061616.154613	WG573095-05	ICV		1		06/16/16 15:46
7	NI.061616.154926	WG573095-06	ICB		1		06/16/16 15:49
8	NI.061616.155239	WG573095-07	Low Level Initial Calibration V		1		06/16/16 15:52
9	NI.061616.155746	WG573095-08	Initial Calibration Verification		1		06/16/16 15:57
10	NI.061616.160355	WG573095-09	Initial Calib Blank		1		06/16/16 16:03
11	NI.061616.160740	WG573095-10	Interference Check		1		06/16/16 16:07
12	NI.061616.162201	WG573095-11	Interference Check		1		06/16/16 16:22
13	NI.061616.162516	WG573095-12	CCV		1		06/16/16 16:25
14	NI.061616.163850	WG573095-13	CCB		1		06/16/16 16:38
15	NI.061616.173543	WG572432-04	Method/Prep Blank	20/50	1		06/16/16 17:35
16	NI.061616.173854	WG572432-05	Laboratory Control S	20/50	1		06/16/16 17:38
17	NI.061616.174206	WG572432-01	Reference Sample		1	L16060540-06	06/16/16 17:42
18	NI.061616.174517	WG572432-06	Matrix Spike	20/50	1	L16060540-06	06/16/16 17:45
19	NI.061616.174829	WG572432-07	Matrix Spike Duplica	20/50	1	L16060540-06	06/16/16 17:48
20	NI.061616.175140	L16060533-01	16F0399-01	20/50	1		06/16/16 17:51
21	NI.061616.175452	L16060540-03	AG4573	20/50	1		06/16/16 17:54
22	NI.061616.175803	WG573083-01	Post Digestion Spike		1	L16060540-03	06/16/16 17:58
23	NI.061616.180115	WG573083-02	Serial Dilution		5	L16060540-03	06/16/16 18:01
24	NI.061616.180426	WG573083-02	Serial Dilution		25	L16060540-03	06/16/16 18:04
25	NI.061616.180739	WG573095-14	CCV		1		06/16/16 18:07
26	NI.061616.181051	WG573095-15	CCB		1		06/16/16 18:10
27	NI.061616.181404	L16060540-09	AG4578	20/50	1		06/16/16 18:14
28	NI.061616.181715	L16060540-10	AG4579	20/50	1		06/16/16 18:17
29	NI.061616.182027	L16060540-11	AG4580	20/50	1		06/16/16 18:20
30	NI.061616.182338	L16060540-14	AG4584	20/50	1		06/16/16 18:23
31	NI.061616.182650	L16060540-15	AG4587	20/50	1		06/16/16 18:26
32	NI.061616.183001	L16060540-16	AG4589	20/50	1		06/16/16 18:30
33	NI.061616.183313	L16060549-01	J6F0164-01	20/50	1		06/16/16 18:33
34	NI.061616.183624	L16060614-01	WATER PLANT B/W	20/50	1		06/16/16 18:36

Page: 1 Approved: June 20, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 061616A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573083,572869,572085,572184

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.061616.183936	L16060624-01	16F1312-03	20/50	1		06/16/16 18:39
36	NI.061616.184247	WG572432-03	Reference Sample		1	L16060630-01	06/16/16 18:42
37	NI.061616.184600	WG573095-16	CCV		1		06/16/16 18:46
38	NI.061616.184912	WG573095-17	CCB		1		06/16/16 18:49
39	NI.061616.185225	WG572432-10	Duplicate	20/50	1	L16060630-01	06/16/16 18:52
40	NI.061616.185538	WG573095-18	CCV		1		06/16/16 18:55
41	NI.061616.185850	WG573095-19	CCB		1		06/16/16 18:58
42	NI.061616.190202	WG573095-20	Low Level Continuing Calibra		1		06/16/16 19:02
43	NI.061616.190516	WG572730-03	Method/Prep Blank	20/50	1		06/16/16 19:05
44	NI.061616.190828	WG572730-04	Laboratory Control S	20/50	1		06/16/16 19:08
45	NI.061616.191230	WG572730-01	Reference Sample		1	L16060664-01	06/16/16 19:12
46	NI.061616.191541	WG572730-05	Duplicate	20/50	1	L16060664-01	06/16/16 19:15
47	NI.061616.191852	WG572730-02	Reference Sample		1	L16060729-03	06/16/16 19:18
48	NI.061616.192204	WG572730-06	Matrix Spike	20/50	1	L16060729-03	06/16/16 19:22
49	NI.061616.192515	WG572730-07	Matrix Spike Duplica	20/50	1	L16060729-03	06/16/16 19:25
50	NI.061616.192827	L16060754-01	V6F0103-02	20/50	1		06/16/16 19:28
51	NI.061616.193138	WG572869-01	Post Digestion Spike		1	L16060754-01	06/16/16 19:31
52	NI.061616.193450	L16060754-01	V6F0103-02		5		06/16/16 19:34
53	NI.061616.193803	WG573095-21	CCV		1		06/16/16 19:38
54	NI.061616.194114	WG573095-22	CCB		1		06/16/16 19:41
55	NI.061616.194427	WG572869-02	Serial Dilution		25	L16060754-01	06/16/16 19:44
56	NI.061616.194738	L16060616-01	MW8-060916	20/50	1		06/16/16 19:47
57	NI.061616.195050	L16060616-02	18CPTMW26SW-060916	20/50	1		06/16/16 19:50
58	NI.061616.195401	L16060616-04	MW10F-060916	20/50	1		06/16/16 19:54
59	NI.061616.195713	L16060649-01	V6F0102-02	20/50	1		06/16/16 19:57
60	NI.061616.200024	L16060650-01	MW1-061016	20/50	1		06/16/16 20:00
61	NI.061616.200336	L16060650-02	MW3-061016	20/50	1		06/16/16 20:03
62	NI.061616.200647	L16060650-03	17WW08-061016	20/50	1		06/16/16 20:06
63	NI.061616.201257	L16060650-08	18WW24F-061016	20/50	1		06/16/16 20:12
64	NI.061616.201608	L16060729-01	A09-MW10-Y1S2	20/50	1		06/16/16 20:16
65	NI.061616.201921	WG573095-23	CCV		1		06/16/16 20:19
66	NI.061616.202232	WG573095-24	CCB		1		06/16/16 20:22
67	NI.061616.202638	L16060729-02	A09-MW11-Y1S2	20/50	1		06/16/16 20:26
68	NI.061616.202950	L16060730-01	18CPTMW14-061316	20/50	1		06/16/16 20:29

Page: 2 Approved: June 20, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 061616A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573083,572869,572085,572184

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.061616.204020	L16060730-02	18CPTMW14FD-061316	20/50	1		06/16/16 20:40
70	NI.061616.204331	L16060730-03	18CPTMW24-061316	20/50	1		06/16/16 20:43
71	NI.061616.204643	L16060731-02	60500-SSP0041-SSP0041	20/50	1		06/16/16 20:46
72	NI.061616.204954	L16060731-02	60500-SSP0041-SSP0041	20/50	10		06/16/16 20:49
73	NI.061616.205306	L16060540-09	AG4578	20/50	100		06/16/16 20:53
74	NI.061616.205727	L16060540-10	AG4579	20/50	10		06/16/16 20:57
75	NI.061616.210039	L16060540-11	AG4580	20/50	10		06/16/16 21:00
76	NI.061616.210350	L16060540-14	AG4584	20/50	100		06/16/16 21:03
77	NI.061616.210702	WG573095-25	CCV		1		06/16/16 21:07
78	NI.061616.211014	WG573095-26	CCB		1		06/16/16 21:10
79	NI.061616.211326	L16060616-01	MW8-060916	20/50	10		06/16/16 21:13
80	NI.061616.211638	L16060616-02	18CPTMW26SW-060916	20/50	10		06/16/16 21:16
81	NI.061616.211949	L16060616-04	MW10F-060916	20/50	10		06/16/16 21:19
82	NI.061616.212301	L16060650-01	MW1-061016	20/50	50		06/16/16 21:23
83	NI.061616.212612	L16060650-02	MW3-061016	20/50	10		06/16/16 21:26
84	NI.061616.212923	L16060650-03	17WW08-061016	20/50	10		06/16/16 21:29
85	NI.061616.213235	L16060650-08	18WW24F-061016	20/50	10		06/16/16 21:32
86	NI.061616.213546	L16060730-01	18CPTMW14-061316	20/50	50		06/16/16 21:35
87	NI.061616.213859	L16060730-02	18CPTMW14FD-061316	20/50	50		06/16/16 21:38
88	NI.061616.214210	L16060730-03	18CPTMW24-061316	20/50	50		06/16/16 21:42
89	NI.061616.214523	WG573095-27	CCV		1		06/16/16 21:45
90	NI.061616.214835	WG573095-28	CCB		1		06/16/16 21:48
91	NI.061616.215148	WG573095-29	Low Level Continuing Calibra		1		06/16/16 21:51
92	NI.061616.215500	WG571964-02	Method/Prep Blank	20/50	1		06/16/16 21:55
93	NI.061616.215811	WG571964-03	Laboratory Control S	20/50	1		06/16/16 21:58
94	NI.061616.220123	WG571964-01	Reference Sample		5	L16060428-01	06/16/16 22:01
95	NI.061616.220434	WG571964-05	Matrix Spike	20/50	5	L16060428-01	06/16/16 22:04
96	NI.061616.220746	WG571964-06	Matrix Spike Duplica	20/50	5	L16060428-01	06/16/16 22:07
97	NI.061616.221057	L16060411-03	AWD4T-060716	20/50	1		06/16/16 22:10
98	NI.061616.221409	L16060411-04	AWD4B-060716	20/50	1		06/16/16 22:14
99	NI.061616.221720	WG572085-03	Post Digestion Spike		1	L16060411-04	06/16/16 22:17
100	NI.061616.222032	L16060411-04	AWD4B-060716		5		06/16/16 22:20
101	NI.061616.222343	WG572085-04	Serial Dilution		25	L16060411-04	06/16/16 22:23
102	NI.061616.222656	WG573095-30	CCV		1		06/16/16 22:26

Page: 3 Approved: June 20, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 061616A.REP

Analyst1: BKT Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705

ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607

CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345

Stannous : Hydroxylamine :

Workgroups: 573083,572869,572085,572184

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.061616.223007	WG573095-31	CCB		1		06/16/16 22:30
104	NI.061616.223320	WG571834-02	Method/Prep Blank	20/50	1		06/16/16 22:33
105	NI.061616.223632	WG571834-03	Laboratory Control S	20/50	1		06/16/16 22:36
106	NI.061616.223943	WG571834-01	Reference Sample		1	L16060337-02	06/16/16 22:39
107	NI.061616.224254	WG571834-04	Matrix Spike	20/50	1	L16060337-02	06/16/16 22:42
108	NI.061616.224606	WG571834-05	Matrix Spike Duplica	20/50	1	L16060337-02	06/16/16 22:46
109	NI.061616.224917	L16060303-01	LH18/24-SP650-6368-GRAB	20/50	1		06/16/16 22:49
110	NI.061616.225229	L16060303-02	LH18/24-SP650-6368-COMP	20/50	1		06/16/16 22:52
111	NI.061616.225540	L16060304-02	LH18/24-SP650-6369-GRAB	20/50	1		06/16/16 22:55
112	NI.061616.225852	WG572184-03	Post Digestion Spike		1	L16060304-02	06/16/16 22:58
113	NI.061616.230203	WG572184-04	Serial Dilution		5	L16060304-02	06/16/16 23:02
114	NI.061616.230516	WG573095-32	CCV		1		06/16/16 23:05
115	NI.061616.230827	WG573095-33	CCB		1		06/16/16 23:08
116	NI.061616.231140	WG573095-34	Low Level Continuing Calibra		1		06/16/16 23:11

Page: 4 Approved: June 20, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062116A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573557,573473,573475

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.062116.123136	Blank	Blank		1		06/21/16 12:31
2	NI.062116.123447	WG573631-01	Calibration Point		1		06/21/16 12:34
3	NI.062116.123759	WG573631-02	Calibration Point		1		06/21/16 12:37
4	NI.062116.124110	WG573631-03	Calibration Point		1		06/21/16 12:41
5	NI.062116.124422	WG573631-04	Calibration Point		1		06/21/16 12:44
6	NI.062116.124735	WG573631-05	Initial Calibration Verification		1		06/21/16 12:47
7	NI.062116.125048	WG573631-06	Initial Calib Blank		1		06/21/16 12:50
8	NI.062116.125401	WG573631-07	Low Level Initial Calibration V		1		06/21/16 12:54
9	NI.062116.125712	WG573631-08	Interference Check		1		06/21/16 12:57
10	NI.062116.130024	WG573631-09	Interference Check		1		06/21/16 13:00
11	NI.062116.130337	WG573631-10	CCV		1		06/21/16 13:03
12	NI.062116.130648	WG573631-11	CCB		1		06/21/16 13:06
13	NI.062116.131000	WG573483-02	Method/Prep Blank	20/50	1		06/21/16 13:10
14	NI.062116.131312	WG573483-03	Laboratory Control S		1		06/21/16 13:13
15	NI.062116.131623	WG573483-01	Reference Sample		1	L16060961-03	06/21/16 13:16
16	NI.062116.131935	WG573483-04	Matrix Spike	20/50	1	L16060961-03	06/21/16 13:19
17	NI.062116.132247	WG573483-05	Matrix Spike Duplica	20/50	1	L16060961-03	06/21/16 13:22
18	NI.062116.132558	L16060731-02	60500-SSP0041-SSP0041	20/50	1		06/21/16 13:25
19	NI.062116.132910	WG573557-01	Post Digestion Spike		1	L16060731-02	06/21/16 13:29
20	NI.062116.133221	WG573557-02	Serial Dilution		5	L16060731-02	06/21/16 13:32
21	NI.062116.133650	WG573662-01	Reference Sample	20/50	1	L16060907-14	06/21/16 13:36
22	NI.062116.134003	WG573631-12	CCV		1		06/21/16 13:40
23	NI.062116.134314	WG573631-13	CCB		1		06/21/16 13:43
24	NI.062116.152226	L16060616-01	MW8-060916	20/50	1		06/21/16 15:22
25	NI.062116.152538	L16060616-02	18CPTMW26SW-060916	20/50	1		06/21/16 15:25
26	NI.062116.152849	L16060616-04	MW10F-060916	20/50	1		06/21/16 15:28
27	NI.062116.153201	L16060650-01	MW1-061016	20/50	1		06/21/16 15:32
28	NI.062116.153512	L16060650-02	MW3-061016	20/50	1		06/21/16 15:35
29	NI.062116.153823	L16060650-03	17WW08-061016	20/50	1		06/21/16 15:38
30	NI.062116.154135	L16060650-08	18WW24F-061016	20/50	1		06/21/16 15:41
31	NI.062116.154446	L16060729-02	A09-MW11-Y1S2	20/50	1		06/21/16 15:44
32	NI.062116.154758	L16060729-03	A09-MW12-Y1S2	20/50	1	WG572730-02	06/21/16 15:47
33	NI.062116.155109	L16060730-01	18CPTMW14-061316	20/50	1		06/21/16 15:51
34	NI.062116.155422	WG573631-14	CCV		1		06/21/16 15:54

Page: 1 Approved: June 22, 2016

Maren Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062116A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573557,573473,573475

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.062116.155734	WG573631-15	CCB		1		06/21/16 15:57
36	NI.062116.160047	L16060730-02	18CPTMW14FD-061316	20/50	1		06/21/16 16:00
37	NI.062116.160358	L16060730-03	18CPTMW24-061316	20/50	1		06/21/16 16:03
38	NI.062116.160710	L16060961-01	GH58HS_MELZER_03-03-0	20/50	1		06/21/16 16:07
39	NI.062116.161021	L16060961-02	GH58HS_MELZER_03-03-0	20/50	1		06/21/16 16:10
40	NI.062116.161333	L16060995-01	UNTREATED	20/50	50		06/21/16 16:13
41	NI.062116.161644	L16060995-02	AFTER	20/50	50		06/21/16 16:16
42	NI.062116.161957	WG573631-16	CCV		1		06/21/16 16:19
43	NI.062116.162309	WG573631-17	CCB		1		06/21/16 16:23
44	NI.062116.171200	WG573111-04	Method/Prep Blank	20/50	1		06/21/16 17:12
45	NI.062116.171512	WG573111-05	Laboratory Control S	20/50	1		06/21/16 17:15
46	NI.062116.171823	WG573111-03	Reference Sample		1	L16060540-06	06/21/16 17:18
47	NI.062116.172135	WG573111-09	Matrix Spike	20/50	1	L16060540-06	06/21/16 17:21
48	NI.062116.172446	WG573111-10	Matrix Spike Duplica	20/50	1	L16060540-06	06/21/16 17:24
49	NI.062116.172758	L16060624-01	16F1312-03	20/50	1		06/21/16 17:27
50	NI.062116.173109	WG573473-01	Post Digestion Spike		1	L16060624-01	06/21/16 17:31
51	NI.062116.173421	WG573473-02	Serial Dilution		5	L16060624-01	06/21/16 17:34
52	NI.062116.173732	WG573473-02	Serial Dilution		25	L16060624-01	06/21/16 17:37
53	NI.062116.174045	WG573631-18	CCV		1		06/21/16 17:40
54	NI.062116.174357	WG573631-19	CCB		1		06/21/16 17:43
55	NI.062116.174710	L16060533-01	16F0399-01	20/50	1		06/21/16 17:47
56	NI.062116.175021	L16060784-03	J6E1050-02	20/50	5		06/21/16 17:50
57	NI.062116.175333	WG573111-01	Reference Sample		1	L16060787-09	06/21/16 17:53
58	NI.062116.175644	L16060787-10	U517TW006C	20/50	1		06/21/16 17:56
59	NI.062116.175956	WG573111-06	Matrix Spike	20/50	1	L16060787-09	06/21/16 17:59
60	NI.062116.180307	WG573111-07	Matrix Spike Duplica	20/50	1	L16060787-09	06/21/16 18:03
61	NI.062116.180619	L16060787-18	U517TW008A	20/50	1		06/21/16 18:06
62	NI.062116.180930	WG573111-02	Reference Sample		1	L16060862-01	06/21/16 18:09
63	NI.062116.181242	WG573111-08	Duplicate	20/50	1	L16060862-01	06/21/16 18:12
64	NI.062116.181553	L16060883-02	WC02	20/50	1		06/21/16 18:15
65	NI.062116.181906	WG573631-20	CCV		1		06/21/16 18:19
66	NI.062116.182218	WG573631-21	CCB		1		06/21/16 18:22
67	NI.062116.182531	L16060896-01	A08-MW02-Y1S2	20/50	1		06/21/16 18:25
68	NI.062116.182842	L16060896-02	A08-MW03-Y1S2	20/50	1		06/21/16 18:28

Page: 2 Approved: June 22, 2016

Maren Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062116A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573557,573473,573475

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.062116.183154	L16060896-03	A08-MW10-Y1S2	20/50	1		06/21/16 18:31
70	NI.062116.183505	L16060896-04	FD-01	20/50	1		06/21/16 18:35
71	NI.062116.183817	L16060896-05	FD-03	20/50	1		06/21/16 18:38
72	NI.062116.184128	L16060896-07	RB01-06-15-16	20/50	1		06/21/16 18:41
73	NI.062116.184440	L16060916-01	PHL 1 FRESHWATER IMPO	20/50	1		06/21/16 18:44
74	NI.062116.184751	L16060916-02	DS TYGERT RIVER	20/50	1		06/21/16 18:47
75	NI.062116.185104	WG573631-22	CCV		1		06/21/16 18:51
76	NI.062116.185415	WG573631-23	CCB		1		06/21/16 18:54
77	NI.062116.191207	WG573631-24	Low Level Continuing Calibra		1		06/21/16 19:12
78	NI.062116.193457	L16060995-01	UNTREATED	20/50	500		06/21/16 19:34
79	NI.062116.193809	L16060995-02	AFTER	20/50	500		06/21/16 19:38
80	NI.062116.194121	WG573631-25	CCV		1		06/21/16 19:41
81	NI.062116.194433	WG573631-26	CCB		1		06/21/16 19:44
82	NI.062116.194745	WG573333-03	Method/Prep Blank	.25/100	1		06/21/16 19:47
83	NI.062116.195057	WG573333-04	Laboratory Control S	.25/100	1		06/21/16 19:50
84	NI.062116.195408	L16061053-01	GS042QDCF01SB061716S-I		1	WG573333-02	06/21/16 19:54
85	NI.062116.195720	L16061053-02	GS042QDCF01SB061716S-I	.253/100	1	WG573333-07	06/21/16 19:57
86	NI.062116.200031	L16061053-03	GS042QDCF01SB061716S-I	.252/100	1	WG573333-08	06/21/16 20:00
87	NI.062116.200343	L16061054-01	GS037QBCF01XB061616S-I	.254/100	1		06/21/16 20:03
88	NI.062116.200654	WG573475-01	Post Digestion Spike		1	L16061054-01	06/21/16 20:06
89	NI.062116.201006	WG573475-02	Serial Dilution		5	L16061054-01	06/21/16 20:10
90	NI.062116.201317	WG573475-02	Serial Dilution		25	L16061054-01	06/21/16 20:13
91	NI.062116.201631	WG573631-27	CCV		1		06/21/16 20:16
92	NI.062116.201942	WG573631-28	CCB		1		06/21/16 20:19
93	NI.062116.202255	L16060787-03	U517SS00510A		1	WG573333-01	06/21/16 20:22
94	NI.062116.202607	L16060787-04	U517SS00510MS	.256/100	1	WG573333-05	06/21/16 20:26
95	NI.062116.202918	L16060787-05	U517SS00510MSD	.253/100	1	WG573333-06	06/21/16 20:29
96	NI.062116.203230	L16060787-06	U517SS00512A	.256/100	1		06/21/16 20:32
97	NI.062116.203541	L16060787-07	U517SS006010A	.256/100	1		06/21/16 20:35
98	NI.062116.203853	L16060787-08	U517SS00612A	.254/100	1		06/21/16 20:38
99	NI.062116.204204	L16060787-13	U517SS00708A	.252/100	1		06/21/16 20:42
100	NI.062116.204516	L16060787-14	U517SS00710A	.259/100	1		06/21/16 20:45
101	NI.062116.204827	L16060787-15	U517SS00808A	.257/100	1		06/21/16 20:48
102	NI.062116.205139	L16060787-16	U517SS00808C	.255/100	1		06/21/16 20:51

Page: 3 Approved: June 22, 2016

Maren Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062116A.REP

Analyst1: BKT Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76279 Post Spike: STD73705

ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607

CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345

Stannous : Hydroxylamine :

Workgroups: 573557,573473,573475

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.062116.205452	WG573631-29	CCV		1		06/21/16 20:54
104	NI.062116.205803	WG573631-30	CCB		1		06/21/16 20:58
105	NI.062116.210116	L16060787-17	U517SS00810A	.259/100	1		06/21/16 21:01
106	NI.062116.210428	L16060964-01	GH5-01	.252/100	1		06/21/16 21:04
107	NI.062116.210739	L16060964-02	GH5-02	.259/100	1		06/21/16 21:07
108	NI.062116.211051	L16060964-03	GH5-03	.254/100	1		06/21/16 21:10
109	NI.062116.211402	L16060964-04	GH5-04	.249/100	1		06/21/16 21:14
110	NI.062116.211714	L16060964-05	GH5-05	.252/100	1		06/21/16 21:17
111	NI.062116.212025	L16060964-06	GH5-06	.258/100	1		06/21/16 21:20
112	NI.062116.212337	L16061048-01	TR0062	.252/100	1		06/21/16 21:23
113	NI.062116.212649	WG573631-31	CCV		1		06/21/16 21:26
114	NI.062116.213001	WG573631-32	CCB		1		06/21/16 21:30

Page: 4 Approved: June 22, 2016

Marcia Berry

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 16-JUN-2016
Analyst: BKT
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 573095
Runlog ID: 75740
Analytical Workgroups: 573083,572869,572085,572184

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	
Level 4	303,304,411,540,616,650,729,730,731
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BKT
Secondary Reviewer	KHR
Comments	

Primary Reviewer:
20-JUN-2016

Secondary Reviewer:
20-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-20-2016 14:36:34

Microbac Laboratories Inc.

Data Checklist

Date: 21-JUN-2016
Analyst: BKT
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 573631
Runlog ID: 75827
Analytical Workgroups: 573557,573473,573475

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	
Level 4	540,616,624,650,729,730,731,787
Level 4	883,896,1053,1054
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BKT
Secondary Reviewer	MMB
Comments	

Primary Reviewer:
21-JUN-2016

Secondary Reviewer:
22-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-22-2016 13:22:13

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG572869

Login Number: L16060650

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW1-061016	01	06/10/16					06/15/2016	5	180		06/16/16	6.5	180	
MW1-061016	01	06/10/16					06/15/2016	5	180		06/16/16	6.6	180	
MW3-061016	02	06/10/16					06/15/2016	5	180		06/16/16	6.5	180	
MW3-061016	02	06/10/16					06/15/2016	5	180		06/16/16	6.5	180	
17WW08-061016	03	06/10/16					06/15/2016	4.9	180		06/16/16	6.5	180	
17WW08-061016	03	06/10/16					06/15/2016	4.9	180		06/16/16	6.4	180	
18WW24F-061016	08	06/10/16					06/15/2016	4.7	180		06/16/16	6.3	180	
18WW24F-061016	08	06/10/16					06/15/2016	4.7	180		06/16/16	6.2	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4812147
Report generated 06/21/2016 18:21

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG573557

Login Number: L16060650

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW1-061016	01	06/10/16					06/21/2016	11	180		06/21/16	11.3	180	
MW3-061016	02	06/10/16					06/21/2016	10.9	180		06/21/16	11.3	180	
17WW08-061016	03	06/10/16					06/21/2016	10.9	180		06/21/16	11.2	180	
18WW24F-061016	08	06/10/16					06/21/2016	10.7	180		06/21/16	11	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4812147
Report generated 06/21/2016 18:21

METHOD BLANK SUMMARY

Login Number: L16060650
Blank File ID: NI.061616.190516
Prep Date: 06/15/16 07:54
Analyzed Date: 06/16/16 19:05
Analyst: BKT

Work Group: WG572869
Blank Sample ID: WG572730-03
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572730-04	NI.061616.190828	06/16/16 19:08	01
DUP	WG572730-05	NI.061616.191541	06/16/16 19:15	01
MW1-061016	L16060650-01	NI.061616.200024	06/16/16 20:00	01
MW3-061016	L16060650-02	NI.061616.200336	06/16/16 20:03	01
17WW08-061016	L16060650-03	NI.061616.200647	06/16/16 20:06	01
18WW24F-061016	L16060650-08	NI.061616.201257	06/16/16 20:12	01
MW1-061016	L16060650-01	NI.061616.212301	06/16/16 21:23	DL01
MW3-061016	L16060650-02	NI.061616.212612	06/16/16 21:26	DL01
17WW08-061016	L16060650-03	NI.061616.212923	06/16/16 21:29	DL01
18WW24F-061016	L16060650-08	NI.061616.213235	06/16/16 21:32	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4812148
Report generated 06/21/2016 18:21

METHOD BLANK SUMMARY

Login Number: L16060650
Blank File ID: NI.062116.131000
Prep Date: 06/21/16 07:48
Analyzed Date: 06/21/16 13:10
Analyst: BKT

Work Group: WG573557
Blank Sample ID: WG573483-02
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573483-03	NI.062116.133650	06/21/16 13:36	01
MW1-061016	L16060650-01	NI.062116.153201	06/21/16 15:32	02
MW3-061016	L16060650-02	NI.062116.153512	06/21/16 15:35	02
17WW08-061016	L16060650-03	NI.062116.153823	06/21/16 15:38	02
18WW24F-061016	L16060650-08	NI.062116.154135	06/21/16 15:41	02

Report Name: BLANK_SUMMARY
PDF File ID: 4812148
Report generated 06/21/2016 18:21

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060650 Prep Date: 06/15/16 07:54 Sample ID: WG572730-03
Instrument ID: ICP-MS2 Run Date: 06/16/16 19:05 Prep Method: 3015
File ID: NI.061616.190516 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG572869 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-16-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Antimony, Total	0.000500	0.00200	0.000500	1	U
Arsenic, Total	0.000500	0.00200	0.00354	1	*
Barium, Total	0.00150	0.00600	0.0283	1	*
Cadmium, Total	0.000300	0.00120	0.000300	1	U
Chromium, Total	0.00100	0.00400	0.00100	1	U
Cobalt, Total	0.000500	0.00200	0.000500	1	U
Copper, Total	0.00100	0.00400	0.00100	1	U
Lead, Total	0.000500	0.00200	0.000500	1	U
Manganese, Total	0.00100	0.00400	0.00100	1	U
Nickel, Total	0.00200	0.00800	0.00200	1	U
Thallium, Total	0.000100	0.000400	0.000100	1	U
Vanadium, Total	0.000500	0.00200	0.000500	1	U
Zinc, Total	0.0125	0.0500	0.0125	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4812149
21-JUN-2016 18:22

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060650 Prep Date: 06/21/16 07:48 Sample ID: WG573483-02
Instrument ID: ICP-MS2 Run Date: 06/21/16 13:10 Prep Method: 3015
File ID: NI.062116.131000 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG573557 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-21-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Arsenic, Total	0.000500	0.00200	0.000500	1	U
Barium, Total	0.00150	0.00600	0.00150	1	U
Silver, Total	0.000500	0.00200	0.000500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4812149
21-JUN-2016 18:22

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060650 Run Date: 06/16/2016 Sample ID: WG572730-04
Instrument ID: ICP-MS2 Run Time: 19:08 Prep Method: 3015
File ID: NI.061616.190828 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG572869 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD75998 Cal ID: ICP-MS-16-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Antimony, Total	0.125	0.118	94.6	80 - 120	
Arsenic, Total	0.125	0.122	97.8	80 - 120	
Barium, Total	0.125	0.122	97.3	80 - 120	
Cadmium, Total	0.125	0.122	97.9	80 - 120	
Chromium, Total	0.125	0.126	100	80 - 120	
Cobalt, Total	0.125	0.133	106	80 - 120	
Copper, Total	0.125	0.124	99.5	80 - 120	
Lead, Total	0.125	0.124	99.2	80 - 120	
Manganese, Total	0.125	0.136	109	80 - 120	
Nickel, Total	0.125	0.124	99.1	80 - 120	
Thallium, Total	0.125	0.118	94.7	80 - 120	
Vanadium, Total	0.125	0.127	102	80 - 120	
Zinc, Total	0.125	0.126	101	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4812150
Report generated: 06/21/2016 18:22

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060650 Run Date: 06/21/2016 Sample ID: WG573483-03
Instrument ID: ICP-MS2 Run Time: 13:36 Prep Method: 3015
File ID: NI.062116.133650 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG573557 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD75998 Cal ID: ICP-MS-21-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Arsenic, Total	0.125	0.125	100	80 - 120	
Barium, Total	0.125	0.127	101	80 - 120	
Silver, Total	0.125	0.130	104	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4812150
Report generated: 06/21/2016 18:22

Loginnum: L16060650 Cal ID: ICP-MS2- Worknum: WG572869
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG572730-02 File ID: NI.061616.191852 Dil: 1 Matrix: WATER
Sample ID: WG572730-06 MS File ID: NI.061616.192204 Dil: 1 Units: mg/L
Sample ID: WG572730-07 MSD File ID: NI.061616.192515 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Antimony	0.000748	0.125	0.117	93.0	0.125	0.120	95.4	2.48	80 - 120	20	
Arsenic	ND	0.125	0.124	99.1	0.125	0.135	108	8.40	80 - 120	20	
Barium	0.0532	0.125	0.163	87.8	0.125	0.360	246	75.4	80 - 120	20	*#
Cadmium	0.000380	0.125	0.118	94.3	0.125	0.118	94.5	0.202	80 - 120	20	
Chromium	0.00126	0.125	0.122	96.2	0.125	0.128	101	5.15	80 - 120	20	
Cobalt	0.0627	0.125	0.194	105	0.125	0.210	118	8.06	80 - 120	20	
Copper	0.00880	0.125	0.129	96.3	0.125	0.134	100	3.48	80 - 120	20	
Lead	0.00276	0.125	0.122	95.5	0.125	0.128	100	4.87	80 - 120	20	
Manganese	0.984	0.125	1.12	108	0.125	1.21	177	7.43	80 - 120	20	*
Nickel	0.0243	0.125	0.144	95.7	0.125	0.150	100	4.07	80 - 120	20	
Thallium	ND	0.125	0.117	93.4	0.125	0.122	97.3	4.07	80 - 120	20	
Vanadium	ND	0.125	0.127	101	0.125	0.135	108	6.40	80 - 120	20	
Zinc	0.0715	0.125	0.193	97.4	0.125	0.203	105	4.74	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4812151
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060650 Cal ID: ICP-MS2- Worknum: WG573557
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG573483-01 File ID: NI.062116.131623 Dil: 1 Matrix: WATER
Sample ID: WG573483-04 MS File ID: NI.062116.131935 Dil: 1 Units: mg/L
Sample ID: WG573483-05 MSD File ID: NI.062116.132247 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Arsenic	ND	0.125	0.128	103	0.125	0.125	100	2.26	80 - 120	20	
Barium	0.0370	0.125	0.156	95.4	0.125	0.159	97.5	1.73	80 - 120	20	
Silver	ND	0.125	0.119	95.1	0.125	0.123	98.5	3.53	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4812151
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16060650 **Worknum:** WG573557
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG573557-02 **File ID:** NI.062116.133221 **Dil:** 5 **Units:** ug/L
Sample: L16060731-02 **File ID:** NI.062116.132558 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	1.14		ND			
Arsenic	12.2	X	12.5	X	2.14	
Barium	10.8	X	11.8	F	9.87	
Cadmium	0.267		ND			
Chromium	1.95		ND			
Cobalt	0.370		ND			
Copper	147		ND			
Lead	9.25		ND			
Manganese	21.0		ND			
Nickel	1.17		ND			
Silver	ND	U	ND	U		
Thallium	0.0436		ND			
Vanadium	5.28		ND			
Zinc	18.4		ND			

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4812145
06/21/2016 18:21

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16060650 **Worknum:** WG572869
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG572869-02 **File ID:** NI.061616.193450 **Dil:** 5 **Units:** ug/L
Sample: L16060754-01 **File ID:** NI.061616.192827 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	ND	U	2.27	F	1100.00	
Arsenic	0.304	F	ND	U		
Barium	21.4	X	20.8	X	2.86	
Cadmium	ND	U	ND	U		
Chromium	1.95	X	2.11	F	8.12	
Cobalt	0.616	F	ND	U		
Copper	104		107		2.99	
Lead	1.81	X	1.85	F	2.23	
Manganese	18.1	X	17.9	X	0.86	
Nickel	2.91	F	ND	U		
Silver	ND	U	ND	U		
Thallium	ND	U	ND	U		
Vanadium	1.81	X	2.04	F	12.90	
Zinc	97.6	X	100	X	2.53	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4812145
06/21/2016 18:21

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16060650 **Worknum:** WG572869
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG572869-02 **File ID:** NI.061616.194427 **Dil:** 25 **Units:** ug/L
Sample: L16060754-01 **File ID:** NI.061616.193450 **Dil:** 5

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	2.27	F	ND	U		
Arsenic	ND	U	ND	U		
Barium	20.8	X	20.9	F	0.70	
Cadmium	ND	U	ND	U		
Chromium	2.11	F	ND	U		
Cobalt	ND	U	ND	U		
Copper	107	X	110	X	2.54	
Lead	1.85	F	ND	U		
Manganese	17.9	X	18.9	F	5.54	
Nickel	ND	U	ND	U		
Silver	ND	U	ND	U		
Thallium	ND	U	ND	U		
Vanadium	2.04	F	ND	U		
Zinc	100	X	ND	U		

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4812145
06/21/2016 18:21

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060650 **Worknum:** WG572869
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG572869-01 **File ID:** NI.061616.193138 **Dil:** 1 **Units:** ug/L
Sample ID: L16060754-01 **File ID:** NI.061616.192827 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	51.2		0	U	50	102.4	75 - 125	
ARSENIC	49.9		0.304	F	50	99.2	75 - 125	
BARIUM	70.7		21.4		50	98.7	75 - 125	
CADMIUM	50.8		0	U	50	101.5	75 - 125	
CHROMIUM	49.7		1.95		50	95.5	75 - 125	
COBALT	53.8		0.616	F	50	106.4	75 - 125	
COPPER	146		104		50	84.8	75 - 125	
LEAD	47.6		1.81		50	91.6	75 - 125	
MANGANESE	68.2		18.1		50	100.2	75 - 125	
NICKEL	49.4		2.91	F	50	92.9	75 - 125	
SILVER	50.6		0	U	50	101.2	75 - 125	
THALLIUM	44.4		0	U	50	88.7	75 - 125	
VANADIUM	53.4		1.81		50	103.2	75 - 125	
ZINC	139		97.6		50	83.0	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4812146
Report generated: 06/21/2016 18:21

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060650 **Worknum:** WG573557
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG573557-01 **File ID:** NI.062116.132910 **Dil:** 1 **Units:** ug/L
Sample ID: L16060731-02 **File ID:** NI.062116.132558 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	50.4		1.14		50	98.5	75 - 125	
ARSENIC	64.0		12.2		50	103.6	75 - 125	
BARIUM	60.7		10.8		50	99.9	75 - 125	
CADMIUM	51.9		0.267	F	50	103.2	75 - 125	
CHROMIUM	52.8		1.95		50	101.7	75 - 125	
COBALT	53.2		0.370	F	50	105.7	75 - 125	
COPPER	195		147		50	96.4	75 - 125	
LEAD	60.3		9.25		50	102.0	75 - 125	
MANGANESE	72.2		21.0		50	102.4	75 - 125	
NICKEL	51.1		1.17	F	50	99.8	75 - 125	
SILVER	50.1		0	U	50	100.3	75 - 125	
THALLIUM	49.7		0.0436	F	50	99.4	75 - 125	
VANADIUM	57.1		5.28		50	103.6	75 - 125	
ZINC	70.3		18.4	F	50	103.8	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4812146
Report generated: 06/21/2016 18:21

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16060650	Workgroup (AAB#):	WG572869
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG573095	Initial Calibration Date:	16-JUN-2016 15:43

	WG573095-01		WG573095-02		WG573095-03		WG573095-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	44.3	.4	294	50	219000	100	429000	.999808	
ARSENIC	0	72.1	.4	27.4	50	55400	100	107000	.999975	
BARIUM	0	17.0	.4	202	50	90500	100	179000	.999915	
CADMIUM	0	3.70	.4	107	50	96700	100	192000	.999929	
CHROMIUM	0	2890	.4	7150	50	370000	100	726000	.999966	
COBALT	0	263	.4	583	50	321000	100	621000	.999989	
COPPER	0	79.7	.4	217	50	93700	100	182000	.999999	
LEAD	0	828	.4	1800	50	831000	100	1630000	.999997	
MANGANESE	0	613	.4	1040	50	296000	100	576000	1	
NICKEL	0	108	.4	245	50	96000	100	187000	1	
SILVER	0	82.7	.4	386	50	301000	100	584000	.999738	
THALLIUM	0	10.0	.4	392	50	373000	100	729000	.999991	
VANADIUM	0	581	.4	1540	50	356000	100	688000	.999992	
ZINC	0	145	.4	311	50	55400	100	108000	1	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4812154
Report generated: 21-JUN-2016 18:22

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16060650	Workgroup (AAB#):	WG573557
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG573631	Initial Calibration Date:	21-JUN-2016 12:44

	WG573631-01		WG573631-02		WG573631-03		WG573631-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	43.1	.4	245	50	207000	100	404000	.999913	
ARSENIC	0	-25.5	.4	16.4	50	52300	100	101000	.999973	
BARIUM	0	106	.4	194	50	89200	100	176000	.999962	
CADMIUM	0	9.30	.4	103	50	91400	100	179000	.999944	
CHROMIUM	0	5910	.4	6080	50	320000	100	622000	.999997	
COBALT	0	269	.4	583	50	304000	100	585000	.999971	
COPPER	0	156	.4	255	50	88900	100	173000	.999998	
LEAD	0	792	.4	1730	50	793000	100	1540000	.999869	
MANGANESE	0	1210	.4	1640	50	319000	100	618000	.999993	
NICKEL	0	292	.4	417	50	89800	100	174000	.999991	
SILVER	0	92.7	.4	386	50	288000	100	561000	.999911	
THALLIUM	0	11.0	.4	386	50	361000	100	706000	.999917	
VANADIUM	0	1010	.4	1270	50	298000	100	571000	.999958	
ZINC	0	143	.4	285	50	51700	100	100000	.999996	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4812154
Report generated: 21-JUN-2016 18:22

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573095-09
Instrument ID: ICP-MS2
Run Time: 16:03
Method: 6020A
File ID: NI.061616.160355
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572869
Cal ID: ICP-MS2 - 16-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
COPPER	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.268	F
THALLIUM	.04	.16	.04	U
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4812156
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060650
Run Date: 06/21/2016
Sample ID: WG573631-06
Instrument ID: ICP-MS2
Run Time: 12:50
Method: 6020A
File ID: NI.062116.125048
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG573557
Cal ID: ICP-MS2 - 21-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4812156
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573095-13
Instrument ID: ICP-MS2
Run Time: 16:38
Method: 6020A
File ID: NI.061616.163850
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573095-19
Instrument ID: ICP-MS2
Run Time: 18:58
Method: 6020A
File ID: NI.061616.185850
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573095-22
Instrument ID: ICP-MS2
Run Time: 19:41
Method: 6020A
File ID: NI.061616.194114
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573095-24
Instrument ID: ICP-MS2
Run Time: 20:22
Method: 6020A
File ID: NI.061616.202232
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573095-26
Instrument ID: ICP-MS2
Run Time: 21:10
Method: 6020A
File ID: NI.061616.211014
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573095-28
Instrument ID: ICP-MS2
Run Time: 21:48
Method: 6020A
File ID: NI.061616.214835
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/21/2016
Sample ID: WG573631-11
Instrument ID: ICP-MS2
Run Time: 13:06
Method: 6020A
File ID: NI.062116.130648
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Silver	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/21/2016
Sample ID: WG573631-13
Instrument ID: ICP-MS2
Run Time: 13:43
Method: 6020A
File ID: NI.062116.134314
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Silver	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/21/2016
Sample ID: WG573631-15
Instrument ID: ICP-MS2
Run Time: 15:57
Method: 6020A
File ID: NI.062116.155734
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Silver	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573095-08
Instrument ID: ICP-MS2
Run Time: 15:57
Method: 6020A
File ID: NI.061616.155746
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	46.9	93.8	90 - 110	
Arsenic		50	49.9	99.8	90 - 110	
Barium		50	47.7	95.3	90 - 110	
Cadmium		50	48.1	96.2	90 - 110	
Chromium		50	50.4	101	90 - 110	
Cobalt		50	49.2	98.4	90 - 110	
Copper		50	50.2	100	90 - 110	
Lead		50	48.5	96.9	90 - 110	
Manganese		50	51.6	103	90 - 110	
Nickel		50	50.1	100	90 - 110	
Thallium		50	47.8	95.7	90 - 110	
Vanadium		50	48.7	97.3	90 - 110	
Zinc		50	50.0	100	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4812155
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060650
Run Date: 06/21/2016
Sample ID: WG573631-05
Instrument ID: ICP-MS2
Run Time: 12:47
Method: 6020A
File ID: NI.062116.124735
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Arsenic		50	50.4	101	90 - 110	
Barium		50	49.0	98.1	90 - 110	
Silver		50	49.8	99.6	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4812155
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573095-12
Instrument ID: ICP-MS2
Run Time: 16:25
Method: 6020A
File ID: NI.061616.162516
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0492	mg/L	98.4	90 - 110		
Arsenic		0.0500	0.0498	mg/L	99.6	90 - 110		
Barium		0.0500	0.0480	mg/L	96.0	90 - 110		
Cadmium		0.0500	0.0483	mg/L	96.7	90 - 110		
Chromium		0.0500	0.0497	mg/L	99.4	90 - 110		
Cobalt		0.0500	0.0504	mg/L	101	90 - 110		
Copper		0.0500	0.0502	mg/L	100	90 - 110		
Lead		0.0500	0.0490	mg/L	98.0	90 - 110		
Manganese		0.0500	0.0514	mg/L	103	90 - 110		
Nickel		0.0500	0.0501	mg/L	100	90 - 110		
Thallium		0.0500	0.0491	mg/L	98.2	90 - 110		
Vanadium		0.0500	0.0497	mg/L	99.3	90 - 110		
Zinc		0.0500	0.0499	mg/L	99.7	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573095-18
Instrument ID: ICP-MS2
Run Time: 18:55
Method: 6020A
File ID: NI.061616.185538
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0494	mg/L	98.8	90 - 110		
Arsenic		0.0500	0.0496	mg/L	99.2	90 - 110		
Barium		0.0500	0.0486	mg/L	97.2	90 - 110		
Cadmium		0.0500	0.0500	mg/L	100	90 - 110		
Chromium		0.0500	0.0500	mg/L	100	90 - 110		
Cobalt		0.0500	0.0532	mg/L	106	90 - 110		
Copper		0.0500	0.0496	mg/L	99.2	90 - 110		
Lead		0.0500	0.0501	mg/L	100	90 - 110		
Manganese		0.0500	0.0540	mg/L	108	90 - 110		
Nickel		0.0500	0.0492	mg/L	98.5	90 - 110		
Thallium		0.0500	0.0493	mg/L	98.6	90 - 110		
Vanadium		0.0500	0.0506	mg/L	101	90 - 110		
Zinc		0.0500	0.0496	mg/L	99.2	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573095-21
Instrument ID: ICP-MS2
Run Time: 19:38
Method: 6020A
File ID: NI.061616.193803
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0512	mg/L	102	90 - 110		
Arsenic		0.0500	0.0488	mg/L	97.6	90 - 110		
Barium		0.0500	0.0486	mg/L	97.1	90 - 110		
Cadmium		0.0500	0.0503	mg/L	101	90 - 110		
Chromium		0.0500	0.0490	mg/L	98.0	90 - 110		
Cobalt		0.0500	0.0548	mg/L	110	90 - 110		
Copper		0.0500	0.0486	mg/L	97.2	90 - 110		
Lead		0.0500	0.0517	mg/L	103	90 - 110		
Manganese		0.0500	0.0527	mg/L	105	90 - 110		
Nickel		0.0500	0.0487	mg/L	97.4	90 - 110		
Thallium		0.0500	0.0499	mg/L	99.9	90 - 110		
Vanadium		0.0500	0.0515	mg/L	103	90 - 110		
Zinc		0.0500	0.0495	mg/L	98.9	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573095-23
Instrument ID: ICP-MS2
Run Time: 20:19
Method: 6020A
File ID: NI.061616.201921
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0477	mg/L	95.4	90 - 110		
Arsenic		0.0500	0.0484	mg/L	96.8	90 - 110		
Barium		0.0500	0.0467	mg/L	93.3	90 - 110		
Cadmium		0.0500	0.0485	mg/L	96.9	90 - 110		
Chromium		0.0500	0.0490	mg/L	97.9	90 - 110		
Cobalt		0.0500	0.0524	mg/L	105	90 - 110		
Copper		0.0500	0.0483	mg/L	96.5	90 - 110		
Lead		0.0500	0.0502	mg/L	100	90 - 110		
Manganese		0.0500	0.0530	mg/L	106	90 - 110		
Nickel		0.0500	0.0478	mg/L	95.6	90 - 110		
Thallium		0.0500	0.0479	mg/L	95.7	90 - 110		
Vanadium		0.0500	0.0501	mg/L	100	90 - 110		
Zinc		0.0500	0.0480	mg/L	95.9	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573095-25
Instrument ID: ICP-MS2
Run Time: 21:07
Method: 6020A
File ID: NI.061616.210702
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0484	mg/L	96.9	90 - 110		
Arsenic		0.0500	0.0488	mg/L	97.5	90 - 110		
Barium		0.0500	0.0477	mg/L	95.4	90 - 110		
Cadmium		0.0500	0.0483	mg/L	96.7	90 - 110		
Chromium		0.0500	0.0499	mg/L	99.8	90 - 110		
Cobalt		0.0500	0.0494	mg/L	98.8	90 - 110		
Copper		0.0500	0.0496	mg/L	99.2	90 - 110		
Lead		0.0500	0.0494	mg/L	98.8	90 - 110		
Manganese		0.0500	0.0534	mg/L	107	90 - 110		
Nickel		0.0500	0.0496	mg/L	99.2	90 - 110		
Thallium		0.0500	0.0475	mg/L	95.0	90 - 110		
Vanadium		0.0500	0.0503	mg/L	101	90 - 110		
Zinc		0.0500	0.0497	mg/L	99.4	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573095-27
Instrument ID: ICP-MS2
Run Time: 21:45
Method: 6020A
File ID: NI.061616.214523
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0479	mg/L	95.7	90 - 110		
Arsenic		0.0500	0.0498	mg/L	99.7	90 - 110		
Barium		0.0500	0.0478	mg/L	95.6	90 - 110		
Cadmium		0.0500	0.0483	mg/L	96.6	90 - 110		
Chromium		0.0500	0.0507	mg/L	101	90 - 110		
Cobalt		0.0500	0.0512	mg/L	102	90 - 110		
Copper		0.0500	0.0503	mg/L	101	90 - 110		
Lead		0.0500	0.0512	mg/L	102	90 - 110		
Manganese		0.0500	0.0553	mg/L	111	90 - 110		*
Nickel		0.0500	0.0504	mg/L	101	90 - 110		
Thallium		0.0500	0.0492	mg/L	98.4	90 - 110		
Vanadium		0.0500	0.0507	mg/L	101	90 - 110		
Zinc		0.0500	0.0501	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/21/2016
Sample ID: WG573631-10
Instrument ID: ICP-MS2
Run Time: 13:03
Method: 6020A
File ID: NI.062116.130337
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Arsenic		0.0500	0.0504	mg/L	101	90 - 110		
Barium		0.0500	0.0495	mg/L	99.0	90 - 110		
Silver		0.0500	0.0492	mg/L	98.4	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/21/2016
Sample ID: WG573631-12
Instrument ID: ICP-MS2
Run Time: 13:40
Method: 6020A
File ID: NI.062116.134003
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Arsenic		0.0500	0.0508	mg/L	102	90 - 110		
Barium		0.0500	0.0493	mg/L	98.6	90 - 110		
Silver		0.0500	0.0497	mg/L	99.3	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812158
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/21/2016
Sample ID: WG573631-14
Instrument ID: ICP-MS2
Run Time: 15:54
Method: 6020A
File ID: NI.062116.155422
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Arsenic		0.0500	0.0505	mg/L	101	90 - 110		
Barium		0.0500	0.0508	mg/L	102	90 - 110		
Silver		0.0500	0.0514	mg/L	103	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812158
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573095-07
Instrument ID: ICP-MS2
Run Time: 15:52
Method: 6020A
File ID: NI.061616.155239
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.437	ug/L	109	70 - 130		
Arsenic		0.400	0.412	ug/L	103	70 - 130		
Barium		0.750	0.670	ug/L	89.4	70 - 130		
Cadmium		0.240	0.237	ug/L	98.6	70 - 130		
Chromium		0.800	0.723	ug/L	90.4	70 - 130		
Cobalt		0.400	0.380	ug/L	95.0	70 - 130		
Copper		0.800	0.790	ug/L	98.7	70 - 130		
Lead		0.200	0.183	ug/L	91.4	70 - 130		
Manganese		0.500	0.452	ug/L	90.4	70 - 130		
Nickel		1.60	1.54	ug/L	96.1	70 - 130		
Thallium		0.0800	0.0818	ug/L	102	70 - 130		
Vanadium		0.400	0.354	ug/L	88.5	70 - 130		
Zinc		6.25	6.72	ug/L	107	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4812160
Report generated 06/22/2016 13:43

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573095-20
Instrument ID: ICP-MS2
Run Time: 19:02
Method: 6020A
File ID: NI.061616.190202
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.394	ug/L	98.5	70 - 130		
Arsenic		0.400	0.383	ug/L	95.8	70 - 130		
Barium		0.750	0.633	ug/L	84.4	70 - 130		
Cadmium		0.240	0.238	ug/L	99.0	70 - 130		
Chromium		0.800	0.710	ug/L	88.8	70 - 130		
Cobalt		0.400	0.391	ug/L	97.6	70 - 130		
Copper		0.800	0.779	ug/L	97.4	70 - 130		
Lead		0.200	0.185	ug/L	92.4	70 - 130		
Manganese		0.500	0.600	ug/L	120	70 - 130		
Nickel		1.60	1.49	ug/L	93.1	70 - 130		
Thallium		0.0800	0.0829	ug/L	104	70 - 130		
Vanadium		0.400	0.360	ug/L	90.1	70 - 130		
Zinc		6.25	6.68	ug/L	107	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4812160
Report generated 06/22/2016 13:43

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573095-29
Instrument ID: ICP-MS2
Run Time: 21:51
Method: 6020A
File ID: NI.061616.215148
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.379	ug/L	94.7	70 - 130		
Arsenic		0.400	0.373	ug/L	93.3	70 - 130		
Barium		0.750	0.661	ug/L	88.1	70 - 130		
Cadmium		0.240	0.222	ug/L	92.4	70 - 130		
Chromium		0.800	0.719	ug/L	89.8	70 - 130		
Cobalt		0.400	0.364	ug/L	91.0	70 - 130		
Copper		0.800	0.802	ug/L	100	70 - 130		
Lead		0.200	0.176	ug/L	88.2	70 - 130		
Manganese		0.500	0.484	ug/L	96.8	70 - 130		
Nickel		1.60	1.55	ug/L	96.6	70 - 130		
Thallium		0.0800	0.0736	ug/L	92.0	70 - 130		
Vanadium		0.400	0.363	ug/L	90.7	70 - 130		
Zinc		6.25	6.31	ug/L	101	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4812160
Report generated 06/22/2016 13:43

Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060650
Run Date: 06/21/2016
Sample ID: WG573631-07
Instrument ID: ICP-MS2
Run Time: 12:54
Method: 6020A
File ID: NI.062116.125401
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Arsenic		0.400	0.431	ug/L	108	70 - 130		
Barium		0.750	0.681	ug/L	90.8	70 - 130		
Silver		0.400	0.401	ug/L	100	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4812160
Report generated 06/22/2016 13:43

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060650
Run Date: 06/21/2016
Sample ID: WG573631-24
Instrument ID: ICP-MS2
Run Time: 19:12
Method: 6020A
File ID: NI.062116.191207
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Arsenic		0.400	0.388	ug/L	97.1	70 - 130		
Barium		0.750	0.690	ug/L	92.0	70 - 130		
Silver		0.400	0.394	ug/L	98.6	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4812160
Report generated 06/22/2016 13:43

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060650
Instrument ID: ICP-MS2
Sol. A : WG573095-10 **File ID:** NI.061616.160740
Sol. AB : WG573095-11 **File ID:** NI.061616.162201

Workgroup (AAB#): WG572869
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.0793	NS	100	94.6	94.6	
Arsenic	NS	-0.0113	NS	100	102	102	
Barium	NS	0.0676	NS	100	94.7	94.7	
Cadmium	NS	-0.0599	NS	100	96.1	96.1	
Chromium	NS	0.0900	NS	100	99.8	99.8	
Cobalt	NS	0.0224	NS	100	104	104	
Copper	NS	0.277	NS	100	99.9	99.9	
Lead	NS	0.0928	NS	100	98.9	98.9	
Manganese	NS	0.0620	NS	100	106	106	
Nickel	NS	0.326	NS	100	99.4	99.4	
Thallium	NS	0.113	NS	100	98.0	98.0	
Vanadium	NS	0.00810	NS	100	100	100	
Zinc	NS	1.37	NS	100	102	102	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4812157
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060650
Instrument ID: ICP-MS2
Sol. A : WG573631-08 **File ID:** NI.062116.125712
Sol. AB : WG573631-09 **File ID:** NI.062116.130024

Workgroup (AAB#): WG573557
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Arsenic	NS	0.00630	NS	100	101	101	
Barium	NS	0.186	NS	100	100	100	
Silver	NS	0.0339	NS	100	95.1	95.1	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4812157
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060650 **Analytical Method:** 6020
Analytical Workgroup: WG572869 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 16-JUN-2016 15:33

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060650-01	SAMP	16-JUN-2016 20:00	93.943	96.925	96.746
L16060650-01	SAMP	16-JUN-2016 21:23	99.579	97.881	104.603
L16060650-02	SAMP	16-JUN-2016 20:03	97.537	95.685	101.514
L16060650-02	SAMP	16-JUN-2016 21:26	94.93	97.746	101.426
L16060650-03	SAMP	16-JUN-2016 20:06	97.564	96.287	103.83
L16060650-03	SAMP	16-JUN-2016 21:29	96.662	100.711	99.068
L16060650-08	SAMP	16-JUN-2016 20:12	98.503	99.399	101.978
L16060650-08	SAMP	16-JUN-2016 21:32	99.127	98.545	102.691
WG572730-03	BLANK	16-JUN-2016 19:05	100.216	99.081	102.939
WG572730-04	LCS	16-JUN-2016 19:08	101.421	99.849	103.204
WG572869-01	PSPK	16-JUN-2016 19:31	112.105	100.336	99.705
WG572869-02	SERIAL	16-JUN-2016 19:34	109.035	99.586	107.45
WG572869-02	SERIAL	16-JUN-2016 19:44	102.137	96.905	105.944
WG573095-07	LLICV	16-JUN-2016 15:52	96.13	93.157	96.318
WG573095-08	ICV	16-JUN-2016 15:57	97.13	96.114	99.927
WG573095-09	ICB	16-JUN-2016 16:03	97.661	96.107	100.676
WG573095-10	ICS	16-JUN-2016 16:07	96.606	97.591	98.938
WG573095-11	ICS	16-JUN-2016 16:22	96.039	94.231	101.38
WG573095-12	CCV	16-JUN-2016 16:25	96.818	96.058	101.069
WG573095-13	CCB	16-JUN-2016 16:38	95.395	96.878	98.817
WG573095-18	CCV	16-JUN-2016 18:55	100.879	98.942	103.257
WG573095-19	CCB	16-JUN-2016 18:58	100.363	100.186	103.213
WG573095-20	LLCCV	16-JUN-2016 19:02	98.621	96.559	99.934
WG573095-21	CCV	16-JUN-2016 19:38	99.655	98.678	100.997
WG573095-22	CCB	16-JUN-2016 19:41	103.251	98.035	102.526
WG573095-23	CCV	16-JUN-2016 20:19	102.275	100.766	107.12
WG573095-24	CCB	16-JUN-2016 20:22	101.002	103.79	104.368
WG573095-25	CCV	16-JUN-2016 21:07	98.791	98.968	101.902
WG573095-26	CCB	16-JUN-2016 21:10	98.056	96.18	104.938
WG573095-27	CCV	16-JUN-2016 21:45	94.877	96.278	101.991
WG573095-28	CCB	16-JUN-2016 21:48	95.773	98.51	99.349
WG573095-29	LLCCV	16-JUN-2016 21:51	96.58	95.236	98.152

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4812153
Report generated: 06/21/2016 18:22

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060650 **Analytical Method:** 6020
Analytical Workgroup: WG572869 **Matrix:** 18
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 16-JUN-2016 15:33

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060731-02	SAMP	16-JUN-2016 20:46	98.985	103.449	100.756
L16060731-02	SAMP	16-JUN-2016 20:49	100.189	99.166	103.967

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4812153
Report generated: 06/21/2016 18:22

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060650 **Analytical Method:** 6020
Analytical Workgroup: WG572869 **Matrix:** 2
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 16-JUN-2016 15:33

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060754-01	SAMP	16-JUN-2016 19:28	110.371	97.831	102.475
L16060754-01	SAMP	16-JUN-2016 19:34	109.035	99.586	107.45

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4812153
Report generated: 06/21/2016 18:22

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060650 **Analytical Method:** 6020
Analytical Workgroup: WG573557 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 21-JUN-2016 12:34

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060650-01	SAMP	21-JUN-2016 15:32	91.399	99.565	95.377
L16060650-02	SAMP	21-JUN-2016 15:35	94.342	101.97	95.122
L16060650-03	SAMP	21-JUN-2016 15:38	100.263	101.048	101.31
L16060650-08	SAMP	21-JUN-2016 15:41	96.504	99.317	101.843
WG573483-02	BLANK	21-JUN-2016 13:10	95.679	98.524	97.195
WG573483-03	LCS	21-JUN-2016 13:36	94.921	99.695	97.281
WG573557-01	PSPK	21-JUN-2016 13:29	98.084	98.955	98.448
WG573557-02	SERIAL	21-JUN-2016 13:32	97.19	102.137	97.153
WG573631-05	ICV	21-JUN-2016 12:47	96.069	98.452	97.355
WG573631-06	ICB	21-JUN-2016 12:50	96.354	99.72	98.43
WG573631-07	LLICV	21-JUN-2016 12:54	94.241	93.729	96.647
WG573631-08	ICS	21-JUN-2016 12:57	94.267	96.671	98.81
WG573631-09	ICS	21-JUN-2016 13:00	96.004	99.918	95.904
WG573631-10	CCV	21-JUN-2016 13:03	94.215	98.219	98.362
WG573631-11	CCB	21-JUN-2016 13:06	96.643	100.438	97.789
WG573631-12	CCV	21-JUN-2016 13:40	96.239	97.396	98.415
WG573631-13	CCB	21-JUN-2016 13:43	94.78	98.379	99.644
WG573631-14	CCV	21-JUN-2016 15:54	98.094	101.613	99.232
WG573631-15	CCB	21-JUN-2016 15:57	98.876	97.92	103.15

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4812153
Report generated: 06/21/2016 18:22

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060650 **Analytical Method:** 6020
Analytical Workgroup: WG573557 **Matrix:** 18
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 21-JUN-2016 12:34

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060731-02	SAMP	21-JUN-2016 13:25	97.415	97.241	100.268
WG572662-01	FBLK2	21-JUN-2016 13:13	96.669	99.978	97.284

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4812153
Report generated: 06/21/2016 18:22

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16060650 **Date:** 04/19/2016
Insturment ID: ICP-MS2 **Method:** 6020A

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Uranium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4812152
Report generated: 06/21/2016 18:22

2.3.2.3 Raw Data

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Thursday, June 16, 2016 14:07:39

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1326	2024	0.708	
Mg	23.985	23.975	4498	2020	0.704	
Co	58.933	58.975	11692	2022	0.692	
In	114.904	114.875	22859	2028	0.691	
U	238.050	238.075	47457	2043	0.702	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	7.436
5.575	8.287
5.625	3.892
5.675	4.802
5.725	2.185
5.775	3.031
5.825	4.638
5.875	2.806
5.925	2.266
5.975	4.757
6.025	3.190
6.075	3.669
6.125	3.622
6.175	3.148
6.225	8.886
6.275	33.166
6.325	46.481
6.375	46.566
6.425	40.745
6.475	56.845
6.525	15.768
6.575	18.835
6.625	3.774
6.675	4.099
6.725	2.150
6.775	4.632
6.825	1.659

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6.875	4.657
6.925	1.715
6.975	2.467
7.025	2.458
7.075	2.433
7.125	2.586
7.175	4.875
7.225	1.268
7.275	2.064
7.325	10.536
7.375	54.398
7.425	60.990
7.475	63.888
7.525	51.618
7.575	39.529
7.625	69.722
7.675	47.507
7.725	16.110
7.775	58.685
7.825	58.330
7.875	66.667
7.925	61.450
7.975	55.902
8.025	102.740
8.075	55.902
8.125	38.401
8.175	63.949
8.225	43.853
8.275	60.858
8.325	45.079
8.375	40.074
8.425	40.074
8.475	54.149
22.525	
22.575	50.619
22.625	33.641
22.675	51.618
22.725	55.902
22.775	25.951
22.825	27.809
22.875	40.946
22.925	49.701
22.975	18.923
23.025	32.442
23.075	23.055
23.125	25.635
23.175	20.888

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23.225	21.374
23.275	25.000
23.325	45.400
23.375	27.285
23.425	30.987
23.475	25.476
23.525	13.045
23.575	6.296
23.625	2.182
23.675	2.995
23.725	2.713
23.775	2.035
23.825	1.176
23.875	0.613
23.925	0.955
23.975	1.904
24.025	1.612
24.075	1.077
24.125	1.787
24.175	1.904
24.225	1.298
24.275	1.635
24.325	13.413
24.375	39.123
24.425	39.529
24.475	21.077
24.525	2.911
24.575	3.152
24.625	1.254
24.675	1.656
24.725	1.429
24.775	1.818
24.825	1.348
24.875	0.955
24.925	1.650
24.975	0.624
25.025	1.148
25.075	1.394
25.125	0.398
25.175	1.878
25.225	3.006
25.275	5.326
25.325	42.950
25.375	30.619
25.425	70.613
25.475	32.723
57.525	12.330

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57.575	7.587
57.625	2.112
57.675	3.255
57.725	2.490
57.775	2.165
57.825	1.108
57.875	2.141
57.925	2.456
57.975	1.875
58.025	3.007
58.075	2.288
58.125	0.909
58.175	2.980
58.225	2.412
58.275	3.761
58.325	25.824
58.375	36.748
58.425	23.570
58.475	18.248
58.525	7.221
58.575	2.071
58.625	1.712
58.675	1.278
58.725	1.414
58.775	1.870
58.825	1.537
58.875	1.904
58.925	2.989
58.975	2.279
59.025	1.504
59.075	1.307
59.125	2.089
59.175	2.055
59.225	1.826
59.275	4.437
59.325	13.359
59.375	41.110
59.425	58.736
59.475	26.307
59.525	11.352
59.575	4.879
59.625	5.862
59.675	3.367
59.725	2.650
59.775	4.079
59.825	1.668
59.875	2.310

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59.925	1.238
59.975	3.774
60.025	3.677
60.075	1.742
60.125	2.822
60.175	4.864
60.225	4.103
60.275	3.750
60.325	18.054
60.375	31.623
60.425	49.739
60.475	56.723
113.525	6.653
113.575	1.927
113.625	2.838
113.675	2.697
113.725	2.195
113.775	4.236
113.825	2.523
113.875	1.968
113.925	2.426
113.975	2.953
114.025	1.676
114.075	1.976
114.125	1.813
114.175	2.440
114.225	7.942
114.275	11.452
114.325	42.061
114.375	20.163
114.425	13.593
114.475	1.983
114.525	1.683
114.575	2.531
114.625	0.874
114.675	1.279
114.725	0.891
114.775	1.779
114.825	1.186
114.875	1.029
114.925	1.564
114.975	0.950
115.025	1.530
115.075	1.114
115.125	2.208
115.175	3.123
115.225	4.486

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115.275	7.177
115.325	14.172
115.375	54.799
115.425	53.420
115.475	16.011
115.525	12.692
115.575	2.883
115.625	6.251
115.675	4.509
115.725	4.245
115.775	1.283
115.825	4.008
115.875	1.211
115.925	2.114
115.975	7.687
116.025	5.271
116.075	5.578
116.125	4.248
116.175	11.979
116.225	16.277
116.275	30.596
116.325	24.845
116.375	28.284
116.425	54.149
116.475	40.000
236.525	
236.575	23.855
236.625	34.401
236.675	27.422
236.725	35.668
236.775	39.989
236.825	18.757
236.875	23.077
236.925	20.761
236.975	14.650
237.025	36.943
237.075	27.109
237.125	25.586
237.175	42.799
237.225	24.325
237.275	21.429
237.325	30.129
237.375	15.267
237.425	4.597
237.475	48.577
237.525	19.963
237.575	13.238

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237.625	6.730
237.675	7.800
237.725	2.904
237.775	1.428
237.825	2.396
237.875	1.255
237.925	0.555
237.975	1.682
238.025	0.745
238.075	0.906
238.125	0.901
238.175	0.264
238.225	0.953
238.275	0.886
238.325	1.395
238.375	2.556
238.425	2.763
238.475	2.183
238.525	12.890
238.575	14.452
238.625	38.797
238.675	16.933
238.725	6.952
238.775	20.328
238.825	29.472
238.875	37.989
238.925	27.140
238.975	18.731
239.025	17.049
239.075	5.454
239.125	29.410
239.175	29.569
239.225	22.608
239.275	13.847
239.325	15.978
239.375	4.980
239.425	11.111
239.475	34.914

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SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\ReportOutput\a.swz

Start Time: 6/16/2016 3:04:36 PM
End Time: 6/16/2016 3:07:03 PM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 4248.80
        Obtained Intensity (Mg 23.985): 62852.37
        Obtained Intensity (In 114.904): 59263.95
        Obtained Intensity (U 238.05): 123631.92
        Obtained Intensity (Bkgd 220): 0.53
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.020 (=3505.01 / 175287.61)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.005 (=894.29 / 175287.61)
```


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SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\ReportOutput\a.swz

Optimization Status

Start Time: 6/16/2016 3:04:36 PM

Daily Performance Check
        Optimization Settings:
                Method: Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 1
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 4248.80
                Obtained Intensity (Mg 23.985): 62852.37
                Obtained Intensity (In 114.904): 59263.95
                Obtained Intensity (U 238.05): 123631.92
                Obtained Intensity (Bkgd 220): 0.53
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.020 (=3505.01 / 175287.61)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.005 (=894.29 / 175287.61)
[Passed]  Optimum value(s): N/A

End Time: 6/16/2016 3:07:03 PM
```


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Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Thursday, June 16, 2016 15:30:14
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	51024.1	2.3				ug/L		Standard
	Be	9	6.7	43.3				ug/L		Standard
	Al	27	625.0	8.5				ug/L		Standard
	Sc	45	29647.3	3.2				ug/L		Standard
	Ti	47	57.3	8.1				ug/L		Standard
	V	51	1141.9	1.8				ug/L		Standard
	Cr	52	6628.1	1.7				ug/L		Standard
	Cr	53	430.0	9.1				ug/L		Standard
	Mn	55	603.3	5.5				ug/L		Standard
	Co	59	237.3	7.6				ug/L		Standard
	Ni	60	141.0	3.9				ug/L		Standard
	Cu	65	109.0	10.8				ug/L		Standard
	Zn	66	159.0	8.8				ug/L		Standard
>	Ge	72	474053.1	1.2				ug/L		Standard
	As	75	-34.2	89.8				ug/L		Standard
	Se	82	14.4	39.0				ug/L		Standard
	Se-1	77	55.3	3.8				ug/L		Standard
>	Ga	71	50.0	36.1				mg/L		Standard
	Rb	85	20.0	43.3				ug/L		Standard
	Y	89	376601.7	1.2				ug/L		Standard
>	Rh	103	16.7	69.3				ug/L		Standard
	Mo	98	8.0	17.7				ug/L		Standard
	Ag	107	80.7	16.9				ug/L		Standard
	Cd	111	3.0	0.1				mg/L		Standard
	Cd	114	7.5	153.9				ug/L		Standard
>	In	115	524721.8	2.2				ug/L		Standard
	Sn	118	715.0	18.5				ug/L		Standard
	Sb	123	200.9	30.1				ug/L		Standard
	Ba	135	107.7	7.0				ug/L		Standard
	Ce	140	30.0	0.0				ug/L		Standard
>	Tb	159	792236.5	1.3				ug/L		Standard
	Ho	165	6.7	43.3				ug/L		Standard
	Tl	203	9.0	50.9				ug/L		Standard
	Tl	205	0.0					ug/L		Standard
	Pb	206	216.0	6.4				ug/L		Standard
	Pb	207	179.7	5.8				ug/L		Standard
	Pb	208	717.3	4.2				ug/L		Standard
	U	238	3.7	15.7				ug/L		Standard
>	Bi	209	460342.9	1.5				ug/L		Standard

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	Na	23	0.0		mg/L	Standard
	Mg	24	20.0	50.0	mg/L	Standard
	K	39	21.7	26.6	mg/L	Standard
	Ca	43	46.7	27.0	mg/L	Standard
	Fe	54	151.0	18.9	mg/L	Standard
	Fe	57	195.0	11.2	mg/L	Standard
>	**Sc-1**	45	29647.3	3.2	mg/L	Standard
	Cl	35	154151.6	0.9	ug/L	Standard
	Kr	83	3.3	17.3	ug/L	Standard
	Br	81	1606.8	11.7	ug/L	Standard
	P	31	22752.1	1.8	ug/L	Standard
	S	34	5049.2	1.8	ug/L	Standard
	Sr	88	86.7	6.7	ug/L	Standard
	C	12	46.7	24.7	mg/L	Standard
	N	14	0.0		mg/L	Standard
	Hg	202	0.0		mg/L	Standard
	Dy	164	9.8	99.2	mg/L	Standard
	Ho-1	165	6.7	43.3	mg/L	Standard
	Er	166	3.3	173.2	mg/L	Standard
	I	127	841.7	10.5	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Blank
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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Thursday, June 16, 2016 15:33:26
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61336.5	17.7				ug/L	51024	Standard
	Be	9	5.0	100.0				ug/L	7	Standard
	Al	27	221.7	31.9				ug/L	625	Standard
	Sc	45	28802.5	9.9				ug/L	29647	Standard
	Ti	47	62.3	33.0				ug/L	57	Standard
	V	51	580.8	14.0				ug/L	1142	Standard
	Cr	52	2885.9	3.7				ug/L	6628	Standard
	Cr	53	203.3	7.5				ug/L	430	Standard
	Mn	55	613.3	37.8				ug/L	603	Standard
	Co	59	262.7	10.4				ug/L	237	Standard
	Ni	60	108.3	5.6				ug/L	141	Standard
	Cu	65	79.7	10.1				ug/L	109	Standard
	Zn	66	145.3	10.1				ug/L	159	Standard
>	**Ge**	72	493610.1	8.2				ug/L	474053	Standard
	As	75	72.1	70.6				ug/L	-34	Standard
	Se	82	46.9	37.4				ug/L	14	Standard
	Se-1	77	47.7	12.6				ug/L	55	Standard
>	**Ga**	71	35.0	37.8				mg/L	50	Standard
	Rb	85	20.0	0.0				ug/L	20	Standard
	Y	89	401482.6	6.9				ug/L	376602	Standard
>	**Rh**	103	11.7	107.9				ug/L	17	Standard
	Mo	98	7.8	54.6				ug/L	8	Standard
	Ag	107	82.7	18.8				ug/L	81	Standard
	Cd	111	3.7	15.8				mg/L	3	Standard
	Cd	114	6.4	91.9				ug/L	7	Standard
>	**In**	115	555148.6	6.0				ug/L	524722	Standard
	Sn	118	256.7	2.2				ug/L	715	Standard
	Sb	123	44.3	25.6				ug/L	201	Standard
	Ba	135	17.0	5.9				ug/L	108	Standard
	Ce	140	18.3	15.7				ug/L	30	Standard
>	**Tb**	159	901198.6	13.9				ug/L	792236	Standard
	Ho	165	1.7	173.2				ug/L	7	Standard
	Tl	203	10.0	75.5				ug/L	9	Standard
	Tl	205	8.3	124.9				ug/L	0	Standard
	Pb	206	256.7	23.8				ug/L	216	Standard
	Pb	207	208.0	18.4				ug/L	180	Standard
	Pb	208	827.7	17.4				ug/L	717	Standard
	U	238	2.7	21.7				ug/L	4	Standard
>	**Bi**	209	546132.2	18.5				ug/L	460343	Standard

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	Na	23	0.0		mg/L	0	Standard
	Mg	24	28.3	10.2	mg/L	20	Standard
	K	39	15.0	33.3	mg/L	22	Standard
	Ca	43	50.0	17.3	mg/L	47	Standard
	Fe	54	136.0	58.3	mg/L	151	Standard
	Fe	57	195.0	23.5	mg/L	195	Standard
>	**Sc-1**	45	28802.5	9.9	mg/L	29647	Standard
	Cl	35	67826.3	3.7	ug/L	154152	Standard
	Kr	83	1.7	34.6	ug/L	3	Standard
	Br	81	586.7	16.8	ug/L	1607	Standard
	P	31	15342.0	42.1	ug/L	22752	Standard
	S	34	2116.8	1.5	ug/L	5049	Standard
	Sr	88	106.7	39.0	ug/L	87	Standard
	C	12	23.3	24.7	mg/L	47	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	3.3	173.2	mg/L	0	Standard
	Dy	164	9.5	5.0	mg/L	10	Standard
	Ho-1	165	1.7	173.2	mg/L	7	Standard
	Er	166	10.0	100.0	mg/L	3	Standard
	I	127	316.7	10.7	mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Thursday, June 16, 2016 15:36:37
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48482.4	0.7				ug/L	51024	Standard
	Be	9	56.7	51.7				ug/L	7	Standard
	Al	27	8083.8	2.1				ug/L	625	Standard
	Sc	45	30706.1	1.7				ug/L	29647	Standard
	Ti	47	79.3	15.6				ug/L	57	Standard
	V	51	1543.2	4.3				ug/L	1142	Standard
	Cr	52	7153.0	1.0				ug/L	6628	Standard
	Cr	53	445.0	12.2				ug/L	430	Standard
	Mn	55	1041.0	0.8				ug/L	603	Standard
	Co	59	583.0	7.0				ug/L	237	Standard
	Ni	60	245.0	4.3				ug/L	141	Standard
	Cu	65	217.0	8.3				ug/L	109	Standard
	Zn	66	310.7	2.1				ug/L	159	Standard
>	**Ge**	72	471168.8	0.1				ug/L	474053	Standard
	As	75	27.4	88.1				ug/L	-34	Standard
	Se	82	24.1	10.8				ug/L	14	Standard
	Se-1	77	60.7	6.2				ug/L	55	Standard
>	**Ga**	71	60.0	28.9				mg/L	50	Standard
	Rb	85	21.7	26.6				ug/L	20	Standard
	Y	89	408481.5	2.2				ug/L	376602	Standard
>	**Rh**	103	23.3	24.7				ug/L	17	Standard
	Mo	98	258.4	4.9				ug/L	8	Standard
	Ag	107	385.7	3.9				ug/L	81	Standard
	Cd	111	107.2	4.8				mg/L	3	Standard
	Cd	114	267.5	8.7				ug/L	7	Standard
>	**In**	115	544133.0	1.6				ug/L	524722	Standard
	Sn	118	778.4	8.1				ug/L	715	Standard
	Sb	123	293.5	11.5				ug/L	201	Standard
	Ba	135	202.3	5.5				ug/L	108	Standard
	Ce	140	46.7	80.4				ug/L	30	Standard
>	**Tb**	159	788761.6	1.1				ug/L	792236	Standard
	Ho	165	18.3	56.8				ug/L	7	Standard
	Tl	203	392.3	6.9				ug/L	9	Standard
	Tl	205	366.7	20.5				ug/L	0	Standard
	Pb	206	479.7	4.5				ug/L	216	Standard
	Pb	207	426.3	6.0				ug/L	180	Standard
	Pb	208	1798.4	0.2				ug/L	717	Standard
	U	238	349.3	5.8				ug/L	4	Standard
>	**Bi**	209	449760.6	0.7				ug/L	460343	Standard

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Na	23	3.3	86.6	mg/L	0	Standard
Mg	24	38.3	27.2	mg/L	20	Standard
K	39	31.7	24.1	mg/L	22	Standard
Ca	43	58.3	21.6	mg/L	47	Standard
Fe	54	152.6	18.2	mg/L	151	Standard
Fe	57	218.3	10.3	mg/L	195	Standard
> **Sc-1**	45	30706.1	1.7	mg/L	29647	Standard
Cl	35	159978.9	1.3	ug/L	154152	Standard
Kr	83	1.3	43.3	ug/L	3	Standard
Br	81	1600.1	10.1	ug/L	1607	Standard
P	31	22997.4	1.5	ug/L	22752	Standard
S	34	5302.6	1.3	ug/L	5049	Standard
Sr	88	58.3	27.6	ug/L	87	Standard
C	12	23.3	65.5	mg/L	47	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	0.0		mg/L	0	Standard
Dy	164	2.7	234.8	mg/L	10	Standard
Ho-1	165	18.3	56.8	mg/L	7	Standard
Er	166	13.3	86.6	mg/L	3	Standard
I	127	928.4	11.9	mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Thursday, June 16, 2016 15:39:49
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50565.9	1.8				ug/L	51024	Standard
	Be	9	42044.9	2.0	**50.0000**	1.656	3.3	ug/L	7	Standard
	Al	27	7094492.1	1.7	**50.0000**	0.240	0.5	ug/L	625	Standard
	Sc	45	29363.4	3.4				ug/L	29647	Standard
	Ti	47	29759.2	1.6	**100.0000**	1.722	1.7	ug/L	57	Standard
	V	51	356139.2	0.8	**50.0000**	0.331	0.7	ug/L	1142	Standard
	Cr	52	369550.1	0.3	**50.0000**	0.347	0.7	ug/L	6628	Standard
	Cr	53	46382.6	2.2	**50.0000**	0.884	1.8	ug/L	430	Standard
	Mn	55	295860.1	0.8	**50.0000**	0.768	1.5	ug/L	603	Standard
	Co	59	321303.4	0.4	**50.0000**	0.569	1.1	ug/L	237	Standard
	Ni	60	95975.7	0.7	**50.0000**	0.220	0.4	ug/L	141	Standard
	Cu	65	93739.7	0.2	**50.0000**	0.238	0.5	ug/L	109	Standard
	Zn	66	55396.4	0.5	**50.0000**	0.181	0.4	ug/L	159	Standard
>	**Ge**	72	471316.6	0.7				ug/L	474053	Standard
	As	75	55401.6	1.7	**50.0000**	1.157	2.3	ug/L	-34	Standard
	Se	82	5512.4	2.0	**50.0000**	1.370	2.7	ug/L	14	Standard
	Se-1	77	3915.5	0.9	**50.0000**	0.786	1.6	ug/L	55	Standard
>	**Ga**	71	120.0	8.3				mg/L	50	Standard
	Rb	85	818.4	2.5				ug/L	20	Standard
	Y	89	383423.6	1.9				ug/L	376602	Standard
>	**Rh**	103	26.7	39.0				ug/L	17	Standard
	Mo	98	238525.6	1.7	**100.0000**	2.248	2.2	ug/L	8	Standard
	Ag	107	300586.5	1.0	**50.0000**	0.931	1.9	ug/L	81	Standard
	Cd	111	96734.5	0.7	**50.0000**	0.446	0.9	mg/L	3	Standard
	Cd	114	239222.4	0.8	**50.0000**	0.320	0.6	ug/L	7	Standard
>	**In**	115	516883.8	1.3				ug/L	524722	Standard
	Sn	118	269170.5	1.9	**50.0000**	0.357	0.7	ug/L	715	Standard
	Sb	123	219395.1	0.6	**50.0000**	0.615	1.2	ug/L	201	Standard
	Ba	135	90538.0	0.9	**50.0000**	0.240	0.5	ug/L	108	Standard
	Ce	140	98.3	33.1				ug/L	30	Standard
>	**Tb**	159	780626.5	1.3				ug/L	792236	Standard
	Ho	165	5.0	0.0				ug/L	7	Standard
	Tl	203	372504.5	0.5	**50.0000**	0.339	0.7	ug/L	9	Standard
	Tl	205	316386.0	0.8	**50.0000**	0.414	0.8	ug/L	0	Standard
	Pb	206	225338.3	0.7	**50.0000**	0.467	0.9	ug/L	216	Standard
	Pb	207	205697.6	0.7	**50.0000**	0.491	1.0	ug/L	180	Standard
	Pb	208	831229.4	0.5	**50.0000**	0.375	0.7	ug/L	717	Standard
	U	238	300295.4	0.8	**50.0000**	0.316	0.6	ug/L	4	Standard
>	**Bi**	209	447053.1	1.0				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.0000**	10.302	206.0	mg/L	0	Standard
Mg	24	3705.5	6.1	**5.0000**	0.367	7.3	mg/L	20	Standard
K	39	671.7	7.3	**5.0000**	0.265	5.3	mg/L	22	Standard
Ca	43	63.3	43.5	**5.0000**	18.565	371.3	mg/L	47	Standard
Fe	54	6334.8	3.3	**5.0000**	0.319	6.4	mg/L	151	Standard
Fe	57	1861.8	5.0	**5.0000**	0.466	9.3	mg/L	195	Standard
> **Sc-1**	45	29363.4	3.4				mg/L	29647	Standard
Cl	35	161698.3	1.0				ug/L	154152	Standard
Kr	83	2.7	21.7				ug/L	3	Standard
Br	81	1496.7	10.1				ug/L	1607	Standard
P	31	25361.3	5.9				ug/L	22752	Standard
S	34	5722.8	8.3				ug/L	5049	Standard
Sr	88	76.7	13.6				ug/L	87	Standard
C	12	36.7	41.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.3	126.2				mg/L	10	Standard
Ho-1	165	5.0	0.0				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	6142.9	1.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Thursday, June 16, 2016 15:43:00
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50435.5	1.6				ug/L	51024	Standard
	Be	9	82346.5	1.2	**99.0819**	1.677	1.7	ug/L	7	Standard
	Al	27	13992181.1	1.0	**99.4387**	0.736	0.7	ug/L	625	Standard
	Sc	45	30006.4	2.8				ug/L	29647	Standard
	Ti	47	58505.4	1.0	**200.8925**	5.085	2.5	ug/L	57	Standard
	V	51	687977.3	0.6	**99.6029**	0.871	0.9	ug/L	1142	Standard
	Cr	52	725902.3	0.9	**100.8293**	2.361	2.3	ug/L	6628	Standard
	Cr	53	91049.5	2.4	**100.5343**	1.118	1.1	ug/L	430	Standard
	Mn	55	576461.1	0.2	**100.0121**	1.485	1.5	ug/L	603	Standard
	Co	59	620596.3	0.4	**99.5359**	1.816	1.8	ug/L	237	Standard
	Ni	60	187359.0	1.0	**100.0839**	1.180	1.2	ug/L	141	Standard
	Cu	65	182121.9	1.8	**99.8326**	0.584	0.6	ug/L	109	Standard
	Zn	66	107693.4	1.7	**99.9466**	0.229	0.2	ug/L	159	Standard
>	**Ge**	72	459665.5	1.5				ug/L	474053	Standard
	As	75	106571.4	0.3	**99.2933**	1.200	1.2	ug/L	-34	Standard
	Se	82	10745.6	0.0	**100.0548**	1.484	1.5	ug/L	14	Standard
	Se-1	77	7418.5	2.3	**98.9131**	3.363	3.4	ug/L	55	Standard
>	**Ga**	71	103.3	32.2				mg/L	50	Standard
	Rb	85	1393.4	13.3				ug/L	20	Standard
	Y	89	377187.2	0.3				ug/L	376602	Standard
>	**Rh**	103	38.3	45.8				ug/L	17	Standard
	Mo	98	461069.8	0.9	**194.9574**	1.968	1.0	ug/L	8	Standard
	Ag	107	583703.5	0.6	**97.7109**	0.535	0.5	ug/L	81	Standard
	Cd	111	192033.7	0.5	**98.8117**	0.100	0.1	mg/L	3	Standard
	Cd	114	474593.2	1.8	**98.7794**	1.465	1.5	ug/L	7	Standard
>	**In**	115	525374.3	0.4				ug/L	524722	Standard
	Sn	118	532965.7	1.1	**98.7299**	1.022	1.0	ug/L	715	Standard
	Sb	123	428817.2	1.1	**98.0404**	1.345	1.4	ug/L	201	Standard
	Ba	135	179232.3	1.1	**98.7001**	1.049	1.1	ug/L	108	Standard
	Ce	140	138.3	11.0				ug/L	30	Standard
>	**Tb**	159	777561.5	1.7				ug/L	792236	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	728897.3	1.0	**99.5734**	0.952	1.0	ug/L	9	Standard
	Tl	205	620686.4	2.0	**99.7030**	1.645	1.6	ug/L	0	Standard
	Pb	206	440868.6	1.2	**99.5956**	1.751	1.8	ug/L	216	Standard
	Pb	207	400234.3	1.0	**99.3185**	1.537	1.5	ug/L	180	Standard
	Pb	208	1631531.3	1.4	**99.7532**	0.911	0.9	ug/L	717	Standard
	U	238	597917.2	1.3	**100.4447**	0.594	0.6	ug/L	4	Standard
>	**Bi**	209	441150.8	1.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	7450.2	2.2	**9.9373**	0.220	2.2	mg/L	20	Standard
K	39	1375.1	15.8	**10.1223**	1.524	15.1	mg/L	22	Standard
Ca	43	130.0	15.4	**16.7571**	3.894	23.2	mg/L	47	Standard
Fe	54	12357.9	4.2	**9.8157**	0.430	4.4	mg/L	151	Standard
Fe	57	3355.4	5.1	**9.6321**	0.814	8.4	mg/L	195	Standard
Sc-1	45	30006.4	2.8				mg/L	29647	Standard
Cl	35	163219.8	1.1				ug/L	154152	Standard
Kr	83	2.3	99.0				ug/L	3	Standard
Br	81	1446.7	4.9				ug/L	1607	Standard
P	31	26878.8	3.1				ug/L	22752	Standard
S	34	5969.5	3.7				ug/L	5049	Standard
Sr	88	53.3	21.7				ug/L	87	Standard
C	12	56.7	36.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	16.2	33.1				mg/L	10	Standard
Ho-1	165	8.3	69.3				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	6194.6	1.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998
Corr. Coef.	Ca	43	Correlation coefficient < 0.998

Sample ID: Standard 4
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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Thursday, June 16, 2016 15:46:13
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48900.5	1.4				ug/L	51024	Standard
	Be	9	40029.5	1.7	**49.6695**	1.322	2.7	ug/L	7	Standard
	Al	27	6807595.1	1.1	**49.8931**	0.613	1.2	ug/L	625	Standard
	Sc	45	29859.4	2.2				ug/L	29647	Standard
	Ti	47	30234.8	0.9	**101.5179**	0.557	0.5	ug/L	57	Standard
	V	51	345968.9	0.4	**48.9414**	0.135	0.3	ug/L	1142	Standard
	Cr	52	361268.5	1.4	**48.6339**	0.583	1.2	ug/L	6628	Standard
	Cr	53	44796.1	1.2	**48.2008**	0.799	1.7	ug/L	430	Standard
	Mn	55	290150.7	1.7	**49.2058**	0.854	1.7	ug/L	603	Standard
	Co	59	308353.8	2.9	**48.3820**	1.390	2.9	ug/L	237	Standard
	Ni	60	93264.8	0.6	**48.7266**	0.581	1.2	ug/L	141	Standard
	Cu	65	92121.6	1.1	**49.4021**	0.815	1.6	ug/L	109	Standard
	Zn	66	55388.4	1.1	**50.2077**	0.826	1.6	ug/L	159	Standard
>	**Ge**	72	469579.4	0.6				ug/L	474053	Standard
	As	75	54025.0	1.0	**49.2819**	0.719	1.5	ug/L	-34	Standard
	Se	82	5305.3	2.4	**48.2613**	1.119	2.3	ug/L	14	Standard
	Se-1	77	3733.1	1.8	**48.3299**	0.600	1.2	ug/L	55	Standard
>	**Ga**	71	121.7	8.6				mg/L	50	Standard
	Rb	85	516.7	11.5				ug/L	20	Standard
	Y	89	375718.4	2.6				ug/L	376602	Standard
>	**Rh**	103	33.3	67.6				ug/L	17	Standard
	Mo	98	242646.9	2.2	**104.6905**	2.943	2.8	ug/L	8	Standard
	Ag	107	289971.5	0.6	**49.5201**	0.189	0.4	ug/L	81	Standard
	Cd	111	93046.4	0.5	**48.8483**	0.170	0.3	mg/L	3	Standard
	Cd	114	230715.9	0.2	**48.9961**	0.373	0.8	ug/L	7	Standard
>	**In**	115	514920.2	0.6				ug/L	524722	Standard
	Sn	118	284710.7	1.9	**53.7768**	1.357	2.5	ug/L	715	Standard
	Sb	123	208688.7	0.3	**48.6728**	0.184	0.4	ug/L	201	Standard
	Ba	135	85799.9	0.5	**48.1785**	0.093	0.2	ug/L	108	Standard
	Ce	140	120.0	21.7				ug/L	30	Standard
>	**Tb**	159	776088.7	0.5				ug/L	792236	Standard
	Ho	165	16.7	45.8				ug/L	7	Standard
	Tl	203	358537.1	1.1	**48.0462**	0.455	0.9	ug/L	9	Standard
	Tl	205	307552.3	1.7	**48.4612**	0.738	1.5	ug/L	0	Standard
	Pb	206	224129.9	0.7	**49.6400**	0.561	1.1	ug/L	216	Standard
	Pb	207	195303.0	0.4	**47.5147**	0.574	1.2	ug/L	180	Standard
	Pb	208	802915.7	0.1	**48.1309**	0.507	1.1	ug/L	717	Standard
	U	238	288986.2	0.3	**47.6224**	0.342	0.7	ug/L	4	Standard
>	**Bi**	209	449693.2	1.0				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3802.1	3.0	**5.0768**	0.262	5.2	mg/L	20	Standard
K	39	675.0	17.5	**4.8950**	0.999	20.4	mg/L	22	Standard
Ca	43	53.3	10.8	**-0.7985**	1.553	194.4	mg/L	47	Standard
Fe	54	5993.9	4.1	**4.7227**	0.110	2.3	mg/L	151	Standard
Fe	57	1776.8	6.7	**4.8135**	0.313	6.5	mg/L	195	Standard
> **Sc-1**	45	29859.4	2.2				mg/L	29647	Standard
Cl	35	159749.2	1.5				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	1490.1	3.7				ug/L	1607	Standard
P	31	25977.3	1.4				ug/L	22752	Standard
S	34	5996.2	1.4				ug/L	5049	Standard
Sr	88	60.0	22.0				ug/L	87	Standard
C	12	80.0	66.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	13.3	43.3				mg/L	10	Standard
Ho-1	165	16.7	45.8				mg/L	7	Standard
Er	166	0.0					mg/L	3	Standard
I	127	935.0	3.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	99.339		
Al	27	99.786		
Sc	45			
Ti	47	101.518		
V	51	97.883		
Cr	52	97.268		
Cr	53			
Mn	55	98.412		
Co	59	96.764		
Ni	60	97.453		
Cu	65	98.804		
Zn	66	100.415		
> Ge	72		99.056	
As	75	98.564		
Se	82	96.523		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	104.691		
Ag	107	99.040		
Cd	111	97.697		
Cd	114			
> In	115		98.132	
Sn	118	107.554		
Sb	123	97.346		
Ba	135	96.357		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	96.092		
Tl	205			
Pb	206	99.280		
Pb	207	95.029		
Pb	208	96.262		
U	238	95.245		
> Bi	209		97.687	
Na	23	209.044		
Mg	24	101.535		
K	39	97.901		
Ca	43	-15.971		
Fe	54	94.453		
Fe	57	96.269		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	K	39	
QC Std 1	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Thursday, June 16, 2016 15:49:26
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48778.4	0.5				ug/L	51024	Standard
	Be	9	35.0	28.6	**0.0225**	0.013	56.3	ug/L	7	Standard
	Al	27	2908.6	43.3	**0.0116**	0.009	80.6	ug/L	625	Standard
	Sc	45	29670.7	2.3				ug/L	29647	Standard
	Ti	47	66.7	16.0	**0.0643**	0.036	55.5	ug/L	57	Standard
	V	51	1072.6	10.6	**-0.0119**	0.017	142.0	ug/L	1142	Standard
	Cr	52	6126.6	0.6	**-0.0646**	0.004	6.2	ug/L	6628	Standard
	Cr	53	356.7	16.1	**-0.0336**	0.065	194.5	ug/L	430	Standard
	Mn	55	698.3	6.8	**-0.0044**	0.009	209.1	ug/L	603	Standard
	Co	59	364.0	15.3	**0.0175**	0.009	54.1	ug/L	237	Standard
	Ni	60	154.7	17.5	**0.0055**	0.015	280.7	ug/L	141	Standard
	Cu	65	145.3	17.7	**0.0141**	0.015	104.9	ug/L	109	Standard
	Zn	66	148.7	11.8	**-0.0929**	0.016	17.2	ug/L	159	Standard
>	**Ge**	72	457105.8	0.9				ug/L	474053	Standard
	As	75	54.4	52.5	**0.0762**	0.027	35.8	ug/L	-34	Standard
	Se	82	25.8	22.3	**0.0738**	0.056	76.3	ug/L	14	Standard
	Se-1	77	51.3	21.0	**-0.0508**	0.151	296.8	ug/L	55	Standard
>	**Ga**	71	53.3	14.3				mg/L	50	Standard
	Rb	85	23.3	65.5				ug/L	20	Standard
	Y	89	386808.9	0.9				ug/L	376602	Standard
>	**Rh**	103	15.0	88.2				ug/L	17	Standard
	Mo	98	421.2	15.5	**0.1736**	0.026	15.2	ug/L	8	Standard
	Ag	107	183.0	26.0	**0.0185**	0.008	41.8	ug/L	81	Standard
	Cd	111	25.9	54.3	**0.0101**	0.007	70.6	mg/L	3	Standard
	Cd	114	76.1	40.9	**0.0121**	0.006	52.7	ug/L	7	Standard
>	**In**	115	521804.6	1.0				ug/L	524722	Standard
	Sn	118	1013.4	16.6	**0.0999**	0.033	32.7	ug/L	715	Standard
	Sb	123	1969.5	19.3	**0.4392**	0.092	20.9	ug/L	201	Standard
	Ba	135	122.3	18.3	**0.0101**	0.012	117.5	ug/L	108	Standard
	Ce	140	26.7	10.8				ug/L	30	Standard
>	**Tb**	159	767907.3	1.3				ug/L	792236	Standard
	Ho	165	6.7	173.2				ug/L	7	Standard
	Tl	203	152.0	42.0	**0.0183**	0.009	47.5	ug/L	9	Standard
	Tl	205	141.7	44.8	**0.0150**	0.010	67.4	ug/L	0	Standard
	Pb	206	285.3	8.6	**0.0085**	0.005	61.9	ug/L	216	Standard
	Pb	207	228.0	15.9	**0.0031**	0.009	284.7	ug/L	180	Standard
	Pb	208	1006.0	13.7	**0.0040**	0.008	208.4	ug/L	717	Standard
	U	238	107.3	30.4	**0.0105**	0.005	51.5	ug/L	4	Standard
>	**Bi**	209	438481.4	0.6				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	33.3	31.2	**-0.0002**	0.013	6870.4	mg/L	20	Standard
K	39	25.0	20.0	**-0.0379**	0.034	91.0	mg/L	22	Standard
Ca	43	46.7	37.6	**-2.2322**	4.367	195.6	mg/L	47	Standard
Fe	54	197.5	14.9	**0.0458**	0.026	57.7	mg/L	151	Standard
Fe	57	191.7	16.8	**-0.0529**	0.109	205.7	mg/L	195	Standard
Sc-1	45	29670.7	2.3				mg/L	29647	Standard
Cl	35	161750.4	2.1				ug/L	154152	Standard
Kr	83	2.7	21.7				ug/L	3	Standard
Br	81	1533.4	11.2				ug/L	1607	Standard
P	31	25499.8	1.3				ug/L	22752	Standard
S	34	5937.8	4.1				ug/L	5049	Standard
Sr	88	66.7	35.4				ug/L	87	Standard
C	12	33.3	75.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.0	187.0				mg/L	10	Standard
Ho-1	165	6.7	173.2				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	1050.0	3.1				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.425	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.444
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.251
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Na	23	
QC Std 2	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Thursday, June 16, 2016 15:52:39
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	47293.7	2.4				ug/L	51024	Standard
	Be	9	145.0	20.7	**0.1655**	0.042	25.4	ug/L	7	Standard
	Al	27	1435.1	31.2	**0.0012**	0.004	314.1	ug/L	625	Standard
	Sc	45	28264.7	3.0				ug/L	29647	Standard
	Ti	47	62.3	15.2	**0.0569**	0.033	58.3	ug/L	57	Standard
	V	51	3460.4	3.6	**0.3540**	0.018	5.2	ug/L	1142	Standard
	Cr	52	11315.9	0.6	**0.7230**	0.033	4.5	ug/L	6628	Standard
	Cr	53	1030.0	4.2	**0.7573**	0.039	5.1	ug/L	430	Standard
	Mn	55	3199.7	2.3	**0.4520**	0.007	1.5	ug/L	603	Standard
	Co	59	2520.2	3.3	**0.3798**	0.019	5.0	ug/L	237	Standard
	Ni	60	2902.6	0.9	**1.5376**	0.034	2.2	ug/L	141	Standard
	Cu	65	1498.7	1.3	**0.7897**	0.019	2.5	ug/L	109	Standard
	Zn	66	7175.7	0.5	**6.7167**	0.069	1.0	ug/L	159	Standard
>	**Ge**	72	441612.7	1.4				ug/L	474053	Standard
	As	75	399.1	9.4	**0.4120**	0.037	8.9	ug/L	-34	Standard
	Se	82	50.3	13.1	**0.3188**	0.059	18.5	ug/L	14	Standard
	Se-1	77	79.7	18.1	**0.3705**	0.214	57.7	ug/L	55	Standard
>	**Ga**	71	46.7	22.3				mg/L	50	Standard
	Rb	85	16.7	96.4				ug/L	20	Standard
	Y	89	357595.4	2.3				ug/L	376602	Standard
>	**Rh**	103	11.7	49.5				ug/L	17	Standard
	Mo	98	140.4	6.4	**0.0562**	0.004	6.6	ug/L	8	Standard
	Ag	107	2290.2	1.1	**0.3863**	0.009	2.4	ug/L	81	Standard
	Cd	111	448.4	2.4	**0.2366**	0.001	0.5	mg/L	3	Standard
	Cd	114	1122.4	5.7	**0.2391**	0.015	6.2	ug/L	7	Standard
>	**In**	115	505402.5	2.0				ug/L	524722	Standard
	Sn	118	471.7	16.6	**0.0014**	0.014	1036.4	ug/L	715	Standard
	Sb	123	1900.7	8.3	**0.4366**	0.030	6.9	ug/L	201	Standard
	Ba	135	1270.4	2.8	**0.6703**	0.033	4.9	ug/L	108	Standard
	Ce	140	16.7	62.4				ug/L	30	Standard
>	**Tb**	159	761635.7	0.6				ug/L	792236	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	619.3	5.8	**0.0818**	0.004	5.4	ug/L	9	Standard
	Tl	205	548.3	4.7	**0.0800**	0.003	4.2	ug/L	0	Standard
	Pb	206	1103.4	2.4	**0.1922**	0.004	2.3	ug/L	216	Standard
	Pb	207	900.7	2.9	**0.1691**	0.006	3.6	ug/L	180	Standard
	Pb	208	3946.5	2.5	**0.1828**	0.006	3.5	ug/L	717	Standard
	U	238	2295.5	1.9	**0.3769**	0.006	1.5	ug/L	4	Standard
>	**Bi**	209	442529.2	1.0				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	23.3	12.4	**-0.0120**	0.004	34.9	mg/L	20	Standard
K	39	20.0	25.0	**-0.0675**	0.043	63.8	mg/L	22	Standard
Ca	43	46.7	52.9	**-1.7510**	6.062	346.2	mg/L	47	Standard
Fe	54	119.0	25.4	**-0.0137**	0.024	175.0	mg/L	151	Standard
Fe	57	175.0	35.1	**-0.0751**	0.210	280.1	mg/L	195	Standard
Sc-1	45	28264.7	3.0				mg/L	29647	Standard
Cl	35	154177.8	0.4				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	1336.7	4.9				ug/L	1607	Standard
P	31	17880.5	2.1				ug/L	22752	Standard
S	34	5776.1	4.1				ug/L	5049	Standard
Sr	88	76.7	43.4				ug/L	87	Standard
C	12	16.7	69.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.4	191.0				mg/L	10	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	3	Standard
I	127	743.4	2.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	82.727		
Al	27	0.117		
Sc	45			
Ti	47			
V	51	88.501		
Cr	52	90.378		
Cr	53			
Mn	55	90.403		
Co	59	94.938		
Ni	60	96.097		
Cu	65	98.718		
Zn	66	107.467		
> Ge	72		93.157	
As	75	103.009		
Se	82	79.699		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	96.587		
Cd	111	98.585		
Cd	114			
> In	115			96.318
Sn	118			
Sb	123	109.162		
Ba	135	89.380		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	102.188		
Tl	205			
Pb	206			
Pb	207			
Pb	208	91.390		
U	238	94.214		
> Bi	209			96.130
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Thursday, June 16, 2016 15:57:46
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	49537.5	0.6				ug/L	51024	Standard
	Be	9	39588.3	1.2	**48.4820**	0.764	1.6	ug/L	7	Standard
	Al	27	6811607.5	1.0	**49.2765**	0.287	0.6	ug/L	625	Standard
	Sc	45	29944.6	0.9				ug/L	29647	Standard
	Ti	47	30600.5	1.8	**105.9033**	0.546	0.5	ug/L	57	Standard
	V	51	333819.4	1.0	**48.6741**	0.557	1.1	ug/L	1142	Standard
	Cr	52	362624.9	0.8	**50.3521**	0.653	1.3	ug/L	6628	Standard
	Cr	53	44669.1	0.6	**49.5578**	1.018	2.1	ug/L	430	Standard
	Mn	55	295010.7	1.9	**51.5679**	0.147	0.3	ug/L	603	Standard
	Co	59	304256.6	2.3	**49.2031**	0.778	1.6	ug/L	237	Standard
	Ni	60	92980.9	2.3	**50.0643**	0.335	0.7	ug/L	141	Standard
	Cu	65	90826.1	1.2	**50.2022**	0.411	0.8	ug/L	109	Standard
	Zn	66	53553.2	3.1	**50.0191**	0.561	1.1	ug/L	159	Standard
>	Ge	72	455630.4	2.0				ug/L	474053	Standard
	As	75	53060.3	1.3	**49.8858**	0.388	0.8	ug/L	-34	Standard
	Se	82	5361.3	1.9	**50.2739**	0.522	1.0	ug/L	14	Standard
	Se-1	77	3719.8	1.8	**49.6698**	1.476	3.0	ug/L	55	Standard
>	Ga	71	106.7	19.5				mg/L	50	Standard
	Rb	85	516.7	9.1				ug/L	20	Standard
	Y	89	378420.4	2.1				ug/L	376602	Standard
>	Rh	103	21.7	74.2				ug/L	17	Standard
	Mo	98	235943.4	1.8	**99.9874**	3.042	3.0	ug/L	8	Standard
	Ag	107	287193.3	1.4	**48.1797**	1.433	3.0	ug/L	81	Standard
	Cd	111	93247.5	0.8	**48.0828**	0.885	1.8	mg/L	3	Standard
	Cd	114	229861.4	1.2	**47.9476**	1.147	2.4	ug/L	7	Standard
>	In	115	524337.5	1.6				ug/L	524722	Standard
	Sn	118	280407.9	1.2	**52.0144**	1.090	2.1	ug/L	715	Standard
	Sb	123	204641.1	2.4	**46.8900**	1.860	4.0	ug/L	201	Standard
	Ba	135	86406.7	0.9	**47.6572**	1.015	2.1	ug/L	108	Standard
	Ce	140	135.0	7.4				ug/L	30	Standard
>	Tb	159	786784.4	0.3				ug/L	792236	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	354843.5	0.6	**47.8254**	0.499	1.0	ug/L	9	Standard
	Tl	205	306407.3	0.5	**48.5592**	0.423	0.9	ug/L	0	Standard
	Pb	206	218264.7	1.4	**48.6127**	0.167	0.3	ug/L	216	Standard
	Pb	207	191093.3	1.2	**46.7522**	0.112	0.2	ug/L	180	Standard
	Pb	208	804010.8	0.5	**48.4716**	0.281	0.6	ug/L	717	Standard
	U	238	288392.8	0.3	**47.7978**	0.457	1.0	ug/L	4	Standard
>	Bi	209	447132.2	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3715.5	2.1	**4.9417**	0.061	1.2	mg/L	20	Standard
K	39	701.7	9.7	**5.0672**	0.500	9.9	mg/L	22	Standard
Ca	43	61.7	24.8	**1.0552**	3.413	323.4	mg/L	47	Standard
Fe	54	6212.5	1.3	**4.8866**	0.105	2.2	mg/L	151	Standard
Fe	57	1778.4	8.4	**4.8076**	0.510	10.6	mg/L	195	Standard
> **Sc-1**	45	29944.6	0.9				mg/L	29647	Standard
Cl	35	161455.3	2.4				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	1416.7	8.8				ug/L	1607	Standard
P	31	25623.3	0.9				ug/L	22752	Standard
S	34	5979.5	3.9				ug/L	5049	Standard
Sr	88	73.3	41.7				ug/L	87	Standard
C	12	33.3	69.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.0	37.7				mg/L	10	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	1055.0	6.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	96.964		
Al	27	98.553		
Sc	45			
Ti	47	105.903		
V	51	97.348		
Cr	52	100.704		
Cr	53			
Mn	55	103.136		
Co	59	98.406		
Ni	60	100.129		
Cu	65	100.404		
Zn	66	100.038		
> Ge	72		96.114	
As	75	99.772		
Se	82	100.548		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	99.987		
Ag	107	96.359		
Cd	111	96.166		
Cd	114			
> In	115			99.927
Sn	118	104.029		
Sb	123	93.780		
Ba	135	95.314		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	95.651		
Tl	205			
Pb	206	97.225		
Pb	207	93.504		
Pb	208	96.943		
U	238	95.596		
> Bi	209			97.130
Na	23	209.044		
Mg	24	98.834		
K	39	101.344		
Ca	43	21.103		
Fe	54	97.732		
Fe	57	96.152		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Thursday, June 16, 2016 16:03:55
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48694.8	0.2				ug/L	51024	Standard
	Be	9	11.7	24.7	**-0.0065**	0.004	55.1	ug/L	7	Standard
	Al	27	941.7	10.9	**-0.0028**	0.001	26.9	ug/L	625	Standard
	Sc	45	29877.8	0.9				ug/L	29647	Standard
	Ti	47	54.3	5.3	**0.0224**	0.010	44.8	ug/L	57	Standard
	V	51	957.2	10.4	**-0.0283**	0.014	48.1	ug/L	1142	Standard
	Cr	52	6138.9	3.0	**-0.0600**	0.025	41.4	ug/L	6628	Standard
	Cr	53	340.0	7.8	**-0.0510**	0.030	59.6	ug/L	430	Standard
	Mn	55	634.3	2.6	**-0.0152**	0.003	19.9	ug/L	603	Standard
	Co	59	238.0	8.6	**-0.0027**	0.004	132.9	ug/L	237	Standard
	Ni	60	130.0	7.3	**-0.0077**	0.005	63.8	ug/L	141	Standard
	Cu	65	103.7	15.4	**-0.0087**	0.009	107.0	ug/L	109	Standard
	Zn	66	127.0	5.2	**-0.1127**	0.007	6.0	ug/L	159	Standard
>	**Ge**	72	455597.3	0.8				ug/L	474053	Standard
	As	75	-43.2	74.2	**-0.0157**	0.030	193.2	ug/L	-34	Standard
	Se	82	18.2	18.4	**0.0019**	0.030	1563.3	ug/L	14	Standard
	Se-1	77	53.3	8.5	**-0.0219**	0.067	305.9	ug/L	55	Standard
>	**Ga**	71	65.0	20.4				mg/L	50	Standard
	Rb	85	26.7	39.0				ug/L	20	Standard
	Y	89	385670.5	2.5				ug/L	376602	Standard
>	**Rh**	103	21.7	48.0				ug/L	17	Standard
	Mo	98	109.5	11.0	**0.0404**	0.004	10.6	ug/L	8	Standard
	Ag	107	89.3	19.3	**0.0026**	0.003	126.0	ug/L	81	Standard
	Cd	111	7.4	34.0	**0.0006**	0.001	222.3	mg/L	3	Standard
	Cd	114	19.0	7.1	**0.0001**	0.000	161.5	ug/L	7	Standard
>	**In**	115	528269.6	2.4				ug/L	524722	Standard
	Sn	118	783.4	18.1	**0.0547**	0.023	42.9	ug/L	715	Standard
	Sb	123	1248.5	31.3	**0.2679**	0.083	31.1	ug/L	201	Standard
	Ba	135	101.3	11.9	**-0.0020**	0.008	395.1	ug/L	108	Standard
	Ce	140	18.3	56.8				ug/L	30	Standard
>	**Tb**	159	789316.7	0.7				ug/L	792236	Standard
	Ho	165	3.3	173.2				ug/L	7	Standard
	Tl	203	34.3	9.4	**0.0020**	0.000	19.3	ug/L	9	Standard
	Tl	205	23.3	61.9	**-0.0042**	0.002	53.7	ug/L	0	Standard
	Pb	206	215.0	9.3	**-0.0087**	0.004	50.2	ug/L	216	Standard
	Pb	207	177.7	3.1	**-0.0106**	0.001	10.4	ug/L	180	Standard
	Pb	208	745.3	3.0	**-0.0132**	0.001	9.1	ug/L	717	Standard
	U	238	19.7	20.5	**-0.0043**	0.001	15.7	ug/L	4	Standard
>	**Bi**	209	449575.7	0.9				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	26.7	60.3	**-0.0094**	0.021	228.0	mg/L	20	Standard
K	39	16.7	45.8	**-0.1015**	0.059	58.3	mg/L	22	Standard
Ca	43	35.0	0.0	**-5.0734**	0.077	1.5	mg/L	47	Standard
Fe	54	139.4	7.2	**-0.0024**	0.009	374.1	mg/L	151	Standard
Fe	57	198.3	8.1	**-0.0375**	0.053	141.8	mg/L	195	Standard
Sc-1	45	29877.8	0.9				mg/L	29647	Standard
Cl	35	160882.5	1.9				ug/L	154152	Standard
Kr	83	1.0	0.0				ug/L	3	Standard
Br	81	1510.1	12.6				ug/L	1607	Standard
P	31	25673.4	1.5				ug/L	22752	Standard
S	34	5894.5	3.2				ug/L	5049	Standard
Sr	88	76.7	32.2				ug/L	87	Standard
C	12	23.3	49.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.4	107.5				mg/L	10	Standard
Ho-1	165	3.3	173.2				mg/L	7	Standard
Er	166	13.3	173.2				mg/L	3	Standard
I	127	965.0	3.2				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.107	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.676	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.661	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Na	23	
QC Std 2	K	39	

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QC Std 2	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Thursday, June 16, 2016 16:07:40
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	55474.7	2.1				ug/L	51024	Standard
	Be	9	18.3	15.7	**-0.0010**	0.003	338.2	ug/L	7	Standard
	Al	27	6905396.8	2.8	**44.6071**	0.703	1.6	ug/L	625	Standard
	Sc	45	29577.2	0.8				ug/L	29647	Standard
	Ti	47	31418.2	1.3	**107.0966**	1.877	1.8	ug/L	57	Standard
	V	51	1222.8	22.4	**0.0081**	0.041	507.7	ug/L	1142	Standard
	Cr	52	7310.1	0.7	**0.0900**	0.007	8.1	ug/L	6628	Standard
	Cr	53	3288.7	9.3	**3.1897**	0.292	9.2	ug/L	430	Standard
	Mn	55	1091.7	3.2	**0.0620**	0.006	9.4	ug/L	603	Standard
	Co	59	399.3	5.7	**0.0224**	0.003	12.6	ug/L	237	Standard
	Ni	60	759.0	2.6	**0.3255**	0.016	4.9	ug/L	141	Standard
	Cu	65	628.7	2.7	**0.2766**	0.010	3.8	ug/L	109	Standard
	Zn	66	1729.4	2.6	**1.3663**	0.021	1.6	ug/L	159	Standard
>	Ge	72	462633.9	1.3				ug/L	474053	Standard
	As	75	-39.5	207.4	**-0.0113**	0.076	672.8	ug/L	-34	Standard
	Se	82	21.1	40.5	**0.0261**	0.078	299.6	ug/L	14	Standard
	Se-1	77	277.0	14.2	**2.9476**	0.479	16.2	ug/L	55	Standard
>	Ga	71	155.0	16.8				mg/L	50	Standard
	Rb	85	810.0	10.2				ug/L	20	Standard
	Y	89	382532.7	1.4				ug/L	376602	Standard
>	Rh	103	13.3	57.3				ug/L	17	Standard
	Mo	98	234826.0	1.7	**100.4857**	2.149	2.1	ug/L	8	Standard
	Ag	107	169.0	8.6	**0.0163**	0.002	15.1	ug/L	81	Standard
	Cd	111	-108.8	6.6	**-0.0599**	0.004	5.9	mg/L	3	Standard
	Cd	114	586.7	17.3	**0.1197**	0.021	17.4	ug/L	7	Standard
>	In	115	519149.4	0.5				ug/L	524722	Standard
	Sn	118	681.7	7.9	**0.0385**	0.011	27.7	ug/L	715	Standard
	Sb	123	406.1	34.2	**0.0793**	0.032	41.0	ug/L	201	Standard
	Ba	135	224.7	3.6	**0.0676**	0.005	7.3	ug/L	108	Standard
	Ce	140	145.0	18.2				ug/L	30	Standard
>	Tb	159	796726.8	0.9				ug/L	792236	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	851.7	23.5	**0.1131**	0.029	25.4	ug/L	9	Standard
	Tl	205	813.4	19.5	**0.1220**	0.027	21.9	ug/L	0	Standard
	Pb	206	671.0	13.8	**0.0943**	0.023	24.1	ug/L	216	Standard
	Pb	207	610.0	7.6	**0.0965**	0.013	13.8	ug/L	180	Standard
	Pb	208	2481.7	5.9	**0.0928**	0.011	11.7	ug/L	717	Standard
	U	238	11.0	24.1	**-0.0057**	0.000	8.1	ug/L	4	Standard
>	Bi	209	444717.2	1.3				ug/L	460343	Standard

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Na	23	1.7	173.2	**4.9320**	9.561	193.9	mg/L	0	Standard
Mg	24	9214.5	2.3	**12.4761**	0.188	1.5	mg/L	20	Standard
K	39	665.0	6.6	**4.8546**	0.351	7.2	mg/L	22	Standard
Ca	43	148.3	13.6	**21.5299**	4.516	21.0	mg/L	47	Standard
Fe	54	14427.7	3.0	**11.6428**	0.306	2.6	mg/L	151	Standard
Fe	57	3798.8	1.5	**11.1428**	0.194	1.7	mg/L	195	Standard
> **Sc-1**	45	29577.2	0.8				mg/L	29647	Standard
Cl	35	176475.5	2.2				ug/L	154152	Standard
Kr	83	2.0	86.6				ug/L	3	Standard
Br	81	1553.4	2.3				ug/L	1607	Standard
P	31	23887.2	3.9				ug/L	22752	Standard
S	34	5340.9	1.7				ug/L	5049	Standard
Sr	88	58.3	9.9				ug/L	87	Standard
C	12	96.7	58.8				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	30.0	0.0				mg/L	0	Standard
Dy	164	2.4	262.3				mg/L	10	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	3	Standard
I	127	1410.1	5.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27	0.892		
Sc	45			
Ti	47	107.097		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.591	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	100.486		
Ag	107			
Cd	111			
Cd	114			
> In	115		98.938	
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209		96.606	
Na	23	39.456		
Mg	24	249.521		
K	39	97.091		
Ca	43	143.533		
Fe	54	93.142		
Fe	57	89.142		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Tl	203	
QC Std 4	Na	23	

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QC Std 4	Mg	24
QC Std 4	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Thursday, June 16, 2016 16:22:01
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	58477.6	0.2				ug/L	51024	Standard
	Be	9	88548.0	0.3	**91.8774**	0.469	0.5	ug/L	7	Standard
	Al	27	7648485.8	0.8	**46.8715**	0.352	0.8	ug/L	625	Standard
	Sc	45	29133.0	2.0				ug/L	29647	Standard
	Ti	47	33470.3	2.4	**118.1657**	2.723	2.3	ug/L	57	Standard
	V	51	673843.7	0.9	**100.3884**	1.672	1.7	ug/L	1142	Standard
	Cr	52	698679.1	1.4	**99.8305**	1.037	1.0	ug/L	6628	Standard
	Cr	53	90290.0	2.1	**102.5975**	1.386	1.4	ug/L	430	Standard
	Mn	55	596300.3	1.2	**106.4457**	0.466	0.4	ug/L	603	Standard
	Co	59	629938.1	1.8	**103.9511**	1.908	1.8	ug/L	237	Standard
	Ni	60	180922.1	0.3	**99.4431**	0.584	0.6	ug/L	141	Standard
	Cu	65	177067.3	0.6	**99.8815**	0.324	0.3	ug/L	109	Standard
	Zn	66	106852.8	0.0	**102.0554**	0.902	0.9	ug/L	159	Standard
>	Ge	72	446706.3	0.8				ug/L	474053	Standard
	As	75	106615.2	0.2	**102.2086**	1.049	1.0	ug/L	-34	Standard
	Se	82	10642.5	1.1	**101.9658**	1.771	1.7	ug/L	14	Standard
	Se-1	77	7567.2	2.1	**103.8353**	2.380	2.3	ug/L	55	Standard
>	Ga	71	153.3	10.5				mg/L	50	Standard
	Rb	85	808.4	8.9				ug/L	20	Standard
	Y	89	396492.9	1.1				ug/L	376602	Standard
>	Rh	103	48.3	15.8				ug/L	17	Standard
	Mo	98	245151.1	0.7	**102.3761**	1.234	1.2	ug/L	8	Standard
	Ag	107	517251.9	0.7	**85.5144**	0.680	0.8	ug/L	81	Standard
	Cd	111	189019.4	1.2	**96.0637**	1.742	1.8	mg/L	3	Standard
	Cd	114	457330.5	1.6	**94.0204**	2.156	2.3	ug/L	7	Standard
>	In	115	531964.2	0.7				ug/L	524722	Standard
	Sn	118	896.7	15.7	**0.0749**	0.027	35.8	ug/L	715	Standard
	Sb	123	419181.5	1.0	**94.6488**	1.016	1.1	ug/L	201	Standard
	Ba	135	174129.5	0.2	**94.7022**	0.497	0.5	ug/L	108	Standard
	Ce	140	123.3	45.2				ug/L	30	Standard
>	Tb	159	792285.1	1.1				ug/L	792236	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	718957.1	0.3	**98.0117**	1.579	1.6	ug/L	9	Standard
	Tl	205	627537.4	1.6	**100.6124**	3.065	3.0	ug/L	0	Standard
	Pb	206	453228.9	0.3	**102.1662**	1.141	1.1	ug/L	216	Standard
	Pb	207	393799.0	0.5	**97.5071**	0.924	0.9	ug/L	180	Standard
	Pb	208	1620914.8	1.9	**98.9101**	2.956	3.0	ug/L	717	Standard
	U	238	599569.3	0.5	**100.5173**	1.718	1.7	ug/L	4	Standard
>	Bi	209	442109.9	1.4				ug/L	460343	Standard

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Na	23	1.7	173.2	**4.7867**	9.813	205.0	mg/L	0	Standard
Mg	24	10183.4	1.3	**14.0071**	0.241	1.7	mg/L	20	Standard
K	39	573.3	13.1	**4.2150**	0.510	12.1	mg/L	22	Standard
Ca	43	138.3	13.7	**19.6561**	3.893	19.8	mg/L	47	Standard
Fe	54	15280.5	1.4	**12.5337**	0.416	3.3	mg/L	151	Standard
Fe	57	4085.6	2.5	**12.2326**	0.552	4.5	mg/L	195	Standard
> **Sc-1**	45	29133.0	2.0				mg/L	29647	Standard
Cl	35	179327.8	1.3				ug/L	154152	Standard
Kr	83	1.3	114.6				ug/L	3	Standard
Br	81	1623.4	4.9				ug/L	1607	Standard
P	31	23591.7	0.4				ug/L	22752	Standard
S	34	5254.2	2.3				ug/L	5049	Standard
Sr	88	70.0	42.9				ug/L	87	Standard
C	12	133.3	4.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	15.9	94.6				mg/L	10	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	3	Standard
I	127	930.0	5.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	91.877		
Al	27	0.937		
Sc	45			
Ti	47	118.166		
V	51	100.388		
Cr	52	99.830		
Cr	53			
Mn	55	106.446		
Co	59	103.951		
Ni	60	99.443		
Cu	65	99.882		
Zn	66	102.055		
> Ge	72		94.231	
As	75	102.209		
Se	82	101.966		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	102.376		
Ag	107	85.514		
Cd	111	96.064		
Cd	114			
> In	115		101.380	
Sn	118			
Sb	123	94.649		
Ba	135	94.702		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.012		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.910		
U	238	100.517		
> Bi	209		96.039	
Na	23	38.294		
Mg	24	280.142		
K	39	84.299		
Ca	43	131.041		
Fe	54	100.269		
Fe	57	97.861		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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QC Std 5	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 16:25:16
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	55603.6	4.4				ug/L	51024	Standard
	Be	9	43453.9	2.4	**47.4947**	3.006	6.3	ug/L	7	Standard
	Al	27	7054078.0	1.0	**45.5100**	1.586	3.5	ug/L	625	Standard
	Sc	45	29373.5	1.7				ug/L	29647	Standard
	Ti	47	28713.9	1.4	**99.4855**	3.895	3.9	ug/L	57	Standard
	V	51	340364.3	1.3	**49.6680**	0.932	1.9	ug/L	1142	Standard
	Cr	52	357828.9	0.7	**49.7225**	1.608	3.2	ug/L	6628	Standard
	Cr	53	43806.6	0.8	**48.6374**	1.665	3.4	ug/L	430	Standard
	Mn	55	293651.9	1.1	**51.3908**	1.852	3.6	ug/L	603	Standard
	Co	59	311248.9	1.6	**50.3908**	1.771	3.5	ug/L	237	Standard
	Ni	60	92893.9	1.1	**50.0647**	1.079	2.2	ug/L	141	Standard
	Cu	65	90724.2	1.5	**50.1802**	0.633	1.3	ug/L	109	Standard
	Zn	66	53344.1	1.6	**49.8682**	0.504	1.0	ug/L	159	Standard
>	Ge	72	455364.8	2.6				ug/L	474053	Standard
	As	75	52938.3	1.1	**49.8092**	0.820	1.6	ug/L	-34	Standard
	Se	82	5329.6	1.7	**50.0105**	0.490	1.0	ug/L	14	Standard
	Se-1	77	3723.8	2.6	**49.7421**	0.784	1.6	ug/L	55	Standard
>	Ga	71	95.0	22.9				mg/L	50	Standard
	Rb	85	726.7	4.9				ug/L	20	Standard
	Y	89	384472.0	0.6				ug/L	376602	Standard
>	Rh	103	16.7	62.4				ug/L	17	Standard
	Mo	98	232118.8	0.3	**97.2358**	1.022	1.1	ug/L	8	Standard
	Ag	107	290638.3	1.3	**48.1940**	0.630	1.3	ug/L	81	Standard
	Cd	111	94793.4	0.9	**48.3272**	1.004	2.1	mg/L	3	Standard
	Cd	114	234828.4	1.3	**48.4291**	1.209	2.5	ug/L	7	Standard
>	In	115	530331.4	1.3				ug/L	524722	Standard
	Sn	118	263139.7	2.6	**48.2596**	1.845	3.8	ug/L	715	Standard
	Sb	123	217327.7	1.3	**49.2164**	0.579	1.2	ug/L	201	Standard
	Ba	135	88067.5	0.7	**48.0226**	0.952	2.0	ug/L	108	Standard
	Ce	140	81.7	18.7				ug/L	30	Standard
>	Tb	159	794129.5	1.0				ug/L	792236	Standard
	Ho	165	6.7	86.6				ug/L	7	Standard
	Tl	203	362843.1	1.0	**49.0795**	1.497	3.1	ug/L	9	Standard
	Tl	205	310212.2	1.3	**49.3427**	1.712	3.5	ug/L	0	Standard
	Pb	206	222989.0	0.9	**49.8435**	1.206	2.4	ug/L	216	Standard
	Pb	207	201083.3	0.8	**49.3722**	1.064	2.2	ug/L	180	Standard
	Pb	208	809454.4	0.8	**48.9759**	1.413	2.9	ug/L	717	Standard
	U	238	299066.7	0.4	**49.7396**	1.132	2.3	ug/L	4	Standard
>	Bi	209	445696.2	2.2				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3647.1	3.0	**4.9460**	0.155	3.1	mg/L	20	Standard
K	39	621.7	4.7	**4.5576**	0.277	6.1	mg/L	22	Standard
Ca	43	53.3	19.5	**-0.5868**	2.635	449.0	mg/L	47	Standard
Fe	54	5858.9	4.9	**4.6943**	0.261	5.6	mg/L	151	Standard
Fe	57	1763.4	1.3	**4.8648**	0.124	2.5	mg/L	195	Standard
> **Sc-1**	45	29373.5	1.7				mg/L	29647	Standard
Cl	35	157950.4	0.4				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	1363.4	1.1				ug/L	1607	Standard
P	31	23531.6	2.3				ug/L	22752	Standard
S	34	5542.7	3.1				ug/L	5049	Standard
Sr	88	65.0	38.5				ug/L	87	Standard
C	12	56.7	71.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.4	50.3				mg/L	10	Standard
Ho-1	165	6.7	86.6				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	3	Standard
I	127	1150.0	8.7				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	94.989		
	Al	27	91.020		
	Sc	45			
	Ti	47	99.485		
	V	51	99.336		
	Cr	52	99.445		
	Cr	53			
	Mn	55	102.782		
	Co	59	100.782		
	Ni	60	100.129		
	Cu	65	100.360		
	Zn	66	99.736		
>	Ge	72		96.058	
	As	75	99.618		
	Se	82	100.021		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	97.236		
Ag	107	96.388		
Cd	111	96.654		
Cd	114			
> In	115			101.069
Sn	118	96.519		
Sb	123	98.433		
Ba	135	96.045		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.159		
Tl	205			
Pb	206			
Pb	207			
Pb	208	97.952		
U	238	99.479		
> Bi	209			96.818
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 16:38:50
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52378.7	2.1				ug/L	51024	Standard
	Be	9	15.0	120.2	**-0.0040**	0.020	512.1	ug/L	7	Standard
	Al	27	540.0	3.7	**-0.0061**	0.000	3.2	ug/L	625	Standard
	Sc	45	28712.2	1.8				ug/L	29647	Standard
	Ti	47	44.7	11.0	**-0.0123**	0.017	140.3	ug/L	57	Standard
	V	51	1065.6	4.8	**-0.0136**	0.008	61.5	ug/L	1142	Standard
	Cr	52	6160.3	1.0	**-0.0638**	0.013	21.0	ug/L	6628	Standard
	Cr	53	386.7	19.4	**-0.0026**	0.081	3156.3	ug/L	430	Standard
	Mn	55	621.0	4.1	**-0.0185**	0.004	21.4	ug/L	603	Standard
	Co	59	231.0	6.0	**-0.0042**	0.002	52.0	ug/L	237	Standard
	Ni	60	109.7	8.8	**-0.0191**	0.005	25.2	ug/L	141	Standard
	Cu	65	97.3	15.8	**-0.0127**	0.008	65.1	ug/L	109	Standard
	Zn	66	133.3	9.4	**-0.1078**	0.012	11.3	ug/L	159	Standard
>	**Ge**	72	459252.1	0.6				ug/L	474053	Standard
	As	75	-47.4	46.6	**-0.0192**	0.021	107.9	ug/L	-34	Standard
	Se	82	15.8	37.3	**-0.0216**	0.055	252.4	ug/L	14	Standard
	Se-1	77	46.7	11.0	**-0.1173**	0.072	61.6	ug/L	55	Standard
>	**Ga**	71	35.0	14.3				mg/L	50	Standard
	Rb	85	20.0	43.3				ug/L	20	Standard
	Y	89	388770.9	2.1				ug/L	376602	Standard
>	**Rh**	103	16.7	62.4				ug/L	17	Standard
	Mo	98	68.1	14.3	**0.0237**	0.004	18.9	ug/L	8	Standard
	Ag	107	85.7	13.7	**0.0022**	0.002	97.9	ug/L	81	Standard
	Cd	111	2.9	60.6	**-0.0017**	0.001	51.5	mg/L	3	Standard
	Cd	114	9.5	115.0	**-0.0018**	0.002	124.6	ug/L	7	Standard
>	**In**	115	518516.6	1.3				ug/L	524722	Standard
	Sn	118	641.7	18.0	**0.0313**	0.023	74.8	ug/L	715	Standard
	Sb	123	920.4	35.2	**0.1991**	0.078	39.0	ug/L	201	Standard
	Ba	135	100.7	10.0	**-0.0014**	0.006	433.1	ug/L	108	Standard
	Ce	140	18.3	78.7				ug/L	30	Standard
>	**Tb**	159	769102.4	0.6				ug/L	792236	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	15.7	25.8	**-0.0004**	0.001	125.3	ug/L	9	Standard
	Tl	205	10.0	50.0	**-0.0062**	0.001	13.5	ug/L	0	Standard
	Pb	206	207.3	13.7	**-0.0092**	0.007	79.6	ug/L	216	Standard
	Pb	207	175.3	4.3	**-0.0101**	0.002	22.2	ug/L	180	Standard
	Pb	208	743.7	4.7	**-0.0122**	0.003	22.5	ug/L	717	Standard
	U	238	8.7	35.3	**-0.0061**	0.000	8.0	ug/L	4	Standard
>	**Bi**	209	439141.9	1.8				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	28.3	66.8	**-0.0053**	0.027	522.2	mg/L	20	Standard
K	39	10.0	86.6	**-0.1489**	0.068	45.9	mg/L	22	Standard
Ca	43	36.7	47.9	**-4.3876**	4.095	93.3	mg/L	47	Standard
Fe	54	152.8	18.0	**0.0136**	0.026	187.8	mg/L	151	Standard
Fe	57	166.7	14.2	**-0.1136**	0.080	70.6	mg/L	195	Standard
> **Sc-1**	45	28712.2	1.8				mg/L	29647	Standard
Cl	35	160111.2	2.5				ug/L	154152	Standard
Kr	83	2.3	89.2				ug/L	3	Standard
Br	81	1460.1	8.4				ug/L	1607	Standard
P	31	22964.1	2.3				ug/L	22752	Standard
S	34	5249.2	1.7				ug/L	5049	Standard
Sr	88	68.3	27.7				ug/L	87	Standard
C	12	40.0	66.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	13.0	113.4				mg/L	10	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	3	Standard
I	127	923.4	1.6				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.878	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.817	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	95.395	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW B7 WG572432-04
Sample Date/Time: Thursday, June 16, 2016 17:35:43
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50888.7	1.4				ug/L	51024	Standard
	Be	9	10.0	50.0	**-0.0092**	0.006	65.8	ug/L	7	Standard
	Al	27	7250.1	1.6	**0.0413**	0.001	3.2	ug/L	625	Standard
	Sc	45	27620.2	1.5				ug/L	29647	Standard
	Ti	47	62.3	15.4	**0.0529**	0.035	66.0	ug/L	57	Standard
	V	51	1096.4	11.0	**-0.0060**	0.018	297.3	ug/L	1142	Standard
	Cr	52	7148.7	0.7	**0.0949**	0.009	9.1	ug/L	6628	Standard
	Cr	53	635.0	13.1	**0.2873**	0.091	31.7	ug/L	430	Standard
	Mn	55	19861.3	0.9	**3.3957**	0.050	1.5	ug/L	603	Standard
	Co	59	181.7	9.8	**-0.0115**	0.003	26.7	ug/L	237	Standard
	Ni	60	180.7	8.3	**0.0208**	0.008	36.7	ug/L	141	Standard
	Cu	65	122.3	7.7	**0.0024**	0.006	234.7	ug/L	109	Standard
	Zn	66	1100.0	2.9	**0.8128**	0.032	3.9	ug/L	159	Standard
>	**Ge**	72	450229.5	0.6				ug/L	474053	Standard
	As	75	-42.0	42.9	**-0.0149**	0.017	113.9	ug/L	-34	Standard
	Se	82	9.3	47.0	**-0.0801**	0.042	52.5	ug/L	14	Standard
	Se-1	77	64.0	16.5	**0.1328**	0.147	110.5	ug/L	55	Standard
>	**Ga**	71	50.0	26.5				mg/L	50	Standard
	Rb	85	73.3	20.8				ug/L	20	Standard
	Y	89	383468.8	0.7				ug/L	376602	Standard
>	**Rh**	103	13.3	21.7				ug/L	17	Standard
	Mo	98	675.4	5.9	**0.2913**	0.019	6.7	ug/L	8	Standard
	Ag	107	79.3	11.9	**0.0015**	0.002	113.9	ug/L	81	Standard
	Cd	111	2.4	24.1	**-0.0019**	0.000	15.9	mg/L	3	Standard
	Cd	114	32.5	70.3	**0.0032**	0.005	153.9	ug/L	7	Standard
>	**In**	115	505606.7	0.8				ug/L	524722	Standard
	Sn	118	778.4	13.1	**0.0606**	0.021	34.0	ug/L	715	Standard
	Sb	123	423.2	31.6	**0.0859**	0.032	37.8	ug/L	201	Standard
	Ba	135	197.0	6.6	**0.0551**	0.008	14.5	ug/L	108	Standard
	Ce	140	71.7	20.1				ug/L	30	Standard
>	**Tb**	159	761176.8	0.6				ug/L	792236	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	45.0	11.1	**0.0037**	0.001	19.6	ug/L	9	Standard
	Tl	205	38.3	27.2	**-0.0016**	0.002	107.0	ug/L	0	Standard
	Pb	206	207.0	9.6	**-0.0086**	0.005	56.9	ug/L	216	Standard
	Pb	207	183.0	3.8	**-0.0075**	0.002	22.0	ug/L	180	Standard
	Pb	208	773.7	0.5	**-0.0097**	0.001	6.3	ug/L	717	Standard
	U	238	7.0	14.3	**-0.0064**	0.000	2.5	ug/L	4	Standard
>	**Bi**	209	432877.1	0.8				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	46.7	37.6	**0.0228**	0.026	113.0	mg/L	20	Standard
K	39	25.0	20.0	**-0.0231**	0.042	181.8	mg/L	22	Standard
Ca	43	38.3	19.9	**-3.5551**	2.049	57.6	mg/L	47	Standard
Fe	54	166.0	7.2	**0.0299**	0.009	28.8	mg/L	151	Standard
Fe	57	193.3	5.4	**-0.0042**	0.043	1021.8	mg/L	195	Standard
Sc-1	45	27620.2	1.5				mg/L	29647	Standard
Cl	35	157510.0	2.0				ug/L	154152	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	1796.8	8.2				ug/L	1607	Standard
P	31	21511.9	1.4				ug/L	22752	Standard
S	34	4927.5	1.4				ug/L	5049	Standard
Sr	88	76.7	10.0				ug/L	87	Standard
C	12	53.3	47.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	18.7	50.9				mg/L	10	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	26.7	57.3				mg/L	3	Standard
I	127	1125.0	8.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		99.734	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		94.974	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.357
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.034
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW B7 WG572432-05
Sample Date/Time: Thursday, June 16, 2016 17:38:54
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51783.3	1.2				ug/L	51024	Standard
	Be	9	41423.2	1.3	**48.5300**	0.724	1.5	ug/L	7	Standard
	Al	27	8105.5	5.6	**0.0464**	0.004	7.6	ug/L	625	Standard
	Sc	45	29290.0	1.1				ug/L	29647	Standard
	Ti	47	66.0	28.8	**0.0608**	0.069	114.0	ug/L	57	Standard
	V	51	347988.7	1.1	**50.1052**	0.398	0.8	ug/L	1142	Standard
	Cr	52	363767.8	1.3	**49.8723**	1.265	2.5	ug/L	6628	Standard
	Cr	53	46272.2	1.3	**50.7068**	1.549	3.1	ug/L	430	Standard
	Mn	55	322059.4	1.1	**55.6120**	1.299	2.3	ug/L	603	Standard
	Co	59	318198.3	0.5	**50.8192**	0.688	1.4	ug/L	237	Standard
	Ni	60	95145.8	1.0	**50.6010**	1.153	2.3	ug/L	141	Standard
	Cu	65	93949.4	0.3	**51.2847**	1.031	2.0	ug/L	109	Standard
	Zn	66	55650.7	0.4	**51.3490**	0.838	1.6	ug/L	159	Standard
>	**Ge**	72	461424.2	1.8				ug/L	474053	Standard
	As	75	53752.8	0.6	**49.9059**	0.739	1.5	ug/L	-34	Standard
	Se	82	5332.6	1.0	**49.3792**	0.829	1.7	ug/L	14	Standard
	Se-1	77	3747.5	1.7	**49.4072**	1.506	3.0	ug/L	55	Standard
>	**Ga**	71	81.7	30.2				mg/L	50	Standard
	Rb	85	53.3	23.6				ug/L	20	Standard
	Y	89	377535.8	0.4				ug/L	376602	Standard
>	**Rh**	103	36.7	31.5				ug/L	17	Standard
	Mo	98	750.8	4.4	**0.3174**	0.017	5.4	ug/L	8	Standard
	Ag	107	297266.0	1.0	**50.6052**	0.925	1.8	ug/L	81	Standard
	Cd	111	95234.0	1.1	**49.8345**	0.593	1.2	mg/L	3	Standard
	Cd	114	234836.7	1.4	**49.7088**	0.798	1.6	ug/L	7	Standard
>	**In**	115	516621.5	1.2				ug/L	524722	Standard
	Sn	118	736.7	13.8	**0.0494**	0.018	37.2	ug/L	715	Standard
	Sb	123	208987.1	0.3	**48.5849**	0.463	1.0	ug/L	201	Standard
	Ba	135	88485.0	1.6	**49.5270**	0.847	1.7	ug/L	108	Standard
	Ce	140	93.3	22.3				ug/L	30	Standard
>	**Tb**	159	786575.0	1.5				ug/L	792236	Standard
	Ho	165	15.0	120.2				ug/L	7	Standard
	Tl	203	367143.4	1.3	**48.6717**	0.655	1.3	ug/L	9	Standard
	Tl	205	311332.9	0.6	**48.5309**	0.337	0.7	ug/L	0	Standard
	Pb	206	233648.2	1.0	**51.1920**	0.365	0.7	ug/L	216	Standard
	Pb	207	204781.6	0.5	**49.2852**	0.113	0.2	ug/L	180	Standard
	Pb	208	826562.7	0.6	**49.0156**	0.301	0.6	ug/L	717	Standard
	U	238	299484.9	0.7	**48.8217**	0.244	0.5	ug/L	4	Standard
>	**Bi**	209	454561.3	0.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	50.0	17.3	**0.0233**	0.011	48.4	mg/L	20	Standard
K	39	26.7	28.6	**-0.0218**	0.061	278.8	mg/L	22	Standard
Ca	43	35.0	75.6	**-4.9193**	6.254	127.1	mg/L	47	Standard
Fe	54	111.6	12.4	**-0.0232**	0.011	46.2	mg/L	151	Standard
Fe	57	160.0	10.8	**-0.1456**	0.055	37.5	mg/L	195	Standard
> **Sc-1**	45	29290.0	1.1				mg/L	29647	Standard
Cl	35	154390.7	1.3				ug/L	154152	Standard
Kr	83	3.3	45.8				ug/L	3	Standard
Br	81	1633.4	8.8				ug/L	1607	Standard
P	31	21568.7	2.2				ug/L	22752	Standard
S	34	5032.5	1.0				ug/L	5049	Standard
Sr	88	65.0	15.4				ug/L	87	Standard
C	12	66.7	17.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	23.2	25.5				mg/L	10	Standard
Ho-1	165	15.0	120.2				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	1071.7	9.3				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		101.488	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.336	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.456
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.744
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606054006 WG572432-01
Sample Date/Time: Thursday, June 16, 2016 17:42:06
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52547.6	1.2				ug/L	51024	Standard
	Be	9	281.7	11.8	**0.3044**	0.040	13.2	ug/L	7	Standard
	Al	27	1816487.4	0.8	**12.3812**	0.043	0.4	ug/L	625	Standard
	Sc	45	29675.7	4.3				ug/L	29647	Standard
	Ti	47	527.0	16.5	**1.6748**	0.301	18.0	ug/L	57	Standard
	V	51	3476.6	2.8	**0.3441**	0.007	2.0	ug/L	1142	Standard
	Cr	52	8938.3	3.6	**0.3455**	0.039	11.3	ug/L	6628	Standard
	Cr	53	901.7	9.0	**0.5864**	0.111	18.9	ug/L	430	Standard
	Mn	55	80134.4	1.0	**14.0253**	0.252	1.8	ug/L	603	Standard
	Co	59	25491.1	1.0	**4.1165**	0.049	1.2	ug/L	237	Standard
	Ni	60	8570.8	3.1	**4.5794**	0.092	2.0	ug/L	141	Standard
	Cu	65	650.0	5.0	**0.2962**	0.012	4.0	ug/L	109	Standard
	Zn	66	3464.7	2.4	**3.0444**	0.035	1.2	ug/L	159	Standard
>	**Ge**	72	452166.6	1.8				ug/L	474053	Standard
	As	75	1182.5	5.5	**1.1442**	0.046	4.0	ug/L	-34	Standard
	Se	82	46.0	21.8	**0.2663**	0.087	32.8	ug/L	14	Standard
	Se-1	77	85.7	5.5	**0.4258**	0.086	20.3	ug/L	55	Standard
>	**Ga**	71	278.3	3.7				mg/L	50	Standard
	Rb	85	4193.9	3.2				ug/L	20	Standard
	Y	89	416460.7	2.0				ug/L	376602	Standard
>	**Rh**	103	23.3	12.4				ug/L	17	Standard
	Mo	98	357.6	5.0	**0.1457**	0.008	5.8	ug/L	8	Standard
	Ag	107	158.3	24.9	**0.0142**	0.007	47.6	ug/L	81	Standard
	Cd	111	270.7	5.4	**0.1360**	0.007	5.2	mg/L	3	Standard
	Cd	114	622.1	11.8	**0.1257**	0.017	13.1	ug/L	7	Standard
>	**In**	115	525525.2	1.0				ug/L	524722	Standard
	Sn	118	728.4	8.0	**0.0455**	0.009	20.8	ug/L	715	Standard
	Sb	123	2010.9	21.8	**0.4446**	0.099	22.2	ug/L	201	Standard
	Ba	135	37719.2	0.5	**20.7210**	0.204	1.0	ug/L	108	Standard
	Ce	140	135002.2	1.6				ug/L	30	Standard
>	**Tb**	159	783120.3	1.3				ug/L	792236	Standard
	Ho	165	2456.9	1.5				ug/L	7	Standard
	Tl	203	253.7	10.2	**0.0320**	0.003	10.8	ug/L	9	Standard
	Tl	205	226.7	16.3	**0.0285**	0.006	20.3	ug/L	0	Standard
	Pb	206	765.0	5.7	**0.1161**	0.008	6.7	ug/L	216	Standard
	Pb	207	652.7	5.5	**0.1078**	0.008	7.7	ug/L	180	Standard
	Pb	208	2766.1	3.6	**0.1109**	0.007	6.4	ug/L	717	Standard
	U	238	1954.1	0.9	**0.3200**	0.006	1.9	ug/L	4	Standard
>	**Bi**	209	442196.1	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1238.4	6.5	**1.6323**	0.087	5.4	mg/L	20	Standard
K	39	41.7	36.7	**0.0889**	0.112	125.7	mg/L	22	Standard
Ca	43	68.3	11.2	**2.8122**	2.229	79.3	mg/L	47	Standard
Fe	54	837.8	5.1	**0.5655**	0.012	2.1	mg/L	151	Standard
Fe	57	411.7	13.3	**0.6277**	0.175	27.9	mg/L	195	Standard
> **Sc-1**	45	29675.7	4.3				mg/L	29647	Standard
Cl	35	169997.1	1.0				ug/L	154152	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	5057.5	1.3				ug/L	1607	Standard
P	31	24386.3	0.9				ug/L	22752	Standard
S	34	5092.5	0.4				ug/L	5049	Standard
Sr	88	103.3	7.4				ug/L	87	Standard
C	12	76.7	60.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	3712.9	1.1				mg/L	10	Standard
Ho-1	165	2456.9	1.5				mg/L	7	Standard
Er	166	2246.8	5.2				mg/L	3	Standard
I	127	9703.1	8.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.986	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.383	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.153
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.058
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606054007S WG572432-06
Sample Date/Time: Thursday, June 16, 2016 17:45:17
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53706.7	0.9				ug/L	51024	Standard
	Be	9	43749.7	1.2	**49.4168**	0.266	0.5	ug/L	7	Standard
	Al	27	1932307.9	0.8	**12.8870**	0.144	1.1	ug/L	625	Standard
	Sc	45	29268.3	2.3				ug/L	29647	Standard
	Ti	47	482.3	20.5	**1.5217**	0.334	21.9	ug/L	57	Standard
	V	51	343151.9	1.8	**50.5559**	1.238	2.4	ug/L	1142	Standard
	Cr	52	356598.9	0.1	**50.0133**	0.323	0.6	ug/L	6628	Standard
	Cr	53	44079.0	0.2	**49.3948**	0.256	0.5	ug/L	430	Standard
	Mn	55	413833.9	0.6	**73.1363**	0.045	0.1	ug/L	603	Standard
	Co	59	348825.8	0.4	**56.9989**	0.424	0.7	ug/L	237	Standard
	Ni	60	100519.4	0.8	**54.6907**	0.393	0.7	ug/L	141	Standard
	Cu	65	91430.0	0.8	**51.0559**	0.663	1.3	ug/L	109	Standard
	Zn	66	56968.2	0.3	**53.7844**	0.273	0.5	ug/L	159	Standard
>	**Ge**	72	450975.6	0.7				ug/L	474053	Standard
	As	75	55730.0	0.9	**52.9297**	0.224	0.4	ug/L	-34	Standard
	Se	82	5454.0	1.2	**51.6747**	0.725	1.4	ug/L	14	Standard
	Se-1	77	3763.1	1.1	**50.7665**	0.264	0.5	ug/L	55	Standard
>	**Ga**	71	263.3	20.3				mg/L	50	Standard
	Rb	85	4255.6	2.8				ug/L	20	Standard
	Y	89	417195.5	2.9				ug/L	376602	Standard
>	**Rh**	103	30.0	16.7				ug/L	17	Standard
	Mo	98	249.7	0.8	**0.1017**	0.004	4.1	ug/L	8	Standard
	Ag	107	291868.5	0.9	**49.6480**	2.126	4.3	ug/L	81	Standard
	Cd	111	96723.0	1.0	**50.5615**	1.461	2.9	mg/L	3	Standard
	Cd	114	235539.9	2.1	**49.7930**	0.984	2.0	ug/L	7	Standard
>	**In**	115	517505.1	3.8				ug/L	524722	Standard
	Sn	118	1476.7	5.3	**0.1884**	0.005	2.4	ug/L	715	Standard
	Sb	123	206896.8	0.8	**48.0521**	1.564	3.3	ug/L	201	Standard
	Ba	135	127540.2	0.0	**71.3559**	2.754	3.9	ug/L	108	Standard
	Ce	140	139925.0	2.0				ug/L	30	Standard
>	**Tb**	159	770775.9	3.8				ug/L	792236	Standard
	Ho	165	2476.9	1.1				ug/L	7	Standard
	Tl	203	360327.5	0.9	**50.2317**	2.202	4.4	ug/L	9	Standard
	Tl	205	316813.0	0.1	**51.9255**	1.944	3.7	ug/L	0	Standard
	Pb	206	230620.2	0.3	**53.1250**	1.777	3.3	ug/L	216	Standard
	Pb	207	202090.2	0.6	**51.1482**	2.204	4.3	ug/L	180	Standard
	Pb	208	841767.9	0.1	**52.4861**	1.864	3.6	ug/L	717	Standard
	U	238	302598.3	0.9	**51.8585**	1.621	3.1	ug/L	4	Standard
>	**Bi**	209	432715.9	3.6				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1251.7	2.3	**1.6745**	0.059	3.5	mg/L	20	Standard
K	39	36.7	20.8	**0.0560**	0.065	115.4	mg/L	22	Standard
Ca	43	53.3	32.9	**-0.5302**	4.352	820.7	mg/L	47	Standard
Fe	54	1026.3	1.7	**0.7308**	0.034	4.6	mg/L	151	Standard
Fe	57	418.3	7.7	**0.6667**	0.128	19.3	mg/L	195	Standard
> **Sc-1**	45	29268.3	2.3				mg/L	29647	Standard
Cl	35	169666.9	1.9				ug/L	154152	Standard
Kr	83	2.0	100.0				ug/L	3	Standard
Br	81	2960.3	5.9				ug/L	1607	Standard
P	31	24135.9	2.5				ug/L	22752	Standard
S	34	4849.1	3.1				ug/L	5049	Standard
Sr	88	106.7	33.9				ug/L	87	Standard
C	12	40.0	50.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	0	Standard
Dy	164	3819.4	7.1				mg/L	10	Standard
Ho-1	165	2476.9	1.1				mg/L	7	Standard
Er	166	2390.2	5.9				mg/L	3	Standard
I	127	12700.3	5.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.257	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.132	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606054007S WG572432-06
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.625
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.999
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606054008SD WG572432-07
Sample Date/Time: Thursday, June 16, 2016 17:48:29
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54998.0	2.9				ug/L	51024	Standard
	Be	9	42282.3	1.6	**46.6702**	1.847	4.0	ug/L	7	Standard
	Al	27	1853346.2	1.8	**12.0720**	0.192	1.6	ug/L	625	Standard
	Sc	45	28618.7	1.6				ug/L	29647	Standard
	Ti	47	438.7	18.4	**1.3101**	0.274	20.9	ug/L	57	Standard
	V	51	339071.1	1.2	**47.9811**	0.898	1.9	ug/L	1142	Standard
	Cr	52	348951.5	0.9	**46.9627**	0.693	1.5	ug/L	6628	Standard
	Cr	53	43296.8	2.2	**46.5875**	1.128	2.4	ug/L	430	Standard
	Mn	55	386934.9	1.9	**65.6847**	1.414	2.2	ug/L	603	Standard
	Co	59	342375.5	0.7	**53.7459**	0.809	1.5	ug/L	237	Standard
	Ni	60	97792.2	0.5	**51.1109**	0.332	0.6	ug/L	141	Standard
	Cu	65	89033.2	0.9	**47.7559**	0.143	0.3	ug/L	109	Standard
	Zn	66	55887.9	0.5	**50.6770**	0.331	0.7	ug/L	159	Standard
>	**Ge**	72	469439.2	1.1				ug/L	474053	Standard
	As	75	54484.6	0.9	**49.7143**	0.277	0.6	ug/L	-34	Standard
	Se	82	5325.5	1.9	**48.4642**	1.024	2.1	ug/L	14	Standard
	Se-1	77	3702.8	2.9	**47.9415**	0.927	1.9	ug/L	55	Standard
>	**Ga**	71	271.7	17.7				mg/L	50	Standard
	Rb	85	4088.9	2.2				ug/L	20	Standard
	Y	89	413416.3	1.0				ug/L	376602	Standard
>	**Rh**	103	41.7	30.2				ug/L	17	Standard
	Mo	98	249.2	1.7	**0.1026**	0.001	1.4	ug/L	8	Standard
	Ag	107	286615.9	0.3	**49.2507**	0.777	1.6	ug/L	81	Standard
	Cd	111	93885.9	0.7	**49.5954**	0.904	1.8	mg/L	3	Standard
	Cd	114	226454.5	0.3	**48.3871**	0.650	1.3	ug/L	7	Standard
>	**In**	115	511810.4	1.2				ug/L	524722	Standard
	Sn	118	701.7	6.8	**0.0441**	0.009	19.5	ug/L	715	Standard
	Sb	123	206600.1	0.8	**48.4856**	0.964	2.0	ug/L	201	Standard
	Ba	135	122408.2	0.7	**69.1850**	1.061	1.5	ug/L	108	Standard
	Ce	140	131819.3	0.1				ug/L	30	Standard
>	**Tb**	159	776885.2	2.2				ug/L	792236	Standard
	Ho	165	2331.8	5.4				ug/L	7	Standard
	Tl	203	352123.1	0.6	**47.6812**	0.707	1.5	ug/L	9	Standard
	Tl	205	309331.5	1.9	**49.2466**	0.608	1.2	ug/L	0	Standard
	Pb	206	228474.4	0.6	**51.1335**	0.852	1.7	ug/L	216	Standard
	Pb	207	200368.2	0.3	**49.2580**	0.755	1.5	ug/L	180	Standard
	Pb	208	813075.7	0.6	**49.2521**	0.923	1.9	ug/L	717	Standard
	U	238	295399.0	1.0	**49.1860**	0.564	1.1	ug/L	4	Standard
>	**Bi**	209	445087.6	1.7				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1281.7	3.9	**1.7556**	0.088	5.0	mg/L	20	Standard
K	39	31.7	63.8	**0.0238**	0.162	681.6	mg/L	22	Standard
Ca	43	90.0	29.4	**8.6263**	6.605	76.6	mg/L	47	Standard
Fe	54	882.7	7.0	**0.6290**	0.061	9.7	mg/L	151	Standard
Fe	57	415.0	3.6	**0.6838**	0.030	4.4	mg/L	195	Standard
Sc-1	45	28618.7	1.6				mg/L	29647	Standard
Cl	35	164516.5	1.8				ug/L	154152	Standard
Kr	83	2.7	78.1				ug/L	3	Standard
Br	81	3177.0	4.4				ug/L	1607	Standard
P	31	23216.1	2.6				ug/L	22752	Standard
S	34	4752.4	2.2				ug/L	5049	Standard
Sr	88	88.3	40.2				ug/L	87	Standard
C	12	76.7	30.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	3671.9	4.0				mg/L	10	Standard
Ho-1	165	2331.8	5.4				mg/L	7	Standard
Er	166	2266.8	11.6				mg/L	3	Standard
I	127	12179.9	5.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		107.788	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.027	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.539
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.686
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606053301
Sample Date/Time: Thursday, June 16, 2016 17:51:40
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60559.2	3.2				ug/L	51024	Standard
	Be	9	28.3	10.2	**0.0074**	0.004	49.8	ug/L	7	Standard
	Al	27	7003612.2	2.3	**41.4514**	0.476	1.1	ug/L	625	Standard
	Sc	45	30053.2	5.5				ug/L	29647	Standard
	Ti	47	795.7	5.5	**2.5457**	0.146	5.8	ug/L	57	Standard
	V	51	2693.3	6.1	**0.2191**	0.025	11.3	ug/L	1142	Standard
	Cr	52	8930.0	3.3	**0.3138**	0.057	18.2	ug/L	6628	Standard
	Cr	53	2155.2	15.7	**1.9427**	0.407	21.0	ug/L	430	Standard
	Mn	55	115337.0	0.2	**19.7464**	0.327	1.7	ug/L	603	Standard
	Co	59	1383.4	9.3	**0.1788**	0.018	10.2	ug/L	237	Standard
	Ni	60	2905.3	1.7	**1.4630**	0.043	2.9	ug/L	141	Standard
	Cu	65	10476.6	1.4	**5.6346**	0.098	1.7	ug/L	109	Standard
	Zn	66	21460.2	1.0	**19.5697**	0.101	0.5	ug/L	159	Standard
>	**Ge**	72	463434.7	1.4				ug/L	474053	Standard
	As	75	3767.1	1.6	**3.5052**	0.045	1.3	ug/L	-34	Standard
	Se	82	163.8	10.0	**1.3482**	0.174	12.9	ug/L	14	Standard
	Se-1	77	257.3	5.7	**2.6846**	0.227	8.5	ug/L	55	Standard
>	**Ga**	71	133.3	15.6				mg/L	50	Standard
	Rb	85	28246.3	1.8				ug/L	20	Standard
	Y	89	371509.9	1.1				ug/L	376602	Standard
>	**Rh**	103	53.3	54.1				ug/L	17	Standard
	Mo	98	1868.0	0.8	**0.7966**	0.012	1.5	ug/L	8	Standard
	Ag	107	323.0	60.8	**0.0424**	0.033	77.8	ug/L	81	Standard
	Cd	111	115.7	21.0	**0.0572**	0.012	21.6	mg/L	3	Standard
	Cd	114	360.8	28.5	**0.0723**	0.021	29.2	ug/L	7	Standard
>	**In**	115	517402.5	1.9				ug/L	524722	Standard
	Sn	118	1711.8	7.1	**0.2327**	0.020	8.5	ug/L	715	Standard
	Sb	123	4614.0	12.3	**1.0551**	0.113	10.7	ug/L	201	Standard
	Ba	135	35141.4	1.4	**19.6067**	0.326	1.7	ug/L	108	Standard
	Ce	140	703.4	25.4				ug/L	30	Standard
>	**Tb**	159	794129.4	2.7				ug/L	792236	Standard
	Ho	165	41.7	38.6				ug/L	7	Standard
	Tl	203	449.0	60.2	**0.0569**	0.035	62.3	ug/L	9	Standard
	Tl	205	276.7	17.7	**0.0354**	0.008	22.9	ug/L	0	Standard
	Pb	206	1738.1	4.6	**0.3254**	0.021	6.4	ug/L	216	Standard
	Pb	207	1473.7	6.2	**0.3016**	0.022	7.3	ug/L	180	Standard
	Pb	208	5917.1	2.4	**0.2937**	0.008	2.7	ug/L	717	Standard
	U	238	273.7	21.5	**0.0370**	0.009	24.9	ug/L	4	Standard
>	**Bi**	209	454186.9	1.7				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.2936**	8.935	168.8	mg/L	0	Standard
Mg	24	24845.4	1.6	**33.2336**	1.348	4.1	mg/L	20	Standard
K	39	435.0	8.7	**3.0600**	0.462	15.1	mg/L	22	Standard
Ca	43	158.3	13.1	**23.4759**	6.234	26.6	mg/L	47	Standard
Fe	54	199.1	33.0	**0.0465**	0.059	127.4	mg/L	151	Standard
Fe	57	291.7	13.3	**0.2501**	0.172	68.9	mg/L	195	Standard
> **Sc-1**	45	30053.2	5.5				mg/L	29647	Standard
Cl	35	199161.9	1.2				ug/L	154152	Standard
Kr	83	2.3	49.5				ug/L	3	Standard
Br	81	12578.6	3.0				ug/L	1607	Standard
P	31	24539.9	2.1				ug/L	22752	Standard
S	34	5079.2	4.0				ug/L	5049	Standard
Sr	88	208.3	14.7				ug/L	87	Standard
C	12	96.7	36.3				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	0	Standard
Dy	164	61.3	25.3				mg/L	10	Standard
Ho-1	165	41.7	38.6				mg/L	7	Standard
Er	166	43.3	13.3				mg/L	3	Standard
I	127	46957.7	3.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.687	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.760	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.605
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.663
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606053301
Report Date/Time: Thursday, June 16, 2016 17:53:57
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Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606054003
Sample Date/Time: Thursday, June 16, 2016 17:54:52
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69060.4	2.1				ug/L	51024	Standard
	Be	9	195.0	15.6	**0.1507**	0.030	20.2	ug/L	7	Standard
	Al	27	5538034.2	2.1	**28.7382**	0.596	2.1	ug/L	625	Standard
	Sc	45	34442.5	3.5				ug/L	29647	Standard
	Ti	47	14518.0	3.2	**50.5821**	0.898	1.8	ug/L	57	Standard
	V	51	33577.2	0.6	**4.7869**	0.070	1.5	ug/L	1142	Standard
	Cr	52	33773.6	0.6	**3.8889**	0.037	1.0	ug/L	6628	Standard
	Cr	53	7016.6	2.1	**7.4876**	0.191	2.6	ug/L	430	Standard
	Mn	55	504059.4	0.9	**88.9661**	0.527	0.6	ug/L	603	Standard
	Co	59	17512.8	1.2	**2.8178**	0.022	0.8	ug/L	237	Standard
	Ni	60	10317.5	0.9	**5.5347**	0.034	0.6	ug/L	141	Standard
	Cu	65	2208.5	1.2	**1.1669**	0.032	2.7	ug/L	109	Standard
	Zn	66	8517.7	1.0	**7.8315**	0.096	1.2	ug/L	159	Standard
>	**Ge**	72	451723.4	1.4				ug/L	474053	Standard
	As	75	12920.2	3.5	**12.2750**	0.581	4.7	ug/L	-34	Standard
	Se	82	2961.0	4.8	**27.9437**	1.699	6.1	ug/L	14	Standard
	Se-1	77	326.3	1.4	**3.7149**	0.003	0.1	ug/L	55	Standard
>	**Ga**	71	2480.2	6.2				mg/L	50	Standard
	Rb	85	38117.9	1.8				ug/L	20	Standard
	Y	89	421962.4	2.5				ug/L	376602	Standard
>	**Rh**	103	78.3	24.2				ug/L	17	Standard
	Mo	98	3944.4	0.7	**1.6261**	0.009	0.6	ug/L	8	Standard
	Ag	107	112.0	6.7	**0.0060**	0.001	21.5	ug/L	81	Standard
	Cd	111	53.6	6.7	**0.0237**	0.002	7.8	mg/L	3	Standard
	Cd	114	133.4	41.0	**0.0233**	0.011	47.5	ug/L	7	Standard
>	**In**	115	537036.3	0.3				ug/L	524722	Standard
	Sn	118	2543.5	1.4	**0.3719**	0.007	2.0	ug/L	715	Standard
	Sb	123	798.0	25.2	**0.1636**	0.044	27.1	ug/L	201	Standard
	Ba	135	340692.9	0.8	**183.5929**	1.953	1.1	ug/L	108	Standard
	Ce	140	164779.7	1.7				ug/L	30	Standard
>	**Tb**	159	813065.5	1.9				ug/L	792236	Standard
	Ho	165	2875.3	7.5				ug/L	7	Standard
	Tl	203	422.0	6.7	**0.0538**	0.003	6.1	ug/L	9	Standard
	Tl	205	353.3	13.4	**0.0477**	0.007	15.2	ug/L	0	Standard
	Pb	206	3737.8	1.9	**0.7699**	0.010	1.3	ug/L	216	Standard
	Pb	207	3100.7	1.2	**0.6991**	0.004	0.6	ug/L	180	Standard
	Pb	208	12994.2	0.7	**0.7197**	0.013	1.8	ug/L	717	Standard
	U	238	1498.4	1.2	**0.2387**	0.006	2.5	ug/L	4	Standard
>	**Bi**	209	451028.7	1.3				ug/L	460343	Standard

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Na	23	6.7	114.6	**-8.8575**	22.422	253.1	mg/L	0	Standard
Mg	24	23361.3	1.7	**27.2407**	1.080	4.0	mg/L	20	Standard
K	39	78.3	19.5	**0.2883**	0.117	40.4	mg/L	22	Standard
Ca	43	363.3	8.7	**59.9201**	6.518	10.9	mg/L	47	Standard
Fe	54	6234.3	4.5	**4.2529**	0.273	6.4	mg/L	151	Standard
Fe	57	2021.8	6.4	**4.7439**	0.351	7.4	mg/L	195	Standard
> **Sc-1**	45	34442.5	3.5				mg/L	29647	Standard
Cl	35	236460.3	1.1				ug/L	154152	Standard
Kr	83	2.0	0.0				ug/L	3	Standard
Br	81	708935.6	4.3				ug/L	1607	Standard
P	31	40141.4	0.8				ug/L	22752	Standard
S	34	5004.2	5.7				ug/L	5049	Standard
Sr	88	448.3	5.6				ug/L	87	Standard
C	12	160.0	16.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	4859.0	3.9				mg/L	10	Standard
Ho-1	165	2875.3	7.5				mg/L	7	Standard
Er	166	2543.5	9.9				mg/L	3	Standard
I	127	141220.9	4.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		135.349	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.290	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606054003
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.347	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.977	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606054003
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Method 6020 - Summary Report

Sample ID: L1606054003PS WG573083-01
Sample Date/Time: Thursday, June 16, 2016 17:58:03
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70691.2	0.9				ug/L	51024	Standard
	Be	9	50693.0	1.7	**43.5062**	1.094	2.5	ug/L	7	Standard
	Al	27	5657732.1	0.5	**28.6796**	0.340	1.2	ug/L	625	Standard
	Sc	45	32850.6	4.5				ug/L	29647	Standard
	Ti	47	14458.2	2.7	**49.6930**	1.695	3.4	ug/L	57	Standard
	V	51	385117.2	0.8	**55.8774**	0.585	1.0	ug/L	1142	Standard
	Cr	52	382916.9	0.3	**52.9297**	0.331	0.6	ug/L	6628	Standard
	Cr	53	51097.7	0.4	**56.4380**	0.261	0.5	ug/L	430	Standard
	Mn	55	810895.8	0.8	**141.2253**	1.951	1.4	ug/L	603	Standard
	Co	59	346570.3	0.8	**55.7548**	0.081	0.1	ug/L	237	Standard
	Ni	60	100953.5	0.6	**54.0794**	0.195	0.4	ug/L	141	Standard
	Cu	65	91462.3	1.6	**50.2871**	1.080	2.1	ug/L	109	Standard
	Zn	66	61341.3	0.6	**57.0367**	0.769	1.3	ug/L	159	Standard
>	**Ge**	72	458036.5	0.7				ug/L	474053	Standard
	As	75	68674.9	0.5	**64.2143**	0.182	0.3	ug/L	-34	Standard
	Se	82	8569.6	1.8	**80.0280**	0.981	1.2	ug/L	14	Standard
	Se-1	77	4022.5	4.5	**53.4821**	2.795	5.2	ug/L	55	Standard
>	**Ga**	71	2441.9	7.4				mg/L	50	Standard
	Rb	85	38290.0	2.9				ug/L	20	Standard
	Y	89	428743.2	0.3				ug/L	376602	Standard
>	**Rh**	103	91.7	35.1				ug/L	17	Standard
	Mo	98	3923.8	0.2	**1.6525**	0.023	1.4	ug/L	8	Standard
	Ag	107	276547.4	3.6	**46.2633**	2.008	4.3	ug/L	81	Standard
	Cd	111	96223.0	0.5	**49.4786**	0.725	1.5	mg/L	3	Standard
	Cd	114	238042.9	1.3	**49.5078**	0.331	0.7	ug/L	7	Standard
>	**In**	115	525777.0	1.3				ug/L	524722	Standard
	Sn	118	2560.2	3.5	**0.3851**	0.023	6.0	ug/L	715	Standard
	Sb	123	215296.5	0.5	**49.1839**	0.834	1.7	ug/L	201	Standard
	Ba	135	428635.4	1.2	**235.9452**	0.924	0.4	ug/L	108	Standard
	Ce	140	165650.7	1.3				ug/L	30	Standard
>	**Tb**	159	801648.7	1.5				ug/L	792236	Standard
	Ho	165	2957.0	2.0				ug/L	7	Standard
	Tl	203	362265.3	0.3	**49.7124**	0.432	0.9	ug/L	9	Standard
	Tl	205	324753.6	0.8	**52.4032**	0.722	1.4	ug/L	0	Standard
	Pb	206	240535.6	0.4	**54.5563**	0.254	0.5	ug/L	216	Standard
	Pb	207	210550.9	0.8	**52.4580**	0.578	1.1	ug/L	180	Standard
	Pb	208	845714.1	0.6	**51.9167**	0.481	0.9	ug/L	717	Standard
	U	238	316985.2	0.3	**53.4916**	0.510	1.0	ug/L	4	Standard
>	**Bi**	209	439144.9	0.6				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.2953**	8.932	168.7	mg/L	0	Standard
Mg	24	23556.6	1.1	**28.8162**	1.308	4.5	mg/L	20	Standard
K	39	103.3	22.9	**0.4849**	0.170	35.0	mg/L	22	Standard
Ca	43	350.0	13.1	**60.9958**	12.902	21.2	mg/L	47	Standard
Fe	54	6036.8	1.7	**4.3211**	0.223	5.2	mg/L	151	Standard
Fe	57	2113.5	3.5	**5.2621**	0.189	3.6	mg/L	195	Standard
Sc-1	45	32850.6	4.5				mg/L	29647	Standard
Cl	35	237983.9	1.1				ug/L	154152	Standard
Kr	83	0.0					ug/L	3	Standard
Br	81	723069.8	1.3				ug/L	1607	Standard
P	31	40273.5	4.5				ug/L	22752	Standard
S	34	4915.8	1.6				ug/L	5049	Standard
Sr	88	436.7	3.5				ug/L	87	Standard
C	12	133.3	4.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	4443.9	9.4				mg/L	10	Standard
Ho-1	165	2957.0	2.0				mg/L	7	Standard
Er	166	2646.9	6.4				mg/L	3	Standard
I	127	140910.6	0.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		138.545	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.621	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.201	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	95.395	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606054003SDL WG573083-02
Sample Date/Time: Thursday, June 16, 2016 18:01:15
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67421.4	2.2				ug/L	51024	Standard
	Be	9	65.0	23.1	**0.0373**	0.012	33.1	ug/L	7	Standard
	Al	27	1133068.0	1.4	**6.0172**	0.214	3.6	ug/L	625	Standard
	Sc	45	29907.8	2.2				ug/L	29647	Standard
	Ti	47	2896.9	2.4	**9.4986**	0.237	2.5	ug/L	57	Standard
	V	51	8118.9	1.6	**0.9749**	0.019	2.0	ug/L	1142	Standard
	Cr	52	11547.7	1.7	**0.6435**	0.029	4.5	ug/L	6628	Standard
	Cr	53	2378.5	3.7	**2.1298**	0.095	4.5	ug/L	430	Standard
	Mn	55	103741.0	1.9	**17.3694**	0.315	1.8	ug/L	603	Standard
	Co	59	3838.8	2.5	**0.5567**	0.015	2.6	ug/L	237	Standard
	Ni	60	2235.5	2.6	**1.0826**	0.031	2.9	ug/L	141	Standard
	Cu	65	647.7	4.8	**0.2788**	0.016	5.8	ug/L	109	Standard
	Zn	66	2803.6	0.9	**2.3005**	0.025	1.1	ug/L	159	Standard
>	**Ge**	72	473393.6	0.2				ug/L	474053	Standard
	As	75	2692.6	2.6	**2.4601**	0.062	2.5	ug/L	-34	Standard
	Se	82	639.2	5.1	**5.6193**	0.300	5.3	ug/L	14	Standard
	Se-1	77	131.7	10.1	**0.9721**	0.173	17.8	ug/L	55	Standard
>	**Ga**	71	563.3	2.9				mg/L	50	Standard
	Rb	85	7626.9	1.4				ug/L	20	Standard
	Y	89	387376.2	0.4				ug/L	376602	Standard
>	**Rh**	103	25.0	34.6				ug/L	17	Standard
	Mo	98	784.5	4.4	**0.3255**	0.017	5.2	ug/L	8	Standard
	Ag	107	1243.4	2.6	**0.1954**	0.006	3.2	ug/L	81	Standard
	Cd	111	29.9	54.1	**0.0121**	0.008	67.3	mg/L	3	Standard
	Cd	114	69.0	67.7	**0.0105**	0.010	91.0	ug/L	7	Standard
>	**In**	115	526626.8	0.9				ug/L	524722	Standard
	Sn	118	845.0	11.0	**0.0669**	0.018	26.5	ug/L	715	Standard
	Sb	123	2277.2	24.6	**0.5055**	0.132	26.2	ug/L	201	Standard
	Ba	135	69797.7	0.8	**38.3133**	0.615	1.6	ug/L	108	Standard
	Ce	140	34238.6	1.3				ug/L	30	Standard
>	**Tb**	159	801692.0	0.8				ug/L	792236	Standard
	Ho	165	618.3	9.3				ug/L	7	Standard
	Tl	203	344.7	8.1	**0.0429**	0.004	8.5	ug/L	9	Standard
	Tl	205	311.7	8.8	**0.0405**	0.004	10.8	ug/L	0	Standard
	Pb	206	1064.0	3.5	**0.1759**	0.009	4.9	ug/L	216	Standard
	Pb	207	867.0	6.7	**0.1540**	0.013	8.6	ug/L	180	Standard
	Pb	208	3581.5	3.9	**0.1537**	0.009	6.2	ug/L	717	Standard
	U	238	339.0	2.5	**0.0474**	0.001	2.9	ug/L	4	Standard
>	**Bi**	209	456914.2	0.6				ug/L	460343	Standard

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Na	23	5.0	173.2	**-5.5106**	27.648	501.7	mg/L	0	Standard
Mg	24	4740.7	2.0	**6.3283**	0.198	3.1	mg/L	20	Standard
K	39	31.7	32.9	**0.0103**	0.074	719.1	mg/L	22	Standard
Ca	43	96.7	10.8	**9.2099**	2.490	27.0	mg/L	47	Standard
Fe	54	1310.9	5.1	**0.9427**	0.077	8.2	mg/L	151	Standard
Fe	57	518.3	4.8	**0.9451**	0.104	11.0	mg/L	195	Standard
Sc-1	45	29907.8	2.2				mg/L	29647	Standard
Cl	35	171537.6	0.9				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	154143.7	2.2				ug/L	1607	Standard
P	31	26042.4	2.9				ug/L	22752	Standard
S	34	4889.1	5.0				ug/L	5049	Standard
Sr	88	148.3	17.0				ug/L	87	Standard
C	12	73.3	47.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	929.7	4.3				mg/L	10	Standard
Ho-1	165	618.3	9.3				mg/L	7	Standard
Er	166	563.3	6.2				mg/L	3	Standard
I	127	30853.1	2.8				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.136	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.861	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.363
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.255
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606054003SDL WG573083-02
Sample Date/Time: Thursday, June 16, 2016 18:04:26
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65921.5	1.7				ug/L	51024	Standard
	Be	9	28.3	10.2	**0.0050**	0.002	49.4	ug/L	7	Standard
	Al	27	234588.9	1.0	**1.2659**	0.010	0.8	ug/L	625	Standard
	Sc	45	29675.7	0.4				ug/L	29647	Standard
	Ti	47	693.0	13.8	**2.1806**	0.270	12.4	ug/L	57	Standard
	V	51	2547.4	1.6	**0.1965**	0.004	2.1	ug/L	1142	Standard
	Cr	52	7577.9	0.6	**0.1209**	0.025	20.3	ug/L	6628	Standard
	Cr	53	1020.0	10.6	**0.6861**	0.125	18.2	ug/L	430	Standard
	Mn	55	22549.8	0.3	**3.7420**	0.091	2.4	ug/L	603	Standard
	Co	59	941.7	6.4	**0.1080**	0.010	9.7	ug/L	237	Standard
	Ni	60	563.3	5.9	**0.2199**	0.025	11.2	ug/L	141	Standard
	Cu	65	269.3	8.9	**0.0800**	0.016	20.5	ug/L	109	Standard
	Zn	66	1451.4	2.3	**1.1019**	0.057	5.2	ug/L	159	Standard
>	**Ge**	72	465567.5	2.4				ug/L	474053	Standard
	As	75	572.2	6.7	**0.5515**	0.039	7.1	ug/L	-34	Standard
	Se	82	153.8	5.1	**1.2486**	0.091	7.3	ug/L	14	Standard
	Se-1	77	80.7	9.5	**0.3264**	0.123	37.8	ug/L	55	Standard
>	**Ga**	71	155.0	27.6				mg/L	50	Standard
	Rb	85	1620.1	5.6				ug/L	20	Standard
	Y	89	390804.2	2.3				ug/L	376602	Standard
>	**Rh**	103	10.0	50.0				ug/L	17	Standard
	Mo	98	177.1	5.2	**0.0674**	0.004	5.5	ug/L	8	Standard
	Ag	107	160.0	23.9	**0.0138**	0.006	46.0	ug/L	81	Standard
	Cd	111	25.4	77.5	**0.0095**	0.010	103.8	mg/L	3	Standard
	Cd	114	52.9	101.2	**0.0069**	0.011	156.6	ug/L	7	Standard
>	**In**	115	539456.4	0.6				ug/L	524722	Standard
	Sn	118	513.3	2.8	**0.0033**	0.003	95.9	ug/L	715	Standard
	Sb	123	668.0	33.5	**0.1338**	0.049	36.9	ug/L	201	Standard
	Ba	135	14458.9	2.3	**7.7012**	0.163	2.1	ug/L	108	Standard
	Ce	140	7036.6	6.6				ug/L	30	Standard
>	**Tb**	159	818023.3	1.0				ug/L	792236	Standard
	Ho	165	115.0	27.2				ug/L	7	Standard
	Tl	203	200.0	22.5	**0.0231**	0.006	25.9	ug/L	9	Standard
	Tl	205	161.7	23.6	**0.0166**	0.006	35.1	ug/L	0	Standard
	Pb	206	434.7	9.5	**0.0360**	0.009	24.6	ug/L	216	Standard
	Pb	207	375.3	3.2	**0.0337**	0.004	10.7	ug/L	180	Standard
	Pb	208	1515.7	5.1	**0.0292**	0.005	17.5	ug/L	717	Standard
	U	238	114.7	29.0	**0.0105**	0.005	51.2	ug/L	4	Standard
>	**Bi**	209	469475.2	1.0				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1023.4	7.3	**1.3409**	0.102	7.6	mg/L	20	Standard
K	39	6.7	43.3	**-0.1772**	0.022	12.3	mg/L	22	Standard
Ca	43	43.3	46.6	**-3.0610**	4.758	155.5	mg/L	47	Standard
Fe	54	379.2	10.8	**0.1931**	0.034	17.8	mg/L	151	Standard
Fe	57	256.7	21.5	**0.1469**	0.171	116.2	mg/L	195	Standard
Sc-1	45	29675.7	0.4				mg/L	29647	Standard
Cl	35	160581.2	1.2				ug/L	154152	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	34599.5	0.7				ug/L	1607	Standard
P	31	23708.5	0.9				ug/L	22752	Standard
S	34	4770.8	0.4				ug/L	5049	Standard
Sr	88	63.3	39.7				ug/L	87	Standard
C	12	46.7	44.6				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	195.8	8.2				mg/L	10	Standard
Ho-1	165	115.0	27.2				mg/L	7	Standard
Er	166	156.7	19.5				mg/L	3	Standard
I	127	7458.5	3.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.197	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.210	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606054003SDL WG573083-02
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.808
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.984
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 18:07:39
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64746.4	0.3				ug/L	51024	Standard
	Be	9	46935.9	0.9	**43.9752**	0.492	1.1	ug/L	7	Standard
	Al	27	7535309.9	1.9	**41.7048**	0.653	1.6	ug/L	625	Standard
	Sc	45	31043.5	4.7				ug/L	29647	Standard
	Ti	47	28772.6	0.9	**96.6294**	1.169	1.2	ug/L	57	Standard
	V	51	348687.3	1.9	**49.3361**	0.535	1.1	ug/L	1142	Standard
	Cr	52	360685.6	0.1	**48.5749**	1.035	2.1	ug/L	6628	Standard
	Cr	53	45317.7	1.7	**48.7728**	0.185	0.4	ug/L	430	Standard
	Mn	55	312229.0	0.7	**52.9756**	0.740	1.4	ug/L	603	Standard
	Co	59	328785.3	1.7	**51.5998**	0.220	0.4	ug/L	237	Standard
	Ni	60	92818.4	0.9	**48.5066**	0.760	1.6	ug/L	141	Standard
	Cu	65	91019.6	1.6	**48.8181**	0.503	1.0	ug/L	109	Standard
	Zn	66	54227.6	1.6	**49.1583**	0.511	1.0	ug/L	159	Standard
>	Ge	72	469521.9	2.1				ug/L	474053	Standard
	As	75	53936.9	1.2	**49.2114**	0.450	0.9	ug/L	-34	Standard
	Se	82	5505.5	2.6	**50.0972**	0.955	1.9	ug/L	14	Standard
	Se-1	77	3726.1	1.9	**48.2480**	0.384	0.8	ug/L	55	Standard
>	Ga	71	78.3	14.7				mg/L	50	Standard
	Rb	85	671.7	4.5				ug/L	20	Standard
	Y	89	383452.4	1.6				ug/L	376602	Standard
>	Rh	103	25.0	0.0				ug/L	17	Standard
	Mo	98	247423.8	2.1	**101.1140**	2.305	2.3	ug/L	8	Standard
	Ag	107	299585.0	1.0	**48.4657**	0.725	1.5	ug/L	81	Standard
	Cd	111	97195.1	1.0	**48.3387**	0.865	1.8	mg/L	3	Standard
	Cd	114	237825.0	2.4	**47.8442**	1.314	2.7	ug/L	7	Standard
>	In	115	543596.8	0.8				ug/L	524722	Standard
	Sn	118	268878.5	1.5	**48.0977**	1.025	2.1	ug/L	715	Standard
	Sb	123	216173.0	0.7	**47.7614**	0.695	1.5	ug/L	201	Standard
	Ba	135	89328.2	0.9	**47.5171**	0.807	1.7	ug/L	108	Standard
	Ce	140	83.3	25.0				ug/L	30	Standard
>	Tb	159	826706.5	0.3				ug/L	792236	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	368647.9	0.4	**47.0636**	0.889	1.9	ug/L	9	Standard
	Tl	205	321431.2	2.0	**48.2447**	0.798	1.7	ug/L	0	Standard
	Pb	206	230222.8	1.5	**48.5740**	1.152	2.4	ug/L	216	Standard
	Pb	207	209229.9	1.3	**48.4917**	1.019	2.1	ug/L	180	Standard
	Pb	208	835767.1	0.5	**47.7236**	0.588	1.2	ug/L	717	Standard
	U	238	311255.6	0.4	**48.8622**	0.739	1.5	ug/L	4	Standard
>	Bi	209	472106.5	1.5				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3973.9	4.2	**5.1144**	0.463	9.1	mg/L	20	Standard
K	39	603.3	5.9	**4.1749**	0.393	9.4	mg/L	22	Standard
Ca	43	58.3	34.6	**-0.2925**	4.036	1380.2	mg/L	47	Standard
Fe	54	5929.6	4.5	**4.5027**	0.427	9.5	mg/L	151	Standard
Fe	57	1646.8	4.1	**4.2259**	0.199	4.7	mg/L	195	Standard
Sc-1	45	31043.5	4.7				mg/L	29647	Standard
Cl	35	162653.1	0.8				ug/L	154152	Standard
Kr	83	1.0	0.0				ug/L	3	Standard
Br	81	4067.2	17.6				ug/L	1607	Standard
P	31	24251.1	1.7				ug/L	22752	Standard
S	34	5482.7	3.7				ug/L	5049	Standard
Sr	88	45.0	33.3				ug/L	87	Standard
C	12	60.0	28.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	22.5	26.8				mg/L	10	Standard
Ho-1	165	8.3	69.3				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	3	Standard
I	127	1428.4	5.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	87.950		
Al	27	83.410		
Sc	45			
Ti	47	96.629		
V	51	98.672		
Cr	52	97.150		
Cr	53			
Mn	55	105.951		
Co	59	103.200		
Ni	60	97.013		
Cu	65	97.636		
Zn	66	98.317		
Ge	72		99.044	
As	75	98.423		
Se	82	100.194		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.114		
Ag	107	96.931		
Cd	111	96.677		
Cd	114			
In	115		103.597	
Sn	118	96.195		
Sb	123	95.523		
Ba	135	95.034		
Ce	140			
Tb	159			
Ho	165			
Tl	203	94.127		
Tl	205			
Pb	206			
Pb	207			
Pb	208	95.447		
U	238	97.724		
Bi	209		102.555	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 18:10:51
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61896.2	1.1				ug/L	51024	Standard
	Be	9	18.3	56.8	**-0.0031**	0.010	331.6	ug/L	7	Standard
	Al	27	1523.4	19.5	**-0.0009**	0.002	172.8	ug/L	625	Standard
	Sc	45	30746.2	4.2				ug/L	29647	Standard
	Ti	47	48.7	24.0	**0.0041**	0.040	983.7	ug/L	57	Standard
	V	51	1096.5	7.2	**-0.0066**	0.011	164.7	ug/L	1142	Standard
	Cr	52	6114.9	1.9	**-0.0559**	0.020	35.8	ug/L	6628	Standard
	Cr	53	420.0	14.4	**0.0427**	0.071	166.6	ug/L	430	Standard
	Mn	55	696.3	8.0	**-0.0034**	0.009	280.9	ug/L	603	Standard
	Co	59	257.0	3.7	**0.0007**	0.001	190.7	ug/L	237	Standard
	Ni	60	98.3	19.1	**-0.0243**	0.010	42.2	ug/L	141	Standard
	Cu	65	138.3	15.9	**0.0111**	0.013	114.3	ug/L	109	Standard
	Zn	66	155.0	9.1	**-0.0853**	0.013	14.8	ug/L	159	Standard
>	**Ge**	72	451752.5	0.6				ug/L	474053	Standard
	As	75	-25.7	89.3	**0.0007**	0.022	2895.4	ug/L	-34	Standard
	Se	82	22.8	34.8	**0.0475**	0.075	158.2	ug/L	14	Standard
	Se-1	77	56.0	11.7	**0.0207**	0.094	453.1	ug/L	55	Standard
>	**Ga**	71	41.7	18.3				mg/L	50	Standard
	Rb	85	23.3	32.7				ug/L	20	Standard
	Y	89	396184.8	0.8				ug/L	376602	Standard
>	**Rh**	103	16.7	45.8				ug/L	17	Standard
	Mo	98	276.1	23.5	**0.1082**	0.027	25.2	ug/L	8	Standard
	Ag	107	114.0	9.8	**0.0063**	0.002	31.9	ug/L	81	Standard
	Cd	111	11.2	11.3	**0.0024**	0.001	28.4	mg/L	3	Standard
	Cd	114	27.7	73.8	**0.0018**	0.004	228.8	ug/L	7	Standard
>	**In**	115	539405.0	1.3				ug/L	524722	Standard
	Sn	118	770.0	23.8	**0.0496**	0.033	67.2	ug/L	715	Standard
	Sb	123	621.2	30.2	**0.1235**	0.042	34.0	ug/L	201	Standard
	Ba	135	117.7	23.5	**0.0055**	0.015	275.0	ug/L	108	Standard
	Ce	140	10.0	50.0				ug/L	30	Standard
>	**Tb**	159	804197.7	0.7				ug/L	792236	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	67.0	31.6	**0.0062**	0.003	43.0	ug/L	9	Standard
	Tl	205	75.0	13.3	**0.0038**	0.001	37.5	ug/L	0	Standard
	Pb	206	240.0	10.9	**-0.0040**	0.005	132.8	ug/L	216	Standard
	Pb	207	198.7	7.7	**-0.0062**	0.004	60.3	ug/L	180	Standard
	Pb	208	866.3	5.4	**-0.0067**	0.003	50.1	ug/L	717	Standard
	U	238	48.0	12.7	**0.0002**	0.001	508.3	ug/L	4	Standard
>	**Bi**	209	456732.7	1.5				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	38.3	82.8	**0.0048**	0.041	858.7	mg/L	20	Standard
K	39	21.7	87.4	**-0.0684**	0.138	202.1	mg/L	22	Standard
Ca	43	51.7	45.7	**-1.4837**	5.565	375.1	mg/L	47	Standard
Fe	54	127.7	12.6	**-0.0146**	0.015	100.1	mg/L	151	Standard
Fe	57	163.3	30.7	**-0.1626**	0.130	79.6	mg/L	195	Standard
Sc-1	45	30746.2	4.2				mg/L	29647	Standard
Cl	35	165606.2	1.3				ug/L	154152	Standard
Kr	83	3.0	57.7				ug/L	3	Standard
Br	81	2933.6	13.2				ug/L	1607	Standard
P	31	25216.0	5.8				ug/L	22752	Standard
S	34	5477.7	2.3				ug/L	5049	Standard
Sr	88	56.7	33.4				ug/L	87	Standard
C	12	36.7	41.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.9	86.8				mg/L	10	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	10.0	173.2				mg/L	3	Standard
I	127	1125.0	7.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.296	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.798	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.216	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606054009
Sample Date/Time: Thursday, June 16, 2016 18:14:04
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62868.5	2.1				ug/L	51024	Standard
	Be	9	25.0	40.0	**0.0030**	0.010	320.4	ug/L	7	Standard
	Al	27	3263361.8	1.6	**18.5978**	0.187	1.0	ug/L	625	Standard
	Sc	45	30816.3	0.3				ug/L	29647	Standard
	Ti	47	176.7	8.1	**0.4336**	0.054	12.4	ug/L	57	Standard
	V	51	2352.6	1.3	**0.1685**	0.004	2.6	ug/L	1142	Standard
	Cr	52	8208.2	0.8	**0.2076**	0.006	3.1	ug/L	6628	Standard
	Cr	53	778.4	12.3	**0.4216**	0.115	27.4	ug/L	430	Standard
	Mn	55	6000883.1	1.3	**1028.9465**	25.297	2.5	ug/L	603	Standard
	Co	59	5272.3	0.9	**0.7938**	0.018	2.3	ug/L	237	Standard
	Ni	60	2681.9	0.9	**1.3375**	0.018	1.4	ug/L	141	Standard
	Cu	65	979.4	2.5	**0.4642**	0.012	2.6	ug/L	109	Standard
	Zn	66	3790.8	1.0	**3.2497**	0.077	2.4	ug/L	159	Standard
>	**Ge**	72	465659.8	1.3				ug/L	474053	Standard
	As	75	5887.6	1.1	**5.4382**	0.057	1.1	ug/L	-34	Standard
	Se	82	141.8	7.0	**1.1369**	0.108	9.5	ug/L	14	Standard
	Se-1	77	74.7	2.0	**0.2451**	0.023	9.4	ug/L	55	Standard
>	**Ga**	71	296.7	5.1				mg/L	50	Standard
	Rb	85	53373.9	1.9				ug/L	20	Standard
	Y	89	385477.9	2.9				ug/L	376602	Standard
>	**Rh**	103	46.7	16.4				ug/L	17	Standard
	Mo	98	1798.6	2.7	**0.7471**	0.020	2.7	ug/L	8	Standard
	Ag	107	110.0	13.7	**0.0059**	0.003	44.0	ug/L	81	Standard
	Cd	111	71.5	14.9	**0.0332**	0.006	17.6	mg/L	3	Standard
	Cd	114	137.0	6.5	**0.0244**	0.002	7.2	ug/L	7	Standard
>	**In**	115	530892.7	1.2				ug/L	524722	Standard
	Sn	118	731.7	10.0	**0.0448**	0.013	28.2	ug/L	715	Standard
	Sb	123	625.1	16.6	**0.1265**	0.022	17.3	ug/L	201	Standard
	Ba	135	131604.4	0.3	**71.7085**	0.676	0.9	ug/L	108	Standard
	Ce	140	6654.8	2.0				ug/L	30	Standard
>	**Tb**	159	816377.9	1.5				ug/L	792236	Standard
	Ho	165	238.3	11.6				ug/L	7	Standard
	Tl	203	76.0	23.3	**0.0075**	0.002	32.6	ug/L	9	Standard
	Tl	205	63.3	64.3	**0.0021**	0.006	310.8	ug/L	0	Standard
	Pb	206	386.0	5.1	**0.0283**	0.005	18.8	ug/L	216	Standard
	Pb	207	347.0	4.2	**0.0297**	0.005	15.2	ug/L	180	Standard
	Pb	208	1437.7	3.0	**0.0274**	0.003	12.5	ug/L	717	Standard
	U	238	4379.0	0.5	**0.7057**	0.012	1.8	ug/L	4	Standard
>	**Bi**	209	455069.1	1.2				ug/L	460343	Standard

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Na	23	5.0	100.0	**-5.2765**	15.737	298.3	mg/L	0	Standard
Mg	24	9816.5	6.9	**12.7603**	0.918	7.2	mg/L	20	Standard
K	39	4015.5	6.3	**29.2188**	1.778	6.1	mg/L	22	Standard
Ca	43	165.0	35.7	**23.9101**	13.280	55.5	mg/L	47	Standard
Fe	54	13256.8	2.9	**10.2548**	0.305	3.0	mg/L	151	Standard
Fe	57	3875.5	1.1	**10.8966**	0.106	1.0	mg/L	195	Standard
> **Sc-1**	45	30816.3	0.3				mg/L	29647	Standard
Cl	35	225833.9	0.4				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	25945.6	7.7				ug/L	1607	Standard
P	31	26763.6	2.0				ug/L	22752	Standard
S	34	5200.9	3.2				ug/L	5049	Standard
Sr	88	240.0	9.1				ug/L	87	Standard
C	12	193.3	18.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	262.1	17.3				mg/L	10	Standard
Ho-1	165	238.3	11.6				mg/L	7	Standard
Er	166	303.3	18.2				mg/L	3	Standard
I	127	75002.8	8.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.213	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.229	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.176	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.854	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606054010
Sample Date/Time: Thursday, June 16, 2016 18:17:15
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65588.3	0.4				ug/L	51024	Standard
	Be	9	30.0	60.1	**0.0066**	0.017	249.6	ug/L	7	Standard
	Al	27	2526422.5	0.3	**13.7972**	0.064	0.5	ug/L	625	Standard
	Sc	45	30417.2	3.2				ug/L	29647	Standard
	Ti	47	2810.3	3.2	**9.9401**	0.380	3.8	ug/L	57	Standard
	V	51	10857.2	0.9	**1.4795**	0.027	1.9	ug/L	1142	Standard
	Cr	52	13448.6	1.8	**1.0447**	0.048	4.6	ug/L	6628	Standard
	Cr	53	1738.4	6.6	**1.5855**	0.118	7.5	ug/L	430	Standard
	Mn	55	662471.2	0.9	**120.2964**	1.474	1.2	ug/L	603	Standard
	Co	59	2699.2	0.2	**0.4120**	0.004	0.9	ug/L	237	Standard
	Ni	60	3377.4	1.2	**1.8118**	0.036	2.0	ug/L	141	Standard
	Cu	65	1366.7	4.1	**0.7187**	0.039	5.4	ug/L	109	Standard
	Zn	66	9779.2	1.9	**9.2895**	0.243	2.6	ug/L	159	Standard
>	**Ge**	72	439226.0	0.9				ug/L	474053	Standard
	As	75	11053.2	2.0	**10.7998**	0.276	2.6	ug/L	-34	Standard
	Se	82	3723.6	2.4	**36.1764**	1.076	3.0	ug/L	14	Standard
	Se-1	77	120.3	17.9	**0.9478**	0.313	33.0	ug/L	55	Standard
>	**Ga**	71	653.3	7.7				mg/L	50	Standard
	Rb	85	17974.0	0.9				ug/L	20	Standard
	Y	89	392749.3	1.5				ug/L	376602	Standard
>	**Rh**	103	83.3	30.2				ug/L	17	Standard
	Mo	98	4323.3	0.4	**1.8596**	0.045	2.4	ug/L	8	Standard
	Ag	107	99.7	3.2	**0.0047**	0.001	17.3	ug/L	81	Standard
	Cd	111	51.2	16.5	**0.0236**	0.004	17.1	mg/L	3	Standard
	Cd	114	147.6	10.0	**0.0276**	0.004	13.0	ug/L	7	Standard
>	**In**	115	515115.8	2.2				ug/L	524722	Standard
	Sn	118	1333.4	7.7	**0.1626**	0.017	10.4	ug/L	715	Standard
	Sb	123	590.9	5.0	**0.1232**	0.010	8.0	ug/L	201	Standard
	Ba	135	57030.1	1.1	**31.9969**	0.347	1.1	ug/L	108	Standard
	Ce	140	21293.3	3.8				ug/L	30	Standard
>	**Tb**	159	786053.3	2.1				ug/L	792236	Standard
	Ho	165	341.7	14.7				ug/L	7	Standard
	Tl	203	337.7	6.2	**0.0450**	0.003	7.2	ug/L	9	Standard
	Tl	205	321.7	3.2	**0.0455**	0.003	5.8	ug/L	0	Standard
	Pb	206	1862.1	0.7	**0.3774**	0.005	1.2	ug/L	216	Standard
	Pb	207	1577.4	0.7	**0.3498**	0.004	1.2	ug/L	180	Standard
	Pb	208	6669.9	1.5	**0.3627**	0.014	3.8	ug/L	717	Standard
	U	238	10873.6	0.3	**1.8752**	0.033	1.8	ug/L	4	Standard
>	**Bi**	209	428106.7	1.8				ug/L	460343	Standard

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Na	23	6.7	114.6	**-10.3208**	23.457	227.3	mg/L	0	Standard
Mg	24	48188.2	2.0	**63.6943**	3.015	4.7	mg/L	20	Standard
K	39	553.3	6.8	**3.8849**	0.281	7.2	mg/L	22	Standard
Ca	43	321.7	16.0	**60.3557**	13.874	23.0	mg/L	47	Standard
Fe	54	1808.8	3.2	**1.3200**	0.080	6.1	mg/L	151	Standard
Fe	57	981.7	5.4	**2.3180**	0.200	8.6	mg/L	195	Standard
> **Sc-1**	45	30417.2	3.2				mg/L	29647	Standard
Cl	35	209372.7	0.6				ug/L	154152	Standard
Kr	83	0.7	173.2				ug/L	3	Standard
Br	81	933072.6	1.4				ug/L	1607	Standard
P	31	28264.7	0.7				ug/L	22752	Standard
S	34	4879.1	1.2				ug/L	5049	Standard
Sr	88	365.0	15.8				ug/L	87	Standard
C	12	160.0	28.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	522.9	18.7				mg/L	10	Standard
Ho-1	165	341.7	14.7				mg/L	7	Standard
Er	166	356.7	9.8				mg/L	3	Standard
I	127	158946.5	8.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.544	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.653	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.169
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.997
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606054011
Sample Date/Time: Thursday, June 16, 2016 18:20:27
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66415.2	0.8				ug/L	51024	Standard
	Be	9	31.7	92.5	**0.0080**	0.027	339.9	ug/L	7	Standard
	Al	27	2599405.0	0.8	**14.0190**	0.029	0.2	ug/L	625	Standard
	Sc	45	30612.6	1.1				ug/L	29647	Standard
	Ti	47	3388.4	4.8	**11.4676**	0.712	6.2	ug/L	57	Standard
	V	51	11365.4	1.1	**1.4778**	0.020	1.3	ug/L	1142	Standard
	Cr	52	14126.6	0.8	**1.0496**	0.030	2.9	ug/L	6628	Standard
	Cr	53	1888.5	10.3	**1.6589**	0.194	11.7	ug/L	430	Standard
	Mn	55	683276.7	0.4	**118.4238**	2.389	2.0	ug/L	603	Standard
	Co	59	2752.6	2.0	**0.3999**	0.015	3.8	ug/L	237	Standard
	Ni	60	3356.7	1.2	**1.7147**	0.043	2.5	ug/L	141	Standard
	Cu	65	1350.7	3.3	**0.6741**	0.033	5.0	ug/L	109	Standard
	Zn	66	8668.5	0.7	**7.8234**	0.178	2.3	ug/L	159	Standard
>	**Ge**	72	460253.4	1.6				ug/L	474053	Standard
	As	75	11667.3	1.2	**10.8800**	0.252	2.3	ug/L	-34	Standard
	Se	82	3942.6	1.6	**36.5587**	0.912	2.5	ug/L	14	Standard
	Se-1	77	129.7	8.5	**0.9935**	0.130	13.1	ug/L	55	Standard
>	**Ga**	71	686.7	16.0				mg/L	50	Standard
	Rb	85	19050.3	3.1				ug/L	20	Standard
	Y	89	381859.4	1.4				ug/L	376602	Standard
>	**Rh**	103	103.3	43.9				ug/L	17	Standard
	Mo	98	4373.4	1.2	**1.9146**	0.031	1.6	ug/L	8	Standard
	Ag	107	74.0	18.9	**0.0005**	0.002	456.1	ug/L	81	Standard
	Cd	111	45.0	20.2	**0.0208**	0.005	23.5	mg/L	3	Standard
	Cd	114	116.5	10.2	**0.0214**	0.003	12.0	ug/L	7	Standard
>	**In**	115	506011.1	0.4				ug/L	524722	Standard
	Sn	118	1185.0	3.8	**0.1387**	0.010	6.9	ug/L	715	Standard
	Sb	123	571.9	4.2	**0.1210**	0.005	4.2	ug/L	201	Standard
	Ba	135	57088.3	0.4	**32.6025**	0.223	0.7	ug/L	108	Standard
	Ce	140	20652.4	1.0				ug/L	30	Standard
>	**Tb**	159	785323.2	1.2				ug/L	792236	Standard
	Ho	165	306.7	8.0				ug/L	7	Standard
	Tl	203	332.3	7.5	**0.0441**	0.003	7.8	ug/L	9	Standard
	Tl	205	303.3	2.5	**0.0423**	0.001	2.9	ug/L	0	Standard
	Pb	206	1906.8	2.4	**0.3865**	0.007	1.8	ug/L	216	Standard
	Pb	207	1585.1	0.2	**0.3506**	0.006	1.6	ug/L	180	Standard
	Pb	208	6566.9	1.1	**0.3550**	0.006	1.8	ug/L	717	Standard
	U	238	10922.6	1.0	**1.8784**	0.027	1.4	ug/L	4	Standard
>	**Bi**	209	429255.9	1.2				ug/L	460343	Standard

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Na	23	10.0		**-21.2549**	0.358	1.7	mg/L	0	Standard
Mg	24	49766.6	0.9	**65.3028**	0.773	1.2	mg/L	20	Standard
K	39	513.3	10.0	**3.5605**	0.354	9.9	mg/L	22	Standard
Ca	43	375.0	2.3	**71.6613**	1.832	2.6	mg/L	47	Standard
Fe	54	1685.6	3.3	**1.2127**	0.057	4.7	mg/L	151	Standard
Fe	57	868.4	4.3	**1.9576**	0.137	7.0	mg/L	195	Standard
> **Sc-1**	45	30612.6	1.1				mg/L	29647	Standard
Cl	35	212698.7	1.3				ug/L	154152	Standard
Kr	83	1.3	114.6				ug/L	3	Standard
Br	81	930543.4	1.3				ug/L	1607	Standard
P	31	28647.1	1.3				ug/L	22752	Standard
S	34	4877.5	1.7				ug/L	5049	Standard
Sr	88	360.0	7.7				ug/L	87	Standard
C	12	163.3	18.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	0	Standard
Dy	164	512.3	22.5				mg/L	10	Standard
Ho-1	165	306.7	8.0				mg/L	7	Standard
Er	166	300.0	28.9				mg/L	3	Standard
I	127	165895.7	6.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		130.164	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.089	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.434
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.247
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606054014
Sample Date/Time: Thursday, June 16, 2016 18:23:38
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68457.7	1.1				ug/L	51024	Standard
	Be	9	223.3	18.0	**0.1767**	0.033	18.9	ug/L	7	Standard
	Al	27	3707488.9	1.7	**19.4017**	0.122	0.6	ug/L	625	Standard
	Sc	45	30515.7	3.4				ug/L	29647	Standard
	Ti	47	294.7	2.2	**0.8253**	0.029	3.5	ug/L	57	Standard
	V	51	3410.3	2.9	**0.3157**	0.010	3.3	ug/L	1142	Standard
	Cr	52	8854.9	2.4	**0.2871**	0.040	14.1	ug/L	6628	Standard
	Cr	53	1000.0	7.8	**0.6537**	0.075	11.4	ug/L	430	Standard
	Mn	55	12117646.4	0.4	**2060.2552**	13.775	0.7	ug/L	603	Standard
	Co	59	1473.7	1.2	**0.1902**	0.002	1.2	ug/L	237	Standard
	Ni	60	5603.4	1.0	**2.8548**	0.061	2.1	ug/L	141	Standard
	Cu	65	1122.7	1.8	**0.5367**	0.010	1.8	ug/L	109	Standard
	Zn	66	11386.6	1.1	**10.1370**	0.058	0.6	ug/L	159	Standard
>	**Ge**	72	469570.6	1.1				ug/L	474053	Standard
	As	75	14849.9	0.4	**13.5649**	0.144	1.1	ug/L	-34	Standard
	Se	82	356.9	5.3	**3.0899**	0.192	6.2	ug/L	14	Standard
	Se-1	77	81.7	2.5	**0.3287**	0.021	6.5	ug/L	55	Standard
>	**Ga**	71	528.3	9.7				mg/L	50	Standard
	Rb	85	19908.1	1.7				ug/L	20	Standard
	Y	89	397696.3	3.0				ug/L	376602	Standard
>	**Rh**	103	73.3	28.4				ug/L	17	Standard
	Mo	98	1099.6	1.0	**0.4465**	0.011	2.4	ug/L	8	Standard
	Ag	107	113.3	53.3	**0.0062**	0.010	164.1	ug/L	81	Standard
	Cd	111	46.4	117.1	**0.0203**	0.028	137.1	mg/L	3	Standard
	Cd	114	110.7	115.4	**0.0188**	0.026	140.1	ug/L	7	Standard
>	**In**	115	540492.7	1.5				ug/L	524722	Standard
	Sn	118	843.4	3.6	**0.0625**	0.003	5.4	ug/L	715	Standard
	Sb	123	260.9	5.7	**0.0432**	0.004	9.7	ug/L	201	Standard
	Ba	135	85652.2	2.1	**45.8145**	0.326	0.7	ug/L	108	Standard
	Ce	140	2418.5	4.8				ug/L	30	Standard
>	**Tb**	159	825063.1	0.9				ug/L	792236	Standard
	Ho	165	370.0	15.3				ug/L	7	Standard
	Tl	203	165.0	77.7	**0.0187**	0.017	89.0	ug/L	9	Standard
	Tl	205	83.3	48.9	**0.0048**	0.006	129.6	ug/L	0	Standard
	Pb	206	781.7	2.4	**0.1102**	0.005	4.7	ug/L	216	Standard
	Pb	207	661.7	6.1	**0.1011**	0.010	10.0	ug/L	180	Standard
	Pb	208	2756.1	3.9	**0.1010**	0.006	6.3	ug/L	717	Standard
	U	238	69.7	29.4	**0.0035**	0.003	95.7	ug/L	4	Standard
>	**Bi**	209	467941.3	0.6				ug/L	460343	Standard

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Na	23	1.7	173.2	**4.9367**	9.553	193.5	mg/L	0	Standard
Mg	24	7730.3	2.8	**10.1412**	0.303	3.0	mg/L	20	Standard
K	39	158.3	7.9	**0.9473**	0.128	13.5	mg/L	22	Standard
Ca	43	168.3	19.8	**24.8759**	6.392	25.7	mg/L	47	Standard
Fe	54	6384.0	2.9	**4.9326**	0.253	5.1	mg/L	151	Standard
Fe	57	1760.1	6.1	**4.6585**	0.505	10.8	mg/L	195	Standard
Sc-1	45	30515.7	3.4				mg/L	29647	Standard
Cl	35	207881.0	0.4				ug/L	154152	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	77943.4	2.4				ug/L	1607	Standard
P	31	27538.3	2.1				ug/L	22752	Standard
S	34	5344.3	4.3				ug/L	5049	Standard
Sr	88	228.3	5.5				ug/L	87	Standard
C	12	153.3	22.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	364.7	19.0				mg/L	10	Standard
Ho-1	165	370.0	15.3				mg/L	7	Standard
Er	166	390.0	7.7				mg/L	3	Standard
I	127	96865.7	4.2				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		134.167	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.054	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.006
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.651
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606054015
Sample Date/Time: Thursday, June 16, 2016 18:26:50
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70212.3	1.0				ug/L	51024	Standard
	Be	9	93.3	11.2	**0.0596**	0.009	14.8	ug/L	7	Standard
	Al	27	2156794.6	1.5	**11.0022**	0.244	2.2	ug/L	625	Standard
	Sc	45	32787.1	2.8				ug/L	29647	Standard
	Ti	47	872.7	1.5	**2.8741**	0.038	1.3	ug/L	57	Standard
	V	51	4953.3	2.7	**0.5601**	0.025	4.5	ug/L	1142	Standard
	Cr	52	12535.5	0.5	**0.8533**	0.007	0.8	ug/L	6628	Standard
	Cr	53	3772.1	6.1	**3.8114**	0.290	7.6	ug/L	430	Standard
	Mn	55	223713.2	0.6	**39.2731**	0.557	1.4	ug/L	603	Standard
	Co	59	2453.9	1.1	**0.3579**	0.004	1.1	ug/L	237	Standard
	Ni	60	3886.2	1.3	**2.0286**	0.038	1.9	ug/L	141	Standard
	Cu	65	32893.7	0.8	**18.2296**	0.262	1.4	ug/L	109	Standard
	Zn	66	61284.4	0.6	**57.5727**	0.568	1.0	ug/L	159	Standard
>	**Ge**	72	453357.9	0.8				ug/L	474053	Standard
	As	75	5903.1	1.9	**5.6002**	0.148	2.6	ug/L	-34	Standard
	Se	82	1422.0	3.2	**13.2789**	0.537	4.0	ug/L	14	Standard
	Se-1	77	189.7	16.8	**1.8389**	0.442	24.1	ug/L	55	Standard
>	**Ga**	71	225.0	13.5				mg/L	50	Standard
	Rb	85	13973.1	2.8				ug/L	20	Standard
	Y	89	404441.3	1.8				ug/L	376602	Standard
>	**Rh**	103	65.0	38.5				ug/L	17	Standard
	Mo	98	294.7	2.2	**0.1146**	0.002	2.0	ug/L	8	Standard
	Ag	107	105.0	9.1	**0.0046**	0.002	33.3	ug/L	81	Standard
	Cd	111	122.5	4.2	**0.0575**	0.003	4.7	mg/L	3	Standard
	Cd	114	252.7	21.3	**0.0469**	0.011	22.8	ug/L	7	Standard
>	**In**	115	544955.5	0.5				ug/L	524722	Standard
	Sn	118	895.0	4.4	**0.0706**	0.008	11.3	ug/L	715	Standard
	Sb	123	270.4	10.2	**0.0448**	0.006	14.2	ug/L	201	Standard
	Ba	135	146088.3	0.9	**77.5484**	1.011	1.3	ug/L	108	Standard
	Ce	140	17523.5	3.1				ug/L	30	Standard
>	**Tb**	159	819658.6	1.6				ug/L	792236	Standard
	Ho	165	628.3	0.5				ug/L	7	Standard
	Tl	203	235.3	10.6	**0.0288**	0.003	9.6	ug/L	9	Standard
	Tl	205	200.0	25.0	**0.0236**	0.008	34.4	ug/L	0	Standard
	Pb	206	6489.4	1.2	**1.3771**	0.042	3.0	ug/L	216	Standard
	Pb	207	5497.7	0.5	**1.2800**	0.026	2.0	ug/L	180	Standard
	Pb	208	22985.2	1.3	**1.3164**	0.041	3.1	ug/L	717	Standard
	U	238	227.3	4.1	**0.0298**	0.002	7.0	ug/L	4	Standard
>	**Bi**	209	451512.8	1.8				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.4796**	8.613	157.2	mg/L	0	Standard
Mg	24	16031.8	1.4	**19.6235**	0.803	4.1	mg/L	20	Standard
K	39	240.0	3.6	**1.4284**	0.103	7.2	mg/L	22	Standard
Ca	43	188.3	18.1	**26.5601**	6.775	25.5	mg/L	47	Standard
Fe	54	2702.3	1.1	**1.8725**	0.045	2.4	mg/L	151	Standard
Fe	57	970.0	7.1	**2.0665**	0.116	5.6	mg/L	195	Standard
> **Sc-1**	45	32787.1	2.8				mg/L	29647	Standard
Cl	35	187497.7	0.8				ug/L	154152	Standard
Kr	83	2.3	49.5				ug/L	3	Standard
Br	81	349533.5	4.1				ug/L	1607	Standard
P	31	41573.8	6.0				ug/L	22752	Standard
S	34	4967.5	2.6				ug/L	5049	Standard
Sr	88	208.3	5.5				ug/L	87	Standard
C	12	116.7	26.2				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	870.5	12.8				mg/L	10	Standard
Ho-1	165	628.3	0.5				mg/L	7	Standard
Er	166	616.7	28.8				mg/L	3	Standard
I	127	319694.7	6.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		137.606	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.634	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.856	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.082	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606054016
Sample Date/Time: Thursday, June 16, 2016 18:30:01
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68176.4	1.2				ug/L	51024	Standard
	Be	9	21.7	13.3	**-0.0018**	0.003	143.7	ug/L	7	Standard
	Al	27	2075359.9	0.4	**10.9025**	0.136	1.2	ug/L	625	Standard
	Sc	45	31050.1	1.7				ug/L	29647	Standard
	Ti	47	887.4	5.3	**2.8528**	0.151	5.3	ug/L	57	Standard
	V	51	3806.8	2.6	**0.3783**	0.010	2.7	ug/L	1142	Standard
	Cr	52	10637.4	1.5	**0.5485**	0.036	6.6	ug/L	6628	Standard
	Cr	53	1405.1	2.8	**1.1115**	0.040	3.6	ug/L	430	Standard
	Mn	55	486178.5	1.9	**83.5032**	2.235	2.7	ug/L	603	Standard
	Co	59	1054.7	3.8	**0.1263**	0.008	6.2	ug/L	237	Standard
	Ni	60	11529.4	0.9	**6.0257**	0.114	1.9	ug/L	141	Standard
	Cu	65	2707.2	1.0	**1.4044**	0.012	0.8	ug/L	109	Standard
	Zn	66	9083.1	1.3	**8.1357**	0.169	2.1	ug/L	159	Standard
>	**Ge**	72	464207.3	1.0				ug/L	474053	Standard
	As	75	2758.8	3.0	**2.5691**	0.059	2.3	ug/L	-34	Standard
	Se	82	1024.4	2.4	**9.2906**	0.197	2.1	ug/L	14	Standard
	Se-1	77	98.0	6.2	**0.5580**	0.071	12.7	ug/L	55	Standard
>	**Ga**	71	195.0	23.5				mg/L	50	Standard
	Rb	85	7673.6	3.9				ug/L	20	Standard
	Y	89	397515.6	2.3				ug/L	376602	Standard
>	**Rh**	103	68.3	30.5				ug/L	17	Standard
	Mo	98	786.7	1.9	**0.3292**	0.014	4.4	ug/L	8	Standard
	Ag	107	78.0	2.6	**0.0008**	0.000	5.5	ug/L	81	Standard
	Cd	111	30.9	35.5	**0.0127**	0.005	42.9	mg/L	3	Standard
	Cd	114	65.2	1.1	**0.0098**	0.000	2.0	ug/L	7	Standard
>	**In**	115	522465.9	2.4				ug/L	524722	Standard
	Sn	118	738.4	3.7	**0.0483**	0.008	17.1	ug/L	715	Standard
	Sb	123	275.0	16.0	**0.0486**	0.012	23.8	ug/L	201	Standard
	Ba	135	25240.0	1.7	**13.9295**	0.222	1.6	ug/L	108	Standard
	Ce	140	3872.2	6.3				ug/L	30	Standard
>	**Tb**	159	782878.6	0.7				ug/L	792236	Standard
	Ho	165	290.0	15.0				ug/L	7	Standard
	Tl	203	118.7	19.0	**0.0136**	0.003	22.8	ug/L	9	Standard
	Tl	205	133.3	20.7	**0.0136**	0.004	32.8	ug/L	0	Standard
	Pb	206	2356.5	1.5	**0.4750**	0.007	1.6	ug/L	216	Standard
	Pb	207	2055.5	1.9	**0.4553**	0.008	1.8	ug/L	180	Standard
	Pb	208	8501.6	2.4	**0.4610**	0.013	2.9	ug/L	717	Standard
	U	238	331.0	4.1	**0.0479**	0.002	5.0	ug/L	4	Standard
>	**Bi**	209	442159.2	0.2				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.1730**	9.144	176.8	mg/L	0	Standard
Mg	24	10690.4	1.9	**13.7935**	0.084	0.6	mg/L	20	Standard
K	39	96.7	13.0	**0.4748**	0.079	16.7	mg/L	22	Standard
Ca	43	233.3	8.9	**38.9201**	5.419	13.9	mg/L	47	Standard
Fe	54	3334.2	1.9	**2.4739**	0.064	2.6	mg/L	151	Standard
Fe	57	1251.7	5.3	**3.0560**	0.253	8.3	mg/L	195	Standard
> **Sc-1**	45	31050.1	1.7				mg/L	29647	Standard
Cl	35	170093.6	1.6				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	245182.8	3.5				ug/L	1607	Standard
P	31	32394.6	2.5				ug/L	22752	Standard
S	34	5009.2	1.9				ug/L	5049	Standard
Sr	88	261.7	17.8				ug/L	87	Standard
C	12	140.0	12.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	323.0	18.5				mg/L	10	Standard
Ho-1	165	290.0	15.0				mg/L	7	Standard
Er	166	216.7	25.4				mg/L	3	Standard
I	127	55511.6	2.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		133.616	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.923	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.570
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.050
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606054901
Sample Date/Time: Thursday, June 16, 2016 18:33:13
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72709.1	1.6				ug/L	51024	Standard
	Be	9	15.0	88.2	**-0.0087**	0.011	126.1	ug/L	7	Standard
	Al	27	11667015.3	1.5	**57.5082**	0.540	0.9	ug/L	625	Standard
	Sc	45	28668.8	2.1				ug/L	29647	Standard
	Ti	47	148.7	19.1	**0.3823**	0.104	27.3	ug/L	57	Standard
	V	51	2595.6	16.9	**0.2356**	0.067	28.4	ug/L	1142	Standard
	Cr	52	17123.0	0.8	**1.6486**	0.049	3.0	ug/L	6628	Standard
	Cr	53	9336.3	15.0	**10.6848**	1.682	15.7	ug/L	430	Standard
	Mn	55	18549.3	0.3	**3.3327**	0.052	1.6	ug/L	603	Standard
	Co	59	5007.8	1.9	**0.8213**	0.019	2.4	ug/L	237	Standard
	Ni	60	15512.9	1.9	**8.8253**	0.199	2.3	ug/L	141	Standard
	Cu	65	297329.3	1.3	**175.0473**	3.650	2.1	ug/L	109	Standard
	Zn	66	4856.4	2.5	**4.6181**	0.121	2.6	ug/L	159	Standard
>	**Ge**	72	428183.3	1.3				ug/L	474053	Standard
	As	75	2686.3	8.7	**2.7111**	0.235	8.7	ug/L	-34	Standard
	Se	82	880.4	5.1	**8.6464**	0.479	5.5	ug/L	14	Standard
	Se-1	77	1273.7	6.1	**17.6237**	1.226	7.0	ug/L	55	Standard
>	**Ga**	71	535.0	8.9				mg/L	50	Standard
	Rb	85	254257.5	1.2				ug/L	20	Standard
	Y	89	359721.9	0.6				ug/L	376602	Standard
>	**Rh**	103	140.0	9.4				ug/L	17	Standard
	Mo	98	3488.6	3.7	**1.5905**	0.067	4.2	ug/L	8	Standard
	Ag	107	123.7	2.8	**0.0101**	0.001	6.2	ug/L	81	Standard
	Cd	111	15.6	26.6	**0.0055**	0.002	42.5	mg/L	3	Standard
	Cd	114	44.2	40.8	**0.0061**	0.004	65.8	ug/L	7	Standard
>	**In**	115	485628.6	0.5				ug/L	524722	Standard
	Sn	118	1148.4	1.8	**0.1409**	0.005	3.6	ug/L	715	Standard
	Sb	123	1921.7	1.1	**0.4606**	0.007	1.6	ug/L	201	Standard
	Ba	135	96043.1	1.3	**57.1923**	0.511	0.9	ug/L	108	Standard
	Ce	140	93.3	49.8				ug/L	30	Standard
>	**Tb**	159	766976.5	0.2				ug/L	792236	Standard
	Ho	165	5.0	173.2				ug/L	7	Standard
	Tl	203	328.3	20.2	**0.0463**	0.010	21.2	ug/L	9	Standard
	Tl	205	263.3	14.0	**0.0383**	0.006	16.9	ug/L	0	Standard
	Pb	206	413.7	9.2	**0.0455**	0.009	20.2	ug/L	216	Standard
	Pb	207	380.0	6.3	**0.0489**	0.006	12.7	ug/L	180	Standard
	Pb	208	1519.7	11.6	**0.0434**	0.011	26.5	ug/L	717	Standard
	U	238	31.3	49.5	**-0.0018**	0.003	153.2	ug/L	4	Standard
>	**Bi**	209	404872.2	0.7				ug/L	460343	Standard

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Na	23	10.0	86.6	**-23.4566**	29.384	125.3	mg/L	0	Standard
Mg	24	267948.6	0.7	**375.7604**	9.820	2.6	mg/L	20	Standard
K	39	5807.8	3.4	**45.5805**	2.203	4.8	mg/L	22	Standard
Ca	43	638.3	3.5	**141.1529**	8.616	6.1	mg/L	47	Standard
Fe	54	146.9	19.8	**0.0083**	0.022	270.3	mg/L	151	Standard
Fe	57	816.7	4.9	**1.9694**	0.159	8.1	mg/L	195	Standard
> **Sc-1**	45	28668.8	2.1				mg/L	29647	Standard
Cl	35	417643.9	1.4				ug/L	154152	Standard
Kr	83	3.0	57.7				ug/L	3	Standard
Br	81	229759.6	2.4				ug/L	1607	Standard
P	31	23254.5	2.6				ug/L	22752	Standard
S	34	4967.5	4.2				ug/L	5049	Standard
Sr	88	355.0	7.8				ug/L	87	Standard
C	12	183.3	32.0				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	56.7	27.0				mg/L	0	Standard
Dy	164	9.8	2.8				mg/L	10	Standard
Ho-1	165	5.0	173.2				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	1031517.8	6.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		142.499	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.324	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	92.550
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	87.950
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

Sample ID: L1606054901
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Method 6020 - Summary Report

Sample ID: L1606061401
Sample Date/Time: Thursday, June 16, 2016 18:36:24
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67849.9	1.1				ug/L	51024	Standard
	Be	9	10.0	100.0	**-0.0122**	0.009	72.4	ug/L	7	Standard
	Al	27	7374370.7	1.4	**38.9545**	0.953	2.4	ug/L	625	Standard
	Sc	45	31795.0	3.3				ug/L	29647	Standard
	Ti	47	313.7	6.8	**0.9174**	0.076	8.3	ug/L	57	Standard
	V	51	2621.7	2.2	**0.2138**	0.007	3.4	ug/L	1142	Standard
	Cr	52	11091.1	1.0	**0.6343**	0.009	1.4	ug/L	6628	Standard
	Cr	53	2283.5	15.4	**2.1128**	0.383	18.1	ug/L	430	Standard
	Mn	55	22885192.4	0.4	**3995.0920**	30.113	0.8	ug/L	603	Standard
	Co	59	1232.4	2.0	**0.1575**	0.003	2.1	ug/L	237	Standard
	Ni	60	2098.5	2.4	**1.0496**	0.022	2.1	ug/L	141	Standard
	Cu	65	1216.4	7.2	**0.6044**	0.045	7.4	ug/L	109	Standard
	Zn	66	2288.2	0.5	**1.9075**	0.018	1.0	ug/L	159	Standard
>	**Ge**	72	457333.9	0.5				ug/L	474053	Standard
	As	75	909.5	3.9	**0.8764**	0.032	3.6	ug/L	-34	Standard
	Se	82	87.0	7.9	**0.6466**	0.066	10.1	ug/L	14	Standard
	Se-1	77	157.0	28.6	**1.3726**	0.597	43.5	ug/L	55	Standard
>	**Ga**	71	960.0	12.3				mg/L	50	Standard
	Rb	85	5015.8	1.4				ug/L	20	Standard
	Y	89	394642.7	2.8				ug/L	376602	Standard
>	**Rh**	103	63.3	16.4				ug/L	17	Standard
	Mo	98	105.8	7.3	**0.0386**	0.003	8.5	ug/L	8	Standard
	Ag	107	76.0	8.0	**0.0002**	0.001	446.5	ug/L	81	Standard
	Cd	111	105.5	11.4	**0.0504**	0.007	13.1	mg/L	3	Standard
	Cd	114	217.3	8.1	**0.0408**	0.003	7.9	ug/L	7	Standard
>	**In**	115	532134.8	0.9				ug/L	524722	Standard
	Sn	118	536.7	2.8	**0.0088**	0.003	34.6	ug/L	715	Standard
	Sb	123	277.5	10.8	**0.0479**	0.007	15.3	ug/L	201	Standard
	Ba	135	159442.6	1.1	**86.6865**	1.387	1.6	ug/L	108	Standard
	Ce	140	1033.4	5.7				ug/L	30	Standard
>	**Tb**	159	812600.2	1.7				ug/L	792236	Standard
	Ho	165	136.7	12.8				ug/L	7	Standard
	Tl	203	148.0	12.8	**0.0171**	0.003	14.9	ug/L	9	Standard
	Tl	205	111.7	14.4	**0.0097**	0.003	26.2	ug/L	0	Standard
	Pb	206	315.7	1.6	**0.0132**	0.001	8.8	ug/L	216	Standard
	Pb	207	263.7	2.5	**0.0100**	0.002	15.2	ug/L	180	Standard
	Pb	208	1172.4	3.4	**0.0120**	0.002	19.7	ug/L	717	Standard
	U	238	803.7	2.6	**0.1241**	0.003	2.8	ug/L	4	Standard
>	**Bi**	209	452405.5	0.1				ug/L	460343	Standard

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Na	23	10.0	50.0	**-19.9609**	15.153	75.9	mg/L	0	Standard
Mg	24	11375.9	2.6	**14.3383**	0.138	1.0	mg/L	20	Standard
K	39	516.7	6.4	**3.4516**	0.346	10.0	mg/L	22	Standard
Ca	43	308.3	25.1	**54.1698**	18.153	33.5	mg/L	47	Standard
Fe	54	4619.7	1.0	**3.3894**	0.094	2.8	mg/L	151	Standard
Fe	57	1538.4	4.2	**3.7997**	0.290	7.6	mg/L	195	Standard
> **Sc-1**	45	31795.0	3.3				mg/L	29647	Standard
Cl	35	183919.6	1.0				ug/L	154152	Standard
Kr	83	2.3	89.2				ug/L	3	Standard
Br	81	17553.5	2.0				ug/L	1607	Standard
P	31	29355.1	2.7				ug/L	22752	Standard
S	34	5200.9	1.9				ug/L	5049	Standard
Sr	88	190.0	11.5				ug/L	87	Standard
C	12	103.3	53.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	152.8	48.1				mg/L	10	Standard
Ho-1	165	136.7	12.8				mg/L	7	Standard
Er	166	150.0	34.6				mg/L	3	Standard
I	127	70208.0	15.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.976	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.473	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	101.413
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.276
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606062401
Sample Date/Time: Thursday, June 16, 2016 18:39:36
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	69110.6	0.2				ug/L	51024	Standard
	Be	9	15.0	33.3	**-0.0079**	0.004	55.0	ug/L	7	Standard
	Al	27	7936210.1	0.6	**41.1512**	0.274	0.7	ug/L	625	Standard
	Sc	45	30823.0	3.2				ug/L	29647	Standard
	Ti	47	221.7	9.7	**0.5979**	0.081	13.6	ug/L	57	Standard
	V	51	218784.0	0.6	**31.6314**	0.474	1.5	ug/L	1142	Standard
	Cr	52	16406.2	1.4	**1.3767**	0.046	3.3	ug/L	6628	Standard
	Cr	53	3238.7	7.2	**3.1676**	0.244	7.7	ug/L	430	Standard
	Mn	55	47582.7	4.0	**8.1574**	0.347	4.3	ug/L	603	Standard
	Co	59	6337.0	0.6	**0.9777**	0.004	0.4	ug/L	237	Standard
	Ni	60	16455.3	0.3	**8.7388**	0.105	1.2	ug/L	141	Standard
	Cu	65	7946.8	1.2	**4.3032**	0.079	1.8	ug/L	109	Standard
	Zn	66	49099.1	1.5	**45.5445**	0.480	1.1	ug/L	159	Standard
>	Ge	72	458635.0	1.0				ug/L	474053	Standard
	As	75	1613.9	2.7	**1.5315**	0.033	2.1	ug/L	-34	Standard
	Se	82	632.2	1.0	**5.7396**	0.015	0.3	ug/L	14	Standard
	Se-1	77	198.0	8.1	**1.9191**	0.191	10.0	ug/L	55	Standard
>	Ga	71	478.3	12.6				mg/L	50	Standard
	Rb	85	15694.8	4.0				ug/L	20	Standard
	Y	89	402857.7	1.3				ug/L	376602	Standard
>	Rh	103	55.0	41.7				ug/L	17	Standard
	Mo	98	250973.6	0.6	**101.4589**	1.305	1.3	ug/L	8	Standard
	Ag	107	107.3	16.2	**0.0049**	0.003	57.8	ug/L	81	Standard
	Cd	111	-120.2	20.3	**-0.0625**	0.013	20.5	mg/L	3	Standard
	Cd	114	568.4	5.3	**0.1093**	0.006	5.7	ug/L	7	Standard
>	In	115	549544.5	1.2				ug/L	524722	Standard
	Sn	118	805.0	7.3	**0.0532**	0.009	16.5	ug/L	715	Standard
	Sb	123	561.0	5.0	**0.1078**	0.005	5.0	ug/L	201	Standard
	Ba	135	33980.1	2.6	**17.8424**	0.439	2.5	ug/L	108	Standard
	Ce	140	471.7	1.2				ug/L	30	Standard
>	Tb	159	820522.7	2.1				ug/L	792236	Standard
	Ho	165	20.0	25.0				ug/L	7	Standard
	Tl	203	251.3	7.2	**0.0306**	0.002	5.8	ug/L	9	Standard
	Tl	205	235.0	7.7	**0.0286**	0.002	7.0	ug/L	0	Standard
	Pb	206	1733.1	4.4	**0.3220**	0.019	5.8	ug/L	216	Standard
	Pb	207	1553.1	3.0	**0.3188**	0.020	6.4	ug/L	180	Standard
	Pb	208	6433.5	1.7	**0.3223**	0.016	4.9	ug/L	717	Standard
	U	238	255.3	11.3	**0.0338**	0.004	11.1	ug/L	4	Standard
>	Bi	209	456920.5	2.4				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.0019**	9.440	188.7	mg/L	0	Standard
Mg	24	19250.6	2.3	**25.0636**	0.292	1.2	mg/L	20	Standard
K	39	168.3	17.4	**1.0102**	0.242	24.0	mg/L	22	Standard
Ca	43	145.0	18.2	**19.2916**	5.015	26.0	mg/L	47	Standard
Fe	54	151.8	11.3	**0.0041**	0.017	409.5	mg/L	151	Standard
Fe	57	315.0	7.3	**0.2903**	0.041	14.1	mg/L	195	Standard
> **Sc-1**	45	30823.0	3.2				mg/L	29647	Standard
Cl	35	228215.4	1.2				ug/L	154152	Standard
Kr	83	1.7	124.9				ug/L	3	Standard
Br	81	147558.5	1.4				ug/L	1607	Standard
P	31	26561.6	1.8				ug/L	22752	Standard
S	34	5117.5	2.5				ug/L	5049	Standard
Sr	88	270.0	14.7				ug/L	87	Standard
C	12	100.0	17.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	70.0	24.7				mg/L	0	Standard
Dy	164	58.9	45.9				mg/L	10	Standard
Ho-1	165	20.0	25.0				mg/L	7	Standard
Er	166	23.3	49.5				mg/L	3	Standard
I	127	16912.8	6.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		135.447	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.748	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	104.731	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.257	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	

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Method 6020 - Summary Report

Sample ID: L1606063001 WG572432-03
Sample Date/Time: Thursday, June 16, 2016 18:42:47
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69631.3	1.0				ug/L	51024	Standard
	Be	9	8.3	34.6	**-0.0138**	0.003	18.5	ug/L	7	Standard
	Al	27	1739354.1	0.6	**8.9445**	0.105	1.2	ug/L	625	Standard
	Sc	45	30928.2	2.9				ug/L	29647	Standard
	Ti	47	665.7	3.5	**2.0953**	0.107	5.1	ug/L	57	Standard
	V	51	2109.1	2.9	**0.1339**	0.005	3.7	ug/L	1142	Standard
	Cr	52	7651.6	0.5	**0.1320**	0.020	15.0	ug/L	6628	Standard
	Cr	53	2638.6	11.3	**2.4577**	0.289	11.8	ug/L	430	Standard
	Mn	55	27736.7	1.0	**4.6358**	0.114	2.5	ug/L	603	Standard
	Co	59	815.4	0.8	**0.0880**	0.002	1.9	ug/L	237	Standard
	Ni	60	1350.7	2.9	**0.6359**	0.022	3.4	ug/L	141	Standard
	Cu	65	5230.6	1.3	**2.7695**	0.021	0.8	ug/L	109	Standard
	Zn	66	9220.1	0.6	**8.2452**	0.069	0.8	ug/L	159	Standard
>	**Ge**	72	465111.5	1.4				ug/L	474053	Standard
	As	75	269.2	8.8	**0.2730**	0.025	9.0	ug/L	-34	Standard
	Se	82	49.8	13.6	**0.2903**	0.068	23.4	ug/L	14	Standard
	Se-1	77	173.0	5.2	**1.5506**	0.090	5.8	ug/L	55	Standard
>	**Ga**	71	241.7	10.4				mg/L	50	Standard
	Rb	85	36829.7	1.3				ug/L	20	Standard
	Y	89	384374.8	2.5				ug/L	376602	Standard
>	**Rh**	103	41.7	25.0				ug/L	17	Standard
	Mo	98	728.3	12.5	**0.3031**	0.038	12.6	ug/L	8	Standard
	Ag	107	82.0	10.4	**0.0014**	0.002	110.2	ug/L	81	Standard
	Cd	111	14.7	18.3	**0.0044**	0.001	34.2	mg/L	3	Standard
	Cd	114	39.2	43.5	**0.0044**	0.004	82.7	ug/L	7	Standard
>	**In**	115	524227.9	1.2				ug/L	524722	Standard
	Sn	118	960.0	3.9	**0.0890**	0.009	10.3	ug/L	715	Standard
	Sb	123	670.5	6.9	**0.1389**	0.011	8.0	ug/L	201	Standard
	Ba	135	8761.5	1.0	**4.7811**	0.086	1.8	ug/L	108	Standard
	Ce	140	878.4	8.1				ug/L	30	Standard
>	**Tb**	159	793064.4	3.2				ug/L	792236	Standard
	Ho	165	38.3	19.9				ug/L	7	Standard
	Tl	203	150.0	18.8	**0.0177**	0.004	22.6	ug/L	9	Standard
	Tl	205	133.3	15.6	**0.0133**	0.003	25.5	ug/L	0	Standard
	Pb	206	508.3	5.7	**0.0571**	0.007	12.3	ug/L	216	Standard
	Pb	207	414.7	10.5	**0.0477**	0.010	21.1	ug/L	180	Standard
	Pb	208	1771.7	0.4	**0.0490**	0.001	1.6	ug/L	717	Standard
	U	238	19.0	24.1	**-0.0044**	0.001	16.6	ug/L	4	Standard
>	**Bi**	209	447050.8	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	28164.5	1.9	**36.5804**	1.386	3.8	mg/L	20	Standard
K	39	385.0	0.0	**2.5870**	0.080	3.1	mg/L	22	Standard
Ca	43	85.0	20.4	**5.9218**	4.410	74.5	mg/L	47	Standard
Fe	54	182.6	15.8	**0.0273**	0.022	80.2	mg/L	151	Standard
Fe	57	225.0	0.0	**0.0211**	0.019	90.5	mg/L	195	Standard
> **Sc-1**	45	30928.2	2.9				mg/L	29647	Standard
Cl	35	213453.3	1.7				ug/L	154152	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	8942.7	8.2				ug/L	1607	Standard
P	31	31840.1	1.6				ug/L	22752	Standard
S	34	5007.5	0.9				ug/L	5049	Standard
Sr	88	131.7	11.6				ug/L	87	Standard
C	12	73.3	34.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	40.5	49.2				mg/L	10	Standard
Ho-1	165	38.3	19.9				mg/L	7	Standard
Er	166	60.0	33.3				mg/L	3	Standard
I	127	51039.4	6.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		136.467	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.114	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.906
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.113
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 18:46:00
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68225.0	3.2				ug/L	51024	Standard
	Be	9	50708.1	3.5	**45.0847**	0.435	1.0	ug/L	7	Standard
	Al	27	7858332.7	1.5	**41.2907**	0.687	1.7	ug/L	625	Standard
	Sc	45	30560.8	2.3				ug/L	29647	Standard
	Ti	47	29370.1	1.8	**100.7639**	1.653	1.6	ug/L	57	Standard
	V	51	355260.2	0.6	**51.3611**	0.501	1.0	ug/L	1142	Standard
	Cr	52	364134.0	1.1	**50.1157**	0.189	0.4	ug/L	6628	Standard
	Cr	53	45359.5	2.1	**49.8880**	1.306	2.6	ug/L	430	Standard
	Mn	55	315438.4	1.3	**54.6794**	1.132	2.1	ug/L	603	Standard
	Co	59	335779.3	1.2	**53.8409**	0.832	1.5	ug/L	237	Standard
	Ni	60	93086.4	0.8	**49.6929**	0.140	0.3	ug/L	141	Standard
	Cu	65	91127.3	1.4	**49.9327**	0.679	1.4	ug/L	109	Standard
	Zn	66	54195.8	1.1	**50.1944**	0.353	0.7	ug/L	159	Standard
>	Ge	72	459562.3	0.8				ug/L	474053	Standard
	As	75	53571.2	0.7	**49.9335**	0.666	1.3	ug/L	-34	Standard
	Se	82	5527.7	0.4	**51.3922**	0.186	0.4	ug/L	14	Standard
	Se-1	77	3740.1	0.8	**49.4994**	0.726	1.5	ug/L	55	Standard
>	Ga	71	238.3	8.5				mg/L	50	Standard
	Rb	85	728.4	8.0				ug/L	20	Standard
	Y	89	403863.1	2.0				ug/L	376602	Standard
>	Rh	103	30.0	16.7				ug/L	17	Standard
	Mo	98	249432.2	1.4	**100.2684**	1.541	1.5	ug/L	8	Standard
	Ag	107	296071.6	1.7	**47.1134**	0.851	1.8	ug/L	81	Standard
	Cd	111	98641.2	1.4	**48.2538**	0.726	1.5	mg/L	3	Standard
	Cd	114	241419.7	2.8	**47.7722**	1.408	2.9	ug/L	7	Standard
>	In	115	552610.2	0.1				ug/L	524722	Standard
	Sn	118	274943.9	0.8	**48.3767**	0.444	0.9	ug/L	715	Standard
	Sb	123	217314.9	1.3	**47.2274**	0.669	1.4	ug/L	201	Standard
	Ba	135	89302.7	0.5	**46.7236**	0.287	0.6	ug/L	108	Standard
	Ce	140	61.7	32.8				ug/L	30	Standard
>	Tb	159	816119.0	0.8				ug/L	792236	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	369419.3	1.5	**48.6376**	0.510	1.0	ug/L	9	Standard
	Tl	205	333866.9	0.9	**51.6890**	0.388	0.8	ug/L	0	Standard
	Pb	206	232126.7	1.0	**50.5119**	0.450	0.9	ug/L	216	Standard
	Pb	207	210545.8	0.6	**50.3290**	0.336	0.7	ug/L	180	Standard
	Pb	208	855972.8	0.6	**50.4191**	0.795	1.6	ug/L	717	Standard
	U	238	320948.2	1.1	**51.9636**	0.277	0.5	ug/L	4	Standard
>	Bi	209	457695.0	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	4200.6	2.8	**5.4815**	0.198	3.6	mg/L	20	Standard
K	39	558.3	18.4	**3.8970**	0.711	18.2	mg/L	22	Standard
Ca	43	60.0	25.0	**0.3745**	3.188	851.1	mg/L	47	Standard
Fe	54	6005.7	4.5	**4.6268**	0.322	7.0	mg/L	151	Standard
Fe	57	1721.8	7.2	**4.5229**	0.315	7.0	mg/L	195	Standard
> **Sc-1**	45	30560.8	2.3				mg/L	29647	Standard
Cl	35	169117.3	1.2				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	2713.6	7.9				ug/L	1607	Standard
P	31	25114.1	2.9				ug/L	22752	Standard
S	34	5354.3	6.7				ug/L	5049	Standard
Sr	88	73.3	32.2				ug/L	87	Standard
C	12	66.7	67.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	23.0	67.5				mg/L	10	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	3423.7	23.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	90.169		
Al	27	82.581		
Sc	45			
Ti	47	100.764		
V	51	102.722		
Cr	52	100.231		
Cr	53			
Mn	55	109.359		
Co	59	107.682		
Ni	60	99.386		
Cu	65	99.865		
Zn	66	100.389		
> Ge	72		96.943	
As	75	99.867		
Se	82	102.784		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	100.268		
Ag	107	94.227		
Cd	111	96.508		
Cd	114			
In	115		105.315	
Sn	118	96.753		
Sb	123	94.455		
Ba	135	93.447		
Ce	140			
Tb	159			
Ho	165			
Tl	203	97.275		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.838		
U	238	103.927		
Bi	209		99.425	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 18:49:12
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64312.9	1.7				ug/L	51024	Standard
	Be	9	10.0	100.0	**-0.0116**	0.009	81.0	ug/L	7	Standard
	Al	27	1253.4	11.0	**-0.0028**	0.001	25.9	ug/L	625	Standard
	Sc	45	30213.4	2.2				ug/L	29647	Standard
	Ti	47	46.7	13.1	**-0.0109**	0.022	201.6	ug/L	57	Standard
	V	51	1033.9	3.5	**-0.0234**	0.008	34.0	ug/L	1142	Standard
	Cr	52	6122.9	0.9	**-0.0987**	0.025	25.4	ug/L	6628	Standard
	Cr	53	575.0	8.8	**0.1852**	0.063	34.2	ug/L	430	Standard
	Mn	55	1171.4	5.3	**0.0703**	0.014	19.8	ug/L	603	Standard
	Co	59	202.3	7.7	**-0.0099**	0.003	28.8	ug/L	237	Standard
	Ni	60	113.3	11.9	**-0.0193**	0.006	33.6	ug/L	141	Standard
	Cu	65	139.7	5.5	**0.0080**	0.006	71.9	ug/L	109	Standard
	Zn	66	162.0	9.1	**-0.0865**	0.010	11.9	ug/L	159	Standard
>	**Ge**	72	475844.7	2.3				ug/L	474053	Standard
	As	75	5.3	48.7	**0.0299**	0.002	7.8	ug/L	-34	Standard
	Se	82	21.3	16.5	**0.0231**	0.034	148.8	ug/L	14	Standard
	Se-1	77	70.7	7.0	**0.1723**	0.070	40.6	ug/L	55	Standard
>	**Ga**	71	140.0	34.1				mg/L	50	Standard
	Rb	85	38.3	49.4				ug/L	20	Standard
	Y	89	392359.8	3.0				ug/L	376602	Standard
>	**Rh**	103	15.0	57.7				ug/L	17	Standard
	Mo	98	303.5	29.0	**0.1205**	0.035	28.8	ug/L	8	Standard
	Ag	107	88.3	9.9	**0.0022**	0.001	58.2	ug/L	81	Standard
	Cd	111	9.2	17.1	**0.0014**	0.001	58.9	mg/L	3	Standard
	Cd	114	26.1	34.4	**0.0015**	0.002	118.0	ug/L	7	Standard
>	**In**	115	533517.8	1.4				ug/L	524722	Standard
	Sn	118	766.7	17.2	**0.0508**	0.026	51.1	ug/L	715	Standard
	Sb	123	454.0	26.6	**0.0877**	0.028	32.4	ug/L	201	Standard
	Ba	135	106.0	9.4	**-0.0001**	0.006	3944.8	ug/L	108	Standard
	Ce	140	23.3	44.6				ug/L	30	Standard
>	**Tb**	159	792169.2	1.1				ug/L	792236	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	62.3	2.5	**0.0057**	0.000	2.0	ug/L	9	Standard
	Tl	205	51.7	49.7	**0.0003**	0.004	1341.8	ug/L	0	Standard
	Pb	206	226.7	8.4	**-0.0062**	0.005	76.5	ug/L	216	Standard
	Pb	207	203.3	4.0	**-0.0045**	0.002	40.0	ug/L	180	Standard
	Pb	208	845.7	5.1	**-0.0073**	0.002	33.6	ug/L	717	Standard
	U	238	36.0	10.0	**-0.0017**	0.001	31.3	ug/L	4	Standard
>	**Bi**	209	451238.0	1.2				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	41.7	38.6	**0.0104**	0.022	211.4	mg/L	20	Standard
K	39	10.0	50.0	**-0.1532**	0.037	24.4	mg/L	22	Standard
Ca	43	38.3	32.8	**-4.4370**	2.704	60.9	mg/L	47	Standard
Fe	54	137.9	7.6	**-0.0050**	0.006	124.9	mg/L	151	Standard
Fe	57	133.3	7.8	**-0.2416**	0.038	15.5	mg/L	195	Standard
Sc-1	45	30213.4	2.2				mg/L	29647	Standard
Cl	35	167592.0	1.8				ug/L	154152	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	2426.9	7.0				ug/L	1607	Standard
P	31	25579.9	2.0				ug/L	22752	Standard
S	34	5439.3	0.7				ug/L	5049	Standard
Sr	88	61.7	9.4				ug/L	87	Standard
C	12	56.7	56.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.0	93.6				mg/L	10	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	2145.2	8.8				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.378	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.676	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.022	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606063001DP WG572432-10
Sample Date/Time: Thursday, June 16, 2016 18:52:25
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68712.2	2.1				ug/L	51024	Standard
	Be	9	13.3	57.3	**-0.0092**	0.007	74.2	ug/L	7	Standard
	Al	27	1694606.4	2.1	**8.8301**	0.029	0.3	ug/L	625	Standard
	Sc	45	32870.6	1.4				ug/L	29647	Standard
	Ti	47	632.0	2.3	**1.9902**	0.036	1.8	ug/L	57	Standard
	V	51	2183.1	15.2	**0.1462**	0.049	33.7	ug/L	1142	Standard
	Cr	52	8437.7	0.6	**0.2463**	0.014	5.5	ug/L	6628	Standard
	Cr	53	3582.1	45.8	**3.5137**	1.806	51.4	ug/L	430	Standard
	Mn	55	25959.2	3.5	**4.3517**	0.184	4.2	ug/L	603	Standard
	Co	59	780.0	4.2	**0.0830**	0.005	6.3	ug/L	237	Standard
	Ni	60	1265.7	3.1	**0.5941**	0.019	3.2	ug/L	141	Standard
	Cu	65	4964.1	2.1	**2.6377**	0.034	1.3	ug/L	109	Standard
	Zn	66	7744.6	0.4	**6.9226**	0.090	1.3	ug/L	159	Standard
>	**Ge**	72	462903.9	0.9				ug/L	474053	Standard
	As	75	268.6	20.8	**0.2737**	0.054	19.7	ug/L	-34	Standard
	Se	82	41.2	34.5	**0.2137**	0.136	63.4	ug/L	14	Standard
	Se-1	77	155.7	4.3	**1.3316**	0.104	7.8	ug/L	55	Standard
>	**Ga**	71	160.0	9.4				mg/L	50	Standard
	Rb	85	36001.1	1.5				ug/L	20	Standard
	Y	89	387483.8	2.3				ug/L	376602	Standard
>	**Rh**	103	38.3	41.9				ug/L	17	Standard
	Mo	98	602.0	7.2	**0.2407**	0.015	6.4	ug/L	8	Standard
	Ag	107	97.7	12.0	**0.0035**	0.002	49.5	ug/L	81	Standard
	Cd	111	14.9	82.6	**0.0042**	0.006	147.6	mg/L	3	Standard
	Cd	114	54.8	20.5	**0.0072**	0.002	30.8	ug/L	7	Standard
>	**In**	115	542940.9	1.2				ug/L	524722	Standard
	Sn	118	1003.4	7.5	**0.0905**	0.011	12.7	ug/L	715	Standard
	Sb	123	760.6	4.7	**0.1535**	0.006	4.0	ug/L	201	Standard
	Ba	135	8458.7	1.6	**4.4523**	0.053	1.2	ug/L	108	Standard
	Ce	140	761.7	12.9				ug/L	30	Standard
>	**Tb**	159	813941.2	0.6				ug/L	792236	Standard
	Ho	165	46.7	60.9				ug/L	7	Standard
	Tl	203	213.3	5.0	**0.0252**	0.001	4.7	ug/L	9	Standard
	Tl	205	173.3	1.7	**0.0188**	0.000	1.2	ug/L	0	Standard
	Pb	206	486.7	2.6	**0.0486**	0.003	6.9	ug/L	216	Standard
	Pb	207	410.0	4.9	**0.0433**	0.005	11.5	ug/L	180	Standard
	Pb	208	1804.7	2.7	**0.0475**	0.003	5.4	ug/L	717	Standard
	U	238	45.0	13.3	**-0.0004**	0.001	279.8	ug/L	4	Standard
>	**Bi**	209	462206.0	0.8				ug/L	460343	Standard

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Na	23	5.0	100.0	**-4.2590**	14.576	342.2	mg/L	0	Standard
Mg	24	26429.7	2.8	**32.2858**	1.354	4.2	mg/L	20	Standard
K	39	396.7	3.9	**2.4991**	0.082	3.3	mg/L	22	Standard
Ca	43	96.7	7.9	**7.1952**	1.844	25.6	mg/L	47	Standard
Fe	54	180.8	15.4	**0.0178**	0.022	121.6	mg/L	151	Standard
Fe	57	203.3	16.0	**-0.0787**	0.096	122.2	mg/L	195	Standard
> **Sc-1**	45	32870.6	1.4				mg/L	29647	Standard
Cl	35	203581.4	1.3				ug/L	154152	Standard
Kr	83	2.0	0.0				ug/L	3	Standard
Br	81	6207.9	4.2				ug/L	1607	Standard
P	31	32229.2	1.5				ug/L	22752	Standard
S	34	4830.8	4.5				ug/L	5049	Standard
Sr	88	108.3	30.0				ug/L	87	Standard
C	12	86.7	6.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	47.3	42.6				mg/L	10	Standard
Ho-1	165	46.7	60.9				mg/L	7	Standard
Er	166	56.7	81.5				mg/L	3	Standard
I	127	39314.5	7.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		134.666	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.648	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.472
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.405
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 18:55:38
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67264.1	3.2				ug/L	51024	Standard
	Be	9	51087.7	3.5	**46.0740**	0.786	1.7	ug/L	7	Standard
	Al	27	7974693.7	0.5	**42.5107**	1.182	2.8	ug/L	625	Standard
	Sc	45	31289.0	2.9				ug/L	29647	Standard
	Ti	47	29983.3	1.5	**100.8099**	2.621	2.6	ug/L	57	Standard
	V	51	356976.4	1.6	**50.5633**	0.626	1.2	ug/L	1142	Standard
	Cr	52	371000.0	2.2	**50.0293**	1.004	2.0	ug/L	6628	Standard
	Cr	53	45682.1	3.1	**49.2179**	1.406	2.9	ug/L	430	Standard
	Mn	55	318039.5	1.1	**54.0099**	0.158	0.3	ug/L	603	Standard
	Co	59	338391.0	1.1	**53.1626**	0.493	0.9	ug/L	237	Standard
	Ni	60	94145.4	2.5	**49.2417**	1.028	2.1	ug/L	141	Standard
	Cu	65	92379.1	1.4	**49.5948**	0.289	0.6	ug/L	109	Standard
	Zn	66	54668.5	1.5	**49.6081**	0.589	1.2	ug/L	159	Standard
>	Ge	72	469038.3	1.3				ug/L	474053	Standard
	As	75	54293.6	1.3	**49.5816**	0.207	0.4	ug/L	-34	Standard
	Se	82	5559.0	0.1	**50.6424**	0.722	1.4	ug/L	14	Standard
	Se-1	77	3786.5	1.3	**49.0965**	0.931	1.9	ug/L	55	Standard
>	Ga	71	158.3	25.7				mg/L	50	Standard
	Rb	85	761.7	7.0				ug/L	20	Standard
	Y	89	395591.6	1.3				ug/L	376602	Standard
>	Rh	103	25.0	80.0				ug/L	17	Standard
	Mo	98	251383.1	0.4	**103.0718**	1.215	1.2	ug/L	8	Standard
	Ag	107	306968.8	0.5	**49.8241**	0.634	1.3	ug/L	81	Standard
	Cd	111	100215.1	0.7	**50.0041**	0.742	1.5	mg/L	3	Standard
	Cd	114	243336.5	2.3	**49.1181**	1.543	3.1	ug/L	7	Standard
>	In	115	541813.2	0.8				ug/L	524722	Standard
	Sn	118	281669.0	0.4	**50.5528**	0.296	0.6	ug/L	715	Standard
	Sb	123	222839.5	0.9	**49.3972**	0.805	1.6	ug/L	201	Standard
	Ba	135	91045.1	0.4	**48.5895**	0.562	1.2	ug/L	108	Standard
	Ce	140	61.7	12.4				ug/L	30	Standard
>	Tb	159	817844.5	0.4				ug/L	792236	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	379786.0	0.6	**49.2821**	0.368	0.7	ug/L	9	Standard
	Tl	205	336318.4	0.5	**51.3165**	0.323	0.6	ug/L	0	Standard
	Pb	206	235111.2	1.0	**50.4225**	0.567	1.1	ug/L	216	Standard
	Pb	207	213294.2	0.5	**50.2491**	0.369	0.7	ug/L	180	Standard
	Pb	208	862915.5	0.7	**50.0892**	0.286	0.6	ug/L	717	Standard
	U	238	324915.2	0.1	**51.8469**	0.100	0.2	ug/L	4	Standard
>	Bi	209	464391.0	0.2				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	4073.9	4.4	**5.1949**	0.373	7.2	mg/L	20	Standard
K	39	616.7	11.0	**4.2379**	0.622	14.7	mg/L	22	Standard
Ca	43	71.7	38.4	**2.7208**	6.257	230.0	mg/L	47	Standard
Fe	54	6184.7	3.6	**4.6538**	0.266	5.7	mg/L	151	Standard
Fe	57	1603.4	6.3	**4.0588**	0.310	7.6	mg/L	195	Standard
> **Sc-1**	45	31289.0	2.9				mg/L	29647	Standard
Cl	35	168092.6	0.3				ug/L	154152	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	1803.4	11.3				ug/L	1607	Standard
P	31	25418.0	3.0				ug/L	22752	Standard
S	34	5476.0	0.8				ug/L	5049	Standard
Sr	88	68.3	36.1				ug/L	87	Standard
C	12	76.7	30.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.5	122.8				mg/L	10	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	3	Standard
I	127	2120.2	19.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	92.148		
Al	27	85.021		
Sc	45			
Ti	47	100.810		
V	51	101.127		
Cr	52	100.059		
Cr	53			
Mn	55	108.020		
Co	59	106.325		
Ni	60	98.483		
Cu	65	99.190		
Zn	66	99.216		
> Ge	72		98.942	
As	75	99.163		
Se	82	101.285		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	103.072		
Ag	107	99.648		
Cd	111	100.008		
Cd	114			
> In	115		103.257	
Sn	118	101.106		
Sb	123	98.794		
Ba	135	97.179		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.564		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.178		
U	238	103.694		
> Bi	209		100.879	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 18:58:50
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65086.2	2.0				ug/L	51024	Standard
	Be	9	21.7	58.1	**-0.0010**	0.011	1171.7	ug/L	7	Standard
	Al	27	2008.5	34.3	**0.0013**	0.004	284.1	ug/L	625	Standard
	Sc	45	30751.2	2.4				ug/L	29647	Standard
	Ti	47	41.3	24.7	**-0.0285**	0.034	119.2	ug/L	57	Standard
	V	51	1096.5	3.2	**-0.0144**	0.004	27.7	ug/L	1142	Standard
	Cr	52	6076.9	0.1	**-0.1037**	0.008	7.3	ug/L	6628	Standard
	Cr	53	488.3	13.0	**0.0929**	0.070	75.6	ug/L	430	Standard
	Mn	55	1470.4	24.5	**0.1211**	0.063	51.8	ug/L	603	Standard
	Co	59	206.0	14.6	**-0.0092**	0.005	53.2	ug/L	237	Standard
	Ni	60	120.7	4.2	**-0.0153**	0.002	15.6	ug/L	141	Standard
	Cu	65	142.0	16.7	**0.0093**	0.013	141.3	ug/L	109	Standard
	Zn	66	152.7	7.5	**-0.0944**	0.011	12.1	ug/L	159	Standard
>	**Ge**	72	474934.0	0.8				ug/L	474053	Standard
	As	75	-45.5	82.0	**-0.0158**	0.033	212.2	ug/L	-34	Standard
	Se	82	16.2	50.9	**-0.0227**	0.076	333.7	ug/L	14	Standard
	Se-1	77	66.0	6.9	**0.1132**	0.063	55.7	ug/L	55	Standard
>	**Ga**	71	136.7	9.2				mg/L	50	Standard
	Rb	85	30.0	28.9				ug/L	20	Standard
	Y	89	402114.5	0.5				ug/L	376602	Standard
>	**Rh**	103	21.7	35.3				ug/L	17	Standard
	Mo	98	281.3	33.4	**0.1095**	0.037	34.1	ug/L	8	Standard
	Ag	107	96.3	13.1	**0.0033**	0.002	62.1	ug/L	81	Standard
	Cd	111	10.2	38.2	**0.0019**	0.002	104.1	mg/L	3	Standard
	Cd	114	23.6	19.2	**0.0010**	0.001	99.3	ug/L	7	Standard
>	**In**	115	541583.6	1.8				ug/L	524722	Standard
	Sn	118	860.0	27.1	**0.0652**	0.041	63.3	ug/L	715	Standard
	Sb	123	479.5	22.9	**0.0918**	0.026	27.9	ug/L	201	Standard
	Ba	135	123.3	8.3	**0.0082**	0.005	60.8	ug/L	108	Standard
	Ce	140	23.3	65.5				ug/L	30	Standard
>	**Tb**	159	792193.7	1.1				ug/L	792236	Standard
	Ho	165	13.3	78.1				ug/L	7	Standard
	Tl	203	66.0	21.2	**0.0060**	0.002	29.5	ug/L	9	Standard
	Tl	205	46.7	12.4	**-0.0007**	0.001	132.6	ug/L	0	Standard
	Pb	206	228.3	5.2	**-0.0071**	0.002	32.1	ug/L	216	Standard
	Pb	207	200.3	2.5	**-0.0063**	0.001	19.4	ug/L	180	Standard
	Pb	208	858.7	6.2	**-0.0078**	0.003	36.1	ug/L	717	Standard
	U	238	38.3	37.5	**-0.0014**	0.002	161.1	ug/L	4	Standard
>	**Bi**	209	462016.2	0.6				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	36.7	70.0	**0.0029**	0.034	1195.5	mg/L	20	Standard
K	39	18.3	56.8	**-0.0943**	0.072	76.9	mg/L	22	Standard
Ca	43	45.0	22.2	**-3.0781**	2.040	66.3	mg/L	47	Standard
Fe	54	114.4	7.6	**-0.0252**	0.008	31.9	mg/L	151	Standard
Fe	57	173.3	9.3	**-0.1300**	0.041	31.6	mg/L	195	Standard
Sc-1	45	30751.2	2.4				mg/L	29647	Standard
Cl	35	167486.4	2.8				ug/L	154152	Standard
Kr	83	2.0	86.6				ug/L	3	Standard
Br	81	1856.8	2.2				ug/L	1607	Standard
P	31	26229.4	1.8				ug/L	22752	Standard
S	34	5394.3	3.3				ug/L	5049	Standard
Sr	88	46.7	37.6				ug/L	87	Standard
C	12	50.0	20.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.9	187.9				mg/L	10	Standard
Ho-1	165	13.3	78.1				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	1466.7	5.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.186	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.213
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.363
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, June 16, 2016 19:02:02
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62105.4	2.6				ug/L	51024	Standard
	Be	9	230.0	20.7	**0.2030**	0.041	20.0	ug/L	7	Standard
	Al	27	2411.9	57.3	**0.0040**	0.008	188.2	ug/L	625	Standard
	Sc	45	29320.0	1.0				ug/L	29647	Standard
	Ti	47	44.0	15.9	**-0.0143**	0.023	160.1	ug/L	57	Standard
	V	51	3629.6	1.0	**0.3604**	0.013	3.7	ug/L	1142	Standard
	Cr	52	11639.8	0.7	**0.7104**	0.026	3.6	ug/L	6628	Standard
	Cr	53	1218.4	6.6	**0.9247**	0.069	7.5	ug/L	430	Standard
	Mn	55	4165.6	11.2	**0.6000**	0.079	13.2	ug/L	603	Standard
	Co	59	2679.2	3.3	**0.3905**	0.015	4.0	ug/L	237	Standard
	Ni	60	2918.9	1.9	**1.4896**	0.048	3.2	ug/L	141	Standard
	Cu	65	1533.7	1.1	**0.7788**	0.010	1.3	ug/L	109	Standard
	Zn	66	7393.8	1.4	**6.6758**	0.118	1.8	ug/L	159	Standard
>	**Ge**	72	457738.9	1.6				ug/L	474053	Standard
	As	75	382.8	8.7	**0.3830**	0.030	7.9	ug/L	-34	Standard
	Se	82	57.3	9.5	**0.3683**	0.054	14.6	ug/L	14	Standard
	Se-1	77	79.7	6.9	**0.3297**	0.074	22.6	ug/L	55	Standard
>	**Ga**	71	103.3	23.9				mg/L	50	Standard
	Rb	85	18.3	41.7				ug/L	20	Standard
	Y	89	375631.5	1.4				ug/L	376602	Standard
>	**Rh**	103	10.0	86.6				ug/L	17	Standard
	Mo	98	122.4	54.4	**0.0465**	0.029	61.8	ug/L	8	Standard
	Ag	107	2330.2	1.4	**0.3786**	0.008	2.1	ug/L	81	Standard
	Cd	111	467.2	1.7	**0.2376**	0.006	2.6	mg/L	3	Standard
	Cd	114	1116.8	1.3	**0.2291**	0.004	1.8	ug/L	7	Standard
>	**In**	115	524377.5	1.0				ug/L	524722	Standard
	Sn	118	430.0	17.1	**-0.0096**	0.013	134.4	ug/L	715	Standard
	Sb	123	1783.9	4.5	**0.3940**	0.022	5.6	ug/L	201	Standard
	Ba	135	1250.7	1.9	**0.6328**	0.015	2.4	ug/L	108	Standard
	Ce	140	8.3	91.7				ug/L	30	Standard
>	**Tb**	159	782327.7	0.6				ug/L	792236	Standard
	Ho	165	11.7	107.9				ug/L	7	Standard
	Tl	203	644.0	4.6	**0.0829**	0.005	5.6	ug/L	9	Standard
	Tl	205	603.3	8.3	**0.0864**	0.009	9.9	ug/L	0	Standard
	Pb	206	1176.0	6.8	**0.2020**	0.018	8.8	ug/L	216	Standard
	Pb	207	1021.4	8.8	**0.1927**	0.023	12.1	ug/L	180	Standard
	Pb	208	4081.2	6.5	**0.1848**	0.017	9.4	ug/L	717	Standard
	U	238	2503.2	1.2	**0.4011**	0.007	1.8	ug/L	4	Standard
>	**Bi**	209	453995.6	0.8				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	40.0	25.0	**0.0095**	0.013	138.3	mg/L	20	Standard
K	39	13.3	43.3	**-0.1249**	0.045	36.2	mg/L	22	Standard
Ca	43	35.0	28.6	**-4.9048**	2.432	49.6	mg/L	47	Standard
Fe	54	120.6	31.6	**-0.0158**	0.032	201.6	mg/L	151	Standard
Fe	57	148.3	13.6	**-0.1825**	0.065	35.6	mg/L	195	Standard
Sc-1	45	29320.0	1.0				mg/L	29647	Standard
Cl	35	160593.3	0.6				ug/L	154152	Standard
Kr	83	0.3	173.2				ug/L	3	Standard
Br	81	1753.4	6.3				ug/L	1607	Standard
P	31	18406.2	0.9				ug/L	22752	Standard
S	34	5287.6	2.4				ug/L	5049	Standard
Sr	88	66.7	18.9				ug/L	87	Standard
C	12	56.7	36.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	13.0	46.6				mg/L	10	Standard
Ho-1	165	11.7	107.9				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	3	Standard
I	127	1111.7	9.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	101.480		
Al	27			
Sc	45			
Ti	47			
V	51	90.091		
Cr	52	88.800		
Cr	53			
Mn	55	120.007		
Co	59	97.613		
Ni	60	93.098		
Cu	65	97.350		
Zn	66	106.813		
Ge	72		96.559	
As	75	95.761		
Se	82	92.069		
Se-1	77			
Ga	71			

Sample ID: QC Std 8
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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	94.641		
Cd	111	99.021		
Cd	114			
> In	115			99.934
Sn	118			
Sb	123	98.503		
Ba	135	84.376		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	103.666		
Tl	205			
Pb	206			
Pb	207			
Pb	208	92.383		
U	238	100.273		
> Bi	209			98.621
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
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Method 6020 - Summary Report

Sample ID: PBW 42 WG572730-03
Sample Date/Time: Thursday, June 16, 2016 19:05:16
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62749.7	0.4				ug/L	51024	Standard
	Be	9	18.3	95.8	**-0.0034**	0.017	498.2	ug/L	7	Standard
	Al	27	45563.5	4.1	**0.2505**	0.010	4.1	ug/L	625	Standard
	Sc	45	30499.0	0.2				ug/L	29647	Standard
	Ti	47	51.3	19.1	**0.0066**	0.033	492.2	ug/L	57	Standard
	V	51	1097.4	4.3	**-0.0126**	0.007	55.7	ug/L	1142	Standard
	Cr	52	7963.4	1.0	**0.1642**	0.013	7.9	ug/L	6628	Standard
	Cr	53	896.7	4.5	**0.5418**	0.048	8.8	ug/L	430	Standard
	Mn	55	2548.5	1.6	**0.3068**	0.006	2.0	ug/L	603	Standard
	Co	59	285.7	3.7	**0.0036**	0.002	42.0	ug/L	237	Standard
	Ni	60	410.7	8.1	**0.1371**	0.018	13.2	ug/L	141	Standard
	Cu	65	253.3	2.8	**0.0699**	0.004	5.6	ug/L	109	Standard
	Zn	66	1271.7	3.2	**0.9258**	0.037	4.0	ug/L	159	Standard
>	**Ge**	72	469694.2	0.4				ug/L	474053	Standard
	As	75	1524.9	4.2	**1.4151**	0.063	4.5	ug/L	-34	Standard
	Se	82	670.0	3.5	**5.9461**	0.237	4.0	ug/L	14	Standard
	Se-1	77	66.0	18.4	**0.1230**	0.163	132.4	ug/L	55	Standard
>	**Ga**	71	123.3	16.4				mg/L	50	Standard
	Rb	85	295.0	3.4				ug/L	20	Standard
	Y	89	394476.0	3.2				ug/L	376602	Standard
>	**Rh**	103	20.0	66.1				ug/L	17	Standard
	Mo	98	84.7	10.3	**0.0293**	0.004	12.7	ug/L	8	Standard
	Ag	107	83.0	7.9	**0.0012**	0.001	88.8	ug/L	81	Standard
	Cd	111	13.9	21.7	**0.0037**	0.001	39.9	mg/L	3	Standard
	Cd	114	54.3	34.3	**0.0072**	0.004	52.7	ug/L	7	Standard
>	**In**	115	540141.2	0.4				ug/L	524722	Standard
	Sn	118	648.3	6.2	**0.0275**	0.007	26.0	ug/L	715	Standard
	Sb	123	144.9	16.0	**0.0174**	0.005	30.4	ug/L	201	Standard
	Ba	135	21260.9	1.4	**11.3366**	0.117	1.0	ug/L	108	Standard
	Ce	140	155.0	8.5				ug/L	30	Standard
>	**Tb**	159	801981.8	0.8				ug/L	792236	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	205.7	5.0	**0.0243**	0.001	5.5	ug/L	9	Standard
	Tl	205	185.0	17.7	**0.0206**	0.005	24.4	ug/L	0	Standard
	Pb	206	277.0	10.2	**0.0035**	0.006	164.3	ug/L	216	Standard
	Pb	207	230.3	3.9	**0.0008**	0.002	210.4	ug/L	180	Standard
	Pb	208	975.0	1.4	**-0.0009**	0.000	49.0	ug/L	717	Standard
	U	238	16.3	25.5	**-0.0050**	0.001	13.9	ug/L	4	Standard
>	**Bi**	209	461335.7	0.7				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	403.3	18.0	**0.4864**	0.096	19.7	mg/L	20	Standard
K	39	18.3	56.8	**-0.0922**	0.077	83.3	mg/L	22	Standard
Ca	43	38.3	27.2	**-4.4783**	2.388	53.3	mg/L	47	Standard
Fe	54	151.1	15.7	**0.0044**	0.018	419.9	mg/L	151	Standard
Fe	57	180.0	9.6	**-0.1053**	0.052	49.8	mg/L	195	Standard
> **Sc-1**	45	30499.0	0.2				mg/L	29647	Standard
Cl	35	167221.1	1.1				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	161399.3	3.9				ug/L	1607	Standard
P	31	23832.1	1.6				ug/L	22752	Standard
S	34	5314.3	4.0				ug/L	5049	Standard
Sr	88	105.0	12.6				ug/L	87	Standard
C	12	53.3	43.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.5	177.6				mg/L	10	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	4855.8	5.9				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		122.980	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.081	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	102.939
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.216
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: LCSW 42 WG572730-04
Sample Date/Time: Thursday, June 16, 2016 19:08:28
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62985.7	0.9				ug/L	51024	Standard
	Be	9	48407.2	1.0	**46.6239**	0.599	1.3	ug/L	7	Standard
	Al	27	15242.7	3.1	**0.0770**	0.003	4.2	ug/L	625	Standard
	Sc	45	31167.0	1.6				ug/L	29647	Standard
	Ti	47	51.0	3.9	**0.0042**	0.006	137.2	ug/L	57	Standard
	V	51	362150.1	1.2	**50.8470**	1.498	2.9	ug/L	1142	Standard
	Cr	52	375631.9	0.2	**50.2056**	0.853	1.7	ug/L	6628	Standard
	Cr	53	46496.2	1.5	**49.6449**	0.253	0.5	ug/L	430	Standard
	Mn	55	324366.5	2.3	**54.5814**	0.385	0.7	ug/L	603	Standard
	Co	59	341108.8	1.8	**53.1006**	0.301	0.6	ug/L	237	Standard
	Ni	60	95614.1	1.0	**49.5608**	0.383	0.8	ug/L	141	Standard
	Cu	65	93513.4	0.6	**49.7560**	0.725	1.5	ug/L	109	Standard
	Zn	66	55921.0	0.3	**50.2961**	0.929	1.8	ug/L	159	Standard
>	**Ge**	72	473336.6	1.7				ug/L	474053	Standard
	As	75	54052.4	0.1	**48.9231**	0.858	1.8	ug/L	-34	Standard
	Se	82	5549.3	0.5	**50.0944**	0.667	1.3	ug/L	14	Standard
	Se-1	77	3851.2	1.4	**49.4942**	1.249	2.5	ug/L	55	Standard
>	**Ga**	71	148.3	5.1				mg/L	50	Standard
	Rb	85	50.0	45.8				ug/L	20	Standard
	Y	89	393664.1	1.4				ug/L	376602	Standard
>	**Rh**	103	30.0	66.7				ug/L	17	Standard
	Mo	98	67.7	16.2	**0.0222**	0.004	19.7	ug/L	8	Standard
	Ag	107	9538.7	1.3	**1.5370**	0.009	0.6	ug/L	81	Standard
	Cd	111	98094.4	0.8	**48.9748**	0.877	1.8	mg/L	3	Standard
	Cd	114	242274.5	1.2	**48.9293**	1.051	2.1	ug/L	7	Standard
>	**In**	115	541531.8	1.4				ug/L	524722	Standard
	Sn	118	718.4	12.9	**0.0399**	0.018	44.4	ug/L	715	Standard
	Sb	123	213208.4	0.4	**47.2901**	0.830	1.8	ug/L	201	Standard
	Ba	135	91061.5	0.2	**48.6273**	0.710	1.5	ug/L	108	Standard
	Ce	140	75.0	30.6				ug/L	30	Standard
>	**Tb**	159	801949.7	1.3				ug/L	792236	Standard
	Ho	165	15.0	66.7				ug/L	7	Standard
	Tl	203	366890.3	0.3	**47.3558**	0.332	0.7	ug/L	9	Standard
	Tl	205	325136.0	2.3	**49.3487**	1.280	2.6	ug/L	0	Standard
	Pb	206	237911.3	0.3	**50.7518**	0.233	0.5	ug/L	216	Standard
	Pb	207	208877.0	1.0	**48.9436**	0.182	0.4	ug/L	180	Standard
	Pb	208	858938.6	1.3	**49.5964**	0.972	2.0	ug/L	717	Standard
	U	238	311185.8	0.3	**49.3920**	0.274	0.6	ug/L	4	Standard
>	**Bi**	209	466882.1	0.8				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	43.3	37.1	**0.0108**	0.021	197.0	mg/L	20	Standard
K	39	21.7	26.6	**-0.0712**	0.040	55.8	mg/L	22	Standard
Ca	43	35.0	37.8	**-5.4027**	2.947	54.5	mg/L	47	Standard
Fe	54	122.0	30.6	**-0.0208**	0.028	132.3	mg/L	151	Standard
Fe	57	123.3	18.3	**-0.2836**	0.067	23.8	mg/L	195	Standard
Sc-1	45	31167.0	1.6				mg/L	29647	Standard
Cl	35	163506.3	1.5				ug/L	154152	Standard
Kr	83	0.3	173.2				ug/L	3	Standard
Br	81	5531.1	27.3				ug/L	1607	Standard
P	31	23947.2	1.0				ug/L	22752	Standard
S	34	5137.5	2.8				ug/L	5049	Standard
Sr	88	76.7	46.3				ug/L	87	Standard
C	12	70.0	14.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	13.2	44.9				mg/L	10	Standard
Ho-1	165	15.0	66.7				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	1283.4	6.1				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		123.443	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.849	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.204
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.421
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606066401 WG572730-01
Sample Date/Time: Thursday, June 16, 2016 19:12:30
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75454.2	2.8				ug/L	51024	Standard
	Be	9	20.0	90.1	**-0.0048**	0.015	318.2	ug/L	7	Standard
	Al	27	11047678.0	1.9	**52.4883**	1.233	2.3	ug/L	625	Standard
	Sc	45	29264.9	1.3				ug/L	29647	Standard
	Ti	47	190.7	4.0	**0.5084**	0.037	7.3	ug/L	57	Standard
	V	51	1712.7	18.3	**0.0872**	0.046	52.6	ug/L	1142	Standard
	Cr	52	16604.1	1.9	**1.4659**	0.021	1.4	ug/L	6628	Standard
	Cr	53	9623.1	1.9	**10.5512**	0.372	3.5	ug/L	430	Standard
	Mn	55	18349.1	1.7	**3.1531**	0.090	2.8	ug/L	603	Standard
	Co	59	837.4	4.2	**0.0969**	0.005	4.7	ug/L	237	Standard
	Ni	60	47686.6	1.9	**26.1478**	0.400	1.5	ug/L	141	Standard
	Cu	65	35936.9	2.3	**20.2125**	0.174	0.9	ug/L	109	Standard
	Zn	66	7845.4	2.5	**7.2754**	0.080	1.1	ug/L	159	Standard
>	**Ge**	72	446804.8	1.5				ug/L	474053	Standard
	As	75	226.8	62.9	**0.2410**	0.135	55.9	ug/L	-34	Standard
	Se	82	88.3	14.1	**0.6770**	0.108	16.0	ug/L	14	Standard
	Se-1	77	1010.0	4.4	**13.2164**	0.770	5.8	ug/L	55	Standard
>	**Ga**	71	121.7	4.7				mg/L	50	Standard
	Rb	85	9374.6	1.9				ug/L	20	Standard
	Y	89	379651.4	1.2				ug/L	376602	Standard
>	**Rh**	103	176.7	43.0				ug/L	17	Standard
	Mo	98	6942.1	1.1	**3.0258**	0.008	0.3	ug/L	8	Standard
	Ag	107	107.7	10.4	**0.0063**	0.002	31.0	ug/L	81	Standard
	Cd	111	16.0	28.8	**0.0053**	0.002	45.3	mg/L	3	Standard
	Cd	114	155.3	55.3	**0.0296**	0.019	62.9	ug/L	7	Standard
>	**In**	115	508746.6	0.9				ug/L	524722	Standard
	Sn	118	32234.3	2.4	**6.0825**	0.133	2.2	ug/L	715	Standard
	Sb	123	2505.0	15.1	**0.5762**	0.084	14.6	ug/L	201	Standard
	Ba	135	56364.3	0.3	**32.0167**	0.382	1.2	ug/L	108	Standard
	Ce	140	273.3	12.5				ug/L	30	Standard
>	**Tb**	159	786168.7	0.3				ug/L	792236	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	162.7	17.5	**0.0211**	0.005	21.6	ug/L	9	Standard
	Tl	205	136.7	17.3	**0.0156**	0.004	27.5	ug/L	0	Standard
	Pb	206	51660.3	0.9	**12.3691**	0.134	1.1	ug/L	216	Standard
	Pb	207	43372.0	1.0	**11.4048**	0.082	0.7	ug/L	180	Standard
	Pb	208	183979.7	0.6	**11.9203**	0.168	1.4	ug/L	717	Standard
	U	238	40.0	22.9	**-0.0004**	0.002	429.9	ug/L	4	Standard
>	**Bi**	209	414575.6	1.7				ug/L	460343	Standard

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Na	23	3.3	173.2	**-0.6680**	19.261	2883.4	mg/L	0	Standard
Mg	24	393015.0	2.1	**539.7437**	8.154	1.5	mg/L	20	Standard
K	39	755.0	20.2	**5.6021**	1.177	21.0	mg/L	22	Standard
Ca	43	273.3	16.4	**51.4216**	9.712	18.9	mg/L	47	Standard
Fe	54	153.2	8.8	**0.0113**	0.013	111.5	mg/L	151	Standard
Fe	57	410.0	9.5	**0.6384**	0.113	17.7	mg/L	195	Standard
> **Sc-1**	45	29264.9	1.3				mg/L	29647	Standard
Cl	35	947330.3	0.6				ug/L	154152	Standard
Kr	83	2.7	86.6				ug/L	3	Standard
Br	81	16345.5	3.0				ug/L	1607	Standard
P	31	24364.6	0.6				ug/L	22752	Standard
S	34	5329.3	1.4				ug/L	5049	Standard
Sr	88	195.0	4.4				ug/L	87	Standard
C	12	283.3	24.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	0	Standard
Dy	164	16.0	130.4				mg/L	10	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	339108.5	7.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		147.879	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.252	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.955
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.058
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606066401DP WG572730-05
Sample Date/Time: Thursday, June 16, 2016 19:15:41
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82599.5	0.8				ug/L	51024	Standard
	Be	9	18.3	31.5	**-0.0076**	0.004	53.8	ug/L	7	Standard
	Al	27	12101738.6	2.4	**52.5022**	0.943	1.8	ug/L	625	Standard
	Sc	45	29381.8	2.9				ug/L	29647	Standard
	Ti	47	224.3	6.3	**0.6337**	0.051	8.1	ug/L	57	Standard
	V	51	1757.9	10.9	**0.0962**	0.030	31.3	ug/L	1142	Standard
	Cr	52	17254.5	0.4	**1.5806**	0.019	1.2	ug/L	6628	Standard
	Cr	53	9484.6	4.9	**10.4776**	0.447	4.3	ug/L	430	Standard
	Mn	55	18275.7	1.8	**3.1668**	0.077	2.4	ug/L	603	Standard
	Co	59	934.4	2.3	**0.1143**	0.005	4.1	ug/L	237	Standard
	Ni	60	50219.4	0.9	**27.7712**	0.300	1.1	ug/L	141	Standard
	Cu	65	38180.1	1.8	**21.6588**	0.226	1.0	ug/L	109	Standard
	Zn	66	9011.3	2.3	**8.4634**	0.126	1.5	ug/L	159	Standard
>	**Ge**	72	443106.2	0.8				ug/L	474053	Standard
	As	75	276.8	42.6	**0.2919**	0.111	38.1	ug/L	-34	Standard
	Se	82	109.2	13.4	**0.8866**	0.132	14.9	ug/L	14	Standard
	Se-1	77	1030.4	1.0	**13.6099**	0.054	0.4	ug/L	55	Standard
>	**Ga**	71	125.0	10.6				mg/L	50	Standard
	Rb	85	9914.9	0.9				ug/L	20	Standard
	Y	89	378132.1	0.5				ug/L	376602	Standard
>	**Rh**	103	276.7	11.8				ug/L	17	Standard
	Mo	98	7350.8	1.1	**3.1941**	0.056	1.8	ug/L	8	Standard
	Ag	107	113.3	9.2	**0.0072**	0.002	27.2	ug/L	81	Standard
	Cd	111	7.2	44.2	**0.0006**	0.002	301.0	mg/L	3	Standard
	Cd	114	112.0	53.6	**0.0203**	0.013	64.2	ug/L	7	Standard
>	**In**	115	510414.8	1.0				ug/L	524722	Standard
	Sn	118	31860.1	0.6	**5.9914**	0.071	1.2	ug/L	715	Standard
	Sb	123	1301.1	10.9	**0.2913**	0.031	10.6	ug/L	201	Standard
	Ba	135	58474.3	1.0	**33.1066**	0.180	0.5	ug/L	108	Standard
	Ce	140	143.3	4.0				ug/L	30	Standard
>	**Tb**	159	793633.3	0.5				ug/L	792236	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	126.3	11.6	**0.0156**	0.002	13.8	ug/L	9	Standard
	Tl	205	108.3	7.1	**0.0105**	0.001	12.1	ug/L	0	Standard
	Pb	206	55773.5	1.1	**13.2134**	0.113	0.9	ug/L	216	Standard
	Pb	207	47080.7	0.8	**12.2506**	0.066	0.5	ug/L	180	Standard
	Pb	208	190215.8	0.7	**12.1921**	0.079	0.7	ug/L	717	Standard
	U	238	29.3	17.2	**-0.0024**	0.001	37.4	ug/L	4	Standard
>	**Bi**	209	419055.7	0.3				ug/L	460343	Standard

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Na	23	10.0	50.0	**-22.7084**	17.142	75.5	mg/L	0	Standard
Mg	24	418232.9	1.5	**572.3635**	15.570	2.7	mg/L	20	Standard
K	39	648.3	17.8	**4.7577**	0.876	18.4	mg/L	22	Standard
Ca	43	226.7	8.4	**40.2176**	3.679	9.1	mg/L	47	Standard
Fe	54	135.1	14.9	**-0.0042**	0.016	368.6	mg/L	151	Standard
Fe	57	428.3	6.4	**0.6912**	0.080	11.6	mg/L	195	Standard
> **Sc-1**	45	29381.8	2.9				mg/L	29647	Standard
Cl	35	974394.4	0.6				ug/L	154152	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	16325.5	4.8				ug/L	1607	Standard
P	31	25179.2	0.8				ug/L	22752	Standard
S	34	5427.6	0.7				ug/L	5049	Standard
Sr	88	171.7	19.8				ug/L	87	Standard
C	12	336.7	27.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	12.9	93.1				mg/L	10	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	345162.2	8.5				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		161.883	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		93.472	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.273
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.031
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606072903 WG572730-02
Sample Date/Time: Thursday, June 16, 2016 19:18:52
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83167.6	0.4				ug/L	51024	Standard
	Be	9	1595.1	11.9	**1.1433**	0.143	12.5	ug/L	7	Standard
	Al	27	12508760.9	0.4	**53.9014**	0.277	0.5	ug/L	625	Standard
	Sc	45	32636.8	2.2				ug/L	29647	Standard
	Ti	47	734.7	25.1	**2.2005**	0.603	27.4	ug/L	57	Standard
	V	51	2647.4	9.7	**0.1914**	0.035	18.3	ug/L	1142	Standard
	Cr	52	10901.3	2.2	**0.5035**	0.035	7.0	ug/L	6628	Standard
	Cr	53	1756.8	5.0	**1.3940**	0.093	6.7	ug/L	430	Standard
	Mn	55	2418538.1	0.3	**393.4562**	2.564	0.7	ug/L	603	Standard
	Co	59	167227.2	1.2	**25.0953**	0.408	1.6	ug/L	237	Standard
	Ni	60	19549.3	0.9	**9.7135**	0.121	1.2	ug/L	141	Standard
	Cu	65	6980.3	2.4	**3.5215**	0.098	2.8	ug/L	109	Standard
	Zn	66	33084.1	0.4	**28.6038**	0.229	0.8	ug/L	159	Standard
>	**Ge**	72	490606.8	0.4				ug/L	474053	Standard
	As	75	126.0	22.9	**0.1350**	0.026	18.9	ug/L	-34	Standard
	Se	82	91.9	23.2	**0.6344**	0.188	29.7	ug/L	14	Standard
	Se-1	77	154.7	9.2	**1.2017**	0.186	15.5	ug/L	55	Standard
>	**Ga**	71	938.4	4.7				mg/L	50	Standard
	Rb	85	17583.5	1.7				ug/L	20	Standard
	Y	89	717044.0	1.5				ug/L	376602	Standard
>	**Rh**	103	161.7	28.1				ug/L	17	Standard
	Mo	98	55.5	8.7	**0.0173**	0.002	11.5	ug/L	8	Standard
	Ag	107	113.0	9.4	**0.0061**	0.002	26.4	ug/L	81	Standard
	Cd	111	309.2	2.3	**0.1520**	0.004	2.4	mg/L	3	Standard
	Cd	114	755.2	14.7	**0.1496**	0.023	15.3	ug/L	7	Standard
>	**In**	115	538550.6	0.6				ug/L	524722	Standard
	Sn	118	861.7	3.5	**0.0664**	0.005	7.2	ug/L	715	Standard
	Sb	123	1408.2	6.3	**0.2992**	0.018	6.0	ug/L	201	Standard
	Ba	135	39659.2	1.6	**21.2618**	0.456	2.1	ug/L	108	Standard
	Ce	140	1381297.9	0.5				ug/L	30	Standard
>	**Tb**	159	851012.3	2.0				ug/L	792236	Standard
	Ho	165	27889.0	1.7				ug/L	7	Standard
	Tl	203	294.7	3.0	**0.0347**	0.002	6.0	ug/L	9	Standard
	Tl	205	265.0	1.9	**0.0316**	0.001	3.8	ug/L	0	Standard
	Pb	206	5868.1	0.6	**1.1726**	0.027	2.3	ug/L	216	Standard
	Pb	207	4864.8	1.2	**1.0656**	0.042	4.0	ug/L	180	Standard
	Pb	208	20514.5	1.0	**1.1052**	0.038	3.5	ug/L	717	Standard
	U	238	2495.2	0.6	**0.3809**	0.010	2.6	ug/L	4	Standard
>	**Bi**	209	476253.4	2.7				ug/L	460343	Standard

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Na	23	11.7	24.7	**-24.3418**	9.212	37.8	mg/L	0	Standard
Mg	24	2530.2	1.8	**3.0712**	0.030	1.0	mg/L	20	Standard
K	39	120.0	8.3	**0.6043**	0.087	14.3	mg/L	22	Standard
Ca	43	210.0	28.9	**31.2136**	11.780	37.7	mg/L	47	Standard
Fe	54	1764.1	4.7	**1.1881**	0.059	5.0	mg/L	151	Standard
Fe	57	758.4	15.5	**1.4817**	0.281	18.9	mg/L	195	Standard
> **Sc-1**	45	32636.8	2.2				mg/L	29647	Standard
Cl	35	300327.3	0.4				ug/L	154152	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	5971.2	0.5				ug/L	1607	Standard
P	31	27339.7	3.0				ug/L	22752	Standard
S	34	4589.0	1.4				ug/L	5049	Standard
Sr	88	426.7	18.4				ug/L	87	Standard
C	12	223.3	9.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	48154.5	2.6				mg/L	10	Standard
Ho-1	165	27889.0	1.7				mg/L	7	Standard
Er	166	24125.9	1.2				mg/L	3	Standard
I	127	233033.3	7.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		162.997	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.492	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.635
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.456
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606072903S WG572730-06
Sample Date/Time: Thursday, June 16, 2016 19:22:04
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	84593.9	1.7				ug/L	51024	Standard
	Be	9	63747.2	1.4	**45.7285**	1.409	3.1	ug/L	7	Standard
	Al	27	12163442.1	0.7	**51.5412**	1.132	2.2	ug/L	625	Standard
	Sc	45	33602.2	1.6				ug/L	29647	Standard
	Ti	47	659.7	12.0	**2.0785**	0.257	12.4	ug/L	57	Standard
	V	51	353641.1	0.6	**50.6609**	2.238	4.4	ug/L	1142	Standard
	Cr	52	356717.6	1.1	**48.6215**	2.101	4.3	ug/L	6628	Standard
	Cr	53	45185.6	0.4	**49.2470**	2.494	5.1	ug/L	430	Standard
	Mn	55	2601278.5	0.7	**447.6689**	18.661	4.2	ug/L	603	Standard
	Co	59	487177.6	1.1	**77.4106**	2.935	3.8	ug/L	237	Standard
	Ni	60	108783.5	0.6	**57.5580**	2.469	4.3	ug/L	141	Standard
	Cu	65	95167.6	1.2	**51.6700**	2.084	4.0	ug/L	109	Standard
	Zn	66	84097.8	1.1	**77.2971**	3.015	3.9	ug/L	159	Standard
>	Ge	72	464397.8	4.8				ug/L	474053	Standard
	As	75	53679.2	1.0	**49.5736**	2.027	4.1	ug/L	-34	Standard
	Se	82	5551.8	0.7	**51.1533**	2.421	4.7	ug/L	14	Standard
	Se-1	77	3791.1	3.4	**49.6831**	1.424	2.9	ug/L	55	Standard
>	Ga	71	958.4	5.4				mg/L	50	Standard
	Rb	85	16624.1	3.0				ug/L	20	Standard
	Y	89	707625.8	0.5				ug/L	376602	Standard
>	Rh	103	125.0	8.0				ug/L	17	Standard
	Mo	98	62.1	4.6	**0.0194**	0.002	8.1	ug/L	8	Standard
	Ag	107	8913.6	1.8	**1.4061**	0.009	0.7	ug/L	81	Standard
	Cd	111	96671.0	1.6	**47.2862**	1.085	2.3	mg/L	3	Standard
	Cd	114	237983.0	1.9	**47.0816**	0.696	1.5	ug/L	7	Standard
>	In	115	552753.1	1.8				ug/L	524722	Standard
	Sn	118	638.3	15.9	**0.0231**	0.018	79.7	ug/L	715	Standard
	Sb	123	215408.0	1.4	**46.8023**	0.239	0.5	ug/L	201	Standard
	Ba	135	124502.1	0.5	**65.1569**	0.974	1.5	ug/L	108	Standard
	Ce	140	1314417.9	1.3				ug/L	30	Standard
>	Tb	159	881280.8	1.9				ug/L	792236	Standard
	Ho	165	27413.1	3.0				ug/L	7	Standard
	Tl	203	374882.9	0.8	**46.6863**	0.358	0.8	ug/L	9	Standard
	Tl	205	338218.3	0.5	**49.5337**	0.988	2.0	ug/L	0	Standard
	Pb	206	247963.0	0.9	**51.0419**	0.964	1.9	ug/L	216	Standard
	Pb	207	216265.5	0.6	**48.8980**	0.689	1.4	ug/L	180	Standard
	Pb	208	876968.0	0.5	**48.8596**	0.973	2.0	ug/L	717	Standard
	U	238	329321.5	0.3	**50.4388**	0.916	1.8	ug/L	4	Standard
>	Bi	209	483914.0	1.5				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.7187**	8.199	143.4	mg/L	0	Standard
Mg	24	2360.2	1.3	**2.7784**	0.056	2.0	mg/L	20	Standard
K	39	110.0	31.5	**0.5143**	0.242	47.0	mg/L	22	Standard
Ca	43	180.0	27.4	**23.8358**	9.598	40.3	mg/L	47	Standard
Fe	54	1737.6	2.8	**1.1314**	0.022	1.9	mg/L	151	Standard
Fe	57	686.7	6.3	**1.2285**	0.107	8.7	mg/L	195	Standard
Sc-1	45	33602.2	1.6				mg/L	29647	Standard
Cl	35	293323.6	1.0				ug/L	154152	Standard
Kr	83	1.7	124.9				ug/L	3	Standard
Br	81	5094.2	9.2				ug/L	1607	Standard
P	31	27336.3	1.5				ug/L	22752	Standard
S	34	4702.4	5.5				ug/L	5049	Standard
Sr	88	400.0	11.5				ug/L	87	Standard
C	12	270.0	13.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	45484.4	2.9				mg/L	10	Standard
Ho-1	165	27413.1	3.0				mg/L	7	Standard
Er	166	23461.5	1.2				mg/L	3	Standard
I	127	221641.3	5.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		165.792	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.963	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.342
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.120
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606072903SD WG572730-07
Sample Date/Time: Thursday, June 16, 2016 19:25:15
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86461.0	1.0				ug/L	51024	Standard
	Be	9	64063.5	1.0	**44.9486**	0.413	0.9	ug/L	7	Standard
	Al	27	12456061.3	1.7	**51.6274**	0.457	0.9	ug/L	625	Standard
	Sc	45	32062.2	2.4				ug/L	29647	Standard
	Ti	47	858.4	8.8	**2.9028**	0.272	9.4	ug/L	57	Standard
	V	51	359033.7	1.5	**54.0078**	1.033	1.9	ug/L	1142	Standard
	Cr	52	357394.7	0.2	**51.1915**	0.354	0.7	ug/L	6628	Standard
	Cr	53	45598.6	3.3	**52.1815**	1.498	2.9	ug/L	430	Standard
	Mn	55	2668759.8	1.0	**482.1929**	4.954	1.0	ug/L	603	Standard
	Co	59	502894.6	1.2	**83.9097**	1.409	1.7	ug/L	237	Standard
	Ni	60	107927.8	1.4	**59.9510**	0.489	0.8	ug/L	141	Standard
	Cu	65	93853.1	1.2	**53.5019**	0.490	0.9	ug/L	109	Standard
	Zn	66	83974.7	0.9	**81.0494**	0.217	0.3	ug/L	159	Standard
>	**Ge**	72	441763.7	0.6				ug/L	474053	Standard
	As	75	55613.6	0.2	**53.9212**	0.243	0.5	ug/L	-34	Standard
	Se	82	6086.3	0.3	**58.8898**	0.200	0.3	ug/L	14	Standard
	Se-1	77	3831.8	0.4	**52.8020**	0.183	0.3	ug/L	55	Standard
>	**Ga**	71	981.7	7.0				mg/L	50	Standard
	Rb	85	19140.4	1.5				ug/L	20	Standard
	Y	89	713271.6	1.4				ug/L	376602	Standard
>	**Rh**	103	201.7	43.7				ug/L	17	Standard
	Mo	98	570.8	5.1	**0.2183**	0.009	3.9	ug/L	8	Standard
	Ag	107	9150.1	1.0	**1.4089**	0.031	2.2	ug/L	81	Standard
	Cd	111	99261.8	1.0	**47.3819**	0.778	1.6	mg/L	3	Standard
	Cd	114	244188.0	1.4	**47.1444**	0.226	0.5	ug/L	7	Standard
>	**In**	115	566399.8	1.8				ug/L	524722	Standard
	Sn	118	1108.4	1.6	**0.1012**	0.003	3.2	ug/L	715	Standard
	Sb	123	226221.3	0.0	**47.9756**	0.857	1.8	ug/L	201	Standard
	Ba	135	281949.2	0.1	**144.0743**	2.519	1.7	ug/L	108	Standard
	Ce	140	1344322.7	0.7				ug/L	30	Standard
>	**Tb**	159	856521.4	0.5				ug/L	792236	Standard
	Ho	165	27917.4	1.4				ug/L	7	Standard
	Tl	203	379214.9	0.1	**48.6259**	0.229	0.5	ug/L	9	Standard
	Tl	205	341701.9	0.7	**51.5229**	0.634	1.2	ug/L	0	Standard
	Pb	206	250400.5	0.4	**53.0698**	0.469	0.9	ug/L	216	Standard
	Pb	207	218768.7	0.4	**50.9304**	0.424	0.8	ug/L	180	Standard
	Pb	208	894325.1	0.6	**51.3006**	0.445	0.9	ug/L	717	Standard
	U	238	333573.8	0.7	**52.6006**	0.628	1.2	ug/L	4	Standard
>	**Bi**	209	469954.5	0.6				ug/L	460343	Standard

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Na	23	3.3	173.2	**0.1020**	17.927	17574.6	mg/L	0	Standard
Mg	24	6119.6	7.0	**7.6313**	0.602	7.9	mg/L	20	Standard
K	39	128.3	31.7	**0.6738**	0.269	39.8	mg/L	22	Standard
Ca	43	203.3	13.5	**30.6746**	5.036	16.4	mg/L	47	Standard
Fe	54	1790.2	1.0	**1.2312**	0.019	1.5	mg/L	151	Standard
Fe	57	780.0	10.9	**1.5831**	0.191	12.1	mg/L	195	Standard
> **Sc-1**	45	32062.2	2.4				mg/L	29647	Standard
Cl	35	296539.1	0.3				ug/L	154152	Standard
Kr	83	1.0	0.0				ug/L	3	Standard
Br	81	116096.7	2.9				ug/L	1607	Standard
P	31	27080.9	1.8				ug/L	22752	Standard
S	34	4614.0	1.1				ug/L	5049	Standard
Sr	88	778.4	3.2				ug/L	87	Standard
C	12	196.7	22.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	46630.2	1.4				mg/L	10	Standard
Ho-1	165	27917.4	1.4				mg/L	7	Standard
Er	166	24322.8	2.2				mg/L	3	Standard
I	127	176317.1	2.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		169.451	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.189	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	107.943
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.088
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606075401
Sample Date/Time: Thursday, June 16, 2016 19:28:27
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82366.7	2.1				ug/L	51024	Standard
	Be	9	51.7	14.8	**0.0170**	0.006	32.8	ug/L	7	Standard
	Al	27	17891826.3	2.7	**77.8692**	2.435	3.1	ug/L	625	Standard
	Sc	45	30427.2	1.9				ug/L	29647	Standard
	Ti	47	2820.9	1.0	**9.4421**	0.167	1.8	ug/L	57	Standard
	V	51	13745.3	1.6	**1.8076**	0.041	2.3	ug/L	1142	Standard
	Cr	52	20733.8	0.8	**1.9525**	0.033	1.7	ug/L	6628	Standard
	Cr	53	4984.2	5.0	**5.0448**	0.169	3.3	ug/L	430	Standard
	Mn	55	105692.4	1.8	**18.0774**	0.683	3.8	ug/L	603	Standard
	Co	59	4134.2	4.3	**0.6164**	0.033	5.4	ug/L	237	Standard
	Ni	60	5645.1	0.8	**2.9135**	0.034	1.2	ug/L	141	Standard
	Cu	65	191176.6	0.9	**103.9111**	2.891	2.8	ug/L	109	Standard
	Zn	66	106024.3	0.8	**97.5572**	2.630	2.7	ug/L	159	Standard
>	**Ge**	72	463769.1	2.0				ug/L	474053	Standard
	As	75	301.2	25.5	**0.3039**	0.075	24.6	ug/L	-34	Standard
	Se	82	127.3	9.6	**1.0095**	0.134	13.3	ug/L	14	Standard
	Se-1	77	289.7	4.6	**3.1103**	0.134	4.3	ug/L	55	Standard
>	**Ga**	71	440.0	5.9				mg/L	50	Standard
	Rb	85	66395.2	1.7				ug/L	20	Standard
	Y	89	407745.6	2.4				ug/L	376602	Standard
>	**Rh**	103	96.7	20.9				ug/L	17	Standard
	Mo	98	1561.5	1.4	**0.6398**	0.014	2.1	ug/L	8	Standard
	Ag	107	747.4	3.8	**0.1101**	0.008	7.2	ug/L	81	Standard
	Cd	111	185.0	11.1	**0.0900**	0.013	14.1	mg/L	3	Standard
	Cd	114	453.1	6.4	**0.0885**	0.009	9.7	ug/L	7	Standard
>	**In**	115	537707.7	3.1				ug/L	524722	Standard
	Sn	118	4545.7	5.8	**0.7338**	0.032	4.3	ug/L	715	Standard
	Sb	123	909.7	21.3	**0.1892**	0.048	25.1	ug/L	201	Standard
	Ba	135	39811.9	1.6	**21.3825**	0.338	1.6	ug/L	108	Standard
	Ce	140	8849.3	2.5				ug/L	30	Standard
>	**Tb**	159	810136.1	3.5				ug/L	792236	Standard
	Ho	165	230.0	24.5				ug/L	7	Standard
	Tl	203	286.7	27.5	**0.0315**	0.010	30.7	ug/L	9	Standard
	Tl	205	228.3	32.9	**0.0241**	0.011	44.8	ug/L	0	Standard
	Pb	206	10175.4	0.5	**1.9406**	0.024	1.2	ug/L	216	Standard
	Pb	207	8305.3	0.7	**1.7365**	0.026	1.5	ug/L	180	Standard
	Pb	208	35130.3	0.9	**1.8082**	0.024	1.3	ug/L	717	Standard
	U	238	1915.5	3.0	**0.2719**	0.010	3.6	ug/L	4	Standard
>	**Bi**	209	508087.3	0.9				ug/L	460343	Standard

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Na	23	3.3	86.6	**-0.2885**	9.302	3224.4	mg/L	0	Standard
Mg	24	30961.6	1.7	**40.8617**	0.835	2.0	mg/L	20	Standard
K	39	656.7	18.1	**4.6487**	0.870	18.7	mg/L	22	Standard
Ca	43	158.3	34.8	**22.7292**	12.064	53.1	mg/L	47	Standard
Fe	54	990.1	10.0	**0.6701**	0.088	13.2	mg/L	151	Standard
Fe	57	505.0	3.4	**0.8773**	0.078	8.8	mg/L	195	Standard
Sc-1	45	30427.2	1.9				mg/L	29647	Standard
Cl	35	217230.9	2.7				ug/L	154152	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	12551.9	10.7				ug/L	1607	Standard
P	31	26334.5	1.0				ug/L	22752	Standard
S	34	4555.7	2.6				ug/L	5049	Standard
Sr	88	170.0	8.8				ug/L	87	Standard
C	12	793.4	8.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	96.7	15.8				mg/L	0	Standard
Dy	164	343.6	11.4				mg/L	10	Standard
Ho-1	165	230.0	24.5				mg/L	7	Standard
Er	166	203.3	15.0				mg/L	3	Standard
I	127	19776.3	5.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		161.427	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.831	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.475
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.371
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: L1606075401PS WG572869-01
Sample Date/Time: Thursday, June 16, 2016 19:31:38
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83402.3	0.7				ug/L	51024	Standard
	Be	9	63124.6	1.4	**45.9169**	0.909	2.0	ug/L	7	Standard
	Al	27	17971744.4	2.8	**77.2382**	2.615	3.4	ug/L	625	Standard
	Sc	45	30682.7	4.2				ug/L	29647	Standard
	Ti	47	2792.9	5.6	**9.1051**	0.451	5.0	ug/L	57	Standard
	V	51	382253.4	0.5	**53.4006**	0.320	0.6	ug/L	1142	Standard
	Cr	52	373919.2	1.3	**49.7147**	0.405	0.8	ug/L	6628	Standard
	Cr	53	49711.5	2.7	**52.8478**	1.467	2.8	ug/L	430	Standard
	Mn	55	406935.5	0.9	**68.1780**	0.090	0.1	ug/L	603	Standard
	Co	59	347435.1	1.8	**53.8207**	0.541	1.0	ug/L	237	Standard
	Ni	60	95683.2	0.8	**49.3519**	0.338	0.7	ug/L	141	Standard
	Cu	65	276145.4	0.3	**146.3258**	0.986	0.7	ug/L	109	Standard
	Zn	66	154951.3	0.2	**139.0713**	0.812	0.6	ug/L	159	Standard
>	**Ge**	72	475646.5	0.8				ug/L	474053	Standard
	As	75	55395.2	0.9	**49.8846**	0.262	0.5	ug/L	-34	Standard
	Se	82	5840.3	1.9	**52.4634**	0.711	1.4	ug/L	14	Standard
	Se-1	77	4138.2	1.9	**52.9629**	0.853	1.6	ug/L	55	Standard
>	**Ga**	71	441.7	10.5				mg/L	50	Standard
	Rb	85	63605.0	2.6				ug/L	20	Standard
	Y	89	384934.5	2.9				ug/L	376602	Standard
>	**Rh**	103	75.0	30.6				ug/L	17	Standard
	Mo	98	1506.0	0.6	**0.6341**	0.012	1.9	ug/L	8	Standard
	Ag	107	301051.6	0.9	**50.6101**	0.914	1.8	ug/L	81	Standard
	Cd	111	98227.5	0.6	**50.7616**	0.701	1.4	mg/L	3	Standard
	Cd	114	243020.5	0.8	**50.8000**	0.654	1.3	ug/L	7	Standard
>	**In**	115	523174.3	1.7				ug/L	524722	Standard
	Sn	118	4532.3	4.2	**0.7549**	0.047	6.3	ug/L	715	Standard
	Sb	123	222938.5	1.8	**51.1866**	1.325	2.6	ug/L	201	Standard
	Ba	135	127885.1	0.6	**70.7164**	1.199	1.7	ug/L	108	Standard
	Ce	140	8752.5	5.4				ug/L	30	Standard
>	**Tb**	159	809108.6	3.0				ug/L	792236	Standard
	Ho	165	236.7	12.0				ug/L	7	Standard
	Tl	203	379894.9	0.9	**44.3716**	1.016	2.3	ug/L	9	Standard
	Tl	205	341979.7	0.7	**46.9709**	1.246	2.7	ug/L	0	Standard
	Pb	206	255943.3	0.4	**49.4070**	1.138	2.3	ug/L	216	Standard
	Pb	207	222866.5	0.7	**47.2585**	1.195	2.5	ug/L	180	Standard
	Pb	208	910678.1	0.7	**47.5815**	1.216	2.6	ug/L	717	Standard
	U	238	341419.2	0.1	**49.0368**	0.922	1.9	ug/L	4	Standard
>	**Bi**	209	516066.4	2.0				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.2328**	9.040	172.8	mg/L	0	Standard
Mg	24	30580.8	0.9	**40.0684**	1.906	4.8	mg/L	20	Standard
K	39	683.3	11.4	**4.8016**	0.478	10.0	mg/L	22	Standard
Ca	43	166.7	18.3	**24.6755**	8.602	34.9	mg/L	47	Standard
Fe	54	991.6	6.4	**0.6639**	0.031	4.7	mg/L	151	Standard
Fe	57	553.3	10.9	**1.0152**	0.249	24.5	mg/L	195	Standard
> **Sc-1**	45	30682.7	4.2				mg/L	29647	Standard
Cl	35	218863.4	0.6				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	11077.4	2.3				ug/L	1607	Standard
P	31	26757.0	3.2				ug/L	22752	Standard
S	34	4704.1	1.5				ug/L	5049	Standard
Sr	88	165.0	10.9				ug/L	87	Standard
C	12	693.3	9.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	90.0	50.9				mg/L	0	Standard
Dy	164	284.7	30.5				mg/L	10	Standard
Ho-1	165	236.7	12.0				mg/L	7	Standard
Er	166	180.0	22.2				mg/L	3	Standard
I	127	17368.3	4.1				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		163.456	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.336	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.705
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	112.105
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1606075401SDL WG572869-02
Sample Date/Time: Thursday, June 16, 2016 19:34:50
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84174.9	1.5				ug/L	51024	Standard
	Be	9	35.0	14.3	**0.0042**	0.004	88.5	ug/L	7	Standard
	Al	27	3660235.8	1.3	**15.5808**	0.435	2.8	ug/L	625	Standard
	Sc	45	32820.5	2.8				ug/L	29647	Standard
	Ti	47	607.7	5.7	**1.8669**	0.107	5.7	ug/L	57	Standard
	V	51	4082.9	1.0	**0.4082**	0.006	1.6	ug/L	1142	Standard
	Cr	52	9894.2	1.7	**0.4222**	0.007	1.6	ug/L	6628	Standard
	Cr	53	1803.4	1.6	**1.5160**	0.013	0.8	ug/L	430	Standard
	Mn	55	21935.9	0.6	**3.5843**	0.077	2.1	ug/L	603	Standard
	Co	59	994.0	3.5	**0.1140**	0.003	2.9	ug/L	237	Standard
	Ni	60	1361.1	4.8	**0.6305**	0.026	4.2	ug/L	141	Standard
	Cu	65	40184.2	0.6	**21.4035**	0.546	2.6	ug/L	109	Standard
	Zn	66	22341.5	1.6	**20.0059**	0.236	1.2	ug/L	159	Standard
>	**Ge**	72	472090.7	2.0				ug/L	474053	Standard
	As	75	70.8	22.3	**0.0894**	0.015	16.6	ug/L	-34	Standard
	Se	82	38.3	18.3	**0.1793**	0.069	38.5	ug/L	14	Standard
	Se-1	77	126.7	16.1	**0.9154**	0.302	33.0	ug/L	55	Standard
>	**Ga**	71	170.0	15.6				mg/L	50	Standard
	Rb	85	13192.4	0.8				ug/L	20	Standard
	Y	89	392636.4	3.5				ug/L	376602	Standard
>	**Rh**	103	25.0	69.3				ug/L	17	Standard
	Mo	98	328.6	6.7	**0.1240**	0.011	8.7	ug/L	8	Standard
	Ag	107	258.3	8.0	**0.0280**	0.003	12.2	ug/L	81	Standard
	Cd	111	44.1	38.1	**0.0179**	0.008	45.4	mg/L	3	Standard
	Cd	114	91.6	47.0	**0.0140**	0.009	61.0	ug/L	7	Standard
>	**In**	115	563812.4	1.7				ug/L	524722	Standard
	Sn	118	1306.7	7.2	**0.1365**	0.020	14.5	ug/L	715	Standard
	Sb	123	2201.6	19.8	**0.4534**	0.085	18.8	ug/L	201	Standard
	Ba	135	8201.6	0.8	**4.1541**	0.077	1.9	ug/L	108	Standard
	Ce	140	1823.4	12.4				ug/L	30	Standard
>	**Tb**	159	855756.3	0.3				ug/L	792236	Standard
	Ho	165	45.0	11.1				ug/L	7	Standard
	Tl	203	135.3	4.5	**0.0137**	0.001	4.2	ug/L	9	Standard
	Tl	205	115.0	7.5	**0.0084**	0.001	13.4	ug/L	0	Standard
	Pb	206	2315.2	1.8	**0.4035**	0.003	0.8	ug/L	216	Standard
	Pb	207	1893.5	0.7	**0.3593**	0.003	0.7	ug/L	180	Standard
	Pb	208	7952.2	1.5	**0.3697**	0.005	1.4	ug/L	717	Standard
	U	238	417.0	3.9	**0.0540**	0.002	3.2	ug/L	4	Standard
>	**Bi**	209	501935.6	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	6119.6	2.2	**7.4516**	0.184	2.5	mg/L	20	Standard
K	39	163.3	26.0	**0.8923**	0.268	30.1	mg/L	22	Standard
Ca	43	58.3	13.1	**-0.8716**	1.621	186.0	mg/L	47	Standard
Fe	54	338.9	14.2	**0.1347**	0.043	31.9	mg/L	151	Standard
Fe	57	201.7	14.9	**-0.0843**	0.069	82.1	mg/L	195	Standard
> **Sc-1**	45	32820.5	2.8				mg/L	29647	Standard
Cl	35	191817.3	0.7				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	3760.5	5.3				ug/L	1607	Standard
P	31	26361.2	0.5				ug/L	22752	Standard
S	34	5075.9	2.0				ug/L	5049	Standard
Sr	88	91.7	22.0				ug/L	87	Standard
C	12	203.3	19.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	124.9				mg/L	0	Standard
Dy	164	57.6	17.4				mg/L	10	Standard
Ho-1	165	45.0	11.1				mg/L	7	Standard
Er	166	50.0	34.6				mg/L	3	Standard
I	127	5225.9	3.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		164.971	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.586	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.450
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.035
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 19:38:03
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75524.5	1.6				ug/L	51024	Standard
	Be	9	58757.1	2.5	**47.1905**	0.427	0.9	ug/L	7	Standard
	Al	27	8592238.6	0.7	**40.7782**	0.896	2.2	ug/L	625	Standard
	Sc	45	30089.9	1.6				ug/L	29647	Standard
	Ti	47	29681.7	0.7	**100.0625**	1.696	1.7	ug/L	57	Standard
	V	51	362295.0	0.1	**51.4700**	1.097	2.1	ug/L	1142	Standard
	Cr	52	362530.7	0.7	**49.0151**	1.305	2.7	ug/L	6628	Standard
	Cr	53	44988.4	1.6	**48.6083**	1.321	2.7	ug/L	430	Standard
	Mn	55	309292.7	1.9	**52.6874**	2.042	3.9	ug/L	603	Standard
	Co	59	348007.0	1.3	**54.8425**	1.822	3.3	ug/L	237	Standard
	Ni	60	92789.3	1.3	**48.6823**	1.578	3.2	ug/L	141	Standard
	Cu	65	90263.4	0.9	**48.6062**	1.434	3.0	ug/L	109	Standard
	Zn	66	54352.7	0.8	**49.4652**	1.123	2.3	ug/L	159	Standard
>	Ge	72	467786.9	2.0				ug/L	474053	Standard
	As	75	53262.0	0.4	**48.7810**	0.849	1.7	ug/L	-34	Standard
	Se	82	5640.4	1.6	**51.5356**	1.525	3.0	ug/L	14	Standard
	Se-1	77	3823.8	0.2	**49.7310**	1.059	2.1	ug/L	55	Standard
>	Ga	71	100.0	10.0				mg/L	50	Standard
	Rb	85	738.4	4.8				ug/L	20	Standard
	Y	89	389211.3	4.2				ug/L	376602	Standard
>	Rh	103	41.7	45.4				ug/L	17	Standard
	Mo	98	258410.6	0.4	**108.3200**	0.551	0.5	ug/L	8	Standard
	Ag	107	305258.5	0.7	**50.6525**	0.191	0.4	ug/L	81	Standard
	Cd	111	98577.0	0.6	**50.2856**	0.543	1.1	mg/L	3	Standard
	Cd	114	240956.8	0.8	**49.7198**	0.544	1.1	ug/L	7	Standard
>	In	115	529955.9	0.8				ug/L	524722	Standard
	Sn	118	279031.2	1.4	**51.1979**	0.292	0.6	ug/L	715	Standard
	Sb	123	225733.2	0.6	**51.1556**	0.269	0.5	ug/L	201	Standard
	Ba	135	88992.9	0.5	**48.5568**	0.564	1.2	ug/L	108	Standard
	Ce	140	98.3	54.8				ug/L	30	Standard
>	Tb	159	792501.9	1.8				ug/L	792236	Standard
	Ho	165	15.0	57.7				ug/L	7	Standard
	Tl	203	380190.8	0.8	**49.9446**	0.519	1.0	ug/L	9	Standard
	Tl	205	340670.7	0.6	**52.6256**	0.733	1.4	ug/L	0	Standard
	Pb	206	240176.7	0.8	**52.1541**	1.146	2.2	ug/L	216	Standard
	Pb	207	218112.4	0.3	**52.0255**	0.882	1.7	ug/L	180	Standard
	Pb	208	878933.8	0.7	**51.6572**	1.015	2.0	ug/L	717	Standard
	U	238	331188.2	0.5	**53.5069**	0.993	1.9	ug/L	4	Standard
>	Bi	209	458755.1	1.5				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	4233.9	2.0	**5.6123**	0.183	3.3	mg/L	20	Standard
K	39	481.7	4.2	**3.3891**	0.102	3.0	mg/L	22	Standard
Ca	43	51.7	40.3	**-1.3433**	4.578	340.8	mg/L	47	Standard
Fe	54	6013.8	2.7	**4.7022**	0.066	1.4	mg/L	151	Standard
Fe	57	1661.8	4.6	**4.4228**	0.232	5.3	mg/L	195	Standard
> **Sc-1**	45	30089.9	1.6				mg/L	29647	Standard
Cl	35	174583.8	2.5				ug/L	154152	Standard
Kr	83	2.7	108.3				ug/L	3	Standard
Br	81	1656.8	6.5				ug/L	1607	Standard
P	31	26137.5	2.6				ug/L	22752	Standard
S	34	5366.0	2.6				ug/L	5049	Standard
Sr	88	61.7	56.9				ug/L	87	Standard
C	12	73.3	56.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.5	105.0				mg/L	10	Standard
Ho-1	165	15.0	57.7				mg/L	7	Standard
Er	166	10.0					mg/L	3	Standard
I	127	1988.5	11.5				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	94.381		
	Al	27	81.556		
	Sc	45			
	Ti	47	100.063		
	V	51	102.940		
	Cr	52	98.030		
	Cr	53			
	Mn	55	105.375		
	Co	59	109.685		
	Ni	60	97.365		
	Cu	65	97.212		
	Zn	66	98.930		
>	Ge	72		98.678	
	As	75	97.562		
	Se	82	103.071		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	108.320		
Ag	107	101.305		
Cd	111	100.571		
Cd	114			
In	115		100.997	
Sn	118	102.396		
Sb	123	102.311		
Ba	135	97.114		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.889		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.314		
U	238	107.014		
Bi	209		99.655	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 19:41:14
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75737.2	0.8				ug/L	51024	Standard
	Be	9	36.7	64.4	**0.0082**	0.019	228.1	ug/L	7	Standard
	Al	27	2361.9	43.7	**0.0014**	0.005	343.6	ug/L	625	Standard
	Sc	45	30985.0	1.8				ug/L	29647	Standard
	Ti	47	35.3	4.3	**-0.0458**	0.006	13.8	ug/L	57	Standard
	V	51	1037.4	10.2	**-0.0196**	0.013	66.8	ug/L	1142	Standard
	Cr	52	6028.9	1.0	**-0.0922**	0.013	14.2	ug/L	6628	Standard
	Cr	53	500.0	1.7	**0.1170**	0.007	5.6	ug/L	430	Standard
	Mn	55	801.0	1.0	**0.0112**	0.003	28.0	ug/L	603	Standard
	Co	59	242.3	16.2	**-0.0028**	0.006	218.5	ug/L	237	Standard
	Ni	60	194.3	2.8	**0.0250**	0.004	15.2	ug/L	141	Standard
	Cu	65	159.3	5.3	**0.0203**	0.005	24.2	ug/L	109	Standard
	Zn	66	178.7	4.3	**-0.0675**	0.009	14.0	ug/L	159	Standard
>	**Ge**	72	464739.5	1.5				ug/L	474053	Standard
	As	75	7.6	225.8	**0.0322**	0.016	48.9	ug/L	-34	Standard
	Se	82	25.4	8.4	**0.0649**	0.020	31.4	ug/L	14	Standard
	Se-1	77	61.7	15.6	**0.0734**	0.117	159.7	ug/L	55	Standard
>	**Ga**	71	83.3	36.7				mg/L	50	Standard
	Rb	85	23.3	44.6				ug/L	20	Standard
	Y	89	383264.6	3.0				ug/L	376602	Standard
>	**Rh**	103	33.3	8.7				ug/L	17	Standard
	Mo	98	271.3	23.3	**0.1065**	0.026	24.6	ug/L	8	Standard
	Ag	107	117.3	15.5	**0.0068**	0.003	41.5	ug/L	81	Standard
	Cd	111	10.2	68.0	**0.0019**	0.003	183.2	mg/L	3	Standard
	Cd	114	44.5	65.5	**0.0053**	0.006	115.1	ug/L	7	Standard
>	**In**	115	537976.2	1.6				ug/L	524722	Standard
	Sn	118	825.0	17.9	**0.0600**	0.027	44.4	ug/L	715	Standard
	Sb	123	661.4	27.1	**0.1329**	0.040	29.8	ug/L	201	Standard
	Ba	135	101.0	9.8	**-0.0033**	0.006	183.9	ug/L	108	Standard
	Ce	140	31.7	79.5				ug/L	30	Standard
>	**Tb**	159	808787.7	0.7				ug/L	792236	Standard
	Ho	165	10.0					ug/L	7	Standard
	Tl	203	70.0	26.5	**0.0063**	0.002	37.5	ug/L	9	Standard
	Tl	205	83.3	42.1	**0.0046**	0.005	114.0	ug/L	0	Standard
	Pb	206	238.3	5.7	**-0.0064**	0.003	45.5	ug/L	216	Standard
	Pb	207	219.3	6.5	**-0.0033**	0.003	100.2	ug/L	180	Standard
	Pb	208	893.7	3.3	**-0.0072**	0.002	24.1	ug/L	717	Standard
	U	238	52.0	44.7	**0.0005**	0.004	686.7	ug/L	4	Standard
>	**Bi**	209	475308.5	0.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	48.3	26.0	**0.0174**	0.016	91.5	mg/L	20	Standard
K	39	13.3	114.6	**-0.1319**	0.110	83.1	mg/L	22	Standard
Ca	43	30.0	33.3	**-6.4628**	2.334	36.1	mg/L	47	Standard
Fe	54	156.0	6.5	**0.0065**	0.010	153.3	mg/L	151	Standard
Fe	57	171.7	23.4	**-0.1375**	0.125	91.1	mg/L	195	Standard
Sc-1	45	30985.0	1.8				mg/L	29647	Standard
Cl	35	175790.7	1.2				ug/L	154152	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	1680.1	2.7				ug/L	1607	Standard
P	31	26980.7	1.7				ug/L	22752	Standard
S	34	5335.9	0.5				ug/L	5049	Standard
Sr	88	53.3	19.5				ug/L	87	Standard
C	12	106.7	44.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.8	173.2				mg/L	10	Standard
Ho-1	165	10.0					mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	1423.4	7.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.035	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.526
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.251
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606075401SDL WG572869-02
Sample Date/Time: Thursday, June 16, 2016 19:44:27
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75285.0	2.4				ug/L	51024	Standard
	Be	9	28.3	27.0	**0.0018**	0.006	349.7	ug/L	7	Standard
	Al	27	678933.6	1.5	**3.2237**	0.074	2.3	ug/L	625	Standard
	Sc	45	30959.9	1.5				ug/L	29647	Standard
	Ti	47	147.0	11.8	**0.3390**	0.053	15.6	ug/L	57	Standard
	V	51	1608.8	3.2	**0.0651**	0.007	11.5	ug/L	1142	Standard
	Cr	52	6858.9	5.4	**0.0335**	0.040	118.0	ug/L	6628	Standard
	Cr	53	711.7	14.1	**0.3581**	0.110	30.8	ug/L	430	Standard
	Mn	55	5081.9	4.1	**0.7566**	0.025	3.3	ug/L	603	Standard
	Co	59	396.3	6.0	**0.0224**	0.003	13.2	ug/L	237	Standard
	Ni	60	495.3	27.9	**0.1866**	0.070	37.6	ug/L	141	Standard
	Cu	65	8119.8	4.3	**4.3896**	0.136	3.1	ug/L	109	Standard
	Zn	66	5396.3	4.5	**4.7897**	0.160	3.3	ug/L	159	Standard
>	**Ge**	72	459379.8	1.3				ug/L	474053	Standard
	As	75	30.4	143.6	**0.0532**	0.040	75.8	ug/L	-34	Standard
	Se	82	25.8	13.6	**0.0723**	0.035	48.4	ug/L	14	Standard
	Se-1	77	72.3	3.5	**0.2270**	0.021	9.3	ug/L	55	Standard
>	**Ga**	71	85.0	20.4				mg/L	50	Standard
	Rb	85	2591.9	3.3				ug/L	20	Standard
	Y	89	395811.5	2.1				ug/L	376602	Standard
>	**Rh**	103	21.7	48.0				ug/L	17	Standard
	Mo	98	145.0	5.9	**0.0524**	0.004	7.4	ug/L	8	Standard
	Ag	107	135.7	35.4	**0.0092**	0.008	85.2	ug/L	81	Standard
	Cd	111	32.4	102.6	**0.0126**	0.016	129.9	mg/L	3	Standard
	Cd	114	75.7	59.7	**0.0111**	0.009	81.1	ug/L	7	Standard
>	**In**	115	555911.8	0.9				ug/L	524722	Standard
	Sn	118	780.0	12.2	**0.0473**	0.018	37.9	ug/L	715	Standard
	Sb	123	369.0	35.2	**0.0651**	0.029	44.3	ug/L	201	Standard
	Ba	135	1717.1	2.7	**0.8366**	0.031	3.7	ug/L	108	Standard
	Ce	140	485.0	42.7				ug/L	30	Standard
>	**Tb**	159	813354.7	3.1				ug/L	792236	Standard
	Ho	165	18.3	87.7				ug/L	7	Standard
	Tl	203	138.7	62.7	**0.0153**	0.011	74.9	ug/L	9	Standard
	Tl	205	61.7	4.7	**0.0015**	0.001	38.9	ug/L	0	Standard
	Pb	206	674.3	7.5	**0.0868**	0.013	15.5	ug/L	216	Standard
	Pb	207	582.7	6.3	**0.0820**	0.010	12.7	ug/L	180	Standard
	Pb	208	2365.1	0.5	**0.0779**	0.003	3.7	ug/L	717	Standard
	U	238	97.7	25.6	**0.0079**	0.004	53.7	ug/L	4	Standard
>	**Bi**	209	470182.7	2.2				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1275.1	3.2	**1.6099**	0.030	1.9	mg/L	20	Standard
K	39	51.7	39.1	**0.1491**	0.148	99.3	mg/L	22	Standard
Ca	43	31.7	9.1	**-6.0988**	0.709	11.6	mg/L	47	Standard
Fe	54	199.5	21.2	**0.0405**	0.034	83.1	mg/L	151	Standard
Fe	57	250.0	6.0	**0.0939**	0.035	37.2	mg/L	195	Standard
> **Sc-1**	45	30959.9	1.5				mg/L	29647	Standard
Cl	35	180506.2	0.5				ug/L	154152	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	1983.5	10.4				ug/L	1607	Standard
P	31	26828.7	3.3				ug/L	22752	Standard
S	34	5309.3	3.4				ug/L	5049	Standard
Sr	88	65.0	13.3				ug/L	87	Standard
C	12	93.3	12.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	25.5	47.4				mg/L	10	Standard
Ho-1	165	18.3	87.7				mg/L	7	Standard
Er	166	23.3	49.5				mg/L	3	Standard
I	127	1906.8	3.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		147.548	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.905	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.944
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.137
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606061601
Sample Date/Time: Thursday, June 16, 2016 19:47:38
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76809.2	0.5				ug/L	51024	Standard
	Be	9	595.0	11.7	**0.4492**	0.056	12.5	ug/L	7	Standard
	Al	27	4369598.1	0.7	**20.3813**	0.060	0.3	ug/L	625	Standard
	Sc	45	31414.2	1.5				ug/L	29647	Standard
	Ti	47	432.0	2.5	**1.3649**	0.030	2.2	ug/L	57	Standard
	V	51	-3320.7	72.4	**-0.6635**	0.356	53.6	ug/L	1142	Standard
	Cr	52	750024.0	0.5	**107.4925**	0.659	0.6	ug/L	6628	Standard
	Cr	53	103144.9	1.1	**117.5491**	0.704	0.6	ug/L	430	Standard
	Mn	55	749735.1	1.9	**134.2073**	3.843	2.9	ug/L	603	Standard
	Co	59	100276.4	1.1	**16.5512**	0.155	0.9	ug/L	237	Standard
	Ni	60	309778.2	0.7	**170.7218**	1.330	0.8	ug/L	141	Standard
	Cu	65	7659.6	1.1	**4.2680**	0.087	2.0	ug/L	109	Standard
	Zn	66	11362.9	1.9	**10.6718**	0.281	2.6	ug/L	159	Standard
>	**Ge**	72	445665.4	0.9				ug/L	474053	Standard
	As	75	686.6	13.7	**0.6845**	0.089	13.0	ug/L	-34	Standard
	Se	82	286.4	5.1	**2.5855**	0.133	5.1	ug/L	14	Standard
	Se-1	77	537.0	3.8	**6.6929**	0.237	3.5	ug/L	55	Standard
>	**Ga**	71	176.7	15.6				mg/L	50	Standard
	Rb	85	2721.9	5.5				ug/L	20	Standard
	Y	89	383236.3	0.5				ug/L	376602	Standard
>	**Rh**	103	50.0	36.1				ug/L	17	Standard
	Mo	98	2500.1	3.0	**1.0779**	0.045	4.2	ug/L	8	Standard
	Ag	107	102.0	12.9	**0.0051**	0.002	37.3	ug/L	81	Standard
	Cd	111	267.3	12.2	**0.1375**	0.014	10.4	mg/L	3	Standard
	Cd	114	603.9	11.8	**0.1249**	0.014	11.6	ug/L	7	Standard
>	**In**	115	512847.6	2.1				ug/L	524722	Standard
	Sn	118	1035.0	6.1	**0.1070**	0.008	7.4	ug/L	715	Standard
	Sb	123	393.5	17.2	**0.0775**	0.017	21.9	ug/L	201	Standard
	Ba	135	97635.9	1.0	**55.0639**	0.765	1.4	ug/L	108	Standard
	Ce	140	12988.9	1.1				ug/L	30	Standard
>	**Tb**	159	771242.3	0.7				ug/L	792236	Standard
	Ho	165	400.0	11.9				ug/L	7	Standard
	Tl	203	321.0	11.6	**0.0421**	0.006	13.3	ug/L	9	Standard
	Tl	205	538.3	98.5	**0.0807**	0.088	108.8	ug/L	0	Standard
	Pb	206	832.7	2.1	**0.1353**	0.003	2.1	ug/L	216	Standard
	Pb	207	700.3	3.6	**0.1232**	0.007	5.6	ug/L	180	Standard
	Pb	208	3407.2	29.9	**0.1547**	0.065	42.3	ug/L	717	Standard
	U	238	614.7	59.9	**0.0979**	0.064	65.5	ug/L	4	Standard
>	**Bi**	209	433217.0	0.9				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.3851**	8.776	163.0	mg/L	0	Standard
Mg	24	53123.0	1.4	**67.9338**	1.263	1.9	mg/L	20	Standard
K	39	26.7	39.0	**-0.0366**	0.073	198.4	mg/L	22	Standard
Ca	43	46.7	27.0	**-2.9236**	2.617	89.5	mg/L	47	Standard
Fe	54	466.9	13.1	**0.2433**	0.047	19.5	mg/L	151	Standard
Fe	57	296.7	18.2	**0.2213**	0.168	75.8	mg/L	195	Standard
Sc-1	45	31414.2	1.5				mg/L	29647	Standard
Cl	35	180426.0	1.3				ug/L	154152	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	63948.0	2.0				ug/L	1607	Standard
P	31	35653.6	1.9				ug/L	22752	Standard
S	34	4944.1	4.8				ug/L	5049	Standard
Sr	88	168.3	28.8				ug/L	87	Standard
C	12	176.7	33.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	644.2	6.3				mg/L	10	Standard
Ho-1	165	400.0	11.9				mg/L	7	Standard
Er	166	330.0	18.9				mg/L	3	Standard
I	127	86114.1	2.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		150.535	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.012	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.737
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.107
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
V 51 Lower	V	51	
Cr 52 Upper, S, EEE	Cr	52	

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Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Ni 60 Upper, S, EEE	Ni	60

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Method 6020 - Summary Report

Sample ID: L1606061602
Sample Date/Time: Thursday, June 16, 2016 19:50:50
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75748.9	1.4				ug/L	51024	Standard
	Be	9	48.3	39.2	**0.0176**	0.015	86.0	ug/L	7	Standard
	Al	27	19995852.4	2.5	**94.6007**	1.188	1.3	ug/L	625	Standard
	Sc	45	30053.1	1.9				ug/L	29647	Standard
	Ti	47	826.4	6.6	**2.7223**	0.220	8.1	ug/L	57	Standard
	V	51	3891.9	11.8	**0.4057**	0.069	17.0	ug/L	1142	Standard
	Cr	52	13157.7	1.1	**0.9469**	0.019	2.0	ug/L	6628	Standard
	Cr	53	8188.9	18.5	**8.8148**	1.816	20.6	ug/L	430	Standard
	Mn	55	3666201.0	1.1	**647.3586**	10.609	1.6	ug/L	603	Standard
	Co	59	2221.5	3.8	**0.3212**	0.018	5.6	ug/L	237	Standard
	Ni	60	1892.5	1.4	**0.9508**	0.014	1.5	ug/L	141	Standard
	Cu	65	951.0	2.0	**0.4643**	0.013	2.7	ug/L	109	Standard
	Zn	66	2843.9	2.3	**2.4576**	0.033	1.3	ug/L	159	Standard
>	**Ge**	72	452100.4	1.1				ug/L	474053	Standard
	As	75	2291.3	4.3	**2.1952**	0.104	4.7	ug/L	-34	Standard
	Se	82	731.9	2.7	**6.7722**	0.229	3.4	ug/L	14	Standard
	Se-1	77	824.7	4.7	**10.5195**	0.619	5.9	ug/L	55	Standard
>	**Ga**	71	260.0	5.8				mg/L	50	Standard
	Rb	85	20994.5	2.7				ug/L	20	Standard
	Y	89	374644.2	1.4				ug/L	376602	Standard
>	**Rh**	103	175.0	2.9				ug/L	17	Standard
	Mo	98	1524.1	2.8	**0.6737**	0.024	3.5	ug/L	8	Standard
	Ag	107	85.0	16.3	**0.0027**	0.002	93.3	ug/L	81	Standard
	Cd	111	31.4	24.1	**0.0138**	0.004	30.8	mg/L	3	Standard
	Cd	114	85.3	56.7	**0.0150**	0.011	72.0	ug/L	7	Standard
>	**In**	115	498521.0	0.9				ug/L	524722	Standard
	Sn	118	2845.3	2.5	**0.4666**	0.019	4.0	ug/L	715	Standard
	Sb	123	273.4	5.3	**0.0511**	0.003	6.4	ug/L	201	Standard
	Ba	135	433999.4	0.6	**251.9694**	2.189	0.9	ug/L	108	Standard
	Ce	140	9039.4	2.4				ug/L	30	Standard
>	**Tb**	159	767594.4	2.3				ug/L	792236	Standard
	Ho	165	158.3	4.8				ug/L	7	Standard
	Tl	203	240.0	18.3	**0.0311**	0.007	21.8	ug/L	9	Standard
	Tl	205	225.0	23.4	**0.0292**	0.009	30.5	ug/L	0	Standard
	Pb	206	742.7	3.3	**0.1155**	0.009	7.8	ug/L	216	Standard
	Pb	207	635.7	4.8	**0.1077**	0.010	9.0	ug/L	180	Standard
	Pb	208	2598.4	5.5	**0.1049**	0.012	11.7	ug/L	717	Standard
	U	238	474.7	5.4	**0.0741**	0.006	7.6	ug/L	4	Standard
>	**Bi**	209	431218.2	2.1				ug/L	460343	Standard

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Na	23	3.3	86.6	**-0.3991**	9.400	2355.4	mg/L	0	Standard
Mg	24	98133.5	1.2	**131.2521**	3.929	3.0	mg/L	20	Standard
K	39	131.7	7.9	**0.7615**	0.060	7.9	mg/L	22	Standard
Ca	43	168.3	4.5	**25.6161**	1.859	7.3	mg/L	47	Standard
Fe	54	29671.0	1.6	**23.6871**	0.442	1.9	mg/L	151	Standard
Fe	57	7898.7	1.9	**23.4845**	0.677	2.9	mg/L	195	Standard
> **Sc-1**	45	30053.1	1.9				mg/L	29647	Standard
Cl	35	175045.0	2.3				ug/L	154152	Standard
Kr	83	2.7	43.3				ug/L	3	Standard
Br	81	182091.9	3.5				ug/L	1607	Standard
P	31	33082.7	1.0				ug/L	22752	Standard
S	34	5377.6	4.5				ug/L	5049	Standard
Sr	88	866.7	3.5				ug/L	87	Standard
C	12	170.0	42.4				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	258.0	17.6				mg/L	10	Standard
Ho-1	165	158.3	4.8				mg/L	7	Standard
Er	166	180.0	25.5				mg/L	3	Standard
I	127	271715.3	7.5				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		148.457	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.369	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.007
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.673
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606061602
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Method 6020 - Summary Report

Sample ID: L1606061604
Sample Date/Time: Thursday, June 16, 2016 19:54:01
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73209.8	0.9				ug/L	51024	Standard
	Be	9	28.3	50.9	**0.0025**	0.012	495.3	ug/L	7	Standard
	Al	27	1228067.5	0.3	**6.0032**	0.043	0.7	ug/L	625	Standard
	Sc	45	32386.3	3.3				ug/L	29647	Standard
	Ti	47	334.0	17.6	**0.9832**	0.212	21.6	ug/L	57	Standard
	V	51	1789.1	4.9	**0.0914**	0.018	19.4	ug/L	1142	Standard
	Cr	52	14674.8	1.1	**1.1301**	0.065	5.7	ug/L	6628	Standard
	Cr	53	2643.6	3.1	**2.5012**	0.083	3.3	ug/L	430	Standard
	Mn	55	705467.3	1.0	**122.4541**	1.381	1.1	ug/L	603	Standard
	Co	59	3430.7	0.7	**0.5095**	0.015	2.8	ug/L	237	Standard
	Ni	60	3839.5	0.3	**1.9758**	0.045	2.3	ug/L	141	Standard
	Cu	65	1168.4	5.1	**0.5751**	0.034	5.9	ug/L	109	Standard
	Zn	66	2259.5	2.7	**1.8718**	0.099	5.3	ug/L	159	Standard
>	**Ge**	72	459550.4	2.1				ug/L	474053	Standard
	As	75	131.8	16.1	**0.1477**	0.018	12.1	ug/L	-34	Standard
	Se	82	59.0	11.8	**0.3811**	0.061	16.1	ug/L	14	Standard
	Se-1	77	99.0	11.6	**0.5837**	0.132	22.6	ug/L	55	Standard
>	**Ga**	71	130.0	11.5				mg/L	50	Standard
	Rb	85	9683.1	3.7				ug/L	20	Standard
	Y	89	395829.7	1.7				ug/L	376602	Standard
>	**Rh**	103	50.0	26.5				ug/L	17	Standard
	Mo	98	129.8	4.6	**0.0461**	0.003	6.2	ug/L	8	Standard
	Ag	107	119.7	9.2	**0.0065**	0.002	28.9	ug/L	81	Standard
	Cd	111	317.1	3.2	**0.1502**	0.006	3.9	mg/L	3	Standard
	Cd	114	681.4	6.2	**0.1296**	0.010	7.4	ug/L	7	Standard
>	**In**	115	558854.3	1.4				ug/L	524722	Standard
	Sn	118	820.0	7.6	**0.0535**	0.012	21.9	ug/L	715	Standard
	Sb	123	282.5	7.4	**0.0459**	0.004	9.0	ug/L	201	Standard
	Ba	135	35268.3	1.2	**18.2144**	0.408	2.2	ug/L	108	Standard
	Ce	140	2163.5	3.8				ug/L	30	Standard
>	**Tb**	159	825700.5	0.4				ug/L	792236	Standard
	Ho	165	51.7	14.8				ug/L	7	Standard
	Tl	203	156.7	22.7	**0.0174**	0.005	26.5	ug/L	9	Standard
	Tl	205	173.3	46.6	**0.0182**	0.012	67.6	ug/L	0	Standard
	Pb	206	424.7	5.7	**0.0331**	0.006	16.7	ug/L	216	Standard
	Pb	207	356.0	3.9	**0.0286**	0.004	13.3	ug/L	180	Standard
	Pb	208	1553.0	4.6	**0.0306**	0.005	14.8	ug/L	717	Standard
	U	238	81.0	68.7	**0.0051**	0.009	171.7	ug/L	4	Standard
>	**Bi**	209	473355.3	0.7				ug/L	460343	Standard

Sample ID: L1606061604
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Na	23	1.7	173.2	**5.6238**	8.363	148.7	mg/L	0	Standard
Mg	24	2843.6	1.0	**3.4857**	0.082	2.3	mg/L	20	Standard
K	39	78.3	14.7	**0.3207**	0.096	29.9	mg/L	22	Standard
Ca	43	50.0	20.0	**-2.4661**	2.354	95.5	mg/L	47	Standard
Fe	54	2460.3	3.7	**1.7187**	0.119	6.9	mg/L	151	Standard
Fe	57	721.7	11.5	**1.4022**	0.269	19.2	mg/L	195	Standard
Sc-1	45	32386.3	3.3				mg/L	29647	Standard
Cl	35	167245.3	0.7				ug/L	154152	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	10406.9	6.9				ug/L	1607	Standard
P	31	27868.9	1.7				ug/L	22752	Standard
S	34	4945.8	3.9				ug/L	5049	Standard
Sr	88	151.7	1.9				ug/L	87	Standard
C	12	130.0	26.6				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	93.0	49.2				mg/L	10	Standard
Ho-1	165	51.7	14.8				mg/L	7	Standard
Er	166	76.7	32.8				mg/L	3	Standard
I	127	108192.1	4.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		143.481	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.941	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.505
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.827
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606064901
Sample Date/Time: Thursday, June 16, 2016 19:57:13
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73899.8	1.9				ug/L	51024	Standard
	Be	9	28.3	20.4	**0.0021**	0.004	205.1	ug/L	7	Standard
	Al	27	17068640.1	0.5	**82.8031**	1.944	2.3	ug/L	625	Standard
	Sc	45	31098.6	0.8				ug/L	29647	Standard
	Ti	47	2220.5	15.6	**7.6952**	1.219	15.8	ug/L	57	Standard
	V	51	3330.6	5.2	**0.3294**	0.025	7.6	ug/L	1142	Standard
	Cr	52	12294.7	1.4	**0.8476**	0.021	2.5	ug/L	6628	Standard
	Cr	53	3545.4	12.3	**3.6195**	0.491	13.6	ug/L	430	Standard
	Mn	55	65149.4	0.9	**11.5346**	0.133	1.2	ug/L	603	Standard
	Co	59	1855.8	3.0	**0.2656**	0.010	3.6	ug/L	237	Standard
	Ni	60	2852.6	1.9	**1.4936**	0.030	2.0	ug/L	141	Standard
	Cu	65	55047.8	0.2	**31.0509**	0.094	0.3	ug/L	109	Standard
	Zn	66	20763.6	1.9	**19.6724**	0.380	1.9	ug/L	159	Standard
>	**Ge**	72	446059.8	0.2				ug/L	474053	Standard
	As	75	230.9	30.1	**0.2467**	0.067	27.2	ug/L	-34	Standard
	Se	82	114.1	10.5	**0.9274**	0.115	12.4	ug/L	14	Standard
	Se-1	77	255.7	12.3	**2.7929**	0.427	15.3	ug/L	55	Standard
>	**Ga**	71	203.3	6.2				mg/L	50	Standard
	Rb	85	64731.4	2.1				ug/L	20	Standard
	Y	89	406326.7	3.3				ug/L	376602	Standard
>	**Rh**	103	48.3	21.5				ug/L	17	Standard
	Mo	98	623.5	1.9	**0.2468**	0.013	5.5	ug/L	8	Standard
	Ag	107	134.0	13.8	**0.0091**	0.002	26.2	ug/L	81	Standard
	Cd	111	49.6	6.5	**0.0211**	0.001	3.6	mg/L	3	Standard
	Cd	114	143.2	27.3	**0.0245**	0.007	27.9	ug/L	7	Standard
>	**In**	115	549535.8	3.5				ug/L	524722	Standard
	Sn	118	1373.4	4.5	**0.1543**	0.017	10.8	ug/L	715	Standard
	Sb	123	311.5	9.8	**0.0535**	0.009	17.0	ug/L	201	Standard
	Ba	135	22377.2	0.2	**11.7401**	0.432	3.7	ug/L	108	Standard
	Ce	140	280.0	11.2				ug/L	30	Standard
>	**Tb**	159	815853.8	2.8				ug/L	792236	Standard
	Ho	165	18.3	95.8				ug/L	7	Standard
	Tl	203	193.0	9.7	**0.0237**	0.002	10.2	ug/L	9	Standard
	Tl	205	165.0	24.1	**0.0186**	0.007	36.0	ug/L	0	Standard
	Pb	206	1296.1	2.0	**0.2354**	0.004	1.8	ug/L	216	Standard
	Pb	207	1110.4	3.4	**0.2207**	0.006	2.5	ug/L	180	Standard
	Pb	208	4630.9	2.3	**0.2243**	0.008	3.6	ug/L	717	Standard
	U	238	1289.4	2.5	**0.2082**	0.002	1.1	ug/L	4	Standard
>	**Bi**	209	442943.4	2.1				ug/L	460343	Standard

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Na	23	6.7	86.6	**-10.3108**	17.983	174.4	mg/L	0	Standard
Mg	24	29769.2	2.1	**38.4319**	0.806	2.1	mg/L	20	Standard
K	39	731.7	8.5	**5.0889**	0.443	8.7	mg/L	22	Standard
Ca	43	196.7	13.0	**30.5875**	5.364	17.5	mg/L	47	Standard
Fe	54	365.7	3.5	**0.1685**	0.008	4.7	mg/L	151	Standard
Fe	57	391.7	14.9	**0.5082**	0.163	32.1	mg/L	195	Standard
> **Sc-1**	45	31098.6	0.8				mg/L	29647	Standard
Cl	35	222953.8	0.9				ug/L	154152	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	17977.3	3.7				ug/L	1607	Standard
P	31	27297.9	1.8				ug/L	22752	Standard
S	34	5117.5	2.7				ug/L	5049	Standard
Sr	88	170.0	7.8				ug/L	87	Standard
C	12	300.0	21.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	86.6				mg/L	0	Standard
Dy	164	34.9	61.4				mg/L	10	Standard
Ho-1	165	18.3	95.8				mg/L	7	Standard
Er	166	36.7	41.7				mg/L	3	Standard
I	127	36641.0	3.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		144.833	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.095	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.729
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.220
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606065001
Sample Date/Time: Thursday, June 16, 2016 20:00:24
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72946.9	1.0				ug/L	51024	Standard
	Be	9	18.3	31.5	**-0.0058**	0.005	85.0	ug/L	7	Standard
	Al	27	25893242.1	1.3	**127.2227**	1.176	0.9	ug/L	625	Standard
	Sc	45	31297.3	0.7				ug/L	29647	Standard
	Ti	47	363.0	6.9	**1.0820**	0.092	8.5	ug/L	57	Standard
	V	51	26598.7	23.4	**3.6881**	0.888	24.1	ug/L	1142	Standard
	Cr	52	3600275.3	0.7	**503.8543**	2.642	0.5	ug/L	6628	Standard
	Cr	53	441968.5	0.3	**489.9131**	0.755	0.2	ug/L	430	Standard
	Mn	55	3750356.5	0.6	**651.5298**	1.262	0.2	ug/L	603	Standard
	Co	59	140636.7	1.1	**22.5301**	0.278	1.2	ug/L	237	Standard
	Ni	60	1491493.6	1.2	**797.5118**	6.177	0.8	ug/L	141	Standard
	Cu	65	3267.0	3.0	**1.7266**	0.047	2.7	ug/L	109	Standard
	Zn	66	3425.7	1.8	**2.9563**	0.067	2.3	ug/L	159	Standard
>	**Ge**	72	459475.2	0.5				ug/L	474053	Standard
	As	75	556.7	15.6	**0.5440**	0.082	15.1	ug/L	-34	Standard
	Se	82	222.9	6.2	**1.9114**	0.137	7.2	ug/L	14	Standard
	Se-1	77	721.0	7.2	**8.9403**	0.656	7.3	ug/L	55	Standard
>	**Ga**	71	291.7	10.5				mg/L	50	Standard
	Rb	85	7967.1	5.2				ug/L	20	Standard
	Y	89	376366.8	3.1				ug/L	376602	Standard
>	**Rh**	103	188.3	17.7				ug/L	17	Standard
	Mo	98	4038.0	0.7	**1.7616**	0.010	0.6	ug/L	8	Standard
	Ag	107	92.0	19.6	**0.0036**	0.003	90.6	ug/L	81	Standard
	Cd	111	324.1	6.9	**0.1694**	0.013	7.5	mg/L	3	Standard
	Cd	114	819.8	8.2	**0.1728**	0.014	8.3	ug/L	7	Standard
>	**In**	115	507645.2	1.3				ug/L	524722	Standard
	Sn	118	691.7	9.8	**0.0432**	0.012	27.3	ug/L	715	Standard
	Sb	123	362.3	12.4	**0.0710**	0.011	16.1	ug/L	201	Standard
	Ba	135	933624.2	0.5	**532.4126**	8.811	1.7	ug/L	108	Standard
	Ce	140	3360.4	5.9				ug/L	30	Standard
>	**Tb**	159	768822.1	0.7				ug/L	792236	Standard
	Ho	165	56.7	48.6				ug/L	7	Standard
	Tl	203	246.7	11.1	**0.0318**	0.003	11.0	ug/L	9	Standard
	Tl	205	253.3	31.2	**0.0337**	0.013	38.1	ug/L	0	Standard
	Pb	206	530.7	3.2	**0.0660**	0.004	5.7	ug/L	216	Standard
	Pb	207	474.0	4.9	**0.0662**	0.005	7.1	ug/L	180	Standard
	Pb	208	1991.7	8.7	**0.0664**	0.011	16.6	ug/L	717	Standard
	U	238	2713.6	2.5	**0.4575**	0.014	3.0	ug/L	4	Standard
>	**Bi**	209	432460.1	1.2				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.2420**	9.024	172.2	mg/L	0	Standard
Mg	24	90814.7	0.4	**116.5891**	0.672	0.6	mg/L	20	Standard
K	39	136.7	18.8	**0.7598**	0.192	25.3	mg/L	22	Standard
Ca	43	113.3	24.3	**11.8769**	5.966	50.2	mg/L	47	Standard
Fe	54	8598.8	2.1	**6.5077**	0.130	2.0	mg/L	151	Standard
Fe	57	2420.2	4.0	**6.4526**	0.333	5.2	mg/L	195	Standard
> **Sc-1**	45	31297.3	0.7				mg/L	29647	Standard
Cl	35	172318.1	2.4				ug/L	154152	Standard
Kr	83	2.7	43.3				ug/L	3	Standard
Br	81	54798.9	1.9				ug/L	1607	Standard
P	31	33010.9	0.2				ug/L	22752	Standard
S	34	5099.2	1.3				ug/L	5049	Standard
Sr	88	600.0	8.0				ug/L	87	Standard
C	12	176.7	34.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	96.6	30.8				mg/L	10	Standard
Ho-1	165	56.7	48.6				mg/L	7	Standard
Er	166	70.0	14.3				mg/L	3	Standard
I	127	400706.8	6.8				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		142.965	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.925	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.746
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.943
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Cr 52 Upper, S, EEE	Cr	52	

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Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Ni 60 Upper, S, EEE	Ni	60
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606065002
Sample Date/Time: Thursday, June 16, 2016 20:03:36
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74923.1	0.9				ug/L	51024	Standard
	Be	9	10.0	86.6	**-0.0129**	0.007	54.5	ug/L	7	Standard
	Al	27	11445723.9	1.0	**54.7538**	1.040	1.9	ug/L	625	Standard
	Sc	45	33881.2	2.3				ug/L	29647	Standard
	Ti	47	432.3	7.3	**1.3384**	0.080	6.0	ug/L	57	Standard
	V	51	2150.8	34.9	**0.1495**	0.116	77.8	ug/L	1142	Standard
	Cr	52	17737.4	0.6	**1.5921**	0.067	4.2	ug/L	6628	Standard
	Cr	53	10231.8	13.3	**11.0925**	1.758	15.8	ug/L	430	Standard
	Mn	55	1115003.1	1.6	**196.2265**	7.080	3.6	ug/L	603	Standard
	Co	59	2902.3	1.7	**0.4307**	0.009	2.2	ug/L	237	Standard
	Ni	60	3566.1	4.1	**1.8534**	0.037	2.0	ug/L	141	Standard
	Cu	65	1206.0	1.3	**0.6044**	0.011	1.8	ug/L	109	Standard
	Zn	66	2690.2	1.2	**2.3054**	0.087	3.8	ug/L	159	Standard
>	**Ge**	72	453598.8	2.2				ug/L	474053	Standard
	As	75	280.7	13.7	**0.2904**	0.040	13.9	ug/L	-34	Standard
	Se	82	128.1	7.4	**1.0434**	0.112	10.7	ug/L	14	Standard
	Se-1	77	619.3	6.2	**7.6936**	0.694	9.0	ug/L	55	Standard
>	**Ga**	71	105.0	17.2				mg/L	50	Standard
	Rb	85	9451.3	1.9				ug/L	20	Standard
	Y	89	391791.6	1.5				ug/L	376602	Standard
>	**Rh**	103	140.0	6.2				ug/L	17	Standard
	Mo	98	235.6	9.4	**0.0929**	0.011	11.9	ug/L	8	Standard
	Ag	107	90.7	15.8	**0.0026**	0.002	86.9	ug/L	81	Standard
	Cd	111	142.6	5.5	**0.0692**	0.005	7.6	mg/L	3	Standard
	Cd	114	324.8	13.1	**0.0629**	0.009	15.1	ug/L	7	Standard
>	**In**	115	532666.5	2.0				ug/L	524722	Standard
	Sn	118	630.0	6.3	**0.0258**	0.009	33.7	ug/L	715	Standard
	Sb	123	425.3	4.8	**0.0811**	0.005	5.7	ug/L	201	Standard
	Ba	135	317814.3	1.2	**172.6789**	1.361	0.8	ug/L	108	Standard
	Ce	140	4260.6	3.9				ug/L	30	Standard
>	**Tb**	159	822106.7	0.8				ug/L	792236	Standard
	Ho	165	98.3	10.6				ug/L	7	Standard
	Tl	203	236.3	5.5	**0.0291**	0.002	5.8	ug/L	9	Standard
	Tl	205	180.0	7.3	**0.0206**	0.002	9.9	ug/L	0	Standard
	Pb	206	404.0	5.2	**0.0334**	0.005	14.3	ug/L	216	Standard
	Pb	207	342.3	3.2	**0.0297**	0.003	8.7	ug/L	180	Standard
	Pb	208	1396.4	3.4	**0.0260**	0.003	10.6	ug/L	717	Standard
	U	238	1612.4	1.0	**0.2586**	0.003	1.2	ug/L	4	Standard
>	**Bi**	209	449004.5	0.2				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	75132.5	1.7	**89.1275**	2.931	3.3	mg/L	20	Standard
K	39	103.3	14.8	**0.4601**	0.085	18.5	mg/L	22	Standard
Ca	43	118.3	6.5	**11.0359**	2.111	19.1	mg/L	47	Standard
Fe	54	299.8	4.4	**0.0986**	0.014	14.4	mg/L	151	Standard
Fe	57	295.0	19.5	**0.1539**	0.166	108.1	mg/L	195	Standard
> **Sc-1**	45	33881.2	2.3				mg/L	29647	Standard
Cl	35	177255.5	0.3				ug/L	154152	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	27852.3	4.5				ug/L	1607	Standard
P	31	36888.2	1.8				ug/L	22752	Standard
S	34	5134.2	5.6				ug/L	5049	Standard
Sr	88	336.7	12.1				ug/L	87	Standard
C	12	236.7	6.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	125.5	16.3				mg/L	10	Standard
Ho-1	165	98.3	10.6				mg/L	7	Standard
Er	166	93.3	16.4				mg/L	3	Standard
I	127	795775.9	5.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		146.839	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.685	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	101.514
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.537
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606065003
Sample Date/Time: Thursday, June 16, 2016 20:06:47
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73049.1	2.8				ug/L	51024	Standard
	Be	9	56.7	53.2	**0.0258**	0.025	96.4	ug/L	7	Standard
	Al	27	6795723.2	1.7	**33.3429**	0.423	1.3	ug/L	625	Standard
	Sc	45	32349.5	2.7				ug/L	29647	Standard
	Ti	47	1362.4	1.5	**4.5490**	0.135	3.0	ug/L	57	Standard
	V	51	-1621.9	225.1	**-0.4056**	0.530	130.6	ug/L	1142	Standard
	Cr	52	1449129.7	0.3	**203.6270**	3.465	1.7	ug/L	6628	Standard
	Cr	53	186956.4	0.3	**208.3861**	2.811	1.3	ug/L	430	Standard
	Mn	55	969240.4	1.1	**169.4166**	2.152	1.3	ug/L	603	Standard
	Co	59	17799.4	0.3	**2.8346**	0.031	1.1	ug/L	237	Standard
	Ni	60	82918.9	0.7	**44.5655**	0.800	1.8	ug/L	141	Standard
	Cu	65	12426.8	2.2	**6.7981**	0.081	1.2	ug/L	109	Standard
	Zn	66	16815.7	1.7	**15.5225**	0.331	2.1	ug/L	159	Standard
>	**Ge**	72	456450.5	1.3				ug/L	474053	Standard
	As	75	1966.3	2.2	**1.8692**	0.017	0.9	ug/L	-34	Standard
	Se	82	293.5	2.7	**2.5875**	0.085	3.3	ug/L	14	Standard
	Se-1	77	432.0	3.1	**5.0994**	0.235	4.6	ug/L	55	Standard
>	**Ga**	71	736.7	9.9				mg/L	50	Standard
	Rb	85	15683.1	2.3				ug/L	20	Standard
	Y	89	407716.2	0.3				ug/L	376602	Standard
>	**Rh**	103	95.0	13.9				ug/L	17	Standard
	Mo	98	6403.0	2.3	**2.6056**	0.071	2.7	ug/L	8	Standard
	Ag	107	109.7	3.7	**0.0054**	0.001	15.4	ug/L	81	Standard
	Cd	111	1059.3	1.9	**0.5225**	0.015	2.8	mg/L	3	Standard
	Cd	114	2761.6	6.2	**0.5508**	0.040	7.3	ug/L	7	Standard
>	**In**	115	544816.8	1.1				ug/L	524722	Standard
	Sn	118	1191.7	7.7	**0.1237**	0.018	14.6	ug/L	715	Standard
	Sb	123	304.1	8.3	**0.0523**	0.006	10.7	ug/L	201	Standard
	Ba	135	110831.6	1.3	**58.8309**	0.136	0.2	ug/L	108	Standard
	Ce	140	24424.7	1.3				ug/L	30	Standard
>	**Tb**	159	809371.8	1.0				ug/L	792236	Standard
	Ho	165	351.7	3.0				ug/L	7	Standard
	Tl	203	219.0	7.6	**0.0268**	0.002	7.8	ug/L	9	Standard
	Tl	205	185.0	24.8	**0.0214**	0.007	34.0	ug/L	0	Standard
	Pb	206	2753.6	3.0	**0.5549**	0.011	2.0	ug/L	216	Standard
	Pb	207	2285.2	1.4	**0.5035**	0.014	2.7	ug/L	180	Standard
	Pb	208	9786.6	1.2	**0.5303**	0.014	2.6	ug/L	717	Standard
	U	238	353.7	1.7	**0.0508**	0.000	0.5	ug/L	4	Standard
>	**Bi**	209	449128.9	1.4				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	37974.2	2.9	**47.1394**	0.683	1.4	mg/L	20	Standard
K	39	91.7	3.1	**0.4128**	0.025	6.0	mg/L	22	Standard
Ca	43	75.0	26.7	**2.9551**	4.725	159.9	mg/L	47	Standard
Fe	54	5125.4	2.8	**3.7060**	0.149	4.0	mg/L	151	Standard
Fe	57	1555.1	4.8	**3.7648**	0.143	3.8	mg/L	195	Standard
> **Sc-1**	45	32349.5	2.7				mg/L	29647	Standard
Cl	35	176741.0	1.5				ug/L	154152	Standard
Kr	83	1.3	86.6				ug/L	3	Standard
Br	81	69459.0	3.9				ug/L	1607	Standard
P	31	30123.3	2.4				ug/L	22752	Standard
S	34	4967.5	1.4				ug/L	5049	Standard
Sr	88	190.0	9.5				ug/L	87	Standard
C	12	126.7	12.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	637.1	0.5				mg/L	10	Standard
Ho-1	165	351.7	3.0				mg/L	7	Standard
Er	166	340.0	15.3				mg/L	3	Standard
I	127	176369.6	3.2				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		143.166	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.287	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.830	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.564	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
V 51 Lower	V	51	
Cr 52 Upper, S, EEE	Cr	52	

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Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55

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Method 6020 - Summary Report

Sample ID: L1606065008
Sample Date/Time: Thursday, June 16, 2016 20:12:57
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72941.9	1.7				ug/L	51024	Standard
	Be	9	75.0	11.5	**0.0413**	0.007	17.1	ug/L	7	Standard
	Al	27	2553806.5	1.0	**12.5408**	0.102	0.8	ug/L	625	Standard
	Sc	45	32038.9	2.8				ug/L	29647	Standard
	Ti	47	722.7	5.7	**2.2554**	0.110	4.9	ug/L	57	Standard
	V	51	3819.2	3.9	**0.3720**	0.024	6.3	ug/L	1142	Standard
	Cr	52	10926.9	1.1	**0.5663**	0.038	6.8	ug/L	6628	Standard
	Cr	53	5912.8	6.8	**5.9618**	0.341	5.7	ug/L	430	Standard
	Mn	55	1386219.7	0.5	**234.7938**	4.744	2.0	ug/L	603	Standard
	Co	59	5557.7	1.4	**0.8285**	0.006	0.8	ug/L	237	Standard
	Ni	60	17011.5	0.7	**8.7950**	0.195	2.2	ug/L	141	Standard
	Cu	65	1618.4	1.4	**0.8000**	0.013	1.6	ug/L	109	Standard
	Zn	66	33299.6	0.0	**29.9907**	0.453	1.5	ug/L	159	Standard
>	**Ge**	72	471205.0	1.5				ug/L	474053	Standard
	As	75	966.9	5.2	**0.9032**	0.033	3.6	ug/L	-34	Standard
	Se	82	311.0	2.5	**2.6600**	0.029	1.1	ug/L	14	Standard
	Se-1	77	329.3	6.4	**3.5702**	0.277	7.8	ug/L	55	Standard
>	**Ga**	71	258.3	15.5				mg/L	50	Standard
	Rb	85	8330.6	3.2				ug/L	20	Standard
	Y	89	401951.6	2.1				ug/L	376602	Standard
>	**Rh**	103	36.7	43.8				ug/L	17	Standard
	Mo	98	105.4	14.0	**0.0382**	0.006	14.8	ug/L	8	Standard
	Ag	107	90.7	18.0	**0.0026**	0.003	103.7	ug/L	81	Standard
	Cd	111	115.2	13.8	**0.0550**	0.008	14.6	mg/L	3	Standard
	Cd	114	259.1	8.3	**0.0492**	0.005	9.4	ug/L	7	Standard
>	**In**	115	535100.4	1.1				ug/L	524722	Standard
	Sn	118	718.4	7.1	**0.0413**	0.008	20.4	ug/L	715	Standard
	Sb	123	448.1	4.2	**0.0858**	0.005	5.4	ug/L	201	Standard
	Ba	135	68982.0	0.6	**37.2626**	0.244	0.7	ug/L	108	Standard
	Ce	140	25868.7	1.1				ug/L	30	Standard
>	**Tb**	159	806521.0	1.2				ug/L	792236	Standard
	Ho	165	500.0	12.5				ug/L	7	Standard
	Tl	203	215.0	12.2	**0.0260**	0.004	15.1	ug/L	9	Standard
	Tl	205	150.0	6.7	**0.0156**	0.002	10.9	ug/L	0	Standard
	Pb	206	509.0	3.9	**0.0556**	0.003	5.6	ug/L	216	Standard
	Pb	207	432.0	1.7	**0.0505**	0.001	2.1	ug/L	180	Standard
	Pb	208	1819.0	0.9	**0.0504**	0.002	3.5	ug/L	717	Standard
	U	238	230.0	2.3	**0.0300**	0.001	2.2	ug/L	4	Standard
>	**Bi**	209	453449.6	1.5				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	38452.1	0.8	**48.2252**	1.630	3.4	mg/L	20	Standard
K	39	58.3	38.7	**0.1852**	0.162	87.6	mg/L	22	Standard
Ca	43	35.0	51.5	**-5.6048**	3.899	69.6	mg/L	47	Standard
Fe	54	249.0	20.9	**0.0731**	0.044	60.8	mg/L	151	Standard
Fe	57	205.0	6.5	**-0.0599**	0.029	47.9	mg/L	195	Standard
> **Sc-1**	45	32038.9	2.8				mg/L	29647	Standard
Cl	35	205402.9	2.6				ug/L	154152	Standard
Kr	83	2.3	24.7				ug/L	3	Standard
Br	81	66452.1	2.3				ug/L	1607	Standard
P	31	28505.1	1.9				ug/L	22752	Standard
S	34	4827.4	1.0				ug/L	5049	Standard
Sr	88	103.3	7.4				ug/L	87	Standard
C	12	290.0	39.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	843.5	10.6				mg/L	10	Standard
Ho-1	165	500.0	12.5				mg/L	7	Standard
Er	166	483.3	20.9				mg/L	3	Standard
I	127	65771.0	5.3				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		142.956	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.399	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.978	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.503	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606072901
Sample Date/Time: Thursday, June 16, 2016 20:16:08
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71451.4	0.2				ug/L	51024	Standard
	Be	9	156.7	13.3	**0.1120**	0.018	15.8	ug/L	7	Standard
	Al	27	1783026.0	1.0	**8.9350**	0.113	1.3	ug/L	625	Standard
	Sc	45	33488.6	0.2				ug/L	29647	Standard
	Ti	47	3847.8	0.7	**12.4804**	0.276	2.2	ug/L	57	Standard
	V	51	20969.4	1.8	**2.7398**	0.019	0.7	ug/L	1142	Standard
	Cr	52	17305.9	0.3	**1.3919**	0.032	2.3	ug/L	6628	Standard
	Cr	53	2988.6	7.9	**2.7405**	0.281	10.3	ug/L	430	Standard
	Mn	55	363989.8	1.4	**60.3519**	1.596	2.6	ug/L	603	Standard
	Co	59	13842.7	0.2	**2.0829**	0.032	1.5	ug/L	237	Standard
	Ni	60	5649.1	2.1	**2.8101**	0.018	0.6	ug/L	141	Standard
	Cu	65	2744.6	2.9	**1.3736**	0.022	1.6	ug/L	109	Standard
	Zn	66	21962.9	1.2	**19.3089**	0.151	0.8	ug/L	159	Standard
>	**Ge**	72	480623.4	1.5				ug/L	474053	Standard
	As	75	604.0	4.6	**0.5630**	0.022	3.9	ug/L	-34	Standard
	Se	82	62.7	5.3	**0.3902**	0.037	9.5	ug/L	14	Standard
	Se-1	77	114.3	16.4	**0.7262**	0.260	35.8	ug/L	55	Standard
>	**Ga**	71	1213.4	6.6				mg/L	50	Standard
	Rb	85	49025.9	0.6				ug/L	20	Standard
	Y	89	427519.3	0.4				ug/L	376602	Standard
>	**Rh**	103	33.3	37.7				ug/L	17	Standard
	Mo	98	183.9	8.3	**0.0677**	0.006	8.8	ug/L	8	Standard
	Ag	107	84.7	15.9	**0.0010**	0.002	216.4	ug/L	81	Standard
	Cd	111	55.6	11.8	**0.0237**	0.003	13.7	mg/L	3	Standard
	Cd	114	123.4	16.9	**0.0204**	0.004	20.0	ug/L	7	Standard
>	**In**	115	557933.4	0.7				ug/L	524722	Standard
	Sn	118	618.3	8.9	**0.0185**	0.009	49.1	ug/L	715	Standard
	Sb	123	180.1	11.3	**0.0240**	0.004	17.3	ug/L	201	Standard
	Ba	135	83499.8	1.0	**43.2656**	0.170	0.4	ug/L	108	Standard
	Ce	140	144607.0	2.1				ug/L	30	Standard
>	**Tb**	159	830815.8	1.2				ug/L	792236	Standard
	Ho	165	2081.8	4.4				ug/L	7	Standard
	Tl	203	322.3	0.4	**0.0385**	0.000	1.0	ug/L	9	Standard
	Tl	205	275.0	3.6	**0.0334**	0.001	4.5	ug/L	0	Standard
	Pb	206	5048.5	0.5	**1.0085**	0.002	0.2	ug/L	216	Standard
	Pb	207	4178.9	1.8	**0.9144**	0.020	2.2	ug/L	180	Standard
	Pb	208	17525.7	1.4	**0.9427**	0.011	1.1	ug/L	717	Standard
	U	238	621.3	3.2	**0.0898**	0.003	3.0	ug/L	4	Standard
>	**Bi**	209	472687.9	0.6				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.6311**	8.350	148.3	mg/L	0	Standard
Mg	24	3158.7	1.3	**3.7460**	0.051	1.3	mg/L	20	Standard
K	39	215.0	8.1	**1.2230**	0.115	9.4	mg/L	22	Standard
Ca	43	38.3	27.2	**-5.2593**	2.154	41.0	mg/L	47	Standard
Fe	54	3415.5	7.7	**2.3435**	0.190	8.1	mg/L	151	Standard
Fe	57	1036.7	4.4	**2.1944**	0.121	5.5	mg/L	195	Standard
> **Sc-1**	45	33488.6	0.2				mg/L	29647	Standard
Cl	35	164707.7	0.4				ug/L	154152	Standard
Kr	83	3.0	33.3				ug/L	3	Standard
Br	81	11457.7	7.7				ug/L	1607	Standard
P	31	28214.6	1.7				ug/L	22752	Standard
S	34	4967.5	1.9				ug/L	5049	Standard
Sr	88	113.3	6.7				ug/L	87	Standard
C	12	80.0	12.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	0	Standard
Dy	164	3722.9	5.4				mg/L	10	Standard
Ho-1	165	2081.8	4.4				mg/L	7	Standard
Er	166	1966.8	4.6				mg/L	3	Standard
I	127	28066.0	3.2				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		140.035	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.386	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.329
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.682
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 20:19:21
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	70359.7	1.3				ug/L	51024	Standard
	Be	9	53312.1	5.5	**45.9476**	1.930	4.2	ug/L	7	Standard
	Al	27	8077611.0	1.8	**41.1433**	0.785	1.9	ug/L	625	Standard
	Sc	45	32289.4	1.8				ug/L	29647	Standard
	Ti	47	30321.3	1.6	**100.0769**	1.272	1.3	ug/L	57	Standard
	V	51	360120.0	0.4	**50.0825**	0.106	0.2	ug/L	1142	Standard
	Cr	52	369947.6	1.5	**48.9622**	0.470	1.0	ug/L	6628	Standard
	Cr	53	47002.8	0.4	**49.7282**	0.165	0.3	ug/L	430	Standard
	Mn	55	317711.3	0.7	**52.9755**	0.531	1.0	ug/L	603	Standard
	Co	59	339862.8	0.3	**52.4255**	0.355	0.7	ug/L	237	Standard
	Ni	60	93112.6	1.0	**47.8173**	0.235	0.5	ug/L	141	Standard
	Cu	65	91542.1	0.9	**48.2534**	0.241	0.5	ug/L	109	Standard
	Zn	66	53846.5	0.5	**47.9689**	0.154	0.3	ug/L	159	Standard
>	Ge	72	477686.4	0.6				ug/L	474053	Standard
	As	75	53954.1	0.4	**48.3818**	0.469	1.0	ug/L	-34	Standard
	Se	82	5528.9	1.3	**49.4502**	0.921	1.9	ug/L	14	Standard
	Se-1	77	3768.1	3.4	**47.9498**	1.532	3.2	ug/L	55	Standard
>	Ga	71	96.7	3.0				mg/L	50	Standard
	Rb	85	860.0	3.6				ug/L	20	Standard
	Y	89	407805.9	2.6				ug/L	376602	Standard
>	Rh	103	38.3	19.9				ug/L	17	Standard
	Mo	98	251849.5	0.7	**99.5336**	0.343	0.3	ug/L	8	Standard
	Ag	107	302942.0	0.9	**47.3977**	0.787	1.7	ug/L	81	Standard
	Cd	111	100743.2	0.5	**48.4530**	0.464	1.0	mg/L	3	Standard
	Cd	114	243706.8	2.6	**47.4138**	1.351	2.8	ug/L	7	Standard
>	In	115	562084.3	0.9				ug/L	524722	Standard
	Sn	118	283917.6	1.7	**49.1130**	0.500	1.0	ug/L	715	Standard
	Sb	123	223152.0	0.8	**47.6804**	0.566	1.2	ug/L	201	Standard
	Ba	135	90693.3	1.2	**46.6526**	0.606	1.3	ug/L	108	Standard
	Ce	140	95.0	24.1				ug/L	30	Standard
>	Tb	159	823567.8	1.3				ug/L	792236	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	373875.5	0.8	**47.8522**	0.141	0.3	ug/L	9	Standard
	Tl	205	338247.8	1.5	**50.9083**	0.885	1.7	ug/L	0	Standard
	Pb	206	233315.4	0.7	**49.3532**	0.331	0.7	ug/L	216	Standard
	Pb	207	211841.0	0.3	**49.2260**	0.469	1.0	ug/L	180	Standard
	Pb	208	876269.3	0.6	**50.1725**	0.549	1.1	ug/L	717	Standard
	U	238	329535.1	0.3	**51.8676**	0.341	0.7	ug/L	4	Standard
>	Bi	209	470816.3	0.6				ug/L	460343	Standard

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Na	23	3.3	86.6	**0.5093**	8.613	1691.0	mg/L	0	Standard
Mg	24	4180.6	4.5	**5.1574**	0.149	2.9	mg/L	20	Standard
K	39	543.3	5.4	**3.5784**	0.272	7.6	mg/L	22	Standard
Ca	43	63.3	12.1	**0.3907**	1.523	389.8	mg/L	47	Standard
Fe	54	5922.9	1.4	**4.3077**	0.105	2.4	mg/L	151	Standard
Fe	57	1828.4	2.7	**4.5503**	0.051	1.1	mg/L	195	Standard
> **Sc-1**	45	32289.4	1.8				mg/L	29647	Standard
Cl	35	173385.8	0.9				ug/L	154152	Standard
Kr	83	1.3	114.6				ug/L	3	Standard
Br	81	2136.8	4.6				ug/L	1607	Standard
P	31	26322.9	2.1				ug/L	22752	Standard
S	34	5514.3	2.6				ug/L	5049	Standard
Sr	88	65.0	27.7				ug/L	87	Standard
C	12	70.0	24.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	23.3	89.2				mg/L	10	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	0.0					mg/L	3	Standard
I	127	3703.8	16.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	91.895		
Al	27	82.287		
Sc	45			
Ti	47	100.077		
V	51	100.165		
Cr	52	97.924		
Cr	53			
Mn	55	105.951		
Co	59	104.851		
Ni	60	95.635		
Cu	65	96.507		
Zn	66	95.938		
> Ge	72		100.766	
As	75	96.764		
Se	82	98.900		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	99.534		
Ag	107	94.795		
Cd	111	96.906		
Cd	114			
In	115			107.120
Sn	118	98.226		
Sb	123	95.361		
Ba	135	93.305		
Ce	140			
Tb	159			
Ho	165			
Tl	203	95.704		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.345		
U	238	103.735		
Bi	209			102.275
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 20:22:32
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67637.3	2.1				ug/L	51024	Standard
	Be	9	18.3	83.3	**-0.0045**	0.014	309.1	ug/L	7	Standard
	Al	27	1391.7	16.0	**-0.0024**	0.001	50.0	ug/L	625	Standard
	Sc	45	30764.5	1.2				ug/L	29647	Standard
	Ti	47	37.3	15.2	**-0.0462**	0.017	37.4	ug/L	57	Standard
	V	51	1089.5	9.5	**-0.0208**	0.013	60.2	ug/L	1142	Standard
	Cr	52	6209.3	0.8	**-0.1150**	0.004	3.7	ug/L	6628	Standard
	Cr	53	621.7	6.5	**0.2124**	0.037	17.6	ug/L	430	Standard
	Mn	55	764.0	5.2	**-0.0024**	0.006	259.9	ug/L	603	Standard
	Co	59	234.0	4.1	**-0.0062**	0.002	27.4	ug/L	237	Standard
	Ni	60	152.7	14.0	**-0.0015**	0.011	728.7	ug/L	141	Standard
	Cu	65	133.0	12.1	**0.0021**	0.009	425.3	ug/L	109	Standard
	Zn	66	146.0	6.6	**-0.1051**	0.009	8.1	ug/L	159	Standard
>	**Ge**	72	492018.2	1.0				ug/L	474053	Standard
	As	75	-9.0	401.0	**0.0170**	0.032	186.2	ug/L	-34	Standard
	Se	82	25.4	15.9	**0.0523**	0.034	65.9	ug/L	14	Standard
	Se-1	77	66.3	19.1	**0.0882**	0.166	188.3	ug/L	55	Standard
>	**Ga**	71	71.7	20.1				mg/L	50	Standard
	Rb	85	26.7	43.3				ug/L	20	Standard
	Y	89	407999.6	2.7				ug/L	376602	Standard
>	**Rh**	103	20.0	50.0				ug/L	17	Standard
	Mo	98	257.9	34.0	**0.0988**	0.034	34.5	ug/L	8	Standard
	Ag	107	107.0	12.6	**0.0049**	0.002	46.8	ug/L	81	Standard
	Cd	111	7.2	23.1	**0.0003**	0.001	264.5	mg/L	3	Standard
	Cd	114	32.4	23.6	**0.0026**	0.001	54.7	ug/L	7	Standard
>	**In**	115	547642.1	1.6				ug/L	524722	Standard
	Sn	118	781.7	18.0	**0.0498**	0.026	53.2	ug/L	715	Standard
	Sb	123	445.8	26.8	**0.0832**	0.027	32.7	ug/L	201	Standard
	Ba	135	126.0	4.8	**0.0089**	0.003	29.7	ug/L	108	Standard
	Ce	140	16.7	34.6				ug/L	30	Standard
>	**Tb**	159	805057.6	1.1				ug/L	792236	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	50.7	17.0	**0.0040**	0.001	27.9	ug/L	9	Standard
	Tl	205	33.3	22.9	**-0.0027**	0.001	41.6	ug/L	0	Standard
	Pb	206	245.3	6.9	**-0.0038**	0.003	90.3	ug/L	216	Standard
	Pb	207	206.3	2.8	**-0.0052**	0.002	29.4	ug/L	180	Standard
	Pb	208	876.0	4.6	**-0.0071**	0.002	32.4	ug/L	717	Standard
	U	238	36.7	27.6	**-0.0017**	0.002	94.5	ug/L	4	Standard
>	**Bi**	209	464955.7	0.5				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.1330**	9.213	179.5	mg/L	0	Standard
Mg	24	40.0	21.7	**0.0070**	0.011	155.9	mg/L	20	Standard
K	39	16.7	69.3	**-0.1055**	0.085	80.5	mg/L	22	Standard
Ca	43	30.0	66.7	**-6.3982**	4.581	71.6	mg/L	47	Standard
Fe	54	159.4	19.4	**0.0098**	0.023	233.9	mg/L	151	Standard
Fe	57	178.3	15.9	**-0.1151**	0.084	72.7	mg/L	195	Standard
Sc-1	45	30764.5	1.2				mg/L	29647	Standard
Cl	35	172678.1	2.2				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	1756.8	6.0				ug/L	1607	Standard
P	31	26713.5	1.7				ug/L	22752	Standard
S	34	5486.0	1.1				ug/L	5049	Standard
Sr	88	68.3	25.7				ug/L	87	Standard
C	12	46.7	12.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	13.0	43.3				mg/L	10	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	2433.5	7.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.790	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.368
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.002
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606072902
Sample Date/Time: Thursday, June 16, 2016 20:26:38
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67597.1	1.4				ug/L	51024	Standard
	Be	9	58.3	13.1	**0.0313**	0.007	23.7	ug/L	7	Standard
	Al	27	1447794.1	2.6	**7.6674**	0.177	2.3	ug/L	625	Standard
	Sc	45	31928.7	4.9				ug/L	29647	Standard
	Ti	47	305.7	12.8	**0.8104**	0.145	17.9	ug/L	57	Standard
	V	51	1674.4	15.6	**0.0568**	0.033	58.1	ug/L	1142	Standard
	Cr	52	9700.4	2.0	**0.3335**	0.001	0.4	ug/L	6628	Standard
	Cr	53	1893.5	6.0	**1.5168**	0.108	7.1	ug/L	430	Standard
	Mn	55	246384.5	0.3	**39.5930**	0.878	2.2	ug/L	603	Standard
	Co	59	7588.2	2.4	**1.0889**	0.047	4.3	ug/L	237	Standard
	Ni	60	3526.1	1.5	**1.6717**	0.049	2.9	ug/L	141	Standard
	Cu	65	954.7	5.5	**0.4196**	0.020	4.8	ug/L	109	Standard
	Zn	66	5586.0	1.4	**4.5915**	0.148	3.2	ug/L	159	Standard
>	**Ge**	72	495383.3	1.9				ug/L	474053	Standard
	As	75	235.4	13.4	**0.2282**	0.025	10.7	ug/L	-34	Standard
	Se	82	130.5	4.3	**0.9599**	0.027	2.8	ug/L	14	Standard
	Se-1	77	93.7	12.4	**0.4210**	0.125	29.6	ug/L	55	Standard
>	**Ga**	71	108.3	13.3				mg/L	50	Standard
	Rb	85	27304.6	1.0				ug/L	20	Standard
	Y	89	392736.9	2.5				ug/L	376602	Standard
>	**Rh**	103	11.7	49.5				ug/L	17	Standard
	Mo	98	87.5	12.2	**0.0306**	0.004	14.1	ug/L	8	Standard
	Ag	107	101.0	6.0	**0.0042**	0.001	22.2	ug/L	81	Standard
	Cd	111	59.5	14.3	**0.0266**	0.004	15.1	mg/L	3	Standard
	Cd	114	114.2	30.2	**0.0194**	0.007	35.4	ug/L	7	Standard
>	**In**	115	538147.1	0.9				ug/L	524722	Standard
	Sn	118	776.7	8.0	**0.0512**	0.012	24.3	ug/L	715	Standard
	Sb	123	200.6	27.1	**0.0300**	0.012	40.3	ug/L	201	Standard
	Ba	135	61289.0	0.7	**32.9142**	0.504	1.5	ug/L	108	Standard
	Ce	140	11052.4	2.4				ug/L	30	Standard
>	**Tb**	159	799876.8	2.9				ug/L	792236	Standard
	Ho	165	190.0	13.9				ug/L	7	Standard
	Tl	203	282.0	7.3	**0.0338**	0.003	8.0	ug/L	9	Standard
	Tl	205	280.0	6.2	**0.0347**	0.004	10.5	ug/L	0	Standard
	Pb	206	401.7	3.5	**0.0294**	0.002	8.2	ug/L	216	Standard
	Pb	207	341.0	0.8	**0.0262**	0.002	6.1	ug/L	180	Standard
	Pb	208	1409.0	1.3	**0.0235**	0.001	4.4	ug/L	717	Standard
	U	238	76.0	25.2	**0.0044**	0.003	61.0	ug/L	4	Standard
>	**Bi**	209	466934.5	2.6				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3003.6	5.4	**3.7365**	0.119	3.2	mg/L	20	Standard
K	39	200.0	11.5	**1.1940**	0.224	18.7	mg/L	22	Standard
Ca	43	26.7	78.1	**-7.2758**	4.881	67.1	mg/L	47	Standard
Fe	54	197.9	11.4	**0.0352**	0.024	69.0	mg/L	151	Standard
Fe	57	201.7	10.0	**-0.0646**	0.087	134.0	mg/L	195	Standard
> **Sc-1**	45	31928.7	4.9				mg/L	29647	Standard
Cl	35	168064.3	0.8				ug/L	154152	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	30467.4	7.1				ug/L	1607	Standard
P	31	27221.1	1.9				ug/L	22752	Standard
S	34	4829.1	7.9				ug/L	5049	Standard
Sr	88	71.7	28.2				ug/L	87	Standard
C	12	70.0	24.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	346.6	23.4				mg/L	10	Standard
Ho-1	165	190.0	13.9				mg/L	7	Standard
Er	166	140.0	21.4				mg/L	3	Standard
I	127	19342.3	3.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.481	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.500	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.559
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.432
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606073001
Sample Date/Time: Thursday, June 16, 2016 20:29:50
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77603.4	4.1				ug/L	51024	Standard
	Be	9	23.3	32.7	**-0.0030**	0.005	179.3	ug/L	7	Standard
	Al	27	6597541.3	1.1	**30.4895**	0.983	3.2	ug/L	625	Standard
	Sc	45	30666.0	3.0				ug/L	29647	Standard
	Ti	47	203.3	18.0	**0.5694**	0.126	22.1	ug/L	57	Standard
	V	51	19344.1	1.4	**2.7880**	0.060	2.2	ug/L	1142	Standard
	Cr	52	223704.1	0.9	**32.1116**	0.253	0.8	ug/L	6628	Standard
	Cr	53	32680.2	2.6	**37.7577**	0.692	1.8	ug/L	430	Standard
	Mn	55	14764.2	0.6	**2.5761**	0.037	1.5	ug/L	603	Standard
	Co	59	8421.3	1.4	**1.3825**	0.016	1.2	ug/L	237	Standard
	Ni	60	8389.0	3.1	**4.6470**	0.087	1.9	ug/L	141	Standard
	Cu	65	2908.6	1.9	**1.6151**	0.017	1.1	ug/L	109	Standard
	Zn	66	3204.0	4.7	**2.9081**	0.114	3.9	ug/L	159	Standard
>	**Ge**	72	436204.2	1.2				ug/L	474053	Standard
	As	75	2688.1	1.6	**2.6639**	0.074	2.8	ug/L	-34	Standard
	Se	82	851.2	1.0	**8.1974**	0.187	2.3	ug/L	14	Standard
	Se-1	77	1137.0	6.7	**15.3552**	1.225	8.0	ug/L	55	Standard
>	**Ga**	71	1600.1	10.1				mg/L	50	Standard
	Rb	85	221561.7	1.4				ug/L	20	Standard
	Y	89	371828.3	2.0				ug/L	376602	Standard
>	**Rh**	103	3242.0	4.8				ug/L	17	Standard
	Mo	98	4562.5	2.6	**2.0314**	0.078	3.9	ug/L	8	Standard
	Ag	107	113.7	11.8	**0.0078**	0.003	32.8	ug/L	81	Standard
	Cd	111	55.8	15.1	**0.0271**	0.005	18.3	mg/L	3	Standard
	Cd	114	143.3	18.4	**0.0277**	0.006	20.9	ug/L	7	Standard
>	**In**	115	497749.4	1.4				ug/L	524722	Standard
	Sn	118	1183.4	2.0	**0.1421**	0.001	1.0	ug/L	715	Standard
	Sb	123	552.4	7.7	**0.1185**	0.008	7.1	ug/L	201	Standard
	Ba	135	1629969.1	1.1	**947.9397**	3.697	0.4	ug/L	108	Standard
	Ce	140	661.7	1.6				ug/L	30	Standard
>	**Tb**	159	768724.3	1.9				ug/L	792236	Standard
	Ho	165	30.0	0.0				ug/L	7	Standard
	Tl	203	273.3	11.0	**0.0373**	0.004	11.6	ug/L	9	Standard
	Tl	205	236.7	11.6	**0.0327**	0.005	13.9	ug/L	0	Standard
	Pb	206	593.0	4.8	**0.0867**	0.006	6.8	ug/L	216	Standard
	Pb	207	503.3	3.4	**0.0795**	0.004	4.6	ug/L	180	Standard
	Pb	208	2099.4	1.6	**0.0791**	0.001	1.5	ug/L	717	Standard
	U	238	272.3	8.1	**0.0412**	0.004	8.8	ug/L	4	Standard
>	**Bi**	209	413369.8	0.7				ug/L	460343	Standard

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Na	23	10.0	86.6	**-20.6958**	26.075	126.0	mg/L	0	Standard
Mg	24	97695.6	0.1	**128.0820**	3.805	3.0	mg/L	20	Standard
K	39	1235.1	6.0	**8.8773**	0.558	6.3	mg/L	22	Standard
Ca	43	1178.4	7.9	**253.1572**	23.304	9.2	mg/L	47	Standard
Fe	54	176.5	19.0	**0.0234**	0.022	95.0	mg/L	151	Standard
Fe	57	1151.7	8.5	**2.8063**	0.366	13.0	mg/L	195	Standard
> **Sc-1**	45	30666.0	3.0				mg/L	29647	Standard
Cl	35	183619.3	0.2				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	216976.2	1.6				ug/L	1607	Standard
P	31	27466.6	2.5				ug/L	22752	Standard
S	34	5401.0	3.5				ug/L	5049	Standard
Sr	88	13359.2	2.8				ug/L	87	Standard
C	12	236.7	14.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	16.2	35.8				mg/L	10	Standard
Ho-1	165	30.0	0.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	172255.5	10.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		152.092	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.016	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.860
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		89.796
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606073002
Sample Date/Time: Thursday, June 16, 2016 20:40:20
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72672.3	2.9				ug/L	51024	Standard
	Be	9	10.0	50.0	**-0.0128**	0.004	30.9	ug/L	7	Standard
	Al	27	6776653.7	2.4	**33.4181**	0.221	0.7	ug/L	625	Standard
	Sc	45	30878.1	3.6				ug/L	29647	Standard
	Ti	47	191.7	10.9	**0.5384**	0.079	14.6	ug/L	57	Standard
	V	51	18320.5	2.2	**2.6731**	0.088	3.3	ug/L	1142	Standard
	Cr	52	218082.0	0.6	**31.7558**	0.128	0.4	ug/L	6628	Standard
	Cr	53	32453.1	2.0	**38.0586**	0.990	2.6	ug/L	430	Standard
	Mn	55	14793.6	1.2	**2.6216**	0.060	2.3	ug/L	603	Standard
	Co	59	8007.4	2.3	**1.3327**	0.045	3.4	ug/L	237	Standard
	Ni	60	8064.8	0.9	**4.5323**	0.032	0.7	ug/L	141	Standard
	Cu	65	2976.0	2.0	**1.6794**	0.017	1.0	ug/L	109	Standard
	Zn	66	2008.5	3.5	**1.7659**	0.064	3.6	ug/L	159	Standard
>	**Ge**	72	429862.6	1.0				ug/L	474053	Standard
	As	75	2572.0	0.4	**2.5869**	0.037	1.4	ug/L	-34	Standard
	Se	82	825.8	3.3	**8.0685**	0.355	4.4	ug/L	14	Standard
	Se-1	77	1141.7	4.7	**15.6522**	0.781	5.0	ug/L	55	Standard
>	**Ga**	71	1611.8	8.9				mg/L	50	Standard
	Rb	85	218102.3	2.0				ug/L	20	Standard
	Y	89	377604.2	0.7				ug/L	376602	Standard
>	**Rh**	103	3075.3	2.3				ug/L	17	Standard
	Mo	98	4376.1	1.3	**1.9206**	0.018	0.9	ug/L	8	Standard
	Ag	107	101.3	11.9	**0.0053**	0.002	42.4	ug/L	81	Standard
	Cd	111	44.3	10.0	**0.0205**	0.002	10.6	mg/L	3	Standard
	Cd	114	101.2	2.7	**0.0181**	0.001	4.2	ug/L	7	Standard
>	**In**	115	504775.6	2.2				ug/L	524722	Standard
	Sn	118	1261.7	9.4	**0.1538**	0.018	12.0	ug/L	715	Standard
	Sb	123	527.5	2.2	**0.1107**	0.000	0.3	ug/L	201	Standard
	Ba	135	1636843.5	1.3	**938.7853**	9.854	1.0	ug/L	108	Standard
	Ce	140	583.3	14.6				ug/L	30	Standard
>	**Tb**	159	772745.6	1.2				ug/L	792236	Standard
	Ho	165	13.3	57.3				ug/L	7	Standard
	Tl	203	237.3	15.4	**0.0328**	0.005	15.8	ug/L	9	Standard
	Tl	205	210.0	10.4	**0.0290**	0.003	11.9	ug/L	0	Standard
	Pb	206	512.7	7.1	**0.0701**	0.008	10.9	ug/L	216	Standard
	Pb	207	440.7	8.2	**0.0656**	0.009	13.2	ug/L	180	Standard
	Pb	208	1827.0	4.1	**0.0642**	0.006	9.9	ug/L	717	Standard
	U	238	243.3	3.8	**0.0371**	0.002	4.2	ug/L	4	Standard
>	**Bi**	209	404002.1	1.1				ug/L	460343	Standard

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Na	23	10.0	86.6	**-20.5285**	26.005	126.7	mg/L	0	Standard
Mg	24	96717.8	1.8	**126.0145**	6.791	5.4	mg/L	20	Standard
K	39	1353.4	2.3	**9.6820**	0.217	2.2	mg/L	22	Standard
Ca	43	1160.0	11.2	**246.7324**	22.672	9.2	mg/L	47	Standard
Fe	54	173.0	8.5	**0.0201**	0.009	45.9	mg/L	151	Standard
Fe	57	1218.4	5.2	**2.9735**	0.072	2.4	mg/L	195	Standard
> **Sc-1**	45	30878.1	3.6				mg/L	29647	Standard
Cl	35	185979.3	1.4				ug/L	154152	Standard
Kr	83	2.7	43.3				ug/L	3	Standard
Br	81	209002.2	2.5				ug/L	1607	Standard
P	31	27092.5	3.1				ug/L	22752	Standard
S	34	5509.3	2.9				ug/L	5049	Standard
Sr	88	11921.4	3.3				ug/L	87	Standard
C	12	216.7	14.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	29.4	59.5				mg/L	10	Standard
Ho-1	165	13.3	57.3				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	173148.1	13.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		142.427	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.678	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.199
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.761
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606073002
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Method 6020 - Summary Report

Sample ID: L1606073003
Sample Date/Time: Thursday, June 16, 2016 20:43:31
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66295.0	5.6				ug/L	51024	Standard
	Be	9	56.7	36.7	**0.0315**	0.022	69.3	ug/L	7	Standard
	Al	27	140324062.6	0.9	**759.9749**	34.895	4.6	ug/L	625	Standard
	Sc	45	30973.3	2.2				ug/L	29647	Standard
	Ti	47	544.3	4.3	**1.8537**	0.066	3.6	ug/L	57	Standard
	V	51	5988.0	12.5	**0.7695**	0.117	15.2	ug/L	1142	Standard
	Cr	52	16952.1	2.7	**1.6378**	0.039	2.4	ug/L	6628	Standard
	Cr	53	39053.8	8.0	**46.3217**	3.179	6.9	ug/L	430	Standard
	Mn	55	1211107.1	0.8	**227.1129**	4.279	1.9	ug/L	603	Standard
	Co	59	15513.3	2.2	**2.6477**	0.097	3.6	ug/L	237	Standard
	Ni	60	11454.7	1.9	**6.5356**	0.059	0.9	ug/L	141	Standard
	Cu	65	2107.5	3.2	**1.1824**	0.030	2.5	ug/L	109	Standard
	Zn	66	3534.1	3.7	**3.3182**	0.082	2.5	ug/L	159	Standard
>	**Ge**	72	425577.5	1.4				ug/L	474053	Standard
	As	75	6875.0	1.9	**6.9431**	0.226	3.3	ug/L	-34	Standard
	Se	82	1838.5	2.4	**18.3557**	0.698	3.8	ug/L	14	Standard
	Se-1	77	5651.1	6.0	**81.1945**	3.892	4.8	ug/L	55	Standard
>	**Ga**	71	298.3	8.3				mg/L	50	Standard
	Rb	85	18603.1	3.0				ug/L	20	Standard
	Y	89	364931.5	1.6				ug/L	376602	Standard
>	**Rh**	103	1093.4	10.5				ug/L	17	Standard
	Mo	98	426.7	6.4	**0.1986**	0.013	6.7	ug/L	8	Standard
	Ag	107	75.7	8.8	**0.0020**	0.001	63.5	ug/L	81	Standard
	Cd	111	101.2	16.3	**0.0557**	0.010	17.5	mg/L	3	Standard
	Cd	114	239.7	20.6	**0.0526**	0.011	21.7	ug/L	7	Standard
>	**In**	115	464316.0	0.4				ug/L	524722	Standard
	Sn	118	820.0	6.0	**0.0826**	0.010	12.0	ug/L	715	Standard
	Sb	123	404.3	9.7	**0.0898**	0.011	11.7	ug/L	201	Standard
	Ba	135	7189623.7	0.9	**4482.5615**	58.524	1.3	ug/L	108	Standard
	Ce	140	11556.1	1.6				ug/L	30	Standard
>	**Tb**	159	738740.3	1.0				ug/L	792236	Standard
	Ho	165	163.3	8.8				ug/L	7	Standard
	Tl	203	154.3	14.2	**0.0220**	0.003	15.0	ug/L	9	Standard
	Tl	205	155.0	9.7	**0.0212**	0.003	13.2	ug/L	0	Standard
	Pb	206	489.3	5.2	**0.0725**	0.006	7.9	ug/L	216	Standard
	Pb	207	420.0	7.6	**0.0677**	0.009	13.2	ug/L	180	Standard
	Pb	208	1652.4	1.4	**0.0599**	0.003	5.3	ug/L	717	Standard
	U	238	9935.9	1.3	**1.9381**	0.028	1.4	ug/L	4	Standard
>	**Bi**	209	378492.4	1.3				ug/L	460343	Standard

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Na	23	20.0	43.3	**-51.8526**	25.479	49.1	mg/L	0	Standard
Mg	24	304205.5	1.3	**394.7766**	3.601	0.9	mg/L	20	Standard
K	39	283.3	22.2	**1.8451**	0.491	26.6	mg/L	22	Standard
Ca	43	1023.4	14.5	**216.1479**	37.325	17.3	mg/L	47	Standard
Fe	54	3507.0	4.8	**2.6133**	0.070	2.7	mg/L	151	Standard
Fe	57	2098.5	3.6	**5.5706**	0.094	1.7	mg/L	195	Standard
> **Sc-1**	45	30973.3	2.2				mg/L	29647	Standard
Cl	35	171200.0	3.8				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	477807.6	1.2				ug/L	1607	Standard
P	31	31030.1	3.4				ug/L	22752	Standard
S	34	5537.7	3.1				ug/L	5049	Standard
Sr	88	3852.2	4.1				ug/L	87	Standard
C	12	250.0	32.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	197.9	47.2				mg/L	10	Standard
Ho-1	165	163.3	8.8				mg/L	7	Standard
Er	166	183.3	6.3				mg/L	3	Standard
I	127	159354.2	8.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.929	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		89.774	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	88.488
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	82.220
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606073102
Sample Date/Time: Thursday, June 16, 2016 20:46:43
Number of Replicates: 3
Autosampler Position: 346
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55473.1	2.7				ug/L	51024	Standard
	Be	9	55.0	36.4	**0.0390**	0.022	55.7	ug/L	7	Standard
	Al	27	942566.4	1.5	**6.0840**	0.204	3.4	ug/L	625	Standard
	Sc	45	34049.9	0.9				ug/L	29647	Standard
	Ti	47	5731.8	2.0	**18.2913**	0.196	1.1	ug/L	57	Standard
	V	51	32065.1	2.5	**4.1901**	0.107	2.6	ug/L	1142	Standard
	Cr	52	17242.5	0.8	**1.3371**	0.009	0.7	ug/L	6628	Standard
	Cr	53	5039.2	15.0	**4.8012**	0.726	15.1	ug/L	430	Standard
	Mn	55	115479.5	1.7	**18.6730**	0.120	0.6	ug/L	603	Standard
	Co	59	2037.1	3.8	**0.2650**	0.009	3.4	ug/L	237	Standard
	Ni	60	2031.8	4.8	**0.9400**	0.039	4.2	ug/L	141	Standard
	Cu	65	266456.7	0.9	**136.9469**	2.046	1.5	ug/L	109	Standard
	Zn	66	37165.9	1.0	**32.1770**	0.480	1.5	ug/L	159	Standard
>	**Ge**	72	490402.9	1.1				ug/L	474053	Standard
	As	75	12459.1	0.9	**10.9020**	0.085	0.8	ug/L	-34	Standard
	Se	82	127.6	3.2	**0.9465**	0.028	3.0	ug/L	14	Standard
	Se-1	77	270.0	15.8	**2.6503**	0.495	18.7	ug/L	55	Standard
>	**Ga**	71	1921.8	2.3				mg/L	50	Standard
	Rb	85	35595.1	1.8				ug/L	20	Standard
	Y	89	404147.8	1.0				ug/L	376602	Standard
>	**Rh**	103	85.0	15.6				ug/L	17	Standard
	Mo	98	4328.7	1.5	**1.8133**	0.020	1.1	ug/L	8	Standard
	Ag	107	869.7	0.1	**0.1324**	0.001	0.5	ug/L	81	Standard
	Cd	111	482.3	7.8	**0.2434**	0.019	8.0	mg/L	3	Standard
	Cd	114	1335.6	3.6	**0.2724**	0.009	3.3	ug/L	7	Standard
>	**In**	115	528691.1	0.6				ug/L	524722	Standard
	Sn	118	4765.7	3.3	**0.7887**	0.031	4.0	ug/L	715	Standard
	Sb	123	3183.9	1.5	**0.7087**	0.011	1.6	ug/L	201	Standard
	Ba	135	17225.1	3.1	**9.3751**	0.336	3.6	ug/L	108	Standard
	Ce	140	48213.3	1.0				ug/L	30	Standard
>	**Tb**	159	793657.4	1.6				ug/L	792236	Standard
	Ho	165	775.0	7.8				ug/L	7	Standard
	Tl	203	260.0	6.4	**0.0318**	0.003	8.6	ug/L	9	Standard
	Tl	205	233.3	20.4	**0.0285**	0.008	27.8	ug/L	0	Standard
	Pb	206	39704.6	1.2	**8.6323**	0.072	0.8	ug/L	216	Standard
	Pb	207	34342.9	1.0	**8.2030**	0.203	2.5	ug/L	180	Standard
	Pb	208	145934.1	1.3	**8.5861**	0.079	0.9	ug/L	717	Standard
	U	238	420.0	4.3	**0.0608**	0.004	7.1	ug/L	4	Standard
>	**Bi**	209	455671.4	2.1				ug/L	460343	Standard

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Na	23	3.3	173.2	**0.8644**	16.607	1921.3	mg/L	0	Standard
Mg	24	12667.0	1.0	**14.9085**	0.215	1.4	mg/L	20	Standard
K	39	335.0	19.1	**1.9967**	0.430	21.5	mg/L	22	Standard
Ca	43	88.3	18.2	**4.8010**	3.416	71.1	mg/L	47	Standard
Fe	54	995.1	5.6	**0.5893**	0.033	5.5	mg/L	151	Standard
Fe	57	445.0	16.6	**0.5516**	0.188	34.0	mg/L	195	Standard
> **Sc-1**	45	34049.9	0.9				mg/L	29647	Standard
Cl	35	173758.3	2.1				ug/L	154152	Standard
Kr	83	3.3	91.7				ug/L	3	Standard
Br	81	6371.4	18.0				ug/L	1607	Standard
P	31	28039.3	2.8				ug/L	22752	Standard
S	34	5270.9	3.8				ug/L	5049	Standard
Sr	88	90.0	5.6				ug/L	87	Standard
C	12	76.7	58.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	56.8				mg/L	0	Standard
Dy	164	1215.7	9.2				mg/L	10	Standard
Ho-1	165	775.0	7.8				mg/L	7	Standard
Er	166	786.7	6.4				mg/L	3	Standard
I	127	21140.1	20.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.719	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.449	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.756	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.985	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: L1606073102
Sample Date/Time: Thursday, June 16, 2016 20:49:54
Number of Replicates: 3
Autosampler Position: 347
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59153.6	1.2				ug/L	51024	Standard
	Be	9	8.3	34.6	**-0.0125**	0.003	23.9	ug/L	7	Standard
	Al	27	100448.6	1.0	**0.5989**	0.007	1.2	ug/L	625	Standard
	Sc	45	33126.2	1.2				ug/L	29647	Standard
	Ti	47	644.7	2.1	**2.0007**	0.071	3.6	ug/L	57	Standard
	V	51	4289.2	6.3	**0.4402**	0.044	10.0	ug/L	1142	Standard
	Cr	52	8064.5	2.5	**0.1771**	0.010	5.7	ug/L	6628	Standard
	Cr	53	1751.8	6.1	**1.4679**	0.099	6.8	ug/L	430	Standard
	Mn	55	12501.5	0.4	**1.9975**	0.048	2.4	ug/L	603	Standard
	Co	59	371.3	7.0	**0.0170**	0.003	18.0	ug/L	237	Standard
	Ni	60	380.0	10.9	**0.1207**	0.019	15.5	ug/L	141	Standard
	Cu	65	26879.2	2.3	**14.3517**	0.162	1.1	ug/L	109	Standard
	Zn	66	5034.5	0.7	**4.3493**	0.122	2.8	ug/L	159	Standard
>	**Ge**	72	470100.0	2.4				ug/L	474053	Standard
	As	75	1188.6	1.5	**1.1081**	0.042	3.8	ug/L	-34	Standard
	Se	82	31.1	20.0	**0.1142**	0.055	48.5	ug/L	14	Standard
	Se-1	77	110.7	11.2	**0.7077**	0.148	20.9	ug/L	55	Standard
>	**Ga**	71	223.3	5.6				mg/L	50	Standard
	Rb	85	3760.5	5.0				ug/L	20	Standard
	Y	89	401153.8	1.8				ug/L	376602	Standard
>	**Rh**	103	35.0	28.6				ug/L	17	Standard
	Mo	98	446.2	5.1	**0.1763**	0.012	6.9	ug/L	8	Standard
	Ag	107	132.3	3.7	**0.0090**	0.001	8.3	ug/L	81	Standard
	Cd	111	53.4	17.3	**0.0233**	0.005	21.5	mg/L	3	Standard
	Cd	114	111.5	28.2	**0.0185**	0.006	33.2	ug/L	7	Standard
>	**In**	115	545539.1	1.6				ug/L	524722	Standard
	Sn	118	1001.7	15.4	**0.0892**	0.025	28.5	ug/L	715	Standard
	Sb	123	390.2	5.8	**0.0711**	0.004	6.2	ug/L	201	Standard
	Ba	135	2004.1	4.2	**1.0056**	0.035	3.5	ug/L	108	Standard
	Ce	140	4912.5	3.1				ug/L	30	Standard
>	**Tb**	159	820295.3	0.5				ug/L	792236	Standard
	Ho	165	85.0	35.8				ug/L	7	Standard
	Tl	203	81.3	9.9	**0.0080**	0.001	12.7	ug/L	9	Standard
	Tl	205	81.7	7.1	**0.0047**	0.001	18.7	ug/L	0	Standard
	Pb	206	4339.0	0.8	**0.8817**	0.013	1.4	ug/L	216	Standard
	Pb	207	3847.8	0.9	**0.8599**	0.011	1.3	ug/L	180	Standard
	Pb	208	15987.3	1.8	**0.8776**	0.022	2.5	ug/L	717	Standard
	U	238	37.0	13.5	**-0.0016**	0.001	51.1	ug/L	4	Standard
>	**Bi**	209	461213.2	0.5				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1265.1	9.3	**1.4911**	0.161	10.8	mg/L	20	Standard
K	39	51.7	11.2	**0.1245**	0.037	30.0	mg/L	22	Standard
Ca	43	36.7	20.8	**-5.5323**	1.502	27.2	mg/L	47	Standard
Fe	54	272.3	11.9	**0.0834**	0.026	30.8	mg/L	151	Standard
Fe	57	213.3	13.3	**-0.0553**	0.084	152.6	mg/L	195	Standard
> **Sc-1**	45	33126.2	1.2				mg/L	29647	Standard
Cl	35	168674.4	1.0				ug/L	154152	Standard
Kr	83	2.7	57.3				ug/L	3	Standard
Br	81	3067.0	8.5				ug/L	1607	Standard
P	31	24656.7	3.1				ug/L	22752	Standard
S	34	5190.9	0.5				ug/L	5049	Standard
Sr	88	70.0	31.1				ug/L	87	Standard
C	12	56.7	40.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	128.2	29.2				mg/L	10	Standard
Ho-1	165	85.0	35.8				mg/L	7	Standard
Er	166	106.7	19.5				mg/L	3	Standard
I	127	4907.5	9.2				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.933	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.166	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.967
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.189
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606054009
Sample Date/Time: Thursday, June 16, 2016 20:53:06
Number of Replicates: 3
Autosampler Position: 348
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57167.7	1.8				ug/L	51024	Standard
	Be	9	16.7	34.6	**-0.0033**	0.006	191.0	ug/L	7	Standard
	Al	27	40703.4	11.7	**0.2452**	0.025	10.3	ug/L	625	Standard
	Sc	45	31935.3	3.8				ug/L	29647	Standard
	Ti	47	33.3	7.5	**-0.0541**	0.007	12.4	ug/L	57	Standard
	V	51	1267.4	7.9	**0.0110**	0.011	98.7	ug/L	1142	Standard
	Cr	52	6813.9	0.7	**0.0049**	0.027	550.7	ug/L	6628	Standard
	Cr	53	1183.4	2.1	**0.8507**	0.047	5.5	ug/L	430	Standard
	Mn	55	63841.2	0.9	**10.7040**	0.156	1.5	ug/L	603	Standard
	Co	59	241.7	8.6	**-0.0034**	0.003	78.7	ug/L	237	Standard
	Ni	60	170.7	5.3	**0.0113**	0.004	35.5	ug/L	141	Standard
	Cu	65	185.7	9.3	**0.0334**	0.011	32.3	ug/L	109	Standard
	Zn	66	1221.7	3.3	**0.8784**	0.051	5.8	ug/L	159	Standard
>	**Ge**	72	470712.9	2.2				ug/L	474053	Standard
	As	75	30.8	16.5	**0.0530**	0.004	7.8	ug/L	-34	Standard
	Se	82	25.1	14.7	**0.0591**	0.030	51.4	ug/L	14	Standard
	Se-1	77	77.3	7.8	**0.2686**	0.059	22.0	ug/L	55	Standard
>	**Ga**	71	51.7	31.1				mg/L	50	Standard
	Rb	85	646.7	20.2				ug/L	20	Standard
	Y	89	396670.0	2.0				ug/L	376602	Standard
>	**Rh**	103	36.7	47.9				ug/L	17	Standard
	Mo	98	41.6	28.6	**0.0117**	0.005	41.7	ug/L	8	Standard
	Ag	107	95.3	39.9	**0.0032**	0.006	177.8	ug/L	81	Standard
	Cd	111	10.6	141.7	**0.0020**	0.007	372.2	mg/L	3	Standard
	Cd	114	31.1	47.0	**0.0025**	0.003	110.7	ug/L	7	Standard
>	**In**	115	535879.5	3.0				ug/L	524722	Standard
	Sn	118	518.3	19.7	**0.0045**	0.016	347.9	ug/L	715	Standard
	Sb	123	86.0	15.9	**0.0044**	0.002	55.3	ug/L	201	Standard
	Ba	135	3179.4	70.5	**1.6371**	1.141	69.7	ug/L	108	Standard
	Ce	140	118.3	56.3				ug/L	30	Standard
>	**Tb**	159	791577.1	1.4				ug/L	792236	Standard
	Ho	165	16.7	62.4				ug/L	7	Standard
	Tl	203	82.0	86.0	**0.0083**	0.009	108.7	ug/L	9	Standard
	Tl	205	38.3	39.8	**-0.0018**	0.002	122.7	ug/L	0	Standard
	Pb	206	276.0	8.2	**0.0051**	0.003	58.8	ug/L	216	Standard
	Pb	207	225.0	9.4	**0.0012**	0.004	310.7	ug/L	180	Standard
	Pb	208	961.3	4.7	**0.0001**	0.001	957.0	ug/L	717	Standard
	U	238	50.7	3.0	**0.0008**	0.000	45.3	ug/L	4	Standard
>	**Bi**	209	447174.4	3.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	178.3	23.3	**0.1782**	0.044	24.8	mg/L	20	Standard
K	39	75.0	0.0	**0.3034**	0.020	6.6	mg/L	22	Standard
Ca	43	26.7	39.0	**-7.4067**	2.216	29.9	mg/L	47	Standard
Fe	54	296.0	2.0	**0.1085**	0.005	4.5	mg/L	151	Standard
Fe	57	203.3	7.1	**-0.0621**	0.045	71.7	mg/L	195	Standard
> **Sc-1**	45	31935.3	3.8				mg/L	29647	Standard
Cl	35	168415.6	1.0				ug/L	154152	Standard
Kr	83	1.0	0.0				ug/L	3	Standard
Br	81	2343.5	14.9				ug/L	1607	Standard
P	31	24079.1	0.8				ug/L	22752	Standard
S	34	5175.9	6.6				ug/L	5049	Standard
Sr	88	91.7	20.7				ug/L	87	Standard
C	12	60.0	28.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	7.9	115.0				mg/L	10	Standard
Ho-1	165	16.7	62.4				mg/L	7	Standard
Er	166	43.3	70.5				mg/L	3	Standard
I	127	3628.8	3.8				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.040	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.295	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.126
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.139
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606054010
Sample Date/Time: Thursday, June 16, 2016 20:57:27
Number of Replicates: 3
Autosampler Position: 349
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56434.9	2.3				ug/L	51024	Standard
	Be	9	8.3	34.6	**-0.0121**	0.003	26.4	ug/L	7	Standard
	Al	27	252906.9	1.5	**1.5971**	0.043	2.7	ug/L	625	Standard
	Sc	45	31920.3	2.1				ug/L	29647	Standard
	Ti	47	312.3	10.2	**0.8821**	0.111	12.6	ug/L	57	Standard
	V	51	2253.7	7.5	**0.1509**	0.028	18.3	ug/L	1142	Standard
	Cr	52	7388.1	1.0	**0.0829**	0.016	19.3	ug/L	6628	Standard
	Cr	53	1196.7	7.3	**0.8649**	0.109	12.6	ug/L	430	Standard
	Mn	55	73740.7	1.7	**12.3802**	0.357	2.9	ug/L	603	Standard
	Co	59	450.0	4.0	**0.0292**	0.003	10.6	ug/L	237	Standard
	Ni	60	555.0	6.8	**0.2120**	0.023	10.8	ug/L	141	Standard
	Cu	65	367.0	6.1	**0.1304**	0.011	8.6	ug/L	109	Standard
	Zn	66	2607.2	1.1	**2.1362**	0.049	2.3	ug/L	159	Standard
>	**Ge**	72	470838.7	1.1				ug/L	474053	Standard
	As	75	1057.7	4.9	**0.9866**	0.037	3.7	ug/L	-34	Standard
	Se	82	371.4	5.2	**3.2111**	0.141	4.4	ug/L	14	Standard
	Se-1	77	82.0	5.3	**0.3308**	0.069	21.0	ug/L	55	Standard
>	**Ga**	71	95.0	21.1				mg/L	50	Standard
	Rb	85	2080.1	6.3				ug/L	20	Standard
	Y	89	394550.0	1.4				ug/L	376602	Standard
>	**Rh**	103	40.0	12.5				ug/L	17	Standard
	Mo	98	432.1	5.5	**0.1778**	0.013	7.4	ug/L	8	Standard
	Ag	107	89.3	6.8	**0.0027**	0.001	34.2	ug/L	81	Standard
	Cd	111	10.8	29.5	**0.0024**	0.002	71.8	mg/L	3	Standard
	Cd	114	7.3	63.1	**-0.0023**	0.001	40.5	ug/L	7	Standard
>	**In**	115	524122.9	2.0				ug/L	524722	Standard
	Sn	118	475.0	16.9	**-0.0012**	0.015	1226.6	ug/L	715	Standard
	Sb	123	126.7	16.7	**0.0143**	0.005	37.6	ug/L	201	Standard
	Ba	135	6164.6	3.3	**3.3481**	0.133	4.0	ug/L	108	Standard
	Ce	140	2293.5	2.9				ug/L	30	Standard
>	**Tb**	159	771498.5	0.9				ug/L	792236	Standard
	Ho	165	40.0	33.1				ug/L	7	Standard
	Tl	203	178.3	6.6	**0.0218**	0.002	7.9	ug/L	9	Standard
	Tl	205	168.3	19.8	**0.0193**	0.006	28.8	ug/L	0	Standard
	Pb	206	424.0	1.9	**0.0396**	0.002	4.6	ug/L	216	Standard
	Pb	207	350.0	3.8	**0.0332**	0.004	10.7	ug/L	180	Standard
	Pb	208	1524.0	3.5	**0.0355**	0.004	11.4	ug/L	717	Standard
	U	238	1126.4	2.3	**0.1820**	0.006	3.2	ug/L	4	Standard
>	**Bi**	209	440459.4	0.9				ug/L	460343	Standard

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Na	23	3.3	86.6	**0.3515**	8.752	2490.2	mg/L	0	Standard
Mg	24	5054.2	1.6	**6.3217**	0.207	3.3	mg/L	20	Standard
K	39	60.0	38.2	**0.1962**	0.161	82.1	mg/L	22	Standard
Ca	43	58.3	27.6	**-0.5341**	3.483	652.1	mg/L	47	Standard
Fe	54	351.0	19.9	**0.1502**	0.054	35.8	mg/L	151	Standard
Fe	57	258.3	13.7	**0.0974**	0.116	119.4	mg/L	195	Standard
> **Sc-1**	45	31920.3	2.1				mg/L	29647	Standard
Cl	35	170598.8	2.4				ug/L	154152	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	89319.4	3.8				ug/L	1607	Standard
P	31	24377.9	0.5				ug/L	22752	Standard
S	34	5239.2	6.6				ug/L	5049	Standard
Sr	88	133.3	15.6				ug/L	87	Standard
C	12	30.0	33.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	52.1	28.7				mg/L	10	Standard
Ho-1	165	40.0	33.1				mg/L	7	Standard
Er	166	26.7	57.3				mg/L	3	Standard
I	127	17059.6	8.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.604	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.322	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.886
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.681
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606054011
Sample Date/Time: Thursday, June 16, 2016 21:00:39
Number of Replicates: 3
Autosampler Position: 350
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58251.8	0.7				ug/L	51024	Standard
	Be	9	10.0	100.0	**-0.0107**	0.010	96.5	ug/L	7	Standard
	Al	27	254779.3	0.3	**1.5580**	0.016	1.0	ug/L	625	Standard
	Sc	45	32790.5	2.0				ug/L	29647	Standard
	Ti	47	354.0	6.1	**1.0202**	0.064	6.3	ug/L	57	Standard
	V	51	2227.5	5.1	**0.1471**	0.023	15.7	ug/L	1142	Standard
	Cr	52	7531.2	1.8	**0.1020**	0.041	40.4	ug/L	6628	Standard
	Cr	53	1105.0	6.8	**0.7629**	0.054	7.1	ug/L	430	Standard
	Mn	55	71367.7	1.1	**11.9661**	0.226	1.9	ug/L	603	Standard
	Co	59	417.3	0.3	**0.0241**	0.001	5.5	ug/L	237	Standard
	Ni	60	538.0	5.0	**0.2029**	0.019	9.2	ug/L	141	Standard
	Cu	65	370.3	6.0	**0.1319**	0.008	6.1	ug/L	109	Standard
	Zn	66	2431.9	0.9	**1.9749**	0.035	1.8	ug/L	159	Standard
>	**Ge**	72	471306.4	2.3				ug/L	474053	Standard
	As	75	1059.1	3.3	**0.9871**	0.024	2.5	ug/L	-34	Standard
	Se	82	374.1	5.5	**3.2332**	0.174	5.4	ug/L	14	Standard
	Se-1	77	74.7	4.7	**0.2331**	0.038	16.2	ug/L	55	Standard
>	**Ga**	71	103.3	15.6				mg/L	50	Standard
	Rb	85	1920.1	7.2				ug/L	20	Standard
	Y	89	383902.2	1.9				ug/L	376602	Standard
>	**Rh**	103	25.0	87.2				ug/L	17	Standard
	Mo	98	436.7	9.1	**0.1748**	0.015	8.7	ug/L	8	Standard
	Ag	107	65.0	9.2	**-0.0017**	0.001	50.8	ug/L	81	Standard
	Cd	111	7.9	14.5	**0.0007**	0.001	83.6	mg/L	3	Standard
	Cd	114	24.6	49.4	**0.0012**	0.002	206.6	ug/L	7	Standard
>	**In**	115	537640.9	1.1				ug/L	524722	Standard
	Sn	118	573.3	39.0	**0.0145**	0.041	281.6	ug/L	715	Standard
	Sb	123	111.2	8.6	**0.0100**	0.002	20.8	ug/L	201	Standard
	Ba	135	6046.2	1.0	**3.1982**	0.060	1.9	ug/L	108	Standard
	Ce	140	2091.8	0.8				ug/L	30	Standard
>	**Tb**	159	809758.8	0.4				ug/L	792236	Standard
	Ho	165	41.7	18.3				ug/L	7	Standard
	Tl	203	180.3	6.1	**0.0211**	0.001	6.1	ug/L	9	Standard
	Tl	205	173.3	24.0	**0.0189**	0.006	33.1	ug/L	0	Standard
	Pb	206	420.3	5.1	**0.0350**	0.005	15.0	ug/L	216	Standard
	Pb	207	374.0	2.6	**0.0354**	0.003	8.0	ug/L	180	Standard
	Pb	208	1541.7	1.3	**0.0327**	0.002	5.1	ug/L	717	Standard
	U	238	1137.0	2.8	**0.1760**	0.006	3.3	ug/L	4	Standard
>	**Bi**	209	459070.7	0.7				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.4041**	8.743	161.8	mg/L	0	Standard
Mg	24	4977.5	2.7	**6.0561**	0.102	1.7	mg/L	20	Standard
K	39	71.7	10.7	**0.2668**	0.063	23.4	mg/L	22	Standard
Ca	43	53.3	10.8	**-1.9274**	1.113	57.7	mg/L	47	Standard
Fe	54	318.9	6.3	**0.1195**	0.015	12.9	mg/L	151	Standard
Fe	57	250.0	29.5	**0.0557**	0.223	399.4	mg/L	195	Standard
Sc-1	45	32790.5	2.0				mg/L	29647	Standard
Cl	35	169793.5	0.8				ug/L	154152	Standard
Kr	83	2.0	0.0				ug/L	3	Standard
Br	81	89396.4	2.9				ug/L	1607	Standard
P	31	24319.5	2.4				ug/L	22752	Standard
S	34	5012.5	5.2				ug/L	5049	Standard
Sr	88	106.7	17.7				ug/L	87	Standard
C	12	46.7	32.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	51.6	38.3				mg/L	10	Standard
Ho-1	165	41.7	18.3				mg/L	7	Standard
Er	166	36.7	63.0				mg/L	3	Standard
I	127	17585.2	6.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.165	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.421	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.462	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.724	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606054014
Sample Date/Time: Thursday, June 16, 2016 21:03:50
Number of Replicates: 3
Autosampler Position: 351
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57943.9	0.3				ug/L	51024	Standard
	Be	9	10.0	50.0	**-0.0106**	0.005	49.0	ug/L	7	Standard
	Al	27	40494.2	7.5	**0.2408**	0.019	8.1	ug/L	625	Standard
	Sc	45	33099.4	0.9				ug/L	29647	Standard
	Ti	47	40.0	11.5	**-0.0319**	0.013	41.5	ug/L	57	Standard
	V	51	1267.4	3.9	**0.0110**	0.004	33.2	ug/L	1142	Standard
	Cr	52	6912.6	1.0	**0.0177**	0.023	132.2	ug/L	6628	Standard
	Cr	53	750.0	9.0	**0.3802**	0.071	18.6	ug/L	430	Standard
	Mn	55	124087.1	1.1	**20.9134**	0.521	2.5	ug/L	603	Standard
	Co	59	211.7	10.1	**-0.0081**	0.004	46.5	ug/L	237	Standard
	Ni	60	248.0	1.5	**0.0516**	0.002	4.7	ug/L	141	Standard
	Cu	65	221.0	10.6	**0.0522**	0.012	22.6	ug/L	109	Standard
	Zn	66	3791.1	1.2	**3.2112**	0.103	3.2	ug/L	159	Standard
>	**Ge**	72	470993.8	1.9				ug/L	474053	Standard
	As	75	110.5	40.9	**0.1251**	0.040	31.9	ug/L	-34	Standard
	Se	82	16.7	56.8	**-0.0174**	0.085	487.8	ug/L	14	Standard
	Se-1	77	66.3	16.1	**0.1259**	0.151	119.8	ug/L	55	Standard
>	**Ga**	71	63.3	27.7				mg/L	50	Standard
	Rb	85	276.7	10.3				ug/L	20	Standard
	Y	89	385833.8	2.0				ug/L	376602	Standard
>	**Rh**	103	31.7	50.8				ug/L	17	Standard
	Mo	98	31.0	14.9	**0.0074**	0.002	27.3	ug/L	8	Standard
	Ag	107	68.0	4.4	**-0.0012**	0.000	32.0	ug/L	81	Standard
	Cd	111	10.9	18.2	**0.0023**	0.001	41.2	mg/L	3	Standard
	Cd	114	35.3	7.7	**0.0034**	0.001	15.7	ug/L	7	Standard
>	**In**	115	534994.4	1.2				ug/L	524722	Standard
	Sn	118	486.7	6.0	**-0.0009**	0.004	488.6	ug/L	715	Standard
	Sb	123	88.5	13.6	**0.0050**	0.002	48.6	ug/L	201	Standard
	Ba	135	1149.4	10.0	**0.5638**	0.054	9.6	ug/L	108	Standard
	Ce	140	73.3	33.6				ug/L	30	Standard
>	**Tb**	159	801412.4	0.6				ug/L	792236	Standard
	Ho	165	16.7	17.3				ug/L	7	Standard
	Tl	203	39.7	22.9	**0.0026**	0.001	46.4	ug/L	9	Standard
	Tl	205	23.3	75.3	**-0.0042**	0.003	64.0	ug/L	0	Standard
	Pb	206	288.7	4.7	**0.0060**	0.003	43.9	ug/L	216	Standard
	Pb	207	232.0	1.6	**0.0012**	0.001	74.1	ug/L	180	Standard
	Pb	208	996.7	1.1	**0.0003**	0.001	274.4	ug/L	717	Standard
	U	238	6.3	48.2	**-0.0066**	0.000	7.5	ug/L	4	Standard
>	**Bi**	209	461918.2	0.5				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.5408**	8.507	153.5	mg/L	0	Standard
Mg	24	155.0	19.6	**0.1428**	0.035	24.6	mg/L	20	Standard
K	39	20.0	75.0	**-0.0919**	0.101	110.1	mg/L	22	Standard
Ca	43	28.3	36.7	**-7.2551**	2.201	30.3	mg/L	47	Standard
Fe	54	217.7	12.7	**0.0436**	0.021	47.7	mg/L	151	Standard
Fe	57	210.0	21.4	**-0.0640**	0.129	201.3	mg/L	195	Standard
> **Sc-1**	45	33099.4	0.9				mg/L	29647	Standard
Cl	35	168257.1	0.3				ug/L	154152	Standard
Kr	83	2.0	86.6				ug/L	3	Standard
Br	81	3430.4	12.2				ug/L	1607	Standard
P	31	24144.2	1.0				ug/L	22752	Standard
S	34	5209.2	2.8				ug/L	5049	Standard
Sr	88	75.0	43.7				ug/L	87	Standard
C	12	36.7	63.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.1	43.3				mg/L	10	Standard
Ho-1	165	16.7	17.3				mg/L	7	Standard
Er	166	26.7	43.3				mg/L	3	Standard
I	127	3078.6	10.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.562	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.355	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606054014
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.958
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.342
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 21:07:02
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57216.2	1.8				ug/L	51024	Standard
	Be	9	44266.2	0.8	**46.9448**	1.086	2.3	ug/L	7	Standard
	Al	27	7280291.9	1.0	**45.6137**	1.287	2.8	ug/L	625	Standard
	Sc	45	32309.4	1.7				ug/L	29647	Standard
	Ti	47	30197.4	0.3	**101.5240**	2.598	2.6	ug/L	57	Standard
	V	51	355347.4	0.9	**50.3294**	0.808	1.6	ug/L	1142	Standard
	Cr	52	370024.2	0.4	**49.8980**	1.109	2.2	ug/L	6628	Standard
	Cr	53	45872.7	0.6	**49.4285**	1.135	2.3	ug/L	430	Standard
	Mn	55	314239.7	1.6	**53.3617**	1.128	2.1	ug/L	603	Standard
	Co	59	314388.6	0.3	**49.3919**	1.176	2.4	ug/L	237	Standard
	Ni	60	94820.1	0.2	**49.5997**	1.101	2.2	ug/L	141	Standard
	Cu	65	92383.2	1.4	**49.5924**	0.629	1.3	ug/L	109	Standard
	Zn	66	54761.8	0.6	**49.6923**	0.878	1.8	ug/L	159	Standard
>	**Ge**	72	469160.5	2.3				ug/L	474053	Standard
	As	75	53380.1	0.9	**48.7528**	1.227	2.5	ug/L	-34	Standard
	Se	82	5320.4	1.7	**48.4684**	1.778	3.7	ug/L	14	Standard
	Se-1	77	3692.8	2.0	**47.8512**	0.716	1.5	ug/L	55	Standard
>	**Ga**	71	61.7	70.8				mg/L	50	Standard
	Rb	85	808.4	9.3				ug/L	20	Standard
	Y	89	383560.2	1.8				ug/L	376602	Standard
>	**Rh**	103	35.0	42.9				ug/L	17	Standard
	Mo	98	232242.3	1.1	**96.5061**	2.361	2.4	ug/L	8	Standard
	Ag	107	292582.7	0.8	**48.1206**	0.391	0.8	ug/L	81	Standard
	Cd	111	95603.2	0.1	**48.3402**	0.694	1.4	mg/L	3	Standard
	Cd	114	235634.1	0.2	**48.1942**	0.648	1.3	ug/L	7	Standard
>	**In**	115	534700.6	1.5				ug/L	524722	Standard
	Sn	118	264473.5	1.3	**48.1050**	1.306	2.7	ug/L	715	Standard
	Sb	123	215670.2	0.6	**48.4479**	0.874	1.8	ug/L	201	Standard
	Ba	135	88155.7	0.1	**47.6769**	0.763	1.6	ug/L	108	Standard
	Ce	140	101.7	19.9				ug/L	30	Standard
>	**Tb**	159	793079.8	1.0				ug/L	792236	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	358440.3	1.1	**47.4951**	0.142	0.3	ug/L	9	Standard
	Tl	205	312266.9	1.0	**48.6540**	0.130	0.3	ug/L	0	Standard
	Pb	206	224283.0	1.3	**49.1202**	0.907	1.8	ug/L	216	Standard
	Pb	207	204302.6	0.7	**49.1523**	0.806	1.6	ug/L	180	Standard
	Pb	208	833504.1	0.4	**49.4087**	0.646	1.3	ug/L	717	Standard
	U	238	304654.1	0.2	**49.6463**	0.682	1.4	ug/L	4	Standard
>	**Bi**	209	454777.5	1.2				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.3475**	8.842	165.3	mg/L	0	Standard
Mg	24	4015.5	1.7	**4.9520**	0.163	3.3	mg/L	20	Standard
K	39	633.3	0.9	**4.2037**	0.116	2.8	mg/L	22	Standard
Ca	43	71.7	28.2	**2.1962**	4.389	199.9	mg/L	47	Standard
Fe	54	5816.1	3.6	**4.2263**	0.216	5.1	mg/L	151	Standard
Fe	57	1691.8	3.9	**4.1585**	0.125	3.0	mg/L	195	Standard
> **Sc-1**	45	32309.4	1.7				mg/L	29647	Standard
Cl	35	165447.9	1.5				ug/L	154152	Standard
Kr	83	3.0	33.3				ug/L	3	Standard
Br	81	2063.5	3.6				ug/L	1607	Standard
P	31	25169.2	0.8				ug/L	22752	Standard
S	34	5737.8	0.7				ug/L	5049	Standard
Sr	88	55.0	15.7				ug/L	87	Standard
C	12	53.3	47.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.2	93.3				mg/L	10	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	10.0					mg/L	3	Standard
I	127	1655.1	3.8				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	93.890		
Al	27	91.227		
Sc	45			
Ti	47	101.524		
V	51	100.659		
Cr	52	99.796		
Cr	53			
Mn	55	106.723		
Co	59	98.784		
Ni	60	99.199		
Cu	65	99.185		
Zn	66	99.385		
> Ge	72		98.968	
As	75	97.506		
Se	82	96.937		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	96.506		
Ag	107	96.241		
Cd	111	96.680		
Cd	114			
> In	115			101.902
Sn	118	96.210		
Sb	123	96.896		
Ba	135	95.354		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	94.990		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.817		
U	238	99.293		
> Bi	209			98.791
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 21:10:14
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55944.8	2.0				ug/L	51024	Standard
	Be	9	16.7	34.6	**-0.0030**	0.006	212.8	ug/L	7	Standard
	Al	27	1526.8	38.2	**-0.0000**	0.004	16917.9	ug/L	625	Standard
	Sc	45	31897.0	7.4				ug/L	29647	Standard
	Ti	47	31.0	8.5	**-0.0586**	0.008	13.1	ug/L	57	Standard
	V	51	1141.1	6.7	**-0.0015**	0.010	648.2	ug/L	1142	Standard
	Cr	52	6326.0	1.2	**-0.0342**	0.003	8.9	ug/L	6628	Standard
	Cr	53	638.3	5.1	**0.2820**	0.027	9.6	ug/L	430	Standard
	Mn	55	672.3	5.7	**-0.0087**	0.006	71.9	ug/L	603	Standard
	Co	59	229.3	15.7	**-0.0042**	0.005	126.3	ug/L	237	Standard
	Ni	60	153.7	14.0	**0.0051**	0.012	235.2	ug/L	141	Standard
	Cu	65	131.3	12.6	**0.0065**	0.009	132.4	ug/L	109	Standard
	Zn	66	145.0	12.1	**-0.0961**	0.015	15.1	ug/L	159	Standard
>	**Ge**	72	455945.8	1.4				ug/L	474053	Standard
	As	75	-22.0	198.7	**0.0041**	0.041	1009.9	ug/L	-34	Standard
	Se	82	27.4	26.2	**0.0880**	0.066	75.2	ug/L	14	Standard
	Se-1	77	76.0	21.7	**0.2852**	0.231	80.9	ug/L	55	Standard
>	**Ga**	71	41.7	42.1				mg/L	50	Standard
	Rb	85	23.3	75.3				ug/L	20	Standard
	Y	89	400519.5	2.1				ug/L	376602	Standard
>	**Rh**	103	30.0	57.7				ug/L	17	Standard
	Mo	98	251.1	32.5	**0.0955**	0.032	33.2	ug/L	8	Standard
	Ag	107	99.3	31.3	**0.0035**	0.005	136.7	ug/L	81	Standard
	Cd	111	14.1	69.7	**0.0037**	0.005	129.5	mg/L	3	Standard
	Cd	114	31.9	76.8	**0.0025**	0.005	193.5	ug/L	7	Standard
>	**In**	115	550633.2	1.2				ug/L	524722	Standard
	Sn	118	735.0	12.4	**0.0407**	0.017	42.7	ug/L	715	Standard
	Sb	123	412.2	18.4	**0.0753**	0.017	23.2	ug/L	201	Standard
	Ba	135	126.7	6.0	**0.0089**	0.003	36.5	ug/L	108	Standard
	Ce	140	13.3	43.3				ug/L	30	Standard
>	**Tb**	159	804256.0	1.8				ug/L	792236	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	62.7	29.5	**0.0058**	0.002	40.2	ug/L	9	Standard
	Tl	205	55.0	15.7	**0.0008**	0.001	147.2	ug/L	0	Standard
	Pb	206	234.3	12.8	**-0.0047**	0.006	120.1	ug/L	216	Standard
	Pb	207	197.7	8.5	**-0.0059**	0.003	52.6	ug/L	180	Standard
	Pb	208	861.7	7.3	**-0.0064**	0.003	48.7	ug/L	717	Standard
	U	238	32.7	49.0	**-0.0022**	0.003	112.0	ug/L	4	Standard
>	**Bi**	209	451393.6	2.0				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.7600**	8.127	141.1	mg/L	0	Standard
Mg	24	66.7	18.9	**0.0383**	0.010	25.0	mg/L	20	Standard
K	39	15.0	66.7	**-0.1191**	0.074	61.9	mg/L	22	Standard
Ca	43	28.3	36.7	**-7.1219**	1.762	24.7	mg/L	47	Standard
Fe	54	147.9	22.4	**-0.0038**	0.019	492.3	mg/L	151	Standard
Fe	57	200.0	17.5	**-0.0677**	0.127	187.5	mg/L	195	Standard
Sc-1	45	31897.0	7.4				mg/L	29647	Standard
Cl	35	166760.1	1.1				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	1793.4	4.2				ug/L	1607	Standard
P	31	26206.0	1.2				ug/L	22752	Standard
S	34	5832.8	0.3				ug/L	5049	Standard
Sr	88	61.7	26.1				ug/L	87	Standard
C	12	43.3	35.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.9	118.8				mg/L	10	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	10.0					mg/L	3	Standard
I	127	1290.1	6.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.180	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	104.938	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.056	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606061601
Sample Date/Time: Thursday, June 16, 2016 21:13:26
Number of Replicates: 3
Autosampler Position: 352
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57249.6	1.2				ug/L	51024	Standard
	Be	9	55.0	9.1	**0.0372**	0.006	15.0	ug/L	7	Standard
	Al	27	393587.4	1.7	**2.4548**	0.057	2.3	ug/L	625	Standard
	Sc	45	32406.3	3.0				ug/L	29647	Standard
	Ti	47	74.0	10.7	**0.0892**	0.028	31.0	ug/L	57	Standard
	V	51	636.6	76.8	**-0.0758**	0.071	93.6	ug/L	1142	Standard
	Cr	52	85601.8	0.6	**11.1086**	0.082	0.7	ug/L	6628	Standard
	Cr	53	11320.9	1.4	**12.1647**	0.172	1.4	ug/L	430	Standard
	Mn	55	80985.9	0.3	**13.9862**	0.035	0.3	ug/L	603	Standard
	Co	59	9834.2	0.6	**1.5416**	0.010	0.6	ug/L	237	Standard
	Ni	60	33446.9	0.3	**17.8603**	0.057	0.3	ug/L	141	Standard
	Cu	65	1052.4	3.7	**0.5130**	0.021	4.2	ug/L	109	Standard
	Zn	66	2617.6	1.1	**2.2110**	0.025	1.1	ug/L	159	Standard
>	**Ge**	72	458154.0	0.1				ug/L	474053	Standard
	As	75	49.8	49.2	**0.0716**	0.023	32.0	ug/L	-34	Standard
	Se	82	42.6	32.1	**0.2293**	0.128	56.0	ug/L	14	Standard
	Se-1	77	102.7	16.6	**0.6383**	0.227	35.6	ug/L	55	Standard
>	**Ga**	71	63.3	35.6				mg/L	50	Standard
	Rb	85	306.7	30.8				ug/L	20	Standard
	Y	89	402460.8	1.4				ug/L	376602	Standard
>	**Rh**	103	15.0	0.0				ug/L	17	Standard
	Mo	98	305.2	3.6	**0.1192**	0.004	3.0	ug/L	8	Standard
	Ag	107	82.0	8.5	**0.0009**	0.001	110.4	ug/L	81	Standard
	Cd	111	31.7	1.8	**0.0126**	0.000	1.7	mg/L	3	Standard
	Cd	114	86.0	11.3	**0.0135**	0.002	15.6	ug/L	7	Standard
>	**In**	115	543559.4	0.9				ug/L	524722	Standard
	Sn	118	521.7	5.3	**0.0040**	0.005	126.9	ug/L	715	Standard
	Sb	123	172.0	20.3	**0.0232**	0.008	34.4	ug/L	201	Standard
	Ba	135	10412.6	2.3	**5.4875**	0.099	1.8	ug/L	108	Standard
	Ce	140	1425.1	2.1				ug/L	30	Standard
>	**Tb**	159	802846.0	2.9				ug/L	792236	Standard
	Ho	165	38.3	49.4				ug/L	7	Standard
	Tl	203	181.0	5.8	**0.0217**	0.002	7.1	ug/L	9	Standard
	Tl	205	158.3	6.6	**0.0171**	0.002	12.3	ug/L	0	Standard
	Pb	206	323.7	3.9	**0.0154**	0.001	9.1	ug/L	216	Standard
	Pb	207	297.3	15.5	**0.0184**	0.010	54.3	ug/L	180	Standard
	Pb	208	1247.7	4.4	**0.0169**	0.002	11.0	ug/L	717	Standard
	U	238	59.7	21.2	**0.0022**	0.002	84.4	ug/L	4	Standard
>	**Bi**	209	449878.2	2.0				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	5219.2	4.5	**6.4369**	0.460	7.1	mg/L	20	Standard
K	39	20.0	25.0	**-0.0887**	0.033	37.4	mg/L	22	Standard
Ca	43	31.7	48.2	**-6.3893**	3.387	53.0	mg/L	47	Standard
Fe	54	173.5	30.0	**0.0146**	0.041	283.6	mg/L	151	Standard
Fe	57	193.3	26.5	**-0.1009**	0.133	132.3	mg/L	195	Standard
> **Sc-1**	45	32406.3	3.0				mg/L	29647	Standard
Cl	35	165598.8	1.0				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	7865.4	1.7				ug/L	1607	Standard
P	31	25877.1	1.5				ug/L	22752	Standard
S	34	5332.6	2.3				ug/L	5049	Standard
Sr	88	75.0	53.3				ug/L	87	Standard
C	12	26.7	86.6				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	38.2	28.0				mg/L	10	Standard
Ho-1	165	38.3	49.4				mg/L	7	Standard
Er	166	36.7	41.7				mg/L	3	Standard
I	127	9661.4	1.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.201	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.646	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.590	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.727	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606061602
Sample Date/Time: Thursday, June 16, 2016 21:16:38
Number of Replicates: 3
Autosampler Position: 353
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54740.4	1.6				ug/L	51024	Standard
	Be	9	13.3	78.1	**-0.0064**	0.011	174.7	ug/L	7	Standard
	Al	27	1805152.0	1.4	**11.8114**	0.177	1.5	ug/L	625	Standard
	Sc	45	31105.2	2.7				ug/L	29647	Standard
	Ti	47	145.3	36.9	**0.3297**	0.185	56.3	ug/L	57	Standard
	V	51	1187.4	9.5	**0.0023**	0.015	668.9	ug/L	1142	Standard
	Cr	52	6910.6	1.9	**0.0321**	0.023	70.2	ug/L	6628	Standard
	Cr	53	2121.8	8.3	**1.9016**	0.204	10.7	ug/L	430	Standard
	Mn	55	395363.0	1.6	**67.9452**	1.352	2.0	ug/L	603	Standard
	Co	59	396.7	9.1	**0.0219**	0.006	27.5	ug/L	237	Standard
	Ni	60	325.0	2.7	**0.0944**	0.004	4.0	ug/L	141	Standard
	Cu	65	328.0	3.2	**0.1122**	0.006	5.3	ug/L	109	Standard
	Zn	66	1614.8	2.3	**1.2569**	0.027	2.1	ug/L	159	Standard
>	**Ge**	72	463730.0	0.5				ug/L	474053	Standard
	As	75	191.5	27.2	**0.2018**	0.048	23.7	ug/L	-34	Standard
	Se	82	80.2	8.7	**0.5721**	0.064	11.1	ug/L	14	Standard
	Se-1	77	154.3	3.1	**1.3098**	0.068	5.2	ug/L	55	Standard
>	**Ga**	71	83.3	12.5				mg/L	50	Standard
	Rb	85	2255.2	4.8				ug/L	20	Standard
	Y	89	395085.6	4.8				ug/L	376602	Standard
>	**Rh**	103	30.0	44.1				ug/L	17	Standard
	Mo	98	187.4	6.4	**0.0739**	0.005	6.8	ug/L	8	Standard
	Ag	107	74.0	13.7	**0.0001**	0.002	2155.8	ug/L	81	Standard
	Cd	111	4.7	21.2	**-0.0008**	0.000	58.4	mg/L	3	Standard
	Cd	114	23.6	85.5	**0.0011**	0.004	381.8	ug/L	7	Standard
>	**In**	115	524300.8	1.8				ug/L	524722	Standard
	Sn	118	675.0	7.1	**0.0361**	0.011	30.7	ug/L	715	Standard
	Sb	123	147.3	26.2	**0.0191**	0.009	49.7	ug/L	201	Standard
	Ba	135	46098.7	0.3	**25.3994**	0.381	1.5	ug/L	108	Standard
	Ce	140	986.7	3.2				ug/L	30	Standard
>	**Tb**	159	774505.0	2.0				ug/L	792236	Standard
	Ho	165	13.3	94.4				ug/L	7	Standard
	Tl	203	220.3	5.0	**0.0280**	0.002	6.1	ug/L	9	Standard
	Tl	205	203.3	19.9	**0.0253**	0.006	25.4	ug/L	0	Standard
	Pb	206	323.3	2.8	**0.0179**	0.002	12.9	ug/L	216	Standard
	Pb	207	301.7	4.5	**0.0222**	0.003	14.6	ug/L	180	Standard
	Pb	208	1220.4	3.0	**0.0179**	0.003	14.6	ug/L	717	Standard
	U	238	72.3	70.3	**0.0048**	0.009	183.1	ug/L	4	Standard
>	**Bi**	209	434377.4	0.6				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	9573.0	1.2	**12.3290**	0.229	1.9	mg/L	20	Standard
K	39	33.3	22.9	**0.0143**	0.056	391.5	mg/L	22	Standard
Ca	43	41.7	42.1	**-3.8937**	4.020	103.2	mg/L	47	Standard
Fe	54	3391.5	3.3	**2.5135**	0.063	2.5	mg/L	151	Standard
Fe	57	1036.7	3.7	**2.4151**	0.178	7.4	mg/L	195	Standard
> **Sc-1**	45	31105.2	2.7				mg/L	29647	Standard
Cl	35	163124.3	2.0				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	18861.8	5.5				ug/L	1607	Standard
P	31	25780.2	1.2				ug/L	22752	Standard
S	34	5427.6	1.2				ug/L	5049	Standard
Sr	88	133.3	17.7				ug/L	87	Standard
C	12	63.3	48.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	29.4	2.5				mg/L	10	Standard
Ho-1	165	13.3	94.4				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	3	Standard
I	127	27164.5	9.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.283	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.822	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.920
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.360
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606061604
Sample Date/Time: Thursday, June 16, 2016 21:19:49
Number of Replicates: 3
Autosampler Position: 354
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54814.0	0.5				ug/L	51024	Standard
	Be	9	6.7	86.6	**-0.0137**	0.006	46.5	ug/L	7	Standard
	Al	27	110436.2	2.3	**0.7124**	0.018	2.6	ug/L	625	Standard
	Sc	45	32459.7	0.6				ug/L	29647	Standard
	Ti	47	55.7	9.0	**0.0154**	0.018	115.7	ug/L	57	Standard
	V	51	1190.0	8.3	**-0.0046**	0.017	376.0	ug/L	1142	Standard
	Cr	52	7226.1	2.7	**0.0323**	0.047	144.2	ug/L	6628	Standard
	Cr	53	801.7	5.0	**0.4109**	0.034	8.3	ug/L	430	Standard
	Mn	55	73546.8	1.3	**11.9804**	0.177	1.5	ug/L	603	Standard
	Co	59	487.0	1.6	**0.0328**	0.001	4.1	ug/L	237	Standard
	Ni	60	526.7	1.8	**0.1891**	0.010	5.0	ug/L	141	Standard
	Cu	65	380.0	8.6	**0.1312**	0.013	9.7	ug/L	109	Standard
	Zn	66	2004.8	2.3	**1.5353**	0.023	1.5	ug/L	159	Standard
>	**Ge**	72	485083.0	2.2				ug/L	474053	Standard
	As	75	-27.5	85.1	**0.0005**	0.021	4240.8	ug/L	-34	Standard
	Se	82	14.1	16.8	**-0.0441**	0.023	53.0	ug/L	14	Standard
	Se-1	77	56.3	6.2	**-0.0281**	0.039	138.2	ug/L	55	Standard
>	**Ga**	71	65.0	27.7				mg/L	50	Standard
	Rb	85	975.0	3.7				ug/L	20	Standard
	Y	89	385735.6	1.3				ug/L	376602	Standard
>	**Rh**	103	33.3	48.2				ug/L	17	Standard
	Mo	98	31.0	17.9	**0.0076**	0.002	32.0	ug/L	8	Standard
	Ag	107	69.3	9.6	**-0.0007**	0.001	178.9	ug/L	81	Standard
	Cd	111	35.6	7.1	**0.0152**	0.001	9.3	mg/L	3	Standard
	Cd	114	78.6	33.7	**0.0126**	0.006	43.8	ug/L	7	Standard
>	**In**	115	522479.0	0.6				ug/L	524722	Standard
	Sn	118	488.3	12.5	**0.0016**	0.012	727.2	ug/L	715	Standard
	Sb	123	114.8	19.9	**0.0116**	0.005	46.5	ug/L	201	Standard
	Ba	135	3662.8	1.7	**1.9717**	0.029	1.5	ug/L	108	Standard
	Ce	140	251.7	12.1				ug/L	30	Standard
>	**Tb**	159	792180.5	1.3				ug/L	792236	Standard
	Ho	165	13.3	21.7				ug/L	7	Standard
	Tl	203	47.3	14.4	**0.0036**	0.001	25.0	ug/L	9	Standard
	Tl	205	38.3	27.2	**-0.0019**	0.002	86.2	ug/L	0	Standard
	Pb	206	262.0	5.8	**0.0007**	0.003	518.6	ug/L	216	Standard
	Pb	207	237.7	10.4	**0.0030**	0.006	203.7	ug/L	180	Standard
	Pb	208	979.3	1.2	**-0.0002**	0.001	232.5	ug/L	717	Standard
	U	238	9.3	43.3	**-0.0061**	0.001	10.8	ug/L	4	Standard
>	**Bi**	209	458288.4	0.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	298.3	19.4	**0.3240**	0.070	21.6	mg/L	20	Standard
K	39	26.7	65.8	**-0.0419**	0.123	294.6	mg/L	22	Standard
Ca	43	43.3	52.0	**-3.9540**	4.787	121.1	mg/L	47	Standard
Fe	54	369.3	3.6	**0.1593**	0.010	6.3	mg/L	151	Standard
Fe	57	236.7	13.4	**0.0219**	0.086	394.4	mg/L	195	Standard
Sc-1	45	32459.7	0.6				mg/L	29647	Standard
Cl	35	161744.2	1.3				ug/L	154152	Standard
Kr	83	2.7	78.1				ug/L	3	Standard
Br	81	2450.2	3.6				ug/L	1607	Standard
P	31	25593.3	1.9				ug/L	22752	Standard
S	34	5534.3	4.3				ug/L	5049	Standard
Sr	88	81.7	34.8				ug/L	87	Standard
C	12	56.7	40.8				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.2	113.9				mg/L	10	Standard
Ho-1	165	13.3	21.7				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	3	Standard
I	127	11324.2	2.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.428	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.327	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.573
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.554
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606065001
Sample Date/Time: Thursday, June 16, 2016 21:23:01
Number of Replicates: 3
Autosampler Position: 355
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56128.8	1.5				ug/L	51024	Standard
	Be	9	8.3	34.6	**-0.0121**	0.003	26.6	ug/L	7	Standard
	Al	27	482122.3	0.7	**3.0698**	0.068	2.2	ug/L	625	Standard
	Sc	45	32641.8	1.6				ug/L	29647	Standard
	Ti	47	45.3	15.0	**-0.0118**	0.021	178.3	ug/L	57	Standard
	V	51	499.2	13.7	**-0.0967**	0.009	9.3	ug/L	1142	Standard
	Cr	52	82458.1	0.9	**10.5208**	0.076	0.7	ug/L	6628	Standard
	Cr	53	10431.9	1.2	**11.0318**	0.293	2.7	ug/L	430	Standard
	Mn	55	79305.3	0.7	**13.5203**	0.175	1.3	ug/L	603	Standard
	Co	59	2974.6	1.7	**0.4315**	0.004	1.0	ug/L	237	Standard
	Ni	60	33369.4	1.4	**17.5928**	0.059	0.3	ug/L	141	Standard
	Cu	65	207.3	9.4	**0.0465**	0.009	20.2	ug/L	109	Standard
	Zn	66	1251.4	5.4	**0.9209**	0.049	5.4	ug/L	159	Standard
>	**Ge**	72	464010.1	1.4				ug/L	474053	Standard
	As	75	2.0	650.9	**0.0269**	0.012	45.0	ug/L	-34	Standard
	Se	82	23.1	30.3	**0.0449**	0.067	148.0	ug/L	14	Standard
	Se-1	77	78.7	3.2	**0.3022**	0.048	15.8	ug/L	55	Standard
>	**Ga**	71	63.3	32.9				mg/L	50	Standard
	Rb	85	220.0	4.5				ug/L	20	Standard
	Y	89	399793.1	1.3				ug/L	376602	Standard
>	**Rh**	103	18.3	103.3				ug/L	17	Standard
	Mo	98	108.7	5.3	**0.0384**	0.002	6.3	ug/L	8	Standard
	Ag	107	73.7	11.4	**-0.0005**	0.001	257.8	ug/L	81	Standard
	Cd	111	9.8	27.0	**0.0016**	0.001	82.1	mg/L	3	Standard
	Cd	114	29.3	22.9	**0.0020**	0.001	66.1	ug/L	7	Standard
>	**In**	115	548875.7	0.2				ug/L	524722	Standard
	Sn	118	460.0	8.7	**-0.0078**	0.007	89.3	ug/L	715	Standard
	Sb	123	86.5	15.7	**0.0041**	0.003	71.3	ug/L	201	Standard
	Ba	135	20540.6	0.3	**10.7757**	0.041	0.4	ug/L	108	Standard
	Ce	140	105.0	17.2				ug/L	30	Standard
>	**Tb**	159	820934.6	1.9				ug/L	792236	Standard
	Ho	165	20.0	25.0				ug/L	7	Standard
	Tl	203	96.0	11.0	**0.0101**	0.002	16.2	ug/L	9	Standard
	Tl	205	83.3	24.2	**0.0050**	0.003	58.6	ug/L	0	Standard
	Pb	206	282.0	1.9	**0.0050**	0.002	36.7	ug/L	216	Standard
	Pb	207	225.3	3.3	**-0.0000**	0.001	53500.0	ug/L	180	Standard
	Pb	208	968.3	3.8	**-0.0009**	0.003	322.0	ug/L	717	Standard
	U	238	52.7	14.0	**0.0010**	0.001	142.8	ug/L	4	Standard
>	**Bi**	209	458406.1	1.9				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1866.8	2.0	**2.2543**	0.080	3.6	mg/L	20	Standard
K	39	16.7	96.4	**-0.1137**	0.109	95.5	mg/L	22	Standard
Ca	43	30.0	44.1	**-6.8062**	2.881	42.3	mg/L	47	Standard
Fe	54	329.9	10.2	**0.1288**	0.026	20.3	mg/L	151	Standard
Fe	57	233.3	15.5	**0.0097**	0.106	1102.3	mg/L	195	Standard
> **Sc-1**	45	32641.8	1.6				mg/L	29647	Standard
Cl	35	163083.7	0.8				ug/L	154152	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	2766.9	2.7				ug/L	1607	Standard
P	31	25266.1	2.8				ug/L	22752	Standard
S	34	5369.3	3.4				ug/L	5049	Standard
Sr	88	88.3	8.6				ug/L	87	Standard
C	12	30.0	57.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.9	122.5				mg/L	10	Standard
Ho-1	165	20.0	25.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	9619.7	7.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.004	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.881	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.603
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.579
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606065002
Sample Date/Time: Thursday, June 16, 2016 21:26:12
Number of Replicates: 3
Autosampler Position: 356
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54365.7	1.4				ug/L	51024	Standard
	Be	9	15.0	57.7	**-0.0044**	0.010	217.8	ug/L	7	Standard
	Al	27	1025103.4	0.5	**6.7495**	0.066	1.0	ug/L	625	Standard
	Sc	45	32087.3	3.3				ug/L	29647	Standard
	Ti	47	91.0	58.5	**0.1440**	0.181	125.8	ug/L	57	Standard
	V	51	1237.3	4.1	**0.0097**	0.009	93.5	ug/L	1142	Standard
	Cr	52	7747.0	1.2	**0.1491**	0.005	3.5	ug/L	6628	Standard
	Cr	53	1525.1	10.3	**1.2446**	0.145	11.6	ug/L	430	Standard
	Mn	55	121524.7	0.0	**20.8162**	0.350	1.7	ug/L	603	Standard
	Co	59	489.3	10.2	**0.0367**	0.008	22.6	ug/L	237	Standard
	Ni	60	546.0	2.6	**0.2119**	0.012	5.8	ug/L	141	Standard
	Cu	65	411.0	3.0	**0.1575**	0.006	3.6	ug/L	109	Standard
	Zn	66	2195.8	1.8	**1.7944**	0.008	0.5	ug/L	159	Standard
>	**Ge**	72	463367.3	1.7				ug/L	474053	Standard
	As	75	18.1	195.3	**0.0420**	0.032	77.3	ug/L	-34	Standard
	Se	82	30.0	13.1	**0.1083**	0.035	32.1	ug/L	14	Standard
	Se-1	77	106.3	6.3	**0.6711**	0.066	9.8	ug/L	55	Standard
>	**Ga**	71	40.0	54.5				mg/L	50	Standard
	Rb	85	1018.4	11.8				ug/L	20	Standard
	Y	89	407107.2	1.0				ug/L	376602	Standard
>	**Rh**	103	23.3	12.4				ug/L	17	Standard
	Mo	98	59.9	56.3	**0.0195**	0.014	72.7	ug/L	8	Standard
	Ag	107	115.7	63.4	**0.0068**	0.012	179.6	ug/L	81	Standard
	Cd	111	19.6	16.6	**0.0067**	0.002	24.0	mg/L	3	Standard
	Cd	114	62.3	30.6	**0.0090**	0.004	42.7	ug/L	7	Standard
>	**In**	115	532203.3	2.6				ug/L	524722	Standard
	Sn	118	596.7	23.5	**0.0202**	0.028	136.6	ug/L	715	Standard
	Sb	123	167.7	43.4	**0.0231**	0.017	71.6	ug/L	201	Standard
	Ba	135	32786.1	2.0	**17.7838**	0.579	3.3	ug/L	108	Standard
	Ce	140	491.7	8.2				ug/L	30	Standard
>	**Tb**	159	779044.5	1.2				ug/L	792236	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	239.0	44.6	**0.0304**	0.015	49.0	ug/L	9	Standard
	Tl	205	176.7	20.9	**0.0208**	0.006	27.7	ug/L	0	Standard
	Pb	206	322.7	21.3	**0.0173**	0.016	92.8	ug/L	216	Standard
	Pb	207	291.0	18.0	**0.0192**	0.014	70.8	ug/L	180	Standard
	Pb	208	1188.0	5.2	**0.0154**	0.003	22.6	ug/L	717	Standard
	U	238	183.3	6.3	**0.0235**	0.002	9.7	ug/L	4	Standard
>	**Bi**	209	437003.3	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	7120.0	1.8	**8.8768**	0.151	1.7	mg/L	20	Standard
K	39	41.7	27.7	**0.0654**	0.079	121.4	mg/L	22	Standard
Ca	43	41.7	42.1	**-4.2187**	3.620	85.8	mg/L	47	Standard
Fe	54	137.5	7.6	**-0.0117**	0.005	43.2	mg/L	151	Standard
Fe	57	181.7	19.3	**-0.1275**	0.097	75.8	mg/L	195	Standard
> **Sc-1**	45	32087.3	3.3				mg/L	29647	Standard
Cl	35	166481.1	1.4				ug/L	154152	Standard
Kr	83	1.0	0.0				ug/L	3	Standard
Br	81	4110.6	4.2				ug/L	1607	Standard
P	31	25599.9	1.8				ug/L	22752	Standard
S	34	5374.3	5.2				ug/L	5049	Standard
Sr	88	101.7	24.3				ug/L	87	Standard
C	12	36.7	41.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.4	106.9				mg/L	10	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	76002.0	4.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.549	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.746	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.426
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.930
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606065003
Sample Date/Time: Thursday, June 16, 2016 21:29:23
Number of Replicates: 3
Autosampler Position: 357
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54541.3	1.2				ug/L	51024	Standard
	Be	9	8.3	124.9	**-0.0119**	0.012	97.1	ug/L	7	Standard
	Al	27	606559.5	1.5	**3.9772**	0.101	2.5	ug/L	625	Standard
	Sc	45	31063.5	1.7				ug/L	29647	Standard
	Ti	47	165.3	5.8	**0.3810**	0.031	8.1	ug/L	57	Standard
	V	51	733.0	77.1	**-0.0659**	0.079	120.2	ug/L	1142	Standard
	Cr	52	157074.9	2.2	**20.2677**	0.514	2.5	ug/L	6628	Standard
	Cr	53	20141.7	1.4	**21.0752**	0.347	1.6	ug/L	430	Standard
	Mn	55	101750.2	1.1	**16.8892**	0.212	1.3	ug/L	603	Standard
	Co	59	1910.5	3.6	**0.2538**	0.010	4.1	ug/L	237	Standard
	Ni	60	8863.6	2.0	**4.4841**	0.097	2.2	ug/L	141	Standard
	Cu	65	1674.4	2.3	**0.8182**	0.022	2.7	ug/L	109	Standard
	Zn	66	2740.2	2.8	**2.2224**	0.074	3.3	ug/L	159	Standard
>	**Ge**	72	477422.4	0.2				ug/L	474053	Standard
	As	75	139.6	40.2	**0.1503**	0.051	33.7	ug/L	-34	Standard
	Se	82	42.3	11.2	**0.2113**	0.043	20.3	ug/L	14	Standard
	Se-1	77	93.0	6.5	**0.4578**	0.081	17.7	ug/L	55	Standard
>	**Ga**	71	101.7	37.2				mg/L	50	Standard
	Rb	85	1565.1	2.0				ug/L	20	Standard
	Y	89	382720.6	3.5				ug/L	376602	Standard
>	**Rh**	103	20.0	66.1				ug/L	17	Standard
	Mo	98	639.1	4.3	**0.2676**	0.013	4.7	ug/L	8	Standard
	Ag	107	90.7	24.5	**0.0030**	0.004	127.1	ug/L	81	Standard
	Cd	111	110.9	7.8	**0.0545**	0.005	9.0	mg/L	3	Standard
	Cd	114	275.8	13.3	**0.0542**	0.008	14.0	ug/L	7	Standard
>	**In**	115	519830.3	1.0				ug/L	524722	Standard
	Sn	118	653.3	27.4	**0.0332**	0.035	105.0	ug/L	715	Standard
	Sb	123	127.7	28.4	**0.0147**	0.009	58.6	ug/L	201	Standard
	Ba	135	11175.1	0.7	**6.1659**	0.078	1.3	ug/L	108	Standard
	Ce	140	2495.2	5.2				ug/L	30	Standard
>	**Tb**	159	780545.7	0.5				ug/L	792236	Standard
	Ho	165	53.3	48.1				ug/L	7	Standard
	Tl	203	163.0	29.4	**0.0195**	0.006	33.3	ug/L	9	Standard
	Tl	205	135.0	9.8	**0.0137**	0.002	15.9	ug/L	0	Standard
	Pb	206	547.3	5.3	**0.0663**	0.008	11.4	ug/L	216	Standard
	Pb	207	444.0	2.8	**0.0555**	0.004	6.9	ug/L	180	Standard
	Pb	208	1903.7	3.0	**0.0576**	0.005	8.4	ug/L	717	Standard
	U	238	51.3	38.7	**0.0010**	0.003	341.9	ug/L	4	Standard
>	**Bi**	209	444975.8	1.2				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3707.1	1.1	**4.7531**	0.132	2.8	mg/L	20	Standard
K	39	33.3	17.3	**0.0146**	0.042	286.2	mg/L	22	Standard
Ca	43	30.0	57.7	**-6.5001**	3.854	59.3	mg/L	47	Standard
Fe	54	681.6	4.0	**0.4140**	0.022	5.2	mg/L	151	Standard
Fe	57	318.3	7.1	**0.2945**	0.082	27.9	mg/L	195	Standard
Sc-1	45	31063.5	1.7				mg/L	29647	Standard
Cl	35	164261.1	1.5				ug/L	154152	Standard
Kr	83	2.0	86.6				ug/L	3	Standard
Br	81	7888.7	5.8				ug/L	1607	Standard
P	31	24920.5	3.3				ug/L	22752	Standard
S	34	5307.6	1.0				ug/L	5049	Standard
Sr	88	88.3	8.6				ug/L	87	Standard
C	12	40.0	25.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	74.8	18.4				mg/L	10	Standard
Ho-1	165	53.3	48.1				mg/L	7	Standard
Er	166	40.0	90.1				mg/L	3	Standard
I	127	17526.8	1.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.893	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.711	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.068
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.662
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606065008
Sample Date/Time: Thursday, June 16, 2016 21:32:35
Number of Replicates: 3
Autosampler Position: 358
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55971.5	1.2				ug/L	51024	Standard
	Be	9	16.7	121.2	**-0.0030**	0.022	732.0	ug/L	7	Standard
	Al	27	227217.9	1.2	**1.4454**	0.014	1.0	ug/L	625	Standard
	Sc	45	33091.1	0.4				ug/L	29647	Standard
	Ti	47	93.0	12.2	**0.1482**	0.035	23.3	ug/L	57	Standard
	V	51	1468.9	10.6	**0.0412**	0.020	48.4	ug/L	1142	Standard
	Cr	52	7242.7	0.8	**0.0709**	0.012	17.1	ug/L	6628	Standard
	Cr	53	1168.4	6.4	**0.8438**	0.086	10.2	ug/L	430	Standard
	Mn	55	143314.1	1.9	**24.3672**	0.286	1.2	ug/L	603	Standard
	Co	59	707.7	4.5	**0.0704**	0.004	5.3	ug/L	237	Standard
	Ni	60	1968.1	3.3	**0.9574**	0.026	2.8	ug/L	141	Standard
	Cu	65	534.7	8.0	**0.2223**	0.018	8.2	ug/L	109	Standard
	Zn	66	4633.0	0.1	**4.0098**	0.079	2.0	ug/L	159	Standard
>	**Ge**	72	467157.4	1.9				ug/L	474053	Standard
	As	75	68.4	19.1	**0.0878**	0.012	13.9	ug/L	-34	Standard
	Se	82	42.7	11.5	**0.2237**	0.049	22.1	ug/L	14	Standard
	Se-1	77	88.3	9.6	**0.4216**	0.095	22.5	ug/L	55	Standard
>	**Ga**	71	53.3	28.6				mg/L	50	Standard
	Rb	85	821.7	8.3				ug/L	20	Standard
	Y	89	390712.9	1.8				ug/L	376602	Standard
>	**Rh**	103	16.7	96.4				ug/L	17	Standard
	Mo	98	26.7	10.2	**0.0055**	0.001	23.5	ug/L	8	Standard
	Ag	107	72.3	16.0	**-0.0005**	0.002	422.0	ug/L	81	Standard
	Cd	111	13.3	4.3	**0.0034**	0.000	6.8	mg/L	3	Standard
	Cd	114	40.2	32.3	**0.0044**	0.003	63.9	ug/L	7	Standard
>	**In**	115	538841.7	2.0				ug/L	524722	Standard
	Sn	118	488.3	14.9	**-0.0013**	0.012	965.6	ug/L	715	Standard
	Sb	123	100.5	11.8	**0.0076**	0.002	30.8	ug/L	201	Standard
	Ba	135	7028.6	0.9	**3.7196**	0.097	2.6	ug/L	108	Standard
	Ce	140	2670.2	3.1				ug/L	30	Standard
>	**Tb**	159	805010.7	0.6				ug/L	792236	Standard
	Ho	165	43.3	40.5				ug/L	7	Standard
	Tl	203	119.0	4.4	**0.0131**	0.001	5.7	ug/L	9	Standard
	Tl	205	95.0	22.9	**0.0069**	0.003	48.8	ug/L	0	Standard
	Pb	206	254.0	2.5	**-0.0008**	0.002	244.2	ug/L	216	Standard
	Pb	207	226.3	9.4	**0.0004**	0.004	982.1	ug/L	180	Standard
	Pb	208	875.0	3.9	**-0.0061**	0.002	39.4	ug/L	717	Standard
	U	238	28.3	19.4	**-0.0030**	0.001	30.6	ug/L	4	Standard
>	**Bi**	209	456325.9	1.4				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3722.1	3.3	**4.4755**	0.132	3.0	mg/L	20	Standard
K	39	21.7	48.0	**-0.0800**	0.071	88.6	mg/L	22	Standard
Ca	43	38.3	49.4	**-5.1655**	3.960	76.7	mg/L	47	Standard
Fe	54	149.3	20.9	**-0.0062**	0.023	370.8	mg/L	151	Standard
Fe	57	191.7	19.2	**-0.1152**	0.104	90.0	mg/L	195	Standard
> **Sc-1**	45	33091.1	0.4				mg/L	29647	Standard
Cl	35	167461.1	1.4				ug/L	154152	Standard
Kr	83	2.3	49.5				ug/L	3	Standard
Br	81	7938.7	3.1				ug/L	1607	Standard
P	31	24910.5	1.2				ug/L	22752	Standard
S	34	5120.9	0.9				ug/L	5049	Standard
Sr	88	83.3	3.5				ug/L	87	Standard
C	12	63.3	48.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	67.9	15.4				mg/L	10	Standard
Ho-1	165	43.3	40.5				mg/L	7	Standard
Er	166	43.3	26.6				mg/L	3	Standard
I	127	7648.6	2.6				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		109.696	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.545	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.691
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.127
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606073001
Sample Date/Time: Thursday, June 16, 2016 21:35:46
Number of Replicates: 3
Autosampler Position: 359
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55371.0	2.2				ug/L	51024	Standard
	Be	9	11.7	65.5	**-0.0084**	0.008	97.7	ug/L	7	Standard
	Al	27	132096.8	1.8	**0.8455**	0.012	1.5	ug/L	625	Standard
	Sc	45	31868.5	4.0				ug/L	29647	Standard
	Ti	47	30.0	17.3	**-0.0614**	0.019	31.4	ug/L	57	Standard
	V	51	1455.6	7.2	**0.0453**	0.013	29.6	ug/L	1142	Standard
	Cr	52	11040.4	2.7	**0.6383**	0.023	3.6	ug/L	6628	Standard
	Cr	53	1623.4	8.3	**1.3902**	0.129	9.3	ug/L	430	Standard
	Mn	55	1201.0	0.7	**0.0848**	0.004	4.7	ug/L	603	Standard
	Co	59	375.7	2.3	**0.0198**	0.001	6.0	ug/L	237	Standard
	Ni	60	312.3	3.4	**0.0912**	0.004	4.7	ug/L	141	Standard
	Cu	65	236.3	2.7	**0.0651**	0.002	3.6	ug/L	109	Standard
	Zn	66	1941.8	2.7	**1.5970**	0.055	3.5	ug/L	159	Standard
>	**Ge**	72	454022.4	1.2				ug/L	474053	Standard
	As	75	11.9	146.3	**0.0364**	0.016	45.2	ug/L	-34	Standard
	Se	82	31.4	12.8	**0.1281**	0.041	32.3	ug/L	14	Standard
	Se-1	77	87.7	5.7	**0.4469**	0.060	13.4	ug/L	55	Standard
>	**Ga**	71	95.0	18.2				mg/L	50	Standard
	Rb	85	4872.5	2.9				ug/L	20	Standard
	Y	89	404770.5	0.6				ug/L	376602	Standard
>	**Rh**	103	80.0	22.5				ug/L	17	Standard
	Mo	98	116.6	2.8	**0.0416**	0.002	4.6	ug/L	8	Standard
	Ag	107	61.3	24.5	**-0.0025**	0.002	96.4	ug/L	81	Standard
	Cd	111	8.1	43.0	**0.0008**	0.002	229.5	mg/L	3	Standard
	Cd	114	29.0	53.2	**0.0020**	0.003	156.6	ug/L	7	Standard
>	**In**	115	550074.8	1.6				ug/L	524722	Standard
	Sn	118	596.7	39.8	**0.0158**	0.040	254.1	ug/L	715	Standard
	Sb	123	117.4	4.2	**0.0108**	0.001	9.0	ug/L	201	Standard
	Ba	135	36971.7	2.1	**19.3982**	0.128	0.7	ug/L	108	Standard
	Ce	140	30.0	16.7				ug/L	30	Standard
>	**Tb**	159	802021.2	1.6				ug/L	792236	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	154.7	7.4	**0.0182**	0.001	7.8	ug/L	9	Standard
	Tl	205	128.3	9.0	**0.0124**	0.002	14.8	ug/L	0	Standard
	Pb	206	255.7	10.1	**0.0005**	0.007	1256.9	ug/L	216	Standard
	Pb	207	236.0	8.3	**0.0037**	0.003	93.0	ug/L	180	Standard
	Pb	208	980.3	1.1	**0.0011**	0.002	149.5	ug/L	717	Standard
	U	238	28.0	18.9	**-0.0030**	0.001	29.7	ug/L	4	Standard
>	**Bi**	209	448836.9	2.3				ug/L	460343	Standard

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Na	23	5.0	100.0	**-5.1594**	15.986	309.8	mg/L	0	Standard
Mg	24	1993.5	3.8	**2.4733**	0.176	7.1	mg/L	20	Standard
K	39	58.3	21.6	**0.1865**	0.091	48.6	mg/L	22	Standard
Ca	43	45.0	19.2	**-3.3710**	2.098	62.2	mg/L	47	Standard
Fe	54	141.5	17.4	**-0.0075**	0.021	284.9	mg/L	151	Standard
Fe	57	231.7	13.9	**0.0185**	0.068	366.5	mg/L	195	Standard
Sc-1	45	31868.5	4.0				mg/L	29647	Standard
Cl	35	162650.5	1.3				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	5611.0	3.8				ug/L	1607	Standard
P	31	25164.2	0.9				ug/L	22752	Standard
S	34	5320.9	2.9				ug/L	5049	Standard
Sr	88	361.7	6.2				ug/L	87	Standard
C	12	50.0	20.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.0	107.3				mg/L	10	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	3	Standard
I	127	5254.2	4.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		108.519	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.775	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.832
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.501
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606073002
Sample Date/Time: Thursday, June 16, 2016 21:38:59
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52860.4	2.3				ug/L	51024	Standard
	Be	9	10.0	50.0	**-0.0095**	0.006	63.2	ug/L	7	Standard
	Al	27	137711.4	1.6	**0.9241**	0.007	0.7	ug/L	625	Standard
	Sc	45	31095.2	1.2				ug/L	29647	Standard
	Ti	47	32.7	23.2	**-0.0560**	0.026	46.7	ug/L	57	Standard
	V	51	1546.7	3.7	**0.0511**	0.010	20.5	ug/L	1142	Standard
	Cr	52	11025.0	1.4	**0.5840**	0.055	9.5	ug/L	6628	Standard
	Cr	53	1463.4	4.0	**1.1555**	0.040	3.5	ug/L	430	Standard
	Mn	55	1410.7	11.5	**0.1137**	0.033	29.0	ug/L	603	Standard
	Co	59	359.7	1.9	**0.0152**	0.002	14.6	ug/L	237	Standard
	Ni	60	319.3	6.2	**0.0894**	0.014	15.7	ug/L	141	Standard
	Cu	65	200.0	1.3	**0.0412**	0.002	3.9	ug/L	109	Standard
	Zn	66	1969.1	2.4	**1.5596**	0.014	0.9	ug/L	159	Standard
>	**Ge**	72	469994.3	2.3				ug/L	474053	Standard
	As	75	0.5	7482.9	**0.0251**	0.035	138.8	ug/L	-34	Standard
	Se	82	28.5	7.3	**0.0908**	0.014	15.4	ug/L	14	Standard
	Se-1	77	88.7	18.3	**0.4207**	0.218	51.8	ug/L	55	Standard
>	**Ga**	71	73.3	28.4				mg/L	50	Standard
	Rb	85	4865.8	1.3				ug/L	20	Standard
	Y	89	399171.5	2.3				ug/L	376602	Standard
>	**Rh**	103	93.3	12.4				ug/L	17	Standard
	Mo	98	101.9	16.6	**0.0370**	0.006	16.6	ug/L	8	Standard
	Ag	107	61.3	18.0	**-0.0021**	0.002	98.0	ug/L	81	Standard
	Cd	111	6.5	18.0	**0.0001**	0.001	960.6	mg/L	3	Standard
	Cd	114	23.1	68.6	**0.0010**	0.003	344.6	ug/L	7	Standard
>	**In**	115	531069.9	2.8				ug/L	524722	Standard
	Sn	118	445.0	10.3	**-0.0078**	0.009	112.2	ug/L	715	Standard
	Sb	123	65.7	14.2	**0.0001**	0.002	2926.8	ug/L	201	Standard
	Ba	135	36371.9	1.1	**19.7762**	0.433	2.2	ug/L	108	Standard
	Ce	140	41.7	50.0				ug/L	30	Standard
>	**Tb**	159	774515.8	2.9				ug/L	792236	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	160.3	8.2	**0.0195**	0.002	8.6	ug/L	9	Standard
	Tl	205	130.0	21.4	**0.0133**	0.005	36.0	ug/L	0	Standard
	Pb	206	254.0	4.2	**0.0016**	0.003	201.3	ug/L	216	Standard
	Pb	207	204.3	4.4	**-0.0027**	0.002	57.9	ug/L	180	Standard
	Pb	208	941.7	3.4	**0.0002**	0.002	1048.9	ug/L	717	Standard
	U	238	8.3	85.1	**-0.0062**	0.001	19.1	ug/L	4	Standard
>	**Bi**	209	437592.9	1.4				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1953.5	4.1	**2.4795**	0.082	3.3	mg/L	20	Standard
K	39	41.7	13.9	**0.0748**	0.041	54.3	mg/L	22	Standard
Ca	43	46.7	6.2	**-2.7971**	0.513	18.3	mg/L	47	Standard
Fe	54	137.1	22.1	**-0.0088**	0.022	251.4	mg/L	151	Standard
Fe	57	218.3	25.5	**-0.0034**	0.160	4703.1	mg/L	195	Standard
> **Sc-1**	45	31095.2	1.2				mg/L	29647	Standard
Cl	35	164376.3	1.5				ug/L	154152	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	5667.7	1.8				ug/L	1607	Standard
P	31	24892.1	1.3				ug/L	22752	Standard
S	34	5330.9	2.9				ug/L	5049	Standard
Sr	88	315.0	7.3				ug/L	87	Standard
C	12	43.3	26.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.7	100.8				mg/L	10	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	5250.9	7.1				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.599	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.144	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.210
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.058
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606073003
Sample Date/Time: Thursday, June 16, 2016 21:42:10
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53594.6	1.1				ug/L	51024	Standard
	Be	9	3.3	86.6	**-0.0173**	0.003	18.9	ug/L	7	Standard
	Al	27	2979001.9	0.3	**19.9155**	0.253	1.3	ug/L	625	Standard
	Sc	45	31315.7	0.8				ug/L	29647	Standard
	Ti	47	43.0	24.6	**-0.0251**	0.035	139.3	ug/L	57	Standard
	V	51	1280.4	1.3	**0.0086**	0.002	24.3	ug/L	1142	Standard
	Cr	52	6976.3	2.4	**0.0037**	0.022	588.3	ug/L	6628	Standard
	Cr	53	1470.1	6.4	**1.1220**	0.096	8.5	ug/L	430	Standard
	Mn	55	27960.5	2.4	**4.5016**	0.120	2.7	ug/L	603	Standard
	Co	59	554.3	12.3	**0.0435**	0.010	24.1	ug/L	237	Standard
	Ni	60	395.0	5.1	**0.1235**	0.010	8.4	ug/L	141	Standard
	Cu	65	173.0	8.3	**0.0243**	0.008	31.2	ug/L	109	Standard
	Zn	66	1439.4	0.7	**1.0440**	0.007	0.7	ug/L	159	Standard
>	**Ge**	72	482360.2	0.2				ug/L	474053	Standard
	As	75	84.5	59.0	**0.1001**	0.044	44.2	ug/L	-34	Standard
	Se	82	47.5	19.6	**0.2529**	0.082	32.5	ug/L	14	Standard
	Se-1	77	132.0	7.2	**0.9443**	0.119	12.5	ug/L	55	Standard
>	**Ga**	71	60.0	14.4				mg/L	50	Standard
	Rb	85	475.0	12.1				ug/L	20	Standard
	Y	89	391203.2	1.3				ug/L	376602	Standard
>	**Rh**	103	55.0	9.1				ug/L	17	Standard
	Mo	98	37.9	67.6	**0.0106**	0.011	103.7	ug/L	8	Standard
	Ag	107	71.3	16.2	**-0.0003**	0.002	600.9	ug/L	81	Standard
	Cd	111	5.3	57.7	**-0.0005**	0.002	303.0	mg/L	3	Standard
	Cd	114	27.8	51.3	**0.0020**	0.003	149.5	ug/L	7	Standard
>	**In**	115	521847.0	1.7				ug/L	524722	Standard
	Sn	118	455.0	13.4	**-0.0046**	0.010	225.0	ug/L	715	Standard
	Sb	123	77.8	11.7	**0.0031**	0.002	74.2	ug/L	201	Standard
	Ba	135	148771.2	0.6	**82.4802**	0.932	1.1	ug/L	108	Standard
	Ce	140	300.0	8.7				ug/L	30	Standard
>	**Tb**	159	770703.6	1.1				ug/L	792236	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	215.7	6.2	**0.0270**	0.001	5.4	ug/L	9	Standard
	Tl	205	208.3	27.6	**0.0257**	0.009	34.8	ug/L	0	Standard
	Pb	206	272.0	3.0	**0.0054**	0.003	50.7	ug/L	216	Standard
	Pb	207	232.3	12.8	**0.0041**	0.008	195.9	ug/L	180	Standard
	Pb	208	1012.0	13.3	**0.0042**	0.007	176.0	ug/L	717	Standard
	U	238	232.3	16.7	**0.0315**	0.006	19.1	ug/L	4	Standard
>	**Bi**	209	439553.9	1.5				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	6086.2	1.7	**7.7675**	0.192	2.5	mg/L	20	Standard
K	39	18.3	56.8	**-0.0957**	0.075	77.9	mg/L	22	Standard
Ca	43	40.0	37.5	**-4.3545**	3.269	75.1	mg/L	47	Standard
Fe	54	265.9	15.1	**0.0898**	0.032	35.5	mg/L	151	Standard
Fe	57	201.7	20.0	**-0.0564**	0.115	204.5	mg/L	195	Standard
> **Sc-1**	45	31315.7	0.8				mg/L	29647	Standard
Cl	35	164992.2	0.7				ug/L	154152	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	10840.5	3.2				ug/L	1607	Standard
P	31	25164.2	3.4				ug/L	22752	Standard
S	34	5275.9	3.2				ug/L	5049	Standard
Sr	88	133.3	20.7				ug/L	87	Standard
C	12	53.3	57.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.2	49.6				mg/L	10	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	3	Standard
I	127	4810.8	4.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.038	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.752	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606073003
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.452
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.484
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 21:45:23
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	52964.1	3.2				ug/L	51024	Standard
	Be	9	42168.6	0.7	**48.3246**	1.216	2.5	ug/L	7	Standard
	Al	27	7159091.1	2.4	**48.4492**	0.473	1.0	ug/L	625	Standard
	Sc	45	31200.4	3.4				ug/L	29647	Standard
	Ti	47	30099.2	0.4	**103.9852**	0.489	0.5	ug/L	57	Standard
	V	51	348173.2	0.9	**50.6797**	0.340	0.7	ug/L	1142	Standard
	Cr	52	366090.7	0.6	**50.7470**	0.566	1.1	ug/L	6628	Standard
	Cr	53	45820.9	1.2	**50.7491**	0.901	1.8	ug/L	430	Standard
	Mn	55	317011.4	2.2	**55.3295**	1.324	2.4	ug/L	603	Standard
	Co	59	316851.8	0.1	**51.1533**	0.313	0.6	ug/L	237	Standard
	Ni	60	93845.8	1.6	**50.4491**	1.080	2.1	ug/L	141	Standard
	Cu	65	91207.1	1.9	**50.3255**	1.210	2.4	ug/L	109	Standard
	Zn	66	53728.8	0.5	**50.1071**	0.516	1.0	ug/L	159	Standard
>	Ge	72	456409.0	0.5				ug/L	474053	Standard
	As	75	53094.6	1.6	**49.8317**	1.034	2.1	ug/L	-34	Standard
	Se	82	5335.2	1.1	**49.9428**	0.782	1.6	ug/L	14	Standard
	Se-1	77	3694.5	1.3	**49.2280**	0.868	1.8	ug/L	55	Standard
>	Ga	71	73.3	28.4				mg/L	50	Standard
	Rb	85	751.7	9.7				ug/L	20	Standard
	Y	89	395355.6	1.3				ug/L	376602	Standard
>	Rh	103	41.7	60.4				ug/L	17	Standard
	Mo	98	229935.7	1.0	**95.4610**	1.901	2.0	ug/L	8	Standard
	Ag	107	284501.2	0.4	**46.7556**	0.793	1.7	ug/L	81	Standard
	Cd	111	95579.3	0.6	**48.2915**	1.096	2.3	mg/L	3	Standard
	Cd	114	235319.3	0.3	**48.0921**	0.943	2.0	ug/L	7	Standard
>	In	115	535171.0	1.8				ug/L	524722	Standard
	Sn	118	268883.3	0.8	**48.8581**	0.478	1.0	ug/L	715	Standard
	Sb	123	213216.9	1.1	**47.8524**	0.650	1.4	ug/L	201	Standard
	Ba	135	88420.6	0.7	**47.7774**	0.620	1.3	ug/L	108	Standard
	Ce	140	60.0	52.0				ug/L	30	Standard
>	Tb	159	778568.6	0.9				ug/L	792236	Standard
	Ho	165	13.3	43.3				ug/L	7	Standard
	Tl	203	356552.0	0.9	**49.1981**	0.525	1.1	ug/L	9	Standard
	Tl	205	312384.5	1.4	**50.6927**	1.380	2.7	ug/L	0	Standard
	Pb	206	221782.7	0.3	**50.5795**	0.697	1.4	ug/L	216	Standard
	Pb	207	201563.9	0.5	**50.4967**	0.774	1.5	ug/L	180	Standard
	Pb	208	829379.7	0.4	**51.1985**	0.900	1.8	ug/L	717	Standard
	U	238	307681.0	0.4	**52.2118**	0.917	1.8	ug/L	4	Standard
>	Bi	209	436760.9	1.5				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.2513**	9.008	171.5	mg/L	0	Standard
Mg	24	3917.2	3.4	**5.0034**	0.184	3.7	mg/L	20	Standard
K	39	655.0	10.8	**4.5166**	0.488	10.8	mg/L	22	Standard
Ca	43	65.0	20.4	**1.3136**	3.422	260.5	mg/L	47	Standard
Fe	54	6192.2	4.0	**4.6769**	0.351	7.5	mg/L	151	Standard
Fe	57	1618.4	6.7	**4.1237**	0.452	11.0	mg/L	195	Standard
Sc-1	45	31200.4	3.4				mg/L	29647	Standard
Cl	35	163997.6	1.9				ug/L	154152	Standard
Kr	83	3.7	15.7				ug/L	3	Standard
Br	81	1766.8	4.0				ug/L	1607	Standard
P	31	25599.9	0.9				ug/L	22752	Standard
S	34	5862.8	2.2				ug/L	5049	Standard
Sr	88	68.3	41.6				ug/L	87	Standard
C	12	33.3	34.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	-1.0	50.0				mg/L	10	Standard
Ho-1	165	13.3	43.3				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	3	Standard
I	127	1488.4	8.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	96.649		
Al	27	96.898		
Sc	45			
Ti	47	103.985		
V	51	101.359		
Cr	52	101.494		
Cr	53			
Mn	55	110.659		
Co	59	102.307		
Ni	60	100.898		
Cu	65	100.651		
Zn	66	100.214		
Ge	72		96.278	
As	75	99.663		
Se	82	99.886		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	95.461		
Ag	107	93.511		
Cd	111	96.583		
Cd	114			
> In	115		101.991	
Sn	118	97.716		
Sb	123	95.705		
Ba	135	95.555		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.396		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.397		
U	238	104.424		
> Bi	209		94.877	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 21:48:35
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51738.2	1.1				ug/L	51024	Standard
	Be	9	8.3	91.7	**-0.0112**	0.009	80.5	ug/L	7	Standard
	Al	27	1365.1	16.8	**-0.0003**	0.002	478.2	ug/L	625	Standard
	Sc	45	32252.6	1.6				ug/L	29647	Standard
	Ti	47	29.0	17.2	**-0.0677**	0.018	26.3	ug/L	57	Standard
	V	51	928.8	10.2	**-0.0358**	0.012	34.3	ug/L	1142	Standard
	Cr	52	6199.9	1.6	**-0.0728**	0.006	8.7	ug/L	6628	Standard
	Cr	53	526.7	17.6	**0.1435**	0.102	70.8	ug/L	430	Standard
	Mn	55	679.7	4.7	**-0.0102**	0.006	62.4	ug/L	603	Standard
	Co	59	222.0	2.4	**-0.0062**	0.001	15.3	ug/L	237	Standard
	Ni	60	127.3	4.5	**-0.0108**	0.003	24.1	ug/L	141	Standard
	Cu	65	129.3	11.3	**0.0037**	0.008	218.4	ug/L	109	Standard
	Zn	66	156.3	8.5	**-0.0888**	0.012	14.0	ug/L	159	Standard
>	**Ge**	72	466990.8	0.9				ug/L	474053	Standard
	As	75	-31.2	100.9	**-0.0035**	0.029	815.0	ug/L	-34	Standard
	Se	82	18.5	27.4	**0.0013**	0.046	3640.7	ug/L	14	Standard
	Se-1	77	60.7	5.3	**0.0572**	0.045	77.9	ug/L	55	Standard
>	**Ga**	71	66.7	41.3				mg/L	50	Standard
	Rb	85	25.0	20.0				ug/L	20	Standard
	Y	89	391075.9	3.9				ug/L	376602	Standard
>	**Rh**	103	35.0	49.5				ug/L	17	Standard
	Mo	98	246.2	31.0	**0.0990**	0.031	31.0	ug/L	8	Standard
	Ag	107	92.0	11.3	**0.0032**	0.002	60.7	ug/L	81	Standard
	Cd	111	9.2	30.0	**0.0015**	0.001	89.3	mg/L	3	Standard
	Cd	114	8.4	58.3	**-0.0021**	0.001	50.3	ug/L	7	Standard
>	**In**	115	521304.7	2.1				ug/L	524722	Standard
	Sn	118	806.7	12.6	**0.0616**	0.022	35.5	ug/L	715	Standard
	Sb	123	413.8	23.7	**0.0808**	0.024	30.2	ug/L	201	Standard
	Ba	135	135.0	17.1	**0.0173**	0.012	72.2	ug/L	108	Standard
	Ce	140	18.3	78.7				ug/L	30	Standard
>	**Tb**	159	770403.7	2.0				ug/L	792236	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	53.3	21.7	**0.0047**	0.002	33.8	ug/L	9	Standard
	Tl	205	41.7	25.0	**-0.0011**	0.002	147.7	ug/L	0	Standard
	Pb	206	231.3	3.6	**-0.0040**	0.002	55.2	ug/L	216	Standard
	Pb	207	191.7	4.4	**-0.0062**	0.002	38.0	ug/L	180	Standard
	Pb	208	830.7	1.5	**-0.0071**	0.001	9.5	ug/L	717	Standard
	U	238	32.3	17.6	**-0.0021**	0.001	45.2	ug/L	4	Standard
>	**Bi**	209	440882.3	0.7				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	40.0	45.1	**0.0046**	0.022	483.5	mg/L	20	Standard
K	39	21.7	13.3	**-0.0762**	0.019	24.7	mg/L	22	Standard
Ca	43	16.7	62.4	**-9.5897**	2.277	23.7	mg/L	47	Standard
Fe	54	154.6	3.2	**0.0006**	0.004	679.4	mg/L	151	Standard
Fe	57	181.7	39.0	**-0.1287**	0.205	159.3	mg/L	195	Standard
> **Sc-1**	45	32252.6	1.6				mg/L	29647	Standard
Cl	35	162535.6	2.7				ug/L	154152	Standard
Kr	83	2.0	100.0				ug/L	3	Standard
Br	81	1583.4	15.5				ug/L	1607	Standard
P	31	25920.5	3.4				ug/L	22752	Standard
S	34	5491.0	2.1				ug/L	5049	Standard
Sr	88	78.3	13.3				ug/L	87	Standard
C	12	43.3	13.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	2.9	173.2				mg/L	10	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	10.0	173.2				mg/L	3	Standard
I	127	951.7	4.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.510	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.349
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.773
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, June 16, 2016 21:51:48
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51025.8	1.8				ug/L	51024	Standard
	Be	9	158.3	20.5	**0.1674**	0.039	23.3	ug/L	7	Standard
	Al	27	703.4	27.7	**-0.0048**	0.001	26.9	ug/L	625	Standard
	Sc	45	32324.5	3.0				ug/L	29647	Standard
	Ti	47	27.3	27.7	**-0.0704**	0.026	37.0	ug/L	57	Standard
	V	51	3596.4	1.1	**0.3627**	0.006	1.6	ug/L	1142	Standard
	Cr	52	11538.7	0.6	**0.7185**	0.004	0.5	ug/L	6628	Standard
	Cr	53	1191.7	2.4	**0.9142**	0.036	4.0	ug/L	430	Standard
	Mn	55	3452.4	2.2	**0.4841**	0.013	2.6	ug/L	603	Standard
	Co	59	2481.5	3.2	**0.3641**	0.012	3.2	ug/L	237	Standard
	Ni	60	2983.6	1.9	**1.5460**	0.025	1.6	ug/L	141	Standard
	Cu	65	1554.1	2.2	**0.8018**	0.018	2.3	ug/L	109	Standard
	Zn	66	6904.6	0.5	**6.3076**	0.040	0.6	ug/L	159	Standard
>	**Ge**	72	451469.6	0.4				ug/L	474053	Standard
	As	75	367.1	3.5	**0.3732**	0.012	3.2	ug/L	-34	Standard
	Se	82	52.6	5.1	**0.3307**	0.024	7.1	ug/L	14	Standard
	Se-1	77	86.0	19.2	**0.4314**	0.229	53.1	ug/L	55	Standard
>	**Ga**	71	36.7	56.8				mg/L	50	Standard
	Rb	85	15.0	145.3				ug/L	20	Standard
	Y	89	372929.0	2.6				ug/L	376602	Standard
>	**Rh**	103	21.7	58.1				ug/L	17	Standard
	Mo	98	53.2	25.4	**0.0175**	0.006	35.6	ug/L	8	Standard
	Ag	107	2191.8	2.9	**0.3621**	0.015	4.2	ug/L	81	Standard
	Cd	111	428.6	3.0	**0.2218**	0.010	4.4	mg/L	3	Standard
	Cd	114	1072.7	8.3	**0.2242**	0.022	10.0	ug/L	7	Standard
>	**In**	115	515022.5	1.7				ug/L	524722	Standard
	Sn	118	460.0	21.8	**-0.0026**	0.018	670.4	ug/L	715	Standard
	Sb	123	1687.6	0.2	**0.3789**	0.008	2.0	ug/L	201	Standard
	Ba	135	1278.4	5.4	**0.6611**	0.044	6.7	ug/L	108	Standard
	Ce	140	11.7	89.2				ug/L	30	Standard
>	**Tb**	159	775692.8	2.1				ug/L	792236	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	561.7	1.8	**0.0736**	0.001	1.5	ug/L	9	Standard
	Tl	205	431.7	7.1	**0.0610**	0.005	8.2	ug/L	0	Standard
	Pb	206	1089.0	2.6	**0.1879**	0.008	4.3	ug/L	216	Standard
	Pb	207	883.7	5.5	**0.1638**	0.011	6.9	ug/L	180	Standard
	Pb	208	3859.2	0.5	**0.1764**	0.003	1.5	ug/L	717	Standard
	U	238	2254.8	1.2	**0.3683**	0.007	1.9	ug/L	4	Standard
>	**Bi**	209	444599.6	0.7				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.3150**	8.898	167.4	mg/L	0	Standard
Mg	24	30.0	16.7	**-0.0079**	0.006	76.0	mg/L	20	Standard
K	39	21.7	66.6	**-0.0767**	0.101	131.3	mg/L	22	Standard
Ca	43	30.0	28.9	**-6.7278**	2.028	30.1	mg/L	47	Standard
Fe	54	87.5	4.0	**-0.0496**	0.004	9.0	mg/L	151	Standard
Fe	57	195.0	9.2	**-0.0929**	0.056	60.4	mg/L	195	Standard
Sc-1	45	32324.5	3.0				mg/L	29647	Standard
Cl	35	156288.7	1.2				ug/L	154152	Standard
Kr	83	3.3	17.3				ug/L	3	Standard
Br	81	1266.7	10.3				ug/L	1607	Standard
P	31	17852.2	2.6				ug/L	22752	Standard
S	34	5659.4	1.8				ug/L	5049	Standard
Sr	88	65.0	40.7				ug/L	87	Standard
C	12	20.0	0.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.2	100.1				mg/L	10	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	985.0	8.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	83.676		
Al	27			
Sc	45			
Ti	47			
V	51	90.668		
Cr	52	89.809		
Cr	53			
Mn	55	96.822		
Co	59	91.014		
Ni	60	96.626		
Cu	65	100.227		
Zn	66	100.922		
Ge	72		95.236	
As	75	93.291		
Se	82	82.669		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	90.533		
Cd	111	92.425		
Cd	114			
> In	115			98.152
Sn	118			
Sb	123	94.728		
Ba	135	88.151		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	91.941		
Tl	205			
Pb	206			
Pb	207			
Pb	208	88.177		
U	238	92.081		
> Bi	209			96.580
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
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Method 6020 - Summary Report

Sample ID: PBW 58 WG571964-02
Sample Date/Time: Thursday, June 16, 2016 21:55:00
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51882.0	0.7				ug/L	51024	Standard
	Be	9	8.3	91.7	**-0.0113**	0.009	79.6	ug/L	7	Standard
	Al	27	7225.1	1.7	**0.0402**	0.001	2.5	ug/L	625	Standard
	Sc	45	32848.9	2.3				ug/L	29647	Standard
	Ti	47	51.0	25.0	**0.0065**	0.044	672.4	ug/L	57	Standard
	V	51	1196.1	1.0	**0.0022**	0.004	185.3	ug/L	1142	Standard
	Cr	52	7726.6	1.1	**0.1365**	0.019	13.7	ug/L	6628	Standard
	Cr	53	648.3	14.3	**0.2747**	0.094	34.1	ug/L	430	Standard
	Mn	55	2688.6	3.0	**0.3326**	0.014	4.1	ug/L	603	Standard
	Co	59	223.3	5.2	**-0.0060**	0.001	19.7	ug/L	237	Standard
	Ni	60	306.7	5.4	**0.0833**	0.005	5.7	ug/L	141	Standard
	Cu	65	369.3	3.4	**0.1332**	0.011	8.3	ug/L	109	Standard
	Zn	66	1524.4	0.8	**1.1625**	0.045	3.9	ug/L	159	Standard
>	**Ge**	72	467701.0	2.5				ug/L	474053	Standard
	As	75	-29.1	18.5	**-0.0015**	0.005	304.8	ug/L	-34	Standard
	Se	82	20.2	33.1	**0.0162**	0.062	379.4	ug/L	14	Standard
	Se-1	77	49.0	28.8	**-0.1009**	0.171	169.5	ug/L	55	Standard
>	**Ga**	71	70.0	25.8				mg/L	50	Standard
	Rb	85	63.3	19.9				ug/L	20	Standard
	Y	89	385228.3	1.7				ug/L	376602	Standard
>	**Rh**	103	13.3	43.3				ug/L	17	Standard
	Mo	98	91.6	20.6	**0.0329**	0.008	25.1	ug/L	8	Standard
	Ag	107	70.0	10.3	**-0.0007**	0.001	169.4	ug/L	81	Standard
	Cd	111	7.2	21.3	**0.0004**	0.001	191.2	mg/L	3	Standard
	Cd	114	8.6	219.6	**-0.0020**	0.004	198.4	ug/L	7	Standard
>	**In**	115	529391.3	2.2				ug/L	524722	Standard
	Sn	118	1728.4	4.6	**0.2287**	0.017	7.5	ug/L	715	Standard
	Sb	123	139.5	23.6	**0.0168**	0.007	40.4	ug/L	201	Standard
	Ba	135	108.3	10.8	**0.0016**	0.007	433.3	ug/L	108	Standard
	Ce	140	70.0	18.9				ug/L	30	Standard
>	**Tb**	159	807450.9	1.8				ug/L	792236	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	22.0	12.0	**0.0003**	0.000	106.9	ug/L	9	Standard
	Tl	205	30.0	28.9	**-0.0032**	0.001	42.5	ug/L	0	Standard
	Pb	206	253.7	10.4	**-0.0009**	0.006	689.0	ug/L	216	Standard
	Pb	207	220.0	2.1	**-0.0010**	0.001	126.8	ug/L	180	Standard
	Pb	208	877.3	3.6	**-0.0060**	0.002	33.1	ug/L	717	Standard
	U	238	8.7	63.5	**-0.0062**	0.001	14.5	ug/L	4	Standard
>	**Bi**	209	455782.1	0.2				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.5393**	8.509	153.6	mg/L	0	Standard
Mg	24	36.7	7.9	**-0.0004**	0.003	710.4	mg/L	20	Standard
K	39	8.3	34.6	**-0.1703**	0.021	12.2	mg/L	22	Standard
Ca	43	33.3	8.7	**-6.1652**	0.476	7.7	mg/L	47	Standard
Fe	54	150.7	24.4	**-0.0047**	0.025	526.5	mg/L	151	Standard
Fe	57	176.7	14.2	**-0.1527**	0.076	49.6	mg/L	195	Standard
> **Sc-1**	45	32848.9	2.3				mg/L	29647	Standard
Cl	35	161385.0	1.1				ug/L	154152	Standard
Kr	83	3.3	34.6				ug/L	3	Standard
Br	81	1680.1	1.8				ug/L	1607	Standard
P	31	24029.0	2.1				ug/L	22752	Standard
S	34	5571.0	3.7				ug/L	5049	Standard
Sr	88	66.7	56.3				ug/L	87	Standard
C	12	53.3	94.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.2	100.1				mg/L	10	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	1201.7	0.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.681	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.660	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.890
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.009
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 58 WG571964-03
Sample Date/Time: Thursday, June 16, 2016 21:58:11
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	53618.1	1.9				ug/L	51024	Standard
	Be	9	43223.2	1.9	**48.9062**	0.701	1.4	ug/L	7	Standard
	Al	27	16045.2	3.1	**0.0975**	0.001	1.5	ug/L	625	Standard
	Sc	45	33034.3	2.7				ug/L	29647	Standard
	Ti	47	54.7	14.9	**0.0208**	0.027	130.9	ug/L	57	Standard
	V	51	357626.2	0.2	**51.4076**	0.356	0.7	ug/L	1142	Standard
	Cr	52	377061.2	0.6	**51.6273**	0.257	0.5	ug/L	6628	Standard
	Cr	53	46803.9	1.6	**51.1933**	1.124	2.2	ug/L	430	Standard
	Mn	55	326931.8	1.1	**56.3462**	0.565	1.0	ug/L	603	Standard
	Co	59	321699.5	0.9	**51.2838**	0.209	0.4	ug/L	237	Standard
	Ni	60	96180.4	1.7	**51.0507**	0.482	0.9	ug/L	141	Standard
	Cu	65	95306.5	1.4	**51.9244**	0.344	0.7	ug/L	109	Standard
	Zn	66	56208.1	0.9	**51.7682**	0.278	0.5	ug/L	159	Standard
>	Ge	72	462203.6	0.8				ug/L	474053	Standard
	As	75	54677.4	1.3	**50.6686**	0.319	0.6	ug/L	-34	Standard
	Se	82	5471.8	2.6	**50.5742**	0.951	1.9	ug/L	14	Standard
	Se-1	77	3817.1	0.9	**50.2380**	0.317	0.6	ug/L	55	Standard
>	Ga	71	60.0	22.0				mg/L	50	Standard
	Rb	85	115.0	15.7				ug/L	20	Standard
	Y	89	401062.4	1.0				ug/L	376602	Standard
>	Rh	103	33.3	37.7				ug/L	17	Standard
	Mo	98	55.7	12.6	**0.0170**	0.003	16.7	ug/L	8	Standard
	Ag	107	298947.0	1.2	**47.9637**	0.316	0.7	ug/L	81	Standard
	Cd	111	99244.6	1.4	**48.9502**	0.549	1.1	mg/L	3	Standard
	Cd	114	239743.2	0.7	**47.8326**	0.248	0.5	ug/L	7	Standard
>	In	115	548071.7	0.8				ug/L	524722	Standard
	Sn	118	1466.7	2.8	**0.1712**	0.008	4.6	ug/L	715	Standard
	Sb	123	213065.5	1.1	**46.6859**	0.143	0.3	ug/L	201	Standard
	Ba	135	90504.9	1.1	**47.7484**	0.750	1.6	ug/L	108	Standard
	Ce	140	71.7	4.0				ug/L	30	Standard
>	Tb	159	809470.0	2.7				ug/L	792236	Standard
	Ho	165	10.0	100.0				ug/L	7	Standard
	Tl	203	363003.7	1.1	**48.3987**	0.635	1.3	ug/L	9	Standard
	Tl	205	319279.0	0.6	**50.0661**	1.366	2.7	ug/L	0	Standard
	Pb	206	230746.8	0.4	**50.8528**	1.062	2.1	ug/L	216	Standard
	Pb	207	202045.2	0.4	**48.9160**	1.313	2.7	ug/L	180	Standard
	Pb	208	862693.1	0.1	**51.4643**	1.296	2.5	ug/L	717	Standard
	U	238	307882.3	0.1	**50.4881**	1.234	2.4	ug/L	4	Standard
>	Bi	209	452058.0	2.3				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.4002**	8.750	162.0	mg/L	0	Standard
Mg	24	33.3	8.7	**-0.0046**	0.004	92.7	mg/L	20	Standard
K	39	38.3	32.8	**0.0349**	0.087	249.1	mg/L	22	Standard
Ca	43	31.7	48.2	**-6.5426**	3.175	48.5	mg/L	47	Standard
Fe	54	129.8	11.6	**-0.0203**	0.010	51.0	mg/L	151	Standard
Fe	57	178.3	5.8	**-0.1508**	0.042	28.0	mg/L	195	Standard
Sc-1	45	33034.3	2.7				mg/L	29647	Standard
Cl	35	160489.1	2.1				ug/L	154152	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	1963.5	7.4				ug/L	1607	Standard
P	31	24446.4	2.0				ug/L	22752	Standard
S	34	5609.4	5.5				ug/L	5049	Standard
Sr	88	61.7	16.9				ug/L	87	Standard
C	12	83.3	59.2				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	16.2	127.9				mg/L	10	Standard
Ho-1	165	10.0	100.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	1580.1	4.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.084	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.500	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.450
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.200
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 58 WG571964-03
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Method 6020 - Summary Report

Sample ID: L1606042801 WG571964-01
Sample Date/Time: Thursday, June 16, 2016 22:01:23
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53056.1	0.8				ug/L	51024	Standard
	Be	9	15.0	120.2	**-0.0038**	0.021	544.4	ug/L	7	Standard
	Al	27	757403.8	1.6	**5.1075**	0.106	2.1	ug/L	625	Standard
	Sc	45	31754.9	2.5				ug/L	29647	Standard
	Ti	47	165.7	8.9	**0.3896**	0.046	11.7	ug/L	57	Standard
	V	51	1511.6	6.0	**0.0457**	0.014	31.1	ug/L	1142	Standard
	Cr	52	8164.9	0.8	**0.1892**	0.010	5.5	ug/L	6628	Standard
	Cr	53	1656.8	10.3	**1.3626**	0.187	13.8	ug/L	430	Standard
	Mn	55	17190.1	1.5	**2.7889**	0.065	2.3	ug/L	603	Standard
	Co	59	391.7	5.3	**0.0201**	0.004	18.4	ug/L	237	Standard
	Ni	60	11431.6	1.7	**5.8888**	0.134	2.3	ug/L	141	Standard
	Cu	65	74287.3	0.4	**39.7191**	0.286	0.7	ug/L	109	Standard
	Zn	66	6798.2	0.6	**5.9426**	0.080	1.3	ug/L	159	Standard
>	**Ge**	72	470820.2	0.8				ug/L	474053	Standard
	As	75	23.4	122.6	**0.0464**	0.026	56.6	ug/L	-34	Standard
	Se	82	24.3	11.2	**0.0524**	0.025	47.2	ug/L	14	Standard
	Se-1	77	121.0	4.3	**0.8414**	0.059	7.0	ug/L	55	Standard
>	**Ga**	71	111.7	6.8				mg/L	50	Standard
	Rb	85	8439.0	5.7				ug/L	20	Standard
	Y	89	394979.4	1.5				ug/L	376602	Standard
>	**Rh**	103	30.0	0.0				ug/L	17	Standard
	Mo	98	18900.0	0.6	**7.8902**	0.142	1.8	ug/L	8	Standard
	Ag	107	1050.7	1.6	**0.1614**	0.000	0.2	ug/L	81	Standard
	Cd	111	8.7	19.0	**0.0012**	0.001	76.4	mg/L	3	Standard
	Cd	114	173.0	66.1	**0.0315**	0.023	73.0	ug/L	7	Standard
>	**In**	115	531861.1	1.7				ug/L	524722	Standard
	Sn	118	33005.9	1.3	**5.9570**	0.142	2.4	ug/L	715	Standard
	Sb	123	2285.8	18.9	**0.5027**	0.106	21.1	ug/L	201	Standard
	Ba	135	21266.9	0.9	**11.5188**	0.132	1.1	ug/L	108	Standard
	Ce	140	228.3	16.1				ug/L	30	Standard
>	**Tb**	159	787998.7	1.7				ug/L	792236	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	150.7	22.9	**0.0182**	0.005	26.8	ug/L	9	Standard
	Tl	205	115.0	41.5	**0.0108**	0.008	72.2	ug/L	0	Standard
	Pb	206	32589.3	0.1	**7.3677**	0.062	0.8	ug/L	216	Standard
	Pb	207	27351.7	1.3	**6.7905**	0.113	1.7	ug/L	180	Standard
	Pb	208	116700.7	0.9	**7.1377**	0.028	0.4	ug/L	717	Standard
	U	238	60.7	30.6	**0.0027**	0.003	116.1	ug/L	4	Standard
>	**Bi**	209	437691.5	0.7				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.5017**	8.575	155.9	mg/L	0	Standard
Mg	24	12460.1	1.8	**15.7356**	0.595	3.8	mg/L	20	Standard
K	39	611.7	9.8	**4.1225**	0.361	8.8	mg/L	22	Standard
Ca	43	61.7	24.8	**0.2569**	3.325	1294.5	mg/L	47	Standard
Fe	54	123.9	25.0	**-0.0210**	0.023	110.5	mg/L	151	Standard
Fe	57	213.3	11.8	**-0.0300**	0.077	258.2	mg/L	195	Standard
Sc-1	45	31754.9	2.5				mg/L	29647	Standard
Cl	35	194533.7	1.6				ug/L	154152	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	3240.3	4.0				ug/L	1607	Standard
P	31	24090.8	3.3				ug/L	22752	Standard
S	34	5104.2	4.8				ug/L	5049	Standard
Sr	88	81.7	19.7				ug/L	87	Standard
C	12	96.7	6.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.5	179.6				mg/L	10	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	13282.5	4.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.982	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.318	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.361
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.079
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606042801S WG571964-05
Sample Date/Time: Thursday, June 16, 2016 22:04:34
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55394.4	1.8				ug/L	51024	Standard
	Be	9	8934.3	3.4	**9.7660**	0.194	2.0	ug/L	7	Standard
	Al	27	748355.5	1.6	**4.8346**	0.168	3.5	ug/L	625	Standard
	Sc	45	32691.9	1.0				ug/L	29647	Standard
	Ti	47	168.3	4.0	**0.3836**	0.024	6.2	ug/L	57	Standard
	V	51	72192.1	1.7	**9.7775**	0.188	1.9	ug/L	1142	Standard
	Cr	52	79707.4	0.5	**9.6848**	0.014	0.1	ug/L	6628	Standard
	Cr	53	10453.6	1.1	**10.5826**	0.158	1.5	ug/L	430	Standard
	Mn	55	79152.9	1.5	**12.9343**	0.146	1.1	ug/L	603	Standard
	Co	59	63320.4	0.7	**9.6094**	0.039	0.4	ug/L	237	Standard
	Ni	60	29840.4	0.9	**15.0769**	0.185	1.2	ug/L	141	Standard
	Cu	65	88796.8	0.4	**46.2088**	0.054	0.1	ug/L	109	Standard
	Zn	66	17201.8	0.7	**14.9707**	0.150	1.0	ug/L	159	Standard
>	**Ge**	72	483837.9	0.4				ug/L	474053	Standard
	As	75	10943.5	1.9	**9.7081**	0.171	1.8	ug/L	-34	Standard
	Se	82	1071.8	4.1	**9.3269**	0.380	4.1	ug/L	14	Standard
	Se-1	77	883.4	1.7	**10.5260**	0.205	1.9	ug/L	55	Standard
>	**Ga**	71	61.7	18.7				mg/L	50	Standard
	Rb	85	8238.9	4.0				ug/L	20	Standard
	Y	89	381877.6	0.5				ug/L	376602	Standard
>	**Rh**	103	51.7	55.9				ug/L	17	Standard
	Mo	98	18040.5	0.2	**7.6113**	0.126	1.7	ug/L	8	Standard
	Ag	107	57677.6	1.0	**9.6285**	0.084	0.9	ug/L	81	Standard
	Cd	111	18876.2	0.3	**9.6948**	0.114	1.2	mg/L	3	Standard
	Cd	114	46340.2	1.4	**9.6280**	0.249	2.6	ug/L	7	Standard
>	**In**	115	526253.2	1.5				ug/L	524722	Standard
	Sn	118	29871.1	0.9	**5.4406**	0.094	1.7	ug/L	715	Standard
	Sb	123	44200.6	1.7	**10.0749**	0.023	0.2	ug/L	201	Standard
	Ba	135	37005.8	1.2	**20.2992**	0.061	0.3	ug/L	108	Standard
	Ce	140	223.3	9.3				ug/L	30	Standard
>	**Tb**	159	800388.6	1.7				ug/L	792236	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	71293.7	0.6	**9.5115**	0.043	0.5	ug/L	9	Standard
	Tl	205	61241.9	1.8	**9.6035**	0.196	2.0	ug/L	0	Standard
	Pb	206	76986.8	0.6	**16.9419**	0.160	0.9	ug/L	216	Standard
	Pb	207	66311.8	0.8	**16.0284**	0.098	0.6	ug/L	180	Standard
	Pb	208	275320.9	0.6	**16.3962**	0.155	0.9	ug/L	717	Standard
	U	238	60579.2	0.6	**9.9347**	0.056	0.6	ug/L	4	Standard
>	**Bi**	209	451597.7	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	12333.4	0.5	**15.1192**	0.089	0.6	mg/L	20	Standard
K	39	615.0	5.3	**4.0231**	0.203	5.0	mg/L	22	Standard
Ca	43	28.3	10.2	**-7.1884**	0.556	7.7	mg/L	47	Standard
Fe	54	187.4	26.5	**0.0230**	0.035	154.6	mg/L	151	Standard
Fe	57	198.3	19.1	**-0.0900**	0.107	118.9	mg/L	195	Standard
> **Sc-1**	45	32691.9	1.0				mg/L	29647	Standard
Cl	35	191462.1	0.2				ug/L	154152	Standard
Kr	83	1.7	124.9				ug/L	3	Standard
Br	81	2590.2	10.5				ug/L	1607	Standard
P	31	24189.3	1.6				ug/L	22752	Standard
S	34	5244.2	0.9				ug/L	5049	Standard
Sr	88	83.3	24.2				ug/L	87	Standard
C	12	146.7	23.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	13.3	114.6				mg/L	10	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	0.0					mg/L	3	Standard
I	127	11335.9	2.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.565	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.064	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.292
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.100
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606042801SD WG571964-06
Sample Date/Time: Thursday, June 16, 2016 22:07:46
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56861.5	1.0				ug/L	51024	Standard
	Be	9	9379.6	0.6	**9.9907**	0.123	1.2	ug/L	7	Standard
	Al	27	791197.5	0.6	**4.9782**	0.076	1.5	ug/L	625	Standard
	Sc	45	33405.1	3.0				ug/L	29647	Standard
	Ti	47	189.0	15.7	**0.4621**	0.100	21.6	ug/L	57	Standard
	V	51	73275.8	0.5	**10.1068**	0.150	1.5	ug/L	1142	Standard
	Cr	52	82693.4	0.6	**10.2789**	0.155	1.5	ug/L	6628	Standard
	Cr	53	11009.0	1.3	**11.3764**	0.331	2.9	ug/L	430	Standard
	Mn	55	80077.1	1.3	**13.3217**	0.087	0.6	ug/L	603	Standard
	Co	59	64342.3	1.0	**9.9396**	0.081	0.8	ug/L	237	Standard
	Ni	60	30668.0	0.6	**15.7751**	0.244	1.5	ug/L	141	Standard
	Cu	65	102903.3	0.9	**54.5140**	0.360	0.7	ug/L	109	Standard
	Zn	66	17903.6	1.4	**15.8728**	0.283	1.8	ug/L	159	Standard
>	**Ge**	72	475415.3	1.6				ug/L	474053	Standard
	As	75	11042.5	1.9	**9.9692**	0.144	1.4	ug/L	-34	Standard
	Se	82	1111.2	2.5	**9.8543**	0.398	4.0	ug/L	14	Standard
	Se-1	77	817.4	1.4	**9.8699**	0.196	2.0	ug/L	55	Standard
>	**Ga**	71	86.7	39.3				mg/L	50	Standard
	Rb	85	8222.2	4.2				ug/L	20	Standard
	Y	89	394850.6	0.8				ug/L	376602	Standard
>	**Rh**	103	35.0	28.6				ug/L	17	Standard
	Mo	98	19398.6	1.2	**8.0048**	0.167	2.1	ug/L	8	Standard
	Ag	107	59697.4	0.4	**9.7470**	0.052	0.5	ug/L	81	Standard
	Cd	111	19317.1	0.2	**9.7032**	0.092	0.9	mg/L	3	Standard
	Cd	114	47826.5	0.6	**9.7171**	0.080	0.8	ug/L	7	Standard
>	**In**	115	538049.7	0.9				ug/L	524722	Standard
	Sn	118	39536.5	1.2	**7.0684**	0.038	0.5	ug/L	715	Standard
	Sb	123	45183.1	0.7	**10.0737**	0.100	1.0	ug/L	201	Standard
	Ba	135	43743.7	0.4	**23.4783**	0.172	0.7	ug/L	108	Standard
	Ce	140	316.7	16.7				ug/L	30	Standard
>	**Tb**	159	823661.0	0.7				ug/L	792236	Standard
	Ho	165	16.7	69.3				ug/L	7	Standard
	Tl	203	73870.7	1.0	**9.7275**	0.120	1.2	ug/L	9	Standard
	Tl	205	62943.8	1.2	**9.7425**	0.171	1.8	ug/L	0	Standard
	Pb	206	79783.5	0.3	**17.3303**	0.067	0.4	ug/L	216	Standard
	Pb	207	68152.3	0.6	**16.2608**	0.196	1.2	ug/L	180	Standard
	Pb	208	286237.0	1.1	**16.8270**	0.286	1.7	ug/L	717	Standard
	U	238	62126.1	0.8	**10.0567**	0.149	1.5	ug/L	4	Standard
>	**Bi**	209	457529.8	0.7				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	13005.6	1.2	**15.6137**	0.541	3.5	mg/L	20	Standard
K	39	631.7	11.7	**4.0527**	0.574	14.2	mg/L	22	Standard
Ca	43	45.0	29.4	**-3.9018**	2.447	62.7	mg/L	47	Standard
Fe	54	151.2	21.8	**-0.0055**	0.026	477.7	mg/L	151	Standard
Fe	57	191.7	21.7	**-0.1180**	0.127	107.5	mg/L	195	Standard
Sc-1	45	33405.1	3.0				mg/L	29647	Standard
Cl	35	198754.5	0.5				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	2900.3	3.8				ug/L	1607	Standard
P	31	24661.7	2.9				ug/L	22752	Standard
S	34	5152.5	2.9				ug/L	5049	Standard
Sr	88	78.3	9.8				ug/L	87	Standard
C	12	96.7	43.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.9	187.9				mg/L	10	Standard
Ho-1	165	16.7	69.3				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	11145.8	3.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		111.440	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.287	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606042801SD WG571964-06
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.540	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.389	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606041103
Sample Date/Time: Thursday, June 16, 2016 22:10:57
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62574.0	2.3				ug/L	51024	Standard
	Be	9	160.0	11.3	**0.1339**	0.015	11.0	ug/L	7	Standard
	Al	27	3612417.3	0.5	**20.6888**	0.380	1.8	ug/L	625	Standard
	Sc	45	41445.0	4.1				ug/L	29647	Standard
	Ti	47	11430.0	1.2	**38.8931**	0.503	1.3	ug/L	57	Standard
	V	51	49465.6	5.9	**6.9654**	0.407	5.8	ug/L	1142	Standard
	Cr	52	278119.6	1.2	**37.8421**	0.634	1.7	ug/L	6628	Standard
	Cr	53	35835.7	1.3	**39.0973**	0.639	1.6	ug/L	430	Standard
	Mn	55	108739.8	1.1	**18.6585**	0.168	0.9	ug/L	603	Standard
	Co	59	16555.0	2.3	**2.6001**	0.043	1.6	ug/L	237	Standard
	Ni	60	172929.3	0.8	**91.8635**	0.500	0.5	ug/L	141	Standard
	Cu	65	6358.3	3.5	**3.4028**	0.118	3.5	ug/L	109	Standard
	Zn	66	15282.7	1.5	**13.9075**	0.137	1.0	ug/L	159	Standard
>	**Ge**	72	462157.8	0.7				ug/L	474053	Standard
	As	75	708.4	1.9	**0.6813**	0.015	2.2	ug/L	-34	Standard
	Se	82	305.6	0.9	**2.6661**	0.043	1.6	ug/L	14	Standard
	Se-1	77	262.0	4.6	**2.7550**	0.165	6.0	ug/L	55	Standard
>	**Ga**	71	6034.5	4.8				mg/L	50	Standard
	Rb	85	47790.3	0.2				ug/L	20	Standard
	Y	89	408920.9	2.9				ug/L	376602	Standard
>	**Rh**	103	41.7	34.6				ug/L	17	Standard
	Mo	98	2172.6	4.5	**0.8781**	0.030	3.5	ug/L	8	Standard
	Ag	107	219.7	70.0	**0.0229**	0.024	105.6	ug/L	81	Standard
	Cd	111	75.9	34.7	**0.0343**	0.013	36.7	mg/L	3	Standard
	Cd	114	241.8	20.0	**0.0446**	0.009	20.8	ug/L	7	Standard
>	**In**	115	546080.6	1.7				ug/L	524722	Standard
	Sn	118	1300.1	5.7	**0.1424**	0.011	7.6	ug/L	715	Standard
	Sb	123	571.3	25.0	**0.1106**	0.030	26.8	ug/L	201	Standard
	Ba	135	154749.6	0.9	**81.9842**	0.666	0.8	ug/L	108	Standard
	Ce	140	87014.2	1.0				ug/L	30	Standard
>	**Tb**	159	814427.9	0.6				ug/L	792236	Standard
	Ho	165	750.0	9.7				ug/L	7	Standard
	Tl	203	378.3	10.9	**0.0480**	0.006	11.9	ug/L	9	Standard
	Tl	205	368.3	33.6	**0.0501**	0.020	39.4	ug/L	0	Standard
	Pb	206	5985.2	3.5	**1.2661**	0.051	4.1	ug/L	216	Standard
	Pb	207	4992.8	4.4	**1.1580**	0.058	5.0	ug/L	180	Standard
	Pb	208	21391.6	3.3	**1.2214**	0.047	3.9	ug/L	717	Standard
	U	238	1095.4	14.1	**0.1724**	0.026	15.1	ug/L	4	Standard
>	**Bi**	209	451292.0	0.4				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	20841.0	1.9	**20.1926**	1.006	5.0	mg/L	20	Standard
K	39	73.3	37.6	**0.1715**	0.145	84.8	mg/L	22	Standard
Ca	43	58.3	64.9	**-3.6032**	6.066	168.3	mg/L	47	Standard
Fe	54	4110.0	2.2	**2.2769**	0.060	2.6	mg/L	151	Standard
Fe	57	1281.7	3.9	**2.1921**	0.046	2.1	mg/L	195	Standard
> **Sc-1**	45	41445.0	4.1				mg/L	29647	Standard
Cl	35	174319.7	0.6				ug/L	154152	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	22139.5	6.4				ug/L	1607	Standard
P	31	56868.2	1.9				ug/L	22752	Standard
S	34	4735.7	5.8				ug/L	5049	Standard
Sr	88	138.3	8.3				ug/L	87	Standard
C	12	140.0	24.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	71.3				mg/L	0	Standard
Dy	164	1332.7	14.4				mg/L	10	Standard
Ho-1	165	750.0	9.7				mg/L	7	Standard
Er	166	710.0	11.5				mg/L	3	Standard
I	127	202127.9	4.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		122.636	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.491	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	104.070	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.034	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606041104
Sample Date/Time: Thursday, June 16, 2016 22:14:09
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64240.9	1.6				ug/L	51024	Standard
	Be	9	136.7	22.1	**0.1078**	0.027	24.9	ug/L	7	Standard
	Al	27	3763925.2	1.3	**20.9934**	0.276	1.3	ug/L	625	Standard
	Sc	45	40464.0	1.9				ug/L	29647	Standard
	Ti	47	8699.5	0.7	**27.3016**	0.630	2.3	ug/L	57	Standard
	V	51	38467.6	1.3	**4.9573**	0.087	1.7	ug/L	1142	Standard
	Cr	52	284248.5	0.2	**35.6883**	1.177	3.3	ug/L	6628	Standard
	Cr	53	35927.6	2.1	**36.1893**	1.342	3.7	ug/L	430	Standard
	Mn	55	133272.7	1.8	**21.1444**	0.498	2.4	ug/L	603	Standard
	Co	59	18921.1	3.5	**2.7470**	0.050	1.8	ug/L	237	Standard
	Ni	60	221247.9	1.4	**108.5931**	1.677	1.5	ug/L	141	Standard
	Cu	65	5825.8	2.3	**2.8698**	0.029	1.0	ug/L	109	Standard
	Zn	66	12440.8	1.3	**10.4031**	0.253	2.4	ug/L	159	Standard
>	**Ge**	72	500409.8	2.9				ug/L	474053	Standard
	As	75	551.3	12.2	**0.4975**	0.064	12.9	ug/L	-34	Standard
	Se	82	300.3	5.4	**2.4053**	0.175	7.3	ug/L	14	Standard
	Se-1	77	256.7	3.5	**2.4250**	0.195	8.0	ug/L	55	Standard
>	**Ga**	71	4735.7	2.7				mg/L	50	Standard
	Rb	85	38717.8	2.3				ug/L	20	Standard
	Y	89	413643.0	2.8				ug/L	376602	Standard
>	**Rh**	103	26.7	28.6				ug/L	17	Standard
	Mo	98	7867.7	1.9	**3.2136**	0.028	0.9	ug/L	8	Standard
	Ag	107	99.3	12.1	**0.0038**	0.002	50.7	ug/L	81	Standard
	Cd	111	46.8	16.9	**0.0200**	0.004	18.8	mg/L	3	Standard
	Cd	114	206.0	6.6	**0.0377**	0.003	7.1	ug/L	7	Standard
>	**In**	115	542917.1	1.0				ug/L	524722	Standard
	Sn	118	1081.7	2.4	**0.1046**	0.003	3.0	ug/L	715	Standard
	Sb	123	436.3	12.1	**0.0817**	0.011	13.3	ug/L	201	Standard
	Ba	135	146593.2	1.4	**78.1037**	0.328	0.4	ug/L	108	Standard
	Ce	140	75445.7	1.8				ug/L	30	Standard
>	**Tb**	159	801118.6	3.0				ug/L	792236	Standard
	Ho	165	633.3	15.1				ug/L	7	Standard
	Tl	203	300.0	6.5	**0.0378**	0.003	8.4	ug/L	9	Standard
	Tl	205	321.7	21.6	**0.0433**	0.012	28.2	ug/L	0	Standard
	Pb	206	5087.9	2.5	**1.0767**	0.011	1.0	ug/L	216	Standard
	Pb	207	4144.6	1.8	**0.9603**	0.027	2.8	ug/L	180	Standard
	Pb	208	18065.6	1.4	**1.0314**	0.029	2.8	ug/L	717	Standard
	U	238	874.7	4.0	**0.1374**	0.011	7.8	ug/L	4	Standard
>	**Bi**	209	447824.2	3.4				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	22872.3	0.6	**22.6806**	0.473	2.1	mg/L	20	Standard
K	39	35.0	51.5	**-0.0329**	0.100	305.7	mg/L	22	Standard
Ca	43	48.3	31.6	**-4.9013**	2.699	55.1	mg/L	47	Standard
Fe	54	3361.7	4.8	**1.8885**	0.113	6.0	mg/L	151	Standard
Fe	57	1078.4	5.6	**1.8011**	0.173	9.6	mg/L	195	Standard
Sc-1	45	40464.0	1.9				mg/L	29647	Standard
Cl	35	177669.3	2.1				ug/L	154152	Standard
Kr	83	2.3	24.7				ug/L	3	Standard
Br	81	20991.2	6.6				ug/L	1607	Standard
P	31	55948.1	2.2				ug/L	22752	Standard
S	34	4435.6	2.7				ug/L	5049	Standard
Sr	88	156.7	18.7				ug/L	87	Standard
C	12	160.0	47.2				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	0	Standard
Dy	164	1259.3	5.9				mg/L	10	Standard
Ho-1	165	633.3	15.1				mg/L	7	Standard
Er	166	573.3	7.3				mg/L	3	Standard
I	127	221985.7	5.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		125.903	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.560	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.468
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.281
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ni 60 Upper, S, EEE	Ni	60	

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Method 6020 - Summary Report

Sample ID: L1606041104PS WG572085-03
Sample Date/Time: Thursday, June 16, 2016 22:17:20
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68479.5	2.8				ug/L	51024	Standard
	Be	9	53798.7	2.5	**47.6621**	0.433	0.9	ug/L	7	Standard
	Al	27	3774638.8	2.0	**19.7508**	0.180	0.9	ug/L	625	Standard
	Sc	45	41744.1	0.5				ug/L	29647	Standard
	Ti	47	8543.7	1.2	**27.1926**	0.351	1.3	ug/L	57	Standard
	V	51	416323.5	0.8	**56.1020**	0.898	1.6	ug/L	1142	Standard
	Cr	52	661415.5	1.7	**85.4827**	2.467	2.9	ug/L	6628	Standard
	Cr	53	82886.1	1.6	**85.2548**	2.351	2.8	ug/L	430	Standard
	Mn	55	455226.4	0.8	**73.5653**	0.461	0.6	ug/L	603	Standard
	Co	59	356626.6	0.3	**53.2845**	0.717	1.3	ug/L	237	Standard
	Ni	60	319608.9	1.5	**159.1819**	4.226	2.7	ug/L	141	Standard
	Cu	65	101931.1	1.4	**52.0544**	1.323	2.5	ug/L	109	Standard
	Zn	66	69708.7	0.9	**60.2129**	1.260	2.1	ug/L	159	Standard
>	**Ge**	72	493214.1	1.2				ug/L	474053	Standard
	As	75	57487.0	0.2	**49.9285**	0.540	1.1	ug/L	-34	Standard
	Se	82	5945.0	0.7	**51.5039**	0.559	1.1	ug/L	14	Standard
	Se-1	77	4052.2	2.0	**49.9708**	0.414	0.8	ug/L	55	Standard
>	**Ga**	71	4670.7	3.3				mg/L	50	Standard
	Rb	85	37354.3	0.9				ug/L	20	Standard
	Y	89	401490.0	0.7				ug/L	376602	Standard
>	**Rh**	103	51.7	24.4				ug/L	17	Standard
	Mo	98	7837.2	0.6	**3.1623**	0.111	3.5	ug/L	8	Standard
	Ag	107	304891.6	0.9	**48.7677**	0.989	2.0	ug/L	81	Standard
	Cd	111	99959.3	1.1	**49.1537**	1.231	2.5	mg/L	3	Standard
	Cd	114	244744.0	1.6	**48.6729**	0.677	1.4	ug/L	7	Standard
>	**In**	115	549981.7	2.9				ug/L	524722	Standard
	Sn	118	1156.7	4.0	**0.1154**	0.002	1.9	ug/L	715	Standard
	Sb	123	225529.7	0.1	**49.2752**	1.450	2.9	ug/L	201	Standard
	Ba	135	235280.0	1.6	**123.8168**	1.916	1.5	ug/L	108	Standard
	Ce	140	72287.1	1.8				ug/L	30	Standard
>	**Tb**	159	836927.2	1.6				ug/L	792236	Standard
	Ho	165	618.3	2.8				ug/L	7	Standard
	Tl	203	374508.5	1.3	**47.9478**	0.598	1.2	ug/L	9	Standard
	Tl	205	331693.7	1.7	**49.9323**	0.614	1.2	ug/L	0	Standard
	Pb	206	246855.7	0.5	**52.2356**	0.118	0.2	ug/L	216	Standard
	Pb	207	213815.1	0.2	**49.6985**	0.193	0.4	ug/L	180	Standard
	Pb	208	877795.6	1.2	**50.2714**	0.366	0.7	ug/L	717	Standard
	U	238	322334.9	1.2	**50.7465**	0.349	0.7	ug/L	4	Standard
>	**Bi**	209	470679.1	0.5				ug/L	460343	Standard

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Na	23	3.3	173.2	**2.6916**	13.442	499.4	mg/L	0	Standard
Mg	24	22820.5	2.3	**21.9277**	0.463	2.1	mg/L	20	Standard
K	39	55.0	32.8	**0.0700**	0.098	140.3	mg/L	22	Standard
Ca	43	53.3	28.6	**-4.3313**	2.572	59.4	mg/L	47	Standard
Fe	54	3487.5	4.4	**1.8989**	0.090	4.7	mg/L	151	Standard
Fe	57	1048.4	8.2	**1.6588**	0.199	12.0	mg/L	195	Standard
> **Sc-1**	45	41744.1	0.5				mg/L	29647	Standard
Cl	35	171137.1	0.1				ug/L	154152	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	19926.4	2.2				ug/L	1607	Standard
P	31	55093.4	2.6				ug/L	22752	Standard
S	34	4375.6	3.4				ug/L	5049	Standard
Sr	88	146.7	22.7				ug/L	87	Standard
C	12	130.0	35.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	69.3				mg/L	0	Standard
Dy	164	1135.3	6.0				mg/L	10	Standard
Ho-1	165	618.3	2.8				mg/L	7	Standard
Er	166	516.7	11.3				mg/L	3	Standard
I	127	228888.4	2.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		134.210	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.042	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.814
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.245
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ni 60 Upper, S, EEE	Ni	60	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606041104SDL WG572085-04
Sample Date/Time: Thursday, June 16, 2016 22:20:32
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64080.3	2.7				ug/L	51024	Standard
	Be	9	40.0	12.5	**0.0168**	0.005	27.3	ug/L	7	Standard
	Al	27	710132.3	2.2	**3.9635**	0.097	2.4	ug/L	625	Standard
	Sc	45	34213.6	1.2				ug/L	29647	Standard
	Ti	47	1665.1	3.3	**5.5149**	0.188	3.4	ug/L	57	Standard
	V	51	8406.9	2.7	**1.0425**	0.044	4.3	ug/L	1142	Standard
	Cr	52	60396.1	0.7	**7.4773**	0.032	0.4	ug/L	6628	Standard
	Cr	53	7433.5	0.9	**7.7546**	0.056	0.7	ug/L	430	Standard
	Mn	55	26233.4	1.3	**4.3983**	0.064	1.4	ug/L	603	Standard
	Co	59	3790.1	2.7	**0.5627**	0.022	4.0	ug/L	237	Standard
	Ni	60	42759.9	1.8	**22.6189**	0.287	1.3	ug/L	141	Standard
	Cu	65	1312.1	2.0	**0.6485**	0.012	1.8	ug/L	109	Standard
	Zn	66	4020.5	0.7	**3.4822**	0.054	1.5	ug/L	159	Standard
>	**Ge**	72	462909.1	1.0				ug/L	474053	Standard
	As	75	127.1	1.3	**0.1426**	0.002	1.2	ug/L	-34	Standard
	Se	82	76.1	4.5	**0.5359**	0.031	5.8	ug/L	14	Standard
	Se-1	77	88.7	7.5	**0.4371**	0.078	17.8	ug/L	55	Standard
>	**Ga**	71	933.4	4.3				mg/L	50	Standard
	Rb	85	7380.1	1.8				ug/L	20	Standard
	Y	89	399286.8	1.5				ug/L	376602	Standard
>	**Rh**	103	10.0	50.0				ug/L	17	Standard
	Mo	98	1500.2	2.7	**0.5970**	0.016	2.6	ug/L	8	Standard
	Ag	107	118.7	15.0	**0.0065**	0.003	41.2	ug/L	81	Standard
	Cd	111	28.9	34.9	**0.0109**	0.005	45.1	mg/L	3	Standard
	Cd	114	79.5	41.7	**0.0119**	0.007	55.5	ug/L	7	Standard
>	**In**	115	553072.6	0.8				ug/L	524722	Standard
	Sn	118	576.7	14.8	**0.0122**	0.016	129.0	ug/L	715	Standard
	Sb	123	2178.3	21.1	**0.4589**	0.103	22.5	ug/L	201	Standard
	Ba	135	28213.6	0.4	**14.7104**	0.164	1.1	ug/L	108	Standard
	Ce	140	14325.1	2.6				ug/L	30	Standard
>	**Tb**	159	808125.3	1.3				ug/L	792236	Standard
	Ho	165	128.3	18.0				ug/L	7	Standard
	Tl	203	157.0	14.8	**0.0183**	0.003	16.5	ug/L	9	Standard
	Tl	205	128.3	27.4	**0.0122**	0.005	43.6	ug/L	0	Standard
	Pb	206	1207.7	4.1	**0.2094**	0.008	3.9	ug/L	216	Standard
	Pb	207	969.0	2.2	**0.1805**	0.006	3.4	ug/L	180	Standard
	Pb	208	4243.2	2.0	**0.1949**	0.007	3.7	ug/L	717	Standard
	U	238	239.0	4.0	**0.0315**	0.002	6.6	ug/L	4	Standard
>	**Bi**	209	453005.7	1.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	4389.0	3.6	**5.1101**	0.132	2.6	mg/L	20	Standard
K	39	13.3	78.1	**-0.1402**	0.068	48.2	mg/L	22	Standard
Ca	43	36.7	43.8	**-5.7822**	3.171	54.8	mg/L	47	Standard
Fe	54	812.9	7.6	**0.4581**	0.050	11.0	mg/L	151	Standard
Fe	57	373.3	8.7	**0.3544**	0.083	23.5	mg/L	195	Standard
> **Sc-1**	45	34213.6	1.2				mg/L	29647	Standard
Cl	35	155114.0	1.0				ug/L	154152	Standard
Kr	83	1.3	114.6				ug/L	3	Standard
Br	81	5447.6	5.1				ug/L	1607	Standard
P	31	29535.4	3.0				ug/L	22752	Standard
S	34	4345.6	4.1				ug/L	5049	Standard
Sr	88	98.3	16.3				ug/L	87	Standard
C	12	66.7	69.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	223.5	3.8				mg/L	10	Standard
Ho-1	165	128.3	18.0				mg/L	7	Standard
Er	166	136.7	22.4				mg/L	3	Standard
I	127	47285.3	1.6				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		125.588	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.649	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	105.403	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.406	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606041104SDL WG572085-04
Sample Date/Time: Thursday, June 16, 2016 22:23:43
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60699.7	1.4				ug/L	51024	Standard
	Be	9	26.7	65.8	**0.0056**	0.018	312.0	ug/L	7	Standard
	Al	27	141309.4	1.9	**0.8247**	0.016	2.0	ug/L	625	Standard
	Sc	45	31491.0	2.2				ug/L	29647	Standard
	Ti	47	381.3	5.6	**1.1251**	0.055	4.9	ug/L	57	Standard
	V	51	2585.2	5.7	**0.2016**	0.028	14.1	ug/L	1142	Standard
	Cr	52	17170.4	0.5	**1.4445**	0.049	3.4	ug/L	6628	Standard
	Cr	53	1966.8	5.0	**1.7199**	0.140	8.1	ug/L	430	Standard
	Mn	55	5874.1	1.6	**0.8794**	0.018	2.1	ug/L	603	Standard
	Co	59	918.7	1.3	**0.1040**	0.001	1.4	ug/L	237	Standard
	Ni	60	8671.8	1.0	**4.4921**	0.067	1.5	ug/L	141	Standard
	Cu	65	375.3	1.5	**0.1368**	0.002	1.4	ug/L	109	Standard
	Zn	66	1553.7	2.6	**1.1927**	0.020	1.7	ug/L	159	Standard
>	**Ge**	72	466371.9	2.3				ug/L	474053	Standard
	As	75	-6.1	252.7	**0.0197**	0.014	72.2	ug/L	-34	Standard
	Se	82	31.9	14.9	**0.1250**	0.051	40.6	ug/L	14	Standard
	Se-1	77	67.3	8.6	**0.1479**	0.098	66.2	ug/L	55	Standard
>	**Ga**	71	236.7	12.4				mg/L	50	Standard
	Rb	85	1530.1	6.8				ug/L	20	Standard
	Y	89	398351.9	2.2				ug/L	376602	Standard
>	**Rh**	103	20.0	90.1				ug/L	17	Standard
	Mo	98	309.3	4.7	**0.1235**	0.007	5.8	ug/L	8	Standard
	Ag	107	82.7	3.5	**0.0013**	0.000	30.9	ug/L	81	Standard
	Cd	111	8.8	17.3	**0.0012**	0.001	68.5	mg/L	3	Standard
	Cd	114	33.8	15.5	**0.0031**	0.001	31.5	ug/L	7	Standard
>	**In**	115	532767.1	1.5				ug/L	524722	Standard
	Sn	118	478.3	5.3	**-0.0020**	0.004	179.1	ug/L	715	Standard
	Sb	123	535.3	25.6	**0.1062**	0.033	30.9	ug/L	201	Standard
	Ba	135	5770.1	0.9	**3.0781**	0.059	1.9	ug/L	108	Standard
	Ce	140	2811.9	5.2				ug/L	30	Standard
>	**Tb**	159	784308.2	0.8				ug/L	792236	Standard
	Ho	165	41.7	18.3				ug/L	7	Standard
	Tl	203	52.7	23.4	**0.0046**	0.002	36.5	ug/L	9	Standard
	Tl	205	35.0	14.3	**-0.0022**	0.001	34.5	ug/L	0	Standard
	Pb	206	411.7	5.6	**0.0360**	0.005	12.9	ug/L	216	Standard
	Pb	207	350.0	3.5	**0.0324**	0.003	8.3	ug/L	180	Standard
	Pb	208	1486.7	0.5	**0.0323**	0.001	2.8	ug/L	717	Standard
	U	238	58.7	16.8	**0.0022**	0.002	75.4	ug/L	4	Standard
>	**Bi**	209	444600.9	0.5				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.3313**	8.870	166.4	mg/L	0	Standard
Mg	24	840.0	10.8	**1.0281**	0.127	12.3	mg/L	20	Standard
K	39	15.0	88.2	**-0.1198**	0.096	80.2	mg/L	22	Standard
Ca	43	18.3	83.3	**-9.1765**	3.343	36.4	mg/L	47	Standard
Fe	54	272.4	14.1	**0.0939**	0.032	34.1	mg/L	151	Standard
Fe	57	256.7	4.9	**0.1011**	0.032	31.4	mg/L	195	Standard
> **Sc-1**	45	31491.0	2.2				mg/L	29647	Standard
Cl	35	151247.9	1.3				ug/L	154152	Standard
Kr	83	3.3	69.3				ug/L	3	Standard
Br	81	2453.5	11.0				ug/L	1607	Standard
P	31	23077.6	3.5				ug/L	22752	Standard
S	34	4429.0	4.8				ug/L	5049	Standard
Sr	88	73.3	21.9				ug/L	87	Standard
C	12	63.3	24.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	47.6	24.3				mg/L	10	Standard
Ho-1	165	41.7	18.3				mg/L	7	Standard
Er	166	50.0	91.7				mg/L	3	Standard
I	127	10970.6	2.1				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		118.963	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.380	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.533	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.580	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 22:26:56
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59001.4	3.1				ug/L	51024	Standard
	Be	9	47251.9	1.9	**48.5958**	0.632	1.3	ug/L	7	Standard
	Al	27	7707900.4	0.6	**46.8442**	1.367	2.9	ug/L	625	Standard
	Sc	45	32042.2	2.5				ug/L	29647	Standard
	Ti	47	31108.6	0.8	**106.3533**	1.301	1.2	ug/L	57	Standard
	V	51	354930.5	0.4	**51.1260**	0.515	1.0	ug/L	1142	Standard
	Cr	52	373996.6	0.2	**51.3100**	0.429	0.8	ug/L	6628	Standard
	Cr	53	46528.0	1.9	**50.9890**	0.660	1.3	ug/L	430	Standard
	Mn	55	313560.0	0.4	**54.1496**	0.181	0.3	ug/L	603	Standard
	Co	59	324218.3	1.5	**51.7917**	0.391	0.8	ug/L	237	Standard
	Ni	60	95070.0	1.4	**50.5665**	0.352	0.7	ug/L	141	Standard
	Cu	65	93181.7	1.5	**50.8709**	0.430	0.8	ug/L	109	Standard
	Zn	66	54868.9	1.6	**50.6327**	0.507	1.0	ug/L	159	Standard
>	Ge	72	461242.2	0.7				ug/L	474053	Standard
	As	75	53786.6	0.6	**49.9506**	0.524	1.0	ug/L	-34	Standard
	Se	82	5398.5	1.3	**50.0080**	1.035	2.1	ug/L	14	Standard
	Se-1	77	3763.8	1.7	**49.6296**	0.770	1.6	ug/L	55	Standard
>	Ga	71	83.3	29.6				mg/L	50	Standard
	Rb	85	758.4	8.6				ug/L	20	Standard
	Y	89	392635.2	3.0				ug/L	376602	Standard
>	Rh	103	40.0	45.1				ug/L	17	Standard
	Mo	98	239363.5	0.3	**97.9544**	0.320	0.3	ug/L	8	Standard
	Ag	107	297613.5	1.2	**48.2150**	0.880	1.8	ug/L	81	Standard
	Cd	111	96257.9	0.7	**47.9363**	0.352	0.7	mg/L	3	Standard
	Cd	114	237569.3	0.8	**47.8568**	0.430	0.9	ug/L	7	Standard
>	In	115	542829.4	0.6				ug/L	524722	Standard
	Sn	118	271504.8	1.8	**48.6303**	0.573	1.2	ug/L	715	Standard
	Sb	123	221602.7	1.2	**49.0302**	0.874	1.8	ug/L	201	Standard
	Ba	135	89759.4	0.9	**47.8096**	0.296	0.6	ug/L	108	Standard
	Ce	140	83.3	15.1				ug/L	30	Standard
>	Tb	159	805068.8	1.3				ug/L	792236	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	366179.1	0.5	**49.0753**	0.770	1.6	ug/L	9	Standard
	Tl	205	320780.3	0.9	**50.5527**	0.981	1.9	ug/L	0	Standard
	Pb	206	226792.4	0.6	**50.2313**	0.545	1.1	ug/L	216	Standard
	Pb	207	206205.4	0.5	**50.1728**	0.804	1.6	ug/L	180	Standard
	Pb	208	828355.0	0.6	**49.6609**	0.844	1.7	ug/L	717	Standard
	U	238	311232.5	0.6	**51.2945**	0.952	1.9	ug/L	4	Standard
>	Bi	209	449694.2	1.3				ug/L	460343	Standard

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Na	23	3.3	173.2	**0.2298**	17.706	7704.3	mg/L	0	Standard
Mg	24	4013.9	1.6	**4.9932**	0.201	4.0	mg/L	20	Standard
K	39	691.7	2.2	**4.6523**	0.139	3.0	mg/L	22	Standard
Ca	43	66.7	18.9	**1.1897**	2.387	200.6	mg/L	47	Standard
Fe	54	5963.7	3.1	**4.3749**	0.232	5.3	mg/L	151	Standard
Fe	57	1775.1	6.5	**4.4411**	0.377	8.5	mg/L	195	Standard
> **Sc-1**	45	32042.2	2.5				mg/L	29647	Standard
Cl	35	154194.0	0.8				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	1553.4	2.0				ug/L	1607	Standard
P	31	22800.5	1.3				ug/L	22752	Standard
S	34	4925.8	3.9				ug/L	5049	Standard
Sr	88	71.7	8.1				ug/L	87	Standard
C	12	50.0	40.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.7	108.3				mg/L	10	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	3	Standard
I	127	1866.8	9.9				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	97.192		
	Al	27	93.688		
	Sc	45			
	Ti	47	106.353		
	V	51	102.252		
	Cr	52	102.620		
	Cr	53			
	Mn	55	108.299		
	Co	59	103.583		
	Ni	60	101.133		
	Cu	65	101.742		
	Zn	66	101.265		
>	Ge	72		97.298	
	As	75	99.901		
	Se	82	100.016		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	97.954		
Ag	107	96.430		
Cd	111	95.873		
Cd	114			
> In	115			103.451
Sn	118	97.261		
Sb	123	98.060		
Ba	135	95.619		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.151		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.322		
U	238	102.589		
> Bi	209			97.687
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 22:30:07
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57406.9	2.2				ug/L	51024	Standard
	Be	9	13.3	86.6	**-0.0071**	0.012	172.1	ug/L	7	Standard
	Al	27	1425.1	26.0	**-0.0009**	0.002	242.5	ug/L	625	Standard
	Sc	45	31355.8	2.5				ug/L	29647	Standard
	Ti	47	24.7	20.0	**-0.0813**	0.017	20.7	ug/L	57	Standard
	V	51	1120.2	2.3	**-0.0061**	0.006	100.1	ug/L	1142	Standard
	Cr	52	6392.0	0.4	**-0.0333**	0.015	44.8	ug/L	6628	Standard
	Cr	53	548.3	18.8	**0.1770**	0.124	70.1	ug/L	430	Standard
	Mn	55	724.0	4.6	**-0.0007**	0.008	1032.9	ug/L	603	Standard
	Co	59	242.7	2.3	**-0.0024**	0.000	19.9	ug/L	237	Standard
	Ni	60	130.3	12.7	**-0.0081**	0.010	124.4	ug/L	141	Standard
	Cu	65	128.7	7.9	**0.0044**	0.007	154.7	ug/L	109	Standard
	Zn	66	153.3	8.3	**-0.0894**	0.013	14.8	ug/L	159	Standard
>	**Ge**	72	460344.2	1.9				ug/L	474053	Standard
	As	75	-26.8	68.7	**0.0000**	0.017	51664.1	ug/L	-34	Standard
	Se	82	13.1	41.0	**-0.0473**	0.049	102.7	ug/L	14	Standard
	Se-1	77	56.7	10.8	**0.0148**	0.078	525.1	ug/L	55	Standard
>	**Ga**	71	50.0	36.1				mg/L	50	Standard
	Rb	85	33.3	8.7				ug/L	20	Standard
	Y	89	391660.9	0.1				ug/L	376602	Standard
>	**Rh**	103	21.7	58.1				ug/L	17	Standard
	Mo	98	296.5	33.7	**0.1177**	0.040	33.6	ug/L	8	Standard
	Ag	107	114.3	9.9	**0.0065**	0.002	24.1	ug/L	81	Standard
	Cd	111	13.8	22.3	**0.0038**	0.001	39.2	mg/L	3	Standard
	Cd	114	58.6	51.2	**0.0082**	0.006	72.9	ug/L	7	Standard
>	**In**	115	532413.4	1.7				ug/L	524722	Standard
	Sn	118	798.4	13.3	**0.0568**	0.021	36.2	ug/L	715	Standard
	Sb	123	522.7	25.9	**0.1035**	0.032	31.2	ug/L	201	Standard
	Ba	135	112.0	12.3	**0.0031**	0.006	206.8	ug/L	108	Standard
	Ce	140	18.3	63.0				ug/L	30	Standard
>	**Tb**	159	782152.3	0.6				ug/L	792236	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	55.3	28.1	**0.0050**	0.002	40.9	ug/L	9	Standard
	Tl	205	48.3	6.0	**-0.0000**	0.000	944.3	ug/L	0	Standard
	Pb	206	239.7	3.4	**-0.0020**	0.002	107.0	ug/L	216	Standard
	Pb	207	204.0	6.9	**-0.0031**	0.003	92.9	ug/L	180	Standard
	Pb	208	866.0	6.6	**-0.0048**	0.003	59.0	ug/L	717	Standard
	U	238	38.3	34.4	**-0.0011**	0.002	189.9	ug/L	4	Standard
>	**Bi**	209	440050.2	1.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	41.7	6.9	**0.0082**	0.003	39.8	mg/L	20	Standard
K	39	13.3	21.7	**-0.1321**	0.019	14.2	mg/L	22	Standard
Ca	43	21.7	53.3	**-8.4223**	2.469	29.3	mg/L	47	Standard
Fe	54	134.4	12.8	**-0.0117**	0.012	103.5	mg/L	151	Standard
Fe	57	178.3	16.9	**-0.1234**	0.101	82.1	mg/L	195	Standard
Sc-1	45	31355.8	2.5				mg/L	29647	Standard
Cl	35	154796.2	1.9				ug/L	154152	Standard
Kr	83	1.3	86.6				ug/L	3	Standard
Br	81	1420.1	12.0				ug/L	1607	Standard
P	31	23807.0	1.6				ug/L	22752	Standard
S	34	4767.4	2.9				ug/L	5049	Standard
Sr	88	76.7	22.9				ug/L	87	Standard
C	12	50.0	60.0				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	6.5	179.6				mg/L	10	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	1236.7	11.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.108	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.466	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	95.592	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW 41 WG571834-02
Sample Date/Time: Thursday, June 16, 2016 22:33:20
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57729.8	2.4				ug/L	51024	Standard
	Be	9	15.0	66.7	**-0.0052**	0.011	207.3	ug/L	7	Standard
	Al	27	10453.6	1.9	**0.0552**	0.003	5.0	ug/L	625	Standard
	Sc	45	33299.9	2.5				ug/L	29647	Standard
	Ti	47	35.7	25.1	**-0.0492**	0.028	57.5	ug/L	57	Standard
	V	51	1262.4	5.5	**0.0063**	0.008	133.6	ug/L	1142	Standard
	Cr	52	7466.2	1.6	**0.0706**	0.026	36.2	ug/L	6628	Standard
	Cr	53	643.3	12.9	**0.2497**	0.092	36.8	ug/L	430	Standard
	Mn	55	1616.1	2.8	**0.1414**	0.004	2.6	ug/L	603	Standard
	Co	59	253.0	6.6	**-0.0025**	0.002	79.5	ug/L	237	Standard
	Ni	60	378.3	5.2	**0.1151**	0.008	6.8	ug/L	141	Standard
	Cu	65	209.0	6.0	**0.0433**	0.007	15.3	ug/L	109	Standard
	Zn	66	1638.4	1.5	**1.2227**	0.044	3.6	ug/L	159	Standard
>	**Ge**	72	481770.3	1.5				ug/L	474053	Standard
	As	75	-7.3	61.8	**0.0186**	0.004	21.3	ug/L	-34	Standard
	Se	82	21.7	38.5	**0.0252**	0.078	309.4	ug/L	14	Standard
	Se-1	77	49.7	10.3	**-0.1081**	0.069	63.9	ug/L	55	Standard
>	**Ga**	71	81.7	19.7				mg/L	50	Standard
	Rb	85	50.0	17.3				ug/L	20	Standard
	Y	89	391456.0	1.0				ug/L	376602	Standard
>	**Rh**	103	15.0	33.3				ug/L	17	Standard
	Mo	98	98.4	20.8	**0.0355**	0.009	26.7	ug/L	8	Standard
	Ag	107	94.7	3.7	**0.0032**	0.001	16.1	ug/L	81	Standard
	Cd	111	15.5	31.8	**0.0046**	0.003	57.0	mg/L	3	Standard
	Cd	114	31.0	41.6	**0.0025**	0.003	104.4	ug/L	7	Standard
>	**In**	115	534892.9	2.4				ug/L	524722	Standard
	Sn	118	895.0	10.2	**0.0734**	0.014	18.9	ug/L	715	Standard
	Sb	123	243.3	24.4	**0.0397**	0.012	30.7	ug/L	201	Standard
	Ba	135	132.3	7.6	**0.0140**	0.006	42.8	ug/L	108	Standard
	Ce	140	126.7	2.3				ug/L	30	Standard
>	**Tb**	159	808648.5	2.5				ug/L	792236	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	39.3	24.7	**0.0026**	0.001	49.6	ug/L	9	Standard
	Tl	205	40.0	50.0	**-0.0017**	0.003	183.3	ug/L	0	Standard
	Pb	206	250.7	8.4	**-0.0022**	0.005	210.3	ug/L	216	Standard
	Pb	207	220.7	4.6	**-0.0015**	0.003	191.8	ug/L	180	Standard
	Pb	208	931.3	4.0	**-0.0035**	0.003	80.4	ug/L	717	Standard
	U	238	32.0	46.7	**-0.0024**	0.002	99.2	ug/L	4	Standard
>	**Bi**	209	461825.2	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	43.3	46.6	**0.0073**	0.026	347.9	mg/L	20	Standard
K	39	21.7	35.3	**-0.0805**	0.053	65.7	mg/L	22	Standard
Ca	43	33.3	31.2	**-6.2262**	2.322	37.3	mg/L	47	Standard
Fe	54	132.8	30.7	**-0.0183**	0.032	174.0	mg/L	151	Standard
Fe	57	186.7	24.3	**-0.1330**	0.122	92.1	mg/L	195	Standard
Sc-1	45	33299.9	2.5				mg/L	29647	Standard
Cl	35	150658.7	1.1				ug/L	154152	Standard
Kr	83	2.3	24.7				ug/L	3	Standard
Br	81	2026.8	3.8				ug/L	1607	Standard
P	31	21810.7	2.4				ug/L	22752	Standard
S	34	4620.7	1.9				ug/L	5049	Standard
Sr	88	70.0	14.3				ug/L	87	Standard
C	12	86.7	40.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.2	111.3				mg/L	10	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	3	Standard
I	127	2880.3	5.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.142	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.628	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.938
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.322
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: LCSW 41 WG571834-03
Sample Date/Time: Thursday, June 16, 2016 22:36:32
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58134.7	1.4				ug/L	51024	Standard
	Be	9	47481.0	1.2	**49.5549**	1.040	2.1	ug/L	7	Standard
	Al	27	11848.2	29.8	**0.0633**	0.022	34.2	ug/L	625	Standard
	Sc	45	33760.9	2.8				ug/L	29647	Standard
	Ti	47	60.7	19.3	**0.0386**	0.038	99.0	ug/L	57	Standard
	V	51	364743.8	0.9	**51.7833**	1.598	3.1	ug/L	1142	Standard
	Cr	52	384565.8	0.9	**52.0063**	1.376	2.6	ug/L	6628	Standard
	Cr	53	46865.7	2.2	**50.6129**	1.593	3.1	ug/L	430	Standard
	Mn	55	323505.6	0.5	**55.0551**	1.092	2.0	ug/L	603	Standard
	Co	59	330925.6	0.6	**52.1042**	1.547	3.0	ug/L	237	Standard
	Ni	60	98420.3	0.4	**51.5920**	1.168	2.3	ug/L	141	Standard
	Cu	65	96735.2	0.8	**52.0474**	1.195	2.3	ug/L	109	Standard
	Zn	66	60428.3	1.1	**54.9708**	1.052	1.9	ug/L	159	Standard
>	**Ge**	72	468206.5	2.5				ug/L	474053	Standard
	As	75	53251.7	1.1	**48.7274**	0.650	1.3	ug/L	-34	Standard
	Se	82	5558.2	1.1	**50.7386**	1.287	2.5	ug/L	14	Standard
	Se-1	77	3779.1	1.8	**49.0879**	0.350	0.7	ug/L	55	Standard
>	**Ga**	71	95.0	5.3				mg/L	50	Standard
	Rb	85	148.3	20.6				ug/L	20	Standard
	Y	89	410210.7	3.1				ug/L	376602	Standard
>	**Rh**	103	26.7	28.6				ug/L	17	Standard
	Mo	98	76.7	14.4	**0.0250**	0.004	16.4	ug/L	8	Standard
	Ag	107	306600.5	0.9	**48.2949**	0.124	0.3	ug/L	81	Standard
	Cd	111	98706.0	0.5	**47.7973**	0.198	0.4	mg/L	3	Standard
	Cd	114	240379.3	1.1	**47.0837**	0.284	0.6	ug/L	7	Standard
>	**In**	115	558260.1	0.9				ug/L	524722	Standard
	Sn	118	793.4	5.7	**0.0490**	0.008	17.0	ug/L	715	Standard
	Sb	123	217861.1	1.5	**46.8696**	0.887	1.9	ug/L	201	Standard
	Ba	135	91054.1	0.9	**47.1604**	0.551	1.2	ug/L	108	Standard
	Ce	140	330.0	6.6				ug/L	30	Standard
>	**Tb**	159	829912.3	0.8				ug/L	792236	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	372803.8	0.5	**48.2082**	0.596	1.2	ug/L	9	Standard
	Tl	205	323995.9	0.8	**49.2672**	0.912	1.9	ug/L	0	Standard
	Pb	206	236745.0	0.6	**50.5944**	0.255	0.5	ug/L	216	Standard
	Pb	207	206177.7	0.9	**48.4046**	0.929	1.9	ug/L	180	Standard
	Pb	208	859668.8	0.2	**49.7270**	0.479	1.0	ug/L	717	Standard
	U	238	310255.0	0.3	**49.3362**	0.627	1.3	ug/L	4	Standard
>	**Bi**	209	466041.0	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	161.7	12.9	**0.1477**	0.029	19.8	mg/L	20	Standard
K	39	16.7	17.3	**-0.1160**	0.022	19.3	mg/L	22	Standard
Ca	43	33.3	31.2	**-6.3847**	1.928	30.2	mg/L	47	Standard
Fe	54	164.9	14.3	**0.0027**	0.015	570.4	mg/L	151	Standard
Fe	57	196.7	21.3	**-0.1103**	0.128	116.3	mg/L	195	Standard
Sc-1	45	33760.9	2.8				mg/L	29647	Standard
Cl	35	149762.7	1.8				ug/L	154152	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	1560.1	10.1				ug/L	1607	Standard
P	31	22984.1	3.6				ug/L	22752	Standard
S	34	4315.6	2.6				ug/L	5049	Standard
Sr	88	53.3	28.6				ug/L	87	Standard
C	12	83.3	18.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	5.9	86.7				mg/L	10	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	16.7	91.7				mg/L	3	Standard
I	127	1323.4	9.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		113.936	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.767	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.392
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.238
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606033702 WG571834-01
Sample Date/Time: Thursday, June 16, 2016 22:39:43
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64441.8	2.3				ug/L	51024	Standard
	Be	9	20.0	25.0	**-0.0022**	0.005	232.0	ug/L	7	Standard
	Al	27	60114.2	4.5	**0.3246**	0.014	4.3	ug/L	625	Standard
	Sc	45	31512.8	4.2				ug/L	29647	Standard
	Ti	47	128.0	6.2	**0.2921**	0.031	10.5	ug/L	57	Standard
	V	51	53503.8	0.8	**7.9103**	0.048	0.6	ug/L	1142	Standard
	Cr	52	15505.3	1.8	**1.3346**	0.030	2.3	ug/L	6628	Standard
	Cr	53	2881.9	1.2	**2.8964**	0.027	0.9	ug/L	430	Standard
	Mn	55	1707.4	4.0	**0.1824**	0.014	7.5	ug/L	603	Standard
	Co	59	1839.8	1.0	**0.2661**	0.003	1.0	ug/L	237	Standard
	Ni	60	5162.5	5.3	**2.7953**	0.140	5.0	ug/L	141	Standard
	Cu	65	169344.1	2.3	**96.6524**	1.757	1.8	ug/L	109	Standard
	Zn	66	2344.5	2.7	**2.0388**	0.050	2.4	ug/L	159	Standard
>	**Ge**	72	441453.2	0.5				ug/L	474053	Standard
	As	75	1218.2	9.1	**1.2061**	0.101	8.4	ug/L	-34	Standard
	Se	82	116.0	12.5	**0.9573**	0.138	14.4	ug/L	14	Standard
	Se-1	77	201.7	7.0	**2.0760**	0.211	10.2	ug/L	55	Standard
>	**Ga**	71	926.7	11.5				mg/L	50	Standard
	Rb	85	12571.9	3.7				ug/L	20	Standard
	Y	89	399117.1	1.0				ug/L	376602	Standard
>	**Rh**	103	173.3	1.7				ug/L	17	Standard
	Mo	98	29352.9	0.6	**12.3636**	0.369	3.0	ug/L	8	Standard
	Ag	107	149.7	54.9	**0.0129**	0.015	112.8	ug/L	81	Standard
	Cd	111	24.8	238.3	**0.0100**	0.031	310.7	mg/L	3	Standard
	Cd	114	161.6	48.9	**0.0300**	0.017	58.2	ug/L	7	Standard
>	**In**	115	527437.4	2.5				ug/L	524722	Standard
	Sn	118	1430.1	3.9	**0.1747**	0.010	5.4	ug/L	715	Standard
	Sb	123	2404.5	19.4	**0.5345**	0.118	22.0	ug/L	201	Standard
	Ba	135	29634.3	0.9	**16.2125**	0.353	2.2	ug/L	108	Standard
	Ce	140	185.0	4.7				ug/L	30	Standard
>	**Tb**	159	786743.9	2.6				ug/L	792236	Standard
	Ho	165	16.7	105.4				ug/L	7	Standard
	Tl	203	226.3	39.8	**0.0295**	0.013	45.5	ug/L	9	Standard
	Tl	205	155.0	25.2	**0.0180**	0.007	37.6	ug/L	0	Standard
	Pb	206	685.3	11.7	**0.1039**	0.021	20.6	ug/L	216	Standard
	Pb	207	574.0	3.7	**0.0935**	0.008	8.7	ug/L	180	Standard
	Pb	208	2394.4	2.6	**0.0935**	0.004	4.7	ug/L	717	Standard
	U	238	81.3	17.9	**0.0066**	0.003	42.7	ug/L	4	Standard
>	**Bi**	209	426956.6	1.8				ug/L	460343	Standard

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Na	23	5.0	100.0	**-4.6650**	15.246	326.8	mg/L	0	Standard
Mg	24	23326.3	4.3	**29.7226**	1.184	4.0	mg/L	20	Standard
K	39	571.7	12.7	**3.8838**	0.629	16.2	mg/L	22	Standard
Ca	43	926.7	6.8	**191.1093**	22.294	11.7	mg/L	47	Standard
Fe	54	142.0	8.4	**-0.0064**	0.005	79.6	mg/L	151	Standard
Fe	57	988.4	6.7	**2.2303**	0.090	4.0	mg/L	195	Standard
> **Sc-1**	45	31512.8	4.2				mg/L	29647	Standard
Cl	35	486390.1	1.5				ug/L	154152	Standard
Kr	83	3.0	33.3				ug/L	3	Standard
Br	81	9422.9	2.9				ug/L	1607	Standard
P	31	23089.2	1.2				ug/L	22752	Standard
S	34	5072.5	3.6				ug/L	5049	Standard
Sr	88	663.3	3.8				ug/L	87	Standard
C	12	73.3	41.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	0	Standard
Dy	164	22.4	24.2				mg/L	10	Standard
Ho-1	165	16.7	105.4				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	3	Standard
I	127	47469.3	4.2				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		126.297	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		93.123	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.518
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.748
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606033702S WG571834-04
Sample Date/Time: Thursday, June 16, 2016 22:42:54
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68019.0	1.4				ug/L	51024	Standard
	Be	9	52452.3	2.6	**46.7932**	1.722	3.7	ug/L	7	Standard
	Al	27	59786.1	1.3	**0.3053**	0.006	2.1	ug/L	625	Standard
	Sc	45	30205.1	3.4				ug/L	29647	Standard
	Ti	47	100.0	14.5	**0.1859**	0.054	29.0	ug/L	57	Standard
	V	51	400824.3	1.2	**59.3044**	1.295	2.2	ug/L	1142	Standard
	Cr	52	361100.0	0.4	**50.8503**	0.412	0.8	ug/L	6628	Standard
	Cr	53	45675.4	2.3	**51.3868**	0.642	1.2	ug/L	430	Standard
	Mn	55	307080.3	1.9	**54.4520**	1.620	3.0	ug/L	603	Standard
	Co	59	323604.2	1.1	**53.0793**	1.177	2.2	ug/L	237	Standard
	Ni	60	93445.6	0.1	**51.0299**	0.526	1.0	ug/L	141	Standard
	Cu	65	247263.6	0.1	**138.7095**	1.722	1.2	ug/L	109	Standard
	Zn	66	54519.2	0.7	**51.6612**	0.952	1.8	ug/L	159	Standard
>	**Ge**	72	449299.9	1.1				ug/L	474053	Standard
	As	75	56719.6	0.9	**54.0778**	1.049	1.9	ug/L	-34	Standard
	Se	82	5785.5	2.0	**55.0413**	1.675	3.0	ug/L	14	Standard
	Se-1	77	3927.8	1.2	**53.2304**	1.135	2.1	ug/L	55	Standard
>	**Ga**	71	895.0	4.4				mg/L	50	Standard
	Rb	85	12290.0	5.9				ug/L	20	Standard
	Y	89	386361.5	1.5				ug/L	376602	Standard
>	**Rh**	103	176.7	6.5				ug/L	17	Standard
	Mo	98	28613.4	1.5	**12.4123**	0.434	3.5	ug/L	8	Standard
	Ag	107	279613.9	0.6	**48.0280**	1.230	2.6	ug/L	81	Standard
	Cd	111	93716.1	1.7	**49.4705**	0.238	0.5	mg/L	3	Standard
	Cd	114	229714.0	2.7	**49.0468**	0.741	1.5	ug/L	7	Standard
>	**In**	115	512129.2	2.1				ug/L	524722	Standard
	Sn	118	1266.7	5.0	**0.1514**	0.007	4.6	ug/L	715	Standard
	Sb	123	219270.1	0.1	**51.4357**	1.142	2.2	ug/L	201	Standard
	Ba	135	113634.2	0.4	**64.1909**	1.164	1.8	ug/L	108	Standard
	Ce	140	183.3	35.2				ug/L	30	Standard
>	**Tb**	159	767306.4	2.1				ug/L	792236	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	352266.3	0.4	**50.2886**	0.147	0.3	ug/L	9	Standard
	Tl	205	319230.0	1.5	**53.5879**	0.832	1.6	ug/L	0	Standard
	Pb	206	230082.1	0.2	**54.2895**	0.055	0.1	ug/L	216	Standard
	Pb	207	199935.5	0.5	**51.8202**	0.151	0.3	ug/L	180	Standard
	Pb	208	828887.7	1.4	**52.9349**	0.572	1.1	ug/L	717	Standard
	U	238	314710.8	1.3	**55.2472**	0.560	1.0	ug/L	4	Standard
>	**Bi**	209	422116.6	0.3				ug/L	460343	Standard

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Na	23	8.3	34.6	**-16.4613**	9.729	59.1	mg/L	0	Standard
Mg	24	22338.1	2.7	**29.6923**	0.787	2.7	mg/L	20	Standard
K	39	545.0	6.6	**3.8545**	0.326	8.5	mg/L	22	Standard
Ca	43	843.4	10.1	**180.3649**	20.489	11.4	mg/L	47	Standard
Fe	54	148.7	22.1	**0.0032**	0.023	711.1	mg/L	151	Standard
Fe	57	781.7	6.7	**1.7339**	0.242	13.9	mg/L	195	Standard
> **Sc-1**	45	30205.1	3.4				mg/L	29647	Standard
Cl	35	476373.7	2.1				ug/L	154152	Standard
Kr	83	2.3	89.2				ug/L	3	Standard
Br	81	9679.8	3.3				ug/L	1607	Standard
P	31	23531.6	1.5				ug/L	22752	Standard
S	34	4985.8	2.7				ug/L	5049	Standard
Sr	88	643.3	5.9				ug/L	87	Standard
C	12	83.3	54.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	100.0				mg/L	0	Standard
Dy	164	9.7	103.3				mg/L	10	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	46467.9	3.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		133.308	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.778	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606033702S WG571834-04
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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.600
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	91.696
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: L1606033702SD WG571834-05
Sample Date/Time: Thursday, June 16, 2016 22:46:06
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69477.3	1.8				ug/L	51024	Standard
	Be	9	51502.4	2.4	**44.9684**	0.786	1.7	ug/L	7	Standard
	Al	27	70351.3	0.6	**0.3532**	0.005	1.3	ug/L	625	Standard
	Sc	45	29879.4	2.7				ug/L	29647	Standard
	Ti	47	116.3	8.0	**0.2444**	0.037	15.0	ug/L	57	Standard
	V	51	388223.7	1.2	**57.5908**	0.764	1.3	ug/L	1142	Standard
	Cr	52	347952.9	2.2	**49.1031**	1.033	2.1	ug/L	6628	Standard
	Cr	53	43768.2	2.9	**49.3632**	1.152	2.3	ug/L	430	Standard
	Mn	55	286009.9	1.4	**50.8380**	0.394	0.8	ug/L	603	Standard
	Co	59	307889.4	1.2	**50.6347**	0.555	1.1	ug/L	237	Standard
	Ni	60	89481.8	1.5	**48.9952**	0.439	0.9	ug/L	141	Standard
	Cu	65	241814.9	1.2	**136.0209**	1.038	0.8	ug/L	109	Standard
	Zn	66	51913.8	0.8	**49.3151**	0.405	0.8	ug/L	159	Standard
>	**Ge**	72	448036.8	0.9				ug/L	474053	Standard
	As	75	54590.9	0.7	**52.1892**	0.176	0.3	ug/L	-34	Standard
	Se	82	5464.5	2.1	**52.1104**	0.678	1.3	ug/L	14	Standard
	Se-1	77	3736.5	2.4	**50.7332**	0.775	1.5	ug/L	55	Standard
>	**Ga**	71	880.0	7.8				mg/L	50	Standard
	Rb	85	11956.4	0.5				ug/L	20	Standard
	Y	89	354548.8	0.8				ug/L	376602	Standard
>	**Rh**	103	176.7	9.9				ug/L	17	Standard
	Mo	98	28019.9	1.2	**12.5852**	0.199	1.6	ug/L	8	Standard
	Ag	107	268450.3	0.3	**47.7483**	0.458	1.0	ug/L	81	Standard
	Cd	111	88694.5	1.0	**48.4950**	0.379	0.8	mg/L	3	Standard
	Cd	114	219923.4	1.6	**48.6380**	0.413	0.8	ug/L	7	Standard
>	**In**	115	494421.9	1.1				ug/L	524722	Standard
	Sn	118	1316.7	9.7	**0.1699**	0.024	14.2	ug/L	715	Standard
	Sb	123	211754.6	0.6	**51.4377**	0.300	0.6	ug/L	201	Standard
	Ba	135	110652.9	0.5	**64.7326**	0.425	0.7	ug/L	108	Standard
	Ce	140	260.0	20.0				ug/L	30	Standard
>	**Tb**	159	762292.0	2.0				ug/L	792236	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	342694.3	1.4	**48.0097**	0.052	0.1	ug/L	9	Standard
	Tl	205	304091.9	1.8	**50.0920**	0.270	0.5	ug/L	0	Standard
	Pb	206	222070.0	1.1	**51.4209**	0.338	0.7	ug/L	216	Standard
	Pb	207	193776.6	0.8	**49.2893**	0.546	1.1	ug/L	180	Standard
	Pb	208	789689.1	0.4	**49.4955**	0.776	1.6	ug/L	717	Standard
	U	238	302421.4	0.6	**52.1051**	0.540	1.0	ug/L	4	Standard
>	**Bi**	209	430141.1	1.5				ug/L	460343	Standard

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Na	23	11.7	24.7	**-27.5524**	10.035	36.4	mg/L	0	Standard
Mg	24	22465.0	1.9	**30.1800**	0.330	1.1	mg/L	20	Standard
K	39	500.0	5.0	**3.5529**	0.109	3.1	mg/L	22	Standard
Ca	43	825.0	4.8	**178.0126**	5.766	3.2	mg/L	47	Standard
Fe	54	141.0	25.7	**-0.0008**	0.031	4097.7	mg/L	151	Standard
Fe	57	861.7	4.4	**2.0033**	0.182	9.1	mg/L	195	Standard
> **Sc-1**	45	29879.4	2.7				mg/L	29647	Standard
Cl	35	471095.3	0.9				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	9509.7	3.3				ug/L	1607	Standard
P	31	23573.3	1.7				ug/L	22752	Standard
S	34	4992.5	2.6				ug/L	5049	Standard
Sr	88	646.7	10.1				ug/L	87	Standard
C	12	96.7	31.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	41.7				mg/L	0	Standard
Dy	164	15.7	76.3				mg/L	10	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	3	Standard
I	127	49629.6	4.5				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		136.166	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		94.512	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.226
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.439
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: L1606030301
Sample Date/Time: Thursday, June 16, 2016 22:49:17
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75542.9	1.1				ug/L	51024	Standard
	Be	9	35.0	14.3	**0.0070**	0.004	53.8	ug/L	7	Standard
	Al	27	29747316.4	1.2	**141.1560**	2.929	2.1	ug/L	625	Standard
	Sc	45	33087.8	1.2				ug/L	29647	Standard
	Ti	47	864.4	0.5	**2.9151**	0.077	2.6	ug/L	57	Standard
	V	51	2646.8	15.2	**0.2300**	0.062	27.0	ug/L	1142	Standard
	Cr	52	10730.1	1.6	**0.6326**	0.065	10.2	ug/L	6628	Standard
	Cr	53	13055.7	9.8	**14.6159**	1.842	12.6	ug/L	430	Standard
	Mn	55	149866.6	1.0	**26.8754**	0.469	1.7	ug/L	603	Standard
	Co	59	3157.0	1.2	**0.4841**	0.012	2.4	ug/L	237	Standard
	Ni	60	2562.6	1.9	**1.3439**	0.063	4.7	ug/L	141	Standard
	Cu	65	1783.1	4.8	**0.9478**	0.026	2.7	ug/L	109	Standard
	Zn	66	4720.1	0.9	**4.3229**	0.088	2.0	ug/L	159	Standard
>	**Ge**	72	443259.0	2.7				ug/L	474053	Standard
	As	75	1196.5	7.5	**1.1797**	0.057	4.8	ug/L	-34	Standard
	Se	82	433.0	3.3	**4.0226**	0.239	5.9	ug/L	14	Standard
	Se-1	77	945.4	12.5	**12.4569**	1.980	15.9	ug/L	55	Standard
>	**Ga**	71	90.0	14.7				mg/L	50	Standard
	Rb	85	8912.6	1.9				ug/L	20	Standard
	Y	89	372910.9	1.8				ug/L	376602	Standard
>	**Rh**	103	138.3	9.1				ug/L	17	Standard
	Mo	98	418.3	6.0	**0.1743**	0.012	6.8	ug/L	8	Standard
	Ag	107	142.7	27.1	**0.0119**	0.006	53.9	ug/L	81	Standard
	Cd	111	58.8	59.4	**0.0275**	0.018	65.5	mg/L	3	Standard
	Cd	114	163.0	53.7	**0.0306**	0.018	59.7	ug/L	7	Standard
>	**In**	115	516818.9	0.6				ug/L	524722	Standard
	Sn	118	633.3	5.7	**0.0299**	0.006	20.2	ug/L	715	Standard
	Sb	123	884.4	13.0	**0.1907**	0.026	13.4	ug/L	201	Standard
	Ba	135	210091.9	0.7	**117.6212**	0.688	0.6	ug/L	108	Standard
	Ce	140	548.3	4.6				ug/L	30	Standard
>	**Tb**	159	797833.7	0.3				ug/L	792236	Standard
	Ho	165	23.3	68.9				ug/L	7	Standard
	Tl	203	225.3	33.3	**0.0286**	0.011	36.9	ug/L	9	Standard
	Tl	205	156.7	26.6	**0.0177**	0.007	39.2	ug/L	0	Standard
	Pb	206	343.3	6.6	**0.0221**	0.005	23.5	ug/L	216	Standard
	Pb	207	295.0	6.1	**0.0203**	0.005	24.8	ug/L	180	Standard
	Pb	208	1172.7	3.5	**0.0147**	0.003	21.3	ug/L	717	Standard
	U	238	2550.2	1.4	**0.4258**	0.006	1.3	ug/L	4	Standard
>	**Bi**	209	436094.8	0.8				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.5341**	8.518	153.9	mg/L	0	Standard
Mg	24	135567.2	1.0	**164.6662**	3.386	2.1	mg/L	20	Standard
K	39	101.7	25.2	**0.4668**	0.178	38.1	mg/L	22	Standard
Ca	43	143.3	8.8	**16.8014**	2.330	13.9	mg/L	47	Standard
Fe	54	210.5	7.2	**0.0385**	0.013	33.1	mg/L	151	Standard
Fe	57	346.7	4.4	**0.3147**	0.041	13.0	mg/L	195	Standard
> **Sc-1**	45	33087.8	1.2				mg/L	29647	Standard
Cl	35	252380.3	1.6				ug/L	154152	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	100794.6	4.5				ug/L	1607	Standard
P	31	32519.9	1.3				ug/L	22752	Standard
S	34	4837.4	4.7				ug/L	5049	Standard
Sr	88	436.7	6.9				ug/L	87	Standard
C	12	223.3	5.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	28.7	92.1				mg/L	10	Standard
Ho-1	165	23.3	68.9				mg/L	7	Standard
Er	166	26.7	57.3				mg/L	3	Standard
I	127	617066.8	8.9				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		148.053	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		93.504	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.494
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.733
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606030302
Sample Date/Time: Thursday, June 16, 2016 22:52:29
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73040.7	1.9				ug/L	51024	Standard
	Be	9	40.0	45.1	**0.0120**	0.014	119.9	ug/L	7	Standard
	Al	27	29071018.9	1.5	**142.6695**	1.976	1.4	ug/L	625	Standard
	Sc	45	31137.0	3.2				ug/L	29647	Standard
	Ti	47	896.0	0.6	**3.1347**	0.013	0.4	ug/L	57	Standard
	V	51	2628.5	16.8	**0.2400**	0.066	27.6	ug/L	1142	Standard
	Cr	52	11569.4	2.8	**0.8104**	0.048	5.9	ug/L	6628	Standard
	Cr	53	14446.9	3.6	**16.7439**	0.524	3.1	ug/L	430	Standard
	Mn	55	152328.9	0.4	**28.2404**	0.204	0.7	ug/L	603	Standard
	Co	59	3172.7	3.4	**0.5045**	0.021	4.1	ug/L	237	Standard
	Ni	60	2824.9	2.2	**1.5411**	0.022	1.4	ug/L	141	Standard
	Cu	65	1634.1	4.2	**0.8948**	0.038	4.3	ug/L	109	Standard
	Zn	66	5209.6	4.4	**4.9636**	0.220	4.4	ug/L	159	Standard
>	**Ge**	72	428745.2	1.0				ug/L	474053	Standard
	As	75	1258.8	1.9	**1.2822**	0.036	2.8	ug/L	-34	Standard
	Se	82	439.1	3.6	**4.2227**	0.199	4.7	ug/L	14	Standard
	Se-1	77	1078.4	5.9	**14.7842**	0.963	6.5	ug/L	55	Standard
>	**Ga**	71	70.0	25.8				mg/L	50	Standard
	Rb	85	9496.3	1.9				ug/L	20	Standard
	Y	89	380626.7	0.4				ug/L	376602	Standard
>	**Rh**	103	98.3	11.7				ug/L	17	Standard
	Mo	98	479.8	3.7	**0.2023**	0.007	3.6	ug/L	8	Standard
	Ag	107	174.0	68.0	**0.0174**	0.020	114.9	ug/L	81	Standard
	Cd	111	83.1	60.8	**0.0404**	0.026	64.8	mg/L	3	Standard
	Cd	114	224.6	76.7	**0.0439**	0.036	82.5	ug/L	7	Standard
>	**In**	115	512708.3	1.5				ug/L	524722	Standard
	Sn	118	761.7	9.5	**0.0552**	0.012	21.8	ug/L	715	Standard
	Sb	123	807.2	10.7	**0.1743**	0.019	11.1	ug/L	201	Standard
	Ba	135	209488.0	1.0	**118.2448**	2.471	2.1	ug/L	108	Standard
	Ce	140	541.7	9.3				ug/L	30	Standard
>	**Tb**	159	775209.0	3.4				ug/L	792236	Standard
	Ho	165	25.0	20.0				ug/L	7	Standard
	Tl	203	254.0	67.1	**0.0340**	0.024	70.2	ug/L	9	Standard
	Tl	205	180.0	38.9	**0.0228**	0.011	49.8	ug/L	0	Standard
	Pb	206	477.0	17.2	**0.0581**	0.017	29.8	ug/L	216	Standard
	Pb	207	417.0	19.6	**0.0560**	0.019	34.6	ug/L	180	Standard
	Pb	208	1674.7	14.6	**0.0509**	0.014	27.2	ug/L	717	Standard
	U	238	2253.2	2.5	**0.3950**	0.010	2.6	ug/L	4	Standard
>	**Bi**	209	414870.7	2.1				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.0844**	9.297	182.9	mg/L	0	Standard
Mg	24	134474.1	0.2	**173.6638**	5.440	3.1	mg/L	20	Standard
K	39	88.3	19.9	**0.4121**	0.119	28.8	mg/L	22	Standard
Ca	43	171.7	13.8	**24.9409**	4.511	18.1	mg/L	47	Standard
Fe	54	188.7	7.0	**0.0310**	0.006	19.6	mg/L	151	Standard
Fe	57	286.7	15.2	**0.1978**	0.124	62.9	mg/L	195	Standard
Sc-1	45	31137.0	3.2				mg/L	29647	Standard
Cl	35	236218.5	0.5				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	103082.9	2.1				ug/L	1607	Standard
P	31	32710.3	0.4				ug/L	22752	Standard
S	34	4897.5	3.2				ug/L	5049	Standard
Sr	88	453.3	14.0				ug/L	87	Standard
C	12	190.0	18.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	21.9	52.8				mg/L	10	Standard
Ho-1	165	25.0	20.0				mg/L	7	Standard
Er	166	30.0	33.3				mg/L	3	Standard
I	127	617957.6	6.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		143.149	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.442	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.710
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	90.122
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606030402
Sample Date/Time: Thursday, June 16, 2016 22:55:40
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71156.7	0.3				ug/L	51024	Standard
	Be	9	20.0	50.0	**-0.0040**	0.009	211.0	ug/L	7	Standard
	Al	27	27285286.1	1.5	**137.4375**	2.316	1.7	ug/L	625	Standard
	Sc	45	31798.3	2.5				ug/L	29647	Standard
	Ti	47	833.7	1.4	**2.8012**	0.055	2.0	ug/L	57	Standard
	V	51	2537.6	8.1	**0.2132**	0.036	16.9	ug/L	1142	Standard
	Cr	52	12018.1	1.3	**0.8169**	0.043	5.3	ug/L	6628	Standard
	Cr	53	14870.6	5.1	**16.6424**	0.566	3.4	ug/L	430	Standard
	Mn	55	153406.0	0.3	**27.4780**	0.629	2.3	ug/L	603	Standard
	Co	59	3042.6	1.6	**0.4644**	0.013	2.9	ug/L	237	Standard
	Ni	60	2834.9	0.9	**1.4924**	0.050	3.3	ug/L	141	Standard
	Cu	65	1512.4	1.9	**0.7934**	0.029	3.7	ug/L	109	Standard
	Zn	66	12243.6	1.2	**11.5661**	0.178	1.5	ug/L	159	Standard
>	**Ge**	72	443839.5	2.3				ug/L	474053	Standard
	As	75	1046.3	4.7	**1.0354**	0.070	6.7	ug/L	-34	Standard
	Se	82	370.0	2.6	**3.4056**	0.089	2.6	ug/L	14	Standard
	Se-1	77	1056.7	5.5	**13.9459**	0.499	3.6	ug/L	55	Standard
>	**Ga**	71	63.3	29.9				mg/L	50	Standard
	Rb	85	8789.2	0.9				ug/L	20	Standard
	Y	89	374101.9	2.2				ug/L	376602	Standard
>	**Rh**	103	100.0	39.7				ug/L	17	Standard
	Mo	98	414.8	3.1	**0.1799**	0.005	3.0	ug/L	8	Standard
	Ag	107	91.0	19.0	**0.0038**	0.003	80.6	ug/L	81	Standard
	Cd	111	38.9	24.2	**0.0179**	0.005	27.8	mg/L	3	Standard
	Cd	114	124.8	37.3	**0.0236**	0.010	41.9	ug/L	7	Standard
>	**In**	115	496787.9	1.5				ug/L	524722	Standard
	Sn	118	751.7	3.4	**0.0580**	0.007	12.3	ug/L	715	Standard
	Sb	123	699.9	9.2	**0.1546**	0.018	11.7	ug/L	201	Standard
	Ba	135	200966.0	0.6	**117.0693**	2.247	1.9	ug/L	108	Standard
	Ce	140	703.3	2.3				ug/L	30	Standard
>	**Tb**	159	757626.8	0.4				ug/L	792236	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	132.7	7.8	**0.0167**	0.001	8.9	ug/L	9	Standard
	Tl	205	95.0	31.6	**0.0084**	0.005	62.5	ug/L	0	Standard
	Pb	206	531.7	2.2	**0.0713**	0.003	3.6	ug/L	216	Standard
	Pb	207	455.3	6.2	**0.0663**	0.009	13.1	ug/L	180	Standard
	Pb	208	1923.0	1.8	**0.0670**	0.003	4.3	ug/L	717	Standard
	U	238	1986.8	1.8	**0.3469**	0.010	2.8	ug/L	4	Standard
>	**Bi**	209	415441.7	1.2				ug/L	460343	Standard

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Na	23	5.0	0.0	**-4.8155**	0.394	8.2	mg/L	0	Standard
Mg	24	122585.6	0.8	**154.9558**	2.818	1.8	mg/L	20	Standard
K	39	68.3	27.7	**0.2568**	0.128	49.9	mg/L	22	Standard
Ca	43	118.3	20.0	**12.5323**	4.646	37.1	mg/L	47	Standard
Fe	54	188.9	8.2	**0.0283**	0.012	41.6	mg/L	151	Standard
Fe	57	303.3	9.9	**0.2303**	0.108	46.9	mg/L	195	Standard
> **Sc-1**	45	31798.3	2.5				mg/L	29647	Standard
Cl	35	229346.8	0.7				ug/L	154152	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	83539.7	2.1				ug/L	1607	Standard
P	31	32606.7	1.9				ug/L	22752	Standard
S	34	4827.4	4.1				ug/L	5049	Standard
Sr	88	453.3	10.5				ug/L	87	Standard
C	12	170.0	0.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	51.9	21.5				mg/L	10	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	30.0	33.3				mg/L	3	Standard
I	127	562279.3	5.4				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		139.457	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		93.627	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.676
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.246
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606030402PS WG572184-03
Sample Date/Time: Thursday, June 16, 2016 22:58:52
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73075.8	1.3				ug/L	51024	Standard
	Be	9	53890.7	1.6	**44.7456**	1.235	2.8	ug/L	7	Standard
	Al	27	27168938.9	0.8	**133.2737**	2.450	1.8	ug/L	625	Standard
	Sc	45	32783.8	3.0				ug/L	29647	Standard
	Ti	47	859.4	2.1	**2.8540**	0.076	2.7	ug/L	57	Standard
	V	51	356764.3	1.1	**52.7436**	0.694	1.3	ug/L	1142	Standard
	Cr	52	356493.8	0.1	**50.1744**	0.746	1.5	ug/L	6628	Standard
	Cr	53	58201.6	1.0	**65.5911**	1.486	2.3	ug/L	430	Standard
	Mn	55	450920.3	1.1	**79.9871**	1.948	2.4	ug/L	603	Standard
	Co	59	316431.5	0.7	**51.8775**	0.422	0.8	ug/L	237	Standard
	Ni	60	89734.3	1.3	**48.9891**	1.257	2.6	ug/L	141	Standard
	Cu	65	87088.6	0.9	**48.7984**	1.056	2.2	ug/L	109	Standard
	Zn	66	59430.7	0.2	**56.3137**	0.736	1.3	ug/L	159	Standard
>	**Ge**	72	449467.4	1.3				ug/L	474053	Standard
	As	75	54174.2	0.7	**51.6333**	0.928	1.8	ug/L	-34	Standard
	Se	82	5615.8	0.7	**53.3981**	0.963	1.8	ug/L	14	Standard
	Se-1	77	4643.7	1.4	**63.0355**	0.461	0.7	ug/L	55	Standard
>	**Ga**	71	86.7	6.7				mg/L	50	Standard
	Rb	85	8584.1	2.2				ug/L	20	Standard
	Y	89	362129.9	0.6				ug/L	376602	Standard
>	**Rh**	103	126.7	12.1				ug/L	17	Standard
	Mo	98	423.7	5.1	**0.1836**	0.012	6.4	ug/L	8	Standard
	Ag	107	266853.3	1.0	**47.1390**	0.674	1.4	ug/L	81	Standard
	Cd	111	91252.6	1.2	**49.5561**	0.951	1.9	mg/L	3	Standard
	Cd	114	222037.4	0.3	**48.7752**	0.696	1.4	ug/L	7	Standard
>	**In**	115	497860.4	1.7				ug/L	524722	Standard
	Sn	118	795.0	4.5	**0.0661**	0.005	7.0	ug/L	715	Standard
	Sb	123	212175.4	1.5	**51.1854**	0.593	1.2	ug/L	201	Standard
	Ba	135	282462.3	0.7	**164.2013**	1.778	1.1	ug/L	108	Standard
	Ce	140	631.7	10.3				ug/L	30	Standard
>	**Tb**	159	772720.2	0.9				ug/L	792236	Standard
	Ho	165	25.0	72.1				ug/L	7	Standard
	Tl	203	348021.0	0.8	**48.9171**	0.207	0.4	ug/L	9	Standard
	Tl	205	307292.3	1.9	**50.7847**	0.486	1.0	ug/L	0	Standard
	Pb	206	227366.6	0.7	**52.8212**	0.283	0.5	ug/L	216	Standard
	Pb	207	198570.4	0.5	**50.6733**	0.216	0.4	ug/L	180	Standard
	Pb	208	808970.2	1.0	**50.8658**	0.381	0.7	ug/L	717	Standard
	U	238	316899.9	0.9	**54.7755**	0.248	0.5	ug/L	4	Standard
>	**Bi**	209	428726.0	0.9				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.3595**	8.821	164.6	mg/L	0	Standard
Mg	24	124008.8	1.6	**152.0535**	3.346	2.2	mg/L	20	Standard
K	39	85.0	11.8	**0.3592**	0.081	22.7	mg/L	22	Standard
Ca	43	100.0	5.0	**7.9645**	1.532	19.2	mg/L	47	Standard
Fe	54	177.2	11.1	**0.0154**	0.015	95.9	mg/L	151	Standard
Fe	57	351.7	12.7	**0.3402**	0.148	43.6	mg/L	195	Standard
> **Sc-1**	45	32783.8	3.0				mg/L	29647	Standard
Cl	35	226771.8	0.7				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	82051.8	3.7				ug/L	1607	Standard
P	31	32553.3	0.7				ug/L	22752	Standard
S	34	4877.5	2.7				ug/L	5049	Standard
Sr	88	468.3	17.3				ug/L	87	Standard
C	12	143.3	17.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	28.9	106.4				mg/L	10	Standard
Ho-1	165	25.0	72.1				mg/L	7	Standard
Er	166	23.3	65.5				mg/L	3	Standard
I	127	560436.2	7.8				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		143.218	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.814	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.881
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.132
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606030402PS WG572184-03
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Method 6020 - Summary Report

Sample ID: L1606030402SDL WG572184-04
Sample Date/Time: Thursday, June 16, 2016 23:02:03
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70743.1	1.8				ug/L	51024	Standard
	Be	9	28.3	50.9	**0.0034**	0.013	384.2	ug/L	7	Standard
	Al	27	5919809.8	1.5	**29.9860**	0.193	0.6	ug/L	625	Standard
	Sc	45	33931.3	4.9				ug/L	29647	Standard
	Ti	47	210.3	4.5	**0.5323**	0.026	4.9	ug/L	57	Standard
	V	51	1736.1	7.7	**0.0751**	0.020	26.8	ug/L	1142	Standard
	Cr	52	8517.7	1.3	**0.2257**	0.018	7.8	ug/L	6628	Standard
	Cr	53	4512.3	4.3	**4.4067**	0.273	6.2	ug/L	430	Standard
	Mn	55	34493.9	0.5	**5.6636**	0.053	0.9	ug/L	603	Standard
	Co	59	857.0	3.0	**0.0916**	0.004	4.4	ug/L	237	Standard
	Ni	60	815.4	3.7	**0.3434**	0.013	3.8	ug/L	141	Standard
	Cu	65	609.0	2.8	**0.2567**	0.008	3.3	ug/L	109	Standard
	Zn	66	2631.2	2.5	**2.1339**	0.077	3.6	ug/L	159	Standard
>	**Ge**	72	475670.8	1.3				ug/L	474053	Standard
	As	75	259.9	19.5	**0.2591**	0.046	17.8	ug/L	-34	Standard
	Se	82	96.9	9.6	**0.7044**	0.090	12.8	ug/L	14	Standard
	Se-1	77	278.3	6.3	**2.8660**	0.190	6.6	ug/L	55	Standard
>	**Ga**	71	100.0	13.2				mg/L	50	Standard
	Rb	85	1971.8	2.2				ug/L	20	Standard
	Y	89	399368.2	0.1				ug/L	376602	Standard
>	**Rh**	103	31.7	55.5				ug/L	17	Standard
	Mo	98	97.2	8.5	**0.0330**	0.003	8.8	ug/L	8	Standard
	Ag	107	194.3	8.7	**0.0182**	0.002	12.0	ug/L	81	Standard
	Cd	111	22.8	26.6	**0.0078**	0.003	35.8	mg/L	3	Standard
	Cd	114	48.7	59.7	**0.0057**	0.006	99.0	ug/L	7	Standard
>	**In**	115	559725.5	1.9				ug/L	524722	Standard
	Sn	118	606.7	7.7	**0.0162**	0.009	56.8	ug/L	715	Standard
	Sb	123	2363.7	19.9	**0.4914**	0.092	18.7	ug/L	201	Standard
	Ba	135	43798.6	2.4	**22.5929**	0.145	0.6	ug/L	108	Standard
	Ce	140	198.3	9.5				ug/L	30	Standard
>	**Tb**	159	842868.7	1.3				ug/L	792236	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	155.3	20.7	**0.0174**	0.004	24.2	ug/L	9	Standard
	Tl	205	138.3	25.4	**0.0131**	0.005	41.5	ug/L	0	Standard
	Pb	206	331.7	5.4	**0.0143**	0.004	25.7	ug/L	216	Standard
	Pb	207	291.7	3.0	**0.0144**	0.002	12.4	ug/L	180	Standard
	Pb	208	1219.7	5.8	**0.0124**	0.004	35.2	ug/L	717	Standard
	U	238	456.0	5.1	**0.0646**	0.005	7.0	ug/L	4	Standard
>	**Bi**	209	468142.9	1.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	26463.1	2.5	**31.3785**	2.343	7.5	mg/L	20	Standard
K	39	26.7	78.1	**-0.0526**	0.134	255.5	mg/L	22	Standard
Ca	43	43.3	17.6	**-4.3735**	1.225	28.0	mg/L	47	Standard
Fe	54	169.2	3.0	**0.0053**	0.003	52.6	mg/L	151	Standard
Fe	57	196.7	11.5	**-0.1160**	0.038	32.8	mg/L	195	Standard
> **Sc-1**	45	33931.3	4.9				mg/L	29647	Standard
Cl	35	196142.1	0.3				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	19616.0	5.5				ug/L	1607	Standard
P	31	27376.4	1.1				ug/L	22752	Standard
S	34	5225.9	4.8				ug/L	5049	Standard
Sr	88	161.7	12.5				ug/L	87	Standard
C	12	53.3	21.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	18.9	105.9				mg/L	10	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	23.3	24.7				mg/L	3	Standard
I	127	136986.5	1.1				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		138.646	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.341	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	106.671
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.694
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 23:05:16
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65141.5	3.2				ug/L	51024	Standard
	Be	9	52703.2	1.3	**49.1153**	1.764	3.6	ug/L	7	Standard
	Al	27	8228815.5	2.2	**45.2824**	0.920	2.0	ug/L	625	Standard
	Sc	45	32498.2	4.1				ug/L	29647	Standard
	Ti	47	31345.1	0.7	**103.5318**	1.343	1.3	ug/L	57	Standard
	V	51	367453.1	0.4	**51.1407**	0.777	1.5	ug/L	1142	Standard
	Cr	52	375913.5	0.3	**49.8070**	1.076	2.2	ug/L	6628	Standard
	Cr	53	47646.5	1.3	**50.4578**	1.488	2.9	ug/L	430	Standard
	Mn	55	329100.4	0.4	**54.9171**	0.971	1.8	ug/L	603	Standard
	Co	59	349269.0	1.0	**53.9203**	1.421	2.6	ug/L	237	Standard
	Ni	60	96531.2	0.8	**49.6170**	1.272	2.6	ug/L	141	Standard
	Cu	65	93924.6	0.9	**49.5504**	1.188	2.4	ug/L	109	Standard
	Zn	66	55518.9	0.1	**49.5011**	0.851	1.7	ug/L	159	Standard
>	Ge	72	477444.4	1.8				ug/L	474053	Standard
	As	75	55141.7	0.8	**49.4767**	0.656	1.3	ug/L	-34	Standard
	Se	82	5701.1	0.6	**51.0288**	1.000	2.0	ug/L	14	Standard
	Se-1	77	3881.8	1.1	**49.4608**	1.267	2.6	ug/L	55	Standard
>	Ga	71	65.0	13.3				mg/L	50	Standard
	Rb	85	788.4	3.5				ug/L	20	Standard
	Y	89	405958.4	2.3				ug/L	376602	Standard
>	Rh	103	46.7	6.2				ug/L	17	Standard
	Mo	98	255980.2	1.6	**104.9334**	3.174	3.0	ug/L	8	Standard
	Ag	107	304085.1	0.1	**49.3379**	0.777	1.6	ug/L	81	Standard
	Cd	111	100650.6	0.4	**50.2032**	0.894	1.8	mg/L	3	Standard
	Cd	114	247889.3	0.9	**50.0095**	0.397	0.8	ug/L	7	Standard
>	In	115	542056.8	1.5				ug/L	524722	Standard
	Sn	118	285272.3	0.9	**51.1841**	0.960	1.9	ug/L	715	Standard
	Sb	123	227314.1	0.8	**50.3702**	0.881	1.7	ug/L	201	Standard
	Ba	135	91208.0	0.4	**48.6598**	0.850	1.7	ug/L	108	Standard
	Ce	140	63.3	32.9				ug/L	30	Standard
>	Tb	159	789070.3	2.3				ug/L	792236	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	377602.8	0.5	**50.2279**	0.920	1.8	ug/L	9	Standard
	Tl	205	337371.9	1.4	**52.7729**	1.437	2.7	ug/L	0	Standard
	Pb	206	238042.0	0.2	**52.3320**	0.779	1.5	ug/L	216	Standard
	Pb	207	215459.6	1.1	**52.0360**	1.192	2.3	ug/L	180	Standard
	Pb	208	891326.9	0.5	**53.0399**	0.951	1.8	ug/L	717	Standard
	U	238	333407.3	1.0	**54.5375**	1.116	2.0	ug/L	4	Standard
>	Bi	209	453096.7	1.3				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.3907**	8.767	162.6	mg/L	0	Standard
Mg	24	4200.6	2.3	**5.1529**	0.111	2.2	mg/L	20	Standard
K	39	616.7	6.8	**4.0727**	0.447	11.0	mg/L	22	Standard
Ca	43	71.7	17.6	**2.1532**	3.105	144.2	mg/L	47	Standard
Fe	54	6037.6	3.3	**4.3664**	0.172	3.9	mg/L	151	Standard
Fe	57	1763.4	0.4	**4.3392**	0.195	4.5	mg/L	195	Standard
Sc-1	45	32498.2	4.1				mg/L	29647	Standard
Cl	35	179833.9	2.1				ug/L	154152	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	2146.8	4.2				ug/L	1607	Standard
P	31	26813.7	2.2				ug/L	22752	Standard
S	34	5724.4	0.6				ug/L	5049	Standard
Sr	88	70.0	14.3				ug/L	87	Standard
C	12	63.3	50.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.0	50.0				mg/L	10	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	3	Standard
I	127	9479.8	26.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	98.231		
Al	27	90.565		
Sc	45			
Ti	47	103.532		
V	51	102.281		
Cr	52	99.614		
Cr	53			
Mn	55	109.834		
Co	59	107.841		
Ni	60	99.234		
Cu	65	99.101		
Zn	66	99.002		
Ge	72		100.715	
As	75	98.953		
Se	82	102.058		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	104.933		
Ag	107	98.676		
Cd	111	100.406		
Cd	114			
> In	115		103.304	
Sn	118	102.368		
Sb	123	100.740		
Ba	135	97.320		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.456		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.080		
U	238	109.075		
> Bi	209		98.426	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Thursday, June 16, 2016 23:07:33
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Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 23:08:27
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65521.4	0.4				ug/L	51024	Standard
	Be	9	23.3	99.0	**0.0005**	0.021	4564.3	ug/L	7	Standard
	Al	27	5681.9	111.4	**0.0212**	0.034	162.2	ug/L	625	Standard
	Sc	45	34061.6	0.4				ug/L	29647	Standard
	Ti	47	31.0	31.1	**-0.0658**	0.030	46.1	ug/L	57	Standard
	V	51	1137.0	4.8	**-0.0132**	0.008	58.0	ug/L	1142	Standard
	Cr	52	6409.0	1.1	**-0.0829**	0.007	8.9	ug/L	6628	Standard
	Cr	53	666.7	9.6	**0.2639**	0.061	23.2	ug/L	430	Standard
	Mn	55	712.4	6.8	**-0.0100**	0.007	70.1	ug/L	603	Standard
	Co	59	233.0	15.5	**-0.0061**	0.005	85.2	ug/L	237	Standard
	Ni	60	159.3	10.8	**0.0024**	0.008	354.6	ug/L	141	Standard
	Cu	65	160.3	16.8	**0.0166**	0.013	81.1	ug/L	109	Standard
	Zn	66	162.7	11.7	**-0.0896**	0.016	17.5	ug/L	159	Standard
>	**Ge**	72	488521.2	0.7				ug/L	474053	Standard
	As	75	-18.2	245.0	**0.0090**	0.039	433.3	ug/L	-34	Standard
	Se	82	22.9	33.5	**0.0317**	0.066	209.0	ug/L	14	Standard
	Se-1	77	61.7	10.8	**0.0347**	0.088	253.1	ug/L	55	Standard
>	**Ga**	71	43.3	6.7				mg/L	50	Standard
	Rb	85	21.7	26.6				ug/L	20	Standard
	Y	89	392497.9	1.5				ug/L	376602	Standard
>	**Rh**	103	15.0	66.7				ug/L	17	Standard
	Mo	98	290.0	34.9	**0.1112**	0.040	35.6	ug/L	8	Standard
	Ag	107	124.3	21.0	**0.0075**	0.004	51.6	ug/L	81	Standard
	Cd	111	11.5	16.4	**0.0024**	0.001	34.9	mg/L	3	Standard
	Cd	114	37.6	64.7	**0.0036**	0.005	130.1	ug/L	7	Standard
>	**In**	115	550836.3	1.7				ug/L	524722	Standard
	Sn	118	835.0	15.5	**0.0583**	0.023	39.6	ug/L	715	Standard
	Sb	123	699.1	30.0	**0.1378**	0.046	33.4	ug/L	201	Standard
	Ba	135	132.0	3.9	**0.0117**	0.003	27.6	ug/L	108	Standard
	Ce	140	11.7	24.7				ug/L	30	Standard
>	**Tb**	159	819426.3	1.1				ug/L	792236	Standard
	Ho	165	6.7	86.6				ug/L	7	Standard
	Tl	203	74.7	34.7	**0.0068**	0.003	47.8	ug/L	9	Standard
	Tl	205	90.0	77.2	**0.0055**	0.010	186.7	ug/L	0	Standard
	Pb	206	270.7	9.3	**0.0000**	0.005	33114.8	ug/L	216	Standard
	Pb	207	219.0	11.0	**-0.0037**	0.006	150.6	ug/L	180	Standard
	Pb	208	961.7	14.2	**-0.0037**	0.008	206.3	ug/L	717	Standard
	U	238	71.3	83.4	**0.0035**	0.009	266.3	ug/L	4	Standard
>	**Bi**	209	478835.9	0.7				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.7236**	8.190	143.1	mg/L	0	Standard
Mg	24	78.3	36.3	**0.0471**	0.033	70.4	mg/L	20	Standard
K	39	20.0	50.0	**-0.0950**	0.067	70.5	mg/L	22	Standard
Ca	43	16.7	62.4	**-9.7998**	2.111	21.5	mg/L	47	Standard
Fe	54	162.8	19.9	**0.0003**	0.023	7301.8	mg/L	151	Standard
Fe	57	211.7	11.2	**-0.0764**	0.066	86.3	mg/L	195	Standard
> **Sc-1**	45	34061.6	0.4				mg/L	29647	Standard
Cl	35	176482.8	2.0				ug/L	154152	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	1700.1	5.3				ug/L	1607	Standard
P	31	27343.0	0.9				ug/L	22752	Standard
S	34	5614.4	3.8				ug/L	5049	Standard
Sr	88	68.3	27.7				ug/L	87	Standard
C	12	56.7	44.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	16.0	95.0				mg/L	10	Standard
Ho-1	165	6.7	86.6				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	4402.3	12.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.052	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.977
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.017
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, June 16, 2016 23:11:40
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62197.5	2.7				ug/L	51024	Standard
	Be	9	238.3	13.6	**0.2121**	0.037	17.6	ug/L	7	Standard
	Al	27	1466.7	24.6	**-0.0013**	0.002	173.1	ug/L	625	Standard
	Sc	45	31464.3	3.4				ug/L	29647	Standard
	Ti	47	25.0	41.8	**-0.0793**	0.036	45.5	ug/L	57	Standard
	V	51	3787.9	2.1	**0.3855**	0.011	2.8	ug/L	1142	Standard
	Cr	52	11607.4	0.4	**0.7122**	0.016	2.2	ug/L	6628	Standard
	Cr	53	1381.7	1.4	**1.1136**	0.035	3.1	ug/L	430	Standard
	Mn	55	3485.4	2.1	**0.4840**	0.015	3.1	ug/L	603	Standard
	Co	59	2688.9	0.3	**0.3937**	0.004	0.9	ug/L	237	Standard
	Ni	60	3045.6	2.3	**1.5635**	0.022	1.4	ug/L	141	Standard
	Cu	65	1580.4	3.3	**0.8079**	0.030	3.7	ug/L	109	Standard
	Zn	66	7167.0	0.7	**6.4903**	0.095	1.5	ug/L	159	Standard
>	**Ge**	72	455928.4	0.9				ug/L	474053	Standard
	As	75	370.6	7.7	**0.3732**	0.030	8.0	ug/L	-34	Standard
	Se	82	61.3	17.8	**0.4078**	0.107	26.4	ug/L	14	Standard
	Se-1	77	90.3	17.8	**0.4781**	0.216	45.1	ug/L	55	Standard
>	**Ga**	71	55.0	24.1				mg/L	50	Standard
	Rb	85	15.0	57.7				ug/L	20	Standard
	Y	89	401919.6	0.8				ug/L	376602	Standard
>	**Rh**	103	13.3	43.3				ug/L	17	Standard
	Mo	98	54.9	10.1	**0.0169**	0.002	11.0	ug/L	8	Standard
	Ag	107	2304.2	2.4	**0.3610**	0.011	3.1	ug/L	81	Standard
	Cd	111	463.2	4.6	**0.2274**	0.011	4.7	mg/L	3	Standard
	Cd	114	1100.0	5.3	**0.2180**	0.017	7.9	ug/L	7	Standard
>	**In**	115	543008.1	2.6				ug/L	524722	Standard
	Sn	118	436.7	6.3	**-0.0111**	0.004	33.6	ug/L	715	Standard
	Sb	123	1825.0	3.3	**0.3894**	0.024	6.1	ug/L	201	Standard
	Ba	135	1282.7	6.8	**0.6257**	0.032	5.1	ug/L	108	Standard
	Ce	140	18.3	41.7				ug/L	30	Standard
>	**Tb**	159	786449.8	2.4				ug/L	792236	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	625.7	5.7	**0.0805**	0.004	5.1	ug/L	9	Standard
	Tl	205	541.7	4.7	**0.0768**	0.002	3.0	ug/L	0	Standard
	Pb	206	1119.4	3.0	**0.1897**	0.004	2.2	ug/L	216	Standard
	Pb	207	980.4	3.9	**0.1828**	0.004	2.1	ug/L	180	Standard
	Pb	208	4169.9	1.1	**0.1903**	0.004	2.3	ug/L	717	Standard
	U	238	2499.2	1.6	**0.4009**	0.009	2.3	ug/L	4	Standard
>	**Bi**	209	453610.3	2.8				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	55.0	15.7	**0.0251**	0.011	43.4	mg/L	20	Standard
K	39	8.3	91.7	**-0.1668**	0.057	33.9	mg/L	22	Standard
Ca	43	21.7	66.6	**-8.4026**	3.204	38.1	mg/L	47	Standard
Fe	54	104.1	4.5	**-0.0352**	0.004	10.9	mg/L	151	Standard
Fe	57	183.3	11.0	**-0.1131**	0.042	36.8	mg/L	195	Standard
> **Sc-1**	45	31464.3	3.4				mg/L	29647	Standard
Cl	35	173373.0	1.2				ug/L	154152	Standard
Kr	83	0.7	173.2				ug/L	3	Standard
Br	81	1516.7	7.1				ug/L	1607	Standard
P	31	19057.0	2.5				ug/L	22752	Standard
S	34	5394.3	1.5				ug/L	5049	Standard
Sr	88	70.0	24.7				ug/L	87	Standard
C	12	66.7	82.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	3.2	173.2				mg/L	10	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	3055.3	5.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	106.050		
Al	27			
Sc	45			
Ti	47			
V	51	96.369		
Cr	52	89.022		
Cr	53			
Mn	55	96.796		
Co	59	98.420		
Ni	60	97.718		
Cu	65	100.991		
Zn	66	103.844		
> Ge	72		96.177	
As	75	93.302		
Se	82	101.945		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	90.256		
Cd	111	94.767		
Cd	114			
> In	115			103.485
Sn	118			
Sb	123	97.340		
Ba	135	83.430		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.678		
Tl	205			
Pb	206			
Pb	207			
Pb	208	95.126		
U	238	100.222		
> Bi	209			98.537
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Tuesday, June 21, 2016 12:07:41

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1329	2024	0.712	
Mg	23.985	23.975	4501	2020	0.694	
Co	58.933	58.925	11686	2022	0.702	
In	114.904	114.925	22861	2028	0.687	
U	238.050	238.075	47460	2043	0.684	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	6.556
5.575	2.909
5.625	3.124
5.675	4.542
5.725	2.516
5.775	3.133
5.825	3.034
5.875	2.659
5.925	3.116
5.975	0.663
6.025	3.021
6.075	4.431
6.125	3.101
6.175	3.302
6.225	9.989
6.275	25.913
6.325	61.237
6.375	37.268
6.425	95.831
6.475	39.218
6.525	13.045
6.575	6.056
6.625	3.694
6.675	1.639
6.725	2.760
6.775	1.475
6.825	2.174

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6.875	1.150
6.925	1.430
6.975	2.330
7.025	1.255
7.075	0.705
7.125	2.295
7.175	1.271
7.225	3.628
7.275	4.494
7.325	27.694
7.375	63.888
7.425	39.123
7.475	88.928
7.525	69.869
7.575	37.268
7.625	63.191
7.675	69.869
7.725	86.603
7.775	99.381
7.825	121.967
7.875	83.853
7.925	72.436
7.975	99.381
8.025	50.000
8.075	34.233
8.125	100.000
8.175	38.030
8.225	40.825
8.275	22.822
8.325	138.332
8.375	39.123
8.425	79.057
8.475	43.853
22.525	223.607
22.575	38.030
22.625	43.853
22.675	32.401
22.725	43.376
22.775	49.793
22.825	52.408
22.875	27.407
22.925	16.563
22.975	20.412
23.025	28.315
23.075	34.881
23.125	25.951
23.175	32.541

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23.225	14.650
23.275	27.809
23.325	19.174
23.375	43.122
23.425	29.487
23.475	18.506
23.525	5.966
23.575	3.055
23.625	1.534
23.675	1.817
23.725	1.183
23.775	0.960
23.825	1.298
23.875	1.103
23.925	0.675
23.975	1.038
24.025	1.417
24.075	0.260
24.125	0.656
24.175	1.631
24.225	1.863
24.275	3.146
24.325	28.710
24.375	26.307
24.425	30.292
24.475	13.327
24.525	4.037
24.575	1.007
24.625	3.057
24.675	2.129
24.725	1.137
24.775	1.370
24.825	1.603
24.875	1.801
24.925	0.625
24.975	1.310
25.025	1.635
25.075	1.412
25.125	1.115
25.175	1.388
25.225	1.212
25.275	14.200
25.325	57.334
25.375	84.265
25.425	42.127
25.475	10.037
57.525	5.453

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57.575	2.202
57.625	3.035
57.675	1.654
57.725	3.803
57.775	1.264
57.825	1.936
57.875	2.815
57.925	1.641
57.975	2.107
58.025	2.389
58.075	2.038
58.125	0.977
58.175	4.405
58.225	4.049
58.275	3.597
58.325	15.526
58.375	17.815
58.425	26.131
58.475	8.281
58.525	1.499
58.575	1.606
58.625	2.262
58.675	1.232
58.725	2.036
58.775	0.724
58.825	1.502
58.875	1.471
58.925	1.251
58.975	1.106
59.025	1.762
59.075	1.429
59.125	1.832
59.175	2.462
59.225	2.138
59.275	14.258
59.325	45.166
59.375	47.140
59.425	44.721
59.475	23.904
59.525	10.883
59.575	9.409
59.625	4.974
59.675	2.777
59.725	1.421
59.775	3.138
59.825	1.163
59.875	1.334

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59.925	3.822
59.975	1.863
60.025	1.945
60.075	2.122
60.125	3.418
60.175	2.126
60.225	8.067
60.275	17.408
60.325	50.619
60.375	35.355
60.425	52.705
60.475	30.842
113.525	13.070
113.575	7.506
113.625	5.331
113.675	1.010
113.725	3.027
113.775	2.098
113.825	2.123
113.875	2.206
113.925	2.127
113.975	2.183
114.025	0.695
114.075	2.493
114.125	1.430
114.175	1.596
114.225	3.899
114.275	3.770
114.325	17.743
114.375	38.065
114.425	24.241
114.475	10.721
114.525	4.779
114.575	3.301
114.625	1.042
114.675	2.599
114.725	2.253
114.775	2.049
114.825	0.960
114.875	1.817
114.925	1.355
114.975	1.378
115.025	1.472
115.075	1.260
115.125	2.051
115.175	2.855
115.225	2.482

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115.275	6.639
115.325	11.285
115.375	27.524
115.425	38.030
115.475	48.445
115.525	22.628
115.575	8.442
115.625	5.335
115.675	3.400
115.725	5.123
115.775	2.482
115.825	4.190
115.875	5.728
115.925	4.930
115.975	5.489
116.025	3.368
116.075	2.667
116.125	3.465
116.175	4.332
116.225	4.691
116.275	14.225
116.325	24.781
116.375	59.266
116.425	74.689
116.475	76.697
236.525	
236.575	42.229
236.625	43.069
236.675	30.822
236.725	19.846
236.775	17.801
236.825	35.067
236.875	14.286
236.925	33.026
236.975	31.044
237.025	23.207
237.075	28.152
237.125	38.870
237.175	48.879
237.225	33.159
237.275	29.116
237.325	14.542
237.375	23.458
237.425	19.563
237.475	25.573
237.525	41.592
237.575	22.988

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237.625	9.655
237.675	3.555
237.725	2.204
237.775	2.335
237.825	2.878
237.875	1.983
237.925	0.860
237.975	1.594
238.025	1.305
238.075	0.963
238.125	1.566
238.175	1.319
238.225	0.999
238.275	0.949
238.325	1.610
238.375	2.604
238.425	0.685
238.475	5.782
238.525	6.276
238.575	21.121
238.625	40.982
238.675	25.226
238.725	31.270
238.775	24.717
238.825	36.014
238.875	26.854
238.925	18.372
238.975	35.067
239.025	35.209
239.075	29.613
239.125	29.155
239.175	13.847
239.225	32.341
239.275	28.917
239.325	41.445
239.375	36.361
239.425	32.530
239.475	31.439

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SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\ReportOutput\a.swz

Start Time: 6/21/2016 12:13:16 PM
End Time: 6/21/2016 12:15:43 PM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 4257.87
        Obtained Intensity (Mg 23.985): 91046.81
        Obtained Intensity (In 114.904): 67007.59
        Obtained Intensity (U 238.05): 138801.86
        Obtained Intensity (Bkgd 220): 0.27
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.018 (=3833.82 / 209522.60)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.006 (=1202.25 / 209522.60)
```


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SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\ReportOutput\a.swz

Optimization Status

Start Time: 6/21/2016 12:13:16 PM

Daily Performance Check
        Optimization Settings:
                Method: Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 1
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 4257.87
                Obtained Intensity (Mg 23.985): 91046.81
                Obtained Intensity (In 114.904): 67007.59
                Obtained Intensity (U 238.05): 138801.86
                Obtained Intensity (Bkgd 220): 0.27
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.018 (=3833.82 / 209522.60)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.006 (=1202.25 / 209522.60)
[Passed]  Optimum value(s): N/A

End Time: 6/21/2016 12:15:43 PM
```


Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Tuesday, June 21, 2016 12:31:36
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60175.9	0.2				ug/L		Standard
	Be	9	5.0	0.0				ug/L		Standard
	Al	27	831.7	9.4				ug/L		Standard
	Sc	45	25065.7	2.2				ug/L		Standard
	Ti	47	37.7	15.6				ug/L		Standard
	V	51	974.0	7.7				ug/L		Standard
	Cr	52	5792.4	1.5				ug/L		Standard
	Cr	53	346.7	9.8				ug/L		Standard
	Mn	55	1164.0	4.2				ug/L		Standard
	Co	59	303.3	8.1				ug/L		Standard
	Ni	60	290.7	6.8				ug/L		Standard
	Cu	65	172.7	6.7				ug/L		Standard
	Zn	66	130.3	5.4				ug/L		Standard
>	Ge	72	491723.5	1.3				ug/L		Standard
	As	75	-24.7	79.1				ug/L		Standard
	Se	82	11.5	37.2				ug/L		Standard
	Se-1	77	57.0	6.3				ug/L		Standard
>	Ga	71	148.3	7.8				mg/L		Standard
	Rb	85	18.3	41.7				ug/L		Standard
	Y	89	401844.8	1.4				ug/L		Standard
>	Rh	103	10.0	50.0				ug/L		Standard
	Mo	98	11.9	33.1				ug/L		Standard
	Ag	107	97.7	16.8				ug/L		Standard
	Cd	111	10.7	42.3				mg/L		Standard
	Cd	114	21.3	80.2				ug/L		Standard
>	In	115	547486.6	2.6				ug/L		Standard
	Sn	118	450.0	16.8				ug/L		Standard
	Sb	123	105.2	26.0				ug/L		Standard
	Ba	135	111.3	14.6				ug/L		Standard
	Ce	140	106.7	44.3				ug/L		Standard
>	Tb	159	890342.4	1.4				ug/L		Standard
	Ho	165	10.0	50.0				ug/L		Standard
	Tl	203	19.3	72.5				ug/L		Standard
	Tl	205	16.7	62.4				ug/L		Standard
	Pb	206	247.0	5.1				ug/L		Standard
	Pb	207	215.0	4.1				ug/L		Standard
	Pb	208	770.0	5.2				ug/L		Standard
	U	238	13.3	42.6				ug/L		Standard
>	Bi	209	503142.7	1.4				ug/L		Standard

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	Na	23	1.7	173.2	mg/L	Standard
	Mg	24	35.0	14.3	mg/L	Standard
	K	39	25.0	52.9	mg/L	Standard
	Ca	43	38.3	19.9	mg/L	Standard
	Fe	54	126.1	27.3	mg/L	Standard
	Fe	57	245.0	30.1	mg/L	Standard
>	**Sc-1**	45	25065.7	2.2	mg/L	Standard
	Cl	35	125857.3	1.3	ug/L	Standard
	Kr	83	1.0	100.0	ug/L	Standard
	Br	81	1350.1	4.5	ug/L	Standard
	P	31	18392.8	1.6	ug/L	Standard
	S	34	3738.8	6.0	ug/L	Standard
	Sr	88	78.3	24.2	ug/L	Standard
	C	12	53.3	60.3	mg/L	Standard
	N	14	0.0		mg/L	Standard
	Hg	202	0.0		mg/L	Standard
	Dy	164	2.2	286.4	mg/L	Standard
	Ho-1	165	10.0	50.0	mg/L	Standard
	Er	166	23.3	65.5	mg/L	Standard
	I	127	1145.0	4.2	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Blank
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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Tuesday, June 21, 2016 12:34:47
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60488.9	1.3				ug/L	60176	Standard
	Be	9	11.7	65.5				ug/L	5	Standard
	Al	27	836.7	4.8				ug/L	832	Standard
	Sc	45	24878.7	2.2				ug/L	25066	Standard
	Ti	47	35.3	20.5				ug/L	38	Standard
	V	51	1014.5	7.5				ug/L	974	Standard
	Cr	52	5913.2	2.9				ug/L	5792	Standard
	Cr	53	315.0	19.3				ug/L	347	Standard
	Mn	55	1207.0	3.4				ug/L	1164	Standard
	Co	59	269.3	1.8				ug/L	303	Standard
	Ni	60	292.0	1.9				ug/L	291	Standard
	Cu	65	155.7	6.3				ug/L	173	Standard
	Zn	66	143.3	11.1				ug/L	130	Standard
>	**Ge**	72	484278.1	1.8				ug/L	491724	Standard
	As	75	-25.5	164.8				ug/L	-25	Standard
	Se	82	11.6	54.6				ug/L	12	Standard
	Se-1	77	49.7	15.1				ug/L	57	Standard
>	**Ga**	71	168.3	18.1				mg/L	148	Standard
	Rb	85	21.7	48.0				ug/L	18	Standard
	Y	89	409346.3	1.0				ug/L	401845	Standard
>	**Rh**	103	26.7	10.8				ug/L	10	Standard
	Mo	98	8.3	17.9				ug/L	12	Standard
	Ag	107	92.7	12.5				ug/L	98	Standard
	Cd	111	9.3	34.5				mg/L	11	Standard
	Cd	114	15.1	46.6				ug/L	21	Standard
>	**In**	115	551450.0	0.7				ug/L	547487	Standard
	Sn	118	430.0	8.1				ug/L	450	Standard
	Sb	123	43.1	45.3				ug/L	105	Standard
	Ba	135	105.7	9.3				ug/L	111	Standard
	Ce	140	71.7	83.2				ug/L	107	Standard
>	**Tb**	159	897003.4	2.0				ug/L	890342	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	11.0	72.2				ug/L	19	Standard
	Tl	205	10.0	132.3				ug/L	17	Standard
	Pb	206	238.0	4.2				ug/L	247	Standard
	Pb	207	219.3	4.9				ug/L	215	Standard
	Pb	208	792.0	5.9				ug/L	770	Standard
	U	238	10.0	75.5				ug/L	13	Standard
>	**Bi**	209	496302.2	1.2				ug/L	503143	Standard

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	Na	23	0.0		mg/L	2	Standard
	Mg	24	31.7	24.1	mg/L	35	Standard
	K	39	33.3	43.3	mg/L	25	Standard
	Ca	43	26.7	10.8	mg/L	38	Standard
	Fe	54	132.9	5.9	mg/L	126	Standard
	Fe	57	250.0	24.0	mg/L	245	Standard
>	**Sc-1**	45	24878.7	2.2	mg/L	25066	Standard
	Cl	35	129128.6	0.4	ug/L	125857	Standard
	Kr	83	1.7	124.9	ug/L	1	Standard
	Br	81	1190.0	4.4	ug/L	1350	Standard
	P	31	18840.0	2.5	ug/L	18393	Standard
	S	34	3955.5	5.6	ug/L	3739	Standard
	Sr	88	98.3	22.9	ug/L	78	Standard
	C	12	73.3	28.4	mg/L	53	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	3.3	173.2	mg/L	0	Standard
	Dy	164	6.2	93.6	mg/L	2	Standard
	Ho-1	165	8.3	69.3	mg/L	10	Standard
	Er	166	10.0	100.0	mg/L	23	Standard
	I	127	1046.7	2.3	mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: Standard 1
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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 1
Report Date/Time: Tuesday, June 21, 2016 12:37:04
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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Tuesday, June 21, 2016 12:37:59
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58902.6	2.2				ug/L	60176	Standard
	Be	9	41.7	36.7				ug/L	5	Standard
	Al	27	7506.9	2.0				ug/L	832	Standard
	Sc	45	24807.0	1.7				ug/L	25066	Standard
	Ti	47	57.3	17.5				ug/L	38	Standard
	V	51	1265.4	5.8				ug/L	974	Standard
	Cr	52	6084.9	2.1				ug/L	5792	Standard
	Cr	53	365.0	11.9				ug/L	347	Standard
	Mn	55	1636.8	0.3				ug/L	1164	Standard
	Co	59	583.0	6.7				ug/L	303	Standard
	Ni	60	417.3	3.9				ug/L	291	Standard
	Cu	65	254.7	1.5				ug/L	173	Standard
	Zn	66	285.3	6.4				ug/L	130	Standard
>	**Ge**	72	474091.1	0.6				ug/L	491724	Standard
	As	75	16.4	175.0				ug/L	-25	Standard
	Se	82	14.3	35.4				ug/L	12	Standard
	Se-1	77	47.7	3.2				ug/L	57	Standard
>	**Ga**	71	163.3	20.8				mg/L	148	Standard
	Rb	85	21.7	35.3				ug/L	18	Standard
	Y	89	421814.2	2.0				ug/L	401845	Standard
>	**Rh**	103	33.3	45.8				ug/L	10	Standard
	Mo	98	251.2	2.5				ug/L	12	Standard
	Ag	107	386.0	1.2				ug/L	98	Standard
	Cd	111	102.9	11.3				mg/L	11	Standard
	Cd	114	249.4	9.6				ug/L	21	Standard
>	**In**	115	548120.3	1.1				ug/L	547487	Standard
	Sn	118	645.0	5.6				ug/L	450	Standard
	Sb	123	245.0	3.3				ug/L	105	Standard
	Ba	135	194.0	3.9				ug/L	111	Standard
	Ce	140	15.0	57.7				ug/L	107	Standard
>	**Tb**	159	869696.1	0.6				ug/L	890342	Standard
	Ho	165	1.7	173.2				ug/L	10	Standard
	Tl	203	386.3	6.2				ug/L	19	Standard
	Tl	205	290.0	6.0				ug/L	17	Standard
	Pb	206	486.7	5.5				ug/L	247	Standard
	Pb	207	430.7	8.6				ug/L	215	Standard
	Pb	208	1734.7	2.5				ug/L	770	Standard
	U	238	291.0	3.0				ug/L	13	Standard
>	**Bi**	209	480303.9	0.6				ug/L	503143	Standard

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	Na	23	0.0		mg/L	2	Standard
	Mg	24	31.7	32.9	mg/L	35	Standard
	K	39	23.3	32.7	mg/L	25	Standard
	Ca	43	26.7	43.3	mg/L	38	Standard
	Fe	54	147.5	2.0	mg/L	126	Standard
	Fe	57	275.0	5.5	mg/L	245	Standard
>	**Sc-1**	45	24807.0	1.7	mg/L	25066	Standard
	Cl	35	127847.2	1.5	ug/L	125857	Standard
	Kr	83	2.0	0.0	ug/L	1	Standard
	Br	81	1250.1	12.9	ug/L	1350	Standard
	P	31	18074.1	2.7	ug/L	18393	Standard
	S	34	3720.5	1.6	ug/L	3739	Standard
	Sr	88	101.7	31.6	ug/L	78	Standard
	C	12	43.3	48.0	mg/L	53	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	0.0		mg/L	0	Standard
	Dy	164	22.2	64.8	mg/L	2	Standard
	Ho-1	165	1.7	173.2	mg/L	10	Standard
	Er	166	23.3	89.2	mg/L	23	Standard
	I	127	1036.7	8.6	mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Tuesday, June 21, 2016 12:41:10
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56823.0	1.6				ug/L	60176	Standard
	Be	9	34135.1	0.9	**50.0000**	0.642	1.3	ug/L	5	Standard
	Al	27	6273208.6	1.1	**50.0000**	0.818	1.6	ug/L	832	Standard
	Sc	45	23723.6	2.6				ug/L	25066	Standard
	Ti	47	19074.3	0.3	**100.0000**	1.640	1.6	ug/L	38	Standard
	V	51	298222.0	1.3	**50.0000**	0.132	0.3	ug/L	974	Standard
	Cr	52	320017.6	0.3	**50.0000**	0.524	1.0	ug/L	5792	Standard
	Cr	53	40928.5	1.7	**50.0000**	0.225	0.4	ug/L	347	Standard
	Mn	55	319441.0	1.9	**50.0000**	0.827	1.7	ug/L	1164	Standard
	Co	59	304089.0	1.5	**50.0000**	1.058	2.1	ug/L	303	Standard
	Ni	60	89819.8	1.0	**50.0000**	0.212	0.4	ug/L	291	Standard
	Cu	65	88932.2	0.8	**50.0000**	0.449	0.9	ug/L	173	Standard
	Zn	66	51748.9	0.1	**50.0000**	0.578	1.2	ug/L	130	Standard
>	**Ge**	72	487193.0	1.3				ug/L	491724	Standard
	As	75	52343.3	1.1	**50.0000**	0.143	0.3	ug/L	-25	Standard
	Se	82	5108.3	0.1	**50.0000**	0.635	1.3	ug/L	12	Standard
	Se-1	77	3568.4	3.1	**50.0000**	1.152	2.3	ug/L	57	Standard
>	**Ga**	71	203.3	5.1				mg/L	148	Standard
	Rb	85	696.7	7.2				ug/L	18	Standard
	Y	89	396857.0	0.8				ug/L	401845	Standard
>	**Rh**	103	46.7	30.9				ug/L	10	Standard
	Mo	98	234863.2	0.4	**100.0000**	1.015	1.0	ug/L	12	Standard
	Ag	107	287635.1	1.1	**50.0000**	0.173	0.3	ug/L	98	Standard
	Cd	111	91412.4	1.2	**50.0000**	0.269	0.5	mg/L	11	Standard
	Cd	114	221759.1	0.4	**50.0000**	0.185	0.4	ug/L	21	Standard
>	**In**	115	526904.6	0.8				ug/L	547487	Standard
	Sn	118	252169.7	1.4	**50.0000**	0.512	1.0	ug/L	450	Standard
	Sb	123	207104.5	0.9	**50.0000**	0.294	0.6	ug/L	105	Standard
	Ba	135	89208.5	1.1	**50.0000**	0.205	0.4	ug/L	111	Standard
	Ce	140	53.3	43.3				ug/L	107	Standard
>	**Tb**	159	848207.6	0.5				ug/L	890342	Standard
	Ho	165	15.0	33.3				ug/L	10	Standard
	Tl	203	360672.2	1.4	**50.0000**	0.148	0.3	ug/L	19	Standard
	Tl	205	296087.7	2.3	**50.0000**	0.563	1.1	ug/L	17	Standard
	Pb	206	233966.3	0.1	**50.0000**	0.511	1.0	ug/L	247	Standard
	Pb	207	213337.5	0.5	**50.0000**	0.319	0.6	ug/L	215	Standard
	Pb	208	792528.2	1.3	**50.0000**	0.762	1.5	ug/L	770	Standard
	U	238	284703.0	1.6	**50.0000**	0.560	1.1	ug/L	13	Standard
>	**Bi**	209	474262.1	1.1				ug/L	503143	Standard

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Na	23	0.0					mg/L	2	Standard
Mg	24	3497.1	1.9	**5.0000**	0.218	4.4	mg/L	35	Standard
K	39	948.4	2.7	**5.0000**	0.233	4.7	mg/L	25	Standard
Ca	43	43.3	43.7	**5.0000**	5.602	112.0	mg/L	38	Standard
Fe	54	5101.0	4.4	**5.0000**	0.298	6.0	mg/L	126	Standard
Fe	57	1468.4	4.8	**5.0000**	0.320	6.4	mg/L	245	Standard
> **Sc-1**	45	23723.6	2.6				mg/L	25066	Standard
Cl	35	130578.9	0.5				ug/L	125857	Standard
Kr	83	3.3	45.8				ug/L	1	Standard
Br	81	1203.4	13.8				ug/L	1350	Standard
P	31	19414.1	1.7				ug/L	18393	Standard
S	34	4177.2	1.3				ug/L	3739	Standard
Sr	88	70.0	21.4				ug/L	78	Standard
C	12	46.7	53.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	15.9	37.5				mg/L	2	Standard
Ho-1	165	15.0	33.3				mg/L	10	Standard
Er	166	16.7	91.7				mg/L	23	Standard
I	127	1070.0	6.4				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85
Y	89
> Rh	103
Mo	98
Ag	107
Cd	111
Cd	114
> In	115
Sn	118
Sb	123
Ba	135
Ce	140
> Tb	159
Ho	165
Tl	203
Tl	205
Pb	206
Pb	207
Pb	208
U	238
> Bi	209
Na	23
Mg	24
K	39
Ca	43
Fe	54
Fe	57
> Sc-1	45
Cl	35
Kr	83
Br	81
P	31
S	34
Sr	88
C	12
N	14
Hg	202
Dy	164
Ho-1	165
Er	166
I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 3
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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Tuesday, June 21, 2016 12:44:22
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57683.0	3.4				ug/L	60176	Standard
	Be	9	68243.4	3.2	**99.2986**	6.394	6.4	ug/L	5	Standard
	Al	27	12435861.2	1.2	**98.8482**	4.005	4.1	ug/L	832	Standard
	Sc	45	23635.1	1.4				ug/L	25066	Standard
	Ti	47	37614.3	1.3	**201.0526**	7.758	3.9	ug/L	38	Standard
	V	51	571041.3	1.0	**99.0826**	2.797	2.8	ug/L	974	Standard
	Cr	52	622374.2	0.8	**100.2480**	3.517	3.5	ug/L	5792	Standard
	Cr	53	79243.4	1.4	**99.7703**	3.986	4.0	ug/L	347	Standard
	Mn	55	617908.9	0.6	**99.6157**	3.115	3.1	ug/L	1164	Standard
	Co	59	584748.3	1.1	**99.2336**	3.268	3.3	ug/L	303	Standard
	Ni	60	173682.2	0.7	**99.5871**	3.225	3.2	ug/L	291	Standard
	Cu	65	172904.7	0.9	**99.8122**	3.300	3.3	ug/L	173	Standard
	Zn	66	100294.9	0.4	**99.7166**	2.796	2.8	ug/L	130	Standard
>	**Ge**	72	476090.8	2.6				ug/L	491724	Standard
	As	75	100801.1	0.2	**99.2690**	2.816	2.8	ug/L	-25	Standard
	Se	82	10056.7	0.8	**100.4354**	3.397	3.4	ug/L	12	Standard
	Se-1	77	6841.5	0.8	**99.3844**	2.883	2.9	ug/L	57	Standard
>	**Ga**	71	273.3	16.9				mg/L	148	Standard
	Rb	85	1416.7	3.8				ug/L	18	Standard
	Y	89	395351.6	0.3				ug/L	401845	Standard
>	**Rh**	103	41.7	25.0				ug/L	10	Standard
	Mo	98	456031.3	1.3	**196.8782**	2.248	1.1	ug/L	12	Standard
	Ag	107	560896.5	1.5	**98.6698**	2.452	2.5	ug/L	98	Standard
	Cd	111	179284.5	0.8	**98.9447**	0.201	0.2	mg/L	11	Standard
	Cd	114	437441.6	1.4	**99.2289**	0.388	0.4	ug/L	21	Standard
>	**In**	115	527764.9	1.0				ug/L	547487	Standard
	Sn	118	497084.9	1.2	**99.2341**	1.596	1.6	ug/L	450	Standard
	Sb	123	404041.2	0.9	**98.6832**	1.399	1.4	ug/L	105	Standard
	Ba	135	175539.8	1.5	**99.1323**	0.709	0.7	ug/L	111	Standard
	Ce	140	116.7	19.8				ug/L	107	Standard
>	**Tb**	159	866248.1	0.4				ug/L	890342	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	705654.1	0.9	**98.7126**	1.568	1.6	ug/L	19	Standard
	Tl	205	578679.2	0.9	**98.6617**	1.804	1.8	ug/L	17	Standard
	Pb	206	450208.6	0.6	**97.9011**	1.428	1.5	ug/L	247	Standard
	Pb	207	407952.9	0.7	**97.5890**	1.592	1.6	ug/L	215	Standard
	Pb	208	1539751.2	0.8	**98.3858**	1.719	1.7	ug/L	770	Standard
	U	238	563509.1	0.5	**99.2888**	1.369	1.4	ug/L	13	Standard
>	**Bi**	209	476118.1	0.9				ug/L	503143	Standard

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Na	23	1.7	173.2	**19.9850**	34.606	173.2	mg/L	2	Standard
Mg	24	6833.2	0.7	**9.9179**	0.081	0.8	mg/L	35	Standard
K	39	1956.8	10.6	**10.2282**	1.035	10.1	mg/L	25	Standard
Ca	43	85.0	45.9	**12.4591**	8.230	66.1	mg/L	38	Standard
Fe	54	10109.9	3.0	**10.0367**	0.163	1.6	mg/L	126	Standard
Fe	57	2636.9	7.0	**9.9408**	0.844	8.5	mg/L	245	Standard
Sc-1	45	23635.1	1.4				mg/L	25066	Standard
Cl	35	128334.7	1.7				ug/L	125857	Standard
Kr	83	2.0	132.3				ug/L	1	Standard
Br	81	1193.4	13.5				ug/L	1350	Standard
P	31	19429.1	2.9				ug/L	18393	Standard
S	34	4115.6	1.9				ug/L	3739	Standard
Sr	88	65.0	15.4				ug/L	78	Standard
C	12	73.3	67.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	18.7	93.3				mg/L	2	Standard
Ho-1	165	8.3	91.7				mg/L	10	Standard
Er	166	26.7	57.3				mg/L	23	Standard
I	127	1098.4	3.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998
Corr. Coef.	Ca	43	Correlation coefficient < 0.998

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Tuesday, June 21, 2016 12:47:35
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56476.7	1.6				ug/L	60176	Standard
	Be	9	33926.3	3.5	**50.3337**	0.983	2.0	ug/L	5	Standard
	Al	27	6239013.2	0.4	**50.6129**	1.022	2.0	ug/L	832	Standard
	Sc	45	23940.6	0.8				ug/L	25066	Standard
	Ti	47	19415.4	2.2	**101.8802**	1.438	1.4	ug/L	38	Standard
	V	51	297179.3	0.9	**50.6032**	0.136	0.3	ug/L	974	Standard
	Cr	52	318615.5	0.4	**49.9739**	0.554	1.1	ug/L	5792	Standard
	Cr	53	40926.9	0.9	**50.4413**	0.865	1.7	ug/L	347	Standard
	Mn	55	316181.4	1.9	**50.0005**	1.281	2.6	ug/L	1164	Standard
	Co	59	298771.6	1.9	**49.8177**	1.314	2.6	ug/L	303	Standard
	Ni	60	88672.0	0.3	**49.8796**	0.328	0.7	ug/L	291	Standard
	Cu	65	89405.3	0.8	**50.6805**	0.441	0.9	ug/L	173	Standard
	Zn	66	52396.1	1.0	**51.0914**	0.187	0.4	ug/L	130	Standard
>	**Ge**	72	484110.7	0.9				ug/L	491724	Standard
	As	75	52053.9	0.4	**50.4073**	0.437	0.9	ug/L	-25	Standard
	Se	82	5137.2	2.1	**50.3854**	1.416	2.8	ug/L	12	Standard
	Se-1	77	3484.7	1.5	**49.4329**	0.431	0.9	ug/L	57	Standard
>	**Ga**	71	218.3	24.7				mg/L	148	Standard
	Rb	85	558.3	1.9				ug/L	18	Standard
	Y	89	399672.1	1.8				ug/L	401845	Standard
>	**Rh**	103	33.3	45.8				ug/L	10	Standard
	Mo	98	243135.2	2.2	**103.9589**	3.579	3.4	ug/L	12	Standard
	Ag	107	285914.9	0.7	**49.7940**	0.941	1.9	ug/L	98	Standard
	Cd	111	90046.3	0.9	**49.2056**	0.320	0.7	mg/L	11	Standard
	Cd	114	222130.6	2.1	**49.8897**	0.705	1.4	ug/L	21	Standard
>	**In**	115	533007.6	1.2				ug/L	547487	Standard
	Sn	118	273659.7	1.6	**54.0588**	0.839	1.6	ug/L	450	Standard
	Sb	123	202430.4	0.7	**48.9552**	0.900	1.8	ug/L	105	Standard
	Ba	135	87724.9	0.8	**49.0309**	0.637	1.3	ug/L	111	Standard
	Ce	140	115.0	26.4				ug/L	107	Standard
>	**Tb**	159	857166.0	1.1				ug/L	890342	Standard
	Ho	165	13.3	43.3				ug/L	10	Standard
	Tl	203	356396.7	0.7	**49.1066**	0.742	1.5	ug/L	19	Standard
	Tl	205	297731.8	0.4	**49.9971**	0.245	0.5	ug/L	17	Standard
	Pb	206	236852.3	0.9	**50.7035**	0.443	0.9	ug/L	247	Standard
	Pb	207	206236.5	0.5	**48.5659**	0.259	0.5	ug/L	215	Standard
	Pb	208	787029.8	0.1	**49.5023**	0.368	0.7	ug/L	770	Standard
	U	238	277599.7	0.5	**48.1782**	0.616	1.3	ug/L	13	Standard
>	**Bi**	209	483361.7	0.8				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3418.7	4.6	**4.8797**	0.255	5.2	mg/L	35	Standard
K	39	995.0	4.8	**5.0805**	0.235	4.6	mg/L	25	Standard
Ca	43	51.7	43.6	**5.3124**	4.563	85.9	mg/L	38	Standard
Fe	54	5233.0	6.0	**5.0647**	0.353	7.0	mg/L	126	Standard
Fe	57	1536.7	1.5	**5.2538**	0.069	1.3	mg/L	245	Standard
> **Sc-1**	45	23940.6	0.8				mg/L	25066	Standard
Cl	35	125636.8	0.9				ug/L	125857	Standard
Kr	83	2.0	0.0				ug/L	1	Standard
Br	81	1126.7	10.0				ug/L	1350	Standard
P	31	18713.2	1.4				ug/L	18393	Standard
S	34	3855.5	6.1				ug/L	3739	Standard
Sr	88	63.3	32.9				ug/L	78	Standard
C	12	76.7	19.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	5.5	203.3				mg/L	2	Standard
Ho-1	165	13.3	43.3				mg/L	10	Standard
Er	166	23.3	49.5				mg/L	23	Standard
I	127	955.0	1.9				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	100.667		
	Al	27	101.226		
	Sc	45			
	Ti	47	101.880		
	V	51	101.206		
	Cr	52	99.948		
	Cr	53			
	Mn	55	100.001		
	Co	59	99.635		
	Ni	60	99.759		
	Cu	65	101.361		
	Zn	66	102.183		
>	Ge	72		98.452	
	As	75	100.815		
	Se	82	100.771		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	103.959		
Ag	107	99.588		
Cd	111	98.411		
Cd	114			
> In	115		97.355	
Sn	118	108.118		
Sb	123	97.910		
Ba	135	98.062		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.213		
Tl	205			
Pb	206	101.407		
Pb	207	97.132		
Pb	208	99.005		
U	238	96.356		
> Bi	209		96.069	
Na	23	0.100		
Mg	24	97.595		
K	39	101.610		
Ca	43	106.247		
Fe	54	101.294		
Fe	57	105.077		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Tuesday, June 21, 2016 12:50:48
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57199.5	1.7				ug/L	60176	Standard
	Be	9	16.7	75.5	**0.0155**	0.019	119.7	ug/L	5	Standard
	Al	27	2038.5	13.7	**0.0079**	0.002	25.0	ug/L	832	Standard
	Sc	45	24297.8	0.5				ug/L	25066	Standard
	Ti	47	32.3	12.5	**-0.0396**	0.023	58.6	ug/L	38	Standard
	V	51	922.0	9.4	**-0.0151**	0.016	107.2	ug/L	974	Standard
	Cr	52	5344.9	2.1	**-0.0994**	0.028	28.6	ug/L	5792	Standard
	Cr	53	318.3	8.7	**-0.0227**	0.028	125.4	ug/L	347	Standard
	Mn	55	1227.7	2.1	**-0.0229**	0.006	27.8	ug/L	1164	Standard
	Co	59	382.3	8.7	**0.0137**	0.006	44.1	ug/L	303	Standard
	Ni	60	312.0	6.8	**-0.0166**	0.014	83.6	ug/L	291	Standard
	Cu	65	170.3	13.8	**-0.0020**	0.015	715.5	ug/L	173	Standard
	Zn	66	185.7	7.5	**-0.0559**	0.012	21.0	ug/L	130	Standard
>	**Ge**	72	490344.5	1.5				ug/L	491724	Standard
	As	75	12.4	235.8	**0.0460**	0.028	60.7	ug/L	-25	Standard
	Se	82	19.0	38.1	**0.0914**	0.071	78.1	ug/L	12	Standard
	Se-1	77	55.0	15.5	**0.1320**	0.132	99.9	ug/L	57	Standard
>	**Ga**	71	143.3	7.3				mg/L	148	Standard
	Rb	85	13.3	43.3				ug/L	18	Standard
	Y	89	406629.8	1.3				ug/L	401845	Standard
>	**Rh**	103	30.0	33.3				ug/L	10	Standard
	Mo	98	318.1	10.6	**0.1300**	0.014	10.8	ug/L	12	Standard
	Ag	107	139.3	8.5	**0.0086**	0.002	23.1	ug/L	98	Standard
	Cd	111	28.1	12.1	**0.0105**	0.002	17.2	mg/L	11	Standard
	Cd	114	75.1	5.3	**0.0122**	0.001	6.8	ug/L	21	Standard
>	**In**	115	538890.5	0.3				ug/L	547487	Standard
	Sn	118	866.7	26.5	**0.0956**	0.046	47.6	ug/L	450	Standard
	Sb	123	1357.6	21.6	**0.3172**	0.071	22.4	ug/L	105	Standard
	Ba	135	122.7	6.5	**0.0123**	0.005	37.7	ug/L	111	Standard
	Ce	140	16.7	124.9				ug/L	107	Standard
>	**Tb**	159	856476.7	1.5				ug/L	890342	Standard
	Ho	165	11.7	107.9				ug/L	10	Standard
	Tl	203	98.3	24.6	**0.0099**	0.003	33.6	ug/L	19	Standard
	Tl	205	75.0	34.6	**0.0135**	0.004	31.4	ug/L	17	Standard
	Pb	206	275.0	3.1	**0.0038**	0.002	58.9	ug/L	247	Standard
	Pb	207	245.0	14.3	**0.0055**	0.009	157.6	ug/L	215	Standard
	Pb	208	917.0	5.8	**-0.0023**	0.004	151.0	ug/L	770	Standard
	U	238	60.7	16.0	**0.0097**	0.002	16.7	ug/L	13	Standard
>	**Bi**	209	484798.8	0.7				ug/L	503143	Standard

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Na	23	1.7	173.2	**19.2545**	33.341	173.2	mg/L	2	Standard
Mg	24	31.7	9.1	**0.0060**	0.004	64.4	mg/L	35	Standard
K	39	31.7	39.7	**0.0506**	0.065	128.8	mg/L	25	Standard
Ca	43	26.7	60.3	**0.0987**	3.281	3325.6	mg/L	38	Standard
Fe	54	137.7	14.6	**-0.0017**	0.019	1127.9	mg/L	126	Standard
Fe	57	235.0	2.1	**-0.1342**	0.025	18.7	mg/L	245	Standard
> **Sc-1**	45	24297.8	0.5				mg/L	25066	Standard
Cl	35	123923.5	2.0				ug/L	125857	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	1190.0	11.8				ug/L	1350	Standard
P	31	19601.0	4.8				ug/L	18393	Standard
S	34	3848.8	8.3				ug/L	3739	Standard
Sr	88	63.3	32.9				ug/L	78	Standard
C	12	46.7	32.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	19.4	53.0				mg/L	2	Standard
Ho-1	165	11.7	107.9				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	1073.4	5.6				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.720	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.430	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.354	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Na	23	
QC Std 2	Fe	57	

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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Tuesday, June 21, 2016 12:54:01
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54655.2	5.0				ug/L	60176	Standard
	Be	9	166.7	9.2	**0.2464**	0.016	6.5	ug/L	5	Standard
	Al	27	3600.6	78.3	**0.0211**	0.022	102.5	ug/L	832	Standard
	Sc	45	22989.1	1.7				ug/L	25066	Standard
	Ti	47	44.3	25.7	**0.0370**	0.061	164.4	ug/L	38	Standard
	V	51	3236.7	8.3	**0.4098**	0.039	9.6	ug/L	974	Standard
	Cr	52	10252.8	1.1	**0.7782**	0.013	1.7	ug/L	5792	Standard
	Cr	53	963.4	10.4	**0.8456**	0.146	17.3	ug/L	347	Standard
	Mn	55	4198.9	8.1	**0.4847**	0.049	10.1	ug/L	1164	Standard
	Co	59	2734.9	12.7	**0.4297**	0.055	12.9	ug/L	303	Standard
	Ni	60	3023.6	2.6	**1.6026**	0.022	1.4	ug/L	291	Standard
	Cu	65	1528.7	5.1	**0.8141**	0.035	4.3	ug/L	173	Standard
	Zn	66	6997.6	1.0	**6.9667**	0.165	2.4	ug/L	130	Standard
>	**Ge**	72	460888.7	1.9				ug/L	491724	Standard
	As	75	390.1	8.4	**0.4307**	0.036	8.3	ug/L	-25	Standard
	Se	82	49.3	11.7	**0.4157**	0.051	12.3	ug/L	12	Standard
	Se-1	77	73.3	5.5	**0.4585**	0.082	18.0	ug/L	57	Standard
>	**Ga**	71	193.3	33.8				mg/L	148	Standard
	Rb	85	25.0	72.1				ug/L	18	Standard
	Y	89	391940.6	1.7				ug/L	401845	Standard
>	**Rh**	103	18.3	31.5				ug/L	10	Standard
	Mo	98	268.6	80.2	**0.1109**	0.092	82.8	ug/L	12	Standard
	Ag	107	2373.9	3.4	**0.4011**	0.013	3.1	ug/L	98	Standard
	Cd	111	418.7	2.5	**0.2258**	0.005	2.2	mg/L	11	Standard
	Cd	114	1058.7	2.4	**0.2351**	0.005	2.1	ug/L	21	Standard
>	**In**	115	529129.7	0.8				ug/L	547487	Standard
	Sn	118	546.7	13.3	**0.0350**	0.015	44.2	ug/L	450	Standard
	Sb	123	1860.1	4.7	**0.4457**	0.025	5.6	ug/L	105	Standard
	Ba	135	1306.7	5.0	**0.6811**	0.043	6.3	ug/L	111	Standard
	Ce	140	71.7	45.4				ug/L	107	Standard
>	**Tb**	159	840369.4	1.8				ug/L	890342	Standard
	Ho	165	3.3	86.6				ug/L	10	Standard
	Tl	203	677.3	13.0	**0.0915**	0.012	13.1	ug/L	19	Standard
	Tl	205	673.3	28.8	**0.1162**	0.033	28.2	ug/L	17	Standard
	Pb	206	1332.4	14.3	**0.2361**	0.041	17.4	ug/L	247	Standard
	Pb	207	1139.0	15.8	**0.2215**	0.042	19.1	ug/L	215	Standard
	Pb	208	4327.3	17.0	**0.2178**	0.046	21.3	ug/L	770	Standard
	U	238	2258.5	8.8	**0.3988**	0.036	8.9	ug/L	13	Standard
>	**Bi**	209	474166.4	1.0				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	13.3	**0.0260**	0.009	33.4	mg/L	35	Standard
K	39	35.0	14.3	**0.0782**	0.031	39.0	mg/L	25	Standard
Ca	43	33.3	45.8	**1.8021**	3.150	174.8	mg/L	38	Standard
Fe	54	89.0	20.5	**-0.0447**	0.017	38.6	mg/L	126	Standard
Fe	57	240.0	23.5	**-0.0557**	0.261	468.1	mg/L	245	Standard
> **Sc-1**	45	22989.1	1.7				mg/L	25066	Standard
Cl	35	119419.5	1.1				ug/L	125857	Standard
Kr	83	3.3	75.5				ug/L	1	Standard
Br	81	1160.0	4.6				ug/L	1350	Standard
P	31	12982.2	1.5				ug/L	18393	Standard
S	34	3700.5	6.7				ug/L	3739	Standard
Sr	88	70.0	7.1				ug/L	78	Standard
C	12	50.0	60.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.2	86.7				mg/L	2	Standard
Ho-1	165	3.3	86.6				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	760.0	5.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	123.200		
Al	27	2.108		
Sc	45			
Ti	47			
V	51	102.440		
Cr	52	97.277		
Cr	53			
Mn	55	96.934		
Co	59	107.430		
Ni	60	100.161		
Cu	65	101.757		
Zn	66	111.467		
> Ge	72		93.729	
As	75	107.669		
Se	82	103.926		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	100.275		
Cd	111	94.072		
Cd	114			
> In	115			96.647
Sn	118			
Sb	123	111.413		
Ba	135	90.816		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	114.430		
Tl	205			
Pb	206			
Pb	207			
Pb	208	108.881		
U	238	99.694		
> Bi	209			94.241
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

Sample ID: QC Std 3
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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Tuesday, June 21, 2016 12:57:12
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59928.3	1.0				ug/L	60176	Standard
	Be	9	13.3	78.1	**0.0097**	0.015	152.2	ug/L	5	Standard
	Al	27	6442669.1	1.9	**49.2453**	0.871	1.8	ug/L	832	Standard
	Sc	45	24813.6	2.8				ug/L	25066	Standard
	Ti	47	19998.2	2.1	**106.8973**	2.582	2.4	ug/L	38	Standard
	V	51	1246.2	25.8	**0.0465**	0.058	124.9	ug/L	974	Standard
	Cr	52	6657.1	2.4	**0.1405**	0.025	17.7	ug/L	5792	Standard
	Cr	53	1993.5	6.1	**2.1090**	0.143	6.8	ug/L	347	Standard
	Mn	55	1883.1	3.1	**0.0891**	0.008	8.9	ug/L	1164	Standard
	Co	59	559.7	6.4	**0.0458**	0.006	12.2	ug/L	303	Standard
	Ni	60	864.0	5.1	**0.3063**	0.026	8.5	ug/L	291	Standard
	Cu	65	667.0	6.9	**0.2880**	0.024	8.5	ug/L	173	Standard
	Zn	66	2146.2	5.5	**1.9055**	0.111	5.8	ug/L	130	Standard
>	**Ge**	72	475353.7	1.0				ug/L	491724	Standard
	As	75	-27.8	154.3	**0.0063**	0.042	673.6	ug/L	-25	Standard
	Se	82	18.3	27.0	**0.0905**	0.048	53.4	ug/L	12	Standard
	Se-1	77	292.0	12.5	**3.6225**	0.508	14.0	ug/L	57	Standard
>	**Ga**	71	251.7	1.1				mg/L	148	Standard
	Rb	85	916.7	3.2				ug/L	18	Standard
	Y	89	407553.9	0.9				ug/L	401845	Standard
>	**Rh**	103	21.7	13.3				ug/L	10	Standard
	Mo	98	227701.2	0.8	**95.9028**	0.590	0.6	ug/L	12	Standard
	Ag	107	287.3	17.5	**0.0339**	0.008	24.1	ug/L	98	Standard
	Cd	111	-145.8	9.1	**-0.0833**	0.008	9.6	mg/L	11	Standard
	Cd	114	464.9	14.1	**0.0986**	0.016	15.9	ug/L	21	Standard
>	**In**	115	540970.5	1.1				ug/L	547487	Standard
	Sn	118	813.4	12.5	**0.0844**	0.019	22.3	ug/L	450	Standard
	Sb	123	429.7	19.0	**0.0947**	0.019	20.0	ug/L	105	Standard
	Ba	135	438.7	7.4	**0.1861**	0.015	8.2	ug/L	111	Standard
	Ce	140	421.7	17.3				ug/L	107	Standard
>	**Tb**	159	869535.9	1.7				ug/L	890342	Standard
	Ho	165	25.0	72.1				ug/L	10	Standard
	Tl	203	354.0	26.0	**0.0461**	0.013	27.8	ug/L	19	Standard
	Tl	205	328.3	30.2	**0.0571**	0.017	29.2	ug/L	17	Standard
	Pb	206	641.0	8.2	**0.0850**	0.011	12.9	ug/L	247	Standard
	Pb	207	546.0	4.3	**0.0790**	0.005	6.1	ug/L	215	Standard
	Pb	208	2135.1	6.6	**0.0771**	0.009	11.7	ug/L	770	Standard
	U	238	92.3	51.3	**0.0155**	0.008	54.0	ug/L	13	Standard
>	**Bi**	209	474298.1	0.6				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.5792**	32.172	173.2	mg/L	2	Standard
Mg	24	8645.8	1.7	**11.9633**	0.233	1.9	mg/L	35	Standard
K	39	950.0	10.3	**4.6748**	0.512	11.0	mg/L	25	Standard
Ca	43	120.0	27.3	**18.4950**	6.097	33.0	mg/L	38	Standard
Fe	54	12543.1	1.5	**11.8952**	0.445	3.7	mg/L	126	Standard
Fe	57	3418.7	4.3	**12.5234**	0.241	1.9	mg/L	245	Standard
> **Sc-1**	45	24813.6	2.8				mg/L	25066	Standard
Cl	35	133729.6	1.1				ug/L	125857	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	1173.4	5.8				ug/L	1350	Standard
P	31	17748.7	0.7				ug/L	18393	Standard
S	34	3328.7	3.9				ug/L	3739	Standard
Sr	88	88.3	27.9				ug/L	78	Standard
C	12	106.7	14.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	33.3				mg/L	0	Standard
Dy	164	29.4	56.6				mg/L	2	Standard
Ho-1	165	25.0	72.1				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	1626.8	8.4				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27	0.985		
	Sc	45			
	Ti	47	106.897		
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.671	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	95.903		
Ag	107			
Cd	111			
Cd	114			
> In	115			98.810
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209			94.267
Na	23	148.634		
Mg	24	239.267		
K	39	93.495		
Ca	43	123.300		
Fe	54	95.162		
Fe	57	100.187		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Tl	203	
QC Std 4	Na	23	

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QC Std 4	Mg	24
QC Std 4	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Tuesday, June 21, 2016 13:00:24
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	61313.8	1.9				ug/L	60176	Standard
	Be	9	72875.0	3.4	**99.6031**	1.781	1.8	ug/L	5	Standard
	Al	27	6936241.6	2.7	**51.8339**	1.804	3.5	ug/L	832	Standard
	Sc	45	23489.9	0.9				ug/L	25066	Standard
	Ti	47	21276.6	0.7	**110.0520**	2.192	2.0	ug/L	38	Standard
	V	51	582101.9	0.7	**97.8399**	1.870	1.9	ug/L	974	Standard
	Cr	52	624654.9	1.1	**97.4149**	0.832	0.9	ug/L	5792	Standard
	Cr	53	80558.6	0.3	**98.2182**	1.167	1.2	ug/L	347	Standard
	Mn	55	645844.3	0.9	**100.8477**	1.253	1.2	ug/L	1164	Standard
	Co	59	617389.8	0.7	**101.4766**	0.663	0.7	ug/L	303	Standard
	Ni	60	173011.2	0.8	**96.0705**	0.455	0.5	ug/L	291	Standard
	Cu	65	173942.1	0.9	**97.2491**	1.211	1.2	ug/L	173	Standard
	Zn	66	103580.5	0.6	**99.7581**	1.812	1.8	ug/L	130	Standard
>	Ge	72	491319.1	1.3				ug/L	491724	Standard
	As	75	106169.7	0.7	**101.2696**	0.638	0.6	ug/L	-25	Standard
	Se	82	10505.5	0.8	**101.6127**	0.832	0.8	ug/L	12	Standard
	Se-1	77	7353.1	1.7	**103.4898**	1.990	1.9	ug/L	57	Standard
>	Ga	71	335.0	6.5				mg/L	148	Standard
	Rb	85	808.4	4.6				ug/L	18	Standard
	Y	89	401288.7	1.4				ug/L	401845	Standard
>	Rh	103	43.3	24.0				ug/L	10	Standard
	Mo	98	244397.7	1.3	**106.0540**	1.465	1.4	ug/L	12	Standard
	Ag	107	538144.7	0.3	**95.1434**	0.773	0.8	ug/L	98	Standard
	Cd	111	185622.1	1.2	**102.9756**	1.700	1.7	mg/L	11	Standard
	Cd	114	445028.4	2.2	**101.4874**	3.011	3.0	ug/L	21	Standard
>	In	115	525063.0	0.9				ug/L	547487	Standard
	Sn	118	885.0	4.3	**0.1037**	0.009	8.6	ug/L	450	Standard
	Sb	123	410344.2	0.6	**100.7382**	1.315	1.3	ug/L	105	Standard
	Ba	135	176777.0	0.5	**100.3551**	1.267	1.3	ug/L	111	Standard
	Ce	140	53.3	5.4				ug/L	107	Standard
>	Tb	159	870528.1	1.1				ug/L	890342	Standard
	Ho	165	10.0	86.6				ug/L	10	Standard
	Tl	203	717855.7	0.6	**98.9861**	1.545	1.6	ug/L	19	Standard
	Tl	205	613661.1	1.7	**103.1465**	3.224	3.1	ug/L	17	Standard
	Pb	206	474569.5	1.2	**101.7199**	1.074	1.1	ug/L	247	Standard
	Pb	207	412085.1	0.4	**97.1656**	1.063	1.1	ug/L	215	Standard
	Pb	208	1621535.0	0.8	**102.1386**	2.136	2.1	ug/L	770	Standard
	U	238	576318.6	1.3	**100.1091**	2.735	2.7	ug/L	13	Standard
>	Bi	209	483038.3	1.5				ug/L	503143	Standard

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Na	23	1.7	173.2	**19.9124**	34.481	173.2	mg/L	2	Standard
Mg	24	9276.2	1.0	**13.5616**	0.245	1.8	mg/L	35	Standard
K	39	1035.0	5.9	**5.3939**	0.335	6.2	mg/L	25	Standard
Ca	43	95.0	18.2	**14.6391**	3.459	23.6	mg/L	38	Standard
Fe	54	13234.0	0.1	**13.2653**	0.121	0.9	mg/L	126	Standard
Fe	57	3633.8	1.9	**14.1986**	0.233	1.6	mg/L	245	Standard
> **Sc-1**	45	23489.9	0.9				mg/L	25066	Standard
Cl	35	135528.8	0.9				ug/L	125857	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	1296.7	11.2				ug/L	1350	Standard
P	31	17078.0	3.3				ug/L	18393	Standard
S	34	3508.7	2.5				ug/L	3739	Standard
Sr	88	66.7	8.7				ug/L	78	Standard
C	12	133.3	22.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.2	93.3				mg/L	2	Standard
Ho-1	165	10.0	86.6				mg/L	10	Standard
Er	166	10.0					mg/L	23	Standard
I	127	985.0	5.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	99.603		
Al	27	1.037		
Sc	45			
Ti	47	110.052		
V	51	97.840		
Cr	52	97.415		
Cr	53			
Mn	55	100.848		
Co	59	101.477		
Ni	60	96.070		
Cu	65	97.249		
Zn	66	99.758		
> Ge	72		99.918	
As	75	101.270		
Se	82	101.613		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	106.054		
Ag	107	95.143		
Cd	111	102.976		
Cd	114			
> In	115		95.904	
Sn	118			
Sb	123	100.738		
Ba	135	100.355		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.986		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.139		
U	238	100.109		
> Bi	209		96.004	
Na	23	159.300		
Mg	24	271.232		
K	39	107.878		
Ca	43	97.594		
Fe	54	106.123		
Fe	57	113.589		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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QC Std 5	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 13:03:37
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60077.3	2.7				ug/L	60176	Standard
	Be	9	36198.2	1.7	**50.5140**	1.282	2.5	ug/L	5	Standard
	Al	27	6376898.0	1.9	**48.6310**	0.871	1.8	ug/L	832	Standard
	Sc	45	23925.5	1.1				ug/L	25066	Standard
	Ti	47	18736.6	0.9	**98.5507**	0.836	0.8	ug/L	38	Standard
	V	51	296150.3	0.5	**50.5471**	0.213	0.4	ug/L	974	Standard
	Cr	52	313728.4	0.3	**49.3090**	0.221	0.4	ug/L	5792	Standard
	Cr	53	39496.4	3.0	**48.7745**	1.414	2.9	ug/L	347	Standard
	Mn	55	317457.2	0.2	**50.3163**	0.163	0.3	ug/L	1164	Standard
	Co	59	310517.1	1.0	**51.8939**	0.567	1.1	ug/L	303	Standard
	Ni	60	88251.3	0.9	**49.7584**	0.471	0.9	ug/L	291	Standard
	Cu	65	88383.0	0.6	**50.2173**	0.264	0.5	ug/L	173	Standard
	Zn	66	51386.7	1.3	**50.2219**	0.654	1.3	ug/L	130	Standard
>	Ge	72	482967.1	0.2				ug/L	491724	Standard
	As	75	51917.7	0.5	**50.3921**	0.181	0.4	ug/L	-25	Standard
	Se	82	5239.5	1.1	**51.5049**	0.485	0.9	ug/L	12	Standard
	Se-1	77	3545.7	2.3	**50.4312**	1.129	2.2	ug/L	57	Standard
>	Ga	71	213.3	29.9				mg/L	148	Standard
	Rb	85	683.3	10.3				ug/L	18	Standard
	Y	89	409717.0	1.9				ug/L	401845	Standard
>	Rh	103	31.7	50.8				ug/L	10	Standard
	Mo	98	232285.6	0.4	**98.2916**	1.691	1.7	ug/L	12	Standard
	Ag	107	285420.0	0.6	**49.1961**	0.526	1.1	ug/L	98	Standard
	Cd	111	92777.6	1.2	**50.1831**	0.862	1.7	mg/L	11	Standard
	Cd	114	226030.0	0.7	**50.2543**	0.780	1.6	ug/L	21	Standard
>	In	115	538520.1	1.5				ug/L	547487	Standard
	Sn	118	254569.4	1.6	**49.7699**	0.919	1.8	ug/L	450	Standard
	Sb	123	208380.8	0.8	**49.8815**	1.089	2.2	ug/L	105	Standard
	Ba	135	89491.5	0.9	**49.5071**	0.604	1.2	ug/L	111	Standard
	Ce	140	65.0	33.5				ug/L	107	Standard
>	Tb	159	844342.7	0.8				ug/L	890342	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	362962.1	0.5	**50.9927**	0.530	1.0	ug/L	19	Standard
	Tl	205	304433.0	0.1	**52.1279**	0.337	0.6	ug/L	17	Standard
	Pb	206	233807.2	0.0	**51.0365**	0.279	0.5	ug/L	247	Standard
	Pb	207	211565.2	0.5	**50.8037**	0.504	1.0	ug/L	215	Standard
	Pb	208	809571.0	0.8	**51.9240**	0.557	1.1	ug/L	770	Standard
	U	238	290163.7	1.3	**51.3453**	0.563	1.1	ug/L	13	Standard
>	Bi	209	474036.7	0.5				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3508.7	4.9	**5.0100**	0.196	3.9	mg/L	35	Standard
K	39	841.7	3.8	**4.2829**	0.143	3.3	mg/L	25	Standard
Ca	43	70.0	25.8	**9.1073**	3.560	39.1	mg/L	38	Standard
Fe	54	5170.4	1.1	**5.0040**	0.054	1.1	mg/L	126	Standard
Fe	57	1545.1	3.9	**5.2918**	0.217	4.1	mg/L	245	Standard
> **Sc-1**	45	23925.5	1.1				mg/L	25066	Standard
Cl	35	126968.4	0.5				ug/L	125857	Standard
Kr	83	2.7	21.7				ug/L	1	Standard
Br	81	1253.4	5.1				ug/L	1350	Standard
P	31	17353.3	2.1				ug/L	18393	Standard
S	34	3680.4	9.2				ug/L	3739	Standard
Sr	88	66.7	11.5				ug/L	78	Standard
C	12	53.3	10.8				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.5	86.7				mg/L	2	Standard
Ho-1	165	8.3	69.3				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	23	Standard
I	127	1191.7	5.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	101.028		
Al	27	97.262		
Sc	45			
Ti	47	98.551		
V	51	101.094		
Cr	52	98.618		
Cr	53			
Mn	55	100.633		
Co	59	103.788		
Ni	60	99.517		
Cu	65	100.435		
Zn	66	100.444		
> Ge	72		98.219	
As	75	100.784		
Se	82	103.010		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.292		
Ag	107	98.392		
Cd	111	100.366		
Cd	114			
> In	115		98.362	
Sn	118	99.540		
Sb	123	99.763		
Ba	135	99.014		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.985		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.848		
U	238	102.691		
> Bi	209		94.215	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 13:06:48
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59220.5	2.2				ug/L	60176	Standard
	Be	9	21.7	113.8	**0.0219**	0.035	161.5	ug/L	5	Standard
	Al	27	2657.0	57.6	**0.0122**	0.012	99.2	ug/L	832	Standard
	Sc	45	23930.6	3.3				ug/L	25066	Standard
	Ti	47	35.7	25.9	**-0.0239**	0.047	197.1	ug/L	38	Standard
	V	51	1146.6	35.4	**0.0212**	0.067	317.9	ug/L	974	Standard
	Cr	52	5554.4	3.9	**-0.0728**	0.035	47.8	ug/L	5792	Standard
	Cr	53	378.3	10.0	**0.0477**	0.045	93.6	ug/L	347	Standard
	Mn	55	1370.7	12.3	**-0.0021**	0.026	1218.8	ug/L	1164	Standard
	Co	59	513.7	41.1	**0.0346**	0.034	98.9	ug/L	303	Standard
	Ni	60	343.7	8.0	**-0.0004**	0.015	3446.4	ug/L	291	Standard
	Cu	65	177.3	6.6	**0.0010**	0.006	620.6	ug/L	173	Standard
	Zn	66	178.7	18.3	**-0.0639**	0.031	48.4	ug/L	130	Standard
>	**Ge**	72	493877.2	0.3				ug/L	491724	Standard
	As	75	17.2	53.9	**0.0502**	0.009	17.4	ug/L	-25	Standard
	Se	82	20.0	19.9	**0.1000**	0.038	37.8	ug/L	12	Standard
	Se-1	77	45.3	7.1	**-0.0109**	0.047	434.0	ug/L	57	Standard
>	**Ga**	71	238.3	11.9				mg/L	148	Standard
	Rb	85	26.7	10.8				ug/L	18	Standard
	Y	89	397655.2	1.8				ug/L	401845	Standard
>	**Rh**	103	25.0	20.0				ug/L	10	Standard
	Mo	98	421.6	47.5	**0.1748**	0.084	48.3	ug/L	12	Standard
	Ag	107	433.3	112.5	**0.0596**	0.084	141.2	ug/L	98	Standard
	Cd	111	31.1	76.1	**0.0122**	0.013	105.0	mg/L	11	Standard
	Cd	114	71.1	92.6	**0.0114**	0.015	128.1	ug/L	21	Standard
>	**In**	115	535380.0	0.4				ug/L	547487	Standard
	Sn	118	765.0	11.6	**0.0766**	0.017	22.1	ug/L	450	Standard
	Sb	123	1104.8	53.2	**0.2581**	0.140	54.4	ug/L	105	Standard
	Ba	135	133.3	33.1	**0.0186**	0.024	130.4	ug/L	111	Standard
	Ce	140	16.7	17.3				ug/L	107	Standard
>	**Tb**	159	863928.7	0.9				ug/L	890342	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	400.0	138.2	**0.0504**	0.074	147.0	ug/L	19	Standard
	Tl	205	160.0	86.7	**0.0274**	0.022	81.9	ug/L	17	Standard
	Pb	206	498.3	73.3	**0.0503**	0.075	149.6	ug/L	247	Standard
	Pb	207	424.0	75.0	**0.0464**	0.072	155.4	ug/L	215	Standard
	Pb	208	1164.7	36.5	**0.0127**	0.025	198.3	ug/L	770	Standard
	U	238	130.0	106.6	**0.0213**	0.023	109.2	ug/L	13	Standard
>	**Bi**	209	486251.4	1.7				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	33.3	8.7	**0.0092**	0.006	61.0	mg/L	35	Standard
K	39	15.0	33.3	**-0.0334**	0.028	84.6	mg/L	25	Standard
Ca	43	26.7	39.0	**0.2255**	2.276	1009.5	mg/L	38	Standard
Fe	54	141.1	12.6	**0.0041**	0.021	506.6	mg/L	126	Standard
Fe	57	250.0	10.4	**-0.0592**	0.073	123.1	mg/L	245	Standard
> **Sc-1**	45	23930.6	3.3				mg/L	25066	Standard
Cl	35	125381.4	1.2				ug/L	125857	Standard
Kr	83	2.7	43.3				ug/L	1	Standard
Br	81	1060.0	3.8				ug/L	1350	Standard
P	31	17481.7	2.2				ug/L	18393	Standard
S	34	3750.5	3.0				ug/L	3739	Standard
Sr	88	66.7	8.7				ug/L	78	Standard
C	12	66.7	48.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	6.2	186.8				mg/L	2	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	1055.0	11.6				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.438	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.789
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.643
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	
QC Std 7	Tl	203	

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Method 6020 - Summary Report

Sample ID: PBW 7Q WG573483-02
Sample Date/Time: Tuesday, June 21, 2016 13:10:00
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58444.2	0.7				ug/L	60176	Standard
	Be	9	26.7	47.2	**0.0292**	0.018	60.9	ug/L	5	Standard
	Al	27	23049.2	3.8	**0.1723**	0.008	4.5	ug/L	832	Standard
	Sc	45	24202.7	2.5				ug/L	25066	Standard
	Ti	47	43.7	14.7	**0.0218**	0.034	156.7	ug/L	38	Standard
	V	51	1023.3	8.4	**0.0039**	0.014	347.8	ug/L	974	Standard
	Cr	52	7324.1	2.0	**0.2266**	0.020	8.6	ug/L	5792	Standard
	Cr	53	578.3	3.5	**0.3051**	0.025	8.2	ug/L	347	Standard
	Mn	55	2461.2	1.9	**0.1751**	0.005	2.7	ug/L	1164	Standard
	Co	59	428.7	8.1	**0.0221**	0.005	24.1	ug/L	303	Standard
	Ni	60	482.7	6.5	**0.0817**	0.017	21.3	ug/L	291	Standard
	Cu	65	326.0	2.1	**0.0873**	0.005	5.3	ug/L	173	Standard
	Zn	66	1189.0	5.1	**0.9283**	0.052	5.6	ug/L	130	Standard
>	**Ge**	72	484464.0	0.7				ug/L	491724	Standard
	As	75	-14.6	23.2	**0.0198**	0.003	16.3	ug/L	-25	Standard
	Se	82	17.0	20.8	**0.0742**	0.035	47.7	ug/L	12	Standard
	Se-1	77	51.3	11.4	**0.0873**	0.080	91.1	ug/L	57	Standard
>	**Ga**	71	196.7	5.9				mg/L	148	Standard
	Rb	85	100.0	27.8				ug/L	18	Standard
	Y	89	408879.8	3.6				ug/L	401845	Standard
>	**Rh**	103	25.0	52.9				ug/L	10	Standard
	Mo	98	122.8	14.6	**0.0481**	0.008	16.4	ug/L	12	Standard
	Ag	107	156.0	19.3	**0.0119**	0.005	46.1	ug/L	98	Standard
	Cd	111	26.1	40.8	**0.0096**	0.006	61.9	mg/L	11	Standard
	Cd	114	50.9	19.0	**0.0070**	0.002	32.2	ug/L	21	Standard
>	**In**	115	532128.9	0.9				ug/L	547487	Standard
	Sn	118	586.7	9.1	**0.0422**	0.011	26.5	ug/L	450	Standard
	Sb	123	401.0	34.8	**0.0897**	0.034	38.3	ug/L	105	Standard
	Ba	135	228.3	6.6	**0.0724**	0.009	12.2	ug/L	111	Standard
	Ce	140	110.0	22.7				ug/L	107	Standard
>	**Tb**	159	840904.1	1.3				ug/L	890342	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	87.0	51.2	**0.0084**	0.006	71.8	ug/L	19	Standard
	Tl	205	86.7	76.8	**0.0155**	0.011	71.5	ug/L	17	Standard
	Pb	206	333.0	6.3	**0.0167**	0.004	25.8	ug/L	247	Standard
	Pb	207	290.7	9.1	**0.0166**	0.006	33.9	ug/L	215	Standard
	Pb	208	1101.3	4.9	**0.0097**	0.003	31.1	ug/L	770	Standard
	U	238	73.3	48.0	**0.0119**	0.006	50.6	ug/L	13	Standard
>	**Bi**	209	481400.6	1.0				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	38.3	41.9	**0.0153**	0.022	142.7	mg/L	35	Standard
K	39	23.3	53.9	**0.0092**	0.068	740.5	mg/L	25	Standard
Ca	43	21.7	58.1	**-0.8598**	2.697	313.7	mg/L	38	Standard
Fe	54	130.8	28.3	**-0.0077**	0.038	495.4	mg/L	126	Standard
Fe	57	285.0	4.6	**0.0748**	0.079	105.8	mg/L	245	Standard
> **Sc-1**	45	24202.7	2.5				mg/L	25066	Standard
Cl	35	126348.0	1.3				ug/L	125857	Standard
Kr	83	1.0	173.2				ug/L	1	Standard
Br	81	1470.1	6.5				ug/L	1350	Standard
P	31	16710.9	1.6				ug/L	18393	Standard
S	34	3748.8	2.6				ug/L	3739	Standard
Sr	88	75.0	11.5				ug/L	78	Standard
C	12	26.7	57.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.0	94.2				mg/L	2	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	656.7	5.8				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		97.122	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.524	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.195
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.679
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 7Q WG573483-02
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Method 6020 - Summary Report

Sample ID: LCSW 7Q WG573483-03
Sample Date/Time: Tuesday, June 21, 2016 13:13:12
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59597.0	1.4				ug/L	60176	Standard
	Be	9	26.7	28.6	**0.0284**	0.010	36.7	ug/L	5	Standard
	Al	27	123378.7	0.8	**0.9401**	0.007	0.7	ug/L	832	Standard
	Sc	45	24184.3	4.6				ug/L	25066	Standard
	Ti	47	45.0	25.6	**0.0250**	0.057	229.9	ug/L	38	Standard
	V	51	1068.6	8.7	**0.0091**	0.015	170.4	ug/L	974	Standard
	Cr	52	7727.3	2.4	**0.2731**	0.024	8.9	ug/L	5792	Standard
	Cr	53	576.7	16.1	**0.2921**	0.109	37.2	ug/L	347	Standard
	Mn	55	3288.0	1.8	**0.2988**	0.009	3.0	ug/L	1164	Standard
	Co	59	442.3	9.5	**0.0233**	0.007	28.1	ug/L	303	Standard
	Ni	60	549.7	6.7	**0.1150**	0.019	16.8	ug/L	291	Standard
	Cu	65	1533.7	1.8	**0.7602**	0.018	2.4	ug/L	173	Standard
	Zn	66	3561.1	0.5	**3.2002**	0.053	1.7	ug/L	130	Standard
>	**Ge**	72	491613.1	1.0				ug/L	491724	Standard
	As	75	67.8	11.4	**0.0986**	0.008	8.2	ug/L	-25	Standard
	Se	82	49.8	19.1	**0.3887**	0.090	23.1	ug/L	12	Standard
	Se-1	77	49.0	15.9	**0.0445**	0.115	258.9	ug/L	57	Standard
>	**Ga**	71	185.0	23.4				mg/L	148	Standard
	Rb	85	243.3	21.6				ug/L	18	Standard
	Y	89	394619.8	1.0				ug/L	401845	Standard
>	**Rh**	103	30.0	44.1				ug/L	10	Standard
	Mo	98	108.2	38.9	**0.0419**	0.018	43.1	ug/L	12	Standard
	Ag	107	146.7	33.6	**0.0102**	0.009	84.7	ug/L	98	Standard
	Cd	111	29.5	45.9	**0.0114**	0.007	64.9	mg/L	11	Standard
	Cd	114	80.9	41.5	**0.0138**	0.008	55.0	ug/L	21	Standard
>	**In**	115	532617.2	0.2				ug/L	547487	Standard
	Sn	118	588.3	10.2	**0.0424**	0.012	28.7	ug/L	450	Standard
	Sb	123	334.8	20.5	**0.0734**	0.016	22.4	ug/L	105	Standard
	Ba	135	9299.9	0.5	**5.1515**	0.018	0.3	ug/L	111	Standard
	Ce	140	778.4	11.1				ug/L	107	Standard
>	**Tb**	159	856842.4	1.3				ug/L	890342	Standard
	Ho	165	25.0	20.0				ug/L	10	Standard
	Tl	203	92.3	45.4	**0.0091**	0.006	63.1	ug/L	19	Standard
	Tl	205	91.7	74.5	**0.0163**	0.011	69.8	ug/L	17	Standard
	Pb	206	607.0	7.8	**0.0743**	0.010	14.0	ug/L	247	Standard
	Pb	207	493.7	5.6	**0.0635**	0.006	9.8	ug/L	215	Standard
	Pb	208	1980.7	5.5	**0.0640**	0.007	10.5	ug/L	770	Standard
	U	238	71.0	67.4	**0.0114**	0.008	72.1	ug/L	13	Standard
>	**Bi**	209	486381.9	0.6				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.3778**	31.823	173.2	mg/L	2	Standard
Mg	24	1595.1	7.2	**2.2306**	0.060	2.7	mg/L	35	Standard
K	39	30.0	44.1	**0.0441**	0.075	168.9	mg/L	25	Standard
Ca	43	33.3	45.8	**1.5391**	3.367	218.8	mg/L	38	Standard
Fe	54	139.5	48.2	**-0.0011**	0.059	5464.9	mg/L	126	Standard
Fe	57	250.0	17.8	**-0.0719**	0.146	202.6	mg/L	245	Standard
Sc-1	45	24184.3	4.6				mg/L	25066	Standard
Cl	35	130065.3	1.4				ug/L	125857	Standard
Kr	83	1.0	0.0				ug/L	1	Standard
Br	81	9623.1	5.0				ug/L	1350	Standard
P	31	16951.1	1.1				ug/L	18393	Standard
S	34	3743.8	4.5				ug/L	3739	Standard
Sr	88	116.7	20.3				ug/L	78	Standard
C	12	46.7	96.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.2	94.4				mg/L	2	Standard
Ho-1	165	25.0	20.0				mg/L	10	Standard
Er	166	10.0					mg/L	23	Standard
I	127	1343.4	6.5				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.038	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.978	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.284
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.669
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606096103 WG573483-01
Sample Date/Time: Tuesday, June 21, 2016 13:16:23
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61047.7	0.6				ug/L	60176	Standard
	Be	9	15.0	33.3	**0.0116**	0.007	59.6	ug/L	5	Standard
	Al	27	9341973.6	1.7	**70.1047**	1.594	2.3	ug/L	832	Standard
	Sc	45	24823.7	1.2				ug/L	25066	Standard
	Ti	47	196.3	14.4	**0.8437**	0.163	19.3	ug/L	38	Standard
	V	51	1520.3	9.2	**0.0937**	0.027	28.5	ug/L	974	Standard
	Cr	52	9129.1	2.7	**0.5414**	0.059	10.9	ug/L	5792	Standard
	Cr	53	738.4	5.5	**0.5207**	0.064	12.4	ug/L	347	Standard
	Mn	55	11081.1	1.1	**1.5747**	0.043	2.7	ug/L	1164	Standard
	Co	59	619.0	4.0	**0.0557**	0.005	8.5	ug/L	303	Standard
	Ni	60	1274.1	1.2	**0.5411**	0.006	1.2	ug/L	291	Standard
	Cu	65	459.3	3.5	**0.1677**	0.009	5.7	ug/L	173	Standard
	Zn	66	1745.8	2.8	**1.5038**	0.023	1.6	ug/L	130	Standard
>	**Ge**	72	475973.6	1.5				ug/L	491724	Standard
	As	75	98.0	38.5	**0.1307**	0.038	29.4	ug/L	-25	Standard
	Se	82	59.0	18.3	**0.4974**	0.116	23.2	ug/L	12	Standard
	Se-1	77	72.0	13.9	**0.4016**	0.131	32.6	ug/L	57	Standard
>	**Ga**	71	200.0	13.9				mg/L	148	Standard
	Rb	85	3465.4	3.7				ug/L	18	Standard
	Y	89	402121.2	2.1				ug/L	401845	Standard
>	**Rh**	103	56.7	44.4				ug/L	10	Standard
	Mo	98	1248.8	2.4	**0.5212**	0.009	1.6	ug/L	12	Standard
	Ag	107	87.0	10.2	**-0.0005**	0.001	301.6	ug/L	98	Standard
	Cd	111	21.3	35.2	**0.0068**	0.004	60.3	mg/L	11	Standard
	Cd	114	36.7	39.5	**0.0037**	0.003	87.9	ug/L	21	Standard
>	**In**	115	541289.4	0.8				ug/L	547487	Standard
	Sn	118	620.0	15.4	**0.0468**	0.019	41.6	ug/L	450	Standard
	Sb	123	250.2	30.2	**0.0519**	0.018	34.1	ug/L	105	Standard
	Ba	135	26997.7	0.3	**14.8192**	0.144	1.0	ug/L	111	Standard
	Ce	140	1078.4	4.8				ug/L	107	Standard
>	**Tb**	159	866683.9	0.6				ug/L	890342	Standard
	Ho	165	30.0	33.3				ug/L	10	Standard
	Tl	203	79.7	2.6	**0.0074**	0.000	3.9	ug/L	19	Standard
	Tl	205	76.7	3.8	**0.0139**	0.000	3.0	ug/L	17	Standard
	Pb	206	354.3	0.4	**0.0212**	0.001	5.4	ug/L	247	Standard
	Pb	207	308.0	4.4	**0.0207**	0.003	15.8	ug/L	215	Standard
	Pb	208	1235.0	2.9	**0.0181**	0.002	9.8	ug/L	770	Standard
	U	238	2800.3	1.8	**0.4867**	0.012	2.5	ug/L	13	Standard
>	**Bi**	209	481870.9	1.1				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3122.0	2.6	**4.2928**	0.138	3.2	mg/L	35	Standard
K	39	116.7	8.9	**0.4746**	0.046	9.7	mg/L	25	Standard
Ca	43	158.3	7.9	**26.2024**	2.672	10.2	mg/L	38	Standard
Fe	54	139.3	11.0	**-0.0029**	0.016	532.1	mg/L	126	Standard
Fe	57	351.7	4.3	**0.3106**	0.078	25.0	mg/L	245	Standard
> **Sc-1**	45	24823.7	1.2				mg/L	25066	Standard
Cl	35	140998.6	2.1				ug/L	125857	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	3500.4	2.8				ug/L	1350	Standard
P	31	19117.1	2.2				ug/L	18393	Standard
S	34	3825.5	3.2				ug/L	3739	Standard
Sr	88	203.3	12.4				ug/L	78	Standard
C	12	103.3	45.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	55.1	19.0				mg/L	2	Standard
Ho-1	165	30.0	33.3				mg/L	10	Standard
Er	166	33.3	75.5				mg/L	23	Standard
I	127	4417.3	4.0				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.449	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.797	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.868
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.772
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606096103S WG573483-04
Sample Date/Time: Tuesday, June 21, 2016 13:19:35
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60085.6	1.7				ug/L	60176	Standard
	Be	9	35418.0	1.7	**49.4123**	1.273	2.6	ug/L	5	Standard
	Al	27	9553806.1	0.1	**72.8510**	1.232	1.7	ug/L	832	Standard
	Sc	45	24382.9	1.2				ug/L	25066	Standard
	Ti	47	190.0	4.7	**0.8162**	0.021	2.5	ug/L	38	Standard
	V	51	287859.7	1.7	**50.2556**	0.599	1.2	ug/L	974	Standard
	Cr	52	311117.1	1.3	**50.0342**	0.746	1.5	ug/L	5792	Standard
	Cr	53	39177.3	2.9	**49.4856**	0.624	1.3	ug/L	347	Standard
	Mn	55	324372.6	0.9	**52.6072**	1.077	2.0	ug/L	1164	Standard
	Co	59	291577.0	1.6	**49.8422**	0.595	1.2	ug/L	303	Standard
	Ni	60	85207.9	1.0	**49.1473**	1.009	2.1	ug/L	291	Standard
	Cu	65	84645.8	0.5	**49.2054**	1.253	2.5	ug/L	173	Standard
	Zn	66	51645.2	1.3	**51.6401**	0.793	1.5	ug/L	130	Standard
>	**Ge**	72	472256.1	2.8				ug/L	491724	Standard
	As	75	51695.2	1.6	**51.3245**	0.593	1.2	ug/L	-25	Standard
	Se	82	5173.1	1.2	**52.0219**	0.822	1.6	ug/L	12	Standard
	Se-1	77	3476.7	1.4	**50.5984**	1.532	3.0	ug/L	57	Standard
>	**Ga**	71	260.0	28.7				mg/L	148	Standard
	Rb	85	3562.1	2.1				ug/L	18	Standard
	Y	89	407263.7	1.8				ug/L	401845	Standard
>	**Rh**	103	68.3	30.5				ug/L	10	Standard
	Mo	98	1317.0	3.1	**0.5537**	0.021	3.9	ug/L	12	Standard
	Ag	107	275415.2	1.3	**47.5488**	1.124	2.4	ug/L	98	Standard
	Cd	111	88696.0	0.6	**48.0474**	0.431	0.9	mg/L	11	Standard
	Cd	114	213461.1	1.2	**47.5387**	1.278	2.7	ug/L	21	Standard
>	**In**	115	537694.2	1.5				ug/L	547487	Standard
	Sn	118	585.0	5.9	**0.0407**	0.007	17.4	ug/L	450	Standard
	Sb	123	193980.1	0.3	**46.5021**	0.680	1.5	ug/L	105	Standard
	Ba	135	112772.5	1.0	**62.4946**	0.514	0.8	ug/L	111	Standard
	Ce	140	1368.4	17.9				ug/L	107	Standard
>	**Tb**	159	852959.3	0.9				ug/L	890342	Standard
	Ho	165	35.0	37.8				ug/L	10	Standard
	Tl	203	345111.3	0.9	**48.9395**	0.677	1.4	ug/L	19	Standard
	Tl	205	293390.1	0.8	**50.7100**	0.765	1.5	ug/L	17	Standard
	Pb	206	227814.4	1.2	**50.1915**	0.357	0.7	ug/L	247	Standard
	Pb	207	198202.5	1.7	**48.0341**	0.475	1.0	ug/L	215	Standard
	Pb	208	774653.3	0.9	**50.1464**	0.296	0.6	ug/L	770	Standard
	U	238	276162.4	0.2	**49.3292**	0.615	1.2	ug/L	13	Standard
>	**Bi**	209	469650.7	1.1				ug/L	503143	Standard

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Na	23	3.3	86.6	**38.0335**	32.935	86.6	mg/L	2	Standard
Mg	24	3283.7	5.8	**4.5981**	0.247	5.4	mg/L	35	Standard
K	39	128.3	19.2	**0.5454**	0.127	23.3	mg/L	25	Standard
Ca	43	110.0	16.4	**16.9725**	3.680	21.7	mg/L	38	Standard
Fe	54	154.7	12.2	**0.0146**	0.020	138.4	mg/L	126	Standard
Fe	57	370.0	1.4	**0.4097**	0.022	5.4	mg/L	245	Standard
> **Sc-1**	45	24382.9	1.2				mg/L	25066	Standard
Cl	35	147069.0	0.9				ug/L	125857	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	2353.5	2.8				ug/L	1350	Standard
P	31	18783.3	1.7				ug/L	18393	Standard
S	34	3680.4	2.3				ug/L	3739	Standard
Sr	88	195.0	15.4				ug/L	78	Standard
C	12	110.0	36.4				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	61.9	82.6				mg/L	2	Standard
Ho-1	165	35.0	37.8				mg/L	10	Standard
Er	166	30.0	57.7				mg/L	23	Standard
I	127	4779.1	3.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.850	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.041	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.211
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.343
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606096103SD WG573483-05
Sample Date/Time: Tuesday, June 21, 2016 13:22:47
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61462.8	1.9				ug/L	60176	Standard
	Be	9	36453.8	2.4	**49.7327**	2.122	4.3	ug/L	5	Standard
	Al	27	9453301.8	0.8	**70.4658**	0.824	1.2	ug/L	832	Standard
	Sc	45	24409.6	0.4				ug/L	25066	Standard
	Ti	47	344.0	66.5	**1.5970**	1.182	74.0	ug/L	38	Standard
	V	51	289238.2	2.5	**49.3099**	0.828	1.7	ug/L	974	Standard
	Cr	52	318109.2	0.9	**49.9609**	0.437	0.9	ug/L	5792	Standard
	Cr	53	40479.0	3.1	**49.9452**	1.314	2.6	ug/L	347	Standard
	Mn	55	314057.7	2.4	**49.7210**	0.754	1.5	ug/L	1164	Standard
	Co	59	290318.9	2.9	**48.4610**	0.991	2.0	ug/L	303	Standard
	Ni	60	87273.0	1.1	**49.1559**	0.393	0.8	ug/L	291	Standard
	Cu	65	85527.1	2.3	**48.5400**	0.760	1.6	ug/L	173	Standard
	Zn	66	51755.6	2.3	**50.5302**	0.778	1.5	ug/L	130	Standard
>	**Ge**	72	483447.8	0.9				ug/L	491724	Standard
	As	75	51749.9	1.4	**50.1783**	0.327	0.7	ug/L	-25	Standard
	Se	82	5053.4	1.0	**49.6285**	0.930	1.9	ug/L	12	Standard
	Se-1	77	3472.4	4.6	**49.3184**	2.029	4.1	ug/L	57	Standard
>	**Ga**	71	256.7	20.0				mg/L	148	Standard
	Rb	85	3362.0	2.8				ug/L	18	Standard
	Y	89	401293.0	3.1				ug/L	401845	Standard
>	**Rh**	103	56.7	10.2				ug/L	10	Standard
	Mo	98	1289.5	8.7	**0.5470**	0.043	7.9	ug/L	12	Standard
	Ag	107	282626.7	0.7	**49.2593**	0.185	0.4	ug/L	98	Standard
	Cd	111	89595.6	1.1	**49.0014**	0.114	0.2	mg/L	11	Standard
	Cd	114	217595.8	1.3	**48.9159**	0.226	0.5	ug/L	21	Standard
>	**In**	115	532522.5	0.9				ug/L	547487	Standard
	Sn	118	533.3	7.5	**0.0316**	0.009	27.6	ug/L	450	Standard
	Sb	123	199986.0	1.4	**48.4014**	0.599	1.2	ug/L	105	Standard
	Ba	135	113635.9	0.8	**63.5855**	0.778	1.2	ug/L	111	Standard
	Ce	140	1038.4	8.3				ug/L	107	Standard
>	**Tb**	159	861213.7	0.8				ug/L	890342	Standard
	Ho	165	33.3	45.8				ug/L	10	Standard
	Tl	203	354994.0	0.6	**48.9345**	0.505	1.0	ug/L	19	Standard
	Tl	205	289401.6	1.8	**48.6253**	1.171	2.4	ug/L	17	Standard
	Pb	206	230028.8	1.2	**49.2668**	0.831	1.7	ug/L	247	Standard
	Pb	207	199754.3	1.2	**47.0633**	0.908	1.9	ug/L	215	Standard
	Pb	208	767538.1	0.5	**48.2969**	0.306	0.6	ug/L	770	Standard
	U	238	277842.3	0.1	**48.2419**	0.411	0.9	ug/L	13	Standard
>	**Bi**	209	483136.4	0.9				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3075.3	4.3	**4.3000**	0.197	4.6	mg/L	35	Standard
K	39	133.3	11.5	**0.5703**	0.080	14.0	mg/L	25	Standard
Ca	43	143.3	12.3	**23.6865**	3.499	14.8	mg/L	38	Standard
Fe	54	131.9	32.2	**-0.0079**	0.042	522.5	mg/L	126	Standard
Fe	57	375.0	17.0	**0.4278**	0.255	59.7	mg/L	245	Standard
> **Sc-1**	45	24409.6	0.4				mg/L	25066	Standard
Cl	35	148355.5	1.1				ug/L	125857	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	1950.1	13.4				ug/L	1350	Standard
P	31	18893.5	3.9				ug/L	18393	Standard
S	34	3878.8	5.1				ug/L	3739	Standard
Sr	88	180.0	4.8				ug/L	78	Standard
C	12	116.7	49.5				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	94.6	15.9				mg/L	2	Standard
Ho-1	165	33.3	45.8				mg/L	10	Standard
Er	166	43.3	13.3				mg/L	23	Standard
I	127	4419.0	9.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.138	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.317	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.267
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.024
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606096103SD WG573483-05
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Method 6020 - Summary Report

Sample ID: L1606073102
Sample Date/Time: Tuesday, June 21, 2016 13:25:58
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	62050.2	2.7				ug/L	60176	Standard
	Be	9	105.0	8.2	**0.1327**	0.009	6.8	ug/L	5	Standard
	Al	27	1013016.4	2.3	**7.4716**	0.030	0.4	ug/L	832	Standard
	Sc	45	25413.0	0.7				ug/L	25066	Standard
	Ti	47	11689.2	3.8	**62.0270**	2.447	3.9	ug/L	38	Standard
	V	51	31514.4	0.8	**5.2807**	0.054	1.0	ug/L	974	Standard
	Cr	52	17882.9	0.9	**1.9504**	0.032	1.6	ug/L	5792	Standard
	Cr	53	2040.1	2.3	**2.1533**	0.055	2.6	ug/L	347	Standard
	Mn	55	131913.8	0.6	**20.9934**	0.153	0.7	ug/L	1164	Standard
	Co	59	2483.5	3.2	**0.3703**	0.015	3.9	ug/L	303	Standard
	Ni	60	2377.5	1.9	**1.1685**	0.022	1.9	ug/L	291	Standard
	Cu	65	255994.2	0.7	**147.1034**	1.372	0.9	ug/L	173	Standard
	Zn	66	18744.6	0.9	**18.3555**	0.182	1.0	ug/L	130	Standard
>	Ge	72	478159.2	0.3				ug/L	491724	Standard
	As	75	12450.5	0.9	**12.2318**	0.086	0.7	ug/L	-25	Standard
	Se	82	110.0	5.3	**1.0009**	0.058	5.8	ug/L	12	Standard
	Se-1	77	115.3	7.0	**1.0288**	0.120	11.7	ug/L	57	Standard
>	Ga	71	2798.6	0.4				mg/L	148	Standard
	Rb	85	49900.4	1.1				ug/L	18	Standard
	Y	89	416526.1	0.5				ug/L	401845	Standard
>	Rh	103	41.7	13.9				ug/L	10	Standard
	Mo	98	4437.9	0.6	**1.8377**	0.013	0.7	ug/L	12	Standard
	Ag	107	916.0	2.3	**0.1396**	0.005	3.7	ug/L	98	Standard
	Cd	111	512.1	2.9	**0.2671**	0.011	4.2	mg/L	11	Standard
	Cd	114	1211.6	3.0	**0.2598**	0.006	2.2	ug/L	21	Standard
>	In	115	548951.9	1.2				ug/L	547487	Standard
	Sn	118	5657.7	4.2	**1.0127**	0.047	4.7	ug/L	450	Standard
	Sb	123	4885.2	8.8	**1.1392**	0.095	8.3	ug/L	105	Standard
	Ba	135	19928.1	1.6	**10.7709**	0.169	1.6	ug/L	111	Standard
	Ce	140	57480.5	1.9				ug/L	107	Standard
>	Tb	159	878774.2	1.0				ug/L	890342	Standard
	Ho	165	1093.4	18.2				ug/L	10	Standard
	Tl	203	347.3	5.3	**0.0436**	0.002	4.8	ug/L	19	Standard
	Tl	205	276.7	3.8	**0.0468**	0.002	4.8	ug/L	17	Standard
	Pb	206	43154.7	0.9	**9.0669**	0.187	2.1	ug/L	247	Standard
	Pb	207	37803.4	1.8	**8.7363**	0.108	1.2	ug/L	215	Standard
	Pb	208	149908.5	0.2	**9.2509**	0.144	1.6	ug/L	770	Standard
	U	238	690.7	5.1	**0.1174**	0.005	4.3	ug/L	13	Standard
>	Bi	209	490138.0	1.5				ug/L	503143	Standard

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Na	23	3.3	86.6	**36.6395**	31.728	86.6	mg/L	2	Standard
Mg	24	11255.8	2.0	**15.2140**	0.309	2.0	mg/L	35	Standard
K	39	513.3	5.7	**2.4114**	0.137	5.7	mg/L	25	Standard
Ca	43	73.3	31.5	**8.9140**	4.383	49.2	mg/L	38	Standard
Fe	54	1193.7	6.4	**0.9809**	0.074	7.6	mg/L	126	Standard
Fe	57	501.7	10.9	**0.8612**	0.218	25.3	mg/L	245	Standard
> **Sc-1**	45	25413.0	0.7				mg/L	25066	Standard
Cl	35	147490.5	1.3				ug/L	125857	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	2373.5	6.5				ug/L	1350	Standard
P	31	25653.5	10.8				ug/L	18393	Standard
S	34	3847.2	1.9				ug/L	3739	Standard
Sr	88	95.0	22.9				ug/L	78	Standard
C	12	80.0	43.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	100.0				mg/L	0	Standard
Dy	164	1461.7	2.4				mg/L	2	Standard
Ho-1	165	1093.4	18.2				mg/L	10	Standard
Er	166	1010.0	4.3				mg/L	23	Standard
I	127	10345.2	3.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.115	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.241	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.268	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.415	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: L1606073102PS WG573557-01
Sample Date/Time: Tuesday, June 21, 2016 13:29:10
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62836.7	1.0				ug/L	60176	Standard
	Be	9	38405.3	1.0	**51.2242**	0.495	1.0	ug/L	5	Standard
	Al	27	986754.3	0.7	**7.1861**	0.032	0.4	ug/L	832	Standard
	Sc	45	25206.0	4.0				ug/L	25066	Standard
	Ti	47	12380.1	4.7	**64.5662**	3.180	4.9	ug/L	38	Standard
	V	51	336761.7	1.5	**57.0716**	0.650	1.1	ug/L	974	Standard
	Cr	52	338031.4	0.9	**52.7987**	0.435	0.8	ug/L	5792	Standard
	Cr	53	42471.1	2.2	**52.0846**	0.966	1.9	ug/L	347	Standard
	Mn	55	458391.3	1.7	**72.2107**	1.483	2.1	ug/L	1164	Standard
	Co	59	320824.6	0.9	**53.2201**	0.682	1.3	ug/L	303	Standard
	Ni	60	91216.4	1.1	**51.0539**	0.706	1.4	ug/L	291	Standard
	Cu	65	345800.3	0.7	**195.2967**	1.049	0.5	ug/L	173	Standard
	Zn	66	72342.6	1.4	**70.2705**	0.971	1.4	ug/L	130	Standard
>	**Ge**	72	486585.9	0.4				ug/L	491724	Standard
	As	75	66468.7	1.6	**64.0258**	0.932	1.5	ug/L	-25	Standard
	Se	82	5473.3	1.5	**53.4097**	0.960	1.8	ug/L	12	Standard
	Se-1	77	3758.5	2.1	**53.0932**	1.114	2.1	ug/L	57	Standard
>	**Ga**	71	2930.3	6.6				mg/L	148	Standard
	Rb	85	50851.9	2.6				ug/L	18	Standard
	Y	89	422665.5	2.8				ug/L	401845	Standard
>	**Rh**	103	43.3	13.3				ug/L	10	Standard
	Mo	98	4548.7	3.3	**1.9199**	0.104	5.4	ug/L	12	Standard
	Ag	107	291098.5	1.4	**50.1491**	1.656	3.3	ug/L	98	Standard
	Cd	111	96011.5	1.2	**51.8878**	0.482	0.9	mg/L	11	Standard
	Cd	114	228852.1	1.3	**50.8404**	0.872	1.7	ug/L	21	Standard
>	**In**	115	538990.3	2.1				ug/L	547487	Standard
	Sn	118	6059.6	11.2	**1.1120**	0.140	12.6	ug/L	450	Standard
	Sb	123	210648.2	0.5	**50.3883**	1.297	2.6	ug/L	105	Standard
	Ba	135	109800.4	0.6	**60.7142**	1.334	2.2	ug/L	111	Standard
	Ce	140	59162.4	7.7				ug/L	107	Standard
>	**Tb**	159	872877.7	0.3				ug/L	890342	Standard
	Ho	165	1188.4	22.2				ug/L	10	Standard
	Tl	203	368407.8	0.3	**49.7173**	0.416	0.8	ug/L	19	Standard
	Tl	205	314960.3	1.3	**51.8065**	0.923	1.8	ug/L	17	Standard
	Pb	206	286269.8	0.5	**60.0352**	0.497	0.8	ug/L	247	Standard
	Pb	207	250420.9	0.8	**57.7692**	0.376	0.7	ug/L	215	Standard
	Pb	208	977924.5	0.9	**60.2632**	1.112	1.8	ug/L	770	Standard
	U	238	292324.4	0.4	**49.6915**	0.547	1.1	ug/L	13	Standard
>	**Bi**	209	493501.4	1.0				ug/L	503143	Standard

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Na	23	3.3	86.6	**37.0547**	32.164	86.8	mg/L	2	Standard
Mg	24	11367.6	3.6	**15.5226**	1.170	7.5	mg/L	35	Standard
K	39	491.7	4.1	**2.3285**	0.165	7.1	mg/L	25	Standard
Ca	43	61.7	32.8	**6.7120**	3.782	56.4	mg/L	38	Standard
Fe	54	1050.3	3.7	**0.8567**	0.077	8.9	mg/L	126	Standard
Fe	57	553.3	6.8	**1.0850**	0.222	20.5	mg/L	245	Standard
> **Sc-1**	45	25206.0	4.0				mg/L	25066	Standard
Cl	35	141394.7	1.2				ug/L	125857	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	2206.8	11.9				ug/L	1350	Standard
P	31	23750.3	1.6				ug/L	18393	Standard
S	34	3492.1	3.7				ug/L	3739	Standard
Sr	88	91.7	19.2				ug/L	78	Standard
C	12	96.7	39.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	65.5				mg/L	0	Standard
Dy	164	1514.9	12.9				mg/L	2	Standard
Ho-1	165	1188.4	22.2				mg/L	10	Standard
Er	166	1083.4	11.0				mg/L	23	Standard
I	127	10306.8	3.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.422	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.955	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.448
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.084
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: L1606073102SDL WG573557-02
Sample Date/Time: Tuesday, June 21, 2016 13:32:21
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62607.4	1.3				ug/L	60176	Standard
	Be	9	25.0	34.6	**0.0244**	0.011	45.5	ug/L	5	Standard
	Al	27	212439.0	0.9	**1.5464**	0.033	2.1	ug/L	832	Standard
	Sc	45	24628.3	0.4				ug/L	25066	Standard
	Ti	47	2784.9	3.0	**13.9086**	0.389	2.8	ug/L	38	Standard
	V	51	7566.4	0.8	**1.0756**	0.023	2.2	ug/L	974	Standard
	Cr	52	8980.0	0.9	**0.4405**	0.021	4.7	ug/L	5792	Standard
	Cr	53	745.0	5.8	**0.4791**	0.044	9.2	ug/L	347	Standard
	Mn	55	27746.4	1.2	**4.0322**	0.081	2.0	ug/L	1164	Standard
	Co	59	770.7	3.6	**0.0747**	0.006	7.8	ug/L	303	Standard
	Ni	60	728.0	3.3	**0.2056**	0.009	4.5	ug/L	291	Standard
	Cu	65	55112.7	1.2	**30.0755**	0.388	1.3	ug/L	173	Standard
	Zn	66	4901.5	0.7	**4.3932**	0.053	1.2	ug/L	130	Standard
>	**Ge**	72	502229.8	1.2				ug/L	491724	Standard
	As	75	2641.7	1.6	**2.4986**	0.070	2.8	ug/L	-25	Standard
	Se	82	37.4	7.9	**0.2610**	0.029	11.1	ug/L	12	Standard
	Se-1	77	65.3	16.9	**0.2568**	0.164	63.9	ug/L	57	Standard
>	**Ga**	71	860.0	7.0				mg/L	148	Standard
	Rb	85	10418.6	2.0				ug/L	18	Standard
	Y	89	399994.5	0.5				ug/L	401845	Standard
>	**Rh**	103	30.0	33.3				ug/L	10	Standard
	Mo	98	925.4	2.8	**0.3921**	0.014	3.7	ug/L	12	Standard
	Ag	107	297.0	13.1	**0.0365**	0.007	19.3	ug/L	98	Standard
	Cd	111	115.6	4.7	**0.0586**	0.003	5.9	mg/L	11	Standard
	Cd	114	279.1	9.6	**0.0584**	0.006	10.2	ug/L	21	Standard
>	**In**	115	531899.2	0.8				ug/L	547487	Standard
	Sn	118	1896.8	36.6	**0.3027**	0.141	46.7	ug/L	450	Standard
	Sb	123	2351.8	13.2	**0.5620**	0.071	12.7	ug/L	105	Standard
	Ba	135	4320.6	0.3	**2.3669**	0.016	0.7	ug/L	111	Standard
	Ce	140	11052.4	4.5				ug/L	107	Standard
>	**Tb**	159	858576.5	0.7				ug/L	890342	Standard
	Ho	165	216.7	10.7				ug/L	10	Standard
	Tl	203	116.0	17.5	**0.0123**	0.003	24.6	ug/L	19	Standard
	Tl	205	98.3	11.7	**0.0173**	0.002	12.0	ug/L	17	Standard
	Pb	206	9169.1	1.7	**1.8876**	0.041	2.2	ug/L	247	Standard
	Pb	207	7982.8	0.7	**1.8083**	0.035	1.9	ug/L	215	Standard
	Pb	208	31008.6	0.6	**1.8704**	0.021	1.1	ug/L	770	Standard
	U	238	168.3	3.3	**0.0281**	0.001	3.9	ug/L	13	Standard
>	**Bi**	209	489002.3	1.5				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	2341.8	1.1	**3.2356**	0.024	0.7	mg/L	35	Standard
K	39	118.3	20.0	**0.4878**	0.118	24.2	mg/L	25	Standard
Ca	43	43.3	17.6	**3.3707**	1.559	46.2	mg/L	38	Standard
Fe	54	377.4	16.5	**0.2279**	0.059	26.1	mg/L	126	Standard
Fe	57	345.0	9.5	**0.2940**	0.127	43.1	mg/L	245	Standard
> **Sc-1**	45	24628.3	0.4				mg/L	25066	Standard
Cl	35	138476.6	0.9				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	1490.1	4.7				ug/L	1350	Standard
P	31	19304.0	1.2				ug/L	18393	Standard
S	34	3498.7	5.5				ug/L	3739	Standard
Sr	88	68.3	18.4				ug/L	78	Standard
C	12	46.7	44.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	337.2	15.6				mg/L	2	Standard
Ho-1	165	216.7	10.7				mg/L	10	Standard
Er	166	196.7	28.9				mg/L	23	Standard
I	127	3045.3	3.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.041	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.137	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.153
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.190
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: FBLANK 7Q WG573662-01
Sample Date/Time: Tuesday, June 21, 2016 13:36:50
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60862.0	1.5				ug/L	60176	Standard
	Be	9	37583.2	1.6	**51.7542**	0.552	1.1	ug/L	5	Standard
	Al	27	21697.9	26.0	**0.1552**	0.044	28.5	ug/L	832	Standard
	Sc	45	23591.7	4.2				ug/L	25066	Standard
	Ti	47	83.7	108.0	**0.2200**	0.454	206.3	ug/L	38	Standard
	V	51	305889.4	1.3	**51.4535**	1.008	2.0	ug/L	974	Standard
	Cr	52	330929.6	0.4	**51.2983**	1.178	2.3	ug/L	5792	Standard
	Cr	53	41528.5	0.6	**50.5645**	1.478	2.9	ug/L	347	Standard
	Mn	55	328303.3	1.1	**51.2988**	1.820	3.5	ug/L	1164	Standard
	Co	59	315656.4	1.0	**52.0010**	1.804	3.5	ug/L	303	Standard
	Ni	60	91664.8	1.0	**50.9431**	1.373	2.7	ug/L	291	Standard
	Cu	65	92045.1	0.9	**51.5472**	1.356	2.6	ug/L	173	Standard
	Zn	66	54111.8	0.2	**52.1307**	1.195	2.3	ug/L	130	Standard
>	**Ge**	72	490225.8	2.5				ug/L	491724	Standard
	As	75	52438.9	0.3	**50.1639**	1.182	2.4	ug/L	-25	Standard
	Se	82	5295.6	0.8	**51.3116**	1.607	3.1	ug/L	12	Standard
	Se-1	77	3616.8	1.2	**50.6984**	1.048	2.1	ug/L	57	Standard
>	**Ga**	71	186.7	10.8				mg/L	148	Standard
	Rb	85	61.7	12.4				ug/L	18	Standard
	Y	89	408507.2	0.7				ug/L	401845	Standard
>	**Rh**	103	48.3	15.8				ug/L	10	Standard
	Mo	98	52.1	23.1	**0.0179**	0.005	29.8	ug/L	12	Standard
	Ag	107	297940.9	0.5	**51.9244**	0.468	0.9	ug/L	98	Standard
	Cd	111	93406.3	0.2	**51.0848**	0.731	1.4	mg/L	11	Standard
	Cd	114	226390.7	0.3	**50.8926**	0.677	1.3	ug/L	21	Standard
>	**In**	115	532598.8	1.2				ug/L	547487	Standard
	Sn	118	560.0	13.9	**0.0370**	0.017	45.0	ug/L	450	Standard
	Sb	123	206757.3	1.1	**50.0344**	0.431	0.9	ug/L	105	Standard
	Ba	135	90690.6	0.8	**50.7329**	0.993	2.0	ug/L	111	Standard
	Ce	140	146.7	19.4				ug/L	107	Standard
>	**Tb**	159	846206.7	1.1				ug/L	890342	Standard
	Ho	165	13.3	86.6				ug/L	10	Standard
	Tl	203	364672.7	1.1	**50.8514**	0.648	1.3	ug/L	19	Standard
	Tl	205	306373.3	0.5	**52.0688**	0.058	0.1	ug/L	17	Standard
	Pb	206	242442.7	0.5	**52.5299**	0.446	0.8	ug/L	247	Standard
	Pb	207	211276.6	0.7	**50.3548**	0.226	0.4	ug/L	215	Standard
	Pb	208	820675.9	0.4	**52.2445**	0.286	0.5	ug/L	770	Standard
	U	238	287466.1	0.1	**50.4910**	0.234	0.5	ug/L	13	Standard
>	**Bi**	209	477588.3	0.5				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	65.0	26.6	**0.0558**	0.025	43.9	mg/L	35	Standard
K	39	33.3	31.2	**0.0629**	0.047	74.5	mg/L	25	Standard
Ca	43	28.3	50.9	**0.5321**	2.713	509.8	mg/L	38	Standard
Fe	54	102.3	13.6	**-0.0329**	0.018	54.0	mg/L	126	Standard
Fe	57	231.7	21.8	**-0.1150**	0.242	210.0	mg/L	245	Standard
> **Sc-1**	45	23591.7	4.2				mg/L	25066	Standard
Cl	35	136517.0	1.3				ug/L	125857	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	1383.4	10.5				ug/L	1350	Standard
P	31	16972.8	0.8				ug/L	18393	Standard
S	34	3713.8	2.7				ug/L	3739	Standard
Sr	88	61.7	9.4				ug/L	78	Standard
C	12	53.3	47.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	19.8	49.2				mg/L	2	Standard
Ho-1	165	13.3	86.6				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	23	Standard
I	127	1001.7	6.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.140	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.695	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.281
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.921
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 13:40:03
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	61031.0	0.7				ug/L	60176	Standard
	Be	9	36594.2	3.2	**50.2545**	1.736	3.5	ug/L	5	Standard
	Al	27	6613287.8	2.3	**49.6387**	1.327	2.7	ug/L	832	Standard
	Sc	45	24596.6	1.9				ug/L	25066	Standard
	Ti	47	19478.9	2.3	**103.3937**	4.517	4.4	ug/L	38	Standard
	V	51	296612.7	2.3	**51.0859**	2.216	4.3	ug/L	974	Standard
	Cr	52	329696.2	2.1	**52.3442**	2.253	4.3	ug/L	5792	Standard
	Cr	53	41729.1	0.9	**52.0173**	1.592	3.1	ug/L	347	Standard
	Mn	55	310317.0	2.6	**49.6295**	2.343	4.7	ug/L	1164	Standard
	Co	59	303689.4	2.7	**51.2154**	2.491	4.9	ug/L	303	Standard
	Ni	60	90715.2	2.4	**51.6193**	2.335	4.5	ug/L	291	Standard
	Cu	65	89623.1	3.1	**51.3920**	2.693	5.2	ug/L	173	Standard
	Zn	66	52311.5	3.1	**51.6008**	2.673	5.2	ug/L	130	Standard
>	Ge	72	478918.3	2.1				ug/L	491724	Standard
	As	75	51909.7	2.4	**50.8415**	2.263	4.5	ug/L	-25	Standard
	Se	82	5184.4	2.6	**51.4278**	2.428	4.7	ug/L	12	Standard
	Se-1	77	3510.4	2.6	**50.3835**	2.410	4.8	ug/L	57	Standard
>	Ga	71	205.0	20.8				mg/L	148	Standard
	Rb	85	766.7	4.6				ug/L	18	Standard
	Y	89	405836.1	1.8				ug/L	401845	Standard
>	Rh	103	35.0	42.9				ug/L	10	Standard
	Mo	98	227649.5	2.0	**96.2656**	2.103	2.2	ug/L	12	Standard
	Ag	107	288372.2	1.1	**49.6724**	0.252	0.5	ug/L	98	Standard
	Cd	111	92130.2	0.9	**49.8016**	0.575	1.2	mg/L	11	Standard
	Cd	114	225554.0	0.3	**50.1162**	0.425	0.8	ug/L	21	Standard
>	In	115	538810.9	0.6				ug/L	547487	Standard
	Sn	118	247773.3	1.9	**48.4123**	1.160	2.4	ug/L	450	Standard
	Sb	123	211050.2	2.3	**50.4816**	1.038	2.1	ug/L	105	Standard
	Ba	135	89213.6	0.7	**49.3244**	0.656	1.3	ug/L	111	Standard
	Ce	140	93.3	16.4				ug/L	107	Standard
>	Tb	159	860595.9	0.4				ug/L	890342	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	362174.3	0.8	**49.8195**	1.053	2.1	ug/L	19	Standard
	Tl	205	305739.0	0.6	**51.2583**	0.985	1.9	ug/L	17	Standard
	Pb	206	230874.7	1.7	**49.3431**	1.266	2.6	ug/L	247	Standard
	Pb	207	208855.0	2.0	**49.1070**	1.530	3.1	ug/L	215	Standard
	Pb	208	795788.6	1.4	**49.9753**	1.375	2.8	ug/L	770	Standard
	U	238	286489.2	0.6	**49.6372**	0.898	1.8	ug/L	13	Standard
>	Bi	209	484221.4	1.4				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3497.1	3.8	**4.8581**	0.197	4.1	mg/L	35	Standard
K	39	931.7	4.0	**4.6234**	0.265	5.7	mg/L	25	Standard
Ca	43	35.0	62.3	**1.6854**	4.328	256.8	mg/L	38	Standard
Fe	54	5344.8	3.0	**5.0352**	0.242	4.8	mg/L	126	Standard
Fe	57	1481.7	2.1	**4.8642**	0.109	2.2	mg/L	245	Standard
Sc-1	45	24596.6	1.9				mg/L	25066	Standard
Cl	35	138959.7	0.4				ug/L	125857	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	1233.4	20.2				ug/L	1350	Standard
P	31	18719.9	0.8				ug/L	18393	Standard
S	34	4417.3	5.9				ug/L	3739	Standard
Sr	88	70.0	32.7				ug/L	78	Standard
C	12	46.7	53.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	-0.6	114.6				mg/L	2	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	1176.7	6.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	100.509		
Al	27	99.277		
Sc	45			
Ti	47	103.394		
V	51	102.172		
Cr	52	104.688		
Cr	53			
Mn	55	99.259		
Co	59	102.431		
Ni	60	103.239		
Cu	65	102.784		
Zn	66	103.202		
Ge	72		97.396	
As	75	101.683		
Se	82	102.856		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	96.266		
Ag	107	99.345		
Cd	111	99.603		
Cd	114			
> In	115			98.415
Sn	118	96.825		
Sb	123	100.963		
Ba	135	98.649		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.639		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.951		
U	238	99.274		
> Bi	209			96.239
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 13:43:14
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59649.0	4.4				ug/L	60176	Standard
	Be	9	41.7	69.3	**0.0484**	0.037	76.6	ug/L	5	Standard
	Al	27	4266.0	98.6	**0.0235**	0.030	128.4	ug/L	832	Standard
	Sc	45	24342.9	3.0				ug/L	25066	Standard
	Ti	47	33.3	27.1	**-0.0321**	0.048	148.9	ug/L	38	Standard
	V	51	1086.3	15.0	**0.0151**	0.028	186.7	ug/L	974	Standard
	Cr	52	6084.9	2.7	**0.0304**	0.025	82.0	ug/L	5792	Standard
	Cr	53	316.7	20.3	**-0.0194**	0.077	400.2	ug/L	347	Standard
	Mn	55	1292.4	23.2	**-0.0102**	0.046	450.7	ug/L	1164	Standard
	Co	59	507.7	41.8	**0.0353**	0.035	98.0	ug/L	303	Standard
	Ni	60	317.3	24.7	**-0.0115**	0.043	371.7	ug/L	291	Standard
	Cu	65	214.0	56.1	**0.0236**	0.067	282.9	ug/L	173	Standard
	Zn	66	173.7	20.6	**-0.0653**	0.034	51.4	ug/L	130	Standard
>	**Ge**	72	483753.8	2.3				ug/L	491724	Standard
	As	75	6.9	624.5	**0.0407**	0.041	101.6	ug/L	-25	Standard
	Se	82	18.5	29.1	**0.0893**	0.056	62.8	ug/L	12	Standard
	Se-1	77	55.0	3.6	**0.1421**	0.045	31.6	ug/L	57	Standard
>	**Ga**	71	175.0	10.3				mg/L	148	Standard
	Rb	85	30.0	44.1				ug/L	18	Standard
	Y	89	416072.0	2.1				ug/L	401845	Standard
>	**Rh**	103	28.3	27.0				ug/L	10	Standard
	Mo	98	258.2	21.7	**0.1033**	0.023	21.8	ug/L	12	Standard
	Ag	107	212.0	65.6	**0.0205**	0.023	112.4	ug/L	98	Standard
	Cd	111	49.9	119.2	**0.0217**	0.031	143.8	mg/L	11	Standard
	Cd	114	138.9	94.3	**0.0258**	0.028	109.1	ug/L	21	Standard
>	**In**	115	545536.5	1.5				ug/L	547487	Standard
	Sn	118	786.7	5.1	**0.0781**	0.009	11.7	ug/L	450	Standard
	Sb	123	893.7	15.1	**0.2036**	0.032	15.8	ug/L	105	Standard
	Ba	135	155.0	26.2	**0.0290**	0.021	73.2	ug/L	111	Standard
	Ce	140	46.7	89.9				ug/L	107	Standard
>	**Tb**	159	851423.1	1.4				ug/L	890342	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	204.7	101.3	**0.0248**	0.028	114.4	ug/L	19	Standard
	Tl	205	236.7	112.3	**0.0410**	0.044	108.4	ug/L	17	Standard
	Pb	206	322.0	34.4	**0.0148**	0.023	155.8	ug/L	247	Standard
	Pb	207	278.7	40.6	**0.0143**	0.026	182.5	ug/L	215	Standard
	Pb	208	1396.0	53.4	**0.0288**	0.046	160.2	ug/L	770	Standard
	U	238	214.3	118.3	**0.0365**	0.044	119.9	ug/L	13	Standard
>	**Bi**	209	476880.3	2.0				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	25.0	52.9	**-0.0037**	0.018	500.1	mg/L	35	Standard
K	39	18.3	56.8	**-0.0172**	0.057	329.7	mg/L	25	Standard
Ca	43	26.7	47.2	**0.1406**	2.740	1948.1	mg/L	38	Standard
Fe	54	132.6	9.5	**-0.0068**	0.014	206.9	mg/L	126	Standard
Fe	57	211.7	5.5	**-0.2294**	0.073	31.8	mg/L	245	Standard
Sc-1	45	24342.9	3.0				mg/L	25066	Standard
Cl	35	143897.4	0.2				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	1373.4	16.1				ug/L	1350	Standard
P	31	19679.4	1.3				ug/L	18393	Standard
S	34	4449.0	1.1				ug/L	3739	Standard
Sr	88	78.3	19.5				ug/L	78	Standard
C	12	66.7	22.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.3	179.8				mg/L	2	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	23	Standard
I	127	996.7	2.4				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.379	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.644
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.780
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 21, 2016 13:45:31
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Method 6020 - Summary Report

Sample ID: L1606061601
Sample Date/Time: Tuesday, June 21, 2016 15:22:26
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61906.2	1.7				ug/L	60176	Standard
	Be	9	353.3	21.2	**0.4684**	0.095	20.2	ug/L	5	Standard
	Al	27	3358447.2	1.6	**24.8506**	0.581	2.3	ug/L	832	Standard
	Sc	45	24973.9	2.3				ug/L	25066	Standard
	Ti	47	298.0	14.4	**1.3564**	0.221	16.3	ug/L	38	Standard
	V	51	-5189.4	20.1	**-1.0574**	0.187	17.7	ug/L	974	Standard
	Cr	52	703390.4	0.3	**111.3019**	1.587	1.4	ug/L	5792	Standard
	Cr	53	93571.6	3.2	**115.6494**	2.048	1.8	ug/L	347	Standard
	Mn	55	821479.7	1.9	**130.0789**	4.283	3.3	ug/L	1164	Standard
	Co	59	94839.6	1.2	**15.7576**	0.403	2.6	ug/L	303	Standard
	Ni	60	304442.7	1.6	**171.4532**	1.376	0.8	ug/L	291	Standard
	Cu	65	7661.9	1.9	**4.2471**	0.033	0.8	ug/L	173	Standard
	Zn	66	10599.0	2.6	**10.1313**	0.186	1.8	ug/L	130	Standard
>	**Ge**	72	484843.6	1.4				ug/L	491724	Standard
	As	75	570.7	9.1	**0.5858**	0.057	9.7	ug/L	-25	Standard
	Se	82	251.1	0.8	**2.3709**	0.055	2.3	ug/L	12	Standard
	Se-1	77	415.7	8.5	**5.3115**	0.417	7.8	ug/L	57	Standard
>	**Ga**	71	288.3	8.9				mg/L	148	Standard
	Rb	85	2623.6	2.0				ug/L	18	Standard
	Y	89	398713.2	0.8				ug/L	401845	Standard
>	**Rh**	103	56.7	27.0				ug/L	10	Standard
	Mo	98	2419.6	2.5	**1.0703**	0.029	2.7	ug/L	12	Standard
	Ag	107	130.0	2.3	**0.0081**	0.001	10.1	ug/L	98	Standard
	Cd	111	262.1	7.2	**0.1442**	0.012	8.3	mg/L	11	Standard
	Cd	114	609.6	2.6	**0.1378**	0.003	2.4	ug/L	21	Standard
>	**In**	115	513017.2	1.6				ug/L	547487	Standard
	Sn	118	821.7	9.2	**0.0947**	0.014	14.3	ug/L	450	Standard
	Sb	123	733.0	25.0	**0.1761**	0.043	24.6	ug/L	105	Standard
	Ba	135	99016.2	1.6	**57.5032**	0.291	0.5	ug/L	111	Standard
	Ce	140	12887.1	3.7				ug/L	107	Standard
>	**Tb**	159	848478.4	1.1				ug/L	890342	Standard
	Ho	165	410.0	18.2				ug/L	10	Standard
	Tl	203	359.3	6.1	**0.0475**	0.004	8.4	ug/L	19	Standard
	Tl	205	305.0	1.6	**0.0538**	0.002	3.7	ug/L	17	Standard
	Pb	206	880.4	2.3	**0.1394**	0.005	3.8	ug/L	247	Standard
	Pb	207	741.7	1.8	**0.1280**	0.007	5.6	ug/L	215	Standard
	Pb	208	2788.1	1.1	**0.1210**	0.006	4.6	ug/L	770	Standard
	U	238	430.0	8.6	**0.0762**	0.008	10.9	ug/L	13	Standard
>	**Bi**	209	469289.0	2.2				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	44893.1	1.4	**61.8782**	1.088	1.8	mg/L	35	Standard
K	39	80.0	10.8	**0.2875**	0.036	12.5	mg/L	25	Standard
Ca	43	58.3	34.6	**6.1586**	3.723	60.4	mg/L	38	Standard
Fe	54	459.2	2.0	**0.3009**	0.006	1.9	mg/L	126	Standard
Fe	57	306.7	6.6	**0.1228**	0.057	46.4	mg/L	245	Standard
> **Sc-1**	45	24973.9	2.3				mg/L	25066	Standard
Cl	35	156643.7	1.7				ug/L	125857	Standard
Kr	83	2.7	43.3				ug/L	1	Standard
Br	81	58328.8	2.2				ug/L	1350	Standard
P	31	28678.8	2.1				ug/L	18393	Standard
S	34	4364.0	4.4				ug/L	3739	Standard
Sr	88	118.3	19.1				ug/L	78	Standard
C	12	100.0	72.1				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	613.2	2.5				mg/L	2	Standard
Ho-1	165	410.0	18.2				mg/L	10	Standard
Er	166	350.0	12.5				mg/L	23	Standard
I	127	70092.1	5.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.875	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.601	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	93.704
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.272
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Lower	V	51	
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	

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Mn 55 Upper, S, EEE	Mn	55
Ni 60 Upper, S, EEE	Ni	60

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Method 6020 - Summary Report

Sample ID: L1606061602
Sample Date/Time: Tuesday, June 21, 2016 15:25:38
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62282.9	3.9				ug/L	60176	Standard
	Be	9	13.3	78.1	**0.0089**	0.014	158.6	ug/L	5	Standard
	Al	27	17049432.7	0.9	**125.5063**	3.981	3.2	ug/L	832	Standard
	Sc	45	25169.2	3.4				ug/L	25066	Standard
	Ti	47	807.7	16.8	**4.0608**	0.742	18.3	ug/L	38	Standard
	V	51	2867.2	4.6	**0.3212**	0.020	6.3	ug/L	974	Standard
	Cr	52	13094.0	1.7	**1.1584**	0.021	1.8	ug/L	5792	Standard
	Cr	53	5707.8	16.6	**6.7038**	1.131	16.9	ug/L	347	Standard
	Mn	55	4214750.0	1.0	**671.9640**	7.527	1.1	ug/L	1164	Standard
	Co	59	2363.5	2.5	**0.3468**	0.009	2.6	ug/L	303	Standard
	Ni	60	2095.5	4.7	**0.9976**	0.054	5.4	ug/L	291	Standard
	Cu	65	827.0	5.3	**0.3740**	0.026	7.0	ug/L	173	Standard
	Zn	66	2898.6	2.7	**2.6166**	0.093	3.5	ug/L	130	Standard
>	**Ge**	72	482049.8	0.7				ug/L	491724	Standard
	As	75	2600.5	3.1	**2.5615**	0.093	3.7	ug/L	-25	Standard
	Se	82	880.4	1.9	**8.5951**	0.224	2.6	ug/L	12	Standard
	Se-1	77	853.7	1.5	**11.6729**	0.213	1.8	ug/L	57	Standard
>	**Ga**	71	506.7	6.6				mg/L	148	Standard
	Rb	85	23870.5	3.1				ug/L	18	Standard
	Y	89	394978.3	1.9				ug/L	401845	Standard
>	**Rh**	103	256.7	27.0				ug/L	10	Standard
	Mo	98	1604.0	4.5	**0.7016**	0.035	5.0	ug/L	12	Standard
	Ag	107	79.0	13.3	**-0.0012**	0.002	164.6	ug/L	98	Standard
	Cd	111	16.1	12.6	**0.0044**	0.001	27.5	mg/L	11	Standard
	Cd	114	59.0	10.1	**0.0092**	0.001	13.1	ug/L	21	Standard
>	**In**	115	517707.0	1.4				ug/L	547487	Standard
	Sn	118	2710.2	6.3	**0.4777**	0.029	6.0	ug/L	450	Standard
	Sb	123	297.7	21.5	**0.0665**	0.016	23.7	ug/L	105	Standard
	Ba	135	499345.8	0.5	**287.6104**	2.831	1.0	ug/L	111	Standard
	Ce	140	10685.4	3.5				ug/L	107	Standard
>	**Tb**	159	859857.7	0.6				ug/L	890342	Standard
	Ho	165	171.7	6.7				ug/L	10	Standard
	Tl	203	147.0	7.7	**0.0176**	0.002	10.6	ug/L	19	Standard
	Tl	205	131.7	9.6	**0.0241**	0.002	10.1	ug/L	17	Standard
	Pb	206	806.4	2.2	**0.1255**	0.005	3.9	ug/L	247	Standard
	Pb	207	665.0	1.0	**0.1116**	0.004	3.1	ug/L	215	Standard
	Pb	208	2632.8	1.6	**0.1132**	0.001	0.6	ug/L	770	Standard
	U	238	475.7	3.2	**0.0854**	0.003	3.7	ug/L	13	Standard
>	**Bi**	209	462865.3	1.2				ug/L	503143	Standard

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Na	23	5.0	100.0	**54.7235**	55.001	100.5	mg/L	2	Standard
Mg	24	92887.3	2.9	**127.2146**	7.642	6.0	mg/L	35	Standard
K	39	313.3	13.8	**1.4400**	0.167	11.6	mg/L	25	Standard
Ca	43	165.0	21.9	**27.2389**	8.231	30.2	mg/L	38	Standard
Fe	54	29519.0	1.0	**27.7809**	0.908	3.3	mg/L	126	Standard
Fe	57	8005.4	3.0	**30.3493**	0.303	1.0	mg/L	245	Standard
> **Sc-1**	45	25169.2	3.4				mg/L	25066	Standard
Cl	35	152557.1	2.2				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	221629.9	2.5				ug/L	1350	Standard
P	31	26778.6	1.5				ug/L	18393	Standard
S	34	4655.7	4.3				ug/L	3739	Standard
Sr	88	723.4	3.8				ug/L	78	Standard
C	12	93.3	22.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	0	Standard
Dy	164	336.0	12.3				mg/L	2	Standard
Ho-1	165	171.7	6.7				mg/L	10	Standard
Er	166	153.3	19.9				mg/L	23	Standard
I	127	284517.0	8.4				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.501	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.033	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.561
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	91.995
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606061604
Sample Date/Time: Tuesday, June 21, 2016 15:28:49
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57020.4	1.0				ug/L	60176	Standard
	Be	9	11.7	24.7	**0.0081**	0.004	51.2	ug/L	5	Standard
	Al	27	1079402.9	2.6	**8.6639**	0.184	2.1	ug/L	832	Standard
	Sc	45	25052.4	2.1				ug/L	25066	Standard
	Ti	47	402.3	58.5	**1.8535**	1.201	64.8	ug/L	38	Standard
	V	51	1463.1	9.7	**0.0731**	0.024	32.4	ug/L	974	Standard
	Cr	52	14139.6	1.7	**1.2608**	0.045	3.6	ug/L	5792	Standard
	Cr	53	2088.5	7.6	**2.1170**	0.178	8.4	ug/L	347	Standard
	Mn	55	835676.7	0.8	**129.2089**	1.084	0.8	ug/L	1164	Standard
	Co	59	3523.1	1.4	**0.5240**	0.006	1.1	ug/L	303	Standard
	Ni	60	4025.9	3.0	**2.0265**	0.074	3.6	ug/L	291	Standard
	Cu	65	706.3	1.2	**0.2935**	0.005	1.8	ug/L	173	Standard
	Zn	66	9224.1	1.2	**8.5777**	0.163	1.9	ug/L	130	Standard
>	**Ge**	72	496394.0	0.7				ug/L	491724	Standard
	As	75	111.7	16.0	**0.1393**	0.017	12.0	ug/L	-25	Standard
	Se	82	53.9	8.6	**0.4236**	0.046	10.9	ug/L	12	Standard
	Se-1	77	90.3	6.8	**0.6163**	0.078	12.7	ug/L	57	Standard
>	**Ga**	71	265.0	3.8				mg/L	148	Standard
	Rb	85	10645.4	6.1				ug/L	18	Standard
	Y	89	419565.3	1.2				ug/L	401845	Standard
>	**Rh**	103	76.7	21.0				ug/L	10	Standard
	Mo	98	94.8	4.8	**0.0348**	0.002	5.0	ug/L	12	Standard
	Ag	107	92.7	8.0	**0.0002**	0.001	504.2	ug/L	98	Standard
	Cd	111	330.1	5.6	**0.1699**	0.010	5.6	mg/L	11	Standard
	Cd	114	763.9	13.9	**0.1615**	0.022	13.6	ug/L	21	Standard
>	**In**	115	550787.3	1.4				ug/L	547487	Standard
	Sn	118	540.0	13.8	**0.0292**	0.013	44.4	ug/L	450	Standard
	Sb	123	257.9	10.5	**0.0527**	0.006	12.1	ug/L	105	Standard
	Ba	135	38973.7	1.1	**21.0479**	0.260	1.2	ug/L	111	Standard
	Ce	140	2586.9	4.8				ug/L	107	Standard
>	**Tb**	159	856869.1	0.8				ug/L	890342	Standard
	Ho	165	58.3	54.4				ug/L	10	Standard
	Tl	203	144.7	17.5	**0.0161**	0.003	20.9	ug/L	19	Standard
	Tl	205	115.0	28.5	**0.0201**	0.005	26.9	ug/L	17	Standard
	Pb	206	457.0	4.6	**0.0419**	0.005	10.8	ug/L	247	Standard
	Pb	207	362.3	5.9	**0.0324**	0.005	16.3	ug/L	215	Standard
	Pb	208	1499.7	3.6	**0.0335**	0.003	9.2	ug/L	770	Standard
	U	238	42.7	10.6	**0.0065**	0.001	11.8	ug/L	13	Standard
>	**Bi**	209	488736.5	0.4				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.7135**	32.404	173.2	mg/L	2	Standard
Mg	24	2508.5	0.8	**3.4105**	0.088	2.6	mg/L	35	Standard
K	39	146.7	2.0	**0.6192**	0.005	0.8	mg/L	25	Standard
Ca	43	36.7	47.9	**1.9276**	3.571	185.3	mg/L	38	Standard
Fe	54	2278.8	4.5	**2.0291**	0.142	7.0	mg/L	126	Standard
Fe	57	766.7	5.8	**1.9335**	0.140	7.2	mg/L	245	Standard
> **Sc-1**	45	25052.4	2.1				mg/L	25066	Standard
Cl	35	147914.5	0.4				ug/L	125857	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	9583.1	14.5				ug/L	1350	Standard
P	31	24017.4	7.0				ug/L	18393	Standard
S	34	4402.3	1.3				ug/L	3739	Standard
Sr	88	115.0	24.2				ug/L	78	Standard
C	12	110.0	15.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	111.3	9.5				mg/L	2	Standard
Ho-1	165	58.3	54.4				mg/L	10	Standard
Er	166	43.3	48.0				mg/L	23	Standard
I	127	122962.9	5.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.756	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.950	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.603
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.137
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606065001
Sample Date/Time: Tuesday, June 21, 2016 15:32:01
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58737.0	2.5				ug/L	60176	Standard
	Be	9	13.3	78.1	**0.0099**	0.015	148.6	ug/L	5	Standard
	Al	27	20311195.1	0.7	**158.4647**	3.057	1.9	ug/L	832	Standard
	Sc	45	24576.6	0.4				ug/L	25066	Standard
	Ti	47	298.3	18.8	**1.3401**	0.257	19.2	ug/L	38	Standard
	V	51	-26804.6	32.1	**-4.7157**	1.536	32.6	ug/L	974	Standard
	Cr	52	3156638.5	1.5	**497.8823**	3.945	0.8	ug/L	5792	Standard
	Cr	53	406838.5	1.2	**499.5299**	10.508	2.1	ug/L	347	Standard
	Mn	55	3878787.1	0.6	**609.0624**	15.870	2.6	ug/L	1164	Standard
	Co	59	134308.5	1.9	**22.1248**	0.836	3.8	ug/L	303	Standard
	Ni	60	1500074.7	0.8	**837.5062**	11.813	1.4	ug/L	291	Standard
	Cu	65	3294.7	4.2	**1.7525**	0.064	3.7	ug/L	173	Standard
	Zn	66	3534.1	0.8	**3.1886**	0.054	1.7	ug/L	130	Standard
>	**Ge**	72	489585.9	2.0				ug/L	491724	Standard
	As	75	619.2	16.7	**0.6262**	0.096	15.3	ug/L	-25	Standard
	Se	82	219.8	7.3	**2.0451**	0.198	9.7	ug/L	12	Standard
	Se-1	77	661.7	6.7	**8.7481**	0.445	5.1	ug/L	57	Standard
>	**Ga**	71	480.0	18.8				mg/L	148	Standard
	Rb	85	7842.0	1.6				ug/L	18	Standard
	Y	89	401986.8	1.4				ug/L	401845	Standard
>	**Rh**	103	255.0	17.1				ug/L	10	Standard
	Mo	98	3790.0	2.1	**1.6493**	0.037	2.3	ug/L	12	Standard
	Ag	107	91.7	12.6	**0.0009**	0.002	229.9	ug/L	98	Standard
	Cd	111	318.1	9.7	**0.1728**	0.018	10.6	mg/L	11	Standard
	Cd	114	767.4	4.0	**0.1715**	0.006	3.7	ug/L	21	Standard
>	**In**	115	522178.8	0.8				ug/L	547487	Standard
	Sn	118	655.0	6.0	**0.0582**	0.008	14.0	ug/L	450	Standard
	Sb	123	316.3	5.2	**0.0705**	0.004	6.2	ug/L	105	Standard
	Ba	135	988361.5	1.0	**564.4491**	9.763	1.7	ug/L	111	Standard
	Ce	140	3193.7	1.3				ug/L	107	Standard
>	**Tb**	159	848147.8	2.2				ug/L	890342	Standard
	Ho	165	61.7	20.4				ug/L	10	Standard
	Tl	203	205.3	8.6	**0.0262**	0.002	9.4	ug/L	19	Standard
	Tl	205	211.7	4.9	**0.0383**	0.002	4.4	ug/L	17	Standard
	Pb	206	552.0	3.0	**0.0694**	0.003	3.8	ug/L	247	Standard
	Pb	207	484.3	2.7	**0.0679**	0.004	6.5	ug/L	215	Standard
	Pb	208	1839.4	3.4	**0.0618**	0.005	8.1	ug/L	770	Standard
	U	238	2510.9	1.9	**0.4572**	0.010	2.2	ug/L	13	Standard
>	**Bi**	209	459869.7	1.0				ug/L	503143	Standard

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Na	23	5.0	0.0	**56.9736**	0.236	0.4	mg/L	2	Standard
Mg	24	79633.7	1.2	**111.5486**	1.739	1.6	mg/L	35	Standard
K	39	216.7	13.5	**0.9891**	0.148	14.9	mg/L	25	Standard
Ca	43	143.3	11.2	**23.4985**	3.298	14.0	mg/L	38	Standard
Fe	54	8009.6	2.0	**7.6156**	0.141	1.9	mg/L	126	Standard
Fe	57	2330.2	7.0	**8.2796**	0.633	7.6	mg/L	245	Standard
> **Sc-1**	45	24576.6	0.4				mg/L	25066	Standard
Cl	35	147026.1	2.2				ug/L	125857	Standard
Kr	83	3.0	33.3				ug/L	1	Standard
Br	81	52694.8	2.4				ug/L	1350	Standard
P	31	26670.1	1.1				ug/L	18393	Standard
S	34	4514.0	2.6				ug/L	3739	Standard
Sr	88	530.0	12.0				ug/L	78	Standard
C	12	150.0	17.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	69.8	80.1				mg/L	2	Standard
Ho-1	165	61.7	20.4				mg/L	10	Standard
Er	166	73.3	47.9				mg/L	23	Standard
I	127	406278.2	6.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.609	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.565	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.377
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	91.399
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
V 51 Lower	V	51	
Cr 52 Upper, S, EEE	Cr	52	

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Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Ni 60 Upper, S, EEE	Ni	60
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606065002
Sample Date/Time: Tuesday, June 21, 2016 15:35:12
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60596.0	1.9				ug/L	60176	Standard
	Be	9	13.3	21.7	**0.0094**	0.004	40.0	ug/L	5	Standard
	Al	27	8739182.4	2.0	**66.0672**	0.799	1.2	ug/L	832	Standard
	Sc	45	26192.6	2.2				ug/L	25066	Standard
	Ti	47	278.7	7.4	**1.2062**	0.081	6.7	ug/L	38	Standard
	V	51	739.9	19.6	**-0.0487**	0.023	48.1	ug/L	974	Standard
	Cr	52	22061.4	0.9	**2.4614**	0.056	2.3	ug/L	5792	Standard
	Cr	53	7727.0	4.4	**8.8615**	0.540	6.1	ug/L	347	Standard
	Mn	55	1194045.7	2.0	**182.8701**	3.213	1.8	ug/L	1164	Standard
	Co	59	2942.3	2.7	**0.4247**	0.011	2.5	ug/L	303	Standard
	Ni	60	3788.5	1.5	**1.8749**	0.030	1.6	ug/L	291	Standard
	Cu	65	823.4	3.2	**0.3537**	0.007	2.1	ug/L	173	Standard
	Zn	66	2433.2	2.0	**2.0660**	0.023	1.1	ug/L	130	Standard
>	**Ge**	72	501409.8	1.7				ug/L	491724	Standard
	As	75	283.2	37.7	**0.2992**	0.102	34.0	ug/L	-25	Standard
	Se	82	131.4	7.4	**1.1550**	0.115	9.9	ug/L	12	Standard
	Se-1	77	578.0	3.8	**7.3693**	0.169	2.3	ug/L	57	Standard
>	**Ga**	71	285.0	6.3				mg/L	148	Standard
	Rb	85	8877.6	3.1				ug/L	18	Standard
	Y	89	394026.5	1.2				ug/L	401845	Standard
>	**Rh**	103	161.7	9.4				ug/L	10	Standard
	Mo	98	195.9	2.8	**0.0813**	0.003	4.3	ug/L	12	Standard
	Ag	107	96.7	5.1	**0.0018**	0.001	33.2	ug/L	98	Standard
	Cd	111	123.0	9.0	**0.0640**	0.005	8.5	mg/L	11	Standard
	Cd	114	254.1	11.5	**0.0540**	0.007	13.5	ug/L	21	Standard
>	**In**	115	520782.3	1.6				ug/L	547487	Standard
	Sn	118	470.0	9.1	**0.0211**	0.009	42.4	ug/L	450	Standard
	Sb	123	310.6	7.2	**0.0693**	0.007	9.8	ug/L	105	Standard
	Ba	135	314668.7	2.2	**180.1229**	1.150	0.6	ug/L	111	Standard
	Ce	140	4312.3	4.3				ug/L	107	Standard
>	**Tb**	159	863525.5	2.8				ug/L	890342	Standard
	Ho	165	90.0	9.6				ug/L	10	Standard
	Tl	203	216.7	3.1	**0.0269**	0.001	4.8	ug/L	19	Standard
	Tl	205	188.3	12.5	**0.0332**	0.005	14.2	ug/L	17	Standard
	Pb	206	400.0	2.1	**0.0323**	0.001	2.6	ug/L	247	Standard
	Pb	207	353.7	7.0	**0.0327**	0.004	13.3	ug/L	215	Standard
	Pb	208	1312.0	2.8	**0.0243**	0.004	16.7	ug/L	770	Standard
	U	238	1391.1	5.3	**0.2449**	0.008	3.4	ug/L	13	Standard
>	**Bi**	209	474675.7	2.0				ug/L	503143	Standard

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Na	23	5.0	100.0	**54.0687**	53.938	99.8	mg/L	2	Standard
Mg	24	62982.4	3.0	**82.7804**	2.551	3.1	mg/L	35	Standard
K	39	133.3	17.7	**0.5224**	0.099	18.9	mg/L	25	Standard
Ca	43	83.3	24.2	**10.4165**	3.976	38.2	mg/L	38	Standard
Fe	54	266.1	10.7	**0.1052**	0.027	25.7	mg/L	126	Standard
Fe	57	355.0	11.2	**0.2514**	0.173	69.0	mg/L	245	Standard
> **Sc-1**	45	26192.6	2.2				mg/L	25066	Standard
Cl	35	150054.1	0.8				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	29669.0	1.2				ug/L	1350	Standard
P	31	28545.2	2.4				ug/L	18393	Standard
S	34	4138.9	4.6				ug/L	3739	Standard
Sr	88	250.0	10.6				ug/L	78	Standard
C	12	156.7	19.5				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	133.3	30.3				mg/L	2	Standard
Ho-1	165	90.0	9.6				mg/L	10	Standard
Er	166	70.0	0.0				mg/L	23	Standard
I	127	661507.8	3.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.698	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.970	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.122
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.342
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606065003
Sample Date/Time: Tuesday, June 21, 2016 15:38:23
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63387.4	2.8				ug/L	60176	Standard
	Be	9	70.0	18.9	**0.0835**	0.017	20.0	ug/L	5	Standard
	Al	27	5157375.6	0.9	**37.2814**	0.808	2.2	ug/L	832	Standard
	Sc	45	26581.6	2.7				ug/L	25066	Standard
	Ti	47	1387.7	9.4	**6.8983**	0.595	8.6	ug/L	38	Standard
	V	51	-9213.7	17.6	**-1.7068**	0.290	17.0	ug/L	974	Standard
	Cr	52	1335310.3	0.9	**206.9695**	2.043	1.0	ug/L	5792	Standard
	Cr	53	177419.5	1.4	**214.3688**	2.599	1.2	ug/L	347	Standard
	Mn	55	997073.2	0.3	**154.0720**	2.167	1.4	ug/L	1164	Standard
	Co	59	16548.7	1.0	**2.6420**	0.067	2.5	ug/L	303	Standard
	Ni	60	80673.3	2.0	**44.1887**	0.256	0.6	ug/L	291	Standard
	Cu	65	12419.1	2.2	**6.7740**	0.077	1.1	ug/L	173	Standard
	Zn	66	5844.5	1.7	**5.3426**	0.029	0.5	ug/L	130	Standard
>	**Ge**	72	496879.0	1.5				ug/L	491724	Standard
	As	75	1809.6	8.9	**1.7401**	0.151	8.7	ug/L	-25	Standard
	Se	82	252.2	9.4	**2.3215**	0.229	9.8	ug/L	12	Standard
	Se-1	77	378.7	3.2	**4.6535**	0.175	3.8	ug/L	57	Standard
>	**Ga**	71	746.7	6.2				mg/L	148	Standard
	Rb	85	13919.7	1.1				ug/L	18	Standard
	Y	89	410755.2	2.3				ug/L	401845	Standard
>	**Rh**	103	111.7	5.2				ug/L	10	Standard
	Mo	98	5865.4	1.5	**2.4053**	0.027	1.1	ug/L	12	Standard
	Ag	107	135.7	10.3	**0.0074**	0.003	38.1	ug/L	98	Standard
	Cd	111	1056.6	4.0	**0.5506**	0.033	6.0	mg/L	11	Standard
	Cd	114	2556.7	1.3	**0.5477**	0.019	3.4	ug/L	21	Standard
>	**In**	115	554660.2	2.1				ug/L	547487	Standard
	Sn	118	1000.0	6.5	**0.1161**	0.012	10.2	ug/L	450	Standard
	Sb	123	402.1	12.9	**0.0857**	0.010	11.9	ug/L	105	Standard
	Ba	135	110239.6	0.8	**59.2270**	0.804	1.4	ug/L	111	Standard
	Ce	140	24279.4	2.4				ug/L	107	Standard
>	**Tb**	159	911640.4	0.6				ug/L	890342	Standard
	Ho	165	350.0	16.5				ug/L	10	Standard
	Tl	203	434.7	1.5	**0.0538**	0.001	1.7	ug/L	19	Standard
	Tl	205	305.0	7.5	**0.0500**	0.004	7.0	ug/L	17	Standard
	Pb	206	4440.3	0.9	**0.8568**	0.008	1.0	ug/L	247	Standard
	Pb	207	3810.8	1.1	**0.8086**	0.012	1.4	ug/L	215	Standard
	Pb	208	15060.6	1.4	**0.8488**	0.012	1.4	ug/L	770	Standard
	U	238	450.7	0.8	**0.0741**	0.001	0.7	ug/L	13	Standard
>	**Bi**	209	504464.9	0.3				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	31947.0	1.0	**41.3748**	1.485	3.6	mg/L	35	Standard
K	39	130.0	21.4	**0.4999**	0.137	27.3	mg/L	25	Standard
Ca	43	60.0		**5.8324**	0.297	5.1	mg/L	38	Standard
Fe	54	4403.4	0.3	**3.8059**	0.116	3.0	mg/L	126	Standard
Fe	57	1286.7	20.4	**3.6876**	0.933	25.3	mg/L	245	Standard
> **Sc-1**	45	26581.6	2.7				mg/L	25066	Standard
Cl	35	147975.1	1.2				ug/L	125857	Standard
Kr	83	2.7	43.3				ug/L	1	Standard
Br	81	55598.5	2.9				ug/L	1350	Standard
P	31	23972.3	2.6				ug/L	18393	Standard
S	34	4225.6	2.4				ug/L	3739	Standard
Sr	88	170.0	19.3				ug/L	78	Standard
C	12	100.0	10.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	656.9	13.7				mg/L	2	Standard
Ho-1	165	350.0	16.5				mg/L	10	Standard
Er	166	343.3	11.0				mg/L	23	Standard
I	127	145460.0	1.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.337	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.048	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.310	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.263	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Lower	V	51	
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	

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Mn 55 Upper, S, EEE	Mn	55

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Method 6020 - Summary Report

Sample ID: L1606065008
Sample Date/Time: Tuesday, June 21, 2016 15:41:35
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63802.5	2.9				ug/L	60176	Standard
	Be	9	36.7	28.4	**0.0391**	0.013	34.5	ug/L	5	Standard
	Al	27	2078545.0	1.4	**14.9291**	0.633	4.2	ug/L	832	Standard
	Sc	45	25579.9	3.4				ug/L	25066	Standard
	Ti	47	845.0	4.5	**4.1986**	0.233	5.6	ug/L	38	Standard
	V	51	3095.5	13.9	**0.3533**	0.071	20.0	ug/L	974	Standard
	Cr	52	11042.0	0.8	**0.8065**	0.028	3.5	ug/L	5792	Standard
	Cr	53	4624.0	3.3	**5.2817**	0.152	2.9	ug/L	347	Standard
	Mn	55	1458217.0	0.5	**229.3462**	1.807	0.8	ug/L	1164	Standard
	Co	59	5268.2	0.6	**0.8223**	0.014	1.7	ug/L	303	Standard
	Ni	60	16880.1	0.7	**9.2581**	0.054	0.6	ug/L	291	Standard
	Cu	65	1985.8	3.0	**1.0205**	0.041	4.0	ug/L	173	Standard
	Zn	66	32937.1	1.1	**31.7490**	0.128	0.4	ug/L	130	Standard
>	**Ge**	72	488364.0	1.2				ug/L	491724	Standard
	As	75	999.3	3.7	**0.9925**	0.031	3.1	ug/L	-25	Standard
	Se	82	345.9	2.6	**3.2758**	0.047	1.4	ug/L	12	Standard
	Se-1	77	334.7	3.8	**4.1184**	0.171	4.1	ug/L	57	Standard
>	**Ga**	71	493.3	14.2				mg/L	148	Standard
	Rb	85	9207.8	3.6				ug/L	18	Standard
	Y	89	437252.9	0.3				ug/L	401845	Standard
>	**Rh**	103	80.0	18.8				ug/L	10	Standard
	Mo	98	268.9	2.1	**0.1055**	0.004	3.8	ug/L	12	Standard
	Ag	107	76.3	10.0	**-0.0027**	0.001	41.6	ug/L	98	Standard
	Cd	111	118.8	3.8	**0.0574**	0.003	4.7	mg/L	11	Standard
	Cd	114	286.1	7.3	**0.0571**	0.005	9.4	ug/L	21	Standard
>	**In**	115	557575.9	1.6				ug/L	547487	Standard
	Sn	118	580.0	4.0	**0.0356**	0.003	9.3	ug/L	450	Standard
	Sb	123	413.5	12.2	**0.0880**	0.012	14.2	ug/L	105	Standard
	Ba	135	72473.6	0.8	**38.7111**	0.451	1.2	ug/L	111	Standard
	Ce	140	27496.6	2.4				ug/L	107	Standard
>	**Tb**	159	890154.3	0.6				ug/L	890342	Standard
	Ho	165	563.3	4.6				ug/L	10	Standard
	Tl	203	194.0	10.1	**0.0231**	0.003	13.1	ug/L	19	Standard
	Tl	205	155.0	11.6	**0.0269**	0.003	10.3	ug/L	17	Standard
	Pb	206	503.3	4.6	**0.0525**	0.006	12.2	ug/L	247	Standard
	Pb	207	451.7	4.0	**0.0538**	0.003	6.1	ug/L	215	Standard
	Pb	208	1721.0	1.3	**0.0480**	0.002	3.9	ug/L	770	Standard
	U	238	216.3	8.8	**0.0365**	0.003	7.7	ug/L	13	Standard
>	**Bi**	209	485551.6	1.6				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.8740**	30.950	173.2	mg/L	2	Standard
Mg	24	34632.9	0.6	**46.6189**	1.523	3.3	mg/L	35	Standard
K	39	138.3	25.6	**0.5602**	0.155	27.6	mg/L	25	Standard
Ca	43	65.0	13.3	**7.2572**	1.904	26.2	mg/L	38	Standard
Fe	54	279.3	17.0	**0.1243**	0.053	42.6	mg/L	126	Standard
Fe	57	271.7	11.8	**-0.0378**	0.151	397.7	mg/L	245	Standard
> **Sc-1**	45	25579.9	3.4				mg/L	25066	Standard
Cl	35	178666.6	0.8				ug/L	125857	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	80231.9	1.9				ug/L	1350	Standard
P	31	24055.7	0.9				ug/L	18393	Standard
S	34	3798.8	4.0				ug/L	3739	Standard
Sr	88	145.0	11.9				ug/L	78	Standard
C	12	176.7	22.9				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	130.0	23.1				mg/L	0	Standard
Dy	164	829.7	17.8				mg/L	2	Standard
Ho-1	165	563.3	4.6				mg/L	10	Standard
Er	166	563.3	12.6				mg/L	23	Standard
I	127	75514.5	3.5				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.027	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.317	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.843	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.504	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606072902
Sample Date/Time: Tuesday, June 21, 2016 15:44:46
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61000.9	2.3				ug/L	60176	Standard
	Be	9	48.3	31.6	**0.0571**	0.019	34.0	ug/L	5	Standard
	Al	27	1265197.3	0.4	**9.4968**	0.215	2.3	ug/L	832	Standard
	Sc	45	24843.7	5.1				ug/L	25066	Standard
	Ti	47	295.0	39.1	**1.2721**	0.610	48.0	ug/L	38	Standard
	V	51	1662.0	6.7	**0.0984**	0.013	12.9	ug/L	974	Standard
	Cr	52	9640.7	1.5	**0.5183**	0.014	2.7	ug/L	5792	Standard
	Cr	53	1788.4	7.9	**1.6929**	0.129	7.6	ug/L	347	Standard
	Mn	55	269286.4	1.8	**40.3553**	1.271	3.2	ug/L	1164	Standard
	Co	59	7695.6	2.0	**1.1688**	0.020	1.7	ug/L	303	Standard
	Ni	60	3736.8	1.2	**1.8110**	0.042	2.3	ug/L	291	Standard
	Cu	65	1102.4	3.8	**0.4960**	0.012	2.4	ug/L	173	Standard
	Zn	66	5766.8	0.8	**5.1234**	0.095	1.8	ug/L	130	Standard
>	**Ge**	72	510457.8	2.2				ug/L	491724	Standard
	As	75	81.7	14.6	**0.1091**	0.013	11.6	ug/L	-25	Standard
	Se	82	51.2	4.3	**0.3844**	0.013	3.3	ug/L	12	Standard
	Se-1	77	109.3	5.0	**0.8419**	0.100	11.9	ug/L	57	Standard
>	**Ga**	71	216.7	17.3				mg/L	148	Standard
	Rb	85	27894.0	1.5				ug/L	18	Standard
	Y	89	417086.1	2.1				ug/L	401845	Standard
>	**Rh**	103	31.7	24.1				ug/L	10	Standard
	Mo	98	60.3	14.2	**0.0209**	0.003	16.1	ug/L	12	Standard
	Ag	107	152.7	9.2	**0.0108**	0.003	25.1	ug/L	98	Standard
	Cd	111	73.5	21.7	**0.0349**	0.009	26.3	mg/L	11	Standard
	Cd	114	176.5	11.5	**0.0346**	0.004	11.6	ug/L	21	Standard
>	**In**	115	541515.1	1.4				ug/L	547487	Standard
	Sn	118	1061.7	1.2	**0.1327**	0.005	4.0	ug/L	450	Standard
	Sb	123	145.5	4.3	**0.0270**	0.002	7.3	ug/L	105	Standard
	Ba	135	64548.3	2.6	**35.5016**	1.269	3.6	ug/L	111	Standard
	Ce	140	11564.4	2.1				ug/L	107	Standard
>	**Tb**	159	870646.6	1.9				ug/L	890342	Standard
	Ho	165	225.0	10.2				ug/L	10	Standard
	Tl	203	276.7	4.4	**0.0339**	0.001	3.4	ug/L	19	Standard
	Tl	205	246.7	10.4	**0.0416**	0.004	8.7	ug/L	17	Standard
	Pb	206	518.0	0.8	**0.0540**	0.002	3.0	ug/L	247	Standard
	Pb	207	451.0	6.3	**0.0522**	0.006	10.7	ug/L	215	Standard
	Pb	208	1790.0	3.5	**0.0508**	0.006	11.7	ug/L	770	Standard
	U	238	117.7	5.0	**0.0192**	0.001	3.2	ug/L	13	Standard
>	**Bi**	209	492368.0	1.9				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	2613.6	7.0	**3.5946**	0.386	10.7	mg/L	35	Standard
K	39	313.3	2.4	**1.4668**	0.102	6.9	mg/L	25	Standard
Ca	43	40.0	12.5	**2.6700**	1.367	51.2	mg/L	38	Standard
Fe	54	172.6	19.4	**0.0297**	0.037	125.0	mg/L	126	Standard
Fe	57	250.0	16.4	**-0.0882**	0.218	247.4	mg/L	245	Standard
> **Sc-1**	45	24843.7	5.1				mg/L	25066	Standard
Cl	35	141007.2	1.2				ug/L	125857	Standard
Kr	83	3.7	68.6				ug/L	1	Standard
Br	81	8976.0	3.5				ug/L	1350	Standard
P	31	21415.1	1.0				ug/L	18393	Standard
S	34	3635.4	3.8				ug/L	3739	Standard
Sr	88	86.7	23.3				ug/L	78	Standard
C	12	93.3	55.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	321.7	9.0				mg/L	2	Standard
Ho-1	165	225.0	10.2				mg/L	10	Standard
Er	166	173.3	13.3				mg/L	23	Standard
I	127	27626.9	6.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.371	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.810	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.909
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.859
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606072903
Sample Date/Time: Tuesday, June 21, 2016 15:47:58
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65829.4	1.7				ug/L	60176	Standard
	Be	9	1091.7	7.9	**1.3819**	0.122	8.9	ug/L	5	Standard
	Al	27	9658460.6	2.5	**67.2033**	0.573	0.9	ug/L	832	Standard
	Sc	45	26962.3	1.0				ug/L	25066	Standard
	Ti	47	1161.4	44.0	**5.6242**	2.574	45.8	ug/L	38	Standard
	V	51	2955.0	3.3	**0.3108**	0.013	4.1	ug/L	974	Standard
	Cr	52	10847.2	2.6	**0.7108**	0.049	6.9	ug/L	5792	Standard
	Cr	53	1273.4	6.0	**1.0957**	0.073	6.6	ug/L	347	Standard
	Mn	55	2432059.6	0.8	**368.2427**	6.764	1.8	ug/L	1164	Standard
	Co	59	153183.5	0.7	**24.3375**	0.235	1.0	ug/L	303	Standard
	Ni	60	19503.2	0.5	**10.3155**	0.174	1.7	ug/L	291	Standard
	Cu	65	6676.5	1.4	**3.5201**	0.098	2.8	ug/L	173	Standard
	Zn	66	32319.1	1.0	**29.9680**	0.510	1.7	ug/L	130	Standard
>	**Ge**	72	507509.6	1.3				ug/L	491724	Standard
	As	75	65.2	90.0	**0.0946**	0.055	58.4	ug/L	-25	Standard
	Se	82	67.0	5.6	**0.5352**	0.041	7.6	ug/L	12	Standard
	Se-1	77	128.3	9.7	**1.1086**	0.151	13.6	ug/L	57	Standard
>	**Ga**	71	1310.1	5.3				mg/L	148	Standard
	Rb	85	17616.9	2.0				ug/L	18	Standard
	Y	89	727532.8	1.3				ug/L	401845	Standard
>	**Rh**	103	103.3	14.8				ug/L	10	Standard
	Mo	98	67.1	4.9	**0.0233**	0.001	5.8	ug/L	12	Standard
	Ag	107	109.7	4.3	**0.0031**	0.001	41.1	ug/L	98	Standard
	Cd	111	313.2	8.9	**0.1612**	0.018	11.3	mg/L	11	Standard
	Cd	114	738.1	10.6	**0.1561**	0.018	11.8	ug/L	21	Standard
>	**In**	115	550912.0	2.6				ug/L	547487	Standard
	Sn	118	630.0	11.0	**0.0468**	0.016	34.7	ug/L	450	Standard
	Sb	123	137.7	12.6	**0.0246**	0.003	13.1	ug/L	105	Standard
	Ba	135	39985.4	1.7	**21.5966**	0.536	2.5	ug/L	111	Standard
	Ce	140	1423873.1	0.8				ug/L	107	Standard
>	**Tb**	159	928141.2	1.7				ug/L	890342	Standard
	Ho	165	28324.8	1.1				ug/L	10	Standard
	Tl	203	290.7	5.4	**0.0344**	0.003	9.6	ug/L	19	Standard
	Tl	205	235.0	16.9	**0.0383**	0.006	14.9	ug/L	17	Standard
	Pb	206	5921.8	0.5	**1.1479**	0.039	3.4	ug/L	247	Standard
	Pb	207	4990.2	2.0	**1.0630**	0.048	4.5	ug/L	215	Standard
	Pb	208	19749.1	0.7	**1.1186**	0.030	2.7	ug/L	770	Standard
	U	238	2317.5	1.8	**0.3802**	0.005	1.4	ug/L	13	Standard
>	**Bi**	209	510317.8	3.2				ug/L	503143	Standard

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Na	23	5.0	100.0	**52.2757**	52.372	100.2	mg/L	2	Standard
Mg	24	2030.1	7.1	**2.5548**	0.200	7.8	mg/L	35	Standard
K	39	193.3	15.2	**0.7833**	0.132	16.9	mg/L	25	Standard
Ca	43	171.7	8.9	**26.1296**	2.684	10.3	mg/L	38	Standard
Fe	54	1645.5	6.5	**1.3153**	0.096	7.3	mg/L	126	Standard
Fe	57	753.4	12.5	**1.6728**	0.365	21.8	mg/L	245	Standard
> **Sc-1**	45	26962.3	1.0				mg/L	25066	Standard
Cl	35	255018.3	0.9				ug/L	125857	Standard
Kr	83	1.0	0.0				ug/L	1	Standard
Br	81	5220.9	5.0				ug/L	1350	Standard
P	31	21920.9	3.7				ug/L	18393	Standard
S	34	3950.5	6.9				ug/L	3739	Standard
Sr	88	301.7	3.8				ug/L	78	Standard
C	12	83.3	38.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	47352.9	1.1				mg/L	2	Standard
Ho-1	165	28324.8	1.1				mg/L	10	Standard
Er	166	25150.9	2.3				mg/L	23	Standard
I	127	224463.3	10.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.395	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.210	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.626
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.426
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606073001
Sample Date/Time: Tuesday, June 21, 2016 15:51:09
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73917.0	6.1				ug/L	60176	Standard
	Be	9	16.7	45.8	**0.0097**	0.008	79.3	ug/L	5	Standard
	Al	27	5652423.5	6.3	**35.0242**	0.471	1.3	ug/L	832	Standard
	Sc	45	24773.6	1.2				ug/L	25066	Standard
	Ti	47	116.3	10.9	**0.4405**	0.086	19.6	ug/L	38	Standard
	V	51	15193.9	3.1	**2.5748**	0.099	3.8	ug/L	974	Standard
	Cr	52	199468.5	0.9	**32.7681**	0.651	2.0	ug/L	5792	Standard
	Cr	53	29413.5	3.2	**38.2606**	2.147	5.6	ug/L	347	Standard
	Mn	55	16906.8	3.1	**2.6231**	0.046	1.8	ug/L	1164	Standard
	Co	59	8261.3	2.1	**1.4084**	0.013	0.9	ug/L	303	Standard
	Ni	60	7629.3	4.1	**4.3628**	0.068	1.6	ug/L	291	Standard
	Cu	65	2854.9	2.0	**1.6169**	0.031	1.9	ug/L	173	Standard
	Zn	66	2209.5	2.4	**2.0537**	0.064	3.1	ug/L	130	Standard
>	**Ge**	72	457885.1	2.6				ug/L	491724	Standard
	As	75	2538.0	5.5	**2.6341**	0.209	8.0	ug/L	-25	Standard
	Se	82	858.9	4.6	**8.8399**	0.642	7.3	ug/L	12	Standard
	Se-1	77	1191.0	2.5	**17.4647**	0.920	5.3	ug/L	57	Standard
>	**Ga**	71	1676.8	5.5				mg/L	148	Standard
	Rb	85	226016.7	0.7				ug/L	18	Standard
	Y	89	390113.6	0.9				ug/L	401845	Standard
>	**Rh**	103	3238.7	1.2				ug/L	10	Standard
	Mo	98	4439.9	1.2	**1.9618**	0.048	2.5	ug/L	12	Standard
	Ag	107	114.0	9.8	**0.0052**	0.002	36.0	ug/L	98	Standard
	Cd	111	49.0	20.1	**0.0230**	0.005	23.8	mg/L	11	Standard
	Cd	114	113.7	9.0	**0.0220**	0.002	11.3	ug/L	21	Standard
>	**In**	115	514604.2	1.3				ug/L	547487	Standard
	Sn	118	1230.1	8.0	**0.1780**	0.020	11.1	ug/L	450	Standard
	Sb	123	498.9	3.3	**0.1174**	0.004	3.7	ug/L	105	Standard
	Ba	135	1735936.7	1.5	**1005.9141**	2.820	0.3	ug/L	111	Standard
	Ce	140	845.0	14.5				ug/L	107	Standard
>	**Tb**	159	860331.0	2.6				ug/L	890342	Standard
	Ho	165	16.7	17.3				ug/L	10	Standard
	Tl	203	237.3	4.9	**0.0323**	0.002	6.7	ug/L	19	Standard
	Tl	205	226.7	26.3	**0.0425**	0.010	22.8	ug/L	17	Standard
	Pb	206	559.7	1.7	**0.0765**	0.002	3.2	ug/L	247	Standard
	Pb	207	477.3	6.9	**0.0710**	0.005	6.3	ug/L	215	Standard
	Pb	208	1797.7	2.6	**0.0642**	0.006	8.9	ug/L	770	Standard
	U	238	256.3	4.6	**0.0480**	0.003	7.3	ug/L	13	Standard
>	**Bi**	209	441187.4	3.3				ug/L	503143	Standard

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Na	23	6.7	114.6	**75.7212**	86.562	114.3	mg/L	2	Standard
Mg	24	90539.7	1.2	**125.8278**	2.144	1.7	mg/L	35	Standard
K	39	2236.8	7.2	**11.1766**	0.942	8.4	mg/L	25	Standard
Ca	43	748.4	12.6	**144.1070**	20.471	14.2	mg/L	38	Standard
Fe	54	142.0	15.6	**-0.0001**	0.022	16866.3	mg/L	126	Standard
Fe	57	1348.4	5.7	**4.2895**	0.312	7.3	mg/L	245	Standard
> **Sc-1**	45	24773.6	1.2				mg/L	25066	Standard
Cl	35	159146.8	0.8				ug/L	125857	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	209975.2	1.8				ug/L	1350	Standard
P	31	20949.5	2.8				ug/L	18393	Standard
S	34	4584.0	1.1				ug/L	3739	Standard
Sr	88	10782.2	5.2				ug/L	78	Standard
C	12	116.7	32.5				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	5.4	219.6				mg/L	2	Standard
Ho-1	165	16.7	17.3				mg/L	10	Standard
Er	166	26.7	43.3				mg/L	23	Standard
I	127	166779.4	5.0				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		122.835	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.118	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.994
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.686
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 15:54:22
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59968.5	1.3				ug/L	60176	Standard
	Be	9	36398.7	0.5	**50.8713**	0.403	0.8	ug/L	5	Standard
	Al	27	6548192.3	1.8	**50.0297**	1.523	3.0	ug/L	832	Standard
	Sc	45	25387.9	1.8				ug/L	25066	Standard
	Ti	47	20514.5	1.9	**104.3164**	2.213	2.1	ug/L	38	Standard
	V	51	309165.3	1.8	**51.0062**	0.680	1.3	ug/L	974	Standard
	Cr	52	340251.9	0.9	**51.7368**	0.210	0.4	ug/L	5792	Standard
	Cr	53	43082.8	0.7	**51.4506**	0.301	0.6	ug/L	347	Standard
	Mn	55	327886.5	1.7	**50.2320**	0.671	1.3	ug/L	1164	Standard
	Co	59	311341.2	1.1	**50.2912**	0.234	0.5	ug/L	303	Standard
	Ni	60	95005.0	1.3	**51.7832**	0.285	0.6	ug/L	291	Standard
	Cu	65	94085.6	1.9	**51.6732**	0.769	1.5	ug/L	173	Standard
	Zn	66	54162.3	1.8	**51.1699**	0.730	1.4	ug/L	130	Standard
>	Ge	72	499656.0	0.8				ug/L	491724	Standard
	As	75	53793.1	1.5	**50.4679**	0.579	1.1	ug/L	-25	Standard
	Se	82	5297.2	1.4	**50.3360**	1.022	2.0	ug/L	12	Standard
	Se-1	77	3753.1	2.9	**51.6078**	1.108	2.1	ug/L	57	Standard
>	Ga	71	116.7	31.0				mg/L	148	Standard
	Rb	85	846.7	4.4				ug/L	18	Standard
	Y	89	409237.0	1.3				ug/L	401845	Standard
>	Rh	103	43.3	24.0				ug/L	10	Standard
	Mo	98	236019.2	1.3	**98.9883**	1.916	1.9	ug/L	12	Standard
	Ag	107	301027.0	0.2	**51.4292**	0.425	0.8	ug/L	98	Standard
	Cd	111	95327.7	1.4	**51.1098**	1.090	2.1	mg/L	11	Standard
	Cd	114	232932.5	0.7	**51.3315**	0.699	1.4	ug/L	21	Standard
>	In	115	543279.3	0.7				ug/L	547487	Standard
	Sn	118	259515.7	1.7	**50.2935**	1.187	2.4	ug/L	450	Standard
	Sb	123	214686.9	1.2	**50.9350**	0.980	1.9	ug/L	105	Standard
	Ba	135	92608.2	0.1	**50.7811**	0.422	0.8	ug/L	111	Standard
	Ce	140	138.3	43.1				ug/L	107	Standard
>	Tb	159	879645.1	1.9				ug/L	890342	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	374242.2	0.3	**50.5043**	0.815	1.6	ug/L	19	Standard
	Tl	205	312151.2	0.8	**51.3434**	0.975	1.9	ug/L	17	Standard
	Pb	206	237883.3	0.7	**49.8803**	1.009	2.0	ug/L	247	Standard
	Pb	207	215064.7	1.2	**49.6101**	1.233	2.5	ug/L	215	Standard
	Pb	208	825294.1	0.6	**50.8408**	0.434	0.9	ug/L	770	Standard
	U	238	298401.1	0.3	**50.7212**	0.598	1.2	ug/L	13	Standard
>	Bi	209	493553.5	1.4				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3700.5	3.6	**4.9819**	0.214	4.3	mg/L	35	Standard
K	39	1016.7	7.6	**4.8957**	0.446	9.1	mg/L	25	Standard
Ca	43	56.7	13.5	**5.6936**	1.352	23.7	mg/L	38	Standard
Fe	54	5409.1	1.3	**4.9332**	0.148	3.0	mg/L	126	Standard
Fe	57	1620.1	7.8	**5.2229**	0.583	11.2	mg/L	245	Standard
> **Sc-1**	45	25387.9	1.8				mg/L	25066	Standard
Cl	35	151052.7	1.4				ug/L	125857	Standard
Kr	83	2.3	137.8				ug/L	1	Standard
Br	81	3390.4	24.1				ug/L	1350	Standard
P	31	21366.7	3.1				ug/L	18393	Standard
S	34	5074.2	4.4				ug/L	3739	Standard
Sr	88	91.7	22.0				ug/L	78	Standard
C	12	80.0	33.1				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.2	96.3				mg/L	2	Standard
Ho-1	165	8.3	34.6				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	8529.2	32.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	101.743		
Al	27	100.059		
Sc	45			
Ti	47	104.316		
V	51	102.012		
Cr	52	103.474		
Cr	53			
Mn	55	100.464		
Co	59	100.582		
Ni	60	103.566		
Cu	65	103.346		
Zn	66	102.340		
> Ge	72		101.613	
As	75	100.936		
Se	82	100.672		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.988		
Ag	107	102.858		
Cd	111	102.220		
Cd	114			
> In	115		99.232	
Sn	118	100.587		
Sb	123	101.870		
Ba	135	101.562		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.009		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.682		
U	238	101.442		
> Bi	209		98.094	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 15:57:34
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59362.8	1.8				ug/L	60176	Standard
	Be	9	21.7	93.3	**0.0213**	0.028	130.6	ug/L	5	Standard
	Al	27	10005.1	126.3	**0.0677**	0.095	140.7	ug/L	832	Standard
	Sc	45	25473.1	2.6				ug/L	25066	Standard
	Ti	47	37.3	36.4	**-0.0109**	0.069	630.7	ug/L	38	Standard
	V	51	1039.9	1.7	**0.0080**	0.005	68.5	ug/L	974	Standard
	Cr	52	6459.7	10.1	**0.0942**	0.091	96.2	ug/L	5792	Standard
	Cr	53	603.3	18.3	**0.3396**	0.127	37.3	ug/L	347	Standard
	Mn	55	2162.5	62.6	**0.1280**	0.210	164.2	ug/L	1164	Standard
	Co	59	333.7	16.0	**0.0066**	0.008	124.3	ug/L	303	Standard
	Ni	60	322.7	48.2	**-0.0082**	0.085	1042.9	ug/L	291	Standard
	Cu	65	161.7	29.8	**-0.0056**	0.026	466.7	ug/L	173	Standard
	Zn	66	184.7	16.2	**-0.0537**	0.027	49.9	ug/L	130	Standard
>	**Ge**	72	481495.2	1.4				ug/L	491724	Standard
	As	75	-13.3	88.6	**0.0210**	0.012	54.8	ug/L	-25	Standard
	Se	82	22.2	8.5	**0.1261**	0.021	16.7	ug/L	12	Standard
	Se-1	77	62.0	2.8	**0.2463**	0.018	7.5	ug/L	57	Standard
>	**Ga**	71	106.7	9.8				mg/L	148	Standard
	Rb	85	63.3	43.5				ug/L	18	Standard
	Y	89	417621.1	1.2				ug/L	401845	Standard
>	**Rh**	103	40.0	45.1				ug/L	10	Standard
	Mo	98	240.6	46.2	**0.0925**	0.045	48.3	ug/L	12	Standard
	Ag	107	129.0	44.6	**0.0058**	0.009	162.4	ug/L	98	Standard
	Cd	111	26.5	116.9	**0.0090**	0.016	178.2	mg/L	11	Standard
	Cd	114	62.7	80.7	**0.0088**	0.011	121.2	ug/L	21	Standard
>	**In**	115	564731.0	1.2				ug/L	547487	Standard
	Sn	118	768.4	3.1	**0.0694**	0.006	8.4	ug/L	450	Standard
	Sb	123	399.1	17.4	**0.0835**	0.016	19.6	ug/L	105	Standard
	Ba	135	378.0	72.8	**0.1438**	0.145	100.9	ug/L	111	Standard
	Ce	140	128.3	104.6				ug/L	107	Standard
>	**Tb**	159	890002.5	2.1				ug/L	890342	Standard
	Ho	165	5.0	100.0				ug/L	10	Standard
	Tl	203	105.7	64.2	**0.0104**	0.008	81.6	ug/L	19	Standard
	Tl	205	133.3	103.5	**0.0222**	0.021	96.6	ug/L	17	Standard
	Pb	206	266.0	23.7	**0.0002**	0.011	6809.3	ug/L	247	Standard
	Pb	207	260.7	18.8	**0.0074**	0.009	126.1	ug/L	215	Standard
	Pb	208	1119.4	33.0	**0.0081**	0.020	245.9	ug/L	770	Standard
	U	238	112.3	126.2	**0.0176**	0.023	129.9	ug/L	13	Standard
>	**Bi**	209	497488.5	3.7				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	95.0	109.9	**0.0875**	0.137	156.5	mg/L	35	Standard
K	39	31.7	18.2	**0.0434**	0.031	72.1	mg/L	25	Standard
Ca	43	43.3	26.6	**3.1138**	2.393	76.8	mg/L	38	Standard
Fe	54	134.3	11.0	**-0.0112**	0.012	107.9	mg/L	126	Standard
Fe	57	253.3	12.5	**-0.1072**	0.121	112.7	mg/L	245	Standard
> **Sc-1**	45	25473.1	2.6				mg/L	25066	Standard
Cl	35	154720.7	1.0				ug/L	125857	Standard
Kr	83	2.7	78.1				ug/L	1	Standard
Br	81	2063.5	2.4				ug/L	1350	Standard
P	31	22254.7	2.6				ug/L	18393	Standard
S	34	4942.5	2.2				ug/L	3739	Standard
Sr	88	83.3	19.3				ug/L	78	Standard
C	12	40.0	25.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.5	88.7				mg/L	2	Standard
Ho-1	165	5.0	100.0				mg/L	10	Standard
Er	166	10.0					mg/L	23	Standard
I	127	3717.1	8.4				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.920	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.150
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.876
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606073002
Sample Date/Time: Tuesday, June 21, 2016 16:00:47
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69308.3	3.7				ug/L	60176	Standard
	Be	9	20.0	50.0	**0.0149**	0.011	75.7	ug/L	5	Standard
	Al	27	6126361.3	1.2	**40.5279**	1.700	4.2	ug/L	832	Standard
	Sc	45	24543.2	3.9				ug/L	25066	Standard
	Ti	47	125.3	13.2	**0.4695**	0.084	17.8	ug/L	38	Standard
	V	51	16629.0	4.3	**2.7512**	0.149	5.4	ug/L	974	Standard
	Cr	52	210588.5	2.1	**33.6543**	0.594	1.8	ug/L	5792	Standard
	Cr	53	31539.5	3.2	**39.8713**	0.997	2.5	ug/L	347	Standard
	Mn	55	23748.6	0.8	**3.6623**	0.062	1.7	ug/L	1164	Standard
	Co	59	8388.0	2.5	**1.3899**	0.039	2.8	ug/L	303	Standard
	Ni	60	8179.5	3.3	**4.5574**	0.124	2.7	ug/L	291	Standard
	Cu	65	2815.6	0.9	**1.5465**	0.029	1.9	ug/L	173	Standard
	Zn	66	2262.5	3.2	**2.0433**	0.069	3.4	ug/L	130	Standard
>	**Ge**	72	470862.5	0.8				ug/L	491724	Standard
	As	75	2905.3	0.7	**2.9245**	0.023	0.8	ug/L	-25	Standard
	Se	82	925.8	0.9	**9.2587**	0.060	0.6	ug/L	12	Standard
	Se-1	77	1310.7	2.5	**18.7167**	0.330	1.8	ug/L	57	Standard
>	**Ga**	71	1603.4	3.2				mg/L	148	Standard
	Rb	85	230305.6	1.1				ug/L	18	Standard
	Y	89	379545.1	0.6				ug/L	401845	Standard
>	**Rh**	103	3307.0	4.1				ug/L	10	Standard
	Mo	98	4638.8	1.0	**2.1857**	0.018	0.8	ug/L	12	Standard
	Ag	107	129.7	17.9	**0.0096**	0.005	47.2	ug/L	98	Standard
	Cd	111	47.1	19.5	**0.0237**	0.006	23.4	mg/L	11	Standard
	Cd	114	88.1	29.6	**0.0174**	0.007	37.3	ug/L	21	Standard
>	**In**	115	482582.3	0.3				ug/L	547487	Standard
	Sn	118	1188.4	1.3	**0.1856**	0.004	2.1	ug/L	450	Standard
	Sb	123	594.7	6.6	**0.1512**	0.010	6.6	ug/L	105	Standard
	Ba	135	1814565.7	1.4	**1121.2802**	14.912	1.3	ug/L	111	Standard
	Ce	140	778.4	4.7				ug/L	107	Standard
>	**Tb**	159	825227.5	1.6				ug/L	890342	Standard
	Ho	165	23.3	101.3				ug/L	10	Standard
	Tl	203	227.3	5.1	**0.0315**	0.002	7.2	ug/L	19	Standard
	Tl	205	193.3	12.2	**0.0374**	0.005	13.4	ug/L	17	Standard
	Pb	206	563.7	9.9	**0.0803**	0.015	18.7	ug/L	247	Standard
	Pb	207	484.3	4.2	**0.0757**	0.007	9.4	ug/L	215	Standard
	Pb	208	1753.4	1.0	**0.0637**	0.003	4.2	ug/L	770	Standard
	U	238	254.3	2.6	**0.0486**	0.002	4.1	ug/L	13	Standard
>	**Bi**	209	431889.8	1.5				ug/L	503143	Standard

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Na	23	15.0	66.7	**174.2413**	120.728	69.3	mg/L	2	Standard
Mg	24	93727.4	0.9	**131.5829**	4.471	3.4	mg/L	35	Standard
K	39	2483.5	4.9	**12.5508**	0.926	7.4	mg/L	25	Standard
Ca	43	885.0	14.1	**173.5278**	30.084	17.3	mg/L	38	Standard
Fe	54	139.9	31.8	**0.0000**	0.04(183799.3		mg/L	126	Standard
Fe	57	1356.7	6.6	**4.3695**	0.153	3.5	mg/L	245	Standard
> **Sc-1**	45	24543.2	3.9				mg/L	25066	Standard
Cl	35	157218.9	1.1				ug/L	125857	Standard
Kr	83	3.7	41.7				ug/L	1	Standard
Br	81	220692.4	1.0				ug/L	1350	Standard
P	31	22506.7	0.5				ug/L	18393	Standard
S	34	4602.4	5.2				ug/L	3739	Standard
Sr	88	10935.6	1.0				ug/L	78	Standard
C	12	216.7	20.8				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	12.9	48.5				mg/L	2	Standard
Ho-1	165	23.3	101.3				mg/L	10	Standard
Er	166	10.0	173.2				mg/L	23	Standard
I	127	172463.4	8.0				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.176	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.758	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		88.145
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		85.838
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606073003
Sample Date/Time: Tuesday, June 21, 2016 16:03:58
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64465.7	7.2				ug/L	60176	Standard
	Be	9	48.3	48.9	**0.0549**	0.035	63.6	ug/L	5	Standard
	Al	27	114115919.1	1.6	**813.1976**	46.881	5.8	ug/L	832	Standard
	Sc	45	25436.3	2.0				ug/L	25066	Standard
	Ti	47	345.7	4.6	**1.8234**	0.101	5.6	ug/L	38	Standard
	V	51	1068.5	35.2	**0.0334**	0.072	216.4	ug/L	974	Standard
	Cr	52	14799.2	0.9	**1.6994**	0.023	1.4	ug/L	5792	Standard
	Cr	53	29695.8	4.6	**40.8112**	1.956	4.8	ug/L	347	Standard
	Mn	55	1183452.9	1.0	**209.7588**	2.233	1.1	ug/L	1164	Standard
	Co	59	14597.4	0.2	**2.6724**	0.007	0.3	ug/L	303	Standard
	Ni	60	10363.9	2.1	**6.3478**	0.146	2.3	ug/L	291	Standard
	Cu	65	1987.5	3.5	**1.1635**	0.045	3.9	ug/L	173	Standard
	Zn	66	3577.8	1.3	**3.6805**	0.061	1.7	ug/L	130	Standard
>	**Ge**	72	433293.9	0.3				ug/L	491724	Standard
	As	75	5927.9	2.2	**6.4431**	0.152	2.4	ug/L	-25	Standard
	Se	82	1611.7	1.7	**17.5991**	0.335	1.9	ug/L	12	Standard
	Se-1	77	5107.5	5.2	**81.3703**	4.339	5.3	ug/L	57	Standard
>	**Ga**	71	338.3	13.7				mg/L	148	Standard
	Rb	85	17830.5	1.3				ug/L	18	Standard
	Y	89	379868.8	3.7				ug/L	401845	Standard
>	**Rh**	103	1205.0	3.7				ug/L	10	Standard
	Mo	98	436.0	6.7	**0.2020**	0.013	6.6	ug/L	12	Standard
	Ag	107	96.0	2.8	**0.0031**	0.001	17.0	ug/L	98	Standard
	Cd	111	101.5	4.0	**0.0568**	0.002	3.9	mg/L	11	Standard
	Cd	114	243.8	21.8	**0.0563**	0.013	23.9	ug/L	21	Standard
>	**In**	115	481162.5	1.1				ug/L	547487	Standard
	Sn	118	790.0	15.5	**0.0989**	0.025	25.1	ug/L	450	Standard
	Sb	123	455.4	4.8	**0.1144**	0.005	4.7	ug/L	105	Standard
	Ba	135	6828454.6	0.9	**4232.2396**	20.556	0.5	ug/L	111	Standard
	Ce	140	12164.9	2.3				ug/L	107	Standard
>	**Tb**	159	829521.0	0.4				ug/L	890342	Standard
	Ho	165	176.7	18.8				ug/L	10	Standard
	Tl	203	129.7	8.2	**0.0170**	0.002	9.5	ug/L	19	Standard
	Tl	205	95.0	19.0	**0.0193**	0.003	17.6	ug/L	17	Standard
	Pb	206	521.0	9.8	**0.0734**	0.012	16.5	ug/L	247	Standard
	Pb	207	417.0	5.1	**0.0609**	0.006	10.2	ug/L	215	Standard
	Pb	208	1676.4	1.8	**0.0615**	0.002	3.3	ug/L	770	Standard
	U	238	9099.4	1.6	**1.8151**	0.034	1.9	ug/L	13	Standard
>	**Bi**	209	420359.8	0.4				ug/L	503143	Standard

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Na	23	15.0	33.3	**164.4381**	51.833	31.5	mg/L	2	Standard
Mg	24	263283.1	1.4	**356.5075**	9.102	2.6	mg/L	35	Standard
K	39	456.7	16.0	**2.1312**	0.355	16.7	mg/L	25	Standard
Ca	43	700.0	3.7	**130.7182**	6.161	4.7	mg/L	38	Standard
Fe	54	3184.3	4.9	**2.8411**	0.129	4.5	mg/L	126	Standard
Fe	57	2041.8	5.4	**6.8401**	0.287	4.2	mg/L	245	Standard
> **Sc-1**	45	25436.3	2.0				mg/L	25066	Standard
Cl	35	151004.1	1.2				ug/L	125857	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	445209.8	0.6				ug/L	1350	Standard
P	31	26399.6	1.7				ug/L	18393	Standard
S	34	4885.8	2.7				ug/L	3739	Standard
Sr	88	3080.3	7.6				ug/L	78	Standard
C	12	203.3	19.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	194.4	40.3				mg/L	2	Standard
Ho-1	165	176.7	18.8				mg/L	10	Standard
Er	166	186.7	8.2				mg/L	23	Standard
I	127	130585.3	6.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.129	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		88.117	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	87.886
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	83.547
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606096101
Sample Date/Time: Tuesday, June 21, 2016 16:07:10
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51179.6	1.3				ug/L	60176	Standard
	Be	9	6.7	43.3	**0.0019**	0.005	248.3	ug/L	5	Standard
	Al	27	50980.9	25.3	**0.4489**	0.121	26.9	ug/L	832	Standard
	Sc	45	25962.2	3.5				ug/L	25066	Standard
	Ti	47	119.0	4.2	**0.4268**	0.032	7.4	ug/L	38	Standard
	V	51	1327.1	7.8	**0.0590**	0.015	25.5	ug/L	974	Standard
	Cr	52	10085.4	1.2	**0.6910**	0.038	5.5	ug/L	5792	Standard
	Cr	53	2786.9	12.0	**3.1009**	0.469	15.1	ug/L	347	Standard
	Mn	55	4068.2	4.6	**0.4397**	0.037	8.5	ug/L	1164	Standard
	Co	59	403.7	6.2	**0.0189**	0.004	21.3	ug/L	303	Standard
	Ni	60	539.0	3.3	**0.1179**	0.012	10.2	ug/L	291	Standard
	Cu	65	14898.0	0.8	**8.4790**	0.067	0.8	ug/L	173	Standard
	Zn	66	3517.4	1.5	**3.2574**	0.058	1.8	ug/L	130	Standard
>	**Ge**	72	477620.4	1.4				ug/L	491724	Standard
	As	75	1519.4	3.8	**1.5239**	0.036	2.3	ug/L	-25	Standard
	Se	82	49.8	7.3	**0.4026**	0.036	8.9	ug/L	12	Standard
	Se-1	77	174.7	19.2	**1.8996**	0.522	27.5	ug/L	57	Standard
>	**Ga**	71	81.7	12.7				mg/L	148	Standard
	Rb	85	1321.7	1.4				ug/L	18	Standard
	Y	89	409645.6	0.4				ug/L	401845	Standard
>	**Rh**	103	80.0	6.3				ug/L	10	Standard
	Mo	98	714.4	3.4	**0.3043**	0.009	3.0	ug/L	12	Standard
	Ag	107	102.7	8.3	**0.0027**	0.002	56.4	ug/L	98	Standard
	Cd	111	14.0	51.5	**0.0031**	0.004	131.5	mg/L	11	Standard
	Cd	114	24.8	60.7	**0.0012**	0.003	284.8	ug/L	21	Standard
>	**In**	115	527134.4	0.6				ug/L	547487	Standard
	Sn	118	2366.9	4.7	**0.3994**	0.023	5.8	ug/L	450	Standard
	Sb	123	152.2	11.5	**0.0296**	0.004	14.7	ug/L	105	Standard
	Ba	135	3191.0	19.6	**1.7498**	0.356	20.3	ug/L	111	Standard
	Ce	140	173.3	23.1				ug/L	107	Standard
>	**Tb**	159	840402.3	0.7				ug/L	890342	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	123.0	17.0	**0.0144**	0.003	21.3	ug/L	19	Standard
	Tl	205	116.7	31.0	**0.0217**	0.006	29.6	ug/L	17	Standard
	Pb	206	3120.0	3.9	**0.6516**	0.026	4.0	ug/L	247	Standard
	Pb	207	2680.2	1.7	**0.6156**	0.006	0.9	ug/L	215	Standard
	Pb	208	10994.6	2.0	**0.6718**	0.014	2.1	ug/L	770	Standard
	U	238	72.3	2.9	**0.0124**	0.000	2.0	ug/L	13	Standard
>	**Bi**	209	457373.4	1.0				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	35125.7	1.1	**46.5846**	1.473	3.2	mg/L	35	Standard
K	39	51.7	5.6	**0.1362**	0.007	5.1	mg/L	25	Standard
Ca	43	31.7	39.7	**0.6865**	2.370	345.2	mg/L	38	Standard
Fe	54	162.3	12.6	**0.0125**	0.021	169.6	mg/L	126	Standard
Fe	57	268.3	4.3	**-0.0679**	0.055	81.1	mg/L	245	Standard
> **Sc-1**	45	25962.2	3.5				mg/L	25066	Standard
Cl	35	155782.8	0.6				ug/L	125857	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	7928.7	7.4				ug/L	1350	Standard
P	31	21842.4	3.3				ug/L	18393	Standard
S	34	4624.0	1.7				ug/L	3739	Standard
Sr	88	61.7	4.7				ug/L	78	Standard
C	12	123.3	54.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	22.5	69.8				mg/L	2	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	16.7	124.9				mg/L	23	Standard
I	127	273253.9	9.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		85.050	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.132	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.283
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.903
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606096102
Sample Date/Time: Tuesday, June 21, 2016 16:10:21
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55466.4	1.7				ug/L	60176	Standard
	Be	9	10.0	50.0	**0.0061**	0.008	123.3	ug/L	5	Standard
	Al	27	3404100.9	2.1	**28.1074**	0.199	0.7	ug/L	832	Standard
	Sc	45	25237.7	1.7				ug/L	25066	Standard
	Ti	47	137.7	20.3	**0.5030**	0.133	26.4	ug/L	38	Standard
	V	51	1824.3	3.0	**0.1361**	0.015	10.9	ug/L	974	Standard
	Cr	52	9639.7	1.2	**0.5728**	0.021	3.6	ug/L	5792	Standard
	Cr	53	2536.9	7.6	**2.6926**	0.311	11.6	ug/L	347	Standard
	Mn	55	410336.5	3.0	**63.9418**	3.504	5.5	ug/L	1164	Standard
	Co	59	771.7	2.6	**0.0774**	0.003	4.5	ug/L	303	Standard
	Ni	60	1278.1	2.9	**0.5199**	0.037	7.2	ug/L	291	Standard
	Cu	65	956.4	1.4	**0.4368**	0.016	3.7	ug/L	173	Standard
	Zn	66	2255.5	3.4	**1.9395**	0.107	5.5	ug/L	130	Standard
>	**Ge**	72	492109.1	2.4				ug/L	491724	Standard
	As	75	628.2	9.2	**0.6327**	0.065	10.2	ug/L	-25	Standard
	Se	82	84.5	5.3	**0.7234**	0.031	4.3	ug/L	12	Standard
	Se-1	77	165.7	4.1	**1.6947**	0.142	8.4	ug/L	57	Standard
>	**Ga**	71	128.3	21.5				mg/L	148	Standard
	Rb	85	1845.1	8.3				ug/L	18	Standard
	Y	89	407649.4	2.2				ug/L	401845	Standard
>	**Rh**	103	66.7	17.3				ug/L	10	Standard
	Mo	98	795.9	1.4	**0.3389**	0.011	3.3	ug/L	12	Standard
	Ag	107	240.3	3.9	**0.0269**	0.002	9.1	ug/L	98	Standard
	Cd	111	25.8	4.4	**0.0095**	0.000	3.6	mg/L	11	Standard
	Cd	114	76.3	38.0	**0.0129**	0.007	53.5	ug/L	21	Standard
>	**In**	115	528415.2	2.1				ug/L	547487	Standard
	Sn	118	820.0	7.2	**0.0898**	0.015	17.0	ug/L	450	Standard
	Sb	123	374.4	4.7	**0.0837**	0.002	2.9	ug/L	105	Standard
	Ba	135	25131.8	1.1	**14.1323**	0.352	2.5	ug/L	111	Standard
	Ce	140	776.7	26.8				ug/L	107	Standard
>	**Tb**	159	852950.8	1.0				ug/L	890342	Standard
	Ho	165	40.0	12.5				ug/L	10	Standard
	Tl	203	322.3	8.3	**0.0415**	0.004	9.0	ug/L	19	Standard
	Tl	205	273.3	11.9	**0.0475**	0.005	11.3	ug/L	17	Standard
	Pb	206	550.0	3.4	**0.0646**	0.004	5.5	ug/L	247	Standard
	Pb	207	494.7	5.4	**0.0662**	0.007	10.5	ug/L	215	Standard
	Pb	208	1825.0	0.9	**0.0567**	0.001	1.9	ug/L	770	Standard
	U	238	550.3	3.0	**0.0961**	0.003	3.3	ug/L	13	Standard
>	**Bi**	209	476377.1	0.5				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	5382.6	8.6	**7.3029**	0.563	7.7	mg/L	35	Standard
K	39	113.3	10.2	**0.4482**	0.048	10.8	mg/L	25	Standard
Ca	43	105.0	23.8	**15.1842**	4.585	30.2	mg/L	38	Standard
Fe	54	182.7	18.3	**0.0355**	0.030	84.2	mg/L	126	Standard
Fe	57	376.7	12.3	**0.3841**	0.168	43.8	mg/L	245	Standard
> **Sc-1**	45	25237.7	1.7				mg/L	25066	Standard
Cl	35	165485.5	0.6				ug/L	125857	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	15875.0	3.1				ug/L	1350	Standard
P	31	18915.1	1.7				ug/L	18393	Standard
S	34	4484.0	2.4				ug/L	3739	Standard
Sr	88	145.0	6.0				ug/L	78	Standard
C	12	53.3	39.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	18.4	111.4				mg/L	2	Standard
Ho-1	165	40.0	12.5				mg/L	10	Standard
Er	166	33.3	75.5				mg/L	23	Standard
I	127	33351.8	7.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.174	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.078	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.517
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.680
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606099501
Sample Date/Time: Tuesday, June 21, 2016 16:13:33
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	168635.9	4.1				ug/L	60176	Standard
	Be	9	6.7	114.6	**-0.0058**	0.004	64.0	ug/L	5	Standard
	Al	27	18474058.8	4.7	**50.2007**	2.075	4.1	ug/L	832	Standard
	Sc	45	25611.7	6.8				ug/L	25066	Standard
	Ti	47	96.0	15.3	**0.3247**	0.061	18.9	ug/L	38	Standard
	V	51	329.6	160.1	**-0.1086**	0.096	88.6	ug/L	974	Standard
	Cr	52	8533.4	2.1	**0.5000**	0.036	7.3	ug/L	5792	Standard
	Cr	53	18279.4	4.6	**23.6005**	0.090	0.4	ug/L	347	Standard
	Mn	55	795230.1	6.4	**133.2539**	3.844	2.9	ug/L	1164	Standard
	Co	59	1757.4	10.4	**0.2603**	0.020	7.8	ug/L	303	Standard
	Ni	60	5918.8	6.2	**3.3415**	0.070	2.1	ug/L	291	Standard
	Cu	65	974.0	13.3	**0.4862**	0.060	12.3	ug/L	173	Standard
	Zn	66	25732.5	3.6	**26.4255**	0.290	1.1	ug/L	130	Standard
>	**Ge**	72	457809.6	4.2				ug/L	491724	Standard
	As	75	24304.8	12.7	**24.8619**	2.381	9.6	ug/L	-25	Standard
	Se	82	10353.3	13.1	**107.2820**	10.769	10.0	ug/L	12	Standard
	Se-1	77	3338.4	7.4	**50.0689**	2.631	5.3	ug/L	57	Standard
>	**Ga**	71	190.0	18.2				mg/L	148	Standard
	Rb	85	67272.7	5.9				ug/L	18	Standard
	Y	89	392267.7	7.8				ug/L	401845	Standard
>	**Rh**	103	6212.9	7.3				ug/L	10	Standard
	Mo	98	66.8	16.5	**0.0261**	0.003	10.8	ug/L	12	Standard
	Ag	107	141.7	8.0	**0.0112**	0.002	19.1	ug/L	98	Standard
	Cd	111	25.2	33.7	**0.0099**	0.004	38.5	mg/L	11	Standard
	Cd	114	42.8	22.6	**0.0058**	0.002	26.8	ug/L	21	Standard
>	**In**	115	495596.9	7.2				ug/L	547487	Standard
	Sn	118	453.3	8.9	**0.0231**	0.015	65.7	ug/L	450	Standard
	Sb	123	307.9	14.7	**0.0722**	0.006	8.8	ug/L	105	Standard
	Ba	135	1737649.7	4.8	**1046.7670**	27.756	2.7	ug/L	111	Standard
	Ce	140	60.0	22.0				ug/L	107	Standard
>	**Tb**	159	833968.6	4.3				ug/L	890342	Standard
	Ho	165	16.7	34.6				ug/L	10	Standard
	Tl	203	93.0	16.9	**0.0113**	0.003	22.9	ug/L	19	Standard
	Tl	205	90.0	16.7	**0.0185**	0.003	15.2	ug/L	17	Standard
	Pb	206	345.7	4.5	**0.0311**	0.007	21.6	ug/L	247	Standard
	Pb	207	301.0	3.7	**0.0302**	0.000	0.9	ug/L	215	Standard
	Pb	208	1072.7	2.8	**0.0184**	0.001	6.1	ug/L	770	Standard
	U	238	4.3	35.3	**0.0001**	0.000	664.3	ug/L	13	Standard
>	**Bi**	209	416771.5	4.0				ug/L	503143	Standard

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Na	23	8.3	91.7	**92.7162**	88.289	95.2	mg/L	2	Standard
Mg	24	248689.5	5.2	**334.6353**	8.738	2.6	mg/L	35	Standard
K	39	770.0	3.9	**3.6624**	0.402	11.0	mg/L	25	Standard
Ca	43	676.7	8.2	**125.1812**	3.636	2.9	mg/L	38	Standard
Fe	54	913.9	19.2	**0.7080**	0.107	15.2	mg/L	126	Standard
Fe	57	1341.7	7.5	**4.0874**	0.184	4.5	mg/L	245	Standard
> **Sc-1**	45	25611.7	6.8				mg/L	25066	Standard
Cl	35	163994.5	4.3				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	2535152.6	9.1				ug/L	1350	Standard
P	31	21693.9	7.1				ug/L	18393	Standard
S	34	5349.3	7.3				ug/L	3739	Standard
Sr	88	17340.0	7.2				ug/L	78	Standard
C	12	46.7	24.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.7	100.4				mg/L	2	Standard
Ho-1	165	16.7	34.6				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	23	Standard
I	127	915873.2	10.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		280.238	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.103	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.522
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		82.834
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Se 82 Upper, S, EEE	Se	82	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606099502
Sample Date/Time: Tuesday, June 21, 2016 16:16:44
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	161934.6	2.9				ug/L	60176	Standard
	Be	9	5.0	0.0	**-0.0064**	0.000	1.1	ug/L	5	Standard
	Al	27	18034095.9	1.2	**51.0410**	1.601	3.1	ug/L	832	Standard
	Sc	45	25640.0	0.6				ug/L	25066	Standard
	Ti	47	101.0	11.2	**0.3353**	0.057	17.0	ug/L	38	Standard
	V	51	557.0	72.8	**-0.0732**	0.071	97.4	ug/L	974	Standard
	Cr	52	8384.0	1.2	**0.4274**	0.017	4.0	ug/L	5792	Standard
	Cr	53	17313.2	4.7	**21.5821**	0.836	3.9	ug/L	347	Standard
	Mn	55	803112.8	0.5	**130.2269**	0.853	0.7	ug/L	1164	Standard
	Co	59	1799.1	3.0	**0.2578**	0.012	4.7	ug/L	303	Standard
	Ni	60	5982.8	1.8	**3.2648**	0.077	2.3	ug/L	291	Standard
	Cu	65	1150.7	3.3	**0.5706**	0.016	2.9	ug/L	173	Standard
	Zn	66	24866.4	0.7	**24.6790**	0.202	0.8	ug/L	130	Standard
>	**Ge**	72	473336.7	1.0				ug/L	491724	Standard
	As	75	25587.3	1.8	**25.3566**	0.273	1.1	ug/L	-25	Standard
	Se	82	10890.0	1.7	**109.3307**	1.159	1.1	ug/L	12	Standard
	Se-1	77	3343.0	3.9	**48.4872**	1.708	3.5	ug/L	57	Standard
>	**Ga**	71	181.7	12.7				mg/L	148	Standard
	Rb	85	66679.8	2.2				ug/L	18	Standard
	Y	89	414678.4	1.0				ug/L	401845	Standard
>	**Rh**	103	6289.6	5.0				ug/L	10	Standard
	Mo	98	37.1	14.9	**0.0122**	0.003	21.4	ug/L	12	Standard
	Ag	107	130.3	5.8	**0.0083**	0.002	18.8	ug/L	98	Standard
	Cd	111	31.2	14.4	**0.0131**	0.003	20.3	mg/L	11	Standard
	Cd	114	39.9	47.6	**0.0049**	0.004	88.5	ug/L	21	Standard
>	**In**	115	510227.1	2.2				ug/L	547487	Standard
	Sn	118	625.0	2.9	**0.0551**	0.005	8.2	ug/L	450	Standard
	Sb	123	301.2	2.3	**0.0685**	0.003	3.9	ug/L	105	Standard
	Ba	135	1706474.6	1.4	**997.5420**	18.016	1.8	ug/L	111	Standard
	Ce	140	70.0	39.8				ug/L	107	Standard
>	**Tb**	159	847245.8	1.6				ug/L	890342	Standard
	Ho	165	16.7	34.6				ug/L	10	Standard
	Tl	203	82.0	5.6	**0.0095**	0.001	7.4	ug/L	19	Standard
	Tl	205	63.3	19.9	**0.0132**	0.002	18.3	ug/L	17	Standard
	Pb	206	2104.8	3.5	**0.4651**	0.017	3.6	ug/L	247	Standard
	Pb	207	1755.4	1.6	**0.4250**	0.008	1.8	ug/L	215	Standard
	Pb	208	6586.6	2.3	**0.4183**	0.011	2.6	ug/L	770	Standard
	U	238	3.3	75.5	**-0.0002**	0.001	311.3	ug/L	13	Standard
>	**Bi**	209	419186.3	0.3				ug/L	503143	Standard

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Na	23	11.7	49.5	**127.1945**	62.567	49.2	mg/L	2	Standard
Mg	24	247534.5	2.1	**332.4511**	8.574	2.6	mg/L	35	Standard
K	39	821.7	11.6	**3.8912**	0.453	11.6	mg/L	25	Standard
Ca	43	693.3	9.8	**128.3410**	13.655	10.6	mg/L	38	Standard
Fe	54	995.6	6.1	**0.7869**	0.051	6.4	mg/L	126	Standard
Fe	57	1348.4	5.9	**4.1068**	0.292	7.1	mg/L	245	Standard
> **Sc-1**	45	25640.0	0.6				mg/L	25066	Standard
Cl	35	170844.7	1.8				ug/L	125857	Standard
Kr	83	3.0	66.7				ug/L	1	Standard
Br	81	2578824.0	0.0				ug/L	1350	Standard
P	31	21972.6	2.3				ug/L	18393	Standard
S	34	5225.9	2.7				ug/L	3739	Standard
Sr	88	16430.6	4.1				ug/L	78	Standard
C	12	46.7	32.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.0	111.0				mg/L	2	Standard
Ho-1	165	16.7	34.6				mg/L	10	Standard
Er	166	20.0	86.6				mg/L	23	Standard
I	127	815214.3	2.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		269.102	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.261	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.194
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		83.314
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Se 82 Upper, S, EEE	Se	82	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 16:19:57
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	53255.1	2.6				ug/L	60176	Standard
	Be	9	34201.9	0.2	**53.8492**	1.444	2.7	ug/L	5	Standard
	Al	27	6443317.1	1.2	**55.4427**	1.386	2.5	ug/L	832	Standard
	Sc	45	29281.6	1.0				ug/L	25066	Standard
	Ti	47	22756.4	2.7	**106.0921**	2.711	2.6	ug/L	38	Standard
	V	51	330023.3	1.9	**49.9178**	0.818	1.6	ug/L	974	Standard
	Cr	52	374935.6	2.1	**52.2804**	1.022	2.0	ug/L	5792	Standard
	Cr	53	48235.0	2.8	**52.8231**	1.387	2.6	ug/L	347	Standard
	Mn	55	352441.5	1.8	**49.5016**	0.742	1.5	ug/L	1164	Standard
	Co	59	322946.3	1.0	**47.8265**	0.311	0.7	ug/L	303	Standard
	Ni	60	103457.1	1.6	**51.7034**	0.790	1.5	ug/L	291	Standard
	Cu	65	102599.3	1.6	**51.6656**	0.731	1.4	ug/L	173	Standard
	Zn	66	58130.6	0.7	**50.3515**	0.428	0.9	ug/L	130	Standard
>	Ge	72	544960.4	0.5				ug/L	491724	Standard
	As	75	57215.3	2.2	**49.2169**	0.986	2.0	ug/L	-25	Standard
	Se	82	5680.0	0.8	**49.4814**	0.520	1.1	ug/L	12	Standard
	Se-1	77	4029.9	3.0	**50.7996**	1.419	2.8	ug/L	57	Standard
>	Ga	71	136.7	2.1				mg/L	148	Standard
	Rb	85	848.4	0.7				ug/L	18	Standard
	Y	89	441171.0	0.9				ug/L	401845	Standard
>	Rh	103	98.3	34.6				ug/L	10	Standard
	Mo	98	240530.6	0.1	**95.5654**	2.386	2.5	ug/L	12	Standard
	Ag	107	314903.2	0.7	**50.9642**	1.103	2.2	ug/L	98	Standard
	Cd	111	99040.2	2.0	**50.2851**	0.336	0.7	mg/L	11	Standard
	Cd	114	242003.9	1.6	**50.5109**	0.771	1.5	ug/L	21	Standard
>	In	115	573676.8	2.4				ug/L	547487	Standard
	Sn	118	268045.3	0.6	**49.2020**	0.945	1.9	ug/L	450	Standard
	Sb	123	224141.2	0.6	**50.3723**	1.071	2.1	ug/L	105	Standard
	Ba	135	96926.4	0.9	**50.3436**	0.859	1.7	ug/L	111	Standard
	Ce	140	86.7	38.4				ug/L	107	Standard
>	Tb	159	919162.1	0.7				ug/L	890342	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	383744.4	1.7	**49.4533**	0.202	0.4	ug/L	19	Standard
	Tl	205	316340.9	2.1	**49.6852**	0.346	0.7	ug/L	17	Standard
	Pb	206	242321.1	0.6	**48.5289**	1.001	2.1	ug/L	247	Standard
	Pb	207	218155.0	0.4	**48.0608**	0.946	2.0	ug/L	215	Standard
	Pb	208	851760.1	1.1	**50.1133**	0.387	0.8	ug/L	770	Standard
	U	238	300943.2	1.1	**48.8537**	0.383	0.8	ug/L	13	Standard
>	Bi	209	516771.8	1.8				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3847.2	2.3	**4.4854**	0.083	1.8	mg/L	35	Standard
K	39	1120.0	5.4	**4.6686**	0.296	6.3	mg/L	25	Standard
Ca	43	61.7	49.5	**5.0777**	5.123	100.9	mg/L	38	Standard
Fe	54	5797.8	2.5	**4.5733**	0.113	2.5	mg/L	126	Standard
Fe	57	1638.4	11.3	**4.4400**	0.621	14.0	mg/L	245	Standard
> **Sc-1**	45	29281.6	1.0				mg/L	25066	Standard
Cl	35	158279.8	0.9				ug/L	125857	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	7785.3	7.0				ug/L	1350	Standard
P	31	24633.3	2.3				ug/L	18393	Standard
S	34	5546.0	5.0				ug/L	3739	Standard
Sr	88	78.3	26.6				ug/L	78	Standard
C	12	36.7	83.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.9	217.0				mg/L	2	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	7436.9	29.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	107.698		
Al	27	110.885		
Sc	45			
Ti	47	106.092		
V	51	99.836		
Cr	52	104.561		
Cr	53			
Mn	55	99.003		
Co	59	95.653		
Ni	60	103.407		
Cu	65	103.331		
Zn	66	100.703		
> Ge	72		110.827	
As	75	98.434		
Se	82	98.963		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	95.565		
Ag	107	101.928		
Cd	111	100.570		
Cd	114			
> In	115		104.784	
Sn	118	98.404		
Sb	123	100.745		
Ba	135	100.687		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.907		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.227		
U	238	97.707		
> Bi	209		102.709	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 16:23:09
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56266.0	2.0				ug/L	60176	Standard
	Be	9	25.0	80.0	**0.0280**	0.030	105.7	ug/L	5	Standard
	Al	27	7918.3	94.7	**0.0560**	0.061	108.1	ug/L	832	Standard
	Sc	45	29356.8	5.8				ug/L	25066	Standard
	Ti	47	35.0	18.7	**-0.0382**	0.028	74.5	ug/L	38	Standard
	V	51	1134.6	16.5	**0.0083**	0.030	365.3	ug/L	974	Standard
	Cr	52	6818.2	1.1	**0.0629**	0.027	42.6	ug/L	5792	Standard
	Cr	53	1238.4	11.1	**1.0052**	0.129	12.8	ug/L	347	Standard
	Mn	55	1320.1	12.1	**-0.0219**	0.024	109.1	ug/L	1164	Standard
	Co	59	310.0	11.8	**-0.0016**	0.006	351.9	ug/L	303	Standard
	Ni	60	235.3	8.6	**-0.0679**	0.011	16.8	ug/L	291	Standard
	Cu	65	177.0	8.0	**-0.0049**	0.008	164.6	ug/L	173	Standard
	Zn	66	177.0	5.2	**-0.0754**	0.007	9.0	ug/L	130	Standard
>	**Ge**	72	524620.7	2.1				ug/L	491724	Standard
	As	75	-13.2	80.2	**0.0220**	0.010	43.5	ug/L	-25	Standard
	Se	82	28.7	3.3	**0.1675**	0.014	8.3	ug/L	12	Standard
	Se-1	77	113.7	8.9	**0.8568**	0.111	13.0	ug/L	57	Standard
>	**Ga**	71	91.7	13.7				mg/L	148	Standard
	Rb	85	53.3	84.0				ug/L	18	Standard
	Y	89	460825.3	1.3				ug/L	401845	Standard
>	**Rh**	103	101.7	25.2				ug/L	10	Standard
	Mo	98	249.0	15.8	**0.0890**	0.015	16.5	ug/L	12	Standard
	Ag	107	151.0	31.3	**0.0077**	0.007	94.9	ug/L	98	Standard
	Cd	111	24.8	83.9	**0.0072**	0.010	139.1	mg/L	11	Standard
	Cd	114	38.5	121.3	**0.0032**	0.009	291.6	ug/L	21	Standard
>	**In**	115	607357.0	0.3				ug/L	547487	Standard
	Sn	118	863.4	16.0	**0.0759**	0.024	32.0	ug/L	450	Standard
	Sb	123	252.1	31.9	**0.0459**	0.017	37.5	ug/L	105	Standard
	Ba	135	755.7	103.5	**0.3163**	0.386	122.0	ug/L	111	Standard
	Ce	140	33.3	70.9				ug/L	107	Standard
>	**Tb**	159	941140.6	1.6				ug/L	890342	Standard
	Ho	165	6.7	114.6				ug/L	10	Standard
	Tl	203	152.0	39.9	**0.0158**	0.008	49.6	ug/L	19	Standard
	Tl	205	98.3	43.8	**0.0163**	0.007	41.4	ug/L	17	Standard
	Pb	206	282.7	4.4	**0.0011**	0.002	198.8	ug/L	247	Standard
	Pb	207	255.7	7.2	**0.0036**	0.003	80.4	ug/L	215	Standard
	Pb	208	1014.3	8.8	**-0.0008**	0.006	712.2	ug/L	770	Standard
	U	238	74.0	54.7	**0.0111**	0.007	59.3	ug/L	13	Standard
>	**Bi**	209	522423.3	2.2				ug/L	503143	Standard

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Na	23	1.7	173.2	**15.5124**	26.860	173.1	mg/L	2	Standard
Mg	24	78.3	48.8	**0.0520**	0.042	80.2	mg/L	35	Standard
K	39	28.3	53.9	**0.0109**	0.074	678.3	mg/L	25	Standard
Ca	43	20.0	25.0	**-1.9217**	1.047	54.5	mg/L	38	Standard
Fe	54	152.7	6.9	**-0.0127**	0.009	69.1	mg/L	126	Standard
Fe	57	248.3	9.9	**-0.2512**	0.109	43.3	mg/L	245	Standard
> **Sc-1**	45	29356.8	5.8				mg/L	25066	Standard
Cl	35	163319.6	1.6				ug/L	125857	Standard
Kr	83	3.3	17.3				ug/L	1	Standard
Br	81	4450.7	3.2				ug/L	1350	Standard
P	31	25079.1	2.0				ug/L	18393	Standard
S	34	5581.0	3.4				ug/L	3739	Standard
Sr	88	80.0	25.0				ug/L	78	Standard
C	12	76.7	7.5				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.2	186.8				mg/L	2	Standard
Ho-1	165	6.7	114.6				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	3778.8	9.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.690	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.935
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.832
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW 17 WG573111-04
Sample Date/Time: Tuesday, June 21, 2016 17:12:00
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54402.5	1.6				ug/L	60176	Standard
	Be	9	5.0	100.0	**-0.0013**	0.008	610.8	ug/L	5	Standard
	Al	27	10618.7	0.6	**0.0810**	0.001	1.1	ug/L	832	Standard
	Sc	45	24893.8	1.7				ug/L	25066	Standard
	Ti	47	40.7	25.8	**0.0061**	0.051	846.2	ug/L	38	Standard
	V	51	1126.6	6.2	**0.0221**	0.007	33.6	ug/L	974	Standard
	Cr	52	8748.9	1.0	**0.4586**	0.027	6.0	ug/L	5792	Standard
	Cr	53	838.4	4.0	**0.6314**	0.050	8.0	ug/L	347	Standard
	Mn	55	1743.4	2.0	**0.0621**	0.003	4.4	ug/L	1164	Standard
	Co	59	260.3	10.0	**-0.0058**	0.005	78.5	ug/L	303	Standard
	Ni	60	358.3	2.1	**0.0122**	0.003	26.6	ug/L	291	Standard
	Cu	65	173.7	5.2	**0.0013**	0.007	572.1	ug/L	173	Standard
	Zn	66	1250.4	1.5	**0.9925**	0.026	2.6	ug/L	130	Standard
>	**Ge**	72	483042.7	2.3				ug/L	491724	Standard
	As	75	-21.6	45.1	**0.0130**	0.009	71.6	ug/L	-25	Standard
	Se	82	20.3	42.3	**0.1056**	0.079	74.7	ug/L	12	Standard
	Se-1	77	60.7	14.0	**0.2232**	0.110	49.2	ug/L	57	Standard
>	**Ga**	71	95.0	27.3				mg/L	148	Standard
	Rb	85	53.3	28.6				ug/L	18	Standard
	Y	89	406515.1	1.2				ug/L	401845	Standard
>	**Rh**	103	40.0	33.1				ug/L	10	Standard
	Mo	98	66.3	12.4	**0.0239**	0.004	16.1	ug/L	12	Standard
	Ag	107	76.0	9.9	**-0.0021**	0.001	70.0	ug/L	98	Standard
	Cd	111	4.2	59.6	**-0.0024**	0.001	56.9	mg/L	11	Standard
	Cd	114	16.2	34.0	**-0.0008**	0.001	148.3	ug/L	21	Standard
>	**In**	115	532744.5	1.4				ug/L	547487	Standard
	Sn	118	578.3	18.2	**0.0405**	0.021	51.9	ug/L	450	Standard
	Sb	123	112.7	14.7	**0.0197**	0.004	21.1	ug/L	105	Standard
	Ba	135	77.3	10.0	**-0.0123**	0.004	33.0	ug/L	111	Standard
	Ce	140	56.7	20.4				ug/L	107	Standard
>	**Tb**	159	863639.0	0.6				ug/L	890342	Standard
	Ho	165	10.0	86.6				ug/L	10	Standard
	Tl	203	20.7	12.2	**-0.0007**	0.000	46.3	ug/L	19	Standard
	Tl	205	13.3	57.3	**0.0032**	0.001	39.6	ug/L	17	Standard
	Pb	206	252.0	6.0	**-0.0014**	0.003	236.2	ug/L	247	Standard
	Pb	207	197.0	9.6	**-0.0061**	0.004	71.2	ug/L	215	Standard
	Pb	208	811.7	2.3	**-0.0092**	0.001	11.3	ug/L	770	Standard
	U	238	4.3	13.3	**-0.0001**	0.000	120.6	ug/L	13	Standard
>	**Bi**	209	487095.8	0.3				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	46.7	22.3	**0.0258**	0.015	59.6	mg/L	35	Standard
K	39	21.7	26.6	**-0.0039**	0.028	718.4	mg/L	25	Standard
Ca	43	25.0	0.0	**-0.3636**	0.085	23.3	mg/L	38	Standard
Fe	54	131.2	2.2	**-0.0111**	0.005	43.5	mg/L	126	Standard
Fe	57	268.3	15.6	**-0.0229**	0.182	793.2	mg/L	245	Standard
Sc-1	45	24893.8	1.7				mg/L	25066	Standard
Cl	35	153737.5	1.5				ug/L	125857	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	1480.1	4.7				ug/L	1350	Standard
P	31	20108.3	1.0				ug/L	18393	Standard
S	34	5007.5	3.6				ug/L	3739	Standard
Sr	88	75.0	24.0				ug/L	78	Standard
C	12	86.7	56.9				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.7	86.6				mg/L	2	Standard
Ho-1	165	10.0	86.6				mg/L	10	Standard
Er	166	0.0					mg/L	23	Standard
I	127	1100.0	6.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.406	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.235	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.307
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.811
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 17 WG573111-05
Sample Date/Time: Tuesday, June 21, 2016 17:15:12
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53402.3	2.8				ug/L	60176	Standard
	Be	9	32992.6	3.7	**51.7865**	1.692	3.3	ug/L	5	Standard
	Al	27	12198.2	3.5	**0.0963**	0.003	3.3	ug/L	832	Standard
	Sc	45	25010.7	4.4				ug/L	25066	Standard
	Ti	47	36.7	19.3	**-0.0127**	0.038	300.5	ug/L	38	Standard
	V	51	309717.1	0.7	**53.3313**	0.527	1.0	ug/L	974	Standard
	Cr	52	342937.1	0.8	**54.4644**	0.576	1.1	ug/L	5792	Standard
	Cr	53	43542.5	1.3	**54.2826**	0.411	0.8	ug/L	347	Standard
	Mn	55	351550.5	1.0	**56.2349**	1.195	2.1	ug/L	1164	Standard
	Co	59	316884.2	0.8	**53.4233**	1.002	1.9	ug/L	303	Standard
	Ni	60	94717.8	1.1	**53.8819**	0.368	0.7	ug/L	291	Standard
	Cu	65	94262.3	0.8	**54.0303**	0.520	1.0	ug/L	173	Standard
	Zn	66	54370.7	1.4	**53.6116**	0.241	0.4	ug/L	130	Standard
>	**Ge**	72	478860.5	1.7				ug/L	491724	Standard
	As	75	54535.7	0.7	**53.3915**	0.571	1.1	ug/L	-25	Standard
	Se	82	5489.3	0.8	**54.4366**	0.730	1.3	ug/L	12	Standard
	Se-1	77	3768.1	1.6	**54.1018**	0.084	0.2	ug/L	57	Standard
>	**Ga**	71	106.7	23.6				mg/L	148	Standard
	Rb	85	70.0	25.8				ug/L	18	Standard
	Y	89	420312.3	1.2				ug/L	401845	Standard
>	**Rh**	103	70.0	14.3				ug/L	10	Standard
	Mo	98	30.2	2.9	**0.0083**	0.001	6.6	ug/L	12	Standard
	Ag	107	9909.6	0.5	**1.6841**	0.042	2.5	ug/L	98	Standard
	Cd	111	95930.4	1.1	**51.6011**	0.537	1.0	mg/L	11	Standard
	Cd	114	231350.0	0.5	**51.1556**	0.846	1.7	ug/L	21	Standard
>	**In**	115	541530.1	2.0				ug/L	547487	Standard
	Sn	118	488.3	3.9	**0.0210**	0.003	13.6	ug/L	450	Standard
	Sb	123	205763.6	0.9	**48.9816**	0.890	1.8	ug/L	105	Standard
	Ba	135	93604.3	1.7	**51.4945**	0.191	0.4	ug/L	111	Standard
	Ce	140	73.3	20.8				ug/L	107	Standard
>	**Tb**	159	860719.0	2.3				ug/L	890342	Standard
	Ho	165	16.7	96.4				ug/L	10	Standard
	Tl	203	369565.4	1.5	**51.2366**	0.305	0.6	ug/L	19	Standard
	Tl	205	309835.9	0.4	**52.3608**	0.657	1.3	ug/L	17	Standard
	Pb	206	243588.1	0.4	**52.4792**	0.634	1.2	ug/L	247	Standard
	Pb	207	213081.9	0.8	**50.5043**	1.123	2.2	ug/L	215	Standard
	Pb	208	848492.0	0.7	**53.7161**	1.109	2.1	ug/L	770	Standard
	U	238	292643.2	0.8	**51.1091**	0.641	1.3	ug/L	13	Standard
>	**Bi**	209	480350.2	1.5				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	53.3	23.6	**0.0350**	0.020	55.8	mg/L	35	Standard
K	39	43.3	24.0	**0.1052**	0.059	55.9	mg/L	25	Standard
Ca	43	38.3	41.9	**2.3482**	3.443	146.6	mg/L	38	Standard
Fe	54	126.6	30.3	**-0.0161**	0.037	230.4	mg/L	126	Standard
Fe	57	250.0	12.5	**-0.1010**	0.134	132.3	mg/L	245	Standard
> **Sc-1**	45	25010.7	4.4				mg/L	25066	Standard
Cl	35	154303.8	1.1				ug/L	125857	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	1753.4	3.7				ug/L	1350	Standard
P	31	20824.3	0.3				ug/L	18393	Standard
S	34	4885.8	3.3				ug/L	3739	Standard
Sr	88	56.7	28.4				ug/L	78	Standard
C	12	36.7	15.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	8.9	8.2				mg/L	2	Standard
Ho-1	165	16.7	96.4				mg/L	10	Standard
Er	166	23.3	65.5				mg/L	23	Standard
I	127	1055.0	7.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.744	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.384	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.912
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.470
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 17 WG573111-05
Report Date/Time: Tuesday, June 21, 2016 17:17:29
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Method 6020 - Summary Report

Sample ID: L1606054006 WG573111-03
Sample Date/Time: Tuesday, June 21, 2016 17:18:23
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53768.6	1.8				ug/L	60176	Standard
	Be	9	223.3	5.2	**0.3390**	0.013	4.0	ug/L	5	Standard
	Al	27	1723479.9	1.0	**14.6779**	0.117	0.8	ug/L	832	Standard
	Sc	45	25968.9	1.0				ug/L	25066	Standard
	Ti	47	174.3	23.9	**0.6975**	0.209	30.0	ug/L	38	Standard
	V	51	3187.1	1.0	**0.3676**	0.007	1.8	ug/L	974	Standard
	Cr	52	9962.3	2.2	**0.6307**	0.032	5.0	ug/L	5792	Standard
	Cr	53	1050.0	15.7	**0.8771**	0.206	23.5	ug/L	347	Standard
	Mn	55	96644.7	2.5	**14.9562**	0.439	2.9	ug/L	1164	Standard
	Co	59	26099.5	1.4	**4.2561**	0.058	1.4	ug/L	303	Standard
	Ni	60	9094.4	0.4	**4.8855**	0.040	0.8	ug/L	291	Standard
	Cu	65	962.0	3.3	**0.4423**	0.013	3.0	ug/L	173	Standard
	Zn	66	4916.8	1.4	**4.5256**	0.053	1.2	ug/L	130	Standard
>	**Ge**	72	489760.3	0.8				ug/L	491724	Standard
	As	75	1211.7	3.7	**1.1931**	0.045	3.8	ug/L	-25	Standard
	Se	82	46.7	17.2	**0.3607**	0.079	21.9	ug/L	12	Standard
	Se-1	77	79.0	14.9	**0.4737**	0.176	37.2	ug/L	57	Standard
>	**Ga**	71	271.7	15.3				mg/L	148	Standard
	Rb	85	4263.9	3.2				ug/L	18	Standard
	Y	89	440770.7	2.7				ug/L	401845	Standard
>	**Rh**	103	63.3	12.1				ug/L	10	Standard
	Mo	98	195.2	3.2	**0.0786**	0.003	4.2	ug/L	12	Standard
	Ag	107	113.0	15.1	**0.0042**	0.003	72.0	ug/L	98	Standard
	Cd	111	262.6	11.3	**0.1381**	0.015	10.9	mg/L	11	Standard
	Cd	114	702.5	10.7	**0.1526**	0.016	10.3	ug/L	21	Standard
>	**In**	115	535297.3	0.8				ug/L	547487	Standard
	Sn	118	651.7	5.8	**0.0543**	0.006	11.8	ug/L	450	Standard
	Sb	123	1542.7	18.6	**0.3642**	0.071	19.6	ug/L	105	Standard
	Ba	135	39728.0	0.6	**22.0778**	0.170	0.8	ug/L	111	Standard
	Ce	140	141161.2	0.1				ug/L	107	Standard
>	**Tb**	159	862084.5	1.3				ug/L	890342	Standard
	Ho	165	2525.2	0.9				ug/L	10	Standard
	Tl	203	237.3	1.4	**0.0286**	0.000	1.4	ug/L	19	Standard
	Tl	205	215.0	12.9	**0.0365**	0.005	13.1	ug/L	17	Standard
	Pb	206	988.7	2.5	**0.1535**	0.005	2.9	ug/L	247	Standard
	Pb	207	865.0	0.8	**0.1485**	0.002	1.1	ug/L	215	Standard
	Pb	208	3337.8	2.7	**0.1469**	0.006	4.0	ug/L	770	Standard
	U	238	1870.8	2.8	**0.3187**	0.008	2.5	ug/L	13	Standard
>	**Bi**	209	491187.2	0.5				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.7819**	30.791	173.2	mg/L	2	Standard
Mg	24	1156.7	3.8	**1.4947**	0.043	2.9	mg/L	35	Standard
K	39	66.7	22.9	**0.2083**	0.073	35.0	mg/L	25	Standard
Ca	43	60.0	28.9	**6.0703**	3.171	52.2	mg/L	38	Standard
Fe	54	927.1	5.1	**0.7125**	0.036	5.1	mg/L	126	Standard
Fe	57	453.3	12.5	**0.6351**	0.217	34.1	mg/L	245	Standard
> **Sc-1**	45	25968.9	1.0				mg/L	25066	Standard
Cl	35	162179.5	1.3				ug/L	125857	Standard
Kr	83	1.7	124.9				ug/L	1	Standard
Br	81	3033.6	2.3				ug/L	1350	Standard
P	31	21506.9	0.4				ug/L	18393	Standard
S	34	4834.1	0.8				ug/L	3739	Standard
Sr	88	95.0	26.3				ug/L	78	Standard
C	12	80.0	25.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	3728.6	6.7				mg/L	2	Standard
Ho-1	165	2525.2	0.9				mg/L	10	Standard
Er	166	2266.8	4.7				mg/L	23	Standard
I	127	11339.3	11.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.352	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.601	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.774
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.624
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606054006 WG573111-03
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Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606054007S WG573111-09
Sample Date/Time: Tuesday, June 21, 2016 17:21:35
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55648.7	1.0				ug/L	60176	Standard
	Be	9	35439.7	1.0	**53.3747**	0.542	1.0	ug/L	5	Standard
	Al	27	1734040.1	1.3	**14.2679**	0.205	1.4	ug/L	832	Standard
	Sc	45	25546.5	2.5				ug/L	25066	Standard
	Ti	47	195.0	1.4	**0.7899**	0.031	3.9	ug/L	38	Standard
	V	51	309925.0	0.5	**51.3311**	0.675	1.3	ug/L	974	Standard
	Cr	52	343998.6	1.2	**52.5323**	1.556	3.0	ug/L	5792	Standard
	Cr	53	43246.7	4.8	**51.8802**	3.426	6.6	ug/L	347	Standard
	Mn	55	421085.3	0.6	**64.8270**	1.302	2.0	ug/L	1164	Standard
	Co	59	336029.8	0.8	**54.5018**	1.427	2.6	ug/L	303	Standard
	Ni	60	104045.4	1.6	**56.9634**	1.904	3.3	ug/L	291	Standard
	Cu	65	95190.8	1.4	**52.4843**	0.914	1.7	ug/L	173	Standard
	Zn	66	58975.9	0.8	**55.9583**	1.065	1.9	ug/L	130	Standard
>	**Ge**	72	497816.0	1.8				ug/L	491724	Standard
	As	75	56479.5	0.3	**53.1942**	0.942	1.8	ug/L	-25	Standard
	Se	82	5338.4	1.1	**50.9267**	1.343	2.6	ug/L	12	Standard
	Se-1	77	3721.8	0.2	**51.3788**	0.854	1.7	ug/L	57	Standard
>	**Ga**	71	246.7	20.3				mg/L	148	Standard
	Rb	85	4018.9	6.2				ug/L	18	Standard
	Y	89	438370.4	1.5				ug/L	401845	Standard
>	**Rh**	103	75.0	20.0				ug/L	10	Standard
	Mo	98	177.1	10.3	**0.0704**	0.007	9.6	ug/L	12	Standard
	Ag	107	25202.6	1.7	**4.3298**	0.014	0.3	ug/L	98	Standard
	Cd	111	95691.9	1.4	**51.7579**	0.175	0.3	mg/L	11	Standard
	Cd	114	231930.1	2.9	**51.5555**	0.701	1.4	ug/L	21	Standard
>	**In**	115	538493.9	1.7				ug/L	547487	Standard
	Sn	118	535.0	0.9	**0.0307**	0.002	8.0	ug/L	450	Standard
	Sb	123	208964.7	1.0	**50.0186**	0.580	1.2	ug/L	105	Standard
	Ba	135	133008.3	1.3	**73.6104**	0.853	1.2	ug/L	111	Standard
	Ce	140	144677.5	1.4				ug/L	107	Standard
>	**Tb**	159	870588.4	1.2				ug/L	890342	Standard
	Ho	165	2515.2	1.4				ug/L	10	Standard
	Tl	203	376132.5	1.2	**50.4480**	0.208	0.4	ug/L	19	Standard
	Tl	205	310457.8	2.2	**50.7488**	0.818	1.6	ug/L	17	Standard
	Pb	206	249489.7	0.6	**51.9992**	0.813	1.6	ug/L	247	Standard
	Pb	207	216108.6	0.2	**49.5458**	0.596	1.2	ug/L	215	Standard
	Pb	208	835970.7	1.9	**51.1849**	0.557	1.1	ug/L	770	Standard
	U	238	296500.2	1.1	**50.0915**	0.324	0.6	ug/L	13	Standard
>	**Bi**	209	496523.1	1.1				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	1253.4	1.0	**1.6514**	0.045	2.7	mg/L	35	Standard
K	39	90.0	24.2	**0.3274**	0.105	31.9	mg/L	25	Standard
Ca	43	50.0	0.0	**4.3487**	0.242	5.6	mg/L	38	Standard
Fe	54	828.2	6.8	**0.6342**	0.039	6.2	mg/L	126	Standard
Fe	57	453.3	3.4	**0.6651**	0.095	14.3	mg/L	245	Standard
> **Sc-1**	45	25546.5	2.5				mg/L	25066	Standard
Cl	35	160715.9	0.9				ug/L	125857	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	6278.0	7.6				ug/L	1350	Standard
P	31	21558.7	3.0				ug/L	18393	Standard
S	34	4647.4	1.5				ug/L	3739	Standard
Sr	88	96.7	16.6				ug/L	78	Standard
C	12	80.0	33.1				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	3942.4	3.7				mg/L	2	Standard
Ho-1	165	2515.2	1.4				mg/L	10	Standard
Er	166	2396.9	12.6				mg/L	23	Standard
I	127	13020.6	8.0				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.477	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.239	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.357
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.684
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606054008SD WG573111-10
Sample Date/Time: Tuesday, June 21, 2016 17:24:46
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55279.0	1.9				ug/L	60176	Standard
	Be	9	36627.6	1.2	**55.5439**	1.219	2.2	ug/L	5	Standard
	Al	27	1713238.5	1.0	**14.1936**	0.289	2.0	ug/L	832	Standard
	Sc	45	25197.6	2.6				ug/L	25066	Standard
	Ti	47	199.3	7.4	**0.8424**	0.087	10.4	ug/L	38	Standard
	V	51	309494.1	1.0	**52.7786**	0.658	1.2	ug/L	974	Standard
	Cr	52	347378.1	1.2	**54.6471**	1.197	2.2	ug/L	5792	Standard
	Cr	53	43514.1	2.2	**53.7328**	1.741	3.2	ug/L	347	Standard
	Mn	55	424846.4	0.6	**67.3400**	0.361	0.5	ug/L	1164	Standard
	Co	59	340025.8	0.7	**56.7736**	0.789	1.4	ug/L	303	Standard
	Ni	60	103607.1	1.5	**58.3956**	1.391	2.4	ug/L	291	Standard
	Cu	65	94948.3	1.4	**53.9039**	1.162	2.2	ug/L	173	Standard
	Zn	66	59000.7	0.9	**57.6432**	1.050	1.8	ug/L	130	Standard
>	**Ge**	72	483481.9	1.0				ug/L	491724	Standard
	As	75	55725.2	0.4	**54.0300**	0.345	0.6	ug/L	-25	Standard
	Se	82	5455.4	1.2	**53.5737**	0.261	0.5	ug/L	12	Standard
	Se-1	77	3687.1	2.8	**52.4054**	0.959	1.8	ug/L	57	Standard
>	**Ga**	71	291.7	5.5				mg/L	148	Standard
	Rb	85	3975.5	3.5				ug/L	18	Standard
	Y	89	437768.5	1.6				ug/L	401845	Standard
>	**Rh**	103	73.3	21.9				ug/L	10	Standard
	Mo	98	292.6	1.9	**0.1184**	0.004	3.1	ug/L	12	Standard
	Ag	107	6385.3	1.6	**1.0770**	0.028	2.6	ug/L	98	Standard
	Cd	111	98546.6	1.7	**52.8871**	1.151	2.2	mg/L	11	Standard
	Cd	114	241574.4	2.1	**53.2859**	1.073	2.0	ug/L	21	Standard
>	**In**	115	542760.7	1.3				ug/L	547487	Standard
	Sn	118	570.0	9.9	**0.0368**	0.012	33.4	ug/L	450	Standard
	Sb	123	210832.3	1.1	**50.0678**	0.730	1.5	ug/L	105	Standard
	Ba	135	135047.9	1.1	**74.1546**	1.297	1.7	ug/L	111	Standard
	Ce	140	141782.0	0.7				ug/L	107	Standard
>	**Tb**	159	865701.6	1.6				ug/L	890342	Standard
	Ho	165	2566.9	2.9				ug/L	10	Standard
	Tl	203	382403.7	0.7	**52.5418**	1.098	2.1	ug/L	19	Standard
	Tl	205	317463.1	0.8	**53.1627**	1.073	2.0	ug/L	17	Standard
	Pb	206	248494.2	0.2	**53.0491**	0.826	1.6	ug/L	247	Standard
	Pb	207	215899.1	1.2	**50.7054**	1.283	2.5	ug/L	215	Standard
	Pb	208	857334.8	1.1	**53.7766**	0.992	1.8	ug/L	770	Standard
	U	238	302840.8	1.0	**52.4120**	1.195	2.3	ug/L	13	Standard
>	**Bi**	209	484780.2	1.4				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	1276.7	8.6	**1.7042**	0.107	6.3	mg/L	35	Standard
K	39	51.7	49.7	**0.1459**	0.135	92.5	mg/L	25	Standard
Ca	43	55.0	9.1	**5.4513**	0.801	14.7	mg/L	38	Standard
Fe	54	811.1	8.4	**0.6307**	0.085	13.5	mg/L	126	Standard
Fe	57	461.7	3.8	**0.7224**	0.112	15.4	mg/L	245	Standard
> **Sc-1**	45	25197.6	2.6				mg/L	25066	Standard
Cl	35	161517.7	0.6				ug/L	125857	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	2850.3	4.7				ug/L	1350	Standard
P	31	22705.3	1.8				ug/L	18393	Standard
S	34	4462.3	4.8				ug/L	3739	Standard
Sr	88	113.3	17.8				ug/L	78	Standard
C	12	80.0	25.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	3943.7	6.5				mg/L	2	Standard
Ho-1	165	2566.9	2.9				mg/L	10	Standard
Er	166	2160.2	8.1				mg/L	23	Standard
I	127	12827.1	9.5				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.862	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.324	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606054008SD WG573111-10
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.137
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.350
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606054008SD WG573111-10
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Method 6020 - Summary Report

Sample ID: L1606062401
Sample Date/Time: Tuesday, June 21, 2016 17:27:58
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58089.5	1.1				ug/L	60176	Standard
	Be	9	30.0	33.3	**0.0342**	0.014	41.0	ug/L	5	Standard
	Al	27	6143141.8	1.0	**48.4472**	0.944	1.9	ug/L	832	Standard
	Sc	45	25180.9	3.0				ug/L	25066	Standard
	Ti	47	164.0	25.9	**0.6648**	0.220	33.1	ug/L	38	Standard
	V	51	185031.3	1.5	**31.8430**	0.072	0.2	ug/L	974	Standard
	Cr	52	18607.9	15.7	**2.0656**	0.441	21.3	ug/L	5792	Standard
	Cr	53	3327.0	10.6	**3.7691**	0.381	10.1	ug/L	347	Standard
	Mn	55	46439.1	0.7	**7.2533**	0.079	1.1	ug/L	1164	Standard
	Co	59	5982.5	1.5	**0.9617**	0.001	0.1	ug/L	303	Standard
	Ni	60	16639.8	1.1	**9.3260**	0.213	2.3	ug/L	291	Standard
	Cu	65	8174.2	0.6	**4.6046**	0.102	2.2	ug/L	173	Standard
	Zn	66	49644.2	2.1	**49.0098**	0.387	0.8	ug/L	130	Standard
>	**Ge**	72	478054.7	1.6				ug/L	491724	Standard
	As	75	1224.7	7.5	**1.2333**	0.072	5.9	ug/L	-25	Standard
	Se	82	472.0	3.9	**4.6028**	0.133	2.9	ug/L	12	Standard
	Se-1	77	207.0	7.7	**2.3618**	0.199	8.4	ug/L	57	Standard
>	**Ga**	71	200.0	23.8				mg/L	148	Standard
	Rb	85	14974.1	2.7				ug/L	18	Standard
	Y	89	411795.2	1.6				ug/L	401845	Standard
>	**Rh**	103	106.7	9.8				ug/L	10	Standard
	Mo	98	231188.7	0.7	**98.5932**	1.267	1.3	ug/L	12	Standard
	Ag	107	131.7	7.2	**0.0075**	0.002	23.5	ug/L	98	Standard
	Cd	111	-78.0	39.1	**-0.0472**	0.016	34.7	mg/L	11	Standard
	Cd	114	617.4	6.3	**0.1339**	0.009	7.0	ug/L	21	Standard
>	**In**	115	534274.2	0.6				ug/L	547487	Standard
	Sn	118	656.7	7.2	**0.0556**	0.010	17.6	ug/L	450	Standard
	Sb	123	2302.2	22.5	**0.5481**	0.126	23.0	ug/L	105	Standard
	Ba	135	32140.4	1.2	**17.8854**	0.296	1.7	ug/L	111	Standard
	Ce	140	261.7	29.6				ug/L	107	Standard
>	**Tb**	159	856456.1	0.5				ug/L	890342	Standard
	Ho	165	20.0	25.0				ug/L	10	Standard
	Tl	203	426.7	20.5	**0.0564**	0.012	21.0	ug/L	19	Standard
	Tl	205	363.3	45.3	**0.0631**	0.028	43.7	ug/L	17	Standard
	Pb	206	788.4	5.3	**0.1175**	0.008	6.8	ug/L	247	Standard
	Pb	207	708.7	4.4	**0.1184**	0.006	5.2	ug/L	215	Standard
	Pb	208	2871.1	13.6	**0.1246**	0.024	18.9	ug/L	770	Standard
	U	238	398.7	34.3	**0.0697**	0.024	33.8	ug/L	13	Standard
>	**Bi**	209	473349.9	0.8				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	16877.7	3.1	**23.0643**	1.225	5.3	mg/L	35	Standard
K	39	280.0	25.0	**1.2812**	0.375	29.2	mg/L	25	Standard
Ca	43	126.7	8.2	**19.5068**	1.380	7.1	mg/L	38	Standard
Fe	54	143.3	6.8	**-0.0010**	0.012	1154.4	mg/L	126	Standard
Fe	57	358.3	9.3	**0.3188**	0.164	51.3	mg/L	245	Standard
> **Sc-1**	45	25180.9	3.0				mg/L	25066	Standard
Cl	35	205780.0	0.7				ug/L	125857	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	97895.4	2.7				ug/L	1350	Standard
P	31	21284.9	2.0				ug/L	18393	Standard
S	34	4504.0	2.9				ug/L	3739	Standard
Sr	88	191.7	4.0				ug/L	78	Standard
C	12	73.3	34.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	88.2				mg/L	0	Standard
Dy	164	29.4	101.4				mg/L	2	Standard
Ho-1	165	20.0	25.0				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	12732.0	2.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		96.533	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.220	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.587
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.079
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606062401PS WG573473-01
Sample Date/Time: Tuesday, June 21, 2016 17:31:09
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59555.2	1.6				ug/L	60176	Standard
	Be	9	38114.6	4.0	**53.6277**	1.538	2.9	ug/L	5	Standard
	Al	27	6236393.4	1.5	**47.9667**	0.190	0.4	ug/L	832	Standard
	Sc	45	25247.7	3.0				ug/L	25066	Standard
	Ti	47	149.7	6.7	**0.5489**	0.064	11.6	ug/L	38	Standard
	V	51	510919.3	1.1	**83.6813**	1.623	1.9	ug/L	974	Standard
	Cr	52	357055.0	1.4	**53.8592**	0.614	1.1	ug/L	5792	Standard
	Cr	53	46658.4	3.1	**55.2620**	1.342	2.4	ug/L	347	Standard
	Mn	55	386237.5	1.3	**58.7100**	1.701	2.9	ug/L	1164	Standard
	Co	59	326523.7	0.8	**52.2967**	1.090	2.1	ug/L	303	Standard
	Ni	60	110932.7	1.4	**59.9730**	0.773	1.3	ug/L	291	Standard
	Cu	65	103725.9	2.2	**56.4780**	0.362	0.6	ug/L	173	Standard
	Zn	66	105350.7	1.8	**98.8815**	0.625	0.6	ug/L	130	Standard
>	**Ge**	72	504099.0	2.3				ug/L	491724	Standard
	As	75	58925.6	0.8	**54.8077**	0.985	1.8	ug/L	-25	Standard
	Se	82	6143.8	2.0	**57.9003**	2.000	3.5	ug/L	12	Standard
	Se-1	77	4049.5	3.3	**55.2355**	0.588	1.1	ug/L	57	Standard
>	**Ga**	71	220.0	17.2				mg/L	148	Standard
	Rb	85	14929.0	0.6				ug/L	18	Standard
	Y	89	406274.5	1.9				ug/L	401845	Standard
>	**Rh**	103	120.0	21.7				ug/L	10	Standard
	Mo	98	233519.6	0.3	**99.7506**	0.946	0.9	ug/L	12	Standard
	Ag	107	294288.6	1.5	**51.2056**	0.387	0.8	ug/L	98	Standard
	Cd	111	97440.1	1.5	**53.2049**	0.652	1.2	mg/L	11	Standard
	Cd	114	237560.5	0.5	**53.3199**	0.438	0.8	ug/L	21	Standard
>	**In**	115	533397.7	0.7				ug/L	547487	Standard
	Sn	118	846.7	2.7	**0.0933**	0.004	4.2	ug/L	450	Standard
	Sb	123	217534.4	0.9	**52.5626**	0.359	0.7	ug/L	105	Standard
	Ba	135	126166.1	0.5	**70.4856**	0.674	1.0	ug/L	111	Standard
	Ce	140	221.7	9.1				ug/L	107	Standard
>	**Tb**	159	863996.7	1.6				ug/L	890342	Standard
	Ho	165	15.0	120.2				ug/L	10	Standard
	Tl	203	388142.4	1.0	**52.8512**	0.991	1.9	ug/L	19	Standard
	Tl	205	322436.9	1.5	**53.5061**	0.715	1.3	ug/L	17	Standard
	Pb	206	253353.0	2.2	**53.5909**	0.163	0.3	ug/L	247	Standard
	Pb	207	220862.2	1.1	**51.4007**	0.713	1.4	ug/L	215	Standard
	Pb	208	859792.8	1.1	**53.4462**	0.779	1.5	ug/L	770	Standard
	U	238	306380.9	1.7	**52.5395**	0.392	0.7	ug/L	13	Standard
>	**Bi**	209	489218.2	2.4				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.9600**	31.099	173.2	mg/L	2	Standard
Mg	24	16909.4	2.0	**23.0293**	0.226	1.0	mg/L	35	Standard
K	39	301.7	1.9	**1.3820**	0.071	5.1	mg/L	25	Standard
Ca	43	131.7	14.4	**20.3888**	3.034	14.9	mg/L	38	Standard
Fe	54	166.4	16.9	**0.0199**	0.023	114.5	mg/L	126	Standard
Fe	57	365.0	8.3	**0.3416**	0.157	46.0	mg/L	245	Standard
> **Sc-1**	45	25247.7	3.0				mg/L	25066	Standard
Cl	35	210532.0	1.1				ug/L	125857	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	100099.7	2.0				ug/L	1350	Standard
P	31	21987.6	1.4				ug/L	18393	Standard
S	34	4502.3	2.4				ug/L	3739	Standard
Sr	88	196.7	8.9				ug/L	78	Standard
C	12	86.7	24.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	70.0	37.8				mg/L	0	Standard
Dy	164	33.0	47.1				mg/L	2	Standard
Ho-1	165	15.0	120.2				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	23	Standard
I	127	13005.6	0.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.968	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.517	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.427
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.232
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606062401SDL WG573473-02
Sample Date/Time: Tuesday, June 21, 2016 17:34:21
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60477.2	2.3				ug/L	60176	Standard
	Be	9	20.0	25.0	**0.0187**	0.007	38.3	ug/L	5	Standard
	Al	27	1346077.1	1.4	**10.1901**	0.104	1.0	ug/L	832	Standard
	Sc	45	26165.9	1.8				ug/L	25066	Standard
	Ti	47	53.3	5.7	**0.0577**	0.020	34.3	ug/L	38	Standard
	V	51	40043.4	1.0	**6.2981**	0.105	1.7	ug/L	974	Standard
	Cr	52	9838.2	1.4	**0.5437**	0.034	6.2	ug/L	5792	Standard
	Cr	53	1326.7	4.2	**1.1460**	0.079	6.9	ug/L	347	Standard
	Mn	55	10769.8	1.7	**1.4023**	0.064	4.6	ug/L	1164	Standard
	Co	59	1559.7	6.1	**0.1970**	0.021	10.5	ug/L	303	Standard
	Ni	60	3793.5	0.5	**1.8350**	0.048	2.6	ug/L	291	Standard
	Cu	65	2218.5	2.2	**1.0935**	0.016	1.5	ug/L	173	Standard
	Zn	66	12058.5	0.3	**10.9344**	0.220	2.0	ug/L	130	Standard
>	**Ge**	72	512114.2	2.3				ug/L	491724	Standard
	As	75	280.0	6.4	**0.2900**	0.014	4.8	ug/L	-25	Standard
	Se	82	125.6	4.8	**1.0748**	0.079	7.4	ug/L	12	Standard
	Se-1	77	81.0	16.3	**0.4492**	0.161	35.8	ug/L	57	Standard
>	**Ga**	71	110.0	9.1				mg/L	148	Standard
	Rb	85	3283.7	4.5				ug/L	18	Standard
	Y	89	414186.7	0.7				ug/L	401845	Standard
>	**Rh**	103	43.3	17.6				ug/L	10	Standard
	Mo	98	48312.3	1.7	**19.6814**	0.770	3.9	ug/L	12	Standard
	Ag	107	449.0	12.1	**0.0592**	0.010	17.0	ug/L	98	Standard
	Cd	111	-5.5	192.0	**-0.0076**	0.005	71.9	mg/L	11	Standard
	Cd	114	194.3	6.1	**0.0372**	0.003	7.7	ug/L	21	Standard
>	**In**	115	559504.5	2.3				ug/L	547487	Standard
	Sn	118	523.3	5.3	**0.0246**	0.006	24.8	ug/L	450	Standard
	Sb	123	2078.0	20.6	**0.4699**	0.089	18.9	ug/L	105	Standard
	Ba	135	6769.2	2.6	**3.5550**	0.174	4.9	ug/L	111	Standard
	Ce	140	83.3	24.2				ug/L	107	Standard
>	**Tb**	159	903655.8	2.0				ug/L	890342	Standard
	Ho	165	10.0	132.3				ug/L	10	Standard
	Tl	203	191.7	11.3	**0.0211**	0.003	12.7	ug/L	19	Standard
	Tl	205	210.0	24.9	**0.0339**	0.008	25.0	ug/L	17	Standard
	Pb	206	458.3	5.1	**0.0367**	0.005	13.4	ug/L	247	Standard
	Pb	207	386.0	11.6	**0.0328**	0.010	31.6	ug/L	215	Standard
	Pb	208	1615.7	13.4	**0.0350**	0.013	38.0	ug/L	770	Standard
	U	238	122.3	50.4	**0.0190**	0.010	52.9	ug/L	13	Standard
>	**Bi**	209	518242.9	1.3				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3608.8	2.9	**4.7118**	0.175	3.7	mg/L	35	Standard
K	39	100.0	50.7	**0.3676**	0.247	67.2	mg/L	25	Standard
Ca	43	65.0	7.7	**6.9544**	1.038	14.9	mg/L	38	Standard
Fe	54	147.5	39.4	**-0.0029**	0.051	1721.0	mg/L	126	Standard
Fe	57	251.7	1.1	**-0.1393**	0.026	18.6	mg/L	245	Standard
> **Sc-1**	45	26165.9	1.8				mg/L	25066	Standard
Cl	35	182370.3	0.5				ug/L	125857	Standard
Kr	83	3.3	17.3				ug/L	1	Standard
Br	81	22266.3	0.9				ug/L	1350	Standard
P	31	21655.5	3.7				ug/L	18393	Standard
S	34	4839.1	3.8				ug/L	3739	Standard
Sr	88	88.3	14.2				ug/L	78	Standard
C	12	70.0	14.3				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.2	45.2				mg/L	2	Standard
Ho-1	165	10.0	132.3				mg/L	10	Standard
Er	166	23.3	49.5				mg/L	23	Standard
I	127	3850.5	6.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.501	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.147	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606062401SDL WG573473-02
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.195
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.001
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606062401SDL WG573473-02
Sample Date/Time: Tuesday, June 21, 2016 17:37:32
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60611.2	5.2				ug/L	60176	Standard
	Be	9	26.7	78.1	**0.0285**	0.030	104.7	ug/L	5	Standard
	Al	27	272431.0	1.2	**2.0536**	0.080	3.9	ug/L	832	Standard
	Sc	45	26581.7	4.6				ug/L	25066	Standard
	Ti	47	32.3	4.7	**-0.0400**	0.007	18.7	ug/L	38	Standard
	V	51	9199.9	0.5	**1.3799**	0.034	2.5	ug/L	974	Standard
	Cr	52	8009.8	1.0	**0.3197**	0.024	7.6	ug/L	5792	Standard
	Cr	53	745.0	1.3	**0.5003**	0.030	5.9	ug/L	347	Standard
	Mn	55	3074.3	2.9	**0.2662**	0.019	7.0	ug/L	1164	Standard
	Co	59	581.3	20.9	**0.0466**	0.022	46.9	ug/L	303	Standard
	Ni	60	942.0	2.2	**0.3340**	0.011	3.2	ug/L	291	Standard
	Cu	65	557.7	1.9	**0.2148**	0.011	5.0	ug/L	173	Standard
	Zn	66	3925.2	1.4	**3.5576**	0.086	2.4	ug/L	130	Standard
>	**Ge**	72	490874.3	1.9				ug/L	491724	Standard
	As	75	56.2	25.4	**0.0878**	0.015	16.7	ug/L	-25	Standard
	Se	82	43.0	3.7	**0.3232**	0.008	2.4	ug/L	12	Standard
	Se-1	77	62.7	10.3	**0.2398**	0.106	44.2	ug/L	57	Standard
>	**Ga**	71	86.7	3.3				mg/L	148	Standard
	Rb	85	633.3	8.9				ug/L	18	Standard
	Y	89	434053.3	1.1				ug/L	401845	Standard
>	**Rh**	103	58.3	43.1				ug/L	10	Standard
	Mo	98	9730.4	1.6	**3.7980**	0.056	1.5	ug/L	12	Standard
	Ag	107	110.7	14.6	**0.0022**	0.003	122.1	ug/L	98	Standard
	Cd	111	25.2	97.4	**0.0080**	0.012	156.2	mg/L	11	Standard
	Cd	114	100.0	105.0	**0.0162**	0.022	134.8	ug/L	21	Standard
>	**In**	115	583063.2	0.9				ug/L	547487	Standard
	Sn	118	498.3	15.0	**0.0160**	0.013	80.4	ug/L	450	Standard
	Sb	123	635.0	36.6	**0.1330**	0.052	39.5	ug/L	105	Standard
	Ba	135	1538.7	3.8	**0.7317**	0.038	5.1	ug/L	111	Standard
	Ce	140	56.7	43.5				ug/L	107	Standard
>	**Tb**	159	902775.5	1.1				ug/L	890342	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	138.3	68.1	**0.0148**	0.013	86.9	ug/L	19	Standard
	Tl	205	111.7	55.3	**0.0190**	0.010	54.2	ug/L	17	Standard
	Pb	206	376.0	13.9	**0.0221**	0.012	55.2	ug/L	247	Standard
	Pb	207	317.0	22.0	**0.0194**	0.017	88.5	ug/L	215	Standard
	Pb	208	1292.4	11.5	**0.0179**	0.010	58.6	ug/L	770	Standard
	U	238	68.7	96.5	**0.0107**	0.011	105.8	ug/L	13	Standard
>	**Bi**	209	506328.7	1.9				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	790.0	5.2	**0.9874**	0.095	9.7	mg/L	35	Standard
K	39	33.3	48.2	**0.0428**	0.071	166.5	mg/L	25	Standard
Ca	43	25.0	20.0	**-0.6943**	0.773	111.4	mg/L	38	Standard
Fe	54	139.1	10.5	**-0.0116**	0.017	151.0	mg/L	126	Standard
Fe	57	223.3	12.7	**-0.2573**	0.129	50.2	mg/L	245	Standard
> **Sc-1**	45	26581.7	4.6				mg/L	25066	Standard
Cl	35	175991.6	1.1				ug/L	125857	Standard
Kr	83	3.0	0.0				ug/L	1	Standard
Br	81	6047.9	4.6				ug/L	1350	Standard
P	31	21570.4	4.4				ug/L	18393	Standard
S	34	4842.4	5.1				ug/L	3739	Standard
Sr	88	105.0	12.6				ug/L	78	Standard
C	12	50.0	52.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	15.7	36.9				mg/L	2	Standard
Ho-1	165	8.3	91.7				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	23	Standard
I	127	1585.1	7.5				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.723	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.827	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.498
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.633
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 17:40:45
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59081.7	2.6				ug/L	60176	Standard
	Be	9	36702.7	2.3	**52.0769**	1.300	2.5	ug/L	5	Standard
	Al	27	6646200.9	1.1	**51.5434**	0.909	1.8	ug/L	832	Standard
	Sc	45	26020.7	3.8				ug/L	25066	Standard
	Ti	47	21214.8	1.7	**108.7289**	0.181	0.2	ug/L	38	Standard
	V	51	316864.2	1.4	**52.6965**	0.283	0.5	ug/L	974	Standard
	Cr	52	348817.6	0.6	**53.4950**	0.696	1.3	ug/L	5792	Standard
	Cr	53	43763.1	2.6	**52.6787**	0.604	1.1	ug/L	347	Standard
	Mn	55	340527.3	1.8	**52.5942**	0.923	1.8	ug/L	1164	Standard
	Co	59	326617.6	0.4	**53.1853**	0.746	1.4	ug/L	303	Standard
	Ni	60	96463.1	1.0	**53.0038**	0.733	1.4	ug/L	291	Standard
	Cu	65	95600.3	0.8	**52.9319**	0.992	1.9	ug/L	173	Standard
	Zn	66	54738.7	1.8	**52.1262**	0.134	0.3	ug/L	130	Standard
>	Ge	72	495763.5	1.8				ug/L	491724	Standard
	As	75	54512.5	0.4	**51.5524**	0.685	1.3	ug/L	-25	Standard
	Se	82	5543.1	2.2	**53.1106**	2.069	3.9	ug/L	12	Standard
	Se-1	77	3720.1	1.9	**51.5619**	0.639	1.2	ug/L	57	Standard
>	Ga	71	110.0	12.0				mg/L	148	Standard
	Rb	85	793.4	4.1				ug/L	18	Standard
	Y	89	412125.4	1.3				ug/L	401845	Standard
>	Rh	103	66.7	11.5				ug/L	10	Standard
	Mo	98	240736.8	1.1	**97.2447**	1.379	1.4	ug/L	12	Standard
	Ag	107	305628.4	1.4	**50.2975**	1.221	2.4	ug/L	98	Standard
	Cd	111	97888.8	1.5	**50.5420**	0.123	0.2	mg/L	11	Standard
	Cd	114	238935.5	1.4	**50.7107**	0.441	0.9	ug/L	21	Standard
>	In	115	564098.2	1.7				ug/L	547487	Standard
	Sn	118	268378.0	1.5	**50.0920**	0.857	1.7	ug/L	450	Standard
	Sb	123	219285.5	1.2	**50.1127**	1.176	2.3	ug/L	105	Standard
	Ba	135	94955.3	0.6	**50.1501**	0.552	1.1	ug/L	111	Standard
	Ce	140	105.0	45.4				ug/L	107	Standard
>	Tb	159	899441.1	1.5				ug/L	890342	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	387085.4	1.3	**50.9741**	0.552	1.1	ug/L	19	Standard
	Tl	205	323757.8	1.2	**51.9659**	0.790	1.5	ug/L	17	Standard
	Pb	206	244011.4	1.2	**49.9245**	0.191	0.4	ug/L	247	Standard
	Pb	207	221667.8	1.0	**49.8940**	0.499	1.0	ug/L	215	Standard
	Pb	208	859541.6	1.0	**51.6749**	0.448	0.9	ug/L	770	Standard
	U	238	309083.0	1.7	**51.2676**	0.733	1.4	ug/L	13	Standard
>	Bi	209	505715.2	0.9				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.6985**	32.378	173.2	mg/L	2	Standard
Mg	24	3983.9	6.0	**5.2438**	0.478	9.1	mg/L	35	Standard
K	39	1098.4	8.7	**5.1786**	0.659	12.7	mg/L	25	Standard
Ca	43	58.3	24.7	**5.7524**	2.702	47.0	mg/L	38	Standard
Fe	54	5616.8	2.9	**5.0026**	0.232	4.6	mg/L	126	Standard
Fe	57	1575.1	5.8	**4.9072**	0.583	11.9	mg/L	245	Standard
> **Sc-1**	45	26020.7	3.8				mg/L	25066	Standard
Cl	35	161905.2	1.1				ug/L	125857	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	1890.1	7.8				ug/L	1350	Standard
P	31	22423.3	2.7				ug/L	18393	Standard
S	34	5154.2	1.4				ug/L	3739	Standard
Sr	88	80.0	16.5				ug/L	78	Standard
C	12	60.0	28.9				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	15.7	132.5				mg/L	2	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	20.0	0.0				mg/L	23	Standard
I	127	1220.0	4.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	104.154		
Al	27	103.087		
Sc	45			
Ti	47	108.729		
V	51	105.393		
Cr	52	106.990		
Cr	53			
Mn	55	105.188		
Co	59	106.371		
Ni	60	106.008		
Cu	65	105.864		
Zn	66	104.252		
> Ge	72		100.822	
As	75	103.105		
Se	82	106.221		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	97.245		
Ag	107	100.595		
Cd	111	101.084		
Cd	114			
> In	115			103.034
Sn	118	100.184		
Sb	123	100.225		
Ba	135	100.300		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.948		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.350		
U	238	102.535		
> Bi	209			100.511
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 17:43:57
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56721.1	4.5				ug/L	60176	Standard
	Be	9	10.0	86.6	**0.0057**	0.013	221.6	ug/L	5	Standard
	Al	27	1560.1	22.0	**0.0041**	0.002	54.2	ug/L	832	Standard
	Sc	45	25518.2	4.3				ug/L	25066	Standard
	Ti	47	31.0	8.5	**-0.0455**	0.014	30.9	ug/L	38	Standard
	V	51	1025.7	2.6	**0.0036**	0.004	119.2	ug/L	974	Standard
	Cr	52	6145.2	1.0	**0.0342**	0.011	31.8	ug/L	5792	Standard
	Cr	53	456.7	16.4	**0.1515**	0.092	60.5	ug/L	347	Standard
	Mn	55	1042.7	1.9	**-0.0507**	0.003	6.1	ug/L	1164	Standard
	Co	59	294.3	14.4	**-0.0005**	0.007	1510.6	ug/L	303	Standard
	Ni	60	217.3	8.8	**-0.0685**	0.011	15.8	ug/L	291	Standard
	Cu	65	143.7	4.6	**-0.0165**	0.004	23.2	ug/L	173	Standard
	Zn	66	170.7	3.9	**-0.0690**	0.006	9.1	ug/L	130	Standard
>	**Ge**	72	486561.4	0.2				ug/L	491724	Standard
	As	75	-23.1	144.8	**0.0117**	0.032	276.8	ug/L	-25	Standard
	Se	82	19.3	43.3	**0.0963**	0.082	85.2	ug/L	12	Standard
	Se-1	77	61.7	9.5	**0.2322**	0.083	35.8	ug/L	57	Standard
>	**Ga**	71	91.7	11.4				mg/L	148	Standard
	Rb	85	30.0	33.3				ug/L	18	Standard
	Y	89	432565.5	1.6				ug/L	401845	Standard
>	**Rh**	103	56.7	13.5				ug/L	10	Standard
	Mo	98	283.8	18.7	**0.1104**	0.019	17.4	ug/L	12	Standard
	Ag	107	119.7	6.8	**0.0044**	0.001	22.8	ug/L	98	Standard
	Cd	111	7.8	28.1	**-0.0007**	0.001	162.1	mg/L	11	Standard
	Cd	114	30.1	75.3	**0.0019**	0.005	242.3	ug/L	21	Standard
>	**In**	115	561643.0	2.0				ug/L	547487	Standard
	Sn	118	805.0	28.2	**0.0777**	0.045	58.3	ug/L	450	Standard
	Sb	123	547.0	24.1	**0.1184**	0.033	27.7	ug/L	105	Standard
	Ba	135	127.0	2.8	**0.0118**	0.001	5.1	ug/L	111	Standard
	Ce	140	23.3	75.3				ug/L	107	Standard
>	**Tb**	159	876464.1	2.5				ug/L	890342	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	66.0	17.1	**0.0053**	0.001	26.5	ug/L	19	Standard
	Tl	205	63.3	53.7	**0.0113**	0.006	48.9	ug/L	17	Standard
	Pb	206	259.3	8.4	**-0.0008**	0.004	538.8	ug/L	247	Standard
	Pb	207	223.7	7.2	**-0.0007**	0.003	439.4	ug/L	215	Standard
	Pb	208	890.3	1.6	**-0.0052**	0.001	19.5	ug/L	770	Standard
	U	238	44.0	15.7	**0.0066**	0.001	16.4	ug/L	13	Standard
>	**Bi**	209	495284.3	1.2				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	30.0	28.9	**0.0015**	0.011	728.8	mg/L	35	Standard
K	39	26.7	43.3	**0.0178**	0.054	304.4	mg/L	25	Standard
Ca	43	45.0	22.2	**3.3451**	1.602	47.9	mg/L	38	Standard
Fe	54	122.5	43.7	**-0.0227**	0.048	210.0	mg/L	126	Standard
Fe	57	173.3	26.8	**-0.4223**	0.156	36.9	mg/L	245	Standard
Sc-1	45	25518.2	4.3				mg/L	25066	Standard
Cl	35	159927.0	1.4				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	1690.1	11.2				ug/L	1350	Standard
P	31	22770.5	4.5				ug/L	18393	Standard
S	34	5202.6	2.4				ug/L	3739	Standard
Sr	88	78.3	13.3				ug/L	78	Standard
C	12	43.3	35.3				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	-0.3	173.2				mg/L	2	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	6.7	173.2				mg/L	23	Standard
I	127	1065.0	12.4				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.950	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.586	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.438	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606053301
Sample Date/Time: Tuesday, June 21, 2016 17:47:10
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60448.7	2.1				ug/L	60176	Standard
	Be	9	18.3	68.6	**0.0166**	0.018	107.0	ug/L	5	Standard
	Al	27	6338152.4	1.3	**48.0500**	1.591	3.3	ug/L	832	Standard
	Sc	45	26546.6	1.7				ug/L	25066	Standard
	Ti	47	533.3	12.7	**2.5549**	0.399	15.6	ug/L	38	Standard
	V	51	2131.1	5.9	**0.1873**	0.019	10.0	ug/L	974	Standard
	Cr	52	10369.5	2.6	**0.6877**	0.071	10.4	ug/L	5792	Standard
	Cr	53	3198.7	11.9	**3.5005**	0.514	14.7	ug/L	347	Standard
	Mn	55	118129.1	0.7	**18.2372**	0.274	1.5	ug/L	1164	Standard
	Co	59	1318.1	2.7	**0.1671**	0.009	5.6	ug/L	303	Standard
	Ni	60	3116.7	1.4	**1.5404**	0.023	1.5	ug/L	291	Standard
	Cu	65	10605.0	1.7	**5.8283**	0.198	3.4	ug/L	173	Standard
	Zn	66	23001.4	1.8	**21.9280**	0.418	1.9	ug/L	130	Standard
>	**Ge**	72	492237.0	2.0				ug/L	491724	Standard
	As	75	3704.8	1.1	**3.5603**	0.041	1.1	ug/L	-25	Standard
	Se	82	134.6	8.4	**1.2098**	0.136	11.2	ug/L	12	Standard
	Se-1	77	313.3	8.9	**3.7853**	0.480	12.7	ug/L	57	Standard
>	**Ga**	71	193.3	12.2				mg/L	148	Standard
	Rb	85	29528.8	1.8				ug/L	18	Standard
	Y	89	410980.2	2.7				ug/L	401845	Standard
>	**Rh**	103	110.0	23.6				ug/L	10	Standard
	Mo	98	1672.2	1.4	**0.6833**	0.014	2.1	ug/L	12	Standard
	Ag	107	140.0	15.4	**0.0081**	0.004	49.8	ug/L	98	Standard
	Cd	111	117.6	8.0	**0.0571**	0.004	7.3	mg/L	11	Standard
	Cd	114	311.6	20.6	**0.0629**	0.014	22.1	ug/L	21	Standard
>	**In**	115	554117.5	1.9				ug/L	547487	Standard
	Sn	118	1430.1	5.5	**0.1980**	0.011	5.7	ug/L	450	Standard
	Sb	123	2644.4	2.3	**0.6075**	0.008	1.3	ug/L	105	Standard
	Ba	135	35642.9	0.4	**19.1319**	0.401	2.1	ug/L	111	Standard
	Ce	140	641.7	11.6				ug/L	107	Standard
>	**Tb**	159	896083.5	0.2				ug/L	890342	Standard
	Ho	165	56.7	18.4				ug/L	10	Standard
	Tl	203	219.3	9.7	**0.0257**	0.003	10.9	ug/L	19	Standard
	Tl	205	195.0	25.3	**0.0326**	0.008	24.4	ug/L	17	Standard
	Pb	206	1749.1	0.8	**0.3074**	0.003	0.8	ug/L	247	Standard
	Pb	207	1455.7	6.4	**0.2796**	0.021	7.4	ug/L	215	Standard
	Pb	208	5822.8	0.8	**0.2946**	0.003	0.9	ug/L	770	Standard
	U	238	208.3	11.2	**0.0341**	0.004	11.4	ug/L	13	Standard
>	**Bi**	209	499957.7	0.2				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	24221.0	1.0	**31.3840**	0.259	0.8	mg/L	35	Standard
K	39	728.4	13.1	**3.3171**	0.458	13.8	mg/L	25	Standard
Ca	43	125.0	12.0	**17.9391**	2.703	15.1	mg/L	38	Standard
Fe	54	160.7	6.4	**0.0076**	0.011	142.5	mg/L	126	Standard
Fe	57	373.3	9.9	**0.2993**	0.127	42.5	mg/L	245	Standard
> **Sc-1**	45	26546.6	1.7				mg/L	25066	Standard
Cl	35	196436.0	1.5				ug/L	125857	Standard
Kr	83	3.3	45.8				ug/L	1	Standard
Br	81	8072.2	1.9				ug/L	1350	Standard
P	31	22922.3	0.8				ug/L	18393	Standard
S	34	4750.7	1.5				ug/L	3739	Standard
Sr	88	181.7	3.2				ug/L	78	Standard
C	12	106.7	14.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	0	Standard
Dy	164	47.8	39.5				mg/L	2	Standard
Ho-1	165	56.7	18.4				mg/L	10	Standard
Er	166	46.7	68.9				mg/L	23	Standard
I	127	47392.4	2.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.453	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.104	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.211
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.367
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078403
Sample Date/Time: Tuesday, June 21, 2016 17:50:21
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64282.8	1.4				ug/L	60176	Standard
	Be	9	16.7	45.8	**0.0128**	0.010	79.1	ug/L	5	Standard
	Al	27	9496901.0	1.4	**67.6751**	0.189	0.3	ug/L	832	Standard
	Sc	45	26276.1	3.6				ug/L	25066	Standard
	Ti	47	2632.9	0.5	**13.4149**	0.197	1.5	ug/L	38	Standard
	V	51	10654.6	5.7	**1.6202**	0.099	6.1	ug/L	974	Standard
	Cr	52	309449.4	0.1	**47.7126**	0.747	1.6	ug/L	5792	Standard
	Cr	53	43286.8	2.0	**52.4956**	0.461	0.9	ug/L	347	Standard
	Mn	55	415246.8	0.7	**64.6633**	0.642	1.0	ug/L	1164	Standard
	Co	59	14818.2	0.7	**2.3840**	0.050	2.1	ug/L	303	Standard
	Ni	60	13775.3	1.0	**7.4623**	0.106	1.4	ug/L	291	Standard
	Cu	65	2774.3	0.5	**1.4525**	0.017	1.2	ug/L	173	Standard
	Zn	66	6076.9	0.8	**5.6215**	0.043	0.8	ug/L	130	Standard
>	**Ge**	72	492081.5	1.5				ug/L	491724	Standard
	As	75	14825.6	0.7	**14.1492**	0.153	1.1	ug/L	-25	Standard
	Se	82	184.4	7.2	**1.6910**	0.151	8.9	ug/L	12	Standard
	Se-1	77	407.3	7.4	**5.1069**	0.343	6.7	ug/L	57	Standard
>	**Ga**	71	388.3	4.9				mg/L	148	Standard
	Rb	85	247976.3	1.2				ug/L	18	Standard
	Y	89	437835.7	1.8				ug/L	401845	Standard
>	**Rh**	103	111.7	11.3				ug/L	10	Standard
	Mo	98	768.6	2.7	**0.3040**	0.009	3.0	ug/L	12	Standard
	Ag	107	190.7	6.0	**0.0158**	0.002	12.3	ug/L	98	Standard
	Cd	111	45.2	11.2	**0.0185**	0.003	14.3	mg/L	11	Standard
	Cd	114	130.8	33.1	**0.0231**	0.009	39.2	ug/L	21	Standard
>	**In**	115	567817.1	0.2				ug/L	547487	Standard
	Sn	118	10468.6	2.5	**1.8698**	0.053	2.8	ug/L	450	Standard
	Sb	123	902.4	8.0	**0.1972**	0.016	8.2	ug/L	105	Standard
	Ba	135	51153.2	1.3	**26.8107**	0.405	1.5	ug/L	111	Standard
	Ce	140	2558.5	2.2				ug/L	107	Standard
>	**Tb**	159	907507.6	0.1				ug/L	890342	Standard
	Ho	165	388.3	9.3				ug/L	10	Standard
	Tl	203	96.3	26.1	**0.0096**	0.003	35.7	ug/L	19	Standard
	Tl	205	85.0	21.2	**0.0151**	0.003	19.8	ug/L	17	Standard
	Pb	206	1399.4	4.9	**0.2426**	0.015	6.0	ug/L	247	Standard
	Pb	207	1257.4	0.9	**0.2420**	0.003	1.1	ug/L	215	Standard
	Pb	208	4943.7	1.7	**0.2490**	0.006	2.2	ug/L	770	Standard
	U	238	308.0	0.9	**0.0522**	0.000	0.8	ug/L	13	Standard
>	**Bi**	209	487096.1	0.1				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.6640**	30.586	173.2	mg/L	2	Standard
Mg	24	54270.4	1.9	**71.1138**	1.170	1.6	mg/L	35	Standard
K	39	6009.5	3.1	**28.4763**	0.896	3.1	mg/L	25	Standard
Ca	43	55.0	36.4	**4.9932**	3.579	71.7	mg/L	38	Standard
Fe	54	345.1	11.2	**0.1762**	0.038	21.4	mg/L	126	Standard
Fe	57	351.7	7.8	**0.2357**	0.144	61.3	mg/L	245	Standard
> **Sc-1**	45	26276.1	3.6				mg/L	25066	Standard
Cl	35	189873.7	0.5				ug/L	125857	Standard
Kr	83	2.3	99.0				ug/L	1	Standard
Br	81	36477.2	3.1				ug/L	1350	Standard
P	31	23743.6	0.5				ug/L	18393	Standard
S	34	4889.1	0.7				ug/L	3739	Standard
Sr	88	155.0	16.1				ug/L	78	Standard
C	12	456.7	11.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	613.9	9.9				mg/L	2	Standard
Ho-1	165	388.3	9.3				mg/L	10	Standard
Er	166	336.7	6.2				mg/L	23	Standard
I	127	738935.3	7.0				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.825	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.073	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.713
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.811
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078709 WG573111-01
Sample Date/Time: Tuesday, June 21, 2016 17:53:33
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60443.9	5.7				ug/L	60176	Standard
	Be	9	16.7	34.6	**0.0143**	0.009	61.5	ug/L	5	Standard
	Al	27	10305250.8	3.2	**78.3639**	7.053	9.0	ug/L	832	Standard
	Sc	45	26180.9	1.3				ug/L	25066	Standard
	Ti	47	492.3	16.0	**2.2835**	0.397	17.4	ug/L	38	Standard
	V	51	9886.7	1.4	**1.4559**	0.086	5.9	ug/L	974	Standard
	Cr	52	12993.9	3.4	**1.0581**	0.156	14.7	ug/L	5792	Standard
	Cr	53	1368.4	1.8	**1.2241**	0.083	6.8	ug/L	347	Standard
	Mn	55	29966.3	1.1	**4.3673**	0.250	5.7	ug/L	1164	Standard
	Co	59	1096.7	3.0	**0.1268**	0.007	5.7	ug/L	303	Standard
	Ni	60	1721.1	4.7	**0.7463**	0.085	11.4	ug/L	291	Standard
	Cu	65	2142.2	3.0	**1.0742**	0.079	7.3	ug/L	173	Standard
	Zn	66	4731.4	2.1	**4.2285**	0.265	6.3	ug/L	130	Standard
>	**Ge**	72	503481.4	4.3				ug/L	491724	Standard
	As	75	526.8	4.6	**0.5242**	0.012	2.2	ug/L	-25	Standard
	Se	82	62.5	5.9	**0.4971**	0.013	2.6	ug/L	12	Standard
	Se-1	77	73.0	10.9	**0.3585**	0.086	24.0	ug/L	57	Standard
>	**Ga**	71	216.7	13.9				mg/L	148	Standard
	Rb	85	2733.6	1.6				ug/L	18	Standard
	Y	89	422057.6	7.6				ug/L	401845	Standard
>	**Rh**	103	68.3	11.2				ug/L	10	Standard
	Mo	98	279.8	4.4	**0.1129**	0.008	6.7	ug/L	12	Standard
	Ag	107	97.0	11.9	**0.0012**	0.003	216.7	ug/L	98	Standard
	Cd	111	40.5	2.4	**0.0170**	0.000	2.5	mg/L	11	Standard
	Cd	114	71.0	35.0	**0.0113**	0.006	51.4	ug/L	21	Standard
>	**In**	115	544133.8	4.3				ug/L	547487	Standard
	Sn	118	2075.1	3.5	**0.3287**	0.027	8.2	ug/L	450	Standard
	Sb	123	255.1	11.7	**0.0530**	0.009	17.6	ug/L	105	Standard
	Ba	135	71686.9	1.7	**39.2991**	2.336	5.9	ug/L	111	Standard
	Ce	140	6308.0	3.7				ug/L	107	Standard
>	**Tb**	159	874247.6	3.5				ug/L	890342	Standard
	Ho	165	205.0	17.6				ug/L	10	Standard
	Tl	203	72.3	6.8	**0.0062**	0.001	9.3	ug/L	19	Standard
	Tl	205	71.7	24.5	**0.0128**	0.003	22.0	ug/L	17	Standard
	Pb	206	870.4	1.3	**0.1280**	0.008	6.2	ug/L	247	Standard
	Pb	207	718.4	2.5	**0.1139**	0.005	4.4	ug/L	215	Standard
	Pb	208	2829.8	1.2	**0.1148**	0.006	5.6	ug/L	770	Standard
	U	238	125.7	17.0	**0.0206**	0.004	19.0	ug/L	13	Standard
>	**Bi**	209	493218.4	3.0				ug/L	503143	Standard

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Na	23	3.3	173.2	**36.2151**	62.718	173.2	mg/L	2	Standard
Mg	24	1295.1	2.9	**1.6648**	0.058	3.5	mg/L	35	Standard
K	39	110.0	9.1	**0.4127**	0.048	11.7	mg/L	25	Standard
Ca	43	135.0	14.8	**20.1289**	3.508	17.4	mg/L	38	Standard
Fe	54	213.8	22.6	**0.0577**	0.043	74.6	mg/L	126	Standard
Fe	57	361.7	4.2	**0.2754**	0.064	23.3	mg/L	245	Standard
> **Sc-1**	45	26180.9	1.3				mg/L	25066	Standard
Cl	35	162260.9	0.6				ug/L	125857	Standard
Kr	83	2.7	78.1				ug/L	1	Standard
Br	81	10053.3	4.2				ug/L	1350	Standard
P	31	24678.4	1.7				ug/L	18393	Standard
S	34	4714.1	1.8				ug/L	3739	Standard
Sr	88	126.7	12.7				ug/L	78	Standard
C	12	166.7	24.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	368.2	19.7				mg/L	2	Standard
Ho-1	165	205.0	17.6				mg/L	10	Standard
Er	166	176.7	57.8				mg/L	23	Standard
I	127	20693.0	48.0				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		100.445	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		102.391	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.388
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.028
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606078710
Sample Date/Time: Tuesday, June 21, 2016 17:56:44
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62773.1	1.4				ug/L	60176	Standard
	Be	9	21.7	35.3	**0.0200**	0.011	52.9	ug/L	5	Standard
	Al	27	10724930.9	3.4	**78.2963**	3.661	4.7	ug/L	832	Standard
	Sc	45	27798.8	3.2				ug/L	25066	Standard
	Ti	47	562.7	17.6	**2.6295**	0.538	20.5	ug/L	38	Standard
	V	51	10217.9	0.6	**1.5004**	0.021	1.4	ug/L	974	Standard
	Cr	52	13153.7	0.9	**1.0695**	0.051	4.8	ug/L	5792	Standard
	Cr	53	1371.7	5.1	**1.2177**	0.058	4.8	ug/L	347	Standard
	Mn	55	29369.4	1.6	**4.2499**	0.136	3.2	ug/L	1164	Standard
	Co	59	1080.7	2.1	**0.1233**	0.002	1.9	ug/L	303	Standard
	Ni	60	1737.1	3.4	**0.7483**	0.031	4.2	ug/L	291	Standard
	Cu	65	1924.5	4.8	**0.9481**	0.033	3.5	ug/L	173	Standard
	Zn	66	4372.0	2.4	**3.8638**	0.075	2.0	ug/L	130	Standard
>	**Ge**	72	505797.3	1.7				ug/L	491724	Standard
	As	75	458.2	3.8	**0.4582**	0.009	2.1	ug/L	-25	Standard
	Se	82	38.6	4.6	**0.2705**	0.020	7.4	ug/L	12	Standard
	Se-1	77	65.3	7.6	**0.2495**	0.074	29.7	ug/L	57	Standard
>	**Ga**	71	210.0	13.3				mg/L	148	Standard
	Rb	85	3273.7	1.4				ug/L	18	Standard
	Y	89	418878.8	2.6				ug/L	401845	Standard
>	**Rh**	103	35.0	37.8				ug/L	10	Standard
	Mo	98	238.7	3.0	**0.0929**	0.004	4.0	ug/L	12	Standard
	Ag	107	109.0	6.6	**0.0027**	0.001	44.0	ug/L	98	Standard
	Cd	111	30.9	30.1	**0.0114**	0.005	43.6	mg/L	11	Standard
	Cd	114	87.2	2.7	**0.0142**	0.001	3.7	ug/L	21	Standard
>	**In**	115	559019.1	0.9				ug/L	547487	Standard
	Sn	118	1906.8	4.3	**0.2855**	0.012	4.3	ug/L	450	Standard
	Sb	123	250.1	13.3	**0.0500**	0.007	14.2	ug/L	105	Standard
	Ba	135	73442.9	1.3	**39.1229**	0.172	0.4	ug/L	111	Standard
	Ce	140	6873.2	4.0				ug/L	107	Standard
>	**Tb**	159	901790.2	0.8				ug/L	890342	Standard
	Ho	165	200.0	9.0				ug/L	10	Standard
	Tl	203	57.3	31.4	**0.0039**	0.002	58.7	ug/L	19	Standard
	Tl	205	43.3	35.3	**0.0078**	0.002	30.1	ug/L	17	Standard
	Pb	206	822.7	3.5	**0.1108**	0.007	6.1	ug/L	247	Standard
	Pb	207	701.0	5.6	**0.1033**	0.010	9.4	ug/L	215	Standard
	Pb	208	2697.1	1.4	**0.0998**	0.003	3.5	ug/L	770	Standard
	U	238	127.0	11.9	**0.0199**	0.002	11.8	ug/L	13	Standard
>	**Bi**	209	514062.2	0.8				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.4295**	30.180	173.2	mg/L	2	Standard
Mg	24	1238.4	1.7	**1.4957**	0.025	1.7	mg/L	35	Standard
K	39	105.0	17.2	**0.3595**	0.078	21.6	mg/L	25	Standard
Ca	43	170.0	10.6	**24.9795**	4.201	16.8	mg/L	38	Standard
Fe	54	232.4	2.4	**0.0625**	0.006	9.3	mg/L	126	Standard
Fe	57	421.7	12.1	**0.4086**	0.168	41.1	mg/L	245	Standard
Sc-1	45	27798.8	3.2				mg/L	25066	Standard
Cl	35	170177.7	0.9				ug/L	125857	Standard
Kr	83	2.3	89.2				ug/L	1	Standard
Br	81	3510.4	1.7				ug/L	1350	Standard
P	31	25923.8	0.8				ug/L	18393	Standard
S	34	5000.8	2.7				ug/L	3739	Standard
Sr	88	136.7	27.0				ug/L	78	Standard
C	12	120.0	16.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	299.1	9.0				mg/L	2	Standard
Ho-1	165	200.0	9.0				mg/L	10	Standard
Er	166	226.7	11.1				mg/L	23	Standard
I	127	8357.3	3.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.316	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.862	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.106
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.170
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606078711S WG573111-06
Sample Date/Time: Tuesday, June 21, 2016 17:59:56
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61600.0	1.8				ug/L	60176	Standard
	Be	9	39351.1	3.1	**53.5432**	1.639	3.1	ug/L	5	Standard
	Al	27	10394779.5	1.5	**77.3073**	1.057	1.4	ug/L	832	Standard
	Sc	45	27065.8	3.5				ug/L	25066	Standard
	Ti	47	963.4	10.6	**4.7337**	0.549	11.6	ug/L	38	Standard
	V	51	322757.3	1.8	**53.6046**	1.325	2.5	ug/L	974	Standard
	Cr	52	347982.3	1.9	**53.2836**	1.385	2.6	ug/L	5792	Standard
	Cr	53	43507.5	4.5	**52.3076**	2.705	5.2	ug/L	347	Standard
	Mn	55	375081.4	0.9	**57.8666**	0.893	1.5	ug/L	1164	Standard
	Co	59	321619.4	0.7	**52.2874**	0.580	1.1	ug/L	303	Standard
	Ni	60	93916.6	2.0	**51.5228**	1.331	2.6	ug/L	291	Standard
	Cu	65	93528.8	1.2	**51.7010**	0.970	1.9	ug/L	173	Standard
	Zn	66	57176.0	0.7	**54.3806**	0.702	1.3	ug/L	130	Standard
>	**Ge**	72	496488.3	0.7				ug/L	491724	Standard
	As	75	55790.3	0.6	**52.6752**	0.114	0.2	ug/L	-25	Standard
	Se	82	5538.3	0.8	**52.9638**	0.537	1.0	ug/L	12	Standard
	Se-1	77	3804.5	1.5	**52.6667**	0.727	1.4	ug/L	57	Standard
>	**Ga**	71	466.7	30.8				mg/L	148	Standard
	Rb	85	5205.9	1.3				ug/L	18	Standard
	Y	89	431108.9	0.1				ug/L	401845	Standard
>	**Rh**	103	70.0	18.9				ug/L	10	Standard
	Mo	98	227.0	2.9	**0.0880**	0.002	2.8	ug/L	12	Standard
	Ag	107	10615.7	2.8	**1.7450**	0.050	2.9	ug/L	98	Standard
	Cd	111	99211.0	0.7	**51.6114**	0.445	0.9	mg/L	11	Standard
	Cd	114	241106.1	2.5	**51.5544**	1.220	2.4	ug/L	21	Standard
>	**In**	115	559879.4	0.9				ug/L	547487	Standard
	Sn	118	2130.1	3.8	**0.3270**	0.012	3.7	ug/L	450	Standard
	Sb	123	217940.1	0.9	**50.1700**	0.382	0.8	ug/L	105	Standard
	Ba	135	167521.4	1.0	**89.1738**	0.251	0.3	ug/L	111	Standard
	Ce	140	9182.8	2.4				ug/L	107	Standard
>	**Tb**	159	892825.7	1.7				ug/L	890342	Standard
	Ho	165	245.0	15.9				ug/L	10	Standard
	Tl	203	382126.3	1.7	**51.0936**	0.456	0.9	ug/L	19	Standard
	Tl	205	328005.7	0.3	**53.4587**	0.419	0.8	ug/L	17	Standard
	Pb	206	247016.4	0.8	**51.3212**	0.143	0.3	ug/L	247	Standard
	Pb	207	215416.9	0.8	**49.2334**	0.302	0.6	ug/L	215	Standard
	Pb	208	864247.6	0.1	**52.7618**	0.483	0.9	ug/L	770	Standard
	U	238	310732.3	0.2	**52.3391**	0.578	1.1	ug/L	13	Standard
>	**Bi**	209	498043.4	1.0				ug/L	503143	Standard

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Na	23	1.7	173.2	**16.7109**	28.936	173.2	mg/L	2	Standard
Mg	24	1233.4	1.0	**1.5318**	0.064	4.2	mg/L	35	Standard
K	39	148.3	7.8	**0.5718**	0.033	5.8	mg/L	25	Standard
Ca	43	170.0	28.4	**25.9171**	9.688	37.4	mg/L	38	Standard
Fe	54	322.0	9.5	**0.1473**	0.036	24.5	mg/L	126	Standard
Fe	57	403.3	22.9	**0.3789**	0.313	82.6	mg/L	245	Standard
> **Sc-1**	45	27065.8	3.5				mg/L	25066	Standard
Cl	35	170176.5	1.7				ug/L	125857	Standard
Kr	83	3.0	57.7				ug/L	1	Standard
Br	81	4414.0	4.5				ug/L	1350	Standard
P	31	26219.3	3.1				ug/L	18393	Standard
S	34	5044.2	5.2				ug/L	3739	Standard
Sr	88	135.0	9.8				ug/L	78	Standard
C	12	86.7	17.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	373.8	5.4				mg/L	2	Standard
Ho-1	165	245.0	15.9				mg/L	10	Standard
Er	166	200.0	13.2				mg/L	23	Standard
I	127	7025.0	4.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.367	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.969	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.264	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.987	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606078712SD WG573111-07
Sample Date/Time: Tuesday, June 21, 2016 18:03:07
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61029.3	0.4				ug/L	60176	Standard
	Be	9	38696.0	1.1	**53.1381**	0.388	0.7	ug/L	5	Standard
	Al	27	10635305.8	0.7	**79.8285**	0.406	0.5	ug/L	832	Standard
	Sc	45	27050.8	1.0				ug/L	25066	Standard
	Ti	47	1614.1	5.0	**7.8928**	0.372	4.7	ug/L	38	Standard
	V	51	334955.3	1.2	**54.4598**	1.088	2.0	ug/L	974	Standard
	Cr	52	351881.2	0.4	**52.7321**	0.628	1.2	ug/L	5792	Standard
	Cr	53	43774.8	1.5	**51.5065**	1.170	2.3	ug/L	347	Standard
	Mn	55	501871.8	1.6	**75.8606**	1.449	1.9	ug/L	1164	Standard
	Co	59	333145.1	1.3	**53.0208**	0.897	1.7	ug/L	303	Standard
	Ni	60	94669.2	0.6	**50.8362**	0.710	1.4	ug/L	291	Standard
	Cu	65	95052.6	1.5	**51.4370**	1.187	2.3	ug/L	173	Standard
	Zn	66	58277.2	0.4	**54.2587**	0.599	1.1	ug/L	130	Standard
>	**Ge**	72	507183.4	0.8				ug/L	491724	Standard
	As	75	57125.5	0.7	**52.8022**	0.788	1.5	ug/L	-25	Standard
	Se	82	5703.6	1.6	**53.3992**	1.190	2.2	ug/L	12	Standard
	Se-1	77	3834.5	0.9	**51.9576**	0.800	1.5	ug/L	57	Standard
>	**Ga**	71	908.4	9.4				mg/L	148	Standard
	Rb	85	10995.7	2.2				ug/L	18	Standard
	Y	89	422851.2	3.7				ug/L	401845	Standard
>	**Rh**	103	70.0	14.3				ug/L	10	Standard
	Mo	98	243.6	1.0	**0.0962**	0.001	1.5	ug/L	12	Standard
	Ag	107	9863.9	1.6	**1.6460**	0.047	2.9	ug/L	98	Standard
	Cd	111	99159.1	2.8	**52.3764**	0.965	1.8	mg/L	11	Standard
	Cd	114	235716.4	1.9	**51.1824**	0.756	1.5	ug/L	21	Standard
>	**In**	115	551348.1	1.3				ug/L	547487	Standard
	Sn	118	2651.9	2.8	**0.4332**	0.019	4.4	ug/L	450	Standard
	Sb	123	193703.2	1.2	**45.2835**	0.741	1.6	ug/L	105	Standard
	Ba	135	168991.9	2.6	**91.3544**	2.313	2.5	ug/L	111	Standard
	Ce	140	32860.6	2.6				ug/L	107	Standard
>	**Tb**	159	880118.4	0.8				ug/L	890342	Standard
	Ho	165	470.0	4.9				ug/L	10	Standard
	Tl	203	380545.4	1.6	**50.5209**	0.728	1.4	ug/L	19	Standard
	Tl	205	329715.6	2.7	**53.3513**	1.427	2.7	ug/L	17	Standard
	Pb	206	252108.4	1.5	**52.0068**	0.872	1.7	ug/L	247	Standard
	Pb	207	219746.2	1.1	**49.8641**	0.528	1.1	ug/L	215	Standard
	Pb	208	883612.2	0.6	**53.5586**	0.555	1.0	ug/L	770	Standard
	U	238	309715.2	1.9	**51.7947**	1.152	2.2	ug/L	13	Standard
>	**Bi**	209	501621.6	0.6				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.3130**	29.978	173.2	mg/L	2	Standard
Mg	24	1170.0	3.4	**1.4509**	0.059	4.0	mg/L	35	Standard
K	39	130.0	27.7	**0.4888**	0.170	34.7	mg/L	25	Standard
Ca	43	153.3	12.3	**22.6892**	3.519	15.5	mg/L	38	Standard
Fe	54	591.5	1.7	**0.3836**	0.008	2.1	mg/L	126	Standard
Fe	57	516.7	13.6	**0.7964**	0.241	30.3	mg/L	245	Standard
> **Sc-1**	45	27050.8	1.0				mg/L	25066	Standard
Cl	35	165809.3	2.3				ug/L	125857	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	2850.3	4.1				ug/L	1350	Standard
P	31	26767.0	3.2				ug/L	18393	Standard
S	34	4750.7	2.1				ug/L	3739	Standard
Sr	88	130.0	7.7				ug/L	78	Standard
C	12	126.7	18.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	835.0	2.5				mg/L	2	Standard
Ho-1	165	470.0	4.9				mg/L	10	Standard
Er	166	453.3	25.8				mg/L	23	Standard
I	127	6214.6	6.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.418	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.144	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.705
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.698
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606078712SD WG573111-07
Report Date/Time: Tuesday, June 21, 2016 18:05:24
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Method 6020 - Summary Report

Sample ID: L1606078718
Sample Date/Time: Tuesday, June 21, 2016 18:06:19
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61345.6	1.0				ug/L	60176	Standard
	Be	9	36.7	28.4	**0.0411**	0.014	34.6	ug/L	5	Standard
	Al	27	13853606.9	0.9	**103.4648**	1.981	1.9	ug/L	832	Standard
	Sc	45	26648.4	1.5				ug/L	25066	Standard
	Ti	47	1471.7	1.8	**7.3873**	0.204	2.8	ug/L	38	Standard
	V	51	15922.0	1.1	**2.4991**	0.067	2.7	ug/L	974	Standard
	Cr	52	13836.7	2.0	**1.2265**	0.015	1.2	ug/L	5792	Standard
	Cr	53	1288.4	6.0	**1.1570**	0.071	6.1	ug/L	347	Standard
	Mn	55	329136.0	2.3	**51.0786**	1.557	3.0	ug/L	1164	Standard
	Co	59	3178.0	2.5	**0.4710**	0.005	1.1	ug/L	303	Standard
	Ni	60	3429.7	2.4	**1.7103**	0.073	4.2	ug/L	291	Standard
	Cu	65	2424.9	0.9	**1.2538**	0.023	1.8	ug/L	173	Standard
	Zn	66	21892.8	1.6	**20.8141**	0.673	3.2	ug/L	130	Standard
>	**Ge**	72	493399.5	1.6				ug/L	491724	Standard
	As	75	662.7	6.1	**0.6629**	0.029	4.3	ug/L	-25	Standard
	Se	82	30.1	21.2	**0.1969**	0.058	29.3	ug/L	12	Standard
	Se-1	77	65.0	20.4	**0.2652**	0.174	65.4	ug/L	57	Standard
>	**Ga**	71	763.4	6.3				mg/L	148	Standard
	Rb	85	11562.7	2.6				ug/L	18	Standard
	Y	89	414722.7	0.7				ug/L	401845	Standard
>	**Rh**	103	61.7	26.1				ug/L	10	Standard
	Mo	98	2202.2	2.7	**0.9051**	0.023	2.6	ug/L	12	Standard
	Ag	107	93.7	9.6	**0.0004**	0.002	405.8	ug/L	98	Standard
	Cd	111	36.0	24.1	**0.0143**	0.005	32.0	mg/L	11	Standard
	Cd	114	82.5	18.5	**0.0135**	0.003	24.8	ug/L	21	Standard
>	**In**	115	551654.9	0.3				ug/L	547487	Standard
	Sn	118	1025.0	2.0	**0.1219**	0.003	2.7	ug/L	450	Standard
	Sb	123	1356.4	22.3	**0.3093**	0.070	22.8	ug/L	105	Standard
	Ba	135	129981.5	0.7	**70.2106**	0.381	0.5	ug/L	111	Standard
	Ce	140	35964.3	1.5				ug/L	107	Standard
>	**Tb**	159	898275.8	1.4				ug/L	890342	Standard
	Ho	165	588.3	7.7				ug/L	10	Standard
	Tl	203	129.0	10.2	**0.0136**	0.002	11.4	ug/L	19	Standard
	Tl	205	128.3	28.2	**0.0218**	0.006	27.3	ug/L	17	Standard
	Pb	206	2292.8	1.9	**0.4195**	0.012	2.9	ug/L	247	Standard
	Pb	207	1882.5	1.6	**0.3763**	0.003	0.8	ug/L	215	Standard
	Pb	208	7667.1	0.4	**0.4062**	0.006	1.5	ug/L	770	Standard
	U	238	370.0	8.6	**0.0612**	0.005	8.6	ug/L	13	Standard
>	**Bi**	209	500668.3	1.1				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.6673**	30.592	173.2	mg/L	2	Standard
Mg	24	3412.1	3.5	**4.3714**	0.183	4.2	mg/L	35	Standard
K	39	153.3	13.2	**0.6068**	0.098	16.1	mg/L	25	Standard
Ca	43	170.0	16.4	**26.2488**	5.560	21.2	mg/L	38	Standard
Fe	54	683.7	6.3	**0.4734**	0.029	6.2	mg/L	126	Standard
Fe	57	593.3	9.3	**1.1125**	0.233	21.0	mg/L	245	Standard
> **Sc-1**	45	26648.4	1.5				mg/L	25066	Standard
Cl	35	162659.9	1.3				ug/L	125857	Standard
Kr	83	4.3	81.0				ug/L	1	Standard
Br	81	1856.8	15.6				ug/L	1350	Standard
P	31	25311.1	1.5				ug/L	18393	Standard
S	34	4550.7	1.1				ug/L	3739	Standard
Sr	88	181.7	9.7				ug/L	78	Standard
C	12	63.3	9.1				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	938.6	15.9				mg/L	2	Standard
Ho-1	165	588.3	7.7				mg/L	10	Standard
Er	166	516.7	15.6				mg/L	23	Standard
I	127	3795.5	3.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.944	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.341	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.761
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.508
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606086201 WG573111-02
Sample Date/Time: Tuesday, June 21, 2016 18:09:30
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70003.4	5.7				ug/L	60176	Standard
	Be	9	36.7	20.8	**0.0348**	0.009	24.5	ug/L	5	Standard
	Al	27	16610862.4	6.4	**108.6830**	1.728	1.6	ug/L	832	Standard
	Sc	45	26531.6	3.2				ug/L	25066	Standard
	Ti	47	79.3	22.9	**0.1919**	0.082	42.6	ug/L	38	Standard
	V	51	2014.4	26.0	**0.1599**	0.083	51.6	ug/L	974	Standard
	Cr	52	10191.1	1.8	**0.6236**	0.029	4.7	ug/L	5792	Standard
	Cr	53	1240.1	4.8	**1.0705**	0.108	10.1	ug/L	347	Standard
	Mn	55	135277.1	2.5	**20.4449**	0.338	1.7	ug/L	1164	Standard
	Co	59	3194.7	8.9	**0.4633**	0.042	9.0	ug/L	303	Standard
	Ni	60	4307.3	3.2	**2.1481**	0.040	1.8	ug/L	291	Standard
	Cu	65	2946.0	3.6	**1.5109**	0.014	0.9	ug/L	173	Standard
	Zn	66	4156.6	3.8	**3.6798**	0.081	2.2	ug/L	130	Standard
>	**Ge**	72	503442.9	2.8				ug/L	491724	Standard
	As	75	284.8	17.5	**0.2994**	0.050	16.6	ug/L	-25	Standard
	Se	82	101.4	8.8	**0.8650**	0.083	9.6	ug/L	12	Standard
	Se-1	77	87.0	7.2	**0.5544**	0.111	20.1	ug/L	57	Standard
>	**Ga**	71	96.7	15.8				mg/L	148	Standard
	Rb	85	10238.5	4.2				ug/L	18	Standard
	Y	89	429610.1	1.8				ug/L	401845	Standard
>	**Rh**	103	65.0	13.3				ug/L	10	Standard
	Mo	98	201.8	61.9	**0.0760**	0.048	63.5	ug/L	12	Standard
	Ag	107	138.7	53.9	**0.0071**	0.012	164.1	ug/L	98	Standard
	Cd	111	55.1	4.5	**0.0236**	0.002	6.5	mg/L	11	Standard
	Cd	114	127.5	35.8	**0.0224**	0.009	41.4	ug/L	21	Standard
>	**In**	115	568273.2	3.6				ug/L	547487	Standard
	Sn	118	590.0	11.4	**0.0352**	0.009	25.4	ug/L	450	Standard
	Sb	123	675.3	25.4	**0.1449**	0.035	24.0	ug/L	105	Standard
	Ba	135	11427.3	2.3	**5.9431**	0.086	1.4	ug/L	111	Standard
	Ce	140	1858.4	6.1				ug/L	107	Standard
>	**Tb**	159	912569.9	2.0				ug/L	890342	Standard
	Ho	165	186.7	6.7				ug/L	10	Standard
	Tl	203	338.7	64.0	**0.0413**	0.028	67.6	ug/L	19	Standard
	Tl	205	318.3	54.7	**0.0526**	0.027	52.2	ug/L	17	Standard
	Pb	206	619.3	45.9	**0.0728**	0.056	77.2	ug/L	247	Standard
	Pb	207	529.7	52.6	**0.0680**	0.061	89.6	ug/L	215	Standard
	Pb	208	1946.1	35.0	**0.0582**	0.039	67.2	ug/L	770	Standard
	U	238	472.3	32.1	**0.0784**	0.024	31.1	ug/L	13	Standard
>	**Bi**	209	499634.8	2.9				ug/L	503143	Standard

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Na	23	3.3	86.6	**35.1997**	30.527	86.7	mg/L	2	Standard
Mg	24	58866.0	4.8	**76.3418**	1.277	1.7	mg/L	35	Standard
K	39	203.3	22.3	**0.8502**	0.245	28.9	mg/L	25	Standard
Ca	43	263.3	12.6	**43.7969**	6.786	15.5	mg/L	38	Standard
Fe	54	172.6	3.6	**0.0183**	0.008	42.0	mg/L	126	Standard
Fe	57	565.0	6.2	**1.0188**	0.198	19.5	mg/L	245	Standard
> **Sc-1**	45	26531.6	3.2				mg/L	25066	Standard
Cl	35	528870.2	4.8				ug/L	125857	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	18100.9	11.2				ug/L	1350	Standard
P	31	22234.7	5.0				ug/L	18393	Standard
S	34	4849.1	0.7				ug/L	3739	Standard
Sr	88	275.0	7.3				ug/L	78	Standard
C	12	93.3	16.4				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	288.4	8.8				mg/L	2	Standard
Ho-1	165	186.7	6.7				mg/L	10	Standard
Er	166	103.3	22.3				mg/L	23	Standard
I	127	6759.8	6.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.331	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.383	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.797
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.303
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606086201DP WG573111-08
Sample Date/Time: Tuesday, June 21, 2016 18:12:42
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77315.1	0.8				ug/L	60176	Standard
	Be	9	36.7	55.1	**0.0306**	0.022	70.8	ug/L	5	Standard
	Al	27	17227028.4	3.4	**102.0589**	2.703	2.6	ug/L	832	Standard
	Sc	45	26312.9	5.4				ug/L	25066	Standard
	Ti	47	92.7	6.6	**0.2625**	0.044	16.8	ug/L	38	Standard
	V	51	1770.2	7.4	**0.1214**	0.033	27.3	ug/L	974	Standard
	Cr	52	10246.5	1.8	**0.6348**	0.045	7.2	ug/L	5792	Standard
	Cr	53	1068.4	4.2	**0.8651**	0.006	0.7	ug/L	347	Standard
	Mn	55	134734.3	3.6	**20.3882**	0.086	0.4	ug/L	1164	Standard
	Co	59	2977.6	2.6	**0.4294**	0.015	3.5	ug/L	303	Standard
	Ni	60	4134.6	6.2	**2.0561**	0.052	2.5	ug/L	291	Standard
	Cu	65	2902.9	3.4	**1.4903**	0.037	2.5	ug/L	173	Standard
	Zn	66	4166.9	2.6	**3.6969**	0.093	2.5	ug/L	130	Standard
>	**Ge**	72	502766.3	3.9				ug/L	491724	Standard
	As	75	231.7	9.5	**0.2502**	0.026	10.3	ug/L	-25	Standard
	Se	82	82.9	12.5	**0.6918**	0.104	15.0	ug/L	12	Standard
	Se-1	77	92.7	5.9	**0.6360**	0.126	19.8	ug/L	57	Standard
>	**Ga**	71	116.7	13.1				mg/L	148	Standard
	Rb	85	10200.1	2.2				ug/L	18	Standard
	Y	89	445666.9	2.4				ug/L	401845	Standard
>	**Rh**	103	83.3	15.1				ug/L	10	Standard
	Mo	98	109.3	3.3	**0.0379**	0.001	2.8	ug/L	12	Standard
	Ag	107	78.3	5.3	**-0.0030**	0.001	22.0	ug/L	98	Standard
	Cd	111	32.1	9.6	**0.0112**	0.002	16.1	mg/L	11	Standard
	Cd	114	61.4	31.5	**0.0081**	0.004	52.2	ug/L	21	Standard
>	**In**	115	588323.0	2.0				ug/L	547487	Standard
	Sn	118	506.7	15.4	**0.0167**	0.013	77.1	ug/L	450	Standard
	Sb	123	391.2	12.5	**0.0783**	0.013	16.1	ug/L	105	Standard
	Ba	135	11417.0	3.2	**5.7308**	0.081	1.4	ug/L	111	Standard
	Ce	140	1880.1	4.4				ug/L	107	Standard
>	**Tb**	159	936011.4	2.7				ug/L	890342	Standard
	Ho	165	181.7	20.8				ug/L	10	Standard
	Tl	203	161.0	14.9	**0.0175**	0.004	20.0	ug/L	19	Standard
	Tl	205	160.0	27.8	**0.0266**	0.008	28.3	ug/L	17	Standard
	Pb	206	452.7	4.8	**0.0372**	0.007	18.1	ug/L	247	Standard
	Pb	207	379.3	5.9	**0.0328**	0.007	22.4	ug/L	215	Standard
	Pb	208	1520.0	3.7	**0.0310**	0.006	19.0	ug/L	770	Standard
	U	238	306.7	5.7	**0.0497**	0.003	6.7	ug/L	13	Standard
>	**Bi**	209	509399.4	2.7				ug/L	503143	Standard

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Na	23	3.3	86.6	**36.1951**	31.438	86.9	mg/L	2	Standard
Mg	24	59695.8	3.9	**78.1443**	2.085	2.7	mg/L	35	Standard
K	39	236.7	11.6	**1.0180**	0.191	18.8	mg/L	25	Standard
Ca	43	230.0	14.3	**37.7841**	4.654	12.3	mg/L	38	Standard
Fe	54	155.5	13.6	**0.0041**	0.017	424.3	mg/L	126	Standard
Fe	57	521.7	15.8	**0.8829**	0.414	46.9	mg/L	245	Standard
> **Sc-1**	45	26312.9	5.4				mg/L	25066	Standard
Cl	35	564291.5	2.7				ug/L	125857	Standard
Kr	83	1.0	0.0				ug/L	1	Standard
Br	81	11614.5	6.5				ug/L	1350	Standard
P	31	22116.2	5.6				ug/L	18393	Standard
S	34	4845.8	1.1				ug/L	3739	Standard
Sr	88	280.0	12.4				ug/L	78	Standard
C	12	113.3	18.4				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	262.8	27.6				mg/L	2	Standard
Ho-1	165	181.7	20.8				mg/L	10	Standard
Er	166	150.0	40.0				mg/L	23	Standard
I	127	6614.8	4.5				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.482	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.246	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.459
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.244
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606088302
Sample Date/Time: Tuesday, June 21, 2016 18:15:53
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72031.1	4.6				ug/L	60176	Standard
	Be	9	43.3	52.0	**0.0410**	0.025	59.9	ug/L	5	Standard
	Al	27	18877330.6	2.8	**120.1329**	2.878	2.4	ug/L	832	Standard
	Sc	45	26508.2	2.8				ug/L	25066	Standard
	Ti	47	1389.4	3.9	**6.9356**	0.221	3.2	ug/L	38	Standard
	V	51	10133.0	2.4	**1.5222**	0.036	2.4	ug/L	974	Standard
	Cr	52	17075.6	2.7	**1.7253**	0.058	3.4	ug/L	5792	Standard
	Cr	53	2106.8	4.1	**2.1475**	0.127	5.9	ug/L	347	Standard
	Mn	55	8659860.5	3.3	**1344.4292**	36.890	2.7	ug/L	1164	Standard
	Co	59	26955.7	4.2	**4.3488**	0.153	3.5	ug/L	303	Standard
	Ni	60	24380.9	3.0	**13.2700**	0.290	2.2	ug/L	291	Standard
	Cu	65	3102.3	3.6	**1.6250**	0.048	3.0	ug/L	173	Standard
	Zn	66	73890.8	2.7	**70.5385**	1.291	1.8	ug/L	130	Standard
>	**Ge**	72	495064.0	0.9				ug/L	491724	Standard
	As	75	7508.6	3.4	**7.1381**	0.186	2.6	ug/L	-25	Standard
	Se	82	88.8	5.6	**0.7604**	0.041	5.3	ug/L	12	Standard
	Se-1	77	104.3	8.0	**0.8163**	0.107	13.1	ug/L	57	Standard
>	**Ga**	71	1203.4	6.0				mg/L	148	Standard
	Rb	85	18631.5	4.9				ug/L	18	Standard
	Y	89	471499.9	4.5				ug/L	401845	Standard
>	**Rh**	103	68.3	23.5				ug/L	10	Standard
	Mo	98	16975.2	1.8	**6.8750**	0.095	1.4	ug/L	12	Standard
	Ag	107	124.7	8.1	**0.0052**	0.002	43.3	ug/L	98	Standard
	Cd	111	354.4	5.3	**0.1790**	0.013	7.3	mg/L	11	Standard
	Cd	114	927.6	4.1	**0.1930**	0.003	1.7	ug/L	21	Standard
>	**In**	115	562376.6	3.1				ug/L	547487	Standard
	Sn	118	4190.6	1.8	**0.7122**	0.033	4.6	ug/L	450	Standard
	Sb	123	1237.0	1.3	**0.2761**	0.009	3.1	ug/L	105	Standard
	Ba	135	323863.4	1.8	**171.7335**	2.697	1.6	ug/L	111	Standard
	Ce	140	34140.1	1.5				ug/L	107	Standard
>	**Tb**	159	897272.3	2.5				ug/L	890342	Standard
	Ho	165	3113.7	2.4				ug/L	10	Standard
	Tl	203	64.7	19.9	**0.0051**	0.002	33.0	ug/L	19	Standard
	Tl	205	68.3	15.2	**0.0121**	0.002	13.5	ug/L	17	Standard
	Pb	206	38821.3	1.4	**8.0108**	0.071	0.9	ug/L	247	Standard
	Pb	207	32359.9	2.0	**7.3434**	0.107	1.5	ug/L	215	Standard
	Pb	208	128351.5	2.3	**7.7758**	0.128	1.6	ug/L	770	Standard
	U	238	8442.7	2.9	**1.4196**	0.032	2.3	ug/L	13	Standard
>	**Bi**	209	498550.4	0.6				ug/L	503143	Standard

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Na	23	5.0	100.0	**53.3736**	52.932	99.2	mg/L	2	Standard
Mg	24	21398.5	5.6	**27.7596**	1.350	4.9	mg/L	35	Standard
K	39	1008.4	11.1	**4.6456**	0.585	12.6	mg/L	25	Standard
Ca	43	186.7	14.8	**29.4057**	4.377	14.9	mg/L	38	Standard
Fe	54	2908.8	2.8	**2.4754**	0.120	4.8	mg/L	126	Standard
Fe	57	1130.0	7.4	**3.1241**	0.310	9.9	mg/L	245	Standard
> **Sc-1**	45	26508.2	2.8				mg/L	25066	Standard
Cl	35	207996.3	4.3				ug/L	125857	Standard
Kr	83	2.7	78.1				ug/L	1	Standard
Br	81	11254.2	3.5				ug/L	1350	Standard
P	31	26543.2	2.6				ug/L	18393	Standard
S	34	4722.4	7.5				ug/L	3739	Standard
Sr	88	290.0	4.6				ug/L	78	Standard
C	12	550.0	9.1				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	4557.8	5.5				mg/L	2	Standard
Ho-1	165	3113.7	2.4				mg/L	10	Standard
Er	166	2983.6	2.5				mg/L	23	Standard
I	127	203725.5	6.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.701	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.679	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.720	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.087	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 18:19:06
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68241.8	3.0				ug/L	60176	Standard
	Be	9	42051.7	3.8	**51.6361**	0.537	1.0	ug/L	5	Standard
	Al	27	6971995.2	1.7	**46.8104**	0.719	1.5	ug/L	832	Standard
	Sc	45	24852.0	1.3				ug/L	25066	Standard
	Ti	47	20097.0	2.7	**107.8691**	2.722	2.5	ug/L	38	Standard
	V	51	307873.7	1.3	**53.6238**	0.489	0.9	ug/L	974	Standard
	Cr	52	328667.5	1.2	**52.7708**	0.685	1.3	ug/L	5792	Standard
	Cr	53	41331.3	2.5	**52.1074**	1.405	2.7	ug/L	347	Standard
	Mn	55	323878.6	1.2	**52.3860**	0.759	1.4	ug/L	1164	Standard
	Co	59	325002.9	1.5	**55.4186**	0.688	1.2	ug/L	303	Standard
	Ni	60	90037.4	0.9	**51.8053**	0.679	1.3	ug/L	291	Standard
	Cu	65	90581.0	1.5	**52.5134**	0.543	1.0	ug/L	173	Standard
	Zn	66	53001.9	0.8	**52.8632**	0.064	0.1	ug/L	130	Standard
>	Ge	72	473368.8	0.8				ug/L	491724	Standard
	As	75	53534.5	0.7	**53.0137**	0.077	0.1	ug/L	-25	Standard
	Se	82	5487.6	1.0	**55.0445**	0.192	0.3	ug/L	12	Standard
	Se-1	77	3650.1	0.8	**53.0021**	0.366	0.7	ug/L	57	Standard
>	Ga	71	215.0	9.3				mg/L	148	Standard
	Rb	85	910.0	6.2				ug/L	18	Standard
	Y	89	416501.3	1.6				ug/L	401845	Standard
>	Rh	103	51.7	20.1				ug/L	10	Standard
	Mo	98	242295.3	0.6	**98.0576**	1.644	1.7	ug/L	12	Standard
	Ag	107	299878.8	2.2	**49.4337**	1.074	2.2	ug/L	98	Standard
	Cd	111	98207.6	0.4	**50.8054**	0.675	1.3	mg/L	11	Standard
	Cd	114	240827.7	3.2	**51.1947**	0.841	1.6	ug/L	21	Standard
>	In	115	563072.6	1.7				ug/L	547487	Standard
	Sn	118	264056.2	0.9	**49.3801**	1.145	2.3	ug/L	450	Standard
	Sb	123	215333.2	1.5	**49.2924**	0.748	1.5	ug/L	105	Standard
	Ba	135	93099.8	1.2	**49.2664**	1.301	2.6	ug/L	111	Standard
	Ce	140	76.7	30.8				ug/L	107	Standard
>	Tb	159	879908.2	1.7				ug/L	890342	Standard
	Ho	165	3.3	173.2				ug/L	10	Standard
	Tl	203	383264.6	0.5	**51.4037**	0.933	1.8	ug/L	19	Standard
	Tl	205	335822.7	2.8	**54.8792**	0.706	1.3	ug/L	17	Standard
	Pb	206	245508.2	1.1	**51.1598**	0.909	1.8	ug/L	247	Standard
	Pb	207	222387.2	0.6	**50.9816**	0.958	1.9	ug/L	215	Standard
	Pb	208	870389.8	0.4	**53.3024**	1.410	2.6	ug/L	770	Standard
	U	238	316954.9	1.4	**53.5444**	1.099	2.1	ug/L	13	Standard
>	Bi	209	496674.2	2.3				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3777.1	3.0	**5.1944**	0.100	1.9	mg/L	35	Standard
K	39	940.0	7.7	**4.6131**	0.347	7.5	mg/L	25	Standard
Ca	43	46.7	27.0	**3.9480**	2.492	63.1	mg/L	38	Standard
Fe	54	5268.6	7.7	**4.9055**	0.368	7.5	mg/L	126	Standard
Fe	57	1598.4	5.2	**5.2665**	0.320	6.1	mg/L	245	Standard
Sc-1	45	24852.0	1.3				mg/L	25066	Standard
Cl	35	163793.4	1.6				ug/L	125857	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	1850.1	19.4				ug/L	1350	Standard
P	31	22236.3	2.1				ug/L	18393	Standard
S	34	4902.5	1.0				ug/L	3739	Standard
Sr	88	91.7	24.6				ug/L	78	Standard
C	12	70.0	0.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	18.9	49.2				mg/L	2	Standard
Ho-1	165	3.3	173.2				mg/L	10	Standard
Er	166	23.3	65.5				mg/L	23	Standard
I	127	5351.1	56.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	103.272		
Al	27	93.621		
Sc	45			
Ti	47	107.869		
V	51	107.248		
Cr	52	105.542		
Cr	53			
Mn	55	104.772		
Co	59	110.837		
Ni	60	103.611		
Cu	65	105.027		
Zn	66	105.726		
Ge	72		96.267	
As	75	106.027		
Se	82	110.089		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.058		
Ag	107	98.867		
Cd	111	101.611		
Cd	114			
> In	115		102.847	
Sn	118	98.760		
Sb	123	98.585		
Ba	135	98.533		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	102.807		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.605		
U	238	107.089		
> Bi	209		98.714	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Co	59	
QC Std 6	Se	82	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 18:22:18
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67175.3	1.0				ug/L	60176	Standard
	Be	9	20.0	25.0	**0.0159**	0.006	38.1	ug/L	5	Standard
	Al	27	2591.9	21.1	**0.0093**	0.004	40.6	ug/L	832	Standard
	Sc	45	25002.3	1.9				ug/L	25066	Standard
	Ti	47	26.3	8.8	**-0.0730**	0.015	21.1	ug/L	38	Standard
	V	51	1024.0	6.3	**-0.0008**	0.011	1434.1	ug/L	974	Standard
	Cr	52	6027.2	0.6	**-0.0071**	0.031	440.7	ug/L	5792	Standard
	Cr	53	448.3	17.4	**0.1301**	0.110	84.6	ug/L	347	Standard
	Mn	55	1540.7	13.4	**0.0229**	0.038	165.9	ug/L	1164	Standard
	Co	59	299.7	11.6	**-0.0007**	0.007	1063.7	ug/L	303	Standard
	Ni	60	216.7	14.8	**-0.0720**	0.016	21.7	ug/L	291	Standard
	Cu	65	161.7	10.9	**-0.0086**	0.009	106.2	ug/L	173	Standard
	Zn	66	175.3	6.1	**-0.0687**	0.005	7.4	ug/L	130	Standard
>	**Ge**	72	498606.4	3.0				ug/L	491724	Standard
	As	75	-26.7	98.4	**0.0088**	0.025	280.9	ug/L	-25	Standard
	Se	82	16.5	23.4	**0.0653**	0.041	63.0	ug/L	12	Standard
	Se-1	77	55.0	16.7	**0.1158**	0.104	89.8	ug/L	57	Standard
>	**Ga**	71	146.7	26.5				mg/L	148	Standard
	Rb	85	28.3	62.0				ug/L	18	Standard
	Y	89	424941.7	0.7				ug/L	401845	Standard
>	**Rh**	103	51.7	27.9				ug/L	10	Standard
	Mo	98	218.0	16.8	**0.0834**	0.015	17.7	ug/L	12	Standard
	Ag	107	103.3	10.3	**0.0016**	0.002	104.0	ug/L	98	Standard
	Cd	111	15.6	39.7	**0.0033**	0.003	97.5	mg/L	11	Standard
	Cd	114	35.3	50.3	**0.0030**	0.004	124.6	ug/L	21	Standard
>	**In**	115	565960.7	1.0				ug/L	547487	Standard
	Sn	118	921.7	38.3	**0.0980**	0.067	68.7	ug/L	450	Standard
	Sb	123	408.0	24.4	**0.0853**	0.023	26.8	ug/L	105	Standard
	Ba	135	123.7	12.1	**0.0096**	0.008	87.6	ug/L	111	Standard
	Ce	140	18.3	63.0				ug/L	107	Standard
>	**Tb**	159	883902.4	1.6				ug/L	890342	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	63.7	25.9	**0.0050**	0.002	46.4	ug/L	19	Standard
	Tl	205	55.0	39.6	**0.0100**	0.004	36.9	ug/L	17	Standard
	Pb	206	285.3	5.4	**0.0043**	0.004	96.3	ug/L	247	Standard
	Pb	207	231.7	13.5	**0.0008**	0.008	949.4	ug/L	215	Standard
	Pb	208	973.0	3.2	**-0.0006**	0.002	406.9	ug/L	770	Standard
	U	238	35.7	23.5	**0.0052**	0.002	29.1	ug/L	13	Standard
>	**Bi**	209	499145.6	2.0				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.6835**	32.352	173.2	mg/L	2	Standard
Mg	24	31.7	50.8	**0.0049**	0.023	465.6	mg/L	35	Standard
K	39	15.0	33.3	**-0.0372**	0.026	69.8	mg/L	25	Standard
Ca	43	28.3	20.4	**0.2868**	1.247	434.6	mg/L	38	Standard
Fe	54	104.1	41.5	**-0.0380**	0.040	104.4	mg/L	126	Standard
Fe	57	216.7	17.3	**-0.2352**	0.133	56.4	mg/L	245	Standard
> **Sc-1**	45	25002.3	1.9				mg/L	25066	Standard
Cl	35	165048.8	0.9				ug/L	125857	Standard
Kr	83	2.7	21.7				ug/L	1	Standard
Br	81	1623.4	12.1				ug/L	1350	Standard
P	31	22124.5	3.3				ug/L	18393	Standard
S	34	4804.1	3.4				ug/L	3739	Standard
Sr	88	68.3	27.7				ug/L	78	Standard
C	12	66.7	31.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.0	193.9				mg/L	2	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	1761.8	7.8				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.400	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.374
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.206
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606089601
Sample Date/Time: Tuesday, June 21, 2016 18:25:31
Number of Replicates: 3
Autosampler Position: 346
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70103.6	3.0				ug/L	60176	Standard
	Be	9	30.0	16.7	**0.0268**	0.005	18.6	ug/L	5	Standard
	Al	27	3685234.3	1.1	**24.0854**	0.545	2.3	ug/L	832	Standard
	Sc	45	27947.4	2.4				ug/L	25066	Standard
	Ti	47	382.0	70.3	**1.6605**	1.282	77.2	ug/L	38	Standard
	V	51	1685.0	2.5	**0.0990**	0.013	12.7	ug/L	974	Standard
	Cr	52	9250.2	0.4	**0.4417**	0.034	7.7	ug/L	5792	Standard
	Cr	53	1403.4	4.4	**1.2193**	0.042	3.4	ug/L	347	Standard
	Mn	55	19012124.1	0.6	**2827.7756**	74.302	2.6	ug/L	1164	Standard
	Co	59	222392.0	0.8	**34.7165**	1.037	3.0	ug/L	303	Standard
	Ni	60	2226.5	4.2	**0.9867**	0.048	4.9	ug/L	291	Standard
	Cu	65	381.0	0.5	**0.1050**	0.004	3.5	ug/L	173	Standard
	Zn	66	3054.6	2.1	**2.5666**	0.027	1.1	ug/L	130	Standard
>	**Ge**	72	517022.9	2.2				ug/L	491724	Standard
	As	75	3484.3	1.7	**3.1917**	0.073	2.3	ug/L	-25	Standard
	Se	82	132.5	2.0	**1.1265**	0.041	3.6	ug/L	12	Standard
	Se-1	77	106.3	7.5	**0.7815**	0.106	13.5	ug/L	57	Standard
>	**Ga**	71	960.0	20.1				mg/L	148	Standard
	Rb	85	23004.1	0.8				ug/L	18	Standard
	Y	89	437717.7	0.3				ug/L	401845	Standard
>	**Rh**	103	45.0	38.5				ug/L	10	Standard
	Mo	98	134.7	12.0	**0.0478**	0.006	13.5	ug/L	12	Standard
	Ag	107	109.0	10.4	**0.0018**	0.002	91.3	ug/L	98	Standard
	Cd	111	14.4	47.1	**0.0025**	0.003	137.0	mg/L	11	Standard
	Cd	114	41.9	23.5	**0.0041**	0.002	49.9	ug/L	21	Standard
>	**In**	115	587619.1	1.4				ug/L	547487	Standard
	Sn	118	860.0	5.8	**0.0802**	0.008	9.4	ug/L	450	Standard
	Sb	123	233.8	26.5	**0.0436**	0.013	29.9	ug/L	105	Standard
	Ba	135	48272.8	1.0	**24.4439**	0.117	0.5	ug/L	111	Standard
	Ce	140	18765.0	11.4				ug/L	107	Standard
>	**Tb**	159	938001.0	0.8				ug/L	890342	Standard
	Ho	165	298.3	19.3				ug/L	10	Standard
	Tl	203	150.3	4.3	**0.0152**	0.001	6.0	ug/L	19	Standard
	Tl	205	115.0	15.7	**0.0185**	0.003	14.4	ug/L	17	Standard
	Pb	206	534.3	3.6	**0.0487**	0.004	8.5	ug/L	247	Standard
	Pb	207	488.7	1.3	**0.0521**	0.002	4.0	ug/L	215	Standard
	Pb	208	1952.4	0.5	**0.0513**	0.000	0.7	ug/L	770	Standard
	U	238	255.0	5.1	**0.0392**	0.002	5.2	ug/L	13	Standard
>	**Bi**	209	534128.2	0.7				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	7298.4	1.4	**8.9592**	0.320	3.6	mg/L	35	Standard
K	39	96.7	31.6	**0.3179**	0.126	39.6	mg/L	25	Standard
Ca	43	46.7	16.4	**2.9434**	1.521	51.7	mg/L	38	Standard
Fe	54	23061.8	3.5	**19.5103**	1.160	5.9	mg/L	126	Standard
Fe	57	5869.5	4.4	**19.6834**	1.282	6.5	mg/L	245	Standard
> **Sc-1**	45	27947.4	2.4				mg/L	25066	Standard
Cl	35	163080.4	1.3				ug/L	125857	Standard
Kr	83	4.3	48.0				ug/L	1	Standard
Br	81	26733.6	2.6				ug/L	1350	Standard
P	31	26311.2	1.3				ug/L	18393	Standard
S	34	4997.5	0.8				ug/L	3739	Standard
Sr	88	113.3	12.7				ug/L	78	Standard
C	12	230.0	4.3				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	393.7	7.8				mg/L	2	Standard
Ho-1	165	298.3	19.3				mg/L	10	Standard
Er	166	270.0	19.2				mg/L	23	Standard
I	127	1056071.3	10.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.498	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.145	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.330
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.158
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606089602
Sample Date/Time: Tuesday, June 21, 2016 18:28:42
Number of Replicates: 3
Autosampler Position: 347
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66890.7	2.2				ug/L	60176	Standard
	Be	9	23.3	24.7	**0.0201**	0.007	32.5	ug/L	5	Standard
	Al	27	149805.7	3.0	**1.0175**	0.011	1.1	ug/L	832	Standard
	Sc	45	26154.2	3.3				ug/L	25066	Standard
	Ti	47	179.3	10.3	**0.7022**	0.105	15.0	ug/L	38	Standard
	V	51	1401.7	5.1	**0.0601**	0.011	18.8	ug/L	974	Standard
	Cr	52	10512.0	0.7	**0.6764**	0.028	4.1	ug/L	5792	Standard
	Cr	53	1416.7	9.0	**1.2841**	0.157	12.2	ug/L	347	Standard
	Mn	55	10409.3	6.2	**1.3787**	0.114	8.3	ug/L	1164	Standard
	Co	59	540.0	3.3	**0.0375**	0.003	8.6	ug/L	303	Standard
	Ni	60	844.0	0.2	**0.2688**	0.005	1.8	ug/L	291	Standard
	Cu	65	296.7	5.6	**0.0648**	0.011	17.1	ug/L	173	Standard
	Zn	66	1902.8	4.1	**1.5621**	0.096	6.1	ug/L	130	Standard
>	**Ge**	72	502257.1	1.3				ug/L	491724	Standard
	As	75	8.2	485.9	**0.0416**	0.037	88.7	ug/L	-25	Standard
	Se	82	33.9	33.4	**0.2274**	0.104	45.7	ug/L	12	Standard
	Se-1	77	70.7	24.9	**0.3292**	0.242	73.5	ug/L	57	Standard
>	**Ga**	71	326.7	26.3				mg/L	148	Standard
	Rb	85	8215.6	2.7				ug/L	18	Standard
	Y	89	444333.1	2.2				ug/L	401845	Standard
>	**Rh**	103	31.7	48.2				ug/L	10	Standard
	Mo	98	46.8	15.4	**0.0138**	0.002	17.7	ug/L	12	Standard
	Ag	107	73.3	4.4	**-0.0037**	0.000	8.2	ug/L	98	Standard
	Cd	111	8.2	45.8	**-0.0006**	0.002	305.8	mg/L	11	Standard
	Cd	114	19.1	24.5	**-0.0005**	0.001	199.0	ug/L	21	Standard
>	**In**	115	583126.7	2.0				ug/L	547487	Standard
	Sn	118	593.3	2.7	**0.0333**	0.003	10.0	ug/L	450	Standard
	Sb	123	144.2	19.6	**0.0243**	0.007	28.0	ug/L	105	Standard
	Ba	135	7469.5	3.8	**3.7635**	0.074	2.0	ug/L	111	Standard
	Ce	140	1718.4	6.1				ug/L	107	Standard
>	**Tb**	159	899867.4	0.7				ug/L	890342	Standard
	Ho	165	30.0	66.7				ug/L	10	Standard
	Tl	203	67.7	10.9	**0.0053**	0.001	16.4	ug/L	19	Standard
	Tl	205	71.7	22.4	**0.0124**	0.003	20.6	ug/L	17	Standard
	Pb	206	312.7	6.7	**0.0088**	0.004	47.7	ug/L	247	Standard
	Pb	207	252.0	2.7	**0.0044**	0.002	38.0	ug/L	215	Standard
	Pb	208	1132.0	3.9	**0.0079**	0.002	19.1	ug/L	770	Standard
	U	238	82.7	5.0	**0.0128**	0.001	6.4	ug/L	13	Standard
>	**Bi**	209	508030.6	1.7				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.2590**	31.617	173.2	mg/L	2	Standard
Mg	24	2870.3	3.9	**3.7404**	0.081	2.2	mg/L	35	Standard
K	39	155.0	5.6	**0.6292**	0.059	9.4	mg/L	25	Standard
Ca	43	26.7	28.6	**-0.2827**	1.489	526.7	mg/L	38	Standard
Fe	54	167.0	2.0	**0.0156**	0.008	50.9	mg/L	126	Standard
Fe	57	218.3	14.7	**-0.2671**	0.094	35.1	mg/L	245	Standard
> **Sc-1**	45	26154.2	3.3				mg/L	25066	Standard
Cl	35	154406.3	2.1				ug/L	125857	Standard
Kr	83	2.7	21.7				ug/L	1	Standard
Br	81	5824.5	3.9				ug/L	1350	Standard
P	31	26713.5	1.6				ug/L	18393	Standard
S	34	4210.6	7.3				ug/L	3739	Standard
Sr	88	103.3	42.3				ug/L	78	Standard
C	12	70.0	28.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	71.7	36.0				mg/L	2	Standard
Ho-1	165	30.0	66.7				mg/L	10	Standard
Er	166	33.3	75.5				mg/L	23	Standard
I	127	32674.7	51.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.159	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.142	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.510
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.971
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606089603
Sample Date/Time: Tuesday, June 21, 2016 18:31:54
Number of Replicates: 3
Autosampler Position: 348
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70073.3	1.0				ug/L	60176	Standard
	Be	9	81.7	39.4	**0.0886**	0.038	43.1	ug/L	5	Standard
	Al	27	1228150.4	2.6	**8.0209**	0.174	2.2	ug/L	832	Standard
	Sc	45	26367.9	1.0				ug/L	25066	Standard
	Ti	47	312.7	10.6	**1.3625**	0.172	12.6	ug/L	38	Standard
	V	51	2417.3	6.1	**0.2237**	0.026	11.6	ug/L	974	Standard
	Cr	52	10006.0	1.3	**0.5837**	0.012	2.0	ug/L	5792	Standard
	Cr	53	1740.1	6.8	**1.6504**	0.119	7.2	ug/L	347	Standard
	Mn	55	87073.6	2.8	**12.9889**	0.479	3.7	ug/L	1164	Standard
	Co	59	5750.4	2.7	**0.8671**	0.033	3.8	ug/L	303	Standard
	Ni	60	2238.5	3.1	**1.0160**	0.026	2.5	ug/L	291	Standard
	Cu	65	1573.1	4.2	**0.7551**	0.029	3.8	ug/L	173	Standard
	Zn	66	4274.9	3.8	**3.7627**	0.142	3.8	ug/L	130	Standard
>	**Ge**	72	507060.9	1.0				ug/L	491724	Standard
	As	75	114.4	32.4	**0.1397**	0.035	24.9	ug/L	-25	Standard
	Se	82	42.1	12.0	**0.3018**	0.050	16.5	ug/L	12	Standard
	Se-1	77	82.3	10.6	**0.4808**	0.128	26.6	ug/L	57	Standard
>	**Ga**	71	333.3	11.3				mg/L	148	Standard
	Rb	85	29852.7	2.6				ug/L	18	Standard
	Y	89	429423.7	0.4				ug/L	401845	Standard
>	**Rh**	103	41.7	6.9				ug/L	10	Standard
	Mo	98	55.7	3.8	**0.0175**	0.001	6.0	ug/L	12	Standard
	Ag	107	93.7	1.6	**-0.0003**	0.000	76.9	ug/L	98	Standard
	Cd	111	26.6	32.0	**0.0087**	0.004	50.4	mg/L	11	Standard
	Cd	114	73.0	10.0	**0.0107**	0.001	13.2	ug/L	21	Standard
>	**In**	115	577865.9	1.0				ug/L	547487	Standard
	Sn	118	510.0	18.7	**0.0191**	0.018	95.2	ug/L	450	Standard
	Sb	123	155.5	12.6	**0.0270**	0.004	15.1	ug/L	105	Standard
	Ba	135	59410.3	1.7	**30.6085**	0.771	2.5	ug/L	111	Standard
	Ce	140	19626.0	1.7				ug/L	107	Standard
>	**Tb**	159	917847.8	1.6				ug/L	890342	Standard
	Ho	165	385.0	3.4				ug/L	10	Standard
	Tl	203	165.0	14.8	**0.0175**	0.003	17.6	ug/L	19	Standard
	Tl	205	135.0	9.8	**0.0220**	0.002	9.0	ug/L	17	Standard
	Pb	206	734.4	1.2	**0.0910**	0.002	2.3	ug/L	247	Standard
	Pb	207	620.7	4.4	**0.0836**	0.007	8.5	ug/L	215	Standard
	Pb	208	2430.4	2.1	**0.0821**	0.004	5.1	ug/L	770	Standard
	U	238	108.0	7.6	**0.0166**	0.001	8.0	ug/L	13	Standard
>	**Bi**	209	520995.4	0.8				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.6640**	30.586	173.2	mg/L	2	Standard
Mg	24	2681.9	2.8	**3.4633**	0.064	1.8	mg/L	35	Standard
K	39	326.7	9.2	**1.4367**	0.158	11.0	mg/L	25	Standard
Ca	43	23.3	24.7	**-0.9469**	1.132	119.5	mg/L	38	Standard
Fe	54	1418.7	4.6	**1.1433**	0.057	5.0	mg/L	126	Standard
Fe	57	535.0	14.5	**0.9148**	0.284	31.1	mg/L	245	Standard
Sc-1	45	26367.9	1.0				mg/L	25066	Standard
Cl	35	152857.2	1.0				ug/L	125857	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	6364.7	4.2				ug/L	1350	Standard
P	31	24361.2	2.7				ug/L	18393	Standard
S	34	4130.6	1.9				ug/L	3739	Standard
Sr	88	91.7	13.7				ug/L	78	Standard
C	12	86.7	17.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	587.2	3.8				mg/L	2	Standard
Ho-1	165	385.0	3.4				mg/L	10	Standard
Er	166	406.7	11.4				mg/L	23	Standard
I	127	49898.9	6.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.447	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.119	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.549
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.548
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606089604
Sample Date/Time: Tuesday, June 21, 2016 18:35:05
Number of Replicates: 3
Autosampler Position: 349
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68337.1	1.8				ug/L	60176	Standard
	Be	9	20.0	50.0	**0.0155**	0.012	78.6	ug/L	5	Standard
	Al	27	4276567.2	0.3	**28.6693**	0.604	2.1	ug/L	832	Standard
	Sc	45	26610.0	1.8				ug/L	25066	Standard
	Ti	47	192.3	15.6	**0.7599**	0.169	22.2	ug/L	38	Standard
	V	51	1621.9	5.7	**0.0939**	0.019	19.8	ug/L	974	Standard
	Cr	52	9092.7	3.3	**0.4438**	0.038	8.7	ug/L	5792	Standard
	Cr	53	1545.1	7.7	**1.4179**	0.111	7.8	ug/L	347	Standard
	Mn	55	17973806.3	0.6	**2724.7615**	75.997	2.8	ug/L	1164	Standard
	Co	59	227528.7	0.7	**36.1992**	0.876	2.4	ug/L	303	Standard
	Ni	60	2730.6	3.7	**1.2807**	0.043	3.3	ug/L	291	Standard
	Cu	65	354.7	4.1	**0.0946**	0.010	10.1	ug/L	173	Standard
	Zn	66	3333.7	3.1	**2.8812**	0.076	2.6	ug/L	130	Standard
>	**Ge**	72	507285.0	2.2				ug/L	491724	Standard
	As	75	2855.6	3.6	**2.6720**	0.119	4.5	ug/L	-25	Standard
	Se	82	109.9	10.6	**0.9366**	0.098	10.5	ug/L	12	Standard
	Se-1	77	112.3	4.4	**0.8920**	0.086	9.6	ug/L	57	Standard
>	**Ga**	71	996.7	5.1				mg/L	148	Standard
	Rb	85	22107.8	1.5				ug/L	18	Standard
	Y	89	431397.8	1.6				ug/L	401845	Standard
>	**Rh**	103	48.3	74.8				ug/L	10	Standard
	Mo	98	71.9	10.1	**0.0241**	0.003	12.0	ug/L	12	Standard
	Ag	107	78.3	8.7	**-0.0027**	0.001	37.5	ug/L	98	Standard
	Cd	111	9.9	26.7	**0.0003**	0.001	431.1	mg/L	11	Standard
	Cd	114	28.2	29.3	**0.0014**	0.002	118.5	ug/L	21	Standard
>	**In**	115	573974.7	0.6				ug/L	547487	Standard
	Sn	118	751.7	10.6	**0.0641**	0.015	23.9	ug/L	450	Standard
	Sb	123	139.4	12.3	**0.0237**	0.004	16.5	ug/L	105	Standard
	Ba	135	41452.3	0.6	**21.4826**	0.241	1.1	ug/L	111	Standard
	Ce	140	20226.9	8.5				ug/L	107	Standard
>	**Tb**	159	913197.4	0.8				ug/L	890342	Standard
	Ho	165	323.3	19.1				ug/L	10	Standard
	Tl	203	108.7	8.7	**0.0105**	0.001	13.3	ug/L	19	Standard
	Tl	205	98.3	5.9	**0.0165**	0.001	6.6	ug/L	17	Standard
	Pb	206	497.3	2.2	**0.0452**	0.002	5.4	ug/L	247	Standard
	Pb	207	457.7	4.4	**0.0492**	0.003	6.7	ug/L	215	Standard
	Pb	208	1899.7	0.7	**0.0525**	0.001	2.6	ug/L	770	Standard
	U	238	173.0	11.0	**0.0274**	0.003	12.4	ug/L	13	Standard
>	**Bi**	209	514279.4	1.2				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.3614**	30.062	173.2	mg/L	2	Standard
Mg	24	6924.9	3.0	**8.9278**	0.424	4.8	mg/L	35	Standard
K	39	88.3	28.5	**0.3038**	0.126	41.5	mg/L	25	Standard
Ca	43	50.0	26.5	**3.9407**	2.346	59.5	mg/L	38	Standard
Fe	54	22062.2	6.3	**19.5992**	1.505	7.7	mg/L	126	Standard
Fe	57	5569.4	4.3	**19.5983**	0.911	4.6	mg/L	245	Standard
Sc-1	45	26610.0	1.8				mg/L	25066	Standard
Cl	35	158607.9	0.7				ug/L	125857	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	25608.3	1.9				ug/L	1350	Standard
P	31	25134.2	0.8				ug/L	18393	Standard
S	34	4804.1	1.5				ug/L	3739	Standard
Sr	88	91.7	45.7				ug/L	78	Standard
C	12	170.0	11.8				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	416.4	11.7				mg/L	2	Standard
Ho-1	165	323.3	19.1				mg/L	10	Standard
Er	166	283.3	8.9				mg/L	23	Standard
I	127	1043280.7	9.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		113.562	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.165	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.838
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.213
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606089605
Sample Date/Time: Tuesday, June 21, 2016 18:38:17
Number of Replicates: 3
Autosampler Position: 350
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67501.7	0.2				ug/L	60176	Standard
	Be	9	70.0	12.4	**0.0779**	0.011	14.0	ug/L	5	Standard
	Al	27	1172906.0	1.5	**7.9523**	0.131	1.6	ug/L	832	Standard
	Sc	45	26443.1	2.2				ug/L	25066	Standard
	Ti	47	221.7	20.6	**0.9153**	0.226	24.7	ug/L	38	Standard
	V	51	1454.3	19.9	**0.0686**	0.046	67.3	ug/L	974	Standard
	Cr	52	9092.7	2.6	**0.4577**	0.038	8.3	ug/L	5792	Standard
	Cr	53	1685.1	8.0	**1.6053**	0.165	10.3	ug/L	347	Standard
	Mn	55	65030.3	1.6	**9.7392**	0.204	2.1	ug/L	1164	Standard
	Co	59	5197.2	1.5	**0.7866**	0.010	1.3	ug/L	303	Standard
	Ni	60	1995.5	3.6	**0.8953**	0.033	3.7	ug/L	291	Standard
	Cu	65	1224.4	4.2	**0.5725**	0.026	4.5	ug/L	173	Standard
	Zn	66	3995.9	1.1	**3.5378**	0.062	1.7	ug/L	130	Standard
>	**Ge**	72	502248.6	0.7				ug/L	491724	Standard
	As	75	42.4	33.0	**0.0736**	0.013	18.2	ug/L	-25	Standard
	Se	82	42.1	17.3	**0.3052**	0.067	21.9	ug/L	12	Standard
	Se-1	77	99.7	4.9	**0.7312**	0.071	9.7	ug/L	57	Standard
>	**Ga**	71	340.0	25.1				mg/L	148	Standard
	Rb	85	28431.7	1.0				ug/L	18	Standard
	Y	89	432391.4	0.5				ug/L	401845	Standard
>	**Rh**	103	25.0	0.0				ug/L	10	Standard
	Mo	98	25.1	12.7	**0.0054**	0.001	24.9	ug/L	12	Standard
	Ag	107	84.0	10.6	**-0.0020**	0.001	71.0	ug/L	98	Standard
	Cd	111	29.3	29.0	**0.0099**	0.004	41.4	mg/L	11	Standard
	Cd	114	82.1	22.2	**0.0125**	0.004	31.8	ug/L	21	Standard
>	**In**	115	582868.3	1.2				ug/L	547487	Standard
	Sn	118	541.7	7.4	**0.0239**	0.006	27.0	ug/L	450	Standard
	Sb	123	106.5	7.0	**0.0159**	0.002	12.1	ug/L	105	Standard
	Ba	135	57467.5	1.5	**29.3464**	0.109	0.4	ug/L	111	Standard
	Ce	140	10703.9	25.2				ug/L	107	Standard
>	**Tb**	159	910811.6	2.1				ug/L	890342	Standard
	Ho	165	225.0	13.5				ug/L	10	Standard
	Tl	203	137.0	7.6	**0.0141**	0.001	9.3	ug/L	19	Standard
	Tl	205	136.7	14.8	**0.0225**	0.003	13.7	ug/L	17	Standard
	Pb	206	419.0	1.3	**0.0293**	0.002	5.4	ug/L	247	Standard
	Pb	207	358.0	1.7	**0.0271**	0.002	6.9	ug/L	215	Standard
	Pb	208	1368.0	1.1	**0.0209**	0.001	6.4	ug/L	770	Standard
	U	238	55.7	17.4	**0.0082**	0.002	18.6	ug/L	13	Standard
>	**Bi**	209	515104.9	0.7				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	2638.6	3.2	**3.3993**	0.161	4.7	mg/L	35	Standard
K	39	276.7	19.3	**1.1956**	0.256	21.4	mg/L	25	Standard
Ca	43	21.7	48.0	**-1.2810**	1.922	150.1	mg/L	38	Standard
Fe	54	612.6	5.0	**0.4150**	0.036	8.6	mg/L	126	Standard
Fe	57	326.7	24.2	**0.1354**	0.321	237.0	mg/L	245	Standard
> **Sc-1**	45	26443.1	2.2				mg/L	25066	Standard
Cl	35	151770.4	0.9				ug/L	125857	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	6438.0	7.0				ug/L	1350	Standard
P	31	24865.4	2.6				ug/L	18393	Standard
S	34	4355.6	4.7				ug/L	3739	Standard
Sr	88	85.0	10.2				ug/L	78	Standard
C	12	100.0	20.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	393.3	8.6				mg/L	2	Standard
Ho-1	165	225.0	13.5				mg/L	10	Standard
Er	166	210.0	16.5				mg/L	23	Standard
I	127	49125.0	32.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.174	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.140	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.463
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.377
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606089607
Sample Date/Time: Tuesday, June 21, 2016 18:41:28
Number of Replicates: 3
Autosampler Position: 351
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64582.3	0.3				ug/L	60176	Standard
	Be	9	10.0	50.0	**0.0040**	0.007	164.6	ug/L	5	Standard
	Al	27	17276.5	1.9	**0.1142**	0.003	2.4	ug/L	832	Standard
	Sc	45	25347.9	2.5				ug/L	25066	Standard
	Ti	47	28.3	10.8	**-0.0659**	0.014	21.5	ug/L	38	Standard
	V	51	1082.8	8.0	**0.0054**	0.014	253.7	ug/L	974	Standard
	Cr	52	8423.3	1.6	**0.3388**	0.029	8.5	ug/L	5792	Standard
	Cr	53	728.4	2.2	**0.4488**	0.025	5.7	ug/L	347	Standard
	Mn	55	3248.4	11.3	**0.2760**	0.059	21.5	ug/L	1164	Standard
	Co	59	268.3	3.6	**-0.0067**	0.002	28.2	ug/L	303	Standard
	Ni	60	364.0	1.4	**0.0051**	0.004	75.7	ug/L	291	Standard
	Cu	65	796.4	1.2	**0.3329**	0.002	0.5	ug/L	173	Standard
	Zn	66	1386.7	3.7	**1.0581**	0.053	5.0	ug/L	130	Standard
>	**Ge**	72	508475.6	0.8				ug/L	491724	Standard
	As	75	-61.1	19.7	**-0.0224**	0.011	51.1	ug/L	-25	Standard
	Se	82	17.3	24.6	**0.0693**	0.041	59.1	ug/L	12	Standard
	Se-1	77	55.3	1.0	**0.1076**	0.014	12.8	ug/L	57	Standard
>	**Ga**	71	210.0	8.2				mg/L	148	Standard
	Rb	85	103.3	12.2				ug/L	18	Standard
	Y	89	417086.5	1.0				ug/L	401845	Standard
>	**Rh**	103	30.0	16.7				ug/L	10	Standard
	Mo	98	23.7	24.8	**0.0052**	0.002	45.5	ug/L	12	Standard
	Ag	107	74.0	14.1	**-0.0031**	0.002	58.5	ug/L	98	Standard
	Cd	111	3.6	42.1	**-0.0028**	0.001	28.2	mg/L	11	Standard
	Cd	114	4.0	390.1	**-0.0036**	0.003	93.1	ug/L	21	Standard
>	**In**	115	557380.8	0.4				ug/L	547487	Standard
	Sn	118	1653.4	11.4	**0.2386**	0.035	14.5	ug/L	450	Standard
	Sb	123	101.0	13.9	**0.0157**	0.003	21.0	ug/L	105	Standard
	Ba	135	275.0	12.7	**0.0916**	0.019	21.0	ug/L	111	Standard
	Ce	140	46.7	27.0				ug/L	107	Standard
>	**Tb**	159	881433.0	0.7				ug/L	890342	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	15.3	24.7	**-0.0015**	0.001	32.6	ug/L	19	Standard
	Tl	205	18.3	41.7	**0.0039**	0.001	30.9	ug/L	17	Standard
	Pb	206	260.7	4.2	**-0.0017**	0.002	99.9	ug/L	247	Standard
	Pb	207	227.7	1.7	**-0.0009**	0.001	146.9	ug/L	215	Standard
	Pb	208	867.3	2.7	**-0.0078**	0.002	22.4	ug/L	770	Standard
	U	238	4.7	24.7	**-0.0001**	0.000	377.0	ug/L	13	Standard
>	**Bi**	209	506624.8	1.1				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.8980**	30.992	173.2	mg/L	2	Standard
Mg	24	78.3	16.1	**0.0675**	0.017	24.9	mg/L	35	Standard
K	39	31.7	24.1	**0.0432**	0.033	77.4	mg/L	25	Standard
Ca	43	33.3	45.8	**1.2167**	3.121	256.5	mg/L	38	Standard
Fe	54	130.8	25.6	**-0.0136**	0.033	239.4	mg/L	126	Standard
Fe	57	228.3	19.7	**-0.1998**	0.177	88.7	mg/L	245	Standard
> **Sc-1**	45	25347.9	2.5				mg/L	25066	Standard
Cl	35	151435.7	0.5				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	1560.1	4.4				ug/L	1350	Standard
P	31	20533.9	2.0				ug/L	18393	Standard
S	34	4339.0	6.0				ug/L	3739	Standard
Sr	88	95.0	38.0				ug/L	78	Standard
C	12	73.3	34.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.4	106.9				mg/L	2	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	7471.9	14.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.323	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.407	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.807
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.692
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606091601
Sample Date/Time: Tuesday, June 21, 2016 18:44:40
Number of Replicates: 3
Autosampler Position: 352
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67190.3	1.4				ug/L	60176	Standard
	Be	9	13.3	57.3	**0.0077**	0.010	125.6	ug/L	5	Standard
	Al	27	4059977.7	0.1	**27.6783**	0.411	1.5	ug/L	832	Standard
	Sc	45	26110.8	1.4				ug/L	25066	Standard
	Ti	47	49.3	11.2	**0.0353**	0.029	83.4	ug/L	38	Standard
	V	51	1268.5	6.0	**0.0323**	0.015	45.0	ug/L	974	Standard
	Cr	52	9251.5	2.7	**0.4413**	0.053	12.0	ug/L	5792	Standard
	Cr	53	838.4	6.1	**0.5622**	0.063	11.2	ug/L	347	Standard
	Mn	55	71645.4	5.8	**10.4299**	0.498	4.8	ug/L	1164	Standard
	Co	59	506.7	18.5	**0.0297**	0.014	46.5	ug/L	303	Standard
	Ni	60	855.0	1.3	**0.2614**	0.011	4.1	ug/L	291	Standard
	Cu	65	780.7	0.8	**0.3173**	0.002	0.5	ug/L	173	Standard
	Zn	66	4612.7	3.9	**3.9937**	0.147	3.7	ug/L	130	Standard
>	**Ge**	72	517216.1	1.1				ug/L	491724	Standard
	As	75	82.9	23.2	**0.1089**	0.017	15.4	ug/L	-25	Standard
	Se	82	25.8	18.1	**0.1443**	0.045	31.4	ug/L	12	Standard
	Se-1	77	58.3	9.4	**0.1352**	0.074	54.8	ug/L	57	Standard
>	**Ga**	71	198.3	18.6				mg/L	148	Standard
	Rb	85	8013.8	3.9				ug/L	18	Standard
	Y	89	419780.8	0.6				ug/L	401845	Standard
>	**Rh**	103	95.0	13.9				ug/L	10	Standard
	Mo	98	354.8	11.3	**0.1391**	0.018	13.1	ug/L	12	Standard
	Ag	107	124.3	40.3	**0.0052**	0.009	167.0	ug/L	98	Standard
	Cd	111	42.3	55.1	**0.0173**	0.012	72.3	mg/L	11	Standard
	Cd	114	113.9	89.0	**0.0200**	0.022	110.6	ug/L	21	Standard
>	**In**	115	563906.1	1.5				ug/L	547487	Standard
	Sn	118	1531.7	4.6	**0.2123**	0.010	4.8	ug/L	450	Standard
	Sb	123	210.1	8.4	**0.0405**	0.005	11.6	ug/L	105	Standard
	Ba	135	162094.5	0.7	**85.6790**	1.283	1.5	ug/L	111	Standard
	Ce	140	216.7	26.5				ug/L	107	Standard
>	**Tb**	159	900794.6	1.8				ug/L	890342	Standard
	Ho	165	15.0	57.7				ug/L	10	Standard
	Tl	203	104.3	57.0	**0.0100**	0.008	79.7	ug/L	19	Standard
	Tl	205	83.3	27.1	**0.0141**	0.004	26.2	ug/L	17	Standard
	Pb	206	391.3	13.8	**0.0236**	0.012	51.7	ug/L	247	Standard
	Pb	207	338.7	17.1	**0.0227**	0.014	61.6	ug/L	215	Standard
	Pb	208	1279.0	4.7	**0.0155**	0.005	30.6	ug/L	770	Standard
	U	238	198.3	8.7	**0.0314**	0.003	10.7	ug/L	13	Standard
>	**Bi**	209	516668.6	1.7				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.8980**	30.992	173.2	mg/L	2	Standard
Mg	24	4872.5	2.7	**6.3892**	0.242	3.8	mg/L	35	Standard
K	39	126.7	27.7	**0.4955**	0.176	35.6	mg/L	25	Standard
Ca	43	53.3	5.4	**4.7635**	0.439	9.2	mg/L	38	Standard
Fe	54	177.6	14.5	**0.0254**	0.024	95.7	mg/L	126	Standard
Fe	57	276.7	15.4	**-0.0443**	0.146	329.7	mg/L	245	Standard
> **Sc-1**	45	26110.8	1.4				mg/L	25066	Standard
Cl	35	176149.6	1.9				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	3207.0	11.6				ug/L	1350	Standard
P	31	23131.2	13.3				ug/L	18393	Standard
S	34	4474.0	0.8				ug/L	3739	Standard
Sr	88	226.7	10.9				ug/L	78	Standard
C	12	83.3	25.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	16.2	38.3				mg/L	2	Standard
Ho-1	165	15.0	57.7				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	28196.2	4.0				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.657	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.184	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.999
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.688
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606091602
Sample Date/Time: Tuesday, June 21, 2016 18:47:51
Number of Replicates: 3
Autosampler Position: 353
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67906.9	1.3				ug/L	60176	Standard
	Be	9	10.0	50.0	**0.0033**	0.006	187.8	ug/L	5	Standard
	Al	27	2296072.1	1.5	**15.4843**	0.344	2.2	ug/L	832	Standard
	Sc	45	25872.1	5.5				ug/L	25066	Standard
	Ti	47	62.3	24.1	**0.1098**	0.081	73.9	ug/L	38	Standard
	V	51	1552.5	12.5	**0.0855**	0.031	36.6	ug/L	974	Standard
	Cr	52	9142.1	3.0	**0.4684**	0.023	4.9	ug/L	5792	Standard
	Cr	53	858.4	6.3	**0.6172**	0.055	8.8	ug/L	347	Standard
	Mn	55	243622.7	0.7	**37.1709**	0.798	2.1	ug/L	1164	Standard
	Co	59	1785.4	6.9	**0.2386**	0.020	8.4	ug/L	303	Standard
	Ni	60	1792.4	0.5	**0.7874**	0.016	2.0	ug/L	291	Standard
	Cu	65	962.4	1.2	**0.4305**	0.012	2.7	ug/L	173	Standard
	Zn	66	2184.5	1.1	**1.8327**	0.052	2.8	ug/L	130	Standard
>	**Ge**	72	501058.6	1.4				ug/L	491724	Standard
	As	75	100.6	11.3	**0.1281**	0.012	9.4	ug/L	-25	Standard
	Se	82	31.7	15.7	**0.2087**	0.052	24.7	ug/L	12	Standard
	Se-1	77	73.3	7.9	**0.3696**	0.094	25.6	ug/L	57	Standard
>	**Ga**	71	198.3	2.9				mg/L	148	Standard
	Rb	85	8319.0	2.0				ug/L	18	Standard
	Y	89	432620.5	1.7				ug/L	401845	Standard
>	**Rh**	103	35.0	14.3				ug/L	10	Standard
	Mo	98	238.4	19.0	**0.0874**	0.016	18.4	ug/L	12	Standard
	Ag	107	135.0	77.0	**0.0057**	0.016	279.8	ug/L	98	Standard
	Cd	111	47.6	114.6	**0.0185**	0.026	142.4	mg/L	11	Standard
	Cd	114	128.6	115.8	**0.0214**	0.030	138.7	ug/L	21	Standard
>	**In**	115	590384.4	2.1				ug/L	547487	Standard
	Sn	118	671.7	10.1	**0.0460**	0.013	27.4	ug/L	450	Standard
	Sb	123	237.2	55.9	**0.0439**	0.028	63.9	ug/L	105	Standard
	Ba	135	31177.4	0.9	**15.6954**	0.181	1.2	ug/L	111	Standard
	Ce	140	1276.7	10.5				ug/L	107	Standard
>	**Tb**	159	916339.4	2.6				ug/L	890342	Standard
	Ho	165	70.0	7.1				ug/L	10	Standard
	Tl	203	237.7	124.8	**0.0268**	0.038	140.4	ug/L	19	Standard
	Tl	205	80.0	33.1	**0.0135**	0.004	29.6	ug/L	17	Standard
	Pb	206	429.0	29.5	**0.0310**	0.024	78.2	ug/L	247	Standard
	Pb	207	341.7	30.1	**0.0231**	0.022	93.1	ug/L	215	Standard
	Pb	208	1332.4	10.6	**0.0186**	0.008	40.8	ug/L	770	Standard
	U	238	141.3	19.4	**0.0221**	0.004	18.5	ug/L	13	Standard
>	**Bi**	209	515955.1	1.9				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	2985.3	1.9	**3.9427**	0.232	5.9	mg/L	35	Standard
K	39	105.0	19.0	**0.3991**	0.123	30.7	mg/L	25	Standard
Ca	43	45.0	29.4	**3.3646**	2.869	85.3	mg/L	38	Standard
Fe	54	322.3	15.6	**0.1588**	0.032	20.1	mg/L	126	Standard
Fe	57	316.7	8.7	**0.1231**	0.144	117.2	mg/L	245	Standard
Sc-1	45	25872.1	5.5				mg/L	25066	Standard
Cl	35	186002.7	0.3				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	3327.0	4.9				ug/L	1350	Standard
P	31	21338.4	3.1				ug/L	18393	Standard
S	34	4454.0	2.0				ug/L	3739	Standard
Sr	88	85.0	75.1				ug/L	78	Standard
C	12	86.7	40.5				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	102.7	23.6				mg/L	2	Standard
Ho-1	165	70.0	7.1				mg/L	10	Standard
Er	166	83.3	45.4				mg/L	23	Standard
I	127	15337.8	5.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.847	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.898	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.835
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.546
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 18:51:04
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63442.7	3.5				ug/L	60176	Standard
	Be	9	40860.0	2.2	**54.0020**	1.449	2.7	ug/L	5	Standard
	Al	27	6937882.5	1.0	**50.1277**	1.614	3.2	ug/L	832	Standard
	Sc	45	25438.0	2.5				ug/L	25066	Standard
	Ti	47	21024.9	0.5	**106.0299**	0.919	0.9	ug/L	38	Standard
	V	51	323750.5	1.3	**52.9773**	0.236	0.4	ug/L	974	Standard
	Cr	52	348011.5	1.4	**52.4939**	0.728	1.4	ug/L	5792	Standard
	Cr	53	43766.5	1.1	**51.8369**	0.281	0.5	ug/L	347	Standard
	Mn	55	333840.5	2.1	**50.7327**	1.510	3.0	ug/L	1164	Standard
	Co	59	335417.2	1.0	**53.7424**	1.033	1.9	ug/L	303	Standard
	Ni	60	95144.1	1.0	**51.4310**	0.379	0.7	ug/L	291	Standard
	Cu	65	94656.8	0.9	**51.5587**	0.282	0.5	ug/L	173	Standard
	Zn	66	55176.0	1.3	**51.7065**	1.118	2.2	ug/L	130	Standard
>	Ge	72	503835.9	1.3				ug/L	491724	Standard
	As	75	55580.2	0.8	**51.7148**	0.495	1.0	ug/L	-25	Standard
	Se	82	5649.2	1.5	**53.2452**	1.272	2.4	ug/L	12	Standard
	Se-1	77	3911.5	2.0	**53.3712**	1.215	2.3	ug/L	57	Standard
>	Ga	71	175.0	20.6				mg/L	148	Standard
	Rb	85	773.4	10.9				ug/L	18	Standard
	Y	89	413055.9	4.2				ug/L	401845	Standard
>	Rh	103	48.3	15.8				ug/L	10	Standard
	Mo	98	250127.2	1.6	**103.9799**	1.624	1.6	ug/L	12	Standard
	Ag	107	312907.8	0.6	**52.9908**	0.412	0.8	ug/L	98	Standard
	Cd	111	99454.2	0.8	**52.8512**	0.382	0.7	mg/L	11	Standard
	Cd	114	242360.3	0.7	**52.9421**	0.765	1.4	ug/L	21	Standard
>	In	115	548076.9	0.7				ug/L	547487	Standard
	Sn	118	267254.9	1.1	**51.3363**	0.470	0.9	ug/L	450	Standard
	Sb	123	224264.3	0.4	**52.7378**	0.174	0.3	ug/L	105	Standard
	Ba	135	94718.1	0.7	**51.4823**	0.153	0.3	ug/L	111	Standard
	Ce	140	61.7	16.9				ug/L	107	Standard
>	Tb	159	872886.8	0.5				ug/L	890342	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	392549.7	0.9	**52.0956**	0.443	0.9	ug/L	19	Standard
	Tl	205	335218.3	1.5	**54.2215**	0.823	1.5	ug/L	17	Standard
	Pb	206	250297.8	0.3	**51.6123**	0.097	0.2	ug/L	247	Standard
	Pb	207	226489.3	0.6	**51.3765**	0.302	0.6	ug/L	215	Standard
	Pb	208	880738.1	0.5	**53.3625**	0.244	0.5	ug/L	770	Standard
	U	238	319048.1	0.1	**53.3329**	0.065	0.1	ug/L	13	Standard
>	Bi	209	501806.7	0.2				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.2483**	31.598	173.2	mg/L	2	Standard
Mg	24	3748.8	3.4	**5.0383**	0.218	4.3	mg/L	35	Standard
K	39	870.0	3.5	**4.1632**	0.196	4.7	mg/L	25	Standard
Ca	43	66.7	30.3	**7.5630**	3.627	48.0	mg/L	38	Standard
Fe	54	5462.5	1.6	**4.9747**	0.206	4.1	mg/L	126	Standard
Fe	57	1633.4	3.9	**5.2565**	0.210	4.0	mg/L	245	Standard
> **Sc-1**	45	25438.0	2.5				mg/L	25066	Standard
Cl	35	159590.9	1.7				ug/L	125857	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	1526.7	9.8				ug/L	1350	Standard
P	31	21814.0	0.5				ug/L	18393	Standard
S	34	4879.1	3.9				ug/L	3739	Standard
Sr	88	73.3	10.4				ug/L	78	Standard
C	12	60.0	33.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.9	218.3				mg/L	2	Standard
Ho-1	165	8.3	91.7				mg/L	10	Standard
Er	166	10.0	173.2				mg/L	23	Standard
I	127	2962.0	13.4				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	108.004		
Al	27	100.255		
Sc	45			
Ti	47	106.030		
V	51	105.955		
Cr	52	104.988		
Cr	53			
Mn	55	101.465		
Co	59	107.485		
Ni	60	102.862		
Cu	65	103.117		
Zn	66	103.413		
> Ge	72		102.463	
As	75	103.430		
Se	82	106.490		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	103.980		
Ag	107	105.982		
Cd	111	105.702		
Cd	114			
> In	115		100.108	
Sn	118	102.673		
Sb	123	105.476		
Ba	135	102.965		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	104.191		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.725		
U	238	106.666		
> Bi	209		99.734	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 18:54:15
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65759.1	2.1				ug/L	60176	Standard
	Be	9	15.0	66.7	**0.0099**	0.012	124.3	ug/L	5	Standard
	Al	27	1593.4	26.8	**0.0027**	0.003	102.5	ug/L	832	Standard
	Sc	45	26474.8	1.5				ug/L	25066	Standard
	Ti	47	28.3	23.5	**-0.0655**	0.031	47.5	ug/L	38	Standard
	V	51	963.9	7.8	**-0.0130**	0.015	114.8	ug/L	974	Standard
	Cr	52	6015.5	0.7	**-0.0229**	0.022	97.4	ug/L	5792	Standard
	Cr	53	381.7	7.2	**0.0411**	0.039	93.9	ug/L	347	Standard
	Mn	55	1197.4	3.7	**-0.0335**	0.005	13.8	ug/L	1164	Standard
	Co	59	265.0	7.5	**-0.0071**	0.002	35.3	ug/L	303	Standard
	Ni	60	191.7	2.1	**-0.0870**	0.003	3.6	ug/L	291	Standard
	Cu	65	137.7	10.1	**-0.0230**	0.006	27.4	ug/L	173	Standard
	Zn	66	181.3	7.5	**-0.0653**	0.015	22.7	ug/L	130	Standard
>	**Ge**	72	506005.0	1.8				ug/L	491724	Standard
	As	75	-35.7	74.2	**0.0007**	0.025	3529.5	ug/L	-25	Standard
	Se	82	12.6	16.6	**0.0250**	0.018	72.8	ug/L	12	Standard
	Se-1	77	54.3	13.9	**0.0968**	0.095	97.8	ug/L	57	Standard
>	**Ga**	71	158.3	20.3				mg/L	148	Standard
	Rb	85	20.0	86.6				ug/L	18	Standard
	Y	89	416660.0	4.4				ug/L	401845	Standard
>	**Rh**	103	31.7	32.9				ug/L	10	Standard
	Mo	98	234.4	23.9	**0.0897**	0.024	26.8	ug/L	12	Standard
	Ag	107	96.7	10.2	**0.0004**	0.002	455.9	ug/L	98	Standard
	Cd	111	9.2	48.8	**0.0000**	0.002	5096.5	mg/L	11	Standard
	Cd	114	32.6	31.9	**0.0024**	0.002	93.4	ug/L	21	Standard
>	**In**	115	568592.5	1.7				ug/L	547487	Standard
	Sn	118	836.7	13.7	**0.0809**	0.019	23.3	ug/L	450	Standard
	Sb	123	401.8	23.4	**0.0833**	0.020	24.4	ug/L	105	Standard
	Ba	135	112.3	11.3	**0.0034**	0.008	222.2	ug/L	111	Standard
	Ce	140	18.3	63.0				ug/L	107	Standard
>	**Tb**	159	905312.2	2.3				ug/L	890342	Standard
	Ho	165	11.7	89.2				ug/L	10	Standard
	Tl	203	52.3	30.0	**0.0031**	0.002	64.6	ug/L	19	Standard
	Tl	205	41.7	48.5	**0.0075**	0.003	42.3	ug/L	17	Standard
	Pb	206	259.3	16.5	**-0.0033**	0.009	264.4	ug/L	247	Standard
	Pb	207	233.3	11.4	**-0.0010**	0.006	617.4	ug/L	215	Standard
	Pb	208	889.0	1.3	**-0.0079**	0.001	10.4	ug/L	770	Standard
	U	238	29.3	61.9	**0.0039**	0.003	75.3	ug/L	13	Standard
>	**Bi**	209	519697.2	0.3				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	35.0	89.2	**0.0068**	0.041	600.8	mg/L	35	Standard
K	39	33.3	31.2	**0.0452**	0.050	110.3	mg/L	25	Standard
Ca	43	33.3	34.6	**0.8931**	2.150	240.8	mg/L	38	Standard
Fe	54	140.9	5.6	**-0.0098**	0.009	91.5	mg/L	126	Standard
Fe	57	233.3	13.1	**-0.2195**	0.109	49.4	mg/L	245	Standard
Sc-1	45	26474.8	1.5				mg/L	25066	Standard
Cl	35	159066.0	0.9				ug/L	125857	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	1636.8	3.9				ug/L	1350	Standard
P	31	22371.5	1.8				ug/L	18393	Standard
S	34	4974.2	4.8				ug/L	3739	Standard
Sr	88	65.0	23.1				ug/L	78	Standard
C	12	46.7	44.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.8	2.8				mg/L	2	Standard
Ho-1	165	11.7	89.2				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	23	Standard
I	127	2216.8	9.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.904	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.855
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.290
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Tuesday, June 21, 2016 19:12:07
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61166.6	1.6				ug/L	60176	Standard
	Be	9	150.0	15.3	**0.1967**	0.033	16.9	ug/L	5	Standard
	Al	27	1561.8	56.4	**0.0032**	0.006	196.8	ug/L	832	Standard
	Sc	45	24875.4	2.5				ug/L	25066	Standard
	Ti	47	28.0	12.9	**-0.0630**	0.020	31.8	ug/L	38	Standard
	V	51	3300.5	1.2	**0.3830**	0.004	1.1	ug/L	974	Standard
	Cr	52	10916.3	1.5	**0.7699**	0.022	2.9	ug/L	5792	Standard
	Cr	53	1001.7	7.0	**0.8086**	0.075	9.2	ug/L	347	Standard
	Mn	55	4162.9	6.9	**0.4342**	0.055	12.7	ug/L	1164	Standard
	Co	59	2663.9	2.0	**0.3873**	0.016	4.1	ug/L	303	Standard
	Ni	60	2996.6	2.6	**1.4705**	0.019	1.3	ug/L	291	Standard
	Cu	65	1480.7	6.8	**0.7275**	0.043	6.0	ug/L	173	Standard
	Zn	66	7406.5	4.4	**6.8860**	0.205	3.0	ug/L	130	Standard
>	**Ge**	72	493083.1	1.6				ug/L	491724	Standard
	As	75	372.9	12.0	**0.3882**	0.043	11.0	ug/L	-25	Standard
	Se	82	55.9	23.6	**0.4460**	0.125	27.9	ug/L	12	Standard
	Se-1	77	84.3	6.0	**0.5409**	0.079	14.6	ug/L	57	Standard
>	**Ga**	71	103.3	2.8				mg/L	148	Standard
	Rb	85	41.7	13.9				ug/L	18	Standard
	Y	89	400269.9	3.2				ug/L	401845	Standard
>	**Rh**	103	43.3	17.6				ug/L	10	Standard
	Mo	98	42.1	20.5	**0.0135**	0.004	31.1	ug/L	12	Standard
	Ag	107	2361.9	2.4	**0.3942**	0.010	2.6	ug/L	98	Standard
	Cd	111	441.3	5.1	**0.2353**	0.012	5.1	mg/L	11	Standard
	Cd	114	1071.7	9.3	**0.2353**	0.024	10.2	ug/L	21	Standard
>	**In**	115	535559.2	2.7				ug/L	547487	Standard
	Sn	118	436.7	24.1	**0.0116**	0.019	163.3	ug/L	450	Standard
	Sb	123	1772.8	0.2	**0.4193**	0.011	2.7	ug/L	105	Standard
	Ba	135	1338.4	0.9	**0.6899**	0.014	2.0	ug/L	111	Standard
	Ce	140	35.0	28.6				ug/L	107	Standard
>	**Tb**	159	857160.6	2.1				ug/L	890342	Standard
	Ho	165	6.7	86.6				ug/L	10	Standard
	Tl	203	591.3	5.4	**0.0761**	0.006	7.9	ug/L	19	Standard
	Tl	205	471.7	10.6	**0.0783**	0.008	10.5	ug/L	17	Standard
	Pb	206	1188.7	1.6	**0.1938**	0.006	3.2	ug/L	247	Standard
	Pb	207	1022.4	5.0	**0.1831**	0.010	5.7	ug/L	215	Standard
	Pb	208	4003.9	0.8	**0.1862**	0.005	2.6	ug/L	770	Standard
	U	238	2368.9	2.6	**0.4007**	0.018	4.4	ug/L	13	Standard
>	**Bi**	209	495170.9	2.1				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	50.0	10.0	**0.0302**	0.005	18.0	mg/L	35	Standard
K	39	30.0	44.1	**0.0395**	0.069	175.4	mg/L	25	Standard
Ca	43	31.7	65.7	**1.0148**	4.252	419.0	mg/L	38	Standard
Fe	54	92.2	19.0	**-0.0485**	0.015	30.9	mg/L	126	Standard
Fe	57	215.0	14.5	**-0.2376**	0.102	43.0	mg/L	245	Standard
> **Sc-1**	45	24875.4	2.5				mg/L	25066	Standard
Cl	35	148704.8	0.2				ug/L	125857	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	1456.7	4.5				ug/L	1350	Standard
P	31	15039.1	1.7				ug/L	18393	Standard
S	34	4490.7	1.0				ug/L	3739	Standard
Sr	88	73.3	19.7				ug/L	78	Standard
C	12	26.7	21.7				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	2.9	202.3				mg/L	2	Standard
Ho-1	165	6.7	86.6				mg/L	10	Standard
Er	166	10.0					mg/L	23	Standard
I	127	996.7	4.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	98.360		
Al	27			
Sc	45			
Ti	47			
V	51	95.739		
Cr	52	96.237		
Cr	53			
Mn	55	86.841		
Co	59	96.822		
Ni	60	91.905		
Cu	65	90.940		
Zn	66	110.176		
> Ge	72		100.276	
As	75	97.059		
Se	82	111.510		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	98.538		
Cd	111	98.062		
Cd	114			
> In	115			97.821
Sn	118			
Sb	123	104.817		
Ba	135	91.990		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	95.070		
Tl	205			
Pb	206			
Pb	207			
Pb	208	93.123		
U	238	100.174		
> Bi	209			98.416
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606099501
Sample Date/Time: Tuesday, June 21, 2016 19:34:57
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 500
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77633.4	0.8				ug/L	60176	Standard
	Be	9	6.7	43.3	**-0.0018**	0.003	172.4	ug/L	5	Standard
	Al	27	2026217.7	0.7	**11.9496**	0.150	1.3	ug/L	832	Standard
	Sc	45	26748.6	2.3				ug/L	25066	Standard
	Ti	47	31.7	17.4	**-0.0462**	0.030	65.2	ug/L	38	Standard
	V	51	1275.8	6.9	**0.0404**	0.016	40.4	ug/L	974	Standard
	Cr	52	6655.1	6.4	**0.0875**	0.082	93.8	ug/L	5792	Standard
	Cr	53	1963.5	8.8	**1.9476**	0.188	9.6	ug/L	347	Standard
	Mn	55	84988.4	1.3	**12.8494**	0.068	0.5	ug/L	1164	Standard
	Co	59	386.7	8.6	**0.0132**	0.006	45.9	ug/L	303	Standard
	Ni	60	675.3	7.4	**0.1784**	0.024	13.2	ug/L	291	Standard
	Cu	65	195.7	5.7	**0.0100**	0.008	78.4	ug/L	173	Standard
	Zn	66	3591.1	3.1	**3.1695**	0.063	2.0	ug/L	130	Standard
>	**Ge**	72	500114.1	1.6				ug/L	491724	Standard
	As	75	1657.7	10.0	**1.5886**	0.178	11.2	ug/L	-25	Standard
	Se	82	741.5	7.8	**6.9659**	0.657	9.4	ug/L	12	Standard
	Se-1	77	304.7	3.4	**3.5912**	0.205	5.7	ug/L	57	Standard
>	**Ga**	71	115.0	17.4				mg/L	148	Standard
	Rb	85	6904.9	3.3				ug/L	18	Standard
	Y	89	413732.9	0.8				ug/L	401845	Standard
>	**Rh**	103	540.0	15.3				ug/L	10	Standard
	Mo	98	33.8	20.7	**0.0095**	0.003	31.4	ug/L	12	Standard
	Ag	107	87.7	13.3	**-0.0007**	0.002	269.3	ug/L	98	Standard
	Cd	111	5.3	39.3	**-0.0019**	0.001	57.9	mg/L	11	Standard
	Cd	114	4.9	315.7	**-0.0034**	0.003	99.4	ug/L	21	Standard
>	**In**	115	553729.7	2.2				ug/L	547487	Standard
	Sn	118	500.0	18.4	**0.0210**	0.015	73.8	ug/L	450	Standard
	Sb	123	98.6	22.2	**0.0153**	0.005	30.1	ug/L	105	Standard
	Ba	135	188976.6	0.6	**101.7485**	2.043	2.0	ug/L	111	Standard
	Ce	140	20.0	25.0				ug/L	107	Standard
>	**Tb**	159	898084.0	1.2				ug/L	890342	Standard
	Ho	165	3.3	86.6				ug/L	10	Standard
	Tl	203	185.0	4.6	**0.0209**	0.001	6.4	ug/L	19	Standard
	Tl	205	168.3	27.6	**0.0281**	0.008	27.5	ug/L	17	Standard
	Pb	206	327.0	2.4	**0.0122**	0.002	14.3	ug/L	247	Standard
	Pb	207	273.3	4.9	**0.0096**	0.003	26.1	ug/L	215	Standard
	Pb	208	1042.0	2.7	**0.0030**	0.001	37.4	ug/L	770	Standard
	U	238	6.0	16.7	**0.0002**	0.000	92.5	ug/L	13	Standard
>	**Bi**	209	503950.2	0.9				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	24992.3	2.5	**32.1567**	1.409	4.4	mg/L	35	Standard
K	39	90.0	5.6	**0.3081**	0.023	7.4	mg/L	25	Standard
Ca	43	76.7	13.6	**8.8158**	1.657	18.8	mg/L	38	Standard
Fe	54	192.9	22.1	**0.0345**	0.034	98.8	mg/L	126	Standard
Fe	57	315.0	9.9	**0.0759**	0.141	185.8	mg/L	245	Standard
> **Sc-1**	45	26748.6	2.3				mg/L	25066	Standard
Cl	35	159695.2	0.9				ug/L	125857	Standard
Kr	83	2.3	107.9				ug/L	1	Standard
Br	81	185783.8	10.6				ug/L	1350	Standard
P	31	21602.1	2.2				ug/L	18393	Standard
S	34	4462.3	2.7				ug/L	3739	Standard
Sr	88	1885.1	4.1				ug/L	78	Standard
C	12	60.0	16.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	29.2	70.1				mg/L	2	Standard
Ho-1	165	3.3	86.6				mg/L	10	Standard
Er	166	16.7	69.3				mg/L	23	Standard
I	127	135026.1	16.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.011	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.706	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.140
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.160
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606099502
Sample Date/Time: Tuesday, June 21, 2016 19:38:09
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 500
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74226.4	2.4				ug/L	60176	Standard
	Be	9	8.3	34.6	**0.0004**	0.003	782.1	ug/L	5	Standard
	Al	27	1964045.2	2.9	**12.1146**	0.244	2.0	ug/L	832	Standard
	Sc	45	24970.6	3.4				ug/L	25066	Standard
	Ti	47	32.7	9.4	**-0.0368**	0.015	40.8	ug/L	38	Standard
	V	51	1262.9	8.3	**0.0439**	0.016	36.9	ug/L	974	Standard
	Cr	52	7258.4	0.5	**0.2111**	0.007	3.1	ug/L	5792	Standard
	Cr	53	1968.5	11.3	**2.0221**	0.300	14.8	ug/L	347	Standard
	Mn	55	84493.3	0.7	**13.1339**	0.146	1.1	ug/L	1164	Standard
	Co	59	367.0	1.6	**0.0116**	0.000	3.3	ug/L	303	Standard
	Ni	60	734.0	4.8	**0.2217**	0.019	8.5	ug/L	291	Standard
	Cu	65	234.0	5.0	**0.0345**	0.007	20.2	ug/L	173	Standard
	Zn	66	3577.4	1.6	**3.2515**	0.080	2.4	ug/L	130	Standard
>	**Ge**	72	486612.8	1.0				ug/L	491724	Standard
	As	75	1897.2	6.2	**1.8600**	0.104	5.6	ug/L	-25	Standard
	Se	82	847.2	4.6	**8.1876**	0.359	4.4	ug/L	12	Standard
	Se-1	77	299.3	6.6	**3.6325**	0.324	8.9	ug/L	57	Standard
>	**Ga**	71	111.7	23.0				mg/L	148	Standard
	Rb	85	6951.6	2.7				ug/L	18	Standard
	Y	89	428541.2	1.0				ug/L	401845	Standard
>	**Rh**	103	660.0	4.2				ug/L	10	Standard
	Mo	98	28.1	25.8	**0.0071**	0.003	41.3	ug/L	12	Standard
	Ag	107	72.0	3.7	**-0.0033**	0.000	11.5	ug/L	98	Standard
	Cd	111	5.6	20.7	**-0.0018**	0.001	33.9	mg/L	11	Standard
	Cd	114	12.2	78.3	**-0.0018**	0.002	112.9	ug/L	21	Standard
>	**In**	115	554225.0	0.6				ug/L	547487	Standard
	Sn	118	540.0	14.7	**0.0287**	0.015	53.8	ug/L	450	Standard
	Sb	123	76.2	13.8	**0.0101**	0.003	24.8	ug/L	105	Standard
	Ba	135	188355.6	0.6	**101.2959**	0.460	0.5	ug/L	111	Standard
	Ce	140	40.0	33.1				ug/L	107	Standard
>	**Tb**	159	890237.5	1.2				ug/L	890342	Standard
	Ho	165	21.7	35.3				ug/L	10	Standard
	Tl	203	179.7	2.8	**0.0212**	0.001	5.5	ug/L	19	Standard
	Tl	205	150.0	6.7	**0.0261**	0.001	4.6	ug/L	17	Standard
	Pb	206	498.3	4.9	**0.0517**	0.004	7.7	ug/L	247	Standard
	Pb	207	466.3	5.0	**0.0577**	0.006	10.6	ug/L	215	Standard
	Pb	208	1786.7	1.0	**0.0525**	0.002	3.4	ug/L	770	Standard
	U	238	3.0	33.3	**-0.0003**	0.000	60.1	ug/L	13	Standard
>	**Bi**	209	483891.9	2.0				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.7247**	32.424	173.2	mg/L	2	Standard
Mg	24	25317.8	3.2	**34.8845**	0.795	2.3	mg/L	35	Standard
K	39	93.3	22.3	**0.3528**	0.090	25.6	mg/L	25	Standard
Ca	43	91.7	8.3	**12.8496**	1.996	15.5	mg/L	38	Standard
Fe	54	224.3	18.2	**0.0779**	0.045	57.5	mg/L	126	Standard
Fe	57	341.7	9.5	**0.2646**	0.154	58.2	mg/L	245	Standard
Sc-1	45	24970.6	3.4				mg/L	25066	Standard
Cl	35	171948.2	0.2				ug/L	125857	Standard
Kr	83	2.3	49.5				ug/L	1	Standard
Br	81	210718.6	1.3				ug/L	1350	Standard
P	31	22428.3	0.3				ug/L	18393	Standard
S	34	4655.7	1.8				ug/L	3739	Standard
Sr	88	1866.8	5.5				ug/L	78	Standard
C	12	56.7	36.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	45.9	45.5				mg/L	2	Standard
Ho-1	165	21.7	35.3				mg/L	10	Standard
Er	166	16.7	124.9				mg/L	23	Standard
I	127	109731.2	3.5				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		123.349	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.961	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.231	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.174	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 19:41:21
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60753.2	0.7				ug/L	60176	Standard
	Be	9	38719.4	2.5	**53.4127**	1.268	2.4	ug/L	5	Standard
	Al	27	6711778.9	2.1	**50.6033**	0.899	1.8	ug/L	832	Standard
	Sc	45	25728.5	2.1				ug/L	25066	Standard
	Ti	47	20982.5	0.5	**104.3242**	1.357	1.3	ug/L	38	Standard
	V	51	321053.2	1.0	**51.7981**	0.934	1.8	ug/L	974	Standard
	Cr	52	344201.5	0.6	**51.1636**	0.287	0.6	ug/L	5792	Standard
	Cr	53	44291.3	1.7	**51.7172**	0.682	1.3	ug/L	347	Standard
	Mn	55	339218.4	3.0	**50.8246**	1.874	3.7	ug/L	1164	Standard
	Co	59	329430.6	2.2	**52.0390**	1.531	2.9	ug/L	303	Standard
	Ni	60	95047.5	0.5	**50.6545**	0.643	1.3	ug/L	291	Standard
	Cu	65	94430.7	0.6	**50.7104**	0.485	1.0	ug/L	173	Standard
	Zn	66	54795.6	0.3	**50.6166**	0.334	0.7	ug/L	130	Standard
>	**Ge**	72	511027.8	0.9				ug/L	491724	Standard
	As	75	54737.8	0.8	**50.2171**	0.828	1.6	ug/L	-25	Standard
	Se	82	5522.7	2.1	**51.3173**	1.540	3.0	ug/L	12	Standard
	Se-1	77	3859.5	2.0	**51.9063**	1.447	2.8	ug/L	57	Standard
>	**Ga**	71	95.0	18.2				mg/L	148	Standard
	Rb	85	715.0	4.2				ug/L	18	Standard
	Y	89	414601.0	3.0				ug/L	401845	Standard
>	**Rh**	103	75.0	29.1				ug/L	10	Standard
	Mo	98	246703.9	0.8	**102.5745**	0.981	1.0	ug/L	12	Standard
	Ag	107	305467.2	1.3	**51.7401**	0.890	1.7	ug/L	98	Standard
	Cd	111	97736.3	0.7	**51.9469**	0.458	0.9	mg/L	11	Standard
	Cd	114	235851.4	0.5	**51.5266**	0.472	0.9	ug/L	21	Standard
>	**In**	115	547985.7	0.4				ug/L	547487	Standard
	Sn	118	265904.1	2.8	**51.0890**	1.611	3.2	ug/L	450	Standard
	Sb	123	218330.5	1.3	**51.3521**	0.839	1.6	ug/L	105	Standard
	Ba	135	93431.9	0.4	**50.7920**	0.422	0.8	ug/L	111	Standard
	Ce	140	66.7	18.9				ug/L	107	Standard
>	**Tb**	159	878645.9	1.2				ug/L	890342	Standard
	Ho	165	16.7	34.6				ug/L	10	Standard
	Tl	203	382593.3	0.6	**51.2166**	0.851	1.7	ug/L	19	Standard
	Tl	205	319855.9	0.2	**52.1860**	0.686	1.3	ug/L	17	Standard
	Pb	206	245809.9	0.3	**51.1253**	0.527	1.0	ug/L	247	Standard
	Pb	207	223379.0	0.7	**51.1100**	0.660	1.3	ug/L	215	Standard
	Pb	208	860209.0	0.8	**52.5732**	1.026	2.0	ug/L	770	Standard
	U	238	310063.3	0.9	**52.2791**	0.641	1.2	ug/L	13	Standard
>	**Bi**	209	497537.7	1.2				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.4323**	31.917	173.2	mg/L	2	Standard
Mg	24	3723.8	3.0	**4.9453**	0.109	2.2	mg/L	35	Standard
K	39	950.0	8.5	**4.5034**	0.416	9.2	mg/L	25	Standard
Ca	43	46.7	24.7	**3.6078**	2.004	55.6	mg/L	38	Standard
Fe	54	5363.4	1.0	**4.8229**	0.058	1.2	mg/L	126	Standard
Fe	57	1550.1	5.1	**4.8704**	0.425	8.7	mg/L	245	Standard
> **Sc-1**	45	25728.5	2.1				mg/L	25066	Standard
Cl	35	153211.6	2.0				ug/L	125857	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	3267.0	14.6				ug/L	1350	Standard
P	31	22256.3	1.2				ug/L	18393	Standard
S	34	4787.4	1.1				ug/L	3739	Standard
Sr	88	73.3	34.3				ug/L	78	Standard
C	12	40.0	25.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	0.0					mg/L	2	Standard
Ho-1	165	16.7	34.6				mg/L	10	Standard
Er	166	0.0					mg/L	23	Standard
I	127	2020.1	11.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	106.825		
Al	27	101.207		
Sc	45			
Ti	47	104.324		
V	51	103.596		
Cr	52	102.327		
Cr	53			
Mn	55	101.649		
Co	59	104.078		
Ni	60	101.309		
Cu	65	101.421		
Zn	66	101.233		
> Ge	72		103.926	
As	75	100.434		
Se	82	102.635		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	102.575		
Ag	107	103.480		
Cd	111	103.894		
Cd	114			
In	115		100.091	
Sn	118	102.178		
Sb	123	102.704		
Ba	135	101.584		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.433		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.146		
U	238	104.558		
Bi	209		98.886	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 19:44:33
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61186.7	3.6				ug/L	60176	Standard
	Be	9	33.3	121.2	**0.0354**	0.053	148.9	ug/L	5	Standard
	Al	27	5501.8	106.7	**0.0318**	0.042	131.0	ug/L	832	Standard
	Sc	45	26701.8	2.0				ug/L	25066	Standard
	Ti	47	30.3	33.2	**-0.0533**	0.048	90.9	ug/L	38	Standard
	V	51	1141.6	4.7	**0.0186**	0.005	28.0	ug/L	974	Standard
	Cr	52	6134.6	2.3	**0.0092**	0.003	30.8	ug/L	5792	Standard
	Cr	53	388.3	9.1	**0.0563**	0.051	89.9	ug/L	347	Standard
	Mn	55	1080.7	12.0	**-0.0490**	0.017	33.8	ug/L	1164	Standard
	Co	59	305.0	13.6	**0.0000**	0.006	21511.9	ug/L	303	Standard
	Ni	60	217.7	16.0	**-0.0715**	0.017	23.3	ug/L	291	Standard
	Cu	65	178.3	13.0	**0.0005**	0.011	2056.8	ug/L	173	Standard
	Zn	66	169.7	10.0	**-0.0741**	0.013	17.6	ug/L	130	Standard
>	**Ge**	72	498463.8	2.0				ug/L	491724	Standard
	As	75	-12.2	286.7	**0.0221**	0.033	148.3	ug/L	-25	Standard
	Se	82	23.6	25.6	**0.1314**	0.054	41.3	ug/L	12	Standard
	Se-1	77	53.0	11.3	**0.0906**	0.088	97.6	ug/L	57	Standard
>	**Ga**	71	131.7	28.5				mg/L	148	Standard
	Rb	85	18.3	15.7				ug/L	18	Standard
	Y	89	417929.1	0.8				ug/L	401845	Standard
>	**Rh**	103	38.3	41.9				ug/L	10	Standard
	Mo	98	257.5	28.1	**0.0990**	0.027	27.2	ug/L	12	Standard
	Ag	107	163.0	35.8	**0.0113**	0.009	79.0	ug/L	98	Standard
	Cd	111	38.5	98.3	**0.0148**	0.019	127.2	mg/L	11	Standard
	Cd	114	81.0	86.9	**0.0125**	0.014	115.3	ug/L	21	Standard
>	**In**	115	565101.8	2.2				ug/L	547487	Standard
	Sn	118	831.7	11.4	**0.0814**	0.021	25.5	ug/L	450	Standard
	Sb	123	393.5	15.0	**0.0823**	0.015	18.3	ug/L	105	Standard
	Ba	135	200.7	38.6	**0.0498**	0.038	76.8	ug/L	111	Standard
	Ce	140	16.7	45.8				ug/L	107	Standard
>	**Tb**	159	889533.7	0.9				ug/L	890342	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	149.3	78.6	**0.0159**	0.015	94.6	ug/L	19	Standard
	Tl	205	106.7	80.7	**0.0179**	0.013	75.0	ug/L	17	Standard
	Pb	206	292.0	13.2	**0.0046**	0.007	158.0	ug/L	247	Standard
	Pb	207	254.3	15.6	**0.0049**	0.008	166.3	ug/L	215	Standard
	Pb	208	1008.7	14.9	**0.0005**	0.008	1674.4	ug/L	770	Standard
	U	238	103.0	92.1	**0.0161**	0.015	95.6	ug/L	13	Standard
>	**Bi**	209	507542.0	1.3				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.1949**	29.774	173.2	mg/L	2	Standard
Mg	24	48.3	76.3	**0.0231**	0.046	200.6	mg/L	35	Standard
K	39	25.0	20.0	**0.0046**	0.023	492.5	mg/L	25	Standard
Ca	43	23.3	32.7	**-1.0097**	1.396	138.2	mg/L	38	Standard
Fe	54	150.9	27.6	**-0.0016**	0.040	2494.1	mg/L	126	Standard
Fe	57	210.0	10.9	**-0.3128**	0.084	26.9	mg/L	245	Standard
Sc-1	45	26701.8	2.0				mg/L	25066	Standard
Cl	35	151455.2	0.3				ug/L	125857	Standard
Kr	83	2.0	0.0				ug/L	1	Standard
Br	81	2233.5	7.9				ug/L	1350	Standard
P	31	22777.1	4.3				ug/L	18393	Standard
S	34	4777.4	2.0				ug/L	3739	Standard
Sr	88	61.7	4.7				ug/L	78	Standard
C	12	53.3	10.8				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.3	94.7				mg/L	2	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	23	Standard
I	127	1440.1	11.4				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.371	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.217
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.874
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBS M7 WG573333-03
Sample Date/Time: Tuesday, June 21, 2016 19:47:45
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60333.2	0.9				ug/L	60176	Standard
	Be	9	8.3	91.7	**0.0026**	0.011	413.6	ug/L	5	Standard
	Al	27	13747.9	0.9	**0.0960**	0.002	1.6	ug/L	832	Standard
	Sc	45	26165.9	1.6				ug/L	25066	Standard
	Ti	47	33.7	12.0	**-0.0319**	0.021	67.5	ug/L	38	Standard
	V	51	1023.7	5.2	**0.0030**	0.011	364.3	ug/L	974	Standard
	Cr	52	8476.0	2.1	**0.4019**	0.015	3.7	ug/L	5792	Standard
	Cr	53	670.0	10.4	**0.4130**	0.076	18.4	ug/L	347	Standard
	Mn	55	1695.4	1.7	**0.0519**	0.001	2.7	ug/L	1164	Standard
	Co	59	1288.1	1.7	**0.1641**	0.005	3.0	ug/L	303	Standard
	Ni	60	726.0	6.3	**0.2167**	0.030	13.9	ug/L	291	Standard
	Cu	65	492.3	1.6	**0.1799**	0.004	2.2	ug/L	173	Standard
	Zn	66	1621.4	0.7	**1.3419**	0.027	2.0	ug/L	130	Standard
>	**Ge**	72	487560.8	1.2				ug/L	491724	Standard
	As	75	-5.7	503.0	**0.0282**	0.028	98.0	ug/L	-25	Standard
	Se	82	31.9	19.2	**0.2175**	0.056	25.7	ug/L	12	Standard
	Se-1	77	56.0	15.9	**0.1503**	0.133	88.5	ug/L	57	Standard
>	**Ga**	71	95.0	13.9				mg/L	148	Standard
	Rb	85	66.7	31.2				ug/L	18	Standard
	Y	89	416805.6	1.1				ug/L	401845	Standard
>	**Rh**	103	40.0	45.1				ug/L	10	Standard
	Mo	98	145.3	0.5	**0.0548**	0.001	1.4	ug/L	12	Standard
	Ag	107	81.0	9.6	**-0.0019**	0.001	72.0	ug/L	98	Standard
	Cd	111	25.4	13.8	**0.0085**	0.002	23.0	mg/L	11	Standard
	Cd	114	59.1	56.7	**0.0083**	0.007	88.4	ug/L	21	Standard
>	**In**	115	559026.1	1.1				ug/L	547487	Standard
	Sn	118	593.3	6.4	**0.0378**	0.006	15.8	ug/L	450	Standard
	Sb	123	135.0	11.3	**0.0235**	0.003	13.5	ug/L	105	Standard
	Ba	135	280.0	9.7	**0.0939**	0.016	17.3	ug/L	111	Standard
	Ce	140	105.0	29.7				ug/L	107	Standard
>	**Tb**	159	875434.1	1.1				ug/L	890342	Standard
	Ho	165	11.7	49.5				ug/L	10	Standard
	Tl	203	36.0	5.6	**0.0012**	0.000	21.8	ug/L	19	Standard
	Tl	205	30.0	44.1	**0.0059**	0.002	36.7	ug/L	17	Standard
	Pb	206	339.0	5.6	**0.0154**	0.004	24.7	ug/L	247	Standard
	Pb	207	271.0	5.6	**0.0097**	0.003	34.8	ug/L	215	Standard
	Pb	208	1160.0	0.8	**0.0108**	0.001	6.7	ug/L	770	Standard
	U	238	14.3	35.8	**0.0016**	0.001	55.1	ug/L	13	Standard
>	**Bi**	209	499087.6	0.6				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	61.6	**0.0157**	0.033	209.3	mg/L	35	Standard
K	39	23.3	49.5	**-0.0010**	0.055	5424.9	mg/L	25	Standard
Ca	43	25.0	60.0	**-0.6344**	2.755	434.3	mg/L	38	Standard
Fe	54	119.2	14.8	**-0.0282**	0.015	51.5	mg/L	126	Standard
Fe	57	218.3	7.4	**-0.2659**	0.051	19.0	mg/L	245	Standard
> **Sc-1**	45	26165.9	1.6				mg/L	25066	Standard
Cl	35	151596.6	0.8				ug/L	125857	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	4757.4	26.7				ug/L	1350	Standard
P	31	21740.6	1.1				ug/L	18393	Standard
S	34	4795.8	1.6				ug/L	3739	Standard
Sr	88	51.7	5.6				ug/L	78	Standard
C	12	43.3	66.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	22.9	66.8				mg/L	2	Standard
Ho-1	165	11.7	49.5				mg/L	10	Standard
Er	166	10.0					mg/L	23	Standard
I	127	1155.0	7.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.261	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.153	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.108	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.194	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBS M7 WG573333-03
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Method 6020 - Summary Report

Sample ID: LCSS M7 WG573333-04
Sample Date/Time: Tuesday, June 21, 2016 19:50:57
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59225.5	1.2				ug/L	60176	Standard
	Be	9	19609.4	3.0	**27.7420**	0.614	2.2	ug/L	5	Standard
	Al	27	12795.4	2.0	**0.0906**	0.002	1.9	ug/L	832	Standard
	Sc	45	25735.2	2.3				ug/L	25066	Standard
	Ti	47	30.7	8.2	**-0.0502**	0.013	25.4	ug/L	38	Standard
	V	51	161756.0	0.9	**26.8215**	0.191	0.7	ug/L	974	Standard
	Cr	52	180807.8	1.0	**27.2779**	0.436	1.6	ug/L	5792	Standard
	Cr	53	22388.2	0.3	**26.7556**	0.203	0.8	ug/L	347	Standard
	Mn	55	175657.5	1.4	**27.0317**	0.594	2.2	ug/L	1164	Standard
	Co	59	169342.1	1.0	**27.5546**	0.491	1.8	ug/L	303	Standard
	Ni	60	48725.6	1.2	**26.6820**	0.407	1.5	ug/L	291	Standard
	Cu	65	49148.3	1.6	**27.1675**	0.617	2.3	ug/L	173	Standard
	Zn	66	29121.0	0.5	**27.6282**	0.375	1.4	ug/L	130	Standard
>	**Ge**	72	495668.9	0.8				ug/L	491724	Standard
	As	75	28447.7	0.7	**26.9212**	0.272	1.0	ug/L	-25	Standard
	Se	82	2857.7	1.2	**27.3299**	0.423	1.5	ug/L	12	Standard
	Se-1	77	1990.5	1.7	**27.2946**	0.705	2.6	ug/L	57	Standard
>	**Ga**	71	91.7	12.6				mg/L	148	Standard
	Rb	85	58.3	27.6				ug/L	18	Standard
	Y	89	417893.5	1.2				ug/L	401845	Standard
>	**Rh**	103	40.0	37.5				ug/L	10	Standard
	Mo	98	60.5	14.8	**0.0204**	0.004	18.1	ug/L	12	Standard
	Ag	107	157370.8	1.5	**26.3596**	0.160	0.6	ug/L	98	Standard
	Cd	111	50266.8	1.9	**26.4266**	0.395	1.5	mg/L	11	Standard
	Cd	114	119121.9	1.8	**25.7414**	0.327	1.3	ug/L	21	Standard
>	**In**	115	553936.9	1.0				ug/L	547487	Standard
	Sn	118	550.0	18.4	**0.0307**	0.020	63.7	ug/L	450	Standard
	Sb	123	113724.8	2.0	**26.4550**	0.324	1.2	ug/L	105	Standard
	Ba	135	48233.0	1.1	**25.9109**	0.064	0.2	ug/L	111	Standard
	Ce	140	93.3	12.4				ug/L	107	Standard
>	**Tb**	159	874780.4	1.3				ug/L	890342	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	196062.2	1.5	**26.2005**	0.206	0.8	ug/L	19	Standard
	Tl	205	168222.2	1.4	**27.4028**	0.377	1.4	ug/L	17	Standard
	Pb	206	128186.0	1.2	**26.5918**	0.160	0.6	ug/L	247	Standard
	Pb	207	111720.4	1.6	**25.4940**	0.201	0.8	ug/L	215	Standard
	Pb	208	451907.4	0.9	**27.5458**	0.346	1.3	ug/L	770	Standard
	U	238	157122.5	0.9	**26.4506**	0.287	1.1	ug/L	13	Standard
>	**Bi**	209	498294.3	0.9				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	30.0	60.1	**0.0016**	0.025	1578.9	mg/L	35	Standard
K	39	23.3	32.7	**0.0007**	0.036	5216.6	mg/L	25	Standard
Ca	43	21.7	48.0	**-1.1391**	2.056	180.5	mg/L	38	Standard
Fe	54	127.8	14.4	**-0.0186**	0.014	76.0	mg/L	126	Standard
Fe	57	258.3	19.9	**-0.0963**	0.212	219.9	mg/L	245	Standard
> **Sc-1**	45	25735.2	2.3				mg/L	25066	Standard
Cl	35	150456.8	1.7				ug/L	125857	Standard
Kr	83	3.0	57.7				ug/L	1	Standard
Br	81	2710.2	6.8				ug/L	1350	Standard
P	31	21206.5	4.7				ug/L	18393	Standard
S	34	4460.7	1.3				ug/L	3739	Standard
Sr	88	63.3	9.1				ug/L	78	Standard
C	12	43.3	13.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.7	118.3				mg/L	2	Standard
Ho-1	165	8.3	91.7				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	998.4	16.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.421	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.802	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85	
Y	89	
> Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
> In	115	101.178
Sn	118	
Sb	123	
Ba	135	
Ce	140	
> Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
> Bi	209	99.036
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
> Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSS M7 WG573333-04
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Method 6020 - Summary Report

Sample ID: L1606105301 WG573333-02
Sample Date/Time: Tuesday, June 21, 2016 19:54:08
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59553.5	1.0				ug/L	60176	Standard
	Be	9	135.0	13.4	**0.1809**	0.024	13.0	ug/L	5	Standard
	Al	27	390493.3	0.9	**2.9960**	0.057	1.9	ug/L	832	Standard
	Sc	45	27242.8	2.6				ug/L	25066	Standard
	Ti	47	6465.0	1.2	**32.1311**	0.140	0.4	ug/L	38	Standard
	V	51	48073.7	0.3	**7.6430**	0.089	1.2	ug/L	974	Standard
	Cr	52	34364.9	0.8	**4.2815**	0.091	2.1	ug/L	5792	Standard
	Cr	53	4007.2	3.0	**4.3239**	0.170	3.9	ug/L	347	Standard
	Mn	55	232477.7	0.8	**34.9054**	0.509	1.5	ug/L	1164	Standard
	Co	59	7863.0	1.3	**1.1989**	0.016	1.3	ug/L	303	Standard
	Ni	60	6025.5	1.1	**3.0464**	0.076	2.5	ug/L	291	Standard
	Cu	65	4433.0	2.2	**2.2972**	0.044	1.9	ug/L	173	Standard
	Zn	66	19225.9	1.6	**17.6815**	0.348	2.0	ug/L	130	Standard
>	**Ge**	72	508937.9	1.5				ug/L	491724	Standard
	As	75	2936.1	0.9	**2.7370**	0.053	1.9	ug/L	-25	Standard
	Se	82	55.2	23.4	**0.4222**	0.115	27.2	ug/L	12	Standard
	Se-1	77	65.0	8.1	**0.2394**	0.078	32.6	ug/L	57	Standard
>	**Ga**	71	5164.2	2.6				mg/L	148	Standard
	Rb	85	19092.0	2.2				ug/L	18	Standard
	Y	89	428438.9	1.5				ug/L	401845	Standard
>	**Rh**	103	26.7	39.0				ug/L	10	Standard
	Mo	98	5911.8	1.7	**2.4389**	0.038	1.6	ug/L	12	Standard
	Ag	107	147.0	13.6	**0.0094**	0.003	37.1	ug/L	98	Standard
	Cd	111	206.9	4.5	**0.1046**	0.005	4.6	mg/L	11	Standard
	Cd	114	472.4	6.6	**0.0981**	0.006	6.3	ug/L	21	Standard
>	**In**	115	551287.4	0.7				ug/L	547487	Standard
	Sn	118	468.3	5.4	**0.0155**	0.005	29.4	ug/L	450	Standard
	Sb	123	357.0	11.8	**0.0759**	0.010	13.0	ug/L	105	Standard
	Ba	135	38678.0	0.4	**20.8682**	0.219	1.0	ug/L	111	Standard
	Ce	140	306495.9	1.2				ug/L	107	Standard
>	**Tb**	159	890380.5	0.6				ug/L	890342	Standard
	Ho	165	2116.8	9.4				ug/L	10	Standard
	Tl	203	519.3	6.1	**0.0646**	0.004	6.1	ug/L	19	Standard
	Tl	205	458.3	12.0	**0.0743**	0.009	11.8	ug/L	17	Standard
	Pb	206	124187.6	1.0	**25.2798**	0.148	0.6	ug/L	247	Standard
	Pb	207	103763.8	0.7	**23.2336**	0.104	0.4	ug/L	215	Standard
	Pb	208	419261.0	0.7	**25.0733**	0.105	0.4	ug/L	770	Standard
	U	238	1623.1	2.0	**0.2673**	0.004	1.6	ug/L	13	Standard
>	**Bi**	209	507748.9	0.4				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	18.3	**0.0137**	0.009	65.1	mg/L	35	Standard
K	39	28.3	27.0	**0.0171**	0.033	190.3	mg/L	25	Standard
Ca	43	28.3	62.0	**-0.2390**	3.080	1288.3	mg/L	38	Standard
Fe	54	3298.0	4.5	**2.7434**	0.115	4.2	mg/L	126	Standard
Fe	57	1085.0	10.1	**2.8415**	0.310	10.9	mg/L	245	Standard
> **Sc-1**	45	27242.8	2.6				mg/L	25066	Standard
Cl	35	140674.8	1.7				ug/L	125857	Standard
Kr	83	1.7	124.9				ug/L	1	Standard
Br	81	2630.2	14.1				ug/L	1350	Standard
P	31	19367.4	0.5				ug/L	18393	Standard
S	34	4402.3	3.5				ug/L	3739	Standard
Sr	88	81.7	12.7				ug/L	78	Standard
C	12	100.0	40.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	63.3	18.2				mg/L	0	Standard
Dy	164	3670.9	4.8				mg/L	2	Standard
Ho-1	165	2116.8	9.4				mg/L	10	Standard
Er	166	1800.1	7.0				mg/L	23	Standard
I	127	6793.2	6.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.966	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.501	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.694
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.915
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606105301 WG573333-02
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Method 6020 - Summary Report

Sample ID: L1606105302S WG573333-07
Sample Date/Time: Tuesday, June 21, 2016 19:57:20
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60433.6	2.0				ug/L	60176	Standard
	Be	9	19427.5	2.3	**26.9397**	0.549	2.0	ug/L	5	Standard
	Al	27	396251.5	0.8	**2.9962**	0.054	1.8	ug/L	832	Standard
	Sc	45	27251.2	1.0				ug/L	25066	Standard
	Ti	47	7488.9	1.0	**38.3195**	0.066	0.2	ug/L	38	Standard
	V	51	191501.2	1.3	**31.8425**	0.616	1.9	ug/L	974	Standard
	Cr	52	197050.6	1.4	**29.8680**	0.710	2.4	ug/L	5792	Standard
	Cr	53	24456.4	1.3	**29.3202**	0.727	2.5	ug/L	347	Standard
	Mn	55	384294.1	1.4	**59.4969**	1.333	2.2	ug/L	1164	Standard
	Co	59	160969.3	2.7	**26.2367**	0.889	3.4	ug/L	303	Standard
	Ni	60	52090.7	1.5	**28.5899**	0.703	2.5	ug/L	291	Standard
	Cu	65	51279.0	0.4	**28.3978**	0.401	1.4	ug/L	173	Standard
	Zn	66	44812.5	1.1	**42.7178**	0.864	2.0	ug/L	130	Standard
>	**Ge**	72	494830.5	1.2				ug/L	491724	Standard
	As	75	25971.2	2.1	**24.6250**	0.687	2.8	ug/L	-25	Standard
	Se	82	2412.0	4.7	**23.0968**	1.223	5.3	ug/L	12	Standard
	Se-1	77	1649.1	1.6	**22.5387**	0.314	1.4	ug/L	57	Standard
>	**Ga**	71	4899.1	4.8				mg/L	148	Standard
	Rb	85	15933.4	0.2				ug/L	18	Standard
	Y	89	434672.4	2.3				ug/L	401845	Standard
>	**Rh**	103	26.7	57.3				ug/L	10	Standard
	Mo	98	16958.8	1.3	**6.8221**	0.110	1.6	ug/L	12	Standard
	Ag	107	140602.8	1.2	**23.0461**	0.295	1.3	ug/L	98	Standard
	Cd	111	48424.2	1.0	**24.9141**	0.334	1.3	mg/L	11	Standard
	Cd	114	117338.3	1.3	**24.8149**	0.406	1.6	ug/L	21	Standard
>	**In**	115	566048.4	0.4				ug/L	547487	Standard
	Sn	118	788.4	48.0	**0.0729**	0.071	97.4	ug/L	450	Standard
	Sb	123	59314.2	1.3	**13.4999**	0.209	1.5	ug/L	105	Standard
	Ba	135	85875.1	2.0	**45.1887**	1.009	2.2	ug/L	111	Standard
	Ce	140	311360.4	1.3				ug/L	107	Standard
>	**Tb**	159	893299.7	0.4				ug/L	890342	Standard
	Ho	165	1725.1	3.4				ug/L	10	Standard
	Tl	203	188251.6	0.6	**24.7136**	0.342	1.4	ug/L	19	Standard
	Tl	205	158225.3	1.5	**25.3203**	0.563	2.2	ug/L	17	Standard
	Pb	206	385483.0	0.9	**78.6614**	0.775	1.0	ug/L	247	Standard
	Pb	207	325540.1	1.2	**73.0713**	0.789	1.1	ug/L	215	Standard
	Pb	208	1297632.0	1.2	**77.8091**	1.554	2.0	ug/L	770	Standard
	U	238	149860.0	2.2	**24.7839**	0.724	2.9	ug/L	13	Standard
>	**Bi**	209	507277.4	0.8				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	53.3	21.7	**0.0285**	0.014	50.4	mg/L	35	Standard
K	39	40.0	33.1	**0.0713**	0.062	86.8	mg/L	25	Standard
Ca	43	30.0	60.1	**0.1178**	3.297	2798.2	mg/L	38	Standard
Fe	54	2785.6	1.9	**2.2951**	0.053	2.3	mg/L	126	Standard
Fe	57	871.7	5.6	**2.0708**	0.165	8.0	mg/L	245	Standard
> **Sc-1**	45	27251.2	1.0				mg/L	25066	Standard
Cl	35	136548.5	0.2				ug/L	125857	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	2690.2	5.6				ug/L	1350	Standard
P	31	18896.8	0.3				ug/L	18393	Standard
S	34	3938.8	2.0				ug/L	3739	Standard
Sr	88	90.0	36.4				ug/L	78	Standard
C	12	110.0					mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	12.4				mg/L	0	Standard
Dy	164	3247.3	7.3				mg/L	2	Standard
Ho-1	165	1725.1	3.4				mg/L	10	Standard
Er	166	1386.7	5.1				mg/L	23	Standard
I	127	5004.2	4.5				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.428	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.632	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606105302S WG573333-07
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.390
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.822
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606105303SD WG573333-08
Sample Date/Time: Tuesday, June 21, 2016 20:00:31
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60791.8	2.4				ug/L	60176	Standard
	Be	9	19442.5	1.7	**26.8023**	0.232	0.9	ug/L	5	Standard
	Al	27	432728.9	2.0	**3.2535**	0.080	2.4	ug/L	832	Standard
	Sc	45	26972.3	0.6				ug/L	25066	Standard
	Ti	47	8101.2	1.8	**41.8095**	0.489	1.2	ug/L	38	Standard
	V	51	194533.2	1.3	**32.6143**	0.536	1.6	ug/L	974	Standard
	Cr	52	196269.4	0.6	**29.9955**	0.469	1.6	ug/L	5792	Standard
	Cr	53	24483.1	0.2	**29.5930**	0.323	1.1	ug/L	347	Standard
	Mn	55	386351.2	0.3	**60.3048**	0.743	1.2	ug/L	1164	Standard
	Co	59	166196.9	0.5	**27.3090**	0.232	0.8	ug/L	303	Standard
	Ni	60	51605.4	0.6	**28.5533**	0.418	1.5	ug/L	291	Standard
	Cu	65	50075.0	1.9	**27.9529**	0.367	1.3	ug/L	173	Standard
	Zn	66	57353.7	1.8	**55.1795**	0.640	1.2	ug/L	130	Standard
>	**Ge**	72	490809.7	1.0				ug/L	491724	Standard
	As	75	25714.1	1.9	**24.5757**	0.229	0.9	ug/L	-25	Standard
	Se	82	2487.9	0.6	**24.0190**	0.366	1.5	ug/L	12	Standard
	Se-1	77	1747.8	2.5	**24.1314**	0.805	3.3	ug/L	57	Standard
>	**Ga**	71	5157.5	2.7				mg/L	148	Standard
	Rb	85	18523.0	3.1				ug/L	18	Standard
	Y	89	444017.8	1.4				ug/L	401845	Standard
>	**Rh**	103	46.7	16.4				ug/L	10	Standard
	Mo	98	5808.7	0.6	**2.3126**	0.026	1.1	ug/L	12	Standard
	Ag	107	143200.7	1.9	**23.2569**	0.246	1.1	ug/L	98	Standard
	Cd	111	48312.1	2.0	**24.6294**	0.423	1.7	mg/L	11	Standard
	Cd	114	117421.2	1.2	**24.6058**	0.205	0.8	ug/L	21	Standard
>	**In**	115	571242.8	0.9				ug/L	547487	Standard
	Sn	118	516.7	19.9	**0.0212**	0.018	86.9	ug/L	450	Standard
	Sb	123	58163.3	1.0	**13.1170**	0.064	0.5	ug/L	105	Standard
	Ba	135	91445.8	0.5	**47.6850**	0.197	0.4	ug/L	111	Standard
	Ce	140	283441.9	1.3				ug/L	107	Standard
>	**Tb**	159	890644.6	2.9				ug/L	890342	Standard
	Ho	165	1641.8	1.4				ug/L	10	Standard
	Tl	203	186726.4	1.3	**24.8727**	0.635	2.6	ug/L	19	Standard
	Tl	205	159870.8	1.7	**25.9629**	0.965	3.7	ug/L	17	Standard
	Pb	206	345180.0	0.3	**71.4786**	2.166	3.0	ug/L	247	Standard
	Pb	207	289788.0	0.4	**66.0118**	2.154	3.3	ug/L	215	Standard
	Pb	208	1193141.1	0.7	**72.6045**	2.586	3.6	ug/L	770	Standard
	U	238	151251.6	0.9	**25.3870**	0.985	3.9	ug/L	13	Standard
>	**Bi**	209	500148.8	3.1				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	29.0	**0.0164**	0.016	96.8	mg/L	35	Standard
K	39	21.7	35.3	**-0.0118**	0.036	304.9	mg/L	25	Standard
Ca	43	35.0	28.6	**1.0832**	1.815	167.6	mg/L	38	Standard
Fe	54	3124.4	3.6	**2.6191**	0.111	4.2	mg/L	126	Standard
Fe	57	1018.4	7.4	**2.6406**	0.258	9.8	mg/L	245	Standard
> **Sc-1**	45	26972.3	0.6				mg/L	25066	Standard
Cl	35	135993.6	0.3				ug/L	125857	Standard
Kr	83	2.3	49.5				ug/L	1	Standard
Br	81	2136.8	9.1				ug/L	1350	Standard
P	31	18498.0	3.5				ug/L	18393	Standard
S	34	3852.2	5.6				ug/L	3739	Standard
Sr	88	71.7	38.4				ug/L	78	Standard
C	12	123.3	4.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	66.7	52.7				mg/L	0	Standard
Dy	164	3021.0	3.5				mg/L	2	Standard
Ho-1	165	1641.8	1.4				mg/L	10	Standard
Er	166	1586.8	8.2				mg/L	23	Standard
I	127	4954.1	6.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.023	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.814	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.339
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.405
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606105401
Sample Date/Time: Tuesday, June 21, 2016 20:03:43
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61720.5	1.6				ug/L	60176	Standard
	Be	9	93.3	26.4	**0.1174**	0.032	27.0	ug/L	5	Standard
	Al	27	303416.2	0.1	**2.2442**	0.038	1.7	ug/L	832	Standard
	Sc	45	26598.3	1.8				ug/L	25066	Standard
	Ti	47	5974.5	1.1	**29.4612**	0.106	0.4	ug/L	38	Standard
	V	51	29615.8	0.7	**4.6079**	0.038	0.8	ug/L	974	Standard
	Cr	52	34301.5	0.5	**4.2336**	0.017	0.4	ug/L	5792	Standard
	Cr	53	4075.5	5.3	**4.3682**	0.220	5.0	ug/L	347	Standard
	Mn	55	67679.2	0.7	**9.9350**	0.149	1.5	ug/L	1164	Standard
	Co	59	5795.4	0.6	**0.8641**	0.012	1.4	ug/L	303	Standard
	Ni	60	7058.0	2.5	**3.5727**	0.066	1.8	ug/L	291	Standard
	Cu	65	1680.8	0.8	**0.8038**	0.014	1.8	ug/L	173	Standard
	Zn	66	13813.0	1.2	**12.5434**	0.154	1.2	ug/L	130	Standard
>	**Ge**	72	512622.2	0.8				ug/L	491724	Standard
	As	75	1326.1	3.7	**1.2458**	0.045	3.6	ug/L	-25	Standard
	Se	82	58.4	19.9	**0.4492**	0.112	25.0	ug/L	12	Standard
	Se-1	77	88.3	8.0	**0.5495**	0.098	17.9	ug/L	57	Standard
>	**Ga**	71	5431.0	3.2				mg/L	148	Standard
	Rb	85	11375.9	1.4				ug/L	18	Standard
	Y	89	433671.4	3.3				ug/L	401845	Standard
>	**Rh**	103	16.7	62.4				ug/L	10	Standard
	Mo	98	2147.6	0.7	**0.8712**	0.013	1.5	ug/L	12	Standard
	Ag	107	162.0	7.3	**0.0115**	0.002	16.1	ug/L	98	Standard
	Cd	111	42.4	7.2	**0.0174**	0.001	7.5	mg/L	11	Standard
	Cd	114	99.9	11.8	**0.0170**	0.002	13.5	ug/L	21	Standard
>	**In**	115	558893.7	1.3				ug/L	547487	Standard
	Sn	118	561.7	17.7	**0.0319**	0.019	59.1	ug/L	450	Standard
	Sb	123	749.1	15.9	**0.1654**	0.030	17.9	ug/L	105	Standard
	Ba	135	29348.7	0.5	**15.6055**	0.116	0.7	ug/L	111	Standard
	Ce	140	146646.3	1.1				ug/L	107	Standard
>	**Tb**	159	887966.0	1.1				ug/L	890342	Standard
	Ho	165	671.7	6.3				ug/L	10	Standard
	Tl	203	235.7	12.3	**0.0279**	0.004	14.4	ug/L	19	Standard
	Tl	205	173.3	14.5	**0.0291**	0.004	14.7	ug/L	17	Standard
	Pb	206	14922.0	0.9	**3.0381**	0.064	2.1	ug/L	247	Standard
	Pb	207	12398.4	1.3	**2.7752**	0.080	2.9	ug/L	215	Standard
	Pb	208	50203.5	0.7	**2.9980**	0.064	2.1	ug/L	770	Standard
	U	238	2316.2	1.5	**0.3880**	0.011	2.7	ug/L	13	Standard
>	**Bi**	209	499818.9	1.6				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	56.7	18.4	**0.0343**	0.012	35.9	mg/L	35	Standard
K	39	40.0	12.5	**0.0758**	0.026	33.7	mg/L	25	Standard
Ca	43	33.3	31.2	**0.8816**	2.026	229.8	mg/L	38	Standard
Fe	54	1087.4	2.8	**0.8360**	0.027	3.2	mg/L	126	Standard
Fe	57	525.0	12.5	**0.8590**	0.218	25.3	mg/L	245	Standard
> **Sc-1**	45	26598.3	1.8				mg/L	25066	Standard
Cl	35	134133.2	1.4				ug/L	125857	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	2273.5	6.1				ug/L	1350	Standard
P	31	19075.3	1.6				ug/L	18393	Standard
S	34	3665.4	1.3				ug/L	3739	Standard
Sr	88	76.7	10.0				ug/L	78	Standard
C	12	130.0	48.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	63.3	24.1				mg/L	0	Standard
Dy	164	1323.8	7.9				mg/L	2	Standard
Ho-1	165	671.7	6.3				mg/L	10	Standard
Er	166	686.7	8.0				mg/L	23	Standard
I	127	2676.9	2.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.567	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.250	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.084
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.339
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L160105401PS WG573475-01
Sample Date/Time: Tuesday, June 21, 2016 20:06:54
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62794.9	0.3				ug/L	60176	Standard
	Be	9	39553.2	1.1	**52.7892**	0.596	1.1	ug/L	5	Standard
	Al	27	307971.8	0.5	**2.2385**	0.019	0.8	ug/L	832	Standard
	Sc	45	26882.2	1.8				ug/L	25066	Standard
	Ti	47	6129.2	0.9	**30.0854**	0.443	1.5	ug/L	38	Standard
	V	51	350807.1	1.1	**56.1596**	0.484	0.9	ug/L	974	Standard
	Cr	52	380685.2	0.7	**56.2324**	0.702	1.2	ug/L	5792	Standard
	Cr	53	47479.3	2.5	**55.0311**	1.483	2.7	ug/L	347	Standard
	Mn	55	401711.5	2.2	**59.7429**	1.526	2.6	ug/L	1164	Standard
	Co	59	335117.7	1.9	**52.5149**	1.178	2.2	ug/L	303	Standard
	Ni	60	103584.6	0.9	**54.7808**	0.581	1.1	ug/L	291	Standard
	Cu	65	100044.2	0.8	**53.3041**	0.495	0.9	ug/L	173	Standard
	Zn	66	69784.7	1.2	**64.0109**	0.350	0.5	ug/L	130	Standard
>	**Ge**	72	515100.8	0.7				ug/L	491724	Standard
	As	75	57585.9	1.4	**52.4062**	0.728	1.4	ug/L	-25	Standard
	Se	82	5557.0	0.5	**51.2198**	0.370	0.7	ug/L	12	Standard
	Se-1	77	3824.8	2.7	**51.0178**	1.538	3.0	ug/L	57	Standard
>	**Ga**	71	5406.0	3.1				mg/L	148	Standard
	Rb	85	11310.9	0.9				ug/L	18	Standard
	Y	89	430615.8	1.3				ug/L	401845	Standard
>	**Rh**	103	35.0	14.3				ug/L	10	Standard
	Mo	98	2082.6	2.7	**0.8357**	0.016	1.9	ug/L	12	Standard
	Ag	107	313560.0	0.3	**51.5352**	0.570	1.1	ug/L	98	Standard
	Cd	111	99080.1	0.8	**51.0986**	0.459	0.9	mg/L	11	Standard
	Cd	114	240574.4	0.6	**50.9998**	0.581	1.1	ug/L	21	Standard
>	**In**	115	564766.8	1.3				ug/L	547487	Standard
	Sn	118	651.7	3.5	**0.0476**	0.003	5.8	ug/L	450	Standard
	Sb	123	219038.4	0.6	**49.9905**	0.624	1.2	ug/L	105	Standard
	Ba	135	122799.3	0.6	**64.7923**	0.643	1.0	ug/L	111	Standard
	Ce	140	145608.1	1.7				ug/L	107	Standard
>	**Tb**	159	891761.9	1.6				ug/L	890342	Standard
	Ho	165	680.0	5.1				ug/L	10	Standard
	Tl	203	390727.1	0.9	**51.0556**	0.307	0.6	ug/L	19	Standard
	Tl	205	332957.0	0.5	**53.0280**	0.386	0.7	ug/L	17	Standard
	Pb	206	268736.3	0.4	**54.5663**	0.473	0.9	ug/L	247	Standard
	Pb	207	234417.6	1.0	**52.3635**	1.055	2.0	ug/L	215	Standard
	Pb	208	909782.4	1.0	**54.2774**	0.756	1.4	ug/L	770	Standard
	U	238	311618.6	0.6	**51.2899**	0.366	0.7	ug/L	13	Standard
>	**Bi**	209	509666.6	1.1				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	56.7	67.4	**0.0334**	0.048	143.9	mg/L	35	Standard
K	39	28.3	88.8	**0.0206**	0.119	576.6	mg/L	25	Standard
Ca	43	23.3	68.9	**-1.0431**	2.962	283.9	mg/L	38	Standard
Fe	54	984.0	1.5	**0.7343**	0.012	1.7	mg/L	126	Standard
Fe	57	478.3	10.2	**0.6676**	0.161	24.2	mg/L	245	Standard
Sc-1	45	26882.2	1.8				mg/L	25066	Standard
Cl	35	130277.0	0.6				ug/L	125857	Standard
Kr	83	3.3	45.8				ug/L	1	Standard
Br	81	2190.2	10.3				ug/L	1350	Standard
P	31	18941.8	1.3				ug/L	18393	Standard
S	34	3468.7	2.9				ug/L	3739	Standard
Sr	88	81.7	9.4				ug/L	78	Standard
C	12	83.3	6.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	60.0	16.7				mg/L	0	Standard
Dy	164	1430.7	6.9				mg/L	2	Standard
Ho-1	165	680.0	5.1				mg/L	10	Standard
Er	166	613.3	13.6				mg/L	23	Standard
I	127	2793.6	5.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.352	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.754	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L160105401PS WG573475-01
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.156
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.297
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606105401SDL WG573475-02
Sample Date/Time: Tuesday, June 21, 2016 20:10:06
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63462.7	2.8				ug/L	60176	Standard
	Be	9	43.3	6.7	**0.0483**	0.005	10.7	ug/L	5	Standard
	Al	27	62110.4	1.6	**0.4402**	0.014	3.1	ug/L	832	Standard
	Sc	45	27483.2	2.5				ug/L	25066	Standard
	Ti	47	1202.7	6.4	**5.8283**	0.361	6.2	ug/L	38	Standard
	V	51	6687.6	0.7	**0.9204**	0.038	4.1	ug/L	974	Standard
	Cr	52	11970.1	2.2	**0.8833**	0.051	5.8	ug/L	5792	Standard
	Cr	53	1118.4	3.2	**0.9142**	0.068	7.4	ug/L	347	Standard
	Mn	55	14114.2	2.6	**1.9239**	0.035	1.8	ug/L	1164	Standard
	Co	59	1371.4	3.2	**0.1692**	0.010	5.9	ug/L	303	Standard
	Ni	60	1550.7	0.7	**0.6455**	0.028	4.3	ug/L	291	Standard
	Cu	65	526.7	2.9	**0.1880**	0.015	7.9	ug/L	173	Standard
	Zn	66	4240.9	4.2	**3.7282**	0.034	0.9	ug/L	130	Standard
>	**Ge**	72	507330.3	3.4				ug/L	491724	Standard
	As	75	245.5	8.2	**0.2605**	0.014	5.3	ug/L	-25	Standard
	Se	82	25.7	28.8	**0.1499**	0.077	51.5	ug/L	12	Standard
	Se-1	77	61.3	9.3	**0.1936**	0.101	52.0	ug/L	57	Standard
>	**Ga**	71	1146.7	6.4				mg/L	148	Standard
	Rb	85	2321.8	7.4				ug/L	18	Standard
	Y	89	429962.5	1.2				ug/L	401845	Standard
>	**Rh**	103	40.0	66.1				ug/L	10	Standard
	Mo	98	429.5	5.0	**0.1645**	0.007	4.1	ug/L	12	Standard
	Ag	107	155.3	11.0	**0.0095**	0.003	29.8	ug/L	98	Standard
	Cd	111	24.9	56.2	**0.0078**	0.007	90.6	mg/L	11	Standard
	Cd	114	64.8	37.7	**0.0090**	0.005	57.8	ug/L	21	Standard
>	**In**	115	579213.8	1.2				ug/L	547487	Standard
	Sn	118	441.7	2.4	**0.0064**	0.003	44.2	ug/L	450	Standard
	Sb	123	1595.3	21.7	**0.3472**	0.075	21.7	ug/L	105	Standard
	Ba	135	5942.5	1.1	**3.0045**	0.068	2.3	ug/L	111	Standard
	Ce	140	29104.6	2.4				ug/L	107	Standard
>	**Tb**	159	919049.1	0.8				ug/L	890342	Standard
	Ho	165	130.0	6.7				ug/L	10	Standard
	Tl	203	140.3	32.1	**0.0144**	0.006	39.9	ug/L	19	Standard
	Tl	205	131.7	30.7	**0.0215**	0.006	29.1	ug/L	17	Standard
	Pb	206	3187.3	2.3	**0.5784**	0.013	2.3	ug/L	247	Standard
	Pb	207	2652.9	2.4	**0.5278**	0.013	2.5	ug/L	215	Standard
	Pb	208	10854.5	0.5	**0.5739**	0.002	0.3	ug/L	770	Standard
	U	238	529.3	8.9	**0.0844**	0.008	9.0	ug/L	13	Standard
>	**Bi**	209	521218.5	0.3				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	45.0	11.1	**0.0175**	0.006	35.9	mg/L	35	Standard
K	39	30.0	44.1	**0.0243**	0.061	252.8	mg/L	25	Standard
Ca	43	23.3	24.7	**-1.1467**	0.924	80.6	mg/L	38	Standard
Fe	54	317.1	0.9	**0.1380**	0.006	4.5	mg/L	126	Standard
Fe	57	253.3	19.5	**-0.1775**	0.188	106.2	mg/L	245	Standard
> **Sc-1**	45	27483.2	2.5				mg/L	25066	Standard
Cl	35	130060.6	1.2				ug/L	125857	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	1580.1	15.4				ug/L	1350	Standard
P	31	19601.0	6.2				ug/L	18393	Standard
S	34	3312.0	2.4				ug/L	3739	Standard
Sr	88	70.0	14.3				ug/L	78	Standard
C	12	53.3	57.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	173.2				mg/L	0	Standard
Dy	164	306.8	2.4				mg/L	2	Standard
Ho-1	165	130.0	6.7				mg/L	10	Standard
Er	166	136.7	23.5				mg/L	23	Standard
I	127	1430.1	5.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.462	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.174	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.795
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.593
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606105401SDL WG573475-02
Sample Date/Time: Tuesday, June 21, 2016 20:13:17
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62075.3	3.4				ug/L	60176	Standard
	Be	9	16.7	17.3	**0.0135**	0.004	29.0	ug/L	5	Standard
	Al	27	12923.8	2.2	**0.0871**	0.004	4.8	ug/L	832	Standard
	Sc	45	27139.3	3.8				ug/L	25066	Standard
	Ti	47	272.0	8.8	**1.1730**	0.126	10.8	ug/L	38	Standard
	V	51	2230.3	1.0	**0.1971**	0.010	5.1	ug/L	974	Standard
	Cr	52	7378.1	1.3	**0.1951**	0.026	13.6	ug/L	5792	Standard
	Cr	53	530.0	5.7	**0.2224**	0.032	14.3	ug/L	347	Standard
	Mn	55	4071.2	2.2	**0.4086**	0.019	4.6	ug/L	1164	Standard
	Co	59	492.0	9.6	**0.0300**	0.009	29.8	ug/L	303	Standard
	Ni	60	471.3	1.5	**0.0663**	0.008	11.5	ug/L	291	Standard
	Cu	65	217.0	2.6	**0.0213**	0.005	21.6	ug/L	173	Standard
	Zn	66	1805.8	2.4	**1.4723**	0.069	4.7	ug/L	130	Standard
>	**Ge**	72	501702.6	1.7				ug/L	491724	Standard
	As	75	24.3	87.9	**0.0566**	0.020	35.2	ug/L	-25	Standard
	Se	82	18.9	18.3	**0.0867**	0.033	37.9	ug/L	12	Standard
	Se-1	77	53.3	8.5	**0.0899**	0.058	64.7	ug/L	57	Standard
>	**Ga**	71	313.3	3.3				mg/L	148	Standard
	Rb	85	476.7	7.4				ug/L	18	Standard
	Y	89	438752.1	0.6				ug/L	401845	Standard
>	**Rh**	103	30.0	16.7				ug/L	10	Standard
	Mo	98	110.3	7.5	**0.0392**	0.004	9.8	ug/L	12	Standard
	Ag	107	108.0	10.5	**0.0020**	0.002	98.3	ug/L	98	Standard
	Cd	111	10.8	70.1	**0.0008**	0.004	499.4	mg/L	11	Standard
	Cd	114	43.9	46.7	**0.0047**	0.004	91.7	ug/L	21	Standard
>	**In**	115	576504.1	1.5				ug/L	547487	Standard
	Sn	118	475.0	15.9	**0.0128**	0.014	109.1	ug/L	450	Standard
	Sb	123	463.6	29.1	**0.0963**	0.031	32.6	ug/L	105	Standard
	Ba	135	1313.4	3.2	**0.6237**	0.012	1.9	ug/L	111	Standard
	Ce	140	5786.1	4.9				ug/L	107	Standard
>	**Tb**	159	898389.3	2.3				ug/L	890342	Standard
	Ho	165	30.0	16.7				ug/L	10	Standard
	Tl	203	55.0	70.9	**0.0037**	0.005	139.1	ug/L	19	Standard
	Tl	205	41.7	70.3	**0.0077**	0.005	61.7	ug/L	17	Standard
	Pb	206	916.0	4.2	**0.1339**	0.009	6.5	ug/L	247	Standard
	Pb	207	747.7	4.4	**0.1174**	0.008	6.7	ug/L	215	Standard
	Pb	208	3092.8	3.0	**0.1274**	0.006	5.0	ug/L	770	Standard
	U	238	143.3	18.2	**0.0231**	0.004	19.3	ug/L	13	Standard
>	**Bi**	209	502532.6	0.4				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	53.3	47.2	**0.0289**	0.033	114.0	mg/L	35	Standard
K	39	30.0	60.1	**0.0244**	0.079	325.6	mg/L	25	Standard
Ca	43	30.0	33.3	**0.1797**	1.980	1101.9	mg/L	38	Standard
Fe	54	180.9	6.6	**0.0219**	0.004	19.7	mg/L	126	Standard
Fe	57	280.0	8.2	**-0.0692**	0.099	143.2	mg/L	245	Standard
> **Sc-1**	45	27139.3	3.8				mg/L	25066	Standard
Cl	35	132798.2	1.3				ug/L	125857	Standard
Kr	83	2.7	78.1				ug/L	1	Standard
Br	81	1633.4	13.0				ug/L	1350	Standard
P	31	18716.6	3.2				ug/L	18393	Standard
S	34	3410.4	2.5				ug/L	3739	Standard
Sr	88	51.7	22.3				ug/L	78	Standard
C	12	60.0	57.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	91.1	51.3				mg/L	2	Standard
Ho-1	165	30.0	16.7				mg/L	10	Standard
Er	166	46.7	32.7				mg/L	23	Standard
I	127	1188.4	6.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.156	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.029	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.300
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.879
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 20:16:31
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	61809.3	4.5				ug/L	60176	Standard
	Be	9	36245.0	0.8	**49.1988**	1.805	3.7	ug/L	5	Standard
	Al	27	6582318.8	1.8	**48.8210**	1.363	2.8	ug/L	832	Standard
	Sc	45	26551.6	2.9				ug/L	25066	Standard
	Ti	47	20307.3	0.8	**104.7366**	0.864	0.8	ug/L	38	Standard
	V	51	307773.1	2.0	**51.5001**	0.172	0.3	ug/L	974	Standard
	Cr	52	332161.2	0.7	**51.2294**	1.226	2.4	ug/L	5792	Standard
	Cr	53	42405.9	1.2	**51.3640**	0.276	0.5	ug/L	347	Standard
	Mn	55	325172.6	1.2	**50.5298**	0.233	0.5	ug/L	1164	Standard
	Co	59	317920.3	2.4	**52.0831**	0.431	0.8	ug/L	303	Standard
	Ni	60	91403.9	0.5	**50.5335**	0.688	1.4	ug/L	291	Standard
	Cu	65	91169.5	0.8	**50.7905**	0.667	1.3	ug/L	173	Standard
	Zn	66	52960.1	1.1	**50.7498**	0.564	1.1	ug/L	130	Standard
>	Ge	72	492646.8	1.7				ug/L	491724	Standard
	As	75	53122.0	0.6	**50.5540**	0.557	1.1	ug/L	-25	Standard
	Se	82	5355.6	0.4	**51.6204**	0.769	1.5	ug/L	12	Standard
	Se-1	77	3659.1	2.5	**51.0370**	1.490	2.9	ug/L	57	Standard
>	Ga	71	103.3	24.8				mg/L	148	Standard
	Rb	85	821.7	11.1				ug/L	18	Standard
	Y	89	426804.9	1.0				ug/L	401845	Standard
>	Rh	103	46.7	62.8				ug/L	10	Standard
	Mo	98	240578.5	1.9	**95.7566**	1.752	1.8	ug/L	12	Standard
	Ag	107	293672.5	0.8	**47.6191**	0.728	1.5	ug/L	98	Standard
	Cd	111	97148.2	0.4	**49.4310**	0.396	0.8	mg/L	11	Standard
	Cd	114	238273.1	1.3	**49.8334**	0.670	1.3	ug/L	21	Standard
>	In	115	572423.0	0.8				ug/L	547487	Standard
	Sn	118	262319.8	0.9	**48.2447**	0.796	1.6	ug/L	450	Standard
	Sb	123	211959.4	1.1	**47.7258**	0.723	1.5	ug/L	105	Standard
	Ba	135	92131.9	0.5	**47.9464**	0.632	1.3	ug/L	111	Standard
	Ce	140	101.7	44.6				ug/L	107	Standard
>	Tb	159	884901.8	0.8				ug/L	890342	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	370454.0	0.8	**49.8033**	0.613	1.2	ug/L	19	Standard
	Tl	205	319179.0	1.6	**52.3013**	1.096	2.1	ug/L	17	Standard
	Pb	206	236235.7	0.3	**49.3439**	0.398	0.8	ug/L	247	Standard
	Pb	207	215467.7	0.9	**49.5115**	0.712	1.4	ug/L	215	Standard
	Pb	208	846194.0	1.4	**51.9369**	0.988	1.9	ug/L	770	Standard
	U	238	302895.4	0.7	**51.2919**	0.606	1.2	ug/L	13	Standard
>	Bi	209	495377.4	0.6				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3608.8	3.4	**4.6428**	0.152	3.3	mg/L	35	Standard
K	39	930.0	9.8	**4.2620**	0.368	8.6	mg/L	25	Standard
Ca	43	71.7	28.2	**7.9807**	3.539	44.3	mg/L	38	Standard
Fe	54	5416.4	5.0	**4.7205**	0.325	6.9	mg/L	126	Standard
Fe	57	1530.1	9.9	**4.6008**	0.459	10.0	mg/L	245	Standard
> **Sc-1**	45	26551.6	2.9				mg/L	25066	Standard
Cl	35	138136.9	1.0				ug/L	125857	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	1570.1	5.7				ug/L	1350	Standard
P	31	19352.4	2.2				ug/L	18393	Standard
S	34	4222.3	4.4				ug/L	3739	Standard
Sr	88	46.7	16.4				ug/L	78	Standard
C	12	56.7	36.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	2.5	222.5				mg/L	2	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	16.7	34.6				mg/L	23	Standard
I	127	1088.4	5.8				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	98.398		
	Al	27	97.642		
	Sc	45			
	Ti	47	104.737		
	V	51	103.000		
	Cr	52	102.459		
	Cr	53			
	Mn	55	101.060		
	Co	59	104.166		
	Ni	60	101.067		
	Cu	65	101.581		
	Zn	66	101.500		
>	Ge	72		100.188	
	As	75	101.108		
	Se	82	103.241		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	95.757		
Ag	107	95.238		
Cd	111	98.862		
Cd	114			
In	115		104.555	
Sn	118	96.489		
Sb	123	95.452		
Ba	135	95.893		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.607		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.874		
U	238	102.584		
Bi	209		98.457	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 20:19:42
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59004.7	2.4				ug/L	60176	Standard
	Be	9	15.0	33.3	**0.0123**	0.007	55.9	ug/L	5	Standard
	Al	27	1221.7	22.8	**0.0011**	0.002	184.4	ug/L	832	Standard
	Sc	45	26162.6	2.8				ug/L	25066	Standard
	Ti	47	22.7	22.2	**-0.0938**	0.025	26.7	ug/L	38	Standard
	V	51	1096.4	3.1	**0.0083**	0.006	72.4	ug/L	974	Standard
	Cr	52	6080.6	0.6	**-0.0141**	0.009	60.7	ug/L	5792	Standard
	Cr	53	428.3	8.2	**0.0958**	0.044	45.6	ug/L	347	Standard
	Mn	55	922.7	7.2	**-0.0753**	0.011	14.0	ug/L	1164	Standard
	Co	59	276.0	8.7	**-0.0053**	0.004	76.6	ug/L	303	Standard
	Ni	60	181.3	7.1	**-0.0927**	0.007	8.0	ug/L	291	Standard
	Cu	65	115.7	15.5	**-0.0349**	0.010	27.6	ug/L	173	Standard
	Zn	66	146.0	12.6	**-0.0986**	0.018	18.2	ug/L	130	Standard
>	**Ge**	72	506500.5	0.5				ug/L	491724	Standard
	As	75	-18.9	142.2	**0.0164**	0.025	151.4	ug/L	-25	Standard
	Se	82	22.3	20.3	**0.1163**	0.042	36.4	ug/L	12	Standard
	Se-1	77	50.7	8.0	**0.0466**	0.058	125.4	ug/L	57	Standard
>	**Ga**	71	98.3	22.9				mg/L	148	Standard
	Rb	85	25.0	34.6				ug/L	18	Standard
	Y	89	420472.2	1.7				ug/L	401845	Standard
>	**Rh**	103	21.7	35.3				ug/L	10	Standard
	Mo	98	215.9	20.5	**0.0836**	0.015	18.1	ug/L	12	Standard
	Ag	107	100.3	2.3	**0.0013**	0.000	16.9	ug/L	98	Standard
	Cd	111	12.6	20.4	**0.0019**	0.001	66.8	mg/L	11	Standard
	Cd	114	36.9	35.9	**0.0034**	0.003	76.6	ug/L	21	Standard
>	**In**	115	556898.8	3.2				ug/L	547487	Standard
	Sn	118	736.7	14.7	**0.0659**	0.025	37.6	ug/L	450	Standard
	Sb	123	429.7	33.8	**0.0926**	0.037	39.4	ug/L	105	Standard
	Ba	135	112.0	12.9	**0.0043**	0.007	160.0	ug/L	111	Standard
	Ce	140	35.0	14.3				ug/L	107	Standard
>	**Tb**	159	887182.6	2.1				ug/L	890342	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	50.3	23.7	**0.0032**	0.002	49.1	ug/L	19	Standard
	Tl	205	48.3	29.9	**0.0089**	0.002	26.7	ug/L	17	Standard
	Pb	206	283.7	6.5	**0.0042**	0.003	82.4	ug/L	247	Standard
	Pb	207	216.0	8.2	**-0.0026**	0.004	153.1	ug/L	215	Standard
	Pb	208	914.3	7.2	**-0.0039**	0.004	93.9	ug/L	770	Standard
	U	238	37.3	13.5	**0.0055**	0.001	14.8	ug/L	13	Standard
>	**Bi**	209	496398.1	0.7				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	48.5	**0.0163**	0.028	170.7	mg/L	35	Standard
K	39	28.3	36.7	**0.0223**	0.046	208.0	mg/L	25	Standard
Ca	43	28.3	36.7	**0.0638**	2.140	3353.3	mg/L	38	Standard
Fe	54	134.3	7.3	**-0.0145**	0.007	47.3	mg/L	126	Standard
Fe	57	193.3	4.0	**-0.3592**	0.042	11.6	mg/L	245	Standard
> **Sc-1**	45	26162.6	2.8				mg/L	25066	Standard
Cl	35	138431.0	1.7				ug/L	125857	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	1586.7	3.9				ug/L	1350	Standard
P	31	19664.4	2.7				ug/L	18393	Standard
S	34	4130.6	2.1				ug/L	3739	Standard
Sr	88	75.0	46.7				ug/L	78	Standard
C	12	43.3	26.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	16.0	75.7				mg/L	2	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	13.3	173.2				mg/L	23	Standard
I	127	915.0	6.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.005	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.719	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.659	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078703 WG573333-01
Sample Date/Time: Tuesday, June 21, 2016 20:22:55
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61250.2	0.8				ug/L	60176	Standard
	Be	9	533.3	8.2	**0.7208**	0.059	8.2	ug/L	5	Standard
	Al	27	4739129.5	0.9	**35.4392**	0.186	0.5	ug/L	832	Standard
	Sc	45	29605.6	2.9				ug/L	25066	Standard
	Ti	47	1339.7	3.2	**6.7020**	0.132	2.0	ug/L	38	Standard
	V	51	71406.4	1.8	**11.7973**	0.190	1.6	ug/L	974	Standard
	Cr	52	50888.7	1.6	**7.0346**	0.128	1.8	ug/L	5792	Standard
	Cr	53	6126.2	1.1	**7.0553**	0.185	2.6	ug/L	347	Standard
	Mn	55	2507110.3	0.7	**390.3777**	5.993	1.5	ug/L	1164	Standard
	Co	59	38304.0	1.2	**6.2221**	0.122	2.0	ug/L	303	Standard
	Ni	60	20980.2	1.2	**11.4317**	0.218	1.9	ug/L	291	Standard
	Cu	65	14716.8	0.9	**8.1026**	0.157	1.9	ug/L	173	Standard
	Zn	66	18330.8	1.8	**17.3802**	0.302	1.7	ug/L	130	Standard
>	**Ge**	72	493512.5	1.4				ug/L	491724	Standard
	As	75	1782.0	5.4	**1.7250**	0.073	4.2	ug/L	-25	Standard
	Se	82	35.6	28.1	**0.2511**	0.099	39.3	ug/L	12	Standard
	Se-1	77	88.0	14.2	**0.5919**	0.186	31.4	ug/L	57	Standard
>	**Ga**	71	8470.7	1.2				mg/L	148	Standard
	Rb	85	77419.0	1.7				ug/L	18	Standard
	Y	89	632239.1	1.1				ug/L	401845	Standard
>	**Rh**	103	36.7	31.5				ug/L	10	Standard
	Mo	98	157.1	8.2	**0.0590**	0.005	8.3	ug/L	12	Standard
	Ag	107	274.7	4.4	**0.0299**	0.003	9.4	ug/L	98	Standard
	Cd	111	187.0	6.5	**0.0920**	0.008	8.8	mg/L	11	Standard
	Cd	114	444.1	15.9	**0.0897**	0.014	15.2	ug/L	21	Standard
>	**In**	115	563958.4	1.8				ug/L	547487	Standard
	Sn	118	591.7	12.1	**0.0367**	0.014	39.0	ug/L	450	Standard
	Sb	123	220.2	26.8	**0.0429**	0.014	33.7	ug/L	105	Standard
	Ba	135	144715.5	0.6	**76.4840**	1.276	1.7	ug/L	111	Standard
	Ce	140	988223.5	0.5				ug/L	107	Standard
>	**Tb**	159	908188.9	1.2				ug/L	890342	Standard
	Ho	165	17219.8	2.5				ug/L	10	Standard
	Tl	203	463.3	4.4	**0.0586**	0.002	4.2	ug/L	19	Standard
	Tl	205	378.3	13.4	**0.0628**	0.008	12.5	ug/L	17	Standard
	Pb	206	45384.9	0.3	**9.4112**	0.053	0.6	ug/L	247	Standard
	Pb	207	36832.4	1.0	**8.3986**	0.095	1.1	ug/L	215	Standard
	Pb	208	155922.4	1.7	**9.4964**	0.166	1.7	ug/L	770	Standard
	U	238	2728.6	1.4	**0.4601**	0.009	2.0	ug/L	13	Standard
>	**Bi**	209	496638.4	0.7				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	93.3	11.2	**0.0696**	0.011	15.8	mg/L	35	Standard
K	39	126.7	21.7	**0.4205**	0.104	24.7	mg/L	25	Standard
Ca	43	46.7	44.6	**2.5335**	3.744	147.8	mg/L	38	Standard
Fe	54	5828.7	1.9	**4.5504**	0.210	4.6	mg/L	126	Standard
Fe	57	1691.8	7.2	**4.5640**	0.493	10.8	mg/L	245	Standard
> **Sc-1**	45	29605.6	2.9				mg/L	25066	Standard
Cl	35	137167.4	0.3				ug/L	125857	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	1823.4	14.0				ug/L	1350	Standard
P	31	18519.7	3.3				ug/L	18393	Standard
S	34	4015.5	1.1				ug/L	3739	Standard
Sr	88	103.3	12.2				ug/L	78	Standard
C	12	66.7	31.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	100.0				mg/L	0	Standard
Dy	164	29188.4	3.4				mg/L	2	Standard
Ho-1	165	17219.8	2.5				mg/L	10	Standard
Er	166	15471.2	3.8				mg/L	23	Standard
I	127	8429.0	7.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.785	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.364	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.009
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.707
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606078704S WG573333-05
Sample Date/Time: Tuesday, June 21, 2016 20:26:07
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60795.1	1.7				ug/L	60176	Standard
	Be	9	19584.3	1.1	**26.9961**	0.342	1.3	ug/L	5	Standard
	Al	27	4567931.7	1.1	**34.4185**	0.489	1.4	ug/L	832	Standard
	Sc	45	29006.1	1.6				ug/L	25066	Standard
	Ti	47	3165.0	3.9	**15.7145**	0.722	4.6	ug/L	38	Standard
	V	51	242137.7	0.6	**39.4045**	0.713	1.8	ug/L	974	Standard
	Cr	52	226731.6	0.9	**33.7129**	0.272	0.8	ug/L	5792	Standard
	Cr	53	28276.4	2.1	**33.1977**	1.054	3.2	ug/L	347	Standard
	Mn	55	2051282.4	3.3	**311.4080**	12.009	3.9	ug/L	1164	Standard
	Co	59	195015.9	1.5	**31.0844**	0.761	2.4	ug/L	303	Standard
	Ni	60	65648.6	0.3	**35.2674**	0.363	1.0	ug/L	291	Standard
	Cu	65	58144.4	1.1	**31.4896**	0.412	1.3	ug/L	173	Standard
	Zn	66	44983.4	1.5	**41.9115**	0.217	0.5	ug/L	130	Standard
>	**Ge**	72	506139.8	1.3				ug/L	491724	Standard
	As	75	25341.1	0.4	**23.4909**	0.303	1.3	ug/L	-25	Standard
	Se	82	2045.3	2.1	**19.1312**	0.577	3.0	ug/L	12	Standard
	Se-1	77	1519.4	1.8	**20.2366**	0.146	0.7	ug/L	57	Standard
>	**Ga**	71	9184.5	4.0				mg/L	148	Standard
	Rb	85	70028.1	1.4				ug/L	18	Standard
	Y	89	627632.4	1.5				ug/L	401845	Standard
>	**Rh**	103	40.0	45.1				ug/L	10	Standard
	Mo	98	594.6	6.7	**0.2447**	0.017	7.1	ug/L	12	Standard
	Ag	107	147727.7	1.0	**25.2040**	0.390	1.5	ug/L	98	Standard
	Cd	111	48105.2	0.3	**25.7603**	0.320	1.2	mg/L	11	Standard
	Cd	114	117496.3	0.5	**25.8635**	0.442	1.7	ug/L	21	Standard
>	**In**	115	543890.8	1.3				ug/L	547487	Standard
	Sn	118	720.0	10.8	**0.0655**	0.015	23.0	ug/L	450	Standard
	Sb	123	21224.1	1.3	**5.0226**	0.049	1.0	ug/L	105	Standard
	Ba	135	168787.7	0.9	**92.5008**	1.371	1.5	ug/L	111	Standard
	Ce	140	900741.5	2.1				ug/L	107	Standard
>	**Tb**	159	881875.5	1.1				ug/L	890342	Standard
	Ho	165	17471.7	0.7				ug/L	10	Standard
	Tl	203	184074.8	0.7	**24.8291**	0.438	1.8	ug/L	19	Standard
	Tl	205	156804.0	1.7	**25.7832**	0.724	2.8	ug/L	17	Standard
	Pb	206	159776.4	0.6	**33.4695**	0.581	1.7	ug/L	247	Standard
	Pb	207	136948.1	0.2	**31.5548**	0.325	1.0	ug/L	215	Standard
	Pb	208	552723.2	0.9	**34.0190**	0.677	2.0	ug/L	770	Standard
	U	238	155414.7	0.8	**26.4072**	0.520	2.0	ug/L	13	Standard
>	**Bi**	209	493745.3	1.2				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	76.7	29.4	**0.0523**	0.028	52.7	mg/L	35	Standard
K	39	121.7	41.6	**0.4123**	0.220	53.4	mg/L	25	Standard
Ca	43	56.7	5.1	**4.3235**	0.342	7.9	mg/L	38	Standard
Fe	54	6910.1	1.7	**5.5303**	0.066	1.2	mg/L	126	Standard
Fe	57	2031.8	2.9	**5.8339**	0.224	3.8	mg/L	245	Standard
> **Sc-1**	45	29006.1	1.6				mg/L	25066	Standard
Cl	35	131188.4	2.4				ug/L	125857	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	1806.8	7.4				ug/L	1350	Standard
P	31	18918.5	1.6				ug/L	18393	Standard
S	34	3765.5	5.6				ug/L	3739	Standard
Sr	88	86.7	23.3				ug/L	78	Standard
C	12	36.7	83.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	28039.5	3.1				mg/L	2	Standard
Ho-1	165	17471.7	0.7				mg/L	10	Standard
Er	166	14914.0	2.5				mg/L	23	Standard
I	127	7893.7	1.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.029	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.932	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.343
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.132
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606078704S WG573333-05
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Method 6020 - Summary Report

Sample ID: L1606078705SD WG573333-06
Sample Date/Time: Tuesday, June 21, 2016 20:29:18
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63216.6	1.8				ug/L	60176	Standard
	Be	9	19696.1	2.2	**26.1120**	0.714	2.7	ug/L	5	Standard
	Al	27	5659138.5	0.3	**41.0133**	0.799	1.9	ug/L	832	Standard
	Sc	45	30033.1	1.0				ug/L	25066	Standard
	Ti	47	2763.3	27.2	**13.8639**	4.139	29.9	ug/L	38	Standard
	V	51	237607.5	1.1	**38.9988**	0.497	1.3	ug/L	974	Standard
	Cr	52	248636.6	1.2	**37.3971**	0.891	2.4	ug/L	5792	Standard
	Cr	53	30921.5	0.6	**36.6639**	1.024	2.8	ug/L	347	Standard
	Mn	55	2410492.6	0.5	**369.1780**	8.479	2.3	ug/L	1164	Standard
	Co	59	185271.5	0.5	**29.7851**	0.497	1.7	ug/L	303	Standard
	Ni	60	67071.8	1.3	**36.3557**	0.915	2.5	ug/L	291	Standard
	Cu	65	60322.2	1.1	**32.9575**	0.383	1.2	ug/L	173	Standard
	Zn	66	45873.7	1.3	**43.1216**	0.385	0.9	ug/L	130	Standard
>	**Ge**	72	501820.8	2.1				ug/L	491724	Standard
	As	75	24039.7	1.9	**22.4789**	0.430	1.9	ug/L	-25	Standard
	Se	82	1972.7	2.1	**18.6056**	0.284	1.5	ug/L	12	Standard
	Se-1	77	1402.7	4.3	**18.8146**	1.203	6.4	ug/L	57	Standard
>	**Ga**	71	9417.9	5.5				mg/L	148	Standard
	Rb	85	66410.2	0.3				ug/L	18	Standard
	Y	89	617512.5	0.5				ug/L	401845	Standard
>	**Rh**	103	50.0	62.5				ug/L	10	Standard
	Mo	98	1524.5	3.3	**0.6151**	0.019	3.1	ug/L	12	Standard
	Ag	107	143879.3	0.9	**23.8137**	0.379	1.6	ug/L	98	Standard
	Cd	111	47710.7	0.7	**24.7847**	0.177	0.7	mg/L	11	Standard
	Cd	114	115961.3	1.6	**24.7605**	0.346	1.4	ug/L	21	Standard
>	**In**	115	560614.7	0.8				ug/L	547487	Standard
	Sn	118	1535.1	5.3	**0.2146**	0.013	6.3	ug/L	450	Standard
	Sb	123	23888.4	1.7	**5.4855**	0.117	2.1	ug/L	105	Standard
	Ba	135	184639.0	1.2	**98.1607**	0.543	0.6	ug/L	111	Standard
	Ce	140	908579.6	1.8				ug/L	107	Standard
>	**Tb**	159	921260.1	0.5				ug/L	890342	Standard
	Ho	165	17002.9	1.2				ug/L	10	Standard
	Tl	203	180601.4	1.1	**23.7143**	0.543	2.3	ug/L	19	Standard
	Tl	205	152330.3	0.3	**24.3789**	0.252	1.0	ug/L	17	Standard
	Pb	206	161923.0	0.9	**33.0139**	0.142	0.4	ug/L	247	Standard
	Pb	207	139326.0	1.1	**31.2477**	0.234	0.7	ug/L	215	Standard
	Pb	208	558215.4	0.7	**33.4396**	0.224	0.7	ug/L	770	Standard
	U	238	149906.9	0.4	**24.7925**	0.215	0.9	ug/L	13	Standard
>	**Bi**	209	507223.5	1.3				ug/L	503143	Standard

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Na	23	1.7	173.2	**15.4815**	26.806	173.1	mg/L	2	Standard
Mg	24	46.7	52.9	**0.0145**	0.028	192.1	mg/L	35	Standard
K	39	158.3	18.5	**0.5456**	0.116	21.3	mg/L	25	Standard
Ca	43	41.7	6.9	**1.5279**	0.454	29.7	mg/L	38	Standard
Fe	54	7213.6	3.5	**5.5758**	0.146	2.6	mg/L	126	Standard
Fe	57	1996.8	3.3	**5.4816**	0.233	4.3	mg/L	245	Standard
> **Sc-1**	45	30033.1	1.0				mg/L	25066	Standard
Cl	35	129762.7	0.8				ug/L	125857	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	1876.8	4.3				ug/L	1350	Standard
P	31	18274.3	0.2				ug/L	18393	Standard
S	34	3732.1	1.2				ug/L	3739	Standard
Sr	88	110.0	27.6				ug/L	78	Standard
C	12	66.7	37.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	29098.6	2.2				mg/L	2	Standard
Ho-1	165	17002.9	1.2				mg/L	10	Standard
Er	166	15394.5	3.5				mg/L	23	Standard
I	127	7451.8	4.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.053	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.053	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.398
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.811
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606078706
Sample Date/Time: Tuesday, June 21, 2016 20:32:30
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61503.1	4.4				ug/L	60176	Standard
	Be	9	190.0	11.5	**0.2498**	0.027	10.8	ug/L	5	Standard
	Al	27	2161096.6	2.0	**16.1023**	0.467	2.9	ug/L	832	Standard
	Sc	45	27194.4	2.9				ug/L	25066	Standard
	Ti	47	1729.4	29.8	**8.8301**	2.712	30.7	ug/L	38	Standard
	V	51	40719.4	1.5	**6.7406**	0.118	1.7	ug/L	974	Standard
	Cr	52	22743.1	1.4	**2.6675**	0.051	1.9	ug/L	5792	Standard
	Cr	53	2448.5	3.6	**2.6090**	0.103	4.0	ug/L	347	Standard
	Mn	55	1260041.1	0.2	**198.5616**	0.943	0.5	ug/L	1164	Standard
	Co	59	12600.6	0.8	**2.0396**	0.022	1.1	ug/L	303	Standard
	Ni	60	7512.5	0.9	**4.0234**	0.036	0.9	ug/L	291	Standard
	Cu	65	5352.3	2.1	**2.9221**	0.069	2.3	ug/L	173	Standard
	Zn	66	8532.4	1.5	**8.0679**	0.130	1.6	ug/L	130	Standard
>	**Ge**	72	487322.6	0.2				ug/L	491724	Standard
	As	75	1559.9	2.0	**1.5334**	0.026	1.7	ug/L	-25	Standard
	Se	82	35.2	29.3	**0.2510**	0.100	39.8	ug/L	12	Standard
	Se-1	77	72.7	4.2	**0.3880**	0.045	11.7	ug/L	57	Standard
>	**Ga**	71	2870.3	6.0				mg/L	148	Standard
	Rb	85	28276.4	2.7				ug/L	18	Standard
	Y	89	521144.4	0.3				ug/L	401845	Standard
>	**Rh**	103	45.0	19.2				ug/L	10	Standard
	Mo	98	116.0	7.3	**0.0415**	0.003	6.9	ug/L	12	Standard
	Ag	107	230.3	3.7	**0.0218**	0.002	8.7	ug/L	98	Standard
	Cd	111	115.8	1.7	**0.0540**	0.002	4.0	mg/L	11	Standard
	Cd	114	274.3	6.0	**0.0527**	0.005	8.7	ug/L	21	Standard
>	**In**	115	575128.8	2.3				ug/L	547487	Standard
	Sn	118	336.7	3.7	**-0.0123**	0.001	7.1	ug/L	450	Standard
	Sb	123	176.1	18.8	**0.0320**	0.008	25.7	ug/L	105	Standard
	Ba	135	86694.7	1.9	**44.9082**	1.004	2.2	ug/L	111	Standard
	Ce	140	436433.2	2.1				ug/L	107	Standard
>	**Tb**	159	887156.7	2.0				ug/L	890342	Standard
	Ho	165	7937.1	1.0				ug/L	10	Standard
	Tl	203	162.7	11.2	**0.0183**	0.003	15.7	ug/L	19	Standard
	Tl	205	140.0	3.6	**0.0238**	0.000	1.8	ug/L	17	Standard
	Pb	206	19692.8	1.3	**4.0500**	0.140	3.5	ug/L	247	Standard
	Pb	207	16290.1	1.3	**3.6832**	0.128	3.5	ug/L	215	Standard
	Pb	208	67765.1	1.3	**4.0908**	0.139	3.4	ug/L	770	Standard
	U	238	859.4	4.8	**0.1442**	0.009	5.9	ug/L	13	Standard
>	**Bi**	209	497164.1	2.1				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	45.0	19.2	**0.0180**	0.010	57.8	mg/L	35	Standard
K	39	71.7	24.5	**0.2186**	0.091	41.5	mg/L	25	Standard
Ca	43	31.7	65.7	**0.4222**	3.721	881.3	mg/L	38	Standard
Fe	54	2730.0	8.4	**2.2488**	0.134	6.0	mg/L	126	Standard
Fe	57	905.0	11.2	**2.1941**	0.285	13.0	mg/L	245	Standard
> **Sc-1**	45	27194.4	2.9				mg/L	25066	Standard
Cl	35	130552.0	0.6				ug/L	125857	Standard
Kr	83	3.7	83.3				ug/L	1	Standard
Br	81	1476.7	11.6				ug/L	1350	Standard
P	31	18608.1	3.2				ug/L	18393	Standard
S	34	3705.5	6.0				ug/L	3739	Standard
Sr	88	98.3	19.3				ug/L	78	Standard
C	12	70.0	14.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	13334.9	2.3				mg/L	2	Standard
Ho-1	165	7937.1	1.0				mg/L	10	Standard
Er	166	6914.9	5.3				mg/L	23	Standard
I	127	2945.3	1.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.205	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.105	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	105.049	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.812	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606078707
Sample Date/Time: Tuesday, June 21, 2016 20:35:41
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59709.1	1.3				ug/L	60176	Standard
	Be	9	200.0	10.9	**0.2718**	0.032	11.7	ug/L	5	Standard
	Al	27	1683075.1	1.4	**12.9055**	0.048	0.4	ug/L	832	Standard
	Sc	45	26478.1	4.1				ug/L	25066	Standard
	Ti	47	1140.4	8.0	**5.5902**	0.464	8.3	ug/L	38	Standard
	V	51	39686.8	0.8	**6.3850**	0.023	0.4	ug/L	974	Standard
	Cr	52	23499.9	2.1	**2.6878**	0.064	2.4	ug/L	5792	Standard
	Cr	53	2666.9	3.2	**2.7908**	0.107	3.8	ug/L	347	Standard
	Mn	55	420579.8	1.9	**64.3639**	1.562	2.4	ug/L	1164	Standard
	Co	59	13033.6	2.2	**2.0538**	0.057	2.8	ug/L	303	Standard
	Ni	60	7165.7	0.5	**3.7215**	0.035	0.9	ug/L	291	Standard
	Cu	65	5197.9	1.7	**2.7564**	0.034	1.2	ug/L	173	Standard
	Zn	66	9135.4	1.5	**8.4176**	0.173	2.1	ug/L	130	Standard
>	**Ge**	72	500708.0	0.5				ug/L	491724	Standard
	As	75	1463.5	3.3	**1.4032**	0.042	3.0	ug/L	-25	Standard
	Se	82	24.1	45.1	**0.1358**	0.103	76.2	ug/L	12	Standard
	Se-1	77	77.3	6.1	**0.4249**	0.062	14.6	ug/L	57	Standard
>	**Ga**	71	2593.6	3.7				mg/L	148	Standard
	Rb	85	26549.9	1.6				ug/L	18	Standard
	Y	89	508383.7	2.6				ug/L	401845	Standard
>	**Rh**	103	26.7	47.2				ug/L	10	Standard
	Mo	98	828.3	1.8	**0.3404**	0.004	1.3	ug/L	12	Standard
	Ag	107	171.0	8.6	**0.0136**	0.003	19.8	ug/L	98	Standard
	Cd	111	92.1	6.3	**0.0443**	0.003	7.2	mg/L	11	Standard
	Cd	114	165.6	20.7	**0.0318**	0.007	23.1	ug/L	21	Standard
>	**In**	115	547256.3	0.7				ug/L	547487	Standard
	Sn	118	725.0	5.0	**0.0656**	0.007	10.8	ug/L	450	Standard
	Sb	123	144.6	14.9	**0.0264**	0.005	18.6	ug/L	105	Standard
	Ba	135	55231.2	0.4	**30.0426**	0.229	0.8	ug/L	111	Standard
	Ce	140	414286.0	0.6				ug/L	107	Standard
>	**Tb**	159	881412.3	0.9				ug/L	890342	Standard
	Ho	165	7586.9	2.2				ug/L	10	Standard
	Tl	203	135.7	11.8	**0.0147**	0.002	16.0	ug/L	19	Standard
	Tl	205	110.0	20.8	**0.0190**	0.004	20.0	ug/L	17	Standard
	Pb	206	19007.2	0.5	**3.9191**	0.061	1.6	ug/L	247	Standard
	Pb	207	15601.7	1.7	**3.5366**	0.107	3.0	ug/L	215	Standard
	Pb	208	64611.6	1.1	**3.9100**	0.093	2.4	ug/L	770	Standard
	U	238	755.0	4.6	**0.1270**	0.005	3.6	ug/L	13	Standard
>	**Bi**	209	495487.3	1.3				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	35.0	14.3	**0.0067**	0.007	106.5	mg/L	35	Standard
K	39	83.3	21.1	**0.2797**	0.073	26.3	mg/L	25	Standard
Ca	43	25.0	20.0	**-0.6389**	1.092	170.9	mg/L	38	Standard
Fe	54	2467.8	3.0	**2.0838**	0.134	6.4	mg/L	126	Standard
Fe	57	820.0	4.2	**1.9775**	0.256	13.0	mg/L	245	Standard
> **Sc-1**	45	26478.1	4.1				mg/L	25066	Standard
Cl	35	128995.5	1.3				ug/L	125857	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	1503.4	13.0				ug/L	1350	Standard
P	31	17358.3	0.2				ug/L	18393	Standard
S	34	3645.4	0.9				ug/L	3739	Standard
Sr	88	81.7	14.1				ug/L	78	Standard
C	12	60.0	28.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	12318.4	0.4				mg/L	2	Standard
Ho-1	165	7586.9	2.2				mg/L	10	Standard
Er	166	6754.8	0.3				mg/L	23	Standard
I	127	2638.6	9.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.224	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.827	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.958
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.478
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078708
Sample Date/Time: Tuesday, June 21, 2016 20:38:53
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61146.5	1.9				ug/L	60176	Standard
	Be	9	295.0	11.1	**0.3957**	0.048	12.2	ug/L	5	Standard
	Al	27	10005765.0	2.2	**74.9914**	2.825	3.8	ug/L	832	Standard
	Sc	45	28378.2	1.3				ug/L	25066	Standard
	Ti	47	1581.7	9.8	**7.8186**	0.716	9.2	ug/L	38	Standard
	V	51	56293.6	0.1	**9.1158**	0.120	1.3	ug/L	974	Standard
	Cr	52	35520.9	2.0	**4.5387**	0.182	4.0	ug/L	5792	Standard
	Cr	53	4120.6	4.1	**4.5322**	0.272	6.0	ug/L	347	Standard
	Mn	55	2245242.9	0.6	**344.0555**	5.834	1.7	ug/L	1164	Standard
	Co	59	20048.6	2.0	**3.1815**	0.095	3.0	ug/L	303	Standard
	Ni	60	12750.7	0.7	**6.7615**	0.141	2.1	ug/L	291	Standard
	Cu	65	8350.6	0.8	**4.4816**	0.075	1.7	ug/L	173	Standard
	Zn	66	13186.1	1.0	**12.2373**	0.257	2.1	ug/L	130	Standard
>	**Ge**	72	501445.8	1.4				ug/L	491724	Standard
	As	75	1545.9	0.8	**1.4785**	0.032	2.1	ug/L	-25	Standard
	Se	82	27.4	13.1	**0.1674**	0.035	21.2	ug/L	12	Standard
	Se-1	77	71.0	5.1	**0.3358**	0.056	16.6	ug/L	57	Standard
>	**Ga**	71	4512.3	1.6				mg/L	148	Standard
	Rb	85	37980.9	3.4				ug/L	18	Standard
	Y	89	531850.3	0.5				ug/L	401845	Standard
>	**Rh**	103	33.3	31.2				ug/L	10	Standard
	Mo	98	272.4	0.4	**0.1086**	0.001	1.4	ug/L	12	Standard
	Ag	107	226.3	10.4	**0.0229**	0.005	19.8	ug/L	98	Standard
	Cd	111	165.5	1.0	**0.0831**	0.002	1.9	mg/L	11	Standard
	Cd	114	397.0	5.6	**0.0822**	0.006	7.3	ug/L	21	Standard
>	**In**	115	548993.1	1.6				ug/L	547487	Standard
	Sn	118	608.3	15.7	**0.0426**	0.017	39.0	ug/L	450	Standard
	Sb	123	116.3	12.7	**0.0197**	0.003	15.4	ug/L	105	Standard
	Ba	135	96057.9	1.5	**52.1296**	0.874	1.7	ug/L	111	Standard
	Ce	140	548131.6	1.4				ug/L	107	Standard
>	**Tb**	159	898753.5	0.5				ug/L	890342	Standard
	Ho	165	10386.9	3.9				ug/L	10	Standard
	Tl	203	211.0	1.6	**0.0248**	0.001	2.7	ug/L	19	Standard
	Tl	205	218.3	11.3	**0.0367**	0.005	12.3	ug/L	17	Standard
	Pb	206	25132.8	0.9	**5.1923**	0.133	2.6	ug/L	247	Standard
	Pb	207	20495.2	0.8	**4.6546**	0.102	2.2	ug/L	215	Standard
	Pb	208	84035.9	0.8	**5.0950**	0.088	1.7	ug/L	770	Standard
	U	238	1374.4	2.1	**0.2316**	0.009	3.8	ug/L	13	Standard
>	**Bi**	209	496285.1	1.7				ug/L	503143	Standard

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Na	23	3.3	86.6	**32.9382**	28.528	86.6	mg/L	2	Standard
Mg	24	73.3	41.7	**0.0503**	0.037	74.4	mg/L	35	Standard
K	39	123.3	26.1	**0.4304**	0.140	32.4	mg/L	25	Standard
Ca	43	121.7	6.3	**15.8707**	1.562	9.8	mg/L	38	Standard
Fe	54	4051.3	3.4	**3.2588**	0.079	2.4	mg/L	126	Standard
Fe	57	1385.1	8.4	**3.7369**	0.455	12.2	mg/L	245	Standard
> **Sc-1**	45	28378.2	1.3				mg/L	25066	Standard
Cl	35	136882.9	1.1				ug/L	125857	Standard
Kr	83	3.7	78.7				ug/L	1	Standard
Br	81	1383.4	11.9				ug/L	1350	Standard
P	31	18684.9	2.6				ug/L	18393	Standard
S	34	4252.3	2.8				ug/L	3739	Standard
Sr	88	103.3	17.0				ug/L	78	Standard
C	12	63.3	18.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	17242.5	4.5				mg/L	2	Standard
Ho-1	165	10386.9	3.9				mg/L	10	Standard
Er	166	9069.4	1.8				mg/L	23	Standard
I	127	2725.2	5.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.613	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.977	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.275
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.637
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606078713
Sample Date/Time: Tuesday, June 21, 2016 20:42:04
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60470.5	2.4				ug/L	60176	Standard
	Be	9	438.3	14.7	**0.5976**	0.076	12.8	ug/L	5	Standard
	Al	27	3860251.5	0.5	**29.2500**	0.787	2.7	ug/L	832	Standard
	Sc	45	28167.8	2.6				ug/L	25066	Standard
	Ti	47	839.4	7.8	**4.1705**	0.369	8.8	ug/L	38	Standard
	V	51	70285.4	1.1	**11.7386**	0.317	2.7	ug/L	974	Standard
	Cr	52	48052.7	0.7	**6.6720**	0.165	2.5	ug/L	5792	Standard
	Cr	53	5747.8	3.9	**6.6668**	0.221	3.3	ug/L	347	Standard
	Mn	55	997665.2	0.2	**156.8856**	2.297	1.5	ug/L	1164	Standard
	Co	59	33501.7	1.1	**5.4941**	0.026	0.5	ug/L	303	Standard
	Ni	60	15742.2	0.8	**8.6243**	0.198	2.3	ug/L	291	Standard
	Cu	65	11171.8	1.1	**6.1943**	0.139	2.2	ug/L	173	Standard
	Zn	66	15290.4	1.0	**14.6175**	0.267	1.8	ug/L	130	Standard
>	**Ge**	72	488278.2	1.6				ug/L	491724	Standard
	As	75	2112.2	1.3	**2.0606**	0.030	1.5	ug/L	-25	Standard
	Se	82	33.4	20.1	**0.2323**	0.063	27.1	ug/L	12	Standard
	Se-1	77	80.7	13.6	**0.4996**	0.152	30.5	ug/L	57	Standard
>	**Ga**	71	6092.9	3.0				mg/L	148	Standard
	Rb	85	50096.0	1.4				ug/L	18	Standard
	Y	89	562308.7	3.4				ug/L	401845	Standard
>	**Rh**	103	20.0	25.0				ug/L	10	Standard
	Mo	98	281.8	18.1	**0.1097**	0.019	17.6	ug/L	12	Standard
	Ag	107	279.0	13.7	**0.0307**	0.006	19.7	ug/L	98	Standard
	Cd	111	205.9	9.5	**0.1020**	0.009	9.3	mg/L	11	Standard
	Cd	114	469.4	17.1	**0.0956**	0.016	17.2	ug/L	21	Standard
>	**In**	115	561794.7	1.8				ug/L	547487	Standard
	Sn	118	1265.1	3.6	**0.1635**	0.012	7.3	ug/L	450	Standard
	Sb	123	114.2	20.1	**0.0186**	0.005	27.0	ug/L	105	Standard
	Ba	135	154704.2	1.6	**82.0962**	2.614	3.2	ug/L	111	Standard
	Ce	140	714982.4	2.2				ug/L	107	Standard
>	**Tb**	159	886704.0	1.2				ug/L	890342	Standard
	Ho	165	12760.4	3.9				ug/L	10	Standard
	Tl	203	335.3	19.3	**0.0422**	0.009	20.6	ug/L	19	Standard
	Tl	205	363.3	52.8	**0.0613**	0.032	51.4	ug/L	17	Standard
	Pb	206	36098.0	0.9	**7.6025**	0.113	1.5	ug/L	247	Standard
	Pb	207	29342.1	0.5	**6.7946**	0.072	1.1	ug/L	215	Standard
	Pb	208	123673.5	2.1	**7.6482**	0.125	1.6	ug/L	770	Standard
	U	238	1531.4	12.8	**0.2621**	0.032	12.3	ug/L	13	Standard
>	**Bi**	209	488339.2	0.8				ug/L	503143	Standard

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Na	23	3.3	86.6	**33.1333**	28.719	86.7	mg/L	2	Standard
Mg	24	66.7	18.9	**0.0424**	0.013	31.2	mg/L	35	Standard
K	39	120.0	27.3	**0.4177**	0.133	31.7	mg/L	25	Standard
Ca	43	43.3	24.0	**2.2723**	1.810	79.7	mg/L	38	Standard
Fe	54	5259.3	3.5	**4.3093**	0.268	6.2	mg/L	126	Standard
Fe	57	1548.4	3.1	**4.3481**	0.308	7.1	mg/L	245	Standard
> **Sc-1**	45	28167.8	2.6				mg/L	25066	Standard
Cl	35	136558.6	0.5				ug/L	125857	Standard
Kr	83	1.3	86.6				ug/L	1	Standard
Br	81	1756.8	8.8				ug/L	1350	Standard
P	31	20071.6	3.8				ug/L	18393	Standard
S	34	4248.9	1.9				ug/L	3739	Standard
Sr	88	81.7	3.5				ug/L	78	Standard
C	12	66.7	8.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	0	Standard
Dy	164	21009.1	0.9				mg/L	2	Standard
Ho-1	165	12760.4	3.9				mg/L	10	Standard
Er	166	11264.2	4.0				mg/L	23	Standard
I	127	3685.4	6.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.489	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.299	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.613
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.058
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606078714
Sample Date/Time: Tuesday, June 21, 2016 20:45:16
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59354.4	2.2				ug/L	60176	Standard
	Be	9	183.3	13.7	**0.2501**	0.038	15.2	ug/L	5	Standard
	Al	27	1653362.7	0.4	**12.7568**	0.239	1.9	ug/L	832	Standard
	Sc	45	26840.4	0.7				ug/L	25066	Standard
	Ti	47	1195.7	15.7	**5.8965**	0.875	14.8	ug/L	38	Standard
	V	51	41857.8	0.9	**6.7842**	0.171	2.5	ug/L	974	Standard
	Cr	52	24805.0	0.8	**2.9115**	0.058	2.0	ug/L	5792	Standard
	Cr	53	2718.6	7.9	**2.8685**	0.201	7.0	ug/L	347	Standard
	Mn	55	271171.7	1.9	**41.6625**	1.227	2.9	ug/L	1164	Standard
	Co	59	15078.2	2.2	**2.3974**	0.058	2.4	ug/L	303	Standard
	Ni	60	7281.1	1.4	**3.8071**	0.071	1.9	ug/L	291	Standard
	Cu	65	4899.5	2.2	**2.6079**	0.059	2.3	ug/L	173	Standard
	Zn	66	8848.9	2.1	**8.1949**	0.270	3.3	ug/L	130	Standard
>	**Ge**	72	497940.3	1.9				ug/L	491724	Standard
	As	75	1399.2	6.8	**1.3498**	0.075	5.6	ug/L	-25	Standard
	Se	82	26.2	42.1	**0.1563**	0.101	64.4	ug/L	12	Standard
	Se-1	77	61.7	13.8	**0.2133**	0.129	60.7	ug/L	57	Standard
>	**Ga**	71	2935.3	6.3				mg/L	148	Standard
	Rb	85	27302.9	4.2				ug/L	18	Standard
	Y	89	493083.8	2.1				ug/L	401845	Standard
>	**Rh**	103	30.0	57.7				ug/L	10	Standard
	Mo	98	274.8	4.9	**0.1086**	0.006	5.1	ug/L	12	Standard
	Ag	107	202.7	17.3	**0.0186**	0.006	33.7	ug/L	98	Standard
	Cd	111	68.6	11.9	**0.0313**	0.004	13.1	mg/L	11	Standard
	Cd	114	186.8	21.1	**0.0360**	0.009	24.8	ug/L	21	Standard
>	**In**	115	553874.2	2.5				ug/L	547487	Standard
	Sn	118	1548.4	4.9	**0.2207**	0.012	5.3	ug/L	450	Standard
	Sb	123	134.4	14.6	**0.0237**	0.005	22.2	ug/L	105	Standard
	Ba	135	62896.3	0.8	**33.8185**	0.569	1.7	ug/L	111	Standard
	Ce	140	379145.7	1.3				ug/L	107	Standard
>	**Tb**	159	877738.6	2.8				ug/L	890342	Standard
	Ho	165	6044.5	3.3				ug/L	10	Standard
	Tl	203	194.0	17.9	**0.0229**	0.005	21.1	ug/L	19	Standard
	Tl	205	156.7	23.5	**0.0270**	0.006	23.3	ug/L	17	Standard
	Pb	206	17434.0	1.8	**3.6406**	0.072	2.0	ug/L	247	Standard
	Pb	207	14230.3	0.5	**3.2661**	0.036	1.1	ug/L	215	Standard
	Pb	208	59458.2	1.1	**3.6438**	0.066	1.8	ug/L	770	Standard
	U	238	818.0	4.9	**0.1396**	0.007	5.0	ug/L	13	Standard
>	**Bi**	209	488685.1	0.9				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	78.3	31.5	**0.0617**	0.032	51.7	mg/L	35	Standard
K	39	63.3	44.9	**0.1830**	0.135	73.6	mg/L	25	Standard
Ca	43	26.7	10.8	**-0.4193**	0.505	120.5	mg/L	38	Standard
Fe	54	2855.0	4.8	**2.3943**	0.139	5.8	mg/L	126	Standard
Fe	57	875.0	9.5	**2.1335**	0.331	15.5	mg/L	245	Standard
> **Sc-1**	45	26840.4	0.7				mg/L	25066	Standard
Cl	35	130769.3	1.1				ug/L	125857	Standard
Kr	83	0.3	173.2				ug/L	1	Standard
Br	81	1500.1	12.5				ug/L	1350	Standard
P	31	18306.1	4.6				ug/L	18393	Standard
S	34	3878.8	1.9				ug/L	3739	Standard
Sr	88	100.0	8.7				ug/L	78	Standard
C	12	53.3	43.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	10446.8	2.5				mg/L	2	Standard
Ho-1	165	6044.5	3.3				mg/L	10	Standard
Er	166	5364.3	4.3				mg/L	23	Standard
I	127	2471.9	4.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.635	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.264	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.167
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.127
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078715
Sample Date/Time: Tuesday, June 21, 2016 20:48:27
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64098.6	1.3				ug/L	60176	Standard
	Be	9	823.4	5.6	**1.0673**	0.048	4.5	ug/L	5	Standard
	Al	27	10125297.3	0.4	**72.3681**	0.913	1.3	ug/L	832	Standard
	Sc	45	30844.7	0.4				ug/L	25066	Standard
	Ti	47	1823.8	2.8	**8.7940**	0.274	3.1	ug/L	38	Standard
	V	51	98074.0	0.7	**15.5570**	0.191	1.2	ug/L	974	Standard
	Cr	52	104674.3	0.6	**14.7577**	0.248	1.7	ug/L	5792	Standard
	Cr	53	12927.2	2.0	**14.6613**	0.237	1.6	ug/L	347	Standard
	Mn	55	2973780.0	0.5	**443.0559**	7.216	1.6	ug/L	1164	Standard
	Co	59	58943.8	0.5	**9.1837**	0.119	1.3	ug/L	303	Standard
	Ni	60	38767.5	1.4	**20.3577**	0.493	2.4	ug/L	291	Standard
	Cu	65	24378.9	0.7	**12.8976**	0.065	0.5	ug/L	173	Standard
	Zn	66	41125.4	0.4	**37.5786**	0.477	1.3	ug/L	130	Standard
>	**Ge**	72	515810.5	1.2				ug/L	491724	Standard
	As	75	2841.8	1.6	**2.6150**	0.042	1.6	ug/L	-25	Standard
	Se	82	45.8	14.7	**0.3299**	0.064	19.5	ug/L	12	Standard
	Se-1	77	92.3	7.0	**0.5967**	0.101	16.9	ug/L	57	Standard
>	**Ga**	71	16957.8	0.2				mg/L	148	Standard
	Rb	85	162914.6	1.1				ug/L	18	Standard
	Y	89	615099.4	2.7				ug/L	401845	Standard
>	**Rh**	103	20.0	43.3				ug/L	10	Standard
	Mo	98	203.9	5.6	**0.0800**	0.004	4.8	ug/L	12	Standard
	Ag	107	382.7	10.1	**0.0492**	0.007	13.9	ug/L	98	Standard
	Cd	111	298.0	2.2	**0.1531**	0.002	1.3	mg/L	11	Standard
	Cd	114	666.5	15.5	**0.1406**	0.023	16.0	ug/L	21	Standard
>	**In**	115	550118.7	1.2				ug/L	547487	Standard
	Sn	118	753.4	4.7	**0.0703**	0.007	9.3	ug/L	450	Standard
	Sb	123	98.5	12.2	**0.0154**	0.003	16.9	ug/L	105	Standard
	Ba	135	241514.0	0.7	**130.8807**	1.833	1.4	ug/L	111	Standard
	Ce	140	1155859.2	0.5				ug/L	107	Standard
>	**Tb**	159	899979.5	1.4				ug/L	890342	Standard
	Ho	165	17680.3	2.0				ug/L	10	Standard
	Tl	203	858.7	0.6	**0.1099**	0.001	1.0	ug/L	19	Standard
	Tl	205	755.0	8.0	**0.1226**	0.012	9.4	ug/L	17	Standard
	Pb	206	60941.6	0.3	**12.4665**	0.202	1.6	ug/L	247	Standard
	Pb	207	50135.5	0.2	**11.2791**	0.161	1.4	ug/L	215	Standard
	Pb	208	203300.5	0.7	**12.2136**	0.108	0.9	ug/L	770	Standard
	U	238	2361.2	2.6	**0.3920**	0.006	1.5	ug/L	13	Standard
>	**Bi**	209	504223.9	1.5				ug/L	503143	Standard

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Na	23	3.3	86.6	**30.2029**	26.152	86.6	mg/L	2	Standard
Mg	24	81.7	17.7	**0.0523**	0.016	31.2	mg/L	35	Standard
K	39	335.0	10.4	**1.2451**	0.147	11.8	mg/L	25	Standard
Ca	43	41.7	13.9	**1.3488**	0.931	69.0	mg/L	38	Standard
Fe	54	13937.7	1.7	**10.6123**	0.221	2.1	mg/L	126	Standard
Fe	57	3708.8	2.8	**10.7946**	0.379	3.5	mg/L	245	Standard
> **Sc-1**	45	30844.7	0.4				mg/L	25066	Standard
Cl	35	127408.8	0.7				ug/L	125857	Standard
Kr	83	2.3	49.5				ug/L	1	Standard
Br	81	1913.5	1.6				ug/L	1350	Standard
P	31	18252.7	1.0				ug/L	18393	Standard
S	34	3877.2	0.8				ug/L	3739	Standard
Sr	88	116.7	13.1				ug/L	78	Standard
C	12	63.3	24.1				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	0	Standard
Dy	164	29223.1	3.8				mg/L	2	Standard
Ho-1	165	17680.3	2.0				mg/L	10	Standard
Er	166	15514.6	3.9				mg/L	23	Standard
I	127	5479.3	4.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.519	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.898	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.481
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.215
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606078716
Sample Date/Time: Tuesday, June 21, 2016 20:51:39
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63156.4	1.5				ug/L	60176	Standard
	Be	9	671.7	2.1	**0.8826**	0.026	3.0	ug/L	5	Standard
	Al	27	8487404.7	1.9	**61.5729**	1.740	2.8	ug/L	832	Standard
	Sc	45	31963.7	1.0				ug/L	25066	Standard
	Ti	47	787.0	5.2	**3.8622**	0.259	6.7	ug/L	38	Standard
	V	51	41199.8	0.5	**6.7490**	0.110	1.6	ug/L	974	Standard
	Cr	52	73420.2	2.1	**10.5882**	0.090	0.9	ug/L	5792	Standard
	Cr	53	8865.9	1.6	**10.4143**	0.113	1.1	ug/L	347	Standard
	Mn	55	3069080.0	1.7	**478.8131**	2.454	0.5	ug/L	1164	Standard
	Co	59	44326.4	0.3	**7.2228**	0.137	1.9	ug/L	303	Standard
	Ni	60	28414.3	2.4	**15.5776**	0.153	1.0	ug/L	291	Standard
	Cu	65	26490.5	2.7	**14.6878**	0.116	0.8	ug/L	173	Standard
	Zn	66	29868.4	0.5	**28.5277**	0.483	1.7	ug/L	130	Standard
>	**Ge**	72	492563.3	2.0				ug/L	491724	Standard
	As	75	705.4	3.6	**0.7048**	0.021	3.0	ug/L	-25	Standard
	Se	82	43.0	1.8	**0.3227**	0.009	2.7	ug/L	12	Standard
	Se-1	77	107.0	6.1	**0.8613**	0.072	8.3	ug/L	57	Standard
>	**Ga**	71	11926.4	3.1				mg/L	148	Standard
	Rb	85	71819.9	2.8				ug/L	18	Standard
	Y	89	651603.7	2.1				ug/L	401845	Standard
>	**Rh**	103	30.0	0.0				ug/L	10	Standard
	Mo	98	68.5	8.4	**0.0231**	0.003	12.2	ug/L	12	Standard
	Ag	107	420.7	8.6	**0.0536**	0.006	11.6	ug/L	98	Standard
	Cd	111	560.2	2.6	**0.2833**	0.005	1.6	mg/L	11	Standard
	Cd	114	1323.3	4.1	**0.2753**	0.012	4.2	ug/L	21	Standard
>	**In**	115	566534.2	2.2				ug/L	547487	Standard
	Sn	118	563.3	6.8	**0.0309**	0.009	30.5	ug/L	450	Standard
	Sb	123	100.4	11.4	**0.0152**	0.002	14.0	ug/L	105	Standard
	Ba	135	283911.4	0.6	**149.4331**	2.900	1.9	ug/L	111	Standard
	Ce	140	1002744.9	0.8				ug/L	107	Standard
>	**Tb**	159	926505.2	0.9				ug/L	890342	Standard
	Ho	165	19863.0	1.4				ug/L	10	Standard
	Tl	203	430.7	7.9	**0.0532**	0.005	8.6	ug/L	19	Standard
	Tl	205	353.3	5.9	**0.0577**	0.003	4.9	ug/L	17	Standard
	Pb	206	69734.1	0.6	**14.2349**	0.089	0.6	ug/L	247	Standard
	Pb	207	57132.8	0.4	**12.8273**	0.185	1.4	ug/L	215	Standard
	Pb	208	238392.7	1.0	**14.2947**	0.123	0.9	ug/L	770	Standard
	U	238	2332.8	0.7	**0.3863**	0.003	0.7	ug/L	13	Standard
>	**Bi**	209	505510.9	1.2				ug/L	503143	Standard

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Na	23	1.7	173.2	**14.5012**	25.108	173.1	mg/L	2	Standard
Mg	24	86.7	20.3	**0.0546**	0.020	36.4	mg/L	35	Standard
K	39	190.0	17.3	**0.6305**	0.128	20.3	mg/L	25	Standard
Ca	43	63.3	24.1	**4.4800**	2.465	55.0	mg/L	38	Standard
Fe	54	5380.7	2.2	**3.8682**	0.114	2.9	mg/L	126	Standard
Fe	57	1575.1	5.6	**3.7787**	0.227	6.0	mg/L	245	Standard
> **Sc-1**	45	31963.7	1.0				mg/L	25066	Standard
Cl	35	132139.0	0.5				ug/L	125857	Standard
Kr	83	3.3	45.8				ug/L	1	Standard
Br	81	1810.1	9.6				ug/L	1350	Standard
P	31	17954.0	0.5				ug/L	18393	Standard
S	34	3857.2	2.7				ug/L	3739	Standard
Sr	88	100.0	20.0				ug/L	78	Standard
C	12	70.0	14.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	65.5				mg/L	0	Standard
Dy	164	33584.1	0.1				mg/L	2	Standard
Ho-1	165	19863.0	1.4				mg/L	10	Standard
Er	166	16942.8	1.2				mg/L	23	Standard
I	127	7925.4	6.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.953	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.171	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.479
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.471
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 20:54:52
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60883.8	1.2				ug/L	60176	Standard
	Be	9	37452.9	1.8	**51.5526**	0.424	0.8	ug/L	5	Standard
	Al	27	6689358.8	1.2	**50.3342**	1.000	2.0	ug/L	832	Standard
	Sc	45	26605.0	1.1				ug/L	25066	Standard
	Ti	47	21026.9	2.2	**105.9022**	3.978	3.8	ug/L	38	Standard
	V	51	311223.1	1.0	**50.8529**	1.359	2.7	ug/L	974	Standard
	Cr	52	341954.8	0.5	**51.4858**	0.949	1.8	ug/L	5792	Standard
	Cr	53	42792.0	0.9	**50.5973**	0.849	1.7	ug/L	347	Standard
	Mn	55	320340.3	1.3	**48.6001**	1.462	3.0	ug/L	1164	Standard
	Co	59	314843.1	1.0	**50.3634**	1.025	2.0	ug/L	303	Standard
	Ni	60	93552.6	1.1	**50.5030**	1.634	3.2	ug/L	291	Standard
	Cu	65	92967.7	0.8	**50.5704**	1.475	2.9	ug/L	173	Standard
	Zn	66	53414.3	0.4	**49.9687**	0.924	1.8	ug/L	130	Standard
>	**Ge**	72	504684.6	2.1				ug/L	491724	Standard
	As	75	53717.6	0.4	**49.9128**	1.219	2.4	ug/L	-25	Standard
	Se	82	5331.3	0.9	**50.1675**	1.278	2.5	ug/L	12	Standard
	Se-1	77	3711.8	3.5	**50.5254**	1.616	3.2	ug/L	57	Standard
>	**Ga**	71	126.7	4.6				mg/L	148	Standard
	Rb	85	895.0	15.1				ug/L	18	Standard
	Y	89	404245.1	2.3				ug/L	401845	Standard
>	**Rh**	103	30.0	72.6				ug/L	10	Standard
	Mo	98	234676.4	0.3	**98.0864**	1.853	1.9	ug/L	12	Standard
	Ag	107	298634.4	0.6	**50.8442**	0.767	1.5	ug/L	98	Standard
	Cd	111	95655.4	0.7	**51.1097**	1.126	2.2	mg/L	11	Standard
	Cd	114	231347.5	1.0	**50.8153**	1.523	3.0	ug/L	21	Standard
>	**In**	115	545250.3	2.0				ug/L	547487	Standard
	Sn	118	260351.2	0.6	**50.2848**	1.264	2.5	ug/L	450	Standard
	Sb	123	214346.2	0.6	**50.6758**	0.746	1.5	ug/L	105	Standard
	Ba	135	92176.2	0.3	**50.3714**	0.906	1.8	ug/L	111	Standard
	Ce	140	526.7	81.3				ug/L	107	Standard
>	**Tb**	159	882908.4	0.6				ug/L	890342	Standard
	Ho	165	28.3	27.0				ug/L	10	Standard
	Tl	203	374935.9	0.9	**50.1205**	0.165	0.3	ug/L	19	Standard
	Tl	205	318674.8	0.7	**51.9217**	0.204	0.4	ug/L	17	Standard
	Pb	206	235754.0	0.4	**48.9660**	0.280	0.6	ug/L	247	Standard
	Pb	207	213881.4	0.3	**48.8706**	0.570	1.2	ug/L	215	Standard
	Pb	208	834513.3	1.3	**50.9306**	0.866	1.7	ug/L	770	Standard
	U	238	300874.8	0.8	**50.6644**	0.698	1.4	ug/L	13	Standard
>	**Bi**	209	498178.2	0.8				ug/L	503143	Standard

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Na	23	3.3	86.6	**34.8841**	30.207	86.6	mg/L	2	Standard
Mg	24	3477.1	4.4	**4.4607**	0.153	3.4	mg/L	35	Standard
K	39	961.7	14.3	**4.4091**	0.698	15.8	mg/L	25	Standard
Ca	43	43.3	69.6	**2.7007**	5.576	206.5	mg/L	38	Standard
Fe	54	5435.3	1.5	**4.7229**	0.037	0.8	mg/L	126	Standard
Fe	57	1608.4	5.4	**4.8844**	0.305	6.2	mg/L	245	Standard
> **Sc-1**	45	26605.0	1.1				mg/L	25066	Standard
Cl	35	135935.1	1.3				ug/L	125857	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	1366.7	10.0				ug/L	1350	Standard
P	31	19796.3	3.2				ug/L	18393	Standard
S	34	4318.9	4.3				ug/L	3739	Standard
Sr	88	66.7	4.3				ug/L	78	Standard
C	12	60.0	66.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	36.0	84.1				mg/L	2	Standard
Ho-1	165	28.3	27.0				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	1233.4	10.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	103.105		
Al	27	100.668		
Sc	45			
Ti	47	105.902		
V	51	101.706		
Cr	52	102.972		
Cr	53			
Mn	55	97.200		
Co	59	100.727		
Ni	60	101.006		
Cu	65	101.141		
Zn	66	99.937		
> Ge	72		102.636	
As	75	99.826		
Se	82	100.335		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.086		
Ag	107	101.688		
Cd	111	102.219		
Cd	114			
> In	115			99.592
Sn	118	100.570		
Sb	123	101.352		
Ba	135	100.743		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.241		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.861		
U	238	101.329		
> Bi	209			99.013
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 20:58:03
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60304.9	3.7				ug/L	60176	Standard
	Be	9	20.0	25.0	**0.0187**	0.006	34.5	ug/L	5	Standard
	Al	27	2683.6	13.5	**0.0119**	0.002	17.0	ug/L	832	Standard
	Sc	45	27745.4	2.3				ug/L	25066	Standard
	Ti	47	26.3	7.9	**-0.0698**	0.006	9.1	ug/L	38	Standard
	V	51	1025.5	6.6	**0.0041**	0.015	373.0	ug/L	974	Standard
	Cr	52	5980.2	0.4	**0.0103**	0.035	341.4	ug/L	5792	Standard
	Cr	53	358.3	2.9	**0.0313**	0.025	80.8	ug/L	347	Standard
	Mn	55	1307.7	11.4	**-0.0089**	0.015	168.5	ug/L	1164	Standard
	Co	59	319.0	5.2	**0.0037**	0.001	16.8	ug/L	303	Standard
	Ni	60	213.7	10.1	**-0.0706**	0.007	10.2	ug/L	291	Standard
	Cu	65	176.0	45.3	**0.0009**	0.040	4571.7	ug/L	173	Standard
	Zn	66	197.3	32.7	**-0.0440**	0.055	125.2	ug/L	130	Standard
>	**Ge**	72	485859.0	4.1				ug/L	491724	Standard
	As	75	-7.9	564.3	**0.0257**	0.042	164.8	ug/L	-25	Standard
	Se	82	20.6	52.0	**0.1089**	0.105	96.6	ug/L	12	Standard
	Se-1	77	51.3	4.9	**0.0854**	0.006	7.0	ug/L	57	Standard
>	**Ga**	71	96.7	26.5				mg/L	148	Standard
	Rb	85	53.3	75.8				ug/L	18	Standard
	Y	89	428893.2	2.6				ug/L	401845	Standard
>	**Rh**	103	21.7	35.3				ug/L	10	Standard
	Mo	98	267.7	20.3	**0.1004**	0.022	21.8	ug/L	12	Standard
	Ag	107	154.3	36.0	**0.0093**	0.009	97.1	ug/L	98	Standard
	Cd	111	33.1	68.4	**0.0119**	0.011	96.1	mg/L	11	Standard
	Cd	114	72.5	60.2	**0.0105**	0.009	86.3	ug/L	21	Standard
>	**In**	115	582185.2	0.5				ug/L	547487	Standard
	Sn	118	775.0	15.8	**0.0663**	0.022	32.6	ug/L	450	Standard
	Sb	123	370.4	13.0	**0.0743**	0.010	13.7	ug/L	105	Standard
	Ba	135	185.0	36.1	**0.0393**	0.035	88.5	ug/L	111	Standard
	Ce	140	261.7	98.8				ug/L	107	Standard
>	**Tb**	159	909104.3	2.8				ug/L	890342	Standard
	Ho	165	13.3	21.7				ug/L	10	Standard
	Tl	203	110.3	66.1	**0.0108**	0.009	83.7	ug/L	19	Standard
	Tl	205	71.7	63.3	**0.0123**	0.007	55.7	ug/L	17	Standard
	Pb	206	312.7	18.6	**0.0088**	0.010	110.7	ug/L	247	Standard
	Pb	207	257.0	12.9	**0.0056**	0.006	101.8	ug/L	215	Standard
	Pb	208	984.0	5.5	**-0.0008**	0.002	247.7	ug/L	770	Standard
	U	238	62.3	31.4	**0.0094**	0.003	31.0	ug/L	13	Standard
>	**Bi**	209	506036.5	3.2				ug/L	503143	Standard

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Na	23	1.7	173.2	**16.4456**	28.476	173.2	mg/L	2	Standard
Mg	24	31.7	48.2	**0.0006**	0.019	3169.4	mg/L	35	Standard
K	39	28.3	44.4	**0.0148**	0.056	376.7	mg/L	25	Standard
Ca	43	30.0	16.7	**0.0246**	0.947	3845.4	mg/L	38	Standard
Fe	54	152.6	13.3	**-0.0059**	0.014	243.4	mg/L	126	Standard
Fe	57	205.0	29.6	**-0.3585**	0.221	61.6	mg/L	245	Standard
> **Sc-1**	45	27745.4	2.3				mg/L	25066	Standard
Cl	35	137127.8	1.4				ug/L	125857	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	1390.1	15.1				ug/L	1350	Standard
P	31	20685.8	4.9				ug/L	18393	Standard
S	34	4127.2	9.0				ug/L	3739	Standard
Sr	88	78.3	54.3				ug/L	78	Standard
C	12	46.7	12.4				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	13.0	115.8				mg/L	2	Standard
Ho-1	165	13.3	21.7				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	23	Standard
I	127	885.0	8.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.807	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.338
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.575
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078717
Sample Date/Time: Tuesday, June 21, 2016 21:01:16
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58967.9	1.9				ug/L	60176	Standard
	Be	9	248.3	8.1	**0.3438**	0.024	6.9	ug/L	5	Standard
	Al	27	2227874.3	0.9	**17.3042**	0.322	1.9	ug/L	832	Standard
	Sc	45	26897.2	2.2				ug/L	25066	Standard
	Ti	47	1431.7	18.6	**6.8597**	1.258	18.3	ug/L	38	Standard
	V	51	47458.5	2.5	**7.4476**	0.204	2.7	ug/L	974	Standard
	Cr	52	32459.4	0.3	**3.9305**	0.054	1.4	ug/L	5792	Standard
	Cr	53	3765.5	1.9	**3.9831**	0.119	3.0	ug/L	347	Standard
	Mn	55	1239543.3	1.8	**184.7250**	3.779	2.0	ug/L	1164	Standard
	Co	59	18572.0	2.0	**2.8625**	0.053	1.9	ug/L	303	Standard
	Ni	60	10124.4	1.0	**5.1808**	0.100	1.9	ug/L	291	Standard
	Cu	65	6785.9	0.8	**3.5234**	0.059	1.7	ug/L	173	Standard
	Zn	66	12295.0	0.6	**11.0803**	0.079	0.7	ug/L	130	Standard
>	**Ge**	72	515286.4	0.8				ug/L	491724	Standard
	As	75	1394.4	4.3	**1.3016**	0.051	3.9	ug/L	-25	Standard
	Se	82	20.2	35.8	**0.0940**	0.067	71.3	ug/L	12	Standard
	Se-1	77	68.7	3.7	**0.2777**	0.038	13.8	ug/L	57	Standard
>	**Ga**	71	3877.2	6.5				mg/L	148	Standard
	Rb	85	33081.1	0.9				ug/L	18	Standard
	Y	89	491266.4	1.3				ug/L	401845	Standard
>	**Rh**	103	30.0	50.0				ug/L	10	Standard
	Mo	98	552.0	0.6	**0.2299**	0.004	1.9	ug/L	12	Standard
	Ag	107	180.0	16.1	**0.0157**	0.005	31.4	ug/L	98	Standard
	Cd	111	82.7	5.7	**0.0401**	0.003	6.4	mg/L	11	Standard
	Cd	114	155.0	26.9	**0.0301**	0.009	30.6	ug/L	21	Standard
>	**In**	115	536864.3	1.3				ug/L	547487	Standard
	Sn	118	871.7	22.7	**0.0970**	0.038	39.0	ug/L	450	Standard
	Sb	123	155.5	16.1	**0.0297**	0.006	20.1	ug/L	105	Standard
	Ba	135	92951.9	0.7	**51.5816**	0.551	1.1	ug/L	111	Standard
	Ce	140	470743.1	1.1				ug/L	107	Standard
>	**Tb**	159	879768.9	2.5				ug/L	890342	Standard
	Ho	165	7800.3	2.1				ug/L	10	Standard
	Tl	203	213.0	5.0	**0.0249**	0.002	7.3	ug/L	19	Standard
	Tl	205	180.0	7.3	**0.0302**	0.002	7.1	ug/L	17	Standard
	Pb	206	22080.4	1.2	**4.5264**	0.114	2.5	ug/L	247	Standard
	Pb	207	18228.6	0.8	**4.1081**	0.080	1.9	ug/L	215	Standard
	Pb	208	74972.7	0.7	**4.5107**	0.075	1.7	ug/L	770	Standard
	U	238	864.0	6.8	**0.1443**	0.008	5.6	ug/L	13	Standard
>	**Bi**	209	499355.6	1.6				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.5774**	30.436	173.2	mg/L	2	Standard
Mg	24	61.7	40.0	**0.0403**	0.033	80.9	mg/L	35	Standard
K	39	90.0	19.2	**0.3053**	0.077	25.2	mg/L	25	Standard
Ca	43	26.7	43.3	**-0.4112**	2.189	532.4	mg/L	38	Standard
Fe	54	3684.8	2.8	**3.1243**	0.156	5.0	mg/L	126	Standard
Fe	57	1071.7	3.2	**2.8502**	0.193	6.8	mg/L	245	Standard
> **Sc-1**	45	26897.2	2.2				mg/L	25066	Standard
Cl	35	128581.4	1.9				ug/L	125857	Standard
Kr	83	3.3	69.3				ug/L	1	Standard
Br	81	1366.7	14.0				ug/L	1350	Standard
P	31	18504.6	2.4				ug/L	18393	Standard
S	34	3872.2	3.4				ug/L	3739	Standard
Sr	88	98.3	24.0				ug/L	78	Standard
C	12	83.3	13.9				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	0	Standard
Dy	164	13079.9	4.0				mg/L	2	Standard
Ho-1	165	7800.3	2.1				mg/L	10	Standard
Er	166	6874.9	2.4				mg/L	23	Standard
I	127	43099.7	5.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.992	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.792	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.060
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.247
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606096401
Sample Date/Time: Tuesday, June 21, 2016 21:04:28
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61683.6	0.8				ug/L	60176	Standard
	Be	9	883.4	4.3	**1.1916**	0.058	4.9	ug/L	5	Standard
	Al	27	5178030.7	2.0	**38.4554**	1.068	2.8	ug/L	832	Standard
	Sc	45	30799.6	3.4				ug/L	25066	Standard
	Ti	47	4718.7	1.1	**24.0318**	0.395	1.6	ug/L	38	Standard
	V	51	114345.0	1.6	**18.9116**	0.174	0.9	ug/L	974	Standard
	Cr	52	105274.2	1.9	**15.4891**	0.252	1.6	ug/L	5792	Standard
	Cr	53	13055.6	1.4	**15.4331**	0.322	2.1	ug/L	347	Standard
	Mn	55	7305075.4	0.8	**1132.9355**	7.283	0.6	ug/L	1164	Standard
	Co	59	110053.3	1.1	**17.8911**	0.196	1.1	ug/L	303	Standard
	Ni	60	42512.6	2.1	**23.2560**	0.355	1.5	ug/L	291	Standard
	Cu	65	53072.8	1.3	**29.3454**	0.332	1.1	ug/L	173	Standard
	Zn	66	99122.2	1.6	**94.6103**	1.148	1.2	ug/L	130	Standard
>	**Ge**	72	495611.5	1.0				ug/L	491724	Standard
	As	75	7905.4	0.5	**7.5070**	0.111	1.5	ug/L	-25	Standard
	Se	82	123.9	10.0	**1.0965**	0.127	11.6	ug/L	12	Standard
	Se-1	77	121.7	4.5	**1.0589**	0.089	8.4	ug/L	57	Standard
>	**Ga**	71	15628.1	1.2				mg/L	148	Standard
	Rb	85	148601.9	0.8				ug/L	18	Standard
	Y	89	644139.5	2.1				ug/L	401845	Standard
>	**Rh**	103	43.3	26.6				ug/L	10	Standard
	Mo	98	2523.4	0.5	**1.0118**	0.017	1.7	ug/L	12	Standard
	Ag	107	592.0	2.4	**0.0817**	0.001	1.4	ug/L	98	Standard
	Cd	111	807.3	4.3	**0.4111**	0.024	5.8	mg/L	11	Standard
	Cd	114	1817.8	11.0	**0.3801**	0.041	10.8	ug/L	21	Standard
>	**In**	115	565837.8	1.4				ug/L	547487	Standard
	Sn	118	1080.0	6.1	**0.1273**	0.013	10.3	ug/L	450	Standard
	Sb	123	319.1	4.8	**0.0651**	0.004	6.6	ug/L	105	Standard
	Ba	135	459850.7	0.5	**242.3294**	2.872	1.2	ug/L	111	Standard
	Ce	140	772197.4	0.7				ug/L	107	Standard
>	**Tb**	159	924228.8	0.8				ug/L	890342	Standard
	Ho	165	18805.0	1.1				ug/L	10	Standard
	Tl	203	1334.1	2.6	**0.1715**	0.004	2.4	ug/L	19	Standard
	Tl	205	1121.7	11.7	**0.1804**	0.021	11.8	ug/L	17	Standard
	Pb	206	155702.0	1.1	**31.7305**	0.431	1.4	ug/L	247	Standard
	Pb	207	128499.6	0.8	**28.8036**	0.297	1.0	ug/L	215	Standard
	Pb	208	526834.4	0.3	**31.5436**	0.346	1.1	ug/L	770	Standard
	U	238	6774.5	2.8	**1.1193**	0.041	3.6	ug/L	13	Standard
>	**Bi**	209	507432.9	0.8				ug/L	503143	Standard

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Na	23	1.7	173.2	**14.5920**	25.265	173.1	mg/L	2	Standard
Mg	24	123.3	36.3	**0.0995**	0.052	52.6	mg/L	35	Standard
K	39	286.7	11.6	**1.0529**	0.157	14.9	mg/L	25	Standard
Ca	43	181.7	8.8	**23.8683**	3.171	13.3	mg/L	38	Standard
Fe	54	30681.9	0.6	**23.5794**	0.906	3.8	mg/L	126	Standard
Fe	57	7930.4	3.9	**24.3571**	0.437	1.8	mg/L	245	Standard
Sc-1	45	30799.6	3.4				mg/L	25066	Standard
Cl	35	140264.3	0.6				ug/L	125857	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	4600.7	5.6				ug/L	1350	Standard
P	31	20849.3	1.5				ug/L	18393	Standard
S	34	4297.3	6.2				ug/L	3739	Standard
Sr	88	158.3	6.6				ug/L	78	Standard
C	12	330.0	10.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	140.0	7.1				mg/L	0	Standard
Dy	164	30992.7	0.4				mg/L	2	Standard
Ho-1	165	18805.0	1.1				mg/L	10	Standard
Er	166	16085.2	2.6				mg/L	23	Standard
I	127	12078.2	5.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		102.506	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.791	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.352
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.853
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606096402
Sample Date/Time: Tuesday, June 21, 2016 21:07:39
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60443.7	2.3				ug/L	60176	Standard
	Be	9	858.4	6.1	**1.1817**	0.077	6.5	ug/L	5	Standard
	Al	27	6826154.4	0.3	**51.7504**	1.316	2.5	ug/L	832	Standard
	Sc	45	29154.7	2.0				ug/L	25066	Standard
	Ti	47	4436.6	0.7	**23.0756**	0.146	0.6	ug/L	38	Standard
	V	51	102185.5	0.5	**17.2535**	0.167	1.0	ug/L	974	Standard
	Cr	52	95353.4	0.7	**14.2638**	0.044	0.3	ug/L	5792	Standard
	Cr	53	11679.5	2.1	**14.0700**	0.355	2.5	ug/L	347	Standard
	Mn	55	7652551.6	0.6	**1212.6036**	11.003	0.9	ug/L	1164	Standard
	Co	59	114240.4	1.3	**18.9785**	0.353	1.9	ug/L	303	Standard
	Ni	60	37577.9	2.9	**20.9856**	0.630	3.0	ug/L	291	Standard
	Cu	65	36514.3	2.8	**20.5993**	0.606	2.9	ug/L	173	Standard
	Zn	66	77328.8	1.2	**75.3661**	1.101	1.5	ug/L	130	Standard
>	**Ge**	72	485083.6	0.6				ug/L	491724	Standard
	As	75	9274.5	0.6	**8.9907**	0.056	0.6	ug/L	-25	Standard
	Se	82	68.6	8.2	**0.5801**	0.058	10.0	ug/L	12	Standard
	Se-1	77	100.0	6.2	**0.7851**	0.097	12.4	ug/L	57	Standard
>	**Ga**	71	13681.2	0.5				mg/L	148	Standard
	Rb	85	107244.9	1.0				ug/L	18	Standard
	Y	89	606939.5	0.4				ug/L	401845	Standard
>	**Rh**	103	73.3	15.7				ug/L	10	Standard
	Mo	98	2763.0	0.4	**1.1251**	0.031	2.8	ug/L	12	Standard
	Ag	107	389.0	4.8	**0.0494**	0.004	8.4	ug/L	98	Standard
	Cd	111	497.8	7.0	**0.2554**	0.018	7.1	mg/L	11	Standard
	Cd	114	1250.0	4.5	**0.2640**	0.013	4.9	ug/L	21	Standard
>	**In**	115	557635.5	2.9				ug/L	547487	Standard
	Sn	118	808.4	8.9	**0.0790**	0.017	21.2	ug/L	450	Standard
	Sb	123	238.7	4.1	**0.0476**	0.003	6.2	ug/L	105	Standard
	Ba	135	379584.7	0.5	**203.0712**	6.745	3.3	ug/L	111	Standard
	Ce	140	697160.9	0.9				ug/L	107	Standard
>	**Tb**	159	886275.1	1.2				ug/L	890342	Standard
	Ho	165	14727.2	5.5				ug/L	10	Standard
	Tl	203	896.7	2.2	**0.1223**	0.004	3.1	ug/L	19	Standard
	Tl	205	745.0	8.4	**0.1283**	0.009	7.2	ug/L	17	Standard
	Pb	206	178412.3	0.6	**38.8786**	0.719	1.8	ug/L	247	Standard
	Pb	207	147399.5	0.7	**35.3313**	0.706	2.0	ug/L	215	Standard
	Pb	208	606573.9	0.8	**38.8359**	0.746	1.9	ug/L	770	Standard
	U	238	7105.3	1.3	**1.2549**	0.033	2.7	ug/L	13	Standard
>	**Bi**	209	474753.1	1.4				ug/L	503143	Standard

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Na	23	8.3	34.6	**79.6978**	26.468	33.2	mg/L	2	Standard
Mg	24	110.0	7.9	**0.0911**	0.012	13.1	mg/L	35	Standard
K	39	256.7	19.5	**0.9885**	0.219	22.1	mg/L	25	Standard
Ca	43	411.7	11.5	**64.4783**	8.203	12.7	mg/L	38	Standard
Fe	54	35968.6	1.2	**29.2125**	0.258	0.9	mg/L	126	Standard
Fe	57	9513.0	2.7	**31.1720**	1.290	4.1	mg/L	245	Standard
> **Sc-1**	45	29154.7	2.0				mg/L	25066	Standard
Cl	35	139874.1	1.4				ug/L	125857	Standard
Kr	83	2.3	107.9				ug/L	1	Standard
Br	81	2370.2	14.6				ug/L	1350	Standard
P	31	20196.8	1.6				ug/L	18393	Standard
S	34	4530.7	2.9				ug/L	3739	Standard
Sr	88	208.3	7.3				ug/L	78	Standard
C	12	226.7	16.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	76.7	52.7				mg/L	0	Standard
Dy	164	23848.2	0.8				mg/L	2	Standard
Ho-1	165	14727.2	5.5				mg/L	10	Standard
Er	166	12765.4	0.8				mg/L	23	Standard
I	127	5762.8	6.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.445	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.650	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	101.854
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.358
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606096403
Sample Date/Time: Tuesday, June 21, 2016 21:10:51
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59725.8	1.2				ug/L	60176	Standard
	Be	9	1065.0	7.1	**1.4856**	0.101	6.8	ug/L	5	Standard
	Al	27	6735770.9	2.1	**51.6724**	1.686	3.3	ug/L	832	Standard
	Sc	45	31080.2	2.4				ug/L	25066	Standard
	Ti	47	4731.4	2.9	**23.5917**	1.146	4.9	ug/L	38	Standard
	V	51	159656.7	1.1	**25.9167**	0.803	3.1	ug/L	974	Standard
	Cr	52	150620.2	2.4	**22.0767**	0.911	4.1	ug/L	5792	Standard
	Cr	53	18673.2	1.5	**21.7771**	0.815	3.7	ug/L	347	Standard
	Mn	55	23162167.1	2.5	**3518.0721**	158.797	4.5	ug/L	1164	Standard
	Co	59	153465.2	2.3	**24.4482**	1.075	4.4	ug/L	303	Standard
	Ni	60	66553.2	1.2	**35.7474**	1.066	3.0	ug/L	291	Standard
	Cu	65	62739.7	1.9	**33.9798**	1.174	3.5	ug/L	173	Standard
	Zn	66	111779.9	1.3	**104.4821**	3.185	3.0	ug/L	130	Standard
>	**Ge**	72	506423.5	2.2				ug/L	491724	Standard
	As	75	13400.8	1.3	**12.4352**	0.374	3.0	ug/L	-25	Standard
	Se	82	118.6	7.2	**1.0218**	0.099	9.7	ug/L	12	Standard
	Se-1	77	153.7	9.5	**1.4639**	0.226	15.5	ug/L	57	Standard
>	**Ga**	71	25104.1	4.5				mg/L	148	Standard
	Rb	85	212398.7	1.8				ug/L	18	Standard
	Y	89	707988.0	2.1				ug/L	401845	Standard
>	**Rh**	103	40.0	21.7				ug/L	10	Standard
	Mo	98	3597.9	2.4	**1.5414**	0.022	1.4	ug/L	12	Standard
	Ag	107	833.4	3.0	**0.1305**	0.003	2.1	ug/L	98	Standard
	Cd	111	780.1	2.5	**0.4239**	0.014	3.3	mg/L	11	Standard
	Cd	114	1837.3	7.4	**0.4101**	0.024	5.8	ug/L	21	Standard
>	**In**	115	530289.5	1.6				ug/L	547487	Standard
	Sn	118	726.7	5.9	**0.0704**	0.006	9.1	ug/L	450	Standard
	Sb	123	189.3	5.2	**0.0384**	0.003	7.9	ug/L	105	Standard
	Ba	135	438353.8	1.0	**246.4838**	2.881	1.2	ug/L	111	Standard
	Ce	140	990763.4	1.4				ug/L	107	Standard
>	**Tb**	159	873474.7	0.7				ug/L	890342	Standard
	Ho	165	24511.5	2.8				ug/L	10	Standard
	Tl	203	1762.8	2.6	**0.2422**	0.010	4.3	ug/L	19	Standard
	Tl	205	1573.4	6.4	**0.2681**	0.014	5.1	ug/L	17	Standard
	Pb	206	175441.6	1.0	**37.9831**	0.971	2.6	ug/L	247	Standard
	Pb	207	144605.2	1.4	**34.4368**	0.983	2.9	ug/L	215	Standard
	Pb	208	588641.2	1.8	**37.4440**	1.195	3.2	ug/L	770	Standard
	U	238	9588.7	2.3	**1.6828**	0.058	3.5	ug/L	13	Standard
>	**Bi**	209	477887.7	1.6				ug/L	503143	Standard

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Na	23	3.3	86.6	**29.6244**	25.651	86.6	mg/L	2	Standard
Mg	24	100.0	32.8	**0.0724**	0.039	53.5	mg/L	35	Standard
K	39	251.7	22.0	**0.8997**	0.220	24.5	mg/L	25	Standard
Ca	43	298.3	10.8	**42.0685**	4.357	10.4	mg/L	38	Standard
Fe	54	46609.4	1.9	**35.5544**	1.340	3.8	mg/L	126	Standard
Fe	57	12280.0	1.7	**37.9835**	1.542	4.1	mg/L	245	Standard
> **Sc-1**	45	31080.2	2.4				mg/L	25066	Standard
Cl	35	131632.1	1.5				ug/L	125857	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	2233.5	9.3				ug/L	1350	Standard
P	31	19908.1	1.2				ug/L	18393	Standard
S	34	4282.3	3.5				ug/L	3739	Standard
Sr	88	186.7	10.8				ug/L	78	Standard
C	12	196.7	7.8				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	28.4				mg/L	0	Standard
Dy	164	39222.5	1.3				mg/L	2	Standard
Ho-1	165	24511.5	2.8				mg/L	10	Standard
Er	166	21451.8	2.5				mg/L	23	Standard
I	127	11184.1	5.0				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.252	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.989	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.859
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.981
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606096404
Sample Date/Time: Tuesday, June 21, 2016 21:14:02
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65608.5	2.4				ug/L	60176	Standard
	Be	9	978.4	9.3	**1.2397**	0.091	7.3	ug/L	5	Standard
	Al	27	20276434.3	2.1	**141.6733**	6.192	4.4	ug/L	832	Standard
	Sc	45	32165.8	0.5				ug/L	25066	Standard
	Ti	47	4298.9	2.0	**22.5280**	0.481	2.1	ug/L	38	Standard
	V	51	146058.2	0.9	**24.9272**	0.315	1.3	ug/L	974	Standard
	Cr	52	151598.3	0.6	**23.4255**	0.607	2.6	ug/L	5792	Standard
	Cr	53	18476.3	1.4	**22.6814**	0.785	3.5	ug/L	347	Standard
	Mn	55	9420566.7	0.7	**1504.6626**	40.210	2.7	ug/L	1164	Standard
	Co	59	121066.1	1.2	**20.2709**	0.323	1.6	ug/L	303	Standard
	Ni	60	72261.9	0.3	**40.8509**	0.828	2.0	ug/L	291	Standard
	Cu	65	54807.6	0.9	**31.2098**	0.512	1.6	ug/L	173	Standard
	Zn	66	122838.6	0.9	**120.7890**	1.613	1.3	ug/L	130	Standard
>	**Ge**	72	481416.0	1.9				ug/L	491724	Standard
	As	75	16765.9	1.3	**16.3502**	0.164	1.0	ug/L	-25	Standard
	Se	82	200.1	3.3	**1.8846**	0.080	4.3	ug/L	12	Standard
	Se-1	77	165.3	6.7	**1.7419**	0.196	11.3	ug/L	57	Standard
>	**Ga**	71	21279.9	1.7				mg/L	148	Standard
	Rb	85	212211.0	1.6				ug/L	18	Standard
	Y	89	668598.8	3.4				ug/L	401845	Standard
>	**Rh**	103	146.7	13.8				ug/L	10	Standard
	Mo	98	6675.4	3.0	**2.8530**	0.135	4.7	ug/L	12	Standard
	Ag	107	751.4	7.2	**0.1157**	0.012	10.3	ug/L	98	Standard
	Cd	111	870.3	3.3	**0.4716**	0.024	5.2	mg/L	11	Standard
	Cd	114	2091.4	3.2	**0.4659**	0.020	4.4	ug/L	21	Standard
>	**In**	115	532573.7	1.9				ug/L	547487	Standard
	Sn	118	885.0	9.3	**0.1010**	0.014	13.8	ug/L	450	Standard
	Sb	123	194.5	1.0	**0.0395**	0.001	2.8	ug/L	105	Standard
	Ba	135	1163510.0	0.9	**651.5400**	6.396	1.0	ug/L	111	Standard
	Ce	140	906567.9	0.7				ug/L	107	Standard
>	**Tb**	159	883392.7	1.4				ug/L	890342	Standard
	Ho	165	22286.4	1.5				ug/L	10	Standard
	Tl	203	2482.5	0.8	**0.3521**	0.004	1.0	ug/L	19	Standard
	Tl	205	1881.8	2.0	**0.3296**	0.010	3.2	ug/L	17	Standard
	Pb	206	158091.9	0.8	**35.1738**	0.401	1.1	ug/L	247	Standard
	Pb	207	129834.2	0.5	**31.7739**	0.359	1.1	ug/L	215	Standard
	Pb	208	527254.9	0.3	**34.4662**	0.500	1.5	ug/L	770	Standard
	U	238	16067.5	1.1	**2.8987**	0.040	1.4	ug/L	13	Standard
>	**Bi**	209	464873.7	1.2				ug/L	503143	Standard

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Na	23	13.3	78.1	**115.9288**	90.093	77.7	mg/L	2	Standard
Mg	24	990.0	4.0	**1.0209**	0.038	3.7	mg/L	35	Standard
K	39	433.3	22.9	**1.5710**	0.385	24.5	mg/L	25	Standard
Ca	43	1288.4	2.4	**192.5985**	3.798	2.0	mg/L	38	Standard
Fe	54	42265.6	1.7	**31.1194**	0.570	1.8	mg/L	126	Standard
Fe	57	11794.6	0.9	**35.1500**	0.244	0.7	mg/L	245	Standard
> **Sc-1**	45	32165.8	0.5				mg/L	25066	Standard
Cl	35	147961.0	1.0				ug/L	125857	Standard
Kr	83	2.7	57.3				ug/L	1	Standard
Br	81	8902.6	11.5				ug/L	1350	Standard
P	31	19879.7	1.0				ug/L	18393	Standard
S	34	4369.0	3.9				ug/L	3739	Standard
Sr	88	638.3	9.0				ug/L	78	Standard
C	12	266.7	53.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	80.0	25.0				mg/L	0	Standard
Dy	164	35429.3	3.3				mg/L	2	Standard
Ho-1	165	22286.4	1.5				mg/L	10	Standard
Er	166	19993.2	2.6				mg/L	23	Standard
I	127	41665.6	4.2				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		109.028	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.904	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.276
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	92.394
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606096405
Sample Date/Time: Tuesday, June 21, 2016 21:17:14
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61603.3	1.5				ug/L	60176	Standard
	Be	9	600.0	13.8	**0.8067**	0.103	12.7	ug/L	5	Standard
	Al	27	6725691.5	0.7	**50.0139**	0.453	0.9	ug/L	832	Standard
	Sc	45	29426.9	0.5				ug/L	25066	Standard
	Ti	47	3385.7	1.8	**17.9264**	0.361	2.0	ug/L	38	Standard
	V	51	99171.8	1.0	**17.0872**	0.169	1.0	ug/L	974	Standard
	Cr	52	93106.5	0.5	**14.2111**	0.046	0.3	ug/L	5792	Standard
	Cr	53	11137.4	1.5	**13.6811**	0.187	1.4	ug/L	347	Standard
	Mn	55	4849349.2	0.5	**784.1366**	4.043	0.5	ug/L	1164	Standard
	Co	59	77636.7	0.7	**13.1472**	0.104	0.8	ug/L	303	Standard
	Ni	60	35771.2	0.8	**20.3821**	0.193	0.9	ug/L	291	Standard
	Cu	65	33083.4	0.4	**19.0401**	0.116	0.6	ug/L	173	Standard
	Zn	66	62395.9	0.5	**62.0204**	0.339	0.5	ug/L	130	Standard
>	**Ge**	72	475299.6	0.2				ug/L	491724	Standard
	As	75	7138.4	0.3	**7.0696**	0.031	0.4	ug/L	-25	Standard
	Se	82	72.9	6.9	**0.6363**	0.050	7.8	ug/L	12	Standard
	Se-1	77	94.7	8.2	**0.7362**	0.114	15.4	ug/L	57	Standard
>	**Ga**	71	13139.0	2.4				mg/L	148	Standard
	Rb	85	122434.4	1.4				ug/L	18	Standard
	Y	89	560272.6	0.4				ug/L	401845	Standard
>	**Rh**	103	85.0	10.2				ug/L	10	Standard
	Mo	98	2829.3	0.9	**1.2062**	0.019	1.6	ug/L	12	Standard
	Ag	107	451.3	3.3	**0.0633**	0.003	4.5	ug/L	98	Standard
	Cd	111	585.9	3.4	**0.3157**	0.009	2.8	mg/L	11	Standard
	Cd	114	1338.5	8.1	**0.2966**	0.027	9.2	ug/L	21	Standard
>	**In**	115	532548.5	0.9				ug/L	547487	Standard
	Sn	118	618.3	6.2	**0.0484**	0.008	15.8	ug/L	450	Standard
	Sb	123	149.8	7.0	**0.0287**	0.003	9.9	ug/L	105	Standard
	Ba	135	747435.4	0.3	**418.5133**	3.169	0.8	ug/L	111	Standard
	Ce	140	560557.9	2.3				ug/L	107	Standard
>	**Tb**	159	866879.8	2.2				ug/L	890342	Standard
	Ho	165	12675.3	1.6				ug/L	10	Standard
	Tl	203	1043.0	2.4	**0.1481**	0.005	3.4	ug/L	19	Standard
	Tl	205	948.4	1.9	**0.1690**	0.003	2.0	ug/L	17	Standard
	Pb	206	83575.9	1.0	**18.8379**	0.180	1.0	ug/L	247	Standard
	Pb	207	68735.9	0.3	**17.0411**	0.225	1.3	ug/L	215	Standard
	Pb	208	284935.0	0.5	**18.8685**	0.292	1.5	ug/L	770	Standard
	U	238	6592.4	0.9	**1.2061**	0.023	1.9	ug/L	13	Standard
>	**Bi**	209	458241.8	1.1				ug/L	503143	Standard

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Na	23	16.7	75.5	**158.9499**	120.668	75.9	mg/L	2	Standard
Mg	24	601.7	3.7	**0.6653**	0.030	4.4	mg/L	35	Standard
K	39	206.7	8.5	**0.7650**	0.071	9.3	mg/L	25	Standard
Ca	43	960.0	3.6	**155.9005**	6.175	4.0	mg/L	38	Standard
Fe	54	23834.6	0.7	**19.1304**	0.220	1.1	mg/L	126	Standard
Fe	57	7443.5	4.6	**23.9100**	1.153	4.8	mg/L	245	Standard
> **Sc-1**	45	29426.9	0.5				mg/L	25066	Standard
Cl	35	144441.3	1.4				ug/L	125857	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	2490.2	5.4				ug/L	1350	Standard
P	31	20085.0	2.1				ug/L	18393	Standard
S	34	4562.4	2.9				ug/L	3739	Standard
Sr	88	393.3	4.5				ug/L	78	Standard
C	12	153.3	3.8				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	75.0				mg/L	0	Standard
Dy	164	20473.5	4.3				mg/L	2	Standard
Ho-1	165	12675.3	1.6				mg/L	10	Standard
Er	166	10737.1	4.1				mg/L	23	Standard
I	127	13227.4	3.4				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.372	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.660	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.272
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	91.076
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606096406
Sample Date/Time: Tuesday, June 21, 2016 21:20:25
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60848.7	3.4				ug/L	60176	Standard
	Be	9	848.4	7.1	**1.1616**	0.108	9.3	ug/L	5	Standard
	Al	27	6018452.6	1.5	**45.3266**	0.962	2.1	ug/L	832	Standard
	Sc	45	29640.6	1.5				ug/L	25066	Standard
	Ti	47	4099.9	2.1	**21.1801**	0.616	2.9	ug/L	38	Standard
	V	51	132165.3	0.9	**22.2298**	0.427	1.9	ug/L	974	Standard
	Cr	52	138324.2	0.9	**20.9859**	0.510	2.4	ug/L	5792	Standard
	Cr	53	16679.2	2.2	**20.1440**	0.532	2.6	ug/L	347	Standard
	Mn	55	5769097.8	1.9	**908.7457**	30.297	3.3	ug/L	1164	Standard
	Co	59	130326.2	1.6	**21.5282**	0.614	2.9	ug/L	303	Standard
	Ni	60	50019.1	0.7	**27.8281**	0.578	2.1	ug/L	291	Standard
	Cu	65	47838.4	0.9	**26.8518**	0.165	0.6	ug/L	173	Standard
	Zn	66	97149.5	0.7	**94.1665**	1.182	1.3	ug/L	130	Standard
>	**Ge**	72	488085.6	1.5				ug/L	491724	Standard
	As	75	10945.8	1.2	**10.5404**	0.129	1.2	ug/L	-25	Standard
	Se	82	126.3	7.0	**1.1371**	0.072	6.3	ug/L	12	Standard
	Se-1	77	119.7	5.4	**1.0557**	0.069	6.6	ug/L	57	Standard
>	**Ga**	71	21567.0	2.2				mg/L	148	Standard
	Rb	85	186239.4	1.0				ug/L	18	Standard
	Y	89	601057.7	2.4				ug/L	401845	Standard
>	**Rh**	103	81.7	23.2				ug/L	10	Standard
	Mo	98	3186.2	0.9	**1.3649**	0.035	2.5	ug/L	12	Standard
	Ag	107	455.7	8.5	**0.0644**	0.006	9.6	ug/L	98	Standard
	Cd	111	524.0	6.4	**0.2832**	0.020	7.0	mg/L	11	Standard
	Cd	114	1252.9	3.3	**0.2784**	0.006	2.0	ug/L	21	Standard
>	**In**	115	530301.4	1.7				ug/L	547487	Standard
	Sn	118	516.7	6.3	**0.0287**	0.006	19.5	ug/L	450	Standard
	Sb	123	143.3	12.6	**0.0273**	0.005	17.6	ug/L	105	Standard
	Ba	135	1292682.2	0.4	**727.0559**	14.238	2.0	ug/L	111	Standard
	Ce	140	693916.1	1.8				ug/L	107	Standard
>	**Tb**	159	864495.5	2.4				ug/L	890342	Standard
	Ho	165	16118.6	0.6				ug/L	10	Standard
	Tl	203	1937.1	6.9	**0.2725**	0.018	6.6	ug/L	19	Standard
	Tl	205	1651.8	5.8	**0.2879**	0.017	5.8	ug/L	17	Standard
	Pb	206	129961.3	0.5	**28.7585**	0.109	0.4	ug/L	247	Standard
	Pb	207	107597.0	0.6	**26.1888**	0.063	0.2	ug/L	215	Standard
	Pb	208	436286.5	1.1	**28.3645**	0.441	1.6	ug/L	770	Standard
	U	238	5730.8	1.3	**1.0282**	0.019	1.9	ug/L	13	Standard
>	**Bi**	209	467215.7	0.6				ug/L	503143	Standard

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Na	23	5.0	100.0	**47.5230**	47.311	99.6	mg/L	2	Standard
Mg	24	1591.8	6.0	**1.8117**	0.138	7.6	mg/L	35	Standard
K	39	305.0	4.3	**1.1740**	0.072	6.1	mg/L	25	Standard
Ca	43	253.3	7.5	**36.8883**	2.607	7.1	mg/L	38	Standard
Fe	54	39612.5	0.8	**31.6600**	0.733	2.3	mg/L	126	Standard
Fe	57	9963.3	0.7	**32.1373**	0.629	2.0	mg/L	245	Standard
> **Sc-1**	45	29640.6	1.5				mg/L	25066	Standard
Cl	35	134083.4	1.7				ug/L	125857	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	10510.3	5.8				ug/L	1350	Standard
P	31	21156.4	3.0				ug/L	18393	Standard
S	34	4474.0	1.7				ug/L	3739	Standard
Sr	88	380.0	15.2				ug/L	78	Standard
C	12	116.7	24.7				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	50.0	87.2				mg/L	0	Standard
Dy	164	26535.5	1.2				mg/L	2	Standard
Ho-1	165	16118.6	0.6				mg/L	10	Standard
Er	166	14313.4	2.0				mg/L	23	Standard
I	127	12621.9	3.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.118	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.260	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.861
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.859
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606104801
Sample Date/Time: Tuesday, June 21, 2016 21:23:37
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59245.6	2.3				ug/L	60176	Standard
	Be	9	998.4	8.4	**1.4039**	0.121	8.6	ug/L	5	Standard
	Al	27	6367880.3	0.6	**49.2460**	0.840	1.7	ug/L	832	Standard
	Sc	45	32329.5	1.7				ug/L	25066	Standard
	Ti	47	1382.7	2.8	**6.7449**	0.291	4.3	ug/L	38	Standard
	V	51	119247.6	0.5	**19.3078**	0.442	2.3	ug/L	974	Standard
	Cr	52	109311.3	1.0	**15.7582**	0.462	2.9	ug/L	5792	Standard
	Cr	53	12982.2	1.5	**15.0048**	0.147	1.0	ug/L	347	Standard
	Mn	55	705485.5	0.6	**106.8784**	1.202	1.1	ug/L	1164	Standard
	Co	59	37775.0	1.2	**5.9772**	0.123	2.1	ug/L	303	Standard
	Ni	60	47756.8	1.1	**25.5883**	0.496	1.9	ug/L	291	Standard
	Cu	65	71575.7	0.3	**38.7654**	0.772	2.0	ug/L	173	Standard
	Zn	66	100398.2	0.5	**93.7869**	1.723	1.8	ug/L	130	Standard
>	**Ge**	72	506494.1	1.7				ug/L	491724	Standard
	As	75	1385.3	0.4	**1.3154**	0.019	1.4	ug/L	-25	Standard
	Se	82	173.9	2.4	**1.5403**	0.020	1.3	ug/L	12	Standard
	Se-1	77	199.0	5.6	**2.0859**	0.187	9.0	ug/L	57	Standard
>	**Ga**	71	14914.0	1.3				mg/L	148	Standard
	Rb	85	75430.7	1.8				ug/L	18	Standard
	Y	89	760970.7	1.5				ug/L	401845	Standard
>	**Rh**	103	35.0	42.9				ug/L	10	Standard
	Mo	98	1188.3	0.2	**0.4982**	0.006	1.3	ug/L	12	Standard
	Ag	107	1544.4	4.3	**0.2507**	0.008	3.1	ug/L	98	Standard
	Cd	111	2357.3	1.5	**1.2699**	0.003	0.2	mg/L	11	Standard
	Cd	114	5698.6	3.2	**1.2625**	0.055	4.3	ug/L	21	Standard
>	**In**	115	538711.6	1.4				ug/L	547487	Standard
	Sn	118	1520.1	9.1	**0.2236**	0.029	13.1	ug/L	450	Standard
	Sb	123	745.4	2.0	**0.1708**	0.006	3.3	ug/L	105	Standard
	Ba	135	233929.7	0.2	**129.4576**	1.611	1.2	ug/L	111	Standard
	Ce	140	1443759.2	1.4				ug/L	107	Standard
>	**Tb**	159	888846.2	1.9				ug/L	890342	Standard
	Ho	165	27959.1	1.2				ug/L	10	Standard
	Tl	203	902.7	2.9	**0.1193**	0.002	2.1	ug/L	19	Standard
	Tl	205	766.7	7.0	**0.1281**	0.008	6.1	ug/L	17	Standard
	Pb	206	138959.0	0.2	**29.3640**	0.336	1.1	ug/L	247	Standard
	Pb	207	113827.0	0.5	**26.4558**	0.247	0.9	ug/L	215	Standard
	Pb	208	467592.1	0.8	**29.0276**	0.195	0.7	ug/L	770	Standard
	U	238	27116.9	1.5	**4.6480**	0.064	1.4	ug/L	13	Standard
>	**Bi**	209	489310.6	0.9				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	71.7	14.5	**0.0373**	0.010	27.1	mg/L	35	Standard
K	39	178.3	19.1	**0.5783**	0.141	24.4	mg/L	25	Standard
Ca	43	95.0	10.5	**9.2082**	1.716	18.6	mg/L	38	Standard
Fe	54	10385.0	3.9	**7.5064**	0.345	4.6	mg/L	126	Standard
Fe	57	2965.3	4.1	**7.9807**	0.521	6.5	mg/L	245	Standard
> **Sc-1**	45	32329.5	1.7				mg/L	25066	Standard
Cl	35	130217.9	1.6				ug/L	125857	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	2376.9	10.6				ug/L	1350	Standard
P	31	19497.5	2.1				ug/L	18393	Standard
S	34	4082.2	1.2				ug/L	3739	Standard
Sr	88	118.3	16.0				ug/L	78	Standard
C	12	216.7	11.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	116.7	26.2				mg/L	0	Standard
Dy	164	44057.9	0.3				mg/L	2	Standard
Ho-1	165	27959.1	1.2				mg/L	10	Standard
Er	166	24553.2	1.7				mg/L	23	Standard
I	127	4534.0	1.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.454	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.004	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.397
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.251
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606104801
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 21:26:49
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	58117.9	1.9				ug/L	60176	Standard
	Be	9	35621.8	0.6	**51.3767**	0.746	1.5	ug/L	5	Standard
	Al	27	6444420.2	2.2	**50.7919**	0.548	1.1	ug/L	832	Standard
	Sc	45	27070.9	3.8				ug/L	25066	Standard
	Ti	47	20949.1	1.3	**109.9419**	1.971	1.8	ug/L	38	Standard
	V	51	311526.8	1.1	**53.0494**	0.891	1.7	ug/L	974	Standard
	Cr	52	336768.4	1.0	**52.8658**	0.756	1.4	ug/L	5792	Standard
	Cr	53	42255.5	1.3	**52.0803**	0.758	1.5	ug/L	347	Standard
	Mn	55	329477.3	1.5	**52.0991**	0.877	1.7	ug/L	1164	Standard
	Co	59	312334.4	0.0	**52.0675**	0.408	0.8	ug/L	303	Standard
	Ni	60	91099.4	0.7	**51.2423**	0.593	1.2	ug/L	291	Standard
	Cu	65	91621.9	0.6	**51.9330**	0.724	1.4	ug/L	173	Standard
	Zn	66	52807.9	0.3	**51.4877**	0.269	0.5	ug/L	130	Standard
>	Ge	72	484191.6	0.8				ug/L	491724	Standard
	As	75	53524.2	1.1	**51.8184**	0.213	0.4	ug/L	-25	Standard
	Se	82	5349.2	1.5	**52.4511**	0.359	0.7	ug/L	12	Standard
	Se-1	77	3620.4	0.5	**51.3775**	0.420	0.8	ug/L	57	Standard
>	Ga	71	158.3	20.1				mg/L	148	Standard
	Rb	85	848.4	15.5				ug/L	18	Standard
	Y	89	427339.9	1.3				ug/L	401845	Standard
>	Rh	103	25.0	52.9				ug/L	10	Standard
	Mo	98	233982.7	0.9	**95.3240**	1.240	1.3	ug/L	12	Standard
	Ag	107	293588.5	0.2	**48.7224**	0.264	0.5	ug/L	98	Standard
	Cd	111	95530.5	0.8	**49.7490**	0.284	0.6	mg/L	11	Standard
	Cd	114	235659.9	1.2	**50.4432**	0.294	0.6	ug/L	21	Standard
>	In	115	559275.1	0.7				ug/L	547487	Standard
	Sn	118	260234.3	0.9	**48.9865**	0.748	1.5	ug/L	450	Standard
	Sb	123	209964.5	0.6	**48.3856**	0.196	0.4	ug/L	105	Standard
	Ba	135	91831.8	1.3	**48.9125**	0.680	1.4	ug/L	111	Standard
	Ce	140	770.0	93.3				ug/L	107	Standard
>	Tb	159	881548.3	1.4				ug/L	890342	Standard
	Ho	165	23.3	101.3				ug/L	10	Standard
	Tl	203	366327.0	0.5	**50.7112**	0.180	0.4	ug/L	19	Standard
	Tl	205	314340.8	1.0	**53.0357**	0.359	0.7	ug/L	17	Standard
	Pb	206	230993.2	0.2	**49.6830**	0.169	0.3	ug/L	247	Standard
	Pb	207	210145.0	1.0	**49.7218**	0.386	0.8	ug/L	215	Standard
	Pb	208	829897.6	0.4	**52.4503**	0.511	1.0	ug/L	770	Standard
	U	238	292600.4	0.9	**51.0190**	0.183	0.4	ug/L	13	Standard
>	Bi	209	481073.7	0.6				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3695.5	9.2	**4.6760**	0.585	12.5	mg/L	35	Standard
K	39	1030.0	1.3	**4.6474**	0.224	4.8	mg/L	25	Standard
Ca	43	45.0	50.9	**2.9507**	4.449	150.8	mg/L	38	Standard
Fe	54	5550.5	2.5	**4.7422**	0.063	1.3	mg/L	126	Standard
Fe	57	1498.4	8.9	**4.3770**	0.384	8.8	mg/L	245	Standard
> **Sc-1**	45	27070.9	3.8				mg/L	25066	Standard
Cl	35	132009.2	0.2				ug/L	125857	Standard
Kr	83	3.0	33.3				ug/L	1	Standard
Br	81	1363.4	15.7				ug/L	1350	Standard
P	31	20323.6	3.2				ug/L	18393	Standard
S	34	4162.2	3.1				ug/L	3739	Standard
Sr	88	85.0	27.0				ug/L	78	Standard
C	12	60.0	33.3				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	58.4	103.7				mg/L	2	Standard
Ho-1	165	23.3	101.3				mg/L	10	Standard
Er	166	33.3	17.3				mg/L	23	Standard
I	127	1211.7	9.1				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	102.753		
	Al	27	101.584		
	Sc	45			
	Ti	47	109.942		
	V	51	106.099		
	Cr	52	105.732		
	Cr	53			
	Mn	55	104.198		
	Co	59	104.135		
	Ni	60	102.485		
	Cu	65	103.866		
	Zn	66	102.975		
>	Ge	72		98.468	
	As	75	103.637		
	Se	82	104.902		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	95.324		
Ag	107	97.445		
Cd	111	99.498		
Cd	114			
> In	115		102.153	
Sn	118	97.973		
Sb	123	96.771		
Ba	135	97.825		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.422		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.901		
U	238	102.038		
> Bi	209		95.614	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 21:30:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57000.4	1.8				ug/L	60176	Standard
	Be	9	11.7	89.2	**0.0083**	0.015	186.0	ug/L	5	Standard
	Al	27	2620.3	47.2	**0.0127**	0.010	80.8	ug/L	832	Standard
	Sc	45	26027.3	2.6				ug/L	25066	Standard
	Ti	47	31.7	11.1	**-0.0438**	0.018	40.1	ug/L	38	Standard
	V	51	1068.5	10.9	**0.0089**	0.018	206.9	ug/L	974	Standard
	Cr	52	5732.8	2.3	**-0.0411**	0.022	53.1	ug/L	5792	Standard
	Cr	53	288.3	8.2	**-0.0602**	0.031	51.8	ug/L	347	Standard
	Mn	55	2013.2	47.5	**0.0986**	0.147	148.9	ug/L	1164	Standard
	Co	59	286.0	4.2	**-0.0024**	0.002	79.0	ug/L	303	Standard
	Ni	60	134.0	14.7	**-0.1162**	0.011	9.1	ug/L	291	Standard
	Cu	65	138.7	6.2	**-0.0202**	0.005	23.4	ug/L	173	Standard
	Zn	66	178.0	11.4	**-0.0638**	0.018	28.8	ug/L	130	Standard
>	**Ge**	72	491825.9	0.7				ug/L	491724	Standard
	As	75	-42.4	64.1	**-0.0065**	0.026	398.9	ug/L	-25	Standard
	Se	82	14.2	62.7	**0.0442**	0.085	192.5	ug/L	12	Standard
	Se-1	77	51.7	16.5	**0.0814**	0.121	148.7	ug/L	57	Standard
>	**Ga**	71	160.0	5.4				mg/L	148	Standard
	Rb	85	65.0	55.5				ug/L	18	Standard
	Y	89	420079.4	1.3				ug/L	401845	Standard
>	**Rh**	103	20.0	43.3				ug/L	10	Standard
	Mo	98	229.1	28.0	**0.0908**	0.025	27.9	ug/L	12	Standard
	Ag	107	121.7	14.1	**0.0053**	0.003	59.9	ug/L	98	Standard
	Cd	111	14.3	8.4	**0.0029**	0.001	24.4	mg/L	11	Standard
	Cd	114	32.1	64.9	**0.0026**	0.005	175.9	ug/L	21	Standard
>	**In**	115	546820.4	1.4				ug/L	547487	Standard
	Sn	118	666.7	23.3	**0.0548**	0.031	57.4	ug/L	450	Standard
	Sb	123	349.2	26.6	**0.0749**	0.023	30.5	ug/L	105	Standard
	Ba	135	222.0	49.7	**0.0657**	0.061	93.2	ug/L	111	Standard
	Ce	140	125.0	70.8				ug/L	107	Standard
>	**Tb**	159	852501.8	2.1				ug/L	890342	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	60.0	17.6	**0.0048**	0.001	29.7	ug/L	19	Standard
	Tl	205	38.3	39.8	**0.0075**	0.003	35.3	ug/L	17	Standard
	Pb	206	294.3	6.3	**0.0089**	0.003	35.8	ug/L	247	Standard
	Pb	207	245.7	12.3	**0.0066**	0.007	110.7	ug/L	215	Standard
	Pb	208	963.3	10.3	**0.0016**	0.007	416.4	ug/L	770	Standard
	U	238	48.0	16.7	**0.0076**	0.001	18.1	ug/L	13	Standard
>	**Bi**	209	476870.2	2.1				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	46.6	**0.0185**	0.027	145.6	mg/L	35	Standard
K	39	13.3	108.3	**-0.0485**	0.069	142.0	mg/L	25	Standard
Ca	43	36.7	20.8	**1.6572**	1.618	97.6	mg/L	38	Standard
Fe	54	138.9	10.0	**-0.0095**	0.014	151.2	mg/L	126	Standard
Fe	57	211.7	11.2	**-0.2847**	0.108	38.1	mg/L	245	Standard
> **Sc-1**	45	26027.3	2.6				mg/L	25066	Standard
Cl	35	131985.8	1.3				ug/L	125857	Standard
Kr	83	3.0	33.3				ug/L	1	Standard
Br	81	1333.4	5.0				ug/L	1350	Standard
P	31	20615.7	2.9				ug/L	18393	Standard
S	34	4127.2	2.0				ug/L	3739	Standard
Sr	88	78.3	32.8				ug/L	78	Standard
C	12	23.3	49.5				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.9	86.8				mg/L	2	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	10.0	173.2				mg/L	23	Standard
I	127	953.4	9.0				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.021	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 7
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.878
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.778
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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2.3.3 Metals CVAA Data (Mercury)

2.3.3.1 Summary Data

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-01	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW1-061016	**Prep Method:**	7470A	**Prep Date:**	06/14/2016 10:23
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/16/2016 14:15
Workgroup #:	WG573072	**Analyst:**	PDM	**Run Date:**	06/16/2016 15:31
Collect Date:	06/10/2016 07:55	**Dilution:**	1	**File ID:**	M7.061616.153110
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-02	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW3-061016	**Prep Method:**	7470A	**Prep Date:**	06/14/2016 10:23
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/16/2016 14:15
Workgroup #:	WG573072	**Analyst:**	PDM	**Run Date:**	06/16/2016 15:33
Collect Date:	06/10/2016 09:05	**Dilution:**	1	**File ID:**	M7.061616.153343
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-03	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	17WW08-061016	**Prep Method:**	7470A	**Prep Date:**	06/14/2016 10:23
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/16/2016 14:15
Workgroup #:	WG573072	**Analyst:**	PDM	**Run Date:**	06/16/2016 15:36
Collect Date:	06/10/2016 10:10	**Dilution:**	1	**File ID:**	M7.061616.153616
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-08	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18WW24F-061016	**Prep Method:**	7470A	**Prep Date:**	06/14/2016 10:23
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/16/2016 14:15
Workgroup #:	WG573072	**Analyst:**	PDM	**Run Date:**	06/16/2016 15:38
Collect Date:	06/10/2016 14:40	**Dilution:**	1	**File ID:**	M7.061616.153847
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.3.3.2 QC Summary

Example Cold Vapor Mercury Calculations
Hydra AA Mercury Analyzer / CETAC M-7600 Quick Trace Mercury Analyzer

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and five standards.

2.0 Calculating the concentration (C) of an element in water using data from run log and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to Volume (mL)	40
Vi = Aliquot Volume (mL)	40
D = Manual dilution factor, if required (10X = 10)	1
Cx = Concentration of element in ppb (ug/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Ws} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to volume (mL)	40
Ws = Aliquot weight (g)	0.6
D = Manual dilution factor	1
Cx = Concentration of element in ug/kg	6.67

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

1 Cx = Concentration calculated as received (wet basis)	6.67
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	8.33

8.33 ug/kg = 0.00833 mg/kg

TCLP Non-Volatile

Analyst(s): AMA
Date: 06/13/16
Filter Lot #: 9486030
Microbac SOP: TCLP01 Rev #: 12

Analyst / Date		Analyst / Date	
AMA	6/13/16	CPD	6/14/16
Time On	Temp On °C	Time Off	Temp Off °C
1430	23.2	0817	21.9

Agitator Speed 30 ± 2 rpm ☑

Jug #	Sample #	Tests	Method	Fluid #	Matrix *	% Solid	Pretest pH Initial	Pretest pH Final	Int. Wt. (g)	Fluid Vol. (mL)	Final extract pH
14	06-0550-01	ME, SV, Pest, Herb	1311	FI-180	S	100	6.75	3.03	100.79	2016	5.23
D	06-0531-01	300	1312	SPLPFI			NA	NA	100.64	2012	9.60
	06-0532-01	300							50.77	1015	10.00
	-02	300							50.35	1007	9.95
	-03	300							50.70	1014	10.04
	-04	300							50.27	1005	9.95
25	06-0620-01	SV	1311	FI-180			8.84	1.86	100.78	2015	5.35
G-12	-02	SV		FI-180			10.25	1.96	100.48	2009	6.85
D	06-0633-01	ME		F2379			12.44	11.94	25.41	508	11.79
	06-0629-01	ME		FI-180			10.08	1.66	100.60	2012	5.14
NA	06-0537-01	ME, SV	1311	Fi 1	O	<0.5	NA	NA	100	100	6.00
NA	06-0535-01	ME, SV, Pest, Herb	1311	Fi 1	W	<0.5					10.00
NA	FBlk 1	ME, SV, Pest, Herb	1311	FI-180	NA	NA	NA	NA	100	100	4.88
	SPLPBlk 1	300	1312	SFI-62							4.22
	FBlk 2	ME	1311	F2-379							2.90

CPD 6/14/16

*Matrix Code: (S = solid, sand, soil or sludge) (P = paint) (O = organic) (W = water or aqueous waste)
D = Disposable plastic jug
TCLP Pretest weight will be 5.0 g (± 0.1) unless otherwise noted.
Temperature shall be maintained at 23° ± 2 for 18 ± 2 hours unless otherwise noted.

Comments: SX 06-0537-01 strong volatile odor, and 06-0535-01 soap odor.

Peer Review By: [signature]

Microbac Laboratories Inc.
Metals Digest Log

Workgroup: WG572607
Analyst: REK
Spike Analyst: REK
Method: 7470A
Run Date: 06/14/2016 10:23
Hotblock Start Temp: 94.98 @ 10:15
Hotblock End Temp: 94.9 @ 12:15
Instrument: HB2

SOP: ME404 Revison 17
Spike Solution: STD76587
Spike Witness: EMW
H2SO4 Lot #: COA18359
40 & 50 ML. DIGESTION TU COA18772
HNO3 Lot #: COA18905
KMnO4 1:1 Lot #: RGT37006
K2S2O8 1:1 Lot #: RGT37046
Mercury Water ICV Lot #: STD76589
HG H2O STDS 10PPM Lot #: STD76595

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Spike Amount	Due Date
1	WG572607-03	BLANK	1	40 mL	40 mL		
2	WG572434-01	FBLK1	17	4 mL	40 mL		
3	WG572434-02	FBLK2	17	4 mL	40 mL		
4	WG572607-04	LCS	1	40 mL	40 mL	4 mL	
5	L16060535-01	SAMP	17	4 mL	40 mL		06/20/16
6	L16060537-01	SAMP	17	1 mL	40 mL		06/20/16
7	L16060550-01	SAMP	17	4 mL	40 mL		06/16/16
8	WG572607-01	REF	1	40 mL	40 mL		
9	L16060564-01	RS01	1	40 mL	40 mL		06/20/16
10	L16060564-03	SAMP	1	40 mL	40 mL		06/20/16
11	WG572607-05	MS	1	36 mL	40 mL	4 mL	
12	L16060564-05	MS01	1	36 mL	40 mL	4 mL	06/20/16
13	WG572607-06	MSD	1	36 mL	40 mL	4 mL	
14	L16060564-07	SD01	1	36 mL	40 mL	4 mL	06/20/16
15	L16060616-01	SAMP	1	40 mL	40 mL		06/21/16
16	L16060616-02	SAMP	1	40 mL	40 mL		06/21/16
17	L16060616-04	SAMP	1	40 mL	40 mL		06/21/16
18	L16060629-01	SAMP	17	4 mL	40 mL		06/17/16
19	L16060633-01	SAMP	17	4 mL	40 mL		06/17/16
20	WG572607-02	REF	2	40 mL	40 mL		
21	L16060635-01	SAMP	2	40 mL	40 mL		06/21/16
22	L16060635-02	SAMP	2	40 mL	40 mL		06/21/16
23	L16060635-03	SAMP	2	40 mL	40 mL		06/21/16
24	L16060650-01	SAMP	1	40 mL	40 mL		06/24/16
25	L16060650-02	SAMP	1	40 mL	40 mL		06/24/16
26	L16060650-03	SAMP	1	40 mL	40 mL		06/24/16
27	L16060650-08	SAMP	1	40 mL	40 mL		06/24/16
28	WG572607-07	DUP	1	40 mL	40 mL		

L16060537-01	FILT. OIL

Analyst: [signature]

Reviewer: [signature]

HB_DIG - Modified 07/26/2012
PDF ID: 4807349
Report generated: 06/14/2016 14:08

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 061616B.CSV

Analyst1: PDM Analyst2: N/A

Method: 7470A/245.1 SOP: ME404 Rev: 17

Maintenance Log ID:

Calibration Std: STD76595 ICV Std: STD76589 Post Spike: STD76595

ICSA: N/A ICSAB: N/A Int. Std:

CCV: LLCCV: Tuning Sol :

Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 573072

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	M7.061616.140228	WG573073-01	Calibration Point		1		06/16/16 14:02
2	M7.061616.140459	WG573073-02	Calibration Point		1		06/16/16 14:04
3	M7.061616.140731	WG573073-03	Calibration Point		1		06/16/16 14:07
4	M7.061616.141003	WG573073-04	Calibration Point		1		06/16/16 14:10
5	M7.061616.141237	WG573073-05	Calibration Point		1		06/16/16 14:12
6	M7.061616.141510	WG573073-06	Calibration Point		1		06/16/16 14:15
7	M7.061616.141744	WG573073-07	Initial Calibration Verification		1		06/16/16 14:17
8	M7.061616.142015	WG573073-08	Initial Calib Blank		1		06/16/16 14:20
9	M7.061616.142248	WG573073-09	CCV		1		06/16/16 14:22
10	M7.061616.142518	WG573073-10	CCB		1		06/16/16 14:25
11	M7.061616.142749	WG572607-03	Method/Prep Blank	40/40	1		06/16/16 14:27
12	M7.061616.143020	WG572607-04	Laboratory Control S	40/40	1		06/16/16 14:30
13	M7.061616.143252	WG572434-01	Fluid Blank 1		1		06/16/16 14:32
14	M7.061616.143523	WG572434-02	Fluid Blank 2		1		06/16/16 14:35
15	M7.061616.143755	L16060535-01	FPL16027	4/40	1		06/16/16 14:37
16	M7.061616.144028	L16060537-01	FPL16026	1/40	1		06/16/16 14:40
17	M7.061616.144300	L16060550-01	J6F0362-01	4/40	1		06/16/16 14:43
18	M7.061616.144533	WG573072-01	Post Digestion Spike		1	L16060550-01	06/16/16 14:45
19	M7.061616.144806	WG572607-01	Reference Sample	40/40	1	L16060564-01	06/16/16 14:48
20	M7.061616.145040	L16060564-03	WBW-FD-06092016	40/40	1		06/16/16 14:50
21	M7.061616.145312	WG573073-11	CCV		1		06/16/16 14:53
22	M7.061616.145543	WG573073-12	CCB		1		06/16/16 14:55
23	M7.061616.145817	L16060564-05	WBW-MS-06092016	36/40	1	WG572607-05	06/16/16 14:58
24	M7.061616.150051	L16060564-07	WBW-MSD-06092016	36/40	1	WG572607-06	06/16/16 15:00
25	M7.061616.150321	L16060616-01	MW8-060916	40/40	1		06/16/16 15:03
26	M7.061616.150552	L16060616-02	18CPTMW26SW-060916	40/40	1		06/16/16 15:05
27	M7.061616.150822	L16060616-04	MW10F-060916	40/40	1		06/16/16 15:08
28	M7.061616.151053	L16060629-01	S6F0380-01	4/40	1		06/16/16 15:10
29	M7.061616.151325	L16060633-01	ALAN 17 BAGS	4/40	1		06/16/16 15:13
30	M7.061616.151557	WG572607-02	Reference Sample	40/40	1	L16060635-01	06/16/16 15:15
31	M7.061616.151829	WG572607-07	Duplicate	40/40	1	L16060635-01	06/16/16 15:18
32	M7.061616.152101	L16060635-02	OUTFALL 001	40/40	1		06/16/16 15:21
33	M7.061616.152333	WG573073-13	CCV		1		06/16/16 15:23
34	M7.061616.152604	WG573073-14	CCB		1		06/16/16 15:26

Page: 1 Approved: June 17, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 061616B.CSV

Analyst1: PDM Analyst2: N/A

Method: 7470A/245.1 SOP: ME404 Rev: 17

Maintenance Log ID:

Calibration Std: STD76595 ICV Std: STD76589 Post Spike: STD76595

ICSA: N/A ICSAB: N/A Int. Std:

CCV: LLCCV: Tuning Sol :

Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 573072

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	M7.061616.152837	L16060635-03	CATCH BASIN 29	40/40	1		06/16/16 15:28
36	M7.061616.153110	L16060650-01	MW1-061016	40/40	1		06/16/16 15:31
37	M7.061616.153343	L16060650-02	MW3-061016	40/40	1		06/16/16 15:33
38	M7.061616.153616	L16060650-03	17WW08-061016	40/40	1		06/16/16 15:36
39	M7.061616.153847	L16060650-08	18WW24F-061016	40/40	1		06/16/16 15:38
40	M7.061616.154405	WG573072-02	Post Digestion Spike		1	L16060650-08	06/16/16 15:44
41	M7.061616.154636	WG573072-03	Post Digestion Spike		1	L16060564-01	06/16/16 15:46
42	M7.061616.154908	WG573073-15	CCV		1		06/16/16 15:49
43	M7.061616.155139	WG573073-16	CCB		1		06/16/16 15:51

Page: 2 Approved: June 17, 2016

Kim H. Rhoden

Microbac Laboratories Inc.

Data Checklist

Date: 16-JUN-2016
Analyst: AMA
Analyst: NA
Method: 7470A/245.1
Instrument: CVAA1
Curve Workgroup: 573073
Runlog ID: 75732
Analytical Workgroups: 573072

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	0535, 0537, 0616, 0650
Client Forms	X
Level X	
Level 3	0535, 0537
Level 4	0616, 0650
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	AMA
Secondary Reviewer	KHR
Comments	

Primary Reviewer:
17-JUN-2016
Alexandra M. Alfred

Secondary Reviewer:
17-JUN-2016
Kym H. Rhoden

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-17-2016 14:46:02

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 7470A

AAB#: WG573072

Login Number: L16060650

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW1-061016	01	06/10/16					06/14/2016	4.1	28		06/16/16	6.3	28	
MW3-061016	02	06/10/16					06/14/2016	4.1	28		06/16/16	6.3	28	
17WW08-061016	03	06/10/16					06/14/2016	4	28		06/16/16	6.2	28	
18WW24F-061016	08	06/10/16					06/14/2016	3.8	28		06/16/16	6	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4812785
Report generated 06/17/2016 13:49

METHOD BLANK SUMMARY

Login Number: L16060650
Blank File ID: M7.061616.142749
Prep Date: 06/14/16 10:23
Analyzed Date: 06/16/16 14:27
Analyst: PDM

Work Group: WG573072
Blank Sample ID: WG572607-03
Instrument ID: CVAA1
Method: 7470A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572607-04	M7.061616.143020	06/16/16 14:30	01
DUP	WG572607-07	M7.061616.151829	06/16/16 15:18	01
MW1-061016	L16060650-01	M7.061616.153110	06/16/16 15:31	01
MW3-061016	L16060650-02	M7.061616.153343	06/16/16 15:33	01
17WW08-061016	L16060650-03	M7.061616.153616	06/16/16 15:36	01
18WW24F-061016	L16060650-08	M7.061616.153847	06/16/16 15:38	01

Report Name: BLANK_SUMMARY
PDF File ID: 4812786
Report generated 06/17/2016 13:49

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060650 Prep Date: 06/14/16 10:23 Sample ID: WG572607-03
Instrument ID: CVAA1 Run Date: 06/16/16 14:27 Prep Method: 7470A
File ID: M7.061616.142749 Analyst: PDM Method: 7470A
Workgroup (AAB#): WG573072 Matrix: Water Units: mg/L
Contract #: Cal ID: CVAA1-16-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Mercury	0.000100	0.000400	0.000100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4812787
17-JUN-2016 13:49

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060650 Run Date: 06/16/2016 Sample ID: WG572607-04
Instrument ID: CVAA1 Run Time: 14:30 Prep Method: 7470A
File ID: M7.061616.143020 Analyst: PDM Method: 7470A
Workgroup (AAB#): WG573072 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76587 Cal ID: CVAA1-16-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Mercury	0.00400	0.00443	111	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4812788
Report generated: 06/17/2016 13:49

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060650 Cal ID: CVAA1 - Worknum: WG573072
Instrument ID: CVAA1 Contract #: Method: 7470A
Parent ID: WG572607-01 File ID: M7.061616.144806 Dil: 1 Matrix: WATER
Sample ID: WG572607-05 MS File ID: M7.061616.145817 Dil: 1 Units: mg/L
Sample ID: WG572607-06 MSD File ID: M7.061616.150051 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Mercury	ND	0.00444	- 0.00000478	-0.108	0.00444	- 0.00000422	-0.0950	-12.3	80 - 120	20	*

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4812789
Report generated 06/17/2016 13:49

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060650 **Worknum:** WG573072
Instrument ID: CVAA1 **Method:** 7470A
Post Spike ID: WG573072-02 **File ID:** M7.061616.154405 **Dil:** 1 **Units:** ug/L
Sample ID: L16060650-08 **File ID:** M7.061616.153847 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MERCURY	1.04		0	U	1	103.9	85 - 115	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4812784
Report generated: 06/17/2016 13:49

Microbac Laboratories Inc.
INITIAL CALIBRATION SUMMARY

Login Number: L16060650
Analytical Method: 7470A
ICAL Worknum: WG573073

Workgroup (AAB#): WG573072
Instrument ID: CVAA1
Initial Calibration Date: 06/16/2016 14:15

Analyte	WG573073-01		WG573073-02		WG573073-03		WG573073-04		WG573073-05		WG573073-06	
	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT
Mercury	0	77.17	0.200	3002	1.00	14230	2.00	28260	5.00	69600	10.0	132600

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4812791
Report generated 06/17/2016 13:49

Login Number: L16060650
Analytical Method: 7470A
ICAL Worknum: WG573073

Workgroup (AAB#): WG573072
Instrument ID: CVAA1
Initial Calibration Date: 06/16/2016 14:15

Analyte	R	Q
Mercury	0.9995	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4812791
Report generated 06/17/2016 13:49

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060650
Instrument ID: CVAA1
File ID: M7.061616.142015
Workgroup (AAB#): WG573072
Matrix: WATER

Run Date: 06/16/2016
Run Time: 14:20
Analyst: PDM
Cal ID: CVAA1 - 16-JUN-16

Sample ID: WG573073-08
Method: 7470A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
MERCURY	.1	.4	.1	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4812793
Report generated 06/17/2016 13:49

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573073-10
Instrument ID: CVAA1
Run Time: 14:25
Method: 7470A
File ID: M7.061616.142518
Analyst: PDM
Units: ug/L
Workgroup (AAB#): WG573072
Cal ID: CVAA1 - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812795
Report generated 06/17/2016 13:49

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573073-12
Instrument ID: CVAA1
Run Time: 14:55
Method: 7470A
File ID: M7.061616.145543
Analyst: PDM
Units: ug/L
Workgroup (AAB#): WG573072
Cal ID: CVAA1 - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812795
Report generated 06/17/2016 13:49

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573073-14
Instrument ID: CVAA1
Run Time: 15:26
Method: 7470A
File ID: M7.061616.152604
Analyst: PDM
Units: ug/L
Workgroup (AAB#): WG573072
Cal ID: CVAA1 - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812795
Report generated 06/17/2016 13:49

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573073-16
Instrument ID: CVAA1
Run Time: 15:51
Method: 7470A
File ID: M7.061616.155139
Analyst: PDM
Units: ug/L
Workgroup (AAB#): WG573072
Cal ID: CVAA1 - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812795
Report generated 06/17/2016 13:49

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573073-07
Instrument ID: CVAA1
Run Time: 14:17
Method: 7470A
File ID: M7.061616.141744
Analyst: PDM
Units: ug/L
Workgroup (AAB#): WG573072
Cal ID: CVAA1 - 16-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Mercury		2	2.07	103	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4812792
Report generated 06/17/2016 13:49

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573073-09
Instrument ID: CVAA1
Run Time: 14:22
Method: 7470A
File ID: M7.061616.142248
Analyst: PDM
QC Key: DOD4
Workgroup (AAB#): WG573072
Cal ID: CVAA1 - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00205	mg/L	103	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812794
Report generated 06/17/2016 13:49

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573073-11
Instrument ID: CVAA1
Run Time: 14:53
Method: 7470A
File ID: M7.061616.145312
Analyst: PDM
QC Key: DOD4
Workgroup (AAB#): WG573072
Cal ID: CVAA1 - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00215	mg/L	107	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812794
Report generated 06/17/2016 13:49

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573073-13
Instrument ID: CVAA1
Run Time: 15:23
Method: 7470A
File ID: M7.061616.152333
Analyst: PDM
QC Key: DOD4
Workgroup (AAB#): WG573072
Cal ID: CVAA1 - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00195	mg/L	97.3	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812794
Report generated 06/17/2016 13:49

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573073-15
Instrument ID: CVAA1
Run Time: 15:49
Method: 7470A
File ID: M7.061616.154908
Analyst: PDM
QC Key: DOD4
Workgroup (AAB#): WG573072
Cal ID: CVAA1 - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00199	mg/L	99.5	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812794
Report generated 06/17/2016 13:49

2.3.3.3 Raw Data

PDM CVAA1 245.1/7470/7471

Report Generated By CETAC QuickTrace
Analyst: VOA
Worksheet file: C:\Program Files (x86)\QuickTrace\Worksheets\061616B.wsz
Date Started: 6/16/2016 1:56:48 PM
Comment:

Results

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
Standard #0					STD	06/16/16 02:02:28 pm	0.0000	77	17.70		1.00
Replicates	68.6	96.4	77.4	66.4							
Standard #1 (0.2 ug/L)					STD	06/16/16 02:04:59 pm	0.2000	3002	1.37		1.00
Replicates	2957.3	2985.0	3013.7	3053.4							
Standard #2 (1.0 ug/L)					STD	06/16/16 02:07:31 pm	1.0000	14233	2.74		1.00
Replicates	13767.0	14078.2	14436.7	14650.8							
Standard #3 (2.0 ug/L)					STD	06/16/16 02:10:03 pm	2.0000	28260	0.21		1.00
Replicates	28177.4	28303.2	28307.2	28254.1							
Standard #4 (5.0 ug/L)					STD	06/16/16 02:12:37 pm	5.0000	69596	0.17		1.00
Replicates	69421.7	69619.7	69676.5	69664.9							
Standard #5 (10.0 ug/L)					STD	06/16/16 02:15:10 pm	10.0000	132584	0.59		1.00
Replicates	131524.8	132472.7	133031.0	133307.0							

Calibration

Equation: A = 1014.787 + 13278.240C
R2: 0.99939
SEE: 1420.4820
Flags:

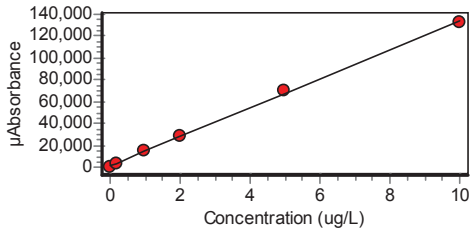

ICV					ICV	06/16/16 02:17:44 pm	2.0690	28486	0.15		1.00
Replicates	28443.8	28541.8	28496.7	28462.5							
% Recovery	103.45										

Approved: June 17, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
ICB					ICB	06/16/16 02:20:15 pm	-0.0754	13	100.37		1.00
Replicates	11.1	5.2	3.7	32.1							
CCV					CCV	06/16/16 02:22:48 pm	2.0500	28237	0.36		1.00
Replicates	28092.3	28241.2	28295.4	28317.5							
% Recovery	102.51										
CCB					CCB	06/16/16 02:25:18 pm	-0.0729	47	22.22		1.00
Replicates	35.9	47.2	61.2	44.7							
WG572607-03					MB	06/16/16 02:27:49 pm	-0.0727	49	17.41		1.00
Replicates	52.1	59.2	47.4	38.7							
WG572607-04					LCS	06/16/16 02:30:20 pm	4.4320	59866	0.24		1.00
Replicates	59655.9	59896.4	59975.4	59936.9							
% Recovery	110.80										
WG572434-01					UNK	06/16/16 02:32:52 pm	-0.0787	-31	48.70		1.00
Replicates	-39.9	-19.2	-46.4	-16.5							
WG572434-02					UNK	06/16/16 02:35:23 pm	-0.0744	27	34.73		1.00
Replicates	40.7	19.6	21.9	26.7							
L1606053501					UNK	06/16/16 02:37:55 pm	-0.0638	168	9.75		1.00
Replicates	151.8	185.4	157.1	179.1							
L1606053701					UNK	06/16/16 02:40:28 pm	0.1418	2897	5.42		1.00
Replicates	2705.0	2847.6	2967.3	3069.4							
L1606055001					UNK	06/16/16 02:43:00 pm	-0.0827	-83	19.72		1.00
Replicates	-81.4	-60.8	-98.4	-91.3							
WG572					SPK	06/16/16 02:45:33 pm	1.0590	15072	0.80		1.00
Replicates	15161.4	15167.3	15052.5	14908.7							
% Recovery	114.14										
L1606056401					UNK	06/16/16 02:48:06 pm	-0.0308	606	3.59		1.00
Replicates	581.4	597.1	612.3	632.5							

Approved: June 17, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1606056403					UNK	06/16/16 02:50:40 pm	-0.0344	558	1.89		1.00
Replicates	573.2	551.1	551.6	554.6							
CCV					CCV	06/16/16 02:53:12 pm	2.1450	29498	0.49		1.00
Replicates	29285.9	29529.8	29606.5	29570.2							
% Recovery	107.26										
CCB					CCB	06/16/16 02:55:43 pm	-0.0721	57	24.06		1.00
Replicates	59.0	41.5	75.0	54.5							
WG572607-05					MSK	06/16/16 02:58:17 pm	-0.0043	958	1.62	N	1.00
Replicates	945.6	946.5	962.0	978.5							
% Recovery	0.75										
WG572607-06					MSDUP	06/16/16 03:00:51 pm	-0.0038	964	1.56	D	1.00
Replicates	946.2	973.6	958.1	979.3							
% Recovery	0.77	RPD -11.47									
L1606061601					UNK	06/16/16 03:03:21 pm	-0.0689	99	17.37		1.00
Replicates	76.3	118.1	101.6	101.5							
L1606061602					UNK	06/16/16 03:05:52 pm	-0.0694	93	4.93		1.00
Replicates	99.1	94.7	91.2	88.4							
L1606061604					UNK	06/16/16 03:08:22 pm	-0.0715	65	21.79		1.00
Replicates	61.5	51.2	85.0	63.4							
L1606062901					UNK	06/16/16 03:10:53 pm	-0.0738	34	37.19		1.00
Replicates	41.7	26.8	47.8	20.4							
L1606063301					UNK	06/16/16 03:13:25 pm	-0.0700	85	13.73		1.00
Replicates	100.7	75.3	77.3	88.1							
L1606063501					UNK	06/16/16 03:15:57 pm	-0.0720	59	32.38		1.00
Replicates	53.2	53.4	85.8	41.8							
WG572607-07					DUP	06/16/16 03:18:29 pm	-0.0725	52	18.54		1.00
Replicates	49.4	44.9	46.9	65.9							
		RPD 0.00									

Approved: June 17, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1606063502					UNK	06/16/16 03:21:01 pm	-0.0713	68	28.27		1.00
Replicates	55.2	78.1	49.8	90.9							
CCV					CCV	06/16/16 03:23:33 pm	1.9450	26837	0.60		1.00
Replicates	26641.3	26776.5	26924.3	27006.6							
% Recovery	97.24										
CCB					CCB	06/16/16 03:26:04 pm	-0.0744	27	70.36		1.00
Replicates	22.1	47.2	3.0	35.4							
L1606063503					UNK	06/16/16 03:28:37 pm	-0.0667	129	5.00		1.00
Replicates	125.1	122.7	137.2	130.5							
L1606065001					UNK	06/16/16 03:31:10 pm	-0.0698	89	6.05		1.00
Replicates	86.0	84.9	96.5	87.0							
L1606065002					UNK	06/16/16 03:33:43 pm	-0.0674	120	12.89		1.00
Replicates	114.1	141.9	118.9	105.7							
L1606065003					UNK	06/16/16 03:36:16 pm	-0.0667	129	3.60		1.00
Replicates	131.1	132.7	122.2	128.3							
L1606065008					UNK	06/16/16 03:38:47 pm	-0.0732	42	37.91		1.00
Replicates	24.8	48.9	34.2	61.2							
WG572-02					SPK	06/16/16 03:44:05 pm	1.0390	14814	0.54		1.00
Replicates	14719.8	14774.9	14876.4	14885.8							
% Recovery	111.25										
WG572-02					SPK	06/16/16 03:46:36 pm	0.5972	8945	1.15	W	1.00
Replicates	8796.5	8955.3	9019.5	9007.8							
% Recovery	67.05										
CCV					CCV	06/16/16 03:49:08 pm	1.9900	27442	0.33		1.00
Replicates	27310.5	27453.2	27488.6	27515.4							
% Recovery	99.51										
CCB					CCB	06/16/16 03:51:39 pm	-0.0754	14	170.01		1.00
Replicates	21.6	41.6	-15.3	8.2							

Approved: June 17, 2016
Alexandra M. Alfred

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
July 1, 2016

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BNB - Brandi N. Bentley
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJQ - Cameron J. Quick
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
CV - Carl Volkman
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
EMW - ERIC M. WILKEN
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LJH - Lacey J. Hendershot
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
NPH - Natalie P. Hart
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
July 01, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
July 01, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Stephanie Mossburg	Project Manager: Debra Richmann	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): Scott Beesinger	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205	pH:	Program:	
Turn Around Time: STANDARD			
Project Name/Location: Longhorn		ERPIMS REQUIRED FIELDS	
Project Number: 60274185.0013BH 1824 MR10			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Total Metals	1,4 - DIOXANE					SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 18/24	MW1-061016			6/10/16	0755		✓	W	5	✓	✓	✓										
	MW3-061016			6/10/16	0905		✓	W	5	✓	✓	✓										
	17WW08-061016			6/10/16	1010		✓	W	5	✓	✓	✓										
	130-061016			6/10/16	1105		✓	W	4	✓	✓											
	130FD-061016			6/10/16	1105		✓	W	4	✓	✓											
	MW12-061016			6/10/16	1330		✓	W	4	✓	✓											
	18WW24-061016			6/10/16	1440		✓	W	5	✓	✓	✓										
	18WW24F-061016			6/10/16	1440		✓	W	1			✓										
	TRIP BLANK			6/10/16			✓	W	2	✓												

Comments: **STANDARD TAT**

Microbac OVD
Received: 06/11/2016 11:18
By: BRENDA GREENWALT 221000087089
Brenda Greenwalt

	Date	Time		Date	Time	
Relinquished by: (Signature) Scott Beesinger	6/10/16	1545	R			Relinquished by: (Signature)
Relinquished by: (Signature)			R (S		Time	Remarks:

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060650
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 24-JUN-2016

Samplenum	Container ID	Products
L16060650-01	758863	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-JUN-2016 10:38	CLS		
2	ANALYZ	V1	ORG4	14-JUN-2016 07:17	AWE	CLS	
3	STORE	ORG4	A1	27-JUN-2016 16:30	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-JUN-2016 10:38	CLS		
2	ANALYZ	V1	ORG4	14-JUN-2016 07:17	AWE	CLS	
3	STORE	ORG4	A1	27-JUN-2016 16:30	CLS	JST	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-JUN-2016 10:38	CLS		
2	ANALYZ	V1	ORG4	14-JUN-2016 07:17	AWE	CLS	
3	STORE	ORG4	A1	27-JUN-2016 16:30	CLS	JST	

Samplenum	Container ID	Products
L16060650-01	758864	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-JUN-2016 10:38	CLS		
2	ANALYZ	W1	SEM	22-JUN-2016 14:47	JWR	CLS	
3	STORE	SEM	A1	24-JUN-2016 12:04	BRG	JWR	

Samplenum	Container ID	Products
L16060650-01	758865	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-JUN-2016 10:38	CLS		
2	PREP	W1	DIG	13-JUN-2016 13:20	ERP	BRG	
3	STORE	DIG	A1	16-JUN-2016 14:03	BRG	ERP	
4	ANALYZ*	DIG	METALS	16-JUN-2016 16:02	PDM	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060650
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 24-JUN-2016

Samplenum	Container ID	Products
L16060650-02	758866	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-JUN-2016 10:38	CLS		
2	ANALYZ	V1	ORG4	14-JUN-2016 07:17	AWE	CLS	
3	STORE	ORG4	A1	27-JUN-2016 16:30	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-JUN-2016 10:38	CLS		
2	ANALYZ	V1	ORG4	14-JUN-2016 07:17	AWE	CLS	
3	STORE	ORG4	A1	27-JUN-2016 16:31	CLS	JST	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-JUN-2016 10:38	CLS		
2	ANALYZ	V1	ORG4	14-JUN-2016 07:17	AWE	CLS	
3	STORE	ORG4	A1	27-JUN-2016 16:31	CLS	JST	

Samplenum	Container ID	Products
L16060650-02	758867	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-JUN-2016 10:38	CLS		
2	ANALYZ	W1	SEM	22-JUN-2016 14:48	JWR	CLS	
3	STORE	SEM	A1	24-JUN-2016 12:04	BRG	JWR	

Samplenum	Container ID	Products
L16060650-02	758868	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	DIG	13-JUN-2016 10:38	CLS		
2	STORE	DIG	A1	16-JUN-2016 14:03	BRG	ERP	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060650
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 24-JUN-2016

Samplenum	Container ID	Products
L16060650-03	758869	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-JUN-2016 10:38	CLS		
2	ANALYZ	V1	ORG4	14-JUN-2016 07:17	AWE	CLS	
3	STORE	ORG4	A1	27-JUN-2016 16:30	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-JUN-2016 10:38	CLS		
2	ANALYZ	V1	ORG4	14-JUN-2016 07:17	AWE	CLS	
3	STORE	ORG4	A1	27-JUN-2016 16:30	CLS	JST	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	ORG4	13-JUN-2016 10:38	CLS		
2	STORE	ORG4	A1	27-JUN-2016 16:30	CLS	JST	

Samplenum	Container ID	Products
L16060650-03	758870	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-JUN-2016 10:38	CLS		
2	ANALYZ	W1	SEM	22-JUN-2016 14:48	JWR	CLS	
3	STORE	SEM	A1	24-JUN-2016 12:04	BRG	JWR	

Samplenum	Container ID	Products
L16060650-03	758871	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-JUN-2016 10:38	CLS		
2	PREP	W1	DIG	13-JUN-2016 13:20	ERP	BRG	
3	STORE	DIG	A1	16-JUN-2016 14:03	BRG	ERP	
4	ANALYZ*	DIG	METALS	16-JUN-2016 16:02	PDM	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060650
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 24-JUN-2016

Samplenum	Container ID	Products
L16060650-04	758872	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-JUN-2016 10:38	CLS		
2	ANALYZ	V1	ORG4	14-JUN-2016 07:17	AWE	CLS	
3	STORE	ORG4	A1	27-JUN-2016 16:30	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-JUN-2016 10:38	CLS		
2	ANALYZ	V1	ORG4	14-JUN-2016 07:17	AWE	CLS	
3	STORE	ORG4	A1	27-JUN-2016 16:31	CLS	JST	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-JUN-2016 10:38	CLS		
2	ANALYZ	V1	ORG4	14-JUN-2016 07:17	AWE	CLS	
3	STORE	ORG4	A1	27-JUN-2016 16:31	CLS	JST	

Samplenum	Container ID	Products
L16060650-04	758873	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-JUN-2016 10:38	CLS		
2	ANALYZ	W1	SEM	22-JUN-2016 14:48	JWR	CLS	
3	STORE	SEM	A1	24-JUN-2016 12:04	BRG	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060650
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 24-JUN-2016

Samplenum	Container ID	Products
L16060650-05	758874	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-JUN-2016 10:38	CLS		
2	ANALYZ	V1	ORG4	14-JUN-2016 07:17	AWE	CLS	
3	STORE	ORG4	A1	27-JUN-2016 16:30	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-JUN-2016 10:38	CLS		
2	ANALYZ	V1	ORG4	14-JUN-2016 07:17	AWE	CLS	
3	STORE	ORG4	A1	27-JUN-2016 16:30	CLS	JST	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-JUN-2016 10:38	CLS		
2	ANALYZ	V1	ORG4	14-JUN-2016 07:17	AWE	CLS	
3	STORE	ORG4	A1	27-JUN-2016 16:30	CLS	JST	

Samplenum	Container ID	Products
L16060650-05	758875	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-JUN-2016 10:38	CLS		
2	ANALYZ	W1	SEM	22-JUN-2016 14:48	JWR	CLS	
3	STORE	SEM	A1	24-JUN-2016 12:04	BRG	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060650
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 24-JUN-2016

Samplenum	Container ID	Products
L16060650-06	758876	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-JUN-2016 10:38	CLS		
2	ANALYZ	V1	ORG4	14-JUN-2016 07:17	AWE	CLS	
3	STORE	ORG4	A1	27-JUN-2016 16:30	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-JUN-2016 10:38	CLS		
2	ANALYZ	V1	ORG4	14-JUN-2016 07:17	AWE	CLS	
3	STORE	ORG4	A1	27-JUN-2016 16:31	CLS	JST	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-JUN-2016 10:38	CLS		
2	ANALYZ	V1	ORG4	14-JUN-2016 07:17	AWE	CLS	
3	STORE	ORG4	A1	27-JUN-2016 16:31	CLS	JST	

Samplenum	Container ID	Products
L16060650-06	758877	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-JUN-2016 10:38	CLS		
2	ANALYZ	W1	SEM	22-JUN-2016 14:48	JWR	CLS	
3	STORE	SEM	A1	24-JUN-2016 12:04	BRG	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060650
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 24-JUN-2016

Samplenum	Container ID	Products
L16060650-07	758878	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-JUN-2016 10:38	CLS		
2	ANALYZ	V1	ORG4	14-JUN-2016 07:17	AWE	CLS	
3	STORE	ORG4	A1	27-JUN-2016 16:30	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-JUN-2016 10:38	CLS		
2	ANALYZ	V1	ORG4	14-JUN-2016 07:17	AWE	CLS	
3	STORE	ORG4	A1	27-JUN-2016 16:30	CLS	JST	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-JUN-2016 10:38	CLS		
2	ANALYZ	V1	ORG4	14-JUN-2016 07:17	AWE	CLS	
3	STORE	ORG4	A1	27-JUN-2016 16:30	CLS	JST	

Samplenum	Container ID	Products
L16060650-07	758879	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-JUN-2016 10:38	CLS		
2	ANALYZ	W1	SEM	22-JUN-2016 14:48	JWR	CLS	
3	STORE	SEM	A1	24-JUN-2016 12:04	BRG	JWR	

Samplenum	Container ID	Products
L16060650-07	758880	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-JUN-2016 10:38	CLS		

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060650
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 24-JUN-2016

Samplenum	Container ID	Products
L16060650-08	758881	K MG MN-MS NA NI-MS PB-MS SB-MS SE-AX TL-MS V-

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-JUN-2016 10:38	CLS		
2	PREP	W1	DIG	13-JUN-2016 13:20	ERP	BRG	
3	STORE	DIG	A1	16-JUN-2016 14:03	BRG	ERP	
4	ANALYZ*	DIG	METALS	16-JUN-2016 16:02	PDM	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060650-09	758882	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-JUN-2016 10:38	CLS		
2	ANALYZ	V1	ORG4	14-JUN-2016 07:17	AWE	CLS	
3	STORE	ORG4	A1	27-JUN-2016 16:31	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-JUN-2016 10:38	CLS		
2	ANALYZ	V1	ORG4	14-JUN-2016 07:17	AWE	CLS	
3	STORE	ORG4	A1	27-JUN-2016 16:31	CLS	JST	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16060730

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Michelle Taylor – Client Services Specialist
(740) 373-4071
Michelle.Taylor@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on July 01 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00113060	I	4.0		J2317165027	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18CPTMW14-061316	L16060730-01	06/13/2016 09:15	06/14/2016 10:15
18CPTMW14FD-061316	L16060730-02	06/13/2016 09:15	06/14/2016 10:15
18CPTMW24-061316	L16060730-03	06/13/2016 10:35	06/14/2016 10:15
TRIP BLANK	L16060730-04	06/13/2016 00:01	06/14/2016 10:15

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16060730
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.0 Summary Data

1.1 Narratives

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	8260
Prep Batch Number(s):	573038	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-29 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2016-06-29 19:42:11

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	8260
Prep Batch Number(s):	573038	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-29 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?		X			1
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	8260
Prep Batch Number(s):	573038	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-29 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	8260
Prep Batch Number(s):	573038	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-29 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			2
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	8260
Prep Batch Number(s):	573038	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-29 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	8260
Prep Batch Number(s):	573038	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-29 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1)1,2-Dichloroethane-d4 exceeded the UCL in the analysis of sample 03. Sample matrix interference was confirmed by reanalysis.

2)Bromomethane and 2,2-Dichloropropane exceeded the UCL in the CCV.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572806	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-23 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-06-23 18:19:27

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572806	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-23 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572806	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-23 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572806	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-23 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572806	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-23 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572806	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-23 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG573791	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-24 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Wade DeLong	Wade DeLong	Chemist I	2016-06-24 15:26:38

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG573791	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-24 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG573791	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-24 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG573791	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-24 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG573791	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-24 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG573791	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-24 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572929	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-07-01 00:41:16

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572929	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?		X			ER#3
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572929	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572929	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			ER#1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?		X			ER#2
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572929	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572929	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - The closing low level calibration check analyzed on 23-Jun-2016 at 15:12 yielded a noncompliant result for selenium. However, all the samples were nondetected for selenium. With permission from project manager, selenium was reported and no further action was taken.

ER#2 - The continuing calibration blank analyzed on 23-JUN-2016 at 15:08 yielded a result for selenium that was above the method detection limit. However, all client samples were below the reporting detection limit for selenium, therefore, no further action was taken.

ER#3 - Client sample 01 required dilution analysis in order to obtain results for calcium and sodium within the calibration range. Client sample 02 required dilution analysis in order to obtain results for calcium and sodium within the calibration range. Client sample 03 required dilution analysis in order to obtain results for calcium, magnesium, and sodium within the calibration range.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG572730, WG573483	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-07-01 00:38:04

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG572730, WG573483	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?		X			ER#3
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?		X			ER#1
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG572730, WG573483	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		X			ER#2
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG572730, WG573483	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG572730, WG573483	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG572730, WG573483	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - The method blank analyzed on 16-JUN-2016 yielded a result for arsenic which exceeded the reporting detection limit. All QA/QC and client samples were redigested and reanalyzed for arsenic with a compliant method blank. The latter results were reported under WG573483.

ER#2 - The laboratory control sample analysis performed on 16-JUN-2016 yielded a noncompliant result for silver. All QA/QC and client samples were redigested and reanalyzed for silver with a compliant LCS. The latter results were reported under WG573483.

ER#3 - Client samples 01, 02, and 03 required dilution analyses in order to obtain results for barium within the calibration range. Client samples 03 required dilution analysis in order to obtain a result for manganese within the calibration range.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572795	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-07-01 00:37:19

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572795	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572795	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572795	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572795	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572795	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW14-061316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573038	**Analyst:**	FJB	**Run Date:**	06/17/2016 00:12
Collect Date:	06/13/2016 09:15	**Dilution:**	1	**File ID:**	8M413052
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.524	J	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	2.20		1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.66		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	25.7		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

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Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.422	J	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	212		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	118	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	101	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

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Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW14-061316	**Prep Method:**	3520C	**Prep Date:**	06/15/2016 18:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573365	**Analyst:**	MES	**Run Date:**	06/21/2016 15:11
Collect Date:	06/13/2016 09:15	**Dilution:**	1	**File ID:**	15M18471
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	50.2	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW14-061316	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/23/2016 13:42
Collect Date:	06/13/2016 09:15	**Dilution:**	500	**File ID:**	1LM.LM35455
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	505		200	100	50.0

Certificate of Analysis

Sample #:	L16060730-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW14-061316	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 13:57
Collect Date:	06/13/2016 09:15	**Dilution:**	1	**File ID:**	T3.062316.135724
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.400		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	0.0599	J	0.200	0.100	0.0500
Magnesium, Total	7439-95-4	12.5		1.00	0.500	0.250
Potassium, Total	7440-09-7	33.5		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW14-061316	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 14:40
Collect Date:	06/13/2016 09:15	**Dilution:**	100	**File ID:**	T3.062316.144053
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	490		50.0	25.0	12.5
Sodium, Total	7440-23-5	378		100	50.0	25.0

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW14-061316	**Prep Method:**	3015	**Prep Date:**	06/21/2016 07:48
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/21/2016 12:44
Workgroup #:	WG573557	**Analyst:**	BKT	**Run Date:**	06/21/2016 15:51
Collect Date:	06/13/2016 09:15	**Dilution:**	1	**File ID:**	NI.062116.155109
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Arsenic, Total	7440-38-2	0.00659		0.00200	0.00100	0.000500
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW14-061316	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 20:29
Collect Date:	06/13/2016 09:15	**Dilution:**	1	**File ID:**	NI.061616.202950
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.0803		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00346		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00404		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.00644		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.0116		0.00800	0.00400	0.00200
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00697		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW14-061316	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 21:35
Collect Date:	06/13/2016 09:15	**Dilution:**	50	**File ID:**	NI.061616.213546
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	2.42		0.300	0.150	0.0750

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-01	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18CPTMW14-061316	**Prep Method:**	7470A	**Prep Date:**	06/15/2016 10:55
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/17/2016 09:53
Workgroup #:	WG573131	**Analyst:**	CJQ	**Run Date:**	06/17/2016 11:03
Collect Date:	06/13/2016 09:15	**Dilution:**	1	**File ID:**	M7.061716.110308
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW14FD-061316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573038	**Analyst:**	FJB	**Run Date:**	06/17/2016 00:41
Collect Date:	06/13/2016 09:15	**Dilution:**	1	**File ID:**	8M413053
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.509	J	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	2.13		1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.52		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	25.1		1.00	0.500	0.250

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Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.464	J	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	208		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	120	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	98.0	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW14FD-061316	**Prep Method:**	3520C	**Prep Date:**	06/15/2016 18:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573365	**Analyst:**	MES	**Run Date:**	06/21/2016 15:34
Collect Date:	06/13/2016 09:15	**Dilution:**	1	**File ID:**	15M18472
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	65.8	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW14FD-061316	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/23/2016 14:01
Collect Date:	06/13/2016 09:15	**Dilution:**	500	**File ID:**	1LM.LM35456
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	520		200	100	50.0

Certificate of Analysis

Sample #:	L16060730-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW14FD-061316	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 14:01
Collect Date:	06/13/2016 09:15	**Dilution:**	1	**File ID:**	T3.062316.140125
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.377		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	0.0756	J	0.200	0.100	0.0500
Magnesium, Total	7439-95-4	13.5		1.00	0.500	0.250
Potassium, Total	7440-09-7	33.6		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW14FD-061316	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 14:44
Collect Date:	06/13/2016 09:15	**Dilution:**	100	**File ID:**	T3.062316.144451
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	477		50.0	25.0	12.5
Sodium, Total	7440-23-5	373		100	50.0	25.0

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW14FD-061316	**Prep Method:**	3015	**Prep Date:**	06/21/2016 07:48
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/21/2016 12:44
Workgroup #:	WG573557	**Analyst:**	BKT	**Run Date:**	06/21/2016 16:00
Collect Date:	06/13/2016 09:15	**Dilution:**	1	**File ID:**	NI.062116.160047
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Arsenic, Total	7440-38-2	0.00731		0.00200	0.00100	0.000500
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW14FD-061316	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 20:40
Collect Date:	06/13/2016 09:15	**Dilution:**	1	**File ID:**	NI.061616.204020
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.0794		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00333		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00420		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.00655		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.0113		0.00800	0.00400	0.00200
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00668		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW14FD-061316	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 21:38
Collect Date:	06/13/2016 09:15	**Dilution:**	50	**File ID:**	NI.061616.213859
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	2.47		0.300	0.150	0.0750

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-02	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18CPTMW14FD-061316	**Prep Method:**	7470A	**Prep Date:**	06/15/2016 10:55
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/17/2016 09:53
Workgroup #:	WG573131	**Analyst:**	CJQ	**Run Date:**	06/17/2016 11:10
Collect Date:	06/13/2016 09:15	**Dilution:**	1	**File ID:**	M7.061716.111043
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW24-061316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573038	**Analyst:**	FJB	**Run Date:**	06/16/2016 22:17
Collect Date:	06/13/2016 10:35	**Dilution:**	1	**File ID:**	8M413048
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	Q	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	Q	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	Q	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	Q	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	Q	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	Q	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	Q	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	Q	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	Q	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	Q	2.00	1.00	0.500
Chloroform	67-66-3	0.250	Q	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	Q	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	Q	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	Q	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	Q	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	Q	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	Q	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	Q	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	Q	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	Q	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	26.0	J	1.00	0.500	0.250

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Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	Q	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	Q	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	Q	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	Q	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	Q	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	Q	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	Q	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	Q	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	Q	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	Q	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	Q	1.00	0.250	0.125
Styrene	100-42-5	0.250	Q	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	Q	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	Q	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	Q	1.00	0.500	0.250
Toluene	108-88-3	0.500	Q	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	Q	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	Q	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	Q	1.00	0.500	0.250
Trichloroethene	79-01-6	12.7	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	Q	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	Q	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	Q	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	Q	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	Q	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	Q	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	121	70	120	*
Toluene-d8	104	85	120	
4-Bromofluorobenzene	101	75	120	

J	The reported result is an estimated value.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW24-061316	**Prep Method:**	3520C	**Prep Date:**	06/15/2016 18:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573365	**Analyst:**	MES	**Run Date:**	06/21/2016 16:19
Collect Date:	06/13/2016 10:35	**Dilution:**	1	**File ID:**	15M18474
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	45.0	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW24-061316	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/23/2016 00:03
Collect Date:	06/13/2016 10:35	**Dilution:**	50	**File ID:**	1LM.LM35438
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	99.0		20.0	10.0	5.00

Certificate of Analysis

Sample #:	L16060730-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW24-061316	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 14:05
Collect Date:	06/13/2016 10:35	**Dilution:**	1	**File ID:**	T3.062316.140527
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.109	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	9.62		0.200	0.100	0.0500
Potassium, Total	7440-09-7	5.86		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW24-061316	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 14:48
Collect Date:	06/13/2016 10:35	**Dilution:**	100	**File ID:**	T3.062316.144849
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	431		50.0	25.0	12.5
Magnesium, Total	7439-95-4	265		100	50.0	25.0
Sodium, Total	7440-23-5	1090		100	50.0	25.0

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW24-061316	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 20:43
Collect Date:	06/13/2016 10:35	**Dilution:**	1	**File ID:**	NI.061616.204331
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00409		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00662		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00296	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0163		0.00800	0.00400	0.00200
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00192	J	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW24-061316	**Prep Method:**	3015	**Prep Date:**	06/21/2016 07:48
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/21/2016 12:44
Workgroup #:	WG573557	**Analyst:**	BKT	**Run Date:**	06/21/2016 16:03
Collect Date:	06/13/2016 10:35	**Dilution:**	1	**File ID:**	NI.062116.160358
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Arsenic, Total	7440-38-2	0.0161		0.00200	0.00100	0.000500
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

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Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW24-061316	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 21:42
Collect Date:	06/13/2016 10:35	**Dilution:**	50	**File ID:**	NI.061616.214210
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	10.3		0.300	0.150	0.0750
Manganese, Total	7439-96-5	0.563		0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-03	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18CPTMW24-061316	**Prep Method:**	7470A	**Prep Date:**	06/15/2016 10:55
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/17/2016 09:53
Workgroup #:	WG573131	**Analyst:**	CJQ	**Run Date:**	06/17/2016 11:13
Collect Date:	06/13/2016 10:35	**Dilution:**	1	**File ID:**	M7.061716.111316
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573038	**Analyst:**	FJB	**Run Date:**	06/16/2016 18:25
Collect Date:	06/13/2016 00:01	**Dilution:**	1	**File ID:**	8M413040
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	114	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	102	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW14-061316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573038	**Analyst:**	FJB	**Run Date:**	06/17/2016 00:12
Collect Date:	06/13/2016 09:15	**Dilution:**	1	**File ID:**	8M413052
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.524	J	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	2.20		1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.66		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	25.7		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.422	J	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	212		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	118	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	101	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW14FD-061316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573038	**Analyst:**	FJB	**Run Date:**	06/17/2016 00:41
Collect Date:	06/13/2016 09:15	**Dilution:**	1	**File ID:**	8M413053
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.509	J	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	2.13		1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.52		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	25.1		1.00	0.500	0.250

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.464	J	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	208		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	120	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	98.0	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW24-061316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573038	**Analyst:**	FJB	**Run Date:**	06/16/2016 22:17
Collect Date:	06/13/2016 10:35	**Dilution:**	1	**File ID:**	8M413048
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	Q	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	Q	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	Q	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	Q	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	Q	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	Q	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	Q	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	Q	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	Q	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	Q	2.00	1.00	0.500
Chloroform	67-66-3	0.250	Q	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	Q	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	Q	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	Q	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	Q	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	Q	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	Q	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	Q	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	Q	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	Q	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	26.0	J	1.00	0.500	0.250

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	Q	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	Q	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	Q	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	Q	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	Q	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	Q	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	Q	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	Q	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	Q	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	Q	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	Q	1.00	0.250	0.125
Styrene	100-42-5	0.250	Q	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	Q	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	Q	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	Q	1.00	0.500	0.250
Toluene	108-88-3	0.500	Q	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	Q	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	Q	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	Q	1.00	0.500	0.250
Trichloroethene	79-01-6	12.7	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	Q	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	Q	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	Q	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	Q	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	Q	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	Q	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	121	70	120	*
Toluene-d8	104	85	120	
4-Bromofluorobenzene	101	75	120	

J	The reported result is an estimated value.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573038	**Analyst:**	FJB	**Run Date:**	06/16/2016 18:25
Collect Date:	06/13/2016 00:01	**Dilution:**	1	**File ID:**	8M413040
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	114	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	102	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051316
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53752

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG568561

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412209	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 08:38
8M412210	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 08:57
8M412211	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 09:29
8M412212	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 09:56
8M412213	WG568561-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/13/16 10:19
8M412214	WG568561-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/13/16 10:51
8M412215	WG568565-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76072	05/13/16 11:36
8M412216	BFB CHECK	NA	1	1	STD76034	05/13/16 12:04
8M412217	BFB CHECK	NA	1	1	STD76034	05/13/16 12:18
8M412218	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 12:36
8M412219	RINSE	NA	1	1		05/13/16 13:00
8M412220	WG568561-02 0.3ug/L STD 8260	NA	1	1	STD76127	05/13/16 13:29
8M412221	WG568561-03 0.4ug/L STD 8260	NA	1	1	STD76127	05/13/16 13:58
8M412222	WG568561-04 1ug/L STD 8260	NA	1	1	STD76127	05/13/16 14:27
8M412223	WG568561-05 2ug/L STD 8260	NA	1	1	STD76127	05/13/16 14:56
8M412224	WG568561-06 5ug/L STD 8260	NA	1	1	STD76127	05/13/16 15:25
8M412225	WG568561-07 20ug/L STD 8260	NA	1	1	STD76127	05/13/16 15:54
8M412226	WG568561-08 50ug/L STD 8260	NA	1	1	STD76127	05/13/16 16:23
8M412227	WG568561-09 100ug/L STD 8260	NA	1	1	STD76127	05/13/16 16:52
8M412228	WG568561-10 200ug/L STD 8260	NA	1	1	STD76127	05/13/16 17:21
8M412229	WG568561-11 300ug/L STD 8260	NA	1	1	STD76127	05/13/16 17:50
8M412230	RINSE	NA	1	1		05/13/16 18:19
8M412231	RINSE	NA	1	1		05/13/16 18:49
8M412232	WG568561-12 50ug/L ALT SRC STD 8260	NA	1	1	STD76109	05/13/16 19:17
8M412233	RINSE	NA	1	1		05/13/16 19:46

Comments

Seq.	Rerun	Dil.	Reason	Analytes
5	X			
File ID: 8M412213				
	Several compounds were low, DNR.			
6				
File ID: 8M412214				

Approved: May 20, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS8	Dataset:	051316		
Analyst1:	TMB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	23
Method:	624	SOP:	MSV10	Rev:	14
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:	53752				

Internal Standard: STD75899 Surrogate Standard: STD75899

CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG568561

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			Two C compounds failed. DNR. Run a curve.	
7 File ID: 8M412215				
			DNR.	

Approved: May 20, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051716
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76072; STD76127 LCS: STD76109; STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG569079; WG569083

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412319	WG569084-01 50ng BFB STD 8260	NA	1	1	STD76034	05/17/16 08:53
8M412320	WG569084-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/17/16 09:18
8M412321	WG569079-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76072	05/17/16 09:47
8M412322	WG569079-03 50ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 10:16
8M412323	WG569079-04 20ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 10:44
8M412324	WG569079-05 5ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 11:13
8M412325	WG569079-06 200ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 11:42
8M412326	WG569079-07 300ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 12:40
8M412327	WG569079-08 400ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 13:10
8M412328	WG569079-09 500ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 13:39
8M412329	RINSE	NA	1	1		05/17/16 14:08
8M412330	RINSE	NA	1	1		05/17/16 14:37
8M412331	WG569079-10 100ug/L ALT SRC STD 826	NA	1	1	STD75801	05/17/16 15:06
8M412332	WG569259-01 BFB 50ng 8260	NA	1	1	STD76034	05/17/16 18:27
8M412333	WG569259-02 50ug/L CCV 8260	NA	1	1	STD76034	05/17/16 18:53
8M412334	WG569260-01 100ug/L CCV A9	NA	1	1	STD76072	05/17/16 19:22
8M412335	WG569083-01 VBLK0517 BLANK 8260	NA	1	1		05/17/16 19:51
8M412336	WG569083-02 20ug/L LCS 8260	NA	1	1	STD76109	05/17/16 20:20
8M412337	WG569083-03 20ug/L LCS2 8260	NA	1	1	STD76109	05/17/16 20:49
8M412338	WG569083-04 100ug/L LCS A9	NA	1	1	STD75801	05/17/16 21:18
8M412339	WG569083-05 100ug/L LCS2 A9	NA	1	1	STD75801	05/17/16 21:46
8M412340	L16050844-01 TB A 826-A9-SPE	5	1	1		05/17/16 22:16
8M412341	L16050844-07 EB A 826-A9-SPE	5	1	1		05/17/16 22:45
8M412342	L16050844-11 AB A 826-A9-SPE	5	1	1		05/17/16 23:14
8M412343	L16050844-02 A 826-A9-SPE	6	1	1		05/17/16 23:43
8M412344	L16050844-05 A 826-A9-SPE	6	1	1		05/18/16 00:12
8M412345	L16050844-06 A 826-A9-SPE	6	1	1		05/18/16 00:41
8M412346	L16050844-12 A 826-A9-SPE	6	1	1		05/18/16 01:10
8M412347	L16050840-01 A 826-A9-SPE	7	1	1		05/18/16 01:38
8M412348	L16050844-08 A 826-A9-SPE	7	1	1		05/18/16 02:07
8M412349	L16050844-13 A 826-A9-SPE	7	1	1		05/18/16 02:36
8M412350	L16050844-15 A 826-A9-SPE	7	1	1		05/18/16 03:05
8M412351	L16050839-01 A 826-A9-SPE	7	1	1		05/18/16 03:33
8M412352	L16050844-03 2.5X A 826-A9-SPE	7	1	2.5		05/18/16 04:02

Approved: May 20, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051716
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76072; STD76127 LCS: STD76109; STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG569079; WG569083

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412353	L16050844-04 5X A 826-A9-SPE	7	1	5		05/18/16 04:31
8M412354	L16050844-09 5X A 826-A9-SPE	7	1	5		05/18/16 05:01
8M412355	L16050844-10 5X A 826-A9-SPE	7	1	5		05/18/16 05:30
8M412356	L16050844-14 50X A 826-A9-SPE	7	1	50		05/18/16 05:59
8M412357	RINSE	NA	1	1		05/18/16 06:28

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
File ID: 8M412320				
	DNR. Running an a9/foo curve.			
32	X	10	Over Calibration Range	CIS12-DCE
File ID: 8M412350				
40	X	2.5	Analyzed too dilute	
File ID: 8M412353				
	DNR.			
37	X	25	Over Calibration Range	TCE
File ID: 8M412355				
38	X	20	Analyzed too dilute	
File ID: 8M412356				
	DNR.			

Approved: May 20, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 061616
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75370 Surrogate Standard: STD76370
CCV: STD76578 LCS: STD76597 MS/MSD: STD76597

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG573038

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M413031	WG573037-01 BFB 50ng 8260	NA	1	1	STD76496	06/16/16 14:02
8M413032	WG573037-02 50ug/L CCV 8260	NA	1	1	STD76578	06/16/16 14:25
8M413033	WG573XXX-01 100ug/L CCV A9	NA	1	1	STD7XXXX	06/16/16 14:54
8M413034	WG573038-01 BLANK 6/16 8260	NA	1	1		06/16/16 15:23
8M413035	WG573038-02 20ug/L LCS 8260	NA	1	1	STD76597	06/16/16 15:52
8M413036	WG573038-03 20ug/L LCS2 8260	NA	1	1	STD76597	06/16/16 16:21
8M413037	L16060637-04 TB A 826-SPE	<2	1	1		06/16/16 16:58
8M413038	L16060756-05 TB A 826-SPE	<2	1	1		06/16/16 17:27
8M413039	L16060765-01 TB A 826-SPE	<2	1	1		06/16/16 17:56
8M413040	L16060730-04 TB A 826-LOW	<2	1	1		06/16/16 18:25
8M413041	L16060732-03 TB A 826-LOW	<2	1	1		06/16/16 18:54
8M413042	L16060823-05 TB A 826-LOW	<2	1	1		06/16/16 19:23
8M413043	L16060616-01 B 826-LOW	<2	1	1		06/16/16 19:52
8M413044	L16060732-01 A 826-LOW	<2	1	1		06/16/16 20:21
8M413045	L16060823-01 A 826-LOW	<2	1	1		06/16/16 20:50
8M413046	L16060823-03 A 826-LOW	<2	1	1		06/16/16 21:19
8M413047	L16060823-04 A 826-LOW	<2	1	1		06/16/16 21:48
8M413048	L16060730-03 A 826-LOW	<2	1	1		06/16/16 22:17
8M413049	L16060765-02 A 826-SPE	<2	1	1		06/16/16 22:46
8M413050	L16060765-03 A 826-SPE	<2	1	1		06/16/16 23:15
8M413051	L16060765-04 A 826-SPE	<2	1	1		06/16/16 23:43
8M413052	L16060730-01 A 826-SPE	<2	1	1		06/17/16 00:12
8M413053	L16060730-02 A 826-SPE	<2	1	1		06/17/16 00:41
8M413054	L16060637-03 A 826-SPE	<2	1	1		06/17/16 01:10
8M413055	L16060756-04 A 826-SPE	<2	1	1		06/17/16 01:38
8M413056	RINSE	NA	1	1		06/17/16 02:07
8M413057	RINSE	NA	1	1		06/17/16 02:37
8M413058	RINSE	NA	1	1		06/17/16 03:05

Comments

Seq.	Rerun	Dil.	Reason	Analytes
14	X		Carry-over contamination	
File ID: 8M413044				

Approved: June 23, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 061616
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75370 Surrogate Standard: STD76370
CCV: STD76578 LCS: STD76597 MS/MSD: STD76597

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG573038

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
	L16060732-01			
15 File ID: 8M413045				
	L16060823-01 high surrogate but sample is ND.			
17 File ID: 8M413047	X		Surrogate standard failure	
	L16060823-04			
18 File ID: 8M413048	X		Surrogate standard failure	
	L16060730-03			
24 File ID: 8M413054	X	20	Over Calibration Range	CFORM, CTET, TCE
	L16060637-03			
25 File ID: 8M413055	X	20	Over Calibration Range	CB
	L16060756-04			

Approved: June 23, 2016

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Microbac Laboratories Inc.

Data Checklist

Date: 13-MAY-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75126
Analytical Workgroups: WG568561

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	TMB
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
17-MAY-2016
Tiffany Bailey

Secondary Reviewer:
20-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2016 11:18:36

Microbac Laboratories Inc.

Data Checklist

Date: 17-MAY-2016
Analyst: TMB
Analyst: FJB
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75174
Analytical Workgroups: WG569079; WG569083

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
19-MAY-2016
Tiffany Bailey

Secondary Reviewer:
20-MAY-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2016 11:05:37

Microbac Laboratories Inc.

Data Checklist

Date: 16-JUN-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75860
Analytical Workgroups: WG573038

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
22-JUN-2016

Secondary Reviewer:
23-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-23-2016 13:34:00

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG573038

Login Number: L16060730

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW14-061316	01	06/13/16					06/17/2016	3.6	14		06/17/16	3.6	14	
18CPTMW14FD-061316	02	06/13/16					06/17/2016	3.6	14		06/17/16	3.6	14	
18CPTMW24-061316	03	06/13/16					06/16/2016	3.5	14		06/16/16	3.5	14	
TRIP BLANK	04	06/13/16					06/16/2016	3.8	14		06/16/16	3.8	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4819633
Report generated 06/29/2016 14:43

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060730
Instrument Id: HPMS8
Workgroup (AAB#): WG573038

Method: 8260
CAL ID: HPMS8-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16060730-01	1.00	01	118	112	101	105
L16060730-02	1.00	01	120	112	98.0	104
L16060730-03	1.00	01	121	112	101	104
L16060730-04	1.00	01	114	110	102	104
WG573038-01	1.00	01	114	109	102	106
WG573038-02	1.00	01	118	110	99.2	104
WG573038-03	1.00	01	114	108	98.9	104

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4819641
Report generated: 06/29/2016 14:43

METHOD BLANK SUMMARY

Login Number: L16060730
Blank File ID: 8M413034
Prep Date: 06/16/16 15:23
Analyzed Date: 06/16/16 15:23
Analyst: FJB

Work Group: WG573038
Blank Sample ID: WG573038-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573038-02	8M413035	06/16/16 15:52	01
LCS2	WG573038-03	8M413036	06/16/16 16:21	01
TRIP BLANK	L16060730-04	8M413040	06/16/16 18:25	01
18CPTMW24-061316	L16060730-03	8M413048	06/16/16 22:17	01
18CPTMW14-061316	L16060730-01	8M413052	06/17/16 00:12	01
18CPTMW14FD-061316	L16060730-02	8M413053	06/17/16 00:41	01

Report Name: BLANK_SUMMARY
PDF File ID: 4819634
Report generated 06/29/2016 14:43

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16060730 Prep Date: 06/16/16 15:23 Sample ID: WG573038-01
Instrument ID: HPMS8 Run Date: 06/16/16 15:23 Prep Method: 5030B/5030C/503
File ID: 8M413034 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573038 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4819635
29-JUN-2016 14:43

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060730 Prep Date: 06/16/16 15:23 Sample ID: WG573038-01
Instrument ID: HPMS8 Run Date: 06/16/16 15:23 Prep Method: 5030B/5030C/503
File ID: 8M413034 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573038 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	109	85 - 115	PASS
1,2-Dichloroethane-d4	114	70 - 120	PASS
Toluene-d8	106	85 - 120	PASS
4-Bromofluorobenzene	102	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4819635
29-JUN-2016 14:43

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060730 | Run Date: 06/16/2016 | Sample ID: WG573038-02
Instrument ID: HPMS8 | Run Time: 15:52 | Prep Method: 5030B/5030C/503
File ID: 8M413035 | Analyst: FJB | Method: 8260B
Workgroup (AAB#): WG573038 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD76597 | Cal ID: HPMS8-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	21.8	109	40 - 140	
Benzene	20.0	20.4	102	80 - 120	
Bromobenzene	20.0	19.2	95.9	75 - 125	
Bromochloromethane	20.0	20.7	103	65 - 130	
Bromodichloromethane	20.0	21.6	108	75 - 120	
Bromoform	20.0	20.0	99.8	70 - 130	
Bromomethane	20.0	14.0	70.2	30 - 145	
2-Butanone	20.0	20.2	101	30 - 150	
n-Butylbenzene	20.0	19.4	97.2	70 - 135	
sec-Butylbenzene	20.0	20.2	101	70 - 125	
tert-Butylbenzene	20.0	19.7	98.5	70 - 130	
Carbon disulfide	20.0	18.1	90.6	35 - 160	
Carbon tetrachloride	20.0	22.5	112	65 - 140	
Chlorobenzene	20.0	20.4	102	80 - 120	
Chlorodibromomethane	20.0	20.5	102	60 - 135	
Chloroethane	20.0	20.4	102	60 - 135	
Chloroform	20.0	21.2	106	65 - 135	
Chloromethane	20.0	18.9	94.7	40 - 125	
2-Chlorotoluene	20.0	20.3	102	75 - 125	
4-Chlorotoluene	20.0	19.7	98.5	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	19.7	98.7	50 - 130	
1,2-Dibromoethane	20.0	20.1	100	80 - 120	
Dibromomethane	20.0	19.9	99.3	75 - 125	
1,2-Dichlorobenzene	20.0	19.7	98.6	70 - 120	
1,3-Dichlorobenzene	20.0	20.0	99.9	75 - 125	
1,4-Dichlorobenzene	20.0	19.7	98.6	75 - 125	
Dichlorodifluoromethane	20.0	20.8	104	30 - 155	
1,1-Dichloroethane	20.0	19.5	97.5	70 - 135	
1,2-Dichloroethane	20.0	23.3	117	70 - 130	
1,1-Dichloroethene	20.0	18.9	94.6	70 - 130	
cis-1,2-Dichloroethene	20.0	20.5	102	70 - 125	
trans-1,2-Dichloroethene	20.0	20.1	100	60 - 140	
1,2-Dichloropropane	20.0	20.4	102	75 - 125	
1,3-Dichloropropane	20.0	20.7	103	75 - 125	
2,2-Dichloropropane	20.0	23.0	115	70 - 135	
cis-1,3-Dichloropropene	20.0	23.1	115	70 - 130	
trans-1,3-Dichloropropene	20.0	20.9	104	55 - 140	
1,1-Dichloropropene	20.0	20.6	103	75 - 130	
Ethylbenzene	20.0	19.9	99.3	75 - 125	
2-Hexanone	20.0	18.6	93.0	55 - 130	
Hexachlorobutadiene	20.0	21.3	106	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4831241
Report generated: 06/29/2016 14:43

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060730 Run Date: 06/16/2016 Sample ID: WG573038-02
Instrument ID: HPMS8 Run Time: 15:52 Prep Method: 5030B/5030C/503
File ID: 8M413035 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573038 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD76597 Cal ID: HPMS8-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	21.6	108	75 - 125	
p-Isopropyltoluene	20.0	20.0	100	75 - 130	
4-Methyl-2-pentanone	20.0	19.8	98.8	60 - 135	
Methylene chloride	20.0	19.3	96.4	55 - 140	
Naphthalene	20.0	17.4	87.0	55 - 140	
n-Propylbenzene	20.0	20.4	102	70 - 130	
Styrene	20.0	20.7	103	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	20.8	104	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	17.7	88.5	65 - 130	
Tetrachloroethene	20.0	20.1	101	45 - 150	
Toluene	20.0	19.7	98.6	75 - 120	
1,2,3-Trichlorobenzene	20.0	19.0	94.8	55 - 140	
1,2,4-Trichlorobenzene	20.0	19.4	96.9	65 - 135	
1,1,1-Trichloroethane	20.0	22.5	112	65 - 130	
1,1,2-Trichloroethane	20.0	19.6	97.9	75 - 125	
Trichloroethene	20.0	21.8	109	70 - 125	
Trichlorofluoromethane	20.0	22.3	111	60 - 145	
1,2,3-Trichloropropane	20.0	19.8	99.1	75 - 125	
1,2,4-Trimethylbenzene	20.0	19.9	99.5	75 - 130	
1,3,5-Trimethylbenzene	20.0	20.3	102	75 - 130	
Vinyl chloride	20.0	23.0	115	50 - 145	
o-Xylene	20.0	21.1	106	80 - 120	
m-,p-Xylene	40.0	40.9	102	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	110	85 - 115	PASS
1,2-Dichloroethane-d4	118	70 - 120	PASS
Toluene-d8	104	85 - 120	PASS
4-Bromofluorobenzene	99.2	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4831241
Report generated: 06/29/2016 14:43

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060730 Analyst: FJB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG573038 Units: ug/L
QC Key: DOD4 Lot #: STD76597

Sample ID: WG573038-02 LCS File ID: 8M413035 Run Date: 06/16/2016 15:52
Sample ID: WG573038-03 LCS2 File ID: 8M413036 Run Date: 06/16/2016 16:21

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	20.8	104	20.0	20.9	105	0.576	80 - 130	30	
1,1,1-Trichloroethane	20.0	22.5	112	20.0	23.2	116	3.45	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	17.7	88.5	20.0	18.1	90.5	2.29	65 - 130	30	
1,1,2-Trichloroethane	20.0	19.6	97.9	20.0	19.6	98.1	0.148	75 - 125	30	
1,1-Dichloroethane	20.0	19.5	97.5	20.0	19.9	99.5	2.06	70 - 135	30	
1,1-Dichloroethene	20.0	18.9	94.6	20.0	19.6	98.2	3.75	70 - 130	30	
1,1-Dichloropropene	20.0	20.6	103	20.0	21.0	105	2.03	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	19.0	94.8	20.0	19.4	96.8	2.05	55 - 140	30	
1,2,3-Trichloropropane	20.0	19.8	99.1	20.0	19.6	97.8	1.36	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	19.4	96.9	20.0	20.1	100	3.60	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	19.9	99.5	20.0	20.3	102	2.19	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	19.7	98.7	20.0	21.4	107	7.93	50 - 130	30	
1,2-Dibromoethane	20.0	20.1	100	20.0	19.9	99.3	1.19	80 - 120	30	
1,2-Dichlorobenzene	20.0	19.7	98.6	20.0	20.3	102	3.14	70 - 120	30	
1,2-Dichloroethane	20.0	23.3	117	20.0	23.5	118	0.816	70 - 130	30	
1,2-Dichloropropane	20.0	20.4	102	20.0	21.0	105	3.16	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	20.3	102	20.0	20.9	105	3.05	75 - 130	30	
1,3-Dichlorobenzene	20.0	20.0	99.9	20.0	20.6	103	3.29	75 - 125	30	
1,3-Dichloropropane	20.0	20.7	103	20.0	21.0	105	1.29	75 - 125	30	
1,4-Dichlorobenzene	20.0	19.7	98.6	20.0	20.4	102	3.14	75 - 125	30	
2,2-Dichloropropane	20.0	23.0	115	20.0	23.5	118	2.50	70 - 135	30	
2-Butanone	20.0	20.2	101	20.0	20.8	104	3.17	30 - 150	30	
2-Chlorotoluene	20.0	20.3	102	20.0	20.6	103	1.51	75 - 125	30	
2-Hexanone	20.0	18.6	93.0	20.0	17.8	89.1	4.24	55 - 130	30	
4-Chlorotoluene	20.0	19.7	98.5	20.0	20.0	100	1.77	75 - 130	30	
4-Methyl-2-pentanone	20.0	19.8	98.8	20.0	20.7	103	4.57	60 - 135	30	
Acetone	20.0	21.8	109	20.0	24.1	121	10.2	40 - 140	30	
Benzene	20.0	20.4	102	20.0	21.1	105	3.43	80 - 120	30	
Bromobenzene	20.0	19.2	95.9	20.0	19.7	98.4	2.64	75 - 125	30	
Bromochloromethane	20.0	20.7	103	20.0	20.6	103	0.508	65 - 130	30	
Bromodichloromethane	20.0	21.6	108	20.0	22.5	112	4.14	75 - 120	30	
Bromoform	20.0	20.0	99.8	20.0	20.0	99.9	0.134	70 - 130	30	
Bromomethane	20.0	14.0	70.2	20.0	15.7	78.3	11.0	30 - 145	30	
Carbon disulfide	20.0	18.1	90.6	20.0	18.6	92.9	2.55	35 - 160	30	
Carbon tetrachloride	20.0	22.5	112	20.0	23.1	115	2.71	65 - 140	30	
Chlorobenzene	20.0	20.4	102	20.0	20.7	104	1.62	80 - 120	30	
Chloroethane	20.0	20.4	102	20.0	21.7	109	6.06	60 - 135	30	
Chloroform	20.0	21.2	106	20.0	21.7	108	2.28	65 - 135	30	
Chloromethane	20.0	18.9	94.7	20.0	20.2	101	6.46	40 - 125	30	
cis-1,2-Dichloroethene	20.0	20.5	102	20.0	21.2	106	3.58	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4819636
Report generated: 06/29/2016 14:43

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060730 Analyst: FJB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG573038 Units: ug/L
QC Key: DOD4 Lot #: STD76597

Sample ID: WG573038-02 LCS File ID: 8M413035 Run Date: 06/16/2016 15:52
Sample ID: WG573038-03 LCS2 File ID: 8M413036 Run Date: 06/16/2016 16:21

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	23.1	115	20.0	23.5	117	1.55	70 - 130	30	
Chlorodibromomethane	20.0	20.5	102	20.0	20.8	104	1.79	60 - 135	30	
Dibromomethane	20.0	19.9	99.3	20.0	19.9	99.6	0.358	75 - 125	30	
Dichlorodifluoromethane	20.0	20.8	104	20.0	21.8	109	4.81	30 - 155	30	
Ethylbenzene	20.0	19.9	99.3	20.0	19.9	99.5	0.215	75 - 125	30	
Hexachlorobutadiene	20.0	21.3	106	20.0	21.7	108	1.84	50 - 140	30	
Isopropylbenzene	20.0	21.6	108	20.0	22.0	110	1.89	75 - 125	30	
m-,p-Xylene	40.0	40.9	102	40.0	41.7	104	2.14	75 - 130	30	
Methylene chloride	20.0	19.3	96.4	20.0	19.9	99.5	3.13	55 - 140	30	
n-Butylbenzene	20.0	19.4	97.2	20.0	19.8	99.2	2.07	70 - 135	30	
n-Propylbenzene	20.0	20.4	102	20.0	21.0	105	2.87	70 - 130	30	
Naphthalene	20.0	17.4	87.0	20.0	18.1	90.5	3.97	55 - 140	30	
o-Xylene	20.0	21.1	106	20.0	21.4	107	1.39	80 - 120	30	
p-Isopropyltoluene	20.0	20.0	100	20.0	20.9	104	4.05	75 - 130	30	
sec-Butylbenzene	20.0	20.2	101	20.0	20.7	104	2.34	70 - 125	30	
Styrene	20.0	20.7	103	20.0	21.1	106	2.22	65 - 135	30	
tert-Butylbenzene	20.0	19.7	98.5	20.0	20.4	102	3.70	70 - 130	30	
Tetrachloroethene	20.0	20.1	101	20.0	20.5	102	1.70	45 - 150	30	
Toluene	20.0	19.7	98.6	20.0	20.1	101	1.94	75 - 120	30	
trans-1,2-Dichloroethene	20.0	20.1	100	20.0	20.4	102	1.57	60 - 140	30	
trans-1,3-Dichloropropene	20.0	20.9	104	20.0	21.1	105	0.925	55 - 140	30	
Trichloroethene	20.0	21.8	109	20.0	22.5	112	3.24	70 - 125	30	
Trichlorofluoromethane	20.0	22.3	111	20.0	22.8	114	2.49	60 - 145	30	
Vinyl chloride	20.0	23.0	115	20.0	24.1	121	4.97	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	118	114	70 - 120	PASS
Dibromofluoromethane	110	108	85 - 115	PASS
4-Bromofluorobenzene	99.2	98.9	75 - 120	PASS
Toluene-d8	104	104	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4819636
Report generated: 06/29/2016 14:43

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060730
Instrument: HPMS8
Analyst: TMB
Workgroup: WG568561

Tune ID: WG568561-01
Run Date: 05/13/2016
Run Time: 12:36
File ID: 8M412218
Cal ID: HPMS8 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	16.7	6575	PASS
75.0	95.0	30.0	60.0	51.3	20171	PASS
95.0	95.0	100	100	100	39312	PASS
96.0	95.0	5.00	9.00	6.74	2649	PASS
173	174	0	2.00	0.363	122	PASS
174	95.0	50.0	100	85.5	33616	PASS
175	174	5.00	9.00	8.17	2746	PASS
176	174	95.0	101	99.2	33360	PASS
177	176	5.00	9.00	6.80	2267	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG568561-02	STD	01	05/13/2016 13:29	
WG568561-03	STD	01	05/13/2016 13:58	
WG568561-04	STD	01	05/13/2016 14:27	
WG568561-05	STD	01	05/13/2016 14:56	
WG568561-06	STD	01	05/13/2016 15:25	
WG568561-07	STD	01	05/13/2016 15:54	
WG568561-08	STD-CCV	01	05/13/2016 16:23	
WG568561-09	STD	01	05/13/2016 16:52	
WG568561-10	STD	01	05/13/2016 17:21	
WG568561-11	STD	01	05/13/2016 17:50	
WG568561-12	SSCV	01	05/13/2016 19:17	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4819638
Report generated 06/29/2016 14:43

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060730
Instrument: HPMS8
Analyst: TMB
Workgroup: WG569084

Tune ID: WG569084-01
Run Date: 05/17/2016
Run Time: 08:53
File ID: 8M412319
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.1	6316	PASS
75.0	95.0	30.0	60.0	54.7	18130	PASS
95.0	95.0	100	100	100	33138	PASS
96.0	95.0	5.00	9.00	6.76	2241	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	72.2	23934	PASS
175	174	5.00	9.00	7.88	1886	PASS
176	174	95.0	101	96.8	23159	PASS
177	176	5.00	9.00	7.15	1655	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG569079-01	STD-CCV	01	05/17/2016 09:47	
WG569079-03	STD	01	05/17/2016 10:16	
WG569079-04	STD	01	05/17/2016 10:44	
WG569079-05	STD	01	05/17/2016 11:13	
WG569079-06	STD	01	05/17/2016 11:42	
WG569079-07	STD	01	05/17/2016 12:40	
WG569079-08	STD	01	05/17/2016 13:10	
WG569079-09	STD	01	05/17/2016 13:39	
WG569079-10	SSCV	01	05/17/2016 15:06	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4819638
Report generated 06/29/2016 14:43

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060730
Instrument: HPMS8
Analyst: FJB
Workgroup: WG573037

Tune ID: WG573037-01
Run Date: 06/16/2016
Run Time: 14:02
File ID: 8M413031
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.9	6352	PASS
75.0	95.0	30.0	60.0	57.2	18249	PASS
95.0	95.0	100	100	100	31890	PASS
96.0	95.0	5.00	9.00	7.42	2366	PASS
173	174	0	2.00	1.50	352	PASS
174	95.0	50.0	100	73.7	23499	PASS
175	174	5.00	9.00	7.96	1870	PASS
176	174	95.0	101	97.3	22869	PASS
177	176	5.00	9.00	6.73	1538	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573037-02	CCV	01	06/16/2016 14:25	
WG573038-01	BLANK	01	06/16/2016 15:23	
WG573038-02	LCS	01	06/16/2016 15:52	
WG573038-03	LCS2	01	06/16/2016 16:21	
L16060730-04	TRIP BLANK	01	06/16/2016 18:25	
L16060730-03	18CPTMW24-061316	01	06/16/2016 22:17	
L16060730-01	18CPTMW14-061316	01	06/17/2016 00:12	
L16060730-02	18CPTMW14FD-061316	01	06/17/2016 00:41	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4819638
Report generated 06/29/2016 14:43

Calibration Table Report
Method: 8260WT.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Calibration: Sat May 14 18:08:06 2016
Curve: WG568561
Calibration Files

	Compound	0.3 8M412220.D	0.4 8M412221.D	1 8M412222.D	2 8M412223.D	5 8M412224.D	20 8M412225.D	50 8M412226.D	100 8M412227.D	200 8M412228.D	300 8M412229.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane		0.427	0.390	0.397	0.364	0.468	0.439	0.452	0.427	0.408	0.419	7.751		
P	Chloromethane			0.264	0.257	0.223	0.253	0.240	0.240	0.239	0.241	0.245	5.336		
C	Vinyl Chloride		0.274	0.296	0.297	0.277	0.299	0.292	0.299	0.292	0.288	0.290	3.191		
T	1,3-Butadiene				0.218	0.208	0.242	0.251	0.277	0.254	0.254	0.243	9.644		
T	Bromomethane			0.129	0.133	0.127	0.162	0.167	0.187	0.205	0.212	0.165	20.449		1.000
T	Chloroethane		0.173	0.157	0.153	0.143	0.164	0.157	0.163	0.164	0.164	0.160	5.354		
T	Trichlorofluoromethane		0.544	0.538	0.559	0.506	0.570	0.538	0.551	0.531	0.525	0.540	3.520		
T	Diethyl ether			0.130	0.138	0.123	0.132	0.125	0.128		0.127	0.129	3.866		
T	Isoprene		0.335	0.351	0.334	0.293	0.334	0.320	0.334	0.322	0.329	0.328	4.867		
T	Acrolein				0.012	0.010	0.010	0.011	0.012		0.014	0.012	12.987		
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.256	0.269	0.240	0.260	0.249	0.257	0.251	0.250	0.254	3.397		
T	Acetone					0.023	0.030	0.029	0.030	0.028	0.028	0.028	9.132		
C	1,1-Dichloroethene		0.424	0.407	0.406	0.387	0.416	0.398	0.409	0.400	0.393	0.404	2.830		
T	Tert-Butyl Alcohol				0.010	0.009	0.009	0.009	0.009		0.009	0.009	2.872		
T	Dimethyl Sulfide		0.133	0.142	0.152	0.137	0.145	0.142	0.151	0.147	0.151	0.145	4.534		
T	Iodomethane				0.019	0.024	0.066	0.101	0.129	0.135	0.131	0.087	58.244		0.998
T	Methyl acetate					0.075	0.076	0.074	0.078	0.076	0.078	0.076	2.221		
T	Methylene Chloride			0.274	0.265	0.244	0.263	0.250	0.255	0.254	0.252	0.257	3.686		
T	Carbon Disulfide			0.888	0.922	0.801	0.873	0.816	0.854	0.813	0.802	0.846	5.346		
T	Acrylonitrile			0.027	0.035	0.033	0.038	0.038	0.039		0.044	0.036	14.671		
T	Methyl Tert Butyl Ether			0.534	0.543	0.521	0.586	0.579	0.585	0.560	0.546	0.557	4.455		
T	trans-1,2-Dichloroethene		0.389	0.395	0.364	0.352	0.381	0.367	0.372	0.364	0.358	0.371	3.858		
T	n-Hexane					0.265	0.280	0.270	0.286	0.275	0.279	0.276	2.732		
T	Diisopropyl ether			0.600	0.607	0.548	0.588	0.572	0.571		0.567	0.579	3.559		
T	Vinyl Acetate				0.256	0.243	0.270	0.275	0.266	0.271	0.275	0.265	4.509		
P	1,1-Dichloroethane		0.441	0.463	0.486	0.434	0.488	0.464	0.470	0.459	0.447	0.461	4.012		
T	Ethyl-Tert-Butyl ether			0.616	0.645	0.590	0.641	0.628	0.619		0.603	0.620	3.188		
T	2-Butanone					0.035	0.042	0.043	0.045	0.041	0.043	0.041	8.268		
T	Propionitrile			0.010	0.012	0.012	0.013	0.012	0.013		0.013	0.012	8.354		
T	2,2-Dichloropropane		0.471	0.462	0.520	0.476	0.503	0.494	0.497	0.483	0.470	0.486	3.839		
T	cis-1,2-Dichloroethene		0.299	0.298	0.291	0.267	0.295	0.282	0.289	0.283	0.277	0.287	3.685		
C	Chloroform	0.563	0.567	0.581	0.536	0.509	0.566	0.543	0.546	0.529	0.506	0.545	4.619		
T	1-Bromopropane			0.034	0.040	0.040	0.043	0.041	0.043	0.043	0.044	0.041	7.649		
T	Bromochloromethane		0.131	0.164	0.147	0.137	0.154	0.148	0.151	0.148	0.145	0.147	6.598		
T	Tetrahydrofuran			0.034	0.028	0.025	0.026	0.026	0.026		0.026	0.027	11.724		
S	Dibromofluoromethane			0.249	0.261	0.257	0.280	0.271	0.284	0.271	0.275	0.269	4.465		
T	1,1,1-Trichloroethane		0.492	0.537	0.515	0.496	0.545	0.525	0.533	0.515	0.499	0.517	3.660		
T	Cyclohexane			0.373	0.369	0.335	0.359	0.344	0.366	0.356	0.364	0.358	3.619		
T	1,1-Dichloropropene			0.414	0.399	0.369	0.403	0.395	0.399	0.392	0.382	0.394	3.488		
T	Tert-Amyl-Methyl ether			0.567	0.587	0.534	0.576	0.568	0.561		0.549	0.563	3.077		
T	Carbon Tetrachloride		0.444	0.456	0.462	0.441	0.481	0.465	0.474	0.462	0.448	0.4594	2.92173		
S	1,2-Dichloroethane-d4			0.241	0.309	0.276	0.312	0.295	0.301	0.284	0.286	0.288	7.93644		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.347	0.335	0.354	0.336	0.371	0.36	0.364	0.349	0.338	0.3505	3.65503		
T	Benzene		1.128	1.084	1.071	0.977	1.085	1.033	1.019	0.963	0.883	1.0269	7.39343		
T	Trichloroethene		0.285	0.275	0.276	0.251	0.283	0.273	0.279	0.273	0.27	0.2739	3.66126		
T	Methylcyclohexane					0.396	0.426	0.408	0.429	0.416	0.422	0.4161	2.94153		
C	1,2-Dichloropropane		0.239	0.222	0.233	0.207	0.238	0.226	0.233	0.231	0.229	0.2286	4.30096		
T	Bromodichloromethane		0.369	0.382	0.412	0.385	0.426	0.421	0.417	0.41	0.395	0.4018	4.93305		
T	1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.0011	14.5817		
T	Dibromomethane		0.141	0.13	0.137	0.128	0.141	0.134	0.137	0.136	0.133	0.1353	3.26799		
T	2-Chloroethyl Vinyl Ether				0.1	0.084	0.103	0.104	0.103	0.095	0.098	0.0983	7.09792		
T	4-Methyl-2-Pentanone					0.033	0.042	0.042	0.043	0.04	0.041	0.0401	8.66859		
T	cis-1,3-Dichloropropene		0.391	0.393	0.386	0.398	0.431	0.428	0.428	0.42	0.405	0.409	4.41527		

T	Dimethyl Disulfide					0.182	0.218	0.221	0.23	0.229	0.23	0.2183	8.49419	
I	Chlorobenzene-d5	ISTD												
S	Toluene-d8			1.282	1.295	1.228	1.385	1.333	1.378	1.289	1.278	1.3084	4.07746	
C	Toluene		1.653	1.696	1.678	1.507	1.647	1.554	1.545	1.418	1.27	1.552	8.98325	
T	Ethyl Methacrylate			0.251	0.293	0.268	0.314	0.314	0.327	0.309	0.31	0.2981	8.76897	
T	Paraldehyde											0	0	
T	trans-1,3-Dichloropropene			0.472	0.51	0.466	0.561	0.552	0.553	0.533	0.515	0.5201	7.01006	
T	1,1,2-Trichloroethane		0.261	0.241	0.242	0.222	0.254	0.249	0.252	0.243	0.241	0.2449	4.54209	
T	2-Hexanone					0.042	0.053	0.053	0.056	0.051	0.053	0.0515	9.50479	
T	1,3-Dichloropropane		0.355	0.442	0.465	0.42	0.468	0.454	0.457	0.437	0.428	0.436	7.93348	
T	Tetrachloroethene		0.355	0.337	0.336	0.306	0.333	0.325	0.337	0.334	0.33	0.3325	3.83886	
T	Dibromochloromethane		0.349	0.336	0.338	0.328	0.373	0.372	0.383	0.373	0.367	0.3576	5.60043	
T	1,2-Dibromoethane		0.233	0.234	0.234	0.227	0.259	0.254	0.258	0.251	0.247	0.2441	5.04151	
T	1-Chlorohexane		0.532	0.584	0.505	0.502	0.54	0.52	0.547	0.521	0.516	0.5298	4.7826	
P	Chlorobenzene		1.029	1.173	1.09	1.007	1.099	1.037	1.043	1.002	0.939	1.0466	6.41465	
T	1,1,1,2-Tetrachloroethane		0.392	0.399	0.403	0.357	0.431	0.414	0.424	0.417	0.413	0.4055	5.39495	
C	Ethylbenzene		0.6	0.594	0.59	0.532	0.586	0.559	0.57	0.564	0.558	0.5726	3.7769	
T	m-,p-Xylene		0.744	0.696	0.691	0.643	0.713	0.67	0.673	0.634	0.581	0.6716	7.12586	
T	o-Xylene			0.691	0.651	0.614	0.692	0.658	0.667	0.65	0.63	0.6567	4.11758	
T	Styrene		1.05	1.06	1.096	1.043	1.159	1.124	1.12	1.061	0.98	1.077	4.96781	
P	Bromoform			0.177	0.21	0.181	0.226	0.221	0.232	0.227	0.223	0.2121	10.0546	
T	Isopropylbenzene		1.853	1.891	1.871	1.708	1.897	1.781	1.75	1.573	1.377	1.7444	9.92447	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.426	0.492	0.503	0.486	0.543	0.51	0.527	0.513	0.514	0.5018	6.60291	
S	p-Bromofluorobenzene				1.054	0.976	1.071	1.016	1.053	1.031	1.046	1.0352	3.05136	
T	1,2,3-Trichloropropane			0.119	0.158	0.161	0.162	0.155	0.162	0.16	0.158	0.1545	9.40789	
T	trans-1,4-Dichloro-2-Butene			0.085	0.118	0.12	0.149	0.151	0.16	0.159	0.161	0.1376	19.9543	1.000
T	n-Propylbenzene		4.139	4.239	4.243	4.051	4.241	3.953	3.882	3.419	2.935	3.9003	11.4439	
T	Bromobenzene	0.796	0.708	0.843	0.837	0.778	0.84	0.798	0.817	0.803	0.803	0.8022	4.93253	
T	1,3,5-Trimethylbenzene		2.941	2.93	2.941	2.839	3.053	2.882	2.871	2.689	2.423	2.8411	6.50391	
T	2-Chlorotoluene		2.917	2.935	2.929	2.712	2.861	2.795	2.682	2.533	2.145	2.7231	9.37022	
T	4-Chlorotoluene		2.681	2.596	2.581	2.474	2.625	2.326	2.447	2.286	2.121	2.4597	7.49558	
T	a-Methylstyrene					1.257	1.406	1.34	1.384	1.35	1.351	1.3479	3.77654	
T	tert-Butylbenzene			0.587	0.555	0.53	0.571	0.533	0.552	0.561	0.558	0.5558	3.34508	
T	1,2,4-Trimethylbenzene		2.955	3.168	3.127	2.936	3.12	2.914	2.937	2.709	2.427	2.9214	7.97314	
T	sec-Butylbenzene			3.701	3.536	3.487	3.607	3.34	3.332	3.045	2.69	3.3424	9.93324	
T	p-Isopropyltoluene			3.112	3.062	2.903	2.988	2.813	2.809	2.634	2.382	2.8379	8.45265	
T	1,3-Dichlorobenzene		1.484	1.617	1.627	1.53	1.605	1.531	1.549	1.51	1.45	1.5448	3.95774	
T	1,4-Dichlorobenzene	1.713	1.524	1.672	1.594	1.503	1.6	1.511	1.535	1.49	1.431	1.5574	5.56562	
T	n-Butylbenzene			3.143	2.96	2.895	3.002	2.791	2.792	2.571	2.292	2.8056	9.55812	
T	1,2-Dichlorobenzene	1.59	1.307	1.415	1.41	1.322	1.404	1.333	1.356	1.315	1.286	1.3739	6.4618	
T	1,2-Dibromo-3-Chloropropane				0.085	0.103	0.102	0.103	0.106	0.104	0.103	0.1007	6.86771	
T	1,2,4-Trichlorobenzene		1.074	1.01	1.028	0.982	1.069	1.013	1.036	1.029	1.002	1.0269	2.90829	
T	Hexachlorobutadiene		0.516	0.476	0.483	0.447	0.487	0.459	0.48	0.485	0.485	0.4798	4.00465	
T	Naphthalene		1.594	1.457	1.574	1.455	1.63	1.552	1.564	1.485	1.422	1.5258	4.75891	
T	1,2,3-Trichlorobenzene	0.913	0.934	0.905	0.862	0.805	0.877	0.824	0.862	0.846	0.835	0.8664	4.7474	

Tue May 17 11:49:41 2016

Calibration Table Report
Method: A9FOOWT.M
Title: A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Calibration: Thu May 19 08:54:31 2016
Curve: WG569079
Calibration Files

	Compound	5 8M412324.D	20 8M412323.D	50 8M412322.D	100 8M412321.D	200 8M412325.D	300 8M412326.D	400 8M412327.D	500 8M412328.D	Avg	%RSD
I	Fluorobenzene	ISTD									
T	Acetonitrile		0.009	0.010	0.010	0.010	0.010	0.010	0.010	0.010	2.076
T	3-Chloro-1-propene	0.306	0.330	0.335	0.331	0.324	0.307	0.304	0.304	0.318	4.307
T	2-Chloro-1,3-butadiene	0.368	0.420	0.420	0.419	0.419	0.392	0.389	0.387	0.402	5.022
T	Ethyl Acetate	0.080	0.096	0.097	0.100	0.099	0.098	0.100	0.095	0.096	6.751
T	Methacrylonitrile	0.041	0.054	0.055	0.055	0.055	0.054	0.055	0.052	0.053	9.227
T	Isobutyl Alcohol			0.003	0.003	0.003	0.003	0.003	0.003	0.003	3.599
T	1-Butanol									0.000	0.000
T	Methyl methacrylate	0.089	0.106	0.106	0.105	0.106	0.105	0.107	0.102	0.103	5.868
T	2-Nitropropane		0.041	0.042	0.043	0.046	0.047	0.048	0.046	0.045	5.992
I	Chlorobenzene-d5	ISTD									
I	1,4-Dichlorobenzene-d4	ISTD									
T	Cyclohexanone		0.011	0.010	0.010	0.009	0.010	0.011	0.010	0.010	4.971

Thu May 19 09:04:52 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060730 Run Date: 05/13/2016 Sample ID: WG568561-12
Instrument ID: HPMS8 Run Time: 19:17 Method: 8260B
File ID: 8M412232 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG568561 Cal ID: HPMS8 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.1	ug/L	0.513	5.70	20	
1,1-Dichloroethene	CCC	50.0	46.0	ug/L	0.372	8.10	20	
1,2-Dichloropropane	CCC	50.0	51.0	ug/L	0.233	1.90	20	
Ethylbenzene	CCC	50.0	48.2	ug/L	0.552	3.60	20	
Toluene	CCC	50.0	49.1	ug/L	1.52	1.80	20	
Vinyl Chloride	CCC	50.0	52.4	ug/L	0.304	4.80	20	
Bromoform	SPCC	50.0	48.2	ug/L	0.205	3.60	20	
Chlorobenzene	SPCC	50.0	50.2	ug/L	1.05	0.400	20	
Chloromethane	SPCC	50.0	50.7	ug/L	0.248	1.40	20	
1,1-Dichloroethane	SPCC	50.0	46.7	ug/L	0.431	6.60	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.6	ug/L	0.498	0.800	20	
Acetone		50.0	57.5	ug/L	0.0324	15.1	20	
Benzene		50.0	48.5	ug/L	0.997	3.00	20	
Bromobenzene		50.0	49.5	ug/L	0.794	1.10	20	
Bromochloromethane		50.0	47.5	ug/L	0.140	4.90	20	
Bromodichloromethane		50.0	48.3	ug/L	0.388	3.40	20	
Bromomethane		50.0	46.4	ug/L	0.162	7.20	20	
2-Butanone		50.0	53.0	ug/L	0.0438	6.00	20	
n-Butylbenzene		50.0	49.7	ug/L	2.79	0.700	20	
sec-Butylbenzene		50.0	51.3	ug/L	3.43	2.70	20	
tert-Butylbenzene		50.0	50.9	ug/L	0.566	1.90	20	
Carbon Disulfide		50.0	42.3	ug/L	0.716	15.4	20	
Carbon Tetrachloride		50.0	46.2	ug/L	0.425	7.50	20	
Dibromochloromethane		50.0	49.7	ug/L	0.355	0.700	20	
Chloroethane		50.0	53.3	ug/L	0.170	6.70	20	
2-Chlorotoluene		50.0	51.6	ug/L	2.81	3.10	20	
4-Chlorotoluene		50.0	48.3	ug/L	2.37	3.50	20	
1,2-Dibromo-3-Chloropropane		50.0	48.5	ug/L	0.0977	3.00	20	
1,2-Dibromoethane		50.0	51.1	ug/L	0.250	2.20	20	
Dibromomethane		50.0	45.8	ug/L	0.124	8.40	20	
1,2-Dichlorobenzene		50.0	50.5	ug/L	1.39	1.00	20	
1,3-Dichlorobenzene		50.0	50.9	ug/L	1.57	1.80	20	
1,4-Dichlorobenzene		50.0	50.5	ug/L	1.57	0.900	20	
Dichlorodifluoromethane		50.0	54.2	ug/L	0.455	8.40	20	
1,2-Dichloroethane		50.0	49.0	ug/L	0.344	2.00	20	
cis-1,2-Dichloroethene		50.0	48.9	ug/L	0.281	2.20	20	
trans-1,2-Dichloroethene		50.0	48.1	ug/L	0.357	3.90	20	
1,3-Dichloropropane		50.0	53.7	ug/L	0.468	7.30	20	
2,2-Dichloropropane		50.0	47.9	ug/L	0.466	4.20	20	
cis-1,3-Dichloropropene		50.0	53.9	ug/L	0.441	7.80	20	
trans-1,3-Dichloropropene		50.0	50.7	ug/L	0.527	1.30	20	
1,1-Dichloropropene		50.0	47.5	ug/L	0.374	5.10	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4819637
Report generated 06/29/2016 14:43

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060730 Run Date: 05/13/2016 Sample ID: WG568561-12
Instrument ID: HPMS8 Run Time: 19:17 Method: 8260B
File ID: 8M412232 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG568561 Cal ID: HPMS8 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	53.6	ug/L	0.0552	7.20	20	
Hexachlorobutadiene		50.0	52.1	ug/L	0.500	4.20	20	
Isopropylbenzene		50.0	51.1	ug/L	1.78	2.20	20	
p-Isopropyltoluene		50.0	50.1	ug/L	2.85	0.300	20	
4-Methyl-2-Pentanone		50.0	51.9	ug/L	0.0416	3.70	20	
Methylene Chloride		50.0	48.4	ug/L	0.249	3.10	20	
Naphthalene		50.0	45.8	ug/L	1.40	8.40	20	
n-Propylbenzene		50.0	51.9	ug/L	4.05	3.80	20	
Styrene		50.0	51.5	ug/L	1.11	3.00	20	
1,1,1,2-Tetrachloroethane		50.0	49.4	ug/L	0.400	1.20	20	
Tetrachloroethene		50.0	47.8	ug/L	0.318	4.40	20	
1,2,3-Trichlorobenzene		50.0	47.7	ug/L	0.827	4.50	20	
1,2,4-Trichlorobenzene		50.0	50.1	ug/L	1.03	0.200	20	
1,1,1-Trichloroethane		50.0	47.6	ug/L	0.492	4.80	20	
1,1,2-Trichloroethane		50.0	49.0	ug/L	0.240	1.90	20	
Trichloroethene		50.0	51.1	ug/L	0.280	2.10	20	
Trichlorofluoromethane		50.0	46.9	ug/L	0.507	6.10	20	
1,2,3-Trichloropropane		50.0	50.1	ug/L	0.155	0.200	20	
1,2,4-Trimethylbenzene		50.0	49.7	ug/L	2.90	0.700	20	
1,3,5-Trimethylbenzene		50.0	51.6	ug/L	2.93	3.30	20	
o-Xylene		50.0	50.6	ug/L	0.664	1.10	20	
m-,p-Xylene		100	101	ug/L	0.679	1.10	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4819637
Report generated 06/29/2016 14:43

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730 Run Date: 06/16/2016 Sample ID: WG573037-02
Instrument ID: HPMS8 Run Time: 14:25 Method: 8260B
File ID: 8M413032 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG573038 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	54.8	ug/L	0.597	9.65	20	
1,1-Dichloroethene	CCC	50.0	54.7	ug/L	0.442	9.30	20	
1,2-Dichloropropane	CCC	50.0	48.6	ug/L	0.222	2.70	20	
Ethylbenzene	CCC	50.0	50.5	ug/L	0.578	0.905	20	
Toluene	CCC	50.0	50.3	ug/L	1.56	0.600	20	
Vinyl Chloride	CCC	50.0	55.1	ug/L	0.320	10.2	20	
Bromoform	SPCC	50.0	50.9	ug/L	0.216	1.72	20	
Chlorobenzene	SPCC	50.0	49.8	ug/L	1.04	0.474	20	
Chloromethane	SPCC	50.0	46.6	ug/L	0.228	6.88	20	
1,1-Dichloroethane	SPCC	50.0	52.3	ug/L	0.483	4.61	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	41.5	ug/L	0.416	17.0	20	
Xylenes		150	154	ug/L	0.683	2.90	20	
Acetone		50.0	52.2	ug/L	0.0293	4.31	20	
Benzene		50.0	52.0	ug/L	1.07	3.99	20	
Bromobenzene		50.0	48.0	ug/L	0.770	4.08	20	
Bromochloromethane		50.0	51.3	ug/L	0.151	2.54	20	
Bromodichloromethane		50.0	55.4	ug/L	0.445	10.8	20	
Bromomethane		50.0	37.0	ug/L	0.128	26.0	20	*
2-Butanone		50.0	45.9	ug/L	0.0380	8.13	20	
n-Butylbenzene		50.0	50.5	ug/L	2.83	1.00	20	
sec-Butylbenzene		50.0	50.3	ug/L	3.37	0.699	20	
tert-Butylbenzene		50.0	48.9	ug/L	0.544	2.12	20	
Carbon Disulfide		50.0	53.0	ug/L	0.897	6.05	20	
Carbon Tetrachloride		50.0	60.0	ug/L	0.551	20.0	20	
Dibromochloromethane		50.0	50.5	ug/L	0.361	0.983	20	
Chloroethane		50.0	48.9	ug/L	0.156	2.14	20	
2-Chlorotoluene		50.0	47.7	ug/L	2.60	4.50	20	
4-Chlorotoluene		50.0	49.7	ug/L	2.44	0.615	20	
1,2-Dibromo-3-Chloropropane		50.0	44.0	ug/L	0.0886	12.0	20	
1,2-Dibromoethane		50.0	47.2	ug/L	0.230	5.67	20	
Dibromomethane		50.0	49.7	ug/L	0.135	0.584	20	
1,2-Dichlorobenzene		50.0	46.6	ug/L	1.28	6.76	20	
1,3-Dichlorobenzene		50.0	49.6	ug/L	1.53	0.820	20	
1,4-Dichlorobenzene		50.0	47.6	ug/L	1.48	4.82	20	
Dichlorodifluoromethane		50.0	57.6	ug/L	0.483	15.3	20	
1,2-Dichloroethane		50.0	56.7	ug/L	0.397	13.3	20	
cis-1,2-Dichloroethene		50.0	50.9	ug/L	0.292	1.90	20	
trans-1,2-Dichloroethene		50.0	52.1	ug/L	0.387	4.10	20	
1,3-Dichloropropane		50.0	47.0	ug/L	0.410	5.96	20	
2,2-Dichloropropane		50.0	61.8	ug/L	0.601	23.6	20	*
cis-1,3-Dichloropropene		50.0	53.3	ug/L	0.436	6.58	20	
trans-1,3-Dichloropropene		50.0	51.1	ug/L	0.532	2.30	20	

CCV - Modified 03/05/2008
PDF File ID: 4819639
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730 Run Date: 06/16/2016 Sample ID: WG573037-02
Instrument ID: HPMS8 Run Time: 14:25 Method: 8260B
File ID: 8M413032 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG573038 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	54.6	ug/L	0.430	9.13	20	
2-Hexanone		50.0	44.4	ug/L	0.0457	11.3	20	
Hexachlorobutadiene		50.0	54.7	ug/L	0.525	9.43	20	
Isopropylbenzene		50.0	54.0	ug/L	1.88	7.91	20	
p-Isopropyltoluene		50.0	50.6	ug/L	2.87	1.20	20	
4-Methyl-2-Pentanone		50.0	45.5	ug/L	0.0366	8.93	20	
Methylene Chloride		50.0	48.8	ug/L	0.251	2.36	20	
Naphthalene		50.0	43.5	ug/L	1.33	13.0	20	
n-Propylbenzene		50.0	49.8	ug/L	3.88	0.484	20	
Styrene		50.0	52.0	ug/L	1.12	4.02	20	
1,1,1,2-Tetrachloroethane		50.0	52.3	ug/L	0.424	4.56	20	
Tetrachloroethene		50.0	53.6	ug/L	0.356	7.11	20	
1,2,3-Trichlorobenzene		50.0	45.4	ug/L	0.786	9.28	20	
1,2,4-Trichlorobenzene		50.0	48.6	ug/L	0.997	2.89	20	
1,1,1-Trichloroethane		50.0	59.6	ug/L	0.616	19.1	20	
1,1,2-Trichloroethane		50.0	46.3	ug/L	0.227	7.39	20	
Trichloroethene		50.0	54.0	ug/L	0.296	7.92	20	
Trichlorofluoromethane		50.0	59.7	ug/L	0.645	19.5	20	
1,2,3-Trichloropropane		50.0	45.0	ug/L	0.139	10.0	20	
1,2,4-Trimethylbenzene		50.0	50.1	ug/L	2.93	0.254	20	
1,3,5-Trimethylbenzene		50.0	50.2	ug/L	2.85	0.347	20	
o-Xylene		50.0	51.2	ug/L	0.673	2.46	20	
m-,p-Xylene		100	103	ug/L	0.693	3.11	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4819639
Report generated 06/29/2016 14:43

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060730
Instrument ID: HPMS8
Workgroup (AAB#): WG573038

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	288225	539116	778260
Upper Limit	NA	NA	576450	1078232	1556520
Lower Limit	NA	NA	144113	269558	389130
L16060730-01	1.00	01	278960	501855	657827
L16060730-02	1.00	01	286086	506073	673536
L16060730-03	1.00	01	289260	515059	679708
L16060730-04	1.00	01	295335	535923	705973
WG573038-01	1.00	01	292043	533754	717429
WG573038-02	1.00	01	307888	540053	724153
WG573038-03	1.00	01	312159	553122	735322

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4819640
Report generated 06/29/2016 14:43

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060730
Instrument ID: HPMS8
Workgroup (AAB#): WG573038

ICAL CCV Number: WG568561-08
CAL ID: HPMS8-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	17.6	14.58	10.71
Upper Limit	NA	NA	18.1	15.08	11.21
Lower Limit	NA	NA	17.1	14.08	10.21
L16060730-01	1.00	01	17.6	14.57	10.71
L16060730-02	1.00	01	17.6	14.57	10.71
L16060730-03	1.00	01	17.6	14.57	10.71
L16060730-04	1.00	01	17.6	14.57	10.71
WG573038-01	1.00	01	17.6	14.57	10.71
WG573038-02	1.00	01	17.6	14.57	10.71
WG573038-03	1.00	01	17.6	14.57	10.71

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4819642
Report generated: 06/29/2016 14:43

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413052.D Vial: 22
Acq On : 17 Jun 2016 00:12 Operator: FJB
Sample : L16060730-01 A 826-SPE Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:21:24 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	657827	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	501855	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	278960	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	198396	28.0704 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 112.28%		
43) 1,2-Dichloroethane-d4	10.30	65	223502	29.4918 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 117.96%		
58) Toluene-d8	12.68	98	687562	26.1781 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.72%		
80) p-Bromofluorobenzene	16.08	95	291698	25.2532 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.00%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.08	85	1489	0.1350 ug/L #	42
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	489978	73.3423 ug/L	95
13) Acetone	6.25	43	8834	11.9360 ug/L	99
14) 1,1-Dichloroethene	6.47	61	3837	0.3607 ug/L	90
29) 2-Butanone	8.88	43	670	0.6161 ug/L #	47
32) cis-1,2-Dichloroethene	9.17	96	194329	25.7355 ug/L	87
33) Chloroform	9.38	83	31566	2.2028 ug/L	96
45) 1,2-Dichloroethane	10.43	62	15289	1.6577 ug/L	92
46) Benzene	10.46	78	14168	0.5243 ug/L	94
47) Trichloroethene	11.21	130	1528673	212.1091 ug/L	99
48) Methylcyclohexane	11.21	83	21337	1.9488 ug/L #	1
66) Tetrachloroethene	13.60	164	2814	0.4216 ug/L	91

(#) = qualifier out of range (m) = manual integration
8M413052.D 8260WT.M Mon Jun 20 09:20:38 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413052.D Vial: 22
Acq On : 17 Jun 2016 00:12 Operator: FJB
Sample : L16060730-01 A 826-SPE Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 8:21 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

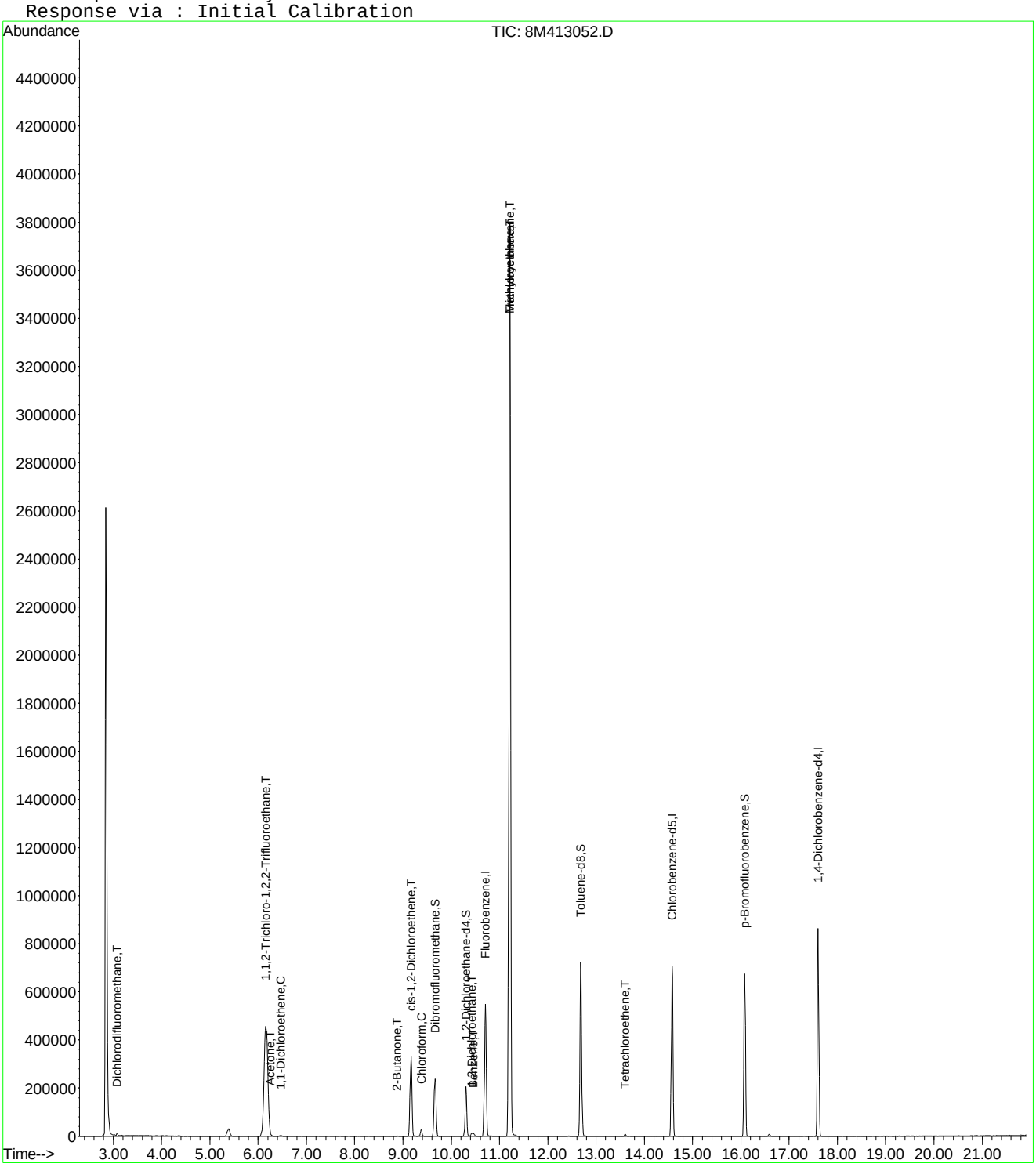

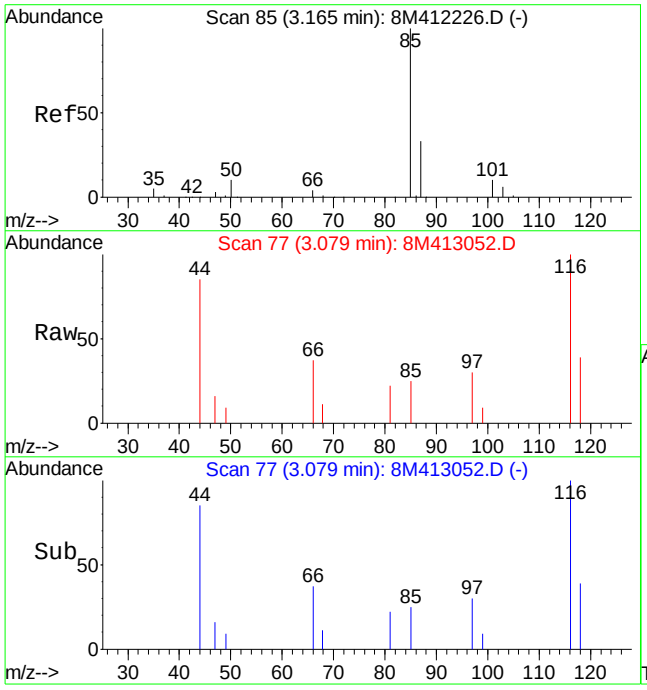

#2
Dichlorodifluoromethane
Concen: 0.14 ug/L
RT: 3.08 min Scan# 77
Delta R.T. -0.09 min
Lab File: 8M413052.D
Acq: 17 Jun 2016 00:12

Tgt Ion: 85 Resp: 1489

Ion	Ratio	Lower	Upper
85	100		
87	0.0	19.6	45.8#

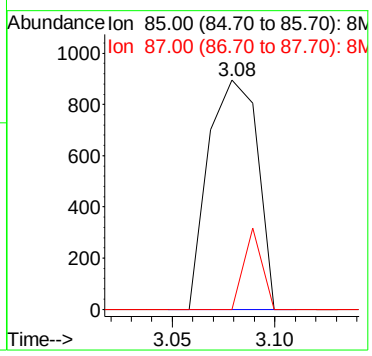

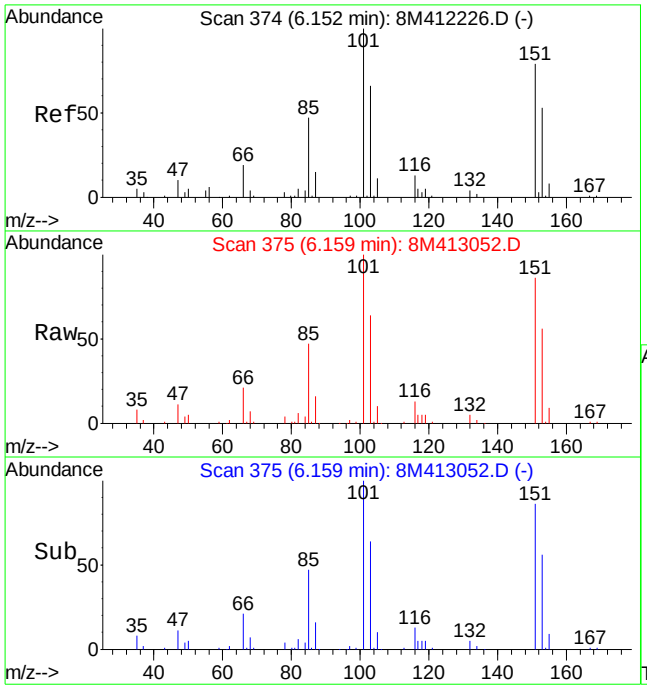

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 73.34 ug/L
RT: 6.16 min Scan# 375
Delta R.T. 0.01 min
Lab File: 8M413052.D
Acq: 17 Jun 2016 00:12

Tgt Ion:101 Resp: 489978

Ion	Ratio	Lower	Upper
101	100		
151	84.8	40.2	120.2

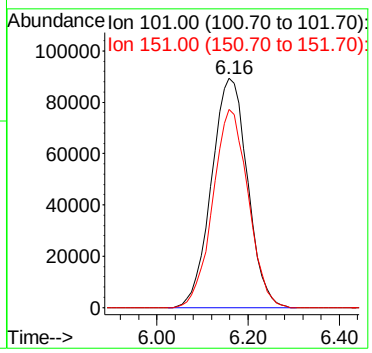

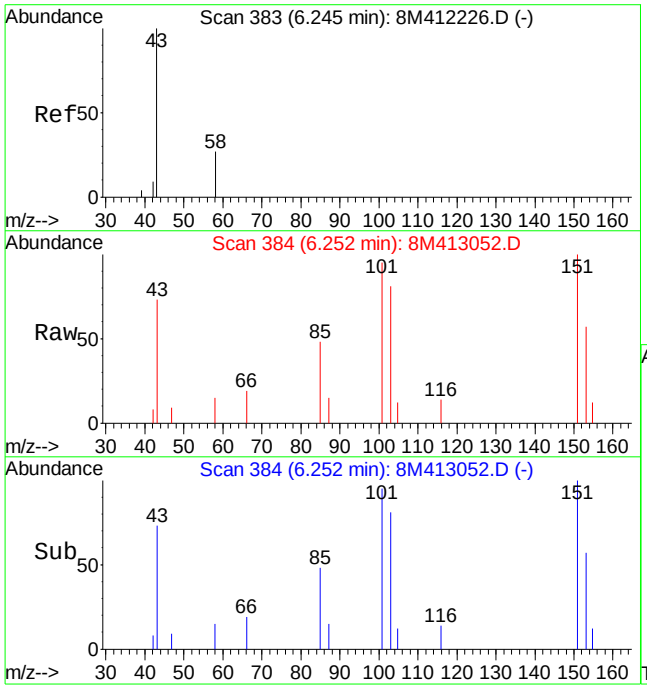

#13
Acetone
Concen: 11.94 ug/L
RT: 6.25 min Scan# 384
Delta R.T. 0.01 min
Lab File: 8M413052.D
Acq: 17 Jun 2016 00:12

Tgt Ion: 43 Resp: 8834

Ion	Ratio	Lower	Upper
43	100		
58	24.6	15.2	35.4

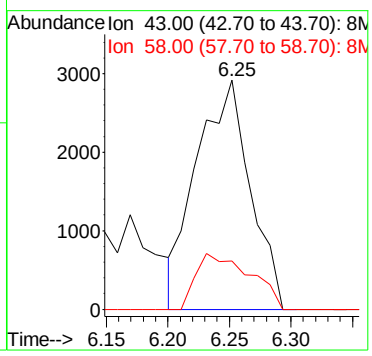

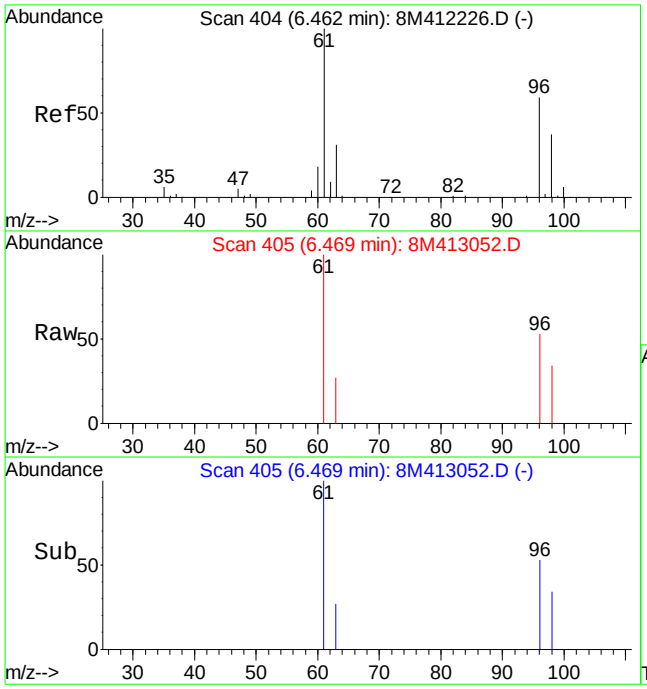

#14
1,1-Dichloroethene
Concen: 0.36 ug/L
RT: 6.47 min Scan# 405
Delta R.T. 0.01 min
Lab File: 8M413052.D
Acq: 17 Jun 2016 00:12

Tgt Ion: 61 Resp: 3837

Ion	Ratio	Lower	Upper
61	100		
96	50.3	34.6	80.8

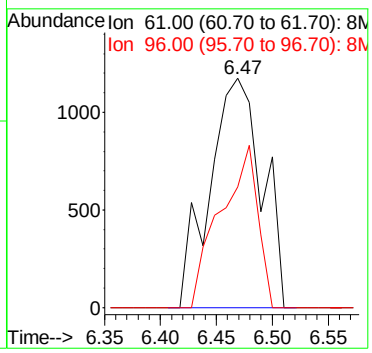

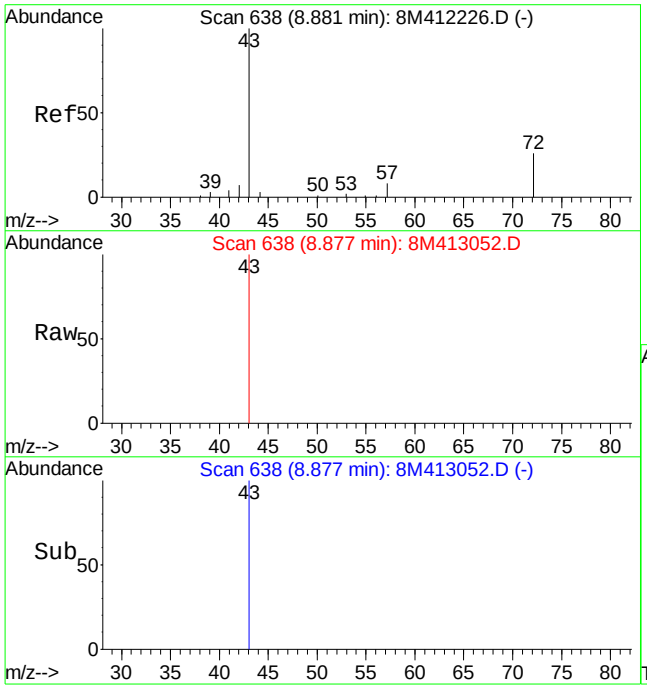

#29
2-Butanone
Concen: 0.62 ug/L
RT: 8.88 min Scan# 638
Delta R.T. -0.00 min
Lab File: 8M413052.D
Acq: 17 Jun 2016 00:12

Tgt Ion: 43 Resp: 670

Ion	Ratio	Lower	Upper
43	100		
72	0.0	16.4	38.4#

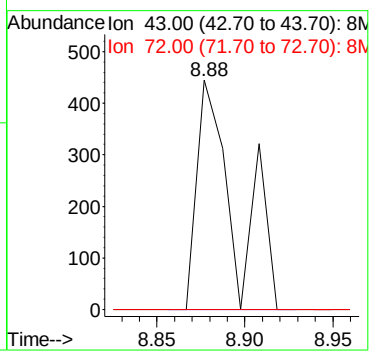

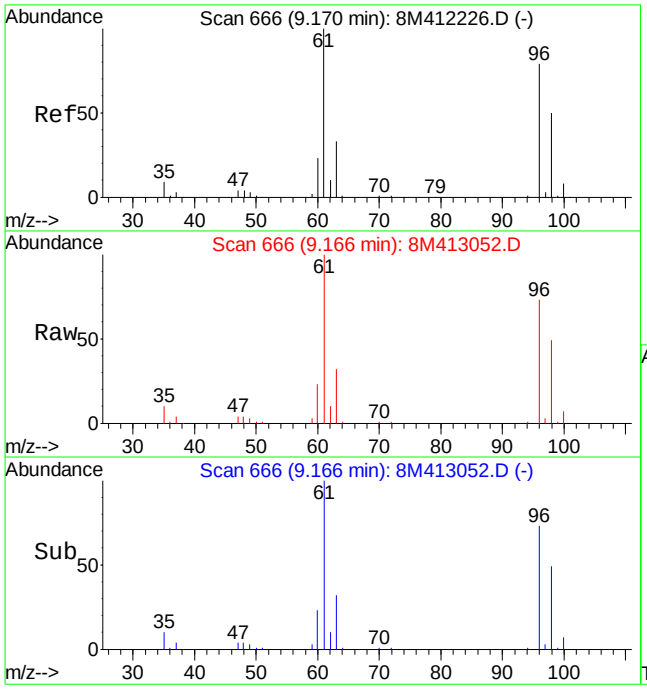

#32
cis-1,2-Dichloroethene
Concen: 25.74 ug/L
RT: 9.17 min Scan# 666
Delta R.T. -0.00 min
Lab File: 8M413052.D
Acq: 17 Jun 2016 00:12

Tgt Ion: 96 Resp: 194329

Ion	Ratio	Lower	Upper
96	100		
61	135.5	91.5	213.5

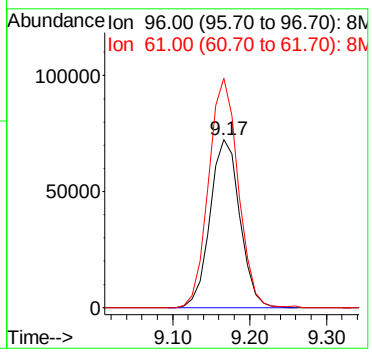

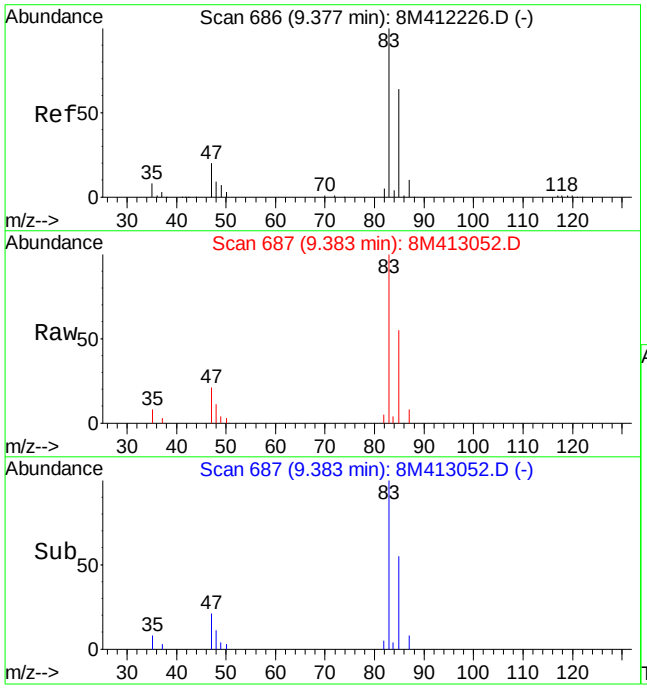

#33
Chloroform
Concen: 2.20 ug/L
RT: 9.38 min Scan# 687
Delta R.T. 0.01 min
Lab File: 8M413052.D
Acq: 17 Jun 2016 00:12

Tgt Ion: 83 Resp: 31566

Ion	Ratio	Lower	Upper
83	100		
85	59.5	37.5	87.5

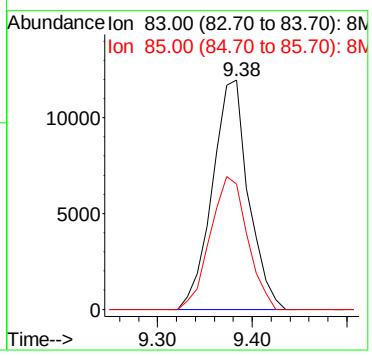

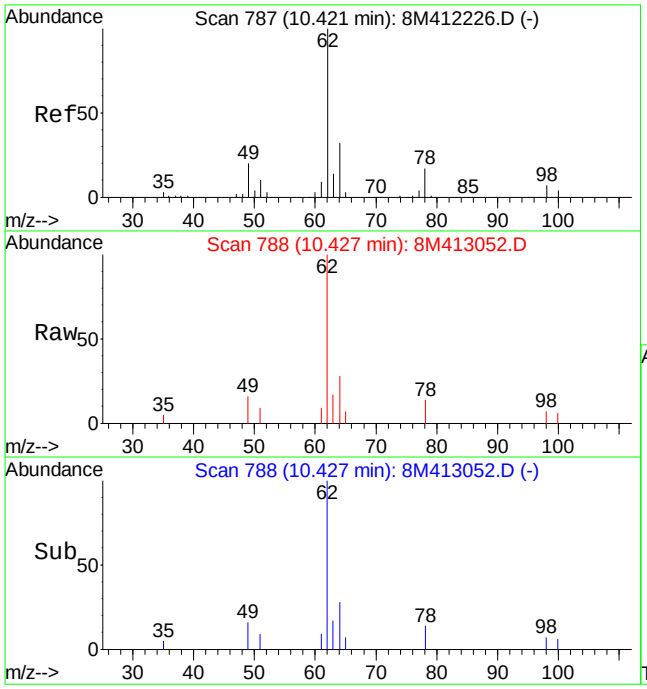

#45
1,2-Dichloroethane
Concen: 1.66 ug/L
RT: 10.43 min Scan# 788
Delta R.T. 0.01 min
Lab File: 8M413052.D
Acq: 17 Jun 2016 00:12

Tgt Ion: 62 Resp: 15289

Ion	Ratio	Lower	Upper
62	100		
64	33.9	19.6	45.6
49	18.2	15.5	36.1

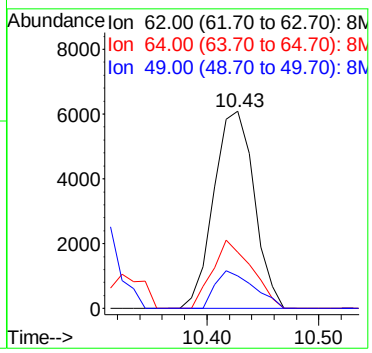

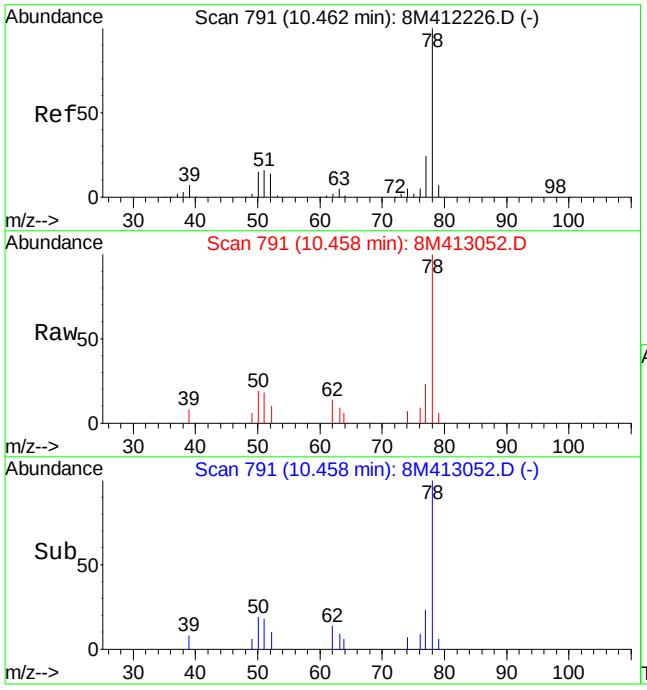

#46
Benzene
Concen: 0.52 ug/L
RT: 10.46 min Scan# 791
Delta R.T. -0.00 min
Lab File: 8M413052.D
Acq: 17 Jun 2016 00:12

Tgt Ion: 78 Resp: 14168

Ion	Ratio	Lower	Upper
78	100		
52	10.2	8.4	19.6
51	20.1	10.9	25.5

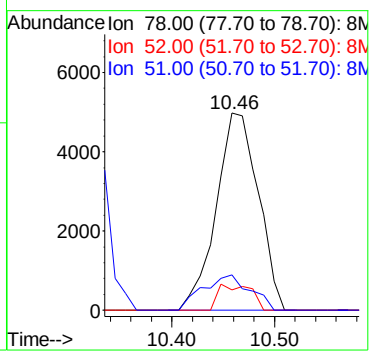

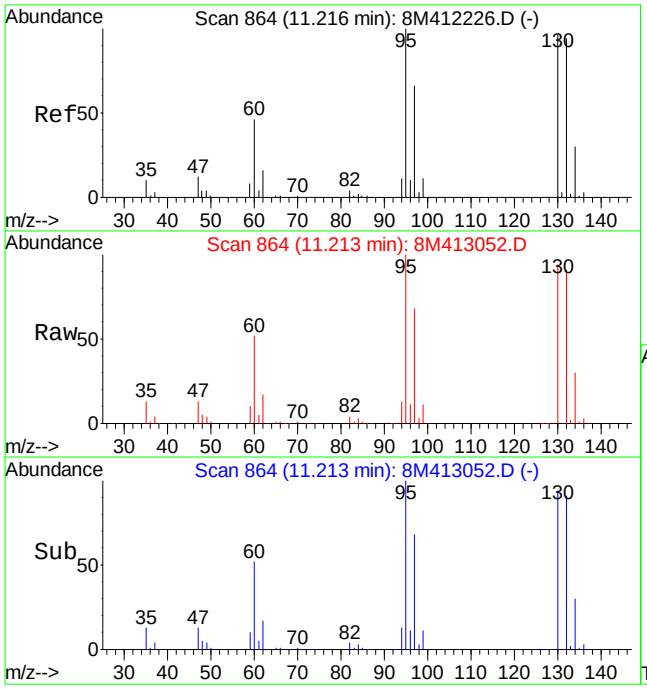

#47
Trichloroethene
Concen: 212.11 ug/L
RT: 11.21 min Scan# 864
Delta R.T. -0.00 min
Lab File: 8M413052.D
Acq: 17 Jun 2016 00:12

Tgt Ion:130 Resp: 1528673

Ion	Ratio	Lower	Upper
130	100		
132	97.2	58.0	135.2
95	106.8	64.9	151.5

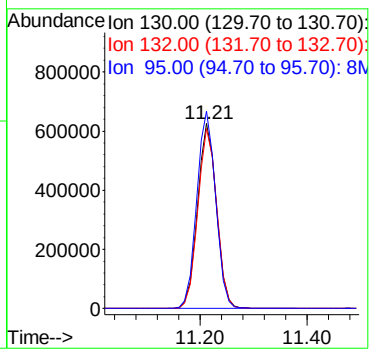

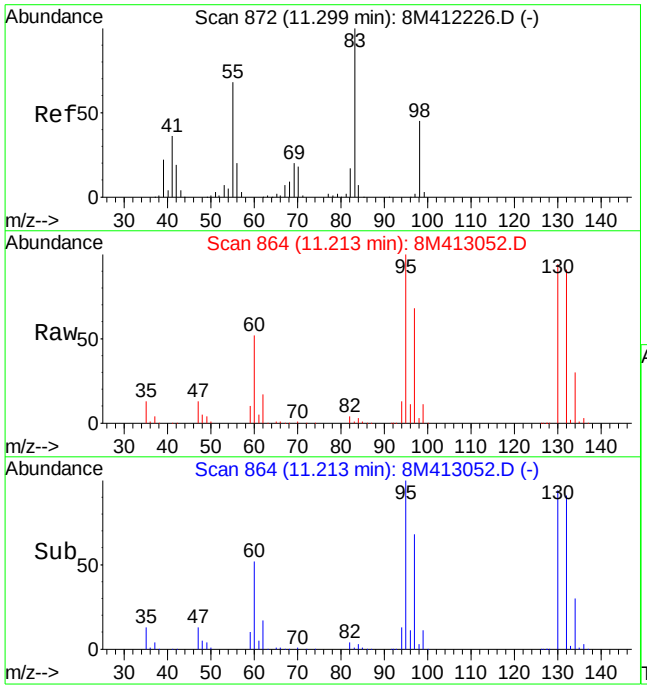

#48
Methylcyclohexane
Concen: 1.95 ug/L
RT: 11.21 min Scan# 864
Delta R.T. -0.09 min
Lab File: 8M413052.D
Acq: 17 Jun 2016 00:12

Tgt Ion: 83 Resp: 21337

Ion	Ratio	Lower	Upper
83	100		
55	0.0	40.9	95.3#
98	212.7	28.1	65.7#

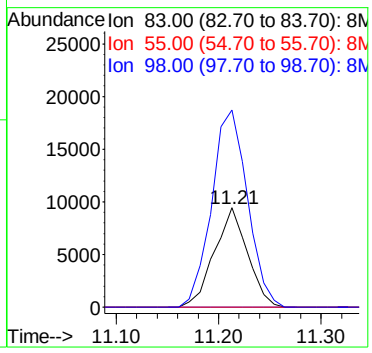

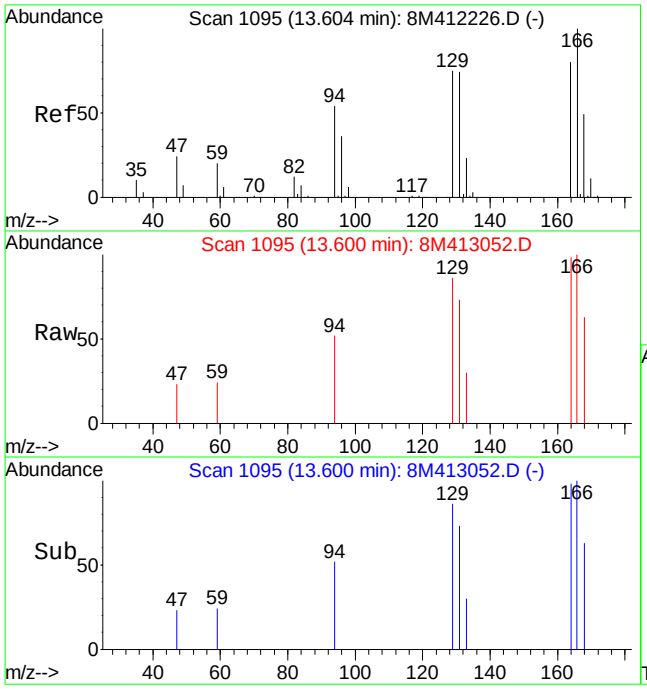

#66
Tetrachloroethene
Concen: 0.42 ug/L
RT: 13.60 min Scan# 1095
Delta R.T. -0.00 min
Lab File: 8M413052.D
Acq: 17 Jun 2016 00:12

Tgt Ion:164 Resp: 2814

Ion	Ratio	Lower	Upper
164	100		
129	87.3	56.6	132.2
94	77.1	40.7	95.1

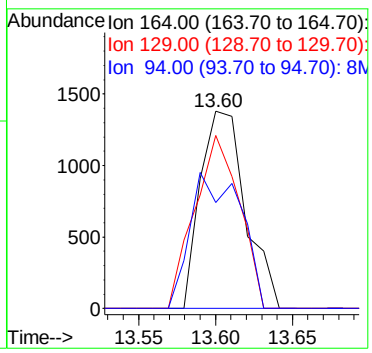

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413053.D Vial: 23
Acq On : 17 Jun 2016 00:41 Operator: FJB
Sample : L16060730-02 A 826-SPE Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:21:53 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	673536	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	506073	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	286086	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	202860	28.0326 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 112.12%		
43) 1,2-Dichloroethane-d4	10.31	65	233224	30.0569 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 120.24%#		
58) Toluene-d8	12.68	98	690474	26.0699 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.28%		
80) p-Bromofluorobenzene	16.08	95	290359	24.5111 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.04%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.08	85	1941	0.1719 ug/L	95
3) Chloromethane	3.62	50	794	0.1205 ug/L #	63
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	480447	70.2383 ug/L	94
13) Acetone	6.23	43	10028	13.2332 ug/L	88
14) 1,1-Dichloroethene	6.45	61	3463	0.3180 ug/L	86
29) 2-Butanone	8.89	43	608	0.5461 ug/L #	47
32) cis-1,2-Dichloroethene	9.17	96	193890	25.0785 ug/L	84
33) Chloroform	9.38	83	31307	2.1338 ug/L	100
45) 1,2-Dichloroethane	10.42	62	14379	1.5226 ug/L #	90
46) Benzene	10.46	78	14074	0.5087 ug/L	95
47) Trichloroethene	11.22	130	1537643	208.3777 ug/L	99
48) Methylcyclohexane	11.22	83	20947	1.8686 ug/L #	1
66) Tetrachloroethene	13.60	164	3124	0.4641 ug/L	84

(#) = qualifier out of range (m) = manual integration
8M413053.D 8260WT.M Mon Jun 20 09:20:44 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413053.D Vial: 23
Acq On : 17 Jun 2016 00:41 Operator: FJB
Sample : L16060730-02 A 826-SPE Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 8:21 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

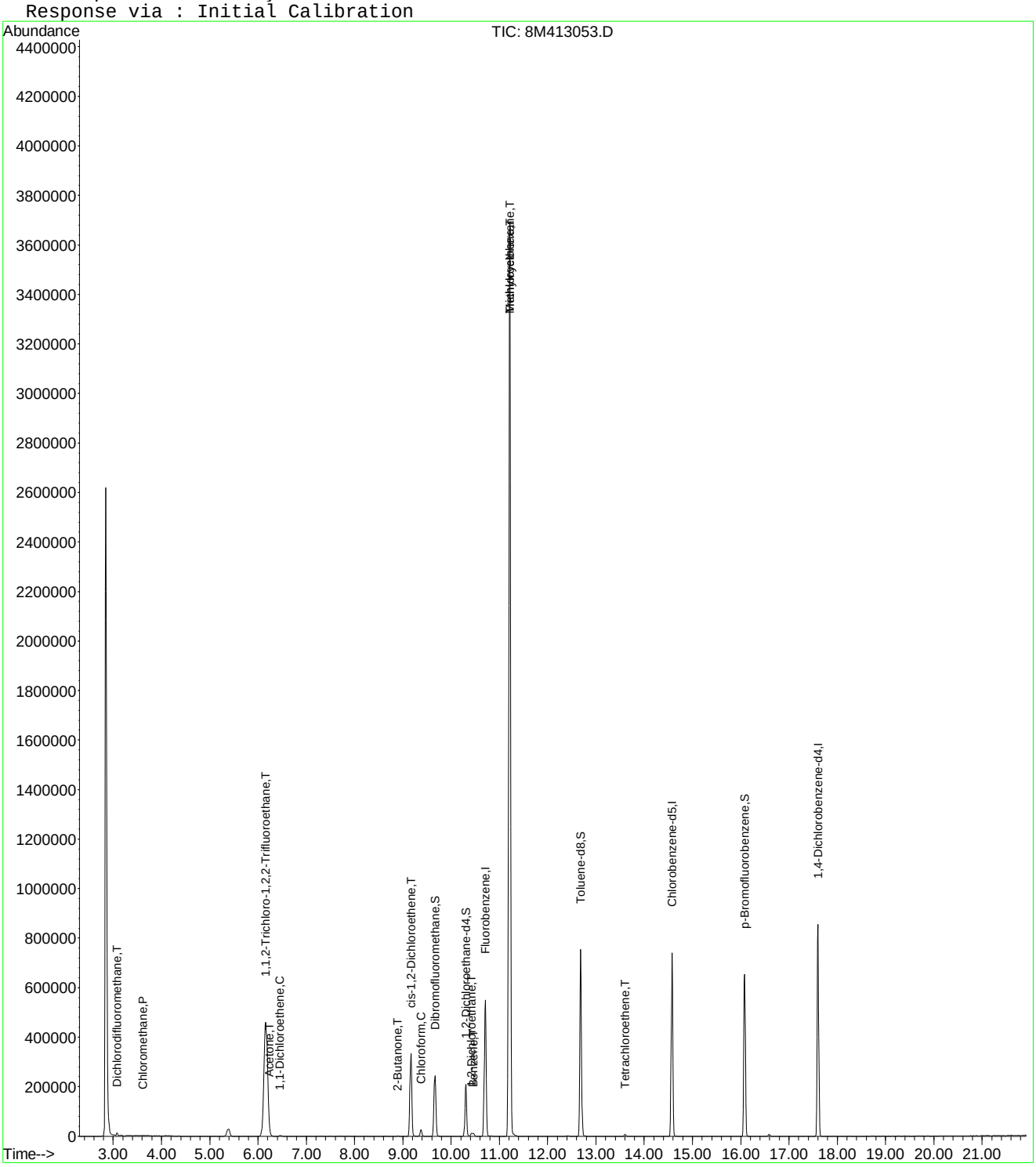

8M413053.D 8260WT.M Mon Jun 20 09:20:45 2016 Page 2

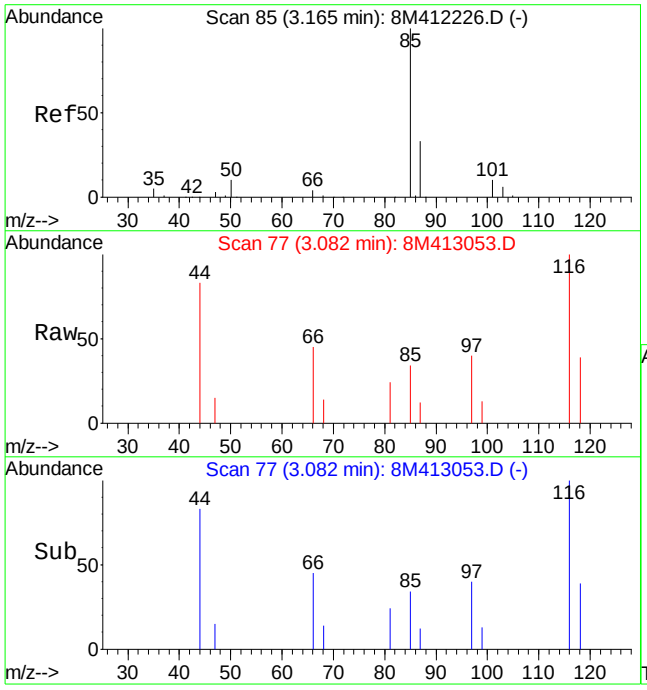

#2
Dichlorodifluoromethane
Concen: 0.17 ug/L
RT: 3.08 min Scan# 77
Delta R.T. -0.08 min
Lab File: 8M413053.D
Acq: 17 Jun 2016 00:41

Tgt Ion: 85 Resp: 1941

Ion	Ratio	Lower	Upper
85	100		
87	35.2	19.6	45.8

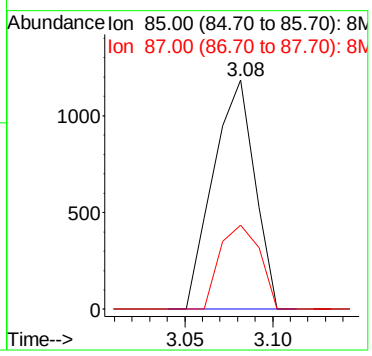

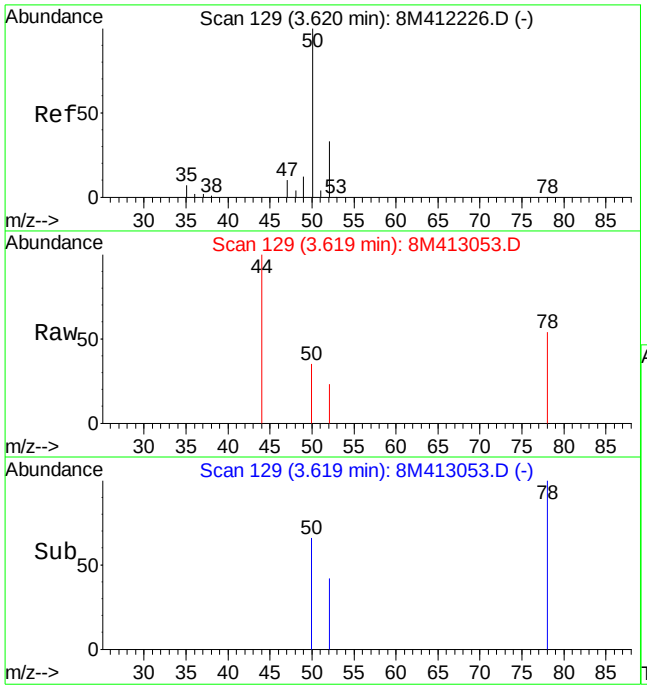

#3
Chloromethane
Concen: 0.12 ug/L
RT: 3.62 min Scan# 129
Delta R.T. -0.00 min
Lab File: 8M413053.D
Acq: 17 Jun 2016 00:41

Tgt Ion: 50 Resp: 794

Ion	Ratio	Lower	Upper
50	100		
52	53.8	19.9	46.3#

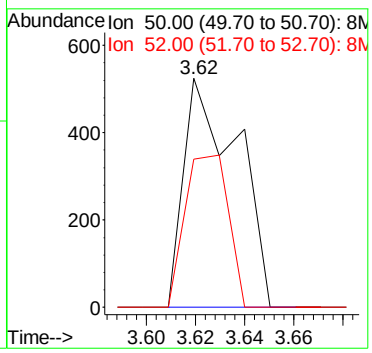

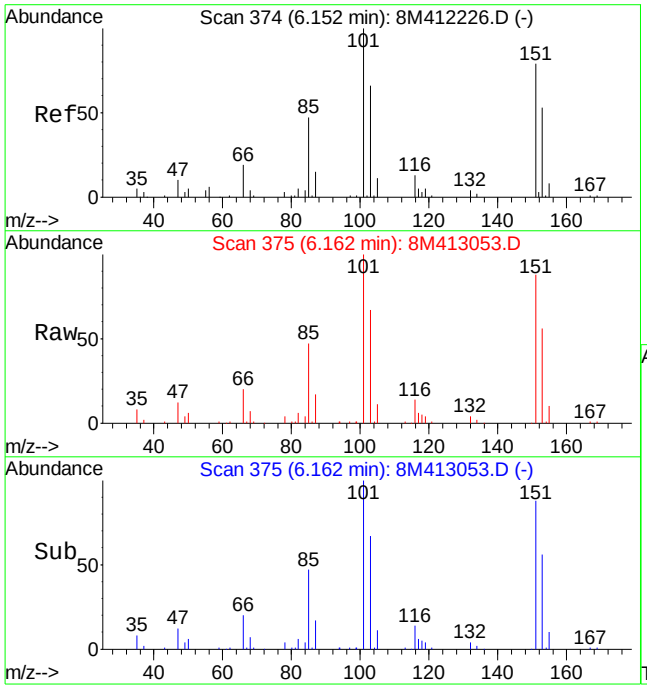

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 70.24 ug/L
RT: 6.16 min Scan# 375
Delta R.T. 0.01 min
Lab File: 8M413053.D
Acq: 17 Jun 2016 00:41

Tgt Ion:101 Resp: 480447

Ion	Ratio	Lower	Upper
101	100		
151	85.9	40.2	120.2

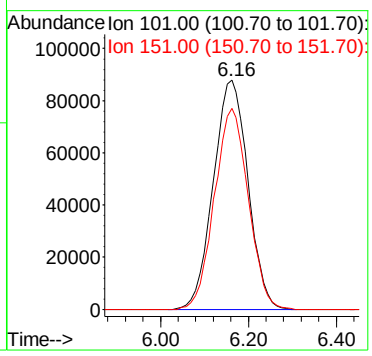

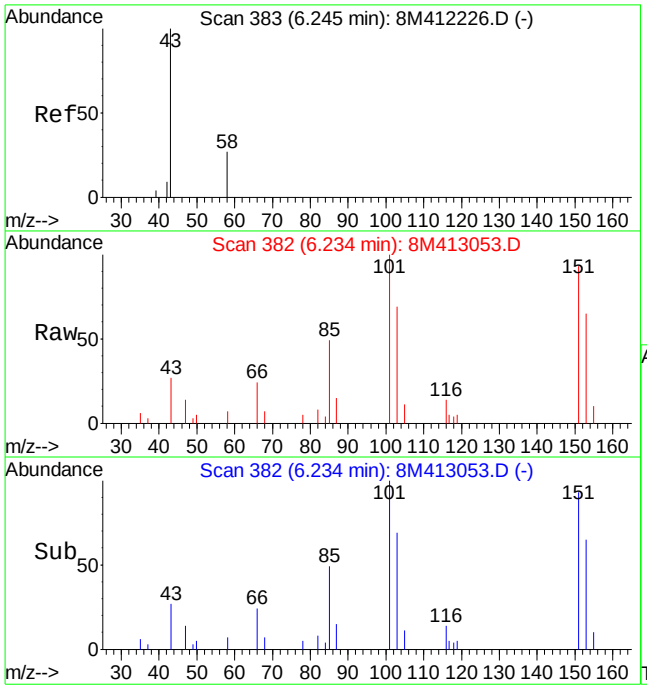

#13
Acetone
Concen: 13.23 ug/L
RT: 6.23 min Scan# 382
Delta R.T. -0.01 min
Lab File: 8M413053.D
Acq: 17 Jun 2016 00:41

Tgt Ion: 43 Resp: 10028

Ion	Ratio	Lower	Upper
43	100		
58	19.1	15.2	35.4

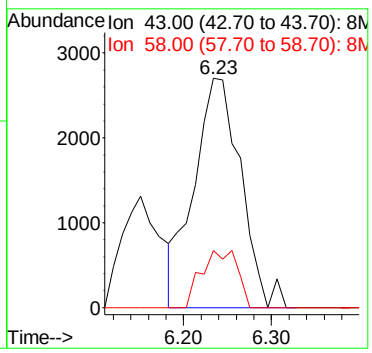

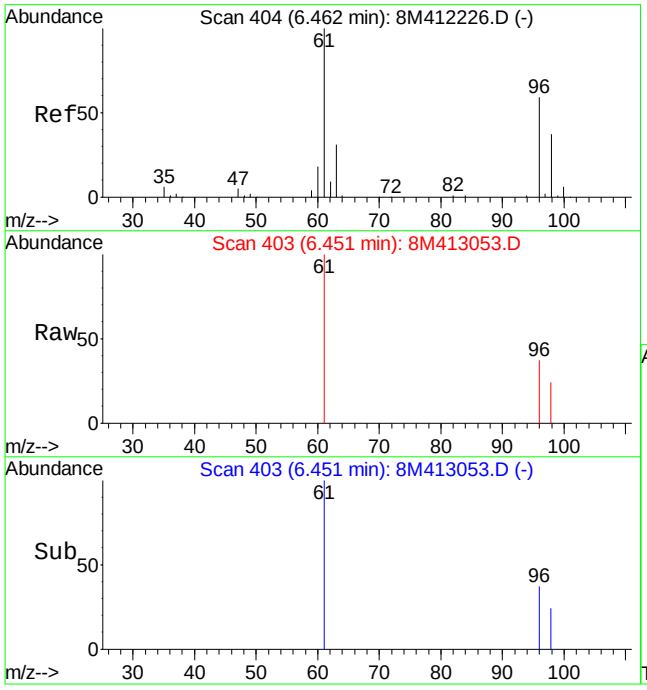

#14
1,1-Dichloroethene
Concen: 0.32 ug/L
RT: 6.45 min Scan# 403
Delta R.T. -0.01 min
Lab File: 8M413053.D
Acq: 17 Jun 2016 00:41

Tgt Ion: 61 Resp: 3463

Ion	Ratio	Lower	Upper
61	100		
96	47.2	34.6	80.8

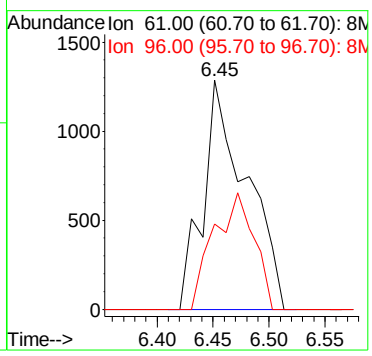

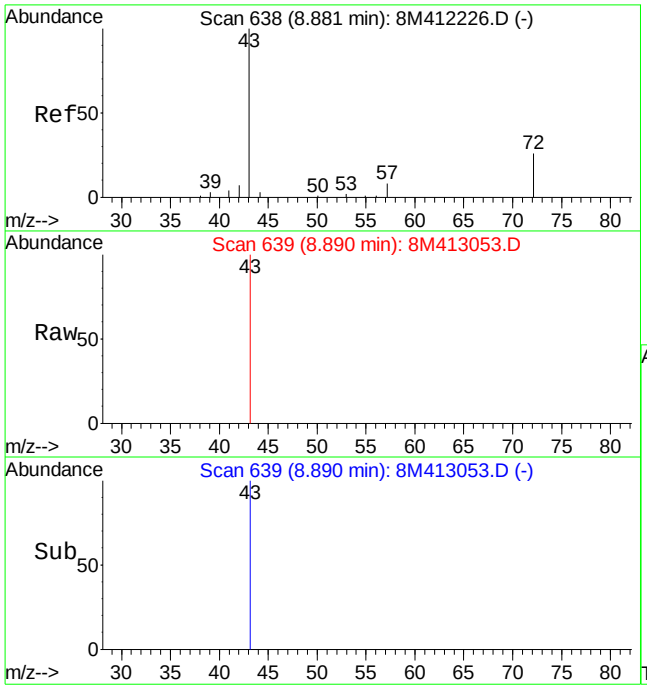

#29
2-Butanone
Concen: 0.55 ug/L
RT: 8.89 min Scan# 639
Delta R.T. 0.01 min
Lab File: 8M413053.D
Acq: 17 Jun 2016 00:41

Tgt Ion: 43 Resp: 608

Ion	Ratio	Lower	Upper
43	100		
72	0.0	16.4	38.4#

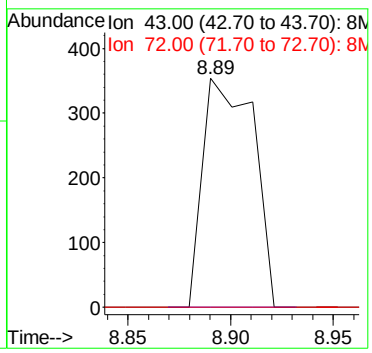

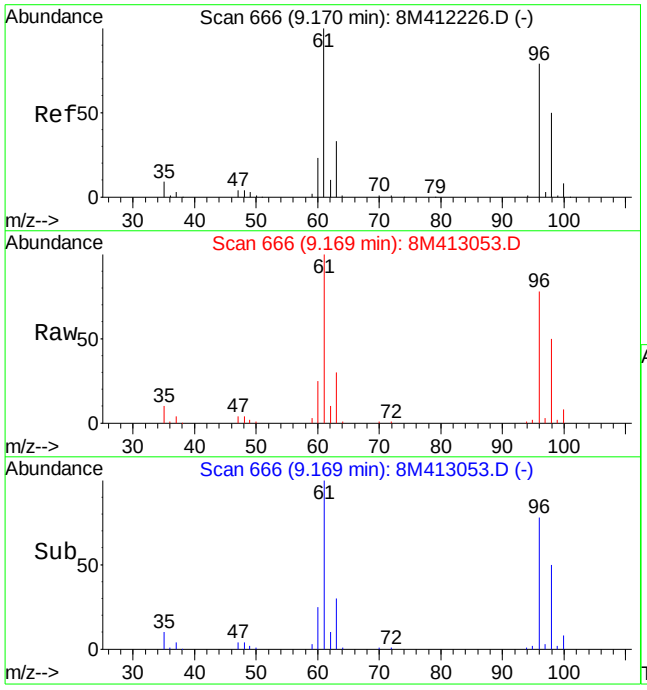

#32
cis-1,2-Dichloroethene
Concen: 25.08 ug/L
RT: 9.17 min Scan# 666
Delta R.T. -0.00 min
Lab File: 8M413053.D
Acq: 17 Jun 2016 00:41

Tgt Ion: 96 Resp: 193890

Ion	Ratio	Lower	Upper
96	100		
61	132.0	91.5	213.5

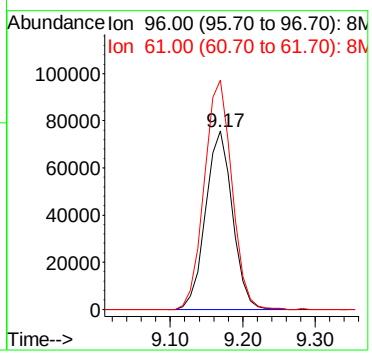

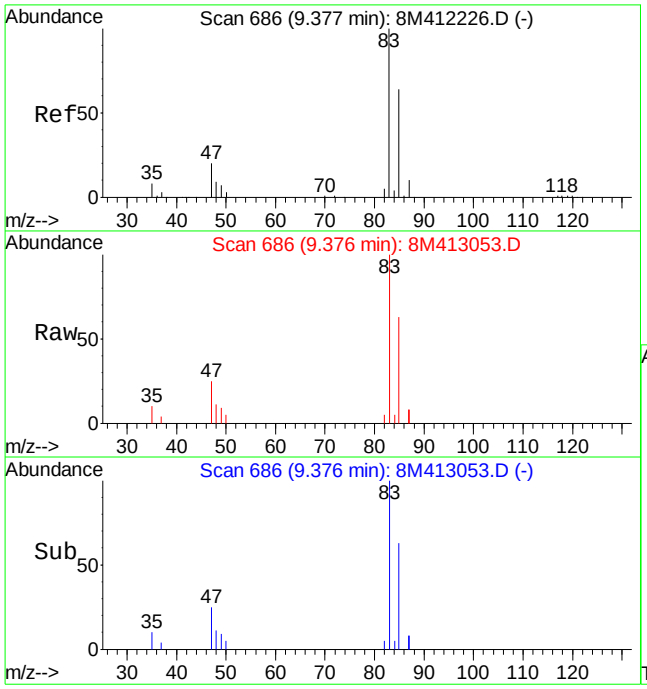

#33
Chloroform
Concen: 2.13 ug/L
RT: 9.38 min Scan# 686
Delta R.T. -0.00 min
Lab File: 8M413053.D
Acq: 17 Jun 2016 00:41

Tgt Ion: 83 Resp: 31307

Ion	Ratio	Lower	Upper
83	100		
85	62.8	37.5	87.5

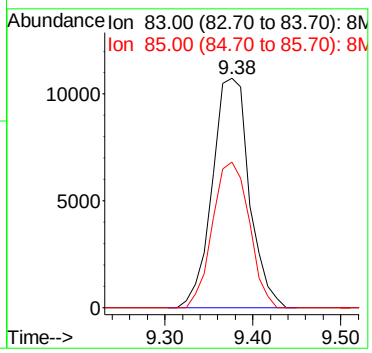

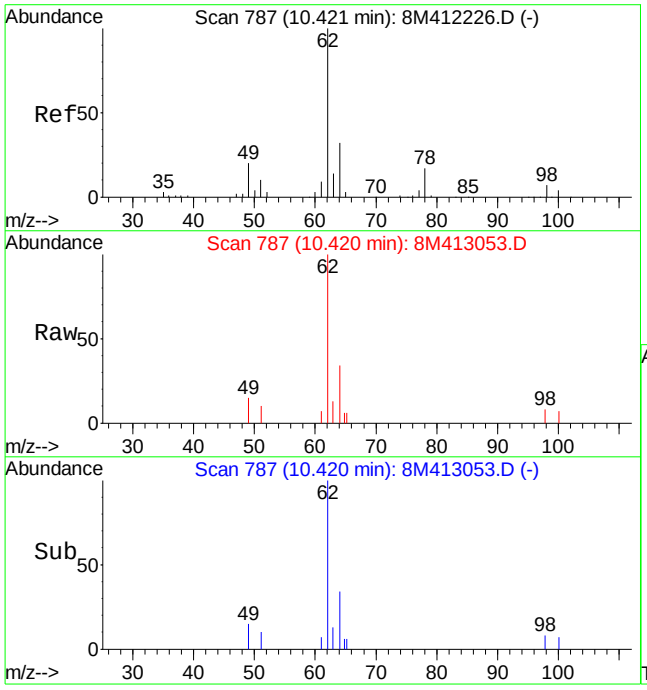

#45
1,2-Dichloroethane
Concen: 1.52 ug/L
RT: 10.42 min Scan# 787
Delta R.T. -0.00 min
Lab File: 8M413053.D
Acq: 17 Jun 2016 00:41

Tgt Ion: 62 Resp: 14379

Ion	Ratio	Lower	Upper
62	100		
64	32.3	19.6	45.6
49	14.7	15.5	36.1#

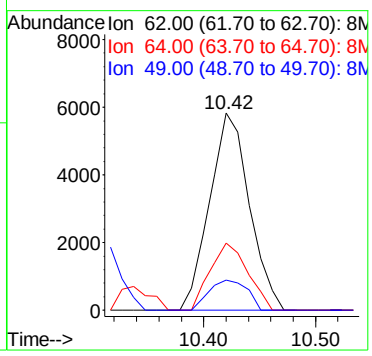

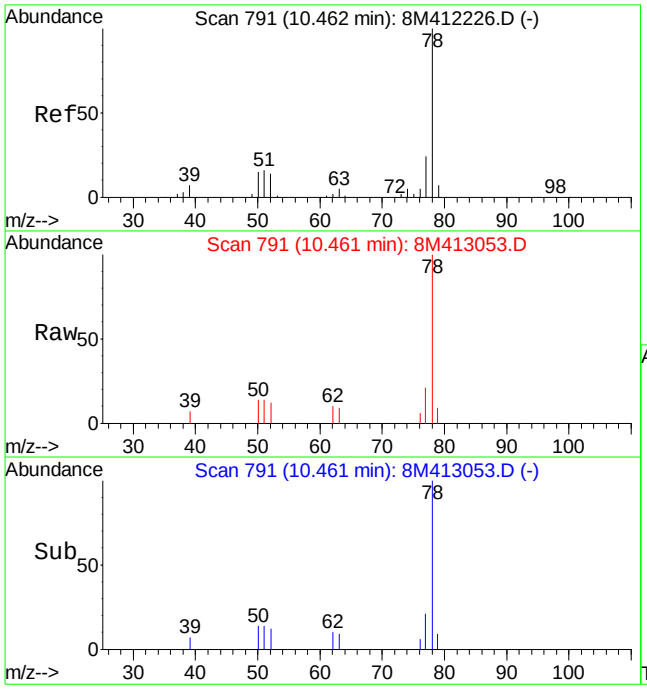

#46
Benzene
Concen: 0.51 ug/L
RT: 10.46 min Scan# 791
Delta R.T. -0.00 min
Lab File: 8M413053.D
Acq: 17 Jun 2016 00:41

Tgt Ion: 78 Resp: 14074

Ion	Ratio	Lower	Upper
78	100		
52	12.9	8.4	19.6
51	21.2	10.9	25.5

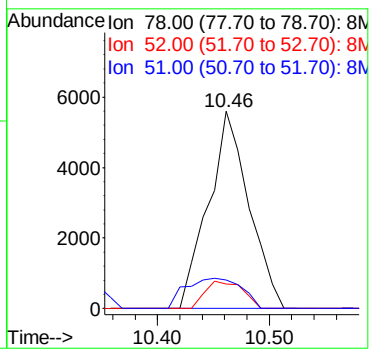

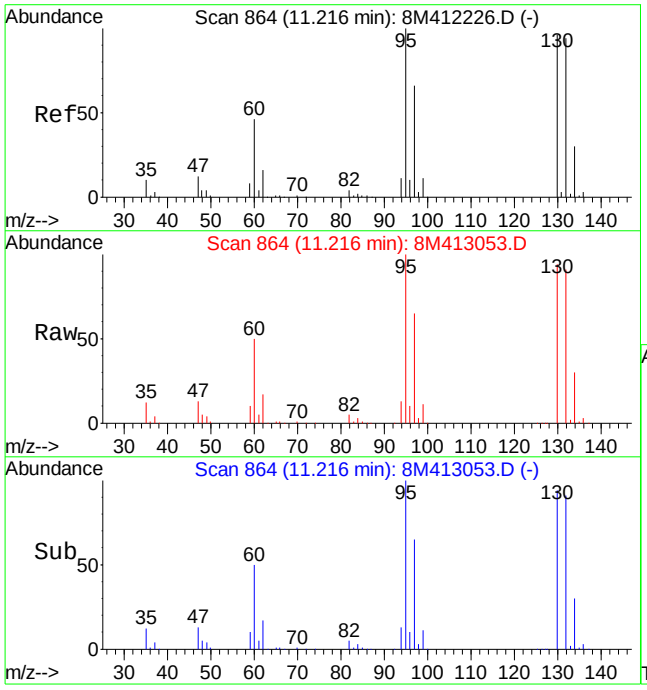

#47
Trichloroethene
Concen: 208.38 ug/L
RT: 11.22 min Scan# 864
Delta R.T. -0.00 min
Lab File: 8M413053.D
Acq: 17 Jun 2016 00:41

Tgt Ion:130 Resp: 1537643

Ion	Ratio	Lower	Upper
130	100		
132	96.4	58.0	135.2
95	107.4	64.9	151.5

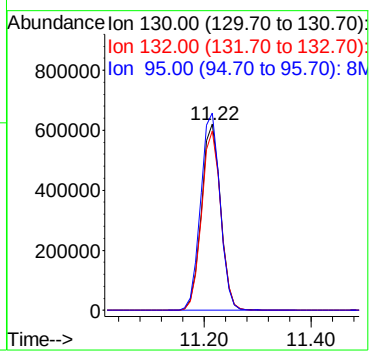

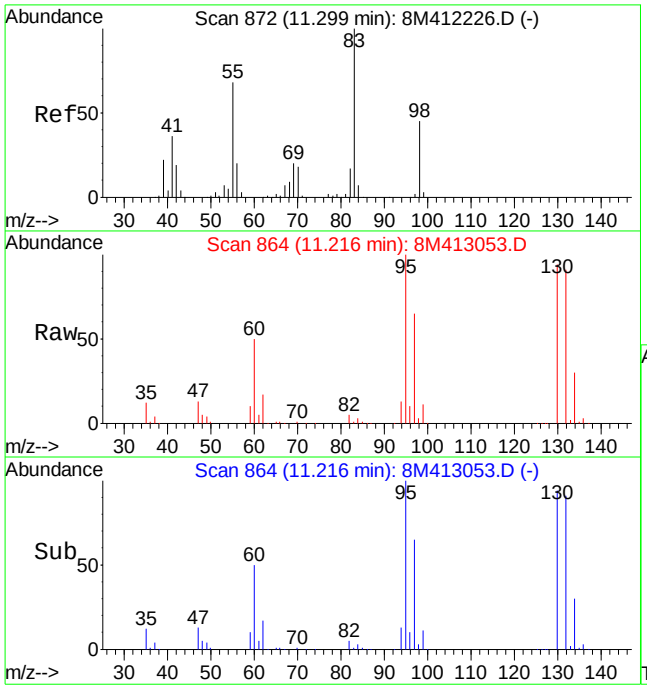

#48
Methylcyclohexane
Concen: 1.87 ug/L
RT: 11.22 min Scan# 864
Delta R.T. -0.08 min
Lab File: 8M413053.D
Acq: 17 Jun 2016 00:41

Tgt Ion: 83 Resp: 20947

Ion	Ratio	Lower	Upper
83	100		
55	0.0	40.9	95.3#
98	224.9	28.1	65.7#

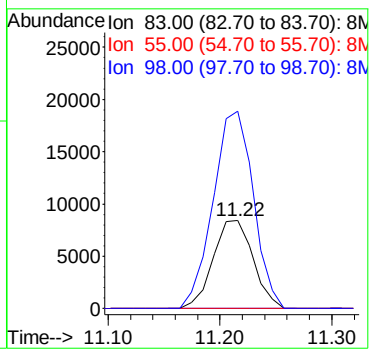

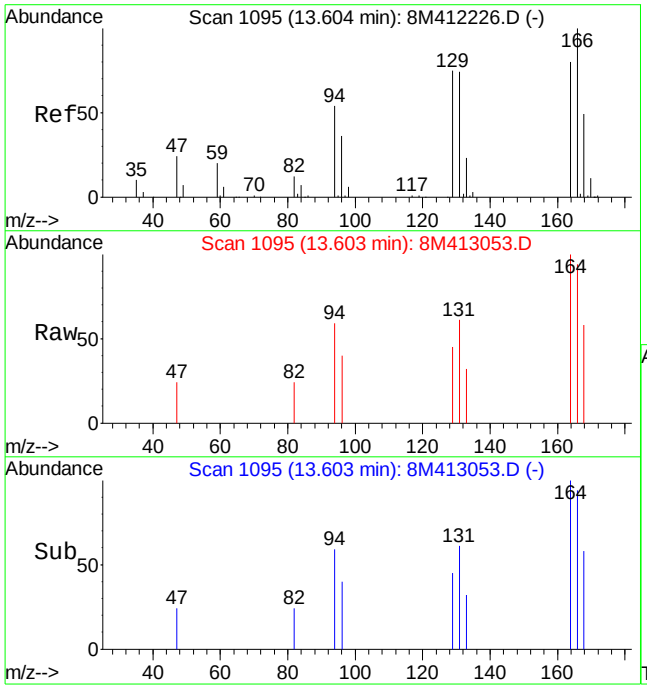

#66
Tetrachloroethene
Concen: 0.46 ug/L
RT: 13.60 min Scan# 1095
Delta R.T. -0.00 min
Lab File: 8M413053.D
Acq: 17 Jun 2016 00:41

Tgt Ion:164 Resp: 3124

Ion	Ratio	Lower	Upper
164	100		
129	79.2	56.6	132.2
94	55.5	40.7	95.1

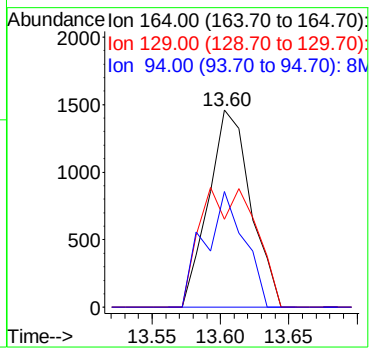

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413048.D Vial: 18
Acq On : 16 Jun 2016 22:17 Operator: FJB
Sample : L16060730-03 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:18:25 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	679708	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	515059	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	289260	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	204245	27.9677 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.88%		
43) 1,2-Dichloroethane-d4	10.30	65	236138	30.1561 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 120.64%#		
58) Toluene-d8	12.68	98	701422	26.0212 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.08%		
80) p-Bromofluorobenzene	16.08	95	301168	25.1446 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.56%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.08	85	6255	0.5489 ug/L	87
8) Trichlorofluoromethane	5.38	101	2573	0.1752 ug/L #	1
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	4361753	631.8706 ug/L	96
13) Acetone	6.17	43	53589	70.0753 ug/L #	77
16) Dimethyl Sulfide	6.73	62	2378	0.6051 ug/L	91
32) cis-1,2-Dichloroethene	9.17	96	202797	25.9924 ug/L	80
47) Trichloroethene	11.21	130	94874	12.7403 ug/L	99
48) Methylcyclohexane	11.21	83	1645	0.1454 ug/L #	1

(#) = qualifier out of range (m) = manual integration
8M413048.D 8260WT.M Mon Jun 20 09:20:18 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413048.D Vial: 18
Acq On : 16 Jun 2016 22:17 Operator: FJB
Sample : L16060730-03 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 8:18 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

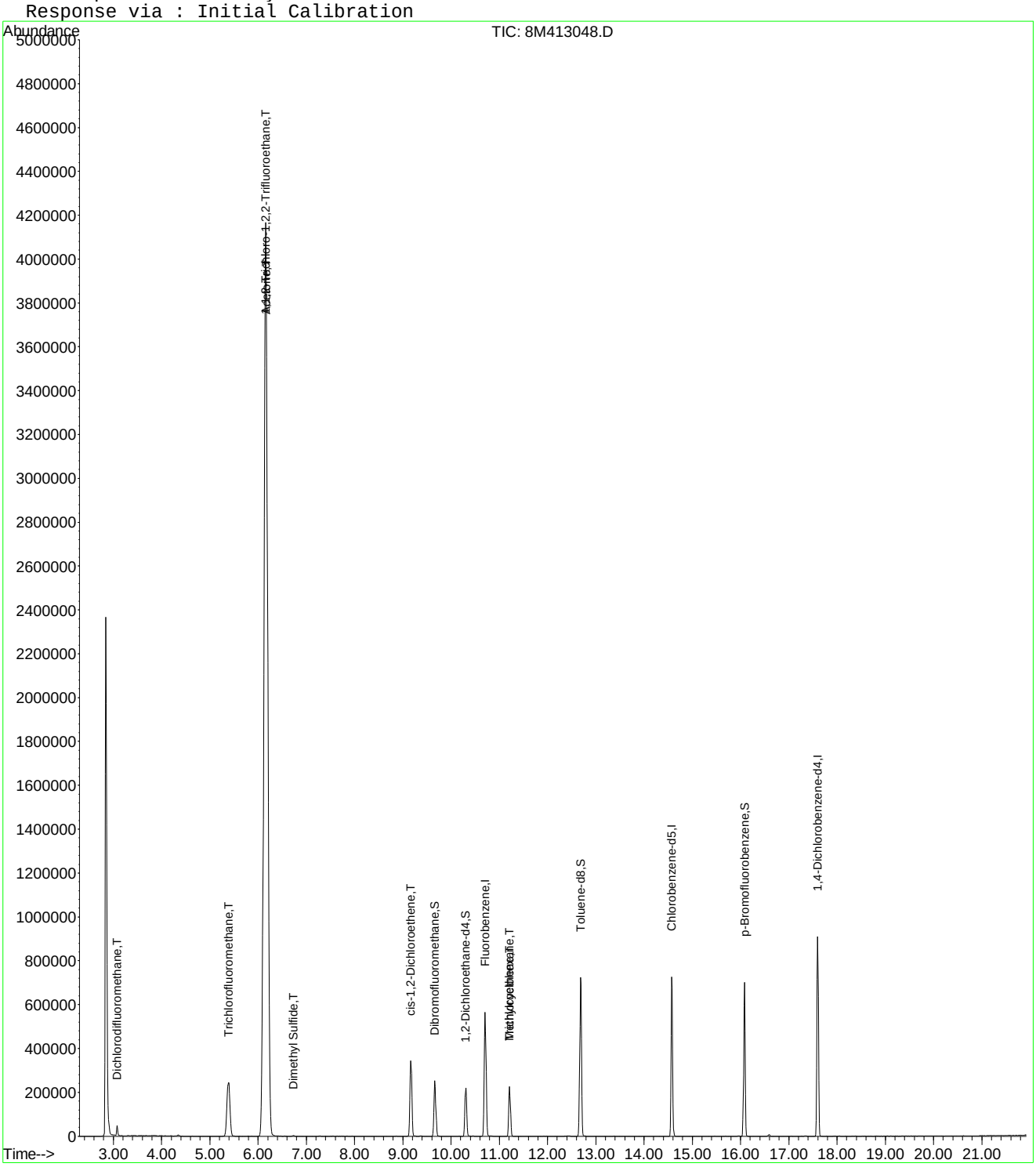

8M413048.D 8260WT.M Mon Jun 20 09:20:18 2016 Page 2

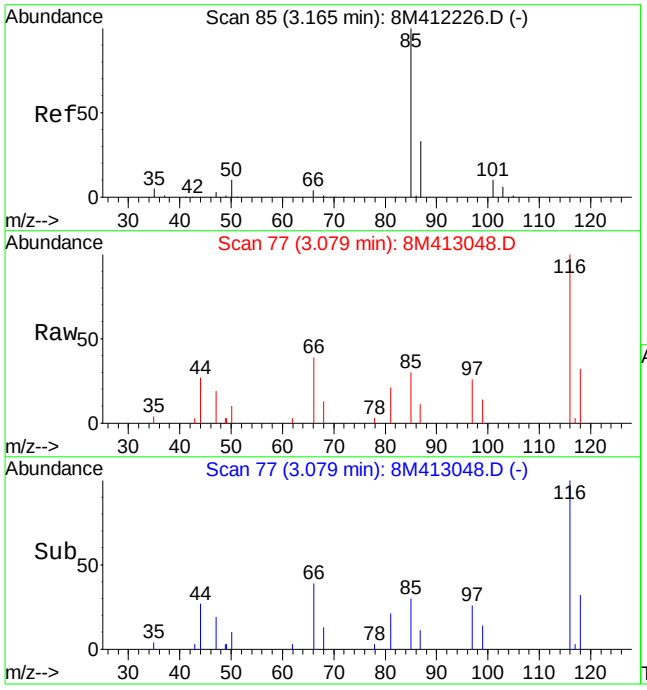

#2
Dichlorodifluoromethane
Concen: 0.55 ug/L
RT: 3.08 min Scan# 77
Delta R.T. -0.09 min
Lab File: 8M413048.D
Acq: 16 Jun 2016 22:17

Tgt Ion: 85 Resp: 6255

Ion	Ratio	Lower	Upper
85	100		
87	40.0	19.6	45.8

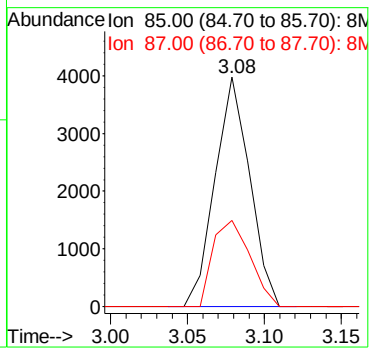

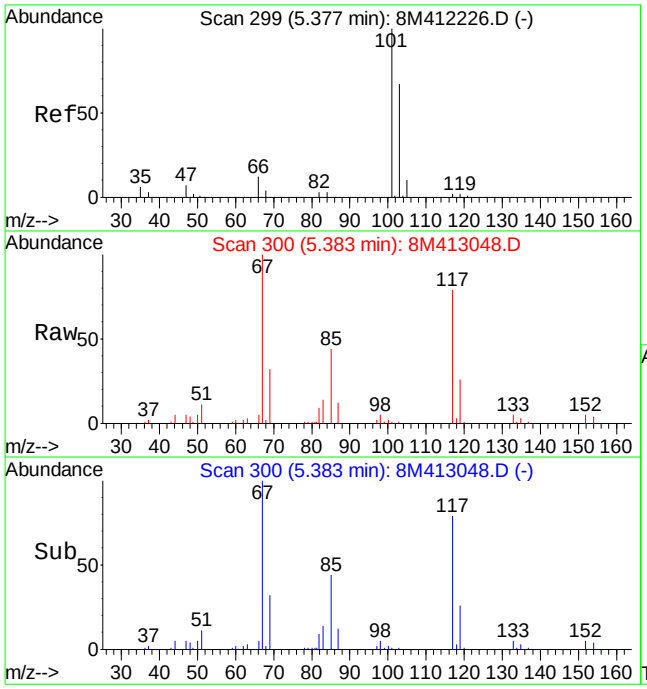

#8
Trichlorofluoromethane
Concen: 0.18 ug/L
RT: 5.38 min Scan# 300
Delta R.T. 0.01 min
Lab File: 8M413048.D
Acq: 16 Jun 2016 22:17

Tgt Ion:101 Resp: 2573

Ion	Ratio	Lower	Upper
101	100		
103	35.6	39.2	91.6#
66	457.2	7.0	16.4#

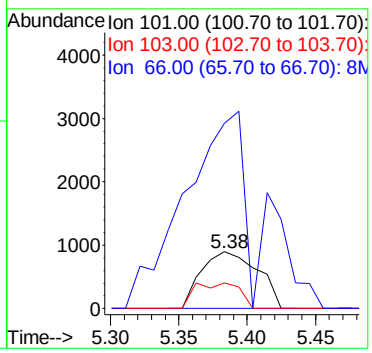

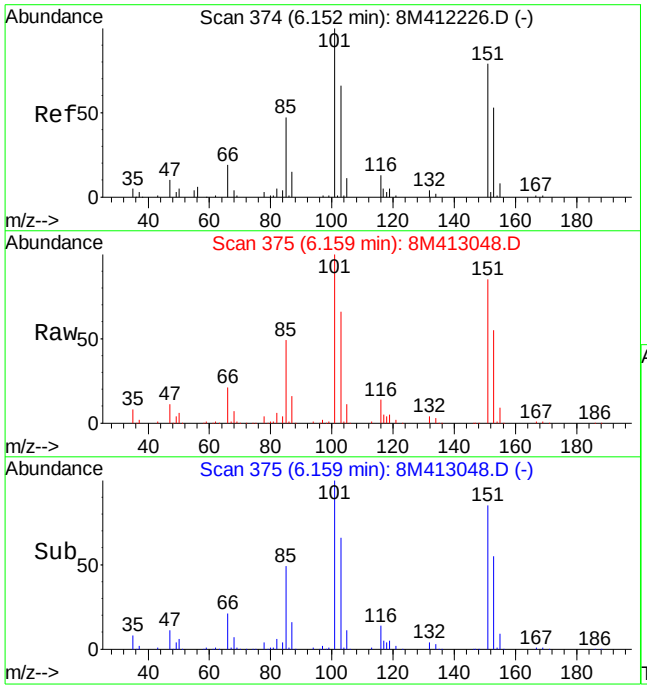

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 631.87 ug/L
RT: 6.16 min Scan# 375
Delta R.T. 0.01 min
Lab File: 8M413048.D
Acq: 16 Jun 2016 22:17

Tgt Ion:101 Resp: 4361753

Ion	Ratio	Lower	Upper
101	100		
151	84.1	40.2	120.2

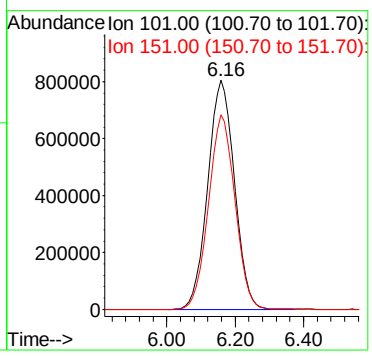

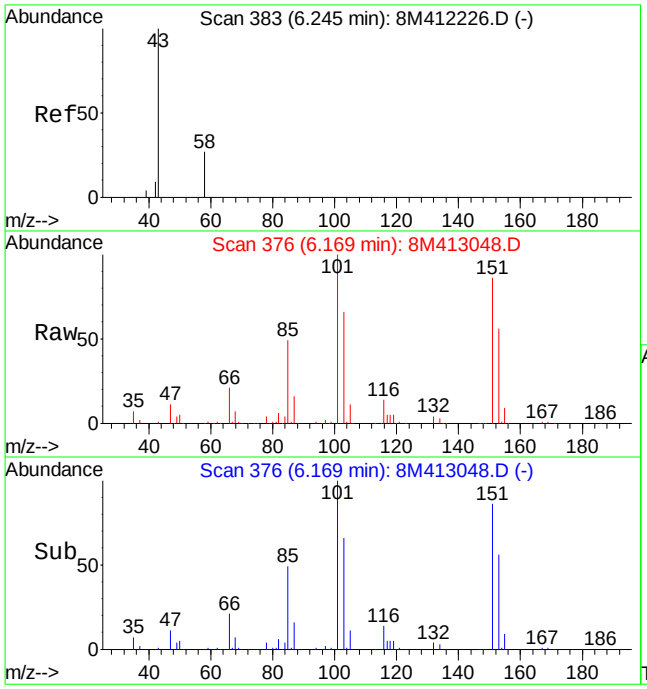

#13
Acetone
Concen: 70.08 ug/L
RT: 6.17 min Scan# 376
Delta R.T. -0.08 min
Lab File: 8M413048.D
Acq: 16 Jun 2016 22:17

Tgt Ion: 43 Resp: 53589

Ion	Ratio	Lower	Upper
43	100		
58	13.9	15.2	35.4#

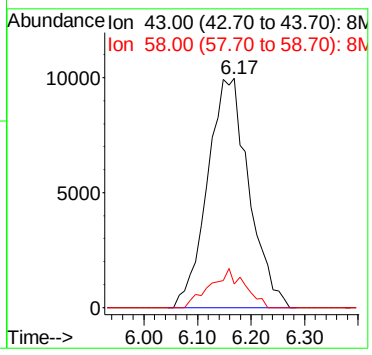

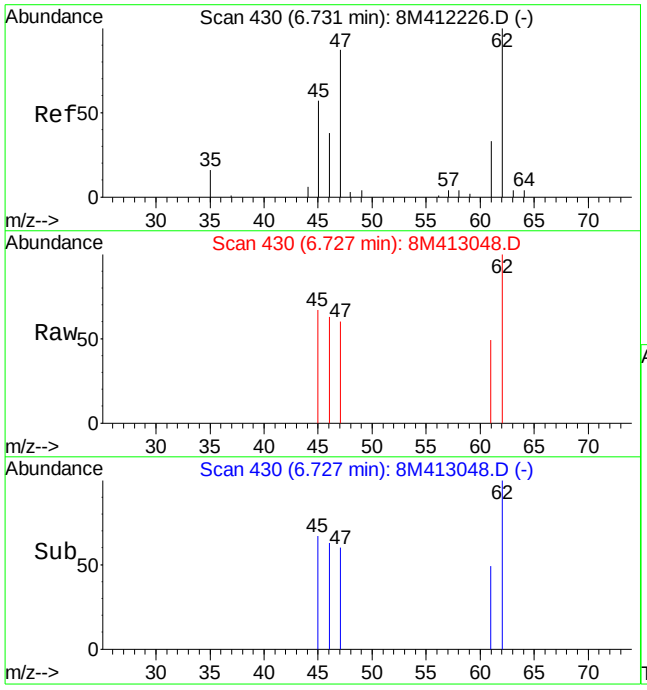

#16
Dimethyl Sulfide
Concen: 0.61 ug/L
RT: 6.73 min Scan# 430
Delta R.T. -0.00 min
Lab File: 8M413048.D
Acq: 16 Jun 2016 22:17

Tgt Ion: 62 Resp: 2378

Ion	Ratio	Lower	Upper
62	100		
47	80.0	53.2	124.0

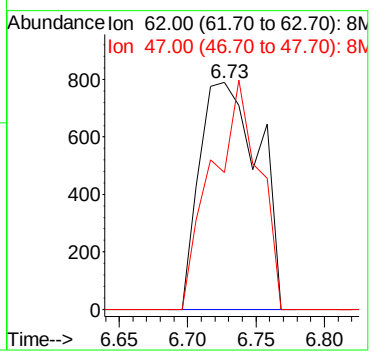

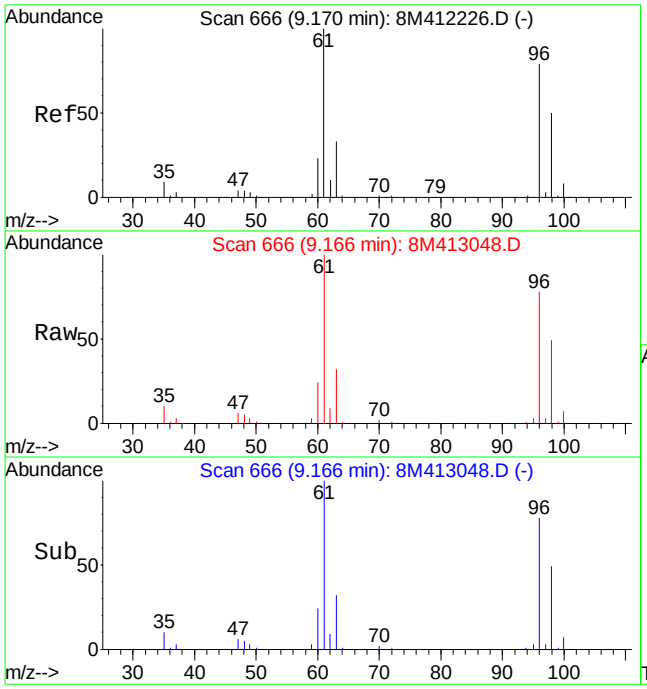

#32
cis-1,2-Dichloroethene
Concen: 25.99 ug/L
RT: 9.17 min Scan# 666
Delta R.T. -0.00 min
Lab File: 8M413048.D
Acq: 16 Jun 2016 22:17

Tgt Ion: 96 Resp: 202797

Ion	Ratio	Lower	Upper
96	100		
61	127.2	91.5	213.5

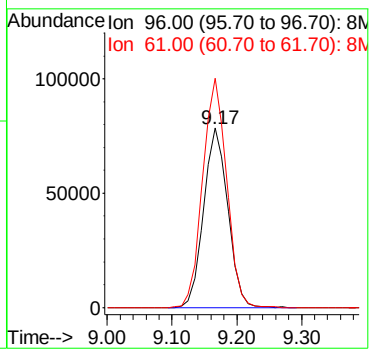

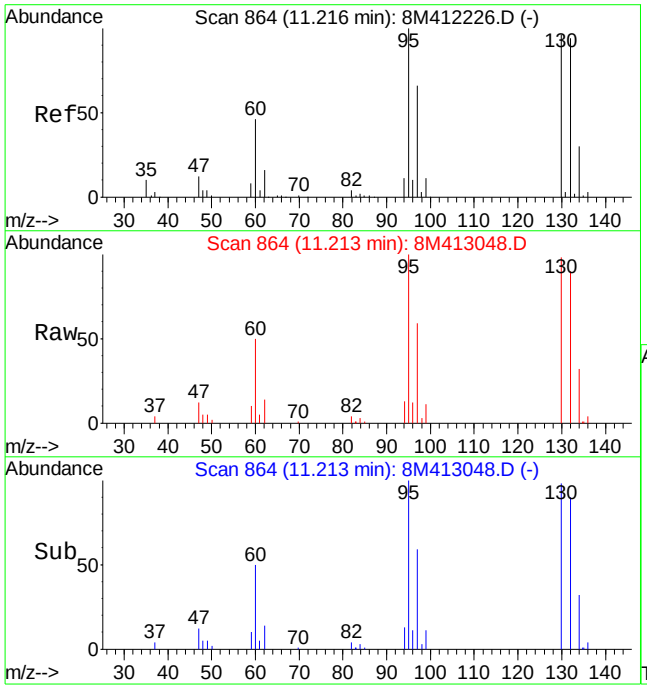

#47
Trichloroethene
Concen: 12.74 ug/L
RT: 11.21 min Scan# 864
Delta R.T. -0.00 min
Lab File: 8M413048.D
Acq: 16 Jun 2016 22:17

Tgt Ion:130 Resp: 94874

Ion	Ratio	Lower	Upper
130	100		
132	95.2	58.0	135.2
95	107.2	64.9	151.5

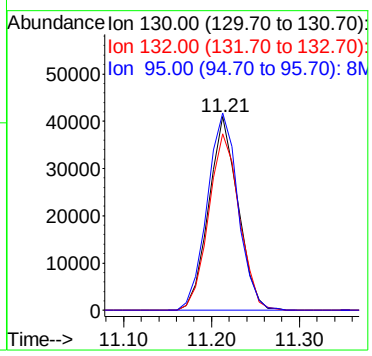

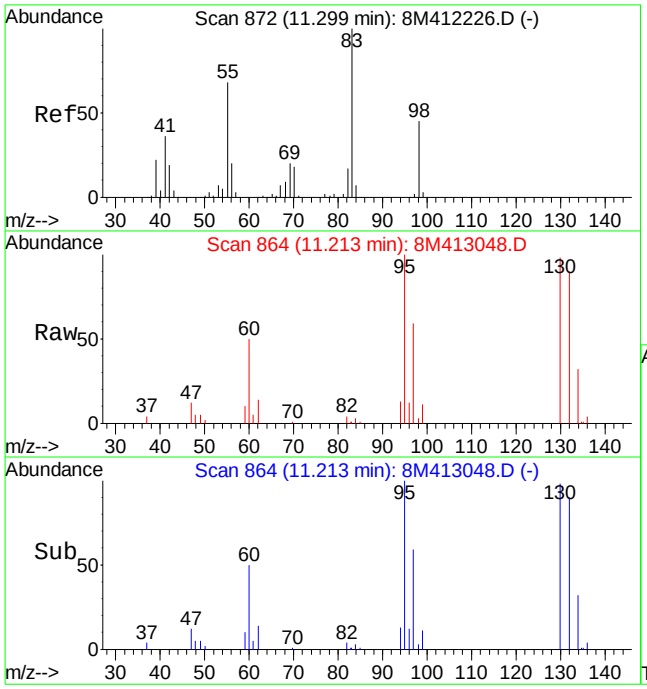

#48
Methylcyclohexane
Concen: 0.15 ug/L
RT: 11.21 min Scan# 864
Delta R.T. -0.09 min
Lab File: 8M413048.D
Acq: 16 Jun 2016 22:17

Tgt Ion: 83 Resp: 1645

Ion	Ratio	Lower	Upper
83	100		
55	0.0	40.9	95.3#
98	162.2	28.1	65.7#

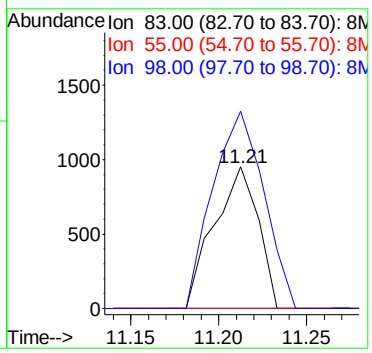

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413040.D Vial: 10
Acq On : 16 Jun 2016 18:25 Operator: FJB
Sample : L16060730-04 TB A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:18:23 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	705973	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	535923	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	295335	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	209210	27.5818 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.32%		
43) 1,2-Dichloroethane-d4	10.31	65	232627	28.6025 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 114.40%		
58) Toluene-d8	12.68	98	727511	25.9383 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.76%		
80) p-Bromofluorobenzene	16.08	95	310344	25.3778 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.52%		

Target Compounds					Qvalue
36) Tetrahydrofuran	9.63	42	871	1.1332 ug/L	92

(#) = qualifier out of range (m) = manual integration
8M413040.D 8260WT.M Mon Jun 20 09:19:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413040.D Vial: 10
Acq On : 16 Jun 2016 18:25 Operator: FJB
Sample : L16060730-04 TB A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 8:18 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

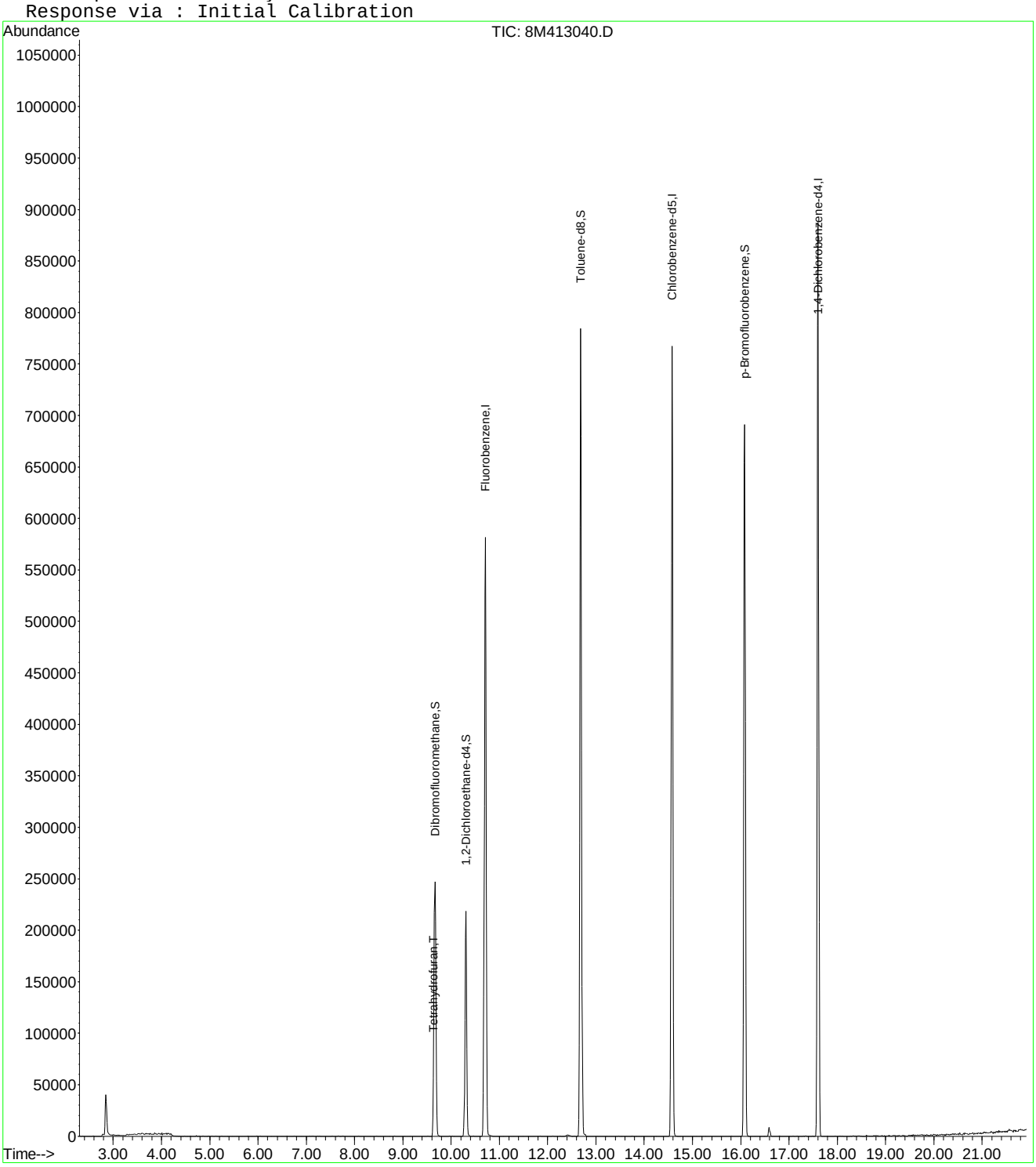

8M413040.D 8260WT.M Mon Jun 20 09:19:44 2016 Page 2

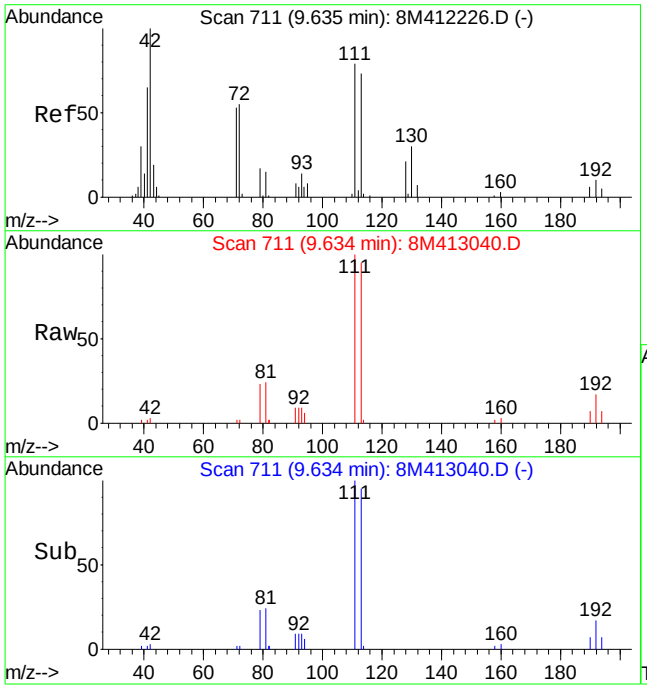

#36
Tetrahydrofuran
Concen: 1.13 ug/L
RT: 9.63 min Scan# 711
Delta R.T. -0.00 min
Lab File: 8M413040.D
Acq: 16 Jun 2016 18:25

Tgt Ion: 42 Resp: 871

Ion	Ratio	Lower	Upper
42	100		
72	52.4	33.8	78.8
71	45.8	32.0	74.8

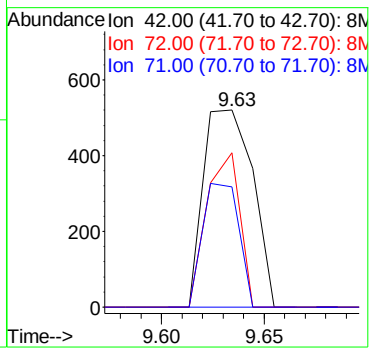

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:40:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	823748	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	571926	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	299321	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	12.68	98	567	0.0189 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.08%#	
80) p-Bromofluorobenzene	16.08	95	313	0.0253 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	3836	0.2778 ug/L	91
3) Chloromethane	3.62	50	3658	0.4537 ug/L	95
4) Vinyl Chloride	3.85	62	2516	0.2630 ug/L #	58
5) 1,3-Butadiene	3.91	54	2079	0.2592 ug/L	71
6) Bromomethane	4.73	94	1152	0.6530 ug/L #	55
7) Chloroethane	4.90	64	1112	0.2113 ug/L #	72
8) Trichlorofluoromethane	5.35	101	2706	0.1520 ug/L #	53
10) Isoprene	5.93	67	2147	0.1987 ug/L	85
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1746	0.2087 ug/L	97
14) 1,1-Dichloroethene	6.48	61	3332	0.2501 ug/L	75
16) Dimethyl Sulfide	6.73	62	1099	0.2308 ug/L	95
19) Methylene Chloride	7.26	84	3414	0.4028 ug/L	88
20) Carbon Disulfide	7.30	76	10739	0.3853 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	4927	0.2686 ug/L #	60
23) trans-1,2-Dichloroethene	7.70	61	3879	0.3170 ug/L	98
24) n-Hexane	7.78	57	2794	0.3075 ug/L	85
26) Vinyl Acetate	8.30	43	1973	0.2259 ug/L #	70
27) 1,1-Dichloroethane	8.33	63	4881	0.3212 ug/L #	88
31) 2,2-Dichloropropane	9.11	77	4966	0.3101 ug/L	89
32) cis-1,2-Dichloroethene	9.17	96	2958	0.3128 ug/L	87
33) Chloroform	9.37	83	5564	0.3101 ug/L	95
34) 1-Bromopropane	9.52	122	210	0.1551 ug/L #	1
35) Bromochloromethane	9.60	130	1386	0.2858 ug/L	76
36) Tetrahydrofuran	9.62	42	1849	2.0617 ug/L #	60
38) 1,1,1-Trichloroethane	9.91	97	4978	0.2921 ug/L	95
39) Cyclohexane	9.93	56	3120	0.2644 ug/L #	85
40) 1,1-Dichloropropene	10.11	75	3779	0.2909 ug/L	97
42) Carbon Tetrachloride	10.24	117	4835	0.3194 ug/L #	74
45) 1,2-Dichloroethane	10.43	62	3295	0.2853 ug/L #	81
46) Benzene	10.46	78	11279	0.3333 ug/L	93
47) Trichloroethene	11.20	130	2410	0.2670 ug/L	97
48) Methylcyclohexane	11.31	83	3936	0.2871 ug/L	84
49) 1,2-Dichloropropane	11.42	63	2136	0.2836 ug/L	88
50) Bromodichloromethane	11.73	83	3767	0.2845 ug/L #	91
52) Dibromomethane	11.82	93	700	0.1570 ug/L #	59
53) 2-Chloroethyl Vinyl Ether	12.02	63	847	0.2616 ug/L #	47
55) cis-1,3-Dichloropropene	12.36	75	4763	0.3535 ug/L	84
56) Dimethyl Disulfide	12.63	79	1647	0.2290 ug/L	82
59) Toluene	12.78	91	11513	0.3243 ug/L	92
60) Ethyl Methacrylate	12.89	69	1631	0.2392 ug/L #	64

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:40:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
62)	trans-1,3-Dichloropropene	12.96	75	3626	0.3047 ug/L		82
63)	1,1,2-Trichloroethane	13.18	97	1409	0.2515 ug/L		98
65)	1,3-Dichloropropane	13.49	76	2584	0.2590 ug/L		93
66)	Tetrachloroethene	13.61	164	2678	0.3520 ug/L	#	75
67)	Dibromochloromethane	13.87	129	2126	0.2599 ug/L		79
68)	1,2-Dibromoethane	14.12	107	1895	0.3394 ug/L		91
69)	1-Chlorohexane	14.21	91	3835	0.3164 ug/L		99
70)	Chlorobenzene	14.62	112	7968	0.3328 ug/L		88
71)	1,1,1,2-Tetrachloroethane	14.67	131	2872	0.3096 ug/L		87
72)	Ethylbenzene	14.64	106	3844	0.2934 ug/L		81
73)	m-,p-Xylene	14.75	106	10447	0.6799 ug/L		96
74)	o-Xylene	15.31	106	4577	0.3047 ug/L		97
75)	Styrene	15.35	104	7545	0.3062 ug/L		95
76)	Bromoform	15.84	173	1301	0.2681 ug/L	#	51
77)	Isopropylbenzene	15.74	105	13119	0.3287 ug/L		90
79)	1,1,2,2-Tetrachloroethane	15.96	83	1714	0.2853 ug/L	#	85
83)	n-Propylbenzene	16.24	91	15676	0.3357 ug/L		92
84)	Bromobenzene	16.38	156	2859	0.2977 ug/L		90
85)	1,3,5-Trimethylbenzene	16.43	105	10873	0.3196 ug/L		99
86)	2-Chlorotoluene	16.52	91	11133	0.3415 ug/L		96
87)	4-Chlorotoluene	16.56	91	10305	0.3499 ug/L		97
88)	a-Methylstyrene	16.83	118	4090	0.2534 ug/L		86
89)	tert-Butylbenzene	16.90	134	1734	0.2606 ug/L		72
90)	1,2,4-Trimethylbenzene	16.95	105	10734	0.3069 ug/L		89
91)	sec-Butylbenzene	17.16	105	13749	0.3436 ug/L		97
92)	p-Isopropyltoluene	17.32	119	10847	0.3192 ug/L		95
93)	1,3-Dichlorobenzene	17.52	146	6023	0.3257 ug/L		99
94)	1,4-Dichlorobenzene	17.65	146	6152	0.3299 ug/L	#	60
95)	n-Butylbenzene	17.85	91	11161	0.3323 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	5711	0.3472 ug/L		92
98)	1,2,4-Trichlorobenzene	20.29	180	4203	0.3418 ug/L		91
99)	Hexachlorobutadiene	20.43	225	1894	0.3297 ug/L		84
100)	Naphthalene	20.65	128	6039	0.3306 ug/L		91
101)	1,2,3-Trichlorobenzene	20.96	180	3279	0.3161 ug/L		86

(#) = qualifier out of range (m) = manual integration

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2778	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.4537	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.2630	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	0.2592	0.0	100	0.03
6	T	Bromomethane	-1.0000	0.9911	0.0	100	0.00
7	T	Chloroethane	-1.0000	0.2113	0.0	100	0.00
8	T	Trichlorofluoromethane	-1.0000	0.1520	0.0	100	-0.02
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.90#
10	T	Isoprene	-1.0000	0.1987	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.13#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2087	0.0	100	0.00
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	-1.0000	0.2501	0.0	100	0.02
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.58#
16	T	Dimethyl Sulfide	-1.0000	0.2308	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.0000	0.0	0	-7.00#
19	T	Methylene Chloride	-1.0000	0.4028	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.3853	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.43#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2686	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	-1.0000	0.3170	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.3075	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.2259	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.3212	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.98#
31	T	2,2-Dichloropropane	-1.0000	0.3101	0.0	100	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.3128	0.0	100	0.00
33	C	Chloroform	0.3000	0.3101	-3.4	100	0.00
34		1-Bromopropane	-1.0000	0.1551	0.0	100	0.00
35	T	Bromochloromethane	-1.0000	0.2858	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	2.0617	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	-1.0000	0.2921	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.2644	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.2909	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	-1.0000	0.3194	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	-1.0000	0.2853	0.0	100	0.00
46	T	Benzene	-1.0000	0.3333	0.0	100	0.00
47	T	Trichloroethene	-1.0000	0.2670	0.0	100	-0.01
48	T	Methylcyclohexane	-1.0000	0.2871	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2836	0.0	100	0.00
50	T	Bromodichloromethane	-1.0000	0.2845	0.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	-1.0000	0.1570	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2616	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.05#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.3535	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2290	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0189	0.0	100	0.00
59	C	Toluene	-1.0000	0.3243	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2392	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3047	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.2515	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	-1.0000	0.2590	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.3520	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.2599	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.3394	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.3164	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.3328	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.3096	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.2934	0.0	100	-0.01
73	T	m-,p-Xylene	-1.0000	0.6799	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.3047	0.0	100	0.00
75	T	Styrene	-1.0000	0.3062	0.0	100	0.00
76	P	Bromoform	-1.0000	0.2681	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.3287	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2853	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0253	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.1103	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	-1.0000	0.3357	0.0	100	0.00
84	T	Bromobenzene	0.3000	0.2977	0.8	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.3196	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.3415	0.0	100	0.00
87	T	4-Chlorotoluene	-1.0000	0.3499	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2534	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.2606	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.3069	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3436	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.3192	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.3257	0.0	100	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.3299	-10.0	100	0.00
95	T	n-Butylbenzene	-1.0000	0.3323	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.3472	-15.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.3418	0.0	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.3297	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.3306	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.3161	-5.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412220.D 8260WT.M Sat May 14 18:03:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	801173	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	557498	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	293108	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
80) p-Bromofluorobenzene	16.08	95	343	0.0286 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	5478	0.3262 ug/L	79
3) Chloromethane	3.63	50	3930	0.2484 ug/L	85
4) Vinyl Chloride	3.84	62	3512	0.3288 ug/L	97
5) 1,3-Butadiene	3.90	54	2479	0.2375 ug/L #	75
6) Bromomethane	4.73	94	1343	0.9497 ug/L	85
7) Chloroethane	4.90	64	2219	0.3174 ug/L #	43
8) Trichlorofluoromethane	5.36	101	6974	0.3289 ug/L #	93
10) Isoprene	5.94	67	4288	0.3952 ug/L #	62
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	3168	0.3263 ug/L #	40
14) 1,1-Dichloroethene	6.47	61	5431	0.2882 ug/L	92
16) Dimethyl Sulfide	6.74	62	1708	0.2453 ug/L	64
19) Methylene Chloride	7.24	84	3785	0.4239 ug/L #	43
20) Carbon Disulfide	7.29	76	12437	0.4565 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	6580	0.3336 ug/L #	76
23) trans-1,2-Dichloroethene	7.71	61	4990	0.2928 ug/L	96
24) n-Hexane	7.79	57	3110	0.2011 ug/L	99
26) Vinyl Acetate	8.31	43	2753	0.1566 ug/L	100
27) 1,1-Dichloroethane	8.32	63	5655	0.2774 ug/L #	92
31) 2,2-Dichloropropane	9.10	77	6035	0.3360 ug/L	82
32) cis-1,2-Dichloroethene	9.16	96	3837	0.3762 ug/L	74
33) Chloroform	9.37	83	7267	0.3842 ug/L	100
34) 1-Bromopropane	9.50	122	234	0.1456 ug/L #	1
35) Bromochloromethane	9.60	130	1674	0.3137 ug/L	62
36) Tetrahydrofuran	9.62	42	447	0.2146 ug/L #	41
38) 1,1,1-Trichloroethane	9.91	97	6304	0.3305 ug/L	90
39) Cyclohexane	9.94	56	4658	0.2238 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	5172	0.3768 ug/L	80
42) Carbon Tetrachloride	10.25	117	5692	0.3172 ug/L	95
45) 1,2-Dichloroethane	10.43	62	4443	0.2796 ug/L #	63
46) Benzene	10.46	78	14456	0.4134 ug/L #	77
47) Trichloroethene	11.21	130	3659	0.3626 ug/L	98
48) Methylcyclohexane	11.29	83	5025	0.3562 ug/L	84
49) 1,2-Dichloropropane	11.42	63	3060	0.3007 ug/L	98
50) Bromodichloromethane	11.73	83	4734	0.3343 ug/L #	93
52) Dibromomethane	11.82	93	1805	0.3767 ug/L	84
55) cis-1,3-Dichloropropene	12.36	75	5008	0.3514 ug/L	90
56) Dimethyl Disulfide	12.63	79	1921	0.2573 ug/L	85
59) Toluene	12.78	91	14742	0.4416 ug/L	98
60) Ethyl Methacrylate	12.90	69	2062	0.3292 ug/L	66
62) trans-1,3-Dichloropropene	12.96	75	3693	0.3171 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
63)	1,1,2-Trichloroethane	13.18	97	2326	0.4391 ug/L		70
65)	1,3-Dichloropropane	13.49	76	3163	0.3219 ug/L		88
66)	Tetrachloroethene	13.61	164	3164	0.4185 ug/L		93
67)	Dibromochloromethane	13.87	129	3113	0.3727 ug/L		86
68)	1,2-Dibromoethane	14.12	107	2076	0.3760 ug/L		90
69)	1-Chlorohexane	14.21	91	4746	0.4174 ug/L		80
70)	Chlorobenzene	14.62	112	9180	0.3960 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.66	131	3501	0.3876 ug/L		95
72)	Ethylbenzene	14.65	106	5348	0.4066 ug/L		84
73)	m-,p-Xylene	14.75	106	13269	0.8757 ug/L		89
74)	o-Xylene	15.31	106	6019	0.3943 ug/L		97
75)	Styrene	15.35	104	9370	0.3849 ug/L		95
76)	Bromoform	15.83	173	1198	0.2500 ug/L	#	76
77)	Isopropylbenzene	15.73	105	16528	0.4270 ug/L		92
79)	1,1,2,2-Tetrachloroethane	15.96	83	1999	0.3419 ug/L	#	83
83)	n-Propylbenzene	16.25	91	19410	0.4297 ug/L		95
84)	Bromobenzene	16.37	156	3319	0.3524 ug/L		75
85)	1,3,5-Trimethylbenzene	16.42	105	13794	0.4127 ug/L		95
86)	2-Chlorotoluene	16.51	91	13678	0.4729 ug/L		90
87)	4-Chlorotoluene	16.56	91	12572	0.4219 ug/L		98
88)	a-Methylstyrene	16.84	118	5739	0.3485 ug/L		96
89)	tert-Butylbenzene	16.90	134	2254	0.3403 ug/L		55
90)	1,2,4-Trimethylbenzene	16.95	105	13859	0.4051 ug/L		90
91)	sec-Butylbenzene	17.17	105	17612	0.4382 ug/L		90
92)	p-Isopropyltoluene	17.32	119	13616	0.3968 ug/L		90
93)	1,3-Dichlorobenzene	17.52	146	6961	0.3724 ug/L		86
94)	1,4-Dichlorobenzene	17.64	146	7149	0.3832 ug/L	#	1
95)	n-Butylbenzene	17.85	91	15223	0.4664 ug/L		91
96)	1,2-Dichlorobenzene	18.14	146	6129	0.3742 ug/L		92
98)	1,2,4-Trichlorobenzene	20.28	180	5035	0.3969 ug/L		97
99)	Hexachlorobutadiene	20.44	225	2420	0.4122 ug/L		83
100)	Naphthalene	20.65	128	7474	0.3874 ug/L	#	84
101)	1,2,3-Trichlorobenzene	20.96	180	4378	0.4056 ug/L	#	78

(#) = qualifier out of range (m) = manual integration
8M412221.D 8260WT.M Fri May 13 14:20:39 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

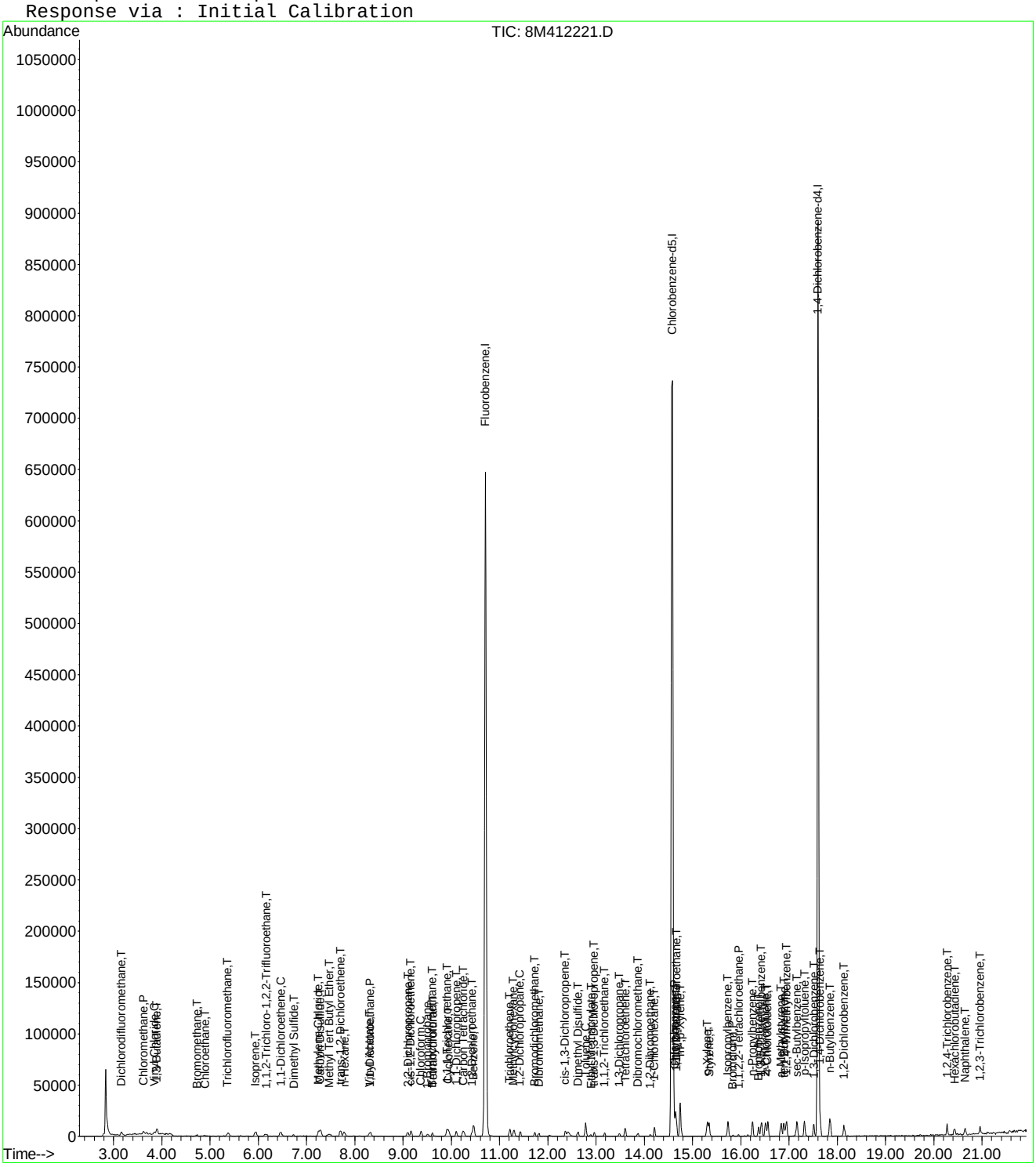

8M412221.D 8260WT.M Fri May 13 14:20:40 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	0.4000	0.4078	-2.0	100	0.00
3	P	Chloromethane	-1.0000	0.5012	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.3775	5.6	100	0.00
5	T	1,3-Butadiene	-1.0000	0.3178	0.0	100	0.02
6	T	Bromomethane	-1.0000	1.0253	0.0	100	0.00
7	T	Chloroethane	0.4000	0.4335	-8.4	100	0.00
8	T	Trichlorofluoromethane	0.4000	0.4029	-0.7	100	-0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.90#
10	T	Isoprene	0.4000	0.4079	-2.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.13#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3894	0.0	100	0.02
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	0.4000	0.4192	-4.8	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.58#
16	T	Dimethyl Sulfide	0.4000	0.3687	7.8	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.2179	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4591	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4587	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.43#
22	T	Methyl Tert Butyl Ether	-1.0000	0.3688	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.4193	-4.8	100	0.00
24	T	n-Hexane	-1.0000	0.3519	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.3241	0.0	100	0.02
27	P	1,1-Dichloroethane	0.4000	0.3826	4.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.98#
31	T	2,2-Dichloropropane	0.4000	0.3874	3.1	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.4172	-4.3	100	-0.01
33	C	Chloroform	0.4000	0.4164	-4.1	100	0.00
34		1-Bromopropane	-1.0000	0.1776	0.0	100	-0.01
35	T	Bromochloromethane	0.4000	0.3550	11.3	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.5125	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	0.4000	0.3803	4.9	100	0.00
39	T	Cyclohexane	-1.0000	0.4058	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4093	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	0.4000	0.3867	3.3	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	0.4000	0.3955	1.1	100	0.00
46	T	Benzene	0.4000	0.4393	-9.8	100	0.00
47	T	Trichloroethene	0.4000	0.4169	-4.2	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3768	0.0	100	-0.01
49	C	1,2-Dichloropropane	0.4000	0.4177	-4.4	100	0.00
50	T	Bromodichloromethane	0.4000	0.3676	8.1	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	0.4000	0.4162	-4.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1401	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.05#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3821	4.5	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2746	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0000	0.0	0	-12.68#
59	C	Toluene	0.4000	0.4259	-6.5	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3102	0.0	100	0.02
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3184	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.4259	-6.5	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	0.4000	0.3253	18.7	100	0.00
66	T	Tetrachloroethene	0.4000	0.4267	-6.7	100	0.00
67	T	Dibromochloromethane	0.4000	0.3904	2.4	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.3814	4.6	100	0.00
69	T	1-Chlorohexane	0.4000	0.4017	-0.4	100	0.00
70	P	Chlorobenzene	0.4000	0.3933	1.7	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3872	3.2	100	0.00
72	C	Ethylbenzene	0.4000	0.4188	-4.7	100	0.00
73	T	m-,p-Xylene	0.8000	0.8859	-10.7	100	0.00
74	T	o-Xylene	-1.0000	0.4110	0.0	100	0.00
75	T	Styrene	0.4000	0.3901	2.5	100	0.00
76	P	Bromoform	-1.0000	0.2533	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.4249	-6.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.3398	15.1	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0283	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.14#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	0.4000	0.4245	-6.1	100	0.00
84	T	Bromobenzene	0.4000	0.3529	11.8	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.4141	-3.5	100	0.00
86	T	2-Chlorotoluene	0.4000	0.4284	-7.1	100	0.00
87	T	4-Chlorotoluene	0.4000	0.4359	-9.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.3631	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3459	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	0.4000	0.4046	-1.2	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.4494	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4092	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.3844	3.9	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.3915	2.1	100	0.00
95	T	n-Butylbenzene	-1.0000	0.4628	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.3805	4.9	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	0.4000	0.4182	-4.5	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.4302	-7.5	100	0.00
100	T	Naphthalene	0.4000	0.4178	-4.5	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.4310	-7.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412221.D 8260WT.M Sat May 14 18:03:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	795577	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	547129	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	284579	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.65	111	3962	0.3966 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery	= 1.60%#	
43) 1,2-Dichloroethane-d4	10.31	65	3835	0.3356 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery	= 1.36%#	
58) Toluene-d8	12.68	98	14023	0.4957 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 2.00%#	
80) p-Bromofluorobenzene	16.08	95	6483	0.5565 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery	= 2.24%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	12402	0.7438 ug/L	97
3) Chloromethane	3.62	50	8415	0.5357 ug/L #	75
4) Vinyl Chloride	3.84	62	9412	0.8873 ug/L	89
5) 1,3-Butadiene	3.90	54	6974	0.6729 ug/L	81
6) Bromomethane	4.73	94	4114	1.3123 ug/L	92
7) Chloroethane	4.90	64	4983	0.7178 ug/L #	80
8) Trichlorofluoromethane	5.38	101	17133	0.8136 ug/L #	96
9) Diethyl ether	5.90	59	20707	3.2140 ug/L	84
10) Isoprene	5.94	67	11176	1.0373 ug/L	76
11) Acrolein	6.14	56	246	0.4300 ug/L #	15
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	8135	0.8438 ug/L	96
13) Acetone	6.24	43	413	0.2115 ug/L #	48
14) 1,1-Dichloroethene	6.46	61	12947	0.6919 ug/L	91
15) Tert-Butyl Alcohol	6.59	59	3316	7.3747 ug/L #	55
16) Dimethyl Sulfide	6.72	62	4505	0.6515 ug/L	79
18) Methyl acetate	7.00	43	2119	0.3630 ug/L #	66
19) Methylene Chloride	7.24	84	8723	0.9837 ug/L #	43
20) Carbon Disulfide	7.29	76	28246	1.0441 ug/L	100
21) Acrylonitrile	7.43	53	2164	0.8620 ug/L	76
22) Methyl Tert Butyl Ether	7.47	73	16998	0.8678 ug/L	84
23) trans-1,2-Dichloroethene	7.70	61	12571	0.7427 ug/L	100
24) n-Hexane	7.78	57	9382	0.6109 ug/L	82
25) Diisopropyl ether	8.12	45	95400	2.1939 ug/L #	91
26) Vinyl Acetate	8.30	43	6750	0.3867 ug/L #	89
27) 1,1-Dichloroethane	8.32	63	14721	0.7271 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	97972	3.2102 ug/L	88
29) 2-Butanone	8.88	43	380	0.1215 ug/L #	57
30) Propionitrile	8.99	54	1593	2.0138 ug/L #	56
31) 2,2-Dichloropropane	9.09	77	14691	0.8236 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	9482	0.9362 ug/L	72
33) Chloroform	9.37	83	18494	0.9845 ug/L	94
34) 1-Bromopropane	9.50	122	1092	0.6844 ug/L	80
35) Bromochloromethane	9.61	130	5234	0.9877 ug/L #	55
36) Tetrahydrofuran	9.63	42	5415	2.6185 ug/L #	68
38) 1,1,1-Trichloroethane	9.91	97	17074	0.9016 ug/L	92
39) Cyclohexane	9.94	56	11865	0.5740 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	13172	0.9663 ug/L	87
41) Tert-Amyl-Methyl ether	10.21	73	90255	4.6173 ug/L #	88
42) Carbon Tetrachloride	10.25	117	14515	0.8146 ug/L	95
45) 1,2-Dichloroethane	10.42	62	10675	0.6766 ug/L	85

(#) = qualifier out of range (m) = manual integration
8M412222.D 8260WT.M Fri May 13 14:49:47 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	10.47	78	34504	0.9938 ug/L		84
47)	Trichloroethene	11.21	130	8752	0.8735 ug/L		93
48)	Methylcyclohexane	11.30	83	13513	0.9646 ug/L		79
49)	1,2-Dichloropropane	11.43	63	7057	0.6982 ug/L	#	67
50)	Bromodichloromethane	11.73	83	12147	0.8638 ug/L		96
52)	Dibromomethane	11.81	93	4130	0.8681 ug/L		95
53)	2-Chloroethyl Vinyl Ether	12.03	63	2694	0.6366 ug/L		86
54)	4-Methyl-2-Pentanone	12.06	58	848	0.3671 ug/L	#	41
55)	cis-1,3-Dichloropropene	12.36	75	12521	0.8847 ug/L		97
56)	Dimethyl Disulfide	12.63	79	5799	0.7821 ug/L		96
59)	Toluene	12.79	91	37114	1.1328 ug/L		95
60)	Ethyl Methacrylate	12.88	69	5490	0.8930 ug/L		69
62)	trans-1,3-Dichloropropene	12.96	75	10328	0.9035 ug/L		92
63)	1,1,2-Trichloroethane	13.18	97	5274	1.0144 ug/L		93
64)	2-Hexanone	13.10	58	397	0.2127 ug/L	#	1
65)	1,3-Dichloropropane	13.49	76	9673	1.0032 ug/L		73
66)	Tetrachloroethene	13.61	164	7373	0.9937 ug/L		95
67)	Dibromochloromethane	13.87	129	7358	0.8977 ug/L		95
68)	1,2-Dibromoethane	14.13	107	5123	0.9454 ug/L		95
69)	1-Chlorohexane	14.21	91	12790	1.1461 ug/L		79
70)	Chlorobenzene	14.62	112	25662	1.1281 ug/L		89
71)	1,1,1,2-Tetrachloroethane	14.66	131	8722	0.9838 ug/L		94
72)	Ethylbenzene	14.65	106	13009	1.0078 ug/L		87
73)	m-,p-Xylene	14.75	106	30465	2.0486 ug/L		84
74)	o-Xylene	15.31	106	15133	1.0101 ug/L		84
75)	Styrene	15.35	104	23191	0.9707 ug/L		91
76)	Bromoform	15.84	173	3875	0.8240 ug/L		96
77)	Isopropylbenzene	15.74	105	41382	1.0895 ug/L		95
79)	1,1,2,2-Tetrachloroethane	15.95	83	5604	0.9873 ug/L	#	93
81)	1,2,3-Trichloropropane	16.15	110	1355	0.7428 ug/L	#	1
82)	trans-1,4-Dichloro-2-Buten	16.19	53	962	0.3479 ug/L	#	1
83)	n-Propylbenzene	16.25	91	48249	1.1002 ug/L		99
84)	Bromobenzene	16.37	156	9598	1.0497 ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	33355	1.0278 ug/L		96
86)	2-Chlorotoluene	16.51	91	33408	1.1895 ug/L		94
87)	4-Chlorotoluene	16.56	91	29548	1.0213 ug/L		95
88)	a-Methylstyrene	16.84	118	14414	0.9014 ug/L		91
89)	tert-Butylbenzene	16.89	134	6686	1.0398 ug/L		86
90)	1,2,4-Trimethylbenzene	16.95	105	36066	1.0857 ug/L		96
91)	sec-Butylbenzene	17.16	105	42128	1.0796 ug/L		96
92)	p-Isopropyltoluene	17.32	119	35424	1.0633 ug/L		94
93)	1,3-Dichlorobenzene	17.52	146	18409	1.0144 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	19031	1.0506 ug/L	#	62
95)	n-Butylbenzene	17.85	91	35772	1.1288 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	16104	1.0126 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.14	75	1262	1.0152 ug/L	#	53
98)	1,2,4-Trichlorobenzene	20.28	180	11494	0.9331 ug/L		98
99)	Hexachlorobutadiene	20.43	225	5421	0.9510 ug/L		98
100)	Naphthalene	20.65	128	16581	0.8853 ug/L		100
101)	1,2,3-Trichlorobenzene	20.96	180	10306	0.9835 ug/L		94

(#) = qualifier out of range (m) = manual integration
8M412222.D 8260WT.M Fri May 13 14:49:48 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

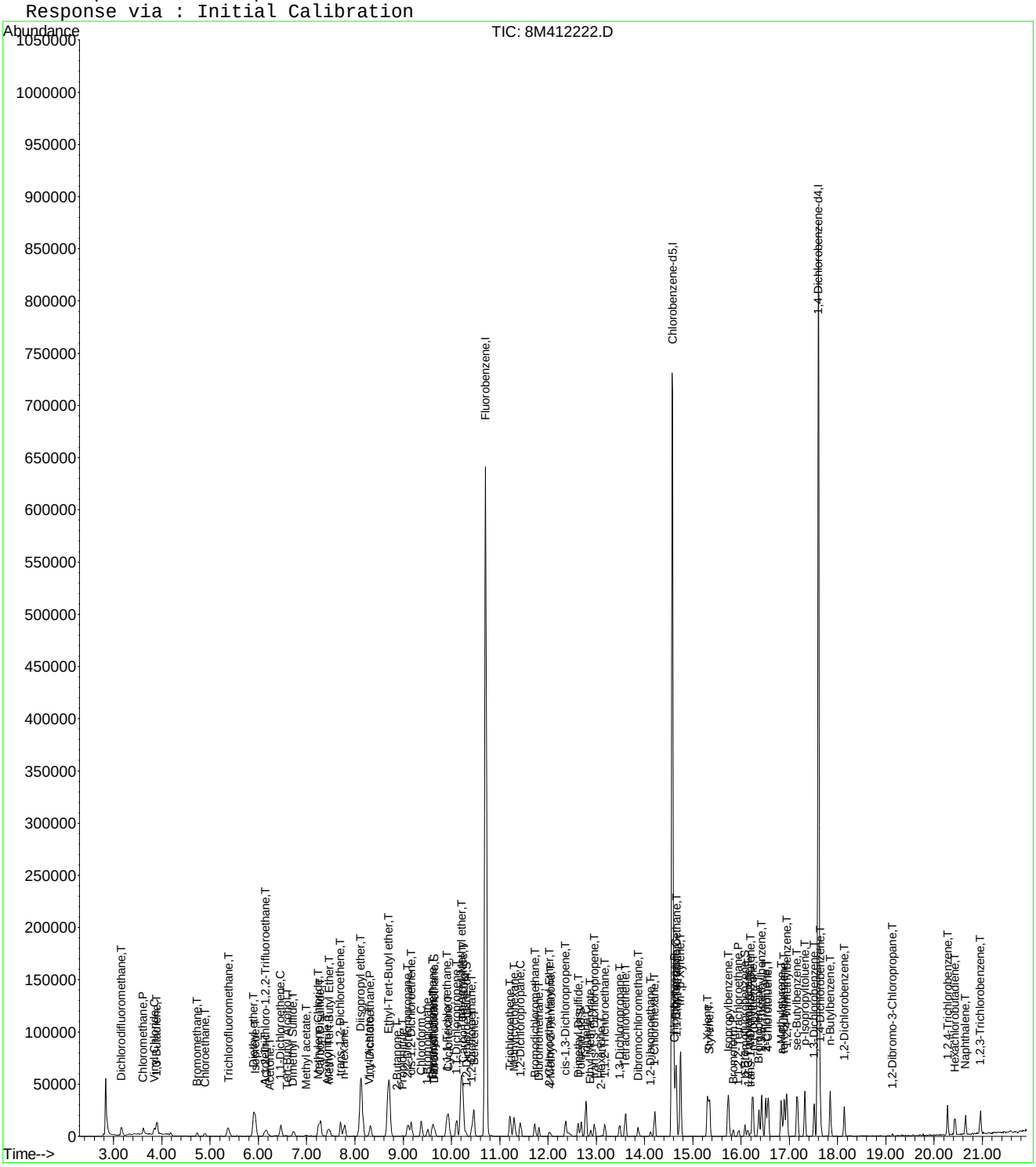

8M412222.D 8260WT.M Fri May 13 14:49:48 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:05:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9298	7.0	100	0.00
3	P	Chloromethane	1.0000	1.0808	-8.1	100	0.00
4	C	Vinyl Chloride	1.0000	1.0189	-1.9	100	0.00
5	T	1,3-Butadiene	-1.0000	0.9002	0.0	100	0.02
6	T	Bromomethane	1.0000	1.2082	-20.8	100	0.00
7	T	Chloroethane	1.0000	0.9803	2.0	100	0.00
8	T	Trichlorofluoromethane	1.0000	0.9968	0.3	100	0.00
9	T	Diethyl ether	5.0000	5.0462	-0.9	100	0.00
10	T	Isoprene	1.0000	1.0707	-7.1	100	0.00
11	T	Acrolein	-1.0000	0.6696	0.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0069	-0.7	100	0.00
13	T	Acetone	-1.0000	0.4614	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	1.0064	-0.6	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	11.5604	0.0	0	0.02
16	T	Dimethyl Sulfide	1.0000	0.9794	2.1	100	-0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.8758	0.0	100	0.00
19	T	Methylene Chloride	1.0000	1.0655	-6.5	100	0.00
20	T	Carbon Disulfide	1.0000	1.0492	-4.9	100	0.00
21	T	Acrylonitrile	2.5000	1.8633	25.5#	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9593	4.1	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	1.0636	-6.4	100	0.00
24	T	n-Hexane	-1.0000	1.0690	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	5.1784	-3.6	100	0.00
26	T	Vinyl Acetate	-1.0000	0.8002	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0029	-0.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.9635	0.7	100	0.00
29	T	2-Butanone	-1.0000	0.2889	0.0	100	0.00
30	T	Propionitrile	5.0000	4.1566	16.9	100	0.00
31	T	2,2-Dichloropropane	1.0000	0.9498	5.0	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	1.0383	-3.8	100	0.00
33	C	Chloroform	1.0000	1.0671	-6.7	100	0.00
34		1-Bromopropane	1.0000	0.8348	16.5	100	-0.01
35	T	Bromochloromethane	1.0000	1.1177	-11.8	100	0.00
36	T	Tetrahydrofuran	5.0000	6.2516	-25.0#	100	0.00
37	S	Dibromofluoromethane	0.5000	0.4635	7.3	100	-0.01
38	T	1,1,1-Trichloroethane	1.0000	1.0372	-3.7	100	0.00
39	T	Cyclohexane	1.0000	1.0411	-4.1	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0498	-5.0	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	5.0344	-0.7	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.9930	0.7	100	0.00
43	S	1,2-Dichloroethane-d4	0.5000	0.4184	16.3	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	1.0000	0.9570	4.3	100	0.00
46	T	Benzene	1.0000	1.0558	-5.6	100	0.00
47	T	Trichloroethene	1.0000	1.0041	-0.4	100	0.00
48	T	Methylcyclohexane	-1.0000	1.0205	0.0	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.9700	3.0	100	0.00
50	T	Bromodichloromethane	1.0000	0.9500	5.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	1.0000	0.9590	4.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.8616	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.6639	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:05:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9621	3.8	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.8348	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	0.5000	0.4897	2.1	100	0.00
59	C	Toluene	1.0000	1.0927	-9.3	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.8416	15.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	1.0000	0.9073	9.3	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.9840	1.6	100	0.00
64	T	2-Hexanone	-1.0000	0.3525	0.0	100	-0.01
65	T	1,3-Dichloropropane	1.0000	1.0137	-1.4	100	0.00
66	T	Tetrachloroethene	1.0000	1.0132	-1.3	100	0.00
67	T	Dibromochloromethane	1.0000	0.9402	6.0	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.9590	4.1	100	0.00
69	T	1-Chlorohexane	1.0000	1.1031	-10.3	100	0.00
70	P	Chlorobenzene	1.0000	1.1204	-12.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.9829	1.7	100	0.00
72	C	Ethylbenzene	1.0000	1.0381	-3.8	100	0.00
73	T	m-,p-Xylene	2.0000	2.0726	-3.6	100	0.00
74	T	o-Xylene	1.0000	1.0530	-5.3	100	0.00
75	T	Styrene	1.0000	0.9839	1.6	100	0.00
76	P	Bromoform	1.0000	0.8348	16.5	100	0.00
77	T	Isopropylbenzene	1.0000	1.0840	-8.4	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	0.9810	1.9	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5502	0.0	100	0.00
81	T	1,2,3-Trichloropropane	1.0000	0.7703	23.0	100	0.02
82	T	trans-1,4-Dichloro-2-Butene	1.0000	1.1443	-14.4	100	0.00
83	T	n-Propylbenzene	1.0000	1.0868	-8.7	100	0.00
84	T	Bromobenzene	1.0000	1.0510	-5.1	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	1.0314	-3.1	100	0.00
86	T	2-Chlorotoluene	1.0000	1.0778	-7.8	100	0.00
87	T	4-Chlorotoluene	1.0000	1.0553	-5.5	100	0.00
88	T	a-Methylstyrene	-1.0000	0.9394	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	1.0567	-5.7	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	1.0845	-8.5	100	0.00
91	T	sec-Butylbenzene	1.0000	1.1073	-10.7	100	0.00
92	T	p-Isopropyltoluene	1.0000	1.0966	-9.7	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0469	-4.7	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	1.0735	-7.3	100	0.00
95	T	n-Butylbenzene	1.0000	1.1201	-12.0	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0297	-3.0	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.1006	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	1.0000	0.9832	1.7	100	0.00
99	T	Hexachlorobutadiene	1.0000	0.9925	0.7	100	0.00
100	T	Naphthalene	1.0000	0.9547	4.5	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	1.0450	-4.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412222.D 8260WT.M Sat May 14 18:05:50 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	782460	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.57	117	543252	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	286450	25.00	ug/L	0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	8161	0.8307	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.32%#		
43) 1,2-Dichloroethane-d4	10.30	65	9681	0.8613	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.44%#		
58) Toluene-d8	12.68	98	28135	1.0016	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.00%#		
80) p-Bromofluorobenzene	16.08	95	12079	1.0302	ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.12%#		

Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.16	85	24870	1.5166	ug/L	98
3) Chloromethane	3.62	50	16106	1.0425	ug/L	93
4) Vinyl Chloride	3.85	62	18562	1.7792	ug/L	94
5) 1,3-Butadiene	3.90	54	13617	1.3360	ug/L	92
6) Bromomethane	4.73	94	8329	1.8804	ug/L	94
7) Chloroethane	4.90	64	9562	1.4006	ug/L	86
8) Trichlorofluoromethane	5.39	101	34970	1.6885	ug/L	97
9) Diethyl ether	5.90	59	107986	17.0420	ug/L	79
10) Isoprene	5.93	67	20936	1.9757	ug/L	73
11) Acrolein	6.14	56	4864	8.6444	ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	16832	1.7751	ug/L	99
13) Acetone	6.23	43	1519	0.7908	ug/L #	48
14) 1,1-Dichloroethene	6.47	61	25394	1.3798	ug/L	89
15) Tert-Butyl Alcohol	6.58	59	14891	33.6725	ug/L	85
16) Dimethyl Sulfide	6.73	62	9489	1.3953	ug/L	79
17) Iodomethane	6.98	142	1211	1.3472	ug/L #	60
18) Methyl acetate	7.01	43	5064	0.8821	ug/L #	79
19) Methylene Chloride	7.25	84	16579	1.9010	ug/L	52
20) Carbon Disulfide	7.29	76	57693	2.1683	ug/L	98
21) Acrylonitrile	7.43	53	13848	5.6089	ug/L	93
22) Methyl Tert Butyl Ether	7.47	73	33991	1.7644	ug/L	84
23) trans-1,2-Dichloroethene	7.70	61	22786	1.3688	ug/L	88
24) n-Hexane	7.79	57	18282	1.2105	ug/L	84
25) Diisopropyl ether	8.12	45	475271	11.1128	ug/L #	92
26) Vinyl Acetate	8.29	43	15998	0.9318	ug/L	93
27) 1,1-Dichloroethane	8.32	63	30419	1.5277	ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	505010	16.8250	ug/L	89
29) 2-Butanone	8.90	43	2250	0.7313	ug/L #	57
30) Propionitrile	8.99	54	9373	12.0479	ug/L	86
31) 2,2-Dichloropropane	9.10	77	32521	1.8538	ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	18238	1.8309	ug/L	91
33) Chloroform	9.37	83	33543	1.8156	ug/L	99
34) 1-Bromopropane	9.52	122	2513	1.6014	ug/L	88
35) Bromochloromethane	9.60	130	9189	1.7632	ug/L	67
36) Tetrahydrofuran	9.63	42	22074	10.8529	ug/L #	66
38) 1,1,1-Trichloroethane	9.90	97	32268	1.7324	ug/L	96
39) Cyclohexane	9.93	56	23097	1.1362	ug/L #	65
40) 1,1-Dichloropropene	10.10	75	24988	1.8639	ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	459535	23.9029	ug/L	87
42) Carbon Tetrachloride	10.24	117	28935	1.6512	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412223.D 8260WT.M Fri May 13 15:18:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.42	62	22142	1.4270 ug/L #	83
46)	Benzene	10.46	78	67028	1.9629 ug/L	83
47)	Trichloroethene	11.21	130	17287	1.7543 ug/L	96
48)	Methylcyclohexane	11.30	83	26050	1.8907 ug/L	84
49)	1,2-Dichloropropane	11.42	63	14582	1.4670 ug/L	77
50)	Bromodichloromethane	11.73	83	25794	1.8651 ug/L	93
51)	1,4-Dioxane	11.73	88	1282	32.3515 ug/L	74
52)	Dibromomethane	11.81	93	8575	1.8325 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.02	63	6234	1.4979 ug/L	100
54)	4-Methyl-2-Pentanone	12.06	58	2139	0.9416 ug/L	84
55)	cis-1,3-Dichloropropene	12.37	75	24153	1.7353 ug/L	98
56)	Dimethyl Disulfide	12.62	79	12288	1.6851 ug/L	99
59)	Toluene	12.79	91	72944	2.2423 ug/L	95
60)	Ethyl Methacrylate	12.88	69	12716	2.0832 ug/L	71
62)	trans-1,3-Dichloropropene	12.96	75	22163	1.9527 ug/L	100
63)	1,1,2-Trichloroethane	13.18	97	10537	2.0412 ug/L	99
64)	2-Hexanone	13.13	58	2200	1.1873 ug/L #	65
65)	1,3-Dichloropropane	13.49	76	20212	2.1112 ug/L	72
66)	Tetrachloroethene	13.60	164	14595	1.9811 ug/L	90
67)	Dibromochloromethane	13.87	129	14698	1.8061 ug/L	98
68)	1,2-Dibromoethane	14.12	107	10152	1.8869 ug/L	95
69)	1-Chlorohexane	14.21	91	21960	1.9818 ug/L	89
70)	Chlorobenzene	14.62	112	47376	2.0974 ug/L	81
71)	1,1,1,2-Tetrachloroethane	14.66	131	17526	1.9910 ug/L	97
72)	Ethylbenzene	14.66	106	25628	1.9996 ug/L	92
73)	m-,p-Xylene	14.74	106	60087	4.0693 ug/L	84
74)	o-Xylene	15.31	106	28289	1.9017 ug/L	79
75)	Styrene	15.35	104	47644	2.0086 ug/L	92
76)	Bromoform	15.84	173	9145	1.9585 ug/L	95
77)	Isopropylbenzene	15.73	105	81301	2.1557 ug/L	97
79)	1,1,2,2-Tetrachloroethane	15.95	83	11538	2.0194 ug/L	95
81)	1,2,3-Trichloropropane	16.13	110	3630	1.9770 ug/L	94
82)	trans-1,4-Dichloro-2-Buten	16.19	53	2699	0.9698 ug/L #	36
83)	n-Propylbenzene	16.24	91	97233	2.2026 ug/L	96
84)	Bromobenzene	16.37	156	19174	2.0834 ug/L	92
85)	1,3,5-Trimethylbenzene	16.42	105	67395	2.0631 ug/L	97
86)	2-Chlorotoluene	16.51	91	67110	2.3739 ug/L	94
87)	4-Chlorotoluene	16.56	91	59154	2.0313 ug/L	92
88)	a-Methylstyrene	16.84	118	29415	1.8275 ug/L	86
89)	tert-Butylbenzene	16.89	134	12716	1.9647 ug/L	67
90)	1,2,4-Trimethylbenzene	16.95	105	71669	2.1435 ug/L	94
91)	sec-Butylbenzene	17.17	105	81038	2.0632 ug/L	98
92)	p-Isopropyltoluene	17.32	119	70170	2.0924 ug/L	92
93)	1,3-Dichlorobenzene	17.52	146	37289	2.0413 ug/L	93
94)	1,4-Dichlorobenzene	17.64	146	36528	2.0034 ug/L #	73
95)	n-Butylbenzene	17.85	91	67823	2.1262 ug/L	96
96)	1,2-Dichlorobenzene	18.14	146	32322	2.0190 ug/L	92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	1955	1.5624 ug/L	94
98)	1,2,4-Trichlorobenzene	20.28	180	23558	1.9000 ug/L	98
99)	Hexachlorobutadiene	20.43	225	11066	1.9286 ug/L	99
100)	Naphthalene	20.65	128	36066	1.9130 ug/L	99
101)	1,2,3-Trichlorobenzene	20.96	180	19765	1.8738 ug/L	95

(#) = qualifier out of range (m) = manual integration
8M412223.D 8260WT.M Fri May 13 15:18:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

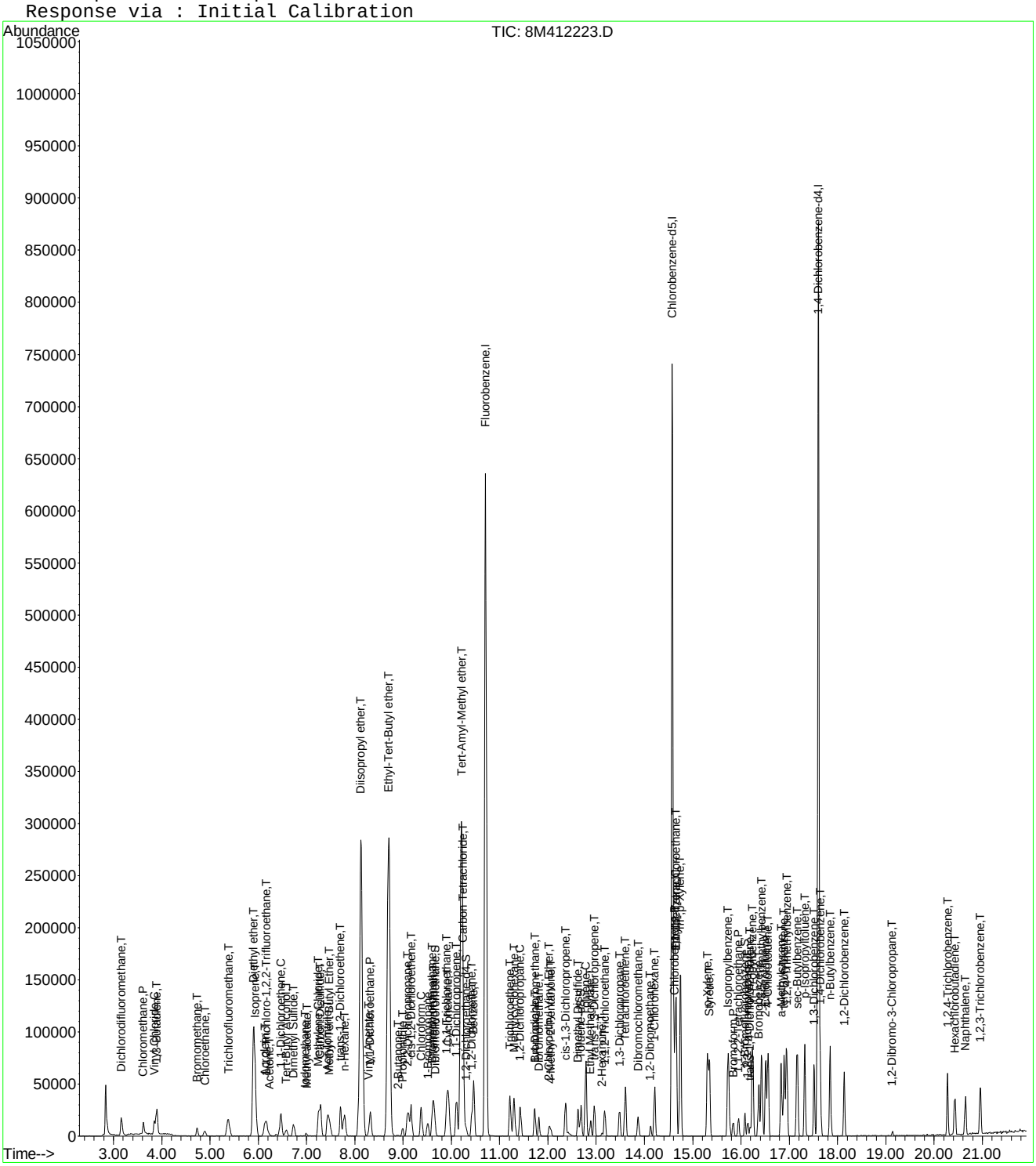

8M412223.D 8260WT.M Fri May 13 15:18:37 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.8958	5.2	100	0.00
3	P	Chloromethane	2.0000	2.1033	-5.2	100	0.00
4	C	Vinyl Chloride	2.0000	2.0431	-2.2	100	0.00
5	T	1,3-Butadiene	2.0000	1.7872	10.6	100	0.02
6	T	Bromomethane	2.0000	2.0126	-0.6	100	0.00
7	T	Chloroethane	2.0000	1.9127	4.4	100	0.00
8	T	Trichlorofluoromethane	2.0000	2.0686	-3.4	100	0.00
9	T	Diethyl ether	25.0000	26.7567	-7.0	100	0.00
10	T	Isoprene	2.0000	2.0394	-2.0	100	0.00
11	T	Acrolein	12.5000	13.4606	-7.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	2.1182	-5.9	100	0.02
13	T	Acetone	-1.0000	1.7255	0.0	100	-0.01
14	C	1,1-Dichloroethene	2.0000	2.0070	-0.4	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	52.7840	-5.6	100	0.00
16	T	Dimethyl Sulfide	2.0000	2.0975	-4.9	100	0.00
17	T	Iodomethane	2.0000	3.0680	-53.4#	100	0.00
18	T	Methyl acetate	-1.0000	2.1281	0.0	100	0.00
19	T	Methylene Chloride	2.0000	2.0590	-3.0	100	0.00
20	T	Carbon Disulfide	2.0000	2.1789	-8.9	100	0.00
21	T	Acrylonitrile	12.5000	12.1237	3.0	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.9505	2.5	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.9603	2.0	100	0.00
24	T	n-Hexane	-1.0000	2.1181	0.0	100	0.00
25	T	Diisopropyl ether	25.0000	26.2305	-4.9	100	0.00
26	T	Vinyl Acetate	2.0000	1.9284	3.6	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.1072	-5.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	26.0139	-4.1	100	0.00
29	T	2-Butanone	-1.0000	1.7396	0.0	100	0.02
30	T	Propionitrile	25.0000	24.8668	0.5	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1378	-6.9	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0306	-1.5	100	0.00
33	C	Chloroform	2.0000	1.9679	1.6	100	0.00
34		1-Bromopropane	2.0000	1.9533	2.3	100	0.00
35	T	Bromochloromethane	2.0000	1.9951	0.2	100	0.00
36	T	Tetrahydrofuran	25.0000	25.9117	-3.6	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9708	2.9	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.9930	0.3	100	0.00
39	T	Cyclohexane	2.0000	2.0605	-3.0	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0248	-1.2	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	26.0627	-4.3	100	0.00
42	T	Carbon Tetrachloride	2.0000	2.0126	-0.6	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0740	-7.4	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	2.0000	2.0183	-0.9	100	0.00
46	T	Benzene	2.0000	2.0854	-4.3	100	0.00
47	T	Trichloroethene	2.0000	2.0166	-0.8	100	0.00
48	T	Methylcyclohexane	-1.0000	2.0003	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0380	-1.9	100	0.00
50	T	Bromodichloromethane	2.0000	2.0511	-2.6	100	0.00
51	T	1,4-Dioxane	-1.0000	35.6688	0.0	100	0.02
52	T	Dibromomethane	2.0000	2.0246	-1.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	2.0271	-1.4	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.7027	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.8869	5.7	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.7986	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	0.9896	1.0	100	0.00
59	C	Toluene	2.0000	2.1628	-8.1	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.9633	1.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	2.0000	1.9609	2.0	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.9800	1.0	100	0.00
64	T	2-Hexanone	-1.0000	1.9672	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.1332	-6.7	100	0.00
66	T	Tetrachloroethene	2.0000	2.0198	-1.0	100	0.00
67	T	Dibromochloromethane	2.0000	1.8915	5.4	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.9141	4.3	100	0.00
69	T	1-Chlorohexane	2.0000	1.9075	4.6	100	0.00
70	P	Chlorobenzene	2.0000	2.0831	-4.2	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.9892	0.5	100	0.00
72	C	Ethylbenzene	2.0000	2.0596	-3.0	100	0.00
73	T	m-,p-Xylene	4.0000	4.1170	-2.9	100	0.00
74	T	o-Xylene	2.0000	1.9825	0.9	100	0.00
75	T	Styrene	2.0000	2.0358	-1.8	100	0.00
76	P	Bromoform	2.0000	1.9841	0.8	100	0.00
77	T	Isopropylbenzene	2.0000	2.1448	-7.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	2.0066	-0.3	100	0.00
80	S	p-Bromofluorobenzene	1.0000	1.0184	-1.8	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	2.0501	-2.5	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	2.0915	-4.6	100	0.00
83	T	n-Propylbenzene	2.0000	2.1757	-8.8	100	0.00
84	T	Bromobenzene	2.0000	2.0859	-4.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.0703	-3.5	100	0.00
86	T	2-Chlorotoluene	2.0000	2.1509	-7.5	100	0.00
87	T	4-Chlorotoluene	2.0000	2.0989	-4.9	100	0.00
88	T	a-Methylstyrene	-1.0000	1.9045	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	1.9967	0.2	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.1411	-7.1	100	0.00
91	T	sec-Butylbenzene	2.0000	2.1161	-5.8	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.1579	-7.9	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.1067	-5.3	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.0470	-2.4	100	0.00
95	T	n-Butylbenzene	2.0000	2.1098	-5.5	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0532	-2.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.6938	15.3	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	2.0021	-0.1	100	0.00
99	T	Hexachlorobutadiene	2.0000	2.0128	-0.6	100	0.00
100	T	Naphthalene	2.0000	2.0630	-3.2	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9910	0.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412223.D 8260WT.M Sat May 14 18:08:14 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	768397	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.58	117	534372	25.00	ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	274234	25.00	ug/L	0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	19775	2.0496	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	8.20%#		
43) 1,2-Dichloroethane-d4	10.30	65	21200	1.9207	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	7.68%#		
58) Toluene-d8	12.68	98	65647	2.3758	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	9.52%#		
80) p-Bromofluorobenzene	16.08	95	26759	2.3838	ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	9.52%#		

Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.16	85	55961	3.4750	ug/L	99
3) Chloromethane	3.62	50	34194	2.2538	ug/L	100
4) Vinyl Chloride	3.84	62	42506	4.1488	ug/L	99
5) 1,3-Butadiene	3.89	54	32006	3.1976	ug/L	93
6) Bromomethane	4.72	94	19582	3.4204	ug/L	94
7) Chloroethane	4.90	64	22000	3.2814	ug/L	84
8) Trichlorofluoromethane	5.37	101	77715	3.8212	ug/L	96
9) Diethyl ether	5.90	59	188516	30.2955	ug/L	79
10) Isoprene	5.94	67	44975	4.3218	ug/L	78
11) Acrolein	6.15	56	7712	13.9568	ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	36867	3.9591	ug/L	99
13) Acetone	6.24	43	3578	1.8967	ug/L	85
14) 1,1-Dichloroethene	6.47	61	59405	3.2870	ug/L	95
15) Tert-Butyl Alcohol	6.58	59	27833	64.0897	ug/L #	82
16) Dimethyl Sulfide	6.73	62	21102	3.1597	ug/L	77
17) Iodomethane	6.99	142	3667	1.8964	ug/L	95
18) Methyl acetate	7.00	43	11500	2.0398	ug/L #	86
19) Methylene Chloride	7.24	84	37533	4.3823	ug/L	52
20) Carbon Disulfide	7.29	76	123060	4.7097	ug/L	100
21) Acrylonitrile	7.43	53	25653	10.5804	ug/L	99
22) Methyl Tert Butyl Ether	7.47	73	80005	4.2289	ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	54124	3.3108	ug/L	94
24) n-Hexane	7.78	57	40758	2.7480	ug/L	82
25) Diisopropyl ether	8.12	45	841400	20.0337	ug/L #	91
26) Vinyl Acetate	8.30	43	37284	2.2113	ug/L #	90
27) 1,1-Dichloroethane	8.32	63	66711	3.4116	ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	907423	30.7852	ug/L	89
29) 2-Butanone	8.89	43	5359	1.7738	ug/L #	82
30) Propionitrile	8.99	54	17933	23.4726	ug/L	100
31) 2,2-Dichloropropane	9.10	77	73150	4.2462	ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	41036	4.1950	ug/L	89
33) Chloroform	9.37	83	78227	4.3116	ug/L	99
34) 1-Bromopropane	9.52	122	6162	3.9986	ug/L	99
35) Bromochloromethane	9.60	130	20988	4.1009	ug/L #	62
36) Tetrahydrofuran	9.62	42	38098	19.0742	ug/L #	62
38) 1,1,1-Trichloroethane	9.91	97	76152	4.1633	ug/L	97
39) Cyclohexane	9.94	56	51439	2.5767	ug/L #	66
40) 1,1-Dichloropropene	10.11	75	56645	4.3027	ug/L	93
41) Tert-Amyl-Methyl ether	10.21	73	821180	43.4958	ug/L	87
42) Carbon Tetrachloride	10.25	117	67831	3.9416	ug/L	96

(#) = qualifier out of range (m) = manual integration
8M412224.D 8260WT.M Fri May 13 15:47:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	51708	3.3934 ug/L		85
46)	Benzene	10.46	78	150204	4.4792 ug/L		86
47)	Trichloroethene	11.21	130	38500	3.9784 ug/L		94
48)	Methylcyclohexane	11.30	83	60897	4.5008 ug/L		81
49)	1,2-Dichloropropane	11.43	63	31773	3.2549 ug/L		77
50)	Bromodichloromethane	11.73	83	59127	4.3535 ug/L		94
51)	1,4-Dioxane	11.71	88	2719	69.8702 ug/L	#	62
52)	Dibromomethane	11.81	93	19711	4.2894 ug/L		96
53)	2-Chloroethyl Vinyl Ether	12.03	63	12946	3.1676 ug/L		98
54)	4-Methyl-2-Pentanone	12.05	58	5129	2.2991 ug/L	#	78
55)	cis-1,3-Dichloropropene	12.36	75	61169	4.4752 ug/L		94
56)	Dimethyl Disulfide	12.62	79	27966	3.9053 ug/L		98
59)	Toluene	12.78	91	161007	5.0316 ug/L		97
60)	Ethyl Methacrylate	12.88	69	28595	4.7624 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	49791	4.4599 ug/L		97
63)	1,1,2-Trichloroethane	13.18	97	23678	4.6631 ug/L		99
64)	2-Hexanone	13.11	58	4499	2.4685 ug/L	#	97
65)	1,3-Dichloropropane	13.49	76	44838	4.7614 ug/L		73
66)	Tetrachloroethene	13.60	164	32715	4.5144 ug/L		97
67)	Dibromochloromethane	13.87	129	35009	4.3734 ug/L		98
68)	1,2-Dibromoethane	14.13	107	24247	4.5815 ug/L		99
69)	1-Chlorohexane	14.21	91	53599	4.9176 ug/L		84
70)	Chlorobenzene	14.62	112	107618	4.8437 ug/L		95
71)	1,1,1,2-Tetrachloroethane	14.65	131	38120	4.4025 ug/L		96
72)	Ethylbenzene	14.65	106	56905	4.5138 ug/L		91
73)	m-,p-Xylene	14.75	106	137390	9.4592 ug/L		86
74)	o-Xylene	15.31	106	65650	4.4866 ug/L		85
75)	Styrene	15.35	104	111433	4.7758 ug/L		91
76)	Bromoform	15.84	173	19346	4.2121 ug/L		97
77)	Isopropylbenzene	15.73	105	182523	4.9200 ug/L		96
79)	1,1,2,2-Tetrachloroethane	15.95	83	26655	4.8730 ug/L		99
81)	1,2,3-Trichloropropane	16.13	110	8840	5.0289 ug/L		81
82)	trans-1,4-Dichloro-2-Buten	16.19	53	6584	2.4712 ug/L	#	51
83)	n-Propylbenzene	16.24	91	222196	5.2576 ug/L		96
84)	Bromobenzene	16.37	156	42665	4.8423 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	155714	4.9790 ug/L		93
86)	2-Chlorotoluene	16.52	91	148764	5.4968 ug/L		94
87)	4-Chlorotoluene	16.56	91	135679	4.8666 ug/L		94
88)	a-Methylstyrene	16.84	118	68945	4.4743 ug/L		91
89)	tert-Butylbenzene	16.89	134	29069	4.6914 ug/L		77
90)	1,2,4-Trimethylbenzene	16.95	105	161016	5.0301 ug/L		94
91)	sec-Butylbenzene	17.17	105	191273	5.0866 ug/L		94
92)	p-Isopropyltoluene	17.32	119	159232	4.9597 ug/L		93
93)	1,3-Dichlorobenzene	17.52	146	83896	4.7972 ug/L		95
94)	1,4-Dichlorobenzene	17.64	146	82462	4.7242 ug/L		86
95)	n-Butylbenzene	17.85	91	158787	5.1996 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	72524	4.7321 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	5629	4.6990 ug/L		76
98)	1,2,4-Trichlorobenzene	20.28	180	53855	4.5369 ug/L		98
99)	Hexachlorobutadiene	20.43	225	24504	4.4608 ug/L		93
100)	Naphthalene	20.65	128	79806	4.4217 ug/L		98
101)	1,2,3-Trichlorobenzene	20.96	180	44150	4.3720 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412224.D 8260WT.M Fri May 13 15:47:44 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

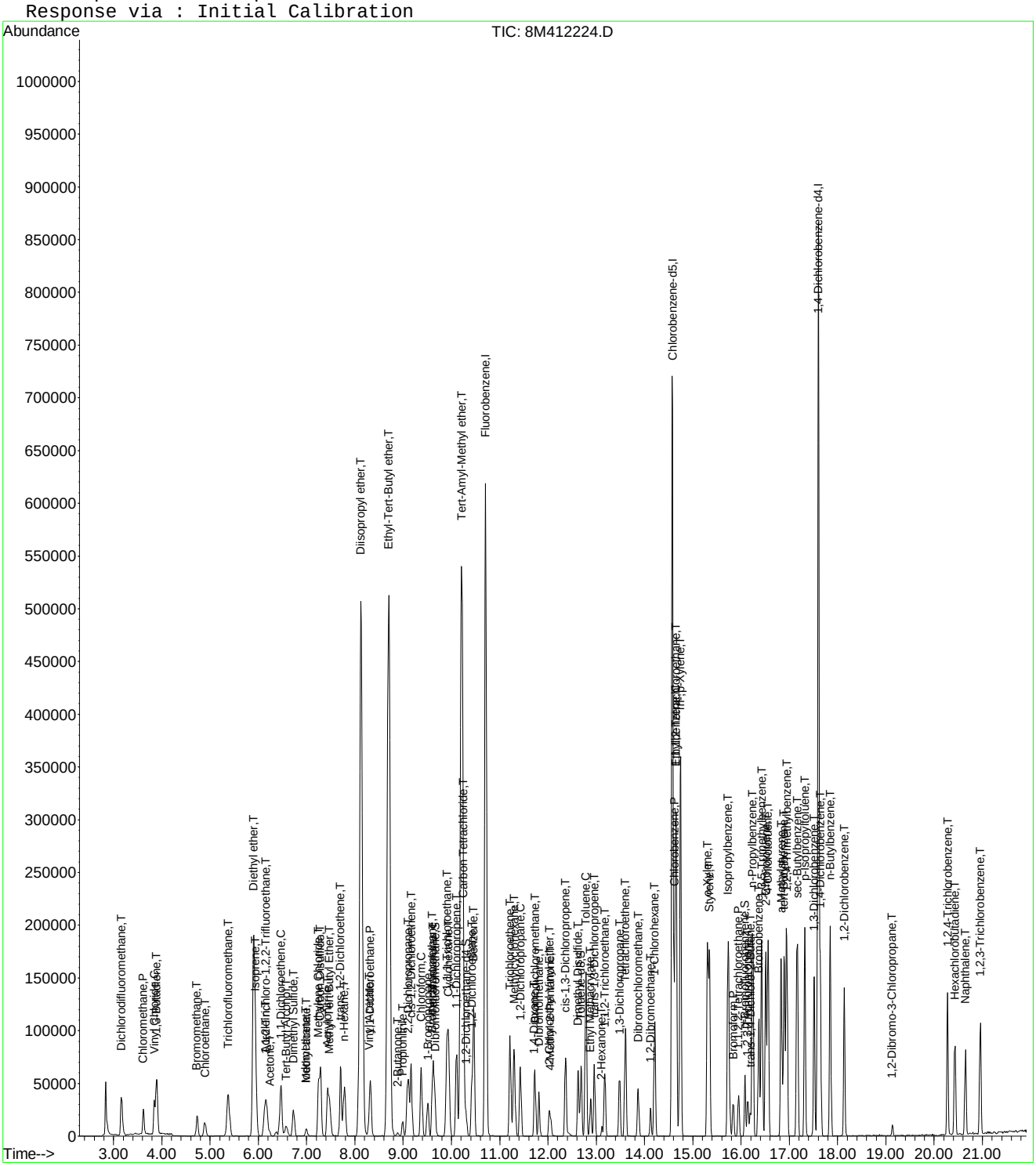

8M412224.D 8260WT.M Fri May 13 15:47:44 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.3438	13.1	100	0.00
3	P	Chloromethane	5.0000	4.5471	9.1	100	0.00
4	C	Vinyl Chloride	5.0000	4.7641	4.7	100	0.00
5	T	1,3-Butadiene	5.0000	4.2777	14.4	100	0.00
6	T	Bromomethane	5.0000	4.1880	16.2	100	-0.01
7	T	Chloroethane	5.0000	4.4813	10.4	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.6812	6.4	100	0.00
9	T	Diethyl ether	50.0000	47.5652	4.9	100	0.00
10	T	Isoprene	5.0000	4.4611	10.8	100	0.00
11	T	Acrolein	25.0000	21.7328	13.1	100	0.02
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.7244	5.5	100	0.00
13	T	Acetone	5.0000	4.1387	17.2	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.7810	4.4	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	100.4650	-0.5	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.7499	5.0	100	0.00
17	T	Iodomethane	5.0000	3.7634	24.7	100	0.00
18	T	Methyl acetate	5.0000	4.9211	1.6	100	0.00
19	T	Methylene Chloride	5.0000	4.7467	5.1	100	0.00
20	T	Carbon Disulfide	5.0000	4.7328	5.3	100	0.00
21	T	Acrylonitrile	25.0000	22.8698	8.5	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.6750	6.5	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.7415	5.2	100	0.00
24	T	n-Hexane	5.0000	4.8084	3.8	100	0.00
25	T	Diisopropyl ether	50.0000	47.2872	5.4	100	0.00
26	T	Vinyl Acetate	5.0000	4.5766	8.5	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.7058	5.9	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	47.5984	4.8	100	0.00
29	T	2-Butanone	5.0000	4.2191	15.6	100	0.00
30	T	Propionitrile	50.0000	48.4475	3.1	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.8965	2.1	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.6525	7.0	100	0.00
33	C	Chloroform	5.0000	4.6735	6.5	100	0.00
34		1-Bromopropane	5.0000	4.8774	2.5	100	0.00
35	T	Bromochloromethane	5.0000	4.6403	7.2	100	0.00
36	T	Tetrahydrofuran	50.0000	45.5400	8.9	100	-0.01
37	S	Dibromofluoromethane	2.5000	2.3953	4.2	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.7896	4.2	100	0.00
39	T	Cyclohexane	5.0000	4.6730	6.5	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.6741	6.5	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	47.6211	4.8	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.8044	3.9	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.3949	4.2	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	5.0000	4.7996	4.0	100	0.00
46	T	Benzene	5.0000	4.7588	4.8	100	0.00
47	T	Trichloroethene	5.0000	4.5733	8.5	100	0.00
48	T	Methylcyclohexane	5.0000	4.7616	4.8	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.5219	9.6	100	0.00
50	T	Bromodichloromethane	5.0000	4.7878	4.2	100	0.00
51	T	1,4-Dioxane	100.0000	77.0346	23.0	100	0.00
52	T	Dibromomethane	5.0000	4.7390	5.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.2867	14.3	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.1576	16.8	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.8662	2.7	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.1683	16.6	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.3473	6.1	100	0.00
59	C	Toluene	5.0000	4.8533	2.9	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.4883	10.2	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	5.0000	4.4786	10.4	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.5231	9.5	100	0.00
64	T	2-Hexanone	5.0000	4.0898	18.2	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.8109	3.8	100	0.00
66	T	Tetrachloroethene	5.0000	4.6028	7.9	100	0.00
67	T	Dibromochloromethane	5.0000	4.5802	8.4	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.6475	7.1	100	0.00
69	T	1-Chlorohexane	5.0000	4.7331	5.3	100	0.00
70	P	Chlorobenzene	5.0000	4.8107	3.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.3984	12.0	100	0.00
72	C	Ethylbenzene	5.0000	4.6492	7.0	100	0.00
73	T	m-,p-Xylene	10.0000	9.5700	4.3	100	0.00
74	T	o-Xylene	5.0000	4.6773	6.5	100	0.00
75	T	Styrene	5.0000	4.8405	3.2	100	0.00
76	P	Bromoform	5.0000	4.2672	14.7	100	0.00
77	T	Isopropylbenzene	5.0000	4.8951	2.1	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	4.8422	3.2	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.3565	5.7	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.2150	-4.3	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.3781	12.4	100	0.00
83	T	n-Propylbenzene	5.0000	5.1935	-3.9	100	0.00
84	T	Bromobenzene	5.0000	4.8483	3.0	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	4.9964	0.1	100	0.00
86	T	2-Chlorotoluene	5.0000	4.9803	0.4	100	0.00
87	T	4-Chlorotoluene	5.0000	5.0286	-0.6	100	0.00
88	T	a-Methylstyrene	5.0000	4.6629	6.7	100	0.00
89	T	tert-Butylbenzene	5.0000	4.7677	4.6	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.0245	-0.5	100	0.00
91	T	sec-Butylbenzene	5.0000	5.2170	-4.3	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.1150	-2.3	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	4.9511	1.0	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	4.8270	3.5	100	0.00
95	T	n-Butylbenzene	5.0000	5.1595	-3.2	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	4.8122	3.8	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	5.0942	-1.9	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.7808	4.4	100	0.00
99	T	Hexachlorobutadiene	5.0000	4.6555	6.9	100	0.00
100	T	Naphthalene	5.0000	4.7684	4.6	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.6455	7.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412224.D 8260WT.M Sat May 14 18:08:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	770027	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	531490	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	283594	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	86295	10.9569 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 43.84%#		
43) 1,2-Dichloroethane-d4	10.30	65	96239	11.3450 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 45.36%#		
58) Toluene-d8	12.68	98	294491	10.9223 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 43.68%#		
80) p-Bromofluorobenzene	16.08	95	121459	10.5490 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 42.20%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	288235	23.7135 ug/L	99
3) Chloromethane	3.62	50	155712	20.3784 ug/L	98
4) Vinyl Chloride	3.84	62	184250	20.9368 ug/L	95
5) 1,3-Butadiene	3.89	54	149348	22.7750 ug/L	96
6) Bromomethane	4.73	94	100098	25.0143 ug/L	99
7) Chloroethane	4.89	64	100876	20.9404 ug/L	91
8) Trichlorofluoromethane	5.37	101	351299	21.2512 ug/L	98
9) Diethyl ether	5.90	59	324317	80.8265 ug/L	78
10) Isoprene	5.94	67	205842	20.3622 ug/L	77
11) Acrolein	6.14	56	12049	34.8201 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	159996	20.3859 ug/L	97
13) Acetone	6.25	43	18459	25.7405 ug/L	98
14) 1,1-Dichloroethene	6.47	61	256241	20.5065 ug/L	92
15) Tert-Butyl Alcohol	6.57	59	43922	153.5712 ug/L	93
16) Dimethyl Sulfide	6.73	62	89456	20.6087 ug/L	83
17) Iodomethane	6.99	142	40622	61.0474 ug/L	93
18) Methyl acetate	7.00	43	46598	20.2171 ug/L #	85
19) Methylene Chloride	7.25	84	161897	20.1338 ug/L	52
20) Carbon Disulfide	7.30	76	538090	20.0802 ug/L	98
21) Acrylonitrile	7.43	53	46305	46.9889 ug/L	100
22) Methyl Tert Butyl Ether	7.47	73	361116	22.0137 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	234754	20.3175 ug/L	90
24) n-Hexane	7.78	57	172498	21.1165 ug/L	84
25) Diisopropyl ether	8.12	45	1447822	80.3755 ug/L #	91
26) Vinyl Acetate	8.30	43	166501	21.7017 ug/L #	88
27) 1,1-Dichloroethane	8.33	63	300321	21.3849 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	1579265	83.0733 ug/L	89
29) 2-Butanone	8.88	43	25681	23.9099 ug/L	87
30) Propionitrile	8.98	54	30953	89.5673 ug/L	94
31) 2,2-Dichloropropane	9.10	77	309575	20.8527 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	181973	20.4488 ug/L	89
33) Chloroform	9.37	83	348925	20.5535 ug/L	96
34) 1-Bromopropane	9.52	122	26723	22.7206 ug/L	96
35) Bromochloromethane	9.61	130	94952	21.3181 ug/L	65
36) Tetrahydrofuran	9.63	42	63066	70.5772 ug/L #	57
38) 1,1,1-Trichloroethane	9.91	97	335486	21.3640 ug/L	99
39) Cyclohexane	9.94	56	221040	19.9984 ug/L #	64
40) 1,1-Dichloropropene	10.11	75	248373	20.4717 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1418183	81.7883 ug/L	88
42) Carbon Tetrachloride	10.25	117	296471	21.3449 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412225.D 8260WT.M Fri May 13 16:16:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	228665	21.6403	ug/L		85
46)	Benzene	10.46	78	668449	20.3769	ug/L		86
47)	Trichloroethene	11.21	130	174107	20.7980	ug/L		96
48)	Methylcyclohexane	11.29	83	262275	21.4887	ug/L		82
49)	1,2-Dichloropropane	11.43	63	146868	21.1883	ug/L	#	72
50)	Bromodichloromethane	11.73	83	262192	21.9986	ug/L		98
51)	1,4-Dioxane	11.71	88	5351	196.3837	ug/L		76
52)	Dibromomethane	11.81	93	86951	21.0734	ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	63586	22.4600	ug/L		91
54)	4-Methyl-2-Pentanone	12.05	58	25754	25.0531	ug/L	#	73
55)	cis-1,3-Dichloropropene	12.36	75	265439	21.9841	ug/L		99
56)	Dimethyl Disulfide	12.63	79	134192	23.9412	ug/L		100
59)	Toluene	12.78	91	700473	20.1722	ug/L		99
60)	Ethyl Methacrylate	12.88	69	133361	23.2046	ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	238585	23.2548	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	107901	21.0216	ug/L		99
64)	2-Hexanone	13.11	58	22561	25.2093	ug/L	#	85
65)	1,3-Dichloropropane	13.49	76	198804	22.2491	ug/L		74
66)	Tetrachloroethene	13.60	164	141791	20.0055	ug/L		94
67)	Dibromochloromethane	13.87	129	158465	22.0695	ug/L		99
68)	1,2-Dibromoethane	14.13	107	110085	22.3366	ug/L		100
69)	1-Chlorohexane	14.21	91	229753	20.3591	ug/L		83
70)	Chlorobenzene	14.62	112	467492	20.4613	ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.65	131	183079	22.2095	ug/L		96
72)	Ethylbenzene	14.65	106	249016	20.2289	ug/L		90
73)	m-,p-Xylene	14.75	106	606381	41.1308	ug/L		88
74)	o-Xylene	15.30	106	294106	21.2106	ug/L		90
75)	Styrene	15.35	104	492781	21.8207	ug/L		89
76)	Bromoform	15.83	173	95911	23.8070	ug/L		99
77)	Isopropylbenzene	15.73	105	806678	20.7280	ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	123253	22.7779	ug/L		95
81)	1,2,3-Trichloropropane	16.14	110	36712	22.1354	ug/L		94
82)	trans-1,4-Dichloro-2-Buten	16.18	53	33702	27.6513	ug/L	#	56
83)	n-Propylbenzene	16.24	91	962196	20.3511	ug/L		97
84)	Bromobenzene	16.37	156	190566	21.2033	ug/L		94
85)	1,3,5-Trimethylbenzene	16.43	105	692633	20.9615	ug/L		94
86)	2-Chlorotoluene	16.51	91	649077	19.9155	ug/L		96
87)	4-Chlorotoluene	16.56	91	595446	20.3225	ug/L		95
88)	a-Methylstyrene	16.83	118	318960	22.3680	ug/L		92
89)	tert-Butylbenzene	16.90	134	129440	20.4705	ug/L		83
90)	1,2,4-Trimethylbenzene	16.95	105	707749	20.4783	ug/L		94
91)	sec-Butylbenzene	17.17	105	818359	20.1802	ug/L		97
92)	p-Isopropyltoluene	17.32	119	677859	19.7492	ug/L		96
93)	1,3-Dichlorobenzene	17.52	146	364065	20.5126	ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	363066	19.9874	ug/L		92
95)	n-Butylbenzene	17.85	91	681055	20.0187	ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	318612	19.9358	ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	23070	21.6419	ug/L		93
98)	1,2,4-Trichlorobenzene	20.28	180	242455	20.8863	ug/L		98
99)	Hexachlorobutadiene	20.43	225	110384	20.2523	ug/L		96
100)	Naphthalene	20.65	128	369849	21.4526	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	198876	19.8356	ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration

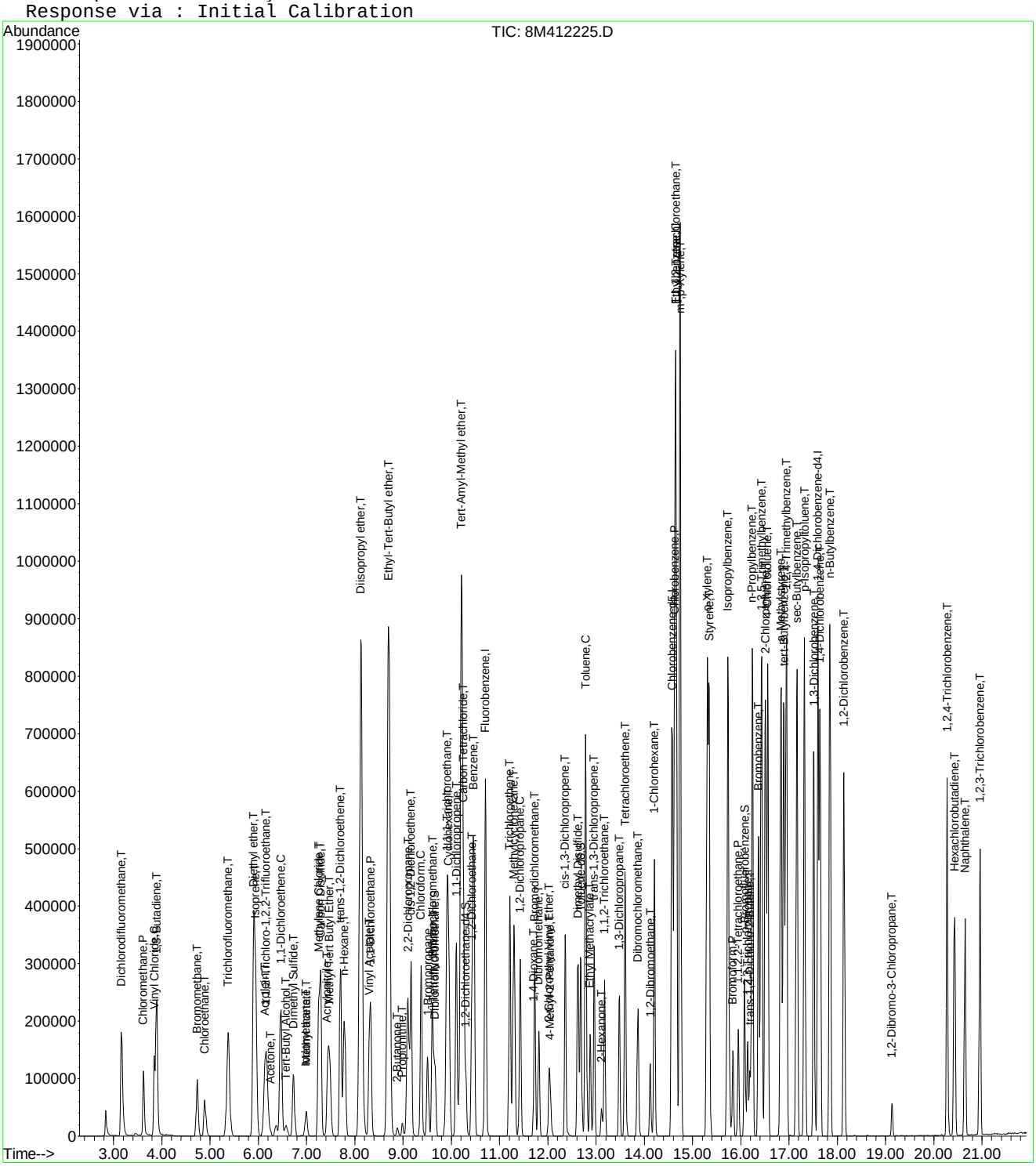

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45:30 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	778260	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	539116	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	288225	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	211053	26.5139 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.04%		
43) 1,2-Dichloroethane-d4	10.31	65	229348	26.7504 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.00%		
58) Toluene-d8	12.68	98	718491	26.2709 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.08%		
80) p-Bromofluorobenzene	16.07	95	292755	25.0180 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.08%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	682745	55.5761 ug/L	100
3) Chloromethane	3.62	50	372858	48.2806 ug/L	98
4) Vinyl Chloride	3.85	62	453905	51.0328 ug/L	96
5) 1,3-Butadiene	3.88	54	390501	58.9199 ug/L	99
6) Bromomethane	4.74	94	260493	64.4080 ug/L	97
7) Chloroethane	4.89	64	244336	50.1840 ug/L	91
8) Trichlorofluoromethane	5.38	101	837676	50.1376 ug/L	99
9) Diethyl ether	5.90	59	389327	96.0019 ug/L	79
10) Isoprene	5.94	67	498060	48.7477 ug/L	76
11) Acrolein	6.13	56	17644	50.4496 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	387643	48.8691 ug/L	97
13) Acetone	6.25	43	45901	63.3305 ug/L	97
14) 1,1-Dichloroethene	6.46	61	619744	49.0724 ug/L	94
15) Tert-Butyl Alcohol	6.58	59	53656	185.6211 ug/L	91
16) Dimethyl Sulfide	6.73	62	221107	50.3993 ug/L	82
17) Iodomethane	6.98	142	157872	234.7428 ug/L	94
18) Methyl acetate	7.00	43	114759	49.2629 ug/L #	81
19) Methylene Chloride	7.25	84	389653	47.9453 ug/L	52
20) Carbon Disulfide	7.29	76	1269941	46.8897 ug/L	99
21) Acrylonitrile	7.43	53	59882	60.1236 ug/L	97
22) Methyl Tert Butyl Ether	7.46	73	901668	54.3843 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	571507	48.9396 ug/L	93
24) n-Hexane	7.79	57	419656	50.8290 ug/L	83
25) Diisopropyl ether	8.13	45	1781012	97.8265 ug/L #	90
26) Vinyl Acetate	8.29	43	428708	55.2866 ug/L #	89
27) 1,1-Dichloroethane	8.32	63	722574	50.9078 ug/L	96
28) Ethyl-Tert-Butyl ether	8.71	59	1955100	101.7552 ug/L	89
29) 2-Butanone	8.88	43	66579	61.3316 ug/L #	82
30) Propionitrile	8.98	54	38235	109.4684 ug/L	95
31) 2,2-Dichloropropane	9.10	77	768496	51.2175 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	439590	48.8754 ug/L	91
33) Chloroform	9.38	83	844564	49.2230 ug/L	97
34) 1-Bromopropane	9.51	122	63442	53.3693 ug/L	99
35) Bromochloromethane	9.60	130	230119	51.1185 ug/L	66
36) Tetrahydrofuran	9.64	42	79437	87.9575 ug/L #	62
38) 1,1,1-Trichloroethane	9.90	97	817606	51.5150 ug/L	99
39) Cyclohexane	9.93	56	535882	47.9707 ug/L #	65
40) 1,1-Dichloropropene	10.10	75	615439	50.1899 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1769381	100.9628 ug/L	88
42) Carbon Tetrachloride	10.24	117	724058	51.5782 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412226.D 8260WT.M Fri May 13 16:45:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45:30 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	561107	52.5401 ug/L		85
46)	Benzene	10.46	78	1607407	48.4816 ug/L		86
47)	Trichloroethene	11.22	130	424998	50.2312 ug/L		96
48)	Methylcyclohexane	11.30	83	635339	51.5040 ug/L		83
49)	1,2-Dichloropropane	11.42	63	351908	50.2320 ug/L	#	71
50)	Bromodichloromethane	11.72	83	654943	54.3701 ug/L		97
51)	1,4-Dioxane	11.71	88	7573	274.9918 ug/L		73
52)	Dibromomethane	11.82	93	209167	50.1574 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	162319	56.7281 ug/L		93
54)	4-Methyl-2-Pentanone	12.05	58	64928	62.4928 ug/L		80
55)	cis-1,3-Dichloropropene	12.36	75	666861	54.6463 ug/L		98
56)	Dimethyl Disulfide	12.62	79	343446	60.6260 ug/L		96
59)	Toluene	12.79	91	1676069	47.5846 ug/L		100
60)	Ethyl Methacrylate	12.88	69	338996	58.1503 ug/L		69
62)	trans-1,3-Dichloropropene	12.96	75	594749	57.1499 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	268432	51.5570 ug/L		98
64)	2-Hexanone	13.12	58	56859	62.6347 ug/L	#	83
65)	1,3-Dichloropropane	13.48	76	489226	53.9770 ug/L		75
66)	Tetrachloroethene	13.60	164	350332	48.7296 ug/L		95
67)	Dibromochloromethane	13.86	129	401149	55.0780 ug/L		100
68)	1,2-Dibromoethane	14.12	107	273580	54.7252 ug/L		99
69)	1-Chlorohexane	14.21	91	560883	48.9984 ug/L		82
70)	Chlorobenzene	14.63	112	1117812	48.2326 ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	446892	53.4462 ug/L		99
72)	Ethylbenzene	14.66	106	603074	48.2980 ug/L		91
73)	m-,p-Xylene	14.74	106	1443780	96.5463 ug/L		90
74)	o-Xylene	15.31	106	709244	50.4265 ug/L		90
75)	Styrene	15.34	104	1212099	52.9133 ug/L		91
76)	Bromoform	15.84	173	238354	58.3272 ug/L		100
77)	Isopropylbenzene	15.73	105	1919993	48.6372 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	294266	53.5083 ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	89279	52.9656 ug/L		93
82)	trans-1,4-Dichloro-2-Buten	16.19	53	86829	70.0956 ug/L	#	53
83)	n-Propylbenzene	16.24	91	2278994	47.4277 ug/L		98
84)	Bromobenzene	16.37	156	459959	50.3549 ug/L		93
85)	1,3,5-Trimethylbenzene	16.43	105	1661486	49.4745 ug/L		95
86)	2-Chlorotoluene	16.51	91	1611031	48.6367 ug/L		97
87)	4-Chlorotoluene	16.56	91	1341051	45.0344 ug/L		95
88)	a-Methylstyrene	16.83	118	772611	53.3111 ug/L		90
89)	tert-Butylbenzene	16.89	134	307503	47.8493 ug/L		81
90)	1,2,4-Trimethylbenzene	16.94	105	1679809	47.8234 ug/L		95
91)	sec-Butylbenzene	17.16	105	1925411	46.7166 ug/L		97
92)	p-Isopropyltoluene	17.32	119	1621383	46.4795 ug/L		95
93)	1,3-Dichlorobenzene	17.51	146	882656	48.9327 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	871210	47.1909 ug/L		92
95)	n-Butylbenzene	17.85	91	1608832	46.5296 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	768548	47.3159 ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	59586	54.9992 ug/L		86
98)	1,2,4-Trichlorobenzene	20.28	180	583880	49.4902 ug/L		100
99)	Hexachlorobutadiene	20.44	225	264699	47.7844 ug/L		98
100)	Naphthalene	20.65	128	894629	51.0579 ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	475246	46.6387 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412226.D 8260WT.M Fri May 13 16:45:33 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration

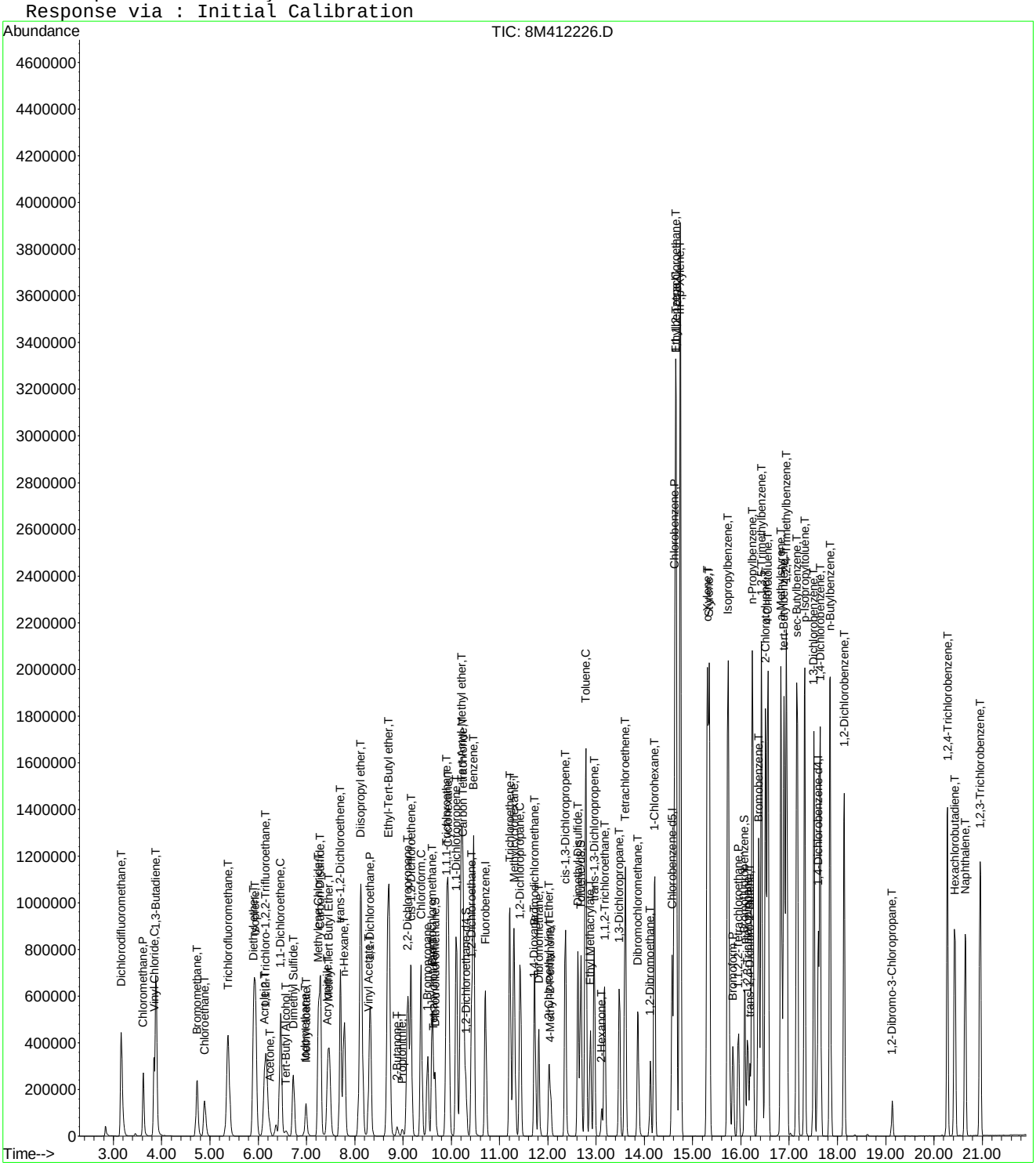

8M412226.D 8260WT.M Fri May 13 16:45:33 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	809533	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	559075	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	296193	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	460283	53.9056 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 215.64%#		
43) 1,2-Dichloroethane-d4	10.30	65	488116	52.5821 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 210.32%#		
58) Toluene-d8	12.68	98	1540572	52.8075 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 211.24%#		
80) p-Bromofluorobenzene	16.08	95	623735	51.1573 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 204.64%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	1463283	109.1068 ug/L	100
3) Chloromethane	3.62	50	778702	97.2380 ug/L	98
4) Vinyl Chloride	3.84	62	968312	103.4979 ug/L	95
5) 1,3-Butadiene	3.88	54	896569	120.4972 ug/L	95
6) Bromomethane	4.73	94	605228	129.8677 ug/L	99
7) Chloroethane	4.89	64	528153	103.4126 ug/L	90
8) Trichlorofluoromethane	5.37	101	1782726	101.4754 ug/L	99
9) Diethyl ether	5.90	59	828091	197.4770 ug/L	79
10) Isoprene	5.94	67	1080684	101.8037 ug/L	78
11) Acrolein	6.14	56	38655	109.5572 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	833546	101.0906 ug/L	97
13) Acetone	6.24	43	97515	109.1944 ug/L	100
14) 1,1-Dichloroethene	6.46	61	1323999	100.6729 ug/L	93
15) Tert-Butyl Alcohol	6.57	59	114220	387.5328 ug/L	91
16) Dimethyl Sulfide	6.73	62	489571	106.5996 ug/L	82
17) Iodomethane	6.99	142	416890	244.5557 ug/L	97
18) Methyl acetate	7.00	43	252444	104.3161 ug/L #	81
19) Methylene Chloride	7.24	84	827241	98.5346 ug/L	53
20) Carbon Disulfide	7.29	76	2766110	99.3432 ug/L	100
21) Acrylonitrile	7.43	53	126153	113.2272 ug/L	98
22) Methyl Tert Butyl Ether	7.46	73	1894494	105.8643 ug/L	87
23) trans-1,2-Dichloroethene	7.70	61	1203701	99.1822 ug/L	93
24) n-Hexane	7.78	57	926226	105.3097 ug/L	84
25) Diisopropyl ether	8.12	45	3699807	196.0386 ug/L #	90
26) Vinyl Acetate	8.29	43	860820	101.8643 ug/L #	88
27) 1,1-Dichloroethane	8.32	63	1521237	101.5567 ug/L	96
28) Ethyl-Tert-Butyl ether	8.70	59	4005676	198.2271 ug/L	89
29) 2-Butanone	8.88	43	145126	112.6698 ug/L #	81
30) Propionitrile	8.98	54	83038	219.1648 ug/L	97
31) 2,2-Dichloropropane	9.11	77	1610615	102.0557 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	935490	99.9944 ug/L	89
33) Chloroform	9.37	83	1766988	98.8341 ug/L	98
34) 1-Bromopropane	9.51	122	139657	108.5299 ug/L	100
35) Bromochloromethane	9.61	130	488678	102.8480 ug/L	66
36) Tetrahydrofuran	9.63	42	167812	187.5699 ug/L #	61
38) 1,1,1-Trichloroethane	9.91	97	1724504	102.7713 ug/L	100
39) Cyclohexane	9.94	56	1185537	102.8628 ug/L #	66
40) 1,1-Dichloropropene	10.11	75	1293224	100.8377 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	3634806	198.1264 ug/L	88
42) Carbon Tetrachloride	10.25	117	1534696	103.3979 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412227.D 8260WT.M Fri May 13 17:14:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	1177876	103.7352	ug/L		85
46)	Benzene	10.46	78	3298928	95.8405	ug/L		87
47)	Trichloroethene	11.21	130	903490	101.9036	ug/L		97
48)	Methylcyclohexane	11.30	83	1389528	104.6454	ug/L		83
49)	1,2-Dichloropropane	11.43	63	755128	102.5297	ug/L		73
50)	Bromodichloromethane	11.73	83	1351612	104.6036	ug/L		99
51)	1,4-Dioxane	11.72	88	16303	473.9624	ug/L		68
52)	Dibromomethane	11.81	93	445130	101.6543	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.02	63	333977	105.4228	ug/L		92
54)	4-Methyl-2-Pentanone	12.05	58	138980	110.1494	ug/L	#	77
55)	cis-1,3-Dichloropropene	12.36	75	1387475	105.9136	ug/L		100
56)	Dimethyl Disulfide	12.62	79	745504	111.3169	ug/L		97
59)	Toluene	12.78	91	3455614	95.2346	ug/L		99
60)	Ethyl Methacrylate	12.88	69	731009	113.5760	ug/L		70
62)	trans-1,3-Dichloropropene	12.96	75	1236182	107.9445	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	564076	103.0604	ug/L		99
64)	2-Hexanone	13.12	58	126268	114.5366	ug/L	#	79
65)	1,3-Dichloropropane	13.48	76	1021082	105.2672	ug/L		74
66)	Tetrachloroethene	13.60	164	752835	101.4023	ug/L		95
67)	Dibromochloromethane	13.87	129	856499	109.6525	ug/L		100
68)	1,2-Dibromoethane	14.12	107	577701	107.6426	ug/L		98
69)	1-Chlorohexane	14.21	91	1222720	103.0385	ug/L		82
70)	Chlorobenzene	14.62	112	2332247	97.2408	ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	947925	106.1463	ug/L		99
72)	Ethylbenzene	14.66	106	1275519	98.8771	ug/L		97
73)	m-,p-Xylene	14.75	106	3009424	194.2602	ug/L		98
74)	o-Xylene	15.31	106	1490638	100.8068	ug/L		93
75)	Styrene	15.35	104	2503721	102.8373	ug/L		88
76)	Bromoform	15.83	173	517827	114.0520	ug/L		100
77)	Isopropylbenzene	15.73	105	3913141	95.4433	ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	624965	106.8610	ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	192087	107.3268	ug/L		97
82)	trans-1,4-Dichloro-2-Buten	16.18	53	189214	128.4818	ug/L	#	59
83)	n-Propylbenzene	16.24	91	4599057	93.6644	ug/L		100
84)	Bromobenzene	16.37	156	968011	102.1426	ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	3401719	97.9556	ug/L		97
86)	2-Chlorotoluene	16.52	91	3177047	93.8267	ug/L		98
87)	4-Chlorotoluene	16.56	91	2899171	96.0712	ug/L		96
88)	a-Methylstyrene	16.84	118	1639166	103.6811	ug/L		90
89)	tert-Butylbenzene	16.90	134	654025	99.4199	ug/L		85
90)	1,2,4-Trimethylbenzene	16.95	105	3479295	96.7054	ug/L		97
91)	sec-Butylbenzene	17.17	105	3947832	94.2785	ug/L		98
92)	p-Isopropyltoluene	17.32	119	3328450	94.4148	ug/L		97
93)	1,3-Dichlorobenzene	17.52	146	1834740	98.9074	ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	1818309	96.6271	ug/L		92
95)	n-Butylbenzene	17.85	91	3308330	94.4002	ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	1606254	97.0179	ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	125368	107.7020	ug/L		87
98)	1,2,4-Trichlorobenzene	20.28	180	1227926	100.7076	ug/L		99
99)	Hexachlorobutadiene	20.43	225	569213	100.5231	ug/L		97
100)	Naphthalene	20.65	128	1852486	101.2968	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	1021163	98.5794	ug/L		100

(#) = qualifier out of range (m) = manual integration
8M412227.D 8260WT.M Fri May 13 17:14:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration

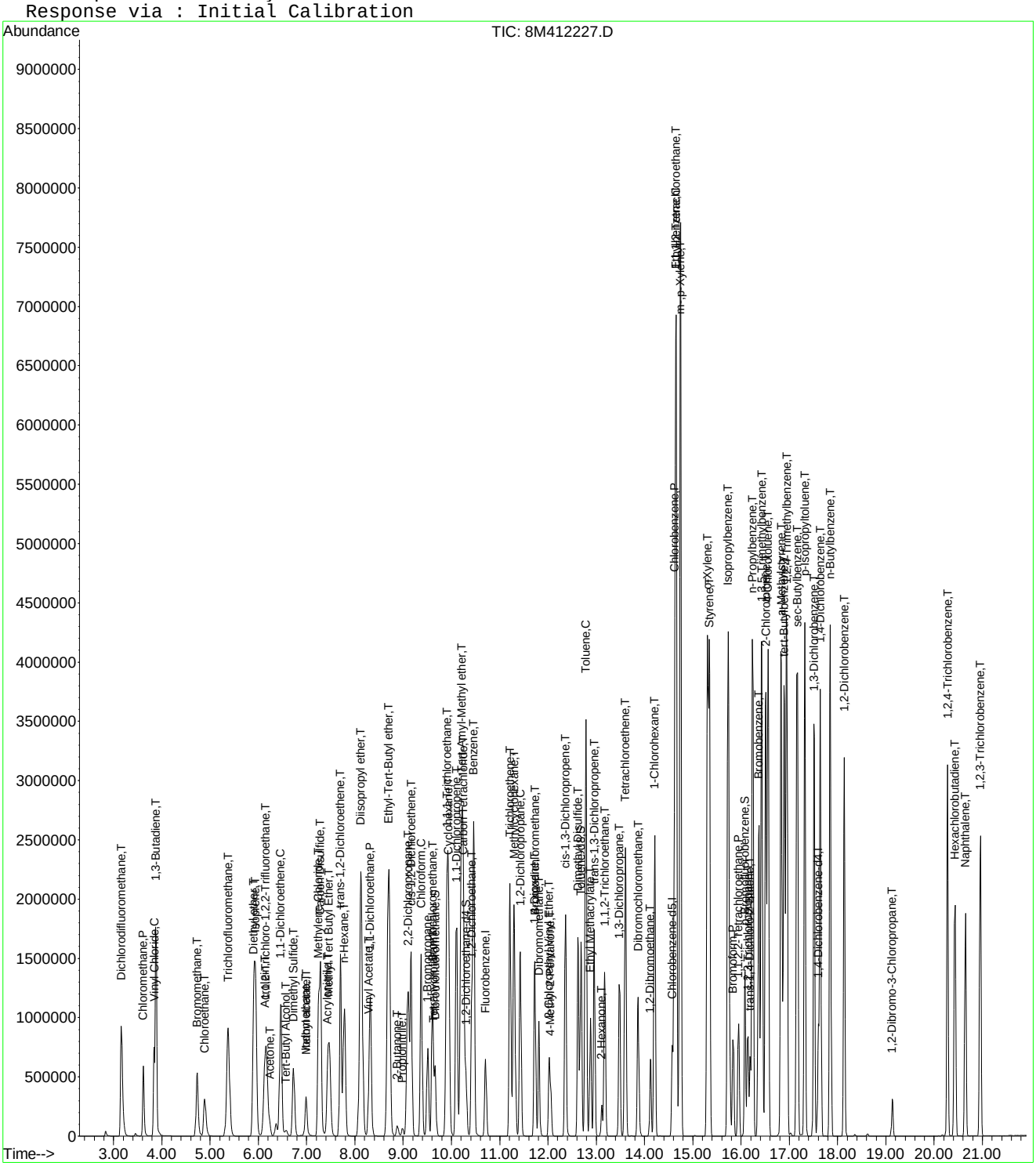

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	828540	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	578848	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	301401	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	898145	101.4517 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 405.80%#		
43) 1,2-Dichloroethane-d4	10.30	65	939848	98.0779 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 392.32%#		
58) Toluene-d8	12.68	98	2984162	97.8805 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 391.52%#		
80) p-Bromofluorobenzene	16.08	95	1242720	99.7023 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 398.80%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	2830517	203.5621 ug/L	98
3) Chloromethane	3.62	50	1586058	194.4056 ug/L	97
4) Vinyl Chloride	3.83	62	1935009	201.0738 ug/L	94
5) 1,3-Butadiene	3.88	54	1684964	212.5477 ug/L	94
6) Bromomethane	4.72	94	1358068	271.2231 ug/L	99
7) Chloroethane	4.89	64	1084803	206.5255 ug/L	90
8) Trichlorofluoromethane	5.37	101	3516760	195.1756 ug/L	99
10) Isoprene	5.94	67	2136665	196.1573 ug/L	78
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1662142	196.5993 ug/L	95
13) Acetone	6.24	43	187748	200.7963 ug/L	97
14) 1,1-Dichloroethene	6.46	61	2649821	196.6732 ug/L	92
15) Tert-Butyl Alcohol	6.58	59	6024	20.0950 ug/L #	87
16) Dimethyl Sulfide	6.73	62	976862	205.8822 ug/L	82
17) Iodomethane	6.99	142	896947	398.7987 ug/L	100
18) Methyl acetate	7.00	43	504293	201.4324 ug/L #	81
19) Methylene Chloride	7.25	84	1684780	196.5546 ug/L	52
20) Carbon Disulfide	7.29	76	5386210	189.2120 ug/L	99
21) Acrylonitrile	7.45	53	30354	26.0447 ug/L #	32
22) Methyl Tert Butyl Ether	7.46	73	3711011	200.6529 ug/L	87
23) trans-1,2-Dichloroethene	7.70	61	2410498	194.2902 ug/L	92
24) n-Hexane	7.78	57	1821777	199.7288 ug/L	84
26) Vinyl Acetate	8.29	43	1796217	206.9060 ug/L #	88
27) 1,1-Dichloroethane	8.32	63	3042055	197.9863 ug/L	95
29) 2-Butanone	8.88	43	271767	199.8193 ug/L #	77
30) Propionitrile	8.90	54	208	0.5280 ug/L #	1
31) 2,2-Dichloropropane	9.11	77	3202633	197.6970 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	1875631	195.8883 ug/L	89
33) Chloroform	9.37	83	3506648	191.9199 ug/L	99
34) 1-Bromopropane	9.51	122	286158	214.2313 ug/L	99
35) Bromochloromethane	9.60	130	980373	200.7807 ug/L	66
36) Tetrahydrofuran	9.62	42	2381	2.6275 ug/L	87
38) 1,1,1-Trichloroethane	9.91	97	3410306	197.7909 ug/L	99
39) Cyclohexane	9.94	56	2357393	198.8974 ug/L #	66
40) 1,1-Dichloropropene	10.10	75	2601175	197.8946 ug/L	96
42) Carbon Tetrachloride	10.25	117	3062767	200.6417 ug/L	99
45) 1,2-Dichloroethane	10.42	62	2313662	198.0324 ug/L	85
46) Benzene	10.46	78	6379817	182.1771 ug/L	89
47) Trichloroethene	11.21	130	1810459	198.9741 ug/L	97
48) Methylcyclohexane	11.30	83	2755373	200.4193 ug/L	83
49) 1,2-Dichloropropane	11.43	63	1528407	202.0331 ug/L	74

(#) = qualifier out of range (m) = manual integration
8M412228.D 8260WT.M Fri May 13 17:43:34 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
50)	Bromodichloromethane	11.73	83	2716764	204.0895 ug/L	99
51)	1,4-Dioxane	11.73	88	3865	104.9352 ug/L #	18
52)	Dibromomethane	11.81	93	898971	200.1154 ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.02	63	631656	192.7236 ug/L	90
54)	4-Methyl-2-Pentanone	12.05	58	262702	198.3957 ug/L #	75
55)	cis-1,3-Dichloropropene	12.36	75	2784162	205.9153 ug/L	99
56)	Dimethyl Disulfide	12.62	79	1518705	215.4711 ug/L	95
59)	Toluene	12.78	91	6564353	175.9274 ug/L	96
60)	Ethyl Methacrylate	12.88	69	1429837	209.8161 ug/L	71
62)	trans-1,3-Dichloropropene	12.96	75	2468609	205.4771 ug/L	98
63)	1,1,2-Trichloroethane	13.18	97	1124672	197.6019 ug/L	100
64)	2-Hexanone	13.12	58	237678	200.9290 ug/L #	81
65)	1,3-Dichloropropane	13.48	76	2023247	199.9545 ug/L	76
66)	Tetrachloroethene	13.60	164	1546618	200.8018 ug/L	97
67)	Dibromochloromethane	13.87	129	1726523	210.5823 ug/L	100
68)	1,2-Dibromoethane	14.12	107	1163160	207.0667 ug/L	99
69)	1-Chlorohexane	14.21	91	2414147	195.6413 ug/L	83
70)	Chlorobenzene	14.62	112	4641169	187.6386 ug/L	94
71)	1,1,1,2-Tetrachloroethane	14.66	131	1929251	206.8372 ug/L	99
72)	Ethylbenzene	14.66	106	2611321	195.8267 ug/L	88
73)	m-,p-Xylene	14.75	106	5876234	367.8657 ug/L	83
74)	o-Xylene	15.31	106	3012318	196.4899 ug/L	98
75)	Styrene	15.35	104	4913204	194.1235 ug/L	86
76)	Bromoform	15.83	173	1052629	218.7989 ug/L	100
77)	Isopropylbenzene	15.73	105	7284624	172.7305 ug/L	97
79)	1,1,2,2-Tetrachloroethane	15.95	83	1237171	205.8673 ug/L	98
81)	1,2,3-Trichloropropane	16.14	110	386738	209.7906 ug/L #	54
82)	trans-1,4-Dichloro-2-Buten	16.19	53	382467	243.6526 ug/L	76
83)	n-Propylbenzene	16.24	91	8244387	166.5110 ug/L	93
84)	Bromobenzene	16.37	156	1935166	200.1305 ug/L	95
85)	1,3,5-Trimethylbenzene	16.43	105	6482975	183.9948 ug/L	98
86)	2-Chlorotoluene	16.52	91	6108308	178.8549 ug/L	99
87)	4-Chlorotoluene	16.56	91	5513221	180.5508 ug/L	99
88)	a-Methylstyrene	16.84	118	3255254	200.4995 ug/L	89
89)	tert-Butylbenzene	16.90	134	1351569	202.1005 ug/L	92
90)	1,2,4-Trimethylbenzene	16.95	105	6531416	179.2445 ug/L	97
91)	sec-Butylbenzene	17.17	105	7342730	173.9814 ug/L	97
92)	p-Isopropyltoluene	17.32	119	6352010	178.7315 ug/L	99
93)	1,3-Dichlorobenzene	17.52	146	3640547	193.1654 ug/L	90
94)	1,4-Dichlorobenzene	17.64	146	3593548	188.4603 ug/L	91
95)	n-Butylbenzene	17.85	91	6198060	175.4375 ug/L	97
96)	1,2-Dichlorobenzene	18.14	146	3171699	188.9651 ug/L	89
97)	1,2-Dibromo-3-Chloropropan	19.13	75	249646	207.5645 ug/L	88
98)	1,2,4-Trichlorobenzene	20.28	180	2480626	199.7296 ug/L	99
99)	Hexachlorobutadiene	20.43	225	1169411	202.7981 ug/L	98
100)	Naphthalene	20.65	128	3580198	192.0323 ug/L	97
101)	1,2,3-Trichlorobenzene	20.96	180	2040570	193.9298 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M412228.D 8260WT.M Fri May 13 17:43:35 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration

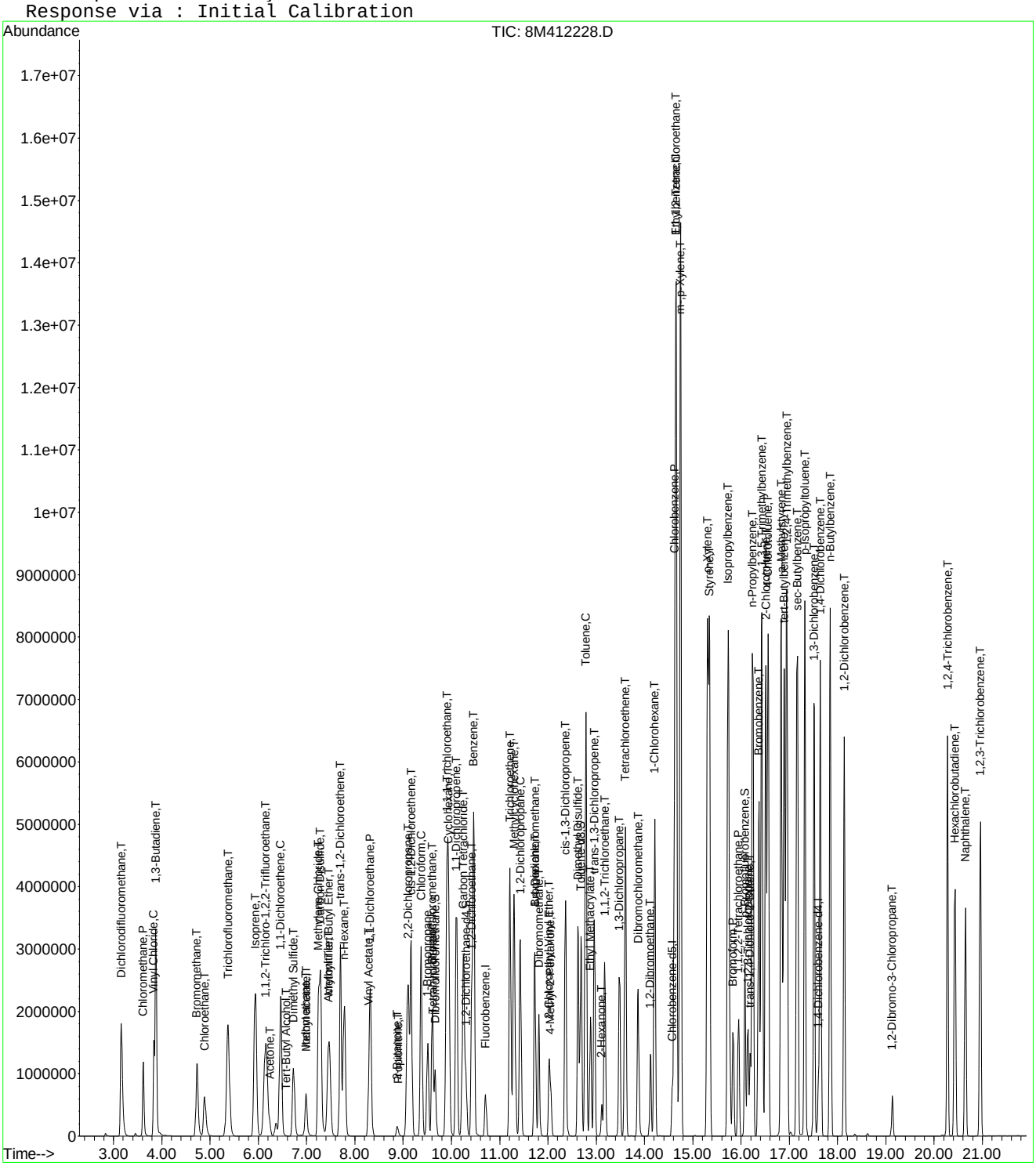

8M412228.D 8260WT.M Fri May 13 17:43:35 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	855409	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	599314	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	305726	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	1411837	154.4674 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 617.88%#		
43) 1,2-Dichloroethane-d4	10.30	65	1466019	148.1811 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 592.72%#		
58) Toluene-d8	12.69	98	4594713	145.5601 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 582.24%#		
80) p-Bromofluorobenzene	16.08	95	1918996	151.7813 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 607.12%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	4191932	292.0014 ug/L	97
3) Chloromethane	3.62	50	2474035	293.7212 ug/L	97
4) Vinyl Chloride	3.83	62	2956347	297.5552 ug/L	94
5) 1,3-Butadiene	3.87	54	2605506	318.3447 ug/L	94
6) Bromomethane	4.72	94	2177550	421.2239 ug/L	98
7) Chloroethane	4.89	64	1688005	311.2693 ug/L	90
8) Trichlorofluoromethane	5.37	101	5387662	289.6161 ug/L	99
9) Diethyl ether	5.90	59	1306432	295.4610 ug/L	80
10) Isoprene	5.93	67	3377164	300.3032 ug/L	78
11) Acrolein	6.14	56	70572	185.7401 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	2563878	293.7317 ug/L	94
13) Acetone	6.24	43	283185	293.3529 ug/L	90
14) 1,1-Dichloroethene	6.46	61	4031745	289.8421 ug/L	91
15) Tert-Butyl Alcohol	6.58	59	181796	587.3907 ug/L	90
16) Dimethyl Sulfide	6.73	62	1553493	317.1280 ug/L	81
17) Iodomethane	6.99	142	1347307	580.2206 ug/L	98
18) Methyl acetate	7.00	43	800046	309.5287 ug/L #	80
19) Methylene Chloride	7.24	84	2587731	292.4144 ug/L	52
20) Carbon Disulfide	7.29	76	8228181	279.9683 ug/L	98
21) Acrylonitrile	7.43	53	228227	189.6753 ug/L	94
22) Methyl Tert Butyl Ether	7.46	73	5605924	293.5892 ug/L	88
23) trans-1,2-Dichloroethene	7.70	61	3678699	287.1957 ug/L	92
24) n-Hexane	7.78	57	2863434	304.0691 ug/L	86
25) Diisopropyl ether	8.12	45	5819647	292.7898 ug/L #	89
26) Vinyl Acetate	8.30	43	2819503	314.5767 ug/L #	87
27) 1,1-Dichloroethane	8.32	63	4586531	289.1293 ug/L	94
28) Ethyl-Tert-Butyl ether	8.70	59	6190206	290.3321 ug/L	89
29) 2-Butanone	8.88	43	439359	312.8959 ug/L #	76
30) Propionitrile	8.99	54	133197	327.4673 ug/L	95
31) 2,2-Dichloropropane	9.10	77	4821388	288.2735 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	2847005	287.9976 ug/L	89
33) Chloroform	9.37	83	5197860	275.5447 ug/L	100
34) 1-Bromopropane	9.51	122	450012	326.3179 ug/L	100
35) Bromochloromethane	9.61	130	1490221	295.6112 ug/L	66
36) Tetrahydrofuran	9.63	42	271736	290.4491 ug/L #	62
38) 1,1,1-Trichloroethane	9.91	97	5126354	287.9792 ug/L	98
39) Cyclohexane	9.94	56	3733392	305.0987 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	3923871	289.1471 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	5639573	291.3713 ug/L	88
42) Carbon Tetrachloride	10.25	117	4598150	291.7629 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412229.D 8260WT.M Fri May 13 18:12:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	3468738	287.5726 ug/L		86
46)	Benzene	10.46	78	9065861	250.7462 ug/L		93
47)	Trichloroethene	11.21	130	2772282	295.1106 ug/L		97
48)	Methylcyclohexane	11.30	83	4327357	304.8748 ug/L		84
49)	1,2-Dichloropropane	11.43	63	2350729	300.9718 ug/L		74
50)	Bromodichloromethane	11.73	83	4051493	294.7973 ug/L		99
51)	1,4-Dioxane	11.72	88	26614	699.8767 ug/L		67
52)	Dibromomethane	11.81	93	1369945	295.3776 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.03	63	1006317	297.3917 ug/L		90
54)	4-Methyl-2-Pentanone	12.06	58	424684	310.6522 ug/L	#	76
55)	cis-1,3-Dichloropropene	12.36	75	4156310	297.7431 ug/L		97
56)	Dimethyl Disulfide	12.63	79	2359825	324.2911 ug/L		94
59)	Toluene	12.78	91	9135213	236.4669 ug/L		90
60)	Ethyl Methacrylate	12.88	69	2228037	315.7801 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	3700845	297.5240 ug/L		96
63)	1,1,2-Trichloroethane	13.18	97	1730199	293.6104 ug/L		100
64)	2-Hexanone	13.11	58	381967	311.8816 ug/L	#	78
65)	1,3-Dichloropropane	13.49	76	3080177	294.0141 ug/L		76
66)	Tetrachloroethene	13.60	164	2374435	297.7522 ug/L		96
67)	Dibromochloromethane	13.87	129	2638145	310.7838 ug/L		100
68)	1,2-Dibromoethane	14.13	107	1778561	305.8085 ug/L		99
69)	1-Chlorohexane	14.21	91	3712592	290.5924 ug/L		84
70)	Chlorobenzene	14.63	112	6754240	263.7433 ug/L		90
71)	1,1,1,2-Tetrachloroethane	14.65	131	2967650	307.3001 ug/L		100
72)	Ethylbenzene	14.65	106	4014412	290.7661 ug/L		70
73)	m-,p-Xylene	14.75	106	8357822	505.3514 ug/L		70
74)	o-Xylene	15.31	106	4530840	285.4488 ug/L		88
75)	Styrene	15.35	104	7050702	269.0641 ug/L		82
76)	Bromoform	15.84	173	1602587	321.7373 ug/L		99
77)	Isopropylbenzene	15.73	105	9900817	226.7477 ug/L		90
79)	1,1,2,2-Tetrachloroethane	15.95	83	1885953	309.3861 ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	581198	310.8176 ug/L		61
82)	trans-1,4-Dichloro-2-Buten	16.18	53	589705	370.3601 ug/L		82
83)	n-Propylbenzene	16.25	91	10768378	214.4110 ug/L		86
84)	Bromobenzene	16.37	156	2947671	300.5290 ug/L		99
85)	1,3,5-Trimethylbenzene	16.43	105	8890651	248.7580 ug/L		92
86)	2-Chlorotoluene	16.51	91	7868844	227.1449 ug/L		92
87)	4-Chlorotoluene	16.57	91	7782731	251.2687 ug/L		93
88)	a-Methylstyrene	16.84	118	4955768	300.9205 ug/L		86
89)	tert-Butylbenzene	16.90	134	2046401	301.6701 ug/L		95
90)	1,2,4-Trimethylbenzene	16.95	105	8903769	240.8932 ug/L		89
91)	sec-Butylbenzene	17.17	105	9867862	230.5051 ug/L		91
92)	p-Isopropyltoluene	17.32	119	8738927	242.4155 ug/L		94
93)	1,3-Dichlorobenzene	17.52	146	5319954	278.2806 ug/L		87
94)	1,4-Dichlorobenzene	17.64	146	5248511	271.3593 ug/L		88
95)	n-Butylbenzene	17.85	91	8408157	234.6279 ug/L		92
96)	1,2-Dichlorobenzene	18.14	146	4717385	277.0787 ug/L		87
97)	1,2-Dibromo-3-Chloropropan	19.13	75	377070	309.0741 ug/L		91
98)	1,2,4-Trichlorobenzene	20.28	180	3677657	291.9206 ug/L		98
99)	Hexachlorobutadiene	20.43	225	1780695	304.4378 ug/L		96
100)	Naphthalene	20.65	128	5216751	275.8542 ug/L		95
101)	1,2,3-Trichlorobenzene	20.96	180	3064908	287.1593 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412229.D 8260WT.M Fri May 13 18:12:36 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration

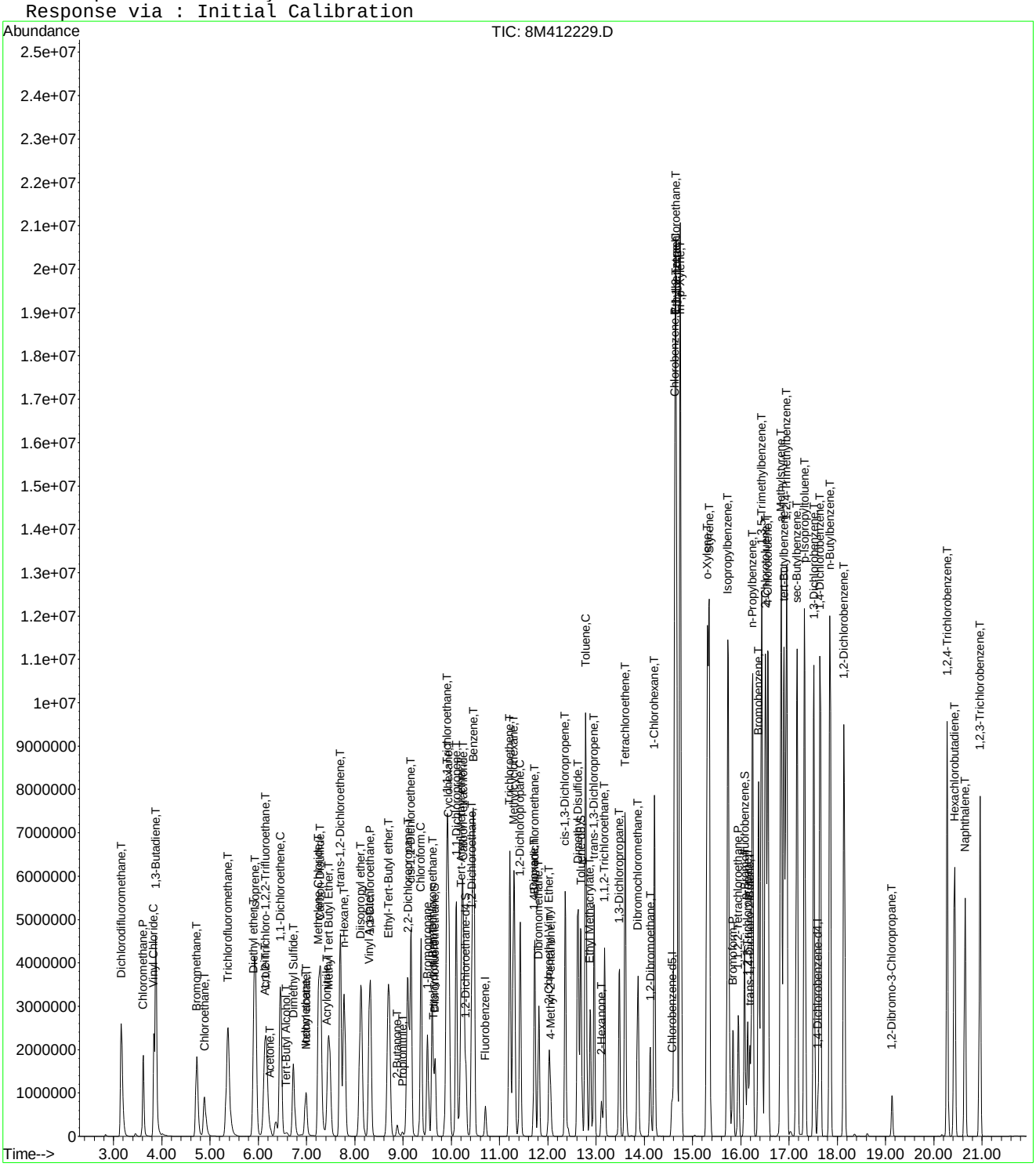

8M412229.D 8260WT.M Fri May 13 18:12:36 2016 Page 3

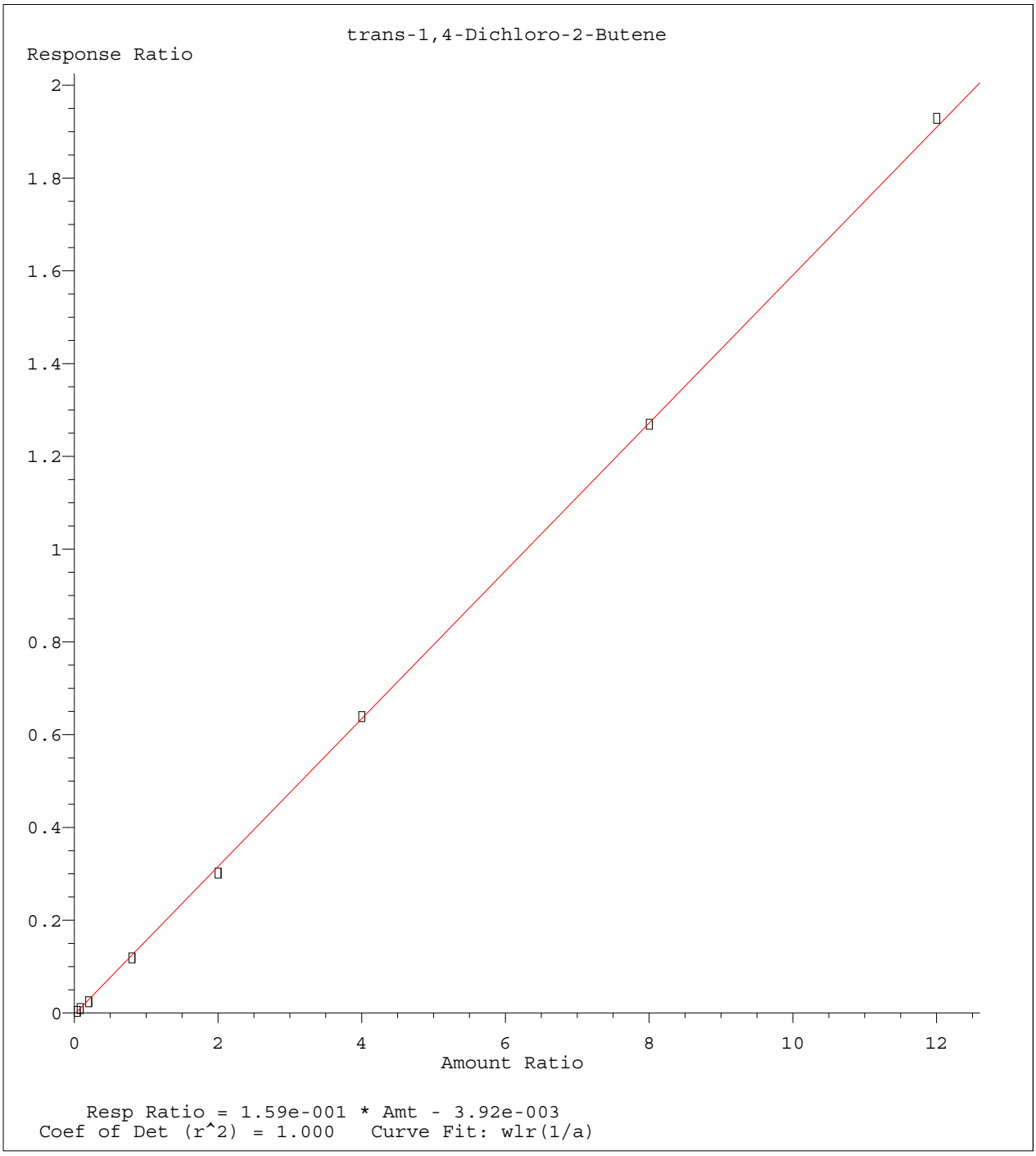

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

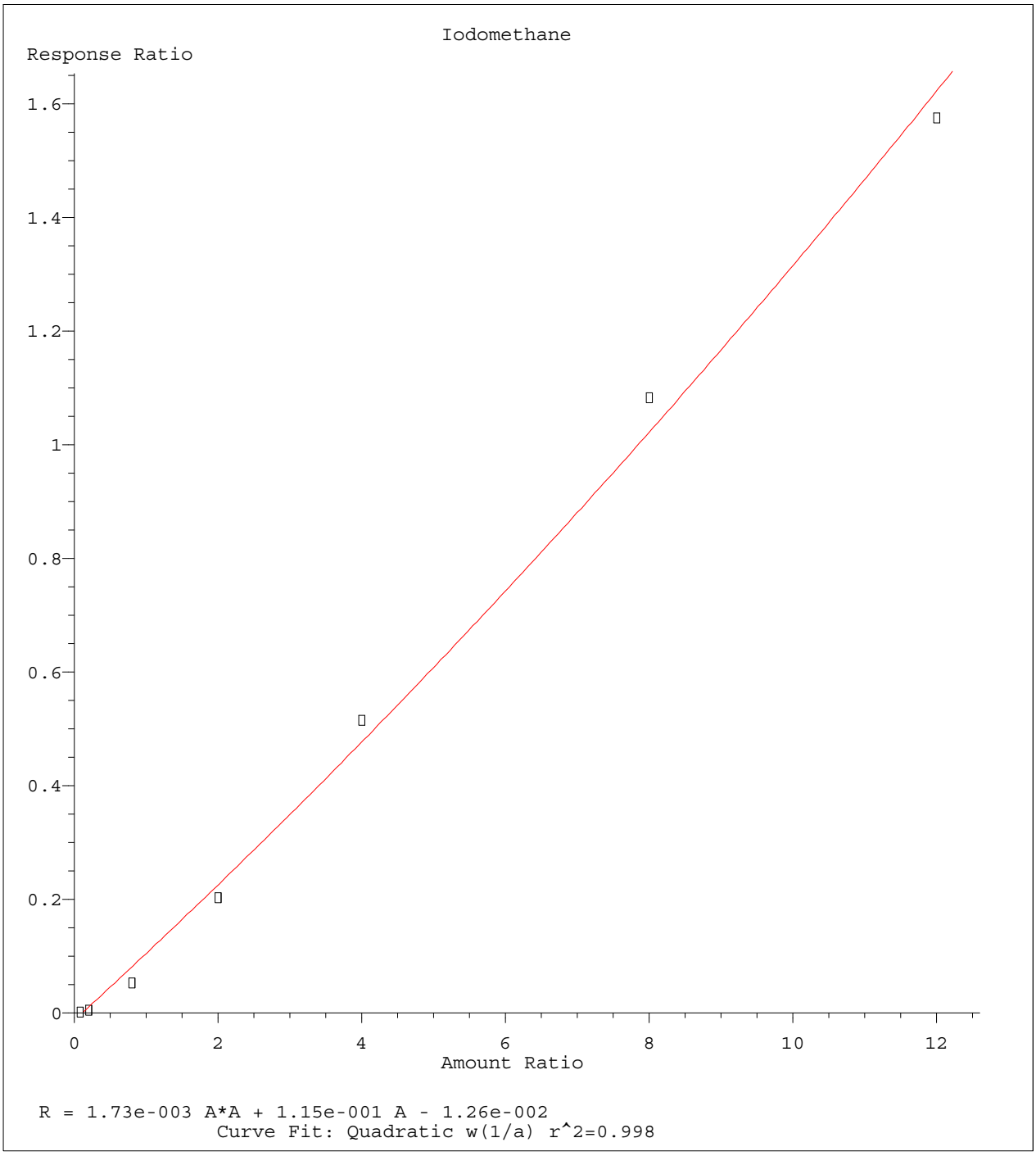

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

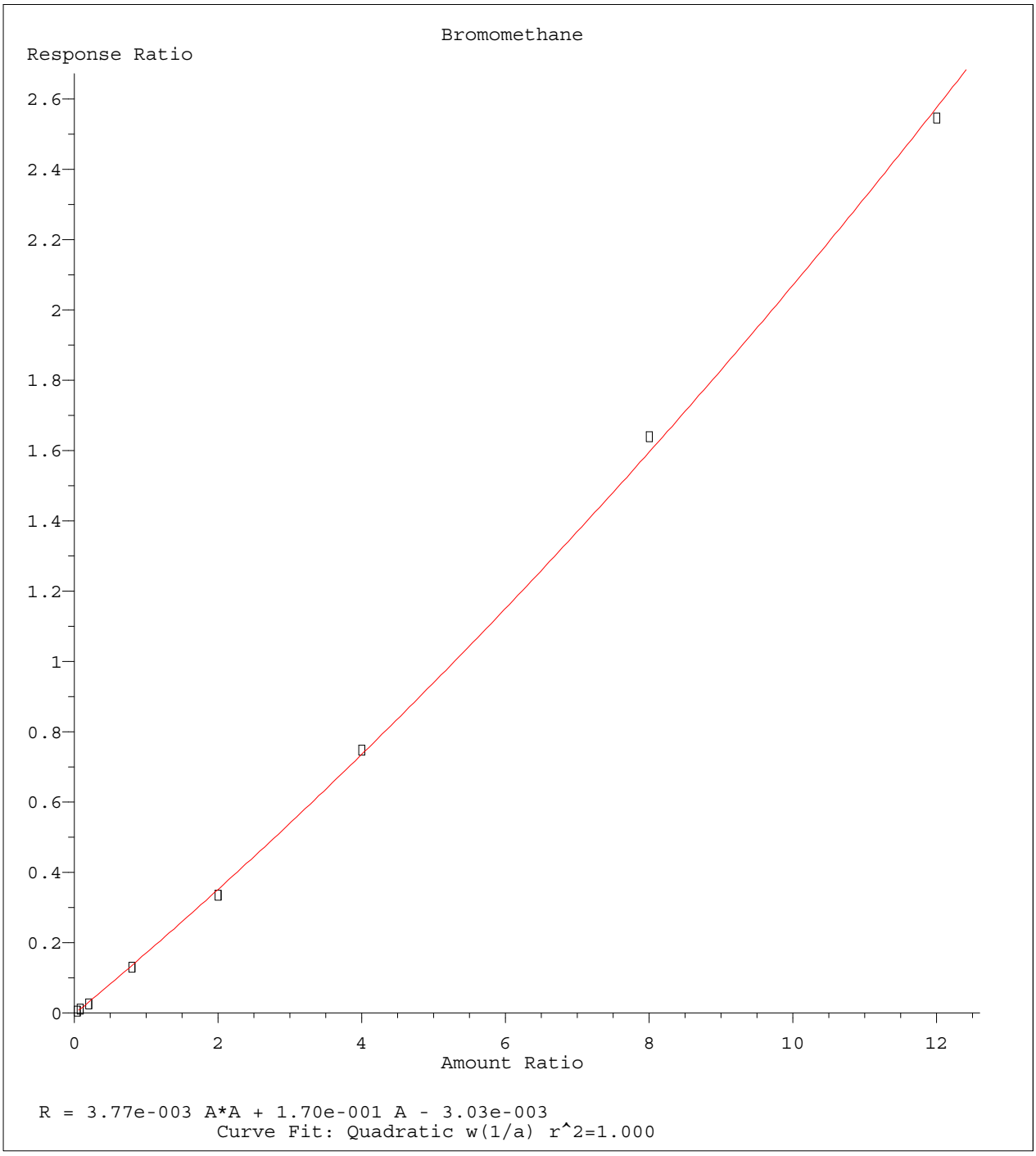

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:44:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Tue May 17 11:43:20 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	837879	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	574720	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	304324	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	229742	25.5204 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.08%		
43) 1,2-Dichloroethane-d4	10.31	65	238672	24.7259 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.92%		
58) Toluene-d8	12.68	98	776362	25.8115 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.24%		
80) p-Bromofluorobenzene	16.07	95	315683	25.0519 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.20%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	761591	54.2141 ug/L	99
3) Chloromethane	3.62	50	415589	50.6814 ug/L	100
4) Vinyl Chloride	3.84	62	509607	52.3810 ug/L	100
5) 1,3-Butadiene	3.88	54	347562	42.6002 ug/L	97
6) Bromomethane	4.73	94	272060	46.3924 ug/L	99
7) Chloroethane	4.88	64	285509	53.3336 ug/L	98
8) Trichlorofluoromethane	5.37	101	849580	46.9313 ug/L	100
9) Diethyl ether	5.90	59	451307	104.4282 ug/L	99
10) Isoprene	5.93	67	582863	53.0208 ug/L	99
11) Acrolein	6.13	56	38877	100.4722 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	419584	49.3091 ug/L	97
13) Acetone	6.23	43	54234	57.5310 ug/L	94
14) 1,1-Dichloroethene	6.46	61	622831	45.9700 ug/L	99
15) Tert-Butyl Alcohol	6.59	59	59797	197.9422 ug/L	97
16) Dimethyl Sulfide	6.73	62	351814	72.6234 ug/L	98
17) Iodomethane	6.99	142	92716	26.2832 ug/L	99
18) Methyl acetate	7.00	43	127540	50.0514 ug/L	98
19) Methylene Chloride	7.25	84	417642	48.4385 ug/L	99
20) Carbon Disulfide	7.29	76	1199899	42.3200 ug/L	100
21) Acrylonitrile	7.43	53	65324	53.4074 ug/L	93
22) Methyl Tert Butyl Ether	7.46	73	949572	50.8859 ug/L	97
23) trans-1,2-Dichloroethene	7.70	61	598296	48.0666 ug/L	99
24) n-Hexane	7.77	57	425106	45.9930 ug/L	99
25) Diisopropyl ether	8.13	45	2040382	105.1615 ug/L	98
26) Vinyl Acetate	8.29	43	415568	46.7802 ug/L	99
27) 1,1-Dichloroethane	8.32	63	721661	46.6846 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	2040020	98.1343 ug/L	99
29) 2-Butanone	8.88	43	73394	52.9905 ug/L	99
30) Propionitrile	8.98	54	42290	104.7756 ug/L	100
31) 2,2-Dichloropropane	9.10	77	780073	47.8861 ug/L	99
32) cis-1,2-Dichloroethene	9.16	96	470465	48.9162 ug/L	98
33) Chloroform	9.38	83	860252	47.1317 ug/L	100
34) 1-Bromopropane	9.51	122	98585	71.5615 ug/L	98
35) Bromochloromethane	9.60	130	234493	47.5456 ug/L	99
36) Tetrahydrofuran	9.62	42	86049	94.3281 ug/L	99
38) 1,1,1-Trichloroethane	9.90	97	825167	47.5949 ug/L	100
39) Cyclohexane	9.93	56	586721	48.8808 ug/L	97
40) 1,1-Dichloropropene	10.10	75	627217	47.4632 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1962875	103.9618 ug/L	99
42) Carbon Tetrachloride	10.24	117	711823	46.2363 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M412232.D 8260WT.M Tue May 17 11:44:38 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	108	0.00
2	T	Dichlorodifluoromethane	50.0000	54.2141	-8.4	112	0.00
3	P	Chloromethane	50.0000	50.6814	-1.4	111	0.00
4	C	Vinyl Chloride	50.0000	52.3811	-4.8	112	-0.01
5	T	1,3-Butadiene	50.0000	42.6002	14.8	89	0.00
6	T	Bromomethane	50.0000	46.3924	7.2	104	-0.01
7	T	Chloroethane	50.0000	53.3336	-6.7	117	-0.01
8	T	Trichlorofluoromethane	50.0000	46.9313	6.1	101	-0.01
9	T	Diethyl ether	100.0000	104.4282	-4.4	116	0.00
10	T	Isoprene	50.0000	53.0208	-6.0	117	0.00
11	T	Acrolein	50.0000	100.4722	-100.9#	220	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	49.3091	1.4	108	0.00
13	T	Acetone	50.0000	57.5310	-15.1	118	-0.01
14	C	1,1-Dichloroethene	50.0000	45.9700	8.1	100	0.00
15	T	Tert-Butyl Alcohol	200.0000	197.9423	1.0	108	0.01
16	T	Dimethyl Sulfide	50.0000	72.6234	-45.2#	159	0.00
17	T	Iodomethane	50.0000	26.2832	47.4#	59	0.01
18	T	Methyl acetate	50.0000	50.0514	-0.1	111	0.00
19	T	Methylene Chloride	50.0000	48.4385	3.1	107	0.00
20	T	Carbon Disulfide	50.0000	42.3200	15.4	94	0.00
21	T	Acrylonitrile	50.0000	53.4074	-6.8	109	0.00
22	T	Methyl Tert Butyl Ether	50.0000	50.8859	-1.8	105	0.00
23	T	trans-1,2-Dichloroethene	50.0000	48.0666	3.9	105	0.00
24	T	n-Hexane	50.0000	45.9930	8.0	101	-0.01
25	T	Diisopropyl ether	100.0000	105.1615	-5.2	115	0.00
26	T	Vinyl Acetate	50.0000	46.7802	6.4	97	0.00
27	P	1,1-Dichloroethane	50.0000	46.6846	6.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.1343	1.9	104	0.00
29	T	2-Butanone	50.0000	52.9905	-6.0	110	0.00
30	T	Propionitrile	100.0000	104.7756	-4.8	111	0.00
31	T	2,2-Dichloropropane	50.0000	47.8861	4.2	102	0.00
32	T	cis-1,2-Dichloroethene	50.0000	48.9162	2.2	107	-0.01
33	C	Chloroform	50.0000	47.1317	5.7	102	0.00
34		1-Bromopropane	50.0000	71.5615	-43.1#	155	0.00
35	T	Bromochloromethane	50.0000	47.5456	4.9	102	0.00
36	T	Tetrahydrofuran	100.0000	94.3281	5.7	108	-0.01
37	S	Dibromofluoromethane	25.0000	25.5204	-2.1	109	0.00
38	T	1,1,1-Trichloroethane	50.0000	47.5949	4.8	101	0.00
39	T	Cyclohexane	50.0000	48.8808	2.2	109	0.00
40	T	1,1-Dichloropropene	50.0000	47.4632	5.1	102	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	103.9618	-4.0	111	0.00
42	T	Carbon Tetrachloride	50.0000	46.2363	7.5	98	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.7259	1.1	104	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	49.0148	2.0	103	0.00
46	T	Benzene	50.0000	48.5232	3.0	104	0.00
47	T	Trichloroethene	50.0000	51.0658	-2.1	110	0.00
48	T	Methylcyclohexane	50.0000	49.8573	0.3	109	0.00
49	C	1,2-Dichloropropane	50.0000	50.9747	-1.9	111	0.00
50	T	Bromodichloromethane	50.0000	48.3053	3.4	99	0.00
51	T	1,4-Dioxane	200.0000	216.9538	-8.5	110	0.01
52	T	Dibromomethane	50.0000	45.8126	8.4	99	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	51.2623	-2.5	104	0.00
54	T	4-Methyl-2-Pentanone	50.0000	51.8715	-3.7	107	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.8979	-7.8	111	0.00
56	T	Dimethyl Disulfide	50.0000	52.2714	-4.5	111	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	107	0.00
58	S	Toluene-d8	25.0000	25.8115	-3.2	108	0.00
59	C	Toluene	50.0000	49.0912	1.8	105	0.00
60	T	Ethyl Methacrylate	50.0000	55.9509	-11.9	113	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	50.6740	-1.3	102	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.0377	1.9	103	0.00
64	T	2-Hexanone	50.0000	53.6057	-7.2	112	0.00
65	T	1,3-Dichloropropane	50.0000	53.6720	-7.3	110	0.00
66	T	Tetrachloroethene	50.0000	47.8053	4.4	104	0.00
67	T	Dibromochloromethane	50.0000	49.6585	0.7	102	0.00
68	T	1,2-Dibromoethane	50.0000	51.1121	-2.2	105	0.00
69	T	1-Chlorohexane	50.0000	51.0611	-2.1	111	0.00
70	P	Chlorobenzene	50.0000	50.1844	-0.4	108	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	49.3793	1.2	103	0.00
72	C	Ethylbenzene	50.0000	48.2013	3.6	105	0.00
73	T	m-,p-Xylene	100.0000	101.1341	-1.1	108	0.00
74	T	o-Xylene	50.0000	50.5675	-1.1	108	0.00
75	T	Styrene	50.0000	51.5086	-3.0	105	0.00
76	P	Bromoform	50.0000	48.2227	3.6	99	0.00
77	T	Isopropylbenzene	50.0000	51.1140	-2.2	107	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	106	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	49.6172	0.8	103	0.00
80	S	p-Bromofluorobenzene	25.0000	25.0519	-0.2	108	0.00
81	T	1,2,3-Trichloropropane	50.0000	50.0849	-0.2	106	0.01
82	T	trans-1,4-Dichloro-2-Butene	50.0000	39.2043	21.6	86	0.00
83	T	n-Propylbenzene	50.0000	51.9237	-3.8	108	0.00
84	T	Bromobenzene	50.0000	49.4648	1.1	105	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	51.6344	-3.3	107	0.00
86	T	2-Chlorotoluene	50.0000	51.5639	-3.1	106	0.00
87	T	4-Chlorotoluene	50.0000	48.2650	3.5	108	0.00
88	T	a-Methylstyrene	50.0000	56.4132	-12.8	120	0.00
89	T	tert-Butylbenzene	50.0000	50.9494	-1.9	112	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	49.6617	0.7	105	0.00
91	T	sec-Butylbenzene	50.0000	51.3386	-2.7	108	0.00
92	T	p-Isopropyltoluene	50.0000	50.1261	-0.3	107	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.8943	-1.8	108	0.00
94	T	1,4-Dichlorobenzene	50.0000	50.4742	-0.9	110	0.00
95	T	n-Butylbenzene	50.0000	49.6520	0.7	105	0.00
96	T	1,2-Dichlorobenzene	50.0000	50.4907	-1.0	110	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	48.4851	3.0	100	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	50.1129	-0.2	107	0.00
99	T	Hexachlorobutadiene	50.0000	52.0919	-4.2	115	0.00
100	T	Naphthalene	50.0000	45.8047	8.4	95	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	47.7353	4.5	106	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412232.D 8260WT.M Sat May 14 18:09:03 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:21 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	709364	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	505399	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	272922	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	27428	100.2132 ug/L	99
3) 3-Chloro-1-propene	7.07	41	940418	104.3259 ug/L	82
4) 2-Chloro-1,3-butadiene	8.45	53	1188994	104.3183 ug/L	86
5) Ethyl Acetate	9.10	43	283167	104.3264 ug/L	95
6) Methacrylonitrile	9.25	67	155775	104.5365 ug/L #	63
7) Isobutyl Alcohol	9.25	43	17893	197.3629 ug/L #	96
9) Methyl methacrylate	11.42	41	298802	102.0346 ug/L	70
10) 2-Nitropropane	11.75	43	121321	95.8263 ug/L	97
13) Cyclohexanone	15.84	55	11401	102.1363 ug/L #	70

(#) = qualifier out of range (m) = manual integration
8M412321.D A9FOOWT.M Thu May 19 09:01:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

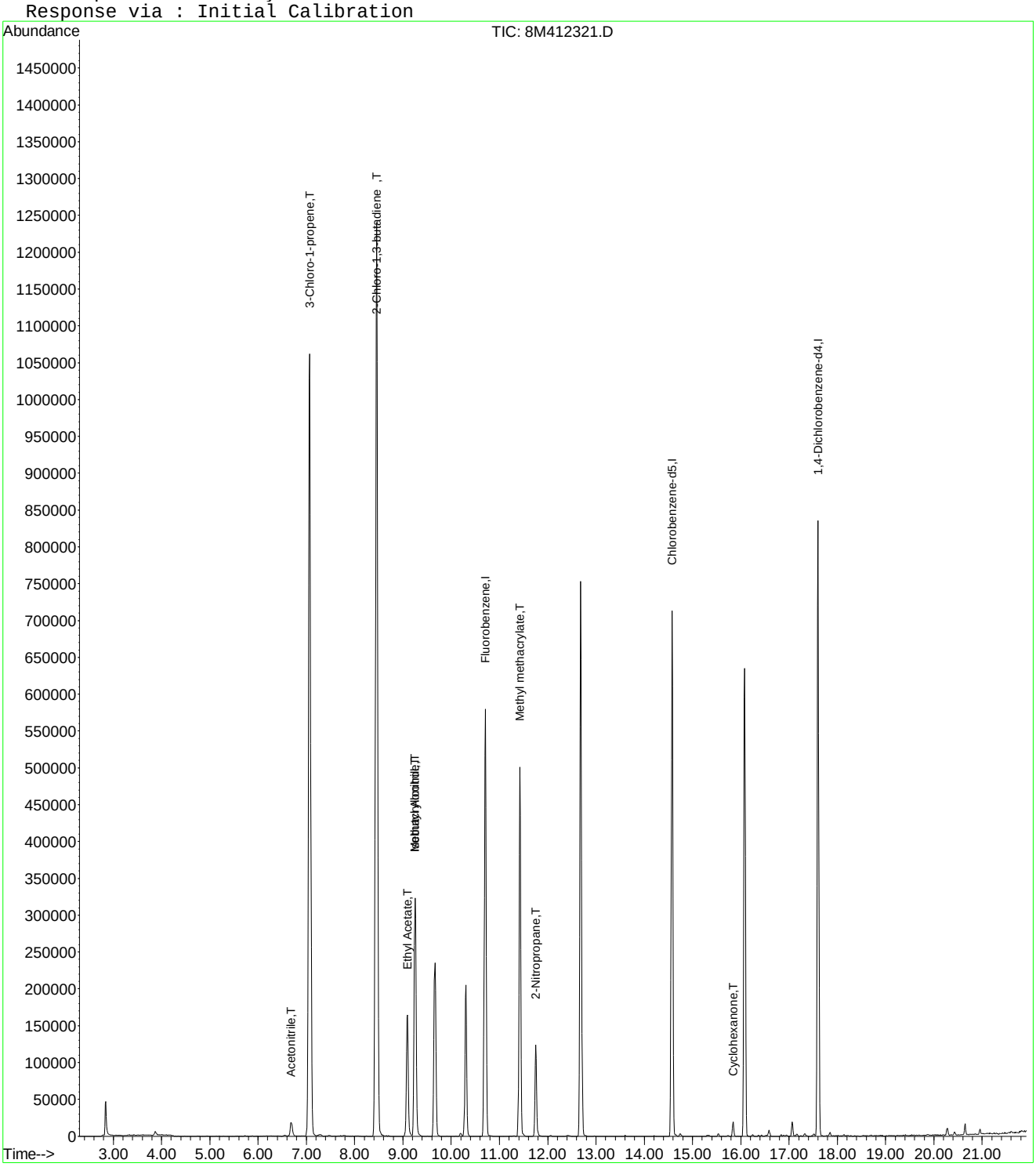

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	100.2132	-0.2	100	0.00
3	T	3-Chloro-1-propene	100.0000	104.3259	-4.3	100	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	104.3183	-4.3	100	0.00
5	T	Ethyl Acetate	100.0000	104.3264	-4.3	100	0.00
6	T	Methacrylonitrile	100.0000	104.5365	-4.5	100	0.00
7	T	Isobutyl Alcohol	200.0000	197.3629	1.3	100	-0.01
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.02
9	T	Methyl methacrylate	100.0000	102.0346	-2.0	100	0.00
10	T	2-Nitropropane	100.0000	95.8263	4.2	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	100.0000	102.1363	-2.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412321.D A9FOOWT.M Thu May 19 09:02:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:20:35 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	677339	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	488377	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	260939	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	13323	50.9795 ug/L	98
3) 3-Chloro-1-propene	7.07	41	453655	52.7060 ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	568765	52.2609 ug/L	87
5) Ethyl Acetate	9.09	43	131636	50.7913 ug/L	97
6) Methacrylonitrile	9.25	67	74064	52.0523 ug/L #	62
7) Isobutyl Alcohol	9.26	43	8483	97.9930 ug/L	95
9) Methyl methacrylate	11.42	41	143892	51.4593 ug/L	70
10) 2-Nitropropane	11.75	43	56559	46.7858 ug/L	95
13) Cyclohexanone	15.84	55	5225	48.9579 ug/L	83

(#) = qualifier out of range (m) = manual integration
8M412322.D A9FOOWT.M Thu May 19 09:20:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:19 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

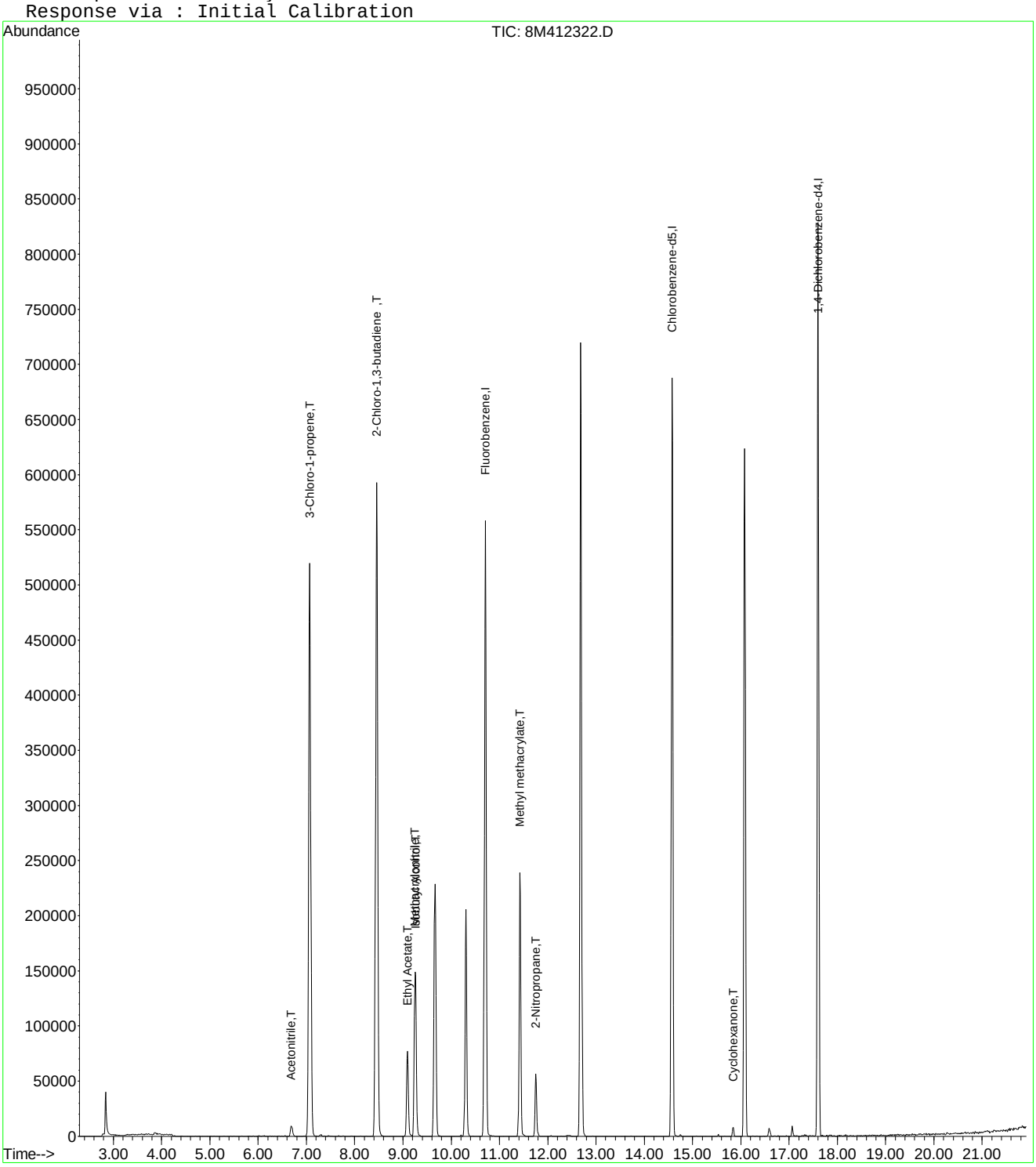

8M412322.D A9FOOWT.M Thu May 19 09:20:36 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	50.9795	-2.0	100	0.00
3	T	3-Chloro-1-propene	50.0000	52.7060	-5.4	100	0.00
4	T	2-Chloro-1,3-butadiene	50.0000	52.2609	-4.5	100	0.00
5	T	Ethyl Acetate	50.0000	50.7913	-1.6	100	0.00
6	T	Methacrylonitrile	50.0000	52.0523	-4.1	100	0.00
7	T	Isobutyl Alcohol	100.0000	97.9929	2.0	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.02
9	T	Methyl methacrylate	50.0000	51.4592	-2.9	100	0.00
10	T	2-Nitropropane	50.0000	46.7858	6.4	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	50.0000	48.9579	2.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412322.D A9FOOWT.M Thu May 19 09:02:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:22:33 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	652985	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	476539	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	256082	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	4873	19.3416 ug/L	80
3) 3-Chloro-1-propene	7.07	41	172467	20.7847 ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	219296	20.9015 ug/L	87
5) Ethyl Acetate	9.09	43	50385	20.1659 ug/L	100
6) Methacrylonitrile	9.26	67	28119	20.4992 ug/L #	63
7) Isobutyl Alcohol	9.27	43	2774	33.2395 ug/L #	8
9) Methyl methacrylate	11.42	41	55309	20.5176 ug/L	73
10) 2-Nitropropane	11.75	43	21584	18.5202 ug/L	99
13) Cyclohexanone	15.84	55	2230	21.2913 ug/L	87

(#) = qualifier out of range (m) = manual integration
8M412323.D A9FOOWT.M Thu May 19 09:22:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:21 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

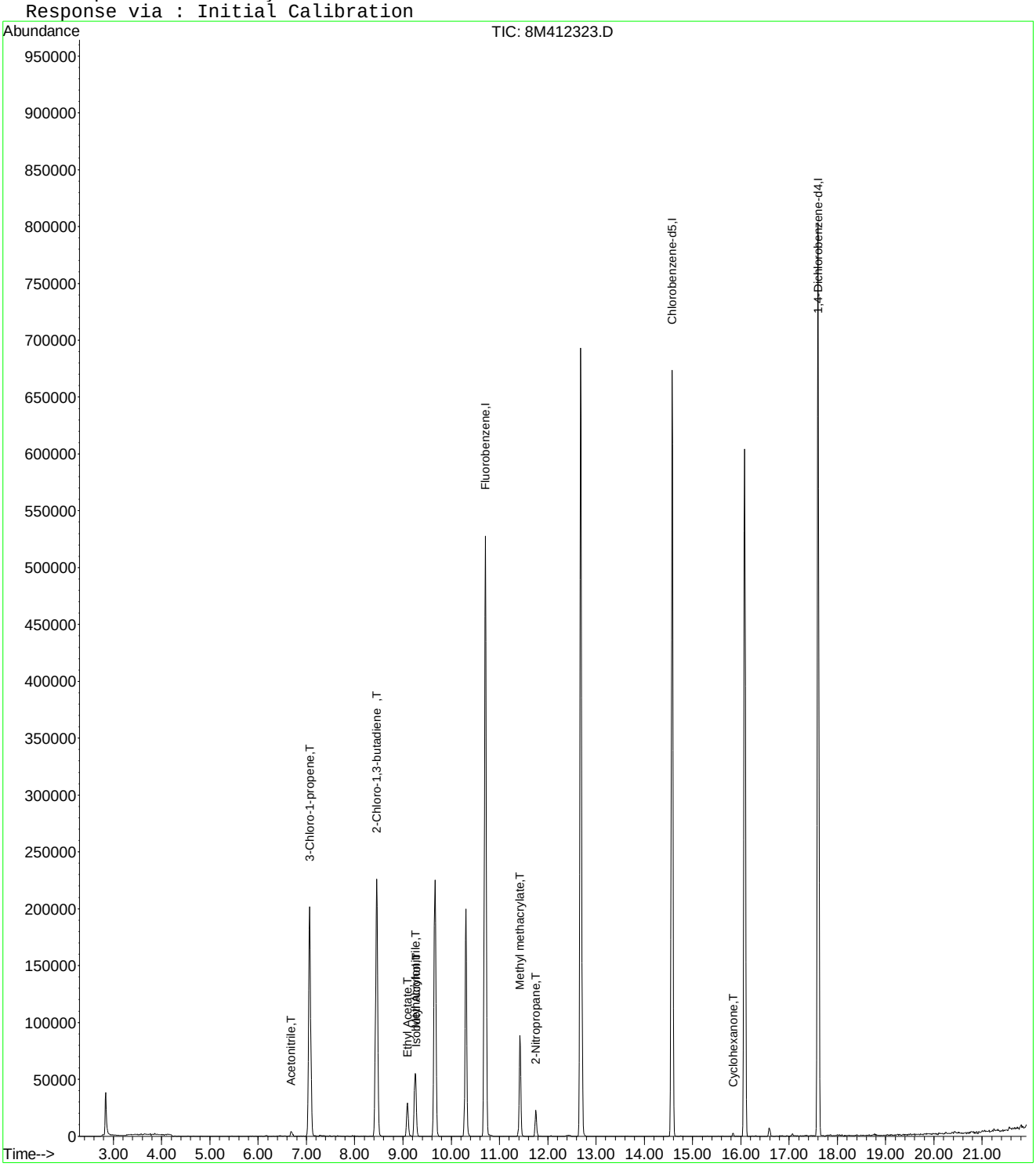

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	19.3416	3.3	100	0.00
3	T	3-Chloro-1-propene	20.0000	20.7847	-3.9	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	20.9015	-4.5	100	0.00
5	T	Ethyl Acetate	20.0000	20.1659	-0.8	100	0.00
6	T	Methacrylonitrile	20.0000	20.4992	-2.5	100	0.00
7	T	Isobutyl Alcohol	-1.0000	33.2395	0.0	0	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.18#
9	T	Methyl methacrylate	20.0000	20.5176	-2.6	100	0.00
10	T	2-Nitropropane	20.0000	18.5203	7.4	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	20.0000	21.2913	-6.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412323.D A9FOOWT.M Thu May 19 09:02:17 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:22:43 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	665645	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	483812	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	257678	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	405	1.5769 ug/L #	23
3) 3-Chloro-1-propene	7.07	41	40699	4.8115 ug/L	84
4) 2-Chloro-1,3-butadiene	8.45	53	48973	4.5789 ug/L	81
5) Ethyl Acetate	9.09	43	10675	4.1913 ug/L	95
6) Methacrylonitrile	9.26	67	5417	3.8740 ug/L #	72
7) Isobutyl Alcohol	9.27	43	441	5.1838 ug/L #	8
9) Methyl methacrylate	11.43	41	11811	4.2981 ug/L	65
10) 2-Nitropropane	11.76	43	4170	3.5100 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412324.D A9FOOWT.M Thu May 19 09:22:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:21 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

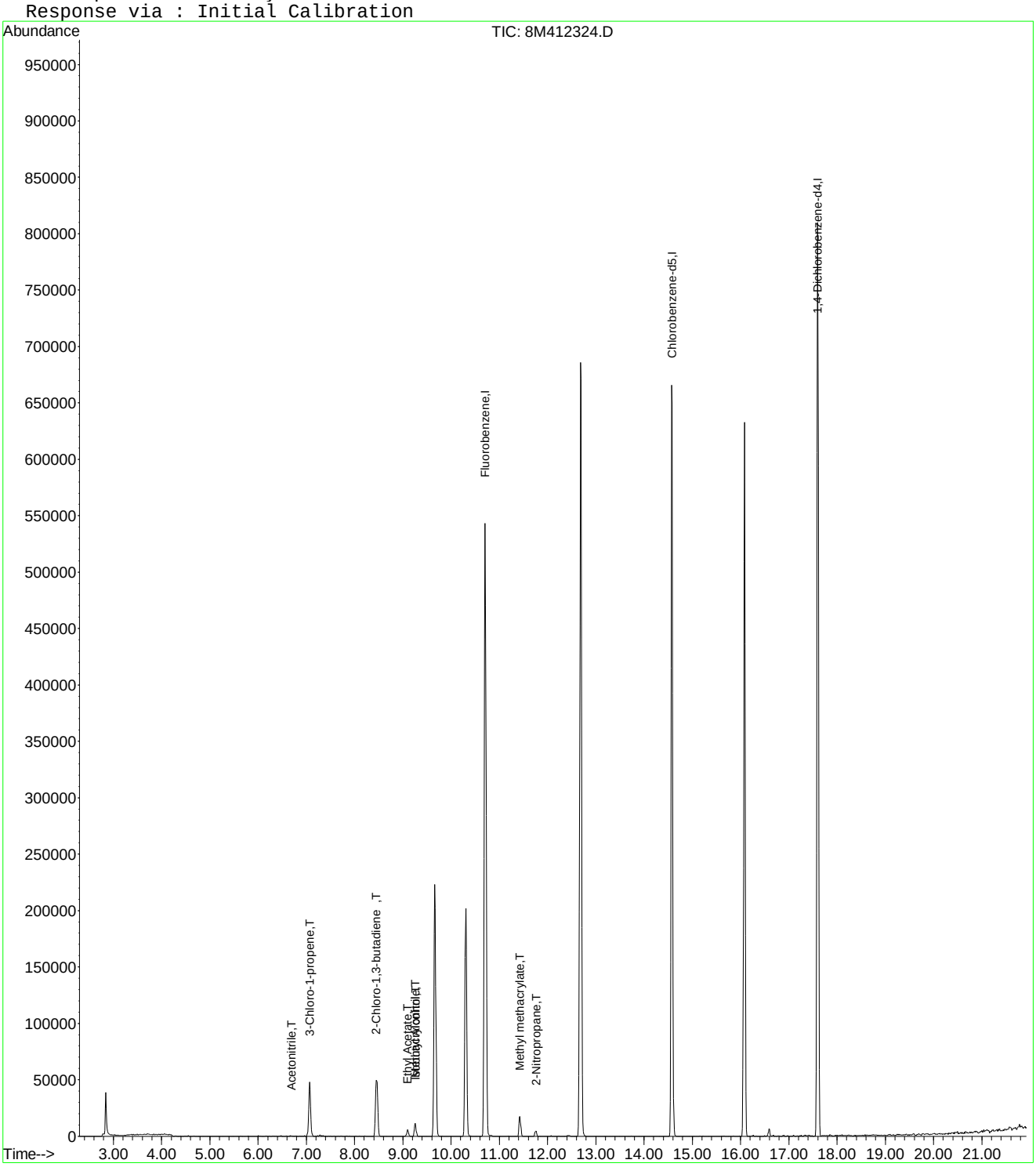

8M412324.D A9FOOWT.M Thu May 19 09:22:43 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	-1.0000	1.5769	0.0	0	0.00
3	T	3-Chloro-1-propene	5.0000	4.8115	3.8	100	0.00
4	T	2-Chloro-1,3-butadiene	5.0000	4.5789	8.4	100	0.00
5	T	Ethyl Acetate	5.0000	4.1913	16.2	100	0.00
6	T	Methacrylonitrile	5.0000	3.8740	22.5	100	0.00
7	T	Isobutyl Alcohol	-1.0000	5.1838	0.0	0	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.18#
9	T	Methyl methacrylate	5.0000	4.2981	14.0	100	0.00
10	T	2-Nitropropane	-1.0000	3.5100	0.0	0	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	0.0000	0.0	0	-15.84#

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412324.D A9FOOWT.M Thu May 19 09:02:03 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412325.D Vial: 7
Acq On : 17 May 2016 11:42 Operator: TMB
Sample : WG569079-06 200ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:27 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	682012	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	491515	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	261877	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.68	41	52022	197.6946 ug/L	97
3) 3-Chloro-1-propene	7.06	41	1768403	204.0468 ug/L	83
4) 2-Chloro-1,3-butadiene	8.46	53	2283706	208.4003 ug/L	87
5) Ethyl Acetate	9.09	43	537585	206.0040 ug/L	94
6) Methacrylonitrile	9.25	67	297408	207.5869 ug/L #	63
7) Isobutyl Alcohol	9.26	43	34441	395.1256 ug/L	95
9) Methyl methacrylate	11.42	41	577612	205.1526 ug/L	72
10) 2-Nitropropane	11.75	43	248395	204.0652 ug/L	95
13) Cyclohexanone	15.85	55	19752	184.4122 ug/L #	59

(#) = qualifier out of range (m) = manual integration
8M412325.D A9FOOWT.M Thu May 19 09:01:28 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412325.D Vial: 7
Acq On : 17 May 2016 11:42 Operator: TMB
Sample : WG569079-06 200ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

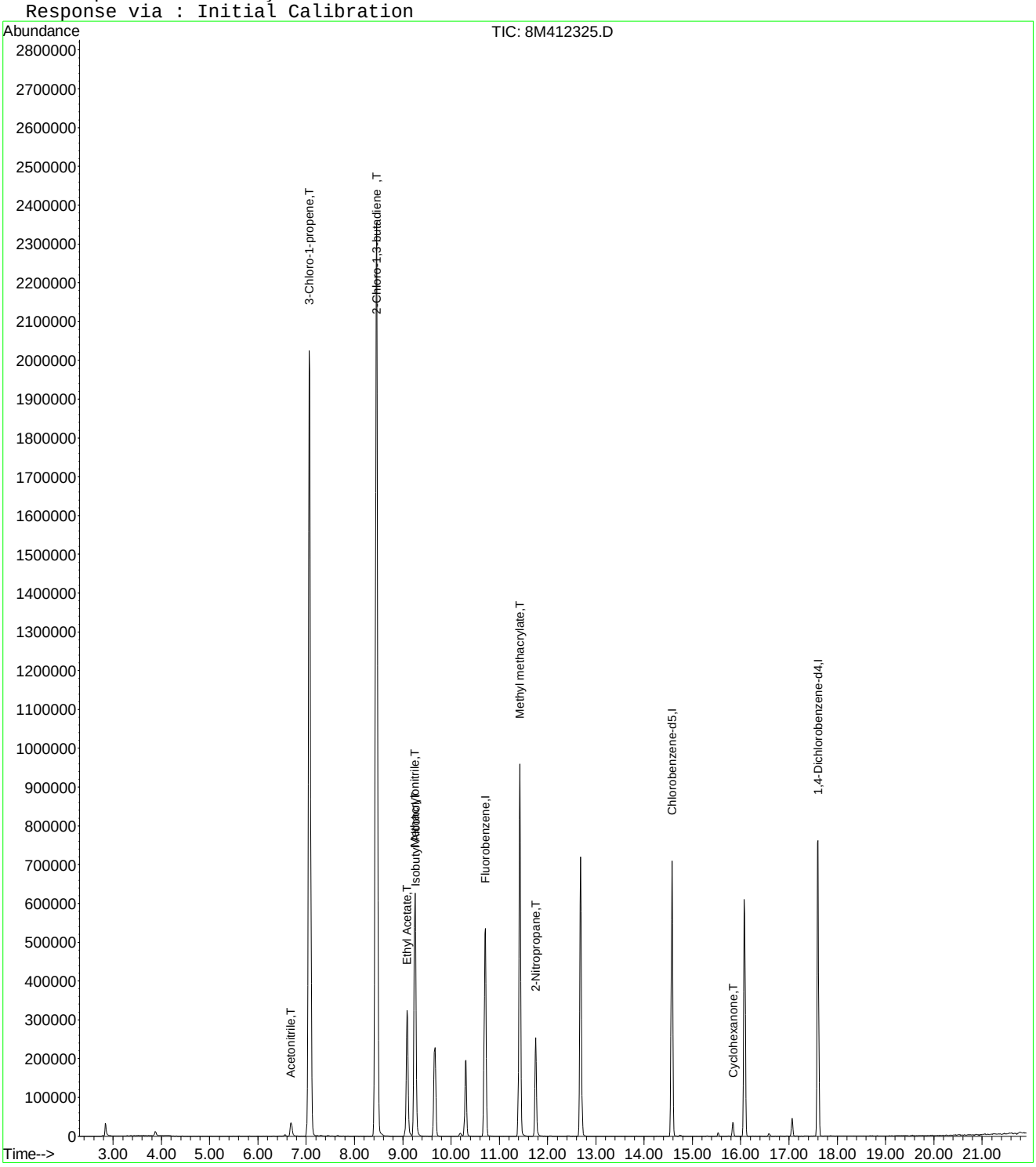

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412326.D Vial: 8
Acq On : 17 May 2016 12:40 Operator: TMB
Sample : WG569079-07 300ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:29 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	694903	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	496643	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	267309	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.69	41	81471	303.8636	ug/L	98
3) 3-Chloro-1-propene	7.06	41	2563559	290.3084	ug/L	83
4) 2-Chloro-1,3-butadiene	8.46	53	3270971	292.9562	ug/L	86
5) Ethyl Acetate	9.09	43	821184	308.8424	ug/L	95
6) Methacrylonitrile	9.25	67	451708	309.4374	ug/L #	62
7) Isobutyl Alcohol	9.26	43	55071	620.0836	ug/L	94
9) Methyl methacrylate	11.42	41	874430	304.8132	ug/L	70
10) 2-Nitropropane	11.75	43	392965	316.8456	ug/L	94
13) Cyclohexanone	15.84	55	33523	306.6233	ug/L #	61

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412326.D Vial: 8
Acq On : 17 May 2016 12:40 Operator: TMB
Sample : WG569079-07 300ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

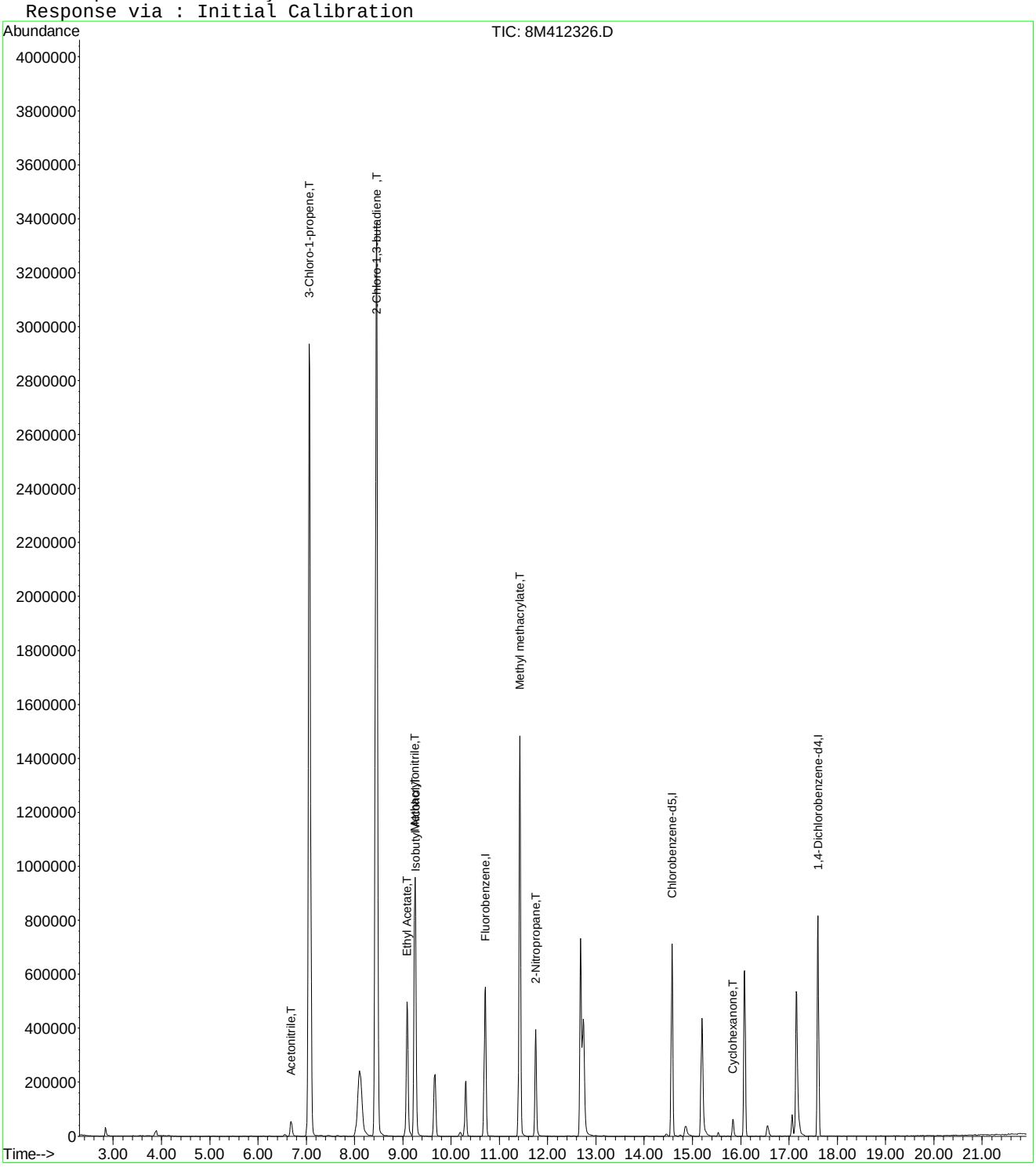

8M412326.D A9FOOWT.M Thu May 19 09:01:29 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412327.D Vial: 9
Acq On : 17 May 2016 13:10 Operator: TMB
Sample : WG569079-08 400ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:30 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	700514	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	502552	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	270883	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.69	41	110761	409.7980	ug/L	97
3) 3-Chloro-1-propene	7.07	41	3406131	382.6353	ug/L	82
4) 2-Chloro-1,3-butadiene	8.45	53	4356691	387.0705	ug/L	85
5) Ethyl Acetate	9.09	43	1116818	416.6642	ug/L	94
6) Methacrylonitrile	9.25	67	615482	418.2517	ug/L #	62
7) Isobutyl Alcohol	9.26	43	75472	842.9862	ug/L	97
9) Methyl methacrylate	11.42	41	1199317	414.7153	ug/L	71
10) 2-Nitropropane	11.75	43	538580	430.7760	ug/L	94
13) Cyclohexanone	15.84	55	45874	414.0575	ug/L #	55

(#) = qualifier out of range (m) = manual integration
8M412327.D A9FOOWT.M Thu May 19 09:01:31 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412327.D Vial: 9
Acq On : 17 May 2016 13:10 Operator: TMB
Sample : WG569079-08 400ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

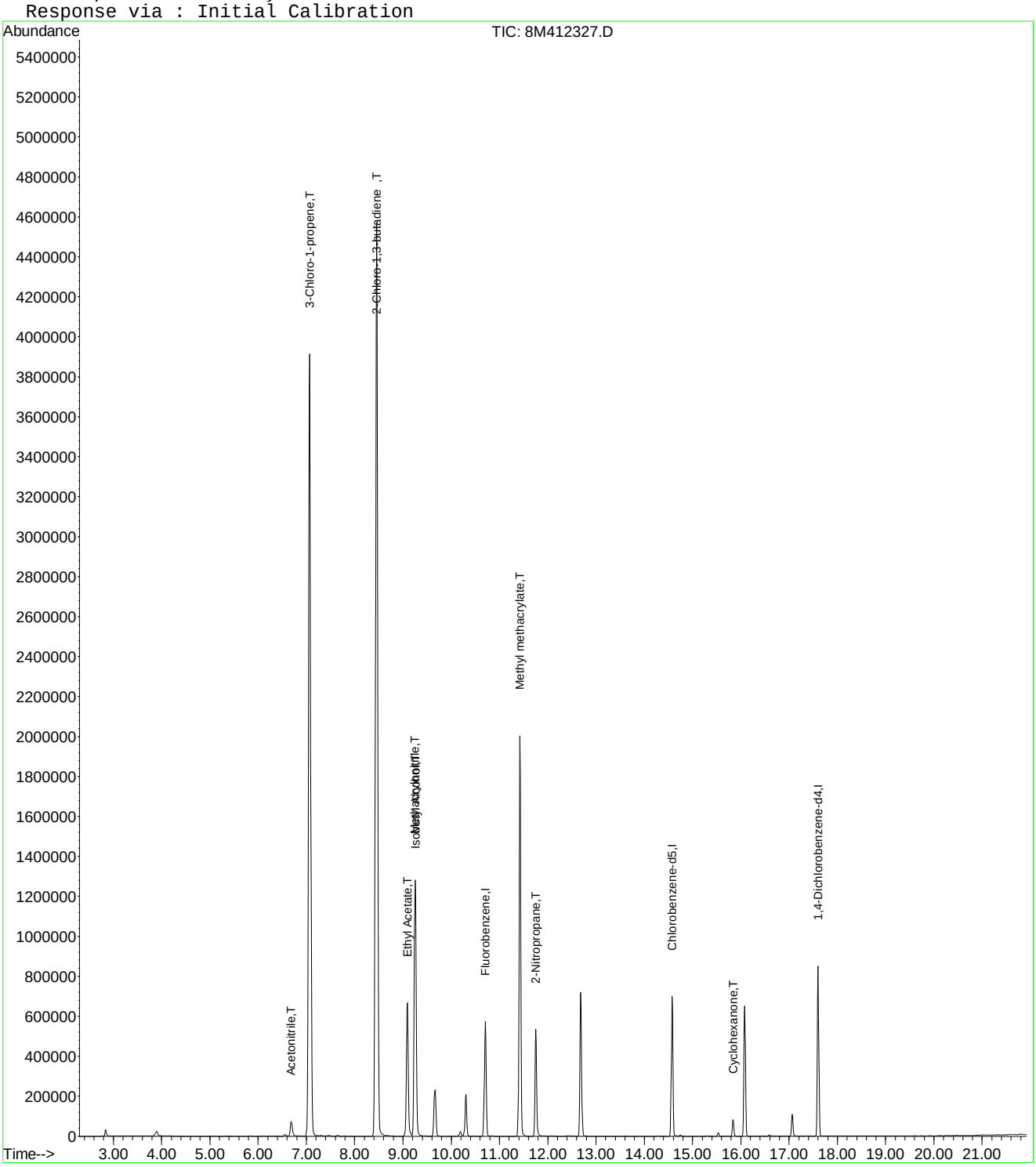

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412328.D Vial: 10
Acq On : 17 May 2016 13:39 Operator: TMB
Sample : WG569079-09 500ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:31 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	695694	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	495257	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	266442	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	132245	492.6753 ug/L	99
3) 3-Chloro-1-propene	7.06	41	4228273	478.2834 ug/L	82
4) 2-Chloro-1,3-butadiene	8.46	53	5390856	482.2693 ug/L	85
5) Ethyl Acetate	9.09	43	1321922	496.6017 ug/L	95
6) Methacrylonitrile	9.25	67	729852	499.4083 ug/L #	61
7) Isobutyl Alcohol	9.26	43	85200	958.2367 ug/L	96
9) Methyl methacrylate	11.42	41	1416438	493.1877 ug/L	72
10) 2-Nitropropane	11.75	43	637335	513.2956 ug/L	93
13) Cyclohexanone	15.84	55	52070	477.8160 ug/L #	61

(#) = qualifier out of range (m) = manual integration
8M412328.D A9FOOWT.M Thu May 19 09:01:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412328.D Vial: 10
Acq On : 17 May 2016 13:39 Operator: TMB
Sample : WG569079-09 500ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

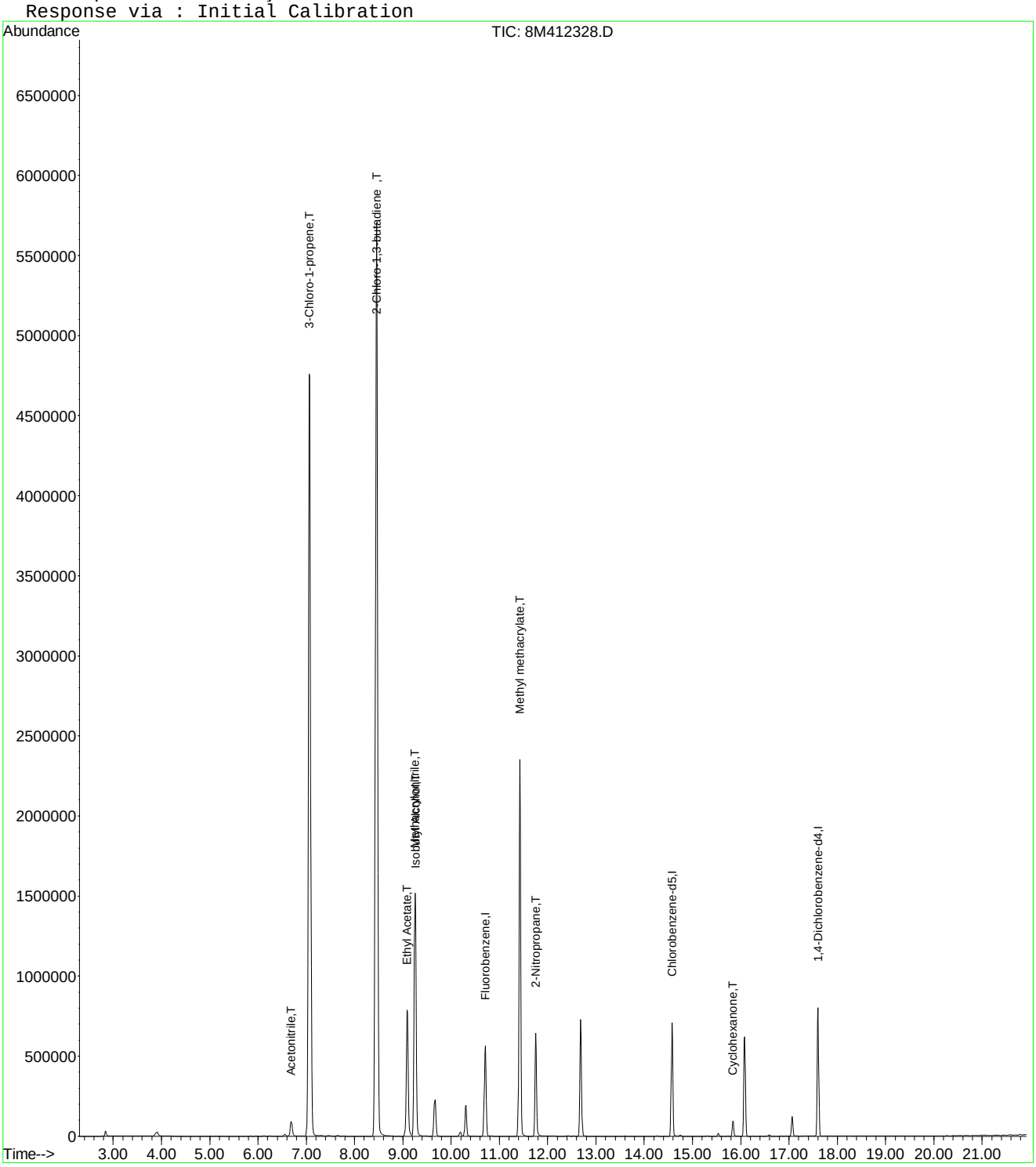

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:32 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	676765	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	486447	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	263036	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.69	41	29876	114.4154	ug/L	97
3) 3-Chloro-1-propene	7.07	41	858035	99.7718	ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	1224194	112.5803	ug/L	87
5) Ethyl Acetate	9.09	43	295545	114.1317	ug/L	96
6) Methacrylonitrile	9.25	67	161574	113.6509	ug/L #	63
7) Isobutyl Alcohol	9.26	43	19948	230.6285	ug/L	94
9) Methyl methacrylate	11.42	41	326465	116.8508	ug/L	72
10) 2-Nitropropane	11.75	43	131261	108.6716	ug/L	94
13) Cyclohexanone	15.83	55	10459	97.2189	ug/L #	74

(#) = qualifier out of range (m) = manual integration
8M412331.D A9FOOWT.M Thu May 19 09:01:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

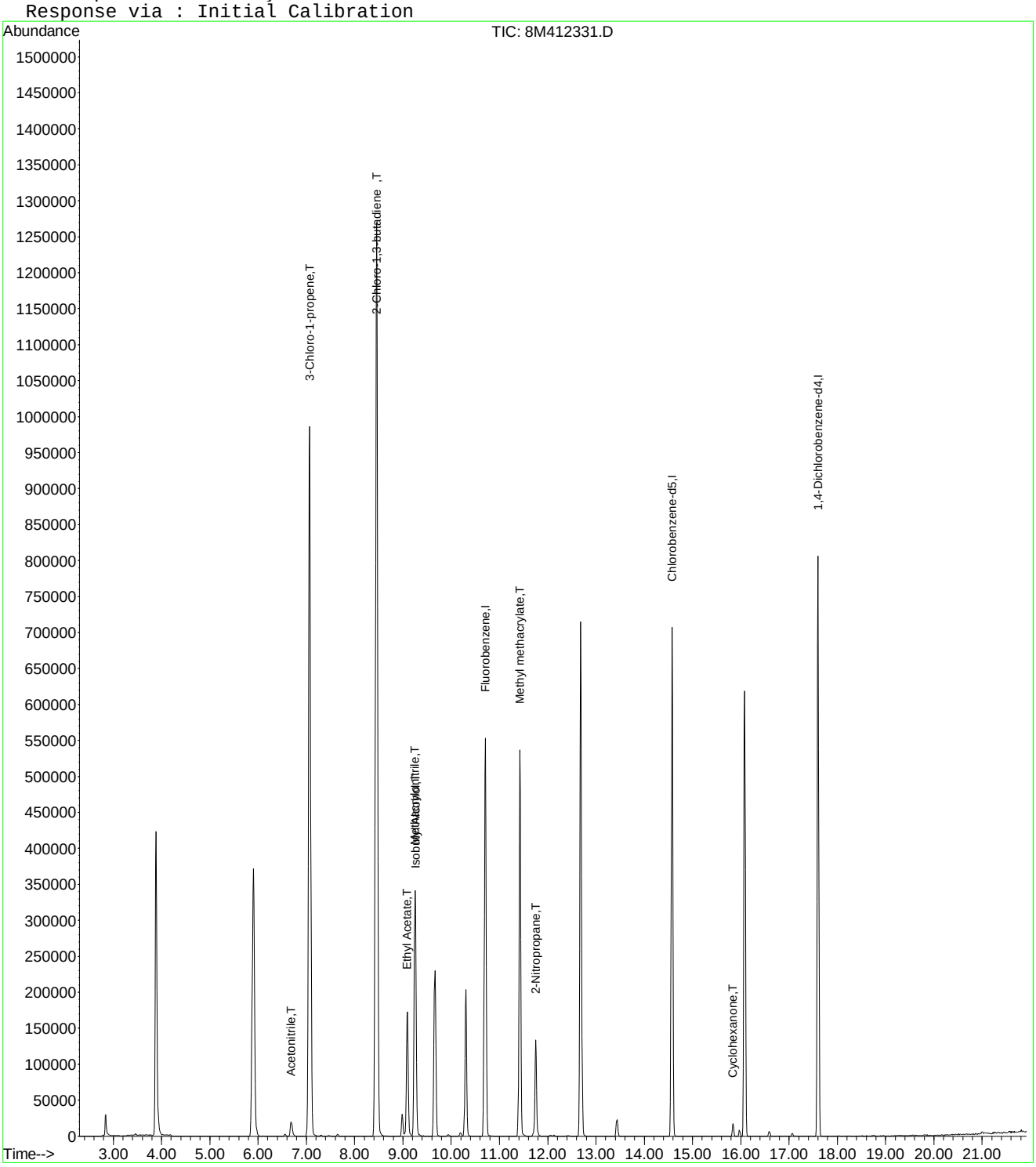

8M412331.D A9FOOWT.M Thu May 19 09:01:33 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	95	0.00
2	T	Acetonitrile	100.0000	114.4154	-14.4	109	0.00
3	T	3-Chloro-1-propene	100.0000	99.7718	0.2	91	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	112.5803	-12.6	103	0.00
5	T	Ethyl Acetate	100.0000	114.1317	-14.1	104	0.00
6	T	Methacrylonitrile	100.0000	113.6509	-13.7	104	0.00
7	T	Isobutyl Alcohol	200.0000	230.6285	-15.3	111	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.01
9	T	Methyl methacrylate	100.0000	116.8508	-16.9	109	0.00
10	T	2-Nitropropane	100.0000	108.6716	-8.7	108	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	96	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	96	0.00
13	T	Cyclohexanone	100.0000	97.2189	2.8	92	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412331.D A9FOOWT.M Thu May 19 09:03:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413032.D Vial: 2
Acq On : 16 Jun 2016 14:25 Operator: FJB
Sample : WG573037-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 20 09:11:28 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	733857	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	538326	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	307491	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	215897	27.3819 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.52%		
43) 1,2-Dichloroethane-d4	10.30	65	234596	27.7486 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.00%		
58) Toluene-d8	12.68	98	742553	26.3564 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.44%		
80) p-Bromofluorobenzene	16.08	95	315298	24.7636 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.04%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	709296	57.6485 ug/L	100
3) Chloromethane	3.62	50	334378	46.5578 ug/L	99
4) Vinyl Chloride	3.84	62	469712	55.1239 ug/L	99
5) 1,3-Butadiene	3.89	54	449731	62.9364 ug/L	97
6) Bromomethane	4.73	94	187928	36.9767 ug/L	99
7) Chloroethane	4.89	64	229428	48.9325 ug/L	97
8) Trichlorofluoromethane	5.37	101	947245	59.7435 ug/L	99
9) Diethyl ether	5.91	59	359174	94.8900 ug/L	97
10) Isoprene	5.94	67	490773	50.9718 ug/L	97
11) Acrolein	6.14	56	15092	44.5317 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	413268	55.4511 ug/L	96
13) Acetone	6.24	43	43062	52.1548 ug/L	100
14) 1,1-Dichloroethene	6.47	61	648526	54.6514 ug/L	98
15) Tert-Butyl Alcohol	6.57	59	62702	236.9793 ug/L	98
16) Dimethyl Sulfide	6.73	62	205530	48.4405 ug/L	98
17) Iodomethane	6.99	142	88941	28.4929 ug/L	92
18) Methyl acetate	7.00	43	95456	42.7704 ug/L	98
19) Methylene Chloride	7.26	84	368680	48.8209 ug/L	100
20) Carbon Disulfide	7.29	76	1316779	53.0253 ug/L	100
21) Acrylonitrile	7.43	53	50980	47.5881 ug/L	94
22) Methyl Tert Butyl Ether	7.46	73	815898	49.9201 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	567448	52.0503 ug/L	100
24) n-Hexane	7.78	57	440578	54.4236 ug/L	99
25) Diisopropyl ether	8.12	45	1629728	95.9026 ug/L	96
26) Vinyl Acetate	8.30	43	383450	49.2832 ug/L	99
27) 1,1-Dichloroethane	8.33	63	708177	52.3061 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1837543	100.9239 ug/L	98
29) 2-Butanone	8.88	43	55723	45.9348 ug/L	98
30) Propionitrile	8.99	54	34053	96.3269 ug/L	98
31) 2,2-Dichloropropane	9.11	77	881786	61.8026 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	429176	50.9485 ug/L	97
33) Chloroform	9.37	83	876461	54.8264 ug/L	100
34) 1-Bromopropane	9.51	122	69827	57.8711 ug/L	99
35) Bromochloromethane	9.61	130	221472	51.2707 ug/L	96
36) Tetrahydrofuran	9.63	42	65588	82.0898 ug/L	92
38) 1,1,1-Trichloroethane	9.91	97	904390	59.5586 ug/L	99
39) Cyclohexane	9.94	56	543065	51.6569 ug/L	96
40) 1,1-Dichloropropene	10.11	75	631550	54.5654 ug/L	100
41) Tert-Amyl-Methyl ether	10.21	73	1667474	100.8347 ug/L	100
42) Carbon Tetrachloride	10.25	117	809209	60.0125 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M413032.D 8260WT.M Mon Jun 20 09:11:29 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413032.D Vial: 2
Acq On : 16 Jun 2016 14:25 Operator: FJB
Sample : WG573037-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 20 09:11:28 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	583022	56.6636	ug/L		98
46)	Benzene	10.46	78	1567451	51.9972	ug/L		99
47)	Trichloroethene	11.21	130	433837	53.9600	ug/L		99
48)	Methylcyclohexane	11.30	83	676953	55.4235	ug/L		100
49)	1,2-Dichloropropane	11.43	63	326457	48.6480	ug/L		86
50)	Bromodichloromethane	11.73	83	653209	55.3826	ug/L		100
51)	1,4-Dioxane	11.72	88	7428	220.3548	ug/L		98
52)	Dibromomethane	11.81	93	197458	49.7082	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.03	63	129844	45.0178	ug/L		95
54)	4-Methyl-2-Pentanone	12.06	58	53646	45.5327	ug/L		94
55)	cis-1,3-Dichloropropene	12.36	75	639780	53.2922	ug/L		100
56)	Dimethyl Disulfide	12.63	79	328801	51.3144	ug/L		99
59)	Toluene	12.78	91	1681041	50.3002	ug/L		100
60)	Ethyl Methacrylate	12.88	69	300733	46.8562	ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	572847	51.1483	ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	244197	46.3057	ug/L		99
64)	2-Hexanone	13.12	58	49168	44.3674	ug/L	#	100
65)	1,3-Dichloropropane	13.48	76	441493	47.0219	ug/L		97
66)	Tetrachloroethene	13.60	164	383463	53.5544	ug/L		98
67)	Dibromochloromethane	13.87	129	388793	50.4917	ug/L		99
68)	1,2-Dibromoethane	14.13	107	247883	47.1634	ug/L		98
69)	1-Chlorohexane	14.21	91	594465	52.1092	ug/L		98
70)	Chlorobenzene	14.62	112	1121470	49.7630	ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.66	131	456454	52.2807	ug/L		100
72)	Ethylbenzene	14.66	106	622088	50.4524	ug/L		99
73)	m-,p-Xylene	14.75	106	1491287	103.1131	ug/L		100
74)	o-Xylene	15.31	106	724388	51.2307	ug/L		99
75)	Styrene	15.35	104	1206191	52.0104	ug/L		96
76)	Bromoform	15.84	173	232298	50.8617	ug/L		99
77)	Isopropylbenzene	15.73	105	2026613	53.9527	ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	256105	41.4928	ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	85494	44.9807	ug/L		72
82)	trans-1,4-Dichloro-2-Buten	16.18	53	84374	43.6303	ug/L	#	51
83)	n-Propylbenzene	16.24	91	2386990	49.7580	ug/L		99
84)	Bromobenzene	16.37	156	473221	47.9586	ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	1753288	50.1733	ug/L		100
86)	2-Chlorotoluene	16.52	91	1599256	47.7491	ug/L		100
87)	4-Chlorotoluene	16.56	91	1503375	49.6923	ug/L		100
88)	a-Methylstyrene	16.84	118	786649	47.4481	ug/L		98
89)	tert-Butylbenzene	16.90	134	334560	48.9377	ug/L		99
90)	1,2,4-Trimethylbenzene	16.95	105	1801178	50.1269	ug/L		100
91)	sec-Butylbenzene	17.17	105	2069862	50.3494	ug/L		99
92)	p-Isopropyltoluene	17.32	119	1766300	50.6022	ug/L		99
93)	1,3-Dichlorobenzene	17.52	146	942205	49.5900	ug/L		98
94)	1,4-Dichlorobenzene	17.64	146	911590	47.5896	ug/L		99
95)	n-Butylbenzene	17.85	91	1742674	50.5007	ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	787813	46.6205	ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	54489	43.9791	ug/L		98
98)	1,2,4-Trichlorobenzene	20.28	180	613274	48.5529	ug/L		100
99)	Hexachlorobutadiene	20.43	225	322898	54.7126	ug/L		99
100)	Naphthalene	20.65	128	816338	43.5006	ug/L		100
101)	1,2,3-Trichlorobenzene	20.96	180	483344	45.3576	ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413032.D Vial: 2
Acq On : 16 Jun 2016 14:25 Operator: FJB
Sample : WG573037-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 20 9:11 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

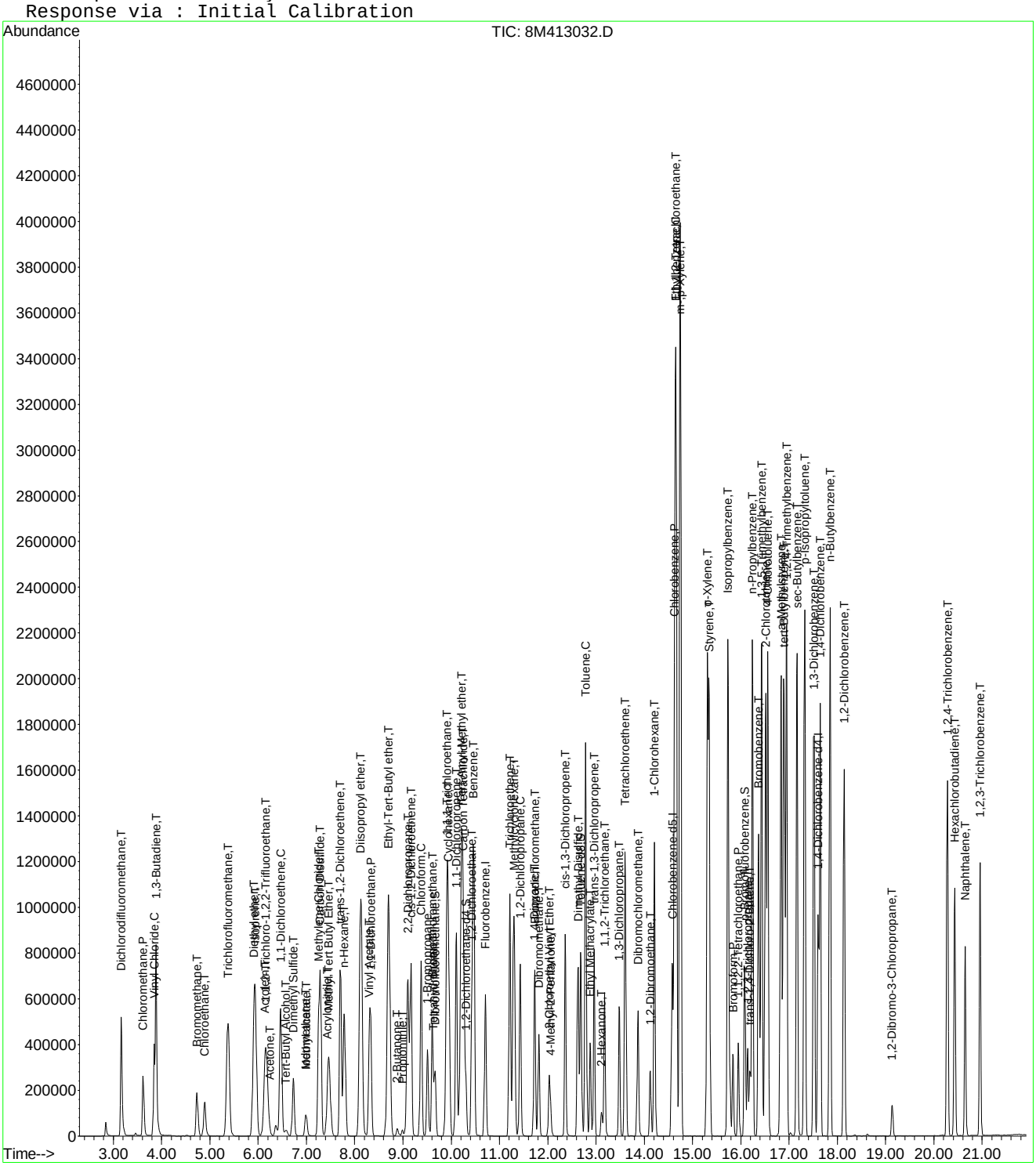

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413032.D Vial: 2
Acq On : 16 Jun 2016 14:25 Operator: FJB
Sample : WG573037-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	94	0.00
2	T	Dichlorodifluoromethane	0.4192	0.4833	-15.3	104	0.00
3	P	Chloromethane	0.2447	0.2278	6.9	90	0.00
4	C	Vinyl Chloride	0.2903	0.3200	-10.2	103	0.00
5	T	1,3-Butadiene	0.2434	0.3064	-25.9#	115	0.00
6	T	Bromomethane	0.1654	0.1280	22.6	72	0.00
7	T	Chloroethane	0.1597	0.1563	2.1	94	0.00
8	T	Trichlorofluoromethane	0.5401	0.6454	-19.5	113	0.00
9	T	Diethyl ether	0.1290	0.1224	5.1	92	0.00
10	T	Isoprene	0.3280	0.3344	-1.9	99	0.00
11	T	Acrolein	0.0116	0.0103	11.0	86	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2539	0.2816	-10.9	107	0.00
13	T	Acetone	0.0281	0.0293	-4.3	94	0.00
14	C	1,1-Dichloroethene	0.4043	0.4419	-9.3	105	0.00
15	T	Tert-Butyl Alcohol	0.0090	0.0107	-18.5	113	0.00
16	T	Dimethyl Sulfide	0.1445	0.1400	3.1	93	0.00
17	T	Iodomethane	0.0866	0.0606	30.0#	56	0.00
18	T	Methyl acetate	0.0760	0.0650	14.5	83	0.00
19	T	Methylene Chloride	0.2573	0.2512	2.4	95	0.00
20	T	Carbon Disulfide	0.8460	0.8972	-6.0	104	0.00
21	T	Acrylonitrile	0.0365	0.0347	4.8	85	0.00
22	T	Methyl Tert Butyl Ether	0.5568	0.5559	0.2	90	0.00
23	T	trans-1,2-Dichloroethene	0.3714	0.3866	-4.1	99	0.00
24	T	n-Hexane	0.2758	0.3002	-8.8	105	0.00
25	T	Diisopropyl ether	0.5789	0.5552	4.1	92	0.00
26	T	Vinyl Acetate	0.2651	0.2613	1.4	89	0.00
27	P	1,1-Dichloroethane	0.4612	0.4825	-4.6	98	0.00
28	T	Ethyl-Tert-Butyl ether	0.6203	0.6260	-0.9	94	0.00
29	T	2-Butanone	0.0413	0.0380	8.1	84	0.00
30	T	Propionitrile	0.0120	0.0116	3.7	89	0.00
31	T	2,2-Dichloropropane	0.4860	0.6008	-23.6	115	0.00
32	T	cis-1,2-Dichloroethene	0.2870	0.2924	-1.9	98	0.00
33	C	Chloroform	0.5446	0.5972	-9.7	104	0.00
34		1-Bromopropane	0.0411	0.0476	-15.8	110	0.00
35	T	Bromochloromethane	0.1472	0.1509	-2.5	96	0.00
36	T	Tetrahydrofuran	0.0272	0.0223	17.9	83	0.00
37	S	Dibromofluoromethane	0.2686	0.2942	-9.5	102	0.00
38	T	1,1,1-Trichloroethane	0.5173	0.6162	-19.1	111	0.00
39	T	Cyclohexane	0.3581	0.3700	-3.3	101	0.00
40	T	1,1-Dichloropropene	0.3943	0.4303	-9.1	103	0.00
41	T	Tert-Amyl-Methyl ether	0.5634	0.5681	-0.8	94	0.00
42	T	Carbon Tetrachloride	0.4593	0.5513	-20.0	112	0.00
43	S	1,2-Dichloroethane-d4	0.2880	0.3197	-11.0	102	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.3505	0.3972	-13.3	104	0.00
46	T	Benzene	1.0269	1.0680	-4.0	98	0.00
47	T	Trichloroethene	0.2739	0.2956	-7.9	102	0.00
48	T	Methylcyclohexane	0.4161	0.4612	-10.8	107	0.00
49	C	1,2-Dichloropropane	0.2286	0.2224	2.7	93	0.00
50	T	Bromodichloromethane	0.4018	0.4451	-10.8	100	0.00
51	T	1,4-Dioxane	0.0012	0.0013	-10.4	98	0.00
52	T	Dibromomethane	0.1353	0.1345	0.6	94	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0983	0.0885	10.0	80	0.00
54	T	4-Methyl-2-Pentanone	0.0401	0.0365	8.9	83	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413032.D Vial: 2
Acq On : 16 Jun 2016 14:25 Operator: FJB
Sample : WG573037-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4090	0.4359	-6.6	96	0.00
56	T	Dimethyl Disulfide	0.2183	0.2240	-2.6	96	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	100	0.00
58	S	Toluene-d8	1.3084	1.3794	-5.4	103	0.00
59	C	Toluene	1.5520	1.5614	-0.6	100	0.00
60	T	Ethyl Methacrylate	0.2981	0.2793	6.3	89	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.5201	0.5321	-2.3	96	0.00
63	T	1,1,2-Trichloroethane	0.2449	0.2268	7.4	91	0.00
64	T	2-Hexanone	0.0515	0.0457	11.3	86	0.00
65	T	1,3-Dichloropropane	0.4360	0.4101	6.0	90	0.00
66	T	Tetrachloroethene	0.3325	0.3562	-7.1	109	0.00
67	T	Dibromochloromethane	0.3576	0.3611	-1.0	97	0.00
68	T	1,2-Dibromoethane	0.2441	0.2302	5.7	91	0.00
69	T	1-Chlorohexane	0.5298	0.5521	-4.2	106	0.00
70	P	Chlorobenzene	1.0466	1.0416	0.5	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4055	0.4240	-4.6	102	0.00
72	C	Ethylbenzene	0.5726	0.5778	-0.9	103	0.00
73	T	m-,p-Xylene	0.6716	0.6926	-3.1	103	0.00
74	T	o-Xylene	0.6566	0.6728	-2.5	102	0.00
75	T	Styrene	1.0770	1.1203	-4.0	100	0.00
76	P	Bromoform	0.2121	0.2158	-1.7	97	0.00
77	T	Isopropylbenzene	1.7444	1.8823	-7.9	106	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	107	0.00
79	P	1,1,2,2-Tetrachloroethane	0.5018	0.4164	17.0	87	0.00
80	S	p-Bromofluorobenzene	1.0352	1.0254	0.9	108	0.00
81	T	1,2,3-Trichloropropane	0.1545	0.1390	10.0	96	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1376	0.1372	0.3	97	0.00
83	T	n-Propylbenzene	3.9003	3.8814	0.5	105	0.00
84	T	Bromobenzene	0.8022	0.7695	4.1	103	0.00
85	T	1,3,5-Trimethylbenzene	2.8411	2.8510	-0.3	106	0.00
86	T	2-Chlorotoluene	2.7231	2.6005	4.5	99	0.00
87	T	4-Chlorotoluene	2.4597	2.4446	0.6	112	0.00
88	T	a-Methylstyrene	1.3479	1.2791	5.1	102	0.00
89	T	tert-Butylbenzene	0.5558	0.5440	2.1	109	0.00
90	T	1,2,4-Trimethylbenzene	2.9214	2.9288	-0.3	107	0.00
91	T	sec-Butylbenzene	3.3424	3.3657	-0.7	108	0.00
92	T	p-Isopropyltoluene	2.8379	2.8721	-1.2	109	0.00
93	T	1,3-Dichlorobenzene	1.5448	1.5321	0.8	107	0.00
94	T	1,4-Dichlorobenzene	1.5574	1.4823	4.8	105	0.00
95	T	n-Butylbenzene	2.8056	2.8337	-1.0	108	0.00
96	T	1,2-Dichlorobenzene	1.3739	1.2810	6.8	103	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1007	0.0886	12.0	91	0.00
98	T	1,2,4-Trichlorobenzene	1.0269	0.9972	2.9	105	0.00
99	T	Hexachlorobutadiene	0.4798	0.5251	-9.4	122	0.00
100	T	Naphthalene	1.5257	1.3274	13.0	91	0.00
101	T	1,2,3-Trichlorobenzene	0.8664	0.7860	9.3	102	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413032.D 8260WT.M Mon Jun 20 09:11:49 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413032.D Vial: 2
Acq On : 16 Jun 2016 14:25 Operator: FJB
Sample : WG573037-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	94	0.00
2	T	Dichlorodifluoromethane	50.0000	57.6485	-15.3	104	0.00
3	P	Chloromethane	50.0000	46.5578	6.9	90	0.00
4	C	Vinyl Chloride	50.0000	55.1240	-10.2	103	0.00
5	T	1,3-Butadiene	50.0000	62.9364	-25.9#	115	0.00
6	T	Bromomethane	50.0000	36.9767	26.0#	72	0.00
7	T	Chloroethane	50.0000	48.9325	2.1	94	0.00
8	T	Trichlorofluoromethane	50.0000	59.7435	-19.5	113	0.00
9	T	Diethyl ether	100.0000	94.8900	5.1	92	0.00
10	T	Isoprene	50.0000	50.9718	-1.9	99	0.00
11	T	Acrolein	50.0000	44.5317	10.9	86	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	55.4511	-10.9	107	0.00
13	T	Acetone	50.0000	52.1548	-4.3	94	0.00
14	C	1,1-Dichloroethene	50.0000	54.6514	-9.3	105	0.00
15	T	Tert-Butyl Alcohol	200.0000	236.9793	-18.5	113	0.00
16	T	Dimethyl Sulfide	50.0000	48.4405	3.1	93	0.00
17	T	Iodomethane	50.0000	28.4930	43.0#	56	0.00
18	T	Methyl acetate	50.0000	42.7704	14.5	83	0.00
19	T	Methylene Chloride	50.0000	48.8209	2.4	95	0.00
20	T	Carbon Disulfide	50.0000	53.0253	-6.1	104	0.00
21	T	Acrylonitrile	50.0000	47.5881	4.8	85	0.00
22	T	Methyl Tert Butyl Ether	50.0000	49.9201	0.2	90	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.0503	-4.1	99	0.00
24	T	n-Hexane	50.0000	54.4236	-8.8	105	0.00
25	T	Diisopropyl ether	100.0000	95.9026	4.1	92	0.00
26	T	Vinyl Acetate	50.0000	49.2832	1.4	89	0.00
27	P	1,1-Dichloroethane	50.0000	52.3061	-4.6	98	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	100.9239	-0.9	94	0.00
29	T	2-Butanone	50.0000	45.9348	8.1	84	0.00
30	T	Propionitrile	100.0000	96.3269	3.7	89	0.00
31	T	2,2-Dichloropropane	50.0000	61.8026	-23.6	115	0.00
32	T	cis-1,2-Dichloroethene	50.0000	50.9485	-1.9	98	0.00
33	C	Chloroform	50.0000	54.8264	-9.7	104	0.00
34		1-Bromopropane	50.0000	57.8711	-15.7	110	0.00
35	T	Bromochloromethane	50.0000	51.2707	-2.5	96	0.00
36	T	Tetrahydrofuran	100.0000	82.0898	17.9	83	0.00
37	S	Dibromofluoromethane	25.0000	27.3819	-9.5	102	0.00
38	T	1,1,1-Trichloroethane	50.0000	59.5586	-19.1	111	0.00
39	T	Cyclohexane	50.0000	51.6569	-3.3	101	0.00
40	T	1,1-Dichloropropene	50.0000	54.5654	-9.1	103	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	100.8347	-0.8	94	0.00
42	T	Carbon Tetrachloride	50.0000	60.0125	-20.0	112	0.00
43	S	1,2-Dichloroethane-d4	25.0000	27.7486	-11.0	102	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	56.6636	-13.3	104	0.00
46	T	Benzene	50.0000	51.9972	-4.0	98	0.00
47	T	Trichloroethene	50.0000	53.9600	-7.9	102	0.00
48	T	Methylcyclohexane	50.0000	55.4235	-10.8	107	0.00
49	C	1,2-Dichloropropane	50.0000	48.6480	2.7	93	0.00
50	T	Bromodichloromethane	50.0000	55.3826	-10.8	100	0.00
51	T	1,4-Dioxane	200.0000	220.3548	-10.2	98	0.00
52	T	Dibromomethane	50.0000	49.7082	0.6	94	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	45.0178	10.0	80	0.00
54	T	4-Methyl-2-Pentanone	50.0000	45.5327	8.9	83	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413032.D Vial: 2
Acq On : 16 Jun 2016 14:25 Operator: FJB
Sample : WG573037-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.2922	-6.6	96	0.00
56	T	Dimethyl Disulfide	50.0000	51.3144	-2.6	96	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	25.0000	26.3564	-5.4	103	0.00
59	C	Toluene	50.0000	50.3002	-0.6	100	0.00
60	T	Ethyl Methacrylate	50.0000	46.8562	6.3	89	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	51.1483	-2.3	96	0.00
63	T	1,1,2-Trichloroethane	50.0000	46.3057	7.4	91	0.00
64	T	2-Hexanone	50.0000	44.3674	11.3	86	0.00
65	T	1,3-Dichloropropane	50.0000	47.0219	6.0	90	0.00
66	T	Tetrachloroethene	50.0000	53.5544	-7.1	109	0.00
67	T	Dibromochloromethane	50.0000	50.4917	-1.0	97	0.00
68	T	1,2-Dibromoethane	50.0000	47.1634	5.7	91	0.00
69	T	1-Chlorohexane	50.0000	52.1093	-4.2	106	0.00
70	P	Chlorobenzene	50.0000	49.7630	0.5	100	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	52.2807	-4.6	102	0.00
72	C	Ethylbenzene	50.0000	50.4524	-0.9	103	0.00
73	T	m-,p-Xylene	100.0000	103.1131	-3.1	103	0.00
74	T	o-Xylene	50.0000	51.2307	-2.5	102	0.00
75	T	Styrene	50.0000	52.0104	-4.0	100	0.00
76	P	Bromoform	50.0000	50.8617	-1.7	97	0.00
77	T	Isopropylbenzene	50.0000	53.9527	-7.9	106	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	107	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	41.4928	17.0	87	0.00
80	S	p-Bromofluorobenzene	25.0000	24.7636	0.9	108	0.00
81	T	1,2,3-Trichloropropane	50.0000	44.9807	10.0	96	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	43.6303	12.7	97	0.00
83	T	n-Propylbenzene	50.0000	49.7580	0.5	105	0.00
84	T	Bromobenzene	50.0000	47.9586	4.1	103	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	50.1733	-0.3	106	0.00
86	T	2-Chlorotoluene	50.0000	47.7491	4.5	99	0.00
87	T	4-Chlorotoluene	50.0000	49.6923	0.6	112	0.00
88	T	a-Methylstyrene	50.0000	47.4481	5.1	102	0.00
89	T	tert-Butylbenzene	50.0000	48.9378	2.1	109	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	50.1269	-0.3	107	0.00
91	T	sec-Butylbenzene	50.0000	50.3494	-0.7	108	0.00
92	T	p-Isopropyltoluene	50.0000	50.6022	-1.2	109	0.00
93	T	1,3-Dichlorobenzene	50.0000	49.5900	0.8	107	0.00
94	T	1,4-Dichlorobenzene	50.0000	47.5896	4.8	105	0.00
95	T	n-Butylbenzene	50.0000	50.5007	-1.0	108	0.00
96	T	1,2-Dichlorobenzene	50.0000	46.6205	6.8	103	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	43.9791	12.0	91	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	48.5529	2.9	105	0.00
99	T	Hexachlorobutadiene	50.0000	54.7126	-9.4	122	0.00
100	T	Naphthalene	50.0000	43.5006	13.0	91	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	45.3576	9.3	102	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413032.D 8260WT.M Mon Jun 20 09:11:52 2016 Page 2

2.1.1.5 Raw QC Data

BFB

Data File : C:\MSDCHEM\2\DATA\051316\8M412218.D Vial: 3
Acq On : 13 May 2016 12:36 Operator: TMB
Sample : WG568561-01 50ng BFB STD 8260 Inst : HPMS8
Misc : 1,1 STD76034 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title : SOP:OVL MSV01

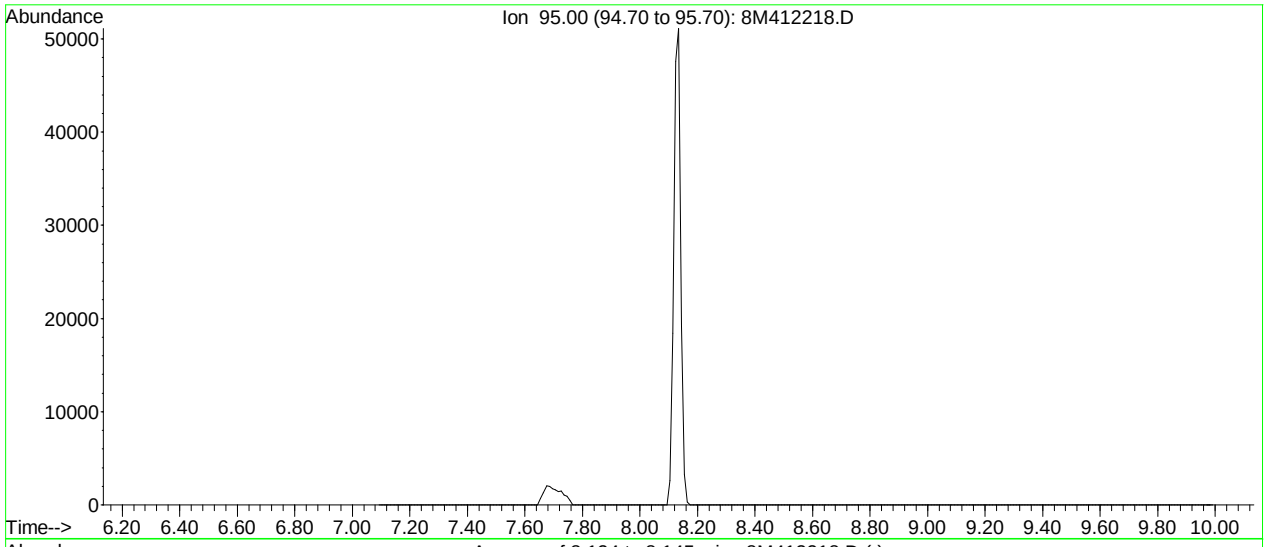

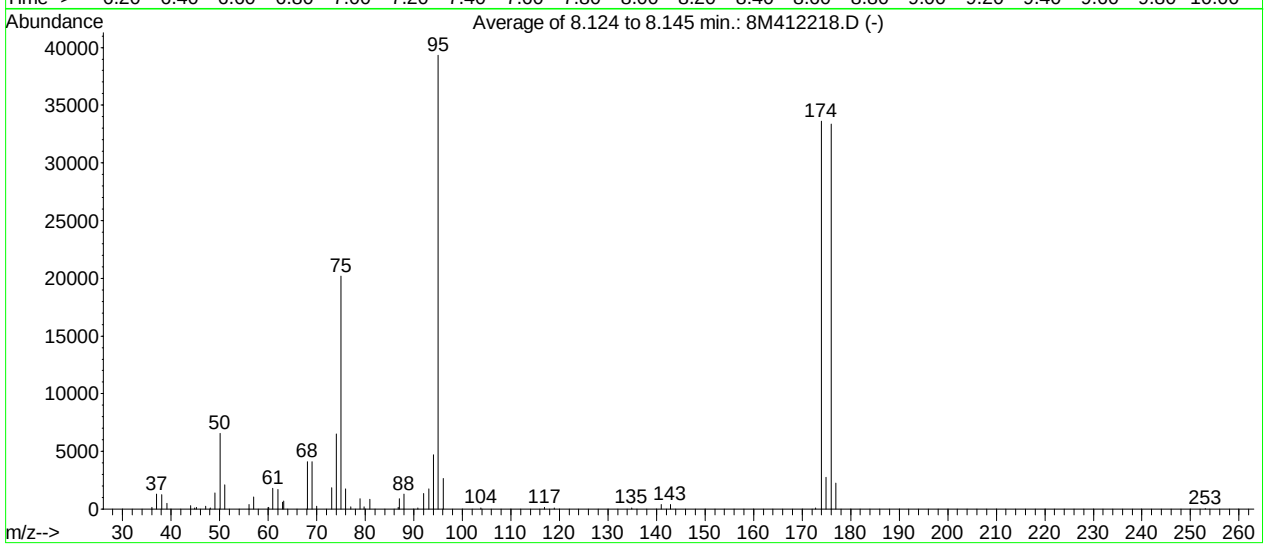

AutoFind: Scans 102, 103, 104; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.7	6575	PASS
75	95	30	60	51.3	20171	PASS
95	95	100	100	100.0	39312	PASS
96	95	5	9	6.7	2649	PASS
173	174	0.00	2	0.4	122	PASS
174	95	50	100	85.5	33616	PASS
175	174	5	9	8.2	2746	PASS
176	174	95	101	99.2	33360	PASS
177	176	5	9	6.8	2267	PASS

8M412218.D BFB.M Fri May 13 12:47:24 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413031.D Vial: 1
Acq On    : 16 Jun 2016  14:02                        Operator: FJB
Sample    : WG573037-01 BFB 50ng 8260                 Inst    : HPMS8
Misc      : 1,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title     : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
```

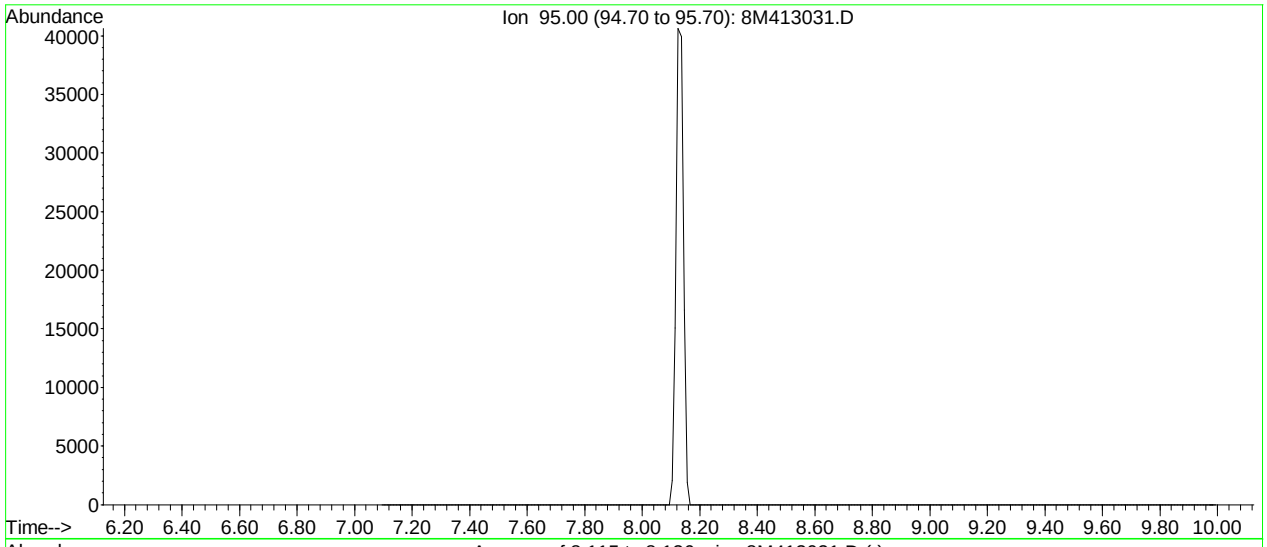

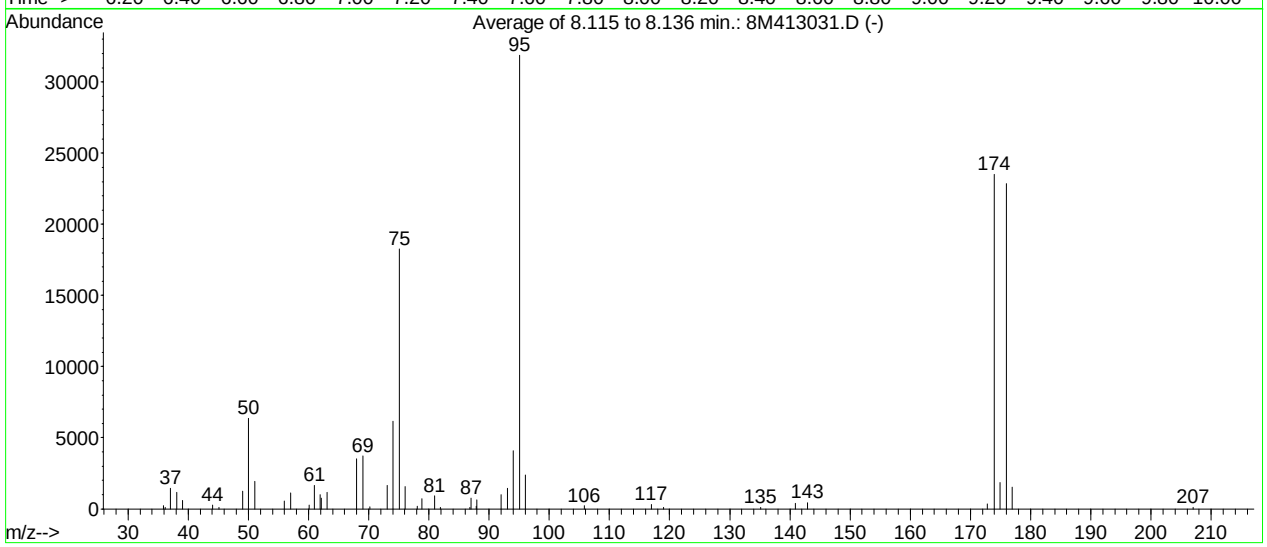

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.9	6352	PASS
75	95	30	60	57.2	18249	PASS
95	95	100	100	100.0	31890	PASS
96	95	5	9	7.4	2366	PASS
173	174	0.00	2	1.5	352	PASS
174	95	50	100	73.7	23499	PASS
175	174	5	9	8.0	1870	PASS
176	174	95	101	97.3	22869	PASS
177	176	5	9	6.7	1538	PASS

8M413031.D 8260WT.M Mon Jun 20 09:08:01 2016

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413034.D Vial: 4
Acq On : 16 Jun 2016 15:23 Operator: FJB
Sample : WG573038-01 BLANK 6/16 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:18:21 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	717429	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	533754	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	292043	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	209977	27.2409 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 108.96%		
43) 1,2-Dichloroethane-d4	10.30	65	235474	28.4902 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 113.96%		
58) Toluene-d8	12.68	98	740524	26.5096 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 106.04%		
80) p-Bromofluorobenzene	16.08	95	307463	25.4256 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.72%		

Target Compounds					Qvalue
36) Tetrahydrofuran	9.64	42	956	1.2239 ug/L	79

(#) = qualifier out of range (m) = manual integration
8M413034.D 8260WT.M Mon Jun 20 09:19:27 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413034.D Vial: 4
Acq On : 16 Jun 2016 15:23 Operator: FJB
Sample : WG573038-01 BLANK 6/16 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 8:18 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

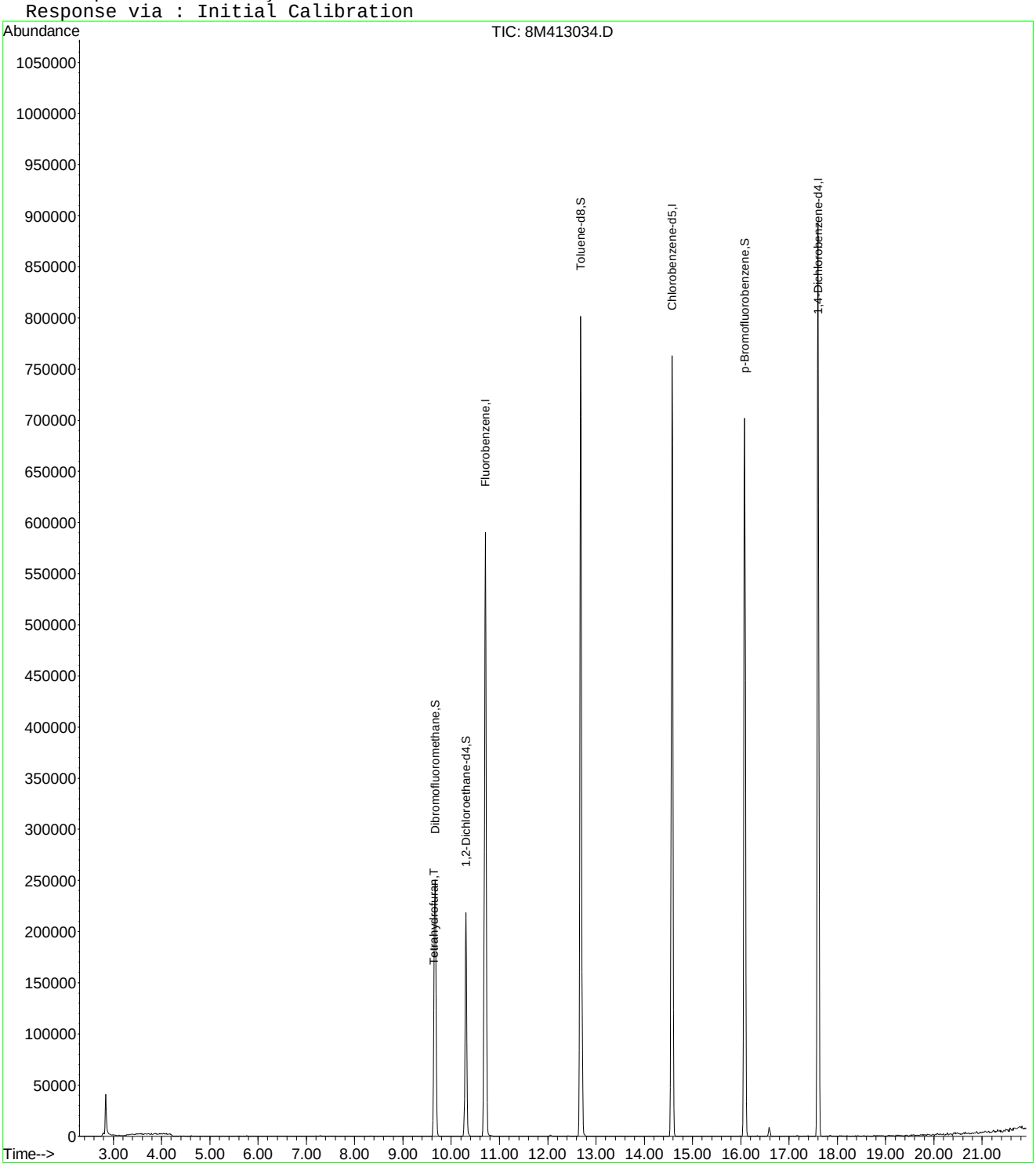

8M413034.D 8260WT.M Mon Jun 20 09:19:28 2016 Page 2

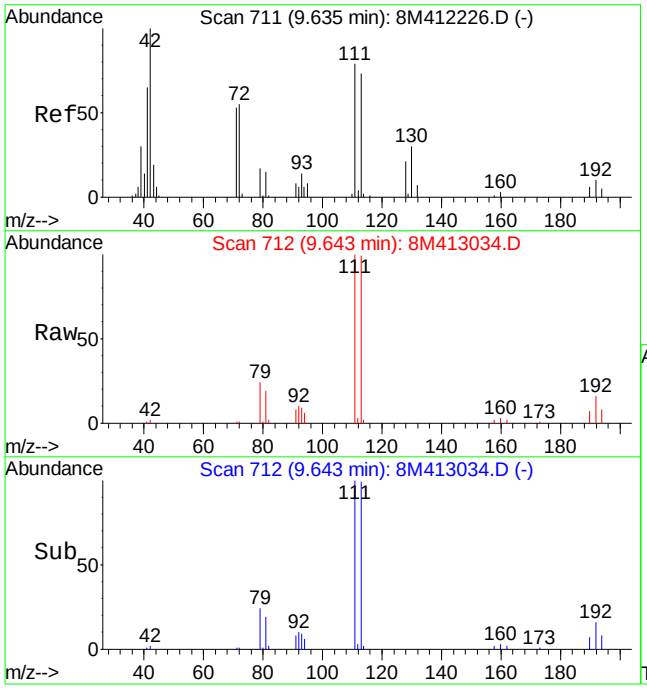

#36
Tetrahydrofuran
Concen: 1.22 ug/L
RT: 9.64 min Scan# 712
Delta R.T. 0.01 min
Lab File: 8M413034.D
Acq: 16 Jun 2016 15:23

Tgt Ion: 42 Resp: 956

Ion	Ratio	Lower	Upper
42	100		
72	74.6	33.8	78.8
71	41.9	32.0	74.8

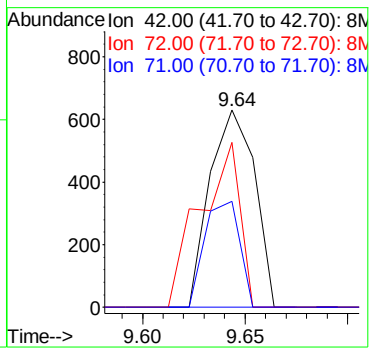

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413035.D Vial: 5
Acq On : 16 Jun 2016 15:52 Operator: FJB
Sample : WG573038-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:18:21 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	724153	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	540053	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	307888	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	213643	27.4591 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.84%		
43) 1,2-Dichloroethane-d4	10.31	65	245621	29.4420 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 117.76%		
58) Toluene-d8	12.68	98	736706	26.0653 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.28%		
80) p-Bromofluorobenzene	16.08	95	316242	24.8057 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.24%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	252315	20.7819 ug/L	99
3) Chloromethane	3.62	50	134208	18.9371 ug/L	99
4) Vinyl Chloride	3.85	62	192999	22.9533 ug/L	100
5) 1,3-Butadiene	3.88	54	21596	3.0627 ug/L	93
6) Bromomethane	4.72	94	67601	14.0319 ug/L	96
7) Chloroethane	4.89	64	94578	20.4419 ug/L	99
8) Trichlorofluoromethane	5.38	101	348634	22.2833 ug/L	99
9) Diethyl ether	5.90	59	376158	100.7087 ug/L	98
10) Isoprene	5.93	67	202345	21.2972 ug/L	96
11) Acrolein	6.13	56	30585	91.4560 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	157632	21.4340 ug/L	96
13) Acetone	6.23	43	17743	21.7775 ug/L	94
14) 1,1-Dichloroethene	6.46	61	221517	18.9174 ug/L	99
15) Tert-Butyl Alcohol	6.58	59	54296	207.9591 ug/L	97
16) Dimethyl Sulfide	6.73	62	149005	35.5890 ug/L	99
17) Iodomethane	6.99	142	33488	12.6554 ug/L	96
18) Methyl acetate	7.00	43	45239	20.5416 ug/L	98
19) Methylene Chloride	7.26	84	143716	19.2860 ug/L	97
20) Carbon Disulfide	7.29	76	443914	18.1155 ug/L	99
21) Acrylonitrile	7.44	53	20303	19.2061 ug/L	97
22) Methyl Tert Butyl Ether	7.46	73	362621	22.4840 ug/L	97
23) trans-1,2-Dichloroethene	7.70	61	216143	20.0918 ug/L	99
24) n-Hexane	7.78	57	148742	18.6200 ug/L	98
25) Diisopropyl ether	8.12	45	1674940	99.8839 ug/L	96
26) Vinyl Acetate	8.30	43	113665	14.8046 ug/L	99
27) 1,1-Dichloroethane	8.32	63	260446	19.4944 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	1819224	101.2567 ug/L	98
29) 2-Butanone	8.88	43	24177	20.1972 ug/L	96
30) Propionitrile	8.99	54	32822	94.0889 ug/L	98
31) 2,2-Dichloropropane	9.11	77	323361	22.9674 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	170309	20.4887 ug/L	97
33) Chloroform	9.37	83	334264	21.1899 ug/L	100
34) 1-Bromopropane	9.51	122	36217	30.4181 ug/L	100
35) Bromochloromethane	9.60	130	88133	20.6762 ug/L	92
36) Tetrahydrofuran	9.62	42	66083	83.8177 ug/L	91
38) 1,1,1-Trichloroethane	9.91	97	336501	22.4572 ug/L	100
39) Cyclohexane	9.94	56	203672	19.6331 ug/L	95
40) 1,1-Dichloropropene	10.10	75	235033	20.5788 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	1758569	107.7684 ug/L	100
42) Carbon Tetrachloride	10.25	117	299046	22.4750 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M413035.D 8260WT.M Mon Jun 20 09:08:47 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413035.D Vial: 5
Acq On : 16 Jun 2016 15:52 Operator: FJB
Sample : WG573038-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:18:21 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	236926	23.3353	ug/L		98
46)	Benzene	10.46	78	605690	20.3618	ug/L		99
47)	Trichloroethene	11.21	130	172682	21.7657	ug/L		99
48)	Methylcyclohexane	11.30	83	251284	20.8488	ug/L		98
49)	1,2-Dichloropropane	11.42	63	134844	20.3635	ug/L		90
50)	Bromodichloromethane	11.73	83	251163	21.5803	ug/L		98
51)	1,4-Dioxane	11.72	88	5908	177.6120	ug/L		98
52)	Dibromomethane	11.81	93	77825	19.8542	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.03	63	55535	19.5124	ug/L		91
54)	4-Methyl-2-Pentanone	12.05	58	22978	19.7642	ug/L		93
55)	cis-1,3-Dichloropropene	12.36	75	273539	23.0905	ug/L		100
56)	Dimethyl Disulfide	12.62	79	137758	21.7873	ug/L		95
59)	Toluene	12.79	91	661287	19.7238	ug/L		99
60)	Ethyl Methacrylate	12.88	69	133238	20.6930	ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	234780	20.8960	ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	103597	19.5817	ug/L		97
64)	2-Hexanone	13.12	58	20672	18.5940	ug/L	#	95
65)	1,3-Dichloropropane	13.48	76	194941	20.6961	ug/L		95
66)	Tetrachloroethene	13.60	164	144676	20.1408	ug/L		99
67)	Dibromochloromethane	13.87	129	158132	20.4706	ug/L		100
68)	1,2-Dibromoethane	14.12	107	105951	20.0943	ug/L		99
69)	1-Chlorohexane	14.21	91	223061	19.4904	ug/L		97
70)	Chlorobenzene	14.63	112	460997	20.3904	ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.66	131	182348	20.8187	ug/L		99
72)	Ethylbenzene	14.66	106	245573	19.8527	ug/L		100
73)	m-,p-Xylene	14.75	106	592898	40.8641	ug/L		95
74)	o-Xylene	15.31	106	299422	21.1082	ug/L		99
75)	Styrene	15.35	104	480813	20.6661	ug/L		96
76)	Bromoform	15.83	173	91438	19.9564	ug/L		99
77)	Isopropylbenzene	15.73	105	813144	21.5784	ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	109337	17.6914	ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	37733	19.8268	ug/L		73
82)	trans-1,4-Dichloro-2-Buten	16.19	53	28275	15.0111	ug/L		99
83)	n-Propylbenzene	16.24	91	981466	20.4328	ug/L		100
84)	Bromobenzene	16.37	156	189420	19.1720	ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	710541	20.3071	ug/L		100
86)	2-Chlorotoluene	16.51	91	681730	20.3282	ug/L		98
87)	4-Chlorotoluene	16.56	91	596710	19.6981	ug/L		99
88)	a-Methylstyrene	16.83	118	344648	20.7612	ug/L		100
89)	tert-Butylbenzene	16.90	134	134805	19.6932	ug/L		98
90)	1,2,4-Trimethylbenzene	16.94	105	716254	19.9077	ug/L		99
91)	sec-Butylbenzene	17.16	105	833548	20.2499	ug/L		99
92)	p-Isopropyltoluene	17.32	119	700643	20.0466	ug/L		100
93)	1,3-Dichlorobenzene	17.51	146	379985	19.9735	ug/L		100
94)	1,4-Dichlorobenzene	17.64	146	378307	19.7240	ug/L		99
95)	n-Butylbenzene	17.85	91	671796	19.4428	ug/L		100
96)	1,2-Dichlorobenzene	18.14	146	333637	19.7182	ug/L		97
97)	1,2-Dibromo-3-Chloropropan	19.13	75	24498	19.7473	ug/L		99
98)	1,2,4-Trichlorobenzene	20.28	180	244999	19.3716	ug/L		99
99)	Hexachlorobutadiene	20.43	225	125683	21.2686	ug/L		98
100)	Naphthalene	20.65	128	326897	17.3970	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	202292	18.9589	ug/L		97

(#) = qualifier out of range (m) = manual integration
8M413035.D 8260WT.M Mon Jun 20 09:08:47 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413035.D Vial: 5
Acq On : 16 Jun 2016 15:52 Operator: FJB
Sample : WG573038-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 8:18 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

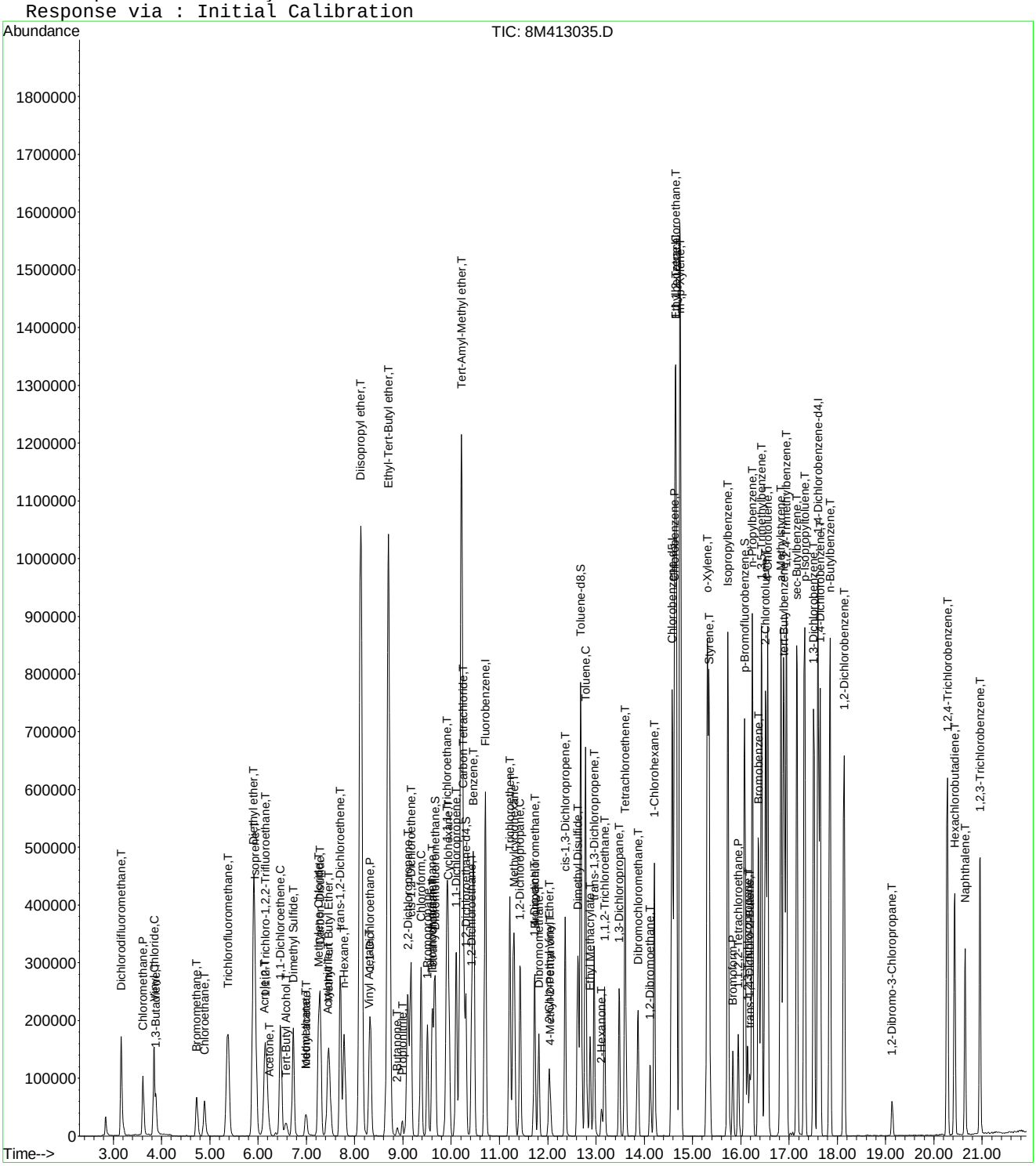

8M413035.D 8260WT.M Mon Jun 20 09:08:48 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413036.D Vial: 6
Acq On : 16 Jun 2016 16:21 Operator: FJB
Sample : WG573038-03 20ug/L LCS2 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:18:22 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	735322	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	553122	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	312159	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	213768	27.0578 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 108.24%		
43) 1,2-Dichloroethane-d4	10.30	65	240558	28.3971 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 113.60%		
58) Toluene-d8	12.68	98	752327	25.9891 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.96%		
80) p-Bromofluorobenzene	16.08	95	319552	24.7224 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.88%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	268839	21.8065 ug/L	99
3) Chloromethane	3.62	50	145372	20.2008 ug/L	99
4) Vinyl Chloride	3.85	62	205956	24.1222 ug/L	100
5) 1,3-Butadiene	3.88	54	22591	3.1551 ug/L	94
6) Bromomethane	4.72	94	76970	15.6580 ug/L	99
7) Chloroethane	4.89	64	102039	21.7196 ug/L	98
8) Trichlorofluoromethane	5.38	101	362939	22.8452 ug/L	98
9) Diethyl ether	5.90	59	397097	104.6998 ug/L	97
10) Isoprene	5.94	67	218692	22.6682 ug/L	99
11) Acrolein	6.14	56	33320	98.1209 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	161414	21.6149 ug/L	94
13) Acetone	6.23	43	19963	24.1301 ug/L	97
14) 1,1-Dichloroethene	6.46	61	233526	19.6401 ug/L	99
15) Tert-Butyl Alcohol	6.57	59	65029	245.2844 ug/L	97
16) Dimethyl Sulfide	6.73	62	155773	36.6403 ug/L	99
17) Iodomethane	6.99	142	48971	16.9853 ug/L	95
18) Methyl acetate	7.00	43	45727	20.4478 ug/L	97
19) Methylene Chloride	7.25	84	150567	19.8985 ug/L	100
20) Carbon Disulfide	7.29	76	462391	18.5829 ug/L	100
21) Acrylonitrile	7.43	53	21986	20.4823 ug/L	92
22) Methyl Tert Butyl Ether	7.47	73	371382	22.6774 ug/L	98
23) trans-1,2-Dichloroethene	7.70	61	222944	20.4092 ug/L	100
24) n-Hexane	7.78	57	159355	19.6456 ug/L	98
25) Diisopropyl ether	8.12	45	1757628	103.2229 ug/L	96
26) Vinyl Acetate	8.30	43	118636	15.2174 ug/L	100
27) 1,1-Dichloroethane	8.32	63	269975	19.9007 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1896750	103.9682 ug/L	98
29) 2-Butanone	8.88	43	25340	20.8472 ug/L	94
30) Propionitrile	8.99	54	36109	101.9393 ug/L	100
31) 2,2-Dichloropropane	9.10	77	336668	23.5494 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	179241	21.2357 ug/L	98
33) Chloroform	9.37	83	347237	21.6779 ug/L	100
34) 1-Bromopropane	9.51	122	37842	31.3001 ug/L	100
35) Bromochloromethane	9.61	130	89039	20.5714 ug/L	96
36) Tetrahydrofuran	9.63	42	72974	91.1522 ug/L	97
38) 1,1,1-Trichloroethane	9.91	97	353698	23.2464 ug/L	100
39) Cyclohexane	9.93	56	214088	20.3237 ug/L	97
40) 1,1-Dichloropropene	10.11	75	243549	21.0005 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1837419	110.8902 ug/L	99
42) Carbon Tetrachloride	10.25	117	311990	23.0917 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413036.D 8260WT.M Mon Jun 20 09:08:50 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413036.D Vial: 6
Acq On : 16 Jun 2016 16:21 Operator: FJB
Sample : WG573038-03 20ug/L LCS2 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:18:22 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.42	62	242552	23.5265 ug/L	98
46)	Benzene	10.46	78	636475	21.0718 ug/L	100
47)	Trichloroethene	11.21	130	181127	22.4834 ug/L	99
48)	Methylcyclohexane	11.30	83	268536	21.9418 ug/L	99
49)	1,2-Dichloropropane	11.42	63	141319	21.0171 ug/L	89
50)	Bromodichloromethane	11.73	83	265829	22.4935 ug/L	99
51)	1,4-Dioxane	11.72	88	6780	200.7309 ug/L	99
52)	Dibromomethane	11.81	93	79309	19.9255 ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.02	63	56761	19.6402 ug/L	94
54)	4-Methyl-2-Pentanone	12.06	58	24424	20.6889 ug/L	92
55)	cis-1,3-Dichloropropene	12.36	75	282091	23.4507 ug/L	99
56)	Dimethyl Disulfide	12.62	79	140775	21.9263 ug/L	94
59)	Toluene	12.79	91	690537	20.1096 ug/L	99
60)	Ethyl Methacrylate	12.88	69	134927	20.4602 ug/L	98
62)	trans-1,3-Dichloropropene	12.96	75	242695	21.0901 ug/L	99
63)	1,1,2-Trichloroethane	13.18	97	106261	19.6107 ug/L	98
64)	2-Hexanone	13.12	58	20293	17.8218 ug/L #	97
65)	1,3-Dichloropropane	13.48	76	202255	20.9653 ug/L	97
66)	Tetrachloroethene	13.60	164	150723	20.4869 ug/L	99
67)	Dibromochloromethane	13.87	129	164885	20.8405 ug/L	100
68)	1,2-Dibromoethane	14.12	107	107229	19.8562 ug/L	100
69)	1-Chlorohexane	14.21	91	238806	20.3731 ug/L	97
70)	Chlorobenzene	14.63	112	479877	20.7240 ug/L	100
71)	1,1,1,2-Tetrachloroethane	14.66	131	187840	20.9390 ug/L	99
72)	Ethylbenzene	14.66	106	252056	19.8954 ug/L	96
73)	m-,p-Xylene	14.75	106	620374	41.7475 ug/L	96
74)	o-Xylene	15.31	106	310957	21.4035 ug/L	98
75)	Styrene	15.35	104	503519	21.1307 ug/L	97
76)	Bromoform	15.83	173	93776	19.9830 ug/L	98
77)	Isopropylbenzene	15.73	105	848704	21.9899 ug/L	99
79)	1,1,2,2-Tetrachloroethane	15.95	83	113419	18.1008 ug/L	100
81)	1,2,3-Trichloropropane	16.14	110	37740	19.5591 ug/L	73
82)	trans-1,4-Dichloro-2-Buten	16.19	53	34462	17.9212 ug/L	82
83)	n-Propylbenzene	16.24	91	1024017	21.0269 ug/L	99
84)	Bromobenzene	16.37	156	197176	19.6840 ug/L	97
85)	1,3,5-Trimethylbenzene	16.42	105	742680	20.9352 ug/L	99
86)	2-Chlorotoluene	16.51	91	701689	20.6371 ug/L	98
87)	4-Chlorotoluene	16.56	91	615763	20.0490 ug/L	99
88)	a-Methylstyrene	16.83	118	365485	21.7152 ug/L	99
89)	tert-Butylbenzene	16.89	134	141823	20.4349 ug/L	98
90)	1,2,4-Trimethylbenzene	16.94	105	742233	20.3475 ug/L	100
91)	sec-Butylbenzene	17.16	105	865092	20.7287 ug/L	100
92)	p-Isopropyltoluene	17.32	119	739719	20.8751 ug/L	99
93)	1,3-Dichlorobenzene	17.51	146	398135	20.6412 ug/L	100
94)	1,4-Dichlorobenzene	17.64	146	395783	20.3529 ug/L	99
95)	n-Butylbenzene	17.85	91	695375	19.8498 ug/L	99
96)	1,2-Dichlorobenzene	18.14	146	349070	20.3481 ug/L	99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	26890	21.3789 ug/L	96
98)	1,2,4-Trichlorobenzene	20.28	180	257503	20.0816 ug/L	99
99)	Hexachlorobutadiene	20.43	225	129798	21.6644 ug/L	98
100)	Naphthalene	20.65	128	344850	18.1014 ug/L	100
101)	1,2,3-Trichlorobenzene	20.96	180	209338	19.3508 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M413036.D 8260WT.M Mon Jun 20 09:08:51 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413036.D Vial: 6
Acq On : 16 Jun 2016 16:21 Operator: FJB
Sample : WG573038-03 20ug/L LCS2 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 8:18 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

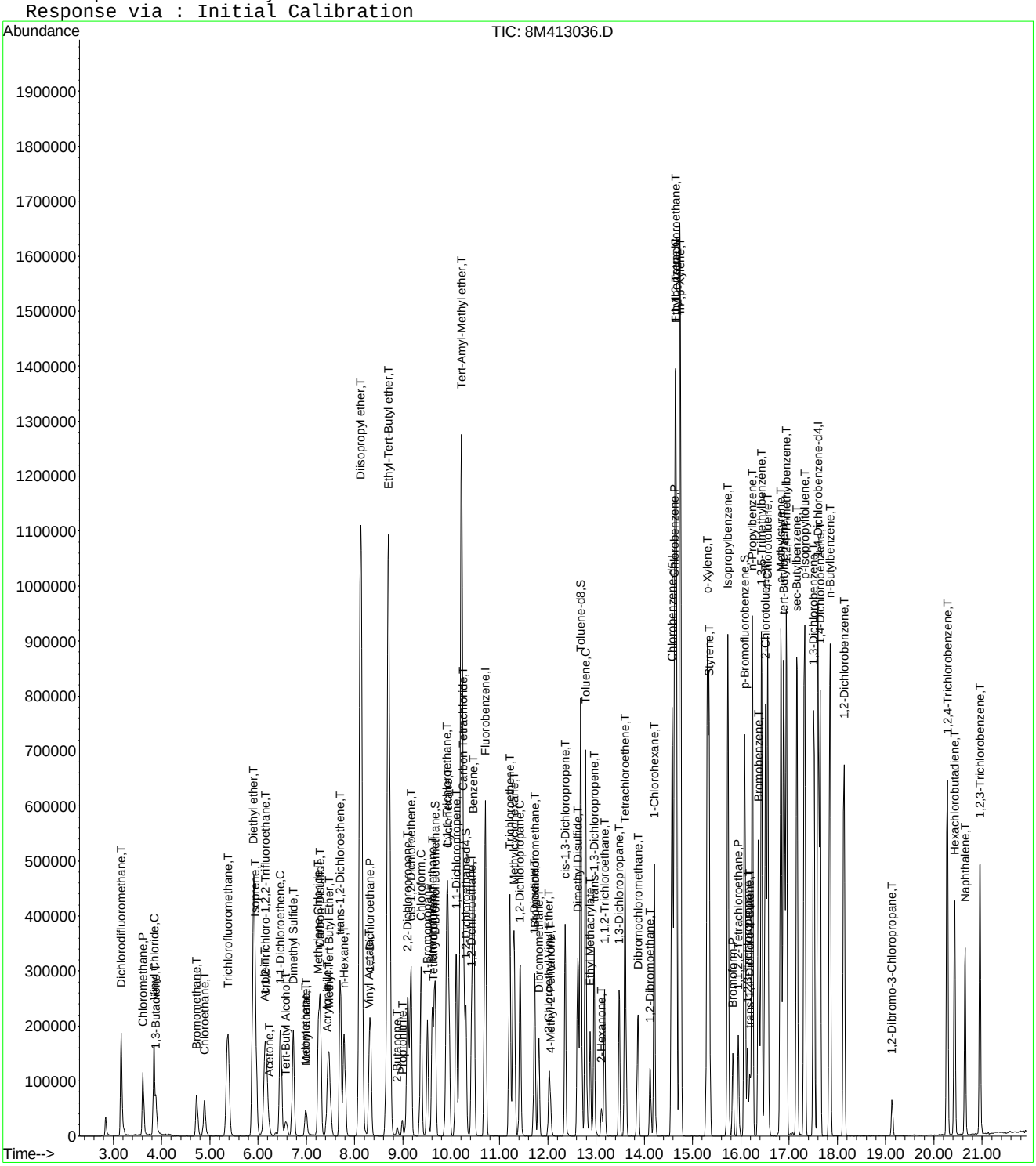

8M413036.D 8260WT.M Mon Jun 20 09:08:52 2016 Page 3

2.2 Semivolatiles Data

2.2.1 Semivolatiles GC/MS Data (Dioxane)

2.2.1.1 Summary Data

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW14-061316	**Prep Method:**	3520C	**Prep Date:**	06/15/2016 18:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573365	**Analyst:**	MES	**Run Date:**	06/21/2016 15:11
Collect Date:	06/13/2016 09:15	**Dilution:**	1	**File ID:**	15M18471
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	50.2	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW14FD-061316	**Prep Method:**	3520C	**Prep Date:**	06/15/2016 18:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573365	**Analyst:**	MES	**Run Date:**	06/21/2016 15:34
Collect Date:	06/13/2016 09:15	**Dilution:**	1	**File ID:**	15M18472
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	65.8	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW24-061316	**Prep Method:**	3520C	**Prep Date:**	06/15/2016 18:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573365	**Analyst:**	MES	**Run Date:**	06/21/2016 16:19
Collect Date:	06/13/2016 10:35	**Dilution:**	1	**File ID:**	15M18474
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	45.0	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.2.1.2 QC Summary Data

Example 8270 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	1261197
Cis = Concentration of the specific internal standard (ug/mL)	40
Ais = Area of the characteristic ion of the specific internal standard	608044
Cx = Concentration of the compound in the standard being measured (ug/mL)	50
RF = Calculated Response Factor	**1.65935**

2.0 Calculating the concentration (C) of a compound in water using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Vi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Vi = Initial volume of sample extracted from prep log (mL)	1021
Cx = Concentration of the compound in the sample being measured (ug/mL)	0.016947
Cx = Concentration of the compound in the sample being measured (ug/L)	**16.947**

3.0 Calculating the concentration (C) of a compound in soil using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Wi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Wi = Initial weight of sample extracted (g) from prep log	30
Cx = Concentration of the compound in the sample being measured (ug/g)	0.576763
Cx = Concentration of the compound in the sample being measured (ug/kg)	**576.7627**

Dry weight correction:

Percent solids (PCT_S)	50
Cd = (Cx) (100)/PCT_S	**1153.525** ug/kg

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve plot

b = intercept from curve plot

Step 2: Calculate y from Quantitation Report

y = 16790/784838 = 0.02139

Step 3: Solve for x

x = (y - b)/m = [(0.02139 -(- 0.0435)]/ 0.0783 = 0.829

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.829) = 20.72 ug/L

Example Spreadsheet Calculation:

Slope from curve, m:	0.0783	
Intercept from curve, b:	-0.0435	
Area of analyte, Ax:	16790	
Area of Internal Standard , Ais:	784484	
Concentration of IS, Cis	25.00	ug/L
Response Ratio (y) :	0.021403	
Amount Ratio:	0.828897	
Concentration (Cx):	20.72241	ug/L

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**0.0259**	
Value of B from plot:	**0.0596**	
Value of C from plot:	**-0.0165**	
Area of analyte from quantitation report:	**203233**	
Area of IS from quantiation report:	**1425653**	
Response ratio, y:	**0.142554**	
C - y:	**-0.15905**	
Root 1 - Computed amount ratio , X1:	**-3.88278**	
Root 2 - Computed amount ratio , X2:	**1.581623**	use this solution
Concentration of IS, Cis:	**40.00**	
Concentration of analyte, Cx:	**63.26**	ug/L

Microbac Laboratories Inc.
Continuous Sample Extract Log

Workgroup: WG572806
Analyst: CPD
Spike Analyst: CPD
Method: 3520C
Run Date: 06/15/2016 18:01
SOP: EXB01 Revison 20
Spike Witness: JDH
Surr Solution: STD74051

TIME ON: 19:15 OFF: 13:30 ON: 17:50 OFF: 12:00

CH2CL2 Lot #: COA18982
sodium sulfate Lot #: COA18814
10N NaOH Lot #: RGT37076
1:1 H2SO4 Lot #: RGT36755

	SAMPLE #	Type	Reference	Prod	pH	Init Amnt	Surr Amnt	Spike Amnt	Spike Sol	Final Vol	Color
1	L16060730-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Colored
2	L16060730-02	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Colored
3	L16060730-03	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
4	L16060756-04	SAMP		827-DIOX	<2>12	1000 mL	.05 mL			1 mL	Colored
5	L16060809-03	SAMP		827-DIOX	<2>12	1000 mL	.05 mL			1 mL	Colored
6	L16060822-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Colored
7	L16060822-03	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
8	L16060822-04	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
9	L16060822-05	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
10	L16060823-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
11	L16060823-03	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Colored
12	L16060823-04	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
13	L16060854-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Colored
14	WG572806-01	BLANK		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
15	WG572806-02	LCS		827-DIOXANE	<2>12	1000 mL	.05 mL	.05 mL	STD75256	1 mL	Transparent
16	WG572806-03	LCS2		827-DIOXANE	<2>12	1000 mL	.05 mL	.05 mL	STD75256	1 mL	Transparent

Due to insufficient sample volume, this preparation batch failed to include the method prescribed MS and MSD.

LCS TV3 Cell 6
LCS DUP TV3 Cell 1

Analyst: Chelsea Davis

Reviewer: Chris Hill

EXTRACT - Modified 01/23/2009
PDF ID: 4813905
Report generated: 06/20/2016 08:50

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062116
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573365

Internal STD: STD76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: STD74214 MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18455	BAKEOUT	1	1		06/21/16 08:46
2	15M18456	WG573501-01 5PPM DFTPP STD	1	1	STD75016	06/21/16 09:05
3	15M18457	WG573501-01 5PPM DFTPP STD	1	1	STD75016	06/21/16 09:34
4	15M18458	WG573501-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 09:52
5	15M18459	WG573501-03 10 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 10:27
6	15M18460	WG573501-04 7.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 10:49
7	15M18461	WG573501-05 2.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:12
8	15M18462	WG573501-06 1 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:34
9	15M18463	WG573501-07 0.4 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:57
10	15M18464	WG573501-08 5PPM 1,4-DIOXANE ALT SRC	1	1	STD74214	06/21/16 12:20
11	15M18465	WG572806-01 BLANK 6/15	1	1		06/21/16 12:54
12	15M18466	WG572806-02 LCS 6/15	1	1		06/21/16 13:17
13	15M18467	WG572806-03 LCSDUP 6/15	1	1		06/21/16 13:40
14	15M18468	WG573008-01 BLANK 6/17	7	1	SOIL	06/21/16 14:03
15	15M18469	WG573008-02 LCS 6/17	7	1	SOIL	06/21/16 14:26
16	15M18470	WG573008-03 LCSDUP 6/17	7	1	SOIL	06/21/16 14:48
17	15M18471	L16060730-01	1	1		06/21/16 15:11
18	15M18472	L16060730-02	1	1		06/21/16 15:34
19	15M18473	L16060854-01	1	1		06/21/16 15:57
20	15M18474	L16060730-03	1	1		06/21/16 16:19
21	15M18475	L16060756-04 827-DIOX	1	1		06/21/16 16:46
22	15M18476	L16060822-01	1	1		06/21/16 17:08
23	15M18477	L16060822-03	1	1		06/21/16 17:31
24	15M18478	L16060822-04	1	1		06/21/16 17:54
25	15M18479	L16060822-05	1	1		06/21/16 18:17
26	15M18480	L16060823-01	1	1		06/21/16 18:40
27	15M18481	L16060823-03	1	1		06/21/16 19:02
28	15M18482	L16060823-04	1	1		06/21/16 19:25
29	15M18483	L16060809-03 827-DIOX	1	1		06/21/16 19:48
30	15M18484	L16060854-01 2X	1	2		06/21/16 20:10
31	15M18485	BAKEOUT	1	1		06/21/16 20:33
32	15M18486	BAKEOUT	1	1		06/21/16 20:55
33	15M18487	BAKEOUT	1	1		06/21/16 21:18

Page: 1 Approved: 22-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062116

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573365

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD: STD74214

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
	WG573501-01 5PPM DFTPP STD rerun DFTPP, pentachlorophenol tailing >2.			
14				
	WG573008-01 BLANK 6/17 DNR-not needed.			
15				
	WG573008-02 LCS DNR-not needed.			
16				
	WG573008-03 LCSDUP DNR-not needed.			
19	X	2	Over Calibration Range	
	L16060854-01			

Page: 2 Approved: 22-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 21-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75850
Analytical Workgroups: L16060730, 060756, 060809, 060822, 060823, 060854

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 22-JUN-2016

Secondary Reviewer: 22-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-22-2016 16:00:51

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8270D

AAB#: WG573365

Login Number: L16060730

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW14-061316	01	06/13/16					06/15/2016	2.4	7		06/21/16	5.9	40	
18CPTMW14FD-061316	02	06/13/16					06/15/2016	2.4	7		06/21/16	5.9	40	
18CPTMW24-061316	03	06/13/16					06/15/2016	2.3	7		06/21/16	5.9	40	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4819032
Report generated 06/23/2016 13:26

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060730
Instrument Id: HPMS15
Workgroup (AAB#): WG573365

Method: 827-DIOXANE
CAL ID: HPMS15-21-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1
L16060730-01	1.00	01	50.2
L16060730-02	1.00	01	65.8
L16060730-03	1.00	01	45.0
WG572806-01	1.00	02	61.7
WG572806-02	1.00	02	62.5
WG572806-03	1.00	02	46.5

Surrogates	Surrogate Limits		
1 - 1,4-Dioxane-d8	20	-	129

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4819048
Report generated: 06/23/2016 13:26

METHOD BLANK SUMMARY

Login Number: L16060730
Blank File ID: 15M18465
Prep Date: 06/15/16 18:01
Analyzed Date: 06/21/16 12:54
Analyst: MES

Work Group: WG573365
Blank Sample ID: WG572806-01
Instrument ID: HPMS15
Method: 8270D

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572806-02	15M18466	06/21/16 13:17	02
LCS2	WG572806-03	15M18467	06/21/16 13:40	02
18CPTMW14-061316	L16060730-01	15M18471	06/21/16 15:11	01
18CPTMW14FD-061316	L16060730-02	15M18472	06/21/16 15:34	01
18CPTMW24-061316	L16060730-03	15M18474	06/21/16 16:19	01

Report Name: BLANK_SUMMARY
PDF File ID: 4821144
Report generated 06/23/2016 13:26

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060730 Prep Date: 06/15/16 18:01 Sample ID: WG572806-01
Instrument ID: HPMS15 Run Date: 06/21/16 12:54 Prep Method: 3520C
File ID: 15M18465 Analyst: MES Method: 8270D
Workgroup (AAB#): WG573365 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS15-21-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
1,4-Dioxane	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	61.7	20 - 129	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4819033
23-JUN-2016 13:26

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060730 Analyst: MES Prep Method: 3520C
Instrument ID: HPMS15 Matrix: Water Method: 8270D
Workgroup (AAB#): WG573365 Units: ug/L
QC Key: DOD4 Lot #: STD75256

Sample ID: WG572806-02 LCS File ID: 15M18466 Run Date: 06/21/2016 13:17
Sample ID: WG572806-03 LCS2 File ID: 15M18467 Run Date: 06/21/2016 13:40

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,4-Dioxane	5.00	3.03	60.6	5.00	2.27	45.5	28.6	30 - 104	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,4-Dioxane-d8	62.5	46.5	20 - 129	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4819034
Report generated: 06/23/2016 13:26

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16060730
Instrument: HPMS15
Analyst: MES
Workgroup: WG573501

Tune ID: WG573501-01
Run Date: 06/21/2016
Run Time: 09:34
File ID: 15M18457
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	38.8	34488	PASS
68.0	69.0	0	2.00	1.36	500	PASS
69.0	198	0	100	41.4	36833	PASS
70.0	69.0	0	2.00	0.467	172	PASS
127	198	40.0	60.0	51.9	46131	PASS
197	198	0	1.00	0	0	PASS
198	198	100	100	100	88880	PASS
199	198	5.00	9.00	6.66	5918	PASS
275	198	10.0	30.0	24.9	22090	PASS
365	198	1.00	100	2.65	2358	PASS
441	443	0.0100	100	75.7	9586	PASS
442	198	40.0	100	73.4	65261	PASS
443	442	17.0	23.0	19.4	12659	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573501-02	STD-CCV	01	06/21/2016 09:52	
WG573501-03	STD	01	06/21/2016 10:27	
WG573501-04	STD	01	06/21/2016 10:49	
WG573501-05	STD	01	06/21/2016 11:12	
WG573501-06	STD	01	06/21/2016 11:34	
WG573501-07	STD	01	06/21/2016 11:57	
WG573501-08	SSCV	01	06/21/2016 12:20	
WG572806-01	BLANK	02	06/21/2016 12:54	
WG572806-02	LCS	02	06/21/2016 13:17	
WG572806-03	LCS2	02	06/21/2016 13:40	
L16060730-01	18CPTMW14-061316	01	06/21/2016 15:11	
L16060730-02	18CPTMW14FD-061316	01	06/21/2016 15:34	
L16060730-03	18CPTMW24-061316	01	06/21/2016 16:19	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4819041
Report generated 06/23/2016 13:26

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060730
Analytical Method: 8270D
ICAL Workgroup: WG573501

Instrument ID: HPMS15
Initial Calibration Date: 21-JUN-16 11:57
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
1,4-Dioxane		0.3060	2.56		

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4819035
Report generated 06/23/2016 13:26

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060730

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 21-JUN-16 11:57

Column ID: F

Analyte	WG573501-02			WG573501-03			WG573501-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	5.00	60883.0000	0.3073	10.0	138820.000	0.3164	7.50	103182.000	0.3106

INT_CAL - Modified 03/06/2008
PDF File ID: 4819035
Report generated 06/23/2016 13:26

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060730

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 21-JUN-16 11:57

Column ID: F

Analyte	WG573501-05			WG573501-06			WG573501-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	2.50	26333.0000	0.2969	1.00	13250.0000	0.2966	0.400	5650.00000	0.3081

INT_CAL - Modified 03/06/2008
PDF File ID: 4819035
Report generated 06/23/2016 13:26

Calibration Table Report
Method: DIOXANE_D8.M
Title: OVD MSS01 SIM 1,4-dioxane ICAL 062116
Last Calibration: Tue Jun 21 12:51:17 2016
Curve:WG573501
Calibration Files

Compound	10 15M18459.D	7.5 15M18460.D	5 15M18458.D	2.5 15M18461.D	1 15M18462.D	0.4 15M18463.D	Avg	%RSD
1,4-Dichlorobenzene-d4	ISTD							
1,4-Dioxane	0.316	0.311	0.307	0.297	0.297	0.308	0.306	2.558
1,4-Dioxane-d8	0.426	0.418	0.417	0.402	0.395		0.411	3.044
Nitrobenzene-d5	1.202	1.173	1.128	1.002	0.927	0.906	1.056	12.163
2-Fluorobiphenyl	2.735	2.736	2.691	2.621	2.563	2.651	2.666	2.548
p-Terphenyl-d14	2.793	2.774	2.622	2.460	2.367	2.405	2.570	7.266

Wed Jun 22 12:17:33 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060730 Run Date: 06/21/2016 Sample ID: WG573501-08
Instrument ID: HPMS15 Run Time: 12:20 Method: 8270D
File ID: 15M18464 Analyst: MES QC Key: DOD4
ICal Workgroup: WG573501 Cal ID: HPMS15 - 21-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
1,4-Dioxane		5000	5050	ug/L	0.309	0.900	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4819040
Report generated 06/23/2016 13:26

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060730
Instrument ID: HPMS15
Workgroup (AAB#): WG573365

ICAL CCV Number: WG573501-02
CAL ID: HPMS15-21-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG573501-02	NA	NA	39637
Upper Limit	NA	NA	79274
Lower Limit	NA	NA	19819
L16060730-01	1.00	01	34018
L16060730-02	1.00	01	34547
L16060730-03	1.00	01	32177
WG572806-01	1.00	02	38899
WG572806-02	1.00	02	27126
WG572806-03	1.00	02	34071

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4819047
Report generated 06/23/2016 13:26

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060730
Instrument ID: HPMS15
Workgroup (AAB#): WG573365

ICAL CCV Number: WG573501-02
CAL ID: HPMS15-21-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG573501-02	NA	NA	6.93
Upper Limit	NA	NA	7.43
Lower Limit	NA	NA	6.43
L16060730-01	1.00	01	6.933
L16060730-02	1.00	01	6.933
L16060730-03	1.00	01	6.936
WG572806-01	1.00	02	6.936
WG572806-02	1.00	02	6.933
WG572806-03	1.00	02	6.933

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4821145
Report generated: 06/23/2016 13:26

2.2.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18471.D
Acq On : 21 Jun 2016 15:11
Operator : MES
Sample : L16060730-01
Misc : 1,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 22 08:03:10 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	34018	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	35119	2.5089	ug/L	0.00
Spiked Amount 5.000			Recovery	=	50.20%	
4) Nitrobenzene-d5	7.436	82	6581	0.1831	ug/L	0.00
Spiked Amount 5.000			Recovery	=	3.60%	
5) 2-Fluorobiphenyl	8.926	172	2335	0.0257	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.60%	
6) p-Terphenyl-d14	12.210	244	1241	0.0142	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.876	58	2865	0.2753	ug/L	71

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18471.D
Acq On : 21 Jun 2016 15:11
Operator : MES
Sample : L16060730-01
Misc : 1,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 22 08:03:10 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

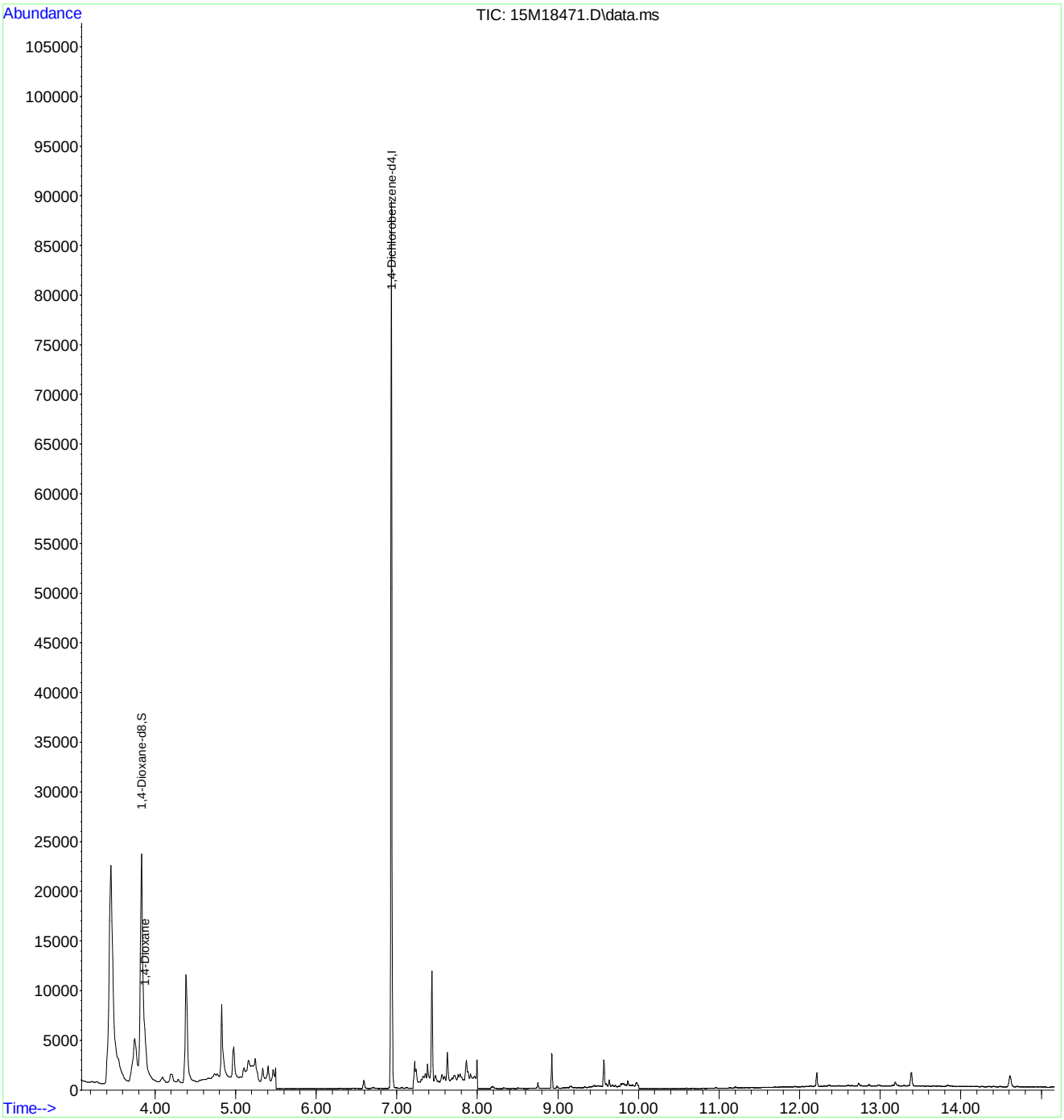

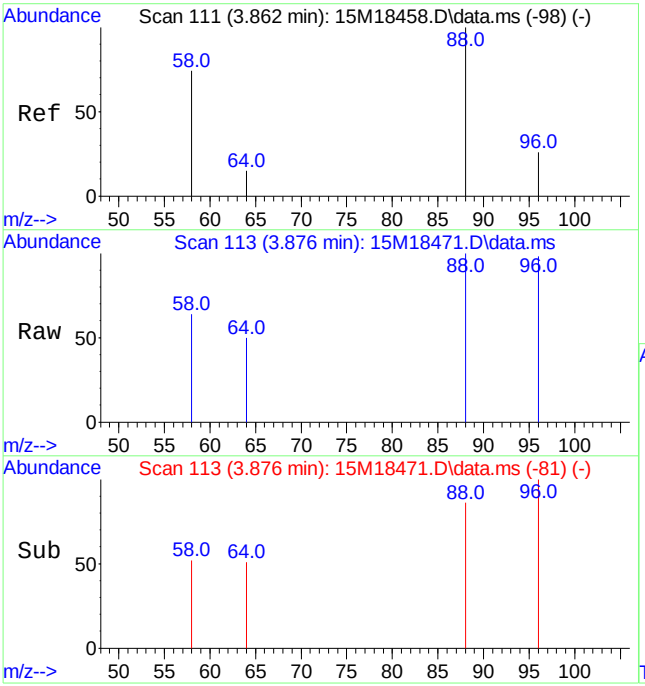

#2
1,4-Dioxane
Concen: 0.28 ug/L
RT: 3.876 min Scan# 113
Delta R.T. 0.014 min
Lab File: 15M18471.D
Acq: 21 Jun 2016 15:11

Tgt Ion: 58 Resp: 2865

Ion	Ratio	Lower	Upper
58	100		
88	132.1	103.1	240.7

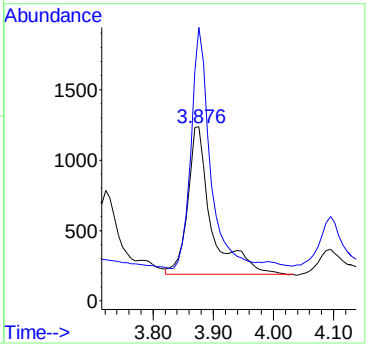

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18472.D
Acq On : 21 Jun 2016 15:34
Operator : MES
Sample : L16060730-02
Misc : 1,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jun 22 08:03:13 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	34547	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	46734	3.2875	ug/L	0.00
Spiked Amount 5.000			Recovery	=	65.80%	
4) Nitrobenzene-d5	7.436	82	7234	0.1982	ug/L	0.00
Spiked Amount 5.000			Recovery	=	4.00%	
5) 2-Fluorobiphenyl	8.926	172	1803	0.0196	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.40%	
6) p-Terphenyl-d14	12.207	244	1115	0.0126	ug/L	0.02
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	3641	0.3445	ug/L	71

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18472.D
Acq On : 21 Jun 2016 15:34
Operator : MES
Sample : L16060730-02
Misc : 1,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jun 22 08:03:13 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

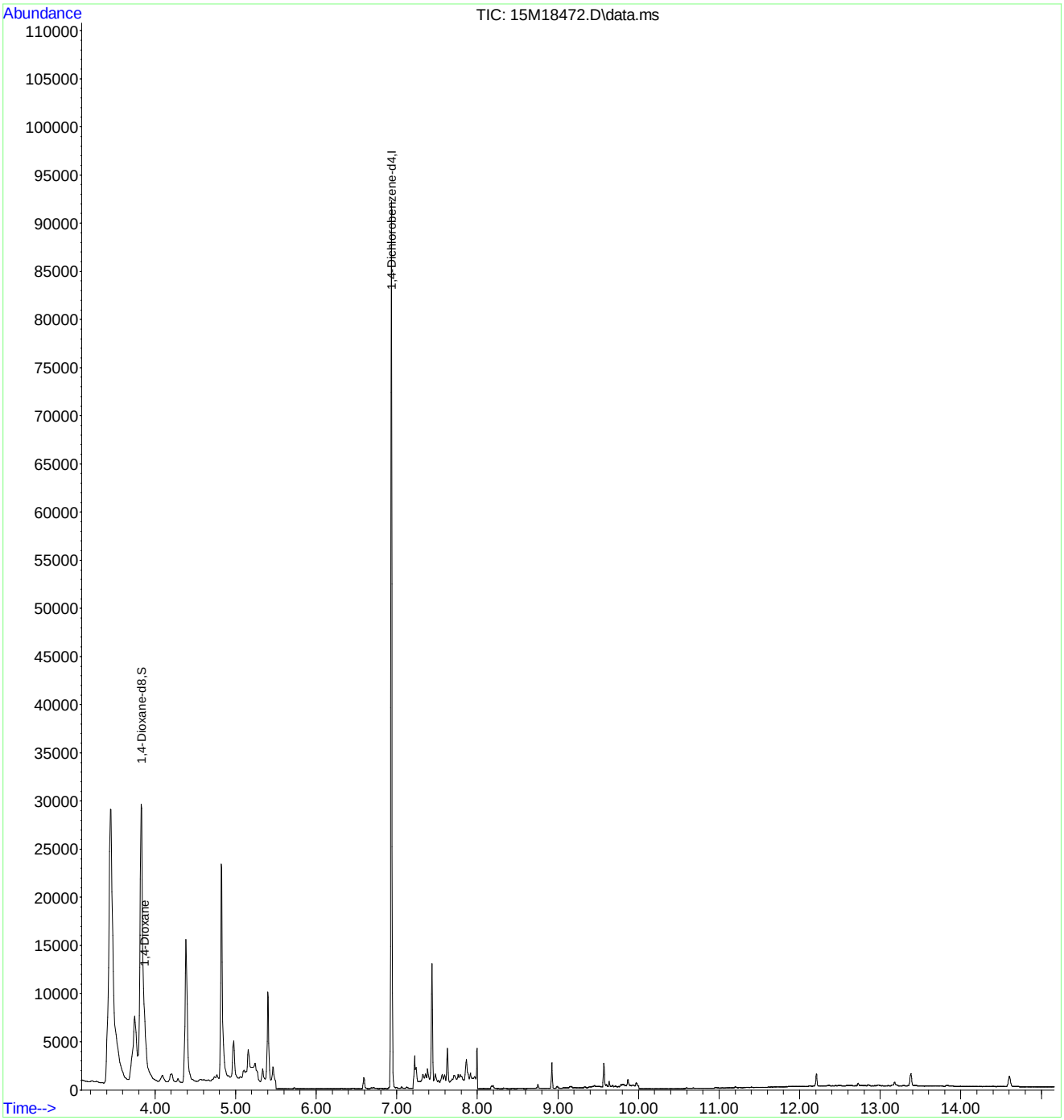

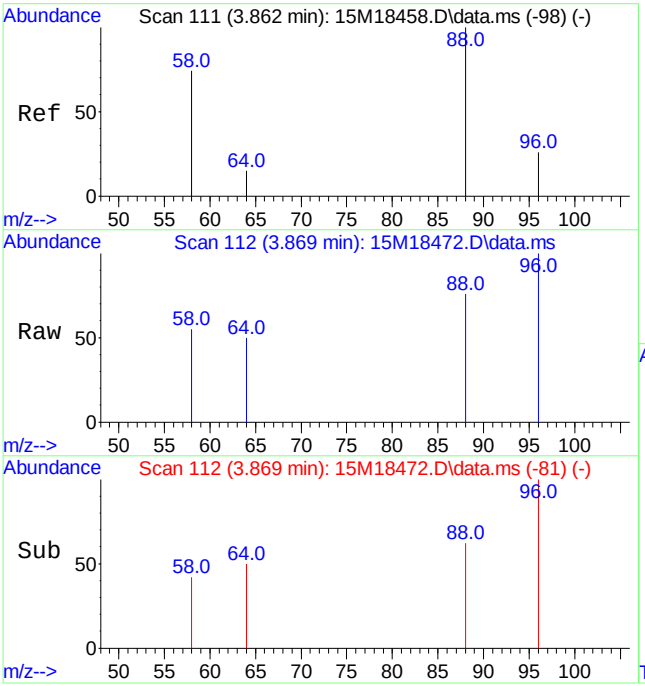

#2
1,4-Dioxane
Concen: 0.34 ug/L
RT: 3.869 min Scan# 112
Delta R.T. 0.007 min
Lab File: 15M18472.D
Acq: 21 Jun 2016 15:34

Tgt Ion: 58 Resp: 3641

Ion	Ratio	Lower	Upper
58	100		
88	131.9	103.1	240.7

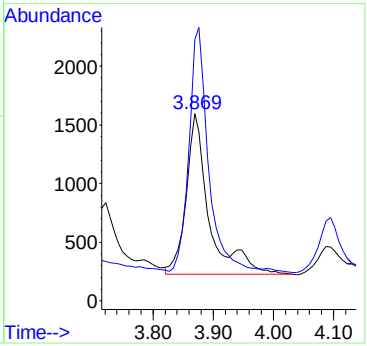

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18474.D
Acq On : 21 Jun 2016 16:19
Operator : MES
Sample : L16060730-03
Misc : 1,1
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Jun 22 08:03:19 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.936	152	32177	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	29820	2.2522	ug/L	0.00
Spiked Amount 5.000			Recovery	=	45.00%	
4) Nitrobenzene-d5	7.436	82	5288	0.1556	ug/L	0.00
Spiked Amount 5.000			Recovery	=	3.20%	
5) 2-Fluorobiphenyl	8.926	172	3787	0.0441	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.80%	
6) p-Terphenyl-d14	12.210	244	1083	0.0131	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.20%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18474.D
Acq On : 21 Jun 2016 16:19
Operator : MES
Sample : L16060730-03
Misc : 1,1
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Jun 22 08:03:19 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

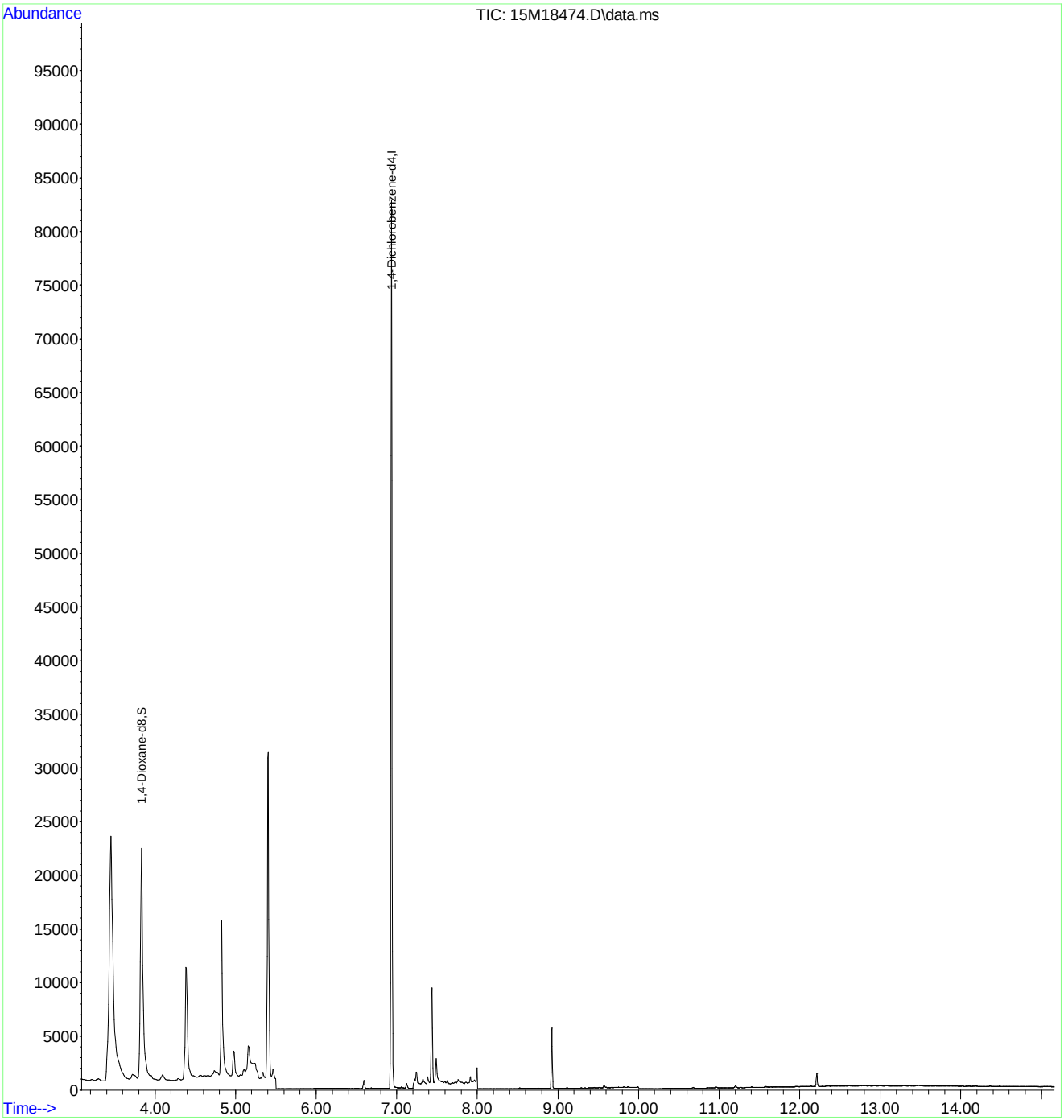

2.2.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 22 08:04:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	39637	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.827	96	82573	5.0627 ug/L	0.00
Spiked Amount 5.000			Recovery	= 101.20%	
4) Nitrobenzene-d5	7.431	82	223381	5.3353 ug/L	0.00
Spiked Amount 5.000			Recovery	= 106.80%	
5) 2-Fluorobiphenyl	8.922	172	533101	5.0444 ug/L	0.00
Spiked Amount 5.000			Recovery	= 100.80%	
6) p-Terphenyl-d14	12.184	244	519544	5.1003 ug/L	0.00
Spiked Amount 5.000			Recovery	= 102.00%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.862	58	60883	5.0202 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 22 08:04:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

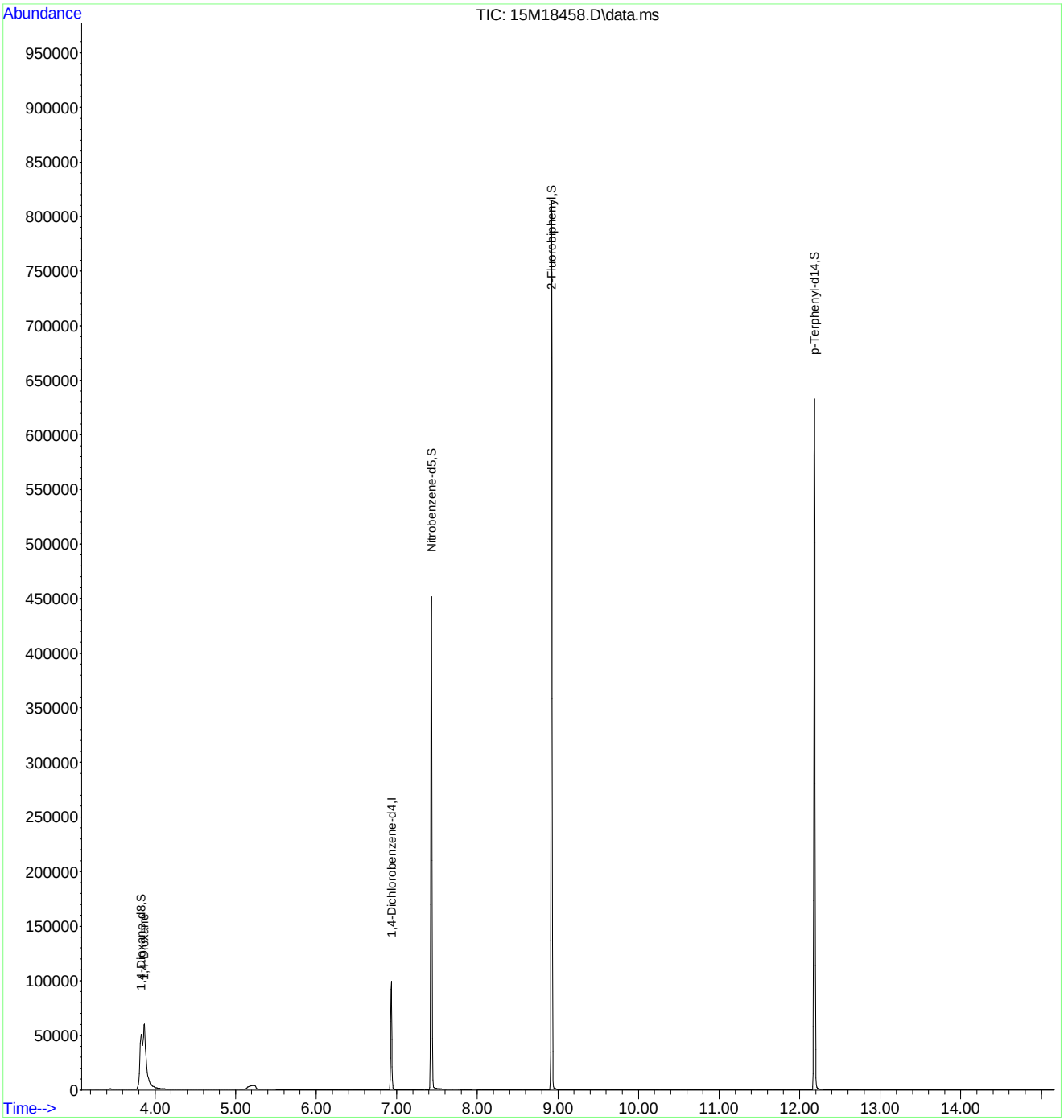

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18459.D
Acq On : 21 Jun 2016 10:27
Operator : MES
Sample : WG573501-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 22 08:04:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	43874	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	186767	10.3452	ug/L	0.00
Spiked Amount 5.000			Recovery = 207.00%			
4) Nitrobenzene-d5	7.431	82	527549	11.3834	ug/L	0.00
Spiked Amount 5.000			Recovery = 227.60%			
5) 2-Fluorobiphenyl	8.926	172	1199799	10.2565	ug/L	0.00
Spiked Amount 5.000			Recovery = 205.20%			
6) p-Terphenyl-d14	12.240	244	1225328	10.8672	ug/L	0.06
Spiked Amount 5.000			Recovery = 217.40%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	138820	10.3412	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18459.D
Acq On : 21 Jun 2016 10:27
Operator : MES
Sample : WG573501-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 22 08:04:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

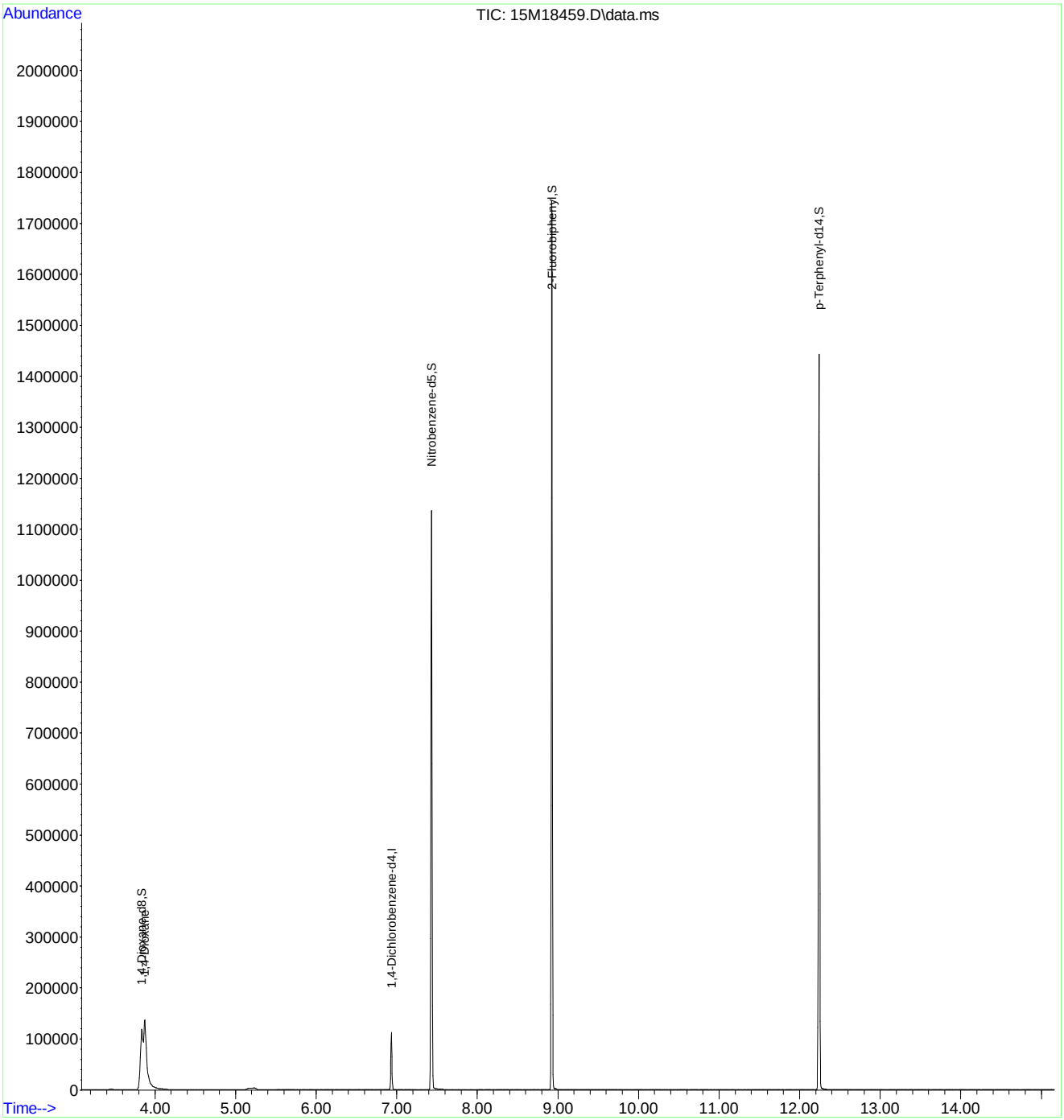

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18460.D
Acq On : 21 Jun 2016 10:49
Operator : MES
Sample : WG573501-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 22 08:04:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	44299	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.834	96	138833	7.6163 ug/L	0.00
Spiked Amount 5.000			Recovery	= 152.40%	
4) Nitrobenzene-d5	7.431	82	389810	8.3306 ug/L	0.00
Spiked Amount 5.000			Recovery	= 166.60%	
5) 2-Fluorobiphenyl	8.923	172	909050	7.6965 ug/L	0.00
Spiked Amount 5.000			Recovery	= 154.00%	
6) p-Terphenyl-d14	12.203	244	921380	8.0931 ug/L	0.02
Spiked Amount 5.000			Recovery	= 161.80%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.876	58	103182	7.6127 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18460.D
Acq On : 21 Jun 2016 10:49
Operator : MES
Sample : WG573501-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 22 08:04:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

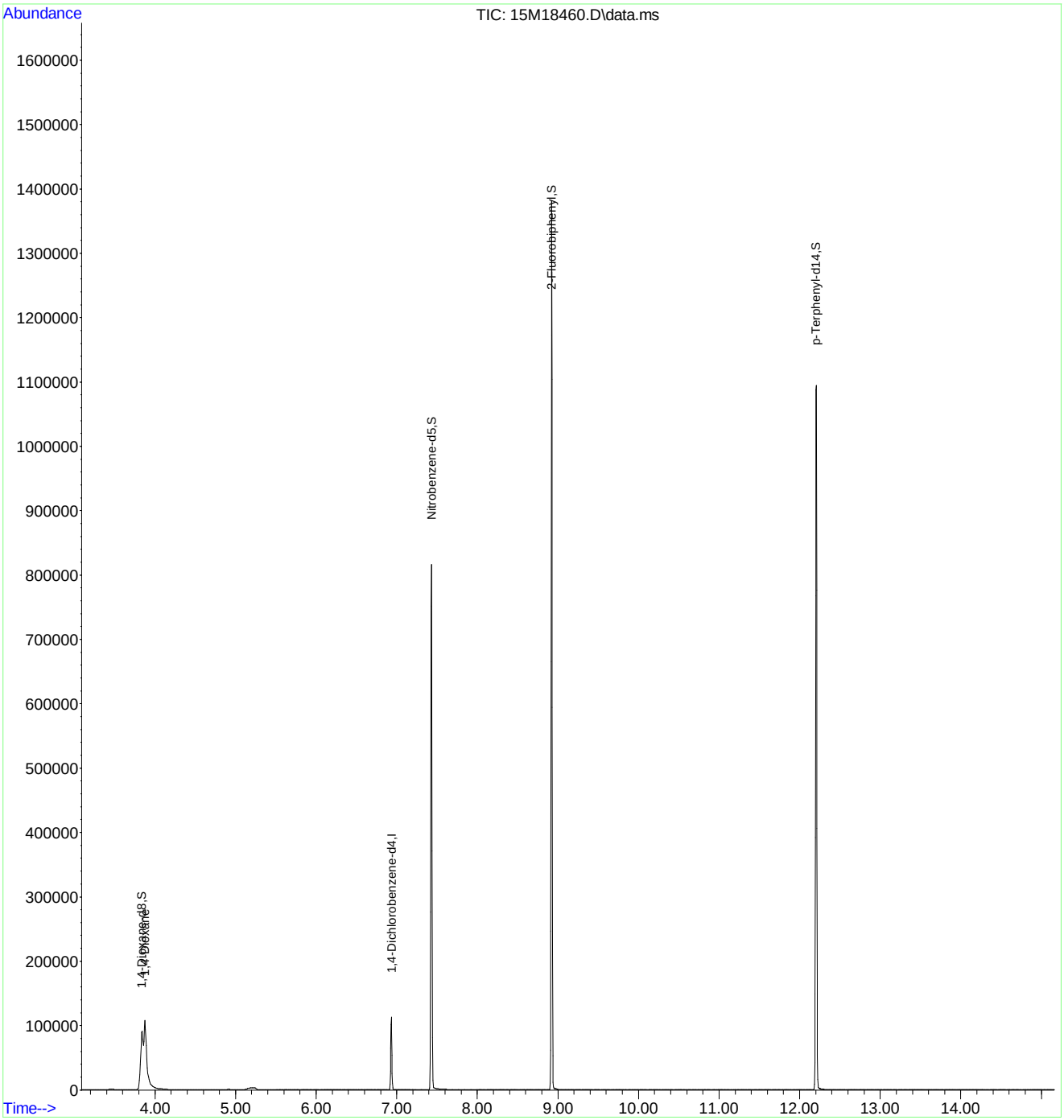

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18461.D
Acq On : 21 Jun 2016 11:12
Operator : MES
Sample : WG573501-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 22 08:04:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	35478	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.827	96	35630	2.4406	ug/L	0.00
Spiked Amount 5.000			Recovery = 48.80%			
4) Nitrobenzene-d5	7.431	82	88869	2.3714	ug/L	0.00
Spiked Amount 5.000			Recovery = 47.40%			
5) 2-Fluorobiphenyl	8.923	172	232500	2.4579	ug/L	0.00
Spiked Amount 5.000			Recovery = 49.20%			
6) p-Terphenyl-d14	12.199	244	218191	2.3930	ug/L	0.02
Spiked Amount 5.000			Recovery = 47.80%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.862	58	26333	2.4259	ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18461.D
Acq On : 21 Jun 2016 11:12
Operator : MES
Sample : WG573501-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 22 08:04:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

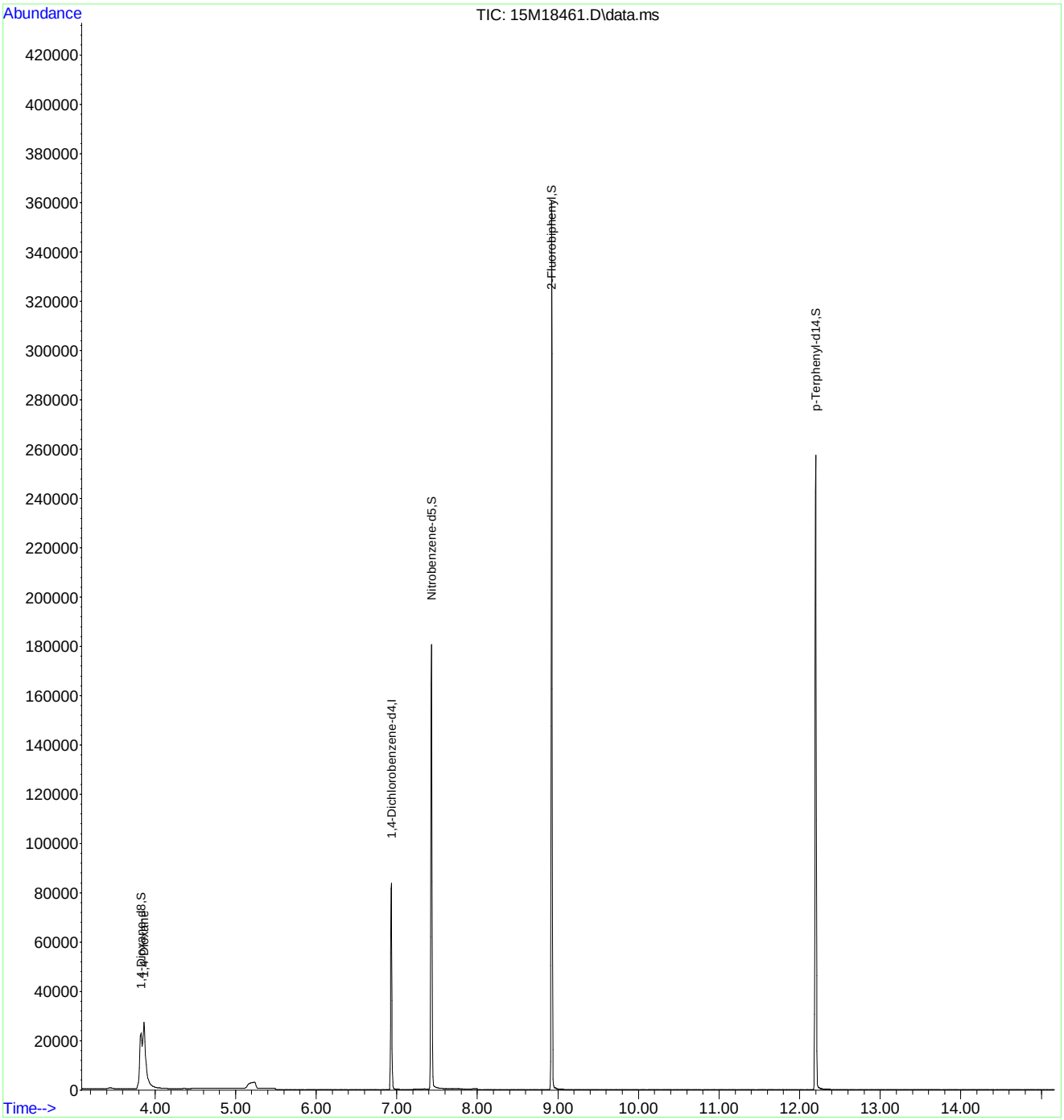

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18462.D
Acq On : 21 Jun 2016 11:34
Operator : MES
Sample : WG573501-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 22 08:04:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	44672	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.841	96	17660	0.9607 ug/L	0.01
Spiked Amount 5.000			Recovery	= 19.20%	
4) Nitrobenzene-d5	7.431	82	41409	0.8776 ug/L	0.00
Spiked Amount 5.000			Recovery	= 17.60%	
5) 2-Fluorobiphenyl	8.922	172	114491	0.9612 ug/L	0.00
Spiked Amount 5.000			Recovery	= 19.20%	
6) p-Terphenyl-d14	12.203	244	105713	0.9208 ug/L	0.02
Spiked Amount 5.000			Recovery	= 18.40%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.876	58	13250	0.9694 ug/L	82

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18462.D
Acq On : 21 Jun 2016 11:34
Operator : MES
Sample : WG573501-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 22 08:04:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

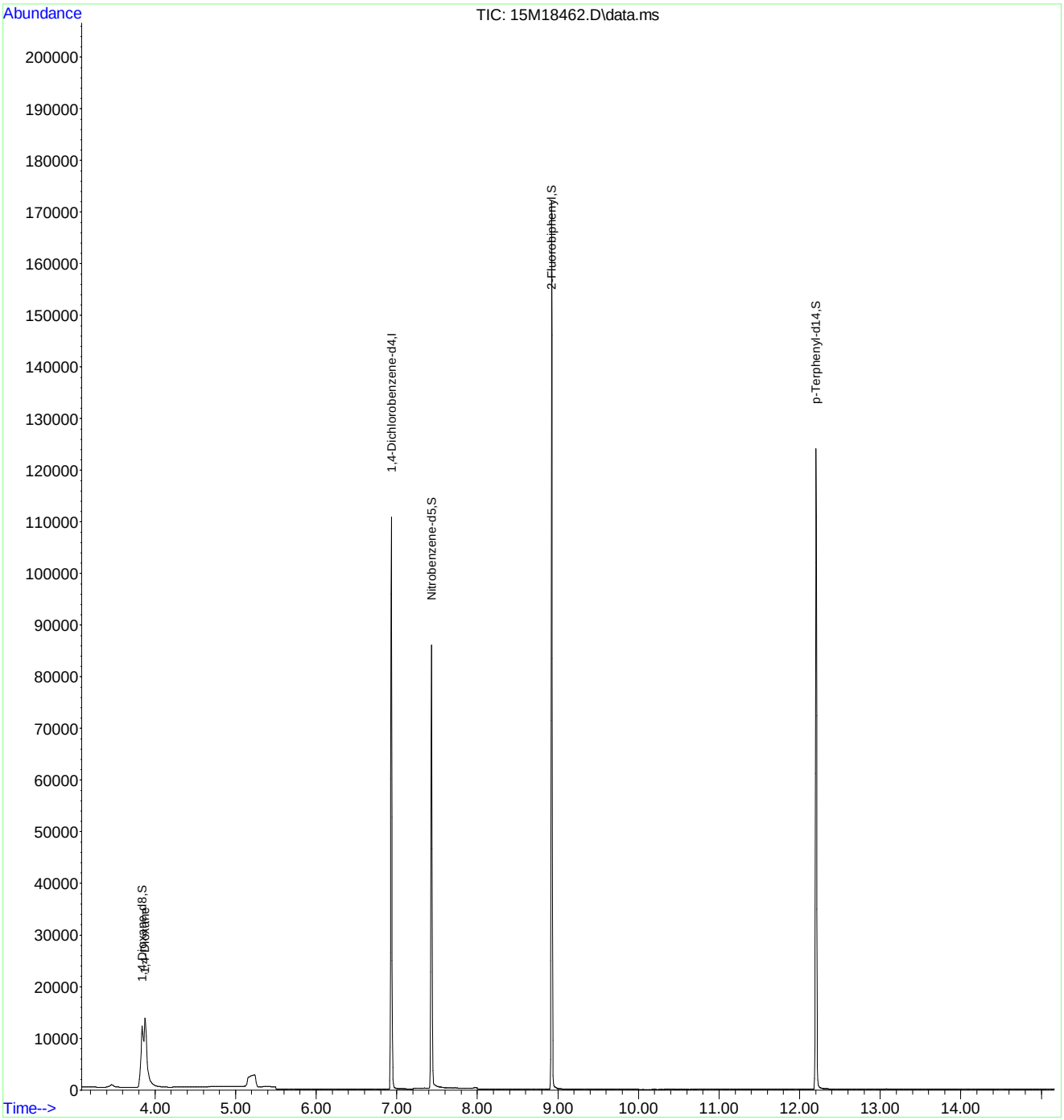

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18463.D
Acq On : 21 Jun 2016 11:57
Operator : MES
Sample : WG573501-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 22 08:04:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	45840	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.841	96	7629	0.4045	ug/L	0.01
Spiked Amount 5.000			Recovery	=	8.00%	
4) Nitrobenzene-d5	7.431	82	16604	0.3429	ug/L	0.00
Spiked Amount 5.000			Recovery	=	6.80%	
5) 2-Fluorobiphenyl	8.923	172	48617	0.3978	ug/L	0.00
Spiked Amount 5.000			Recovery	=	8.00%	
6) p-Terphenyl-d14	12.210	244	44097	0.3743	ug/L	0.03
Spiked Amount 5.000			Recovery	=	7.40%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.876	58	5650	0.4028	ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18463.D
Acq On : 21 Jun 2016 11:57
Operator : MES
Sample : WG573501-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 22 08:04:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

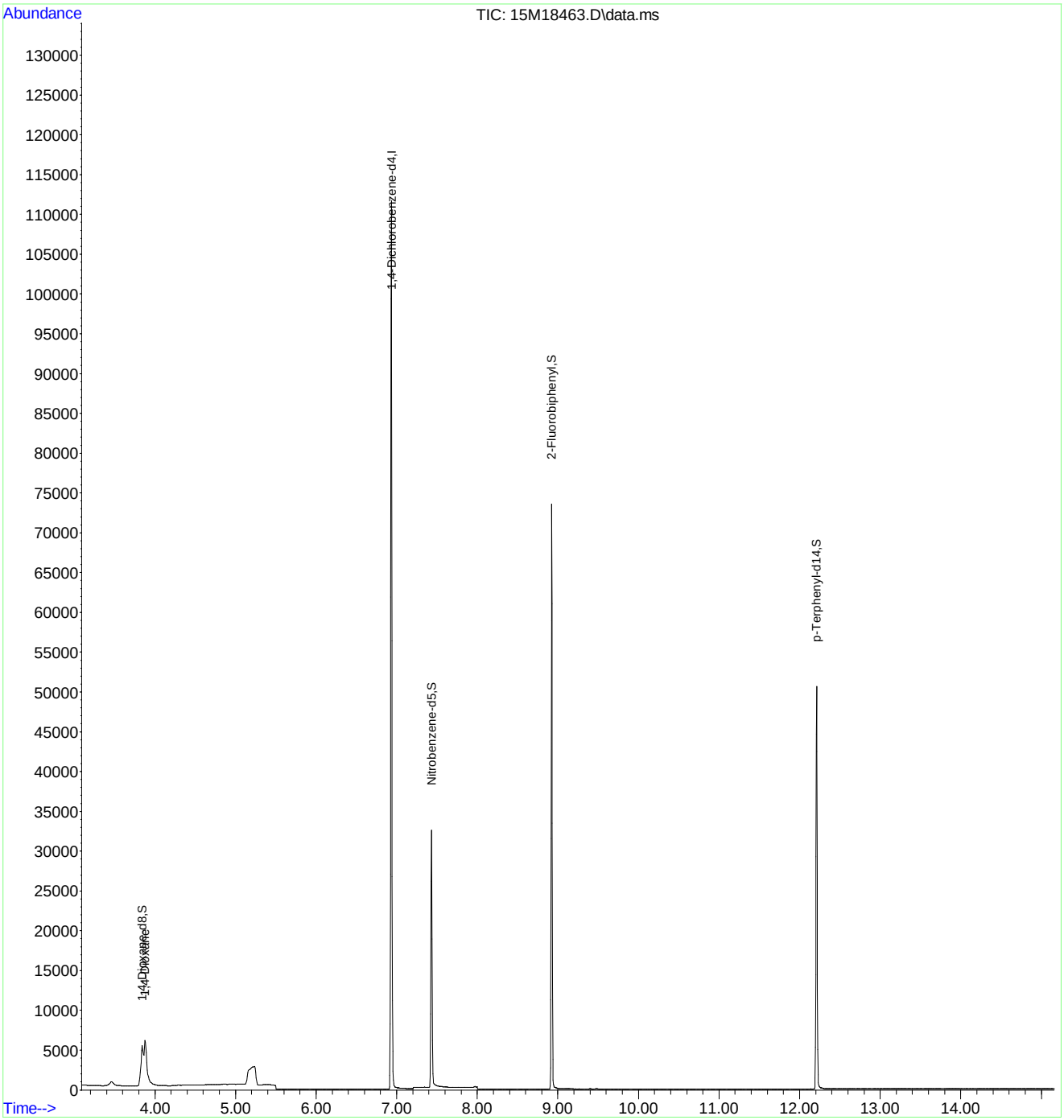

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	41944	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.792	96	22	0.0013	ug/L	-0.04
Spiked Amount 5.000			Recovery	=	0.00%	
4) Nitrobenzene-d5	7.436	82	56	0.0013	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
5) 2-Fluorobiphenyl	8.926	172	23	0.0002	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.214	244	128	0.0012	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	64750	5.0454	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

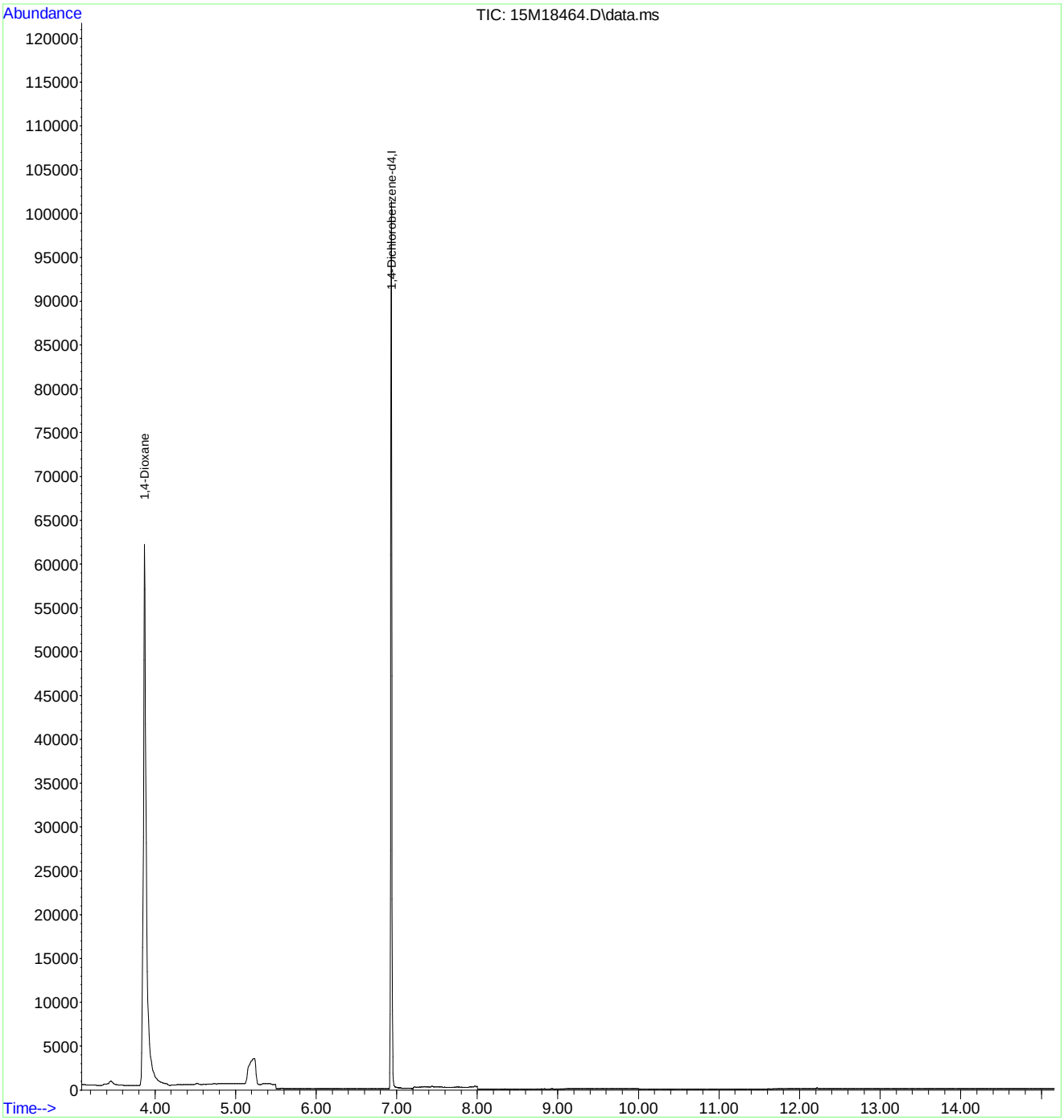

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	106	0.00
2		1,4-Dioxane	5.000	5.045	-0.9	106	0.00
3	S	1,4-Dioxane-d8	5.000	0.001	100.0#	0	-0.04
4	S	Nitrobenzene-d5	5.000	0.001	100.0#	0	0.00
5	S	2-Fluorobiphenyl	5.000	0.000	100.0#	0	0.00
6	S	p-Terphenyl-d14	5.000	0.001	100.0#	0	0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

2.2.1.5 Raw QC Data

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

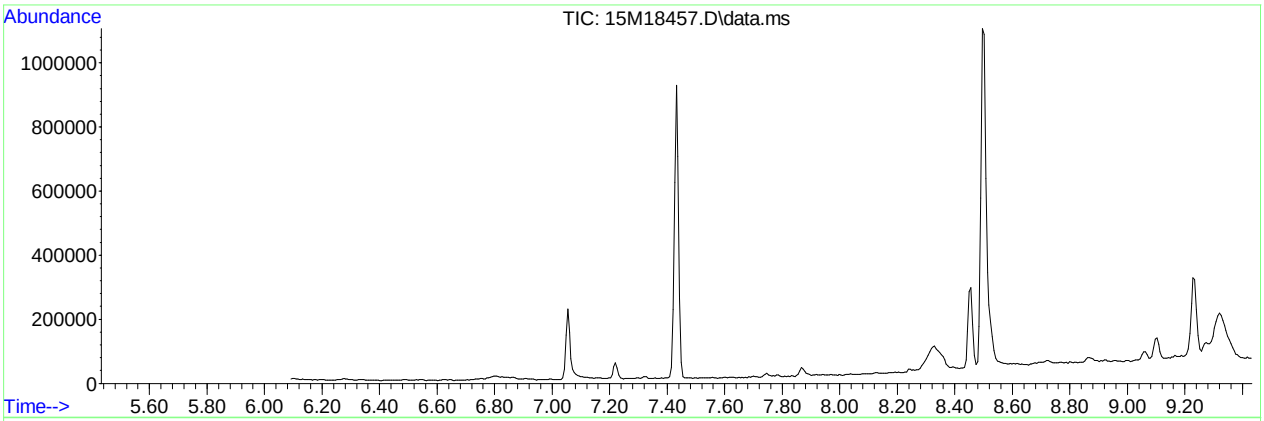

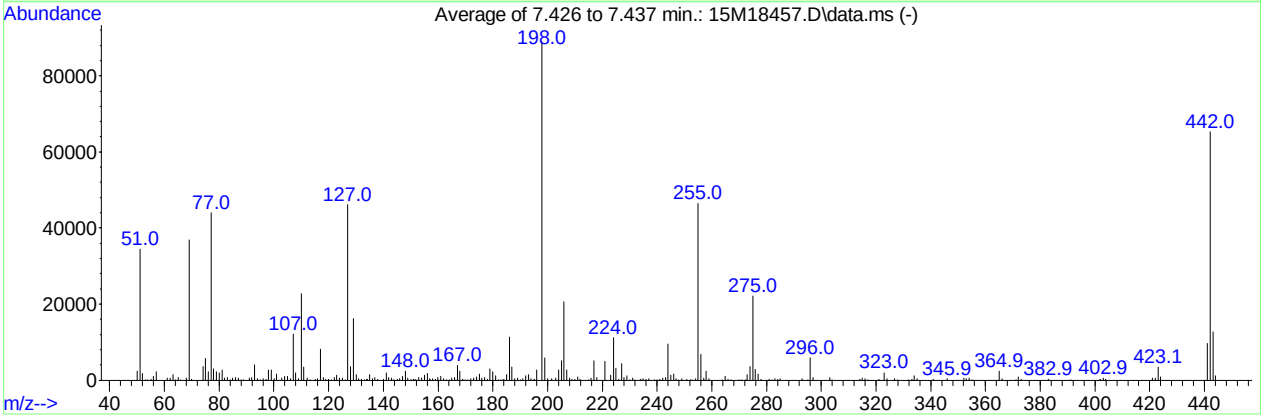

AutoFind: Scans 234, 235, 236; Background Corrected with Scan 228

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	38.8	34488	PASS
68	69	0.00	2	1.4	500	PASS
69	198	0.00	100	41.4	36833	PASS
70	69	0.00	2	0.5	172	PASS
127	198	40	60	51.9	46131	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	88880	PASS
199	198	5	9	6.7	5918	PASS
275	198	10	30	24.9	22090	PASS
365	198	1	100	2.7	2358	PASS
441	443	0.01	100	75.7	9586	PASS
442	198	40	100	73.4	65261	PASS
443	442	17	23	19.4	12659	PASS

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

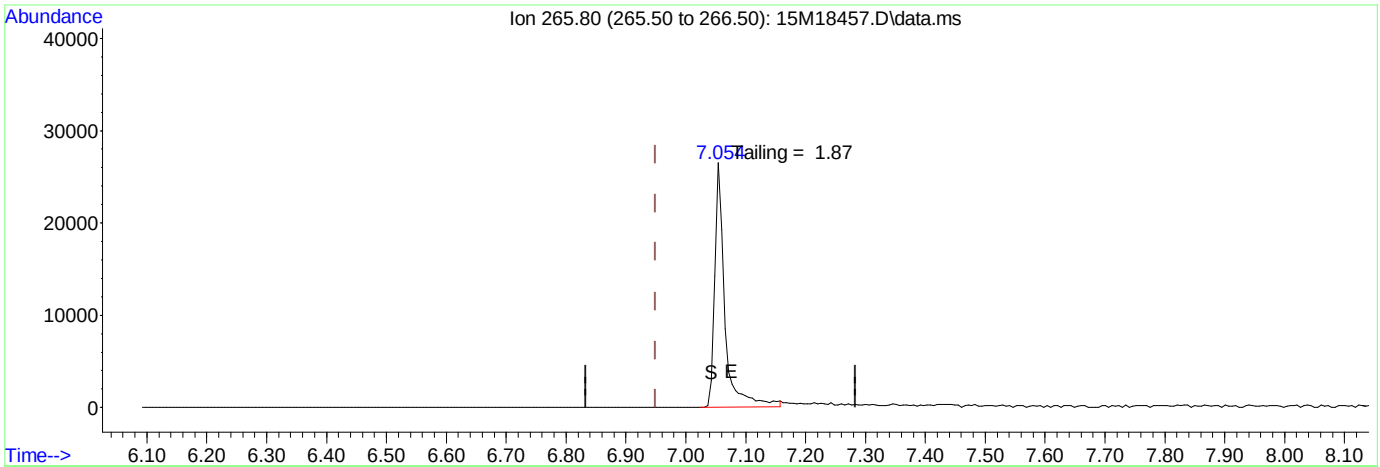

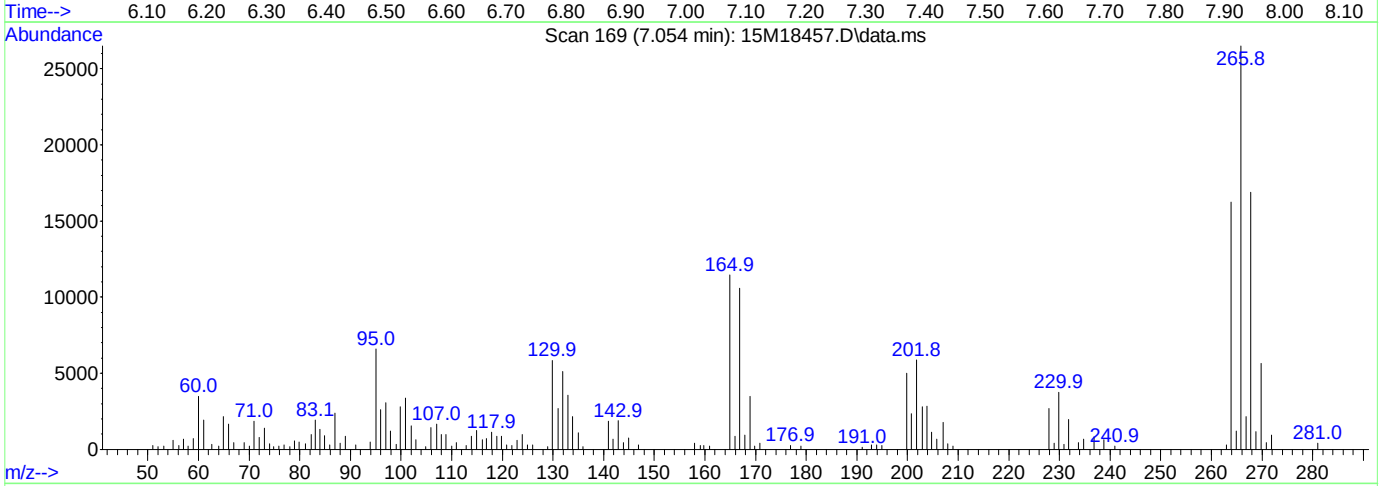

TIC: 15M18457.D\data.ms

(1) Pentachlorophenol

7.054min (+ 0.105) 0.00 ug/ml

response 30738

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

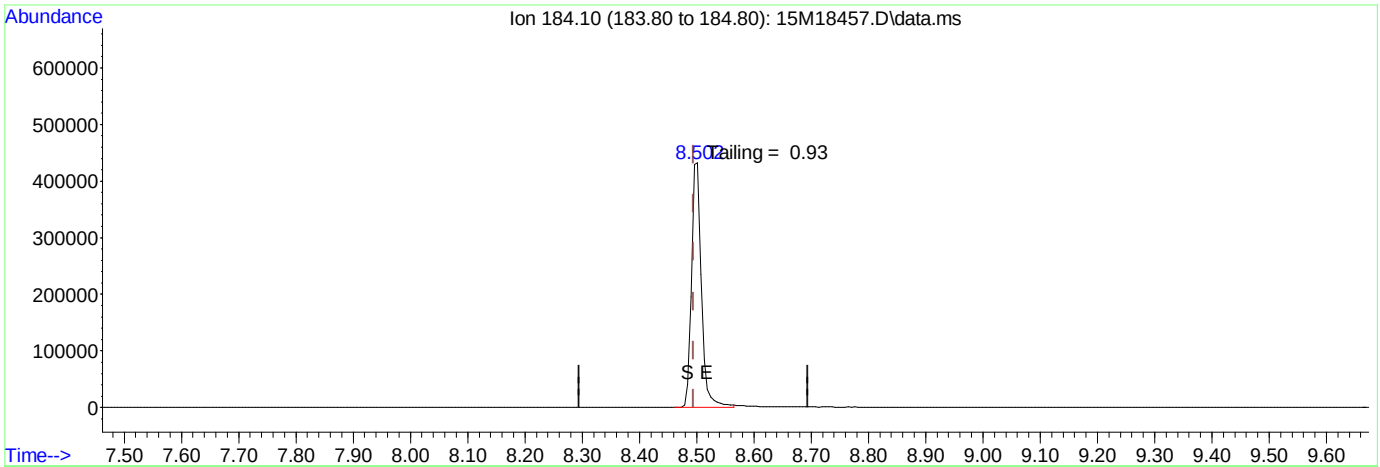

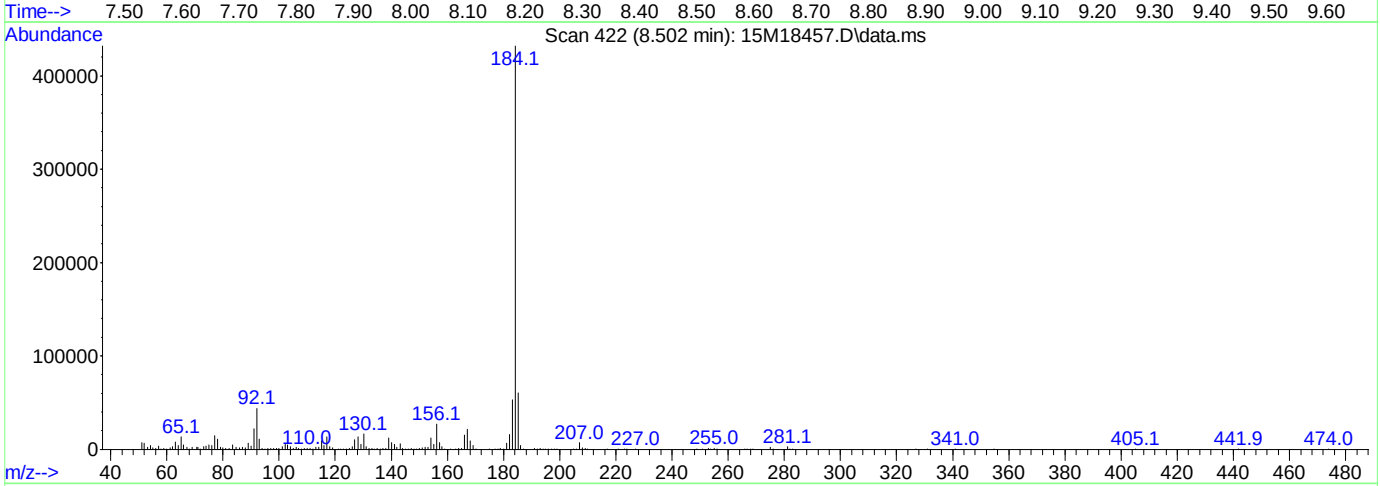

TIC: 15M18457.D\data.ms

(2) Benzidine

8.502min (+ 0.008) 0.00 ug/ml

response 532770

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

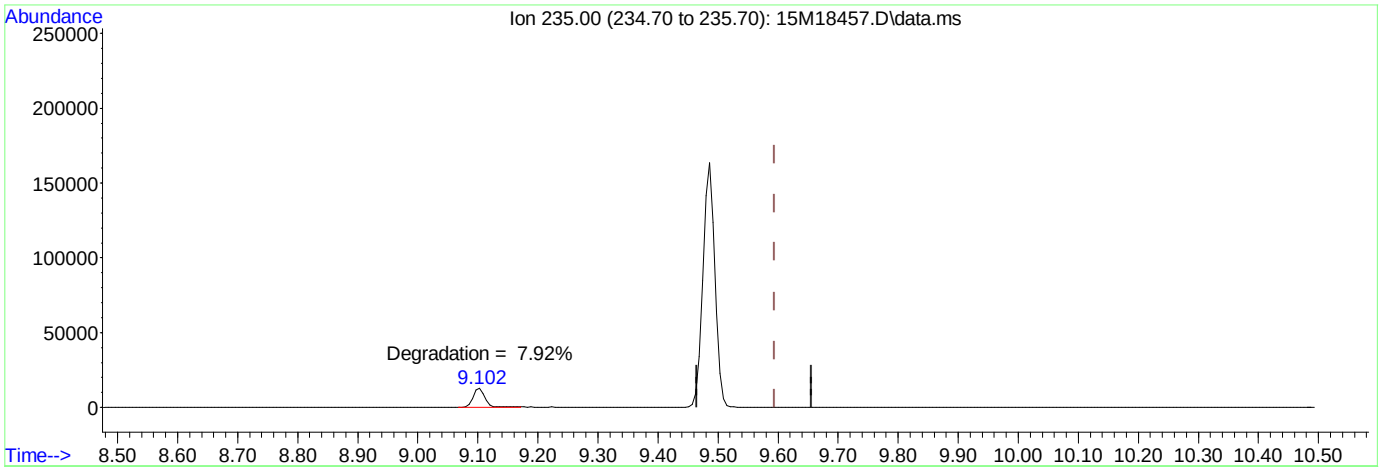

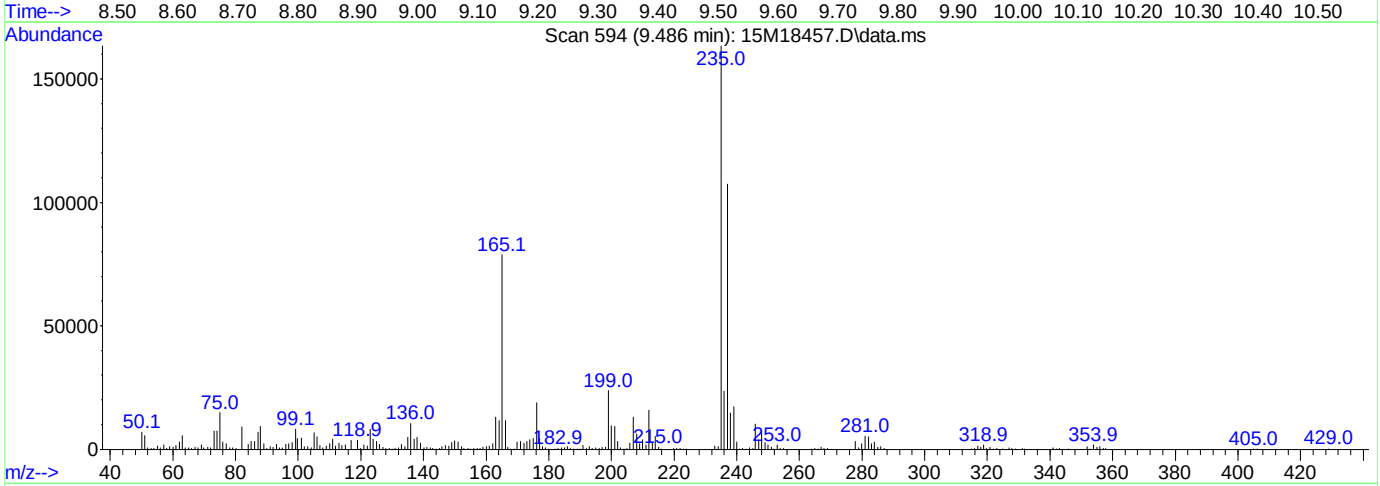

TIC: 15M18457.D\data.ms

(3) DDT

9.486min (-0.108) 0.00 ug/ml

response 180187

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18465.D
Acq On : 21 Jun 2016 12:54
Operator : MES
Sample : WG572806-01 BLANK 6/15
Misc : 1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 21 16:33:15 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.936	152	38899	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	49398	3.0862	ug/L	0.00
Spiked Amount 5.000			Recovery = 61.80%			
4) Nitrobenzene-d5	7.431	82	1663307	40.4808	ug/L	0.00
Spiked Amount 5.000			Recovery = 809.60%			
5) 2-Fluorobiphenyl	8.926	172	3076633	29.6644	ug/L	0.00
Spiked Amount 5.000			Recovery = 593.20%			
6) p-Terphenyl-d14	12.258	244	4064361	40.6562	ug/L	0.07
Spiked Amount 5.000			Recovery = 813.20%			

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18465.D
Acq On : 21 Jun 2016 12:54
Operator : MES
Sample : WG572806-01 BLANK 6/15
Misc : 1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 21 16:33:15 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

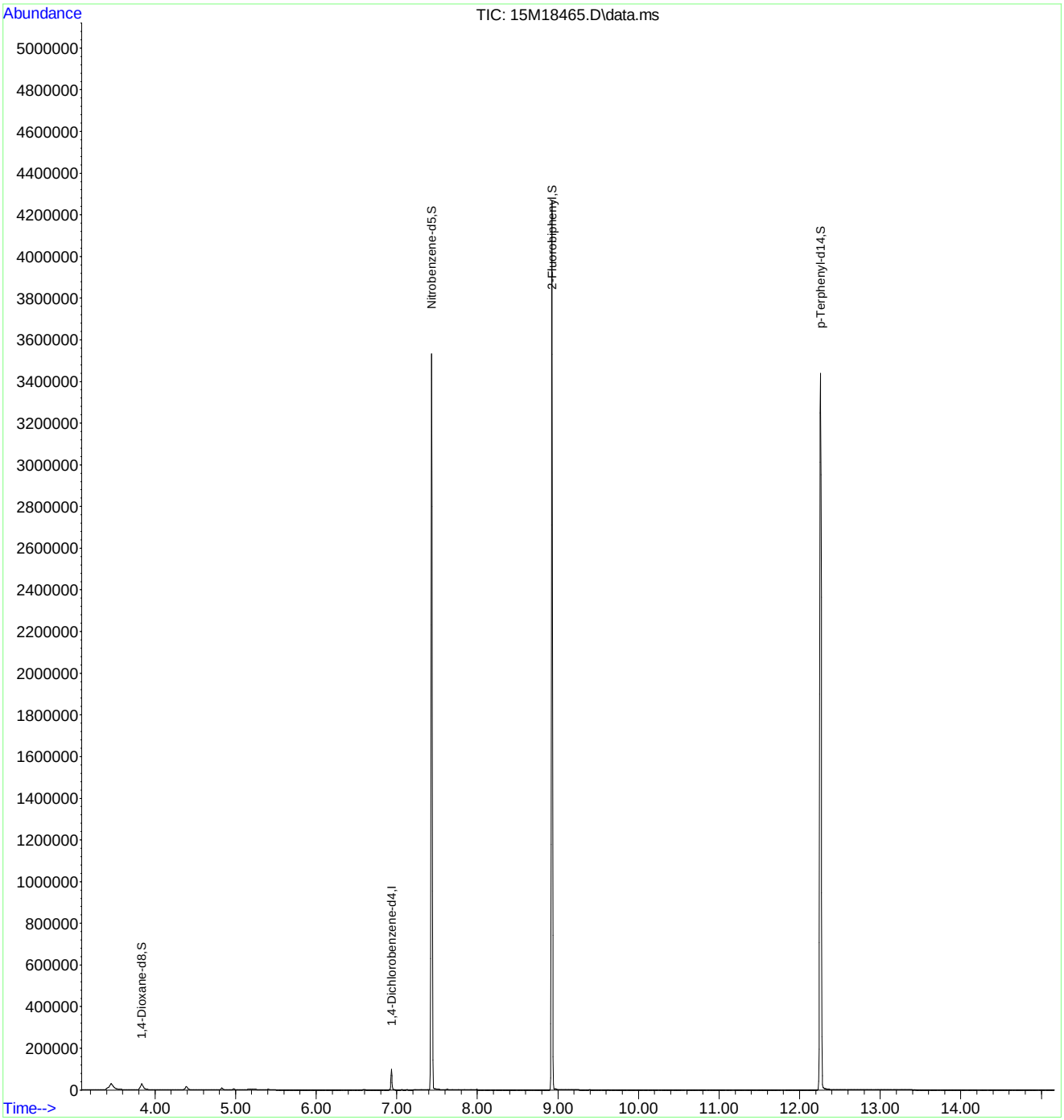

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18466.D
Acq On : 21 Jun 2016 13:17
Operator : MES
Sample : WG572806-02 LCS 6/15
Misc : 1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 22 08:05:00 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	27126	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.820	96	34886	3.1254	ug/L	0.00
Spiked Amount 5.000			Recovery	=	62.60%	
4) Nitrobenzene-d5	7.436	82	2047	0.0714	ug/L	0.00
Spiked Amount 5.000			Recovery	=	1.40%	
5) 2-Fluorobiphenyl	8.923	172	526	0.0073	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.20%	
6) p-Terphenyl-d14	12.229	244	1164	0.0167	ug/L	0.04
Spiked Amount 5.000			Recovery	=	0.40%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.855	58	25161	3.0316	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18466.D
Acq On : 21 Jun 2016 13:17
Operator : MES
Sample : WG572806-02 LCS 6/15
Misc : 1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 22 08:05:00 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

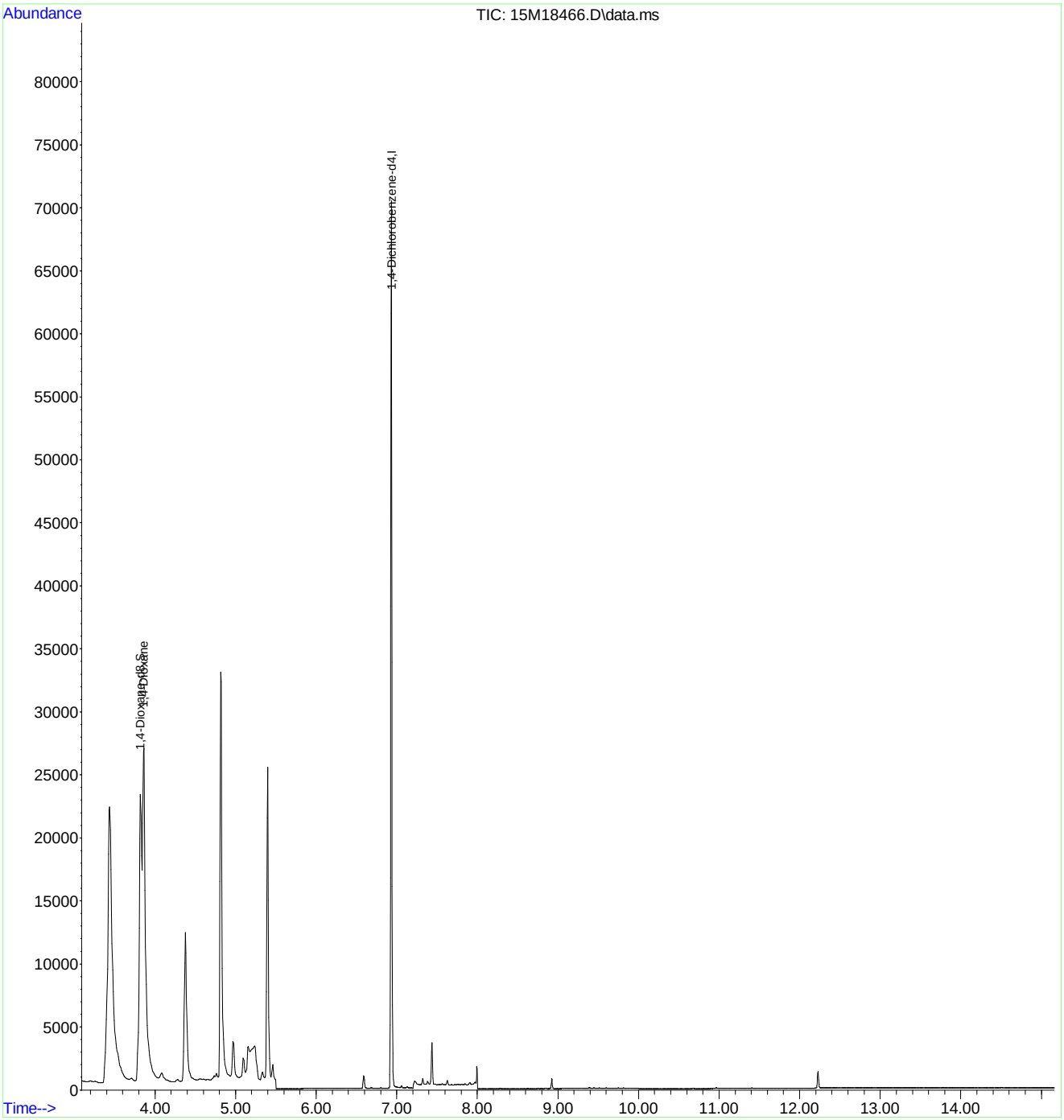

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18467.D
Acq On : 21 Jun 2016 13:40
Operator : MES
Sample : WG572806-03 LCSDUP 6/15
Misc : 1,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jun 22 08:05:03 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	34071	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	32606	2.3257	ug/L	0.00
Spiked Amount 5.000			Recovery	=	46.60%	
4) Nitrobenzene-d5	7.238	82	1167	0.0324	ug/L	-0.19
Spiked Amount 5.000			Recovery	=	0.60%	
5) 2-Fluorobiphenyl	8.923	172	1594	0.0175	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.40%	
6) p-Terphenyl-d14	12.207	244	949	0.0108	ug/L	0.02
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	23691	2.2726	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18467.D
Acq On : 21 Jun 2016 13:40
Operator : MES
Sample : WG572806-03 LCSDUP 6/15
Misc : 1,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jun 22 08:05:03 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

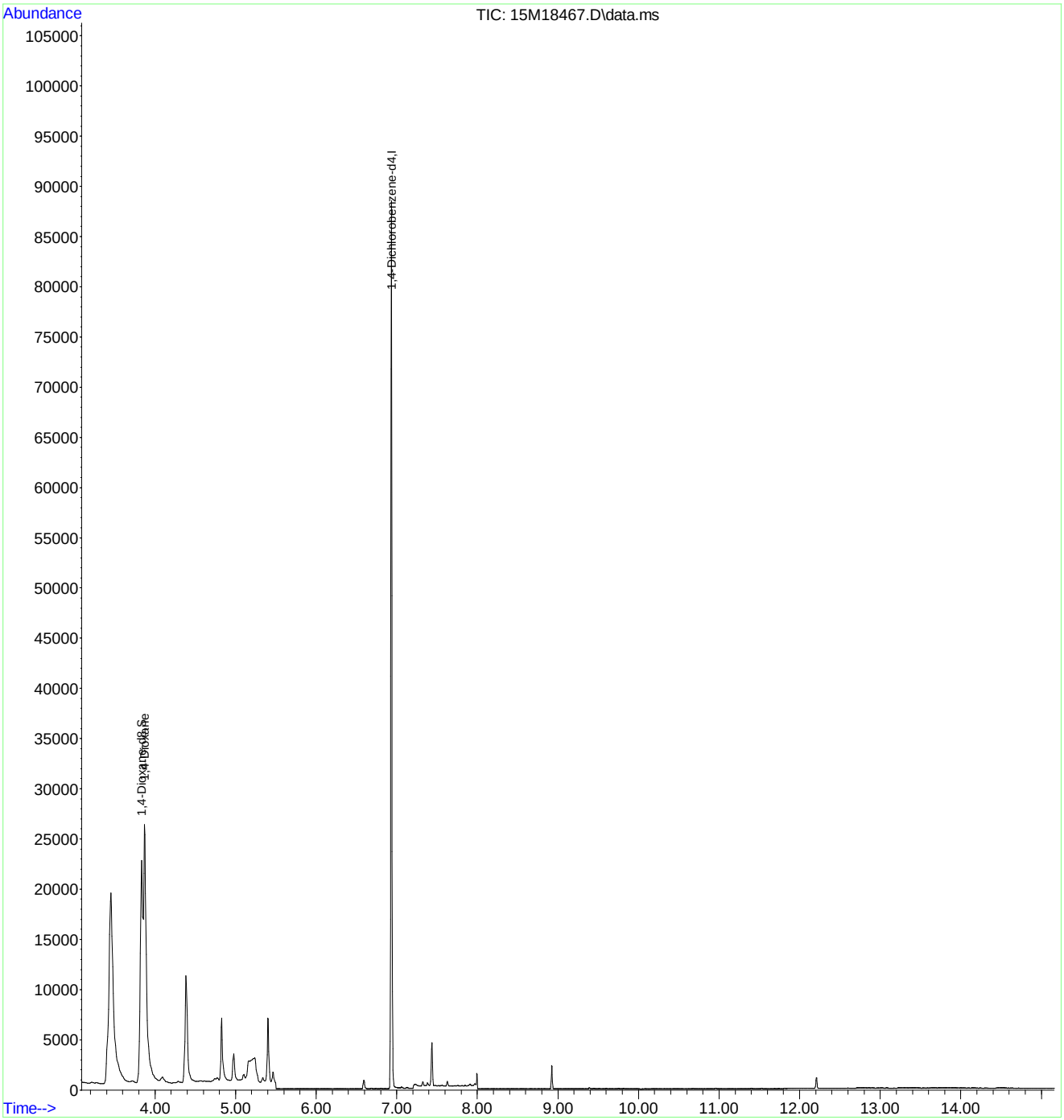

2.2 General Chromatography Data

2.2.2 6850 LC/MS Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW14-061316	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/23/2016 13:42
Collect Date:	06/13/2016 09:15	**Dilution:**	500	**File ID:**	1LM.LM35455
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	505		200	100	50.0

Certificate of Analysis

Sample #:	L16060730-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW14FD-061316	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/23/2016 14:01
Collect Date:	06/13/2016 09:15	**Dilution:**	500	**File ID:**	1LM.LM35456
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	520		200	100	50.0

Certificate of Analysis

Sample #:	L16060730-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW24-061316	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/23/2016 00:03
Collect Date:	06/13/2016 10:35	**Dilution:**	50	**File ID:**	1LM.LM35438
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	99.0		20.0	10.0	5.00

2.2.2.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1401 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG573791-01 MCT	9,940.	
-02 Blank	0.34	
-03 LCS	0.41	
-04 LCS2	0.42	
L16060650-01	2,500.	
-02	1,505.	
-03	839.	
-04	1,830.	
-05	1,832.	
-06	1,104.	
-07	711.	
L16060730-01	4,900.	
-02	4,930.	
-03	10,050.	
L16060732-01	3,060.	
-02	2,940.	
L16060822-01	627.	
-03	1,199.	
-04	901.	
-05	899.	
L16060854-01	3,040.	
L16061180-01	3,020.	

Analyst: John Richards

Date/Time: 06/23/16 13:33

DCN#119262

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

Page: 1 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

Page: 2 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 062216_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG573791 (waters)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments: All samples were initially analyzed neat or at dilutions based on their historical results.
Samples tagged with (NR) did not conform to their historical results. These samples were reanalyzed on the end of the sequence, either neat or at a dilution, based on the results of their initial analysis.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35415	WG573797-01 CCB	1	1		06/22/16 16:48
2	1LM.LM35416	WG573797-02 CCV (1.0ug/L)	1	1	STD75510	06/22/16 17:06
3	1LM.LM35417	WG573791-05 MRL (0.2ug/L)	1	1	STD75510	06/22/16 17:25
4	1LM.LM35418	WG573791-01 MCT (0.2ug/L)	1	1	STD75512	06/22/16 17:44
5	1LM.LM35419	WG573791-02 BLANK	1	1		06/22/16 18:03
6	1LM.LM35420	WG573791-03 LCS (0.2ug/L)	1	1	STD75512	06/22/16 18:22
7	1LM.LM35421	WG573791-04 LCS2 (0.2ug/L)	1	1	STD75512	06/22/16 18:41
8	1LM.LM35422	L16061180-01	1	1		06/22/16 19:00
9	1LM.LM35423	L16060732-01	1	1		06/22/16 19:19
10	1LM.LM35424	L16060732-02	1	1		06/22/16 19:38
11	1LM.LM35425	L16060854-01	1	1		06/22/16 19:57
12	1LM.LM35426	L16060650-01 (10,000x)	1	10000		06/22/16 20:16
13	1LM.LM35427	L16060650-02 (10,000x)	1	10000		06/22/16 20:35
14	1LM.LM35428	WG573797-03 CCV (1.0ug/L)	1	1	STD75510	06/22/16 20:54
15	1LM.LM35429	WG573791-06 MRL (0.2ug/L)	1	1	STD75510	06/22/16 21:13
16	1LM.LM35430	WG573797-04 CCB	1	1		06/22/16 21:31
17	1LM.LM35431	L16060650-03	1	1		06/22/16 21:50
18	1LM.LM35432	L16060650-04 (5,000x) (NR)	1	5000		06/22/16 22:09
19	1LM.LM35433	L16060650-05 (5,000x) (NR)	1	5000		06/22/16 22:28
20	1LM.LM35434	L16060650-06 (100x) (NR)	1	100		06/22/16 22:47
21	1LM.LM35435	L16060650-07	1	1		06/22/16 23:06
22	1LM.LM35436	L16060730-01 (50x) (NR)	1	50		06/22/16 23:25
23	1LM.LM35437	L16060730-02 (50x) (NR)	1	50		06/22/16 23:44
24	1LM.LM35438	L16060730-03 (50x)	1	50		06/23/16 00:03
25	1LM.LM35439	WG573797-05 CCV (1.0ug/L)	1	1	STD75510	06/23/16 00:22
26	1LM.LM35440	WG573791-07 MRL (0.2ug/L)	1	1	STD75510	06/23/16 00:41
27	1LM.LM35441	WG573797-06 CCB	1	1		06/23/16 01:00
28	1LM.LM35442	L16060822-01	1	1		06/23/16 01:19
29	1LM.LM35443	L16060822-03	1	1		06/23/16 01:38
30	1LM.LM35444	L16060822-04 (NR)	1	1		06/23/16 01:57
31	1LM.LM35445	L16060822-05 (NR)	1	1		06/23/16 02:16
32	1LM.LM35446	WG573797-07 CCV (1.0ug/L)	1	1	STD75510	06/23/16 02:34
33	1LM.LM35447	WG573791-08 MRL (0.2ug/L)	1	1	STD75510	06/23/16 02:53

Page: 1 Approved: 24-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 062216_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG573791 (waters)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 NA

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM35448	WG573797-08 CCB	1	1		06/23/16 03:12
35	1LM.LM35449	WG573797-09 CCV (1.0ug/L)	1	1	STD75510	06/23/16 11:49
36	1LM.LM35450	WG573791-09 MRL (0.2ug/L)	1	1	STD75510	06/23/16 12:08
37	1LM.LM35451	WG573797-10 CCB	1	1		06/23/16 12:27
38	1LM.LM35452	L16060650-04 (RR 50x)	1	50		06/23/16 12:46
39	1LM.LM35453	L16060650-05 (RR 50x)	1	50		06/23/16 13:05
40	1LM.LM35454	L16060650-06 (RR Neat)	1	1		06/23/16 13:23
41	1LM.LM35455	L16060730-01 (RR 500x)	1	500		06/23/16 13:42
42	1LM.LM35456	L16060730-02 (RR 500x)	1	500		06/23/16 14:01
43	1LM.LM35457	L16060822-04 (RR 1000x)	1	1000		06/23/16 14:20
44	1LM.LM35458	L16060822-05 (RR 1000x)	1	1000		06/23/16 14:39
45	1LM.LM35459	WG573797-11 CCV (1.0ug/L)	1	1	STD75510	06/23/16 14:58
46	1LM.LM35460	WG573791-10 MRL (0.2ug/L)	1	1	STD75510	06/23/16 15:17
47	1LM.LM35461	WG573797-12 CCB	1	1		06/23/16 15:36

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 2 Approved: 24-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
04-MAY-2016
John Richards

Secondary Reviewer:
05-MAY-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 22-JUN-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 75891
Analytical Workgroups: L16060650, 0730, 0732, 0822, 0854, 1180

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
24-JUN-2016
John Richards

Secondary Reviewer:
24-JUN-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-24-2016 11:54:16

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG573791

Login Number: L16060730

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW14-061316	01	06/13/16					06/22/2016	9.3	28		06/23/16	.9	28	
18CPTMW14FD-061316	02	06/13/16					06/22/2016	9.3	28		06/23/16	.9	28	
18CPTMW24-061316	03	06/13/16					06/22/2016	9.2	28		06/23/16	.3	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4822421
Report generated 06/27/2016 15:53

METHOD BLANK SUMMARY

Login Number: L16060730
Blank File ID: 1LM.LM35419
Prep Date: 06/22/16 16:00
Analyzed Date: 06/22/16 18:03
Analyst: JWR

Work Group: WG573791
Blank Sample ID: WG573791-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG573791-05	1LM.LM35417	06/22/16 17:25	01
MCT	WG573791-01	1LM.LM35418	06/22/16 17:44	01
LCS	WG573791-03	1LM.LM35420	06/22/16 18:22	01
LCS2	WG573791-04	1LM.LM35421	06/22/16 18:41	01
QCMRL	WG573791-06	1LM.LM35429	06/22/16 21:13	01
18CPTMW24-061316	L16060730-03	1LM.LM35438	06/23/16 00:03	DL01
QCMRL	WG573791-07	1LM.LM35440	06/23/16 00:41	01
QCMRL	WG573791-08	1LM.LM35447	06/23/16 02:53	01
QCMRL	WG573791-09	1LM.LM35450	06/23/16 12:08	01
18CPTMW14-061316	L16060730-01	1LM.LM35455	06/23/16 13:42	DL01
18CPTMW14FD-061316	L16060730-02	1LM.LM35456	06/23/16 14:01	DL01
QCMRL	WG573791-10	1LM.LM35460	06/23/16 15:17	01

Report Name: BLANK_SUMMARY
PDF File ID: 4822422
Report generated 06/27/2016 15:53

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060730 Prep Date: 06/22/16 16:00 Sample ID: WG573791-02
Instrument ID: LCMS1 Run Date: 06/22/16 18:03 Prep Method: 6850
File ID: 1LM.LM35419 Analyst: JWR Method: 6850
Workgroup (AAB#): WG573791 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4822423
27-JUN-2016 15:53

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060730 Analyst: JWR Prep Method: 6850
Instrument ID: LCMS1 Matrix: Water Method: 6850
Workgroup (AAB#): WG573791 Units: ug/L
QC Key: DOD4 Lot #: STD75512

Sample ID: WG573791-03 LCS File ID: 1LM.LM35420 Run Date: 06/22/2016 18:22
Sample ID: WG573791-04 LCS2 File ID: 1LM.LM35421 Run Date: 06/22/2016 18:41

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Perchlorate	0.200	0.201	101	0.200	0.215	108	6.73	80 - 120	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4822424
Report generated: 06/27/2016 15:53

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060730
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4822565
Report generated 06/27/2016 15:53

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060730

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4822565
Report generated 06/27/2016 15:53

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060730

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4822565
Report generated 06/27/2016 15:53

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060730

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008

PDF File ID: 4822565

Report generated 06/27/2016 15:53

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060730 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4822566
Report generated 06/27/2016 15:53

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/22/2016
Sample ID: WG573797-01
Instrument ID: LCMS1
Run Time: 16:48
Method: 6850
File ID: 1LM.LM35415
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822427
Report generated 06/27/2016 15:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/22/2016
Sample ID: WG573797-04
Instrument ID: LCMS1
Run Time: 21:31
Method: 6850
File ID: 1LM.LM35430
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822427
Report generated 06/27/2016 15:53

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573797-06
Instrument ID: LCMS1
Run Time: 01:00
Method: 6850
File ID: 1LM.LM35441
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822427
Report generated 06/27/2016 15:53

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573797-08
Instrument ID: LCMS1
Run Time: 03:12
Method: 6850
File ID: 1LM.LM35448
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822427
Report generated 06/27/2016 15:53

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573797-10
Instrument ID: LCMS1
Run Time: 12:27
Method: 6850
File ID: 1LM.LM35451
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822427
Report generated 06/27/2016 15:53

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573797-12
Instrument ID: LCMS1
Run Time: 15:36
Method: 6850
File ID: 1LM.LM35461
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822427
Report generated 06/27/2016 15:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/22/2016
Sample ID: WG573797-02
Instrument ID: LCMS1
Run Time: 17:06
Method: 6850
File ID: 1LM.LM35416
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.997	ug/L	1.68	0.300	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822426
Report generated 06/27/2016 15:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/22/2016
Sample ID: WG573797-03
Instrument ID: LCMS1
Run Time: 20:54
Method: 6850
File ID: 1LM.LM35428
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.75	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822426
Report generated 06/27/2016 15:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573797-05
Instrument ID: LCMS1
Run Time: 00:22
Method: 6850
File ID: 1LM.LM35439
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.74	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822426
Report generated 06/27/2016 15:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573797-07
Instrument ID: LCMS1
Run Time: 02:34
Method: 6850
File ID: 1LM.LM35446
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.75	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822426
Report generated 06/27/2016 15:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573797-09
Instrument ID: LCMS1
Run Time: 11:49
Method: 6850
File ID: 1LM.LM35449
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.71	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822426
Report generated 06/27/2016 15:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573797-11
Instrument ID: LCMS1
Run Time: 14:58
Method: 6850
File ID: 1LM.LM35459
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.05	ug/L	1.77	5.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822426
Report generated 06/27/2016 15:53

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060730 Run Date: 06/22/2016 Sample ID: WG573791-05
Instrument ID: LCMS1 Run Time: 17:25 Prep Method: 6850
File ID: 1LM.LM35417 Analyst: JWR Method: 6850
Workgroup (AAB#): WG573791 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4822425
Report generated 06/27/2016 15:53

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060730 Run Date: 06/22/2016 Sample ID: WG573791-06
Instrument ID: LCMS1 Run Time: 21:13 Prep Method: 6850
File ID: 1LM.LM35429 Analyst: JWR Method: 6850
Workgroup (AAB#): WG573791 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.204	102	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4822425
Report generated 06/27/2016 15:53

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060730 Run Date: 06/23/2016 Sample ID: WG573791-07
Instrument ID: LCMS1 Run Time: 00:41 Prep Method: 6850
File ID: 1LM.LM35440 Analyst: JWR Method: 6850
Workgroup (AAB#): WG573791 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.210	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4822425
Report generated 06/27/2016 15:53

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060730 Run Date: 06/23/2016 Sample ID: WG573791-08
Instrument ID: LCMS1 Run Time: 02:53 Prep Method: 6850
File ID: 1LM.LM35447 Analyst: JWR Method: 6850
Workgroup (AAB#): WG573791 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.214	107	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4822425
Report generated 06/27/2016 15:53

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060730 Run Date: 06/23/2016 Sample ID: WG573791-09
Instrument ID: LCMS1 Run Time: 12:08 Prep Method: 6850
File ID: 1LM.LM35450 Analyst: JWR Method: 6850
Workgroup (AAB#): WG573791 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.209	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4822425
Report generated 06/27/2016 15:53

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060730 Run Date: 06/23/2016 Sample ID: WG573791-10
Instrument ID: LCMS1 Run Time: 15:17 Prep Method: 6850
File ID: 1LM.LM35460 Analyst: JWR Method: 6850
Workgroup (AAB#): WG573791 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.201	101	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4822425
Report generated 06/27/2016 15:53

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16060730
Instrument ID: LCMS1
Workgroup (AAB#): WG573791

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16060730-01	500	DL01	439000
L16060730-02	500	DL01	446000
L16060730-03	50.0	DL01	405000
WG573791-02	1.00	01	436000
WG573791-03	1.00	01	440000
WG573791-04	1.00	01	435000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4822428
Report generated 06/27/2016 15:53

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**	6850	**Samplenum:**	L16060730-01
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35455
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 13:42	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	149000	52200	2.85	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**	6850	**Samplenum:**	L16060730-02
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35456
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 14:01	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	157000	54000	2.91	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**	6850	**Samplenum:**	L16060730-03
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35438
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 00:03	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	269000	93600	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**	6850	**Samplenum:**	WG573791-01
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35418
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 17:44	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	28500	10000	2.85	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**	6850	**Samplenum:**	WG573791-02
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35419
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 18:03	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	505	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**	6850	**Samplenum:**	WG573791-03
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35420
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 18:22	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	30300	11500	2.63	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**	6850	**Samplenum:**	WG573791-04
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35421
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 18:41	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32000	11500	2.78	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**	6850	**Samplenum:**	WG573791-05
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35417
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 17:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	31200	11200	2.79	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**	6850	**Samplenum:**	WG573791-06
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35429
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 21:13	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34500	12500	2.76	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**	6850	**Samplenum:**	WG573791-07
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35440
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 00:41	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36700	12900	2.84	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**	6850	**Samplenum:**	WG573791-08
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35447
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 02:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34800	11700	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**	6850	**Samplenum:**	WG573791-09
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35450
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 12:08	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	30500	11000	2.77	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**	6850	**Samplenum:**	WG573791-10
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35460
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 15:17	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32000	12700	2.52	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**		**Samplenum:**	WG573797-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35415
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 16:48	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	583	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**		**Samplenum:**	WG573797-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35416
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 17:06	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	151000	54200	2.79	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**		**Samplenum:**	WG573797-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35428
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 20:54	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	172000	61400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**		**Samplenum:**	WG573797-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35430
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 21:31	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	223	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**		**Samplenum:**	WG573797-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35439
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 00:22	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	176000	61500	2.86	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**		**Samplenum:**	WG573797-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35441
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 01:00	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**		**Samplenum:**	WG573797-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35446
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 02:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	58500	2.89	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**		**Samplenum:**	WG573797-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35448
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 03:12	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**		**Samplenum:**	WG573797-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35449
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 11:49	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	142000	50700	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**		**Samplenum:**	WG573797-10
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35451
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 12:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	560	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**		**Samplenum:**	WG573797-11
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35459
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 14:58	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	167000	56000	2.98	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**		**Samplenum:**	WG573797-12
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35461
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 15:36	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

2.2.2.3 Sample Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/23/2016 5:06 PM

Data File	LM35455.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 1:42:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060730-01 (RR 500x)	**Injection Vial**	29.00
Data File	LM35455.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 1:42:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	L16060730-01	**Dilution Factor**	1.00
Sample Comment	1,500.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.390e+05	9.52	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.490e+05	9.53	N/A	1.01
Perchlorate conf	5.220e+04	9.52	N/A	1.04

O18LP (Internal Standard)

RT (Exp. RT): 9.52(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

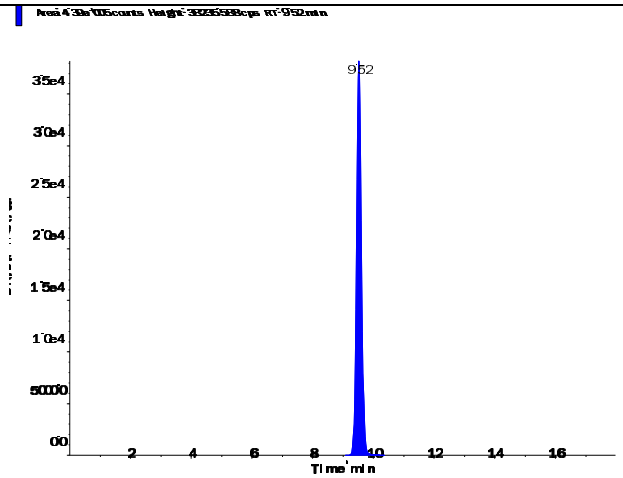

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.53 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.34
Sample Type:	(Unknown)

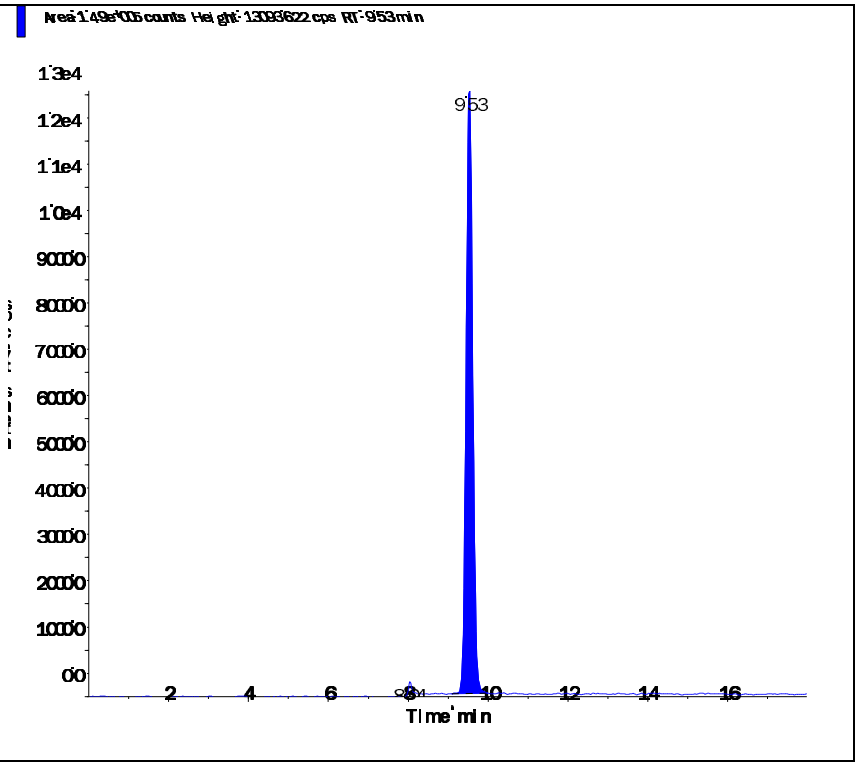

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.52 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.119
Sample Type:	(Unknown)

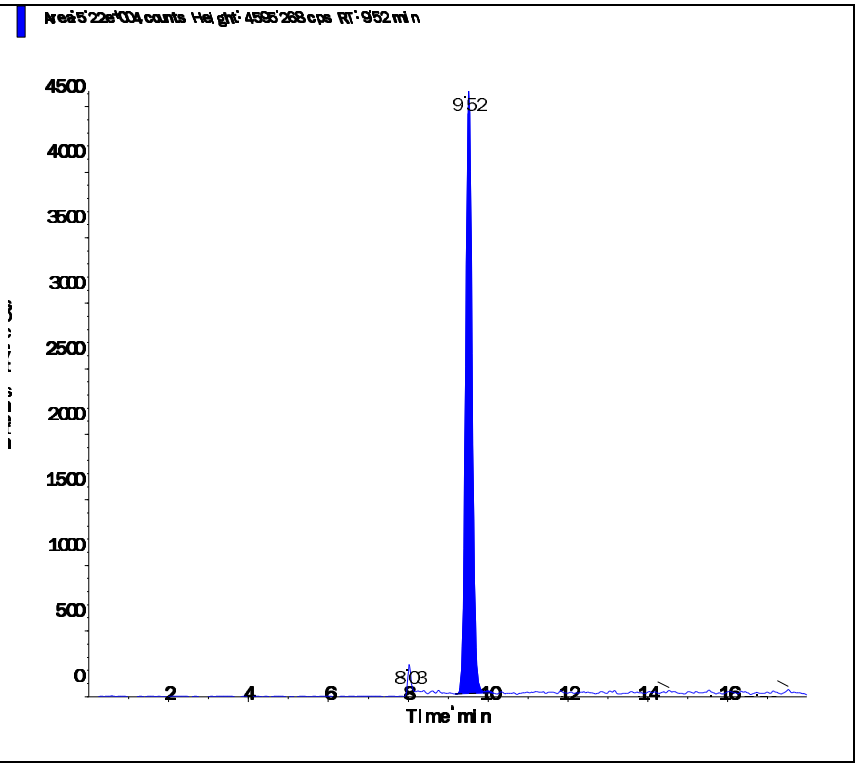

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/23/2016 5:06 PM

Data File	LM35456.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 2:01:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060730-02 (RR 500x)	**Injection Vial**	30.00
Data File	LM35456.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 2:01:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	L16060730-02	**Dilution Factor**	1.00
Sample Comment	1,500.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.460e+05	9.53	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.570e+05	9.55	N/A	1.04
Perchlorate conf	5.400e+04	9.53	N/A	1.06

O18LP (Internal Standard)

RT (Exp. RT): 9.53(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

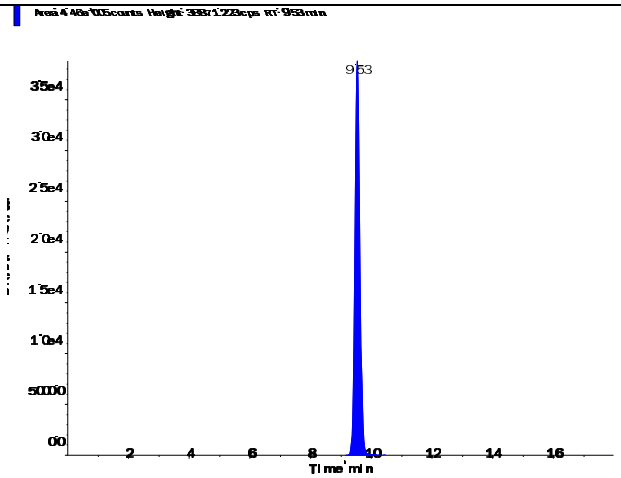

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Applied Biosystems | MDS SCIEX

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.55 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.351
Sample Type:	(Unknown)

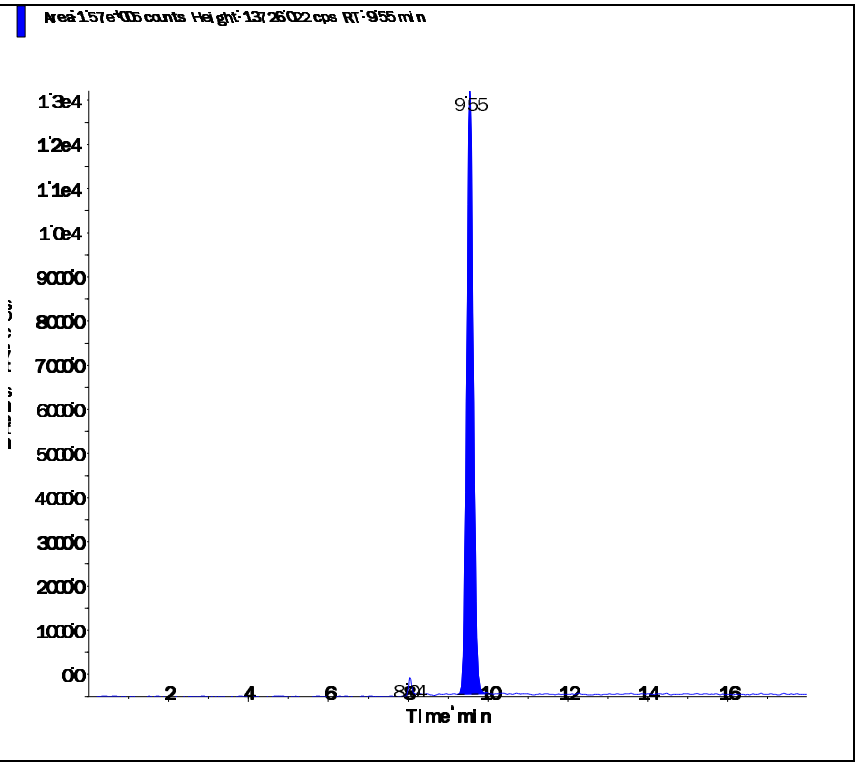

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.53 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.121
Sample Type:	(Unknown)

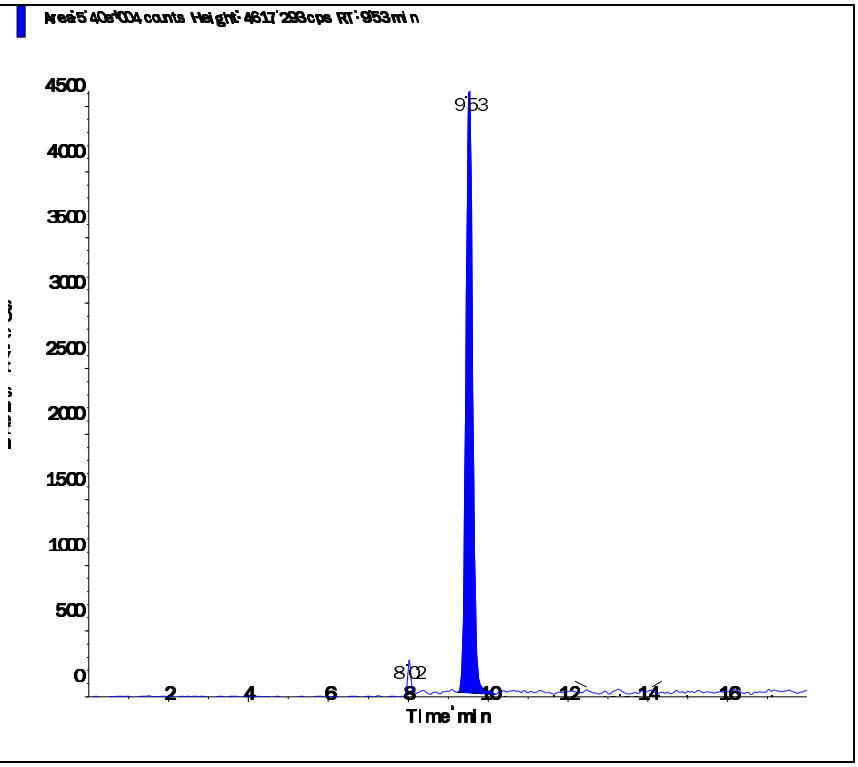

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/23/2016 5:01 PM

Data File	LM35438.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 12:03:29 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060730-03 (50x)	**Injection Vial**	21.00
Data File	LM35438.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 12:03:29 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	L16060730-03	**Dilution Factor**	1.00
Sample Comment	1,50 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.050e+05	9.35	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.690e+05	9.37	N/A	1.98
Perchlorate conf	9.360e+04	9.35	N/A	2.05

O18LP (Internal Standard)

RT (Exp. RT): 9.35(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

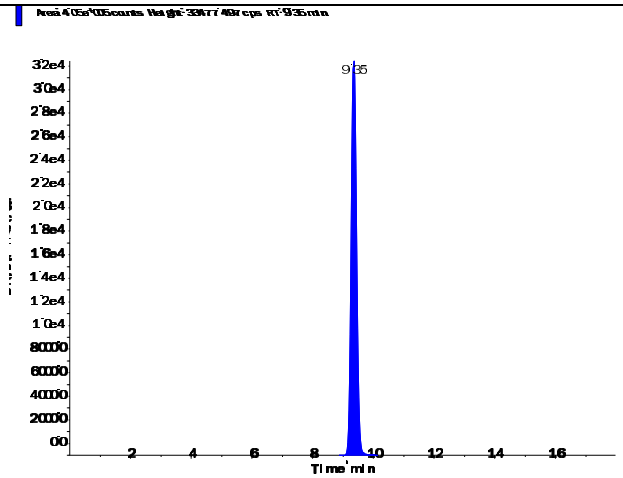

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.37 (9.84) min
Calculated conc:	1.98 ng/ml
Area Ratio:	0.666
Sample Type:	(Unknown)

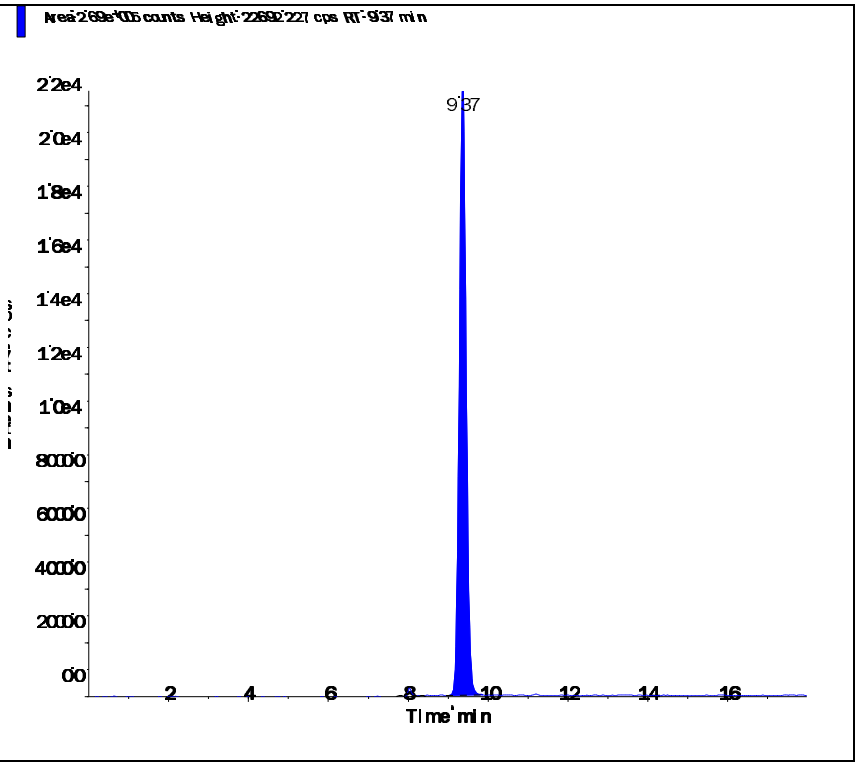

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	2.05 ng/ml
Area Ratio:	0.231
Sample Type:	(Unknown)

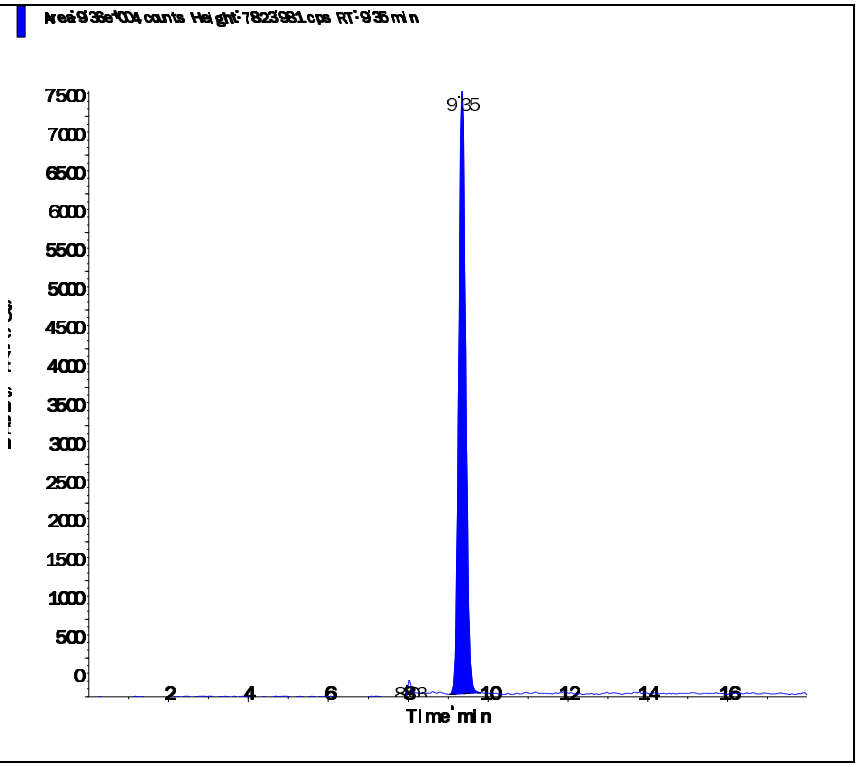

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2.2.2.4 Standards Data

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Data File	LM34686.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

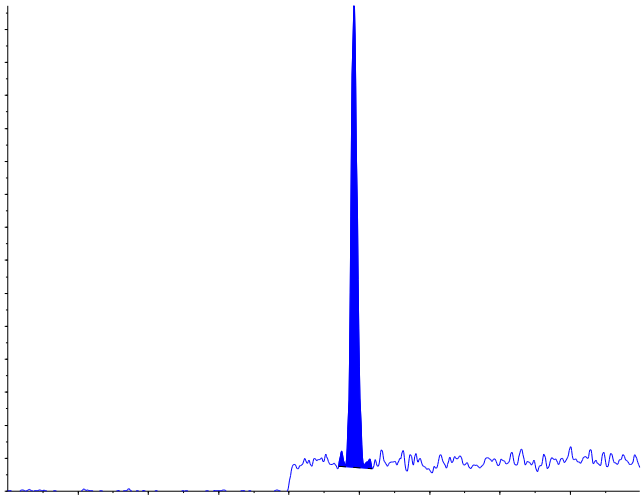

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Created with Analyst Reporter
Printed: 6/23/2016 4:49 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

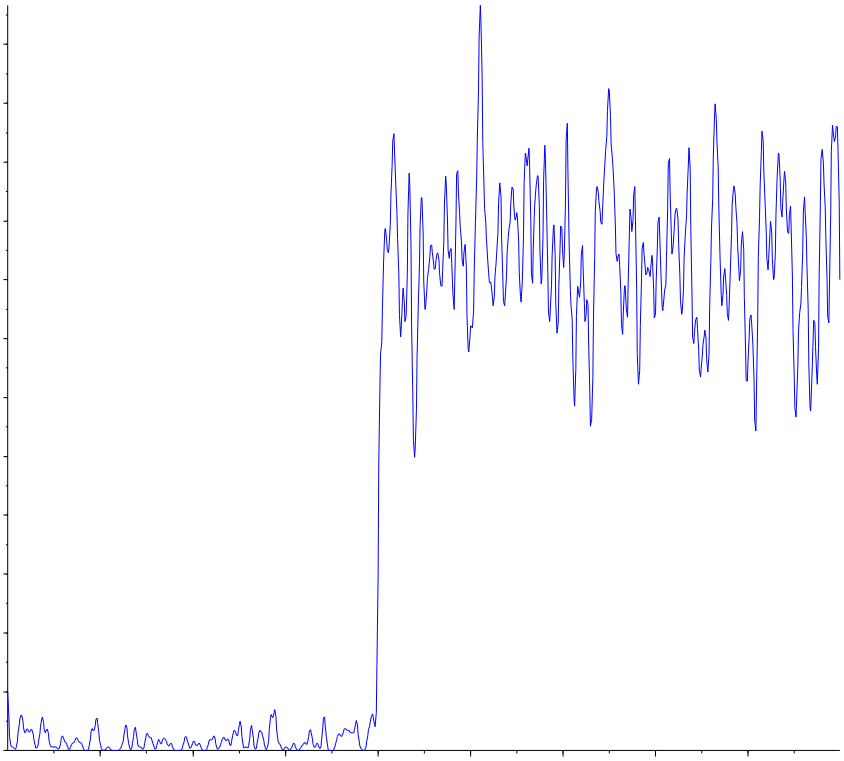

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

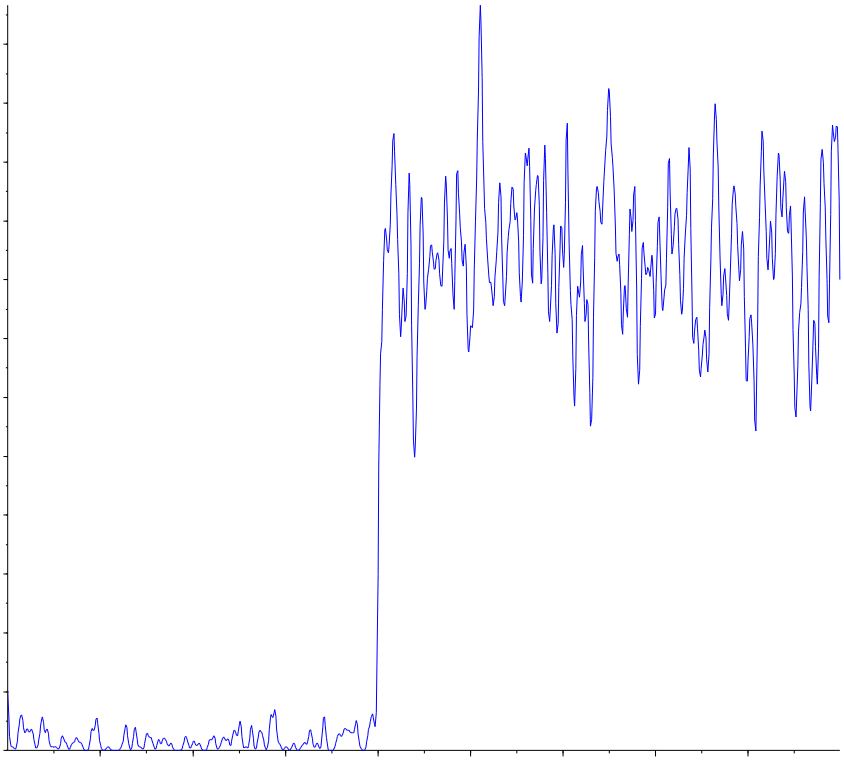

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Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

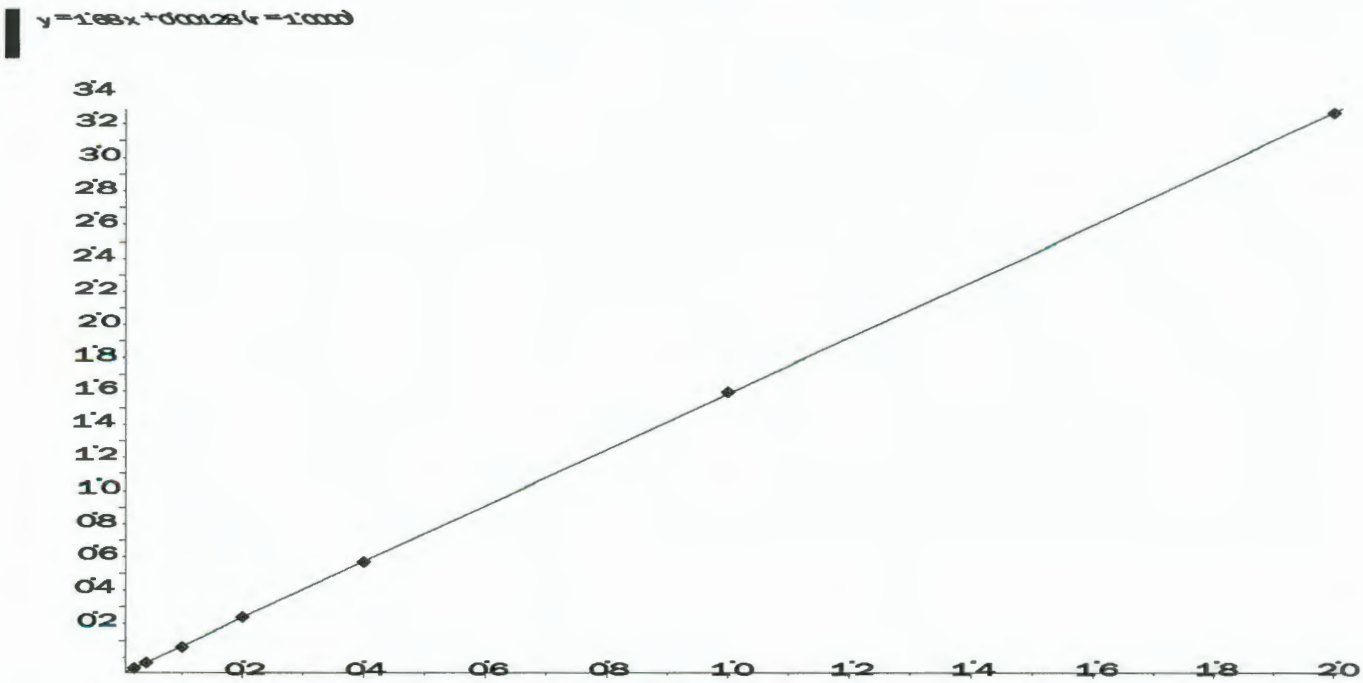

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Created with Analyst Reporter
Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

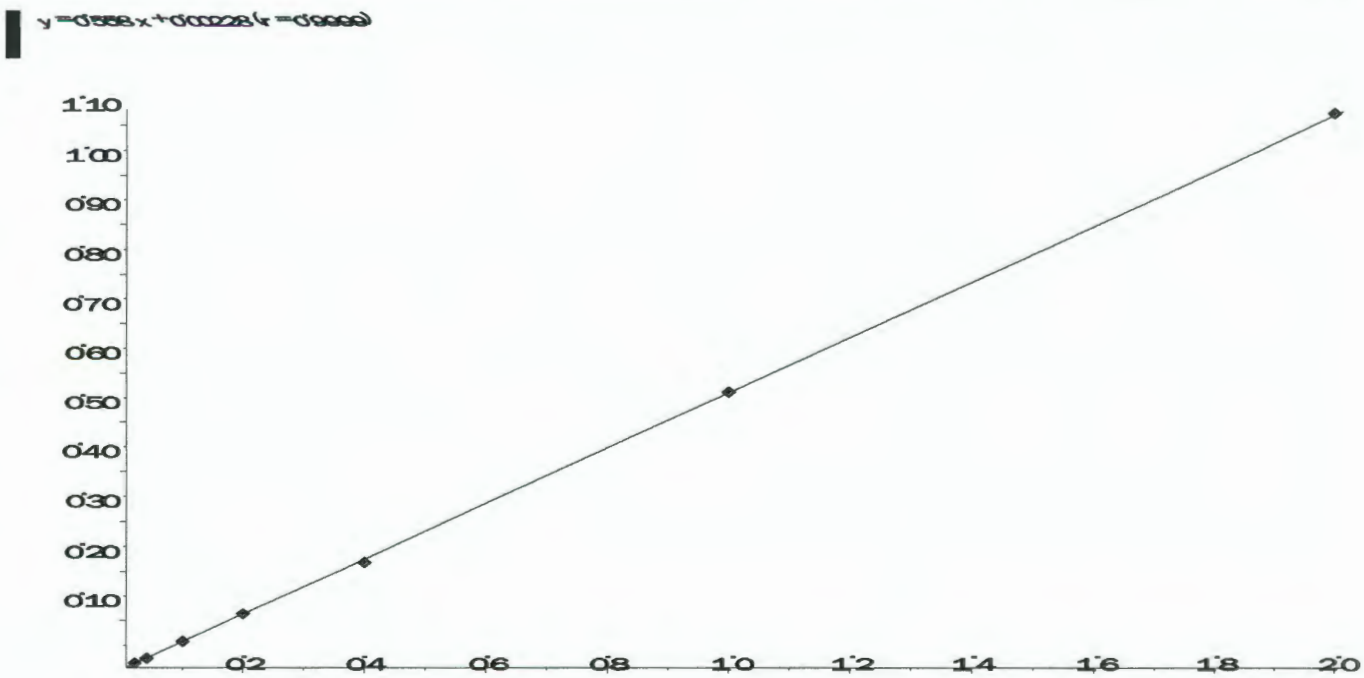

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Printed: 6/23/2016 4:50 PM

Data File	LM34687.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

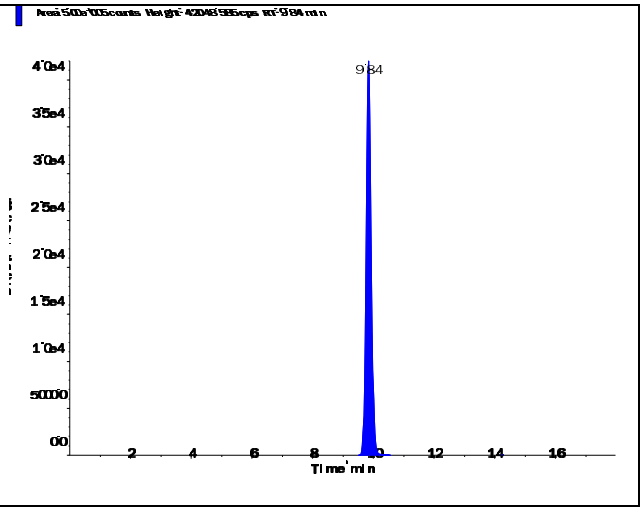

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.103 ng/ml
Area Ratio:	0.036
Sample Type:	(Standard)

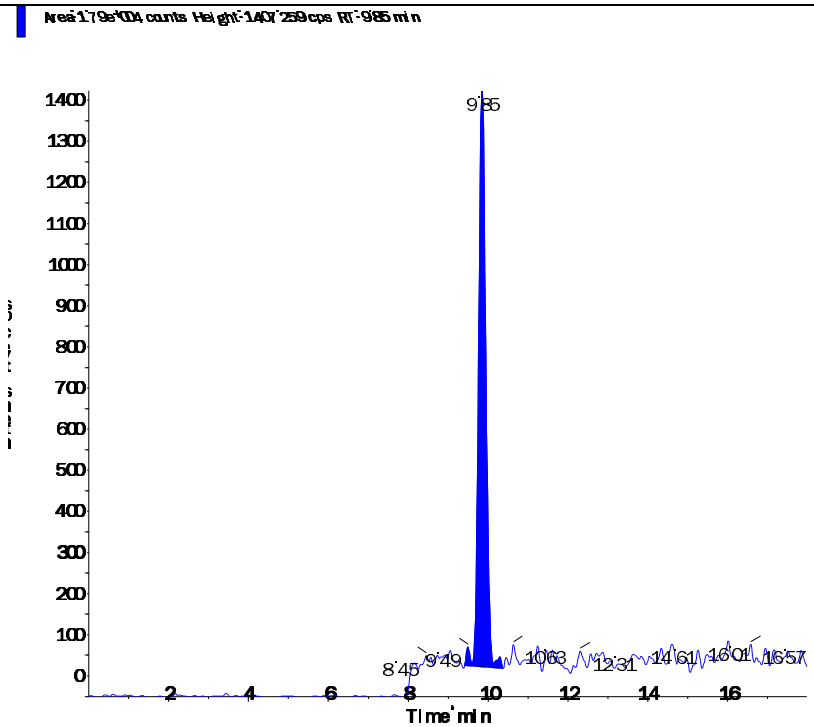

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.104 ng/ml
Area Ratio:	0.014
Sample Type:	(Standard)

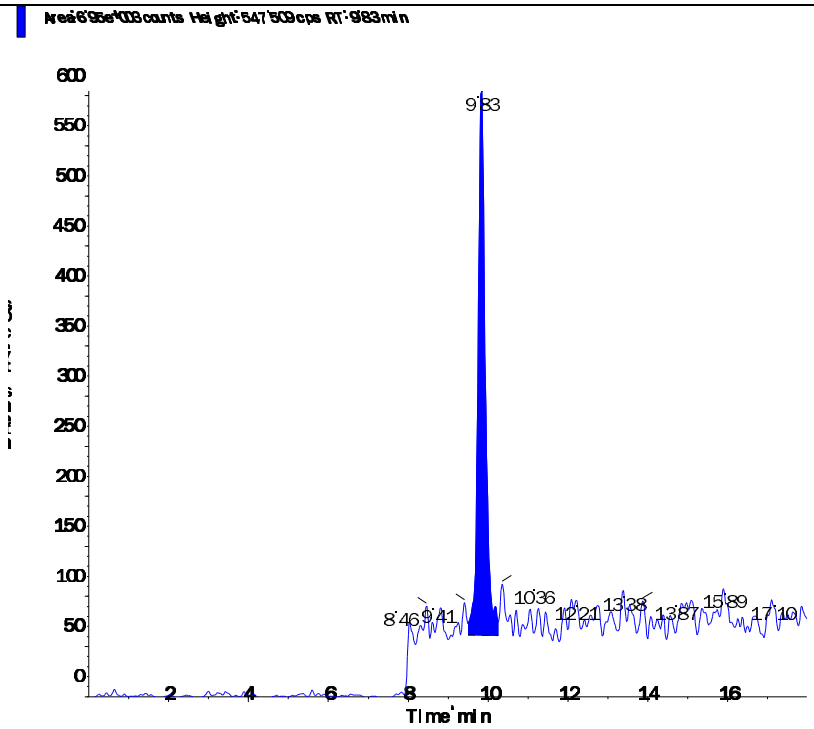

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Data File	LM34688.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

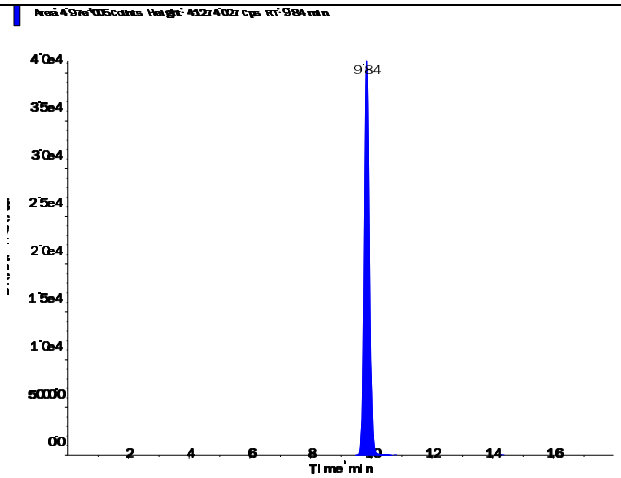

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

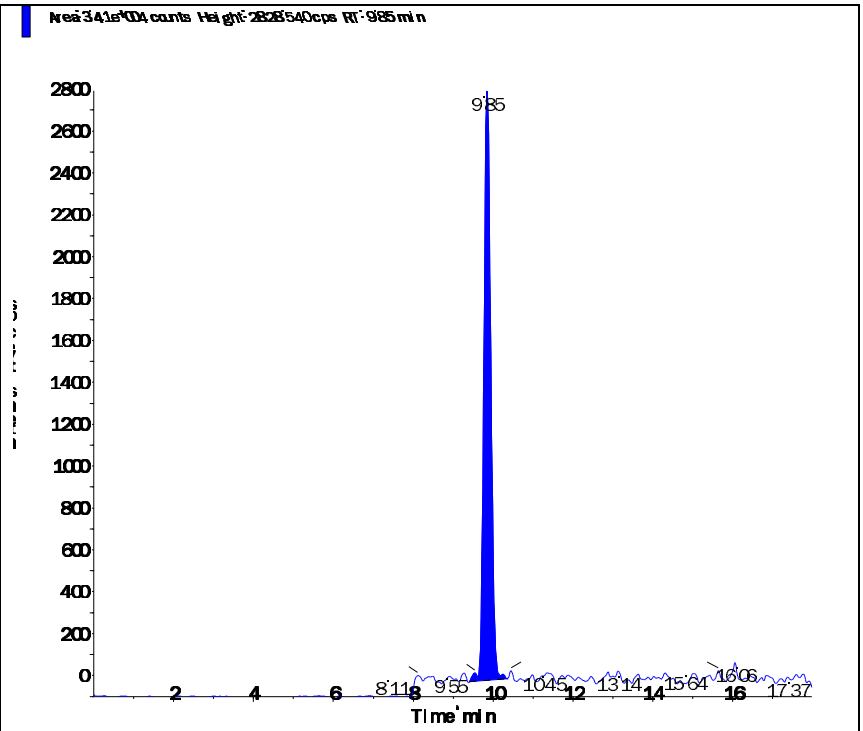

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

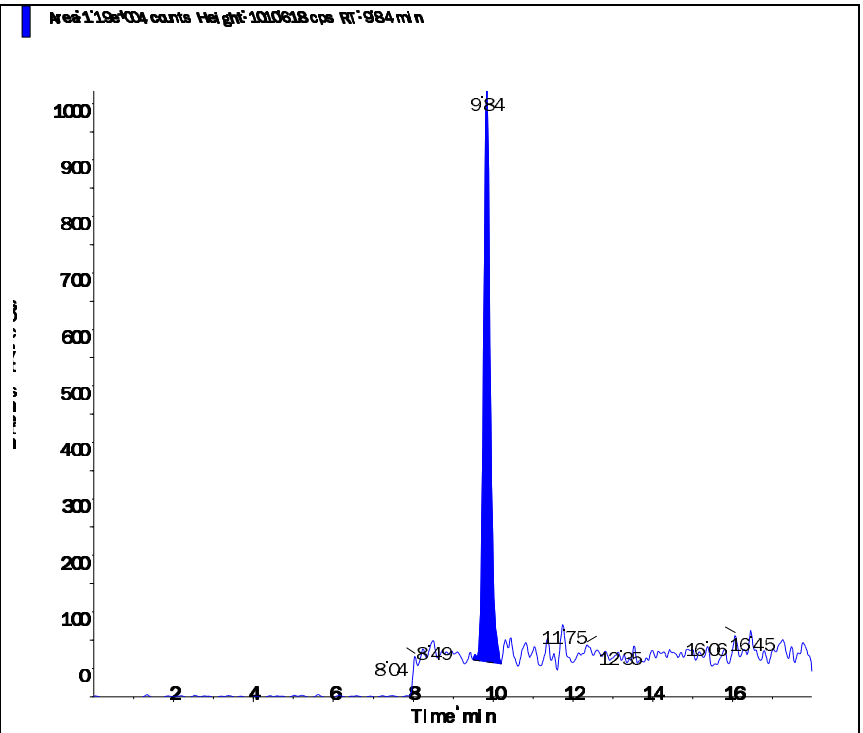

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Data File	LM34689.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

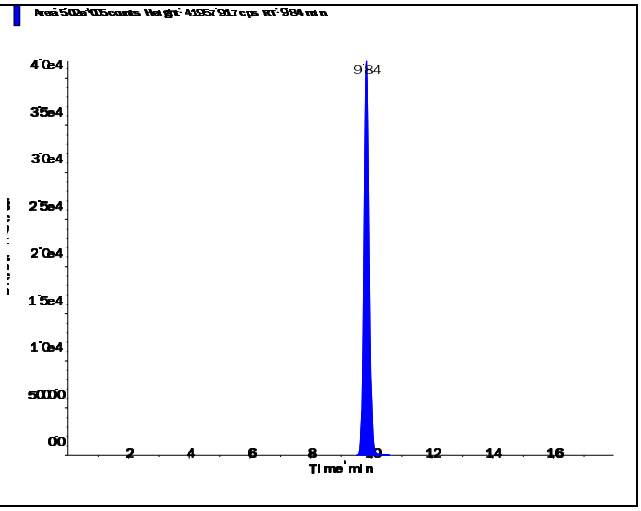

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.483 ng/ml
Area Ratio:	0.164
Sample Type:	(Standard)

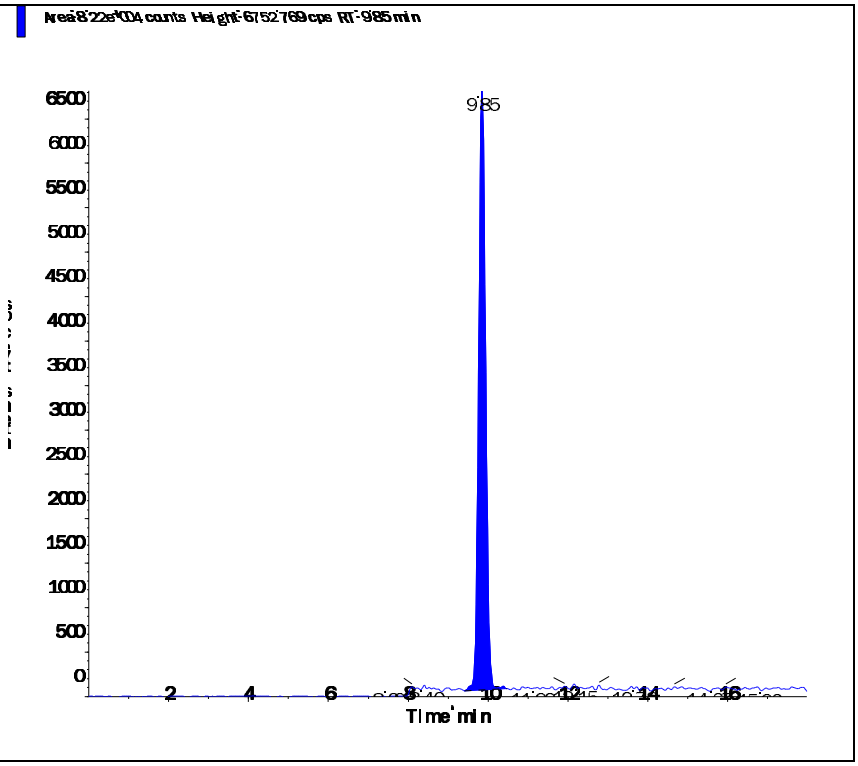

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.503 ng/ml
Area Ratio:	0.058
Sample Type:	(Standard)

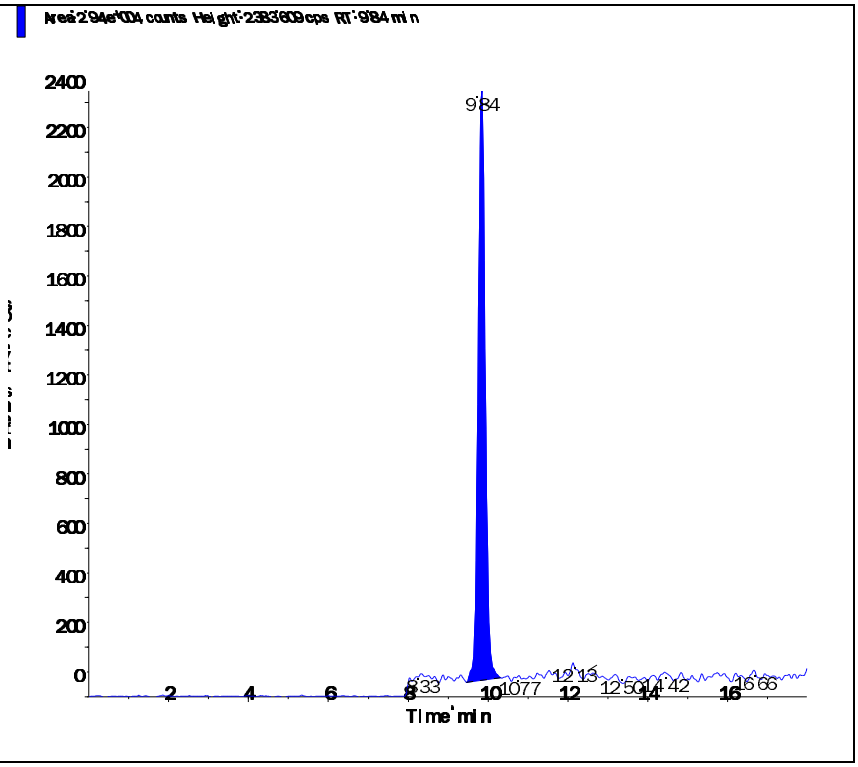

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Data File	LM34690.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

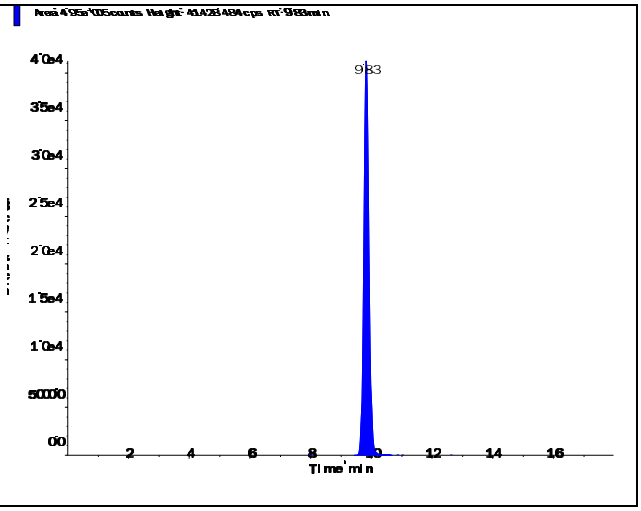

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

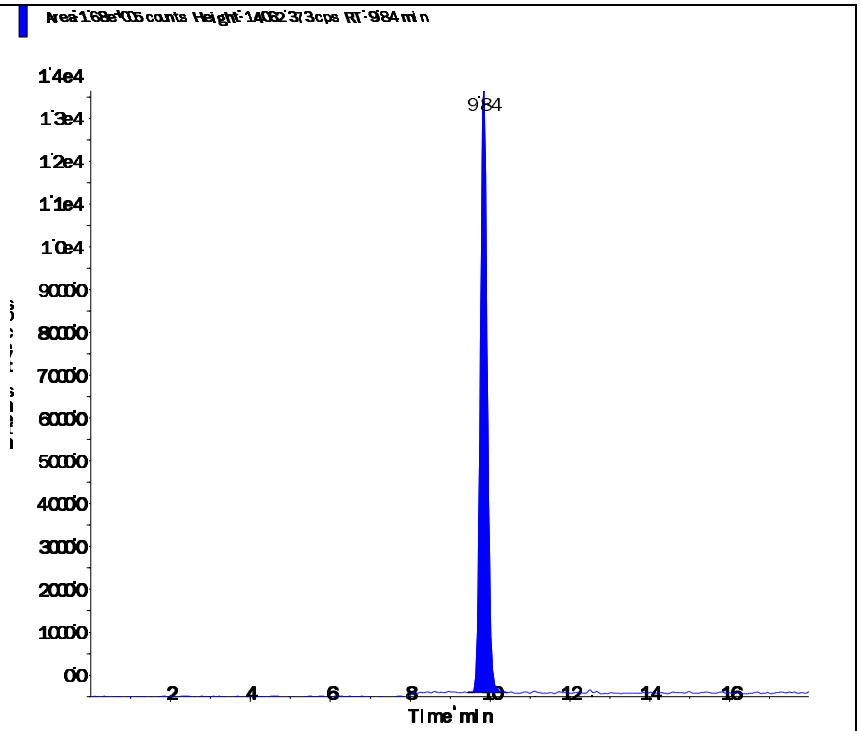

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

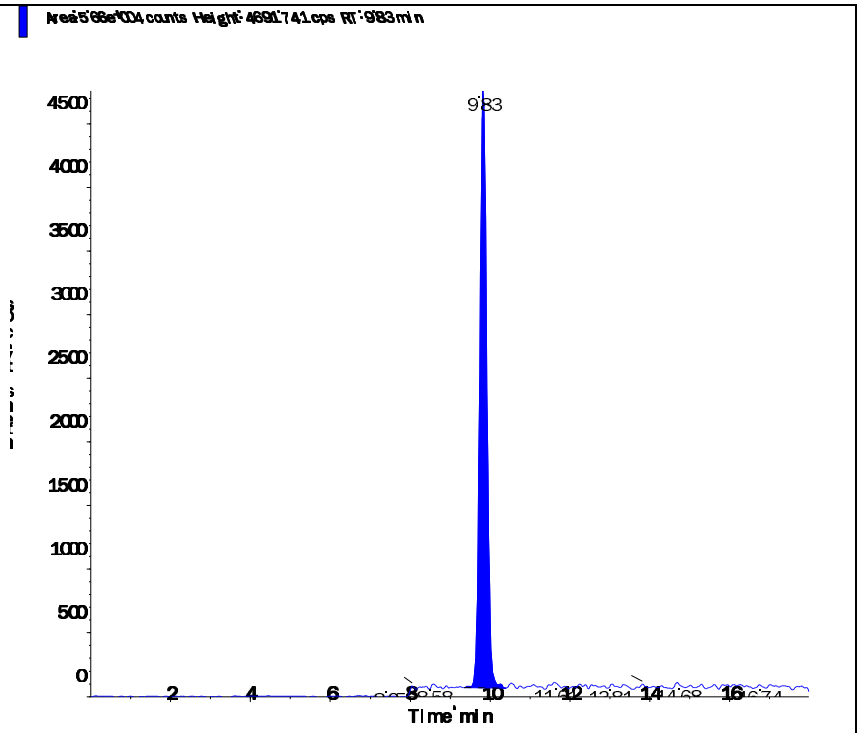

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Data File	LM34691.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

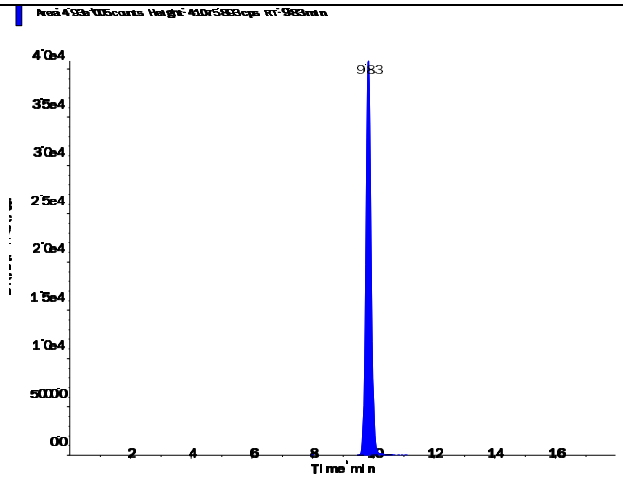

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 1.99 ng/ml Area Ratio: 0.669 Sample Type: (Standard)	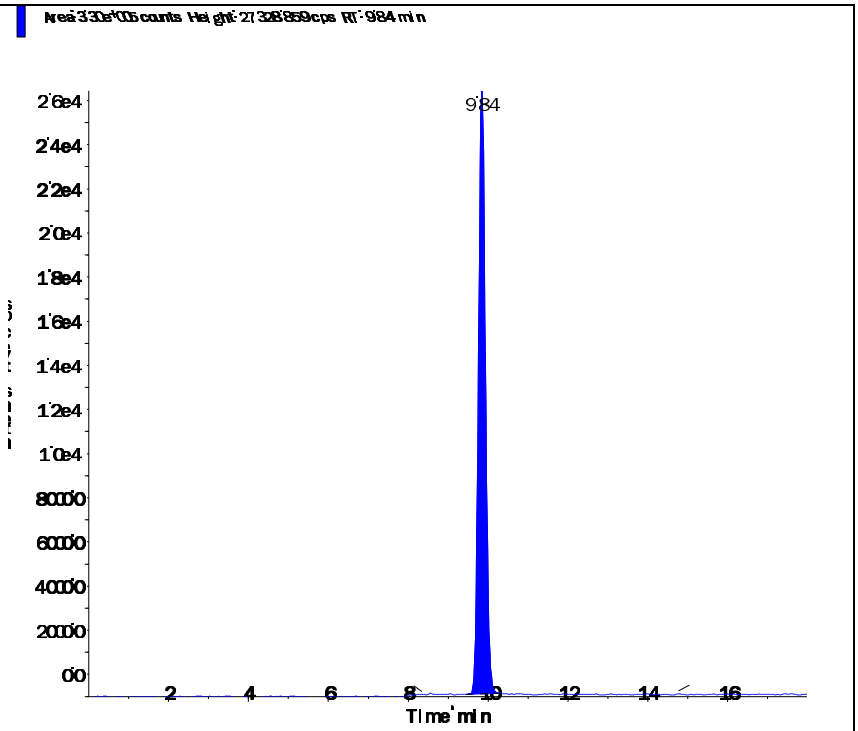
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 1.94 ng/ml Area Ratio: 0.219 Sample Type: (Standard)	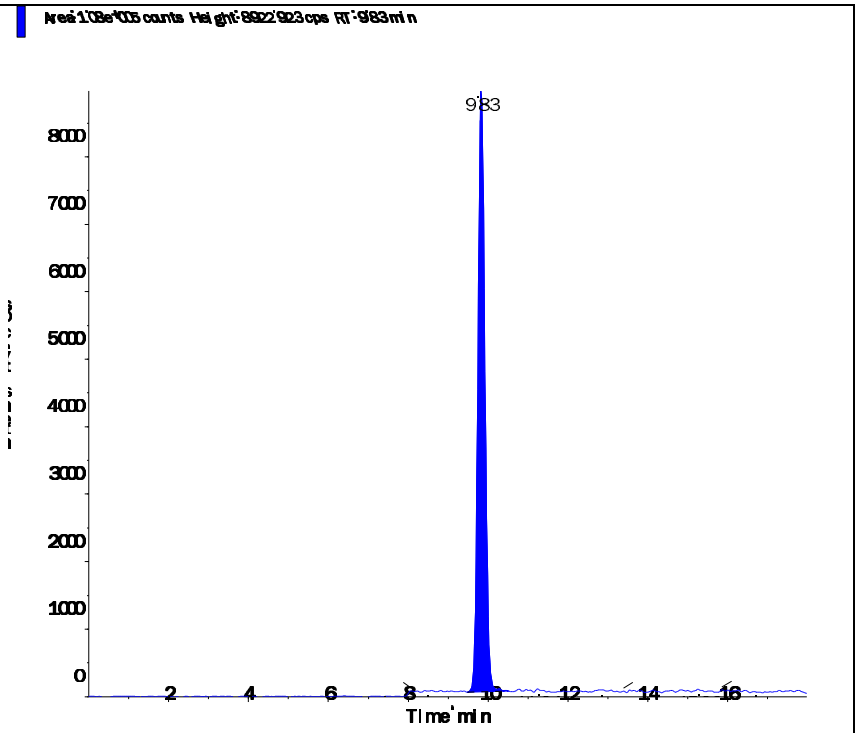

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Data File	LM34692.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

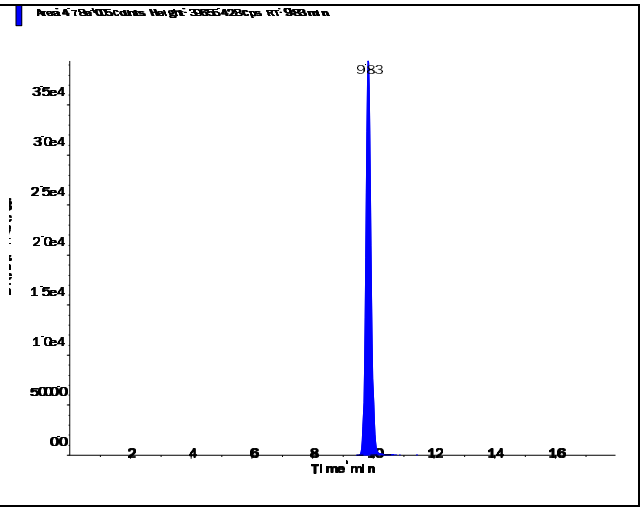

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

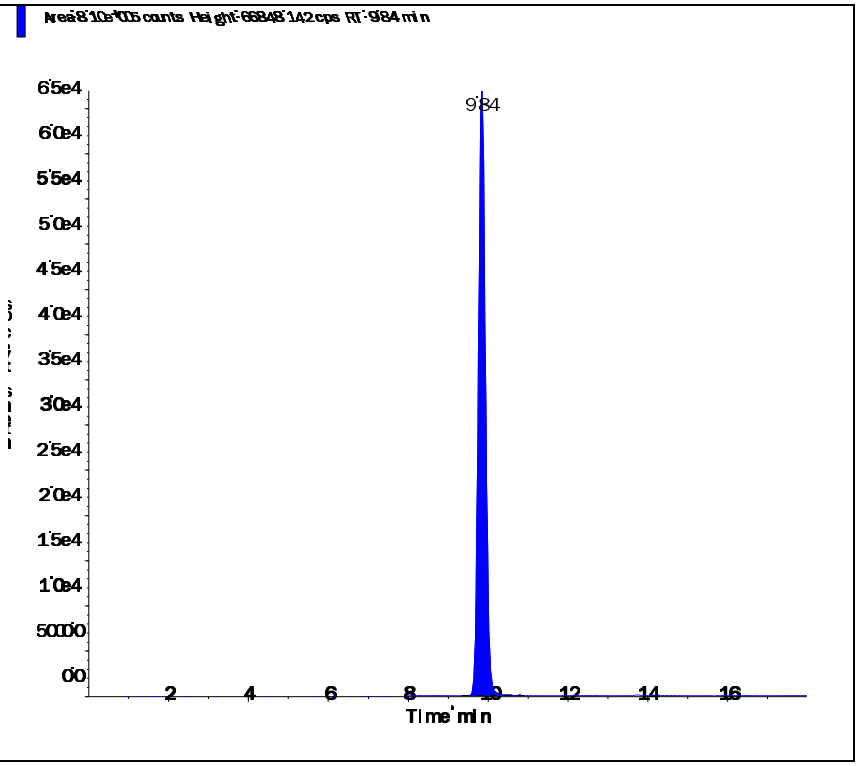

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

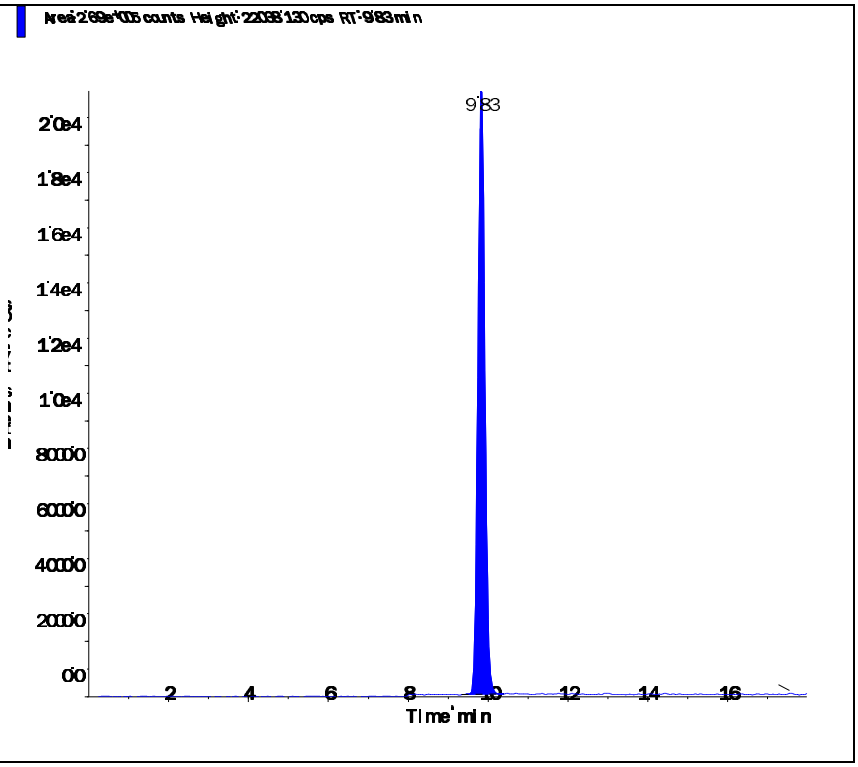

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Data File	LM34693.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

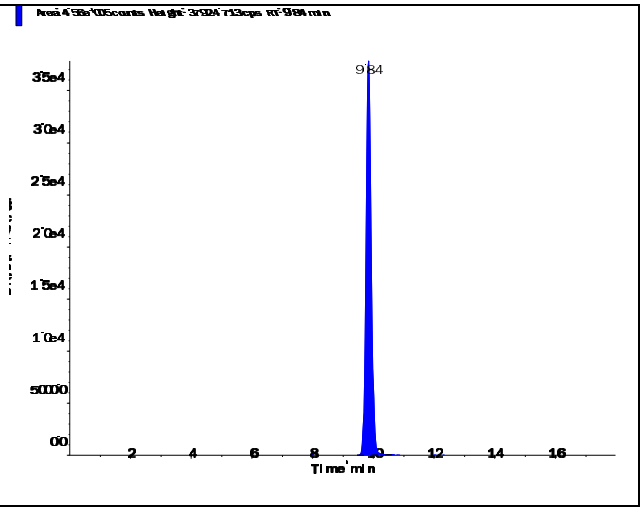

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 9.99 ng/ml Area Ratio: 3.36 Sample Type: (Standard)	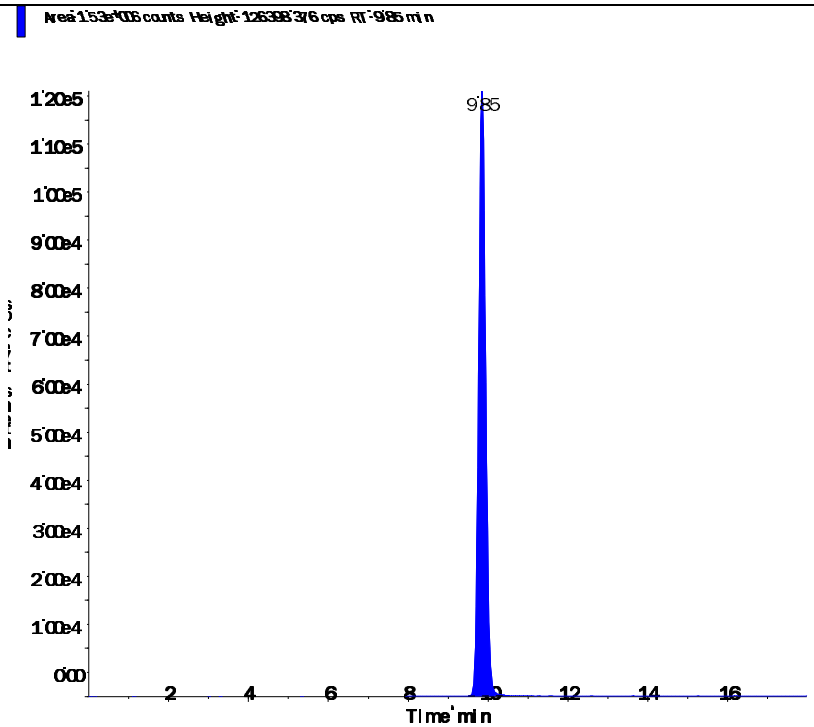
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 10.00 ng/ml Area Ratio: 1.122 Sample Type: (Standard)	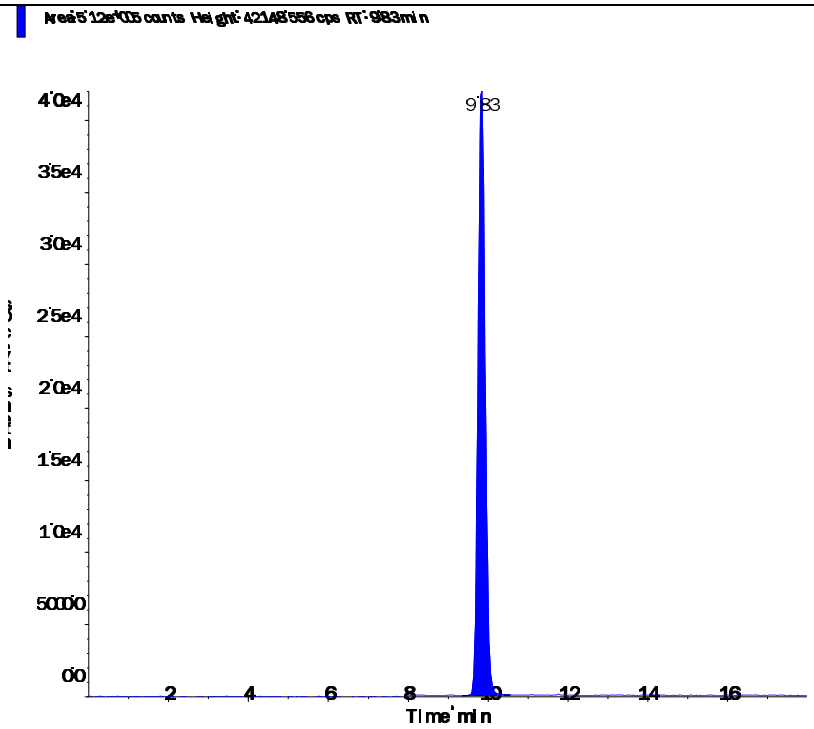

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Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

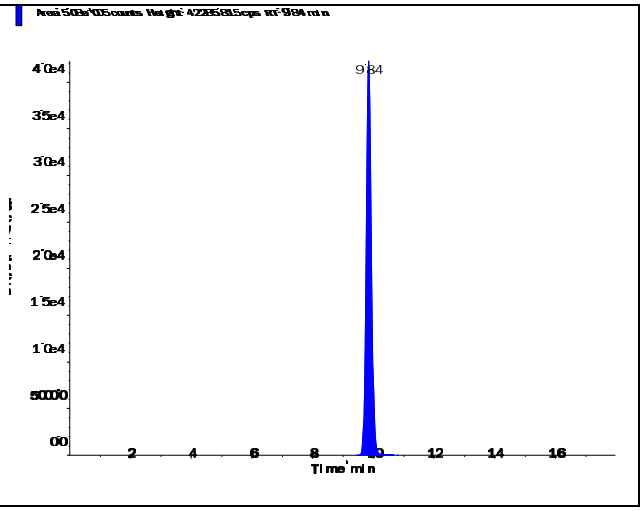

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.332
Sample Type:	(Quality Control)

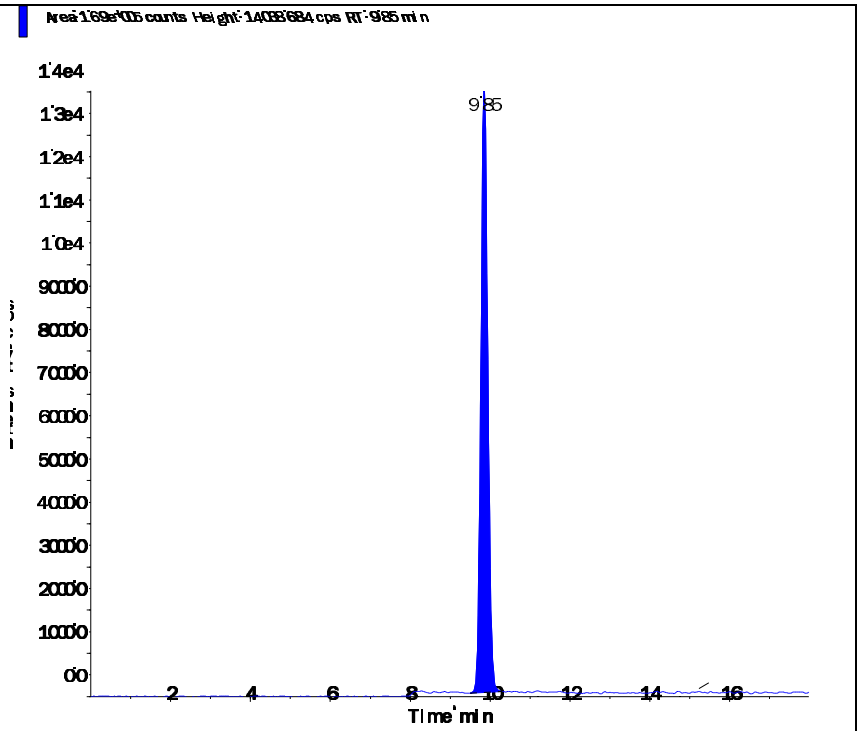

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

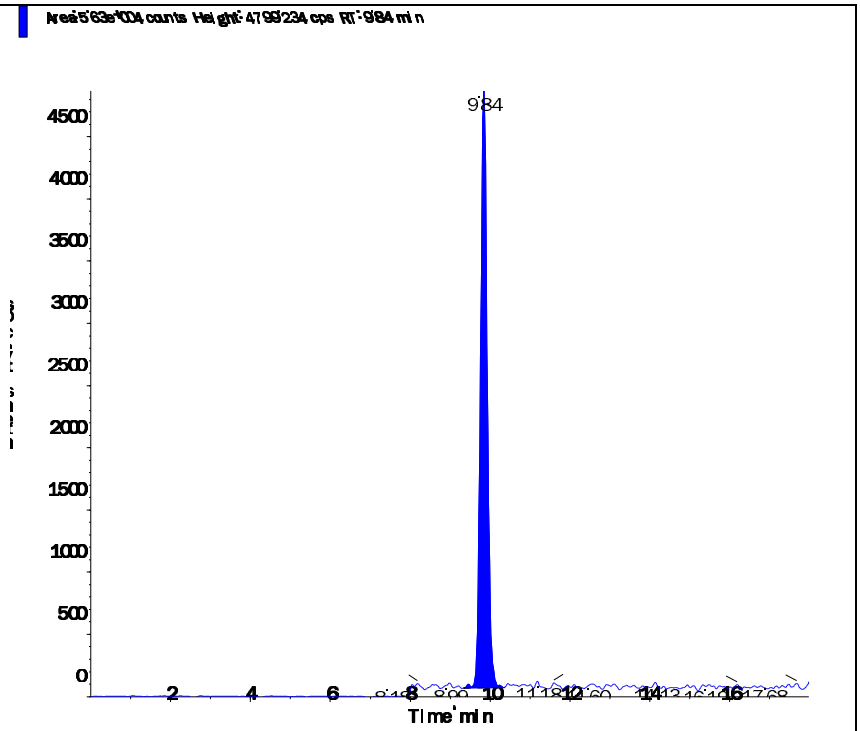

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Data File	LM35416.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 5:06:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35416.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 5:06:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.480e+05	9.13	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.510e+05	9.14	1.00	0.997
Perchlorate conf	5.420e+04	9.13	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 9.13(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

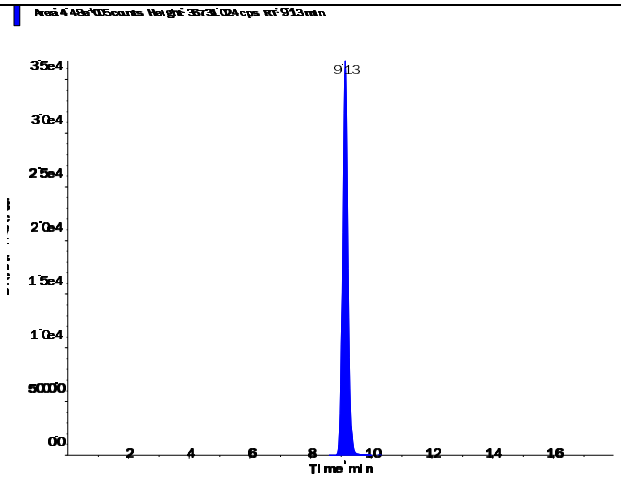

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.14 (9.84) min
Calculated conc:	0.997 ng/ml
Area Ratio:	0.336
Sample Type:	(Quality Control)

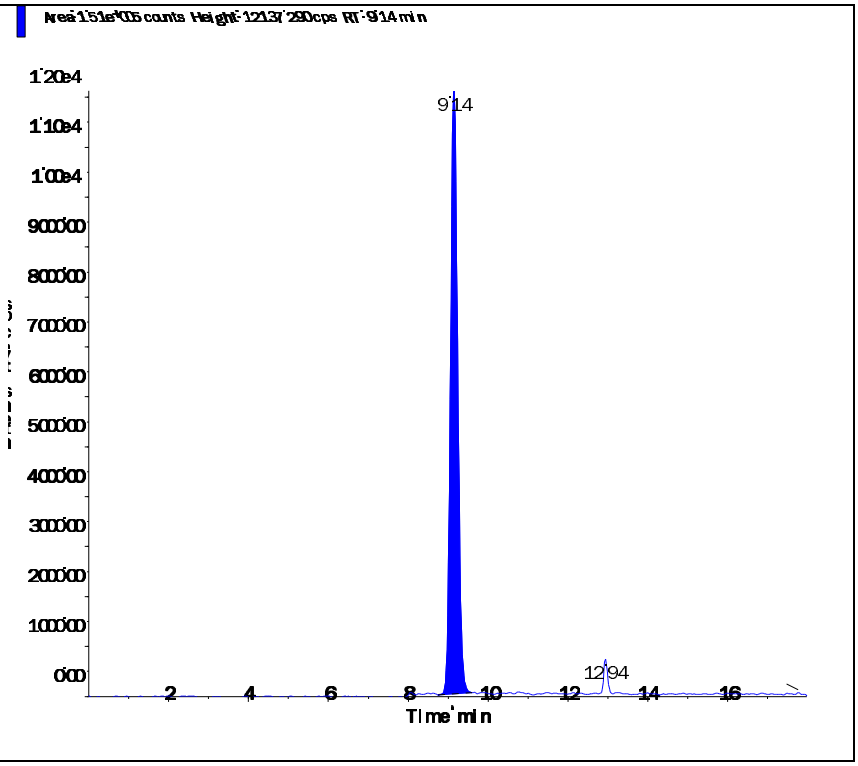

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.13 (9.84) min
Calculated conc:	1.07 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

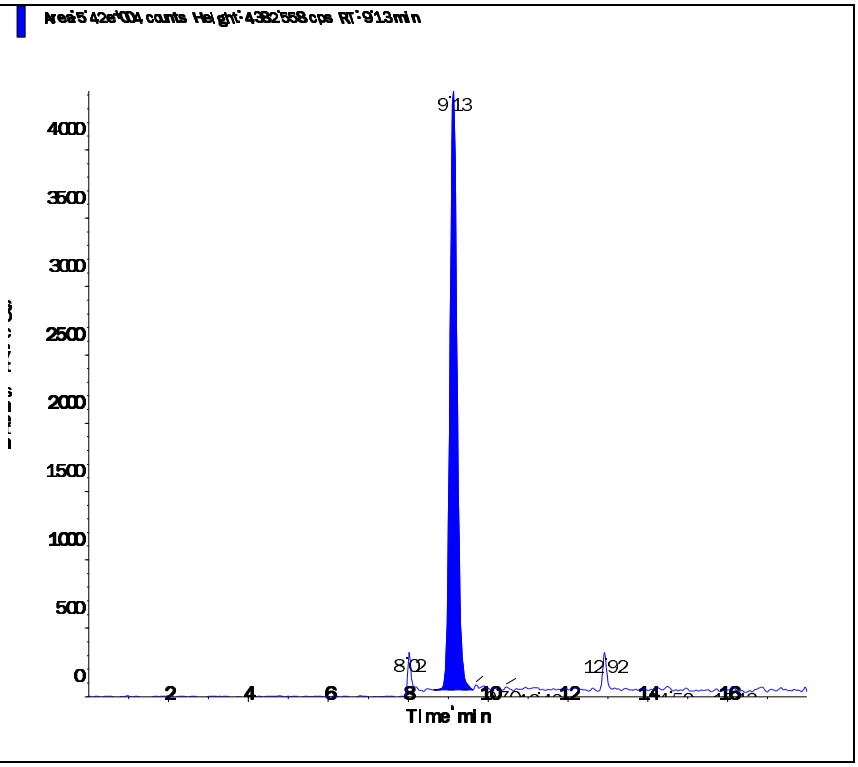

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Data File	LM35428.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 8:54:07 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35428.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 8:54:07 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.900e+05	9.17	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.720e+05	9.18	1.00	1.04
Perchlorate conf	6.140e+04	9.16	1.00	1.10

O18LP (Internal Standard)

RT (Exp. RT): 9.17(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

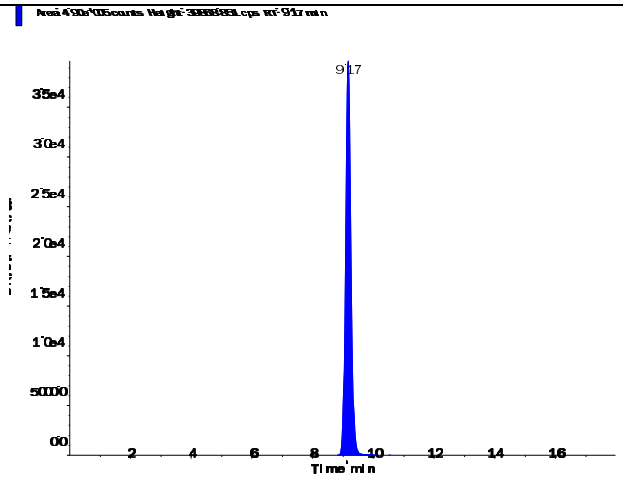

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.18 (9.84) min Calculated conc: 1.04 ng/ml Area Ratio: 0.351 Sample Type: (Quality Control)	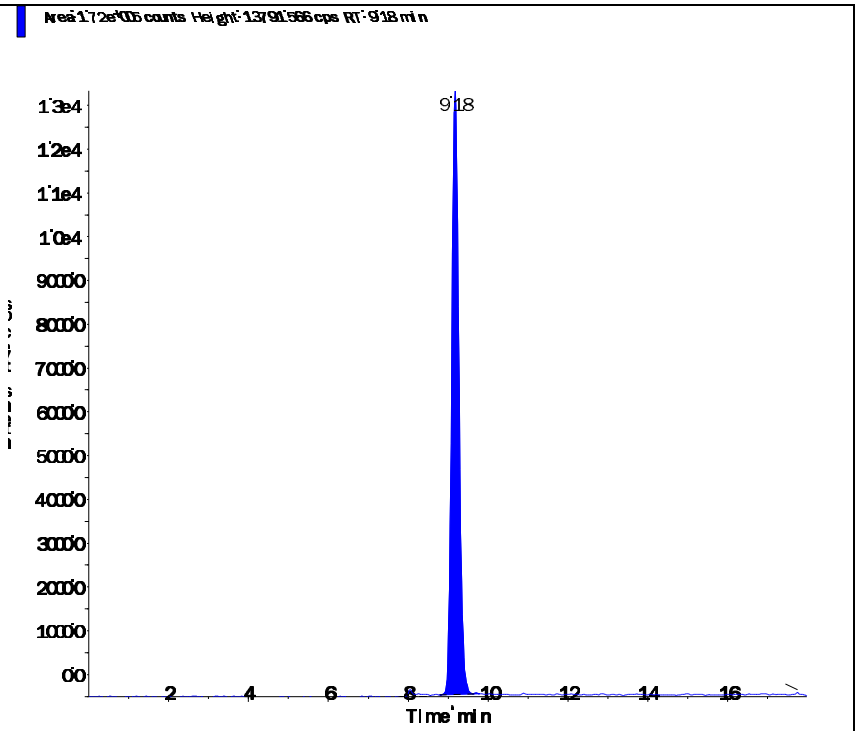
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.16 (9.84) min Calculated conc: 1.10 ng/ml Area Ratio: 0.125 Sample Type: (Quality Control)	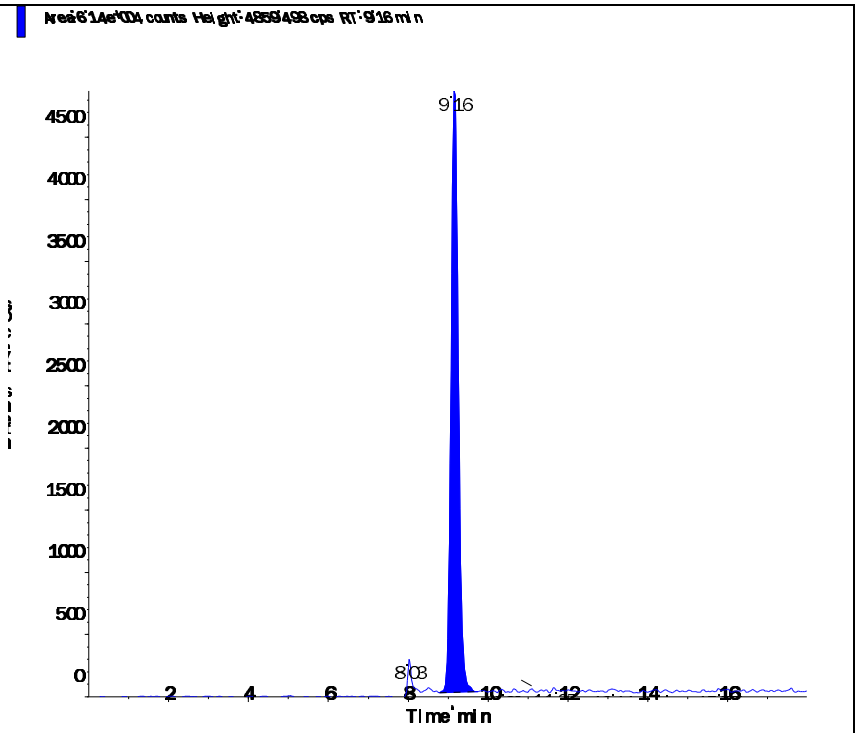

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Data File	LM35439.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 12:22:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35439.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 12:22:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.20	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.760e+05	9.22	1.00	1.03
Perchlorate conf	6.150e+04	9.20	1.00	1.06

O18LP (Internal Standard)

RT (Exp. RT): 9.20(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

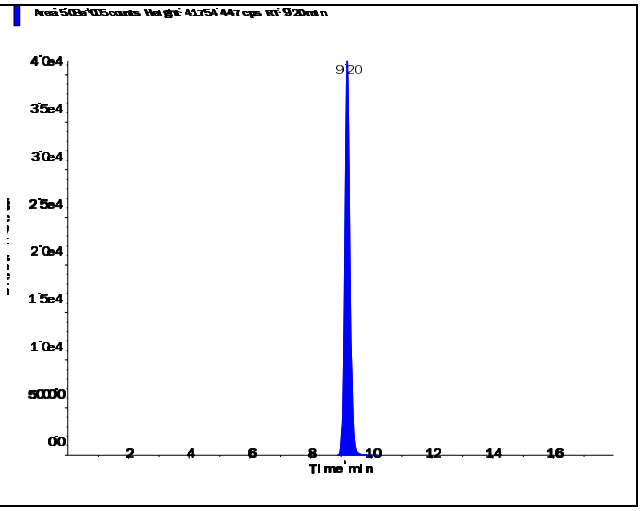

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.22 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.347
Sample Type:	(Quality Control)

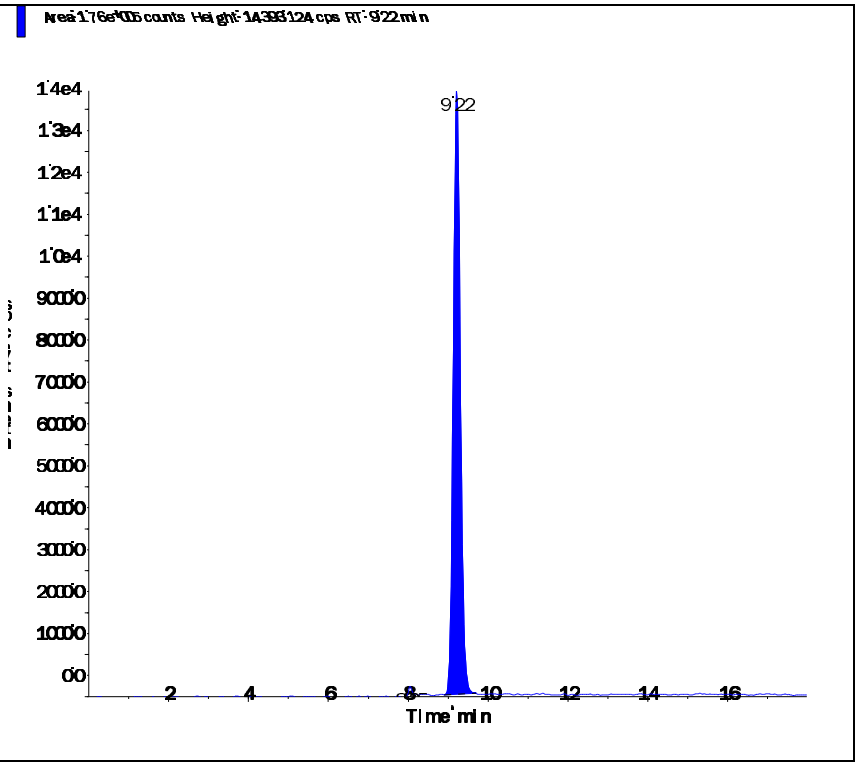

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.20 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

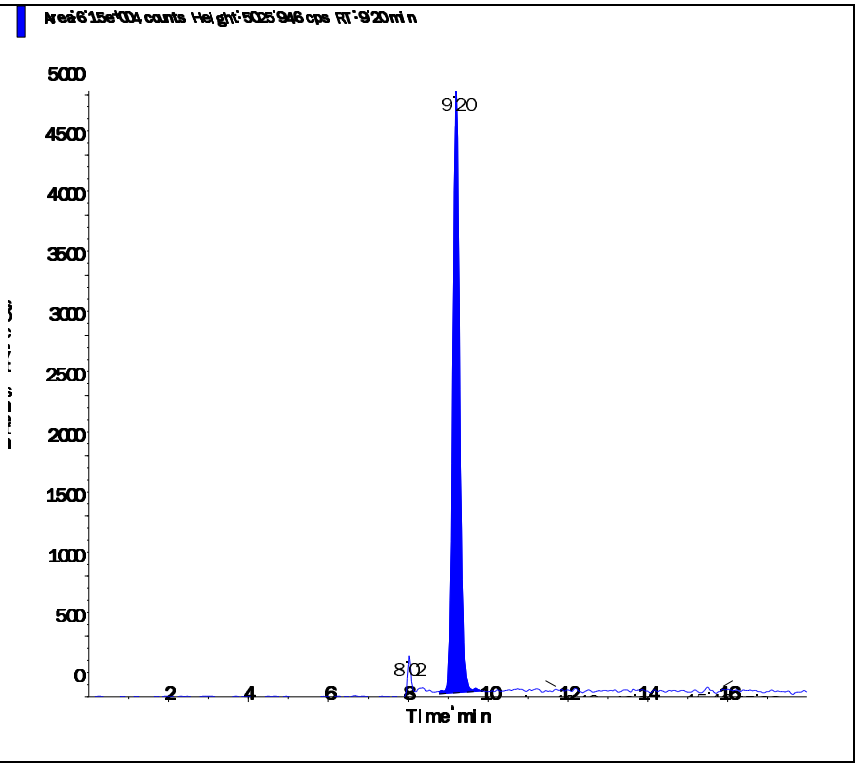

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Data File	LM35446.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 2:34:57 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35446.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 2:34:57 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.820e+05	9.22	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.23	1.00	1.04
Perchlorate conf	5.850e+04	9.22	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 9.22(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

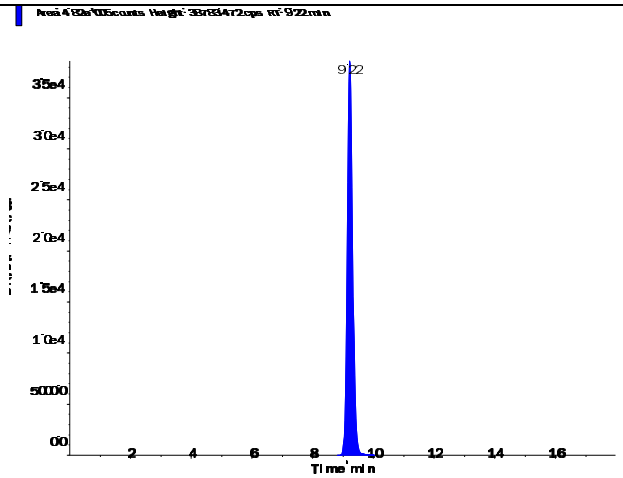

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.23 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.351
Sample Type:	(Quality Control)

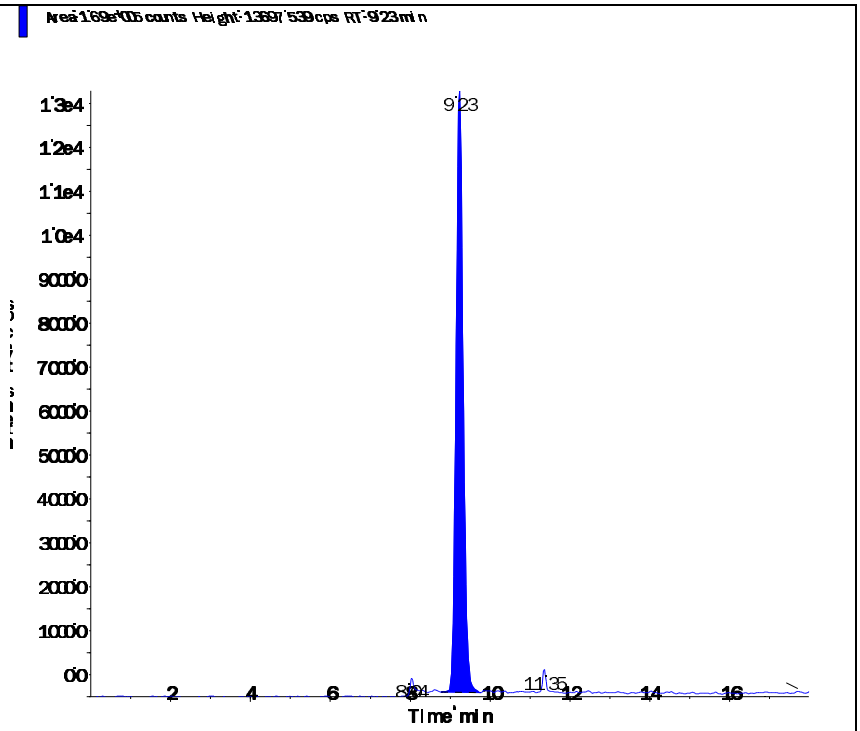

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.22 (9.84) min
Calculated conc:	1.07 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

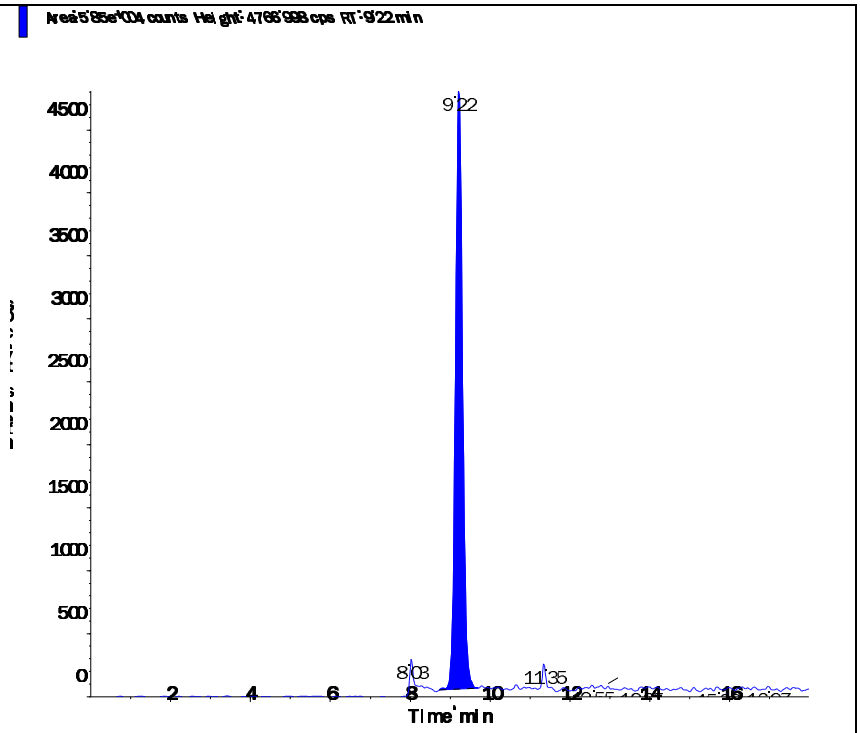

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Created with Analyst Reporter
Printed: 6/23/2016 5:04 PM

Data File	LM35449.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 11:49:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35449.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 11:49:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.170e+05	9.26	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.420e+05	9.27	1.00	1.01
Perchlorate conf	5.070e+04	9.25	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 9.26(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

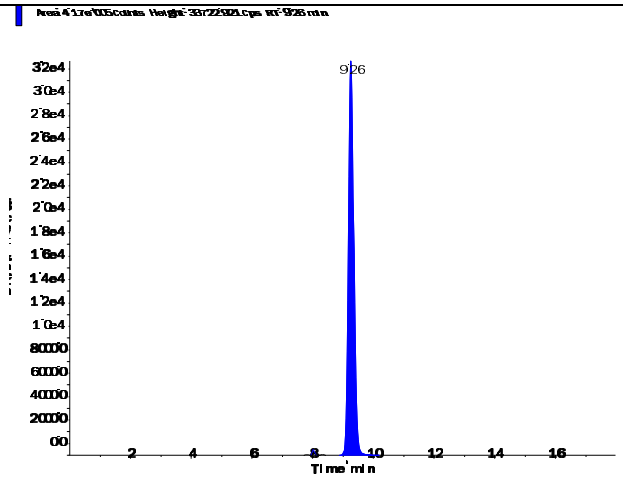

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.27 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.341
Sample Type:	(Quality Control)

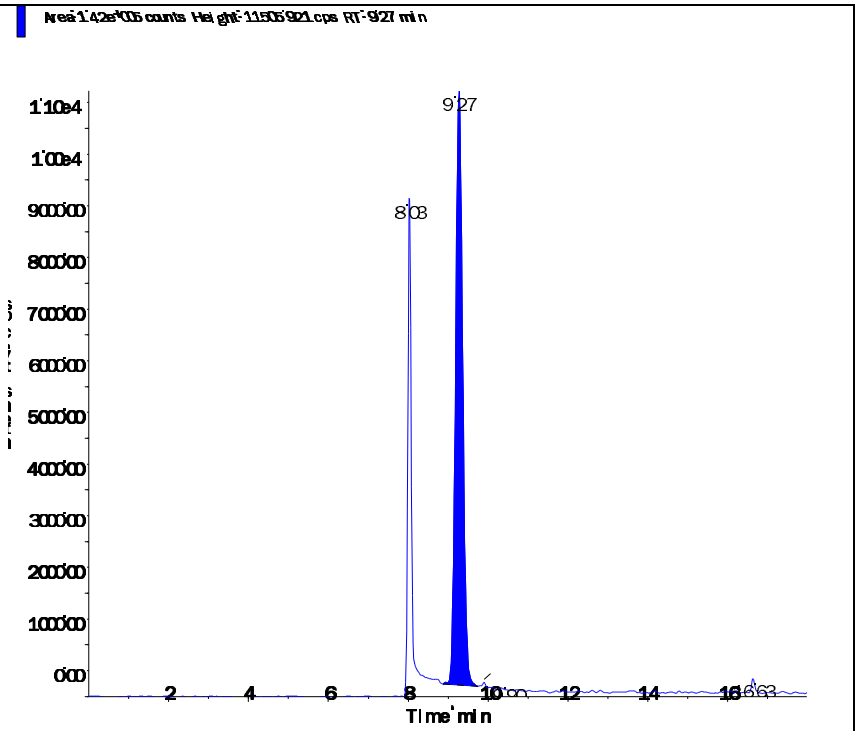

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.25 (9.84) min
Calculated conc:	1.07 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

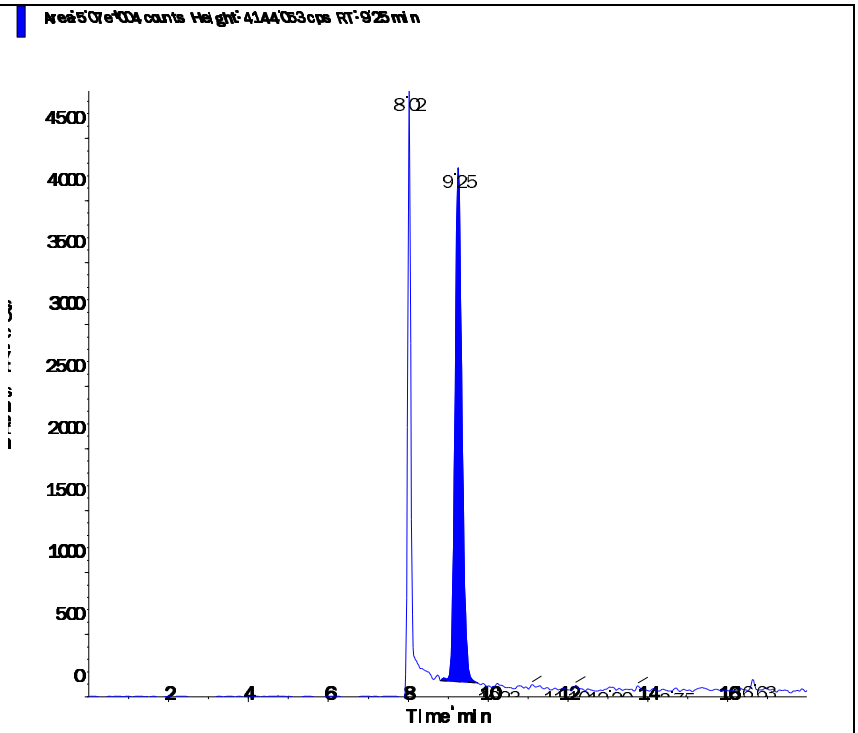

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Printed: 6/23/2016 5:07 PM

Data File	LM35459.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 2:58:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-11 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35459.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 2:58:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.720e+05	9.28	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.670e+05	9.29	1.00	1.05
Perchlorate conf	5.600e+04	9.28	1.00	1.04

O18LP (Internal Standard)

RT (Exp. RT): 9.28(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

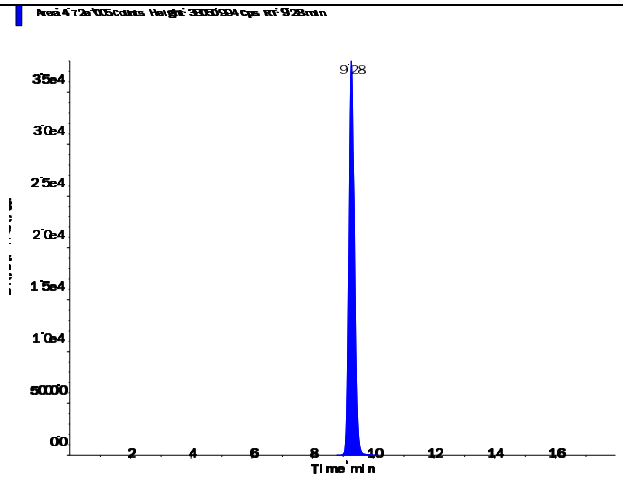

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.29 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.354
Sample Type:	(Quality Control)

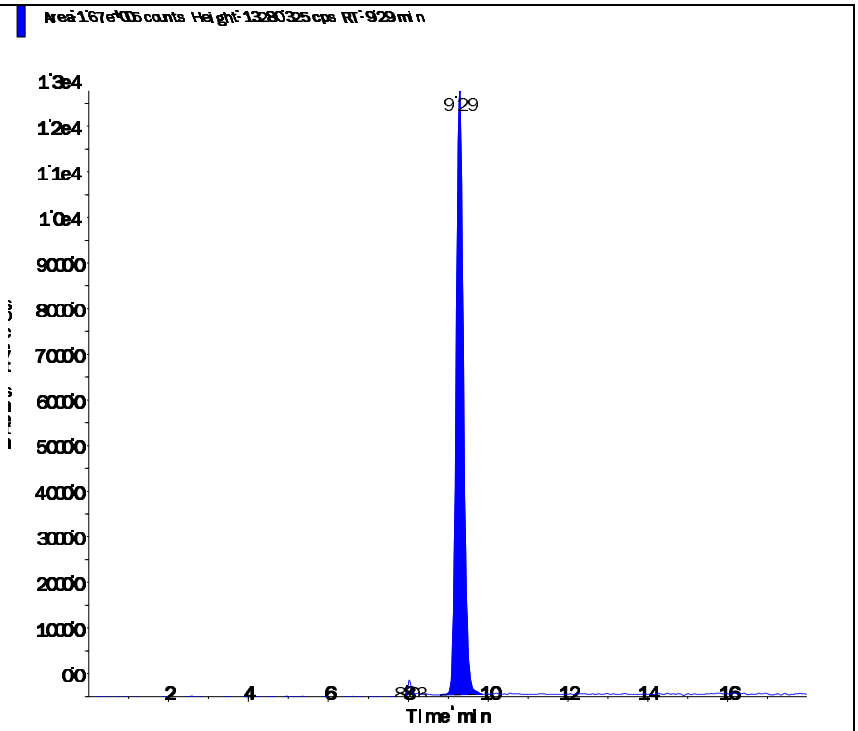

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.28 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

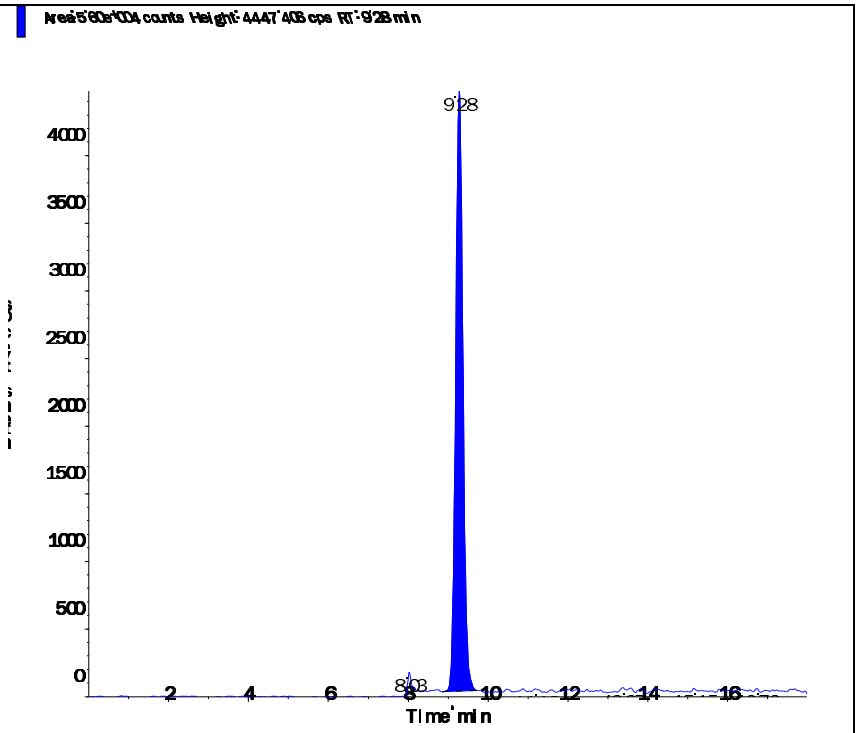

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Data File	LM35417.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 5:25:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-05 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35417.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 5:25:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.430e+05	9.19	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.120e+04	9.20	N/A	0.206
Perchlorate conf	1.120e+04	9.20	N/A	0.206

O18LP (Internal Standard)

RT (Exp. RT): 9.19(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

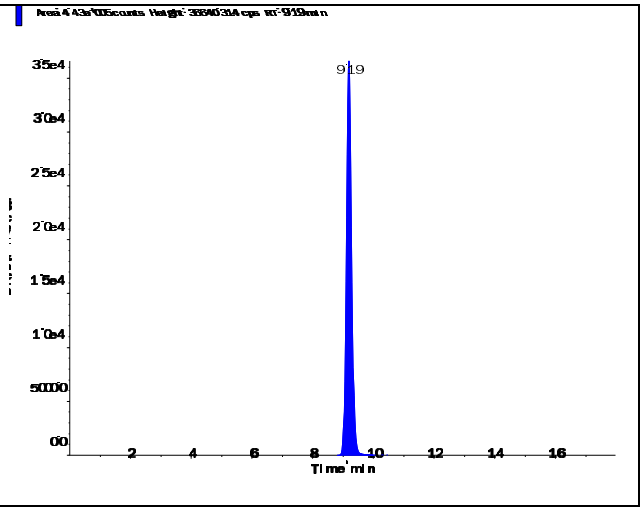

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.20 (9.84) min Calculated conc: 0.206 ng/ml Area Ratio: 0.071 Sample Type: (Unknown)	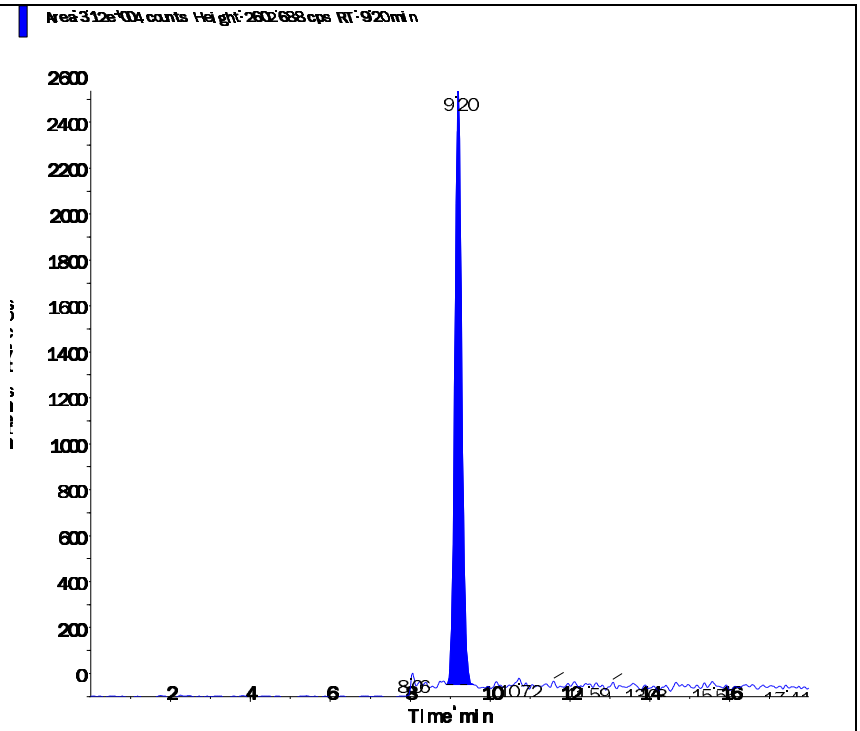
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.20 (9.84) min Calculated conc: 0.206 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	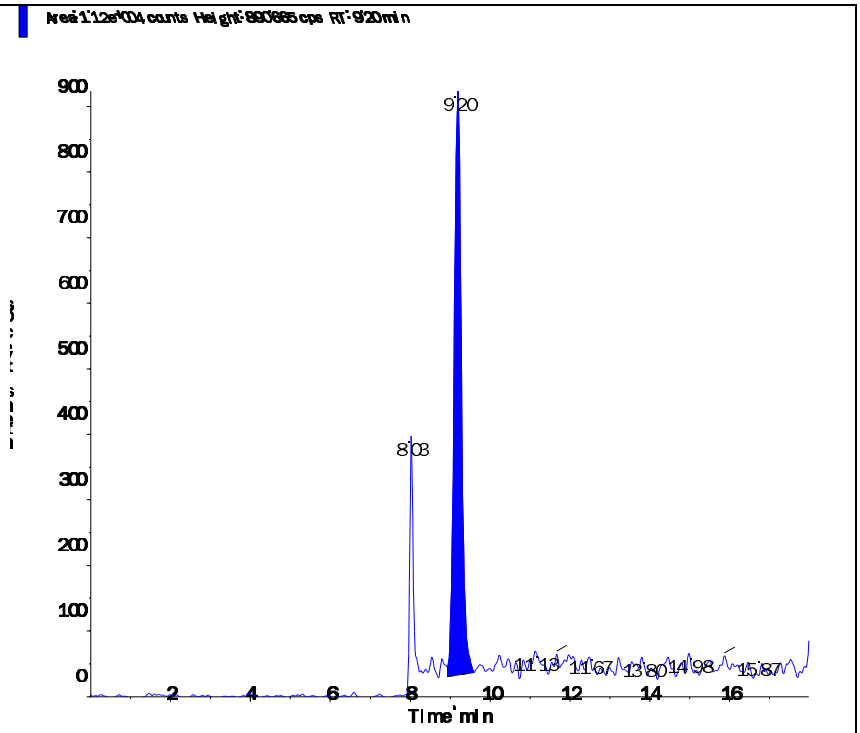

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Data File	LM35429.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 9:13:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-06 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35429.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 9:13:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.940e+05	9.23	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.450e+04	9.24	N/A	0.204
Perchlorate conf	1.250e+04	9.22	N/A	0.206

O18LP (Internal Standard)

RT (Exp. RT): 9.23(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

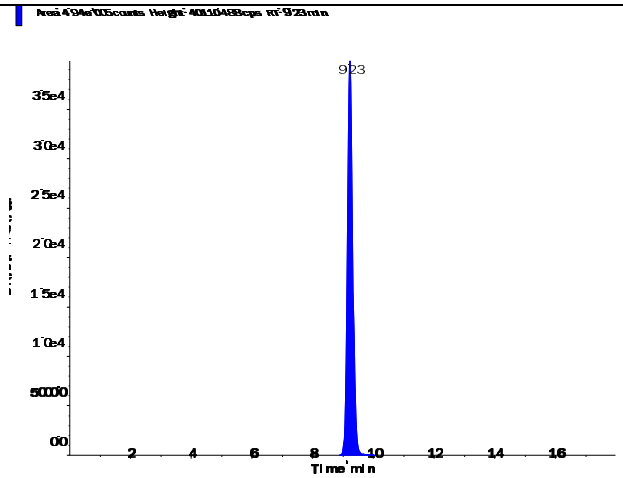

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.24 (9.84) min
Calculated conc:	0.204 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

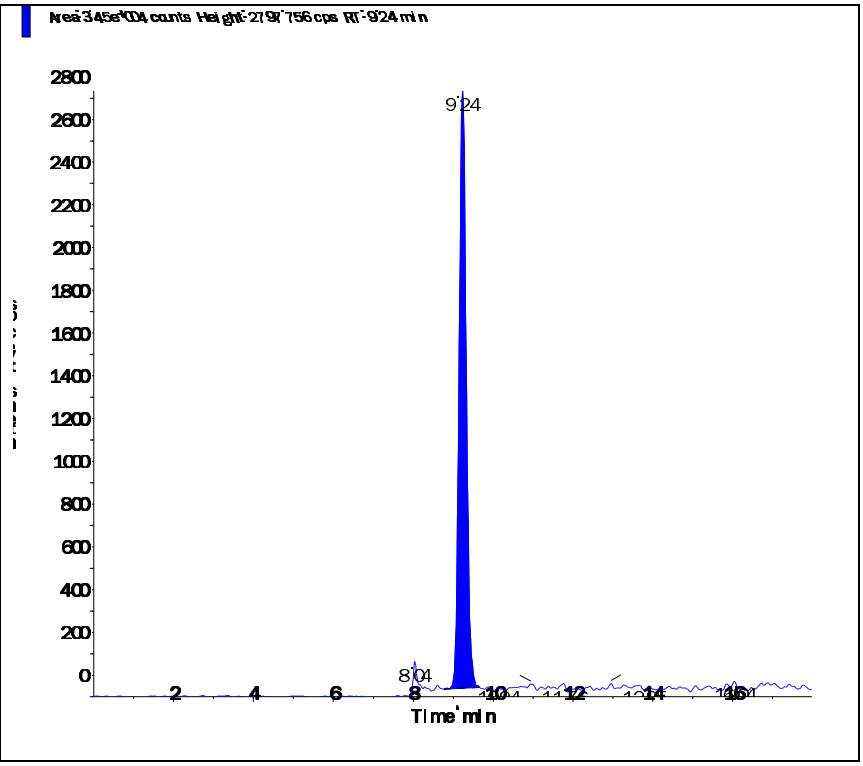

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.22 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

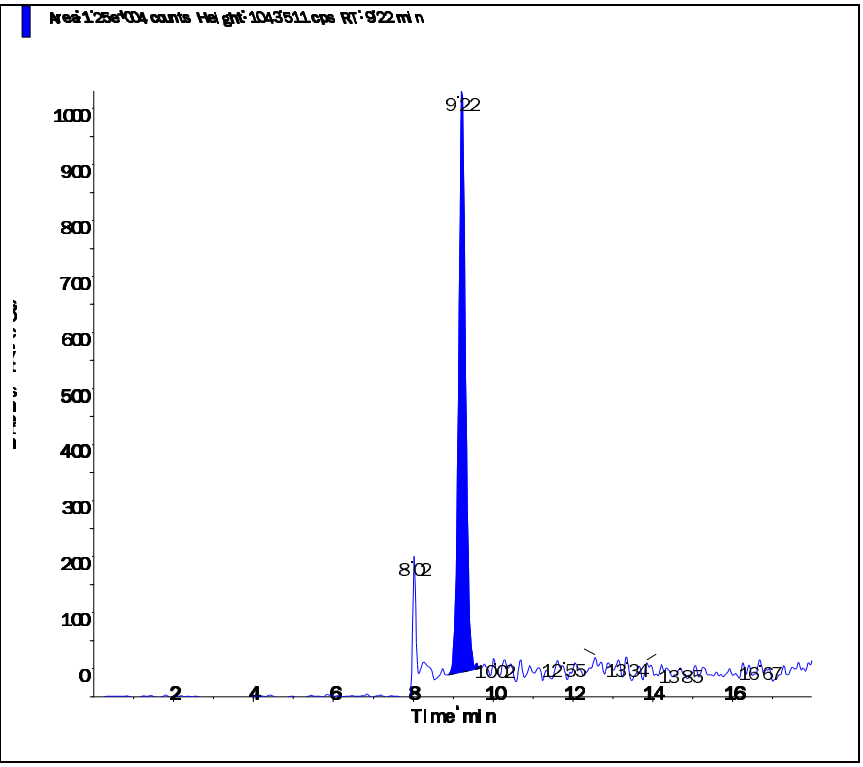

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Data File	LM35440.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 12:41:19 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35440.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 12:41:19 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.090e+05	9.26	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.670e+04	9.27	N/A	0.21
Perchlorate conf	1.290e+04	9.24	N/A	0.207

O18LP (Internal Standard)

RT (Exp. RT): 9.26(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

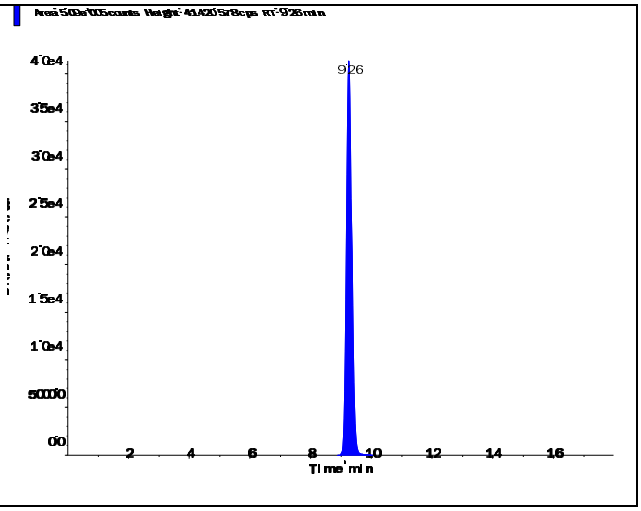

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.27 (9.84) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

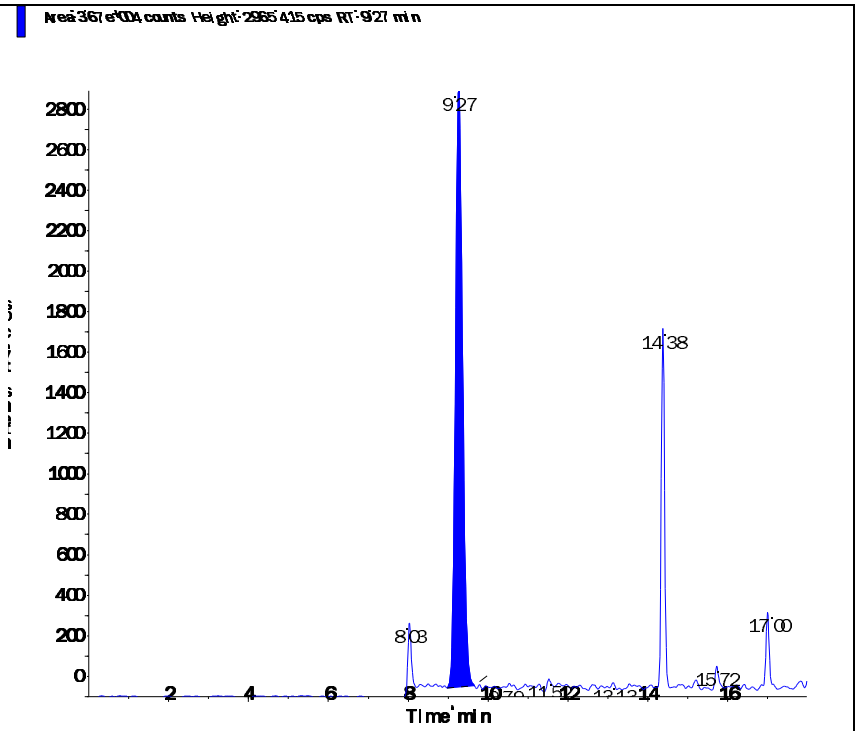

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.24 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

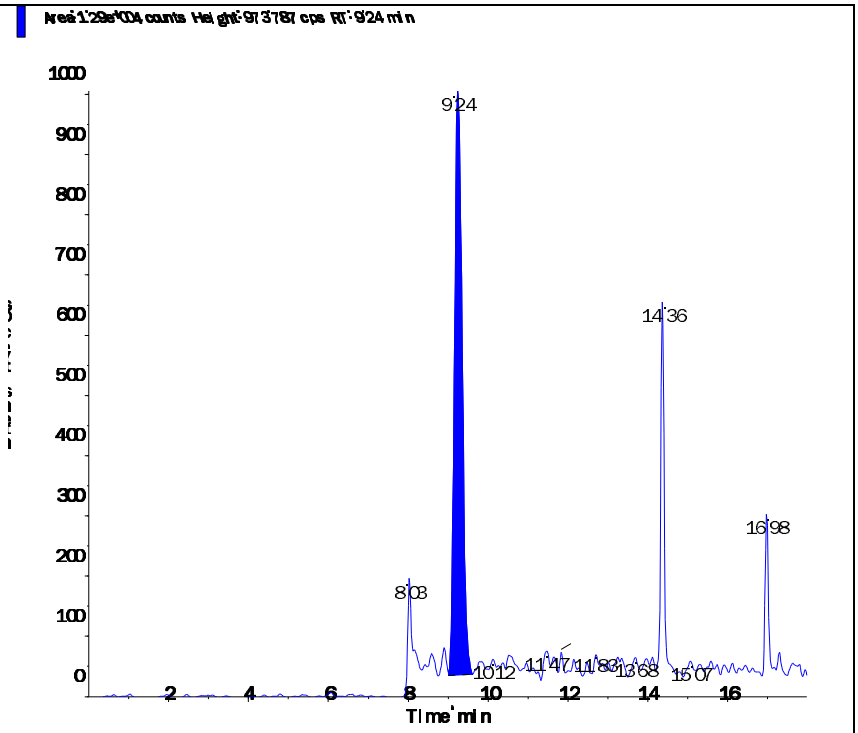

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Data File	LM35447.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 2:53:53 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-08 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35447.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 2:53:53 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.770e+05	9.27	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.480e+04	9.28	N/A	0.214
Perchlorate conf	1.170e+04	9.27	N/A	0.20

O18LP (Internal Standard)

RT (Exp. RT): 9.27(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

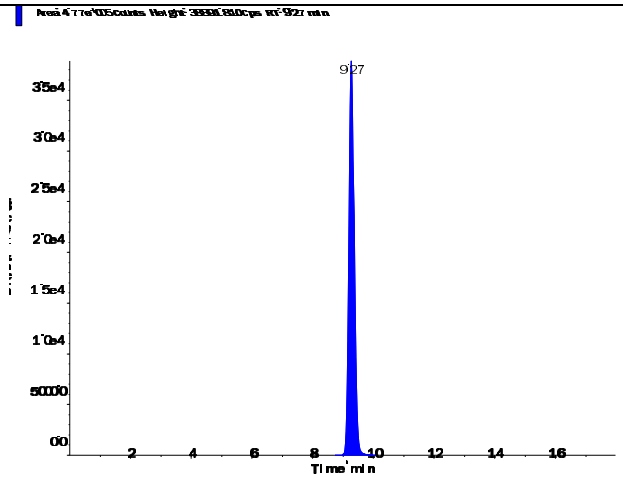

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.28 (9.84) min
Calculated conc:	0.214 ng/ml
Area Ratio:	0.073
Sample Type:	(Unknown)

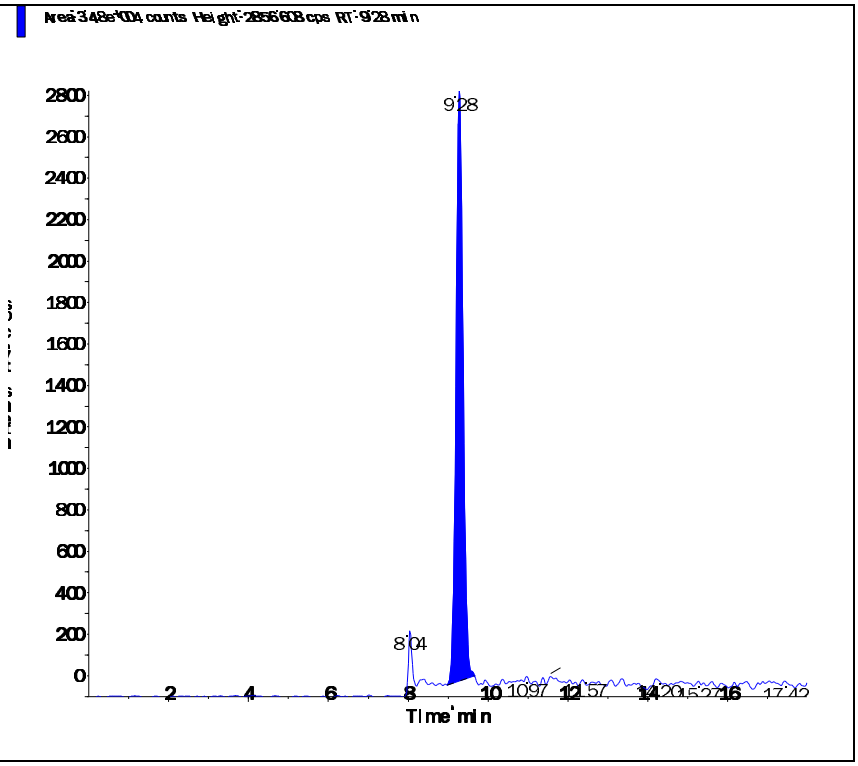

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.27 (9.84) min
Calculated conc:	0.20 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

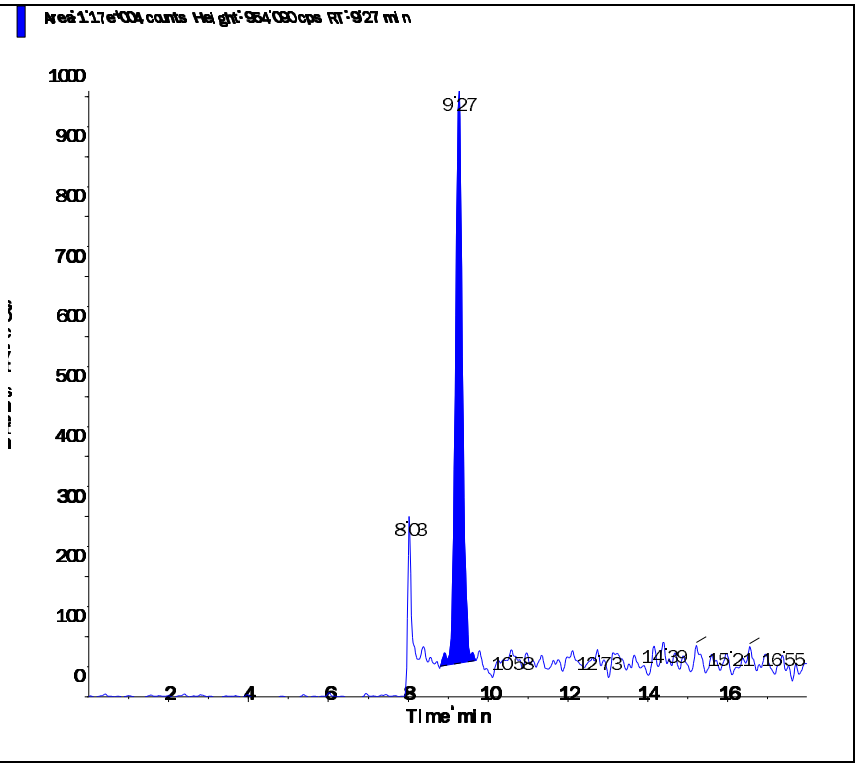

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Data File	LM35450.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 12:08:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-09 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35450.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 12:08:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.250e+05	9.31	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.050e+04	9.32	N/A	0.209
Perchlorate conf	1.100e+04	9.31	N/A	0.211

O18LP (Internal Standard)

RT (Exp. RT): 9.31(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

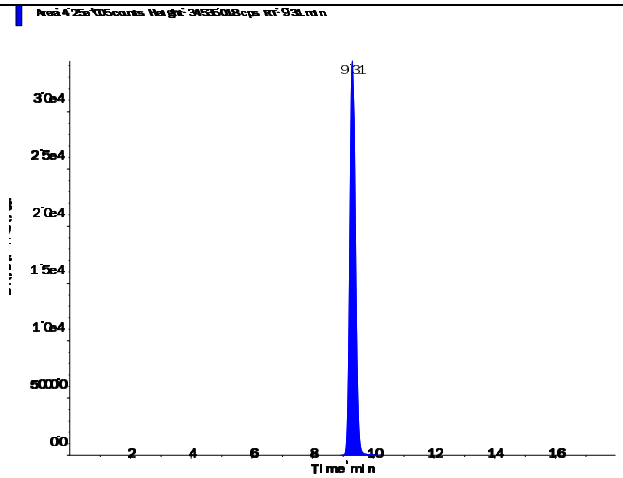

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.32 (9.84) min
Calculated conc:	0.209 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

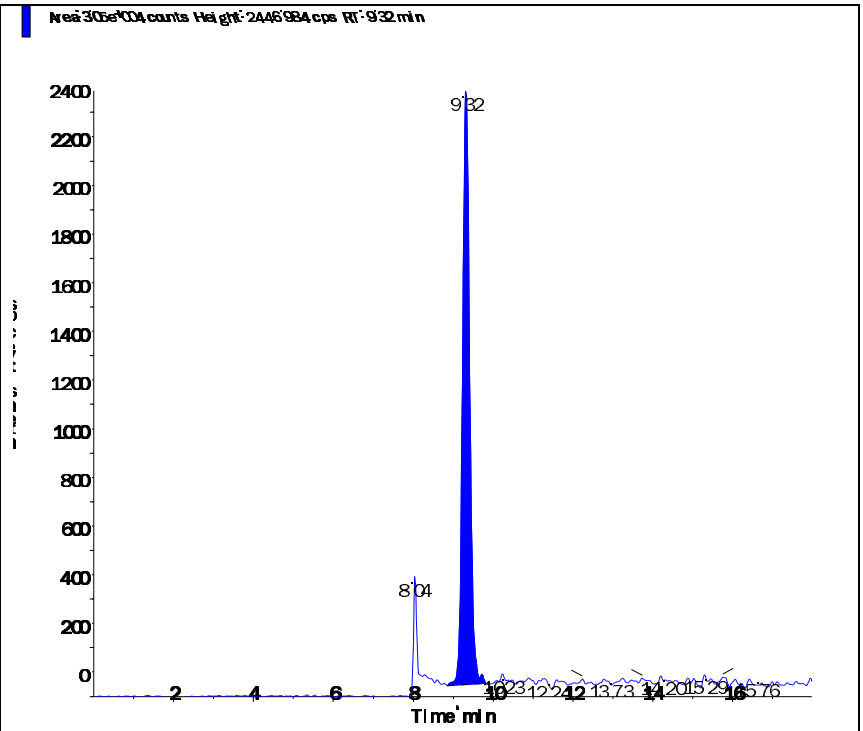

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.31 (9.84) min
Calculated conc:	0.211 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

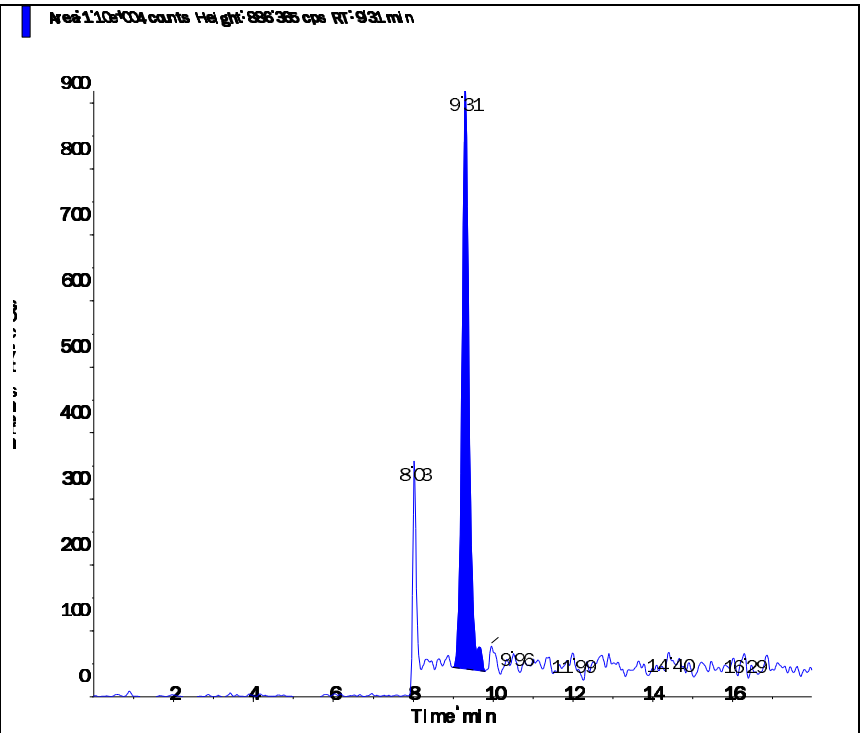

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Data File	LM35460.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 3:17:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-10 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35460.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 3:17:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-10	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.650e+05	9.33	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.200e+04	9.35	N/A	0.201
Perchlorate conf	1.270e+04	9.33	N/A	0.224

O18LP (Internal Standard)

RT (Exp. RT): 9.33(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

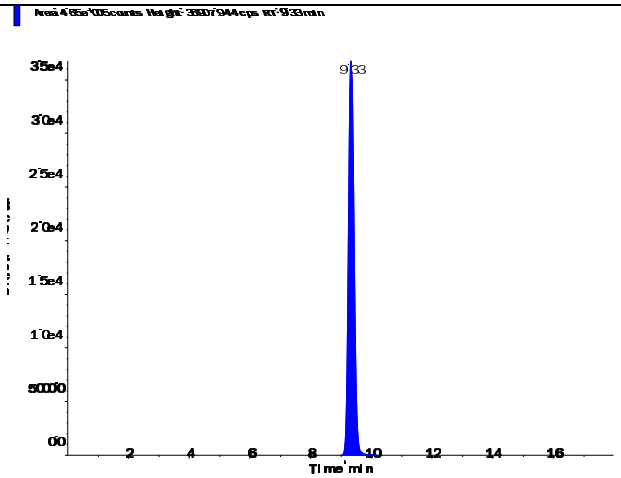

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

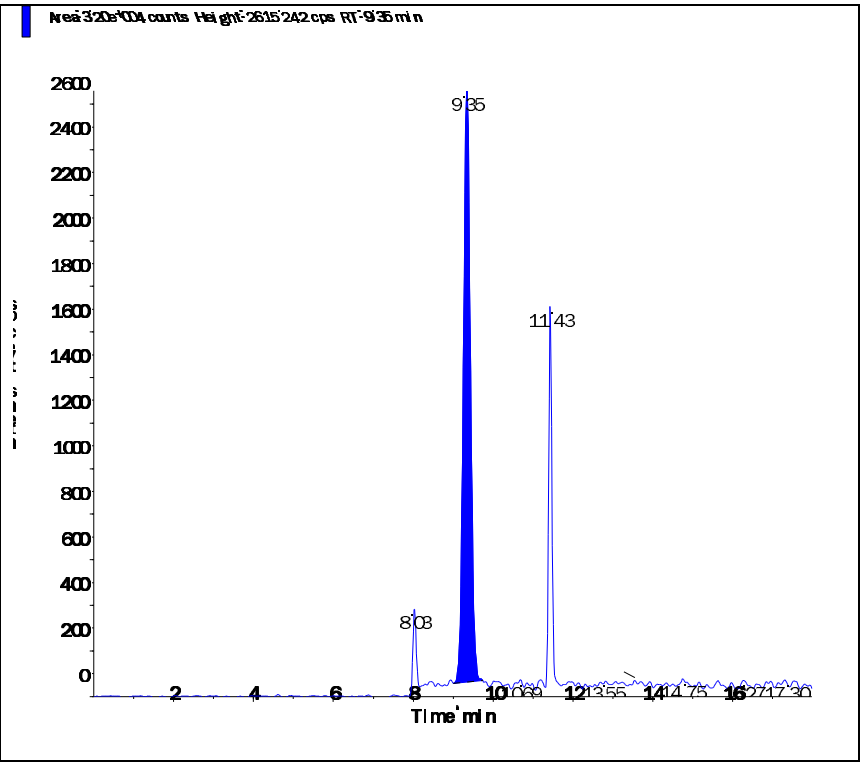

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.33 (9.84) min
Calculated conc:	0.224 ng/ml
Area Ratio:	0.027
Sample Type:	(Unknown)

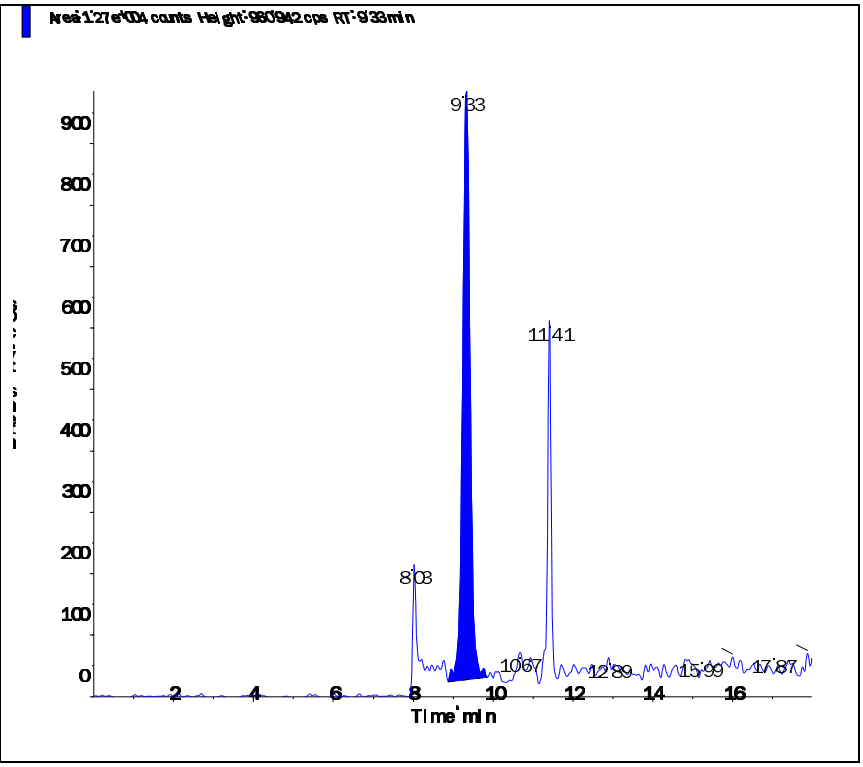

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Created with Analyst Reporter
Printed: 6/23/2016 4:52 PM

Data File	LM35415.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 4:48:02 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-01 CCB	**Injection Vial**	1.00
Data File	LM35415.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 4:48:02 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.750e+05	9.37	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	5.830e+02	9.37	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.37(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

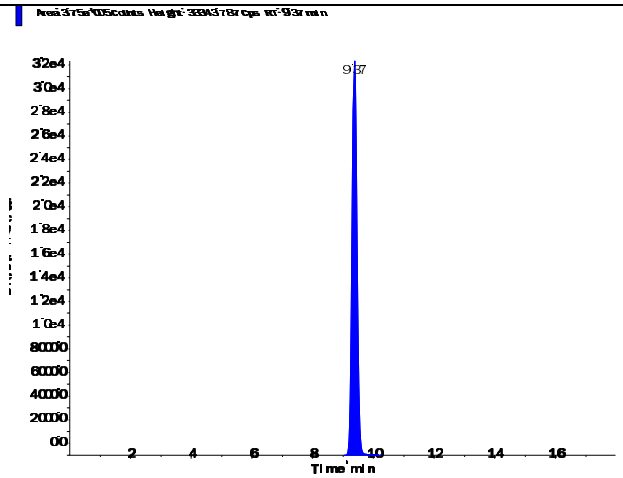

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

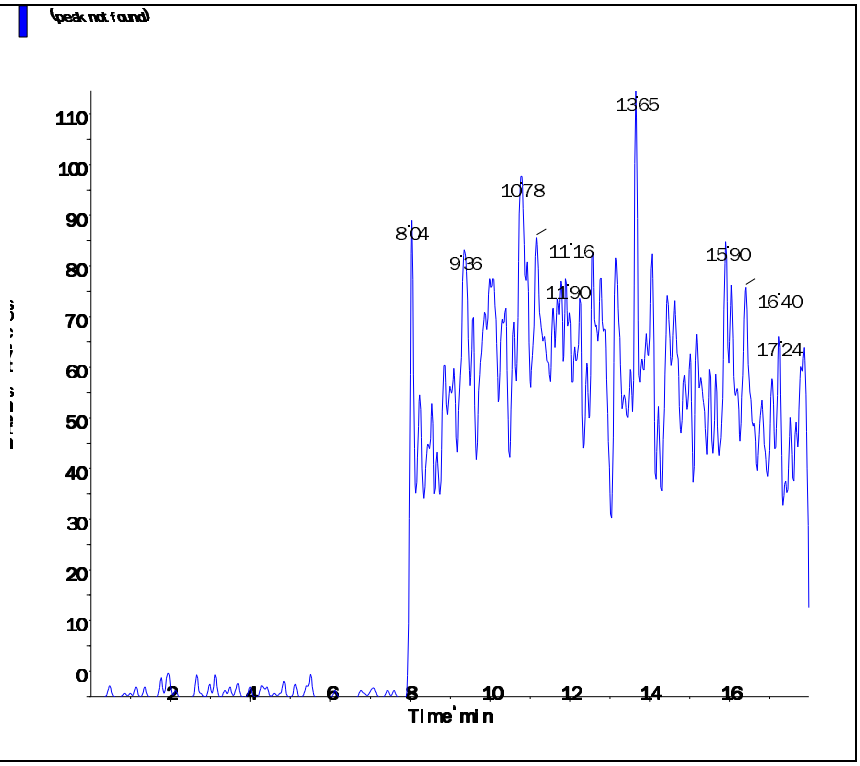

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.37 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

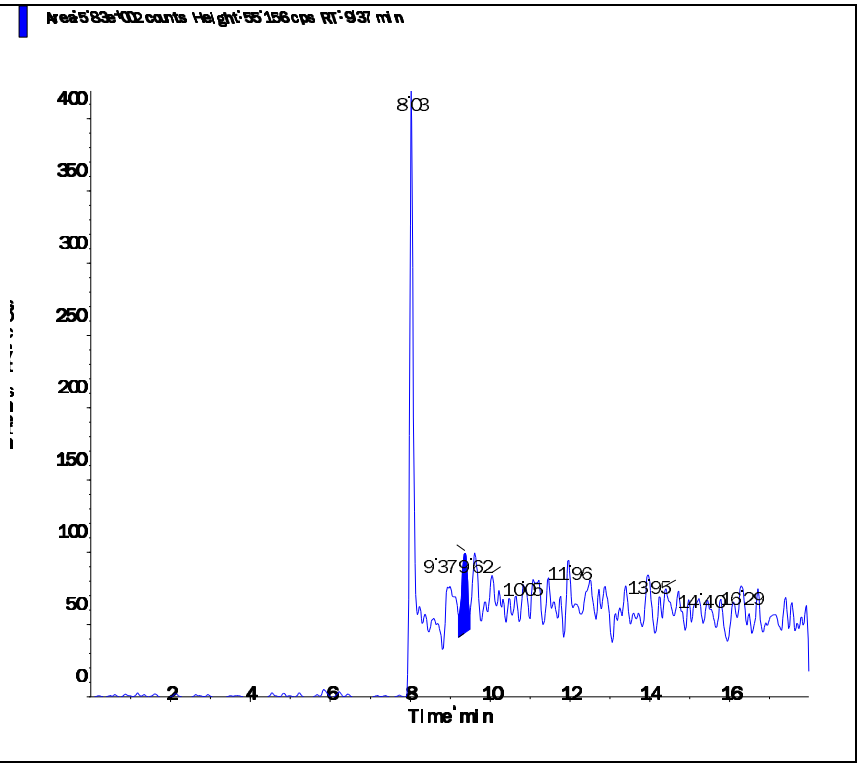

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Printed: 6/23/2016 4:58 PM

Data File	LM35430.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 9:31:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-04 CCB	**Injection Vial**	1.00
Data File	LM35430.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 9:31:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.890e+05	9.42	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	2.230e+02	9.45	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.42(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

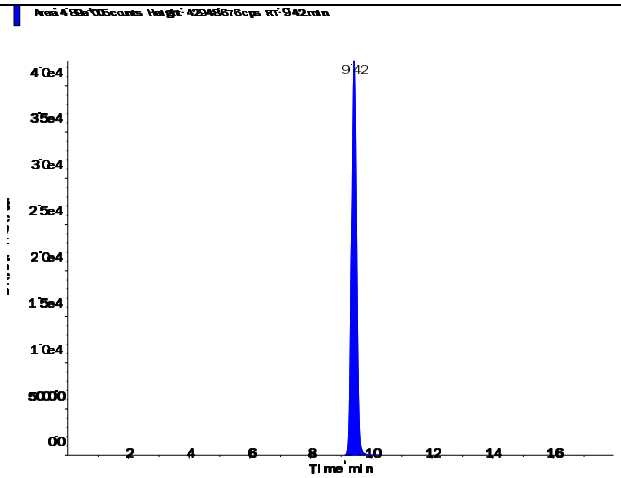

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

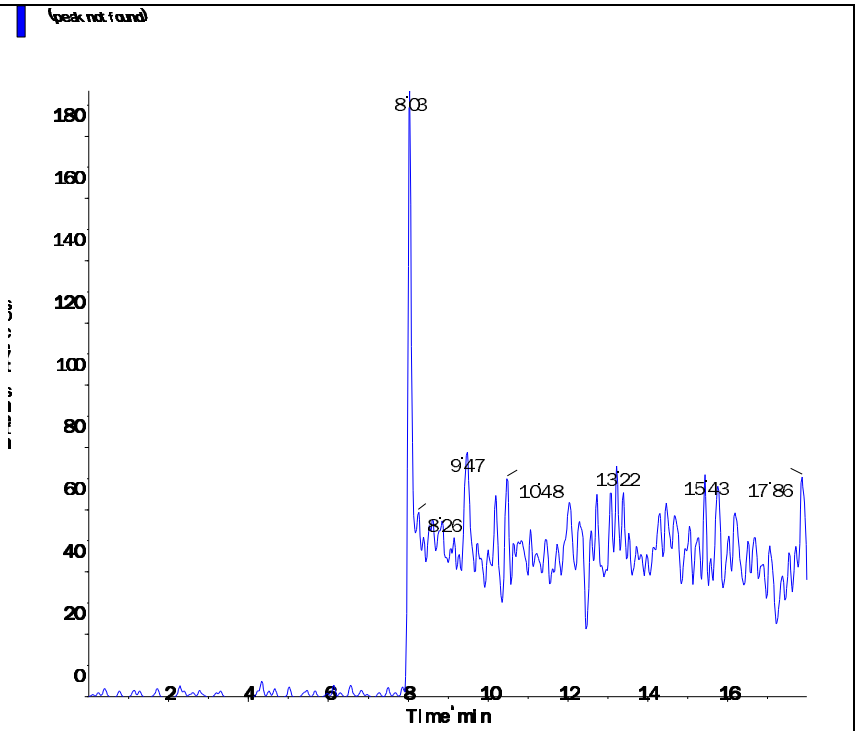

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.45 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

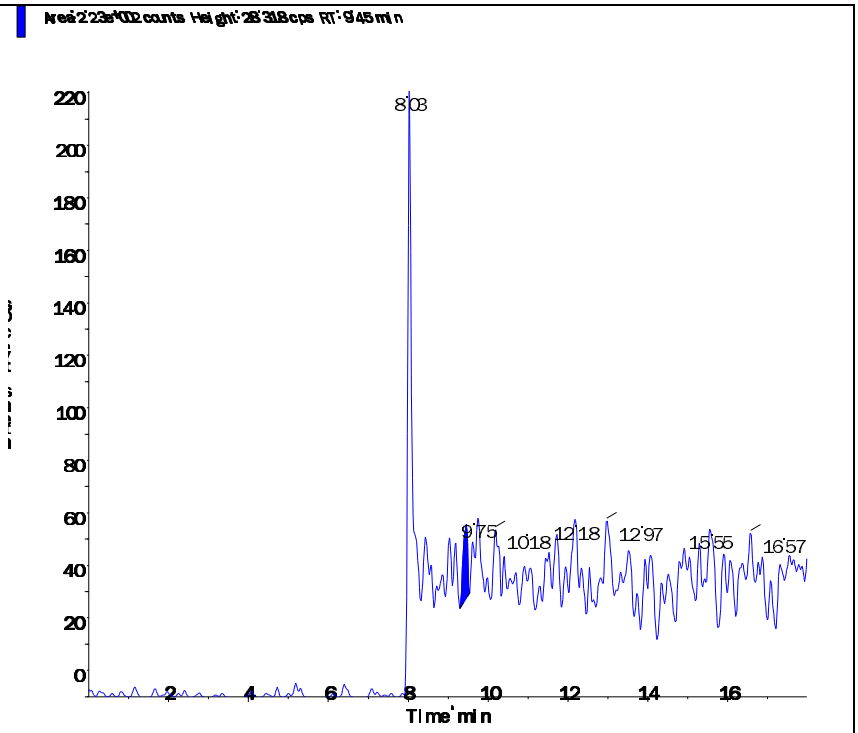

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Printed: 6/23/2016 5:02 PM

Data File	LM35441.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 1:00:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-06 CCB	**Injection Vial**	1.00
Data File	LM35441.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 1:00:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.040e+05	9.46	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.46(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

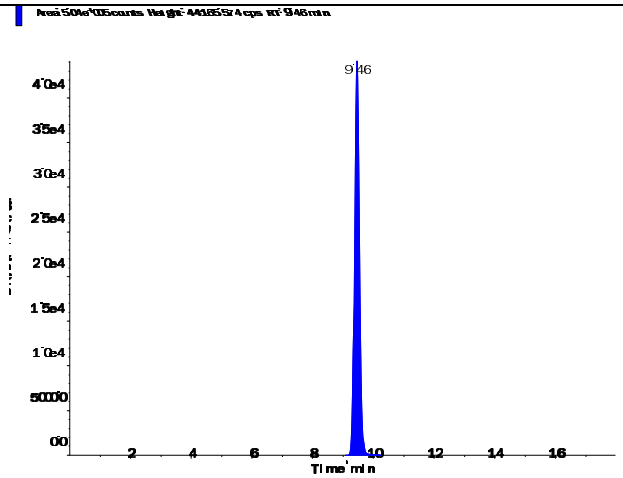

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

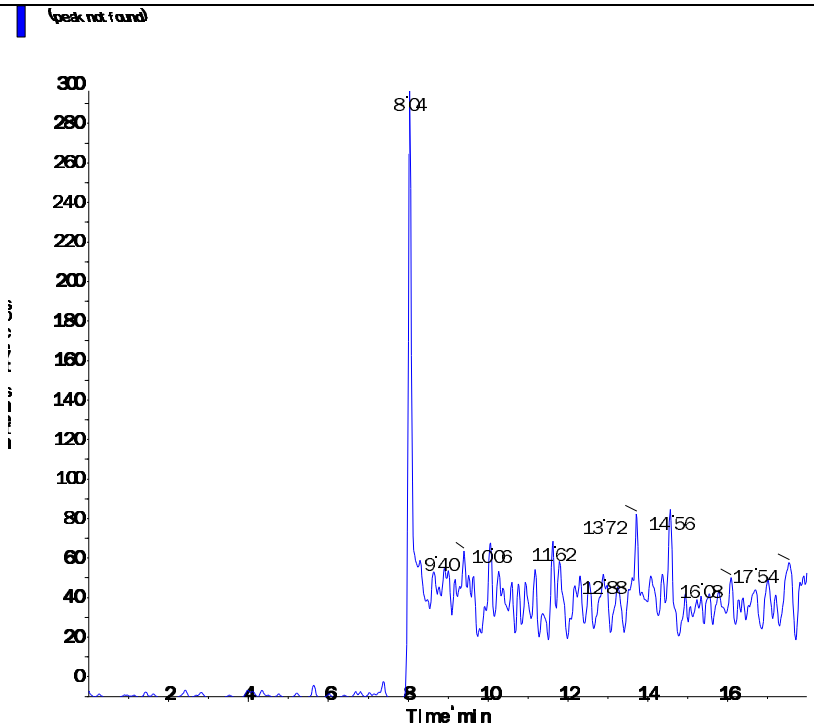

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

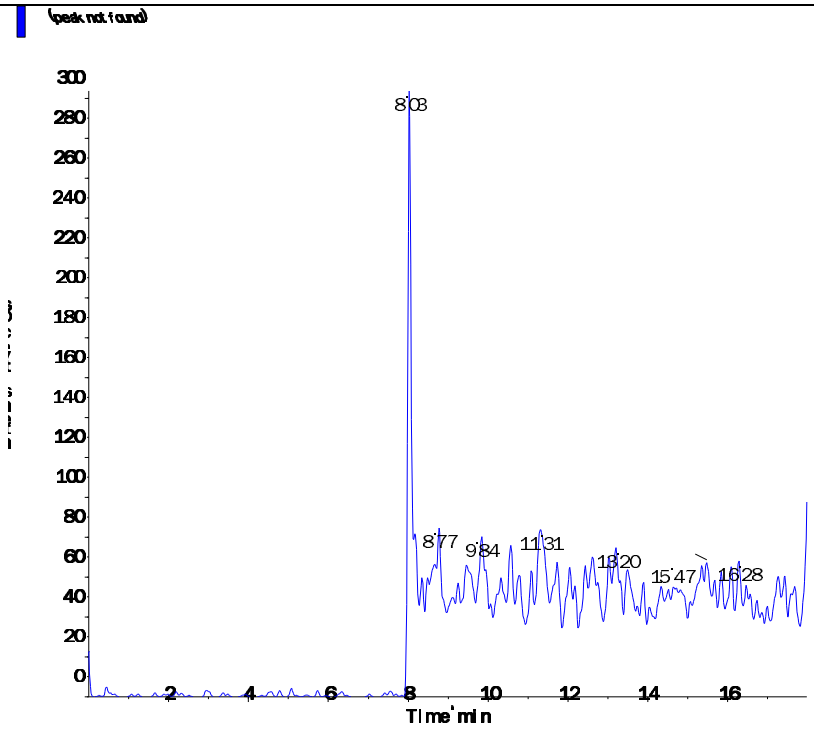

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Data File	LM35448.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 3:12:48 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-08 CCB	**Injection Vial**	1.00
Data File	LM35448.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 3:12:48 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.850e+05	9.47	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.47(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

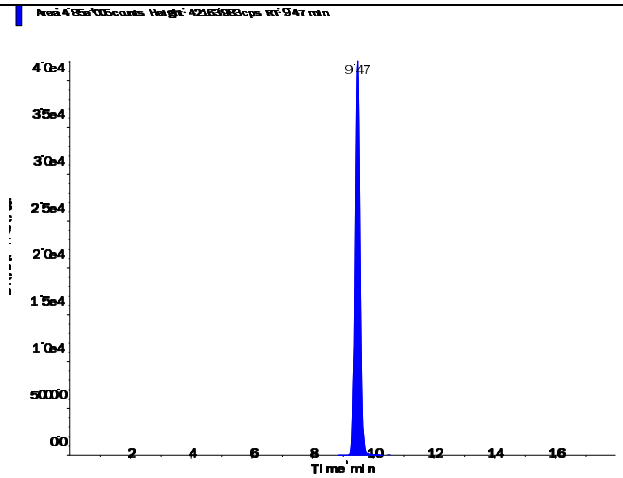

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

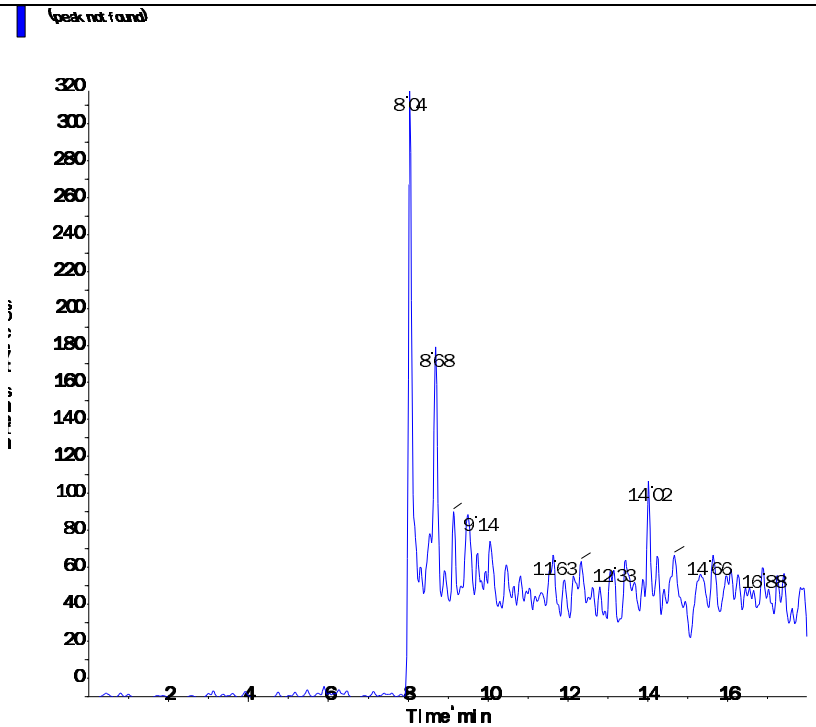

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

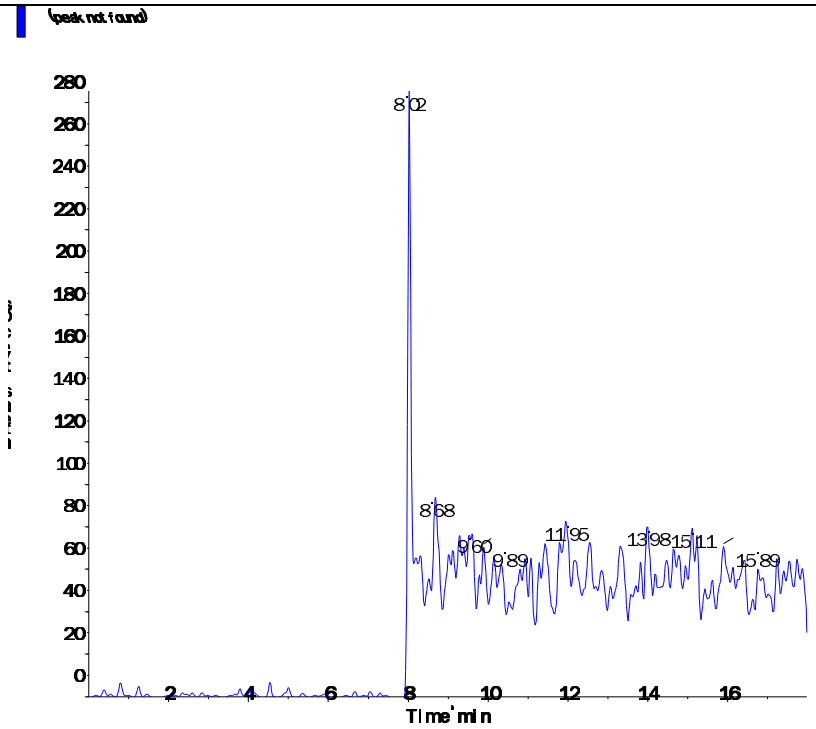

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Data File	LM35451.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 12:27:11 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-10 CCB	**Injection Vial**	1.00
Data File	LM35451.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 12:27:11 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.370e+05	9.51	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	5.600e+02	9.50	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.51(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

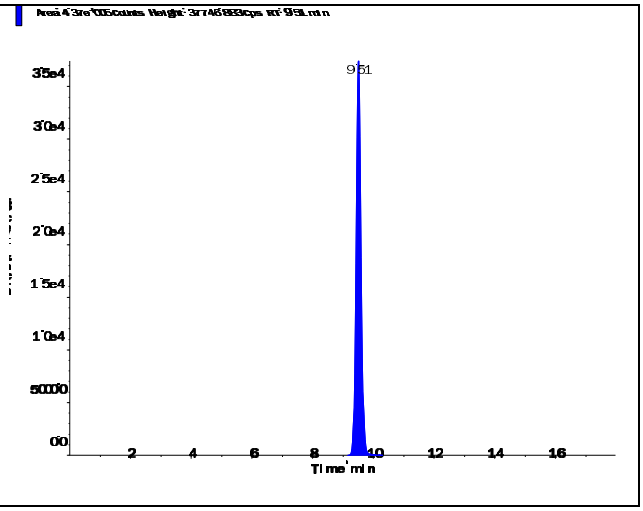

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

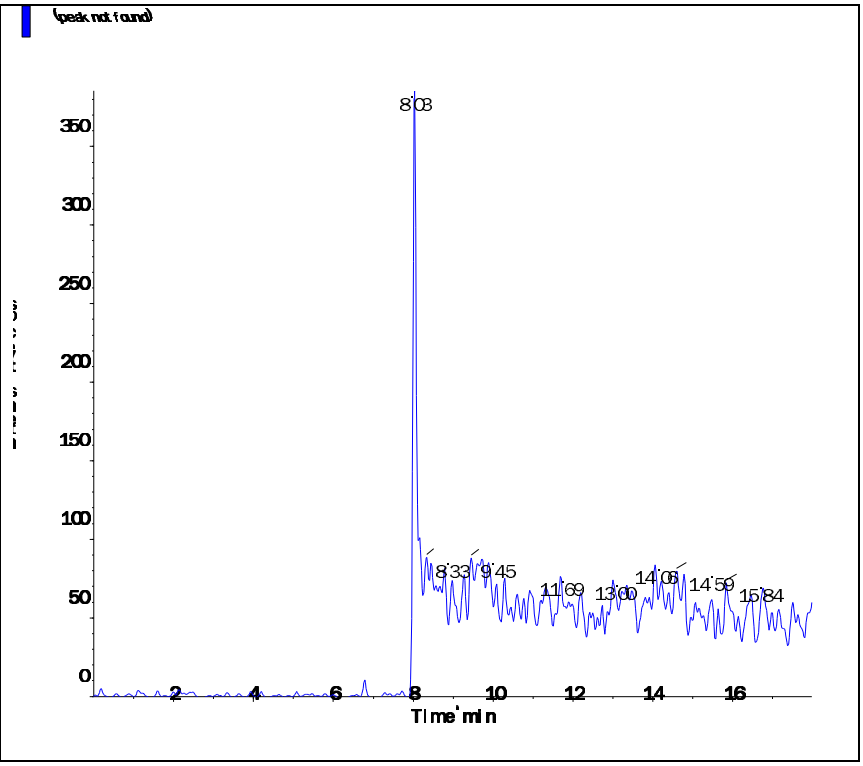

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.50 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

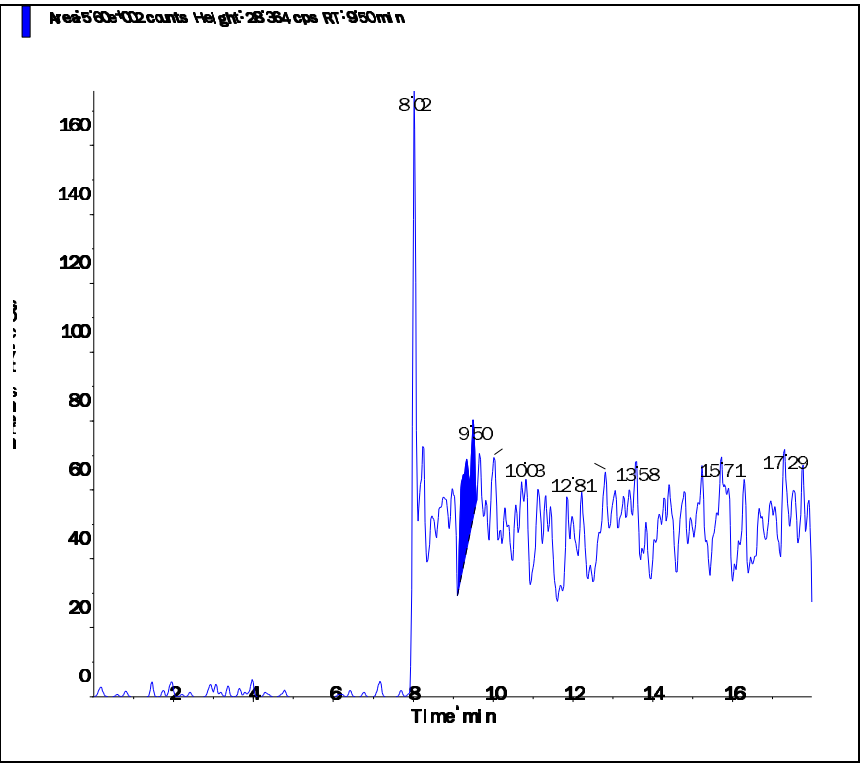

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Data File	LM35461.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 3:36:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-12 CCB	**Injection Vial**	1.00
Data File	LM35461.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 3:36:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-12	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.660e+05	9.52	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.52(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

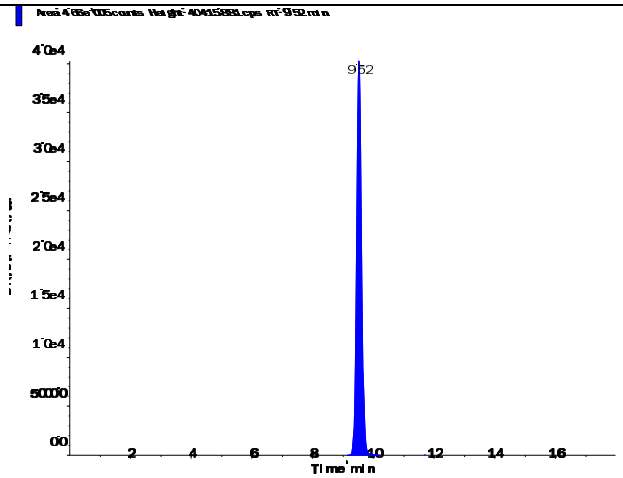

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

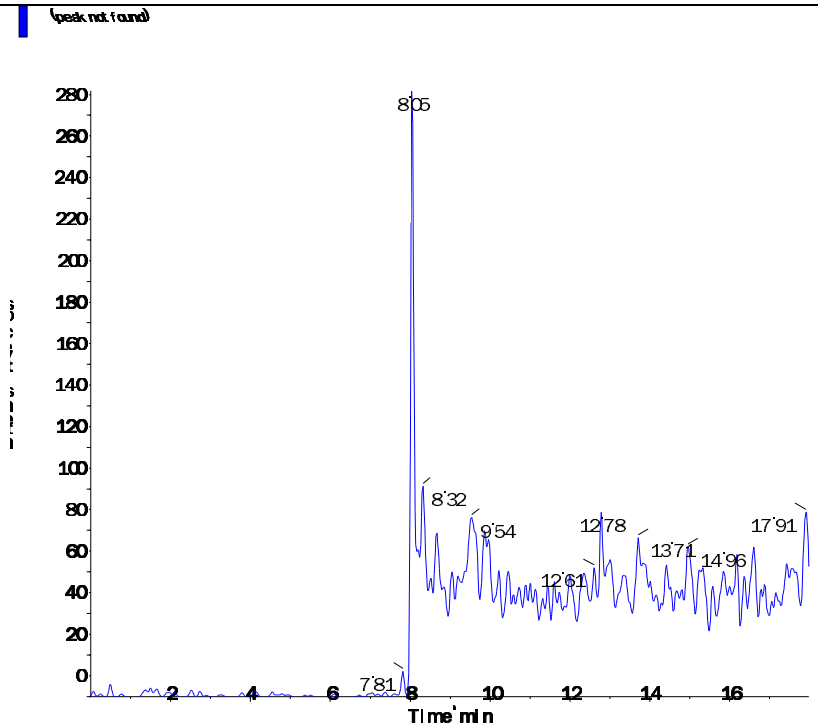

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

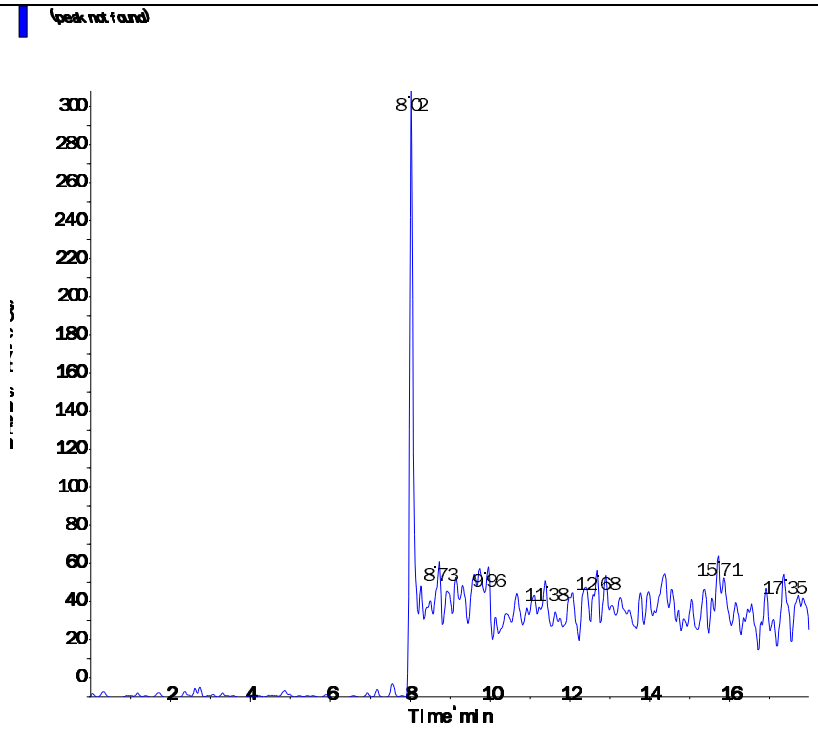

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Data File	LM35418.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 5:44:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM35418.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 5:44:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.330e+05	8.77	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.850e+04	8.77	N/A	0.192
Perchlorate conf	1.000e+04	8.76	N/A	0.187

O18LP (Internal Standard)

RT (Exp. RT): 8.77(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

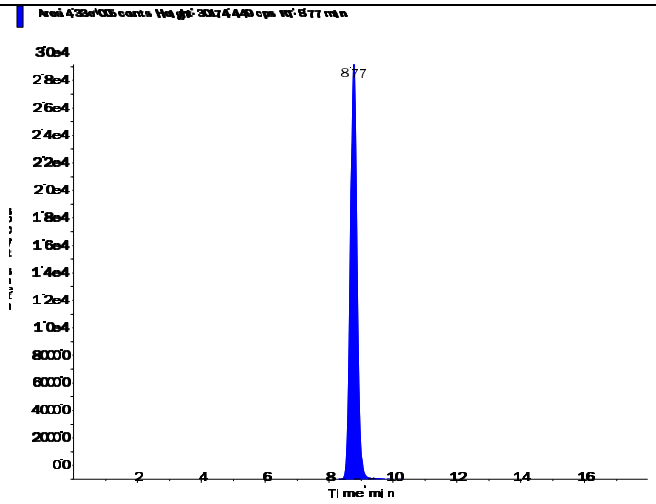

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Printed: 6/23/2016 4:53 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	8.77 (9.84) min
Calculated conc:	0.192 ng/ml
Area Ratio:	0.066
Sample Type:	(Unknown)

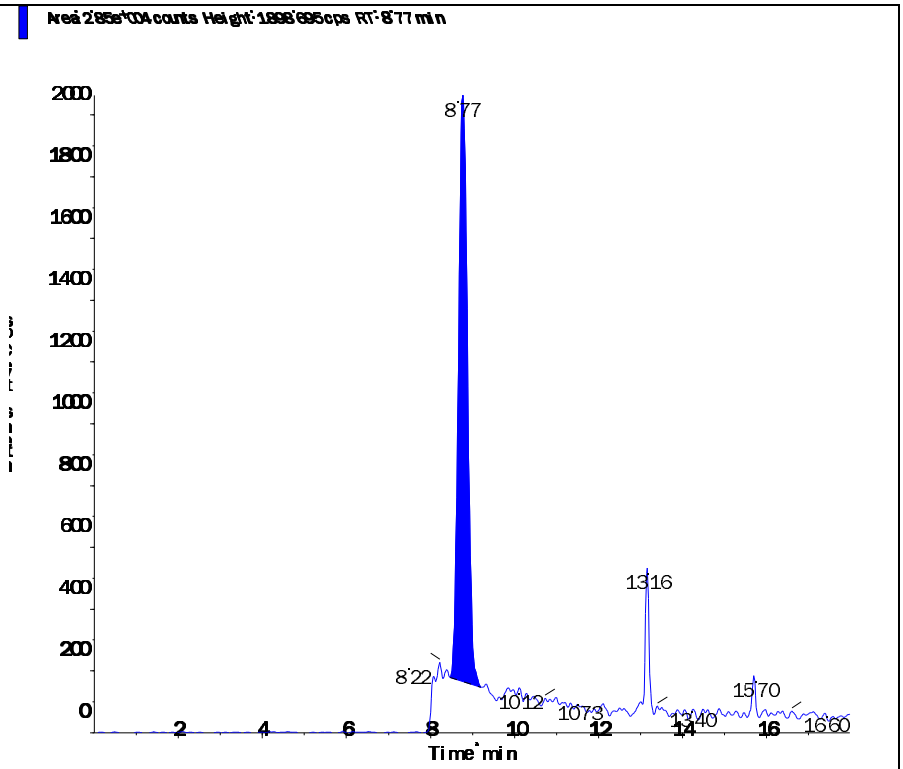

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	8.76 (9.84) min
Calculated conc:	0.187 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

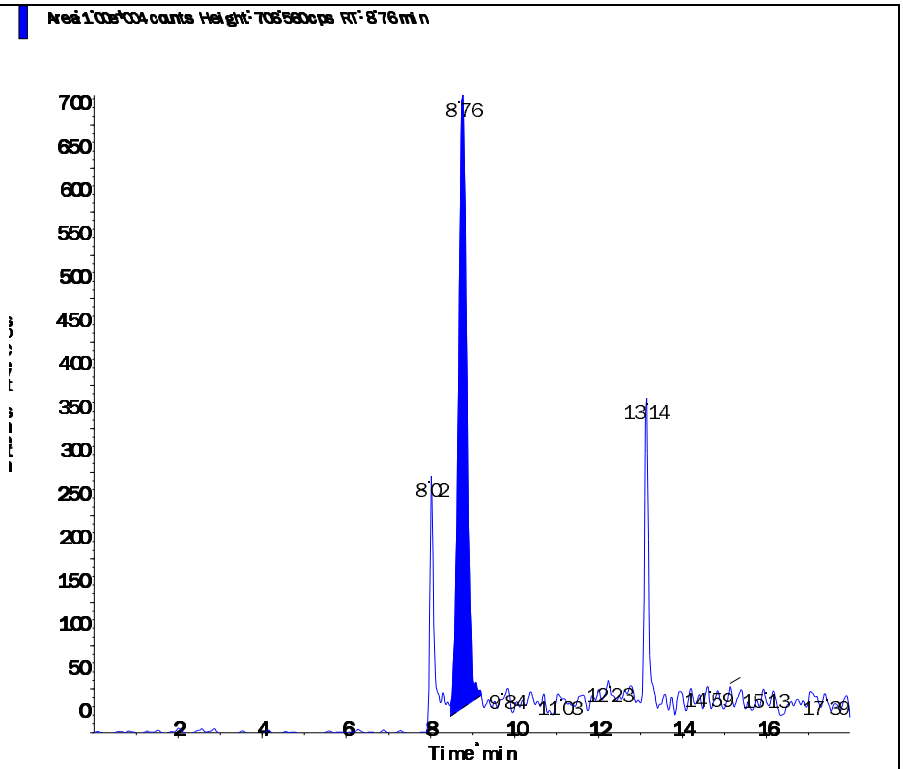

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Printing Time: 6:50:16 PM
Printing Date: Wednesday, June 22, 2016

Sample Name: "WG573791-01 MCT (0.2ug/L)" Sample ID: "WG573791-01" File: "LM35418.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index: 1
Sample Type: Unknown
Concentration: N/A
Calculated Conc: 0.230 ug/L
Acq. Date: 6/22/2016
Acq. Time: 5:44:45 PM

Modified: No
Proc. Algorithm: Analyst Classic
Smoothing Factor: 2
Noise Threshold: 18.48 cps
Area Threshold: 92.40 cps
Num. Smooths: 5
Sep. Width: 0.20
Sep. Height: 0.01
Exp. Peak Ratio: 5.00
Exp. Adj. Ratio: 4.00
Exp. Val. Ratio: 3.00
RT Window: 30.000 sec
Expected RT: 9.84 min
Use Relative RT: Yes

Int. Type: Valley
Retention Time: 8.77 min
Area: 3.40e+004 counts
Height: 1990.014 cps
Start Time: 8.303 min
End Time: 9.417 min

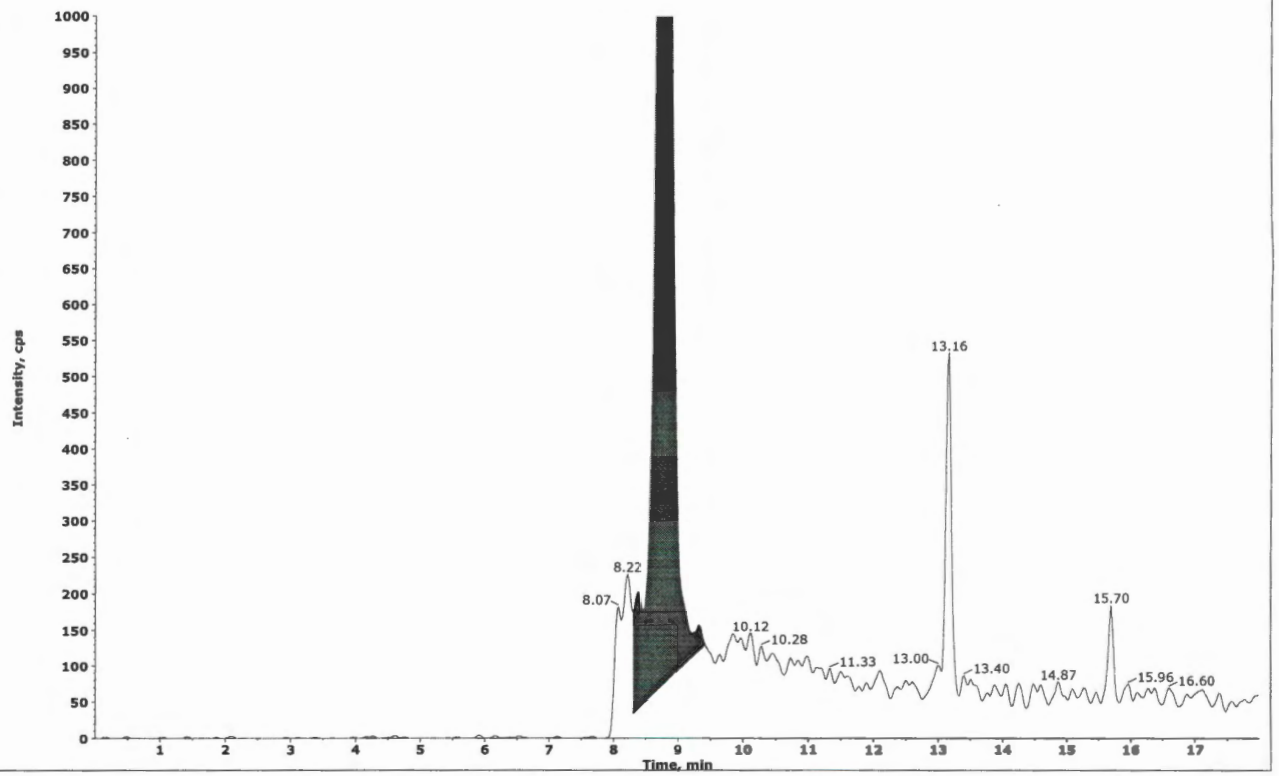

Collected by: N/A
Electronic Signature: no
Operator: lcmsl

Printing Time: 6:52:29 PM
Printing Date: Wednesday, June 22, 2016

Sample Name: "WG573791-01 MCT (0.2ug/L)" Sample ID: "WG573791-01" File: "LM35418.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.192 ug/L
Acq. Date:	6/22/2016
Acq. Time:	5:44:45 PM
Modified:	Yes
Proc. Algorithm:	Analyst Classic
Smoothing Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Sep. Width:	0.20
Sep. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Manual
Retention Time:	8.77 min
Area:	2.85e+004 counts
Height:	1898.695 cps
Start Time:	8.465 min
End Time:	9.194 min

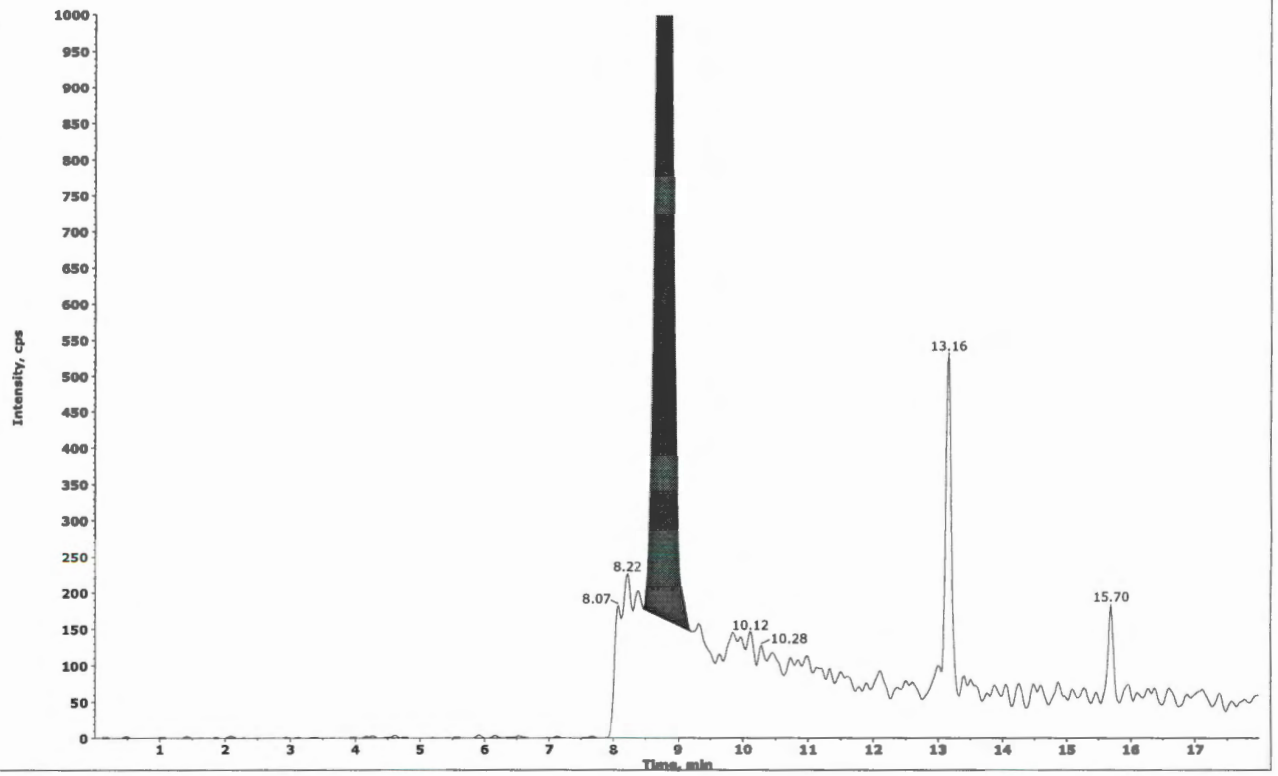

#4
JWR 06/22/16

✓ WD
6-24-16

Collected by: N/A
Electronic Signature: no
Operator: lcms1

2.2.2.5 Raw QC Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/23/2016 4:54 PM

Data File	LM35419.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 6:03:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-02 BLANK	**Injection Vial**	5.00
Data File	LM35419.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 6:03:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.360e+05	9.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	5.050e+02	9.25	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.30(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

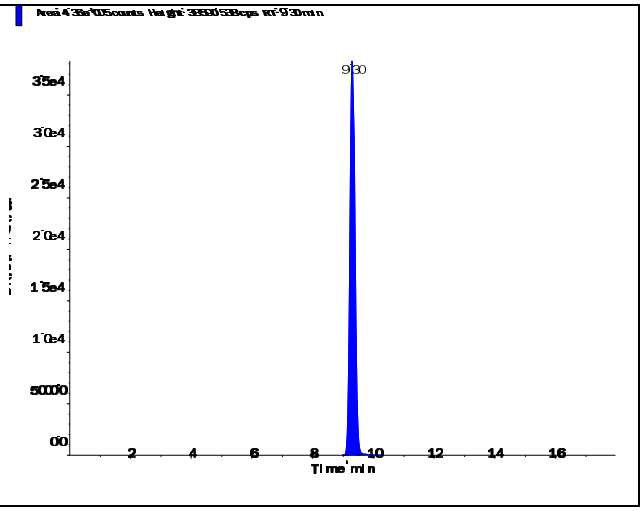

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/23/2016 4:54 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	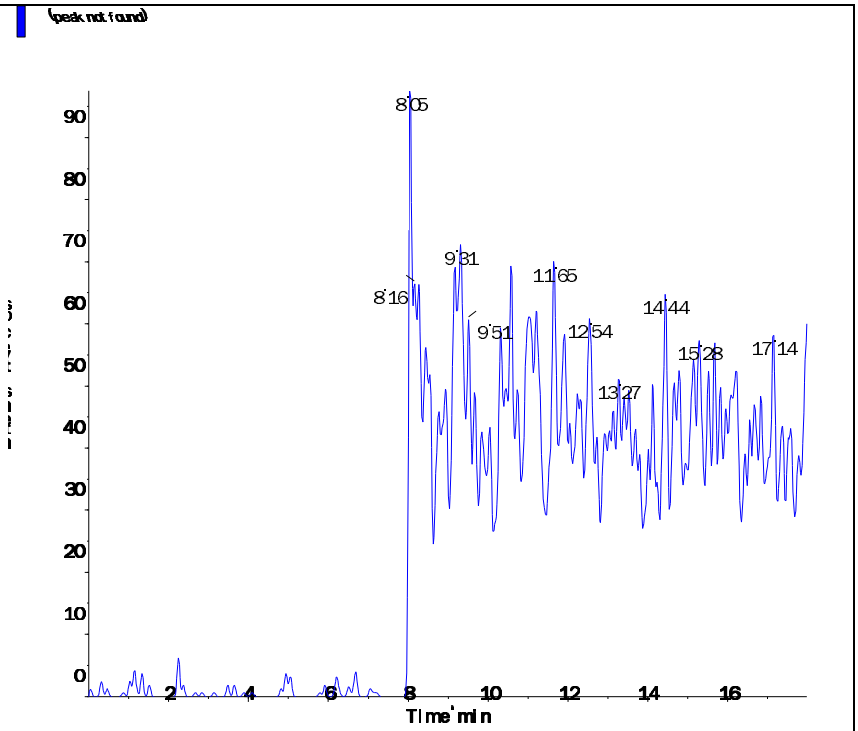
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.25 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	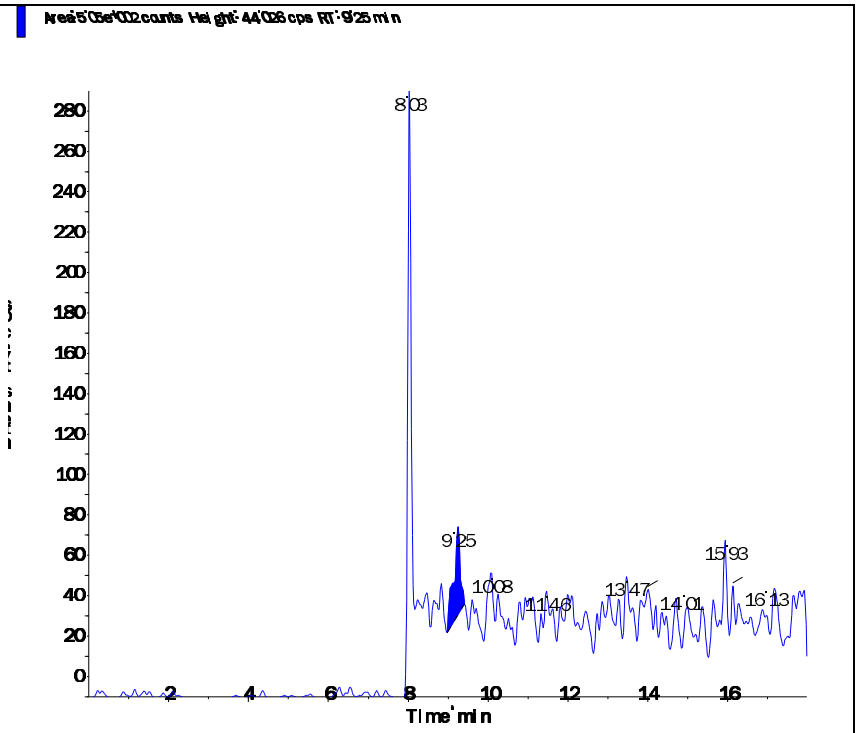

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/23/2016 4:54 PM

Data File	LM35420.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 6:22:36 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM35420.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 6:22:36 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.400e+05	9.33	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.030e+04	9.35	N/A	0.201
Perchlorate conf	1.150e+04	9.33	N/A	0.213

O18LP (Internal Standard)

RT (Exp. RT): 9.33(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

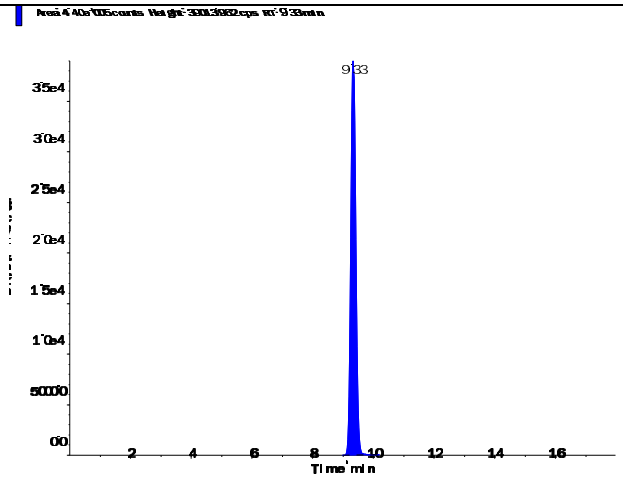

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/23/2016 4:54 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

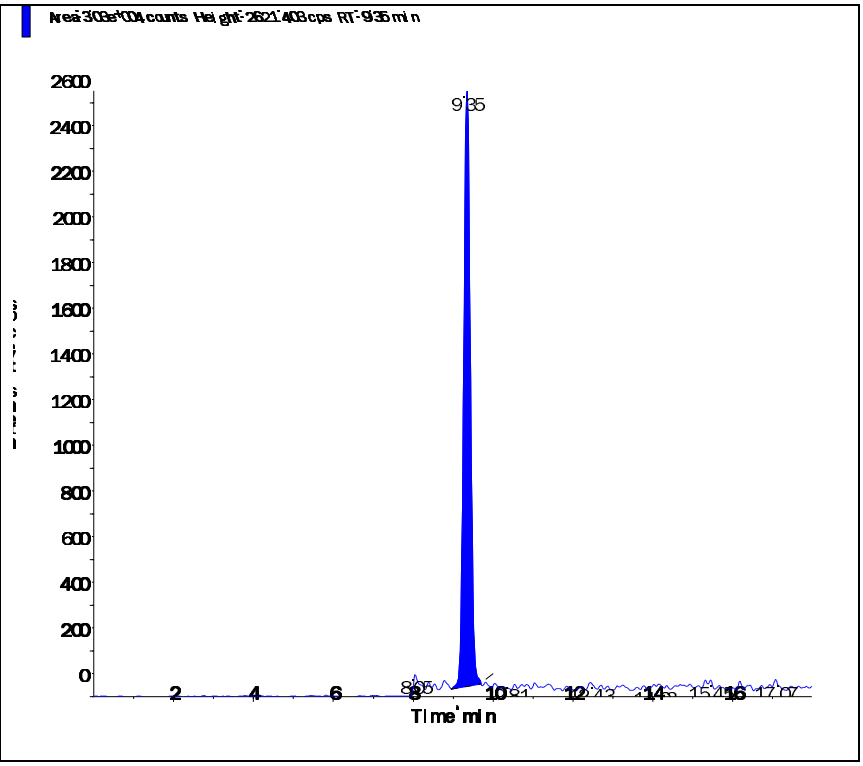

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.33 (9.84) min
Calculated conc:	0.213 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

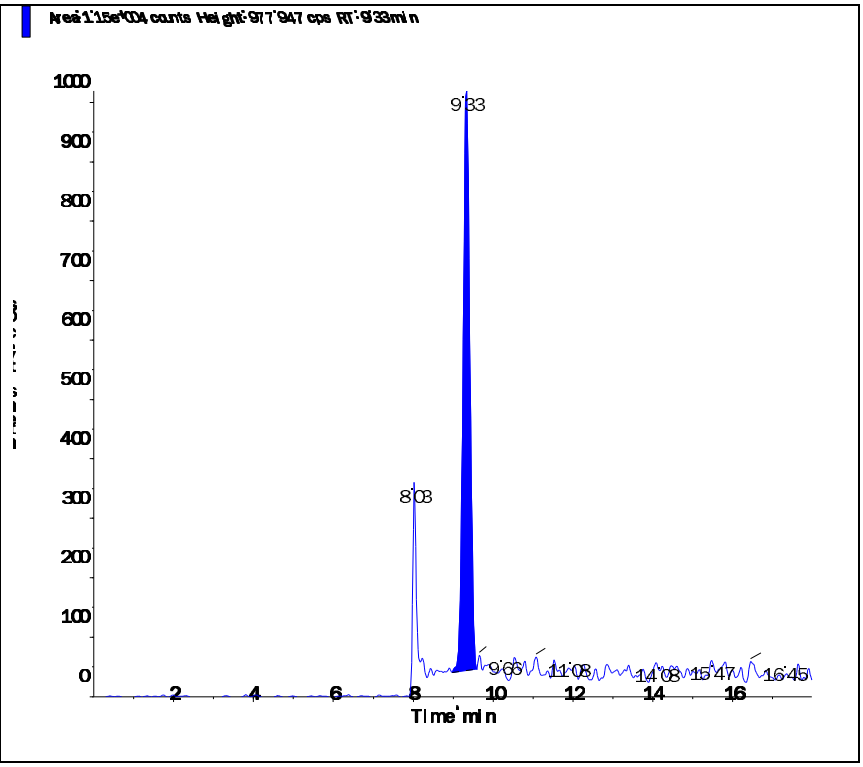

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/23/2016 4:55 PM

Data File	LM35421.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 6:41:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-04 LCS2 (0.2ug/L)	**Injection Vial**	7.00
Data File	LM35421.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 6:41:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.350e+05	9.36	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.200e+04	9.38	N/A	0.215
Perchlorate conf	1.150e+04	9.36	N/A	0.216

O18LP (Internal Standard)

RT (Exp. RT): 9.36(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

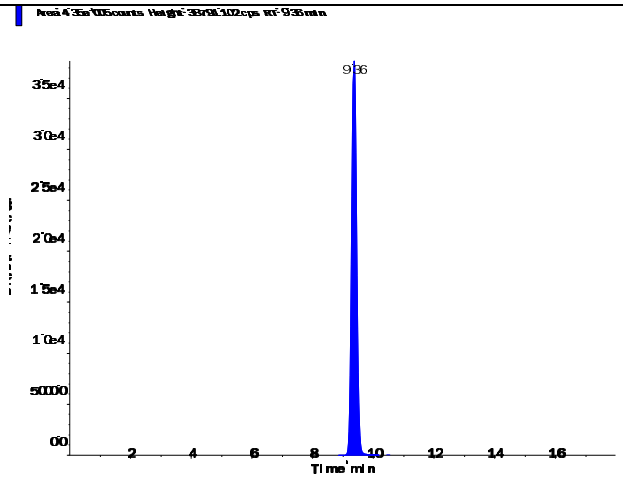

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	0.215 ng/ml
Area Ratio:	0.074
Sample Type:	(Unknown)

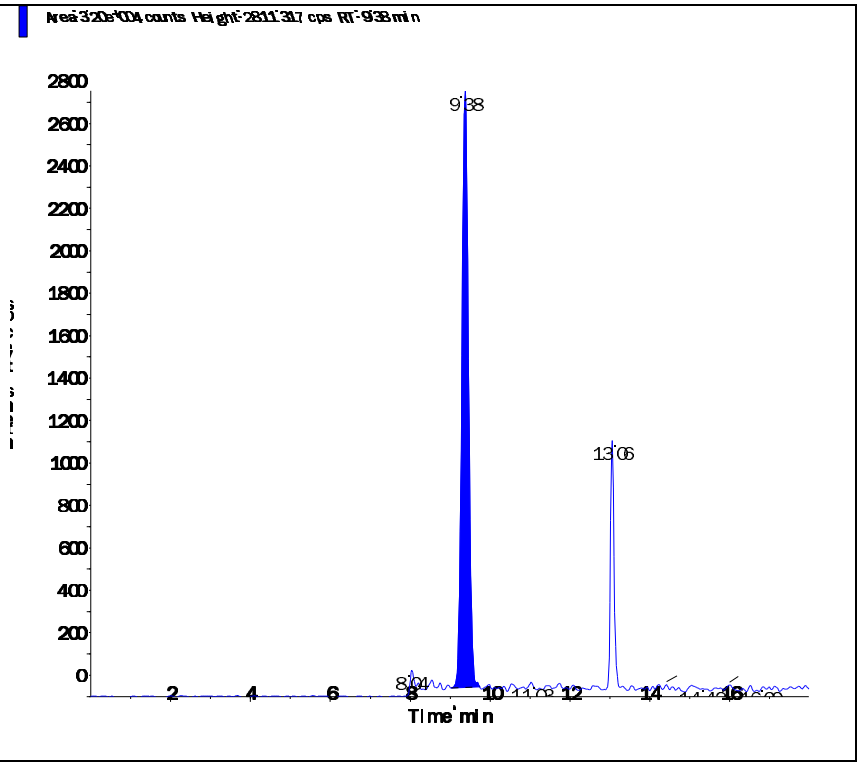

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.36 (9.84) min
Calculated conc:	0.216 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

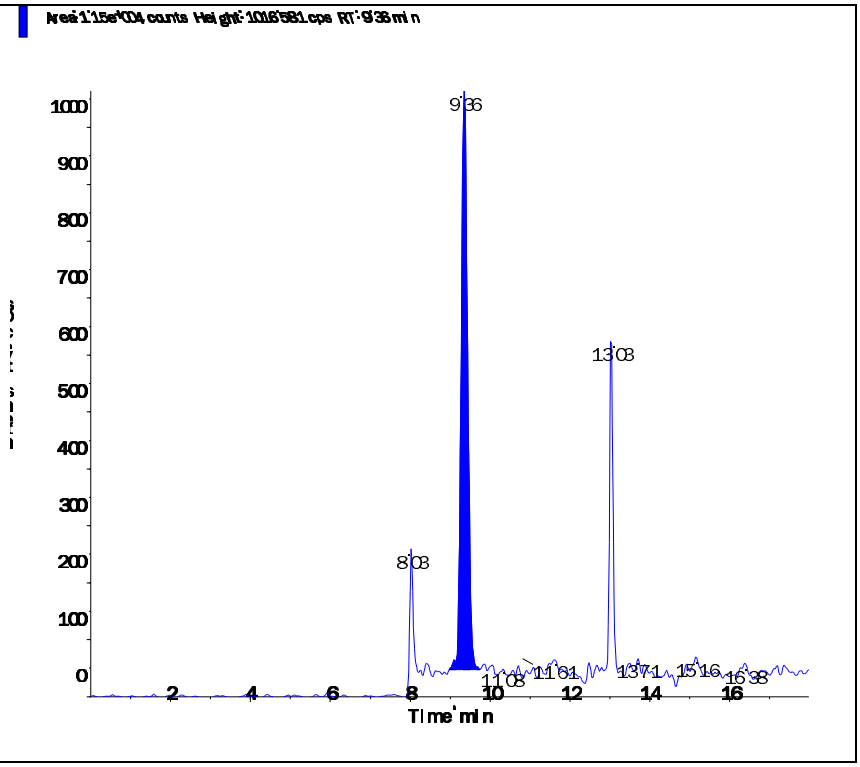

s.dataFile Page 2 of 2

2.3 Metals Data

2.3.1 Metals I C P Data

2.3.1.1 Summary Data

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW14-061316	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 13:57
Collect Date:	06/13/2016 09:15	**Dilution:**	1	**File ID:**	T3.062316.135724
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.400		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	0.0599	J	0.200	0.100	0.0500
Magnesium, Total	7439-95-4	12.5		1.00	0.500	0.250
Potassium, Total	7440-09-7	33.5		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW14-061316	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 14:40
Collect Date:	06/13/2016 09:15	**Dilution:**	100	**File ID:**	T3.062316.144053
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	490		50.0	25.0	12.5
Sodium, Total	7440-23-5	378		100	50.0	25.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW14FD-061316	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 14:01
Collect Date:	06/13/2016 09:15	**Dilution:**	1	**File ID:**	T3.062316.140125
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.377		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	0.0756	J	0.200	0.100	0.0500
Magnesium, Total	7439-95-4	13.5		1.00	0.500	0.250
Potassium, Total	7440-09-7	33.6		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW14FD-061316	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 14:44
Collect Date:	06/13/2016 09:15	**Dilution:**	100	**File ID:**	T3.062316.144451
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	477		50.0	25.0	12.5
Sodium, Total	7440-23-5	373		100	50.0	25.0

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW24-061316	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 14:05
Collect Date:	06/13/2016 10:35	**Dilution:**	1	**File ID:**	T3.062316.140527
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.109	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	9.62		0.200	0.100	0.0500
Potassium, Total	7440-09-7	5.86		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW24-061316	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 14:48
Collect Date:	06/13/2016 10:35	**Dilution:**	100	**File ID:**	T3.062316.144849
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	431		50.0	25.0	12.5
Magnesium, Total	7439-95-4	265		100	50.0	25.0
Sodium, Total	7440-23-5	1090		100	50.0	25.0

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.1.2 QC Summary Data

Example 6010 Calculations
Thermo Scientific iCAP

1.0 Initial Calibration (ICAL) Parameters
For a multi-point calibration, the system performs linear regression from data consisting of a blank and four standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG572929
Analyst: AC
Spike Analyst: AC
Run Date: 06/16/2016 09:15
Method: 3015
Balance: BAL019
Instrument: MW-1
Instrument Start: 06/16/2016 09:15

SOP: ME407 Revison 19
Spike Solution: STD76576
Spike Witness: VC
HNO3 Lot #: COA18905
HCL Lot #: COA18769
ICP Filters- fisher-Lot# RGT35619
40 & 50 ML. DIGESTION TU COA18772

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG572929-02	BLANK	1	40 mL	50 mL	206.938 g	206.935 g		
2	WG572929-03	LCS	1	40 mL	50 mL	210.153 g	210.151 g	5 mL	
3	L16060643-01	SAMP	1	40 mL	50 mL	207.856 g	207.852 g		06/20/16
4	L16060643-02	SAMP	1	40 mL	50 mL	204.497 g	204.494 g		06/20/16
5	L16060643-03	SAMP	1	40 mL	50 mL	207.772 g	207.768 g		06/20/16
6	L16060643-04	SAMP	1	40 mL	50 mL	207.139 g	207.134 g		06/20/16
7	L16060643-05	SAMP	1	40 mL	50 mL	205.74 g	205.731 g		06/20/16
8	L16060643-06	SAMP	1	40 mL	50 mL	208.714 g	208.698 g		06/20/16
9	L16060643-07	SAMP	1	40 mL	50 mL	206.348 g	206.336 g		06/20/16
10	L16060643-08	SAMP	1	40 mL	50 mL	207.957 g	207.944 g		06/20/16
11	L16060643-09	SAMP	1	40 mL	50 mL	206.486 g	206.475 g		06/20/16
12	L16060650-01	SAMP	1	40 mL	50 mL	205.084 g	205.057 g		06/24/16
13	L16060650-02	SAMP	1	40 mL	50 mL	208.779 g	208.757 g		06/24/16
14	L16060650-03	SAMP	1	40 mL	50 mL	209.27 g	209.262 g		06/24/16
15	L16060650-08	SAMP	1	40 mL	50 mL	206.678 g	206.659 g		06/24/16
16	L16060729-01	SAMP	1	40 mL	50 mL	207.286 g	207.265 g		06/24/16
17	L16060729-02	SAMP	1	40 mL	50 mL	207.115 g	207.107 g		06/24/16
18	L16060729-03	SAMP	1	40 mL	50 mL	207.445 g	207.43 g		06/24/16
19	L16060730-01	SAMP	1	40 mL	50 mL	206.076 g	206.069 g		06/24/16
20	L16060730-02	SAMP	1	40 mL	50 mL	209.237 g	209.22 g		06/24/16
21	L16060730-03	SAMP	1	40 mL	50 mL	208.764 g	208.758 g		06/24/16
22	WG572929-01	REF	1	40 mL	50 mL	206.882 g	206.875 g		
23	L16060806-01	RS01	1	40 mL	50 mL	206.882 g	206.875 g		06/24/16
24	WG572929-04	MS	1	40 mL	50 mL	213.169 g	213.153 g	5 mL	
25	L16060806-03	MS01	1	40 mL	50 mL	213.169 g	213.153 g	5 mL	06/24/16
26	WG572929-05	MSD	1	40 mL	50 mL	215.158 g	215.146 g	5 mL	
27	L16060806-04	SD01	1	40 mL	50 mL	215.158 g	215.146 g	5 mL	06/24/16

L16060729-01	filtered digestate

Analyst: _____

Reviewer: _____

MW_DIG - Modified 09/30/2009
PDF ID: 4809573
Report generated: 06/16/2016 10:09

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062316T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573560,573561

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.062316.094745	WG573930-01	Calibration Point		1		06/23/16 09:47
2	T3.062316.095145	WG573930-02	Calibration Point		1		06/23/16 09:51
3	T3.062316.095544	WG573930-03	Calibration Point		1		06/23/16 09:55
4	T3.062316.095942	WG573930-04	Calibration Point		1		06/23/16 09:59
5	T3.062316.100322	WG573930-05	Calibration Point		1		06/23/16 10:03
6	T3.062316.100658	WG573930-06	Initial Calibration Verification		1		06/23/16 10:06
7	T3.062316.101036	WG573930-07	Initial Calib Blank		1		06/23/16 10:10
8	T3.062316.101434	WG573930-08	Low Level Initial Calibration V		1		06/23/16 10:14
9	T3.062316.101833	WG573930-09	Low Level Initial Calibration V		1		06/23/16 10:18
10	T3.062316.102228	WG573930-10	Interference Check		1		06/23/16 10:22
11	T3.062316.102622	WG573930-11	Interference Check		1		06/23/16 10:26
12	T3.062316.103007	WG573930-12	CCV		1		06/23/16 10:30
13	T3.062316.103346	WG573930-13	CCB		1		06/23/16 10:33
14	T3.062316.103746	WG572929-02	Method/Prep Blank	40/50	1		06/23/16 10:37
15	T3.062316.104808	WG572929-03	Laboratory Control S	40/50	1		06/23/16 10:48
16	T3.062316.105149	WG572929-01	Reference Sample		1	L16060806-01	06/23/16 10:51
17	T3.062316.105545	WG572929-04	Matrix Spike	40/50	1	L16060806-01	06/23/16 10:55
18	T3.062316.105925	WG572929-05	Matrix Spike Duplica	40/50	1	L16060806-01	06/23/16 10:59
19	T3.062316.110304	L16060643-01	15-13-8 S1	40/50	1		06/23/16 11:03
20	T3.062316.110701	WG573560-01	Post Digestion Spike		1	L16060643-01	06/23/16 11:07
21	T3.062316.111031	WG573560-02	Serial Dilution		5	L16060643-01	06/23/16 11:10
22	T3.062316.111429	WG573560-02	Serial Dilution		25	L16060643-01	06/23/16 11:14
23	T3.062316.111829	WG573930-14	CCV		1		06/23/16 11:18
24	T3.062316.112207	WG573930-15	CCB		1		06/23/16 11:22
25	T3.062316.112606	L16060643-02	15-13-8 S2	40/50	1		06/23/16 11:26
26	T3.062316.113003	L16060643-03	15-13-8 S3	40/50	1		06/23/16 11:30
27	T3.062316.113358	L16060643-04	15-11-1 S1	40/50	1		06/23/16 11:33
28	T3.062316.113754	L16060643-05	2208-118 W2	40/50	1		06/23/16 11:37
29	T3.062316.114150	L16060643-06	2208-118 W1	40/50	1		06/23/16 11:41
30	T3.062316.114545	L16060643-07	2208-118 S1	40/50	1		06/23/16 11:45
31	T3.062316.114943	L16060643-08	2208-118 S2	40/50	1		06/23/16 11:49
32	T3.062316.115338	L16060643-09	2208-118 S3	40/50	1		06/23/16 11:53
33	T3.062316.115734	L16060650-01	MW1-061016	40/50	1		06/23/16 11:57
34	T3.062316.120126	L16060650-02	MW3-061016	40/50	1		06/23/16 12:01

Page: 1 Approved: June 24, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062316T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573560,573561

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.062316.120521	WG573930-16	CCV		1		06/23/16 12:05
36	T3.062316.120859	WG573930-17	CCB		1		06/23/16 12:08
37	T3.062316.121258	L16060650-03	17WW08-061016	40/50	1		06/23/16 12:12
38	T3.062316.121653	L16060650-08	18WW24F-061016	40/50	1		06/23/16 12:16
39	T3.062316.122048	WG573930-18	CCV		1		06/23/16 12:20
40	T3.062316.122427	WG573930-19	CCB		1		06/23/16 12:24
41	T3.062316.122826	WG573102-02	Method/Prep Blank	40/50	1		06/23/16 12:28
42	T3.062316.123225	WG573102-03	Laboratory Control S	40/50	1		06/23/16 12:32
43	T3.062316.123606	WG573102-04	Filter Blank		1		06/23/16 12:36
44	T3.062316.124005	WG573102-01	Reference Sample		1	L16060787-09	06/23/16 12:40
45	T3.062316.124400	WG573102-05	Matrix Spike	40/50	1	L16060787-09	06/23/16 12:44
46	T3.062316.124740	WG573102-06	Matrix Spike Duplica	40/50	1	L16060787-09	06/23/16 12:47
47	T3.062316.125119	L16060947-02	\#2 (EAST END)	40/50	1		06/23/16 12:51
48	T3.062316.125512	WG573561-01	Post Digestion Spike		1	L16060947-02	06/23/16 12:55
49	T3.062316.125851	WG573561-02	Serial Dilution		5	L16060947-02	06/23/16 12:58
50	T3.062316.130248	WG573561-02	Serial Dilution		25	L16060947-02	06/23/16 13:02
51	T3.062316.130647	WG573930-20	CCV		1		06/23/16 13:06
52	T3.062316.131025	WG573930-21	CCB		1		06/23/16 13:10
53	T3.062316.131425	L16060947-05	\#5 (WEST END)	40/50	1		06/23/16 13:14
54	T3.062316.131818	L16060947-08	\#8 (RAILROAD CULVERT)	40/50	1		06/23/16 13:18
55	T3.062316.132213	L16060763-01	WVOG	40/50	100		06/23/16 13:22
56	T3.062316.132618	L16060837-02	INS-WL01-061316	40/50	1		06/23/16 13:26
57	T3.062316.133005	L16060857-01	2204-129A RW2 (B)	40/50	1		06/23/16 13:30
58	T3.062316.133402	L16060857-02	2204-129A RW2 (U)	40/50	1		06/23/16 13:34
59	T3.062316.133759	WG573930-22	CCV		1		06/23/16 13:37
60	T3.062316.134137	WG573930-23	CCB		1		06/23/16 13:41
61	T3.062316.134536	L16060729-01	A09-MW10-Y1S2	40/50	1		06/23/16 13:45
62	T3.062316.134934	L16060729-02	A09-MW11-Y1S2	40/50	1		06/23/16 13:49
63	T3.062316.135331	L16060729-03	A09-MW12-Y1S2	40/50	1		06/23/16 13:53
64	T3.062316.135724	L16060730-01	18CPTMW14-061316	40/50	1		06/23/16 13:57
65	T3.062316.140125	L16060730-02	18CPTMW14FD-061316	40/50	1		06/23/16 14:01
66	T3.062316.140527	L16060730-03	18CPTMW24-061316	40/50	1		06/23/16 14:05
67	T3.062316.140930	L16060650-01	MW1-061016	40/50	10		06/23/16 14:09
68	T3.062316.141326	L16060650-02	MW3-061016	40/50	10		06/23/16 14:13

Page: 2 Approved: June 24, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062316T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573560,573561

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.062316.141723	L16060650-03	17WW08-061016	40/50	10		06/23/16 14:17
70	T3.062316.142120	L16060650-08	18WW24F-061016	40/50	10		06/23/16 14:21
71	T3.062316.142518	WG573930-24	CCV		1		06/23/16 14:25
72	T3.062316.142857	WG573930-25	CCB		1		06/23/16 14:28
73	T3.062316.143257	L16060729-01	A09-MW10-Y1S2	40/50	10		06/23/16 14:32
74	T3.062316.143655	L16060729-03	A09-MW12-Y1S2	40/50	10		06/23/16 14:36
75	T3.062316.144053	L16060730-01	18CPTMW14-061316	40/50	100		06/23/16 14:40
76	T3.062316.144451	L16060730-02	18CPTMW14FD-061316	40/50	100		06/23/16 14:44
77	T3.062316.144849	L16060730-03	18CPTMW24-061316	40/50	100		06/23/16 14:48
78	T3.062316.145248	L16060798-06	N. DOCK FLUME	1/50	1		06/23/16 14:52
79	T3.062316.145646	L16060837-02	INS-WL01-061316	40/50	1		06/23/16 14:56
80	T3.062316.150032	L16060763-01	WVOG	40/50	2000		06/23/16 15:00
81	T3.062316.150429	WG573930-26	CCV		1		06/23/16 15:04
82	T3.062316.150809	WG573930-27	CCB		1		06/23/16 15:08
83	T3.062316.151209	WG573930-28	Low Level Continuing Calibra		1		06/23/16 15:12
84	T3.062316.151607	L16060724-01	ABW_06142016	40/50	100		06/23/16 15:16
85	T3.062316.152011	L16060762-01	MW-24-001	40/50	1		06/23/16 15:20
86	T3.062316.152407	L16060779-18	477-TS02-W0001	40/50	1		06/23/16 15:24
87	T3.062316.152807	L16060787-01	EB04	40/50	1		06/23/16 15:28
88	T3.062316.153205	L16060787-10	U517TW006C	40/50	1		06/23/16 15:32
89	T3.062316.153601	L16060724-02	ABW_06142016	40/50	100		06/23/16 15:36
90	T3.062316.154005	L16060787-18	U517TW008A	40/50	1		06/23/16 15:40
91	T3.062316.154401	L16060787-19	EB05	40/50	1		06/23/16 15:44
92	T3.062316.154800	L16060798-02	PERMEATE	1/50	1		06/23/16 15:48
93	T3.062316.155157	L16060798-04	BLEED	1/50	2		06/23/16 15:51
94	T3.062316.155553	WG573930-29	CCV		1		06/23/16 15:55
95	T3.062316.155920	WG573930-30	CCB		1		06/23/16 15:59
96	T3.062316.160319	WG573930-31	Interference Check		1		06/23/16 16:03
97	T3.062316.160713	WG573930-32	Interference Check		1		06/23/16 16:07
98	T3.062316.161057	WG573930-33	CCV		1		06/23/16 16:10
99	T3.062316.161435	WG573930-34	CCB		1		06/23/16 16:14
100	T3.062316.162045	WG573930-35	Low Level Continuing Calibra		1		06/23/16 16:20

Page: 3 Approved: June 24, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 23-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 573930
Runlog ID: 75880
Analytical Workgroups: 573560,573561

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	806,762,837
Level 4	650,729,730.779,787
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer:

Secondary Reviewer:
24-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-24-2016 11:23:59

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010C

AAB#: WG573560

Login Number: L16060730

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW14-061316	01	06/13/16					06/16/2016	3	180		06/23/16	10.2	180	
18CPTMW14-061316	01	06/13/16					06/16/2016	3	180		06/23/16	10.2	180	
18CPTMW14FD-061316	02	06/13/16					06/16/2016	3	180		06/23/16	10.2	180	
18CPTMW14FD-061316	02	06/13/16					06/16/2016	3	180		06/23/16	10.2	180	
18CPTMW24-061316	03	06/13/16					06/16/2016	2.9	180		06/23/16	10.2	180	
18CPTMW24-061316	03	06/13/16					06/16/2016	2.9	180		06/23/16	10.1	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4822211
Report generated 06/24/2016 09:04

METHOD BLANK SUMMARY

Login Number: L16060730
Blank File ID: T3.062316.103746
Prep Date: 06/16/16 09:15
Analyzed Date: 06/23/16 10:37
Analyst: JYH

Work Group: WG573560
Blank Sample ID: WG572929-02
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572929-03	T3.062316.104808	06/23/16 10:48	01
18CPTMW14-061316	L16060730-01	T3.062316.135724	06/23/16 13:57	01
18CPTMW14FD-061316	L16060730-02	T3.062316.140125	06/23/16 14:01	01
18CPTMW24-061316	L16060730-03	T3.062316.140527	06/23/16 14:05	01
18CPTMW14-061316	L16060730-01	T3.062316.144053	06/23/16 14:40	DL01
18CPTMW14FD-061316	L16060730-02	T3.062316.144451	06/23/16 14:44	DL01
18CPTMW24-061316	L16060730-03	T3.062316.144849	06/23/16 14:48	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4822212
Report generated 06/24/2016 09:16

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060730 Prep Date: 06/16/16 09:15 Sample ID: WG572929-02
Instrument ID: ICP-THERMO3 Run Date: 06/23/16 10:37 Prep Method: 3015
File ID: T3.062316.103746 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG573560 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-23-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Aluminum, Total	0.0500	0.200	0.0500	1	U
Beryllium, Total	0.00500	0.0200	0.00500	1	U
Calcium, Total	0.125	0.500	0.125	1	U
Iron, Total	0.0500	0.200	0.0500	1	U
Magnesium, Total	0.250	1.00	0.250	1	U
Potassium, Total	0.500	2.00	0.500	1	U
Selenium, Total	0.00500	0.0200	0.00500	1	U
Sodium, Total	0.250	1.00	0.250	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4822213
24-JUN-2016 09:16

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060730 Run Date: 06/23/2016 Sample ID: WG572929-03
Instrument ID: ICP-THERMO3 Run Time: 10:48 Prep Method: 3015
File ID: T3.062316.104808 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG573560 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76576 Cal ID: ICP-TH-23-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Aluminum, Total	6.25	6.69	107	80 - 120	
Beryllium, Total	0.0313	0.0330	106	80 - 120	
Calcium, Total	6.25	6.88	110	80 - 120	
Iron, Total	2.50	2.70	108	80 - 120	
Magnesium, Total	6.25	6.70	107	80 - 120	
Potassium, Total	31.3	33.3	107	80 - 120	
Selenium, Total	0.250	0.256	102	80 - 120	
Sodium, Total	31.3	33.9	108	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4822214
Report generated: 06/24/2016 09:16

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060730 Cal ID: ICP-THERMO3 - Worknum: WG573560
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG572929-01 File ID: T3.062316.105149 Dil: 1 Matrix: WATER
Sample ID: WG572929-04 MS File ID: T3.062316.105545 Dil: 1 Units: mg/L
Sample ID: WG572929-05 MSD File ID: T3.062316.105925 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Aluminum	0.0598	6.25	6.57	104	6.25	6.63	105	0.820	80 - 120	20	
Beryllium	ND	0.0313	0.0323	103	0.0313	0.0327	104	1.04	80 - 120	20	
Calcium	53.8	6.25	58.6	77.4	6.25	59.6	93.0	1.65	80 - 120	20	*
Iron	0.504	2.50	3.14	106	2.50	3.29	112	4.66	80 - 120	20	
Magnesium	9.46	6.25	16.0	105	6.25	15.9	103	0.721	80 - 120	20	
Potassium	3.10	31.3	35.9	105	31.3	36.1	106	0.475	80 - 120	20	
Selenium	ND	0.250	0.254	102	0.250	0.246	98.4	3.13	80 - 120	20	
Sodium	11.0	31.3	44.0	106	31.3	43.1	103	1.97	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4822215
Report generated 06/24/2016 09:16

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16060730 **Worknum:** WG573560
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG573560-02 **File ID:** T3.062316.111031 **Dil:** 5 **Units:** ug/L
Sample: L16060643-01 **File ID:** T3.062316.110304 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	66.2		90.5		36.80	E
Beryllium	ND	U	ND	U		
Calcium	38300		35600		6.95	
Iron	55.1		ND	U		
Magnesium	6970		6480		7.03	
Potassium	822		881		7.15	
Selenium	0.460		33.6		7200.00	E
Sodium	5220		5030		3.52	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4822209
06/24/2016 09:16

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060730 **Worknum:** WG573560
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG573560-01 **File ID:** T3.062316.110701 **Dil:** 1 **Units:** ug/L
Sample ID: L16060643-01 **File ID:** T3.062316.110304 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	5350		66.2	F	5000	105.8	75 - 125	
BERYLLIUM	26.1		0	U	25	104.2	75 - 125	
CALCIUM	39500		38300		5000	100.0	75 - 125	
IRON	2170		55.1	F	2000	106.2	75 - 125	
MAGNESIUM	11700		6970		5000	107.6	75 - 125	
POTASSIUM	27200		822	F	25000	106.0	75 - 125	
SELENIUM	205		0	U	200	102.4	75 - 125	
SODIUM	31300		5220		25000	106.5	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4822210
Report generated: 06/24/2016 09:16

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16060730	Workgroup (AAB#):	WG573560
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG573930	Initial Calibration Date:	23-JUN-2016 10:03

	WG573930-01		WG573930-02		WG573930-03		WG573930-04		WG573930-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.00118	.1	0.00193	.2	0.00268	10	0.0882	20	0.173	.999945	
BERYLLIUM	0	0.000880	.0005	0.00136	.001	0.00170	.05	0.0518	.1	0.101	.999922	
CALCIUM	0	0.00189	.1	0.00547	.2	0.00991	10	0.469	20	0.927	.999971	
IRON	0	-0.0000300	.04	0.000460	.08	0.00112	4	0.0936	8	0.185	.999683	
MAGNESIUM	0	-0.000540	NA	NA	.2	0.000940	10	0.0909	20	0.178	.99993	
POTASSIUM	0	-0.0110	.5	0.0234	1	0.0462	50	3.24	100	6.39	.999797	
SELENIUM	0	-0.000340	NA	NA	.008	-0.000260	.4	0.00638	.8	0.0127	.999812	
SODIUM	0	-0.0674	.5	0.00897	1	0.0787	50	8.98	100	17.7	.999966	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4822218
Report generated: 24-JUN-2016 09:04

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573930-07
Instrument ID: ICP-THERMO3
Run Time: 10:10
Method: 6010C
File ID: T3.062316.101036
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573560
Cal ID: ICP-THERI - 23-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	.004	U
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4822220
Report generated 06/24/2016 09:04

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573930-13
Instrument ID: ICP-THERMO3
Run Time: 10:33
Method: 6010C
File ID: T3.062316.103346
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822223
Report generated 06/24/2016 09:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573930-15
Instrument ID: ICP-THERMO3
Run Time: 11:22
Method: 6010C
File ID: T3.062316.112207
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822223
Report generated 06/24/2016 09:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573930-23
Instrument ID: ICP-THERMO3
Run Time: 13:41
Method: 6010C
File ID: T3.062316.134137
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822223
Report generated 06/24/2016 09:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573930-25
Instrument ID: ICP-THERMO3
Run Time: 14:28
Method: 6010C
File ID: T3.062316.142857
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00482	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822223
Report generated 06/24/2016 09:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573930-27
Instrument ID: ICP-THERMO3
Run Time: 15:08
Method: 6010C
File ID: T3.062316.150809
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00960	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822223
Report generated 06/24/2016 09:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573930-30
Instrument ID: ICP-THERMO3
Run Time: 15:59
Method: 6010C
File ID: T3.062316.155920
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822223
Report generated 06/24/2016 09:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573930-34
Instrument ID: ICP-THERMO3
Run Time: 16:14
Method: 6010C
File ID: T3.062316.161435
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0440	F
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	-0.00590	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822223
Report generated 06/24/2016 09:05

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573930-06
Instrument ID: ICP-THERMO3
Run Time: 10:06
Method: 6010C
File ID: T3.062316.100658
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	10.1	101	90 - 110	
Beryllium		.05	0.0506	101	90 - 110	
Calcium		10	10.1	101	90 - 110	
Iron		4	4.02	100	90 - 110	
Magnesium		10	10.0	100	90 - 110	
Potassium		50	50.3	101	90 - 110	
Selenium		.4	0.401	100	90 - 110	
Sodium		50	50.2	100	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4822219
Report generated 06/24/2016 09:04

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573930-12
Instrument ID: ICP-THERMO3
Run Time: 10:30
Method: 6010C
File ID: T3.062316.103007
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.0	mg/L	100	90 - 110		
Beryllium		0.0500	0.0499	mg/L	99.7	90 - 110		
Calcium		10.0	10.1	mg/L	101	90 - 110		
Iron		4.00	4.06	mg/L	101	90 - 110		
Magnesium		10.0	9.95	mg/L	99.5	90 - 110		
Potassium		50.0	50.4	mg/L	101	90 - 110		
Selenium		0.400	0.406	mg/L	101	90 - 110		
Sodium		50.0	50.4	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822222
Report generated 06/24/2016 09:04

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573930-14
Instrument ID: ICP-THERMO3
Run Time: 11:18
Method: 6010C
File ID: T3.062316.111829
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.0	mg/L	100	90 - 110		
Beryllium		0.0500	0.0501	mg/L	100	90 - 110		
Calcium		10.0	10.0	mg/L	100	90 - 110		
Iron		4.00	4.02	mg/L	100	90 - 110		
Magnesium		10.0	9.96	mg/L	99.6	90 - 110		
Potassium		50.0	50.3	mg/L	101	90 - 110		
Selenium		0.400	0.404	mg/L	101	90 - 110		
Sodium		50.0	50.3	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822222
Report generated 06/24/2016 09:04

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573930-22
Instrument ID: ICP-THERMO3
Run Time: 13:37
Method: 6010C
File ID: T3.062316.133759
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.8	mg/L	108	90 - 110		
Beryllium		0.0500	0.0531	mg/L	106	90 - 110		
Calcium		10.0	10.7	mg/L	107	90 - 110		
Iron		4.00	4.33	mg/L	108	90 - 110		
Magnesium		10.0	10.7	mg/L	107	90 - 110		
Potassium		50.0	54.0	mg/L	108	90 - 110		
Selenium		0.400	0.431	mg/L	108	90 - 110		
Sodium		50.0	54.3	mg/L	109	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822222
Report generated 06/24/2016 09:04

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573930-24
Instrument ID: ICP-THERMO3
Run Time: 14:25
Method: 6010C
File ID: T3.062316.142518
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.3	mg/L	103	90 - 110		
Beryllium		0.0500	0.0508	mg/L	102	90 - 110		
Calcium		10.0	10.2	mg/L	102	90 - 110		
Iron		4.00	4.15	mg/L	104	90 - 110		
Magnesium		10.0	10.4	mg/L	104	90 - 110		
Potassium		50.0	51.8	mg/L	104	90 - 110		
Selenium		0.400	0.408	mg/L	102	90 - 110		
Sodium		50.0	52.0	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822222
Report generated 06/24/2016 09:04

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573930-26
Instrument ID: ICP-THERMO3
Run Time: 15:04
Method: 6010C
File ID: T3.062316.150429
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.2	mg/L	102	90 - 110		
Beryllium		0.0500	0.0507	mg/L	101	90 - 110		
Calcium		10.0	10.1	mg/L	101	90 - 110		
Iron		4.00	4.12	mg/L	103	90 - 110		
Magnesium		10.0	10.1	mg/L	101	90 - 110		
Potassium		50.0	51.1	mg/L	102	90 - 110		
Selenium		0.400	0.418	mg/L	104	90 - 110		
Sodium		50.0	51.2	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822222
Report generated 06/24/2016 09:04

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573930-29
Instrument ID: ICP-THERMO3
Run Time: 15:55
Method: 6010C
File ID: T3.062316.155553
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.3	mg/L	103	90 - 110		
Beryllium		0.0500	0.0508	mg/L	102	90 - 110		
Calcium		10.0	10.2	mg/L	102	90 - 110		
Iron		4.00	4.08	mg/L	102	90 - 110		
Magnesium		10.0	10.2	mg/L	102	90 - 110		
Potassium		50.0	51.4	mg/L	103	90 - 110		
Selenium		0.400	0.399	mg/L	99.7	90 - 110		
Sodium		50.0	51.6	mg/L	103	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822222
Report generated 06/24/2016 09:04

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573930-33
Instrument ID: ICP-THERMO3
Run Time: 16:10
Method: 6010C
File ID: T3.062316.161057
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.5	mg/L	105	90 - 110		
Beryllium		0.0500	0.0509	mg/L	102	90 - 110		
Calcium		10.0	10.4	mg/L	104	90 - 110		
Iron		4.00	4.26	mg/L	106	90 - 110		
Magnesium		10.0	10.6	mg/L	106	90 - 110		
Potassium		50.0	51.6	mg/L	103	90 - 110		
Selenium		0.400	0.416	mg/L	104	90 - 110		
Sodium		50.0	52.1	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822222
Report generated 06/24/2016 09:04

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573930-08
Instrument ID: ICP-THERMO3
Run Time: 10:14
Method: 6010C
File ID: T3.062316.101434
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.167	mg/L	104	70 - 130		
Beryllium		0.00160	0.00152	mg/L	95.0	70 - 130		
Calcium		0.400	0.381	mg/L	95.2	70 - 130		
Iron		0.0800	0.0709	mg/L	88.6	70 - 130		
Magnesium		0.400	0.366	mg/L	91.5	70 - 130		
Selenium		0.0160	0.0185	mg/L	115	70 - 130		
Sodium		0.400	0.457	mg/L	114	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4822224
Report generated 06/24/2016 09:16

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573930-28
Instrument ID: ICP-THERMO3
Run Time: 15:12
Method: 6010C
File ID: T3.062316.151209
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.191	mg/L	119	70 - 130		
Beryllium		0.00160	0.00164	mg/L	103	70 - 130		
Calcium		0.400	0.374	mg/L	93.5	70 - 130		
Iron		0.0800	0.0850	mg/L	106	70 - 130		
Magnesium		0.400	0.426	mg/L	106	70 - 130		
Potassium		0.800	0.951	mg/L	119	70 - 130		
Selenium		0.0160	0.0211	mg/L	132	70 - 130		*
Sodium		0.400	0.505	mg/L	126	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4822224
Report generated 06/24/2016 09:16

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060730
Instrument ID: ICP-THERMO3
Sol. A : WG573930-10 **File ID:** T3.062316.102228
Sol. AB : WG573930-11 **File ID:** T3.062316.102622

Workgroup (AAB#): WG573560
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	271	108	250	261	104	
Beryllium	NS	-0.0000600	NS	0.250	0.239	95.6	
Calcium	250	260	104	250	250	100	
Iron	100	102	102	100	97.3	97.3	
Magnesium	250	257	103	250	245	98.0	
Potassium	NS	0.0710	NS	5.00	5.20	104	
Selenium	NS	0.00407	NS	0.250	0.253	101	
Sodium	NS	0.00909	NS	5.00	5.24	105	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4822221
Report generated 06/24/2016 09:04

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060730
Instrument ID: ICP-THERMO3
Sol. A : WG573930-31 **File ID:** T3.062316.160319
Sol. AB : WG573930-32 **File ID:** T3.062316.160713

Workgroup (AAB#): WG573560
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	296	118	250	296	118	
Beryllium	NS	0.000100	NS	0.250	0.272	109	
Calcium	250	274	110	250	276	110	
Iron	100	110	110	100	108	108	
Magnesium	250	276	110	250	272	109	
Potassium	NS	0.0525	NS	5.00	5.80	116	
Selenium	NS	0.00521	NS	0.250	0.281	112	
Sodium	NS	0.128	NS	5.00	5.96	119	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4822221
Report generated 06/24/2016 09:04

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060730 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	AG	AL	AS	B	BA
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000410	0	0	0
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0.0115	0	-0.0000800
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0.000260	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	-0.000289	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	-0.0000490	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.0000120	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0.0000300	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4822217
Report generated: 06/24/2016 09:04

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060730 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	BE	CA	CD	CO	CR
ALUMINUM	308.20	0	0	0	-0.000820	0
ANTIMONY	206.80	0	0	0	0	0.0200
ARSENIC	189.00	0	0	0	0	-0.00190
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0.00343	0
CADMIUM	228.80	0	0	0	-0.00390	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	-0.000200
COPPER	224.70	0	0	0	0.0000770	-0.00100
IRON	261.10	0	0	0	0	-0.00100
LEAD	220.30	0	0	0	-0.0000130	-0.000132
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.0000500
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	-0.000860	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0.00000500	0	0	0
THALLIUM	190.80	0	0	0	0.00240	0.000276
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	-0.00480
ZINC	206.20	0	0	0	0	-0.00180
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4822217
Report generated: 06/24/2016 09:04

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060730 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	CU	FE	K	LI	MG
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000560	0	0	0
ARSENIC	189.00	0	-0.0000500	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0.000300	0	0	0
CADMIUM	228.80	0	-0.0000190	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000500	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0.00160	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0.000609	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.00000300
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0.0000420	0	0	0
PHOSPHORUS	214.90	-0.323	0.000900	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000270	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000400	0	0	0
VANADIUM	292.40	0	0.00000700	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	-0.0000300	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4822217
Report generated: 06/24/2016 09:04

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060730 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	MN	MO	NA	NI	P
ALUMINUM	308.20	0	0.0163	0	0	0
ANTIMONY	206.80	0	-0.00310	0	-0.00350	0
ARSENIC	189.00	0	0.00120	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	-0.00190	0	0	0
CADMIUM	228.80	0	0.0000320	0	-0.000770	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0.000360	0	0	0	0
COBALT	228.60	0	-0.00200	0	0.000100	0
COPPER	224.70	0	0.00160	0	-0.0123	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	-0.00210	0	0.000110	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	-0.00290	-0.0230	0	0	0
MANGANESE	257.60	0	0.0000300	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0.00710	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0.000600	0.000580	0	0	0
SILICON	212.40	0	0.0187	0	0	0
SILVER	328.00	0	-0.0000430	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0.00100	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000153	0	0	0
VANADIUM	292.40	-0.000200	-0.00830	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060730 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	PB	SB	SE	SI	SN
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0	0	0	-0.0220
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0.00440	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060730 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	SR	TI	TL	V	ZN
ALUMINUM	308.20	0	0	0	0.0950	0
ANTIMONY	206.80	0	0.00110	0	-0.00360	0
ARSENIC	189.00	0	0	0	0.000107	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	-0.00000700	0	0.000990	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0.000102	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000550	0	0	0
COBALT	228.60	0	0.00210	0	0.0000200	0
COPPER	224.70	0	0.000269	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	-0.000126	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	-0.00290	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	-0.000110	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	-0.00100	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000720	0	-0.000260	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.000800	0	-0.00490	0
TIN	189.90	0	-0.00190	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0.000820	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4822217
Report generated: 06/24/2016 09:04

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060730 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	ZR
ALUMINUM	308.20	0
ANTIMONY	206.80	0
ARSENIC	189.00	0
BARIUM	455.40	0
BERYLLIUM	313.10	0
BORON	249.60	0
CADMIUM	228.80	0
CALCIUM	422.60	0
CHROMIUM	267.70	0
COBALT	228.60	0
COPPER	224.70	0
IRON	261.10	0
LEAD	220.30	0
LITHIUM	670.70	0
MAGNESIUM	279.00	0
MANGANESE	257.60	0
MOLYBDENUM	202.00	0
NICKEL	231.60	0
PHOSPHORUS	214.90	0
POTASSIUM	766.40	0
SELENIUM	196.00	0
SILICON	212.40	0
SILVER	328.00	0
SODIUM	589.50	0
STRONTIUM	407.70	0
THALLIUM	190.80	0
TIN	189.90	0
TITANIUM	337.20	0
VANADIUM	292.40	0
ZINC	206.20	0
ZIRCONIUM	339.10	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4822217
Report generated: 06/24/2016 09:04

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16060730 **Date:** 04/29/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	900.0
Antimony	20.00	45.0
Arsenic	10.00	45.0
Barium	10.00	45.0
Beryllium	10.00	1.8
Boron	20.00	45.0
Cadmium	20.00	4.5
Calcium	5.00	270.0
Chromium	20.00	36.0
Cobalt	20.00	45.0
Copper	20.00	180.0
Iron	5.00	720.0
Lead	20.00	225.0
Lithium	5.00	36.0
Magnesium	5.00	900.0
Manganese	10.00	36.0
Molybdenum	20.00	27.0
Nickel	20.00	90.0
Phosphorus	20.00	180.0
Potassium	5.00	450.0
Selenium	20.00	90.0
Silicon	20.00	36.0
Silver	10.00	9.0
Sodium	5.00	270.0
Strontium	5.00	9.0
Thallium	20.00	18.0
Tin	20.00	45.0
Titanium	5.00	36.0
Vanadium	20.00	27.0
Zinc	20.00	45.0
Zirconium	10.00	45.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4822216
Report generated: 06/24/2016 09:04

2.3.1.3 Raw Data

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000327	0.050519	0.000000	1.000000
Al 308.215 {109}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.001184	0.008547	0.000000	1.000000
As 189.042 {478}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000022	0.024758	0.000000	1.000000
B 249.678 {135}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.000018	0.023238	0.000000	1.000000
Ba 455.403 { 74}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.027822	2.182359	0.000000	1.000000
Be 313.107 {108}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.000884	0.988895	0.000000	1.000000
Ca 422.673 { 80}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.001888	0.046400	0.000000	1.000000
Cd 228.802 {447}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000259	0.601556	0.000000	1.000000
Co 228.616 {447}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000232	0.375758	0.000000	1.000000
Cr 267.716 {126}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.000258	0.061893	0.000000	1.000000
Cu 224.700 {450}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000097	0.130708	0.000000	1.000000
Fe 261.187 {129}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000026	0.023142	0.000000	1.000000
K 766.490 { 44}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.010983	0.064443	0.000000	1.000000
Li 670.784 { 50}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.012386	1.550598	0.000000	1.000000
Mg 279.079 {121}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000540	0.009018	0.000000	1.000000
Mn 257.610 {131}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.000084	0.292837	0.000000	1.000000
Mo 202.030 {467}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000041	0.187450	0.000000	1.000000
Na 589.592 { 57}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.067361	0.179038	0.000000	1.000000
Ni 231.604 {446}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000824	0.142104	0.000000	1.000000
P 214.914 {457}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000276	0.013786	0.000000	1.000000
Pb 220.353 {453}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000879	0.064979	0.000000	1.000000
Sb 206.833 {463}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.000126	0.031435	0.000000	1.000000
Se 196.090 {472}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000341	0.016453	0.000000	1.000000
Si 212.412 {459}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.001289	0.040464	0.000000	1.000000
Sn 189.989 {477}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.000003	0.072384	0.000000	1.000000
Sr 407.771 { 83}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.002752	3.677062	0.000000	1.000000
Ti 337.280 {100}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.004029	0.126515	0.000000	1.000000
Tl 190.856 {477}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000471	0.029978	0.000000	1.000000
V 292.402 {115}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.000027	0.073239	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.000283	0.432003	0.000000	1.000000
Zr 339.198 { 99}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.017932	0.006978	0.000000	1.000000

Approved: June 24, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.998445	0.000007	0.003073	0.010242	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999945	0.000006	0.012393	0.041310	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999934	0.000001	0.004231	0.014103	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999002	0.000005	0.003935	0.013116	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999924	0.000171	0.001407	0.004691	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999922	0.000004	0.000127	0.000425	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999971	0.000022	0.054850	0.182833	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.998853	0.000010	0.000352	0.001173	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999920	0.000006	0.000541	0.001803	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999763	0.000004	0.001598	0.005328	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999857	0.000007	0.001832	0.006106	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999683	0.000015	0.029884	0.099612	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999797	0.000412	0.125648	0.418826	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999917	0.000196	0.005174	0.017246	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999930	0.000010	0.103664	0.345547	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999861	0.000015	0.003328	0.011094	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999976	0.000008	0.000575	0.001918	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999966	0.000467	0.041906	0.139686	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999837	0.000008	0.001517	0.005055	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999993	0.000003	0.009729	0.032429	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999313	0.000008	0.004814	0.016047	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999370	0.000008	0.005878	0.019595	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999812	0.000001	0.009227	0.030755	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999941	0.000014	0.003128	0.010426	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999956	0.000004	0.001186	0.003953	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999941	0.000254	0.000576	0.001919	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999409	0.000028	0.009099	0.030331	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999772	0.000003	0.004130	0.013767	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999945	0.000005	0.001306	0.004353	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999933	0.000032	0.000269	0.000895	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.532572	0.000070	0.349536	1.165120	OK.	1.000000	0.000000	1	0

Approved: June 24, 2016

Sample Name: S0 Acquired: 6/23/2016 9:47:45 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00033**	**.00118**	**-.00002**	**.00002**	**.02782**	**.00088**	**.00189**
Stddev	.00010	.00002	.00004	.00004	.00180	.00010	.00037
%RSD	30.084	1.4700	181.28	191.91	6.4574	11.181	19.686
#1	-.00044	.00117	-.00006	.00001	.02575	.00088	.00156
#2	-.00029	.00120	.00002	-.00001	.02884	.00079	.00229
#3	-.00025	.00118	-.00002	.00006	.02887	.00098	.00181

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00026**	**-.00023**	**.00026**	**-.00010**	**-.00003**	**-.01099**	**-.01238**
Stddev	.00008	.00017	.00006	.00021	.00051	.00547	.00240
%RSD	31.523	72.312	22.460	216.26	1964.6	49.768	19.397
#1	-.00035	-.00043	.00026	.00013	-.00053	-.01572	-.00962
#2	-.00018	-.00012	.00032	-.00028	-.00004	-.01227	-.01358
#3	-.00025	-.00015	.00020	-.00014	.00049	-.00500	-.01395

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00054**	**.00008**	**-.00004**	**-.06737**	**-.00082**	**-.00028**	**-.00088**
Stddev	.00016	.00103	.00002	.00237	.00014	.00005	.00011
%RSD	30.180	1239.0	43.179	3.5134	16.845	19.474	12.307
#1	-.00053	.00101	-.00002	-.06969	-.00098	-.00024	-.00080
#2	-.00038	-.00103	-.00005	-.06495	-.00077	-.00034	-.00084
#3	-.00071	.00027	-.00005	-.06746	-.00072	-.00025	-.00100

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00013**	**-.00034**	**.00129**	**.00000**	**.00275**	**-.00403**	**-.00047**
Stddev	.00009	.00012	.00012	.00007	.00094	.00048	.00005
%RSD	74.764	35.234	9.2690	2174.4	34.350	11.992	11.038
#1	.00002	-.00027	.00122	.00008	.00316	-.00353	-.00050
#2	.00021	-.00048	.00143	.00000	.00342	-.00407	-.00050
#3	.00014	-.00027	.00122	-.00007	.00167	-.00449	-.00041

Approved: June 24, 2016

Sample Name: S0 Acquired: 6/23/2016 9:47:45 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00003	.00028	-.01793
Stddev	.00001	.00000	.00048
%RSD	29.396	1.4571	2.6643
#1	.00003	.00028	-.01841
#2	.00002	.00029	-.01792
#3	.00003	.00028	-.01745
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7062.2	43492.	2217.3
Stddev	13.5	299.	17.6
%RSD	.19180	.68708	.79492
#1	7077.5	43152.	2210.9
#2	7057.6	43609.	2203.8
#3	7051.6	43714.	2237.3

Approved: June 24, 2016

Sample Name: S1 Acquired: 6/23/2016 9:51:45 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00007	.00193	.04472	.00136	.00547	.00005	.00043
Stddev	.00004	.00003	.00207	.00006	.00204	.00008	.00007
%RSD	56.524	1.3065	4.6190	4.0730	37.359	159.01	16.558
#1	-.00003	.00191	.04691	.00130	.00781	.00011	.00047
#2	-.00008	.00196	.04281	.00138	.00410	-.00004	.00046
#3	-.00011	.00193	.04443	.00141	.00449	.00009	.00034

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00059	.00032	.00046	.02342	.00155	.00151	.00897
Stddev	.00007	.00009	.00056	.00787	.00023	.00007	.00270
%RSD	11.404	26.424	121.46	33.618	14.624	4.5319	30.104
#1	.00058	.00023	.00096	.02094	.00129	.00152	.00901
#2	.00053	.00038	.00056	.01709	.00170	.00144	.01166
#3	.00066	.00037	-.00014	.03224	.00167	.00158	.00625

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00040	.00082	-.00049	.00022	.00287	.00063	.03432
Stddev	.00009	.00018	.00005	.00001	.00008	.00005	.00075
%RSD	22.758	21.588	10.902	6.3689	2.8319	7.2878	2.1904
#1	-.00029	.00077	-.00049	.00024	.00282	.00066	.03350
#2	-.00044	.00068	-.00043	.00023	.00283	.00065	.03448
#3	-.00046	.00102	-.00054	.00021	.00297	.00058	.03498

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00266	.00054	.00367	-.01945
Stddev	.00038	.00007	.00006	.00123
%RSD	14.429	13.089	1.5774	6.3329
#1	-.00239	.00061	.00371	-.01936
#2	-.00310	.00055	.00360	-.01826
#3	-.00250	.00047	.00369	-.02072

Approved: June 24, 2016

Sample Name: S1 Acquired: 6/23/2016 9:51:45 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7054.0**	**43388.**	**2199.2**
Stddev	62.0	91.	19.7
%RSD	.87863	.20992	.89612
#1	6984.1	43368.	2196.9
#2	7102.3	43308.	2180.7
#3	7075.6	43487.	2219.9

Approved: June 24, 2016

Sample Name: S2 Acquired: 6/23/2016 9:55:44 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00012	.00268	.00011	.00031	.06640	.00170	.00991
Stddev	.00004	.00003	.00010	.00004	.00183	.00007	.00177
%RSD	36.212	1.1391	90.972	12.373	2.7523	3.8893	17.859
#1	.00016	.00268	.00007	.00036	.06434	.00170	.01185
#2	.00007	.00271	.00023	.00029	.06706	.00164	.00838
#3	.00014	.00265	.00004	.00029	.06781	.00177	.00951

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00059	.00085	.00081	.00087	.00112	.04623	.01110
Stddev	.00016	.00020	.00005	.00008	.00089	.00284	.00869
%RSD	27.552	23.577	6.6457	8.7488	79.065	6.1346	78.236
#1	.00064	.00098	.00079	.00091	.00182	.04508	.01496
#2	.00040	.00096	.00078	.00078	.00142	.04946	.00116
#3	.00071	.00062	.00088	.00092	.00012	.04415	.01719

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00094	.00246	.00297	.07870	.00040	.00192	-.00019
Stddev	.00041	.00089	.00002	.00483	.00006	.00008	.00022
%RSD	43.863	36.036	.64370	6.1334	16.212	4.2436	118.69
#1	.00052	.00149	.00298	.07468	.00045	.00184	.00001
#2	.00095	.00264	.00298	.08405	.00032	.00200	-.00014
#3	.00134	.00324	.00295	.07737	.00042	.00192	-.00043

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00066	-.00026	.00459	.00125	.06450	-.00121	-.00029
Stddev	.00013	.00008	.00004	.00004	.00129	.00119	.00010
%RSD	19.457	29.683	.78499	3.1517	1.9941	98.413	34.606
#1	.00051	-.00017	.00462	.00123	.06318	-.00004	-.00021
#2	.00075	-.00030	.00455	.00130	.06457	-.00241	-.00026
#3	.00071	-.00030	.00459	.00123	.06575	-.00117	-.00040

Approved: June 24, 2016

Sample Name: S2 Acquired: 6/23/2016 9:55:44 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00118	.00728	-.01880
Stddev	.00006	.00002	.00401
%RSD	5.2111	.25538	21.324
#1	.00123	.00729	-.01658
#2	.00119	.00729	-.01639
#3	.00111	.00726	-.02343
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7107.4	43682.	2201.4
Stddev	34.8	155.	7.4
%RSD	.49001	.35466	.33601
#1	7078.9	43832.	2207.7
#2	7097.0	43694.	2193.3
#3	7146.2	43522.	2203.3

Approved: June 24, 2016

Sample Name: S3 Acquired: 6/23/2016 9:59:42 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.02081	.08821	.00989	.01171	2.2386	.05183	.46857
Stddev	.00017	.00024	.00010	.00001	.0026	.00010	.00097
%RSD	.83671	.27202	1.0425	.08059	.11782	.19029	.20689
#1	.02061	.08793	.00989	.01171	2.2374	.05180	.46784
#2	.02091	.08835	.00979	.01170	2.2369	.05194	.46820
#3	.02092	.08834	.01000	.01171	2.2417	.05175	.46967

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.03287	.07581	.03164	.06652	.09364	3.2368	1.5657
Stddev	.00024	.00015	.00015	.00023	.00074	.0078	.0054
%RSD	.72813	.20127	.46858	.35008	.78498	.23962	.34576
#1	.03272	.07591	.03147	.06677	.09289	3.2281	1.5662
#2	.03276	.07563	.03172	.06647	.09367	3.2431	1.5600
#3	.03315	.07588	.03173	.06631	.09436	3.2393	1.5708

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.09086	.14859	.18912	8.9754	.07142	.13612	.03223
Stddev	.00042	.00056	.00056	.0162	.00020	.00025	.00019
%RSD	.46733	.37813	.29665	.18036	.28541	.18100	.60348
#1	.09126	.14905	.18974	8.9567	.07119	.13585	.03240
#2	.09042	.14875	.18898	8.9850	.07154	.13616	.03226
#3	.09090	.14797	.18865	8.9845	.07154	.13634	.03202

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.03750	.00638	.20745	.07283	3.7282	.12240	.01360
Stddev	.00016	.00015	.00035	.00003	.0056	.00020	.00017
%RSD	.41622	2.3451	.16934	.03924	.14969	.16109	1.2349
#1	.03757	.00651	.20734	.07280	3.7223	.12235	.01340
#2	.03761	.00641	.20784	.07286	3.7289	.12224	.01369
#3	.03732	.00621	.20717	.07284	3.7334	.12262	.01370

Approved: June 24, 2016

Sample Name: S3 Acquired: 6/23/2016 9:59:42 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.07398	.43911	-.01037
Stddev	.00019	.00017	.00164
%RSD	.25546	.03885	15.815
#1	.07379	.43894	-.01027
#2	.07416	.43911	-.01205
#3	.07399	.43928	-.00878
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7072.0	43259.	2224.1
Stddev	14.8	398.	27.4
%RSD	.20991	.91929	1.2319
#1	7082.8	43351.	2233.7
#2	7055.1	43603.	2193.1
#3	7078.2	42824.	2245.4

Approved: June 24, 2016

Sample Name: S4 Acquired: 6/23/2016 10:03:22 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.03877	.17265	.01961	.02296	4.3610	.10110	.92672
Stddev	.00008	.00014	.00002	.00010	.0067	.00020	.00216
%RSD	.20818	.08155	.08575	.43952	.15282	.19359	.23349
#1	.03869	.17274	.01961	.02300	4.3606	.10112	.92440
#2	.03885	.17273	.01960	.02304	4.3545	.10128	.92708
#3	.03877	.17249	.01963	.02285	4.3678	.10089	.92868

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.06477	.14887	.06165	.12967	.18456	6.3934	3.0627
Stddev	.00016	.00033	.00010	.00044	.00066	.0064	.0061
%RSD	.25220	.22294	.15869	.33572	.35572	.09992	.20036
#1	.06467	.14868	.06175	.12936	.18461	6.3967	3.0674
#2	.06468	.14925	.06164	.13017	.18519	6.3860	3.0649
#3	.06496	.14868	.06156	.12949	.18388	6.3974	3.0558

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.17782	.29064	.37302	17.738	.14014	.27047	.06376
Stddev	.00285	.00058	.00143	.015	.00041	.00041	.00046
%RSD	1.6033	.19826	.38353	.08733	.29065	.15216	.72211
#1	.17453	.29011	.37413	17.754	.14007	.27030	.06405
#2	.17968	.29055	.37352	17.723	.14058	.27094	.06323
#3	.17923	.29126	.37140	17.737	.13978	.27016	.06399

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.07413	.01273	.40435	.14378	7.3040	.24741	.02669
Stddev	.00038	.00018	.00048	.00027	.0055	.00191	.00012
%RSD	.50593	1.4245	.11988	.19085	.07511	.77196	.46475
#1	.07456	.01277	.40450	.14408	7.2977	.24715	.02667
#2	.07399	.01288	.40474	.14369	7.3077	.24565	.02658
#3	.07385	.01253	.40380	.14356	7.3065	.24944	.02682

Approved: June 24, 2016

Sample Name: S4 Acquired: 6/23/2016 10:03:22 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.14535	.85675	-.00201
Stddev	.00022	.00106	.00208
%RSD	.14897	.12329	103.46
#1	.14559	.85650	-.00367
#2	.14528	.85790	-.00268
#3	.14518	.85583	.00032
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7025.2	42809.	2247.9
Stddev	16.9	188.	24.0
%RSD	.24090	.44025	1.0680
#1	7039.6	42965.	2221.1
#2	7006.5	42863.	2267.3
#3	7029.4	42600.	2255.4

Approved: June 24, 2016

Sample Name: ICV Acquired: 6/23/2016 10:06:58 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .42174	10.074	.40229	.50598	1.0063	.05063	10.063
Stddev	.00302	.012	.00036	.00324	.0012	.00028	.027
%RSD	.71491	.12338	.09016	.63984	.11621	.54378	.26390
#1	.41978	10.077	.40200	.50965	1.0062	.05031	10.058
#2	.42521	10.061	.40269	.50355	1.0074	.05083	10.039
#3	.42022	10.085	.40217	.50473	1.0051	.05074	10.091
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	.40000						
Range	5.0000%						

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05009	.20240	.50800	.50888	4.0175	50.261	1.0143
Stddev	.00040	.00056	.00279	.00221	.0049	.216	.0029
%RSD	.79974	.27632	.54852	.43436	.12247	.43006	.28626
#1	.04978	.20259	.50648	.50656	4.0165	50.225	1.0113
#2	.04996	.20177	.50630	.51096	4.0228	50.065	1.0171
#3	.05054	.20283	.51122	.50911	4.0132	50.492	1.0143
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.029	.50479	1.0180	50.178	.50855	10.012	.50742
Stddev	.068	.00560	.0013	.103	.00125	.021	.00677
%RSD	.67615	1.1094	.12869	.20500	.24556	.20476	1.3336
#1	9.9507	.49880	1.0193	50.067	.50868	10.009	.51030
#2	10.071	.50989	1.0181	50.197	.50972	10.034	.51227
#3	10.065	.50568	1.0167	50.269	.50723	9.9938	.49969
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 24, 2016

Sample Name: ICV Acquired: 6/23/2016 10:06:58 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2144**	**.40080**	**5.0742**	**1.0050**	**1.0071**	**.99391**	**.50847**
Stddev	.0044	.00712	.0014	.0021	.0017	.00711	.00066
%RSD	.36603	1.7766	.02857	.20562	.16965	.71494	.13049
#1	1.2140	.40749	5.0728	1.0062	1.0051	.99195	.50860
#2	1.2101	.40159	5.0757	1.0062	1.0080	1.0018	.50775
#3	1.2190	.39332	5.0743	1.0026	1.0081	.98799	.50906
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0155**	**1.0131**	F **.12125**
Stddev	.0036	.0007	.25829
%RSD	.34912	.07339	213.01
#1	1.0114	1.0137	.27856
#2	1.0171	1.0134	-.17684
#3	1.0179	1.0123	.26204
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-5.0000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7063.9**	**43324.**	**2262.6**
Stddev	26.9	275.	33.0
%RSD	.38052	.63544	1.4576
#1	7089.7	43277.	2289.4
#2	7065.8	43619.	2272.6
#3	7036.1	43074.	2225.7

Approved: June 24, 2016

Sample Name: ICB Acquired: 6/23/2016 10:10:36 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00017**	**.01239**	**.00168**	**.00784**	**.00108**	**-.00005**	**.01547**
Stddev	.00127	.00323	.00365	.00240	.00081	.00013	.03150
%RSD	761.85	26.074	217.60	30.609	74.419	238.60	203.55
#1	-.00111	.01021	-.00250	.00684	.00033	.00009	.00370
#2	.00143	.01085	.00327	.00609	.00194	-.00008	.05117
#3	.00018	.01610	.00427	.01057	.00098	-.00016	-.00844
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00017**	**-.00011**	**.00215**	**-.00040**	**.00514**	**.14107**	**.00031**
Stddev	.00018	.00062	.00088	.00176	.00928	.02657	.00101
%RSD	104.46	548.40	40.681	436.49	180.68	18.833	322.01
#1	-.00003	-.00011	.00293	-.00229	.01533	.11729	-.00065
#2	.00032	.00051	.00233	.00120	-.00283	.16974	.00136
#3	.00022	-.00074	.00120	-.00012	.00291	.13619	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.01369**	**-.00036**	**.00556**	**.06424**	**-.00091**	**.00285**	**-.00073**
Stddev	.01771	.00468	.00084	.01730	.00010	.01137	.00348
%RSD	129.35	1308.3	15.177	26.932	10.872	399.00	478.06
#1	-.03386	-.00180	.00466	.08422	-.00089	.00224	-.00360
#2	-.00656	-.00415	.00566	.05400	-.00102	-.00820	-.00173
#3	-.00066	.00487	.00634	.05451	-.00082	.01452	.00314
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: ICB Acquired: 6/23/2016 10:10:36 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00450**	**.00319**	**.00546**	**.00160**	**.00011**	**.00807**	**-.00078**
Stddev	.00442	.00503	.00259	.00177	.00005	.00279	.00085
%RSD	98.273	157.51	47.403	111.10	47.857	34.558	108.58
#1	.00423	.00106	.00505	.00225	.00017	.01129	-.00165
#2	.00905	-.00042	.00824	.00295	.00010	.00635	-.00076
#3	.00022	.00893	.00311	-.00041	.00007	.00657	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00061**	**.00048**	F **-.08910**
Stddev	.00075	.00021	.06733
%RSD	122.01	43.386	75.566
#1	.00025	.00070	-.02326
#2	-.00099	.00030	-.08622
#3	-.00109	.00043	-.15783
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7168.4**	**44479.**	**2251.6**
Stddev	29.8	69.	20.9
%RSD	.41618	.15552	.92660
#1	7152.0	44539.	2258.2
#2	7150.4	44494.	2268.3
#3	7202.8	44403.	2228.2

Approved: June 24, 2016

Sample Name: LLICV Acquired: 6/23/2016 10:14:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00871	.16697	.00827	.08217	.00866	.00152	.38076	.00112
Stddev	.00156	.00657	.00044	.00102	.00032	.00007	.06191	.00032
%RSD	17.931	3.9351	5.3040	1.2445	3.7469	4.3059	16.258	28.573
#1	.01035	.17443	.00778	.08312	.00851	.00145	.31159	.00084
#2	.00724	.16440	.00839	.08109	.00903	.00156	.39972	.00146
#3	.00855	.16207	.00864	.08229	.00844	.00156	.43097	.00104
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00394	.00592	.00329	.07090	.79173	.08265	.36584	.00927
Stddev	.00047	.00114	.00160	.01384	.02303	.00937	.05302	.00519
%RSD	12.002	19.186	48.539	19.517	2.9090	11.331	14.493	55.960
#1	.00439	.00498	.00379	.07490	.81829	.09313	.30462	.00415
#2	.00345	.00560	.00150	.08230	.77965	.07511	.39718	.00914
#3	.00398	.00718	.00458	.05550	.77726	.07971	.39573	.01453
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00929	.45743	.01489	.78319	.01009	.07954	.01845	.79603
Stddev	.00043	.03314	.00060	.01825	.00222	.00564	.00326	.00509
%RSD	4.6307	7.2446	4.0153	2.3296	21.973	7.0958	17.681	.63940
#1	.00903	.41933	.01553	.77767	.01192	.08338	.01946	.80191
#2	.00906	.47958	.01480	.80356	.01072	.07306	.02110	.79293
#3	.00979	.47338	.01434	.76834	.00762	.08218	.01481	.79326
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: LLICV Acquired: 6/23/2016 10:14:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39699	.04007	.02977	.14695	.00735	.01649	18.209
Stddev	.00063	.00024	.00357	.00246	.00036	.00018	.750
%RSD	.15976	.60040	11.988	1.6760	4.8581	1.0904	4.1175
#1	.39689	.04033	.03374	.14514	.00762	.01640	19.047
#2	.39766	.04002	.02683	.14975	.00695	.01638	17.976
#3	.39640	.03986	.02874	.14596	.00750	.01670	17.602
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7227.1	44664.	2257.6
Stddev	42.6	520.	1.8
%RSD	.58953	1.1634	.08124
#1	7268.9	45241.	2255.5
#2	7228.6	44516.	2258.4
#3	7183.7	44234.	2258.8

Approved: June 24, 2016

Sample Name: LLICV Acquired: 6/23/2016 10:18:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02171	.39362	.01983	.19823	.01984	.00378	.98794
Stddev	.00126	.00193	.00080	.00319	.00015	.00007	.03627
%RSD	5.8133	.49006	4.0133	1.6108	.73269	1.8430	3.6708
#1	.02039	.39161	.01959	.20114	.01975	.00370	1.0191
#2	.02183	.39546	.02072	.19872	.02001	.00380	.99656
#3	.02291	.39380	.01919	.19482	.01977	.00383	.94814
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00252	.01000	.01184	.01043	.17737	1.9880	.19918
Stddev	.00013	.00031	.00088	.00057	.01113	.0700	.00144
%RSD	5.1534	3.0882	7.4088	5.4266	6.2724	3.5205	.72403
#1	.00266	.01021	.01239	.01023	.18480	2.0647	.20052
#2	.00248	.01015	.01231	.01107	.16458	1.9716	.19765
#3	.00241	.00964	.01083	.01000	.18273	1.9276	.19937
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.1505	.02028	.02021	1.0786	.04040	1.9285	.02515
Stddev	.0090	.00213	.00036	.0105	.00040	.0076	.00902
%RSD	.77857	10.486	1.7929	.97378	.98140	.39154	35.846
#1	1.1570	.02252	.01981	1.0904	.04017	1.9199	.01676
#2	1.1403	.01829	.02029	1.0752	.04017	1.9323	.02401
#3	1.1543	.02002	.02052	1.0702	.04085	1.9335	.03469
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: LLICV Acquired: 6/23/2016 10:18:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21009	.04460	1.9712	.98749	.09965	.06198	.36922
Stddev	.00337	.00699	.0053	.00228	.00021	.00569	.00142
%RSD	1.6035	15.669	.27005	.23094	.20676	9.1750	.38432
#1	.21342	.04410	1.9701	.98953	.09951	.05610	.36818
#2	.21016	.05183	1.9770	.98791	.09956	.06745	.37084
#3	.20668	.03788	1.9665	.98503	.09989	.06237	.36865
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.01894	.04026	F 47.513
Stddev	.00073	.00018	.199
%RSD	3.8495	.44845	.41793
#1	.01826	.04006	47.723
#2	.01884	.04039	47.328
#3	.01971	.04034	47.487
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7163.5	44550.	2290.7
Stddev	23.5	177.	32.2
%RSD	.32766	.39713	1.4074
#1	7153.2	44670.	2264.8
#2	7190.4	44347.	2326.8
#3	7147.1	44633.	2280.6

Approved: June 24, 2016

Sample Name: ICSA Acquired: 6/23/2016 10:22:28 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00351**	**271.49**	**-.00407**	**.01552**	**.00191**	**-.00006**	**259.57**
Stddev	.00173	.32	.00149	.00100	.00131	.00002	.24
%RSD	49.261	.11797	36.681	6.4247	68.399	32.662	.09253
#1	.00498	271.21	-.00491	.01579	.00056	-.00008	259.30
#2	.00393	271.84	-.00495	.01636	.00317	-.00005	259.62
#3	.00161	271.43	-.00235	.01442	.00201	-.00005	259.78
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00073**	**-.00118**	**.00013**	**-.00016**	**102.11**	**.07096**	**.01023**
Stddev	.00043	.00034	.00149	.00197	.27	.10061	.00810
%RSD	59.851	28.800	1110.3	1223.6	.26622	141.78	79.115
#1	.00040	-.00155	.00018	-.00175	102.00	.03056	.01779
#2	.00056	-.00088	.00160	-.00076	101.90	-.00317	.00169
#3	.00122	-.00112	-.00138	.00204	102.42	.18550	.01122
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**257.21**	**-.00249**	**-.00019**	**.00909**	**.00061**	**.04214**	**.00307**
Stddev	.74	.00315	.00022	.02391	.00155	.00873	.00083
%RSD	.28577	126.41	113.88	262.88	255.31	20.716	27.122
#1	256.58	.00103	.00006	.01060	-.00109	.03399	.00215
#2	257.04	-.00505	-.00035	.03221	.00094	.04107	.00329
#3	258.02	-.00345	-.00029	-.01553	.00197	.05136	.00377
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: ICSA Acquired: 6/23/2016 10:22:28 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.01225**	**.00407**	**.01963**	**.00083**	**.00063**	**.00292**	**-.00060**
Stddev	.00264	.01019	.00271	.00011	.00019	.00730	.00391
%RSD	21.585	250.49	13.788	13.141	29.260	250.52	650.88
#1	-.01403	.01308	.02032	.00071	.00052	.00569	.00121
#2	-.00921	-.00698	.01664	.00086	.00053	-.00537	.00208
#3	-.01350	.00610	.02192	.00092	.00085	.00842	-.00509
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00779**	**-.00550**	F **-.47797**
Stddev	.00107	.00025	.21460
%RSD	13.733	4.4540	44.897
#1	-.00663	-.00578	-.66798
#2	-.00800	-.00535	-.52071
#3	-.00874	-.00537	-.24522
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02000
Low Limit			-.02000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6553.6**	**40388.**	**2145.8**
Stddev	12.6	118.	22.2
%RSD	.19296	.29225	1.0362
#1	6564.3	40521.	2171.0
#2	6539.6	40297.	2129.0
#3	6556.7	40345.	2137.4

Approved: June 24, 2016

Sample Name: ICSAB Acquired: 6/23/2016 10:26:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.54642	261.25	.24491	.01461	.25091	.23890	249.80
Stddev	.00252	.21	.00115	.00263	.00040	.00013	.92
%RSD	.46133	.07960	.46840	18.008	.15906	.05602	.36945
#1	.54352	261.03	.24362	.01303	.25053	.23905	249.38
#2	.54809	261.29	.24581	.01315	.25133	.23882	250.86
#3	.54765	261.43	.24530	.01764	.25088	.23882	249.16
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49188	.23744	.24847	.24603	97.291	5.1952	.01399
Stddev	.00064	.00054	.00296	.00107	.562	.0586	.00583
%RSD	.12989	.22676	1.1915	.43492	.57726	1.1288	41.675
#1	.49222	.23763	.24669	.24496	96.756	5.1630	.02072
#2	.49115	.23683	.24683	.24603	97.876	5.1597	.01083
#3	.49229	.23785	.25188	.24710	97.239	5.2629	.01042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	245.45	.24547	-.00016	5.2391	.47688	.02967	.49137
Stddev	.56	.00407	.00020	.0305	.00126	.00679	.00397
%RSD	.22733	1.6582	126.27	.58302	.26435	22.869	.80836
#1	245.09	.24118	.00001	5.2340	.47587	.03596	.48700
#2	246.09	.24596	-.00011	5.2718	.47829	.02248	.49476
#3	245.16	.24927	-.00039	5.2114	.47649	.03058	.49235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: ICSAB Acquired: 6/23/2016 10:26:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49041**	**.25262**	**.01058**	**.00080**	**.00095**	**-.00253**	**.46155**
Stddev	.00461	.00205	.00274	.00118	.00028	.00344	.00419
%RSD	.94074	.81253	25.938	147.62	29.252	135.58	.90806
#1	.49574	.25026	.00741	.00083	.00108	-.00511	.45692
#2	.48787	.25359	.01204	.00197	.00063	.00137	.46508
#3	.48763	.25401	.01228	-.00040	.00114	-.00386	.46266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.24277**	**.47990**	F **-.55726**
Stddev	.00211	.00039	.17760
%RSD	.87023	.08099	31.870
#1	.24037	.47959	-.50386
#2	.24434	.47976	-.75543
#3	.24360	.48033	-.41249
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02500
Low Limit			-.02500

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6867.2**	**42131.**	**2229.4**
Stddev	30.3	59.	27.6
%RSD	.44128	.13923	1.2390
#1	6862.7	42197.	2251.0
#2	6899.5	42109.	2239.0
#3	6839.4	42086.	2198.3

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 10:30:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41972	10.006	.40325	.49964	1.0111	.04985	10.067
Stddev	.00435	.016	.00112	.00580	.0052	.00034	.068
%RSD	1.0364	.16389	.27665	1.1604	.51834	.67480	.67879
#1	.42011	9.9983	.40199	.50246	1.0058	.05014	10.015
#2	.41519	9.9944	.40364	.50348	1.0162	.04993	10.144
#3	.42386	10.025	.40411	.49297	1.0113	.04948	10.041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05024	.20223	.50131	.50749	4.0553	50.377	1.0226
Stddev	.00028	.00067	.00274	.00104	.0420	.183	.0017
%RSD	.56269	.33341	.54611	.20417	1.0345	.36293	.16260
#1	.05043	.20278	.50296	.50646	4.0254	50.317	1.0219
#2	.04992	.20244	.50282	.50853	4.0372	50.582	1.0245
#3	.05037	.20148	.49815	.50748	4.1032	50.231	1.0214
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.9528	.50477	1.0077	50.394	.50575	10.041	.50277
Stddev	.0960	.00398	.0034	.164	.00126	.013	.00300
%RSD	.96419	.78931	.33712	.32583	.24862	.12624	.59574
#1	9.9093	.50065	1.0114	50.208	.50700	10.027	.50104
#2	10.063	.50505	1.0070	50.519	.50448	10.051	.50104
#3	9.8862	.50860	1.0048	50.454	.50576	10.046	.50622
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 10:30:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2122**	**.40567**	**5.0769**	**1.0044**	**1.0093**	**.99371**	**.51032**
Stddev	.0058	.00436	.0044	.0017	.0042	.00390	.00026
%RSD	.47789	1.0749	.08648	.16760	.41078	.39271	.05189
#1	1.2179	.40121	5.0794	1.0059	1.0071	.98947	.51004
#2	1.2063	.40587	5.0795	1.0026	1.0141	.99715	.51035
#3	1.2126	.40993	5.0719	1.0046	1.0067	.99452	.51057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0014**	**1.0107**	F **.71299**
Stddev	.0067	.0004	.23489
%RSD	.66944	.04203	32.944
#1	1.0039	1.0108	.53231
#2	1.0066	1.0110	.97851
#3	.99386	1.0102	.62814
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7133.2**	**43787.**	**2246.1**
Stddev	18.4	184.	8.5
%RSD	.25841	.41964	.37924
#1	7124.4	43972.	2255.6
#2	7154.4	43605.	2239.0
#3	7120.8	43783.	2243.7

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 10:33:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00297**	**-.00189**	**.00289**	**.00380**	**.00027**	**-.00003**	**.02225**
Stddev	.00079	.00779	.00159	.00210	.00139	.00004	.03753
%RSD	26.593	413.32	55.111	55.251	514.31	136.58	168.66
#1	.00334	-.00786	.00273	.00334	.00168	-.00001	-.00921
#2	.00350	.00693	.00139	.00609	.00023	-.00000	.06379
#3	.00206	-.00473	.00457	.00197	-.00110	-.00008	.01218
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00012**	**-.00000**	**.00131**	**.00018**	**-.03277**	**.04923**	**-.00040**
Stddev	.00014	.00031	.00102	.00083	.02068	.05258	.00151
%RSD	114.48	23177.	77.426	468.65	63.118	106.80	379.45
#1	.00007	.00021	.00045	-.00049	-.03402	.00596	.00130
#2	.00028	.00015	.00105	-.00008	-.01149	.03398	-.00091
#3	.00002	-.00036	.00243	.00110	-.05280	.10775	-.00158
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00472**	**-.00040**	**.00398**	**.04186**	**.00037**	**.00183**	**.00092**
Stddev	.07151	.00169	.00086	.03433	.00046	.01093	.00506
%RSD	1514.3	422.40	21.740	82.001	123.50	599.09	550.15
#1	.06340	.00145	.00330	.07571	-.00014	-.00531	.00400
#2	.00162	-.00078	.00368	.00708	.00074	.01441	.00368
#3	-.07919	-.00188	.00495	.04280	.00051	-.00362	-.00492
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 10:33:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.00397**	**.00703**	**.00090**	**.00049**	**-.00046**	**-.00277**
Stddev	.00449	.00153	.00249	.00076	.00019	.00531	.00268
%RSD	1177.2	38.496	35.437	84.023	38.599	1160.2	96.770
#1	-.00383	.00290	.00990	.00168	.00070	-.00540	-.00548
#2	.00470	.00572	.00539	.00016	.00039	.00516	-.00013
#3	-.00201	.00329	.00581	.00086	.00037	-.00113	-.00269
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00047**	**.00010**	F **-.23448**
Stddev	.00129	.00031	.19803
%RSD	273.56	297.44	84.455
#1	-.00071	-.00016	-.44342
#2	.00092	.00044	-.21046
#3	-.00163	.00002	-.04956
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7198.5**	**44410.**	**2298.3**
Stddev	13.1	128.	10.8
%RSD	.18130	.28902	.47010
#1	7213.3	44273.	2294.3
#2	7188.5	44528.	2310.6
#3	7193.7	44429.	2290.1

Approved: June 24, 2016

Sample Name: PBW 02 Acquired: 6/23/2016 10:37:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00243	.01289	-.00238	.00215	.00059	.00001	.00064	.00027
Stddev	.00241	.00507	.00138	.00467	.00018	.00007	.03803	.00006
%RSD	99.217	39.320	57.920	217.09	29.967	855.05	5917.2	21.093
#1	-.00031	.01133	-.00397	.00515	.00054	-.00004	-.00920	.00024
#2	.00421	.01856	-.00155	.00453	.00079	-.00003	-.03149	.00033
#3	.00340	.00879	-.00162	-.00323	.00045	.00009	.04262	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	.00191	-.00100	.00249	.04815	.00220	-.00515	-.00126
Stddev	.00015	.00073	.00043	.01361	.09597	.00221	.11951	.00238
%RSD	73.207	38.022	42.787	546.34	199.31	100.78	2321.3	189.95
#1	-.00025	.00137	-.00123	.01660	-.05245	.00010	.03750	-.00019
#2	-.00003	.00273	-.00051	-.01057	.13870	.00199	-.14013	.00041
#3	-.00031	.00163	-.00126	.00145	.05820	.00451	.08719	-.00399
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00121	.04263	-.00108	-.00736	.00241	-.00353	.00285	.00836
Stddev	.00026	.02816	.00116	.00127	.00261	.00137	.00741	.00138
%RSD	21.618	66.044	107.01	17.201	108.31	38.784	259.67	16.477
#1	.00092	.01185	.00018	-.00596	.00167	-.00350	-.00460	.00969
#2	.00128	.06707	-.00134	-.00769	.00530	-.00218	.01021	.00694
#3	.00142	.04898	-.00208	-.00843	.00025	-.00492	.00294	.00846
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: PBW 02 Acquired: 6/23/2016 10:37:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00109**	**-.00009**	**.01096**	**-.00098**	**-.00023**	**.00040**	**.03142**
Stddev	.00065	.00030	.00703	.00449	.00148	.00015	.35769
%RSD	59.540	324.77	64.152	456.40	635.29	36.948	1138.4
#1	.00065	.00022	.01902	.00189	-.00170	.00048	.18768
#2	.00079	-.00037	.00777	-.00616	-.00024	.00050	-.37782
#3	.00184	-.00013	.00609	.00132	.00125	.00023	.28440
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7056.8**	**44113.**	**2291.0**
Stddev	55.6	316.	27.4
%RSD	.78762	.71710	1.1965
#1	7118.4	44456.	2259.3
#2	7041.7	43832.	2306.7
#3	7010.4	44053.	2306.9

Approved: June 24, 2016

Sample Name: LCSW 02 Acquired: 6/23/2016 10:48:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.22850**	**5.3524**	**.21516**	**1.0428**	**.54496**	**.02642**	**5.5039**	**.02684**
Stddev	.00330	.0076	.00251	.0020	.00025	.00010	.0620	.00020
%RSD	1.4451	.14203	1.1655	.19167	.04529	.37359	1.1259	.73257
#1	.22591	5.3512	.21360	1.0405	.54519	.02650	5.4405	.02701
#2	.23222	5.3454	.21805	1.0440	.54499	.02631	5.5067	.02662
#3	.22739	5.3605	.21382	1.0440	.54470	.02644	5.5644	.02689
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10911**	**.27097**	**.27491**	**2.1584**	**26.630**	**.54834**	**5.3637**	**.26968**
Stddev	.00035	.00159	.00152	.0163	.041	.00364	.0151	.00278
%RSD	.31852	.58817	.55193	.75658	.15361	.66310	.28212	1.0312
#1	.10906	.27197	.27357	2.1714	26.592	.55090	5.3742	.27283
#2	.10880	.26913	.27656	2.1401	26.625	.54418	5.3705	.26757
#3	.10949	.27181	.27460	2.1637	26.673	.54993	5.3463	.26864
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.55353**	**27.101**	**.27454**	**5.1950**	**.27137**	**.65400**	**.20493**	**2.7480**
Stddev	.00112	.080	.00191	.0060	.00219	.00254	.00409	.0055
%RSD	.20253	.29526	.69567	.11494	.80702	.38851	1.9961	.20068
#1	.55266	27.180	.27670	5.1938	.27139	.65193	.20099	2.7458
#2	.55314	27.020	.27307	5.1896	.26916	.65683	.20465	2.7440
#3	.55480	27.102	.27383	5.2014	.27354	.65323	.20916	2.7543
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: LCSW 02 Acquired: 6/23/2016 10:48:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.54136**	**.54956**	**.53774**	**.26798**	**.53756**	**.53807**	**.52263**
Stddev	.00124	.00284	.00655	.00160	.00065	.00111	.08625
%RSD	.22963	.51687	1.2184	.59886	.12008	.20681	16.502
#1	.54178	.55283	.53336	.26631	.53698	.53720	.47858
#2	.53996	.54779	.54527	.26810	.53744	.53770	.62201
#3	.54233	.54805	.53459	.26951	.53826	.53933	.46730
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6751.0**	**41595.**	**2147.5**
Stddev	16.5	417.	15.8
%RSD	.24497	1.0037	.73785
#1	6750.9	41122.	2157.2
#2	6734.6	41910.	2156.0
#3	6767.6	41755.	2129.2

Approved: June 24, 2016

Sample Name: L1606080601 Acquired: 6/23/2016 10:51:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00332	.04783	-.00051	.02919	.02316	-.00001	43.010	.00030
Stddev	.00229	.01237	.00173	.00366	.00041	.00006	.052	.00045
%RSD	69.212	25.855	341.87	12.521	1.7488	512.34	.12116	151.99
#1	.00527	.04741	-.00003	.03341	.02305	.00001	43.043	.00037
#2	.00390	.03568	-.00243	.02723	.02361	.00004	42.950	.00071
#3	.00079	.06040	.00094	.02694	.02283	-.00008	43.037	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.00082	.00144	.40311	2.4797	-.00382	7.5681	.03103
Stddev	.00013	.00101	.00278	.00772	.0470	.00214	.0970	.00130
%RSD	74.032	123.26	193.44	1.9146	1.8949	56.013	1.2820	4.2001
#1	-.00014	.00001	.00047	.41089	2.4255	-.00177	7.5891	.03208
#2	-.00031	.00050	-.00073	.39545	2.5043	-.00366	7.6528	.03142
#3	-.00006	.00195	.00457	.40300	2.5092	-.00604	7.4622	.02957
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00181	8.7753	.00096	-.00180	-.00112	-.00294	.00044	2.4583
Stddev	.00051	.0335	.00050	.00217	.00243	.00750	.00595	.0091
%RSD	27.981	.38181	52.318	121.11	217.36	255.25	1360.5	.36984
#1	.00170	8.7390	.00121	-.00156	.00092	-.00259	.00525	2.4480
#2	.00237	8.7818	.00038	.00025	-.00047	.00438	-.00622	2.4617
#3	.00137	8.8051	.00129	-.00408	-.00381	-.01060	.00229	2.4652
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606080601 Acquired: 6/23/2016 10:51:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00095	.15971	.00244	.00018	-.00142	.00421	.06591
Stddev	.00050	.00036	.01050	.00258	.00131	.00020	.08417
%RSD	52.557	.22648	430.07	1452.4	91.782	4.6676	127.70
#1	.00048	.15994	-.00770	-.00278	-.00014	.00424	.10987
#2	.00148	.15929	.00175	.00136	-.00137	.00439	-.03114
#3	.00090	.15990	.01328	.00196	-.00275	.00400	.11899
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6810.6	42146.	2192.1
Stddev	25.2	266.	18.6
%RSD	.36933	.63096	.84850
#1	6802.0	42073.	2178.6
#2	6790.9	41924.	2184.4
#3	6838.9	42440.	2213.3

Approved: June 24, 2016

Sample Name: L1606080603S Acquired: 6/23/2016 10:55:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.22292**	**5.2580**	**.21233**	**1.0506**	**.56122**	**.02585**	**46.880**	**.02653**
Stddev	.00125	.0051	.00435	.0034	.00394	.00006	.174	.00017
%RSD	.56117	.09779	2.0482	.32163	.70242	.22036	.37102	.65401
#1	.22331	5.2556	.21640	1.0468	.56286	.02591	47.040	.02643
#2	.22392	5.2639	.20775	1.0517	.55673	.02583	46.695	.02642
#3	.22152	5.2545	.21283	1.0533	.56408	.02580	46.905	.02673
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10658**	**.26462**	**.26636**	**2.5134**	**28.758**	**.54406**	**12.811**	**.30027**
Stddev	.00029	.00181	.00051	.0405	.213	.00394	.014	.00457
%RSD	.27356	.68391	.18983	1.6130	.74146	.72467	.10931	1.5227
#1	.10631	.26358	.26675	2.5028	28.880	.54429	12.814	.30476
#2	.10654	.26671	.26655	2.4792	28.512	.54000	12.796	.29562
#3	.10689	.26358	.26579	2.5582	28.882	.54788	12.823	.30041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.55170**	**35.165**	**.26531**	**5.2323**	**.26719**	**.65049**	**.20303**	**5.1631**
Stddev	.00113	.187	.00228	.0061	.00196	.00181	.00446	.0029
%RSD	.20429	.53311	.85843	.11604	.73356	.27771	2.1946	.05639
#1	.55286	35.340	.26794	5.2303	.26915	.64881	.20042	5.1665
#2	.55060	34.967	.26407	5.2275	.26523	.65240	.20818	5.1612
#3	.55165	35.189	.26391	5.2391	.26720	.65026	.20050	5.1617
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606080603S Acquired: 6/23/2016 10:55:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53484**	**.70111**	**.52936**	**.26439**	**.52736**	**.52795**	**.54980**
Stddev	.00124	.00139	.00278	.00080	.00211	.00104	.46028
%RSD	.23260	.19809	.52607	.30199	.39931	.19788	83.718
#1	.53546	.70248	.52994	.26380	.52862	.52807	.30765
#2	.53566	.69970	.52632	.26530	.52854	.52685	.26115
#3	.53341	.70117	.53180	.26408	.52493	.52893	1.0806
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6736.2**	**41946.**	**2187.8**
Stddev	5.1	20.	14.7
%RSD	.07591	.04740	.67015
#1	6730.4	41949.	2172.7
#2	6737.9	41964.	2188.8
#3	6740.2	41924.	2201.9

Approved: June 24, 2016

Sample Name: L1606080604SD Acquired: 6/23/2016 10:59:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.22494**	**5.3013**	**.21407**	**1.0628**	**.56365**	**.02612**	**47.662**	**.02643**
Stddev	.00131	.0093	.00129	.0020	.00234	.00011	.148	.00049
%RSD	.58037	.17470	.60415	.18460	.41544	.41243	.31045	1.8605
#1	.22580	5.3020	.21515	1.0606	.56620	.02606	47.808	.02611
#2	.22344	5.3102	.21442	1.0642	.56160	.02624	47.512	.02700
#3	.22559	5.2917	.21263	1.0637	.56315	.02605	47.665	.02619
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10674**	**.26724**	**.26524**	**2.6333**	**28.895**	**.54557**	**12.719**	**.30439**
Stddev	.00058	.00062	.00038	.0330	.106	.00090	.094	.00619
%RSD	.54609	.23196	.14207	1.2527	.36519	.16505	.74234	2.0338
#1	.10638	.26678	.26533	2.6696	28.991	.54627	12.772	.31139
#2	.10741	.26794	.26557	2.6252	28.782	.54456	12.610	.30217
#3	.10642	.26698	.26483	2.6052	28.913	.54588	12.776	.29962
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.55418**	**34.480**	**.26678**	**5.2501**	**.26985**	**.65141**	**.19677**	**5.1827**
Stddev	.00050	.067	.00127	.0075	.00459	.00504	.00312	.0057
%RSD	.08994	.19311	.47791	.14252	1.7002	.77356	1.5871	.10959
#1	.55380	34.540	.26578	5.2415	.27196	.65020	.19384	5.1876
#2	.55474	34.408	.26821	5.2542	.26459	.64709	.19641	5.1765
#3	.55399	34.491	.26635	5.2546	.27301	.65695	.20005	5.1841
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606080604SD Acquired: 6/23/2016 10:59:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53983**	**.70207**	**.53595**	**.26631**	**.53443**	**.53118**	**.44263**
Stddev	.00237	.00250	.00231	.00541	.00162	.00068	.38887
%RSD	.43894	.35572	.43187	2.0329	.30357	.12798	87.854
#1	.54163	.70459	.53352	.26243	.53589	.53106	.10258
#2	.54071	.69960	.53620	.27250	.53268	.53191	.86662
#3	.53715	.70202	.53813	.26401	.53473	.53057	.35870
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6749.7**	**41983.**	**2189.9**
Stddev	23.3	132.	6.1
%RSD	.34593	.31400	.28075
#1	6735.6	41949.	2183.1
#2	6776.6	41872.	2195.2
#3	6736.8	42129.	2191.3

Approved: June 24, 2016

Sample Name: L1606064301 Acquired: 6/23/2016 11:03:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00122	.06615	-.00143	.02593	.03006	-.00006	38.280	.00032
Stddev	.00204	.01101	.00114	.00145	.00109	.00010	.072	.00020
%RSD	168.05	16.644	79.877	5.6031	3.6139	160.24	.18846	60.547
#1	-.00114	.06914	-.00036	.02742	.03123	.00004	38.219	.00022
#2	.00222	.05395	-.00264	.02452	.02986	-.00006	38.359	.00055
#3	.00256	.07536	-.00129	.02585	.02908	-.00016	38.261	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.00230	.00108	.05505	.82182	.00036	6.9671	.00298
Stddev	.00067	.00063	.00204	.02247	.04972	.00219	.1563	.00230
%RSD	948.74	27.362	188.95	40.824	6.0505	601.29	2.2439	77.255
#1	-.00016	.00300	-.00033	.07041	.79866	.00194	6.8403	.00562
#2	-.00069	.00179	.00342	.06549	.87890	-.00214	7.1417	.00149
#3	.00064	.00211	.00015	.02926	.78791	.00129	6.9192	.00182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	5.2162	-.00040	.00723	.00244	-.00396	.00046	4.1726
Stddev	.00051	.0203	.00014	.00259	.00459	.00187	.00839	.0123
%RSD	44.166	.38819	33.920	35.779	188.07	47.157	1810.3	.29505
#1	.00058	5.2125	-.00024	.00977	-.00208	-.00520	-.00153	4.1806
#2	.00139	5.2380	-.00049	.00460	.00709	-.00487	-.00675	4.1789
#3	.00153	5.1980	-.00046	.00731	.00230	-.00181	.00967	4.1585
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606064301 Acquired: 6/23/2016 11:03:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00078**	**.20451**	**.00530**	**-.00469**	**-.00006**	**.00110**	**.14863**
Stddev	.00121	.00048	.00792	.00091	.00063	.00030	.13987
%RSD	154.61	.23532	149.42	19.355	996.61	27.576	94.109
#1	.00207	.20397	.00166	-.00442	-.00057	.00145	.23839
#2	.00061	.20490	.01439	-.00395	-.00026	.00092	-.01253
#3	-.00033	.20466	-.00014	-.00571	.00064	.00093	.22003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6830.4**	**42508.**	**2171.6**
Stddev	8.5	112.	27.2
%RSD	.12431	.26329	1.2518
#1	6822.3	42542.	2152.2
#2	6839.3	42598.	2160.0
#3	6829.7	42382.	2202.7

Approved: June 24, 2016

Sample Name: L1606064301PS Acquired: 6/23/2016 11:07:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573560-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.22725**	**5.3504**	**.21699**	**1.0586**	**.56235**	**.02606**	**39.453**	**.02652**
Stddev	.00177	.0067	.00179	.0027	.00155	.00012	.197	.00023
%RSD	.77717	.12503	.82531	.25428	.27486	.46212	.49837	.88589
#1	.22925	5.3465	.21509	1.0575	.56204	.02619	39.648	.02660
#2	.22656	5.3582	.21864	1.0616	.56403	.02598	39.456	.02625
#3	.22593	5.3466	.21724	1.0566	.56099	.02599	39.255	.02669
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10707**	**.26636**	**.26786**	**2.1734**	**27.243**	**.54647**	**11.652**	**.26618**
Stddev	.00054	.00055	.00272	.0119	.213	.00192	.041	.00881
%RSD	.50398	.20739	1.0148	.54748	.78325	.35141	.35108	3.3092
#1	.10730	.26671	.26949	2.1869	27.405	.54632	11.608	.27572
#2	.10746	.26572	.26937	2.1646	27.322	.54463	11.688	.26445
#3	.10645	.26665	.26472	2.1686	27.001	.54846	11.659	.25836
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.54977**	**31.311**	**.26618**	**5.2709**	**.26415**	**.65246**	**.20473**	**6.5222**
Stddev	.00116	.147	.00099	.0077	.00299	.00202	.00237	.0133
%RSD	.21115	.46806	.37140	.14598	1.1311	.30884	1.1586	.20363
#1	.55015	31.346	.26545	5.2795	.26421	.65014	.20272	6.5165
#2	.55069	31.436	.26579	5.2647	.26113	.65378	.20735	6.5374
#3	.54846	31.150	.26730	5.2685	.26710	.65345	.20414	6.5128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606064301PS Acquired: 6/23/2016 11:07:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573560-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53985	.72655	.53558	.26570	.53178	.53125	.33122
Stddev	.00086	.00309	.00331	.00043	.00075	.00054	.05932
%RSD	.15906	.42561	.61803	.16301	.14059	.10232	17.910
#1	.53907	.72896	.53270	.26521	.53252	.53085	.28877
#2	.54077	.72764	.53485	.26582	.53103	.53187	.30588
#3	.53972	.72307	.53920	.26605	.53179	.53103	.39900
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6757.9	41916.	2182.6
Stddev	34.8	107.	23.2
%RSD	.51560	.25636	1.0623
#1	6728.7	41855.	2187.7
#2	6796.5	42040.	2157.3
#3	6748.6	41853.	2202.8

Approved: June 24, 2016

Sample Name: L1606064301SDL Acquired: 6/23/2016 11:10:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573560-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00070**	**.01810**	**-.00492**	**.01185**	**.00631**	**-.00000**	**7.1236**
Stddev	.00274	.00839	.00252	.00391	.00222	.00007	.1325
%RSD	392.94	46.334	51.249	32.975	35.103	3513.5	1.8603
#1	-.00235	.00864	-.00244	.01427	.00517	.00007	6.9946
#2	.00149	.02106	-.00747	.01394	.00887	-.00001	7.2594
#3	.00296	.02462	-.00483	.00734	.00490	-.00006	7.1166
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**.00002**	**.00232**	**-.00095**	**-.00610**	**.17611**	**-.00235**
Stddev	.00025	.00059	.00130	.00129	.02126	.10548	.00501
%RSD	155.98	3337.0	56.059	136.53	348.65	59.896	212.68
#1	.00039	.00038	.00248	-.00038	-.02017	.14177	.00306
#2	-.00011	-.00067	.00095	-.00242	-.01648	.29448	-.00331
#3	.00021	.00034	.00353	-.00003	.01836	.09207	-.00681
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2954**	**.00077**	**.00079**	**1.0065**	**-.00075**	**.00450**	**.00141**
Stddev	.1344	.00192	.00039	.0274	.00071	.00539	.00486
%RSD	10.379	247.98	49.311	2.7240	94.064	119.85	344.90
#1	1.2316	-.00060	.00040	1.0091	-.00103	.00495	-.00378
#2	1.4498	.00297	.00118	1.0325	.00005	.00964	.00586
#3	1.2047	-.00004	.00078	.97783	-.00128	-.00111	.00215
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606064301SDL Acquired: 6/23/2016 11:10:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573560-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00658	.00672	.79406	.00083	.03798	.01408	-.00117
Stddev	.00316	.00321	.00147	.00103	.00094	.01087	.00246
%RSD	48.021	47.777	.18462	123.89	2.4756	77.174	209.17
#1	-.00294	.00985	.79575	.00155	.03738	.01337	-.00372
#2	-.00825	.00344	.79333	-.00035	.03907	.00359	.00119
#3	-.00856	.00686	.79311	.00130	.03751	.02529	-.00099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00049	.00087	F -.20818
Stddev	.00030	.00009	.00447
%RSD	61.635	10.403	2.1493
#1	-.00050	.00094	-.20536
#2	-.00079	.00091	-.21334
#3	-.00019	.00077	-.20585
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7139.5	44441.	2238.0
Stddev	50.1	436.	9.4
%RSD	.70115	.98188	.41959
#1	7082.7	44722.	2247.5
#2	7158.3	43938.	2228.7
#3	7177.3	44663.	2237.9

Approved: June 24, 2016

Sample Name: L1606064301SDL Acquired: 6/23/2016 11:14:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573560-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00261	.00791	-.00004	.00376	.00049	.00002	1.3594	.00023
Stddev	.00120	.00238	.00074	.00093	.00141	.00007	.0314	.00034
%RSD	45.945	30.141	1664.4	24.870	290.88	378.58	2.3106	150.85
#1	.00358	.00988	-.00069	.00277	.00038	-.00005	1.3505	.00050
#2	.00297	.00526	.00076	.00387	-.00087	.00008	1.3943	-.00016
#3	.00127	.00858	-.00021	.00463	.00195	.00002	1.3334	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	.00078	-.00032	-.01191	.06875	-.00169	.28703	-.00226
Stddev	.00009	.00052	.00249	.01602	.11639	.00434	.08030	.00304
%RSD	20.872	66.349	784.39	134.58	169.31	257.07	27.975	134.96
#1	.00037	.00028	.00241	-.01207	.19064	.00305	.35886	.00125
#2	.00043	.00131	-.00246	.00420	-.04124	-.00547	.20034	-.00380
#3	.00055	.00075	-.00090	-.02785	.05685	-.00264	.30188	-.00422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	.26228	-.00128	.00562	.00251	-.00194	.00134	.17660
Stddev	.00028	.01679	.00122	.00155	.00558	.00069	.00224	.00148
%RSD	62.629	6.4019	95.033	27.643	222.32	35.685	167.54	.83658
#1	.00015	.27136	-.00120	.00432	.00095	-.00169	.00300	.17609
#2	.00048	.24290	-.00011	.00520	.00870	-.00273	.00222	.17545
#3	.00071	.27258	-.00253	.00734	-.00213	-.00141	-.00121	.17827
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606064301SDL Acquired: 6/23/2016 11:14:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573560-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.00771	.00924	.00187	-.00212	.00023	.10361
Stddev	.00110	.00046	.00454	.00261	.00099	.00022	.04989
%RSD	590.32	5.9848	49.119	139.27	46.532	92.023	48.149
#1	.00142	.00743	.00743	-.00027	-.00305	.00007	.15002
#2	-.00018	.00824	.01440	.00111	-.00224	.00048	.10996
#3	-.00069	.00745	.00588	.00478	-.00108	.00016	.05085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6961.0	42861.	2262.2
Stddev	19.0	128.	28.0
%RSD	.27352	.29900	1.2383
#1	6966.6	42842.	2290.8
#2	6976.7	42744.	2234.8
#3	6939.9	42998.	2261.1

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 11:18:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.42208**	**10.026**	**.40440**	**.50274**	**1.0079**	**.05013**	**10.009**
Stddev	.00403	.034	.00230	.00696	.0010	.00017	.055
%RSD	.95372	.34303	.56808	1.3853	.10403	.33377	.55336
#1	.41788	9.9874	.40287	.49470	1.0087	.04997	10.060
#2	.42245	10.054	.40705	.50702	1.0082	.05030	10.019
#3	.42590	10.037	.40329	.50649	1.0067	.05012	9.9500
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05023**	**.20256**	**.50302**	**.50725**	**4.0199**	**50.275**	**1.0209**
Stddev	.00011	.00027	.00258	.00083	.0198	.052	.0040
%RSD	.22018	.13367	.51361	.16325	.49293	.10377	.39074
#1	.05036	.20253	.50114	.50692	4.0081	50.322	1.0175
#2	.05016	.20231	.50596	.50664	4.0428	50.219	1.0253
#3	.05017	.20285	.50195	.50819	4.0088	50.282	1.0199
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.9566**	**.50840**	**1.0090**	**50.346**	**.50788**	**10.008**	**.50433**
Stddev	.0526	.00612	.0027	.132	.00211	.011	.00390
%RSD	.52863	1.2043	.27275	.26241	.41570	.11030	.77248
#1	9.9739	.51083	1.0117	50.491	.50814	9.9964	.50363
#2	9.9984	.50144	1.0092	50.313	.50565	10.010	.50083
#3	9.8975	.51294	1.0062	50.233	.50985	10.018	.50853
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 11:18:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2091**	**.40397**	**5.0887**	**1.0011**	**1.0108**	**.99757**	**.51228**
Stddev	.0044	.00601	.0108	.0007	.0040	.01110	.00232
%RSD	.36159	1.4875	.21143	.06763	.39423	1.1124	.45377
#1	1.2140	.40998	5.0829	1.0007	1.0113	.98553	.51248
#2	1.2059	.40395	5.0820	1.0019	1.0145	1.0074	.50986
#3	1.2073	.39797	5.1011	1.0007	1.0066	.99981	.51449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0073**	**1.0103**	F **-.07667**
Stddev	.0043	.0010	.16401
%RSD	.42507	.09626	213.92
#1	1.0026	1.0099	.11242
#2	1.0085	1.0096	-.16212
#3	1.0109	1.0114	-.18030
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7112.5**	**44059.**	**2267.2**
Stddev	29.9	13.	7.7
%RSD	.42011	.02930	.33758
#1	7083.9	44050.	2270.1
#2	7143.5	44074.	2273.0
#3	7110.0	44053.	2258.5

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 11:22:07 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00189**	**.01317**	**-.00014**	**.00695**	**-.00071**	**.00002**	**.05005**
Stddev	.00207	.00751	.00124	.00172	.00046	.00003	.03317
%RSD	109.38	57.025	881.13	24.753	65.131	192.61	66.278
#1	.00097	.02150	.00128	.00894	-.00027	-.00002	.01183
#2	.00044	.01111	-.00070	.00597	-.00119	.00003	.07135
#3	.00426	.00691	-.00101	.00594	-.00067	.00004	.06697
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00033**	**.00016**	**.00124**	**-.00052**	**-.01915**	**.11943**	**.00219**
Stddev	.00022	.00035	.00068	.00139	.00890	.05118	.00124
%RSD	66.393	219.43	54.732	264.88	46.485	42.852	56.612
#1	.00009	-.00001	.00069	-.00028	-.01341	.09118	.00192
#2	.00052	.00056	.00200	-.00202	-.02941	.08860	.00111
#3	.00038	-.00008	.00103	.00073	-.01464	.17850	.00355
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00380**	**-.00012**	**.00453**	**.04304**	**.00039**	**.00349**	F **.00609**
Stddev	.12926	.00178	.00020	.00496	.00064	.00646	.00128
%RSD	3404.8	1473.3	4.5001	11.533	165.65	184.97	21.041
#1	-.01541	.00096	.00430	.04248	.00001	.00020	.00607
#2	-.11479	-.00217	.00460	.04826	.00002	.01093	.00482
#3	.14158	.00085	.00469	.03838	.00113	-.00066	.00738
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							.00500
Low Limit							-.00500

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 11:22:07 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00227	.00206	.00558	.00044	.00024	.00228	-.00124
Stddev	.00104	.01111	.00105	.00112	.00019	.00747	.00491
%RSD	45.890	538.56	18.813	256.59	76.427	327.13	397.12
#1	.00114	.01300	.00502	.00065	.00003	.01091	.00178
#2	.00249	-.00921	.00679	.00143	.00031	-.00219	-.00690
#3	.00318	.00239	.00492	-.00077	.00039	-.00187	.00141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00174	.00003	F .09081
Stddev	.00025	.00043	.08933
%RSD	14.138	1286.3	98.377
#1	-.00177	-.00004	.02370
#2	-.00148	-.00035	.05651
#3	-.00197	.00049	.19220
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7200.1	44649.	2270.6
Stddev	37.7	32.	39.2
%RSD	.52300	.07113	1.7243
#1	7240.4	44677.	2277.9
#2	7194.1	44614.	2228.3
#3	7165.8	44655.	2305.6

Approved: June 24, 2016

Sample Name: L1606064302 Acquired: 6/23/2016 11:26:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	.26747	-.00009	.02484	.04254	-.00005	43.396	.00022
Stddev	.00197	.00413	.00272	.00027	.00060	.00012	.324	.00013
%RSD	261.93	1.5424	2949.9	1.0811	1.4178	232.10	.74631	58.986
#1	-.00150	.26752	-.00205	.02509	.04264	-.00019	43.509	.00035
#2	.00218	.26332	.00301	.02456	.04309	.00004	43.649	.00023
#3	.00157	.27158	-.00123	.02486	.04189	-.00000	43.031	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.00266	.00081	.32785	.96194	.00079	5.1860	.01617
Stddev	.00029	.00025	.00240	.01532	.08177	.00339	.1255	.00084
%RSD	88.646	9.5763	296.94	4.6741	8.5002	427.83	2.4202	5.1909
#1	.00048	.00271	-.00046	.32168	1.0234	-.00276	5.2270	.01561
#2	-.00001	.00289	.00357	.31657	.99334	.00400	5.0451	.01713
#3	.00051	.00238	-.00069	.34529	.86913	.00115	5.2859	.01577
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00206	5.2001	.00017	.04611	.00359	-.00067	-.00054	4.1105
Stddev	.00042	.0405	.00053	.00238	.00353	.00387	.00445	.0061
%RSD	20.472	.77885	304.22	5.1573	98.382	575.44	822.83	.14753
#1	.00157	5.1727	-.00037	.04386	.00542	.00182	.00165	4.1139
#2	.00228	5.2466	.00069	.04587	.00581	.00130	-.00566	4.1141
#3	.00232	5.1809	.00021	.04860	-.00048	-.00513	.00239	4.1035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606064302 Acquired: 6/23/2016 11:26:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.15100	-.00290	-.00074	-.00060	.00253	.02492
Stddev	.00012	.00127	.00397	.00016	.00041	.00023	.28447
%RSD	14.883	.83854	137.08	21.805	67.554	9.2827	1141.4
#1	.00091	.14977	-.00056	-.00070	-.00066	.00264	.35267
#2	.00068	.15230	-.00748	-.00091	-.00098	.00269	-.15784
#3	.00086	.15094	-.00065	-.00060	-.00017	.00226	-.12006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6794.5	42752.	2192.4
Stddev	30.7	54.	19.1
%RSD	.45171	.12704	.86965
#1	6781.9	42692.	2170.4
#2	6829.5	42766.	2202.2
#3	6772.1	42798.	2204.6

Approved: June 24, 2016

Sample Name: L1606064303 Acquired: 6/23/2016 11:30:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00032**	**.06602**	**-.00261**	**.01285**	**.08166**	**-.00002**	**70.478**
Stddev	.00222	.00884	.00362	.00367	.00098	.00003	.278
%RSD	699.98	13.390	138.45	28.517	1.2008	166.64	.39496
#1	.00122	.07324	-.00461	.00955	.08278	.00001	70.795
#2	.00069	.05616	.00156	.01680	.08122	-.00005	70.361
#3	-.00286	.06867	-.00478	.01221	.08098	-.00001	70.277
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00043**	**-.00007**	**.00271**	**.00017**	**.04905**	**.61723**	**.00329**
Stddev	.00030	.00015	.00141	.00138	.01853	.06231	.00259
%RSD	71.212	206.71	52.030	794.77	37.781	10.096	78.525
#1	.00025	.00010	.00274	.00099	.03029	.64631	.00522
#2	.00025	-.00017	.00410	-.00142	.06734	.54569	.00035
#3	.00078	-.00014	.00128	.00095	.04951	.65969	.00431
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**6.5197**	**.00210**	**.00114**	**2.3160**	**-.00214**	**.00652**	**.00322**
Stddev	.0292	.00379	.00024	.0359	.00068	.00269	.00233
%RSD	.44719	180.73	20.594	1.5492	31.730	41.293	72.581
#1	6.5530	.00221	.00134	2.3485	-.00249	.00417	.00531
#2	6.5068	.00583	.00121	2.3220	-.00136	.00593	.00363
#3	6.4992	-.00175	.00088	2.2775	-.00258	.00946	.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606064303 Acquired: 6/23/2016 11:30:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00123**	**.00062**	**4.1539**	**.00045**	**.17219**	**-.00442**	**.00006**
Stddev	.00291	.01044	.0062	.00093	.00121	.00598	.00245
%RSD	237.16	1677.3	.14820	204.40	.70469	135.24	4374.1
#1	.00370	.00751	4.1602	.00043	.17312	.00044	-.00181
#2	-.00198	-.01139	4.1479	.00139	.17265	-.01110	.00282
#3	.00197	.00575	4.1535	-.00046	.17082	-.00261	-.00084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00098**	**.00130**	F **-.24913**
Stddev	.00104	.00037	.16574
%RSD	106.16	28.501	66.527
#1	-.00218	.00173	-.34490
#2	-.00050	.00113	-.34473
#3	-.00027	.00105	-.05775
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6742.6**	**42153.**	**2187.5**
Stddev	20.5	148.	11.5
%RSD	.30347	.35129	.52481
#1	6758.7	42081.	2174.4
#2	6749.4	42054.	2192.3
#3	6719.6	42323.	2195.8

Approved: June 24, 2016

Sample Name: L1606064304 Acquired: 6/23/2016 11:33:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00117**	**.04057**	**-.00439**	**.03066**	**.04299**	**.00000**	**34.940**
Stddev	.00339	.00478	.00245	.00191	.00060	.00005	.093
%RSD	290.05	11.772	55.836	6.2346	1.3895	9400.1	.26617
#1	-.00268	.03688	-.00325	.02912	.04367	.00003	34.964
#2	.00250	.03887	-.00272	.03280	.04255	.00003	34.838
#3	.00369	.04596	-.00721	.03006	.04274	-.00006	35.019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**.00024**	**.00105**	**.00014**	**.00854**	**.93624**	**.00350**
Stddev	.00026	.00041	.00147	.00134	.02324	.10226	.00098
%RSD	120.80	169.78	140.19	932.26	272.26	10.922	27.945
#1	-.00008	.00003	-.00057	.00167	.03444	1.0540	.00407
#2	.00043	-.00002	.00230	-.00086	.00162	.87036	.00237
#3	.00030	.00072	.00143	-.00038	-.01046	.88433	.00405
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.1691**	**.00284**	**.00082**	**5.3323**	**.00048**	**.04039**	**.00314**
Stddev	.1006	.00320	.00036	.0155	.00048	.00723	.00588
%RSD	1.4038	112.52	43.945	.29013	100.08	17.911	186.90
#1	7.1974	.00652	.00120	5.3463	-.00005	.04875	.00442
#2	7.2526	.00128	.00078	5.3157	.00059	.03626	.00828
#3	7.0574	.00073	.00048	5.3349	.00088	.03617	-.00327
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606064304 Acquired: 6/23/2016 11:33:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00317**	**.00206**	**4.2290**	**.00011**	**.18686**	**.00008**	**-.00047**
Stddev	.00292	.00547	.0074	.00020	.00078	.00312	.00056
%RSD	92.220	265.53	.17548	181.78	.41674	3781.1	120.08
#1	-.00439	.00616	4.2261	-.00003	.18732	.00329	-.00032
#2	-.00528	.00417	4.2374	.00002	.18596	-.00294	-.00108
#3	.00017	-.00415	4.2234	.00034	.18729	-.00010	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00060**	**.00082**	F **-.17008**
Stddev	.00049	.00010	.27354
%RSD	82.787	12.582	160.83
#1	-.00060	.00070	-.07497
#2	-.00109	.00087	.04322
#3	-.00010	.00088	-.47848
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6776.1**	**42494.**	**2204.9**
Stddev	17.1	133.	21.4
%RSD	.25303	.31335	.97208
#1	6795.0	42645.	2183.8
#2	6771.9	42444.	2226.6
#3	6761.5	42394.	2204.4

Approved: June 24, 2016

Sample Name: L1606064305 Acquired: 6/23/2016 11:37:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	.53186	-.00214	.02175	.03601	-.00010	14.722	.00055
Stddev	.00228	.00247	.00445	.00230	.00094	.00005	.126	.00022
%RSD	421.53	.46389	208.04	10.587	2.6199	44.933	.85596	40.022
#1	.00316	.53012	-.00077	.02401	.03640	-.00014	14.685	.00039
#2	-.00105	.53469	-.00712	.01940	.03493	-.00005	14.619	.00081
#3	-.00048	.53078	.00146	.02185	.03669	-.00011	14.863	.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00006	.00230	.00548	.76832	2.3392	.00621	2.5504	.01694
Stddev	.00042	.00048	.00129	.01630	.0828	.00232	.0808	.00496
%RSD	702.55	20.753	23.604	2.1212	3.5411	37.306	3.1691	29.304
#1	-.00052	.00176	.00693	.75108	2.2935	.00388	2.4729	.01653
#2	.00003	.00248	.00444	.78348	2.4348	.00851	2.5441	.01220
#3	.00031	.00267	.00508	.77041	2.2892	.00625	2.6342	.02210
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	2.3848	.00454	.26337	.00504	-.00323	.00041	3.5594
Stddev	.00025	.0113	.00058	.00316	.00307	.00618	.00461	.0030
%RSD	40.210	.47407	12.866	1.1998	60.786	191.51	1127.1	.08456
#1	.00053	2.3726	.00503	.26642	.00155	-.00695	-.00306	3.5582
#2	.00043	2.3950	.00389	.26358	.00631	.00391	-.00135	3.5572
#3	.00091	2.3868	.00469	.26011	.00728	-.00664	.00563	3.5629
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606064305 Acquired: 6/23/2016 11:37:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00103	.06157	.01102	.00080	.00021	.06676	.17696
Stddev	.00038	.00058	.00530	.00336	.00041	.00009	.30311
%RSD	36.515	.93995	48.116	418.46	190.39	.14087	171.29
#1	.00068	.06155	.01291	.00467	.00037	.06668	-.11953
#2	.00098	.06100	.00503	-.00096	.00052	.06675	.48629
#3	.00143	.06216	.01513	-.00131	-.00025	.06686	.16411
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6948.0	43351.	2270.5
Stddev	24.8	156.	17.3
%RSD	.35679	.35939	.76126
#1	6945.4	43469.	2251.5
#2	6924.6	43410.	2274.7
#3	6973.9	43175.	2285.3

Approved: June 24, 2016

Sample Name: L1606064306 Acquired: 6/23/2016 11:41:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00187	.02354	.00138	.02630	.06121	-.00008	71.332	.00064
Stddev	.00122	.00905	.00134	.00013	.00195	.00003	.346	.00019
%RSD	65.350	38.437	97.369	.47954	3.1785	41.406	.48481	30.029
#1	.00046	.01310	.00189	.02632	.06190	-.00011	71.409	.00076
#2	.00257	.02853	.00239	.02617	.05901	-.00005	71.633	.00073
#3	.00258	.02900	-.00014	.02642	.06272	-.00007	70.954	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.00059	.00886	1.1481	2.4731	.02039	10.652	1.0194
Stddev	.00049	.00045	.00003	.0078	.1060	.00516	.108	.0029
%RSD	101.33	75.377	.29783	.68117	4.2846	25.297	1.0171	.28156
#1	.00039	.00035	.00888	1.1433	2.4250	.01560	10.708	1.0222
#2	.00005	.00111	.00886	1.1572	2.3998	.02585	10.527	1.0197
#3	.00102	.00032	.00883	1.1439	2.5946	.01972	10.720	1.0165
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00199	8.2539	.00024	.00303	.00651	-.00357	.00566	6.8739
Stddev	.00062	.0799	.00153	.00444	.00110	.00639	.00190	.0186
%RSD	31.027	.96777	643.77	146.27	16.949	178.95	33.597	.27005
#1	.00160	8.3389	-.00019	.00365	.00621	.00234	.00382	6.8912
#2	.00167	8.2427	.00194	-.00168	.00558	-.00269	.00762	6.8762
#3	.00270	8.1803	-.00103	.00713	.00773	-.01035	.00554	6.8543
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606064306 Acquired: 6/23/2016 11:41:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	.29195	-.00902	-.00150	-.00167	.02587	-.01653
Stddev	.00023	.00130	.00517	.00042	.00082	.00004	.37226
%RSD	81.741	.44447	57.341	28.330	49.121	.15361	2251.5
#1	.00030	.29340	-.00360	-.00101	-.00198	.02590	-.43514
#2	.00051	.29092	-.00957	-.00177	-.00074	.02587	.10816
#3	.00004	.29152	-.01390	-.00172	-.00228	.02582	.27737
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6886.1	42877.	2263.4
Stddev	11.4	248.	22.5
%RSD	.16521	.57737	.99518
#1	6899.1	43012.	2243.8
#2	6878.0	42591.	2258.4
#3	6881.3	43027.	2288.0

Approved: June 24, 2016

Sample Name: L1606064307 Acquired: 6/23/2016 11:45:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00027**	**.46732**	**-.00367**	**.03634**	**.03450**	**-.00001**	**48.188**
Stddev	.00117	.00622	.00300	.00353	.00021	.00003	.411
%RSD	430.98	1.3308	81.768	9.7232	.60957	380.82	.85283
#1	-.00110	.46077	-.00519	.03387	.03473	-.00002	48.611
#2	.00107	.47315	-.00021	.04039	.03431	.00003	48.163
#3	-.00078	.46803	-.00562	.03477	.03447	-.00003	47.791
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00049**	**-.00006**	**.00258**	**.00189**	**.46248**	**1.2468**	**.00637**
Stddev	.00032	.00044	.00041	.00037	.01357	.0192	.00270
%RSD	64.989	744.12	16.031	19.615	2.9342	1.5408	42.427
#1	.00085	-.00054	.00222	.00176	.46783	1.2648	.00616
#2	.00036	.00033	.00303	.00230	.47255	1.2265	.00378
#3	.00025	.00003	.00249	.00159	.44705	1.2490	.00917
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**11.690**	**.00808**	**.00138**	**11.004**	**-.00087**	**.04505**	**.00560**
Stddev	.220	.00278	.00009	.159	.00078	.00925	.00188
%RSD	1.8858	34.421	6.2970	1.4424	90.051	20.521	33.511
#1	11.824	.01029	.00138	11.101	.00003	.03848	.00352
#2	11.435	.00496	.00146	10.820	-.00139	.05563	.00610
#3	11.810	.00900	.00129	11.090	-.00126	.04106	.00718
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606064307 Acquired: 6/23/2016 11:45:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00150	-.00572	4.5875	.00033	.43303	.00532	-.00050
Stddev	.00456	.00884	.0072	.00047	.00154	.00872	.00190
%RSD	304.22	154.57	.15713	143.25	.35558	164.00	377.95
#1	-.00440	.00284	4.5857	.00014	.43366	.01418	-.00160
#2	-.00386	-.00518	4.5813	.00086	.43127	-.00326	.00169
#3	.00376	-.01481	4.5954	-.00002	.43415	.00503	-.00160
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00018	.00281	F -.24796
Stddev	.00061	.00016	.09171
%RSD	331.24	5.7704	36.987
#1	-.00078	.00270	-.33680
#2	-.00022	.00300	-.15362
#3	.00044	.00274	-.25345
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6781.2	42216.	2186.7
Stddev	33.5	59.	32.2
%RSD	.49353	.14055	1.4733
#1	6753.0	42285.	2149.7
#2	6772.5	42188.	2208.2
#3	6818.2	42177.	2202.2

Approved: June 24, 2016

Sample Name: L1606064308 Acquired: 6/23/2016 11:49:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00281	.28274	-.00295	.04314	.05239	-.00005	45.551	.00021
Stddev	.00212	.00598	.00239	.00293	.00113	.00003	.432	.00040
%RSD	75.574	2.1150	81.250	6.7892	2.1640	68.363	.94927	190.87
#1	.00246	.27651	-.00108	.04005	.05186	-.00008	46.037	.00028
#2	.00088	.28328	-.00564	.04350	.05369	-.00006	45.208	.00058
#3	.00508	.28843	-.00211	.04588	.05161	-.00001	45.407	-.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	.00251	-.00039	.27914	1.0523	.00350	9.9548	.00822
Stddev	.00011	.00220	.00108	.00276	.0768	.00421	.0849	.00471
%RSD	51.782	87.665	276.22	.98965	7.2950	120.45	.85241	57.326
#1	.00030	.00492	-.00140	.27833	.96686	.00383	10.029	.00571
#2	.00009	.00201	-.00053	.27688	1.0745	.00754	9.9737	.01366
#3	.00023	.00060	.00075	.28222	1.1155	-.00087	9.8620	.00530
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00143	28.849	.00034	.01859	.00004	-.00158	-.00433	4.2971
Stddev	.00035	.282	.00020	.00238	.00212	.00343	.00783	.0027
%RSD	24.593	.97651	59.389	12.791	4881.5	217.91	180.83	.06385
#1	.00106	29.162	.00024	.02134	-.00032	.00109	.00011	4.2940
#2	.00176	28.616	.00057	.01734	.00232	-.00545	-.01337	4.2982
#3	.00146	28.768	.00020	.01710	-.00187	-.00037	.00027	4.2992
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606064308 Acquired: 6/23/2016 11:49:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00126	.24347	.00339	-.00154	-.00045	.00217	.14987
Stddev	.00049	.00220	.00280	.00105	.00060	.00011	.32468
%RSD	39.037	.90382	82.553	68.121	135.39	4.8880	216.64
#1	.00073	.24601	.00642	-.00066	.00024	.00206	-.08894
#2	.00136	.24221	.00092	-.00270	-.00088	.00228	.51957
#3	.00170	.24219	.00281	-.00126	-.00070	.00217	.01899
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6738.5	42037.	2168.6
Stddev	30.1	232.	22.7
%RSD	.44688	.55143	1.0458
#1	6773.1	41803.	2143.6
#2	6718.5	42041.	2187.9
#3	6723.9	42267.	2174.3

Approved: June 24, 2016

Sample Name: L1606064309 Acquired: 6/23/2016 11:53:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00160	.15661	.00013	.04545	.04682	-.00000	35.419	.00033
Stddev	.00119	.00708	.00146	.00254	.00106	.00005	.240	.00028
%RSD	74.477	4.5233	1123.7	5.5867	2.2675	2104.2	.67865	85.873
#1	.00217	.15152	.00060	.04537	.04715	.00006	35.626	.00060
#2	.00240	.16470	-.00150	.04803	.04768	-.00004	35.476	.00033
#3	.00023	.15362	.00129	.04295	.04564	-.00003	35.155	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	.00123	.00024	.15532	.80097	.00097	6.9091	.00278
Stddev	.00049	.00097	.00034	.01614	.06209	.00454	.1107	.00175
%RSD	317.05	78.958	139.68	10.394	7.7519	469.66	1.6020	63.186
#1	-.00031	.00012	.00055	.17250	.73834	-.00386	6.9993	.00471
#2	.00039	.00163	.00029	.14047	.80205	.00159	6.7856	.00232
#3	-.00055	.00194	-.00012	.15300	.86251	.00516	6.9425	.00129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00431	36.718	-.00063	.01439	.00498	.00086	.00491	3.5590
Stddev	.00071	.056	.00104	.00557	.00152	.00128	.00282	.0044
%RSD	16.376	.15337	164.46	38.729	30.498	148.41	57.449	.12483
#1	.00432	36.703	-.00058	.02081	.00665	.00233	.00794	3.5641
#2	.00361	36.671	.00038	.01159	.00460	-.00005	.00237	3.5559
#3	.00502	36.780	-.00170	.01077	.00369	.00032	.00441	3.5570
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606064309 Acquired: 6/23/2016 11:53:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	.21143	-.00049	-.00473	-.00081	.00436	-.03117
Stddev	.00101	.00052	.00261	.00291	.00072	.00002	.28307
%RSD	133.37	.24546	537.03	61.538	89.522	.51462	908.26
#1	.00054	.21158	-.00030	-.00579	-.00149	.00436	.28801
#2	.00187	.21086	.00202	-.00697	-.00005	.00433	-.12971
#3	-.00012	.21186	-.00319	-.00144	-.00087	.00437	-.25179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6756.8	42049.	2196.1
Stddev	2.9	297.	15.9
%RSD	.04298	.70626	.72401
#1	6759.4	42356.	2177.8
#2	6757.4	41764.	2203.9
#3	6753.6	42028.	2206.5

Approved: June 24, 2016

Sample Name: L1606065001 Acquired: 6/23/2016 11:57:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00189**	**.06102**	**.00775**	**.01249**	**1.2363**	**.00005**	**40.010**
Stddev	.00078	.00679	.00307	.00259	.0071	.00016	.172
%RSD	41.259	11.125	39.598	20.763	.57164	292.34	.43096
#1	.00127	.05450	.01048	.01533	1.2439	.00018	40.193
#2	.00276	.06052	.00443	.01188	1.2353	.00011	39.988
#3	.00162	.06805	.00833	.01025	1.2299	-.00012	39.850
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00106**	**.04734**	**1.1335**	**.02781**	**17.038**	**2.5926**	**.01356**
Stddev	.00024	.00012	.0049	.00083	.057	.1423	.00643
%RSD	22.902	.25671	.43407	2.9805	.33217	5.4883	47.388
#1	.00108	.04721	1.1300	.02697	17.098	2.7070	.00680
#2	.00081	.04745	1.1391	.02863	17.031	2.4333	.01959
#3	.00129	.04736	1.1313	.02782	16.986	2.6375	.01430
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**34.850**	**1.3390**	**.00398**	**248.16**	**1.8950**	**.02385**	**.00496**
Stddev	.281	.0074	.00009	1.41	.0047	.00515	.00238
%RSD	.80752	.55545	2.2572	.56977	.24691	21.589	47.930
#1	35.099	1.3471	.00399	249.72	1.8962	.01848	.00456
#2	34.906	1.3375	.00406	247.80	1.8898	.02433	.00751
#3	34.545	1.3325	.00388	246.96	1.8989	.02874	.00281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606065001 Acquired: 6/23/2016 11:57:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.01117**	**-.00066**	**13.554**	**.00005**	**.88403**	**.00483**	**-.00261**
Stddev	.00331	.00370	.031	.00079	.00508	.00193	.00683
%RSD	29.635	565.13	.22672	1633.3	.57500	39.908	261.28
#1	-.00741	-.00127	13.581	-.00068	.88877	.00490	-.00463
#2	-.01242	.00332	13.521	-.00007	.88464	.00672	.00500
#3	-.01367	-.00401	13.560	.00090	.87866	.00287	-.00820
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00250**	**.00586**	F **-.23790**
Stddev	.00044	.00008	.31093
%RSD	17.584	1.3809	130.70
#1	.00210	.00596	-.30620
#2	.00297	.00581	.10150
#3	.00244	.00582	-.50901
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6603.7**	**40805.**	**2163.3**
Stddev	14.6	102.	41.7
%RSD	.22048	.24875	1.9297
#1	6587.1	40899.	2117.7
#2	6609.4	40818.	2172.3
#3	6614.4	40697.	2199.7

Approved: June 24, 2016

Sample Name: L1606065002 Acquired: 6/23/2016 12:01:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.02489	-.00287	.01411	.43644	.00011	25.711	.00088
Stddev	.00364	.00573	.00631	.00070	.00286	.00008	.186	.00056
%RSD	1038.5	23.031	220.06	4.9786	.65436	74.454	.72154	63.369
#1	-.00031	.03150	.00020	.01409	.43459	.00021	25.499	.00071
#2	-.00291	.02178	-.01012	.01482	.43973	.00004	25.845	.00151
#3	.00428	.02138	.00132	.01341	.43501	.00010	25.789	.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00144	.00464	-.00035	.33432	1.6832	.02333	16.223	.45100
Stddev	.00038	.00058	.00206	.02492	.0621	.00804	.060	.00508
%RSD	26.480	12.537	584.16	7.4533	3.6873	34.445	.36916	1.1259
#1	.00136	.00469	.00094	.34179	1.7336	.01773	16.240	.44555
#2	.00111	.00520	-.00272	.35464	1.7021	.03254	16.273	.45559
#3	.00186	.00404	.00072	.30652	1.6139	.01972	16.157	.45185
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	215.70	.00198	.01638	.00394	-.00086	-.00158	21.449
Stddev	.00010	1.30	.00093	.00175	.00302	.00337	.00400	.049
%RSD	19.360	.60478	47.194	10.688	76.721	393.11	253.30	.22739
#1	.00046	214.20	.00219	.01443	.00078	-.00439	-.00479	21.421
#2	.00062	216.54	.00278	.01781	.00680	.00233	-.00284	21.506
#3	.00045	216.35	.00096	.01689	.00423	-.00052	.00290	21.421
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606065002 Acquired: 6/23/2016 12:01:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00135	.47255	.00420	-.00295	-.00075	.00414	-.00270
Stddev	.00119	.00434	.00287	.00338	.00038	.00035	.37159
%RSD	88.287	.91926	68.478	114.54	51.374	8.5564	13768.
#1	.00241	.46832	.00697	.00051	-.00091	.00441	.12398
#2	.00156	.47234	.00440	-.00312	-.00031	.00428	-.42106
#3	.00006	.47700	.00123	-.00625	-.00102	.00374	.28898
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6563.7	40866.	2174.9
Stddev	21.3	148.	21.1
%RSD	.32412	.36219	.97234
#1	6544.5	40970.	2172.5
#2	6586.6	40931.	2155.1
#3	6560.1	40696.	2197.2

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 12:05:21 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .44831	10.703	.43168	.53573	1.0911	.05263	10.796
Stddev	.00175	.017	.00230	.00775	.0043	.00042	.054
%RSD	.39004	.15465	.53180	1.4463	.39478	.79021	.50197
#1	.44828	10.721	.43341	.54048	1.0870	.05303	10.796
#2	.44658	10.689	.42908	.52679	1.0956	.05220	10.850
#3	.45007	10.698	.43256	.53993	1.0905	.05265	10.741
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	.40000						
Range	10.000%						

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05416	.21667	.53159	.54518	4.3683	54.317	1.0928
Stddev	.00040	.00029	.00253	.00167	.0262	.148	.0073
%RSD	.73561	.13516	.47580	.30570	.59939	.27161	.67268
#1	.05371	.21640	.53279	.54635	4.3590	54.209	1.0857
#2	.05447	.21665	.52868	.54327	4.3978	54.485	1.0922
#3	.05430	.21698	.53329	.54592	4.3480	54.255	1.1004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.810	.54923	1.0837	54.737	.54364	10.749	.54374
Stddev	.058	.00364	.0022	.052	.00153	.032	.00832
%RSD	.53876	.66352	.20765	.09464	.28227	.30158	1.5305
#1	10.744	.54558	1.0861	54.703	.54348	10.742	.55291
#2	10.829	.55287	1.0816	54.797	.54220	10.721	.53666
#3	10.856	.54925	1.0832	54.712	.54525	10.784	.54166
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 12:05:21 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.3058**	**.42212**	**5.4532**	**1.0751**	**1.0918**	**1.0815**	**.54219**
Stddev	.0030	.00832	.0055	.0028	.0024	.0066	.00333
%RSD	.22701	1.9705	.10048	.25831	.21941	.61474	.61478
#1	1.3084	.43050	5.4492	1.0747	1.0913	1.0807	.54087
#2	1.3026	.41386	5.4509	1.0725	1.0944	1.0753	.53971
#3	1.3063	.42201	5.4594	1.0780	1.0897	1.0885	.54598
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0620**	**1.0850**	F **.06906**
Stddev	.0098	.0015	.29136
%RSD	.92653	.13908	421.86
#1	1.0688	1.0865	-.26582
#2	1.0507	1.0835	.20859
#3	1.0665	1.0851	.26442
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6761.2**	**42170.**	**2135.6**
Stddev	30.4	254.	38.5
%RSD	.45025	.60227	1.8034
#1	6745.3	42171.	2097.5
#2	6742.0	41916.	2134.8
#3	6796.3	42424.	2174.6

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 12:08:59 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00138	.00939	.00126	.00156	-.00034	.00001	.02965	-.00007
Stddev	.00293	.00768	.00491	.00136	.00065	.00010	.04568	.00027
%RSD	212.42	81.850	390.17	87.175	192.88	1033.2	154.04	411.15
#1	.00109	.01823	-.00438	.00279	-.00065	-.00008	.02210	-.00003
#2	.00444	.00563	.00455	.00010	.00041	.00011	.07863	.00018
#3	-.00140	.00431	.00361	.00180	-.00077	-.00000	-.01178	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00044	-.00193	-.00150	.04686	-.00321	-.04218	.00070
Stddev	.00023	.00045	.00177	.02531	.06645	.00382	.02089	.00303
%RSD	191.66	103.40	91.906	1685.8	141.79	119.02	49.541	434.91
#1	.00034	.00011	-.00127	.02678	-.00514	-.00396	-.05130	.00224
#2	.00012	.00024	-.00058	-.00927	.02400	-.00661	-.05695	.00264
#3	-.00011	.00095	-.00393	-.02201	.12172	.00093	-.01827	-.00279
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00437	.11699	-.00061	.00269	.00423	.00051	.00440	.00901
Stddev	.00070	.02428	.00128	.00780	.00466	.00512	.00537	.00090
%RSD	15.940	20.756	211.37	290.47	110.16	1005.7	122.02	9.9508
#1	.00357	.11912	.00043	.00283	.00310	-.00541	.01043	.00798
#2	.00471	.09171	-.00204	-.00519	.00936	.00342	.00264	.00957
#3	.00483	.14013	-.00021	.01042	.00024	.00351	.00013	.00949
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 12:08:59 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00104**	**.00007**	**.00479**	**-.00426**	**-.00086**	**-.00007**	**-.03636**
Stddev	.00150	.00005	.00475	.00529	.00041	.00006	.17918
%RSD	144.40	81.653	99.036	124.26	48.035	88.430	492.84
#1	.00274	.00004	.00301	.00106	-.00121	-.00001	.10971
#2	.00049	.00013	.01017	-.00952	-.00040	-.00006	.01751
#3	-.00011	.00004	.00120	-.00432	-.00097	-.00013	-.23629
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6787.7**	**42559.**	**2189.0**
Stddev	42.9	357.	32.2
%RSD	.63217	.83804	1.4713
#1	6836.5	42970.	2162.6
#2	6755.7	42330.	2179.6
#3	6771.0	42377.	2224.9

Approved: June 24, 2016

Sample Name: L1606065003 Acquired: 6/23/2016 12:12:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00370	.80939	.00267	.03223	.15152	.00003	16.410	.00200
Stddev	.00030	.00550	.00231	.00157	.00143	.00010	.167	.00026
%RSD	8.1591	.67996	86.365	4.8792	.94244	399.37	1.0195	13.059
#1	.00343	.80457	.00076	.03228	.15213	-.00008	16.600	.00230
#2	.00403	.81539	.00524	.03063	.14989	.00012	16.345	.00182
#3	.00363	.80821	.00203	.03377	.15254	.00003	16.285	.00188
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00674	.49819	.01602	10.808	1.5538	.01896	9.8126	.38868
Stddev	.00032	.00140	.00090	.095	.1322	.00275	.0110	.00294
%RSD	4.7724	.28078	5.6391	.88079	8.5094	14.512	.11155	.75614
#1	.00646	.49798	.01681	10.917	1.4017	.01883	9.8202	.38995
#2	.00667	.49691	.01621	10.740	1.6187	.01628	9.8000	.38532
#3	.00709	.49968	.01504	10.768	1.6411	.02178	9.8176	.39076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00725	109.71	.11187	.09046	.00426	.00012	-.00167	10.244
Stddev	.00018	.52	.00059	.00282	.00268	.00533	.00876	.010
%RSD	2.4336	.47677	.52734	3.1220	62.780	4272.0	525.12	.09876
#1	.00723	110.29	.11247	.09372	.00362	-.00576	.00638	10.232
#2	.00708	109.28	.11184	.08876	.00720	.00462	-.00039	10.250
#3	.00743	109.56	.11129	.08890	.00196	.00152	-.01099	10.249
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606065003 Acquired: 6/23/2016 12:12:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00113	.28838	.01481	.00147	.00293	.01681	.05048
Stddev	.00051	.00065	.00364	.00241	.00118	.00020	.02831
%RSD	45.019	.22666	24.569	163.44	40.265	1.2003	56.077
#1	.00092	.28836	.01790	.00214	.00241	.01669	.07419
#2	.00172	.28774	.01080	.00348	.00427	.01704	.01914
#3	.00077	.28905	.01573	-.00120	.00209	.01669	.05812
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6730.4	42248.	2219.4
Stddev	36.5	334.	5.6
%RSD	.54199	.79170	.25173
#1	6743.2	42234.	2213.5
#2	6758.8	42590.	2220.1
#3	6689.3	41921.	2224.6

Approved: June 24, 2016

Sample Name: L1606065008 Acquired: 6/23/2016 12:16:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.37295	-.00050	.01100	.08991	.00014	5.5551
Stddev	.00216	.00586	.00030	.00247	.00137	.00007	.0211
%RSD	231.27	1.5701	60.725	22.464	1.5229	48.760	.37958
#1	-.00155	.37972	-.00076	.00961	.09094	.00017	5.5696
#2	.00239	.36962	-.00058	.00954	.08836	.00019	5.5648
#3	.00197	.36953	-.00016	.01385	.09043	.00006	5.5309
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	.00183	.00276	-.00009	.22715	1.2637	.01968
Stddev	.00019	.00020	.00006	.00175	.01231	.1251	.00398
%RSD	42.655	10.871	2.0726	2042.1	5.4197	9.9030	20.221
#1	.00028	.00168	.00280	.00015	.21454	1.2211	.01991
#2	.00042	.00177	.00269	-.00194	.23914	1.4046	.01559
#3	.00066	.00206	.00277	.00153	.22778	1.1654	.02354
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.5219	.51901	.00085	107.29	.02015	.05313	.00169
Stddev	.1150	.00477	.00050	.21	.00058	.00814	.00069
%RSD	3.2666	.91942	58.338	.19407	2.8910	15.322	41.005
#1	3.3891	.51379	.00032	107.25	.02066	.04374	.00247
#2	3.5920	.52011	.00129	107.52	.02027	.05752	.00113
#3	3.5845	.52314	.00094	107.12	.01952	.05813	.00149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606065008 Acquired: 6/23/2016 12:16:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00073**	**-.00197**	**8.8487**	**.00069**	**.11069**	**.00926**	**-.00445**
Stddev	.00134	.00306	.0099	.00012	.00023	.00236	.00053
%RSD	182.00	155.09	.11148	17.201	.20833	25.534	11.807
#1	-.00192	-.00166	8.8443	.00082	.11048	.00698	-.00505
#2	-.00099	-.00517	8.8600	.00068	.11065	.00910	-.00423
#3	.00071	.00092	8.8417	.00058	.11093	.01170	-.00408
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00059**	**.06839**	F **-.19029**
Stddev	.00037	.00033	.03412
%RSD	61.583	.48036	17.929
#1	-.00097	.06802	-.15444
#2	-.00057	.06860	-.22235
#3	-.00024	.06857	-.19407
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6652.3**	**41744.**	**2157.8**
Stddev	13.8	125.	26.3
%RSD	.20808	.30032	1.2206
#1	6636.5	41605.	2128.7
#2	6661.9	41780.	2164.7
#3	6658.6	41848.	2180.0

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 12:20:48 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.43349**	**10.353**	**.41577**	**.50994**	**1.0482**	**.05096**	**10.384**
Stddev	.00485	.010	.00570	.00299	.0008	.00033	.107
%RSD	1.1187	.09724	1.3717	.58537	.07978	.64838	1.0295
#1	.42886	10.350	.41404	.50989	1.0486	.05109	10.397
#2	.43308	10.345	.41113	.51295	1.0488	.05121	10.483
#3	.43854	10.364	.42213	.50698	1.0473	.05059	10.271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05233**	**.21095**	**.51702**	**.52714**	**4.1456**	**52.157**	**1.0519**
Stddev	.00026	.00011	.00231	.00225	.0219	.071	.0095
%RSD	.49939	.05441	.44715	.42771	.52838	.13576	.90262
#1	.05254	.21106	.51692	.52834	4.1708	52.147	1.0521
#2	.05203	.21083	.51937	.52454	4.1342	52.092	1.0614
#3	.05240	.21096	.51475	.52854	4.1317	52.232	1.0424
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.434**	**.52121**	**1.0492**	**52.414**	**.52654**	**10.396**	**.52092**
Stddev	.126	.00385	.0056	.098	.00103	.025	.00769
%RSD	1.2092	.73822	.53418	.18692	.19506	.24476	1.4771
#1	10.317	.51677	1.0555	52.460	.52766	10.404	.52824
#2	10.568	.52362	1.0474	52.480	.52564	10.368	.51290
#3	10.417	.52323	1.0447	52.301	.52632	10.417	.52161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 12:20:48 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2647**	**.41582**	**5.2897**	**1.0426**	**1.0474**	**1.0316**	**.52421**
Stddev	.0085	.00081	.0192	.0024	.0031	.0076	.00494
%RSD	.67132	.19539	.36255	.23353	.29112	.73907	.94263
#1	1.2718	.41524	5.2962	1.0431	1.0449	1.0253	.52700
#2	1.2553	.41547	5.2682	1.0400	1.0508	1.0294	.52712
#3	1.2670	.41675	5.3049	1.0448	1.0466	1.0400	.51850
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0286**	**1.0463**	F **.06116**
Stddev	.0063	.0019	.57133
%RSD	.60756	.18676	934.11
#1	1.0326	1.0469	-.55556
#2	1.0317	1.0441	.57239
#3	1.0214	1.0478	.16666
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6823.1**	**42205.**	**2180.8**
Stddev	45.2	76.	38.1
%RSD	.66310	.18083	1.7449
#1	6824.7	42291.	2143.4
#2	6867.5	42174.	2219.5
#3	6777.1	42148.	2179.5

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 12:24:27 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00060**	**.01492**	**.00161**	**.00461**	**.00327**	**.00005**	**.00493**
Stddev	.00124	.00546	.00218	.00168	.00084	.00006	.03046
%RSD	205.49	36.566	135.28	36.366	25.661	137.48	617.42
#1	-.00032	.00875	-.00044	.00277	.00418	.00002	-.02974
#2	.00047	.01693	.00390	.00501	.00309	.00000	.01715
#3	-.00195	.01909	.00137	.00605	.00253	.00012	.02738
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00044**	**.00010**	**.00142**	**-.00176**	**-.01069**	**.06773**	**-.00268**
Stddev	.00041	.00031	.00160	.00098	.01615	.07990	.00427
%RSD	92.565	296.93	112.74	55.809	151.09	117.97	159.16
#1	.00010	-.00004	.00076	-.00065	.00519	.15988	.00187
#2	.00090	.00046	.00324	-.00253	-.02710	.02546	-.00659
#3	.00034	-.00011	.00025	-.00210	-.01015	.01784	-.00333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.19200**	**.00252**	**.00474**	**.07698**	**-.00084**	**.00528**	**.00057**
Stddev	.12403	.00084	.00094	.02220	.00131	.00743	.00445
%RSD	64.597	33.209	19.832	28.835	155.82	140.76	776.29
#1	-.15567	.00334	.00378	.08323	-.00038	.01004	-.00293
#2	-.33014	.00167	.00566	.09539	.00018	.00907	-.00094
#3	-.09020	.00254	.00476	.05233	-.00233	-.00328	.00559
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 12:24:27 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00066**	**.00330**	**.01008**	**.00122**	**.00049**	**.00291**	**-.00103**
Stddev	.00887	.00211	.00243	.00082	.00040	.00265	.00189
%RSD	1339.0	63.868	24.056	67.357	81.347	91.128	183.66
#1	-.00210	.00463	.00977	.00028	.00054	-.00004	-.00303
#2	.01058	.00087	.01265	.00182	.00007	.00369	.00073
#3	-.00650	.00440	.00783	.00157	.00085	.00509	-.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00060**	**-.00001**	F **-.22691**
Stddev	.00066	.00012	.26976
%RSD	109.33	1826.7	118.88
#1	-.00062	.00005	-.50673
#2	.00007	-.00014	.03151
#3	-.00125	.00007	-.20552
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6792.2**	**42764.**	**2142.0**
Stddev	4.5	206.	11.5
%RSD	.06579	.48263	.53538
#1	6797.0	42989.	2133.7
#2	6788.2	42584.	2155.1
#3	6791.3	42720.	2137.4

Approved: June 24, 2016

Sample Name: PBW 9A Acquired: 6/23/2016 12:28:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00105**	**.02171**	**.00244**	**.00673**	**.00126**	**-.00003**	**-.05439**
Stddev	.00150	.00352	.00258	.00309	.00128	.00008	.04093
%RSD	143.33	16.201	105.76	45.867	102.12	293.70	75.246
#1	-.00069	.02375	.00128	.00392	.00151	.00000	-.08805
#2	.00189	.01765	.00539	.01003	.00240	.00003	-.06629
#3	.00193	.02373	.00064	.00624	-.00013	-.00012	-.00883
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00035**	**.00023**	**.00158**	**-.00096**	**.00709**	**-.07719**	**.00102**
Stddev	.00000	.00019	.00089	.00068	.03049	.03016	.00222
%RSD	.83206	82.958	56.456	70.362	430.31	39.069	216.53
#1	.00035	.00032	.00226	-.00086	.01702	-.04271	.00135
#2	.00035	.00001	.00190	-.00034	.03137	-.09023	.00306
#3	.00036	.00035	.00057	-.00169	-.02713	-.09865	-.00134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03686**	**.00230**	**.00136**	**.11675**	**-.00185**	**-.00459**	**.00215**
Stddev	.08180	.00124	.00032	.02730	.00032	.00543	.00135
%RSD	221.89	54.095	23.684	23.386	17.191	118.48	62.717
#1	.12721	.00089	.00140	.08528	-.00149	-.00676	.00368
#2	.01555	.00324	.00102	.13093	-.00204	.00160	.00111
#3	-.03217	.00276	.00166	.13405	-.00204	-.00860	.00166
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: PBW 9A Acquired: 6/23/2016 12:28:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00174	-.00430	.00801	.00106	.00047	.01231	-.00171
Stddev	.00278	.00332	.00038	.00032	.00078	.00274	.00288
%RSD	160.19	77.122	4.7825	29.796	167.01	22.301	168.53
#1	.00487	-.00373	.00845	.00141	.00114	.01343	-.00071
#2	-.00042	-.00131	.00773	.00098	-.00038	.00918	.00054
#3	.00076	-.00787	.00785	.00079	.00064	.01432	-.00495
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00020	.00177	F -.42567
Stddev	.00050	.00016	.27822
%RSD	254.67	8.9618	65.360
#1	-.00062	.00175	-.67922
#2	-.00032	.00163	-.12805
#3	.00035	.00194	-.46974
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6735.9	42461.	2142.9
Stddev	23.8	190.	19.6
%RSD	.35284	.44797	.91669
#1	6756.3	42258.	2130.8
#2	6741.6	42489.	2132.3
#3	6709.8	42635.	2165.5

Approved: June 24, 2016

Sample Name: LCSW 9A Acquired: 6/23/2016 12:32:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21862**	**5.1749**	**.20706**	**1.0059**	**.52790**	**.02511**	**5.3259**	**.02625**
Stddev	.00105	.0138	.00142	.0053	.00145	.00005	.0730	.00042
%RSD	.47858	.26622	.68661	.52250	.27422	.20554	1.3710	1.6039
#1	.21748	5.1595	.20682	1.0119	.52887	.02505	5.3723	.02617
#2	.21883	5.1861	.20578	1.0037	.52624	.02514	5.2417	.02587
#3	.21954	5.1791	.20859	1.0021	.52860	.02514	5.3636	.02670
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10579**	**.25981**	**.26650**	**2.1153**	**25.949**	**.52615**	**5.2296**	**.26267**
Stddev	.00017	.00166	.00050	.0412	.208	.00546	.1321	.00383
%RSD	.16358	.63829	.18798	1.9496	.80266	1.0377	2.5264	1.4585
#1	.10598	.26003	.26617	2.0972	25.958	.53066	5.1307	.26398
#2	.10575	.26135	.26625	2.0863	25.736	.52008	5.1784	.26568
#3	.10564	.25806	.26708	2.1626	26.152	.52771	5.3796	.25836
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53809**	**26.382**	**.26602**	**5.0505**	**.26442**	**.63942**	**.19862**	**2.6942**
Stddev	.00217	.107	.00132	.0129	.00389	.00289	.00602	.0099
%RSD	.40327	.40576	.49728	.25504	1.4726	.45272	3.0327	.36655
#1	.54058	26.505	.26742	5.0651	.26838	.64232	.20378	2.7053
#2	.53711	26.319	.26585	5.0454	.26059	.63653	.19200	2.6864
#3	.53658	26.320	.26479	5.0409	.26429	.63940	.20007	2.6909
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: LCSW 9A Acquired: 6/23/2016 12:32:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52664	.53638	.53249	.26160	.51512	.52639	.07644
Stddev	.00197	.00221	.00973	.00257	.00134	.00186	.23401
%RSD	.37460	.41251	1.8268	.98264	.26011	.35402	306.16
#1	.52890	.53538	.53798	.26390	.51583	.52848	.32243
#2	.52526	.53485	.52126	.26208	.51596	.52489	-.14341
#3	.52576	.53892	.53824	.25882	.51357	.52581	.05029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6718.1	42029.	2146.1
Stddev	16.8	197.	23.7
%RSD	.24960	.46881	1.1059
#1	6729.4	41993.	2126.8
#2	6726.0	41853.	2138.9
#3	6698.8	42242.	2172.6

Approved: June 24, 2016

Sample Name: F BLANK Acquired: 6/23/2016 12:36:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00169**	**.01329**	**.00117**	**.00521**	**.00090**	**.00004**	**.01184**
Stddev	.00118	.01449	.00247	.00116	.00111	.00005	.05441
%RSD	69.720	109.00	211.84	22.232	123.24	115.17	459.72
#1	.00067	.02586	-.00106	.00446	-.00014	.00007	-.05079
#2	.00143	-.00256	.00382	.00464	.00077	-.00001	.04749
#3	.00299	.01658	.00073	.00655	.00207	.00007	.03881
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00030**	**-.00030**	**.00180**	**-.00037**	F **-.03210**	**.02396**	**.00164**
Stddev	.00007	.00028	.00162	.00173	.01094	.07024	.00113
%RSD	22.944	95.859	89.912	468.65	34.099	293.15	68.927
#1	.00032	-.00035	.00011	.00030	-.01979	.07357	.00037
#2	.00023	.00001	.00195	.00093	-.04072	.05472	.00201
#3	.00037	-.00055	.00335	-.00234	-.03578	-.05641	.00253
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.03159**	**-.00119**	**.00127**	**.14348**	**-.00017**	**-.00302**	**.00279**
Stddev	.05268	.00112	.00015	.00668	.00022	.01538	.00239
%RSD	166.73	93.930	12.134	4.6553	124.39	508.76	85.383
#1	-.06723	-.00247	.00111	.15005	-.00016	-.01729	.00135
#2	.02891	-.00065	.00141	.13670	-.00040	.01327	.00555
#3	-.05646	-.00044	.00131	.14370	.00003	-.00504	.00148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: F BLANK Acquired: 6/23/2016 12:36:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00429**	**.00520**	**.01018**	**.00070**	**.00304**	**.00711**	**-.00371**
Stddev	.00171	.00663	.00080	.00222	.00057	.00751	.00309
%RSD	39.956	127.55	7.8886	317.56	18.898	105.60	83.235
#1	-.00383	.00412	.01000	.00203	.00239	.00988	-.00016
#2	-.00619	-.00083	.00948	.00194	.00326	-.00139	-.00580
#3	-.00286	.01231	.01106	-.00187	.00347	.01285	-.00517
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00052**	**.00247**	**.20188**
Stddev	.00067	.00028	.15109
%RSD	128.14	11.399	74.843
#1	-.00000	.00266	.12763
#2	-.00029	.00260	.10227
#3	-.00128	.00214	.37573
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6848.0**	**43129.**	**2203.6**
Stddev	17.0	116.	40.3
%RSD	.24788	.26822	1.8285
#1	6840.0	43254.	2237.6
#2	6836.5	43026.	2159.1
#3	6867.5	43107.	2214.2

Approved: June 24, 2016

Sample Name: L1606078709 Acquired: 6/23/2016 12:40:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00229	.34423	-.00164	.04501	.09329	-.00010	56.919	.00038
Stddev	.00043	.01247	.00379	.00153	.00209	.00009	.746	.00006
%RSD	18.600	3.6226	230.35	3.4051	2.2355	91.391	1.3098	15.382
#1	.00278	.35810	.00261	.04367	.09569	-.00010	57.776	.00044
#2	.00205	.33394	-.00291	.04468	.09195	-.00001	56.556	.00036
#3	.00205	.34066	-.00463	.04668	.09223	-.00019	56.425	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.00331	.00226	.32551	1.2191	.01307	18.463	.01384
Stddev	.00024	.00045	.00113	.02821	.0343	.00579	.294	.00288
%RSD	163.96	13.717	50.047	8.6673	2.8163	44.290	1.5898	20.829
#1	.00006	.00370	.00148	.35802	1.2200	.00909	18.613	.01575
#2	.00042	.00343	.00356	.31107	1.2530	.01970	18.125	.01052
#3	-.00004	.00281	.00175	.30744	1.1843	.01041	18.651	.01525
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	3.8679	-.00006	.19112	.00273	.00016	.00316	9.5319
Stddev	.00017	.0832	.00169	.00281	.00222	.00426	.01169	.0215
%RSD	33.645	2.1507	2767.7	1.4686	81.412	2635.4	369.49	.22498
#1	.00048	3.9597	.00168	.19419	.00029	-.00139	.00141	9.5100
#2	.00069	3.8464	-.00169	.18868	.00326	-.00310	-.00755	9.5529
#3	.00035	3.7975	-.00017	.19050	.00464	.00498	.01564	9.5328
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606078709 Acquired: 6/23/2016 12:40:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00114	.15008	.00611	.00006	.00208	.01394	.12651
Stddev	.00029	.00282	.00671	.00130	.00048	.00024	.10058
%RSD	25.142	1.8804	109.74	2091.4	22.807	1.6929	79.498
#1	.00101	.15329	.00841	.00056	.00197	.01393	.23030
#2	.00147	.14797	-.00144	.00104	.00261	.01418	.11976
#3	.00094	.14899	.01136	-.00142	.00168	.01371	.02949
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7008.6	44037.	2274.6
Stddev	58.7	90.	58.1
%RSD	.83811	.20335	2.5527
#1	7040.7	44061.	2210.8
#2	6940.8	43938.	2288.9
#3	7044.3	44112.	2324.2

Approved: June 24, 2016

Sample Name: L1606078711S Acquired: 6/23/2016 12:44:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21444**	**5.4597**	**.20422**	**1.0297**	**.60086**	**.02444**	**59.136**	**.02564**
Stddev	.00107	.0321	.00448	.0059	.00240	.00026	.342	.00031
%RSD	.50108	.58738	2.1942	.57168	.39981	1.0599	.57766	1.1894
#1	.21336	5.4646	.19913	1.0298	.60082	.02453	58.978	.02599
#2	.21551	5.4255	.20758	1.0238	.60329	.02415	59.528	.02540
#3	.21444	5.4890	.20595	1.0356	.59848	.02465	58.901	.02554
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10099**	**.25246**	**.25408**	**2.3914**	**26.238**	**.52509**	**22.671**	**.26957**
Stddev	.00096	.00240	.00204	.0378	.190	.00248	.097	.00069
%RSD	.95542	.94955	.80099	1.5812	.72578	.47192	.42611	.25486
#1	.10204	.25175	.25493	2.4019	26.290	.52317	22.742	.26878
#2	.10014	.25050	.25176	2.4230	26.396	.52789	22.561	.27007
#3	.10080	.25513	.25556	2.3495	26.027	.52422	22.709	.26985
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52400**	**29.173**	**.25206**	**5.2009**	**.25684**	**.62111**	**.19336**	**12.135**
Stddev	.00226	.184	.00153	.0264	.00562	.00252	.00475	.045
%RSD	.43200	.63202	.60780	.50841	2.1877	.40638	2.4564	.37093
#1	.52661	29.078	.25383	5.2253	.26309	.62401	.19051	12.187
#2	.52273	29.385	.25133	5.2045	.25220	.61993	.19072	12.105
#3	.52266	29.055	.25104	5.1728	.25523	.61940	.19884	12.114
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606078711S Acquired: 6/23/2016 12:44:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50899**	**.66145**	**.51197**	**.11737**	**.50542**	**.51776**	**.38550**
Stddev	.00093	.00353	.00830	.00250	.00346	.00270	.16244
%RSD	.18257	.53437	1.6211	2.1327	.68550	.52078	42.137
#1	.50929	.65987	.50403	.12026	.50405	.52085	.44171
#2	.50794	.66550	.52059	.11582	.50284	.51657	.20242
#3	.50973	.65898	.51129	.11603	.50936	.51586	.51236
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6896.6**	**43117.**	**2256.9**
Stddev	23.4	149.	25.7
%RSD	.33903	.34585	1.1384
#1	6870.8	43289.	2227.3
#2	6902.4	43043.	2272.5
#3	6916.4	43021.	2271.0

Approved: June 24, 2016

Sample Name: L1606078712SD Acquired: 6/23/2016 12:47:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.22222	6.9091	.21902	1.0835	.63705	.02557	61.949	.02711
Stddev	.00054	.0778	.00270	.0119	.00654	.00033	.627	.00049
%RSD	.24497	1.1267	1.2310	1.0998	1.0260	1.2886	1.0120	1.8122
#1	.22159	6.8203	.22150	1.0711	.64423	.02521	62.665	.02667
#2	.22252	6.9419	.21942	1.0845	.63145	.02585	61.499	.02702
#3	.22255	6.9652	.21615	1.0948	.63547	.02566	61.683	.02764
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10799	.26553	.27324	3.5530	27.834	.54656	24.046	.31995
Stddev	.00068	.00298	.00075	.0652	.258	.00986	.319	.00232
%RSD	.63148	1.1216	.27535	1.8345	.92801	1.8040	1.3284	.72573
#1	.10770	.26210	.27379	3.6282	28.112	.54919	24.403	.32247
#2	.10750	.26697	.27238	3.5140	27.602	.53565	23.948	.31949
#3	.10877	.26750	.27354	3.5167	27.788	.55483	23.787	.31790
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.55768	30.666	.26947	5.5531	.27503	.65875	.20965	15.500
Stddev	.00211	.309	.00314	.0329	.00634	.00222	.00306	.082
%RSD	.37890	1.0085	1.1651	.59314	2.3050	.33734	1.4581	.52959
#1	.55544	31.019	.26645	5.5261	.26776	.65625	.21162	15.429
#2	.55796	30.445	.26924	5.5434	.27796	.66048	.20613	15.482
#3	.55964	30.533	.27272	5.5898	.27938	.65954	.21121	15.590
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606078712SD Acquired: 6/23/2016 12:47:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.54487**	**.69273**	**.54313**	**.20068**	**.52663**	**.55357**	**.81516**
Stddev	.00401	.00802	.00413	.00570	.00642	.00315	.20013
%RSD	.73565	1.1579	.75965	2.8389	1.2184	.56876	24.551
#1	.54171	.70191	.54694	.19419	.51929	.55044	.73031
#2	.54352	.68922	.54371	.20484	.52944	.55353	.67143
#3	.54938	.68707	.53875	.20302	.53116	.55674	1.0437
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6712.3**	**42493.**	**2227.8**
Stddev	15.8	439.	27.4
%RSD	.23544	1.0332	1.2303
#1	6721.1	42996.	2205.4
#2	6721.6	42185.	2219.6
#3	6694.0	42299.	2258.4

Approved: June 24, 2016

Sample Name: L1606094702 Acquired: 6/23/2016 12:51:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00161**	**.72329**	**.00024**	**.04257**	**.02726**	**.00093**	**71.363**
Stddev	.00172	.00564	.00259	.00289	.00077	.00009	.357
%RSD	107.13	.78037	1071.7	6.7912	2.8393	9.5513	.49984
#1	.00263	.72125	.00050	.03924	.02748	.00083	71.550
#2	-.00038	.71895	.00269	.04449	.02790	.00099	71.588
#3	.00257	.72967	-.00247	.04397	.02640	.00097	70.952
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00065**	**.01705**	**.00536**	**.00360**	**.48801**	**4.4714**	**.08505**
Stddev	.00017	.00041	.00004	.00180	.01606	.0806	.00293
%RSD	26.336	2.4191	.69244	50.107	3.2903	1.8030	3.4402
#1	.00062	.01749	.00532	.00198	.49690	4.3787	.08246
#2	.00084	.01697	.00535	.00328	.49765	4.5098	.08447
#3	.00050	.01668	.00540	.00554	.46947	4.5256	.08822
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**49.963**	**2.6850**	**.00051**	**2.6407**	**.10126**	**.02363**	**.00021**
Stddev	.390	.0188	.00060	.0576	.00091	.00614	.00130
%RSD	.78147	.69880	116.71	2.1803	.89694	25.990	626.25
#1	50.021	2.6947	.00017	2.6107	.10203	.01758	.00168
#2	50.320	2.6969	.00120	2.6044	.10149	.02985	-.00027
#3	49.546	2.6634	.00017	2.7071	.10026	.02345	-.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606094702 Acquired: 6/23/2016 12:51:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00117**	**.00780**	**9.0826**	**.00035**	**.15068**	**-.00633**	**-.00126**
Stddev	.00263	.00037	.0069	.00043	.00086	.00191	.00207
%RSD	224.74	4.7068	.07622	124.87	.56783	30.257	164.67
#1	-.00051	.00762	9.0850	-.00014	.15125	-.00686	.00098
#2	.00107	.00823	9.0748	.00049	.15110	-.00792	-.00164
#3	-.00406	.00757	9.0880	.00069	.14970	-.00420	-.00311
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00160**	**.09771**	F **-.16778**
Stddev	.00119	.00040	.51040
%RSD	73.987	.41151	304.20
#1	-.00195	.09817	-.75124
#2	-.00028	.09753	.19603
#3	-.00258	.09742	.05186
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6766.6**	**42365.**	**2163.4**
Stddev	9.2	146.	15.3
%RSD	.13637	.34463	.70577
#1	6775.0	42444.	2166.8
#2	6768.2	42197.	2146.8
#3	6756.7	42455.	2176.8

Approved: June 24, 2016

Sample Name: L1606094702PS Acquired: 6/23/2016 12:55:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573561-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.23131**	**6.0776**	**.22198**	**1.0949**	**.57783**	**.02707**	**68.881**	**.02745**
Stddev	.00261	.0118	.00368	.0042	.00396	.00014	.349	.00034
%RSD	1.1293	.19488	1.6573	.38166	.68564	.52400	.50731	1.2383
#1	.23191	6.0677	.22245	1.0989	.58171	.02694	69.284	.02712
#2	.23358	6.0907	.22540	1.0952	.57379	.02722	68.656	.02780
#3	.22846	6.0743	.21808	1.0905	.57800	.02705	68.704	.02742
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.12357**	**.27001**	**.27410**	**2.6713**	**31.343**	**.63792**	**50.109**	**2.6662**
Stddev	.00057	.00132	.00049	.0829	.141	.00571	.478	.0042
%RSD	.46382	.48739	.18035	3.1046	.45067	.89520	.95447	.15755
#1	.12291	.26993	.27402	2.7447	31.454	.64241	50.655	2.6687
#2	.12395	.26874	.27464	2.5813	31.391	.63149	49.762	2.6614
#3	.12384	.27137	.27366	2.6879	31.184	.63985	49.911	2.6685
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.56440**	**30.139**	**.35952**	**5.4625**	**.27321**	**.67168**	**.20646**	**10.951**
Stddev	.00177	.207	.00084	.0146	.00396	.00325	.00903	.012
%RSD	.31433	.68626	.23364	.26735	1.4480	.48353	4.3731	.11161
#1	.56510	30.360	.35967	5.4483	.26967	.66886	.19608	10.941
#2	.56572	29.950	.36028	5.4775	.27248	.67095	.21077	10.965
#3	.56239	30.107	.35862	5.4616	.27748	.67523	.21252	10.949
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606094702PS Acquired: 6/23/2016 12:55:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573561-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.55207	.69512	.54416	.27151	.53992	.62316	.33455
Stddev	.00111	.00297	.00646	.00259	.00233	.00135	.21435
%RSD	.20021	.42717	1.1871	.95282	.43173	.21709	64.072
#1	.55091	.69855	.54132	.27429	.53723	.62231	.56787
#2	.55311	.69332	.55155	.27110	.54122	.62472	.28942
#3	.55220	.69350	.53960	.26916	.54131	.62246	.14635
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6701.8	41790.	2191.5
Stddev	33.8	212.	30.8
%RSD	.50413	.50847	1.4072
#1	6738.9	41963.	2159.3
#2	6693.9	41855.	2194.4
#3	6672.8	41553.	2220.7

Approved: June 24, 2016

Sample Name: L1606094702SDL Acquired: 6/23/2016 12:58:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573561-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00043**	**.14607**	**-.00240**	**.01522**	**.00533**	**.00018**	**13.829**
Stddev	.00072	.00173	.00155	.00294	.00088	.00007	.014
%RSD	166.60	1.1836	64.638	19.298	16.495	36.775	.10097
#1	.00110	.14802	-.00090	.01555	.00630	.00012	13.821
#2	.00052	.14545	-.00230	.01213	.00459	.00025	13.845
#3	-.00033	.14473	-.00399	.01798	.00509	.00017	13.821
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00040**	**.00301**	**.00202**	**-.00034**	**.09184**	**.97478**	**.01267**
Stddev	.00032	.00048	.00120	.00215	.01151	.12899	.00579
%RSD	79.310	15.784	59.069	637.47	12.537	13.232	45.699
#1	.00047	.00356	.00068	-.00130	.09769	.95678	.00661
#2	.00068	.00280	.00298	.00212	.07858	1.1118	.01326
#3	.00005	.00268	.00241	-.00183	.09927	.85574	.01815
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.9348**	**.52152**	**.00068**	**.59140**	**.01937**	**.00797**	**.00486**
Stddev	.0620	.00623	.00032	.02814	.00066	.00973	.00294
%RSD	.62431	1.1951	47.005	4.7580	3.4076	121.96	60.573
#1	9.8700	.51435	.00105	.60058	.01907	.01776	.00762
#2	9.9936	.52460	.00045	.61381	.01892	-.00169	.00177
#3	9.9409	.52561	.00055	.55982	.02013	.00786	.00517
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606094702SDL Acquired: 6/23/2016 12:58:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573561-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00111**	**.00210**	**1.8002**	**.00040**	**.02959**	**.00055**	**-.00159**
Stddev	.00327	.00710	.0136	.00093	.00013	.00562	.00187
%RSD	293.76	338.69	.75754	236.18	.44358	1015.7	117.61
#1	-.00190	.00513	1.7939	.00073	.02952	.00262	.00008
#2	-.00392	-.00601	1.7909	-.00066	.02974	-.00581	-.00361
#3	.00248	.00718	1.8159	.00112	.02950	.00484	-.00124
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00035**	**.01973**	F **-.13864**
Stddev	.00102	.00027	.24407
%RSD	289.01	1.3729	176.04
#1	.00075	.01955	.08331
#2	-.00055	.02004	-.09920
#3	-.00127	.01961	-.40003
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6855.2**	**43109.**	**2187.1**
Stddev	32.0	303.	16.2
%RSD	.46723	.70314	.73913
#1	6819.8	43433.	2193.1
#2	6882.1	43061.	2199.5
#3	6863.8	42833.	2168.8

Approved: June 24, 2016

Sample Name: L1606094702SDL Acquired: 6/23/2016 13:02:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573561-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00232**	**.02993**	**.00197**	**.00512**	**.00114**	**.00015**	**2.8120**
Stddev	.00313	.00891	.00181	.00244	.00183	.00007	.0500
%RSD	135.12	29.779	91.937	47.607	160.57	48.153	1.7778
#1	-.00063	.02792	.00148	.00724	.00306	.00014	2.7564
#2	.00198	.03967	.00046	.00246	-.00058	.00008	2.8532
#3	.00561	.02219	.00398	.00564	.00094	.00022	2.8264
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**.00072**	**.00245**	**-.00169**	**.00207**	**.15449**	**.00188**
Stddev	.00040	.00049	.00241	.00183	.01789	.14437	.00389
%RSD	284.13	68.360	98.576	108.23	863.70	93.452	207.06
#1	-.00007	.00018	-.00005	-.00315	.01687	.27627	.00638
#2	-.00011	.00115	.00262	-.00229	.00716	-.00499	-.00030
#3	.00060	.00082	.00477	.00036	-.01782	.19218	-.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.8882**	**.10521**	**.00022**	**.13787**	**.00377**	**.01679**	**.00215**
Stddev	.0526	.00189	.00010	.02493	.00067	.01082	.00238
%RSD	2.7846	1.7994	46.937	18.080	17.824	64.431	110.71
#1	1.8378	.10506	.00020	.10917	.00363	.02905	.00396
#2	1.9428	.10340	.00033	.15032	.00318	.01271	-.00055
#3	1.8841	.10717	.00013	.15412	.00450	.00860	.00303
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606094702SDL Acquired: 6/23/2016 13:02:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573561-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00088**	**.00528**	**.39801**	**-.00045**	**.00623**	**.00559**	**-.00232**
Stddev	.00473	.00204	.01013	.00049	.00041	.00837	.00290
%RSD	536.31	38.691	2.5457	109.74	6.5228	149.79	124.78
#1	-.00591	.00761	.38714	-.00061	.00612	.01019	-.00518
#2	-.00021	.00380	.39971	-.00083	.00589	.01064	.00062
#3	.00348	.00443	.40719	.00010	.00668	-.00407	-.00241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00052**	**.00442**	F **-.13647**
Stddev	.00130	.00031	.33809
%RSD	251.32	7.0031	247.74
#1	.00098	.00407	.17426
#2	-.00137	.00451	-.08717
#3	-.00117	.00467	-.49650
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6876.1**	**42408.**	**2136.2**
Stddev	29.1	201.	14.2
%RSD	.42340	.47409	.66281
#1	6864.1	42374.	2128.3
#2	6855.0	42226.	2152.5
#3	6909.3	42624.	2127.7

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 13:06:47 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41931	9.9537	.39878	.50263	1.0085	.04939	10.034
Stddev	.00164	.0353	.00377	.00336	.0014	.00017	.082
%RSD	.39206	.35430	.94451	.66913	.14275	.35114	.81498
#1	.41760	9.9153	.40299	.50583	1.0078	.04928	9.9769
#2	.42087	9.9846	.39571	.50292	1.0075	.04930	10.128
#3	.41947	9.9613	.39765	.49913	1.0101	.04959	9.9974
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05036	.20153	.50072	.50474	4.0678	50.366	1.0214
Stddev	.00065	.00037	.00022	.00087	.0271	.102	.0072
%RSD	1.2912	.18249	.04296	.17151	.66491	.20209	.70465
#1	.04968	.20117	.50070	.50536	4.0371	50.471	1.0215
#2	.05045	.20152	.50094	.50375	4.0880	50.359	1.0141
#3	.05097	.20191	.50052	.50511	4.0784	50.267	1.0285
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.079	.50366	1.0023	50.473	.50280	9.9624	.50077
Stddev	.093	.00324	.0039	.115	.00207	.0072	.00211
%RSD	.92173	.64314	.38539	.22799	.41224	.07221	.42157
#1	10.093	.50472	1.0065	50.555	.50200	9.9547	.50253
#2	9.9799	.50003	1.0015	50.342	.50124	9.9690	.49843
#3	10.164	.50624	.99889	50.523	.50515	9.9635	.50133
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 13:06:47 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2042	.41075	5.0693	.99619	1.0092	1.0079	.50475
Stddev	.0025	.00642	.0043	.00145	.0003	.0022	.00299
%RSD	.20940	1.5623	.08445	.14552	.02557	.21789	.59179
#1	1.2050	.41242	5.0716	.99657	1.0089	1.0078	.50470
#2	1.2061	.40366	5.0643	.99459	1.0094	1.0101	.50180
#3	1.2013	.41616	5.0719	.99741	1.0093	1.0057	.50777
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.99675	1.0031	F .29620
Stddev	.00360	.0019	.08449
%RSD	.36160	.18852	28.526
#1	.99318	1.0044	.28950
#2	.99668	1.0009	.21526
#3	1.0004	1.0040	.38384
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7020.3	43456.	2261.9
Stddev	43.3	359.	17.6
%RSD	.61673	.82524	.77983
#1	6973.3	43726.	2266.4
#2	7058.5	43594.	2276.9
#3	7029.1	43049.	2242.5

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 13:10:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00055**	**.00613**	**-.00044**	**.00485**	**.00148**	**-.00004**	**.00904**
Stddev	.00241	.01049	.00350	.00063	.00079	.00007	.03049
%RSD	433.80	171.08	799.41	13.078	53.619	184.29	337.38
#1	-.00199	-.00292	-.00005	.00421	.00232	-.00011	.00926
#2	.00280	.01763	.00285	.00487	.00075	-.00002	.03942
#3	.00085	.00369	-.00411	.00548	.00136	.00002	-.02156
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**.00004**	**.00060**	**.00022**	**-.00957**	**.04485**	**-.00298**
Stddev	.00016	.00039	.00104	.00109	.01163	.02561	.00513
%RSD	223.78	1017.8	171.83	492.97	121.56	57.110	171.96
#1	-.00011	-.00030	-.00058	.00117	.00113	.06139	.00197
#2	.00019	-.00006	.00135	-.00097	-.02194	.01535	-.00827
#3	.00013	.00047	.00104	.00046	-.00789	.05781	-.00265
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.02645**	**-.00131**	**.00436**	**.08359**	**-.00037**	**.00422**	**.00149**
Stddev	.14321	.00098	.00060	.01032	.00168	.00190	.00276
%RSD	541.38	74.508	13.758	12.343	448.02	44.982	185.09
#1	.05023	-.00131	.00393	.08391	-.00111	.00494	.00032
#2	-.19168	-.00033	.00411	.09375	.00154	.00207	-.00049
#3	.06209	-.00229	.00504	.07312	-.00156	.00566	.00464
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 13:10:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00132**	**.00696**	**.00966**	**.00061**	**.00020**	**.00914**	**.00001**
Stddev	.00299	.00629	.00189	.00100	.00058	.00341	.00099
%RSD	227.17	90.310	19.527	162.70	288.56	37.372	8812.9
#1	-.00215	.00080	.01034	.00060	-.00047	.00937	.00002
#2	.00200	.00671	.00753	.00162	.00050	.00561	-.00099
#3	-.00380	.01337	.01111	-.00038	.00057	.01243	.00100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00102**	**-.00026**	F **-.17576**
Stddev	.00081	.00011	.20815
%RSD	79.559	41.267	118.43
#1	-.00149	-.00038	-.14101
#2	-.00149	-.00024	-.39909
#3	-.00008	-.00017	.01284
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7064.6**	**44034.**	**2255.7**
Stddev	48.2	228.	34.9
%RSD	.68253	.51684	1.5489
#1	7013.3	43791.	2215.4
#2	7071.5	44242.	2278.1
#3	7109.0	44070.	2273.5

Approved: June 24, 2016

Sample Name: L1606094705 Acquired: 6/23/2016 13:14:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00161	.82187	-.00408	.03630	.02684	.00085	72.205
Stddev	.00173	.01481	.00130	.00534	.00064	.00005	.308
%RSD	107.81	1.8022	31.834	14.720	2.3986	5.8394	.42674
#1	-.00022	.80686	-.00282	.03020	.02758	.00091	72.165
#2	.00323	.82228	-.00541	.03856	.02651	.00081	72.531
#3	.00181	.83648	-.00400	.04015	.02642	.00085	71.919
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	.01817	.00093	.00185	1.6458	4.6897	.09158
Stddev	.00025	.00062	.00101	.00048	.0446	.0964	.00336
%RSD	38.480	3.3997	108.34	25.910	2.7105	2.0559	3.6734
#1	.00077	.01886	.00173	.00135	1.5994	4.6337	.09260
#2	.00079	.01766	.00125	.00189	1.6495	4.6344	.09432
#3	.00036	.01800	-.00020	.00230	1.6884	4.8010	.08783
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	50.658	2.7986	.00127	2.6354	.09959	.02662	.00491
Stddev	.427	.0103	.00085	.0371	.00198	.00455	.00524
%RSD	.84271	.36614	66.753	1.4074	1.9871	17.099	106.80
#1	50.468	2.7956	.00072	2.6766	.09863	.02137	.00295
#2	51.146	2.8100	.00085	2.6046	.10186	.02939	.00092
#3	50.358	2.7901	.00225	2.6249	.09827	.02912	.01085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606094705 Acquired: 6/23/2016 13:14:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.00381**	**9.4129**	**.00054**	**.15051**	**.00190**	**-.00354**
Stddev	.00250	.00519	.0092	.00074	.00019	.00454	.00281
%RSD	1434.8	136.33	.09823	136.03	.12621	239.54	79.161
#1	-.00288	.00904	9.4198	-.00014	.15064	-.00000	-.00187
#2	.00032	.00371	9.4024	.00044	.15061	.00708	-.00678
#3	.00204	-.00133	9.4164	.00133	.15030	-.00139	-.00198
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00068**	**.07173**	F **-.37347**
Stddev	.00049	.00031	.18302
%RSD	72.278	.43135	49.004
#1	-.00045	.07207	-.56086
#2	-.00124	.07162	-.19516
#3	-.00034	.07148	-.36439
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6758.8**	**42075.**	**2180.1**
Stddev	19.3	166.	25.7
%RSD	.28529	.39440	1.1777
#1	6737.6	42257.	2166.1
#2	6763.5	42034.	2164.6
#3	6775.3	41933.	2209.8

Approved: June 24, 2016

Sample Name: L1606094708 Acquired: 6/23/2016 13:18:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00164	.06268	-.00080	.04013	.00822	-.00003	60.992	.00016
Stddev	.00030	.00800	.00219	.00082	.00098	.00002	.228	.00037
%RSD	18.102	12.756	272.89	2.0475	11.889	94.254	.37380	237.07
#1	.00189	.06933	.00137	.04011	.00734	-.00001	61.184	-.00008
#2	.00173	.05381	-.00301	.04096	.00805	-.00005	61.053	.00058
#3	.00131	.06491	-.00077	.03932	.00927	-.00001	60.740	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	.00259	.00012	.09008	2.7645	.02265	30.254	.13310
Stddev	.00013	.00099	.00044	.02365	.0093	.00490	.212	.00117
%RSD	25.250	38.264	366.51	26.251	.33582	21.630	.70194	.87906
#1	.00063	.00359	.00008	.09591	2.7684	.02272	30.452	.13445
#2	.00038	.00161	-.00029	.11026	2.7711	.02751	30.282	.13248
#3	.00059	.00256	.00057	.06406	2.7539	.01771	30.030	.13238
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	4.9855	.00127	.00314	.00298	-.00189	-.00265	2.6611
Stddev	.00045	.0199	.00123	.01354	.00332	.00518	.00200	.0079
%RSD	67.573	.39826	96.334	430.54	111.66	274.01	75.517	.29649
#1	.00015	4.9673	.00107	.01537	-.00028	.00407	-.00034	2.6680
#2	.00085	5.0067	.00016	.00547	.00284	-.00527	-.00378	2.6630
#3	.00098	4.9825	.00259	-.01141	.00636	-.00447	-.00382	2.6525
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606094708 Acquired: 6/23/2016 13:18:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.29525	-.00362	-.00167	-.00101	.00597	.05225
Stddev	.00035	.00175	.00389	.00187	.00032	.00015	.18866
%RSD	198.39	.59327	107.39	112.11	31.885	2.5356	361.09
#1	.00059	.29710	-.00450	-.00362	-.00076	.00607	.26218
#2	-.00000	.29505	-.00700	.00012	-.00138	.00604	-.10311
#3	-.00005	.29362	.00063	-.00151	-.00091	.00580	-.00232
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6816.2	42457.	2186.9
Stddev	19.1	323.	21.6
%RSD	.27982	.76080	.98620
#1	6816.0	42426.	2162.1
#2	6835.4	42150.	2201.0
#3	6797.3	42794.	2197.6

Approved: June 24, 2016

Sample Name: L1606076301 Acquired: 6/23/2016 13:22:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00194	.02208	.02568	.43236	9.4855	-.00003	137.11
Stddev	.00189	.00829	.00398	.00360	.0365	.00003	.72
%RSD	97.559	37.532	15.506	.83185	.38489	98.288	.52423
#1	.00262	.01725	.02946	.42833	9.5136	-.00001	137.41
#2	-.00020	.03164	.02605	.43352	9.4987	-.00002	137.63
#3	.00340	.01734	.02153	.43523	9.4443	-.00007	136.29
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	.00163	.00105	.00139	1.5590	7.9988	.72684
Stddev	.00021	.00016	.00122	.00073	.0278	.0357	.00746
%RSD	39.106	9.9424	116.16	52.795	1.7846	.44566	1.0265
#1	.00076	.00145	.00161	.00122	1.5818	8.0399	.72260
#2	.00035	.00173	-.00035	.00220	1.5671	7.9808	.73546
#3	.00049	.00173	.00189	.00076	1.5280	7.9758	.72247
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	14.574	.07725	.00038	F 366.35	-.00162	.09780	.00176
Stddev	.049	.00319	.00015	1.74	.00116	.00383	.00483
%RSD	.33920	4.1257	40.701	.47471	71.599	3.9136	275.19
#1	14.616	.07580	.00021	367.63	-.00032	.10141	.00318
#2	14.520	.07504	.00050	367.06	-.00199	.09379	.00571
#3	14.587	.08091	.00042	364.37	-.00255	.09822	-.00363
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 24, 2016

Sample Name: L1606076301 Acquired: 6/23/2016 13:22:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00397	-.00149	.10084	.00027	F 24.369	-.01330	.00299
Stddev	.00063	.00465	.00184	.00125	.396	.00152	.00530
%RSD	15.977	312.53	1.8206	463.89	1.6252	11.429	177.27
#1	.00431	-.00566	.10152	.00089	24.651	-.01201	.00898
#2	.00323	-.00233	.09876	.00108	24.539	-.01292	.00105
#3	.00435	.00353	.10223	-.00117	23.916	-.01498	-.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00040	.00607	.08263
Stddev	.00114	.00037	.16823
%RSD	283.06	6.0904	203.59
#1	.00067	.00564	.26003
#2	-.00159	.00627	-.07461
#3	-.00029	.00630	.06248
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6689.4	41180.	2146.8
Stddev	11.2	70.	2.5
%RSD	.16807	.16995	.11474
#1	6693.8	41192.	2144.5
#2	6676.6	41244.	2146.6
#3	6697.7	41105.	2149.4

Approved: June 24, 2016

Sample Name: L1606083702 Acquired: 6/23/2016 13:26:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00431	33.801	.01724	.09854	.41741	.00265	60.826
Stddev	.00281	.289	.00257	.00140	.00133	.00011	.364
%RSD	65.115	.85604	14.900	1.4221	.31977	3.9646	.59912
#1	.00738	33.583	.01584	.09704	.41851	.00273	61.102
#2	.00187	33.691	.02021	.09878	.41592	.00270	60.413
#3	.00369	34.130	.01567	.09981	.41779	.00253	60.962
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00162	.03572	.24908	.16782	92.318	11.517	.04115
Stddev	.00019	.00013	.00143	.00172	.620	.067	.00381
%RSD	11.832	.36436	.57531	1.0249	.67118	.58564	9.2558
#1	.00174	.03587	.24747	.16611	92.764	11.553	.03804
#2	.00172	.03567	.24955	.16781	91.610	11.439	.04540
#3	.00140	.03563	.25022	.16955	92.580	11.558	.04002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	17.028	1.2901	.09338	14.567	.12343	1.5590	.05321
Stddev	.186	.0069	.00072	.078	.00126	.0107	.00374
%RSD	1.0941	.53832	.76698	.53245	1.0197	.68610	7.0268
#1	17.029	1.2886	.09348	14.610	.12229	1.5476	.05746
#2	16.842	1.2841	.09405	14.477	.12322	1.5688	.05046
#3	17.215	1.2977	.09262	14.613	.12478	1.5607	.05169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606083702 Acquired: 6/23/2016 13:26:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00197	.00383	F 49.208	.00874	.24272	.69278	.00268
Stddev	.00187	.00439	.228	.00096	.00102	.00808	.00504
%RSD	94.757	114.53	.46427	10.948	.42123	1.1659	188.15
#1	.00014	.00501	48.946	.00793	.24335	.69156	.00539
#2	-.00342	-.00103	49.367	.00849	.24154	.68538	.00578
#3	-.00263	.00751	49.310	.00980	.24327	.70140	-.00313
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-1.0000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.08021	1.6367	4.1823
Stddev	.00064	.0106	.2507
%RSD	.80102	.64459	5.9933
#1	.07948	1.6246	4.0835
#2	.08071	1.6413	3.9961
#3	.08043	1.6441	4.4673
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6974.3	43179.	2263.8
Stddev	63.4	499.	11.4
%RSD	.90879	1.1550	.50270
#1	7031.6	43179.	2250.8
#2	6985.2	43677.	2268.4
#3	6906.2	42680.	2272.1

Approved: June 24, 2016

Sample Name: L1606085701 Acquired: 6/23/2016 13:30:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00105**	**.01551**	**-.00313**	**.11826**	**.00818**	**-.00000**	**2.0275**
Stddev	.00070	.00234	.00310	.00767	.00196	.00006	.0370
%RSD	66.752	15.097	99.267	6.4869	23.923	1367.3	1.8270
#1	.00059	.01377	-.00395	.11540	.00595	-.00005	1.9946
#2	.00185	.01458	.00031	.11242	.00898	.00006	2.0676
#3	.00071	.01817	-.00574	.12695	.00960	-.00003	2.0203
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00055**	**.00014**	**.00223**	**-.00232**	**-.00256**	**.40790**	**-.00322**
Stddev	.00041	.00028	.00121	.00125	.01666	.12678	.00659
%RSD	74.729	200.06	54.281	54.124	650.75	31.082	205.00
#1	.00103	.00003	.00355	-.00094	.01552	.30288	.00155
#2	.00028	-.00007	.00117	-.00261	-.01729	.37208	-.01074
#3	.00035	.00045	.00197	-.00340	-.00591	.54874	-.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.70908**	**.00231**	**.00078**	**28.050**	**.00489**	**.05231**	**.00240**
Stddev	.08177	.00221	.00088	.079	.00053	.00501	.00051
%RSD	11.531	95.612	113.58	.28080	10.812	9.5863	21.339
#1	.78336	.00106	.00002	28.135	.00550	.05582	.00192
#2	.72241	.00485	.00057	28.034	.00462	.05454	.00234
#3	.62147	.00100	.00175	27.980	.00455	.04656	.00294
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606085701 Acquired: 6/23/2016 13:30:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00069	.00604	.93518	.00155	.06238	-.00090	-.00177
Stddev	.00289	.00426	.00365	.00027	.00056	.00405	.00079
%RSD	416.59	70.572	.39073	17.233	.90476	450.45	44.755
#1	.00258	.00177	.93304	.00161	.06186	-.00521	-.00087
#2	-.00174	.00606	.93311	.00179	.06230	-.00032	-.00237
#3	-.00292	.01029	.93940	.00126	.06298	.00283	-.00205
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00004	.03465	F -.25289
Stddev	.00070	.00017	.21558
%RSD	1777.2	.48633	85.245
#1	.00072	.03457	-.04792
#2	.00009	.03454	-.47771
#3	-.00069	.03485	-.23306
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6771.2	42793.	2185.7
Stddev	16.2	557.	12.6
%RSD	.23870	1.3012	.57582
#1	6760.8	42567.	2172.1
#2	6789.8	43427.	2188.0
#3	6762.9	42385.	2197.0

Approved: June 24, 2016

Sample Name: L1606085702 Acquired: 6/23/2016 13:34:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00033**	**.07270**	**-.00203**	**.14026**	**.07278**	**.00001**	**1.8420**
Stddev	.00276	.01164	.00125	.00065	.00057	.00018	.0327
%RSD	841.02	16.017	61.792	.46587	.78910	3297.7	1.7766
#1	-.00316	.07004	-.00091	.14030	.07212	.00019	1.8290
#2	.00236	.06261	-.00179	.13959	.07316	-.00001	1.8178
#3	-.00019	.08544	-.00338	.14090	.07306	-.00016	1.8792
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00058**	**.00049**	**.00229**	**.00175**	**.01354**	**.82547**	**.00707**
Stddev	.00023	.00070	.00094	.00097	.02857	.04036	.00543
%RSD	39.415	144.45	40.924	55.606	211.01	4.8891	76.883
#1	.00077	.00036	.00132	.00068	-.01924	.84400	.01011
#2	.00033	-.00015	.00319	.00257	.02674	.77917	.01030
#3	.00063	.00124	.00236	.00201	.03312	.85323	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51491**	**.00195**	**.00449**	F **275.14**	**-.00069**	**.03509**	**-.00069**
Stddev	.09772	.00296	.00024	.76	.00123	.00164	.00476
%RSD	18.977	151.69	5.4308	.27666	177.16	4.6788	690.35
#1	.41497	.00336	.00448	275.95	.00072	.03463	.00474
#2	.61024	.00394	.00425	274.44	-.00134	.03372	-.00420
#3	.51952	-.00145	.00474	275.04	-.00146	.03691	-.00261
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 24, 2016

Sample Name: L1606085702 Acquired: 6/23/2016 13:34:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00460**	**-.00060**	**3.0002**	**.00006**	**.09445**	**.00506**	**-.00228**
Stddev	.00222	.00516	.0036	.00068	.00055	.00431	.00386
%RSD	48.324	853.07	.11830	1137.5	.58448	85.182	169.08
#1	-.00698	-.00204	3.0021	-.00036	.09414	.00516	-.00490
#2	-.00424	.00512	3.0025	-.00031	.09412	.00070	-.00411
#3	-.00258	-.00489	2.9961	.00085	.09509	.00931	.00215
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00051**	**.00248**	F **-.05261**
Stddev	.00144	.00019	.29783
%RSD	282.24	7.6734	566.10
#1	.00067	.00238	-.32296
#2	-.00211	.00270	-.10151
#3	-.00009	.00236	.26664
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6545.6**	**40539.**	**2141.5**
Stddev	22.7	279.	19.5
%RSD	.34678	.68833	.90844
#1	6540.8	40596.	2119.8
#2	6570.4	40236.	2147.6
#3	6525.8	40786.	2157.3

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 13:37:59 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .45134	10.807	.43069	.53551	1.0873	.05306	10.734
Stddev	.00120	.042	.00127	.00658	.0048	.00054	.109
%RSD	.26661	.38935	.29560	1.2285	.44392	1.0118	1.0192
#1	.45043	10.780	.43162	.52920	1.0877	.05245	10.843
#2	.45270	10.855	.42924	.53499	1.0919	.05345	10.736
#3	.45088	10.785	.43121	.54233	1.0823	.05328	10.624
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	.40000						
Range	10.000%						

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05377	.21778	.53858	.54577	4.3294	53.973	1.0995
Stddev	.00038	.00023	.00492	.00029	.0324	.101	.0034
%RSD	.70417	.10643	.91354	.05369	.74928	.18648	.31286
#1	.05336	.21804	.53402	.54544	4.2921	53.955	1.0956
#2	.05383	.21761	.54380	.54590	4.3510	54.082	1.1020
#3	.05411	.21768	.53792	.54598	4.3450	53.883	1.1008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.676	.54210	1.0831	54.317	.54570	10.765	.54231
Stddev	.144	.00268	.0045	.237	.00054	.017	.00789
%RSD	1.3465	.49516	.41592	.43723	.09840	.15367	1.4551
#1	10.841	.54173	1.0860	54.234	.54581	10.748	.54167
#2	10.605	.53962	1.0854	54.585	.54511	10.768	.55050
#3	10.581	.54495	1.0779	54.132	.54617	10.781	.53475
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 13:37:59 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.3154**	**.43131**	**5.4716**	**1.0779**	**1.0816**	**1.0682**	**.54041**
Stddev	.0100	.01288	.0063	.0008	.0051	.0038	.00148
%RSD	.76033	2.9867	.11483	.07203	.47288	.35443	.27465
#1	1.3264	.42222	5.4703	1.0779	1.0791	1.0696	.54165
#2	1.3068	.42566	5.4661	1.0786	1.0874	1.0639	.53876
#3	1.3129	.44605	5.4784	1.0771	1.0782	1.0710	.54081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0737**	**1.0856**	F **.15193**
Stddev	.0085	.0016	.28587
%RSD	.79069	.14554	188.16
#1	1.0640	1.0847	.18724
#2	1.0798	1.0846	-.14996
#3	1.0773	1.0874	.41850
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6619.5**	**40889.**	**2120.6**
Stddev	22.8	56.	15.1
%RSD	.34376	.13697	.71393
#1	6636.9	40858.	2120.9
#2	6627.9	40856.	2105.4
#3	6593.8	40954.	2135.6

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 13:41:37 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00158**	**.01770**	**-.00290**	**.00420**	**.00296**	**.00008**	**.00768**
Stddev	.00238	.01297	.00182	.00442	.00097	.00006	.03100
%RSD	150.72	73.266	62.817	105.42	32.973	74.730	403.53
#1	-.00078	.02309	-.00093	.00783	.00184	.00014	-.01510
#2	.00397	.00291	-.00452	.00548	.00340	.00005	-.00484
#3	.00154	.02711	-.00326	-.00073	.00363	.00003	.04298
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00046**	**.00012**	**.00248**	**-.00061**	**-.00542**	**.10552**	**.00074**
Stddev	.00020	.00062	.00070	.00053	.02692	.07766	.00351
%RSD	43.624	499.77	28.448	85.995	496.30	73.597	477.45
#1	.00063	-.00055	.00323	-.00038	-.00888	.03365	.00151
#2	.00024	.00026	.00236	-.00122	-.03045	.09501	.00379
#3	.00052	.00066	.00184	-.00024	.02305	.18790	-.00310
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04199**	**.00149**	**.00473**	**.07384**	**-.00091**	F **.01440**	**.00237**
Stddev	.03372	.00533	.00067	.02566	.00057	.00186	.00194
%RSD	80.305	359.18	14.065	34.748	62.773	12.937	82.124
#1	.06837	.00627	.00403	.06546	-.00149	.01277	.00039
#2	.05361	.00246	.00480	.10263	-.00091	.01643	.00427
#3	.00400	-.00427	.00536	.05341	-.00034	.01399	.00244
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						.01000	
Low Limit						-.01000	

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 13:41:37 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00149**	**.00301**	**.01027**	**.00140**	**.00008**	**.00320**	**.00031**
Stddev	.00130	.00950	.00052	.00086	.00053	.00649	.00310
%RSD	87.162	315.28	5.0885	61.563	705.61	202.89	987.14
#1	.00285	.00014	.00977	.00239	.00066	.00051	.00035
#2	.00026	-.00472	.01081	.00106	-.00039	.01060	-.00281
#3	.00135	.01362	.01022	.00076	-.00004	-.00151	.00340
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00103**	**-.00008**	F **-.23953**
Stddev	.00169	.00028	.04048
%RSD	163.72	371.39	16.899
#1	-.00118	-.00003	-.26217
#2	-.00264	.00018	-.26362
#3	.00073	-.00037	-.19280
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6630.2**	**41602.**	**2070.3**
Stddev	4.8	212.	18.8
%RSD	.07287	.50936	.90799
#1	6631.2	41452.	2049.7
#2	6625.0	41845.	2074.7
#3	6634.5	41510.	2086.6

Approved: June 24, 2016

Sample Name: L1606072901 Acquired: 6/23/2016 13:45:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	1.9022	-.00033	.01275	.10878	.00027	3.3748
Stddev	.00218	.0080	.00247	.00210	.00122	.00005	.0521
%RSD	390.51	.41881	752.84	16.492	1.1199	19.165	1.5437
#1	-.00143	1.9097	.00166	.01339	.10869	.00021	3.3553
#2	.00290	1.9031	-.00310	.01447	.10760	.00029	3.3352
#3	.00021	1.8938	.00045	.01041	.11004	.00031	3.4338
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00070	.00686	.00502	.00274	8.7296	4.0858	.00187
Stddev	.00049	.00031	.00079	.00095	.1044	.1587	.00572
%RSD	70.901	4.5508	15.682	34.818	1.1959	3.8848	306.19
#1	.00013	.00699	.00492	.00271	8.7332	4.1453	-.00456
#2	.00097	.00708	.00585	.00180	8.6235	3.9059	.00638
#3	.00100	.00650	.00428	.00370	8.8322	4.2062	.00378
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.5279	.18987	.00146	8.8883	.00643	.07669	.00585
Stddev	.0806	.00418	.00002	.0264	.00132	.00989	.00345
%RSD	3.1886	2.2032	1.4553	.29688	20.582	12.899	59.068
#1	2.6115	.18525	.00145	8.8787	.00728	.08764	.00219
#2	2.4507	.19098	.00145	8.8681	.00491	.06839	.00629
#3	2.5215	.19340	.00149	8.9182	.00711	.07404	.00906
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606072901 Acquired: 6/23/2016 13:45:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00422**	**.00114**	**7.7009**	**.00094**	**.04165**	**.04528**	**-.00124**
Stddev	.00105	.00887	.0106	.00031	.00116	.00750	.00474
%RSD	24.977	779.78	.13780	33.440	2.7765	16.566	383.19
#1	-.00314	.00770	7.7122	.00125	.04034	.05338	-.00668
#2	-.00426	-.00895	7.6912	.00063	.04213	.04390	.00093
#3	-.00525	.00466	7.6993	.00093	.04250	.03857	.00204
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00695**	**.03769**	F **-.07426**
Stddev	.00021	.00010	.25506
%RSD	3.0434	.26201	343.45
#1	.00719	.03759	-.17879
#2	.00685	.03770	.21646
#3	.00679	.03778	-.26046
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6663.7**	**41447.**	**2124.9**
Stddev	31.4	101.	8.5
%RSD	.47053	.24398	.40015
#1	6635.9	41409.	2127.4
#2	6657.5	41369.	2115.5
#3	6697.7	41561.	2131.9

Approved: June 24, 2016

Sample Name: L1606072902 Acquired: 6/23/2016 13:49:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.08436	-.00231	.01162	.09500	.00024	3.2071	.00025
Stddev	.00068	.00795	.00473	.00261	.00117	.00003	.0288	.00030
%RSD	140.03	9.4206	204.37	22.450	1.2279	13.019	.89891	120.44
#1	.00085	.08971	-.00104	.01189	.09406	.00022	3.1880	.00059
#2	-.00030	.08814	-.00754	.01408	.09631	.00022	3.1929	.00004
#3	.00091	.07523	.00164	.00888	.09463	.00027	3.2402	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00258	.00169	.00001	.09122	4.0554	.00554	2.1514	.10164
Stddev	.00036	.00098	.00083	.01409	.0725	.00749	.0915	.00166
%RSD	13.810	58.028	9389.3	15.450	1.7870	135.26	4.2536	1.6371
#1	.00228	.00185	-.00094	.08293	4.0962	-.00132	2.2029	.09978
#2	.00297	.00064	.00036	.10750	3.9717	.01352	2.0457	.10217
#3	.00249	.00258	.00061	.08324	4.0982	.00441	2.2055	.10298
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00107	9.3347	.00534	-.00760	.00262	-.00247	-.00071	5.8284
Stddev	.00067	.0017	.00059	.00657	.00192	.00656	.00734	.0047
%RSD	62.899	.01851	11.082	86.434	73.407	265.29	1036.5	.08050
#1	.00073	9.3339	.00595	-.01085	.00076	.00233	.00419	5.8231
#2	.00063	9.3335	.00477	-.01192	.00459	.00021	.00283	5.8300
#3	.00184	9.3367	.00529	-.00004	.00250	-.00996	-.00914	5.8320
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606072902 Acquired: 6/23/2016 13:49:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	.04455	.00383	-.00158	-.00117	.01067	.01977
Stddev	.00091	.00048	.00462	.00107	.00115	.00017	.19686
%RSD	195.27	1.0877	120.59	67.563	97.637	1.6384	995.89
#1	.00011	.04507	-.00045	-.00119	-.00123	.01066	.06131
#2	.00150	.04411	.00321	-.00077	-.00229	.01086	-.19455
#3	-.00021	.04447	.00873	-.00279	-.00000	.01051	.19254
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6679.4	41883.	2140.8
Stddev	19.5	115.	21.9
%RSD	.29209	.27528	1.0253
#1	6687.8	41773.	2148.4
#2	6693.3	41873.	2116.0
#3	6657.1	42003.	2157.9

Approved: June 24, 2016

Sample Name: L1606072903 Acquired: 6/23/2016 13:53:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00121	3.1940	-.00317	.05585	.05128	.00272	55.198	.00092
Stddev	.00190	.0150	.00311	.00265	.00071	.00005	.533	.00026
%RSD	157.00	.46804	98.051	4.7403	1.3804	2.0101	.96560	28.456
#1	-.00098	3.2101	-.00297	.05354	.05052	.00274	54.599	.00105
#2	.00226	3.1805	-.00017	.05528	.05192	.00276	55.376	.00062
#3	.00234	3.1916	-.00638	.05874	.05142	.00265	55.619	.00109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05365	.00268	.00557	3.4652	2.3690	.00136	16.189	.87450
Stddev	.00041	.00184	.00156	.0341	.0787	.00738	.191	.00113
%RSD	.76801	68.642	27.990	.98414	3.3240	542.12	1.1778	.12910
#1	.05412	.00147	.00733	3.4487	2.4341	-.00716	16.303	.87482
#2	.05346	.00480	.00435	3.5044	2.2815	.00562	15.968	.87543
#3	.05336	.00178	.00504	3.4424	2.3914	.00562	16.295	.87324
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	6.4254	.02173	.00157	.00749	.00178	.00259	5.9642
Stddev	.00053	.0272	.00078	.00506	.00256	.00308	.00359	.0225
%RSD	256.99	.42327	3.5957	323.06	34.182	173.34	138.86	.37668
#1	-.00034	6.4199	.02259	.00740	.00733	.00347	.00639	5.9884
#2	.00025	6.4014	.02152	-.00148	.00502	-.00178	.00211	5.9601
#3	.00072	6.4549	.02107	-.00122	.01014	.00364	-.00075	5.9440
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606072903 Acquired: 6/23/2016 13:53:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.50021	.00294	-.00570	-.00006	.06538	.14572
Stddev	.00142	.00223	.00346	.00366	.00105	.00038	.27662
%RSD	475.50	.44540	117.77	64.085	1811.6	.58637	189.83
#1	.00193	.49771	.00052	-.00185	-.00105	.06577	-.10106
#2	-.00032	.50094	.00139	-.00614	-.00017	.06537	.09350
#3	-.00070	.50198	.00690	-.00913	.00104	.06500	.44473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6815.5	42583.	2186.5
Stddev	19.4	255.	20.2
%RSD	.28450	.59973	.92196
#1	6828.0	42494.	2188.2
#2	6793.2	42385.	2205.8
#3	6825.4	42871.	2165.6

Approved: June 24, 2016

Sample Name: L1606073001 Acquired: 6/23/2016 13:57:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00256	.31997	.00369	.01015	2.4447	-.00002	F 391.57
Stddev	.00124	.00976	.00345	.00235	.0050	.00008	.92
%RSD	48.609	3.0496	93.533	23.200	.20351	460.90	.23566
#1	.00128	.30999	-.00013	.01225	2.4390	-.00011	390.52
#2	.00376	.32043	.00659	.01060	2.4484	.00003	391.93
#3	.00264	.32949	.00461	.00760	2.4465	.00003	392.25
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	.00332	.07503	.00241	.04789	26.816	.16164
Stddev	.00006	.00025	.00123	.00077	.02971	.128	.00555
%RSD	13.649	7.5530	1.6428	31.776	62.037	.47549	3.4306
#1	.00051	.00360	.07369	.00185	.02298	26.708	.16210
#2	.00039	.00313	.07526	.00328	.03991	26.784	.16695
#3	.00050	.00322	.07612	.00210	.08077	26.957	.15589
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.9869	.00807	.00500	F 300.26	-.00001	.00977	.00319
Stddev	.0805	.00347	.00030	.50	.00088	.00901	.00538
%RSD	.80645	42.987	6.0910	.16764	16745.	92.216	168.62
#1	9.9524	.00517	.00524	299.73	.00074	.00083	.00794
#2	9.9294	.00714	.00465	300.32	.00023	.00962	.00428
#3	10.079	.01192	.00510	300.74	-.00098	.01885	-.00265
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 24, 2016

Sample Name: L1606073001 Acquired: 6/23/2016 13:57:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00030**	**-.00121**	**6.9753**	**.00042**	F **24.468**	F **-.04746**	**-.00176**
Stddev	.00142	.00818	.0038	.00053	.196	.01075	.00131
%RSD	471.93	673.71	.05469	126.13	.80146	22.649	74.343
#1	-.00042	.00785	6.9714	.00042	24.521	-.03746	-.00146
#2	.00194	-.00344	6.9790	-.00011	24.631	-.05883	-.00063
#3	-.00061	-.00804	6.9754	.00096	24.250	-.04608	-.00320
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Pass
High Limit					9.0000	36.000	
Low Limit					-.01000	-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00483**	**.00304**	F **-.25994**
Stddev	.00095	.00011	.47028
%RSD	19.772	3.5436	180.92
#1	.00584	.00296	-.78106
#2	.00471	.00316	.13285
#3	.00394	.00300	-.13161
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6405.8**	**39923.**	**2130.5**
Stddev	43.1	179.	24.3
%RSD	.67309	.44763	1.1394
#1	6423.5	39842.	2147.8
#2	6437.2	39799.	2102.8
#3	6356.6	40127.	2140.9

Approved: June 24, 2016

Sample Name: L1606073002 Acquired: 6/23/2016 14:01:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**.30159**	**.00192**	**.00855**	**2.4572**	**-.00005**	F **391.13**
Stddev	.00178	.00597	.00175	.00180	.0121	.00005	1.72
%RSD	1582.0	1.9801	91.272	21.054	.49021	108.20	.43917
#1	-.00072	.30830	.00395	.00732	2.4525	-.00000	390.34
#2	-.00151	.29959	.00093	.00772	2.4483	-.00011	389.95
#3	.00189	.29687	.00089	.01062	2.4709	-.00004	393.10
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00083**	**.00328**	**.07488**	**.00378**	**.06045**	**26.884**	**.15804**
Stddev	.00045	.00088	.00139	.00327	.02010	.168	.00401
%RSD	53.690	26.823	1.8521	86.444	33.259	.62310	2.5398
#1	.00040	.00331	.07575	.00650	.08326	26.768	.16070
#2	.00129	.00414	.07328	.00469	.04533	26.808	.15342
#3	.00080	.00239	.07560	.00015	.05274	27.076	.15999
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.834**	**.00242**	**.00478**	F **302.91**	**-.00114**	**-.00268**	**.00268**
Stddev	.163	.00322	.00063	1.34	.00044	.00170	.00128
%RSD	1.5067	133.12	13.189	.44217	38.961	63.359	47.782
#1	10.905	-.00130	.00456	302.40	-.00129	-.00108	.00361
#2	10.647	.00422	.00549	301.91	-.00064	-.00447	.00321
#3	10.950	.00435	.00429	304.43	-.00149	-.00251	.00122
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 24, 2016

Sample Name: L1606073002 Acquired: 6/23/2016 14:01:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00058**	**-.00081**	**7.0233**	**.00053**	F **24.522**	F **-.05058**	**-.00421**
Stddev	.00221	.00364	.0004	.00034	.334	.00928	.00168
%RSD	381.72	447.00	.00560	64.571	1.3621	18.354	39.774
#1	-.00268	.00184	7.0238	.00033	24.364	-.04360	-.00542
#2	-.00079	.00069	7.0231	.00033	24.905	-.04702	-.00492
#3	.00173	-.00497	7.0231	.00092	24.296	-.06112	-.00230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Pass
High Limit					9.0000	36.000	
Low Limit					-.01000	-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00622**	**.00213**	F **-.10401**
Stddev	.00097	.00020	.39318
%RSD	15.584	9.3584	378.01
#1	.00524	.00203	.33604
#2	.00625	.00236	-.42076
#3	.00718	.00200	-.22731
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6399.2**	**39605.**	**2125.8**
Stddev	37.9	110.	18.5
%RSD	.59190	.27845	.86813
#1	6440.2	39489.	2146.1
#2	6391.9	39620.	2121.4
#3	6365.5	39708.	2110.0

Approved: June 24, 2016

Sample Name: L1606073003 Acquired: 6/23/2016 14:05:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00163	.08741	.00459	.00740	9.5652	.00021	F 359.97
Stddev	.00290	.01125	.00113	.00556	.0602	.00005	2.32
%RSD	177.98	12.875	24.619	75.211	.62908	22.498	.64513
#1	-.00023	.08788	.00519	.01075	9.5821	.00025	360.68
#2	.00496	.09842	.00329	.01047	9.4984	.00023	357.37
#3	.00015	.07593	.00529	.00098	9.6152	.00016	361.85
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	.00733	.00421	.00132	7.6968	4.6889	.05502
Stddev	.00016	.00040	.00043	.00230	.0700	.1346	.00192
%RSD	17.239	5.4950	10.244	173.72	.90938	2.8698	3.4965
#1	.00083	.00700	.00459	-.00074	7.7485	4.5651	.05658
#2	.00080	.00721	.00429	.00091	7.6172	4.6694	.05560
#3	.00109	.00778	.00374	.00380	7.7248	4.8321	.05287
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	222.02	.46392	.00100	F 907.17	.00310	.02957	.00359
Stddev	1.03	.00590	.00045	6.20	.00060	.00708	.00191
%RSD	.46426	1.2720	45.476	.68347	19.251	23.934	53.290
#1	221.59	.46076	.00151	909.32	.00379	.02554	.00305
#2	221.27	.46028	.00064	912.02	.00275	.02542	.00572
#3	223.20	.47073	.00084	900.19	.00276	.03774	.00201
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 24, 2016

Sample Name: L1606073003 Acquired: 6/23/2016 14:05:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00269**	**-.00290**	**15.510**	**.00105**	**7.7454**	F **-.03815**	**-.00190**
Stddev	.00374	.00479	.014	.00060	.0520	.00404	.00349
%RSD	138.83	165.18	.09191	57.186	.67173	10.600	183.63
#1	.00695	-.00093	15.517	.00160	7.7532	-.03745	.00130
#2	-.00005	-.00836	15.493	.00114	7.6899	-.04250	-.00563
#3	.00117	.00059	15.519	.00041	7.7931	-.03451	-.00138
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00223**	**.00565**	**.20878**
Stddev	.00149	.00017	.22493
%RSD	66.807	3.0725	107.73
#1	-.00382	.00583	-.02471
#2	-.00199	.00565	.22702
#3	-.00087	.00548	.42404
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6192.6**	**37959.**	**2074.6**
Stddev	8.6	172.	6.3
%RSD	.13852	.45191	.30587
#1	6200.5	37983.	2079.7
#2	6183.5	37777.	2076.7
#3	6193.6	38118.	2067.5

Approved: June 24, 2016

Sample Name: L1606065001 Acquired: 6/23/2016 14:09:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00101	.02086	.00078	.00392	.11798	.00010	3.7797
Stddev	.00330	.00981	.00259	.00188	.00093	.00009	.0253
%RSD	325.36	47.024	330.21	48.042	.79125	91.343	.67047
#1	-.00269	.01004	.00280	.00180	.11849	.00006	3.7511
#2	.00211	.02918	.00169	.00456	.11854	.00004	3.7886
#3	.00363	.02335	-.00214	.00540	.11690	.00021	3.7994
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00039	.00473	.11075	.00254	1.6128	.36399	.00052
Stddev	.00015	.00028	.00247	.00153	.0205	.13250	.00682
%RSD	39.437	5.8376	2.2265	59.990	1.2685	36.403	1305.8
#1	.00043	.00442	.10829	.00126	1.6215	.50232	.00839
#2	.00052	.00494	.11323	.00423	1.5894	.35143	-.00365
#3	.00022	.00484	.11072	.00213	1.6275	.23821	-.00317
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.3114	.12820	.00059	23.908	.19913	.01143	.00693
Stddev	.0612	.00234	.00031	.193	.00371	.00816	.00284
%RSD	1.8496	1.8238	52.171	.80626	1.8611	71.384	41.001
#1	3.3128	.13027	.00090	23.692	.19516	.00780	.00543
#2	3.2495	.12566	.00028	24.064	.19975	.00572	.00515
#3	3.3720	.12866	.00059	23.967	.20249	.02078	.01021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606065001 Acquired: 6/23/2016 14:09:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00112**	**.00322**	**1.4139**	**.00021**	**.08513**	**.01184**	**-.00134**
Stddev	.00332	.00894	.0290	.00109	.00058	.00972	.00180
%RSD	295.41	277.65	2.0534	506.07	.67723	82.127	134.05
#1	-.00422	.01348	1.3849	.00054	.08447	.00066	-.00038
#2	.00238	-.00289	1.4138	-.00100	.08552	.01829	-.00023
#3	-.00152	-.00093	1.4430	.00110	.08541	.01657	-.00342
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00159**	**.00105**	F **-.37996**
Stddev	.00053	.00021	.11946
%RSD	33.537	19.605	31.441
#1	-.00120	.00087	-.38083
#2	-.00220	.00100	-.26007
#3	-.00137	.00127	-.49899
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6890.2**	**43019.**	**2167.8**
Stddev	63.1	99.	28.1
%RSD	.91638	.23029	1.2947
#1	6934.3	42909.	2177.8
#2	6918.4	43046.	2136.2
#3	6817.9	43101.	2189.6

Approved: June 24, 2016

Sample Name: L1606065002 Acquired: 6/23/2016 14:13:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00119**	**.00619**	**.00053**	**.00242**	**.04050**	**.00005**	**2.4175**
Stddev	.00153	.00568	.00140	.00436	.00121	.00004	.0565
%RSD	128.35	91.662	266.78	179.97	2.9976	95.253	2.3370
#1	.00059	.00843	.00063	.00739	.04165	.00010	2.4475
#2	.00005	.01040	-.00093	.00068	.04062	.00002	2.3523
#3	.00292	-.00026	.00187	-.00080	.03923	.00002	2.4527
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00018**	**.00062**	**.00128**	**-.00132**	**.01627**	**.11917**	**.00122**
Stddev	.00027	.00046	.00064	.00184	.03317	.08838	.00191
%RSD	149.87	75.230	50.288	139.76	203.80	74.161	156.79
#1	-.00011	.00016	.00101	-.00254	.04806	.14500	.00296
#2	.00022	.00109	.00201	.00080	.01888	.02075	.00151
#3	.00042	.00060	.00081	-.00222	-.01812	.19175	-.00082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.5446**	**.04594**	**.00017**	**20.766**	**.00047**	**.00485**	**.00051**
Stddev	.0763	.00146	.00033	.149	.00143	.00885	.00349
%RSD	4.9423	3.1762	199.14	.71702	303.54	182.41	681.91
#1	1.4640	.04664	-.00012	20.654	.00209	.00163	-.00344
#2	1.6158	.04427	.00054	20.710	-.00006	.01486	.00319
#3	1.5540	.04692	.00009	20.935	-.00062	-.00194	.00178
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606065002 Acquired: 6/23/2016 14:13:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00098	-.00033	2.1606	.00059	.04583	.00531	-.00032
Stddev	.00451	.00336	.0261	.00086	.00032	.01016	.00354
%RSD	460.69	1017.1	1.2061	145.66	.69478	191.19	1094.5
#1	-.00324	.00342	2.1358	.00154	.04555	.00482	-.00398
#2	.00045	-.00306	2.1582	.00037	.04577	.01571	-.00006
#3	.00573	-.00135	2.1877	-.00014	.04618	-.00459	.00307
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00011	.00081	F -.25970
Stddev	.00182	.00018	.14592
%RSD	1638.0	22.380	56.190
#1	.00114	.00078	-.23795
#2	-.00221	.00100	-.41527
#3	.00073	.00064	-.12587
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6847.2	42507.	2206.5
Stddev	7.7	174.	27.0
%RSD	.11197	.40941	1.2214
#1	6848.1	42368.	2181.6
#2	6839.1	42451.	2203.0
#3	6854.3	42702.	2235.1

Approved: June 24, 2016

Sample Name: L1606065003 Acquired: 6/23/2016 14:17:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00067	.08910	.00038	.00141	.01681	.00007	1.5698	.00071
Stddev	.00142	.00383	.00422	.00345	.00071	.00002	.0515	.00016
%RSD	211.03	4.2965	1109.5	244.57	4.2236	27.061	3.2785	22.773
#1	.00003	.09101	.00022	.00166	.01758	.00009	1.5296	.00090
#2	-.00230	.08469	-.00376	.00473	.01666	.00008	1.5520	.00061
#3	.00026	.09160	.00468	-.00216	.01619	.00005	1.6278	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00113	.05077	.00085	1.0203	.30376	-.00498	.99295	.03616
Stddev	.00058	.00147	.00210	.0205	.07272	.00068	.07738	.00181
%RSD	51.340	2.8981	247.26	2.0115	23.941	13.727	7.7929	5.0090
#1	.00132	.04948	.00273	.99875	.34266	-.00450	1.0062	.03804
#2	.00048	.05047	.00125	1.0396	.21986	-.00467	.90982	.03602
#3	.00159	.05237	-.00142	1.0224	.34877	-.00576	1.0629	.03443
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	10.870	.01041	.02046	.00421	-.00251	-.00096	1.0575
Stddev	.00071	.065	.00096	.00304	.00222	.00307	.00294	.0121
%RSD	118.73	.59889	9.1817	14.859	52.652	122.13	304.81	1.1477
#1	.00120	10.813	.00941	.02356	.00283	-.00575	.00065	1.0435
#2	.00077	10.857	.01132	.02033	.00676	.00035	-.00435	1.0643
#3	-.00018	10.941	.01050	.01748	.00303	-.00214	.00081	1.0648
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606065003 Acquired: 6/23/2016 14:17:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00018**	**.02812**	**.00927**	**-.00234**	**.00055**	**.00136**	**.26713**
Stddev	.00044	.00045	.01111	.00135	.00029	.00018	.11649
%RSD	247.67	1.5998	119.83	57.833	53.067	13.216	43.608
#1	-.00029	.02761	-.00352	-.00390	.00030	.00141	.14323
#2	.00031	.02844	.01649	-.00165	.00048	.00116	.37443
#3	-.00055	.02832	.01484	-.00148	.00086	.00151	.28371
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6858.1**	**42494.**	**2175.3**
Stddev	42.7	209.	26.7
%RSD	.62293	.49294	1.2285
#1	6902.9	42252.	2201.8
#2	6817.9	42604.	2175.9
#3	6853.5	42625.	2148.4

Approved: June 24, 2016

Sample Name: L1606065008 Acquired: 6/23/2016 14:21:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00167	.05295	-.00138	.00258	.01026	.00007	.47962	.00043
Stddev	.00382	.00591	.00487	.00427	.00085	.00006	.02685	.00034
%RSD	228.87	11.159	352.65	165.38	8.2961	86.535	5.5975	78.751
#1	.00493	.04838	-.00184	.00341	.00986	.00008	.50825	.00064
#2	.00262	.05085	.00370	-.00204	.01124	.00013	.47558	.00004
#3	-.00254	.05962	-.00601	.00637	.00969	.00001	.45502	.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	.00105	.00052	.01114	.23594	.00258	.32831	.04867
Stddev	.00048	.00065	.00211	.02304	.15716	.00476	.03457	.00107
%RSD	72.667	62.238	405.10	206.92	66.612	184.28	10.530	2.1978
#1	.00121	.00147	-.00090	.03051	.27011	.00744	.32906	.04762
#2	.00035	.00030	-.00048	-.01435	.37320	.00238	.29337	.04976
#3	.00041	.00139	.00294	.01725	.06450	-.00207	.36250	.04864
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	10.506	.00237	.01642	.00213	-.00348	-.00290	.95589
Stddev	.00033	.102	.00127	.00194	.00052	.00334	.00341	.02057
%RSD	80.143	.97506	53.506	11.825	24.406	96.118	117.83	2.1518
#1	.00038	10.423	.00381	.01546	.00262	-.00214	.00087	.93512
#2	.00074	10.474	.00146	.01866	.00158	-.00728	-.00579	.95628
#3	.00009	10.620	.00183	.01515	.00217	-.00101	-.00377	.97625
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606065008 Acquired: 6/23/2016 14:21:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**.01016**	**.01408**	**-.00180**	**.00034**	**.00780**	**-.02250**
Stddev	.00029	.00090	.00037	.00226	.00082	.00018	.41195
%RSD	114.07	8.8585	2.5924	125.83	238.75	2.2653	1831.1
#1	.00001	.00914	.01377	-.00283	.00079	.00783	.44684
#2	-.00021	.01085	.01448	.00080	.00083	.00796	-.19010
#3	-.00057	.01049	.01399	-.00336	-.00060	.00761	-.32423
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6841.7**	**42195.**	**2159.0**
Stddev	30.1	205.	11.8
%RSD	.44004	.48548	.54660
#1	6815.4	42021.	2145.6
#2	6874.6	42142.	2163.1
#3	6835.2	42421.	2168.1

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 14:25:18 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.42857**	**10.259**	**.41459**	**.51312**	**1.0377**	**.05083**	**10.240**
Stddev	.00145	.042	.00240	.00208	.0005	.00026	.035
%RSD	.33767	.40774	.57876	.40627	.05142	.51677	.34610
#1	.42691	10.262	.41492	.51075	1.0371	.05053	10.280
#2	.42953	10.299	.41680	.51396	1.0378	.05103	10.216
#3	.42927	10.216	.41204	.51467	1.0381	.05092	10.222
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05153**	**.20713**	**.51313**	**.52122**	**4.1496**	**51.824**	**1.0450**
Stddev	.00053	.00038	.00040	.00239	.0217	.086	.0064
%RSD	1.0374	.18497	.07884	.45778	.52422	.16565	.60961
#1	.05201	.20708	.51297	.51947	4.1602	51.775	1.0391
#2	.05164	.20754	.51283	.52394	4.1246	51.773	1.0517
#3	.05096	.20678	.51359	.52026	4.1640	51.923	1.0442
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.365**	**.51748**	**1.0289**	**52.020**	**.52164**	**10.278**	**.51633**
Stddev	.087	.00146	.0058	.056	.00105	.029	.00388
%RSD	.84013	.28224	.56032	.10741	.20123	.27986	.75206
#1	10.444	.51915	1.0335	51.957	.52178	10.279	.51436
#2	10.378	.51684	1.0308	52.062	.52261	10.306	.52080
#3	10.271	.51645	1.0225	52.042	.52052	10.249	.51381
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 14:25:18 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2446**	**.40802**	**5.2183**	**1.0274**	**1.0363**	**1.0285**	**.51759**
Stddev	.0023	.00604	.0089	.0012	.0017	.0067	.00261
%RSD	.18445	1.4800	.17081	.11732	.16361	.65413	.50434
#1	1.2468	.40186	5.2137	1.0272	1.0367	1.0216	.51819
#2	1.2449	.41392	5.2286	1.0286	1.0377	1.0289	.51985
#3	1.2422	.40829	5.2127	1.0262	1.0344	1.0351	.51473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0241**	**1.0338**	F **-.06192**
Stddev	.0027	.0025	.13680
%RSD	.26305	.23934	220.92
#1	1.0256	1.0347	-.12891
#2	1.0256	1.0357	-.15233
#3	1.0210	1.0310	.09546
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6790.5**	**41937.**	**2171.8**
Stddev	14.3	237.	31.3
%RSD	.21009	.56402	1.4431
#1	6793.6	42002.	2142.6
#2	6774.9	41675.	2204.9
#3	6802.9	42135.	2167.9

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 14:28:57 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00068**	**.00684**	**.00039**	**.00405**	**-.00014**	**-.00001**	**.01111**
Stddev	.00139	.00533	.00047	.00294	.00042	.00014	.05193
%RSD	204.27	77.917	119.96	72.476	307.90	1309.0	467.61
#1	.00203	.00321	.00027	.00312	.00020	.00006	.02540
#2	-.00074	.00435	-.00001	.00734	-.00061	-.00017	.05439
#3	.00075	.01296	.00090	.00169	-.00000	.00008	-.04648
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00006**	**.00013**	**.00175**	**-.00169**	**-.03481**	**.03957**	**-.00259**
Stddev	.00015	.00019	.00125	.00122	.01045	.07332	.00926
%RSD	234.29	139.55	71.393	71.935	30.013	185.30	357.55
#1	.00015	.00011	.00272	-.00149	-.03890	.12238	-.01323
#2	-.00011	-.00004	.00034	-.00059	-.02294	-.01707	.00367
#3	.00015	.00033	.00220	-.00299	-.04259	.01338	.00179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00762**	**.00145**	**.00451**	**.09184**	**.00017**	**-.00187**	**.00393**
Stddev	.06220	.00270	.00068	.03009	.00063	.00768	.00289
%RSD	816.14	186.07	15.116	32.766	369.41	409.76	73.613
#1	.05398	.00182	.00387	.11465	-.00014	-.00570	.00494
#2	-.07042	-.00142	.00443	.05773	-.00024	-.00688	.00067
#3	-.00642	.00395	.00522	.10312	.00090	.00697	.00619
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 14:28:57 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00279**	**.00482**	**.00847**	**.00053**	**.00006**	**.00257**	**-.00411**
Stddev	.00278	.00681	.00116	.00085	.00055	.00504	.00289
%RSD	99.442	141.35	13.644	158.61	926.38	195.66	70.433
#1	-.00026	.01020	.00758	.00147	.00031	.00784	-.00566
#2	.00347	-.00284	.00978	.00031	.00045	.00209	-.00589
#3	.00516	.00708	.00806	-.00018	-.00058	-.00220	-.00077
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00079**	**.00006**	F **-.39260**
Stddev	.00035	.00021	.05919
%RSD	44.671	327.48	15.076
#1	-.00108	.00012	-.33568
#2	-.00040	.00024	-.38830
#3	-.00090	-.00017	-.45382
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6873.8**	**43066.**	**2219.3**
Stddev	24.2	262.	10.6
%RSD	.35168	.60922	.47776
#1	6894.9	42910.	2212.4
#2	6847.5	43369.	2213.9
#3	6879.2	42920.	2231.5

Approved: June 24, 2016

Sample Name: L1606072901 Acquired: 6/23/2016 14:32:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00103**	**.20477**	**-.00132**	**.00218**	**.01021**	**.00012**	**.30745**	**.00047**
Stddev	.00053	.01327	.00471	.00232	.00114	.00003	.02774	.00015
%RSD	51.996	6.4798	356.90	106.25	11.138	25.468	9.0221	31.167
#1	.00051	.19008	.00260	-.00050	.01138	.00015	.32209	.00059
#2	.00157	.20831	-.00655	.00356	.00911	.00010	.32479	.00031
#3	.00100	.21590	-.00002	.00349	.01015	.00010	.27546	.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00053**	**.00267**	**-.00085**	**.77824**	**.42499**	**-.00305**	**.23675**	**.02029**
Stddev	.00027	.00103	.00058	.02700	.08780	.00861	.05586	.00118
%RSD	50.518	38.540	68.845	3.4690	20.660	282.38	23.595	5.8114
#1	.00022	.00290	-.00136	.75084	.33202	.00511	.29331	.01914
#2	.00068	.00356	-.00098	.80482	.50650	-.01205	.18162	.02149
#3	.00070	.00154	-.00021	.77905	.43645	-.00220	.23531	.02024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00083**	**.86266**	**.00042**	**.01404**	**.00097**	**-.00077**	**-.00134**	**.76395**
Stddev	.00051	.02574	.00063	.00375	.00275	.00513	.00230	.00735
%RSD	61.366	2.9839	148.39	26.677	282.93	667.71	172.38	.96211
#1	.00134	.88860	-.00030	.00973	-.00211	.00442	-.00008	.75683
#2	.00082	.86224	.00077	.01648	.00317	-.00089	.00007	.76352
#3	.00032	.83713	.00080	.01592	.00186	-.00583	-.00399	.77151
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606072901 Acquired: 6/23/2016 14:32:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	.00368	.00790	.00091	.00042	.00382	.00650
Stddev	.00078	.00018	.01121	.00106	.00050	.00012	.11639
%RSD	100.57	5.0167	141.79	116.57	120.43	3.0763	1791.7
#1	-.00009	.00388	-.00377	.00178	.00087	.00368	.14066
#2	.00143	.00363	.01857	.00120	-.00012	.00388	-.06741
#3	.00097	.00352	.00891	-.00027	.00049	.00389	-.05376
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6901.1	42979.	2151.2
Stddev	19.2	285.	20.3
%RSD	.27820	.66224	.94575
#1	6910.1	42716.	2144.7
#2	6879.1	42940.	2174.0
#3	6914.2	43281.	2134.9

Approved: June 24, 2016

Sample Name: L1606072903 Acquired: 6/23/2016 14:36:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00094	.33608	-.00131	.00564	.00616	.00028	5.3240	.00024
Stddev	.00198	.00768	.00306	.00252	.00005	.00002	.0535	.00020
%RSD	210.97	2.2849	233.73	44.693	.84156	5.9585	1.0055	83.951
#1	-.00250	.34457	-.00041	.00677	.00622	.00030	5.3370	.00012
#2	-.00160	.33405	.00120	.00275	.00614	.00027	5.2651	.00012
#3	.00129	.32962	-.00472	.00739	.00612	.00029	5.3698	.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00548	.00093	.00024	.32576	.22463	-.00164	1.5833	.08416
Stddev	.00028	.00184	.00153	.03169	.09456	.00642	.0663	.00253
%RSD	5.0708	199.26	630.81	9.7265	42.093	390.50	4.1863	3.0039
#1	.00547	.00063	-.00138	.32125	.31484	-.00892	1.6253	.08128
#2	.00576	-.00075	.00164	.29657	.12626	.00078	1.5069	.08600
#3	.00520	.00290	.00047	.35946	.23280	.00321	1.6177	.08520
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.67183	.00202	.00827	.00144	-.00380	-.00466	.60971
Stddev	.00034	.01528	.00167	.00684	.00325	.00501	.00541	.00733
%RSD	171.43	2.2750	82.664	82.772	226.43	132.11	116.12	1.2017
#1	-.00013	.68370	.00049	.01582	-.00007	-.00544	-.01091	.60649
#2	.00017	.65459	.00380	.00649	.00517	-.00778	-.00164	.60453
#3	.00055	.67721	.00176	.00249	-.00079	.00184	-.00144	.61809
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606072903 Acquired: 6/23/2016 14:36:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	.04758	.01193	-.00049	-.00069	.00682	.19864
Stddev	.00020	.00030	.00301	.00156	.00048	.00021	.25703
%RSD	23.011	.62722	25.235	318.54	70.477	3.0551	129.40
#1	.00102	.04760	.01334	-.00168	-.00078	.00688	-.08790
#2	.00096	.04787	.00847	.00128	-.00112	.00658	.27491
#3	.00065	.04727	.01398	-.00107	-.00016	.00698	.40890
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6965.2	43094.	2177.3
Stddev	15.3	76.	32.6
%RSD	.21966	.17684	1.4974
#1	6962.6	43145.	2141.8
#2	6981.7	43006.	2184.2
#3	6951.4	43131.	2205.9

Approved: June 24, 2016

Sample Name: L1606073001 Acquired: 6/23/2016 14:40:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.00616	.00037	.00349	.02625	.00006	3.9162
Stddev	.00335	.00482	.00309	.00065	.00035	.00006	.0556
%RSD	564.87	78.283	834.66	18.491	1.3216	106.85	1.4210
#1	.00444	.01164	-.00103	.00328	.02619	.00005	3.8953
#2	-.00105	.00259	-.00177	.00422	.02663	.00013	3.8741
#3	-.00161	.00425	.00392	.00298	.02594	.00000	3.9793
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	-.00033	.00192	-.00122	-.01907	.37213	-.00062
Stddev	.00029	.00023	.00070	.00142	.03046	.01397	.00645
%RSD	73.054	68.840	36.466	116.28	159.68	3.7528	1041.9
#1	.00063	-.00043	.00172	-.00275	.00425	.36288	.00114
#2	.00007	-.00007	.00269	.00006	-.05353	.36531	-.00777
#3	.00050	-.00048	.00134	-.00098	-.00794	.38819	.00477
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09432	.00289	.00055	3.0211	-.00098	.01000	.00131
Stddev	.14378	.00050	.00029	.0512	.00050	.00813	.00252
%RSD	152.43	17.247	51.863	1.6958	50.999	81.317	192.75
#1	.19256	.00246	.00087	2.9729	-.00134	.01243	.00264
#2	-.07070	.00277	.00046	3.0155	-.00041	.01663	.00288
#3	.16111	.00343	.00032	3.0749	-.00119	.00093	-.00160
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606073001 Acquired: 6/23/2016 14:40:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00098	.00138	.09081	.00094	.24565	.00908	.00018
Stddev	.00150	.01124	.00206	.00054	.00245	.00487	.00266
%RSD	153.60	812.48	2.2711	57.604	.99651	53.609	1475.0
#1	-.00029	-.00680	.09067	.00035	.24300	.00356	-.00259
#2	.00059	.01419	.08882	.00108	.24613	.01277	.00272
#3	.00264	-.00325	.09294	.00141	.24782	.01091	.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00029	.00054	F -.09488
Stddev	.00071	.00025	.31939
%RSD	242.69	45.791	336.63
#1	-.00028	.00030	.08622
#2	-.00102	.00079	-.46366
#3	.00041	.00053	.09280
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6849.4	42570.	2167.2
Stddev	35.5	125.	28.6
%RSD	.51829	.29286	1.3210
#1	6875.7	42440.	2198.6
#2	6863.4	42689.	2160.4
#3	6809.0	42580.	2142.5

Approved: June 24, 2016

Sample Name: L1606073002 Acquired: 6/23/2016 14:44:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00017**	**.01083**	**-.00205**	**.00068**	**.02540**	**.00015**	**3.8128**
Stddev	.00133	.00120	.00144	.00218	.00124	.00005	.0165
%RSD	768.03	11.069	69.997	322.04	4.8845	32.561	.43336
#1	-.00136	.01193	-.00368	.00286	.02637	.00011	3.8166
#2	.00089	.00955	-.00148	-.00151	.02400	.00020	3.7948
#3	.00099	.01100	-.00099	.00068	.02582	.00013	3.8271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00027**	**.00024**	**.00238**	**-.00072**	**-.00102**	**.33240**	**-.00150**
Stddev	.00031	.00067	.00070	.00078	.03059	.08106	.00543
%RSD	116.50	277.35	29.547	107.87	2985.6	24.386	362.53
#1	.00046	.00097	.00198	-.00007	-.03428	.42140	.00454
#2	-.00009	.00009	.00197	-.00158	.00527	.31296	-.00598
#3	.00042	-.00034	.00320	-.00052	.02593	.26282	-.00305
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.08263**	**-.00127**	**.00011**	**2.9817**	**-.00201**	**.00849**	**.00399**
Stddev	.10700	.00354	.00040	.0541	.00161	.01034	.00729
%RSD	129.49	278.60	368.84	1.8148	80.212	121.72	182.85
#1	.12830	-.00124	.00054	3.0211	-.00070	.02020	-.00010
#2	-.03962	-.00483	-.00026	2.9200	-.00381	.00062	.01240
#3	.15921	.00225	.00005	3.0039	-.00151	.00466	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606073002 Acquired: 6/23/2016 14:44:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00184**	**.00620**	**.08953**	**.00070**	**.24109**	**.00037**	**-.00136**
Stddev	.00446	.00364	.00198	.00084	.00389	.00307	.00210
%RSD	242.07	58.803	2.2141	119.60	1.6120	831.83	154.38
#1	-.00677	.00350	.08733	.00005	.24147	.00226	-.00229
#2	.00192	.01034	.09119	.00040	.23703	.00202	-.00284
#3	-.00067	.00474	.09006	.00164	.24478	-.00317	.00105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00051**	**.00070**	F **-.24102**
Stddev	.00283	.00010	.11806
%RSD	551.12	14.785	48.982
#1	.00158	.00072	-.15363
#2	.00061	.00079	-.19411
#3	-.00373	.00059	-.37532
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6840.3**	**42417.**	**2160.9**
Stddev	59.2	242.	14.5
%RSD	.86491	.56950	.67170
#1	6867.8	42609.	2155.8
#2	6772.3	42497.	2177.3
#3	6880.6	42146.	2149.7

Approved: June 24, 2016

Sample Name: L1606073003 Acquired: 6/23/2016 14:48:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00055**	**.01128**	**-.00360**	**.00095**	**.09229**	**.00002**	**3.4454**
Stddev	.00294	.01174	.00423	.00193	.00276	.00001	.0759
%RSD	534.98	104.10	117.37	203.76	2.9914	63.105	2.2014
#1	.00353	.01187	-.00535	.00225	.08912	.00002	3.3587
#2	-.00235	-.00075	.00122	-.00127	.09417	.00004	3.4781
#3	.00047	.02271	-.00667	.00188	.09358	.00001	3.4994
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00047**	**.00032**	**.00060**	**.00028**	**.05676**	**.04348**	**.00010**
Stddev	.00029	.00040	.00086	.00135	.01517	.10320	.00444
%RSD	60.846	126.16	142.92	481.42	26.736	237.38	4312.3
#1	.00069	.00062	-.00010	.00179	.05340	.16110	-.00312
#2	.00015	.00047	.00034	-.00012	.04354	.00124	.00516
#3	.00058	-.00014	.00157	-.00082	.07333	-.03191	-.00174
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.1211**	**.00612**	**.00035**	**8.7390**	**-.00056**	**.00954**	**.00317**
Stddev	.0586	.00084	.00008	.1820	.00126	.01316	.00361
%RSD	2.7622	13.667	23.949	2.0828	224.18	138.03	114.02
#1	2.0534	.00679	.00028	8.5296	.00086	-.00088	.00724
#2	2.1559	.00518	.00045	8.8598	-.00102	.02433	.00034
#3	2.1538	.00638	.00034	8.8275	-.00152	.00516	.00193
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606073003 Acquired: 6/23/2016 14:48:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00137**	**.00017**	**.16478**	**-.00039**	**.07546**	**.00790**	**-.00140**
Stddev	.00416	.00381	.00381	.00111	.00268	.00448	.00325
%RSD	303.81	2305.1	2.3143	282.95	3.5523	56.785	231.19
#1	.00324	.00456	.16046	-.00122	.07236	.00467	.00171
#2	-.00483	-.00216	.16767	.00087	.07707	.01302	-.00115
#3	-.00252	-.00190	.16622	-.00083	.07693	.00600	-.00477
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00080**	**.00049**	F **-.49766**
Stddev	.00035	.00012	.27901
%RSD	43.847	24.954	56.065
#1	-.00120	.00048	-.66239
#2	-.00070	.00061	-.65508
#3	-.00052	.00037	-.17551
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6909.4**	**42385.**	**2199.2**
Stddev	85.6	560.	44.7
%RSD	1.2389	1.3218	2.0328
#1	6964.9	42416.	2245.9
#2	6810.8	42929.	2156.9
#3	6952.4	41810.	2194.7

Approved: June 24, 2016

Sample Name: L1606079806 Acquired: 6/23/2016 14:52:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00172	.03292	-.00480	.00673	-.00023	.00008	4.1415
Stddev	.00289	.00555	.00057	.00215	.00045	.00003	.0589
%RSD	167.55	16.855	11.845	31.992	189.92	35.476	1.4213
#1	.00229	.02652	-.00539	.00560	-.00013	.00010	4.1840
#2	-.00141	.03586	-.00476	.00921	-.00072	.00005	4.0743
#3	.00429	.03639	-.00425	.00538	.00015	.00009	4.1662
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.00029	.00067	.00027	.03525	.95621	-.00238
Stddev	.00022	.00037	.00038	.00048	.02860	.05109	.00098
%RSD	68.237	128.88	56.635	179.92	81.137	5.3431	41.163
#1	.00025	.00026	.00057	-.00014	.04638	.89722	-.00177
#2	.00015	-.00007	.00109	.00080	.00276	.98490	-.00351
#3	.00057	.00068	.00035	.00015	.05661	.98650	-.00186
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.22291	.04167	.00051	1.6649	-.00058	.11093	.00427
Stddev	.03032	.00317	.00005	.0494	.00129	.00517	.00167
%RSD	13.600	7.6072	9.5760	2.9645	223.14	4.6572	39.196
#1	.19841	.04523	.00053	1.7187	-.00196	.11261	.00621
#2	.25681	.03916	.00045	1.6218	-.00037	.11505	.00330
#3	.21351	.04061	.00054	1.6542	.00060	.10514	.00331
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606079806 Acquired: 6/23/2016 14:52:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00090**	**.00853**	**.10041**	**.00029**	**.00840**	**.00456**	**-.00331**
Stddev	.00606	.00547	.00496	.00066	.00076	.00979	.00385
%RSD	670.85	64.066	4.9419	223.71	9.0388	214.73	116.40
#1	-.00610	.01332	.09874	.00104	.00908	-.00436	-.00335
#2	.00445	.00258	.09649	-.00019	.00758	.01504	-.00714
#3	.00436	.00969	.10599	.00003	.00852	.00300	.00056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00108**	**.00379**	F **-.12134**
Stddev	.00143	.00002	.45676
%RSD	132.69	.64499	376.42
#1	.00048	.00382	-.46260
#2	-.00232	.00377	.39755
#3	-.00139	.00380	-.29898
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6843.0**	**42928.**	**2203.1**
Stddev	10.6	399.	20.9
%RSD	.15555	.92941	.94688
#1	6853.1	43236.	2180.6
#2	6844.0	42477.	2221.8
#3	6831.9	43070.	2207.0

Approved: June 24, 2016

Sample Name: L1606083702 Acquired: 6/23/2016 14:56:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00103	33.857	.01885	.09424	.42276	.00271	61.580
Stddev	.00116	.523	.00142	.00266	.00475	.00005	.605
%RSD	112.59	1.5444	7.5406	2.8236	1.1243	1.9678	.98167
#1	.00045	33.254	.02049	.09497	.42332	.00273	62.020
#2	.00028	34.133	.01796	.09647	.42721	.00276	61.828
#3	.00236	34.185	.01811	.09129	.41775	.00266	60.890
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00158	.03539	.25107	.16869	93.694	11.512	.04006
Stddev	.00031	.00035	.00308	.00084	1.110	.087	.00415
%RSD	19.902	1.0004	1.2276	.49779	1.1849	.75934	10.368
#1	.00164	.03511	.24822	.16866	94.581	11.593	.03794
#2	.00124	.03527	.25434	.16955	94.053	11.523	.04485
#3	.00185	.03578	.25064	.16787	92.449	11.420	.03740
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	17.243	1.3068	.09317	14.697	.12633	1.5684	.05340
Stddev	.403	.0150	.00071	.155	.00154	.0065	.00035
%RSD	2.3401	1.1447	.75952	1.0519	1.2191	.41297	.66412
#1	17.343	1.3237	.09309	14.771	.12800	1.5724	.05368
#2	17.586	1.3015	.09391	14.799	.12602	1.5719	.05300
#3	16.798	1.2953	.09251	14.519	.12497	1.5609	.05351
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606083702 Acquired: 6/23/2016 14:56:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00468	.00688	F 49.401	.00852	.24330	.70184	-.00081
Stddev	.00376	.00767	.188	.00007	.00135	.00911	.00079
%RSD	80.452	111.46	.38077	.81926	.55626	1.2982	97.258
#1	-.00342	.00621	49.502	.00844	.24396	.69824	.00000
#2	-.00171	-.00043	49.517	.00857	.24419	.71220	-.00157
#3	-.00891	.01487	49.184	.00853	.24174	.69507	-.00086
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-1.0000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.07972	1.6548	4.0068
Stddev	.00275	.0052	.2116
%RSD	3.4445	.31177	5.2802
#1	.07661	1.6562	4.1269
#2	.08074	1.6591	4.1310
#3	.08181	1.6490	3.7625
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7040.4	43524.	2280.2
Stddev	23.2	392.	46.0
%RSD	.32915	.90067	2.0194
#1	7044.1	43916.	2252.6
#2	7015.6	43132.	2254.7
#3	7061.5	43525.	2333.4

Approved: June 24, 2016

Sample Name: L1606076301 Acquired: 6/23/2016 15:00:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 2000 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00209**	**.00627**	**.00216**	**.02527**	**.48529**	**.00009**	**6.9887**
Stddev	.00272	.01885	.00159	.00167	.00114	.00009	.0306
%RSD	129.86	300.66	73.428	6.6226	.23547	97.727	.43743
#1	-.00051	.00191	.00231	.02362	.48659	.00008	6.9546
#2	.00491	.02692	.00051	.02696	.48443	.00001	7.0136
#3	.00188	-.01002	.00368	.02522	.48485	.00018	6.9981
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00027**	**-.00007**	**.00164**	**-.00209**	**.05206**	**.55309**	**.03828**
Stddev	.00039	.00053	.00064	.00068	.03153	.15560	.00148
%RSD	147.80	766.58	39.062	32.660	60.562	28.132	3.8546
#1	.00002	-.00006	.00153	-.00135	.08578	.50218	.03687
#2	.00072	.00046	.00106	-.00270	.04705	.72777	.03816
#3	.00005	-.00060	.00232	-.00221	.02333	.42933	.03981
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.80937**	**.00615**	**.00011**	**18.432**	**-.00084**	**.01113**	**.00495**
Stddev	.07243	.00368	.00028	.051	.00072	.00634	.00126
%RSD	8.9487	59.847	241.18	.27432	85.170	57.003	25.523
#1	.74808	.00514	.00035	18.483	-.00005	.01420	.00640
#2	.88929	.00308	-.00019	18.382	-.00145	.01535	.00415
#3	.79073	.01023	.00018	18.430	-.00103	.00383	.00429
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606076301 Acquired: 6/23/2016 15:00:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 2000 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00303	.00197	.01915	.00072	1.2567	.00585	-.00090
Stddev	.00426	.00853	.00295	.00087	.0008	.00852	.00356
%RSD	140.49	432.89	15.427	121.09	.05936	145.65	397.05
#1	.00172	.00221	.01973	.00139	1.2559	-.00393	.00299
#2	-.00650	.01037	.01595	.00103	1.2573	.01163	-.00169
#3	-.00432	-.00668	.02178	-.00026	1.2570	.00985	-.00399
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00051	.00049	F -.04104
Stddev	.00064	.00013	.38903
%RSD	125.10	27.351	948.00
#1	-.00100	.00058	-.48337
#2	.00021	.00033	.24794
#3	-.00075	.00055	.11232
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6956.6	43183.	2199.2
Stddev	54.4	430.	23.1
%RSD	.78258	.99497	1.0493
#1	6897.1	43389.	2175.5
#2	7003.8	42689.	2221.6
#3	6969.0	43471.	2200.5

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 15:04:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.42738	10.225	.42355	.51012	1.0244	.05065	10.091
Stddev	.00539	.091	.00940	.00307	.0059	.00037	.032
%RSD	1.2616	.89220	2.2182	.60127	.57526	.72572	.31685
#1	.43352	10.304	.41275	.51099	1.0233	.05098	10.124
#2	.42518	10.125	.42814	.51265	1.0307	.05026	10.090
#3	.42343	10.245	.42977	.50671	1.0191	.05072	10.060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05206	.21028	.51417	.52677	4.1200	51.074	1.0411
Stddev	.00053	.00344	.00348	.01016	.0524	.111	.0062
%RSD	1.0133	1.6372	.67695	1.9286	1.2706	.21701	.59918
#1	.05150	.20662	.51607	.51557	4.0788	51.072	1.0407
#2	.05215	.21077	.51015	.52936	4.1789	51.186	1.0475
#3	.05254	.21346	.51628	.53538	4.1023	50.964	1.0351
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.113	.51188	1.0430	51.213	.52516	10.399	.52247
Stddev	.033	.00526	.0152	.231	.01144	.198	.01294
%RSD	.32155	1.0286	1.4605	.45051	2.1789	1.9024	2.4764
#1	10.090	.51095	1.0261	51.190	.51316	10.183	.51032
#2	10.100	.51755	1.0473	51.454	.52639	10.443	.52101
#3	10.151	.50715	1.0556	50.995	.53595	10.572	.53607
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 15:04:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2622**	**.41756**	**5.2863**	**1.0398**	**1.0224**	**1.0081**	**.52620**
Stddev	.0172	.01202	.1013	.0212	.0050	.0168	.01061
%RSD	1.3628	2.8782	1.9163	2.0349	.48725	1.6684	2.0157
#1	1.2445	.40471	5.1785	1.0162	1.0221	.99826	.51546
#2	1.2633	.42852	5.3008	1.0459	1.0276	1.0275	.52647
#3	1.2788	.41945	5.3795	1.0572	1.0176	.99852	.53667
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0245**	**1.0446**	F **.30237**
Stddev	.0058	.0191	.11177
%RSD	.56950	1.8236	36.966
#1	1.0294	1.0239	.21395
#2	1.0181	1.0484	.42800
#3	1.0259	1.0614	.26515
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6742.0**	**42317.**	**2192.6**
Stddev	87.2	372.	30.2
%RSD	1.2933	.87896	1.3758
#1	6830.2	42166.	2173.3
#2	6739.8	42741.	2177.1
#3	6655.9	42044.	2227.3

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 15:08:09 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00165**	**.01698**	**.00203**	**.00543**	**.00119**	**.00012**	**-.02429**
Stddev	.00195	.00654	.00152	.00145	.00127	.00007	.00281
%RSD	118.20	38.505	75.033	26.749	107.33	59.090	11.574
#1	-.00044	.01513	.00183	.00559	.00162	.00008	-.02105
#2	.00342	.01157	.00363	.00390	-.00025	.00009	-.02611
#3	.00196	.02425	.00061	.00679	.00218	.00021	-.02570
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.00021**	**.00208**	**-.00115**	**-.00919**	**.13134**	**-.00257**
Stddev	.00022	.00023	.00133	.00177	.02889	.16842	.00681
%RSD	385.67	112.78	63.704	153.40	314.27	128.23	265.13
#1	-.00015	-.00001	.00141	.00076	.02413	.31843	-.00487
#2	-.00022	.00045	.00361	-.00149	-.02726	-.00819	.00509
#3	.00020	.00018	.00123	-.00273	-.02444	.08379	-.00793
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03703**	**.00048**	**.00464**	**.04952**	**-.00087**	**-.00385**	F **.00550**
Stddev	.05363	.00205	.00051	.02064	.00055	.00333	.00438
%RSD	144.81	427.88	10.944	41.670	63.582	86.433	79.629
#1	-.02401	-.00081	.00408	.07276	-.00099	-.00608	.00137
#2	.05854	-.00060	.00478	.04248	-.00135	-.00546	.00504
#3	.07657	.00284	.00507	.03333	-.00027	-.00002	.01010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							.00500
Low Limit							-.00500

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 15:08:09 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00190	.00960	.00918	.00035	.00048	.00265	-.00074
Stddev	.00634	.00369	.00360	.00070	.00044	.00545	.00148
%RSD	334.41	38.448	39.161	198.03	92.306	205.78	199.13
#1	.00543	.01383	.00505	.00076	.00032	.00705	.00096
#2	-.00566	.00709	.01162	-.00045	.00097	-.00344	-.00148
#3	-.00545	.00786	.01087	.00076	.00014	.00434	-.00171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00082	-.00017	F -.48223
Stddev	.00142	.00006	.08088
%RSD	173.58	35.228	16.772
#1	-.00234	-.00022	-.41477
#2	.00049	-.00010	-.46001
#3	-.00061	-.00017	-.57189
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6825.4	42257.	2184.3
Stddev	15.3	2149.	8.4
%RSD	.22359	5.0854	.38501
#1	6842.1	43585.	2177.3
#2	6821.7	43408.	2193.6
#3	6812.3	39777.	2182.1

Approved: June 24, 2016

Sample Name: LLCCV Acquired: 6/23/2016 15:12:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00900	.19078	.00767	.08599	.00976	.00164	.37400	.00143
Stddev	.00038	.00658	.00428	.00071	.00082	.00004	.02888	.00026
%RSD	4.2583	3.4477	55.791	.82106	8.4373	2.4498	7.7231	18.189
#1	.00920	.19742	.01158	.08642	.00935	.00167	.34688	.00165
#2	.00925	.18427	.00832	.08637	.00922	.00160	.40437	.00149
#3	.00856	.19065	.00310	.08517	.01071	.00167	.37075	.00114
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00437	.00454	.00423	.08499	.95099	.08309	.42598	.00933
Stddev	.00026	.00120	.00118	.02252	.18201	.00250	.04612	.00260
%RSD	5.9228	26.460	27.815	26.494	19.139	3.0129	10.828	27.902
#1	.00437	.00540	.00558	.10931	.94621	.08030	.47657	.00727
#2	.00411	.00505	.00373	.06486	.77142	.08381	.41507	.00846
#3	.00463	.00317	.00339	.08082	1.1353	.08515	.38628	.01225
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00906	.50543	.01575	.83822	.01206	.08796	.02110	.86437
Stddev	.00045	.01423	.00111	.00843	.00061	.00300	.00981	.00437
%RSD	4.9498	2.8156	7.0712	1.0058	5.0700	3.4062	46.487	.50596
#1	.00855	.48956	.01609	.83135	.01163	.08885	.02568	.86154
#2	.00934	.51706	.01664	.84763	.01276	.09042	.00984	.86217
#3	.00930	.50965	.01450	.83568	.01180	.08462	.02778	.86941
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: LLCCV Acquired: 6/23/2016 15:12:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.42833**	**.04265**	**.02782**	**.15622**	**.00760**	**.01768**	**19.398**
Stddev	.00202	.00078	.00320	.00149	.00082	.00018	.364
%RSD	.47120	1.8184	11.486	.95612	10.759	1.0376	1.8748
#1	.43055	.04189	.02625	.15477	.00737	.01787	19.046
#2	.42783	.04344	.03150	.15612	.00850	.01767	19.773
#3	.42661	.04262	.02572	.15776	.00692	.01750	19.376
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6741.4**	**42149.**	**2154.7**
Stddev	40.7	448.	3.9
%RSD	.60444	1.0621	.18286
#1	6739.4	41643.	2153.9
#2	6701.8	42314.	2159.0
#3	6783.2	42491.	2151.2

Approved: June 24, 2016

Sample Name: L1606072401 Acquired: 6/23/2016 15:16:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00277	.01879	.00029	.96014	2.4170	.00001	173.53
Stddev	.00234	.00416	.00093	.00391	.0133	.00011	.98
%RSD	84.467	22.118	321.95	.40684	.55081	1049.3	.56425
#1	.00226	.02192	.00135	.95713	2.4039	.00010	172.57
#2	.00533	.01408	-.00038	.95873	2.4305	.00004	174.53
#3	.00073	.02039	-.00011	.96455	2.4166	-.00011	173.50
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	.00105	.00268	-.00010	.88444	14.199	.57377
Stddev	.00030	.00019	.00115	.00121	.03836	.163	.00568
%RSD	60.201	18.370	42.910	1155.9	4.3367	1.1492	.98942
#1	.00039	.00127	.00146	.00113	.88346	14.011	.56748
#2	.00027	.00096	.00284	-.00016	.92327	14.311	.57853
#3	.00084	.00091	.00374	-.00128	.84658	14.273	.57529
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	16.994	.07845	.00033	F 412.25	-.00165	.00224	.00196
Stddev	.190	.00271	.00048	2.14	.00067	.00447	.00418
%RSD	1.1178	3.4582	144.78	.51818	40.333	199.28	213.26
#1	16.808	.07648	-.00014	409.89	-.00181	.00740	.00030
#2	16.986	.08154	.00032	414.05	-.00223	-.00047	.00672
#3	17.188	.07731	.00081	412.81	-.00092	-.00020	-.00113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 24, 2016

Sample Name: L1606072401 Acquired: 6/23/2016 15:16:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00083	.00344	.10306	.00025	F 33.286	-.01719	.00197
Stddev	.00660	.01147	.00129	.00070	.662	.00384	.00073
%RSD	796.07	333.14	1.2495	284.34	1.9888	22.354	37.258
#1	.00514	-.00975	.10450	-.00055	33.434	-.01505	.00161
#2	-.00677	.01101	.10202	.00075	32.563	-.02162	.00281
#3	.00412	.00907	.10266	.00054	33.862	-.01489	.00148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00083	.00418	F -.23243
Stddev	.00050	.00012	.29004
%RSD	59.630	2.9539	124.79
#1	-.00137	.00405	-.37729
#2	-.00039	.00420	.10151
#3	-.00074	.00429	-.42150
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6723.1	41417.	2153.6
Stddev	21.6	497.	27.2
%RSD	.32089	1.1995	1.2626
#1	6746.3	40877.	2166.1
#2	6703.6	41854.	2172.4
#3	6719.4	41522.	2122.5

Approved: June 24, 2016

Sample Name: L1606076201 Acquired: 6/23/2016 15:20:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.02536	-.00249	.01844	.00535	.00003	13.112	.00023
Stddev	.00127	.01968	.00199	.00200	.00076	.00010	.093	.00036
%RSD	1210.9	77.601	79.841	10.824	14.251	352.87	.70940	158.39
#1	-.00133	.03591	-.00453	.02010	.00610	.00006	13.202	.00020
#2	.00108	.00266	-.00239	.01899	.00537	.00011	13.118	.00059
#3	.00057	.03753	-.00056	.01623	.00458	-.00009	13.016	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.00194	-.00001	.01450	1.0331	.00146	1.8703	.00269
Stddev	.00018	.00175	.00196	.01085	.0976	.00077	.1297	.00116
%RSD	179.15	90.064	25521.	74.817	9.4452	53.000	6.9359	42.985
#1	-.00008	.00349	.00137	.01074	1.1059	.00167	1.9776	.00278
#2	.00007	.00229	-.00225	.00603	.92218	.00060	1.7261	.00380
#3	-.00029	.00005	.00086	.02673	1.0711	.00210	1.9073	.00149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00119	1.9239	-.00066	-.00546	.00006	-.00042	.00466	2.2221
Stddev	.00030	.0280	.00136	.00908	.00267	.00575	.00011	.0019
%RSD	25.010	1.4533	206.81	166.34	4184.1	1357.9	2.3851	.08626
#1	.00148	1.9518	-.00109	.00488	-.00200	-.00344	.00454	2.2236
#2	.00121	1.8959	-.00174	-.01213	.00308	-.00405	.00474	2.2227
#3	.00089	1.9239	.00086	-.00913	-.00089	.00621	.00472	2.2199
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606076201 Acquired: 6/23/2016 15:20:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00040**	**.04721**	**.00638**	**.00000**	**-.00085**	**.00130**	**.50415**
Stddev	.00136	.00033	.00533	.00127	.00101	.00013	.13507
%RSD	341.17	.70394	83.621	32921.	119.58	10.205	26.791
#1	.00187	.04759	.00544	-.00091	.00031	.00144	.65988
#2	.00015	.04708	.00158	-.00053	-.00127	.00129	.41889
#3	-.00082	.04697	.01212	.00145	-.00158	.00117	.43368
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6705.8**	**41937.**	**2141.7**
Stddev	7.3	291.	9.9
%RSD	.10956	.69290	.46000
#1	6707.2	41673.	2137.5
#2	6697.9	41888.	2134.7
#3	6712.4	42248.	2153.0

Approved: June 24, 2016

Sample Name: L1606077918 Acquired: 6/23/2016 15:24:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00167	.01863	-.00253	.02217	.00148	.00003	.01869	.00029
Stddev	.00214	.00655	.00149	.00110	.00241	.00005	.08144	.00024
%RSD	128.32	35.170	59.064	4.9626	162.98	181.98	435.85	82.700
#1	.00243	.01329	-.00293	.02326	-.00126	.00009	.02943	.00045
#2	-.00075	.02594	-.00088	.02220	.00327	-.00002	.09422	.00001
#3	.00332	.01665	-.00378	.02106	.00243	.00002	-.06760	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	.00192	.00078	-.01653	-.02200	-.00394	-.01131	-.00011
Stddev	.00029	.00013	.00054	.01402	.10641	.00102	.07303	.00282
%RSD	164.29	6.8552	69.534	84.801	483.77	25.969	645.89	2502.9
#1	-.00050	.00178	.00029	-.01912	.09171	-.00295	.07302	-.00190
#2	-.00010	.00204	.00136	-.00140	-.03853	-.00500	-.05410	.00314
#3	.00007	.00193	.00070	-.02907	-.11917	-.00387	-.05284	-.00157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	2.0695	-.00008	-.00529	.00154	-.00212	.00188	.14025
Stddev	.00033	.0606	.00084	.00055	.00138	.00317	.00994	.00166
%RSD	44.530	2.9288	1113.0	10.468	89.385	149.30	528.79	1.1848
#1	.00102	2.1357	.00074	-.00465	.00046	-.00572	.00864	.14193
#2	.00079	2.0167	-.00094	-.00563	.00107	.00028	.00653	.14022
#3	.00038	2.0563	-.00003	-.00558	.00309	-.00094	-.00953	.13861
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606077918 Acquired: 6/23/2016 15:24:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.00126	.00815	-.00353	-.00074	.00157	.11270
Stddev	.00035	.00043	.01205	.00082	.00125	.00009	.15849
%RSD	67.954	34.228	147.85	23.195	169.72	6.0212	140.63
#1	.00087	.00176	-.00539	-.00440	.00069	.00167	-.04429
#2	.00053	.00100	.01768	-.00277	-.00127	.00150	.10974
#3	.00016	.00103	.01216	-.00342	-.00163	.00153	.27265
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6730.2	41984.	2122.6
Stddev	9.9	392.	7.1
%RSD	.14640	.93343	.33457
#1	6723.8	41604.	2115.9
#2	6741.6	41961.	2130.1
#3	6725.4	42387.	2121.9

Approved: June 24, 2016

Sample Name: L1606078701 Acquired: 6/23/2016 15:28:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00134	.02016	-.00184	.00404	.00137	-.00001	.12352
Stddev	.00329	.00145	.00162	.00051	.00066	.00012	.03646
%RSD	244.80	7.1928	87.867	12.618	48.048	1036.7	29.515
#1	-.00242	.01849	-.00198	.00347	.00108	.00002	.12792
#2	.00278	.02084	-.00338	.00444	.00212	.00009	.08506
#3	.00367	.02114	-.00016	.00420	.00091	-.00014	.15758
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00058	.00005	.00229	.00086	-.00893	.04033	.00067
Stddev	.00021	.00060	.00129	.00091	.05697	.07103	.00112
%RSD	35.316	1231.2	56.527	104.93	637.77	176.11	168.56
#1	.00081	-.00042	.00094	-.00018	-.06783	.07929	-.00038
#2	.00052	.00072	.00242	.00145	-.00485	.08335	.00053
#3	.00042	-.00015	.00351	.00132	.04588	-.04165	.00185
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00079	.00355	.00016	.51805	-.00054	-.00239	-.00291
Stddev	.04525	.00184	.00024	.02678	.00082	.01066	.00180
%RSD	5714.9	51.848	157.11	5.1696	151.92	446.68	61.810
#1	.02267	.00374	.00029	.54478	.00032	-.00520	-.00089
#2	-.05296	.00529	-.00013	.51816	-.00062	.00940	-.00435
#3	.02792	.00162	.00030	.49122	-.00131	-.01136	-.00349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606078701 Acquired: 6/23/2016 15:28:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00239**	**.00772**	**.13349**	**.00103**	**.00107**	**.00346**	**-.00334**
Stddev	.00234	.00402	.00019	.00058	.00048	.00641	.00040
%RSD	97.989	52.060	.14358	56.048	44.671	185.55	12.008
#1	-.00270	.00313	.13368	.00129	.00156	.00140	-.00288
#2	.00009	.00942	.13350	.00144	.00060	-.00168	-.00355
#3	-.00456	.01060	.13329	.00037	.00105	.01065	-.00360
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00117**	**.00491**	F **-.21371**
Stddev	.00101	.00036	.39855
%RSD	86.018	7.3434	186.50
#1	-.00212	.00530	.20425
#2	-.00129	.00459	-.25586
#3	-.00011	.00483	-.58951
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6740.9**	**42203.**	**2144.6**
Stddev	38.3	203.	23.0
%RSD	.56823	.48091	1.0724
#1	6770.7	42025.	2119.8
#2	6754.4	42161.	2165.3
#3	6697.7	42424.	2148.7

Approved: June 24, 2016

Sample Name: L1606078710 Acquired: 6/23/2016 15:32:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00084**	**.27296**	**-.00343**	**.04542**	**.09618**	**-.00003**	**57.392**
Stddev	.00117	.00475	.00186	.00269	.00132	.00003	.461
%RSD	138.82	1.7388	54.215	5.9151	1.3771	97.809	.80344
#1	-.00034	.27840	-.00365	.04242	.09771	-.00002	57.856
#2	.00087	.26969	-.00518	.04761	.09539	-.00001	57.384
#3	.00200	.27079	-.00147	.04623	.09544	-.00006	56.934
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00064**	**.00033**	**.00402**	**.00290**	**.23383**	**1.0771**	**.00900**
Stddev	.00017	.00013	.00208	.00129	.01456	.0457	.00428
%RSD	26.807	40.705	51.843	44.530	6.2269	4.2470	47.527
#1	.00083	.00031	.00175	.00376	.24955	1.0260	.00837
#2	.00058	.00047	.00585	.00354	.22081	1.1143	.01355
#3	.00051	.00020	.00444	.00142	.23113	1.0909	.00507
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**18.842**	**.01135**	**.00060**	**3.8640**	**-.00095**	**.19470**	**.00196**
Stddev	.177	.00110	.00029	.0359	.00078	.00332	.00221
%RSD	.93834	9.6581	48.710	.92870	82.442	1.7074	113.18
#1	18.724	.01117	.00027	3.8945	-.00012	.19396	.00367
#2	19.045	.01253	.00081	3.8731	-.00105	.19833	.00275
#3	18.757	.01036	.00074	3.8244	-.00167	.19180	-.00054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606078710 Acquired: 6/23/2016 15:32:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00214**	**.00030**	**9.5395**	**.00090**	**.15048**	**.00322**	**-.00111**
Stddev	.00331	.00448	.0053	.00019	.00007	.00950	.00409
%RSD	154.82	1486.1	.05501	20.991	.04682	294.96	367.19
#1	.00049	-.00485	9.5347	.00098	.15055	-.00075	-.00438
#2	-.00002	.00249	9.5451	.00068	.15047	.01406	-.00244
#3	.00595	.00326	9.5386	.00104	.15041	-.00365	.00348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00310**	**.00611**	F **-.09613**
Stddev	.00083	.00018	.38193
%RSD	26.810	2.9005	397.32
#1	.00381	.00625	.21134
#2	.00329	.00618	-.52366
#3	.00218	.00591	.02394
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6716.0**	**41811.**	**2141.5**
Stddev	20.0	38.	38.3
%RSD	.29820	.09082	1.7907
#1	6697.9	41817.	2120.8
#2	6712.8	41845.	2118.0
#3	6737.5	41770.	2185.8

Approved: June 24, 2016

Sample Name: L1606072402 Acquired: 6/23/2016 15:36:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.02429	.00126	1.0001	2.4553	.00011	175.12
Stddev	.00172	.00751	.00369	.0073	.0182	.00006	1.38
%RSD	1268.7	30.918	292.44	.72550	.74042	57.336	.79024
#1	.00202	.03260	.00295	.99250	2.4346	.00017	173.60
#2	-.00134	.01798	-.00297	1.0008	2.4623	.00013	175.43
#3	-.00027	.02231	.00381	1.0070	2.4689	.00004	176.32
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	.00144	.00224	.00109	.88917	14.331	.57927
Stddev	.00026	.00062	.00123	.00028	.02013	.196	.00713
%RSD	50.087	43.164	55.139	26.047	2.2642	1.3673	1.2310
#1	.00027	.00131	.00262	.00136	.90097	14.105	.57116
#2	.00052	.00089	.00323	.00112	.90061	14.456	.58209
#3	.00080	.00212	.00086	.00079	.86592	14.431	.58456
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	17.314	.07801	.00008	F 417.81	-.00090	.00661	.00485
Stddev	.333	.00169	.00032	3.43	.00062	.00486	.00222
%RSD	1.9225	2.1614	387.14	.82124	68.692	73.506	45.764
#1	16.937	.07635	.00046	413.93	-.00126	.00102	.00356
#2	17.437	.07972	-.00012	419.03	-.00019	.00986	.00358
#3	17.567	.07797	-.00009	420.46	-.00127	.00895	.00741
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 24, 2016

Sample Name: L1606072402 Acquired: 6/23/2016 15:36:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00480**	**-.00067**	**.10759**	**-.00027**	F **33.118**	**-.02215**	**.00020**
Stddev	.00242	.00358	.00424	.00098	.241	.01018	.00271
%RSD	50.361	531.89	3.9427	362.00	.72774	45.960	1351.6
#1	-.00308	.00251	.10307	-.00000	33.152	-.01317	.00188
#2	-.00757	-.00455	.11148	-.00135	33.340	-.02006	-.00293
#3	-.00376	.00003	.10821	.00055	32.862	-.03321	.00165
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00126**	**.00524**	F **-.35646**
Stddev	.00018	.00006	.36766
%RSD	13.956	1.1266	103.14
#1	-.00124	.00517	-.66560
#2	-.00110	.00528	.05011
#3	-.00145	.00527	-.45387
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6700.2**	**41500.**	**2177.0**
Stddev	45.1	267.	16.8
%RSD	.67280	.64386	.77022
#1	6649.2	41642.	2175.9
#2	6734.7	41192.	2160.8
#3	6716.7	41667.	2194.2

Approved: June 24, 2016

Sample Name: L1606078718 Acquired: 6/23/2016 15:40:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00182	1.3663	-.00099	.08602	.17005	.00003	59.339	.00041
Stddev	.00205	.0062	.00401	.00049	.00175	.00016	.521	.00016
%RSD	112.70	.45392	402.94	.56785	1.0290	592.47	.87774	39.098
#1	.00101	1.3731	.00134	.08564	.17098	.00020	59.613	.00026
#2	.00030	1.3649	.00129	.08586	.17113	-.00011	59.666	.00039
#3	.00416	1.3610	-.00562	.08657	.16803	-.00000	58.739	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00139	.00460	.00180	1.4597	1.5559	.01180	24.176	.12500
Stddev	.00034	.00106	.00032	.0390	.1298	.00641	.117	.00150
%RSD	24.411	23.098	17.578	2.6741	8.3397	54.300	.48391	1.1984
#1	.00116	.00569	.00160	1.4736	1.5769	.00880	24.113	.12424
#2	.00123	.00452	.00216	1.4899	1.4170	.01916	24.311	.12672
#3	.00178	.00357	.00163	1.4156	1.6739	.00745	24.105	.12403
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00247	10.893	.00215	.17889	.00449	-.00364	.00139	10.448
Stddev	.00018	.216	.00011	.00508	.00265	.00289	.00135	.018
%RSD	7.2484	1.9792	4.9404	2.8394	59.034	79.479	97.200	.17603
#1	.00258	11.133	.00215	.17389	.00534	-.00034	.00294	10.467
#2	.00258	10.830	.00205	.17875	.00152	-.00482	.00047	10.447
#3	.00227	10.716	.00226	.18404	.00661	-.00574	.00076	10.430
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606078718 Acquired: 6/23/2016 15:40:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00169**	**.24340**	**.01315**	**-.00297**	**.00401**	**.00904**	**.48814**
Stddev	.00049	.00237	.01040	.00495	.00132	.00024	.22160
%RSD	29.225	.97535	79.136	166.53	32.895	2.7044	45.397
#1	.00129	.24607	.02200	-.00597	.00252	.00883	.25296
#2	.00154	.24264	.00169	.00274	.00448	.00931	.69305
#3	.00224	.24151	.01575	-.00569	.00503	.00898	.51840
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6702.6**	**41482.**	**2156.8**
Stddev	7.1	311.	17.9
%RSD	.10622	.74978	.83036
#1	6710.2	41132.	2152.2
#2	6701.7	41728.	2141.6
#3	6696.0	41585.	2176.6

Approved: June 24, 2016

Sample Name: L1606078719 Acquired: 6/23/2016 15:44:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00153**	**.01414**	**-.00427**	**.00486**	**.00226**	**.00005**	**.15369**
Stddev	.00114	.00804	.00087	.00166	.00023	.00001	.02440
%RSD	74.831	56.853	20.359	34.032	10.239	25.333	15.878
#1	.00057	.00685	-.00525	.00587	.00249	.00006	.17540
#2	.00122	.02277	-.00358	.00577	.00203	.00004	.12728
#3	.00280	.01281	-.00399	.00295	.00226	.00006	.15840
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00024**	**.00009**	**.00104**	**.00368**	F **-.03550**	**.01454**	**-.00410**
Stddev	.00019	.00020	.00141	.00160	.02523	.01783	.00666
%RSD	79.976	213.68	135.45	43.472	71.078	122.60	162.48
#1	.00014	-.00002	.00040	.00186	-.05512	-.00480	-.00325
#2	.00046	-.00002	.00006	.00430	-.00703	.01812	.00210
#3	.00012	.00033	.00266	.00487	-.04436	.03031	-.01114
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01439**	**.00113**	**.00041**	**.38527**	**-.00105**	**-.00827**	**.00290**
Stddev	.04149	.00426	.00020	.02060	.00044	.00472	.00131
%RSD	288.35	378.69	48.693	5.3456	41.861	57.039	45.127
#1	-.02539	-.00342	.00053	.37602	-.00131	-.00665	.00229
#2	.05740	.00504	.00053	.40887	-.00054	-.01358	.00201
#3	.01115	.00176	.00018	.37092	-.00129	-.00457	.00440
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606078719 Acquired: 6/23/2016 15:44:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00257	.00690	.07841	.00066	.00220	.00871	-.00196
Stddev	.00414	.01188	.00070	.00073	.00015	.00294	.00454
%RSD	161.26	172.25	.88662	111.70	6.9362	33.794	231.14
#1	-.00606	-.00682	.07920	.00142	.00205	.01122	-.00256
#2	.00201	.01408	.07788	-.00004	.00218	.00943	.00284
#3	-.00366	.01344	.07815	.00059	.00235	.00547	-.00617
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00067	.00557	.08340
Stddev	.00077	.00005	.21806
%RSD	115.62	.88962	261.46
#1	.00022	.00562	.20466
#2	-.00113	.00553	-.16833
#3	-.00110	.00554	.21388
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6728.6	42173.	2145.0
Stddev	41.6	57.	33.9
%RSD	.61795	.13424	1.5810
#1	6776.6	42109.	2106.1
#2	6704.9	42215.	2160.0
#3	6704.4	42195.	2168.8

Approved: June 24, 2016

Sample Name: L1606079802 Acquired: 6/23/2016 15:48:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00144	.03243	-.00074	.01231	.00010	.00002	1.1630	.00027
Stddev	.00109	.01416	.00372	.00189	.00037	.00003	.0162	.00019
%RSD	75.901	43.667	501.02	15.351	392.72	145.15	1.3948	69.324
#1	.00136	.04726	-.00472	.01055	-.00032	.00001	1.1621	.00007
#2	.00258	.03100	.00265	.01431	.00021	-.00000	1.1473	.00030
#3	.00039	.01904	-.00016	.01208	.00040	.00005	1.1797	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.00286	.00149	-.00261	17.582	-.00293	.47862	.00440
Stddev	.00027	.00101	.00088	.00368	.094	.00238	.08717	.00440
%RSD	141.67	35.178	58.815	140.96	.53503	81.061	18.212	99.937
#1	.00006	.00398	.00049	.00163	17.679	-.00560	.55068	.00147
#2	.00001	.00203	.00190	-.00493	17.575	-.00104	.50345	.00946
#3	.00050	.00258	.00210	-.00453	17.491	-.00215	.38174	.00227
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00219	36.621	.00066	2.4466	.00301	.00041	.00081	.25089
Stddev	.00044	.385	.00146	.0064	.00179	.00359	.00845	.00206
%RSD	20.233	1.0507	219.59	.26158	59.557	866.11	1046.1	.82160
#1	.00171	37.035	.00190	2.4473	.00481	.00455	.00656	.25256
#2	.00226	36.553	.00104	2.4526	.00123	-.00173	.00477	.25153
#3	.00259	36.275	-.00094	2.4399	.00298	-.00158	-.00890	.24859
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606079802 Acquired: 6/23/2016 15:48:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00167	.00120	.00799	-.00172	-.00016	.01069	.29290
Stddev	.00023	.00009	.00245	.00171	.00081	.00016	.28737
%RSD	13.614	7.7584	30.718	99.218	509.00	1.4511	98.111
#1	.00185	.00111	.00516	-.00311	.00029	.01070	.29578
#2	.00142	.00129	.00922	-.00223	-.00109	.01053	.00410
#3	.00176	.00121	.00958	.00018	.00032	.01084	.57883
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6875.8	42924.	2217.4
Stddev	18.1	343.	31.5
%RSD	.26359	.79954	1.4211
#1	6874.1	42569.	2185.0
#2	6894.7	43254.	2248.0
#3	6858.5	42948.	2219.2

Approved: June 24, 2016

Sample Name: L1606079804 Acquired: 6/23/2016 15:51:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00292	.06016	-.00090	.00843	.00749	-.00019	45.159	.00037
Stddev	.00241	.00107	.00203	.00073	.00119	.00004	.339	.00018
%RSD	82.468	1.7811	226.97	8.6615	15.818	18.253	.75060	47.525
#1	.00166	.06132	-.00161	.00799	.00886	-.00021	44.779	.00055
#2	.00569	.05995	-.00248	.00928	.00687	-.00015	45.430	.00020
#3	.00140	.05921	.00140	.00803	.00675	-.00022	45.268	.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00296	.00937	.17564	8.4244	.00238	2.2221	.09641
Stddev	.00021	.00105	.00039	.02162	.0287	.00549	.0421	.00186
%RSD	241.35	35.503	4.1089	12.307	.34054	230.82	1.8934	1.9315
#1	.00033	.00354	.00975	.19448	8.4123	.00370	2.2235	.09437
#2	-.00005	.00175	.00939	.18040	8.4572	-.00365	2.1794	.09686
#3	-.00002	.00359	.00898	.15204	8.4038	.00709	2.2635	.09802
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00217	17.774	.00302	26.483	.00590	-.00008	.01034	.16124
Stddev	.00050	.097	.00068	.043	.00269	.00227	.00953	.00054
%RSD	22.837	.54315	22.502	.16325	45.484	2730.6	92.186	.33287
#1	.00202	17.666	.00316	26.440	.00849	.00019	.00360	.16097
#2	.00177	17.854	.00228	26.526	.00313	-.00248	.02125	.16186
#3	.00272	17.800	.00361	26.483	.00609	.00204	.00617	.16089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606079804 Acquired: 6/23/2016 15:51:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	.03109	.00099	.00459	.00006	.08912	.51232
Stddev	.00066	.00080	.00670	.00258	.00048	.00020	.12801
%RSD	85.536	2.5649	674.85	56.182	788.63	.22881	24.986
#1	.00069	.03017	-.00154	.00507	-.00038	.08911	.57216
#2	.00147	.03152	-.00407	.00180	.00057	.08892	.36535
#3	.00016	.03157	.00859	.00690	-.00001	.08933	.59945
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7950.5	48692.	2535.1
Stddev	32.4	365.	7.3
%RSD	.40779	.75001	.28802
#1	7923.5	48270.	2535.8
#2	7986.5	48901.	2542.1
#3	7941.6	48905.	2527.5

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 15:55:53 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.42646	10.279	.41356	.51175	1.0306	.05076	10.205
Stddev	.00204	.051	.00199	.00426	.0086	.00025	.126
%RSD	.47932	.49909	.48079	.83170	.83457	.49984	1.2349
#1	.42434	10.238	.41525	.51584	1.0212	.05048	10.064
#2	.42664	10.336	.41407	.51205	1.0326	.05081	10.244
#3	.42841	10.262	.41137	.50735	1.0380	.05098	10.306
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05186	.20878	.51384	.52434	4.0815	51.382	1.0440
Stddev	.00027	.00087	.00306	.00302	.0649	.432	.0097
%RSD	.52657	.41503	.59534	.57578	1.5889	.84015	.92985
#1	.05202	.20802	.51042	.52115	4.0401	50.884	1.0353
#2	.05201	.20972	.51630	.52716	4.0482	51.628	1.0422
#3	.05154	.20860	.51480	.52470	4.1563	51.635	1.0545
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.201	.51297	1.0355	51.634	.52512	10.356	.52060
Stddev	.133	.00911	.0052	.288	.00329	.031	.00278
%RSD	1.3081	1.7758	.49793	.55755	.62569	.29937	.53373
#1	10.058	.50248	1.0351	51.315	.52328	10.327	.52371
#2	10.223	.51766	1.0408	51.710	.52891	10.389	.51975
#3	10.322	.51879	1.0306	51.876	.52316	10.353	.51835
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 15:55:53 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2590**	**.39898**	**5.2574**	**1.0340**	**1.0272**	**1.0156**	**.52194**
Stddev	.0159	.00202	.0311	.0050	.0078	.0129	.00221
%RSD	1.2636	.50630	.59143	.48329	.76072	1.2706	.42268
#1	1.2594	.39666	5.2283	1.0307	1.0187	1.0008	.51942
#2	1.2746	.40033	5.2902	1.0397	1.0290	1.0249	.52354
#3	1.2428	.39996	5.2537	1.0315	1.0340	1.0209	.52286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0272**	**1.0395**	F **.76977**
Stddev	.0059	.0029	.39400
%RSD	.57455	.27998	51.184
#1	1.0219	1.0379	.54911
#2	1.0336	1.0428	.53555
#3	1.0261	1.0377	1.2247
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6768.6**	**42010.**	**2153.6**
Stddev	37.5	259.	15.3
%RSD	.55402	.61595	.71163
#1	6809.7	41923.	2137.5
#2	6736.2	41806.	2155.3
#3	6760.0	42301.	2168.0

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 15:59:20 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00114**	**.01588**	**.00002**	**.00629**	**.00234**	**.00000**	**.01938**
Stddev	.00137	.00887	.00130	.00592	.00077	.00004	.02910
%RSD	120.04	55.880	5265.1	94.076	32.785	916.73	150.13
#1	-.00044	.02525	-.00001	.00358	.00243	-.00002	-.00373
#2	-.00027	.00761	-.00126	.01308	.00307	.00005	.00982
#3	-.00271	.01478	.00134	.00221	.00154	-.00002	.05206
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00039**	**.00009**	**.00109**	**.00045**	**-.01096**	**.05826**	**-.00107**
Stddev	.00009	.00043	.00020	.00134	.05378	.12671	.00316
%RSD	22.643	485.10	18.341	295.38	490.89	217.49	293.68
#1	.00048	-.00040	.00113	-.00109	-.03258	-.08772	-.00007
#2	.00037	.00043	.00126	.00134	.05027	.12270	.00146
#3	.00031	.00024	.00087	.00110	-.05055	.13981	-.00461
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.01399**	**-.00049**	**.00462**	**.09808**	**.00018**	**.00588**	**.00220**
Stddev	.01908	.00229	.00022	.02974	.00154	.00621	.00597
%RSD	136.32	468.16	4.8140	30.323	833.68	105.64	271.60
#1	.00803	-.00312	.00472	.13145	-.00103	.00102	.00713
#2	-.02479	.00056	.00436	.08842	.00192	.00373	-.00444
#3	-.02522	.00109	.00477	.07438	-.00034	.01288	.00391
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 15:59:20 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00449**	**.00077**	**.01037**	**.00119**	**.00117**	**.00814**	**-.00292**
Stddev	.00414	.00612	.00397	.00019	.00046	.00274	.00050
%RSD	92.254	796.98	38.225	16.402	38.885	33.649	17.217
#1	.00912	.00523	.01435	.00110	.00170	.00638	-.00346
#2	.00112	.00328	.01035	.00105	.00095	.01130	-.00286
#3	.00323	-.00621	.00642	.00141	.00087	.00675	-.00246
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00013**	**.00000**	F **-.15928**
Stddev	.00082	.00025	.25243
%RSD	624.25	8432.5	158.48
#1	-.00065	.00025	-.37693
#2	-.00056	.00001	-.21836
#3	.00082	-.00025	.11745
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6764.3**	**42214.**	**2158.6**
Stddev	9.8	206.	11.6
%RSD	.14426	.48768	.53511
#1	6758.9	42034.	2168.0
#2	6758.3	42168.	2162.1
#3	6775.5	42439.	2145.7

Approved: June 24, 2016

Sample Name: ICSA Acquired: 6/23/2016 16:03:19 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00208**	**295.58**	**-.00325**	**.00908**	**.00322**	**.00010**	**273.70**
Stddev	.00236	.85	.00199	.00346	.00101	.00006	.86
%RSD	113.23	.28674	61.144	38.103	31.523	65.751	.31303
#1	.00087	294.66	-.00312	.00644	.00421	.00014	272.77
#2	.00058	296.32	-.00531	.01300	.00326	.00002	273.88
#3	.00480	295.77	-.00133	.00781	.00219	.00012	274.45
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **.00108**	**-.00082**	**.00022**	**.00233**	**109.50**	**.05250**	**.01009**
Stddev	.00041	.00021	.00182	.00181	.40	.12252	.00125
%RSD	38.111	25.991	813.25	77.633	.36960	233.38	12.428
#1	.00063	-.00102	.00055	.00411	109.23	.16966	.01044
#2	.00119	-.00085	.00185	.00240	109.30	.06259	.01113
#3	.00143	-.00059	-.00174	.00049	109.96	-.07475	.00869
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.00080						
Low Limit	-.00080						

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**275.93**	**-.00030**	**.00008**	**.12765**	**-.00145**	**.04923**	**-.00110**
Stddev	1.32	.00231	.00021	.02109	.00124	.00453	.00380
%RSD	.47822	758.84	259.08	16.521	85.657	9.2005	344.88
#1	275.22	-.00113	-.00014	.12709	-.00019	.05367	-.00530
#2	275.12	-.00209	.00012	.10685	-.00149	.04941	.00209
#3	277.45	.00230	.00027	.14901	-.00267	.04462	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: ICSA Acquired: 6/23/2016 16:03:19 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00743**	**.00521**	**.02728**	**.00048**	**-.00001**	**-.00737**	**-.00248**
Stddev	.00821	.01356	.00232	.00057	.00068	.00415	.00352
%RSD	110.59	260.10	8.4896	119.75	7500.7	56.273	141.97
#1	-.01603	-.01035	.02586	-.00018	.00063	-.00272	-.00224
#2	-.00656	.01449	.02603	.00085	-.00072	-.01069	-.00611
#3	.00032	.01150	.02995	.00076	.00006	-.00870	.00092
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00690**	**-.00237**	F **-.97047**
Stddev	.00125	.00006	.13443
%RSD	18.064	2.5689	13.852
#1	-.00564	-.00236	-.99205
#2	-.00813	-.00244	-.82655
#3	-.00692	-.00232	-1.0928
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02000
Low Limit			-.02000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6096.7**	**36985.**	**2032.0**
Stddev	12.3	450.	10.8
%RSD	.20106	1.2158	.52965
#1	6103.4	37299.	2022.3
#2	6104.2	36470.	2043.6
#3	6082.6	37186.	2030.0

Approved: June 24, 2016

Sample Name: ICSAB Acquired: 6/23/2016 16:07:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .61513	295.58	.27616	.01273	.28137	.27182	275.51
Stddev	.00198	.38	.00201	.00218	.00168	.00055	1.53
%RSD	.32189	.12856	.72891	17.114	.59730	.20172	.55467
#1	.61497	295.92	.27748	.01189	.28331	.27245	275.46
#2	.61718	295.65	.27385	.01520	.28043	.27144	277.05
#3	.61323	295.17	.27716	.01109	.28038	.27158	274.00
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.60000						
Low Limit	.40000						

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.55626	.27017	.28219	.28373	108.00	5.8031	.00521
Stddev	.00061	.00065	.00106	.00040	.65	.1899	.00170
%RSD	.11032	.23929	.37563	.14179	.60589	3.2730	32.651
#1	.55696	.26965	.28228	.28330	107.97	6.0146	.00625
#2	.55595	.27089	.28320	.28380	108.66	5.6472	.00613
#3	.55585	.26995	.28108	.28409	107.35	5.7474	.00325
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	271.98	.27321	-.00023	5.9645	.54441	.04388	.55597
Stddev	2.18	.00652	.00054	.0491	.00210	.01228	.00315
%RSD	.80074	2.3850	241.03	.82254	.38502	27.985	.56724
#1	272.14	.26889	-.00078	5.9321	.54658	.05666	.55621
#2	274.08	.28070	-.00020	6.0209	.54240	.04283	.55270
#3	269.73	.27002	.00030	5.9405	.54426	.03216	.55899
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: ICSAB Acquired: 6/23/2016 16:07:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.57108**	**.28123**	**.01867**	**.00174**	**.00066**	**-.00797**	**.51622**
Stddev	.00496	.00708	.00561	.00106	.00040	.00629	.00401
%RSD	.86857	2.5171	30.040	61.006	60.094	78.897	.77665
#1	.57104	.28924	.01660	.00101	.00062	-.00170	.51236
#2	.57607	.27580	.01440	.00296	.00029	-.00794	.51594
#3	.56615	.27865	.02503	.00126	.00108	-.01427	.52036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.27940**	**.53906**	F **-.81686**
Stddev	.00128	.00109	.34524
%RSD	.45637	.20272	42.264
#1	.27986	.54025	-1.1980
#2	.28038	.53883	-.52512
#3	.27796	.53810	-.72746
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02500
Low Limit			-.02500

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6104.6**	**37638.**	**2051.0**
Stddev	15.8	242.	6.9
%RSD	.25938	.64230	.33869
#1	6108.4	37412.	2052.5
#2	6087.2	37610.	2043.5
#3	6118.1	37893.	2057.1

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 16:10:57 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.43129	10.465	.41985	.51183	1.0374	.05092	10.407
Stddev	.00445	.028	.00287	.00388	.0073	.00042	.026
%RSD	1.0329	.26646	.68377	.75830	.70356	.82022	.24998
#1	.42682	10.482	.41977	.51138	1.0308	.05130	10.385
#2	.43573	10.433	.42276	.50819	1.0362	.05047	10.436
#3	.43133	10.481	.41702	.51591	1.0453	.05100	10.400
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05246	.21061	.51727	.52836	4.2555	51.648	1.0430
Stddev	.00029	.00045	.00402	.00070	.0398	.269	.0074
%RSD	.55057	.21557	.77762	.13161	.93496	.52018	.70576
#1	.05215	.21014	.51884	.52835	4.2096	51.387	1.0369
#2	.05272	.21105	.51270	.52767	4.2768	51.634	1.0410
#3	.05250	.21063	.52027	.52906	4.2800	51.924	1.0512
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.577	.51661	1.0426	52.094	.52783	10.433	.52665
Stddev	.150	.00290	.0022	.352	.00290	.019	.00347
%RSD	1.4156	.56079	.21295	.67529	.54945	.18081	.65799
#1	10.619	.51942	1.0445	51.788	.52449	10.416	.52747
#2	10.411	.51363	1.0430	52.016	.52940	10.454	.52285
#3	10.702	.51679	1.0402	52.478	.52961	10.429	.52963
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 16:10:57 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2640**	**.41613**	**5.2942**	**1.0415**	**1.0304**	**1.0283**	**.52107**
Stddev	.0044	.01334	.0124	.0017	.0086	.0107	.00377
%RSD	.35114	3.2062	.23333	.16484	.83471	1.0423	.72377
#1	1.2686	.40846	5.2802	1.0399	1.0214	1.0160	.51721
#2	1.2597	.43154	5.2989	1.0413	1.0313	1.0359	.52475
#3	1.2639	.40840	5.3034	1.0433	1.0385	1.0329	.52124
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0304**	**1.0488**	F **.29466**
Stddev	.0079	.0015	.06908
%RSD	.76862	.14614	23.443
#1	1.0334	1.0473	.27743
#2	1.0214	1.0504	.37072
#3	1.0364	1.0487	.23582
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6660.8**	**41217.**	**2108.1**
Stddev	24.6	274.	21.9
%RSD	.36920	.66571	1.0385
#1	6682.2	40900.	2084.4
#2	6666.3	41370.	2127.6
#3	6633.9	41380.	2112.3

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 16:14:35 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00225	.04402	.00120	.00288	.00212	.00005	.04105
Stddev	.00247	.00546	.00401	.00265	.00105	.00005	.01088
%RSD	109.69	12.401	335.85	91.781	49.695	106.37	26.511
#1	.00264	.03779	-.00184	.00082	.00333	.00011	.04148
#2	-.00039	.04798	.00575	.00587	.00163	.00003	.02996
#3	.00452	.04628	-.00032	.00196	.00140	.00001	.05171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	-.00042	.00226	-.00066	.00784	.06373	-.00051
Stddev	.00005	.00021	.00058	.00060	.02162	.10751	.00583
%RSD	20.013	50.707	25.816	91.619	275.57	168.69	1147.8
#1	.00030	-.00043	.00166	-.00039	.01889	.18696	.00620
#2	.00022	-.00062	.00283	-.00023	-.01706	-.01092	-.00339
#3	.00021	-.00020	.00228	-.00134	.02170	.01516	-.00434
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04546	.00321	.00476	.11079	-.00088	F .01576	.00302
Stddev	.04418	.00204	.00076	.03712	.00083	.00331	.00267
%RSD	97.174	63.563	15.884	33.504	94.324	21.016	88.554
#1	-.00366	.00528	.00394	.15162	-.00140	.01748	.00600
#2	.08192	.00317	.00491	.07909	-.00132	.01194	.00083
#3	.05813	.00119	.00544	.10165	.00008	.01785	.00223
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						.01000	
Low Limit						-.01000	

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 16:14:35 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00279	-.00590	.01388	.00065	.00123	.00606	-.00259
Stddev	.00212	.00283	.00309	.00091	.00070	.00181	.00112
%RSD	76.170	48.036	22.277	139.45	57.067	29.854	43.106
#1	.00170	-.00623	.01064	.00170	.00200	.00788	-.00300
#2	.00143	-.00291	.01422	.00003	.00104	.00602	-.00344
#3	.00524	-.00855	.01680	.00024	.00064	.00427	-.00133
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00022	.00017	F .06648
Stddev	.00100	.00012	.34706
%RSD	463.52	73.720	522.02
#1	-.00068	.00013	-.10679
#2	.00003	.00007	-.15982
#3	.00130	.00030	.46606
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6703.4	41700.	2173.4
Stddev	27.2	93.	18.4
%RSD	.40511	.22371	.84726
#1	6715.0	41593.	2190.3
#2	6672.4	41748.	2176.3
#3	6722.9	41760.	2153.8

Approved: June 24, 2016

Sample Name: LLCCV Acquired: 6/23/2016 16:20:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01226	.19306	.00822	.08713	.00934	.00170	.37434	.00095
Stddev	.00226	.00994	.00221	.00050	.00037	.00009	.04623	.00012
%RSD	18.429	5.1483	26.863	.57673	4.0055	5.3752	12.349	12.607
#1	.01082	.20416	.01018	.08727	.00945	.00181	.33947	.00090
#2	.01110	.18498	.00583	.08754	.00964	.00166	.35679	.00108
#3	.01487	.19005	.00866	.08657	.00892	.00164	.42678	.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00443	.00621	.00343	.09684	.99841	.08574	.39422	.00845
Stddev	.00015	.00101	.00090	.02371	.01980	.00431	.04579	.00352
%RSD	3.4357	16.173	26.179	24.486	1.9832	5.0254	11.615	41.733
#1	.00426	.00573	.00262	.11113	1.0142	.08076	.38626	.00758
#2	.00456	.00737	.00329	.06947	.97621	.08821	.44347	.01232
#3	.00447	.00555	.00440	.10992	1.0048	.08824	.35294	.00543
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00955	.49049	.01642	.85294	.00895	.08691	.01959	.86370
Stddev	.00058	.01009	.00122	.01011	.00086	.00285	.00820	.00122
%RSD	6.1041	2.0577	7.4378	1.1851	9.5578	3.2817	41.869	.14090
#1	.01021	.48064	.01558	.85568	.00909	.08424	.02576	.86506
#2	.00910	.50081	.01782	.84175	.00972	.08991	.01028	.86335
#3	.00933	.49002	.01586	.86141	.00803	.08657	.02274	.86270
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: LLCCV Acquired: 6/23/2016 16:20:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.42813	.04307	.03712	.15993	.00773	.01869	19.866
Stddev	.00098	.00025	.00768	.00135	.00073	.00033	.441
%RSD	.22912	.58060	20.685	.84107	9.4794	1.7749	2.2219
#1	.42871	.04302	.03075	.15935	.00749	.01905	19.528
#2	.42868	.04335	.04565	.16146	.00715	.01864	20.366
#3	.42700	.04285	.03498	.15896	.00855	.01839	19.706
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6737.1	42185.	2135.3
Stddev	26.5	284.	28.1
%RSD	.39354	.67345	1.3174
#1	6718.8	41884.	2154.3
#2	6767.5	42448.	2103.0
#3	6725.1	42222.	2148.5

Approved: June 24, 2016

2.3.2 Metals ICP-MS Data

2.3.2.1 Summary Data

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW14-061316	**Prep Method:**	3015	**Prep Date:**	06/21/2016 07:48
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/21/2016 12:44
Workgroup #:	WG573557	**Analyst:**	BKT	**Run Date:**	06/21/2016 15:51
Collect Date:	06/13/2016 09:15	**Dilution:**	1	**File ID:**	NI.062116.155109
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Arsenic, Total	7440-38-2	0.00659		0.00200	0.00100	0.000500
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW14-061316	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 20:29
Collect Date:	06/13/2016 09:15	**Dilution:**	1	**File ID:**	NI.061616.202950
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.0803		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00346		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00404		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.00644		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.0116		0.00800	0.00400	0.00200
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00697		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW14-061316	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 21:35
Collect Date:	06/13/2016 09:15	**Dilution:**	50	**File ID:**	NI.061616.213546
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	2.42		0.300	0.150	0.0750

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW14FD-061316	**Prep Method:**	3015	**Prep Date:**	06/21/2016 07:48
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/21/2016 12:44
Workgroup #:	WG573557	**Analyst:**	BKT	**Run Date:**	06/21/2016 16:00
Collect Date:	06/13/2016 09:15	**Dilution:**	1	**File ID:**	NI.062116.160047
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Arsenic, Total	7440-38-2	0.00731		0.00200	0.00100	0.000500
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW14FD-061316	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 20:40
Collect Date:	06/13/2016 09:15	**Dilution:**	1	**File ID:**	NI.061616.204020
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.0794		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00333		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00420		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.00655		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.0113		0.00800	0.00400	0.00200
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00668		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW14FD-061316	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 21:38
Collect Date:	06/13/2016 09:15	**Dilution:**	50	**File ID:**	NI.061616.213859
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	2.47		0.300	0.150	0.0750

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW24-061316	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 20:43
Collect Date:	06/13/2016 10:35	**Dilution:**	1	**File ID:**	NI.061616.204331
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00409		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00662		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00296	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0163		0.00800	0.00400	0.00200
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00192	J	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW24-061316	**Prep Method:**	3015	**Prep Date:**	06/21/2016 07:48
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/21/2016 12:44
Workgroup #:	WG573557	**Analyst:**	BKT	**Run Date:**	06/21/2016 16:03
Collect Date:	06/13/2016 10:35	**Dilution:**	1	**File ID:**	NI.062116.160358
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Arsenic, Total	7440-38-2	0.0161		0.00200	0.00100	0.000500
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW24-061316	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 21:42
Collect Date:	06/13/2016 10:35	**Dilution:**	50	**File ID:**	NI.061616.214210
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	10.3		0.300	0.150	0.0750
Manganese, Total	7439-96-5	0.563		0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer NexION 300X

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	100
Vi = Initial volume	40
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/L)	0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	200
Vi = Initial volume	0.5
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/kg)	40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	40
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	50

50 ug/kg = 0.050 mg/kg

Perkin Elmer NexION ICP/MS

STANDARDS KEY

QC Std 1 - ICV
QC Std 2 - ICB
QC Std 3 - LLICV
QC Std 4 - ICSA
QC Std 5 - ICSAB
QC Std 6 - CCV
QC Std 7 - CCB
QC Std 8 - LLCCV

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.00005	0.05	0.1
Sb	10	0	0.00005	0.05	0.1
As	10	0	0.00005	0.05	0.1
Ba	10	0	0.00005	0.05	0.1
Be	10	0	0.00005	0.05	0.1
Ca	1000	0	0.005	5	10
Cd	10	0	0.0005	0.05	0.1
Cr	10	0	0.0005	0.05	0.1
Co	10	0	0.0005	0.05	0.1
Cu	10	0	0.0005	0.05	0.1
Fe	1000	0	0.005	5	10
Pb	10	0	0.00005	0.05	0.1
Mg	1000	0	0.005	5	10
Mn	10	0	0.00005	0.05	0.1
Ni	10	0	0.00005	0.05	0.1
K	1000	0	0.005	5	10
Se	10	0	0.00005	0.05	0.1
Ag	10	0	0.00005	0.05	0.1
Na	1000	0	0.005	5	10
Tl	10	0	0.00005	0.05	0.1
V	10	0	0.00005	0.05	0.1
U	1000	0	0.00005	0.05	0.1
Zn	10	0	0.00005	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG573483
Analyst: VC
Spike Analyst: VC
Run Date: 06/21/2016 07:48
Method: 3015
Balance: BAL016
Instrument: MW-4
Instrument Start: 06/21/2016 08:19

SOP: ME407 Revison 19
Spike Solution: STD75998
Spike Witness: ERP
40 & 50 ML. DIGESTION TU COA18987
MS Filters- fisher-Lot#R RGT35621
HNO3 Lot #: COA18905

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG573483-02	BLANK	1	20 mL	50 mL	184.315 g	184.299 g		
2	WG572662-01	FBLK2	18	20 mL	50 mL	182.12 g	182.115 g		
3	WG573483-03	LCS	1	20 mL	50 mL	182.488 g	182.467 g	.25 mL	
4	L16060616-01	SAMP	1	20 mL	50 mL	183.726 g	183.7 g		06/21/16
5	L16060616-02	SAMP	1	20 mL	50 mL	182.782 g	182.769 g		06/21/16
6	L16060616-04	SAMP	1	20 mL	50 mL	182.01 g	181.989 g		06/21/16
7	L16060650-01	SAMP	1	20 mL	50 mL	182.593 g	182.584 g		06/24/16
8	L16060650-02	SAMP	1	20 mL	50 mL	182.881 g	182.855 g		06/24/16
9	L16060650-03	SAMP	1	20 mL	50 mL	182.342 g	182.296 g		06/24/16
10	L16060650-08	SAMP	1	20 mL	50 mL	182.009 g	181.997 g		06/24/16
11	L16060729-02	SAMP	1	20 mL	50 mL	183.948 g	183.941 g		06/24/16
12	L16060729-03	SAMP	1	20 mL	50 mL	180.366 g	180.368 g		06/24/16
13	L16060730-01	SAMP	1	20 mL	50 mL	180.5 g	180.493 g		06/24/16
14	L16060730-02	SAMP	1	20 mL	50 mL	182.181 g	182.183 g		06/24/16
15	L16060730-03	SAMP	1	20 mL	50 mL	181.455 g	181.446 g		06/24/16
16	L16060731-02	SAMP	18	20 mL	50 mL	183.631 g	183.62 g		06/17/16
17	L16060961-01	SAMP	1	20 mL	50 mL	184.464 g	184.461 g		06/24/16
18	L16060961-02	SAMP	1	20 mL	50 mL	182.66 g	182.651 g		06/24/16
19	WG573483-01	REF	1	20 mL	50 mL	181.648 g	181.642 g		
20	L16060961-03	SAMP	1	20 mL	50 mL	181.648 g	181.642 g		06/24/16
21	L16060995-01	SAMP	1	20 mL	50 mL	183.365 g	183.359 g		06/24/16
22	L16060995-02	SAMP	1	20 mL	50 mL	185.146 g	185.151 g		06/24/16
23	WG573483-04	MS	1	20 mL	50 mL	181.067 g	181.054 g	.25 mL	
24	WG573483-05	MSD	1	20 mL	50 mL	183.356 g	183.356 g	.25 mL	

L16060995-01	ph adj
L16060995-02	ph adj

Analyst: Vicki Collins

Reviewer: Erin Potter

MW_DIG - Modified 09/30/2009
PDF ID: 4815645
Report generated: 06/21/2016 09:07

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG572730
Analyst: VC
Spike Analyst: VC
Run Date: 06/15/2016 07:54
Method: 3015
Balance: BAL016
Instrument: MW-3
Instrument Start: 06/15/2016 07:59

SOP: ME407 Revison 19
Spike Solution: STD75998
Spike Witness: ERP
40 & 50 ML. DIGESTION TU COA18772
HNO3 Lot #: COA18905
MS Filters- fisher-Lot#R RGT35621

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG572730-03	BLANK	1	20 mL	50 mL	182.294 g	182.284 g		
2	WG572662-01	FBLK2	18	20 mL	50 mL	180.913 g	180.919 g		
3	WG572730-04	LCS	1	20 mL	50 mL	182.621 g	182.604 g	.25 mL	
4	L16060616-01	SAMP	1	20 mL	50 mL	181.592 g	181.591 g		06/21/16
5	L16060616-02	SAMP	1	20 mL	50 mL	183.537 g	183.546 g		06/21/16
6	L16060616-04	SAMP	1	20 mL	50 mL	183.852 g	183.819 g		06/21/16
7	L16060649-01	SAMP	2	20 mL	50 mL	183.221 g	183.203 g		06/20/16
8	L16060650-01	SAMP	1	20 mL	50 mL	182.311 g	182.309 g		06/24/16
9	L16060650-02	SAMP	1	20 mL	50 mL	183.087 g	183.085 g		06/24/16
10	L16060650-03	SAMP	1	20 mL	50 mL	181.652 g	181.65 g		06/24/16
11	L16060650-08	SAMP	1	20 mL	50 mL	184.579 g	184.558 g		06/24/16
12	WG572730-01	REF	2	20 mL	50 mL	182.936 g	182.92 g		
13	L16060664-01	SAMP	2	20 mL	50 mL	182.936 g	182.92 g		06/17/16
14	L16060724-01	SAMP	1	20 mL	50 mL	187.236 g	187.232 g		06/24/16
15	L16060729-01	SAMP	1	20 mL	50 mL	182.146 g	182.149 g		06/24/16
16	L16060729-02	SAMP	1	20 mL	50 mL	181.631 g	181.644 g		06/24/16
17	WG572730-02	REF	1	20 mL	50 mL	183.736 g	183.731 g		
18	L16060729-03	SAMP	1	20 mL	50 mL	183.736 g	183.731 g		06/24/16
19	L16060730-01	SAMP	1	20 mL	50 mL	184.668 g	184.674 g		06/24/16
20	L16060730-02	SAMP	1	20 mL	50 mL	182.686 g	182.675 g		06/24/16
21	L16060730-03	SAMP	1	20 mL	50 mL	181.928 g	181.933 g		06/24/16
22	L16060731-02	SAMP	18	20 mL	50 mL	183.292 g	183.277 g		06/17/16
23	L16060754-01	SAMP	2	20 mL	50 mL	182.824 g	182.823 g		06/21/16
24	WG572730-05	DUP	1	20 mL	50 mL	181.184 g	181.19 g		
25	WG572730-06	MS	1	20 mL	50 mL	183.99 g	183.994 g	.25 mL	
26	WG572730-07	MSD	1	20 mL	50 mL	183.548 g	183.523 g	.25 mL	

L16060650-03	FILTERED DIGESTATE
L16060729-01	FILTERED DIGESTATE
L16060754-01	FILTERED DIGESTATE
L16060731-02	FILTERED DIGESTATE

Analyst: Vicki Collins

Reviewer: Erin Potter

MW_DIG - Modified 09/30/2009
PDF ID: 4807925
Report generated: 06/15/2016 11:11

Microbac

TCLP Non-Volatile

Analyst(s): AMA/CPD
Date: 06/14/2016
Filter Lot #: 94860030
Microbac SOP: TCLP01 Rev #: 12

Analyst / Date		Analyst / Date	
CPD	6/14/16	AMA	6/15/16
Time On	Temp On °C	Time Off	Temp Off °C
1427	23.8	0827	21.9

Agitator Speed 30 ± 2 rpm ☑

Jug #	Sample #	Tests	Method	Fluid #	Matrix *	% Solid	Pretest pH Initial	Pretest pH Final	Int. Wt. (g)	Fluid Vol. (mL)	Final extract pH
D	06-0670-01	ME	1311	F1-181	S	100	8.12	2.08	7.67	153	5.19
↓	-02	↓	↓	↓	↓	↓	8.98	2.06	100.27	2005	5.79
↓	-03	↓	↓	↓	↓	↓	10.07	4.79	100.14	2003	7.34
↓	-04	↓	↓	↓	↓	↓	9.53	1.65	100.72	2014	5.13
↓	-05	↓	↓	↓	↓	↓	8.98	2.69	100.32	2006	6.67
↓	-06	↓	↓	↓	↓	↓	9.43	1.94	40.43	807	6.79
↓	-07	↓	↓	F2-379	↓	↓	8.10	7.75	25.70	514	8.08
D	06-0731-01	ME pH-L	1311	F2-379	S	100	8.47	5.86	50.46	1009	4.32
↓	-02	↓ ↓	1312	SPLP F2-326	↓	↓	NA	NA	100.62	2012	8.44
NA	FBIK1	ME	1311	F1-181	NA	NA	NA	NA	100	100	4.93
↓	FBIK2	↓ COD pH-L ~~ME~~	↓	F2-379	↓	↓	↓	↓	↓	↓	2.88
↓	SPLP F2-	↓ pH-L	1312	SPLP F2-326	↓	↓	↓	↓	↓	↓	5.05

CPD 6/14/16

*Matrix Code: (S = solid, sand, soil or sludge) (P = paint) (O = organic) (W = water or aqueous waste)
D = Disposable plastic jug
TCLP Pretest weight will be 5.0 g (± 0.1) unless otherwise noted.
Temperature shall be maintained at 23° ± 2 for 18 ± 2 hours unless otherwise noted.

Comments: 5x 06-0670-01 recieved with limited volume.

Peer Review By: [signature]

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 061616A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573083,572869,572085,572184

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.061616.153014	Blank	Blank		1		06/16/16 15:30
2	NI.061616.153326	WG573095-01	Calibration Point		1		06/16/16 15:33
3	NI.061616.153637	WG573095-02	Calibration Point		1		06/16/16 15:36
4	NI.061616.153949	WG573095-03	Calibration Point		1		06/16/16 15:39
5	NI.061616.154300	WG573095-04	Calibration Point		1		06/16/16 15:43
6	NI.061616.154613	WG573095-05	ICV		1		06/16/16 15:46
7	NI.061616.154926	WG573095-06	ICB		1		06/16/16 15:49
8	NI.061616.155239	WG573095-07	Low Level Initial Calibration V		1		06/16/16 15:52
9	NI.061616.155746	WG573095-08	Initial Calibration Verification		1		06/16/16 15:57
10	NI.061616.160355	WG573095-09	Initial Calib Blank		1		06/16/16 16:03
11	NI.061616.160740	WG573095-10	Interference Check		1		06/16/16 16:07
12	NI.061616.162201	WG573095-11	Interference Check		1		06/16/16 16:22
13	NI.061616.162516	WG573095-12	CCV		1		06/16/16 16:25
14	NI.061616.163850	WG573095-13	CCB		1		06/16/16 16:38
15	NI.061616.173543	WG572432-04	Method/Prep Blank	20/50	1		06/16/16 17:35
16	NI.061616.173854	WG572432-05	Laboratory Control S	20/50	1		06/16/16 17:38
17	NI.061616.174206	WG572432-01	Reference Sample		1	L16060540-06	06/16/16 17:42
18	NI.061616.174517	WG572432-06	Matrix Spike	20/50	1	L16060540-06	06/16/16 17:45
19	NI.061616.174829	WG572432-07	Matrix Spike Duplica	20/50	1	L16060540-06	06/16/16 17:48
20	NI.061616.175140	L16060533-01	16F0399-01	20/50	1		06/16/16 17:51
21	NI.061616.175452	L16060540-03	AG4573	20/50	1		06/16/16 17:54
22	NI.061616.175803	WG573083-01	Post Digestion Spike		1	L16060540-03	06/16/16 17:58
23	NI.061616.180115	WG573083-02	Serial Dilution		5	L16060540-03	06/16/16 18:01
24	NI.061616.180426	WG573083-02	Serial Dilution		25	L16060540-03	06/16/16 18:04
25	NI.061616.180739	WG573095-14	CCV		1		06/16/16 18:07
26	NI.061616.181051	WG573095-15	CCB		1		06/16/16 18:10
27	NI.061616.181404	L16060540-09	AG4578	20/50	1		06/16/16 18:14
28	NI.061616.181715	L16060540-10	AG4579	20/50	1		06/16/16 18:17
29	NI.061616.182027	L16060540-11	AG4580	20/50	1		06/16/16 18:20
30	NI.061616.182338	L16060540-14	AG4584	20/50	1		06/16/16 18:23
31	NI.061616.182650	L16060540-15	AG4587	20/50	1		06/16/16 18:26
32	NI.061616.183001	L16060540-16	AG4589	20/50	1		06/16/16 18:30
33	NI.061616.183313	L16060549-01	J6F0164-01	20/50	1		06/16/16 18:33
34	NI.061616.183624	L16060614-01	WATER PLANT B/W	20/50	1		06/16/16 18:36

Page: 1 Approved: June 20, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 061616A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573083,572869,572085,572184

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.061616.183936	L16060624-01	16F1312-03	20/50	1		06/16/16 18:39
36	NI.061616.184247	WG572432-03	Reference Sample		1	L16060630-01	06/16/16 18:42
37	NI.061616.184600	WG573095-16	CCV		1		06/16/16 18:46
38	NI.061616.184912	WG573095-17	CCB		1		06/16/16 18:49
39	NI.061616.185225	WG572432-10	Duplicate	20/50	1	L16060630-01	06/16/16 18:52
40	NI.061616.185538	WG573095-18	CCV		1		06/16/16 18:55
41	NI.061616.185850	WG573095-19	CCB		1		06/16/16 18:58
42	NI.061616.190202	WG573095-20	Low Level Continuing Calibra		1		06/16/16 19:02
43	NI.061616.190516	WG572730-03	Method/Prep Blank	20/50	1		06/16/16 19:05
44	NI.061616.190828	WG572730-04	Laboratory Control S	20/50	1		06/16/16 19:08
45	NI.061616.191230	WG572730-01	Reference Sample		1	L16060664-01	06/16/16 19:12
46	NI.061616.191541	WG572730-05	Duplicate	20/50	1	L16060664-01	06/16/16 19:15
47	NI.061616.191852	WG572730-02	Reference Sample		1	L16060729-03	06/16/16 19:18
48	NI.061616.192204	WG572730-06	Matrix Spike	20/50	1	L16060729-03	06/16/16 19:22
49	NI.061616.192515	WG572730-07	Matrix Spike Duplica	20/50	1	L16060729-03	06/16/16 19:25
50	NI.061616.192827	L16060754-01	V6F0103-02	20/50	1		06/16/16 19:28
51	NI.061616.193138	WG572869-01	Post Digestion Spike		1	L16060754-01	06/16/16 19:31
52	NI.061616.193450	L16060754-01	V6F0103-02		5		06/16/16 19:34
53	NI.061616.193803	WG573095-21	CCV		1		06/16/16 19:38
54	NI.061616.194114	WG573095-22	CCB		1		06/16/16 19:41
55	NI.061616.194427	WG572869-02	Serial Dilution		25	L16060754-01	06/16/16 19:44
56	NI.061616.194738	L16060616-01	MW8-060916	20/50	1		06/16/16 19:47
57	NI.061616.195050	L16060616-02	18CPTMW26SW-060916	20/50	1		06/16/16 19:50
58	NI.061616.195401	L16060616-04	MW10F-060916	20/50	1		06/16/16 19:54
59	NI.061616.195713	L16060649-01	V6F0102-02	20/50	1		06/16/16 19:57
60	NI.061616.200024	L16060650-01	MW1-061016	20/50	1		06/16/16 20:00
61	NI.061616.200336	L16060650-02	MW3-061016	20/50	1		06/16/16 20:03
62	NI.061616.200647	L16060650-03	17WW08-061016	20/50	1		06/16/16 20:06
63	NI.061616.201257	L16060650-08	18WW24F-061016	20/50	1		06/16/16 20:12
64	NI.061616.201608	L16060729-01	A09-MW10-Y1S2	20/50	1		06/16/16 20:16
65	NI.061616.201921	WG573095-23	CCV		1		06/16/16 20:19
66	NI.061616.202232	WG573095-24	CCB		1		06/16/16 20:22
67	NI.061616.202638	L16060729-02	A09-MW11-Y1S2	20/50	1		06/16/16 20:26
68	NI.061616.202950	L16060730-01	18CPTMW14-061316	20/50	1		06/16/16 20:29

Page: 2 Approved: June 20, 2016

Kim H. Rhoden

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 061616A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573083,572869,572085,572184

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.061616.204020	L16060730-02	18CPTMW14FD-061316	20/50	1		06/16/16 20:40
70	NI.061616.204331	L16060730-03	18CPTMW24-061316	20/50	1		06/16/16 20:43
71	NI.061616.204643	L16060731-02	60500-SSP0041-SSP0041	20/50	1		06/16/16 20:46
72	NI.061616.204954	L16060731-02	60500-SSP0041-SSP0041	20/50	10		06/16/16 20:49
73	NI.061616.205306	L16060540-09	AG4578	20/50	100		06/16/16 20:53
74	NI.061616.205727	L16060540-10	AG4579	20/50	10		06/16/16 20:57
75	NI.061616.210039	L16060540-11	AG4580	20/50	10		06/16/16 21:00
76	NI.061616.210350	L16060540-14	AG4584	20/50	100		06/16/16 21:03
77	NI.061616.210702	WG573095-25	CCV		1		06/16/16 21:07
78	NI.061616.211014	WG573095-26	CCB		1		06/16/16 21:10
79	NI.061616.211326	L16060616-01	MW8-060916	20/50	10		06/16/16 21:13
80	NI.061616.211638	L16060616-02	18CPTMW26SW-060916	20/50	10		06/16/16 21:16
81	NI.061616.211949	L16060616-04	MW10F-060916	20/50	10		06/16/16 21:19
82	NI.061616.212301	L16060650-01	MW1-061016	20/50	50		06/16/16 21:23
83	NI.061616.212612	L16060650-02	MW3-061016	20/50	10		06/16/16 21:26
84	NI.061616.212923	L16060650-03	17WW08-061016	20/50	10		06/16/16 21:29
85	NI.061616.213235	L16060650-08	18WW24F-061016	20/50	10		06/16/16 21:32
86	NI.061616.213546	L16060730-01	18CPTMW14-061316	20/50	50		06/16/16 21:35
87	NI.061616.213859	L16060730-02	18CPTMW14FD-061316	20/50	50		06/16/16 21:38
88	NI.061616.214210	L16060730-03	18CPTMW24-061316	20/50	50		06/16/16 21:42
89	NI.061616.214523	WG573095-27	CCV		1		06/16/16 21:45
90	NI.061616.214835	WG573095-28	CCB		1		06/16/16 21:48
91	NI.061616.215148	WG573095-29	Low Level Continuing Calibra		1		06/16/16 21:51
92	NI.061616.215500	WG571964-02	Method/Prep Blank	20/50	1		06/16/16 21:55
93	NI.061616.215811	WG571964-03	Laboratory Control S	20/50	1		06/16/16 21:58
94	NI.061616.220123	WG571964-01	Reference Sample		5	L16060428-01	06/16/16 22:01
95	NI.061616.220434	WG571964-05	Matrix Spike	20/50	5	L16060428-01	06/16/16 22:04
96	NI.061616.220746	WG571964-06	Matrix Spike Duplica	20/50	5	L16060428-01	06/16/16 22:07
97	NI.061616.221057	L16060411-03	AWD4T-060716	20/50	1		06/16/16 22:10
98	NI.061616.221409	L16060411-04	AWD4B-060716	20/50	1		06/16/16 22:14
99	NI.061616.221720	WG572085-03	Post Digestion Spike		1	L16060411-04	06/16/16 22:17
100	NI.061616.222032	L16060411-04	AWD4B-060716		5		06/16/16 22:20
101	NI.061616.222343	WG572085-04	Serial Dilution		25	L16060411-04	06/16/16 22:23
102	NI.061616.222656	WG573095-30	CCV		1		06/16/16 22:26

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Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 061616A.REP

Analyst1: BKT Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705

ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607

CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345

Stannous : Hydroxylamine :

Workgroups: 573083,572869,572085,572184

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.061616.223007	WG573095-31	CCB		1		06/16/16 22:30
104	NI.061616.223320	WG571834-02	Method/Prep Blank	20/50	1		06/16/16 22:33
105	NI.061616.223632	WG571834-03	Laboratory Control S	20/50	1		06/16/16 22:36
106	NI.061616.223943	WG571834-01	Reference Sample		1	L16060337-02	06/16/16 22:39
107	NI.061616.224254	WG571834-04	Matrix Spike	20/50	1	L16060337-02	06/16/16 22:42
108	NI.061616.224606	WG571834-05	Matrix Spike Duplica	20/50	1	L16060337-02	06/16/16 22:46
109	NI.061616.224917	L16060303-01	LH18/24-SP650-6368-GRAB	20/50	1		06/16/16 22:49
110	NI.061616.225229	L16060303-02	LH18/24-SP650-6368-COMP	20/50	1		06/16/16 22:52
111	NI.061616.225540	L16060304-02	LH18/24-SP650-6369-GRAB	20/50	1		06/16/16 22:55
112	NI.061616.225852	WG572184-03	Post Digestion Spike		1	L16060304-02	06/16/16 22:58
113	NI.061616.230203	WG572184-04	Serial Dilution		5	L16060304-02	06/16/16 23:02
114	NI.061616.230516	WG573095-32	CCV		1		06/16/16 23:05
115	NI.061616.230827	WG573095-33	CCB		1		06/16/16 23:08
116	NI.061616.231140	WG573095-34	Low Level Continuing Calibra		1		06/16/16 23:11

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Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062116A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573557,573473,573475

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.062116.123136	Blank	Blank		1		06/21/16 12:31
2	NI.062116.123447	WG573631-01	Calibration Point		1		06/21/16 12:34
3	NI.062116.123759	WG573631-02	Calibration Point		1		06/21/16 12:37
4	NI.062116.124110	WG573631-03	Calibration Point		1		06/21/16 12:41
5	NI.062116.124422	WG573631-04	Calibration Point		1		06/21/16 12:44
6	NI.062116.124735	WG573631-05	Initial Calibration Verification		1		06/21/16 12:47
7	NI.062116.125048	WG573631-06	Initial Calib Blank		1		06/21/16 12:50
8	NI.062116.125401	WG573631-07	Low Level Initial Calibration V		1		06/21/16 12:54
9	NI.062116.125712	WG573631-08	Interference Check		1		06/21/16 12:57
10	NI.062116.130024	WG573631-09	Interference Check		1		06/21/16 13:00
11	NI.062116.130337	WG573631-10	CCV		1		06/21/16 13:03
12	NI.062116.130648	WG573631-11	CCB		1		06/21/16 13:06
13	NI.062116.131000	WG573483-02	Method/Prep Blank	20/50	1		06/21/16 13:10
14	NI.062116.131312	WG573483-03	Laboratory Control S		1		06/21/16 13:13
15	NI.062116.131623	WG573483-01	Reference Sample		1	L16060961-03	06/21/16 13:16
16	NI.062116.131935	WG573483-04	Matrix Spike	20/50	1	L16060961-03	06/21/16 13:19
17	NI.062116.132247	WG573483-05	Matrix Spike Duplica	20/50	1	L16060961-03	06/21/16 13:22
18	NI.062116.132558	L16060731-02	60500-SSP0041-SSP0041	20/50	1		06/21/16 13:25
19	NI.062116.132910	WG573557-01	Post Digestion Spike		1	L16060731-02	06/21/16 13:29
20	NI.062116.133221	WG573557-02	Serial Dilution		5	L16060731-02	06/21/16 13:32
21	NI.062116.133650	WG573662-01	Reference Sample	20/50	1	L16060907-14	06/21/16 13:36
22	NI.062116.134003	WG573631-12	CCV		1		06/21/16 13:40
23	NI.062116.134314	WG573631-13	CCB		1		06/21/16 13:43
24	NI.062116.152226	L16060616-01	MW8-060916	20/50	1		06/21/16 15:22
25	NI.062116.152538	L16060616-02	18CPTMW26SW-060916	20/50	1		06/21/16 15:25
26	NI.062116.152849	L16060616-04	MW10F-060916	20/50	1		06/21/16 15:28
27	NI.062116.153201	L16060650-01	MW1-061016	20/50	1		06/21/16 15:32
28	NI.062116.153512	L16060650-02	MW3-061016	20/50	1		06/21/16 15:35
29	NI.062116.153823	L16060650-03	17WW08-061016	20/50	1		06/21/16 15:38
30	NI.062116.154135	L16060650-08	18WW24F-061016	20/50	1		06/21/16 15:41
31	NI.062116.154446	L16060729-02	A09-MW11-Y1S2	20/50	1		06/21/16 15:44
32	NI.062116.154758	L16060729-03	A09-MW12-Y1S2	20/50	1	WG572730-02	06/21/16 15:47
33	NI.062116.155109	L16060730-01	18CPTMW14-061316	20/50	1		06/21/16 15:51
34	NI.062116.155422	WG573631-14	CCV		1		06/21/16 15:54

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Maren Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062116A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573557,573473,573475

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.062116.155734	WG573631-15	CCB		1		06/21/16 15:57
36	NI.062116.160047	L16060730-02	18CPTMW14FD-061316	20/50	1		06/21/16 16:00
37	NI.062116.160358	L16060730-03	18CPTMW24-061316	20/50	1		06/21/16 16:03
38	NI.062116.160710	L16060961-01	GH58HS_MELZER_03-03-0	20/50	1		06/21/16 16:07
39	NI.062116.161021	L16060961-02	GH58HS_MELZER_03-03-0	20/50	1		06/21/16 16:10
40	NI.062116.161333	L16060995-01	UNTREATED	20/50	50		06/21/16 16:13
41	NI.062116.161644	L16060995-02	AFTER	20/50	50		06/21/16 16:16
42	NI.062116.161957	WG573631-16	CCV		1		06/21/16 16:19
43	NI.062116.162309	WG573631-17	CCB		1		06/21/16 16:23
44	NI.062116.171200	WG573111-04	Method/Prep Blank	20/50	1		06/21/16 17:12
45	NI.062116.171512	WG573111-05	Laboratory Control S	20/50	1		06/21/16 17:15
46	NI.062116.171823	WG573111-03	Reference Sample		1	L16060540-06	06/21/16 17:18
47	NI.062116.172135	WG573111-09	Matrix Spike	20/50	1	L16060540-06	06/21/16 17:21
48	NI.062116.172446	WG573111-10	Matrix Spike Duplica	20/50	1	L16060540-06	06/21/16 17:24
49	NI.062116.172758	L16060624-01	16F1312-03	20/50	1		06/21/16 17:27
50	NI.062116.173109	WG573473-01	Post Digestion Spike		1	L16060624-01	06/21/16 17:31
51	NI.062116.173421	WG573473-02	Serial Dilution		5	L16060624-01	06/21/16 17:34
52	NI.062116.173732	WG573473-02	Serial Dilution		25	L16060624-01	06/21/16 17:37
53	NI.062116.174045	WG573631-18	CCV		1		06/21/16 17:40
54	NI.062116.174357	WG573631-19	CCB		1		06/21/16 17:43
55	NI.062116.174710	L16060533-01	16F0399-01	20/50	1		06/21/16 17:47
56	NI.062116.175021	L16060784-03	J6E1050-02	20/50	5		06/21/16 17:50
57	NI.062116.175333	WG573111-01	Reference Sample		1	L16060787-09	06/21/16 17:53
58	NI.062116.175644	L16060787-10	U517TW006C	20/50	1		06/21/16 17:56
59	NI.062116.175956	WG573111-06	Matrix Spike	20/50	1	L16060787-09	06/21/16 17:59
60	NI.062116.180307	WG573111-07	Matrix Spike Duplica	20/50	1	L16060787-09	06/21/16 18:03
61	NI.062116.180619	L16060787-18	U517TW008A	20/50	1		06/21/16 18:06
62	NI.062116.180930	WG573111-02	Reference Sample		1	L16060862-01	06/21/16 18:09
63	NI.062116.181242	WG573111-08	Duplicate	20/50	1	L16060862-01	06/21/16 18:12
64	NI.062116.181553	L16060883-02	WC02	20/50	1		06/21/16 18:15
65	NI.062116.181906	WG573631-20	CCV		1		06/21/16 18:19
66	NI.062116.182218	WG573631-21	CCB		1		06/21/16 18:22
67	NI.062116.182531	L16060896-01	A08-MW02-Y1S2	20/50	1		06/21/16 18:25
68	NI.062116.182842	L16060896-02	A08-MW03-Y1S2	20/50	1		06/21/16 18:28

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Maren Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062116A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573557,573473,573475

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.062116.183154	L16060896-03	A08-MW10-Y1S2	20/50	1		06/21/16 18:31
70	NI.062116.183505	L16060896-04	FD-01	20/50	1		06/21/16 18:35
71	NI.062116.183817	L16060896-05	FD-03	20/50	1		06/21/16 18:38
72	NI.062116.184128	L16060896-07	RB01-06-15-16	20/50	1		06/21/16 18:41
73	NI.062116.184440	L16060916-01	PHL 1 FRESHWATER IMPO	20/50	1		06/21/16 18:44
74	NI.062116.184751	L16060916-02	DS TYGERT RIVER	20/50	1		06/21/16 18:47
75	NI.062116.185104	WG573631-22	CCV		1		06/21/16 18:51
76	NI.062116.185415	WG573631-23	CCB		1		06/21/16 18:54
77	NI.062116.191207	WG573631-24	Low Level Continuing Calibra		1		06/21/16 19:12
78	NI.062116.193457	L16060995-01	UNTREATED	20/50	500		06/21/16 19:34
79	NI.062116.193809	L16060995-02	AFTER	20/50	500		06/21/16 19:38
80	NI.062116.194121	WG573631-25	CCV		1		06/21/16 19:41
81	NI.062116.194433	WG573631-26	CCB		1		06/21/16 19:44
82	NI.062116.194745	WG573333-03	Method/Prep Blank	.25/100	1		06/21/16 19:47
83	NI.062116.195057	WG573333-04	Laboratory Control S	.25/100	1		06/21/16 19:50
84	NI.062116.195408	L16061053-01	GS042QDCF01SB061716S-I		1	WG573333-02	06/21/16 19:54
85	NI.062116.195720	L16061053-02	GS042QDCF01SB061716S-I	.253/100	1	WG573333-07	06/21/16 19:57
86	NI.062116.200031	L16061053-03	GS042QDCF01SB061716S-I	.252/100	1	WG573333-08	06/21/16 20:00
87	NI.062116.200343	L16061054-01	GS037QBCF01XB061616S-I	.254/100	1		06/21/16 20:03
88	NI.062116.200654	WG573475-01	Post Digestion Spike		1	L16061054-01	06/21/16 20:06
89	NI.062116.201006	WG573475-02	Serial Dilution		5	L16061054-01	06/21/16 20:10
90	NI.062116.201317	WG573475-02	Serial Dilution		25	L16061054-01	06/21/16 20:13
91	NI.062116.201631	WG573631-27	CCV		1		06/21/16 20:16
92	NI.062116.201942	WG573631-28	CCB		1		06/21/16 20:19
93	NI.062116.202255	L16060787-03	U517SS00510A		1	WG573333-01	06/21/16 20:22
94	NI.062116.202607	L16060787-04	U517SS00510MS	.256/100	1	WG573333-05	06/21/16 20:26
95	NI.062116.202918	L16060787-05	U517SS00510MSD	.253/100	1	WG573333-06	06/21/16 20:29
96	NI.062116.203230	L16060787-06	U517SS00512A	.256/100	1		06/21/16 20:32
97	NI.062116.203541	L16060787-07	U517SS006010A	.256/100	1		06/21/16 20:35
98	NI.062116.203853	L16060787-08	U517SS00612A	.254/100	1		06/21/16 20:38
99	NI.062116.204204	L16060787-13	U517SS00708A	.252/100	1		06/21/16 20:42
100	NI.062116.204516	L16060787-14	U517SS00710A	.259/100	1		06/21/16 20:45
101	NI.062116.204827	L16060787-15	U517SS00808A	.257/100	1		06/21/16 20:48
102	NI.062116.205139	L16060787-16	U517SS00808C	.255/100	1		06/21/16 20:51

Page: 3 Approved: June 22, 2016

Maren Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062116A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573557,573473,573475

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.062116.205452	WG573631-29	CCV		1		06/21/16 20:54
104	NI.062116.205803	WG573631-30	CCB		1		06/21/16 20:58
105	NI.062116.210116	L16060787-17	U517SS00810A	.259/100	1		06/21/16 21:01
106	NI.062116.210428	L16060964-01	GH5-01	.252/100	1		06/21/16 21:04
107	NI.062116.210739	L16060964-02	GH5-02	.259/100	1		06/21/16 21:07
108	NI.062116.211051	L16060964-03	GH5-03	.254/100	1		06/21/16 21:10
109	NI.062116.211402	L16060964-04	GH5-04	.249/100	1		06/21/16 21:14
110	NI.062116.211714	L16060964-05	GH5-05	.252/100	1		06/21/16 21:17
111	NI.062116.212025	L16060964-06	GH5-06	.258/100	1		06/21/16 21:20
112	NI.062116.212337	L16061048-01	TR0062	.252/100	1		06/21/16 21:23
113	NI.062116.212649	WG573631-31	CCV		1		06/21/16 21:26
114	NI.062116.213001	WG573631-32	CCB		1		06/21/16 21:30

Page: 4 Approved: June 22, 2016

Maren Berry

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 16-JUN-2016
Analyst: BKT
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 573095
Runlog ID: 75740
Analytical Workgroups: 573083,572869,572085,572184

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	
Level 4	303,304,411,540,616,650,729,730,731
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BKT
Secondary Reviewer	KHR
Comments	

Primary Reviewer:
20-JUN-2016

Secondary Reviewer:
20-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-20-2016 14:36:34

Microbac Laboratories Inc.

Data Checklist

Date: 21-JUN-2016
Analyst: BKT
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 573631
Runlog ID: 75827
Analytical Workgroups: 573557,573473,573475

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	
Level 4	540,616,624,650,729,730,731,787
Level 4	883,896,1053,1054
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BKT
Secondary Reviewer	MMB
Comments	

Primary Reviewer:
21-JUN-2016

Secondary Reviewer:
22-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-22-2016 13:22:13

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG572869

Login Number: L16060730

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW14-061316	01	06/13/16					06/15/2016	1.9	180		06/16/16	3.5	180	
18CPTMW14-061316	01	06/13/16					06/15/2016	1.9	180		06/16/16	3.5	180	
18CPTMW14FD-061316	02	06/13/16					06/15/2016	1.9	180		06/16/16	3.5	180	
18CPTMW14FD-061316	02	06/13/16					06/15/2016	1.9	180		06/16/16	3.5	180	
18CPTMW24-061316	03	06/13/16					06/15/2016	1.9	180		06/16/16	3.4	180	
18CPTMW24-061316	03	06/13/16					06/15/2016	1.9	180		06/16/16	3.5	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4812178
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG573557

Login Number: L16060730

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW14-061316	01	06/13/16					06/21/2016	7.9	180		06/21/16	8.3	180	
18CPTMW14FD-061316	02	06/13/16					06/21/2016	7.9	180		06/21/16	8.3	180	
18CPTMW24-061316	03	06/13/16					06/21/2016	7.9	180		06/21/16	8.2	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4812178
Report generated 06/21/2016 18:22

METHOD BLANK SUMMARY

Login Number: L16060730
Blank File ID: NI.061616.190516
Prep Date: 06/15/16 07:54
Analyzed Date: 06/16/16 19:05
Analyst: BKT

Work Group: WG572869
Blank Sample ID: WG572730-03
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572730-04	NI.061616.190828	06/16/16 19:08	01
DUP	WG572730-05	NI.061616.191541	06/16/16 19:15	01
18CPTMW14-061316	L16060730-01	NI.061616.202950	06/16/16 20:29	01
18CPTMW14FD-061316	L16060730-02	NI.061616.204020	06/16/16 20:40	01
18CPTMW24-061316	L16060730-03	NI.061616.204331	06/16/16 20:43	01
18CPTMW14-061316	L16060730-01	NI.061616.213546	06/16/16 21:35	DL01
18CPTMW14FD-061316	L16060730-02	NI.061616.213859	06/16/16 21:38	DL01
18CPTMW24-061316	L16060730-03	NI.061616.214210	06/16/16 21:42	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4812179
Report generated 06/21/2016 18:22

METHOD BLANK SUMMARY

Login Number: L16060730
Blank File ID: NI.062116.131000
Prep Date: 06/21/16 07:48
Analyzed Date: 06/21/16 13:10
Analyst: BKT

Work Group: WG573557
Blank Sample ID: WG573483-02
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573483-03	NI.062116.133650	06/21/16 13:36	01
18CPTMW14-061316	L16060730-01	NI.062116.155109	06/21/16 15:51	02
18CPTMW14FD-061316	L16060730-02	NI.062116.160047	06/21/16 16:00	02
18CPTMW24-061316	L16060730-03	NI.062116.160358	06/21/16 16:03	02

Report Name: BLANK_SUMMARY
PDF File ID: 4812179
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060730 Prep Date: 06/15/16 07:54 Sample ID: WG572730-03
Instrument ID: ICP-MS2 Run Date: 06/16/16 19:05 Prep Method: 3015
File ID: NI.061616.190516 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG572869 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-16-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Antimony, Total	0.000500	0.00200	0.000500	1	U
Barium, Total	0.00150	0.00600	0.0283	1	*
Cadmium, Total	0.000300	0.00120	0.000300	1	U
Chromium, Total	0.00100	0.00400	0.00100	1	U
Cobalt, Total	0.000500	0.00200	0.000500	1	U
Copper, Total	0.00100	0.00400	0.00100	1	U
Lead, Total	0.000500	0.00200	0.000500	1	U
Manganese, Total	0.00100	0.00400	0.00100	1	U
Nickel, Total	0.00200	0.00800	0.00200	1	U
Thallium, Total	0.000100	0.000400	0.000100	1	U
Vanadium, Total	0.000500	0.00200	0.000500	1	U
Zinc, Total	0.0125	0.0500	0.0125	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4812180
21-JUN-2016 18:22

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060730 Prep Date: 06/21/16 07:48 Sample ID: WG573483-02
Instrument ID: ICP-MS2 Run Date: 06/21/16 13:10 Prep Method: 3015
File ID: NI.062116.131000 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG573557 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-21-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Arsenic, Total	0.000500	0.00200	0.000500	1	U
Silver, Total	0.000500	0.00200	0.000500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4812180
21-JUN-2016 18:22

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060730 Run Date: 06/16/2016 Sample ID: WG572730-04
Instrument ID: ICP-MS2 Run Time: 19:08 Prep Method: 3015
File ID: NI.061616.190828 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG572869 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD75998 Cal ID: ICP-MS-16-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Antimony, Total	0.125	0.118	94.6	80 - 120	
Barium, Total	0.125	0.122	97.3	80 - 120	
Cadmium, Total	0.125	0.122	97.9	80 - 120	
Chromium, Total	0.125	0.126	100	80 - 120	
Cobalt, Total	0.125	0.133	106	80 - 120	
Copper, Total	0.125	0.124	99.5	80 - 120	
Lead, Total	0.125	0.124	99.2	80 - 120	
Manganese, Total	0.125	0.136	109	80 - 120	
Nickel, Total	0.125	0.124	99.1	80 - 120	
Thallium, Total	0.125	0.118	94.7	80 - 120	
Vanadium, Total	0.125	0.127	102	80 - 120	
Zinc, Total	0.125	0.126	101	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4812181
Report generated: 06/21/2016 18:22

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060730 Run Date: 06/21/2016 Sample ID: WG573483-03
Instrument ID: ICP-MS2 Run Time: 13:36 Prep Method: 3015
File ID: NI.062116.133650 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG573557 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD75998 Cal ID: ICP-MS-21-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Arsenic, Total	0.125	0.125	100	80 - 120	
Silver, Total	0.125	0.130	104	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4812181
Report generated: 06/21/2016 18:22

Loginnum: L16060730 Cal ID: ICP-MS2- Worknum: WG572869
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG572730-02 File ID: NI.061616.191852 Dil: 1 Matrix: WATER
Sample ID: WG572730-06 MS File ID: NI.061616.192204 Dil: 1 Units: mg/L
Sample ID: WG572730-07 MSD File ID: NI.061616.192515 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Antimony	0.000748	0.125	0.117	93.0	0.125	0.120	95.4	2.48	80 - 120	20	
Barium	0.0532	0.125	0.163	87.8	0.125	0.360	246	75.4	80 - 120	20	*#
Cadmium	0.000380	0.125	0.118	94.3	0.125	0.118	94.5	0.202	80 - 120	20	
Chromium	0.00126	0.125	0.122	96.2	0.125	0.128	101	5.15	80 - 120	20	
Cobalt	0.0627	0.125	0.194	105	0.125	0.210	118	8.06	80 - 120	20	
Copper	0.00880	0.125	0.129	96.3	0.125	0.134	100	3.48	80 - 120	20	
Lead	0.00276	0.125	0.122	95.5	0.125	0.128	100	4.87	80 - 120	20	
Manganese	0.984	0.125	1.12	108	0.125	1.21	177	7.43	80 - 120	20	*
Nickel	0.0243	0.125	0.144	95.7	0.125	0.150	100	4.07	80 - 120	20	
Thallium	ND	0.125	0.117	93.4	0.125	0.122	97.3	4.07	80 - 120	20	
Vanadium	ND	0.125	0.127	101	0.125	0.135	108	6.40	80 - 120	20	
Zinc	0.0715	0.125	0.193	97.4	0.125	0.203	105	4.74	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4812182
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060730 Cal ID: ICP-MS2- Worknum: WG573557
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG573483-01 File ID: NI.062116.131623 Dil: 1 Matrix: WATER
Sample ID: WG573483-04 MS File ID: NI.062116.131935 Dil: 1 Units: mg/L
Sample ID: WG573483-05 MSD File ID: NI.062116.132247 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Arsenic	ND	0.125	0.128	103	0.125	0.125	100	2.26	80 - 120	20	
Silver	ND	0.125	0.119	95.1	0.125	0.123	98.5	3.53	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4812182
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16060730 **Worknum:** WG573557
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG573557-02 **File ID:** NI.062116.133221 **Dil:** 5 **Units:** ug/L
Sample: L16060731-02 **File ID:** NI.062116.132558 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	1.14		ND			
Arsenic	12.2	X	12.5	X	2.14	
Barium	10.8		ND			
Cadmium	0.267		ND			
Chromium	1.95		ND			
Cobalt	0.370		ND			
Copper	147		ND			
Lead	9.25		ND			
Manganese	21.0		ND			
Nickel	1.17		ND			
Silver	ND	U	ND	U		
Thallium	0.0436		ND			
Vanadium	5.28		ND			
Zinc	18.4		ND			

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4812176
06/21/2016 18:22

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16060730 **Worknum:** WG572869
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG572869-02 **File ID:** NI.061616.194427 **Dil:** 25 **Units:** ug/L
Sample: L16060754-01 **File ID:** NI.061616.193450 **Dil:** 5

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	2.27	F	ND	U		
Arsenic	ND	U	ND	U		
Barium	20.8	X	20.9	F	0.70	
Cadmium	ND	U	ND	U		
Chromium	2.11	F	ND	U		
Cobalt	ND	U	ND	U		
Copper	107	X	110	X	2.54	
Lead	1.85	F	ND	U		
Manganese	17.9	X	18.9	F	5.54	
Nickel	ND	U	ND	U		
Silver	ND	U	ND	U		
Thallium	ND	U	ND	U		
Vanadium	2.04	F	ND	U		
Zinc	100	X	ND	U		

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4812176
06/21/2016 18:22

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16060730 **Worknum:** WG572869
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG572869-02 **File ID:** NI.061616.193450 **Dil:** 5 **Units:** ug/L
Sample: L16060754-01 **File ID:** NI.061616.192827 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	ND	U	2.27	F	1100.00	
Arsenic	0.304	F	ND	U		
Barium	21.4	X	20.8	X	2.86	
Cadmium	ND	U	ND	U		
Chromium	1.95	X	2.11	F	8.12	
Cobalt	0.616	F	ND	U		
Copper	104		107		2.99	
Lead	1.81	X	1.85	F	2.23	
Manganese	18.1	X	17.9	X	0.86	
Nickel	2.91	F	ND	U		
Silver	ND	U	ND	U		
Thallium	ND	U	ND	U		
Vanadium	1.81	X	2.04	F	12.90	
Zinc	97.6	X	100	X	2.53	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4812176
06/21/2016 18:22

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060730 **Worknum:** WG572869
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG572869-01 **File ID:** NI.061616.193138 **Dil:** 1 **Units:** ug/L
Sample ID: L16060754-01 **File ID:** NI.061616.192827 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	51.2		0	U	50	102.4	75 - 125	
ARSENIC	49.9		0.304	F	50	99.2	75 - 125	
BARIUM	70.7		21.4		50	98.7	75 - 125	
CADMIUM	50.8		0	U	50	101.5	75 - 125	
CHROMIUM	49.7		1.95		50	95.5	75 - 125	
COBALT	53.8		0.616	F	50	106.4	75 - 125	
COPPER	146		104		50	84.8	75 - 125	
LEAD	47.6		1.81		50	91.6	75 - 125	
MANGANESE	68.2		18.1		50	100.2	75 - 125	
NICKEL	49.4		2.91	F	50	92.9	75 - 125	
SILVER	50.6		0	U	50	101.2	75 - 125	
THALLIUM	44.4		0	U	50	88.7	75 - 125	
VANADIUM	53.4		1.81		50	103.2	75 - 125	
ZINC	139		97.6		50	83.0	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4812177
Report generated: 06/21/2016 18:22

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060730 **Worknum:** WG573557
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG573557-01 **File ID:** NI.062116.132910 **Dil:** 1 **Units:** ug/L
Sample ID: L16060731-02 **File ID:** NI.062116.132558 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	50.4		1.14		50	98.5	75 - 125	
ARSENIC	64.0		12.2		50	103.6	75 - 125	
BARIUM	60.7		10.8		50	99.9	75 - 125	
CADMIUM	51.9		0.267	F	50	103.2	75 - 125	
CHROMIUM	52.8		1.95		50	101.7	75 - 125	
COBALT	53.2		0.370	F	50	105.7	75 - 125	
COPPER	195		147		50	96.4	75 - 125	
LEAD	60.3		9.25		50	102.0	75 - 125	
MANGANESE	72.2		21.0		50	102.4	75 - 125	
NICKEL	51.1		1.17	F	50	99.8	75 - 125	
SILVER	50.1		0	U	50	100.3	75 - 125	
THALLIUM	49.7		0.0436	F	50	99.4	75 - 125	
VANADIUM	57.1		5.28		50	103.6	75 - 125	
ZINC	70.3		18.4	F	50	103.8	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4812177
Report generated: 06/21/2016 18:22

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16060730	Workgroup (AAB#):	WG572869
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG573095	Initial Calibration Date:	16-JUN-2016 15:43

	WG573095-01		WG573095-02		WG573095-03		WG573095-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	44.3	.4	294	50	219000	100	429000	.999808	
ARSENIC	0	72.1	.4	27.4	50	55400	100	107000	.999975	
BARIUM	0	17.0	.4	202	50	90500	100	179000	.999915	
CADMIUM	0	3.70	.4	107	50	96700	100	192000	.999929	
CHROMIUM	0	2890	.4	7150	50	370000	100	726000	.999966	
COBALT	0	263	.4	583	50	321000	100	621000	.999989	
COPPER	0	79.7	.4	217	50	93700	100	182000	.999999	
LEAD	0	828	.4	1800	50	831000	100	1630000	.999997	
MANGANESE	0	613	.4	1040	50	296000	100	576000	1	
NICKEL	0	108	.4	245	50	96000	100	187000	1	
SILVER	0	82.7	.4	386	50	301000	100	584000	.999738	
THALLIUM	0	10.0	.4	392	50	373000	100	729000	.999991	
VANADIUM	0	581	.4	1540	50	356000	100	688000	.999992	
ZINC	0	145	.4	311	50	55400	100	108000	1	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4812185
Report generated: 21-JUN-2016 18:22

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16060730	Workgroup (AAB#):	WG573557
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG573631	Initial Calibration Date:	21-JUN-2016 12:44

	WG573631-01		WG573631-02		WG573631-03		WG573631-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	43.1	.4	245	50	207000	100	404000	.999913	
ARSENIC	0	-25.5	.4	16.4	50	52300	100	101000	.999973	
BARIUM	0	106	.4	194	50	89200	100	176000	.999962	
CADMIUM	0	9.30	.4	103	50	91400	100	179000	.999944	
CHROMIUM	0	5910	.4	6080	50	320000	100	622000	.999997	
COBALT	0	269	.4	583	50	304000	100	585000	.999971	
COPPER	0	156	.4	255	50	88900	100	173000	.999998	
LEAD	0	792	.4	1730	50	793000	100	1540000	.999869	
MANGANESE	0	1210	.4	1640	50	319000	100	618000	.999993	
NICKEL	0	292	.4	417	50	89800	100	174000	.999991	
SILVER	0	92.7	.4	386	50	288000	100	561000	.999911	
THALLIUM	0	11.0	.4	386	50	361000	100	706000	.999917	
VANADIUM	0	1010	.4	1270	50	298000	100	571000	.999958	
ZINC	0	143	.4	285	50	51700	100	100000	.999996	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4812185
Report generated: 21-JUN-2016 18:22

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060730
Run Date: 06/16/2016
Sample ID: WG573095-09
Instrument ID: ICP-MS2
Run Time: 16:03
Method: 6020A
File ID: NI.061616.160355
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572869
Cal ID: ICP-MS2 - 16-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
COPPER	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.268	F
THALLIUM	.04	.16	.04	U
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4812187
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060730
Instrument ID: ICP-MS2
File ID: NI.062116.125048
Workgroup (AAB#): WG573557
Matrix: WATER

Run Date: 06/21/2016
Run Time: 12:50
Analyst: BKT
Cal ID: ICP-MS2 - 21-JUN-16

Sample ID: WG573631-06
Method: 6020A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U

U = Result is less than 2 x MDL
F = Result is between MDL and 2 x MDL
* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4812187
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/16/2016
Sample ID: WG573095-13
Instrument ID: ICP-MS2
Run Time: 16:38
Method: 6020A
File ID: NI.061616.163850
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812190
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/16/2016
Sample ID: WG573095-19
Instrument ID: ICP-MS2
Run Time: 18:58
Method: 6020A
File ID: NI.061616.185850
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812190
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/16/2016
Sample ID: WG573095-22
Instrument ID: ICP-MS2
Run Time: 19:41
Method: 6020A
File ID: NI.061616.194114
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812190
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/16/2016
Sample ID: WG573095-24
Instrument ID: ICP-MS2
Run Time: 20:22
Method: 6020A
File ID: NI.061616.202232
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812190
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/16/2016
Sample ID: WG573095-26
Instrument ID: ICP-MS2
Run Time: 21:10
Method: 6020A
File ID: NI.061616.211014
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812190
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/16/2016
Sample ID: WG573095-28
Instrument ID: ICP-MS2
Run Time: 21:48
Method: 6020A
File ID: NI.061616.214835
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812190
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/21/2016
Sample ID: WG573631-11
Instrument ID: ICP-MS2
Run Time: 13:06
Method: 6020A
File ID: NI.062116.130648
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Arsenic	0.200	0.800	0.200	U
Silver	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812190
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/21/2016
Sample ID: WG573631-13
Instrument ID: ICP-MS2
Run Time: 13:43
Method: 6020A
File ID: NI.062116.134314
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Arsenic	0.200	0.800	0.200	U
Silver	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812190
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/21/2016
Sample ID: WG573631-15
Instrument ID: ICP-MS2
Run Time: 15:57
Method: 6020A
File ID: NI.062116.155734
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Arsenic	0.200	0.800	0.200	U
Silver	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812190
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/21/2016
Sample ID: WG573631-17
Instrument ID: ICP-MS2
Run Time: 16:23
Method: 6020A
File ID: NI.062116.162309
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Arsenic	0.200	0.800	0.200	U
Silver	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812190
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060730
Run Date: 06/16/2016
Sample ID: WG573095-08
Instrument ID: ICP-MS2
Run Time: 15:57
Method: 6020A
File ID: NI.061616.155746
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	46.9	93.8	90 - 110	
Barium		50	47.7	95.3	90 - 110	
Cadmium		50	48.1	96.2	90 - 110	
Chromium		50	50.4	101	90 - 110	
Cobalt		50	49.2	98.4	90 - 110	
Copper		50	50.2	100	90 - 110	
Lead		50	48.5	96.9	90 - 110	
Manganese		50	51.6	103	90 - 110	
Nickel		50	50.1	100	90 - 110	
Thallium		50	47.8	95.7	90 - 110	
Vanadium		50	48.7	97.3	90 - 110	
Zinc		50	50.0	100	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4812186
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060730
Run Date: 06/21/2016
Sample ID: WG573631-05
Instrument ID: ICP-MS2
Run Time: 12:47
Method: 6020A
File ID: NI.062116.124735
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Arsenic		50	50.4	101	90 - 110	
Silver		50	49.8	99.6	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4812186
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/16/2016
Sample ID: WG573095-12
Instrument ID: ICP-MS2
Run Time: 16:25
Method: 6020A
File ID: NI.061616.162516
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0492	mg/L	98.4	90 - 110		
Barium		0.0500	0.0480	mg/L	96.0	90 - 110		
Cadmium		0.0500	0.0483	mg/L	96.7	90 - 110		
Chromium		0.0500	0.0497	mg/L	99.4	90 - 110		
Cobalt		0.0500	0.0504	mg/L	101	90 - 110		
Copper		0.0500	0.0502	mg/L	100	90 - 110		
Lead		0.0500	0.0490	mg/L	98.0	90 - 110		
Manganese		0.0500	0.0514	mg/L	103	90 - 110		
Nickel		0.0500	0.0501	mg/L	100	90 - 110		
Thallium		0.0500	0.0491	mg/L	98.2	90 - 110		
Vanadium		0.0500	0.0497	mg/L	99.3	90 - 110		
Zinc		0.0500	0.0499	mg/L	99.7	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812189
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/16/2016
Sample ID: WG573095-18
Instrument ID: ICP-MS2
Run Time: 18:55
Method: 6020A
File ID: NI.061616.185538
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0494	mg/L	98.8	90 - 110		
Barium		0.0500	0.0486	mg/L	97.2	90 - 110		
Cadmium		0.0500	0.0500	mg/L	100	90 - 110		
Chromium		0.0500	0.0500	mg/L	100	90 - 110		
Cobalt		0.0500	0.0532	mg/L	106	90 - 110		
Copper		0.0500	0.0496	mg/L	99.2	90 - 110		
Lead		0.0500	0.0501	mg/L	100	90 - 110		
Manganese		0.0500	0.0540	mg/L	108	90 - 110		
Nickel		0.0500	0.0492	mg/L	98.5	90 - 110		
Thallium		0.0500	0.0493	mg/L	98.6	90 - 110		
Vanadium		0.0500	0.0506	mg/L	101	90 - 110		
Zinc		0.0500	0.0496	mg/L	99.2	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/16/2016
Sample ID: WG573095-21
Instrument ID: ICP-MS2
Run Time: 19:38
Method: 6020A
File ID: NI.061616.193803
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0512	mg/L	102	90 - 110		
Barium		0.0500	0.0486	mg/L	97.1	90 - 110		
Cadmium		0.0500	0.0503	mg/L	101	90 - 110		
Chromium		0.0500	0.0490	mg/L	98.0	90 - 110		
Cobalt		0.0500	0.0548	mg/L	110	90 - 110		
Copper		0.0500	0.0486	mg/L	97.2	90 - 110		
Lead		0.0500	0.0517	mg/L	103	90 - 110		
Manganese		0.0500	0.0527	mg/L	105	90 - 110		
Nickel		0.0500	0.0487	mg/L	97.4	90 - 110		
Thallium		0.0500	0.0499	mg/L	99.9	90 - 110		
Vanadium		0.0500	0.0515	mg/L	103	90 - 110		
Zinc		0.0500	0.0495	mg/L	98.9	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/16/2016
Sample ID: WG573095-23
Instrument ID: ICP-MS2
Run Time: 20:19
Method: 6020A
File ID: NI.061616.201921
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0477	mg/L	95.4	90 - 110		
Barium		0.0500	0.0467	mg/L	93.3	90 - 110		
Cadmium		0.0500	0.0485	mg/L	96.9	90 - 110		
Chromium		0.0500	0.0490	mg/L	97.9	90 - 110		
Cobalt		0.0500	0.0524	mg/L	105	90 - 110		
Copper		0.0500	0.0483	mg/L	96.5	90 - 110		
Lead		0.0500	0.0502	mg/L	100	90 - 110		
Manganese		0.0500	0.0530	mg/L	106	90 - 110		
Nickel		0.0500	0.0478	mg/L	95.6	90 - 110		
Thallium		0.0500	0.0479	mg/L	95.7	90 - 110		
Vanadium		0.0500	0.0501	mg/L	100	90 - 110		
Zinc		0.0500	0.0480	mg/L	95.9	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/16/2016
Sample ID: WG573095-25
Instrument ID: ICP-MS2
Run Time: 21:07
Method: 6020A
File ID: NI.061616.210702
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0484	mg/L	96.9	90 - 110		
Barium		0.0500	0.0477	mg/L	95.4	90 - 110		
Cadmium		0.0500	0.0483	mg/L	96.7	90 - 110		
Chromium		0.0500	0.0499	mg/L	99.8	90 - 110		
Cobalt		0.0500	0.0494	mg/L	98.8	90 - 110		
Copper		0.0500	0.0496	mg/L	99.2	90 - 110		
Lead		0.0500	0.0494	mg/L	98.8	90 - 110		
Manganese		0.0500	0.0534	mg/L	107	90 - 110		
Nickel		0.0500	0.0496	mg/L	99.2	90 - 110		
Thallium		0.0500	0.0475	mg/L	95.0	90 - 110		
Vanadium		0.0500	0.0503	mg/L	101	90 - 110		
Zinc		0.0500	0.0497	mg/L	99.4	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/16/2016
Sample ID: WG573095-27
Instrument ID: ICP-MS2
Run Time: 21:45
Method: 6020A
File ID: NI.061616.214523
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0479	mg/L	95.7	90 - 110		
Barium		0.0500	0.0478	mg/L	95.6	90 - 110		
Cadmium		0.0500	0.0483	mg/L	96.6	90 - 110		
Chromium		0.0500	0.0507	mg/L	101	90 - 110		
Cobalt		0.0500	0.0512	mg/L	102	90 - 110		
Copper		0.0500	0.0503	mg/L	101	90 - 110		
Lead		0.0500	0.0512	mg/L	102	90 - 110		
Manganese		0.0500	0.0553	mg/L	111	90 - 110		*
Nickel		0.0500	0.0504	mg/L	101	90 - 110		
Thallium		0.0500	0.0492	mg/L	98.4	90 - 110		
Vanadium		0.0500	0.0507	mg/L	101	90 - 110		
Zinc		0.0500	0.0501	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/21/2016
Sample ID: WG573631-10
Instrument ID: ICP-MS2
Run Time: 13:03
Method: 6020A
File ID: NI.062116.130337
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Arsenic		0.0500	0.0504	mg/L	101	90 - 110		
Silver		0.0500	0.0492	mg/L	98.4	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/21/2016
Sample ID: WG573631-12
Instrument ID: ICP-MS2
Run Time: 13:40
Method: 6020A
File ID: NI.062116.134003
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Arsenic		0.0500	0.0508	mg/L	102	90 - 110		
Silver		0.0500	0.0497	mg/L	99.3	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812189
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/21/2016
Sample ID: WG573631-14
Instrument ID: ICP-MS2
Run Time: 15:54
Method: 6020A
File ID: NI.062116.155422
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Arsenic		0.0500	0.0505	mg/L	101	90 - 110		
Silver		0.0500	0.0514	mg/L	103	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/21/2016
Sample ID: WG573631-16
Instrument ID: ICP-MS2
Run Time: 16:19
Method: 6020A
File ID: NI.062116.161957
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Arsenic		0.0500	0.0492	mg/L	98.4	90 - 110		
Silver		0.0500	0.0510	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812189
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060730
Run Date: 06/16/2016
Sample ID: WG573095-07
Instrument ID: ICP-MS2
Run Time: 15:52
Method: 6020A
File ID: NI.061616.155239
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.437	ug/L	109	70 - 130		
Barium		0.750	0.670	ug/L	89.4	70 - 130		
Cadmium		0.240	0.237	ug/L	98.6	70 - 130		
Chromium		0.800	0.723	ug/L	90.4	70 - 130		
Cobalt		0.400	0.380	ug/L	95.0	70 - 130		
Copper		0.800	0.790	ug/L	98.7	70 - 130		
Lead		0.200	0.183	ug/L	91.4	70 - 130		
Manganese		0.500	0.452	ug/L	90.4	70 - 130		
Nickel		1.60	1.54	ug/L	96.1	70 - 130		
Thallium		0.0800	0.0818	ug/L	102	70 - 130		
Vanadium		0.400	0.354	ug/L	88.5	70 - 130		
Zinc		6.25	6.72	ug/L	107	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4812191
Report generated 06/22/2016 13:43

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060730
Run Date: 06/16/2016
Sample ID: WG573095-20
Instrument ID: ICP-MS2
Run Time: 19:02
Method: 6020A
File ID: NI.061616.190202
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.394	ug/L	98.5	70 - 130		
Barium		0.750	0.633	ug/L	84.4	70 - 130		
Cadmium		0.240	0.238	ug/L	99.0	70 - 130		
Chromium		0.800	0.710	ug/L	88.8	70 - 130		
Cobalt		0.400	0.391	ug/L	97.6	70 - 130		
Copper		0.800	0.779	ug/L	97.4	70 - 130		
Lead		0.200	0.185	ug/L	92.4	70 - 130		
Manganese		0.500	0.600	ug/L	120	70 - 130		
Nickel		1.60	1.49	ug/L	93.1	70 - 130		
Thallium		0.0800	0.0829	ug/L	104	70 - 130		
Vanadium		0.400	0.360	ug/L	90.1	70 - 130		
Zinc		6.25	6.68	ug/L	107	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4812191
Report generated 06/22/2016 13:43

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060730
Run Date: 06/16/2016
Sample ID: WG573095-29
Instrument ID: ICP-MS2
Run Time: 21:51
Method: 6020A
File ID: NI.061616.215148
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.379	ug/L	94.7	70 - 130		
Barium		0.750	0.661	ug/L	88.1	70 - 130		
Cadmium		0.240	0.222	ug/L	92.4	70 - 130		
Chromium		0.800	0.719	ug/L	89.8	70 - 130		
Cobalt		0.400	0.364	ug/L	91.0	70 - 130		
Copper		0.800	0.802	ug/L	100	70 - 130		
Lead		0.200	0.176	ug/L	88.2	70 - 130		
Manganese		0.500	0.484	ug/L	96.8	70 - 130		
Nickel		1.60	1.55	ug/L	96.6	70 - 130		
Thallium		0.0800	0.0736	ug/L	92.0	70 - 130		
Vanadium		0.400	0.363	ug/L	90.7	70 - 130		
Zinc		6.25	6.31	ug/L	101	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4812191
Report generated 06/22/2016 13:43

Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060730
Run Date: 06/21/2016
Sample ID: WG573631-07
Instrument ID: ICP-MS2
Run Time: 12:54
Method: 6020A
File ID: NI.062116.125401
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Arsenic		0.400	0.431	ug/L	108	70 - 130		
Silver		0.400	0.401	ug/L	100	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4812191
Report generated 06/22/2016 13:43

Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060730
Run Date: 06/21/2016
Sample ID: WG573631-24
Instrument ID: ICP-MS2
Run Time: 19:12
Method: 6020A
File ID: NI.062116.191207
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Arsenic		0.400	0.388	ug/L	97.1	70 - 130		
Silver		0.400	0.394	ug/L	98.6	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4812191
Report generated 06/22/2016 13:43

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060730
Instrument ID: ICP-MS2
Sol. A : WG573095-10 **File ID:** NI.061616.160740
Sol. AB : WG573095-11 **File ID:** NI.061616.162201

Workgroup (AAB#): WG572869
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.0793	NS	100	94.6	94.6	
Barium	NS	0.0676	NS	100	94.7	94.7	
Cadmium	NS	-0.0599	NS	100	96.1	96.1	
Chromium	NS	0.0900	NS	100	99.8	99.8	
Cobalt	NS	0.0224	NS	100	104	104	
Copper	NS	0.277	NS	100	99.9	99.9	
Lead	NS	0.0928	NS	100	98.9	98.9	
Manganese	NS	0.0620	NS	100	106	106	
Nickel	NS	0.326	NS	100	99.4	99.4	
Thallium	NS	0.113	NS	100	98.0	98.0	
Vanadium	NS	0.00810	NS	100	100	100	
Zinc	NS	1.37	NS	100	102	102	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
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Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060730
Instrument ID: ICP-MS2
Sol. A : WG573631-08 **File ID:** NI.062116.125712
Sol. AB : WG573631-09 **File ID:** NI.062116.130024

Workgroup (AAB#): WG573557
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Arsenic	NS	0.00630	NS	100	101	101	
Silver	NS	0.0339	NS	100	95.1	95.1	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4812188
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060730 **Analytical Method:** 6020
Analytical Workgroup: WG572869 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 16-JUN-2016 15:33

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060730-01	SAMP	16-JUN-2016 20:29	89.796	92.016	94.86
L16060730-01	SAMP	16-JUN-2016 21:35	97.501	95.775	104.832
L16060730-02	SAMP	16-JUN-2016 20:40	87.761	90.678	96.199
L16060730-02	SAMP	16-JUN-2016 21:38	95.058	99.144	101.21
L16060730-03	SAMP	16-JUN-2016 20:43	82.22	89.774	88.488
L16060730-03	SAMP	16-JUN-2016 21:42	95.484	101.752	99.452
WG572730-03	BLANK	16-JUN-2016 19:05	100.216	99.081	102.939
WG572730-04	LCS	16-JUN-2016 19:08	101.421	99.849	103.204
WG572869-01	PSPK	16-JUN-2016 19:31	112.105	100.336	99.705
WG572869-02	SERIAL	16-JUN-2016 19:34	109.035	99.586	107.45
WG572869-02	SERIAL	16-JUN-2016 19:44	102.137	96.905	105.944
WG573095-07	LLICV	16-JUN-2016 15:52	96.13	93.157	96.318
WG573095-08	ICV	16-JUN-2016 15:57	97.13	96.114	99.927
WG573095-09	ICB	16-JUN-2016 16:03	97.661	96.107	100.676
WG573095-10	ICS	16-JUN-2016 16:07	96.606	97.591	98.938
WG573095-11	ICS	16-JUN-2016 16:22	96.039	94.231	101.38
WG573095-12	CCV	16-JUN-2016 16:25	96.818	96.058	101.069
WG573095-13	CCB	16-JUN-2016 16:38	95.395	96.878	98.817
WG573095-18	CCV	16-JUN-2016 18:55	100.879	98.942	103.257
WG573095-19	CCB	16-JUN-2016 18:58	100.363	100.186	103.213
WG573095-20	LLCCV	16-JUN-2016 19:02	98.621	96.559	99.934
WG573095-21	CCV	16-JUN-2016 19:38	99.655	98.678	100.997
WG573095-22	CCB	16-JUN-2016 19:41	103.251	98.035	102.526
WG573095-23	CCV	16-JUN-2016 20:19	102.275	100.766	107.12
WG573095-24	CCB	16-JUN-2016 20:22	101.002	103.79	104.368
WG573095-25	CCV	16-JUN-2016 21:07	98.791	98.968	101.902
WG573095-26	CCB	16-JUN-2016 21:10	98.056	96.18	104.938
WG573095-27	CCV	16-JUN-2016 21:45	94.877	96.278	101.991
WG573095-28	CCB	16-JUN-2016 21:48	95.773	98.51	99.349
WG573095-29	LLCCV	16-JUN-2016 21:51	96.58	95.236	98.152

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4812184
Report generated: 06/21/2016 18:22

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060730 **Analytical Method:** 6020
Analytical Workgroup: WG572869 **Matrix:** 18
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 16-JUN-2016 15:33

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060731-02	SAMP	16-JUN-2016 20:46	98.985	103.449	100.756
L16060731-02	SAMP	16-JUN-2016 20:49	100.189	99.166	103.967

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4812184
Report generated: 06/21/2016 18:22

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060730 **Analytical Method:** 6020
Analytical Workgroup: WG572869 **Matrix:** 2
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 16-JUN-2016 15:33

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060754-01	SAMP	16-JUN-2016 19:28	110.371	97.831	102.475
L16060754-01	SAMP	16-JUN-2016 19:34	109.035	99.586	107.45

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4812184
Report generated: 06/21/2016 18:22

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060730 **Analytical Method:** 6020
Analytical Workgroup: WG573557 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 21-JUN-2016 12:34

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060730-01	SAMP	21-JUN-2016 15:51	87.686	93.118	93.994
L16060730-02	SAMP	21-JUN-2016 16:00	85.838	95.758	88.145
L16060730-03	SAMP	21-JUN-2016 16:03	83.547	88.117	87.886
WG573483-02	BLANK	21-JUN-2016 13:10	95.679	98.524	97.195
WG573483-03	LCS	21-JUN-2016 13:36	94.921	99.695	97.281
WG573557-01	PSPK	21-JUN-2016 13:29	98.084	98.955	98.448
WG573557-02	SERIAL	21-JUN-2016 13:32	97.19	102.137	97.153
WG573631-05	ICV	21-JUN-2016 12:47	96.069	98.452	97.355
WG573631-06	ICB	21-JUN-2016 12:50	96.354	99.72	98.43
WG573631-07	LLICV	21-JUN-2016 12:54	94.241	93.729	96.647
WG573631-08	ICS	21-JUN-2016 12:57	94.267	96.671	98.81
WG573631-09	ICS	21-JUN-2016 13:00	96.004	99.918	95.904
WG573631-10	CCV	21-JUN-2016 13:03	94.215	98.219	98.362
WG573631-11	CCB	21-JUN-2016 13:06	96.643	100.438	97.789
WG573631-12	CCV	21-JUN-2016 13:40	96.239	97.396	98.415
WG573631-13	CCB	21-JUN-2016 13:43	94.78	98.379	99.644
WG573631-14	CCV	21-JUN-2016 15:54	98.094	101.613	99.232
WG573631-15	CCB	21-JUN-2016 15:57	98.876	97.92	103.15
WG573631-16	CCV	21-JUN-2016 16:19	102.709	110.827	104.784
WG573631-17	CCB	21-JUN-2016 16:23	103.832	106.69	110.935

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
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Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060730 **Analytical Method:** 6020
Analytical Workgroup: WG573557 **Matrix:** 18
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 21-JUN-2016 12:34

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060731-02	SAMP	21-JUN-2016 13:25	97.415	97.241	100.268
WG572662-01	FBLK2	21-JUN-2016 13:13	96.669	99.978	97.284

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4812184
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Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16060730 **Date:** 04/19/2016
Insturment ID: ICP-MS2 **Method:** 6020A

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Uranium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4812183
Report generated: 06/21/2016 18:22

2.3.2.3 Raw Data

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Thursday, June 16, 2016 14:07:39

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1326	2024	0.708	
Mg	23.985	23.975	4498	2020	0.704	
Co	58.933	58.975	11692	2022	0.692	
In	114.904	114.875	22859	2028	0.691	
U	238.050	238.075	47457	2043	0.702	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	7.436
5.575	8.287
5.625	3.892
5.675	4.802
5.725	2.185
5.775	3.031
5.825	4.638
5.875	2.806
5.925	2.266
5.975	4.757
6.025	3.190
6.075	3.669
6.125	3.622
6.175	3.148
6.225	8.886
6.275	33.166
6.325	46.481
6.375	46.566
6.425	40.745
6.475	56.845
6.525	15.768
6.575	18.835
6.625	3.774
6.675	4.099
6.725	2.150
6.775	4.632
6.825	1.659

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6.875	4.657
6.925	1.715
6.975	2.467
7.025	2.458
7.075	2.433
7.125	2.586
7.175	4.875
7.225	1.268
7.275	2.064
7.325	10.536
7.375	54.398
7.425	60.990
7.475	63.888
7.525	51.618
7.575	39.529
7.625	69.722
7.675	47.507
7.725	16.110
7.775	58.685
7.825	58.330
7.875	66.667
7.925	61.450
7.975	55.902
8.025	102.740
8.075	55.902
8.125	38.401
8.175	63.949
8.225	43.853
8.275	60.858
8.325	45.079
8.375	40.074
8.425	40.074
8.475	54.149
22.525	
22.575	50.619
22.625	33.641
22.675	51.618
22.725	55.902
22.775	25.951
22.825	27.809
22.875	40.946
22.925	49.701
22.975	18.923
23.025	32.442
23.075	23.055
23.125	25.635
23.175	20.888

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23.225	21.374
23.275	25.000
23.325	45.400
23.375	27.285
23.425	30.987
23.475	25.476
23.525	13.045
23.575	6.296
23.625	2.182
23.675	2.995
23.725	2.713
23.775	2.035
23.825	1.176
23.875	0.613
23.925	0.955
23.975	1.904
24.025	1.612
24.075	1.077
24.125	1.787
24.175	1.904
24.225	1.298
24.275	1.635
24.325	13.413
24.375	39.123
24.425	39.529
24.475	21.077
24.525	2.911
24.575	3.152
24.625	1.254
24.675	1.656
24.725	1.429
24.775	1.818
24.825	1.348
24.875	0.955
24.925	1.650
24.975	0.624
25.025	1.148
25.075	1.394
25.125	0.398
25.175	1.878
25.225	3.006
25.275	5.326
25.325	42.950
25.375	30.619
25.425	70.613
25.475	32.723
57.525	12.330

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57.575	7.587
57.625	2.112
57.675	3.255
57.725	2.490
57.775	2.165
57.825	1.108
57.875	2.141
57.925	2.456
57.975	1.875
58.025	3.007
58.075	2.288
58.125	0.909
58.175	2.980
58.225	2.412
58.275	3.761
58.325	25.824
58.375	36.748
58.425	23.570
58.475	18.248
58.525	7.221
58.575	2.071
58.625	1.712
58.675	1.278
58.725	1.414
58.775	1.870
58.825	1.537
58.875	1.904
58.925	2.989
58.975	2.279
59.025	1.504
59.075	1.307
59.125	2.089
59.175	2.055
59.225	1.826
59.275	4.437
59.325	13.359
59.375	41.110
59.425	58.736
59.475	26.307
59.525	11.352
59.575	4.879
59.625	5.862
59.675	3.367
59.725	2.650
59.775	4.079
59.825	1.668
59.875	2.310

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59.925	1.238
59.975	3.774
60.025	3.677
60.075	1.742
60.125	2.822
60.175	4.864
60.225	4.103
60.275	3.750
60.325	18.054
60.375	31.623
60.425	49.739
60.475	56.723
113.525	6.653
113.575	1.927
113.625	2.838
113.675	2.697
113.725	2.195
113.775	4.236
113.825	2.523
113.875	1.968
113.925	2.426
113.975	2.953
114.025	1.676
114.075	1.976
114.125	1.813
114.175	2.440
114.225	7.942
114.275	11.452
114.325	42.061
114.375	20.163
114.425	13.593
114.475	1.983
114.525	1.683
114.575	2.531
114.625	0.874
114.675	1.279
114.725	0.891
114.775	1.779
114.825	1.186
114.875	1.029
114.925	1.564
114.975	0.950
115.025	1.530
115.075	1.114
115.125	2.208
115.175	3.123
115.225	4.486

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115.275	7.177
115.325	14.172
115.375	54.799
115.425	53.420
115.475	16.011
115.525	12.692
115.575	2.883
115.625	6.251
115.675	4.509
115.725	4.245
115.775	1.283
115.825	4.008
115.875	1.211
115.925	2.114
115.975	7.687
116.025	5.271
116.075	5.578
116.125	4.248
116.175	11.979
116.225	16.277
116.275	30.596
116.325	24.845
116.375	28.284
116.425	54.149
116.475	40.000
236.525	
236.575	23.855
236.625	34.401
236.675	27.422
236.725	35.668
236.775	39.989
236.825	18.757
236.875	23.077
236.925	20.761
236.975	14.650
237.025	36.943
237.075	27.109
237.125	25.586
237.175	42.799
237.225	24.325
237.275	21.429
237.325	30.129
237.375	15.267
237.425	4.597
237.475	48.577
237.525	19.963
237.575	13.238

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237.625	6.730
237.675	7.800
237.725	2.904
237.775	1.428
237.825	2.396
237.875	1.255
237.925	0.555
237.975	1.682
238.025	0.745
238.075	0.906
238.125	0.901
238.175	0.264
238.225	0.953
238.275	0.886
238.325	1.395
238.375	2.556
238.425	2.763
238.475	2.183
238.525	12.890
238.575	14.452
238.625	38.797
238.675	16.933
238.725	6.952
238.775	20.328
238.825	29.472
238.875	37.989
238.925	27.140
238.975	18.731
239.025	17.049
239.075	5.454
239.125	29.410
239.175	29.569
239.225	22.608
239.275	13.847
239.325	15.978
239.375	4.980
239.425	11.111
239.475	34.914

Approved: June 20, 2016

SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\ReportOutput\a.swz

Start Time: 6/16/2016 3:04:36 PM
End Time: 6/16/2016 3:07:03 PM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 4248.80
        Obtained Intensity (Mg 23.985): 62852.37
        Obtained Intensity (In 114.904): 59263.95
        Obtained Intensity (U 238.05): 123631.92
        Obtained Intensity (Bkgd 220): 0.53
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.020 (=3505.01 / 175287.61)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.005 (=894.29 / 175287.61)
```


Approved: June 20, 2016

SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\ReportOutput\a.swz

Optimization Status

Start Time: 6/16/2016 3:04:36 PM

Daily Performance Check
        Optimization Settings:
                Method: Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 1
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 4248.80
                Obtained Intensity (Mg 23.985): 62852.37
                Obtained Intensity (In 114.904): 59263.95
                Obtained Intensity (U 238.05): 123631.92
                Obtained Intensity (Bkgd 220): 0.53
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.020 (=3505.01 / 175287.61)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.005 (=894.29 / 175287.61)
[Passed]  Optimum value(s): N/A

End Time: 6/16/2016 3:07:03 PM
```


Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Thursday, June 16, 2016 15:30:14
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	51024.1	2.3				ug/L		Standard
	Be	9	6.7	43.3				ug/L		Standard
	Al	27	625.0	8.5				ug/L		Standard
	Sc	45	29647.3	3.2				ug/L		Standard
	Ti	47	57.3	8.1				ug/L		Standard
	V	51	1141.9	1.8				ug/L		Standard
	Cr	52	6628.1	1.7				ug/L		Standard
	Cr	53	430.0	9.1				ug/L		Standard
	Mn	55	603.3	5.5				ug/L		Standard
	Co	59	237.3	7.6				ug/L		Standard
	Ni	60	141.0	3.9				ug/L		Standard
	Cu	65	109.0	10.8				ug/L		Standard
	Zn	66	159.0	8.8				ug/L		Standard
>	Ge	72	474053.1	1.2				ug/L		Standard
	As	75	-34.2	89.8				ug/L		Standard
	Se	82	14.4	39.0				ug/L		Standard
	Se-1	77	55.3	3.8				ug/L		Standard
>	Ga	71	50.0	36.1				mg/L		Standard
	Rb	85	20.0	43.3				ug/L		Standard
	Y	89	376601.7	1.2				ug/L		Standard
>	Rh	103	16.7	69.3				ug/L		Standard
	Mo	98	8.0	17.7				ug/L		Standard
	Ag	107	80.7	16.9				ug/L		Standard
	Cd	111	3.0	0.1				mg/L		Standard
	Cd	114	7.5	153.9				ug/L		Standard
>	In	115	524721.8	2.2				ug/L		Standard
	Sn	118	715.0	18.5				ug/L		Standard
	Sb	123	200.9	30.1				ug/L		Standard
	Ba	135	107.7	7.0				ug/L		Standard
	Ce	140	30.0	0.0				ug/L		Standard
>	Tb	159	792236.5	1.3				ug/L		Standard
	Ho	165	6.7	43.3				ug/L		Standard
	Tl	203	9.0	50.9				ug/L		Standard
	Tl	205	0.0					ug/L		Standard
	Pb	206	216.0	6.4				ug/L		Standard
	Pb	207	179.7	5.8				ug/L		Standard
	Pb	208	717.3	4.2				ug/L		Standard
	U	238	3.7	15.7				ug/L		Standard
>	Bi	209	460342.9	1.5				ug/L		Standard

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	Na	23	0.0		mg/L	Standard
	Mg	24	20.0	50.0	mg/L	Standard
	K	39	21.7	26.6	mg/L	Standard
	Ca	43	46.7	27.0	mg/L	Standard
	Fe	54	151.0	18.9	mg/L	Standard
	Fe	57	195.0	11.2	mg/L	Standard
>	**Sc-1**	45	29647.3	3.2	mg/L	Standard
	Cl	35	154151.6	0.9	ug/L	Standard
	Kr	83	3.3	17.3	ug/L	Standard
	Br	81	1606.8	11.7	ug/L	Standard
	P	31	22752.1	1.8	ug/L	Standard
	S	34	5049.2	1.8	ug/L	Standard
	Sr	88	86.7	6.7	ug/L	Standard
	C	12	46.7	24.7	mg/L	Standard
	N	14	0.0		mg/L	Standard
	Hg	202	0.0		mg/L	Standard
	Dy	164	9.8	99.2	mg/L	Standard
	Ho-1	165	6.7	43.3	mg/L	Standard
	Er	166	3.3	173.2	mg/L	Standard
	I	127	841.7	10.5	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Thursday, June 16, 2016 15:33:26
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61336.5	17.7				ug/L	51024	Standard
	Be	9	5.0	100.0				ug/L	7	Standard
	Al	27	221.7	31.9				ug/L	625	Standard
	Sc	45	28802.5	9.9				ug/L	29647	Standard
	Ti	47	62.3	33.0				ug/L	57	Standard
	V	51	580.8	14.0				ug/L	1142	Standard
	Cr	52	2885.9	3.7				ug/L	6628	Standard
	Cr	53	203.3	7.5				ug/L	430	Standard
	Mn	55	613.3	37.8				ug/L	603	Standard
	Co	59	262.7	10.4				ug/L	237	Standard
	Ni	60	108.3	5.6				ug/L	141	Standard
	Cu	65	79.7	10.1				ug/L	109	Standard
	Zn	66	145.3	10.1				ug/L	159	Standard
>	**Ge**	72	493610.1	8.2				ug/L	474053	Standard
	As	75	72.1	70.6				ug/L	-34	Standard
	Se	82	46.9	37.4				ug/L	14	Standard
	Se-1	77	47.7	12.6				ug/L	55	Standard
>	**Ga**	71	35.0	37.8				mg/L	50	Standard
	Rb	85	20.0	0.0				ug/L	20	Standard
	Y	89	401482.6	6.9				ug/L	376602	Standard
>	**Rh**	103	11.7	107.9				ug/L	17	Standard
	Mo	98	7.8	54.6				ug/L	8	Standard
	Ag	107	82.7	18.8				ug/L	81	Standard
	Cd	111	3.7	15.8				mg/L	3	Standard
	Cd	114	6.4	91.9				ug/L	7	Standard
>	**In**	115	555148.6	6.0				ug/L	524722	Standard
	Sn	118	256.7	2.2				ug/L	715	Standard
	Sb	123	44.3	25.6				ug/L	201	Standard
	Ba	135	17.0	5.9				ug/L	108	Standard
	Ce	140	18.3	15.7				ug/L	30	Standard
>	**Tb**	159	901198.6	13.9				ug/L	792236	Standard
	Ho	165	1.7	173.2				ug/L	7	Standard
	Tl	203	10.0	75.5				ug/L	9	Standard
	Tl	205	8.3	124.9				ug/L	0	Standard
	Pb	206	256.7	23.8				ug/L	216	Standard
	Pb	207	208.0	18.4				ug/L	180	Standard
	Pb	208	827.7	17.4				ug/L	717	Standard
	U	238	2.7	21.7				ug/L	4	Standard
>	**Bi**	209	546132.2	18.5				ug/L	460343	Standard

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	Na	23	0.0		mg/L	0	Standard
	Mg	24	28.3	10.2	mg/L	20	Standard
	K	39	15.0	33.3	mg/L	22	Standard
	Ca	43	50.0	17.3	mg/L	47	Standard
	Fe	54	136.0	58.3	mg/L	151	Standard
	Fe	57	195.0	23.5	mg/L	195	Standard
>	**Sc-1**	45	28802.5	9.9	mg/L	29647	Standard
	Cl	35	67826.3	3.7	ug/L	154152	Standard
	Kr	83	1.7	34.6	ug/L	3	Standard
	Br	81	586.7	16.8	ug/L	1607	Standard
	P	31	15342.0	42.1	ug/L	22752	Standard
	S	34	2116.8	1.5	ug/L	5049	Standard
	Sr	88	106.7	39.0	ug/L	87	Standard
	C	12	23.3	24.7	mg/L	47	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	3.3	173.2	mg/L	0	Standard
	Dy	164	9.5	5.0	mg/L	10	Standard
	Ho-1	165	1.7	173.2	mg/L	7	Standard
	Er	166	10.0	100.0	mg/L	3	Standard
	I	127	316.7	10.7	mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Thursday, June 16, 2016 15:36:37
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48482.4	0.7				ug/L	51024	Standard
	Be	9	56.7	51.7				ug/L	7	Standard
	Al	27	8083.8	2.1				ug/L	625	Standard
	Sc	45	30706.1	1.7				ug/L	29647	Standard
	Ti	47	79.3	15.6				ug/L	57	Standard
	V	51	1543.2	4.3				ug/L	1142	Standard
	Cr	52	7153.0	1.0				ug/L	6628	Standard
	Cr	53	445.0	12.2				ug/L	430	Standard
	Mn	55	1041.0	0.8				ug/L	603	Standard
	Co	59	583.0	7.0				ug/L	237	Standard
	Ni	60	245.0	4.3				ug/L	141	Standard
	Cu	65	217.0	8.3				ug/L	109	Standard
	Zn	66	310.7	2.1				ug/L	159	Standard
>	**Ge**	72	471168.8	0.1				ug/L	474053	Standard
	As	75	27.4	88.1				ug/L	-34	Standard
	Se	82	24.1	10.8				ug/L	14	Standard
	Se-1	77	60.7	6.2				ug/L	55	Standard
>	**Ga**	71	60.0	28.9				mg/L	50	Standard
	Rb	85	21.7	26.6				ug/L	20	Standard
	Y	89	408481.5	2.2				ug/L	376602	Standard
>	**Rh**	103	23.3	24.7				ug/L	17	Standard
	Mo	98	258.4	4.9				ug/L	8	Standard
	Ag	107	385.7	3.9				ug/L	81	Standard
	Cd	111	107.2	4.8				mg/L	3	Standard
	Cd	114	267.5	8.7				ug/L	7	Standard
>	**In**	115	544133.0	1.6				ug/L	524722	Standard
	Sn	118	778.4	8.1				ug/L	715	Standard
	Sb	123	293.5	11.5				ug/L	201	Standard
	Ba	135	202.3	5.5				ug/L	108	Standard
	Ce	140	46.7	80.4				ug/L	30	Standard
>	**Tb**	159	788761.6	1.1				ug/L	792236	Standard
	Ho	165	18.3	56.8				ug/L	7	Standard
	Tl	203	392.3	6.9				ug/L	9	Standard
	Tl	205	366.7	20.5				ug/L	0	Standard
	Pb	206	479.7	4.5				ug/L	216	Standard
	Pb	207	426.3	6.0				ug/L	180	Standard
	Pb	208	1798.4	0.2				ug/L	717	Standard
	U	238	349.3	5.8				ug/L	4	Standard
>	**Bi**	209	449760.6	0.7				ug/L	460343	Standard

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Na	23	3.3	86.6	mg/L	0	Standard
Mg	24	38.3	27.2	mg/L	20	Standard
K	39	31.7	24.1	mg/L	22	Standard
Ca	43	58.3	21.6	mg/L	47	Standard
Fe	54	152.6	18.2	mg/L	151	Standard
Fe	57	218.3	10.3	mg/L	195	Standard
> **Sc-1**	45	30706.1	1.7	mg/L	29647	Standard
Cl	35	159978.9	1.3	ug/L	154152	Standard
Kr	83	1.3	43.3	ug/L	3	Standard
Br	81	1600.1	10.1	ug/L	1607	Standard
P	31	22997.4	1.5	ug/L	22752	Standard
S	34	5302.6	1.3	ug/L	5049	Standard
Sr	88	58.3	27.6	ug/L	87	Standard
C	12	23.3	65.5	mg/L	47	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	0.0		mg/L	0	Standard
Dy	164	2.7	234.8	mg/L	10	Standard
Ho-1	165	18.3	56.8	mg/L	7	Standard
Er	166	13.3	86.6	mg/L	3	Standard
I	127	928.4	11.9	mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Thursday, June 16, 2016 15:39:49
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50565.9	1.8				ug/L	51024	Standard
	Be	9	42044.9	2.0	**50.0000**	1.656	3.3	ug/L	7	Standard
	Al	27	7094492.1	1.7	**50.0000**	0.240	0.5	ug/L	625	Standard
	Sc	45	29363.4	3.4				ug/L	29647	Standard
	Ti	47	29759.2	1.6	**100.0000**	1.722	1.7	ug/L	57	Standard
	V	51	356139.2	0.8	**50.0000**	0.331	0.7	ug/L	1142	Standard
	Cr	52	369550.1	0.3	**50.0000**	0.347	0.7	ug/L	6628	Standard
	Cr	53	46382.6	2.2	**50.0000**	0.884	1.8	ug/L	430	Standard
	Mn	55	295860.1	0.8	**50.0000**	0.768	1.5	ug/L	603	Standard
	Co	59	321303.4	0.4	**50.0000**	0.569	1.1	ug/L	237	Standard
	Ni	60	95975.7	0.7	**50.0000**	0.220	0.4	ug/L	141	Standard
	Cu	65	93739.7	0.2	**50.0000**	0.238	0.5	ug/L	109	Standard
	Zn	66	55396.4	0.5	**50.0000**	0.181	0.4	ug/L	159	Standard
>	**Ge**	72	471316.6	0.7				ug/L	474053	Standard
	As	75	55401.6	1.7	**50.0000**	1.157	2.3	ug/L	-34	Standard
	Se	82	5512.4	2.0	**50.0000**	1.370	2.7	ug/L	14	Standard
	Se-1	77	3915.5	0.9	**50.0000**	0.786	1.6	ug/L	55	Standard
>	**Ga**	71	120.0	8.3				mg/L	50	Standard
	Rb	85	818.4	2.5				ug/L	20	Standard
	Y	89	383423.6	1.9				ug/L	376602	Standard
>	**Rh**	103	26.7	39.0				ug/L	17	Standard
	Mo	98	238525.6	1.7	**100.0000**	2.248	2.2	ug/L	8	Standard
	Ag	107	300586.5	1.0	**50.0000**	0.931	1.9	ug/L	81	Standard
	Cd	111	96734.5	0.7	**50.0000**	0.446	0.9	mg/L	3	Standard
	Cd	114	239222.4	0.8	**50.0000**	0.320	0.6	ug/L	7	Standard
>	**In**	115	516883.8	1.3				ug/L	524722	Standard
	Sn	118	269170.5	1.9	**50.0000**	0.357	0.7	ug/L	715	Standard
	Sb	123	219395.1	0.6	**50.0000**	0.615	1.2	ug/L	201	Standard
	Ba	135	90538.0	0.9	**50.0000**	0.240	0.5	ug/L	108	Standard
	Ce	140	98.3	33.1				ug/L	30	Standard
>	**Tb**	159	780626.5	1.3				ug/L	792236	Standard
	Ho	165	5.0	0.0				ug/L	7	Standard
	Tl	203	372504.5	0.5	**50.0000**	0.339	0.7	ug/L	9	Standard
	Tl	205	316386.0	0.8	**50.0000**	0.414	0.8	ug/L	0	Standard
	Pb	206	225338.3	0.7	**50.0000**	0.467	0.9	ug/L	216	Standard
	Pb	207	205697.6	0.7	**50.0000**	0.491	1.0	ug/L	180	Standard
	Pb	208	831229.4	0.5	**50.0000**	0.375	0.7	ug/L	717	Standard
	U	238	300295.4	0.8	**50.0000**	0.316	0.6	ug/L	4	Standard
>	**Bi**	209	447053.1	1.0				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.0000**	10.302	206.0	mg/L	0	Standard
Mg	24	3705.5	6.1	**5.0000**	0.367	7.3	mg/L	20	Standard
K	39	671.7	7.3	**5.0000**	0.265	5.3	mg/L	22	Standard
Ca	43	63.3	43.5	**5.0000**	18.565	371.3	mg/L	47	Standard
Fe	54	6334.8	3.3	**5.0000**	0.319	6.4	mg/L	151	Standard
Fe	57	1861.8	5.0	**5.0000**	0.466	9.3	mg/L	195	Standard
> **Sc-1**	45	29363.4	3.4				mg/L	29647	Standard
Cl	35	161698.3	1.0				ug/L	154152	Standard
Kr	83	2.7	21.7				ug/L	3	Standard
Br	81	1496.7	10.1				ug/L	1607	Standard
P	31	25361.3	5.9				ug/L	22752	Standard
S	34	5722.8	8.3				ug/L	5049	Standard
Sr	88	76.7	13.6				ug/L	87	Standard
C	12	36.7	41.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.3	126.2				mg/L	10	Standard
Ho-1	165	5.0	0.0				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	6142.9	1.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Thursday, June 16, 2016 15:43:00
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	50435.5	1.6				ug/L	51024	Standard
	Be	9	82346.5	1.2	**99.0819**	1.677	1.7	ug/L	7	Standard
	Al	27	13992181.1	1.0	**99.4387**	0.736	0.7	ug/L	625	Standard
	Sc	45	30006.4	2.8				ug/L	29647	Standard
	Ti	47	58505.4	1.0	**200.8925**	5.085	2.5	ug/L	57	Standard
	V	51	687977.3	0.6	**99.6029**	0.871	0.9	ug/L	1142	Standard
	Cr	52	725902.3	0.9	**100.8293**	2.361	2.3	ug/L	6628	Standard
	Cr	53	91049.5	2.4	**100.5343**	1.118	1.1	ug/L	430	Standard
	Mn	55	576461.1	0.2	**100.0121**	1.485	1.5	ug/L	603	Standard
	Co	59	620596.3	0.4	**99.5359**	1.816	1.8	ug/L	237	Standard
	Ni	60	187359.0	1.0	**100.0839**	1.180	1.2	ug/L	141	Standard
	Cu	65	182121.9	1.8	**99.8326**	0.584	0.6	ug/L	109	Standard
	Zn	66	107693.4	1.7	**99.9466**	0.229	0.2	ug/L	159	Standard
>	Ge	72	459665.5	1.5				ug/L	474053	Standard
	As	75	106571.4	0.3	**99.2933**	1.200	1.2	ug/L	-34	Standard
	Se	82	10745.6	0.0	**100.0548**	1.484	1.5	ug/L	14	Standard
	Se-1	77	7418.5	2.3	**98.9131**	3.363	3.4	ug/L	55	Standard
>	Ga	71	103.3	32.2				mg/L	50	Standard
	Rb	85	1393.4	13.3				ug/L	20	Standard
	Y	89	377187.2	0.3				ug/L	376602	Standard
>	Rh	103	38.3	45.8				ug/L	17	Standard
	Mo	98	461069.8	0.9	**194.9574**	1.968	1.0	ug/L	8	Standard
	Ag	107	583703.5	0.6	**97.7109**	0.535	0.5	ug/L	81	Standard
	Cd	111	192033.7	0.5	**98.8117**	0.100	0.1	mg/L	3	Standard
	Cd	114	474593.2	1.8	**98.7794**	1.465	1.5	ug/L	7	Standard
>	In	115	525374.3	0.4				ug/L	524722	Standard
	Sn	118	532965.7	1.1	**98.7299**	1.022	1.0	ug/L	715	Standard
	Sb	123	428817.2	1.1	**98.0404**	1.345	1.4	ug/L	201	Standard
	Ba	135	179232.3	1.1	**98.7001**	1.049	1.1	ug/L	108	Standard
	Ce	140	138.3	11.0				ug/L	30	Standard
>	Tb	159	777561.5	1.7				ug/L	792236	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	728897.3	1.0	**99.5734**	0.952	1.0	ug/L	9	Standard
	Tl	205	620686.4	2.0	**99.7030**	1.645	1.6	ug/L	0	Standard
	Pb	206	440868.6	1.2	**99.5956**	1.751	1.8	ug/L	216	Standard
	Pb	207	400234.3	1.0	**99.3185**	1.537	1.5	ug/L	180	Standard
	Pb	208	1631531.3	1.4	**99.7532**	0.911	0.9	ug/L	717	Standard
	U	238	597917.2	1.3	**100.4447**	0.594	0.6	ug/L	4	Standard
>	Bi	209	441150.8	1.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	7450.2	2.2	**9.9373**	0.220	2.2	mg/L	20	Standard
K	39	1375.1	15.8	**10.1223**	1.524	15.1	mg/L	22	Standard
Ca	43	130.0	15.4	**16.7571**	3.894	23.2	mg/L	47	Standard
Fe	54	12357.9	4.2	**9.8157**	0.430	4.4	mg/L	151	Standard
Fe	57	3355.4	5.1	**9.6321**	0.814	8.4	mg/L	195	Standard
> **Sc-1**	45	30006.4	2.8				mg/L	29647	Standard
Cl	35	163219.8	1.1				ug/L	154152	Standard
Kr	83	2.3	99.0				ug/L	3	Standard
Br	81	1446.7	4.9				ug/L	1607	Standard
P	31	26878.8	3.1				ug/L	22752	Standard
S	34	5969.5	3.7				ug/L	5049	Standard
Sr	88	53.3	21.7				ug/L	87	Standard
C	12	56.7	36.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	16.2	33.1				mg/L	10	Standard
Ho-1	165	8.3	69.3				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	6194.6	1.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998
Corr. Coef.	Ca	43	Correlation coefficient < 0.998

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Thursday, June 16, 2016 15:46:13
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	48900.5	1.4				ug/L	51024	Standard
	Be	9	40029.5	1.7	**49.6695**	1.322	2.7	ug/L	7	Standard
	Al	27	6807595.1	1.1	**49.8931**	0.613	1.2	ug/L	625	Standard
	Sc	45	29859.4	2.2				ug/L	29647	Standard
	Ti	47	30234.8	0.9	**101.5179**	0.557	0.5	ug/L	57	Standard
	V	51	345968.9	0.4	**48.9414**	0.135	0.3	ug/L	1142	Standard
	Cr	52	361268.5	1.4	**48.6339**	0.583	1.2	ug/L	6628	Standard
	Cr	53	44796.1	1.2	**48.2008**	0.799	1.7	ug/L	430	Standard
	Mn	55	290150.7	1.7	**49.2058**	0.854	1.7	ug/L	603	Standard
	Co	59	308353.8	2.9	**48.3820**	1.390	2.9	ug/L	237	Standard
	Ni	60	93264.8	0.6	**48.7266**	0.581	1.2	ug/L	141	Standard
	Cu	65	92121.6	1.1	**49.4021**	0.815	1.6	ug/L	109	Standard
	Zn	66	55388.4	1.1	**50.2077**	0.826	1.6	ug/L	159	Standard
>	Ge	72	469579.4	0.6				ug/L	474053	Standard
	As	75	54025.0	1.0	**49.2819**	0.719	1.5	ug/L	-34	Standard
	Se	82	5305.3	2.4	**48.2613**	1.119	2.3	ug/L	14	Standard
	Se-1	77	3733.1	1.8	**48.3299**	0.600	1.2	ug/L	55	Standard
>	Ga	71	121.7	8.6				mg/L	50	Standard
	Rb	85	516.7	11.5				ug/L	20	Standard
	Y	89	375718.4	2.6				ug/L	376602	Standard
>	Rh	103	33.3	67.6				ug/L	17	Standard
	Mo	98	242646.9	2.2	**104.6905**	2.943	2.8	ug/L	8	Standard
	Ag	107	289971.5	0.6	**49.5201**	0.189	0.4	ug/L	81	Standard
	Cd	111	93046.4	0.5	**48.8483**	0.170	0.3	mg/L	3	Standard
	Cd	114	230715.9	0.2	**48.9961**	0.373	0.8	ug/L	7	Standard
>	In	115	514920.2	0.6				ug/L	524722	Standard
	Sn	118	284710.7	1.9	**53.7768**	1.357	2.5	ug/L	715	Standard
	Sb	123	208688.7	0.3	**48.6728**	0.184	0.4	ug/L	201	Standard
	Ba	135	85799.9	0.5	**48.1785**	0.093	0.2	ug/L	108	Standard
	Ce	140	120.0	21.7				ug/L	30	Standard
>	Tb	159	776088.7	0.5				ug/L	792236	Standard
	Ho	165	16.7	45.8				ug/L	7	Standard
	Tl	203	358537.1	1.1	**48.0462**	0.455	0.9	ug/L	9	Standard
	Tl	205	307552.3	1.7	**48.4612**	0.738	1.5	ug/L	0	Standard
	Pb	206	224129.9	0.7	**49.6400**	0.561	1.1	ug/L	216	Standard
	Pb	207	195303.0	0.4	**47.5147**	0.574	1.2	ug/L	180	Standard
	Pb	208	802915.7	0.1	**48.1309**	0.507	1.1	ug/L	717	Standard
	U	238	288986.2	0.3	**47.6224**	0.342	0.7	ug/L	4	Standard
>	Bi	209	449693.2	1.0				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3802.1	3.0	**5.0768**	0.262	5.2	mg/L	20	Standard
K	39	675.0	17.5	**4.8950**	0.999	20.4	mg/L	22	Standard
Ca	43	53.3	10.8	**-0.7985**	1.553	194.4	mg/L	47	Standard
Fe	54	5993.9	4.1	**4.7227**	0.110	2.3	mg/L	151	Standard
Fe	57	1776.8	6.7	**4.8135**	0.313	6.5	mg/L	195	Standard
Sc-1	45	29859.4	2.2				mg/L	29647	Standard
Cl	35	159749.2	1.5				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	1490.1	3.7				ug/L	1607	Standard
P	31	25977.3	1.4				ug/L	22752	Standard
S	34	5996.2	1.4				ug/L	5049	Standard
Sr	88	60.0	22.0				ug/L	87	Standard
C	12	80.0	66.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	13.3	43.3				mg/L	10	Standard
Ho-1	165	16.7	45.8				mg/L	7	Standard
Er	166	0.0					mg/L	3	Standard
I	127	935.0	3.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	99.339		
Al	27	99.786		
Sc	45			
Ti	47	101.518		
V	51	97.883		
Cr	52	97.268		
Cr	53			
Mn	55	98.412		
Co	59	96.764		
Ni	60	97.453		
Cu	65	98.804		
Zn	66	100.415		
Ge	72		99.056	
As	75	98.564		
Se	82	96.523		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	104.691		
Ag	107	99.040		
Cd	111	97.697		
Cd	114			
> In	115		98.132	
Sn	118	107.554		
Sb	123	97.346		
Ba	135	96.357		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	96.092		
Tl	205			
Pb	206	99.280		
Pb	207	95.029		
Pb	208	96.262		
U	238	95.245		
> Bi	209		97.687	
Na	23	209.044		
Mg	24	101.535		
K	39	97.901		
Ca	43	-15.971		
Fe	54	94.453		
Fe	57	96.269		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	K	39	
QC Std 1	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Thursday, June 16, 2016 15:49:26
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48778.4	0.5				ug/L	51024	Standard
	Be	9	35.0	28.6	**0.0225**	0.013	56.3	ug/L	7	Standard
	Al	27	2908.6	43.3	**0.0116**	0.009	80.6	ug/L	625	Standard
	Sc	45	29670.7	2.3				ug/L	29647	Standard
	Ti	47	66.7	16.0	**0.0643**	0.036	55.5	ug/L	57	Standard
	V	51	1072.6	10.6	**-0.0119**	0.017	142.0	ug/L	1142	Standard
	Cr	52	6126.6	0.6	**-0.0646**	0.004	6.2	ug/L	6628	Standard
	Cr	53	356.7	16.1	**-0.0336**	0.065	194.5	ug/L	430	Standard
	Mn	55	698.3	6.8	**-0.0044**	0.009	209.1	ug/L	603	Standard
	Co	59	364.0	15.3	**0.0175**	0.009	54.1	ug/L	237	Standard
	Ni	60	154.7	17.5	**0.0055**	0.015	280.7	ug/L	141	Standard
	Cu	65	145.3	17.7	**0.0141**	0.015	104.9	ug/L	109	Standard
	Zn	66	148.7	11.8	**-0.0929**	0.016	17.2	ug/L	159	Standard
>	**Ge**	72	457105.8	0.9				ug/L	474053	Standard
	As	75	54.4	52.5	**0.0762**	0.027	35.8	ug/L	-34	Standard
	Se	82	25.8	22.3	**0.0738**	0.056	76.3	ug/L	14	Standard
	Se-1	77	51.3	21.0	**-0.0508**	0.151	296.8	ug/L	55	Standard
>	**Ga**	71	53.3	14.3				mg/L	50	Standard
	Rb	85	23.3	65.5				ug/L	20	Standard
	Y	89	386808.9	0.9				ug/L	376602	Standard
>	**Rh**	103	15.0	88.2				ug/L	17	Standard
	Mo	98	421.2	15.5	**0.1736**	0.026	15.2	ug/L	8	Standard
	Ag	107	183.0	26.0	**0.0185**	0.008	41.8	ug/L	81	Standard
	Cd	111	25.9	54.3	**0.0101**	0.007	70.6	mg/L	3	Standard
	Cd	114	76.1	40.9	**0.0121**	0.006	52.7	ug/L	7	Standard
>	**In**	115	521804.6	1.0				ug/L	524722	Standard
	Sn	118	1013.4	16.6	**0.0999**	0.033	32.7	ug/L	715	Standard
	Sb	123	1969.5	19.3	**0.4392**	0.092	20.9	ug/L	201	Standard
	Ba	135	122.3	18.3	**0.0101**	0.012	117.5	ug/L	108	Standard
	Ce	140	26.7	10.8				ug/L	30	Standard
>	**Tb**	159	767907.3	1.3				ug/L	792236	Standard
	Ho	165	6.7	173.2				ug/L	7	Standard
	Tl	203	152.0	42.0	**0.0183**	0.009	47.5	ug/L	9	Standard
	Tl	205	141.7	44.8	**0.0150**	0.010	67.4	ug/L	0	Standard
	Pb	206	285.3	8.6	**0.0085**	0.005	61.9	ug/L	216	Standard
	Pb	207	228.0	15.9	**0.0031**	0.009	284.7	ug/L	180	Standard
	Pb	208	1006.0	13.7	**0.0040**	0.008	208.4	ug/L	717	Standard
	U	238	107.3	30.4	**0.0105**	0.005	51.5	ug/L	4	Standard
>	**Bi**	209	438481.4	0.6				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	33.3	31.2	**-0.0002**	0.013	6870.4	mg/L	20	Standard
K	39	25.0	20.0	**-0.0379**	0.034	91.0	mg/L	22	Standard
Ca	43	46.7	37.6	**-2.2322**	4.367	195.6	mg/L	47	Standard
Fe	54	197.5	14.9	**0.0458**	0.026	57.7	mg/L	151	Standard
Fe	57	191.7	16.8	**-0.0529**	0.109	205.7	mg/L	195	Standard
Sc-1	45	29670.7	2.3				mg/L	29647	Standard
Cl	35	161750.4	2.1				ug/L	154152	Standard
Kr	83	2.7	21.7				ug/L	3	Standard
Br	81	1533.4	11.2				ug/L	1607	Standard
P	31	25499.8	1.3				ug/L	22752	Standard
S	34	5937.8	4.1				ug/L	5049	Standard
Sr	88	66.7	35.4				ug/L	87	Standard
C	12	33.3	75.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.0	187.0				mg/L	10	Standard
Ho-1	165	6.7	173.2				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	1050.0	3.1				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.425	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.444
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.251
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Na	23	
QC Std 2	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Thursday, June 16, 2016 15:52:39
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	47293.7	2.4				ug/L	51024	Standard
	Be	9	145.0	20.7	**0.1655**	0.042	25.4	ug/L	7	Standard
	Al	27	1435.1	31.2	**0.0012**	0.004	314.1	ug/L	625	Standard
	Sc	45	28264.7	3.0				ug/L	29647	Standard
	Ti	47	62.3	15.2	**0.0569**	0.033	58.3	ug/L	57	Standard
	V	51	3460.4	3.6	**0.3540**	0.018	5.2	ug/L	1142	Standard
	Cr	52	11315.9	0.6	**0.7230**	0.033	4.5	ug/L	6628	Standard
	Cr	53	1030.0	4.2	**0.7573**	0.039	5.1	ug/L	430	Standard
	Mn	55	3199.7	2.3	**0.4520**	0.007	1.5	ug/L	603	Standard
	Co	59	2520.2	3.3	**0.3798**	0.019	5.0	ug/L	237	Standard
	Ni	60	2902.6	0.9	**1.5376**	0.034	2.2	ug/L	141	Standard
	Cu	65	1498.7	1.3	**0.7897**	0.019	2.5	ug/L	109	Standard
	Zn	66	7175.7	0.5	**6.7167**	0.069	1.0	ug/L	159	Standard
>	**Ge**	72	441612.7	1.4				ug/L	474053	Standard
	As	75	399.1	9.4	**0.4120**	0.037	8.9	ug/L	-34	Standard
	Se	82	50.3	13.1	**0.3188**	0.059	18.5	ug/L	14	Standard
	Se-1	77	79.7	18.1	**0.3705**	0.214	57.7	ug/L	55	Standard
>	**Ga**	71	46.7	22.3				mg/L	50	Standard
	Rb	85	16.7	96.4				ug/L	20	Standard
	Y	89	357595.4	2.3				ug/L	376602	Standard
>	**Rh**	103	11.7	49.5				ug/L	17	Standard
	Mo	98	140.4	6.4	**0.0562**	0.004	6.6	ug/L	8	Standard
	Ag	107	2290.2	1.1	**0.3863**	0.009	2.4	ug/L	81	Standard
	Cd	111	448.4	2.4	**0.2366**	0.001	0.5	mg/L	3	Standard
	Cd	114	1122.4	5.7	**0.2391**	0.015	6.2	ug/L	7	Standard
>	**In**	115	505402.5	2.0				ug/L	524722	Standard
	Sn	118	471.7	16.6	**0.0014**	0.014	1036.4	ug/L	715	Standard
	Sb	123	1900.7	8.3	**0.4366**	0.030	6.9	ug/L	201	Standard
	Ba	135	1270.4	2.8	**0.6703**	0.033	4.9	ug/L	108	Standard
	Ce	140	16.7	62.4				ug/L	30	Standard
>	**Tb**	159	761635.7	0.6				ug/L	792236	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	619.3	5.8	**0.0818**	0.004	5.4	ug/L	9	Standard
	Tl	205	548.3	4.7	**0.0800**	0.003	4.2	ug/L	0	Standard
	Pb	206	1103.4	2.4	**0.1922**	0.004	2.3	ug/L	216	Standard
	Pb	207	900.7	2.9	**0.1691**	0.006	3.6	ug/L	180	Standard
	Pb	208	3946.5	2.5	**0.1828**	0.006	3.5	ug/L	717	Standard
	U	238	2295.5	1.9	**0.3769**	0.006	1.5	ug/L	4	Standard
>	**Bi**	209	442529.2	1.0				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	23.3	12.4	**-0.0120**	0.004	34.9	mg/L	20	Standard
K	39	20.0	25.0	**-0.0675**	0.043	63.8	mg/L	22	Standard
Ca	43	46.7	52.9	**-1.7510**	6.062	346.2	mg/L	47	Standard
Fe	54	119.0	25.4	**-0.0137**	0.024	175.0	mg/L	151	Standard
Fe	57	175.0	35.1	**-0.0751**	0.210	280.1	mg/L	195	Standard
> **Sc-1**	45	28264.7	3.0				mg/L	29647	Standard
Cl	35	154177.8	0.4				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	1336.7	4.9				ug/L	1607	Standard
P	31	17880.5	2.1				ug/L	22752	Standard
S	34	5776.1	4.1				ug/L	5049	Standard
Sr	88	76.7	43.4				ug/L	87	Standard
C	12	16.7	69.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.4	191.0				mg/L	10	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	3	Standard
I	127	743.4	2.7				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	82.727		
	Al	27	0.117		
	Sc	45			
	Ti	47			
	V	51	88.501		
	Cr	52	90.378		
	Cr	53			
	Mn	55	90.403		
	Co	59	94.938		
	Ni	60	96.097		
	Cu	65	98.718		
	Zn	66	107.467		
>	Ge	72		93.157	
	As	75	103.009		
	Se	82	79.699		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	96.587		
Cd	111	98.585		
Cd	114			
> In	115			96.318
Sn	118			
Sb	123	109.162		
Ba	135	89.380		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	102.188		
Tl	205			
Pb	206			
Pb	207			
Pb	208	91.390		
U	238	94.214		
> Bi	209			96.130
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Thursday, June 16, 2016 15:57:46
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	49537.5	0.6				ug/L	51024	Standard
	Be	9	39588.3	1.2	**48.4820**	0.764	1.6	ug/L	7	Standard
	Al	27	6811607.5	1.0	**49.2765**	0.287	0.6	ug/L	625	Standard
	Sc	45	29944.6	0.9				ug/L	29647	Standard
	Ti	47	30600.5	1.8	**105.9033**	0.546	0.5	ug/L	57	Standard
	V	51	333819.4	1.0	**48.6741**	0.557	1.1	ug/L	1142	Standard
	Cr	52	362624.9	0.8	**50.3521**	0.653	1.3	ug/L	6628	Standard
	Cr	53	44669.1	0.6	**49.5578**	1.018	2.1	ug/L	430	Standard
	Mn	55	295010.7	1.9	**51.5679**	0.147	0.3	ug/L	603	Standard
	Co	59	304256.6	2.3	**49.2031**	0.778	1.6	ug/L	237	Standard
	Ni	60	92980.9	2.3	**50.0643**	0.335	0.7	ug/L	141	Standard
	Cu	65	90826.1	1.2	**50.2022**	0.411	0.8	ug/L	109	Standard
	Zn	66	53553.2	3.1	**50.0191**	0.561	1.1	ug/L	159	Standard
>	Ge	72	455630.4	2.0				ug/L	474053	Standard
	As	75	53060.3	1.3	**49.8858**	0.388	0.8	ug/L	-34	Standard
	Se	82	5361.3	1.9	**50.2739**	0.522	1.0	ug/L	14	Standard
	Se-1	77	3719.8	1.8	**49.6698**	1.476	3.0	ug/L	55	Standard
>	Ga	71	106.7	19.5				mg/L	50	Standard
	Rb	85	516.7	9.1				ug/L	20	Standard
	Y	89	378420.4	2.1				ug/L	376602	Standard
>	Rh	103	21.7	74.2				ug/L	17	Standard
	Mo	98	235943.4	1.8	**99.9874**	3.042	3.0	ug/L	8	Standard
	Ag	107	287193.3	1.4	**48.1797**	1.433	3.0	ug/L	81	Standard
	Cd	111	93247.5	0.8	**48.0828**	0.885	1.8	mg/L	3	Standard
	Cd	114	229861.4	1.2	**47.9476**	1.147	2.4	ug/L	7	Standard
>	In	115	524337.5	1.6				ug/L	524722	Standard
	Sn	118	280407.9	1.2	**52.0144**	1.090	2.1	ug/L	715	Standard
	Sb	123	204641.1	2.4	**46.8900**	1.860	4.0	ug/L	201	Standard
	Ba	135	86406.7	0.9	**47.6572**	1.015	2.1	ug/L	108	Standard
	Ce	140	135.0	7.4				ug/L	30	Standard
>	Tb	159	786784.4	0.3				ug/L	792236	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	354843.5	0.6	**47.8254**	0.499	1.0	ug/L	9	Standard
	Tl	205	306407.3	0.5	**48.5592**	0.423	0.9	ug/L	0	Standard
	Pb	206	218264.7	1.4	**48.6127**	0.167	0.3	ug/L	216	Standard
	Pb	207	191093.3	1.2	**46.7522**	0.112	0.2	ug/L	180	Standard
	Pb	208	804010.8	0.5	**48.4716**	0.281	0.6	ug/L	717	Standard
	U	238	288392.8	0.3	**47.7978**	0.457	1.0	ug/L	4	Standard
>	Bi	209	447132.2	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3715.5	2.1	**4.9417**	0.061	1.2	mg/L	20	Standard
K	39	701.7	9.7	**5.0672**	0.500	9.9	mg/L	22	Standard
Ca	43	61.7	24.8	**1.0552**	3.413	323.4	mg/L	47	Standard
Fe	54	6212.5	1.3	**4.8866**	0.105	2.2	mg/L	151	Standard
Fe	57	1778.4	8.4	**4.8076**	0.510	10.6	mg/L	195	Standard
> **Sc-1**	45	29944.6	0.9				mg/L	29647	Standard
Cl	35	161455.3	2.4				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	1416.7	8.8				ug/L	1607	Standard
P	31	25623.3	0.9				ug/L	22752	Standard
S	34	5979.5	3.9				ug/L	5049	Standard
Sr	88	73.3	41.7				ug/L	87	Standard
C	12	33.3	69.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.0	37.7				mg/L	10	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	1055.0	6.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	96.964		
Al	27	98.553		
Sc	45			
Ti	47	105.903		
V	51	97.348		
Cr	52	100.704		
Cr	53			
Mn	55	103.136		
Co	59	98.406		
Ni	60	100.129		
Cu	65	100.404		
Zn	66	100.038		
> Ge	72		96.114	
As	75	99.772		
Se	82	100.548		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	99.987		
Ag	107	96.359		
Cd	111	96.166		
Cd	114			
> In	115			99.927
Sn	118	104.029		
Sb	123	93.780		
Ba	135	95.314		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	95.651		
Tl	205			
Pb	206	97.225		
Pb	207	93.504		
Pb	208	96.943		
U	238	95.596		
> Bi	209			97.130
Na	23	209.044		
Mg	24	98.834		
K	39	101.344		
Ca	43	21.103		
Fe	54	97.732		
Fe	57	96.152		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Thursday, June 16, 2016 16:03:55
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48694.8	0.2				ug/L	51024	Standard
	Be	9	11.7	24.7	**-0.0065**	0.004	55.1	ug/L	7	Standard
	Al	27	941.7	10.9	**-0.0028**	0.001	26.9	ug/L	625	Standard
	Sc	45	29877.8	0.9				ug/L	29647	Standard
	Ti	47	54.3	5.3	**0.0224**	0.010	44.8	ug/L	57	Standard
	V	51	957.2	10.4	**-0.0283**	0.014	48.1	ug/L	1142	Standard
	Cr	52	6138.9	3.0	**-0.0600**	0.025	41.4	ug/L	6628	Standard
	Cr	53	340.0	7.8	**-0.0510**	0.030	59.6	ug/L	430	Standard
	Mn	55	634.3	2.6	**-0.0152**	0.003	19.9	ug/L	603	Standard
	Co	59	238.0	8.6	**-0.0027**	0.004	132.9	ug/L	237	Standard
	Ni	60	130.0	7.3	**-0.0077**	0.005	63.8	ug/L	141	Standard
	Cu	65	103.7	15.4	**-0.0087**	0.009	107.0	ug/L	109	Standard
	Zn	66	127.0	5.2	**-0.1127**	0.007	6.0	ug/L	159	Standard
>	**Ge**	72	455597.3	0.8				ug/L	474053	Standard
	As	75	-43.2	74.2	**-0.0157**	0.030	193.2	ug/L	-34	Standard
	Se	82	18.2	18.4	**0.0019**	0.030	1563.3	ug/L	14	Standard
	Se-1	77	53.3	8.5	**-0.0219**	0.067	305.9	ug/L	55	Standard
>	**Ga**	71	65.0	20.4				mg/L	50	Standard
	Rb	85	26.7	39.0				ug/L	20	Standard
	Y	89	385670.5	2.5				ug/L	376602	Standard
>	**Rh**	103	21.7	48.0				ug/L	17	Standard
	Mo	98	109.5	11.0	**0.0404**	0.004	10.6	ug/L	8	Standard
	Ag	107	89.3	19.3	**0.0026**	0.003	126.0	ug/L	81	Standard
	Cd	111	7.4	34.0	**0.0006**	0.001	222.3	mg/L	3	Standard
	Cd	114	19.0	7.1	**0.0001**	0.000	161.5	ug/L	7	Standard
>	**In**	115	528269.6	2.4				ug/L	524722	Standard
	Sn	118	783.4	18.1	**0.0547**	0.023	42.9	ug/L	715	Standard
	Sb	123	1248.5	31.3	**0.2679**	0.083	31.1	ug/L	201	Standard
	Ba	135	101.3	11.9	**-0.0020**	0.008	395.1	ug/L	108	Standard
	Ce	140	18.3	56.8				ug/L	30	Standard
>	**Tb**	159	789316.7	0.7				ug/L	792236	Standard
	Ho	165	3.3	173.2				ug/L	7	Standard
	Tl	203	34.3	9.4	**0.0020**	0.000	19.3	ug/L	9	Standard
	Tl	205	23.3	61.9	**-0.0042**	0.002	53.7	ug/L	0	Standard
	Pb	206	215.0	9.3	**-0.0087**	0.004	50.2	ug/L	216	Standard
	Pb	207	177.7	3.1	**-0.0106**	0.001	10.4	ug/L	180	Standard
	Pb	208	745.3	3.0	**-0.0132**	0.001	9.1	ug/L	717	Standard
	U	238	19.7	20.5	**-0.0043**	0.001	15.7	ug/L	4	Standard
>	**Bi**	209	449575.7	0.9				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	26.7	60.3	**-0.0094**	0.021	228.0	mg/L	20	Standard
K	39	16.7	45.8	**-0.1015**	0.059	58.3	mg/L	22	Standard
Ca	43	35.0	0.0	**-5.0734**	0.077	1.5	mg/L	47	Standard
Fe	54	139.4	7.2	**-0.0024**	0.009	374.1	mg/L	151	Standard
Fe	57	198.3	8.1	**-0.0375**	0.053	141.8	mg/L	195	Standard
Sc-1	45	29877.8	0.9				mg/L	29647	Standard
Cl	35	160882.5	1.9				ug/L	154152	Standard
Kr	83	1.0	0.0				ug/L	3	Standard
Br	81	1510.1	12.6				ug/L	1607	Standard
P	31	25673.4	1.5				ug/L	22752	Standard
S	34	5894.5	3.2				ug/L	5049	Standard
Sr	88	76.7	32.2				ug/L	87	Standard
C	12	23.3	49.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.4	107.5				mg/L	10	Standard
Ho-1	165	3.3	173.2				mg/L	7	Standard
Er	166	13.3	173.2				mg/L	3	Standard
I	127	965.0	3.2				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.107	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.676	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.661	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Na	23	
QC Std 2	K	39	

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QC Std 2	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Thursday, June 16, 2016 16:07:40
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55474.7	2.1				ug/L	51024	Standard
	Be	9	18.3	15.7	**-0.0010**	0.003	338.2	ug/L	7	Standard
	Al	27	6905396.8	2.8	**44.6071**	0.703	1.6	ug/L	625	Standard
	Sc	45	29577.2	0.8				ug/L	29647	Standard
	Ti	47	31418.2	1.3	**107.0966**	1.877	1.8	ug/L	57	Standard
	V	51	1222.8	22.4	**0.0081**	0.041	507.7	ug/L	1142	Standard
	Cr	52	7310.1	0.7	**0.0900**	0.007	8.1	ug/L	6628	Standard
	Cr	53	3288.7	9.3	**3.1897**	0.292	9.2	ug/L	430	Standard
	Mn	55	1091.7	3.2	**0.0620**	0.006	9.4	ug/L	603	Standard
	Co	59	399.3	5.7	**0.0224**	0.003	12.6	ug/L	237	Standard
	Ni	60	759.0	2.6	**0.3255**	0.016	4.9	ug/L	141	Standard
	Cu	65	628.7	2.7	**0.2766**	0.010	3.8	ug/L	109	Standard
	Zn	66	1729.4	2.6	**1.3663**	0.021	1.6	ug/L	159	Standard
>	**Ge**	72	462633.9	1.3				ug/L	474053	Standard
	As	75	-39.5	207.4	**-0.0113**	0.076	672.8	ug/L	-34	Standard
	Se	82	21.1	40.5	**0.0261**	0.078	299.6	ug/L	14	Standard
	Se-1	77	277.0	14.2	**2.9476**	0.479	16.2	ug/L	55	Standard
>	**Ga**	71	155.0	16.8				mg/L	50	Standard
	Rb	85	810.0	10.2				ug/L	20	Standard
	Y	89	382532.7	1.4				ug/L	376602	Standard
>	**Rh**	103	13.3	57.3				ug/L	17	Standard
	Mo	98	234826.0	1.7	**100.4857**	2.149	2.1	ug/L	8	Standard
	Ag	107	169.0	8.6	**0.0163**	0.002	15.1	ug/L	81	Standard
	Cd	111	-108.8	6.6	**-0.0599**	0.004	5.9	mg/L	3	Standard
	Cd	114	586.7	17.3	**0.1197**	0.021	17.4	ug/L	7	Standard
>	**In**	115	519149.4	0.5				ug/L	524722	Standard
	Sn	118	681.7	7.9	**0.0385**	0.011	27.7	ug/L	715	Standard
	Sb	123	406.1	34.2	**0.0793**	0.032	41.0	ug/L	201	Standard
	Ba	135	224.7	3.6	**0.0676**	0.005	7.3	ug/L	108	Standard
	Ce	140	145.0	18.2				ug/L	30	Standard
>	**Tb**	159	796726.8	0.9				ug/L	792236	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	851.7	23.5	**0.1131**	0.029	25.4	ug/L	9	Standard
	Tl	205	813.4	19.5	**0.1220**	0.027	21.9	ug/L	0	Standard
	Pb	206	671.0	13.8	**0.0943**	0.023	24.1	ug/L	216	Standard
	Pb	207	610.0	7.6	**0.0965**	0.013	13.8	ug/L	180	Standard
	Pb	208	2481.7	5.9	**0.0928**	0.011	11.7	ug/L	717	Standard
	U	238	11.0	24.1	**-0.0057**	0.000	8.1	ug/L	4	Standard
>	**Bi**	209	444717.2	1.3				ug/L	460343	Standard

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Na	23	1.7	173.2	**4.9320**	9.561	193.9	mg/L	0	Standard
Mg	24	9214.5	2.3	**12.4761**	0.188	1.5	mg/L	20	Standard
K	39	665.0	6.6	**4.8546**	0.351	7.2	mg/L	22	Standard
Ca	43	148.3	13.6	**21.5299**	4.516	21.0	mg/L	47	Standard
Fe	54	14427.7	3.0	**11.6428**	0.306	2.6	mg/L	151	Standard
Fe	57	3798.8	1.5	**11.1428**	0.194	1.7	mg/L	195	Standard
> **Sc-1**	45	29577.2	0.8				mg/L	29647	Standard
Cl	35	176475.5	2.2				ug/L	154152	Standard
Kr	83	2.0	86.6				ug/L	3	Standard
Br	81	1553.4	2.3				ug/L	1607	Standard
P	31	23887.2	3.9				ug/L	22752	Standard
S	34	5340.9	1.7				ug/L	5049	Standard
Sr	88	58.3	9.9				ug/L	87	Standard
C	12	96.7	58.8				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	30.0	0.0				mg/L	0	Standard
Dy	164	2.4	262.3				mg/L	10	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	3	Standard
I	127	1410.1	5.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27	0.892		
Sc	45			
Ti	47	107.097		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.591	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	100.486		
Ag	107			
Cd	111			
Cd	114			
In	115			98.938
Sn	118			
Sb	123			
Ba	135			
Ce	140			
Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
Bi	209			96.606
Na	23	39.456		
Mg	24	249.521		
K	39	97.091		
Ca	43	143.533		
Fe	54	93.142		
Fe	57	89.142		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Tl	203	
QC Std 4	Na	23	

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QC Std 4	Mg	24
QC Std 4	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Thursday, June 16, 2016 16:22:01
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	58477.6	0.2				ug/L	51024	Standard
	Be	9	88548.0	0.3	**91.8774**	0.469	0.5	ug/L	7	Standard
	Al	27	7648485.8	0.8	**46.8715**	0.352	0.8	ug/L	625	Standard
	Sc	45	29133.0	2.0				ug/L	29647	Standard
	Ti	47	33470.3	2.4	**118.1657**	2.723	2.3	ug/L	57	Standard
	V	51	673843.7	0.9	**100.3884**	1.672	1.7	ug/L	1142	Standard
	Cr	52	698679.1	1.4	**99.8305**	1.037	1.0	ug/L	6628	Standard
	Cr	53	90290.0	2.1	**102.5975**	1.386	1.4	ug/L	430	Standard
	Mn	55	596300.3	1.2	**106.4457**	0.466	0.4	ug/L	603	Standard
	Co	59	629938.1	1.8	**103.9511**	1.908	1.8	ug/L	237	Standard
	Ni	60	180922.1	0.3	**99.4431**	0.584	0.6	ug/L	141	Standard
	Cu	65	177067.3	0.6	**99.8815**	0.324	0.3	ug/L	109	Standard
	Zn	66	106852.8	0.0	**102.0554**	0.902	0.9	ug/L	159	Standard
>	Ge	72	446706.3	0.8				ug/L	474053	Standard
	As	75	106615.2	0.2	**102.2086**	1.049	1.0	ug/L	-34	Standard
	Se	82	10642.5	1.1	**101.9658**	1.771	1.7	ug/L	14	Standard
	Se-1	77	7567.2	2.1	**103.8353**	2.380	2.3	ug/L	55	Standard
>	Ga	71	153.3	10.5				mg/L	50	Standard
	Rb	85	808.4	8.9				ug/L	20	Standard
	Y	89	396492.9	1.1				ug/L	376602	Standard
>	Rh	103	48.3	15.8				ug/L	17	Standard
	Mo	98	245151.1	0.7	**102.3761**	1.234	1.2	ug/L	8	Standard
	Ag	107	517251.9	0.7	**85.5144**	0.680	0.8	ug/L	81	Standard
	Cd	111	189019.4	1.2	**96.0637**	1.742	1.8	mg/L	3	Standard
	Cd	114	457330.5	1.6	**94.0204**	2.156	2.3	ug/L	7	Standard
>	In	115	531964.2	0.7				ug/L	524722	Standard
	Sn	118	896.7	15.7	**0.0749**	0.027	35.8	ug/L	715	Standard
	Sb	123	419181.5	1.0	**94.6488**	1.016	1.1	ug/L	201	Standard
	Ba	135	174129.5	0.2	**94.7022**	0.497	0.5	ug/L	108	Standard
	Ce	140	123.3	45.2				ug/L	30	Standard
>	Tb	159	792285.1	1.1				ug/L	792236	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	718957.1	0.3	**98.0117**	1.579	1.6	ug/L	9	Standard
	Tl	205	627537.4	1.6	**100.6124**	3.065	3.0	ug/L	0	Standard
	Pb	206	453228.9	0.3	**102.1662**	1.141	1.1	ug/L	216	Standard
	Pb	207	393799.0	0.5	**97.5071**	0.924	0.9	ug/L	180	Standard
	Pb	208	1620914.8	1.9	**98.9101**	2.956	3.0	ug/L	717	Standard
	U	238	599569.3	0.5	**100.5173**	1.718	1.7	ug/L	4	Standard
>	Bi	209	442109.9	1.4				ug/L	460343	Standard

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Na	23	1.7	173.2	**4.7867**	9.813	205.0	mg/L	0	Standard
Mg	24	10183.4	1.3	**14.0071**	0.241	1.7	mg/L	20	Standard
K	39	573.3	13.1	**4.2150**	0.510	12.1	mg/L	22	Standard
Ca	43	138.3	13.7	**19.6561**	3.893	19.8	mg/L	47	Standard
Fe	54	15280.5	1.4	**12.5337**	0.416	3.3	mg/L	151	Standard
Fe	57	4085.6	2.5	**12.2326**	0.552	4.5	mg/L	195	Standard
> **Sc-1**	45	29133.0	2.0				mg/L	29647	Standard
Cl	35	179327.8	1.3				ug/L	154152	Standard
Kr	83	1.3	114.6				ug/L	3	Standard
Br	81	1623.4	4.9				ug/L	1607	Standard
P	31	23591.7	0.4				ug/L	22752	Standard
S	34	5254.2	2.3				ug/L	5049	Standard
Sr	88	70.0	42.9				ug/L	87	Standard
C	12	133.3	4.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	15.9	94.6				mg/L	10	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	3	Standard
I	127	930.0	5.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	91.877		
Al	27	0.937		
Sc	45			
Ti	47	118.166		
V	51	100.388		
Cr	52	99.830		
Cr	53			
Mn	55	106.446		
Co	59	103.951		
Ni	60	99.443		
Cu	65	99.882		
Zn	66	102.055		
> Ge	72		94.231	
As	75	102.209		
Se	82	101.966		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	102.376		
Ag	107	85.514		
Cd	111	96.064		
Cd	114			
In	115		101.380	
Sn	118			
Sb	123	94.649		
Ba	135	94.702		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.012		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.910		
U	238	100.517		
Bi	209		96.039	
Na	23	38.294		
Mg	24	280.142		
K	39	84.299		
Ca	43	131.041		
Fe	54	100.269		
Fe	57	97.861		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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QC Std 5	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 16:25:16
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55603.6	4.4				ug/L	51024	Standard
	Be	9	43453.9	2.4	**47.4947**	3.006	6.3	ug/L	7	Standard
	Al	27	7054078.0	1.0	**45.5100**	1.586	3.5	ug/L	625	Standard
	Sc	45	29373.5	1.7				ug/L	29647	Standard
	Ti	47	28713.9	1.4	**99.4855**	3.895	3.9	ug/L	57	Standard
	V	51	340364.3	1.3	**49.6680**	0.932	1.9	ug/L	1142	Standard
	Cr	52	357828.9	0.7	**49.7225**	1.608	3.2	ug/L	6628	Standard
	Cr	53	43806.6	0.8	**48.6374**	1.665	3.4	ug/L	430	Standard
	Mn	55	293651.9	1.1	**51.3908**	1.852	3.6	ug/L	603	Standard
	Co	59	311248.9	1.6	**50.3908**	1.771	3.5	ug/L	237	Standard
	Ni	60	92893.9	1.1	**50.0647**	1.079	2.2	ug/L	141	Standard
	Cu	65	90724.2	1.5	**50.1802**	0.633	1.3	ug/L	109	Standard
	Zn	66	53344.1	1.6	**49.8682**	0.504	1.0	ug/L	159	Standard
>	**Ge**	72	455364.8	2.6				ug/L	474053	Standard
	As	75	52938.3	1.1	**49.8092**	0.820	1.6	ug/L	-34	Standard
	Se	82	5329.6	1.7	**50.0105**	0.490	1.0	ug/L	14	Standard
	Se-1	77	3723.8	2.6	**49.7421**	0.784	1.6	ug/L	55	Standard
>	**Ga**	71	95.0	22.9				mg/L	50	Standard
	Rb	85	726.7	4.9				ug/L	20	Standard
	Y	89	384472.0	0.6				ug/L	376602	Standard
>	**Rh**	103	16.7	62.4				ug/L	17	Standard
	Mo	98	232118.8	0.3	**97.2358**	1.022	1.1	ug/L	8	Standard
	Ag	107	290638.3	1.3	**48.1940**	0.630	1.3	ug/L	81	Standard
	Cd	111	94793.4	0.9	**48.3272**	1.004	2.1	mg/L	3	Standard
	Cd	114	234828.4	1.3	**48.4291**	1.209	2.5	ug/L	7	Standard
>	**In**	115	530331.4	1.3				ug/L	524722	Standard
	Sn	118	263139.7	2.6	**48.2596**	1.845	3.8	ug/L	715	Standard
	Sb	123	217327.7	1.3	**49.2164**	0.579	1.2	ug/L	201	Standard
	Ba	135	88067.5	0.7	**48.0226**	0.952	2.0	ug/L	108	Standard
	Ce	140	81.7	18.7				ug/L	30	Standard
>	**Tb**	159	794129.5	1.0				ug/L	792236	Standard
	Ho	165	6.7	86.6				ug/L	7	Standard
	Tl	203	362843.1	1.0	**49.0795**	1.497	3.1	ug/L	9	Standard
	Tl	205	310212.2	1.3	**49.3427**	1.712	3.5	ug/L	0	Standard
	Pb	206	222989.0	0.9	**49.8435**	1.206	2.4	ug/L	216	Standard
	Pb	207	201083.3	0.8	**49.3722**	1.064	2.2	ug/L	180	Standard
	Pb	208	809454.4	0.8	**48.9759**	1.413	2.9	ug/L	717	Standard
	U	238	299066.7	0.4	**49.7396**	1.132	2.3	ug/L	4	Standard
>	**Bi**	209	445696.2	2.2				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3647.1	3.0	**4.9460**	0.155	3.1	mg/L	20	Standard
K	39	621.7	4.7	**4.5576**	0.277	6.1	mg/L	22	Standard
Ca	43	53.3	19.5	**-0.5868**	2.635	449.0	mg/L	47	Standard
Fe	54	5858.9	4.9	**4.6943**	0.261	5.6	mg/L	151	Standard
Fe	57	1763.4	1.3	**4.8648**	0.124	2.5	mg/L	195	Standard
> **Sc-1**	45	29373.5	1.7				mg/L	29647	Standard
Cl	35	157950.4	0.4				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	1363.4	1.1				ug/L	1607	Standard
P	31	23531.6	2.3				ug/L	22752	Standard
S	34	5542.7	3.1				ug/L	5049	Standard
Sr	88	65.0	38.5				ug/L	87	Standard
C	12	56.7	71.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.4	50.3				mg/L	10	Standard
Ho-1	165	6.7	86.6				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	3	Standard
I	127	1150.0	8.7				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	94.989		
	Al	27	91.020		
	Sc	45			
	Ti	47	99.485		
	V	51	99.336		
	Cr	52	99.445		
	Cr	53			
	Mn	55	102.782		
	Co	59	100.782		
	Ni	60	100.129		
	Cu	65	100.360		
	Zn	66	99.736		
>	Ge	72		96.058	
	As	75	99.618		
	Se	82	100.021		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	97.236		
Ag	107	96.388		
Cd	111	96.654		
Cd	114			
> In	115			101.069
Sn	118	96.519		
Sb	123	98.433		
Ba	135	96.045		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.159		
Tl	205			
Pb	206			
Pb	207			
Pb	208	97.952		
U	238	99.479		
> Bi	209			96.818
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 16:38:50
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52378.7	2.1				ug/L	51024	Standard
	Be	9	15.0	120.2	**-0.0040**	0.020	512.1	ug/L	7	Standard
	Al	27	540.0	3.7	**-0.0061**	0.000	3.2	ug/L	625	Standard
	Sc	45	28712.2	1.8				ug/L	29647	Standard
	Ti	47	44.7	11.0	**-0.0123**	0.017	140.3	ug/L	57	Standard
	V	51	1065.6	4.8	**-0.0136**	0.008	61.5	ug/L	1142	Standard
	Cr	52	6160.3	1.0	**-0.0638**	0.013	21.0	ug/L	6628	Standard
	Cr	53	386.7	19.4	**-0.0026**	0.081	3156.3	ug/L	430	Standard
	Mn	55	621.0	4.1	**-0.0185**	0.004	21.4	ug/L	603	Standard
	Co	59	231.0	6.0	**-0.0042**	0.002	52.0	ug/L	237	Standard
	Ni	60	109.7	8.8	**-0.0191**	0.005	25.2	ug/L	141	Standard
	Cu	65	97.3	15.8	**-0.0127**	0.008	65.1	ug/L	109	Standard
	Zn	66	133.3	9.4	**-0.1078**	0.012	11.3	ug/L	159	Standard
>	**Ge**	72	459252.1	0.6				ug/L	474053	Standard
	As	75	-47.4	46.6	**-0.0192**	0.021	107.9	ug/L	-34	Standard
	Se	82	15.8	37.3	**-0.0216**	0.055	252.4	ug/L	14	Standard
	Se-1	77	46.7	11.0	**-0.1173**	0.072	61.6	ug/L	55	Standard
>	**Ga**	71	35.0	14.3				mg/L	50	Standard
	Rb	85	20.0	43.3				ug/L	20	Standard
	Y	89	388770.9	2.1				ug/L	376602	Standard
>	**Rh**	103	16.7	62.4				ug/L	17	Standard
	Mo	98	68.1	14.3	**0.0237**	0.004	18.9	ug/L	8	Standard
	Ag	107	85.7	13.7	**0.0022**	0.002	97.9	ug/L	81	Standard
	Cd	111	2.9	60.6	**-0.0017**	0.001	51.5	mg/L	3	Standard
	Cd	114	9.5	115.0	**-0.0018**	0.002	124.6	ug/L	7	Standard
>	**In**	115	518516.6	1.3				ug/L	524722	Standard
	Sn	118	641.7	18.0	**0.0313**	0.023	74.8	ug/L	715	Standard
	Sb	123	920.4	35.2	**0.1991**	0.078	39.0	ug/L	201	Standard
	Ba	135	100.7	10.0	**-0.0014**	0.006	433.1	ug/L	108	Standard
	Ce	140	18.3	78.7				ug/L	30	Standard
>	**Tb**	159	769102.4	0.6				ug/L	792236	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	15.7	25.8	**-0.0004**	0.001	125.3	ug/L	9	Standard
	Tl	205	10.0	50.0	**-0.0062**	0.001	13.5	ug/L	0	Standard
	Pb	206	207.3	13.7	**-0.0092**	0.007	79.6	ug/L	216	Standard
	Pb	207	175.3	4.3	**-0.0101**	0.002	22.2	ug/L	180	Standard
	Pb	208	743.7	4.7	**-0.0122**	0.003	22.5	ug/L	717	Standard
	U	238	8.7	35.3	**-0.0061**	0.000	8.0	ug/L	4	Standard
>	**Bi**	209	439141.9	1.8				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	28.3	66.8	**-0.0053**	0.027	522.2	mg/L	20	Standard
K	39	10.0	86.6	**-0.1489**	0.068	45.9	mg/L	22	Standard
Ca	43	36.7	47.9	**-4.3876**	4.095	93.3	mg/L	47	Standard
Fe	54	152.8	18.0	**0.0136**	0.026	187.8	mg/L	151	Standard
Fe	57	166.7	14.2	**-0.1136**	0.080	70.6	mg/L	195	Standard
> **Sc-1**	45	28712.2	1.8				mg/L	29647	Standard
Cl	35	160111.2	2.5				ug/L	154152	Standard
Kr	83	2.3	89.2				ug/L	3	Standard
Br	81	1460.1	8.4				ug/L	1607	Standard
P	31	22964.1	2.3				ug/L	22752	Standard
S	34	5249.2	1.7				ug/L	5049	Standard
Sr	88	68.3	27.7				ug/L	87	Standard
C	12	40.0	66.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	13.0	113.4				mg/L	10	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	3	Standard
I	127	923.4	1.6				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.878	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.817
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.395
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW B7 WG572432-04
Sample Date/Time: Thursday, June 16, 2016 17:35:43
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50888.7	1.4				ug/L	51024	Standard
	Be	9	10.0	50.0	**-0.0092**	0.006	65.8	ug/L	7	Standard
	Al	27	7250.1	1.6	**0.0413**	0.001	3.2	ug/L	625	Standard
	Sc	45	27620.2	1.5				ug/L	29647	Standard
	Ti	47	62.3	15.4	**0.0529**	0.035	66.0	ug/L	57	Standard
	V	51	1096.4	11.0	**-0.0060**	0.018	297.3	ug/L	1142	Standard
	Cr	52	7148.7	0.7	**0.0949**	0.009	9.1	ug/L	6628	Standard
	Cr	53	635.0	13.1	**0.2873**	0.091	31.7	ug/L	430	Standard
	Mn	55	19861.3	0.9	**3.3957**	0.050	1.5	ug/L	603	Standard
	Co	59	181.7	9.8	**-0.0115**	0.003	26.7	ug/L	237	Standard
	Ni	60	180.7	8.3	**0.0208**	0.008	36.7	ug/L	141	Standard
	Cu	65	122.3	7.7	**0.0024**	0.006	234.7	ug/L	109	Standard
	Zn	66	1100.0	2.9	**0.8128**	0.032	3.9	ug/L	159	Standard
>	**Ge**	72	450229.5	0.6				ug/L	474053	Standard
	As	75	-42.0	42.9	**-0.0149**	0.017	113.9	ug/L	-34	Standard
	Se	82	9.3	47.0	**-0.0801**	0.042	52.5	ug/L	14	Standard
	Se-1	77	64.0	16.5	**0.1328**	0.147	110.5	ug/L	55	Standard
>	**Ga**	71	50.0	26.5				mg/L	50	Standard
	Rb	85	73.3	20.8				ug/L	20	Standard
	Y	89	383468.8	0.7				ug/L	376602	Standard
>	**Rh**	103	13.3	21.7				ug/L	17	Standard
	Mo	98	675.4	5.9	**0.2913**	0.019	6.7	ug/L	8	Standard
	Ag	107	79.3	11.9	**0.0015**	0.002	113.9	ug/L	81	Standard
	Cd	111	2.4	24.1	**-0.0019**	0.000	15.9	mg/L	3	Standard
	Cd	114	32.5	70.3	**0.0032**	0.005	153.9	ug/L	7	Standard
>	**In**	115	505606.7	0.8				ug/L	524722	Standard
	Sn	118	778.4	13.1	**0.0606**	0.021	34.0	ug/L	715	Standard
	Sb	123	423.2	31.6	**0.0859**	0.032	37.8	ug/L	201	Standard
	Ba	135	197.0	6.6	**0.0551**	0.008	14.5	ug/L	108	Standard
	Ce	140	71.7	20.1				ug/L	30	Standard
>	**Tb**	159	761176.8	0.6				ug/L	792236	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	45.0	11.1	**0.0037**	0.001	19.6	ug/L	9	Standard
	Tl	205	38.3	27.2	**-0.0016**	0.002	107.0	ug/L	0	Standard
	Pb	206	207.0	9.6	**-0.0086**	0.005	56.9	ug/L	216	Standard
	Pb	207	183.0	3.8	**-0.0075**	0.002	22.0	ug/L	180	Standard
	Pb	208	773.7	0.5	**-0.0097**	0.001	6.3	ug/L	717	Standard
	U	238	7.0	14.3	**-0.0064**	0.000	2.5	ug/L	4	Standard
>	**Bi**	209	432877.1	0.8				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	46.7	37.6	**0.0228**	0.026	113.0	mg/L	20	Standard
K	39	25.0	20.0	**-0.0231**	0.042	181.8	mg/L	22	Standard
Ca	43	38.3	19.9	**-3.5551**	2.049	57.6	mg/L	47	Standard
Fe	54	166.0	7.2	**0.0299**	0.009	28.8	mg/L	151	Standard
Fe	57	193.3	5.4	**-0.0042**	0.043	1021.8	mg/L	195	Standard
> **Sc-1**	45	27620.2	1.5				mg/L	29647	Standard
Cl	35	157510.0	2.0				ug/L	154152	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	1796.8	8.2				ug/L	1607	Standard
P	31	21511.9	1.4				ug/L	22752	Standard
S	34	4927.5	1.4				ug/L	5049	Standard
Sr	88	76.7	10.0				ug/L	87	Standard
C	12	53.3	47.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	18.7	50.9				mg/L	10	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	26.7	57.3				mg/L	3	Standard
I	127	1125.0	8.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.734	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.974	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.357
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.034
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW B7 WG572432-05
Sample Date/Time: Thursday, June 16, 2016 17:38:54
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51783.3	1.2				ug/L	51024	Standard
	Be	9	41423.2	1.3	**48.5300**	0.724	1.5	ug/L	7	Standard
	Al	27	8105.5	5.6	**0.0464**	0.004	7.6	ug/L	625	Standard
	Sc	45	29290.0	1.1				ug/L	29647	Standard
	Ti	47	66.0	28.8	**0.0608**	0.069	114.0	ug/L	57	Standard
	V	51	347988.7	1.1	**50.1052**	0.398	0.8	ug/L	1142	Standard
	Cr	52	363767.8	1.3	**49.8723**	1.265	2.5	ug/L	6628	Standard
	Cr	53	46272.2	1.3	**50.7068**	1.549	3.1	ug/L	430	Standard
	Mn	55	322059.4	1.1	**55.6120**	1.299	2.3	ug/L	603	Standard
	Co	59	318198.3	0.5	**50.8192**	0.688	1.4	ug/L	237	Standard
	Ni	60	95145.8	1.0	**50.6010**	1.153	2.3	ug/L	141	Standard
	Cu	65	93949.4	0.3	**51.2847**	1.031	2.0	ug/L	109	Standard
	Zn	66	55650.7	0.4	**51.3490**	0.838	1.6	ug/L	159	Standard
>	**Ge**	72	461424.2	1.8				ug/L	474053	Standard
	As	75	53752.8	0.6	**49.9059**	0.739	1.5	ug/L	-34	Standard
	Se	82	5332.6	1.0	**49.3792**	0.829	1.7	ug/L	14	Standard
	Se-1	77	3747.5	1.7	**49.4072**	1.506	3.0	ug/L	55	Standard
>	**Ga**	71	81.7	30.2				mg/L	50	Standard
	Rb	85	53.3	23.6				ug/L	20	Standard
	Y	89	377535.8	0.4				ug/L	376602	Standard
>	**Rh**	103	36.7	31.5				ug/L	17	Standard
	Mo	98	750.8	4.4	**0.3174**	0.017	5.4	ug/L	8	Standard
	Ag	107	297266.0	1.0	**50.6052**	0.925	1.8	ug/L	81	Standard
	Cd	111	95234.0	1.1	**49.8345**	0.593	1.2	mg/L	3	Standard
	Cd	114	234836.7	1.4	**49.7088**	0.798	1.6	ug/L	7	Standard
>	**In**	115	516621.5	1.2				ug/L	524722	Standard
	Sn	118	736.7	13.8	**0.0494**	0.018	37.2	ug/L	715	Standard
	Sb	123	208987.1	0.3	**48.5849**	0.463	1.0	ug/L	201	Standard
	Ba	135	88485.0	1.6	**49.5270**	0.847	1.7	ug/L	108	Standard
	Ce	140	93.3	22.3				ug/L	30	Standard
>	**Tb**	159	786575.0	1.5				ug/L	792236	Standard
	Ho	165	15.0	120.2				ug/L	7	Standard
	Tl	203	367143.4	1.3	**48.6717**	0.655	1.3	ug/L	9	Standard
	Tl	205	311332.9	0.6	**48.5309**	0.337	0.7	ug/L	0	Standard
	Pb	206	233648.2	1.0	**51.1920**	0.365	0.7	ug/L	216	Standard
	Pb	207	204781.6	0.5	**49.2852**	0.113	0.2	ug/L	180	Standard
	Pb	208	826562.7	0.6	**49.0156**	0.301	0.6	ug/L	717	Standard
	U	238	299484.9	0.7	**48.8217**	0.244	0.5	ug/L	4	Standard
>	**Bi**	209	454561.3	0.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	50.0	17.3	**0.0233**	0.011	48.4	mg/L	20	Standard
K	39	26.7	28.6	**-0.0218**	0.061	278.8	mg/L	22	Standard
Ca	43	35.0	75.6	**-4.9193**	6.254	127.1	mg/L	47	Standard
Fe	54	111.6	12.4	**-0.0232**	0.011	46.2	mg/L	151	Standard
Fe	57	160.0	10.8	**-0.1456**	0.055	37.5	mg/L	195	Standard
> **Sc-1**	45	29290.0	1.1				mg/L	29647	Standard
Cl	35	154390.7	1.3				ug/L	154152	Standard
Kr	83	3.3	45.8				ug/L	3	Standard
Br	81	1633.4	8.8				ug/L	1607	Standard
P	31	21568.7	2.2				ug/L	22752	Standard
S	34	5032.5	1.0				ug/L	5049	Standard
Sr	88	65.0	15.4				ug/L	87	Standard
C	12	66.7	17.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	23.2	25.5				mg/L	10	Standard
Ho-1	165	15.0	120.2				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	1071.7	9.3				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		101.488	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.336	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.456
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.744
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW B7 WG572432-05
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Method 6020 - Summary Report

Sample ID: L1606054006 WG572432-01
Sample Date/Time: Thursday, June 16, 2016 17:42:06
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52547.6	1.2				ug/L	51024	Standard
	Be	9	281.7	11.8	**0.3044**	0.040	13.2	ug/L	7	Standard
	Al	27	1816487.4	0.8	**12.3812**	0.043	0.4	ug/L	625	Standard
	Sc	45	29675.7	4.3				ug/L	29647	Standard
	Ti	47	527.0	16.5	**1.6748**	0.301	18.0	ug/L	57	Standard
	V	51	3476.6	2.8	**0.3441**	0.007	2.0	ug/L	1142	Standard
	Cr	52	8938.3	3.6	**0.3455**	0.039	11.3	ug/L	6628	Standard
	Cr	53	901.7	9.0	**0.5864**	0.111	18.9	ug/L	430	Standard
	Mn	55	80134.4	1.0	**14.0253**	0.252	1.8	ug/L	603	Standard
	Co	59	25491.1	1.0	**4.1165**	0.049	1.2	ug/L	237	Standard
	Ni	60	8570.8	3.1	**4.5794**	0.092	2.0	ug/L	141	Standard
	Cu	65	650.0	5.0	**0.2962**	0.012	4.0	ug/L	109	Standard
	Zn	66	3464.7	2.4	**3.0444**	0.035	1.2	ug/L	159	Standard
>	**Ge**	72	452166.6	1.8				ug/L	474053	Standard
	As	75	1182.5	5.5	**1.1442**	0.046	4.0	ug/L	-34	Standard
	Se	82	46.0	21.8	**0.2663**	0.087	32.8	ug/L	14	Standard
	Se-1	77	85.7	5.5	**0.4258**	0.086	20.3	ug/L	55	Standard
>	**Ga**	71	278.3	3.7				mg/L	50	Standard
	Rb	85	4193.9	3.2				ug/L	20	Standard
	Y	89	416460.7	2.0				ug/L	376602	Standard
>	**Rh**	103	23.3	12.4				ug/L	17	Standard
	Mo	98	357.6	5.0	**0.1457**	0.008	5.8	ug/L	8	Standard
	Ag	107	158.3	24.9	**0.0142**	0.007	47.6	ug/L	81	Standard
	Cd	111	270.7	5.4	**0.1360**	0.007	5.2	mg/L	3	Standard
	Cd	114	622.1	11.8	**0.1257**	0.017	13.1	ug/L	7	Standard
>	**In**	115	525525.2	1.0				ug/L	524722	Standard
	Sn	118	728.4	8.0	**0.0455**	0.009	20.8	ug/L	715	Standard
	Sb	123	2010.9	21.8	**0.4446**	0.099	22.2	ug/L	201	Standard
	Ba	135	37719.2	0.5	**20.7210**	0.204	1.0	ug/L	108	Standard
	Ce	140	135002.2	1.6				ug/L	30	Standard
>	**Tb**	159	783120.3	1.3				ug/L	792236	Standard
	Ho	165	2456.9	1.5				ug/L	7	Standard
	Tl	203	253.7	10.2	**0.0320**	0.003	10.8	ug/L	9	Standard
	Tl	205	226.7	16.3	**0.0285**	0.006	20.3	ug/L	0	Standard
	Pb	206	765.0	5.7	**0.1161**	0.008	6.7	ug/L	216	Standard
	Pb	207	652.7	5.5	**0.1078**	0.008	7.7	ug/L	180	Standard
	Pb	208	2766.1	3.6	**0.1109**	0.007	6.4	ug/L	717	Standard
	U	238	1954.1	0.9	**0.3200**	0.006	1.9	ug/L	4	Standard
>	**Bi**	209	442196.1	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1238.4	6.5	**1.6323**	0.087	5.4	mg/L	20	Standard
K	39	41.7	36.7	**0.0889**	0.112	125.7	mg/L	22	Standard
Ca	43	68.3	11.2	**2.8122**	2.229	79.3	mg/L	47	Standard
Fe	54	837.8	5.1	**0.5655**	0.012	2.1	mg/L	151	Standard
Fe	57	411.7	13.3	**0.6277**	0.175	27.9	mg/L	195	Standard
Sc-1	45	29675.7	4.3				mg/L	29647	Standard
Cl	35	169997.1	1.0				ug/L	154152	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	5057.5	1.3				ug/L	1607	Standard
P	31	24386.3	0.9				ug/L	22752	Standard
S	34	5092.5	0.4				ug/L	5049	Standard
Sr	88	103.3	7.4				ug/L	87	Standard
C	12	76.7	60.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	3712.9	1.1				mg/L	10	Standard
Ho-1	165	2456.9	1.5				mg/L	7	Standard
Er	166	2246.8	5.2				mg/L	3	Standard
I	127	9703.1	8.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.986	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.383	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.153
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.058
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606054007S WG572432-06
Sample Date/Time: Thursday, June 16, 2016 17:45:17
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53706.7	0.9				ug/L	51024	Standard
	Be	9	43749.7	1.2	**49.4168**	0.266	0.5	ug/L	7	Standard
	Al	27	1932307.9	0.8	**12.8870**	0.144	1.1	ug/L	625	Standard
	Sc	45	29268.3	2.3				ug/L	29647	Standard
	Ti	47	482.3	20.5	**1.5217**	0.334	21.9	ug/L	57	Standard
	V	51	343151.9	1.8	**50.5559**	1.238	2.4	ug/L	1142	Standard
	Cr	52	356598.9	0.1	**50.0133**	0.323	0.6	ug/L	6628	Standard
	Cr	53	44079.0	0.2	**49.3948**	0.256	0.5	ug/L	430	Standard
	Mn	55	413833.9	0.6	**73.1363**	0.045	0.1	ug/L	603	Standard
	Co	59	348825.8	0.4	**56.9989**	0.424	0.7	ug/L	237	Standard
	Ni	60	100519.4	0.8	**54.6907**	0.393	0.7	ug/L	141	Standard
	Cu	65	91430.0	0.8	**51.0559**	0.663	1.3	ug/L	109	Standard
	Zn	66	56968.2	0.3	**53.7844**	0.273	0.5	ug/L	159	Standard
>	**Ge**	72	450975.6	0.7				ug/L	474053	Standard
	As	75	55730.0	0.9	**52.9297**	0.224	0.4	ug/L	-34	Standard
	Se	82	5454.0	1.2	**51.6747**	0.725	1.4	ug/L	14	Standard
	Se-1	77	3763.1	1.1	**50.7665**	0.264	0.5	ug/L	55	Standard
>	**Ga**	71	263.3	20.3				mg/L	50	Standard
	Rb	85	4255.6	2.8				ug/L	20	Standard
	Y	89	417195.5	2.9				ug/L	376602	Standard
>	**Rh**	103	30.0	16.7				ug/L	17	Standard
	Mo	98	249.7	0.8	**0.1017**	0.004	4.1	ug/L	8	Standard
	Ag	107	291868.5	0.9	**49.6480**	2.126	4.3	ug/L	81	Standard
	Cd	111	96723.0	1.0	**50.5615**	1.461	2.9	mg/L	3	Standard
	Cd	114	235539.9	2.1	**49.7930**	0.984	2.0	ug/L	7	Standard
>	**In**	115	517505.1	3.8				ug/L	524722	Standard
	Sn	118	1476.7	5.3	**0.1884**	0.005	2.4	ug/L	715	Standard
	Sb	123	206896.8	0.8	**48.0521**	1.564	3.3	ug/L	201	Standard
	Ba	135	127540.2	0.0	**71.3559**	2.754	3.9	ug/L	108	Standard
	Ce	140	139925.0	2.0				ug/L	30	Standard
>	**Tb**	159	770775.9	3.8				ug/L	792236	Standard
	Ho	165	2476.9	1.1				ug/L	7	Standard
	Tl	203	360327.5	0.9	**50.2317**	2.202	4.4	ug/L	9	Standard
	Tl	205	316813.0	0.1	**51.9255**	1.944	3.7	ug/L	0	Standard
	Pb	206	230620.2	0.3	**53.1250**	1.777	3.3	ug/L	216	Standard
	Pb	207	202090.2	0.6	**51.1482**	2.204	4.3	ug/L	180	Standard
	Pb	208	841767.9	0.1	**52.4861**	1.864	3.6	ug/L	717	Standard
	U	238	302598.3	0.9	**51.8585**	1.621	3.1	ug/L	4	Standard
>	**Bi**	209	432715.9	3.6				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1251.7	2.3	**1.6745**	0.059	3.5	mg/L	20	Standard
K	39	36.7	20.8	**0.0560**	0.065	115.4	mg/L	22	Standard
Ca	43	53.3	32.9	**-0.5302**	4.352	820.7	mg/L	47	Standard
Fe	54	1026.3	1.7	**0.7308**	0.034	4.6	mg/L	151	Standard
Fe	57	418.3	7.7	**0.6667**	0.128	19.3	mg/L	195	Standard
> **Sc-1**	45	29268.3	2.3				mg/L	29647	Standard
Cl	35	169666.9	1.9				ug/L	154152	Standard
Kr	83	2.0	100.0				ug/L	3	Standard
Br	81	2960.3	5.9				ug/L	1607	Standard
P	31	24135.9	2.5				ug/L	22752	Standard
S	34	4849.1	3.1				ug/L	5049	Standard
Sr	88	106.7	33.9				ug/L	87	Standard
C	12	40.0	50.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	0	Standard
Dy	164	3819.4	7.1				mg/L	10	Standard
Ho-1	165	2476.9	1.1				mg/L	7	Standard
Er	166	2390.2	5.9				mg/L	3	Standard
I	127	12700.3	5.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.257	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.132	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.625
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.999
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606054008SD WG572432-07
Sample Date/Time: Thursday, June 16, 2016 17:48:29
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54998.0	2.9				ug/L	51024	Standard
	Be	9	42282.3	1.6	**46.6702**	1.847	4.0	ug/L	7	Standard
	Al	27	1853346.2	1.8	**12.0720**	0.192	1.6	ug/L	625	Standard
	Sc	45	28618.7	1.6				ug/L	29647	Standard
	Ti	47	438.7	18.4	**1.3101**	0.274	20.9	ug/L	57	Standard
	V	51	339071.1	1.2	**47.9811**	0.898	1.9	ug/L	1142	Standard
	Cr	52	348951.5	0.9	**46.9627**	0.693	1.5	ug/L	6628	Standard
	Cr	53	43296.8	2.2	**46.5875**	1.128	2.4	ug/L	430	Standard
	Mn	55	386934.9	1.9	**65.6847**	1.414	2.2	ug/L	603	Standard
	Co	59	342375.5	0.7	**53.7459**	0.809	1.5	ug/L	237	Standard
	Ni	60	97792.2	0.5	**51.1109**	0.332	0.6	ug/L	141	Standard
	Cu	65	89033.2	0.9	**47.7559**	0.143	0.3	ug/L	109	Standard
	Zn	66	55887.9	0.5	**50.6770**	0.331	0.7	ug/L	159	Standard
>	**Ge**	72	469439.2	1.1				ug/L	474053	Standard
	As	75	54484.6	0.9	**49.7143**	0.277	0.6	ug/L	-34	Standard
	Se	82	5325.5	1.9	**48.4642**	1.024	2.1	ug/L	14	Standard
	Se-1	77	3702.8	2.9	**47.9415**	0.927	1.9	ug/L	55	Standard
>	**Ga**	71	271.7	17.7				mg/L	50	Standard
	Rb	85	4088.9	2.2				ug/L	20	Standard
	Y	89	413416.3	1.0				ug/L	376602	Standard
>	**Rh**	103	41.7	30.2				ug/L	17	Standard
	Mo	98	249.2	1.7	**0.1026**	0.001	1.4	ug/L	8	Standard
	Ag	107	286615.9	0.3	**49.2507**	0.777	1.6	ug/L	81	Standard
	Cd	111	93885.9	0.7	**49.5954**	0.904	1.8	mg/L	3	Standard
	Cd	114	226454.5	0.3	**48.3871**	0.650	1.3	ug/L	7	Standard
>	**In**	115	511810.4	1.2				ug/L	524722	Standard
	Sn	118	701.7	6.8	**0.0441**	0.009	19.5	ug/L	715	Standard
	Sb	123	206600.1	0.8	**48.4856**	0.964	2.0	ug/L	201	Standard
	Ba	135	122408.2	0.7	**69.1850**	1.061	1.5	ug/L	108	Standard
	Ce	140	131819.3	0.1				ug/L	30	Standard
>	**Tb**	159	776885.2	2.2				ug/L	792236	Standard
	Ho	165	2331.8	5.4				ug/L	7	Standard
	Tl	203	352123.1	0.6	**47.6812**	0.707	1.5	ug/L	9	Standard
	Tl	205	309331.5	1.9	**49.2466**	0.608	1.2	ug/L	0	Standard
	Pb	206	228474.4	0.6	**51.1335**	0.852	1.7	ug/L	216	Standard
	Pb	207	200368.2	0.3	**49.2580**	0.755	1.5	ug/L	180	Standard
	Pb	208	813075.7	0.6	**49.2521**	0.923	1.9	ug/L	717	Standard
	U	238	295399.0	1.0	**49.1860**	0.564	1.1	ug/L	4	Standard
>	**Bi**	209	445087.6	1.7				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1281.7	3.9	**1.7556**	0.088	5.0	mg/L	20	Standard
K	39	31.7	63.8	**0.0238**	0.162	681.6	mg/L	22	Standard
Ca	43	90.0	29.4	**8.6263**	6.605	76.6	mg/L	47	Standard
Fe	54	882.7	7.0	**0.6290**	0.061	9.7	mg/L	151	Standard
Fe	57	415.0	3.6	**0.6838**	0.030	4.4	mg/L	195	Standard
Sc-1	45	28618.7	1.6				mg/L	29647	Standard
Cl	35	164516.5	1.8				ug/L	154152	Standard
Kr	83	2.7	78.1				ug/L	3	Standard
Br	81	3177.0	4.4				ug/L	1607	Standard
P	31	23216.1	2.6				ug/L	22752	Standard
S	34	4752.4	2.2				ug/L	5049	Standard
Sr	88	88.3	40.2				ug/L	87	Standard
C	12	76.7	30.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	3671.9	4.0				mg/L	10	Standard
Ho-1	165	2331.8	5.4				mg/L	7	Standard
Er	166	2266.8	11.6				mg/L	3	Standard
I	127	12179.9	5.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.788	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.027	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.539
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.686
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606053301
Sample Date/Time: Thursday, June 16, 2016 17:51:40
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60559.2	3.2				ug/L	51024	Standard
	Be	9	28.3	10.2	**0.0074**	0.004	49.8	ug/L	7	Standard
	Al	27	7003612.2	2.3	**41.4514**	0.476	1.1	ug/L	625	Standard
	Sc	45	30053.2	5.5				ug/L	29647	Standard
	Ti	47	795.7	5.5	**2.5457**	0.146	5.8	ug/L	57	Standard
	V	51	2693.3	6.1	**0.2191**	0.025	11.3	ug/L	1142	Standard
	Cr	52	8930.0	3.3	**0.3138**	0.057	18.2	ug/L	6628	Standard
	Cr	53	2155.2	15.7	**1.9427**	0.407	21.0	ug/L	430	Standard
	Mn	55	115337.0	0.2	**19.7464**	0.327	1.7	ug/L	603	Standard
	Co	59	1383.4	9.3	**0.1788**	0.018	10.2	ug/L	237	Standard
	Ni	60	2905.3	1.7	**1.4630**	0.043	2.9	ug/L	141	Standard
	Cu	65	10476.6	1.4	**5.6346**	0.098	1.7	ug/L	109	Standard
	Zn	66	21460.2	1.0	**19.5697**	0.101	0.5	ug/L	159	Standard
>	**Ge**	72	463434.7	1.4				ug/L	474053	Standard
	As	75	3767.1	1.6	**3.5052**	0.045	1.3	ug/L	-34	Standard
	Se	82	163.8	10.0	**1.3482**	0.174	12.9	ug/L	14	Standard
	Se-1	77	257.3	5.7	**2.6846**	0.227	8.5	ug/L	55	Standard
>	**Ga**	71	133.3	15.6				mg/L	50	Standard
	Rb	85	28246.3	1.8				ug/L	20	Standard
	Y	89	371509.9	1.1				ug/L	376602	Standard
>	**Rh**	103	53.3	54.1				ug/L	17	Standard
	Mo	98	1868.0	0.8	**0.7966**	0.012	1.5	ug/L	8	Standard
	Ag	107	323.0	60.8	**0.0424**	0.033	77.8	ug/L	81	Standard
	Cd	111	115.7	21.0	**0.0572**	0.012	21.6	mg/L	3	Standard
	Cd	114	360.8	28.5	**0.0723**	0.021	29.2	ug/L	7	Standard
>	**In**	115	517402.5	1.9				ug/L	524722	Standard
	Sn	118	1711.8	7.1	**0.2327**	0.020	8.5	ug/L	715	Standard
	Sb	123	4614.0	12.3	**1.0551**	0.113	10.7	ug/L	201	Standard
	Ba	135	35141.4	1.4	**19.6067**	0.326	1.7	ug/L	108	Standard
	Ce	140	703.4	25.4				ug/L	30	Standard
>	**Tb**	159	794129.4	2.7				ug/L	792236	Standard
	Ho	165	41.7	38.6				ug/L	7	Standard
	Tl	203	449.0	60.2	**0.0569**	0.035	62.3	ug/L	9	Standard
	Tl	205	276.7	17.7	**0.0354**	0.008	22.9	ug/L	0	Standard
	Pb	206	1738.1	4.6	**0.3254**	0.021	6.4	ug/L	216	Standard
	Pb	207	1473.7	6.2	**0.3016**	0.022	7.3	ug/L	180	Standard
	Pb	208	5917.1	2.4	**0.2937**	0.008	2.7	ug/L	717	Standard
	U	238	273.7	21.5	**0.0370**	0.009	24.9	ug/L	4	Standard
>	**Bi**	209	454186.9	1.7				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.2936**	8.935	168.8	mg/L	0	Standard
Mg	24	24845.4	1.6	**33.2336**	1.348	4.1	mg/L	20	Standard
K	39	435.0	8.7	**3.0600**	0.462	15.1	mg/L	22	Standard
Ca	43	158.3	13.1	**23.4759**	6.234	26.6	mg/L	47	Standard
Fe	54	199.1	33.0	**0.0465**	0.059	127.4	mg/L	151	Standard
Fe	57	291.7	13.3	**0.2501**	0.172	68.9	mg/L	195	Standard
> **Sc-1**	45	30053.2	5.5				mg/L	29647	Standard
Cl	35	199161.9	1.2				ug/L	154152	Standard
Kr	83	2.3	49.5				ug/L	3	Standard
Br	81	12578.6	3.0				ug/L	1607	Standard
P	31	24539.9	2.1				ug/L	22752	Standard
S	34	5079.2	4.0				ug/L	5049	Standard
Sr	88	208.3	14.7				ug/L	87	Standard
C	12	96.7	36.3				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	0	Standard
Dy	164	61.3	25.3				mg/L	10	Standard
Ho-1	165	41.7	38.6				mg/L	7	Standard
Er	166	43.3	13.3				mg/L	3	Standard
I	127	46957.7	3.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.687	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.760	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606053301
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.605
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.663
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606054003
Sample Date/Time: Thursday, June 16, 2016 17:54:52
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69060.4	2.1				ug/L	51024	Standard
	Be	9	195.0	15.6	**0.1507**	0.030	20.2	ug/L	7	Standard
	Al	27	5538034.2	2.1	**28.7382**	0.596	2.1	ug/L	625	Standard
	Sc	45	34442.5	3.5				ug/L	29647	Standard
	Ti	47	14518.0	3.2	**50.5821**	0.898	1.8	ug/L	57	Standard
	V	51	33577.2	0.6	**4.7869**	0.070	1.5	ug/L	1142	Standard
	Cr	52	33773.6	0.6	**3.8889**	0.037	1.0	ug/L	6628	Standard
	Cr	53	7016.6	2.1	**7.4876**	0.191	2.6	ug/L	430	Standard
	Mn	55	504059.4	0.9	**88.9661**	0.527	0.6	ug/L	603	Standard
	Co	59	17512.8	1.2	**2.8178**	0.022	0.8	ug/L	237	Standard
	Ni	60	10317.5	0.9	**5.5347**	0.034	0.6	ug/L	141	Standard
	Cu	65	2208.5	1.2	**1.1669**	0.032	2.7	ug/L	109	Standard
	Zn	66	8517.7	1.0	**7.8315**	0.096	1.2	ug/L	159	Standard
>	**Ge**	72	451723.4	1.4				ug/L	474053	Standard
	As	75	12920.2	3.5	**12.2750**	0.581	4.7	ug/L	-34	Standard
	Se	82	2961.0	4.8	**27.9437**	1.699	6.1	ug/L	14	Standard
	Se-1	77	326.3	1.4	**3.7149**	0.003	0.1	ug/L	55	Standard
>	**Ga**	71	2480.2	6.2				mg/L	50	Standard
	Rb	85	38117.9	1.8				ug/L	20	Standard
	Y	89	421962.4	2.5				ug/L	376602	Standard
>	**Rh**	103	78.3	24.2				ug/L	17	Standard
	Mo	98	3944.4	0.7	**1.6261**	0.009	0.6	ug/L	8	Standard
	Ag	107	112.0	6.7	**0.0060**	0.001	21.5	ug/L	81	Standard
	Cd	111	53.6	6.7	**0.0237**	0.002	7.8	mg/L	3	Standard
	Cd	114	133.4	41.0	**0.0233**	0.011	47.5	ug/L	7	Standard
>	**In**	115	537036.3	0.3				ug/L	524722	Standard
	Sn	118	2543.5	1.4	**0.3719**	0.007	2.0	ug/L	715	Standard
	Sb	123	798.0	25.2	**0.1636**	0.044	27.1	ug/L	201	Standard
	Ba	135	340692.9	0.8	**183.5929**	1.953	1.1	ug/L	108	Standard
	Ce	140	164779.7	1.7				ug/L	30	Standard
>	**Tb**	159	813065.5	1.9				ug/L	792236	Standard
	Ho	165	2875.3	7.5				ug/L	7	Standard
	Tl	203	422.0	6.7	**0.0538**	0.003	6.1	ug/L	9	Standard
	Tl	205	353.3	13.4	**0.0477**	0.007	15.2	ug/L	0	Standard
	Pb	206	3737.8	1.9	**0.7699**	0.010	1.3	ug/L	216	Standard
	Pb	207	3100.7	1.2	**0.6991**	0.004	0.6	ug/L	180	Standard
	Pb	208	12994.2	0.7	**0.7197**	0.013	1.8	ug/L	717	Standard
	U	238	1498.4	1.2	**0.2387**	0.006	2.5	ug/L	4	Standard
>	**Bi**	209	451028.7	1.3				ug/L	460343	Standard

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Na	23	6.7	114.6	**-8.8575**	22.422	253.1	mg/L	0	Standard
Mg	24	23361.3	1.7	**27.2407**	1.080	4.0	mg/L	20	Standard
K	39	78.3	19.5	**0.2883**	0.117	40.4	mg/L	22	Standard
Ca	43	363.3	8.7	**59.9201**	6.518	10.9	mg/L	47	Standard
Fe	54	6234.3	4.5	**4.2529**	0.273	6.4	mg/L	151	Standard
Fe	57	2021.8	6.4	**4.7439**	0.351	7.4	mg/L	195	Standard
> **Sc-1**	45	34442.5	3.5				mg/L	29647	Standard
Cl	35	236460.3	1.1				ug/L	154152	Standard
Kr	83	2.0	0.0				ug/L	3	Standard
Br	81	708935.6	4.3				ug/L	1607	Standard
P	31	40141.4	0.8				ug/L	22752	Standard
S	34	5004.2	5.7				ug/L	5049	Standard
Sr	88	448.3	5.6				ug/L	87	Standard
C	12	160.0	16.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	4859.0	3.9				mg/L	10	Standard
Ho-1	165	2875.3	7.5				mg/L	7	Standard
Er	166	2543.5	9.9				mg/L	3	Standard
I	127	141220.9	4.3				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		135.349	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.290	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.347	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.977	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606054003PS WG573083-01
Sample Date/Time: Thursday, June 16, 2016 17:58:03
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70691.2	0.9				ug/L	51024	Standard
	Be	9	50693.0	1.7	**43.5062**	1.094	2.5	ug/L	7	Standard
	Al	27	5657732.1	0.5	**28.6796**	0.340	1.2	ug/L	625	Standard
	Sc	45	32850.6	4.5				ug/L	29647	Standard
	Ti	47	14458.2	2.7	**49.6930**	1.695	3.4	ug/L	57	Standard
	V	51	385117.2	0.8	**55.8774**	0.585	1.0	ug/L	1142	Standard
	Cr	52	382916.9	0.3	**52.9297**	0.331	0.6	ug/L	6628	Standard
	Cr	53	51097.7	0.4	**56.4380**	0.261	0.5	ug/L	430	Standard
	Mn	55	810895.8	0.8	**141.2253**	1.951	1.4	ug/L	603	Standard
	Co	59	346570.3	0.8	**55.7548**	0.081	0.1	ug/L	237	Standard
	Ni	60	100953.5	0.6	**54.0794**	0.195	0.4	ug/L	141	Standard
	Cu	65	91462.3	1.6	**50.2871**	1.080	2.1	ug/L	109	Standard
	Zn	66	61341.3	0.6	**57.0367**	0.769	1.3	ug/L	159	Standard
>	**Ge**	72	458036.5	0.7				ug/L	474053	Standard
	As	75	68674.9	0.5	**64.2143**	0.182	0.3	ug/L	-34	Standard
	Se	82	8569.6	1.8	**80.0280**	0.981	1.2	ug/L	14	Standard
	Se-1	77	4022.5	4.5	**53.4821**	2.795	5.2	ug/L	55	Standard
>	**Ga**	71	2441.9	7.4				mg/L	50	Standard
	Rb	85	38290.0	2.9				ug/L	20	Standard
	Y	89	428743.2	0.3				ug/L	376602	Standard
>	**Rh**	103	91.7	35.1				ug/L	17	Standard
	Mo	98	3923.8	0.2	**1.6525**	0.023	1.4	ug/L	8	Standard
	Ag	107	276547.4	3.6	**46.2633**	2.008	4.3	ug/L	81	Standard
	Cd	111	96223.0	0.5	**49.4786**	0.725	1.5	mg/L	3	Standard
	Cd	114	238042.9	1.3	**49.5078**	0.331	0.7	ug/L	7	Standard
>	**In**	115	525777.0	1.3				ug/L	524722	Standard
	Sn	118	2560.2	3.5	**0.3851**	0.023	6.0	ug/L	715	Standard
	Sb	123	215296.5	0.5	**49.1839**	0.834	1.7	ug/L	201	Standard
	Ba	135	428635.4	1.2	**235.9452**	0.924	0.4	ug/L	108	Standard
	Ce	140	165650.7	1.3				ug/L	30	Standard
>	**Tb**	159	801648.7	1.5				ug/L	792236	Standard
	Ho	165	2957.0	2.0				ug/L	7	Standard
	Tl	203	362265.3	0.3	**49.7124**	0.432	0.9	ug/L	9	Standard
	Tl	205	324753.6	0.8	**52.4032**	0.722	1.4	ug/L	0	Standard
	Pb	206	240535.6	0.4	**54.5563**	0.254	0.5	ug/L	216	Standard
	Pb	207	210550.9	0.8	**52.4580**	0.578	1.1	ug/L	180	Standard
	Pb	208	845714.1	0.6	**51.9167**	0.481	0.9	ug/L	717	Standard
	U	238	316985.2	0.3	**53.4916**	0.510	1.0	ug/L	4	Standard
>	**Bi**	209	439144.9	0.6				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.2953**	8.932	168.7	mg/L	0	Standard
Mg	24	23556.6	1.1	**28.8162**	1.308	4.5	mg/L	20	Standard
K	39	103.3	22.9	**0.4849**	0.170	35.0	mg/L	22	Standard
Ca	43	350.0	13.1	**60.9958**	12.902	21.2	mg/L	47	Standard
Fe	54	6036.8	1.7	**4.3211**	0.223	5.2	mg/L	151	Standard
Fe	57	2113.5	3.5	**5.2621**	0.189	3.6	mg/L	195	Standard
> **Sc-1**	45	32850.6	4.5				mg/L	29647	Standard
Cl	35	237983.9	1.1				ug/L	154152	Standard
Kr	83	0.0					ug/L	3	Standard
Br	81	723069.8	1.3				ug/L	1607	Standard
P	31	40273.5	4.5				ug/L	22752	Standard
S	34	4915.8	1.6				ug/L	5049	Standard
Sr	88	436.7	3.5				ug/L	87	Standard
C	12	133.3	4.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	4443.9	9.4				mg/L	10	Standard
Ho-1	165	2957.0	2.0				mg/L	7	Standard
Er	166	2646.9	6.4				mg/L	3	Standard
I	127	140910.6	0.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		138.545	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.621	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.201
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.395
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606054003PS WG573083-01
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Method 6020 - Summary Report

Sample ID: L1606054003SDL WG573083-02
Sample Date/Time: Thursday, June 16, 2016 18:01:15
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67421.4	2.2				ug/L	51024	Standard
	Be	9	65.0	23.1	**0.0373**	0.012	33.1	ug/L	7	Standard
	Al	27	1133068.0	1.4	**6.0172**	0.214	3.6	ug/L	625	Standard
	Sc	45	29907.8	2.2				ug/L	29647	Standard
	Ti	47	2896.9	2.4	**9.4986**	0.237	2.5	ug/L	57	Standard
	V	51	8118.9	1.6	**0.9749**	0.019	2.0	ug/L	1142	Standard
	Cr	52	11547.7	1.7	**0.6435**	0.029	4.5	ug/L	6628	Standard
	Cr	53	2378.5	3.7	**2.1298**	0.095	4.5	ug/L	430	Standard
	Mn	55	103741.0	1.9	**17.3694**	0.315	1.8	ug/L	603	Standard
	Co	59	3838.8	2.5	**0.5567**	0.015	2.6	ug/L	237	Standard
	Ni	60	2235.5	2.6	**1.0826**	0.031	2.9	ug/L	141	Standard
	Cu	65	647.7	4.8	**0.2788**	0.016	5.8	ug/L	109	Standard
	Zn	66	2803.6	0.9	**2.3005**	0.025	1.1	ug/L	159	Standard
>	**Ge**	72	473393.6	0.2				ug/L	474053	Standard
	As	75	2692.6	2.6	**2.4601**	0.062	2.5	ug/L	-34	Standard
	Se	82	639.2	5.1	**5.6193**	0.300	5.3	ug/L	14	Standard
	Se-1	77	131.7	10.1	**0.9721**	0.173	17.8	ug/L	55	Standard
>	**Ga**	71	563.3	2.9				mg/L	50	Standard
	Rb	85	7626.9	1.4				ug/L	20	Standard
	Y	89	387376.2	0.4				ug/L	376602	Standard
>	**Rh**	103	25.0	34.6				ug/L	17	Standard
	Mo	98	784.5	4.4	**0.3255**	0.017	5.2	ug/L	8	Standard
	Ag	107	1243.4	2.6	**0.1954**	0.006	3.2	ug/L	81	Standard
	Cd	111	29.9	54.1	**0.0121**	0.008	67.3	mg/L	3	Standard
	Cd	114	69.0	67.7	**0.0105**	0.010	91.0	ug/L	7	Standard
>	**In**	115	526626.8	0.9				ug/L	524722	Standard
	Sn	118	845.0	11.0	**0.0669**	0.018	26.5	ug/L	715	Standard
	Sb	123	2277.2	24.6	**0.5055**	0.132	26.2	ug/L	201	Standard
	Ba	135	69797.7	0.8	**38.3133**	0.615	1.6	ug/L	108	Standard
	Ce	140	34238.6	1.3				ug/L	30	Standard
>	**Tb**	159	801692.0	0.8				ug/L	792236	Standard
	Ho	165	618.3	9.3				ug/L	7	Standard
	Tl	203	344.7	8.1	**0.0429**	0.004	8.5	ug/L	9	Standard
	Tl	205	311.7	8.8	**0.0405**	0.004	10.8	ug/L	0	Standard
	Pb	206	1064.0	3.5	**0.1759**	0.009	4.9	ug/L	216	Standard
	Pb	207	867.0	6.7	**0.1540**	0.013	8.6	ug/L	180	Standard
	Pb	208	3581.5	3.9	**0.1537**	0.009	6.2	ug/L	717	Standard
	U	238	339.0	2.5	**0.0474**	0.001	2.9	ug/L	4	Standard
>	**Bi**	209	456914.2	0.6				ug/L	460343	Standard

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Na	23	5.0	173.2	**-5.5106**	27.648	501.7	mg/L	0	Standard
Mg	24	4740.7	2.0	**6.3283**	0.198	3.1	mg/L	20	Standard
K	39	31.7	32.9	**0.0103**	0.074	719.1	mg/L	22	Standard
Ca	43	96.7	10.8	**9.2099**	2.490	27.0	mg/L	47	Standard
Fe	54	1310.9	5.1	**0.9427**	0.077	8.2	mg/L	151	Standard
Fe	57	518.3	4.8	**0.9451**	0.104	11.0	mg/L	195	Standard
Sc-1	45	29907.8	2.2				mg/L	29647	Standard
Cl	35	171537.6	0.9				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	154143.7	2.2				ug/L	1607	Standard
P	31	26042.4	2.9				ug/L	22752	Standard
S	34	4889.1	5.0				ug/L	5049	Standard
Sr	88	148.3	17.0				ug/L	87	Standard
C	12	73.3	47.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	929.7	4.3				mg/L	10	Standard
Ho-1	165	618.3	9.3				mg/L	7	Standard
Er	166	563.3	6.2				mg/L	3	Standard
I	127	30853.1	2.8				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.136	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.861	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606054003SDL WG573083-02
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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.363
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.255
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606054003SDL WG573083-02
Sample Date/Time: Thursday, June 16, 2016 18:04:26
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65921.5	1.7				ug/L	51024	Standard
	Be	9	28.3	10.2	**0.0050**	0.002	49.4	ug/L	7	Standard
	Al	27	234588.9	1.0	**1.2659**	0.010	0.8	ug/L	625	Standard
	Sc	45	29675.7	0.4				ug/L	29647	Standard
	Ti	47	693.0	13.8	**2.1806**	0.270	12.4	ug/L	57	Standard
	V	51	2547.4	1.6	**0.1965**	0.004	2.1	ug/L	1142	Standard
	Cr	52	7577.9	0.6	**0.1209**	0.025	20.3	ug/L	6628	Standard
	Cr	53	1020.0	10.6	**0.6861**	0.125	18.2	ug/L	430	Standard
	Mn	55	22549.8	0.3	**3.7420**	0.091	2.4	ug/L	603	Standard
	Co	59	941.7	6.4	**0.1080**	0.010	9.7	ug/L	237	Standard
	Ni	60	563.3	5.9	**0.2199**	0.025	11.2	ug/L	141	Standard
	Cu	65	269.3	8.9	**0.0800**	0.016	20.5	ug/L	109	Standard
	Zn	66	1451.4	2.3	**1.1019**	0.057	5.2	ug/L	159	Standard
>	**Ge**	72	465567.5	2.4				ug/L	474053	Standard
	As	75	572.2	6.7	**0.5515**	0.039	7.1	ug/L	-34	Standard
	Se	82	153.8	5.1	**1.2486**	0.091	7.3	ug/L	14	Standard
	Se-1	77	80.7	9.5	**0.3264**	0.123	37.8	ug/L	55	Standard
>	**Ga**	71	155.0	27.6				mg/L	50	Standard
	Rb	85	1620.1	5.6				ug/L	20	Standard
	Y	89	390804.2	2.3				ug/L	376602	Standard
>	**Rh**	103	10.0	50.0				ug/L	17	Standard
	Mo	98	177.1	5.2	**0.0674**	0.004	5.5	ug/L	8	Standard
	Ag	107	160.0	23.9	**0.0138**	0.006	46.0	ug/L	81	Standard
	Cd	111	25.4	77.5	**0.0095**	0.010	103.8	mg/L	3	Standard
	Cd	114	52.9	101.2	**0.0069**	0.011	156.6	ug/L	7	Standard
>	**In**	115	539456.4	0.6				ug/L	524722	Standard
	Sn	118	513.3	2.8	**0.0033**	0.003	95.9	ug/L	715	Standard
	Sb	123	668.0	33.5	**0.1338**	0.049	36.9	ug/L	201	Standard
	Ba	135	14458.9	2.3	**7.7012**	0.163	2.1	ug/L	108	Standard
	Ce	140	7036.6	6.6				ug/L	30	Standard
>	**Tb**	159	818023.3	1.0				ug/L	792236	Standard
	Ho	165	115.0	27.2				ug/L	7	Standard
	Tl	203	200.0	22.5	**0.0231**	0.006	25.9	ug/L	9	Standard
	Tl	205	161.7	23.6	**0.0166**	0.006	35.1	ug/L	0	Standard
	Pb	206	434.7	9.5	**0.0360**	0.009	24.6	ug/L	216	Standard
	Pb	207	375.3	3.2	**0.0337**	0.004	10.7	ug/L	180	Standard
	Pb	208	1515.7	5.1	**0.0292**	0.005	17.5	ug/L	717	Standard
	U	238	114.7	29.0	**0.0105**	0.005	51.2	ug/L	4	Standard
>	**Bi**	209	469475.2	1.0				ug/L	460343	Standard

Sample ID: L1606054003SDL WG573083-02
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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1023.4	7.3	**1.3409**	0.102	7.6	mg/L	20	Standard
K	39	6.7	43.3	**-0.1772**	0.022	12.3	mg/L	22	Standard
Ca	43	43.3	46.6	**-3.0610**	4.758	155.5	mg/L	47	Standard
Fe	54	379.2	10.8	**0.1931**	0.034	17.8	mg/L	151	Standard
Fe	57	256.7	21.5	**0.1469**	0.171	116.2	mg/L	195	Standard
Sc-1	45	29675.7	0.4				mg/L	29647	Standard
Cl	35	160581.2	1.2				ug/L	154152	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	34599.5	0.7				ug/L	1607	Standard
P	31	23708.5	0.9				ug/L	22752	Standard
S	34	4770.8	0.4				ug/L	5049	Standard
Sr	88	63.3	39.7				ug/L	87	Standard
C	12	46.7	44.6				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	195.8	8.2				mg/L	10	Standard
Ho-1	165	115.0	27.2				mg/L	7	Standard
Er	166	156.7	19.5				mg/L	3	Standard
I	127	7458.5	3.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.197	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.210	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	102.808
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.984
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 18:07:39
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64746.4	0.3				ug/L	51024	Standard
	Be	9	46935.9	0.9	**43.9752**	0.492	1.1	ug/L	7	Standard
	Al	27	7535309.9	1.9	**41.7048**	0.653	1.6	ug/L	625	Standard
	Sc	45	31043.5	4.7				ug/L	29647	Standard
	Ti	47	28772.6	0.9	**96.6294**	1.169	1.2	ug/L	57	Standard
	V	51	348687.3	1.9	**49.3361**	0.535	1.1	ug/L	1142	Standard
	Cr	52	360685.6	0.1	**48.5749**	1.035	2.1	ug/L	6628	Standard
	Cr	53	45317.7	1.7	**48.7728**	0.185	0.4	ug/L	430	Standard
	Mn	55	312229.0	0.7	**52.9756**	0.740	1.4	ug/L	603	Standard
	Co	59	328785.3	1.7	**51.5998**	0.220	0.4	ug/L	237	Standard
	Ni	60	92818.4	0.9	**48.5066**	0.760	1.6	ug/L	141	Standard
	Cu	65	91019.6	1.6	**48.8181**	0.503	1.0	ug/L	109	Standard
	Zn	66	54227.6	1.6	**49.1583**	0.511	1.0	ug/L	159	Standard
>	Ge	72	469521.9	2.1				ug/L	474053	Standard
	As	75	53936.9	1.2	**49.2114**	0.450	0.9	ug/L	-34	Standard
	Se	82	5505.5	2.6	**50.0972**	0.955	1.9	ug/L	14	Standard
	Se-1	77	3726.1	1.9	**48.2480**	0.384	0.8	ug/L	55	Standard
>	Ga	71	78.3	14.7				mg/L	50	Standard
	Rb	85	671.7	4.5				ug/L	20	Standard
	Y	89	383452.4	1.6				ug/L	376602	Standard
>	Rh	103	25.0	0.0				ug/L	17	Standard
	Mo	98	247423.8	2.1	**101.1140**	2.305	2.3	ug/L	8	Standard
	Ag	107	299585.0	1.0	**48.4657**	0.725	1.5	ug/L	81	Standard
	Cd	111	97195.1	1.0	**48.3387**	0.865	1.8	mg/L	3	Standard
	Cd	114	237825.0	2.4	**47.8442**	1.314	2.7	ug/L	7	Standard
>	In	115	543596.8	0.8				ug/L	524722	Standard
	Sn	118	268878.5	1.5	**48.0977**	1.025	2.1	ug/L	715	Standard
	Sb	123	216173.0	0.7	**47.7614**	0.695	1.5	ug/L	201	Standard
	Ba	135	89328.2	0.9	**47.5171**	0.807	1.7	ug/L	108	Standard
	Ce	140	83.3	25.0				ug/L	30	Standard
>	Tb	159	826706.5	0.3				ug/L	792236	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	368647.9	0.4	**47.0636**	0.889	1.9	ug/L	9	Standard
	Tl	205	321431.2	2.0	**48.2447**	0.798	1.7	ug/L	0	Standard
	Pb	206	230222.8	1.5	**48.5740**	1.152	2.4	ug/L	216	Standard
	Pb	207	209229.9	1.3	**48.4917**	1.019	2.1	ug/L	180	Standard
	Pb	208	835767.1	0.5	**47.7236**	0.588	1.2	ug/L	717	Standard
	U	238	311255.6	0.4	**48.8622**	0.739	1.5	ug/L	4	Standard
>	Bi	209	472106.5	1.5				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3973.9	4.2	**5.1144**	0.463	9.1	mg/L	20	Standard
K	39	603.3	5.9	**4.1749**	0.393	9.4	mg/L	22	Standard
Ca	43	58.3	34.6	**-0.2925**	4.036	1380.2	mg/L	47	Standard
Fe	54	5929.6	4.5	**4.5027**	0.427	9.5	mg/L	151	Standard
Fe	57	1646.8	4.1	**4.2259**	0.199	4.7	mg/L	195	Standard
Sc-1	45	31043.5	4.7				mg/L	29647	Standard
Cl	35	162653.1	0.8				ug/L	154152	Standard
Kr	83	1.0	0.0				ug/L	3	Standard
Br	81	4067.2	17.6				ug/L	1607	Standard
P	31	24251.1	1.7				ug/L	22752	Standard
S	34	5482.7	3.7				ug/L	5049	Standard
Sr	88	45.0	33.3				ug/L	87	Standard
C	12	60.0	28.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	22.5	26.8				mg/L	10	Standard
Ho-1	165	8.3	69.3				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	3	Standard
I	127	1428.4	5.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	87.950		
Al	27	83.410		
Sc	45			
Ti	47	96.629		
V	51	98.672		
Cr	52	97.150		
Cr	53			
Mn	55	105.951		
Co	59	103.200		
Ni	60	97.013		
Cu	65	97.636		
Zn	66	98.317		
Ge	72		99.044	
As	75	98.423		
Se	82	100.194		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.114		
Ag	107	96.931		
Cd	111	96.677		
Cd	114			
In	115		103.597	
Sn	118	96.195		
Sb	123	95.523		
Ba	135	95.034		
Ce	140			
Tb	159			
Ho	165			
Tl	203	94.127		
Tl	205			
Pb	206			
Pb	207			
Pb	208	95.447		
U	238	97.724		
Bi	209		102.555	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	

Sample ID: QC Std 6
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Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 18:10:51
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61896.2	1.1				ug/L	51024	Standard
	Be	9	18.3	56.8	**-0.0031**	0.010	331.6	ug/L	7	Standard
	Al	27	1523.4	19.5	**-0.0009**	0.002	172.8	ug/L	625	Standard
	Sc	45	30746.2	4.2				ug/L	29647	Standard
	Ti	47	48.7	24.0	**0.0041**	0.040	983.7	ug/L	57	Standard
	V	51	1096.5	7.2	**-0.0066**	0.011	164.7	ug/L	1142	Standard
	Cr	52	6114.9	1.9	**-0.0559**	0.020	35.8	ug/L	6628	Standard
	Cr	53	420.0	14.4	**0.0427**	0.071	166.6	ug/L	430	Standard
	Mn	55	696.3	8.0	**-0.0034**	0.009	280.9	ug/L	603	Standard
	Co	59	257.0	3.7	**0.0007**	0.001	190.7	ug/L	237	Standard
	Ni	60	98.3	19.1	**-0.0243**	0.010	42.2	ug/L	141	Standard
	Cu	65	138.3	15.9	**0.0111**	0.013	114.3	ug/L	109	Standard
	Zn	66	155.0	9.1	**-0.0853**	0.013	14.8	ug/L	159	Standard
>	**Ge**	72	451752.5	0.6				ug/L	474053	Standard
	As	75	-25.7	89.3	**0.0007**	0.022	2895.4	ug/L	-34	Standard
	Se	82	22.8	34.8	**0.0475**	0.075	158.2	ug/L	14	Standard
	Se-1	77	56.0	11.7	**0.0207**	0.094	453.1	ug/L	55	Standard
>	**Ga**	71	41.7	18.3				mg/L	50	Standard
	Rb	85	23.3	32.7				ug/L	20	Standard
	Y	89	396184.8	0.8				ug/L	376602	Standard
>	**Rh**	103	16.7	45.8				ug/L	17	Standard
	Mo	98	276.1	23.5	**0.1082**	0.027	25.2	ug/L	8	Standard
	Ag	107	114.0	9.8	**0.0063**	0.002	31.9	ug/L	81	Standard
	Cd	111	11.2	11.3	**0.0024**	0.001	28.4	mg/L	3	Standard
	Cd	114	27.7	73.8	**0.0018**	0.004	228.8	ug/L	7	Standard
>	**In**	115	539405.0	1.3				ug/L	524722	Standard
	Sn	118	770.0	23.8	**0.0496**	0.033	67.2	ug/L	715	Standard
	Sb	123	621.2	30.2	**0.1235**	0.042	34.0	ug/L	201	Standard
	Ba	135	117.7	23.5	**0.0055**	0.015	275.0	ug/L	108	Standard
	Ce	140	10.0	50.0				ug/L	30	Standard
>	**Tb**	159	804197.7	0.7				ug/L	792236	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	67.0	31.6	**0.0062**	0.003	43.0	ug/L	9	Standard
	Tl	205	75.0	13.3	**0.0038**	0.001	37.5	ug/L	0	Standard
	Pb	206	240.0	10.9	**-0.0040**	0.005	132.8	ug/L	216	Standard
	Pb	207	198.7	7.7	**-0.0062**	0.004	60.3	ug/L	180	Standard
	Pb	208	866.3	5.4	**-0.0067**	0.003	50.1	ug/L	717	Standard
	U	238	48.0	12.7	**0.0002**	0.001	508.3	ug/L	4	Standard
>	**Bi**	209	456732.7	1.5				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	38.3	82.8	**0.0048**	0.041	858.7	mg/L	20	Standard
K	39	21.7	87.4	**-0.0684**	0.138	202.1	mg/L	22	Standard
Ca	43	51.7	45.7	**-1.4837**	5.565	375.1	mg/L	47	Standard
Fe	54	127.7	12.6	**-0.0146**	0.015	100.1	mg/L	151	Standard
Fe	57	163.3	30.7	**-0.1626**	0.130	79.6	mg/L	195	Standard
> **Sc-1**	45	30746.2	4.2				mg/L	29647	Standard
Cl	35	165606.2	1.3				ug/L	154152	Standard
Kr	83	3.0	57.7				ug/L	3	Standard
Br	81	2933.6	13.2				ug/L	1607	Standard
P	31	25216.0	5.8				ug/L	22752	Standard
S	34	5477.7	2.3				ug/L	5049	Standard
Sr	88	56.7	33.4				ug/L	87	Standard
C	12	36.7	41.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.9	86.8				mg/L	10	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	10.0	173.2				mg/L	3	Standard
I	127	1125.0	7.7				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.296	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 7
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.798	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.216	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606054009
Sample Date/Time: Thursday, June 16, 2016 18:14:04
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62868.5	2.1				ug/L	51024	Standard
	Be	9	25.0	40.0	**0.0030**	0.010	320.4	ug/L	7	Standard
	Al	27	3263361.8	1.6	**18.5978**	0.187	1.0	ug/L	625	Standard
	Sc	45	30816.3	0.3				ug/L	29647	Standard
	Ti	47	176.7	8.1	**0.4336**	0.054	12.4	ug/L	57	Standard
	V	51	2352.6	1.3	**0.1685**	0.004	2.6	ug/L	1142	Standard
	Cr	52	8208.2	0.8	**0.2076**	0.006	3.1	ug/L	6628	Standard
	Cr	53	778.4	12.3	**0.4216**	0.115	27.4	ug/L	430	Standard
	Mn	55	6000883.1	1.3	**1028.9465**	25.297	2.5	ug/L	603	Standard
	Co	59	5272.3	0.9	**0.7938**	0.018	2.3	ug/L	237	Standard
	Ni	60	2681.9	0.9	**1.3375**	0.018	1.4	ug/L	141	Standard
	Cu	65	979.4	2.5	**0.4642**	0.012	2.6	ug/L	109	Standard
	Zn	66	3790.8	1.0	**3.2497**	0.077	2.4	ug/L	159	Standard
>	**Ge**	72	465659.8	1.3				ug/L	474053	Standard
	As	75	5887.6	1.1	**5.4382**	0.057	1.1	ug/L	-34	Standard
	Se	82	141.8	7.0	**1.1369**	0.108	9.5	ug/L	14	Standard
	Se-1	77	74.7	2.0	**0.2451**	0.023	9.4	ug/L	55	Standard
>	**Ga**	71	296.7	5.1				mg/L	50	Standard
	Rb	85	53373.9	1.9				ug/L	20	Standard
	Y	89	385477.9	2.9				ug/L	376602	Standard
>	**Rh**	103	46.7	16.4				ug/L	17	Standard
	Mo	98	1798.6	2.7	**0.7471**	0.020	2.7	ug/L	8	Standard
	Ag	107	110.0	13.7	**0.0059**	0.003	44.0	ug/L	81	Standard
	Cd	111	71.5	14.9	**0.0332**	0.006	17.6	mg/L	3	Standard
	Cd	114	137.0	6.5	**0.0244**	0.002	7.2	ug/L	7	Standard
>	**In**	115	530892.7	1.2				ug/L	524722	Standard
	Sn	118	731.7	10.0	**0.0448**	0.013	28.2	ug/L	715	Standard
	Sb	123	625.1	16.6	**0.1265**	0.022	17.3	ug/L	201	Standard
	Ba	135	131604.4	0.3	**71.7085**	0.676	0.9	ug/L	108	Standard
	Ce	140	6654.8	2.0				ug/L	30	Standard
>	**Tb**	159	816377.9	1.5				ug/L	792236	Standard
	Ho	165	238.3	11.6				ug/L	7	Standard
	Tl	203	76.0	23.3	**0.0075**	0.002	32.6	ug/L	9	Standard
	Tl	205	63.3	64.3	**0.0021**	0.006	310.8	ug/L	0	Standard
	Pb	206	386.0	5.1	**0.0283**	0.005	18.8	ug/L	216	Standard
	Pb	207	347.0	4.2	**0.0297**	0.005	15.2	ug/L	180	Standard
	Pb	208	1437.7	3.0	**0.0274**	0.003	12.5	ug/L	717	Standard
	U	238	4379.0	0.5	**0.7057**	0.012	1.8	ug/L	4	Standard
>	**Bi**	209	455069.1	1.2				ug/L	460343	Standard

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Na	23	5.0	100.0	**-5.2765**	15.737	298.3	mg/L	0	Standard
Mg	24	9816.5	6.9	**12.7603**	0.918	7.2	mg/L	20	Standard
K	39	4015.5	6.3	**29.2188**	1.778	6.1	mg/L	22	Standard
Ca	43	165.0	35.7	**23.9101**	13.280	55.5	mg/L	47	Standard
Fe	54	13256.8	2.9	**10.2548**	0.305	3.0	mg/L	151	Standard
Fe	57	3875.5	1.1	**10.8966**	0.106	1.0	mg/L	195	Standard
> **Sc-1**	45	30816.3	0.3				mg/L	29647	Standard
Cl	35	225833.9	0.4				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	25945.6	7.7				ug/L	1607	Standard
P	31	26763.6	2.0				ug/L	22752	Standard
S	34	5200.9	3.2				ug/L	5049	Standard
Sr	88	240.0	9.1				ug/L	87	Standard
C	12	193.3	18.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	262.1	17.3				mg/L	10	Standard
Ho-1	165	238.3	11.6				mg/L	7	Standard
Er	166	303.3	18.2				mg/L	3	Standard
I	127	75002.8	8.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.213	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.229	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.176	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.854	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606054009
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Method 6020 - Summary Report

Sample ID: L1606054010
Sample Date/Time: Thursday, June 16, 2016 18:17:15
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65588.3	0.4				ug/L	51024	Standard
	Be	9	30.0	60.1	**0.0066**	0.017	249.6	ug/L	7	Standard
	Al	27	2526422.5	0.3	**13.7972**	0.064	0.5	ug/L	625	Standard
	Sc	45	30417.2	3.2				ug/L	29647	Standard
	Ti	47	2810.3	3.2	**9.9401**	0.380	3.8	ug/L	57	Standard
	V	51	10857.2	0.9	**1.4795**	0.027	1.9	ug/L	1142	Standard
	Cr	52	13448.6	1.8	**1.0447**	0.048	4.6	ug/L	6628	Standard
	Cr	53	1738.4	6.6	**1.5855**	0.118	7.5	ug/L	430	Standard
	Mn	55	662471.2	0.9	**120.2964**	1.474	1.2	ug/L	603	Standard
	Co	59	2699.2	0.2	**0.4120**	0.004	0.9	ug/L	237	Standard
	Ni	60	3377.4	1.2	**1.8118**	0.036	2.0	ug/L	141	Standard
	Cu	65	1366.7	4.1	**0.7187**	0.039	5.4	ug/L	109	Standard
	Zn	66	9779.2	1.9	**9.2895**	0.243	2.6	ug/L	159	Standard
>	**Ge**	72	439226.0	0.9				ug/L	474053	Standard
	As	75	11053.2	2.0	**10.7998**	0.276	2.6	ug/L	-34	Standard
	Se	82	3723.6	2.4	**36.1764**	1.076	3.0	ug/L	14	Standard
	Se-1	77	120.3	17.9	**0.9478**	0.313	33.0	ug/L	55	Standard
>	**Ga**	71	653.3	7.7				mg/L	50	Standard
	Rb	85	17974.0	0.9				ug/L	20	Standard
	Y	89	392749.3	1.5				ug/L	376602	Standard
>	**Rh**	103	83.3	30.2				ug/L	17	Standard
	Mo	98	4323.3	0.4	**1.8596**	0.045	2.4	ug/L	8	Standard
	Ag	107	99.7	3.2	**0.0047**	0.001	17.3	ug/L	81	Standard
	Cd	111	51.2	16.5	**0.0236**	0.004	17.1	mg/L	3	Standard
	Cd	114	147.6	10.0	**0.0276**	0.004	13.0	ug/L	7	Standard
>	**In**	115	515115.8	2.2				ug/L	524722	Standard
	Sn	118	1333.4	7.7	**0.1626**	0.017	10.4	ug/L	715	Standard
	Sb	123	590.9	5.0	**0.1232**	0.010	8.0	ug/L	201	Standard
	Ba	135	57030.1	1.1	**31.9969**	0.347	1.1	ug/L	108	Standard
	Ce	140	21293.3	3.8				ug/L	30	Standard
>	**Tb**	159	786053.3	2.1				ug/L	792236	Standard
	Ho	165	341.7	14.7				ug/L	7	Standard
	Tl	203	337.7	6.2	**0.0450**	0.003	7.2	ug/L	9	Standard
	Tl	205	321.7	3.2	**0.0455**	0.003	5.8	ug/L	0	Standard
	Pb	206	1862.1	0.7	**0.3774**	0.005	1.2	ug/L	216	Standard
	Pb	207	1577.4	0.7	**0.3498**	0.004	1.2	ug/L	180	Standard
	Pb	208	6669.9	1.5	**0.3627**	0.014	3.8	ug/L	717	Standard
	U	238	10873.6	0.3	**1.8752**	0.033	1.8	ug/L	4	Standard
>	**Bi**	209	428106.7	1.8				ug/L	460343	Standard

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Na	23	6.7	114.6	**-10.3208**	23.457	227.3	mg/L	0	Standard
Mg	24	48188.2	2.0	**63.6943**	3.015	4.7	mg/L	20	Standard
K	39	553.3	6.8	**3.8849**	0.281	7.2	mg/L	22	Standard
Ca	43	321.7	16.0	**60.3557**	13.874	23.0	mg/L	47	Standard
Fe	54	1808.8	3.2	**1.3200**	0.080	6.1	mg/L	151	Standard
Fe	57	981.7	5.4	**2.3180**	0.200	8.6	mg/L	195	Standard
> **Sc-1**	45	30417.2	3.2				mg/L	29647	Standard
Cl	35	209372.7	0.6				ug/L	154152	Standard
Kr	83	0.7	173.2				ug/L	3	Standard
Br	81	933072.6	1.4				ug/L	1607	Standard
P	31	28264.7	0.7				ug/L	22752	Standard
S	34	4879.1	1.2				ug/L	5049	Standard
Sr	88	365.0	15.8				ug/L	87	Standard
C	12	160.0	28.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	522.9	18.7				mg/L	10	Standard
Ho-1	165	341.7	14.7				mg/L	7	Standard
Er	166	356.7	9.8				mg/L	3	Standard
I	127	158946.5	8.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.544	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.653	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.169
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.997
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606054010
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Method 6020 - Summary Report

Sample ID: L1606054011
Sample Date/Time: Thursday, June 16, 2016 18:20:27
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66415.2	0.8				ug/L	51024	Standard
	Be	9	31.7	92.5	**0.0080**	0.027	339.9	ug/L	7	Standard
	Al	27	2599405.0	0.8	**14.0190**	0.029	0.2	ug/L	625	Standard
	Sc	45	30612.6	1.1				ug/L	29647	Standard
	Ti	47	3388.4	4.8	**11.4676**	0.712	6.2	ug/L	57	Standard
	V	51	11365.4	1.1	**1.4778**	0.020	1.3	ug/L	1142	Standard
	Cr	52	14126.6	0.8	**1.0496**	0.030	2.9	ug/L	6628	Standard
	Cr	53	1888.5	10.3	**1.6589**	0.194	11.7	ug/L	430	Standard
	Mn	55	683276.7	0.4	**118.4238**	2.389	2.0	ug/L	603	Standard
	Co	59	2752.6	2.0	**0.3999**	0.015	3.8	ug/L	237	Standard
	Ni	60	3356.7	1.2	**1.7147**	0.043	2.5	ug/L	141	Standard
	Cu	65	1350.7	3.3	**0.6741**	0.033	5.0	ug/L	109	Standard
	Zn	66	8668.5	0.7	**7.8234**	0.178	2.3	ug/L	159	Standard
>	**Ge**	72	460253.4	1.6				ug/L	474053	Standard
	As	75	11667.3	1.2	**10.8800**	0.252	2.3	ug/L	-34	Standard
	Se	82	3942.6	1.6	**36.5587**	0.912	2.5	ug/L	14	Standard
	Se-1	77	129.7	8.5	**0.9935**	0.130	13.1	ug/L	55	Standard
>	**Ga**	71	686.7	16.0				mg/L	50	Standard
	Rb	85	19050.3	3.1				ug/L	20	Standard
	Y	89	381859.4	1.4				ug/L	376602	Standard
>	**Rh**	103	103.3	43.9				ug/L	17	Standard
	Mo	98	4373.4	1.2	**1.9146**	0.031	1.6	ug/L	8	Standard
	Ag	107	74.0	18.9	**0.0005**	0.002	456.1	ug/L	81	Standard
	Cd	111	45.0	20.2	**0.0208**	0.005	23.5	mg/L	3	Standard
	Cd	114	116.5	10.2	**0.0214**	0.003	12.0	ug/L	7	Standard
>	**In**	115	506011.1	0.4				ug/L	524722	Standard
	Sn	118	1185.0	3.8	**0.1387**	0.010	6.9	ug/L	715	Standard
	Sb	123	571.9	4.2	**0.1210**	0.005	4.2	ug/L	201	Standard
	Ba	135	57088.3	0.4	**32.6025**	0.223	0.7	ug/L	108	Standard
	Ce	140	20652.4	1.0				ug/L	30	Standard
>	**Tb**	159	785323.2	1.2				ug/L	792236	Standard
	Ho	165	306.7	8.0				ug/L	7	Standard
	Tl	203	332.3	7.5	**0.0441**	0.003	7.8	ug/L	9	Standard
	Tl	205	303.3	2.5	**0.0423**	0.001	2.9	ug/L	0	Standard
	Pb	206	1906.8	2.4	**0.3865**	0.007	1.8	ug/L	216	Standard
	Pb	207	1585.1	0.2	**0.3506**	0.006	1.6	ug/L	180	Standard
	Pb	208	6566.9	1.1	**0.3550**	0.006	1.8	ug/L	717	Standard
	U	238	10922.6	1.0	**1.8784**	0.027	1.4	ug/L	4	Standard
>	**Bi**	209	429255.9	1.2				ug/L	460343	Standard

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Na	23	10.0		**-21.2549**	0.358	1.7	mg/L	0	Standard
Mg	24	49766.6	0.9	**65.3028**	0.773	1.2	mg/L	20	Standard
K	39	513.3	10.0	**3.5605**	0.354	9.9	mg/L	22	Standard
Ca	43	375.0	2.3	**71.6613**	1.832	2.6	mg/L	47	Standard
Fe	54	1685.6	3.3	**1.2127**	0.057	4.7	mg/L	151	Standard
Fe	57	868.4	4.3	**1.9576**	0.137	7.0	mg/L	195	Standard
> **Sc-1**	45	30612.6	1.1				mg/L	29647	Standard
Cl	35	212698.7	1.3				ug/L	154152	Standard
Kr	83	1.3	114.6				ug/L	3	Standard
Br	81	930543.4	1.3				ug/L	1607	Standard
P	31	28647.1	1.3				ug/L	22752	Standard
S	34	4877.5	1.7				ug/L	5049	Standard
Sr	88	360.0	7.7				ug/L	87	Standard
C	12	163.3	18.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	0	Standard
Dy	164	512.3	22.5				mg/L	10	Standard
Ho-1	165	306.7	8.0				mg/L	7	Standard
Er	166	300.0	28.9				mg/L	3	Standard
I	127	165895.7	6.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		130.164	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.089	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.434
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.247
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606054011
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Method 6020 - Summary Report

Sample ID: L1606054014
Sample Date/Time: Thursday, June 16, 2016 18:23:38
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68457.7	1.1				ug/L	51024	Standard
	Be	9	223.3	18.0	**0.1767**	0.033	18.9	ug/L	7	Standard
	Al	27	3707488.9	1.7	**19.4017**	0.122	0.6	ug/L	625	Standard
	Sc	45	30515.7	3.4				ug/L	29647	Standard
	Ti	47	294.7	2.2	**0.8253**	0.029	3.5	ug/L	57	Standard
	V	51	3410.3	2.9	**0.3157**	0.010	3.3	ug/L	1142	Standard
	Cr	52	8854.9	2.4	**0.2871**	0.040	14.1	ug/L	6628	Standard
	Cr	53	1000.0	7.8	**0.6537**	0.075	11.4	ug/L	430	Standard
	Mn	55	12117646.4	0.4	**2060.2552**	13.775	0.7	ug/L	603	Standard
	Co	59	1473.7	1.2	**0.1902**	0.002	1.2	ug/L	237	Standard
	Ni	60	5603.4	1.0	**2.8548**	0.061	2.1	ug/L	141	Standard
	Cu	65	1122.7	1.8	**0.5367**	0.010	1.8	ug/L	109	Standard
	Zn	66	11386.6	1.1	**10.1370**	0.058	0.6	ug/L	159	Standard
>	**Ge**	72	469570.6	1.1				ug/L	474053	Standard
	As	75	14849.9	0.4	**13.5649**	0.144	1.1	ug/L	-34	Standard
	Se	82	356.9	5.3	**3.0899**	0.192	6.2	ug/L	14	Standard
	Se-1	77	81.7	2.5	**0.3287**	0.021	6.5	ug/L	55	Standard
>	**Ga**	71	528.3	9.7				mg/L	50	Standard
	Rb	85	19908.1	1.7				ug/L	20	Standard
	Y	89	397696.3	3.0				ug/L	376602	Standard
>	**Rh**	103	73.3	28.4				ug/L	17	Standard
	Mo	98	1099.6	1.0	**0.4465**	0.011	2.4	ug/L	8	Standard
	Ag	107	113.3	53.3	**0.0062**	0.010	164.1	ug/L	81	Standard
	Cd	111	46.4	117.1	**0.0203**	0.028	137.1	mg/L	3	Standard
	Cd	114	110.7	115.4	**0.0188**	0.026	140.1	ug/L	7	Standard
>	**In**	115	540492.7	1.5				ug/L	524722	Standard
	Sn	118	843.4	3.6	**0.0625**	0.003	5.4	ug/L	715	Standard
	Sb	123	260.9	5.7	**0.0432**	0.004	9.7	ug/L	201	Standard
	Ba	135	85652.2	2.1	**45.8145**	0.326	0.7	ug/L	108	Standard
	Ce	140	2418.5	4.8				ug/L	30	Standard
>	**Tb**	159	825063.1	0.9				ug/L	792236	Standard
	Ho	165	370.0	15.3				ug/L	7	Standard
	Tl	203	165.0	77.7	**0.0187**	0.017	89.0	ug/L	9	Standard
	Tl	205	83.3	48.9	**0.0048**	0.006	129.6	ug/L	0	Standard
	Pb	206	781.7	2.4	**0.1102**	0.005	4.7	ug/L	216	Standard
	Pb	207	661.7	6.1	**0.1011**	0.010	10.0	ug/L	180	Standard
	Pb	208	2756.1	3.9	**0.1010**	0.006	6.3	ug/L	717	Standard
	U	238	69.7	29.4	**0.0035**	0.003	95.7	ug/L	4	Standard
>	**Bi**	209	467941.3	0.6				ug/L	460343	Standard

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Na	23	1.7	173.2	**4.9367**	9.553	193.5	mg/L	0	Standard
Mg	24	7730.3	2.8	**10.1412**	0.303	3.0	mg/L	20	Standard
K	39	158.3	7.9	**0.9473**	0.128	13.5	mg/L	22	Standard
Ca	43	168.3	19.8	**24.8759**	6.392	25.7	mg/L	47	Standard
Fe	54	6384.0	2.9	**4.9326**	0.253	5.1	mg/L	151	Standard
Fe	57	1760.1	6.1	**4.6585**	0.505	10.8	mg/L	195	Standard
> **Sc-1**	45	30515.7	3.4				mg/L	29647	Standard
Cl	35	207881.0	0.4				ug/L	154152	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	77943.4	2.4				ug/L	1607	Standard
P	31	27538.3	2.1				ug/L	22752	Standard
S	34	5344.3	4.3				ug/L	5049	Standard
Sr	88	228.3	5.5				ug/L	87	Standard
C	12	153.3	22.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	364.7	19.0				mg/L	10	Standard
Ho-1	165	370.0	15.3				mg/L	7	Standard
Er	166	390.0	7.7				mg/L	3	Standard
I	127	96865.7	4.2				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		134.167	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.054	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.006
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.651
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606054015
Sample Date/Time: Thursday, June 16, 2016 18:26:50
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70212.3	1.0				ug/L	51024	Standard
	Be	9	93.3	11.2	**0.0596**	0.009	14.8	ug/L	7	Standard
	Al	27	2156794.6	1.5	**11.0022**	0.244	2.2	ug/L	625	Standard
	Sc	45	32787.1	2.8				ug/L	29647	Standard
	Ti	47	872.7	1.5	**2.8741**	0.038	1.3	ug/L	57	Standard
	V	51	4953.3	2.7	**0.5601**	0.025	4.5	ug/L	1142	Standard
	Cr	52	12535.5	0.5	**0.8533**	0.007	0.8	ug/L	6628	Standard
	Cr	53	3772.1	6.1	**3.8114**	0.290	7.6	ug/L	430	Standard
	Mn	55	223713.2	0.6	**39.2731**	0.557	1.4	ug/L	603	Standard
	Co	59	2453.9	1.1	**0.3579**	0.004	1.1	ug/L	237	Standard
	Ni	60	3886.2	1.3	**2.0286**	0.038	1.9	ug/L	141	Standard
	Cu	65	32893.7	0.8	**18.2296**	0.262	1.4	ug/L	109	Standard
	Zn	66	61284.4	0.6	**57.5727**	0.568	1.0	ug/L	159	Standard
>	**Ge**	72	453357.9	0.8				ug/L	474053	Standard
	As	75	5903.1	1.9	**5.6002**	0.148	2.6	ug/L	-34	Standard
	Se	82	1422.0	3.2	**13.2789**	0.537	4.0	ug/L	14	Standard
	Se-1	77	189.7	16.8	**1.8389**	0.442	24.1	ug/L	55	Standard
>	**Ga**	71	225.0	13.5				mg/L	50	Standard
	Rb	85	13973.1	2.8				ug/L	20	Standard
	Y	89	404441.3	1.8				ug/L	376602	Standard
>	**Rh**	103	65.0	38.5				ug/L	17	Standard
	Mo	98	294.7	2.2	**0.1146**	0.002	2.0	ug/L	8	Standard
	Ag	107	105.0	9.1	**0.0046**	0.002	33.3	ug/L	81	Standard
	Cd	111	122.5	4.2	**0.0575**	0.003	4.7	mg/L	3	Standard
	Cd	114	252.7	21.3	**0.0469**	0.011	22.8	ug/L	7	Standard
>	**In**	115	544955.5	0.5				ug/L	524722	Standard
	Sn	118	895.0	4.4	**0.0706**	0.008	11.3	ug/L	715	Standard
	Sb	123	270.4	10.2	**0.0448**	0.006	14.2	ug/L	201	Standard
	Ba	135	146088.3	0.9	**77.5484**	1.011	1.3	ug/L	108	Standard
	Ce	140	17523.5	3.1				ug/L	30	Standard
>	**Tb**	159	819658.6	1.6				ug/L	792236	Standard
	Ho	165	628.3	0.5				ug/L	7	Standard
	Tl	203	235.3	10.6	**0.0288**	0.003	9.6	ug/L	9	Standard
	Tl	205	200.0	25.0	**0.0236**	0.008	34.4	ug/L	0	Standard
	Pb	206	6489.4	1.2	**1.3771**	0.042	3.0	ug/L	216	Standard
	Pb	207	5497.7	0.5	**1.2800**	0.026	2.0	ug/L	180	Standard
	Pb	208	22985.2	1.3	**1.3164**	0.041	3.1	ug/L	717	Standard
	U	238	227.3	4.1	**0.0298**	0.002	7.0	ug/L	4	Standard
>	**Bi**	209	451512.8	1.8				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.4796**	8.613	157.2	mg/L	0	Standard
Mg	24	16031.8	1.4	**19.6235**	0.803	4.1	mg/L	20	Standard
K	39	240.0	3.6	**1.4284**	0.103	7.2	mg/L	22	Standard
Ca	43	188.3	18.1	**26.5601**	6.775	25.5	mg/L	47	Standard
Fe	54	2702.3	1.1	**1.8725**	0.045	2.4	mg/L	151	Standard
Fe	57	970.0	7.1	**2.0665**	0.116	5.6	mg/L	195	Standard
> **Sc-1**	45	32787.1	2.8				mg/L	29647	Standard
Cl	35	187497.7	0.8				ug/L	154152	Standard
Kr	83	2.3	49.5				ug/L	3	Standard
Br	81	349533.5	4.1				ug/L	1607	Standard
P	31	41573.8	6.0				ug/L	22752	Standard
S	34	4967.5	2.6				ug/L	5049	Standard
Sr	88	208.3	5.5				ug/L	87	Standard
C	12	116.7	26.2				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	870.5	12.8				mg/L	10	Standard
Ho-1	165	628.3	0.5				mg/L	7	Standard
Er	166	616.7	28.8				mg/L	3	Standard
I	127	319694.7	6.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		137.606	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.634	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.856	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.082	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606054016
Sample Date/Time: Thursday, June 16, 2016 18:30:01
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68176.4	1.2				ug/L	51024	Standard
	Be	9	21.7	13.3	**-0.0018**	0.003	143.7	ug/L	7	Standard
	Al	27	2075359.9	0.4	**10.9025**	0.136	1.2	ug/L	625	Standard
	Sc	45	31050.1	1.7				ug/L	29647	Standard
	Ti	47	887.4	5.3	**2.8528**	0.151	5.3	ug/L	57	Standard
	V	51	3806.8	2.6	**0.3783**	0.010	2.7	ug/L	1142	Standard
	Cr	52	10637.4	1.5	**0.5485**	0.036	6.6	ug/L	6628	Standard
	Cr	53	1405.1	2.8	**1.1115**	0.040	3.6	ug/L	430	Standard
	Mn	55	486178.5	1.9	**83.5032**	2.235	2.7	ug/L	603	Standard
	Co	59	1054.7	3.8	**0.1263**	0.008	6.2	ug/L	237	Standard
	Ni	60	11529.4	0.9	**6.0257**	0.114	1.9	ug/L	141	Standard
	Cu	65	2707.2	1.0	**1.4044**	0.012	0.8	ug/L	109	Standard
	Zn	66	9083.1	1.3	**8.1357**	0.169	2.1	ug/L	159	Standard
>	**Ge**	72	464207.3	1.0				ug/L	474053	Standard
	As	75	2758.8	3.0	**2.5691**	0.059	2.3	ug/L	-34	Standard
	Se	82	1024.4	2.4	**9.2906**	0.197	2.1	ug/L	14	Standard
	Se-1	77	98.0	6.2	**0.5580**	0.071	12.7	ug/L	55	Standard
>	**Ga**	71	195.0	23.5				mg/L	50	Standard
	Rb	85	7673.6	3.9				ug/L	20	Standard
	Y	89	397515.6	2.3				ug/L	376602	Standard
>	**Rh**	103	68.3	30.5				ug/L	17	Standard
	Mo	98	786.7	1.9	**0.3292**	0.014	4.4	ug/L	8	Standard
	Ag	107	78.0	2.6	**0.0008**	0.000	5.5	ug/L	81	Standard
	Cd	111	30.9	35.5	**0.0127**	0.005	42.9	mg/L	3	Standard
	Cd	114	65.2	1.1	**0.0098**	0.000	2.0	ug/L	7	Standard
>	**In**	115	522465.9	2.4				ug/L	524722	Standard
	Sn	118	738.4	3.7	**0.0483**	0.008	17.1	ug/L	715	Standard
	Sb	123	275.0	16.0	**0.0486**	0.012	23.8	ug/L	201	Standard
	Ba	135	25240.0	1.7	**13.9295**	0.222	1.6	ug/L	108	Standard
	Ce	140	3872.2	6.3				ug/L	30	Standard
>	**Tb**	159	782878.6	0.7				ug/L	792236	Standard
	Ho	165	290.0	15.0				ug/L	7	Standard
	Tl	203	118.7	19.0	**0.0136**	0.003	22.8	ug/L	9	Standard
	Tl	205	133.3	20.7	**0.0136**	0.004	32.8	ug/L	0	Standard
	Pb	206	2356.5	1.5	**0.4750**	0.007	1.6	ug/L	216	Standard
	Pb	207	2055.5	1.9	**0.4553**	0.008	1.8	ug/L	180	Standard
	Pb	208	8501.6	2.4	**0.4610**	0.013	2.9	ug/L	717	Standard
	U	238	331.0	4.1	**0.0479**	0.002	5.0	ug/L	4	Standard
>	**Bi**	209	442159.2	0.2				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.1730**	9.144	176.8	mg/L	0	Standard
Mg	24	10690.4	1.9	**13.7935**	0.084	0.6	mg/L	20	Standard
K	39	96.7	13.0	**0.4748**	0.079	16.7	mg/L	22	Standard
Ca	43	233.3	8.9	**38.9201**	5.419	13.9	mg/L	47	Standard
Fe	54	3334.2	1.9	**2.4739**	0.064	2.6	mg/L	151	Standard
Fe	57	1251.7	5.3	**3.0560**	0.253	8.3	mg/L	195	Standard
> **Sc-1**	45	31050.1	1.7				mg/L	29647	Standard
Cl	35	170093.6	1.6				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	245182.8	3.5				ug/L	1607	Standard
P	31	32394.6	2.5				ug/L	22752	Standard
S	34	5009.2	1.9				ug/L	5049	Standard
Sr	88	261.7	17.8				ug/L	87	Standard
C	12	140.0	12.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	323.0	18.5				mg/L	10	Standard
Ho-1	165	290.0	15.0				mg/L	7	Standard
Er	166	216.7	25.4				mg/L	3	Standard
I	127	55511.6	2.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		133.616	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.923	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.570
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.050
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606054901
Sample Date/Time: Thursday, June 16, 2016 18:33:13
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72709.1	1.6				ug/L	51024	Standard
	Be	9	15.0	88.2	**-0.0087**	0.011	126.1	ug/L	7	Standard
	Al	27	11667015.3	1.5	**57.5082**	0.540	0.9	ug/L	625	Standard
	Sc	45	28668.8	2.1				ug/L	29647	Standard
	Ti	47	148.7	19.1	**0.3823**	0.104	27.3	ug/L	57	Standard
	V	51	2595.6	16.9	**0.2356**	0.067	28.4	ug/L	1142	Standard
	Cr	52	17123.0	0.8	**1.6486**	0.049	3.0	ug/L	6628	Standard
	Cr	53	9336.3	15.0	**10.6848**	1.682	15.7	ug/L	430	Standard
	Mn	55	18549.3	0.3	**3.3327**	0.052	1.6	ug/L	603	Standard
	Co	59	5007.8	1.9	**0.8213**	0.019	2.4	ug/L	237	Standard
	Ni	60	15512.9	1.9	**8.8253**	0.199	2.3	ug/L	141	Standard
	Cu	65	297329.3	1.3	**175.0473**	3.650	2.1	ug/L	109	Standard
	Zn	66	4856.4	2.5	**4.6181**	0.121	2.6	ug/L	159	Standard
>	**Ge**	72	428183.3	1.3				ug/L	474053	Standard
	As	75	2686.3	8.7	**2.7111**	0.235	8.7	ug/L	-34	Standard
	Se	82	880.4	5.1	**8.6464**	0.479	5.5	ug/L	14	Standard
	Se-1	77	1273.7	6.1	**17.6237**	1.226	7.0	ug/L	55	Standard
>	**Ga**	71	535.0	8.9				mg/L	50	Standard
	Rb	85	254257.5	1.2				ug/L	20	Standard
	Y	89	359721.9	0.6				ug/L	376602	Standard
>	**Rh**	103	140.0	9.4				ug/L	17	Standard
	Mo	98	3488.6	3.7	**1.5905**	0.067	4.2	ug/L	8	Standard
	Ag	107	123.7	2.8	**0.0101**	0.001	6.2	ug/L	81	Standard
	Cd	111	15.6	26.6	**0.0055**	0.002	42.5	mg/L	3	Standard
	Cd	114	44.2	40.8	**0.0061**	0.004	65.8	ug/L	7	Standard
>	**In**	115	485628.6	0.5				ug/L	524722	Standard
	Sn	118	1148.4	1.8	**0.1409**	0.005	3.6	ug/L	715	Standard
	Sb	123	1921.7	1.1	**0.4606**	0.007	1.6	ug/L	201	Standard
	Ba	135	96043.1	1.3	**57.1923**	0.511	0.9	ug/L	108	Standard
	Ce	140	93.3	49.8				ug/L	30	Standard
>	**Tb**	159	766976.5	0.2				ug/L	792236	Standard
	Ho	165	5.0	173.2				ug/L	7	Standard
	Tl	203	328.3	20.2	**0.0463**	0.010	21.2	ug/L	9	Standard
	Tl	205	263.3	14.0	**0.0383**	0.006	16.9	ug/L	0	Standard
	Pb	206	413.7	9.2	**0.0455**	0.009	20.2	ug/L	216	Standard
	Pb	207	380.0	6.3	**0.0489**	0.006	12.7	ug/L	180	Standard
	Pb	208	1519.7	11.6	**0.0434**	0.011	26.5	ug/L	717	Standard
	U	238	31.3	49.5	**-0.0018**	0.003	153.2	ug/L	4	Standard
>	**Bi**	209	404872.2	0.7				ug/L	460343	Standard

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Na	23	10.0	86.6	**-23.4566**	29.384	125.3	mg/L	0	Standard
Mg	24	267948.6	0.7	**375.7604**	9.820	2.6	mg/L	20	Standard
K	39	5807.8	3.4	**45.5805**	2.203	4.8	mg/L	22	Standard
Ca	43	638.3	3.5	**141.1529**	8.616	6.1	mg/L	47	Standard
Fe	54	146.9	19.8	**0.0083**	0.022	270.3	mg/L	151	Standard
Fe	57	816.7	4.9	**1.9694**	0.159	8.1	mg/L	195	Standard
> **Sc-1**	45	28668.8	2.1				mg/L	29647	Standard
Cl	35	417643.9	1.4				ug/L	154152	Standard
Kr	83	3.0	57.7				ug/L	3	Standard
Br	81	229759.6	2.4				ug/L	1607	Standard
P	31	23254.5	2.6				ug/L	22752	Standard
S	34	4967.5	4.2				ug/L	5049	Standard
Sr	88	355.0	7.8				ug/L	87	Standard
C	12	183.3	32.0				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	56.7	27.0				mg/L	0	Standard
Dy	164	9.8	2.8				mg/L	10	Standard
Ho-1	165	5.0	173.2				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	1031517.8	6.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		142.499	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.324	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	92.550
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	87.950
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: L1606061401
Sample Date/Time: Thursday, June 16, 2016 18:36:24
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67849.9	1.1				ug/L	51024	Standard
	Be	9	10.0	100.0	**-0.0122**	0.009	72.4	ug/L	7	Standard
	Al	27	7374370.7	1.4	**38.9545**	0.953	2.4	ug/L	625	Standard
	Sc	45	31795.0	3.3				ug/L	29647	Standard
	Ti	47	313.7	6.8	**0.9174**	0.076	8.3	ug/L	57	Standard
	V	51	2621.7	2.2	**0.2138**	0.007	3.4	ug/L	1142	Standard
	Cr	52	11091.1	1.0	**0.6343**	0.009	1.4	ug/L	6628	Standard
	Cr	53	2283.5	15.4	**2.1128**	0.383	18.1	ug/L	430	Standard
	Mn	55	22885192.4	0.4	**3995.0920**	30.113	0.8	ug/L	603	Standard
	Co	59	1232.4	2.0	**0.1575**	0.003	2.1	ug/L	237	Standard
	Ni	60	2098.5	2.4	**1.0496**	0.022	2.1	ug/L	141	Standard
	Cu	65	1216.4	7.2	**0.6044**	0.045	7.4	ug/L	109	Standard
	Zn	66	2288.2	0.5	**1.9075**	0.018	1.0	ug/L	159	Standard
>	**Ge**	72	457333.9	0.5				ug/L	474053	Standard
	As	75	909.5	3.9	**0.8764**	0.032	3.6	ug/L	-34	Standard
	Se	82	87.0	7.9	**0.6466**	0.066	10.1	ug/L	14	Standard
	Se-1	77	157.0	28.6	**1.3726**	0.597	43.5	ug/L	55	Standard
>	**Ga**	71	960.0	12.3				mg/L	50	Standard
	Rb	85	5015.8	1.4				ug/L	20	Standard
	Y	89	394642.7	2.8				ug/L	376602	Standard
>	**Rh**	103	63.3	16.4				ug/L	17	Standard
	Mo	98	105.8	7.3	**0.0386**	0.003	8.5	ug/L	8	Standard
	Ag	107	76.0	8.0	**0.0002**	0.001	446.5	ug/L	81	Standard
	Cd	111	105.5	11.4	**0.0504**	0.007	13.1	mg/L	3	Standard
	Cd	114	217.3	8.1	**0.0408**	0.003	7.9	ug/L	7	Standard
>	**In**	115	532134.8	0.9				ug/L	524722	Standard
	Sn	118	536.7	2.8	**0.0088**	0.003	34.6	ug/L	715	Standard
	Sb	123	277.5	10.8	**0.0479**	0.007	15.3	ug/L	201	Standard
	Ba	135	159442.6	1.1	**86.6865**	1.387	1.6	ug/L	108	Standard
	Ce	140	1033.4	5.7				ug/L	30	Standard
>	**Tb**	159	812600.2	1.7				ug/L	792236	Standard
	Ho	165	136.7	12.8				ug/L	7	Standard
	Tl	203	148.0	12.8	**0.0171**	0.003	14.9	ug/L	9	Standard
	Tl	205	111.7	14.4	**0.0097**	0.003	26.2	ug/L	0	Standard
	Pb	206	315.7	1.6	**0.0132**	0.001	8.8	ug/L	216	Standard
	Pb	207	263.7	2.5	**0.0100**	0.002	15.2	ug/L	180	Standard
	Pb	208	1172.4	3.4	**0.0120**	0.002	19.7	ug/L	717	Standard
	U	238	803.7	2.6	**0.1241**	0.003	2.8	ug/L	4	Standard
>	**Bi**	209	452405.5	0.1				ug/L	460343	Standard

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Na	23	10.0	50.0	**-19.9609**	15.153	75.9	mg/L	0	Standard
Mg	24	11375.9	2.6	**14.3383**	0.138	1.0	mg/L	20	Standard
K	39	516.7	6.4	**3.4516**	0.346	10.0	mg/L	22	Standard
Ca	43	308.3	25.1	**54.1698**	18.153	33.5	mg/L	47	Standard
Fe	54	4619.7	1.0	**3.3894**	0.094	2.8	mg/L	151	Standard
Fe	57	1538.4	4.2	**3.7997**	0.290	7.6	mg/L	195	Standard
> **Sc-1**	45	31795.0	3.3				mg/L	29647	Standard
Cl	35	183919.6	1.0				ug/L	154152	Standard
Kr	83	2.3	89.2				ug/L	3	Standard
Br	81	17553.5	2.0				ug/L	1607	Standard
P	31	29355.1	2.7				ug/L	22752	Standard
S	34	5200.9	1.9				ug/L	5049	Standard
Sr	88	190.0	11.5				ug/L	87	Standard
C	12	103.3	53.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	152.8	48.1				mg/L	10	Standard
Ho-1	165	136.7	12.8				mg/L	7	Standard
Er	166	150.0	34.6				mg/L	3	Standard
I	127	70208.0	15.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.976	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.473	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.413	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.276	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606062401
Sample Date/Time: Thursday, June 16, 2016 18:39:36
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69110.6	0.2				ug/L	51024	Standard
	Be	9	15.0	33.3	**-0.0079**	0.004	55.0	ug/L	7	Standard
	Al	27	7936210.1	0.6	**41.1512**	0.274	0.7	ug/L	625	Standard
	Sc	45	30823.0	3.2				ug/L	29647	Standard
	Ti	47	221.7	9.7	**0.5979**	0.081	13.6	ug/L	57	Standard
	V	51	218784.0	0.6	**31.6314**	0.474	1.5	ug/L	1142	Standard
	Cr	52	16406.2	1.4	**1.3767**	0.046	3.3	ug/L	6628	Standard
	Cr	53	3238.7	7.2	**3.1676**	0.244	7.7	ug/L	430	Standard
	Mn	55	47582.7	4.0	**8.1574**	0.347	4.3	ug/L	603	Standard
	Co	59	6337.0	0.6	**0.9777**	0.004	0.4	ug/L	237	Standard
	Ni	60	16455.3	0.3	**8.7388**	0.105	1.2	ug/L	141	Standard
	Cu	65	7946.8	1.2	**4.3032**	0.079	1.8	ug/L	109	Standard
	Zn	66	49099.1	1.5	**45.5445**	0.480	1.1	ug/L	159	Standard
>	**Ge**	72	458635.0	1.0				ug/L	474053	Standard
	As	75	1613.9	2.7	**1.5315**	0.033	2.1	ug/L	-34	Standard
	Se	82	632.2	1.0	**5.7396**	0.015	0.3	ug/L	14	Standard
	Se-1	77	198.0	8.1	**1.9191**	0.191	10.0	ug/L	55	Standard
>	**Ga**	71	478.3	12.6				mg/L	50	Standard
	Rb	85	15694.8	4.0				ug/L	20	Standard
	Y	89	402857.7	1.3				ug/L	376602	Standard
>	**Rh**	103	55.0	41.7				ug/L	17	Standard
	Mo	98	250973.6	0.6	**101.4589**	1.305	1.3	ug/L	8	Standard
	Ag	107	107.3	16.2	**0.0049**	0.003	57.8	ug/L	81	Standard
	Cd	111	-120.2	20.3	**-0.0625**	0.013	20.5	mg/L	3	Standard
	Cd	114	568.4	5.3	**0.1093**	0.006	5.7	ug/L	7	Standard
>	**In**	115	549544.5	1.2				ug/L	524722	Standard
	Sn	118	805.0	7.3	**0.0532**	0.009	16.5	ug/L	715	Standard
	Sb	123	561.0	5.0	**0.1078**	0.005	5.0	ug/L	201	Standard
	Ba	135	33980.1	2.6	**17.8424**	0.439	2.5	ug/L	108	Standard
	Ce	140	471.7	1.2				ug/L	30	Standard
>	**Tb**	159	820522.7	2.1				ug/L	792236	Standard
	Ho	165	20.0	25.0				ug/L	7	Standard
	Tl	203	251.3	7.2	**0.0306**	0.002	5.8	ug/L	9	Standard
	Tl	205	235.0	7.7	**0.0286**	0.002	7.0	ug/L	0	Standard
	Pb	206	1733.1	4.4	**0.3220**	0.019	5.8	ug/L	216	Standard
	Pb	207	1553.1	3.0	**0.3188**	0.020	6.4	ug/L	180	Standard
	Pb	208	6433.5	1.7	**0.3223**	0.016	4.9	ug/L	717	Standard
	U	238	255.3	11.3	**0.0338**	0.004	11.1	ug/L	4	Standard
>	**Bi**	209	456920.5	2.4				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.0019**	9.440	188.7	mg/L	0	Standard
Mg	24	19250.6	2.3	**25.0636**	0.292	1.2	mg/L	20	Standard
K	39	168.3	17.4	**1.0102**	0.242	24.0	mg/L	22	Standard
Ca	43	145.0	18.2	**19.2916**	5.015	26.0	mg/L	47	Standard
Fe	54	151.8	11.3	**0.0041**	0.017	409.5	mg/L	151	Standard
Fe	57	315.0	7.3	**0.2903**	0.041	14.1	mg/L	195	Standard
Sc-1	45	30823.0	3.2				mg/L	29647	Standard
Cl	35	228215.4	1.2				ug/L	154152	Standard
Kr	83	1.7	124.9				ug/L	3	Standard
Br	81	147558.5	1.4				ug/L	1607	Standard
P	31	26561.6	1.8				ug/L	22752	Standard
S	34	5117.5	2.5				ug/L	5049	Standard
Sr	88	270.0	14.7				ug/L	87	Standard
C	12	100.0	17.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	70.0	24.7				mg/L	0	Standard
Dy	164	58.9	45.9				mg/L	10	Standard
Ho-1	165	20.0	25.0				mg/L	7	Standard
Er	166	23.3	49.5				mg/L	3	Standard
I	127	16912.8	6.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		135.447	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.748	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	104.731	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.257	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	

Sample ID: L1606062401
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Method 6020 - Summary Report

Sample ID: L1606063001 WG572432-03
Sample Date/Time: Thursday, June 16, 2016 18:42:47
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69631.3	1.0				ug/L	51024	Standard
	Be	9	8.3	34.6	**-0.0138**	0.003	18.5	ug/L	7	Standard
	Al	27	1739354.1	0.6	**8.9445**	0.105	1.2	ug/L	625	Standard
	Sc	45	30928.2	2.9				ug/L	29647	Standard
	Ti	47	665.7	3.5	**2.0953**	0.107	5.1	ug/L	57	Standard
	V	51	2109.1	2.9	**0.1339**	0.005	3.7	ug/L	1142	Standard
	Cr	52	7651.6	0.5	**0.1320**	0.020	15.0	ug/L	6628	Standard
	Cr	53	2638.6	11.3	**2.4577**	0.289	11.8	ug/L	430	Standard
	Mn	55	27736.7	1.0	**4.6358**	0.114	2.5	ug/L	603	Standard
	Co	59	815.4	0.8	**0.0880**	0.002	1.9	ug/L	237	Standard
	Ni	60	1350.7	2.9	**0.6359**	0.022	3.4	ug/L	141	Standard
	Cu	65	5230.6	1.3	**2.7695**	0.021	0.8	ug/L	109	Standard
	Zn	66	9220.1	0.6	**8.2452**	0.069	0.8	ug/L	159	Standard
>	**Ge**	72	465111.5	1.4				ug/L	474053	Standard
	As	75	269.2	8.8	**0.2730**	0.025	9.0	ug/L	-34	Standard
	Se	82	49.8	13.6	**0.2903**	0.068	23.4	ug/L	14	Standard
	Se-1	77	173.0	5.2	**1.5506**	0.090	5.8	ug/L	55	Standard
>	**Ga**	71	241.7	10.4				mg/L	50	Standard
	Rb	85	36829.7	1.3				ug/L	20	Standard
	Y	89	384374.8	2.5				ug/L	376602	Standard
>	**Rh**	103	41.7	25.0				ug/L	17	Standard
	Mo	98	728.3	12.5	**0.3031**	0.038	12.6	ug/L	8	Standard
	Ag	107	82.0	10.4	**0.0014**	0.002	110.2	ug/L	81	Standard
	Cd	111	14.7	18.3	**0.0044**	0.001	34.2	mg/L	3	Standard
	Cd	114	39.2	43.5	**0.0044**	0.004	82.7	ug/L	7	Standard
>	**In**	115	524227.9	1.2				ug/L	524722	Standard
	Sn	118	960.0	3.9	**0.0890**	0.009	10.3	ug/L	715	Standard
	Sb	123	670.5	6.9	**0.1389**	0.011	8.0	ug/L	201	Standard
	Ba	135	8761.5	1.0	**4.7811**	0.086	1.8	ug/L	108	Standard
	Ce	140	878.4	8.1				ug/L	30	Standard
>	**Tb**	159	793064.4	3.2				ug/L	792236	Standard
	Ho	165	38.3	19.9				ug/L	7	Standard
	Tl	203	150.0	18.8	**0.0177**	0.004	22.6	ug/L	9	Standard
	Tl	205	133.3	15.6	**0.0133**	0.003	25.5	ug/L	0	Standard
	Pb	206	508.3	5.7	**0.0571**	0.007	12.3	ug/L	216	Standard
	Pb	207	414.7	10.5	**0.0477**	0.010	21.1	ug/L	180	Standard
	Pb	208	1771.7	0.4	**0.0490**	0.001	1.6	ug/L	717	Standard
	U	238	19.0	24.1	**-0.0044**	0.001	16.6	ug/L	4	Standard
>	**Bi**	209	447050.8	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	28164.5	1.9	**36.5804**	1.386	3.8	mg/L	20	Standard
K	39	385.0	0.0	**2.5870**	0.080	3.1	mg/L	22	Standard
Ca	43	85.0	20.4	**5.9218**	4.410	74.5	mg/L	47	Standard
Fe	54	182.6	15.8	**0.0273**	0.022	80.2	mg/L	151	Standard
Fe	57	225.0	0.0	**0.0211**	0.019	90.5	mg/L	195	Standard
Sc-1	45	30928.2	2.9				mg/L	29647	Standard
Cl	35	213453.3	1.7				ug/L	154152	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	8942.7	8.2				ug/L	1607	Standard
P	31	31840.1	1.6				ug/L	22752	Standard
S	34	5007.5	0.9				ug/L	5049	Standard
Sr	88	131.7	11.6				ug/L	87	Standard
C	12	73.3	34.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	40.5	49.2				mg/L	10	Standard
Ho-1	165	38.3	19.9				mg/L	7	Standard
Er	166	60.0	33.3				mg/L	3	Standard
I	127	51039.4	6.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		136.467	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.114	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.906
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.113
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 18:46:00
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68225.0	3.2				ug/L	51024	Standard
	Be	9	50708.1	3.5	**45.0847**	0.435	1.0	ug/L	7	Standard
	Al	27	7858332.7	1.5	**41.2907**	0.687	1.7	ug/L	625	Standard
	Sc	45	30560.8	2.3				ug/L	29647	Standard
	Ti	47	29370.1	1.8	**100.7639**	1.653	1.6	ug/L	57	Standard
	V	51	355260.2	0.6	**51.3611**	0.501	1.0	ug/L	1142	Standard
	Cr	52	364134.0	1.1	**50.1157**	0.189	0.4	ug/L	6628	Standard
	Cr	53	45359.5	2.1	**49.8880**	1.306	2.6	ug/L	430	Standard
	Mn	55	315438.4	1.3	**54.6794**	1.132	2.1	ug/L	603	Standard
	Co	59	335779.3	1.2	**53.8409**	0.832	1.5	ug/L	237	Standard
	Ni	60	93086.4	0.8	**49.6929**	0.140	0.3	ug/L	141	Standard
	Cu	65	91127.3	1.4	**49.9327**	0.679	1.4	ug/L	109	Standard
	Zn	66	54195.8	1.1	**50.1944**	0.353	0.7	ug/L	159	Standard
>	**Ge**	72	459562.3	0.8				ug/L	474053	Standard
	As	75	53571.2	0.7	**49.9335**	0.666	1.3	ug/L	-34	Standard
	Se	82	5527.7	0.4	**51.3922**	0.186	0.4	ug/L	14	Standard
	Se-1	77	3740.1	0.8	**49.4994**	0.726	1.5	ug/L	55	Standard
>	**Ga**	71	238.3	8.5				mg/L	50	Standard
	Rb	85	728.4	8.0				ug/L	20	Standard
	Y	89	403863.1	2.0				ug/L	376602	Standard
>	**Rh**	103	30.0	16.7				ug/L	17	Standard
	Mo	98	249432.2	1.4	**100.2684**	1.541	1.5	ug/L	8	Standard
	Ag	107	296071.6	1.7	**47.1134**	0.851	1.8	ug/L	81	Standard
	Cd	111	98641.2	1.4	**48.2538**	0.726	1.5	mg/L	3	Standard
	Cd	114	241419.7	2.8	**47.7722**	1.408	2.9	ug/L	7	Standard
>	**In**	115	552610.2	0.1				ug/L	524722	Standard
	Sn	118	274943.9	0.8	**48.3767**	0.444	0.9	ug/L	715	Standard
	Sb	123	217314.9	1.3	**47.2274**	0.669	1.4	ug/L	201	Standard
	Ba	135	89302.7	0.5	**46.7236**	0.287	0.6	ug/L	108	Standard
	Ce	140	61.7	32.8				ug/L	30	Standard
>	**Tb**	159	816119.0	0.8				ug/L	792236	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	369419.3	1.5	**48.6376**	0.510	1.0	ug/L	9	Standard
	Tl	205	333866.9	0.9	**51.6890**	0.388	0.8	ug/L	0	Standard
	Pb	206	232126.7	1.0	**50.5119**	0.450	0.9	ug/L	216	Standard
	Pb	207	210545.8	0.6	**50.3290**	0.336	0.7	ug/L	180	Standard
	Pb	208	855972.8	0.6	**50.4191**	0.795	1.6	ug/L	717	Standard
	U	238	320948.2	1.1	**51.9636**	0.277	0.5	ug/L	4	Standard
>	**Bi**	209	457695.0	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	4200.6	2.8	**5.4815**	0.198	3.6	mg/L	20	Standard
K	39	558.3	18.4	**3.8970**	0.711	18.2	mg/L	22	Standard
Ca	43	60.0	25.0	**0.3745**	3.188	851.1	mg/L	47	Standard
Fe	54	6005.7	4.5	**4.6268**	0.322	7.0	mg/L	151	Standard
Fe	57	1721.8	7.2	**4.5229**	0.315	7.0	mg/L	195	Standard
> **Sc-1**	45	30560.8	2.3				mg/L	29647	Standard
Cl	35	169117.3	1.2				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	2713.6	7.9				ug/L	1607	Standard
P	31	25114.1	2.9				ug/L	22752	Standard
S	34	5354.3	6.7				ug/L	5049	Standard
Sr	88	73.3	32.2				ug/L	87	Standard
C	12	66.7	67.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	23.0	67.5				mg/L	10	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	3423.7	23.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	90.169		
Al	27	82.581		
Sc	45			
Ti	47	100.764		
V	51	102.722		
Cr	52	100.231		
Cr	53			
Mn	55	109.359		
Co	59	107.682		
Ni	60	99.386		
Cu	65	99.865		
Zn	66	100.389		
> Ge	72		96.943	
As	75	99.867		
Se	82	102.784		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	100.268		
Ag	107	94.227		
Cd	111	96.508		
Cd	114			
In	115		105.315	
Sn	118	96.753		
Sb	123	94.455		
Ba	135	93.447		
Ce	140			
Tb	159			
Ho	165			
Tl	203	97.275		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.838		
U	238	103.927		
Bi	209		99.425	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 18:49:12
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64312.9	1.7				ug/L	51024	Standard
	Be	9	10.0	100.0	**-0.0116**	0.009	81.0	ug/L	7	Standard
	Al	27	1253.4	11.0	**-0.0028**	0.001	25.9	ug/L	625	Standard
	Sc	45	30213.4	2.2				ug/L	29647	Standard
	Ti	47	46.7	13.1	**-0.0109**	0.022	201.6	ug/L	57	Standard
	V	51	1033.9	3.5	**-0.0234**	0.008	34.0	ug/L	1142	Standard
	Cr	52	6122.9	0.9	**-0.0987**	0.025	25.4	ug/L	6628	Standard
	Cr	53	575.0	8.8	**0.1852**	0.063	34.2	ug/L	430	Standard
	Mn	55	1171.4	5.3	**0.0703**	0.014	19.8	ug/L	603	Standard
	Co	59	202.3	7.7	**-0.0099**	0.003	28.8	ug/L	237	Standard
	Ni	60	113.3	11.9	**-0.0193**	0.006	33.6	ug/L	141	Standard
	Cu	65	139.7	5.5	**0.0080**	0.006	71.9	ug/L	109	Standard
	Zn	66	162.0	9.1	**-0.0865**	0.010	11.9	ug/L	159	Standard
>	**Ge**	72	475844.7	2.3				ug/L	474053	Standard
	As	75	5.3	48.7	**0.0299**	0.002	7.8	ug/L	-34	Standard
	Se	82	21.3	16.5	**0.0231**	0.034	148.8	ug/L	14	Standard
	Se-1	77	70.7	7.0	**0.1723**	0.070	40.6	ug/L	55	Standard
>	**Ga**	71	140.0	34.1				mg/L	50	Standard
	Rb	85	38.3	49.4				ug/L	20	Standard
	Y	89	392359.8	3.0				ug/L	376602	Standard
>	**Rh**	103	15.0	57.7				ug/L	17	Standard
	Mo	98	303.5	29.0	**0.1205**	0.035	28.8	ug/L	8	Standard
	Ag	107	88.3	9.9	**0.0022**	0.001	58.2	ug/L	81	Standard
	Cd	111	9.2	17.1	**0.0014**	0.001	58.9	mg/L	3	Standard
	Cd	114	26.1	34.4	**0.0015**	0.002	118.0	ug/L	7	Standard
>	**In**	115	533517.8	1.4				ug/L	524722	Standard
	Sn	118	766.7	17.2	**0.0508**	0.026	51.1	ug/L	715	Standard
	Sb	123	454.0	26.6	**0.0877**	0.028	32.4	ug/L	201	Standard
	Ba	135	106.0	9.4	**-0.0001**	0.006	3944.8	ug/L	108	Standard
	Ce	140	23.3	44.6				ug/L	30	Standard
>	**Tb**	159	792169.2	1.1				ug/L	792236	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	62.3	2.5	**0.0057**	0.000	2.0	ug/L	9	Standard
	Tl	205	51.7	49.7	**0.0003**	0.004	1341.8	ug/L	0	Standard
	Pb	206	226.7	8.4	**-0.0062**	0.005	76.5	ug/L	216	Standard
	Pb	207	203.3	4.0	**-0.0045**	0.002	40.0	ug/L	180	Standard
	Pb	208	845.7	5.1	**-0.0073**	0.002	33.6	ug/L	717	Standard
	U	238	36.0	10.0	**-0.0017**	0.001	31.3	ug/L	4	Standard
>	**Bi**	209	451238.0	1.2				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	41.7	38.6	**0.0104**	0.022	211.4	mg/L	20	Standard
K	39	10.0	50.0	**-0.1532**	0.037	24.4	mg/L	22	Standard
Ca	43	38.3	32.8	**-4.4370**	2.704	60.9	mg/L	47	Standard
Fe	54	137.9	7.6	**-0.0050**	0.006	124.9	mg/L	151	Standard
Fe	57	133.3	7.8	**-0.2416**	0.038	15.5	mg/L	195	Standard
Sc-1	45	30213.4	2.2				mg/L	29647	Standard
Cl	35	167592.0	1.8				ug/L	154152	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	2426.9	7.0				ug/L	1607	Standard
P	31	25579.9	2.0				ug/L	22752	Standard
S	34	5439.3	0.7				ug/L	5049	Standard
Sr	88	61.7	9.4				ug/L	87	Standard
C	12	56.7	56.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.0	93.6				mg/L	10	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	2145.2	8.8				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.378	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.676	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.022	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, June 16, 2016 18:51:29
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Method 6020 - Summary Report

Sample ID: L1606063001DP WG572432-10
Sample Date/Time: Thursday, June 16, 2016 18:52:25
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68712.2	2.1				ug/L	51024	Standard
	Be	9	13.3	57.3	**-0.0092**	0.007	74.2	ug/L	7	Standard
	Al	27	1694606.4	2.1	**8.8301**	0.029	0.3	ug/L	625	Standard
	Sc	45	32870.6	1.4				ug/L	29647	Standard
	Ti	47	632.0	2.3	**1.9902**	0.036	1.8	ug/L	57	Standard
	V	51	2183.1	15.2	**0.1462**	0.049	33.7	ug/L	1142	Standard
	Cr	52	8437.7	0.6	**0.2463**	0.014	5.5	ug/L	6628	Standard
	Cr	53	3582.1	45.8	**3.5137**	1.806	51.4	ug/L	430	Standard
	Mn	55	25959.2	3.5	**4.3517**	0.184	4.2	ug/L	603	Standard
	Co	59	780.0	4.2	**0.0830**	0.005	6.3	ug/L	237	Standard
	Ni	60	1265.7	3.1	**0.5941**	0.019	3.2	ug/L	141	Standard
	Cu	65	4964.1	2.1	**2.6377**	0.034	1.3	ug/L	109	Standard
	Zn	66	7744.6	0.4	**6.9226**	0.090	1.3	ug/L	159	Standard
>	**Ge**	72	462903.9	0.9				ug/L	474053	Standard
	As	75	268.6	20.8	**0.2737**	0.054	19.7	ug/L	-34	Standard
	Se	82	41.2	34.5	**0.2137**	0.136	63.4	ug/L	14	Standard
	Se-1	77	155.7	4.3	**1.3316**	0.104	7.8	ug/L	55	Standard
>	**Ga**	71	160.0	9.4				mg/L	50	Standard
	Rb	85	36001.1	1.5				ug/L	20	Standard
	Y	89	387483.8	2.3				ug/L	376602	Standard
>	**Rh**	103	38.3	41.9				ug/L	17	Standard
	Mo	98	602.0	7.2	**0.2407**	0.015	6.4	ug/L	8	Standard
	Ag	107	97.7	12.0	**0.0035**	0.002	49.5	ug/L	81	Standard
	Cd	111	14.9	82.6	**0.0042**	0.006	147.6	mg/L	3	Standard
	Cd	114	54.8	20.5	**0.0072**	0.002	30.8	ug/L	7	Standard
>	**In**	115	542940.9	1.2				ug/L	524722	Standard
	Sn	118	1003.4	7.5	**0.0905**	0.011	12.7	ug/L	715	Standard
	Sb	123	760.6	4.7	**0.1535**	0.006	4.0	ug/L	201	Standard
	Ba	135	8458.7	1.6	**4.4523**	0.053	1.2	ug/L	108	Standard
	Ce	140	761.7	12.9				ug/L	30	Standard
>	**Tb**	159	813941.2	0.6				ug/L	792236	Standard
	Ho	165	46.7	60.9				ug/L	7	Standard
	Tl	203	213.3	5.0	**0.0252**	0.001	4.7	ug/L	9	Standard
	Tl	205	173.3	1.7	**0.0188**	0.000	1.2	ug/L	0	Standard
	Pb	206	486.7	2.6	**0.0486**	0.003	6.9	ug/L	216	Standard
	Pb	207	410.0	4.9	**0.0433**	0.005	11.5	ug/L	180	Standard
	Pb	208	1804.7	2.7	**0.0475**	0.003	5.4	ug/L	717	Standard
	U	238	45.0	13.3	**-0.0004**	0.001	279.8	ug/L	4	Standard
>	**Bi**	209	462206.0	0.8				ug/L	460343	Standard

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Na	23	5.0	100.0	**-4.2590**	14.576	342.2	mg/L	0	Standard
Mg	24	26429.7	2.8	**32.2858**	1.354	4.2	mg/L	20	Standard
K	39	396.7	3.9	**2.4991**	0.082	3.3	mg/L	22	Standard
Ca	43	96.7	7.9	**7.1952**	1.844	25.6	mg/L	47	Standard
Fe	54	180.8	15.4	**0.0178**	0.022	121.6	mg/L	151	Standard
Fe	57	203.3	16.0	**-0.0787**	0.096	122.2	mg/L	195	Standard
> **Sc-1**	45	32870.6	1.4				mg/L	29647	Standard
Cl	35	203581.4	1.3				ug/L	154152	Standard
Kr	83	2.0	0.0				ug/L	3	Standard
Br	81	6207.9	4.2				ug/L	1607	Standard
P	31	32229.2	1.5				ug/L	22752	Standard
S	34	4830.8	4.5				ug/L	5049	Standard
Sr	88	108.3	30.0				ug/L	87	Standard
C	12	86.7	6.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	47.3	42.6				mg/L	10	Standard
Ho-1	165	46.7	60.9				mg/L	7	Standard
Er	166	56.7	81.5				mg/L	3	Standard
I	127	39314.5	7.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		134.666	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.648	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.472
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.405
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 18:55:38
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67264.1	3.2				ug/L	51024	Standard
	Be	9	51087.7	3.5	**46.0740**	0.786	1.7	ug/L	7	Standard
	Al	27	7974693.7	0.5	**42.5107**	1.182	2.8	ug/L	625	Standard
	Sc	45	31289.0	2.9				ug/L	29647	Standard
	Ti	47	29983.3	1.5	**100.8099**	2.621	2.6	ug/L	57	Standard
	V	51	356976.4	1.6	**50.5633**	0.626	1.2	ug/L	1142	Standard
	Cr	52	371000.0	2.2	**50.0293**	1.004	2.0	ug/L	6628	Standard
	Cr	53	45682.1	3.1	**49.2179**	1.406	2.9	ug/L	430	Standard
	Mn	55	318039.5	1.1	**54.0099**	0.158	0.3	ug/L	603	Standard
	Co	59	338391.0	1.1	**53.1626**	0.493	0.9	ug/L	237	Standard
	Ni	60	94145.4	2.5	**49.2417**	1.028	2.1	ug/L	141	Standard
	Cu	65	92379.1	1.4	**49.5948**	0.289	0.6	ug/L	109	Standard
	Zn	66	54668.5	1.5	**49.6081**	0.589	1.2	ug/L	159	Standard
>	Ge	72	469038.3	1.3				ug/L	474053	Standard
	As	75	54293.6	1.3	**49.5816**	0.207	0.4	ug/L	-34	Standard
	Se	82	5559.0	0.1	**50.6424**	0.722	1.4	ug/L	14	Standard
	Se-1	77	3786.5	1.3	**49.0965**	0.931	1.9	ug/L	55	Standard
>	Ga	71	158.3	25.7				mg/L	50	Standard
	Rb	85	761.7	7.0				ug/L	20	Standard
	Y	89	395591.6	1.3				ug/L	376602	Standard
>	Rh	103	25.0	80.0				ug/L	17	Standard
	Mo	98	251383.1	0.4	**103.0718**	1.215	1.2	ug/L	8	Standard
	Ag	107	306968.8	0.5	**49.8241**	0.634	1.3	ug/L	81	Standard
	Cd	111	100215.1	0.7	**50.0041**	0.742	1.5	mg/L	3	Standard
	Cd	114	243336.5	2.3	**49.1181**	1.543	3.1	ug/L	7	Standard
>	In	115	541813.2	0.8				ug/L	524722	Standard
	Sn	118	281669.0	0.4	**50.5528**	0.296	0.6	ug/L	715	Standard
	Sb	123	222839.5	0.9	**49.3972**	0.805	1.6	ug/L	201	Standard
	Ba	135	91045.1	0.4	**48.5895**	0.562	1.2	ug/L	108	Standard
	Ce	140	61.7	12.4				ug/L	30	Standard
>	Tb	159	817844.5	0.4				ug/L	792236	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	379786.0	0.6	**49.2821**	0.368	0.7	ug/L	9	Standard
	Tl	205	336318.4	0.5	**51.3165**	0.323	0.6	ug/L	0	Standard
	Pb	206	235111.2	1.0	**50.4225**	0.567	1.1	ug/L	216	Standard
	Pb	207	213294.2	0.5	**50.2491**	0.369	0.7	ug/L	180	Standard
	Pb	208	862915.5	0.7	**50.0892**	0.286	0.6	ug/L	717	Standard
	U	238	324915.2	0.1	**51.8469**	0.100	0.2	ug/L	4	Standard
>	Bi	209	464391.0	0.2				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	4073.9	4.4	**5.1949**	0.373	7.2	mg/L	20	Standard
K	39	616.7	11.0	**4.2379**	0.622	14.7	mg/L	22	Standard
Ca	43	71.7	38.4	**2.7208**	6.257	230.0	mg/L	47	Standard
Fe	54	6184.7	3.6	**4.6538**	0.266	5.7	mg/L	151	Standard
Fe	57	1603.4	6.3	**4.0588**	0.310	7.6	mg/L	195	Standard
> **Sc-1**	45	31289.0	2.9				mg/L	29647	Standard
Cl	35	168092.6	0.3				ug/L	154152	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	1803.4	11.3				ug/L	1607	Standard
P	31	25418.0	3.0				ug/L	22752	Standard
S	34	5476.0	0.8				ug/L	5049	Standard
Sr	88	68.3	36.1				ug/L	87	Standard
C	12	76.7	30.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.5	122.8				mg/L	10	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	3	Standard
I	127	2120.2	19.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	92.148		
Al	27	85.021		
Sc	45			
Ti	47	100.810		
V	51	101.127		
Cr	52	100.059		
Cr	53			
Mn	55	108.020		
Co	59	106.325		
Ni	60	98.483		
Cu	65	99.190		
Zn	66	99.216		
> Ge	72		98.942	
As	75	99.163		
Se	82	101.285		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	103.072		
Ag	107	99.648		
Cd	111	100.008		
Cd	114			
> In	115		103.257	
Sn	118	101.106		
Sb	123	98.794		
Ba	135	97.179		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.564		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.178		
U	238	103.694		
> Bi	209		100.879	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 18:58:50
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65086.2	2.0				ug/L	51024	Standard
	Be	9	21.7	58.1	**-0.0010**	0.011	1171.7	ug/L	7	Standard
	Al	27	2008.5	34.3	**0.0013**	0.004	284.1	ug/L	625	Standard
	Sc	45	30751.2	2.4				ug/L	29647	Standard
	Ti	47	41.3	24.7	**-0.0285**	0.034	119.2	ug/L	57	Standard
	V	51	1096.5	3.2	**-0.0144**	0.004	27.7	ug/L	1142	Standard
	Cr	52	6076.9	0.1	**-0.1037**	0.008	7.3	ug/L	6628	Standard
	Cr	53	488.3	13.0	**0.0929**	0.070	75.6	ug/L	430	Standard
	Mn	55	1470.4	24.5	**0.1211**	0.063	51.8	ug/L	603	Standard
	Co	59	206.0	14.6	**-0.0092**	0.005	53.2	ug/L	237	Standard
	Ni	60	120.7	4.2	**-0.0153**	0.002	15.6	ug/L	141	Standard
	Cu	65	142.0	16.7	**0.0093**	0.013	141.3	ug/L	109	Standard
	Zn	66	152.7	7.5	**-0.0944**	0.011	12.1	ug/L	159	Standard
>	**Ge**	72	474934.0	0.8				ug/L	474053	Standard
	As	75	-45.5	82.0	**-0.0158**	0.033	212.2	ug/L	-34	Standard
	Se	82	16.2	50.9	**-0.0227**	0.076	333.7	ug/L	14	Standard
	Se-1	77	66.0	6.9	**0.1132**	0.063	55.7	ug/L	55	Standard
>	**Ga**	71	136.7	9.2				mg/L	50	Standard
	Rb	85	30.0	28.9				ug/L	20	Standard
	Y	89	402114.5	0.5				ug/L	376602	Standard
>	**Rh**	103	21.7	35.3				ug/L	17	Standard
	Mo	98	281.3	33.4	**0.1095**	0.037	34.1	ug/L	8	Standard
	Ag	107	96.3	13.1	**0.0033**	0.002	62.1	ug/L	81	Standard
	Cd	111	10.2	38.2	**0.0019**	0.002	104.1	mg/L	3	Standard
	Cd	114	23.6	19.2	**0.0010**	0.001	99.3	ug/L	7	Standard
>	**In**	115	541583.6	1.8				ug/L	524722	Standard
	Sn	118	860.0	27.1	**0.0652**	0.041	63.3	ug/L	715	Standard
	Sb	123	479.5	22.9	**0.0918**	0.026	27.9	ug/L	201	Standard
	Ba	135	123.3	8.3	**0.0082**	0.005	60.8	ug/L	108	Standard
	Ce	140	23.3	65.5				ug/L	30	Standard
>	**Tb**	159	792193.7	1.1				ug/L	792236	Standard
	Ho	165	13.3	78.1				ug/L	7	Standard
	Tl	203	66.0	21.2	**0.0060**	0.002	29.5	ug/L	9	Standard
	Tl	205	46.7	12.4	**-0.0007**	0.001	132.6	ug/L	0	Standard
	Pb	206	228.3	5.2	**-0.0071**	0.002	32.1	ug/L	216	Standard
	Pb	207	200.3	2.5	**-0.0063**	0.001	19.4	ug/L	180	Standard
	Pb	208	858.7	6.2	**-0.0078**	0.003	36.1	ug/L	717	Standard
	U	238	38.3	37.5	**-0.0014**	0.002	161.1	ug/L	4	Standard
>	**Bi**	209	462016.2	0.6				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	36.7	70.0	**0.0029**	0.034	1195.5	mg/L	20	Standard
K	39	18.3	56.8	**-0.0943**	0.072	76.9	mg/L	22	Standard
Ca	43	45.0	22.2	**-3.0781**	2.040	66.3	mg/L	47	Standard
Fe	54	114.4	7.6	**-0.0252**	0.008	31.9	mg/L	151	Standard
Fe	57	173.3	9.3	**-0.1300**	0.041	31.6	mg/L	195	Standard
Sc-1	45	30751.2	2.4				mg/L	29647	Standard
Cl	35	167486.4	2.8				ug/L	154152	Standard
Kr	83	2.0	86.6				ug/L	3	Standard
Br	81	1856.8	2.2				ug/L	1607	Standard
P	31	26229.4	1.8				ug/L	22752	Standard
S	34	5394.3	3.3				ug/L	5049	Standard
Sr	88	46.7	37.6				ug/L	87	Standard
C	12	50.0	20.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.9	187.9				mg/L	10	Standard
Ho-1	165	13.3	78.1				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	1466.7	5.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.186	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.213
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.363
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, June 16, 2016 19:01:07
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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, June 16, 2016 19:02:02
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62105.4	2.6				ug/L	51024	Standard
	Be	9	230.0	20.7	**0.2030**	0.041	20.0	ug/L	7	Standard
	Al	27	2411.9	57.3	**0.0040**	0.008	188.2	ug/L	625	Standard
	Sc	45	29320.0	1.0				ug/L	29647	Standard
	Ti	47	44.0	15.9	**-0.0143**	0.023	160.1	ug/L	57	Standard
	V	51	3629.6	1.0	**0.3604**	0.013	3.7	ug/L	1142	Standard
	Cr	52	11639.8	0.7	**0.7104**	0.026	3.6	ug/L	6628	Standard
	Cr	53	1218.4	6.6	**0.9247**	0.069	7.5	ug/L	430	Standard
	Mn	55	4165.6	11.2	**0.6000**	0.079	13.2	ug/L	603	Standard
	Co	59	2679.2	3.3	**0.3905**	0.015	4.0	ug/L	237	Standard
	Ni	60	2918.9	1.9	**1.4896**	0.048	3.2	ug/L	141	Standard
	Cu	65	1533.7	1.1	**0.7788**	0.010	1.3	ug/L	109	Standard
	Zn	66	7393.8	1.4	**6.6758**	0.118	1.8	ug/L	159	Standard
>	**Ge**	72	457738.9	1.6				ug/L	474053	Standard
	As	75	382.8	8.7	**0.3830**	0.030	7.9	ug/L	-34	Standard
	Se	82	57.3	9.5	**0.3683**	0.054	14.6	ug/L	14	Standard
	Se-1	77	79.7	6.9	**0.3297**	0.074	22.6	ug/L	55	Standard
>	**Ga**	71	103.3	23.9				mg/L	50	Standard
	Rb	85	18.3	41.7				ug/L	20	Standard
	Y	89	375631.5	1.4				ug/L	376602	Standard
>	**Rh**	103	10.0	86.6				ug/L	17	Standard
	Mo	98	122.4	54.4	**0.0465**	0.029	61.8	ug/L	8	Standard
	Ag	107	2330.2	1.4	**0.3786**	0.008	2.1	ug/L	81	Standard
	Cd	111	467.2	1.7	**0.2376**	0.006	2.6	mg/L	3	Standard
	Cd	114	1116.8	1.3	**0.2291**	0.004	1.8	ug/L	7	Standard
>	**In**	115	524377.5	1.0				ug/L	524722	Standard
	Sn	118	430.0	17.1	**-0.0096**	0.013	134.4	ug/L	715	Standard
	Sb	123	1783.9	4.5	**0.3940**	0.022	5.6	ug/L	201	Standard
	Ba	135	1250.7	1.9	**0.6328**	0.015	2.4	ug/L	108	Standard
	Ce	140	8.3	91.7				ug/L	30	Standard
>	**Tb**	159	782327.7	0.6				ug/L	792236	Standard
	Ho	165	11.7	107.9				ug/L	7	Standard
	Tl	203	644.0	4.6	**0.0829**	0.005	5.6	ug/L	9	Standard
	Tl	205	603.3	8.3	**0.0864**	0.009	9.9	ug/L	0	Standard
	Pb	206	1176.0	6.8	**0.2020**	0.018	8.8	ug/L	216	Standard
	Pb	207	1021.4	8.8	**0.1927**	0.023	12.1	ug/L	180	Standard
	Pb	208	4081.2	6.5	**0.1848**	0.017	9.4	ug/L	717	Standard
	U	238	2503.2	1.2	**0.4011**	0.007	1.8	ug/L	4	Standard
>	**Bi**	209	453995.6	0.8				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	40.0	25.0	**0.0095**	0.013	138.3	mg/L	20	Standard
K	39	13.3	43.3	**-0.1249**	0.045	36.2	mg/L	22	Standard
Ca	43	35.0	28.6	**-4.9048**	2.432	49.6	mg/L	47	Standard
Fe	54	120.6	31.6	**-0.0158**	0.032	201.6	mg/L	151	Standard
Fe	57	148.3	13.6	**-0.1825**	0.065	35.6	mg/L	195	Standard
Sc-1	45	29320.0	1.0				mg/L	29647	Standard
Cl	35	160593.3	0.6				ug/L	154152	Standard
Kr	83	0.3	173.2				ug/L	3	Standard
Br	81	1753.4	6.3				ug/L	1607	Standard
P	31	18406.2	0.9				ug/L	22752	Standard
S	34	5287.6	2.4				ug/L	5049	Standard
Sr	88	66.7	18.9				ug/L	87	Standard
C	12	56.7	36.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	13.0	46.6				mg/L	10	Standard
Ho-1	165	11.7	107.9				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	3	Standard
I	127	1111.7	9.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	101.480		
Al	27			
Sc	45			
Ti	47			
V	51	90.091		
Cr	52	88.800		
Cr	53			
Mn	55	120.007		
Co	59	97.613		
Ni	60	93.098		
Cu	65	97.350		
Zn	66	106.813		
Ge	72		96.559	
As	75	95.761		
Se	82	92.069		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	94.641		
Cd	111	99.021		
Cd	114			
> In	115			99.934
Sn	118			
Sb	123	98.503		
Ba	135	84.376		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	103.666		
Tl	205			
Pb	206			
Pb	207			
Pb	208	92.383		
U	238	100.273		
> Bi	209			98.621
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW 42 WG572730-03
Sample Date/Time: Thursday, June 16, 2016 19:05:16
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62749.7	0.4				ug/L	51024	Standard
	Be	9	18.3	95.8	**-0.0034**	0.017	498.2	ug/L	7	Standard
	Al	27	45563.5	4.1	**0.2505**	0.010	4.1	ug/L	625	Standard
	Sc	45	30499.0	0.2				ug/L	29647	Standard
	Ti	47	51.3	19.1	**0.0066**	0.033	492.2	ug/L	57	Standard
	V	51	1097.4	4.3	**-0.0126**	0.007	55.7	ug/L	1142	Standard
	Cr	52	7963.4	1.0	**0.1642**	0.013	7.9	ug/L	6628	Standard
	Cr	53	896.7	4.5	**0.5418**	0.048	8.8	ug/L	430	Standard
	Mn	55	2548.5	1.6	**0.3068**	0.006	2.0	ug/L	603	Standard
	Co	59	285.7	3.7	**0.0036**	0.002	42.0	ug/L	237	Standard
	Ni	60	410.7	8.1	**0.1371**	0.018	13.2	ug/L	141	Standard
	Cu	65	253.3	2.8	**0.0699**	0.004	5.6	ug/L	109	Standard
	Zn	66	1271.7	3.2	**0.9258**	0.037	4.0	ug/L	159	Standard
>	**Ge**	72	469694.2	0.4				ug/L	474053	Standard
	As	75	1524.9	4.2	**1.4151**	0.063	4.5	ug/L	-34	Standard
	Se	82	670.0	3.5	**5.9461**	0.237	4.0	ug/L	14	Standard
	Se-1	77	66.0	18.4	**0.1230**	0.163	132.4	ug/L	55	Standard
>	**Ga**	71	123.3	16.4				mg/L	50	Standard
	Rb	85	295.0	3.4				ug/L	20	Standard
	Y	89	394476.0	3.2				ug/L	376602	Standard
>	**Rh**	103	20.0	66.1				ug/L	17	Standard
	Mo	98	84.7	10.3	**0.0293**	0.004	12.7	ug/L	8	Standard
	Ag	107	83.0	7.9	**0.0012**	0.001	88.8	ug/L	81	Standard
	Cd	111	13.9	21.7	**0.0037**	0.001	39.9	mg/L	3	Standard
	Cd	114	54.3	34.3	**0.0072**	0.004	52.7	ug/L	7	Standard
>	**In**	115	540141.2	0.4				ug/L	524722	Standard
	Sn	118	648.3	6.2	**0.0275**	0.007	26.0	ug/L	715	Standard
	Sb	123	144.9	16.0	**0.0174**	0.005	30.4	ug/L	201	Standard
	Ba	135	21260.9	1.4	**11.3366**	0.117	1.0	ug/L	108	Standard
	Ce	140	155.0	8.5				ug/L	30	Standard
>	**Tb**	159	801981.8	0.8				ug/L	792236	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	205.7	5.0	**0.0243**	0.001	5.5	ug/L	9	Standard
	Tl	205	185.0	17.7	**0.0206**	0.005	24.4	ug/L	0	Standard
	Pb	206	277.0	10.2	**0.0035**	0.006	164.3	ug/L	216	Standard
	Pb	207	230.3	3.9	**0.0008**	0.002	210.4	ug/L	180	Standard
	Pb	208	975.0	1.4	**-0.0009**	0.000	49.0	ug/L	717	Standard
	U	238	16.3	25.5	**-0.0050**	0.001	13.9	ug/L	4	Standard
>	**Bi**	209	461335.7	0.7				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	403.3	18.0	**0.4864**	0.096	19.7	mg/L	20	Standard
K	39	18.3	56.8	**-0.0922**	0.077	83.3	mg/L	22	Standard
Ca	43	38.3	27.2	**-4.4783**	2.388	53.3	mg/L	47	Standard
Fe	54	151.1	15.7	**0.0044**	0.018	419.9	mg/L	151	Standard
Fe	57	180.0	9.6	**-0.1053**	0.052	49.8	mg/L	195	Standard
> **Sc-1**	45	30499.0	0.2				mg/L	29647	Standard
Cl	35	167221.1	1.1				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	161399.3	3.9				ug/L	1607	Standard
P	31	23832.1	1.6				ug/L	22752	Standard
S	34	5314.3	4.0				ug/L	5049	Standard
Sr	88	105.0	12.6				ug/L	87	Standard
C	12	53.3	43.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.5	177.6				mg/L	10	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	4855.8	5.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		122.980	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.081	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.939
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.216
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: PBW 42 WG572730-03
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Method 6020 - Summary Report

Sample ID: LCSW 42 WG572730-04
Sample Date/Time: Thursday, June 16, 2016 19:08:28
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	62985.7	0.9				ug/L	51024	Standard
	Be	9	48407.2	1.0	**46.6239**	0.599	1.3	ug/L	7	Standard
	Al	27	15242.7	3.1	**0.0770**	0.003	4.2	ug/L	625	Standard
	Sc	45	31167.0	1.6				ug/L	29647	Standard
	Ti	47	51.0	3.9	**0.0042**	0.006	137.2	ug/L	57	Standard
	V	51	362150.1	1.2	**50.8470**	1.498	2.9	ug/L	1142	Standard
	Cr	52	375631.9	0.2	**50.2056**	0.853	1.7	ug/L	6628	Standard
	Cr	53	46496.2	1.5	**49.6449**	0.253	0.5	ug/L	430	Standard
	Mn	55	324366.5	2.3	**54.5814**	0.385	0.7	ug/L	603	Standard
	Co	59	341108.8	1.8	**53.1006**	0.301	0.6	ug/L	237	Standard
	Ni	60	95614.1	1.0	**49.5608**	0.383	0.8	ug/L	141	Standard
	Cu	65	93513.4	0.6	**49.7560**	0.725	1.5	ug/L	109	Standard
	Zn	66	55921.0	0.3	**50.2961**	0.929	1.8	ug/L	159	Standard
>	Ge	72	473336.6	1.7				ug/L	474053	Standard
	As	75	54052.4	0.1	**48.9231**	0.858	1.8	ug/L	-34	Standard
	Se	82	5549.3	0.5	**50.0944**	0.667	1.3	ug/L	14	Standard
	Se-1	77	3851.2	1.4	**49.4942**	1.249	2.5	ug/L	55	Standard
>	Ga	71	148.3	5.1				mg/L	50	Standard
	Rb	85	50.0	45.8				ug/L	20	Standard
	Y	89	393664.1	1.4				ug/L	376602	Standard
>	Rh	103	30.0	66.7				ug/L	17	Standard
	Mo	98	67.7	16.2	**0.0222**	0.004	19.7	ug/L	8	Standard
	Ag	107	9538.7	1.3	**1.5370**	0.009	0.6	ug/L	81	Standard
	Cd	111	98094.4	0.8	**48.9748**	0.877	1.8	mg/L	3	Standard
	Cd	114	242274.5	1.2	**48.9293**	1.051	2.1	ug/L	7	Standard
>	In	115	541531.8	1.4				ug/L	524722	Standard
	Sn	118	718.4	12.9	**0.0399**	0.018	44.4	ug/L	715	Standard
	Sb	123	213208.4	0.4	**47.2901**	0.830	1.8	ug/L	201	Standard
	Ba	135	91061.5	0.2	**48.6273**	0.710	1.5	ug/L	108	Standard
	Ce	140	75.0	30.6				ug/L	30	Standard
>	Tb	159	801949.7	1.3				ug/L	792236	Standard
	Ho	165	15.0	66.7				ug/L	7	Standard
	Tl	203	366890.3	0.3	**47.3558**	0.332	0.7	ug/L	9	Standard
	Tl	205	325136.0	2.3	**49.3487**	1.280	2.6	ug/L	0	Standard
	Pb	206	237911.3	0.3	**50.7518**	0.233	0.5	ug/L	216	Standard
	Pb	207	208877.0	1.0	**48.9436**	0.182	0.4	ug/L	180	Standard
	Pb	208	858938.6	1.3	**49.5964**	0.972	2.0	ug/L	717	Standard
	U	238	311185.8	0.3	**49.3920**	0.274	0.6	ug/L	4	Standard
>	Bi	209	466882.1	0.8				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	43.3	37.1	**0.0108**	0.021	197.0	mg/L	20	Standard
K	39	21.7	26.6	**-0.0712**	0.040	55.8	mg/L	22	Standard
Ca	43	35.0	37.8	**-5.4027**	2.947	54.5	mg/L	47	Standard
Fe	54	122.0	30.6	**-0.0208**	0.028	132.3	mg/L	151	Standard
Fe	57	123.3	18.3	**-0.2836**	0.067	23.8	mg/L	195	Standard
Sc-1	45	31167.0	1.6				mg/L	29647	Standard
Cl	35	163506.3	1.5				ug/L	154152	Standard
Kr	83	0.3	173.2				ug/L	3	Standard
Br	81	5531.1	27.3				ug/L	1607	Standard
P	31	23947.2	1.0				ug/L	22752	Standard
S	34	5137.5	2.8				ug/L	5049	Standard
Sr	88	76.7	46.3				ug/L	87	Standard
C	12	70.0	14.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	13.2	44.9				mg/L	10	Standard
Ho-1	165	15.0	66.7				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	1283.4	6.1				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.443	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.849	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.204
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.421
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: LCSW 42 WG572730-04
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Method 6020 - Summary Report

Sample ID: L1606066401 WG572730-01
Sample Date/Time: Thursday, June 16, 2016 19:12:30
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75454.2	2.8				ug/L	51024	Standard
	Be	9	20.0	90.1	**-0.0048**	0.015	318.2	ug/L	7	Standard
	Al	27	11047678.0	1.9	**52.4883**	1.233	2.3	ug/L	625	Standard
	Sc	45	29264.9	1.3				ug/L	29647	Standard
	Ti	47	190.7	4.0	**0.5084**	0.037	7.3	ug/L	57	Standard
	V	51	1712.7	18.3	**0.0872**	0.046	52.6	ug/L	1142	Standard
	Cr	52	16604.1	1.9	**1.4659**	0.021	1.4	ug/L	6628	Standard
	Cr	53	9623.1	1.9	**10.5512**	0.372	3.5	ug/L	430	Standard
	Mn	55	18349.1	1.7	**3.1531**	0.090	2.8	ug/L	603	Standard
	Co	59	837.4	4.2	**0.0969**	0.005	4.7	ug/L	237	Standard
	Ni	60	47686.6	1.9	**26.1478**	0.400	1.5	ug/L	141	Standard
	Cu	65	35936.9	2.3	**20.2125**	0.174	0.9	ug/L	109	Standard
	Zn	66	7845.4	2.5	**7.2754**	0.080	1.1	ug/L	159	Standard
>	**Ge**	72	446804.8	1.5				ug/L	474053	Standard
	As	75	226.8	62.9	**0.2410**	0.135	55.9	ug/L	-34	Standard
	Se	82	88.3	14.1	**0.6770**	0.108	16.0	ug/L	14	Standard
	Se-1	77	1010.0	4.4	**13.2164**	0.770	5.8	ug/L	55	Standard
>	**Ga**	71	121.7	4.7				mg/L	50	Standard
	Rb	85	9374.6	1.9				ug/L	20	Standard
	Y	89	379651.4	1.2				ug/L	376602	Standard
>	**Rh**	103	176.7	43.0				ug/L	17	Standard
	Mo	98	6942.1	1.1	**3.0258**	0.008	0.3	ug/L	8	Standard
	Ag	107	107.7	10.4	**0.0063**	0.002	31.0	ug/L	81	Standard
	Cd	111	16.0	28.8	**0.0053**	0.002	45.3	mg/L	3	Standard
	Cd	114	155.3	55.3	**0.0296**	0.019	62.9	ug/L	7	Standard
>	**In**	115	508746.6	0.9				ug/L	524722	Standard
	Sn	118	32234.3	2.4	**6.0825**	0.133	2.2	ug/L	715	Standard
	Sb	123	2505.0	15.1	**0.5762**	0.084	14.6	ug/L	201	Standard
	Ba	135	56364.3	0.3	**32.0167**	0.382	1.2	ug/L	108	Standard
	Ce	140	273.3	12.5				ug/L	30	Standard
>	**Tb**	159	786168.7	0.3				ug/L	792236	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	162.7	17.5	**0.0211**	0.005	21.6	ug/L	9	Standard
	Tl	205	136.7	17.3	**0.0156**	0.004	27.5	ug/L	0	Standard
	Pb	206	51660.3	0.9	**12.3691**	0.134	1.1	ug/L	216	Standard
	Pb	207	43372.0	1.0	**11.4048**	0.082	0.7	ug/L	180	Standard
	Pb	208	183979.7	0.6	**11.9203**	0.168	1.4	ug/L	717	Standard
	U	238	40.0	22.9	**-0.0004**	0.002	429.9	ug/L	4	Standard
>	**Bi**	209	414575.6	1.7				ug/L	460343	Standard

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Na	23	3.3	173.2	**-0.6680**	19.261	2883.4	mg/L	0	Standard
Mg	24	393015.0	2.1	**539.7437**	8.154	1.5	mg/L	20	Standard
K	39	755.0	20.2	**5.6021**	1.177	21.0	mg/L	22	Standard
Ca	43	273.3	16.4	**51.4216**	9.712	18.9	mg/L	47	Standard
Fe	54	153.2	8.8	**0.0113**	0.013	111.5	mg/L	151	Standard
Fe	57	410.0	9.5	**0.6384**	0.113	17.7	mg/L	195	Standard
> **Sc-1**	45	29264.9	1.3				mg/L	29647	Standard
Cl	35	947330.3	0.6				ug/L	154152	Standard
Kr	83	2.7	86.6				ug/L	3	Standard
Br	81	16345.5	3.0				ug/L	1607	Standard
P	31	24364.6	0.6				ug/L	22752	Standard
S	34	5329.3	1.4				ug/L	5049	Standard
Sr	88	195.0	4.4				ug/L	87	Standard
C	12	283.3	24.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	0	Standard
Dy	164	16.0	130.4				mg/L	10	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	339108.5	7.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		147.879	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.252	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.955
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	90.058
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606066401DP WG572730-05
Sample Date/Time: Thursday, June 16, 2016 19:15:41
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82599.5	0.8				ug/L	51024	Standard
	Be	9	18.3	31.5	**-0.0076**	0.004	53.8	ug/L	7	Standard
	Al	27	12101738.6	2.4	**52.5022**	0.943	1.8	ug/L	625	Standard
	Sc	45	29381.8	2.9				ug/L	29647	Standard
	Ti	47	224.3	6.3	**0.6337**	0.051	8.1	ug/L	57	Standard
	V	51	1757.9	10.9	**0.0962**	0.030	31.3	ug/L	1142	Standard
	Cr	52	17254.5	0.4	**1.5806**	0.019	1.2	ug/L	6628	Standard
	Cr	53	9484.6	4.9	**10.4776**	0.447	4.3	ug/L	430	Standard
	Mn	55	18275.7	1.8	**3.1668**	0.077	2.4	ug/L	603	Standard
	Co	59	934.4	2.3	**0.1143**	0.005	4.1	ug/L	237	Standard
	Ni	60	50219.4	0.9	**27.7712**	0.300	1.1	ug/L	141	Standard
	Cu	65	38180.1	1.8	**21.6588**	0.226	1.0	ug/L	109	Standard
	Zn	66	9011.3	2.3	**8.4634**	0.126	1.5	ug/L	159	Standard
>	**Ge**	72	443106.2	0.8				ug/L	474053	Standard
	As	75	276.8	42.6	**0.2919**	0.111	38.1	ug/L	-34	Standard
	Se	82	109.2	13.4	**0.8866**	0.132	14.9	ug/L	14	Standard
	Se-1	77	1030.4	1.0	**13.6099**	0.054	0.4	ug/L	55	Standard
>	**Ga**	71	125.0	10.6				mg/L	50	Standard
	Rb	85	9914.9	0.9				ug/L	20	Standard
	Y	89	378132.1	0.5				ug/L	376602	Standard
>	**Rh**	103	276.7	11.8				ug/L	17	Standard
	Mo	98	7350.8	1.1	**3.1941**	0.056	1.8	ug/L	8	Standard
	Ag	107	113.3	9.2	**0.0072**	0.002	27.2	ug/L	81	Standard
	Cd	111	7.2	44.2	**0.0006**	0.002	301.0	mg/L	3	Standard
	Cd	114	112.0	53.6	**0.0203**	0.013	64.2	ug/L	7	Standard
>	**In**	115	510414.8	1.0				ug/L	524722	Standard
	Sn	118	31860.1	0.6	**5.9914**	0.071	1.2	ug/L	715	Standard
	Sb	123	1301.1	10.9	**0.2913**	0.031	10.6	ug/L	201	Standard
	Ba	135	58474.3	1.0	**33.1066**	0.180	0.5	ug/L	108	Standard
	Ce	140	143.3	4.0				ug/L	30	Standard
>	**Tb**	159	793633.3	0.5				ug/L	792236	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	126.3	11.6	**0.0156**	0.002	13.8	ug/L	9	Standard
	Tl	205	108.3	7.1	**0.0105**	0.001	12.1	ug/L	0	Standard
	Pb	206	55773.5	1.1	**13.2134**	0.113	0.9	ug/L	216	Standard
	Pb	207	47080.7	0.8	**12.2506**	0.066	0.5	ug/L	180	Standard
	Pb	208	190215.8	0.7	**12.1921**	0.079	0.7	ug/L	717	Standard
	U	238	29.3	17.2	**-0.0024**	0.001	37.4	ug/L	4	Standard
>	**Bi**	209	419055.7	0.3				ug/L	460343	Standard

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Na	23	10.0	50.0	**-22.7084**	17.142	75.5	mg/L	0	Standard
Mg	24	418232.9	1.5	**572.3635**	15.570	2.7	mg/L	20	Standard
K	39	648.3	17.8	**4.7577**	0.876	18.4	mg/L	22	Standard
Ca	43	226.7	8.4	**40.2176**	3.679	9.1	mg/L	47	Standard
Fe	54	135.1	14.9	**-0.0042**	0.016	368.6	mg/L	151	Standard
Fe	57	428.3	6.4	**0.6912**	0.080	11.6	mg/L	195	Standard
> **Sc-1**	45	29381.8	2.9				mg/L	29647	Standard
Cl	35	974394.4	0.6				ug/L	154152	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	16325.5	4.8				ug/L	1607	Standard
P	31	25179.2	0.8				ug/L	22752	Standard
S	34	5427.6	0.7				ug/L	5049	Standard
Sr	88	171.7	19.8				ug/L	87	Standard
C	12	336.7	27.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	12.9	93.1				mg/L	10	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	345162.2	8.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		161.883	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.472	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.273
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.031
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: L1606066401DP WG572730-05
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Method 6020 - Summary Report

Sample ID: L1606072903 WG572730-02
Sample Date/Time: Thursday, June 16, 2016 19:18:52
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83167.6	0.4				ug/L	51024	Standard
	Be	9	1595.1	11.9	**1.1433**	0.143	12.5	ug/L	7	Standard
	Al	27	12508760.9	0.4	**53.9014**	0.277	0.5	ug/L	625	Standard
	Sc	45	32636.8	2.2				ug/L	29647	Standard
	Ti	47	734.7	25.1	**2.2005**	0.603	27.4	ug/L	57	Standard
	V	51	2647.4	9.7	**0.1914**	0.035	18.3	ug/L	1142	Standard
	Cr	52	10901.3	2.2	**0.5035**	0.035	7.0	ug/L	6628	Standard
	Cr	53	1756.8	5.0	**1.3940**	0.093	6.7	ug/L	430	Standard
	Mn	55	2418538.1	0.3	**393.4562**	2.564	0.7	ug/L	603	Standard
	Co	59	167227.2	1.2	**25.0953**	0.408	1.6	ug/L	237	Standard
	Ni	60	19549.3	0.9	**9.7135**	0.121	1.2	ug/L	141	Standard
	Cu	65	6980.3	2.4	**3.5215**	0.098	2.8	ug/L	109	Standard
	Zn	66	33084.1	0.4	**28.6038**	0.229	0.8	ug/L	159	Standard
>	**Ge**	72	490606.8	0.4				ug/L	474053	Standard
	As	75	126.0	22.9	**0.1350**	0.026	18.9	ug/L	-34	Standard
	Se	82	91.9	23.2	**0.6344**	0.188	29.7	ug/L	14	Standard
	Se-1	77	154.7	9.2	**1.2017**	0.186	15.5	ug/L	55	Standard
>	**Ga**	71	938.4	4.7				mg/L	50	Standard
	Rb	85	17583.5	1.7				ug/L	20	Standard
	Y	89	717044.0	1.5				ug/L	376602	Standard
>	**Rh**	103	161.7	28.1				ug/L	17	Standard
	Mo	98	55.5	8.7	**0.0173**	0.002	11.5	ug/L	8	Standard
	Ag	107	113.0	9.4	**0.0061**	0.002	26.4	ug/L	81	Standard
	Cd	111	309.2	2.3	**0.1520**	0.004	2.4	mg/L	3	Standard
	Cd	114	755.2	14.7	**0.1496**	0.023	15.3	ug/L	7	Standard
>	**In**	115	538550.6	0.6				ug/L	524722	Standard
	Sn	118	861.7	3.5	**0.0664**	0.005	7.2	ug/L	715	Standard
	Sb	123	1408.2	6.3	**0.2992**	0.018	6.0	ug/L	201	Standard
	Ba	135	39659.2	1.6	**21.2618**	0.456	2.1	ug/L	108	Standard
	Ce	140	1381297.9	0.5				ug/L	30	Standard
>	**Tb**	159	851012.3	2.0				ug/L	792236	Standard
	Ho	165	27889.0	1.7				ug/L	7	Standard
	Tl	203	294.7	3.0	**0.0347**	0.002	6.0	ug/L	9	Standard
	Tl	205	265.0	1.9	**0.0316**	0.001	3.8	ug/L	0	Standard
	Pb	206	5868.1	0.6	**1.1726**	0.027	2.3	ug/L	216	Standard
	Pb	207	4864.8	1.2	**1.0656**	0.042	4.0	ug/L	180	Standard
	Pb	208	20514.5	1.0	**1.1052**	0.038	3.5	ug/L	717	Standard
	U	238	2495.2	0.6	**0.3809**	0.010	2.6	ug/L	4	Standard
>	**Bi**	209	476253.4	2.7				ug/L	460343	Standard

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Na	23	11.7	24.7	**-24.3418**	9.212	37.8	mg/L	0	Standard
Mg	24	2530.2	1.8	**3.0712**	0.030	1.0	mg/L	20	Standard
K	39	120.0	8.3	**0.6043**	0.087	14.3	mg/L	22	Standard
Ca	43	210.0	28.9	**31.2136**	11.780	37.7	mg/L	47	Standard
Fe	54	1764.1	4.7	**1.1881**	0.059	5.0	mg/L	151	Standard
Fe	57	758.4	15.5	**1.4817**	0.281	18.9	mg/L	195	Standard
> **Sc-1**	45	32636.8	2.2				mg/L	29647	Standard
Cl	35	300327.3	0.4				ug/L	154152	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	5971.2	0.5				ug/L	1607	Standard
P	31	27339.7	3.0				ug/L	22752	Standard
S	34	4589.0	1.4				ug/L	5049	Standard
Sr	88	426.7	18.4				ug/L	87	Standard
C	12	223.3	9.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	48154.5	2.6				mg/L	10	Standard
Ho-1	165	27889.0	1.7				mg/L	7	Standard
Er	166	24125.9	1.2				mg/L	3	Standard
I	127	233033.3	7.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		162.997	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.492	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	102.635
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.456
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606072903 WG572730-02
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Method 6020 - Summary Report

Sample ID: L1606072903S WG572730-06
Sample Date/Time: Thursday, June 16, 2016 19:22:04
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84593.9	1.7				ug/L	51024	Standard
	Be	9	63747.2	1.4	**45.7285**	1.409	3.1	ug/L	7	Standard
	Al	27	12163442.1	0.7	**51.5412**	1.132	2.2	ug/L	625	Standard
	Sc	45	33602.2	1.6				ug/L	29647	Standard
	Ti	47	659.7	12.0	**2.0785**	0.257	12.4	ug/L	57	Standard
	V	51	353641.1	0.6	**50.6609**	2.238	4.4	ug/L	1142	Standard
	Cr	52	356717.6	1.1	**48.6215**	2.101	4.3	ug/L	6628	Standard
	Cr	53	45185.6	0.4	**49.2470**	2.494	5.1	ug/L	430	Standard
	Mn	55	2601278.5	0.7	**447.6689**	18.661	4.2	ug/L	603	Standard
	Co	59	487177.6	1.1	**77.4106**	2.935	3.8	ug/L	237	Standard
	Ni	60	108783.5	0.6	**57.5580**	2.469	4.3	ug/L	141	Standard
	Cu	65	95167.6	1.2	**51.6700**	2.084	4.0	ug/L	109	Standard
	Zn	66	84097.8	1.1	**77.2971**	3.015	3.9	ug/L	159	Standard
>	**Ge**	72	464397.8	4.8				ug/L	474053	Standard
	As	75	53679.2	1.0	**49.5736**	2.027	4.1	ug/L	-34	Standard
	Se	82	5551.8	0.7	**51.1533**	2.421	4.7	ug/L	14	Standard
	Se-1	77	3791.1	3.4	**49.6831**	1.424	2.9	ug/L	55	Standard
>	**Ga**	71	958.4	5.4				mg/L	50	Standard
	Rb	85	16624.1	3.0				ug/L	20	Standard
	Y	89	707625.8	0.5				ug/L	376602	Standard
>	**Rh**	103	125.0	8.0				ug/L	17	Standard
	Mo	98	62.1	4.6	**0.0194**	0.002	8.1	ug/L	8	Standard
	Ag	107	8913.6	1.8	**1.4061**	0.009	0.7	ug/L	81	Standard
	Cd	111	96671.0	1.6	**47.2862**	1.085	2.3	mg/L	3	Standard
	Cd	114	237983.0	1.9	**47.0816**	0.696	1.5	ug/L	7	Standard
>	**In**	115	552753.1	1.8				ug/L	524722	Standard
	Sn	118	638.3	15.9	**0.0231**	0.018	79.7	ug/L	715	Standard
	Sb	123	215408.0	1.4	**46.8023**	0.239	0.5	ug/L	201	Standard
	Ba	135	124502.1	0.5	**65.1569**	0.974	1.5	ug/L	108	Standard
	Ce	140	1314417.9	1.3				ug/L	30	Standard
>	**Tb**	159	881280.8	1.9				ug/L	792236	Standard
	Ho	165	27413.1	3.0				ug/L	7	Standard
	Tl	203	374882.9	0.8	**46.6863**	0.358	0.8	ug/L	9	Standard
	Tl	205	338218.3	0.5	**49.5337**	0.988	2.0	ug/L	0	Standard
	Pb	206	247963.0	0.9	**51.0419**	0.964	1.9	ug/L	216	Standard
	Pb	207	216265.5	0.6	**48.8980**	0.689	1.4	ug/L	180	Standard
	Pb	208	876968.0	0.5	**48.8596**	0.973	2.0	ug/L	717	Standard
	U	238	329321.5	0.3	**50.4388**	0.916	1.8	ug/L	4	Standard
>	**Bi**	209	483914.0	1.5				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.7187**	8.199	143.4	mg/L	0	Standard
Mg	24	2360.2	1.3	**2.7784**	0.056	2.0	mg/L	20	Standard
K	39	110.0	31.5	**0.5143**	0.242	47.0	mg/L	22	Standard
Ca	43	180.0	27.4	**23.8358**	9.598	40.3	mg/L	47	Standard
Fe	54	1737.6	2.8	**1.1314**	0.022	1.9	mg/L	151	Standard
Fe	57	686.7	6.3	**1.2285**	0.107	8.7	mg/L	195	Standard
Sc-1	45	33602.2	1.6				mg/L	29647	Standard
Cl	35	293323.6	1.0				ug/L	154152	Standard
Kr	83	1.7	124.9				ug/L	3	Standard
Br	81	5094.2	9.2				ug/L	1607	Standard
P	31	27336.3	1.5				ug/L	22752	Standard
S	34	4702.4	5.5				ug/L	5049	Standard
Sr	88	400.0	11.5				ug/L	87	Standard
C	12	270.0	13.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	45484.4	2.9				mg/L	10	Standard
Ho-1	165	27413.1	3.0				mg/L	7	Standard
Er	166	23461.5	1.2				mg/L	3	Standard
I	127	221641.3	5.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		165.792	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.963	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.342
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.120
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606072903SD WG572730-07
Sample Date/Time: Thursday, June 16, 2016 19:25:15
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86461.0	1.0				ug/L	51024	Standard
	Be	9	64063.5	1.0	**44.9486**	0.413	0.9	ug/L	7	Standard
	Al	27	12456061.3	1.7	**51.6274**	0.457	0.9	ug/L	625	Standard
	Sc	45	32062.2	2.4				ug/L	29647	Standard
	Ti	47	858.4	8.8	**2.9028**	0.272	9.4	ug/L	57	Standard
	V	51	359033.7	1.5	**54.0078**	1.033	1.9	ug/L	1142	Standard
	Cr	52	357394.7	0.2	**51.1915**	0.354	0.7	ug/L	6628	Standard
	Cr	53	45598.6	3.3	**52.1815**	1.498	2.9	ug/L	430	Standard
	Mn	55	2668759.8	1.0	**482.1929**	4.954	1.0	ug/L	603	Standard
	Co	59	502894.6	1.2	**83.9097**	1.409	1.7	ug/L	237	Standard
	Ni	60	107927.8	1.4	**59.9510**	0.489	0.8	ug/L	141	Standard
	Cu	65	93853.1	1.2	**53.5019**	0.490	0.9	ug/L	109	Standard
	Zn	66	83974.7	0.9	**81.0494**	0.217	0.3	ug/L	159	Standard
>	**Ge**	72	441763.7	0.6				ug/L	474053	Standard
	As	75	55613.6	0.2	**53.9212**	0.243	0.5	ug/L	-34	Standard
	Se	82	6086.3	0.3	**58.8898**	0.200	0.3	ug/L	14	Standard
	Se-1	77	3831.8	0.4	**52.8020**	0.183	0.3	ug/L	55	Standard
>	**Ga**	71	981.7	7.0				mg/L	50	Standard
	Rb	85	19140.4	1.5				ug/L	20	Standard
	Y	89	713271.6	1.4				ug/L	376602	Standard
>	**Rh**	103	201.7	43.7				ug/L	17	Standard
	Mo	98	570.8	5.1	**0.2183**	0.009	3.9	ug/L	8	Standard
	Ag	107	9150.1	1.0	**1.4089**	0.031	2.2	ug/L	81	Standard
	Cd	111	99261.8	1.0	**47.3819**	0.778	1.6	mg/L	3	Standard
	Cd	114	244188.0	1.4	**47.1444**	0.226	0.5	ug/L	7	Standard
>	**In**	115	566399.8	1.8				ug/L	524722	Standard
	Sn	118	1108.4	1.6	**0.1012**	0.003	3.2	ug/L	715	Standard
	Sb	123	226221.3	0.0	**47.9756**	0.857	1.8	ug/L	201	Standard
	Ba	135	281949.2	0.1	**144.0743**	2.519	1.7	ug/L	108	Standard
	Ce	140	1344322.7	0.7				ug/L	30	Standard
>	**Tb**	159	856521.4	0.5				ug/L	792236	Standard
	Ho	165	27917.4	1.4				ug/L	7	Standard
	Tl	203	379214.9	0.1	**48.6259**	0.229	0.5	ug/L	9	Standard
	Tl	205	341701.9	0.7	**51.5229**	0.634	1.2	ug/L	0	Standard
	Pb	206	250400.5	0.4	**53.0698**	0.469	0.9	ug/L	216	Standard
	Pb	207	218768.7	0.4	**50.9304**	0.424	0.8	ug/L	180	Standard
	Pb	208	894325.1	0.6	**51.3006**	0.445	0.9	ug/L	717	Standard
	U	238	333573.8	0.7	**52.6006**	0.628	1.2	ug/L	4	Standard
>	**Bi**	209	469954.5	0.6				ug/L	460343	Standard

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Na	23	3.3	173.2	**0.1020**	17.927	17574.6	mg/L	0	Standard
Mg	24	6119.6	7.0	**7.6313**	0.602	7.9	mg/L	20	Standard
K	39	128.3	31.7	**0.6738**	0.269	39.8	mg/L	22	Standard
Ca	43	203.3	13.5	**30.6746**	5.036	16.4	mg/L	47	Standard
Fe	54	1790.2	1.0	**1.2312**	0.019	1.5	mg/L	151	Standard
Fe	57	780.0	10.9	**1.5831**	0.191	12.1	mg/L	195	Standard
Sc-1	45	32062.2	2.4				mg/L	29647	Standard
Cl	35	296539.1	0.3				ug/L	154152	Standard
Kr	83	1.0	0.0				ug/L	3	Standard
Br	81	116096.7	2.9				ug/L	1607	Standard
P	31	27080.9	1.8				ug/L	22752	Standard
S	34	4614.0	1.1				ug/L	5049	Standard
Sr	88	778.4	3.2				ug/L	87	Standard
C	12	196.7	22.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	46630.2	1.4				mg/L	10	Standard
Ho-1	165	27917.4	1.4				mg/L	7	Standard
Er	166	24322.8	2.2				mg/L	3	Standard
I	127	176317.1	2.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		169.451	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.189	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.943
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.088
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606075401
Sample Date/Time: Thursday, June 16, 2016 19:28:27
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82366.7	2.1				ug/L	51024	Standard
	Be	9	51.7	14.8	**0.0170**	0.006	32.8	ug/L	7	Standard
	Al	27	17891826.3	2.7	**77.8692**	2.435	3.1	ug/L	625	Standard
	Sc	45	30427.2	1.9				ug/L	29647	Standard
	Ti	47	2820.9	1.0	**9.4421**	0.167	1.8	ug/L	57	Standard
	V	51	13745.3	1.6	**1.8076**	0.041	2.3	ug/L	1142	Standard
	Cr	52	20733.8	0.8	**1.9525**	0.033	1.7	ug/L	6628	Standard
	Cr	53	4984.2	5.0	**5.0448**	0.169	3.3	ug/L	430	Standard
	Mn	55	105692.4	1.8	**18.0774**	0.683	3.8	ug/L	603	Standard
	Co	59	4134.2	4.3	**0.6164**	0.033	5.4	ug/L	237	Standard
	Ni	60	5645.1	0.8	**2.9135**	0.034	1.2	ug/L	141	Standard
	Cu	65	191176.6	0.9	**103.9111**	2.891	2.8	ug/L	109	Standard
	Zn	66	106024.3	0.8	**97.5572**	2.630	2.7	ug/L	159	Standard
>	**Ge**	72	463769.1	2.0				ug/L	474053	Standard
	As	75	301.2	25.5	**0.3039**	0.075	24.6	ug/L	-34	Standard
	Se	82	127.3	9.6	**1.0095**	0.134	13.3	ug/L	14	Standard
	Se-1	77	289.7	4.6	**3.1103**	0.134	4.3	ug/L	55	Standard
>	**Ga**	71	440.0	5.9				mg/L	50	Standard
	Rb	85	66395.2	1.7				ug/L	20	Standard
	Y	89	407745.6	2.4				ug/L	376602	Standard
>	**Rh**	103	96.7	20.9				ug/L	17	Standard
	Mo	98	1561.5	1.4	**0.6398**	0.014	2.1	ug/L	8	Standard
	Ag	107	747.4	3.8	**0.1101**	0.008	7.2	ug/L	81	Standard
	Cd	111	185.0	11.1	**0.0900**	0.013	14.1	mg/L	3	Standard
	Cd	114	453.1	6.4	**0.0885**	0.009	9.7	ug/L	7	Standard
>	**In**	115	537707.7	3.1				ug/L	524722	Standard
	Sn	118	4545.7	5.8	**0.7338**	0.032	4.3	ug/L	715	Standard
	Sb	123	909.7	21.3	**0.1892**	0.048	25.1	ug/L	201	Standard
	Ba	135	39811.9	1.6	**21.3825**	0.338	1.6	ug/L	108	Standard
	Ce	140	8849.3	2.5				ug/L	30	Standard
>	**Tb**	159	810136.1	3.5				ug/L	792236	Standard
	Ho	165	230.0	24.5				ug/L	7	Standard
	Tl	203	286.7	27.5	**0.0315**	0.010	30.7	ug/L	9	Standard
	Tl	205	228.3	32.9	**0.0241**	0.011	44.8	ug/L	0	Standard
	Pb	206	10175.4	0.5	**1.9406**	0.024	1.2	ug/L	216	Standard
	Pb	207	8305.3	0.7	**1.7365**	0.026	1.5	ug/L	180	Standard
	Pb	208	35130.3	0.9	**1.8082**	0.024	1.3	ug/L	717	Standard
	U	238	1915.5	3.0	**0.2719**	0.010	3.6	ug/L	4	Standard
>	**Bi**	209	508087.3	0.9				ug/L	460343	Standard

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Na	23	3.3	86.6	**-0.2885**	9.302	3224.4	mg/L	0	Standard
Mg	24	30961.6	1.7	**40.8617**	0.835	2.0	mg/L	20	Standard
K	39	656.7	18.1	**4.6487**	0.870	18.7	mg/L	22	Standard
Ca	43	158.3	34.8	**22.7292**	12.064	53.1	mg/L	47	Standard
Fe	54	990.1	10.0	**0.6701**	0.088	13.2	mg/L	151	Standard
Fe	57	505.0	3.4	**0.8773**	0.078	8.8	mg/L	195	Standard
> **Sc-1**	45	30427.2	1.9				mg/L	29647	Standard
Cl	35	217230.9	2.7				ug/L	154152	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	12551.9	10.7				ug/L	1607	Standard
P	31	26334.5	1.0				ug/L	22752	Standard
S	34	4555.7	2.6				ug/L	5049	Standard
Sr	88	170.0	8.8				ug/L	87	Standard
C	12	793.4	8.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	96.7	15.8				mg/L	0	Standard
Dy	164	343.6	11.4				mg/L	10	Standard
Ho-1	165	230.0	24.5				mg/L	7	Standard
Er	166	203.3	15.0				mg/L	3	Standard
I	127	19776.3	5.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		161.427	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.831	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.475	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	110.371	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

Sample ID: L1606075401
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Method 6020 - Summary Report

Sample ID: L1606075401PS WG572869-01
Sample Date/Time: Thursday, June 16, 2016 19:31:38
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83402.3	0.7				ug/L	51024	Standard
	Be	9	63124.6	1.4	**45.9169**	0.909	2.0	ug/L	7	Standard
	Al	27	17971744.4	2.8	**77.2382**	2.615	3.4	ug/L	625	Standard
	Sc	45	30682.7	4.2				ug/L	29647	Standard
	Ti	47	2792.9	5.6	**9.1051**	0.451	5.0	ug/L	57	Standard
	V	51	382253.4	0.5	**53.4006**	0.320	0.6	ug/L	1142	Standard
	Cr	52	373919.2	1.3	**49.7147**	0.405	0.8	ug/L	6628	Standard
	Cr	53	49711.5	2.7	**52.8478**	1.467	2.8	ug/L	430	Standard
	Mn	55	406935.5	0.9	**68.1780**	0.090	0.1	ug/L	603	Standard
	Co	59	347435.1	1.8	**53.8207**	0.541	1.0	ug/L	237	Standard
	Ni	60	95683.2	0.8	**49.3519**	0.338	0.7	ug/L	141	Standard
	Cu	65	276145.4	0.3	**146.3258**	0.986	0.7	ug/L	109	Standard
	Zn	66	154951.3	0.2	**139.0713**	0.812	0.6	ug/L	159	Standard
>	Ge	72	475646.5	0.8				ug/L	474053	Standard
	As	75	55395.2	0.9	**49.8846**	0.262	0.5	ug/L	-34	Standard
	Se	82	5840.3	1.9	**52.4634**	0.711	1.4	ug/L	14	Standard
	Se-1	77	4138.2	1.9	**52.9629**	0.853	1.6	ug/L	55	Standard
>	Ga	71	441.7	10.5				mg/L	50	Standard
	Rb	85	63605.0	2.6				ug/L	20	Standard
	Y	89	384934.5	2.9				ug/L	376602	Standard
>	Rh	103	75.0	30.6				ug/L	17	Standard
	Mo	98	1506.0	0.6	**0.6341**	0.012	1.9	ug/L	8	Standard
	Ag	107	301051.6	0.9	**50.6101**	0.914	1.8	ug/L	81	Standard
	Cd	111	98227.5	0.6	**50.7616**	0.701	1.4	mg/L	3	Standard
	Cd	114	243020.5	0.8	**50.8000**	0.654	1.3	ug/L	7	Standard
>	In	115	523174.3	1.7				ug/L	524722	Standard
	Sn	118	4532.3	4.2	**0.7549**	0.047	6.3	ug/L	715	Standard
	Sb	123	222938.5	1.8	**51.1866**	1.325	2.6	ug/L	201	Standard
	Ba	135	127885.1	0.6	**70.7164**	1.199	1.7	ug/L	108	Standard
	Ce	140	8752.5	5.4				ug/L	30	Standard
>	Tb	159	809108.6	3.0				ug/L	792236	Standard
	Ho	165	236.7	12.0				ug/L	7	Standard
	Tl	203	379894.9	0.9	**44.3716**	1.016	2.3	ug/L	9	Standard
	Tl	205	341979.7	0.7	**46.9709**	1.246	2.7	ug/L	0	Standard
	Pb	206	255943.3	0.4	**49.4070**	1.138	2.3	ug/L	216	Standard
	Pb	207	222866.5	0.7	**47.2585**	1.195	2.5	ug/L	180	Standard
	Pb	208	910678.1	0.7	**47.5815**	1.216	2.6	ug/L	717	Standard
	U	238	341419.2	0.1	**49.0368**	0.922	1.9	ug/L	4	Standard
>	Bi	209	516066.4	2.0				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.2328**	9.040	172.8	mg/L	0	Standard
Mg	24	30580.8	0.9	**40.0684**	1.906	4.8	mg/L	20	Standard
K	39	683.3	11.4	**4.8016**	0.478	10.0	mg/L	22	Standard
Ca	43	166.7	18.3	**24.6755**	8.602	34.9	mg/L	47	Standard
Fe	54	991.6	6.4	**0.6639**	0.031	4.7	mg/L	151	Standard
Fe	57	553.3	10.9	**1.0152**	0.249	24.5	mg/L	195	Standard
> **Sc-1**	45	30682.7	4.2				mg/L	29647	Standard
Cl	35	218863.4	0.6				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	11077.4	2.3				ug/L	1607	Standard
P	31	26757.0	3.2				ug/L	22752	Standard
S	34	4704.1	1.5				ug/L	5049	Standard
Sr	88	165.0	10.9				ug/L	87	Standard
C	12	693.3	9.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	90.0	50.9				mg/L	0	Standard
Dy	164	284.7	30.5				mg/L	10	Standard
Ho-1	165	236.7	12.0				mg/L	7	Standard
Er	166	180.0	22.2				mg/L	3	Standard
I	127	17368.3	4.1				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		163.456	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.336	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.705	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	112.105	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1606075401SDL WG572869-02
Sample Date/Time: Thursday, June 16, 2016 19:34:50
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84174.9	1.5				ug/L	51024	Standard
	Be	9	35.0	14.3	**0.0042**	0.004	88.5	ug/L	7	Standard
	Al	27	3660235.8	1.3	**15.5808**	0.435	2.8	ug/L	625	Standard
	Sc	45	32820.5	2.8				ug/L	29647	Standard
	Ti	47	607.7	5.7	**1.8669**	0.107	5.7	ug/L	57	Standard
	V	51	4082.9	1.0	**0.4082**	0.006	1.6	ug/L	1142	Standard
	Cr	52	9894.2	1.7	**0.4222**	0.007	1.6	ug/L	6628	Standard
	Cr	53	1803.4	1.6	**1.5160**	0.013	0.8	ug/L	430	Standard
	Mn	55	21935.9	0.6	**3.5843**	0.077	2.1	ug/L	603	Standard
	Co	59	994.0	3.5	**0.1140**	0.003	2.9	ug/L	237	Standard
	Ni	60	1361.1	4.8	**0.6305**	0.026	4.2	ug/L	141	Standard
	Cu	65	40184.2	0.6	**21.4035**	0.546	2.6	ug/L	109	Standard
	Zn	66	22341.5	1.6	**20.0059**	0.236	1.2	ug/L	159	Standard
>	**Ge**	72	472090.7	2.0				ug/L	474053	Standard
	As	75	70.8	22.3	**0.0894**	0.015	16.6	ug/L	-34	Standard
	Se	82	38.3	18.3	**0.1793**	0.069	38.5	ug/L	14	Standard
	Se-1	77	126.7	16.1	**0.9154**	0.302	33.0	ug/L	55	Standard
>	**Ga**	71	170.0	15.6				mg/L	50	Standard
	Rb	85	13192.4	0.8				ug/L	20	Standard
	Y	89	392636.4	3.5				ug/L	376602	Standard
>	**Rh**	103	25.0	69.3				ug/L	17	Standard
	Mo	98	328.6	6.7	**0.1240**	0.011	8.7	ug/L	8	Standard
	Ag	107	258.3	8.0	**0.0280**	0.003	12.2	ug/L	81	Standard
	Cd	111	44.1	38.1	**0.0179**	0.008	45.4	mg/L	3	Standard
	Cd	114	91.6	47.0	**0.0140**	0.009	61.0	ug/L	7	Standard
>	**In**	115	563812.4	1.7				ug/L	524722	Standard
	Sn	118	1306.7	7.2	**0.1365**	0.020	14.5	ug/L	715	Standard
	Sb	123	2201.6	19.8	**0.4534**	0.085	18.8	ug/L	201	Standard
	Ba	135	8201.6	0.8	**4.1541**	0.077	1.9	ug/L	108	Standard
	Ce	140	1823.4	12.4				ug/L	30	Standard
>	**Tb**	159	855756.3	0.3				ug/L	792236	Standard
	Ho	165	45.0	11.1				ug/L	7	Standard
	Tl	203	135.3	4.5	**0.0137**	0.001	4.2	ug/L	9	Standard
	Tl	205	115.0	7.5	**0.0084**	0.001	13.4	ug/L	0	Standard
	Pb	206	2315.2	1.8	**0.4035**	0.003	0.8	ug/L	216	Standard
	Pb	207	1893.5	0.7	**0.3593**	0.003	0.7	ug/L	180	Standard
	Pb	208	7952.2	1.5	**0.3697**	0.005	1.4	ug/L	717	Standard
	U	238	417.0	3.9	**0.0540**	0.002	3.2	ug/L	4	Standard
>	**Bi**	209	501935.6	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	6119.6	2.2	**7.4516**	0.184	2.5	mg/L	20	Standard
K	39	163.3	26.0	**0.8923**	0.268	30.1	mg/L	22	Standard
Ca	43	58.3	13.1	**-0.8716**	1.621	186.0	mg/L	47	Standard
Fe	54	338.9	14.2	**0.1347**	0.043	31.9	mg/L	151	Standard
Fe	57	201.7	14.9	**-0.0843**	0.069	82.1	mg/L	195	Standard
> **Sc-1**	45	32820.5	2.8				mg/L	29647	Standard
Cl	35	191817.3	0.7				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	3760.5	5.3				ug/L	1607	Standard
P	31	26361.2	0.5				ug/L	22752	Standard
S	34	5075.9	2.0				ug/L	5049	Standard
Sr	88	91.7	22.0				ug/L	87	Standard
C	12	203.3	19.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	124.9				mg/L	0	Standard
Dy	164	57.6	17.4				mg/L	10	Standard
Ho-1	165	45.0	11.1				mg/L	7	Standard
Er	166	50.0	34.6				mg/L	3	Standard
I	127	5225.9	3.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		164.971	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.586	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	107.450
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	109.035
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 19:38:03
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75524.5	1.6				ug/L	51024	Standard
	Be	9	58757.1	2.5	**47.1905**	0.427	0.9	ug/L	7	Standard
	Al	27	8592238.6	0.7	**40.7782**	0.896	2.2	ug/L	625	Standard
	Sc	45	30089.9	1.6				ug/L	29647	Standard
	Ti	47	29681.7	0.7	**100.0625**	1.696	1.7	ug/L	57	Standard
	V	51	362295.0	0.1	**51.4700**	1.097	2.1	ug/L	1142	Standard
	Cr	52	362530.7	0.7	**49.0151**	1.305	2.7	ug/L	6628	Standard
	Cr	53	44988.4	1.6	**48.6083**	1.321	2.7	ug/L	430	Standard
	Mn	55	309292.7	1.9	**52.6874**	2.042	3.9	ug/L	603	Standard
	Co	59	348007.0	1.3	**54.8425**	1.822	3.3	ug/L	237	Standard
	Ni	60	92789.3	1.3	**48.6823**	1.578	3.2	ug/L	141	Standard
	Cu	65	90263.4	0.9	**48.6062**	1.434	3.0	ug/L	109	Standard
	Zn	66	54352.7	0.8	**49.4652**	1.123	2.3	ug/L	159	Standard
>	Ge	72	467786.9	2.0				ug/L	474053	Standard
	As	75	53262.0	0.4	**48.7810**	0.849	1.7	ug/L	-34	Standard
	Se	82	5640.4	1.6	**51.5356**	1.525	3.0	ug/L	14	Standard
	Se-1	77	3823.8	0.2	**49.7310**	1.059	2.1	ug/L	55	Standard
>	Ga	71	100.0	10.0				mg/L	50	Standard
	Rb	85	738.4	4.8				ug/L	20	Standard
	Y	89	389211.3	4.2				ug/L	376602	Standard
>	Rh	103	41.7	45.4				ug/L	17	Standard
	Mo	98	258410.6	0.4	**108.3200**	0.551	0.5	ug/L	8	Standard
	Ag	107	305258.5	0.7	**50.6525**	0.191	0.4	ug/L	81	Standard
	Cd	111	98577.0	0.6	**50.2856**	0.543	1.1	mg/L	3	Standard
	Cd	114	240956.8	0.8	**49.7198**	0.544	1.1	ug/L	7	Standard
>	In	115	529955.9	0.8				ug/L	524722	Standard
	Sn	118	279031.2	1.4	**51.1979**	0.292	0.6	ug/L	715	Standard
	Sb	123	225733.2	0.6	**51.1556**	0.269	0.5	ug/L	201	Standard
	Ba	135	88992.9	0.5	**48.5568**	0.564	1.2	ug/L	108	Standard
	Ce	140	98.3	54.8				ug/L	30	Standard
>	Tb	159	792501.9	1.8				ug/L	792236	Standard
	Ho	165	15.0	57.7				ug/L	7	Standard
	Tl	203	380190.8	0.8	**49.9446**	0.519	1.0	ug/L	9	Standard
	Tl	205	340670.7	0.6	**52.6256**	0.733	1.4	ug/L	0	Standard
	Pb	206	240176.7	0.8	**52.1541**	1.146	2.2	ug/L	216	Standard
	Pb	207	218112.4	0.3	**52.0255**	0.882	1.7	ug/L	180	Standard
	Pb	208	878933.8	0.7	**51.6572**	1.015	2.0	ug/L	717	Standard
	U	238	331188.2	0.5	**53.5069**	0.993	1.9	ug/L	4	Standard
>	Bi	209	458755.1	1.5				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	4233.9	2.0	**5.6123**	0.183	3.3	mg/L	20	Standard
K	39	481.7	4.2	**3.3891**	0.102	3.0	mg/L	22	Standard
Ca	43	51.7	40.3	**-1.3433**	4.578	340.8	mg/L	47	Standard
Fe	54	6013.8	2.7	**4.7022**	0.066	1.4	mg/L	151	Standard
Fe	57	1661.8	4.6	**4.4228**	0.232	5.3	mg/L	195	Standard
> **Sc-1**	45	30089.9	1.6				mg/L	29647	Standard
Cl	35	174583.8	2.5				ug/L	154152	Standard
Kr	83	2.7	108.3				ug/L	3	Standard
Br	81	1656.8	6.5				ug/L	1607	Standard
P	31	26137.5	2.6				ug/L	22752	Standard
S	34	5366.0	2.6				ug/L	5049	Standard
Sr	88	61.7	56.9				ug/L	87	Standard
C	12	73.3	56.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.5	105.0				mg/L	10	Standard
Ho-1	165	15.0	57.7				mg/L	7	Standard
Er	166	10.0					mg/L	3	Standard
I	127	1988.5	11.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	94.381		
Al	27	81.556		
Sc	45			
Ti	47	100.063		
V	51	102.940		
Cr	52	98.030		
Cr	53			
Mn	55	105.375		
Co	59	109.685		
Ni	60	97.365		
Cu	65	97.212		
Zn	66	98.930		
> Ge	72		98.678	
As	75	97.562		
Se	82	103.071		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	108.320		
Ag	107	101.305		
Cd	111	100.571		
Cd	114			
In	115		100.997	
Sn	118	102.396		
Sb	123	102.311		
Ba	135	97.114		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.889		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.314		
U	238	107.014		
Bi	209		99.655	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 19:41:14
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75737.2	0.8				ug/L	51024	Standard
	Be	9	36.7	64.4	**0.0082**	0.019	228.1	ug/L	7	Standard
	Al	27	2361.9	43.7	**0.0014**	0.005	343.6	ug/L	625	Standard
	Sc	45	30985.0	1.8				ug/L	29647	Standard
	Ti	47	35.3	4.3	**-0.0458**	0.006	13.8	ug/L	57	Standard
	V	51	1037.4	10.2	**-0.0196**	0.013	66.8	ug/L	1142	Standard
	Cr	52	6028.9	1.0	**-0.0922**	0.013	14.2	ug/L	6628	Standard
	Cr	53	500.0	1.7	**0.1170**	0.007	5.6	ug/L	430	Standard
	Mn	55	801.0	1.0	**0.0112**	0.003	28.0	ug/L	603	Standard
	Co	59	242.3	16.2	**-0.0028**	0.006	218.5	ug/L	237	Standard
	Ni	60	194.3	2.8	**0.0250**	0.004	15.2	ug/L	141	Standard
	Cu	65	159.3	5.3	**0.0203**	0.005	24.2	ug/L	109	Standard
	Zn	66	178.7	4.3	**-0.0675**	0.009	14.0	ug/L	159	Standard
>	**Ge**	72	464739.5	1.5				ug/L	474053	Standard
	As	75	7.6	225.8	**0.0322**	0.016	48.9	ug/L	-34	Standard
	Se	82	25.4	8.4	**0.0649**	0.020	31.4	ug/L	14	Standard
	Se-1	77	61.7	15.6	**0.0734**	0.117	159.7	ug/L	55	Standard
>	**Ga**	71	83.3	36.7				mg/L	50	Standard
	Rb	85	23.3	44.6				ug/L	20	Standard
	Y	89	383264.6	3.0				ug/L	376602	Standard
>	**Rh**	103	33.3	8.7				ug/L	17	Standard
	Mo	98	271.3	23.3	**0.1065**	0.026	24.6	ug/L	8	Standard
	Ag	107	117.3	15.5	**0.0068**	0.003	41.5	ug/L	81	Standard
	Cd	111	10.2	68.0	**0.0019**	0.003	183.2	mg/L	3	Standard
	Cd	114	44.5	65.5	**0.0053**	0.006	115.1	ug/L	7	Standard
>	**In**	115	537976.2	1.6				ug/L	524722	Standard
	Sn	118	825.0	17.9	**0.0600**	0.027	44.4	ug/L	715	Standard
	Sb	123	661.4	27.1	**0.1329**	0.040	29.8	ug/L	201	Standard
	Ba	135	101.0	9.8	**-0.0033**	0.006	183.9	ug/L	108	Standard
	Ce	140	31.7	79.5				ug/L	30	Standard
>	**Tb**	159	808787.7	0.7				ug/L	792236	Standard
	Ho	165	10.0					ug/L	7	Standard
	Tl	203	70.0	26.5	**0.0063**	0.002	37.5	ug/L	9	Standard
	Tl	205	83.3	42.1	**0.0046**	0.005	114.0	ug/L	0	Standard
	Pb	206	238.3	5.7	**-0.0064**	0.003	45.5	ug/L	216	Standard
	Pb	207	219.3	6.5	**-0.0033**	0.003	100.2	ug/L	180	Standard
	Pb	208	893.7	3.3	**-0.0072**	0.002	24.1	ug/L	717	Standard
	U	238	52.0	44.7	**0.0005**	0.004	686.7	ug/L	4	Standard
>	**Bi**	209	475308.5	0.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	48.3	26.0	**0.0174**	0.016	91.5	mg/L	20	Standard
K	39	13.3	114.6	**-0.1319**	0.110	83.1	mg/L	22	Standard
Ca	43	30.0	33.3	**-6.4628**	2.334	36.1	mg/L	47	Standard
Fe	54	156.0	6.5	**0.0065**	0.010	153.3	mg/L	151	Standard
Fe	57	171.7	23.4	**-0.1375**	0.125	91.1	mg/L	195	Standard
Sc-1	45	30985.0	1.8				mg/L	29647	Standard
Cl	35	175790.7	1.2				ug/L	154152	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	1680.1	2.7				ug/L	1607	Standard
P	31	26980.7	1.7				ug/L	22752	Standard
S	34	5335.9	0.5				ug/L	5049	Standard
Sr	88	53.3	19.5				ug/L	87	Standard
C	12	106.7	44.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.8	173.2				mg/L	10	Standard
Ho-1	165	10.0					mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	1423.4	7.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.035	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.526
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.251
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606075401SDL WG572869-02
Sample Date/Time: Thursday, June 16, 2016 19:44:27
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75285.0	2.4				ug/L	51024	Standard
	Be	9	28.3	27.0	**0.0018**	0.006	349.7	ug/L	7	Standard
	Al	27	678933.6	1.5	**3.2237**	0.074	2.3	ug/L	625	Standard
	Sc	45	30959.9	1.5				ug/L	29647	Standard
	Ti	47	147.0	11.8	**0.3390**	0.053	15.6	ug/L	57	Standard
	V	51	1608.8	3.2	**0.0651**	0.007	11.5	ug/L	1142	Standard
	Cr	52	6858.9	5.4	**0.0335**	0.040	118.0	ug/L	6628	Standard
	Cr	53	711.7	14.1	**0.3581**	0.110	30.8	ug/L	430	Standard
	Mn	55	5081.9	4.1	**0.7566**	0.025	3.3	ug/L	603	Standard
	Co	59	396.3	6.0	**0.0224**	0.003	13.2	ug/L	237	Standard
	Ni	60	495.3	27.9	**0.1866**	0.070	37.6	ug/L	141	Standard
	Cu	65	8119.8	4.3	**4.3896**	0.136	3.1	ug/L	109	Standard
	Zn	66	5396.3	4.5	**4.7897**	0.160	3.3	ug/L	159	Standard
>	**Ge**	72	459379.8	1.3				ug/L	474053	Standard
	As	75	30.4	143.6	**0.0532**	0.040	75.8	ug/L	-34	Standard
	Se	82	25.8	13.6	**0.0723**	0.035	48.4	ug/L	14	Standard
	Se-1	77	72.3	3.5	**0.2270**	0.021	9.3	ug/L	55	Standard
>	**Ga**	71	85.0	20.4				mg/L	50	Standard
	Rb	85	2591.9	3.3				ug/L	20	Standard
	Y	89	395811.5	2.1				ug/L	376602	Standard
>	**Rh**	103	21.7	48.0				ug/L	17	Standard
	Mo	98	145.0	5.9	**0.0524**	0.004	7.4	ug/L	8	Standard
	Ag	107	135.7	35.4	**0.0092**	0.008	85.2	ug/L	81	Standard
	Cd	111	32.4	102.6	**0.0126**	0.016	129.9	mg/L	3	Standard
	Cd	114	75.7	59.7	**0.0111**	0.009	81.1	ug/L	7	Standard
>	**In**	115	555911.8	0.9				ug/L	524722	Standard
	Sn	118	780.0	12.2	**0.0473**	0.018	37.9	ug/L	715	Standard
	Sb	123	369.0	35.2	**0.0651**	0.029	44.3	ug/L	201	Standard
	Ba	135	1717.1	2.7	**0.8366**	0.031	3.7	ug/L	108	Standard
	Ce	140	485.0	42.7				ug/L	30	Standard
>	**Tb**	159	813354.7	3.1				ug/L	792236	Standard
	Ho	165	18.3	87.7				ug/L	7	Standard
	Tl	203	138.7	62.7	**0.0153**	0.011	74.9	ug/L	9	Standard
	Tl	205	61.7	4.7	**0.0015**	0.001	38.9	ug/L	0	Standard
	Pb	206	674.3	7.5	**0.0868**	0.013	15.5	ug/L	216	Standard
	Pb	207	582.7	6.3	**0.0820**	0.010	12.7	ug/L	180	Standard
	Pb	208	2365.1	0.5	**0.0779**	0.003	3.7	ug/L	717	Standard
	U	238	97.7	25.6	**0.0079**	0.004	53.7	ug/L	4	Standard
>	**Bi**	209	470182.7	2.2				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1275.1	3.2	**1.6099**	0.030	1.9	mg/L	20	Standard
K	39	51.7	39.1	**0.1491**	0.148	99.3	mg/L	22	Standard
Ca	43	31.7	9.1	**-6.0988**	0.709	11.6	mg/L	47	Standard
Fe	54	199.5	21.2	**0.0405**	0.034	83.1	mg/L	151	Standard
Fe	57	250.0	6.0	**0.0939**	0.035	37.2	mg/L	195	Standard
> **Sc-1**	45	30959.9	1.5				mg/L	29647	Standard
Cl	35	180506.2	0.5				ug/L	154152	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	1983.5	10.4				ug/L	1607	Standard
P	31	26828.7	3.3				ug/L	22752	Standard
S	34	5309.3	3.4				ug/L	5049	Standard
Sr	88	65.0	13.3				ug/L	87	Standard
C	12	93.3	12.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	25.5	47.4				mg/L	10	Standard
Ho-1	165	18.3	87.7				mg/L	7	Standard
Er	166	23.3	49.5				mg/L	3	Standard
I	127	1906.8	3.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		147.548	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.905	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606075401SDL WG572869-02
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.944
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.137
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606061601
Sample Date/Time: Thursday, June 16, 2016 19:47:38
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76809.2	0.5				ug/L	51024	Standard
	Be	9	595.0	11.7	**0.4492**	0.056	12.5	ug/L	7	Standard
	Al	27	4369598.1	0.7	**20.3813**	0.060	0.3	ug/L	625	Standard
	Sc	45	31414.2	1.5				ug/L	29647	Standard
	Ti	47	432.0	2.5	**1.3649**	0.030	2.2	ug/L	57	Standard
	V	51	-3320.7	72.4	**-0.6635**	0.356	53.6	ug/L	1142	Standard
	Cr	52	750024.0	0.5	**107.4925**	0.659	0.6	ug/L	6628	Standard
	Cr	53	103144.9	1.1	**117.5491**	0.704	0.6	ug/L	430	Standard
	Mn	55	749735.1	1.9	**134.2073**	3.843	2.9	ug/L	603	Standard
	Co	59	100276.4	1.1	**16.5512**	0.155	0.9	ug/L	237	Standard
	Ni	60	309778.2	0.7	**170.7218**	1.330	0.8	ug/L	141	Standard
	Cu	65	7659.6	1.1	**4.2680**	0.087	2.0	ug/L	109	Standard
	Zn	66	11362.9	1.9	**10.6718**	0.281	2.6	ug/L	159	Standard
>	**Ge**	72	445665.4	0.9				ug/L	474053	Standard
	As	75	686.6	13.7	**0.6845**	0.089	13.0	ug/L	-34	Standard
	Se	82	286.4	5.1	**2.5855**	0.133	5.1	ug/L	14	Standard
	Se-1	77	537.0	3.8	**6.6929**	0.237	3.5	ug/L	55	Standard
>	**Ga**	71	176.7	15.6				mg/L	50	Standard
	Rb	85	2721.9	5.5				ug/L	20	Standard
	Y	89	383236.3	0.5				ug/L	376602	Standard
>	**Rh**	103	50.0	36.1				ug/L	17	Standard
	Mo	98	2500.1	3.0	**1.0779**	0.045	4.2	ug/L	8	Standard
	Ag	107	102.0	12.9	**0.0051**	0.002	37.3	ug/L	81	Standard
	Cd	111	267.3	12.2	**0.1375**	0.014	10.4	mg/L	3	Standard
	Cd	114	603.9	11.8	**0.1249**	0.014	11.6	ug/L	7	Standard
>	**In**	115	512847.6	2.1				ug/L	524722	Standard
	Sn	118	1035.0	6.1	**0.1070**	0.008	7.4	ug/L	715	Standard
	Sb	123	393.5	17.2	**0.0775**	0.017	21.9	ug/L	201	Standard
	Ba	135	97635.9	1.0	**55.0639**	0.765	1.4	ug/L	108	Standard
	Ce	140	12988.9	1.1				ug/L	30	Standard
>	**Tb**	159	771242.3	0.7				ug/L	792236	Standard
	Ho	165	400.0	11.9				ug/L	7	Standard
	Tl	203	321.0	11.6	**0.0421**	0.006	13.3	ug/L	9	Standard
	Tl	205	538.3	98.5	**0.0807**	0.088	108.8	ug/L	0	Standard
	Pb	206	832.7	2.1	**0.1353**	0.003	2.1	ug/L	216	Standard
	Pb	207	700.3	3.6	**0.1232**	0.007	5.6	ug/L	180	Standard
	Pb	208	3407.2	29.9	**0.1547**	0.065	42.3	ug/L	717	Standard
	U	238	614.7	59.9	**0.0979**	0.064	65.5	ug/L	4	Standard
>	**Bi**	209	433217.0	0.9				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.3851**	8.776	163.0	mg/L	0	Standard
Mg	24	53123.0	1.4	**67.9338**	1.263	1.9	mg/L	20	Standard
K	39	26.7	39.0	**-0.0366**	0.073	198.4	mg/L	22	Standard
Ca	43	46.7	27.0	**-2.9236**	2.617	89.5	mg/L	47	Standard
Fe	54	466.9	13.1	**0.2433**	0.047	19.5	mg/L	151	Standard
Fe	57	296.7	18.2	**0.2213**	0.168	75.8	mg/L	195	Standard
Sc-1	45	31414.2	1.5				mg/L	29647	Standard
Cl	35	180426.0	1.3				ug/L	154152	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	63948.0	2.0				ug/L	1607	Standard
P	31	35653.6	1.9				ug/L	22752	Standard
S	34	4944.1	4.8				ug/L	5049	Standard
Sr	88	168.3	28.8				ug/L	87	Standard
C	12	176.7	33.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	644.2	6.3				mg/L	10	Standard
Ho-1	165	400.0	11.9				mg/L	7	Standard
Er	166	330.0	18.9				mg/L	3	Standard
I	127	86114.1	2.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		150.535	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.012	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.737
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.107
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
V 51 Lower	V	51	
Cr 52 Upper, S, EEE	Cr	52	

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Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Ni 60 Upper, S, EEE	Ni	60

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Method 6020 - Summary Report

Sample ID: L1606061602
Sample Date/Time: Thursday, June 16, 2016 19:50:50
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75748.9	1.4				ug/L	51024	Standard
	Be	9	48.3	39.2	**0.0176**	0.015	86.0	ug/L	7	Standard
	Al	27	19995852.4	2.5	**94.6007**	1.188	1.3	ug/L	625	Standard
	Sc	45	30053.1	1.9				ug/L	29647	Standard
	Ti	47	826.4	6.6	**2.7223**	0.220	8.1	ug/L	57	Standard
	V	51	3891.9	11.8	**0.4057**	0.069	17.0	ug/L	1142	Standard
	Cr	52	13157.7	1.1	**0.9469**	0.019	2.0	ug/L	6628	Standard
	Cr	53	8188.9	18.5	**8.8148**	1.816	20.6	ug/L	430	Standard
	Mn	55	3666201.0	1.1	**647.3586**	10.609	1.6	ug/L	603	Standard
	Co	59	2221.5	3.8	**0.3212**	0.018	5.6	ug/L	237	Standard
	Ni	60	1892.5	1.4	**0.9508**	0.014	1.5	ug/L	141	Standard
	Cu	65	951.0	2.0	**0.4643**	0.013	2.7	ug/L	109	Standard
	Zn	66	2843.9	2.3	**2.4576**	0.033	1.3	ug/L	159	Standard
>	**Ge**	72	452100.4	1.1				ug/L	474053	Standard
	As	75	2291.3	4.3	**2.1952**	0.104	4.7	ug/L	-34	Standard
	Se	82	731.9	2.7	**6.7722**	0.229	3.4	ug/L	14	Standard
	Se-1	77	824.7	4.7	**10.5195**	0.619	5.9	ug/L	55	Standard
>	**Ga**	71	260.0	5.8				mg/L	50	Standard
	Rb	85	20994.5	2.7				ug/L	20	Standard
	Y	89	374644.2	1.4				ug/L	376602	Standard
>	**Rh**	103	175.0	2.9				ug/L	17	Standard
	Mo	98	1524.1	2.8	**0.6737**	0.024	3.5	ug/L	8	Standard
	Ag	107	85.0	16.3	**0.0027**	0.002	93.3	ug/L	81	Standard
	Cd	111	31.4	24.1	**0.0138**	0.004	30.8	mg/L	3	Standard
	Cd	114	85.3	56.7	**0.0150**	0.011	72.0	ug/L	7	Standard
>	**In**	115	498521.0	0.9				ug/L	524722	Standard
	Sn	118	2845.3	2.5	**0.4666**	0.019	4.0	ug/L	715	Standard
	Sb	123	273.4	5.3	**0.0511**	0.003	6.4	ug/L	201	Standard
	Ba	135	433999.4	0.6	**251.9694**	2.189	0.9	ug/L	108	Standard
	Ce	140	9039.4	2.4				ug/L	30	Standard
>	**Tb**	159	767594.4	2.3				ug/L	792236	Standard
	Ho	165	158.3	4.8				ug/L	7	Standard
	Tl	203	240.0	18.3	**0.0311**	0.007	21.8	ug/L	9	Standard
	Tl	205	225.0	23.4	**0.0292**	0.009	30.5	ug/L	0	Standard
	Pb	206	742.7	3.3	**0.1155**	0.009	7.8	ug/L	216	Standard
	Pb	207	635.7	4.8	**0.1077**	0.010	9.0	ug/L	180	Standard
	Pb	208	2598.4	5.5	**0.1049**	0.012	11.7	ug/L	717	Standard
	U	238	474.7	5.4	**0.0741**	0.006	7.6	ug/L	4	Standard
>	**Bi**	209	431218.2	2.1				ug/L	460343	Standard

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Na	23	3.3	86.6	**-0.3991**	9.400	2355.4	mg/L	0	Standard
Mg	24	98133.5	1.2	**131.2521**	3.929	3.0	mg/L	20	Standard
K	39	131.7	7.9	**0.7615**	0.060	7.9	mg/L	22	Standard
Ca	43	168.3	4.5	**25.6161**	1.859	7.3	mg/L	47	Standard
Fe	54	29671.0	1.6	**23.6871**	0.442	1.9	mg/L	151	Standard
Fe	57	7898.7	1.9	**23.4845**	0.677	2.9	mg/L	195	Standard
> **Sc-1**	45	30053.1	1.9				mg/L	29647	Standard
Cl	35	175045.0	2.3				ug/L	154152	Standard
Kr	83	2.7	43.3				ug/L	3	Standard
Br	81	182091.9	3.5				ug/L	1607	Standard
P	31	33082.7	1.0				ug/L	22752	Standard
S	34	5377.6	4.5				ug/L	5049	Standard
Sr	88	866.7	3.5				ug/L	87	Standard
C	12	170.0	42.4				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	258.0	17.6				mg/L	10	Standard
Ho-1	165	158.3	4.8				mg/L	7	Standard
Er	166	180.0	25.5				mg/L	3	Standard
I	127	271715.3	7.5				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		148.457	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.369	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.007
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.673
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606061604
Sample Date/Time: Thursday, June 16, 2016 19:54:01
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73209.8	0.9				ug/L	51024	Standard
	Be	9	28.3	50.9	**0.0025**	0.012	495.3	ug/L	7	Standard
	Al	27	1228067.5	0.3	**6.0032**	0.043	0.7	ug/L	625	Standard
	Sc	45	32386.3	3.3				ug/L	29647	Standard
	Ti	47	334.0	17.6	**0.9832**	0.212	21.6	ug/L	57	Standard
	V	51	1789.1	4.9	**0.0914**	0.018	19.4	ug/L	1142	Standard
	Cr	52	14674.8	1.1	**1.1301**	0.065	5.7	ug/L	6628	Standard
	Cr	53	2643.6	3.1	**2.5012**	0.083	3.3	ug/L	430	Standard
	Mn	55	705467.3	1.0	**122.4541**	1.381	1.1	ug/L	603	Standard
	Co	59	3430.7	0.7	**0.5095**	0.015	2.8	ug/L	237	Standard
	Ni	60	3839.5	0.3	**1.9758**	0.045	2.3	ug/L	141	Standard
	Cu	65	1168.4	5.1	**0.5751**	0.034	5.9	ug/L	109	Standard
	Zn	66	2259.5	2.7	**1.8718**	0.099	5.3	ug/L	159	Standard
>	**Ge**	72	459550.4	2.1				ug/L	474053	Standard
	As	75	131.8	16.1	**0.1477**	0.018	12.1	ug/L	-34	Standard
	Se	82	59.0	11.8	**0.3811**	0.061	16.1	ug/L	14	Standard
	Se-1	77	99.0	11.6	**0.5837**	0.132	22.6	ug/L	55	Standard
>	**Ga**	71	130.0	11.5				mg/L	50	Standard
	Rb	85	9683.1	3.7				ug/L	20	Standard
	Y	89	395829.7	1.7				ug/L	376602	Standard
>	**Rh**	103	50.0	26.5				ug/L	17	Standard
	Mo	98	129.8	4.6	**0.0461**	0.003	6.2	ug/L	8	Standard
	Ag	107	119.7	9.2	**0.0065**	0.002	28.9	ug/L	81	Standard
	Cd	111	317.1	3.2	**0.1502**	0.006	3.9	mg/L	3	Standard
	Cd	114	681.4	6.2	**0.1296**	0.010	7.4	ug/L	7	Standard
>	**In**	115	558854.3	1.4				ug/L	524722	Standard
	Sn	118	820.0	7.6	**0.0535**	0.012	21.9	ug/L	715	Standard
	Sb	123	282.5	7.4	**0.0459**	0.004	9.0	ug/L	201	Standard
	Ba	135	35268.3	1.2	**18.2144**	0.408	2.2	ug/L	108	Standard
	Ce	140	2163.5	3.8				ug/L	30	Standard
>	**Tb**	159	825700.5	0.4				ug/L	792236	Standard
	Ho	165	51.7	14.8				ug/L	7	Standard
	Tl	203	156.7	22.7	**0.0174**	0.005	26.5	ug/L	9	Standard
	Tl	205	173.3	46.6	**0.0182**	0.012	67.6	ug/L	0	Standard
	Pb	206	424.7	5.7	**0.0331**	0.006	16.7	ug/L	216	Standard
	Pb	207	356.0	3.9	**0.0286**	0.004	13.3	ug/L	180	Standard
	Pb	208	1553.0	4.6	**0.0306**	0.005	14.8	ug/L	717	Standard
	U	238	81.0	68.7	**0.0051**	0.009	171.7	ug/L	4	Standard
>	**Bi**	209	473355.3	0.7				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.6238**	8.363	148.7	mg/L	0	Standard
Mg	24	2843.6	1.0	**3.4857**	0.082	2.3	mg/L	20	Standard
K	39	78.3	14.7	**0.3207**	0.096	29.9	mg/L	22	Standard
Ca	43	50.0	20.0	**-2.4661**	2.354	95.5	mg/L	47	Standard
Fe	54	2460.3	3.7	**1.7187**	0.119	6.9	mg/L	151	Standard
Fe	57	721.7	11.5	**1.4022**	0.269	19.2	mg/L	195	Standard
Sc-1	45	32386.3	3.3				mg/L	29647	Standard
Cl	35	167245.3	0.7				ug/L	154152	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	10406.9	6.9				ug/L	1607	Standard
P	31	27868.9	1.7				ug/L	22752	Standard
S	34	4945.8	3.9				ug/L	5049	Standard
Sr	88	151.7	1.9				ug/L	87	Standard
C	12	130.0	26.6				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	93.0	49.2				mg/L	10	Standard
Ho-1	165	51.7	14.8				mg/L	7	Standard
Er	166	76.7	32.8				mg/L	3	Standard
I	127	108192.1	4.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		143.481	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.941	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	106.505
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.827
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606064901
Sample Date/Time: Thursday, June 16, 2016 19:57:13
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73899.8	1.9				ug/L	51024	Standard
	Be	9	28.3	20.4	**0.0021**	0.004	205.1	ug/L	7	Standard
	Al	27	17068640.1	0.5	**82.8031**	1.944	2.3	ug/L	625	Standard
	Sc	45	31098.6	0.8				ug/L	29647	Standard
	Ti	47	2220.5	15.6	**7.6952**	1.219	15.8	ug/L	57	Standard
	V	51	3330.6	5.2	**0.3294**	0.025	7.6	ug/L	1142	Standard
	Cr	52	12294.7	1.4	**0.8476**	0.021	2.5	ug/L	6628	Standard
	Cr	53	3545.4	12.3	**3.6195**	0.491	13.6	ug/L	430	Standard
	Mn	55	65149.4	0.9	**11.5346**	0.133	1.2	ug/L	603	Standard
	Co	59	1855.8	3.0	**0.2656**	0.010	3.6	ug/L	237	Standard
	Ni	60	2852.6	1.9	**1.4936**	0.030	2.0	ug/L	141	Standard
	Cu	65	55047.8	0.2	**31.0509**	0.094	0.3	ug/L	109	Standard
	Zn	66	20763.6	1.9	**19.6724**	0.380	1.9	ug/L	159	Standard
>	**Ge**	72	446059.8	0.2				ug/L	474053	Standard
	As	75	230.9	30.1	**0.2467**	0.067	27.2	ug/L	-34	Standard
	Se	82	114.1	10.5	**0.9274**	0.115	12.4	ug/L	14	Standard
	Se-1	77	255.7	12.3	**2.7929**	0.427	15.3	ug/L	55	Standard
>	**Ga**	71	203.3	6.2				mg/L	50	Standard
	Rb	85	64731.4	2.1				ug/L	20	Standard
	Y	89	406326.7	3.3				ug/L	376602	Standard
>	**Rh**	103	48.3	21.5				ug/L	17	Standard
	Mo	98	623.5	1.9	**0.2468**	0.013	5.5	ug/L	8	Standard
	Ag	107	134.0	13.8	**0.0091**	0.002	26.2	ug/L	81	Standard
	Cd	111	49.6	6.5	**0.0211**	0.001	3.6	mg/L	3	Standard
	Cd	114	143.2	27.3	**0.0245**	0.007	27.9	ug/L	7	Standard
>	**In**	115	549535.8	3.5				ug/L	524722	Standard
	Sn	118	1373.4	4.5	**0.1543**	0.017	10.8	ug/L	715	Standard
	Sb	123	311.5	9.8	**0.0535**	0.009	17.0	ug/L	201	Standard
	Ba	135	22377.2	0.2	**11.7401**	0.432	3.7	ug/L	108	Standard
	Ce	140	280.0	11.2				ug/L	30	Standard
>	**Tb**	159	815853.8	2.8				ug/L	792236	Standard
	Ho	165	18.3	95.8				ug/L	7	Standard
	Tl	203	193.0	9.7	**0.0237**	0.002	10.2	ug/L	9	Standard
	Tl	205	165.0	24.1	**0.0186**	0.007	36.0	ug/L	0	Standard
	Pb	206	1296.1	2.0	**0.2354**	0.004	1.8	ug/L	216	Standard
	Pb	207	1110.4	3.4	**0.2207**	0.006	2.5	ug/L	180	Standard
	Pb	208	4630.9	2.3	**0.2243**	0.008	3.6	ug/L	717	Standard
	U	238	1289.4	2.5	**0.2082**	0.002	1.1	ug/L	4	Standard
>	**Bi**	209	442943.4	2.1				ug/L	460343	Standard

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Na	23	6.7	86.6	**-10.3108**	17.983	174.4	mg/L	0	Standard
Mg	24	29769.2	2.1	**38.4319**	0.806	2.1	mg/L	20	Standard
K	39	731.7	8.5	**5.0889**	0.443	8.7	mg/L	22	Standard
Ca	43	196.7	13.0	**30.5875**	5.364	17.5	mg/L	47	Standard
Fe	54	365.7	3.5	**0.1685**	0.008	4.7	mg/L	151	Standard
Fe	57	391.7	14.9	**0.5082**	0.163	32.1	mg/L	195	Standard
> **Sc-1**	45	31098.6	0.8				mg/L	29647	Standard
Cl	35	222953.8	0.9				ug/L	154152	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	17977.3	3.7				ug/L	1607	Standard
P	31	27297.9	1.8				ug/L	22752	Standard
S	34	5117.5	2.7				ug/L	5049	Standard
Sr	88	170.0	7.8				ug/L	87	Standard
C	12	300.0	21.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	86.6				mg/L	0	Standard
Dy	164	34.9	61.4				mg/L	10	Standard
Ho-1	165	18.3	95.8				mg/L	7	Standard
Er	166	36.7	41.7				mg/L	3	Standard
I	127	36641.0	3.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		144.833	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.095	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	104.729	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.220	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606065001
Sample Date/Time: Thursday, June 16, 2016 20:00:24
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72946.9	1.0				ug/L	51024	Standard
	Be	9	18.3	31.5	**-0.0058**	0.005	85.0	ug/L	7	Standard
	Al	27	25893242.1	1.3	**127.2227**	1.176	0.9	ug/L	625	Standard
	Sc	45	31297.3	0.7				ug/L	29647	Standard
	Ti	47	363.0	6.9	**1.0820**	0.092	8.5	ug/L	57	Standard
	V	51	26598.7	23.4	**3.6881**	0.888	24.1	ug/L	1142	Standard
	Cr	52	3600275.3	0.7	**503.8543**	2.642	0.5	ug/L	6628	Standard
	Cr	53	441968.5	0.3	**489.9131**	0.755	0.2	ug/L	430	Standard
	Mn	55	3750356.5	0.6	**651.5298**	1.262	0.2	ug/L	603	Standard
	Co	59	140636.7	1.1	**22.5301**	0.278	1.2	ug/L	237	Standard
	Ni	60	1491493.6	1.2	**797.5118**	6.177	0.8	ug/L	141	Standard
	Cu	65	3267.0	3.0	**1.7266**	0.047	2.7	ug/L	109	Standard
	Zn	66	3425.7	1.8	**2.9563**	0.067	2.3	ug/L	159	Standard
>	**Ge**	72	459475.2	0.5				ug/L	474053	Standard
	As	75	556.7	15.6	**0.5440**	0.082	15.1	ug/L	-34	Standard
	Se	82	222.9	6.2	**1.9114**	0.137	7.2	ug/L	14	Standard
	Se-1	77	721.0	7.2	**8.9403**	0.656	7.3	ug/L	55	Standard
>	**Ga**	71	291.7	10.5				mg/L	50	Standard
	Rb	85	7967.1	5.2				ug/L	20	Standard
	Y	89	376366.8	3.1				ug/L	376602	Standard
>	**Rh**	103	188.3	17.7				ug/L	17	Standard
	Mo	98	4038.0	0.7	**1.7616**	0.010	0.6	ug/L	8	Standard
	Ag	107	92.0	19.6	**0.0036**	0.003	90.6	ug/L	81	Standard
	Cd	111	324.1	6.9	**0.1694**	0.013	7.5	mg/L	3	Standard
	Cd	114	819.8	8.2	**0.1728**	0.014	8.3	ug/L	7	Standard
>	**In**	115	507645.2	1.3				ug/L	524722	Standard
	Sn	118	691.7	9.8	**0.0432**	0.012	27.3	ug/L	715	Standard
	Sb	123	362.3	12.4	**0.0710**	0.011	16.1	ug/L	201	Standard
	Ba	135	933624.2	0.5	**532.4126**	8.811	1.7	ug/L	108	Standard
	Ce	140	3360.4	5.9				ug/L	30	Standard
>	**Tb**	159	768822.1	0.7				ug/L	792236	Standard
	Ho	165	56.7	48.6				ug/L	7	Standard
	Tl	203	246.7	11.1	**0.0318**	0.003	11.0	ug/L	9	Standard
	Tl	205	253.3	31.2	**0.0337**	0.013	38.1	ug/L	0	Standard
	Pb	206	530.7	3.2	**0.0660**	0.004	5.7	ug/L	216	Standard
	Pb	207	474.0	4.9	**0.0662**	0.005	7.1	ug/L	180	Standard
	Pb	208	1991.7	8.7	**0.0664**	0.011	16.6	ug/L	717	Standard
	U	238	2713.6	2.5	**0.4575**	0.014	3.0	ug/L	4	Standard
>	**Bi**	209	432460.1	1.2				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.2420**	9.024	172.2	mg/L	0	Standard
Mg	24	90814.7	0.4	**116.5891**	0.672	0.6	mg/L	20	Standard
K	39	136.7	18.8	**0.7598**	0.192	25.3	mg/L	22	Standard
Ca	43	113.3	24.3	**11.8769**	5.966	50.2	mg/L	47	Standard
Fe	54	8598.8	2.1	**6.5077**	0.130	2.0	mg/L	151	Standard
Fe	57	2420.2	4.0	**6.4526**	0.333	5.2	mg/L	195	Standard
> **Sc-1**	45	31297.3	0.7				mg/L	29647	Standard
Cl	35	172318.1	2.4				ug/L	154152	Standard
Kr	83	2.7	43.3				ug/L	3	Standard
Br	81	54798.9	1.9				ug/L	1607	Standard
P	31	33010.9	0.2				ug/L	22752	Standard
S	34	5099.2	1.3				ug/L	5049	Standard
Sr	88	600.0	8.0				ug/L	87	Standard
C	12	176.7	34.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	96.6	30.8				mg/L	10	Standard
Ho-1	165	56.7	48.6				mg/L	7	Standard
Er	166	70.0	14.3				mg/L	3	Standard
I	127	400706.8	6.8				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		142.965	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.925	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.746
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.943
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Cr 52 Upper, S, EEE	Cr	52	

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Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Ni 60 Upper, S, EEE	Ni	60
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606065002
Sample Date/Time: Thursday, June 16, 2016 20:03:36
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74923.1	0.9				ug/L	51024	Standard
	Be	9	10.0	86.6	**-0.0129**	0.007	54.5	ug/L	7	Standard
	Al	27	11445723.9	1.0	**54.7538**	1.040	1.9	ug/L	625	Standard
	Sc	45	33881.2	2.3				ug/L	29647	Standard
	Ti	47	432.3	7.3	**1.3384**	0.080	6.0	ug/L	57	Standard
	V	51	2150.8	34.9	**0.1495**	0.116	77.8	ug/L	1142	Standard
	Cr	52	17737.4	0.6	**1.5921**	0.067	4.2	ug/L	6628	Standard
	Cr	53	10231.8	13.3	**11.0925**	1.758	15.8	ug/L	430	Standard
	Mn	55	1115003.1	1.6	**196.2265**	7.080	3.6	ug/L	603	Standard
	Co	59	2902.3	1.7	**0.4307**	0.009	2.2	ug/L	237	Standard
	Ni	60	3566.1	4.1	**1.8534**	0.037	2.0	ug/L	141	Standard
	Cu	65	1206.0	1.3	**0.6044**	0.011	1.8	ug/L	109	Standard
	Zn	66	2690.2	1.2	**2.3054**	0.087	3.8	ug/L	159	Standard
>	**Ge**	72	453598.8	2.2				ug/L	474053	Standard
	As	75	280.7	13.7	**0.2904**	0.040	13.9	ug/L	-34	Standard
	Se	82	128.1	7.4	**1.0434**	0.112	10.7	ug/L	14	Standard
	Se-1	77	619.3	6.2	**7.6936**	0.694	9.0	ug/L	55	Standard
>	**Ga**	71	105.0	17.2				mg/L	50	Standard
	Rb	85	9451.3	1.9				ug/L	20	Standard
	Y	89	391791.6	1.5				ug/L	376602	Standard
>	**Rh**	103	140.0	6.2				ug/L	17	Standard
	Mo	98	235.6	9.4	**0.0929**	0.011	11.9	ug/L	8	Standard
	Ag	107	90.7	15.8	**0.0026**	0.002	86.9	ug/L	81	Standard
	Cd	111	142.6	5.5	**0.0692**	0.005	7.6	mg/L	3	Standard
	Cd	114	324.8	13.1	**0.0629**	0.009	15.1	ug/L	7	Standard
>	**In**	115	532666.5	2.0				ug/L	524722	Standard
	Sn	118	630.0	6.3	**0.0258**	0.009	33.7	ug/L	715	Standard
	Sb	123	425.3	4.8	**0.0811**	0.005	5.7	ug/L	201	Standard
	Ba	135	317814.3	1.2	**172.6789**	1.361	0.8	ug/L	108	Standard
	Ce	140	4260.6	3.9				ug/L	30	Standard
>	**Tb**	159	822106.7	0.8				ug/L	792236	Standard
	Ho	165	98.3	10.6				ug/L	7	Standard
	Tl	203	236.3	5.5	**0.0291**	0.002	5.8	ug/L	9	Standard
	Tl	205	180.0	7.3	**0.0206**	0.002	9.9	ug/L	0	Standard
	Pb	206	404.0	5.2	**0.0334**	0.005	14.3	ug/L	216	Standard
	Pb	207	342.3	3.2	**0.0297**	0.003	8.7	ug/L	180	Standard
	Pb	208	1396.4	3.4	**0.0260**	0.003	10.6	ug/L	717	Standard
	U	238	1612.4	1.0	**0.2586**	0.003	1.2	ug/L	4	Standard
>	**Bi**	209	449004.5	0.2				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	75132.5	1.7	**89.1275**	2.931	3.3	mg/L	20	Standard
K	39	103.3	14.8	**0.4601**	0.085	18.5	mg/L	22	Standard
Ca	43	118.3	6.5	**11.0359**	2.111	19.1	mg/L	47	Standard
Fe	54	299.8	4.4	**0.0986**	0.014	14.4	mg/L	151	Standard
Fe	57	295.0	19.5	**0.1539**	0.166	108.1	mg/L	195	Standard
> **Sc-1**	45	33881.2	2.3				mg/L	29647	Standard
Cl	35	177255.5	0.3				ug/L	154152	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	27852.3	4.5				ug/L	1607	Standard
P	31	36888.2	1.8				ug/L	22752	Standard
S	34	5134.2	5.6				ug/L	5049	Standard
Sr	88	336.7	12.1				ug/L	87	Standard
C	12	236.7	6.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	125.5	16.3				mg/L	10	Standard
Ho-1	165	98.3	10.6				mg/L	7	Standard
Er	166	93.3	16.4				mg/L	3	Standard
I	127	795775.9	5.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		146.839	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.685	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.514	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.537	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606065003
Sample Date/Time: Thursday, June 16, 2016 20:06:47
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73049.1	2.8				ug/L	51024	Standard
	Be	9	56.7	53.2	**0.0258**	0.025	96.4	ug/L	7	Standard
	Al	27	6795723.2	1.7	**33.3429**	0.423	1.3	ug/L	625	Standard
	Sc	45	32349.5	2.7				ug/L	29647	Standard
	Ti	47	1362.4	1.5	**4.5490**	0.135	3.0	ug/L	57	Standard
	V	51	-1621.9	225.1	**-0.4056**	0.530	130.6	ug/L	1142	Standard
	Cr	52	1449129.7	0.3	**203.6270**	3.465	1.7	ug/L	6628	Standard
	Cr	53	186956.4	0.3	**208.3861**	2.811	1.3	ug/L	430	Standard
	Mn	55	969240.4	1.1	**169.4166**	2.152	1.3	ug/L	603	Standard
	Co	59	17799.4	0.3	**2.8346**	0.031	1.1	ug/L	237	Standard
	Ni	60	82918.9	0.7	**44.5655**	0.800	1.8	ug/L	141	Standard
	Cu	65	12426.8	2.2	**6.7981**	0.081	1.2	ug/L	109	Standard
	Zn	66	16815.7	1.7	**15.5225**	0.331	2.1	ug/L	159	Standard
>	**Ge**	72	456450.5	1.3				ug/L	474053	Standard
	As	75	1966.3	2.2	**1.8692**	0.017	0.9	ug/L	-34	Standard
	Se	82	293.5	2.7	**2.5875**	0.085	3.3	ug/L	14	Standard
	Se-1	77	432.0	3.1	**5.0994**	0.235	4.6	ug/L	55	Standard
>	**Ga**	71	736.7	9.9				mg/L	50	Standard
	Rb	85	15683.1	2.3				ug/L	20	Standard
	Y	89	407716.2	0.3				ug/L	376602	Standard
>	**Rh**	103	95.0	13.9				ug/L	17	Standard
	Mo	98	6403.0	2.3	**2.6056**	0.071	2.7	ug/L	8	Standard
	Ag	107	109.7	3.7	**0.0054**	0.001	15.4	ug/L	81	Standard
	Cd	111	1059.3	1.9	**0.5225**	0.015	2.8	mg/L	3	Standard
	Cd	114	2761.6	6.2	**0.5508**	0.040	7.3	ug/L	7	Standard
>	**In**	115	544816.8	1.1				ug/L	524722	Standard
	Sn	118	1191.7	7.7	**0.1237**	0.018	14.6	ug/L	715	Standard
	Sb	123	304.1	8.3	**0.0523**	0.006	10.7	ug/L	201	Standard
	Ba	135	110831.6	1.3	**58.8309**	0.136	0.2	ug/L	108	Standard
	Ce	140	24424.7	1.3				ug/L	30	Standard
>	**Tb**	159	809371.8	1.0				ug/L	792236	Standard
	Ho	165	351.7	3.0				ug/L	7	Standard
	Tl	203	219.0	7.6	**0.0268**	0.002	7.8	ug/L	9	Standard
	Tl	205	185.0	24.8	**0.0214**	0.007	34.0	ug/L	0	Standard
	Pb	206	2753.6	3.0	**0.5549**	0.011	2.0	ug/L	216	Standard
	Pb	207	2285.2	1.4	**0.5035**	0.014	2.7	ug/L	180	Standard
	Pb	208	9786.6	1.2	**0.5303**	0.014	2.6	ug/L	717	Standard
	U	238	353.7	1.7	**0.0508**	0.000	0.5	ug/L	4	Standard
>	**Bi**	209	449128.9	1.4				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	37974.2	2.9	**47.1394**	0.683	1.4	mg/L	20	Standard
K	39	91.7	3.1	**0.4128**	0.025	6.0	mg/L	22	Standard
Ca	43	75.0	26.7	**2.9551**	4.725	159.9	mg/L	47	Standard
Fe	54	5125.4	2.8	**3.7060**	0.149	4.0	mg/L	151	Standard
Fe	57	1555.1	4.8	**3.7648**	0.143	3.8	mg/L	195	Standard
> **Sc-1**	45	32349.5	2.7				mg/L	29647	Standard
Cl	35	176741.0	1.5				ug/L	154152	Standard
Kr	83	1.3	86.6				ug/L	3	Standard
Br	81	69459.0	3.9				ug/L	1607	Standard
P	31	30123.3	2.4				ug/L	22752	Standard
S	34	4967.5	1.4				ug/L	5049	Standard
Sr	88	190.0	9.5				ug/L	87	Standard
C	12	126.7	12.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	637.1	0.5				mg/L	10	Standard
Ho-1	165	351.7	3.0				mg/L	7	Standard
Er	166	340.0	15.3				mg/L	3	Standard
I	127	176369.6	3.2				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		143.166	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.287	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.830	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.564	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
V 51 Lower	V	51	
Cr 52 Upper, S, EEE	Cr	52	

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Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55

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Method 6020 - Summary Report

Sample ID: L1606065008
Sample Date/Time: Thursday, June 16, 2016 20:12:57
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72941.9	1.7				ug/L	51024	Standard
	Be	9	75.0	11.5	**0.0413**	0.007	17.1	ug/L	7	Standard
	Al	27	2553806.5	1.0	**12.5408**	0.102	0.8	ug/L	625	Standard
	Sc	45	32038.9	2.8				ug/L	29647	Standard
	Ti	47	722.7	5.7	**2.2554**	0.110	4.9	ug/L	57	Standard
	V	51	3819.2	3.9	**0.3720**	0.024	6.3	ug/L	1142	Standard
	Cr	52	10926.9	1.1	**0.5663**	0.038	6.8	ug/L	6628	Standard
	Cr	53	5912.8	6.8	**5.9618**	0.341	5.7	ug/L	430	Standard
	Mn	55	1386219.7	0.5	**234.7938**	4.744	2.0	ug/L	603	Standard
	Co	59	5557.7	1.4	**0.8285**	0.006	0.8	ug/L	237	Standard
	Ni	60	17011.5	0.7	**8.7950**	0.195	2.2	ug/L	141	Standard
	Cu	65	1618.4	1.4	**0.8000**	0.013	1.6	ug/L	109	Standard
	Zn	66	33299.6	0.0	**29.9907**	0.453	1.5	ug/L	159	Standard
>	**Ge**	72	471205.0	1.5				ug/L	474053	Standard
	As	75	966.9	5.2	**0.9032**	0.033	3.6	ug/L	-34	Standard
	Se	82	311.0	2.5	**2.6600**	0.029	1.1	ug/L	14	Standard
	Se-1	77	329.3	6.4	**3.5702**	0.277	7.8	ug/L	55	Standard
>	**Ga**	71	258.3	15.5				mg/L	50	Standard
	Rb	85	8330.6	3.2				ug/L	20	Standard
	Y	89	401951.6	2.1				ug/L	376602	Standard
>	**Rh**	103	36.7	43.8				ug/L	17	Standard
	Mo	98	105.4	14.0	**0.0382**	0.006	14.8	ug/L	8	Standard
	Ag	107	90.7	18.0	**0.0026**	0.003	103.7	ug/L	81	Standard
	Cd	111	115.2	13.8	**0.0550**	0.008	14.6	mg/L	3	Standard
	Cd	114	259.1	8.3	**0.0492**	0.005	9.4	ug/L	7	Standard
>	**In**	115	535100.4	1.1				ug/L	524722	Standard
	Sn	118	718.4	7.1	**0.0413**	0.008	20.4	ug/L	715	Standard
	Sb	123	448.1	4.2	**0.0858**	0.005	5.4	ug/L	201	Standard
	Ba	135	68982.0	0.6	**37.2626**	0.244	0.7	ug/L	108	Standard
	Ce	140	25868.7	1.1				ug/L	30	Standard
>	**Tb**	159	806521.0	1.2				ug/L	792236	Standard
	Ho	165	500.0	12.5				ug/L	7	Standard
	Tl	203	215.0	12.2	**0.0260**	0.004	15.1	ug/L	9	Standard
	Tl	205	150.0	6.7	**0.0156**	0.002	10.9	ug/L	0	Standard
	Pb	206	509.0	3.9	**0.0556**	0.003	5.6	ug/L	216	Standard
	Pb	207	432.0	1.7	**0.0505**	0.001	2.1	ug/L	180	Standard
	Pb	208	1819.0	0.9	**0.0504**	0.002	3.5	ug/L	717	Standard
	U	238	230.0	2.3	**0.0300**	0.001	2.2	ug/L	4	Standard
>	**Bi**	209	453449.6	1.5				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	38452.1	0.8	**48.2252**	1.630	3.4	mg/L	20	Standard
K	39	58.3	38.7	**0.1852**	0.162	87.6	mg/L	22	Standard
Ca	43	35.0	51.5	**-5.6048**	3.899	69.6	mg/L	47	Standard
Fe	54	249.0	20.9	**0.0731**	0.044	60.8	mg/L	151	Standard
Fe	57	205.0	6.5	**-0.0599**	0.029	47.9	mg/L	195	Standard
> **Sc-1**	45	32038.9	2.8				mg/L	29647	Standard
Cl	35	205402.9	2.6				ug/L	154152	Standard
Kr	83	2.3	24.7				ug/L	3	Standard
Br	81	66452.1	2.3				ug/L	1607	Standard
P	31	28505.1	1.9				ug/L	22752	Standard
S	34	4827.4	1.0				ug/L	5049	Standard
Sr	88	103.3	7.4				ug/L	87	Standard
C	12	290.0	39.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	843.5	10.6				mg/L	10	Standard
Ho-1	165	500.0	12.5				mg/L	7	Standard
Er	166	483.3	20.9				mg/L	3	Standard
I	127	65771.0	5.3				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		142.956	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.399	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.978	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.503	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606072901
Sample Date/Time: Thursday, June 16, 2016 20:16:08
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71451.4	0.2				ug/L	51024	Standard
	Be	9	156.7	13.3	**0.1120**	0.018	15.8	ug/L	7	Standard
	Al	27	1783026.0	1.0	**8.9350**	0.113	1.3	ug/L	625	Standard
	Sc	45	33488.6	0.2				ug/L	29647	Standard
	Ti	47	3847.8	0.7	**12.4804**	0.276	2.2	ug/L	57	Standard
	V	51	20969.4	1.8	**2.7398**	0.019	0.7	ug/L	1142	Standard
	Cr	52	17305.9	0.3	**1.3919**	0.032	2.3	ug/L	6628	Standard
	Cr	53	2988.6	7.9	**2.7405**	0.281	10.3	ug/L	430	Standard
	Mn	55	363989.8	1.4	**60.3519**	1.596	2.6	ug/L	603	Standard
	Co	59	13842.7	0.2	**2.0829**	0.032	1.5	ug/L	237	Standard
	Ni	60	5649.1	2.1	**2.8101**	0.018	0.6	ug/L	141	Standard
	Cu	65	2744.6	2.9	**1.3736**	0.022	1.6	ug/L	109	Standard
	Zn	66	21962.9	1.2	**19.3089**	0.151	0.8	ug/L	159	Standard
>	**Ge**	72	480623.4	1.5				ug/L	474053	Standard
	As	75	604.0	4.6	**0.5630**	0.022	3.9	ug/L	-34	Standard
	Se	82	62.7	5.3	**0.3902**	0.037	9.5	ug/L	14	Standard
	Se-1	77	114.3	16.4	**0.7262**	0.260	35.8	ug/L	55	Standard
>	**Ga**	71	1213.4	6.6				mg/L	50	Standard
	Rb	85	49025.9	0.6				ug/L	20	Standard
	Y	89	427519.3	0.4				ug/L	376602	Standard
>	**Rh**	103	33.3	37.7				ug/L	17	Standard
	Mo	98	183.9	8.3	**0.0677**	0.006	8.8	ug/L	8	Standard
	Ag	107	84.7	15.9	**0.0010**	0.002	216.4	ug/L	81	Standard
	Cd	111	55.6	11.8	**0.0237**	0.003	13.7	mg/L	3	Standard
	Cd	114	123.4	16.9	**0.0204**	0.004	20.0	ug/L	7	Standard
>	**In**	115	557933.4	0.7				ug/L	524722	Standard
	Sn	118	618.3	8.9	**0.0185**	0.009	49.1	ug/L	715	Standard
	Sb	123	180.1	11.3	**0.0240**	0.004	17.3	ug/L	201	Standard
	Ba	135	83499.8	1.0	**43.2656**	0.170	0.4	ug/L	108	Standard
	Ce	140	144607.0	2.1				ug/L	30	Standard
>	**Tb**	159	830815.8	1.2				ug/L	792236	Standard
	Ho	165	2081.8	4.4				ug/L	7	Standard
	Tl	203	322.3	0.4	**0.0385**	0.000	1.0	ug/L	9	Standard
	Tl	205	275.0	3.6	**0.0334**	0.001	4.5	ug/L	0	Standard
	Pb	206	5048.5	0.5	**1.0085**	0.002	0.2	ug/L	216	Standard
	Pb	207	4178.9	1.8	**0.9144**	0.020	2.2	ug/L	180	Standard
	Pb	208	17525.7	1.4	**0.9427**	0.011	1.1	ug/L	717	Standard
	U	238	621.3	3.2	**0.0898**	0.003	3.0	ug/L	4	Standard
>	**Bi**	209	472687.9	0.6				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.6311**	8.350	148.3	mg/L	0	Standard
Mg	24	3158.7	1.3	**3.7460**	0.051	1.3	mg/L	20	Standard
K	39	215.0	8.1	**1.2230**	0.115	9.4	mg/L	22	Standard
Ca	43	38.3	27.2	**-5.2593**	2.154	41.0	mg/L	47	Standard
Fe	54	3415.5	7.7	**2.3435**	0.190	8.1	mg/L	151	Standard
Fe	57	1036.7	4.4	**2.1944**	0.121	5.5	mg/L	195	Standard
Sc-1	45	33488.6	0.2				mg/L	29647	Standard
Cl	35	164707.7	0.4				ug/L	154152	Standard
Kr	83	3.0	33.3				ug/L	3	Standard
Br	81	11457.7	7.7				ug/L	1607	Standard
P	31	28214.6	1.7				ug/L	22752	Standard
S	34	4967.5	1.9				ug/L	5049	Standard
Sr	88	113.3	6.7				ug/L	87	Standard
C	12	80.0	12.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	0	Standard
Dy	164	3722.9	5.4				mg/L	10	Standard
Ho-1	165	2081.8	4.4				mg/L	7	Standard
Er	166	1966.8	4.6				mg/L	3	Standard
I	127	28066.0	3.2				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		140.035	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.386	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.329
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.682
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 20:19:21
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70359.7	1.3				ug/L	51024	Standard
	Be	9	53312.1	5.5	**45.9476**	1.930	4.2	ug/L	7	Standard
	Al	27	8077611.0	1.8	**41.1433**	0.785	1.9	ug/L	625	Standard
	Sc	45	32289.4	1.8				ug/L	29647	Standard
	Ti	47	30321.3	1.6	**100.0769**	1.272	1.3	ug/L	57	Standard
	V	51	360120.0	0.4	**50.0825**	0.106	0.2	ug/L	1142	Standard
	Cr	52	369947.6	1.5	**48.9622**	0.470	1.0	ug/L	6628	Standard
	Cr	53	47002.8	0.4	**49.7282**	0.165	0.3	ug/L	430	Standard
	Mn	55	317711.3	0.7	**52.9755**	0.531	1.0	ug/L	603	Standard
	Co	59	339862.8	0.3	**52.4255**	0.355	0.7	ug/L	237	Standard
	Ni	60	93112.6	1.0	**47.8173**	0.235	0.5	ug/L	141	Standard
	Cu	65	91542.1	0.9	**48.2534**	0.241	0.5	ug/L	109	Standard
	Zn	66	53846.5	0.5	**47.9689**	0.154	0.3	ug/L	159	Standard
>	**Ge**	72	477686.4	0.6				ug/L	474053	Standard
	As	75	53954.1	0.4	**48.3818**	0.469	1.0	ug/L	-34	Standard
	Se	82	5528.9	1.3	**49.4502**	0.921	1.9	ug/L	14	Standard
	Se-1	77	3768.1	3.4	**47.9498**	1.532	3.2	ug/L	55	Standard
>	**Ga**	71	96.7	3.0				mg/L	50	Standard
	Rb	85	860.0	3.6				ug/L	20	Standard
	Y	89	407805.9	2.6				ug/L	376602	Standard
>	**Rh**	103	38.3	19.9				ug/L	17	Standard
	Mo	98	251849.5	0.7	**99.5336**	0.343	0.3	ug/L	8	Standard
	Ag	107	302942.0	0.9	**47.3977**	0.787	1.7	ug/L	81	Standard
	Cd	111	100743.2	0.5	**48.4530**	0.464	1.0	mg/L	3	Standard
	Cd	114	243706.8	2.6	**47.4138**	1.351	2.8	ug/L	7	Standard
>	**In**	115	562084.3	0.9				ug/L	524722	Standard
	Sn	118	283917.6	1.7	**49.1130**	0.500	1.0	ug/L	715	Standard
	Sb	123	223152.0	0.8	**47.6804**	0.566	1.2	ug/L	201	Standard
	Ba	135	90693.3	1.2	**46.6526**	0.606	1.3	ug/L	108	Standard
	Ce	140	95.0	24.1				ug/L	30	Standard
>	**Tb**	159	823567.8	1.3				ug/L	792236	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	373875.5	0.8	**47.8522**	0.141	0.3	ug/L	9	Standard
	Tl	205	338247.8	1.5	**50.9083**	0.885	1.7	ug/L	0	Standard
	Pb	206	233315.4	0.7	**49.3532**	0.331	0.7	ug/L	216	Standard
	Pb	207	211841.0	0.3	**49.2260**	0.469	1.0	ug/L	180	Standard
	Pb	208	876269.3	0.6	**50.1725**	0.549	1.1	ug/L	717	Standard
	U	238	329535.1	0.3	**51.8676**	0.341	0.7	ug/L	4	Standard
>	**Bi**	209	470816.3	0.6				ug/L	460343	Standard

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Na	23	3.3	86.6	**0.5093**	8.613	1691.0	mg/L	0	Standard
Mg	24	4180.6	4.5	**5.1574**	0.149	2.9	mg/L	20	Standard
K	39	543.3	5.4	**3.5784**	0.272	7.6	mg/L	22	Standard
Ca	43	63.3	12.1	**0.3907**	1.523	389.8	mg/L	47	Standard
Fe	54	5922.9	1.4	**4.3077**	0.105	2.4	mg/L	151	Standard
Fe	57	1828.4	2.7	**4.5503**	0.051	1.1	mg/L	195	Standard
Sc-1	45	32289.4	1.8				mg/L	29647	Standard
Cl	35	173385.8	0.9				ug/L	154152	Standard
Kr	83	1.3	114.6				ug/L	3	Standard
Br	81	2136.8	4.6				ug/L	1607	Standard
P	31	26322.9	2.1				ug/L	22752	Standard
S	34	5514.3	2.6				ug/L	5049	Standard
Sr	88	65.0	27.7				ug/L	87	Standard
C	12	70.0	24.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	23.3	89.2				mg/L	10	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	0.0					mg/L	3	Standard
I	127	3703.8	16.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	91.895		
Al	27	82.287		
Sc	45			
Ti	47	100.077		
V	51	100.165		
Cr	52	97.924		
Cr	53			
Mn	55	105.951		
Co	59	104.851		
Ni	60	95.635		
Cu	65	96.507		
Zn	66	95.938		
Ge	72		100.766	
As	75	96.764		
Se	82	98.900		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	99.534		
Ag	107	94.795		
Cd	111	96.906		
Cd	114			
> In	115		107.120	
Sn	118	98.226		
Sb	123	95.361		
Ba	135	93.305		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	95.704		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.345		
U	238	103.735		
> Bi	209		102.275	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 20:22:32
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67637.3	2.1				ug/L	51024	Standard
	Be	9	18.3	83.3	**-0.0045**	0.014	309.1	ug/L	7	Standard
	Al	27	1391.7	16.0	**-0.0024**	0.001	50.0	ug/L	625	Standard
	Sc	45	30764.5	1.2				ug/L	29647	Standard
	Ti	47	37.3	15.2	**-0.0462**	0.017	37.4	ug/L	57	Standard
	V	51	1089.5	9.5	**-0.0208**	0.013	60.2	ug/L	1142	Standard
	Cr	52	6209.3	0.8	**-0.1150**	0.004	3.7	ug/L	6628	Standard
	Cr	53	621.7	6.5	**0.2124**	0.037	17.6	ug/L	430	Standard
	Mn	55	764.0	5.2	**-0.0024**	0.006	259.9	ug/L	603	Standard
	Co	59	234.0	4.1	**-0.0062**	0.002	27.4	ug/L	237	Standard
	Ni	60	152.7	14.0	**-0.0015**	0.011	728.7	ug/L	141	Standard
	Cu	65	133.0	12.1	**0.0021**	0.009	425.3	ug/L	109	Standard
	Zn	66	146.0	6.6	**-0.1051**	0.009	8.1	ug/L	159	Standard
>	**Ge**	72	492018.2	1.0				ug/L	474053	Standard
	As	75	-9.0	401.0	**0.0170**	0.032	186.2	ug/L	-34	Standard
	Se	82	25.4	15.9	**0.0523**	0.034	65.9	ug/L	14	Standard
	Se-1	77	66.3	19.1	**0.0882**	0.166	188.3	ug/L	55	Standard
>	**Ga**	71	71.7	20.1				mg/L	50	Standard
	Rb	85	26.7	43.3				ug/L	20	Standard
	Y	89	407999.6	2.7				ug/L	376602	Standard
>	**Rh**	103	20.0	50.0				ug/L	17	Standard
	Mo	98	257.9	34.0	**0.0988**	0.034	34.5	ug/L	8	Standard
	Ag	107	107.0	12.6	**0.0049**	0.002	46.8	ug/L	81	Standard
	Cd	111	7.2	23.1	**0.0003**	0.001	264.5	mg/L	3	Standard
	Cd	114	32.4	23.6	**0.0026**	0.001	54.7	ug/L	7	Standard
>	**In**	115	547642.1	1.6				ug/L	524722	Standard
	Sn	118	781.7	18.0	**0.0498**	0.026	53.2	ug/L	715	Standard
	Sb	123	445.8	26.8	**0.0832**	0.027	32.7	ug/L	201	Standard
	Ba	135	126.0	4.8	**0.0089**	0.003	29.7	ug/L	108	Standard
	Ce	140	16.7	34.6				ug/L	30	Standard
>	**Tb**	159	805057.6	1.1				ug/L	792236	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	50.7	17.0	**0.0040**	0.001	27.9	ug/L	9	Standard
	Tl	205	33.3	22.9	**-0.0027**	0.001	41.6	ug/L	0	Standard
	Pb	206	245.3	6.9	**-0.0038**	0.003	90.3	ug/L	216	Standard
	Pb	207	206.3	2.8	**-0.0052**	0.002	29.4	ug/L	180	Standard
	Pb	208	876.0	4.6	**-0.0071**	0.002	32.4	ug/L	717	Standard
	U	238	36.7	27.6	**-0.0017**	0.002	94.5	ug/L	4	Standard
>	**Bi**	209	464955.7	0.5				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.1330**	9.213	179.5	mg/L	0	Standard
Mg	24	40.0	21.7	**0.0070**	0.011	155.9	mg/L	20	Standard
K	39	16.7	69.3	**-0.1055**	0.085	80.5	mg/L	22	Standard
Ca	43	30.0	66.7	**-6.3982**	4.581	71.6	mg/L	47	Standard
Fe	54	159.4	19.4	**0.0098**	0.023	233.9	mg/L	151	Standard
Fe	57	178.3	15.9	**-0.1151**	0.084	72.7	mg/L	195	Standard
Sc-1	45	30764.5	1.2				mg/L	29647	Standard
Cl	35	172678.1	2.2				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	1756.8	6.0				ug/L	1607	Standard
P	31	26713.5	1.7				ug/L	22752	Standard
S	34	5486.0	1.1				ug/L	5049	Standard
Sr	88	68.3	25.7				ug/L	87	Standard
C	12	46.7	12.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	13.0	43.3				mg/L	10	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	2433.5	7.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.790	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.368
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.002
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606072902
Sample Date/Time: Thursday, June 16, 2016 20:26:38
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67597.1	1.4				ug/L	51024	Standard
	Be	9	58.3	13.1	**0.0313**	0.007	23.7	ug/L	7	Standard
	Al	27	1447794.1	2.6	**7.6674**	0.177	2.3	ug/L	625	Standard
	Sc	45	31928.7	4.9				ug/L	29647	Standard
	Ti	47	305.7	12.8	**0.8104**	0.145	17.9	ug/L	57	Standard
	V	51	1674.4	15.6	**0.0568**	0.033	58.1	ug/L	1142	Standard
	Cr	52	9700.4	2.0	**0.3335**	0.001	0.4	ug/L	6628	Standard
	Cr	53	1893.5	6.0	**1.5168**	0.108	7.1	ug/L	430	Standard
	Mn	55	246384.5	0.3	**39.5930**	0.878	2.2	ug/L	603	Standard
	Co	59	7588.2	2.4	**1.0889**	0.047	4.3	ug/L	237	Standard
	Ni	60	3526.1	1.5	**1.6717**	0.049	2.9	ug/L	141	Standard
	Cu	65	954.7	5.5	**0.4196**	0.020	4.8	ug/L	109	Standard
	Zn	66	5586.0	1.4	**4.5915**	0.148	3.2	ug/L	159	Standard
>	**Ge**	72	495383.3	1.9				ug/L	474053	Standard
	As	75	235.4	13.4	**0.2282**	0.025	10.7	ug/L	-34	Standard
	Se	82	130.5	4.3	**0.9599**	0.027	2.8	ug/L	14	Standard
	Se-1	77	93.7	12.4	**0.4210**	0.125	29.6	ug/L	55	Standard
>	**Ga**	71	108.3	13.3				mg/L	50	Standard
	Rb	85	27304.6	1.0				ug/L	20	Standard
	Y	89	392736.9	2.5				ug/L	376602	Standard
>	**Rh**	103	11.7	49.5				ug/L	17	Standard
	Mo	98	87.5	12.2	**0.0306**	0.004	14.1	ug/L	8	Standard
	Ag	107	101.0	6.0	**0.0042**	0.001	22.2	ug/L	81	Standard
	Cd	111	59.5	14.3	**0.0266**	0.004	15.1	mg/L	3	Standard
	Cd	114	114.2	30.2	**0.0194**	0.007	35.4	ug/L	7	Standard
>	**In**	115	538147.1	0.9				ug/L	524722	Standard
	Sn	118	776.7	8.0	**0.0512**	0.012	24.3	ug/L	715	Standard
	Sb	123	200.6	27.1	**0.0300**	0.012	40.3	ug/L	201	Standard
	Ba	135	61289.0	0.7	**32.9142**	0.504	1.5	ug/L	108	Standard
	Ce	140	11052.4	2.4				ug/L	30	Standard
>	**Tb**	159	799876.8	2.9				ug/L	792236	Standard
	Ho	165	190.0	13.9				ug/L	7	Standard
	Tl	203	282.0	7.3	**0.0338**	0.003	8.0	ug/L	9	Standard
	Tl	205	280.0	6.2	**0.0347**	0.004	10.5	ug/L	0	Standard
	Pb	206	401.7	3.5	**0.0294**	0.002	8.2	ug/L	216	Standard
	Pb	207	341.0	0.8	**0.0262**	0.002	6.1	ug/L	180	Standard
	Pb	208	1409.0	1.3	**0.0235**	0.001	4.4	ug/L	717	Standard
	U	238	76.0	25.2	**0.0044**	0.003	61.0	ug/L	4	Standard
>	**Bi**	209	466934.5	2.6				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3003.6	5.4	**3.7365**	0.119	3.2	mg/L	20	Standard
K	39	200.0	11.5	**1.1940**	0.224	18.7	mg/L	22	Standard
Ca	43	26.7	78.1	**-7.2758**	4.881	67.1	mg/L	47	Standard
Fe	54	197.9	11.4	**0.0352**	0.024	69.0	mg/L	151	Standard
Fe	57	201.7	10.0	**-0.0646**	0.087	134.0	mg/L	195	Standard
> **Sc-1**	45	31928.7	4.9				mg/L	29647	Standard
Cl	35	168064.3	0.8				ug/L	154152	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	30467.4	7.1				ug/L	1607	Standard
P	31	27221.1	1.9				ug/L	22752	Standard
S	34	4829.1	7.9				ug/L	5049	Standard
Sr	88	71.7	28.2				ug/L	87	Standard
C	12	70.0	24.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	346.6	23.4				mg/L	10	Standard
Ho-1	165	190.0	13.9				mg/L	7	Standard
Er	166	140.0	21.4				mg/L	3	Standard
I	127	19342.3	3.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.481	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.500	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.559
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.432
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606073001
Sample Date/Time: Thursday, June 16, 2016 20:29:50
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77603.4	4.1				ug/L	51024	Standard
	Be	9	23.3	32.7	**-0.0030**	0.005	179.3	ug/L	7	Standard
	Al	27	6597541.3	1.1	**30.4895**	0.983	3.2	ug/L	625	Standard
	Sc	45	30666.0	3.0				ug/L	29647	Standard
	Ti	47	203.3	18.0	**0.5694**	0.126	22.1	ug/L	57	Standard
	V	51	19344.1	1.4	**2.7880**	0.060	2.2	ug/L	1142	Standard
	Cr	52	223704.1	0.9	**32.1116**	0.253	0.8	ug/L	6628	Standard
	Cr	53	32680.2	2.6	**37.7577**	0.692	1.8	ug/L	430	Standard
	Mn	55	14764.2	0.6	**2.5761**	0.037	1.5	ug/L	603	Standard
	Co	59	8421.3	1.4	**1.3825**	0.016	1.2	ug/L	237	Standard
	Ni	60	8389.0	3.1	**4.6470**	0.087	1.9	ug/L	141	Standard
	Cu	65	2908.6	1.9	**1.6151**	0.017	1.1	ug/L	109	Standard
	Zn	66	3204.0	4.7	**2.9081**	0.114	3.9	ug/L	159	Standard
>	**Ge**	72	436204.2	1.2				ug/L	474053	Standard
	As	75	2688.1	1.6	**2.6639**	0.074	2.8	ug/L	-34	Standard
	Se	82	851.2	1.0	**8.1974**	0.187	2.3	ug/L	14	Standard
	Se-1	77	1137.0	6.7	**15.3552**	1.225	8.0	ug/L	55	Standard
>	**Ga**	71	1600.1	10.1				mg/L	50	Standard
	Rb	85	221561.7	1.4				ug/L	20	Standard
	Y	89	371828.3	2.0				ug/L	376602	Standard
>	**Rh**	103	3242.0	4.8				ug/L	17	Standard
	Mo	98	4562.5	2.6	**2.0314**	0.078	3.9	ug/L	8	Standard
	Ag	107	113.7	11.8	**0.0078**	0.003	32.8	ug/L	81	Standard
	Cd	111	55.8	15.1	**0.0271**	0.005	18.3	mg/L	3	Standard
	Cd	114	143.3	18.4	**0.0277**	0.006	20.9	ug/L	7	Standard
>	**In**	115	497749.4	1.4				ug/L	524722	Standard
	Sn	118	1183.4	2.0	**0.1421**	0.001	1.0	ug/L	715	Standard
	Sb	123	552.4	7.7	**0.1185**	0.008	7.1	ug/L	201	Standard
	Ba	135	1629969.1	1.1	**947.9397**	3.697	0.4	ug/L	108	Standard
	Ce	140	661.7	1.6				ug/L	30	Standard
>	**Tb**	159	768724.3	1.9				ug/L	792236	Standard
	Ho	165	30.0	0.0				ug/L	7	Standard
	Tl	203	273.3	11.0	**0.0373**	0.004	11.6	ug/L	9	Standard
	Tl	205	236.7	11.6	**0.0327**	0.005	13.9	ug/L	0	Standard
	Pb	206	593.0	4.8	**0.0867**	0.006	6.8	ug/L	216	Standard
	Pb	207	503.3	3.4	**0.0795**	0.004	4.6	ug/L	180	Standard
	Pb	208	2099.4	1.6	**0.0791**	0.001	1.5	ug/L	717	Standard
	U	238	272.3	8.1	**0.0412**	0.004	8.8	ug/L	4	Standard
>	**Bi**	209	413369.8	0.7				ug/L	460343	Standard

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Na	23	10.0	86.6	**-20.6958**	26.075	126.0	mg/L	0	Standard
Mg	24	97695.6	0.1	**128.0820**	3.805	3.0	mg/L	20	Standard
K	39	1235.1	6.0	**8.8773**	0.558	6.3	mg/L	22	Standard
Ca	43	1178.4	7.9	**253.1572**	23.304	9.2	mg/L	47	Standard
Fe	54	176.5	19.0	**0.0234**	0.022	95.0	mg/L	151	Standard
Fe	57	1151.7	8.5	**2.8063**	0.366	13.0	mg/L	195	Standard
> **Sc-1**	45	30666.0	3.0				mg/L	29647	Standard
Cl	35	183619.3	0.2				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	216976.2	1.6				ug/L	1607	Standard
P	31	27466.6	2.5				ug/L	22752	Standard
S	34	5401.0	3.5				ug/L	5049	Standard
Sr	88	13359.2	2.8				ug/L	87	Standard
C	12	236.7	14.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	16.2	35.8				mg/L	10	Standard
Ho-1	165	30.0	0.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	172255.5	10.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		152.092	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.016	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.860
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	89.796
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606073002
Sample Date/Time: Thursday, June 16, 2016 20:40:20
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72672.3	2.9				ug/L	51024	Standard
	Be	9	10.0	50.0	**-0.0128**	0.004	30.9	ug/L	7	Standard
	Al	27	6776653.7	2.4	**33.4181**	0.221	0.7	ug/L	625	Standard
	Sc	45	30878.1	3.6				ug/L	29647	Standard
	Ti	47	191.7	10.9	**0.5384**	0.079	14.6	ug/L	57	Standard
	V	51	18320.5	2.2	**2.6731**	0.088	3.3	ug/L	1142	Standard
	Cr	52	218082.0	0.6	**31.7558**	0.128	0.4	ug/L	6628	Standard
	Cr	53	32453.1	2.0	**38.0586**	0.990	2.6	ug/L	430	Standard
	Mn	55	14793.6	1.2	**2.6216**	0.060	2.3	ug/L	603	Standard
	Co	59	8007.4	2.3	**1.3327**	0.045	3.4	ug/L	237	Standard
	Ni	60	8064.8	0.9	**4.5323**	0.032	0.7	ug/L	141	Standard
	Cu	65	2976.0	2.0	**1.6794**	0.017	1.0	ug/L	109	Standard
	Zn	66	2008.5	3.5	**1.7659**	0.064	3.6	ug/L	159	Standard
>	**Ge**	72	429862.6	1.0				ug/L	474053	Standard
	As	75	2572.0	0.4	**2.5869**	0.037	1.4	ug/L	-34	Standard
	Se	82	825.8	3.3	**8.0685**	0.355	4.4	ug/L	14	Standard
	Se-1	77	1141.7	4.7	**15.6522**	0.781	5.0	ug/L	55	Standard
>	**Ga**	71	1611.8	8.9				mg/L	50	Standard
	Rb	85	218102.3	2.0				ug/L	20	Standard
	Y	89	377604.2	0.7				ug/L	376602	Standard
>	**Rh**	103	3075.3	2.3				ug/L	17	Standard
	Mo	98	4376.1	1.3	**1.9206**	0.018	0.9	ug/L	8	Standard
	Ag	107	101.3	11.9	**0.0053**	0.002	42.4	ug/L	81	Standard
	Cd	111	44.3	10.0	**0.0205**	0.002	10.6	mg/L	3	Standard
	Cd	114	101.2	2.7	**0.0181**	0.001	4.2	ug/L	7	Standard
>	**In**	115	504775.6	2.2				ug/L	524722	Standard
	Sn	118	1261.7	9.4	**0.1538**	0.018	12.0	ug/L	715	Standard
	Sb	123	527.5	2.2	**0.1107**	0.000	0.3	ug/L	201	Standard
	Ba	135	1636843.5	1.3	**938.7853**	9.854	1.0	ug/L	108	Standard
	Ce	140	583.3	14.6				ug/L	30	Standard
>	**Tb**	159	772745.6	1.2				ug/L	792236	Standard
	Ho	165	13.3	57.3				ug/L	7	Standard
	Tl	203	237.3	15.4	**0.0328**	0.005	15.8	ug/L	9	Standard
	Tl	205	210.0	10.4	**0.0290**	0.003	11.9	ug/L	0	Standard
	Pb	206	512.7	7.1	**0.0701**	0.008	10.9	ug/L	216	Standard
	Pb	207	440.7	8.2	**0.0656**	0.009	13.2	ug/L	180	Standard
	Pb	208	1827.0	4.1	**0.0642**	0.006	9.9	ug/L	717	Standard
	U	238	243.3	3.8	**0.0371**	0.002	4.2	ug/L	4	Standard
>	**Bi**	209	404002.1	1.1				ug/L	460343	Standard

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Na	23	10.0	86.6	**-20.5285**	26.005	126.7	mg/L	0	Standard
Mg	24	96717.8	1.8	**126.0145**	6.791	5.4	mg/L	20	Standard
K	39	1353.4	2.3	**9.6820**	0.217	2.2	mg/L	22	Standard
Ca	43	1160.0	11.2	**246.7324**	22.672	9.2	mg/L	47	Standard
Fe	54	173.0	8.5	**0.0201**	0.009	45.9	mg/L	151	Standard
Fe	57	1218.4	5.2	**2.9735**	0.072	2.4	mg/L	195	Standard
> **Sc-1**	45	30878.1	3.6				mg/L	29647	Standard
Cl	35	185979.3	1.4				ug/L	154152	Standard
Kr	83	2.7	43.3				ug/L	3	Standard
Br	81	209002.2	2.5				ug/L	1607	Standard
P	31	27092.5	3.1				ug/L	22752	Standard
S	34	5509.3	2.9				ug/L	5049	Standard
Sr	88	11921.4	3.3				ug/L	87	Standard
C	12	216.7	14.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	29.4	59.5				mg/L	10	Standard
Ho-1	165	13.3	57.3				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	173148.1	13.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		142.427	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.678	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.199
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.761
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606073003
Sample Date/Time: Thursday, June 16, 2016 20:43:31
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66295.0	5.6				ug/L	51024	Standard
	Be	9	56.7	36.7	**0.0315**	0.022	69.3	ug/L	7	Standard
	Al	27	140324062.6	0.9	**759.9749**	34.895	4.6	ug/L	625	Standard
	Sc	45	30973.3	2.2				ug/L	29647	Standard
	Ti	47	544.3	4.3	**1.8537**	0.066	3.6	ug/L	57	Standard
	V	51	5988.0	12.5	**0.7695**	0.117	15.2	ug/L	1142	Standard
	Cr	52	16952.1	2.7	**1.6378**	0.039	2.4	ug/L	6628	Standard
	Cr	53	39053.8	8.0	**46.3217**	3.179	6.9	ug/L	430	Standard
	Mn	55	1211107.1	0.8	**227.1129**	4.279	1.9	ug/L	603	Standard
	Co	59	15513.3	2.2	**2.6477**	0.097	3.6	ug/L	237	Standard
	Ni	60	11454.7	1.9	**6.5356**	0.059	0.9	ug/L	141	Standard
	Cu	65	2107.5	3.2	**1.1824**	0.030	2.5	ug/L	109	Standard
	Zn	66	3534.1	3.7	**3.3182**	0.082	2.5	ug/L	159	Standard
>	**Ge**	72	425577.5	1.4				ug/L	474053	Standard
	As	75	6875.0	1.9	**6.9431**	0.226	3.3	ug/L	-34	Standard
	Se	82	1838.5	2.4	**18.3557**	0.698	3.8	ug/L	14	Standard
	Se-1	77	5651.1	6.0	**81.1945**	3.892	4.8	ug/L	55	Standard
>	**Ga**	71	298.3	8.3				mg/L	50	Standard
	Rb	85	18603.1	3.0				ug/L	20	Standard
	Y	89	364931.5	1.6				ug/L	376602	Standard
>	**Rh**	103	1093.4	10.5				ug/L	17	Standard
	Mo	98	426.7	6.4	**0.1986**	0.013	6.7	ug/L	8	Standard
	Ag	107	75.7	8.8	**0.0020**	0.001	63.5	ug/L	81	Standard
	Cd	111	101.2	16.3	**0.0557**	0.010	17.5	mg/L	3	Standard
	Cd	114	239.7	20.6	**0.0526**	0.011	21.7	ug/L	7	Standard
>	**In**	115	464316.0	0.4				ug/L	524722	Standard
	Sn	118	820.0	6.0	**0.0826**	0.010	12.0	ug/L	715	Standard
	Sb	123	404.3	9.7	**0.0898**	0.011	11.7	ug/L	201	Standard
	Ba	135	7189623.7	0.9	**4482.5615**	58.524	1.3	ug/L	108	Standard
	Ce	140	11556.1	1.6				ug/L	30	Standard
>	**Tb**	159	738740.3	1.0				ug/L	792236	Standard
	Ho	165	163.3	8.8				ug/L	7	Standard
	Tl	203	154.3	14.2	**0.0220**	0.003	15.0	ug/L	9	Standard
	Tl	205	155.0	9.7	**0.0212**	0.003	13.2	ug/L	0	Standard
	Pb	206	489.3	5.2	**0.0725**	0.006	7.9	ug/L	216	Standard
	Pb	207	420.0	7.6	**0.0677**	0.009	13.2	ug/L	180	Standard
	Pb	208	1652.4	1.4	**0.0599**	0.003	5.3	ug/L	717	Standard
	U	238	9935.9	1.3	**1.9381**	0.028	1.4	ug/L	4	Standard
>	**Bi**	209	378492.4	1.3				ug/L	460343	Standard

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Na	23	20.0	43.3	**-51.8526**	25.479	49.1	mg/L	0	Standard
Mg	24	304205.5	1.3	**394.7766**	3.601	0.9	mg/L	20	Standard
K	39	283.3	22.2	**1.8451**	0.491	26.6	mg/L	22	Standard
Ca	43	1023.4	14.5	**216.1479**	37.325	17.3	mg/L	47	Standard
Fe	54	3507.0	4.8	**2.6133**	0.070	2.7	mg/L	151	Standard
Fe	57	2098.5	3.6	**5.5706**	0.094	1.7	mg/L	195	Standard
> **Sc-1**	45	30973.3	2.2				mg/L	29647	Standard
Cl	35	171200.0	3.8				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	477807.6	1.2				ug/L	1607	Standard
P	31	31030.1	3.4				ug/L	22752	Standard
S	34	5537.7	3.1				ug/L	5049	Standard
Sr	88	3852.2	4.1				ug/L	87	Standard
C	12	250.0	32.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	197.9	47.2				mg/L	10	Standard
Ho-1	165	163.3	8.8				mg/L	7	Standard
Er	166	183.3	6.3				mg/L	3	Standard
I	127	159354.2	8.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.929	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		89.774	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	88.488
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	82.220
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606073102
Sample Date/Time: Thursday, June 16, 2016 20:46:43
Number of Replicates: 3
Autosampler Position: 346
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55473.1	2.7				ug/L	51024	Standard
	Be	9	55.0	36.4	**0.0390**	0.022	55.7	ug/L	7	Standard
	Al	27	942566.4	1.5	**6.0840**	0.204	3.4	ug/L	625	Standard
	Sc	45	34049.9	0.9				ug/L	29647	Standard
	Ti	47	5731.8	2.0	**18.2913**	0.196	1.1	ug/L	57	Standard
	V	51	32065.1	2.5	**4.1901**	0.107	2.6	ug/L	1142	Standard
	Cr	52	17242.5	0.8	**1.3371**	0.009	0.7	ug/L	6628	Standard
	Cr	53	5039.2	15.0	**4.8012**	0.726	15.1	ug/L	430	Standard
	Mn	55	115479.5	1.7	**18.6730**	0.120	0.6	ug/L	603	Standard
	Co	59	2037.1	3.8	**0.2650**	0.009	3.4	ug/L	237	Standard
	Ni	60	2031.8	4.8	**0.9400**	0.039	4.2	ug/L	141	Standard
	Cu	65	266456.7	0.9	**136.9469**	2.046	1.5	ug/L	109	Standard
	Zn	66	37165.9	1.0	**32.1770**	0.480	1.5	ug/L	159	Standard
>	**Ge**	72	490402.9	1.1				ug/L	474053	Standard
	As	75	12459.1	0.9	**10.9020**	0.085	0.8	ug/L	-34	Standard
	Se	82	127.6	3.2	**0.9465**	0.028	3.0	ug/L	14	Standard
	Se-1	77	270.0	15.8	**2.6503**	0.495	18.7	ug/L	55	Standard
>	**Ga**	71	1921.8	2.3				mg/L	50	Standard
	Rb	85	35595.1	1.8				ug/L	20	Standard
	Y	89	404147.8	1.0				ug/L	376602	Standard
>	**Rh**	103	85.0	15.6				ug/L	17	Standard
	Mo	98	4328.7	1.5	**1.8133**	0.020	1.1	ug/L	8	Standard
	Ag	107	869.7	0.1	**0.1324**	0.001	0.5	ug/L	81	Standard
	Cd	111	482.3	7.8	**0.2434**	0.019	8.0	mg/L	3	Standard
	Cd	114	1335.6	3.6	**0.2724**	0.009	3.3	ug/L	7	Standard
>	**In**	115	528691.1	0.6				ug/L	524722	Standard
	Sn	118	4765.7	3.3	**0.7887**	0.031	4.0	ug/L	715	Standard
	Sb	123	3183.9	1.5	**0.7087**	0.011	1.6	ug/L	201	Standard
	Ba	135	17225.1	3.1	**9.3751**	0.336	3.6	ug/L	108	Standard
	Ce	140	48213.3	1.0				ug/L	30	Standard
>	**Tb**	159	793657.4	1.6				ug/L	792236	Standard
	Ho	165	775.0	7.8				ug/L	7	Standard
	Tl	203	260.0	6.4	**0.0318**	0.003	8.6	ug/L	9	Standard
	Tl	205	233.3	20.4	**0.0285**	0.008	27.8	ug/L	0	Standard
	Pb	206	39704.6	1.2	**8.6323**	0.072	0.8	ug/L	216	Standard
	Pb	207	34342.9	1.0	**8.2030**	0.203	2.5	ug/L	180	Standard
	Pb	208	145934.1	1.3	**8.5861**	0.079	0.9	ug/L	717	Standard
	U	238	420.0	4.3	**0.0608**	0.004	7.1	ug/L	4	Standard
>	**Bi**	209	455671.4	2.1				ug/L	460343	Standard

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Na	23	3.3	173.2	**0.8644**	16.607	1921.3	mg/L	0	Standard
Mg	24	12667.0	1.0	**14.9085**	0.215	1.4	mg/L	20	Standard
K	39	335.0	19.1	**1.9967**	0.430	21.5	mg/L	22	Standard
Ca	43	88.3	18.2	**4.8010**	3.416	71.1	mg/L	47	Standard
Fe	54	995.1	5.6	**0.5893**	0.033	5.5	mg/L	151	Standard
Fe	57	445.0	16.6	**0.5516**	0.188	34.0	mg/L	195	Standard
> **Sc-1**	45	34049.9	0.9				mg/L	29647	Standard
Cl	35	173758.3	2.1				ug/L	154152	Standard
Kr	83	3.3	91.7				ug/L	3	Standard
Br	81	6371.4	18.0				ug/L	1607	Standard
P	31	28039.3	2.8				ug/L	22752	Standard
S	34	5270.9	3.8				ug/L	5049	Standard
Sr	88	90.0	5.6				ug/L	87	Standard
C	12	76.7	58.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	56.8				mg/L	0	Standard
Dy	164	1215.7	9.2				mg/L	10	Standard
Ho-1	165	775.0	7.8				mg/L	7	Standard
Er	166	786.7	6.4				mg/L	3	Standard
I	127	21140.1	20.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.719	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.449	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.756
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.985
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: L1606073102
Sample Date/Time: Thursday, June 16, 2016 20:49:54
Number of Replicates: 3
Autosampler Position: 347
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59153.6	1.2				ug/L	51024	Standard
	Be	9	8.3	34.6	**-0.0125**	0.003	23.9	ug/L	7	Standard
	Al	27	100448.6	1.0	**0.5989**	0.007	1.2	ug/L	625	Standard
	Sc	45	33126.2	1.2				ug/L	29647	Standard
	Ti	47	644.7	2.1	**2.0007**	0.071	3.6	ug/L	57	Standard
	V	51	4289.2	6.3	**0.4402**	0.044	10.0	ug/L	1142	Standard
	Cr	52	8064.5	2.5	**0.1771**	0.010	5.7	ug/L	6628	Standard
	Cr	53	1751.8	6.1	**1.4679**	0.099	6.8	ug/L	430	Standard
	Mn	55	12501.5	0.4	**1.9975**	0.048	2.4	ug/L	603	Standard
	Co	59	371.3	7.0	**0.0170**	0.003	18.0	ug/L	237	Standard
	Ni	60	380.0	10.9	**0.1207**	0.019	15.5	ug/L	141	Standard
	Cu	65	26879.2	2.3	**14.3517**	0.162	1.1	ug/L	109	Standard
	Zn	66	5034.5	0.7	**4.3493**	0.122	2.8	ug/L	159	Standard
>	**Ge**	72	470100.0	2.4				ug/L	474053	Standard
	As	75	1188.6	1.5	**1.1081**	0.042	3.8	ug/L	-34	Standard
	Se	82	31.1	20.0	**0.1142**	0.055	48.5	ug/L	14	Standard
	Se-1	77	110.7	11.2	**0.7077**	0.148	20.9	ug/L	55	Standard
>	**Ga**	71	223.3	5.6				mg/L	50	Standard
	Rb	85	3760.5	5.0				ug/L	20	Standard
	Y	89	401153.8	1.8				ug/L	376602	Standard
>	**Rh**	103	35.0	28.6				ug/L	17	Standard
	Mo	98	446.2	5.1	**0.1763**	0.012	6.9	ug/L	8	Standard
	Ag	107	132.3	3.7	**0.0090**	0.001	8.3	ug/L	81	Standard
	Cd	111	53.4	17.3	**0.0233**	0.005	21.5	mg/L	3	Standard
	Cd	114	111.5	28.2	**0.0185**	0.006	33.2	ug/L	7	Standard
>	**In**	115	545539.1	1.6				ug/L	524722	Standard
	Sn	118	1001.7	15.4	**0.0892**	0.025	28.5	ug/L	715	Standard
	Sb	123	390.2	5.8	**0.0711**	0.004	6.2	ug/L	201	Standard
	Ba	135	2004.1	4.2	**1.0056**	0.035	3.5	ug/L	108	Standard
	Ce	140	4912.5	3.1				ug/L	30	Standard
>	**Tb**	159	820295.3	0.5				ug/L	792236	Standard
	Ho	165	85.0	35.8				ug/L	7	Standard
	Tl	203	81.3	9.9	**0.0080**	0.001	12.7	ug/L	9	Standard
	Tl	205	81.7	7.1	**0.0047**	0.001	18.7	ug/L	0	Standard
	Pb	206	4339.0	0.8	**0.8817**	0.013	1.4	ug/L	216	Standard
	Pb	207	3847.8	0.9	**0.8599**	0.011	1.3	ug/L	180	Standard
	Pb	208	15987.3	1.8	**0.8776**	0.022	2.5	ug/L	717	Standard
	U	238	37.0	13.5	**-0.0016**	0.001	51.1	ug/L	4	Standard
>	**Bi**	209	461213.2	0.5				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1265.1	9.3	**1.4911**	0.161	10.8	mg/L	20	Standard
K	39	51.7	11.2	**0.1245**	0.037	30.0	mg/L	22	Standard
Ca	43	36.7	20.8	**-5.5323**	1.502	27.2	mg/L	47	Standard
Fe	54	272.3	11.9	**0.0834**	0.026	30.8	mg/L	151	Standard
Fe	57	213.3	13.3	**-0.0553**	0.084	152.6	mg/L	195	Standard
> **Sc-1**	45	33126.2	1.2				mg/L	29647	Standard
Cl	35	168674.4	1.0				ug/L	154152	Standard
Kr	83	2.7	57.3				ug/L	3	Standard
Br	81	3067.0	8.5				ug/L	1607	Standard
P	31	24656.7	3.1				ug/L	22752	Standard
S	34	5190.9	0.5				ug/L	5049	Standard
Sr	88	70.0	31.1				ug/L	87	Standard
C	12	56.7	40.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	128.2	29.2				mg/L	10	Standard
Ho-1	165	85.0	35.8				mg/L	7	Standard
Er	166	106.7	19.5				mg/L	3	Standard
I	127	4907.5	9.2				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.933	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.166	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.967
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.189
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606054009
Sample Date/Time: Thursday, June 16, 2016 20:53:06
Number of Replicates: 3
Autosampler Position: 348
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57167.7	1.8				ug/L	51024	Standard
	Be	9	16.7	34.6	**-0.0033**	0.006	191.0	ug/L	7	Standard
	Al	27	40703.4	11.7	**0.2452**	0.025	10.3	ug/L	625	Standard
	Sc	45	31935.3	3.8				ug/L	29647	Standard
	Ti	47	33.3	7.5	**-0.0541**	0.007	12.4	ug/L	57	Standard
	V	51	1267.4	7.9	**0.0110**	0.011	98.7	ug/L	1142	Standard
	Cr	52	6813.9	0.7	**0.0049**	0.027	550.7	ug/L	6628	Standard
	Cr	53	1183.4	2.1	**0.8507**	0.047	5.5	ug/L	430	Standard
	Mn	55	63841.2	0.9	**10.7040**	0.156	1.5	ug/L	603	Standard
	Co	59	241.7	8.6	**-0.0034**	0.003	78.7	ug/L	237	Standard
	Ni	60	170.7	5.3	**0.0113**	0.004	35.5	ug/L	141	Standard
	Cu	65	185.7	9.3	**0.0334**	0.011	32.3	ug/L	109	Standard
	Zn	66	1221.7	3.3	**0.8784**	0.051	5.8	ug/L	159	Standard
>	**Ge**	72	470712.9	2.2				ug/L	474053	Standard
	As	75	30.8	16.5	**0.0530**	0.004	7.8	ug/L	-34	Standard
	Se	82	25.1	14.7	**0.0591**	0.030	51.4	ug/L	14	Standard
	Se-1	77	77.3	7.8	**0.2686**	0.059	22.0	ug/L	55	Standard
>	**Ga**	71	51.7	31.1				mg/L	50	Standard
	Rb	85	646.7	20.2				ug/L	20	Standard
	Y	89	396670.0	2.0				ug/L	376602	Standard
>	**Rh**	103	36.7	47.9				ug/L	17	Standard
	Mo	98	41.6	28.6	**0.0117**	0.005	41.7	ug/L	8	Standard
	Ag	107	95.3	39.9	**0.0032**	0.006	177.8	ug/L	81	Standard
	Cd	111	10.6	141.7	**0.0020**	0.007	372.2	mg/L	3	Standard
	Cd	114	31.1	47.0	**0.0025**	0.003	110.7	ug/L	7	Standard
>	**In**	115	535879.5	3.0				ug/L	524722	Standard
	Sn	118	518.3	19.7	**0.0045**	0.016	347.9	ug/L	715	Standard
	Sb	123	86.0	15.9	**0.0044**	0.002	55.3	ug/L	201	Standard
	Ba	135	3179.4	70.5	**1.6371**	1.141	69.7	ug/L	108	Standard
	Ce	140	118.3	56.3				ug/L	30	Standard
>	**Tb**	159	791577.1	1.4				ug/L	792236	Standard
	Ho	165	16.7	62.4				ug/L	7	Standard
	Tl	203	82.0	86.0	**0.0083**	0.009	108.7	ug/L	9	Standard
	Tl	205	38.3	39.8	**-0.0018**	0.002	122.7	ug/L	0	Standard
	Pb	206	276.0	8.2	**0.0051**	0.003	58.8	ug/L	216	Standard
	Pb	207	225.0	9.4	**0.0012**	0.004	310.7	ug/L	180	Standard
	Pb	208	961.3	4.7	**0.0001**	0.001	957.0	ug/L	717	Standard
	U	238	50.7	3.0	**0.0008**	0.000	45.3	ug/L	4	Standard
>	**Bi**	209	447174.4	3.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	178.3	23.3	**0.1782**	0.044	24.8	mg/L	20	Standard
K	39	75.0	0.0	**0.3034**	0.020	6.6	mg/L	22	Standard
Ca	43	26.7	39.0	**-7.4067**	2.216	29.9	mg/L	47	Standard
Fe	54	296.0	2.0	**0.1085**	0.005	4.5	mg/L	151	Standard
Fe	57	203.3	7.1	**-0.0621**	0.045	71.7	mg/L	195	Standard
> **Sc-1**	45	31935.3	3.8				mg/L	29647	Standard
Cl	35	168415.6	1.0				ug/L	154152	Standard
Kr	83	1.0	0.0				ug/L	3	Standard
Br	81	2343.5	14.9				ug/L	1607	Standard
P	31	24079.1	0.8				ug/L	22752	Standard
S	34	5175.9	6.6				ug/L	5049	Standard
Sr	88	91.7	20.7				ug/L	87	Standard
C	12	60.0	28.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	7.9	115.0				mg/L	10	Standard
Ho-1	165	16.7	62.4				mg/L	7	Standard
Er	166	43.3	70.5				mg/L	3	Standard
I	127	3628.8	3.8				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.040	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.295	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.126
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.139
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606054010
Sample Date/Time: Thursday, June 16, 2016 20:57:27
Number of Replicates: 3
Autosampler Position: 349
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56434.9	2.3				ug/L	51024	Standard
	Be	9	8.3	34.6	**-0.0121**	0.003	26.4	ug/L	7	Standard
	Al	27	252906.9	1.5	**1.5971**	0.043	2.7	ug/L	625	Standard
	Sc	45	31920.3	2.1				ug/L	29647	Standard
	Ti	47	312.3	10.2	**0.8821**	0.111	12.6	ug/L	57	Standard
	V	51	2253.7	7.5	**0.1509**	0.028	18.3	ug/L	1142	Standard
	Cr	52	7388.1	1.0	**0.0829**	0.016	19.3	ug/L	6628	Standard
	Cr	53	1196.7	7.3	**0.8649**	0.109	12.6	ug/L	430	Standard
	Mn	55	73740.7	1.7	**12.3802**	0.357	2.9	ug/L	603	Standard
	Co	59	450.0	4.0	**0.0292**	0.003	10.6	ug/L	237	Standard
	Ni	60	555.0	6.8	**0.2120**	0.023	10.8	ug/L	141	Standard
	Cu	65	367.0	6.1	**0.1304**	0.011	8.6	ug/L	109	Standard
	Zn	66	2607.2	1.1	**2.1362**	0.049	2.3	ug/L	159	Standard
>	**Ge**	72	470838.7	1.1				ug/L	474053	Standard
	As	75	1057.7	4.9	**0.9866**	0.037	3.7	ug/L	-34	Standard
	Se	82	371.4	5.2	**3.2111**	0.141	4.4	ug/L	14	Standard
	Se-1	77	82.0	5.3	**0.3308**	0.069	21.0	ug/L	55	Standard
>	**Ga**	71	95.0	21.1				mg/L	50	Standard
	Rb	85	2080.1	6.3				ug/L	20	Standard
	Y	89	394550.0	1.4				ug/L	376602	Standard
>	**Rh**	103	40.0	12.5				ug/L	17	Standard
	Mo	98	432.1	5.5	**0.1778**	0.013	7.4	ug/L	8	Standard
	Ag	107	89.3	6.8	**0.0027**	0.001	34.2	ug/L	81	Standard
	Cd	111	10.8	29.5	**0.0024**	0.002	71.8	mg/L	3	Standard
	Cd	114	7.3	63.1	**-0.0023**	0.001	40.5	ug/L	7	Standard
>	**In**	115	524122.9	2.0				ug/L	524722	Standard
	Sn	118	475.0	16.9	**-0.0012**	0.015	1226.6	ug/L	715	Standard
	Sb	123	126.7	16.7	**0.0143**	0.005	37.6	ug/L	201	Standard
	Ba	135	6164.6	3.3	**3.3481**	0.133	4.0	ug/L	108	Standard
	Ce	140	2293.5	2.9				ug/L	30	Standard
>	**Tb**	159	771498.5	0.9				ug/L	792236	Standard
	Ho	165	40.0	33.1				ug/L	7	Standard
	Tl	203	178.3	6.6	**0.0218**	0.002	7.9	ug/L	9	Standard
	Tl	205	168.3	19.8	**0.0193**	0.006	28.8	ug/L	0	Standard
	Pb	206	424.0	1.9	**0.0396**	0.002	4.6	ug/L	216	Standard
	Pb	207	350.0	3.8	**0.0332**	0.004	10.7	ug/L	180	Standard
	Pb	208	1524.0	3.5	**0.0355**	0.004	11.4	ug/L	717	Standard
	U	238	1126.4	2.3	**0.1820**	0.006	3.2	ug/L	4	Standard
>	**Bi**	209	440459.4	0.9				ug/L	460343	Standard

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Na	23	3.3	86.6	**0.3515**	8.752	2490.2	mg/L	0	Standard
Mg	24	5054.2	1.6	**6.3217**	0.207	3.3	mg/L	20	Standard
K	39	60.0	38.2	**0.1962**	0.161	82.1	mg/L	22	Standard
Ca	43	58.3	27.6	**-0.5341**	3.483	652.1	mg/L	47	Standard
Fe	54	351.0	19.9	**0.1502**	0.054	35.8	mg/L	151	Standard
Fe	57	258.3	13.7	**0.0974**	0.116	119.4	mg/L	195	Standard
Sc-1	45	31920.3	2.1				mg/L	29647	Standard
Cl	35	170598.8	2.4				ug/L	154152	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	89319.4	3.8				ug/L	1607	Standard
P	31	24377.9	0.5				ug/L	22752	Standard
S	34	5239.2	6.6				ug/L	5049	Standard
Sr	88	133.3	15.6				ug/L	87	Standard
C	12	30.0	33.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	52.1	28.7				mg/L	10	Standard
Ho-1	165	40.0	33.1				mg/L	7	Standard
Er	166	26.7	57.3				mg/L	3	Standard
I	127	17059.6	8.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.604	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.322	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.886
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.681
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606054011
Sample Date/Time: Thursday, June 16, 2016 21:00:39
Number of Replicates: 3
Autosampler Position: 350
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58251.8	0.7				ug/L	51024	Standard
	Be	9	10.0	100.0	**-0.0107**	0.010	96.5	ug/L	7	Standard
	Al	27	254779.3	0.3	**1.5580**	0.016	1.0	ug/L	625	Standard
	Sc	45	32790.5	2.0				ug/L	29647	Standard
	Ti	47	354.0	6.1	**1.0202**	0.064	6.3	ug/L	57	Standard
	V	51	2227.5	5.1	**0.1471**	0.023	15.7	ug/L	1142	Standard
	Cr	52	7531.2	1.8	**0.1020**	0.041	40.4	ug/L	6628	Standard
	Cr	53	1105.0	6.8	**0.7629**	0.054	7.1	ug/L	430	Standard
	Mn	55	71367.7	1.1	**11.9661**	0.226	1.9	ug/L	603	Standard
	Co	59	417.3	0.3	**0.0241**	0.001	5.5	ug/L	237	Standard
	Ni	60	538.0	5.0	**0.2029**	0.019	9.2	ug/L	141	Standard
	Cu	65	370.3	6.0	**0.1319**	0.008	6.1	ug/L	109	Standard
	Zn	66	2431.9	0.9	**1.9749**	0.035	1.8	ug/L	159	Standard
>	**Ge**	72	471306.4	2.3				ug/L	474053	Standard
	As	75	1059.1	3.3	**0.9871**	0.024	2.5	ug/L	-34	Standard
	Se	82	374.1	5.5	**3.2332**	0.174	5.4	ug/L	14	Standard
	Se-1	77	74.7	4.7	**0.2331**	0.038	16.2	ug/L	55	Standard
>	**Ga**	71	103.3	15.6				mg/L	50	Standard
	Rb	85	1920.1	7.2				ug/L	20	Standard
	Y	89	383902.2	1.9				ug/L	376602	Standard
>	**Rh**	103	25.0	87.2				ug/L	17	Standard
	Mo	98	436.7	9.1	**0.1748**	0.015	8.7	ug/L	8	Standard
	Ag	107	65.0	9.2	**-0.0017**	0.001	50.8	ug/L	81	Standard
	Cd	111	7.9	14.5	**0.0007**	0.001	83.6	mg/L	3	Standard
	Cd	114	24.6	49.4	**0.0012**	0.002	206.6	ug/L	7	Standard
>	**In**	115	537640.9	1.1				ug/L	524722	Standard
	Sn	118	573.3	39.0	**0.0145**	0.041	281.6	ug/L	715	Standard
	Sb	123	111.2	8.6	**0.0100**	0.002	20.8	ug/L	201	Standard
	Ba	135	6046.2	1.0	**3.1982**	0.060	1.9	ug/L	108	Standard
	Ce	140	2091.8	0.8				ug/L	30	Standard
>	**Tb**	159	809758.8	0.4				ug/L	792236	Standard
	Ho	165	41.7	18.3				ug/L	7	Standard
	Tl	203	180.3	6.1	**0.0211**	0.001	6.1	ug/L	9	Standard
	Tl	205	173.3	24.0	**0.0189**	0.006	33.1	ug/L	0	Standard
	Pb	206	420.3	5.1	**0.0350**	0.005	15.0	ug/L	216	Standard
	Pb	207	374.0	2.6	**0.0354**	0.003	8.0	ug/L	180	Standard
	Pb	208	1541.7	1.3	**0.0327**	0.002	5.1	ug/L	717	Standard
	U	238	1137.0	2.8	**0.1760**	0.006	3.3	ug/L	4	Standard
>	**Bi**	209	459070.7	0.7				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.4041**	8.743	161.8	mg/L	0	Standard
Mg	24	4977.5	2.7	**6.0561**	0.102	1.7	mg/L	20	Standard
K	39	71.7	10.7	**0.2668**	0.063	23.4	mg/L	22	Standard
Ca	43	53.3	10.8	**-1.9274**	1.113	57.7	mg/L	47	Standard
Fe	54	318.9	6.3	**0.1195**	0.015	12.9	mg/L	151	Standard
Fe	57	250.0	29.5	**0.0557**	0.223	399.4	mg/L	195	Standard
Sc-1	45	32790.5	2.0				mg/L	29647	Standard
Cl	35	169793.5	0.8				ug/L	154152	Standard
Kr	83	2.0	0.0				ug/L	3	Standard
Br	81	89396.4	2.9				ug/L	1607	Standard
P	31	24319.5	2.4				ug/L	22752	Standard
S	34	5012.5	5.2				ug/L	5049	Standard
Sr	88	106.7	17.7				ug/L	87	Standard
C	12	46.7	32.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	51.6	38.3				mg/L	10	Standard
Ho-1	165	41.7	18.3				mg/L	7	Standard
Er	166	36.7	63.0				mg/L	3	Standard
I	127	17585.2	6.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.165	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.421	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.462	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.724	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606054014
Sample Date/Time: Thursday, June 16, 2016 21:03:50
Number of Replicates: 3
Autosampler Position: 351
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57943.9	0.3				ug/L	51024	Standard
	Be	9	10.0	50.0	**-0.0106**	0.005	49.0	ug/L	7	Standard
	Al	27	40494.2	7.5	**0.2408**	0.019	8.1	ug/L	625	Standard
	Sc	45	33099.4	0.9				ug/L	29647	Standard
	Ti	47	40.0	11.5	**-0.0319**	0.013	41.5	ug/L	57	Standard
	V	51	1267.4	3.9	**0.0110**	0.004	33.2	ug/L	1142	Standard
	Cr	52	6912.6	1.0	**0.0177**	0.023	132.2	ug/L	6628	Standard
	Cr	53	750.0	9.0	**0.3802**	0.071	18.6	ug/L	430	Standard
	Mn	55	124087.1	1.1	**20.9134**	0.521	2.5	ug/L	603	Standard
	Co	59	211.7	10.1	**-0.0081**	0.004	46.5	ug/L	237	Standard
	Ni	60	248.0	1.5	**0.0516**	0.002	4.7	ug/L	141	Standard
	Cu	65	221.0	10.6	**0.0522**	0.012	22.6	ug/L	109	Standard
	Zn	66	3791.1	1.2	**3.2112**	0.103	3.2	ug/L	159	Standard
>	**Ge**	72	470993.8	1.9				ug/L	474053	Standard
	As	75	110.5	40.9	**0.1251**	0.040	31.9	ug/L	-34	Standard
	Se	82	16.7	56.8	**-0.0174**	0.085	487.8	ug/L	14	Standard
	Se-1	77	66.3	16.1	**0.1259**	0.151	119.8	ug/L	55	Standard
>	**Ga**	71	63.3	27.7				mg/L	50	Standard
	Rb	85	276.7	10.3				ug/L	20	Standard
	Y	89	385833.8	2.0				ug/L	376602	Standard
>	**Rh**	103	31.7	50.8				ug/L	17	Standard
	Mo	98	31.0	14.9	**0.0074**	0.002	27.3	ug/L	8	Standard
	Ag	107	68.0	4.4	**-0.0012**	0.000	32.0	ug/L	81	Standard
	Cd	111	10.9	18.2	**0.0023**	0.001	41.2	mg/L	3	Standard
	Cd	114	35.3	7.7	**0.0034**	0.001	15.7	ug/L	7	Standard
>	**In**	115	534994.4	1.2				ug/L	524722	Standard
	Sn	118	486.7	6.0	**-0.0009**	0.004	488.6	ug/L	715	Standard
	Sb	123	88.5	13.6	**0.0050**	0.002	48.6	ug/L	201	Standard
	Ba	135	1149.4	10.0	**0.5638**	0.054	9.6	ug/L	108	Standard
	Ce	140	73.3	33.6				ug/L	30	Standard
>	**Tb**	159	801412.4	0.6				ug/L	792236	Standard
	Ho	165	16.7	17.3				ug/L	7	Standard
	Tl	203	39.7	22.9	**0.0026**	0.001	46.4	ug/L	9	Standard
	Tl	205	23.3	75.3	**-0.0042**	0.003	64.0	ug/L	0	Standard
	Pb	206	288.7	4.7	**0.0060**	0.003	43.9	ug/L	216	Standard
	Pb	207	232.0	1.6	**0.0012**	0.001	74.1	ug/L	180	Standard
	Pb	208	996.7	1.1	**0.0003**	0.001	274.4	ug/L	717	Standard
	U	238	6.3	48.2	**-0.0066**	0.000	7.5	ug/L	4	Standard
>	**Bi**	209	461918.2	0.5				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.5408**	8.507	153.5	mg/L	0	Standard
Mg	24	155.0	19.6	**0.1428**	0.035	24.6	mg/L	20	Standard
K	39	20.0	75.0	**-0.0919**	0.101	110.1	mg/L	22	Standard
Ca	43	28.3	36.7	**-7.2551**	2.201	30.3	mg/L	47	Standard
Fe	54	217.7	12.7	**0.0436**	0.021	47.7	mg/L	151	Standard
Fe	57	210.0	21.4	**-0.0640**	0.129	201.3	mg/L	195	Standard
Sc-1	45	33099.4	0.9				mg/L	29647	Standard
Cl	35	168257.1	0.3				ug/L	154152	Standard
Kr	83	2.0	86.6				ug/L	3	Standard
Br	81	3430.4	12.2				ug/L	1607	Standard
P	31	24144.2	1.0				ug/L	22752	Standard
S	34	5209.2	2.8				ug/L	5049	Standard
Sr	88	75.0	43.7				ug/L	87	Standard
C	12	36.7	63.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.1	43.3				mg/L	10	Standard
Ho-1	165	16.7	17.3				mg/L	7	Standard
Er	166	26.7	43.3				mg/L	3	Standard
I	127	3078.6	10.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.562	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.355	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.958
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.342
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 21:07:02
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	57216.2	1.8				ug/L	51024	Standard
	Be	9	44266.2	0.8	**46.9448**	1.086	2.3	ug/L	7	Standard
	Al	27	7280291.9	1.0	**45.6137**	1.287	2.8	ug/L	625	Standard
	Sc	45	32309.4	1.7				ug/L	29647	Standard
	Ti	47	30197.4	0.3	**101.5240**	2.598	2.6	ug/L	57	Standard
	V	51	355347.4	0.9	**50.3294**	0.808	1.6	ug/L	1142	Standard
	Cr	52	370024.2	0.4	**49.8980**	1.109	2.2	ug/L	6628	Standard
	Cr	53	45872.7	0.6	**49.4285**	1.135	2.3	ug/L	430	Standard
	Mn	55	314239.7	1.6	**53.3617**	1.128	2.1	ug/L	603	Standard
	Co	59	314388.6	0.3	**49.3919**	1.176	2.4	ug/L	237	Standard
	Ni	60	94820.1	0.2	**49.5997**	1.101	2.2	ug/L	141	Standard
	Cu	65	92383.2	1.4	**49.5924**	0.629	1.3	ug/L	109	Standard
	Zn	66	54761.8	0.6	**49.6923**	0.878	1.8	ug/L	159	Standard
>	Ge	72	469160.5	2.3				ug/L	474053	Standard
	As	75	53380.1	0.9	**48.7528**	1.227	2.5	ug/L	-34	Standard
	Se	82	5320.4	1.7	**48.4684**	1.778	3.7	ug/L	14	Standard
	Se-1	77	3692.8	2.0	**47.8512**	0.716	1.5	ug/L	55	Standard
>	Ga	71	61.7	70.8				mg/L	50	Standard
	Rb	85	808.4	9.3				ug/L	20	Standard
	Y	89	383560.2	1.8				ug/L	376602	Standard
>	Rh	103	35.0	42.9				ug/L	17	Standard
	Mo	98	232242.3	1.1	**96.5061**	2.361	2.4	ug/L	8	Standard
	Ag	107	292582.7	0.8	**48.1206**	0.391	0.8	ug/L	81	Standard
	Cd	111	95603.2	0.1	**48.3402**	0.694	1.4	mg/L	3	Standard
	Cd	114	235634.1	0.2	**48.1942**	0.648	1.3	ug/L	7	Standard
>	In	115	534700.6	1.5				ug/L	524722	Standard
	Sn	118	264473.5	1.3	**48.1050**	1.306	2.7	ug/L	715	Standard
	Sb	123	215670.2	0.6	**48.4479**	0.874	1.8	ug/L	201	Standard
	Ba	135	88155.7	0.1	**47.6769**	0.763	1.6	ug/L	108	Standard
	Ce	140	101.7	19.9				ug/L	30	Standard
>	Tb	159	793079.8	1.0				ug/L	792236	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	358440.3	1.1	**47.4951**	0.142	0.3	ug/L	9	Standard
	Tl	205	312266.9	1.0	**48.6540**	0.130	0.3	ug/L	0	Standard
	Pb	206	224283.0	1.3	**49.1202**	0.907	1.8	ug/L	216	Standard
	Pb	207	204302.6	0.7	**49.1523**	0.806	1.6	ug/L	180	Standard
	Pb	208	833504.1	0.4	**49.4087**	0.646	1.3	ug/L	717	Standard
	U	238	304654.1	0.2	**49.6463**	0.682	1.4	ug/L	4	Standard
>	Bi	209	454777.5	1.2				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.3475**	8.842	165.3	mg/L	0	Standard
Mg	24	4015.5	1.7	**4.9520**	0.163	3.3	mg/L	20	Standard
K	39	633.3	0.9	**4.2037**	0.116	2.8	mg/L	22	Standard
Ca	43	71.7	28.2	**2.1962**	4.389	199.9	mg/L	47	Standard
Fe	54	5816.1	3.6	**4.2263**	0.216	5.1	mg/L	151	Standard
Fe	57	1691.8	3.9	**4.1585**	0.125	3.0	mg/L	195	Standard
> **Sc-1**	45	32309.4	1.7				mg/L	29647	Standard
Cl	35	165447.9	1.5				ug/L	154152	Standard
Kr	83	3.0	33.3				ug/L	3	Standard
Br	81	2063.5	3.6				ug/L	1607	Standard
P	31	25169.2	0.8				ug/L	22752	Standard
S	34	5737.8	0.7				ug/L	5049	Standard
Sr	88	55.0	15.7				ug/L	87	Standard
C	12	53.3	47.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.2	93.3				mg/L	10	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	10.0					mg/L	3	Standard
I	127	1655.1	3.8				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	93.890		
Al	27	91.227		
Sc	45			
Ti	47	101.524		
V	51	100.659		
Cr	52	99.796		
Cr	53			
Mn	55	106.723		
Co	59	98.784		
Ni	60	99.199		
Cu	65	99.185		
Zn	66	99.385		
> Ge	72		98.968	
As	75	97.506		
Se	82	96.937		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	96.506		
Ag	107	96.241		
Cd	111	96.680		
Cd	114			
> In	115			101.902
Sn	118	96.210		
Sb	123	96.896		
Ba	135	95.354		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	94.990		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.817		
U	238	99.293		
> Bi	209			98.791
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 21:10:14
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55944.8	2.0				ug/L	51024	Standard
	Be	9	16.7	34.6	**-0.0030**	0.006	212.8	ug/L	7	Standard
	Al	27	1526.8	38.2	**-0.0000**	0.004	16917.9	ug/L	625	Standard
	Sc	45	31897.0	7.4				ug/L	29647	Standard
	Ti	47	31.0	8.5	**-0.0586**	0.008	13.1	ug/L	57	Standard
	V	51	1141.1	6.7	**-0.0015**	0.010	648.2	ug/L	1142	Standard
	Cr	52	6326.0	1.2	**-0.0342**	0.003	8.9	ug/L	6628	Standard
	Cr	53	638.3	5.1	**0.2820**	0.027	9.6	ug/L	430	Standard
	Mn	55	672.3	5.7	**-0.0087**	0.006	71.9	ug/L	603	Standard
	Co	59	229.3	15.7	**-0.0042**	0.005	126.3	ug/L	237	Standard
	Ni	60	153.7	14.0	**0.0051**	0.012	235.2	ug/L	141	Standard
	Cu	65	131.3	12.6	**0.0065**	0.009	132.4	ug/L	109	Standard
	Zn	66	145.0	12.1	**-0.0961**	0.015	15.1	ug/L	159	Standard
>	**Ge**	72	455945.8	1.4				ug/L	474053	Standard
	As	75	-22.0	198.7	**0.0041**	0.041	1009.9	ug/L	-34	Standard
	Se	82	27.4	26.2	**0.0880**	0.066	75.2	ug/L	14	Standard
	Se-1	77	76.0	21.7	**0.2852**	0.231	80.9	ug/L	55	Standard
>	**Ga**	71	41.7	42.1				mg/L	50	Standard
	Rb	85	23.3	75.3				ug/L	20	Standard
	Y	89	400519.5	2.1				ug/L	376602	Standard
>	**Rh**	103	30.0	57.7				ug/L	17	Standard
	Mo	98	251.1	32.5	**0.0955**	0.032	33.2	ug/L	8	Standard
	Ag	107	99.3	31.3	**0.0035**	0.005	136.7	ug/L	81	Standard
	Cd	111	14.1	69.7	**0.0037**	0.005	129.5	mg/L	3	Standard
	Cd	114	31.9	76.8	**0.0025**	0.005	193.5	ug/L	7	Standard
>	**In**	115	550633.2	1.2				ug/L	524722	Standard
	Sn	118	735.0	12.4	**0.0407**	0.017	42.7	ug/L	715	Standard
	Sb	123	412.2	18.4	**0.0753**	0.017	23.2	ug/L	201	Standard
	Ba	135	126.7	6.0	**0.0089**	0.003	36.5	ug/L	108	Standard
	Ce	140	13.3	43.3				ug/L	30	Standard
>	**Tb**	159	804256.0	1.8				ug/L	792236	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	62.7	29.5	**0.0058**	0.002	40.2	ug/L	9	Standard
	Tl	205	55.0	15.7	**0.0008**	0.001	147.2	ug/L	0	Standard
	Pb	206	234.3	12.8	**-0.0047**	0.006	120.1	ug/L	216	Standard
	Pb	207	197.7	8.5	**-0.0059**	0.003	52.6	ug/L	180	Standard
	Pb	208	861.7	7.3	**-0.0064**	0.003	48.7	ug/L	717	Standard
	U	238	32.7	49.0	**-0.0022**	0.003	112.0	ug/L	4	Standard
>	**Bi**	209	451393.6	2.0				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.7600**	8.127	141.1	mg/L	0	Standard
Mg	24	66.7	18.9	**0.0383**	0.010	25.0	mg/L	20	Standard
K	39	15.0	66.7	**-0.1191**	0.074	61.9	mg/L	22	Standard
Ca	43	28.3	36.7	**-7.1219**	1.762	24.7	mg/L	47	Standard
Fe	54	147.9	22.4	**-0.0038**	0.019	492.3	mg/L	151	Standard
Fe	57	200.0	17.5	**-0.0677**	0.127	187.5	mg/L	195	Standard
Sc-1	45	31897.0	7.4				mg/L	29647	Standard
Cl	35	166760.1	1.1				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	1793.4	4.2				ug/L	1607	Standard
P	31	26206.0	1.2				ug/L	22752	Standard
S	34	5832.8	0.3				ug/L	5049	Standard
Sr	88	61.7	26.1				ug/L	87	Standard
C	12	43.3	35.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.9	118.8				mg/L	10	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	10.0					mg/L	3	Standard
I	127	1290.1	6.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.180	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.938
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.056
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606061601
Sample Date/Time: Thursday, June 16, 2016 21:13:26
Number of Replicates: 3
Autosampler Position: 352
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57249.6	1.2				ug/L	51024	Standard
	Be	9	55.0	9.1	**0.0372**	0.006	15.0	ug/L	7	Standard
	Al	27	393587.4	1.7	**2.4548**	0.057	2.3	ug/L	625	Standard
	Sc	45	32406.3	3.0				ug/L	29647	Standard
	Ti	47	74.0	10.7	**0.0892**	0.028	31.0	ug/L	57	Standard
	V	51	636.6	76.8	**-0.0758**	0.071	93.6	ug/L	1142	Standard
	Cr	52	85601.8	0.6	**11.1086**	0.082	0.7	ug/L	6628	Standard
	Cr	53	11320.9	1.4	**12.1647**	0.172	1.4	ug/L	430	Standard
	Mn	55	80985.9	0.3	**13.9862**	0.035	0.3	ug/L	603	Standard
	Co	59	9834.2	0.6	**1.5416**	0.010	0.6	ug/L	237	Standard
	Ni	60	33446.9	0.3	**17.8603**	0.057	0.3	ug/L	141	Standard
	Cu	65	1052.4	3.7	**0.5130**	0.021	4.2	ug/L	109	Standard
	Zn	66	2617.6	1.1	**2.2110**	0.025	1.1	ug/L	159	Standard
>	**Ge**	72	458154.0	0.1				ug/L	474053	Standard
	As	75	49.8	49.2	**0.0716**	0.023	32.0	ug/L	-34	Standard
	Se	82	42.6	32.1	**0.2293**	0.128	56.0	ug/L	14	Standard
	Se-1	77	102.7	16.6	**0.6383**	0.227	35.6	ug/L	55	Standard
>	**Ga**	71	63.3	35.6				mg/L	50	Standard
	Rb	85	306.7	30.8				ug/L	20	Standard
	Y	89	402460.8	1.4				ug/L	376602	Standard
>	**Rh**	103	15.0	0.0				ug/L	17	Standard
	Mo	98	305.2	3.6	**0.1192**	0.004	3.0	ug/L	8	Standard
	Ag	107	82.0	8.5	**0.0009**	0.001	110.4	ug/L	81	Standard
	Cd	111	31.7	1.8	**0.0126**	0.000	1.7	mg/L	3	Standard
	Cd	114	86.0	11.3	**0.0135**	0.002	15.6	ug/L	7	Standard
>	**In**	115	543559.4	0.9				ug/L	524722	Standard
	Sn	118	521.7	5.3	**0.0040**	0.005	126.9	ug/L	715	Standard
	Sb	123	172.0	20.3	**0.0232**	0.008	34.4	ug/L	201	Standard
	Ba	135	10412.6	2.3	**5.4875**	0.099	1.8	ug/L	108	Standard
	Ce	140	1425.1	2.1				ug/L	30	Standard
>	**Tb**	159	802846.0	2.9				ug/L	792236	Standard
	Ho	165	38.3	49.4				ug/L	7	Standard
	Tl	203	181.0	5.8	**0.0217**	0.002	7.1	ug/L	9	Standard
	Tl	205	158.3	6.6	**0.0171**	0.002	12.3	ug/L	0	Standard
	Pb	206	323.7	3.9	**0.0154**	0.001	9.1	ug/L	216	Standard
	Pb	207	297.3	15.5	**0.0184**	0.010	54.3	ug/L	180	Standard
	Pb	208	1247.7	4.4	**0.0169**	0.002	11.0	ug/L	717	Standard
	U	238	59.7	21.2	**0.0022**	0.002	84.4	ug/L	4	Standard
>	**Bi**	209	449878.2	2.0				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	5219.2	4.5	**6.4369**	0.460	7.1	mg/L	20	Standard
K	39	20.0	25.0	**-0.0887**	0.033	37.4	mg/L	22	Standard
Ca	43	31.7	48.2	**-6.3893**	3.387	53.0	mg/L	47	Standard
Fe	54	173.5	30.0	**0.0146**	0.041	283.6	mg/L	151	Standard
Fe	57	193.3	26.5	**-0.1009**	0.133	132.3	mg/L	195	Standard
> **Sc-1**	45	32406.3	3.0				mg/L	29647	Standard
Cl	35	165598.8	1.0				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	7865.4	1.7				ug/L	1607	Standard
P	31	25877.1	1.5				ug/L	22752	Standard
S	34	5332.6	2.3				ug/L	5049	Standard
Sr	88	75.0	53.3				ug/L	87	Standard
C	12	26.7	86.6				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	38.2	28.0				mg/L	10	Standard
Ho-1	165	38.3	49.4				mg/L	7	Standard
Er	166	36.7	41.7				mg/L	3	Standard
I	127	9661.4	1.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.201	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.646	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.590	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.727	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606061602
Sample Date/Time: Thursday, June 16, 2016 21:16:38
Number of Replicates: 3
Autosampler Position: 353
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54740.4	1.6				ug/L	51024	Standard
	Be	9	13.3	78.1	**-0.0064**	0.011	174.7	ug/L	7	Standard
	Al	27	1805152.0	1.4	**11.8114**	0.177	1.5	ug/L	625	Standard
	Sc	45	31105.2	2.7				ug/L	29647	Standard
	Ti	47	145.3	36.9	**0.3297**	0.185	56.3	ug/L	57	Standard
	V	51	1187.4	9.5	**0.0023**	0.015	668.9	ug/L	1142	Standard
	Cr	52	6910.6	1.9	**0.0321**	0.023	70.2	ug/L	6628	Standard
	Cr	53	2121.8	8.3	**1.9016**	0.204	10.7	ug/L	430	Standard
	Mn	55	395363.0	1.6	**67.9452**	1.352	2.0	ug/L	603	Standard
	Co	59	396.7	9.1	**0.0219**	0.006	27.5	ug/L	237	Standard
	Ni	60	325.0	2.7	**0.0944**	0.004	4.0	ug/L	141	Standard
	Cu	65	328.0	3.2	**0.1122**	0.006	5.3	ug/L	109	Standard
	Zn	66	1614.8	2.3	**1.2569**	0.027	2.1	ug/L	159	Standard
>	**Ge**	72	463730.0	0.5				ug/L	474053	Standard
	As	75	191.5	27.2	**0.2018**	0.048	23.7	ug/L	-34	Standard
	Se	82	80.2	8.7	**0.5721**	0.064	11.1	ug/L	14	Standard
	Se-1	77	154.3	3.1	**1.3098**	0.068	5.2	ug/L	55	Standard
>	**Ga**	71	83.3	12.5				mg/L	50	Standard
	Rb	85	2255.2	4.8				ug/L	20	Standard
	Y	89	395085.6	4.8				ug/L	376602	Standard
>	**Rh**	103	30.0	44.1				ug/L	17	Standard
	Mo	98	187.4	6.4	**0.0739**	0.005	6.8	ug/L	8	Standard
	Ag	107	74.0	13.7	**0.0001**	0.002	2155.8	ug/L	81	Standard
	Cd	111	4.7	21.2	**-0.0008**	0.000	58.4	mg/L	3	Standard
	Cd	114	23.6	85.5	**0.0011**	0.004	381.8	ug/L	7	Standard
>	**In**	115	524300.8	1.8				ug/L	524722	Standard
	Sn	118	675.0	7.1	**0.0361**	0.011	30.7	ug/L	715	Standard
	Sb	123	147.3	26.2	**0.0191**	0.009	49.7	ug/L	201	Standard
	Ba	135	46098.7	0.3	**25.3994**	0.381	1.5	ug/L	108	Standard
	Ce	140	986.7	3.2				ug/L	30	Standard
>	**Tb**	159	774505.0	2.0				ug/L	792236	Standard
	Ho	165	13.3	94.4				ug/L	7	Standard
	Tl	203	220.3	5.0	**0.0280**	0.002	6.1	ug/L	9	Standard
	Tl	205	203.3	19.9	**0.0253**	0.006	25.4	ug/L	0	Standard
	Pb	206	323.3	2.8	**0.0179**	0.002	12.9	ug/L	216	Standard
	Pb	207	301.7	4.5	**0.0222**	0.003	14.6	ug/L	180	Standard
	Pb	208	1220.4	3.0	**0.0179**	0.003	14.6	ug/L	717	Standard
	U	238	72.3	70.3	**0.0048**	0.009	183.1	ug/L	4	Standard
>	**Bi**	209	434377.4	0.6				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	9573.0	1.2	**12.3290**	0.229	1.9	mg/L	20	Standard
K	39	33.3	22.9	**0.0143**	0.056	391.5	mg/L	22	Standard
Ca	43	41.7	42.1	**-3.8937**	4.020	103.2	mg/L	47	Standard
Fe	54	3391.5	3.3	**2.5135**	0.063	2.5	mg/L	151	Standard
Fe	57	1036.7	3.7	**2.4151**	0.178	7.4	mg/L	195	Standard
> **Sc-1**	45	31105.2	2.7				mg/L	29647	Standard
Cl	35	163124.3	2.0				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	18861.8	5.5				ug/L	1607	Standard
P	31	25780.2	1.2				ug/L	22752	Standard
S	34	5427.6	1.2				ug/L	5049	Standard
Sr	88	133.3	17.7				ug/L	87	Standard
C	12	63.3	48.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	29.4	2.5				mg/L	10	Standard
Ho-1	165	13.3	94.4				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	3	Standard
I	127	27164.5	9.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.283	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.822	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.920
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.360
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606061604
Sample Date/Time: Thursday, June 16, 2016 21:19:49
Number of Replicates: 3
Autosampler Position: 354
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54814.0	0.5				ug/L	51024	Standard
	Be	9	6.7	86.6	**-0.0137**	0.006	46.5	ug/L	7	Standard
	Al	27	110436.2	2.3	**0.7124**	0.018	2.6	ug/L	625	Standard
	Sc	45	32459.7	0.6				ug/L	29647	Standard
	Ti	47	55.7	9.0	**0.0154**	0.018	115.7	ug/L	57	Standard
	V	51	1190.0	8.3	**-0.0046**	0.017	376.0	ug/L	1142	Standard
	Cr	52	7226.1	2.7	**0.0323**	0.047	144.2	ug/L	6628	Standard
	Cr	53	801.7	5.0	**0.4109**	0.034	8.3	ug/L	430	Standard
	Mn	55	73546.8	1.3	**11.9804**	0.177	1.5	ug/L	603	Standard
	Co	59	487.0	1.6	**0.0328**	0.001	4.1	ug/L	237	Standard
	Ni	60	526.7	1.8	**0.1891**	0.010	5.0	ug/L	141	Standard
	Cu	65	380.0	8.6	**0.1312**	0.013	9.7	ug/L	109	Standard
	Zn	66	2004.8	2.3	**1.5353**	0.023	1.5	ug/L	159	Standard
>	**Ge**	72	485083.0	2.2				ug/L	474053	Standard
	As	75	-27.5	85.1	**0.0005**	0.021	4240.8	ug/L	-34	Standard
	Se	82	14.1	16.8	**-0.0441**	0.023	53.0	ug/L	14	Standard
	Se-1	77	56.3	6.2	**-0.0281**	0.039	138.2	ug/L	55	Standard
>	**Ga**	71	65.0	27.7				mg/L	50	Standard
	Rb	85	975.0	3.7				ug/L	20	Standard
	Y	89	385735.6	1.3				ug/L	376602	Standard
>	**Rh**	103	33.3	48.2				ug/L	17	Standard
	Mo	98	31.0	17.9	**0.0076**	0.002	32.0	ug/L	8	Standard
	Ag	107	69.3	9.6	**-0.0007**	0.001	178.9	ug/L	81	Standard
	Cd	111	35.6	7.1	**0.0152**	0.001	9.3	mg/L	3	Standard
	Cd	114	78.6	33.7	**0.0126**	0.006	43.8	ug/L	7	Standard
>	**In**	115	522479.0	0.6				ug/L	524722	Standard
	Sn	118	488.3	12.5	**0.0016**	0.012	727.2	ug/L	715	Standard
	Sb	123	114.8	19.9	**0.0116**	0.005	46.5	ug/L	201	Standard
	Ba	135	3662.8	1.7	**1.9717**	0.029	1.5	ug/L	108	Standard
	Ce	140	251.7	12.1				ug/L	30	Standard
>	**Tb**	159	792180.5	1.3				ug/L	792236	Standard
	Ho	165	13.3	21.7				ug/L	7	Standard
	Tl	203	47.3	14.4	**0.0036**	0.001	25.0	ug/L	9	Standard
	Tl	205	38.3	27.2	**-0.0019**	0.002	86.2	ug/L	0	Standard
	Pb	206	262.0	5.8	**0.0007**	0.003	518.6	ug/L	216	Standard
	Pb	207	237.7	10.4	**0.0030**	0.006	203.7	ug/L	180	Standard
	Pb	208	979.3	1.2	**-0.0002**	0.001	232.5	ug/L	717	Standard
	U	238	9.3	43.3	**-0.0061**	0.001	10.8	ug/L	4	Standard
>	**Bi**	209	458288.4	0.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	298.3	19.4	**0.3240**	0.070	21.6	mg/L	20	Standard
K	39	26.7	65.8	**-0.0419**	0.123	294.6	mg/L	22	Standard
Ca	43	43.3	52.0	**-3.9540**	4.787	121.1	mg/L	47	Standard
Fe	54	369.3	3.6	**0.1593**	0.010	6.3	mg/L	151	Standard
Fe	57	236.7	13.4	**0.0219**	0.086	394.4	mg/L	195	Standard
Sc-1	45	32459.7	0.6				mg/L	29647	Standard
Cl	35	161744.2	1.3				ug/L	154152	Standard
Kr	83	2.7	78.1				ug/L	3	Standard
Br	81	2450.2	3.6				ug/L	1607	Standard
P	31	25593.3	1.9				ug/L	22752	Standard
S	34	5534.3	4.3				ug/L	5049	Standard
Sr	88	81.7	34.8				ug/L	87	Standard
C	12	56.7	40.8				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.2	113.9				mg/L	10	Standard
Ho-1	165	13.3	21.7				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	3	Standard
I	127	11324.2	2.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		107.428	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.327	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606061604
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.573
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.554
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606065001
Sample Date/Time: Thursday, June 16, 2016 21:23:01
Number of Replicates: 3
Autosampler Position: 355
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56128.8	1.5				ug/L	51024	Standard
	Be	9	8.3	34.6	**-0.0121**	0.003	26.6	ug/L	7	Standard
	Al	27	482122.3	0.7	**3.0698**	0.068	2.2	ug/L	625	Standard
	Sc	45	32641.8	1.6				ug/L	29647	Standard
	Ti	47	45.3	15.0	**-0.0118**	0.021	178.3	ug/L	57	Standard
	V	51	499.2	13.7	**-0.0967**	0.009	9.3	ug/L	1142	Standard
	Cr	52	82458.1	0.9	**10.5208**	0.076	0.7	ug/L	6628	Standard
	Cr	53	10431.9	1.2	**11.0318**	0.293	2.7	ug/L	430	Standard
	Mn	55	79305.3	0.7	**13.5203**	0.175	1.3	ug/L	603	Standard
	Co	59	2974.6	1.7	**0.4315**	0.004	1.0	ug/L	237	Standard
	Ni	60	33369.4	1.4	**17.5928**	0.059	0.3	ug/L	141	Standard
	Cu	65	207.3	9.4	**0.0465**	0.009	20.2	ug/L	109	Standard
	Zn	66	1251.4	5.4	**0.9209**	0.049	5.4	ug/L	159	Standard
>	**Ge**	72	464010.1	1.4				ug/L	474053	Standard
	As	75	2.0	650.9	**0.0269**	0.012	45.0	ug/L	-34	Standard
	Se	82	23.1	30.3	**0.0449**	0.067	148.0	ug/L	14	Standard
	Se-1	77	78.7	3.2	**0.3022**	0.048	15.8	ug/L	55	Standard
>	**Ga**	71	63.3	32.9				mg/L	50	Standard
	Rb	85	220.0	4.5				ug/L	20	Standard
	Y	89	399793.1	1.3				ug/L	376602	Standard
>	**Rh**	103	18.3	103.3				ug/L	17	Standard
	Mo	98	108.7	5.3	**0.0384**	0.002	6.3	ug/L	8	Standard
	Ag	107	73.7	11.4	**-0.0005**	0.001	257.8	ug/L	81	Standard
	Cd	111	9.8	27.0	**0.0016**	0.001	82.1	mg/L	3	Standard
	Cd	114	29.3	22.9	**0.0020**	0.001	66.1	ug/L	7	Standard
>	**In**	115	548875.7	0.2				ug/L	524722	Standard
	Sn	118	460.0	8.7	**-0.0078**	0.007	89.3	ug/L	715	Standard
	Sb	123	86.5	15.7	**0.0041**	0.003	71.3	ug/L	201	Standard
	Ba	135	20540.6	0.3	**10.7757**	0.041	0.4	ug/L	108	Standard
	Ce	140	105.0	17.2				ug/L	30	Standard
>	**Tb**	159	820934.6	1.9				ug/L	792236	Standard
	Ho	165	20.0	25.0				ug/L	7	Standard
	Tl	203	96.0	11.0	**0.0101**	0.002	16.2	ug/L	9	Standard
	Tl	205	83.3	24.2	**0.0050**	0.003	58.6	ug/L	0	Standard
	Pb	206	282.0	1.9	**0.0050**	0.002	36.7	ug/L	216	Standard
	Pb	207	225.3	3.3	**-0.0000**	0.001	53500.0	ug/L	180	Standard
	Pb	208	968.3	3.8	**-0.0009**	0.003	322.0	ug/L	717	Standard
	U	238	52.7	14.0	**0.0010**	0.001	142.8	ug/L	4	Standard
>	**Bi**	209	458406.1	1.9				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1866.8	2.0	**2.2543**	0.080	3.6	mg/L	20	Standard
K	39	16.7	96.4	**-0.1137**	0.109	95.5	mg/L	22	Standard
Ca	43	30.0	44.1	**-6.8062**	2.881	42.3	mg/L	47	Standard
Fe	54	329.9	10.2	**0.1288**	0.026	20.3	mg/L	151	Standard
Fe	57	233.3	15.5	**0.0097**	0.106	1102.3	mg/L	195	Standard
> **Sc-1**	45	32641.8	1.6				mg/L	29647	Standard
Cl	35	163083.7	0.8				ug/L	154152	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	2766.9	2.7				ug/L	1607	Standard
P	31	25266.1	2.8				ug/L	22752	Standard
S	34	5369.3	3.4				ug/L	5049	Standard
Sr	88	88.3	8.6				ug/L	87	Standard
C	12	30.0	57.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.9	122.5				mg/L	10	Standard
Ho-1	165	20.0	25.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	9619.7	7.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.004	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.881	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.603
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.579
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606065001
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Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606065002
Sample Date/Time: Thursday, June 16, 2016 21:26:12
Number of Replicates: 3
Autosampler Position: 356
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54365.7	1.4				ug/L	51024	Standard
	Be	9	15.0	57.7	**-0.0044**	0.010	217.8	ug/L	7	Standard
	Al	27	1025103.4	0.5	**6.7495**	0.066	1.0	ug/L	625	Standard
	Sc	45	32087.3	3.3				ug/L	29647	Standard
	Ti	47	91.0	58.5	**0.1440**	0.181	125.8	ug/L	57	Standard
	V	51	1237.3	4.1	**0.0097**	0.009	93.5	ug/L	1142	Standard
	Cr	52	7747.0	1.2	**0.1491**	0.005	3.5	ug/L	6628	Standard
	Cr	53	1525.1	10.3	**1.2446**	0.145	11.6	ug/L	430	Standard
	Mn	55	121524.7	0.0	**20.8162**	0.350	1.7	ug/L	603	Standard
	Co	59	489.3	10.2	**0.0367**	0.008	22.6	ug/L	237	Standard
	Ni	60	546.0	2.6	**0.2119**	0.012	5.8	ug/L	141	Standard
	Cu	65	411.0	3.0	**0.1575**	0.006	3.6	ug/L	109	Standard
	Zn	66	2195.8	1.8	**1.7944**	0.008	0.5	ug/L	159	Standard
>	**Ge**	72	463367.3	1.7				ug/L	474053	Standard
	As	75	18.1	195.3	**0.0420**	0.032	77.3	ug/L	-34	Standard
	Se	82	30.0	13.1	**0.1083**	0.035	32.1	ug/L	14	Standard
	Se-1	77	106.3	6.3	**0.6711**	0.066	9.8	ug/L	55	Standard
>	**Ga**	71	40.0	54.5				mg/L	50	Standard
	Rb	85	1018.4	11.8				ug/L	20	Standard
	Y	89	407107.2	1.0				ug/L	376602	Standard
>	**Rh**	103	23.3	12.4				ug/L	17	Standard
	Mo	98	59.9	56.3	**0.0195**	0.014	72.7	ug/L	8	Standard
	Ag	107	115.7	63.4	**0.0068**	0.012	179.6	ug/L	81	Standard
	Cd	111	19.6	16.6	**0.0067**	0.002	24.0	mg/L	3	Standard
	Cd	114	62.3	30.6	**0.0090**	0.004	42.7	ug/L	7	Standard
>	**In**	115	532203.3	2.6				ug/L	524722	Standard
	Sn	118	596.7	23.5	**0.0202**	0.028	136.6	ug/L	715	Standard
	Sb	123	167.7	43.4	**0.0231**	0.017	71.6	ug/L	201	Standard
	Ba	135	32786.1	2.0	**17.7838**	0.579	3.3	ug/L	108	Standard
	Ce	140	491.7	8.2				ug/L	30	Standard
>	**Tb**	159	779044.5	1.2				ug/L	792236	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	239.0	44.6	**0.0304**	0.015	49.0	ug/L	9	Standard
	Tl	205	176.7	20.9	**0.0208**	0.006	27.7	ug/L	0	Standard
	Pb	206	322.7	21.3	**0.0173**	0.016	92.8	ug/L	216	Standard
	Pb	207	291.0	18.0	**0.0192**	0.014	70.8	ug/L	180	Standard
	Pb	208	1188.0	5.2	**0.0154**	0.003	22.6	ug/L	717	Standard
	U	238	183.3	6.3	**0.0235**	0.002	9.7	ug/L	4	Standard
>	**Bi**	209	437003.3	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	7120.0	1.8	**8.8768**	0.151	1.7	mg/L	20	Standard
K	39	41.7	27.7	**0.0654**	0.079	121.4	mg/L	22	Standard
Ca	43	41.7	42.1	**-4.2187**	3.620	85.8	mg/L	47	Standard
Fe	54	137.5	7.6	**-0.0117**	0.005	43.2	mg/L	151	Standard
Fe	57	181.7	19.3	**-0.1275**	0.097	75.8	mg/L	195	Standard
> **Sc-1**	45	32087.3	3.3				mg/L	29647	Standard
Cl	35	166481.1	1.4				ug/L	154152	Standard
Kr	83	1.0	0.0				ug/L	3	Standard
Br	81	4110.6	4.2				ug/L	1607	Standard
P	31	25599.9	1.8				ug/L	22752	Standard
S	34	5374.3	5.2				ug/L	5049	Standard
Sr	88	101.7	24.3				ug/L	87	Standard
C	12	36.7	41.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.4	106.9				mg/L	10	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	76002.0	4.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.549	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.746	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.426
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.930
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606065003
Sample Date/Time: Thursday, June 16, 2016 21:29:23
Number of Replicates: 3
Autosampler Position: 357
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54541.3	1.2				ug/L	51024	Standard
	Be	9	8.3	124.9	**-0.0119**	0.012	97.1	ug/L	7	Standard
	Al	27	606559.5	1.5	**3.9772**	0.101	2.5	ug/L	625	Standard
	Sc	45	31063.5	1.7				ug/L	29647	Standard
	Ti	47	165.3	5.8	**0.3810**	0.031	8.1	ug/L	57	Standard
	V	51	733.0	77.1	**-0.0659**	0.079	120.2	ug/L	1142	Standard
	Cr	52	157074.9	2.2	**20.2677**	0.514	2.5	ug/L	6628	Standard
	Cr	53	20141.7	1.4	**21.0752**	0.347	1.6	ug/L	430	Standard
	Mn	55	101750.2	1.1	**16.8892**	0.212	1.3	ug/L	603	Standard
	Co	59	1910.5	3.6	**0.2538**	0.010	4.1	ug/L	237	Standard
	Ni	60	8863.6	2.0	**4.4841**	0.097	2.2	ug/L	141	Standard
	Cu	65	1674.4	2.3	**0.8182**	0.022	2.7	ug/L	109	Standard
	Zn	66	2740.2	2.8	**2.2224**	0.074	3.3	ug/L	159	Standard
>	**Ge**	72	477422.4	0.2				ug/L	474053	Standard
	As	75	139.6	40.2	**0.1503**	0.051	33.7	ug/L	-34	Standard
	Se	82	42.3	11.2	**0.2113**	0.043	20.3	ug/L	14	Standard
	Se-1	77	93.0	6.5	**0.4578**	0.081	17.7	ug/L	55	Standard
>	**Ga**	71	101.7	37.2				mg/L	50	Standard
	Rb	85	1565.1	2.0				ug/L	20	Standard
	Y	89	382720.6	3.5				ug/L	376602	Standard
>	**Rh**	103	20.0	66.1				ug/L	17	Standard
	Mo	98	639.1	4.3	**0.2676**	0.013	4.7	ug/L	8	Standard
	Ag	107	90.7	24.5	**0.0030**	0.004	127.1	ug/L	81	Standard
	Cd	111	110.9	7.8	**0.0545**	0.005	9.0	mg/L	3	Standard
	Cd	114	275.8	13.3	**0.0542**	0.008	14.0	ug/L	7	Standard
>	**In**	115	519830.3	1.0				ug/L	524722	Standard
	Sn	118	653.3	27.4	**0.0332**	0.035	105.0	ug/L	715	Standard
	Sb	123	127.7	28.4	**0.0147**	0.009	58.6	ug/L	201	Standard
	Ba	135	11175.1	0.7	**6.1659**	0.078	1.3	ug/L	108	Standard
	Ce	140	2495.2	5.2				ug/L	30	Standard
>	**Tb**	159	780545.7	0.5				ug/L	792236	Standard
	Ho	165	53.3	48.1				ug/L	7	Standard
	Tl	203	163.0	29.4	**0.0195**	0.006	33.3	ug/L	9	Standard
	Tl	205	135.0	9.8	**0.0137**	0.002	15.9	ug/L	0	Standard
	Pb	206	547.3	5.3	**0.0663**	0.008	11.4	ug/L	216	Standard
	Pb	207	444.0	2.8	**0.0555**	0.004	6.9	ug/L	180	Standard
	Pb	208	1903.7	3.0	**0.0576**	0.005	8.4	ug/L	717	Standard
	U	238	51.3	38.7	**0.0010**	0.003	341.9	ug/L	4	Standard
>	**Bi**	209	444975.8	1.2				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3707.1	1.1	**4.7531**	0.132	2.8	mg/L	20	Standard
K	39	33.3	17.3	**0.0146**	0.042	286.2	mg/L	22	Standard
Ca	43	30.0	57.7	**-6.5001**	3.854	59.3	mg/L	47	Standard
Fe	54	681.6	4.0	**0.4140**	0.022	5.2	mg/L	151	Standard
Fe	57	318.3	7.1	**0.2945**	0.082	27.9	mg/L	195	Standard
> **Sc-1**	45	31063.5	1.7				mg/L	29647	Standard
Cl	35	164261.1	1.5				ug/L	154152	Standard
Kr	83	2.0	86.6				ug/L	3	Standard
Br	81	7888.7	5.8				ug/L	1607	Standard
P	31	24920.5	3.3				ug/L	22752	Standard
S	34	5307.6	1.0				ug/L	5049	Standard
Sr	88	88.3	8.6				ug/L	87	Standard
C	12	40.0	25.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	74.8	18.4				mg/L	10	Standard
Ho-1	165	53.3	48.1				mg/L	7	Standard
Er	166	40.0	90.1				mg/L	3	Standard
I	127	17526.8	1.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.893	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.711	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.068
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.662
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606065008
Sample Date/Time: Thursday, June 16, 2016 21:32:35
Number of Replicates: 3
Autosampler Position: 358
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55971.5	1.2				ug/L	51024	Standard
	Be	9	16.7	121.2	**-0.0030**	0.022	732.0	ug/L	7	Standard
	Al	27	227217.9	1.2	**1.4454**	0.014	1.0	ug/L	625	Standard
	Sc	45	33091.1	0.4				ug/L	29647	Standard
	Ti	47	93.0	12.2	**0.1482**	0.035	23.3	ug/L	57	Standard
	V	51	1468.9	10.6	**0.0412**	0.020	48.4	ug/L	1142	Standard
	Cr	52	7242.7	0.8	**0.0709**	0.012	17.1	ug/L	6628	Standard
	Cr	53	1168.4	6.4	**0.8438**	0.086	10.2	ug/L	430	Standard
	Mn	55	143314.1	1.9	**24.3672**	0.286	1.2	ug/L	603	Standard
	Co	59	707.7	4.5	**0.0704**	0.004	5.3	ug/L	237	Standard
	Ni	60	1968.1	3.3	**0.9574**	0.026	2.8	ug/L	141	Standard
	Cu	65	534.7	8.0	**0.2223**	0.018	8.2	ug/L	109	Standard
	Zn	66	4633.0	0.1	**4.0098**	0.079	2.0	ug/L	159	Standard
>	**Ge**	72	467157.4	1.9				ug/L	474053	Standard
	As	75	68.4	19.1	**0.0878**	0.012	13.9	ug/L	-34	Standard
	Se	82	42.7	11.5	**0.2237**	0.049	22.1	ug/L	14	Standard
	Se-1	77	88.3	9.6	**0.4216**	0.095	22.5	ug/L	55	Standard
>	**Ga**	71	53.3	28.6				mg/L	50	Standard
	Rb	85	821.7	8.3				ug/L	20	Standard
	Y	89	390712.9	1.8				ug/L	376602	Standard
>	**Rh**	103	16.7	96.4				ug/L	17	Standard
	Mo	98	26.7	10.2	**0.0055**	0.001	23.5	ug/L	8	Standard
	Ag	107	72.3	16.0	**-0.0005**	0.002	422.0	ug/L	81	Standard
	Cd	111	13.3	4.3	**0.0034**	0.000	6.8	mg/L	3	Standard
	Cd	114	40.2	32.3	**0.0044**	0.003	63.9	ug/L	7	Standard
>	**In**	115	538841.7	2.0				ug/L	524722	Standard
	Sn	118	488.3	14.9	**-0.0013**	0.012	965.6	ug/L	715	Standard
	Sb	123	100.5	11.8	**0.0076**	0.002	30.8	ug/L	201	Standard
	Ba	135	7028.6	0.9	**3.7196**	0.097	2.6	ug/L	108	Standard
	Ce	140	2670.2	3.1				ug/L	30	Standard
>	**Tb**	159	805010.7	0.6				ug/L	792236	Standard
	Ho	165	43.3	40.5				ug/L	7	Standard
	Tl	203	119.0	4.4	**0.0131**	0.001	5.7	ug/L	9	Standard
	Tl	205	95.0	22.9	**0.0069**	0.003	48.8	ug/L	0	Standard
	Pb	206	254.0	2.5	**-0.0008**	0.002	244.2	ug/L	216	Standard
	Pb	207	226.3	9.4	**0.0004**	0.004	982.1	ug/L	180	Standard
	Pb	208	875.0	3.9	**-0.0061**	0.002	39.4	ug/L	717	Standard
	U	238	28.3	19.4	**-0.0030**	0.001	30.6	ug/L	4	Standard
>	**Bi**	209	456325.9	1.4				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3722.1	3.3	**4.4755**	0.132	3.0	mg/L	20	Standard
K	39	21.7	48.0	**-0.0800**	0.071	88.6	mg/L	22	Standard
Ca	43	38.3	49.4	**-5.1655**	3.960	76.7	mg/L	47	Standard
Fe	54	149.3	20.9	**-0.0062**	0.023	370.8	mg/L	151	Standard
Fe	57	191.7	19.2	**-0.1152**	0.104	90.0	mg/L	195	Standard
> **Sc-1**	45	33091.1	0.4				mg/L	29647	Standard
Cl	35	167461.1	1.4				ug/L	154152	Standard
Kr	83	2.3	49.5				ug/L	3	Standard
Br	81	7938.7	3.1				ug/L	1607	Standard
P	31	24910.5	1.2				ug/L	22752	Standard
S	34	5120.9	0.9				ug/L	5049	Standard
Sr	88	83.3	3.5				ug/L	87	Standard
C	12	63.3	48.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	67.9	15.4				mg/L	10	Standard
Ho-1	165	43.3	40.5				mg/L	7	Standard
Er	166	43.3	26.6				mg/L	3	Standard
I	127	7648.6	2.6				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		109.696	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.545	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.691	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.127	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606073001
Sample Date/Time: Thursday, June 16, 2016 21:35:46
Number of Replicates: 3
Autosampler Position: 359
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55371.0	2.2				ug/L	51024	Standard
	Be	9	11.7	65.5	**-0.0084**	0.008	97.7	ug/L	7	Standard
	Al	27	132096.8	1.8	**0.8455**	0.012	1.5	ug/L	625	Standard
	Sc	45	31868.5	4.0				ug/L	29647	Standard
	Ti	47	30.0	17.3	**-0.0614**	0.019	31.4	ug/L	57	Standard
	V	51	1455.6	7.2	**0.0453**	0.013	29.6	ug/L	1142	Standard
	Cr	52	11040.4	2.7	**0.6383**	0.023	3.6	ug/L	6628	Standard
	Cr	53	1623.4	8.3	**1.3902**	0.129	9.3	ug/L	430	Standard
	Mn	55	1201.0	0.7	**0.0848**	0.004	4.7	ug/L	603	Standard
	Co	59	375.7	2.3	**0.0198**	0.001	6.0	ug/L	237	Standard
	Ni	60	312.3	3.4	**0.0912**	0.004	4.7	ug/L	141	Standard
	Cu	65	236.3	2.7	**0.0651**	0.002	3.6	ug/L	109	Standard
	Zn	66	1941.8	2.7	**1.5970**	0.055	3.5	ug/L	159	Standard
>	**Ge**	72	454022.4	1.2				ug/L	474053	Standard
	As	75	11.9	146.3	**0.0364**	0.016	45.2	ug/L	-34	Standard
	Se	82	31.4	12.8	**0.1281**	0.041	32.3	ug/L	14	Standard
	Se-1	77	87.7	5.7	**0.4469**	0.060	13.4	ug/L	55	Standard
>	**Ga**	71	95.0	18.2				mg/L	50	Standard
	Rb	85	4872.5	2.9				ug/L	20	Standard
	Y	89	404770.5	0.6				ug/L	376602	Standard
>	**Rh**	103	80.0	22.5				ug/L	17	Standard
	Mo	98	116.6	2.8	**0.0416**	0.002	4.6	ug/L	8	Standard
	Ag	107	61.3	24.5	**-0.0025**	0.002	96.4	ug/L	81	Standard
	Cd	111	8.1	43.0	**0.0008**	0.002	229.5	mg/L	3	Standard
	Cd	114	29.0	53.2	**0.0020**	0.003	156.6	ug/L	7	Standard
>	**In**	115	550074.8	1.6				ug/L	524722	Standard
	Sn	118	596.7	39.8	**0.0158**	0.040	254.1	ug/L	715	Standard
	Sb	123	117.4	4.2	**0.0108**	0.001	9.0	ug/L	201	Standard
	Ba	135	36971.7	2.1	**19.3982**	0.128	0.7	ug/L	108	Standard
	Ce	140	30.0	16.7				ug/L	30	Standard
>	**Tb**	159	802021.2	1.6				ug/L	792236	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	154.7	7.4	**0.0182**	0.001	7.8	ug/L	9	Standard
	Tl	205	128.3	9.0	**0.0124**	0.002	14.8	ug/L	0	Standard
	Pb	206	255.7	10.1	**0.0005**	0.007	1256.9	ug/L	216	Standard
	Pb	207	236.0	8.3	**0.0037**	0.003	93.0	ug/L	180	Standard
	Pb	208	980.3	1.1	**0.0011**	0.002	149.5	ug/L	717	Standard
	U	238	28.0	18.9	**-0.0030**	0.001	29.7	ug/L	4	Standard
>	**Bi**	209	448836.9	2.3				ug/L	460343	Standard

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Na	23	5.0	100.0	**-5.1594**	15.986	309.8	mg/L	0	Standard
Mg	24	1993.5	3.8	**2.4733**	0.176	7.1	mg/L	20	Standard
K	39	58.3	21.6	**0.1865**	0.091	48.6	mg/L	22	Standard
Ca	43	45.0	19.2	**-3.3710**	2.098	62.2	mg/L	47	Standard
Fe	54	141.5	17.4	**-0.0075**	0.021	284.9	mg/L	151	Standard
Fe	57	231.7	13.9	**0.0185**	0.068	366.5	mg/L	195	Standard
Sc-1	45	31868.5	4.0				mg/L	29647	Standard
Cl	35	162650.5	1.3				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	5611.0	3.8				ug/L	1607	Standard
P	31	25164.2	0.9				ug/L	22752	Standard
S	34	5320.9	2.9				ug/L	5049	Standard
Sr	88	361.7	6.2				ug/L	87	Standard
C	12	50.0	20.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.0	107.3				mg/L	10	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	3	Standard
I	127	5254.2	4.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		108.519	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.775	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.832
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.501
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606073002
Sample Date/Time: Thursday, June 16, 2016 21:38:59
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52860.4	2.3				ug/L	51024	Standard
	Be	9	10.0	50.0	**-0.0095**	0.006	63.2	ug/L	7	Standard
	Al	27	137711.4	1.6	**0.9241**	0.007	0.7	ug/L	625	Standard
	Sc	45	31095.2	1.2				ug/L	29647	Standard
	Ti	47	32.7	23.2	**-0.0560**	0.026	46.7	ug/L	57	Standard
	V	51	1546.7	3.7	**0.0511**	0.010	20.5	ug/L	1142	Standard
	Cr	52	11025.0	1.4	**0.5840**	0.055	9.5	ug/L	6628	Standard
	Cr	53	1463.4	4.0	**1.1555**	0.040	3.5	ug/L	430	Standard
	Mn	55	1410.7	11.5	**0.1137**	0.033	29.0	ug/L	603	Standard
	Co	59	359.7	1.9	**0.0152**	0.002	14.6	ug/L	237	Standard
	Ni	60	319.3	6.2	**0.0894**	0.014	15.7	ug/L	141	Standard
	Cu	65	200.0	1.3	**0.0412**	0.002	3.9	ug/L	109	Standard
	Zn	66	1969.1	2.4	**1.5596**	0.014	0.9	ug/L	159	Standard
>	**Ge**	72	469994.3	2.3				ug/L	474053	Standard
	As	75	0.5	7482.9	**0.0251**	0.035	138.8	ug/L	-34	Standard
	Se	82	28.5	7.3	**0.0908**	0.014	15.4	ug/L	14	Standard
	Se-1	77	88.7	18.3	**0.4207**	0.218	51.8	ug/L	55	Standard
>	**Ga**	71	73.3	28.4				mg/L	50	Standard
	Rb	85	4865.8	1.3				ug/L	20	Standard
	Y	89	399171.5	2.3				ug/L	376602	Standard
>	**Rh**	103	93.3	12.4				ug/L	17	Standard
	Mo	98	101.9	16.6	**0.0370**	0.006	16.6	ug/L	8	Standard
	Ag	107	61.3	18.0	**-0.0021**	0.002	98.0	ug/L	81	Standard
	Cd	111	6.5	18.0	**0.0001**	0.001	960.6	mg/L	3	Standard
	Cd	114	23.1	68.6	**0.0010**	0.003	344.6	ug/L	7	Standard
>	**In**	115	531069.9	2.8				ug/L	524722	Standard
	Sn	118	445.0	10.3	**-0.0078**	0.009	112.2	ug/L	715	Standard
	Sb	123	65.7	14.2	**0.0001**	0.002	2926.8	ug/L	201	Standard
	Ba	135	36371.9	1.1	**19.7762**	0.433	2.2	ug/L	108	Standard
	Ce	140	41.7	50.0				ug/L	30	Standard
>	**Tb**	159	774515.8	2.9				ug/L	792236	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	160.3	8.2	**0.0195**	0.002	8.6	ug/L	9	Standard
	Tl	205	130.0	21.4	**0.0133**	0.005	36.0	ug/L	0	Standard
	Pb	206	254.0	4.2	**0.0016**	0.003	201.3	ug/L	216	Standard
	Pb	207	204.3	4.4	**-0.0027**	0.002	57.9	ug/L	180	Standard
	Pb	208	941.7	3.4	**0.0002**	0.002	1048.9	ug/L	717	Standard
	U	238	8.3	85.1	**-0.0062**	0.001	19.1	ug/L	4	Standard
>	**Bi**	209	437592.9	1.4				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1953.5	4.1	**2.4795**	0.082	3.3	mg/L	20	Standard
K	39	41.7	13.9	**0.0748**	0.041	54.3	mg/L	22	Standard
Ca	43	46.7	6.2	**-2.7971**	0.513	18.3	mg/L	47	Standard
Fe	54	137.1	22.1	**-0.0088**	0.022	251.4	mg/L	151	Standard
Fe	57	218.3	25.5	**-0.0034**	0.160	4703.1	mg/L	195	Standard
> **Sc-1**	45	31095.2	1.2				mg/L	29647	Standard
Cl	35	164376.3	1.5				ug/L	154152	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	5667.7	1.8				ug/L	1607	Standard
P	31	24892.1	1.3				ug/L	22752	Standard
S	34	5330.9	2.9				ug/L	5049	Standard
Sr	88	315.0	7.3				ug/L	87	Standard
C	12	43.3	26.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.7	100.8				mg/L	10	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	5250.9	7.1				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.599	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.144	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.210
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.058
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606073003
Sample Date/Time: Thursday, June 16, 2016 21:42:10
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53594.6	1.1				ug/L	51024	Standard
	Be	9	3.3	86.6	**-0.0173**	0.003	18.9	ug/L	7	Standard
	Al	27	2979001.9	0.3	**19.9155**	0.253	1.3	ug/L	625	Standard
	Sc	45	31315.7	0.8				ug/L	29647	Standard
	Ti	47	43.0	24.6	**-0.0251**	0.035	139.3	ug/L	57	Standard
	V	51	1280.4	1.3	**0.0086**	0.002	24.3	ug/L	1142	Standard
	Cr	52	6976.3	2.4	**0.0037**	0.022	588.3	ug/L	6628	Standard
	Cr	53	1470.1	6.4	**1.1220**	0.096	8.5	ug/L	430	Standard
	Mn	55	27960.5	2.4	**4.5016**	0.120	2.7	ug/L	603	Standard
	Co	59	554.3	12.3	**0.0435**	0.010	24.1	ug/L	237	Standard
	Ni	60	395.0	5.1	**0.1235**	0.010	8.4	ug/L	141	Standard
	Cu	65	173.0	8.3	**0.0243**	0.008	31.2	ug/L	109	Standard
	Zn	66	1439.4	0.7	**1.0440**	0.007	0.7	ug/L	159	Standard
>	**Ge**	72	482360.2	0.2				ug/L	474053	Standard
	As	75	84.5	59.0	**0.1001**	0.044	44.2	ug/L	-34	Standard
	Se	82	47.5	19.6	**0.2529**	0.082	32.5	ug/L	14	Standard
	Se-1	77	132.0	7.2	**0.9443**	0.119	12.5	ug/L	55	Standard
>	**Ga**	71	60.0	14.4				mg/L	50	Standard
	Rb	85	475.0	12.1				ug/L	20	Standard
	Y	89	391203.2	1.3				ug/L	376602	Standard
>	**Rh**	103	55.0	9.1				ug/L	17	Standard
	Mo	98	37.9	67.6	**0.0106**	0.011	103.7	ug/L	8	Standard
	Ag	107	71.3	16.2	**-0.0003**	0.002	600.9	ug/L	81	Standard
	Cd	111	5.3	57.7	**-0.0005**	0.002	303.0	mg/L	3	Standard
	Cd	114	27.8	51.3	**0.0020**	0.003	149.5	ug/L	7	Standard
>	**In**	115	521847.0	1.7				ug/L	524722	Standard
	Sn	118	455.0	13.4	**-0.0046**	0.010	225.0	ug/L	715	Standard
	Sb	123	77.8	11.7	**0.0031**	0.002	74.2	ug/L	201	Standard
	Ba	135	148771.2	0.6	**82.4802**	0.932	1.1	ug/L	108	Standard
	Ce	140	300.0	8.7				ug/L	30	Standard
>	**Tb**	159	770703.6	1.1				ug/L	792236	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	215.7	6.2	**0.0270**	0.001	5.4	ug/L	9	Standard
	Tl	205	208.3	27.6	**0.0257**	0.009	34.8	ug/L	0	Standard
	Pb	206	272.0	3.0	**0.0054**	0.003	50.7	ug/L	216	Standard
	Pb	207	232.3	12.8	**0.0041**	0.008	195.9	ug/L	180	Standard
	Pb	208	1012.0	13.3	**0.0042**	0.007	176.0	ug/L	717	Standard
	U	238	232.3	16.7	**0.0315**	0.006	19.1	ug/L	4	Standard
>	**Bi**	209	439553.9	1.5				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	6086.2	1.7	**7.7675**	0.192	2.5	mg/L	20	Standard
K	39	18.3	56.8	**-0.0957**	0.075	77.9	mg/L	22	Standard
Ca	43	40.0	37.5	**-4.3545**	3.269	75.1	mg/L	47	Standard
Fe	54	265.9	15.1	**0.0898**	0.032	35.5	mg/L	151	Standard
Fe	57	201.7	20.0	**-0.0564**	0.115	204.5	mg/L	195	Standard
Sc-1	45	31315.7	0.8				mg/L	29647	Standard
Cl	35	164992.2	0.7				ug/L	154152	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	10840.5	3.2				ug/L	1607	Standard
P	31	25164.2	3.4				ug/L	22752	Standard
S	34	5275.9	3.2				ug/L	5049	Standard
Sr	88	133.3	20.7				ug/L	87	Standard
C	12	53.3	57.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.2	49.6				mg/L	10	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	3	Standard
I	127	4810.8	4.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		105.038	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.752	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.452
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.484
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 21:45:23
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	52964.1	3.2				ug/L	51024	Standard
	Be	9	42168.6	0.7	**48.3246**	1.216	2.5	ug/L	7	Standard
	Al	27	7159091.1	2.4	**48.4492**	0.473	1.0	ug/L	625	Standard
	Sc	45	31200.4	3.4				ug/L	29647	Standard
	Ti	47	30099.2	0.4	**103.9852**	0.489	0.5	ug/L	57	Standard
	V	51	348173.2	0.9	**50.6797**	0.340	0.7	ug/L	1142	Standard
	Cr	52	366090.7	0.6	**50.7470**	0.566	1.1	ug/L	6628	Standard
	Cr	53	45820.9	1.2	**50.7491**	0.901	1.8	ug/L	430	Standard
	Mn	55	317011.4	2.2	**55.3295**	1.324	2.4	ug/L	603	Standard
	Co	59	316851.8	0.1	**51.1533**	0.313	0.6	ug/L	237	Standard
	Ni	60	93845.8	1.6	**50.4491**	1.080	2.1	ug/L	141	Standard
	Cu	65	91207.1	1.9	**50.3255**	1.210	2.4	ug/L	109	Standard
	Zn	66	53728.8	0.5	**50.1071**	0.516	1.0	ug/L	159	Standard
>	Ge	72	456409.0	0.5				ug/L	474053	Standard
	As	75	53094.6	1.6	**49.8317**	1.034	2.1	ug/L	-34	Standard
	Se	82	5335.2	1.1	**49.9428**	0.782	1.6	ug/L	14	Standard
	Se-1	77	3694.5	1.3	**49.2280**	0.868	1.8	ug/L	55	Standard
>	Ga	71	73.3	28.4				mg/L	50	Standard
	Rb	85	751.7	9.7				ug/L	20	Standard
	Y	89	395355.6	1.3				ug/L	376602	Standard
>	Rh	103	41.7	60.4				ug/L	17	Standard
	Mo	98	229935.7	1.0	**95.4610**	1.901	2.0	ug/L	8	Standard
	Ag	107	284501.2	0.4	**46.7556**	0.793	1.7	ug/L	81	Standard
	Cd	111	95579.3	0.6	**48.2915**	1.096	2.3	mg/L	3	Standard
	Cd	114	235319.3	0.3	**48.0921**	0.943	2.0	ug/L	7	Standard
>	In	115	535171.0	1.8				ug/L	524722	Standard
	Sn	118	268883.3	0.8	**48.8581**	0.478	1.0	ug/L	715	Standard
	Sb	123	213216.9	1.1	**47.8524**	0.650	1.4	ug/L	201	Standard
	Ba	135	88420.6	0.7	**47.7774**	0.620	1.3	ug/L	108	Standard
	Ce	140	60.0	52.0				ug/L	30	Standard
>	Tb	159	778568.6	0.9				ug/L	792236	Standard
	Ho	165	13.3	43.3				ug/L	7	Standard
	Tl	203	356552.0	0.9	**49.1981**	0.525	1.1	ug/L	9	Standard
	Tl	205	312384.5	1.4	**50.6927**	1.380	2.7	ug/L	0	Standard
	Pb	206	221782.7	0.3	**50.5795**	0.697	1.4	ug/L	216	Standard
	Pb	207	201563.9	0.5	**50.4967**	0.774	1.5	ug/L	180	Standard
	Pb	208	829379.7	0.4	**51.1985**	0.900	1.8	ug/L	717	Standard
	U	238	307681.0	0.4	**52.2118**	0.917	1.8	ug/L	4	Standard
>	Bi	209	436760.9	1.5				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.2513**	9.008	171.5	mg/L	0	Standard
Mg	24	3917.2	3.4	**5.0034**	0.184	3.7	mg/L	20	Standard
K	39	655.0	10.8	**4.5166**	0.488	10.8	mg/L	22	Standard
Ca	43	65.0	20.4	**1.3136**	3.422	260.5	mg/L	47	Standard
Fe	54	6192.2	4.0	**4.6769**	0.351	7.5	mg/L	151	Standard
Fe	57	1618.4	6.7	**4.1237**	0.452	11.0	mg/L	195	Standard
Sc-1	45	31200.4	3.4				mg/L	29647	Standard
Cl	35	163997.6	1.9				ug/L	154152	Standard
Kr	83	3.7	15.7				ug/L	3	Standard
Br	81	1766.8	4.0				ug/L	1607	Standard
P	31	25599.9	0.9				ug/L	22752	Standard
S	34	5862.8	2.2				ug/L	5049	Standard
Sr	88	68.3	41.6				ug/L	87	Standard
C	12	33.3	34.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	-1.0	50.0				mg/L	10	Standard
Ho-1	165	13.3	43.3				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	3	Standard
I	127	1488.4	8.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	96.649		
Al	27	96.898		
Sc	45			
Ti	47	103.985		
V	51	101.359		
Cr	52	101.494		
Cr	53			
Mn	55	110.659		
Co	59	102.307		
Ni	60	100.898		
Cu	65	100.651		
Zn	66	100.214		
Ge	72		96.278	
As	75	99.663		
Se	82	99.886		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	95.461		
Ag	107	93.511		
Cd	111	96.583		
Cd	114			
In	115		101.991	
Sn	118	97.716		
Sb	123	95.705		
Ba	135	95.555		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.396		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.397		
U	238	104.424		
Bi	209		94.877	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 21:48:35
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51738.2	1.1				ug/L	51024	Standard
	Be	9	8.3	91.7	**-0.0112**	0.009	80.5	ug/L	7	Standard
	Al	27	1365.1	16.8	**-0.0003**	0.002	478.2	ug/L	625	Standard
	Sc	45	32252.6	1.6				ug/L	29647	Standard
	Ti	47	29.0	17.2	**-0.0677**	0.018	26.3	ug/L	57	Standard
	V	51	928.8	10.2	**-0.0358**	0.012	34.3	ug/L	1142	Standard
	Cr	52	6199.9	1.6	**-0.0728**	0.006	8.7	ug/L	6628	Standard
	Cr	53	526.7	17.6	**0.1435**	0.102	70.8	ug/L	430	Standard
	Mn	55	679.7	4.7	**-0.0102**	0.006	62.4	ug/L	603	Standard
	Co	59	222.0	2.4	**-0.0062**	0.001	15.3	ug/L	237	Standard
	Ni	60	127.3	4.5	**-0.0108**	0.003	24.1	ug/L	141	Standard
	Cu	65	129.3	11.3	**0.0037**	0.008	218.4	ug/L	109	Standard
	Zn	66	156.3	8.5	**-0.0888**	0.012	14.0	ug/L	159	Standard
>	**Ge**	72	466990.8	0.9				ug/L	474053	Standard
	As	75	-31.2	100.9	**-0.0035**	0.029	815.0	ug/L	-34	Standard
	Se	82	18.5	27.4	**0.0013**	0.046	3640.7	ug/L	14	Standard
	Se-1	77	60.7	5.3	**0.0572**	0.045	77.9	ug/L	55	Standard
>	**Ga**	71	66.7	41.3				mg/L	50	Standard
	Rb	85	25.0	20.0				ug/L	20	Standard
	Y	89	391075.9	3.9				ug/L	376602	Standard
>	**Rh**	103	35.0	49.5				ug/L	17	Standard
	Mo	98	246.2	31.0	**0.0990**	0.031	31.0	ug/L	8	Standard
	Ag	107	92.0	11.3	**0.0032**	0.002	60.7	ug/L	81	Standard
	Cd	111	9.2	30.0	**0.0015**	0.001	89.3	mg/L	3	Standard
	Cd	114	8.4	58.3	**-0.0021**	0.001	50.3	ug/L	7	Standard
>	**In**	115	521304.7	2.1				ug/L	524722	Standard
	Sn	118	806.7	12.6	**0.0616**	0.022	35.5	ug/L	715	Standard
	Sb	123	413.8	23.7	**0.0808**	0.024	30.2	ug/L	201	Standard
	Ba	135	135.0	17.1	**0.0173**	0.012	72.2	ug/L	108	Standard
	Ce	140	18.3	78.7				ug/L	30	Standard
>	**Tb**	159	770403.7	2.0				ug/L	792236	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	53.3	21.7	**0.0047**	0.002	33.8	ug/L	9	Standard
	Tl	205	41.7	25.0	**-0.0011**	0.002	147.7	ug/L	0	Standard
	Pb	206	231.3	3.6	**-0.0040**	0.002	55.2	ug/L	216	Standard
	Pb	207	191.7	4.4	**-0.0062**	0.002	38.0	ug/L	180	Standard
	Pb	208	830.7	1.5	**-0.0071**	0.001	9.5	ug/L	717	Standard
	U	238	32.3	17.6	**-0.0021**	0.001	45.2	ug/L	4	Standard
>	**Bi**	209	440882.3	0.7				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	40.0	45.1	**0.0046**	0.022	483.5	mg/L	20	Standard
K	39	21.7	13.3	**-0.0762**	0.019	24.7	mg/L	22	Standard
Ca	43	16.7	62.4	**-9.5897**	2.277	23.7	mg/L	47	Standard
Fe	54	154.6	3.2	**0.0006**	0.004	679.4	mg/L	151	Standard
Fe	57	181.7	39.0	**-0.1287**	0.205	159.3	mg/L	195	Standard
> **Sc-1**	45	32252.6	1.6				mg/L	29647	Standard
Cl	35	162535.6	2.7				ug/L	154152	Standard
Kr	83	2.0	100.0				ug/L	3	Standard
Br	81	1583.4	15.5				ug/L	1607	Standard
P	31	25920.5	3.4				ug/L	22752	Standard
S	34	5491.0	2.1				ug/L	5049	Standard
Sr	88	78.3	13.3				ug/L	87	Standard
C	12	43.3	13.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	2.9	173.2				mg/L	10	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	10.0	173.2				mg/L	3	Standard
I	127	951.7	4.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.510	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.349
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.773
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, June 16, 2016 21:51:48
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51025.8	1.8				ug/L	51024	Standard
	Be	9	158.3	20.5	**0.1674**	0.039	23.3	ug/L	7	Standard
	Al	27	703.4	27.7	**-0.0048**	0.001	26.9	ug/L	625	Standard
	Sc	45	32324.5	3.0				ug/L	29647	Standard
	Ti	47	27.3	27.7	**-0.0704**	0.026	37.0	ug/L	57	Standard
	V	51	3596.4	1.1	**0.3627**	0.006	1.6	ug/L	1142	Standard
	Cr	52	11538.7	0.6	**0.7185**	0.004	0.5	ug/L	6628	Standard
	Cr	53	1191.7	2.4	**0.9142**	0.036	4.0	ug/L	430	Standard
	Mn	55	3452.4	2.2	**0.4841**	0.013	2.6	ug/L	603	Standard
	Co	59	2481.5	3.2	**0.3641**	0.012	3.2	ug/L	237	Standard
	Ni	60	2983.6	1.9	**1.5460**	0.025	1.6	ug/L	141	Standard
	Cu	65	1554.1	2.2	**0.8018**	0.018	2.3	ug/L	109	Standard
	Zn	66	6904.6	0.5	**6.3076**	0.040	0.6	ug/L	159	Standard
>	**Ge**	72	451469.6	0.4				ug/L	474053	Standard
	As	75	367.1	3.5	**0.3732**	0.012	3.2	ug/L	-34	Standard
	Se	82	52.6	5.1	**0.3307**	0.024	7.1	ug/L	14	Standard
	Se-1	77	86.0	19.2	**0.4314**	0.229	53.1	ug/L	55	Standard
>	**Ga**	71	36.7	56.8				mg/L	50	Standard
	Rb	85	15.0	145.3				ug/L	20	Standard
	Y	89	372929.0	2.6				ug/L	376602	Standard
>	**Rh**	103	21.7	58.1				ug/L	17	Standard
	Mo	98	53.2	25.4	**0.0175**	0.006	35.6	ug/L	8	Standard
	Ag	107	2191.8	2.9	**0.3621**	0.015	4.2	ug/L	81	Standard
	Cd	111	428.6	3.0	**0.2218**	0.010	4.4	mg/L	3	Standard
	Cd	114	1072.7	8.3	**0.2242**	0.022	10.0	ug/L	7	Standard
>	**In**	115	515022.5	1.7				ug/L	524722	Standard
	Sn	118	460.0	21.8	**-0.0026**	0.018	670.4	ug/L	715	Standard
	Sb	123	1687.6	0.2	**0.3789**	0.008	2.0	ug/L	201	Standard
	Ba	135	1278.4	5.4	**0.6611**	0.044	6.7	ug/L	108	Standard
	Ce	140	11.7	89.2				ug/L	30	Standard
>	**Tb**	159	775692.8	2.1				ug/L	792236	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	561.7	1.8	**0.0736**	0.001	1.5	ug/L	9	Standard
	Tl	205	431.7	7.1	**0.0610**	0.005	8.2	ug/L	0	Standard
	Pb	206	1089.0	2.6	**0.1879**	0.008	4.3	ug/L	216	Standard
	Pb	207	883.7	5.5	**0.1638**	0.011	6.9	ug/L	180	Standard
	Pb	208	3859.2	0.5	**0.1764**	0.003	1.5	ug/L	717	Standard
	U	238	2254.8	1.2	**0.3683**	0.007	1.9	ug/L	4	Standard
>	**Bi**	209	444599.6	0.7				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.3150**	8.898	167.4	mg/L	0	Standard
Mg	24	30.0	16.7	**-0.0079**	0.006	76.0	mg/L	20	Standard
K	39	21.7	66.6	**-0.0767**	0.101	131.3	mg/L	22	Standard
Ca	43	30.0	28.9	**-6.7278**	2.028	30.1	mg/L	47	Standard
Fe	54	87.5	4.0	**-0.0496**	0.004	9.0	mg/L	151	Standard
Fe	57	195.0	9.2	**-0.0929**	0.056	60.4	mg/L	195	Standard
Sc-1	45	32324.5	3.0				mg/L	29647	Standard
Cl	35	156288.7	1.2				ug/L	154152	Standard
Kr	83	3.3	17.3				ug/L	3	Standard
Br	81	1266.7	10.3				ug/L	1607	Standard
P	31	17852.2	2.6				ug/L	22752	Standard
S	34	5659.4	1.8				ug/L	5049	Standard
Sr	88	65.0	40.7				ug/L	87	Standard
C	12	20.0	0.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.2	100.1				mg/L	10	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	985.0	8.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	83.676		
Al	27			
Sc	45			
Ti	47			
V	51	90.668		
Cr	52	89.809		
Cr	53			
Mn	55	96.822		
Co	59	91.014		
Ni	60	96.626		
Cu	65	100.227		
Zn	66	100.922		
Ge	72		95.236	
As	75	93.291		
Se	82	82.669		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	90.533		
Cd	111	92.425		
Cd	114			
> In	115			98.152
Sn	118			
Sb	123	94.728		
Ba	135	88.151		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	91.941		
Tl	205			
Pb	206			
Pb	207			
Pb	208	88.177		
U	238	92.081		
> Bi	209			96.580
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW 58 WG571964-02
Sample Date/Time: Thursday, June 16, 2016 21:55:00
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51882.0	0.7				ug/L	51024	Standard
	Be	9	8.3	91.7	**-0.0113**	0.009	79.6	ug/L	7	Standard
	Al	27	7225.1	1.7	**0.0402**	0.001	2.5	ug/L	625	Standard
	Sc	45	32848.9	2.3				ug/L	29647	Standard
	Ti	47	51.0	25.0	**0.0065**	0.044	672.4	ug/L	57	Standard
	V	51	1196.1	1.0	**0.0022**	0.004	185.3	ug/L	1142	Standard
	Cr	52	7726.6	1.1	**0.1365**	0.019	13.7	ug/L	6628	Standard
	Cr	53	648.3	14.3	**0.2747**	0.094	34.1	ug/L	430	Standard
	Mn	55	2688.6	3.0	**0.3326**	0.014	4.1	ug/L	603	Standard
	Co	59	223.3	5.2	**-0.0060**	0.001	19.7	ug/L	237	Standard
	Ni	60	306.7	5.4	**0.0833**	0.005	5.7	ug/L	141	Standard
	Cu	65	369.3	3.4	**0.1332**	0.011	8.3	ug/L	109	Standard
	Zn	66	1524.4	0.8	**1.1625**	0.045	3.9	ug/L	159	Standard
>	**Ge**	72	467701.0	2.5				ug/L	474053	Standard
	As	75	-29.1	18.5	**-0.0015**	0.005	304.8	ug/L	-34	Standard
	Se	82	20.2	33.1	**0.0162**	0.062	379.4	ug/L	14	Standard
	Se-1	77	49.0	28.8	**-0.1009**	0.171	169.5	ug/L	55	Standard
>	**Ga**	71	70.0	25.8				mg/L	50	Standard
	Rb	85	63.3	19.9				ug/L	20	Standard
	Y	89	385228.3	1.7				ug/L	376602	Standard
>	**Rh**	103	13.3	43.3				ug/L	17	Standard
	Mo	98	91.6	20.6	**0.0329**	0.008	25.1	ug/L	8	Standard
	Ag	107	70.0	10.3	**-0.0007**	0.001	169.4	ug/L	81	Standard
	Cd	111	7.2	21.3	**0.0004**	0.001	191.2	mg/L	3	Standard
	Cd	114	8.6	219.6	**-0.0020**	0.004	198.4	ug/L	7	Standard
>	**In**	115	529391.3	2.2				ug/L	524722	Standard
	Sn	118	1728.4	4.6	**0.2287**	0.017	7.5	ug/L	715	Standard
	Sb	123	139.5	23.6	**0.0168**	0.007	40.4	ug/L	201	Standard
	Ba	135	108.3	10.8	**0.0016**	0.007	433.3	ug/L	108	Standard
	Ce	140	70.0	18.9				ug/L	30	Standard
>	**Tb**	159	807450.9	1.8				ug/L	792236	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	22.0	12.0	**0.0003**	0.000	106.9	ug/L	9	Standard
	Tl	205	30.0	28.9	**-0.0032**	0.001	42.5	ug/L	0	Standard
	Pb	206	253.7	10.4	**-0.0009**	0.006	689.0	ug/L	216	Standard
	Pb	207	220.0	2.1	**-0.0010**	0.001	126.8	ug/L	180	Standard
	Pb	208	877.3	3.6	**-0.0060**	0.002	33.1	ug/L	717	Standard
	U	238	8.7	63.5	**-0.0062**	0.001	14.5	ug/L	4	Standard
>	**Bi**	209	455782.1	0.2				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.5393**	8.509	153.6	mg/L	0	Standard
Mg	24	36.7	7.9	**-0.0004**	0.003	710.4	mg/L	20	Standard
K	39	8.3	34.6	**-0.1703**	0.021	12.2	mg/L	22	Standard
Ca	43	33.3	8.7	**-6.1652**	0.476	7.7	mg/L	47	Standard
Fe	54	150.7	24.4	**-0.0047**	0.025	526.5	mg/L	151	Standard
Fe	57	176.7	14.2	**-0.1527**	0.076	49.6	mg/L	195	Standard
> **Sc-1**	45	32848.9	2.3				mg/L	29647	Standard
Cl	35	161385.0	1.1				ug/L	154152	Standard
Kr	83	3.3	34.6				ug/L	3	Standard
Br	81	1680.1	1.8				ug/L	1607	Standard
P	31	24029.0	2.1				ug/L	22752	Standard
S	34	5571.0	3.7				ug/L	5049	Standard
Sr	88	66.7	56.3				ug/L	87	Standard
C	12	53.3	94.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.2	100.1				mg/L	10	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	1201.7	0.5				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		101.681	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.660	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.890
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.009
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 58 WG571964-02
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Method 6020 - Summary Report

Sample ID: LCSW 58 WG571964-03
Sample Date/Time: Thursday, June 16, 2016 21:58:11
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53618.1	1.9				ug/L	51024	Standard
	Be	9	43223.2	1.9	**48.9062**	0.701	1.4	ug/L	7	Standard
	Al	27	16045.2	3.1	**0.0975**	0.001	1.5	ug/L	625	Standard
	Sc	45	33034.3	2.7				ug/L	29647	Standard
	Ti	47	54.7	14.9	**0.0208**	0.027	130.9	ug/L	57	Standard
	V	51	357626.2	0.2	**51.4076**	0.356	0.7	ug/L	1142	Standard
	Cr	52	377061.2	0.6	**51.6273**	0.257	0.5	ug/L	6628	Standard
	Cr	53	46803.9	1.6	**51.1933**	1.124	2.2	ug/L	430	Standard
	Mn	55	326931.8	1.1	**56.3462**	0.565	1.0	ug/L	603	Standard
	Co	59	321699.5	0.9	**51.2838**	0.209	0.4	ug/L	237	Standard
	Ni	60	96180.4	1.7	**51.0507**	0.482	0.9	ug/L	141	Standard
	Cu	65	95306.5	1.4	**51.9244**	0.344	0.7	ug/L	109	Standard
	Zn	66	56208.1	0.9	**51.7682**	0.278	0.5	ug/L	159	Standard
>	**Ge**	72	462203.6	0.8				ug/L	474053	Standard
	As	75	54677.4	1.3	**50.6686**	0.319	0.6	ug/L	-34	Standard
	Se	82	5471.8	2.6	**50.5742**	0.951	1.9	ug/L	14	Standard
	Se-1	77	3817.1	0.9	**50.2380**	0.317	0.6	ug/L	55	Standard
>	**Ga**	71	60.0	22.0				mg/L	50	Standard
	Rb	85	115.0	15.7				ug/L	20	Standard
	Y	89	401062.4	1.0				ug/L	376602	Standard
>	**Rh**	103	33.3	37.7				ug/L	17	Standard
	Mo	98	55.7	12.6	**0.0170**	0.003	16.7	ug/L	8	Standard
	Ag	107	298947.0	1.2	**47.9637**	0.316	0.7	ug/L	81	Standard
	Cd	111	99244.6	1.4	**48.9502**	0.549	1.1	mg/L	3	Standard
	Cd	114	239743.2	0.7	**47.8326**	0.248	0.5	ug/L	7	Standard
>	**In**	115	548071.7	0.8				ug/L	524722	Standard
	Sn	118	1466.7	2.8	**0.1712**	0.008	4.6	ug/L	715	Standard
	Sb	123	213065.5	1.1	**46.6859**	0.143	0.3	ug/L	201	Standard
	Ba	135	90504.9	1.1	**47.7484**	0.750	1.6	ug/L	108	Standard
	Ce	140	71.7	4.0				ug/L	30	Standard
>	**Tb**	159	809470.0	2.7				ug/L	792236	Standard
	Ho	165	10.0	100.0				ug/L	7	Standard
	Tl	203	363003.7	1.1	**48.3987**	0.635	1.3	ug/L	9	Standard
	Tl	205	319279.0	0.6	**50.0661**	1.366	2.7	ug/L	0	Standard
	Pb	206	230746.8	0.4	**50.8528**	1.062	2.1	ug/L	216	Standard
	Pb	207	202045.2	0.4	**48.9160**	1.313	2.7	ug/L	180	Standard
	Pb	208	862693.1	0.1	**51.4643**	1.296	2.5	ug/L	717	Standard
	U	238	307882.3	0.1	**50.4881**	1.234	2.4	ug/L	4	Standard
>	**Bi**	209	452058.0	2.3				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.4002**	8.750	162.0	mg/L	0	Standard
Mg	24	33.3	8.7	**-0.0046**	0.004	92.7	mg/L	20	Standard
K	39	38.3	32.8	**0.0349**	0.087	249.1	mg/L	22	Standard
Ca	43	31.7	48.2	**-6.5426**	3.175	48.5	mg/L	47	Standard
Fe	54	129.8	11.6	**-0.0203**	0.010	51.0	mg/L	151	Standard
Fe	57	178.3	5.8	**-0.1508**	0.042	28.0	mg/L	195	Standard
> **Sc-1**	45	33034.3	2.7				mg/L	29647	Standard
Cl	35	160489.1	2.1				ug/L	154152	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	1963.5	7.4				ug/L	1607	Standard
P	31	24446.4	2.0				ug/L	22752	Standard
S	34	5609.4	5.5				ug/L	5049	Standard
Sr	88	61.7	16.9				ug/L	87	Standard
C	12	83.3	59.2				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	16.2	127.9				mg/L	10	Standard
Ho-1	165	10.0	100.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	1580.1	4.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.084	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.500	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.450
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.200
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606042801 WG571964-01
Sample Date/Time: Thursday, June 16, 2016 22:01:23
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53056.1	0.8				ug/L	51024	Standard
	Be	9	15.0	120.2	**-0.0038**	0.021	544.4	ug/L	7	Standard
	Al	27	757403.8	1.6	**5.1075**	0.106	2.1	ug/L	625	Standard
	Sc	45	31754.9	2.5				ug/L	29647	Standard
	Ti	47	165.7	8.9	**0.3896**	0.046	11.7	ug/L	57	Standard
	V	51	1511.6	6.0	**0.0457**	0.014	31.1	ug/L	1142	Standard
	Cr	52	8164.9	0.8	**0.1892**	0.010	5.5	ug/L	6628	Standard
	Cr	53	1656.8	10.3	**1.3626**	0.187	13.8	ug/L	430	Standard
	Mn	55	17190.1	1.5	**2.7889**	0.065	2.3	ug/L	603	Standard
	Co	59	391.7	5.3	**0.0201**	0.004	18.4	ug/L	237	Standard
	Ni	60	11431.6	1.7	**5.8888**	0.134	2.3	ug/L	141	Standard
	Cu	65	74287.3	0.4	**39.7191**	0.286	0.7	ug/L	109	Standard
	Zn	66	6798.2	0.6	**5.9426**	0.080	1.3	ug/L	159	Standard
>	**Ge**	72	470820.2	0.8				ug/L	474053	Standard
	As	75	23.4	122.6	**0.0464**	0.026	56.6	ug/L	-34	Standard
	Se	82	24.3	11.2	**0.0524**	0.025	47.2	ug/L	14	Standard
	Se-1	77	121.0	4.3	**0.8414**	0.059	7.0	ug/L	55	Standard
>	**Ga**	71	111.7	6.8				mg/L	50	Standard
	Rb	85	8439.0	5.7				ug/L	20	Standard
	Y	89	394979.4	1.5				ug/L	376602	Standard
>	**Rh**	103	30.0	0.0				ug/L	17	Standard
	Mo	98	18900.0	0.6	**7.8902**	0.142	1.8	ug/L	8	Standard
	Ag	107	1050.7	1.6	**0.1614**	0.000	0.2	ug/L	81	Standard
	Cd	111	8.7	19.0	**0.0012**	0.001	76.4	mg/L	3	Standard
	Cd	114	173.0	66.1	**0.0315**	0.023	73.0	ug/L	7	Standard
>	**In**	115	531861.1	1.7				ug/L	524722	Standard
	Sn	118	33005.9	1.3	**5.9570**	0.142	2.4	ug/L	715	Standard
	Sb	123	2285.8	18.9	**0.5027**	0.106	21.1	ug/L	201	Standard
	Ba	135	21266.9	0.9	**11.5188**	0.132	1.1	ug/L	108	Standard
	Ce	140	228.3	16.1				ug/L	30	Standard
>	**Tb**	159	787998.7	1.7				ug/L	792236	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	150.7	22.9	**0.0182**	0.005	26.8	ug/L	9	Standard
	Tl	205	115.0	41.5	**0.0108**	0.008	72.2	ug/L	0	Standard
	Pb	206	32589.3	0.1	**7.3677**	0.062	0.8	ug/L	216	Standard
	Pb	207	27351.7	1.3	**6.7905**	0.113	1.7	ug/L	180	Standard
	Pb	208	116700.7	0.9	**7.1377**	0.028	0.4	ug/L	717	Standard
	U	238	60.7	30.6	**0.0027**	0.003	116.1	ug/L	4	Standard
>	**Bi**	209	437691.5	0.7				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.5017**	8.575	155.9	mg/L	0	Standard
Mg	24	12460.1	1.8	**15.7356**	0.595	3.8	mg/L	20	Standard
K	39	611.7	9.8	**4.1225**	0.361	8.8	mg/L	22	Standard
Ca	43	61.7	24.8	**0.2569**	3.325	1294.5	mg/L	47	Standard
Fe	54	123.9	25.0	**-0.0210**	0.023	110.5	mg/L	151	Standard
Fe	57	213.3	11.8	**-0.0300**	0.077	258.2	mg/L	195	Standard
Sc-1	45	31754.9	2.5				mg/L	29647	Standard
Cl	35	194533.7	1.6				ug/L	154152	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	3240.3	4.0				ug/L	1607	Standard
P	31	24090.8	3.3				ug/L	22752	Standard
S	34	5104.2	4.8				ug/L	5049	Standard
Sr	88	81.7	19.7				ug/L	87	Standard
C	12	96.7	6.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.5	179.6				mg/L	10	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	13282.5	4.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		103.982	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.318	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.361
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.079
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606042801S WG571964-05
Sample Date/Time: Thursday, June 16, 2016 22:04:34
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55394.4	1.8				ug/L	51024	Standard
	Be	9	8934.3	3.4	**9.7660**	0.194	2.0	ug/L	7	Standard
	Al	27	748355.5	1.6	**4.8346**	0.168	3.5	ug/L	625	Standard
	Sc	45	32691.9	1.0				ug/L	29647	Standard
	Ti	47	168.3	4.0	**0.3836**	0.024	6.2	ug/L	57	Standard
	V	51	72192.1	1.7	**9.7775**	0.188	1.9	ug/L	1142	Standard
	Cr	52	79707.4	0.5	**9.6848**	0.014	0.1	ug/L	6628	Standard
	Cr	53	10453.6	1.1	**10.5826**	0.158	1.5	ug/L	430	Standard
	Mn	55	79152.9	1.5	**12.9343**	0.146	1.1	ug/L	603	Standard
	Co	59	63320.4	0.7	**9.6094**	0.039	0.4	ug/L	237	Standard
	Ni	60	29840.4	0.9	**15.0769**	0.185	1.2	ug/L	141	Standard
	Cu	65	88796.8	0.4	**46.2088**	0.054	0.1	ug/L	109	Standard
	Zn	66	17201.8	0.7	**14.9707**	0.150	1.0	ug/L	159	Standard
>	**Ge**	72	483837.9	0.4				ug/L	474053	Standard
	As	75	10943.5	1.9	**9.7081**	0.171	1.8	ug/L	-34	Standard
	Se	82	1071.8	4.1	**9.3269**	0.380	4.1	ug/L	14	Standard
	Se-1	77	883.4	1.7	**10.5260**	0.205	1.9	ug/L	55	Standard
>	**Ga**	71	61.7	18.7				mg/L	50	Standard
	Rb	85	8238.9	4.0				ug/L	20	Standard
	Y	89	381877.6	0.5				ug/L	376602	Standard
>	**Rh**	103	51.7	55.9				ug/L	17	Standard
	Mo	98	18040.5	0.2	**7.6113**	0.126	1.7	ug/L	8	Standard
	Ag	107	57677.6	1.0	**9.6285**	0.084	0.9	ug/L	81	Standard
	Cd	111	18876.2	0.3	**9.6948**	0.114	1.2	mg/L	3	Standard
	Cd	114	46340.2	1.4	**9.6280**	0.249	2.6	ug/L	7	Standard
>	**In**	115	526253.2	1.5				ug/L	524722	Standard
	Sn	118	29871.1	0.9	**5.4406**	0.094	1.7	ug/L	715	Standard
	Sb	123	44200.6	1.7	**10.0749**	0.023	0.2	ug/L	201	Standard
	Ba	135	37005.8	1.2	**20.2992**	0.061	0.3	ug/L	108	Standard
	Ce	140	223.3	9.3				ug/L	30	Standard
>	**Tb**	159	800388.6	1.7				ug/L	792236	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	71293.7	0.6	**9.5115**	0.043	0.5	ug/L	9	Standard
	Tl	205	61241.9	1.8	**9.6035**	0.196	2.0	ug/L	0	Standard
	Pb	206	76986.8	0.6	**16.9419**	0.160	0.9	ug/L	216	Standard
	Pb	207	66311.8	0.8	**16.0284**	0.098	0.6	ug/L	180	Standard
	Pb	208	275320.9	0.6	**16.3962**	0.155	0.9	ug/L	717	Standard
	U	238	60579.2	0.6	**9.9347**	0.056	0.6	ug/L	4	Standard
>	**Bi**	209	451597.7	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	12333.4	0.5	**15.1192**	0.089	0.6	mg/L	20	Standard
K	39	615.0	5.3	**4.0231**	0.203	5.0	mg/L	22	Standard
Ca	43	28.3	10.2	**-7.1884**	0.556	7.7	mg/L	47	Standard
Fe	54	187.4	26.5	**0.0230**	0.035	154.6	mg/L	151	Standard
Fe	57	198.3	19.1	**-0.0900**	0.107	118.9	mg/L	195	Standard
> **Sc-1**	45	32691.9	1.0				mg/L	29647	Standard
Cl	35	191462.1	0.2				ug/L	154152	Standard
Kr	83	1.7	124.9				ug/L	3	Standard
Br	81	2590.2	10.5				ug/L	1607	Standard
P	31	24189.3	1.6				ug/L	22752	Standard
S	34	5244.2	0.9				ug/L	5049	Standard
Sr	88	83.3	24.2				ug/L	87	Standard
C	12	146.7	23.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	13.3	114.6				mg/L	10	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	0.0					mg/L	3	Standard
I	127	11335.9	2.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.565	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.064	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.292
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.100
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606042801SD WG571964-06
Sample Date/Time: Thursday, June 16, 2016 22:07:46
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56861.5	1.0				ug/L	51024	Standard
	Be	9	9379.6	0.6	**9.9907**	0.123	1.2	ug/L	7	Standard
	Al	27	791197.5	0.6	**4.9782**	0.076	1.5	ug/L	625	Standard
	Sc	45	33405.1	3.0				ug/L	29647	Standard
	Ti	47	189.0	15.7	**0.4621**	0.100	21.6	ug/L	57	Standard
	V	51	73275.8	0.5	**10.1068**	0.150	1.5	ug/L	1142	Standard
	Cr	52	82693.4	0.6	**10.2789**	0.155	1.5	ug/L	6628	Standard
	Cr	53	11009.0	1.3	**11.3764**	0.331	2.9	ug/L	430	Standard
	Mn	55	80077.1	1.3	**13.3217**	0.087	0.6	ug/L	603	Standard
	Co	59	64342.3	1.0	**9.9396**	0.081	0.8	ug/L	237	Standard
	Ni	60	30668.0	0.6	**15.7751**	0.244	1.5	ug/L	141	Standard
	Cu	65	102903.3	0.9	**54.5140**	0.360	0.7	ug/L	109	Standard
	Zn	66	17903.6	1.4	**15.8728**	0.283	1.8	ug/L	159	Standard
>	**Ge**	72	475415.3	1.6				ug/L	474053	Standard
	As	75	11042.5	1.9	**9.9692**	0.144	1.4	ug/L	-34	Standard
	Se	82	1111.2	2.5	**9.8543**	0.398	4.0	ug/L	14	Standard
	Se-1	77	817.4	1.4	**9.8699**	0.196	2.0	ug/L	55	Standard
>	**Ga**	71	86.7	39.3				mg/L	50	Standard
	Rb	85	8222.2	4.2				ug/L	20	Standard
	Y	89	394850.6	0.8				ug/L	376602	Standard
>	**Rh**	103	35.0	28.6				ug/L	17	Standard
	Mo	98	19398.6	1.2	**8.0048**	0.167	2.1	ug/L	8	Standard
	Ag	107	59697.4	0.4	**9.7470**	0.052	0.5	ug/L	81	Standard
	Cd	111	19317.1	0.2	**9.7032**	0.092	0.9	mg/L	3	Standard
	Cd	114	47826.5	0.6	**9.7171**	0.080	0.8	ug/L	7	Standard
>	**In**	115	538049.7	0.9				ug/L	524722	Standard
	Sn	118	39536.5	1.2	**7.0684**	0.038	0.5	ug/L	715	Standard
	Sb	123	45183.1	0.7	**10.0737**	0.100	1.0	ug/L	201	Standard
	Ba	135	43743.7	0.4	**23.4783**	0.172	0.7	ug/L	108	Standard
	Ce	140	316.7	16.7				ug/L	30	Standard
>	**Tb**	159	823661.0	0.7				ug/L	792236	Standard
	Ho	165	16.7	69.3				ug/L	7	Standard
	Tl	203	73870.7	1.0	**9.7275**	0.120	1.2	ug/L	9	Standard
	Tl	205	62943.8	1.2	**9.7425**	0.171	1.8	ug/L	0	Standard
	Pb	206	79783.5	0.3	**17.3303**	0.067	0.4	ug/L	216	Standard
	Pb	207	68152.3	0.6	**16.2608**	0.196	1.2	ug/L	180	Standard
	Pb	208	286237.0	1.1	**16.8270**	0.286	1.7	ug/L	717	Standard
	U	238	62126.1	0.8	**10.0567**	0.149	1.5	ug/L	4	Standard
>	**Bi**	209	457529.8	0.7				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	13005.6	1.2	**15.6137**	0.541	3.5	mg/L	20	Standard
K	39	631.7	11.7	**4.0527**	0.574	14.2	mg/L	22	Standard
Ca	43	45.0	29.4	**-3.9018**	2.447	62.7	mg/L	47	Standard
Fe	54	151.2	21.8	**-0.0055**	0.026	477.7	mg/L	151	Standard
Fe	57	191.7	21.7	**-0.1180**	0.127	107.5	mg/L	195	Standard
> **Sc-1**	45	33405.1	3.0				mg/L	29647	Standard
Cl	35	198754.5	0.5				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	2900.3	3.8				ug/L	1607	Standard
P	31	24661.7	2.9				ug/L	22752	Standard
S	34	5152.5	2.9				ug/L	5049	Standard
Sr	88	78.3	9.8				ug/L	87	Standard
C	12	96.7	43.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.9	187.9				mg/L	10	Standard
Ho-1	165	16.7	69.3				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	11145.8	3.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.440	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.287	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.540	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.389	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606042801SD WG571964-06
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Method 6020 - Summary Report

Sample ID: L1606041103
Sample Date/Time: Thursday, June 16, 2016 22:10:57
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62574.0	2.3				ug/L	51024	Standard
	Be	9	160.0	11.3	**0.1339**	0.015	11.0	ug/L	7	Standard
	Al	27	3612417.3	0.5	**20.6888**	0.380	1.8	ug/L	625	Standard
	Sc	45	41445.0	4.1				ug/L	29647	Standard
	Ti	47	11430.0	1.2	**38.8931**	0.503	1.3	ug/L	57	Standard
	V	51	49465.6	5.9	**6.9654**	0.407	5.8	ug/L	1142	Standard
	Cr	52	278119.6	1.2	**37.8421**	0.634	1.7	ug/L	6628	Standard
	Cr	53	35835.7	1.3	**39.0973**	0.639	1.6	ug/L	430	Standard
	Mn	55	108739.8	1.1	**18.6585**	0.168	0.9	ug/L	603	Standard
	Co	59	16555.0	2.3	**2.6001**	0.043	1.6	ug/L	237	Standard
	Ni	60	172929.3	0.8	**91.8635**	0.500	0.5	ug/L	141	Standard
	Cu	65	6358.3	3.5	**3.4028**	0.118	3.5	ug/L	109	Standard
	Zn	66	15282.7	1.5	**13.9075**	0.137	1.0	ug/L	159	Standard
>	**Ge**	72	462157.8	0.7				ug/L	474053	Standard
	As	75	708.4	1.9	**0.6813**	0.015	2.2	ug/L	-34	Standard
	Se	82	305.6	0.9	**2.6661**	0.043	1.6	ug/L	14	Standard
	Se-1	77	262.0	4.6	**2.7550**	0.165	6.0	ug/L	55	Standard
>	**Ga**	71	6034.5	4.8				mg/L	50	Standard
	Rb	85	47790.3	0.2				ug/L	20	Standard
	Y	89	408920.9	2.9				ug/L	376602	Standard
>	**Rh**	103	41.7	34.6				ug/L	17	Standard
	Mo	98	2172.6	4.5	**0.8781**	0.030	3.5	ug/L	8	Standard
	Ag	107	219.7	70.0	**0.0229**	0.024	105.6	ug/L	81	Standard
	Cd	111	75.9	34.7	**0.0343**	0.013	36.7	mg/L	3	Standard
	Cd	114	241.8	20.0	**0.0446**	0.009	20.8	ug/L	7	Standard
>	**In**	115	546080.6	1.7				ug/L	524722	Standard
	Sn	118	1300.1	5.7	**0.1424**	0.011	7.6	ug/L	715	Standard
	Sb	123	571.3	25.0	**0.1106**	0.030	26.8	ug/L	201	Standard
	Ba	135	154749.6	0.9	**81.9842**	0.666	0.8	ug/L	108	Standard
	Ce	140	87014.2	1.0				ug/L	30	Standard
>	**Tb**	159	814427.9	0.6				ug/L	792236	Standard
	Ho	165	750.0	9.7				ug/L	7	Standard
	Tl	203	378.3	10.9	**0.0480**	0.006	11.9	ug/L	9	Standard
	Tl	205	368.3	33.6	**0.0501**	0.020	39.4	ug/L	0	Standard
	Pb	206	5985.2	3.5	**1.2661**	0.051	4.1	ug/L	216	Standard
	Pb	207	4992.8	4.4	**1.1580**	0.058	5.0	ug/L	180	Standard
	Pb	208	21391.6	3.3	**1.2214**	0.047	3.9	ug/L	717	Standard
	U	238	1095.4	14.1	**0.1724**	0.026	15.1	ug/L	4	Standard
>	**Bi**	209	451292.0	0.4				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	20841.0	1.9	**20.1926**	1.006	5.0	mg/L	20	Standard
K	39	73.3	37.6	**0.1715**	0.145	84.8	mg/L	22	Standard
Ca	43	58.3	64.9	**-3.6032**	6.066	168.3	mg/L	47	Standard
Fe	54	4110.0	2.2	**2.2769**	0.060	2.6	mg/L	151	Standard
Fe	57	1281.7	3.9	**2.1921**	0.046	2.1	mg/L	195	Standard
> **Sc-1**	45	41445.0	4.1				mg/L	29647	Standard
Cl	35	174319.7	0.6				ug/L	154152	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	22139.5	6.4				ug/L	1607	Standard
P	31	56868.2	1.9				ug/L	22752	Standard
S	34	4735.7	5.8				ug/L	5049	Standard
Sr	88	138.3	8.3				ug/L	87	Standard
C	12	140.0	24.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	71.3				mg/L	0	Standard
Dy	164	1332.7	14.4				mg/L	10	Standard
Ho-1	165	750.0	9.7				mg/L	7	Standard
Er	166	710.0	11.5				mg/L	3	Standard
I	127	202127.9	4.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		122.636	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.491	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.070
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.034
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606041104
Sample Date/Time: Thursday, June 16, 2016 22:14:09
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64240.9	1.6				ug/L	51024	Standard
	Be	9	136.7	22.1	**0.1078**	0.027	24.9	ug/L	7	Standard
	Al	27	3763925.2	1.3	**20.9934**	0.276	1.3	ug/L	625	Standard
	Sc	45	40464.0	1.9				ug/L	29647	Standard
	Ti	47	8699.5	0.7	**27.3016**	0.630	2.3	ug/L	57	Standard
	V	51	38467.6	1.3	**4.9573**	0.087	1.7	ug/L	1142	Standard
	Cr	52	284248.5	0.2	**35.6883**	1.177	3.3	ug/L	6628	Standard
	Cr	53	35927.6	2.1	**36.1893**	1.342	3.7	ug/L	430	Standard
	Mn	55	133272.7	1.8	**21.1444**	0.498	2.4	ug/L	603	Standard
	Co	59	18921.1	3.5	**2.7470**	0.050	1.8	ug/L	237	Standard
	Ni	60	221247.9	1.4	**108.5931**	1.677	1.5	ug/L	141	Standard
	Cu	65	5825.8	2.3	**2.8698**	0.029	1.0	ug/L	109	Standard
	Zn	66	12440.8	1.3	**10.4031**	0.253	2.4	ug/L	159	Standard
>	Ge	72	500409.8	2.9				ug/L	474053	Standard
	As	75	551.3	12.2	**0.4975**	0.064	12.9	ug/L	-34	Standard
	Se	82	300.3	5.4	**2.4053**	0.175	7.3	ug/L	14	Standard
	Se-1	77	256.7	3.5	**2.4250**	0.195	8.0	ug/L	55	Standard
>	Ga	71	4735.7	2.7				mg/L	50	Standard
	Rb	85	38717.8	2.3				ug/L	20	Standard
	Y	89	413643.0	2.8				ug/L	376602	Standard
>	Rh	103	26.7	28.6				ug/L	17	Standard
	Mo	98	7867.7	1.9	**3.2136**	0.028	0.9	ug/L	8	Standard
	Ag	107	99.3	12.1	**0.0038**	0.002	50.7	ug/L	81	Standard
	Cd	111	46.8	16.9	**0.0200**	0.004	18.8	mg/L	3	Standard
	Cd	114	206.0	6.6	**0.0377**	0.003	7.1	ug/L	7	Standard
>	In	115	542917.1	1.0				ug/L	524722	Standard
	Sn	118	1081.7	2.4	**0.1046**	0.003	3.0	ug/L	715	Standard
	Sb	123	436.3	12.1	**0.0817**	0.011	13.3	ug/L	201	Standard
	Ba	135	146593.2	1.4	**78.1037**	0.328	0.4	ug/L	108	Standard
	Ce	140	75445.7	1.8				ug/L	30	Standard
>	Tb	159	801118.6	3.0				ug/L	792236	Standard
	Ho	165	633.3	15.1				ug/L	7	Standard
	Tl	203	300.0	6.5	**0.0378**	0.003	8.4	ug/L	9	Standard
	Tl	205	321.7	21.6	**0.0433**	0.012	28.2	ug/L	0	Standard
	Pb	206	5087.9	2.5	**1.0767**	0.011	1.0	ug/L	216	Standard
	Pb	207	4144.6	1.8	**0.9603**	0.027	2.8	ug/L	180	Standard
	Pb	208	18065.6	1.4	**1.0314**	0.029	2.8	ug/L	717	Standard
	U	238	874.7	4.0	**0.1374**	0.011	7.8	ug/L	4	Standard
>	Bi	209	447824.2	3.4				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	22872.3	0.6	**22.6806**	0.473	2.1	mg/L	20	Standard
K	39	35.0	51.5	**-0.0329**	0.100	305.7	mg/L	22	Standard
Ca	43	48.3	31.6	**-4.9013**	2.699	55.1	mg/L	47	Standard
Fe	54	3361.7	4.8	**1.8885**	0.113	6.0	mg/L	151	Standard
Fe	57	1078.4	5.6	**1.8011**	0.173	9.6	mg/L	195	Standard
Sc-1	45	40464.0	1.9				mg/L	29647	Standard
Cl	35	177669.3	2.1				ug/L	154152	Standard
Kr	83	2.3	24.7				ug/L	3	Standard
Br	81	20991.2	6.6				ug/L	1607	Standard
P	31	55948.1	2.2				ug/L	22752	Standard
S	34	4435.6	2.7				ug/L	5049	Standard
Sr	88	156.7	18.7				ug/L	87	Standard
C	12	160.0	47.2				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	0	Standard
Dy	164	1259.3	5.9				mg/L	10	Standard
Ho-1	165	633.3	15.1				mg/L	7	Standard
Er	166	573.3	7.3				mg/L	3	Standard
I	127	221985.7	5.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		125.903	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.560	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.468
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.281
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ni 60 Upper, S, EEE	Ni	60	

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Method 6020 - Summary Report

Sample ID: L1606041104PS WG572085-03
Sample Date/Time: Thursday, June 16, 2016 22:17:20
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68479.5	2.8				ug/L	51024	Standard
	Be	9	53798.7	2.5	**47.6621**	0.433	0.9	ug/L	7	Standard
	Al	27	3774638.8	2.0	**19.7508**	0.180	0.9	ug/L	625	Standard
	Sc	45	41744.1	0.5				ug/L	29647	Standard
	Ti	47	8543.7	1.2	**27.1926**	0.351	1.3	ug/L	57	Standard
	V	51	416323.5	0.8	**56.1020**	0.898	1.6	ug/L	1142	Standard
	Cr	52	661415.5	1.7	**85.4827**	2.467	2.9	ug/L	6628	Standard
	Cr	53	82886.1	1.6	**85.2548**	2.351	2.8	ug/L	430	Standard
	Mn	55	455226.4	0.8	**73.5653**	0.461	0.6	ug/L	603	Standard
	Co	59	356626.6	0.3	**53.2845**	0.717	1.3	ug/L	237	Standard
	Ni	60	319608.9	1.5	**159.1819**	4.226	2.7	ug/L	141	Standard
	Cu	65	101931.1	1.4	**52.0544**	1.323	2.5	ug/L	109	Standard
	Zn	66	69708.7	0.9	**60.2129**	1.260	2.1	ug/L	159	Standard
>	Ge	72	493214.1	1.2				ug/L	474053	Standard
	As	75	57487.0	0.2	**49.9285**	0.540	1.1	ug/L	-34	Standard
	Se	82	5945.0	0.7	**51.5039**	0.559	1.1	ug/L	14	Standard
	Se-1	77	4052.2	2.0	**49.9708**	0.414	0.8	ug/L	55	Standard
>	Ga	71	4670.7	3.3				mg/L	50	Standard
	Rb	85	37354.3	0.9				ug/L	20	Standard
	Y	89	401490.0	0.7				ug/L	376602	Standard
>	Rh	103	51.7	24.4				ug/L	17	Standard
	Mo	98	7837.2	0.6	**3.1623**	0.111	3.5	ug/L	8	Standard
	Ag	107	304891.6	0.9	**48.7677**	0.989	2.0	ug/L	81	Standard
	Cd	111	99959.3	1.1	**49.1537**	1.231	2.5	mg/L	3	Standard
	Cd	114	244744.0	1.6	**48.6729**	0.677	1.4	ug/L	7	Standard
>	In	115	549981.7	2.9				ug/L	524722	Standard
	Sn	118	1156.7	4.0	**0.1154**	0.002	1.9	ug/L	715	Standard
	Sb	123	225529.7	0.1	**49.2752**	1.450	2.9	ug/L	201	Standard
	Ba	135	235280.0	1.6	**123.8168**	1.916	1.5	ug/L	108	Standard
	Ce	140	72287.1	1.8				ug/L	30	Standard
>	Tb	159	836927.2	1.6				ug/L	792236	Standard
	Ho	165	618.3	2.8				ug/L	7	Standard
	Tl	203	374508.5	1.3	**47.9478**	0.598	1.2	ug/L	9	Standard
	Tl	205	331693.7	1.7	**49.9323**	0.614	1.2	ug/L	0	Standard
	Pb	206	246855.7	0.5	**52.2356**	0.118	0.2	ug/L	216	Standard
	Pb	207	213815.1	0.2	**49.6985**	0.193	0.4	ug/L	180	Standard
	Pb	208	877795.6	1.2	**50.2714**	0.366	0.7	ug/L	717	Standard
	U	238	322334.9	1.2	**50.7465**	0.349	0.7	ug/L	4	Standard
>	Bi	209	470679.1	0.5				ug/L	460343	Standard

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Na	23	3.3	173.2	**2.6916**	13.442	499.4	mg/L	0	Standard
Mg	24	22820.5	2.3	**21.9277**	0.463	2.1	mg/L	20	Standard
K	39	55.0	32.8	**0.0700**	0.098	140.3	mg/L	22	Standard
Ca	43	53.3	28.6	**-4.3313**	2.572	59.4	mg/L	47	Standard
Fe	54	3487.5	4.4	**1.8989**	0.090	4.7	mg/L	151	Standard
Fe	57	1048.4	8.2	**1.6588**	0.199	12.0	mg/L	195	Standard
> **Sc-1**	45	41744.1	0.5				mg/L	29647	Standard
Cl	35	171137.1	0.1				ug/L	154152	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	19926.4	2.2				ug/L	1607	Standard
P	31	55093.4	2.6				ug/L	22752	Standard
S	34	4375.6	3.4				ug/L	5049	Standard
Sr	88	146.7	22.7				ug/L	87	Standard
C	12	130.0	35.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	69.3				mg/L	0	Standard
Dy	164	1135.3	6.0				mg/L	10	Standard
Ho-1	165	618.3	2.8				mg/L	7	Standard
Er	166	516.7	11.3				mg/L	3	Standard
I	127	228888.4	2.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		134.210	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.042	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.814
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.245
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ni 60 Upper, S, EEE	Ni	60	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606041104PS WG572085-03
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Method 6020 - Summary Report

Sample ID: L1606041104SDL WG572085-04
Sample Date/Time: Thursday, June 16, 2016 22:20:32
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64080.3	2.7				ug/L	51024	Standard
	Be	9	40.0	12.5	**0.0168**	0.005	27.3	ug/L	7	Standard
	Al	27	710132.3	2.2	**3.9635**	0.097	2.4	ug/L	625	Standard
	Sc	45	34213.6	1.2				ug/L	29647	Standard
	Ti	47	1665.1	3.3	**5.5149**	0.188	3.4	ug/L	57	Standard
	V	51	8406.9	2.7	**1.0425**	0.044	4.3	ug/L	1142	Standard
	Cr	52	60396.1	0.7	**7.4773**	0.032	0.4	ug/L	6628	Standard
	Cr	53	7433.5	0.9	**7.7546**	0.056	0.7	ug/L	430	Standard
	Mn	55	26233.4	1.3	**4.3983**	0.064	1.4	ug/L	603	Standard
	Co	59	3790.1	2.7	**0.5627**	0.022	4.0	ug/L	237	Standard
	Ni	60	42759.9	1.8	**22.6189**	0.287	1.3	ug/L	141	Standard
	Cu	65	1312.1	2.0	**0.6485**	0.012	1.8	ug/L	109	Standard
	Zn	66	4020.5	0.7	**3.4822**	0.054	1.5	ug/L	159	Standard
>	**Ge**	72	462909.1	1.0				ug/L	474053	Standard
	As	75	127.1	1.3	**0.1426**	0.002	1.2	ug/L	-34	Standard
	Se	82	76.1	4.5	**0.5359**	0.031	5.8	ug/L	14	Standard
	Se-1	77	88.7	7.5	**0.4371**	0.078	17.8	ug/L	55	Standard
>	**Ga**	71	933.4	4.3				mg/L	50	Standard
	Rb	85	7380.1	1.8				ug/L	20	Standard
	Y	89	399286.8	1.5				ug/L	376602	Standard
>	**Rh**	103	10.0	50.0				ug/L	17	Standard
	Mo	98	1500.2	2.7	**0.5970**	0.016	2.6	ug/L	8	Standard
	Ag	107	118.7	15.0	**0.0065**	0.003	41.2	ug/L	81	Standard
	Cd	111	28.9	34.9	**0.0109**	0.005	45.1	mg/L	3	Standard
	Cd	114	79.5	41.7	**0.0119**	0.007	55.5	ug/L	7	Standard
>	**In**	115	553072.6	0.8				ug/L	524722	Standard
	Sn	118	576.7	14.8	**0.0122**	0.016	129.0	ug/L	715	Standard
	Sb	123	2178.3	21.1	**0.4589**	0.103	22.5	ug/L	201	Standard
	Ba	135	28213.6	0.4	**14.7104**	0.164	1.1	ug/L	108	Standard
	Ce	140	14325.1	2.6				ug/L	30	Standard
>	**Tb**	159	808125.3	1.3				ug/L	792236	Standard
	Ho	165	128.3	18.0				ug/L	7	Standard
	Tl	203	157.0	14.8	**0.0183**	0.003	16.5	ug/L	9	Standard
	Tl	205	128.3	27.4	**0.0122**	0.005	43.6	ug/L	0	Standard
	Pb	206	1207.7	4.1	**0.2094**	0.008	3.9	ug/L	216	Standard
	Pb	207	969.0	2.2	**0.1805**	0.006	3.4	ug/L	180	Standard
	Pb	208	4243.2	2.0	**0.1949**	0.007	3.7	ug/L	717	Standard
	U	238	239.0	4.0	**0.0315**	0.002	6.6	ug/L	4	Standard
>	**Bi**	209	453005.7	1.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	4389.0	3.6	**5.1101**	0.132	2.6	mg/L	20	Standard
K	39	13.3	78.1	**-0.1402**	0.068	48.2	mg/L	22	Standard
Ca	43	36.7	43.8	**-5.7822**	3.171	54.8	mg/L	47	Standard
Fe	54	812.9	7.6	**0.4581**	0.050	11.0	mg/L	151	Standard
Fe	57	373.3	8.7	**0.3544**	0.083	23.5	mg/L	195	Standard
> **Sc-1**	45	34213.6	1.2				mg/L	29647	Standard
Cl	35	155114.0	1.0				ug/L	154152	Standard
Kr	83	1.3	114.6				ug/L	3	Standard
Br	81	5447.6	5.1				ug/L	1607	Standard
P	31	29535.4	3.0				ug/L	22752	Standard
S	34	4345.6	4.1				ug/L	5049	Standard
Sr	88	98.3	16.3				ug/L	87	Standard
C	12	66.7	69.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	223.5	3.8				mg/L	10	Standard
Ho-1	165	128.3	18.0				mg/L	7	Standard
Er	166	136.7	22.4				mg/L	3	Standard
I	127	47285.3	1.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		125.588	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.649	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	105.403	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.406	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606041104SDL WG572085-04
Sample Date/Time: Thursday, June 16, 2016 22:23:43
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60699.7	1.4				ug/L	51024	Standard
	Be	9	26.7	65.8	**0.0056**	0.018	312.0	ug/L	7	Standard
	Al	27	141309.4	1.9	**0.8247**	0.016	2.0	ug/L	625	Standard
	Sc	45	31491.0	2.2				ug/L	29647	Standard
	Ti	47	381.3	5.6	**1.1251**	0.055	4.9	ug/L	57	Standard
	V	51	2585.2	5.7	**0.2016**	0.028	14.1	ug/L	1142	Standard
	Cr	52	17170.4	0.5	**1.4445**	0.049	3.4	ug/L	6628	Standard
	Cr	53	1966.8	5.0	**1.7199**	0.140	8.1	ug/L	430	Standard
	Mn	55	5874.1	1.6	**0.8794**	0.018	2.1	ug/L	603	Standard
	Co	59	918.7	1.3	**0.1040**	0.001	1.4	ug/L	237	Standard
	Ni	60	8671.8	1.0	**4.4921**	0.067	1.5	ug/L	141	Standard
	Cu	65	375.3	1.5	**0.1368**	0.002	1.4	ug/L	109	Standard
	Zn	66	1553.7	2.6	**1.1927**	0.020	1.7	ug/L	159	Standard
>	**Ge**	72	466371.9	2.3				ug/L	474053	Standard
	As	75	-6.1	252.7	**0.0197**	0.014	72.2	ug/L	-34	Standard
	Se	82	31.9	14.9	**0.1250**	0.051	40.6	ug/L	14	Standard
	Se-1	77	67.3	8.6	**0.1479**	0.098	66.2	ug/L	55	Standard
>	**Ga**	71	236.7	12.4				mg/L	50	Standard
	Rb	85	1530.1	6.8				ug/L	20	Standard
	Y	89	398351.9	2.2				ug/L	376602	Standard
>	**Rh**	103	20.0	90.1				ug/L	17	Standard
	Mo	98	309.3	4.7	**0.1235**	0.007	5.8	ug/L	8	Standard
	Ag	107	82.7	3.5	**0.0013**	0.000	30.9	ug/L	81	Standard
	Cd	111	8.8	17.3	**0.0012**	0.001	68.5	mg/L	3	Standard
	Cd	114	33.8	15.5	**0.0031**	0.001	31.5	ug/L	7	Standard
>	**In**	115	532767.1	1.5				ug/L	524722	Standard
	Sn	118	478.3	5.3	**-0.0020**	0.004	179.1	ug/L	715	Standard
	Sb	123	535.3	25.6	**0.1062**	0.033	30.9	ug/L	201	Standard
	Ba	135	5770.1	0.9	**3.0781**	0.059	1.9	ug/L	108	Standard
	Ce	140	2811.9	5.2				ug/L	30	Standard
>	**Tb**	159	784308.2	0.8				ug/L	792236	Standard
	Ho	165	41.7	18.3				ug/L	7	Standard
	Tl	203	52.7	23.4	**0.0046**	0.002	36.5	ug/L	9	Standard
	Tl	205	35.0	14.3	**-0.0022**	0.001	34.5	ug/L	0	Standard
	Pb	206	411.7	5.6	**0.0360**	0.005	12.9	ug/L	216	Standard
	Pb	207	350.0	3.5	**0.0324**	0.003	8.3	ug/L	180	Standard
	Pb	208	1486.7	0.5	**0.0323**	0.001	2.8	ug/L	717	Standard
	U	238	58.7	16.8	**0.0022**	0.002	75.4	ug/L	4	Standard
>	**Bi**	209	444600.9	0.5				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.3313**	8.870	166.4	mg/L	0	Standard
Mg	24	840.0	10.8	**1.0281**	0.127	12.3	mg/L	20	Standard
K	39	15.0	88.2	**-0.1198**	0.096	80.2	mg/L	22	Standard
Ca	43	18.3	83.3	**-9.1765**	3.343	36.4	mg/L	47	Standard
Fe	54	272.4	14.1	**0.0939**	0.032	34.1	mg/L	151	Standard
Fe	57	256.7	4.9	**0.1011**	0.032	31.4	mg/L	195	Standard
> **Sc-1**	45	31491.0	2.2				mg/L	29647	Standard
Cl	35	151247.9	1.3				ug/L	154152	Standard
Kr	83	3.3	69.3				ug/L	3	Standard
Br	81	2453.5	11.0				ug/L	1607	Standard
P	31	23077.6	3.5				ug/L	22752	Standard
S	34	4429.0	4.8				ug/L	5049	Standard
Sr	88	73.3	21.9				ug/L	87	Standard
C	12	63.3	24.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	47.6	24.3				mg/L	10	Standard
Ho-1	165	41.7	18.3				mg/L	7	Standard
Er	166	50.0	91.7				mg/L	3	Standard
I	127	10970.6	2.1				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		118.963	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.380	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.533
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.580
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 22:26:56
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59001.4	3.1				ug/L	51024	Standard
	Be	9	47251.9	1.9	**48.5958**	0.632	1.3	ug/L	7	Standard
	Al	27	7707900.4	0.6	**46.8442**	1.367	2.9	ug/L	625	Standard
	Sc	45	32042.2	2.5				ug/L	29647	Standard
	Ti	47	31108.6	0.8	**106.3533**	1.301	1.2	ug/L	57	Standard
	V	51	354930.5	0.4	**51.1260**	0.515	1.0	ug/L	1142	Standard
	Cr	52	373996.6	0.2	**51.3100**	0.429	0.8	ug/L	6628	Standard
	Cr	53	46528.0	1.9	**50.9890**	0.660	1.3	ug/L	430	Standard
	Mn	55	313560.0	0.4	**54.1496**	0.181	0.3	ug/L	603	Standard
	Co	59	324218.3	1.5	**51.7917**	0.391	0.8	ug/L	237	Standard
	Ni	60	95070.0	1.4	**50.5665**	0.352	0.7	ug/L	141	Standard
	Cu	65	93181.7	1.5	**50.8709**	0.430	0.8	ug/L	109	Standard
	Zn	66	54868.9	1.6	**50.6327**	0.507	1.0	ug/L	159	Standard
>	Ge	72	461242.2	0.7				ug/L	474053	Standard
	As	75	53786.6	0.6	**49.9506**	0.524	1.0	ug/L	-34	Standard
	Se	82	5398.5	1.3	**50.0080**	1.035	2.1	ug/L	14	Standard
	Se-1	77	3763.8	1.7	**49.6296**	0.770	1.6	ug/L	55	Standard
>	Ga	71	83.3	29.6				mg/L	50	Standard
	Rb	85	758.4	8.6				ug/L	20	Standard
	Y	89	392635.2	3.0				ug/L	376602	Standard
>	Rh	103	40.0	45.1				ug/L	17	Standard
	Mo	98	239363.5	0.3	**97.9544**	0.320	0.3	ug/L	8	Standard
	Ag	107	297613.5	1.2	**48.2150**	0.880	1.8	ug/L	81	Standard
	Cd	111	96257.9	0.7	**47.9363**	0.352	0.7	mg/L	3	Standard
	Cd	114	237569.3	0.8	**47.8568**	0.430	0.9	ug/L	7	Standard
>	In	115	542829.4	0.6				ug/L	524722	Standard
	Sn	118	271504.8	1.8	**48.6303**	0.573	1.2	ug/L	715	Standard
	Sb	123	221602.7	1.2	**49.0302**	0.874	1.8	ug/L	201	Standard
	Ba	135	89759.4	0.9	**47.8096**	0.296	0.6	ug/L	108	Standard
	Ce	140	83.3	15.1				ug/L	30	Standard
>	Tb	159	805068.8	1.3				ug/L	792236	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	366179.1	0.5	**49.0753**	0.770	1.6	ug/L	9	Standard
	Tl	205	320780.3	0.9	**50.5527**	0.981	1.9	ug/L	0	Standard
	Pb	206	226792.4	0.6	**50.2313**	0.545	1.1	ug/L	216	Standard
	Pb	207	206205.4	0.5	**50.1728**	0.804	1.6	ug/L	180	Standard
	Pb	208	828355.0	0.6	**49.6609**	0.844	1.7	ug/L	717	Standard
	U	238	311232.5	0.6	**51.2945**	0.952	1.9	ug/L	4	Standard
>	Bi	209	449694.2	1.3				ug/L	460343	Standard

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Na	23	3.3	173.2	**0.2298**	17.706	7704.3	mg/L	0	Standard
Mg	24	4013.9	1.6	**4.9932**	0.201	4.0	mg/L	20	Standard
K	39	691.7	2.2	**4.6523**	0.139	3.0	mg/L	22	Standard
Ca	43	66.7	18.9	**1.1897**	2.387	200.6	mg/L	47	Standard
Fe	54	5963.7	3.1	**4.3749**	0.232	5.3	mg/L	151	Standard
Fe	57	1775.1	6.5	**4.4411**	0.377	8.5	mg/L	195	Standard
> **Sc-1**	45	32042.2	2.5				mg/L	29647	Standard
Cl	35	154194.0	0.8				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	1553.4	2.0				ug/L	1607	Standard
P	31	22800.5	1.3				ug/L	22752	Standard
S	34	4925.8	3.9				ug/L	5049	Standard
Sr	88	71.7	8.1				ug/L	87	Standard
C	12	50.0	40.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.7	108.3				mg/L	10	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	3	Standard
I	127	1866.8	9.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	97.192		
Al	27	93.688		
Sc	45			
Ti	47	106.353		
V	51	102.252		
Cr	52	102.620		
Cr	53			
Mn	55	108.299		
Co	59	103.583		
Ni	60	101.133		
Cu	65	101.742		
Zn	66	101.265		
> Ge	72		97.298	
As	75	99.901		
Se	82	100.016		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	97.954		
Ag	107	96.430		
Cd	111	95.873		
Cd	114			
> In	115		103.451	
Sn	118	97.261		
Sb	123	98.060		
Ba	135	95.619		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.151		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.322		
U	238	102.589		
> Bi	209		97.687	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 22:30:07
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57406.9	2.2				ug/L	51024	Standard
	Be	9	13.3	86.6	**-0.0071**	0.012	172.1	ug/L	7	Standard
	Al	27	1425.1	26.0	**-0.0009**	0.002	242.5	ug/L	625	Standard
	Sc	45	31355.8	2.5				ug/L	29647	Standard
	Ti	47	24.7	20.0	**-0.0813**	0.017	20.7	ug/L	57	Standard
	V	51	1120.2	2.3	**-0.0061**	0.006	100.1	ug/L	1142	Standard
	Cr	52	6392.0	0.4	**-0.0333**	0.015	44.8	ug/L	6628	Standard
	Cr	53	548.3	18.8	**0.1770**	0.124	70.1	ug/L	430	Standard
	Mn	55	724.0	4.6	**-0.0007**	0.008	1032.9	ug/L	603	Standard
	Co	59	242.7	2.3	**-0.0024**	0.000	19.9	ug/L	237	Standard
	Ni	60	130.3	12.7	**-0.0081**	0.010	124.4	ug/L	141	Standard
	Cu	65	128.7	7.9	**0.0044**	0.007	154.7	ug/L	109	Standard
	Zn	66	153.3	8.3	**-0.0894**	0.013	14.8	ug/L	159	Standard
>	**Ge**	72	460344.2	1.9				ug/L	474053	Standard
	As	75	-26.8	68.7	**0.0000**	0.017	51664.1	ug/L	-34	Standard
	Se	82	13.1	41.0	**-0.0473**	0.049	102.7	ug/L	14	Standard
	Se-1	77	56.7	10.8	**0.0148**	0.078	525.1	ug/L	55	Standard
>	**Ga**	71	50.0	36.1				mg/L	50	Standard
	Rb	85	33.3	8.7				ug/L	20	Standard
	Y	89	391660.9	0.1				ug/L	376602	Standard
>	**Rh**	103	21.7	58.1				ug/L	17	Standard
	Mo	98	296.5	33.7	**0.1177**	0.040	33.6	ug/L	8	Standard
	Ag	107	114.3	9.9	**0.0065**	0.002	24.1	ug/L	81	Standard
	Cd	111	13.8	22.3	**0.0038**	0.001	39.2	mg/L	3	Standard
	Cd	114	58.6	51.2	**0.0082**	0.006	72.9	ug/L	7	Standard
>	**In**	115	532413.4	1.7				ug/L	524722	Standard
	Sn	118	798.4	13.3	**0.0568**	0.021	36.2	ug/L	715	Standard
	Sb	123	522.7	25.9	**0.1035**	0.032	31.2	ug/L	201	Standard
	Ba	135	112.0	12.3	**0.0031**	0.006	206.8	ug/L	108	Standard
	Ce	140	18.3	63.0				ug/L	30	Standard
>	**Tb**	159	782152.3	0.6				ug/L	792236	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	55.3	28.1	**0.0050**	0.002	40.9	ug/L	9	Standard
	Tl	205	48.3	6.0	**-0.0000**	0.000	944.3	ug/L	0	Standard
	Pb	206	239.7	3.4	**-0.0020**	0.002	107.0	ug/L	216	Standard
	Pb	207	204.0	6.9	**-0.0031**	0.003	92.9	ug/L	180	Standard
	Pb	208	866.0	6.6	**-0.0048**	0.003	59.0	ug/L	717	Standard
	U	238	38.3	34.4	**-0.0011**	0.002	189.9	ug/L	4	Standard
>	**Bi**	209	440050.2	1.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	41.7	6.9	**0.0082**	0.003	39.8	mg/L	20	Standard
K	39	13.3	21.7	**-0.1321**	0.019	14.2	mg/L	22	Standard
Ca	43	21.7	53.3	**-8.4223**	2.469	29.3	mg/L	47	Standard
Fe	54	134.4	12.8	**-0.0117**	0.012	103.5	mg/L	151	Standard
Fe	57	178.3	16.9	**-0.1234**	0.101	82.1	mg/L	195	Standard
Sc-1	45	31355.8	2.5				mg/L	29647	Standard
Cl	35	154796.2	1.9				ug/L	154152	Standard
Kr	83	1.3	86.6				ug/L	3	Standard
Br	81	1420.1	12.0				ug/L	1607	Standard
P	31	23807.0	1.6				ug/L	22752	Standard
S	34	4767.4	2.9				ug/L	5049	Standard
Sr	88	76.7	22.9				ug/L	87	Standard
C	12	50.0	60.0				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	6.5	179.6				mg/L	10	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	1236.7	11.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.108	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.466	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	95.592	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW 41 WG571834-02
Sample Date/Time: Thursday, June 16, 2016 22:33:20
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57729.8	2.4				ug/L	51024	Standard
	Be	9	15.0	66.7	**-0.0052**	0.011	207.3	ug/L	7	Standard
	Al	27	10453.6	1.9	**0.0552**	0.003	5.0	ug/L	625	Standard
	Sc	45	33299.9	2.5				ug/L	29647	Standard
	Ti	47	35.7	25.1	**-0.0492**	0.028	57.5	ug/L	57	Standard
	V	51	1262.4	5.5	**0.0063**	0.008	133.6	ug/L	1142	Standard
	Cr	52	7466.2	1.6	**0.0706**	0.026	36.2	ug/L	6628	Standard
	Cr	53	643.3	12.9	**0.2497**	0.092	36.8	ug/L	430	Standard
	Mn	55	1616.1	2.8	**0.1414**	0.004	2.6	ug/L	603	Standard
	Co	59	253.0	6.6	**-0.0025**	0.002	79.5	ug/L	237	Standard
	Ni	60	378.3	5.2	**0.1151**	0.008	6.8	ug/L	141	Standard
	Cu	65	209.0	6.0	**0.0433**	0.007	15.3	ug/L	109	Standard
	Zn	66	1638.4	1.5	**1.2227**	0.044	3.6	ug/L	159	Standard
>	**Ge**	72	481770.3	1.5				ug/L	474053	Standard
	As	75	-7.3	61.8	**0.0186**	0.004	21.3	ug/L	-34	Standard
	Se	82	21.7	38.5	**0.0252**	0.078	309.4	ug/L	14	Standard
	Se-1	77	49.7	10.3	**-0.1081**	0.069	63.9	ug/L	55	Standard
>	**Ga**	71	81.7	19.7				mg/L	50	Standard
	Rb	85	50.0	17.3				ug/L	20	Standard
	Y	89	391456.0	1.0				ug/L	376602	Standard
>	**Rh**	103	15.0	33.3				ug/L	17	Standard
	Mo	98	98.4	20.8	**0.0355**	0.009	26.7	ug/L	8	Standard
	Ag	107	94.7	3.7	**0.0032**	0.001	16.1	ug/L	81	Standard
	Cd	111	15.5	31.8	**0.0046**	0.003	57.0	mg/L	3	Standard
	Cd	114	31.0	41.6	**0.0025**	0.003	104.4	ug/L	7	Standard
>	**In**	115	534892.9	2.4				ug/L	524722	Standard
	Sn	118	895.0	10.2	**0.0734**	0.014	18.9	ug/L	715	Standard
	Sb	123	243.3	24.4	**0.0397**	0.012	30.7	ug/L	201	Standard
	Ba	135	132.3	7.6	**0.0140**	0.006	42.8	ug/L	108	Standard
	Ce	140	126.7	2.3				ug/L	30	Standard
>	**Tb**	159	808648.5	2.5				ug/L	792236	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	39.3	24.7	**0.0026**	0.001	49.6	ug/L	9	Standard
	Tl	205	40.0	50.0	**-0.0017**	0.003	183.3	ug/L	0	Standard
	Pb	206	250.7	8.4	**-0.0022**	0.005	210.3	ug/L	216	Standard
	Pb	207	220.7	4.6	**-0.0015**	0.003	191.8	ug/L	180	Standard
	Pb	208	931.3	4.0	**-0.0035**	0.003	80.4	ug/L	717	Standard
	U	238	32.0	46.7	**-0.0024**	0.002	99.2	ug/L	4	Standard
>	**Bi**	209	461825.2	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	43.3	46.6	**0.0073**	0.026	347.9	mg/L	20	Standard
K	39	21.7	35.3	**-0.0805**	0.053	65.7	mg/L	22	Standard
Ca	43	33.3	31.2	**-6.2262**	2.322	37.3	mg/L	47	Standard
Fe	54	132.8	30.7	**-0.0183**	0.032	174.0	mg/L	151	Standard
Fe	57	186.7	24.3	**-0.1330**	0.122	92.1	mg/L	195	Standard
Sc-1	45	33299.9	2.5				mg/L	29647	Standard
Cl	35	150658.7	1.1				ug/L	154152	Standard
Kr	83	2.3	24.7				ug/L	3	Standard
Br	81	2026.8	3.8				ug/L	1607	Standard
P	31	21810.7	2.4				ug/L	22752	Standard
S	34	4620.7	1.9				ug/L	5049	Standard
Sr	88	70.0	14.3				ug/L	87	Standard
C	12	86.7	40.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.2	111.3				mg/L	10	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	3	Standard
I	127	2880.3	5.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.142	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.628	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.938
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.322
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: LCSW 41 WG571834-03
Sample Date/Time: Thursday, June 16, 2016 22:36:32
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58134.7	1.4				ug/L	51024	Standard
	Be	9	47481.0	1.2	**49.5549**	1.040	2.1	ug/L	7	Standard
	Al	27	11848.2	29.8	**0.0633**	0.022	34.2	ug/L	625	Standard
	Sc	45	33760.9	2.8				ug/L	29647	Standard
	Ti	47	60.7	19.3	**0.0386**	0.038	99.0	ug/L	57	Standard
	V	51	364743.8	0.9	**51.7833**	1.598	3.1	ug/L	1142	Standard
	Cr	52	384565.8	0.9	**52.0063**	1.376	2.6	ug/L	6628	Standard
	Cr	53	46865.7	2.2	**50.6129**	1.593	3.1	ug/L	430	Standard
	Mn	55	323505.6	0.5	**55.0551**	1.092	2.0	ug/L	603	Standard
	Co	59	330925.6	0.6	**52.1042**	1.547	3.0	ug/L	237	Standard
	Ni	60	98420.3	0.4	**51.5920**	1.168	2.3	ug/L	141	Standard
	Cu	65	96735.2	0.8	**52.0474**	1.195	2.3	ug/L	109	Standard
	Zn	66	60428.3	1.1	**54.9708**	1.052	1.9	ug/L	159	Standard
>	**Ge**	72	468206.5	2.5				ug/L	474053	Standard
	As	75	53251.7	1.1	**48.7274**	0.650	1.3	ug/L	-34	Standard
	Se	82	5558.2	1.1	**50.7386**	1.287	2.5	ug/L	14	Standard
	Se-1	77	3779.1	1.8	**49.0879**	0.350	0.7	ug/L	55	Standard
>	**Ga**	71	95.0	5.3				mg/L	50	Standard
	Rb	85	148.3	20.6				ug/L	20	Standard
	Y	89	410210.7	3.1				ug/L	376602	Standard
>	**Rh**	103	26.7	28.6				ug/L	17	Standard
	Mo	98	76.7	14.4	**0.0250**	0.004	16.4	ug/L	8	Standard
	Ag	107	306600.5	0.9	**48.2949**	0.124	0.3	ug/L	81	Standard
	Cd	111	98706.0	0.5	**47.7973**	0.198	0.4	mg/L	3	Standard
	Cd	114	240379.3	1.1	**47.0837**	0.284	0.6	ug/L	7	Standard
>	**In**	115	558260.1	0.9				ug/L	524722	Standard
	Sn	118	793.4	5.7	**0.0490**	0.008	17.0	ug/L	715	Standard
	Sb	123	217861.1	1.5	**46.8696**	0.887	1.9	ug/L	201	Standard
	Ba	135	91054.1	0.9	**47.1604**	0.551	1.2	ug/L	108	Standard
	Ce	140	330.0	6.6				ug/L	30	Standard
>	**Tb**	159	829912.3	0.8				ug/L	792236	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	372803.8	0.5	**48.2082**	0.596	1.2	ug/L	9	Standard
	Tl	205	323995.9	0.8	**49.2672**	0.912	1.9	ug/L	0	Standard
	Pb	206	236745.0	0.6	**50.5944**	0.255	0.5	ug/L	216	Standard
	Pb	207	206177.7	0.9	**48.4046**	0.929	1.9	ug/L	180	Standard
	Pb	208	859668.8	0.2	**49.7270**	0.479	1.0	ug/L	717	Standard
	U	238	310255.0	0.3	**49.3362**	0.627	1.3	ug/L	4	Standard
>	**Bi**	209	466041.0	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	161.7	12.9	**0.1477**	0.029	19.8	mg/L	20	Standard
K	39	16.7	17.3	**-0.1160**	0.022	19.3	mg/L	22	Standard
Ca	43	33.3	31.2	**-6.3847**	1.928	30.2	mg/L	47	Standard
Fe	54	164.9	14.3	**0.0027**	0.015	570.4	mg/L	151	Standard
Fe	57	196.7	21.3	**-0.1103**	0.128	116.3	mg/L	195	Standard
Sc-1	45	33760.9	2.8				mg/L	29647	Standard
Cl	35	149762.7	1.8				ug/L	154152	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	1560.1	10.1				ug/L	1607	Standard
P	31	22984.1	3.6				ug/L	22752	Standard
S	34	4315.6	2.6				ug/L	5049	Standard
Sr	88	53.3	28.6				ug/L	87	Standard
C	12	83.3	18.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	5.9	86.7				mg/L	10	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	16.7	91.7				mg/L	3	Standard
I	127	1323.4	9.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.936	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.767	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.392
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.238
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606033702 WG571834-01
Sample Date/Time: Thursday, June 16, 2016 22:39:43
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64441.8	2.3				ug/L	51024	Standard
	Be	9	20.0	25.0	**-0.0022**	0.005	232.0	ug/L	7	Standard
	Al	27	60114.2	4.5	**0.3246**	0.014	4.3	ug/L	625	Standard
	Sc	45	31512.8	4.2				ug/L	29647	Standard
	Ti	47	128.0	6.2	**0.2921**	0.031	10.5	ug/L	57	Standard
	V	51	53503.8	0.8	**7.9103**	0.048	0.6	ug/L	1142	Standard
	Cr	52	15505.3	1.8	**1.3346**	0.030	2.3	ug/L	6628	Standard
	Cr	53	2881.9	1.2	**2.8964**	0.027	0.9	ug/L	430	Standard
	Mn	55	1707.4	4.0	**0.1824**	0.014	7.5	ug/L	603	Standard
	Co	59	1839.8	1.0	**0.2661**	0.003	1.0	ug/L	237	Standard
	Ni	60	5162.5	5.3	**2.7953**	0.140	5.0	ug/L	141	Standard
	Cu	65	169344.1	2.3	**96.6524**	1.757	1.8	ug/L	109	Standard
	Zn	66	2344.5	2.7	**2.0388**	0.050	2.4	ug/L	159	Standard
>	**Ge**	72	441453.2	0.5				ug/L	474053	Standard
	As	75	1218.2	9.1	**1.2061**	0.101	8.4	ug/L	-34	Standard
	Se	82	116.0	12.5	**0.9573**	0.138	14.4	ug/L	14	Standard
	Se-1	77	201.7	7.0	**2.0760**	0.211	10.2	ug/L	55	Standard
>	**Ga**	71	926.7	11.5				mg/L	50	Standard
	Rb	85	12571.9	3.7				ug/L	20	Standard
	Y	89	399117.1	1.0				ug/L	376602	Standard
>	**Rh**	103	173.3	1.7				ug/L	17	Standard
	Mo	98	29352.9	0.6	**12.3636**	0.369	3.0	ug/L	8	Standard
	Ag	107	149.7	54.9	**0.0129**	0.015	112.8	ug/L	81	Standard
	Cd	111	24.8	238.3	**0.0100**	0.031	310.7	mg/L	3	Standard
	Cd	114	161.6	48.9	**0.0300**	0.017	58.2	ug/L	7	Standard
>	**In**	115	527437.4	2.5				ug/L	524722	Standard
	Sn	118	1430.1	3.9	**0.1747**	0.010	5.4	ug/L	715	Standard
	Sb	123	2404.5	19.4	**0.5345**	0.118	22.0	ug/L	201	Standard
	Ba	135	29634.3	0.9	**16.2125**	0.353	2.2	ug/L	108	Standard
	Ce	140	185.0	4.7				ug/L	30	Standard
>	**Tb**	159	786743.9	2.6				ug/L	792236	Standard
	Ho	165	16.7	105.4				ug/L	7	Standard
	Tl	203	226.3	39.8	**0.0295**	0.013	45.5	ug/L	9	Standard
	Tl	205	155.0	25.2	**0.0180**	0.007	37.6	ug/L	0	Standard
	Pb	206	685.3	11.7	**0.1039**	0.021	20.6	ug/L	216	Standard
	Pb	207	574.0	3.7	**0.0935**	0.008	8.7	ug/L	180	Standard
	Pb	208	2394.4	2.6	**0.0935**	0.004	4.7	ug/L	717	Standard
	U	238	81.3	17.9	**0.0066**	0.003	42.7	ug/L	4	Standard
>	**Bi**	209	426956.6	1.8				ug/L	460343	Standard

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Na	23	5.0	100.0	**-4.6650**	15.246	326.8	mg/L	0	Standard
Mg	24	23326.3	4.3	**29.7226**	1.184	4.0	mg/L	20	Standard
K	39	571.7	12.7	**3.8838**	0.629	16.2	mg/L	22	Standard
Ca	43	926.7	6.8	**191.1093**	22.294	11.7	mg/L	47	Standard
Fe	54	142.0	8.4	**-0.0064**	0.005	79.6	mg/L	151	Standard
Fe	57	988.4	6.7	**2.2303**	0.090	4.0	mg/L	195	Standard
> **Sc-1**	45	31512.8	4.2				mg/L	29647	Standard
Cl	35	486390.1	1.5				ug/L	154152	Standard
Kr	83	3.0	33.3				ug/L	3	Standard
Br	81	9422.9	2.9				ug/L	1607	Standard
P	31	23089.2	1.2				ug/L	22752	Standard
S	34	5072.5	3.6				ug/L	5049	Standard
Sr	88	663.3	3.8				ug/L	87	Standard
C	12	73.3	41.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	0	Standard
Dy	164	22.4	24.2				mg/L	10	Standard
Ho-1	165	16.7	105.4				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	3	Standard
I	127	47469.3	4.2				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		126.297	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.123	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.518
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.748
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606033702S WG571834-04
Sample Date/Time: Thursday, June 16, 2016 22:42:54
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68019.0	1.4				ug/L	51024	Standard
	Be	9	52452.3	2.6	**46.7932**	1.722	3.7	ug/L	7	Standard
	Al	27	59786.1	1.3	**0.3053**	0.006	2.1	ug/L	625	Standard
	Sc	45	30205.1	3.4				ug/L	29647	Standard
	Ti	47	100.0	14.5	**0.1859**	0.054	29.0	ug/L	57	Standard
	V	51	400824.3	1.2	**59.3044**	1.295	2.2	ug/L	1142	Standard
	Cr	52	361100.0	0.4	**50.8503**	0.412	0.8	ug/L	6628	Standard
	Cr	53	45675.4	2.3	**51.3868**	0.642	1.2	ug/L	430	Standard
	Mn	55	307080.3	1.9	**54.4520**	1.620	3.0	ug/L	603	Standard
	Co	59	323604.2	1.1	**53.0793**	1.177	2.2	ug/L	237	Standard
	Ni	60	93445.6	0.1	**51.0299**	0.526	1.0	ug/L	141	Standard
	Cu	65	247263.6	0.1	**138.7095**	1.722	1.2	ug/L	109	Standard
	Zn	66	54519.2	0.7	**51.6612**	0.952	1.8	ug/L	159	Standard
>	Ge	72	449299.9	1.1				ug/L	474053	Standard
	As	75	56719.6	0.9	**54.0778**	1.049	1.9	ug/L	-34	Standard
	Se	82	5785.5	2.0	**55.0413**	1.675	3.0	ug/L	14	Standard
	Se-1	77	3927.8	1.2	**53.2304**	1.135	2.1	ug/L	55	Standard
>	Ga	71	895.0	4.4				mg/L	50	Standard
	Rb	85	12290.0	5.9				ug/L	20	Standard
	Y	89	386361.5	1.5				ug/L	376602	Standard
>	Rh	103	176.7	6.5				ug/L	17	Standard
	Mo	98	28613.4	1.5	**12.4123**	0.434	3.5	ug/L	8	Standard
	Ag	107	279613.9	0.6	**48.0280**	1.230	2.6	ug/L	81	Standard
	Cd	111	93716.1	1.7	**49.4705**	0.238	0.5	mg/L	3	Standard
	Cd	114	229714.0	2.7	**49.0468**	0.741	1.5	ug/L	7	Standard
>	In	115	512129.2	2.1				ug/L	524722	Standard
	Sn	118	1266.7	5.0	**0.1514**	0.007	4.6	ug/L	715	Standard
	Sb	123	219270.1	0.1	**51.4357**	1.142	2.2	ug/L	201	Standard
	Ba	135	113634.2	0.4	**64.1909**	1.164	1.8	ug/L	108	Standard
	Ce	140	183.3	35.2				ug/L	30	Standard
>	Tb	159	767306.4	2.1				ug/L	792236	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	352266.3	0.4	**50.2886**	0.147	0.3	ug/L	9	Standard
	Tl	205	319230.0	1.5	**53.5879**	0.832	1.6	ug/L	0	Standard
	Pb	206	230082.1	0.2	**54.2895**	0.055	0.1	ug/L	216	Standard
	Pb	207	199935.5	0.5	**51.8202**	0.151	0.3	ug/L	180	Standard
	Pb	208	828887.7	1.4	**52.9349**	0.572	1.1	ug/L	717	Standard
	U	238	314710.8	1.3	**55.2472**	0.560	1.0	ug/L	4	Standard
>	Bi	209	422116.6	0.3				ug/L	460343	Standard

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Na	23	8.3	34.6	**-16.4613**	9.729	59.1	mg/L	0	Standard
Mg	24	22338.1	2.7	**29.6923**	0.787	2.7	mg/L	20	Standard
K	39	545.0	6.6	**3.8545**	0.326	8.5	mg/L	22	Standard
Ca	43	843.4	10.1	**180.3649**	20.489	11.4	mg/L	47	Standard
Fe	54	148.7	22.1	**0.0032**	0.023	711.1	mg/L	151	Standard
Fe	57	781.7	6.7	**1.7339**	0.242	13.9	mg/L	195	Standard
> **Sc-1**	45	30205.1	3.4				mg/L	29647	Standard
Cl	35	476373.7	2.1				ug/L	154152	Standard
Kr	83	2.3	89.2				ug/L	3	Standard
Br	81	9679.8	3.3				ug/L	1607	Standard
P	31	23531.6	1.5				ug/L	22752	Standard
S	34	4985.8	2.7				ug/L	5049	Standard
Sr	88	643.3	5.9				ug/L	87	Standard
C	12	83.3	54.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	100.0				mg/L	0	Standard
Dy	164	9.7	103.3				mg/L	10	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	46467.9	3.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		133.308	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.778	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.600
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	91.696
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: L1606033702SD WG571834-05
Sample Date/Time: Thursday, June 16, 2016 22:46:06
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69477.3	1.8				ug/L	51024	Standard
	Be	9	51502.4	2.4	**44.9684**	0.786	1.7	ug/L	7	Standard
	Al	27	70351.3	0.6	**0.3532**	0.005	1.3	ug/L	625	Standard
	Sc	45	29879.4	2.7				ug/L	29647	Standard
	Ti	47	116.3	8.0	**0.2444**	0.037	15.0	ug/L	57	Standard
	V	51	388223.7	1.2	**57.5908**	0.764	1.3	ug/L	1142	Standard
	Cr	52	347952.9	2.2	**49.1031**	1.033	2.1	ug/L	6628	Standard
	Cr	53	43768.2	2.9	**49.3632**	1.152	2.3	ug/L	430	Standard
	Mn	55	286009.9	1.4	**50.8380**	0.394	0.8	ug/L	603	Standard
	Co	59	307889.4	1.2	**50.6347**	0.555	1.1	ug/L	237	Standard
	Ni	60	89481.8	1.5	**48.9952**	0.439	0.9	ug/L	141	Standard
	Cu	65	241814.9	1.2	**136.0209**	1.038	0.8	ug/L	109	Standard
	Zn	66	51913.8	0.8	**49.3151**	0.405	0.8	ug/L	159	Standard
>	**Ge**	72	448036.8	0.9				ug/L	474053	Standard
	As	75	54590.9	0.7	**52.1892**	0.176	0.3	ug/L	-34	Standard
	Se	82	5464.5	2.1	**52.1104**	0.678	1.3	ug/L	14	Standard
	Se-1	77	3736.5	2.4	**50.7332**	0.775	1.5	ug/L	55	Standard
>	**Ga**	71	880.0	7.8				mg/L	50	Standard
	Rb	85	11956.4	0.5				ug/L	20	Standard
	Y	89	354548.8	0.8				ug/L	376602	Standard
>	**Rh**	103	176.7	9.9				ug/L	17	Standard
	Mo	98	28019.9	1.2	**12.5852**	0.199	1.6	ug/L	8	Standard
	Ag	107	268450.3	0.3	**47.7483**	0.458	1.0	ug/L	81	Standard
	Cd	111	88694.5	1.0	**48.4950**	0.379	0.8	mg/L	3	Standard
	Cd	114	219923.4	1.6	**48.6380**	0.413	0.8	ug/L	7	Standard
>	**In**	115	494421.9	1.1				ug/L	524722	Standard
	Sn	118	1316.7	9.7	**0.1699**	0.024	14.2	ug/L	715	Standard
	Sb	123	211754.6	0.6	**51.4377**	0.300	0.6	ug/L	201	Standard
	Ba	135	110652.9	0.5	**64.7326**	0.425	0.7	ug/L	108	Standard
	Ce	140	260.0	20.0				ug/L	30	Standard
>	**Tb**	159	762292.0	2.0				ug/L	792236	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	342694.3	1.4	**48.0097**	0.052	0.1	ug/L	9	Standard
	Tl	205	304091.9	1.8	**50.0920**	0.270	0.5	ug/L	0	Standard
	Pb	206	222070.0	1.1	**51.4209**	0.338	0.7	ug/L	216	Standard
	Pb	207	193776.6	0.8	**49.2893**	0.546	1.1	ug/L	180	Standard
	Pb	208	789689.1	0.4	**49.4955**	0.776	1.6	ug/L	717	Standard
	U	238	302421.4	0.6	**52.1051**	0.540	1.0	ug/L	4	Standard
>	**Bi**	209	430141.1	1.5				ug/L	460343	Standard

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Na	23	11.7	24.7	**-27.5524**	10.035	36.4	mg/L	0	Standard
Mg	24	22465.0	1.9	**30.1800**	0.330	1.1	mg/L	20	Standard
K	39	500.0	5.0	**3.5529**	0.109	3.1	mg/L	22	Standard
Ca	43	825.0	4.8	**178.0126**	5.766	3.2	mg/L	47	Standard
Fe	54	141.0	25.7	**-0.0008**	0.031	4097.7	mg/L	151	Standard
Fe	57	861.7	4.4	**2.0033**	0.182	9.1	mg/L	195	Standard
> **Sc-1**	45	29879.4	2.7				mg/L	29647	Standard
Cl	35	471095.3	0.9				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	9509.7	3.3				ug/L	1607	Standard
P	31	23573.3	1.7				ug/L	22752	Standard
S	34	4992.5	2.6				ug/L	5049	Standard
Sr	88	646.7	10.1				ug/L	87	Standard
C	12	96.7	31.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	41.7				mg/L	0	Standard
Dy	164	15.7	76.3				mg/L	10	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	3	Standard
I	127	49629.6	4.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		136.166	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.512	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.226
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.439
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

Sample ID: L1606033702SD WG571834-05
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Method 6020 - Summary Report

Sample ID: L1606030301
Sample Date/Time: Thursday, June 16, 2016 22:49:17
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75542.9	1.1				ug/L	51024	Standard
	Be	9	35.0	14.3	**0.0070**	0.004	53.8	ug/L	7	Standard
	Al	27	29747316.4	1.2	**141.1560**	2.929	2.1	ug/L	625	Standard
	Sc	45	33087.8	1.2				ug/L	29647	Standard
	Ti	47	864.4	0.5	**2.9151**	0.077	2.6	ug/L	57	Standard
	V	51	2646.8	15.2	**0.2300**	0.062	27.0	ug/L	1142	Standard
	Cr	52	10730.1	1.6	**0.6326**	0.065	10.2	ug/L	6628	Standard
	Cr	53	13055.7	9.8	**14.6159**	1.842	12.6	ug/L	430	Standard
	Mn	55	149866.6	1.0	**26.8754**	0.469	1.7	ug/L	603	Standard
	Co	59	3157.0	1.2	**0.4841**	0.012	2.4	ug/L	237	Standard
	Ni	60	2562.6	1.9	**1.3439**	0.063	4.7	ug/L	141	Standard
	Cu	65	1783.1	4.8	**0.9478**	0.026	2.7	ug/L	109	Standard
	Zn	66	4720.1	0.9	**4.3229**	0.088	2.0	ug/L	159	Standard
>	**Ge**	72	443259.0	2.7				ug/L	474053	Standard
	As	75	1196.5	7.5	**1.1797**	0.057	4.8	ug/L	-34	Standard
	Se	82	433.0	3.3	**4.0226**	0.239	5.9	ug/L	14	Standard
	Se-1	77	945.4	12.5	**12.4569**	1.980	15.9	ug/L	55	Standard
>	**Ga**	71	90.0	14.7				mg/L	50	Standard
	Rb	85	8912.6	1.9				ug/L	20	Standard
	Y	89	372910.9	1.8				ug/L	376602	Standard
>	**Rh**	103	138.3	9.1				ug/L	17	Standard
	Mo	98	418.3	6.0	**0.1743**	0.012	6.8	ug/L	8	Standard
	Ag	107	142.7	27.1	**0.0119**	0.006	53.9	ug/L	81	Standard
	Cd	111	58.8	59.4	**0.0275**	0.018	65.5	mg/L	3	Standard
	Cd	114	163.0	53.7	**0.0306**	0.018	59.7	ug/L	7	Standard
>	**In**	115	516818.9	0.6				ug/L	524722	Standard
	Sn	118	633.3	5.7	**0.0299**	0.006	20.2	ug/L	715	Standard
	Sb	123	884.4	13.0	**0.1907**	0.026	13.4	ug/L	201	Standard
	Ba	135	210091.9	0.7	**117.6212**	0.688	0.6	ug/L	108	Standard
	Ce	140	548.3	4.6				ug/L	30	Standard
>	**Tb**	159	797833.7	0.3				ug/L	792236	Standard
	Ho	165	23.3	68.9				ug/L	7	Standard
	Tl	203	225.3	33.3	**0.0286**	0.011	36.9	ug/L	9	Standard
	Tl	205	156.7	26.6	**0.0177**	0.007	39.2	ug/L	0	Standard
	Pb	206	343.3	6.6	**0.0221**	0.005	23.5	ug/L	216	Standard
	Pb	207	295.0	6.1	**0.0203**	0.005	24.8	ug/L	180	Standard
	Pb	208	1172.7	3.5	**0.0147**	0.003	21.3	ug/L	717	Standard
	U	238	2550.2	1.4	**0.4258**	0.006	1.3	ug/L	4	Standard
>	**Bi**	209	436094.8	0.8				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.5341**	8.518	153.9	mg/L	0	Standard
Mg	24	135567.2	1.0	**164.6662**	3.386	2.1	mg/L	20	Standard
K	39	101.7	25.2	**0.4668**	0.178	38.1	mg/L	22	Standard
Ca	43	143.3	8.8	**16.8014**	2.330	13.9	mg/L	47	Standard
Fe	54	210.5	7.2	**0.0385**	0.013	33.1	mg/L	151	Standard
Fe	57	346.7	4.4	**0.3147**	0.041	13.0	mg/L	195	Standard
> **Sc-1**	45	33087.8	1.2				mg/L	29647	Standard
Cl	35	252380.3	1.6				ug/L	154152	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	100794.6	4.5				ug/L	1607	Standard
P	31	32519.9	1.3				ug/L	22752	Standard
S	34	4837.4	4.7				ug/L	5049	Standard
Sr	88	436.7	6.9				ug/L	87	Standard
C	12	223.3	5.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	28.7	92.1				mg/L	10	Standard
Ho-1	165	23.3	68.9				mg/L	7	Standard
Er	166	26.7	57.3				mg/L	3	Standard
I	127	617066.8	8.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		148.053	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.504	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.494
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.733
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606030302
Sample Date/Time: Thursday, June 16, 2016 22:52:29
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73040.7	1.9				ug/L	51024	Standard
	Be	9	40.0	45.1	**0.0120**	0.014	119.9	ug/L	7	Standard
	Al	27	29071018.9	1.5	**142.6695**	1.976	1.4	ug/L	625	Standard
	Sc	45	31137.0	3.2				ug/L	29647	Standard
	Ti	47	896.0	0.6	**3.1347**	0.013	0.4	ug/L	57	Standard
	V	51	2628.5	16.8	**0.2400**	0.066	27.6	ug/L	1142	Standard
	Cr	52	11569.4	2.8	**0.8104**	0.048	5.9	ug/L	6628	Standard
	Cr	53	14446.9	3.6	**16.7439**	0.524	3.1	ug/L	430	Standard
	Mn	55	152328.9	0.4	**28.2404**	0.204	0.7	ug/L	603	Standard
	Co	59	3172.7	3.4	**0.5045**	0.021	4.1	ug/L	237	Standard
	Ni	60	2824.9	2.2	**1.5411**	0.022	1.4	ug/L	141	Standard
	Cu	65	1634.1	4.2	**0.8948**	0.038	4.3	ug/L	109	Standard
	Zn	66	5209.6	4.4	**4.9636**	0.220	4.4	ug/L	159	Standard
>	**Ge**	72	428745.2	1.0				ug/L	474053	Standard
	As	75	1258.8	1.9	**1.2822**	0.036	2.8	ug/L	-34	Standard
	Se	82	439.1	3.6	**4.2227**	0.199	4.7	ug/L	14	Standard
	Se-1	77	1078.4	5.9	**14.7842**	0.963	6.5	ug/L	55	Standard
>	**Ga**	71	70.0	25.8				mg/L	50	Standard
	Rb	85	9496.3	1.9				ug/L	20	Standard
	Y	89	380626.7	0.4				ug/L	376602	Standard
>	**Rh**	103	98.3	11.7				ug/L	17	Standard
	Mo	98	479.8	3.7	**0.2023**	0.007	3.6	ug/L	8	Standard
	Ag	107	174.0	68.0	**0.0174**	0.020	114.9	ug/L	81	Standard
	Cd	111	83.1	60.8	**0.0404**	0.026	64.8	mg/L	3	Standard
	Cd	114	224.6	76.7	**0.0439**	0.036	82.5	ug/L	7	Standard
>	**In**	115	512708.3	1.5				ug/L	524722	Standard
	Sn	118	761.7	9.5	**0.0552**	0.012	21.8	ug/L	715	Standard
	Sb	123	807.2	10.7	**0.1743**	0.019	11.1	ug/L	201	Standard
	Ba	135	209488.0	1.0	**118.2448**	2.471	2.1	ug/L	108	Standard
	Ce	140	541.7	9.3				ug/L	30	Standard
>	**Tb**	159	775209.0	3.4				ug/L	792236	Standard
	Ho	165	25.0	20.0				ug/L	7	Standard
	Tl	203	254.0	67.1	**0.0340**	0.024	70.2	ug/L	9	Standard
	Tl	205	180.0	38.9	**0.0228**	0.011	49.8	ug/L	0	Standard
	Pb	206	477.0	17.2	**0.0581**	0.017	29.8	ug/L	216	Standard
	Pb	207	417.0	19.6	**0.0560**	0.019	34.6	ug/L	180	Standard
	Pb	208	1674.7	14.6	**0.0509**	0.014	27.2	ug/L	717	Standard
	U	238	2253.2	2.5	**0.3950**	0.010	2.6	ug/L	4	Standard
>	**Bi**	209	414870.7	2.1				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.0844**	9.297	182.9	mg/L	0	Standard
Mg	24	134474.1	0.2	**173.6638**	5.440	3.1	mg/L	20	Standard
K	39	88.3	19.9	**0.4121**	0.119	28.8	mg/L	22	Standard
Ca	43	171.7	13.8	**24.9409**	4.511	18.1	mg/L	47	Standard
Fe	54	188.7	7.0	**0.0310**	0.006	19.6	mg/L	151	Standard
Fe	57	286.7	15.2	**0.1978**	0.124	62.9	mg/L	195	Standard
Sc-1	45	31137.0	3.2				mg/L	29647	Standard
Cl	35	236218.5	0.5				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	103082.9	2.1				ug/L	1607	Standard
P	31	32710.3	0.4				ug/L	22752	Standard
S	34	4897.5	3.2				ug/L	5049	Standard
Sr	88	453.3	14.0				ug/L	87	Standard
C	12	190.0	18.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	21.9	52.8				mg/L	10	Standard
Ho-1	165	25.0	20.0				mg/L	7	Standard
Er	166	30.0	33.3				mg/L	3	Standard
I	127	617957.6	6.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		143.149	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		90.442	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.710
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.122
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606030402
Sample Date/Time: Thursday, June 16, 2016 22:55:40
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71156.7	0.3				ug/L	51024	Standard
	Be	9	20.0	50.0	**-0.0040**	0.009	211.0	ug/L	7	Standard
	Al	27	27285286.1	1.5	**137.4375**	2.316	1.7	ug/L	625	Standard
	Sc	45	31798.3	2.5				ug/L	29647	Standard
	Ti	47	833.7	1.4	**2.8012**	0.055	2.0	ug/L	57	Standard
	V	51	2537.6	8.1	**0.2132**	0.036	16.9	ug/L	1142	Standard
	Cr	52	12018.1	1.3	**0.8169**	0.043	5.3	ug/L	6628	Standard
	Cr	53	14870.6	5.1	**16.6424**	0.566	3.4	ug/L	430	Standard
	Mn	55	153406.0	0.3	**27.4780**	0.629	2.3	ug/L	603	Standard
	Co	59	3042.6	1.6	**0.4644**	0.013	2.9	ug/L	237	Standard
	Ni	60	2834.9	0.9	**1.4924**	0.050	3.3	ug/L	141	Standard
	Cu	65	1512.4	1.9	**0.7934**	0.029	3.7	ug/L	109	Standard
	Zn	66	12243.6	1.2	**11.5661**	0.178	1.5	ug/L	159	Standard
>	**Ge**	72	443839.5	2.3				ug/L	474053	Standard
	As	75	1046.3	4.7	**1.0354**	0.070	6.7	ug/L	-34	Standard
	Se	82	370.0	2.6	**3.4056**	0.089	2.6	ug/L	14	Standard
	Se-1	77	1056.7	5.5	**13.9459**	0.499	3.6	ug/L	55	Standard
>	**Ga**	71	63.3	29.9				mg/L	50	Standard
	Rb	85	8789.2	0.9				ug/L	20	Standard
	Y	89	374101.9	2.2				ug/L	376602	Standard
>	**Rh**	103	100.0	39.7				ug/L	17	Standard
	Mo	98	414.8	3.1	**0.1799**	0.005	3.0	ug/L	8	Standard
	Ag	107	91.0	19.0	**0.0038**	0.003	80.6	ug/L	81	Standard
	Cd	111	38.9	24.2	**0.0179**	0.005	27.8	mg/L	3	Standard
	Cd	114	124.8	37.3	**0.0236**	0.010	41.9	ug/L	7	Standard
>	**In**	115	496787.9	1.5				ug/L	524722	Standard
	Sn	118	751.7	3.4	**0.0580**	0.007	12.3	ug/L	715	Standard
	Sb	123	699.9	9.2	**0.1546**	0.018	11.7	ug/L	201	Standard
	Ba	135	200966.0	0.6	**117.0693**	2.247	1.9	ug/L	108	Standard
	Ce	140	703.3	2.3				ug/L	30	Standard
>	**Tb**	159	757626.8	0.4				ug/L	792236	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	132.7	7.8	**0.0167**	0.001	8.9	ug/L	9	Standard
	Tl	205	95.0	31.6	**0.0084**	0.005	62.5	ug/L	0	Standard
	Pb	206	531.7	2.2	**0.0713**	0.003	3.6	ug/L	216	Standard
	Pb	207	455.3	6.2	**0.0663**	0.009	13.1	ug/L	180	Standard
	Pb	208	1923.0	1.8	**0.0670**	0.003	4.3	ug/L	717	Standard
	U	238	1986.8	1.8	**0.3469**	0.010	2.8	ug/L	4	Standard
>	**Bi**	209	415441.7	1.2				ug/L	460343	Standard

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Na	23	5.0	0.0	**-4.8155**	0.394	8.2	mg/L	0	Standard
Mg	24	122585.6	0.8	**154.9558**	2.818	1.8	mg/L	20	Standard
K	39	68.3	27.7	**0.2568**	0.128	49.9	mg/L	22	Standard
Ca	43	118.3	20.0	**12.5323**	4.646	37.1	mg/L	47	Standard
Fe	54	188.9	8.2	**0.0283**	0.012	41.6	mg/L	151	Standard
Fe	57	303.3	9.9	**0.2303**	0.108	46.9	mg/L	195	Standard
Sc-1	45	31798.3	2.5				mg/L	29647	Standard
Cl	35	229346.8	0.7				ug/L	154152	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	83539.7	2.1				ug/L	1607	Standard
P	31	32606.7	1.9				ug/L	22752	Standard
S	34	4827.4	4.1				ug/L	5049	Standard
Sr	88	453.3	10.5				ug/L	87	Standard
C	12	170.0	0.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	51.9	21.5				mg/L	10	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	30.0	33.3				mg/L	3	Standard
I	127	562279.3	5.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		139.457	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		93.627	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.676
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	90.246
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606030402PS WG572184-03
Sample Date/Time: Thursday, June 16, 2016 22:58:52
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73075.8	1.3				ug/L	51024	Standard
	Be	9	53890.7	1.6	**44.7456**	1.235	2.8	ug/L	7	Standard
	Al	27	27168938.9	0.8	**133.2737**	2.450	1.8	ug/L	625	Standard
	Sc	45	32783.8	3.0				ug/L	29647	Standard
	Ti	47	859.4	2.1	**2.8540**	0.076	2.7	ug/L	57	Standard
	V	51	356764.3	1.1	**52.7436**	0.694	1.3	ug/L	1142	Standard
	Cr	52	356493.8	0.1	**50.1744**	0.746	1.5	ug/L	6628	Standard
	Cr	53	58201.6	1.0	**65.5911**	1.486	2.3	ug/L	430	Standard
	Mn	55	450920.3	1.1	**79.9871**	1.948	2.4	ug/L	603	Standard
	Co	59	316431.5	0.7	**51.8775**	0.422	0.8	ug/L	237	Standard
	Ni	60	89734.3	1.3	**48.9891**	1.257	2.6	ug/L	141	Standard
	Cu	65	87088.6	0.9	**48.7984**	1.056	2.2	ug/L	109	Standard
	Zn	66	59430.7	0.2	**56.3137**	0.736	1.3	ug/L	159	Standard
>	**Ge**	72	449467.4	1.3				ug/L	474053	Standard
	As	75	54174.2	0.7	**51.6333**	0.928	1.8	ug/L	-34	Standard
	Se	82	5615.8	0.7	**53.3981**	0.963	1.8	ug/L	14	Standard
	Se-1	77	4643.7	1.4	**63.0355**	0.461	0.7	ug/L	55	Standard
>	**Ga**	71	86.7	6.7				mg/L	50	Standard
	Rb	85	8584.1	2.2				ug/L	20	Standard
	Y	89	362129.9	0.6				ug/L	376602	Standard
>	**Rh**	103	126.7	12.1				ug/L	17	Standard
	Mo	98	423.7	5.1	**0.1836**	0.012	6.4	ug/L	8	Standard
	Ag	107	266853.3	1.0	**47.1390**	0.674	1.4	ug/L	81	Standard
	Cd	111	91252.6	1.2	**49.5561**	0.951	1.9	mg/L	3	Standard
	Cd	114	222037.4	0.3	**48.7752**	0.696	1.4	ug/L	7	Standard
>	**In**	115	497860.4	1.7				ug/L	524722	Standard
	Sn	118	795.0	4.5	**0.0661**	0.005	7.0	ug/L	715	Standard
	Sb	123	212175.4	1.5	**51.1854**	0.593	1.2	ug/L	201	Standard
	Ba	135	282462.3	0.7	**164.2013**	1.778	1.1	ug/L	108	Standard
	Ce	140	631.7	10.3				ug/L	30	Standard
>	**Tb**	159	772720.2	0.9				ug/L	792236	Standard
	Ho	165	25.0	72.1				ug/L	7	Standard
	Tl	203	348021.0	0.8	**48.9171**	0.207	0.4	ug/L	9	Standard
	Tl	205	307292.3	1.9	**50.7847**	0.486	1.0	ug/L	0	Standard
	Pb	206	227366.6	0.7	**52.8212**	0.283	0.5	ug/L	216	Standard
	Pb	207	198570.4	0.5	**50.6733**	0.216	0.4	ug/L	180	Standard
	Pb	208	808970.2	1.0	**50.8658**	0.381	0.7	ug/L	717	Standard
	U	238	316899.9	0.9	**54.7755**	0.248	0.5	ug/L	4	Standard
>	**Bi**	209	428726.0	0.9				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.3595**	8.821	164.6	mg/L	0	Standard
Mg	24	124008.8	1.6	**152.0535**	3.346	2.2	mg/L	20	Standard
K	39	85.0	11.8	**0.3592**	0.081	22.7	mg/L	22	Standard
Ca	43	100.0	5.0	**7.9645**	1.532	19.2	mg/L	47	Standard
Fe	54	177.2	11.1	**0.0154**	0.015	95.9	mg/L	151	Standard
Fe	57	351.7	12.7	**0.3402**	0.148	43.6	mg/L	195	Standard
> **Sc-1**	45	32783.8	3.0				mg/L	29647	Standard
Cl	35	226771.8	0.7				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	82051.8	3.7				ug/L	1607	Standard
P	31	32553.3	0.7				ug/L	22752	Standard
S	34	4877.5	2.7				ug/L	5049	Standard
Sr	88	468.3	17.3				ug/L	87	Standard
C	12	143.3	17.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	28.9	106.4				mg/L	10	Standard
Ho-1	165	25.0	72.1				mg/L	7	Standard
Er	166	23.3	65.5				mg/L	3	Standard
I	127	560436.2	7.8				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		143.218	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.814	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.881
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.132
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606030402SDL WG572184-04
Sample Date/Time: Thursday, June 16, 2016 23:02:03
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70743.1	1.8				ug/L	51024	Standard
	Be	9	28.3	50.9	**0.0034**	0.013	384.2	ug/L	7	Standard
	Al	27	5919809.8	1.5	**29.9860**	0.193	0.6	ug/L	625	Standard
	Sc	45	33931.3	4.9				ug/L	29647	Standard
	Ti	47	210.3	4.5	**0.5323**	0.026	4.9	ug/L	57	Standard
	V	51	1736.1	7.7	**0.0751**	0.020	26.8	ug/L	1142	Standard
	Cr	52	8517.7	1.3	**0.2257**	0.018	7.8	ug/L	6628	Standard
	Cr	53	4512.3	4.3	**4.4067**	0.273	6.2	ug/L	430	Standard
	Mn	55	34493.9	0.5	**5.6636**	0.053	0.9	ug/L	603	Standard
	Co	59	857.0	3.0	**0.0916**	0.004	4.4	ug/L	237	Standard
	Ni	60	815.4	3.7	**0.3434**	0.013	3.8	ug/L	141	Standard
	Cu	65	609.0	2.8	**0.2567**	0.008	3.3	ug/L	109	Standard
	Zn	66	2631.2	2.5	**2.1339**	0.077	3.6	ug/L	159	Standard
>	**Ge**	72	475670.8	1.3				ug/L	474053	Standard
	As	75	259.9	19.5	**0.2591**	0.046	17.8	ug/L	-34	Standard
	Se	82	96.9	9.6	**0.7044**	0.090	12.8	ug/L	14	Standard
	Se-1	77	278.3	6.3	**2.8660**	0.190	6.6	ug/L	55	Standard
>	**Ga**	71	100.0	13.2				mg/L	50	Standard
	Rb	85	1971.8	2.2				ug/L	20	Standard
	Y	89	399368.2	0.1				ug/L	376602	Standard
>	**Rh**	103	31.7	55.5				ug/L	17	Standard
	Mo	98	97.2	8.5	**0.0330**	0.003	8.8	ug/L	8	Standard
	Ag	107	194.3	8.7	**0.0182**	0.002	12.0	ug/L	81	Standard
	Cd	111	22.8	26.6	**0.0078**	0.003	35.8	mg/L	3	Standard
	Cd	114	48.7	59.7	**0.0057**	0.006	99.0	ug/L	7	Standard
>	**In**	115	559725.5	1.9				ug/L	524722	Standard
	Sn	118	606.7	7.7	**0.0162**	0.009	56.8	ug/L	715	Standard
	Sb	123	2363.7	19.9	**0.4914**	0.092	18.7	ug/L	201	Standard
	Ba	135	43798.6	2.4	**22.5929**	0.145	0.6	ug/L	108	Standard
	Ce	140	198.3	9.5				ug/L	30	Standard
>	**Tb**	159	842868.7	1.3				ug/L	792236	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	155.3	20.7	**0.0174**	0.004	24.2	ug/L	9	Standard
	Tl	205	138.3	25.4	**0.0131**	0.005	41.5	ug/L	0	Standard
	Pb	206	331.7	5.4	**0.0143**	0.004	25.7	ug/L	216	Standard
	Pb	207	291.7	3.0	**0.0144**	0.002	12.4	ug/L	180	Standard
	Pb	208	1219.7	5.8	**0.0124**	0.004	35.2	ug/L	717	Standard
	U	238	456.0	5.1	**0.0646**	0.005	7.0	ug/L	4	Standard
>	**Bi**	209	468142.9	1.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	26463.1	2.5	**31.3785**	2.343	7.5	mg/L	20	Standard
K	39	26.7	78.1	**-0.0526**	0.134	255.5	mg/L	22	Standard
Ca	43	43.3	17.6	**-4.3735**	1.225	28.0	mg/L	47	Standard
Fe	54	169.2	3.0	**0.0053**	0.003	52.6	mg/L	151	Standard
Fe	57	196.7	11.5	**-0.1160**	0.038	32.8	mg/L	195	Standard
> **Sc-1**	45	33931.3	4.9				mg/L	29647	Standard
Cl	35	196142.1	0.3				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	19616.0	5.5				ug/L	1607	Standard
P	31	27376.4	1.1				ug/L	22752	Standard
S	34	5225.9	4.8				ug/L	5049	Standard
Sr	88	161.7	12.5				ug/L	87	Standard
C	12	53.3	21.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	18.9	105.9				mg/L	10	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	23.3	24.7				mg/L	3	Standard
I	127	136986.5	1.1				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		138.646	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.341	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.671
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.694
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 23:05:16
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65141.5	3.2				ug/L	51024	Standard
	Be	9	52703.2	1.3	**49.1153**	1.764	3.6	ug/L	7	Standard
	Al	27	8228815.5	2.2	**45.2824**	0.920	2.0	ug/L	625	Standard
	Sc	45	32498.2	4.1				ug/L	29647	Standard
	Ti	47	31345.1	0.7	**103.5318**	1.343	1.3	ug/L	57	Standard
	V	51	367453.1	0.4	**51.1407**	0.777	1.5	ug/L	1142	Standard
	Cr	52	375913.5	0.3	**49.8070**	1.076	2.2	ug/L	6628	Standard
	Cr	53	47646.5	1.3	**50.4578**	1.488	2.9	ug/L	430	Standard
	Mn	55	329100.4	0.4	**54.9171**	0.971	1.8	ug/L	603	Standard
	Co	59	349269.0	1.0	**53.9203**	1.421	2.6	ug/L	237	Standard
	Ni	60	96531.2	0.8	**49.6170**	1.272	2.6	ug/L	141	Standard
	Cu	65	93924.6	0.9	**49.5504**	1.188	2.4	ug/L	109	Standard
	Zn	66	55518.9	0.1	**49.5011**	0.851	1.7	ug/L	159	Standard
>	Ge	72	477444.4	1.8				ug/L	474053	Standard
	As	75	55141.7	0.8	**49.4767**	0.656	1.3	ug/L	-34	Standard
	Se	82	5701.1	0.6	**51.0288**	1.000	2.0	ug/L	14	Standard
	Se-1	77	3881.8	1.1	**49.4608**	1.267	2.6	ug/L	55	Standard
>	Ga	71	65.0	13.3				mg/L	50	Standard
	Rb	85	788.4	3.5				ug/L	20	Standard
	Y	89	405958.4	2.3				ug/L	376602	Standard
>	Rh	103	46.7	6.2				ug/L	17	Standard
	Mo	98	255980.2	1.6	**104.9334**	3.174	3.0	ug/L	8	Standard
	Ag	107	304085.1	0.1	**49.3379**	0.777	1.6	ug/L	81	Standard
	Cd	111	100650.6	0.4	**50.2032**	0.894	1.8	mg/L	3	Standard
	Cd	114	247889.3	0.9	**50.0095**	0.397	0.8	ug/L	7	Standard
>	In	115	542056.8	1.5				ug/L	524722	Standard
	Sn	118	285272.3	0.9	**51.1841**	0.960	1.9	ug/L	715	Standard
	Sb	123	227314.1	0.8	**50.3702**	0.881	1.7	ug/L	201	Standard
	Ba	135	91208.0	0.4	**48.6598**	0.850	1.7	ug/L	108	Standard
	Ce	140	63.3	32.9				ug/L	30	Standard
>	Tb	159	789070.3	2.3				ug/L	792236	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	377602.8	0.5	**50.2279**	0.920	1.8	ug/L	9	Standard
	Tl	205	337371.9	1.4	**52.7729**	1.437	2.7	ug/L	0	Standard
	Pb	206	238042.0	0.2	**52.3320**	0.779	1.5	ug/L	216	Standard
	Pb	207	215459.6	1.1	**52.0360**	1.192	2.3	ug/L	180	Standard
	Pb	208	891326.9	0.5	**53.0399**	0.951	1.8	ug/L	717	Standard
	U	238	333407.3	1.0	**54.5375**	1.116	2.0	ug/L	4	Standard
>	Bi	209	453096.7	1.3				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.3907**	8.767	162.6	mg/L	0	Standard
Mg	24	4200.6	2.3	**5.1529**	0.111	2.2	mg/L	20	Standard
K	39	616.7	6.8	**4.0727**	0.447	11.0	mg/L	22	Standard
Ca	43	71.7	17.6	**2.1532**	3.105	144.2	mg/L	47	Standard
Fe	54	6037.6	3.3	**4.3664**	0.172	3.9	mg/L	151	Standard
Fe	57	1763.4	0.4	**4.3392**	0.195	4.5	mg/L	195	Standard
Sc-1	45	32498.2	4.1				mg/L	29647	Standard
Cl	35	179833.9	2.1				ug/L	154152	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	2146.8	4.2				ug/L	1607	Standard
P	31	26813.7	2.2				ug/L	22752	Standard
S	34	5724.4	0.6				ug/L	5049	Standard
Sr	88	70.0	14.3				ug/L	87	Standard
C	12	63.3	50.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.0	50.0				mg/L	10	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	3	Standard
I	127	9479.8	26.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	98.231		
Al	27	90.565		
Sc	45			
Ti	47	103.532		
V	51	102.281		
Cr	52	99.614		
Cr	53			
Mn	55	109.834		
Co	59	107.841		
Ni	60	99.234		
Cu	65	99.101		
Zn	66	99.002		
Ge	72		100.715	
As	75	98.953		
Se	82	102.058		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	104.933		
Ag	107	98.676		
Cd	111	100.406		
Cd	114			
> In	115		103.304	
Sn	118	102.368		
Sb	123	100.740		
Ba	135	97.320		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.456		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.080		
U	238	109.075		
> Bi	209		98.426	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 23:08:27
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65521.4	0.4				ug/L	51024	Standard
	Be	9	23.3	99.0	**0.0005**	0.021	4564.3	ug/L	7	Standard
	Al	27	5681.9	111.4	**0.0212**	0.034	162.2	ug/L	625	Standard
	Sc	45	34061.6	0.4				ug/L	29647	Standard
	Ti	47	31.0	31.1	**-0.0658**	0.030	46.1	ug/L	57	Standard
	V	51	1137.0	4.8	**-0.0132**	0.008	58.0	ug/L	1142	Standard
	Cr	52	6409.0	1.1	**-0.0829**	0.007	8.9	ug/L	6628	Standard
	Cr	53	666.7	9.6	**0.2639**	0.061	23.2	ug/L	430	Standard
	Mn	55	712.4	6.8	**-0.0100**	0.007	70.1	ug/L	603	Standard
	Co	59	233.0	15.5	**-0.0061**	0.005	85.2	ug/L	237	Standard
	Ni	60	159.3	10.8	**0.0024**	0.008	354.6	ug/L	141	Standard
	Cu	65	160.3	16.8	**0.0166**	0.013	81.1	ug/L	109	Standard
	Zn	66	162.7	11.7	**-0.0896**	0.016	17.5	ug/L	159	Standard
>	**Ge**	72	488521.2	0.7				ug/L	474053	Standard
	As	75	-18.2	245.0	**0.0090**	0.039	433.3	ug/L	-34	Standard
	Se	82	22.9	33.5	**0.0317**	0.066	209.0	ug/L	14	Standard
	Se-1	77	61.7	10.8	**0.0347**	0.088	253.1	ug/L	55	Standard
>	**Ga**	71	43.3	6.7				mg/L	50	Standard
	Rb	85	21.7	26.6				ug/L	20	Standard
	Y	89	392497.9	1.5				ug/L	376602	Standard
>	**Rh**	103	15.0	66.7				ug/L	17	Standard
	Mo	98	290.0	34.9	**0.1112**	0.040	35.6	ug/L	8	Standard
	Ag	107	124.3	21.0	**0.0075**	0.004	51.6	ug/L	81	Standard
	Cd	111	11.5	16.4	**0.0024**	0.001	34.9	mg/L	3	Standard
	Cd	114	37.6	64.7	**0.0036**	0.005	130.1	ug/L	7	Standard
>	**In**	115	550836.3	1.7				ug/L	524722	Standard
	Sn	118	835.0	15.5	**0.0583**	0.023	39.6	ug/L	715	Standard
	Sb	123	699.1	30.0	**0.1378**	0.046	33.4	ug/L	201	Standard
	Ba	135	132.0	3.9	**0.0117**	0.003	27.6	ug/L	108	Standard
	Ce	140	11.7	24.7				ug/L	30	Standard
>	**Tb**	159	819426.3	1.1				ug/L	792236	Standard
	Ho	165	6.7	86.6				ug/L	7	Standard
	Tl	203	74.7	34.7	**0.0068**	0.003	47.8	ug/L	9	Standard
	Tl	205	90.0	77.2	**0.0055**	0.010	186.7	ug/L	0	Standard
	Pb	206	270.7	9.3	**0.0000**	0.005	33114.8	ug/L	216	Standard
	Pb	207	219.0	11.0	**-0.0037**	0.006	150.6	ug/L	180	Standard
	Pb	208	961.7	14.2	**-0.0037**	0.008	206.3	ug/L	717	Standard
	U	238	71.3	83.4	**0.0035**	0.009	266.3	ug/L	4	Standard
>	**Bi**	209	478835.9	0.7				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.7236**	8.190	143.1	mg/L	0	Standard
Mg	24	78.3	36.3	**0.0471**	0.033	70.4	mg/L	20	Standard
K	39	20.0	50.0	**-0.0950**	0.067	70.5	mg/L	22	Standard
Ca	43	16.7	62.4	**-9.7998**	2.111	21.5	mg/L	47	Standard
Fe	54	162.8	19.9	**0.0003**	0.023	7301.8	mg/L	151	Standard
Fe	57	211.7	11.2	**-0.0764**	0.066	86.3	mg/L	195	Standard
> **Sc-1**	45	34061.6	0.4				mg/L	29647	Standard
Cl	35	176482.8	2.0				ug/L	154152	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	1700.1	5.3				ug/L	1607	Standard
P	31	27343.0	0.9				ug/L	22752	Standard
S	34	5614.4	3.8				ug/L	5049	Standard
Sr	88	68.3	27.7				ug/L	87	Standard
C	12	56.7	44.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	16.0	95.0				mg/L	10	Standard
Ho-1	165	6.7	86.6				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	4402.3	12.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.052	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.977
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.017
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, June 16, 2016 23:11:40
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62197.5	2.7				ug/L	51024	Standard
	Be	9	238.3	13.6	**0.2121**	0.037	17.6	ug/L	7	Standard
	Al	27	1466.7	24.6	**-0.0013**	0.002	173.1	ug/L	625	Standard
	Sc	45	31464.3	3.4				ug/L	29647	Standard
	Ti	47	25.0	41.8	**-0.0793**	0.036	45.5	ug/L	57	Standard
	V	51	3787.9	2.1	**0.3855**	0.011	2.8	ug/L	1142	Standard
	Cr	52	11607.4	0.4	**0.7122**	0.016	2.2	ug/L	6628	Standard
	Cr	53	1381.7	1.4	**1.1136**	0.035	3.1	ug/L	430	Standard
	Mn	55	3485.4	2.1	**0.4840**	0.015	3.1	ug/L	603	Standard
	Co	59	2688.9	0.3	**0.3937**	0.004	0.9	ug/L	237	Standard
	Ni	60	3045.6	2.3	**1.5635**	0.022	1.4	ug/L	141	Standard
	Cu	65	1580.4	3.3	**0.8079**	0.030	3.7	ug/L	109	Standard
	Zn	66	7167.0	0.7	**6.4903**	0.095	1.5	ug/L	159	Standard
>	**Ge**	72	455928.4	0.9				ug/L	474053	Standard
	As	75	370.6	7.7	**0.3732**	0.030	8.0	ug/L	-34	Standard
	Se	82	61.3	17.8	**0.4078**	0.107	26.4	ug/L	14	Standard
	Se-1	77	90.3	17.8	**0.4781**	0.216	45.1	ug/L	55	Standard
>	**Ga**	71	55.0	24.1				mg/L	50	Standard
	Rb	85	15.0	57.7				ug/L	20	Standard
	Y	89	401919.6	0.8				ug/L	376602	Standard
>	**Rh**	103	13.3	43.3				ug/L	17	Standard
	Mo	98	54.9	10.1	**0.0169**	0.002	11.0	ug/L	8	Standard
	Ag	107	2304.2	2.4	**0.3610**	0.011	3.1	ug/L	81	Standard
	Cd	111	463.2	4.6	**0.2274**	0.011	4.7	mg/L	3	Standard
	Cd	114	1100.0	5.3	**0.2180**	0.017	7.9	ug/L	7	Standard
>	**In**	115	543008.1	2.6				ug/L	524722	Standard
	Sn	118	436.7	6.3	**-0.0111**	0.004	33.6	ug/L	715	Standard
	Sb	123	1825.0	3.3	**0.3894**	0.024	6.1	ug/L	201	Standard
	Ba	135	1282.7	6.8	**0.6257**	0.032	5.1	ug/L	108	Standard
	Ce	140	18.3	41.7				ug/L	30	Standard
>	**Tb**	159	786449.8	2.4				ug/L	792236	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	625.7	5.7	**0.0805**	0.004	5.1	ug/L	9	Standard
	Tl	205	541.7	4.7	**0.0768**	0.002	3.0	ug/L	0	Standard
	Pb	206	1119.4	3.0	**0.1897**	0.004	2.2	ug/L	216	Standard
	Pb	207	980.4	3.9	**0.1828**	0.004	2.1	ug/L	180	Standard
	Pb	208	4169.9	1.1	**0.1903**	0.004	2.3	ug/L	717	Standard
	U	238	2499.2	1.6	**0.4009**	0.009	2.3	ug/L	4	Standard
>	**Bi**	209	453610.3	2.8				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	55.0	15.7	**0.0251**	0.011	43.4	mg/L	20	Standard
K	39	8.3	91.7	**-0.1668**	0.057	33.9	mg/L	22	Standard
Ca	43	21.7	66.6	**-8.4026**	3.204	38.1	mg/L	47	Standard
Fe	54	104.1	4.5	**-0.0352**	0.004	10.9	mg/L	151	Standard
Fe	57	183.3	11.0	**-0.1131**	0.042	36.8	mg/L	195	Standard
> **Sc-1**	45	31464.3	3.4				mg/L	29647	Standard
Cl	35	173373.0	1.2				ug/L	154152	Standard
Kr	83	0.7	173.2				ug/L	3	Standard
Br	81	1516.7	7.1				ug/L	1607	Standard
P	31	19057.0	2.5				ug/L	22752	Standard
S	34	5394.3	1.5				ug/L	5049	Standard
Sr	88	70.0	24.7				ug/L	87	Standard
C	12	66.7	82.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	3.2	173.2				mg/L	10	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	3055.3	5.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	106.050		
Al	27			
Sc	45			
Ti	47			
V	51	96.369		
Cr	52	89.022		
Cr	53			
Mn	55	96.796		
Co	59	98.420		
Ni	60	97.718		
Cu	65	100.991		
Zn	66	103.844		
> Ge	72		96.177	
As	75	93.302		
Se	82	101.945		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	90.256		
Cd	111	94.767		
Cd	114			
> In	115			103.485
Sn	118			
Sb	123	97.340		
Ba	135	83.430		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.678		
Tl	205			
Pb	206			
Pb	207			
Pb	208	95.126		
U	238	100.222		
> Bi	209			98.537
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Tuesday, June 21, 2016 12:07:41

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1329	2024	0.712	
Mg	23.985	23.975	4501	2020	0.694	
Co	58.933	58.925	11686	2022	0.702	
In	114.904	114.925	22861	2028	0.687	
U	238.050	238.075	47460	2043	0.684	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	6.556
5.575	2.909
5.625	3.124
5.675	4.542
5.725	2.516
5.775	3.133
5.825	3.034
5.875	2.659
5.925	3.116
5.975	0.663
6.025	3.021
6.075	4.431
6.125	3.101
6.175	3.302
6.225	9.989
6.275	25.913
6.325	61.237
6.375	37.268
6.425	95.831
6.475	39.218
6.525	13.045
6.575	6.056
6.625	3.694
6.675	1.639
6.725	2.760
6.775	1.475
6.825	2.174

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6.875	1.150
6.925	1.430
6.975	2.330
7.025	1.255
7.075	0.705
7.125	2.295
7.175	1.271
7.225	3.628
7.275	4.494
7.325	27.694
7.375	63.888
7.425	39.123
7.475	88.928
7.525	69.869
7.575	37.268
7.625	63.191
7.675	69.869
7.725	86.603
7.775	99.381
7.825	121.967
7.875	83.853
7.925	72.436
7.975	99.381
8.025	50.000
8.075	34.233
8.125	100.000
8.175	38.030
8.225	40.825
8.275	22.822
8.325	138.332
8.375	39.123
8.425	79.057
8.475	43.853
22.525	223.607
22.575	38.030
22.625	43.853
22.675	32.401
22.725	43.376
22.775	49.793
22.825	52.408
22.875	27.407
22.925	16.563
22.975	20.412
23.025	28.315
23.075	34.881
23.125	25.951
23.175	32.541

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23.225	14.650
23.275	27.809
23.325	19.174
23.375	43.122
23.425	29.487
23.475	18.506
23.525	5.966
23.575	3.055
23.625	1.534
23.675	1.817
23.725	1.183
23.775	0.960
23.825	1.298
23.875	1.103
23.925	0.675
23.975	1.038
24.025	1.417
24.075	0.260
24.125	0.656
24.175	1.631
24.225	1.863
24.275	3.146
24.325	28.710
24.375	26.307
24.425	30.292
24.475	13.327
24.525	4.037
24.575	1.007
24.625	3.057
24.675	2.129
24.725	1.137
24.775	1.370
24.825	1.603
24.875	1.801
24.925	0.625
24.975	1.310
25.025	1.635
25.075	1.412
25.125	1.115
25.175	1.388
25.225	1.212
25.275	14.200
25.325	57.334
25.375	84.265
25.425	42.127
25.475	10.037
57.525	5.453

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57.575	2.202
57.625	3.035
57.675	1.654
57.725	3.803
57.775	1.264
57.825	1.936
57.875	2.815
57.925	1.641
57.975	2.107
58.025	2.389
58.075	2.038
58.125	0.977
58.175	4.405
58.225	4.049
58.275	3.597
58.325	15.526
58.375	17.815
58.425	26.131
58.475	8.281
58.525	1.499
58.575	1.606
58.625	2.262
58.675	1.232
58.725	2.036
58.775	0.724
58.825	1.502
58.875	1.471
58.925	1.251
58.975	1.106
59.025	1.762
59.075	1.429
59.125	1.832
59.175	2.462
59.225	2.138
59.275	14.258
59.325	45.166
59.375	47.140
59.425	44.721
59.475	23.904
59.525	10.883
59.575	9.409
59.625	4.974
59.675	2.777
59.725	1.421
59.775	3.138
59.825	1.163
59.875	1.334

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59.925	3.822
59.975	1.863
60.025	1.945
60.075	2.122
60.125	3.418
60.175	2.126
60.225	8.067
60.275	17.408
60.325	50.619
60.375	35.355
60.425	52.705
60.475	30.842
113.525	13.070
113.575	7.506
113.625	5.331
113.675	1.010
113.725	3.027
113.775	2.098
113.825	2.123
113.875	2.206
113.925	2.127
113.975	2.183
114.025	0.695
114.075	2.493
114.125	1.430
114.175	1.596
114.225	3.899
114.275	3.770
114.325	17.743
114.375	38.065
114.425	24.241
114.475	10.721
114.525	4.779
114.575	3.301
114.625	1.042
114.675	2.599
114.725	2.253
114.775	2.049
114.825	0.960
114.875	1.817
114.925	1.355
114.975	1.378
115.025	1.472
115.075	1.260
115.125	2.051
115.175	2.855
115.225	2.482

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115.275	6.639
115.325	11.285
115.375	27.524
115.425	38.030
115.475	48.445
115.525	22.628
115.575	8.442
115.625	5.335
115.675	3.400
115.725	5.123
115.775	2.482
115.825	4.190
115.875	5.728
115.925	4.930
115.975	5.489
116.025	3.368
116.075	2.667
116.125	3.465
116.175	4.332
116.225	4.691
116.275	14.225
116.325	24.781
116.375	59.266
116.425	74.689
116.475	76.697
236.525	
236.575	42.229
236.625	43.069
236.675	30.822
236.725	19.846
236.775	17.801
236.825	35.067
236.875	14.286
236.925	33.026
236.975	31.044
237.025	23.207
237.075	28.152
237.125	38.870
237.175	48.879
237.225	33.159
237.275	29.116
237.325	14.542
237.375	23.458
237.425	19.563
237.475	25.573
237.525	41.592
237.575	22.988

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237.625	9.655
237.675	3.555
237.725	2.204
237.775	2.335
237.825	2.878
237.875	1.983
237.925	0.860
237.975	1.594
238.025	1.305
238.075	0.963
238.125	1.566
238.175	1.319
238.225	0.999
238.275	0.949
238.325	1.610
238.375	2.604
238.425	0.685
238.475	5.782
238.525	6.276
238.575	21.121
238.625	40.982
238.675	25.226
238.725	31.270
238.775	24.717
238.825	36.014
238.875	26.854
238.925	18.372
238.975	35.067
239.025	35.209
239.075	29.613
239.125	29.155
239.175	13.847
239.225	32.341
239.275	28.917
239.325	41.445
239.375	36.361
239.425	32.530
239.475	31.439

Approved: June 22, 2016

SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\ReportOutput\a.swz

Start Time: 6/21/2016 12:13:16 PM
End Time: 6/21/2016 12:15:43 PM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 4257.87
        Obtained Intensity (Mg 23.985): 91046.81
        Obtained Intensity (In 114.904): 67007.59
        Obtained Intensity (U 238.05): 138801.86
        Obtained Intensity (Bkgd 220): 0.27
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.018 (=3833.82 / 209522.60)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.006 (=1202.25 / 209522.60)
```


Approved: June 22, 2016

SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\ReportOutput\a.swz

Optimization Status

Start Time: 6/21/2016 12:13:16 PM

Daily Performance Check
        Optimization Settings:
                Method: Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 1
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 4257.87
                Obtained Intensity (Mg 23.985): 91046.81
                Obtained Intensity (In 114.904): 67007.59
                Obtained Intensity (U 238.05): 138801.86
                Obtained Intensity (Bkgd 220): 0.27
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.018 (=3833.82 / 209522.60)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.006 (=1202.25 / 209522.60)
[Passed]  Optimum value(s): N/A

End Time: 6/21/2016 12:15:43 PM
```


Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Tuesday, June 21, 2016 12:31:36
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60175.9	0.2				ug/L		Standard
	Be	9	5.0	0.0				ug/L		Standard
	Al	27	831.7	9.4				ug/L		Standard
	Sc	45	25065.7	2.2				ug/L		Standard
	Ti	47	37.7	15.6				ug/L		Standard
	V	51	974.0	7.7				ug/L		Standard
	Cr	52	5792.4	1.5				ug/L		Standard
	Cr	53	346.7	9.8				ug/L		Standard
	Mn	55	1164.0	4.2				ug/L		Standard
	Co	59	303.3	8.1				ug/L		Standard
	Ni	60	290.7	6.8				ug/L		Standard
	Cu	65	172.7	6.7				ug/L		Standard
	Zn	66	130.3	5.4				ug/L		Standard
>	Ge	72	491723.5	1.3				ug/L		Standard
	As	75	-24.7	79.1				ug/L		Standard
	Se	82	11.5	37.2				ug/L		Standard
	Se-1	77	57.0	6.3				ug/L		Standard
>	Ga	71	148.3	7.8				mg/L		Standard
	Rb	85	18.3	41.7				ug/L		Standard
	Y	89	401844.8	1.4				ug/L		Standard
>	Rh	103	10.0	50.0				ug/L		Standard
	Mo	98	11.9	33.1				ug/L		Standard
	Ag	107	97.7	16.8				ug/L		Standard
	Cd	111	10.7	42.3				mg/L		Standard
	Cd	114	21.3	80.2				ug/L		Standard
>	In	115	547486.6	2.6				ug/L		Standard
	Sn	118	450.0	16.8				ug/L		Standard
	Sb	123	105.2	26.0				ug/L		Standard
	Ba	135	111.3	14.6				ug/L		Standard
	Ce	140	106.7	44.3				ug/L		Standard
>	Tb	159	890342.4	1.4				ug/L		Standard
	Ho	165	10.0	50.0				ug/L		Standard
	Tl	203	19.3	72.5				ug/L		Standard
	Tl	205	16.7	62.4				ug/L		Standard
	Pb	206	247.0	5.1				ug/L		Standard
	Pb	207	215.0	4.1				ug/L		Standard
	Pb	208	770.0	5.2				ug/L		Standard
	U	238	13.3	42.6				ug/L		Standard
>	Bi	209	503142.7	1.4				ug/L		Standard

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Na	23	1.7	173.2	mg/L	Standard
Mg	24	35.0	14.3	mg/L	Standard
K	39	25.0	52.9	mg/L	Standard
Ca	43	38.3	19.9	mg/L	Standard
Fe	54	126.1	27.3	mg/L	Standard
Fe	57	245.0	30.1	mg/L	Standard
> **Sc-1**	45	25065.7	2.2	mg/L	Standard
Cl	35	125857.3	1.3	ug/L	Standard
Kr	83	1.0	100.0	ug/L	Standard
Br	81	1350.1	4.5	ug/L	Standard
P	31	18392.8	1.6	ug/L	Standard
S	34	3738.8	6.0	ug/L	Standard
Sr	88	78.3	24.2	ug/L	Standard
C	12	53.3	60.3	mg/L	Standard
N	14	0.0		mg/L	Standard
Hg	202	0.0		mg/L	Standard
Dy	164	2.2	286.4	mg/L	Standard
Ho-1	165	10.0	50.0	mg/L	Standard
Er	166	23.3	65.5	mg/L	Standard
I	127	1145.0	4.2	mg/L	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Tuesday, June 21, 2016 12:34:47
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60488.9	1.3				ug/L	60176	Standard
	Be	9	11.7	65.5				ug/L	5	Standard
	Al	27	836.7	4.8				ug/L	832	Standard
	Sc	45	24878.7	2.2				ug/L	25066	Standard
	Ti	47	35.3	20.5				ug/L	38	Standard
	V	51	1014.5	7.5				ug/L	974	Standard
	Cr	52	5913.2	2.9				ug/L	5792	Standard
	Cr	53	315.0	19.3				ug/L	347	Standard
	Mn	55	1207.0	3.4				ug/L	1164	Standard
	Co	59	269.3	1.8				ug/L	303	Standard
	Ni	60	292.0	1.9				ug/L	291	Standard
	Cu	65	155.7	6.3				ug/L	173	Standard
	Zn	66	143.3	11.1				ug/L	130	Standard
>	**Ge**	72	484278.1	1.8				ug/L	491724	Standard
	As	75	-25.5	164.8				ug/L	-25	Standard
	Se	82	11.6	54.6				ug/L	12	Standard
	Se-1	77	49.7	15.1				ug/L	57	Standard
>	**Ga**	71	168.3	18.1				mg/L	148	Standard
	Rb	85	21.7	48.0				ug/L	18	Standard
	Y	89	409346.3	1.0				ug/L	401845	Standard
>	**Rh**	103	26.7	10.8				ug/L	10	Standard
	Mo	98	8.3	17.9				ug/L	12	Standard
	Ag	107	92.7	12.5				ug/L	98	Standard
	Cd	111	9.3	34.5				mg/L	11	Standard
	Cd	114	15.1	46.6				ug/L	21	Standard
>	**In**	115	551450.0	0.7				ug/L	547487	Standard
	Sn	118	430.0	8.1				ug/L	450	Standard
	Sb	123	43.1	45.3				ug/L	105	Standard
	Ba	135	105.7	9.3				ug/L	111	Standard
	Ce	140	71.7	83.2				ug/L	107	Standard
>	**Tb**	159	897003.4	2.0				ug/L	890342	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	11.0	72.2				ug/L	19	Standard
	Tl	205	10.0	132.3				ug/L	17	Standard
	Pb	206	238.0	4.2				ug/L	247	Standard
	Pb	207	219.3	4.9				ug/L	215	Standard
	Pb	208	792.0	5.9				ug/L	770	Standard
	U	238	10.0	75.5				ug/L	13	Standard
>	**Bi**	209	496302.2	1.2				ug/L	503143	Standard

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	Na	23	0.0		mg/L	2	Standard
	Mg	24	31.7	24.1	mg/L	35	Standard
	K	39	33.3	43.3	mg/L	25	Standard
	Ca	43	26.7	10.8	mg/L	38	Standard
	Fe	54	132.9	5.9	mg/L	126	Standard
	Fe	57	250.0	24.0	mg/L	245	Standard
>	**Sc-1**	45	24878.7	2.2	mg/L	25066	Standard
	Cl	35	129128.6	0.4	ug/L	125857	Standard
	Kr	83	1.7	124.9	ug/L	1	Standard
	Br	81	1190.0	4.4	ug/L	1350	Standard
	P	31	18840.0	2.5	ug/L	18393	Standard
	S	34	3955.5	5.6	ug/L	3739	Standard
	Sr	88	98.3	22.9	ug/L	78	Standard
	C	12	73.3	28.4	mg/L	53	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	3.3	173.2	mg/L	0	Standard
	Dy	164	6.2	93.6	mg/L	2	Standard
	Ho-1	165	8.3	69.3	mg/L	10	Standard
	Er	166	10.0	100.0	mg/L	23	Standard
	I	127	1046.7	2.3	mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85
Y	89
> Rh	103
Mo	98
Ag	107
Cd	111
Cd	114
> In	115
Sn	118
Sb	123
Ba	135
Ce	140
> Tb	159
Ho	165
Tl	203
Tl	205
Pb	206
Pb	207
Pb	208
U	238
> Bi	209
Na	23
Mg	24
K	39
Ca	43
Fe	54
Fe	57
> Sc-1	45
Cl	35
Kr	83
Br	81
P	31
S	34
Sr	88
C	12
N	14
Hg	202
Dy	164
Ho-1	165
Er	166
I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 1
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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Tuesday, June 21, 2016 12:37:59
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	58902.6	2.2				ug/L	60176	Standard
	Be	9	41.7	36.7				ug/L	5	Standard
	Al	27	7506.9	2.0				ug/L	832	Standard
	Sc	45	24807.0	1.7				ug/L	25066	Standard
	Ti	47	57.3	17.5				ug/L	38	Standard
	V	51	1265.4	5.8				ug/L	974	Standard
	Cr	52	6084.9	2.1				ug/L	5792	Standard
	Cr	53	365.0	11.9				ug/L	347	Standard
	Mn	55	1636.8	0.3				ug/L	1164	Standard
	Co	59	583.0	6.7				ug/L	303	Standard
	Ni	60	417.3	3.9				ug/L	291	Standard
	Cu	65	254.7	1.5				ug/L	173	Standard
	Zn	66	285.3	6.4				ug/L	130	Standard
>	Ge	72	474091.1	0.6				ug/L	491724	Standard
	As	75	16.4	175.0				ug/L	-25	Standard
	Se	82	14.3	35.4				ug/L	12	Standard
	Se-1	77	47.7	3.2				ug/L	57	Standard
>	Ga	71	163.3	20.8				mg/L	148	Standard
	Rb	85	21.7	35.3				ug/L	18	Standard
	Y	89	421814.2	2.0				ug/L	401845	Standard
>	Rh	103	33.3	45.8				ug/L	10	Standard
	Mo	98	251.2	2.5				ug/L	12	Standard
	Ag	107	386.0	1.2				ug/L	98	Standard
	Cd	111	102.9	11.3				mg/L	11	Standard
	Cd	114	249.4	9.6				ug/L	21	Standard
>	In	115	548120.3	1.1				ug/L	547487	Standard
	Sn	118	645.0	5.6				ug/L	450	Standard
	Sb	123	245.0	3.3				ug/L	105	Standard
	Ba	135	194.0	3.9				ug/L	111	Standard
	Ce	140	15.0	57.7				ug/L	107	Standard
>	Tb	159	869696.1	0.6				ug/L	890342	Standard
	Ho	165	1.7	173.2				ug/L	10	Standard
	Tl	203	386.3	6.2				ug/L	19	Standard
	Tl	205	290.0	6.0				ug/L	17	Standard
	Pb	206	486.7	5.5				ug/L	247	Standard
	Pb	207	430.7	8.6				ug/L	215	Standard
	Pb	208	1734.7	2.5				ug/L	770	Standard
	U	238	291.0	3.0				ug/L	13	Standard
>	Bi	209	480303.9	0.6				ug/L	503143	Standard

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	Na	23	0.0		mg/L	2	Standard
	Mg	24	31.7	32.9	mg/L	35	Standard
	K	39	23.3	32.7	mg/L	25	Standard
	Ca	43	26.7	43.3	mg/L	38	Standard
	Fe	54	147.5	2.0	mg/L	126	Standard
	Fe	57	275.0	5.5	mg/L	245	Standard
>	**Sc-1**	45	24807.0	1.7	mg/L	25066	Standard
	Cl	35	127847.2	1.5	ug/L	125857	Standard
	Kr	83	2.0	0.0	ug/L	1	Standard
	Br	81	1250.1	12.9	ug/L	1350	Standard
	P	31	18074.1	2.7	ug/L	18393	Standard
	S	34	3720.5	1.6	ug/L	3739	Standard
	Sr	88	101.7	31.6	ug/L	78	Standard
	C	12	43.3	48.0	mg/L	53	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	0.0		mg/L	0	Standard
	Dy	164	22.2	64.8	mg/L	2	Standard
	Ho-1	165	1.7	173.2	mg/L	10	Standard
	Er	166	23.3	89.2	mg/L	23	Standard
	I	127	1036.7	8.6	mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Tuesday, June 21, 2016 12:41:10
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56823.0	1.6				ug/L	60176	Standard
	Be	9	34135.1	0.9	**50.0000**	0.642	1.3	ug/L	5	Standard
	Al	27	6273208.6	1.1	**50.0000**	0.818	1.6	ug/L	832	Standard
	Sc	45	23723.6	2.6				ug/L	25066	Standard
	Ti	47	19074.3	0.3	**100.0000**	1.640	1.6	ug/L	38	Standard
	V	51	298222.0	1.3	**50.0000**	0.132	0.3	ug/L	974	Standard
	Cr	52	320017.6	0.3	**50.0000**	0.524	1.0	ug/L	5792	Standard
	Cr	53	40928.5	1.7	**50.0000**	0.225	0.4	ug/L	347	Standard
	Mn	55	319441.0	1.9	**50.0000**	0.827	1.7	ug/L	1164	Standard
	Co	59	304089.0	1.5	**50.0000**	1.058	2.1	ug/L	303	Standard
	Ni	60	89819.8	1.0	**50.0000**	0.212	0.4	ug/L	291	Standard
	Cu	65	88932.2	0.8	**50.0000**	0.449	0.9	ug/L	173	Standard
	Zn	66	51748.9	0.1	**50.0000**	0.578	1.2	ug/L	130	Standard
>	**Ge**	72	487193.0	1.3				ug/L	491724	Standard
	As	75	52343.3	1.1	**50.0000**	0.143	0.3	ug/L	-25	Standard
	Se	82	5108.3	0.1	**50.0000**	0.635	1.3	ug/L	12	Standard
	Se-1	77	3568.4	3.1	**50.0000**	1.152	2.3	ug/L	57	Standard
>	**Ga**	71	203.3	5.1				mg/L	148	Standard
	Rb	85	696.7	7.2				ug/L	18	Standard
	Y	89	396857.0	0.8				ug/L	401845	Standard
>	**Rh**	103	46.7	30.9				ug/L	10	Standard
	Mo	98	234863.2	0.4	**100.0000**	1.015	1.0	ug/L	12	Standard
	Ag	107	287635.1	1.1	**50.0000**	0.173	0.3	ug/L	98	Standard
	Cd	111	91412.4	1.2	**50.0000**	0.269	0.5	mg/L	11	Standard
	Cd	114	221759.1	0.4	**50.0000**	0.185	0.4	ug/L	21	Standard
>	**In**	115	526904.6	0.8				ug/L	547487	Standard
	Sn	118	252169.7	1.4	**50.0000**	0.512	1.0	ug/L	450	Standard
	Sb	123	207104.5	0.9	**50.0000**	0.294	0.6	ug/L	105	Standard
	Ba	135	89208.5	1.1	**50.0000**	0.205	0.4	ug/L	111	Standard
	Ce	140	53.3	43.3				ug/L	107	Standard
>	**Tb**	159	848207.6	0.5				ug/L	890342	Standard
	Ho	165	15.0	33.3				ug/L	10	Standard
	Tl	203	360672.2	1.4	**50.0000**	0.148	0.3	ug/L	19	Standard
	Tl	205	296087.7	2.3	**50.0000**	0.563	1.1	ug/L	17	Standard
	Pb	206	233966.3	0.1	**50.0000**	0.511	1.0	ug/L	247	Standard
	Pb	207	213337.5	0.5	**50.0000**	0.319	0.6	ug/L	215	Standard
	Pb	208	792528.2	1.3	**50.0000**	0.762	1.5	ug/L	770	Standard
	U	238	284703.0	1.6	**50.0000**	0.560	1.1	ug/L	13	Standard
>	**Bi**	209	474262.1	1.1				ug/L	503143	Standard

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Na	23	0.0					mg/L	2	Standard
Mg	24	3497.1	1.9	**5.0000**	0.218	4.4	mg/L	35	Standard
K	39	948.4	2.7	**5.0000**	0.233	4.7	mg/L	25	Standard
Ca	43	43.3	43.7	**5.0000**	5.602	112.0	mg/L	38	Standard
Fe	54	5101.0	4.4	**5.0000**	0.298	6.0	mg/L	126	Standard
Fe	57	1468.4	4.8	**5.0000**	0.320	6.4	mg/L	245	Standard
> **Sc-1**	45	23723.6	2.6				mg/L	25066	Standard
Cl	35	130578.9	0.5				ug/L	125857	Standard
Kr	83	3.3	45.8				ug/L	1	Standard
Br	81	1203.4	13.8				ug/L	1350	Standard
P	31	19414.1	1.7				ug/L	18393	Standard
S	34	4177.2	1.3				ug/L	3739	Standard
Sr	88	70.0	21.4				ug/L	78	Standard
C	12	46.7	53.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	15.9	37.5				mg/L	2	Standard
Ho-1	165	15.0	33.3				mg/L	10	Standard
Er	166	16.7	91.7				mg/L	23	Standard
I	127	1070.0	6.4				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 3
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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Tuesday, June 21, 2016 12:44:22
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57683.0	3.4				ug/L	60176	Standard
	Be	9	68243.4	3.2	**99.2986**	6.394	6.4	ug/L	5	Standard
	Al	27	12435861.2	1.2	**98.8482**	4.005	4.1	ug/L	832	Standard
	Sc	45	23635.1	1.4				ug/L	25066	Standard
	Ti	47	37614.3	1.3	**201.0526**	7.758	3.9	ug/L	38	Standard
	V	51	571041.3	1.0	**99.0826**	2.797	2.8	ug/L	974	Standard
	Cr	52	622374.2	0.8	**100.2480**	3.517	3.5	ug/L	5792	Standard
	Cr	53	79243.4	1.4	**99.7703**	3.986	4.0	ug/L	347	Standard
	Mn	55	617908.9	0.6	**99.6157**	3.115	3.1	ug/L	1164	Standard
	Co	59	584748.3	1.1	**99.2336**	3.268	3.3	ug/L	303	Standard
	Ni	60	173682.2	0.7	**99.5871**	3.225	3.2	ug/L	291	Standard
	Cu	65	172904.7	0.9	**99.8122**	3.300	3.3	ug/L	173	Standard
	Zn	66	100294.9	0.4	**99.7166**	2.796	2.8	ug/L	130	Standard
>	**Ge**	72	476090.8	2.6				ug/L	491724	Standard
	As	75	100801.1	0.2	**99.2690**	2.816	2.8	ug/L	-25	Standard
	Se	82	10056.7	0.8	**100.4354**	3.397	3.4	ug/L	12	Standard
	Se-1	77	6841.5	0.8	**99.3844**	2.883	2.9	ug/L	57	Standard
>	**Ga**	71	273.3	16.9				mg/L	148	Standard
	Rb	85	1416.7	3.8				ug/L	18	Standard
	Y	89	395351.6	0.3				ug/L	401845	Standard
>	**Rh**	103	41.7	25.0				ug/L	10	Standard
	Mo	98	456031.3	1.3	**196.8782**	2.248	1.1	ug/L	12	Standard
	Ag	107	560896.5	1.5	**98.6698**	2.452	2.5	ug/L	98	Standard
	Cd	111	179284.5	0.8	**98.9447**	0.201	0.2	mg/L	11	Standard
	Cd	114	437441.6	1.4	**99.2289**	0.388	0.4	ug/L	21	Standard
>	**In**	115	527764.9	1.0				ug/L	547487	Standard
	Sn	118	497084.9	1.2	**99.2341**	1.596	1.6	ug/L	450	Standard
	Sb	123	404041.2	0.9	**98.6832**	1.399	1.4	ug/L	105	Standard
	Ba	135	175539.8	1.5	**99.1323**	0.709	0.7	ug/L	111	Standard
	Ce	140	116.7	19.8				ug/L	107	Standard
>	**Tb**	159	866248.1	0.4				ug/L	890342	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	705654.1	0.9	**98.7126**	1.568	1.6	ug/L	19	Standard
	Tl	205	578679.2	0.9	**98.6617**	1.804	1.8	ug/L	17	Standard
	Pb	206	450208.6	0.6	**97.9011**	1.428	1.5	ug/L	247	Standard
	Pb	207	407952.9	0.7	**97.5890**	1.592	1.6	ug/L	215	Standard
	Pb	208	1539751.2	0.8	**98.3858**	1.719	1.7	ug/L	770	Standard
	U	238	563509.1	0.5	**99.2888**	1.369	1.4	ug/L	13	Standard
>	**Bi**	209	476118.1	0.9				ug/L	503143	Standard

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Na	23	1.7	173.2	**19.9850**	34.606	173.2	mg/L	2	Standard
Mg	24	6833.2	0.7	**9.9179**	0.081	0.8	mg/L	35	Standard
K	39	1956.8	10.6	**10.2282**	1.035	10.1	mg/L	25	Standard
Ca	43	85.0	45.9	**12.4591**	8.230	66.1	mg/L	38	Standard
Fe	54	10109.9	3.0	**10.0367**	0.163	1.6	mg/L	126	Standard
Fe	57	2636.9	7.0	**9.9408**	0.844	8.5	mg/L	245	Standard
> **Sc-1**	45	23635.1	1.4				mg/L	25066	Standard
Cl	35	128334.7	1.7				ug/L	125857	Standard
Kr	83	2.0	132.3				ug/L	1	Standard
Br	81	1193.4	13.5				ug/L	1350	Standard
P	31	19429.1	2.9				ug/L	18393	Standard
S	34	4115.6	1.9				ug/L	3739	Standard
Sr	88	65.0	15.4				ug/L	78	Standard
C	12	73.3	67.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	18.7	93.3				mg/L	2	Standard
Ho-1	165	8.3	91.7				mg/L	10	Standard
Er	166	26.7	57.3				mg/L	23	Standard
I	127	1098.4	3.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998
Corr. Coef.	Ca	43	Correlation coefficient < 0.998

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Tuesday, June 21, 2016 12:47:35
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56476.7	1.6				ug/L	60176	Standard
	Be	9	33926.3	3.5	**50.3337**	0.983	2.0	ug/L	5	Standard
	Al	27	6239013.2	0.4	**50.6129**	1.022	2.0	ug/L	832	Standard
	Sc	45	23940.6	0.8				ug/L	25066	Standard
	Ti	47	19415.4	2.2	**101.8802**	1.438	1.4	ug/L	38	Standard
	V	51	297179.3	0.9	**50.6032**	0.136	0.3	ug/L	974	Standard
	Cr	52	318615.5	0.4	**49.9739**	0.554	1.1	ug/L	5792	Standard
	Cr	53	40926.9	0.9	**50.4413**	0.865	1.7	ug/L	347	Standard
	Mn	55	316181.4	1.9	**50.0005**	1.281	2.6	ug/L	1164	Standard
	Co	59	298771.6	1.9	**49.8177**	1.314	2.6	ug/L	303	Standard
	Ni	60	88672.0	0.3	**49.8796**	0.328	0.7	ug/L	291	Standard
	Cu	65	89405.3	0.8	**50.6805**	0.441	0.9	ug/L	173	Standard
	Zn	66	52396.1	1.0	**51.0914**	0.187	0.4	ug/L	130	Standard
>	**Ge**	72	484110.7	0.9				ug/L	491724	Standard
	As	75	52053.9	0.4	**50.4073**	0.437	0.9	ug/L	-25	Standard
	Se	82	5137.2	2.1	**50.3854**	1.416	2.8	ug/L	12	Standard
	Se-1	77	3484.7	1.5	**49.4329**	0.431	0.9	ug/L	57	Standard
>	**Ga**	71	218.3	24.7				mg/L	148	Standard
	Rb	85	558.3	1.9				ug/L	18	Standard
	Y	89	399672.1	1.8				ug/L	401845	Standard
>	**Rh**	103	33.3	45.8				ug/L	10	Standard
	Mo	98	243135.2	2.2	**103.9589**	3.579	3.4	ug/L	12	Standard
	Ag	107	285914.9	0.7	**49.7940**	0.941	1.9	ug/L	98	Standard
	Cd	111	90046.3	0.9	**49.2056**	0.320	0.7	mg/L	11	Standard
	Cd	114	222130.6	2.1	**49.8897**	0.705	1.4	ug/L	21	Standard
>	**In**	115	533007.6	1.2				ug/L	547487	Standard
	Sn	118	273659.7	1.6	**54.0588**	0.839	1.6	ug/L	450	Standard
	Sb	123	202430.4	0.7	**48.9552**	0.900	1.8	ug/L	105	Standard
	Ba	135	87724.9	0.8	**49.0309**	0.637	1.3	ug/L	111	Standard
	Ce	140	115.0	26.4				ug/L	107	Standard
>	**Tb**	159	857166.0	1.1				ug/L	890342	Standard
	Ho	165	13.3	43.3				ug/L	10	Standard
	Tl	203	356396.7	0.7	**49.1066**	0.742	1.5	ug/L	19	Standard
	Tl	205	297731.8	0.4	**49.9971**	0.245	0.5	ug/L	17	Standard
	Pb	206	236852.3	0.9	**50.7035**	0.443	0.9	ug/L	247	Standard
	Pb	207	206236.5	0.5	**48.5659**	0.259	0.5	ug/L	215	Standard
	Pb	208	787029.8	0.1	**49.5023**	0.368	0.7	ug/L	770	Standard
	U	238	277599.7	0.5	**48.1782**	0.616	1.3	ug/L	13	Standard
>	**Bi**	209	483361.7	0.8				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3418.7	4.6	**4.8797**	0.255	5.2	mg/L	35	Standard
K	39	995.0	4.8	**5.0805**	0.235	4.6	mg/L	25	Standard
Ca	43	51.7	43.6	**5.3124**	4.563	85.9	mg/L	38	Standard
Fe	54	5233.0	6.0	**5.0647**	0.353	7.0	mg/L	126	Standard
Fe	57	1536.7	1.5	**5.2538**	0.069	1.3	mg/L	245	Standard
> **Sc-1**	45	23940.6	0.8				mg/L	25066	Standard
Cl	35	125636.8	0.9				ug/L	125857	Standard
Kr	83	2.0	0.0				ug/L	1	Standard
Br	81	1126.7	10.0				ug/L	1350	Standard
P	31	18713.2	1.4				ug/L	18393	Standard
S	34	3855.5	6.1				ug/L	3739	Standard
Sr	88	63.3	32.9				ug/L	78	Standard
C	12	76.7	19.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	5.5	203.3				mg/L	2	Standard
Ho-1	165	13.3	43.3				mg/L	10	Standard
Er	166	23.3	49.5				mg/L	23	Standard
I	127	955.0	1.9				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	100.667		
	Al	27	101.226		
	Sc	45			
	Ti	47	101.880		
	V	51	101.206		
	Cr	52	99.948		
	Cr	53			
	Mn	55	100.001		
	Co	59	99.635		
	Ni	60	99.759		
	Cu	65	101.361		
	Zn	66	102.183		
>	Ge	72		98.452	
	As	75	100.815		
	Se	82	100.771		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	103.959		
Ag	107	99.588		
Cd	111	98.411		
Cd	114			
In	115		97.355	
Sn	118	108.118		
Sb	123	97.910		
Ba	135	98.062		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.213		
Tl	205			
Pb	206	101.407		
Pb	207	97.132		
Pb	208	99.005		
U	238	96.356		
Bi	209		96.069	
Na	23	0.100		
Mg	24	97.595		
K	39	101.610		
Ca	43	106.247		
Fe	54	101.294		
Fe	57	105.077		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	

Sample ID: QC Std 1
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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Tuesday, June 21, 2016 12:50:48
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57199.5	1.7				ug/L	60176	Standard
	Be	9	16.7	75.5	**0.0155**	0.019	119.7	ug/L	5	Standard
	Al	27	2038.5	13.7	**0.0079**	0.002	25.0	ug/L	832	Standard
	Sc	45	24297.8	0.5				ug/L	25066	Standard
	Ti	47	32.3	12.5	**-0.0396**	0.023	58.6	ug/L	38	Standard
	V	51	922.0	9.4	**-0.0151**	0.016	107.2	ug/L	974	Standard
	Cr	52	5344.9	2.1	**-0.0994**	0.028	28.6	ug/L	5792	Standard
	Cr	53	318.3	8.7	**-0.0227**	0.028	125.4	ug/L	347	Standard
	Mn	55	1227.7	2.1	**-0.0229**	0.006	27.8	ug/L	1164	Standard
	Co	59	382.3	8.7	**0.0137**	0.006	44.1	ug/L	303	Standard
	Ni	60	312.0	6.8	**-0.0166**	0.014	83.6	ug/L	291	Standard
	Cu	65	170.3	13.8	**-0.0020**	0.015	715.5	ug/L	173	Standard
	Zn	66	185.7	7.5	**-0.0559**	0.012	21.0	ug/L	130	Standard
>	**Ge**	72	490344.5	1.5				ug/L	491724	Standard
	As	75	12.4	235.8	**0.0460**	0.028	60.7	ug/L	-25	Standard
	Se	82	19.0	38.1	**0.0914**	0.071	78.1	ug/L	12	Standard
	Se-1	77	55.0	15.5	**0.1320**	0.132	99.9	ug/L	57	Standard
>	**Ga**	71	143.3	7.3				mg/L	148	Standard
	Rb	85	13.3	43.3				ug/L	18	Standard
	Y	89	406629.8	1.3				ug/L	401845	Standard
>	**Rh**	103	30.0	33.3				ug/L	10	Standard
	Mo	98	318.1	10.6	**0.1300**	0.014	10.8	ug/L	12	Standard
	Ag	107	139.3	8.5	**0.0086**	0.002	23.1	ug/L	98	Standard
	Cd	111	28.1	12.1	**0.0105**	0.002	17.2	mg/L	11	Standard
	Cd	114	75.1	5.3	**0.0122**	0.001	6.8	ug/L	21	Standard
>	**In**	115	538890.5	0.3				ug/L	547487	Standard
	Sn	118	866.7	26.5	**0.0956**	0.046	47.6	ug/L	450	Standard
	Sb	123	1357.6	21.6	**0.3172**	0.071	22.4	ug/L	105	Standard
	Ba	135	122.7	6.5	**0.0123**	0.005	37.7	ug/L	111	Standard
	Ce	140	16.7	124.9				ug/L	107	Standard
>	**Tb**	159	856476.7	1.5				ug/L	890342	Standard
	Ho	165	11.7	107.9				ug/L	10	Standard
	Tl	203	98.3	24.6	**0.0099**	0.003	33.6	ug/L	19	Standard
	Tl	205	75.0	34.6	**0.0135**	0.004	31.4	ug/L	17	Standard
	Pb	206	275.0	3.1	**0.0038**	0.002	58.9	ug/L	247	Standard
	Pb	207	245.0	14.3	**0.0055**	0.009	157.6	ug/L	215	Standard
	Pb	208	917.0	5.8	**-0.0023**	0.004	151.0	ug/L	770	Standard
	U	238	60.7	16.0	**0.0097**	0.002	16.7	ug/L	13	Standard
>	**Bi**	209	484798.8	0.7				ug/L	503143	Standard

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Na	23	1.7	173.2	**19.2545**	33.341	173.2	mg/L	2	Standard
Mg	24	31.7	9.1	**0.0060**	0.004	64.4	mg/L	35	Standard
K	39	31.7	39.7	**0.0506**	0.065	128.8	mg/L	25	Standard
Ca	43	26.7	60.3	**0.0987**	3.281	3325.6	mg/L	38	Standard
Fe	54	137.7	14.6	**-0.0017**	0.019	1127.9	mg/L	126	Standard
Fe	57	235.0	2.1	**-0.1342**	0.025	18.7	mg/L	245	Standard
> **Sc-1**	45	24297.8	0.5				mg/L	25066	Standard
Cl	35	123923.5	2.0				ug/L	125857	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	1190.0	11.8				ug/L	1350	Standard
P	31	19601.0	4.8				ug/L	18393	Standard
S	34	3848.8	8.3				ug/L	3739	Standard
Sr	88	63.3	32.9				ug/L	78	Standard
C	12	46.7	32.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	19.4	53.0				mg/L	2	Standard
Ho-1	165	11.7	107.9				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	1073.4	5.6				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.720	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.430
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.354
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Na	23	
QC Std 2	Fe	57	

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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Tuesday, June 21, 2016 12:54:01
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54655.2	5.0				ug/L	60176	Standard
	Be	9	166.7	9.2	**0.2464**	0.016	6.5	ug/L	5	Standard
	Al	27	3600.6	78.3	**0.0211**	0.022	102.5	ug/L	832	Standard
	Sc	45	22989.1	1.7				ug/L	25066	Standard
	Ti	47	44.3	25.7	**0.0370**	0.061	164.4	ug/L	38	Standard
	V	51	3236.7	8.3	**0.4098**	0.039	9.6	ug/L	974	Standard
	Cr	52	10252.8	1.1	**0.7782**	0.013	1.7	ug/L	5792	Standard
	Cr	53	963.4	10.4	**0.8456**	0.146	17.3	ug/L	347	Standard
	Mn	55	4198.9	8.1	**0.4847**	0.049	10.1	ug/L	1164	Standard
	Co	59	2734.9	12.7	**0.4297**	0.055	12.9	ug/L	303	Standard
	Ni	60	3023.6	2.6	**1.6026**	0.022	1.4	ug/L	291	Standard
	Cu	65	1528.7	5.1	**0.8141**	0.035	4.3	ug/L	173	Standard
	Zn	66	6997.6	1.0	**6.9667**	0.165	2.4	ug/L	130	Standard
>	**Ge**	72	460888.7	1.9				ug/L	491724	Standard
	As	75	390.1	8.4	**0.4307**	0.036	8.3	ug/L	-25	Standard
	Se	82	49.3	11.7	**0.4157**	0.051	12.3	ug/L	12	Standard
	Se-1	77	73.3	5.5	**0.4585**	0.082	18.0	ug/L	57	Standard
>	**Ga**	71	193.3	33.8				mg/L	148	Standard
	Rb	85	25.0	72.1				ug/L	18	Standard
	Y	89	391940.6	1.7				ug/L	401845	Standard
>	**Rh**	103	18.3	31.5				ug/L	10	Standard
	Mo	98	268.6	80.2	**0.1109**	0.092	82.8	ug/L	12	Standard
	Ag	107	2373.9	3.4	**0.4011**	0.013	3.1	ug/L	98	Standard
	Cd	111	418.7	2.5	**0.2258**	0.005	2.2	mg/L	11	Standard
	Cd	114	1058.7	2.4	**0.2351**	0.005	2.1	ug/L	21	Standard
>	**In**	115	529129.7	0.8				ug/L	547487	Standard
	Sn	118	546.7	13.3	**0.0350**	0.015	44.2	ug/L	450	Standard
	Sb	123	1860.1	4.7	**0.4457**	0.025	5.6	ug/L	105	Standard
	Ba	135	1306.7	5.0	**0.6811**	0.043	6.3	ug/L	111	Standard
	Ce	140	71.7	45.4				ug/L	107	Standard
>	**Tb**	159	840369.4	1.8				ug/L	890342	Standard
	Ho	165	3.3	86.6				ug/L	10	Standard
	Tl	203	677.3	13.0	**0.0915**	0.012	13.1	ug/L	19	Standard
	Tl	205	673.3	28.8	**0.1162**	0.033	28.2	ug/L	17	Standard
	Pb	206	1332.4	14.3	**0.2361**	0.041	17.4	ug/L	247	Standard
	Pb	207	1139.0	15.8	**0.2215**	0.042	19.1	ug/L	215	Standard
	Pb	208	4327.3	17.0	**0.2178**	0.046	21.3	ug/L	770	Standard
	U	238	2258.5	8.8	**0.3988**	0.036	8.9	ug/L	13	Standard
>	**Bi**	209	474166.4	1.0				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	13.3	**0.0260**	0.009	33.4	mg/L	35	Standard
K	39	35.0	14.3	**0.0782**	0.031	39.0	mg/L	25	Standard
Ca	43	33.3	45.8	**1.8021**	3.150	174.8	mg/L	38	Standard
Fe	54	89.0	20.5	**-0.0447**	0.017	38.6	mg/L	126	Standard
Fe	57	240.0	23.5	**-0.0557**	0.261	468.1	mg/L	245	Standard
> **Sc-1**	45	22989.1	1.7				mg/L	25066	Standard
Cl	35	119419.5	1.1				ug/L	125857	Standard
Kr	83	3.3	75.5				ug/L	1	Standard
Br	81	1160.0	4.6				ug/L	1350	Standard
P	31	12982.2	1.5				ug/L	18393	Standard
S	34	3700.5	6.7				ug/L	3739	Standard
Sr	88	70.0	7.1				ug/L	78	Standard
C	12	50.0	60.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.2	86.7				mg/L	2	Standard
Ho-1	165	3.3	86.6				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	760.0	5.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	123.200		
Al	27	2.108		
Sc	45			
Ti	47			
V	51	102.440		
Cr	52	97.277		
Cr	53			
Mn	55	96.934		
Co	59	107.430		
Ni	60	100.161		
Cu	65	101.757		
Zn	66	111.467		
> Ge	72		93.729	
As	75	107.669		
Se	82	103.926		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	100.275		
Cd	111	94.072		
Cd	114			
> In	115			96.647
Sn	118			
Sb	123	111.413		
Ba	135	90.816		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	114.430		
Tl	205			
Pb	206			
Pb	207			
Pb	208	108.881		
U	238	99.694		
> Bi	209			94.241
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Tuesday, June 21, 2016 12:57:12
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59928.3	1.0				ug/L	60176	Standard
	Be	9	13.3	78.1	**0.0097**	0.015	152.2	ug/L	5	Standard
	Al	27	6442669.1	1.9	**49.2453**	0.871	1.8	ug/L	832	Standard
	Sc	45	24813.6	2.8				ug/L	25066	Standard
	Ti	47	19998.2	2.1	**106.8973**	2.582	2.4	ug/L	38	Standard
	V	51	1246.2	25.8	**0.0465**	0.058	124.9	ug/L	974	Standard
	Cr	52	6657.1	2.4	**0.1405**	0.025	17.7	ug/L	5792	Standard
	Cr	53	1993.5	6.1	**2.1090**	0.143	6.8	ug/L	347	Standard
	Mn	55	1883.1	3.1	**0.0891**	0.008	8.9	ug/L	1164	Standard
	Co	59	559.7	6.4	**0.0458**	0.006	12.2	ug/L	303	Standard
	Ni	60	864.0	5.1	**0.3063**	0.026	8.5	ug/L	291	Standard
	Cu	65	667.0	6.9	**0.2880**	0.024	8.5	ug/L	173	Standard
	Zn	66	2146.2	5.5	**1.9055**	0.111	5.8	ug/L	130	Standard
>	Ge	72	475353.7	1.0				ug/L	491724	Standard
	As	75	-27.8	154.3	**0.0063**	0.042	673.6	ug/L	-25	Standard
	Se	82	18.3	27.0	**0.0905**	0.048	53.4	ug/L	12	Standard
	Se-1	77	292.0	12.5	**3.6225**	0.508	14.0	ug/L	57	Standard
>	Ga	71	251.7	1.1				mg/L	148	Standard
	Rb	85	916.7	3.2				ug/L	18	Standard
	Y	89	407553.9	0.9				ug/L	401845	Standard
>	Rh	103	21.7	13.3				ug/L	10	Standard
	Mo	98	227701.2	0.8	**95.9028**	0.590	0.6	ug/L	12	Standard
	Ag	107	287.3	17.5	**0.0339**	0.008	24.1	ug/L	98	Standard
	Cd	111	-145.8	9.1	**-0.0833**	0.008	9.6	mg/L	11	Standard
	Cd	114	464.9	14.1	**0.0986**	0.016	15.9	ug/L	21	Standard
>	In	115	540970.5	1.1				ug/L	547487	Standard
	Sn	118	813.4	12.5	**0.0844**	0.019	22.3	ug/L	450	Standard
	Sb	123	429.7	19.0	**0.0947**	0.019	20.0	ug/L	105	Standard
	Ba	135	438.7	7.4	**0.1861**	0.015	8.2	ug/L	111	Standard
	Ce	140	421.7	17.3				ug/L	107	Standard
>	Tb	159	869535.9	1.7				ug/L	890342	Standard
	Ho	165	25.0	72.1				ug/L	10	Standard
	Tl	203	354.0	26.0	**0.0461**	0.013	27.8	ug/L	19	Standard
	Tl	205	328.3	30.2	**0.0571**	0.017	29.2	ug/L	17	Standard
	Pb	206	641.0	8.2	**0.0850**	0.011	12.9	ug/L	247	Standard
	Pb	207	546.0	4.3	**0.0790**	0.005	6.1	ug/L	215	Standard
	Pb	208	2135.1	6.6	**0.0771**	0.009	11.7	ug/L	770	Standard
	U	238	92.3	51.3	**0.0155**	0.008	54.0	ug/L	13	Standard
>	Bi	209	474298.1	0.6				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.5792**	32.172	173.2	mg/L	2	Standard
Mg	24	8645.8	1.7	**11.9633**	0.233	1.9	mg/L	35	Standard
K	39	950.0	10.3	**4.6748**	0.512	11.0	mg/L	25	Standard
Ca	43	120.0	27.3	**18.4950**	6.097	33.0	mg/L	38	Standard
Fe	54	12543.1	1.5	**11.8952**	0.445	3.7	mg/L	126	Standard
Fe	57	3418.7	4.3	**12.5234**	0.241	1.9	mg/L	245	Standard
> **Sc-1**	45	24813.6	2.8				mg/L	25066	Standard
Cl	35	133729.6	1.1				ug/L	125857	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	1173.4	5.8				ug/L	1350	Standard
P	31	17748.7	0.7				ug/L	18393	Standard
S	34	3328.7	3.9				ug/L	3739	Standard
Sr	88	88.3	27.9				ug/L	78	Standard
C	12	106.7	14.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	33.3				mg/L	0	Standard
Dy	164	29.4	56.6				mg/L	2	Standard
Ho-1	165	25.0	72.1				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	1626.8	8.4				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27	0.985		
	Sc	45			
	Ti	47	106.897		
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.671	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	95.903		
Ag	107			
Cd	111			
Cd	114			
> In	115			98.810
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209			94.267
Na	23	148.634		
Mg	24	239.267		
K	39	93.495		
Ca	43	123.300		
Fe	54	95.162		
Fe	57	100.187		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Tl	203	
QC Std 4	Na	23	

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QC Std 4	Mg	24
QC Std 4	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Tuesday, June 21, 2016 13:00:24
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61313.8	1.9				ug/L	60176	Standard
	Be	9	72875.0	3.4	**99.6031**	1.781	1.8	ug/L	5	Standard
	Al	27	6936241.6	2.7	**51.8339**	1.804	3.5	ug/L	832	Standard
	Sc	45	23489.9	0.9				ug/L	25066	Standard
	Ti	47	21276.6	0.7	**110.0520**	2.192	2.0	ug/L	38	Standard
	V	51	582101.9	0.7	**97.8399**	1.870	1.9	ug/L	974	Standard
	Cr	52	624654.9	1.1	**97.4149**	0.832	0.9	ug/L	5792	Standard
	Cr	53	80558.6	0.3	**98.2182**	1.167	1.2	ug/L	347	Standard
	Mn	55	645844.3	0.9	**100.8477**	1.253	1.2	ug/L	1164	Standard
	Co	59	617389.8	0.7	**101.4766**	0.663	0.7	ug/L	303	Standard
	Ni	60	173011.2	0.8	**96.0705**	0.455	0.5	ug/L	291	Standard
	Cu	65	173942.1	0.9	**97.2491**	1.211	1.2	ug/L	173	Standard
	Zn	66	103580.5	0.6	**99.7581**	1.812	1.8	ug/L	130	Standard
>	**Ge**	72	491319.1	1.3				ug/L	491724	Standard
	As	75	106169.7	0.7	**101.2696**	0.638	0.6	ug/L	-25	Standard
	Se	82	10505.5	0.8	**101.6127**	0.832	0.8	ug/L	12	Standard
	Se-1	77	7353.1	1.7	**103.4898**	1.990	1.9	ug/L	57	Standard
>	**Ga**	71	335.0	6.5				mg/L	148	Standard
	Rb	85	808.4	4.6				ug/L	18	Standard
	Y	89	401288.7	1.4				ug/L	401845	Standard
>	**Rh**	103	43.3	24.0				ug/L	10	Standard
	Mo	98	244397.7	1.3	**106.0540**	1.465	1.4	ug/L	12	Standard
	Ag	107	538144.7	0.3	**95.1434**	0.773	0.8	ug/L	98	Standard
	Cd	111	185622.1	1.2	**102.9756**	1.700	1.7	mg/L	11	Standard
	Cd	114	445028.4	2.2	**101.4874**	3.011	3.0	ug/L	21	Standard
>	**In**	115	525063.0	0.9				ug/L	547487	Standard
	Sn	118	885.0	4.3	**0.1037**	0.009	8.6	ug/L	450	Standard
	Sb	123	410344.2	0.6	**100.7382**	1.315	1.3	ug/L	105	Standard
	Ba	135	176777.0	0.5	**100.3551**	1.267	1.3	ug/L	111	Standard
	Ce	140	53.3	5.4				ug/L	107	Standard
>	**Tb**	159	870528.1	1.1				ug/L	890342	Standard
	Ho	165	10.0	86.6				ug/L	10	Standard
	Tl	203	717855.7	0.6	**98.9861**	1.545	1.6	ug/L	19	Standard
	Tl	205	613661.1	1.7	**103.1465**	3.224	3.1	ug/L	17	Standard
	Pb	206	474569.5	1.2	**101.7199**	1.074	1.1	ug/L	247	Standard
	Pb	207	412085.1	0.4	**97.1656**	1.063	1.1	ug/L	215	Standard
	Pb	208	1621535.0	0.8	**102.1386**	2.136	2.1	ug/L	770	Standard
	U	238	576318.6	1.3	**100.1091**	2.735	2.7	ug/L	13	Standard
>	**Bi**	209	483038.3	1.5				ug/L	503143	Standard

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Na	23	1.7	173.2	**19.9124**	34.481	173.2	mg/L	2	Standard
Mg	24	9276.2	1.0	**13.5616**	0.245	1.8	mg/L	35	Standard
K	39	1035.0	5.9	**5.3939**	0.335	6.2	mg/L	25	Standard
Ca	43	95.0	18.2	**14.6391**	3.459	23.6	mg/L	38	Standard
Fe	54	13234.0	0.1	**13.2653**	0.121	0.9	mg/L	126	Standard
Fe	57	3633.8	1.9	**14.1986**	0.233	1.6	mg/L	245	Standard
> **Sc-1**	45	23489.9	0.9				mg/L	25066	Standard
Cl	35	135528.8	0.9				ug/L	125857	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	1296.7	11.2				ug/L	1350	Standard
P	31	17078.0	3.3				ug/L	18393	Standard
S	34	3508.7	2.5				ug/L	3739	Standard
Sr	88	66.7	8.7				ug/L	78	Standard
C	12	133.3	22.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.2	93.3				mg/L	2	Standard
Ho-1	165	10.0	86.6				mg/L	10	Standard
Er	166	10.0					mg/L	23	Standard
I	127	985.0	5.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	99.603		
Al	27	1.037		
Sc	45			
Ti	47	110.052		
V	51	97.840		
Cr	52	97.415		
Cr	53			
Mn	55	100.848		
Co	59	101.477		
Ni	60	96.070		
Cu	65	97.249		
Zn	66	99.758		
> Ge	72		99.918	
As	75	101.270		
Se	82	101.613		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	106.054		
Ag	107	95.143		
Cd	111	102.976		
Cd	114			
> In	115		95.904	
Sn	118			
Sb	123	100.738		
Ba	135	100.355		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.986		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.139		
U	238	100.109		
> Bi	209		96.004	
Na	23	159.300		
Mg	24	271.232		
K	39	107.878		
Ca	43	97.594		
Fe	54	106.123		
Fe	57	113.589		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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QC Std 5	Ca	43

Sample ID: QC Std 5
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 13:03:37
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60077.3	2.7				ug/L	60176	Standard
	Be	9	36198.2	1.7	**50.5140**	1.282	2.5	ug/L	5	Standard
	Al	27	6376898.0	1.9	**48.6310**	0.871	1.8	ug/L	832	Standard
	Sc	45	23925.5	1.1				ug/L	25066	Standard
	Ti	47	18736.6	0.9	**98.5507**	0.836	0.8	ug/L	38	Standard
	V	51	296150.3	0.5	**50.5471**	0.213	0.4	ug/L	974	Standard
	Cr	52	313728.4	0.3	**49.3090**	0.221	0.4	ug/L	5792	Standard
	Cr	53	39496.4	3.0	**48.7745**	1.414	2.9	ug/L	347	Standard
	Mn	55	317457.2	0.2	**50.3163**	0.163	0.3	ug/L	1164	Standard
	Co	59	310517.1	1.0	**51.8939**	0.567	1.1	ug/L	303	Standard
	Ni	60	88251.3	0.9	**49.7584**	0.471	0.9	ug/L	291	Standard
	Cu	65	88383.0	0.6	**50.2173**	0.264	0.5	ug/L	173	Standard
	Zn	66	51386.7	1.3	**50.2219**	0.654	1.3	ug/L	130	Standard
>	Ge	72	482967.1	0.2				ug/L	491724	Standard
	As	75	51917.7	0.5	**50.3921**	0.181	0.4	ug/L	-25	Standard
	Se	82	5239.5	1.1	**51.5049**	0.485	0.9	ug/L	12	Standard
	Se-1	77	3545.7	2.3	**50.4312**	1.129	2.2	ug/L	57	Standard
>	Ga	71	213.3	29.9				mg/L	148	Standard
	Rb	85	683.3	10.3				ug/L	18	Standard
	Y	89	409717.0	1.9				ug/L	401845	Standard
>	Rh	103	31.7	50.8				ug/L	10	Standard
	Mo	98	232285.6	0.4	**98.2916**	1.691	1.7	ug/L	12	Standard
	Ag	107	285420.0	0.6	**49.1961**	0.526	1.1	ug/L	98	Standard
	Cd	111	92777.6	1.2	**50.1831**	0.862	1.7	mg/L	11	Standard
	Cd	114	226030.0	0.7	**50.2543**	0.780	1.6	ug/L	21	Standard
>	In	115	538520.1	1.5				ug/L	547487	Standard
	Sn	118	254569.4	1.6	**49.7699**	0.919	1.8	ug/L	450	Standard
	Sb	123	208380.8	0.8	**49.8815**	1.089	2.2	ug/L	105	Standard
	Ba	135	89491.5	0.9	**49.5071**	0.604	1.2	ug/L	111	Standard
	Ce	140	65.0	33.5				ug/L	107	Standard
>	Tb	159	844342.7	0.8				ug/L	890342	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	362962.1	0.5	**50.9927**	0.530	1.0	ug/L	19	Standard
	Tl	205	304433.0	0.1	**52.1279**	0.337	0.6	ug/L	17	Standard
	Pb	206	233807.2	0.0	**51.0365**	0.279	0.5	ug/L	247	Standard
	Pb	207	211565.2	0.5	**50.8037**	0.504	1.0	ug/L	215	Standard
	Pb	208	809571.0	0.8	**51.9240**	0.557	1.1	ug/L	770	Standard
	U	238	290163.7	1.3	**51.3453**	0.563	1.1	ug/L	13	Standard
>	Bi	209	474036.7	0.5				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3508.7	4.9	**5.0100**	0.196	3.9	mg/L	35	Standard
K	39	841.7	3.8	**4.2829**	0.143	3.3	mg/L	25	Standard
Ca	43	70.0	25.8	**9.1073**	3.560	39.1	mg/L	38	Standard
Fe	54	5170.4	1.1	**5.0040**	0.054	1.1	mg/L	126	Standard
Fe	57	1545.1	3.9	**5.2918**	0.217	4.1	mg/L	245	Standard
> **Sc-1**	45	23925.5	1.1				mg/L	25066	Standard
Cl	35	126968.4	0.5				ug/L	125857	Standard
Kr	83	2.7	21.7				ug/L	1	Standard
Br	81	1253.4	5.1				ug/L	1350	Standard
P	31	17353.3	2.1				ug/L	18393	Standard
S	34	3680.4	9.2				ug/L	3739	Standard
Sr	88	66.7	11.5				ug/L	78	Standard
C	12	53.3	10.8				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.5	86.7				mg/L	2	Standard
Ho-1	165	8.3	69.3				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	23	Standard
I	127	1191.7	5.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	101.028		
Al	27	97.262		
Sc	45			
Ti	47	98.551		
V	51	101.094		
Cr	52	98.618		
Cr	53			
Mn	55	100.633		
Co	59	103.788		
Ni	60	99.517		
Cu	65	100.435		
Zn	66	100.444		
> Ge	72		98.219	
As	75	100.784		
Se	82	103.010		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	98.292		
Ag	107	98.392		
Cd	111	100.366		
Cd	114			
In	115			98.362
Sn	118	99.540		
Sb	123	99.763		
Ba	135	99.014		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.985		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.848		
U	238	102.691		
Bi	209			94.215
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 13:06:48
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59220.5	2.2				ug/L	60176	Standard
	Be	9	21.7	113.8	**0.0219**	0.035	161.5	ug/L	5	Standard
	Al	27	2657.0	57.6	**0.0122**	0.012	99.2	ug/L	832	Standard
	Sc	45	23930.6	3.3				ug/L	25066	Standard
	Ti	47	35.7	25.9	**-0.0239**	0.047	197.1	ug/L	38	Standard
	V	51	1146.6	35.4	**0.0212**	0.067	317.9	ug/L	974	Standard
	Cr	52	5554.4	3.9	**-0.0728**	0.035	47.8	ug/L	5792	Standard
	Cr	53	378.3	10.0	**0.0477**	0.045	93.6	ug/L	347	Standard
	Mn	55	1370.7	12.3	**-0.0021**	0.026	1218.8	ug/L	1164	Standard
	Co	59	513.7	41.1	**0.0346**	0.034	98.9	ug/L	303	Standard
	Ni	60	343.7	8.0	**-0.0004**	0.015	3446.4	ug/L	291	Standard
	Cu	65	177.3	6.6	**0.0010**	0.006	620.6	ug/L	173	Standard
	Zn	66	178.7	18.3	**-0.0639**	0.031	48.4	ug/L	130	Standard
>	**Ge**	72	493877.2	0.3				ug/L	491724	Standard
	As	75	17.2	53.9	**0.0502**	0.009	17.4	ug/L	-25	Standard
	Se	82	20.0	19.9	**0.1000**	0.038	37.8	ug/L	12	Standard
	Se-1	77	45.3	7.1	**-0.0109**	0.047	434.0	ug/L	57	Standard
>	**Ga**	71	238.3	11.9				mg/L	148	Standard
	Rb	85	26.7	10.8				ug/L	18	Standard
	Y	89	397655.2	1.8				ug/L	401845	Standard
>	**Rh**	103	25.0	20.0				ug/L	10	Standard
	Mo	98	421.6	47.5	**0.1748**	0.084	48.3	ug/L	12	Standard
	Ag	107	433.3	112.5	**0.0596**	0.084	141.2	ug/L	98	Standard
	Cd	111	31.1	76.1	**0.0122**	0.013	105.0	mg/L	11	Standard
	Cd	114	71.1	92.6	**0.0114**	0.015	128.1	ug/L	21	Standard
>	**In**	115	535380.0	0.4				ug/L	547487	Standard
	Sn	118	765.0	11.6	**0.0766**	0.017	22.1	ug/L	450	Standard
	Sb	123	1104.8	53.2	**0.2581**	0.140	54.4	ug/L	105	Standard
	Ba	135	133.3	33.1	**0.0186**	0.024	130.4	ug/L	111	Standard
	Ce	140	16.7	17.3				ug/L	107	Standard
>	**Tb**	159	863928.7	0.9				ug/L	890342	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	400.0	138.2	**0.0504**	0.074	147.0	ug/L	19	Standard
	Tl	205	160.0	86.7	**0.0274**	0.022	81.9	ug/L	17	Standard
	Pb	206	498.3	73.3	**0.0503**	0.075	149.6	ug/L	247	Standard
	Pb	207	424.0	75.0	**0.0464**	0.072	155.4	ug/L	215	Standard
	Pb	208	1164.7	36.5	**0.0127**	0.025	198.3	ug/L	770	Standard
	U	238	130.0	106.6	**0.0213**	0.023	109.2	ug/L	13	Standard
>	**Bi**	209	486251.4	1.7				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	33.3	8.7	**0.0092**	0.006	61.0	mg/L	35	Standard
K	39	15.0	33.3	**-0.0334**	0.028	84.6	mg/L	25	Standard
Ca	43	26.7	39.0	**0.2255**	2.276	1009.5	mg/L	38	Standard
Fe	54	141.1	12.6	**0.0041**	0.021	506.6	mg/L	126	Standard
Fe	57	250.0	10.4	**-0.0592**	0.073	123.1	mg/L	245	Standard
> **Sc-1**	45	23930.6	3.3				mg/L	25066	Standard
Cl	35	125381.4	1.2				ug/L	125857	Standard
Kr	83	2.7	43.3				ug/L	1	Standard
Br	81	1060.0	3.8				ug/L	1350	Standard
P	31	17481.7	2.2				ug/L	18393	Standard
S	34	3750.5	3.0				ug/L	3739	Standard
Sr	88	66.7	8.7				ug/L	78	Standard
C	12	66.7	48.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	6.2	186.8				mg/L	2	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	1055.0	11.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.438	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.789
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.643
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	
QC Std 7	Tl	203	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW 7Q WG573483-02
Sample Date/Time: Tuesday, June 21, 2016 13:10:00
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58444.2	0.7				ug/L	60176	Standard
	Be	9	26.7	47.2	**0.0292**	0.018	60.9	ug/L	5	Standard
	Al	27	23049.2	3.8	**0.1723**	0.008	4.5	ug/L	832	Standard
	Sc	45	24202.7	2.5				ug/L	25066	Standard
	Ti	47	43.7	14.7	**0.0218**	0.034	156.7	ug/L	38	Standard
	V	51	1023.3	8.4	**0.0039**	0.014	347.8	ug/L	974	Standard
	Cr	52	7324.1	2.0	**0.2266**	0.020	8.6	ug/L	5792	Standard
	Cr	53	578.3	3.5	**0.3051**	0.025	8.2	ug/L	347	Standard
	Mn	55	2461.2	1.9	**0.1751**	0.005	2.7	ug/L	1164	Standard
	Co	59	428.7	8.1	**0.0221**	0.005	24.1	ug/L	303	Standard
	Ni	60	482.7	6.5	**0.0817**	0.017	21.3	ug/L	291	Standard
	Cu	65	326.0	2.1	**0.0873**	0.005	5.3	ug/L	173	Standard
	Zn	66	1189.0	5.1	**0.9283**	0.052	5.6	ug/L	130	Standard
>	**Ge**	72	484464.0	0.7				ug/L	491724	Standard
	As	75	-14.6	23.2	**0.0198**	0.003	16.3	ug/L	-25	Standard
	Se	82	17.0	20.8	**0.0742**	0.035	47.7	ug/L	12	Standard
	Se-1	77	51.3	11.4	**0.0873**	0.080	91.1	ug/L	57	Standard
>	**Ga**	71	196.7	5.9				mg/L	148	Standard
	Rb	85	100.0	27.8				ug/L	18	Standard
	Y	89	408879.8	3.6				ug/L	401845	Standard
>	**Rh**	103	25.0	52.9				ug/L	10	Standard
	Mo	98	122.8	14.6	**0.0481**	0.008	16.4	ug/L	12	Standard
	Ag	107	156.0	19.3	**0.0119**	0.005	46.1	ug/L	98	Standard
	Cd	111	26.1	40.8	**0.0096**	0.006	61.9	mg/L	11	Standard
	Cd	114	50.9	19.0	**0.0070**	0.002	32.2	ug/L	21	Standard
>	**In**	115	532128.9	0.9				ug/L	547487	Standard
	Sn	118	586.7	9.1	**0.0422**	0.011	26.5	ug/L	450	Standard
	Sb	123	401.0	34.8	**0.0897**	0.034	38.3	ug/L	105	Standard
	Ba	135	228.3	6.6	**0.0724**	0.009	12.2	ug/L	111	Standard
	Ce	140	110.0	22.7				ug/L	107	Standard
>	**Tb**	159	840904.1	1.3				ug/L	890342	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	87.0	51.2	**0.0084**	0.006	71.8	ug/L	19	Standard
	Tl	205	86.7	76.8	**0.0155**	0.011	71.5	ug/L	17	Standard
	Pb	206	333.0	6.3	**0.0167**	0.004	25.8	ug/L	247	Standard
	Pb	207	290.7	9.1	**0.0166**	0.006	33.9	ug/L	215	Standard
	Pb	208	1101.3	4.9	**0.0097**	0.003	31.1	ug/L	770	Standard
	U	238	73.3	48.0	**0.0119**	0.006	50.6	ug/L	13	Standard
>	**Bi**	209	481400.6	1.0				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	38.3	41.9	**0.0153**	0.022	142.7	mg/L	35	Standard
K	39	23.3	53.9	**0.0092**	0.068	740.5	mg/L	25	Standard
Ca	43	21.7	58.1	**-0.8598**	2.697	313.7	mg/L	38	Standard
Fe	54	130.8	28.3	**-0.0077**	0.038	495.4	mg/L	126	Standard
Fe	57	285.0	4.6	**0.0748**	0.079	105.8	mg/L	245	Standard
Sc-1	45	24202.7	2.5				mg/L	25066	Standard
Cl	35	126348.0	1.3				ug/L	125857	Standard
Kr	83	1.0	173.2				ug/L	1	Standard
Br	81	1470.1	6.5				ug/L	1350	Standard
P	31	16710.9	1.6				ug/L	18393	Standard
S	34	3748.8	2.6				ug/L	3739	Standard
Sr	88	75.0	11.5				ug/L	78	Standard
C	12	26.7	57.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.0	94.2				mg/L	2	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	656.7	5.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.122	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.524	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.195
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.679
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 7Q WG573483-02
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Method 6020 - Summary Report

Sample ID: LCSW 7Q WG573483-03
Sample Date/Time: Tuesday, June 21, 2016 13:13:12
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59597.0	1.4				ug/L	60176	Standard
	Be	9	26.7	28.6	**0.0284**	0.010	36.7	ug/L	5	Standard
	Al	27	123378.7	0.8	**0.9401**	0.007	0.7	ug/L	832	Standard
	Sc	45	24184.3	4.6				ug/L	25066	Standard
	Ti	47	45.0	25.6	**0.0250**	0.057	229.9	ug/L	38	Standard
	V	51	1068.6	8.7	**0.0091**	0.015	170.4	ug/L	974	Standard
	Cr	52	7727.3	2.4	**0.2731**	0.024	8.9	ug/L	5792	Standard
	Cr	53	576.7	16.1	**0.2921**	0.109	37.2	ug/L	347	Standard
	Mn	55	3288.0	1.8	**0.2988**	0.009	3.0	ug/L	1164	Standard
	Co	59	442.3	9.5	**0.0233**	0.007	28.1	ug/L	303	Standard
	Ni	60	549.7	6.7	**0.1150**	0.019	16.8	ug/L	291	Standard
	Cu	65	1533.7	1.8	**0.7602**	0.018	2.4	ug/L	173	Standard
	Zn	66	3561.1	0.5	**3.2002**	0.053	1.7	ug/L	130	Standard
>	**Ge**	72	491613.1	1.0				ug/L	491724	Standard
	As	75	67.8	11.4	**0.0986**	0.008	8.2	ug/L	-25	Standard
	Se	82	49.8	19.1	**0.3887**	0.090	23.1	ug/L	12	Standard
	Se-1	77	49.0	15.9	**0.0445**	0.115	258.9	ug/L	57	Standard
>	**Ga**	71	185.0	23.4				mg/L	148	Standard
	Rb	85	243.3	21.6				ug/L	18	Standard
	Y	89	394619.8	1.0				ug/L	401845	Standard
>	**Rh**	103	30.0	44.1				ug/L	10	Standard
	Mo	98	108.2	38.9	**0.0419**	0.018	43.1	ug/L	12	Standard
	Ag	107	146.7	33.6	**0.0102**	0.009	84.7	ug/L	98	Standard
	Cd	111	29.5	45.9	**0.0114**	0.007	64.9	mg/L	11	Standard
	Cd	114	80.9	41.5	**0.0138**	0.008	55.0	ug/L	21	Standard
>	**In**	115	532617.2	0.2				ug/L	547487	Standard
	Sn	118	588.3	10.2	**0.0424**	0.012	28.7	ug/L	450	Standard
	Sb	123	334.8	20.5	**0.0734**	0.016	22.4	ug/L	105	Standard
	Ba	135	9299.9	0.5	**5.1515**	0.018	0.3	ug/L	111	Standard
	Ce	140	778.4	11.1				ug/L	107	Standard
>	**Tb**	159	856842.4	1.3				ug/L	890342	Standard
	Ho	165	25.0	20.0				ug/L	10	Standard
	Tl	203	92.3	45.4	**0.0091**	0.006	63.1	ug/L	19	Standard
	Tl	205	91.7	74.5	**0.0163**	0.011	69.8	ug/L	17	Standard
	Pb	206	607.0	7.8	**0.0743**	0.010	14.0	ug/L	247	Standard
	Pb	207	493.7	5.6	**0.0635**	0.006	9.8	ug/L	215	Standard
	Pb	208	1980.7	5.5	**0.0640**	0.007	10.5	ug/L	770	Standard
	U	238	71.0	67.4	**0.0114**	0.008	72.1	ug/L	13	Standard
>	**Bi**	209	486381.9	0.6				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.3778**	31.823	173.2	mg/L	2	Standard
Mg	24	1595.1	7.2	**2.2306**	0.060	2.7	mg/L	35	Standard
K	39	30.0	44.1	**0.0441**	0.075	168.9	mg/L	25	Standard
Ca	43	33.3	45.8	**1.5391**	3.367	218.8	mg/L	38	Standard
Fe	54	139.5	48.2	**-0.0011**	0.059	5464.9	mg/L	126	Standard
Fe	57	250.0	17.8	**-0.0719**	0.146	202.6	mg/L	245	Standard
Sc-1	45	24184.3	4.6				mg/L	25066	Standard
Cl	35	130065.3	1.4				ug/L	125857	Standard
Kr	83	1.0	0.0				ug/L	1	Standard
Br	81	9623.1	5.0				ug/L	1350	Standard
P	31	16951.1	1.1				ug/L	18393	Standard
S	34	3743.8	4.5				ug/L	3739	Standard
Sr	88	116.7	20.3				ug/L	78	Standard
C	12	46.7	96.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.2	94.4				mg/L	2	Standard
Ho-1	165	25.0	20.0				mg/L	10	Standard
Er	166	10.0					mg/L	23	Standard
I	127	1343.4	6.5				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.038	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.978	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.284
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.669
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606096103 WG573483-01
Sample Date/Time: Tuesday, June 21, 2016 13:16:23
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61047.7	0.6				ug/L	60176	Standard
	Be	9	15.0	33.3	**0.0116**	0.007	59.6	ug/L	5	Standard
	Al	27	9341973.6	1.7	**70.1047**	1.594	2.3	ug/L	832	Standard
	Sc	45	24823.7	1.2				ug/L	25066	Standard
	Ti	47	196.3	14.4	**0.8437**	0.163	19.3	ug/L	38	Standard
	V	51	1520.3	9.2	**0.0937**	0.027	28.5	ug/L	974	Standard
	Cr	52	9129.1	2.7	**0.5414**	0.059	10.9	ug/L	5792	Standard
	Cr	53	738.4	5.5	**0.5207**	0.064	12.4	ug/L	347	Standard
	Mn	55	11081.1	1.1	**1.5747**	0.043	2.7	ug/L	1164	Standard
	Co	59	619.0	4.0	**0.0557**	0.005	8.5	ug/L	303	Standard
	Ni	60	1274.1	1.2	**0.5411**	0.006	1.2	ug/L	291	Standard
	Cu	65	459.3	3.5	**0.1677**	0.009	5.7	ug/L	173	Standard
	Zn	66	1745.8	2.8	**1.5038**	0.023	1.6	ug/L	130	Standard
>	**Ge**	72	475973.6	1.5				ug/L	491724	Standard
	As	75	98.0	38.5	**0.1307**	0.038	29.4	ug/L	-25	Standard
	Se	82	59.0	18.3	**0.4974**	0.116	23.2	ug/L	12	Standard
	Se-1	77	72.0	13.9	**0.4016**	0.131	32.6	ug/L	57	Standard
>	**Ga**	71	200.0	13.9				mg/L	148	Standard
	Rb	85	3465.4	3.7				ug/L	18	Standard
	Y	89	402121.2	2.1				ug/L	401845	Standard
>	**Rh**	103	56.7	44.4				ug/L	10	Standard
	Mo	98	1248.8	2.4	**0.5212**	0.009	1.6	ug/L	12	Standard
	Ag	107	87.0	10.2	**-0.0005**	0.001	301.6	ug/L	98	Standard
	Cd	111	21.3	35.2	**0.0068**	0.004	60.3	mg/L	11	Standard
	Cd	114	36.7	39.5	**0.0037**	0.003	87.9	ug/L	21	Standard
>	**In**	115	541289.4	0.8				ug/L	547487	Standard
	Sn	118	620.0	15.4	**0.0468**	0.019	41.6	ug/L	450	Standard
	Sb	123	250.2	30.2	**0.0519**	0.018	34.1	ug/L	105	Standard
	Ba	135	26997.7	0.3	**14.8192**	0.144	1.0	ug/L	111	Standard
	Ce	140	1078.4	4.8				ug/L	107	Standard
>	**Tb**	159	866683.9	0.6				ug/L	890342	Standard
	Ho	165	30.0	33.3				ug/L	10	Standard
	Tl	203	79.7	2.6	**0.0074**	0.000	3.9	ug/L	19	Standard
	Tl	205	76.7	3.8	**0.0139**	0.000	3.0	ug/L	17	Standard
	Pb	206	354.3	0.4	**0.0212**	0.001	5.4	ug/L	247	Standard
	Pb	207	308.0	4.4	**0.0207**	0.003	15.8	ug/L	215	Standard
	Pb	208	1235.0	2.9	**0.0181**	0.002	9.8	ug/L	770	Standard
	U	238	2800.3	1.8	**0.4867**	0.012	2.5	ug/L	13	Standard
>	**Bi**	209	481870.9	1.1				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3122.0	2.6	**4.2928**	0.138	3.2	mg/L	35	Standard
K	39	116.7	8.9	**0.4746**	0.046	9.7	mg/L	25	Standard
Ca	43	158.3	7.9	**26.2024**	2.672	10.2	mg/L	38	Standard
Fe	54	139.3	11.0	**-0.0029**	0.016	532.1	mg/L	126	Standard
Fe	57	351.7	4.3	**0.3106**	0.078	25.0	mg/L	245	Standard
> **Sc-1**	45	24823.7	1.2				mg/L	25066	Standard
Cl	35	140998.6	2.1				ug/L	125857	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	3500.4	2.8				ug/L	1350	Standard
P	31	19117.1	2.2				ug/L	18393	Standard
S	34	3825.5	3.2				ug/L	3739	Standard
Sr	88	203.3	12.4				ug/L	78	Standard
C	12	103.3	45.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	55.1	19.0				mg/L	2	Standard
Ho-1	165	30.0	33.3				mg/L	10	Standard
Er	166	33.3	75.5				mg/L	23	Standard
I	127	4417.3	4.0				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.449	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.797	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.868
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.772
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606096103S WG573483-04
Sample Date/Time: Tuesday, June 21, 2016 13:19:35
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60085.6	1.7				ug/L	60176	Standard
	Be	9	35418.0	1.7	**49.4123**	1.273	2.6	ug/L	5	Standard
	Al	27	9553806.1	0.1	**72.8510**	1.232	1.7	ug/L	832	Standard
	Sc	45	24382.9	1.2				ug/L	25066	Standard
	Ti	47	190.0	4.7	**0.8162**	0.021	2.5	ug/L	38	Standard
	V	51	287859.7	1.7	**50.2556**	0.599	1.2	ug/L	974	Standard
	Cr	52	311117.1	1.3	**50.0342**	0.746	1.5	ug/L	5792	Standard
	Cr	53	39177.3	2.9	**49.4856**	0.624	1.3	ug/L	347	Standard
	Mn	55	324372.6	0.9	**52.6072**	1.077	2.0	ug/L	1164	Standard
	Co	59	291577.0	1.6	**49.8422**	0.595	1.2	ug/L	303	Standard
	Ni	60	85207.9	1.0	**49.1473**	1.009	2.1	ug/L	291	Standard
	Cu	65	84645.8	0.5	**49.2054**	1.253	2.5	ug/L	173	Standard
	Zn	66	51645.2	1.3	**51.6401**	0.793	1.5	ug/L	130	Standard
>	**Ge**	72	472256.1	2.8				ug/L	491724	Standard
	As	75	51695.2	1.6	**51.3245**	0.593	1.2	ug/L	-25	Standard
	Se	82	5173.1	1.2	**52.0219**	0.822	1.6	ug/L	12	Standard
	Se-1	77	3476.7	1.4	**50.5984**	1.532	3.0	ug/L	57	Standard
>	**Ga**	71	260.0	28.7				mg/L	148	Standard
	Rb	85	3562.1	2.1				ug/L	18	Standard
	Y	89	407263.7	1.8				ug/L	401845	Standard
>	**Rh**	103	68.3	30.5				ug/L	10	Standard
	Mo	98	1317.0	3.1	**0.5537**	0.021	3.9	ug/L	12	Standard
	Ag	107	275415.2	1.3	**47.5488**	1.124	2.4	ug/L	98	Standard
	Cd	111	88696.0	0.6	**48.0474**	0.431	0.9	mg/L	11	Standard
	Cd	114	213461.1	1.2	**47.5387**	1.278	2.7	ug/L	21	Standard
>	**In**	115	537694.2	1.5				ug/L	547487	Standard
	Sn	118	585.0	5.9	**0.0407**	0.007	17.4	ug/L	450	Standard
	Sb	123	193980.1	0.3	**46.5021**	0.680	1.5	ug/L	105	Standard
	Ba	135	112772.5	1.0	**62.4946**	0.514	0.8	ug/L	111	Standard
	Ce	140	1368.4	17.9				ug/L	107	Standard
>	**Tb**	159	852959.3	0.9				ug/L	890342	Standard
	Ho	165	35.0	37.8				ug/L	10	Standard
	Tl	203	345111.3	0.9	**48.9395**	0.677	1.4	ug/L	19	Standard
	Tl	205	293390.1	0.8	**50.7100**	0.765	1.5	ug/L	17	Standard
	Pb	206	227814.4	1.2	**50.1915**	0.357	0.7	ug/L	247	Standard
	Pb	207	198202.5	1.7	**48.0341**	0.475	1.0	ug/L	215	Standard
	Pb	208	774653.3	0.9	**50.1464**	0.296	0.6	ug/L	770	Standard
	U	238	276162.4	0.2	**49.3292**	0.615	1.2	ug/L	13	Standard
>	**Bi**	209	469650.7	1.1				ug/L	503143	Standard

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Na	23	3.3	86.6	**38.0335**	32.935	86.6	mg/L	2	Standard
Mg	24	3283.7	5.8	**4.5981**	0.247	5.4	mg/L	35	Standard
K	39	128.3	19.2	**0.5454**	0.127	23.3	mg/L	25	Standard
Ca	43	110.0	16.4	**16.9725**	3.680	21.7	mg/L	38	Standard
Fe	54	154.7	12.2	**0.0146**	0.020	138.4	mg/L	126	Standard
Fe	57	370.0	1.4	**0.4097**	0.022	5.4	mg/L	245	Standard
> **Sc-1**	45	24382.9	1.2				mg/L	25066	Standard
Cl	35	147069.0	0.9				ug/L	125857	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	2353.5	2.8				ug/L	1350	Standard
P	31	18783.3	1.7				ug/L	18393	Standard
S	34	3680.4	2.3				ug/L	3739	Standard
Sr	88	195.0	15.4				ug/L	78	Standard
C	12	110.0	36.4				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	61.9	82.6				mg/L	2	Standard
Ho-1	165	35.0	37.8				mg/L	10	Standard
Er	166	30.0	57.7				mg/L	23	Standard
I	127	4779.1	3.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.850	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.041	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.211
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.343
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606096103SD WG573483-05
Sample Date/Time: Tuesday, June 21, 2016 13:22:47
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61462.8	1.9				ug/L	60176	Standard
	Be	9	36453.8	2.4	**49.7327**	2.122	4.3	ug/L	5	Standard
	Al	27	9453301.8	0.8	**70.4658**	0.824	1.2	ug/L	832	Standard
	Sc	45	24409.6	0.4				ug/L	25066	Standard
	Ti	47	344.0	66.5	**1.5970**	1.182	74.0	ug/L	38	Standard
	V	51	289238.2	2.5	**49.3099**	0.828	1.7	ug/L	974	Standard
	Cr	52	318109.2	0.9	**49.9609**	0.437	0.9	ug/L	5792	Standard
	Cr	53	40479.0	3.1	**49.9452**	1.314	2.6	ug/L	347	Standard
	Mn	55	314057.7	2.4	**49.7210**	0.754	1.5	ug/L	1164	Standard
	Co	59	290318.9	2.9	**48.4610**	0.991	2.0	ug/L	303	Standard
	Ni	60	87273.0	1.1	**49.1559**	0.393	0.8	ug/L	291	Standard
	Cu	65	85527.1	2.3	**48.5400**	0.760	1.6	ug/L	173	Standard
	Zn	66	51755.6	2.3	**50.5302**	0.778	1.5	ug/L	130	Standard
>	**Ge**	72	483447.8	0.9				ug/L	491724	Standard
	As	75	51749.9	1.4	**50.1783**	0.327	0.7	ug/L	-25	Standard
	Se	82	5053.4	1.0	**49.6285**	0.930	1.9	ug/L	12	Standard
	Se-1	77	3472.4	4.6	**49.3184**	2.029	4.1	ug/L	57	Standard
>	**Ga**	71	256.7	20.0				mg/L	148	Standard
	Rb	85	3362.0	2.8				ug/L	18	Standard
	Y	89	401293.0	3.1				ug/L	401845	Standard
>	**Rh**	103	56.7	10.2				ug/L	10	Standard
	Mo	98	1289.5	8.7	**0.5470**	0.043	7.9	ug/L	12	Standard
	Ag	107	282626.7	0.7	**49.2593**	0.185	0.4	ug/L	98	Standard
	Cd	111	89595.6	1.1	**49.0014**	0.114	0.2	mg/L	11	Standard
	Cd	114	217595.8	1.3	**48.9159**	0.226	0.5	ug/L	21	Standard
>	**In**	115	532522.5	0.9				ug/L	547487	Standard
	Sn	118	533.3	7.5	**0.0316**	0.009	27.6	ug/L	450	Standard
	Sb	123	199986.0	1.4	**48.4014**	0.599	1.2	ug/L	105	Standard
	Ba	135	113635.9	0.8	**63.5855**	0.778	1.2	ug/L	111	Standard
	Ce	140	1038.4	8.3				ug/L	107	Standard
>	**Tb**	159	861213.7	0.8				ug/L	890342	Standard
	Ho	165	33.3	45.8				ug/L	10	Standard
	Tl	203	354994.0	0.6	**48.9345**	0.505	1.0	ug/L	19	Standard
	Tl	205	289401.6	1.8	**48.6253**	1.171	2.4	ug/L	17	Standard
	Pb	206	230028.8	1.2	**49.2668**	0.831	1.7	ug/L	247	Standard
	Pb	207	199754.3	1.2	**47.0633**	0.908	1.9	ug/L	215	Standard
	Pb	208	767538.1	0.5	**48.2969**	0.306	0.6	ug/L	770	Standard
	U	238	277842.3	0.1	**48.2419**	0.411	0.9	ug/L	13	Standard
>	**Bi**	209	483136.4	0.9				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3075.3	4.3	**4.3000**	0.197	4.6	mg/L	35	Standard
K	39	133.3	11.5	**0.5703**	0.080	14.0	mg/L	25	Standard
Ca	43	143.3	12.3	**23.6865**	3.499	14.8	mg/L	38	Standard
Fe	54	131.9	32.2	**-0.0079**	0.042	522.5	mg/L	126	Standard
Fe	57	375.0	17.0	**0.4278**	0.255	59.7	mg/L	245	Standard
> **Sc-1**	45	24409.6	0.4				mg/L	25066	Standard
Cl	35	148355.5	1.1				ug/L	125857	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	1950.1	13.4				ug/L	1350	Standard
P	31	18893.5	3.9				ug/L	18393	Standard
S	34	3878.8	5.1				ug/L	3739	Standard
Sr	88	180.0	4.8				ug/L	78	Standard
C	12	116.7	49.5				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	94.6	15.9				mg/L	2	Standard
Ho-1	165	33.3	45.8				mg/L	10	Standard
Er	166	43.3	13.3				mg/L	23	Standard
I	127	4419.0	9.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.138	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.317	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.267
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.024
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606073102
Sample Date/Time: Tuesday, June 21, 2016 13:25:58
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62050.2	2.7				ug/L	60176	Standard
	Be	9	105.0	8.2	**0.1327**	0.009	6.8	ug/L	5	Standard
	Al	27	1013016.4	2.3	**7.4716**	0.030	0.4	ug/L	832	Standard
	Sc	45	25413.0	0.7				ug/L	25066	Standard
	Ti	47	11689.2	3.8	**62.0270**	2.447	3.9	ug/L	38	Standard
	V	51	31514.4	0.8	**5.2807**	0.054	1.0	ug/L	974	Standard
	Cr	52	17882.9	0.9	**1.9504**	0.032	1.6	ug/L	5792	Standard
	Cr	53	2040.1	2.3	**2.1533**	0.055	2.6	ug/L	347	Standard
	Mn	55	131913.8	0.6	**20.9934**	0.153	0.7	ug/L	1164	Standard
	Co	59	2483.5	3.2	**0.3703**	0.015	3.9	ug/L	303	Standard
	Ni	60	2377.5	1.9	**1.1685**	0.022	1.9	ug/L	291	Standard
	Cu	65	255994.2	0.7	**147.1034**	1.372	0.9	ug/L	173	Standard
	Zn	66	18744.6	0.9	**18.3555**	0.182	1.0	ug/L	130	Standard
>	**Ge**	72	478159.2	0.3				ug/L	491724	Standard
	As	75	12450.5	0.9	**12.2318**	0.086	0.7	ug/L	-25	Standard
	Se	82	110.0	5.3	**1.0009**	0.058	5.8	ug/L	12	Standard
	Se-1	77	115.3	7.0	**1.0288**	0.120	11.7	ug/L	57	Standard
>	**Ga**	71	2798.6	0.4				mg/L	148	Standard
	Rb	85	49900.4	1.1				ug/L	18	Standard
	Y	89	416526.1	0.5				ug/L	401845	Standard
>	**Rh**	103	41.7	13.9				ug/L	10	Standard
	Mo	98	4437.9	0.6	**1.8377**	0.013	0.7	ug/L	12	Standard
	Ag	107	916.0	2.3	**0.1396**	0.005	3.7	ug/L	98	Standard
	Cd	111	512.1	2.9	**0.2671**	0.011	4.2	mg/L	11	Standard
	Cd	114	1211.6	3.0	**0.2598**	0.006	2.2	ug/L	21	Standard
>	**In**	115	548951.9	1.2				ug/L	547487	Standard
	Sn	118	5657.7	4.2	**1.0127**	0.047	4.7	ug/L	450	Standard
	Sb	123	4885.2	8.8	**1.1392**	0.095	8.3	ug/L	105	Standard
	Ba	135	19928.1	1.6	**10.7709**	0.169	1.6	ug/L	111	Standard
	Ce	140	57480.5	1.9				ug/L	107	Standard
>	**Tb**	159	878774.2	1.0				ug/L	890342	Standard
	Ho	165	1093.4	18.2				ug/L	10	Standard
	Tl	203	347.3	5.3	**0.0436**	0.002	4.8	ug/L	19	Standard
	Tl	205	276.7	3.8	**0.0468**	0.002	4.8	ug/L	17	Standard
	Pb	206	43154.7	0.9	**9.0669**	0.187	2.1	ug/L	247	Standard
	Pb	207	37803.4	1.8	**8.7363**	0.108	1.2	ug/L	215	Standard
	Pb	208	149908.5	0.2	**9.2509**	0.144	1.6	ug/L	770	Standard
	U	238	690.7	5.1	**0.1174**	0.005	4.3	ug/L	13	Standard
>	**Bi**	209	490138.0	1.5				ug/L	503143	Standard

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Na	23	3.3	86.6	**36.6395**	31.728	86.6	mg/L	2	Standard
Mg	24	11255.8	2.0	**15.2140**	0.309	2.0	mg/L	35	Standard
K	39	513.3	5.7	**2.4114**	0.137	5.7	mg/L	25	Standard
Ca	43	73.3	31.5	**8.9140**	4.383	49.2	mg/L	38	Standard
Fe	54	1193.7	6.4	**0.9809**	0.074	7.6	mg/L	126	Standard
Fe	57	501.7	10.9	**0.8612**	0.218	25.3	mg/L	245	Standard
> **Sc-1**	45	25413.0	0.7				mg/L	25066	Standard
Cl	35	147490.5	1.3				ug/L	125857	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	2373.5	6.5				ug/L	1350	Standard
P	31	25653.5	10.8				ug/L	18393	Standard
S	34	3847.2	1.9				ug/L	3739	Standard
Sr	88	95.0	22.9				ug/L	78	Standard
C	12	80.0	43.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	100.0				mg/L	0	Standard
Dy	164	1461.7	2.4				mg/L	2	Standard
Ho-1	165	1093.4	18.2				mg/L	10	Standard
Er	166	1010.0	4.3				mg/L	23	Standard
I	127	10345.2	3.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.115	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.241	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.268	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.415	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: L1606073102PS WG573557-01
Sample Date/Time: Tuesday, June 21, 2016 13:29:10
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62836.7	1.0				ug/L	60176	Standard
	Be	9	38405.3	1.0	**51.2242**	0.495	1.0	ug/L	5	Standard
	Al	27	986754.3	0.7	**7.1861**	0.032	0.4	ug/L	832	Standard
	Sc	45	25206.0	4.0				ug/L	25066	Standard
	Ti	47	12380.1	4.7	**64.5662**	3.180	4.9	ug/L	38	Standard
	V	51	336761.7	1.5	**57.0716**	0.650	1.1	ug/L	974	Standard
	Cr	52	338031.4	0.9	**52.7987**	0.435	0.8	ug/L	5792	Standard
	Cr	53	42471.1	2.2	**52.0846**	0.966	1.9	ug/L	347	Standard
	Mn	55	458391.3	1.7	**72.2107**	1.483	2.1	ug/L	1164	Standard
	Co	59	320824.6	0.9	**53.2201**	0.682	1.3	ug/L	303	Standard
	Ni	60	91216.4	1.1	**51.0539**	0.706	1.4	ug/L	291	Standard
	Cu	65	345800.3	0.7	**195.2967**	1.049	0.5	ug/L	173	Standard
	Zn	66	72342.6	1.4	**70.2705**	0.971	1.4	ug/L	130	Standard
>	**Ge**	72	486585.9	0.4				ug/L	491724	Standard
	As	75	66468.7	1.6	**64.0258**	0.932	1.5	ug/L	-25	Standard
	Se	82	5473.3	1.5	**53.4097**	0.960	1.8	ug/L	12	Standard
	Se-1	77	3758.5	2.1	**53.0932**	1.114	2.1	ug/L	57	Standard
>	**Ga**	71	2930.3	6.6				mg/L	148	Standard
	Rb	85	50851.9	2.6				ug/L	18	Standard
	Y	89	422665.5	2.8				ug/L	401845	Standard
>	**Rh**	103	43.3	13.3				ug/L	10	Standard
	Mo	98	4548.7	3.3	**1.9199**	0.104	5.4	ug/L	12	Standard
	Ag	107	291098.5	1.4	**50.1491**	1.656	3.3	ug/L	98	Standard
	Cd	111	96011.5	1.2	**51.8878**	0.482	0.9	mg/L	11	Standard
	Cd	114	228852.1	1.3	**50.8404**	0.872	1.7	ug/L	21	Standard
>	**In**	115	538990.3	2.1				ug/L	547487	Standard
	Sn	118	6059.6	11.2	**1.1120**	0.140	12.6	ug/L	450	Standard
	Sb	123	210648.2	0.5	**50.3883**	1.297	2.6	ug/L	105	Standard
	Ba	135	109800.4	0.6	**60.7142**	1.334	2.2	ug/L	111	Standard
	Ce	140	59162.4	7.7				ug/L	107	Standard
>	**Tb**	159	872877.7	0.3				ug/L	890342	Standard
	Ho	165	1188.4	22.2				ug/L	10	Standard
	Tl	203	368407.8	0.3	**49.7173**	0.416	0.8	ug/L	19	Standard
	Tl	205	314960.3	1.3	**51.8065**	0.923	1.8	ug/L	17	Standard
	Pb	206	286269.8	0.5	**60.0352**	0.497	0.8	ug/L	247	Standard
	Pb	207	250420.9	0.8	**57.7692**	0.376	0.7	ug/L	215	Standard
	Pb	208	977924.5	0.9	**60.2632**	1.112	1.8	ug/L	770	Standard
	U	238	292324.4	0.4	**49.6915**	0.547	1.1	ug/L	13	Standard
>	**Bi**	209	493501.4	1.0				ug/L	503143	Standard

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Na	23	3.3	86.6	**37.0547**	32.164	86.8	mg/L	2	Standard
Mg	24	11367.6	3.6	**15.5226**	1.170	7.5	mg/L	35	Standard
K	39	491.7	4.1	**2.3285**	0.165	7.1	mg/L	25	Standard
Ca	43	61.7	32.8	**6.7120**	3.782	56.4	mg/L	38	Standard
Fe	54	1050.3	3.7	**0.8567**	0.077	8.9	mg/L	126	Standard
Fe	57	553.3	6.8	**1.0850**	0.222	20.5	mg/L	245	Standard
> **Sc-1**	45	25206.0	4.0				mg/L	25066	Standard
Cl	35	141394.7	1.2				ug/L	125857	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	2206.8	11.9				ug/L	1350	Standard
P	31	23750.3	1.6				ug/L	18393	Standard
S	34	3492.1	3.7				ug/L	3739	Standard
Sr	88	91.7	19.2				ug/L	78	Standard
C	12	96.7	39.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	65.5				mg/L	0	Standard
Dy	164	1514.9	12.9				mg/L	2	Standard
Ho-1	165	1188.4	22.2				mg/L	10	Standard
Er	166	1083.4	11.0				mg/L	23	Standard
I	127	10306.8	3.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.422	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.955	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.448
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.084
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: L1606073102SDL WG573557-02
Sample Date/Time: Tuesday, June 21, 2016 13:32:21
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62607.4	1.3				ug/L	60176	Standard
	Be	9	25.0	34.6	**0.0244**	0.011	45.5	ug/L	5	Standard
	Al	27	212439.0	0.9	**1.5464**	0.033	2.1	ug/L	832	Standard
	Sc	45	24628.3	0.4				ug/L	25066	Standard
	Ti	47	2784.9	3.0	**13.9086**	0.389	2.8	ug/L	38	Standard
	V	51	7566.4	0.8	**1.0756**	0.023	2.2	ug/L	974	Standard
	Cr	52	8980.0	0.9	**0.4405**	0.021	4.7	ug/L	5792	Standard
	Cr	53	745.0	5.8	**0.4791**	0.044	9.2	ug/L	347	Standard
	Mn	55	27746.4	1.2	**4.0322**	0.081	2.0	ug/L	1164	Standard
	Co	59	770.7	3.6	**0.0747**	0.006	7.8	ug/L	303	Standard
	Ni	60	728.0	3.3	**0.2056**	0.009	4.5	ug/L	291	Standard
	Cu	65	55112.7	1.2	**30.0755**	0.388	1.3	ug/L	173	Standard
	Zn	66	4901.5	0.7	**4.3932**	0.053	1.2	ug/L	130	Standard
>	**Ge**	72	502229.8	1.2				ug/L	491724	Standard
	As	75	2641.7	1.6	**2.4986**	0.070	2.8	ug/L	-25	Standard
	Se	82	37.4	7.9	**0.2610**	0.029	11.1	ug/L	12	Standard
	Se-1	77	65.3	16.9	**0.2568**	0.164	63.9	ug/L	57	Standard
>	**Ga**	71	860.0	7.0				mg/L	148	Standard
	Rb	85	10418.6	2.0				ug/L	18	Standard
	Y	89	399994.5	0.5				ug/L	401845	Standard
>	**Rh**	103	30.0	33.3				ug/L	10	Standard
	Mo	98	925.4	2.8	**0.3921**	0.014	3.7	ug/L	12	Standard
	Ag	107	297.0	13.1	**0.0365**	0.007	19.3	ug/L	98	Standard
	Cd	111	115.6	4.7	**0.0586**	0.003	5.9	mg/L	11	Standard
	Cd	114	279.1	9.6	**0.0584**	0.006	10.2	ug/L	21	Standard
>	**In**	115	531899.2	0.8				ug/L	547487	Standard
	Sn	118	1896.8	36.6	**0.3027**	0.141	46.7	ug/L	450	Standard
	Sb	123	2351.8	13.2	**0.5620**	0.071	12.7	ug/L	105	Standard
	Ba	135	4320.6	0.3	**2.3669**	0.016	0.7	ug/L	111	Standard
	Ce	140	11052.4	4.5				ug/L	107	Standard
>	**Tb**	159	858576.5	0.7				ug/L	890342	Standard
	Ho	165	216.7	10.7				ug/L	10	Standard
	Tl	203	116.0	17.5	**0.0123**	0.003	24.6	ug/L	19	Standard
	Tl	205	98.3	11.7	**0.0173**	0.002	12.0	ug/L	17	Standard
	Pb	206	9169.1	1.7	**1.8876**	0.041	2.2	ug/L	247	Standard
	Pb	207	7982.8	0.7	**1.8083**	0.035	1.9	ug/L	215	Standard
	Pb	208	31008.6	0.6	**1.8704**	0.021	1.1	ug/L	770	Standard
	U	238	168.3	3.3	**0.0281**	0.001	3.9	ug/L	13	Standard
>	**Bi**	209	489002.3	1.5				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	2341.8	1.1	**3.2356**	0.024	0.7	mg/L	35	Standard
K	39	118.3	20.0	**0.4878**	0.118	24.2	mg/L	25	Standard
Ca	43	43.3	17.6	**3.3707**	1.559	46.2	mg/L	38	Standard
Fe	54	377.4	16.5	**0.2279**	0.059	26.1	mg/L	126	Standard
Fe	57	345.0	9.5	**0.2940**	0.127	43.1	mg/L	245	Standard
> **Sc-1**	45	24628.3	0.4				mg/L	25066	Standard
Cl	35	138476.6	0.9				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	1490.1	4.7				ug/L	1350	Standard
P	31	19304.0	1.2				ug/L	18393	Standard
S	34	3498.7	5.5				ug/L	3739	Standard
Sr	88	68.3	18.4				ug/L	78	Standard
C	12	46.7	44.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	337.2	15.6				mg/L	2	Standard
Ho-1	165	216.7	10.7				mg/L	10	Standard
Er	166	196.7	28.9				mg/L	23	Standard
I	127	3045.3	3.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.041	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.137	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.153
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.190
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: FBLANK 7Q WG573662-01
Sample Date/Time: Tuesday, June 21, 2016 13:36:50
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60862.0	1.5				ug/L	60176	Standard
	Be	9	37583.2	1.6	**51.7542**	0.552	1.1	ug/L	5	Standard
	Al	27	21697.9	26.0	**0.1552**	0.044	28.5	ug/L	832	Standard
	Sc	45	23591.7	4.2				ug/L	25066	Standard
	Ti	47	83.7	108.0	**0.2200**	0.454	206.3	ug/L	38	Standard
	V	51	305889.4	1.3	**51.4535**	1.008	2.0	ug/L	974	Standard
	Cr	52	330929.6	0.4	**51.2983**	1.178	2.3	ug/L	5792	Standard
	Cr	53	41528.5	0.6	**50.5645**	1.478	2.9	ug/L	347	Standard
	Mn	55	328303.3	1.1	**51.2988**	1.820	3.5	ug/L	1164	Standard
	Co	59	315656.4	1.0	**52.0010**	1.804	3.5	ug/L	303	Standard
	Ni	60	91664.8	1.0	**50.9431**	1.373	2.7	ug/L	291	Standard
	Cu	65	92045.1	0.9	**51.5472**	1.356	2.6	ug/L	173	Standard
	Zn	66	54111.8	0.2	**52.1307**	1.195	2.3	ug/L	130	Standard
>	**Ge**	72	490225.8	2.5				ug/L	491724	Standard
	As	75	52438.9	0.3	**50.1639**	1.182	2.4	ug/L	-25	Standard
	Se	82	5295.6	0.8	**51.3116**	1.607	3.1	ug/L	12	Standard
	Se-1	77	3616.8	1.2	**50.6984**	1.048	2.1	ug/L	57	Standard
>	**Ga**	71	186.7	10.8				mg/L	148	Standard
	Rb	85	61.7	12.4				ug/L	18	Standard
	Y	89	408507.2	0.7				ug/L	401845	Standard
>	**Rh**	103	48.3	15.8				ug/L	10	Standard
	Mo	98	52.1	23.1	**0.0179**	0.005	29.8	ug/L	12	Standard
	Ag	107	297940.9	0.5	**51.9244**	0.468	0.9	ug/L	98	Standard
	Cd	111	93406.3	0.2	**51.0848**	0.731	1.4	mg/L	11	Standard
	Cd	114	226390.7	0.3	**50.8926**	0.677	1.3	ug/L	21	Standard
>	**In**	115	532598.8	1.2				ug/L	547487	Standard
	Sn	118	560.0	13.9	**0.0370**	0.017	45.0	ug/L	450	Standard
	Sb	123	206757.3	1.1	**50.0344**	0.431	0.9	ug/L	105	Standard
	Ba	135	90690.6	0.8	**50.7329**	0.993	2.0	ug/L	111	Standard
	Ce	140	146.7	19.4				ug/L	107	Standard
>	**Tb**	159	846206.7	1.1				ug/L	890342	Standard
	Ho	165	13.3	86.6				ug/L	10	Standard
	Tl	203	364672.7	1.1	**50.8514**	0.648	1.3	ug/L	19	Standard
	Tl	205	306373.3	0.5	**52.0688**	0.058	0.1	ug/L	17	Standard
	Pb	206	242442.7	0.5	**52.5299**	0.446	0.8	ug/L	247	Standard
	Pb	207	211276.6	0.7	**50.3548**	0.226	0.4	ug/L	215	Standard
	Pb	208	820675.9	0.4	**52.2445**	0.286	0.5	ug/L	770	Standard
	U	238	287466.1	0.1	**50.4910**	0.234	0.5	ug/L	13	Standard
>	**Bi**	209	477588.3	0.5				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	65.0	26.6	**0.0558**	0.025	43.9	mg/L	35	Standard
K	39	33.3	31.2	**0.0629**	0.047	74.5	mg/L	25	Standard
Ca	43	28.3	50.9	**0.5321**	2.713	509.8	mg/L	38	Standard
Fe	54	102.3	13.6	**-0.0329**	0.018	54.0	mg/L	126	Standard
Fe	57	231.7	21.8	**-0.1150**	0.242	210.0	mg/L	245	Standard
> **Sc-1**	45	23591.7	4.2				mg/L	25066	Standard
Cl	35	136517.0	1.3				ug/L	125857	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	1383.4	10.5				ug/L	1350	Standard
P	31	16972.8	0.8				ug/L	18393	Standard
S	34	3713.8	2.7				ug/L	3739	Standard
Sr	88	61.7	9.4				ug/L	78	Standard
C	12	53.3	47.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	19.8	49.2				mg/L	2	Standard
Ho-1	165	13.3	86.6				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	23	Standard
I	127	1001.7	6.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.140	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.695	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.281
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.921
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 13:40:03
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61031.0	0.7				ug/L	60176	Standard
	Be	9	36594.2	3.2	**50.2545**	1.736	3.5	ug/L	5	Standard
	Al	27	6613287.8	2.3	**49.6387**	1.327	2.7	ug/L	832	Standard
	Sc	45	24596.6	1.9				ug/L	25066	Standard
	Ti	47	19478.9	2.3	**103.3937**	4.517	4.4	ug/L	38	Standard
	V	51	296612.7	2.3	**51.0859**	2.216	4.3	ug/L	974	Standard
	Cr	52	329696.2	2.1	**52.3442**	2.253	4.3	ug/L	5792	Standard
	Cr	53	41729.1	0.9	**52.0173**	1.592	3.1	ug/L	347	Standard
	Mn	55	310317.0	2.6	**49.6295**	2.343	4.7	ug/L	1164	Standard
	Co	59	303689.4	2.7	**51.2154**	2.491	4.9	ug/L	303	Standard
	Ni	60	90715.2	2.4	**51.6193**	2.335	4.5	ug/L	291	Standard
	Cu	65	89623.1	3.1	**51.3920**	2.693	5.2	ug/L	173	Standard
	Zn	66	52311.5	3.1	**51.6008**	2.673	5.2	ug/L	130	Standard
>	**Ge**	72	478918.3	2.1				ug/L	491724	Standard
	As	75	51909.7	2.4	**50.8415**	2.263	4.5	ug/L	-25	Standard
	Se	82	5184.4	2.6	**51.4278**	2.428	4.7	ug/L	12	Standard
	Se-1	77	3510.4	2.6	**50.3835**	2.410	4.8	ug/L	57	Standard
>	**Ga**	71	205.0	20.8				mg/L	148	Standard
	Rb	85	766.7	4.6				ug/L	18	Standard
	Y	89	405836.1	1.8				ug/L	401845	Standard
>	**Rh**	103	35.0	42.9				ug/L	10	Standard
	Mo	98	227649.5	2.0	**96.2656**	2.103	2.2	ug/L	12	Standard
	Ag	107	288372.2	1.1	**49.6724**	0.252	0.5	ug/L	98	Standard
	Cd	111	92130.2	0.9	**49.8016**	0.575	1.2	mg/L	11	Standard
	Cd	114	225554.0	0.3	**50.1162**	0.425	0.8	ug/L	21	Standard
>	**In**	115	538810.9	0.6				ug/L	547487	Standard
	Sn	118	247773.3	1.9	**48.4123**	1.160	2.4	ug/L	450	Standard
	Sb	123	211050.2	2.3	**50.4816**	1.038	2.1	ug/L	105	Standard
	Ba	135	89213.6	0.7	**49.3244**	0.656	1.3	ug/L	111	Standard
	Ce	140	93.3	16.4				ug/L	107	Standard
>	**Tb**	159	860595.9	0.4				ug/L	890342	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	362174.3	0.8	**49.8195**	1.053	2.1	ug/L	19	Standard
	Tl	205	305739.0	0.6	**51.2583**	0.985	1.9	ug/L	17	Standard
	Pb	206	230874.7	1.7	**49.3431**	1.266	2.6	ug/L	247	Standard
	Pb	207	208855.0	2.0	**49.1070**	1.530	3.1	ug/L	215	Standard
	Pb	208	795788.6	1.4	**49.9753**	1.375	2.8	ug/L	770	Standard
	U	238	286489.2	0.6	**49.6372**	0.898	1.8	ug/L	13	Standard
>	**Bi**	209	484221.4	1.4				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3497.1	3.8	**4.8581**	0.197	4.1	mg/L	35	Standard
K	39	931.7	4.0	**4.6234**	0.265	5.7	mg/L	25	Standard
Ca	43	35.0	62.3	**1.6854**	4.328	256.8	mg/L	38	Standard
Fe	54	5344.8	3.0	**5.0352**	0.242	4.8	mg/L	126	Standard
Fe	57	1481.7	2.1	**4.8642**	0.109	2.2	mg/L	245	Standard
Sc-1	45	24596.6	1.9				mg/L	25066	Standard
Cl	35	138959.7	0.4				ug/L	125857	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	1233.4	20.2				ug/L	1350	Standard
P	31	18719.9	0.8				ug/L	18393	Standard
S	34	4417.3	5.9				ug/L	3739	Standard
Sr	88	70.0	32.7				ug/L	78	Standard
C	12	46.7	53.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	-0.6	114.6				mg/L	2	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	1176.7	6.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	100.509		
Al	27	99.277		
Sc	45			
Ti	47	103.394		
V	51	102.172		
Cr	52	104.688		
Cr	53			
Mn	55	99.259		
Co	59	102.431		
Ni	60	103.239		
Cu	65	102.784		
Zn	66	103.202		
Ge	72		97.396	
As	75	101.683		
Se	82	102.856		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
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Rb	85			
Y	89			
Rh	103			
Mo	98	96.266		
Ag	107	99.345		
Cd	111	99.603		
Cd	114			
In	115			98.415
Sn	118	96.825		
Sb	123	100.963		
Ba	135	98.649		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.639		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.951		
U	238	99.274		
Bi	209			96.239
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 13:43:14
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59649.0	4.4				ug/L	60176	Standard
	Be	9	41.7	69.3	**0.0484**	0.037	76.6	ug/L	5	Standard
	Al	27	4266.0	98.6	**0.0235**	0.030	128.4	ug/L	832	Standard
	Sc	45	24342.9	3.0				ug/L	25066	Standard
	Ti	47	33.3	27.1	**-0.0321**	0.048	148.9	ug/L	38	Standard
	V	51	1086.3	15.0	**0.0151**	0.028	186.7	ug/L	974	Standard
	Cr	52	6084.9	2.7	**0.0304**	0.025	82.0	ug/L	5792	Standard
	Cr	53	316.7	20.3	**-0.0194**	0.077	400.2	ug/L	347	Standard
	Mn	55	1292.4	23.2	**-0.0102**	0.046	450.7	ug/L	1164	Standard
	Co	59	507.7	41.8	**0.0353**	0.035	98.0	ug/L	303	Standard
	Ni	60	317.3	24.7	**-0.0115**	0.043	371.7	ug/L	291	Standard
	Cu	65	214.0	56.1	**0.0236**	0.067	282.9	ug/L	173	Standard
	Zn	66	173.7	20.6	**-0.0653**	0.034	51.4	ug/L	130	Standard
>	**Ge**	72	483753.8	2.3				ug/L	491724	Standard
	As	75	6.9	624.5	**0.0407**	0.041	101.6	ug/L	-25	Standard
	Se	82	18.5	29.1	**0.0893**	0.056	62.8	ug/L	12	Standard
	Se-1	77	55.0	3.6	**0.1421**	0.045	31.6	ug/L	57	Standard
>	**Ga**	71	175.0	10.3				mg/L	148	Standard
	Rb	85	30.0	44.1				ug/L	18	Standard
	Y	89	416072.0	2.1				ug/L	401845	Standard
>	**Rh**	103	28.3	27.0				ug/L	10	Standard
	Mo	98	258.2	21.7	**0.1033**	0.023	21.8	ug/L	12	Standard
	Ag	107	212.0	65.6	**0.0205**	0.023	112.4	ug/L	98	Standard
	Cd	111	49.9	119.2	**0.0217**	0.031	143.8	mg/L	11	Standard
	Cd	114	138.9	94.3	**0.0258**	0.028	109.1	ug/L	21	Standard
>	**In**	115	545536.5	1.5				ug/L	547487	Standard
	Sn	118	786.7	5.1	**0.0781**	0.009	11.7	ug/L	450	Standard
	Sb	123	893.7	15.1	**0.2036**	0.032	15.8	ug/L	105	Standard
	Ba	135	155.0	26.2	**0.0290**	0.021	73.2	ug/L	111	Standard
	Ce	140	46.7	89.9				ug/L	107	Standard
>	**Tb**	159	851423.1	1.4				ug/L	890342	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	204.7	101.3	**0.0248**	0.028	114.4	ug/L	19	Standard
	Tl	205	236.7	112.3	**0.0410**	0.044	108.4	ug/L	17	Standard
	Pb	206	322.0	34.4	**0.0148**	0.023	155.8	ug/L	247	Standard
	Pb	207	278.7	40.6	**0.0143**	0.026	182.5	ug/L	215	Standard
	Pb	208	1396.0	53.4	**0.0288**	0.046	160.2	ug/L	770	Standard
	U	238	214.3	118.3	**0.0365**	0.044	119.9	ug/L	13	Standard
>	**Bi**	209	476880.3	2.0				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	25.0	52.9	**-0.0037**	0.018	500.1	mg/L	35	Standard
K	39	18.3	56.8	**-0.0172**	0.057	329.7	mg/L	25	Standard
Ca	43	26.7	47.2	**0.1406**	2.740	1948.1	mg/L	38	Standard
Fe	54	132.6	9.5	**-0.0068**	0.014	206.9	mg/L	126	Standard
Fe	57	211.7	5.5	**-0.2294**	0.073	31.8	mg/L	245	Standard
Sc-1	45	24342.9	3.0				mg/L	25066	Standard
Cl	35	143897.4	0.2				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	1373.4	16.1				ug/L	1350	Standard
P	31	19679.4	1.3				ug/L	18393	Standard
S	34	4449.0	1.1				ug/L	3739	Standard
Sr	88	78.3	19.5				ug/L	78	Standard
C	12	66.7	22.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.3	179.8				mg/L	2	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	23	Standard
I	127	996.7	2.4				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.379	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.644
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.780
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

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Method 6020 - Summary Report

Sample ID: L1606061601
Sample Date/Time: Tuesday, June 21, 2016 15:22:26
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61906.2	1.7				ug/L	60176	Standard
	Be	9	353.3	21.2	**0.4684**	0.095	20.2	ug/L	5	Standard
	Al	27	3358447.2	1.6	**24.8506**	0.581	2.3	ug/L	832	Standard
	Sc	45	24973.9	2.3				ug/L	25066	Standard
	Ti	47	298.0	14.4	**1.3564**	0.221	16.3	ug/L	38	Standard
	V	51	-5189.4	20.1	**-1.0574**	0.187	17.7	ug/L	974	Standard
	Cr	52	703390.4	0.3	**111.3019**	1.587	1.4	ug/L	5792	Standard
	Cr	53	93571.6	3.2	**115.6494**	2.048	1.8	ug/L	347	Standard
	Mn	55	821479.7	1.9	**130.0789**	4.283	3.3	ug/L	1164	Standard
	Co	59	94839.6	1.2	**15.7576**	0.403	2.6	ug/L	303	Standard
	Ni	60	304442.7	1.6	**171.4532**	1.376	0.8	ug/L	291	Standard
	Cu	65	7661.9	1.9	**4.2471**	0.033	0.8	ug/L	173	Standard
	Zn	66	10599.0	2.6	**10.1313**	0.186	1.8	ug/L	130	Standard
>	**Ge**	72	484843.6	1.4				ug/L	491724	Standard
	As	75	570.7	9.1	**0.5858**	0.057	9.7	ug/L	-25	Standard
	Se	82	251.1	0.8	**2.3709**	0.055	2.3	ug/L	12	Standard
	Se-1	77	415.7	8.5	**5.3115**	0.417	7.8	ug/L	57	Standard
>	**Ga**	71	288.3	8.9				mg/L	148	Standard
	Rb	85	2623.6	2.0				ug/L	18	Standard
	Y	89	398713.2	0.8				ug/L	401845	Standard
>	**Rh**	103	56.7	27.0				ug/L	10	Standard
	Mo	98	2419.6	2.5	**1.0703**	0.029	2.7	ug/L	12	Standard
	Ag	107	130.0	2.3	**0.0081**	0.001	10.1	ug/L	98	Standard
	Cd	111	262.1	7.2	**0.1442**	0.012	8.3	mg/L	11	Standard
	Cd	114	609.6	2.6	**0.1378**	0.003	2.4	ug/L	21	Standard
>	**In**	115	513017.2	1.6				ug/L	547487	Standard
	Sn	118	821.7	9.2	**0.0947**	0.014	14.3	ug/L	450	Standard
	Sb	123	733.0	25.0	**0.1761**	0.043	24.6	ug/L	105	Standard
	Ba	135	99016.2	1.6	**57.5032**	0.291	0.5	ug/L	111	Standard
	Ce	140	12887.1	3.7				ug/L	107	Standard
>	**Tb**	159	848478.4	1.1				ug/L	890342	Standard
	Ho	165	410.0	18.2				ug/L	10	Standard
	Tl	203	359.3	6.1	**0.0475**	0.004	8.4	ug/L	19	Standard
	Tl	205	305.0	1.6	**0.0538**	0.002	3.7	ug/L	17	Standard
	Pb	206	880.4	2.3	**0.1394**	0.005	3.8	ug/L	247	Standard
	Pb	207	741.7	1.8	**0.1280**	0.007	5.6	ug/L	215	Standard
	Pb	208	2788.1	1.1	**0.1210**	0.006	4.6	ug/L	770	Standard
	U	238	430.0	8.6	**0.0762**	0.008	10.9	ug/L	13	Standard
>	**Bi**	209	469289.0	2.2				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	44893.1	1.4	**61.8782**	1.088	1.8	mg/L	35	Standard
K	39	80.0	10.8	**0.2875**	0.036	12.5	mg/L	25	Standard
Ca	43	58.3	34.6	**6.1586**	3.723	60.4	mg/L	38	Standard
Fe	54	459.2	2.0	**0.3009**	0.006	1.9	mg/L	126	Standard
Fe	57	306.7	6.6	**0.1228**	0.057	46.4	mg/L	245	Standard
> **Sc-1**	45	24973.9	2.3				mg/L	25066	Standard
Cl	35	156643.7	1.7				ug/L	125857	Standard
Kr	83	2.7	43.3				ug/L	1	Standard
Br	81	58328.8	2.2				ug/L	1350	Standard
P	31	28678.8	2.1				ug/L	18393	Standard
S	34	4364.0	4.4				ug/L	3739	Standard
Sr	88	118.3	19.1				ug/L	78	Standard
C	12	100.0	72.1				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	613.2	2.5				mg/L	2	Standard
Ho-1	165	410.0	18.2				mg/L	10	Standard
Er	166	350.0	12.5				mg/L	23	Standard
I	127	70092.1	5.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.875	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.601	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	93.704
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.272
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Lower	V	51	
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	

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Mn 55 Upper, S, EEE	Mn	55
Ni 60 Upper, S, EEE	Ni	60

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Method 6020 - Summary Report

Sample ID: L1606061602
Sample Date/Time: Tuesday, June 21, 2016 15:25:38
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62282.9	3.9				ug/L	60176	Standard
	Be	9	13.3	78.1	**0.0089**	0.014	158.6	ug/L	5	Standard
	Al	27	17049432.7	0.9	**125.5063**	3.981	3.2	ug/L	832	Standard
	Sc	45	25169.2	3.4				ug/L	25066	Standard
	Ti	47	807.7	16.8	**4.0608**	0.742	18.3	ug/L	38	Standard
	V	51	2867.2	4.6	**0.3212**	0.020	6.3	ug/L	974	Standard
	Cr	52	13094.0	1.7	**1.1584**	0.021	1.8	ug/L	5792	Standard
	Cr	53	5707.8	16.6	**6.7038**	1.131	16.9	ug/L	347	Standard
	Mn	55	4214750.0	1.0	**671.9640**	7.527	1.1	ug/L	1164	Standard
	Co	59	2363.5	2.5	**0.3468**	0.009	2.6	ug/L	303	Standard
	Ni	60	2095.5	4.7	**0.9976**	0.054	5.4	ug/L	291	Standard
	Cu	65	827.0	5.3	**0.3740**	0.026	7.0	ug/L	173	Standard
	Zn	66	2898.6	2.7	**2.6166**	0.093	3.5	ug/L	130	Standard
>	**Ge**	72	482049.8	0.7				ug/L	491724	Standard
	As	75	2600.5	3.1	**2.5615**	0.093	3.7	ug/L	-25	Standard
	Se	82	880.4	1.9	**8.5951**	0.224	2.6	ug/L	12	Standard
	Se-1	77	853.7	1.5	**11.6729**	0.213	1.8	ug/L	57	Standard
>	**Ga**	71	506.7	6.6				mg/L	148	Standard
	Rb	85	23870.5	3.1				ug/L	18	Standard
	Y	89	394978.3	1.9				ug/L	401845	Standard
>	**Rh**	103	256.7	27.0				ug/L	10	Standard
	Mo	98	1604.0	4.5	**0.7016**	0.035	5.0	ug/L	12	Standard
	Ag	107	79.0	13.3	**-0.0012**	0.002	164.6	ug/L	98	Standard
	Cd	111	16.1	12.6	**0.0044**	0.001	27.5	mg/L	11	Standard
	Cd	114	59.0	10.1	**0.0092**	0.001	13.1	ug/L	21	Standard
>	**In**	115	517707.0	1.4				ug/L	547487	Standard
	Sn	118	2710.2	6.3	**0.4777**	0.029	6.0	ug/L	450	Standard
	Sb	123	297.7	21.5	**0.0665**	0.016	23.7	ug/L	105	Standard
	Ba	135	499345.8	0.5	**287.6104**	2.831	1.0	ug/L	111	Standard
	Ce	140	10685.4	3.5				ug/L	107	Standard
>	**Tb**	159	859857.7	0.6				ug/L	890342	Standard
	Ho	165	171.7	6.7				ug/L	10	Standard
	Tl	203	147.0	7.7	**0.0176**	0.002	10.6	ug/L	19	Standard
	Tl	205	131.7	9.6	**0.0241**	0.002	10.1	ug/L	17	Standard
	Pb	206	806.4	2.2	**0.1255**	0.005	3.9	ug/L	247	Standard
	Pb	207	665.0	1.0	**0.1116**	0.004	3.1	ug/L	215	Standard
	Pb	208	2632.8	1.6	**0.1132**	0.001	0.6	ug/L	770	Standard
	U	238	475.7	3.2	**0.0854**	0.003	3.7	ug/L	13	Standard
>	**Bi**	209	462865.3	1.2				ug/L	503143	Standard

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Na	23	5.0	100.0	**54.7235**	55.001	100.5	mg/L	2	Standard
Mg	24	92887.3	2.9	**127.2146**	7.642	6.0	mg/L	35	Standard
K	39	313.3	13.8	**1.4400**	0.167	11.6	mg/L	25	Standard
Ca	43	165.0	21.9	**27.2389**	8.231	30.2	mg/L	38	Standard
Fe	54	29519.0	1.0	**27.7809**	0.908	3.3	mg/L	126	Standard
Fe	57	8005.4	3.0	**30.3493**	0.303	1.0	mg/L	245	Standard
> **Sc-1**	45	25169.2	3.4				mg/L	25066	Standard
Cl	35	152557.1	2.2				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	221629.9	2.5				ug/L	1350	Standard
P	31	26778.6	1.5				ug/L	18393	Standard
S	34	4655.7	4.3				ug/L	3739	Standard
Sr	88	723.4	3.8				ug/L	78	Standard
C	12	93.3	22.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	0	Standard
Dy	164	336.0	12.3				mg/L	2	Standard
Ho-1	165	171.7	6.7				mg/L	10	Standard
Er	166	153.3	19.9				mg/L	23	Standard
I	127	284517.0	8.4				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.501	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.033	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.561
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	91.995
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606061604
Sample Date/Time: Tuesday, June 21, 2016 15:28:49
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57020.4	1.0				ug/L	60176	Standard
	Be	9	11.7	24.7	**0.0081**	0.004	51.2	ug/L	5	Standard
	Al	27	1079402.9	2.6	**8.6639**	0.184	2.1	ug/L	832	Standard
	Sc	45	25052.4	2.1				ug/L	25066	Standard
	Ti	47	402.3	58.5	**1.8535**	1.201	64.8	ug/L	38	Standard
	V	51	1463.1	9.7	**0.0731**	0.024	32.4	ug/L	974	Standard
	Cr	52	14139.6	1.7	**1.2608**	0.045	3.6	ug/L	5792	Standard
	Cr	53	2088.5	7.6	**2.1170**	0.178	8.4	ug/L	347	Standard
	Mn	55	835676.7	0.8	**129.2089**	1.084	0.8	ug/L	1164	Standard
	Co	59	3523.1	1.4	**0.5240**	0.006	1.1	ug/L	303	Standard
	Ni	60	4025.9	3.0	**2.0265**	0.074	3.6	ug/L	291	Standard
	Cu	65	706.3	1.2	**0.2935**	0.005	1.8	ug/L	173	Standard
	Zn	66	9224.1	1.2	**8.5777**	0.163	1.9	ug/L	130	Standard
>	**Ge**	72	496394.0	0.7				ug/L	491724	Standard
	As	75	111.7	16.0	**0.1393**	0.017	12.0	ug/L	-25	Standard
	Se	82	53.9	8.6	**0.4236**	0.046	10.9	ug/L	12	Standard
	Se-1	77	90.3	6.8	**0.6163**	0.078	12.7	ug/L	57	Standard
>	**Ga**	71	265.0	3.8				mg/L	148	Standard
	Rb	85	10645.4	6.1				ug/L	18	Standard
	Y	89	419565.3	1.2				ug/L	401845	Standard
>	**Rh**	103	76.7	21.0				ug/L	10	Standard
	Mo	98	94.8	4.8	**0.0348**	0.002	5.0	ug/L	12	Standard
	Ag	107	92.7	8.0	**0.0002**	0.001	504.2	ug/L	98	Standard
	Cd	111	330.1	5.6	**0.1699**	0.010	5.6	mg/L	11	Standard
	Cd	114	763.9	13.9	**0.1615**	0.022	13.6	ug/L	21	Standard
>	**In**	115	550787.3	1.4				ug/L	547487	Standard
	Sn	118	540.0	13.8	**0.0292**	0.013	44.4	ug/L	450	Standard
	Sb	123	257.9	10.5	**0.0527**	0.006	12.1	ug/L	105	Standard
	Ba	135	38973.7	1.1	**21.0479**	0.260	1.2	ug/L	111	Standard
	Ce	140	2586.9	4.8				ug/L	107	Standard
>	**Tb**	159	856869.1	0.8				ug/L	890342	Standard
	Ho	165	58.3	54.4				ug/L	10	Standard
	Tl	203	144.7	17.5	**0.0161**	0.003	20.9	ug/L	19	Standard
	Tl	205	115.0	28.5	**0.0201**	0.005	26.9	ug/L	17	Standard
	Pb	206	457.0	4.6	**0.0419**	0.005	10.8	ug/L	247	Standard
	Pb	207	362.3	5.9	**0.0324**	0.005	16.3	ug/L	215	Standard
	Pb	208	1499.7	3.6	**0.0335**	0.003	9.2	ug/L	770	Standard
	U	238	42.7	10.6	**0.0065**	0.001	11.8	ug/L	13	Standard
>	**Bi**	209	488736.5	0.4				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.7135**	32.404	173.2	mg/L	2	Standard
Mg	24	2508.5	0.8	**3.4105**	0.088	2.6	mg/L	35	Standard
K	39	146.7	2.0	**0.6192**	0.005	0.8	mg/L	25	Standard
Ca	43	36.7	47.9	**1.9276**	3.571	185.3	mg/L	38	Standard
Fe	54	2278.8	4.5	**2.0291**	0.142	7.0	mg/L	126	Standard
Fe	57	766.7	5.8	**1.9335**	0.140	7.2	mg/L	245	Standard
> **Sc-1**	45	25052.4	2.1				mg/L	25066	Standard
Cl	35	147914.5	0.4				ug/L	125857	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	9583.1	14.5				ug/L	1350	Standard
P	31	24017.4	7.0				ug/L	18393	Standard
S	34	4402.3	1.3				ug/L	3739	Standard
Sr	88	115.0	24.2				ug/L	78	Standard
C	12	110.0	15.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	111.3	9.5				mg/L	2	Standard
Ho-1	165	58.3	54.4				mg/L	10	Standard
Er	166	43.3	48.0				mg/L	23	Standard
I	127	122962.9	5.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.756	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.950	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.603
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.137
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606065001
Sample Date/Time: Tuesday, June 21, 2016 15:32:01
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58737.0	2.5				ug/L	60176	Standard
	Be	9	13.3	78.1	**0.0099**	0.015	148.6	ug/L	5	Standard
	Al	27	20311195.1	0.7	**158.4647**	3.057	1.9	ug/L	832	Standard
	Sc	45	24576.6	0.4				ug/L	25066	Standard
	Ti	47	298.3	18.8	**1.3401**	0.257	19.2	ug/L	38	Standard
	V	51	-26804.6	32.1	**-4.7157**	1.536	32.6	ug/L	974	Standard
	Cr	52	3156638.5	1.5	**497.8823**	3.945	0.8	ug/L	5792	Standard
	Cr	53	406838.5	1.2	**499.5299**	10.508	2.1	ug/L	347	Standard
	Mn	55	3878787.1	0.6	**609.0624**	15.870	2.6	ug/L	1164	Standard
	Co	59	134308.5	1.9	**22.1248**	0.836	3.8	ug/L	303	Standard
	Ni	60	1500074.7	0.8	**837.5062**	11.813	1.4	ug/L	291	Standard
	Cu	65	3294.7	4.2	**1.7525**	0.064	3.7	ug/L	173	Standard
	Zn	66	3534.1	0.8	**3.1886**	0.054	1.7	ug/L	130	Standard
>	**Ge**	72	489585.9	2.0				ug/L	491724	Standard
	As	75	619.2	16.7	**0.6262**	0.096	15.3	ug/L	-25	Standard
	Se	82	219.8	7.3	**2.0451**	0.198	9.7	ug/L	12	Standard
	Se-1	77	661.7	6.7	**8.7481**	0.445	5.1	ug/L	57	Standard
>	**Ga**	71	480.0	18.8				mg/L	148	Standard
	Rb	85	7842.0	1.6				ug/L	18	Standard
	Y	89	401986.8	1.4				ug/L	401845	Standard
>	**Rh**	103	255.0	17.1				ug/L	10	Standard
	Mo	98	3790.0	2.1	**1.6493**	0.037	2.3	ug/L	12	Standard
	Ag	107	91.7	12.6	**0.0009**	0.002	229.9	ug/L	98	Standard
	Cd	111	318.1	9.7	**0.1728**	0.018	10.6	mg/L	11	Standard
	Cd	114	767.4	4.0	**0.1715**	0.006	3.7	ug/L	21	Standard
>	**In**	115	522178.8	0.8				ug/L	547487	Standard
	Sn	118	655.0	6.0	**0.0582**	0.008	14.0	ug/L	450	Standard
	Sb	123	316.3	5.2	**0.0705**	0.004	6.2	ug/L	105	Standard
	Ba	135	988361.5	1.0	**564.4491**	9.763	1.7	ug/L	111	Standard
	Ce	140	3193.7	1.3				ug/L	107	Standard
>	**Tb**	159	848147.8	2.2				ug/L	890342	Standard
	Ho	165	61.7	20.4				ug/L	10	Standard
	Tl	203	205.3	8.6	**0.0262**	0.002	9.4	ug/L	19	Standard
	Tl	205	211.7	4.9	**0.0383**	0.002	4.4	ug/L	17	Standard
	Pb	206	552.0	3.0	**0.0694**	0.003	3.8	ug/L	247	Standard
	Pb	207	484.3	2.7	**0.0679**	0.004	6.5	ug/L	215	Standard
	Pb	208	1839.4	3.4	**0.0618**	0.005	8.1	ug/L	770	Standard
	U	238	2510.9	1.9	**0.4572**	0.010	2.2	ug/L	13	Standard
>	**Bi**	209	459869.7	1.0				ug/L	503143	Standard

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Na	23	5.0	0.0	**56.9736**	0.236	0.4	mg/L	2	Standard
Mg	24	79633.7	1.2	**111.5486**	1.739	1.6	mg/L	35	Standard
K	39	216.7	13.5	**0.9891**	0.148	14.9	mg/L	25	Standard
Ca	43	143.3	11.2	**23.4985**	3.298	14.0	mg/L	38	Standard
Fe	54	8009.6	2.0	**7.6156**	0.141	1.9	mg/L	126	Standard
Fe	57	2330.2	7.0	**8.2796**	0.633	7.6	mg/L	245	Standard
> **Sc-1**	45	24576.6	0.4				mg/L	25066	Standard
Cl	35	147026.1	2.2				ug/L	125857	Standard
Kr	83	3.0	33.3				ug/L	1	Standard
Br	81	52694.8	2.4				ug/L	1350	Standard
P	31	26670.1	1.1				ug/L	18393	Standard
S	34	4514.0	2.6				ug/L	3739	Standard
Sr	88	530.0	12.0				ug/L	78	Standard
C	12	150.0	17.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	69.8	80.1				mg/L	2	Standard
Ho-1	165	61.7	20.4				mg/L	10	Standard
Er	166	73.3	47.9				mg/L	23	Standard
I	127	406278.2	6.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.609	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.565	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.377
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	91.399
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
V 51 Lower	V	51	
Cr 52 Upper, S, EEE	Cr	52	

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Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Ni 60 Upper, S, EEE	Ni	60
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606065002
Sample Date/Time: Tuesday, June 21, 2016 15:35:12
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60596.0	1.9				ug/L	60176	Standard
	Be	9	13.3	21.7	**0.0094**	0.004	40.0	ug/L	5	Standard
	Al	27	8739182.4	2.0	**66.0672**	0.799	1.2	ug/L	832	Standard
	Sc	45	26192.6	2.2				ug/L	25066	Standard
	Ti	47	278.7	7.4	**1.2062**	0.081	6.7	ug/L	38	Standard
	V	51	739.9	19.6	**-0.0487**	0.023	48.1	ug/L	974	Standard
	Cr	52	22061.4	0.9	**2.4614**	0.056	2.3	ug/L	5792	Standard
	Cr	53	7727.0	4.4	**8.8615**	0.540	6.1	ug/L	347	Standard
	Mn	55	1194045.7	2.0	**182.8701**	3.213	1.8	ug/L	1164	Standard
	Co	59	2942.3	2.7	**0.4247**	0.011	2.5	ug/L	303	Standard
	Ni	60	3788.5	1.5	**1.8749**	0.030	1.6	ug/L	291	Standard
	Cu	65	823.4	3.2	**0.3537**	0.007	2.1	ug/L	173	Standard
	Zn	66	2433.2	2.0	**2.0660**	0.023	1.1	ug/L	130	Standard
>	**Ge**	72	501409.8	1.7				ug/L	491724	Standard
	As	75	283.2	37.7	**0.2992**	0.102	34.0	ug/L	-25	Standard
	Se	82	131.4	7.4	**1.1550**	0.115	9.9	ug/L	12	Standard
	Se-1	77	578.0	3.8	**7.3693**	0.169	2.3	ug/L	57	Standard
>	**Ga**	71	285.0	6.3				mg/L	148	Standard
	Rb	85	8877.6	3.1				ug/L	18	Standard
	Y	89	394026.5	1.2				ug/L	401845	Standard
>	**Rh**	103	161.7	9.4				ug/L	10	Standard
	Mo	98	195.9	2.8	**0.0813**	0.003	4.3	ug/L	12	Standard
	Ag	107	96.7	5.1	**0.0018**	0.001	33.2	ug/L	98	Standard
	Cd	111	123.0	9.0	**0.0640**	0.005	8.5	mg/L	11	Standard
	Cd	114	254.1	11.5	**0.0540**	0.007	13.5	ug/L	21	Standard
>	**In**	115	520782.3	1.6				ug/L	547487	Standard
	Sn	118	470.0	9.1	**0.0211**	0.009	42.4	ug/L	450	Standard
	Sb	123	310.6	7.2	**0.0693**	0.007	9.8	ug/L	105	Standard
	Ba	135	314668.7	2.2	**180.1229**	1.150	0.6	ug/L	111	Standard
	Ce	140	4312.3	4.3				ug/L	107	Standard
>	**Tb**	159	863525.5	2.8				ug/L	890342	Standard
	Ho	165	90.0	9.6				ug/L	10	Standard
	Tl	203	216.7	3.1	**0.0269**	0.001	4.8	ug/L	19	Standard
	Tl	205	188.3	12.5	**0.0332**	0.005	14.2	ug/L	17	Standard
	Pb	206	400.0	2.1	**0.0323**	0.001	2.6	ug/L	247	Standard
	Pb	207	353.7	7.0	**0.0327**	0.004	13.3	ug/L	215	Standard
	Pb	208	1312.0	2.8	**0.0243**	0.004	16.7	ug/L	770	Standard
	U	238	1391.1	5.3	**0.2449**	0.008	3.4	ug/L	13	Standard
>	**Bi**	209	474675.7	2.0				ug/L	503143	Standard

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Na	23	5.0	100.0	**54.0687**	53.938	99.8	mg/L	2	Standard
Mg	24	62982.4	3.0	**82.7804**	2.551	3.1	mg/L	35	Standard
K	39	133.3	17.7	**0.5224**	0.099	18.9	mg/L	25	Standard
Ca	43	83.3	24.2	**10.4165**	3.976	38.2	mg/L	38	Standard
Fe	54	266.1	10.7	**0.1052**	0.027	25.7	mg/L	126	Standard
Fe	57	355.0	11.2	**0.2514**	0.173	69.0	mg/L	245	Standard
> **Sc-1**	45	26192.6	2.2				mg/L	25066	Standard
Cl	35	150054.1	0.8				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	29669.0	1.2				ug/L	1350	Standard
P	31	28545.2	2.4				ug/L	18393	Standard
S	34	4138.9	4.6				ug/L	3739	Standard
Sr	88	250.0	10.6				ug/L	78	Standard
C	12	156.7	19.5				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	133.3	30.3				mg/L	2	Standard
Ho-1	165	90.0	9.6				mg/L	10	Standard
Er	166	70.0	0.0				mg/L	23	Standard
I	127	661507.8	3.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.698	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.970	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.122
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.342
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606065002
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Method 6020 - Summary Report

Sample ID: L1606065003
Sample Date/Time: Tuesday, June 21, 2016 15:38:23
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63387.4	2.8				ug/L	60176	Standard
	Be	9	70.0	18.9	**0.0835**	0.017	20.0	ug/L	5	Standard
	Al	27	5157375.6	0.9	**37.2814**	0.808	2.2	ug/L	832	Standard
	Sc	45	26581.6	2.7				ug/L	25066	Standard
	Ti	47	1387.7	9.4	**6.8983**	0.595	8.6	ug/L	38	Standard
	V	51	-9213.7	17.6	**-1.7068**	0.290	17.0	ug/L	974	Standard
	Cr	52	1335310.3	0.9	**206.9695**	2.043	1.0	ug/L	5792	Standard
	Cr	53	177419.5	1.4	**214.3688**	2.599	1.2	ug/L	347	Standard
	Mn	55	997073.2	0.3	**154.0720**	2.167	1.4	ug/L	1164	Standard
	Co	59	16548.7	1.0	**2.6420**	0.067	2.5	ug/L	303	Standard
	Ni	60	80673.3	2.0	**44.1887**	0.256	0.6	ug/L	291	Standard
	Cu	65	12419.1	2.2	**6.7740**	0.077	1.1	ug/L	173	Standard
	Zn	66	5844.5	1.7	**5.3426**	0.029	0.5	ug/L	130	Standard
>	**Ge**	72	496879.0	1.5				ug/L	491724	Standard
	As	75	1809.6	8.9	**1.7401**	0.151	8.7	ug/L	-25	Standard
	Se	82	252.2	9.4	**2.3215**	0.229	9.8	ug/L	12	Standard
	Se-1	77	378.7	3.2	**4.6535**	0.175	3.8	ug/L	57	Standard
>	**Ga**	71	746.7	6.2				mg/L	148	Standard
	Rb	85	13919.7	1.1				ug/L	18	Standard
	Y	89	410755.2	2.3				ug/L	401845	Standard
>	**Rh**	103	111.7	5.2				ug/L	10	Standard
	Mo	98	5865.4	1.5	**2.4053**	0.027	1.1	ug/L	12	Standard
	Ag	107	135.7	10.3	**0.0074**	0.003	38.1	ug/L	98	Standard
	Cd	111	1056.6	4.0	**0.5506**	0.033	6.0	mg/L	11	Standard
	Cd	114	2556.7	1.3	**0.5477**	0.019	3.4	ug/L	21	Standard
>	**In**	115	554660.2	2.1				ug/L	547487	Standard
	Sn	118	1000.0	6.5	**0.1161**	0.012	10.2	ug/L	450	Standard
	Sb	123	402.1	12.9	**0.0857**	0.010	11.9	ug/L	105	Standard
	Ba	135	110239.6	0.8	**59.2270**	0.804	1.4	ug/L	111	Standard
	Ce	140	24279.4	2.4				ug/L	107	Standard
>	**Tb**	159	911640.4	0.6				ug/L	890342	Standard
	Ho	165	350.0	16.5				ug/L	10	Standard
	Tl	203	434.7	1.5	**0.0538**	0.001	1.7	ug/L	19	Standard
	Tl	205	305.0	7.5	**0.0500**	0.004	7.0	ug/L	17	Standard
	Pb	206	4440.3	0.9	**0.8568**	0.008	1.0	ug/L	247	Standard
	Pb	207	3810.8	1.1	**0.8086**	0.012	1.4	ug/L	215	Standard
	Pb	208	15060.6	1.4	**0.8488**	0.012	1.4	ug/L	770	Standard
	U	238	450.7	0.8	**0.0741**	0.001	0.7	ug/L	13	Standard
>	**Bi**	209	504464.9	0.3				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	31947.0	1.0	**41.3748**	1.485	3.6	mg/L	35	Standard
K	39	130.0	21.4	**0.4999**	0.137	27.3	mg/L	25	Standard
Ca	43	60.0		**5.8324**	0.297	5.1	mg/L	38	Standard
Fe	54	4403.4	0.3	**3.8059**	0.116	3.0	mg/L	126	Standard
Fe	57	1286.7	20.4	**3.6876**	0.933	25.3	mg/L	245	Standard
> **Sc-1**	45	26581.6	2.7				mg/L	25066	Standard
Cl	35	147975.1	1.2				ug/L	125857	Standard
Kr	83	2.7	43.3				ug/L	1	Standard
Br	81	55598.5	2.9				ug/L	1350	Standard
P	31	23972.3	2.6				ug/L	18393	Standard
S	34	4225.6	2.4				ug/L	3739	Standard
Sr	88	170.0	19.3				ug/L	78	Standard
C	12	100.0	10.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	656.9	13.7				mg/L	2	Standard
Ho-1	165	350.0	16.5				mg/L	10	Standard
Er	166	343.3	11.0				mg/L	23	Standard
I	127	145460.0	1.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.337	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.048	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.310
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.263
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Lower	V	51	
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	

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Mn 55 Upper, S, EEE	Mn	55

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Method 6020 - Summary Report

Sample ID: L1606065008
Sample Date/Time: Tuesday, June 21, 2016 15:41:35
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63802.5	2.9				ug/L	60176	Standard
	Be	9	36.7	28.4	**0.0391**	0.013	34.5	ug/L	5	Standard
	Al	27	2078545.0	1.4	**14.9291**	0.633	4.2	ug/L	832	Standard
	Sc	45	25579.9	3.4				ug/L	25066	Standard
	Ti	47	845.0	4.5	**4.1986**	0.233	5.6	ug/L	38	Standard
	V	51	3095.5	13.9	**0.3533**	0.071	20.0	ug/L	974	Standard
	Cr	52	11042.0	0.8	**0.8065**	0.028	3.5	ug/L	5792	Standard
	Cr	53	4624.0	3.3	**5.2817**	0.152	2.9	ug/L	347	Standard
	Mn	55	1458217.0	0.5	**229.3462**	1.807	0.8	ug/L	1164	Standard
	Co	59	5268.2	0.6	**0.8223**	0.014	1.7	ug/L	303	Standard
	Ni	60	16880.1	0.7	**9.2581**	0.054	0.6	ug/L	291	Standard
	Cu	65	1985.8	3.0	**1.0205**	0.041	4.0	ug/L	173	Standard
	Zn	66	32937.1	1.1	**31.7490**	0.128	0.4	ug/L	130	Standard
>	**Ge**	72	488364.0	1.2				ug/L	491724	Standard
	As	75	999.3	3.7	**0.9925**	0.031	3.1	ug/L	-25	Standard
	Se	82	345.9	2.6	**3.2758**	0.047	1.4	ug/L	12	Standard
	Se-1	77	334.7	3.8	**4.1184**	0.171	4.1	ug/L	57	Standard
>	**Ga**	71	493.3	14.2				mg/L	148	Standard
	Rb	85	9207.8	3.6				ug/L	18	Standard
	Y	89	437252.9	0.3				ug/L	401845	Standard
>	**Rh**	103	80.0	18.8				ug/L	10	Standard
	Mo	98	268.9	2.1	**0.1055**	0.004	3.8	ug/L	12	Standard
	Ag	107	76.3	10.0	**-0.0027**	0.001	41.6	ug/L	98	Standard
	Cd	111	118.8	3.8	**0.0574**	0.003	4.7	mg/L	11	Standard
	Cd	114	286.1	7.3	**0.0571**	0.005	9.4	ug/L	21	Standard
>	**In**	115	557575.9	1.6				ug/L	547487	Standard
	Sn	118	580.0	4.0	**0.0356**	0.003	9.3	ug/L	450	Standard
	Sb	123	413.5	12.2	**0.0880**	0.012	14.2	ug/L	105	Standard
	Ba	135	72473.6	0.8	**38.7111**	0.451	1.2	ug/L	111	Standard
	Ce	140	27496.6	2.4				ug/L	107	Standard
>	**Tb**	159	890154.3	0.6				ug/L	890342	Standard
	Ho	165	563.3	4.6				ug/L	10	Standard
	Tl	203	194.0	10.1	**0.0231**	0.003	13.1	ug/L	19	Standard
	Tl	205	155.0	11.6	**0.0269**	0.003	10.3	ug/L	17	Standard
	Pb	206	503.3	4.6	**0.0525**	0.006	12.2	ug/L	247	Standard
	Pb	207	451.7	4.0	**0.0538**	0.003	6.1	ug/L	215	Standard
	Pb	208	1721.0	1.3	**0.0480**	0.002	3.9	ug/L	770	Standard
	U	238	216.3	8.8	**0.0365**	0.003	7.7	ug/L	13	Standard
>	**Bi**	209	485551.6	1.6				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.8740**	30.950	173.2	mg/L	2	Standard
Mg	24	34632.9	0.6	**46.6189**	1.523	3.3	mg/L	35	Standard
K	39	138.3	25.6	**0.5602**	0.155	27.6	mg/L	25	Standard
Ca	43	65.0	13.3	**7.2572**	1.904	26.2	mg/L	38	Standard
Fe	54	279.3	17.0	**0.1243**	0.053	42.6	mg/L	126	Standard
Fe	57	271.7	11.8	**-0.0378**	0.151	397.7	mg/L	245	Standard
> **Sc-1**	45	25579.9	3.4				mg/L	25066	Standard
Cl	35	178666.6	0.8				ug/L	125857	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	80231.9	1.9				ug/L	1350	Standard
P	31	24055.7	0.9				ug/L	18393	Standard
S	34	3798.8	4.0				ug/L	3739	Standard
Sr	88	145.0	11.9				ug/L	78	Standard
C	12	176.7	22.9				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	130.0	23.1				mg/L	0	Standard
Dy	164	829.7	17.8				mg/L	2	Standard
Ho-1	165	563.3	4.6				mg/L	10	Standard
Er	166	563.3	12.6				mg/L	23	Standard
I	127	75514.5	3.5				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.027	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.317	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.843	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.504	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606072902
Sample Date/Time: Tuesday, June 21, 2016 15:44:46
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61000.9	2.3				ug/L	60176	Standard
	Be	9	48.3	31.6	**0.0571**	0.019	34.0	ug/L	5	Standard
	Al	27	1265197.3	0.4	**9.4968**	0.215	2.3	ug/L	832	Standard
	Sc	45	24843.7	5.1				ug/L	25066	Standard
	Ti	47	295.0	39.1	**1.2721**	0.610	48.0	ug/L	38	Standard
	V	51	1662.0	6.7	**0.0984**	0.013	12.9	ug/L	974	Standard
	Cr	52	9640.7	1.5	**0.5183**	0.014	2.7	ug/L	5792	Standard
	Cr	53	1788.4	7.9	**1.6929**	0.129	7.6	ug/L	347	Standard
	Mn	55	269286.4	1.8	**40.3553**	1.271	3.2	ug/L	1164	Standard
	Co	59	7695.6	2.0	**1.1688**	0.020	1.7	ug/L	303	Standard
	Ni	60	3736.8	1.2	**1.8110**	0.042	2.3	ug/L	291	Standard
	Cu	65	1102.4	3.8	**0.4960**	0.012	2.4	ug/L	173	Standard
	Zn	66	5766.8	0.8	**5.1234**	0.095	1.8	ug/L	130	Standard
>	**Ge**	72	510457.8	2.2				ug/L	491724	Standard
	As	75	81.7	14.6	**0.1091**	0.013	11.6	ug/L	-25	Standard
	Se	82	51.2	4.3	**0.3844**	0.013	3.3	ug/L	12	Standard
	Se-1	77	109.3	5.0	**0.8419**	0.100	11.9	ug/L	57	Standard
>	**Ga**	71	216.7	17.3				mg/L	148	Standard
	Rb	85	27894.0	1.5				ug/L	18	Standard
	Y	89	417086.1	2.1				ug/L	401845	Standard
>	**Rh**	103	31.7	24.1				ug/L	10	Standard
	Mo	98	60.3	14.2	**0.0209**	0.003	16.1	ug/L	12	Standard
	Ag	107	152.7	9.2	**0.0108**	0.003	25.1	ug/L	98	Standard
	Cd	111	73.5	21.7	**0.0349**	0.009	26.3	mg/L	11	Standard
	Cd	114	176.5	11.5	**0.0346**	0.004	11.6	ug/L	21	Standard
>	**In**	115	541515.1	1.4				ug/L	547487	Standard
	Sn	118	1061.7	1.2	**0.1327**	0.005	4.0	ug/L	450	Standard
	Sb	123	145.5	4.3	**0.0270**	0.002	7.3	ug/L	105	Standard
	Ba	135	64548.3	2.6	**35.5016**	1.269	3.6	ug/L	111	Standard
	Ce	140	11564.4	2.1				ug/L	107	Standard
>	**Tb**	159	870646.6	1.9				ug/L	890342	Standard
	Ho	165	225.0	10.2				ug/L	10	Standard
	Tl	203	276.7	4.4	**0.0339**	0.001	3.4	ug/L	19	Standard
	Tl	205	246.7	10.4	**0.0416**	0.004	8.7	ug/L	17	Standard
	Pb	206	518.0	0.8	**0.0540**	0.002	3.0	ug/L	247	Standard
	Pb	207	451.0	6.3	**0.0522**	0.006	10.7	ug/L	215	Standard
	Pb	208	1790.0	3.5	**0.0508**	0.006	11.7	ug/L	770	Standard
	U	238	117.7	5.0	**0.0192**	0.001	3.2	ug/L	13	Standard
>	**Bi**	209	492368.0	1.9				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	2613.6	7.0	**3.5946**	0.386	10.7	mg/L	35	Standard
K	39	313.3	2.4	**1.4668**	0.102	6.9	mg/L	25	Standard
Ca	43	40.0	12.5	**2.6700**	1.367	51.2	mg/L	38	Standard
Fe	54	172.6	19.4	**0.0297**	0.037	125.0	mg/L	126	Standard
Fe	57	250.0	16.4	**-0.0882**	0.218	247.4	mg/L	245	Standard
> **Sc-1**	45	24843.7	5.1				mg/L	25066	Standard
Cl	35	141007.2	1.2				ug/L	125857	Standard
Kr	83	3.7	68.6				ug/L	1	Standard
Br	81	8976.0	3.5				ug/L	1350	Standard
P	31	21415.1	1.0				ug/L	18393	Standard
S	34	3635.4	3.8				ug/L	3739	Standard
Sr	88	86.7	23.3				ug/L	78	Standard
C	12	93.3	55.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	321.7	9.0				mg/L	2	Standard
Ho-1	165	225.0	10.2				mg/L	10	Standard
Er	166	173.3	13.3				mg/L	23	Standard
I	127	27626.9	6.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.371	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.810	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.909
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.859
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606072903
Sample Date/Time: Tuesday, June 21, 2016 15:47:58
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65829.4	1.7				ug/L	60176	Standard
	Be	9	1091.7	7.9	**1.3819**	0.122	8.9	ug/L	5	Standard
	Al	27	9658460.6	2.5	**67.2033**	0.573	0.9	ug/L	832	Standard
	Sc	45	26962.3	1.0				ug/L	25066	Standard
	Ti	47	1161.4	44.0	**5.6242**	2.574	45.8	ug/L	38	Standard
	V	51	2955.0	3.3	**0.3108**	0.013	4.1	ug/L	974	Standard
	Cr	52	10847.2	2.6	**0.7108**	0.049	6.9	ug/L	5792	Standard
	Cr	53	1273.4	6.0	**1.0957**	0.073	6.6	ug/L	347	Standard
	Mn	55	2432059.6	0.8	**368.2427**	6.764	1.8	ug/L	1164	Standard
	Co	59	153183.5	0.7	**24.3375**	0.235	1.0	ug/L	303	Standard
	Ni	60	19503.2	0.5	**10.3155**	0.174	1.7	ug/L	291	Standard
	Cu	65	6676.5	1.4	**3.5201**	0.098	2.8	ug/L	173	Standard
	Zn	66	32319.1	1.0	**29.9680**	0.510	1.7	ug/L	130	Standard
>	**Ge**	72	507509.6	1.3				ug/L	491724	Standard
	As	75	65.2	90.0	**0.0946**	0.055	58.4	ug/L	-25	Standard
	Se	82	67.0	5.6	**0.5352**	0.041	7.6	ug/L	12	Standard
	Se-1	77	128.3	9.7	**1.1086**	0.151	13.6	ug/L	57	Standard
>	**Ga**	71	1310.1	5.3				mg/L	148	Standard
	Rb	85	17616.9	2.0				ug/L	18	Standard
	Y	89	727532.8	1.3				ug/L	401845	Standard
>	**Rh**	103	103.3	14.8				ug/L	10	Standard
	Mo	98	67.1	4.9	**0.0233**	0.001	5.8	ug/L	12	Standard
	Ag	107	109.7	4.3	**0.0031**	0.001	41.1	ug/L	98	Standard
	Cd	111	313.2	8.9	**0.1612**	0.018	11.3	mg/L	11	Standard
	Cd	114	738.1	10.6	**0.1561**	0.018	11.8	ug/L	21	Standard
>	**In**	115	550912.0	2.6				ug/L	547487	Standard
	Sn	118	630.0	11.0	**0.0468**	0.016	34.7	ug/L	450	Standard
	Sb	123	137.7	12.6	**0.0246**	0.003	13.1	ug/L	105	Standard
	Ba	135	39985.4	1.7	**21.5966**	0.536	2.5	ug/L	111	Standard
	Ce	140	1423873.1	0.8				ug/L	107	Standard
>	**Tb**	159	928141.2	1.7				ug/L	890342	Standard
	Ho	165	28324.8	1.1				ug/L	10	Standard
	Tl	203	290.7	5.4	**0.0344**	0.003	9.6	ug/L	19	Standard
	Tl	205	235.0	16.9	**0.0383**	0.006	14.9	ug/L	17	Standard
	Pb	206	5921.8	0.5	**1.1479**	0.039	3.4	ug/L	247	Standard
	Pb	207	4990.2	2.0	**1.0630**	0.048	4.5	ug/L	215	Standard
	Pb	208	19749.1	0.7	**1.1186**	0.030	2.7	ug/L	770	Standard
	U	238	2317.5	1.8	**0.3802**	0.005	1.4	ug/L	13	Standard
>	**Bi**	209	510317.8	3.2				ug/L	503143	Standard

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Na	23	5.0	100.0	**52.2757**	52.372	100.2	mg/L	2	Standard
Mg	24	2030.1	7.1	**2.5548**	0.200	7.8	mg/L	35	Standard
K	39	193.3	15.2	**0.7833**	0.132	16.9	mg/L	25	Standard
Ca	43	171.7	8.9	**26.1296**	2.684	10.3	mg/L	38	Standard
Fe	54	1645.5	6.5	**1.3153**	0.096	7.3	mg/L	126	Standard
Fe	57	753.4	12.5	**1.6728**	0.365	21.8	mg/L	245	Standard
> **Sc-1**	45	26962.3	1.0				mg/L	25066	Standard
Cl	35	255018.3	0.9				ug/L	125857	Standard
Kr	83	1.0	0.0				ug/L	1	Standard
Br	81	5220.9	5.0				ug/L	1350	Standard
P	31	21920.9	3.7				ug/L	18393	Standard
S	34	3950.5	6.9				ug/L	3739	Standard
Sr	88	301.7	3.8				ug/L	78	Standard
C	12	83.3	38.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	47352.9	1.1				mg/L	2	Standard
Ho-1	165	28324.8	1.1				mg/L	10	Standard
Er	166	25150.9	2.3				mg/L	23	Standard
I	127	224463.3	10.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.395	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.210	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.626
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.426
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606073001
Sample Date/Time: Tuesday, June 21, 2016 15:51:09
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73917.0	6.1				ug/L	60176	Standard
	Be	9	16.7	45.8	**0.0097**	0.008	79.3	ug/L	5	Standard
	Al	27	5652423.5	6.3	**35.0242**	0.471	1.3	ug/L	832	Standard
	Sc	45	24773.6	1.2				ug/L	25066	Standard
	Ti	47	116.3	10.9	**0.4405**	0.086	19.6	ug/L	38	Standard
	V	51	15193.9	3.1	**2.5748**	0.099	3.8	ug/L	974	Standard
	Cr	52	199468.5	0.9	**32.7681**	0.651	2.0	ug/L	5792	Standard
	Cr	53	29413.5	3.2	**38.2606**	2.147	5.6	ug/L	347	Standard
	Mn	55	16906.8	3.1	**2.6231**	0.046	1.8	ug/L	1164	Standard
	Co	59	8261.3	2.1	**1.4084**	0.013	0.9	ug/L	303	Standard
	Ni	60	7629.3	4.1	**4.3628**	0.068	1.6	ug/L	291	Standard
	Cu	65	2854.9	2.0	**1.6169**	0.031	1.9	ug/L	173	Standard
	Zn	66	2209.5	2.4	**2.0537**	0.064	3.1	ug/L	130	Standard
>	**Ge**	72	457885.1	2.6				ug/L	491724	Standard
	As	75	2538.0	5.5	**2.6341**	0.209	8.0	ug/L	-25	Standard
	Se	82	858.9	4.6	**8.8399**	0.642	7.3	ug/L	12	Standard
	Se-1	77	1191.0	2.5	**17.4647**	0.920	5.3	ug/L	57	Standard
>	**Ga**	71	1676.8	5.5				mg/L	148	Standard
	Rb	85	226016.7	0.7				ug/L	18	Standard
	Y	89	390113.6	0.9				ug/L	401845	Standard
>	**Rh**	103	3238.7	1.2				ug/L	10	Standard
	Mo	98	4439.9	1.2	**1.9618**	0.048	2.5	ug/L	12	Standard
	Ag	107	114.0	9.8	**0.0052**	0.002	36.0	ug/L	98	Standard
	Cd	111	49.0	20.1	**0.0230**	0.005	23.8	mg/L	11	Standard
	Cd	114	113.7	9.0	**0.0220**	0.002	11.3	ug/L	21	Standard
>	**In**	115	514604.2	1.3				ug/L	547487	Standard
	Sn	118	1230.1	8.0	**0.1780**	0.020	11.1	ug/L	450	Standard
	Sb	123	498.9	3.3	**0.1174**	0.004	3.7	ug/L	105	Standard
	Ba	135	1735936.7	1.5	**1005.9141**	2.820	0.3	ug/L	111	Standard
	Ce	140	845.0	14.5				ug/L	107	Standard
>	**Tb**	159	860331.0	2.6				ug/L	890342	Standard
	Ho	165	16.7	17.3				ug/L	10	Standard
	Tl	203	237.3	4.9	**0.0323**	0.002	6.7	ug/L	19	Standard
	Tl	205	226.7	26.3	**0.0425**	0.010	22.8	ug/L	17	Standard
	Pb	206	559.7	1.7	**0.0765**	0.002	3.2	ug/L	247	Standard
	Pb	207	477.3	6.9	**0.0710**	0.005	6.3	ug/L	215	Standard
	Pb	208	1797.7	2.6	**0.0642**	0.006	8.9	ug/L	770	Standard
	U	238	256.3	4.6	**0.0480**	0.003	7.3	ug/L	13	Standard
>	**Bi**	209	441187.4	3.3				ug/L	503143	Standard

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Na	23	6.7	114.6	**75.7212**	86.562	114.3	mg/L	2	Standard
Mg	24	90539.7	1.2	**125.8278**	2.144	1.7	mg/L	35	Standard
K	39	2236.8	7.2	**11.1766**	0.942	8.4	mg/L	25	Standard
Ca	43	748.4	12.6	**144.1070**	20.471	14.2	mg/L	38	Standard
Fe	54	142.0	15.6	**-0.0001**	0.022	16866.3	mg/L	126	Standard
Fe	57	1348.4	5.7	**4.2895**	0.312	7.3	mg/L	245	Standard
Sc-1	45	24773.6	1.2				mg/L	25066	Standard
Cl	35	159146.8	0.8				ug/L	125857	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	209975.2	1.8				ug/L	1350	Standard
P	31	20949.5	2.8				ug/L	18393	Standard
S	34	4584.0	1.1				ug/L	3739	Standard
Sr	88	10782.2	5.2				ug/L	78	Standard
C	12	116.7	32.5				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	5.4	219.6				mg/L	2	Standard
Ho-1	165	16.7	17.3				mg/L	10	Standard
Er	166	26.7	43.3				mg/L	23	Standard
I	127	166779.4	5.0				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		122.835	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		93.118	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.994
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.686
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 15:54:22
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59968.5	1.3				ug/L	60176	Standard
	Be	9	36398.7	0.5	**50.8713**	0.403	0.8	ug/L	5	Standard
	Al	27	6548192.3	1.8	**50.0297**	1.523	3.0	ug/L	832	Standard
	Sc	45	25387.9	1.8				ug/L	25066	Standard
	Ti	47	20514.5	1.9	**104.3164**	2.213	2.1	ug/L	38	Standard
	V	51	309165.3	1.8	**51.0062**	0.680	1.3	ug/L	974	Standard
	Cr	52	340251.9	0.9	**51.7368**	0.210	0.4	ug/L	5792	Standard
	Cr	53	43082.8	0.7	**51.4506**	0.301	0.6	ug/L	347	Standard
	Mn	55	327886.5	1.7	**50.2320**	0.671	1.3	ug/L	1164	Standard
	Co	59	311341.2	1.1	**50.2912**	0.234	0.5	ug/L	303	Standard
	Ni	60	95005.0	1.3	**51.7832**	0.285	0.6	ug/L	291	Standard
	Cu	65	94085.6	1.9	**51.6732**	0.769	1.5	ug/L	173	Standard
	Zn	66	54162.3	1.8	**51.1699**	0.730	1.4	ug/L	130	Standard
>	Ge	72	499656.0	0.8				ug/L	491724	Standard
	As	75	53793.1	1.5	**50.4679**	0.579	1.1	ug/L	-25	Standard
	Se	82	5297.2	1.4	**50.3360**	1.022	2.0	ug/L	12	Standard
	Se-1	77	3753.1	2.9	**51.6078**	1.108	2.1	ug/L	57	Standard
>	Ga	71	116.7	31.0				mg/L	148	Standard
	Rb	85	846.7	4.4				ug/L	18	Standard
	Y	89	409237.0	1.3				ug/L	401845	Standard
>	Rh	103	43.3	24.0				ug/L	10	Standard
	Mo	98	236019.2	1.3	**98.9883**	1.916	1.9	ug/L	12	Standard
	Ag	107	301027.0	0.2	**51.4292**	0.425	0.8	ug/L	98	Standard
	Cd	111	95327.7	1.4	**51.1098**	1.090	2.1	mg/L	11	Standard
	Cd	114	232932.5	0.7	**51.3315**	0.699	1.4	ug/L	21	Standard
>	In	115	543279.3	0.7				ug/L	547487	Standard
	Sn	118	259515.7	1.7	**50.2935**	1.187	2.4	ug/L	450	Standard
	Sb	123	214686.9	1.2	**50.9350**	0.980	1.9	ug/L	105	Standard
	Ba	135	92608.2	0.1	**50.7811**	0.422	0.8	ug/L	111	Standard
	Ce	140	138.3	43.1				ug/L	107	Standard
>	Tb	159	879645.1	1.9				ug/L	890342	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	374242.2	0.3	**50.5043**	0.815	1.6	ug/L	19	Standard
	Tl	205	312151.2	0.8	**51.3434**	0.975	1.9	ug/L	17	Standard
	Pb	206	237883.3	0.7	**49.8803**	1.009	2.0	ug/L	247	Standard
	Pb	207	215064.7	1.2	**49.6101**	1.233	2.5	ug/L	215	Standard
	Pb	208	825294.1	0.6	**50.8408**	0.434	0.9	ug/L	770	Standard
	U	238	298401.1	0.3	**50.7212**	0.598	1.2	ug/L	13	Standard
>	Bi	209	493553.5	1.4				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3700.5	3.6	**4.9819**	0.214	4.3	mg/L	35	Standard
K	39	1016.7	7.6	**4.8957**	0.446	9.1	mg/L	25	Standard
Ca	43	56.7	13.5	**5.6936**	1.352	23.7	mg/L	38	Standard
Fe	54	5409.1	1.3	**4.9332**	0.148	3.0	mg/L	126	Standard
Fe	57	1620.1	7.8	**5.2229**	0.583	11.2	mg/L	245	Standard
> **Sc-1**	45	25387.9	1.8				mg/L	25066	Standard
Cl	35	151052.7	1.4				ug/L	125857	Standard
Kr	83	2.3	137.8				ug/L	1	Standard
Br	81	3390.4	24.1				ug/L	1350	Standard
P	31	21366.7	3.1				ug/L	18393	Standard
S	34	5074.2	4.4				ug/L	3739	Standard
Sr	88	91.7	22.0				ug/L	78	Standard
C	12	80.0	33.1				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.2	96.3				mg/L	2	Standard
Ho-1	165	8.3	34.6				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	8529.2	32.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	101.743		
Al	27	100.059		
Sc	45			
Ti	47	104.316		
V	51	102.012		
Cr	52	103.474		
Cr	53			
Mn	55	100.464		
Co	59	100.582		
Ni	60	103.566		
Cu	65	103.346		
Zn	66	102.340		
> Ge	72		101.613	
As	75	100.936		
Se	82	100.672		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.988		
Ag	107	102.858		
Cd	111	102.220		
Cd	114			
> In	115			99.232
Sn	118	100.587		
Sb	123	101.870		
Ba	135	101.562		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.009		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.682		
U	238	101.442		
> Bi	209			98.094
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 15:57:34
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59362.8	1.8				ug/L	60176	Standard
	Be	9	21.7	93.3	**0.0213**	0.028	130.6	ug/L	5	Standard
	Al	27	10005.1	126.3	**0.0677**	0.095	140.7	ug/L	832	Standard
	Sc	45	25473.1	2.6				ug/L	25066	Standard
	Ti	47	37.3	36.4	**-0.0109**	0.069	630.7	ug/L	38	Standard
	V	51	1039.9	1.7	**0.0080**	0.005	68.5	ug/L	974	Standard
	Cr	52	6459.7	10.1	**0.0942**	0.091	96.2	ug/L	5792	Standard
	Cr	53	603.3	18.3	**0.3396**	0.127	37.3	ug/L	347	Standard
	Mn	55	2162.5	62.6	**0.1280**	0.210	164.2	ug/L	1164	Standard
	Co	59	333.7	16.0	**0.0066**	0.008	124.3	ug/L	303	Standard
	Ni	60	322.7	48.2	**-0.0082**	0.085	1042.9	ug/L	291	Standard
	Cu	65	161.7	29.8	**-0.0056**	0.026	466.7	ug/L	173	Standard
	Zn	66	184.7	16.2	**-0.0537**	0.027	49.9	ug/L	130	Standard
>	**Ge**	72	481495.2	1.4				ug/L	491724	Standard
	As	75	-13.3	88.6	**0.0210**	0.012	54.8	ug/L	-25	Standard
	Se	82	22.2	8.5	**0.1261**	0.021	16.7	ug/L	12	Standard
	Se-1	77	62.0	2.8	**0.2463**	0.018	7.5	ug/L	57	Standard
>	**Ga**	71	106.7	9.8				mg/L	148	Standard
	Rb	85	63.3	43.5				ug/L	18	Standard
	Y	89	417621.1	1.2				ug/L	401845	Standard
>	**Rh**	103	40.0	45.1				ug/L	10	Standard
	Mo	98	240.6	46.2	**0.0925**	0.045	48.3	ug/L	12	Standard
	Ag	107	129.0	44.6	**0.0058**	0.009	162.4	ug/L	98	Standard
	Cd	111	26.5	116.9	**0.0090**	0.016	178.2	mg/L	11	Standard
	Cd	114	62.7	80.7	**0.0088**	0.011	121.2	ug/L	21	Standard
>	**In**	115	564731.0	1.2				ug/L	547487	Standard
	Sn	118	768.4	3.1	**0.0694**	0.006	8.4	ug/L	450	Standard
	Sb	123	399.1	17.4	**0.0835**	0.016	19.6	ug/L	105	Standard
	Ba	135	378.0	72.8	**0.1438**	0.145	100.9	ug/L	111	Standard
	Ce	140	128.3	104.6				ug/L	107	Standard
>	**Tb**	159	890002.5	2.1				ug/L	890342	Standard
	Ho	165	5.0	100.0				ug/L	10	Standard
	Tl	203	105.7	64.2	**0.0104**	0.008	81.6	ug/L	19	Standard
	Tl	205	133.3	103.5	**0.0222**	0.021	96.6	ug/L	17	Standard
	Pb	206	266.0	23.7	**0.0002**	0.011	6809.3	ug/L	247	Standard
	Pb	207	260.7	18.8	**0.0074**	0.009	126.1	ug/L	215	Standard
	Pb	208	1119.4	33.0	**0.0081**	0.020	245.9	ug/L	770	Standard
	U	238	112.3	126.2	**0.0176**	0.023	129.9	ug/L	13	Standard
>	**Bi**	209	497488.5	3.7				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	95.0	109.9	**0.0875**	0.137	156.5	mg/L	35	Standard
K	39	31.7	18.2	**0.0434**	0.031	72.1	mg/L	25	Standard
Ca	43	43.3	26.6	**3.1138**	2.393	76.8	mg/L	38	Standard
Fe	54	134.3	11.0	**-0.0112**	0.012	107.9	mg/L	126	Standard
Fe	57	253.3	12.5	**-0.1072**	0.121	112.7	mg/L	245	Standard
> **Sc-1**	45	25473.1	2.6				mg/L	25066	Standard
Cl	35	154720.7	1.0				ug/L	125857	Standard
Kr	83	2.7	78.1				ug/L	1	Standard
Br	81	2063.5	2.4				ug/L	1350	Standard
P	31	22254.7	2.6				ug/L	18393	Standard
S	34	4942.5	2.2				ug/L	3739	Standard
Sr	88	83.3	19.3				ug/L	78	Standard
C	12	40.0	25.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.5	88.7				mg/L	2	Standard
Ho-1	165	5.0	100.0				mg/L	10	Standard
Er	166	10.0					mg/L	23	Standard
I	127	3717.1	8.4				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.920	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.150	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.876	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606073002
Sample Date/Time: Tuesday, June 21, 2016 16:00:47
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69308.3	3.7				ug/L	60176	Standard
	Be	9	20.0	50.0	**0.0149**	0.011	75.7	ug/L	5	Standard
	Al	27	6126361.3	1.2	**40.5279**	1.700	4.2	ug/L	832	Standard
	Sc	45	24543.2	3.9				ug/L	25066	Standard
	Ti	47	125.3	13.2	**0.4695**	0.084	17.8	ug/L	38	Standard
	V	51	16629.0	4.3	**2.7512**	0.149	5.4	ug/L	974	Standard
	Cr	52	210588.5	2.1	**33.6543**	0.594	1.8	ug/L	5792	Standard
	Cr	53	31539.5	3.2	**39.8713**	0.997	2.5	ug/L	347	Standard
	Mn	55	23748.6	0.8	**3.6623**	0.062	1.7	ug/L	1164	Standard
	Co	59	8388.0	2.5	**1.3899**	0.039	2.8	ug/L	303	Standard
	Ni	60	8179.5	3.3	**4.5574**	0.124	2.7	ug/L	291	Standard
	Cu	65	2815.6	0.9	**1.5465**	0.029	1.9	ug/L	173	Standard
	Zn	66	2262.5	3.2	**2.0433**	0.069	3.4	ug/L	130	Standard
>	**Ge**	72	470862.5	0.8				ug/L	491724	Standard
	As	75	2905.3	0.7	**2.9245**	0.023	0.8	ug/L	-25	Standard
	Se	82	925.8	0.9	**9.2587**	0.060	0.6	ug/L	12	Standard
	Se-1	77	1310.7	2.5	**18.7167**	0.330	1.8	ug/L	57	Standard
>	**Ga**	71	1603.4	3.2				mg/L	148	Standard
	Rb	85	230305.6	1.1				ug/L	18	Standard
	Y	89	379545.1	0.6				ug/L	401845	Standard
>	**Rh**	103	3307.0	4.1				ug/L	10	Standard
	Mo	98	4638.8	1.0	**2.1857**	0.018	0.8	ug/L	12	Standard
	Ag	107	129.7	17.9	**0.0096**	0.005	47.2	ug/L	98	Standard
	Cd	111	47.1	19.5	**0.0237**	0.006	23.4	mg/L	11	Standard
	Cd	114	88.1	29.6	**0.0174**	0.007	37.3	ug/L	21	Standard
>	**In**	115	482582.3	0.3				ug/L	547487	Standard
	Sn	118	1188.4	1.3	**0.1856**	0.004	2.1	ug/L	450	Standard
	Sb	123	594.7	6.6	**0.1512**	0.010	6.6	ug/L	105	Standard
	Ba	135	1814565.7	1.4	**1121.2802**	14.912	1.3	ug/L	111	Standard
	Ce	140	778.4	4.7				ug/L	107	Standard
>	**Tb**	159	825227.5	1.6				ug/L	890342	Standard
	Ho	165	23.3	101.3				ug/L	10	Standard
	Tl	203	227.3	5.1	**0.0315**	0.002	7.2	ug/L	19	Standard
	Tl	205	193.3	12.2	**0.0374**	0.005	13.4	ug/L	17	Standard
	Pb	206	563.7	9.9	**0.0803**	0.015	18.7	ug/L	247	Standard
	Pb	207	484.3	4.2	**0.0757**	0.007	9.4	ug/L	215	Standard
	Pb	208	1753.4	1.0	**0.0637**	0.003	4.2	ug/L	770	Standard
	U	238	254.3	2.6	**0.0486**	0.002	4.1	ug/L	13	Standard
>	**Bi**	209	431889.8	1.5				ug/L	503143	Standard

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Na	23	15.0	66.7	**174.2413**	120.728	69.3	mg/L	2	Standard
Mg	24	93727.4	0.9	**131.5829**	4.471	3.4	mg/L	35	Standard
K	39	2483.5	4.9	**12.5508**	0.926	7.4	mg/L	25	Standard
Ca	43	885.0	14.1	**173.5278**	30.084	17.3	mg/L	38	Standard
Fe	54	139.9	31.8	**0.0000**	0.04(183799.3		mg/L	126	Standard
Fe	57	1356.7	6.6	**4.3695**	0.153	3.5	mg/L	245	Standard
> **Sc-1**	45	24543.2	3.9				mg/L	25066	Standard
Cl	35	157218.9	1.1				ug/L	125857	Standard
Kr	83	3.7	41.7				ug/L	1	Standard
Br	81	220692.4	1.0				ug/L	1350	Standard
P	31	22506.7	0.5				ug/L	18393	Standard
S	34	4602.4	5.2				ug/L	3739	Standard
Sr	88	10935.6	1.0				ug/L	78	Standard
C	12	216.7	20.8				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	12.9	48.5				mg/L	2	Standard
Ho-1	165	23.3	101.3				mg/L	10	Standard
Er	166	10.0	173.2				mg/L	23	Standard
I	127	172463.4	8.0				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.176	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.758	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		88.145
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		85.838
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606073003
Sample Date/Time: Tuesday, June 21, 2016 16:03:58
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64465.7	7.2				ug/L	60176	Standard
	Be	9	48.3	48.9	**0.0549**	0.035	63.6	ug/L	5	Standard
	Al	27	114115919.1	1.6	**813.1976**	46.881	5.8	ug/L	832	Standard
	Sc	45	25436.3	2.0				ug/L	25066	Standard
	Ti	47	345.7	4.6	**1.8234**	0.101	5.6	ug/L	38	Standard
	V	51	1068.5	35.2	**0.0334**	0.072	216.4	ug/L	974	Standard
	Cr	52	14799.2	0.9	**1.6994**	0.023	1.4	ug/L	5792	Standard
	Cr	53	29695.8	4.6	**40.8112**	1.956	4.8	ug/L	347	Standard
	Mn	55	1183452.9	1.0	**209.7588**	2.233	1.1	ug/L	1164	Standard
	Co	59	14597.4	0.2	**2.6724**	0.007	0.3	ug/L	303	Standard
	Ni	60	10363.9	2.1	**6.3478**	0.146	2.3	ug/L	291	Standard
	Cu	65	1987.5	3.5	**1.1635**	0.045	3.9	ug/L	173	Standard
	Zn	66	3577.8	1.3	**3.6805**	0.061	1.7	ug/L	130	Standard
>	**Ge**	72	433293.9	0.3				ug/L	491724	Standard
	As	75	5927.9	2.2	**6.4431**	0.152	2.4	ug/L	-25	Standard
	Se	82	1611.7	1.7	**17.5991**	0.335	1.9	ug/L	12	Standard
	Se-1	77	5107.5	5.2	**81.3703**	4.339	5.3	ug/L	57	Standard
>	**Ga**	71	338.3	13.7				mg/L	148	Standard
	Rb	85	17830.5	1.3				ug/L	18	Standard
	Y	89	379868.8	3.7				ug/L	401845	Standard
>	**Rh**	103	1205.0	3.7				ug/L	10	Standard
	Mo	98	436.0	6.7	**0.2020**	0.013	6.6	ug/L	12	Standard
	Ag	107	96.0	2.8	**0.0031**	0.001	17.0	ug/L	98	Standard
	Cd	111	101.5	4.0	**0.0568**	0.002	3.9	mg/L	11	Standard
	Cd	114	243.8	21.8	**0.0563**	0.013	23.9	ug/L	21	Standard
>	**In**	115	481162.5	1.1				ug/L	547487	Standard
	Sn	118	790.0	15.5	**0.0989**	0.025	25.1	ug/L	450	Standard
	Sb	123	455.4	4.8	**0.1144**	0.005	4.7	ug/L	105	Standard
	Ba	135	6828454.6	0.9	**4232.2396**	20.556	0.5	ug/L	111	Standard
	Ce	140	12164.9	2.3				ug/L	107	Standard
>	**Tb**	159	829521.0	0.4				ug/L	890342	Standard
	Ho	165	176.7	18.8				ug/L	10	Standard
	Tl	203	129.7	8.2	**0.0170**	0.002	9.5	ug/L	19	Standard
	Tl	205	95.0	19.0	**0.0193**	0.003	17.6	ug/L	17	Standard
	Pb	206	521.0	9.8	**0.0734**	0.012	16.5	ug/L	247	Standard
	Pb	207	417.0	5.1	**0.0609**	0.006	10.2	ug/L	215	Standard
	Pb	208	1676.4	1.8	**0.0615**	0.002	3.3	ug/L	770	Standard
	U	238	9099.4	1.6	**1.8151**	0.034	1.9	ug/L	13	Standard
>	**Bi**	209	420359.8	0.4				ug/L	503143	Standard

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Na	23	15.0	33.3	**164.4381**	51.833	31.5	mg/L	2	Standard
Mg	24	263283.1	1.4	**356.5075**	9.102	2.6	mg/L	35	Standard
K	39	456.7	16.0	**2.1312**	0.355	16.7	mg/L	25	Standard
Ca	43	700.0	3.7	**130.7182**	6.161	4.7	mg/L	38	Standard
Fe	54	3184.3	4.9	**2.8411**	0.129	4.5	mg/L	126	Standard
Fe	57	2041.8	5.4	**6.8401**	0.287	4.2	mg/L	245	Standard
> **Sc-1**	45	25436.3	2.0				mg/L	25066	Standard
Cl	35	151004.1	1.2				ug/L	125857	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	445209.8	0.6				ug/L	1350	Standard
P	31	26399.6	1.7				ug/L	18393	Standard
S	34	4885.8	2.7				ug/L	3739	Standard
Sr	88	3080.3	7.6				ug/L	78	Standard
C	12	203.3	19.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	194.4	40.3				mg/L	2	Standard
Ho-1	165	176.7	18.8				mg/L	10	Standard
Er	166	186.7	8.2				mg/L	23	Standard
I	127	130585.3	6.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.129	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		88.117	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	87.886
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	83.547
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606073003
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Method 6020 - Summary Report

Sample ID: L1606096101
Sample Date/Time: Tuesday, June 21, 2016 16:07:10
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51179.6	1.3				ug/L	60176	Standard
	Be	9	6.7	43.3	**0.0019**	0.005	248.3	ug/L	5	Standard
	Al	27	50980.9	25.3	**0.4489**	0.121	26.9	ug/L	832	Standard
	Sc	45	25962.2	3.5				ug/L	25066	Standard
	Ti	47	119.0	4.2	**0.4268**	0.032	7.4	ug/L	38	Standard
	V	51	1327.1	7.8	**0.0590**	0.015	25.5	ug/L	974	Standard
	Cr	52	10085.4	1.2	**0.6910**	0.038	5.5	ug/L	5792	Standard
	Cr	53	2786.9	12.0	**3.1009**	0.469	15.1	ug/L	347	Standard
	Mn	55	4068.2	4.6	**0.4397**	0.037	8.5	ug/L	1164	Standard
	Co	59	403.7	6.2	**0.0189**	0.004	21.3	ug/L	303	Standard
	Ni	60	539.0	3.3	**0.1179**	0.012	10.2	ug/L	291	Standard
	Cu	65	14898.0	0.8	**8.4790**	0.067	0.8	ug/L	173	Standard
	Zn	66	3517.4	1.5	**3.2574**	0.058	1.8	ug/L	130	Standard
>	**Ge**	72	477620.4	1.4				ug/L	491724	Standard
	As	75	1519.4	3.8	**1.5239**	0.036	2.3	ug/L	-25	Standard
	Se	82	49.8	7.3	**0.4026**	0.036	8.9	ug/L	12	Standard
	Se-1	77	174.7	19.2	**1.8996**	0.522	27.5	ug/L	57	Standard
>	**Ga**	71	81.7	12.7				mg/L	148	Standard
	Rb	85	1321.7	1.4				ug/L	18	Standard
	Y	89	409645.6	0.4				ug/L	401845	Standard
>	**Rh**	103	80.0	6.3				ug/L	10	Standard
	Mo	98	714.4	3.4	**0.3043**	0.009	3.0	ug/L	12	Standard
	Ag	107	102.7	8.3	**0.0027**	0.002	56.4	ug/L	98	Standard
	Cd	111	14.0	51.5	**0.0031**	0.004	131.5	mg/L	11	Standard
	Cd	114	24.8	60.7	**0.0012**	0.003	284.8	ug/L	21	Standard
>	**In**	115	527134.4	0.6				ug/L	547487	Standard
	Sn	118	2366.9	4.7	**0.3994**	0.023	5.8	ug/L	450	Standard
	Sb	123	152.2	11.5	**0.0296**	0.004	14.7	ug/L	105	Standard
	Ba	135	3191.0	19.6	**1.7498**	0.356	20.3	ug/L	111	Standard
	Ce	140	173.3	23.1				ug/L	107	Standard
>	**Tb**	159	840402.3	0.7				ug/L	890342	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	123.0	17.0	**0.0144**	0.003	21.3	ug/L	19	Standard
	Tl	205	116.7	31.0	**0.0217**	0.006	29.6	ug/L	17	Standard
	Pb	206	3120.0	3.9	**0.6516**	0.026	4.0	ug/L	247	Standard
	Pb	207	2680.2	1.7	**0.6156**	0.006	0.9	ug/L	215	Standard
	Pb	208	10994.6	2.0	**0.6718**	0.014	2.1	ug/L	770	Standard
	U	238	72.3	2.9	**0.0124**	0.000	2.0	ug/L	13	Standard
>	**Bi**	209	457373.4	1.0				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	35125.7	1.1	**46.5846**	1.473	3.2	mg/L	35	Standard
K	39	51.7	5.6	**0.1362**	0.007	5.1	mg/L	25	Standard
Ca	43	31.7	39.7	**0.6865**	2.370	345.2	mg/L	38	Standard
Fe	54	162.3	12.6	**0.0125**	0.021	169.6	mg/L	126	Standard
Fe	57	268.3	4.3	**-0.0679**	0.055	81.1	mg/L	245	Standard
> **Sc-1**	45	25962.2	3.5				mg/L	25066	Standard
Cl	35	155782.8	0.6				ug/L	125857	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	7928.7	7.4				ug/L	1350	Standard
P	31	21842.4	3.3				ug/L	18393	Standard
S	34	4624.0	1.7				ug/L	3739	Standard
Sr	88	61.7	4.7				ug/L	78	Standard
C	12	123.3	54.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	22.5	69.8				mg/L	2	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	16.7	124.9				mg/L	23	Standard
I	127	273253.9	9.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		85.050	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.132	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.283
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.903
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606096102
Sample Date/Time: Tuesday, June 21, 2016 16:10:21
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55466.4	1.7				ug/L	60176	Standard
	Be	9	10.0	50.0	**0.0061**	0.008	123.3	ug/L	5	Standard
	Al	27	3404100.9	2.1	**28.1074**	0.199	0.7	ug/L	832	Standard
	Sc	45	25237.7	1.7				ug/L	25066	Standard
	Ti	47	137.7	20.3	**0.5030**	0.133	26.4	ug/L	38	Standard
	V	51	1824.3	3.0	**0.1361**	0.015	10.9	ug/L	974	Standard
	Cr	52	9639.7	1.2	**0.5728**	0.021	3.6	ug/L	5792	Standard
	Cr	53	2536.9	7.6	**2.6926**	0.311	11.6	ug/L	347	Standard
	Mn	55	410336.5	3.0	**63.9418**	3.504	5.5	ug/L	1164	Standard
	Co	59	771.7	2.6	**0.0774**	0.003	4.5	ug/L	303	Standard
	Ni	60	1278.1	2.9	**0.5199**	0.037	7.2	ug/L	291	Standard
	Cu	65	956.4	1.4	**0.4368**	0.016	3.7	ug/L	173	Standard
	Zn	66	2255.5	3.4	**1.9395**	0.107	5.5	ug/L	130	Standard
>	**Ge**	72	492109.1	2.4				ug/L	491724	Standard
	As	75	628.2	9.2	**0.6327**	0.065	10.2	ug/L	-25	Standard
	Se	82	84.5	5.3	**0.7234**	0.031	4.3	ug/L	12	Standard
	Se-1	77	165.7	4.1	**1.6947**	0.142	8.4	ug/L	57	Standard
>	**Ga**	71	128.3	21.5				mg/L	148	Standard
	Rb	85	1845.1	8.3				ug/L	18	Standard
	Y	89	407649.4	2.2				ug/L	401845	Standard
>	**Rh**	103	66.7	17.3				ug/L	10	Standard
	Mo	98	795.9	1.4	**0.3389**	0.011	3.3	ug/L	12	Standard
	Ag	107	240.3	3.9	**0.0269**	0.002	9.1	ug/L	98	Standard
	Cd	111	25.8	4.4	**0.0095**	0.000	3.6	mg/L	11	Standard
	Cd	114	76.3	38.0	**0.0129**	0.007	53.5	ug/L	21	Standard
>	**In**	115	528415.2	2.1				ug/L	547487	Standard
	Sn	118	820.0	7.2	**0.0898**	0.015	17.0	ug/L	450	Standard
	Sb	123	374.4	4.7	**0.0837**	0.002	2.9	ug/L	105	Standard
	Ba	135	25131.8	1.1	**14.1323**	0.352	2.5	ug/L	111	Standard
	Ce	140	776.7	26.8				ug/L	107	Standard
>	**Tb**	159	852950.8	1.0				ug/L	890342	Standard
	Ho	165	40.0	12.5				ug/L	10	Standard
	Tl	203	322.3	8.3	**0.0415**	0.004	9.0	ug/L	19	Standard
	Tl	205	273.3	11.9	**0.0475**	0.005	11.3	ug/L	17	Standard
	Pb	206	550.0	3.4	**0.0646**	0.004	5.5	ug/L	247	Standard
	Pb	207	494.7	5.4	**0.0662**	0.007	10.5	ug/L	215	Standard
	Pb	208	1825.0	0.9	**0.0567**	0.001	1.9	ug/L	770	Standard
	U	238	550.3	3.0	**0.0961**	0.003	3.3	ug/L	13	Standard
>	**Bi**	209	476377.1	0.5				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	5382.6	8.6	**7.3029**	0.563	7.7	mg/L	35	Standard
K	39	113.3	10.2	**0.4482**	0.048	10.8	mg/L	25	Standard
Ca	43	105.0	23.8	**15.1842**	4.585	30.2	mg/L	38	Standard
Fe	54	182.7	18.3	**0.0355**	0.030	84.2	mg/L	126	Standard
Fe	57	376.7	12.3	**0.3841**	0.168	43.8	mg/L	245	Standard
> **Sc-1**	45	25237.7	1.7				mg/L	25066	Standard
Cl	35	165485.5	0.6				ug/L	125857	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	15875.0	3.1				ug/L	1350	Standard
P	31	18915.1	1.7				ug/L	18393	Standard
S	34	4484.0	2.4				ug/L	3739	Standard
Sr	88	145.0	6.0				ug/L	78	Standard
C	12	53.3	39.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	18.4	111.4				mg/L	2	Standard
Ho-1	165	40.0	12.5				mg/L	10	Standard
Er	166	33.3	75.5				mg/L	23	Standard
I	127	33351.8	7.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.174	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.078	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.517
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.680
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606099501
Sample Date/Time: Tuesday, June 21, 2016 16:13:33
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	168635.9	4.1				ug/L	60176	Standard
	Be	9	6.7	114.6	**-0.0058**	0.004	64.0	ug/L	5	Standard
	Al	27	18474058.8	4.7	**50.2007**	2.075	4.1	ug/L	832	Standard
	Sc	45	25611.7	6.8				ug/L	25066	Standard
	Ti	47	96.0	15.3	**0.3247**	0.061	18.9	ug/L	38	Standard
	V	51	329.6	160.1	**-0.1086**	0.096	88.6	ug/L	974	Standard
	Cr	52	8533.4	2.1	**0.5000**	0.036	7.3	ug/L	5792	Standard
	Cr	53	18279.4	4.6	**23.6005**	0.090	0.4	ug/L	347	Standard
	Mn	55	795230.1	6.4	**133.2539**	3.844	2.9	ug/L	1164	Standard
	Co	59	1757.4	10.4	**0.2603**	0.020	7.8	ug/L	303	Standard
	Ni	60	5918.8	6.2	**3.3415**	0.070	2.1	ug/L	291	Standard
	Cu	65	974.0	13.3	**0.4862**	0.060	12.3	ug/L	173	Standard
	Zn	66	25732.5	3.6	**26.4255**	0.290	1.1	ug/L	130	Standard
>	**Ge**	72	457809.6	4.2				ug/L	491724	Standard
	As	75	24304.8	12.7	**24.8619**	2.381	9.6	ug/L	-25	Standard
	Se	82	10353.3	13.1	**107.2820**	10.769	10.0	ug/L	12	Standard
	Se-1	77	3338.4	7.4	**50.0689**	2.631	5.3	ug/L	57	Standard
>	**Ga**	71	190.0	18.2				mg/L	148	Standard
	Rb	85	67272.7	5.9				ug/L	18	Standard
	Y	89	392267.7	7.8				ug/L	401845	Standard
>	**Rh**	103	6212.9	7.3				ug/L	10	Standard
	Mo	98	66.8	16.5	**0.0261**	0.003	10.8	ug/L	12	Standard
	Ag	107	141.7	8.0	**0.0112**	0.002	19.1	ug/L	98	Standard
	Cd	111	25.2	33.7	**0.0099**	0.004	38.5	mg/L	11	Standard
	Cd	114	42.8	22.6	**0.0058**	0.002	26.8	ug/L	21	Standard
>	**In**	115	495596.9	7.2				ug/L	547487	Standard
	Sn	118	453.3	8.9	**0.0231**	0.015	65.7	ug/L	450	Standard
	Sb	123	307.9	14.7	**0.0722**	0.006	8.8	ug/L	105	Standard
	Ba	135	1737649.7	4.8	**1046.7670**	27.756	2.7	ug/L	111	Standard
	Ce	140	60.0	22.0				ug/L	107	Standard
>	**Tb**	159	833968.6	4.3				ug/L	890342	Standard
	Ho	165	16.7	34.6				ug/L	10	Standard
	Tl	203	93.0	16.9	**0.0113**	0.003	22.9	ug/L	19	Standard
	Tl	205	90.0	16.7	**0.0185**	0.003	15.2	ug/L	17	Standard
	Pb	206	345.7	4.5	**0.0311**	0.007	21.6	ug/L	247	Standard
	Pb	207	301.0	3.7	**0.0302**	0.000	0.9	ug/L	215	Standard
	Pb	208	1072.7	2.8	**0.0184**	0.001	6.1	ug/L	770	Standard
	U	238	4.3	35.3	**0.0001**	0.000	664.3	ug/L	13	Standard
>	**Bi**	209	416771.5	4.0				ug/L	503143	Standard

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Na	23	8.3	91.7	**92.7162**	88.289	95.2	mg/L	2	Standard
Mg	24	248689.5	5.2	**334.6353**	8.738	2.6	mg/L	35	Standard
K	39	770.0	3.9	**3.6624**	0.402	11.0	mg/L	25	Standard
Ca	43	676.7	8.2	**125.1812**	3.636	2.9	mg/L	38	Standard
Fe	54	913.9	19.2	**0.7080**	0.107	15.2	mg/L	126	Standard
Fe	57	1341.7	7.5	**4.0874**	0.184	4.5	mg/L	245	Standard
> **Sc-1**	45	25611.7	6.8				mg/L	25066	Standard
Cl	35	163994.5	4.3				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	2535152.6	9.1				ug/L	1350	Standard
P	31	21693.9	7.1				ug/L	18393	Standard
S	34	5349.3	7.3				ug/L	3739	Standard
Sr	88	17340.0	7.2				ug/L	78	Standard
C	12	46.7	24.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.7	100.4				mg/L	2	Standard
Ho-1	165	16.7	34.6				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	23	Standard
I	127	915873.2	10.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		280.238	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.103	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.522
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		82.834
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Se 82 Upper, S, EEE	Se	82	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606099502
Sample Date/Time: Tuesday, June 21, 2016 16:16:44
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	161934.6	2.9				ug/L	60176	Standard
	Be	9	5.0	0.0	**-0.0064**	0.000	1.1	ug/L	5	Standard
	Al	27	18034095.9	1.2	**51.0410**	1.601	3.1	ug/L	832	Standard
	Sc	45	25640.0	0.6				ug/L	25066	Standard
	Ti	47	101.0	11.2	**0.3353**	0.057	17.0	ug/L	38	Standard
	V	51	557.0	72.8	**-0.0732**	0.071	97.4	ug/L	974	Standard
	Cr	52	8384.0	1.2	**0.4274**	0.017	4.0	ug/L	5792	Standard
	Cr	53	17313.2	4.7	**21.5821**	0.836	3.9	ug/L	347	Standard
	Mn	55	803112.8	0.5	**130.2269**	0.853	0.7	ug/L	1164	Standard
	Co	59	1799.1	3.0	**0.2578**	0.012	4.7	ug/L	303	Standard
	Ni	60	5982.8	1.8	**3.2648**	0.077	2.3	ug/L	291	Standard
	Cu	65	1150.7	3.3	**0.5706**	0.016	2.9	ug/L	173	Standard
	Zn	66	24866.4	0.7	**24.6790**	0.202	0.8	ug/L	130	Standard
>	**Ge**	72	473336.7	1.0				ug/L	491724	Standard
	As	75	25587.3	1.8	**25.3566**	0.273	1.1	ug/L	-25	Standard
	Se	82	10890.0	1.7	**109.3307**	1.159	1.1	ug/L	12	Standard
	Se-1	77	3343.0	3.9	**48.4872**	1.708	3.5	ug/L	57	Standard
>	**Ga**	71	181.7	12.7				mg/L	148	Standard
	Rb	85	66679.8	2.2				ug/L	18	Standard
	Y	89	414678.4	1.0				ug/L	401845	Standard
>	**Rh**	103	6289.6	5.0				ug/L	10	Standard
	Mo	98	37.1	14.9	**0.0122**	0.003	21.4	ug/L	12	Standard
	Ag	107	130.3	5.8	**0.0083**	0.002	18.8	ug/L	98	Standard
	Cd	111	31.2	14.4	**0.0131**	0.003	20.3	mg/L	11	Standard
	Cd	114	39.9	47.6	**0.0049**	0.004	88.5	ug/L	21	Standard
>	**In**	115	510227.1	2.2				ug/L	547487	Standard
	Sn	118	625.0	2.9	**0.0551**	0.005	8.2	ug/L	450	Standard
	Sb	123	301.2	2.3	**0.0685**	0.003	3.9	ug/L	105	Standard
	Ba	135	1706474.6	1.4	**997.5420**	18.016	1.8	ug/L	111	Standard
	Ce	140	70.0	39.8				ug/L	107	Standard
>	**Tb**	159	847245.8	1.6				ug/L	890342	Standard
	Ho	165	16.7	34.6				ug/L	10	Standard
	Tl	203	82.0	5.6	**0.0095**	0.001	7.4	ug/L	19	Standard
	Tl	205	63.3	19.9	**0.0132**	0.002	18.3	ug/L	17	Standard
	Pb	206	2104.8	3.5	**0.4651**	0.017	3.6	ug/L	247	Standard
	Pb	207	1755.4	1.6	**0.4250**	0.008	1.8	ug/L	215	Standard
	Pb	208	6586.6	2.3	**0.4183**	0.011	2.6	ug/L	770	Standard
	U	238	3.3	75.5	**-0.0002**	0.001	311.3	ug/L	13	Standard
>	**Bi**	209	419186.3	0.3				ug/L	503143	Standard

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Na	23	11.7	49.5	**127.1945**	62.567	49.2	mg/L	2	Standard
Mg	24	247534.5	2.1	**332.4511**	8.574	2.6	mg/L	35	Standard
K	39	821.7	11.6	**3.8912**	0.453	11.6	mg/L	25	Standard
Ca	43	693.3	9.8	**128.3410**	13.655	10.6	mg/L	38	Standard
Fe	54	995.6	6.1	**0.7869**	0.051	6.4	mg/L	126	Standard
Fe	57	1348.4	5.9	**4.1068**	0.292	7.1	mg/L	245	Standard
> **Sc-1**	45	25640.0	0.6				mg/L	25066	Standard
Cl	35	170844.7	1.8				ug/L	125857	Standard
Kr	83	3.0	66.7				ug/L	1	Standard
Br	81	2578824.0	0.0				ug/L	1350	Standard
P	31	21972.6	2.3				ug/L	18393	Standard
S	34	5225.9	2.7				ug/L	3739	Standard
Sr	88	16430.6	4.1				ug/L	78	Standard
C	12	46.7	32.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.0	111.0				mg/L	2	Standard
Ho-1	165	16.7	34.6				mg/L	10	Standard
Er	166	20.0	86.6				mg/L	23	Standard
I	127	815214.3	2.9				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		269.102	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.261	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.194
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		83.314
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Se 82 Upper, S, EEE	Se	82	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 16:19:57
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53255.1	2.6				ug/L	60176	Standard
	Be	9	34201.9	0.2	**53.8492**	1.444	2.7	ug/L	5	Standard
	Al	27	6443317.1	1.2	**55.4427**	1.386	2.5	ug/L	832	Standard
	Sc	45	29281.6	1.0				ug/L	25066	Standard
	Ti	47	22756.4	2.7	**106.0921**	2.711	2.6	ug/L	38	Standard
	V	51	330023.3	1.9	**49.9178**	0.818	1.6	ug/L	974	Standard
	Cr	52	374935.6	2.1	**52.2804**	1.022	2.0	ug/L	5792	Standard
	Cr	53	48235.0	2.8	**52.8231**	1.387	2.6	ug/L	347	Standard
	Mn	55	352441.5	1.8	**49.5016**	0.742	1.5	ug/L	1164	Standard
	Co	59	322946.3	1.0	**47.8265**	0.311	0.7	ug/L	303	Standard
	Ni	60	103457.1	1.6	**51.7034**	0.790	1.5	ug/L	291	Standard
	Cu	65	102599.3	1.6	**51.6656**	0.731	1.4	ug/L	173	Standard
	Zn	66	58130.6	0.7	**50.3515**	0.428	0.9	ug/L	130	Standard
>	**Ge**	72	544960.4	0.5				ug/L	491724	Standard
	As	75	57215.3	2.2	**49.2169**	0.986	2.0	ug/L	-25	Standard
	Se	82	5680.0	0.8	**49.4814**	0.520	1.1	ug/L	12	Standard
	Se-1	77	4029.9	3.0	**50.7996**	1.419	2.8	ug/L	57	Standard
>	**Ga**	71	136.7	2.1				mg/L	148	Standard
	Rb	85	848.4	0.7				ug/L	18	Standard
	Y	89	441171.0	0.9				ug/L	401845	Standard
>	**Rh**	103	98.3	34.6				ug/L	10	Standard
	Mo	98	240530.6	0.1	**95.5654**	2.386	2.5	ug/L	12	Standard
	Ag	107	314903.2	0.7	**50.9642**	1.103	2.2	ug/L	98	Standard
	Cd	111	99040.2	2.0	**50.2851**	0.336	0.7	mg/L	11	Standard
	Cd	114	242003.9	1.6	**50.5109**	0.771	1.5	ug/L	21	Standard
>	**In**	115	573676.8	2.4				ug/L	547487	Standard
	Sn	118	268045.3	0.6	**49.2020**	0.945	1.9	ug/L	450	Standard
	Sb	123	224141.2	0.6	**50.3723**	1.071	2.1	ug/L	105	Standard
	Ba	135	96926.4	0.9	**50.3436**	0.859	1.7	ug/L	111	Standard
	Ce	140	86.7	38.4				ug/L	107	Standard
>	**Tb**	159	919162.1	0.7				ug/L	890342	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	383744.4	1.7	**49.4533**	0.202	0.4	ug/L	19	Standard
	Tl	205	316340.9	2.1	**49.6852**	0.346	0.7	ug/L	17	Standard
	Pb	206	242321.1	0.6	**48.5289**	1.001	2.1	ug/L	247	Standard
	Pb	207	218155.0	0.4	**48.0608**	0.946	2.0	ug/L	215	Standard
	Pb	208	851760.1	1.1	**50.1133**	0.387	0.8	ug/L	770	Standard
	U	238	300943.2	1.1	**48.8537**	0.383	0.8	ug/L	13	Standard
>	**Bi**	209	516771.8	1.8				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3847.2	2.3	**4.4854**	0.083	1.8	mg/L	35	Standard
K	39	1120.0	5.4	**4.6686**	0.296	6.3	mg/L	25	Standard
Ca	43	61.7	49.5	**5.0777**	5.123	100.9	mg/L	38	Standard
Fe	54	5797.8	2.5	**4.5733**	0.113	2.5	mg/L	126	Standard
Fe	57	1638.4	11.3	**4.4400**	0.621	14.0	mg/L	245	Standard
> **Sc-1**	45	29281.6	1.0				mg/L	25066	Standard
Cl	35	158279.8	0.9				ug/L	125857	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	7785.3	7.0				ug/L	1350	Standard
P	31	24633.3	2.3				ug/L	18393	Standard
S	34	5546.0	5.0				ug/L	3739	Standard
Sr	88	78.3	26.6				ug/L	78	Standard
C	12	36.7	83.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.9	217.0				mg/L	2	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	7436.9	29.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	107.698		
Al	27	110.885		
Sc	45			
Ti	47	106.092		
V	51	99.836		
Cr	52	104.561		
Cr	53			
Mn	55	99.003		
Co	59	95.653		
Ni	60	103.407		
Cu	65	103.331		
Zn	66	100.703		
> Ge	72		110.827	
As	75	98.434		
Se	82	98.963		
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98	95.565	
Ag	107	101.928	
Cd	111	100.570	
Cd	114		
> In	115		104.784
Sn	118	98.404	
Sb	123	100.745	
Ba	135	100.687	
Ce	140		
> Tb	159		
Ho	165		
Tl	203	98.907	
Tl	205		
Pb	206		
Pb	207		
Pb	208	100.227	
U	238	97.707	
> Bi	209		102.709
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 16:23:09
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56266.0	2.0				ug/L	60176	Standard
	Be	9	25.0	80.0	**0.0280**	0.030	105.7	ug/L	5	Standard
	Al	27	7918.3	94.7	**0.0560**	0.061	108.1	ug/L	832	Standard
	Sc	45	29356.8	5.8				ug/L	25066	Standard
	Ti	47	35.0	18.7	**-0.0382**	0.028	74.5	ug/L	38	Standard
	V	51	1134.6	16.5	**0.0083**	0.030	365.3	ug/L	974	Standard
	Cr	52	6818.2	1.1	**0.0629**	0.027	42.6	ug/L	5792	Standard
	Cr	53	1238.4	11.1	**1.0052**	0.129	12.8	ug/L	347	Standard
	Mn	55	1320.1	12.1	**-0.0219**	0.024	109.1	ug/L	1164	Standard
	Co	59	310.0	11.8	**-0.0016**	0.006	351.9	ug/L	303	Standard
	Ni	60	235.3	8.6	**-0.0679**	0.011	16.8	ug/L	291	Standard
	Cu	65	177.0	8.0	**-0.0049**	0.008	164.6	ug/L	173	Standard
	Zn	66	177.0	5.2	**-0.0754**	0.007	9.0	ug/L	130	Standard
>	**Ge**	72	524620.7	2.1				ug/L	491724	Standard
	As	75	-13.2	80.2	**0.0220**	0.010	43.5	ug/L	-25	Standard
	Se	82	28.7	3.3	**0.1675**	0.014	8.3	ug/L	12	Standard
	Se-1	77	113.7	8.9	**0.8568**	0.111	13.0	ug/L	57	Standard
>	**Ga**	71	91.7	13.7				mg/L	148	Standard
	Rb	85	53.3	84.0				ug/L	18	Standard
	Y	89	460825.3	1.3				ug/L	401845	Standard
>	**Rh**	103	101.7	25.2				ug/L	10	Standard
	Mo	98	249.0	15.8	**0.0890**	0.015	16.5	ug/L	12	Standard
	Ag	107	151.0	31.3	**0.0077**	0.007	94.9	ug/L	98	Standard
	Cd	111	24.8	83.9	**0.0072**	0.010	139.1	mg/L	11	Standard
	Cd	114	38.5	121.3	**0.0032**	0.009	291.6	ug/L	21	Standard
>	**In**	115	607357.0	0.3				ug/L	547487	Standard
	Sn	118	863.4	16.0	**0.0759**	0.024	32.0	ug/L	450	Standard
	Sb	123	252.1	31.9	**0.0459**	0.017	37.5	ug/L	105	Standard
	Ba	135	755.7	103.5	**0.3163**	0.386	122.0	ug/L	111	Standard
	Ce	140	33.3	70.9				ug/L	107	Standard
>	**Tb**	159	941140.6	1.6				ug/L	890342	Standard
	Ho	165	6.7	114.6				ug/L	10	Standard
	Tl	203	152.0	39.9	**0.0158**	0.008	49.6	ug/L	19	Standard
	Tl	205	98.3	43.8	**0.0163**	0.007	41.4	ug/L	17	Standard
	Pb	206	282.7	4.4	**0.0011**	0.002	198.8	ug/L	247	Standard
	Pb	207	255.7	7.2	**0.0036**	0.003	80.4	ug/L	215	Standard
	Pb	208	1014.3	8.8	**-0.0008**	0.006	712.2	ug/L	770	Standard
	U	238	74.0	54.7	**0.0111**	0.007	59.3	ug/L	13	Standard
>	**Bi**	209	522423.3	2.2				ug/L	503143	Standard

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Na	23	1.7	173.2	**15.5124**	26.860	173.1	mg/L	2	Standard
Mg	24	78.3	48.8	**0.0520**	0.042	80.2	mg/L	35	Standard
K	39	28.3	53.9	**0.0109**	0.074	678.3	mg/L	25	Standard
Ca	43	20.0	25.0	**-1.9217**	1.047	54.5	mg/L	38	Standard
Fe	54	152.7	6.9	**-0.0127**	0.009	69.1	mg/L	126	Standard
Fe	57	248.3	9.9	**-0.2512**	0.109	43.3	mg/L	245	Standard
> **Sc-1**	45	29356.8	5.8				mg/L	25066	Standard
Cl	35	163319.6	1.6				ug/L	125857	Standard
Kr	83	3.3	17.3				ug/L	1	Standard
Br	81	4450.7	3.2				ug/L	1350	Standard
P	31	25079.1	2.0				ug/L	18393	Standard
S	34	5581.0	3.4				ug/L	3739	Standard
Sr	88	80.0	25.0				ug/L	78	Standard
C	12	76.7	7.5				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.2	186.8				mg/L	2	Standard
Ho-1	165	6.7	114.6				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	3778.8	9.6				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		106.690	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.935
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.832
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW 17 WG573111-04
Sample Date/Time: Tuesday, June 21, 2016 17:12:00
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54402.5	1.6				ug/L	60176	Standard
	Be	9	5.0	100.0	**-0.0013**	0.008	610.8	ug/L	5	Standard
	Al	27	10618.7	0.6	**0.0810**	0.001	1.1	ug/L	832	Standard
	Sc	45	24893.8	1.7				ug/L	25066	Standard
	Ti	47	40.7	25.8	**0.0061**	0.051	846.2	ug/L	38	Standard
	V	51	1126.6	6.2	**0.0221**	0.007	33.6	ug/L	974	Standard
	Cr	52	8748.9	1.0	**0.4586**	0.027	6.0	ug/L	5792	Standard
	Cr	53	838.4	4.0	**0.6314**	0.050	8.0	ug/L	347	Standard
	Mn	55	1743.4	2.0	**0.0621**	0.003	4.4	ug/L	1164	Standard
	Co	59	260.3	10.0	**-0.0058**	0.005	78.5	ug/L	303	Standard
	Ni	60	358.3	2.1	**0.0122**	0.003	26.6	ug/L	291	Standard
	Cu	65	173.7	5.2	**0.0013**	0.007	572.1	ug/L	173	Standard
	Zn	66	1250.4	1.5	**0.9925**	0.026	2.6	ug/L	130	Standard
>	**Ge**	72	483042.7	2.3				ug/L	491724	Standard
	As	75	-21.6	45.1	**0.0130**	0.009	71.6	ug/L	-25	Standard
	Se	82	20.3	42.3	**0.1056**	0.079	74.7	ug/L	12	Standard
	Se-1	77	60.7	14.0	**0.2232**	0.110	49.2	ug/L	57	Standard
>	**Ga**	71	95.0	27.3				mg/L	148	Standard
	Rb	85	53.3	28.6				ug/L	18	Standard
	Y	89	406515.1	1.2				ug/L	401845	Standard
>	**Rh**	103	40.0	33.1				ug/L	10	Standard
	Mo	98	66.3	12.4	**0.0239**	0.004	16.1	ug/L	12	Standard
	Ag	107	76.0	9.9	**-0.0021**	0.001	70.0	ug/L	98	Standard
	Cd	111	4.2	59.6	**-0.0024**	0.001	56.9	mg/L	11	Standard
	Cd	114	16.2	34.0	**-0.0008**	0.001	148.3	ug/L	21	Standard
>	**In**	115	532744.5	1.4				ug/L	547487	Standard
	Sn	118	578.3	18.2	**0.0405**	0.021	51.9	ug/L	450	Standard
	Sb	123	112.7	14.7	**0.0197**	0.004	21.1	ug/L	105	Standard
	Ba	135	77.3	10.0	**-0.0123**	0.004	33.0	ug/L	111	Standard
	Ce	140	56.7	20.4				ug/L	107	Standard
>	**Tb**	159	863639.0	0.6				ug/L	890342	Standard
	Ho	165	10.0	86.6				ug/L	10	Standard
	Tl	203	20.7	12.2	**-0.0007**	0.000	46.3	ug/L	19	Standard
	Tl	205	13.3	57.3	**0.0032**	0.001	39.6	ug/L	17	Standard
	Pb	206	252.0	6.0	**-0.0014**	0.003	236.2	ug/L	247	Standard
	Pb	207	197.0	9.6	**-0.0061**	0.004	71.2	ug/L	215	Standard
	Pb	208	811.7	2.3	**-0.0092**	0.001	11.3	ug/L	770	Standard
	U	238	4.3	13.3	**-0.0001**	0.000	120.6	ug/L	13	Standard
>	**Bi**	209	487095.8	0.3				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	46.7	22.3	**0.0258**	0.015	59.6	mg/L	35	Standard
K	39	21.7	26.6	**-0.0039**	0.028	718.4	mg/L	25	Standard
Ca	43	25.0	0.0	**-0.3636**	0.085	23.3	mg/L	38	Standard
Fe	54	131.2	2.2	**-0.0111**	0.005	43.5	mg/L	126	Standard
Fe	57	268.3	15.6	**-0.0229**	0.182	793.2	mg/L	245	Standard
Sc-1	45	24893.8	1.7				mg/L	25066	Standard
Cl	35	153737.5	1.5				ug/L	125857	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	1480.1	4.7				ug/L	1350	Standard
P	31	20108.3	1.0				ug/L	18393	Standard
S	34	5007.5	3.6				ug/L	3739	Standard
Sr	88	75.0	24.0				ug/L	78	Standard
C	12	86.7	56.9				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.7	86.6				mg/L	2	Standard
Ho-1	165	10.0	86.6				mg/L	10	Standard
Er	166	0.0					mg/L	23	Standard
I	127	1100.0	6.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.406	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.235	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.307
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.811
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 17 WG573111-05
Sample Date/Time: Tuesday, June 21, 2016 17:15:12
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53402.3	2.8				ug/L	60176	Standard
	Be	9	32992.6	3.7	**51.7865**	1.692	3.3	ug/L	5	Standard
	Al	27	12198.2	3.5	**0.0963**	0.003	3.3	ug/L	832	Standard
	Sc	45	25010.7	4.4				ug/L	25066	Standard
	Ti	47	36.7	19.3	**-0.0127**	0.038	300.5	ug/L	38	Standard
	V	51	309717.1	0.7	**53.3313**	0.527	1.0	ug/L	974	Standard
	Cr	52	342937.1	0.8	**54.4644**	0.576	1.1	ug/L	5792	Standard
	Cr	53	43542.5	1.3	**54.2826**	0.411	0.8	ug/L	347	Standard
	Mn	55	351550.5	1.0	**56.2349**	1.195	2.1	ug/L	1164	Standard
	Co	59	316884.2	0.8	**53.4233**	1.002	1.9	ug/L	303	Standard
	Ni	60	94717.8	1.1	**53.8819**	0.368	0.7	ug/L	291	Standard
	Cu	65	94262.3	0.8	**54.0303**	0.520	1.0	ug/L	173	Standard
	Zn	66	54370.7	1.4	**53.6116**	0.241	0.4	ug/L	130	Standard
>	**Ge**	72	478860.5	1.7				ug/L	491724	Standard
	As	75	54535.7	0.7	**53.3915**	0.571	1.1	ug/L	-25	Standard
	Se	82	5489.3	0.8	**54.4366**	0.730	1.3	ug/L	12	Standard
	Se-1	77	3768.1	1.6	**54.1018**	0.084	0.2	ug/L	57	Standard
>	**Ga**	71	106.7	23.6				mg/L	148	Standard
	Rb	85	70.0	25.8				ug/L	18	Standard
	Y	89	420312.3	1.2				ug/L	401845	Standard
>	**Rh**	103	70.0	14.3				ug/L	10	Standard
	Mo	98	30.2	2.9	**0.0083**	0.001	6.6	ug/L	12	Standard
	Ag	107	9909.6	0.5	**1.6841**	0.042	2.5	ug/L	98	Standard
	Cd	111	95930.4	1.1	**51.6011**	0.537	1.0	mg/L	11	Standard
	Cd	114	231350.0	0.5	**51.1556**	0.846	1.7	ug/L	21	Standard
>	**In**	115	541530.1	2.0				ug/L	547487	Standard
	Sn	118	488.3	3.9	**0.0210**	0.003	13.6	ug/L	450	Standard
	Sb	123	205763.6	0.9	**48.9816**	0.890	1.8	ug/L	105	Standard
	Ba	135	93604.3	1.7	**51.4945**	0.191	0.4	ug/L	111	Standard
	Ce	140	73.3	20.8				ug/L	107	Standard
>	**Tb**	159	860719.0	2.3				ug/L	890342	Standard
	Ho	165	16.7	96.4				ug/L	10	Standard
	Tl	203	369565.4	1.5	**51.2366**	0.305	0.6	ug/L	19	Standard
	Tl	205	309835.9	0.4	**52.3608**	0.657	1.3	ug/L	17	Standard
	Pb	206	243588.1	0.4	**52.4792**	0.634	1.2	ug/L	247	Standard
	Pb	207	213081.9	0.8	**50.5043**	1.123	2.2	ug/L	215	Standard
	Pb	208	848492.0	0.7	**53.7161**	1.109	2.1	ug/L	770	Standard
	U	238	292643.2	0.8	**51.1091**	0.641	1.3	ug/L	13	Standard
>	**Bi**	209	480350.2	1.5				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	53.3	23.6	**0.0350**	0.020	55.8	mg/L	35	Standard
K	39	43.3	24.0	**0.1052**	0.059	55.9	mg/L	25	Standard
Ca	43	38.3	41.9	**2.3482**	3.443	146.6	mg/L	38	Standard
Fe	54	126.6	30.3	**-0.0161**	0.037	230.4	mg/L	126	Standard
Fe	57	250.0	12.5	**-0.1010**	0.134	132.3	mg/L	245	Standard
> **Sc-1**	45	25010.7	4.4				mg/L	25066	Standard
Cl	35	154303.8	1.1				ug/L	125857	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	1753.4	3.7				ug/L	1350	Standard
P	31	20824.3	0.3				ug/L	18393	Standard
S	34	4885.8	3.3				ug/L	3739	Standard
Sr	88	56.7	28.4				ug/L	78	Standard
C	12	36.7	15.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	8.9	8.2				mg/L	2	Standard
Ho-1	165	16.7	96.4				mg/L	10	Standard
Er	166	23.3	65.5				mg/L	23	Standard
I	127	1055.0	7.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.744	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.384	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.912
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.470
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 17 WG573111-05
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Method 6020 - Summary Report

Sample ID: L1606054006 WG573111-03
Sample Date/Time: Tuesday, June 21, 2016 17:18:23
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53768.6	1.8				ug/L	60176	Standard
	Be	9	223.3	5.2	**0.3390**	0.013	4.0	ug/L	5	Standard
	Al	27	1723479.9	1.0	**14.6779**	0.117	0.8	ug/L	832	Standard
	Sc	45	25968.9	1.0				ug/L	25066	Standard
	Ti	47	174.3	23.9	**0.6975**	0.209	30.0	ug/L	38	Standard
	V	51	3187.1	1.0	**0.3676**	0.007	1.8	ug/L	974	Standard
	Cr	52	9962.3	2.2	**0.6307**	0.032	5.0	ug/L	5792	Standard
	Cr	53	1050.0	15.7	**0.8771**	0.206	23.5	ug/L	347	Standard
	Mn	55	96644.7	2.5	**14.9562**	0.439	2.9	ug/L	1164	Standard
	Co	59	26099.5	1.4	**4.2561**	0.058	1.4	ug/L	303	Standard
	Ni	60	9094.4	0.4	**4.8855**	0.040	0.8	ug/L	291	Standard
	Cu	65	962.0	3.3	**0.4423**	0.013	3.0	ug/L	173	Standard
	Zn	66	4916.8	1.4	**4.5256**	0.053	1.2	ug/L	130	Standard
>	**Ge**	72	489760.3	0.8				ug/L	491724	Standard
	As	75	1211.7	3.7	**1.1931**	0.045	3.8	ug/L	-25	Standard
	Se	82	46.7	17.2	**0.3607**	0.079	21.9	ug/L	12	Standard
	Se-1	77	79.0	14.9	**0.4737**	0.176	37.2	ug/L	57	Standard
>	**Ga**	71	271.7	15.3				mg/L	148	Standard
	Rb	85	4263.9	3.2				ug/L	18	Standard
	Y	89	440770.7	2.7				ug/L	401845	Standard
>	**Rh**	103	63.3	12.1				ug/L	10	Standard
	Mo	98	195.2	3.2	**0.0786**	0.003	4.2	ug/L	12	Standard
	Ag	107	113.0	15.1	**0.0042**	0.003	72.0	ug/L	98	Standard
	Cd	111	262.6	11.3	**0.1381**	0.015	10.9	mg/L	11	Standard
	Cd	114	702.5	10.7	**0.1526**	0.016	10.3	ug/L	21	Standard
>	**In**	115	535297.3	0.8				ug/L	547487	Standard
	Sn	118	651.7	5.8	**0.0543**	0.006	11.8	ug/L	450	Standard
	Sb	123	1542.7	18.6	**0.3642**	0.071	19.6	ug/L	105	Standard
	Ba	135	39728.0	0.6	**22.0778**	0.170	0.8	ug/L	111	Standard
	Ce	140	141161.2	0.1				ug/L	107	Standard
>	**Tb**	159	862084.5	1.3				ug/L	890342	Standard
	Ho	165	2525.2	0.9				ug/L	10	Standard
	Tl	203	237.3	1.4	**0.0286**	0.000	1.4	ug/L	19	Standard
	Tl	205	215.0	12.9	**0.0365**	0.005	13.1	ug/L	17	Standard
	Pb	206	988.7	2.5	**0.1535**	0.005	2.9	ug/L	247	Standard
	Pb	207	865.0	0.8	**0.1485**	0.002	1.1	ug/L	215	Standard
	Pb	208	3337.8	2.7	**0.1469**	0.006	4.0	ug/L	770	Standard
	U	238	1870.8	2.8	**0.3187**	0.008	2.5	ug/L	13	Standard
>	**Bi**	209	491187.2	0.5				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.7819**	30.791	173.2	mg/L	2	Standard
Mg	24	1156.7	3.8	**1.4947**	0.043	2.9	mg/L	35	Standard
K	39	66.7	22.9	**0.2083**	0.073	35.0	mg/L	25	Standard
Ca	43	60.0	28.9	**6.0703**	3.171	52.2	mg/L	38	Standard
Fe	54	927.1	5.1	**0.7125**	0.036	5.1	mg/L	126	Standard
Fe	57	453.3	12.5	**0.6351**	0.217	34.1	mg/L	245	Standard
> **Sc-1**	45	25968.9	1.0				mg/L	25066	Standard
Cl	35	162179.5	1.3				ug/L	125857	Standard
Kr	83	1.7	124.9				ug/L	1	Standard
Br	81	3033.6	2.3				ug/L	1350	Standard
P	31	21506.9	0.4				ug/L	18393	Standard
S	34	4834.1	0.8				ug/L	3739	Standard
Sr	88	95.0	26.3				ug/L	78	Standard
C	12	80.0	25.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	3728.6	6.7				mg/L	2	Standard
Ho-1	165	2525.2	0.9				mg/L	10	Standard
Er	166	2266.8	4.7				mg/L	23	Standard
I	127	11339.3	11.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.352	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.601	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.774
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.624
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606054007S WG573111-09
Sample Date/Time: Tuesday, June 21, 2016 17:21:35
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55648.7	1.0				ug/L	60176	Standard
	Be	9	35439.7	1.0	**53.3747**	0.542	1.0	ug/L	5	Standard
	Al	27	1734040.1	1.3	**14.2679**	0.205	1.4	ug/L	832	Standard
	Sc	45	25546.5	2.5				ug/L	25066	Standard
	Ti	47	195.0	1.4	**0.7899**	0.031	3.9	ug/L	38	Standard
	V	51	309925.0	0.5	**51.3311**	0.675	1.3	ug/L	974	Standard
	Cr	52	343998.6	1.2	**52.5323**	1.556	3.0	ug/L	5792	Standard
	Cr	53	43246.7	4.8	**51.8802**	3.426	6.6	ug/L	347	Standard
	Mn	55	421085.3	0.6	**64.8270**	1.302	2.0	ug/L	1164	Standard
	Co	59	336029.8	0.8	**54.5018**	1.427	2.6	ug/L	303	Standard
	Ni	60	104045.4	1.6	**56.9634**	1.904	3.3	ug/L	291	Standard
	Cu	65	95190.8	1.4	**52.4843**	0.914	1.7	ug/L	173	Standard
	Zn	66	58975.9	0.8	**55.9583**	1.065	1.9	ug/L	130	Standard
>	**Ge**	72	497816.0	1.8				ug/L	491724	Standard
	As	75	56479.5	0.3	**53.1942**	0.942	1.8	ug/L	-25	Standard
	Se	82	5338.4	1.1	**50.9267**	1.343	2.6	ug/L	12	Standard
	Se-1	77	3721.8	0.2	**51.3788**	0.854	1.7	ug/L	57	Standard
>	**Ga**	71	246.7	20.3				mg/L	148	Standard
	Rb	85	4018.9	6.2				ug/L	18	Standard
	Y	89	438370.4	1.5				ug/L	401845	Standard
>	**Rh**	103	75.0	20.0				ug/L	10	Standard
	Mo	98	177.1	10.3	**0.0704**	0.007	9.6	ug/L	12	Standard
	Ag	107	25202.6	1.7	**4.3298**	0.014	0.3	ug/L	98	Standard
	Cd	111	95691.9	1.4	**51.7579**	0.175	0.3	mg/L	11	Standard
	Cd	114	231930.1	2.9	**51.5555**	0.701	1.4	ug/L	21	Standard
>	**In**	115	538493.9	1.7				ug/L	547487	Standard
	Sn	118	535.0	0.9	**0.0307**	0.002	8.0	ug/L	450	Standard
	Sb	123	208964.7	1.0	**50.0186**	0.580	1.2	ug/L	105	Standard
	Ba	135	133008.3	1.3	**73.6104**	0.853	1.2	ug/L	111	Standard
	Ce	140	144677.5	1.4				ug/L	107	Standard
>	**Tb**	159	870588.4	1.2				ug/L	890342	Standard
	Ho	165	2515.2	1.4				ug/L	10	Standard
	Tl	203	376132.5	1.2	**50.4480**	0.208	0.4	ug/L	19	Standard
	Tl	205	310457.8	2.2	**50.7488**	0.818	1.6	ug/L	17	Standard
	Pb	206	249489.7	0.6	**51.9992**	0.813	1.6	ug/L	247	Standard
	Pb	207	216108.6	0.2	**49.5458**	0.596	1.2	ug/L	215	Standard
	Pb	208	835970.7	1.9	**51.1849**	0.557	1.1	ug/L	770	Standard
	U	238	296500.2	1.1	**50.0915**	0.324	0.6	ug/L	13	Standard
>	**Bi**	209	496523.1	1.1				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	1253.4	1.0	**1.6514**	0.045	2.7	mg/L	35	Standard
K	39	90.0	24.2	**0.3274**	0.105	31.9	mg/L	25	Standard
Ca	43	50.0	0.0	**4.3487**	0.242	5.6	mg/L	38	Standard
Fe	54	828.2	6.8	**0.6342**	0.039	6.2	mg/L	126	Standard
Fe	57	453.3	3.4	**0.6651**	0.095	14.3	mg/L	245	Standard
> **Sc-1**	45	25546.5	2.5				mg/L	25066	Standard
Cl	35	160715.9	0.9				ug/L	125857	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	6278.0	7.6				ug/L	1350	Standard
P	31	21558.7	3.0				ug/L	18393	Standard
S	34	4647.4	1.5				ug/L	3739	Standard
Sr	88	96.7	16.6				ug/L	78	Standard
C	12	80.0	33.1				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	3942.4	3.7				mg/L	2	Standard
Ho-1	165	2515.2	1.4				mg/L	10	Standard
Er	166	2396.9	12.6				mg/L	23	Standard
I	127	13020.6	8.0				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.477	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.239	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.357
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.684
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606054008SD WG573111-10
Sample Date/Time: Tuesday, June 21, 2016 17:24:46
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55279.0	1.9				ug/L	60176	Standard
	Be	9	36627.6	1.2	**55.5439**	1.219	2.2	ug/L	5	Standard
	Al	27	1713238.5	1.0	**14.1936**	0.289	2.0	ug/L	832	Standard
	Sc	45	25197.6	2.6				ug/L	25066	Standard
	Ti	47	199.3	7.4	**0.8424**	0.087	10.4	ug/L	38	Standard
	V	51	309494.1	1.0	**52.7786**	0.658	1.2	ug/L	974	Standard
	Cr	52	347378.1	1.2	**54.6471**	1.197	2.2	ug/L	5792	Standard
	Cr	53	43514.1	2.2	**53.7328**	1.741	3.2	ug/L	347	Standard
	Mn	55	424846.4	0.6	**67.3400**	0.361	0.5	ug/L	1164	Standard
	Co	59	340025.8	0.7	**56.7736**	0.789	1.4	ug/L	303	Standard
	Ni	60	103607.1	1.5	**58.3956**	1.391	2.4	ug/L	291	Standard
	Cu	65	94948.3	1.4	**53.9039**	1.162	2.2	ug/L	173	Standard
	Zn	66	59000.7	0.9	**57.6432**	1.050	1.8	ug/L	130	Standard
>	**Ge**	72	483481.9	1.0				ug/L	491724	Standard
	As	75	55725.2	0.4	**54.0300**	0.345	0.6	ug/L	-25	Standard
	Se	82	5455.4	1.2	**53.5737**	0.261	0.5	ug/L	12	Standard
	Se-1	77	3687.1	2.8	**52.4054**	0.959	1.8	ug/L	57	Standard
>	**Ga**	71	291.7	5.5				mg/L	148	Standard
	Rb	85	3975.5	3.5				ug/L	18	Standard
	Y	89	437768.5	1.6				ug/L	401845	Standard
>	**Rh**	103	73.3	21.9				ug/L	10	Standard
	Mo	98	292.6	1.9	**0.1184**	0.004	3.1	ug/L	12	Standard
	Ag	107	6385.3	1.6	**1.0770**	0.028	2.6	ug/L	98	Standard
	Cd	111	98546.6	1.7	**52.8871**	1.151	2.2	mg/L	11	Standard
	Cd	114	241574.4	2.1	**53.2859**	1.073	2.0	ug/L	21	Standard
>	**In**	115	542760.7	1.3				ug/L	547487	Standard
	Sn	118	570.0	9.9	**0.0368**	0.012	33.4	ug/L	450	Standard
	Sb	123	210832.3	1.1	**50.0678**	0.730	1.5	ug/L	105	Standard
	Ba	135	135047.9	1.1	**74.1546**	1.297	1.7	ug/L	111	Standard
	Ce	140	141782.0	0.7				ug/L	107	Standard
>	**Tb**	159	865701.6	1.6				ug/L	890342	Standard
	Ho	165	2566.9	2.9				ug/L	10	Standard
	Tl	203	382403.7	0.7	**52.5418**	1.098	2.1	ug/L	19	Standard
	Tl	205	317463.1	0.8	**53.1627**	1.073	2.0	ug/L	17	Standard
	Pb	206	248494.2	0.2	**53.0491**	0.826	1.6	ug/L	247	Standard
	Pb	207	215899.1	1.2	**50.7054**	1.283	2.5	ug/L	215	Standard
	Pb	208	857334.8	1.1	**53.7766**	0.992	1.8	ug/L	770	Standard
	U	238	302840.8	1.0	**52.4120**	1.195	2.3	ug/L	13	Standard
>	**Bi**	209	484780.2	1.4				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	1276.7	8.6	**1.7042**	0.107	6.3	mg/L	35	Standard
K	39	51.7	49.7	**0.1459**	0.135	92.5	mg/L	25	Standard
Ca	43	55.0	9.1	**5.4513**	0.801	14.7	mg/L	38	Standard
Fe	54	811.1	8.4	**0.6307**	0.085	13.5	mg/L	126	Standard
Fe	57	461.7	3.8	**0.7224**	0.112	15.4	mg/L	245	Standard
> **Sc-1**	45	25197.6	2.6				mg/L	25066	Standard
Cl	35	161517.7	0.6				ug/L	125857	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	2850.3	4.7				ug/L	1350	Standard
P	31	22705.3	1.8				ug/L	18393	Standard
S	34	4462.3	4.8				ug/L	3739	Standard
Sr	88	113.3	17.8				ug/L	78	Standard
C	12	80.0	25.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	3943.7	6.5				mg/L	2	Standard
Ho-1	165	2566.9	2.9				mg/L	10	Standard
Er	166	2160.2	8.1				mg/L	23	Standard
I	127	12827.1	9.5				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.862	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.324	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.137
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.350
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606062401
Sample Date/Time: Tuesday, June 21, 2016 17:27:58
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58089.5	1.1				ug/L	60176	Standard
	Be	9	30.0	33.3	**0.0342**	0.014	41.0	ug/L	5	Standard
	Al	27	6143141.8	1.0	**48.4472**	0.944	1.9	ug/L	832	Standard
	Sc	45	25180.9	3.0				ug/L	25066	Standard
	Ti	47	164.0	25.9	**0.6648**	0.220	33.1	ug/L	38	Standard
	V	51	185031.3	1.5	**31.8430**	0.072	0.2	ug/L	974	Standard
	Cr	52	18607.9	15.7	**2.0656**	0.441	21.3	ug/L	5792	Standard
	Cr	53	3327.0	10.6	**3.7691**	0.381	10.1	ug/L	347	Standard
	Mn	55	46439.1	0.7	**7.2533**	0.079	1.1	ug/L	1164	Standard
	Co	59	5982.5	1.5	**0.9617**	0.001	0.1	ug/L	303	Standard
	Ni	60	16639.8	1.1	**9.3260**	0.213	2.3	ug/L	291	Standard
	Cu	65	8174.2	0.6	**4.6046**	0.102	2.2	ug/L	173	Standard
	Zn	66	49644.2	2.1	**49.0098**	0.387	0.8	ug/L	130	Standard
>	**Ge**	72	478054.7	1.6				ug/L	491724	Standard
	As	75	1224.7	7.5	**1.2333**	0.072	5.9	ug/L	-25	Standard
	Se	82	472.0	3.9	**4.6028**	0.133	2.9	ug/L	12	Standard
	Se-1	77	207.0	7.7	**2.3618**	0.199	8.4	ug/L	57	Standard
>	**Ga**	71	200.0	23.8				mg/L	148	Standard
	Rb	85	14974.1	2.7				ug/L	18	Standard
	Y	89	411795.2	1.6				ug/L	401845	Standard
>	**Rh**	103	106.7	9.8				ug/L	10	Standard
	Mo	98	231188.7	0.7	**98.5932**	1.267	1.3	ug/L	12	Standard
	Ag	107	131.7	7.2	**0.0075**	0.002	23.5	ug/L	98	Standard
	Cd	111	-78.0	39.1	**-0.0472**	0.016	34.7	mg/L	11	Standard
	Cd	114	617.4	6.3	**0.1339**	0.009	7.0	ug/L	21	Standard
>	**In**	115	534274.2	0.6				ug/L	547487	Standard
	Sn	118	656.7	7.2	**0.0556**	0.010	17.6	ug/L	450	Standard
	Sb	123	2302.2	22.5	**0.5481**	0.126	23.0	ug/L	105	Standard
	Ba	135	32140.4	1.2	**17.8854**	0.296	1.7	ug/L	111	Standard
	Ce	140	261.7	29.6				ug/L	107	Standard
>	**Tb**	159	856456.1	0.5				ug/L	890342	Standard
	Ho	165	20.0	25.0				ug/L	10	Standard
	Tl	203	426.7	20.5	**0.0564**	0.012	21.0	ug/L	19	Standard
	Tl	205	363.3	45.3	**0.0631**	0.028	43.7	ug/L	17	Standard
	Pb	206	788.4	5.3	**0.1175**	0.008	6.8	ug/L	247	Standard
	Pb	207	708.7	4.4	**0.1184**	0.006	5.2	ug/L	215	Standard
	Pb	208	2871.1	13.6	**0.1246**	0.024	18.9	ug/L	770	Standard
	U	238	398.7	34.3	**0.0697**	0.024	33.8	ug/L	13	Standard
>	**Bi**	209	473349.9	0.8				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	16877.7	3.1	**23.0643**	1.225	5.3	mg/L	35	Standard
K	39	280.0	25.0	**1.2812**	0.375	29.2	mg/L	25	Standard
Ca	43	126.7	8.2	**19.5068**	1.380	7.1	mg/L	38	Standard
Fe	54	143.3	6.8	**-0.0010**	0.012	1154.4	mg/L	126	Standard
Fe	57	358.3	9.3	**0.3188**	0.164	51.3	mg/L	245	Standard
> **Sc-1**	45	25180.9	3.0				mg/L	25066	Standard
Cl	35	205780.0	0.7				ug/L	125857	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	97895.4	2.7				ug/L	1350	Standard
P	31	21284.9	2.0				ug/L	18393	Standard
S	34	4504.0	2.9				ug/L	3739	Standard
Sr	88	191.7	4.0				ug/L	78	Standard
C	12	73.3	34.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	88.2				mg/L	0	Standard
Dy	164	29.4	101.4				mg/L	2	Standard
Ho-1	165	20.0	25.0				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	12732.0	2.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		96.533	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.220	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.587
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.079
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606062401PS WG573473-01
Sample Date/Time: Tuesday, June 21, 2016 17:31:09
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59555.2	1.6				ug/L	60176	Standard
	Be	9	38114.6	4.0	**53.6277**	1.538	2.9	ug/L	5	Standard
	Al	27	6236393.4	1.5	**47.9667**	0.190	0.4	ug/L	832	Standard
	Sc	45	25247.7	3.0				ug/L	25066	Standard
	Ti	47	149.7	6.7	**0.5489**	0.064	11.6	ug/L	38	Standard
	V	51	510919.3	1.1	**83.6813**	1.623	1.9	ug/L	974	Standard
	Cr	52	357055.0	1.4	**53.8592**	0.614	1.1	ug/L	5792	Standard
	Cr	53	46658.4	3.1	**55.2620**	1.342	2.4	ug/L	347	Standard
	Mn	55	386237.5	1.3	**58.7100**	1.701	2.9	ug/L	1164	Standard
	Co	59	326523.7	0.8	**52.2967**	1.090	2.1	ug/L	303	Standard
	Ni	60	110932.7	1.4	**59.9730**	0.773	1.3	ug/L	291	Standard
	Cu	65	103725.9	2.2	**56.4780**	0.362	0.6	ug/L	173	Standard
	Zn	66	105350.7	1.8	**98.8815**	0.625	0.6	ug/L	130	Standard
>	**Ge**	72	504099.0	2.3				ug/L	491724	Standard
	As	75	58925.6	0.8	**54.8077**	0.985	1.8	ug/L	-25	Standard
	Se	82	6143.8	2.0	**57.9003**	2.000	3.5	ug/L	12	Standard
	Se-1	77	4049.5	3.3	**55.2355**	0.588	1.1	ug/L	57	Standard
>	**Ga**	71	220.0	17.2				mg/L	148	Standard
	Rb	85	14929.0	0.6				ug/L	18	Standard
	Y	89	406274.5	1.9				ug/L	401845	Standard
>	**Rh**	103	120.0	21.7				ug/L	10	Standard
	Mo	98	233519.6	0.3	**99.7506**	0.946	0.9	ug/L	12	Standard
	Ag	107	294288.6	1.5	**51.2056**	0.387	0.8	ug/L	98	Standard
	Cd	111	97440.1	1.5	**53.2049**	0.652	1.2	mg/L	11	Standard
	Cd	114	237560.5	0.5	**53.3199**	0.438	0.8	ug/L	21	Standard
>	**In**	115	533397.7	0.7				ug/L	547487	Standard
	Sn	118	846.7	2.7	**0.0933**	0.004	4.2	ug/L	450	Standard
	Sb	123	217534.4	0.9	**52.5626**	0.359	0.7	ug/L	105	Standard
	Ba	135	126166.1	0.5	**70.4856**	0.674	1.0	ug/L	111	Standard
	Ce	140	221.7	9.1				ug/L	107	Standard
>	**Tb**	159	863996.7	1.6				ug/L	890342	Standard
	Ho	165	15.0	120.2				ug/L	10	Standard
	Tl	203	388142.4	1.0	**52.8512**	0.991	1.9	ug/L	19	Standard
	Tl	205	322436.9	1.5	**53.5061**	0.715	1.3	ug/L	17	Standard
	Pb	206	253353.0	2.2	**53.5909**	0.163	0.3	ug/L	247	Standard
	Pb	207	220862.2	1.1	**51.4007**	0.713	1.4	ug/L	215	Standard
	Pb	208	859792.8	1.1	**53.4462**	0.779	1.5	ug/L	770	Standard
	U	238	306380.9	1.7	**52.5395**	0.392	0.7	ug/L	13	Standard
>	**Bi**	209	489218.2	2.4				ug/L	503143	Standard

Sample ID: L1606062401PS WG573473-01
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Na	23	1.7	173.2	**17.9600**	31.099	173.2	mg/L	2	Standard
Mg	24	16909.4	2.0	**23.0293**	0.226	1.0	mg/L	35	Standard
K	39	301.7	1.9	**1.3820**	0.071	5.1	mg/L	25	Standard
Ca	43	131.7	14.4	**20.3888**	3.034	14.9	mg/L	38	Standard
Fe	54	166.4	16.9	**0.0199**	0.023	114.5	mg/L	126	Standard
Fe	57	365.0	8.3	**0.3416**	0.157	46.0	mg/L	245	Standard
> **Sc-1**	45	25247.7	3.0				mg/L	25066	Standard
Cl	35	210532.0	1.1				ug/L	125857	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	100099.7	2.0				ug/L	1350	Standard
P	31	21987.6	1.4				ug/L	18393	Standard
S	34	4502.3	2.4				ug/L	3739	Standard
Sr	88	196.7	8.9				ug/L	78	Standard
C	12	86.7	24.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	70.0	37.8				mg/L	0	Standard
Dy	164	33.0	47.1				mg/L	2	Standard
Ho-1	165	15.0	120.2				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	23	Standard
I	127	13005.6	0.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.968	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.517	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.427
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.232
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606062401SDL WG573473-02
Sample Date/Time: Tuesday, June 21, 2016 17:34:21
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60477.2	2.3				ug/L	60176	Standard
	Be	9	20.0	25.0	**0.0187**	0.007	38.3	ug/L	5	Standard
	Al	27	1346077.1	1.4	**10.1901**	0.104	1.0	ug/L	832	Standard
	Sc	45	26165.9	1.8				ug/L	25066	Standard
	Ti	47	53.3	5.7	**0.0577**	0.020	34.3	ug/L	38	Standard
	V	51	40043.4	1.0	**6.2981**	0.105	1.7	ug/L	974	Standard
	Cr	52	9838.2	1.4	**0.5437**	0.034	6.2	ug/L	5792	Standard
	Cr	53	1326.7	4.2	**1.1460**	0.079	6.9	ug/L	347	Standard
	Mn	55	10769.8	1.7	**1.4023**	0.064	4.6	ug/L	1164	Standard
	Co	59	1559.7	6.1	**0.1970**	0.021	10.5	ug/L	303	Standard
	Ni	60	3793.5	0.5	**1.8350**	0.048	2.6	ug/L	291	Standard
	Cu	65	2218.5	2.2	**1.0935**	0.016	1.5	ug/L	173	Standard
	Zn	66	12058.5	0.3	**10.9344**	0.220	2.0	ug/L	130	Standard
>	Ge	72	512114.2	2.3				ug/L	491724	Standard
	As	75	280.0	6.4	**0.2900**	0.014	4.8	ug/L	-25	Standard
	Se	82	125.6	4.8	**1.0748**	0.079	7.4	ug/L	12	Standard
	Se-1	77	81.0	16.3	**0.4492**	0.161	35.8	ug/L	57	Standard
>	Ga	71	110.0	9.1				mg/L	148	Standard
	Rb	85	3283.7	4.5				ug/L	18	Standard
	Y	89	414186.7	0.7				ug/L	401845	Standard
>	Rh	103	43.3	17.6				ug/L	10	Standard
	Mo	98	48312.3	1.7	**19.6814**	0.770	3.9	ug/L	12	Standard
	Ag	107	449.0	12.1	**0.0592**	0.010	17.0	ug/L	98	Standard
	Cd	111	-5.5	192.0	**-0.0076**	0.005	71.9	mg/L	11	Standard
	Cd	114	194.3	6.1	**0.0372**	0.003	7.7	ug/L	21	Standard
>	In	115	559504.5	2.3				ug/L	547487	Standard
	Sn	118	523.3	5.3	**0.0246**	0.006	24.8	ug/L	450	Standard
	Sb	123	2078.0	20.6	**0.4699**	0.089	18.9	ug/L	105	Standard
	Ba	135	6769.2	2.6	**3.5550**	0.174	4.9	ug/L	111	Standard
	Ce	140	83.3	24.2				ug/L	107	Standard
>	Tb	159	903655.8	2.0				ug/L	890342	Standard
	Ho	165	10.0	132.3				ug/L	10	Standard
	Tl	203	191.7	11.3	**0.0211**	0.003	12.7	ug/L	19	Standard
	Tl	205	210.0	24.9	**0.0339**	0.008	25.0	ug/L	17	Standard
	Pb	206	458.3	5.1	**0.0367**	0.005	13.4	ug/L	247	Standard
	Pb	207	386.0	11.6	**0.0328**	0.010	31.6	ug/L	215	Standard
	Pb	208	1615.7	13.4	**0.0350**	0.013	38.0	ug/L	770	Standard
	U	238	122.3	50.4	**0.0190**	0.010	52.9	ug/L	13	Standard
>	Bi	209	518242.9	1.3				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3608.8	2.9	**4.7118**	0.175	3.7	mg/L	35	Standard
K	39	100.0	50.7	**0.3676**	0.247	67.2	mg/L	25	Standard
Ca	43	65.0	7.7	**6.9544**	1.038	14.9	mg/L	38	Standard
Fe	54	147.5	39.4	**-0.0029**	0.051	1721.0	mg/L	126	Standard
Fe	57	251.7	1.1	**-0.1393**	0.026	18.6	mg/L	245	Standard
> **Sc-1**	45	26165.9	1.8				mg/L	25066	Standard
Cl	35	182370.3	0.5				ug/L	125857	Standard
Kr	83	3.3	17.3				ug/L	1	Standard
Br	81	22266.3	0.9				ug/L	1350	Standard
P	31	21655.5	3.7				ug/L	18393	Standard
S	34	4839.1	3.8				ug/L	3739	Standard
Sr	88	88.3	14.2				ug/L	78	Standard
C	12	70.0	14.3				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.2	45.2				mg/L	2	Standard
Ho-1	165	10.0	132.3				mg/L	10	Standard
Er	166	23.3	49.5				mg/L	23	Standard
I	127	3850.5	6.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.501	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.147	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.195
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.001
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606062401SDL WG573473-02
Sample Date/Time: Tuesday, June 21, 2016 17:37:32
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60611.2	5.2				ug/L	60176	Standard
	Be	9	26.7	78.1	**0.0285**	0.030	104.7	ug/L	5	Standard
	Al	27	272431.0	1.2	**2.0536**	0.080	3.9	ug/L	832	Standard
	Sc	45	26581.7	4.6				ug/L	25066	Standard
	Ti	47	32.3	4.7	**-0.0400**	0.007	18.7	ug/L	38	Standard
	V	51	9199.9	0.5	**1.3799**	0.034	2.5	ug/L	974	Standard
	Cr	52	8009.8	1.0	**0.3197**	0.024	7.6	ug/L	5792	Standard
	Cr	53	745.0	1.3	**0.5003**	0.030	5.9	ug/L	347	Standard
	Mn	55	3074.3	2.9	**0.2662**	0.019	7.0	ug/L	1164	Standard
	Co	59	581.3	20.9	**0.0466**	0.022	46.9	ug/L	303	Standard
	Ni	60	942.0	2.2	**0.3340**	0.011	3.2	ug/L	291	Standard
	Cu	65	557.7	1.9	**0.2148**	0.011	5.0	ug/L	173	Standard
	Zn	66	3925.2	1.4	**3.5576**	0.086	2.4	ug/L	130	Standard
>	**Ge**	72	490874.3	1.9				ug/L	491724	Standard
	As	75	56.2	25.4	**0.0878**	0.015	16.7	ug/L	-25	Standard
	Se	82	43.0	3.7	**0.3232**	0.008	2.4	ug/L	12	Standard
	Se-1	77	62.7	10.3	**0.2398**	0.106	44.2	ug/L	57	Standard
>	**Ga**	71	86.7	3.3				mg/L	148	Standard
	Rb	85	633.3	8.9				ug/L	18	Standard
	Y	89	434053.3	1.1				ug/L	401845	Standard
>	**Rh**	103	58.3	43.1				ug/L	10	Standard
	Mo	98	9730.4	1.6	**3.7980**	0.056	1.5	ug/L	12	Standard
	Ag	107	110.7	14.6	**0.0022**	0.003	122.1	ug/L	98	Standard
	Cd	111	25.2	97.4	**0.0080**	0.012	156.2	mg/L	11	Standard
	Cd	114	100.0	105.0	**0.0162**	0.022	134.8	ug/L	21	Standard
>	**In**	115	583063.2	0.9				ug/L	547487	Standard
	Sn	118	498.3	15.0	**0.0160**	0.013	80.4	ug/L	450	Standard
	Sb	123	635.0	36.6	**0.1330**	0.052	39.5	ug/L	105	Standard
	Ba	135	1538.7	3.8	**0.7317**	0.038	5.1	ug/L	111	Standard
	Ce	140	56.7	43.5				ug/L	107	Standard
>	**Tb**	159	902775.5	1.1				ug/L	890342	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	138.3	68.1	**0.0148**	0.013	86.9	ug/L	19	Standard
	Tl	205	111.7	55.3	**0.0190**	0.010	54.2	ug/L	17	Standard
	Pb	206	376.0	13.9	**0.0221**	0.012	55.2	ug/L	247	Standard
	Pb	207	317.0	22.0	**0.0194**	0.017	88.5	ug/L	215	Standard
	Pb	208	1292.4	11.5	**0.0179**	0.010	58.6	ug/L	770	Standard
	U	238	68.7	96.5	**0.0107**	0.011	105.8	ug/L	13	Standard
>	**Bi**	209	506328.7	1.9				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	790.0	5.2	**0.9874**	0.095	9.7	mg/L	35	Standard
K	39	33.3	48.2	**0.0428**	0.071	166.5	mg/L	25	Standard
Ca	43	25.0	20.0	**-0.6943**	0.773	111.4	mg/L	38	Standard
Fe	54	139.1	10.5	**-0.0116**	0.017	151.0	mg/L	126	Standard
Fe	57	223.3	12.7	**-0.2573**	0.129	50.2	mg/L	245	Standard
> **Sc-1**	45	26581.7	4.6				mg/L	25066	Standard
Cl	35	175991.6	1.1				ug/L	125857	Standard
Kr	83	3.0	0.0				ug/L	1	Standard
Br	81	6047.9	4.6				ug/L	1350	Standard
P	31	21570.4	4.4				ug/L	18393	Standard
S	34	4842.4	5.1				ug/L	3739	Standard
Sr	88	105.0	12.6				ug/L	78	Standard
C	12	50.0	52.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	15.7	36.9				mg/L	2	Standard
Ho-1	165	8.3	91.7				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	23	Standard
I	127	1585.1	7.5				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.723	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.827	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.498
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.633
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 17:40:45
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59081.7	2.6				ug/L	60176	Standard
	Be	9	36702.7	2.3	**52.0769**	1.300	2.5	ug/L	5	Standard
	Al	27	6646200.9	1.1	**51.5434**	0.909	1.8	ug/L	832	Standard
	Sc	45	26020.7	3.8				ug/L	25066	Standard
	Ti	47	21214.8	1.7	**108.7289**	0.181	0.2	ug/L	38	Standard
	V	51	316864.2	1.4	**52.6965**	0.283	0.5	ug/L	974	Standard
	Cr	52	348817.6	0.6	**53.4950**	0.696	1.3	ug/L	5792	Standard
	Cr	53	43763.1	2.6	**52.6787**	0.604	1.1	ug/L	347	Standard
	Mn	55	340527.3	1.8	**52.5942**	0.923	1.8	ug/L	1164	Standard
	Co	59	326617.6	0.4	**53.1853**	0.746	1.4	ug/L	303	Standard
	Ni	60	96463.1	1.0	**53.0038**	0.733	1.4	ug/L	291	Standard
	Cu	65	95600.3	0.8	**52.9319**	0.992	1.9	ug/L	173	Standard
	Zn	66	54738.7	1.8	**52.1262**	0.134	0.3	ug/L	130	Standard
>	Ge	72	495763.5	1.8				ug/L	491724	Standard
	As	75	54512.5	0.4	**51.5524**	0.685	1.3	ug/L	-25	Standard
	Se	82	5543.1	2.2	**53.1106**	2.069	3.9	ug/L	12	Standard
	Se-1	77	3720.1	1.9	**51.5619**	0.639	1.2	ug/L	57	Standard
>	Ga	71	110.0	12.0				mg/L	148	Standard
	Rb	85	793.4	4.1				ug/L	18	Standard
	Y	89	412125.4	1.3				ug/L	401845	Standard
>	Rh	103	66.7	11.5				ug/L	10	Standard
	Mo	98	240736.8	1.1	**97.2447**	1.379	1.4	ug/L	12	Standard
	Ag	107	305628.4	1.4	**50.2975**	1.221	2.4	ug/L	98	Standard
	Cd	111	97888.8	1.5	**50.5420**	0.123	0.2	mg/L	11	Standard
	Cd	114	238935.5	1.4	**50.7107**	0.441	0.9	ug/L	21	Standard
>	In	115	564098.2	1.7				ug/L	547487	Standard
	Sn	118	268378.0	1.5	**50.0920**	0.857	1.7	ug/L	450	Standard
	Sb	123	219285.5	1.2	**50.1127**	1.176	2.3	ug/L	105	Standard
	Ba	135	94955.3	0.6	**50.1501**	0.552	1.1	ug/L	111	Standard
	Ce	140	105.0	45.4				ug/L	107	Standard
>	Tb	159	899441.1	1.5				ug/L	890342	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	387085.4	1.3	**50.9741**	0.552	1.1	ug/L	19	Standard
	Tl	205	323757.8	1.2	**51.9659**	0.790	1.5	ug/L	17	Standard
	Pb	206	244011.4	1.2	**49.9245**	0.191	0.4	ug/L	247	Standard
	Pb	207	221667.8	1.0	**49.8940**	0.499	1.0	ug/L	215	Standard
	Pb	208	859541.6	1.0	**51.6749**	0.448	0.9	ug/L	770	Standard
	U	238	309083.0	1.7	**51.2676**	0.733	1.4	ug/L	13	Standard
>	Bi	209	505715.2	0.9				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.6985**	32.378	173.2	mg/L	2	Standard
Mg	24	3983.9	6.0	**5.2438**	0.478	9.1	mg/L	35	Standard
K	39	1098.4	8.7	**5.1786**	0.659	12.7	mg/L	25	Standard
Ca	43	58.3	24.7	**5.7524**	2.702	47.0	mg/L	38	Standard
Fe	54	5616.8	2.9	**5.0026**	0.232	4.6	mg/L	126	Standard
Fe	57	1575.1	5.8	**4.9072**	0.583	11.9	mg/L	245	Standard
> **Sc-1**	45	26020.7	3.8				mg/L	25066	Standard
Cl	35	161905.2	1.1				ug/L	125857	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	1890.1	7.8				ug/L	1350	Standard
P	31	22423.3	2.7				ug/L	18393	Standard
S	34	5154.2	1.4				ug/L	3739	Standard
Sr	88	80.0	16.5				ug/L	78	Standard
C	12	60.0	28.9				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	15.7	132.5				mg/L	2	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	20.0	0.0				mg/L	23	Standard
I	127	1220.0	4.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	104.154		
Al	27	103.087		
Sc	45			
Ti	47	108.729		
V	51	105.393		
Cr	52	106.990		
Cr	53			
Mn	55	105.188		
Co	59	106.371		
Ni	60	106.008		
Cu	65	105.864		
Zn	66	104.252		
> Ge	72		100.822	
As	75	103.105		
Se	82	106.221		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	97.245		
Ag	107	100.595		
Cd	111	101.084		
Cd	114			
> In	115			103.034
Sn	118	100.184		
Sb	123	100.225		
Ba	135	100.300		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.948		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.350		
U	238	102.535		
> Bi	209			100.511
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 17:43:57
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56721.1	4.5				ug/L	60176	Standard
	Be	9	10.0	86.6	**0.0057**	0.013	221.6	ug/L	5	Standard
	Al	27	1560.1	22.0	**0.0041**	0.002	54.2	ug/L	832	Standard
	Sc	45	25518.2	4.3				ug/L	25066	Standard
	Ti	47	31.0	8.5	**-0.0455**	0.014	30.9	ug/L	38	Standard
	V	51	1025.7	2.6	**0.0036**	0.004	119.2	ug/L	974	Standard
	Cr	52	6145.2	1.0	**0.0342**	0.011	31.8	ug/L	5792	Standard
	Cr	53	456.7	16.4	**0.1515**	0.092	60.5	ug/L	347	Standard
	Mn	55	1042.7	1.9	**-0.0507**	0.003	6.1	ug/L	1164	Standard
	Co	59	294.3	14.4	**-0.0005**	0.007	1510.6	ug/L	303	Standard
	Ni	60	217.3	8.8	**-0.0685**	0.011	15.8	ug/L	291	Standard
	Cu	65	143.7	4.6	**-0.0165**	0.004	23.2	ug/L	173	Standard
	Zn	66	170.7	3.9	**-0.0690**	0.006	9.1	ug/L	130	Standard
>	**Ge**	72	486561.4	0.2				ug/L	491724	Standard
	As	75	-23.1	144.8	**0.0117**	0.032	276.8	ug/L	-25	Standard
	Se	82	19.3	43.3	**0.0963**	0.082	85.2	ug/L	12	Standard
	Se-1	77	61.7	9.5	**0.2322**	0.083	35.8	ug/L	57	Standard
>	**Ga**	71	91.7	11.4				mg/L	148	Standard
	Rb	85	30.0	33.3				ug/L	18	Standard
	Y	89	432565.5	1.6				ug/L	401845	Standard
>	**Rh**	103	56.7	13.5				ug/L	10	Standard
	Mo	98	283.8	18.7	**0.1104**	0.019	17.4	ug/L	12	Standard
	Ag	107	119.7	6.8	**0.0044**	0.001	22.8	ug/L	98	Standard
	Cd	111	7.8	28.1	**-0.0007**	0.001	162.1	mg/L	11	Standard
	Cd	114	30.1	75.3	**0.0019**	0.005	242.3	ug/L	21	Standard
>	**In**	115	561643.0	2.0				ug/L	547487	Standard
	Sn	118	805.0	28.2	**0.0777**	0.045	58.3	ug/L	450	Standard
	Sb	123	547.0	24.1	**0.1184**	0.033	27.7	ug/L	105	Standard
	Ba	135	127.0	2.8	**0.0118**	0.001	5.1	ug/L	111	Standard
	Ce	140	23.3	75.3				ug/L	107	Standard
>	**Tb**	159	876464.1	2.5				ug/L	890342	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	66.0	17.1	**0.0053**	0.001	26.5	ug/L	19	Standard
	Tl	205	63.3	53.7	**0.0113**	0.006	48.9	ug/L	17	Standard
	Pb	206	259.3	8.4	**-0.0008**	0.004	538.8	ug/L	247	Standard
	Pb	207	223.7	7.2	**-0.0007**	0.003	439.4	ug/L	215	Standard
	Pb	208	890.3	1.6	**-0.0052**	0.001	19.5	ug/L	770	Standard
	U	238	44.0	15.7	**0.0066**	0.001	16.4	ug/L	13	Standard
>	**Bi**	209	495284.3	1.2				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	30.0	28.9	**0.0015**	0.011	728.8	mg/L	35	Standard
K	39	26.7	43.3	**0.0178**	0.054	304.4	mg/L	25	Standard
Ca	43	45.0	22.2	**3.3451**	1.602	47.9	mg/L	38	Standard
Fe	54	122.5	43.7	**-0.0227**	0.048	210.0	mg/L	126	Standard
Fe	57	173.3	26.8	**-0.4223**	0.156	36.9	mg/L	245	Standard
Sc-1	45	25518.2	4.3				mg/L	25066	Standard
Cl	35	159927.0	1.4				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	1690.1	11.2				ug/L	1350	Standard
P	31	22770.5	4.5				ug/L	18393	Standard
S	34	5202.6	2.4				ug/L	3739	Standard
Sr	88	78.3	13.3				ug/L	78	Standard
C	12	43.3	35.3				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	-0.3	173.2				mg/L	2	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	6.7	173.2				mg/L	23	Standard
I	127	1065.0	12.4				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.950	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.586	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.438	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606053301
Sample Date/Time: Tuesday, June 21, 2016 17:47:10
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60448.7	2.1				ug/L	60176	Standard
	Be	9	18.3	68.6	**0.0166**	0.018	107.0	ug/L	5	Standard
	Al	27	6338152.4	1.3	**48.0500**	1.591	3.3	ug/L	832	Standard
	Sc	45	26546.6	1.7				ug/L	25066	Standard
	Ti	47	533.3	12.7	**2.5549**	0.399	15.6	ug/L	38	Standard
	V	51	2131.1	5.9	**0.1873**	0.019	10.0	ug/L	974	Standard
	Cr	52	10369.5	2.6	**0.6877**	0.071	10.4	ug/L	5792	Standard
	Cr	53	3198.7	11.9	**3.5005**	0.514	14.7	ug/L	347	Standard
	Mn	55	118129.1	0.7	**18.2372**	0.274	1.5	ug/L	1164	Standard
	Co	59	1318.1	2.7	**0.1671**	0.009	5.6	ug/L	303	Standard
	Ni	60	3116.7	1.4	**1.5404**	0.023	1.5	ug/L	291	Standard
	Cu	65	10605.0	1.7	**5.8283**	0.198	3.4	ug/L	173	Standard
	Zn	66	23001.4	1.8	**21.9280**	0.418	1.9	ug/L	130	Standard
>	Ge	72	492237.0	2.0				ug/L	491724	Standard
	As	75	3704.8	1.1	**3.5603**	0.041	1.1	ug/L	-25	Standard
	Se	82	134.6	8.4	**1.2098**	0.136	11.2	ug/L	12	Standard
	Se-1	77	313.3	8.9	**3.7853**	0.480	12.7	ug/L	57	Standard
>	Ga	71	193.3	12.2				mg/L	148	Standard
	Rb	85	29528.8	1.8				ug/L	18	Standard
	Y	89	410980.2	2.7				ug/L	401845	Standard
>	Rh	103	110.0	23.6				ug/L	10	Standard
	Mo	98	1672.2	1.4	**0.6833**	0.014	2.1	ug/L	12	Standard
	Ag	107	140.0	15.4	**0.0081**	0.004	49.8	ug/L	98	Standard
	Cd	111	117.6	8.0	**0.0571**	0.004	7.3	mg/L	11	Standard
	Cd	114	311.6	20.6	**0.0629**	0.014	22.1	ug/L	21	Standard
>	In	115	554117.5	1.9				ug/L	547487	Standard
	Sn	118	1430.1	5.5	**0.1980**	0.011	5.7	ug/L	450	Standard
	Sb	123	2644.4	2.3	**0.6075**	0.008	1.3	ug/L	105	Standard
	Ba	135	35642.9	0.4	**19.1319**	0.401	2.1	ug/L	111	Standard
	Ce	140	641.7	11.6				ug/L	107	Standard
>	Tb	159	896083.5	0.2				ug/L	890342	Standard
	Ho	165	56.7	18.4				ug/L	10	Standard
	Tl	203	219.3	9.7	**0.0257**	0.003	10.9	ug/L	19	Standard
	Tl	205	195.0	25.3	**0.0326**	0.008	24.4	ug/L	17	Standard
	Pb	206	1749.1	0.8	**0.3074**	0.003	0.8	ug/L	247	Standard
	Pb	207	1455.7	6.4	**0.2796**	0.021	7.4	ug/L	215	Standard
	Pb	208	5822.8	0.8	**0.2946**	0.003	0.9	ug/L	770	Standard
	U	238	208.3	11.2	**0.0341**	0.004	11.4	ug/L	13	Standard
>	Bi	209	499957.7	0.2				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	24221.0	1.0	**31.3840**	0.259	0.8	mg/L	35	Standard
K	39	728.4	13.1	**3.3171**	0.458	13.8	mg/L	25	Standard
Ca	43	125.0	12.0	**17.9391**	2.703	15.1	mg/L	38	Standard
Fe	54	160.7	6.4	**0.0076**	0.011	142.5	mg/L	126	Standard
Fe	57	373.3	9.9	**0.2993**	0.127	42.5	mg/L	245	Standard
> **Sc-1**	45	26546.6	1.7				mg/L	25066	Standard
Cl	35	196436.0	1.5				ug/L	125857	Standard
Kr	83	3.3	45.8				ug/L	1	Standard
Br	81	8072.2	1.9				ug/L	1350	Standard
P	31	22922.3	0.8				ug/L	18393	Standard
S	34	4750.7	1.5				ug/L	3739	Standard
Sr	88	181.7	3.2				ug/L	78	Standard
C	12	106.7	14.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	0	Standard
Dy	164	47.8	39.5				mg/L	2	Standard
Ho-1	165	56.7	18.4				mg/L	10	Standard
Er	166	46.7	68.9				mg/L	23	Standard
I	127	47392.4	2.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.453	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.104	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.211	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.367	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078403
Sample Date/Time: Tuesday, June 21, 2016 17:50:21
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64282.8	1.4				ug/L	60176	Standard
	Be	9	16.7	45.8	**0.0128**	0.010	79.1	ug/L	5	Standard
	Al	27	9496901.0	1.4	**67.6751**	0.189	0.3	ug/L	832	Standard
	Sc	45	26276.1	3.6				ug/L	25066	Standard
	Ti	47	2632.9	0.5	**13.4149**	0.197	1.5	ug/L	38	Standard
	V	51	10654.6	5.7	**1.6202**	0.099	6.1	ug/L	974	Standard
	Cr	52	309449.4	0.1	**47.7126**	0.747	1.6	ug/L	5792	Standard
	Cr	53	43286.8	2.0	**52.4956**	0.461	0.9	ug/L	347	Standard
	Mn	55	415246.8	0.7	**64.6633**	0.642	1.0	ug/L	1164	Standard
	Co	59	14818.2	0.7	**2.3840**	0.050	2.1	ug/L	303	Standard
	Ni	60	13775.3	1.0	**7.4623**	0.106	1.4	ug/L	291	Standard
	Cu	65	2774.3	0.5	**1.4525**	0.017	1.2	ug/L	173	Standard
	Zn	66	6076.9	0.8	**5.6215**	0.043	0.8	ug/L	130	Standard
>	**Ge**	72	492081.5	1.5				ug/L	491724	Standard
	As	75	14825.6	0.7	**14.1492**	0.153	1.1	ug/L	-25	Standard
	Se	82	184.4	7.2	**1.6910**	0.151	8.9	ug/L	12	Standard
	Se-1	77	407.3	7.4	**5.1069**	0.343	6.7	ug/L	57	Standard
>	**Ga**	71	388.3	4.9				mg/L	148	Standard
	Rb	85	247976.3	1.2				ug/L	18	Standard
	Y	89	437835.7	1.8				ug/L	401845	Standard
>	**Rh**	103	111.7	11.3				ug/L	10	Standard
	Mo	98	768.6	2.7	**0.3040**	0.009	3.0	ug/L	12	Standard
	Ag	107	190.7	6.0	**0.0158**	0.002	12.3	ug/L	98	Standard
	Cd	111	45.2	11.2	**0.0185**	0.003	14.3	mg/L	11	Standard
	Cd	114	130.8	33.1	**0.0231**	0.009	39.2	ug/L	21	Standard
>	**In**	115	567817.1	0.2				ug/L	547487	Standard
	Sn	118	10468.6	2.5	**1.8698**	0.053	2.8	ug/L	450	Standard
	Sb	123	902.4	8.0	**0.1972**	0.016	8.2	ug/L	105	Standard
	Ba	135	51153.2	1.3	**26.8107**	0.405	1.5	ug/L	111	Standard
	Ce	140	2558.5	2.2				ug/L	107	Standard
>	**Tb**	159	907507.6	0.1				ug/L	890342	Standard
	Ho	165	388.3	9.3				ug/L	10	Standard
	Tl	203	96.3	26.1	**0.0096**	0.003	35.7	ug/L	19	Standard
	Tl	205	85.0	21.2	**0.0151**	0.003	19.8	ug/L	17	Standard
	Pb	206	1399.4	4.9	**0.2426**	0.015	6.0	ug/L	247	Standard
	Pb	207	1257.4	0.9	**0.2420**	0.003	1.1	ug/L	215	Standard
	Pb	208	4943.7	1.7	**0.2490**	0.006	2.2	ug/L	770	Standard
	U	238	308.0	0.9	**0.0522**	0.000	0.8	ug/L	13	Standard
>	**Bi**	209	487096.1	0.1				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.6640**	30.586	173.2	mg/L	2	Standard
Mg	24	54270.4	1.9	**71.1138**	1.170	1.6	mg/L	35	Standard
K	39	6009.5	3.1	**28.4763**	0.896	3.1	mg/L	25	Standard
Ca	43	55.0	36.4	**4.9932**	3.579	71.7	mg/L	38	Standard
Fe	54	345.1	11.2	**0.1762**	0.038	21.4	mg/L	126	Standard
Fe	57	351.7	7.8	**0.2357**	0.144	61.3	mg/L	245	Standard
> **Sc-1**	45	26276.1	3.6				mg/L	25066	Standard
Cl	35	189873.7	0.5				ug/L	125857	Standard
Kr	83	2.3	99.0				ug/L	1	Standard
Br	81	36477.2	3.1				ug/L	1350	Standard
P	31	23743.6	0.5				ug/L	18393	Standard
S	34	4889.1	0.7				ug/L	3739	Standard
Sr	88	155.0	16.1				ug/L	78	Standard
C	12	456.7	11.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	613.9	9.9				mg/L	2	Standard
Ho-1	165	388.3	9.3				mg/L	10	Standard
Er	166	336.7	6.2				mg/L	23	Standard
I	127	738935.3	7.0				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.825	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.073	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.713
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.811
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078709 WG573111-01
Sample Date/Time: Tuesday, June 21, 2016 17:53:33
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60443.9	5.7				ug/L	60176	Standard
	Be	9	16.7	34.6	**0.0143**	0.009	61.5	ug/L	5	Standard
	Al	27	10305250.8	3.2	**78.3639**	7.053	9.0	ug/L	832	Standard
	Sc	45	26180.9	1.3				ug/L	25066	Standard
	Ti	47	492.3	16.0	**2.2835**	0.397	17.4	ug/L	38	Standard
	V	51	9886.7	1.4	**1.4559**	0.086	5.9	ug/L	974	Standard
	Cr	52	12993.9	3.4	**1.0581**	0.156	14.7	ug/L	5792	Standard
	Cr	53	1368.4	1.8	**1.2241**	0.083	6.8	ug/L	347	Standard
	Mn	55	29966.3	1.1	**4.3673**	0.250	5.7	ug/L	1164	Standard
	Co	59	1096.7	3.0	**0.1268**	0.007	5.7	ug/L	303	Standard
	Ni	60	1721.1	4.7	**0.7463**	0.085	11.4	ug/L	291	Standard
	Cu	65	2142.2	3.0	**1.0742**	0.079	7.3	ug/L	173	Standard
	Zn	66	4731.4	2.1	**4.2285**	0.265	6.3	ug/L	130	Standard
>	**Ge**	72	503481.4	4.3				ug/L	491724	Standard
	As	75	526.8	4.6	**0.5242**	0.012	2.2	ug/L	-25	Standard
	Se	82	62.5	5.9	**0.4971**	0.013	2.6	ug/L	12	Standard
	Se-1	77	73.0	10.9	**0.3585**	0.086	24.0	ug/L	57	Standard
>	**Ga**	71	216.7	13.9				mg/L	148	Standard
	Rb	85	2733.6	1.6				ug/L	18	Standard
	Y	89	422057.6	7.6				ug/L	401845	Standard
>	**Rh**	103	68.3	11.2				ug/L	10	Standard
	Mo	98	279.8	4.4	**0.1129**	0.008	6.7	ug/L	12	Standard
	Ag	107	97.0	11.9	**0.0012**	0.003	216.7	ug/L	98	Standard
	Cd	111	40.5	2.4	**0.0170**	0.000	2.5	mg/L	11	Standard
	Cd	114	71.0	35.0	**0.0113**	0.006	51.4	ug/L	21	Standard
>	**In**	115	544133.8	4.3				ug/L	547487	Standard
	Sn	118	2075.1	3.5	**0.3287**	0.027	8.2	ug/L	450	Standard
	Sb	123	255.1	11.7	**0.0530**	0.009	17.6	ug/L	105	Standard
	Ba	135	71686.9	1.7	**39.2991**	2.336	5.9	ug/L	111	Standard
	Ce	140	6308.0	3.7				ug/L	107	Standard
>	**Tb**	159	874247.6	3.5				ug/L	890342	Standard
	Ho	165	205.0	17.6				ug/L	10	Standard
	Tl	203	72.3	6.8	**0.0062**	0.001	9.3	ug/L	19	Standard
	Tl	205	71.7	24.5	**0.0128**	0.003	22.0	ug/L	17	Standard
	Pb	206	870.4	1.3	**0.1280**	0.008	6.2	ug/L	247	Standard
	Pb	207	718.4	2.5	**0.1139**	0.005	4.4	ug/L	215	Standard
	Pb	208	2829.8	1.2	**0.1148**	0.006	5.6	ug/L	770	Standard
	U	238	125.7	17.0	**0.0206**	0.004	19.0	ug/L	13	Standard
>	**Bi**	209	493218.4	3.0				ug/L	503143	Standard

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Na	23	3.3	173.2	**36.2151**	62.718	173.2	mg/L	2	Standard
Mg	24	1295.1	2.9	**1.6648**	0.058	3.5	mg/L	35	Standard
K	39	110.0	9.1	**0.4127**	0.048	11.7	mg/L	25	Standard
Ca	43	135.0	14.8	**20.1289**	3.508	17.4	mg/L	38	Standard
Fe	54	213.8	22.6	**0.0577**	0.043	74.6	mg/L	126	Standard
Fe	57	361.7	4.2	**0.2754**	0.064	23.3	mg/L	245	Standard
> **Sc-1**	45	26180.9	1.3				mg/L	25066	Standard
Cl	35	162260.9	0.6				ug/L	125857	Standard
Kr	83	2.7	78.1				ug/L	1	Standard
Br	81	10053.3	4.2				ug/L	1350	Standard
P	31	24678.4	1.7				ug/L	18393	Standard
S	34	4714.1	1.8				ug/L	3739	Standard
Sr	88	126.7	12.7				ug/L	78	Standard
C	12	166.7	24.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	368.2	19.7				mg/L	2	Standard
Ho-1	165	205.0	17.6				mg/L	10	Standard
Er	166	176.7	57.8				mg/L	23	Standard
I	127	20693.0	48.0				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.445	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.391	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.388
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.028
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078710
Sample Date/Time: Tuesday, June 21, 2016 17:56:44
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62773.1	1.4				ug/L	60176	Standard
	Be	9	21.7	35.3	**0.0200**	0.011	52.9	ug/L	5	Standard
	Al	27	10724930.9	3.4	**78.2963**	3.661	4.7	ug/L	832	Standard
	Sc	45	27798.8	3.2				ug/L	25066	Standard
	Ti	47	562.7	17.6	**2.6295**	0.538	20.5	ug/L	38	Standard
	V	51	10217.9	0.6	**1.5004**	0.021	1.4	ug/L	974	Standard
	Cr	52	13153.7	0.9	**1.0695**	0.051	4.8	ug/L	5792	Standard
	Cr	53	1371.7	5.1	**1.2177**	0.058	4.8	ug/L	347	Standard
	Mn	55	29369.4	1.6	**4.2499**	0.136	3.2	ug/L	1164	Standard
	Co	59	1080.7	2.1	**0.1233**	0.002	1.9	ug/L	303	Standard
	Ni	60	1737.1	3.4	**0.7483**	0.031	4.2	ug/L	291	Standard
	Cu	65	1924.5	4.8	**0.9481**	0.033	3.5	ug/L	173	Standard
	Zn	66	4372.0	2.4	**3.8638**	0.075	2.0	ug/L	130	Standard
>	**Ge**	72	505797.3	1.7				ug/L	491724	Standard
	As	75	458.2	3.8	**0.4582**	0.009	2.1	ug/L	-25	Standard
	Se	82	38.6	4.6	**0.2705**	0.020	7.4	ug/L	12	Standard
	Se-1	77	65.3	7.6	**0.2495**	0.074	29.7	ug/L	57	Standard
>	**Ga**	71	210.0	13.3				mg/L	148	Standard
	Rb	85	3273.7	1.4				ug/L	18	Standard
	Y	89	418878.8	2.6				ug/L	401845	Standard
>	**Rh**	103	35.0	37.8				ug/L	10	Standard
	Mo	98	238.7	3.0	**0.0929**	0.004	4.0	ug/L	12	Standard
	Ag	107	109.0	6.6	**0.0027**	0.001	44.0	ug/L	98	Standard
	Cd	111	30.9	30.1	**0.0114**	0.005	43.6	mg/L	11	Standard
	Cd	114	87.2	2.7	**0.0142**	0.001	3.7	ug/L	21	Standard
>	**In**	115	559019.1	0.9				ug/L	547487	Standard
	Sn	118	1906.8	4.3	**0.2855**	0.012	4.3	ug/L	450	Standard
	Sb	123	250.1	13.3	**0.0500**	0.007	14.2	ug/L	105	Standard
	Ba	135	73442.9	1.3	**39.1229**	0.172	0.4	ug/L	111	Standard
	Ce	140	6873.2	4.0				ug/L	107	Standard
>	**Tb**	159	901790.2	0.8				ug/L	890342	Standard
	Ho	165	200.0	9.0				ug/L	10	Standard
	Tl	203	57.3	31.4	**0.0039**	0.002	58.7	ug/L	19	Standard
	Tl	205	43.3	35.3	**0.0078**	0.002	30.1	ug/L	17	Standard
	Pb	206	822.7	3.5	**0.1108**	0.007	6.1	ug/L	247	Standard
	Pb	207	701.0	5.6	**0.1033**	0.010	9.4	ug/L	215	Standard
	Pb	208	2697.1	1.4	**0.0998**	0.003	3.5	ug/L	770	Standard
	U	238	127.0	11.9	**0.0199**	0.002	11.8	ug/L	13	Standard
>	**Bi**	209	514062.2	0.8				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.4295**	30.180	173.2	mg/L	2	Standard
Mg	24	1238.4	1.7	**1.4957**	0.025	1.7	mg/L	35	Standard
K	39	105.0	17.2	**0.3595**	0.078	21.6	mg/L	25	Standard
Ca	43	170.0	10.6	**24.9795**	4.201	16.8	mg/L	38	Standard
Fe	54	232.4	2.4	**0.0625**	0.006	9.3	mg/L	126	Standard
Fe	57	421.7	12.1	**0.4086**	0.168	41.1	mg/L	245	Standard
> **Sc-1**	45	27798.8	3.2				mg/L	25066	Standard
Cl	35	170177.7	0.9				ug/L	125857	Standard
Kr	83	2.3	89.2				ug/L	1	Standard
Br	81	3510.4	1.7				ug/L	1350	Standard
P	31	25923.8	0.8				ug/L	18393	Standard
S	34	5000.8	2.7				ug/L	3739	Standard
Sr	88	136.7	27.0				ug/L	78	Standard
C	12	120.0	16.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	299.1	9.0				mg/L	2	Standard
Ho-1	165	200.0	9.0				mg/L	10	Standard
Er	166	226.7	11.1				mg/L	23	Standard
I	127	8357.3	3.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.316	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.862	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.106
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.170
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606078711S WG573111-06
Sample Date/Time: Tuesday, June 21, 2016 17:59:56
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61600.0	1.8				ug/L	60176	Standard
	Be	9	39351.1	3.1	**53.5432**	1.639	3.1	ug/L	5	Standard
	Al	27	10394779.5	1.5	**77.3073**	1.057	1.4	ug/L	832	Standard
	Sc	45	27065.8	3.5				ug/L	25066	Standard
	Ti	47	963.4	10.6	**4.7337**	0.549	11.6	ug/L	38	Standard
	V	51	322757.3	1.8	**53.6046**	1.325	2.5	ug/L	974	Standard
	Cr	52	347982.3	1.9	**53.2836**	1.385	2.6	ug/L	5792	Standard
	Cr	53	43507.5	4.5	**52.3076**	2.705	5.2	ug/L	347	Standard
	Mn	55	375081.4	0.9	**57.8666**	0.893	1.5	ug/L	1164	Standard
	Co	59	321619.4	0.7	**52.2874**	0.580	1.1	ug/L	303	Standard
	Ni	60	93916.6	2.0	**51.5228**	1.331	2.6	ug/L	291	Standard
	Cu	65	93528.8	1.2	**51.7010**	0.970	1.9	ug/L	173	Standard
	Zn	66	57176.0	0.7	**54.3806**	0.702	1.3	ug/L	130	Standard
>	**Ge**	72	496488.3	0.7				ug/L	491724	Standard
	As	75	55790.3	0.6	**52.6752**	0.114	0.2	ug/L	-25	Standard
	Se	82	5538.3	0.8	**52.9638**	0.537	1.0	ug/L	12	Standard
	Se-1	77	3804.5	1.5	**52.6667**	0.727	1.4	ug/L	57	Standard
>	**Ga**	71	466.7	30.8				mg/L	148	Standard
	Rb	85	5205.9	1.3				ug/L	18	Standard
	Y	89	431108.9	0.1				ug/L	401845	Standard
>	**Rh**	103	70.0	18.9				ug/L	10	Standard
	Mo	98	227.0	2.9	**0.0880**	0.002	2.8	ug/L	12	Standard
	Ag	107	10615.7	2.8	**1.7450**	0.050	2.9	ug/L	98	Standard
	Cd	111	99211.0	0.7	**51.6114**	0.445	0.9	mg/L	11	Standard
	Cd	114	241106.1	2.5	**51.5544**	1.220	2.4	ug/L	21	Standard
>	**In**	115	559879.4	0.9				ug/L	547487	Standard
	Sn	118	2130.1	3.8	**0.3270**	0.012	3.7	ug/L	450	Standard
	Sb	123	217940.1	0.9	**50.1700**	0.382	0.8	ug/L	105	Standard
	Ba	135	167521.4	1.0	**89.1738**	0.251	0.3	ug/L	111	Standard
	Ce	140	9182.8	2.4				ug/L	107	Standard
>	**Tb**	159	892825.7	1.7				ug/L	890342	Standard
	Ho	165	245.0	15.9				ug/L	10	Standard
	Tl	203	382126.3	1.7	**51.0936**	0.456	0.9	ug/L	19	Standard
	Tl	205	328005.7	0.3	**53.4587**	0.419	0.8	ug/L	17	Standard
	Pb	206	247016.4	0.8	**51.3212**	0.143	0.3	ug/L	247	Standard
	Pb	207	215416.9	0.8	**49.2334**	0.302	0.6	ug/L	215	Standard
	Pb	208	864247.6	0.1	**52.7618**	0.483	0.9	ug/L	770	Standard
	U	238	310732.3	0.2	**52.3391**	0.578	1.1	ug/L	13	Standard
>	**Bi**	209	498043.4	1.0				ug/L	503143	Standard

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Na	23	1.7	173.2	**16.7109**	28.936	173.2	mg/L	2	Standard
Mg	24	1233.4	1.0	**1.5318**	0.064	4.2	mg/L	35	Standard
K	39	148.3	7.8	**0.5718**	0.033	5.8	mg/L	25	Standard
Ca	43	170.0	28.4	**25.9171**	9.688	37.4	mg/L	38	Standard
Fe	54	322.0	9.5	**0.1473**	0.036	24.5	mg/L	126	Standard
Fe	57	403.3	22.9	**0.3789**	0.313	82.6	mg/L	245	Standard
> **Sc-1**	45	27065.8	3.5				mg/L	25066	Standard
Cl	35	170176.5	1.7				ug/L	125857	Standard
Kr	83	3.0	57.7				ug/L	1	Standard
Br	81	4414.0	4.5				ug/L	1350	Standard
P	31	26219.3	3.1				ug/L	18393	Standard
S	34	5044.2	5.2				ug/L	3739	Standard
Sr	88	135.0	9.8				ug/L	78	Standard
C	12	86.7	17.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	373.8	5.4				mg/L	2	Standard
Ho-1	165	245.0	15.9				mg/L	10	Standard
Er	166	200.0	13.2				mg/L	23	Standard
I	127	7025.0	4.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.367	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.969	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606078711S WG573111-06
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.264
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.987
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606078712SD WG573111-07
Sample Date/Time: Tuesday, June 21, 2016 18:03:07
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61029.3	0.4				ug/L	60176	Standard
	Be	9	38696.0	1.1	**53.1381**	0.388	0.7	ug/L	5	Standard
	Al	27	10635305.8	0.7	**79.8285**	0.406	0.5	ug/L	832	Standard
	Sc	45	27050.8	1.0				ug/L	25066	Standard
	Ti	47	1614.1	5.0	**7.8928**	0.372	4.7	ug/L	38	Standard
	V	51	334955.3	1.2	**54.4598**	1.088	2.0	ug/L	974	Standard
	Cr	52	351881.2	0.4	**52.7321**	0.628	1.2	ug/L	5792	Standard
	Cr	53	43774.8	1.5	**51.5065**	1.170	2.3	ug/L	347	Standard
	Mn	55	501871.8	1.6	**75.8606**	1.449	1.9	ug/L	1164	Standard
	Co	59	333145.1	1.3	**53.0208**	0.897	1.7	ug/L	303	Standard
	Ni	60	94669.2	0.6	**50.8362**	0.710	1.4	ug/L	291	Standard
	Cu	65	95052.6	1.5	**51.4370**	1.187	2.3	ug/L	173	Standard
	Zn	66	58277.2	0.4	**54.2587**	0.599	1.1	ug/L	130	Standard
>	**Ge**	72	507183.4	0.8				ug/L	491724	Standard
	As	75	57125.5	0.7	**52.8022**	0.788	1.5	ug/L	-25	Standard
	Se	82	5703.6	1.6	**53.3992**	1.190	2.2	ug/L	12	Standard
	Se-1	77	3834.5	0.9	**51.9576**	0.800	1.5	ug/L	57	Standard
>	**Ga**	71	908.4	9.4				mg/L	148	Standard
	Rb	85	10995.7	2.2				ug/L	18	Standard
	Y	89	422851.2	3.7				ug/L	401845	Standard
>	**Rh**	103	70.0	14.3				ug/L	10	Standard
	Mo	98	243.6	1.0	**0.0962**	0.001	1.5	ug/L	12	Standard
	Ag	107	9863.9	1.6	**1.6460**	0.047	2.9	ug/L	98	Standard
	Cd	111	99159.1	2.8	**52.3764**	0.965	1.8	mg/L	11	Standard
	Cd	114	235716.4	1.9	**51.1824**	0.756	1.5	ug/L	21	Standard
>	**In**	115	551348.1	1.3				ug/L	547487	Standard
	Sn	118	2651.9	2.8	**0.4332**	0.019	4.4	ug/L	450	Standard
	Sb	123	193703.2	1.2	**45.2835**	0.741	1.6	ug/L	105	Standard
	Ba	135	168991.9	2.6	**91.3544**	2.313	2.5	ug/L	111	Standard
	Ce	140	32860.6	2.6				ug/L	107	Standard
>	**Tb**	159	880118.4	0.8				ug/L	890342	Standard
	Ho	165	470.0	4.9				ug/L	10	Standard
	Tl	203	380545.4	1.6	**50.5209**	0.728	1.4	ug/L	19	Standard
	Tl	205	329715.6	2.7	**53.3513**	1.427	2.7	ug/L	17	Standard
	Pb	206	252108.4	1.5	**52.0068**	0.872	1.7	ug/L	247	Standard
	Pb	207	219746.2	1.1	**49.8641**	0.528	1.1	ug/L	215	Standard
	Pb	208	883612.2	0.6	**53.5586**	0.555	1.0	ug/L	770	Standard
	U	238	309715.2	1.9	**51.7947**	1.152	2.2	ug/L	13	Standard
>	**Bi**	209	501621.6	0.6				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.3130**	29.978	173.2	mg/L	2	Standard
Mg	24	1170.0	3.4	**1.4509**	0.059	4.0	mg/L	35	Standard
K	39	130.0	27.7	**0.4888**	0.170	34.7	mg/L	25	Standard
Ca	43	153.3	12.3	**22.6892**	3.519	15.5	mg/L	38	Standard
Fe	54	591.5	1.7	**0.3836**	0.008	2.1	mg/L	126	Standard
Fe	57	516.7	13.6	**0.7964**	0.241	30.3	mg/L	245	Standard
> **Sc-1**	45	27050.8	1.0				mg/L	25066	Standard
Cl	35	165809.3	2.3				ug/L	125857	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	2850.3	4.1				ug/L	1350	Standard
P	31	26767.0	3.2				ug/L	18393	Standard
S	34	4750.7	2.1				ug/L	3739	Standard
Sr	88	130.0	7.7				ug/L	78	Standard
C	12	126.7	18.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	835.0	2.5				mg/L	2	Standard
Ho-1	165	470.0	4.9				mg/L	10	Standard
Er	166	453.3	25.8				mg/L	23	Standard
I	127	6214.6	6.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.418	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.144	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.705
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.698
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606078712SD WG573111-07
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Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606078718
Sample Date/Time: Tuesday, June 21, 2016 18:06:19
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61345.6	1.0				ug/L	60176	Standard
	Be	9	36.7	28.4	**0.0411**	0.014	34.6	ug/L	5	Standard
	Al	27	13853606.9	0.9	**103.4648**	1.981	1.9	ug/L	832	Standard
	Sc	45	26648.4	1.5				ug/L	25066	Standard
	Ti	47	1471.7	1.8	**7.3873**	0.204	2.8	ug/L	38	Standard
	V	51	15922.0	1.1	**2.4991**	0.067	2.7	ug/L	974	Standard
	Cr	52	13836.7	2.0	**1.2265**	0.015	1.2	ug/L	5792	Standard
	Cr	53	1288.4	6.0	**1.1570**	0.071	6.1	ug/L	347	Standard
	Mn	55	329136.0	2.3	**51.0786**	1.557	3.0	ug/L	1164	Standard
	Co	59	3178.0	2.5	**0.4710**	0.005	1.1	ug/L	303	Standard
	Ni	60	3429.7	2.4	**1.7103**	0.073	4.2	ug/L	291	Standard
	Cu	65	2424.9	0.9	**1.2538**	0.023	1.8	ug/L	173	Standard
	Zn	66	21892.8	1.6	**20.8141**	0.673	3.2	ug/L	130	Standard
>	**Ge**	72	493399.5	1.6				ug/L	491724	Standard
	As	75	662.7	6.1	**0.6629**	0.029	4.3	ug/L	-25	Standard
	Se	82	30.1	21.2	**0.1969**	0.058	29.3	ug/L	12	Standard
	Se-1	77	65.0	20.4	**0.2652**	0.174	65.4	ug/L	57	Standard
>	**Ga**	71	763.4	6.3				mg/L	148	Standard
	Rb	85	11562.7	2.6				ug/L	18	Standard
	Y	89	414722.7	0.7				ug/L	401845	Standard
>	**Rh**	103	61.7	26.1				ug/L	10	Standard
	Mo	98	2202.2	2.7	**0.9051**	0.023	2.6	ug/L	12	Standard
	Ag	107	93.7	9.6	**0.0004**	0.002	405.8	ug/L	98	Standard
	Cd	111	36.0	24.1	**0.0143**	0.005	32.0	mg/L	11	Standard
	Cd	114	82.5	18.5	**0.0135**	0.003	24.8	ug/L	21	Standard
>	**In**	115	551654.9	0.3				ug/L	547487	Standard
	Sn	118	1025.0	2.0	**0.1219**	0.003	2.7	ug/L	450	Standard
	Sb	123	1356.4	22.3	**0.3093**	0.070	22.8	ug/L	105	Standard
	Ba	135	129981.5	0.7	**70.2106**	0.381	0.5	ug/L	111	Standard
	Ce	140	35964.3	1.5				ug/L	107	Standard
>	**Tb**	159	898275.8	1.4				ug/L	890342	Standard
	Ho	165	588.3	7.7				ug/L	10	Standard
	Tl	203	129.0	10.2	**0.0136**	0.002	11.4	ug/L	19	Standard
	Tl	205	128.3	28.2	**0.0218**	0.006	27.3	ug/L	17	Standard
	Pb	206	2292.8	1.9	**0.4195**	0.012	2.9	ug/L	247	Standard
	Pb	207	1882.5	1.6	**0.3763**	0.003	0.8	ug/L	215	Standard
	Pb	208	7667.1	0.4	**0.4062**	0.006	1.5	ug/L	770	Standard
	U	238	370.0	8.6	**0.0612**	0.005	8.6	ug/L	13	Standard
>	**Bi**	209	500668.3	1.1				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.6673**	30.592	173.2	mg/L	2	Standard
Mg	24	3412.1	3.5	**4.3714**	0.183	4.2	mg/L	35	Standard
K	39	153.3	13.2	**0.6068**	0.098	16.1	mg/L	25	Standard
Ca	43	170.0	16.4	**26.2488**	5.560	21.2	mg/L	38	Standard
Fe	54	683.7	6.3	**0.4734**	0.029	6.2	mg/L	126	Standard
Fe	57	593.3	9.3	**1.1125**	0.233	21.0	mg/L	245	Standard
> **Sc-1**	45	26648.4	1.5				mg/L	25066	Standard
Cl	35	162659.9	1.3				ug/L	125857	Standard
Kr	83	4.3	81.0				ug/L	1	Standard
Br	81	1856.8	15.6				ug/L	1350	Standard
P	31	25311.1	1.5				ug/L	18393	Standard
S	34	4550.7	1.1				ug/L	3739	Standard
Sr	88	181.7	9.7				ug/L	78	Standard
C	12	63.3	9.1				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	938.6	15.9				mg/L	2	Standard
Ho-1	165	588.3	7.7				mg/L	10	Standard
Er	166	516.7	15.6				mg/L	23	Standard
I	127	3795.5	3.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.944	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.341	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.761
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.508
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606078718
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Method 6020 - Summary Report

Sample ID: L1606086201 WG573111-02
Sample Date/Time: Tuesday, June 21, 2016 18:09:30
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70003.4	5.7				ug/L	60176	Standard
	Be	9	36.7	20.8	**0.0348**	0.009	24.5	ug/L	5	Standard
	Al	27	16610862.4	6.4	**108.6830**	1.728	1.6	ug/L	832	Standard
	Sc	45	26531.6	3.2				ug/L	25066	Standard
	Ti	47	79.3	22.9	**0.1919**	0.082	42.6	ug/L	38	Standard
	V	51	2014.4	26.0	**0.1599**	0.083	51.6	ug/L	974	Standard
	Cr	52	10191.1	1.8	**0.6236**	0.029	4.7	ug/L	5792	Standard
	Cr	53	1240.1	4.8	**1.0705**	0.108	10.1	ug/L	347	Standard
	Mn	55	135277.1	2.5	**20.4449**	0.338	1.7	ug/L	1164	Standard
	Co	59	3194.7	8.9	**0.4633**	0.042	9.0	ug/L	303	Standard
	Ni	60	4307.3	3.2	**2.1481**	0.040	1.8	ug/L	291	Standard
	Cu	65	2946.0	3.6	**1.5109**	0.014	0.9	ug/L	173	Standard
	Zn	66	4156.6	3.8	**3.6798**	0.081	2.2	ug/L	130	Standard
>	**Ge**	72	503442.9	2.8				ug/L	491724	Standard
	As	75	284.8	17.5	**0.2994**	0.050	16.6	ug/L	-25	Standard
	Se	82	101.4	8.8	**0.8650**	0.083	9.6	ug/L	12	Standard
	Se-1	77	87.0	7.2	**0.5544**	0.111	20.1	ug/L	57	Standard
>	**Ga**	71	96.7	15.8				mg/L	148	Standard
	Rb	85	10238.5	4.2				ug/L	18	Standard
	Y	89	429610.1	1.8				ug/L	401845	Standard
>	**Rh**	103	65.0	13.3				ug/L	10	Standard
	Mo	98	201.8	61.9	**0.0760**	0.048	63.5	ug/L	12	Standard
	Ag	107	138.7	53.9	**0.0071**	0.012	164.1	ug/L	98	Standard
	Cd	111	55.1	4.5	**0.0236**	0.002	6.5	mg/L	11	Standard
	Cd	114	127.5	35.8	**0.0224**	0.009	41.4	ug/L	21	Standard
>	**In**	115	568273.2	3.6				ug/L	547487	Standard
	Sn	118	590.0	11.4	**0.0352**	0.009	25.4	ug/L	450	Standard
	Sb	123	675.3	25.4	**0.1449**	0.035	24.0	ug/L	105	Standard
	Ba	135	11427.3	2.3	**5.9431**	0.086	1.4	ug/L	111	Standard
	Ce	140	1858.4	6.1				ug/L	107	Standard
>	**Tb**	159	912569.9	2.0				ug/L	890342	Standard
	Ho	165	186.7	6.7				ug/L	10	Standard
	Tl	203	338.7	64.0	**0.0413**	0.028	67.6	ug/L	19	Standard
	Tl	205	318.3	54.7	**0.0526**	0.027	52.2	ug/L	17	Standard
	Pb	206	619.3	45.9	**0.0728**	0.056	77.2	ug/L	247	Standard
	Pb	207	529.7	52.6	**0.0680**	0.061	89.6	ug/L	215	Standard
	Pb	208	1946.1	35.0	**0.0582**	0.039	67.2	ug/L	770	Standard
	U	238	472.3	32.1	**0.0784**	0.024	31.1	ug/L	13	Standard
>	**Bi**	209	499634.8	2.9				ug/L	503143	Standard

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Na	23	3.3	86.6	**35.1997**	30.527	86.7	mg/L	2	Standard
Mg	24	58866.0	4.8	**76.3418**	1.277	1.7	mg/L	35	Standard
K	39	203.3	22.3	**0.8502**	0.245	28.9	mg/L	25	Standard
Ca	43	263.3	12.6	**43.7969**	6.786	15.5	mg/L	38	Standard
Fe	54	172.6	3.6	**0.0183**	0.008	42.0	mg/L	126	Standard
Fe	57	565.0	6.2	**1.0188**	0.198	19.5	mg/L	245	Standard
> **Sc-1**	45	26531.6	3.2				mg/L	25066	Standard
Cl	35	528870.2	4.8				ug/L	125857	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	18100.9	11.2				ug/L	1350	Standard
P	31	22234.7	5.0				ug/L	18393	Standard
S	34	4849.1	0.7				ug/L	3739	Standard
Sr	88	275.0	7.3				ug/L	78	Standard
C	12	93.3	16.4				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	288.4	8.8				mg/L	2	Standard
Ho-1	165	186.7	6.7				mg/L	10	Standard
Er	166	103.3	22.3				mg/L	23	Standard
I	127	6759.8	6.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.331	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.383	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606086201 WG573111-02
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.797
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.303
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606086201 WG573111-02
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Method 6020 - Summary Report

Sample ID: L1606086201DP WG573111-08
Sample Date/Time: Tuesday, June 21, 2016 18:12:42
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77315.1	0.8				ug/L	60176	Standard
	Be	9	36.7	55.1	**0.0306**	0.022	70.8	ug/L	5	Standard
	Al	27	17227028.4	3.4	**102.0589**	2.703	2.6	ug/L	832	Standard
	Sc	45	26312.9	5.4				ug/L	25066	Standard
	Ti	47	92.7	6.6	**0.2625**	0.044	16.8	ug/L	38	Standard
	V	51	1770.2	7.4	**0.1214**	0.033	27.3	ug/L	974	Standard
	Cr	52	10246.5	1.8	**0.6348**	0.045	7.2	ug/L	5792	Standard
	Cr	53	1068.4	4.2	**0.8651**	0.006	0.7	ug/L	347	Standard
	Mn	55	134734.3	3.6	**20.3882**	0.086	0.4	ug/L	1164	Standard
	Co	59	2977.6	2.6	**0.4294**	0.015	3.5	ug/L	303	Standard
	Ni	60	4134.6	6.2	**2.0561**	0.052	2.5	ug/L	291	Standard
	Cu	65	2902.9	3.4	**1.4903**	0.037	2.5	ug/L	173	Standard
	Zn	66	4166.9	2.6	**3.6969**	0.093	2.5	ug/L	130	Standard
>	Ge	72	502766.3	3.9				ug/L	491724	Standard
	As	75	231.7	9.5	**0.2502**	0.026	10.3	ug/L	-25	Standard
	Se	82	82.9	12.5	**0.6918**	0.104	15.0	ug/L	12	Standard
	Se-1	77	92.7	5.9	**0.6360**	0.126	19.8	ug/L	57	Standard
>	Ga	71	116.7	13.1				mg/L	148	Standard
	Rb	85	10200.1	2.2				ug/L	18	Standard
	Y	89	445666.9	2.4				ug/L	401845	Standard
>	Rh	103	83.3	15.1				ug/L	10	Standard
	Mo	98	109.3	3.3	**0.0379**	0.001	2.8	ug/L	12	Standard
	Ag	107	78.3	5.3	**-0.0030**	0.001	22.0	ug/L	98	Standard
	Cd	111	32.1	9.6	**0.0112**	0.002	16.1	mg/L	11	Standard
	Cd	114	61.4	31.5	**0.0081**	0.004	52.2	ug/L	21	Standard
>	In	115	588323.0	2.0				ug/L	547487	Standard
	Sn	118	506.7	15.4	**0.0167**	0.013	77.1	ug/L	450	Standard
	Sb	123	391.2	12.5	**0.0783**	0.013	16.1	ug/L	105	Standard
	Ba	135	11417.0	3.2	**5.7308**	0.081	1.4	ug/L	111	Standard
	Ce	140	1880.1	4.4				ug/L	107	Standard
>	Tb	159	936011.4	2.7				ug/L	890342	Standard
	Ho	165	181.7	20.8				ug/L	10	Standard
	Tl	203	161.0	14.9	**0.0175**	0.004	20.0	ug/L	19	Standard
	Tl	205	160.0	27.8	**0.0266**	0.008	28.3	ug/L	17	Standard
	Pb	206	452.7	4.8	**0.0372**	0.007	18.1	ug/L	247	Standard
	Pb	207	379.3	5.9	**0.0328**	0.007	22.4	ug/L	215	Standard
	Pb	208	1520.0	3.7	**0.0310**	0.006	19.0	ug/L	770	Standard
	U	238	306.7	5.7	**0.0497**	0.003	6.7	ug/L	13	Standard
>	Bi	209	509399.4	2.7				ug/L	503143	Standard

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Na	23	3.3	86.6	**36.1951**	31.438	86.9	mg/L	2	Standard
Mg	24	59695.8	3.9	**78.1443**	2.085	2.7	mg/L	35	Standard
K	39	236.7	11.6	**1.0180**	0.191	18.8	mg/L	25	Standard
Ca	43	230.0	14.3	**37.7841**	4.654	12.3	mg/L	38	Standard
Fe	54	155.5	13.6	**0.0041**	0.017	424.3	mg/L	126	Standard
Fe	57	521.7	15.8	**0.8829**	0.414	46.9	mg/L	245	Standard
> **Sc-1**	45	26312.9	5.4				mg/L	25066	Standard
Cl	35	564291.5	2.7				ug/L	125857	Standard
Kr	83	1.0	0.0				ug/L	1	Standard
Br	81	11614.5	6.5				ug/L	1350	Standard
P	31	22116.2	5.6				ug/L	18393	Standard
S	34	4845.8	1.1				ug/L	3739	Standard
Sr	88	280.0	12.4				ug/L	78	Standard
C	12	113.3	18.4				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	262.8	27.6				mg/L	2	Standard
Ho-1	165	181.7	20.8				mg/L	10	Standard
Er	166	150.0	40.0				mg/L	23	Standard
I	127	6614.8	4.5				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.482	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.246	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.459
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.244
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606088302
Sample Date/Time: Tuesday, June 21, 2016 18:15:53
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72031.1	4.6				ug/L	60176	Standard
	Be	9	43.3	52.0	**0.0410**	0.025	59.9	ug/L	5	Standard
	Al	27	18877330.6	2.8	**120.1329**	2.878	2.4	ug/L	832	Standard
	Sc	45	26508.2	2.8				ug/L	25066	Standard
	Ti	47	1389.4	3.9	**6.9356**	0.221	3.2	ug/L	38	Standard
	V	51	10133.0	2.4	**1.5222**	0.036	2.4	ug/L	974	Standard
	Cr	52	17075.6	2.7	**1.7253**	0.058	3.4	ug/L	5792	Standard
	Cr	53	2106.8	4.1	**2.1475**	0.127	5.9	ug/L	347	Standard
	Mn	55	8659860.5	3.3	**1344.4292**	36.890	2.7	ug/L	1164	Standard
	Co	59	26955.7	4.2	**4.3488**	0.153	3.5	ug/L	303	Standard
	Ni	60	24380.9	3.0	**13.2700**	0.290	2.2	ug/L	291	Standard
	Cu	65	3102.3	3.6	**1.6250**	0.048	3.0	ug/L	173	Standard
	Zn	66	73890.8	2.7	**70.5385**	1.291	1.8	ug/L	130	Standard
>	**Ge**	72	495064.0	0.9				ug/L	491724	Standard
	As	75	7508.6	3.4	**7.1381**	0.186	2.6	ug/L	-25	Standard
	Se	82	88.8	5.6	**0.7604**	0.041	5.3	ug/L	12	Standard
	Se-1	77	104.3	8.0	**0.8163**	0.107	13.1	ug/L	57	Standard
>	**Ga**	71	1203.4	6.0				mg/L	148	Standard
	Rb	85	18631.5	4.9				ug/L	18	Standard
	Y	89	471499.9	4.5				ug/L	401845	Standard
>	**Rh**	103	68.3	23.5				ug/L	10	Standard
	Mo	98	16975.2	1.8	**6.8750**	0.095	1.4	ug/L	12	Standard
	Ag	107	124.7	8.1	**0.0052**	0.002	43.3	ug/L	98	Standard
	Cd	111	354.4	5.3	**0.1790**	0.013	7.3	mg/L	11	Standard
	Cd	114	927.6	4.1	**0.1930**	0.003	1.7	ug/L	21	Standard
>	**In**	115	562376.6	3.1				ug/L	547487	Standard
	Sn	118	4190.6	1.8	**0.7122**	0.033	4.6	ug/L	450	Standard
	Sb	123	1237.0	1.3	**0.2761**	0.009	3.1	ug/L	105	Standard
	Ba	135	323863.4	1.8	**171.7335**	2.697	1.6	ug/L	111	Standard
	Ce	140	34140.1	1.5				ug/L	107	Standard
>	**Tb**	159	897272.3	2.5				ug/L	890342	Standard
	Ho	165	3113.7	2.4				ug/L	10	Standard
	Tl	203	64.7	19.9	**0.0051**	0.002	33.0	ug/L	19	Standard
	Tl	205	68.3	15.2	**0.0121**	0.002	13.5	ug/L	17	Standard
	Pb	206	38821.3	1.4	**8.0108**	0.071	0.9	ug/L	247	Standard
	Pb	207	32359.9	2.0	**7.3434**	0.107	1.5	ug/L	215	Standard
	Pb	208	128351.5	2.3	**7.7758**	0.128	1.6	ug/L	770	Standard
	U	238	8442.7	2.9	**1.4196**	0.032	2.3	ug/L	13	Standard
>	**Bi**	209	498550.4	0.6				ug/L	503143	Standard

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Na	23	5.0	100.0	**53.3736**	52.932	99.2	mg/L	2	Standard
Mg	24	21398.5	5.6	**27.7596**	1.350	4.9	mg/L	35	Standard
K	39	1008.4	11.1	**4.6456**	0.585	12.6	mg/L	25	Standard
Ca	43	186.7	14.8	**29.4057**	4.377	14.9	mg/L	38	Standard
Fe	54	2908.8	2.8	**2.4754**	0.120	4.8	mg/L	126	Standard
Fe	57	1130.0	7.4	**3.1241**	0.310	9.9	mg/L	245	Standard
> **Sc-1**	45	26508.2	2.8				mg/L	25066	Standard
Cl	35	207996.3	4.3				ug/L	125857	Standard
Kr	83	2.7	78.1				ug/L	1	Standard
Br	81	11254.2	3.5				ug/L	1350	Standard
P	31	26543.2	2.6				ug/L	18393	Standard
S	34	4722.4	7.5				ug/L	3739	Standard
Sr	88	290.0	4.6				ug/L	78	Standard
C	12	550.0	9.1				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	4557.8	5.5				mg/L	2	Standard
Ho-1	165	3113.7	2.4				mg/L	10	Standard
Er	166	2983.6	2.5				mg/L	23	Standard
I	127	203725.5	6.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.701	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.679	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.720	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.087	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 18:19:06
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68241.8	3.0				ug/L	60176	Standard
	Be	9	42051.7	3.8	**51.6361**	0.537	1.0	ug/L	5	Standard
	Al	27	6971995.2	1.7	**46.8104**	0.719	1.5	ug/L	832	Standard
	Sc	45	24852.0	1.3				ug/L	25066	Standard
	Ti	47	20097.0	2.7	**107.8691**	2.722	2.5	ug/L	38	Standard
	V	51	307873.7	1.3	**53.6238**	0.489	0.9	ug/L	974	Standard
	Cr	52	328667.5	1.2	**52.7708**	0.685	1.3	ug/L	5792	Standard
	Cr	53	41331.3	2.5	**52.1074**	1.405	2.7	ug/L	347	Standard
	Mn	55	323878.6	1.2	**52.3860**	0.759	1.4	ug/L	1164	Standard
	Co	59	325002.9	1.5	**55.4186**	0.688	1.2	ug/L	303	Standard
	Ni	60	90037.4	0.9	**51.8053**	0.679	1.3	ug/L	291	Standard
	Cu	65	90581.0	1.5	**52.5134**	0.543	1.0	ug/L	173	Standard
	Zn	66	53001.9	0.8	**52.8632**	0.064	0.1	ug/L	130	Standard
>	Ge	72	473368.8	0.8				ug/L	491724	Standard
	As	75	53534.5	0.7	**53.0137**	0.077	0.1	ug/L	-25	Standard
	Se	82	5487.6	1.0	**55.0445**	0.192	0.3	ug/L	12	Standard
	Se-1	77	3650.1	0.8	**53.0021**	0.366	0.7	ug/L	57	Standard
>	Ga	71	215.0	9.3				mg/L	148	Standard
	Rb	85	910.0	6.2				ug/L	18	Standard
	Y	89	416501.3	1.6				ug/L	401845	Standard
>	Rh	103	51.7	20.1				ug/L	10	Standard
	Mo	98	242295.3	0.6	**98.0576**	1.644	1.7	ug/L	12	Standard
	Ag	107	299878.8	2.2	**49.4337**	1.074	2.2	ug/L	98	Standard
	Cd	111	98207.6	0.4	**50.8054**	0.675	1.3	mg/L	11	Standard
	Cd	114	240827.7	3.2	**51.1947**	0.841	1.6	ug/L	21	Standard
>	In	115	563072.6	1.7				ug/L	547487	Standard
	Sn	118	264056.2	0.9	**49.3801**	1.145	2.3	ug/L	450	Standard
	Sb	123	215333.2	1.5	**49.2924**	0.748	1.5	ug/L	105	Standard
	Ba	135	93099.8	1.2	**49.2664**	1.301	2.6	ug/L	111	Standard
	Ce	140	76.7	30.8				ug/L	107	Standard
>	Tb	159	879908.2	1.7				ug/L	890342	Standard
	Ho	165	3.3	173.2				ug/L	10	Standard
	Tl	203	383264.6	0.5	**51.4037**	0.933	1.8	ug/L	19	Standard
	Tl	205	335822.7	2.8	**54.8792**	0.706	1.3	ug/L	17	Standard
	Pb	206	245508.2	1.1	**51.1598**	0.909	1.8	ug/L	247	Standard
	Pb	207	222387.2	0.6	**50.9816**	0.958	1.9	ug/L	215	Standard
	Pb	208	870389.8	0.4	**53.3024**	1.410	2.6	ug/L	770	Standard
	U	238	316954.9	1.4	**53.5444**	1.099	2.1	ug/L	13	Standard
>	Bi	209	496674.2	2.3				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3777.1	3.0	**5.1944**	0.100	1.9	mg/L	35	Standard
K	39	940.0	7.7	**4.6131**	0.347	7.5	mg/L	25	Standard
Ca	43	46.7	27.0	**3.9480**	2.492	63.1	mg/L	38	Standard
Fe	54	5268.6	7.7	**4.9055**	0.368	7.5	mg/L	126	Standard
Fe	57	1598.4	5.2	**5.2665**	0.320	6.1	mg/L	245	Standard
> **Sc-1**	45	24852.0	1.3				mg/L	25066	Standard
Cl	35	163793.4	1.6				ug/L	125857	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	1850.1	19.4				ug/L	1350	Standard
P	31	22236.3	2.1				ug/L	18393	Standard
S	34	4902.5	1.0				ug/L	3739	Standard
Sr	88	91.7	24.6				ug/L	78	Standard
C	12	70.0	0.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	18.9	49.2				mg/L	2	Standard
Ho-1	165	3.3	173.2				mg/L	10	Standard
Er	166	23.3	65.5				mg/L	23	Standard
I	127	5351.1	56.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	103.272		
Al	27	93.621		
Sc	45			
Ti	47	107.869		
V	51	107.248		
Cr	52	105.542		
Cr	53			
Mn	55	104.772		
Co	59	110.837		
Ni	60	103.611		
Cu	65	105.027		
Zn	66	105.726		
> Ge	72		96.267	
As	75	106.027		
Se	82	110.089		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.058		
Ag	107	98.867		
Cd	111	101.611		
Cd	114			
> In	115		102.847	
Sn	118	98.760		
Sb	123	98.585		
Ba	135	98.533		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	102.807		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.605		
U	238	107.089		
> Bi	209		98.714	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Co	59	
QC Std 6	Se	82	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 18:22:18
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67175.3	1.0				ug/L	60176	Standard
	Be	9	20.0	25.0	**0.0159**	0.006	38.1	ug/L	5	Standard
	Al	27	2591.9	21.1	**0.0093**	0.004	40.6	ug/L	832	Standard
	Sc	45	25002.3	1.9				ug/L	25066	Standard
	Ti	47	26.3	8.8	**-0.0730**	0.015	21.1	ug/L	38	Standard
	V	51	1024.0	6.3	**-0.0008**	0.011	1434.1	ug/L	974	Standard
	Cr	52	6027.2	0.6	**-0.0071**	0.031	440.7	ug/L	5792	Standard
	Cr	53	448.3	17.4	**0.1301**	0.110	84.6	ug/L	347	Standard
	Mn	55	1540.7	13.4	**0.0229**	0.038	165.9	ug/L	1164	Standard
	Co	59	299.7	11.6	**-0.0007**	0.007	1063.7	ug/L	303	Standard
	Ni	60	216.7	14.8	**-0.0720**	0.016	21.7	ug/L	291	Standard
	Cu	65	161.7	10.9	**-0.0086**	0.009	106.2	ug/L	173	Standard
	Zn	66	175.3	6.1	**-0.0687**	0.005	7.4	ug/L	130	Standard
>	**Ge**	72	498606.4	3.0				ug/L	491724	Standard
	As	75	-26.7	98.4	**0.0088**	0.025	280.9	ug/L	-25	Standard
	Se	82	16.5	23.4	**0.0653**	0.041	63.0	ug/L	12	Standard
	Se-1	77	55.0	16.7	**0.1158**	0.104	89.8	ug/L	57	Standard
>	**Ga**	71	146.7	26.5				mg/L	148	Standard
	Rb	85	28.3	62.0				ug/L	18	Standard
	Y	89	424941.7	0.7				ug/L	401845	Standard
>	**Rh**	103	51.7	27.9				ug/L	10	Standard
	Mo	98	218.0	16.8	**0.0834**	0.015	17.7	ug/L	12	Standard
	Ag	107	103.3	10.3	**0.0016**	0.002	104.0	ug/L	98	Standard
	Cd	111	15.6	39.7	**0.0033**	0.003	97.5	mg/L	11	Standard
	Cd	114	35.3	50.3	**0.0030**	0.004	124.6	ug/L	21	Standard
>	**In**	115	565960.7	1.0				ug/L	547487	Standard
	Sn	118	921.7	38.3	**0.0980**	0.067	68.7	ug/L	450	Standard
	Sb	123	408.0	24.4	**0.0853**	0.023	26.8	ug/L	105	Standard
	Ba	135	123.7	12.1	**0.0096**	0.008	87.6	ug/L	111	Standard
	Ce	140	18.3	63.0				ug/L	107	Standard
>	**Tb**	159	883902.4	1.6				ug/L	890342	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	63.7	25.9	**0.0050**	0.002	46.4	ug/L	19	Standard
	Tl	205	55.0	39.6	**0.0100**	0.004	36.9	ug/L	17	Standard
	Pb	206	285.3	5.4	**0.0043**	0.004	96.3	ug/L	247	Standard
	Pb	207	231.7	13.5	**0.0008**	0.008	949.4	ug/L	215	Standard
	Pb	208	973.0	3.2	**-0.0006**	0.002	406.9	ug/L	770	Standard
	U	238	35.7	23.5	**0.0052**	0.002	29.1	ug/L	13	Standard
>	**Bi**	209	499145.6	2.0				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.6835**	32.352	173.2	mg/L	2	Standard
Mg	24	31.7	50.8	**0.0049**	0.023	465.6	mg/L	35	Standard
K	39	15.0	33.3	**-0.0372**	0.026	69.8	mg/L	25	Standard
Ca	43	28.3	20.4	**0.2868**	1.247	434.6	mg/L	38	Standard
Fe	54	104.1	41.5	**-0.0380**	0.040	104.4	mg/L	126	Standard
Fe	57	216.7	17.3	**-0.2352**	0.133	56.4	mg/L	245	Standard
> **Sc-1**	45	25002.3	1.9				mg/L	25066	Standard
Cl	35	165048.8	0.9				ug/L	125857	Standard
Kr	83	2.7	21.7				ug/L	1	Standard
Br	81	1623.4	12.1				ug/L	1350	Standard
P	31	22124.5	3.3				ug/L	18393	Standard
S	34	4804.1	3.4				ug/L	3739	Standard
Sr	88	68.3	27.7				ug/L	78	Standard
C	12	66.7	31.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.0	193.9				mg/L	2	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	1761.8	7.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.400	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.374	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.206	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606089601
Sample Date/Time: Tuesday, June 21, 2016 18:25:31
Number of Replicates: 3
Autosampler Position: 346
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70103.6	3.0				ug/L	60176	Standard
	Be	9	30.0	16.7	**0.0268**	0.005	18.6	ug/L	5	Standard
	Al	27	3685234.3	1.1	**24.0854**	0.545	2.3	ug/L	832	Standard
	Sc	45	27947.4	2.4				ug/L	25066	Standard
	Ti	47	382.0	70.3	**1.6605**	1.282	77.2	ug/L	38	Standard
	V	51	1685.0	2.5	**0.0990**	0.013	12.7	ug/L	974	Standard
	Cr	52	9250.2	0.4	**0.4417**	0.034	7.7	ug/L	5792	Standard
	Cr	53	1403.4	4.4	**1.2193**	0.042	3.4	ug/L	347	Standard
	Mn	55	19012124.1	0.6	**2827.7756**	74.302	2.6	ug/L	1164	Standard
	Co	59	222392.0	0.8	**34.7165**	1.037	3.0	ug/L	303	Standard
	Ni	60	2226.5	4.2	**0.9867**	0.048	4.9	ug/L	291	Standard
	Cu	65	381.0	0.5	**0.1050**	0.004	3.5	ug/L	173	Standard
	Zn	66	3054.6	2.1	**2.5666**	0.027	1.1	ug/L	130	Standard
>	**Ge**	72	517022.9	2.2				ug/L	491724	Standard
	As	75	3484.3	1.7	**3.1917**	0.073	2.3	ug/L	-25	Standard
	Se	82	132.5	2.0	**1.1265**	0.041	3.6	ug/L	12	Standard
	Se-1	77	106.3	7.5	**0.7815**	0.106	13.5	ug/L	57	Standard
>	**Ga**	71	960.0	20.1				mg/L	148	Standard
	Rb	85	23004.1	0.8				ug/L	18	Standard
	Y	89	437717.7	0.3				ug/L	401845	Standard
>	**Rh**	103	45.0	38.5				ug/L	10	Standard
	Mo	98	134.7	12.0	**0.0478**	0.006	13.5	ug/L	12	Standard
	Ag	107	109.0	10.4	**0.0018**	0.002	91.3	ug/L	98	Standard
	Cd	111	14.4	47.1	**0.0025**	0.003	137.0	mg/L	11	Standard
	Cd	114	41.9	23.5	**0.0041**	0.002	49.9	ug/L	21	Standard
>	**In**	115	587619.1	1.4				ug/L	547487	Standard
	Sn	118	860.0	5.8	**0.0802**	0.008	9.4	ug/L	450	Standard
	Sb	123	233.8	26.5	**0.0436**	0.013	29.9	ug/L	105	Standard
	Ba	135	48272.8	1.0	**24.4439**	0.117	0.5	ug/L	111	Standard
	Ce	140	18765.0	11.4				ug/L	107	Standard
>	**Tb**	159	938001.0	0.8				ug/L	890342	Standard
	Ho	165	298.3	19.3				ug/L	10	Standard
	Tl	203	150.3	4.3	**0.0152**	0.001	6.0	ug/L	19	Standard
	Tl	205	115.0	15.7	**0.0185**	0.003	14.4	ug/L	17	Standard
	Pb	206	534.3	3.6	**0.0487**	0.004	8.5	ug/L	247	Standard
	Pb	207	488.7	1.3	**0.0521**	0.002	4.0	ug/L	215	Standard
	Pb	208	1952.4	0.5	**0.0513**	0.000	0.7	ug/L	770	Standard
	U	238	255.0	5.1	**0.0392**	0.002	5.2	ug/L	13	Standard
>	**Bi**	209	534128.2	0.7				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	7298.4	1.4	**8.9592**	0.320	3.6	mg/L	35	Standard
K	39	96.7	31.6	**0.3179**	0.126	39.6	mg/L	25	Standard
Ca	43	46.7	16.4	**2.9434**	1.521	51.7	mg/L	38	Standard
Fe	54	23061.8	3.5	**19.5103**	1.160	5.9	mg/L	126	Standard
Fe	57	5869.5	4.4	**19.6834**	1.282	6.5	mg/L	245	Standard
> **Sc-1**	45	27947.4	2.4				mg/L	25066	Standard
Cl	35	163080.4	1.3				ug/L	125857	Standard
Kr	83	4.3	48.0				ug/L	1	Standard
Br	81	26733.6	2.6				ug/L	1350	Standard
P	31	26311.2	1.3				ug/L	18393	Standard
S	34	4997.5	0.8				ug/L	3739	Standard
Sr	88	113.3	12.7				ug/L	78	Standard
C	12	230.0	4.3				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	393.7	7.8				mg/L	2	Standard
Ho-1	165	298.3	19.3				mg/L	10	Standard
Er	166	270.0	19.2				mg/L	23	Standard
I	127	1056071.3	10.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.498	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.145	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.330
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.158
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606089602
Sample Date/Time: Tuesday, June 21, 2016 18:28:42
Number of Replicates: 3
Autosampler Position: 347
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66890.7	2.2				ug/L	60176	Standard
	Be	9	23.3	24.7	**0.0201**	0.007	32.5	ug/L	5	Standard
	Al	27	149805.7	3.0	**1.0175**	0.011	1.1	ug/L	832	Standard
	Sc	45	26154.2	3.3				ug/L	25066	Standard
	Ti	47	179.3	10.3	**0.7022**	0.105	15.0	ug/L	38	Standard
	V	51	1401.7	5.1	**0.0601**	0.011	18.8	ug/L	974	Standard
	Cr	52	10512.0	0.7	**0.6764**	0.028	4.1	ug/L	5792	Standard
	Cr	53	1416.7	9.0	**1.2841**	0.157	12.2	ug/L	347	Standard
	Mn	55	10409.3	6.2	**1.3787**	0.114	8.3	ug/L	1164	Standard
	Co	59	540.0	3.3	**0.0375**	0.003	8.6	ug/L	303	Standard
	Ni	60	844.0	0.2	**0.2688**	0.005	1.8	ug/L	291	Standard
	Cu	65	296.7	5.6	**0.0648**	0.011	17.1	ug/L	173	Standard
	Zn	66	1902.8	4.1	**1.5621**	0.096	6.1	ug/L	130	Standard
>	**Ge**	72	502257.1	1.3				ug/L	491724	Standard
	As	75	8.2	485.9	**0.0416**	0.037	88.7	ug/L	-25	Standard
	Se	82	33.9	33.4	**0.2274**	0.104	45.7	ug/L	12	Standard
	Se-1	77	70.7	24.9	**0.3292**	0.242	73.5	ug/L	57	Standard
>	**Ga**	71	326.7	26.3				mg/L	148	Standard
	Rb	85	8215.6	2.7				ug/L	18	Standard
	Y	89	444333.1	2.2				ug/L	401845	Standard
>	**Rh**	103	31.7	48.2				ug/L	10	Standard
	Mo	98	46.8	15.4	**0.0138**	0.002	17.7	ug/L	12	Standard
	Ag	107	73.3	4.4	**-0.0037**	0.000	8.2	ug/L	98	Standard
	Cd	111	8.2	45.8	**-0.0006**	0.002	305.8	mg/L	11	Standard
	Cd	114	19.1	24.5	**-0.0005**	0.001	199.0	ug/L	21	Standard
>	**In**	115	583126.7	2.0				ug/L	547487	Standard
	Sn	118	593.3	2.7	**0.0333**	0.003	10.0	ug/L	450	Standard
	Sb	123	144.2	19.6	**0.0243**	0.007	28.0	ug/L	105	Standard
	Ba	135	7469.5	3.8	**3.7635**	0.074	2.0	ug/L	111	Standard
	Ce	140	1718.4	6.1				ug/L	107	Standard
>	**Tb**	159	899867.4	0.7				ug/L	890342	Standard
	Ho	165	30.0	66.7				ug/L	10	Standard
	Tl	203	67.7	10.9	**0.0053**	0.001	16.4	ug/L	19	Standard
	Tl	205	71.7	22.4	**0.0124**	0.003	20.6	ug/L	17	Standard
	Pb	206	312.7	6.7	**0.0088**	0.004	47.7	ug/L	247	Standard
	Pb	207	252.0	2.7	**0.0044**	0.002	38.0	ug/L	215	Standard
	Pb	208	1132.0	3.9	**0.0079**	0.002	19.1	ug/L	770	Standard
	U	238	82.7	5.0	**0.0128**	0.001	6.4	ug/L	13	Standard
>	**Bi**	209	508030.6	1.7				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.2590**	31.617	173.2	mg/L	2	Standard
Mg	24	2870.3	3.9	**3.7404**	0.081	2.2	mg/L	35	Standard
K	39	155.0	5.6	**0.6292**	0.059	9.4	mg/L	25	Standard
Ca	43	26.7	28.6	**-0.2827**	1.489	526.7	mg/L	38	Standard
Fe	54	167.0	2.0	**0.0156**	0.008	50.9	mg/L	126	Standard
Fe	57	218.3	14.7	**-0.2671**	0.094	35.1	mg/L	245	Standard
> **Sc-1**	45	26154.2	3.3				mg/L	25066	Standard
Cl	35	154406.3	2.1				ug/L	125857	Standard
Kr	83	2.7	21.7				ug/L	1	Standard
Br	81	5824.5	3.9				ug/L	1350	Standard
P	31	26713.5	1.6				ug/L	18393	Standard
S	34	4210.6	7.3				ug/L	3739	Standard
Sr	88	103.3	42.3				ug/L	78	Standard
C	12	70.0	28.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	71.7	36.0				mg/L	2	Standard
Ho-1	165	30.0	66.7				mg/L	10	Standard
Er	166	33.3	75.5				mg/L	23	Standard
I	127	32674.7	51.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.159	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.142	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.510
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.971
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606089603
Sample Date/Time: Tuesday, June 21, 2016 18:31:54
Number of Replicates: 3
Autosampler Position: 348
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70073.3	1.0				ug/L	60176	Standard
	Be	9	81.7	39.4	**0.0886**	0.038	43.1	ug/L	5	Standard
	Al	27	1228150.4	2.6	**8.0209**	0.174	2.2	ug/L	832	Standard
	Sc	45	26367.9	1.0				ug/L	25066	Standard
	Ti	47	312.7	10.6	**1.3625**	0.172	12.6	ug/L	38	Standard
	V	51	2417.3	6.1	**0.2237**	0.026	11.6	ug/L	974	Standard
	Cr	52	10006.0	1.3	**0.5837**	0.012	2.0	ug/L	5792	Standard
	Cr	53	1740.1	6.8	**1.6504**	0.119	7.2	ug/L	347	Standard
	Mn	55	87073.6	2.8	**12.9889**	0.479	3.7	ug/L	1164	Standard
	Co	59	5750.4	2.7	**0.8671**	0.033	3.8	ug/L	303	Standard
	Ni	60	2238.5	3.1	**1.0160**	0.026	2.5	ug/L	291	Standard
	Cu	65	1573.1	4.2	**0.7551**	0.029	3.8	ug/L	173	Standard
	Zn	66	4274.9	3.8	**3.7627**	0.142	3.8	ug/L	130	Standard
>	**Ge**	72	507060.9	1.0				ug/L	491724	Standard
	As	75	114.4	32.4	**0.1397**	0.035	24.9	ug/L	-25	Standard
	Se	82	42.1	12.0	**0.3018**	0.050	16.5	ug/L	12	Standard
	Se-1	77	82.3	10.6	**0.4808**	0.128	26.6	ug/L	57	Standard
>	**Ga**	71	333.3	11.3				mg/L	148	Standard
	Rb	85	29852.7	2.6				ug/L	18	Standard
	Y	89	429423.7	0.4				ug/L	401845	Standard
>	**Rh**	103	41.7	6.9				ug/L	10	Standard
	Mo	98	55.7	3.8	**0.0175**	0.001	6.0	ug/L	12	Standard
	Ag	107	93.7	1.6	**-0.0003**	0.000	76.9	ug/L	98	Standard
	Cd	111	26.6	32.0	**0.0087**	0.004	50.4	mg/L	11	Standard
	Cd	114	73.0	10.0	**0.0107**	0.001	13.2	ug/L	21	Standard
>	**In**	115	577865.9	1.0				ug/L	547487	Standard
	Sn	118	510.0	18.7	**0.0191**	0.018	95.2	ug/L	450	Standard
	Sb	123	155.5	12.6	**0.0270**	0.004	15.1	ug/L	105	Standard
	Ba	135	59410.3	1.7	**30.6085**	0.771	2.5	ug/L	111	Standard
	Ce	140	19626.0	1.7				ug/L	107	Standard
>	**Tb**	159	917847.8	1.6				ug/L	890342	Standard
	Ho	165	385.0	3.4				ug/L	10	Standard
	Tl	203	165.0	14.8	**0.0175**	0.003	17.6	ug/L	19	Standard
	Tl	205	135.0	9.8	**0.0220**	0.002	9.0	ug/L	17	Standard
	Pb	206	734.4	1.2	**0.0910**	0.002	2.3	ug/L	247	Standard
	Pb	207	620.7	4.4	**0.0836**	0.007	8.5	ug/L	215	Standard
	Pb	208	2430.4	2.1	**0.0821**	0.004	5.1	ug/L	770	Standard
	U	238	108.0	7.6	**0.0166**	0.001	8.0	ug/L	13	Standard
>	**Bi**	209	520995.4	0.8				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.6640**	30.586	173.2	mg/L	2	Standard
Mg	24	2681.9	2.8	**3.4633**	0.064	1.8	mg/L	35	Standard
K	39	326.7	9.2	**1.4367**	0.158	11.0	mg/L	25	Standard
Ca	43	23.3	24.7	**-0.9469**	1.132	119.5	mg/L	38	Standard
Fe	54	1418.7	4.6	**1.1433**	0.057	5.0	mg/L	126	Standard
Fe	57	535.0	14.5	**0.9148**	0.284	31.1	mg/L	245	Standard
> **Sc-1**	45	26367.9	1.0				mg/L	25066	Standard
Cl	35	152857.2	1.0				ug/L	125857	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	6364.7	4.2				ug/L	1350	Standard
P	31	24361.2	2.7				ug/L	18393	Standard
S	34	4130.6	1.9				ug/L	3739	Standard
Sr	88	91.7	13.7				ug/L	78	Standard
C	12	86.7	17.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	587.2	3.8				mg/L	2	Standard
Ho-1	165	385.0	3.4				mg/L	10	Standard
Er	166	406.7	11.4				mg/L	23	Standard
I	127	49898.9	6.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.447	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.119	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.549
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.548
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606089604
Sample Date/Time: Tuesday, June 21, 2016 18:35:05
Number of Replicates: 3
Autosampler Position: 349
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68337.1	1.8				ug/L	60176	Standard
	Be	9	20.0	50.0	**0.0155**	0.012	78.6	ug/L	5	Standard
	Al	27	4276567.2	0.3	**28.6693**	0.604	2.1	ug/L	832	Standard
	Sc	45	26610.0	1.8				ug/L	25066	Standard
	Ti	47	192.3	15.6	**0.7599**	0.169	22.2	ug/L	38	Standard
	V	51	1621.9	5.7	**0.0939**	0.019	19.8	ug/L	974	Standard
	Cr	52	9092.7	3.3	**0.4438**	0.038	8.7	ug/L	5792	Standard
	Cr	53	1545.1	7.7	**1.4179**	0.111	7.8	ug/L	347	Standard
	Mn	55	17973806.3	0.6	**2724.7615**	75.997	2.8	ug/L	1164	Standard
	Co	59	227528.7	0.7	**36.1992**	0.876	2.4	ug/L	303	Standard
	Ni	60	2730.6	3.7	**1.2807**	0.043	3.3	ug/L	291	Standard
	Cu	65	354.7	4.1	**0.0946**	0.010	10.1	ug/L	173	Standard
	Zn	66	3333.7	3.1	**2.8812**	0.076	2.6	ug/L	130	Standard
>	**Ge**	72	507285.0	2.2				ug/L	491724	Standard
	As	75	2855.6	3.6	**2.6720**	0.119	4.5	ug/L	-25	Standard
	Se	82	109.9	10.6	**0.9366**	0.098	10.5	ug/L	12	Standard
	Se-1	77	112.3	4.4	**0.8920**	0.086	9.6	ug/L	57	Standard
>	**Ga**	71	996.7	5.1				mg/L	148	Standard
	Rb	85	22107.8	1.5				ug/L	18	Standard
	Y	89	431397.8	1.6				ug/L	401845	Standard
>	**Rh**	103	48.3	74.8				ug/L	10	Standard
	Mo	98	71.9	10.1	**0.0241**	0.003	12.0	ug/L	12	Standard
	Ag	107	78.3	8.7	**-0.0027**	0.001	37.5	ug/L	98	Standard
	Cd	111	9.9	26.7	**0.0003**	0.001	431.1	mg/L	11	Standard
	Cd	114	28.2	29.3	**0.0014**	0.002	118.5	ug/L	21	Standard
>	**In**	115	573974.7	0.6				ug/L	547487	Standard
	Sn	118	751.7	10.6	**0.0641**	0.015	23.9	ug/L	450	Standard
	Sb	123	139.4	12.3	**0.0237**	0.004	16.5	ug/L	105	Standard
	Ba	135	41452.3	0.6	**21.4826**	0.241	1.1	ug/L	111	Standard
	Ce	140	20226.9	8.5				ug/L	107	Standard
>	**Tb**	159	913197.4	0.8				ug/L	890342	Standard
	Ho	165	323.3	19.1				ug/L	10	Standard
	Tl	203	108.7	8.7	**0.0105**	0.001	13.3	ug/L	19	Standard
	Tl	205	98.3	5.9	**0.0165**	0.001	6.6	ug/L	17	Standard
	Pb	206	497.3	2.2	**0.0452**	0.002	5.4	ug/L	247	Standard
	Pb	207	457.7	4.4	**0.0492**	0.003	6.7	ug/L	215	Standard
	Pb	208	1899.7	0.7	**0.0525**	0.001	2.6	ug/L	770	Standard
	U	238	173.0	11.0	**0.0274**	0.003	12.4	ug/L	13	Standard
>	**Bi**	209	514279.4	1.2				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.3614**	30.062	173.2	mg/L	2	Standard
Mg	24	6924.9	3.0	**8.9278**	0.424	4.8	mg/L	35	Standard
K	39	88.3	28.5	**0.3038**	0.126	41.5	mg/L	25	Standard
Ca	43	50.0	26.5	**3.9407**	2.346	59.5	mg/L	38	Standard
Fe	54	22062.2	6.3	**19.5992**	1.505	7.7	mg/L	126	Standard
Fe	57	5569.4	4.3	**19.5983**	0.911	4.6	mg/L	245	Standard
> **Sc-1**	45	26610.0	1.8				mg/L	25066	Standard
Cl	35	158607.9	0.7				ug/L	125857	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	25608.3	1.9				ug/L	1350	Standard
P	31	25134.2	0.8				ug/L	18393	Standard
S	34	4804.1	1.5				ug/L	3739	Standard
Sr	88	91.7	45.7				ug/L	78	Standard
C	12	170.0	11.8				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	416.4	11.7				mg/L	2	Standard
Ho-1	165	323.3	19.1				mg/L	10	Standard
Er	166	283.3	8.9				mg/L	23	Standard
I	127	1043280.7	9.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.562	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.165	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.838
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.213
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606089605
Sample Date/Time: Tuesday, June 21, 2016 18:38:17
Number of Replicates: 3
Autosampler Position: 350
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67501.7	0.2				ug/L	60176	Standard
	Be	9	70.0	12.4	**0.0779**	0.011	14.0	ug/L	5	Standard
	Al	27	1172906.0	1.5	**7.9523**	0.131	1.6	ug/L	832	Standard
	Sc	45	26443.1	2.2				ug/L	25066	Standard
	Ti	47	221.7	20.6	**0.9153**	0.226	24.7	ug/L	38	Standard
	V	51	1454.3	19.9	**0.0686**	0.046	67.3	ug/L	974	Standard
	Cr	52	9092.7	2.6	**0.4577**	0.038	8.3	ug/L	5792	Standard
	Cr	53	1685.1	8.0	**1.6053**	0.165	10.3	ug/L	347	Standard
	Mn	55	65030.3	1.6	**9.7392**	0.204	2.1	ug/L	1164	Standard
	Co	59	5197.2	1.5	**0.7866**	0.010	1.3	ug/L	303	Standard
	Ni	60	1995.5	3.6	**0.8953**	0.033	3.7	ug/L	291	Standard
	Cu	65	1224.4	4.2	**0.5725**	0.026	4.5	ug/L	173	Standard
	Zn	66	3995.9	1.1	**3.5378**	0.062	1.7	ug/L	130	Standard
>	**Ge**	72	502248.6	0.7				ug/L	491724	Standard
	As	75	42.4	33.0	**0.0736**	0.013	18.2	ug/L	-25	Standard
	Se	82	42.1	17.3	**0.3052**	0.067	21.9	ug/L	12	Standard
	Se-1	77	99.7	4.9	**0.7312**	0.071	9.7	ug/L	57	Standard
>	**Ga**	71	340.0	25.1				mg/L	148	Standard
	Rb	85	28431.7	1.0				ug/L	18	Standard
	Y	89	432391.4	0.5				ug/L	401845	Standard
>	**Rh**	103	25.0	0.0				ug/L	10	Standard
	Mo	98	25.1	12.7	**0.0054**	0.001	24.9	ug/L	12	Standard
	Ag	107	84.0	10.6	**-0.0020**	0.001	71.0	ug/L	98	Standard
	Cd	111	29.3	29.0	**0.0099**	0.004	41.4	mg/L	11	Standard
	Cd	114	82.1	22.2	**0.0125**	0.004	31.8	ug/L	21	Standard
>	**In**	115	582868.3	1.2				ug/L	547487	Standard
	Sn	118	541.7	7.4	**0.0239**	0.006	27.0	ug/L	450	Standard
	Sb	123	106.5	7.0	**0.0159**	0.002	12.1	ug/L	105	Standard
	Ba	135	57467.5	1.5	**29.3464**	0.109	0.4	ug/L	111	Standard
	Ce	140	10703.9	25.2				ug/L	107	Standard
>	**Tb**	159	910811.6	2.1				ug/L	890342	Standard
	Ho	165	225.0	13.5				ug/L	10	Standard
	Tl	203	137.0	7.6	**0.0141**	0.001	9.3	ug/L	19	Standard
	Tl	205	136.7	14.8	**0.0225**	0.003	13.7	ug/L	17	Standard
	Pb	206	419.0	1.3	**0.0293**	0.002	5.4	ug/L	247	Standard
	Pb	207	358.0	1.7	**0.0271**	0.002	6.9	ug/L	215	Standard
	Pb	208	1368.0	1.1	**0.0209**	0.001	6.4	ug/L	770	Standard
	U	238	55.7	17.4	**0.0082**	0.002	18.6	ug/L	13	Standard
>	**Bi**	209	515104.9	0.7				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	2638.6	3.2	**3.3993**	0.161	4.7	mg/L	35	Standard
K	39	276.7	19.3	**1.1956**	0.256	21.4	mg/L	25	Standard
Ca	43	21.7	48.0	**-1.2810**	1.922	150.1	mg/L	38	Standard
Fe	54	612.6	5.0	**0.4150**	0.036	8.6	mg/L	126	Standard
Fe	57	326.7	24.2	**0.1354**	0.321	237.0	mg/L	245	Standard
> **Sc-1**	45	26443.1	2.2				mg/L	25066	Standard
Cl	35	151770.4	0.9				ug/L	125857	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	6438.0	7.0				ug/L	1350	Standard
P	31	24865.4	2.6				ug/L	18393	Standard
S	34	4355.6	4.7				ug/L	3739	Standard
Sr	88	85.0	10.2				ug/L	78	Standard
C	12	100.0	20.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	393.3	8.6				mg/L	2	Standard
Ho-1	165	225.0	13.5				mg/L	10	Standard
Er	166	210.0	16.5				mg/L	23	Standard
I	127	49125.0	32.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.174	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.140	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.463
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.377
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606089607
Sample Date/Time: Tuesday, June 21, 2016 18:41:28
Number of Replicates: 3
Autosampler Position: 351
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64582.3	0.3				ug/L	60176	Standard
	Be	9	10.0	50.0	**0.0040**	0.007	164.6	ug/L	5	Standard
	Al	27	17276.5	1.9	**0.1142**	0.003	2.4	ug/L	832	Standard
	Sc	45	25347.9	2.5				ug/L	25066	Standard
	Ti	47	28.3	10.8	**-0.0659**	0.014	21.5	ug/L	38	Standard
	V	51	1082.8	8.0	**0.0054**	0.014	253.7	ug/L	974	Standard
	Cr	52	8423.3	1.6	**0.3388**	0.029	8.5	ug/L	5792	Standard
	Cr	53	728.4	2.2	**0.4488**	0.025	5.7	ug/L	347	Standard
	Mn	55	3248.4	11.3	**0.2760**	0.059	21.5	ug/L	1164	Standard
	Co	59	268.3	3.6	**-0.0067**	0.002	28.2	ug/L	303	Standard
	Ni	60	364.0	1.4	**0.0051**	0.004	75.7	ug/L	291	Standard
	Cu	65	796.4	1.2	**0.3329**	0.002	0.5	ug/L	173	Standard
	Zn	66	1386.7	3.7	**1.0581**	0.053	5.0	ug/L	130	Standard
>	**Ge**	72	508475.6	0.8				ug/L	491724	Standard
	As	75	-61.1	19.7	**-0.0224**	0.011	51.1	ug/L	-25	Standard
	Se	82	17.3	24.6	**0.0693**	0.041	59.1	ug/L	12	Standard
	Se-1	77	55.3	1.0	**0.1076**	0.014	12.8	ug/L	57	Standard
>	**Ga**	71	210.0	8.2				mg/L	148	Standard
	Rb	85	103.3	12.2				ug/L	18	Standard
	Y	89	417086.5	1.0				ug/L	401845	Standard
>	**Rh**	103	30.0	16.7				ug/L	10	Standard
	Mo	98	23.7	24.8	**0.0052**	0.002	45.5	ug/L	12	Standard
	Ag	107	74.0	14.1	**-0.0031**	0.002	58.5	ug/L	98	Standard
	Cd	111	3.6	42.1	**-0.0028**	0.001	28.2	mg/L	11	Standard
	Cd	114	4.0	390.1	**-0.0036**	0.003	93.1	ug/L	21	Standard
>	**In**	115	557380.8	0.4				ug/L	547487	Standard
	Sn	118	1653.4	11.4	**0.2386**	0.035	14.5	ug/L	450	Standard
	Sb	123	101.0	13.9	**0.0157**	0.003	21.0	ug/L	105	Standard
	Ba	135	275.0	12.7	**0.0916**	0.019	21.0	ug/L	111	Standard
	Ce	140	46.7	27.0				ug/L	107	Standard
>	**Tb**	159	881433.0	0.7				ug/L	890342	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	15.3	24.7	**-0.0015**	0.001	32.6	ug/L	19	Standard
	Tl	205	18.3	41.7	**0.0039**	0.001	30.9	ug/L	17	Standard
	Pb	206	260.7	4.2	**-0.0017**	0.002	99.9	ug/L	247	Standard
	Pb	207	227.7	1.7	**-0.0009**	0.001	146.9	ug/L	215	Standard
	Pb	208	867.3	2.7	**-0.0078**	0.002	22.4	ug/L	770	Standard
	U	238	4.7	24.7	**-0.0001**	0.000	377.0	ug/L	13	Standard
>	**Bi**	209	506624.8	1.1				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.8980**	30.992	173.2	mg/L	2	Standard
Mg	24	78.3	16.1	**0.0675**	0.017	24.9	mg/L	35	Standard
K	39	31.7	24.1	**0.0432**	0.033	77.4	mg/L	25	Standard
Ca	43	33.3	45.8	**1.2167**	3.121	256.5	mg/L	38	Standard
Fe	54	130.8	25.6	**-0.0136**	0.033	239.4	mg/L	126	Standard
Fe	57	228.3	19.7	**-0.1998**	0.177	88.7	mg/L	245	Standard
> **Sc-1**	45	25347.9	2.5				mg/L	25066	Standard
Cl	35	151435.7	0.5				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	1560.1	4.4				ug/L	1350	Standard
P	31	20533.9	2.0				ug/L	18393	Standard
S	34	4339.0	6.0				ug/L	3739	Standard
Sr	88	95.0	38.0				ug/L	78	Standard
C	12	73.3	34.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.4	106.9				mg/L	2	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	7471.9	14.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.323	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.407	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.807
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.692
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606091601
Sample Date/Time: Tuesday, June 21, 2016 18:44:40
Number of Replicates: 3
Autosampler Position: 352
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67190.3	1.4				ug/L	60176	Standard
	Be	9	13.3	57.3	**0.0077**	0.010	125.6	ug/L	5	Standard
	Al	27	4059977.7	0.1	**27.6783**	0.411	1.5	ug/L	832	Standard
	Sc	45	26110.8	1.4				ug/L	25066	Standard
	Ti	47	49.3	11.2	**0.0353**	0.029	83.4	ug/L	38	Standard
	V	51	1268.5	6.0	**0.0323**	0.015	45.0	ug/L	974	Standard
	Cr	52	9251.5	2.7	**0.4413**	0.053	12.0	ug/L	5792	Standard
	Cr	53	838.4	6.1	**0.5622**	0.063	11.2	ug/L	347	Standard
	Mn	55	71645.4	5.8	**10.4299**	0.498	4.8	ug/L	1164	Standard
	Co	59	506.7	18.5	**0.0297**	0.014	46.5	ug/L	303	Standard
	Ni	60	855.0	1.3	**0.2614**	0.011	4.1	ug/L	291	Standard
	Cu	65	780.7	0.8	**0.3173**	0.002	0.5	ug/L	173	Standard
	Zn	66	4612.7	3.9	**3.9937**	0.147	3.7	ug/L	130	Standard
>	**Ge**	72	517216.1	1.1				ug/L	491724	Standard
	As	75	82.9	23.2	**0.1089**	0.017	15.4	ug/L	-25	Standard
	Se	82	25.8	18.1	**0.1443**	0.045	31.4	ug/L	12	Standard
	Se-1	77	58.3	9.4	**0.1352**	0.074	54.8	ug/L	57	Standard
>	**Ga**	71	198.3	18.6				mg/L	148	Standard
	Rb	85	8013.8	3.9				ug/L	18	Standard
	Y	89	419780.8	0.6				ug/L	401845	Standard
>	**Rh**	103	95.0	13.9				ug/L	10	Standard
	Mo	98	354.8	11.3	**0.1391**	0.018	13.1	ug/L	12	Standard
	Ag	107	124.3	40.3	**0.0052**	0.009	167.0	ug/L	98	Standard
	Cd	111	42.3	55.1	**0.0173**	0.012	72.3	mg/L	11	Standard
	Cd	114	113.9	89.0	**0.0200**	0.022	110.6	ug/L	21	Standard
>	**In**	115	563906.1	1.5				ug/L	547487	Standard
	Sn	118	1531.7	4.6	**0.2123**	0.010	4.8	ug/L	450	Standard
	Sb	123	210.1	8.4	**0.0405**	0.005	11.6	ug/L	105	Standard
	Ba	135	162094.5	0.7	**85.6790**	1.283	1.5	ug/L	111	Standard
	Ce	140	216.7	26.5				ug/L	107	Standard
>	**Tb**	159	900794.6	1.8				ug/L	890342	Standard
	Ho	165	15.0	57.7				ug/L	10	Standard
	Tl	203	104.3	57.0	**0.0100**	0.008	79.7	ug/L	19	Standard
	Tl	205	83.3	27.1	**0.0141**	0.004	26.2	ug/L	17	Standard
	Pb	206	391.3	13.8	**0.0236**	0.012	51.7	ug/L	247	Standard
	Pb	207	338.7	17.1	**0.0227**	0.014	61.6	ug/L	215	Standard
	Pb	208	1279.0	4.7	**0.0155**	0.005	30.6	ug/L	770	Standard
	U	238	198.3	8.7	**0.0314**	0.003	10.7	ug/L	13	Standard
>	**Bi**	209	516668.6	1.7				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.8980**	30.992	173.2	mg/L	2	Standard
Mg	24	4872.5	2.7	**6.3892**	0.242	3.8	mg/L	35	Standard
K	39	126.7	27.7	**0.4955**	0.176	35.6	mg/L	25	Standard
Ca	43	53.3	5.4	**4.7635**	0.439	9.2	mg/L	38	Standard
Fe	54	177.6	14.5	**0.0254**	0.024	95.7	mg/L	126	Standard
Fe	57	276.7	15.4	**-0.0443**	0.146	329.7	mg/L	245	Standard
> **Sc-1**	45	26110.8	1.4				mg/L	25066	Standard
Cl	35	176149.6	1.9				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	3207.0	11.6				ug/L	1350	Standard
P	31	23131.2	13.3				ug/L	18393	Standard
S	34	4474.0	0.8				ug/L	3739	Standard
Sr	88	226.7	10.9				ug/L	78	Standard
C	12	83.3	25.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	16.2	38.3				mg/L	2	Standard
Ho-1	165	15.0	57.7				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	28196.2	4.0				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.657	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.184	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.999
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.688
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606091602
Sample Date/Time: Tuesday, June 21, 2016 18:47:51
Number of Replicates: 3
Autosampler Position: 353
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67906.9	1.3				ug/L	60176	Standard
	Be	9	10.0	50.0	**0.0033**	0.006	187.8	ug/L	5	Standard
	Al	27	2296072.1	1.5	**15.4843**	0.344	2.2	ug/L	832	Standard
	Sc	45	25872.1	5.5				ug/L	25066	Standard
	Ti	47	62.3	24.1	**0.1098**	0.081	73.9	ug/L	38	Standard
	V	51	1552.5	12.5	**0.0855**	0.031	36.6	ug/L	974	Standard
	Cr	52	9142.1	3.0	**0.4684**	0.023	4.9	ug/L	5792	Standard
	Cr	53	858.4	6.3	**0.6172**	0.055	8.8	ug/L	347	Standard
	Mn	55	243622.7	0.7	**37.1709**	0.798	2.1	ug/L	1164	Standard
	Co	59	1785.4	6.9	**0.2386**	0.020	8.4	ug/L	303	Standard
	Ni	60	1792.4	0.5	**0.7874**	0.016	2.0	ug/L	291	Standard
	Cu	65	962.4	1.2	**0.4305**	0.012	2.7	ug/L	173	Standard
	Zn	66	2184.5	1.1	**1.8327**	0.052	2.8	ug/L	130	Standard
>	**Ge**	72	501058.6	1.4				ug/L	491724	Standard
	As	75	100.6	11.3	**0.1281**	0.012	9.4	ug/L	-25	Standard
	Se	82	31.7	15.7	**0.2087**	0.052	24.7	ug/L	12	Standard
	Se-1	77	73.3	7.9	**0.3696**	0.094	25.6	ug/L	57	Standard
>	**Ga**	71	198.3	2.9				mg/L	148	Standard
	Rb	85	8319.0	2.0				ug/L	18	Standard
	Y	89	432620.5	1.7				ug/L	401845	Standard
>	**Rh**	103	35.0	14.3				ug/L	10	Standard
	Mo	98	238.4	19.0	**0.0874**	0.016	18.4	ug/L	12	Standard
	Ag	107	135.0	77.0	**0.0057**	0.016	279.8	ug/L	98	Standard
	Cd	111	47.6	114.6	**0.0185**	0.026	142.4	mg/L	11	Standard
	Cd	114	128.6	115.8	**0.0214**	0.030	138.7	ug/L	21	Standard
>	**In**	115	590384.4	2.1				ug/L	547487	Standard
	Sn	118	671.7	10.1	**0.0460**	0.013	27.4	ug/L	450	Standard
	Sb	123	237.2	55.9	**0.0439**	0.028	63.9	ug/L	105	Standard
	Ba	135	31177.4	0.9	**15.6954**	0.181	1.2	ug/L	111	Standard
	Ce	140	1276.7	10.5				ug/L	107	Standard
>	**Tb**	159	916339.4	2.6				ug/L	890342	Standard
	Ho	165	70.0	7.1				ug/L	10	Standard
	Tl	203	237.7	124.8	**0.0268**	0.038	140.4	ug/L	19	Standard
	Tl	205	80.0	33.1	**0.0135**	0.004	29.6	ug/L	17	Standard
	Pb	206	429.0	29.5	**0.0310**	0.024	78.2	ug/L	247	Standard
	Pb	207	341.7	30.1	**0.0231**	0.022	93.1	ug/L	215	Standard
	Pb	208	1332.4	10.6	**0.0186**	0.008	40.8	ug/L	770	Standard
	U	238	141.3	19.4	**0.0221**	0.004	18.5	ug/L	13	Standard
>	**Bi**	209	515955.1	1.9				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	2985.3	1.9	**3.9427**	0.232	5.9	mg/L	35	Standard
K	39	105.0	19.0	**0.3991**	0.123	30.7	mg/L	25	Standard
Ca	43	45.0	29.4	**3.3646**	2.869	85.3	mg/L	38	Standard
Fe	54	322.3	15.6	**0.1588**	0.032	20.1	mg/L	126	Standard
Fe	57	316.7	8.7	**0.1231**	0.144	117.2	mg/L	245	Standard
Sc-1	45	25872.1	5.5				mg/L	25066	Standard
Cl	35	186002.7	0.3				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	3327.0	4.9				ug/L	1350	Standard
P	31	21338.4	3.1				ug/L	18393	Standard
S	34	4454.0	2.0				ug/L	3739	Standard
Sr	88	85.0	75.1				ug/L	78	Standard
C	12	86.7	40.5				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	102.7	23.6				mg/L	2	Standard
Ho-1	165	70.0	7.1				mg/L	10	Standard
Er	166	83.3	45.4				mg/L	23	Standard
I	127	15337.8	5.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.847	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.898	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.835
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.546
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 18:51:04
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63442.7	3.5				ug/L	60176	Standard
	Be	9	40860.0	2.2	**54.0020**	1.449	2.7	ug/L	5	Standard
	Al	27	6937882.5	1.0	**50.1277**	1.614	3.2	ug/L	832	Standard
	Sc	45	25438.0	2.5				ug/L	25066	Standard
	Ti	47	21024.9	0.5	**106.0299**	0.919	0.9	ug/L	38	Standard
	V	51	323750.5	1.3	**52.9773**	0.236	0.4	ug/L	974	Standard
	Cr	52	348011.5	1.4	**52.4939**	0.728	1.4	ug/L	5792	Standard
	Cr	53	43766.5	1.1	**51.8369**	0.281	0.5	ug/L	347	Standard
	Mn	55	333840.5	2.1	**50.7327**	1.510	3.0	ug/L	1164	Standard
	Co	59	335417.2	1.0	**53.7424**	1.033	1.9	ug/L	303	Standard
	Ni	60	95144.1	1.0	**51.4310**	0.379	0.7	ug/L	291	Standard
	Cu	65	94656.8	0.9	**51.5587**	0.282	0.5	ug/L	173	Standard
	Zn	66	55176.0	1.3	**51.7065**	1.118	2.2	ug/L	130	Standard
>	Ge	72	503835.9	1.3				ug/L	491724	Standard
	As	75	55580.2	0.8	**51.7148**	0.495	1.0	ug/L	-25	Standard
	Se	82	5649.2	1.5	**53.2452**	1.272	2.4	ug/L	12	Standard
	Se-1	77	3911.5	2.0	**53.3712**	1.215	2.3	ug/L	57	Standard
>	Ga	71	175.0	20.6				mg/L	148	Standard
	Rb	85	773.4	10.9				ug/L	18	Standard
	Y	89	413055.9	4.2				ug/L	401845	Standard
>	Rh	103	48.3	15.8				ug/L	10	Standard
	Mo	98	250127.2	1.6	**103.9799**	1.624	1.6	ug/L	12	Standard
	Ag	107	312907.8	0.6	**52.9908**	0.412	0.8	ug/L	98	Standard
	Cd	111	99454.2	0.8	**52.8512**	0.382	0.7	mg/L	11	Standard
	Cd	114	242360.3	0.7	**52.9421**	0.765	1.4	ug/L	21	Standard
>	In	115	548076.9	0.7				ug/L	547487	Standard
	Sn	118	267254.9	1.1	**51.3363**	0.470	0.9	ug/L	450	Standard
	Sb	123	224264.3	0.4	**52.7378**	0.174	0.3	ug/L	105	Standard
	Ba	135	94718.1	0.7	**51.4823**	0.153	0.3	ug/L	111	Standard
	Ce	140	61.7	16.9				ug/L	107	Standard
>	Tb	159	872886.8	0.5				ug/L	890342	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	392549.7	0.9	**52.0956**	0.443	0.9	ug/L	19	Standard
	Tl	205	335218.3	1.5	**54.2215**	0.823	1.5	ug/L	17	Standard
	Pb	206	250297.8	0.3	**51.6123**	0.097	0.2	ug/L	247	Standard
	Pb	207	226489.3	0.6	**51.3765**	0.302	0.6	ug/L	215	Standard
	Pb	208	880738.1	0.5	**53.3625**	0.244	0.5	ug/L	770	Standard
	U	238	319048.1	0.1	**53.3329**	0.065	0.1	ug/L	13	Standard
>	Bi	209	501806.7	0.2				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.2483**	31.598	173.2	mg/L	2	Standard
Mg	24	3748.8	3.4	**5.0383**	0.218	4.3	mg/L	35	Standard
K	39	870.0	3.5	**4.1632**	0.196	4.7	mg/L	25	Standard
Ca	43	66.7	30.3	**7.5630**	3.627	48.0	mg/L	38	Standard
Fe	54	5462.5	1.6	**4.9747**	0.206	4.1	mg/L	126	Standard
Fe	57	1633.4	3.9	**5.2565**	0.210	4.0	mg/L	245	Standard
> **Sc-1**	45	25438.0	2.5				mg/L	25066	Standard
Cl	35	159590.9	1.7				ug/L	125857	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	1526.7	9.8				ug/L	1350	Standard
P	31	21814.0	0.5				ug/L	18393	Standard
S	34	4879.1	3.9				ug/L	3739	Standard
Sr	88	73.3	10.4				ug/L	78	Standard
C	12	60.0	33.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.9	218.3				mg/L	2	Standard
Ho-1	165	8.3	91.7				mg/L	10	Standard
Er	166	10.0	173.2				mg/L	23	Standard
I	127	2962.0	13.4				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	108.004		
Al	27	100.255		
Sc	45			
Ti	47	106.030		
V	51	105.955		
Cr	52	104.988		
Cr	53			
Mn	55	101.465		
Co	59	107.485		
Ni	60	102.862		
Cu	65	103.117		
Zn	66	103.413		
> Ge	72		102.463	
As	75	103.430		
Se	82	106.490		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	103.980		
Ag	107	105.982		
Cd	111	105.702		
Cd	114			
> In	115		100.108	
Sn	118	102.673		
Sb	123	105.476		
Ba	135	102.965		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	104.191		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.725		
U	238	106.666		
> Bi	209		99.734	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 18:54:15
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65759.1	2.1				ug/L	60176	Standard
	Be	9	15.0	66.7	**0.0099**	0.012	124.3	ug/L	5	Standard
	Al	27	1593.4	26.8	**0.0027**	0.003	102.5	ug/L	832	Standard
	Sc	45	26474.8	1.5				ug/L	25066	Standard
	Ti	47	28.3	23.5	**-0.0655**	0.031	47.5	ug/L	38	Standard
	V	51	963.9	7.8	**-0.0130**	0.015	114.8	ug/L	974	Standard
	Cr	52	6015.5	0.7	**-0.0229**	0.022	97.4	ug/L	5792	Standard
	Cr	53	381.7	7.2	**0.0411**	0.039	93.9	ug/L	347	Standard
	Mn	55	1197.4	3.7	**-0.0335**	0.005	13.8	ug/L	1164	Standard
	Co	59	265.0	7.5	**-0.0071**	0.002	35.3	ug/L	303	Standard
	Ni	60	191.7	2.1	**-0.0870**	0.003	3.6	ug/L	291	Standard
	Cu	65	137.7	10.1	**-0.0230**	0.006	27.4	ug/L	173	Standard
	Zn	66	181.3	7.5	**-0.0653**	0.015	22.7	ug/L	130	Standard
>	**Ge**	72	506005.0	1.8				ug/L	491724	Standard
	As	75	-35.7	74.2	**0.0007**	0.025	3529.5	ug/L	-25	Standard
	Se	82	12.6	16.6	**0.0250**	0.018	72.8	ug/L	12	Standard
	Se-1	77	54.3	13.9	**0.0968**	0.095	97.8	ug/L	57	Standard
>	**Ga**	71	158.3	20.3				mg/L	148	Standard
	Rb	85	20.0	86.6				ug/L	18	Standard
	Y	89	416660.0	4.4				ug/L	401845	Standard
>	**Rh**	103	31.7	32.9				ug/L	10	Standard
	Mo	98	234.4	23.9	**0.0897**	0.024	26.8	ug/L	12	Standard
	Ag	107	96.7	10.2	**0.0004**	0.002	455.9	ug/L	98	Standard
	Cd	111	9.2	48.8	**0.0000**	0.002	5096.5	mg/L	11	Standard
	Cd	114	32.6	31.9	**0.0024**	0.002	93.4	ug/L	21	Standard
>	**In**	115	568592.5	1.7				ug/L	547487	Standard
	Sn	118	836.7	13.7	**0.0809**	0.019	23.3	ug/L	450	Standard
	Sb	123	401.8	23.4	**0.0833**	0.020	24.4	ug/L	105	Standard
	Ba	135	112.3	11.3	**0.0034**	0.008	222.2	ug/L	111	Standard
	Ce	140	18.3	63.0				ug/L	107	Standard
>	**Tb**	159	905312.2	2.3				ug/L	890342	Standard
	Ho	165	11.7	89.2				ug/L	10	Standard
	Tl	203	52.3	30.0	**0.0031**	0.002	64.6	ug/L	19	Standard
	Tl	205	41.7	48.5	**0.0075**	0.003	42.3	ug/L	17	Standard
	Pb	206	259.3	16.5	**-0.0033**	0.009	264.4	ug/L	247	Standard
	Pb	207	233.3	11.4	**-0.0010**	0.006	617.4	ug/L	215	Standard
	Pb	208	889.0	1.3	**-0.0079**	0.001	10.4	ug/L	770	Standard
	U	238	29.3	61.9	**0.0039**	0.003	75.3	ug/L	13	Standard
>	**Bi**	209	519697.2	0.3				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	35.0	89.2	**0.0068**	0.041	600.8	mg/L	35	Standard
K	39	33.3	31.2	**0.0452**	0.050	110.3	mg/L	25	Standard
Ca	43	33.3	34.6	**0.8931**	2.150	240.8	mg/L	38	Standard
Fe	54	140.9	5.6	**-0.0098**	0.009	91.5	mg/L	126	Standard
Fe	57	233.3	13.1	**-0.2195**	0.109	49.4	mg/L	245	Standard
> **Sc-1**	45	26474.8	1.5				mg/L	25066	Standard
Cl	35	159066.0	0.9				ug/L	125857	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	1636.8	3.9				ug/L	1350	Standard
P	31	22371.5	1.8				ug/L	18393	Standard
S	34	4974.2	4.8				ug/L	3739	Standard
Sr	88	65.0	23.1				ug/L	78	Standard
C	12	46.7	44.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.8	2.8				mg/L	2	Standard
Ho-1	165	11.7	89.2				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	23	Standard
I	127	2216.8	9.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.904	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.855
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.290
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Tuesday, June 21, 2016 19:12:07
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61166.6	1.6				ug/L	60176	Standard
	Be	9	150.0	15.3	**0.1967**	0.033	16.9	ug/L	5	Standard
	Al	27	1561.8	56.4	**0.0032**	0.006	196.8	ug/L	832	Standard
	Sc	45	24875.4	2.5				ug/L	25066	Standard
	Ti	47	28.0	12.9	**-0.0630**	0.020	31.8	ug/L	38	Standard
	V	51	3300.5	1.2	**0.3830**	0.004	1.1	ug/L	974	Standard
	Cr	52	10916.3	1.5	**0.7699**	0.022	2.9	ug/L	5792	Standard
	Cr	53	1001.7	7.0	**0.8086**	0.075	9.2	ug/L	347	Standard
	Mn	55	4162.9	6.9	**0.4342**	0.055	12.7	ug/L	1164	Standard
	Co	59	2663.9	2.0	**0.3873**	0.016	4.1	ug/L	303	Standard
	Ni	60	2996.6	2.6	**1.4705**	0.019	1.3	ug/L	291	Standard
	Cu	65	1480.7	6.8	**0.7275**	0.043	6.0	ug/L	173	Standard
	Zn	66	7406.5	4.4	**6.8860**	0.205	3.0	ug/L	130	Standard
>	**Ge**	72	493083.1	1.6				ug/L	491724	Standard
	As	75	372.9	12.0	**0.3882**	0.043	11.0	ug/L	-25	Standard
	Se	82	55.9	23.6	**0.4460**	0.125	27.9	ug/L	12	Standard
	Se-1	77	84.3	6.0	**0.5409**	0.079	14.6	ug/L	57	Standard
>	**Ga**	71	103.3	2.8				mg/L	148	Standard
	Rb	85	41.7	13.9				ug/L	18	Standard
	Y	89	400269.9	3.2				ug/L	401845	Standard
>	**Rh**	103	43.3	17.6				ug/L	10	Standard
	Mo	98	42.1	20.5	**0.0135**	0.004	31.1	ug/L	12	Standard
	Ag	107	2361.9	2.4	**0.3942**	0.010	2.6	ug/L	98	Standard
	Cd	111	441.3	5.1	**0.2353**	0.012	5.1	mg/L	11	Standard
	Cd	114	1071.7	9.3	**0.2353**	0.024	10.2	ug/L	21	Standard
>	**In**	115	535559.2	2.7				ug/L	547487	Standard
	Sn	118	436.7	24.1	**0.0116**	0.019	163.3	ug/L	450	Standard
	Sb	123	1772.8	0.2	**0.4193**	0.011	2.7	ug/L	105	Standard
	Ba	135	1338.4	0.9	**0.6899**	0.014	2.0	ug/L	111	Standard
	Ce	140	35.0	28.6				ug/L	107	Standard
>	**Tb**	159	857160.6	2.1				ug/L	890342	Standard
	Ho	165	6.7	86.6				ug/L	10	Standard
	Tl	203	591.3	5.4	**0.0761**	0.006	7.9	ug/L	19	Standard
	Tl	205	471.7	10.6	**0.0783**	0.008	10.5	ug/L	17	Standard
	Pb	206	1188.7	1.6	**0.1938**	0.006	3.2	ug/L	247	Standard
	Pb	207	1022.4	5.0	**0.1831**	0.010	5.7	ug/L	215	Standard
	Pb	208	4003.9	0.8	**0.1862**	0.005	2.6	ug/L	770	Standard
	U	238	2368.9	2.6	**0.4007**	0.018	4.4	ug/L	13	Standard
>	**Bi**	209	495170.9	2.1				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	50.0	10.0	**0.0302**	0.005	18.0	mg/L	35	Standard
K	39	30.0	44.1	**0.0395**	0.069	175.4	mg/L	25	Standard
Ca	43	31.7	65.7	**1.0148**	4.252	419.0	mg/L	38	Standard
Fe	54	92.2	19.0	**-0.0485**	0.015	30.9	mg/L	126	Standard
Fe	57	215.0	14.5	**-0.2376**	0.102	43.0	mg/L	245	Standard
> **Sc-1**	45	24875.4	2.5				mg/L	25066	Standard
Cl	35	148704.8	0.2				ug/L	125857	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	1456.7	4.5				ug/L	1350	Standard
P	31	15039.1	1.7				ug/L	18393	Standard
S	34	4490.7	1.0				ug/L	3739	Standard
Sr	88	73.3	19.7				ug/L	78	Standard
C	12	26.7	21.7				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	2.9	202.3				mg/L	2	Standard
Ho-1	165	6.7	86.6				mg/L	10	Standard
Er	166	10.0					mg/L	23	Standard
I	127	996.7	4.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	98.360		
Al	27			
Sc	45			
Ti	47			
V	51	95.739		
Cr	52	96.237		
Cr	53			
Mn	55	86.841		
Co	59	96.822		
Ni	60	91.905		
Cu	65	90.940		
Zn	66	110.176		
> Ge	72		100.276	
As	75	97.059		
Se	82	111.510		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	98.538		
Cd	111	98.062		
Cd	114			
> In	115			97.821
Sn	118			
Sb	123	104.817		
Ba	135	91.990		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	95.070		
Tl	205			
Pb	206			
Pb	207			
Pb	208	93.123		
U	238	100.174		
> Bi	209			98.416
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
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Method 6020 - Summary Report

Sample ID: L1606099501
Sample Date/Time: Tuesday, June 21, 2016 19:34:57
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 500
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77633.4	0.8				ug/L	60176	Standard
	Be	9	6.7	43.3	**-0.0018**	0.003	172.4	ug/L	5	Standard
	Al	27	2026217.7	0.7	**11.9496**	0.150	1.3	ug/L	832	Standard
	Sc	45	26748.6	2.3				ug/L	25066	Standard
	Ti	47	31.7	17.4	**-0.0462**	0.030	65.2	ug/L	38	Standard
	V	51	1275.8	6.9	**0.0404**	0.016	40.4	ug/L	974	Standard
	Cr	52	6655.1	6.4	**0.0875**	0.082	93.8	ug/L	5792	Standard
	Cr	53	1963.5	8.8	**1.9476**	0.188	9.6	ug/L	347	Standard
	Mn	55	84988.4	1.3	**12.8494**	0.068	0.5	ug/L	1164	Standard
	Co	59	386.7	8.6	**0.0132**	0.006	45.9	ug/L	303	Standard
	Ni	60	675.3	7.4	**0.1784**	0.024	13.2	ug/L	291	Standard
	Cu	65	195.7	5.7	**0.0100**	0.008	78.4	ug/L	173	Standard
	Zn	66	3591.1	3.1	**3.1695**	0.063	2.0	ug/L	130	Standard
>	**Ge**	72	500114.1	1.6				ug/L	491724	Standard
	As	75	1657.7	10.0	**1.5886**	0.178	11.2	ug/L	-25	Standard
	Se	82	741.5	7.8	**6.9659**	0.657	9.4	ug/L	12	Standard
	Se-1	77	304.7	3.4	**3.5912**	0.205	5.7	ug/L	57	Standard
>	**Ga**	71	115.0	17.4				mg/L	148	Standard
	Rb	85	6904.9	3.3				ug/L	18	Standard
	Y	89	413732.9	0.8				ug/L	401845	Standard
>	**Rh**	103	540.0	15.3				ug/L	10	Standard
	Mo	98	33.8	20.7	**0.0095**	0.003	31.4	ug/L	12	Standard
	Ag	107	87.7	13.3	**-0.0007**	0.002	269.3	ug/L	98	Standard
	Cd	111	5.3	39.3	**-0.0019**	0.001	57.9	mg/L	11	Standard
	Cd	114	4.9	315.7	**-0.0034**	0.003	99.4	ug/L	21	Standard
>	**In**	115	553729.7	2.2				ug/L	547487	Standard
	Sn	118	500.0	18.4	**0.0210**	0.015	73.8	ug/L	450	Standard
	Sb	123	98.6	22.2	**0.0153**	0.005	30.1	ug/L	105	Standard
	Ba	135	188976.6	0.6	**101.7485**	2.043	2.0	ug/L	111	Standard
	Ce	140	20.0	25.0				ug/L	107	Standard
>	**Tb**	159	898084.0	1.2				ug/L	890342	Standard
	Ho	165	3.3	86.6				ug/L	10	Standard
	Tl	203	185.0	4.6	**0.0209**	0.001	6.4	ug/L	19	Standard
	Tl	205	168.3	27.6	**0.0281**	0.008	27.5	ug/L	17	Standard
	Pb	206	327.0	2.4	**0.0122**	0.002	14.3	ug/L	247	Standard
	Pb	207	273.3	4.9	**0.0096**	0.003	26.1	ug/L	215	Standard
	Pb	208	1042.0	2.7	**0.0030**	0.001	37.4	ug/L	770	Standard
	U	238	6.0	16.7	**0.0002**	0.000	92.5	ug/L	13	Standard
>	**Bi**	209	503950.2	0.9				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	24992.3	2.5	**32.1567**	1.409	4.4	mg/L	35	Standard
K	39	90.0	5.6	**0.3081**	0.023	7.4	mg/L	25	Standard
Ca	43	76.7	13.6	**8.8158**	1.657	18.8	mg/L	38	Standard
Fe	54	192.9	22.1	**0.0345**	0.034	98.8	mg/L	126	Standard
Fe	57	315.0	9.9	**0.0759**	0.141	185.8	mg/L	245	Standard
> **Sc-1**	45	26748.6	2.3				mg/L	25066	Standard
Cl	35	159695.2	0.9				ug/L	125857	Standard
Kr	83	2.3	107.9				ug/L	1	Standard
Br	81	185783.8	10.6				ug/L	1350	Standard
P	31	21602.1	2.2				ug/L	18393	Standard
S	34	4462.3	2.7				ug/L	3739	Standard
Sr	88	1885.1	4.1				ug/L	78	Standard
C	12	60.0	16.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	29.2	70.1				mg/L	2	Standard
Ho-1	165	3.3	86.6				mg/L	10	Standard
Er	166	16.7	69.3				mg/L	23	Standard
I	127	135026.1	16.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.011	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.706	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.140
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.160
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606099502
Sample Date/Time: Tuesday, June 21, 2016 19:38:09
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 500
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74226.4	2.4				ug/L	60176	Standard
	Be	9	8.3	34.6	**0.0004**	0.003	782.1	ug/L	5	Standard
	Al	27	1964045.2	2.9	**12.1146**	0.244	2.0	ug/L	832	Standard
	Sc	45	24970.6	3.4				ug/L	25066	Standard
	Ti	47	32.7	9.4	**-0.0368**	0.015	40.8	ug/L	38	Standard
	V	51	1262.9	8.3	**0.0439**	0.016	36.9	ug/L	974	Standard
	Cr	52	7258.4	0.5	**0.2111**	0.007	3.1	ug/L	5792	Standard
	Cr	53	1968.5	11.3	**2.0221**	0.300	14.8	ug/L	347	Standard
	Mn	55	84493.3	0.7	**13.1339**	0.146	1.1	ug/L	1164	Standard
	Co	59	367.0	1.6	**0.0116**	0.000	3.3	ug/L	303	Standard
	Ni	60	734.0	4.8	**0.2217**	0.019	8.5	ug/L	291	Standard
	Cu	65	234.0	5.0	**0.0345**	0.007	20.2	ug/L	173	Standard
	Zn	66	3577.4	1.6	**3.2515**	0.080	2.4	ug/L	130	Standard
>	**Ge**	72	486612.8	1.0				ug/L	491724	Standard
	As	75	1897.2	6.2	**1.8600**	0.104	5.6	ug/L	-25	Standard
	Se	82	847.2	4.6	**8.1876**	0.359	4.4	ug/L	12	Standard
	Se-1	77	299.3	6.6	**3.6325**	0.324	8.9	ug/L	57	Standard
>	**Ga**	71	111.7	23.0				mg/L	148	Standard
	Rb	85	6951.6	2.7				ug/L	18	Standard
	Y	89	428541.2	1.0				ug/L	401845	Standard
>	**Rh**	103	660.0	4.2				ug/L	10	Standard
	Mo	98	28.1	25.8	**0.0071**	0.003	41.3	ug/L	12	Standard
	Ag	107	72.0	3.7	**-0.0033**	0.000	11.5	ug/L	98	Standard
	Cd	111	5.6	20.7	**-0.0018**	0.001	33.9	mg/L	11	Standard
	Cd	114	12.2	78.3	**-0.0018**	0.002	112.9	ug/L	21	Standard
>	**In**	115	554225.0	0.6				ug/L	547487	Standard
	Sn	118	540.0	14.7	**0.0287**	0.015	53.8	ug/L	450	Standard
	Sb	123	76.2	13.8	**0.0101**	0.003	24.8	ug/L	105	Standard
	Ba	135	188355.6	0.6	**101.2959**	0.460	0.5	ug/L	111	Standard
	Ce	140	40.0	33.1				ug/L	107	Standard
>	**Tb**	159	890237.5	1.2				ug/L	890342	Standard
	Ho	165	21.7	35.3				ug/L	10	Standard
	Tl	203	179.7	2.8	**0.0212**	0.001	5.5	ug/L	19	Standard
	Tl	205	150.0	6.7	**0.0261**	0.001	4.6	ug/L	17	Standard
	Pb	206	498.3	4.9	**0.0517**	0.004	7.7	ug/L	247	Standard
	Pb	207	466.3	5.0	**0.0577**	0.006	10.6	ug/L	215	Standard
	Pb	208	1786.7	1.0	**0.0525**	0.002	3.4	ug/L	770	Standard
	U	238	3.0	33.3	**-0.0003**	0.000	60.1	ug/L	13	Standard
>	**Bi**	209	483891.9	2.0				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.7247**	32.424	173.2	mg/L	2	Standard
Mg	24	25317.8	3.2	**34.8845**	0.795	2.3	mg/L	35	Standard
K	39	93.3	22.3	**0.3528**	0.090	25.6	mg/L	25	Standard
Ca	43	91.7	8.3	**12.8496**	1.996	15.5	mg/L	38	Standard
Fe	54	224.3	18.2	**0.0779**	0.045	57.5	mg/L	126	Standard
Fe	57	341.7	9.5	**0.2646**	0.154	58.2	mg/L	245	Standard
> **Sc-1**	45	24970.6	3.4				mg/L	25066	Standard
Cl	35	171948.2	0.2				ug/L	125857	Standard
Kr	83	2.3	49.5				ug/L	1	Standard
Br	81	210718.6	1.3				ug/L	1350	Standard
P	31	22428.3	0.3				ug/L	18393	Standard
S	34	4655.7	1.8				ug/L	3739	Standard
Sr	88	1866.8	5.5				ug/L	78	Standard
C	12	56.7	36.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	45.9	45.5				mg/L	2	Standard
Ho-1	165	21.7	35.3				mg/L	10	Standard
Er	166	16.7	124.9				mg/L	23	Standard
I	127	109731.2	3.5				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.349	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.961	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.231	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.174	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 19:41:21
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60753.2	0.7				ug/L	60176	Standard
	Be	9	38719.4	2.5	**53.4127**	1.268	2.4	ug/L	5	Standard
	Al	27	6711778.9	2.1	**50.6033**	0.899	1.8	ug/L	832	Standard
	Sc	45	25728.5	2.1				ug/L	25066	Standard
	Ti	47	20982.5	0.5	**104.3242**	1.357	1.3	ug/L	38	Standard
	V	51	321053.2	1.0	**51.7981**	0.934	1.8	ug/L	974	Standard
	Cr	52	344201.5	0.6	**51.1636**	0.287	0.6	ug/L	5792	Standard
	Cr	53	44291.3	1.7	**51.7172**	0.682	1.3	ug/L	347	Standard
	Mn	55	339218.4	3.0	**50.8246**	1.874	3.7	ug/L	1164	Standard
	Co	59	329430.6	2.2	**52.0390**	1.531	2.9	ug/L	303	Standard
	Ni	60	95047.5	0.5	**50.6545**	0.643	1.3	ug/L	291	Standard
	Cu	65	94430.7	0.6	**50.7104**	0.485	1.0	ug/L	173	Standard
	Zn	66	54795.6	0.3	**50.6166**	0.334	0.7	ug/L	130	Standard
>	**Ge**	72	511027.8	0.9				ug/L	491724	Standard
	As	75	54737.8	0.8	**50.2171**	0.828	1.6	ug/L	-25	Standard
	Se	82	5522.7	2.1	**51.3173**	1.540	3.0	ug/L	12	Standard
	Se-1	77	3859.5	2.0	**51.9063**	1.447	2.8	ug/L	57	Standard
>	**Ga**	71	95.0	18.2				mg/L	148	Standard
	Rb	85	715.0	4.2				ug/L	18	Standard
	Y	89	414601.0	3.0				ug/L	401845	Standard
>	**Rh**	103	75.0	29.1				ug/L	10	Standard
	Mo	98	246703.9	0.8	**102.5745**	0.981	1.0	ug/L	12	Standard
	Ag	107	305467.2	1.3	**51.7401**	0.890	1.7	ug/L	98	Standard
	Cd	111	97736.3	0.7	**51.9469**	0.458	0.9	mg/L	11	Standard
	Cd	114	235851.4	0.5	**51.5266**	0.472	0.9	ug/L	21	Standard
>	**In**	115	547985.7	0.4				ug/L	547487	Standard
	Sn	118	265904.1	2.8	**51.0890**	1.611	3.2	ug/L	450	Standard
	Sb	123	218330.5	1.3	**51.3521**	0.839	1.6	ug/L	105	Standard
	Ba	135	93431.9	0.4	**50.7920**	0.422	0.8	ug/L	111	Standard
	Ce	140	66.7	18.9				ug/L	107	Standard
>	**Tb**	159	878645.9	1.2				ug/L	890342	Standard
	Ho	165	16.7	34.6				ug/L	10	Standard
	Tl	203	382593.3	0.6	**51.2166**	0.851	1.7	ug/L	19	Standard
	Tl	205	319855.9	0.2	**52.1860**	0.686	1.3	ug/L	17	Standard
	Pb	206	245809.9	0.3	**51.1253**	0.527	1.0	ug/L	247	Standard
	Pb	207	223379.0	0.7	**51.1100**	0.660	1.3	ug/L	215	Standard
	Pb	208	860209.0	0.8	**52.5732**	1.026	2.0	ug/L	770	Standard
	U	238	310063.3	0.9	**52.2791**	0.641	1.2	ug/L	13	Standard
>	**Bi**	209	497537.7	1.2				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.4323**	31.917	173.2	mg/L	2	Standard
Mg	24	3723.8	3.0	**4.9453**	0.109	2.2	mg/L	35	Standard
K	39	950.0	8.5	**4.5034**	0.416	9.2	mg/L	25	Standard
Ca	43	46.7	24.7	**3.6078**	2.004	55.6	mg/L	38	Standard
Fe	54	5363.4	1.0	**4.8229**	0.058	1.2	mg/L	126	Standard
Fe	57	1550.1	5.1	**4.8704**	0.425	8.7	mg/L	245	Standard
> **Sc-1**	45	25728.5	2.1				mg/L	25066	Standard
Cl	35	153211.6	2.0				ug/L	125857	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	3267.0	14.6				ug/L	1350	Standard
P	31	22256.3	1.2				ug/L	18393	Standard
S	34	4787.4	1.1				ug/L	3739	Standard
Sr	88	73.3	34.3				ug/L	78	Standard
C	12	40.0	25.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	0.0					mg/L	2	Standard
Ho-1	165	16.7	34.6				mg/L	10	Standard
Er	166	0.0					mg/L	23	Standard
I	127	2020.1	11.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	106.825		
Al	27	101.207		
Sc	45			
Ti	47	104.324		
V	51	103.596		
Cr	52	102.327		
Cr	53			
Mn	55	101.649		
Co	59	104.078		
Ni	60	101.309		
Cu	65	101.421		
Zn	66	101.233		
> Ge	72		103.926	
As	75	100.434		
Se	82	102.635		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	102.575		
Ag	107	103.480		
Cd	111	103.894		
Cd	114			
> In	115		100.091	
Sn	118	102.178		
Sb	123	102.704		
Ba	135	101.584		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	102.433		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.146		
U	238	104.558		
> Bi	209		98.886	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 19:44:33
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61186.7	3.6				ug/L	60176	Standard
	Be	9	33.3	121.2	**0.0354**	0.053	148.9	ug/L	5	Standard
	Al	27	5501.8	106.7	**0.0318**	0.042	131.0	ug/L	832	Standard
	Sc	45	26701.8	2.0				ug/L	25066	Standard
	Ti	47	30.3	33.2	**-0.0533**	0.048	90.9	ug/L	38	Standard
	V	51	1141.6	4.7	**0.0186**	0.005	28.0	ug/L	974	Standard
	Cr	52	6134.6	2.3	**0.0092**	0.003	30.8	ug/L	5792	Standard
	Cr	53	388.3	9.1	**0.0563**	0.051	89.9	ug/L	347	Standard
	Mn	55	1080.7	12.0	**-0.0490**	0.017	33.8	ug/L	1164	Standard
	Co	59	305.0	13.6	**0.0000**	0.006	21511.9	ug/L	303	Standard
	Ni	60	217.7	16.0	**-0.0715**	0.017	23.3	ug/L	291	Standard
	Cu	65	178.3	13.0	**0.0005**	0.011	2056.8	ug/L	173	Standard
	Zn	66	169.7	10.0	**-0.0741**	0.013	17.6	ug/L	130	Standard
>	**Ge**	72	498463.8	2.0				ug/L	491724	Standard
	As	75	-12.2	286.7	**0.0221**	0.033	148.3	ug/L	-25	Standard
	Se	82	23.6	25.6	**0.1314**	0.054	41.3	ug/L	12	Standard
	Se-1	77	53.0	11.3	**0.0906**	0.088	97.6	ug/L	57	Standard
>	**Ga**	71	131.7	28.5				mg/L	148	Standard
	Rb	85	18.3	15.7				ug/L	18	Standard
	Y	89	417929.1	0.8				ug/L	401845	Standard
>	**Rh**	103	38.3	41.9				ug/L	10	Standard
	Mo	98	257.5	28.1	**0.0990**	0.027	27.2	ug/L	12	Standard
	Ag	107	163.0	35.8	**0.0113**	0.009	79.0	ug/L	98	Standard
	Cd	111	38.5	98.3	**0.0148**	0.019	127.2	mg/L	11	Standard
	Cd	114	81.0	86.9	**0.0125**	0.014	115.3	ug/L	21	Standard
>	**In**	115	565101.8	2.2				ug/L	547487	Standard
	Sn	118	831.7	11.4	**0.0814**	0.021	25.5	ug/L	450	Standard
	Sb	123	393.5	15.0	**0.0823**	0.015	18.3	ug/L	105	Standard
	Ba	135	200.7	38.6	**0.0498**	0.038	76.8	ug/L	111	Standard
	Ce	140	16.7	45.8				ug/L	107	Standard
>	**Tb**	159	889533.7	0.9				ug/L	890342	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	149.3	78.6	**0.0159**	0.015	94.6	ug/L	19	Standard
	Tl	205	106.7	80.7	**0.0179**	0.013	75.0	ug/L	17	Standard
	Pb	206	292.0	13.2	**0.0046**	0.007	158.0	ug/L	247	Standard
	Pb	207	254.3	15.6	**0.0049**	0.008	166.3	ug/L	215	Standard
	Pb	208	1008.7	14.9	**0.0005**	0.008	1674.4	ug/L	770	Standard
	U	238	103.0	92.1	**0.0161**	0.015	95.6	ug/L	13	Standard
>	**Bi**	209	507542.0	1.3				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.1949**	29.774	173.2	mg/L	2	Standard
Mg	24	48.3	76.3	**0.0231**	0.046	200.6	mg/L	35	Standard
K	39	25.0	20.0	**0.0046**	0.023	492.5	mg/L	25	Standard
Ca	43	23.3	32.7	**-1.0097**	1.396	138.2	mg/L	38	Standard
Fe	54	150.9	27.6	**-0.0016**	0.040	2494.1	mg/L	126	Standard
Fe	57	210.0	10.9	**-0.3128**	0.084	26.9	mg/L	245	Standard
Sc-1	45	26701.8	2.0				mg/L	25066	Standard
Cl	35	151455.2	0.3				ug/L	125857	Standard
Kr	83	2.0	0.0				ug/L	1	Standard
Br	81	2233.5	7.9				ug/L	1350	Standard
P	31	22777.1	4.3				ug/L	18393	Standard
S	34	4777.4	2.0				ug/L	3739	Standard
Sr	88	61.7	4.7				ug/L	78	Standard
C	12	53.3	10.8				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.3	94.7				mg/L	2	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	23	Standard
I	127	1440.1	11.4				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.371	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.217
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.874
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBS M7 WG573333-03
Sample Date/Time: Tuesday, June 21, 2016 19:47:45
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60333.2	0.9				ug/L	60176	Standard
	Be	9	8.3	91.7	**0.0026**	0.011	413.6	ug/L	5	Standard
	Al	27	13747.9	0.9	**0.0960**	0.002	1.6	ug/L	832	Standard
	Sc	45	26165.9	1.6				ug/L	25066	Standard
	Ti	47	33.7	12.0	**-0.0319**	0.021	67.5	ug/L	38	Standard
	V	51	1023.7	5.2	**0.0030**	0.011	364.3	ug/L	974	Standard
	Cr	52	8476.0	2.1	**0.4019**	0.015	3.7	ug/L	5792	Standard
	Cr	53	670.0	10.4	**0.4130**	0.076	18.4	ug/L	347	Standard
	Mn	55	1695.4	1.7	**0.0519**	0.001	2.7	ug/L	1164	Standard
	Co	59	1288.1	1.7	**0.1641**	0.005	3.0	ug/L	303	Standard
	Ni	60	726.0	6.3	**0.2167**	0.030	13.9	ug/L	291	Standard
	Cu	65	492.3	1.6	**0.1799**	0.004	2.2	ug/L	173	Standard
	Zn	66	1621.4	0.7	**1.3419**	0.027	2.0	ug/L	130	Standard
>	**Ge**	72	487560.8	1.2				ug/L	491724	Standard
	As	75	-5.7	503.0	**0.0282**	0.028	98.0	ug/L	-25	Standard
	Se	82	31.9	19.2	**0.2175**	0.056	25.7	ug/L	12	Standard
	Se-1	77	56.0	15.9	**0.1503**	0.133	88.5	ug/L	57	Standard
>	**Ga**	71	95.0	13.9				mg/L	148	Standard
	Rb	85	66.7	31.2				ug/L	18	Standard
	Y	89	416805.6	1.1				ug/L	401845	Standard
>	**Rh**	103	40.0	45.1				ug/L	10	Standard
	Mo	98	145.3	0.5	**0.0548**	0.001	1.4	ug/L	12	Standard
	Ag	107	81.0	9.6	**-0.0019**	0.001	72.0	ug/L	98	Standard
	Cd	111	25.4	13.8	**0.0085**	0.002	23.0	mg/L	11	Standard
	Cd	114	59.1	56.7	**0.0083**	0.007	88.4	ug/L	21	Standard
>	**In**	115	559026.1	1.1				ug/L	547487	Standard
	Sn	118	593.3	6.4	**0.0378**	0.006	15.8	ug/L	450	Standard
	Sb	123	135.0	11.3	**0.0235**	0.003	13.5	ug/L	105	Standard
	Ba	135	280.0	9.7	**0.0939**	0.016	17.3	ug/L	111	Standard
	Ce	140	105.0	29.7				ug/L	107	Standard
>	**Tb**	159	875434.1	1.1				ug/L	890342	Standard
	Ho	165	11.7	49.5				ug/L	10	Standard
	Tl	203	36.0	5.6	**0.0012**	0.000	21.8	ug/L	19	Standard
	Tl	205	30.0	44.1	**0.0059**	0.002	36.7	ug/L	17	Standard
	Pb	206	339.0	5.6	**0.0154**	0.004	24.7	ug/L	247	Standard
	Pb	207	271.0	5.6	**0.0097**	0.003	34.8	ug/L	215	Standard
	Pb	208	1160.0	0.8	**0.0108**	0.001	6.7	ug/L	770	Standard
	U	238	14.3	35.8	**0.0016**	0.001	55.1	ug/L	13	Standard
>	**Bi**	209	499087.6	0.6				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	61.6	**0.0157**	0.033	209.3	mg/L	35	Standard
K	39	23.3	49.5	**-0.0010**	0.055	5424.9	mg/L	25	Standard
Ca	43	25.0	60.0	**-0.6344**	2.755	434.3	mg/L	38	Standard
Fe	54	119.2	14.8	**-0.0282**	0.015	51.5	mg/L	126	Standard
Fe	57	218.3	7.4	**-0.2659**	0.051	19.0	mg/L	245	Standard
> **Sc-1**	45	26165.9	1.6				mg/L	25066	Standard
Cl	35	151596.6	0.8				ug/L	125857	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	4757.4	26.7				ug/L	1350	Standard
P	31	21740.6	1.1				ug/L	18393	Standard
S	34	4795.8	1.6				ug/L	3739	Standard
Sr	88	51.7	5.6				ug/L	78	Standard
C	12	43.3	66.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	22.9	66.8				mg/L	2	Standard
Ho-1	165	11.7	49.5				mg/L	10	Standard
Er	166	10.0					mg/L	23	Standard
I	127	1155.0	7.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.261	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.153	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.108
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.194
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSS M7 WG573333-04
Sample Date/Time: Tuesday, June 21, 2016 19:50:57
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59225.5	1.2				ug/L	60176	Standard
	Be	9	19609.4	3.0	**27.7420**	0.614	2.2	ug/L	5	Standard
	Al	27	12795.4	2.0	**0.0906**	0.002	1.9	ug/L	832	Standard
	Sc	45	25735.2	2.3				ug/L	25066	Standard
	Ti	47	30.7	8.2	**-0.0502**	0.013	25.4	ug/L	38	Standard
	V	51	161756.0	0.9	**26.8215**	0.191	0.7	ug/L	974	Standard
	Cr	52	180807.8	1.0	**27.2779**	0.436	1.6	ug/L	5792	Standard
	Cr	53	22388.2	0.3	**26.7556**	0.203	0.8	ug/L	347	Standard
	Mn	55	175657.5	1.4	**27.0317**	0.594	2.2	ug/L	1164	Standard
	Co	59	169342.1	1.0	**27.5546**	0.491	1.8	ug/L	303	Standard
	Ni	60	48725.6	1.2	**26.6820**	0.407	1.5	ug/L	291	Standard
	Cu	65	49148.3	1.6	**27.1675**	0.617	2.3	ug/L	173	Standard
	Zn	66	29121.0	0.5	**27.6282**	0.375	1.4	ug/L	130	Standard
>	**Ge**	72	495668.9	0.8				ug/L	491724	Standard
	As	75	28447.7	0.7	**26.9212**	0.272	1.0	ug/L	-25	Standard
	Se	82	2857.7	1.2	**27.3299**	0.423	1.5	ug/L	12	Standard
	Se-1	77	1990.5	1.7	**27.2946**	0.705	2.6	ug/L	57	Standard
>	**Ga**	71	91.7	12.6				mg/L	148	Standard
	Rb	85	58.3	27.6				ug/L	18	Standard
	Y	89	417893.5	1.2				ug/L	401845	Standard
>	**Rh**	103	40.0	37.5				ug/L	10	Standard
	Mo	98	60.5	14.8	**0.0204**	0.004	18.1	ug/L	12	Standard
	Ag	107	157370.8	1.5	**26.3596**	0.160	0.6	ug/L	98	Standard
	Cd	111	50266.8	1.9	**26.4266**	0.395	1.5	mg/L	11	Standard
	Cd	114	119121.9	1.8	**25.7414**	0.327	1.3	ug/L	21	Standard
>	**In**	115	553936.9	1.0				ug/L	547487	Standard
	Sn	118	550.0	18.4	**0.0307**	0.020	63.7	ug/L	450	Standard
	Sb	123	113724.8	2.0	**26.4550**	0.324	1.2	ug/L	105	Standard
	Ba	135	48233.0	1.1	**25.9109**	0.064	0.2	ug/L	111	Standard
	Ce	140	93.3	12.4				ug/L	107	Standard
>	**Tb**	159	874780.4	1.3				ug/L	890342	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	196062.2	1.5	**26.2005**	0.206	0.8	ug/L	19	Standard
	Tl	205	168222.2	1.4	**27.4028**	0.377	1.4	ug/L	17	Standard
	Pb	206	128186.0	1.2	**26.5918**	0.160	0.6	ug/L	247	Standard
	Pb	207	111720.4	1.6	**25.4940**	0.201	0.8	ug/L	215	Standard
	Pb	208	451907.4	0.9	**27.5458**	0.346	1.3	ug/L	770	Standard
	U	238	157122.5	0.9	**26.4506**	0.287	1.1	ug/L	13	Standard
>	**Bi**	209	498294.3	0.9				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	30.0	60.1	**0.0016**	0.025	1578.9	mg/L	35	Standard
K	39	23.3	32.7	**0.0007**	0.036	5216.6	mg/L	25	Standard
Ca	43	21.7	48.0	**-1.1391**	2.056	180.5	mg/L	38	Standard
Fe	54	127.8	14.4	**-0.0186**	0.014	76.0	mg/L	126	Standard
Fe	57	258.3	19.9	**-0.0963**	0.212	219.9	mg/L	245	Standard
> **Sc-1**	45	25735.2	2.3				mg/L	25066	Standard
Cl	35	150456.8	1.7				ug/L	125857	Standard
Kr	83	3.0	57.7				ug/L	1	Standard
Br	81	2710.2	6.8				ug/L	1350	Standard
P	31	21206.5	4.7				ug/L	18393	Standard
S	34	4460.7	1.3				ug/L	3739	Standard
Sr	88	63.3	9.1				ug/L	78	Standard
C	12	43.3	13.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.7	118.3				mg/L	2	Standard
Ho-1	165	8.3	91.7				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	998.4	16.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.421	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.802	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.178	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.036	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606105301 WG573333-02
Sample Date/Time: Tuesday, June 21, 2016 19:54:08
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59553.5	1.0				ug/L	60176	Standard
	Be	9	135.0	13.4	**0.1809**	0.024	13.0	ug/L	5	Standard
	Al	27	390493.3	0.9	**2.9960**	0.057	1.9	ug/L	832	Standard
	Sc	45	27242.8	2.6				ug/L	25066	Standard
	Ti	47	6465.0	1.2	**32.1311**	0.140	0.4	ug/L	38	Standard
	V	51	48073.7	0.3	**7.6430**	0.089	1.2	ug/L	974	Standard
	Cr	52	34364.9	0.8	**4.2815**	0.091	2.1	ug/L	5792	Standard
	Cr	53	4007.2	3.0	**4.3239**	0.170	3.9	ug/L	347	Standard
	Mn	55	232477.7	0.8	**34.9054**	0.509	1.5	ug/L	1164	Standard
	Co	59	7863.0	1.3	**1.1989**	0.016	1.3	ug/L	303	Standard
	Ni	60	6025.5	1.1	**3.0464**	0.076	2.5	ug/L	291	Standard
	Cu	65	4433.0	2.2	**2.2972**	0.044	1.9	ug/L	173	Standard
	Zn	66	19225.9	1.6	**17.6815**	0.348	2.0	ug/L	130	Standard
>	**Ge**	72	508937.9	1.5				ug/L	491724	Standard
	As	75	2936.1	0.9	**2.7370**	0.053	1.9	ug/L	-25	Standard
	Se	82	55.2	23.4	**0.4222**	0.115	27.2	ug/L	12	Standard
	Se-1	77	65.0	8.1	**0.2394**	0.078	32.6	ug/L	57	Standard
>	**Ga**	71	5164.2	2.6				mg/L	148	Standard
	Rb	85	19092.0	2.2				ug/L	18	Standard
	Y	89	428438.9	1.5				ug/L	401845	Standard
>	**Rh**	103	26.7	39.0				ug/L	10	Standard
	Mo	98	5911.8	1.7	**2.4389**	0.038	1.6	ug/L	12	Standard
	Ag	107	147.0	13.6	**0.0094**	0.003	37.1	ug/L	98	Standard
	Cd	111	206.9	4.5	**0.1046**	0.005	4.6	mg/L	11	Standard
	Cd	114	472.4	6.6	**0.0981**	0.006	6.3	ug/L	21	Standard
>	**In**	115	551287.4	0.7				ug/L	547487	Standard
	Sn	118	468.3	5.4	**0.0155**	0.005	29.4	ug/L	450	Standard
	Sb	123	357.0	11.8	**0.0759**	0.010	13.0	ug/L	105	Standard
	Ba	135	38678.0	0.4	**20.8682**	0.219	1.0	ug/L	111	Standard
	Ce	140	306495.9	1.2				ug/L	107	Standard
>	**Tb**	159	890380.5	0.6				ug/L	890342	Standard
	Ho	165	2116.8	9.4				ug/L	10	Standard
	Tl	203	519.3	6.1	**0.0646**	0.004	6.1	ug/L	19	Standard
	Tl	205	458.3	12.0	**0.0743**	0.009	11.8	ug/L	17	Standard
	Pb	206	124187.6	1.0	**25.2798**	0.148	0.6	ug/L	247	Standard
	Pb	207	103763.8	0.7	**23.2336**	0.104	0.4	ug/L	215	Standard
	Pb	208	419261.0	0.7	**25.0733**	0.105	0.4	ug/L	770	Standard
	U	238	1623.1	2.0	**0.2673**	0.004	1.6	ug/L	13	Standard
>	**Bi**	209	507748.9	0.4				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	18.3	**0.0137**	0.009	65.1	mg/L	35	Standard
K	39	28.3	27.0	**0.0171**	0.033	190.3	mg/L	25	Standard
Ca	43	28.3	62.0	**-0.2390**	3.080	1288.3	mg/L	38	Standard
Fe	54	3298.0	4.5	**2.7434**	0.115	4.2	mg/L	126	Standard
Fe	57	1085.0	10.1	**2.8415**	0.310	10.9	mg/L	245	Standard
> **Sc-1**	45	27242.8	2.6				mg/L	25066	Standard
Cl	35	140674.8	1.7				ug/L	125857	Standard
Kr	83	1.7	124.9				ug/L	1	Standard
Br	81	2630.2	14.1				ug/L	1350	Standard
P	31	19367.4	0.5				ug/L	18393	Standard
S	34	4402.3	3.5				ug/L	3739	Standard
Sr	88	81.7	12.7				ug/L	78	Standard
C	12	100.0	40.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	63.3	18.2				mg/L	0	Standard
Dy	164	3670.9	4.8				mg/L	2	Standard
Ho-1	165	2116.8	9.4				mg/L	10	Standard
Er	166	1800.1	7.0				mg/L	23	Standard
I	127	6793.2	6.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.966	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.501	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.694
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.915
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606105302S WG573333-07
Sample Date/Time: Tuesday, June 21, 2016 19:57:20
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60433.6	2.0				ug/L	60176	Standard
	Be	9	19427.5	2.3	**26.9397**	0.549	2.0	ug/L	5	Standard
	Al	27	396251.5	0.8	**2.9962**	0.054	1.8	ug/L	832	Standard
	Sc	45	27251.2	1.0				ug/L	25066	Standard
	Ti	47	7488.9	1.0	**38.3195**	0.066	0.2	ug/L	38	Standard
	V	51	191501.2	1.3	**31.8425**	0.616	1.9	ug/L	974	Standard
	Cr	52	197050.6	1.4	**29.8680**	0.710	2.4	ug/L	5792	Standard
	Cr	53	24456.4	1.3	**29.3202**	0.727	2.5	ug/L	347	Standard
	Mn	55	384294.1	1.4	**59.4969**	1.333	2.2	ug/L	1164	Standard
	Co	59	160969.3	2.7	**26.2367**	0.889	3.4	ug/L	303	Standard
	Ni	60	52090.7	1.5	**28.5899**	0.703	2.5	ug/L	291	Standard
	Cu	65	51279.0	0.4	**28.3978**	0.401	1.4	ug/L	173	Standard
	Zn	66	44812.5	1.1	**42.7178**	0.864	2.0	ug/L	130	Standard
>	**Ge**	72	494830.5	1.2				ug/L	491724	Standard
	As	75	25971.2	2.1	**24.6250**	0.687	2.8	ug/L	-25	Standard
	Se	82	2412.0	4.7	**23.0968**	1.223	5.3	ug/L	12	Standard
	Se-1	77	1649.1	1.6	**22.5387**	0.314	1.4	ug/L	57	Standard
>	**Ga**	71	4899.1	4.8				mg/L	148	Standard
	Rb	85	15933.4	0.2				ug/L	18	Standard
	Y	89	434672.4	2.3				ug/L	401845	Standard
>	**Rh**	103	26.7	57.3				ug/L	10	Standard
	Mo	98	16958.8	1.3	**6.8221**	0.110	1.6	ug/L	12	Standard
	Ag	107	140602.8	1.2	**23.0461**	0.295	1.3	ug/L	98	Standard
	Cd	111	48424.2	1.0	**24.9141**	0.334	1.3	mg/L	11	Standard
	Cd	114	117338.3	1.3	**24.8149**	0.406	1.6	ug/L	21	Standard
>	**In**	115	566048.4	0.4				ug/L	547487	Standard
	Sn	118	788.4	48.0	**0.0729**	0.071	97.4	ug/L	450	Standard
	Sb	123	59314.2	1.3	**13.4999**	0.209	1.5	ug/L	105	Standard
	Ba	135	85875.1	2.0	**45.1887**	1.009	2.2	ug/L	111	Standard
	Ce	140	311360.4	1.3				ug/L	107	Standard
>	**Tb**	159	893299.7	0.4				ug/L	890342	Standard
	Ho	165	1725.1	3.4				ug/L	10	Standard
	Tl	203	188251.6	0.6	**24.7136**	0.342	1.4	ug/L	19	Standard
	Tl	205	158225.3	1.5	**25.3203**	0.563	2.2	ug/L	17	Standard
	Pb	206	385483.0	0.9	**78.6614**	0.775	1.0	ug/L	247	Standard
	Pb	207	325540.1	1.2	**73.0713**	0.789	1.1	ug/L	215	Standard
	Pb	208	1297632.0	1.2	**77.8091**	1.554	2.0	ug/L	770	Standard
	U	238	149860.0	2.2	**24.7839**	0.724	2.9	ug/L	13	Standard
>	**Bi**	209	507277.4	0.8				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	53.3	21.7	**0.0285**	0.014	50.4	mg/L	35	Standard
K	39	40.0	33.1	**0.0713**	0.062	86.8	mg/L	25	Standard
Ca	43	30.0	60.1	**0.1178**	3.297	2798.2	mg/L	38	Standard
Fe	54	2785.6	1.9	**2.2951**	0.053	2.3	mg/L	126	Standard
Fe	57	871.7	5.6	**2.0708**	0.165	8.0	mg/L	245	Standard
> **Sc-1**	45	27251.2	1.0				mg/L	25066	Standard
Cl	35	136548.5	0.2				ug/L	125857	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	2690.2	5.6				ug/L	1350	Standard
P	31	18896.8	0.3				ug/L	18393	Standard
S	34	3938.8	2.0				ug/L	3739	Standard
Sr	88	90.0	36.4				ug/L	78	Standard
C	12	110.0					mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	12.4				mg/L	0	Standard
Dy	164	3247.3	7.3				mg/L	2	Standard
Ho-1	165	1725.1	3.4				mg/L	10	Standard
Er	166	1386.7	5.1				mg/L	23	Standard
I	127	5004.2	4.5				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		100.428	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.632	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606105302S WG573333-07
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.390
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.822
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606105303SD WG573333-08
Sample Date/Time: Tuesday, June 21, 2016 20:00:31
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60791.8	2.4				ug/L	60176	Standard
	Be	9	19442.5	1.7	**26.8023**	0.232	0.9	ug/L	5	Standard
	Al	27	432728.9	2.0	**3.2535**	0.080	2.4	ug/L	832	Standard
	Sc	45	26972.3	0.6				ug/L	25066	Standard
	Ti	47	8101.2	1.8	**41.8095**	0.489	1.2	ug/L	38	Standard
	V	51	194533.2	1.3	**32.6143**	0.536	1.6	ug/L	974	Standard
	Cr	52	196269.4	0.6	**29.9955**	0.469	1.6	ug/L	5792	Standard
	Cr	53	24483.1	0.2	**29.5930**	0.323	1.1	ug/L	347	Standard
	Mn	55	386351.2	0.3	**60.3048**	0.743	1.2	ug/L	1164	Standard
	Co	59	166196.9	0.5	**27.3090**	0.232	0.8	ug/L	303	Standard
	Ni	60	51605.4	0.6	**28.5533**	0.418	1.5	ug/L	291	Standard
	Cu	65	50075.0	1.9	**27.9529**	0.367	1.3	ug/L	173	Standard
	Zn	66	57353.7	1.8	**55.1795**	0.640	1.2	ug/L	130	Standard
>	**Ge**	72	490809.7	1.0				ug/L	491724	Standard
	As	75	25714.1	1.9	**24.5757**	0.229	0.9	ug/L	-25	Standard
	Se	82	2487.9	0.6	**24.0190**	0.366	1.5	ug/L	12	Standard
	Se-1	77	1747.8	2.5	**24.1314**	0.805	3.3	ug/L	57	Standard
>	**Ga**	71	5157.5	2.7				mg/L	148	Standard
	Rb	85	18523.0	3.1				ug/L	18	Standard
	Y	89	444017.8	1.4				ug/L	401845	Standard
>	**Rh**	103	46.7	16.4				ug/L	10	Standard
	Mo	98	5808.7	0.6	**2.3126**	0.026	1.1	ug/L	12	Standard
	Ag	107	143200.7	1.9	**23.2569**	0.246	1.1	ug/L	98	Standard
	Cd	111	48312.1	2.0	**24.6294**	0.423	1.7	mg/L	11	Standard
	Cd	114	117421.2	1.2	**24.6058**	0.205	0.8	ug/L	21	Standard
>	**In**	115	571242.8	0.9				ug/L	547487	Standard
	Sn	118	516.7	19.9	**0.0212**	0.018	86.9	ug/L	450	Standard
	Sb	123	58163.3	1.0	**13.1170**	0.064	0.5	ug/L	105	Standard
	Ba	135	91445.8	0.5	**47.6850**	0.197	0.4	ug/L	111	Standard
	Ce	140	283441.9	1.3				ug/L	107	Standard
>	**Tb**	159	890644.6	2.9				ug/L	890342	Standard
	Ho	165	1641.8	1.4				ug/L	10	Standard
	Tl	203	186726.4	1.3	**24.8727**	0.635	2.6	ug/L	19	Standard
	Tl	205	159870.8	1.7	**25.9629**	0.965	3.7	ug/L	17	Standard
	Pb	206	345180.0	0.3	**71.4786**	2.166	3.0	ug/L	247	Standard
	Pb	207	289788.0	0.4	**66.0118**	2.154	3.3	ug/L	215	Standard
	Pb	208	1193141.1	0.7	**72.6045**	2.586	3.6	ug/L	770	Standard
	U	238	151251.6	0.9	**25.3870**	0.985	3.9	ug/L	13	Standard
>	**Bi**	209	500148.8	3.1				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	29.0	**0.0164**	0.016	96.8	mg/L	35	Standard
K	39	21.7	35.3	**-0.0118**	0.036	304.9	mg/L	25	Standard
Ca	43	35.0	28.6	**1.0832**	1.815	167.6	mg/L	38	Standard
Fe	54	3124.4	3.6	**2.6191**	0.111	4.2	mg/L	126	Standard
Fe	57	1018.4	7.4	**2.6406**	0.258	9.8	mg/L	245	Standard
Sc-1	45	26972.3	0.6				mg/L	25066	Standard
Cl	35	135993.6	0.3				ug/L	125857	Standard
Kr	83	2.3	49.5				ug/L	1	Standard
Br	81	2136.8	9.1				ug/L	1350	Standard
P	31	18498.0	3.5				ug/L	18393	Standard
S	34	3852.2	5.6				ug/L	3739	Standard
Sr	88	71.7	38.4				ug/L	78	Standard
C	12	123.3	4.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	66.7	52.7				mg/L	0	Standard
Dy	164	3021.0	3.5				mg/L	2	Standard
Ho-1	165	1641.8	1.4				mg/L	10	Standard
Er	166	1586.8	8.2				mg/L	23	Standard
I	127	4954.1	6.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		101.023	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.814	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.339
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.405
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606105401
Sample Date/Time: Tuesday, June 21, 2016 20:03:43
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61720.5	1.6				ug/L	60176	Standard
	Be	9	93.3	26.4	**0.1174**	0.032	27.0	ug/L	5	Standard
	Al	27	303416.2	0.1	**2.2442**	0.038	1.7	ug/L	832	Standard
	Sc	45	26598.3	1.8				ug/L	25066	Standard
	Ti	47	5974.5	1.1	**29.4612**	0.106	0.4	ug/L	38	Standard
	V	51	29615.8	0.7	**4.6079**	0.038	0.8	ug/L	974	Standard
	Cr	52	34301.5	0.5	**4.2336**	0.017	0.4	ug/L	5792	Standard
	Cr	53	4075.5	5.3	**4.3682**	0.220	5.0	ug/L	347	Standard
	Mn	55	67679.2	0.7	**9.9350**	0.149	1.5	ug/L	1164	Standard
	Co	59	5795.4	0.6	**0.8641**	0.012	1.4	ug/L	303	Standard
	Ni	60	7058.0	2.5	**3.5727**	0.066	1.8	ug/L	291	Standard
	Cu	65	1680.8	0.8	**0.8038**	0.014	1.8	ug/L	173	Standard
	Zn	66	13813.0	1.2	**12.5434**	0.154	1.2	ug/L	130	Standard
>	**Ge**	72	512622.2	0.8				ug/L	491724	Standard
	As	75	1326.1	3.7	**1.2458**	0.045	3.6	ug/L	-25	Standard
	Se	82	58.4	19.9	**0.4492**	0.112	25.0	ug/L	12	Standard
	Se-1	77	88.3	8.0	**0.5495**	0.098	17.9	ug/L	57	Standard
>	**Ga**	71	5431.0	3.2				mg/L	148	Standard
	Rb	85	11375.9	1.4				ug/L	18	Standard
	Y	89	433671.4	3.3				ug/L	401845	Standard
>	**Rh**	103	16.7	62.4				ug/L	10	Standard
	Mo	98	2147.6	0.7	**0.8712**	0.013	1.5	ug/L	12	Standard
	Ag	107	162.0	7.3	**0.0115**	0.002	16.1	ug/L	98	Standard
	Cd	111	42.4	7.2	**0.0174**	0.001	7.5	mg/L	11	Standard
	Cd	114	99.9	11.8	**0.0170**	0.002	13.5	ug/L	21	Standard
>	**In**	115	558893.7	1.3				ug/L	547487	Standard
	Sn	118	561.7	17.7	**0.0319**	0.019	59.1	ug/L	450	Standard
	Sb	123	749.1	15.9	**0.1654**	0.030	17.9	ug/L	105	Standard
	Ba	135	29348.7	0.5	**15.6055**	0.116	0.7	ug/L	111	Standard
	Ce	140	146646.3	1.1				ug/L	107	Standard
>	**Tb**	159	887966.0	1.1				ug/L	890342	Standard
	Ho	165	671.7	6.3				ug/L	10	Standard
	Tl	203	235.7	12.3	**0.0279**	0.004	14.4	ug/L	19	Standard
	Tl	205	173.3	14.5	**0.0291**	0.004	14.7	ug/L	17	Standard
	Pb	206	14922.0	0.9	**3.0381**	0.064	2.1	ug/L	247	Standard
	Pb	207	12398.4	1.3	**2.7752**	0.080	2.9	ug/L	215	Standard
	Pb	208	50203.5	0.7	**2.9980**	0.064	2.1	ug/L	770	Standard
	U	238	2316.2	1.5	**0.3880**	0.011	2.7	ug/L	13	Standard
>	**Bi**	209	499818.9	1.6				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	56.7	18.4	**0.0343**	0.012	35.9	mg/L	35	Standard
K	39	40.0	12.5	**0.0758**	0.026	33.7	mg/L	25	Standard
Ca	43	33.3	31.2	**0.8816**	2.026	229.8	mg/L	38	Standard
Fe	54	1087.4	2.8	**0.8360**	0.027	3.2	mg/L	126	Standard
Fe	57	525.0	12.5	**0.8590**	0.218	25.3	mg/L	245	Standard
> **Sc-1**	45	26598.3	1.8				mg/L	25066	Standard
Cl	35	134133.2	1.4				ug/L	125857	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	2273.5	6.1				ug/L	1350	Standard
P	31	19075.3	1.6				ug/L	18393	Standard
S	34	3665.4	1.3				ug/L	3739	Standard
Sr	88	76.7	10.0				ug/L	78	Standard
C	12	130.0	48.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	63.3	24.1				mg/L	0	Standard
Dy	164	1323.8	7.9				mg/L	2	Standard
Ho-1	165	671.7	6.3				mg/L	10	Standard
Er	166	686.7	8.0				mg/L	23	Standard
I	127	2676.9	2.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.567	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.250	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.084
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.339
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L160105401PS WG573475-01
Sample Date/Time: Tuesday, June 21, 2016 20:06:54
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62794.9	0.3				ug/L	60176	Standard
	Be	9	39553.2	1.1	**52.7892**	0.596	1.1	ug/L	5	Standard
	Al	27	307971.8	0.5	**2.2385**	0.019	0.8	ug/L	832	Standard
	Sc	45	26882.2	1.8				ug/L	25066	Standard
	Ti	47	6129.2	0.9	**30.0854**	0.443	1.5	ug/L	38	Standard
	V	51	350807.1	1.1	**56.1596**	0.484	0.9	ug/L	974	Standard
	Cr	52	380685.2	0.7	**56.2324**	0.702	1.2	ug/L	5792	Standard
	Cr	53	47479.3	2.5	**55.0311**	1.483	2.7	ug/L	347	Standard
	Mn	55	401711.5	2.2	**59.7429**	1.526	2.6	ug/L	1164	Standard
	Co	59	335117.7	1.9	**52.5149**	1.178	2.2	ug/L	303	Standard
	Ni	60	103584.6	0.9	**54.7808**	0.581	1.1	ug/L	291	Standard
	Cu	65	100044.2	0.8	**53.3041**	0.495	0.9	ug/L	173	Standard
	Zn	66	69784.7	1.2	**64.0109**	0.350	0.5	ug/L	130	Standard
>	**Ge**	72	515100.8	0.7				ug/L	491724	Standard
	As	75	57585.9	1.4	**52.4062**	0.728	1.4	ug/L	-25	Standard
	Se	82	5557.0	0.5	**51.2198**	0.370	0.7	ug/L	12	Standard
	Se-1	77	3824.8	2.7	**51.0178**	1.538	3.0	ug/L	57	Standard
>	**Ga**	71	5406.0	3.1				mg/L	148	Standard
	Rb	85	11310.9	0.9				ug/L	18	Standard
	Y	89	430615.8	1.3				ug/L	401845	Standard
>	**Rh**	103	35.0	14.3				ug/L	10	Standard
	Mo	98	2082.6	2.7	**0.8357**	0.016	1.9	ug/L	12	Standard
	Ag	107	313560.0	0.3	**51.5352**	0.570	1.1	ug/L	98	Standard
	Cd	111	99080.1	0.8	**51.0986**	0.459	0.9	mg/L	11	Standard
	Cd	114	240574.4	0.6	**50.9998**	0.581	1.1	ug/L	21	Standard
>	**In**	115	564766.8	1.3				ug/L	547487	Standard
	Sn	118	651.7	3.5	**0.0476**	0.003	5.8	ug/L	450	Standard
	Sb	123	219038.4	0.6	**49.9905**	0.624	1.2	ug/L	105	Standard
	Ba	135	122799.3	0.6	**64.7923**	0.643	1.0	ug/L	111	Standard
	Ce	140	145608.1	1.7				ug/L	107	Standard
>	**Tb**	159	891761.9	1.6				ug/L	890342	Standard
	Ho	165	680.0	5.1				ug/L	10	Standard
	Tl	203	390727.1	0.9	**51.0556**	0.307	0.6	ug/L	19	Standard
	Tl	205	332957.0	0.5	**53.0280**	0.386	0.7	ug/L	17	Standard
	Pb	206	268736.3	0.4	**54.5663**	0.473	0.9	ug/L	247	Standard
	Pb	207	234417.6	1.0	**52.3635**	1.055	2.0	ug/L	215	Standard
	Pb	208	909782.4	1.0	**54.2774**	0.756	1.4	ug/L	770	Standard
	U	238	311618.6	0.6	**51.2899**	0.366	0.7	ug/L	13	Standard
>	**Bi**	209	509666.6	1.1				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	56.7	67.4	**0.0334**	0.048	143.9	mg/L	35	Standard
K	39	28.3	88.8	**0.0206**	0.119	576.6	mg/L	25	Standard
Ca	43	23.3	68.9	**-1.0431**	2.962	283.9	mg/L	38	Standard
Fe	54	984.0	1.5	**0.7343**	0.012	1.7	mg/L	126	Standard
Fe	57	478.3	10.2	**0.6676**	0.161	24.2	mg/L	245	Standard
> **Sc-1**	45	26882.2	1.8				mg/L	25066	Standard
Cl	35	130277.0	0.6				ug/L	125857	Standard
Kr	83	3.3	45.8				ug/L	1	Standard
Br	81	2190.2	10.3				ug/L	1350	Standard
P	31	18941.8	1.3				ug/L	18393	Standard
S	34	3468.7	2.9				ug/L	3739	Standard
Sr	88	81.7	9.4				ug/L	78	Standard
C	12	83.3	6.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	60.0	16.7				mg/L	0	Standard
Dy	164	1430.7	6.9				mg/L	2	Standard
Ho-1	165	680.0	5.1				mg/L	10	Standard
Er	166	613.3	13.6				mg/L	23	Standard
I	127	2793.6	5.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.352	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.754	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.156
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.297
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606105401SDL WG573475-02
Sample Date/Time: Tuesday, June 21, 2016 20:10:06
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63462.7	2.8				ug/L	60176	Standard
	Be	9	43.3	6.7	**0.0483**	0.005	10.7	ug/L	5	Standard
	Al	27	62110.4	1.6	**0.4402**	0.014	3.1	ug/L	832	Standard
	Sc	45	27483.2	2.5				ug/L	25066	Standard
	Ti	47	1202.7	6.4	**5.8283**	0.361	6.2	ug/L	38	Standard
	V	51	6687.6	0.7	**0.9204**	0.038	4.1	ug/L	974	Standard
	Cr	52	11970.1	2.2	**0.8833**	0.051	5.8	ug/L	5792	Standard
	Cr	53	1118.4	3.2	**0.9142**	0.068	7.4	ug/L	347	Standard
	Mn	55	14114.2	2.6	**1.9239**	0.035	1.8	ug/L	1164	Standard
	Co	59	1371.4	3.2	**0.1692**	0.010	5.9	ug/L	303	Standard
	Ni	60	1550.7	0.7	**0.6455**	0.028	4.3	ug/L	291	Standard
	Cu	65	526.7	2.9	**0.1880**	0.015	7.9	ug/L	173	Standard
	Zn	66	4240.9	4.2	**3.7282**	0.034	0.9	ug/L	130	Standard
>	**Ge**	72	507330.3	3.4				ug/L	491724	Standard
	As	75	245.5	8.2	**0.2605**	0.014	5.3	ug/L	-25	Standard
	Se	82	25.7	28.8	**0.1499**	0.077	51.5	ug/L	12	Standard
	Se-1	77	61.3	9.3	**0.1936**	0.101	52.0	ug/L	57	Standard
>	**Ga**	71	1146.7	6.4				mg/L	148	Standard
	Rb	85	2321.8	7.4				ug/L	18	Standard
	Y	89	429962.5	1.2				ug/L	401845	Standard
>	**Rh**	103	40.0	66.1				ug/L	10	Standard
	Mo	98	429.5	5.0	**0.1645**	0.007	4.1	ug/L	12	Standard
	Ag	107	155.3	11.0	**0.0095**	0.003	29.8	ug/L	98	Standard
	Cd	111	24.9	56.2	**0.0078**	0.007	90.6	mg/L	11	Standard
	Cd	114	64.8	37.7	**0.0090**	0.005	57.8	ug/L	21	Standard
>	**In**	115	579213.8	1.2				ug/L	547487	Standard
	Sn	118	441.7	2.4	**0.0064**	0.003	44.2	ug/L	450	Standard
	Sb	123	1595.3	21.7	**0.3472**	0.075	21.7	ug/L	105	Standard
	Ba	135	5942.5	1.1	**3.0045**	0.068	2.3	ug/L	111	Standard
	Ce	140	29104.6	2.4				ug/L	107	Standard
>	**Tb**	159	919049.1	0.8				ug/L	890342	Standard
	Ho	165	130.0	6.7				ug/L	10	Standard
	Tl	203	140.3	32.1	**0.0144**	0.006	39.9	ug/L	19	Standard
	Tl	205	131.7	30.7	**0.0215**	0.006	29.1	ug/L	17	Standard
	Pb	206	3187.3	2.3	**0.5784**	0.013	2.3	ug/L	247	Standard
	Pb	207	2652.9	2.4	**0.5278**	0.013	2.5	ug/L	215	Standard
	Pb	208	10854.5	0.5	**0.5739**	0.002	0.3	ug/L	770	Standard
	U	238	529.3	8.9	**0.0844**	0.008	9.0	ug/L	13	Standard
>	**Bi**	209	521218.5	0.3				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	45.0	11.1	**0.0175**	0.006	35.9	mg/L	35	Standard
K	39	30.0	44.1	**0.0243**	0.061	252.8	mg/L	25	Standard
Ca	43	23.3	24.7	**-1.1467**	0.924	80.6	mg/L	38	Standard
Fe	54	317.1	0.9	**0.1380**	0.006	4.5	mg/L	126	Standard
Fe	57	253.3	19.5	**-0.1775**	0.188	106.2	mg/L	245	Standard
> **Sc-1**	45	27483.2	2.5				mg/L	25066	Standard
Cl	35	130060.6	1.2				ug/L	125857	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	1580.1	15.4				ug/L	1350	Standard
P	31	19601.0	6.2				ug/L	18393	Standard
S	34	3312.0	2.4				ug/L	3739	Standard
Sr	88	70.0	14.3				ug/L	78	Standard
C	12	53.3	57.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	173.2				mg/L	0	Standard
Dy	164	306.8	2.4				mg/L	2	Standard
Ho-1	165	130.0	6.7				mg/L	10	Standard
Er	166	136.7	23.5				mg/L	23	Standard
I	127	1430.1	5.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.462	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.174	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.795
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.593
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606105401SDL WG573475-02
Sample Date/Time: Tuesday, June 21, 2016 20:13:17
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62075.3	3.4				ug/L	60176	Standard
	Be	9	16.7	17.3	**0.0135**	0.004	29.0	ug/L	5	Standard
	Al	27	12923.8	2.2	**0.0871**	0.004	4.8	ug/L	832	Standard
	Sc	45	27139.3	3.8				ug/L	25066	Standard
	Ti	47	272.0	8.8	**1.1730**	0.126	10.8	ug/L	38	Standard
	V	51	2230.3	1.0	**0.1971**	0.010	5.1	ug/L	974	Standard
	Cr	52	7378.1	1.3	**0.1951**	0.026	13.6	ug/L	5792	Standard
	Cr	53	530.0	5.7	**0.2224**	0.032	14.3	ug/L	347	Standard
	Mn	55	4071.2	2.2	**0.4086**	0.019	4.6	ug/L	1164	Standard
	Co	59	492.0	9.6	**0.0300**	0.009	29.8	ug/L	303	Standard
	Ni	60	471.3	1.5	**0.0663**	0.008	11.5	ug/L	291	Standard
	Cu	65	217.0	2.6	**0.0213**	0.005	21.6	ug/L	173	Standard
	Zn	66	1805.8	2.4	**1.4723**	0.069	4.7	ug/L	130	Standard
>	**Ge**	72	501702.6	1.7				ug/L	491724	Standard
	As	75	24.3	87.9	**0.0566**	0.020	35.2	ug/L	-25	Standard
	Se	82	18.9	18.3	**0.0867**	0.033	37.9	ug/L	12	Standard
	Se-1	77	53.3	8.5	**0.0899**	0.058	64.7	ug/L	57	Standard
>	**Ga**	71	313.3	3.3				mg/L	148	Standard
	Rb	85	476.7	7.4				ug/L	18	Standard
	Y	89	438752.1	0.6				ug/L	401845	Standard
>	**Rh**	103	30.0	16.7				ug/L	10	Standard
	Mo	98	110.3	7.5	**0.0392**	0.004	9.8	ug/L	12	Standard
	Ag	107	108.0	10.5	**0.0020**	0.002	98.3	ug/L	98	Standard
	Cd	111	10.8	70.1	**0.0008**	0.004	499.4	mg/L	11	Standard
	Cd	114	43.9	46.7	**0.0047**	0.004	91.7	ug/L	21	Standard
>	**In**	115	576504.1	1.5				ug/L	547487	Standard
	Sn	118	475.0	15.9	**0.0128**	0.014	109.1	ug/L	450	Standard
	Sb	123	463.6	29.1	**0.0963**	0.031	32.6	ug/L	105	Standard
	Ba	135	1313.4	3.2	**0.6237**	0.012	1.9	ug/L	111	Standard
	Ce	140	5786.1	4.9				ug/L	107	Standard
>	**Tb**	159	898389.3	2.3				ug/L	890342	Standard
	Ho	165	30.0	16.7				ug/L	10	Standard
	Tl	203	55.0	70.9	**0.0037**	0.005	139.1	ug/L	19	Standard
	Tl	205	41.7	70.3	**0.0077**	0.005	61.7	ug/L	17	Standard
	Pb	206	916.0	4.2	**0.1339**	0.009	6.5	ug/L	247	Standard
	Pb	207	747.7	4.4	**0.1174**	0.008	6.7	ug/L	215	Standard
	Pb	208	3092.8	3.0	**0.1274**	0.006	5.0	ug/L	770	Standard
	U	238	143.3	18.2	**0.0231**	0.004	19.3	ug/L	13	Standard
>	**Bi**	209	502532.6	0.4				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	53.3	47.2	**0.0289**	0.033	114.0	mg/L	35	Standard
K	39	30.0	60.1	**0.0244**	0.079	325.6	mg/L	25	Standard
Ca	43	30.0	33.3	**0.1797**	1.980	1101.9	mg/L	38	Standard
Fe	54	180.9	6.6	**0.0219**	0.004	19.7	mg/L	126	Standard
Fe	57	280.0	8.2	**-0.0692**	0.099	143.2	mg/L	245	Standard
> **Sc-1**	45	27139.3	3.8				mg/L	25066	Standard
Cl	35	132798.2	1.3				ug/L	125857	Standard
Kr	83	2.7	78.1				ug/L	1	Standard
Br	81	1633.4	13.0				ug/L	1350	Standard
P	31	18716.6	3.2				ug/L	18393	Standard
S	34	3410.4	2.5				ug/L	3739	Standard
Sr	88	51.7	22.3				ug/L	78	Standard
C	12	60.0	57.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	91.1	51.3				mg/L	2	Standard
Ho-1	165	30.0	16.7				mg/L	10	Standard
Er	166	46.7	32.7				mg/L	23	Standard
I	127	1188.4	6.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.156	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.029	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.300
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.879
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 20:16:31
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61809.3	4.5				ug/L	60176	Standard
	Be	9	36245.0	0.8	**49.1988**	1.805	3.7	ug/L	5	Standard
	Al	27	6582318.8	1.8	**48.8210**	1.363	2.8	ug/L	832	Standard
	Sc	45	26551.6	2.9				ug/L	25066	Standard
	Ti	47	20307.3	0.8	**104.7366**	0.864	0.8	ug/L	38	Standard
	V	51	307773.1	2.0	**51.5001**	0.172	0.3	ug/L	974	Standard
	Cr	52	332161.2	0.7	**51.2294**	1.226	2.4	ug/L	5792	Standard
	Cr	53	42405.9	1.2	**51.3640**	0.276	0.5	ug/L	347	Standard
	Mn	55	325172.6	1.2	**50.5298**	0.233	0.5	ug/L	1164	Standard
	Co	59	317920.3	2.4	**52.0831**	0.431	0.8	ug/L	303	Standard
	Ni	60	91403.9	0.5	**50.5335**	0.688	1.4	ug/L	291	Standard
	Cu	65	91169.5	0.8	**50.7905**	0.667	1.3	ug/L	173	Standard
	Zn	66	52960.1	1.1	**50.7498**	0.564	1.1	ug/L	130	Standard
>	**Ge**	72	492646.8	1.7				ug/L	491724	Standard
	As	75	53122.0	0.6	**50.5540**	0.557	1.1	ug/L	-25	Standard
	Se	82	5355.6	0.4	**51.6204**	0.769	1.5	ug/L	12	Standard
	Se-1	77	3659.1	2.5	**51.0370**	1.490	2.9	ug/L	57	Standard
>	**Ga**	71	103.3	24.8				mg/L	148	Standard
	Rb	85	821.7	11.1				ug/L	18	Standard
	Y	89	426804.9	1.0				ug/L	401845	Standard
>	**Rh**	103	46.7	62.8				ug/L	10	Standard
	Mo	98	240578.5	1.9	**95.7566**	1.752	1.8	ug/L	12	Standard
	Ag	107	293672.5	0.8	**47.6191**	0.728	1.5	ug/L	98	Standard
	Cd	111	97148.2	0.4	**49.4310**	0.396	0.8	mg/L	11	Standard
	Cd	114	238273.1	1.3	**49.8334**	0.670	1.3	ug/L	21	Standard
>	**In**	115	572423.0	0.8				ug/L	547487	Standard
	Sn	118	262319.8	0.9	**48.2447**	0.796	1.6	ug/L	450	Standard
	Sb	123	211959.4	1.1	**47.7258**	0.723	1.5	ug/L	105	Standard
	Ba	135	92131.9	0.5	**47.9464**	0.632	1.3	ug/L	111	Standard
	Ce	140	101.7	44.6				ug/L	107	Standard
>	**Tb**	159	884901.8	0.8				ug/L	890342	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	370454.0	0.8	**49.8033**	0.613	1.2	ug/L	19	Standard
	Tl	205	319179.0	1.6	**52.3013**	1.096	2.1	ug/L	17	Standard
	Pb	206	236235.7	0.3	**49.3439**	0.398	0.8	ug/L	247	Standard
	Pb	207	215467.7	0.9	**49.5115**	0.712	1.4	ug/L	215	Standard
	Pb	208	846194.0	1.4	**51.9369**	0.988	1.9	ug/L	770	Standard
	U	238	302895.4	0.7	**51.2919**	0.606	1.2	ug/L	13	Standard
>	**Bi**	209	495377.4	0.6				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3608.8	3.4	**4.6428**	0.152	3.3	mg/L	35	Standard
K	39	930.0	9.8	**4.2620**	0.368	8.6	mg/L	25	Standard
Ca	43	71.7	28.2	**7.9807**	3.539	44.3	mg/L	38	Standard
Fe	54	5416.4	5.0	**4.7205**	0.325	6.9	mg/L	126	Standard
Fe	57	1530.1	9.9	**4.6008**	0.459	10.0	mg/L	245	Standard
> **Sc-1**	45	26551.6	2.9				mg/L	25066	Standard
Cl	35	138136.9	1.0				ug/L	125857	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	1570.1	5.7				ug/L	1350	Standard
P	31	19352.4	2.2				ug/L	18393	Standard
S	34	4222.3	4.4				ug/L	3739	Standard
Sr	88	46.7	16.4				ug/L	78	Standard
C	12	56.7	36.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	2.5	222.5				mg/L	2	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	16.7	34.6				mg/L	23	Standard
I	127	1088.4	5.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	98.398		
Al	27	97.642		
Sc	45			
Ti	47	104.737		
V	51	103.000		
Cr	52	102.459		
Cr	53			
Mn	55	101.060		
Co	59	104.166		
Ni	60	101.067		
Cu	65	101.581		
Zn	66	101.500		
> Ge	72		100.188	
As	75	101.108		
Se	82	103.241		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	95.757		
Ag	107	95.238		
Cd	111	98.862		
Cd	114			
In	115		104.555	
Sn	118	96.489		
Sb	123	95.452		
Ba	135	95.893		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.607		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.874		
U	238	102.584		
Bi	209		98.457	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 20:19:42
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59004.7	2.4				ug/L	60176	Standard
	Be	9	15.0	33.3	**0.0123**	0.007	55.9	ug/L	5	Standard
	Al	27	1221.7	22.8	**0.0011**	0.002	184.4	ug/L	832	Standard
	Sc	45	26162.6	2.8				ug/L	25066	Standard
	Ti	47	22.7	22.2	**-0.0938**	0.025	26.7	ug/L	38	Standard
	V	51	1096.4	3.1	**0.0083**	0.006	72.4	ug/L	974	Standard
	Cr	52	6080.6	0.6	**-0.0141**	0.009	60.7	ug/L	5792	Standard
	Cr	53	428.3	8.2	**0.0958**	0.044	45.6	ug/L	347	Standard
	Mn	55	922.7	7.2	**-0.0753**	0.011	14.0	ug/L	1164	Standard
	Co	59	276.0	8.7	**-0.0053**	0.004	76.6	ug/L	303	Standard
	Ni	60	181.3	7.1	**-0.0927**	0.007	8.0	ug/L	291	Standard
	Cu	65	115.7	15.5	**-0.0349**	0.010	27.6	ug/L	173	Standard
	Zn	66	146.0	12.6	**-0.0986**	0.018	18.2	ug/L	130	Standard
>	**Ge**	72	506500.5	0.5				ug/L	491724	Standard
	As	75	-18.9	142.2	**0.0164**	0.025	151.4	ug/L	-25	Standard
	Se	82	22.3	20.3	**0.1163**	0.042	36.4	ug/L	12	Standard
	Se-1	77	50.7	8.0	**0.0466**	0.058	125.4	ug/L	57	Standard
>	**Ga**	71	98.3	22.9				mg/L	148	Standard
	Rb	85	25.0	34.6				ug/L	18	Standard
	Y	89	420472.2	1.7				ug/L	401845	Standard
>	**Rh**	103	21.7	35.3				ug/L	10	Standard
	Mo	98	215.9	20.5	**0.0836**	0.015	18.1	ug/L	12	Standard
	Ag	107	100.3	2.3	**0.0013**	0.000	16.9	ug/L	98	Standard
	Cd	111	12.6	20.4	**0.0019**	0.001	66.8	mg/L	11	Standard
	Cd	114	36.9	35.9	**0.0034**	0.003	76.6	ug/L	21	Standard
>	**In**	115	556898.8	3.2				ug/L	547487	Standard
	Sn	118	736.7	14.7	**0.0659**	0.025	37.6	ug/L	450	Standard
	Sb	123	429.7	33.8	**0.0926**	0.037	39.4	ug/L	105	Standard
	Ba	135	112.0	12.9	**0.0043**	0.007	160.0	ug/L	111	Standard
	Ce	140	35.0	14.3				ug/L	107	Standard
>	**Tb**	159	887182.6	2.1				ug/L	890342	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	50.3	23.7	**0.0032**	0.002	49.1	ug/L	19	Standard
	Tl	205	48.3	29.9	**0.0089**	0.002	26.7	ug/L	17	Standard
	Pb	206	283.7	6.5	**0.0042**	0.003	82.4	ug/L	247	Standard
	Pb	207	216.0	8.2	**-0.0026**	0.004	153.1	ug/L	215	Standard
	Pb	208	914.3	7.2	**-0.0039**	0.004	93.9	ug/L	770	Standard
	U	238	37.3	13.5	**0.0055**	0.001	14.8	ug/L	13	Standard
>	**Bi**	209	496398.1	0.7				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	48.5	**0.0163**	0.028	170.7	mg/L	35	Standard
K	39	28.3	36.7	**0.0223**	0.046	208.0	mg/L	25	Standard
Ca	43	28.3	36.7	**0.0638**	2.140	3353.3	mg/L	38	Standard
Fe	54	134.3	7.3	**-0.0145**	0.007	47.3	mg/L	126	Standard
Fe	57	193.3	4.0	**-0.3592**	0.042	11.6	mg/L	245	Standard
> **Sc-1**	45	26162.6	2.8				mg/L	25066	Standard
Cl	35	138431.0	1.7				ug/L	125857	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	1586.7	3.9				ug/L	1350	Standard
P	31	19664.4	2.7				ug/L	18393	Standard
S	34	4130.6	2.1				ug/L	3739	Standard
Sr	88	75.0	46.7				ug/L	78	Standard
C	12	43.3	26.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	16.0	75.7				mg/L	2	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	13.3	173.2				mg/L	23	Standard
I	127	915.0	6.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.005	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.719
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.659
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606078703 WG573333-01
Sample Date/Time: Tuesday, June 21, 2016 20:22:55
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61250.2	0.8				ug/L	60176	Standard
	Be	9	533.3	8.2	**0.7208**	0.059	8.2	ug/L	5	Standard
	Al	27	4739129.5	0.9	**35.4392**	0.186	0.5	ug/L	832	Standard
	Sc	45	29605.6	2.9				ug/L	25066	Standard
	Ti	47	1339.7	3.2	**6.7020**	0.132	2.0	ug/L	38	Standard
	V	51	71406.4	1.8	**11.7973**	0.190	1.6	ug/L	974	Standard
	Cr	52	50888.7	1.6	**7.0346**	0.128	1.8	ug/L	5792	Standard
	Cr	53	6126.2	1.1	**7.0553**	0.185	2.6	ug/L	347	Standard
	Mn	55	2507110.3	0.7	**390.3777**	5.993	1.5	ug/L	1164	Standard
	Co	59	38304.0	1.2	**6.2221**	0.122	2.0	ug/L	303	Standard
	Ni	60	20980.2	1.2	**11.4317**	0.218	1.9	ug/L	291	Standard
	Cu	65	14716.8	0.9	**8.1026**	0.157	1.9	ug/L	173	Standard
	Zn	66	18330.8	1.8	**17.3802**	0.302	1.7	ug/L	130	Standard
>	**Ge**	72	493512.5	1.4				ug/L	491724	Standard
	As	75	1782.0	5.4	**1.7250**	0.073	4.2	ug/L	-25	Standard
	Se	82	35.6	28.1	**0.2511**	0.099	39.3	ug/L	12	Standard
	Se-1	77	88.0	14.2	**0.5919**	0.186	31.4	ug/L	57	Standard
>	**Ga**	71	8470.7	1.2				mg/L	148	Standard
	Rb	85	77419.0	1.7				ug/L	18	Standard
	Y	89	632239.1	1.1				ug/L	401845	Standard
>	**Rh**	103	36.7	31.5				ug/L	10	Standard
	Mo	98	157.1	8.2	**0.0590**	0.005	8.3	ug/L	12	Standard
	Ag	107	274.7	4.4	**0.0299**	0.003	9.4	ug/L	98	Standard
	Cd	111	187.0	6.5	**0.0920**	0.008	8.8	mg/L	11	Standard
	Cd	114	444.1	15.9	**0.0897**	0.014	15.2	ug/L	21	Standard
>	**In**	115	563958.4	1.8				ug/L	547487	Standard
	Sn	118	591.7	12.1	**0.0367**	0.014	39.0	ug/L	450	Standard
	Sb	123	220.2	26.8	**0.0429**	0.014	33.7	ug/L	105	Standard
	Ba	135	144715.5	0.6	**76.4840**	1.276	1.7	ug/L	111	Standard
	Ce	140	988223.5	0.5				ug/L	107	Standard
>	**Tb**	159	908188.9	1.2				ug/L	890342	Standard
	Ho	165	17219.8	2.5				ug/L	10	Standard
	Tl	203	463.3	4.4	**0.0586**	0.002	4.2	ug/L	19	Standard
	Tl	205	378.3	13.4	**0.0628**	0.008	12.5	ug/L	17	Standard
	Pb	206	45384.9	0.3	**9.4112**	0.053	0.6	ug/L	247	Standard
	Pb	207	36832.4	1.0	**8.3986**	0.095	1.1	ug/L	215	Standard
	Pb	208	155922.4	1.7	**9.4964**	0.166	1.7	ug/L	770	Standard
	U	238	2728.6	1.4	**0.4601**	0.009	2.0	ug/L	13	Standard
>	**Bi**	209	496638.4	0.7				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	93.3	11.2	**0.0696**	0.011	15.8	mg/L	35	Standard
K	39	126.7	21.7	**0.4205**	0.104	24.7	mg/L	25	Standard
Ca	43	46.7	44.6	**2.5335**	3.744	147.8	mg/L	38	Standard
Fe	54	5828.7	1.9	**4.5504**	0.210	4.6	mg/L	126	Standard
Fe	57	1691.8	7.2	**4.5640**	0.493	10.8	mg/L	245	Standard
> **Sc-1**	45	29605.6	2.9				mg/L	25066	Standard
Cl	35	137167.4	0.3				ug/L	125857	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	1823.4	14.0				ug/L	1350	Standard
P	31	18519.7	3.3				ug/L	18393	Standard
S	34	4015.5	1.1				ug/L	3739	Standard
Sr	88	103.3	12.2				ug/L	78	Standard
C	12	66.7	31.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	100.0				mg/L	0	Standard
Dy	164	29188.4	3.4				mg/L	2	Standard
Ho-1	165	17219.8	2.5				mg/L	10	Standard
Er	166	15471.2	3.8				mg/L	23	Standard
I	127	8429.0	7.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.785	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.364	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606078703 WG573333-01
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.009
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.707
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606078704S WG573333-05
Sample Date/Time: Tuesday, June 21, 2016 20:26:07
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60795.1	1.7				ug/L	60176	Standard
	Be	9	19584.3	1.1	**26.9961**	0.342	1.3	ug/L	5	Standard
	Al	27	4567931.7	1.1	**34.4185**	0.489	1.4	ug/L	832	Standard
	Sc	45	29006.1	1.6				ug/L	25066	Standard
	Ti	47	3165.0	3.9	**15.7145**	0.722	4.6	ug/L	38	Standard
	V	51	242137.7	0.6	**39.4045**	0.713	1.8	ug/L	974	Standard
	Cr	52	226731.6	0.9	**33.7129**	0.272	0.8	ug/L	5792	Standard
	Cr	53	28276.4	2.1	**33.1977**	1.054	3.2	ug/L	347	Standard
	Mn	55	2051282.4	3.3	**311.4080**	12.009	3.9	ug/L	1164	Standard
	Co	59	195015.9	1.5	**31.0844**	0.761	2.4	ug/L	303	Standard
	Ni	60	65648.6	0.3	**35.2674**	0.363	1.0	ug/L	291	Standard
	Cu	65	58144.4	1.1	**31.4896**	0.412	1.3	ug/L	173	Standard
	Zn	66	44983.4	1.5	**41.9115**	0.217	0.5	ug/L	130	Standard
>	**Ge**	72	506139.8	1.3				ug/L	491724	Standard
	As	75	25341.1	0.4	**23.4909**	0.303	1.3	ug/L	-25	Standard
	Se	82	2045.3	2.1	**19.1312**	0.577	3.0	ug/L	12	Standard
	Se-1	77	1519.4	1.8	**20.2366**	0.146	0.7	ug/L	57	Standard
>	**Ga**	71	9184.5	4.0				mg/L	148	Standard
	Rb	85	70028.1	1.4				ug/L	18	Standard
	Y	89	627632.4	1.5				ug/L	401845	Standard
>	**Rh**	103	40.0	45.1				ug/L	10	Standard
	Mo	98	594.6	6.7	**0.2447**	0.017	7.1	ug/L	12	Standard
	Ag	107	147727.7	1.0	**25.2040**	0.390	1.5	ug/L	98	Standard
	Cd	111	48105.2	0.3	**25.7603**	0.320	1.2	mg/L	11	Standard
	Cd	114	117496.3	0.5	**25.8635**	0.442	1.7	ug/L	21	Standard
>	**In**	115	543890.8	1.3				ug/L	547487	Standard
	Sn	118	720.0	10.8	**0.0655**	0.015	23.0	ug/L	450	Standard
	Sb	123	21224.1	1.3	**5.0226**	0.049	1.0	ug/L	105	Standard
	Ba	135	168787.7	0.9	**92.5008**	1.371	1.5	ug/L	111	Standard
	Ce	140	900741.5	2.1				ug/L	107	Standard
>	**Tb**	159	881875.5	1.1				ug/L	890342	Standard
	Ho	165	17471.7	0.7				ug/L	10	Standard
	Tl	203	184074.8	0.7	**24.8291**	0.438	1.8	ug/L	19	Standard
	Tl	205	156804.0	1.7	**25.7832**	0.724	2.8	ug/L	17	Standard
	Pb	206	159776.4	0.6	**33.4695**	0.581	1.7	ug/L	247	Standard
	Pb	207	136948.1	0.2	**31.5548**	0.325	1.0	ug/L	215	Standard
	Pb	208	552723.2	0.9	**34.0190**	0.677	2.0	ug/L	770	Standard
	U	238	155414.7	0.8	**26.4072**	0.520	2.0	ug/L	13	Standard
>	**Bi**	209	493745.3	1.2				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	76.7	29.4	**0.0523**	0.028	52.7	mg/L	35	Standard
K	39	121.7	41.6	**0.4123**	0.220	53.4	mg/L	25	Standard
Ca	43	56.7	5.1	**4.3235**	0.342	7.9	mg/L	38	Standard
Fe	54	6910.1	1.7	**5.5303**	0.066	1.2	mg/L	126	Standard
Fe	57	2031.8	2.9	**5.8339**	0.224	3.8	mg/L	245	Standard
> **Sc-1**	45	29006.1	1.6				mg/L	25066	Standard
Cl	35	131188.4	2.4				ug/L	125857	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	1806.8	7.4				ug/L	1350	Standard
P	31	18918.5	1.6				ug/L	18393	Standard
S	34	3765.5	5.6				ug/L	3739	Standard
Sr	88	86.7	23.3				ug/L	78	Standard
C	12	36.7	83.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	28039.5	3.1				mg/L	2	Standard
Ho-1	165	17471.7	0.7				mg/L	10	Standard
Er	166	14914.0	2.5				mg/L	23	Standard
I	127	7893.7	1.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.029	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.932	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.343
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.132
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606078705SD WG573333-06
Sample Date/Time: Tuesday, June 21, 2016 20:29:18
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63216.6	1.8				ug/L	60176	Standard
	Be	9	19696.1	2.2	**26.1120**	0.714	2.7	ug/L	5	Standard
	Al	27	5659138.5	0.3	**41.0133**	0.799	1.9	ug/L	832	Standard
	Sc	45	30033.1	1.0				ug/L	25066	Standard
	Ti	47	2763.3	27.2	**13.8639**	4.139	29.9	ug/L	38	Standard
	V	51	237607.5	1.1	**38.9988**	0.497	1.3	ug/L	974	Standard
	Cr	52	248636.6	1.2	**37.3971**	0.891	2.4	ug/L	5792	Standard
	Cr	53	30921.5	0.6	**36.6639**	1.024	2.8	ug/L	347	Standard
	Mn	55	2410492.6	0.5	**369.1780**	8.479	2.3	ug/L	1164	Standard
	Co	59	185271.5	0.5	**29.7851**	0.497	1.7	ug/L	303	Standard
	Ni	60	67071.8	1.3	**36.3557**	0.915	2.5	ug/L	291	Standard
	Cu	65	60322.2	1.1	**32.9575**	0.383	1.2	ug/L	173	Standard
	Zn	66	45873.7	1.3	**43.1216**	0.385	0.9	ug/L	130	Standard
>	**Ge**	72	501820.8	2.1				ug/L	491724	Standard
	As	75	24039.7	1.9	**22.4789**	0.430	1.9	ug/L	-25	Standard
	Se	82	1972.7	2.1	**18.6056**	0.284	1.5	ug/L	12	Standard
	Se-1	77	1402.7	4.3	**18.8146**	1.203	6.4	ug/L	57	Standard
>	**Ga**	71	9417.9	5.5				mg/L	148	Standard
	Rb	85	66410.2	0.3				ug/L	18	Standard
	Y	89	617512.5	0.5				ug/L	401845	Standard
>	**Rh**	103	50.0	62.5				ug/L	10	Standard
	Mo	98	1524.5	3.3	**0.6151**	0.019	3.1	ug/L	12	Standard
	Ag	107	143879.3	0.9	**23.8137**	0.379	1.6	ug/L	98	Standard
	Cd	111	47710.7	0.7	**24.7847**	0.177	0.7	mg/L	11	Standard
	Cd	114	115961.3	1.6	**24.7605**	0.346	1.4	ug/L	21	Standard
>	**In**	115	560614.7	0.8				ug/L	547487	Standard
	Sn	118	1535.1	5.3	**0.2146**	0.013	6.3	ug/L	450	Standard
	Sb	123	23888.4	1.7	**5.4855**	0.117	2.1	ug/L	105	Standard
	Ba	135	184639.0	1.2	**98.1607**	0.543	0.6	ug/L	111	Standard
	Ce	140	908579.6	1.8				ug/L	107	Standard
>	**Tb**	159	921260.1	0.5				ug/L	890342	Standard
	Ho	165	17002.9	1.2				ug/L	10	Standard
	Tl	203	180601.4	1.1	**23.7143**	0.543	2.3	ug/L	19	Standard
	Tl	205	152330.3	0.3	**24.3789**	0.252	1.0	ug/L	17	Standard
	Pb	206	161923.0	0.9	**33.0139**	0.142	0.4	ug/L	247	Standard
	Pb	207	139326.0	1.1	**31.2477**	0.234	0.7	ug/L	215	Standard
	Pb	208	558215.4	0.7	**33.4396**	0.224	0.7	ug/L	770	Standard
	U	238	149906.9	0.4	**24.7925**	0.215	0.9	ug/L	13	Standard
>	**Bi**	209	507223.5	1.3				ug/L	503143	Standard

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Na	23	1.7	173.2	**15.4815**	26.806	173.1	mg/L	2	Standard
Mg	24	46.7	52.9	**0.0145**	0.028	192.1	mg/L	35	Standard
K	39	158.3	18.5	**0.5456**	0.116	21.3	mg/L	25	Standard
Ca	43	41.7	6.9	**1.5279**	0.454	29.7	mg/L	38	Standard
Fe	54	7213.6	3.5	**5.5758**	0.146	2.6	mg/L	126	Standard
Fe	57	1996.8	3.3	**5.4816**	0.233	4.3	mg/L	245	Standard
> **Sc-1**	45	30033.1	1.0				mg/L	25066	Standard
Cl	35	129762.7	0.8				ug/L	125857	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	1876.8	4.3				ug/L	1350	Standard
P	31	18274.3	0.2				ug/L	18393	Standard
S	34	3732.1	1.2				ug/L	3739	Standard
Sr	88	110.0	27.6				ug/L	78	Standard
C	12	66.7	37.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	29098.6	2.2				mg/L	2	Standard
Ho-1	165	17002.9	1.2				mg/L	10	Standard
Er	166	15394.5	3.5				mg/L	23	Standard
I	127	7451.8	4.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.053	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.053	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.398
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.811
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606078705SD WG573333-06
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Method 6020 - Summary Report

Sample ID: L1606078706
Sample Date/Time: Tuesday, June 21, 2016 20:32:30
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61503.1	4.4				ug/L	60176	Standard
	Be	9	190.0	11.5	**0.2498**	0.027	10.8	ug/L	5	Standard
	Al	27	2161096.6	2.0	**16.1023**	0.467	2.9	ug/L	832	Standard
	Sc	45	27194.4	2.9				ug/L	25066	Standard
	Ti	47	1729.4	29.8	**8.8301**	2.712	30.7	ug/L	38	Standard
	V	51	40719.4	1.5	**6.7406**	0.118	1.7	ug/L	974	Standard
	Cr	52	22743.1	1.4	**2.6675**	0.051	1.9	ug/L	5792	Standard
	Cr	53	2448.5	3.6	**2.6090**	0.103	4.0	ug/L	347	Standard
	Mn	55	1260041.1	0.2	**198.5616**	0.943	0.5	ug/L	1164	Standard
	Co	59	12600.6	0.8	**2.0396**	0.022	1.1	ug/L	303	Standard
	Ni	60	7512.5	0.9	**4.0234**	0.036	0.9	ug/L	291	Standard
	Cu	65	5352.3	2.1	**2.9221**	0.069	2.3	ug/L	173	Standard
	Zn	66	8532.4	1.5	**8.0679**	0.130	1.6	ug/L	130	Standard
>	**Ge**	72	487322.6	0.2				ug/L	491724	Standard
	As	75	1559.9	2.0	**1.5334**	0.026	1.7	ug/L	-25	Standard
	Se	82	35.2	29.3	**0.2510**	0.100	39.8	ug/L	12	Standard
	Se-1	77	72.7	4.2	**0.3880**	0.045	11.7	ug/L	57	Standard
>	**Ga**	71	2870.3	6.0				mg/L	148	Standard
	Rb	85	28276.4	2.7				ug/L	18	Standard
	Y	89	521144.4	0.3				ug/L	401845	Standard
>	**Rh**	103	45.0	19.2				ug/L	10	Standard
	Mo	98	116.0	7.3	**0.0415**	0.003	6.9	ug/L	12	Standard
	Ag	107	230.3	3.7	**0.0218**	0.002	8.7	ug/L	98	Standard
	Cd	111	115.8	1.7	**0.0540**	0.002	4.0	mg/L	11	Standard
	Cd	114	274.3	6.0	**0.0527**	0.005	8.7	ug/L	21	Standard
>	**In**	115	575128.8	2.3				ug/L	547487	Standard
	Sn	118	336.7	3.7	**-0.0123**	0.001	7.1	ug/L	450	Standard
	Sb	123	176.1	18.8	**0.0320**	0.008	25.7	ug/L	105	Standard
	Ba	135	86694.7	1.9	**44.9082**	1.004	2.2	ug/L	111	Standard
	Ce	140	436433.2	2.1				ug/L	107	Standard
>	**Tb**	159	887156.7	2.0				ug/L	890342	Standard
	Ho	165	7937.1	1.0				ug/L	10	Standard
	Tl	203	162.7	11.2	**0.0183**	0.003	15.7	ug/L	19	Standard
	Tl	205	140.0	3.6	**0.0238**	0.000	1.8	ug/L	17	Standard
	Pb	206	19692.8	1.3	**4.0500**	0.140	3.5	ug/L	247	Standard
	Pb	207	16290.1	1.3	**3.6832**	0.128	3.5	ug/L	215	Standard
	Pb	208	67765.1	1.3	**4.0908**	0.139	3.4	ug/L	770	Standard
	U	238	859.4	4.8	**0.1442**	0.009	5.9	ug/L	13	Standard
>	**Bi**	209	497164.1	2.1				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	45.0	19.2	**0.0180**	0.010	57.8	mg/L	35	Standard
K	39	71.7	24.5	**0.2186**	0.091	41.5	mg/L	25	Standard
Ca	43	31.7	65.7	**0.4222**	3.721	881.3	mg/L	38	Standard
Fe	54	2730.0	8.4	**2.2488**	0.134	6.0	mg/L	126	Standard
Fe	57	905.0	11.2	**2.1941**	0.285	13.0	mg/L	245	Standard
> **Sc-1**	45	27194.4	2.9				mg/L	25066	Standard
Cl	35	130552.0	0.6				ug/L	125857	Standard
Kr	83	3.7	83.3				ug/L	1	Standard
Br	81	1476.7	11.6				ug/L	1350	Standard
P	31	18608.1	3.2				ug/L	18393	Standard
S	34	3705.5	6.0				ug/L	3739	Standard
Sr	88	98.3	19.3				ug/L	78	Standard
C	12	70.0	14.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	13334.9	2.3				mg/L	2	Standard
Ho-1	165	7937.1	1.0				mg/L	10	Standard
Er	166	6914.9	5.3				mg/L	23	Standard
I	127	2945.3	1.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.205	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.105	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	105.049	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.812	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606078707
Sample Date/Time: Tuesday, June 21, 2016 20:35:41
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59709.1	1.3				ug/L	60176	Standard
	Be	9	200.0	10.9	**0.2718**	0.032	11.7	ug/L	5	Standard
	Al	27	1683075.1	1.4	**12.9055**	0.048	0.4	ug/L	832	Standard
	Sc	45	26478.1	4.1				ug/L	25066	Standard
	Ti	47	1140.4	8.0	**5.5902**	0.464	8.3	ug/L	38	Standard
	V	51	39686.8	0.8	**6.3850**	0.023	0.4	ug/L	974	Standard
	Cr	52	23499.9	2.1	**2.6878**	0.064	2.4	ug/L	5792	Standard
	Cr	53	2666.9	3.2	**2.7908**	0.107	3.8	ug/L	347	Standard
	Mn	55	420579.8	1.9	**64.3639**	1.562	2.4	ug/L	1164	Standard
	Co	59	13033.6	2.2	**2.0538**	0.057	2.8	ug/L	303	Standard
	Ni	60	7165.7	0.5	**3.7215**	0.035	0.9	ug/L	291	Standard
	Cu	65	5197.9	1.7	**2.7564**	0.034	1.2	ug/L	173	Standard
	Zn	66	9135.4	1.5	**8.4176**	0.173	2.1	ug/L	130	Standard
>	**Ge**	72	500708.0	0.5				ug/L	491724	Standard
	As	75	1463.5	3.3	**1.4032**	0.042	3.0	ug/L	-25	Standard
	Se	82	24.1	45.1	**0.1358**	0.103	76.2	ug/L	12	Standard
	Se-1	77	77.3	6.1	**0.4249**	0.062	14.6	ug/L	57	Standard
>	**Ga**	71	2593.6	3.7				mg/L	148	Standard
	Rb	85	26549.9	1.6				ug/L	18	Standard
	Y	89	508383.7	2.6				ug/L	401845	Standard
>	**Rh**	103	26.7	47.2				ug/L	10	Standard
	Mo	98	828.3	1.8	**0.3404**	0.004	1.3	ug/L	12	Standard
	Ag	107	171.0	8.6	**0.0136**	0.003	19.8	ug/L	98	Standard
	Cd	111	92.1	6.3	**0.0443**	0.003	7.2	mg/L	11	Standard
	Cd	114	165.6	20.7	**0.0318**	0.007	23.1	ug/L	21	Standard
>	**In**	115	547256.3	0.7				ug/L	547487	Standard
	Sn	118	725.0	5.0	**0.0656**	0.007	10.8	ug/L	450	Standard
	Sb	123	144.6	14.9	**0.0264**	0.005	18.6	ug/L	105	Standard
	Ba	135	55231.2	0.4	**30.0426**	0.229	0.8	ug/L	111	Standard
	Ce	140	414286.0	0.6				ug/L	107	Standard
>	**Tb**	159	881412.3	0.9				ug/L	890342	Standard
	Ho	165	7586.9	2.2				ug/L	10	Standard
	Tl	203	135.7	11.8	**0.0147**	0.002	16.0	ug/L	19	Standard
	Tl	205	110.0	20.8	**0.0190**	0.004	20.0	ug/L	17	Standard
	Pb	206	19007.2	0.5	**3.9191**	0.061	1.6	ug/L	247	Standard
	Pb	207	15601.7	1.7	**3.5366**	0.107	3.0	ug/L	215	Standard
	Pb	208	64611.6	1.1	**3.9100**	0.093	2.4	ug/L	770	Standard
	U	238	755.0	4.6	**0.1270**	0.005	3.6	ug/L	13	Standard
>	**Bi**	209	495487.3	1.3				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	35.0	14.3	**0.0067**	0.007	106.5	mg/L	35	Standard
K	39	83.3	21.1	**0.2797**	0.073	26.3	mg/L	25	Standard
Ca	43	25.0	20.0	**-0.6389**	1.092	170.9	mg/L	38	Standard
Fe	54	2467.8	3.0	**2.0838**	0.134	6.4	mg/L	126	Standard
Fe	57	820.0	4.2	**1.9775**	0.256	13.0	mg/L	245	Standard
> **Sc-1**	45	26478.1	4.1				mg/L	25066	Standard
Cl	35	128995.5	1.3				ug/L	125857	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	1503.4	13.0				ug/L	1350	Standard
P	31	17358.3	0.2				ug/L	18393	Standard
S	34	3645.4	0.9				ug/L	3739	Standard
Sr	88	81.7	14.1				ug/L	78	Standard
C	12	60.0	28.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	12318.4	0.4				mg/L	2	Standard
Ho-1	165	7586.9	2.2				mg/L	10	Standard
Er	166	6754.8	0.3				mg/L	23	Standard
I	127	2638.6	9.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.224	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.827	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.958
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.478
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078708
Sample Date/Time: Tuesday, June 21, 2016 20:38:53
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61146.5	1.9				ug/L	60176	Standard
	Be	9	295.0	11.1	**0.3957**	0.048	12.2	ug/L	5	Standard
	Al	27	10005765.0	2.2	**74.9914**	2.825	3.8	ug/L	832	Standard
	Sc	45	28378.2	1.3				ug/L	25066	Standard
	Ti	47	1581.7	9.8	**7.8186**	0.716	9.2	ug/L	38	Standard
	V	51	56293.6	0.1	**9.1158**	0.120	1.3	ug/L	974	Standard
	Cr	52	35520.9	2.0	**4.5387**	0.182	4.0	ug/L	5792	Standard
	Cr	53	4120.6	4.1	**4.5322**	0.272	6.0	ug/L	347	Standard
	Mn	55	2245242.9	0.6	**344.0555**	5.834	1.7	ug/L	1164	Standard
	Co	59	20048.6	2.0	**3.1815**	0.095	3.0	ug/L	303	Standard
	Ni	60	12750.7	0.7	**6.7615**	0.141	2.1	ug/L	291	Standard
	Cu	65	8350.6	0.8	**4.4816**	0.075	1.7	ug/L	173	Standard
	Zn	66	13186.1	1.0	**12.2373**	0.257	2.1	ug/L	130	Standard
>	**Ge**	72	501445.8	1.4				ug/L	491724	Standard
	As	75	1545.9	0.8	**1.4785**	0.032	2.1	ug/L	-25	Standard
	Se	82	27.4	13.1	**0.1674**	0.035	21.2	ug/L	12	Standard
	Se-1	77	71.0	5.1	**0.3358**	0.056	16.6	ug/L	57	Standard
>	**Ga**	71	4512.3	1.6				mg/L	148	Standard
	Rb	85	37980.9	3.4				ug/L	18	Standard
	Y	89	531850.3	0.5				ug/L	401845	Standard
>	**Rh**	103	33.3	31.2				ug/L	10	Standard
	Mo	98	272.4	0.4	**0.1086**	0.001	1.4	ug/L	12	Standard
	Ag	107	226.3	10.4	**0.0229**	0.005	19.8	ug/L	98	Standard
	Cd	111	165.5	1.0	**0.0831**	0.002	1.9	mg/L	11	Standard
	Cd	114	397.0	5.6	**0.0822**	0.006	7.3	ug/L	21	Standard
>	**In**	115	548993.1	1.6				ug/L	547487	Standard
	Sn	118	608.3	15.7	**0.0426**	0.017	39.0	ug/L	450	Standard
	Sb	123	116.3	12.7	**0.0197**	0.003	15.4	ug/L	105	Standard
	Ba	135	96057.9	1.5	**52.1296**	0.874	1.7	ug/L	111	Standard
	Ce	140	548131.6	1.4				ug/L	107	Standard
>	**Tb**	159	898753.5	0.5				ug/L	890342	Standard
	Ho	165	10386.9	3.9				ug/L	10	Standard
	Tl	203	211.0	1.6	**0.0248**	0.001	2.7	ug/L	19	Standard
	Tl	205	218.3	11.3	**0.0367**	0.005	12.3	ug/L	17	Standard
	Pb	206	25132.8	0.9	**5.1923**	0.133	2.6	ug/L	247	Standard
	Pb	207	20495.2	0.8	**4.6546**	0.102	2.2	ug/L	215	Standard
	Pb	208	84035.9	0.8	**5.0950**	0.088	1.7	ug/L	770	Standard
	U	238	1374.4	2.1	**0.2316**	0.009	3.8	ug/L	13	Standard
>	**Bi**	209	496285.1	1.7				ug/L	503143	Standard

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Na	23	3.3	86.6	**32.9382**	28.528	86.6	mg/L	2	Standard
Mg	24	73.3	41.7	**0.0503**	0.037	74.4	mg/L	35	Standard
K	39	123.3	26.1	**0.4304**	0.140	32.4	mg/L	25	Standard
Ca	43	121.7	6.3	**15.8707**	1.562	9.8	mg/L	38	Standard
Fe	54	4051.3	3.4	**3.2588**	0.079	2.4	mg/L	126	Standard
Fe	57	1385.1	8.4	**3.7369**	0.455	12.2	mg/L	245	Standard
> **Sc-1**	45	28378.2	1.3				mg/L	25066	Standard
Cl	35	136882.9	1.1				ug/L	125857	Standard
Kr	83	3.7	78.7				ug/L	1	Standard
Br	81	1383.4	11.9				ug/L	1350	Standard
P	31	18684.9	2.6				ug/L	18393	Standard
S	34	4252.3	2.8				ug/L	3739	Standard
Sr	88	103.3	17.0				ug/L	78	Standard
C	12	63.3	18.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	17242.5	4.5				mg/L	2	Standard
Ho-1	165	10386.9	3.9				mg/L	10	Standard
Er	166	9069.4	1.8				mg/L	23	Standard
I	127	2725.2	5.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.613	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.977	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.275
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.637
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606078708
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Method 6020 - Summary Report

Sample ID: L1606078713
Sample Date/Time: Tuesday, June 21, 2016 20:42:04
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60470.5	2.4				ug/L	60176	Standard
	Be	9	438.3	14.7	**0.5976**	0.076	12.8	ug/L	5	Standard
	Al	27	3860251.5	0.5	**29.2500**	0.787	2.7	ug/L	832	Standard
	Sc	45	28167.8	2.6				ug/L	25066	Standard
	Ti	47	839.4	7.8	**4.1705**	0.369	8.8	ug/L	38	Standard
	V	51	70285.4	1.1	**11.7386**	0.317	2.7	ug/L	974	Standard
	Cr	52	48052.7	0.7	**6.6720**	0.165	2.5	ug/L	5792	Standard
	Cr	53	5747.8	3.9	**6.6668**	0.221	3.3	ug/L	347	Standard
	Mn	55	997665.2	0.2	**156.8856**	2.297	1.5	ug/L	1164	Standard
	Co	59	33501.7	1.1	**5.4941**	0.026	0.5	ug/L	303	Standard
	Ni	60	15742.2	0.8	**8.6243**	0.198	2.3	ug/L	291	Standard
	Cu	65	11171.8	1.1	**6.1943**	0.139	2.2	ug/L	173	Standard
	Zn	66	15290.4	1.0	**14.6175**	0.267	1.8	ug/L	130	Standard
>	**Ge**	72	488278.2	1.6				ug/L	491724	Standard
	As	75	2112.2	1.3	**2.0606**	0.030	1.5	ug/L	-25	Standard
	Se	82	33.4	20.1	**0.2323**	0.063	27.1	ug/L	12	Standard
	Se-1	77	80.7	13.6	**0.4996**	0.152	30.5	ug/L	57	Standard
>	**Ga**	71	6092.9	3.0				mg/L	148	Standard
	Rb	85	50096.0	1.4				ug/L	18	Standard
	Y	89	562308.7	3.4				ug/L	401845	Standard
>	**Rh**	103	20.0	25.0				ug/L	10	Standard
	Mo	98	281.8	18.1	**0.1097**	0.019	17.6	ug/L	12	Standard
	Ag	107	279.0	13.7	**0.0307**	0.006	19.7	ug/L	98	Standard
	Cd	111	205.9	9.5	**0.1020**	0.009	9.3	mg/L	11	Standard
	Cd	114	469.4	17.1	**0.0956**	0.016	17.2	ug/L	21	Standard
>	**In**	115	561794.7	1.8				ug/L	547487	Standard
	Sn	118	1265.1	3.6	**0.1635**	0.012	7.3	ug/L	450	Standard
	Sb	123	114.2	20.1	**0.0186**	0.005	27.0	ug/L	105	Standard
	Ba	135	154704.2	1.6	**82.0962**	2.614	3.2	ug/L	111	Standard
	Ce	140	714982.4	2.2				ug/L	107	Standard
>	**Tb**	159	886704.0	1.2				ug/L	890342	Standard
	Ho	165	12760.4	3.9				ug/L	10	Standard
	Tl	203	335.3	19.3	**0.0422**	0.009	20.6	ug/L	19	Standard
	Tl	205	363.3	52.8	**0.0613**	0.032	51.4	ug/L	17	Standard
	Pb	206	36098.0	0.9	**7.6025**	0.113	1.5	ug/L	247	Standard
	Pb	207	29342.1	0.5	**6.7946**	0.072	1.1	ug/L	215	Standard
	Pb	208	123673.5	2.1	**7.6482**	0.125	1.6	ug/L	770	Standard
	U	238	1531.4	12.8	**0.2621**	0.032	12.3	ug/L	13	Standard
>	**Bi**	209	488339.2	0.8				ug/L	503143	Standard

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Na	23	3.3	86.6	**33.1333**	28.719	86.7	mg/L	2	Standard
Mg	24	66.7	18.9	**0.0424**	0.013	31.2	mg/L	35	Standard
K	39	120.0	27.3	**0.4177**	0.133	31.7	mg/L	25	Standard
Ca	43	43.3	24.0	**2.2723**	1.810	79.7	mg/L	38	Standard
Fe	54	5259.3	3.5	**4.3093**	0.268	6.2	mg/L	126	Standard
Fe	57	1548.4	3.1	**4.3481**	0.308	7.1	mg/L	245	Standard
> **Sc-1**	45	28167.8	2.6				mg/L	25066	Standard
Cl	35	136558.6	0.5				ug/L	125857	Standard
Kr	83	1.3	86.6				ug/L	1	Standard
Br	81	1756.8	8.8				ug/L	1350	Standard
P	31	20071.6	3.8				ug/L	18393	Standard
S	34	4248.9	1.9				ug/L	3739	Standard
Sr	88	81.7	3.5				ug/L	78	Standard
C	12	66.7	8.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	0	Standard
Dy	164	21009.1	0.9				mg/L	2	Standard
Ho-1	165	12760.4	3.9				mg/L	10	Standard
Er	166	11264.2	4.0				mg/L	23	Standard
I	127	3685.4	6.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.489	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.299	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.613	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.058	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606078714
Sample Date/Time: Tuesday, June 21, 2016 20:45:16
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59354.4	2.2				ug/L	60176	Standard
	Be	9	183.3	13.7	**0.2501**	0.038	15.2	ug/L	5	Standard
	Al	27	1653362.7	0.4	**12.7568**	0.239	1.9	ug/L	832	Standard
	Sc	45	26840.4	0.7				ug/L	25066	Standard
	Ti	47	1195.7	15.7	**5.8965**	0.875	14.8	ug/L	38	Standard
	V	51	41857.8	0.9	**6.7842**	0.171	2.5	ug/L	974	Standard
	Cr	52	24805.0	0.8	**2.9115**	0.058	2.0	ug/L	5792	Standard
	Cr	53	2718.6	7.9	**2.8685**	0.201	7.0	ug/L	347	Standard
	Mn	55	271171.7	1.9	**41.6625**	1.227	2.9	ug/L	1164	Standard
	Co	59	15078.2	2.2	**2.3974**	0.058	2.4	ug/L	303	Standard
	Ni	60	7281.1	1.4	**3.8071**	0.071	1.9	ug/L	291	Standard
	Cu	65	4899.5	2.2	**2.6079**	0.059	2.3	ug/L	173	Standard
	Zn	66	8848.9	2.1	**8.1949**	0.270	3.3	ug/L	130	Standard
>	**Ge**	72	497940.3	1.9				ug/L	491724	Standard
	As	75	1399.2	6.8	**1.3498**	0.075	5.6	ug/L	-25	Standard
	Se	82	26.2	42.1	**0.1563**	0.101	64.4	ug/L	12	Standard
	Se-1	77	61.7	13.8	**0.2133**	0.129	60.7	ug/L	57	Standard
>	**Ga**	71	2935.3	6.3				mg/L	148	Standard
	Rb	85	27302.9	4.2				ug/L	18	Standard
	Y	89	493083.8	2.1				ug/L	401845	Standard
>	**Rh**	103	30.0	57.7				ug/L	10	Standard
	Mo	98	274.8	4.9	**0.1086**	0.006	5.1	ug/L	12	Standard
	Ag	107	202.7	17.3	**0.0186**	0.006	33.7	ug/L	98	Standard
	Cd	111	68.6	11.9	**0.0313**	0.004	13.1	mg/L	11	Standard
	Cd	114	186.8	21.1	**0.0360**	0.009	24.8	ug/L	21	Standard
>	**In**	115	553874.2	2.5				ug/L	547487	Standard
	Sn	118	1548.4	4.9	**0.2207**	0.012	5.3	ug/L	450	Standard
	Sb	123	134.4	14.6	**0.0237**	0.005	22.2	ug/L	105	Standard
	Ba	135	62896.3	0.8	**33.8185**	0.569	1.7	ug/L	111	Standard
	Ce	140	379145.7	1.3				ug/L	107	Standard
>	**Tb**	159	877738.6	2.8				ug/L	890342	Standard
	Ho	165	6044.5	3.3				ug/L	10	Standard
	Tl	203	194.0	17.9	**0.0229**	0.005	21.1	ug/L	19	Standard
	Tl	205	156.7	23.5	**0.0270**	0.006	23.3	ug/L	17	Standard
	Pb	206	17434.0	1.8	**3.6406**	0.072	2.0	ug/L	247	Standard
	Pb	207	14230.3	0.5	**3.2661**	0.036	1.1	ug/L	215	Standard
	Pb	208	59458.2	1.1	**3.6438**	0.066	1.8	ug/L	770	Standard
	U	238	818.0	4.9	**0.1396**	0.007	5.0	ug/L	13	Standard
>	**Bi**	209	488685.1	0.9				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	78.3	31.5	**0.0617**	0.032	51.7	mg/L	35	Standard
K	39	63.3	44.9	**0.1830**	0.135	73.6	mg/L	25	Standard
Ca	43	26.7	10.8	**-0.4193**	0.505	120.5	mg/L	38	Standard
Fe	54	2855.0	4.8	**2.3943**	0.139	5.8	mg/L	126	Standard
Fe	57	875.0	9.5	**2.1335**	0.331	15.5	mg/L	245	Standard
> **Sc-1**	45	26840.4	0.7				mg/L	25066	Standard
Cl	35	130769.3	1.1				ug/L	125857	Standard
Kr	83	0.3	173.2				ug/L	1	Standard
Br	81	1500.1	12.5				ug/L	1350	Standard
P	31	18306.1	4.6				ug/L	18393	Standard
S	34	3878.8	1.9				ug/L	3739	Standard
Sr	88	100.0	8.7				ug/L	78	Standard
C	12	53.3	43.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	10446.8	2.5				mg/L	2	Standard
Ho-1	165	6044.5	3.3				mg/L	10	Standard
Er	166	5364.3	4.3				mg/L	23	Standard
I	127	2471.9	4.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.635	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.264	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.167	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.127	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078715
Sample Date/Time: Tuesday, June 21, 2016 20:48:27
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64098.6	1.3				ug/L	60176	Standard
	Be	9	823.4	5.6	**1.0673**	0.048	4.5	ug/L	5	Standard
	Al	27	10125297.3	0.4	**72.3681**	0.913	1.3	ug/L	832	Standard
	Sc	45	30844.7	0.4				ug/L	25066	Standard
	Ti	47	1823.8	2.8	**8.7940**	0.274	3.1	ug/L	38	Standard
	V	51	98074.0	0.7	**15.5570**	0.191	1.2	ug/L	974	Standard
	Cr	52	104674.3	0.6	**14.7577**	0.248	1.7	ug/L	5792	Standard
	Cr	53	12927.2	2.0	**14.6613**	0.237	1.6	ug/L	347	Standard
	Mn	55	2973780.0	0.5	**443.0559**	7.216	1.6	ug/L	1164	Standard
	Co	59	58943.8	0.5	**9.1837**	0.119	1.3	ug/L	303	Standard
	Ni	60	38767.5	1.4	**20.3577**	0.493	2.4	ug/L	291	Standard
	Cu	65	24378.9	0.7	**12.8976**	0.065	0.5	ug/L	173	Standard
	Zn	66	41125.4	0.4	**37.5786**	0.477	1.3	ug/L	130	Standard
>	**Ge**	72	515810.5	1.2				ug/L	491724	Standard
	As	75	2841.8	1.6	**2.6150**	0.042	1.6	ug/L	-25	Standard
	Se	82	45.8	14.7	**0.3299**	0.064	19.5	ug/L	12	Standard
	Se-1	77	92.3	7.0	**0.5967**	0.101	16.9	ug/L	57	Standard
>	**Ga**	71	16957.8	0.2				mg/L	148	Standard
	Rb	85	162914.6	1.1				ug/L	18	Standard
	Y	89	615099.4	2.7				ug/L	401845	Standard
>	**Rh**	103	20.0	43.3				ug/L	10	Standard
	Mo	98	203.9	5.6	**0.0800**	0.004	4.8	ug/L	12	Standard
	Ag	107	382.7	10.1	**0.0492**	0.007	13.9	ug/L	98	Standard
	Cd	111	298.0	2.2	**0.1531**	0.002	1.3	mg/L	11	Standard
	Cd	114	666.5	15.5	**0.1406**	0.023	16.0	ug/L	21	Standard
>	**In**	115	550118.7	1.2				ug/L	547487	Standard
	Sn	118	753.4	4.7	**0.0703**	0.007	9.3	ug/L	450	Standard
	Sb	123	98.5	12.2	**0.0154**	0.003	16.9	ug/L	105	Standard
	Ba	135	241514.0	0.7	**130.8807**	1.833	1.4	ug/L	111	Standard
	Ce	140	1155859.2	0.5				ug/L	107	Standard
>	**Tb**	159	899979.5	1.4				ug/L	890342	Standard
	Ho	165	17680.3	2.0				ug/L	10	Standard
	Tl	203	858.7	0.6	**0.1099**	0.001	1.0	ug/L	19	Standard
	Tl	205	755.0	8.0	**0.1226**	0.012	9.4	ug/L	17	Standard
	Pb	206	60941.6	0.3	**12.4665**	0.202	1.6	ug/L	247	Standard
	Pb	207	50135.5	0.2	**11.2791**	0.161	1.4	ug/L	215	Standard
	Pb	208	203300.5	0.7	**12.2136**	0.108	0.9	ug/L	770	Standard
	U	238	2361.2	2.6	**0.3920**	0.006	1.5	ug/L	13	Standard
>	**Bi**	209	504223.9	1.5				ug/L	503143	Standard

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Na	23	3.3	86.6	**30.2029**	26.152	86.6	mg/L	2	Standard
Mg	24	81.7	17.7	**0.0523**	0.016	31.2	mg/L	35	Standard
K	39	335.0	10.4	**1.2451**	0.147	11.8	mg/L	25	Standard
Ca	43	41.7	13.9	**1.3488**	0.931	69.0	mg/L	38	Standard
Fe	54	13937.7	1.7	**10.6123**	0.221	2.1	mg/L	126	Standard
Fe	57	3708.8	2.8	**10.7946**	0.379	3.5	mg/L	245	Standard
> **Sc-1**	45	30844.7	0.4				mg/L	25066	Standard
Cl	35	127408.8	0.7				ug/L	125857	Standard
Kr	83	2.3	49.5				ug/L	1	Standard
Br	81	1913.5	1.6				ug/L	1350	Standard
P	31	18252.7	1.0				ug/L	18393	Standard
S	34	3877.2	0.8				ug/L	3739	Standard
Sr	88	116.7	13.1				ug/L	78	Standard
C	12	63.3	24.1				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	0	Standard
Dy	164	29223.1	3.8				mg/L	2	Standard
Ho-1	165	17680.3	2.0				mg/L	10	Standard
Er	166	15514.6	3.9				mg/L	23	Standard
I	127	5479.3	4.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.519	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.898	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.481
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.215
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606078716
Sample Date/Time: Tuesday, June 21, 2016 20:51:39
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63156.4	1.5				ug/L	60176	Standard
	Be	9	671.7	2.1	**0.8826**	0.026	3.0	ug/L	5	Standard
	Al	27	8487404.7	1.9	**61.5729**	1.740	2.8	ug/L	832	Standard
	Sc	45	31963.7	1.0				ug/L	25066	Standard
	Ti	47	787.0	5.2	**3.8622**	0.259	6.7	ug/L	38	Standard
	V	51	41199.8	0.5	**6.7490**	0.110	1.6	ug/L	974	Standard
	Cr	52	73420.2	2.1	**10.5882**	0.090	0.9	ug/L	5792	Standard
	Cr	53	8865.9	1.6	**10.4143**	0.113	1.1	ug/L	347	Standard
	Mn	55	3069080.0	1.7	**478.8131**	2.454	0.5	ug/L	1164	Standard
	Co	59	44326.4	0.3	**7.2228**	0.137	1.9	ug/L	303	Standard
	Ni	60	28414.3	2.4	**15.5776**	0.153	1.0	ug/L	291	Standard
	Cu	65	26490.5	2.7	**14.6878**	0.116	0.8	ug/L	173	Standard
	Zn	66	29868.4	0.5	**28.5277**	0.483	1.7	ug/L	130	Standard
>	**Ge**	72	492563.3	2.0				ug/L	491724	Standard
	As	75	705.4	3.6	**0.7048**	0.021	3.0	ug/L	-25	Standard
	Se	82	43.0	1.8	**0.3227**	0.009	2.7	ug/L	12	Standard
	Se-1	77	107.0	6.1	**0.8613**	0.072	8.3	ug/L	57	Standard
>	**Ga**	71	11926.4	3.1				mg/L	148	Standard
	Rb	85	71819.9	2.8				ug/L	18	Standard
	Y	89	651603.7	2.1				ug/L	401845	Standard
>	**Rh**	103	30.0	0.0				ug/L	10	Standard
	Mo	98	68.5	8.4	**0.0231**	0.003	12.2	ug/L	12	Standard
	Ag	107	420.7	8.6	**0.0536**	0.006	11.6	ug/L	98	Standard
	Cd	111	560.2	2.6	**0.2833**	0.005	1.6	mg/L	11	Standard
	Cd	114	1323.3	4.1	**0.2753**	0.012	4.2	ug/L	21	Standard
>	**In**	115	566534.2	2.2				ug/L	547487	Standard
	Sn	118	563.3	6.8	**0.0309**	0.009	30.5	ug/L	450	Standard
	Sb	123	100.4	11.4	**0.0152**	0.002	14.0	ug/L	105	Standard
	Ba	135	283911.4	0.6	**149.4331**	2.900	1.9	ug/L	111	Standard
	Ce	140	1002744.9	0.8				ug/L	107	Standard
>	**Tb**	159	926505.2	0.9				ug/L	890342	Standard
	Ho	165	19863.0	1.4				ug/L	10	Standard
	Tl	203	430.7	7.9	**0.0532**	0.005	8.6	ug/L	19	Standard
	Tl	205	353.3	5.9	**0.0577**	0.003	4.9	ug/L	17	Standard
	Pb	206	69734.1	0.6	**14.2349**	0.089	0.6	ug/L	247	Standard
	Pb	207	57132.8	0.4	**12.8273**	0.185	1.4	ug/L	215	Standard
	Pb	208	238392.7	1.0	**14.2947**	0.123	0.9	ug/L	770	Standard
	U	238	2332.8	0.7	**0.3863**	0.003	0.7	ug/L	13	Standard
>	**Bi**	209	505510.9	1.2				ug/L	503143	Standard

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Na	23	1.7	173.2	**14.5012**	25.108	173.1	mg/L	2	Standard
Mg	24	86.7	20.3	**0.0546**	0.020	36.4	mg/L	35	Standard
K	39	190.0	17.3	**0.6305**	0.128	20.3	mg/L	25	Standard
Ca	43	63.3	24.1	**4.4800**	2.465	55.0	mg/L	38	Standard
Fe	54	5380.7	2.2	**3.8682**	0.114	2.9	mg/L	126	Standard
Fe	57	1575.1	5.6	**3.7787**	0.227	6.0	mg/L	245	Standard
> **Sc-1**	45	31963.7	1.0				mg/L	25066	Standard
Cl	35	132139.0	0.5				ug/L	125857	Standard
Kr	83	3.3	45.8				ug/L	1	Standard
Br	81	1810.1	9.6				ug/L	1350	Standard
P	31	17954.0	0.5				ug/L	18393	Standard
S	34	3857.2	2.7				ug/L	3739	Standard
Sr	88	100.0	20.0				ug/L	78	Standard
C	12	70.0	14.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	65.5				mg/L	0	Standard
Dy	164	33584.1	0.1				mg/L	2	Standard
Ho-1	165	19863.0	1.4				mg/L	10	Standard
Er	166	16942.8	1.2				mg/L	23	Standard
I	127	7925.4	6.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.953	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.171	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.479
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.471
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 20:54:52
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60883.8	1.2				ug/L	60176	Standard
	Be	9	37452.9	1.8	**51.5526**	0.424	0.8	ug/L	5	Standard
	Al	27	6689358.8	1.2	**50.3342**	1.000	2.0	ug/L	832	Standard
	Sc	45	26605.0	1.1				ug/L	25066	Standard
	Ti	47	21026.9	2.2	**105.9022**	3.978	3.8	ug/L	38	Standard
	V	51	311223.1	1.0	**50.8529**	1.359	2.7	ug/L	974	Standard
	Cr	52	341954.8	0.5	**51.4858**	0.949	1.8	ug/L	5792	Standard
	Cr	53	42792.0	0.9	**50.5973**	0.849	1.7	ug/L	347	Standard
	Mn	55	320340.3	1.3	**48.6001**	1.462	3.0	ug/L	1164	Standard
	Co	59	314843.1	1.0	**50.3634**	1.025	2.0	ug/L	303	Standard
	Ni	60	93552.6	1.1	**50.5030**	1.634	3.2	ug/L	291	Standard
	Cu	65	92967.7	0.8	**50.5704**	1.475	2.9	ug/L	173	Standard
	Zn	66	53414.3	0.4	**49.9687**	0.924	1.8	ug/L	130	Standard
>	**Ge**	72	504684.6	2.1				ug/L	491724	Standard
	As	75	53717.6	0.4	**49.9128**	1.219	2.4	ug/L	-25	Standard
	Se	82	5331.3	0.9	**50.1675**	1.278	2.5	ug/L	12	Standard
	Se-1	77	3711.8	3.5	**50.5254**	1.616	3.2	ug/L	57	Standard
>	**Ga**	71	126.7	4.6				mg/L	148	Standard
	Rb	85	895.0	15.1				ug/L	18	Standard
	Y	89	404245.1	2.3				ug/L	401845	Standard
>	**Rh**	103	30.0	72.6				ug/L	10	Standard
	Mo	98	234676.4	0.3	**98.0864**	1.853	1.9	ug/L	12	Standard
	Ag	107	298634.4	0.6	**50.8442**	0.767	1.5	ug/L	98	Standard
	Cd	111	95655.4	0.7	**51.1097**	1.126	2.2	mg/L	11	Standard
	Cd	114	231347.5	1.0	**50.8153**	1.523	3.0	ug/L	21	Standard
>	**In**	115	545250.3	2.0				ug/L	547487	Standard
	Sn	118	260351.2	0.6	**50.2848**	1.264	2.5	ug/L	450	Standard
	Sb	123	214346.2	0.6	**50.6758**	0.746	1.5	ug/L	105	Standard
	Ba	135	92176.2	0.3	**50.3714**	0.906	1.8	ug/L	111	Standard
	Ce	140	526.7	81.3				ug/L	107	Standard
>	**Tb**	159	882908.4	0.6				ug/L	890342	Standard
	Ho	165	28.3	27.0				ug/L	10	Standard
	Tl	203	374935.9	0.9	**50.1205**	0.165	0.3	ug/L	19	Standard
	Tl	205	318674.8	0.7	**51.9217**	0.204	0.4	ug/L	17	Standard
	Pb	206	235754.0	0.4	**48.9660**	0.280	0.6	ug/L	247	Standard
	Pb	207	213881.4	0.3	**48.8706**	0.570	1.2	ug/L	215	Standard
	Pb	208	834513.3	1.3	**50.9306**	0.866	1.7	ug/L	770	Standard
	U	238	300874.8	0.8	**50.6644**	0.698	1.4	ug/L	13	Standard
>	**Bi**	209	498178.2	0.8				ug/L	503143	Standard

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Na	23	3.3	86.6	**34.8841**	30.207	86.6	mg/L	2	Standard
Mg	24	3477.1	4.4	**4.4607**	0.153	3.4	mg/L	35	Standard
K	39	961.7	14.3	**4.4091**	0.698	15.8	mg/L	25	Standard
Ca	43	43.3	69.6	**2.7007**	5.576	206.5	mg/L	38	Standard
Fe	54	5435.3	1.5	**4.7229**	0.037	0.8	mg/L	126	Standard
Fe	57	1608.4	5.4	**4.8844**	0.305	6.2	mg/L	245	Standard
> **Sc-1**	45	26605.0	1.1				mg/L	25066	Standard
Cl	35	135935.1	1.3				ug/L	125857	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	1366.7	10.0				ug/L	1350	Standard
P	31	19796.3	3.2				ug/L	18393	Standard
S	34	4318.9	4.3				ug/L	3739	Standard
Sr	88	66.7	4.3				ug/L	78	Standard
C	12	60.0	66.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	36.0	84.1				mg/L	2	Standard
Ho-1	165	28.3	27.0				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	1233.4	10.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	103.105		
Al	27	100.668		
Sc	45			
Ti	47	105.902		
V	51	101.706		
Cr	52	102.972		
Cr	53			
Mn	55	97.200		
Co	59	100.727		
Ni	60	101.006		
Cu	65	101.141		
Zn	66	99.937		
> Ge	72		102.636	
As	75	99.826		
Se	82	100.335		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.086		
Ag	107	101.688		
Cd	111	102.219		
Cd	114			
> In	115			99.592
Sn	118	100.570		
Sb	123	101.352		
Ba	135	100.743		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.241		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.861		
U	238	101.329		
> Bi	209			99.013
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 20:58:03
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60304.9	3.7				ug/L	60176	Standard
	Be	9	20.0	25.0	**0.0187**	0.006	34.5	ug/L	5	Standard
	Al	27	2683.6	13.5	**0.0119**	0.002	17.0	ug/L	832	Standard
	Sc	45	27745.4	2.3				ug/L	25066	Standard
	Ti	47	26.3	7.9	**-0.0698**	0.006	9.1	ug/L	38	Standard
	V	51	1025.5	6.6	**0.0041**	0.015	373.0	ug/L	974	Standard
	Cr	52	5980.2	0.4	**0.0103**	0.035	341.4	ug/L	5792	Standard
	Cr	53	358.3	2.9	**0.0313**	0.025	80.8	ug/L	347	Standard
	Mn	55	1307.7	11.4	**-0.0089**	0.015	168.5	ug/L	1164	Standard
	Co	59	319.0	5.2	**0.0037**	0.001	16.8	ug/L	303	Standard
	Ni	60	213.7	10.1	**-0.0706**	0.007	10.2	ug/L	291	Standard
	Cu	65	176.0	45.3	**0.0009**	0.040	4571.7	ug/L	173	Standard
	Zn	66	197.3	32.7	**-0.0440**	0.055	125.2	ug/L	130	Standard
>	**Ge**	72	485859.0	4.1				ug/L	491724	Standard
	As	75	-7.9	564.3	**0.0257**	0.042	164.8	ug/L	-25	Standard
	Se	82	20.6	52.0	**0.1089**	0.105	96.6	ug/L	12	Standard
	Se-1	77	51.3	4.9	**0.0854**	0.006	7.0	ug/L	57	Standard
>	**Ga**	71	96.7	26.5				mg/L	148	Standard
	Rb	85	53.3	75.8				ug/L	18	Standard
	Y	89	428893.2	2.6				ug/L	401845	Standard
>	**Rh**	103	21.7	35.3				ug/L	10	Standard
	Mo	98	267.7	20.3	**0.1004**	0.022	21.8	ug/L	12	Standard
	Ag	107	154.3	36.0	**0.0093**	0.009	97.1	ug/L	98	Standard
	Cd	111	33.1	68.4	**0.0119**	0.011	96.1	mg/L	11	Standard
	Cd	114	72.5	60.2	**0.0105**	0.009	86.3	ug/L	21	Standard
>	**In**	115	582185.2	0.5				ug/L	547487	Standard
	Sn	118	775.0	15.8	**0.0663**	0.022	32.6	ug/L	450	Standard
	Sb	123	370.4	13.0	**0.0743**	0.010	13.7	ug/L	105	Standard
	Ba	135	185.0	36.1	**0.0393**	0.035	88.5	ug/L	111	Standard
	Ce	140	261.7	98.8				ug/L	107	Standard
>	**Tb**	159	909104.3	2.8				ug/L	890342	Standard
	Ho	165	13.3	21.7				ug/L	10	Standard
	Tl	203	110.3	66.1	**0.0108**	0.009	83.7	ug/L	19	Standard
	Tl	205	71.7	63.3	**0.0123**	0.007	55.7	ug/L	17	Standard
	Pb	206	312.7	18.6	**0.0088**	0.010	110.7	ug/L	247	Standard
	Pb	207	257.0	12.9	**0.0056**	0.006	101.8	ug/L	215	Standard
	Pb	208	984.0	5.5	**-0.0008**	0.002	247.7	ug/L	770	Standard
	U	238	62.3	31.4	**0.0094**	0.003	31.0	ug/L	13	Standard
>	**Bi**	209	506036.5	3.2				ug/L	503143	Standard

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Na	23	1.7	173.2	**16.4456**	28.476	173.2	mg/L	2	Standard
Mg	24	31.7	48.2	**0.0006**	0.019	3169.4	mg/L	35	Standard
K	39	28.3	44.4	**0.0148**	0.056	376.7	mg/L	25	Standard
Ca	43	30.0	16.7	**0.0246**	0.947	3845.4	mg/L	38	Standard
Fe	54	152.6	13.3	**-0.0059**	0.014	243.4	mg/L	126	Standard
Fe	57	205.0	29.6	**-0.3585**	0.221	61.6	mg/L	245	Standard
> **Sc-1**	45	27745.4	2.3				mg/L	25066	Standard
Cl	35	137127.8	1.4				ug/L	125857	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	1390.1	15.1				ug/L	1350	Standard
P	31	20685.8	4.9				ug/L	18393	Standard
S	34	4127.2	9.0				ug/L	3739	Standard
Sr	88	78.3	54.3				ug/L	78	Standard
C	12	46.7	12.4				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	13.0	115.8				mg/L	2	Standard
Ho-1	165	13.3	21.7				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	23	Standard
I	127	885.0	8.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.807	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.338
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.575
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078717
Sample Date/Time: Tuesday, June 21, 2016 21:01:16
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58967.9	1.9				ug/L	60176	Standard
	Be	9	248.3	8.1	**0.3438**	0.024	6.9	ug/L	5	Standard
	Al	27	2227874.3	0.9	**17.3042**	0.322	1.9	ug/L	832	Standard
	Sc	45	26897.2	2.2				ug/L	25066	Standard
	Ti	47	1431.7	18.6	**6.8597**	1.258	18.3	ug/L	38	Standard
	V	51	47458.5	2.5	**7.4476**	0.204	2.7	ug/L	974	Standard
	Cr	52	32459.4	0.3	**3.9305**	0.054	1.4	ug/L	5792	Standard
	Cr	53	3765.5	1.9	**3.9831**	0.119	3.0	ug/L	347	Standard
	Mn	55	1239543.3	1.8	**184.7250**	3.779	2.0	ug/L	1164	Standard
	Co	59	18572.0	2.0	**2.8625**	0.053	1.9	ug/L	303	Standard
	Ni	60	10124.4	1.0	**5.1808**	0.100	1.9	ug/L	291	Standard
	Cu	65	6785.9	0.8	**3.5234**	0.059	1.7	ug/L	173	Standard
	Zn	66	12295.0	0.6	**11.0803**	0.079	0.7	ug/L	130	Standard
>	**Ge**	72	515286.4	0.8				ug/L	491724	Standard
	As	75	1394.4	4.3	**1.3016**	0.051	3.9	ug/L	-25	Standard
	Se	82	20.2	35.8	**0.0940**	0.067	71.3	ug/L	12	Standard
	Se-1	77	68.7	3.7	**0.2777**	0.038	13.8	ug/L	57	Standard
>	**Ga**	71	3877.2	6.5				mg/L	148	Standard
	Rb	85	33081.1	0.9				ug/L	18	Standard
	Y	89	491266.4	1.3				ug/L	401845	Standard
>	**Rh**	103	30.0	50.0				ug/L	10	Standard
	Mo	98	552.0	0.6	**0.2299**	0.004	1.9	ug/L	12	Standard
	Ag	107	180.0	16.1	**0.0157**	0.005	31.4	ug/L	98	Standard
	Cd	111	82.7	5.7	**0.0401**	0.003	6.4	mg/L	11	Standard
	Cd	114	155.0	26.9	**0.0301**	0.009	30.6	ug/L	21	Standard
>	**In**	115	536864.3	1.3				ug/L	547487	Standard
	Sn	118	871.7	22.7	**0.0970**	0.038	39.0	ug/L	450	Standard
	Sb	123	155.5	16.1	**0.0297**	0.006	20.1	ug/L	105	Standard
	Ba	135	92951.9	0.7	**51.5816**	0.551	1.1	ug/L	111	Standard
	Ce	140	470743.1	1.1				ug/L	107	Standard
>	**Tb**	159	879768.9	2.5				ug/L	890342	Standard
	Ho	165	7800.3	2.1				ug/L	10	Standard
	Tl	203	213.0	5.0	**0.0249**	0.002	7.3	ug/L	19	Standard
	Tl	205	180.0	7.3	**0.0302**	0.002	7.1	ug/L	17	Standard
	Pb	206	22080.4	1.2	**4.5264**	0.114	2.5	ug/L	247	Standard
	Pb	207	18228.6	0.8	**4.1081**	0.080	1.9	ug/L	215	Standard
	Pb	208	74972.7	0.7	**4.5107**	0.075	1.7	ug/L	770	Standard
	U	238	864.0	6.8	**0.1443**	0.008	5.6	ug/L	13	Standard
>	**Bi**	209	499355.6	1.6				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.5774**	30.436	173.2	mg/L	2	Standard
Mg	24	61.7	40.0	**0.0403**	0.033	80.9	mg/L	35	Standard
K	39	90.0	19.2	**0.3053**	0.077	25.2	mg/L	25	Standard
Ca	43	26.7	43.3	**-0.4112**	2.189	532.4	mg/L	38	Standard
Fe	54	3684.8	2.8	**3.1243**	0.156	5.0	mg/L	126	Standard
Fe	57	1071.7	3.2	**2.8502**	0.193	6.8	mg/L	245	Standard
> **Sc-1**	45	26897.2	2.2				mg/L	25066	Standard
Cl	35	128581.4	1.9				ug/L	125857	Standard
Kr	83	3.3	69.3				ug/L	1	Standard
Br	81	1366.7	14.0				ug/L	1350	Standard
P	31	18504.6	2.4				ug/L	18393	Standard
S	34	3872.2	3.4				ug/L	3739	Standard
Sr	88	98.3	24.0				ug/L	78	Standard
C	12	83.3	13.9				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	0	Standard
Dy	164	13079.9	4.0				mg/L	2	Standard
Ho-1	165	7800.3	2.1				mg/L	10	Standard
Er	166	6874.9	2.4				mg/L	23	Standard
I	127	43099.7	5.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.992	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.792	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.060
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.247
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606096401
Sample Date/Time: Tuesday, June 21, 2016 21:04:28
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61683.6	0.8				ug/L	60176	Standard
	Be	9	883.4	4.3	**1.1916**	0.058	4.9	ug/L	5	Standard
	Al	27	5178030.7	2.0	**38.4554**	1.068	2.8	ug/L	832	Standard
	Sc	45	30799.6	3.4				ug/L	25066	Standard
	Ti	47	4718.7	1.1	**24.0318**	0.395	1.6	ug/L	38	Standard
	V	51	114345.0	1.6	**18.9116**	0.174	0.9	ug/L	974	Standard
	Cr	52	105274.2	1.9	**15.4891**	0.252	1.6	ug/L	5792	Standard
	Cr	53	13055.6	1.4	**15.4331**	0.322	2.1	ug/L	347	Standard
	Mn	55	7305075.4	0.8	**1132.9355**	7.283	0.6	ug/L	1164	Standard
	Co	59	110053.3	1.1	**17.8911**	0.196	1.1	ug/L	303	Standard
	Ni	60	42512.6	2.1	**23.2560**	0.355	1.5	ug/L	291	Standard
	Cu	65	53072.8	1.3	**29.3454**	0.332	1.1	ug/L	173	Standard
	Zn	66	99122.2	1.6	**94.6103**	1.148	1.2	ug/L	130	Standard
>	**Ge**	72	495611.5	1.0				ug/L	491724	Standard
	As	75	7905.4	0.5	**7.5070**	0.111	1.5	ug/L	-25	Standard
	Se	82	123.9	10.0	**1.0965**	0.127	11.6	ug/L	12	Standard
	Se-1	77	121.7	4.5	**1.0589**	0.089	8.4	ug/L	57	Standard
>	**Ga**	71	15628.1	1.2				mg/L	148	Standard
	Rb	85	148601.9	0.8				ug/L	18	Standard
	Y	89	644139.5	2.1				ug/L	401845	Standard
>	**Rh**	103	43.3	26.6				ug/L	10	Standard
	Mo	98	2523.4	0.5	**1.0118**	0.017	1.7	ug/L	12	Standard
	Ag	107	592.0	2.4	**0.0817**	0.001	1.4	ug/L	98	Standard
	Cd	111	807.3	4.3	**0.4111**	0.024	5.8	mg/L	11	Standard
	Cd	114	1817.8	11.0	**0.3801**	0.041	10.8	ug/L	21	Standard
>	**In**	115	565837.8	1.4				ug/L	547487	Standard
	Sn	118	1080.0	6.1	**0.1273**	0.013	10.3	ug/L	450	Standard
	Sb	123	319.1	4.8	**0.0651**	0.004	6.6	ug/L	105	Standard
	Ba	135	459850.7	0.5	**242.3294**	2.872	1.2	ug/L	111	Standard
	Ce	140	772197.4	0.7				ug/L	107	Standard
>	**Tb**	159	924228.8	0.8				ug/L	890342	Standard
	Ho	165	18805.0	1.1				ug/L	10	Standard
	Tl	203	1334.1	2.6	**0.1715**	0.004	2.4	ug/L	19	Standard
	Tl	205	1121.7	11.7	**0.1804**	0.021	11.8	ug/L	17	Standard
	Pb	206	155702.0	1.1	**31.7305**	0.431	1.4	ug/L	247	Standard
	Pb	207	128499.6	0.8	**28.8036**	0.297	1.0	ug/L	215	Standard
	Pb	208	526834.4	0.3	**31.5436**	0.346	1.1	ug/L	770	Standard
	U	238	6774.5	2.8	**1.1193**	0.041	3.6	ug/L	13	Standard
>	**Bi**	209	507432.9	0.8				ug/L	503143	Standard

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Na	23	1.7	173.2	**14.5920**	25.265	173.1	mg/L	2	Standard
Mg	24	123.3	36.3	**0.0995**	0.052	52.6	mg/L	35	Standard
K	39	286.7	11.6	**1.0529**	0.157	14.9	mg/L	25	Standard
Ca	43	181.7	8.8	**23.8683**	3.171	13.3	mg/L	38	Standard
Fe	54	30681.9	0.6	**23.5794**	0.906	3.8	mg/L	126	Standard
Fe	57	7930.4	3.9	**24.3571**	0.437	1.8	mg/L	245	Standard
Sc-1	45	30799.6	3.4				mg/L	25066	Standard
Cl	35	140264.3	0.6				ug/L	125857	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	4600.7	5.6				ug/L	1350	Standard
P	31	20849.3	1.5				ug/L	18393	Standard
S	34	4297.3	6.2				ug/L	3739	Standard
Sr	88	158.3	6.6				ug/L	78	Standard
C	12	330.0	10.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	140.0	7.1				mg/L	0	Standard
Dy	164	30992.7	0.4				mg/L	2	Standard
Ho-1	165	18805.0	1.1				mg/L	10	Standard
Er	166	16085.2	2.6				mg/L	23	Standard
I	127	12078.2	5.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.506	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.791	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.352
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.853
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606096402
Sample Date/Time: Tuesday, June 21, 2016 21:07:39
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60443.7	2.3				ug/L	60176	Standard
	Be	9	858.4	6.1	**1.1817**	0.077	6.5	ug/L	5	Standard
	Al	27	6826154.4	0.3	**51.7504**	1.316	2.5	ug/L	832	Standard
	Sc	45	29154.7	2.0				ug/L	25066	Standard
	Ti	47	4436.6	0.7	**23.0756**	0.146	0.6	ug/L	38	Standard
	V	51	102185.5	0.5	**17.2535**	0.167	1.0	ug/L	974	Standard
	Cr	52	95353.4	0.7	**14.2638**	0.044	0.3	ug/L	5792	Standard
	Cr	53	11679.5	2.1	**14.0700**	0.355	2.5	ug/L	347	Standard
	Mn	55	7652551.6	0.6	**1212.6036**	11.003	0.9	ug/L	1164	Standard
	Co	59	114240.4	1.3	**18.9785**	0.353	1.9	ug/L	303	Standard
	Ni	60	37577.9	2.9	**20.9856**	0.630	3.0	ug/L	291	Standard
	Cu	65	36514.3	2.8	**20.5993**	0.606	2.9	ug/L	173	Standard
	Zn	66	77328.8	1.2	**75.3661**	1.101	1.5	ug/L	130	Standard
>	**Ge**	72	485083.6	0.6				ug/L	491724	Standard
	As	75	9274.5	0.6	**8.9907**	0.056	0.6	ug/L	-25	Standard
	Se	82	68.6	8.2	**0.5801**	0.058	10.0	ug/L	12	Standard
	Se-1	77	100.0	6.2	**0.7851**	0.097	12.4	ug/L	57	Standard
>	**Ga**	71	13681.2	0.5				mg/L	148	Standard
	Rb	85	107244.9	1.0				ug/L	18	Standard
	Y	89	606939.5	0.4				ug/L	401845	Standard
>	**Rh**	103	73.3	15.7				ug/L	10	Standard
	Mo	98	2763.0	0.4	**1.1251**	0.031	2.8	ug/L	12	Standard
	Ag	107	389.0	4.8	**0.0494**	0.004	8.4	ug/L	98	Standard
	Cd	111	497.8	7.0	**0.2554**	0.018	7.1	mg/L	11	Standard
	Cd	114	1250.0	4.5	**0.2640**	0.013	4.9	ug/L	21	Standard
>	**In**	115	557635.5	2.9				ug/L	547487	Standard
	Sn	118	808.4	8.9	**0.0790**	0.017	21.2	ug/L	450	Standard
	Sb	123	238.7	4.1	**0.0476**	0.003	6.2	ug/L	105	Standard
	Ba	135	379584.7	0.5	**203.0712**	6.745	3.3	ug/L	111	Standard
	Ce	140	697160.9	0.9				ug/L	107	Standard
>	**Tb**	159	886275.1	1.2				ug/L	890342	Standard
	Ho	165	14727.2	5.5				ug/L	10	Standard
	Tl	203	896.7	2.2	**0.1223**	0.004	3.1	ug/L	19	Standard
	Tl	205	745.0	8.4	**0.1283**	0.009	7.2	ug/L	17	Standard
	Pb	206	178412.3	0.6	**38.8786**	0.719	1.8	ug/L	247	Standard
	Pb	207	147399.5	0.7	**35.3313**	0.706	2.0	ug/L	215	Standard
	Pb	208	606573.9	0.8	**38.8359**	0.746	1.9	ug/L	770	Standard
	U	238	7105.3	1.3	**1.2549**	0.033	2.7	ug/L	13	Standard
>	**Bi**	209	474753.1	1.4				ug/L	503143	Standard

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Na	23	8.3	34.6	**79.6978**	26.468	33.2	mg/L	2	Standard
Mg	24	110.0	7.9	**0.0911**	0.012	13.1	mg/L	35	Standard
K	39	256.7	19.5	**0.9885**	0.219	22.1	mg/L	25	Standard
Ca	43	411.7	11.5	**64.4783**	8.203	12.7	mg/L	38	Standard
Fe	54	35968.6	1.2	**29.2125**	0.258	0.9	mg/L	126	Standard
Fe	57	9513.0	2.7	**31.1720**	1.290	4.1	mg/L	245	Standard
> **Sc-1**	45	29154.7	2.0				mg/L	25066	Standard
Cl	35	139874.1	1.4				ug/L	125857	Standard
Kr	83	2.3	107.9				ug/L	1	Standard
Br	81	2370.2	14.6				ug/L	1350	Standard
P	31	20196.8	1.6				ug/L	18393	Standard
S	34	4530.7	2.9				ug/L	3739	Standard
Sr	88	208.3	7.3				ug/L	78	Standard
C	12	226.7	16.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	76.7	52.7				mg/L	0	Standard
Dy	164	23848.2	0.8				mg/L	2	Standard
Ho-1	165	14727.2	5.5				mg/L	10	Standard
Er	166	12765.4	0.8				mg/L	23	Standard
I	127	5762.8	6.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.445	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.650	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.854	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	94.358	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606096403
Sample Date/Time: Tuesday, June 21, 2016 21:10:51
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59725.8	1.2				ug/L	60176	Standard
	Be	9	1065.0	7.1	**1.4856**	0.101	6.8	ug/L	5	Standard
	Al	27	6735770.9	2.1	**51.6724**	1.686	3.3	ug/L	832	Standard
	Sc	45	31080.2	2.4				ug/L	25066	Standard
	Ti	47	4731.4	2.9	**23.5917**	1.146	4.9	ug/L	38	Standard
	V	51	159656.7	1.1	**25.9167**	0.803	3.1	ug/L	974	Standard
	Cr	52	150620.2	2.4	**22.0767**	0.911	4.1	ug/L	5792	Standard
	Cr	53	18673.2	1.5	**21.7771**	0.815	3.7	ug/L	347	Standard
	Mn	55	23162167.1	2.5	**3518.0721**	158.797	4.5	ug/L	1164	Standard
	Co	59	153465.2	2.3	**24.4482**	1.075	4.4	ug/L	303	Standard
	Ni	60	66553.2	1.2	**35.7474**	1.066	3.0	ug/L	291	Standard
	Cu	65	62739.7	1.9	**33.9798**	1.174	3.5	ug/L	173	Standard
	Zn	66	111779.9	1.3	**104.4821**	3.185	3.0	ug/L	130	Standard
>	**Ge**	72	506423.5	2.2				ug/L	491724	Standard
	As	75	13400.8	1.3	**12.4352**	0.374	3.0	ug/L	-25	Standard
	Se	82	118.6	7.2	**1.0218**	0.099	9.7	ug/L	12	Standard
	Se-1	77	153.7	9.5	**1.4639**	0.226	15.5	ug/L	57	Standard
>	**Ga**	71	25104.1	4.5				mg/L	148	Standard
	Rb	85	212398.7	1.8				ug/L	18	Standard
	Y	89	707988.0	2.1				ug/L	401845	Standard
>	**Rh**	103	40.0	21.7				ug/L	10	Standard
	Mo	98	3597.9	2.4	**1.5414**	0.022	1.4	ug/L	12	Standard
	Ag	107	833.4	3.0	**0.1305**	0.003	2.1	ug/L	98	Standard
	Cd	111	780.1	2.5	**0.4239**	0.014	3.3	mg/L	11	Standard
	Cd	114	1837.3	7.4	**0.4101**	0.024	5.8	ug/L	21	Standard
>	**In**	115	530289.5	1.6				ug/L	547487	Standard
	Sn	118	726.7	5.9	**0.0704**	0.006	9.1	ug/L	450	Standard
	Sb	123	189.3	5.2	**0.0384**	0.003	7.9	ug/L	105	Standard
	Ba	135	438353.8	1.0	**246.4838**	2.881	1.2	ug/L	111	Standard
	Ce	140	990763.4	1.4				ug/L	107	Standard
>	**Tb**	159	873474.7	0.7				ug/L	890342	Standard
	Ho	165	24511.5	2.8				ug/L	10	Standard
	Tl	203	1762.8	2.6	**0.2422**	0.010	4.3	ug/L	19	Standard
	Tl	205	1573.4	6.4	**0.2681**	0.014	5.1	ug/L	17	Standard
	Pb	206	175441.6	1.0	**37.9831**	0.971	2.6	ug/L	247	Standard
	Pb	207	144605.2	1.4	**34.4368**	0.983	2.9	ug/L	215	Standard
	Pb	208	588641.2	1.8	**37.4440**	1.195	3.2	ug/L	770	Standard
	U	238	9588.7	2.3	**1.6828**	0.058	3.5	ug/L	13	Standard
>	**Bi**	209	477887.7	1.6				ug/L	503143	Standard

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Na	23	3.3	86.6	**29.6244**	25.651	86.6	mg/L	2	Standard
Mg	24	100.0	32.8	**0.0724**	0.039	53.5	mg/L	35	Standard
K	39	251.7	22.0	**0.8997**	0.220	24.5	mg/L	25	Standard
Ca	43	298.3	10.8	**42.0685**	4.357	10.4	mg/L	38	Standard
Fe	54	46609.4	1.9	**35.5544**	1.340	3.8	mg/L	126	Standard
Fe	57	12280.0	1.7	**37.9835**	1.542	4.1	mg/L	245	Standard
> **Sc-1**	45	31080.2	2.4				mg/L	25066	Standard
Cl	35	131632.1	1.5				ug/L	125857	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	2233.5	9.3				ug/L	1350	Standard
P	31	19908.1	1.2				ug/L	18393	Standard
S	34	4282.3	3.5				ug/L	3739	Standard
Sr	88	186.7	10.8				ug/L	78	Standard
C	12	196.7	7.8				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	28.4				mg/L	0	Standard
Dy	164	39222.5	1.3				mg/L	2	Standard
Ho-1	165	24511.5	2.8				mg/L	10	Standard
Er	166	21451.8	2.5				mg/L	23	Standard
I	127	11184.1	5.0				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.252	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.989	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.859
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.981
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606096403
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Method 6020 - Summary Report

Sample ID: L1606096404
Sample Date/Time: Tuesday, June 21, 2016 21:14:02
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65608.5	2.4				ug/L	60176	Standard
	Be	9	978.4	9.3	**1.2397**	0.091	7.3	ug/L	5	Standard
	Al	27	20276434.3	2.1	**141.6733**	6.192	4.4	ug/L	832	Standard
	Sc	45	32165.8	0.5				ug/L	25066	Standard
	Ti	47	4298.9	2.0	**22.5280**	0.481	2.1	ug/L	38	Standard
	V	51	146058.2	0.9	**24.9272**	0.315	1.3	ug/L	974	Standard
	Cr	52	151598.3	0.6	**23.4255**	0.607	2.6	ug/L	5792	Standard
	Cr	53	18476.3	1.4	**22.6814**	0.785	3.5	ug/L	347	Standard
	Mn	55	9420566.7	0.7	**1504.6626**	40.210	2.7	ug/L	1164	Standard
	Co	59	121066.1	1.2	**20.2709**	0.323	1.6	ug/L	303	Standard
	Ni	60	72261.9	0.3	**40.8509**	0.828	2.0	ug/L	291	Standard
	Cu	65	54807.6	0.9	**31.2098**	0.512	1.6	ug/L	173	Standard
	Zn	66	122838.6	0.9	**120.7890**	1.613	1.3	ug/L	130	Standard
>	**Ge**	72	481416.0	1.9				ug/L	491724	Standard
	As	75	16765.9	1.3	**16.3502**	0.164	1.0	ug/L	-25	Standard
	Se	82	200.1	3.3	**1.8846**	0.080	4.3	ug/L	12	Standard
	Se-1	77	165.3	6.7	**1.7419**	0.196	11.3	ug/L	57	Standard
>	**Ga**	71	21279.9	1.7				mg/L	148	Standard
	Rb	85	212211.0	1.6				ug/L	18	Standard
	Y	89	668598.8	3.4				ug/L	401845	Standard
>	**Rh**	103	146.7	13.8				ug/L	10	Standard
	Mo	98	6675.4	3.0	**2.8530**	0.135	4.7	ug/L	12	Standard
	Ag	107	751.4	7.2	**0.1157**	0.012	10.3	ug/L	98	Standard
	Cd	111	870.3	3.3	**0.4716**	0.024	5.2	mg/L	11	Standard
	Cd	114	2091.4	3.2	**0.4659**	0.020	4.4	ug/L	21	Standard
>	**In**	115	532573.7	1.9				ug/L	547487	Standard
	Sn	118	885.0	9.3	**0.1010**	0.014	13.8	ug/L	450	Standard
	Sb	123	194.5	1.0	**0.0395**	0.001	2.8	ug/L	105	Standard
	Ba	135	1163510.0	0.9	**651.5400**	6.396	1.0	ug/L	111	Standard
	Ce	140	906567.9	0.7				ug/L	107	Standard
>	**Tb**	159	883392.7	1.4				ug/L	890342	Standard
	Ho	165	22286.4	1.5				ug/L	10	Standard
	Tl	203	2482.5	0.8	**0.3521**	0.004	1.0	ug/L	19	Standard
	Tl	205	1881.8	2.0	**0.3296**	0.010	3.2	ug/L	17	Standard
	Pb	206	158091.9	0.8	**35.1738**	0.401	1.1	ug/L	247	Standard
	Pb	207	129834.2	0.5	**31.7739**	0.359	1.1	ug/L	215	Standard
	Pb	208	527254.9	0.3	**34.4662**	0.500	1.5	ug/L	770	Standard
	U	238	16067.5	1.1	**2.8987**	0.040	1.4	ug/L	13	Standard
>	**Bi**	209	464873.7	1.2				ug/L	503143	Standard

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Na	23	13.3	78.1	**115.9288**	90.093	77.7	mg/L	2	Standard
Mg	24	990.0	4.0	**1.0209**	0.038	3.7	mg/L	35	Standard
K	39	433.3	22.9	**1.5710**	0.385	24.5	mg/L	25	Standard
Ca	43	1288.4	2.4	**192.5985**	3.798	2.0	mg/L	38	Standard
Fe	54	42265.6	1.7	**31.1194**	0.570	1.8	mg/L	126	Standard
Fe	57	11794.6	0.9	**35.1500**	0.244	0.7	mg/L	245	Standard
> **Sc-1**	45	32165.8	0.5				mg/L	25066	Standard
Cl	35	147961.0	1.0				ug/L	125857	Standard
Kr	83	2.7	57.3				ug/L	1	Standard
Br	81	8902.6	11.5				ug/L	1350	Standard
P	31	19879.7	1.0				ug/L	18393	Standard
S	34	4369.0	3.9				ug/L	3739	Standard
Sr	88	638.3	9.0				ug/L	78	Standard
C	12	266.7	53.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	80.0	25.0				mg/L	0	Standard
Dy	164	35429.3	3.3				mg/L	2	Standard
Ho-1	165	22286.4	1.5				mg/L	10	Standard
Er	166	19993.2	2.6				mg/L	23	Standard
I	127	41665.6	4.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.028	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.904	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.276
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.394
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606096405
Sample Date/Time: Tuesday, June 21, 2016 21:17:14
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61603.3	1.5				ug/L	60176	Standard
	Be	9	600.0	13.8	**0.8067**	0.103	12.7	ug/L	5	Standard
	Al	27	6725691.5	0.7	**50.0139**	0.453	0.9	ug/L	832	Standard
	Sc	45	29426.9	0.5				ug/L	25066	Standard
	Ti	47	3385.7	1.8	**17.9264**	0.361	2.0	ug/L	38	Standard
	V	51	99171.8	1.0	**17.0872**	0.169	1.0	ug/L	974	Standard
	Cr	52	93106.5	0.5	**14.2111**	0.046	0.3	ug/L	5792	Standard
	Cr	53	11137.4	1.5	**13.6811**	0.187	1.4	ug/L	347	Standard
	Mn	55	4849349.2	0.5	**784.1366**	4.043	0.5	ug/L	1164	Standard
	Co	59	77636.7	0.7	**13.1472**	0.104	0.8	ug/L	303	Standard
	Ni	60	35771.2	0.8	**20.3821**	0.193	0.9	ug/L	291	Standard
	Cu	65	33083.4	0.4	**19.0401**	0.116	0.6	ug/L	173	Standard
	Zn	66	62395.9	0.5	**62.0204**	0.339	0.5	ug/L	130	Standard
>	**Ge**	72	475299.6	0.2				ug/L	491724	Standard
	As	75	7138.4	0.3	**7.0696**	0.031	0.4	ug/L	-25	Standard
	Se	82	72.9	6.9	**0.6363**	0.050	7.8	ug/L	12	Standard
	Se-1	77	94.7	8.2	**0.7362**	0.114	15.4	ug/L	57	Standard
>	**Ga**	71	13139.0	2.4				mg/L	148	Standard
	Rb	85	122434.4	1.4				ug/L	18	Standard
	Y	89	560272.6	0.4				ug/L	401845	Standard
>	**Rh**	103	85.0	10.2				ug/L	10	Standard
	Mo	98	2829.3	0.9	**1.2062**	0.019	1.6	ug/L	12	Standard
	Ag	107	451.3	3.3	**0.0633**	0.003	4.5	ug/L	98	Standard
	Cd	111	585.9	3.4	**0.3157**	0.009	2.8	mg/L	11	Standard
	Cd	114	1338.5	8.1	**0.2966**	0.027	9.2	ug/L	21	Standard
>	**In**	115	532548.5	0.9				ug/L	547487	Standard
	Sn	118	618.3	6.2	**0.0484**	0.008	15.8	ug/L	450	Standard
	Sb	123	149.8	7.0	**0.0287**	0.003	9.9	ug/L	105	Standard
	Ba	135	747435.4	0.3	**418.5133**	3.169	0.8	ug/L	111	Standard
	Ce	140	560557.9	2.3				ug/L	107	Standard
>	**Tb**	159	866879.8	2.2				ug/L	890342	Standard
	Ho	165	12675.3	1.6				ug/L	10	Standard
	Tl	203	1043.0	2.4	**0.1481**	0.005	3.4	ug/L	19	Standard
	Tl	205	948.4	1.9	**0.1690**	0.003	2.0	ug/L	17	Standard
	Pb	206	83575.9	1.0	**18.8379**	0.180	1.0	ug/L	247	Standard
	Pb	207	68735.9	0.3	**17.0411**	0.225	1.3	ug/L	215	Standard
	Pb	208	284935.0	0.5	**18.8685**	0.292	1.5	ug/L	770	Standard
	U	238	6592.4	0.9	**1.2061**	0.023	1.9	ug/L	13	Standard
>	**Bi**	209	458241.8	1.1				ug/L	503143	Standard

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Na	23	16.7	75.5	**158.9499**	120.668	75.9	mg/L	2	Standard
Mg	24	601.7	3.7	**0.6653**	0.030	4.4	mg/L	35	Standard
K	39	206.7	8.5	**0.7650**	0.071	9.3	mg/L	25	Standard
Ca	43	960.0	3.6	**155.9005**	6.175	4.0	mg/L	38	Standard
Fe	54	23834.6	0.7	**19.1304**	0.220	1.1	mg/L	126	Standard
Fe	57	7443.5	4.6	**23.9100**	1.153	4.8	mg/L	245	Standard
> **Sc-1**	45	29426.9	0.5				mg/L	25066	Standard
Cl	35	144441.3	1.4				ug/L	125857	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	2490.2	5.4				ug/L	1350	Standard
P	31	20085.0	2.1				ug/L	18393	Standard
S	34	4562.4	2.9				ug/L	3739	Standard
Sr	88	393.3	4.5				ug/L	78	Standard
C	12	153.3	3.8				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	75.0				mg/L	0	Standard
Dy	164	20473.5	4.3				mg/L	2	Standard
Ho-1	165	12675.3	1.6				mg/L	10	Standard
Er	166	10737.1	4.1				mg/L	23	Standard
I	127	13227.4	3.4				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.372	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.660	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.272
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	91.076
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606096406
Sample Date/Time: Tuesday, June 21, 2016 21:20:25
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60848.7	3.4				ug/L	60176	Standard
	Be	9	848.4	7.1	**1.1616**	0.108	9.3	ug/L	5	Standard
	Al	27	6018452.6	1.5	**45.3266**	0.962	2.1	ug/L	832	Standard
	Sc	45	29640.6	1.5				ug/L	25066	Standard
	Ti	47	4099.9	2.1	**21.1801**	0.616	2.9	ug/L	38	Standard
	V	51	132165.3	0.9	**22.2298**	0.427	1.9	ug/L	974	Standard
	Cr	52	138324.2	0.9	**20.9859**	0.510	2.4	ug/L	5792	Standard
	Cr	53	16679.2	2.2	**20.1440**	0.532	2.6	ug/L	347	Standard
	Mn	55	5769097.8	1.9	**908.7457**	30.297	3.3	ug/L	1164	Standard
	Co	59	130326.2	1.6	**21.5282**	0.614	2.9	ug/L	303	Standard
	Ni	60	50019.1	0.7	**27.8281**	0.578	2.1	ug/L	291	Standard
	Cu	65	47838.4	0.9	**26.8518**	0.165	0.6	ug/L	173	Standard
	Zn	66	97149.5	0.7	**94.1665**	1.182	1.3	ug/L	130	Standard
>	**Ge**	72	488085.6	1.5				ug/L	491724	Standard
	As	75	10945.8	1.2	**10.5404**	0.129	1.2	ug/L	-25	Standard
	Se	82	126.3	7.0	**1.1371**	0.072	6.3	ug/L	12	Standard
	Se-1	77	119.7	5.4	**1.0557**	0.069	6.6	ug/L	57	Standard
>	**Ga**	71	21567.0	2.2				mg/L	148	Standard
	Rb	85	186239.4	1.0				ug/L	18	Standard
	Y	89	601057.7	2.4				ug/L	401845	Standard
>	**Rh**	103	81.7	23.2				ug/L	10	Standard
	Mo	98	3186.2	0.9	**1.3649**	0.035	2.5	ug/L	12	Standard
	Ag	107	455.7	8.5	**0.0644**	0.006	9.6	ug/L	98	Standard
	Cd	111	524.0	6.4	**0.2832**	0.020	7.0	mg/L	11	Standard
	Cd	114	1252.9	3.3	**0.2784**	0.006	2.0	ug/L	21	Standard
>	**In**	115	530301.4	1.7				ug/L	547487	Standard
	Sn	118	516.7	6.3	**0.0287**	0.006	19.5	ug/L	450	Standard
	Sb	123	143.3	12.6	**0.0273**	0.005	17.6	ug/L	105	Standard
	Ba	135	1292682.2	0.4	**727.0559**	14.238	2.0	ug/L	111	Standard
	Ce	140	693916.1	1.8				ug/L	107	Standard
>	**Tb**	159	864495.5	2.4				ug/L	890342	Standard
	Ho	165	16118.6	0.6				ug/L	10	Standard
	Tl	203	1937.1	6.9	**0.2725**	0.018	6.6	ug/L	19	Standard
	Tl	205	1651.8	5.8	**0.2879**	0.017	5.8	ug/L	17	Standard
	Pb	206	129961.3	0.5	**28.7585**	0.109	0.4	ug/L	247	Standard
	Pb	207	107597.0	0.6	**26.1888**	0.063	0.2	ug/L	215	Standard
	Pb	208	436286.5	1.1	**28.3645**	0.441	1.6	ug/L	770	Standard
	U	238	5730.8	1.3	**1.0282**	0.019	1.9	ug/L	13	Standard
>	**Bi**	209	467215.7	0.6				ug/L	503143	Standard

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Na	23	5.0	100.0	**47.5230**	47.311	99.6	mg/L	2	Standard
Mg	24	1591.8	6.0	**1.8117**	0.138	7.6	mg/L	35	Standard
K	39	305.0	4.3	**1.1740**	0.072	6.1	mg/L	25	Standard
Ca	43	253.3	7.5	**36.8883**	2.607	7.1	mg/L	38	Standard
Fe	54	39612.5	0.8	**31.6600**	0.733	2.3	mg/L	126	Standard
Fe	57	9963.3	0.7	**32.1373**	0.629	2.0	mg/L	245	Standard
> **Sc-1**	45	29640.6	1.5				mg/L	25066	Standard
Cl	35	134083.4	1.7				ug/L	125857	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	10510.3	5.8				ug/L	1350	Standard
P	31	21156.4	3.0				ug/L	18393	Standard
S	34	4474.0	1.7				ug/L	3739	Standard
Sr	88	380.0	15.2				ug/L	78	Standard
C	12	116.7	24.7				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	50.0	87.2				mg/L	0	Standard
Dy	164	26535.5	1.2				mg/L	2	Standard
Ho-1	165	16118.6	0.6				mg/L	10	Standard
Er	166	14313.4	2.0				mg/L	23	Standard
I	127	12621.9	3.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.118	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.260	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.861
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.859
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606104801
Sample Date/Time: Tuesday, June 21, 2016 21:23:37
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59245.6	2.3				ug/L	60176	Standard
	Be	9	998.4	8.4	**1.4039**	0.121	8.6	ug/L	5	Standard
	Al	27	6367880.3	0.6	**49.2460**	0.840	1.7	ug/L	832	Standard
	Sc	45	32329.5	1.7				ug/L	25066	Standard
	Ti	47	1382.7	2.8	**6.7449**	0.291	4.3	ug/L	38	Standard
	V	51	119247.6	0.5	**19.3078**	0.442	2.3	ug/L	974	Standard
	Cr	52	109311.3	1.0	**15.7582**	0.462	2.9	ug/L	5792	Standard
	Cr	53	12982.2	1.5	**15.0048**	0.147	1.0	ug/L	347	Standard
	Mn	55	705485.5	0.6	**106.8784**	1.202	1.1	ug/L	1164	Standard
	Co	59	37775.0	1.2	**5.9772**	0.123	2.1	ug/L	303	Standard
	Ni	60	47756.8	1.1	**25.5883**	0.496	1.9	ug/L	291	Standard
	Cu	65	71575.7	0.3	**38.7654**	0.772	2.0	ug/L	173	Standard
	Zn	66	100398.2	0.5	**93.7869**	1.723	1.8	ug/L	130	Standard
>	**Ge**	72	506494.1	1.7				ug/L	491724	Standard
	As	75	1385.3	0.4	**1.3154**	0.019	1.4	ug/L	-25	Standard
	Se	82	173.9	2.4	**1.5403**	0.020	1.3	ug/L	12	Standard
	Se-1	77	199.0	5.6	**2.0859**	0.187	9.0	ug/L	57	Standard
>	**Ga**	71	14914.0	1.3				mg/L	148	Standard
	Rb	85	75430.7	1.8				ug/L	18	Standard
	Y	89	760970.7	1.5				ug/L	401845	Standard
>	**Rh**	103	35.0	42.9				ug/L	10	Standard
	Mo	98	1188.3	0.2	**0.4982**	0.006	1.3	ug/L	12	Standard
	Ag	107	1544.4	4.3	**0.2507**	0.008	3.1	ug/L	98	Standard
	Cd	111	2357.3	1.5	**1.2699**	0.003	0.2	mg/L	11	Standard
	Cd	114	5698.6	3.2	**1.2625**	0.055	4.3	ug/L	21	Standard
>	**In**	115	538711.6	1.4				ug/L	547487	Standard
	Sn	118	1520.1	9.1	**0.2236**	0.029	13.1	ug/L	450	Standard
	Sb	123	745.4	2.0	**0.1708**	0.006	3.3	ug/L	105	Standard
	Ba	135	233929.7	0.2	**129.4576**	1.611	1.2	ug/L	111	Standard
	Ce	140	1443759.2	1.4				ug/L	107	Standard
>	**Tb**	159	888846.2	1.9				ug/L	890342	Standard
	Ho	165	27959.1	1.2				ug/L	10	Standard
	Tl	203	902.7	2.9	**0.1193**	0.002	2.1	ug/L	19	Standard
	Tl	205	766.7	7.0	**0.1281**	0.008	6.1	ug/L	17	Standard
	Pb	206	138959.0	0.2	**29.3640**	0.336	1.1	ug/L	247	Standard
	Pb	207	113827.0	0.5	**26.4558**	0.247	0.9	ug/L	215	Standard
	Pb	208	467592.1	0.8	**29.0276**	0.195	0.7	ug/L	770	Standard
	U	238	27116.9	1.5	**4.6480**	0.064	1.4	ug/L	13	Standard
>	**Bi**	209	489310.6	0.9				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	71.7	14.5	**0.0373**	0.010	27.1	mg/L	35	Standard
K	39	178.3	19.1	**0.5783**	0.141	24.4	mg/L	25	Standard
Ca	43	95.0	10.5	**9.2082**	1.716	18.6	mg/L	38	Standard
Fe	54	10385.0	3.9	**7.5064**	0.345	4.6	mg/L	126	Standard
Fe	57	2965.3	4.1	**7.9807**	0.521	6.5	mg/L	245	Standard
> **Sc-1**	45	32329.5	1.7				mg/L	25066	Standard
Cl	35	130217.9	1.6				ug/L	125857	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	2376.9	10.6				ug/L	1350	Standard
P	31	19497.5	2.1				ug/L	18393	Standard
S	34	4082.2	1.2				ug/L	3739	Standard
Sr	88	118.3	16.0				ug/L	78	Standard
C	12	216.7	11.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	116.7	26.2				mg/L	0	Standard
Dy	164	44057.9	0.3				mg/L	2	Standard
Ho-1	165	27959.1	1.2				mg/L	10	Standard
Er	166	24553.2	1.7				mg/L	23	Standard
I	127	4534.0	1.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.454	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.004	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.397
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.251
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 21:26:49
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	58117.9	1.9				ug/L	60176	Standard
	Be	9	35621.8	0.6	**51.3767**	0.746	1.5	ug/L	5	Standard
	Al	27	6444420.2	2.2	**50.7919**	0.548	1.1	ug/L	832	Standard
	Sc	45	27070.9	3.8				ug/L	25066	Standard
	Ti	47	20949.1	1.3	**109.9419**	1.971	1.8	ug/L	38	Standard
	V	51	311526.8	1.1	**53.0494**	0.891	1.7	ug/L	974	Standard
	Cr	52	336768.4	1.0	**52.8658**	0.756	1.4	ug/L	5792	Standard
	Cr	53	42255.5	1.3	**52.0803**	0.758	1.5	ug/L	347	Standard
	Mn	55	329477.3	1.5	**52.0991**	0.877	1.7	ug/L	1164	Standard
	Co	59	312334.4	0.0	**52.0675**	0.408	0.8	ug/L	303	Standard
	Ni	60	91099.4	0.7	**51.2423**	0.593	1.2	ug/L	291	Standard
	Cu	65	91621.9	0.6	**51.9330**	0.724	1.4	ug/L	173	Standard
	Zn	66	52807.9	0.3	**51.4877**	0.269	0.5	ug/L	130	Standard
>	Ge	72	484191.6	0.8				ug/L	491724	Standard
	As	75	53524.2	1.1	**51.8184**	0.213	0.4	ug/L	-25	Standard
	Se	82	5349.2	1.5	**52.4511**	0.359	0.7	ug/L	12	Standard
	Se-1	77	3620.4	0.5	**51.3775**	0.420	0.8	ug/L	57	Standard
>	Ga	71	158.3	20.1				mg/L	148	Standard
	Rb	85	848.4	15.5				ug/L	18	Standard
	Y	89	427339.9	1.3				ug/L	401845	Standard
>	Rh	103	25.0	52.9				ug/L	10	Standard
	Mo	98	233982.7	0.9	**95.3240**	1.240	1.3	ug/L	12	Standard
	Ag	107	293588.5	0.2	**48.7224**	0.264	0.5	ug/L	98	Standard
	Cd	111	95530.5	0.8	**49.7490**	0.284	0.6	mg/L	11	Standard
	Cd	114	235659.9	1.2	**50.4432**	0.294	0.6	ug/L	21	Standard
>	In	115	559275.1	0.7				ug/L	547487	Standard
	Sn	118	260234.3	0.9	**48.9865**	0.748	1.5	ug/L	450	Standard
	Sb	123	209964.5	0.6	**48.3856**	0.196	0.4	ug/L	105	Standard
	Ba	135	91831.8	1.3	**48.9125**	0.680	1.4	ug/L	111	Standard
	Ce	140	770.0	93.3				ug/L	107	Standard
>	Tb	159	881548.3	1.4				ug/L	890342	Standard
	Ho	165	23.3	101.3				ug/L	10	Standard
	Tl	203	366327.0	0.5	**50.7112**	0.180	0.4	ug/L	19	Standard
	Tl	205	314340.8	1.0	**53.0357**	0.359	0.7	ug/L	17	Standard
	Pb	206	230993.2	0.2	**49.6830**	0.169	0.3	ug/L	247	Standard
	Pb	207	210145.0	1.0	**49.7218**	0.386	0.8	ug/L	215	Standard
	Pb	208	829897.6	0.4	**52.4503**	0.511	1.0	ug/L	770	Standard
	U	238	292600.4	0.9	**51.0190**	0.183	0.4	ug/L	13	Standard
>	Bi	209	481073.7	0.6				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3695.5	9.2	**4.6760**	0.585	12.5	mg/L	35	Standard
K	39	1030.0	1.3	**4.6474**	0.224	4.8	mg/L	25	Standard
Ca	43	45.0	50.9	**2.9507**	4.449	150.8	mg/L	38	Standard
Fe	54	5550.5	2.5	**4.7422**	0.063	1.3	mg/L	126	Standard
Fe	57	1498.4	8.9	**4.3770**	0.384	8.8	mg/L	245	Standard
> **Sc-1**	45	27070.9	3.8				mg/L	25066	Standard
Cl	35	132009.2	0.2				ug/L	125857	Standard
Kr	83	3.0	33.3				ug/L	1	Standard
Br	81	1363.4	15.7				ug/L	1350	Standard
P	31	20323.6	3.2				ug/L	18393	Standard
S	34	4162.2	3.1				ug/L	3739	Standard
Sr	88	85.0	27.0				ug/L	78	Standard
C	12	60.0	33.3				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	58.4	103.7				mg/L	2	Standard
Ho-1	165	23.3	101.3				mg/L	10	Standard
Er	166	33.3	17.3				mg/L	23	Standard
I	127	1211.7	9.1				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	102.753		
	Al	27	101.584		
	Sc	45			
	Ti	47	109.942		
	V	51	106.099		
	Cr	52	105.732		
	Cr	53			
	Mn	55	104.198		
	Co	59	104.135		
	Ni	60	102.485		
	Cu	65	103.866		
	Zn	66	102.975		
>	Ge	72		98.468	
	As	75	103.637		
	Se	82	104.902		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	95.324		
Ag	107	97.445		
Cd	111	99.498		
Cd	114			
> In	115		102.153	
Sn	118	97.973		
Sb	123	96.771		
Ba	135	97.825		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.422		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.901		
U	238	102.038		
> Bi	209		95.614	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 21:30:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57000.4	1.8				ug/L	60176	Standard
	Be	9	11.7	89.2	**0.0083**	0.015	186.0	ug/L	5	Standard
	Al	27	2620.3	47.2	**0.0127**	0.010	80.8	ug/L	832	Standard
	Sc	45	26027.3	2.6				ug/L	25066	Standard
	Ti	47	31.7	11.1	**-0.0438**	0.018	40.1	ug/L	38	Standard
	V	51	1068.5	10.9	**0.0089**	0.018	206.9	ug/L	974	Standard
	Cr	52	5732.8	2.3	**-0.0411**	0.022	53.1	ug/L	5792	Standard
	Cr	53	288.3	8.2	**-0.0602**	0.031	51.8	ug/L	347	Standard
	Mn	55	2013.2	47.5	**0.0986**	0.147	148.9	ug/L	1164	Standard
	Co	59	286.0	4.2	**-0.0024**	0.002	79.0	ug/L	303	Standard
	Ni	60	134.0	14.7	**-0.1162**	0.011	9.1	ug/L	291	Standard
	Cu	65	138.7	6.2	**-0.0202**	0.005	23.4	ug/L	173	Standard
	Zn	66	178.0	11.4	**-0.0638**	0.018	28.8	ug/L	130	Standard
>	**Ge**	72	491825.9	0.7				ug/L	491724	Standard
	As	75	-42.4	64.1	**-0.0065**	0.026	398.9	ug/L	-25	Standard
	Se	82	14.2	62.7	**0.0442**	0.085	192.5	ug/L	12	Standard
	Se-1	77	51.7	16.5	**0.0814**	0.121	148.7	ug/L	57	Standard
>	**Ga**	71	160.0	5.4				mg/L	148	Standard
	Rb	85	65.0	55.5				ug/L	18	Standard
	Y	89	420079.4	1.3				ug/L	401845	Standard
>	**Rh**	103	20.0	43.3				ug/L	10	Standard
	Mo	98	229.1	28.0	**0.0908**	0.025	27.9	ug/L	12	Standard
	Ag	107	121.7	14.1	**0.0053**	0.003	59.9	ug/L	98	Standard
	Cd	111	14.3	8.4	**0.0029**	0.001	24.4	mg/L	11	Standard
	Cd	114	32.1	64.9	**0.0026**	0.005	175.9	ug/L	21	Standard
>	**In**	115	546820.4	1.4				ug/L	547487	Standard
	Sn	118	666.7	23.3	**0.0548**	0.031	57.4	ug/L	450	Standard
	Sb	123	349.2	26.6	**0.0749**	0.023	30.5	ug/L	105	Standard
	Ba	135	222.0	49.7	**0.0657**	0.061	93.2	ug/L	111	Standard
	Ce	140	125.0	70.8				ug/L	107	Standard
>	**Tb**	159	852501.8	2.1				ug/L	890342	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	60.0	17.6	**0.0048**	0.001	29.7	ug/L	19	Standard
	Tl	205	38.3	39.8	**0.0075**	0.003	35.3	ug/L	17	Standard
	Pb	206	294.3	6.3	**0.0089**	0.003	35.8	ug/L	247	Standard
	Pb	207	245.7	12.3	**0.0066**	0.007	110.7	ug/L	215	Standard
	Pb	208	963.3	10.3	**0.0016**	0.007	416.4	ug/L	770	Standard
	U	238	48.0	16.7	**0.0076**	0.001	18.1	ug/L	13	Standard
>	**Bi**	209	476870.2	2.1				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	46.6	**0.0185**	0.027	145.6	mg/L	35	Standard
K	39	13.3	108.3	**-0.0485**	0.069	142.0	mg/L	25	Standard
Ca	43	36.7	20.8	**1.6572**	1.618	97.6	mg/L	38	Standard
Fe	54	138.9	10.0	**-0.0095**	0.014	151.2	mg/L	126	Standard
Fe	57	211.7	11.2	**-0.2847**	0.108	38.1	mg/L	245	Standard
> **Sc-1**	45	26027.3	2.6				mg/L	25066	Standard
Cl	35	131985.8	1.3				ug/L	125857	Standard
Kr	83	3.0	33.3				ug/L	1	Standard
Br	81	1333.4	5.0				ug/L	1350	Standard
P	31	20615.7	2.9				ug/L	18393	Standard
S	34	4127.2	2.0				ug/L	3739	Standard
Sr	88	78.3	32.8				ug/L	78	Standard
C	12	23.3	49.5				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.9	86.8				mg/L	2	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	10.0	173.2				mg/L	23	Standard
I	127	953.4	9.0				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.021	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.878
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.778
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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2.3.3 Metals CVAA Data (Mercury)

2.3.3.1 Summary Data

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-01	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18CPTMW14-061316	**Prep Method:**	7470A	**Prep Date:**	06/15/2016 10:55
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/17/2016 09:53
Workgroup #:	WG573131	**Analyst:**	CJQ	**Run Date:**	06/17/2016 11:03
Collect Date:	06/13/2016 09:15	**Dilution:**	1	**File ID:**	M7.061716.110308
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-02	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18CPTMW14FD-061316	**Prep Method:**	7470A	**Prep Date:**	06/15/2016 10:55
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/17/2016 09:53
Workgroup #:	WG573131	**Analyst:**	CJQ	**Run Date:**	06/17/2016 11:10
Collect Date:	06/13/2016 09:15	**Dilution:**	1	**File ID:**	M7.061716.111043
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-03	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18CPTMW24-061316	**Prep Method:**	7470A	**Prep Date:**	06/15/2016 10:55
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/17/2016 09:53
Workgroup #:	WG573131	**Analyst:**	CJQ	**Run Date:**	06/17/2016 11:13
Collect Date:	06/13/2016 10:35	**Dilution:**	1	**File ID:**	M7.061716.111316
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.3.3.2 QC Summary

Example Cold Vapor Mercury Calculations
Hydra AA Mercury Analyzer / CETAC M-7600 Quick Trace Mercury Analyzer

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and five standards.

2.0 Calculating the concentration (C) of an element in water using data from run log and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to Volume (mL)	40
Vi = Aliquot Volume (mL)	40
D = Manual dilution factor, if required (10X = 10)	1
Cx = Concentration of element in ppb (ug/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Ws} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to volume (mL)	40
Ws = Aliquot weight (g)	0.6
D = Manual dilution factor	1
Cx = Concentration of element in ug/kg	6.67

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

1 Cx = Concentration calculated as received (wet basis)	6.67
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	8.33

8.33 ug/kg = 0.00833 mg/kg

Microbac Laboratories Inc.
Metals Digest Log

Workgroup: WG572795
Analyst: REK
Spike Analyst: REK
Method: 7470A
Run Date: 06/15/2016 10:55
Hotblock Start Temp: 95 @ 10:50
Hotblock End Temp: 95 @ 12:50
Instrument: HB2

SOP: ME404 Revison 17
Spike Solution: STD76612
Spike Witness: EMW
H2SO4 Lot #: COA18359
40 & 50 ML. DIGESTION TU COA18772
HNO3 Lot #: COA18905
K2S2O8 1:1 Lot #: RGT37046
KMnO4 1:1 Lot #: RGT37006
Mercury Water ICV Lot #: STD76614
HG H2O STDS 10PPM Lot #: STD76620

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Spike Amount	Due Date
1	WG572795-03	BLANK	1	40 mL	40 mL		
2	WG572612-01	FBLK1	17	4 mL	40 mL		
3	WG572612-02	FBLK2	17	4 mL	40 mL		
4	WG572795-04	LCS	1	40 mL	40 mL	4 mL	
5	L16060670-01	SAMP	17	4 mL	40 mL		06/17/16
6	L16060670-02	SAMP	17	4 mL	40 mL		06/17/16
7	L16060670-03	SAMP	17	4 mL	40 mL		06/17/16
8	WG572795-01	REF	17	4 mL	40 mL		
9	L16060670-04	SAMP	17	4 mL	40 mL		06/17/16
10	L16060670-05	SAMP	17	4 mL	40 mL		06/17/16
11	L16060670-06	SAMP	17	4 mL	40 mL		06/17/16
12	L16060670-07	SAMP	17	4 mL	40 mL		06/17/16
13	L16060724-01	SAMP	1	40 mL	40 mL		06/24/16
14	L16060729-01	SAMP	1	40 mL	40 mL		06/24/16
15	L16060729-02	SAMP	1	40 mL	40 mL		06/24/16
16	L16060729-03	SAMP	1	40 mL	40 mL		06/24/16
17	L16060730-01	SAMP	1	40 mL	40 mL		06/24/16
18	L16060730-02	SAMP	1	40 mL	40 mL		06/24/16
19	L16060730-03	SAMP	1	40 mL	40 mL		06/24/16
20	WG572795-02	REF	2	40 mL	40 mL		
21	L16060759-02	SAMP	2	40 mL	40 mL		06/24/16
22	L16060762-01	SAMP	1	40 mL	40 mL		06/28/16
23	WG572795-05	MS	1	4 mL	40 mL	4 mL	
24	WG572795-06	MSD	1	4 mL	40 mL	4 mL	
25	WG572795-07	DUP	1	40 mL	40 mL		

Analyst: [signature]

Reviewer: [signature]

* All calibration and check standards are prepared and digested with sample batch following the procedures in section 7.0 of SOP ME404/ME405.

HB_DIG - Modified 07/26/2012
PDF ID: 4808745
Report generated: 06/15/2016 13:37

TCLP Non-Volatile

Analyst(s): AMA/CPD
Date: 06/14/2016
Filter Lot #: 94860030
Microbac SOP: TCLP01 Rev #: 12

Analyst / Date		Analyst / Date	
CPD 6/14/16		AMA 6/15/16	
Time On	Temp On °C	Time Off	Temp Off °C
1427	23.8	0827	21.9

Agitator Speed 30 ± 2 rpm ☑

Jug #	Sample #	Tests	Method	Fluid #	Matrix *	% Solid	Pretest pH Initial	Pretest pH Final	Int. Wt. (g)	Fluid Vol. (mL)	Final extract pH
D	06-0670-01	ME	1311	F1-181	S	100	8.12	2.08	7.67	153	5.19
	-02						8.98	2.06	100.27	2005	5.79
	-03						10.07	4.79	100.14	2003	7.34
	-04						9.53	1.65	100.72	2014	5.13
	-05						8.98	2.69	100.32	2006	6.67
	-06						9.43	1.94	40.43	807	6.79
	-07			F2-379			8.10	7.75	25.70	514	8.08
D	06-0731-01	ME pH-L	1311	F2-379	S	100	8.47	5.86	50.46	1009	4.32
	-02		1312	SPLP F2-326			NA	NA	100.62	2012	8.44
NA	FBIK1	ME	1311	F1-181	NA	NA	NA	NA	100	100	4.93
	FBIK2	COD pH-L ~~ME~~		F2-379							2.88
	SPLP F2-	pH-L	1312	SPLP F2-326							5.05

CPD 6/14/16

*Matrix Code: (S = solid, sand, soil or sludge) (P = paint) (O = organic) (W = water or aqueous waste)
D = Disposable plastic jug
TCLP Pretest weight will be 5.0 g (± 0.1) unless otherwise noted.
Temperature shall be maintained at 23° ± 2 for 18 ± 2 hours unless otherwise noted.

Comments: 5x 06-0670-01 recieved with limited volume.

Peer Review By: [signature]

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 061716A.CSV

Analyst1: AMA Analyst2: N/A

Method: 7470A/245.1 SOP: ME404 Rev: 17

Maintenance Log ID:

Calibration Std: STD76620 ICV Std: STD76614 Post Spike: STD76620

ICSA: N/A ICSAB: N/A Int. Std:

CCV: LLCCV: Tuning Sol :

Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 573131

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	M7.061716.094017	WG573198-01	Calibration Point		1		06/17/16 09:40
2	M7.061716.094249	WG573198-02	Calibration Point		1		06/17/16 09:42
3	M7.061716.094521	WG573198-03	Calibration Point		1		06/17/16 09:45
4	M7.061716.094753	WG573198-04	Calibration Point		1		06/17/16 09:47
5	M7.061716.095026	WG573198-05	Calibration Point		1		06/17/16 09:50
6	M7.061716.095300	WG573198-06	Calibration Point		1		06/17/16 09:53
7	M7.061716.095534	WG573198-07	Initial Calibration Verification		1		06/17/16 09:55
8	M7.061716.095951	WG573198-08	Initial Calibration Verification		1		06/17/16 09:59
9	M7.061716.100222	WG573198-09	Initial Calib Blank		1		06/17/16 10:02
10	M7.061716.100454	WG573198-10	CCV		1		06/17/16 10:04
11	M7.061716.100725	WG573198-11	CCB		1		06/17/16 10:07
12	M7.061716.100956	WG572795-03	Method/Prep Blank	40/40	1		06/17/16 10:09
13	M7.061716.101227	WG572795-04	Laboratory Control S	40/40	1		06/17/16 10:12
14	M7.061716.101458	WG572612-01	Fluid Blank 1		1		06/17/16 10:14
15	M7.061716.101730	WG572612-02	Fluid Blank 2		1		06/17/16 10:17
16	M7.061716.102002	L16060670-01	J6F0497-01	4/40	1		06/17/16 10:20
17	M7.061716.102234	WG573131-01	Post Digestion Spike		1	L16060670-01	06/17/16 10:22
18	M7.061716.102507	L16060670-02	J6F0497-02	4/40	1		06/17/16 10:25
19	M7.061716.102740	L16060670-03	J6F0497-03	4/40	1		06/17/16 10:27
20	M7.061716.103013	L16060670-04	J6F0497-04	4/40	1	WG572795-01	06/17/16 10:30
21	M7.061716.103246	WG572795-05	Matrix Spike	4/40	1	L16060670-04	06/17/16 10:32
22	M7.061716.103519	WG573198-12	CCV		1		06/17/16 10:35
23	M7.061716.103750	WG573198-13	CCB		1		06/17/16 10:37
24	M7.061716.104023	WG572795-06	Matrix Spike Duplica	4/40	1	L16060670-04	06/17/16 10:40
25	M7.061716.104257	L16060670-05	J6F0497-05	4/40	1		06/17/16 10:42
26	M7.061716.104528	L16060670-06	J6F0497-06	4/40	1		06/17/16 10:45
27	M7.061716.104758	L16060670-07	J6F0497-07	4/40	1		06/17/16 10:47
28	M7.061716.105029	L16060724-01	ABW_06142016	40/40	1		06/17/16 10:50
29	M7.061716.105300	L16060729-01	A09-MW10-Y1S2	40/40	1		06/17/16 10:53
30	M7.061716.105532	L16060729-02	A09-MW11-Y1S2	40/40	1		06/17/16 10:55
31	M7.061716.105803	WG573131-02	Post Digestion Spike		1	L16060729-01	06/17/16 10:58
32	M7.061716.110035	L16060729-03	A09-MW12-Y1S2	40/40	1		06/17/16 11:00
33	M7.061716.110308	L16060730-01	18CPTMW14-061316	40/40	1		06/17/16 11:03
34	M7.061716.110540	WG573198-14	CCV		1		06/17/16 11:05

Page: 1 Approved: June 17, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 061716A.CSV

Analyst1: AMA Analyst2: N/A

Method: 7470A/245.1 SOP: ME404 Rev: 17

Maintenance Log ID:

Calibration Std: STD76620 ICV Std: STD76614 Post Spike: STD76620

ICSA: N/A ICSAB: N/A Int. Std:

CCV: LLCCV: Tuning Sol :

Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 573131

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	M7.061716.110811	WG573198-15	CCB		1		06/17/16 11:08
36	M7.061716.111043	L16060730-02	18CPTMW14FD-061316	40/40	1		06/17/16 11:10
37	M7.061716.111316	L16060730-03	18CPTMW24-061316	40/40	1		06/17/16 11:13
38	M7.061716.111549	L16060759-02	LOCAL/COMP	40/40	1	WG572795-02	06/17/16 11:15
39	M7.061716.111823	WG572795-07	Duplicate	40/40	1	L16060759-02	06/17/16 11:18
40	M7.061716.112053	L16060762-01	MW-24-001	40/40	1		06/17/16 11:20
41	M7.061716.112325	WG573198-16	CCV		1		06/17/16 11:23
42	M7.061716.112556	WG573198-17	CCB		1		06/17/16 11:25

Page: 2 Approved: June 17, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 17-JUN-2016
Analyst: AMA
Analyst: NA
Method: 7470A/245.1
Instrument: CVAA1
Curve Workgroup: 573198
Runlog ID: 75763
Analytical Workgroups: 573131

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	0729, 0730, 0762
Client Forms	X
Level X	
Level 3	0762
Level 4	0729, 0730
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	AMA
Secondary Reviewer	KHR
Comments	

Primary Reviewer:
17-JUN-2016
Alexandra M. Alfred

Secondary Reviewer:
17-JUN-2016
Kym H. Rhoden

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-17-2016 14:02:31

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 7470A

AAB#: WG573131

Login Number: L16060730

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW14-061316	01	06/13/16					06/15/2016	2.1	28		06/17/16	4.1	28	
18CPTMW14FD-061316	02	06/13/16					06/15/2016	2.1	28		06/17/16	4.1	28	
18CPTMW24-061316	03	06/13/16					06/15/2016	2	28		06/17/16	4	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4812598
Report generated 06/17/2016 13:03

METHOD BLANK SUMMARY

Login Number: L16060730
Blank File ID: M7.061716.100956
Prep Date: 06/15/16 10:55
Analyzed Date: 06/17/16 10:09
Analyst: CJQ

Work Group: WG573131
Blank Sample ID: WG572795-03
Instrument ID: CVAA1
Method: 7470A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572795-04	M7.061716.101227	06/17/16 10:12	01
18CPTMW14-061316	L16060730-01	M7.061716.110308	06/17/16 11:03	01
18CPTMW14FD-061316	L16060730-02	M7.061716.111043	06/17/16 11:10	01
18CPTMW24-061316	L16060730-03	M7.061716.111316	06/17/16 11:13	01
DUP	WG572795-07	M7.061716.111823	06/17/16 11:18	01

Report Name: BLANK_SUMMARY
PDF File ID: 4812599
Report generated 06/17/2016 13:03

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060730 Prep Date: 06/15/16 10:55 Sample ID: WG572795-03
Instrument ID: CVAA1 Run Date: 06/17/16 10:09 Prep Method: 7470A
File ID: M7.061716.100956 Analyst: CJQ Method: 7470A
Workgroup (AAB#): WG573131 Matrix: Water Units: mg/L
Contract #: Cal ID: CVAA1-17-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Mercury	0.000100	0.000400	0.000100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4812600
17-JUN-2016 13:03

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060730 Run Date: 06/17/2016 Sample ID: WG572795-04
Instrument ID: CVAA1 Run Time: 10:12 Prep Method: 7470A
File ID: M7.061716.101227 Analyst: CJQ Method: 7470A
Workgroup (AAB#): WG573131 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76612 Cal ID: CVAA1-17-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Mercury	0.00400	0.00441	110	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4812602
Report generated: 06/17/2016 13:03

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060730 Cal ID: CVAA1 - Worknum: WG573131
Instrument ID: CVAA1 Contract #: Method: 7470A
Parent ID: WG572795-01 File ID: M7.061716.103013 Dil: 1 Matrix: WATER
Sample ID: WG572795-05 MS File ID: M7.061716.103246 Dil: 1 Units: mg/L
Sample ID: WG572795-06 MSD File ID: M7.061716.104023 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Mercury	ND	0.0400	0.0449	112	0.0400	0.0458	114	1.85	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4812603
Report generated 06/17/2016 13:03

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060730 **Worknum:** WG573131
Instrument ID: CVAA1 **Method:** 7470A
Post Spike ID: WG573131-02 **File ID:** M7.061716.105803 **Dil:** 1 **Units:** ug/L
Sample ID: L16060729-01 **File ID:** M7.061716.105300 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MERCURY	1.11		0	U	1	111.3	85 - 115	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4812597
Report generated: 06/17/2016 13:03

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060730
Analytical Method: 7470A
ICAL Worknum: WG573198

Workgroup (AAB#): WG573131
Instrument ID: CVAA1
Initial Calibration Date: 06/17/2016 09:53

Analyte	WG573198-01		WG573198-02		WG573198-03		WG573198-04		WG573198-05		WG573198-06	
	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT
Mercury	0	12.47	0.200	2342	1.00	12030	2.00	23820	5.00	58000	10.0	117600

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4812604
Report generated 06/17/2016 13:03

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060730
Analytical Method: 7470A
ICAL Worknum: WG573198

Workgroup (AAB#): WG573131
Instrument ID: CVAA1
Initial Calibration Date: 06/17/2016 09:53

Analyte	R	Q
Mercury	1.000	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4812604
Report generated 06/17/2016 13:03

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060730
Run Date: 06/17/2016
Sample ID: WG573198-09
Instrument ID: CVAA1
Run Time: 10:02
Method: 7470A
File ID: M7.061716.100222
Analyst: CJQ
Units: ug/L
Workgroup (AAB#): WG573131
Cal ID: CVAA1 - 17-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
MERCURY	.1	.4	.1	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4812606
Report generated 06/17/2016 13:03

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/17/2016
Sample ID: WG573198-11
Instrument ID: CVAA1
Run Time: 10:07
Method: 7470A
File ID: M7.061716.100725
Analyst: CJQ
Units: ug/L
Workgroup (AAB#): WG573131
Cal ID: CVAA1 - 17-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812608
Report generated 06/17/2016 13:03

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/17/2016
Sample ID: WG573198-13
Instrument ID: CVAA1
Run Time: 10:37
Method: 7470A
File ID: M7.061716.103750
Analyst: CJQ
Units: ug/L
Workgroup (AAB#): WG573131
Cal ID: CVAA1 - 17-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812608
Report generated 06/17/2016 13:03

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/17/2016
Sample ID: WG573198-15
Instrument ID: CVAA1
Run Time: 11:08
Method: 7470A
File ID: M7.061716.110811
Analyst: CJQ
Units: ug/L
Workgroup (AAB#): WG573131
Cal ID: CVAA1 - 17-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812608
Report generated 06/17/2016 13:03

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/17/2016
Sample ID: WG573198-17
Instrument ID: CVAA1
Run Time: 11:25
Method: 7470A
File ID: M7.061716.112556
Analyst: CJQ
Units: ug/L
Workgroup (AAB#): WG573131
Cal ID: CVAA1 - 17-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812608
Report generated 06/17/2016 13:03

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060730
Run Date: 06/17/2016
Sample ID: WG573198-08
Instrument ID: CVAA1
Run Time: 09:59
Method: 7470A
File ID: M7.061716.095951
Analyst: CJQ
Units: ug/L
Workgroup (AAB#): WG573131
Cal ID: CVAA1 - 17-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Mercury		2	1.97	98.3	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4812605
Report generated 06/17/2016 13:11

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/17/2016
Sample ID: WG573198-10
Instrument ID: CVAA1
Run Time: 10:04
Method: 7470A
File ID: M7.061716.100454
Analyst: CJQ
QC Key: DOD4
Workgroup (AAB#): WG573131
Cal ID: CVAA1 - 17-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00214	mg/L	107	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812607
Report generated 06/17/2016 13:03

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/17/2016
Sample ID: WG573198-12
Instrument ID: CVAA1
Run Time: 10:35
Method: 7470A
File ID: M7.061716.103519
Analyst: CJQ
QC Key: DOD4
Workgroup (AAB#): WG573131
Cal ID: CVAA1 - 17-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00222	mg/L	111	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812607
Report generated 06/17/2016 13:03

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/17/2016
Sample ID: WG573198-14
Instrument ID: CVAA1
Run Time: 11:05
Method: 7470A
File ID: M7.061716.110540
Analyst: CJQ
QC Key: DOD4
Workgroup (AAB#): WG573131
Cal ID: CVAA1 - 17-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00220	mg/L	110	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812607
Report generated 06/17/2016 13:03

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/17/2016
Sample ID: WG573198-16
Instrument ID: CVAA1
Run Time: 11:23
Method: 7470A
File ID: M7.061716.112325
Analyst: CJQ
QC Key: DOD4
Workgroup (AAB#): WG573131
Cal ID: CVAA1 - 17-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00219	mg/L	110	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812607
Report generated 06/17/2016 13:03

2.3.3.3 Raw Data

PDM CVAA1 245.1/7470/7471

Report Generated By CETAC QuickTrace
Analyst: VOA
Worksheet file: C:\Program Files (x86)\QuickTrace\Worksheets\061716A.wsz
Date Started: 6/17/2016 9:17:30 AM
Comment:

Results

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
Standard #0					STD	06/17/16 09:40:17 am	0.0000	12	84.65		1.00
Replicates	-1.5	15.5	23.9	12.0							
Standard #1 (0.2 ug/L)					STD	06/17/16 09:42:49 am	0.2000	2342	1.13		1.00
Replicates	2379.1	2336.7	2336.5	2316.2							
Standard #2 (1.0 ug/L)					STD	06/17/16 09:45:21 am	1.0000	12034	0.35		1.00
Replicates	12092.3	12036.0	11999.2	12009.5							
Standard #3 (2.0 ug/L)					STD	06/17/16 09:47:53 am	2.0000	23817	0.38		1.00
Replicates	23923.7	23858.2	23733.3	23753.0							
Standard #4 (5.0 ug/L)					STD	06/17/16 09:50:26 am	5.0000	57996	0.43		1.00
Replicates	58322.6	58052.6	57854.1	57756.4							
Standard #5 (10.0 ug/L)					STD	06/17/16 09:53:00 am	10.0000	117620	0.17		1.00
Replicates	117900.5	117628.3	117431.1	117522.1							

Calibration

Equation: A = 58.859 + 11729.100C
R2: 0.99993
SEE: 427.5421
Flags:

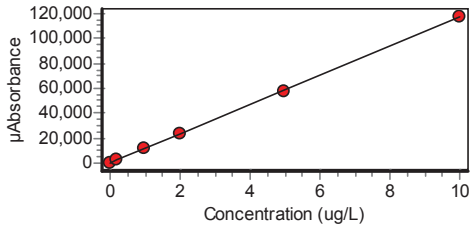

ICV					ICV	06/17/16 09:55:34 am	2.1630	25433	0.49	Q	1.00
Replicates	25590.4	25463.2	25380.4	25299.4							
% Recovery	108.17										

Approved: June 17, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
ICV					ICV	06/17/16 09:59:51 am	1.9650	23109	0.17		1.00
Replicates	23118.5	23066.3	23094.8	23158.3							
% Recovery	98.26										
ICB					ICB	06/17/16 10:02:22 am	-0.0055	-6	397.68		1.00
Replicates	-37.5	1.0	17.2	-3.8							
CCV					CCV	06/17/16 10:04:54 am	2.1440	25201	0.25		1.00
Replicates	25273.8	25234.2	25157.7	25138.2							
% Recovery	107.18										
CCB					CCB	06/17/16 10:07:25 am	-0.0041	11	63.50		1.00
Replicates	3.7	6.8	18.1	16.8							
WG572795-03					UNK	06/17/16 10:09:56 am	-0.0041	11	56.12		1.00
Replicates	3.1	11.2	12.2	18.4							
WG572795-04					UNK	06/17/16 10:12:27 am	4.4120	51808	0.19		1.00
Replicates	51929.8	51843.7	51760.5	51698.9							
WG572612-01					UNK	06/17/16 10:14:58 am	-0.0053	-3	347.17		1.00
Replicates	-13.4	-7.4	8.8	0.8							
WG572612-02					UNK	06/17/16 10:17:30 am	-0.0017	39	16.11		1.00
Replicates	38.6	41.5	45.8	30.8							
L1606067001					UNK	06/17/16 10:20:02 am	-0.0029	25	56.38		1.00
Replicates	43.7	26.0	13.6	15.1							
WG573131-01					UNK	06/17/16 10:22:34 am	1.1420	13452	0.42		1.00
Replicates	13496.3	13492.6	13446.2	13374.6							
L1606067002					UNK	06/17/16 10:25:07 am	-0.0037	16	160.72		1.00
Replicates	8.3	-2.2	52.5	3.6							
L1606067003					UNK	06/17/16 10:27:40 am	-0.0009	48	11.03		1.00
Replicates	46.6	55.6	44.0	45.3							

Approved: June 17, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1606067004					UNK	06/17/16 10:30:13 am	-0.0011	46	19.50		1.00
Replicates	34.8	46.9	45.4	56.7							
WG572795-05					UNK	06/17/16 10:32:46 am	4.4930	52753	0.24		1.00
Replicates	52893.8	52816.9	52702.2	52601.1							
CCV					CCV	06/17/16 10:35:19 am	2.2240	26144	0.51	Q	1.00
Replicates	26268.9	26229.3	26102.5	25976.6							
% Recovery	111.20										
CCB					CCB	06/17/16 10:37:50 am	-0.0102	-61	15.22		1.00
Replicates	-71.4	-48.9	-61.2	-60.9							
WG572795-06					UNK	06/17/16 10:40:23 am	4.5770	53742	0.75		1.00
Replicates	54139.9	53960.9	53644.7	53223.1							
L1606067005					UNK	06/17/16 10:42:57 am	-0.0078	-33	49.67		1.00
Replicates	-33.6	-21.2	-55.2	-20.5							
L1606067006					UNK	06/17/16 10:45:28 am	-0.0183	-155	11.82		1.00
Replicates	-135.5	-146.7	-161.5	-177.9							
L1606067007					UNK	06/17/16 10:47:58 am	-0.0140	-106	15.58		1.00
Replicates	-104.2	-89.3	-128.4	-100.8							
L1606072401					UNK	06/17/16 10:50:29 am	0.0332	448	3.74		1.00
Replicates	429.8	451.3	441.1	469.3							
L1606072901					UNK	06/17/16 10:53:00 am	-0.0095	-53	30.15		1.00
Replicates	-42.6	-60.7	-37.2	-71.7							
WG573131-02					SPK	06/17/16 10:55:32 am	-0.0105	-64	16.08	W	1.00
Replicates	-49.3	-73.4	-66.8	-66.4							
% Recovery	-0.09										
L1606072902					UNK	06/17/16 10:58:03 am	1.1130	13116	0.58		1.00
Replicates	13202.7	13145.9	13088.8	13025.6							

Approved: June 17, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1606072903					UNK	06/17/16 11:00:35 am	-0.0126	-89	21.89		1.00
Replicates	-81.9	-69.4	-89.2	-115.6							
L1606073001					UNK	06/17/16 11:03:08 am	-0.0096	-53	28.92		1.00
Replicates	-51.6	-38.4	-75.1	-48.9							
CCV					CCV	06/17/16 11:05:40 am	2.2030	25903	0.37	Q	1.00
Replicates	25978.7	25979.2	25873.5	25781.7							
% Recovery	110.17										
CCB					CCB	06/17/16 11:08:11 am	-0.0078	-33	67.29		1.00
Replicates	-1.3	-53.2	-38.0	-39.7							
L1606073002					UNK	06/17/16 11:10:43 am	-0.0108	-67	31.91		1.00
Replicates	-74.4	-84.8	-36.0	-74.3							
L1606073003					UNK	06/17/16 11:13:16 am	-0.0071	-24	92.16		1.00
Replicates	-52.1	2.1	-28.4	-19.1							
L1606075902					UNK	06/17/16 11:15:49 am	0.0081	154	14.15		1.00
Replicates	152.9	134.2	184.4	143.7							
WG572795-07					DUP	06/17/16 11:18:23 am	0.0050	118	14.76		1.00
Replicates	123.6	138.2	96.7	113.7							
		RPD 0.00									
L1606076201					UNK	06/17/16 11:20:53 am	-0.0139	-105	10.68		1.00
Replicates	-88.4	-109.9	-113.5	-106.5							
CCV					CCV	06/17/16 11:23:25 am	2.1910	25762	0.35		1.00
Replicates	25813.9	25832.0	25768.7	25633.7							
% Recovery	109.57										
CCB					CCB	06/17/16 11:25:56 am	-0.0273	-261	8.28		1.00
Replicates	-231.7	-258.0	-273.9	-280.2							

Approved: June 17, 2016

Alexandra M. Alfred

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
July 1, 2016

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BNB - Brandi N. Bentley
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJQ - Cameron J. Quick
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
CV - Carl Volkman
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
EMW - ERIC M. WILKEN
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LJH - Lacey J. Hendershot
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
NPH - Natalie P. Hart
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
July 01, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
July 01, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Debra Richmann
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD	pH:	
Project Name/Location:	Longhorn		
Project Number:	60274185.0013BH 1824 MR10		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Total Metals	1, 4 - DIOXANE	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 18/24	18CPT mw14-061316			6/13/16	0915		✓	W	7	✓	✓	✓	✓					
	18CPT mw14 FD-061316			6/13/16	0915		✓	W	7	✓	✓	✓	✓					
	18CPT mw24-061316			6/13/16	1035		✓	W	7	✓	✓	✓	✓					
	TRIP BLANK			6/13/16			✓	W	2	✓								

Comments: **STANDARD TAT**

Relinquished by: (Signature) Scott Beesinger	Date 6/13/16	Time 1500	Received
Relinquished by: (Signature)	Date	Time	Received (Signature)

Microbac OVD
Received: 06/14/2016 10:15
By: CARA STRICKLER
221000087134
Cara Strickler

Time	Relinquished by: (Signature)
Time	Remarks:

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

00670395

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060730
Account: 2551
Project: 2551.096
Samples: 4
Due Date: 24-JUN-2016

Samplenum	Container ID	Products
L16060730-01	759930	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	ORG4	14-JUN-2016 12:53	CLS		
2	STORE	ORG4	A1	29-JUN-2016 12:16	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-JUN-2016 12:53	CLS		
2	ANALYZ	V1	ORG4	15-JUN-2016 07:36	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:16	CLS	JST	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-JUN-2016 12:53	CLS		
2	ANALYZ	V1	ORG4	15-JUN-2016 07:36	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:16	CLS	JST	

Samplenum	Container ID	Products
L16060730-01	759931	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	14-JUN-2016 12:53	CLS		
2	PREP	W1	EXT	15-JUN-2016 17:32	CPD	AZH	
3	DISP	EXT	DISP	16-JUN-2016 15:23	BJO	BJO	
4	ANALYZ*	EXT	SEMI	20-JUN-2016 09:18	NPH	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	14-JUN-2016 12:53	CLS		
2	STORE	W1	A1	24-JUN-2016 08:23	BRG	BRG	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060730-01	759932	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	14-JUN-2016 12:53	CLS		
2	ANALYZ	W1	SEM	22-JUN-2016 14:48	JWR	CLS	
3	STORE	SEM	A1	24-JUN-2016 12:04	BRG	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060730
Account: 2551
Project: 2551.096
Samples: 4
Due Date: 24-JUN-2016

Samplenum	Container ID	Products
L16060730-01	759933	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	14-JUN-2016 12:53	CLS		
2	PREP	W1	DIG	14-JUN-2016 13:35	ERP	CLS	
3	STORE	DIG	A1	16-JUN-2016 14:03	BRG	ERP	
4	ANALYZ*	DIG	METALS	17-JUN-2016 09:10	CJQ	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060730-02	759934	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		14-JUN-2016 12:53	CLS		

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-JUN-2016 12:53	CLS		
2	ANALYZ	V1	ORG4	15-JUN-2016 07:36	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:16	CLS	JST	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-JUN-2016 12:53	CLS		
2	ANALYZ	V1	ORG4	15-JUN-2016 07:36	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:16	CLS	JST	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060730
Account: 2551
Project: 2551.096
Samples: 4
Due Date: 24-JUN-2016

Samplenum	Container ID	Products
L16060730-02	759935	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	14-JUN-2016 12:53	CLS		
2	PREP	W1	EXT	15-JUN-2016 17:32	CPD	AZH	
3	DISP	EXT	DISP	16-JUN-2016 15:23	BJO	BJO	
4	ANALYZ*	EXT	SEMI	20-JUN-2016 09:18	NPH	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	14-JUN-2016 12:53	CLS		
2	STORE	W1	A1	24-JUN-2016 08:23	BRG	BRG	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060730-02	759936	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	14-JUN-2016 12:53	CLS		
2	ANALYZ	W1	SEM	22-JUN-2016 14:48	JWR	CLS	
3	STORE	SEM	A1	24-JUN-2016 12:04	BRG	JWR	

Samplenum	Container ID	Products
L16060730-02	759937	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	14-JUN-2016 12:53	CLS		
2	PREP	W1	DIG	14-JUN-2016 13:35	ERP	CLS	
3	STORE	DIG	A1	16-JUN-2016 14:03	BRG	ERP	
4	ANALYZ*	DIG	METALS	17-JUN-2016 09:10	CJQ	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060730
Account: 2551
Project: 2551.096
Samples: 4
Due Date: 24-JUN-2016

Samplenum	Container ID	Products
L16060730-03	759938	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-JUN-2016 12:53	CLS		
2	ANALYZ	V1	ORG4	15-JUN-2016 07:36	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:16	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-JUN-2016 12:53	CLS		
2	ANALYZ	V1	ORG4	15-JUN-2016 07:36	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:16	CLS	JST	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-JUN-2016 12:53	CLS		
2	ANALYZ	V1	ORG4	15-JUN-2016 07:36	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:16	CLS	JST	

Samplenum	Container ID	Products
L16060730-03	759939	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	14-JUN-2016 12:53	CLS		
2	PREP	W1	EXT	15-JUN-2016 17:32	CPD	AZH	
3	DISP	EXT	DISP	16-JUN-2016 15:22	BJO	BJO	
4	ANALYZ*	EXT	SEMI	20-JUN-2016 09:18	NPH	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	14-JUN-2016 12:53	CLS		
2	STORE	W1	A1	24-JUN-2016 08:23	BRG	BRG	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060730
Account: 2551
Project: 2551.096
Samples: 4
Due Date: 24-JUN-2016

Samplenum	Container ID	Products
L16060730-03	759940	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	14-JUN-2016 12:53	CLS		
2	ANALYZ	W1	SEM	22-JUN-2016 14:48	JWR	CLS	
3	STORE	SEM	A1	24-JUN-2016 12:04	BRG	JWR	

Samplenum	Container ID	Products
L16060730-03	759941	K MG MN-MS NA NI-MS PB-MS SB-MS SE-AX TL-MS V-

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	14-JUN-2016 12:53	CLS		
2	PREP	W1	DIG	14-JUN-2016 13:35	ERP	CLS	
3	STORE	DIG	A1	16-JUN-2016 14:03	BRG	ERP	
4	ANALYZ*	DIG	METALS	17-JUN-2016 09:10	CJQ	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060730-04	759942	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-JUN-2016 12:53	CLS		
2	ANALYZ	V1	ORG4	15-JUN-2016 07:36	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:16	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-JUN-2016 12:53	CLS		
2	ANALYZ	V1	ORG4	15-JUN-2016 07:36	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:16	CLS	JST	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16060822

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Michelle Taylor – Client Services Specialist
(740) 373-4071
Michelle.Taylor@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on July 07 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00110834	H	3.0		J2317165018	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18WW03-061416	L16060822-01	06/14/2016 07:40	06/15/2016 09:54
18WW03F-061416	L16060822-02	06/14/2016 07:40	06/15/2016 09:54
18CPTMW04SW-061416	L16060822-03	06/14/2016 09:00	06/15/2016 09:54
18CPTMW04-061416	L16060822-04	06/14/2016 10:00	06/15/2016 09:54
18CPTMW04FD-061416	L16060822-05	06/14/2016 10:00	06/15/2016 09:54
TRIP BLANK	L16060822-06	06/14/2016 00:01	06/15/2016 09:54

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16060822
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.0 Summary Data

1.1 Narratives

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	8260
Prep Batch Number(s):	573036,573253	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-24 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2016-06-24 20:33:54

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	8260
Prep Batch Number(s):	573036,573253	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-24 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	8260
Prep Batch Number(s):	573036,573253	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-24 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	8260
Prep Batch Number(s):	573036,573253	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-24 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	8260
Prep Batch Number(s):	573036,573253	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-24 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	8260
Prep Batch Number(s):	573036,573253	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-24 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572806	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-23 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-06-23 18:21:41

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572806	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-23 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572806	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-23 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572806	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-23 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572806	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-23 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572806	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-23 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG573791	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-24 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Wade DeLong	Wade DeLong	Chemist I	2016-06-24 15:34:16

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG573791	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-24 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG573791	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-24 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG573791	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-24 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG573791	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-24 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG573791	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-24 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573190	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-07-07 19:01:34

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573190	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?		X			ER#3
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?		X			ER#2
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573190	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573190	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			ER#1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573190	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573190	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - The low level continuing calibration verification analyzed on 23-JUN-2016 at 22:27 yielded a noncompliant recovery for selenium. All batch QA/QC and client samples were reanalyzed on a later calibration for selenium. The low level continuing calibration verification analyzed on 25-JUN-2016 at 17:25 yielded a recovery for selenium that was above the acceptance limit. Generally this elevated recovery could indicate a high bias on the sample results, however, since the samples yielded results less than the reporting detection limit, no further action was taken.

ER#2 - The continuing calibration blank analyzed on 23-JUN-2016 at 19:20 yielded a result for sodium that was above the method detection limit. However, the reported sample results exceeded that of the CCB by greater than a factor of ten, therefore, no further action was taken. The initial calibration blank analyzed on 25-JUN-2016 at 12:43 yielded a result for selenium that was above the method detection limit. However, all client samples were below the reporting detection limit for selenium, therefore, no further action was taken.

ER#3 - Client sample 03 required dilution analysis in order to obtain a result for calcium within the calibration range.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG574242	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-07-07 18:53:54

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG574242	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?		X			ER#2
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?		X			ER#1
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG574242	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG574242	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG574242	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG574242	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - The initial calibration blank analyzed on 28-JUN-2016 at 13:22 yielded a result for antimony greater than the LOD and less than the LOQ. All client samples were nondetect for antimony. With permission from the project manager, antimony was reported and no further action was taken.

ER#2 - Client sample 02 required dilution analysis in order to obtain a result for barium within the calibration range.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572915	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-07-07 17:28:06

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572915	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572915	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572915	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572915	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572915	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18WW03-061416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/01/2016 17:19
Workgroup #:	WG573036	**Analyst:**	FJB	**Run Date:**	06/17/2016 01:10
Collect Date:	06/14/2016 07:40	**Dilution:**	1	**File ID:**	6M140129
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	105	70	120	
Toluene-d8	98.5	85	120	
4-Bromofluorobenzene	104	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18WW03-061416	**Prep Method:**	3520C	**Prep Date:**	06/15/2016 18:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573365	**Analyst:**	MES	**Run Date:**	06/21/2016 17:08
Collect Date:	06/14/2016 07:40	**Dilution:**	1	**File ID:**	15M18476
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	43.7	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW03-061416	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/23/2016 01:19
Collect Date:	06/14/2016 07:40	**Dilution:**	1	**File ID:**	1LM.LM35442
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW03F-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 16:45
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/23/2016 20:25
Collect Date:	06/14/2016 07:40	**Dilution:**	1	**File ID:**	T3.062316.202527
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.100	U	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	8.25		0.500	0.250	0.125
Iron, Total	7439-89-6	2.77		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	5.84		1.00	0.500	0.250
Potassium, Total	7440-09-7	2.16		2.00	1.00	0.500
Sodium, Total	7440-23-5	109		1.00	0.500	0.250

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW03F-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/25/2016 12:36
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/25/2016 13:40
Collect Date:	06/14/2016 07:40	**Dilution:**	1	**File ID:**	T3.062516.134058
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Selenium, Total	7782-49-2	0.00565	J	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW03F-061416	**Prep Method:**	3015	**Prep Date:**	06/27/2016 08:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/28/2016 13:15
Workgroup #:	WG574570	**Analyst:**	BKT	**Run Date:**	06/28/2016 20:42
Collect Date:	06/14/2016 07:40	**Dilution:**	1	**File ID:**	NI.062816.204236
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.000919	J	0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.173		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00200	U	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00100	U	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00200	U	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.0960		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00400	U	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-02	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18WW03F-061416	**Prep Method:**	7470A	**Prep Date:**	06/16/2016 07:27
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/26/2016 12:23
Workgroup #:	WG573236	**Analyst:**	AMA	**Run Date:**	06/26/2016 13:14
Collect Date:	06/14/2016 07:40	**Dilution:**	1	**File ID:**	M7.062616.131428
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW04SW-061416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/01/2016 17:19
Workgroup #:	WG573036	**Analyst:**	FJB	**Run Date:**	06/17/2016 01:42
Collect Date:	06/14/2016 09:00	**Dilution:**	1	**File ID:**	6M140130
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	106	70	120	
Toluene-d8	99.1	85	120	
4-Bromofluorobenzene	104	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW04SW-061416	**Prep Method:**	3520C	**Prep Date:**	06/15/2016 18:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573365	**Analyst:**	MES	**Run Date:**	06/21/2016 17:31
Collect Date:	06/14/2016 09:00	**Dilution:**	1	**File ID:**	15M18477
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	48.5	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW04SW-061416	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/23/2016 01:38
Collect Date:	06/14/2016 09:00	**Dilution:**	1	**File ID:**	1LM.LM35443
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.186	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW04SW-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 16:45
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/23/2016 20:29
Collect Date:	06/14/2016 09:00	**Dilution:**	1	**File ID:**	T3.062316.202923
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.0639	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	6.72		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	19.1		1.00	0.500	0.250
Potassium, Total	7440-09-7	64.8		2.00	1.00	0.500
Sodium, Total	7440-23-5	117		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW04SW-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/25/2016 12:36
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/25/2016 13:37
Collect Date:	06/14/2016 09:00	**Dilution:**	1	**File ID:**	T3.062516.133704
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW04SW-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 16:45
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/23/2016 21:28
Collect Date:	06/14/2016 09:00	**Dilution:**	20	**File ID:**	T3.062316.212816
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	38.2		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW04SW-061416	**Prep Method:**	3015	**Prep Date:**	06/27/2016 08:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/28/2016 13:15
Workgroup #:	WG574570	**Analyst:**	BKT	**Run Date:**	06/28/2016 20:45
Collect Date:	06/14/2016 09:00	**Dilution:**	1	**File ID:**	NI.062816.204547
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00407		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00950		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00368		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00200	U	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.213		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00574	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW04SW-061416	**Prep Method:**	3015	**Prep Date:**	06/27/2016 08:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/29/2016 11:35
Workgroup #:	WG574570	**Analyst:**	BKT	**Run Date:**	06/29/2016 12:25
Collect Date:	06/14/2016 09:00	**Dilution:**	10	**File ID:**	NI.062916.122501
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.936		0.0600	0.0300	0.0150

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-03	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18CPTMW04SW-061416	**Prep Method:**	7470A	**Prep Date:**	06/16/2016 07:27
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/26/2016 12:23
Workgroup #:	WG573236	**Analyst:**	AMA	**Run Date:**	06/26/2016 13:16
Collect Date:	06/14/2016 09:00	**Dilution:**	1	**File ID:**	M7.062616.131659
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW04-061416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/01/2016 17:19
Workgroup #:	WG573036	**Analyst:**	FJB	**Run Date:**	06/17/2016 02:15
Collect Date:	06/14/2016 10:00	**Dilution:**	1	**File ID:**	6M140131
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.618	J	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	3.39		1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.314	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	4.87		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	5.87		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	76.9		1.00	0.500	0.250

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.593	J	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.494	J	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	1.09		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.617	J	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	105	70	120	
Toluene-d8	99.4	85	120	
4-Bromofluorobenzene	104	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW04-061416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573253	**Analyst:**	FJB	**Run Date:**	06/17/2016 21:42
Collect Date:	06/14/2016 10:00	**Dilution:**	50	**File ID:**	8M413071
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Trichloroethene	79-01-6	2030		50.0	25.0	12.5

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	113	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	99.5	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW04-061416	**Prep Method:**	3520C	**Prep Date:**	06/15/2016 18:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573365	**Analyst:**	MES	**Run Date:**	06/21/2016 17:54
Collect Date:	06/14/2016 10:00	**Dilution:**	1	**File ID:**	15M18478
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.67	J	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	72.9	20	129	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW04-061416	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/23/2016 14:20
Collect Date:	06/14/2016 10:00	**Dilution:**	1000	**File ID:**	1LM.LM35457
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1360		400	200	100

Certificate of Analysis

Sample #:	L16060822-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW04FD-061416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/01/2016 17:19
Workgroup #:	WG573036	**Analyst:**	FJB	**Run Date:**	06/17/2016 02:47
Collect Date:	06/14/2016 10:00	**Dilution:**	1	**File ID:**	6M140132
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.612	J	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	3.33		1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.311	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	4.84		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	5.76		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	76.2		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.671	J	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.528	J	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	1.10		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.631	J	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	106	70	120	
Toluene-d8	99.2	85	120	
4-Bromofluorobenzene	104	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW04FD-061416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573253	**Analyst:**	FJB	**Run Date:**	06/17/2016 22:12
Collect Date:	06/14/2016 10:00	**Dilution:**	50	**File ID:**	8M413072
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Trichloroethene	79-01-6	1960		50.0	25.0	12.5

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	109	85	115	
1,2-Dichloroethane-d4	109	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	100	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW04FD-061416	**Prep Method:**	3520C	**Prep Date:**	06/15/2016 18:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573365	**Analyst:**	MES	**Run Date:**	06/21/2016 18:17
Collect Date:	06/14/2016 10:00	**Dilution:**	1	**File ID:**	15M18479
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	2.01		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	103	20	129	

Certificate of Analysis

Sample #:	L16060822-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW04FD-061416	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/23/2016 14:39
Collect Date:	06/14/2016 10:00	**Dilution:**	1000	**File ID:**	1LM.LM35458
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1380		400	200	100

Certificate of Analysis

Sample #:	L16060822-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/01/2016 17:19
Workgroup #:	WG573036	**Analyst:**	FJB	**Run Date:**	06/16/2016 23:34
Collect Date:	06/14/2016 00:01	**Dilution:**	1	**File ID:**	6M140126
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200

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Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	105	70	120	
Toluene-d8	99.0	85	120	
4-Bromofluorobenzene	103	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18WW03-061416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/01/2016 17:19
Workgroup #:	WG573036	**Analyst:**	FJB	**Run Date:**	06/17/2016 01:10
Collect Date:	06/14/2016 07:40	**Dilution:**	1	**File ID:**	6M140129
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

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Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	105	70	120	
Toluene-d8	98.5	85	120	
4-Bromofluorobenzene	104	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW04SW-061416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/01/2016 17:19
Workgroup #:	WG573036	**Analyst:**	FJB	**Run Date:**	06/17/2016 01:42
Collect Date:	06/14/2016 09:00	**Dilution:**	1	**File ID:**	6M140130
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	106	70	120	
Toluene-d8	99.1	85	120	
4-Bromofluorobenzene	104	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW04-061416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/01/2016 17:19
Workgroup #:	WG573036	**Analyst:**	FJB	**Run Date:**	06/17/2016 02:15
Collect Date:	06/14/2016 10:00	**Dilution:**	1	**File ID:**	6M140131
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.618	J	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	3.39		1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.314	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	4.87		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	5.87		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	76.9		1.00	0.500	0.250

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.593	J	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.494	J	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	1.09		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.617	J	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	105	70	120	
Toluene-d8	99.4	85	120	
4-Bromofluorobenzene	104	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW04-061416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573253	**Analyst:**	FJB	**Run Date:**	06/17/2016 21:42
Collect Date:	06/14/2016 10:00	**Dilution:**	50	**File ID:**	8M413071
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Trichloroethene	79-01-6	2030		50.0	25.0	12.5

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	113	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	99.5	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW04FD-061416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/01/2016 17:19
Workgroup #:	WG573036	**Analyst:**	FJB	**Run Date:**	06/17/2016 02:47
Collect Date:	06/14/2016 10:00	**Dilution:**	1	**File ID:**	6M140132
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.612	J	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	3.33		1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.311	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	4.84		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	5.76		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	76.2		1.00	0.500	0.250

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.671	J	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.528	J	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	1.10		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.631	J	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	106	70	120	
Toluene-d8	99.2	85	120	
4-Bromofluorobenzene	104	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW04FD-061416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573253	**Analyst:**	FJB	**Run Date:**	06/17/2016 22:12
Collect Date:	06/14/2016 10:00	**Dilution:**	50	**File ID:**	8M413072
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Trichloroethene	79-01-6	1960		50.0	25.0	12.5

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	109	85	115	
1,2-Dichloroethane-d4	109	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	100	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/01/2016 17:19
Workgroup #:	WG573036	**Analyst:**	FJB	**Run Date:**	06/16/2016 23:34
Collect Date:	06/14/2016 00:01	**Dilution:**	1	**File ID:**	6M140126
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	105	70	120	
Toluene-d8	99.0	85	120	
4-Bromofluorobenzene	103	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

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Instrument Run Log

Instrument: HPMS6 Dataset: 042416
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75498 Surrogate Standard: STD75498
CCV: STD75791 LCS: STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG566155

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M138749	RINSE	NA	1	1		04/24/16 16:05
6M138750	WG566155-01 50ng BFB 826-A9	NA	1	1	STD75485	04/24/16 16:33
6M138751	WG566155-02 5ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 16:59
6M138752	WG566155-03 20ug/L STD 826-A	NA	1	1	STD75791	04/24/16 17:31
6M138753	WG566155-04 50ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 18:03
6M138754	WG566155-05 100ug/L STD 826-A	NA	1	1	STD75791	04/24/16 18:36
6M138755	WG566155-06 200ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 19:08
6M138756	WG566155-07 300ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 19:40
6M138757	WG566155-08 400ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 20:12
6M138758	WG566155-09 500ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 20:44
6M138759	RINSE	NA	1	1		04/24/16 21:16
6M138760	RINSE	NA	1	1		04/24/16 21:49
6M138761	WG566155-10 100ug/L ALT SRC	NA	1	1	STD75801	04/24/16 22:21
6M138762	RINSE	NA	1	1		04/24/16 22:53
6M138763	RINSE	NA	1	1		04/24/16 23:25

Approved: April 29, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051316
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53752

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG568561

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412209	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 08:38
8M412210	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 08:57
8M412211	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 09:29
8M412212	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 09:56
8M412213	WG568561-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/13/16 10:19
8M412214	WG568561-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/13/16 10:51
8M412215	WG568565-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76072	05/13/16 11:36
8M412216	BFB CHECK	NA	1	1	STD76034	05/13/16 12:04
8M412217	BFB CHECK	NA	1	1	STD76034	05/13/16 12:18
8M412218	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 12:36
8M412219	RINSE	NA	1	1		05/13/16 13:00
8M412220	WG568561-02 0.3ug/L STD 8260	NA	1	1	STD76127	05/13/16 13:29
8M412221	WG568561-03 0.4ug/L STD 8260	NA	1	1	STD76127	05/13/16 13:58
8M412222	WG568561-04 1ug/L STD 8260	NA	1	1	STD76127	05/13/16 14:27
8M412223	WG568561-05 2ug/L STD 8260	NA	1	1	STD76127	05/13/16 14:56
8M412224	WG568561-06 5ug/L STD 8260	NA	1	1	STD76127	05/13/16 15:25
8M412225	WG568561-07 20ug/L STD 8260	NA	1	1	STD76127	05/13/16 15:54
8M412226	WG568561-08 50ug/L STD 8260	NA	1	1	STD76127	05/13/16 16:23
8M412227	WG568561-09 100ug/L STD 8260	NA	1	1	STD76127	05/13/16 16:52
8M412228	WG568561-10 200ug/L STD 8260	NA	1	1	STD76127	05/13/16 17:21
8M412229	WG568561-11 300ug/L STD 8260	NA	1	1	STD76127	05/13/16 17:50
8M412230	RINSE	NA	1	1		05/13/16 18:19
8M412231	RINSE	NA	1	1		05/13/16 18:49
8M412232	WG568561-12 50ug/L ALT SRC STD 8260	NA	1	1	STD76109	05/13/16 19:17
8M412233	RINSE	NA	1	1		05/13/16 19:46

Comments

Seq.	Rerun	Dil.	Reason	Analytes
5	X			
File ID: 8M412213				
	Several compounds were low, DNR.			
6				
File ID: 8M412214				

Approved: May 20, 2016

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Instrument Run Log

Instrument:	HPMS8	Dataset:	051316		
Analyst1:	TMB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	23
Method:	624	SOP:	MSV10	Rev:	14
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:	53752				

Internal Standard: STD75899 Surrogate Standard: STD75899

CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG568561

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			Two C compounds failed. DNR. Run a curve.	
7 File ID: 8M412215				
			DNR.	

Approved: May 20, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051716
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76072; STD76127 LCS: STD76109; STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG569079; WG569083

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412319	WG569084-01 50ng BFB STD 8260	NA	1	1	STD76034	05/17/16 08:53
8M412320	WG569084-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/17/16 09:18
8M412321	WG569079-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76072	05/17/16 09:47
8M412322	WG569079-03 50ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 10:16
8M412323	WG569079-04 20ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 10:44
8M412324	WG569079-05 5ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 11:13
8M412325	WG569079-06 200ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 11:42
8M412326	WG569079-07 300ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 12:40
8M412327	WG569079-08 400ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 13:10
8M412328	WG569079-09 500ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 13:39
8M412329	RINSE	NA	1	1		05/17/16 14:08
8M412330	RINSE	NA	1	1		05/17/16 14:37
8M412331	WG569079-10 100ug/L ALT SRC STD 826	NA	1	1	STD75801	05/17/16 15:06
8M412332	WG569259-01 BFB 50ng 8260	NA	1	1	STD76034	05/17/16 18:27
8M412333	WG569259-02 50ug/L CCV 8260	NA	1	1	STD76034	05/17/16 18:53
8M412334	WG569260-01 100ug/L CCV A9	NA	1	1	STD76072	05/17/16 19:22
8M412335	WG569083-01 VBLK0517 BLANK 8260	NA	1	1		05/17/16 19:51
8M412336	WG569083-02 20ug/L LCS 8260	NA	1	1	STD76109	05/17/16 20:20
8M412337	WG569083-03 20ug/L LCS2 8260	NA	1	1	STD76109	05/17/16 20:49
8M412338	WG569083-04 100ug/L LCS A9	NA	1	1	STD75801	05/17/16 21:18
8M412339	WG569083-05 100ug/L LCS2 A9	NA	1	1	STD75801	05/17/16 21:46
8M412340	L16050844-01 TB A 826-A9-SPE	5	1	1		05/17/16 22:16
8M412341	L16050844-07 EB A 826-A9-SPE	5	1	1		05/17/16 22:45
8M412342	L16050844-11 AB A 826-A9-SPE	5	1	1		05/17/16 23:14
8M412343	L16050844-02 A 826-A9-SPE	6	1	1		05/17/16 23:43
8M412344	L16050844-05 A 826-A9-SPE	6	1	1		05/18/16 00:12
8M412345	L16050844-06 A 826-A9-SPE	6	1	1		05/18/16 00:41
8M412346	L16050844-12 A 826-A9-SPE	6	1	1		05/18/16 01:10
8M412347	L16050840-01 A 826-A9-SPE	7	1	1		05/18/16 01:38
8M412348	L16050844-08 A 826-A9-SPE	7	1	1		05/18/16 02:07
8M412349	L16050844-13 A 826-A9-SPE	7	1	1		05/18/16 02:36
8M412350	L16050844-15 A 826-A9-SPE	7	1	1		05/18/16 03:05
8M412351	L16050839-01 A 826-A9-SPE	7	1	1		05/18/16 03:33
8M412352	L16050844-03 2.5X A 826-A9-SPE	7	1	2.5		05/18/16 04:02

Approved: May 20, 2016

Sarah Vandenberg

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Instrument Run Log

Instrument: HPMS8 Dataset: 051716
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76072; STD76127 LCS: STD76109; STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG569079; WG569083

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412353	L16050844-04 5X A 826-A9-SPE	7	1	5		05/18/16 04:31
8M412354	L16050844-09 5X A 826-A9-SPE	7	1	5		05/18/16 05:01
8M412355	L16050844-10 5X A 826-A9-SPE	7	1	5		05/18/16 05:30
8M412356	L16050844-14 50X A 826-A9-SPE	7	1	50		05/18/16 05:59
8M412357	RINSE	NA	1	1		05/18/16 06:28

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
File ID: 8M412320				
	DNR. Running an a9/foo curve.			
32	X	10	Over Calibration Range	CIS12-DCE
File ID: 8M412350				
40	X	2.5	Analyzed too dilute	
File ID: 8M412353				
	DNR.			
37	X	25	Over Calibration Range	TCE
File ID: 8M412355				
38	X	20	Analyzed too dilute	
File ID: 8M412356				
	DNR.			

Approved: May 20, 2016

Sarah Vandenberg

Microbac

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 060116
Analyst1: TMB Analyst2: NA
Method: 8260B/OVAP SOP: MSV01 Rev: 23/0
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A/OVAP SOP: PAT01 Rev: 18/0
Maintenance Log ID: 53768

Internal Standard: STD76146 Surrogate Standard: STD76146
CCV: STD76405 LCS: STD76401 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG570915; WG570966

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M139735	WG570915-01 50ng BFB STD 8260	NA	1	1	STD76034	06/01/16 12:04
6M139736	WG570915-02 0.3ug/L STD 8260	NA	1	1	STD76405	06/01/16 12:30
6M139737	WG570915-03 0.4ug/L STD 8260	NA	1	1	STD76405	06/01/16 13:01
6M139738	WG570915-04 1ug/L STD 8260	NA	1	1	STD76405	06/01/16 13:33
6M139739	WG570915-05 2ug/L STD 8260	NA	1	1	STD76405	06/01/16 14:06
6M139740	WG570915-06 5ug/L STD 8260	NA	1	1	STD76405	06/01/16 14:38
6M139741	WG570915-07 20ug/L STD 8260	NA	1	1	STD76405	06/01/16 15:10
6M139742	WG570915-08 50ug/L STD 8260	NA	1	1	STD76405	06/01/16 15:43
6M139743	WG570915-09 100ug/L STD 8260	NA	1	1	STD76405	06/01/16 16:15
6M139744	WG570915-10 200ug/L STD 8260	NA	1	1	STD76405	06/01/16 16:47
6M139745	WG570915-11 300ug/L STD 8260	NA	1	1	STD76405	06/01/16 17:19
6M139746	RINSE	NA	1	1		06/01/16 17:52
6M139747	RINSE	NA	1	1		06/01/16 18:24
6M139748	WG570915-12 50ug/L ALT SRC STD 8260	NA	1	1	STD76401	06/01/16 18:56
6M139749	WG570966-01 VBLK0601 BLANK STD 826	NA	1	1		06/01/16 19:28
6M139750	L16010006-01 MDL-A 826-SPE	NA	1	1	STD76411	06/01/16 20:00
6M139751	L16010006-02 MDL-A 826-SPE	NA	1	1	STD76411	06/01/16 20:33
6M139752	L16010006-03 MDL-A 826-SPE	NA	1	1	STD76411	06/01/16 21:05
6M139753	L16010006-04 MDL-A 826-SPE	NA	1	1	STD76411	06/01/16 21:37
6M139754	L16010006-05 MDL-A 826-SPE	NA	1	1	STD76411	06/01/16 22:09
6M139755	L16010006-06 MDL-A 826-SPE	NA	1	1	STD76411	06/01/16 22:41
6M139756	L16010006-07 MDL-A 826-SPE	NA	1	1	STD76411	06/01/16 23:13

Approved: June 02, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 061616
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 16
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD76454 Surrogate Standard: STD76454
CCV: STD76405 LCS: STD76597 MS/MSD: STD76597

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG573036

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M140110	WG573035-01 BFB 50ng 8260	NA	1	1	STD76496	06/16/16 14:03
6M140111	WG573035-02 50ug/L CCV 8260	NA	1	1	STD76496	06/16/16 14:28
6M140112	WG573035-02 50ug/L CCV 8260	NA	1	1	STD76496	06/16/16 15:01
6M140113	WG573035-01 BFB 50ng 8260	NA	1	1	STD76496	06/16/16 16:21
6M140114	WG573035-02 50ug/L CCV 8260	NA	1	1	STD76496	06/16/16 16:59
6M140115	WG573XXX-01 100ug/L CCV A9	NA	1	1	STDXXXXX	06/16/16 17:41
6M140116	WG573036-01 BLANK 6/16 8260	NA	1	1		06/16/16 18:13
6M140117	WG573036-02 20ug/L LCS 8260	NA	1	1	STD76597	06/16/16 18:45
6M140118	L16060806-03 MS A 826-SPE	7	1	1	STD76597	06/16/16 19:17
6M140119	L16060806-04 MSD A 826-SPE	7	1	1	STD76597	06/16/16 19:49
6M140120	L16060808-03 MS A 826-SPE	7	1	1	STD76597	06/16/16 20:22
6M140121	L16060808-04 MSD A 826-SPE	7	1	1	STD76597	06/16/16 20:54
6M140122	L16060590-05 5X 826-SPE D1	<2	1	5		06/16/16 21:26
6M140123	L16060790-01 10X 826-SPE	<2	1	10		06/16/16 21:58
6M140124	L16060808-02 TB A 826-SPE	6	1	1		06/16/16 22:30
6M140125	L16060806-02 TB A 826-SPE	5	1	1		06/16/16 23:02
6M140126	L16060822-06 TB A 826-LOW	<2	1	1		06/16/16 23:34
6M140127	L16060806-01 REF A 826-SPE	7	1	1		06/17/16 00:06
6M140128	L16060808-01 REF A 826-SPE	7	1	1		06/17/16 00:38
6M140129	L16060822-01 A 826-LOW	<2	1	1		06/17/16 01:10
6M140130	L16060822-03 A 826-LOW	<2	1	1		06/17/16 01:42
6M140131	L16060822-04 A 826-LOW	<2	1	1		06/17/16 02:15
6M140132	L16060822-05 A 826-LOW	<2	1	1		06/17/16 02:47
6M140133	L16060794-01 A 826-SPE	<2	1	1		06/17/16 03:19
6M140134	L16060794-02 A 826-SPE	<2	1	1		06/17/16 03:51
6M140135	L16060837-02 10X A 826-SPE	<2	1	10		06/17/16 04:23
6M140136	CCV	NA	1	1		06/17/16 04:55
6M140137	RINSE	NA	1	1		06/17/16 05:27
6M140138	RINSE	NA	1	1		06/17/16 05:59

Comments

Seq.	Rerun	Dil.	Reason	Analytes
22	X	50	Over Calibration Range	TCE

Approved: June 24, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 061616
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 16
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD76454 Surrogate Standard: STD76454
CCV: STD76405 LCS: STD76597 MS/MSD: STD76597

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG573036

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
File ID: 6M140131				
	L16060822-04			
23	X	50	Over Calibration Range	TCE
File ID: 6M140132				
	L16060822-05			
24	X	1	Carry-over contamination	
File ID: 6M140133				
	L16060794-01			
25	X	1	Carry-over contamination	
File ID: 6M140134				
	L16060794-02			
26	X	1	Analyzed too dilute	
File ID: 6M140135				
	L16060837-02			

Approved: June 24, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 061716
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75370 Surrogate Standard: STD76370
CCV: STD76578 LCS: STD76597 MS/MSD: STD76597

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG573253

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M413059	WG573252-01 BFB 50ng 8260	NA	1	1	STD76496	06/17/16 15:56
8M413060	WG573252-02 50ug/L CCV 8260	NA	1	1	STD76578	06/17/16 16:23
8M413061	WG573XXX-01 100ug/L CCV A9	NA	1	1	STDXXXXX	06/17/16 16:52
8M413062	WG573253-01 BLANK 6/17 8260	NA	1	1		06/17/16 17:21
8M413063	L16060134-01 A 826-REF-BLK	NA	1	1		06/17/16 17:50
8M413064	L16060134-02 A 826-REF-BLK	NA	1	1		06/17/16 18:19
8M413065	L16060134-03 A 826-REF-BLK	NA	1	1		06/17/16 18:48
8M413066	L16060134-04 A 826-REF-BLK	NA	1	1		06/17/16 19:17
8M413067	L16060134-05 A 826-REF-BLK	NA	1	1		06/17/16 19:46
8M413068	WG573253-02 20ug/L LCS 8260	NA	1	1	STD76597	06/17/16 20:15
8M413069	L16060564-05 MS 10X A 8260	NA	1	10	STD76597	06/17/16 20:44
8M413070	L16060564-07 MSD 10X A 8260	NA	1	10	STD76597	06/17/16 21:13
8M413071	L16060822-04 50X B 826-LOW D1	NA	1	50		06/17/16 21:42
8M413072	L16060822-05 50X B 826-LOW D1	NA	1	50		06/17/16 22:12
8M413073	L16060637-03 20X B 826-LOW D1	NA	1	20		06/17/16 22:41
8M413074	L16060756-04 20X B 826-LOW D1	NA	1	20		06/17/16 23:10
8M413075	L16060779-19 TB A 826-LOW	NA	1	1		06/17/16 23:38
8M413076	L16060904-04 TB A 826-SPE	NA	1	1		06/18/16 00:07
8M413077	L16060900-19 EB A 826-SPE	NA	1	1		06/18/16 00:36
8M413078	L16060729-04 TB B 826-SPE	NA	1	1		06/18/16 01:05
8M413079	L16060729-03 B 826-SPE	NA	1	1		06/18/16 01:33
8M413080	L16060837-02 B 826-SPE	NA	1	1		06/18/16 02:02
8M413081	L16060564-01 REF 10X A 8260	NA	1	10		06/18/16 02:32
8M413082	L16060564-03 10X A 8260	NA	1	10		06/18/16 03:01
8M413083	L16060779-18 A 826-LOW	NA	1	1		06/18/16 03:29
8M413084	RINSE	NA	1	1		06/18/16 03:58
8M413085	WG573253-06 BLANK 624	NA	2	1		06/18/16 04:27
8M413086	L16061006-01 A 624-SPE	7	2	1		06/18/16 04:56
8M413087	L16061035-02 A 624-SPE	7	2	1		06/18/16 05:25
8M413088	L16061031-02 A 624-SPE	NA	2	1		06/18/16 05:53
8M413089	L16061047-01 A 624-SPE	NA	2	1		06/18/16 06:22
8M413090	L16060989-01 A 624	NA	2	1		06/18/16 06:50
8M413091	CCV	NA	1	1		06/18/16 07:19
8M413092	RINSE	NA	1	1		06/18/16 07:48

Approved: June 24, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 061716
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75370 Surrogate Standard: STD76370
CCV: STD76578 LCS: STD76597 MS/MSD: STD76597

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG573253

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M413093	RINSE	NA	1	1		06/18/16 08:17

Approved: June 24, 2016

Sarah Vandenberg

Microbac

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Microbac Laboratories Inc.

Data Checklist

Date: 24-APR-2016
Analyst: JDS
Analyst: NA
Method: 8260B/624
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 74754
Analytical Workgroups: WG566155

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
27-APR-2016
Tiffany Bailey

Secondary Reviewer:
29-APR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: APR-29-2016 12:29:57

Microbac Laboratories Inc.

Data Checklist

Date: 13-MAY-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75126
Analytical Workgroups: WG568561

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	TMB
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
17-MAY-2016
Tiffany Bailey

Secondary Reviewer:
20-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2016 11:18:36

Microbac Laboratories Inc.

Data Checklist

Date: 17-MAY-2016
Analyst: TMB
Analyst: FJB
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75174
Analytical Workgroups: WG569079; WG569083

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
19-MAY-2016
Tiffany Bailey

Secondary Reviewer:
20-MAY-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2016 11:05:37

Microbac Laboratories Inc.

Data Checklist

Date: 01-JUN-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 75441
Analytical Workgroups: WG570915; WG570966

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
02-JUN-2016
Tiffany Bailey

Secondary Reviewer:
02-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-02-2016 17:16:55

Microbac Laboratories Inc.

Data Checklist

Date: 16-JUN-2016
Analyst: FJB
Analyst: NA
Method: 8260B
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 75903
Analytical Workgroups: WG573036

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	WTD
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	FJB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
24-JUN-2016

Secondary Reviewer:
24-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-24-2016 12:44:28

Microbac Laboratories Inc.

Data Checklist

Date: 17-JUN-2016
Analyst: FJB
Analyst: NA
Method: 8260B
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75908
Analytical Workgroups: WG573253

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	WTD
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	FJB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
24-JUN-2016

Secondary Reviewer:
24-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-24-2016 16:22:07

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG573036

Login Number: L16060822

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW03-061416	01	06/14/16					06/17/2016	2.7	14		06/17/16	2.7	14	
18CPTMW04SW-061416	03	06/14/16					06/17/2016	2.7	14		06/17/16	2.7	14	
18CPTMW04-061416	04	06/14/16					06/17/2016	2.7	14		06/17/16	2.7	14	
18CPTMW04FD-061416	05	06/14/16					06/17/2016	2.7	14		06/17/16	2.7	14	
TRIP BLANK	06	06/14/16					06/16/2016	3	14		06/16/16	3	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4822658
Report generated 06/24/2016 16:18

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG573253

Login Number: L16060822

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW04-061416	04	06/14/16					06/17/2016	3.5	14		06/17/16	3.5	14	
18CPTMW04FD-061416	05	06/14/16					06/17/2016	3.5	14		06/17/16	3.5	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4822658
Report generated 06/24/2016 16:18

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060822
Instrument Id: HPMS6
Workgroup (AAB#): WG573036

Method: 8260
CAL ID: HPMS6-01-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16060822-01	1.00	01	105	103	104	98.5
L16060822-03	1.00	01	106	103	104	99.1
L16060822-04	1.00	01	105	104	104	99.4
L16060822-05	1.00	01	106	104	104	99.2
L16060822-06	1.00	01	105	102	103	99.0
WG573036-01	1.00	01	104	102	107	99.6
WG573036-02	1.00	01	103	101	101	99.7

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
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Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060822
Instrument Id: HPMS8
Workgroup (AAB#): WG573253

Method: 8260
CAL ID: HPMS8 - 13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16060822-04	50.0	DL01	113	110	99.5	105
L16060822-05	50.0	DL01	109	109	100	105
WG573253-01	1.00	01	118	112	101	104
WG573253-02	1.00	01	119	111	101	103
WG573253-06	1.00	01	118	113	101	105

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4822666
Report generated: 06/24/2016 16:18

METHOD BLANK SUMMARY

Login Number: L16060822
Blank File ID: 6M140116
Prep Date: 06/16/16 18:13
Analyzed Date: 06/16/16 18:13
Analyst: FJB

Work Group: WG573036
Blank Sample ID: WG573036-01
Instrument ID: HPMS6
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573036-02	6M140117	06/16/16 18:45	01
TRIP BLANK	L16060822-06	6M140126	06/16/16 23:34	01
18WW03-061416	L16060822-01	6M140129	06/17/16 01:10	01
18CPTMW04SW-061416	L16060822-03	6M140130	06/17/16 01:42	01
18CPTMW04-061416	L16060822-04	6M140131	06/17/16 02:15	01
18CPTMW04FD-061416	L16060822-05	6M140132	06/17/16 02:47	01

Report Name: BLANK_SUMMARY
PDF File ID: 4822659
Report generated 06/24/2016 16:18

METHOD BLANK SUMMARY

Login Number: L16060822
Blank File ID: 8M413062
Prep Date: 06/17/16 17:21
Analyzed Date: 06/17/16 17:21
Analyst: FJB

Work Group: WG573253
Blank Sample ID: WG573253-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573253-02	8M413068	06/17/16 20:15	01
18CPTMW04-061416	L16060822-04	8M413071	06/17/16 21:42	DL01
18CPTMW04FD-061416	L16060822-05	8M413072	06/17/16 22:12	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4822659
Report generated 06/24/2016 16:18

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16060822 Prep Date: 06/16/16 18:13 Sample ID: WG573036-01
Instrument ID: HPMS6 Run Date: 06/16/16 18:13 Prep Method: 5030B/5030C/503
File ID: 6M140116 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573036 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS6-01-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4822660
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Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060822 Prep Date: 06/16/16 18:13 Sample ID: WG573036-01
Instrument ID: HPMS6 Run Date: 06/16/16 18:13 Prep Method: 5030B/5030C/503
File ID: 6M140116 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573036 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS6-01-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	102	85 - 115	PASS
1,2-Dichloroethane-d4	104	70 - 120	PASS
Toluene-d8	99.6	85 - 120	PASS
4-Bromofluorobenzene	107	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4822660
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Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060822 Prep Date: 06/17/16 17:21 Sample ID: WG573253-01
Instrument ID: HPMS8 Run Date: 06/17/16 17:21 Prep Method: 5030B/5030C/503
File ID: 8M413062 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573253 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Trichloroethene	0.250	1.00	0.250	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	112	85 - 115	PASS
1,2-Dichloroethane-d4	118	70 - 120	PASS
Toluene-d8	104	85 - 120	PASS
4-Bromofluorobenzene	101	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4822660
24-JUN-2016 16:18

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060822 Run Date: 06/16/2016 Sample ID: WG573036-02
Instrument ID: HPMS6 Run Time: 18:45 Prep Method: 5030B/5030C/503
File ID: 6M140117 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573036 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD76597 Cal ID: HPMS6-01-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	20.2	101	40 - 140	
Benzene	20.0	20.6	103	80 - 120	
Bromobenzene	20.0	20.5	102	75 - 125	
Bromochloromethane	20.0	20.6	103	65 - 130	
Bromodichloromethane	20.0	21.8	109	75 - 120	
Bromoform	20.0	20.7	103	70 - 130	
Bromomethane	20.0	17.9	89.3	30 - 145	
2-Butanone	20.0	21.6	108	30 - 150	
n-Butylbenzene	20.0	22.0	110	70 - 135	
sec-Butylbenzene	20.0	22.2	111	70 - 125	
tert-Butylbenzene	20.0	22.0	110	70 - 130	
Carbon disulfide	20.0	19.2	96.2	35 - 160	
Carbon tetrachloride	20.0	21.6	108	65 - 140	
Chlorobenzene	20.0	21.4	107	80 - 120	
Chlorodibromomethane	20.0	21.7	108	60 - 135	
Chloroethane	20.0	18.6	93.1	60 - 135	
Chloroform	20.0	21.1	106	65 - 135	
Chloromethane	20.0	17.1	85.3	40 - 125	
2-Chlorotoluene	20.0	21.3	107	75 - 125	
4-Chlorotoluene	20.0	22.1	110	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	23.0	115	50 - 130	
1,2-Dibromoethane	20.0	21.4	107	80 - 120	
Dibromomethane	20.0	20.7	103	75 - 125	
1,2-Dichlorobenzene	20.0	21.6	108	70 - 120	
1,3-Dichlorobenzene	20.0	21.1	105	75 - 125	
1,4-Dichlorobenzene	20.0	22.6	113	75 - 125	
Dichlorodifluoromethane	20.0	19.4	97.1	30 - 155	
1,1-Dichloroethane	20.0	19.9	99.5	70 - 135	
1,2-Dichloroethane	20.0	22.3	112	70 - 130	
1,1-Dichloroethene	20.0	19.6	97.8	70 - 130	
cis-1,2-Dichloroethene	20.0	21.0	105	70 - 125	
trans-1,2-Dichloroethene	20.0	20.4	102	60 - 140	
1,2-Dichloropropane	20.0	21.9	110	75 - 125	
1,3-Dichloropropane	20.0	22.5	113	75 - 125	
2,2-Dichloropropane	20.0	22.4	112	70 - 135	
cis-1,3-Dichloropropene	20.0	23.9	120	70 - 130	
trans-1,3-Dichloropropene	20.0	22.2	111	55 - 140	
1,1-Dichloropropene	20.0	20.5	103	75 - 130	
Ethylbenzene	20.0	20.8	104	75 - 125	
2-Hexanone	20.0	20.7	104	55 - 130	
Hexachlorobutadiene	20.0	22.9	114	50 - 140	

LCS - Modified 03/06/2008
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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060822 Run Date: 06/16/2016 Sample ID: WG573036-02
Instrument ID: HPMS6 Run Time: 18:45 Prep Method: 5030B/5030C/503
File ID: 6M140117 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573036 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD76597 Cal ID: HPMS6-01-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	22.6	113	75 - 125	
p-Isopropyltoluene	20.0	22.0	110	75 - 130	
4-Methyl-2-pentanone	20.0	21.5	108	60 - 135	
Methylene chloride	20.0	19.8	99.2	55 - 140	
Naphthalene	20.0	21.0	105	55 - 140	
n-Propylbenzene	20.0	22.7	113	70 - 130	
Styrene	20.0	22.2	111	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	21.6	108	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	21.4	107	65 - 130	
Tetrachloroethene	20.0	19.9	99.7	45 - 150	
Toluene	20.0	20.9	105	75 - 120	
1,2,3-Trichlorobenzene	20.0	21.5	107	55 - 140	
1,2,4-Trichlorobenzene	20.0	22.1	110	65 - 135	
1,1,1-Trichloroethane	20.0	21.4	107	65 - 130	
1,1,2-Trichloroethane	20.0	21.5	107	75 - 125	
Trichloroethene	20.0	21.1	106	70 - 125	
Trichlorofluoromethane	20.0	22.0	110	60 - 145	
1,2,3-Trichloropropane	20.0	21.4	107	75 - 125	
1,2,4-Trimethylbenzene	20.0	21.4	107	75 - 130	
1,3,5-Trimethylbenzene	20.0	22.2	111	75 - 130	
Vinyl chloride	20.0	19.9	99.4	50 - 145	
o-Xylene	20.0	22.1	111	80 - 120	
m-,p-Xylene	40.0	43.2	108	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	101	85 - 115	PASS
1,2-Dichloroethane-d4	103	70 - 120	PASS
Toluene-d8	99.7	85 - 120	PASS
4-Bromofluorobenzene	101	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060822 Run Date: 06/17/2016 Sample ID: WG573253-02
Instrument ID: HPMS8 Run Time: 20:15 Prep Method: 5030B/5030C/503
File ID: 8M413068 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573253 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD76597 Cal ID: HPMS8-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Trichloroethene	20.0	23.2	116	70 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	111	85 - 115	PASS
1,2-Dichloroethane-d4	119	70 - 120	PASS
Toluene-d8	103	85 - 120	PASS
4-Bromofluorobenzene	101	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
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Report generated: 06/24/2016 16:18

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060822
Instrument: HPMS6
Analyst: JDS
Workgroup: WG566155

Tune ID: WG566155-01
Run Date: 04/24/2016
Run Time: 16:33
File ID: 6M138750
Cal ID: HPMS6 - 24-APR-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.5	10010	PASS
75.0	95.0	30.0	60.0	52.0	23152	PASS
95.0	95.0	100	100	100	44552	PASS
96.0	95.0	5.00	9.00	6.92	3085	PASS
173	174	0	2.00	0.346	113	PASS
174	95.0	50.0	100	73.2	32632	PASS
175	174	5.00	9.00	7.16	2336	PASS
176	174	95.0	101	99.2	32384	PASS
177	176	5.00	9.00	6.95	2251	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG566155-02	STD	01	04/24/2016 16:59	
WG566155-03	STD	01	04/24/2016 17:31	
WG566155-04	STD	01	04/24/2016 18:03	
WG566155-05	STD-CCV	01	04/24/2016 18:36	
WG566155-06	STD	01	04/24/2016 19:08	
WG566155-07	STD	01	04/24/2016 19:40	
WG566155-08	STD	01	04/24/2016 20:12	
WG566155-09	STD	01	04/24/2016 20:44	
WG566155-10	SSCV	01	04/24/2016 22:21	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4822663
Report generated 06/24/2016 16:18

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060822
Instrument: HPMS6
Analyst: TMB
Workgroup: WG570915

Tune ID: WG570915-01
Run Date: 06/01/2016
Run Time: 12:04
File ID: 6M139735
Cal ID: HPMS6 - 01-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.0	10283	PASS
75.0	95.0	30.0	60.0	48.7	22744	PASS
95.0	95.0	100	100	100	46704	PASS
96.0	95.0	5.00	9.00	7.26	3392	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	79.6	37192	PASS
175	174	5.00	9.00	7.41	2756	PASS
176	174	95.0	101	97.2	36149	PASS
177	176	5.00	9.00	6.58	2378	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG570915-02	STD	01	06/01/2016 12:30	
WG570915-03	STD	01	06/01/2016 13:01	
WG570915-04	STD	01	06/01/2016 13:33	
WG570915-05	STD	01	06/01/2016 14:06	
WG570915-06	STD	01	06/01/2016 14:38	
WG570915-07	STD	01	06/01/2016 15:10	
WG570915-08	STD-CCV	01	06/01/2016 15:43	
WG570915-09	STD	01	06/01/2016 16:15	
WG570915-10	STD	01	06/01/2016 16:47	
WG570915-11	STD	01	06/01/2016 17:19	
WG570915-12	SSCV	01	06/01/2016 18:56	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4822663
Report generated 06/24/2016 16:18

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060822
Instrument: HPMS6
Analyst: FJB
Workgroup: WG573035

Tune ID: WG573035-01
Run Date: 06/16/2016
Run Time: 16:21
File ID: 6M140113
Cal ID: HPMS6 - 01-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.9	7403	PASS
75.0	95.0	30.0	60.0	50.2	16974	PASS
95.0	95.0	100	100	100	33797	PASS
96.0	95.0	5.00	9.00	6.81	2302	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	80.0	27042	PASS
175	174	5.00	9.00	7.46	2016	PASS
176	174	95.0	101	96.3	26048	PASS
177	176	5.00	9.00	7.16	1864	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573035-02	CCV	01	06/16/2016 16:59	
WG573036-01	BLANK	01	06/16/2016 18:13	
WG573036-02	LCS	01	06/16/2016 18:45	
L16060822-06	TRIP BLANK	01	06/16/2016 23:34	
L16060822-01	18WW03-061416	01	06/17/2016 01:10	
L16060822-03	18CPTMW04SW-061416	01	06/17/2016 01:42	
L16060822-04	18CPTMW04-061416	01	06/17/2016 02:15	
L16060822-05	18CPTMW04FD-061416	01	06/17/2016 02:47	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4822663
Report generated 06/24/2016 16:18

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060822
Instrument: HPMS8
Analyst: TMB
Workgroup: WG568561

Tune ID: WG568561-01
Run Date: 05/13/2016
Run Time: 12:36
File ID: 8M412218
Cal ID: HPMS8 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	16.7	6575	PASS
75.0	95.0	30.0	60.0	51.3	20171	PASS
95.0	95.0	100	100	100	39312	PASS
96.0	95.0	5.00	9.00	6.74	2649	PASS
173	174	0	2.00	0.363	122	PASS
174	95.0	50.0	100	85.5	33616	PASS
175	174	5.00	9.00	8.17	2746	PASS
176	174	95.0	101	99.2	33360	PASS
177	176	5.00	9.00	6.80	2267	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG568561-02	STD	01	05/13/2016 13:29	
WG568561-03	STD	01	05/13/2016 13:58	
WG568561-04	STD	01	05/13/2016 14:27	
WG568561-05	STD	01	05/13/2016 14:56	
WG568561-06	STD	01	05/13/2016 15:25	
WG568561-07	STD	01	05/13/2016 15:54	
WG568561-08	STD-CCV	01	05/13/2016 16:23	
WG568561-09	STD	01	05/13/2016 16:52	
WG568561-10	STD	01	05/13/2016 17:21	
WG568561-11	STD	01	05/13/2016 17:50	
WG568561-12	SSCV	01	05/13/2016 19:17	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4822663
Report generated 06/24/2016 16:18

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060822
Instrument: HPMS8
Analyst: TMB
Workgroup: WG569084

Tune ID: WG569084-01
Run Date: 05/17/2016
Run Time: 08:53
File ID: 8M412319
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.1	6316	PASS
75.0	95.0	30.0	60.0	54.7	18130	PASS
95.0	95.0	100	100	100	33138	PASS
96.0	95.0	5.00	9.00	6.76	2241	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	72.2	23934	PASS
175	174	5.00	9.00	7.88	1886	PASS
176	174	95.0	101	96.8	23159	PASS
177	176	5.00	9.00	7.15	1655	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG569079-01	STD-CCV	01	05/17/2016 09:47	
WG569079-03	STD	01	05/17/2016 10:16	
WG569079-04	STD	01	05/17/2016 10:44	
WG569079-05	STD	01	05/17/2016 11:13	
WG569079-06	STD	01	05/17/2016 11:42	
WG569079-07	STD	01	05/17/2016 12:40	
WG569079-08	STD	01	05/17/2016 13:10	
WG569079-09	STD	01	05/17/2016 13:39	
WG569079-10	SSCV	01	05/17/2016 15:06	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4822663
Report generated 06/24/2016 16:18

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060822
Instrument: HPMS8
Analyst: FJB
Workgroup: WG573252

Tune ID: WG573252-01
Run Date: 06/17/2016
Run Time: 15:56
File ID: 8M413059
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	17.7	6432	PASS
75.0	95.0	30.0	60.0	57.5	20879	PASS
95.0	95.0	100	100	100	36330	PASS
96.0	95.0	5.00	9.00	6.14	2230	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	76.8	27909	PASS
175	174	5.00	9.00	6.98	1948	PASS
176	174	95.0	101	96.5	26925	PASS
177	176	5.00	9.00	6.58	1773	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573252-02	CCV	01	06/17/2016 16:23	
WG573253-01	BLANK	01	06/17/2016 17:21	
WG573253-02	LCS	01	06/17/2016 20:15	
L16060822-04	18CPTMW04-061416	DL01	06/17/2016 21:42	
L16060822-05	18CPTMW04FD-061416	DL01	06/17/2016 22:12	
WG573253-06	BLANK2	01	06/18/2016 04:27	*

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4822663
Report generated 06/24/2016 16:18

Calibration Table Report
Method: A9FOOWT.M
Title: A9-FOO Water - IC: 042416 - HPMS6
Last Calibration: Wed Apr 27 16:03:33 2016
Curve: WG566155
Calibration Files

	Compound	5 6M138751.D	20 6M138752.D	50 6M138753.D	100 6M138754.D	200 6M138755.D	300 6M138756.D	400 6M138757.D	500 6M138758.D	Avg	%RSD
I	Fluorobenzene	ISTD									
T	Acetonitrile	0.036	0.037	0.039	0.038	0.038	0.038	0.038	0.036	0.037	2.606
T	3-Chloro-1-propene	0.567	0.621	0.656	0.672	0.635	0.622	0.617	0.603	0.624	5.157
T	2-Chloro-1,3-butadiene	0.415	0.507	0.558	0.590	0.558	0.553	0.556	0.548	0.535	10.001
T	Ethyl Acetate	0.229	0.259	0.279	0.281	0.277	0.272	0.279	0.268	0.268	6.419
T	Methacrylonitrile	0.071	0.089	0.099	0.099	0.097	0.095	0.096	0.093	0.092	9.852
T	Isobutyl Alcohol		0.008	0.008	0.007	0.007	0.008	0.010	0.010	0.009	13.654
T	1-Butanol									0.000	0.000
T	Methyl methacrylate	0.159	0.200	0.231	0.244	0.244	0.241	0.246	0.236	0.225	13.591
T	2-Nitropropane			0.079	0.082	0.085	0.085	0.088	0.084	0.084	3.643
I	Chlorobenzene-d5	ISTD									
I	1,4-Dichlorobenzene-d4	ISTD									
T	Cyclohexanone			0.026	0.027	0.032	0.034	0.035	0.033	0.031	12.127

Wed Apr 27 16:05:59 2016

Calibration Table Report
Method: 8260WT.M
Title: 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Calibration: Thu Jun 02 12:19:33 2016
Curve: WG570915
Calibration Files

	Compound	0.3 6M139736.D	0.4 6M139737.D	1 6M139738.D	2 6M139739.D	5 6M139740.D	20 6M139741.D	50 6M139742.D	100 6M139743.D	200 6M139744.D	300 6M139745.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.368	0.389	0.360	0.417	0.428	0.427	0.416	0.361	0.396	7.472		
P	Chloromethane			0.508	0.532	0.486	0.500	0.497	0.488	0.465	0.385	0.482	9.076		
C	Vinyl Chloride		0.401	0.350	0.343	0.312	0.323	0.317	0.315	0.304	0.262	0.325	11.731		
T	1,3-Butadiene					0.284	0.265	0.185	0.182	0.173	0.159	0.208	25.270	0.993	
T	Bromomethane			0.159	0.168	0.144	0.137	0.153	0.170	0.184	0.167	0.160	9.429		
T	Chloroethane			0.212	0.219	0.210	0.206	0.204	0.204	0.204	0.186	0.206	4.708		
T	Trichlorofluoromethane		0.437	0.445	0.470	0.433	0.436	0.435	0.434	0.431	0.399	0.436	4.163		
T	Diethyl ether			0.220	0.247	0.237	0.230	0.236	0.237		0.232	0.234	3.554		
T	Isoprene					0.355	0.373	0.369	0.380	0.375	0.368	0.370	2.297		
T	Acrolein				0.038	0.040	0.038	0.039	0.041		0.040	0.040	2.934		
T	1,1,2-Trichloro-1,2,2-Trifluoroet			0.237	0.269	0.247	0.245	0.249	0.250	0.252	0.241	0.249	3.880		
T	Acetone					0.103	0.074	0.075	0.074	0.072	0.067	0.078	16.625	0.999	
C	1,1-Dichloroethene		0.464	0.431	0.455	0.435	0.429	0.438	0.440	0.447	0.425	0.441	2.860		
T	Tert-Butyl Alcohol			0.019	0.021	0.022	0.022	0.023	0.024		0.021	0.022	7.217		
T	Dimethyl Sulfide					0.191	0.206	0.203	0.205	0.206	0.203	0.202	2.776		
T	Iodomethane				0.048	0.105	0.188	0.192	0.194	0.191	0.176	0.156	36.677	0.997	
T	Methyl acetate					0.225	0.218	0.215	0.216	0.212	0.208	0.216	2.557		
T	Methylene Chloride			0.290	0.301	0.275	0.263	0.262	0.260	0.267	0.256	0.272	5.900		
T	Carbon Disulfide			0.869	0.917	0.858	0.877	0.860	0.869	0.852	0.792	0.862	3.999		
T	Acrylonitrile			0.088	0.092	0.090	0.093	0.101	0.100		0.102	0.095	5.996		
T	Methyl Tert Butyl Ether			0.638	0.686	0.655	0.655	0.669	0.668	0.678	0.655	0.663	2.281		
T	trans-1,2-Dichloroethene		0.254	0.252	0.269	0.253	0.255	0.257	0.257	0.262	0.253	0.257	2.039		
T	n-Hexane					0.407	0.403	0.398	0.405	0.399	0.387	0.400	1.831		
T	Diisopropyl ether			1.043	1.114	1.089	1.056	1.078	1.065		1.007	1.064	3.213		
T	Vinyl Acetate					0.421	0.424	0.454	0.438	0.497	0.478	0.452	6.758		
P	1,1-Dichloroethane		0.527	0.521	0.544	0.508	0.506	0.505	0.507	0.516	0.499	0.515	2.718		
T	Ethyl-Tert-Butyl ether			0.841	0.896	0.884	0.864	0.890	0.881		0.843	0.871	2.557		
T	2-Butanone					0.121	0.109	0.114	0.115	0.113	0.104	0.113	5.044		
T	Propionitrile			0.028	0.032	0.031	0.032	0.033	0.033		0.029	0.031	6.795		
T	2,2-Dichloropropane		0.374	0.389	0.411	0.378	0.356	0.362	0.369	0.376	0.361	0.375	4.479		
T	cis-1,2-Dichloroethene		0.263	0.280	0.292	0.281	0.276	0.282	0.280	0.288	0.277	0.280	2.886		
C	Chloroform	0.482	0.449	0.447	0.491	0.459	0.450	0.452	0.451	0.460	0.442	0.458	3.416		
T	1-Bromopropane			0.026	0.043	0.048	0.046	0.046	0.047	0.047	0.046	0.044	16.515	1.000	
T	Bromochloromethane		0.151	0.151	0.167	0.159	0.160	0.161	0.161	0.164	0.157	0.159	3.527		
T	Tetrahydrofuran			0.095	0.078	0.075	0.074	0.077	0.076		0.070	0.078	10.111		
S	Dibromofluoromethane				0.257	0.255	0.269	0.262	0.256	0.260	0.253	0.259	2.029		
T	1,1,1-Trichloroethane		0.436	0.383	0.433	0.400	0.393	0.404	0.408	0.419	0.403	0.409	4.334		
T	Cyclohexane			0.487	0.535	0.494	0.516	0.511	0.523	0.524	0.509	0.512	3.081		
T	1,1-Dichloropropene			0.340	0.358	0.349	0.344	0.350	0.355	0.361	0.346	0.350	2.036		
T	Tert-Amyl-Methyl ether			0.641	0.688	0.677	0.666	0.686	0.691		0.671	0.674	2.592		
T	Carbon Tetrachloride		0.358	0.347	0.378	0.35	0.356	0.37	0.377	0.379	0.367	0.36473	3.3573		
S	1,2-Dichloroethane-d4				0.29	0.283	0.299	0.288	0.282	0.282	0.272	0.28519	2.87577		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.365	0.344	0.373	0.347	0.343	0.35	0.349	0.356	0.342	0.35222	3.02016		
T	Benzene		1.124	1.064	1.107	1.037	1.005	1.01	1.002	0.995	0.9	1.02701	6.51675		
T	Trichloroethene		0.258	0.271	0.275	0.256	0.259	0.262	0.264	0.265	0.251	0.2623	2.78541		
T	Methylcyclohexane					0.394	0.401	0.396	0.405	0.402	0.388	0.39768	1.59426		
C	1,2-Dichloropropane		0.277	0.281	0.294	0.283	0.278	0.284	0.285	0.292	0.28	0.28367	2.04718		
T	1,4-Dioxane					0.002	0.002	0.002	0.002		0.002	0.00202	8.64372		
T	Bromodichloromethane		0.332	0.346	0.359	0.34	0.343	0.355	0.355	0.363	0.346	0.34886	2.85717		
T	Dibromomethane		0.14	0.142	0.148	0.145	0.146	0.15	0.149	0.153	0.145	0.14638	2.73027		
T	2-Chloroethyl Vinyl Ether				0.12	0.118	0.133	0.141	0.138	0.134	0.122	0.12947	7.05634		
T	4-Methyl-2-Pentanone					0.077	0.085	0.091	0.091	0.091	0.083	0.08617	6.68181		
T	cis-1,3-Dichloropropene		0.354	0.356	0.398	0.395	0.399	0.413	0.415	0.425	0.4	0.39484	6.23009		
T	Dimethyl Disulfide					0.183	0.218	0.231	0.241	0.249	0.243	0.22747	10.8008		
I	Chlorobenzene-d5	ISTD													
S	Toluene-d8				1.251	1.228	1.225	1.176	1.161	1.169	1.189	1.19981	2.90775		
C	Toluene		1.473	1.426	1.524	1.458	1.418	1.408	1.402	1.382	1.285	1.41964	4.6754		
T	Ethyl Methacrylate			0.306	0.362	0.365	0.398	0.411	0.421	0.426	0.424	0.38902	10.8195		
T	Paraldehyde											0	0		
T	trans-1,3-Dichloropropene			0.421	0.476	0.468	0.478	0.498	0.501	0.517	0.51	0.4835	6.35458		
T	1,1,2-Trichloroethane		0.272	0.252	0.282	0.268	0.269	0.273	0.271	0.276	0.269	0.27029	3.02397		
T	2-Hexanone					0.221	0.217	0.233	0.237	0.24	0.227	0.22936	3.87639		
T	1,3-Dichloropropane		0.467	0.467	0.498	0.469	0.473	0.479	0.475	0.481	0.466	0.47522	2.15067		
T	Tetrachloroethene		0.377	0.386	0.393	0.377	0.362	0.364	0.362	0.366	0.364	0.37239	3.0474		
T	Dibromochloromethane		0.334	0.328	0.341	0.335	0.34	0.354	0.356	0.362	0.349	0.3444	3.3424		
T	1,2-Dibromoethane		0.256	0.24	0.267	0.254	0.263	0.268	0.269	0.271	0.262	0.26125	3.70682		
T	1-Chlorohexane		0.42	0.416	0.457	0.451	0.472	0.482	0.487	0.486	0.478	0.46097	5.97256		
P	Chlorobenzene		0.984	0.972	1.04	0.972	0.93	0.933	0.926	0.927	0.865	0.9499	5.17962		
T	1,1,1,2-Tetrachloroethane		0.333	0.322	0.341	0.342	0.344	0.353	0.356	0.365	0.346	0.34453	3.65039		
C	Ethylbenzene		0.485	0.495	0.519	0.505	0.492	0.508	0.508	0.524	0.498	0.50384	2.47296		
T	m-,p-Xylene		0.627	0.587	0.625	0.612	0.603	0.606	0.606	0.592	0.53	0.59856	4.81039		
T	o-Xylene			0.554	0.6	0.592	0.595	0.603	0.604	0.613	0.571	0.59151	3.29999		
T	Styrene		0.817	0.867	0.983	0.988	1.024	1.054	1.069	1.071	0.967	0.98236	9.03093		
P	Bromoform			0.191	0.199	0.198	0.213	0.228	0.239	0.248	0.233	0.21851	9.8506		
T	Isopropylbenzene		1.479	1.461	1.525	1.509	1.513	1.549	1.55	1.495	1.282	1.48477	5.4827		
I	1,4-Dichlorobenzene-d4	ISTD													
P	1,1,2,2-Tetrachloroethane		0.587	0.595	0.639	0.592	0.581	0.6	0.6	0.623	0.608	0.60275	3.02728		
S	p-Bromofluorobenzene				0.883	0.881	0.916	0.873	0.863	0.883	0.881	0.88281	1.83022		

T	1,2,3-Trichloropropane			0.168	0.192	0.163	0.17	0.176	0.176	0.178	0.175	0.17451	4.94444	
T	trans-1,4-Dichloro-2-Butene			0.107	0.15	0.163	0.191	0.205	0.217	0.219	0.221	0.18403	22.2298	0.999
T	n-Propylbenzene		3.439	3.272	3.551	3.406	3.322	3.313	3.215	3.027	2.616	3.2401	8.53408	
T	Bromobenzene	0.84	0.754	0.764	0.805	0.762	0.737	0.736	0.727	0.748	0.73	0.76031	4.726	
T	1,3,5-Trimethylbenzene		2.174	2.282	2.426	2.351	2.342	2.342	2.317	2.311	2.086	2.29253	4.46771	
T	2-Chlorotoluene		2.453	2.255	2.502	2.26	2.177	2.144	2.165	2.112	1.907	2.21937	8.06439	
T	4-Chlorotoluene		1.999	2.118	2.186	2.154	2.046	2.063	1.99	2.054	1.936	2.06065	3.92778	
T	a-Methylstyrene					1.193	1.289	1.293	1.32	1.315	1.279	1.28165	3.60789	
T	tert-Butylbenzene			0.467	0.527	0.516	0.503	0.508	0.509	0.518	0.496	0.50542	3.60353	
T	1,2,4-Trimethylbenzene			2.289	2.555	2.468	2.45	2.451	2.435	2.403	2.149	2.39988	5.22721	
T	sec-Butylbenzene			2.845	3.007	2.916	2.875	2.877	2.866	2.757	2.424	2.82101	6.19277	
T	p-Isopropyltoluene			2.3	2.503	2.467	2.445	2.488	2.483	2.404	2.142	2.404	5.1767	
T	1,3-Dichlorobenzene		1.665	1.484	1.562	1.493	1.45	1.441	1.447	1.439	1.363	1.48259	5.84022	
T	1,4-Dichlorobenzene	2.703	1.755	1.595	1.633	1.463	1.435	1.445	1.445	1.434	1.353	1.62614	24.4079	0.999
T	n-Butylbenzene			2.15	2.352	2.307	2.306	2.359	2.37	2.304	2.055	2.27543	4.95243	
T	1,2-Dichlorobenzene	1.542	1.39	1.334	1.501	1.383	1.346	1.359	1.355	1.342	1.264	1.3816	5.91958	
T	1,2-Dibromo-3-Chloropropane				0.09	0.105	0.102	0.115	0.116	0.117	0.112	0.10824	9.10771	
T	1,2,4-Trichlorobenzene		0.991	0.897	0.97	0.944	0.955	0.967	0.967	0.977	0.928	0.95524	2.96669	
T	Hexachlorobutadiene		0.41	0.42	0.407	0.413	0.385	0.389	0.387	0.384	0.372	0.39643	4.16165	
T	Naphthalene		1.837	1.729	1.844	1.857	1.956	2.027	2.008	1.956	1.781	1.88827	5.46689	
T	1,2,3-Trichlorobenzene	0.981	0.939	0.873	0.921	0.896	0.892	0.903	0.895	0.893	0.847	0.90398	4.0381	

Thu Jun 02 14:04:26 2016

Calibration Table Report
Method: 8260WT.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Calibration: Sat May 14 18:08:06 2016
Curve: WG568561
Calibration Files

	Compound	0.3 8M412220.D	0.4 8M412221.D	1 8M412222.D	2 8M412223.D	5 8M412224.D	20 8M412225.D	50 8M412226.D	100 8M412227.D	200 8M412228.D	300 8M412229.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane		0.427	0.390	0.397	0.364	0.468	0.439	0.452	0.427	0.408	0.419	7.751		
P	Chloromethane			0.264	0.257	0.223	0.253	0.240	0.240	0.239	0.241	0.245	5.336		
C	Vinyl Chloride		0.274	0.296	0.297	0.277	0.299	0.292	0.299	0.292	0.288	0.290	3.191		
T	1,3-Butadiene				0.218	0.208	0.242	0.251	0.277	0.254	0.254	0.243	9.644		
T	Bromomethane			0.129	0.133	0.127	0.162	0.167	0.187	0.205	0.212	0.165	20.449		1.000
T	Chloroethane		0.173	0.157	0.153	0.143	0.164	0.157	0.163	0.164	0.164	0.160	5.354		
T	Trichlorofluoromethane		0.544	0.538	0.559	0.506	0.570	0.538	0.551	0.531	0.525	0.540	3.520		
T	Diethyl ether			0.130	0.138	0.123	0.132	0.125	0.128		0.127	0.129	3.866		
T	Isoprene		0.335	0.351	0.334	0.293	0.334	0.320	0.334	0.322	0.329	0.328	4.867		
T	Acrolein				0.012	0.010	0.010	0.011	0.012		0.014	0.012	12.987		
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.256	0.269	0.240	0.260	0.249	0.257	0.251	0.250	0.254	3.397		
T	Acetone					0.023	0.030	0.029	0.030	0.028	0.028	0.028	9.132		
C	1,1-Dichloroethene		0.424	0.407	0.406	0.387	0.416	0.398	0.409	0.400	0.393	0.404	2.830		
T	Tert-Butyl Alcohol				0.010	0.009	0.009	0.009	0.009		0.009	0.009	2.872		
T	Dimethyl Sulfide		0.133	0.142	0.152	0.137	0.145	0.142	0.151	0.147	0.151	0.145	4.534		
T	Iodomethane				0.019	0.024	0.066	0.101	0.129	0.135	0.131	0.087	58.244		0.998
T	Methyl acetate					0.075	0.076	0.074	0.078	0.076	0.078	0.076	2.221		
T	Methylene Chloride			0.274	0.265	0.244	0.263	0.250	0.255	0.254	0.252	0.257	3.686		
T	Carbon Disulfide			0.888	0.922	0.801	0.873	0.816	0.854	0.813	0.802	0.846	5.346		
T	Acrylonitrile			0.027	0.035	0.033	0.038	0.038	0.039		0.044	0.036	14.671		
T	Methyl Tert Butyl Ether			0.534	0.543	0.521	0.586	0.579	0.585	0.560	0.546	0.557	4.455		
T	trans-1,2-Dichloroethene		0.389	0.395	0.364	0.352	0.381	0.367	0.372	0.364	0.358	0.371	3.858		
T	n-Hexane					0.265	0.280	0.270	0.286	0.275	0.279	0.276	2.732		
T	Diisopropyl ether			0.600	0.607	0.548	0.588	0.572	0.571		0.567	0.579	3.559		
T	Vinyl Acetate				0.256	0.243	0.270	0.275	0.266	0.271	0.275	0.265	4.509		
P	1,1-Dichloroethane		0.441	0.463	0.486	0.434	0.488	0.464	0.470	0.459	0.447	0.461	4.012		
T	Ethyl-Tert-Butyl ether			0.616	0.645	0.590	0.641	0.628	0.619		0.603	0.620	3.188		
T	2-Butanone					0.035	0.042	0.043	0.045	0.041	0.043	0.041	8.268		
T	Propionitrile			0.010	0.012	0.012	0.013	0.012	0.013		0.013	0.012	8.354		
T	2,2-Dichloropropane		0.471	0.462	0.520	0.476	0.503	0.494	0.497	0.483	0.470	0.486	3.839		
T	cis-1,2-Dichloroethene		0.299	0.298	0.291	0.267	0.295	0.282	0.289	0.283	0.277	0.287	3.685		
C	Chloroform	0.563	0.567	0.581	0.536	0.509	0.566	0.543	0.546	0.529	0.506	0.545	4.619		
T	1-Bromopropane			0.034	0.040	0.040	0.043	0.041	0.043	0.043	0.044	0.041	7.649		
T	Bromochloromethane		0.131	0.164	0.147	0.137	0.154	0.148	0.151	0.148	0.145	0.147	6.598		
T	Tetrahydrofuran			0.034	0.028	0.025	0.026	0.026	0.026		0.026	0.027	11.724		
S	Dibromofluoromethane			0.249	0.261	0.257	0.280	0.271	0.284	0.271	0.275	0.269	4.465		
T	1,1,1-Trichloroethane		0.492	0.537	0.515	0.496	0.545	0.525	0.533	0.515	0.499	0.517	3.660		
T	Cyclohexane			0.373	0.369	0.335	0.359	0.344	0.366	0.356	0.364	0.358	3.619		
T	1,1-Dichloropropene			0.414	0.399	0.369	0.403	0.395	0.399	0.392	0.382	0.394	3.488		
T	Tert-Amyl-Methyl ether			0.567	0.587	0.534	0.576	0.568	0.561		0.549	0.563	3.077		
T	Carbon Tetrachloride		0.444	0.456	0.462	0.441	0.481	0.465	0.474	0.462	0.448	0.4594	2.92173		
S	1,2-Dichloroethane-d4			0.241	0.309	0.276	0.312	0.295	0.301	0.284	0.286	0.288	7.93644		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.347	0.335	0.354	0.336	0.371	0.36	0.364	0.349	0.338	0.3505	3.65503		
T	Benzene		1.128	1.084	1.071	0.977	1.085	1.033	1.019	0.963	0.883	1.0269	7.39343		
T	Trichloroethene		0.285	0.275	0.276	0.251	0.283	0.273	0.279	0.273	0.27	0.2739	3.66126		
T	Methylcyclohexane					0.396	0.426	0.408	0.429	0.416	0.422	0.4161	2.94153		
C	1,2-Dichloropropane		0.239	0.222	0.233	0.207	0.238	0.226	0.233	0.231	0.229	0.2286	4.30096		
T	Bromodichloromethane		0.369	0.382	0.412	0.385	0.426	0.421	0.417	0.41	0.395	0.4018	4.93305		
T	1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.0011	14.5817		
T	Dibromomethane		0.141	0.13	0.137	0.128	0.141	0.134	0.137	0.136	0.133	0.1353	3.26799		
T	2-Chloroethyl Vinyl Ether				0.1	0.084	0.103	0.104	0.103	0.095	0.098	0.0983	7.09792		
T	4-Methyl-2-Pentanone					0.033	0.042	0.042	0.043	0.04	0.041	0.0401	8.66859		
T	cis-1,3-Dichloropropene		0.391	0.393	0.386	0.398	0.431	0.428	0.428	0.42	0.405	0.409	4.41527		

T	Dimethyl Disulfide					0.182	0.218	0.221	0.23	0.229	0.23	0.2183	8.49419	
I	Chlorobenzene-d5	ISTD												
S	Toluene-d8			1.282	1.295	1.228	1.385	1.333	1.378	1.289	1.278	1.3084	4.07746	
C	Toluene		1.653	1.696	1.678	1.507	1.647	1.554	1.545	1.418	1.27	1.552	8.98325	
T	Ethyl Methacrylate			0.251	0.293	0.268	0.314	0.314	0.327	0.309	0.31	0.2981	8.76897	
T	Paraldehyde											0	0	
T	trans-1,3-Dichloropropene			0.472	0.51	0.466	0.561	0.552	0.553	0.533	0.515	0.5201	7.01006	
T	1,1,2-Trichloroethane		0.261	0.241	0.242	0.222	0.254	0.249	0.252	0.243	0.241	0.2449	4.54209	
T	2-Hexanone					0.042	0.053	0.053	0.056	0.051	0.053	0.0515	9.50479	
T	1,3-Dichloropropane		0.355	0.442	0.465	0.42	0.468	0.454	0.457	0.437	0.428	0.436	7.93348	
T	Tetrachloroethene		0.355	0.337	0.336	0.306	0.333	0.325	0.337	0.334	0.33	0.3325	3.83886	
T	Dibromochloromethane		0.349	0.336	0.338	0.328	0.373	0.372	0.383	0.373	0.367	0.3576	5.60043	
T	1,2-Dibromoethane		0.233	0.234	0.234	0.227	0.259	0.254	0.258	0.251	0.247	0.2441	5.04151	
T	1-Chlorohexane		0.532	0.584	0.505	0.502	0.54	0.52	0.547	0.521	0.516	0.5298	4.7826	
P	Chlorobenzene		1.029	1.173	1.09	1.007	1.099	1.037	1.043	1.002	0.939	1.0466	6.41465	
T	1,1,1,2-Tetrachloroethane		0.392	0.399	0.403	0.357	0.431	0.414	0.424	0.417	0.413	0.4055	5.39495	
C	Ethylbenzene		0.6	0.594	0.59	0.532	0.586	0.559	0.57	0.564	0.558	0.5726	3.7769	
T	m-,p-Xylene		0.744	0.696	0.691	0.643	0.713	0.67	0.673	0.634	0.581	0.6716	7.12586	
T	o-Xylene			0.691	0.651	0.614	0.692	0.658	0.667	0.65	0.63	0.6567	4.11758	
T	Styrene		1.05	1.06	1.096	1.043	1.159	1.124	1.12	1.061	0.98	1.077	4.96781	
P	Bromoform			0.177	0.21	0.181	0.226	0.221	0.232	0.227	0.223	0.2121	10.0546	
T	Isopropylbenzene		1.853	1.891	1.871	1.708	1.897	1.781	1.75	1.573	1.377	1.7444	9.92447	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.426	0.492	0.503	0.486	0.543	0.51	0.527	0.513	0.514	0.5018	6.60291	
S	p-Bromofluorobenzene				1.054	0.976	1.071	1.016	1.053	1.031	1.046	1.0352	3.05136	
T	1,2,3-Trichloropropane			0.119	0.158	0.161	0.162	0.155	0.162	0.16	0.158	0.1545	9.40789	
T	trans-1,4-Dichloro-2-Butene			0.085	0.118	0.12	0.149	0.151	0.16	0.159	0.161	0.1376	19.9543	1.000
T	n-Propylbenzene		4.139	4.239	4.243	4.051	4.241	3.953	3.882	3.419	2.935	3.9003	11.4439	
T	Bromobenzene	0.796	0.708	0.843	0.837	0.778	0.84	0.798	0.817	0.803	0.803	0.8022	4.93253	
T	1,3,5-Trimethylbenzene		2.941	2.93	2.941	2.839	3.053	2.882	2.871	2.689	2.423	2.8411	6.50391	
T	2-Chlorotoluene		2.917	2.935	2.929	2.712	2.861	2.795	2.682	2.533	2.145	2.7231	9.37022	
T	4-Chlorotoluene		2.681	2.596	2.581	2.474	2.625	2.326	2.447	2.286	2.121	2.4597	7.49558	
T	a-Methylstyrene					1.257	1.406	1.34	1.384	1.35	1.351	1.3479	3.77654	
T	tert-Butylbenzene			0.587	0.555	0.53	0.571	0.533	0.552	0.561	0.558	0.5558	3.34508	
T	1,2,4-Trimethylbenzene		2.955	3.168	3.127	2.936	3.12	2.914	2.937	2.709	2.427	2.9214	7.97314	
T	sec-Butylbenzene			3.701	3.536	3.487	3.607	3.34	3.332	3.045	2.69	3.3424	9.93324	
T	p-Isopropyltoluene			3.112	3.062	2.903	2.988	2.813	2.809	2.634	2.382	2.8379	8.45265	
T	1,3-Dichlorobenzene		1.484	1.617	1.627	1.53	1.605	1.531	1.549	1.51	1.45	1.5448	3.95774	
T	1,4-Dichlorobenzene	1.713	1.524	1.672	1.594	1.503	1.6	1.511	1.535	1.49	1.431	1.5574	5.56562	
T	n-Butylbenzene			3.143	2.96	2.895	3.002	2.791	2.792	2.571	2.292	2.8056	9.55812	
T	1,2-Dichlorobenzene	1.59	1.307	1.415	1.41	1.322	1.404	1.333	1.356	1.315	1.286	1.3739	6.4618	
T	1,2-Dibromo-3-Chloropropane				0.085	0.103	0.102	0.103	0.106	0.104	0.103	0.1007	6.86771	
T	1,2,4-Trichlorobenzene		1.074	1.01	1.028	0.982	1.069	1.013	1.036	1.029	1.002	1.0269	2.90829	
T	Hexachlorobutadiene		0.516	0.476	0.483	0.447	0.487	0.459	0.48	0.485	0.485	0.4798	4.00465	
T	Naphthalene		1.594	1.457	1.574	1.455	1.63	1.552	1.564	1.485	1.422	1.5258	4.75891	
T	1,2,3-Trichlorobenzene	0.913	0.934	0.905	0.862	0.805	0.877	0.824	0.862	0.846	0.835	0.8664	4.7474	

Tue May 17 11:49:41 2016

Calibration Table Report
Method: A9FOOWT.M
Title: A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Calibration: Thu May 19 08:54:31 2016
Curve: WG569079
Calibration Files

	Compound	5 8M412324.D	20 8M412323.D	50 8M412322.D	100 8M412321.D	200 8M412325.D	300 8M412326.D	400 8M412327.D	500 8M412328.D	Avg	%RSD
I	Fluorobenzene	ISTD									
T	Acetonitrile		0.009	0.010	0.010	0.010	0.010	0.010	0.010	0.010	2.076
T	3-Chloro-1-propene	0.306	0.330	0.335	0.331	0.324	0.307	0.304	0.304	0.318	4.307
T	2-Chloro-1,3-butadiene	0.368	0.420	0.420	0.419	0.419	0.392	0.389	0.387	0.402	5.022
T	Ethyl Acetate	0.080	0.096	0.097	0.100	0.099	0.098	0.100	0.095	0.096	6.751
T	Methacrylonitrile	0.041	0.054	0.055	0.055	0.055	0.054	0.055	0.052	0.053	9.227
T	Isobutyl Alcohol			0.003	0.003	0.003	0.003	0.003	0.003	0.003	3.599
T	1-Butanol									0.000	0.000
T	Methyl methacrylate	0.089	0.106	0.106	0.105	0.106	0.105	0.107	0.102	0.103	5.868
T	2-Nitropropane		0.041	0.042	0.043	0.046	0.047	0.048	0.046	0.045	5.992
I	Chlorobenzene-d5	ISTD									
I	1,4-Dichlorobenzene-d4	ISTD									
T	Cyclohexanone		0.011	0.010	0.010	0.009	0.010	0.011	0.010	0.010	4.971

Thu May 19 09:04:52 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060822 Run Date: 06/01/2016 Sample ID: WG570915-12
Instrument ID: HPMS6 Run Time: 18:56 Method: 8260B
File ID: 6M139748 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG570915 Cal ID: HPMS6 - 01-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	49.5	ug/L	0.453	1.10	20	
1,1-Dichloroethene	CCC	50.0	48.1	ug/L	0.424	3.80	20	
1,2-Dichloropropane	CCC	50.0	52.4	ug/L	0.297	4.80	20	
Ethylbenzene	CCC	50.0	51.3	ug/L	0.517	2.60	20	
Toluene	CCC	50.0	51.7	ug/L	1.47	3.40	20	
Vinyl Chloride	CCC	50.0	48.8	ug/L	0.317	2.50	20	
Bromoform	SPCC	50.0	48.3	ug/L	0.211	3.50	20	
Chlorobenzene	SPCC	50.0	51.3	ug/L	0.974	2.50	20	
Chloromethane	SPCC	50.0	47.6	ug/L	0.460	4.70	20	
1,1-Dichloroethane	SPCC	50.0	48.0	ug/L	0.494	3.90	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	51.7	ug/L	0.623	3.40	20	
Acetone		50.0	50.0	ug/L	0.0727	0.100	20	
Benzene		50.0	50.0	ug/L	1.03	0	20	
Bromobenzene		50.0	50.0	ug/L	0.760	0	20	
Bromochloromethane		50.0	50.2	ug/L	0.160	0.400	20	
Bromodichloromethane		50.0	51.1	ug/L	0.356	2.10	20	
Bromomethane		50.0	45.5	ug/L	0.146	9.00	20	
2-Butanone		50.0	48.8	ug/L	0.110	2.40	20	
n-Butylbenzene		50.0	52.4	ug/L	2.39	4.80	20	
sec-Butylbenzene		50.0	53.8	ug/L	3.03	7.60	20	
tert-Butylbenzene		50.0	53.4	ug/L	0.540	6.80	20	
Carbon Disulfide		50.0	48.3	ug/L	0.833	3.40	20	
Carbon Tetrachloride		50.0	50.4	ug/L	0.367	0.700	20	
Dibromochloromethane		50.0	51.4	ug/L	0.354	2.80	20	
Chloroethane		50.0	51.4	ug/L	0.211	2.70	20	
2-Chlorotoluene		50.0	52.0	ug/L	2.31	4.00	20	
4-Chlorotoluene		50.0	53.6	ug/L	2.21	7.30	20	
1,2-Dibromo-3-Chloropropane		50.0	53.9	ug/L	0.117	7.80	20	
1,2-Dibromoethane		50.0	52.4	ug/L	0.274	4.80	20	
Dibromomethane		50.0	49.4	ug/L	0.145	1.20	20	
1,2-Dichlorobenzene		50.0	51.9	ug/L	1.43	3.80	20	
1,3-Dichlorobenzene		50.0	50.4	ug/L	1.49	0.800	20	
1,4-Dichlorobenzene		50.0	54.3	ug/L	1.52	8.50	20	
Dichlorodifluoromethane		50.0	54.6	ug/L	0.432	9.20	20	
1,2-Dichloroethane		50.0	50.5	ug/L	0.356	1.00	20	
cis-1,2-Dichloroethene		50.0	51.7	ug/L	0.289	3.50	20	
trans-1,2-Dichloroethene		50.0	50.9	ug/L	0.262	1.90	20	
1,3-Dichloropropane		50.0	54.6	ug/L	0.519	9.30	20	
2,2-Dichloropropane		50.0	48.0	ug/L	0.360	4.00	20	
cis-1,3-Dichloropropene		50.0	57.2	ug/L	0.452	14.4	20	
trans-1,3-Dichloropropene		50.0	52.9	ug/L	0.511	5.70	20	
1,1-Dichloropropene		50.0	49.7	ug/L	0.348	0.600	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4822662
Report generated 06/24/2016 16:18

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060822 Run Date: 06/01/2016 Sample ID: WG570915-12
Instrument ID: HPMS6 Run Time: 18:56 Method: 8260B
File ID: 6M139748 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG570915 Cal ID: HPMS6 - 01-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	48.5	ug/L	0.223	3.00	20	
Hexachlorobutadiene		50.0	53.5	ug/L	0.424	6.90	20	
Isopropylbenzene		50.0	53.4	ug/L	1.58	6.70	20	
p-Isopropyltoluene		50.0	53.2	ug/L	2.56	6.30	20	
4-Methyl-2-Pentanone		50.0	50.1	ug/L	0.0863	0.200	20	
Methylene Chloride		50.0	49.1	ug/L	0.267	1.90	20	
Naphthalene		50.0	48.9	ug/L	1.85	2.20	20	
n-Propylbenzene		50.0	55.1	ug/L	3.57	10.2	20	
Styrene		50.0	54.2	ug/L	1.07	8.40	20	
1,1,1,2-Tetrachloroethane		50.0	52.5	ug/L	0.362	5.10	20	
Tetrachloroethene		50.0	49.1	ug/L	0.365	1.90	20	
1,2,3-Trichlorobenzene		50.0	50.0	ug/L	0.905	0.100	20	
1,2,4-Trichlorobenzene		50.0	52.1	ug/L	0.996	4.30	20	
1,1,1-Trichloroethane		50.0	49.8	ug/L	0.407	0.400	20	
1,1,2-Trichloroethane		50.0	51.8	ug/L	0.280	3.50	20	
Trichloroethene		50.0	51.8	ug/L	0.272	3.60	20	
Trichlorofluoromethane		50.0	47.5	ug/L	0.414	5.00	20	
1,2,3-Trichloropropane		50.0	52.7	ug/L	0.184	5.50	20	
1,2,4-Trimethylbenzene		50.0	52.0	ug/L	2.50	4.10	20	
1,3,5-Trimethylbenzene		50.0	54.2	ug/L	2.48	8.40	20	
o-Xylene		50.0	53.6	ug/L	0.634	7.20	20	
m-,p-Xylene		100	106	ug/L	0.632	5.60	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4822662
Report generated 06/24/2016 16:18

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060822 Run Date: 05/13/2016 Sample ID: WG568561-12
Instrument ID: HPMS8 Run Time: 19:17 Method: 8260B
File ID: 8M412232 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG568561 Cal ID: HPMS8 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.1	ug/L	0.513	5.70	20	
1,1-Dichloroethene	CCC	50.0	46.0	ug/L	0.372	8.10	20	
1,2-Dichloropropane	CCC	50.0	51.0	ug/L	0.233	1.90	20	
Ethylbenzene	CCC	50.0	48.2	ug/L	0.552	3.60	20	
Toluene	CCC	50.0	49.1	ug/L	1.52	1.80	20	
Vinyl Chloride	CCC	50.0	52.4	ug/L	0.304	4.80	20	
Bromoform	SPCC	50.0	48.2	ug/L	0.205	3.60	20	
Chlorobenzene	SPCC	50.0	50.2	ug/L	1.05	0.400	20	
Chloromethane	SPCC	50.0	50.7	ug/L	0.248	1.40	20	
1,1-Dichloroethane	SPCC	50.0	46.7	ug/L	0.431	6.60	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.6	ug/L	0.498	0.800	20	
Acetone		50.0	57.5	ug/L	0.0324	15.1	20	
Benzene		50.0	48.5	ug/L	0.997	3.00	20	
Bromobenzene		50.0	49.5	ug/L	0.794	1.10	20	
Bromochloromethane		50.0	47.5	ug/L	0.140	4.90	20	
Bromodichloromethane		50.0	48.3	ug/L	0.388	3.40	20	
Bromomethane		50.0	46.4	ug/L	0.162	7.20	20	
2-Butanone		50.0	53.0	ug/L	0.0438	6.00	20	
n-Butylbenzene		50.0	49.7	ug/L	2.79	0.700	20	
sec-Butylbenzene		50.0	51.3	ug/L	3.43	2.70	20	
tert-Butylbenzene		50.0	50.9	ug/L	0.566	1.90	20	
Carbon Disulfide		50.0	42.3	ug/L	0.716	15.4	20	
Carbon Tetrachloride		50.0	46.2	ug/L	0.425	7.50	20	
Dibromochloromethane		50.0	49.7	ug/L	0.355	0.700	20	
Chloroethane		50.0	53.3	ug/L	0.170	6.70	20	
2-Chlorotoluene		50.0	51.6	ug/L	2.81	3.10	20	
4-Chlorotoluene		50.0	48.3	ug/L	2.37	3.50	20	
1,2-Dibromo-3-Chloropropane		50.0	48.5	ug/L	0.0977	3.00	20	
1,2-Dibromoethane		50.0	51.1	ug/L	0.250	2.20	20	
Dibromomethane		50.0	45.8	ug/L	0.124	8.40	20	
1,2-Dichlorobenzene		50.0	50.5	ug/L	1.39	1.00	20	
1,3-Dichlorobenzene		50.0	50.9	ug/L	1.57	1.80	20	
1,4-Dichlorobenzene		50.0	50.5	ug/L	1.57	0.900	20	
Dichlorodifluoromethane		50.0	54.2	ug/L	0.455	8.40	20	
1,2-Dichloroethane		50.0	49.0	ug/L	0.344	2.00	20	
cis-1,2-Dichloroethene		50.0	48.9	ug/L	0.281	2.20	20	
trans-1,2-Dichloroethene		50.0	48.1	ug/L	0.357	3.90	20	
1,3-Dichloropropane		50.0	53.7	ug/L	0.468	7.30	20	
2,2-Dichloropropane		50.0	47.9	ug/L	0.466	4.20	20	
cis-1,3-Dichloropropene		50.0	53.9	ug/L	0.441	7.80	20	
trans-1,3-Dichloropropene		50.0	50.7	ug/L	0.527	1.30	20	
1,1-Dichloropropene		50.0	47.5	ug/L	0.374	5.10	20	

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Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060822 Run Date: 05/13/2016 Sample ID: WG568561-12
Instrument ID: HPMS8 Run Time: 19:17 Method: 8260B
File ID: 8M412232 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG568561 Cal ID: HPMS8 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	53.6	ug/L	0.0552	7.20	20	
Hexachlorobutadiene		50.0	52.1	ug/L	0.500	4.20	20	
Isopropylbenzene		50.0	51.1	ug/L	1.78	2.20	20	
p-Isopropyltoluene		50.0	50.1	ug/L	2.85	0.300	20	
4-Methyl-2-Pentanone		50.0	51.9	ug/L	0.0416	3.70	20	
Methylene Chloride		50.0	48.4	ug/L	0.249	3.10	20	
Naphthalene		50.0	45.8	ug/L	1.40	8.40	20	
n-Propylbenzene		50.0	51.9	ug/L	4.05	3.80	20	
Styrene		50.0	51.5	ug/L	1.11	3.00	20	
1,1,1,2-Tetrachloroethane		50.0	49.4	ug/L	0.400	1.20	20	
Tetrachloroethene		50.0	47.8	ug/L	0.318	4.40	20	
1,2,3-Trichlorobenzene		50.0	47.7	ug/L	0.827	4.50	20	
1,2,4-Trichlorobenzene		50.0	50.1	ug/L	1.03	0.200	20	
1,1,1-Trichloroethane		50.0	47.6	ug/L	0.492	4.80	20	
1,1,2-Trichloroethane		50.0	49.0	ug/L	0.240	1.90	20	
Trichloroethene		50.0	51.1	ug/L	0.280	2.10	20	
Trichlorofluoromethane		50.0	46.9	ug/L	0.507	6.10	20	
1,2,3-Trichloropropane		50.0	50.1	ug/L	0.155	0.200	20	
1,2,4-Trimethylbenzene		50.0	49.7	ug/L	2.90	0.700	20	
1,3,5-Trimethylbenzene		50.0	51.6	ug/L	2.93	3.30	20	
o-Xylene		50.0	50.6	ug/L	0.664	1.10	20	
m-,p-Xylene		100	101	ug/L	0.679	1.10	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

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Version 1.5 PDF File ID: 4822662
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Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822 Run Date: 06/16/2016 Sample ID: WG573035-02
Instrument ID: HPMS6 Run Time: 16:59 Method: 8260B
File ID: 6M140114 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG573036 Cal ID: HPMS6 - 01-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	49.8	ug/L	0.457	0.339	20	
1,1-Dichloroethene	CCC	50.0	50.5	ug/L	0.445	1.06	20	
1,2-Dichloropropane	CCC	50.0	49.2	ug/L	0.279	1.57	20	
Ethylbenzene	CCC	50.0	48.3	ug/L	0.487	3.44	20	
Toluene	CCC	50.0	48.6	ug/L	1.38	2.75	20	
Vinyl Chloride	CCC	50.0	43.5	ug/L	0.283	13.0	20	
Bromoform	SPCC	50.0	47.7	ug/L	0.209	4.58	20	
Chlorobenzene	SPCC	50.0	47.6	ug/L	0.905	4.70	20	
Chloromethane	SPCC	50.0	41.1	ug/L	0.396	17.9	20	
1,1-Dichloroethane	SPCC	50.0	49.2	ug/L	0.506	1.64	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	45.5	ug/L	0.549	8.94	20	
Xylenes		150	147	ug/L	0.583	2.10	20	
Acetone		50.0	43.9	ug/L	0.0642	12.2	20	
Benzene		50.0	48.3	ug/L	0.993	3.30	20	
Bromobenzene		50.0	47.2	ug/L	0.718	5.59	20	
Bromochloromethane		50.0	49.6	ug/L	0.158	0.857	20	
Bromodichloromethane		50.0	50.9	ug/L	0.355	1.77	20	
Bromomethane		50.0	43.3	ug/L	0.139	13.5	20	
2-Butanone		50.0	44.9	ug/L	0.101	10.3	20	
n-Butylbenzene		50.0	51.7	ug/L	2.35	3.48	20	
sec-Butylbenzene		50.0	50.2	ug/L	2.83	0.369	20	
tert-Butylbenzene		50.0	48.6	ug/L	0.492	2.73	20	
Carbon Disulfide		50.0	53.3	ug/L	0.918	6.50	20	
Carbon Tetrachloride		50.0	52.7	ug/L	0.385	5.49	20	
Dibromochloromethane		50.0	49.6	ug/L	0.342	0.821	20	
Chloroethane		50.0	40.6	ug/L	0.167	18.7	20	
2-Chlorotoluene		50.0	48.0	ug/L	2.13	3.94	20	
4-Chlorotoluene		50.0	49.5	ug/L	2.04	1.07	20	
1,2-Dibromo-3-Chloropropane		50.0	47.8	ug/L	0.103	4.49	20	
1,2-Dibromoethane		50.0	47.4	ug/L	0.248	5.20	20	
Dibromomethane		50.0	48.8	ug/L	0.143	2.44	20	
1,2-Dichlorobenzene		50.0	47.2	ug/L	1.30	5.69	20	
1,3-Dichlorobenzene		50.0	47.7	ug/L	1.41	4.61	20	
1,4-Dichlorobenzene		50.0	50.2	ug/L	1.41	0.427	20	
Dichlorodifluoromethane		50.0	47.8	ug/L	0.378	4.42	20	
1,2-Dichloroethane		50.0	49.6	ug/L	0.350	0.722	20	
cis-1,2-Dichloroethene		50.0	49.7	ug/L	0.278	0.632	20	
trans-1,2-Dichloroethene		50.0	49.2	ug/L	0.253	1.59	20	
1,3-Dichloropropane		50.0	47.4	ug/L	0.451	5.10	20	
2,2-Dichloropropane		50.0	54.3	ug/L	0.407	8.51	20	
cis-1,3-Dichloropropene		50.0	52.1	ug/L	0.411	4.10	20	
trans-1,3-Dichloropropene		50.0	50.3	ug/L	0.487	0.699	20	

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822 Run Date: 06/16/2016 Sample ID: WG573035-02
Instrument ID: HPMS6 Run Time: 16:59 Method: 8260B
File ID: 6M140114 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG573036 Cal ID: HPMS6 - 01-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	50.8	ug/L	0.356	1.57	20	
2-Hexanone		50.0	43.7	ug/L	0.200	12.6	20	
Hexachlorobutadiene		50.0	49.9	ug/L	0.396	0.164	20	
Isopropylbenzene		50.0	50.8	ug/L	1.51	1.54	20	
p-Isopropyltoluene		50.0	51.1	ug/L	2.46	2.16	20	
4-Methyl-2-Pentanone		50.0	45.3	ug/L	0.0781	9.34	20	
Methylene Chloride		50.0	47.3	ug/L	0.257	5.36	20	
Naphthalene		50.0	49.4	ug/L	1.87	1.21	20	
n-Propylbenzene		50.0	51.1	ug/L	3.31	2.22	20	
Styrene		50.0	50.8	ug/L	0.998	1.57	20	
1,1,1,2-Tetrachloroethane		50.0	49.7	ug/L	0.343	0.549	20	
Tetrachloroethene		50.0	48.2	ug/L	0.359	3.62	20	
1,2,3-Trichlorobenzene		50.0	47.5	ug/L	0.858	5.05	20	
1,2,4-Trichlorobenzene		50.0	49.9	ug/L	0.954	0.110	20	
1,1,1-Trichloroethane		50.0	50.8	ug/L	0.416	1.65	20	
1,1,2-Trichloroethane		50.0	47.3	ug/L	0.256	5.36	20	
Trichloroethene		50.0	48.5	ug/L	0.255	2.92	20	
Trichlorofluoromethane		50.0	53.2	ug/L	0.463	6.34	20	
1,2,3-Trichloropropane		50.0	45.0	ug/L	0.157	10.0	20	
1,2,4-Trimethylbenzene		50.0	49.9	ug/L	2.40	0.118	20	
1,3,5-Trimethylbenzene		50.0	50.4	ug/L	2.31	0.824	20	
o-Xylene		50.0	49.2	ug/L	0.583	1.52	20	
m-,p-Xylene		100	97.6	ug/L	0.584	2.39	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4822664
Report generated 06/24/2016 16:18

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822 Run Date: 06/17/2016 Sample ID: WG573252-02
Instrument ID: HPMS8 Run Time: 16:23 Method: 8260B
File ID: 8M413060 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG573253 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	52.9	ug/L	0.576	5.83	20	
1,1-Dichloroethene	CCC	50.0	51.5	ug/L	0.416	2.94	20	
1,2-Dichloropropane	CCC	50.0	46.7	ug/L	0.214	6.55	20	
Ethylbenzene	CCC	50.0	47.9	ug/L	0.549	4.17	20	
Toluene	CCC	50.0	47.6	ug/L	1.48	4.84	20	
Vinyl Chloride	CCC	50.0	52.1	ug/L	0.302	4.14	20	
Bromoform	SPCC	50.0	51.5	ug/L	0.219	3.03	20	
Chlorobenzene	SPCC	50.0	47.5	ug/L	0.994	5.04	20	
Chloromethane	SPCC	50.0	43.9	ug/L	0.215	12.2	20	
1,1-Dichloroethane	SPCC	50.0	50.2	ug/L	0.463	0.426	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	41.4	ug/L	0.415	17.2	20	
Trichloroethene		50.0	51.5	ug/L	0.282	3.07	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
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Report generated 06/24/2016 16:18

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060822
Instrument ID: HPMS6
Workgroup (AAB#): WG573036

ICAL CCV Number: WG570915-08
CAL ID: HPMS6 - 01-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG570915-08	NA	NA	314779	551471	743292
Upper Limit	NA	NA	629558	1102942	1486584
Lower Limit	NA	NA	157390	275736	371646
L16060822-01	1.00	01	210501	396217	530050
L16060822-03	1.00	01	214202	398813	530311
L16060822-04	1.00	01	214898	396686	531330
L16060822-05	1.00	01	210980	392746	526269
L16060822-06	1.00	01	216671	402451	537933
WG573036-01	1.00	01	223731	423614	572141
WG573036-02	1.00	01	240638	426092	567923

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
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Report generated 06/24/2016 16:18

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060822
Instrument ID: HPMS8
Workgroup (AAB#): WG573253

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	288225	539116	778260
Upper Limit	NA	NA	576450	1078232	1556520
Lower Limit	NA	NA	144113	269558	389130
L16060822-04	50.0	DL01	315183	559419	742726
L16060822-05	50.0	DL01	307393	559288	741577
WG573253-01	1.00	01	282360	509490	668097
WG573253-02	1.00	01	286337	510872	672761

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4822665
Report generated 06/24/2016 16:18

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060822
Instrument ID: HPMS8
Workgroup (AAB#): WG573253

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	17.6	14.58	10.71
Upper Limit	NA	NA	18.1	15.08	11.21
Lower Limit	NA	NA	17.1	14.08	10.21
L16060822-04	50.0	DL01	17.6	14.57	10.71
L16060822-05	50.0	DL01	17.6	14.57	10.71
WG573253-01	1.00	01	17.6	14.57	10.71
WG573253-02	1.00	01	17.6	14.57	10.71

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4822667
Report generated: 06/24/2016 16:18

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060822
Instrument ID: HPMS6
Workgroup (AAB#): WG573036

ICAL CCV Number: WG570915-08
CAL ID: HPMS6 - 01-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG570915-08	NA	NA	19.65	16.06	11.57
Upper Limit	NA	NA	20.15	16.56	12.07
Lower Limit	NA	NA	19.15	15.56	11.07
L16060822-01	1.00	01	19.65	16.06	11.57
L16060822-03	1.00	01	19.65	16.07	11.57
L16060822-04	1.00	01	19.64	16.07	11.57
L16060822-05	1.00	01	19.64	16.07	11.56
L16060822-06	1.00	01	19.64	16.07	11.57
WG573036-01	1.00	01	19.64	16.07	11.57
WG573036-02	1.00	01	19.65	16.06	11.57

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4822667
Report generated: 06/24/2016 16:18

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061616\6M140129.D Vial: 17
Acq On : 17 Jun 2016 1:10 Operator: FJB
Sample : L16060822-01 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:37:19 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	530050	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.06	117	396217	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	210501	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	141922	25.8711 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.48%		
43) 1,2-Dichloroethane-d4	11.11	65	158438	26.2033 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 104.80%		
58) Toluene-d8	13.85	98	468316	24.6283 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.52%		
80) p-Bromofluorobenzene	17.84	95	194014	26.1005 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.40%		

Target Compounds					Qvalue
13) Acetone	6.66	43	205	Below Cal	# 48
26) Vinyl Acetate	9.04	43	2439	0.2545 ug/L	# 78
60) Ethyl Methacrylate	13.86	69	795	0.1289 ug/L	# 11

(#) = qualifier out of range (m) = manual integration
6M140129.D 8260WT.M Fri Jun 17 08:37:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061616\6M140129.D Vial: 17
Acq On : 17 Jun 2016 1:10 Operator: FJB
Sample : L16060822-01 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 8:37 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration

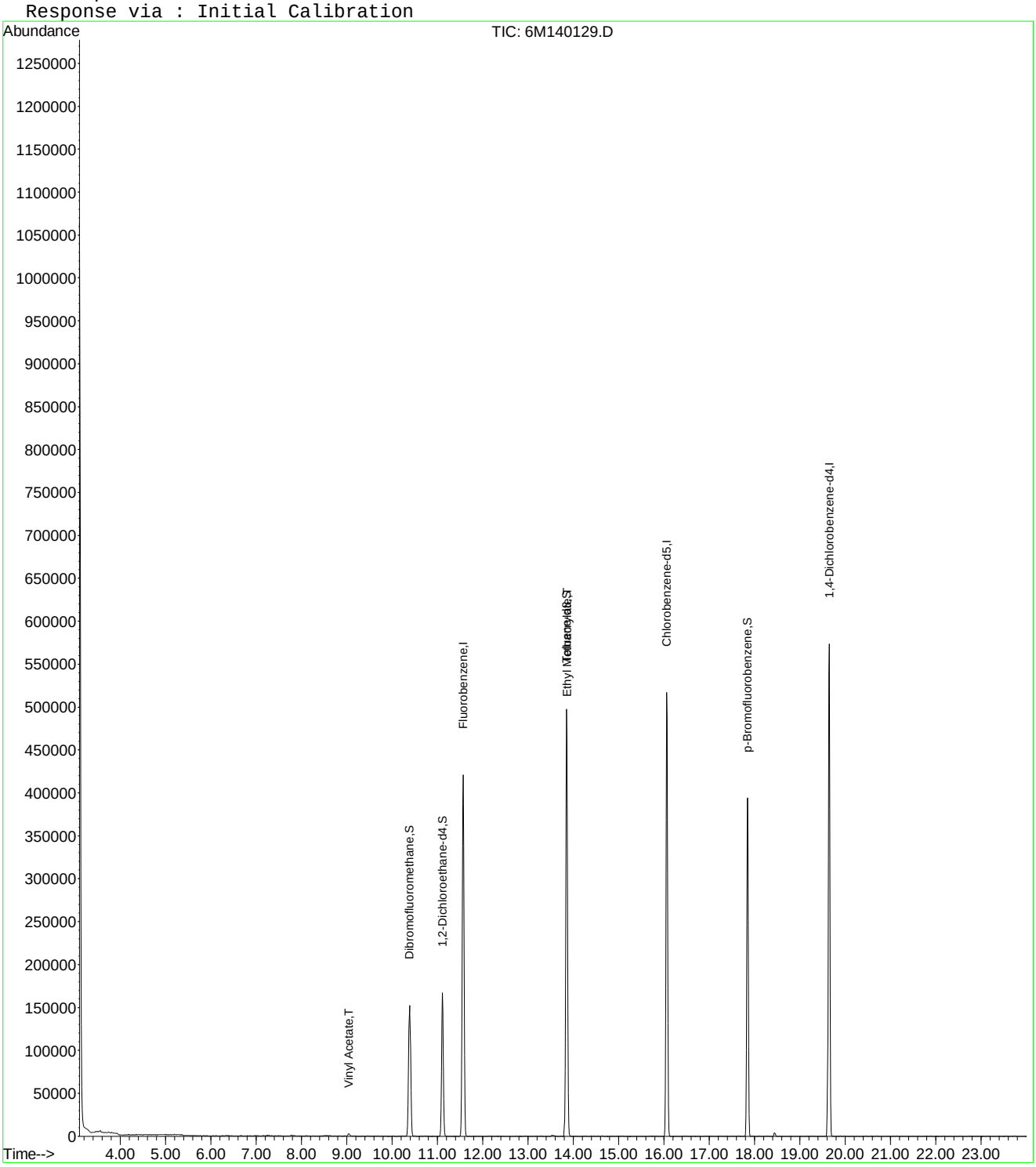

6M140129.D 8260WT.M Fri Jun 17 08:37:23 2016 Page 2

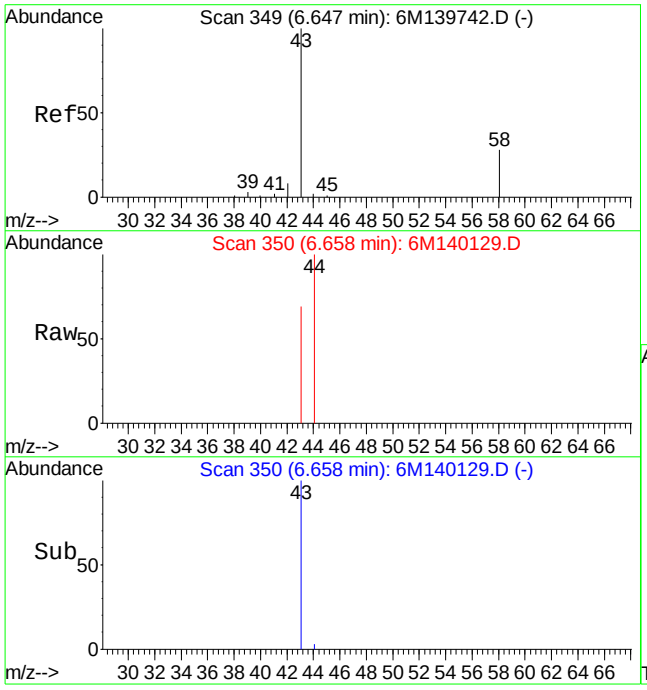

#13
Acetone
Concen: Below Cal
RT: 6.66 min Scan# 350
Delta R.T. 0.00 min
Lab File: 6M140129.D
Acq: 17 Jun 2016 1:10

Tgt Ion: 43 Resp: 205

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

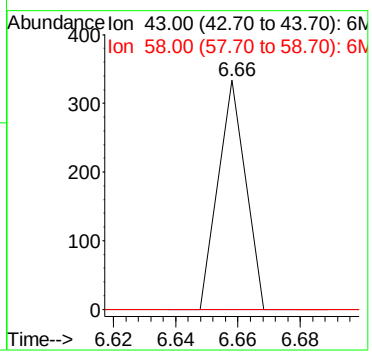

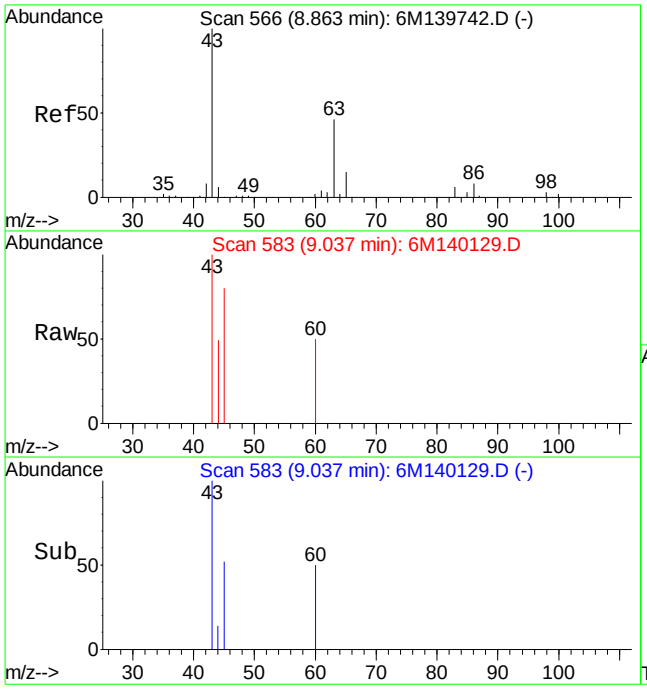

#26
Vinyl Acetate
Concen: 0.25 ug/L
RT: 9.04 min Scan# 583
Delta R.T. 0.17 min
Lab File: 6M140129.D
Acq: 17 Jun 2016 1:10

Tgt Ion: 43 Resp: 2439

Ion	Ratio	Lower	Upper
43	100		
86	0.0	4.5	10.5#

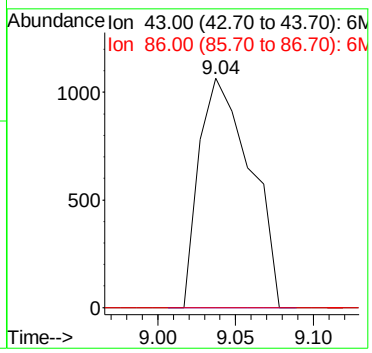

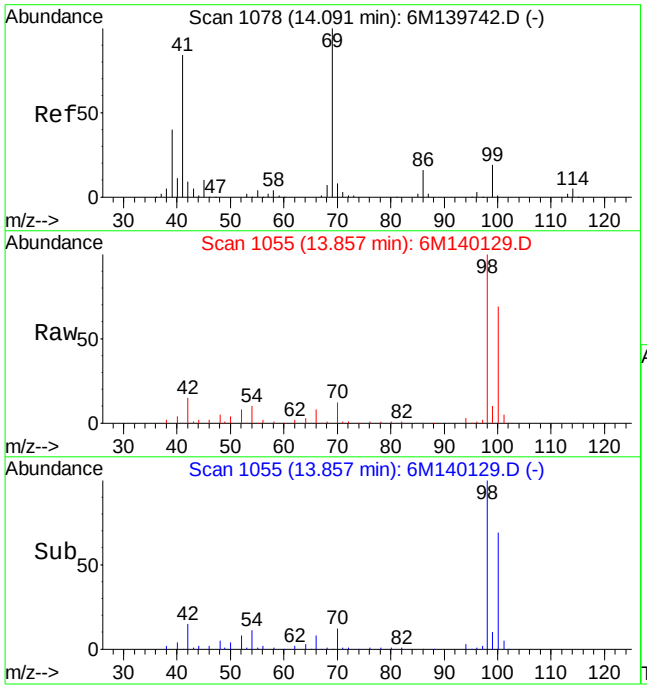

#60
Ethyl Methacrylate
Concen: 0.13 ug/L
RT: 13.86 min Scan# 1055
Delta R.T. -0.23 min
Lab File: 6M140129.D
Acq: 17 Jun 2016 1:10

Tgt Ion: 69 Resp: 795

Ion	Ratio	Lower	Upper
69	100		
41	167.0	51.4	120.0#

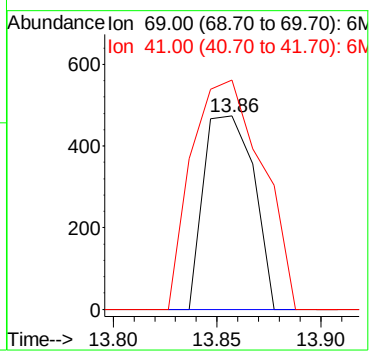

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061616\6M140130.D Vial: 18
Acq On : 17 Jun 2016 1:42 Operator: FJB
Sample : L16060822-03 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:37:25 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	530311	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	398813	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	214202	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.38	111	141981	25.8691 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.48%		
43) 1,2-Dichloroethane-d4	11.11	65	160253	26.4904 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 105.96%		
58) Toluene-d8	13.85	98	474258	24.7784 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.12%		
80) p-Bromofluorobenzene	17.85	95	196865	26.0265 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.12%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.36	85	13226	1.5756 ug/L #	56
12) 1,1,2-Trichloro-1,2,2-Trif	6.55	101	5557	1.0530 ug/L	98
13) Acetone	6.67	43	193	Below Cal #	48
26) Vinyl Acetate	9.04	43	4659	0.4859 ug/L #	78
55) cis-1,3-Dichloropropene	13.55	75	1196	0.1428 ug/L #	46
60) Ethyl Methacrylate	13.86	69	845	0.1362 ug/L #	59

(#) = qualifier out of range (m) = manual integration
6M140130.D 8260WT.M Fri Jun 17 08:37:27 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061616\6M140130.D Vial: 18
Acq On : 17 Jun 2016 1:42 Operator: FJB
Sample : L16060822-03 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 8:37 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration

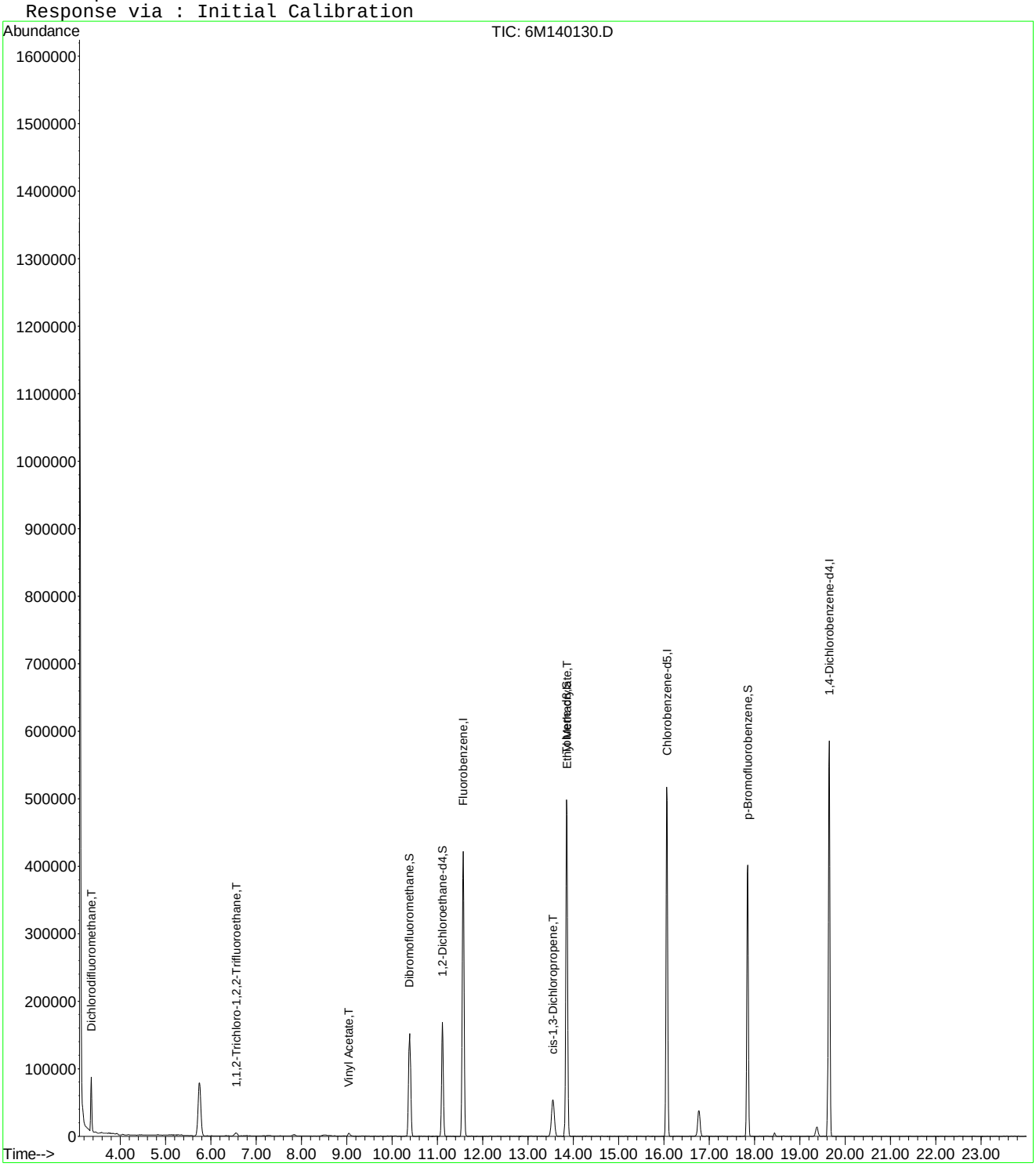

6M140130.D 8260WT.M Fri Jun 17 08:37:28 2016 Page 2

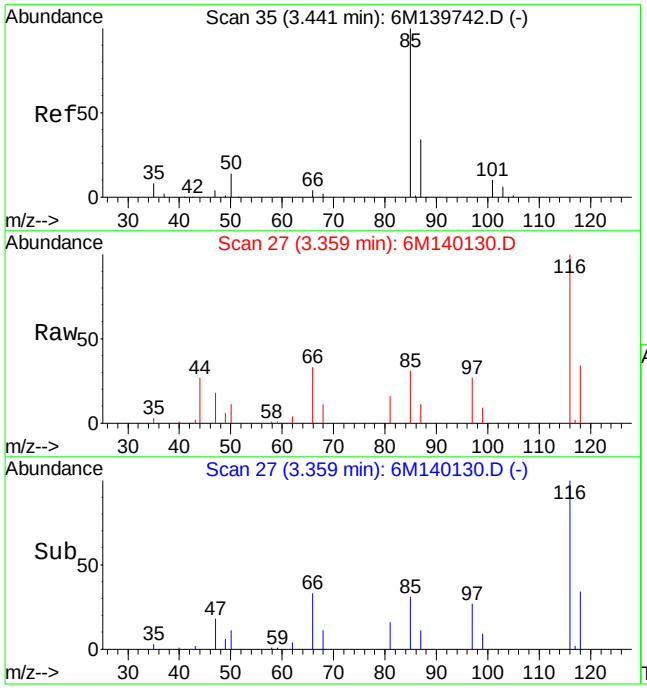

#2
Dichlorodifluoromethane
Concen: 1.58 ug/L
RT: 3.36 min Scan# 27
Delta R.T. -0.08 min
Lab File: 6M140130.D
Acq: 17 Jun 2016 1:42

Tgt Ion: 85 Resp: 13226

Ion	Ratio	Lower	Upper
85	100		
50	33.5	9.1	21.1#

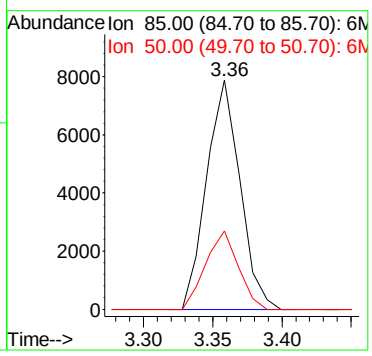

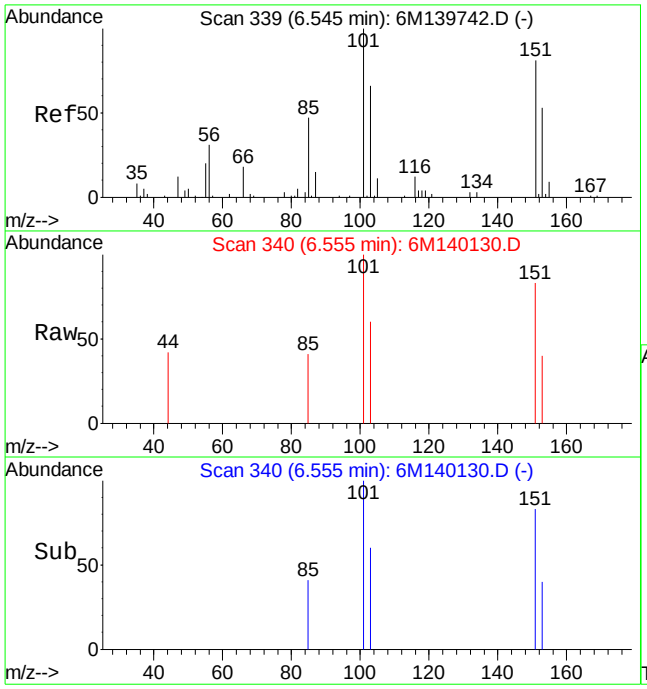

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 1.05 ug/L
RT: 6.55 min Scan# 340
Delta R.T. 0.01 min
Lab File: 6M140130.D
Acq: 17 Jun 2016 1:42

Tgt Ion:101 Resp: 5557

Ion	Ratio	Lower	Upper
101	100		
151	83.1	49.4	115.2
103	67.1	38.8	90.4

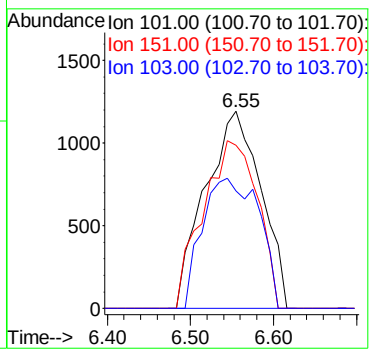

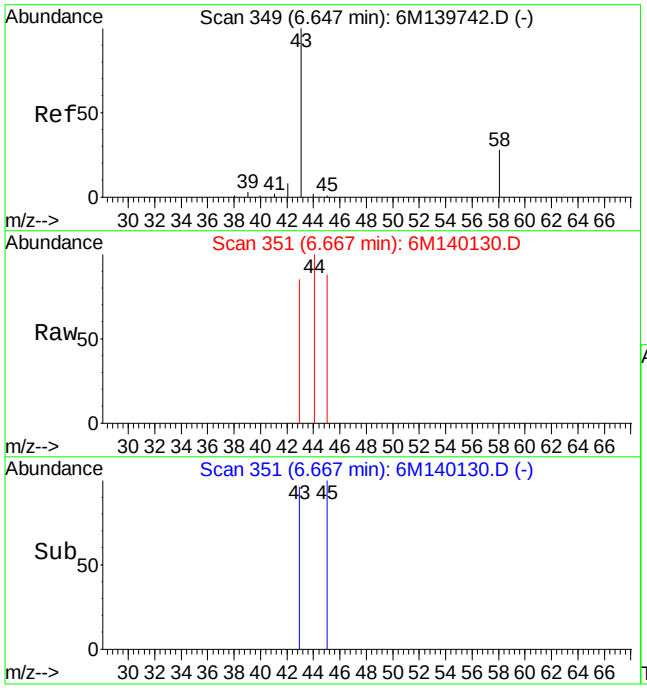

#13
Acetone
Concen: Below Cal
RT: 6.67 min Scan# 351
Delta R.T. 0.01 min
Lab File: 6M140130.D
Acq: 17 Jun 2016 1:42

Tgt Ion: 43 Resp: 193

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

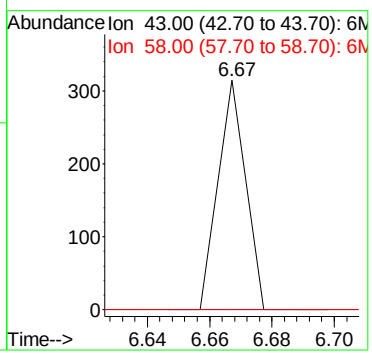

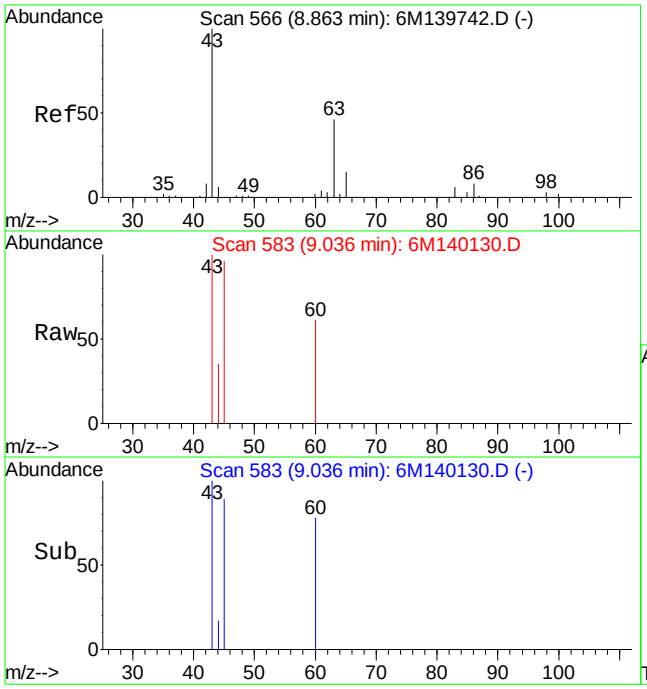

#26
Vinyl Acetate
Concen: 0.49 ug/L
RT: 9.04 min Scan# 583
Delta R.T. 0.17 min
Lab File: 6M140130.D
Acq: 17 Jun 2016 1:42

Tgt Ion: 43 Resp: 4659

Ion	Ratio	Lower	Upper
43	100		
86	0.0	4.5	10.5#

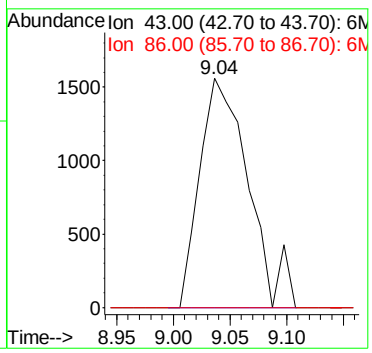

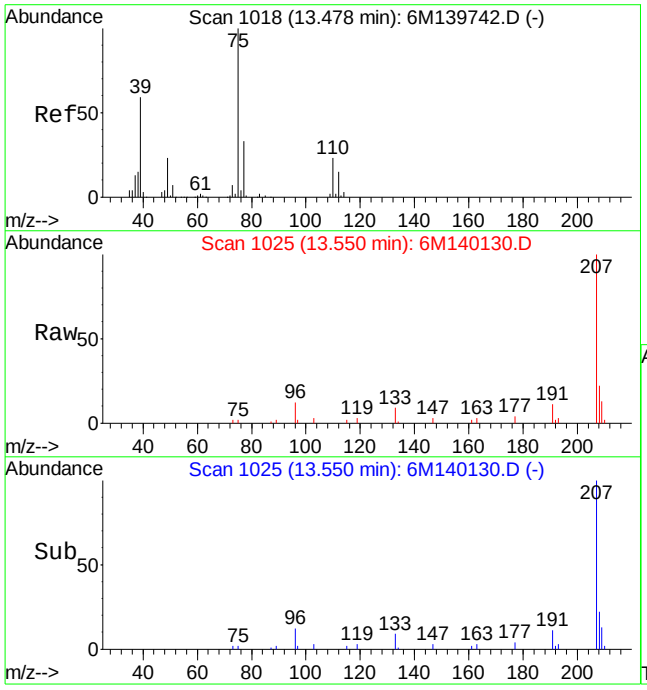

#55
cis-1,3-Dichloropropene
Concen: 0.14 ug/L
RT: 13.55 min Scan# 1025
Delta R.T. 0.07 min
Lab File: 6M140130.D
Acq: 17 Jun 2016 1:42

Tgt Ion: 75 Resp: 1196

Ion	Ratio	Lower	Upper
75	100		
77	0.0	19.5	45.5#
49	0.0	14.1	32.9#

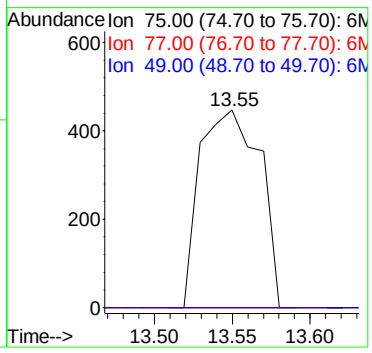

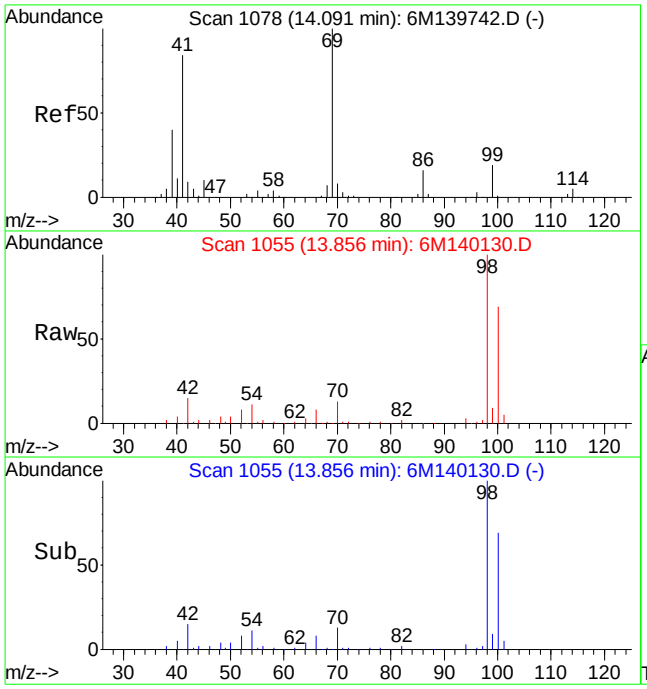

#60
Ethyl Methacrylate
Concen: 0.14 ug/L
RT: 13.86 min Scan# 1055
Delta R.T. -0.24 min
Lab File: 6M140130.D
Acq: 17 Jun 2016 1:42

Tgt Ion: 69 Resp: 845

Ion	Ratio	Lower	Upper
69	100		
41	123.7	51.4	120.0#

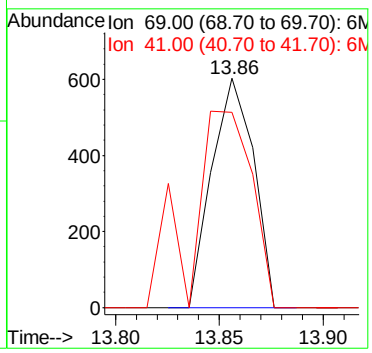

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061616\6M140131.D Vial: 19
Acq On : 17 Jun 2016 2:15 Operator: FJB
Sample : L16060822-04 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:37:31 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	531330	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	396686	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.64	152	214898	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	143187	26.0388 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.16%		
43) 1,2-Dichloroethane-d4	11.11	65	159249	26.2740 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 105.08%		
58) Toluene-d8	13.85	98	473136	24.8523 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.40%		
80) p-Bromofluorobenzene	17.84	95	196852	25.9405 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.76%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.36	85	31540	3.7501 ug/L #	59
4) Vinyl Chloride	4.17	62	4264	0.6169 ug/L	96
8) Trichlorofluoromethane	5.74	101	10087	1.0898 ug/L #	64
9) Diethyl ether	6.54	59	74323	14.9320 ug/L #	16
10) Isoprene	6.54	67	44272	5.6259 ug/L #	10
12) 1,1,2-Trichloro-1,2,2-Trif	6.55	101	6920824	1308.8607 ug/L	97
13) Acetone	6.55	43	97571	63.9050 ug/L	91
14) 1,1-Dichloroethene	6.89	61	54963	5.8695 ug/L	98
15) Tert-Butyl Alcohol	6.89	59	1406	3.0593 ug/L #	57
19) Methylene Chloride	7.73	84	755	0.1307 ug/L	71
23) trans-1,2-Dichloroethene	8.21	96	3235	0.5927 ug/L	90
26) Vinyl Acetate	9.03	43	4012	0.4177 ug/L #	78
27) 1,1-Dichloroethane	8.90	63	3432	0.3138 ug/L #	75
32) cis-1,2-Dichloroethene	9.83	96	457504	76.9369 ug/L	99
33) Chloroform	10.06	83	32986	3.3865 ug/L	99
45) 1,2-Dichloroethane	11.25	62	36468	4.8716 ug/L	91
46) Benzene	11.29	78	13498	0.6184 ug/L	95
47) Trichloroethene	12.14	130	8574613	1538.1169 ug/L	76
48) Methylcyclohexane	12.14	83	152225	18.0107 ug/L #	1
49) 1,2-Dichloropropane	12.14	63	45415	7.5328 ug/L #	35
60) Ethyl Methacrylate	13.84	69	783	0.1268 ug/L	80
66) Tetrachloroethene	14.92	166	2916	0.4935 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140131.D 8260WT.M Fri Jun 17 08:37:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061616\6M140131.D Vial: 19
Acq On : 17 Jun 2016 2:15 Operator: FJB
Sample : L16060822-04 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 8:37 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration

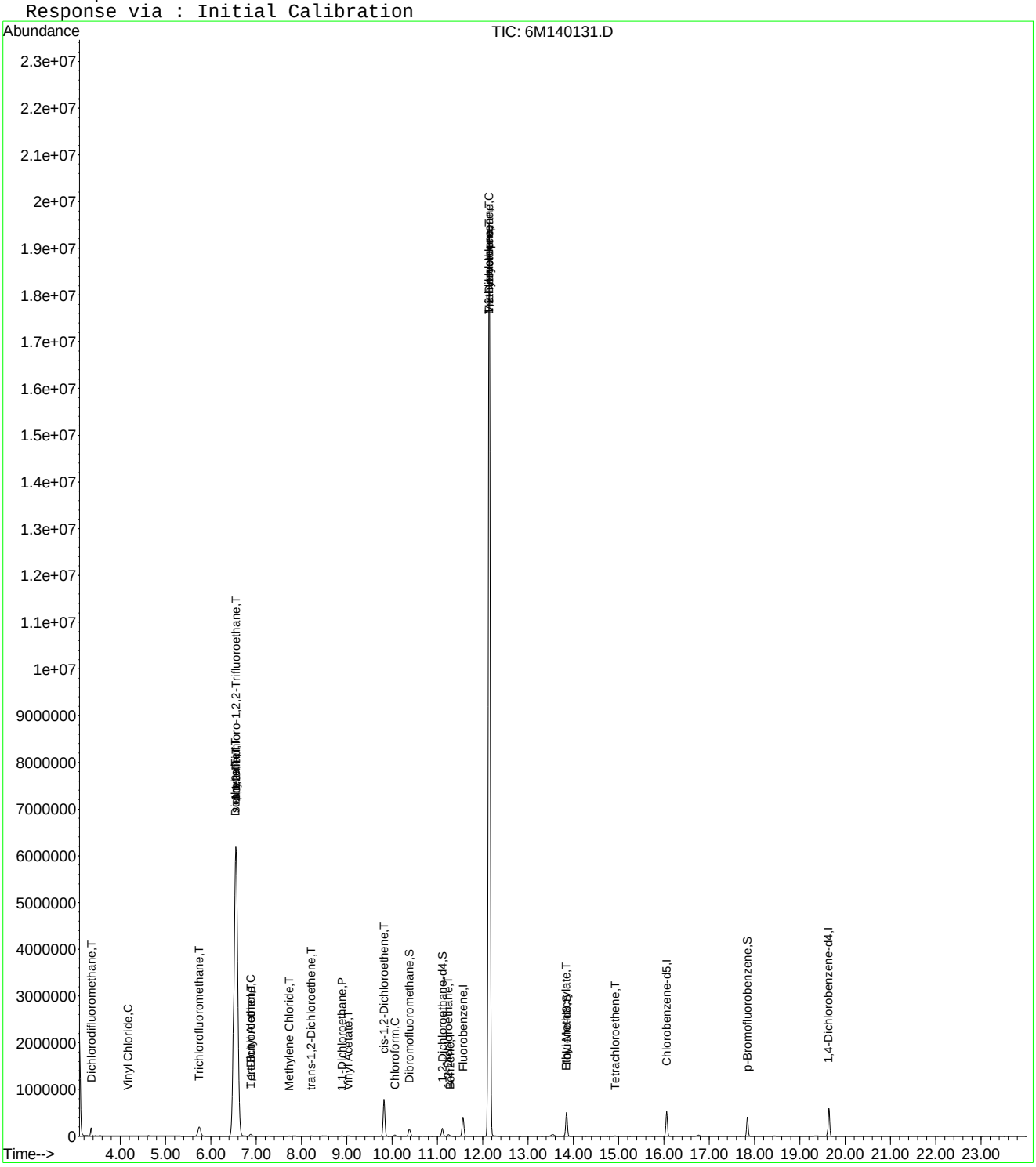

6M140131.D 8260WT.M Fri Jun 17 08:37:34 2016 Page 2

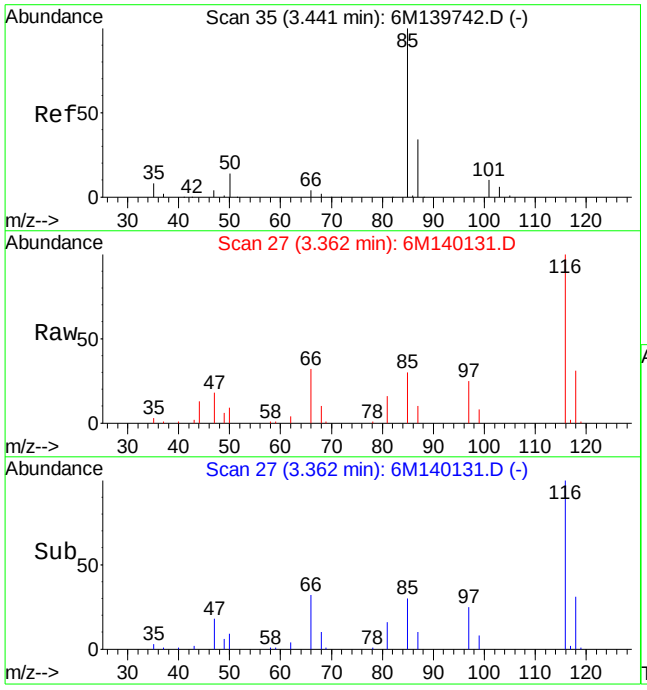

#2
Dichlorodifluoromethane
Concen: 3.75 ug/L
RT: 3.36 min Scan# 27
Delta R.T. -0.08 min
Lab File: 6M140131.D
Acq: 17 Jun 2016 2:15

Tgt Ion: 85 Resp: 31540

Ion	Ratio	Lower	Upper
85	100		
50	32.2	9.1	21.1#

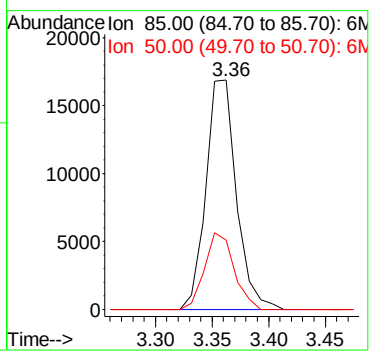

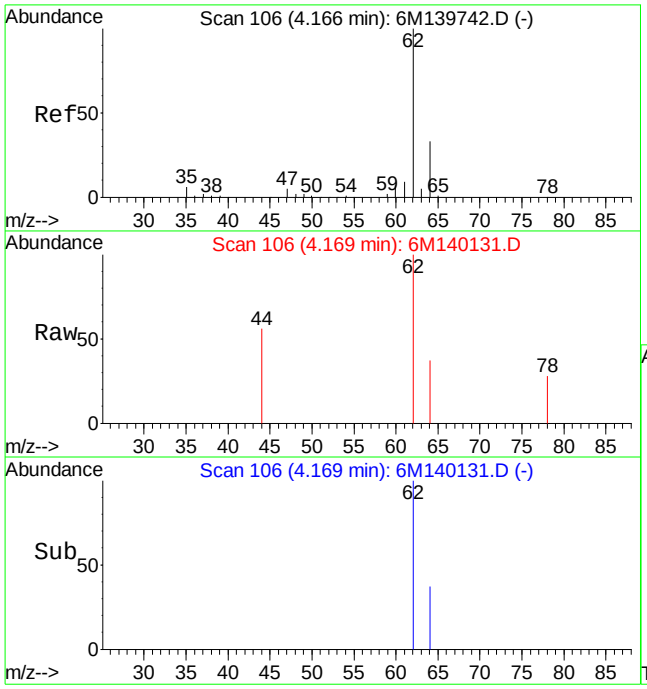

#4
Vinyl Chloride
Concen: 0.62 ug/L
RT: 4.17 min Scan# 106
Delta R.T. 0.01 min
Lab File: 6M140131.D
Acq: 17 Jun 2016 2:15

Tgt Ion: 62 Resp: 4264

Ion	Ratio	Lower	Upper
62	100		
64	30.1	19.3	45.1

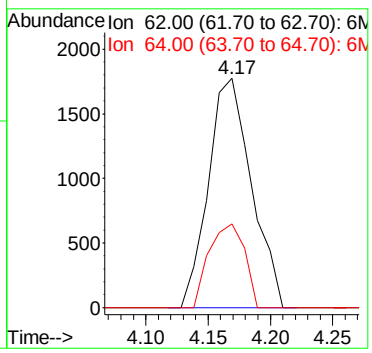

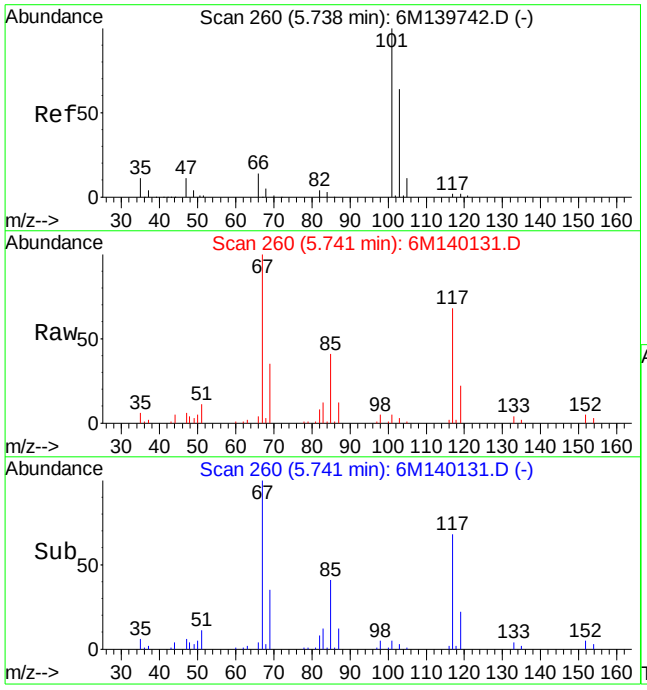

#8
Trichlorofluoromethane
Concen: 1.09 ug/L
RT: 5.74 min Scan# 260
Delta R.T. 0.02 min
Lab File: 6M140131.D
Acq: 17 Jun 2016 2:15

Tgt Ion:101 Resp: 10087

Ion	Ratio	Lower	Upper
101	100		
103	65.6	39.1	91.1
66	94.7	8.3	19.5#

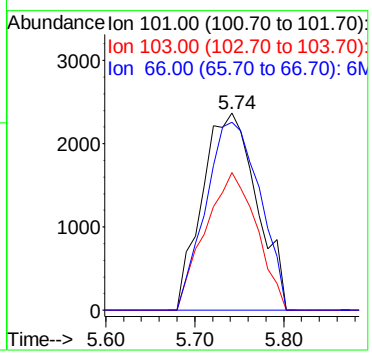

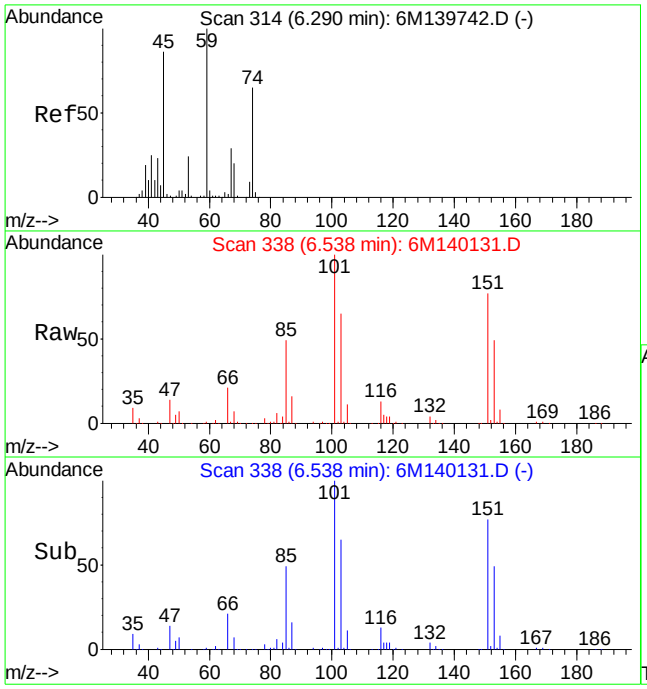

#9
Diethyl ether
Concen: 14.93 ug/L
RT: 6.54 min Scan# 338
Delta R.T. 0.25 min
Lab File: 6M140131.D
Acq: 17 Jun 2016 2:15

Tgt Ion: 59 Resp: 74323

Ion	Ratio	Lower	Upper
59	100		
45	0.3	51.5	120.3#
74	7.4	38.5	89.7#

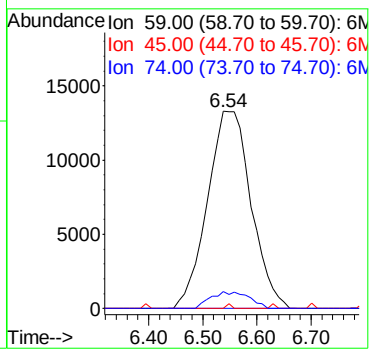

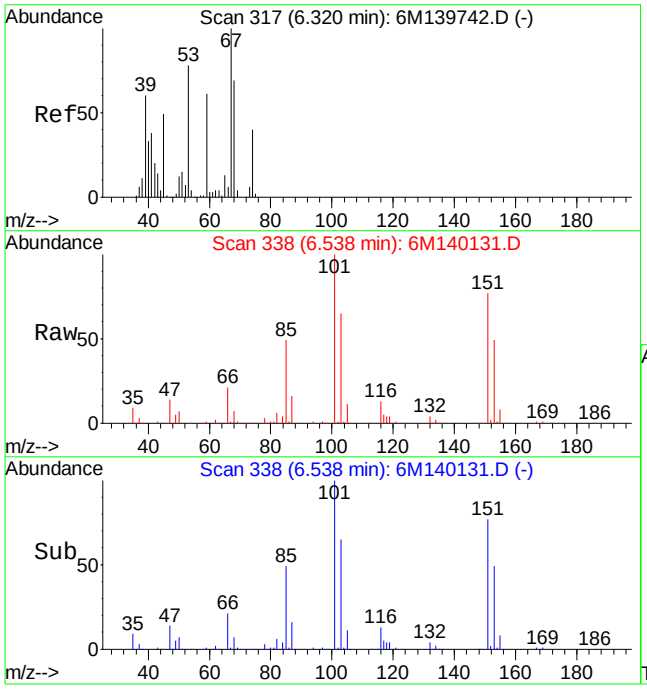

#10
Isoprene
Concen: 5.63 ug/L
RT: 6.54 min Scan# 338
Delta R.T. 0.22 min
Lab File: 6M140131.D
Acq: 17 Jun 2016 2:15

Tgt Ion: 67 Resp: 44272

Ion	Ratio	Lower	Upper
67	100		
53	0.0	47.4	110.6#

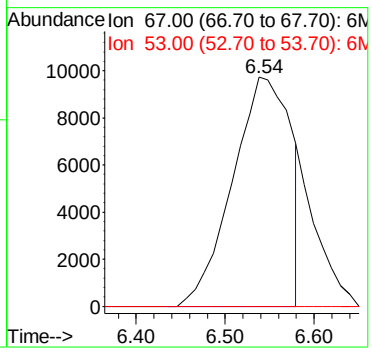

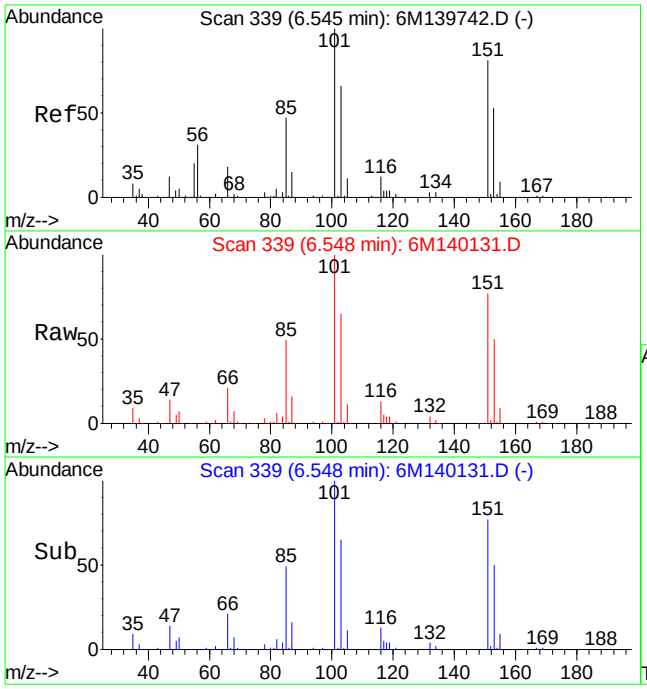

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 1308.86 ug/L
RT: 6.55 min Scan# 339
Delta R.T. 0.00 min
Lab File: 6M140131.D
Acq: 17 Jun 2016 2:15

Tgt Ion:101 Resp: 6920824

Ion	Ratio	Lower	Upper
101	100		
151	78.5	49.4	115.2
103	65.2	38.8	90.4

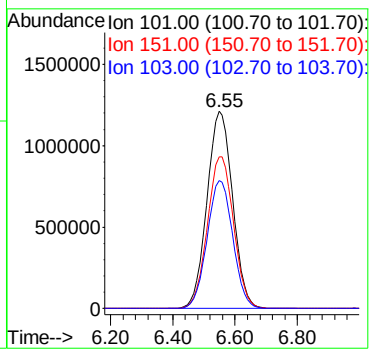

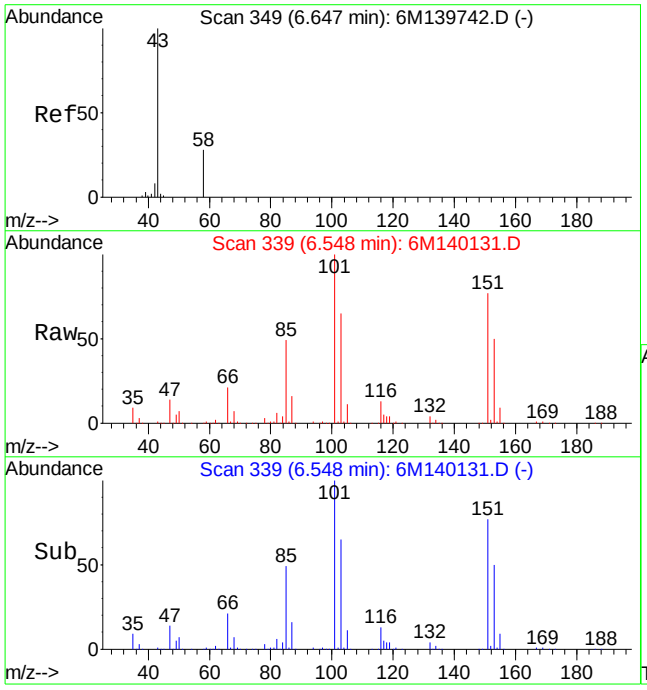

#13
Acetone
Concen: 63.90 ug/L
RT: 6.55 min Scan# 339
Delta R.T. -0.11 min
Lab File: 6M140131.D
Acq: 17 Jun 2016 2:15

Tgt Ion: 43 Resp: 97571

Ion	Ratio	Lower	Upper
43	100		
58	22.6	16.4	38.2

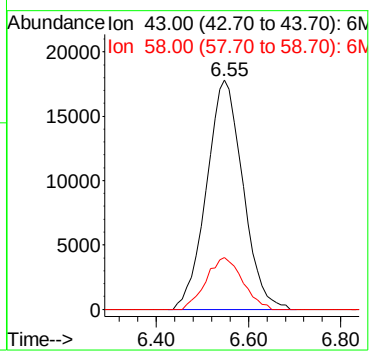

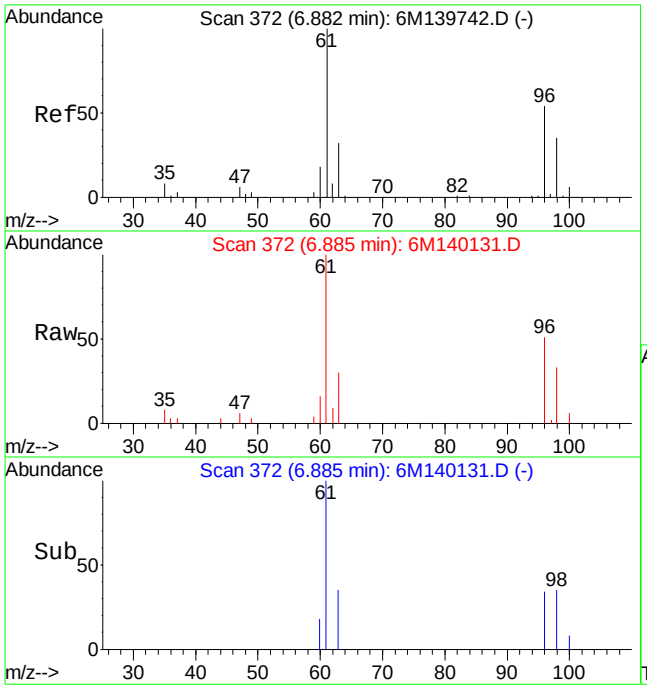

#14
1,1-Dichloroethene
Concen: 5.87 ug/L
RT: 6.89 min Scan# 372
Delta R.T. 0.01 min
Lab File: 6M140131.D
Acq: 17 Jun 2016 2:15

Tgt Ion: 61 Resp: 54963

Ion	Ratio	Lower	Upper
61	100		
96	51.7	32.0	74.6

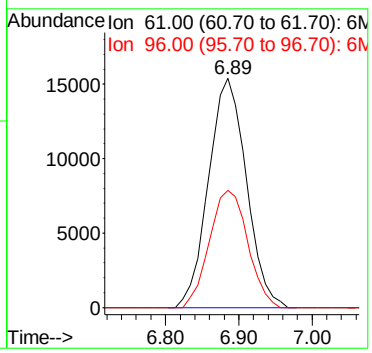

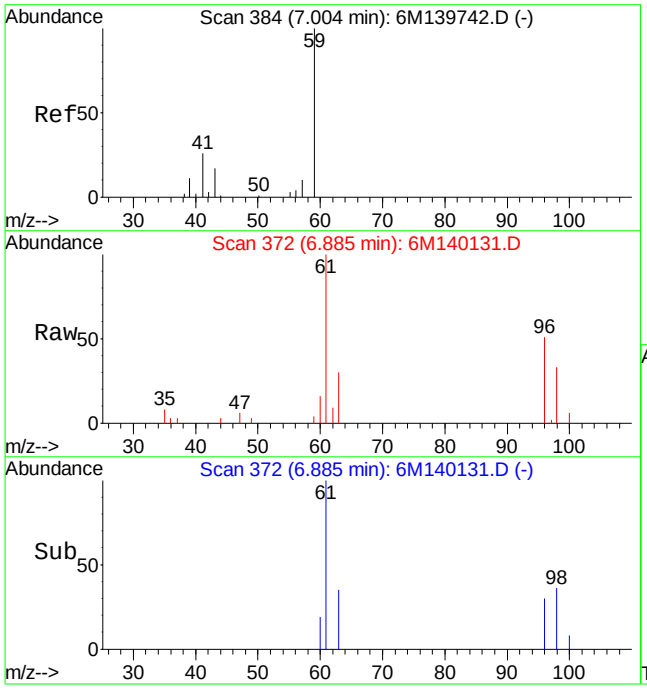

#15
Tert-Butyl Alcohol
Concen: 3.06 ug/L
RT: 6.89 min Scan# 372
Delta R.T. -0.16 min
Lab File: 6M140131.D
Acq: 17 Jun 2016 2:15

Tgt Ion: 59 Resp: 1406

Ion	Ratio	Lower	Upper
59	100		
41	0.0	14.6	34.0#
57	0.0	6.4	14.8#

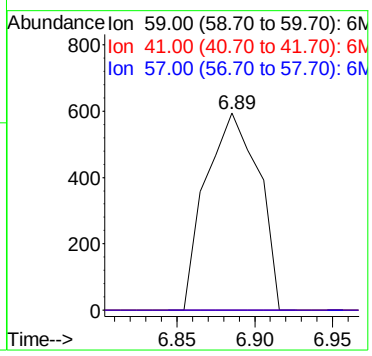

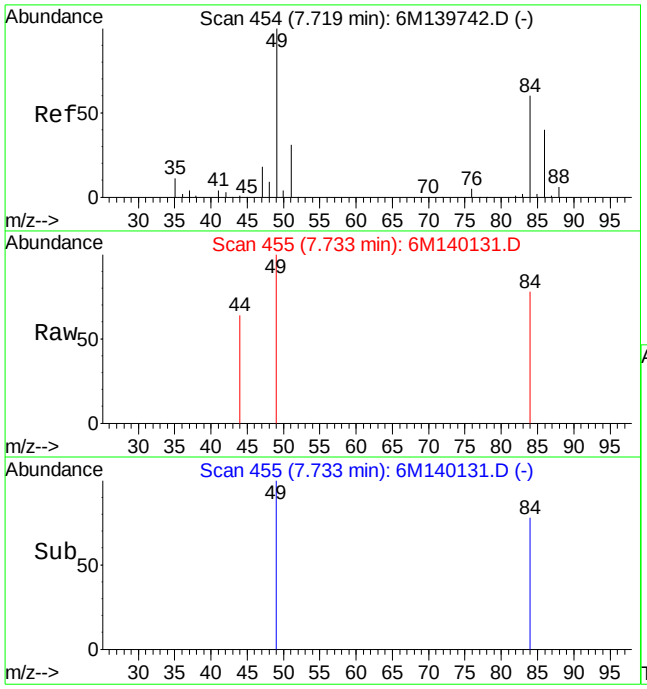

#19
Methylene Chloride
Concen: 0.13 ug/L
RT: 7.73 min Scan# 455
Delta R.T. 0.01 min
Lab File: 6M140131.D
Acq: 17 Jun 2016 2:15

Tgt Ion: 84 Resp: 755

Ion	Ratio	Lower	Upper
84	100		
49	205.2	99.3	231.7

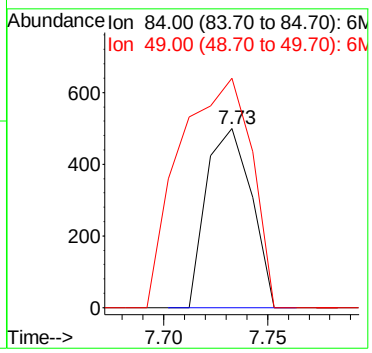

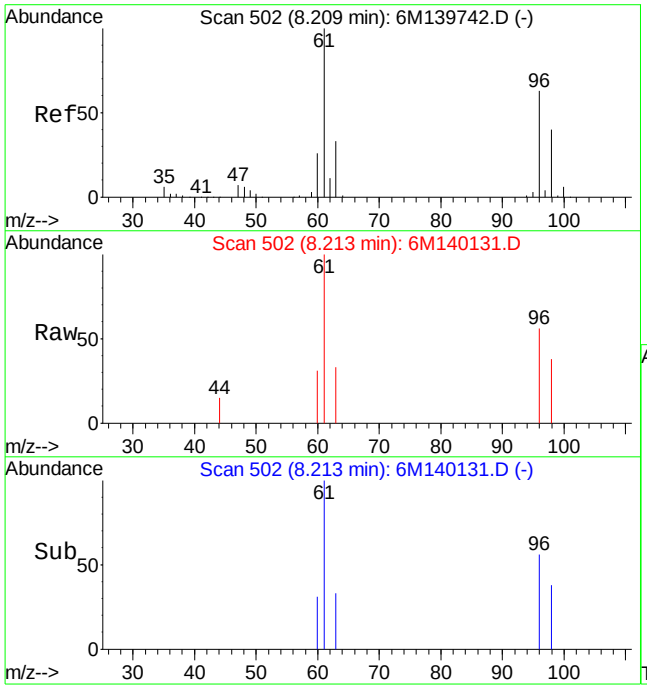

#23
trans-1,2-Dichloroethene
Concen: 0.59 ug/L
RT: 8.21 min Scan# 502
Delta R.T. 0.00 min
Lab File: 6M140131.D
Acq: 17 Jun 2016 2:15

Tgt Ion: 96 Resp: 3235

Ion	Ratio	Lower	Upper
96	100		
61	174.3	96.3	224.7

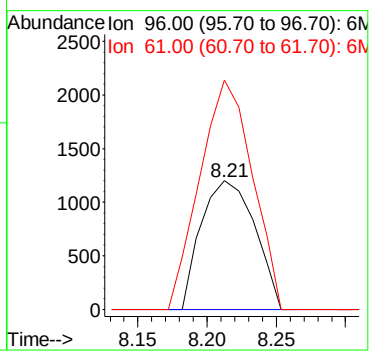

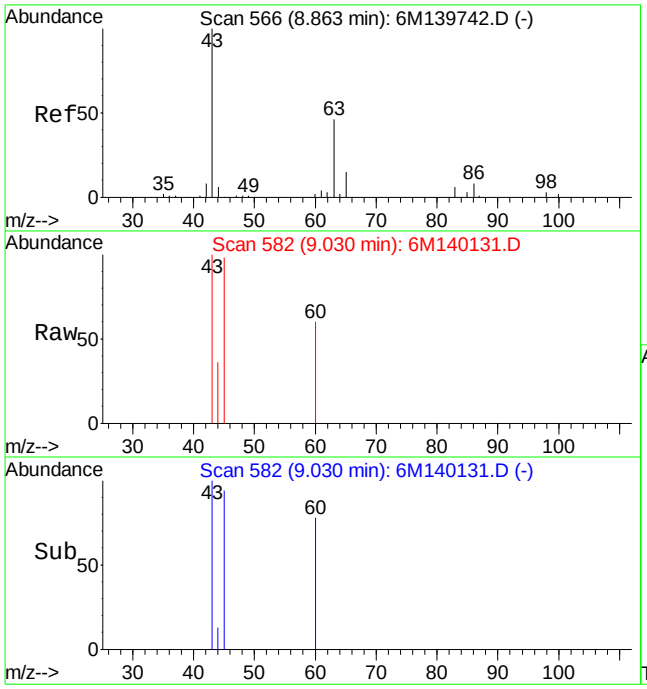

#26
Vinyl Acetate
Concen: 0.42 ug/L
RT: 9.03 min Scan# 582
Delta R.T. 0.17 min
Lab File: 6M140131.D
Acq: 17 Jun 2016 2:15

Tgt Ion: 43 Resp: 4012

Ion	Ratio	Lower	Upper
43	100		
86	0.0	4.5	10.5#

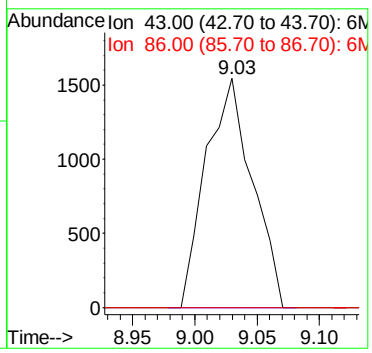

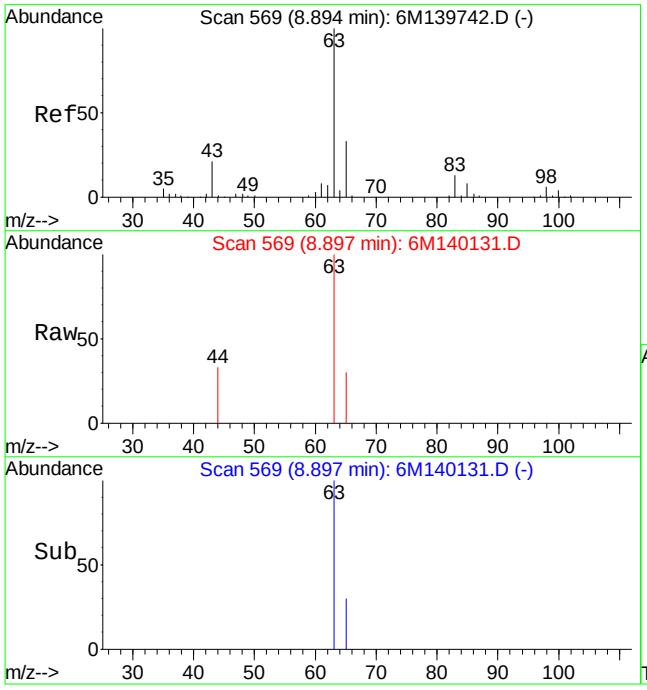

#27
1,1-Dichloroethane
Concen: 0.31 ug/L
RT: 8.90 min Scan# 569
Delta R.T. 0.00 min
Lab File: 6M140131.D
Acq: 17 Jun 2016 2:15

Tgt Ion: 63 Resp: 3432

Ion	Ratio	Lower	Upper
63	100		
65	18.4	19.3	44.9#

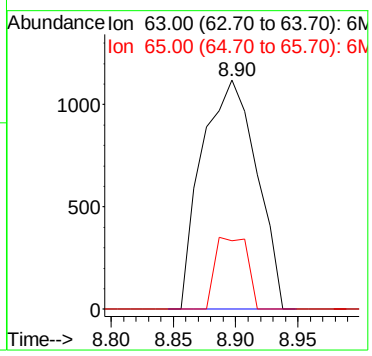

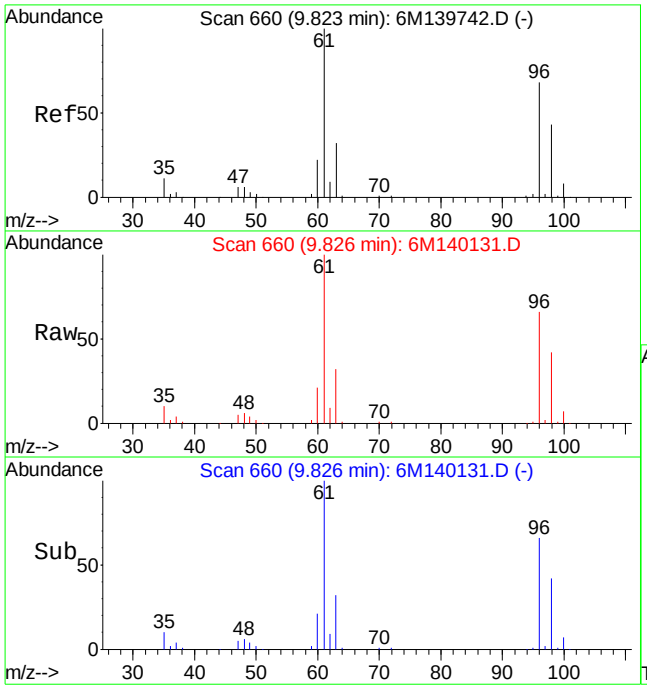

#32
cis-1,2-Dichloroethene
Concen: 76.94 ug/L
RT: 9.83 min Scan# 660
Delta R.T. 0.00 min
Lab File: 6M140131.D
Acq: 17 Jun 2016 2:15

Tgt Ion: 96 Resp: 457504

Ion	Ratio	Lower	Upper
96	100		
61	150.5	89.2	208.2

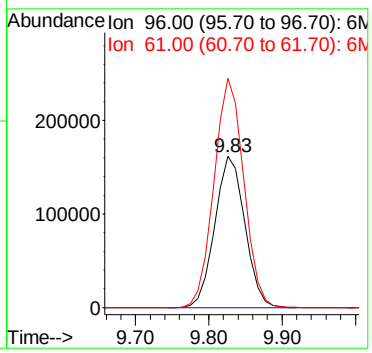

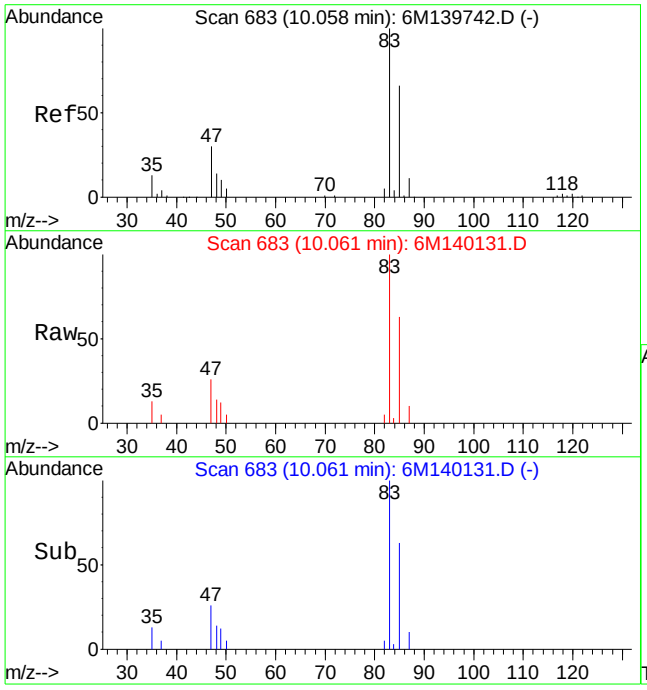

#33
Chloroform
Concen: 3.39 ug/L
RT: 10.06 min Scan# 683
Delta R.T. 0.00 min
Lab File: 6M140131.D
Acq: 17 Jun 2016 2:15

Tgt Ion: 83 Resp: 32986

Ion	Ratio	Lower	Upper
83	100		
85	65.2	39.0	91.0
47	29.4	18.5	43.1

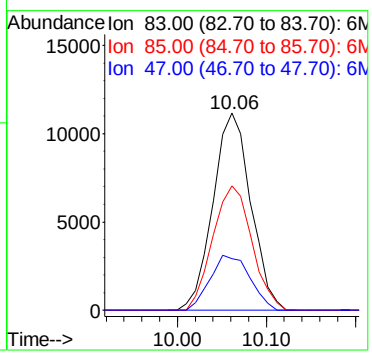

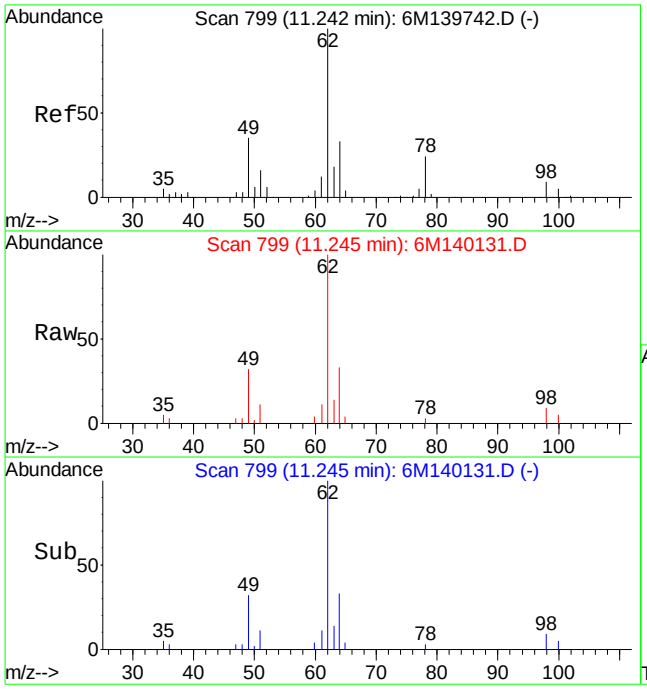

#45
1,2-Dichloroethane
Concen: 4.87 ug/L
RT: 11.25 min Scan# 799
Delta R.T. 0.00 min
Lab File: 6M140131.D
Acq: 17 Jun 2016 2:15

Tgt Ion: 62 Resp: 36468

Ion	Ratio	Lower	Upper
62	100		
49	35.3	25.1	58.5
98	7.3	5.2	12.0

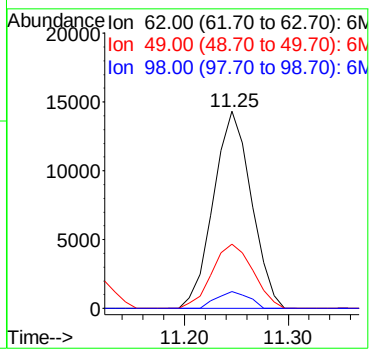

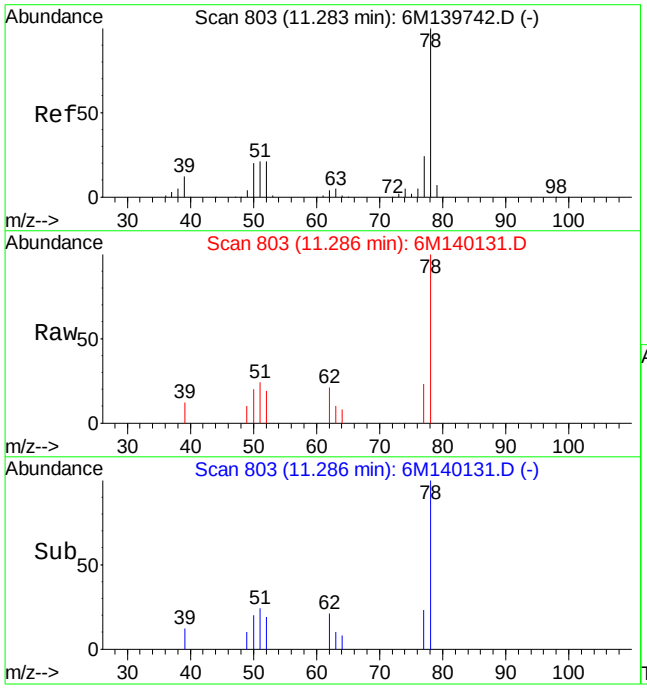

#46
Benzene
Concen: 0.62 ug/L
RT: 11.29 min Scan# 803
Delta R.T. 0.00 min
Lab File: 6M140131.D
Acq: 17 Jun 2016 2:15

Tgt Ion: 78 Resp: 13498

Ion	Ratio	Lower	Upper
78	100		
52	18.6	12.4	29.0

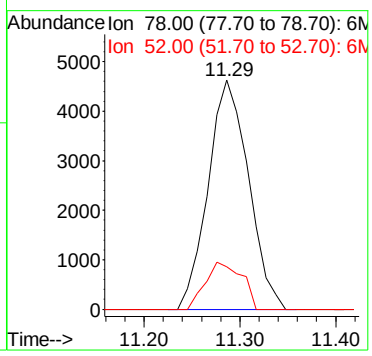

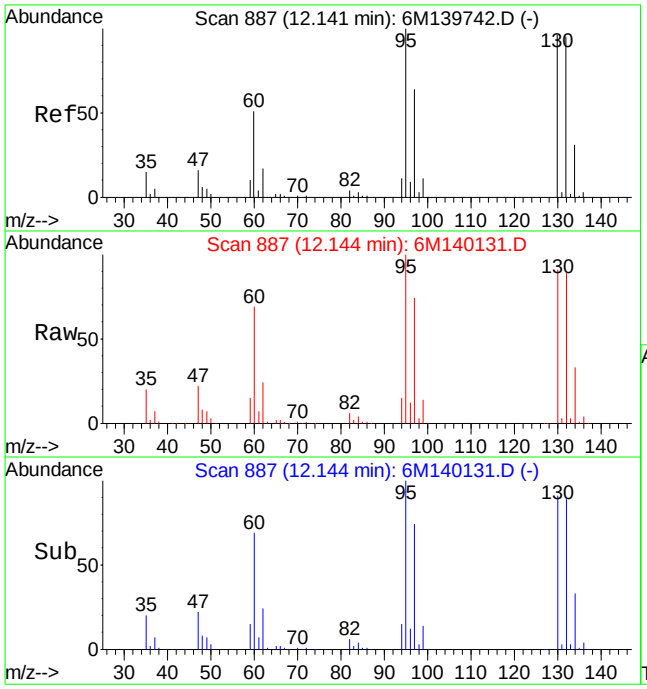

#47
Trichloroethene
Concen: 1538.12 ug/L
RT: 12.14 min Scan# 887
Delta R.T. -0.01 min
Lab File: 6M140131.D
Acq: 17 Jun 2016 2:15

Tgt Ion:130 Resp: 8574613

Ion	Ratio	Lower	Upper
130	100		
60	70.6	32.0	74.6

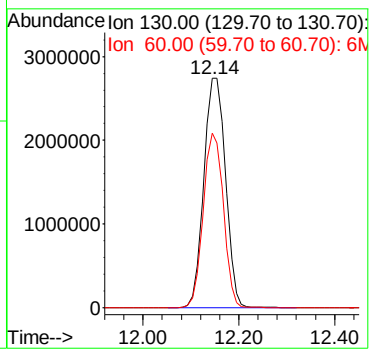

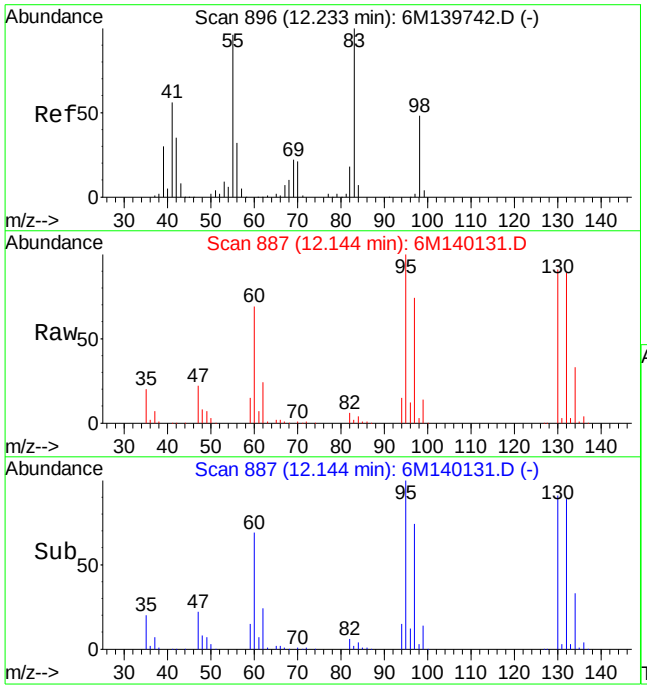

#48
Methylcyclohexane
Concen: 18.01 ug/L
RT: 12.14 min Scan# 887
Delta R.T. -0.09 min
Lab File: 6M140131.D
Acq: 17 Jun 2016 2:15

Tgt Ion: 83 Resp: 152225

Ion	Ratio	Lower	Upper
83	100		
55	0.0	56.3	131.3#
98	196.5	28.4	66.4#

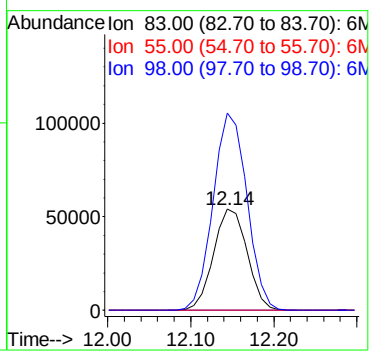

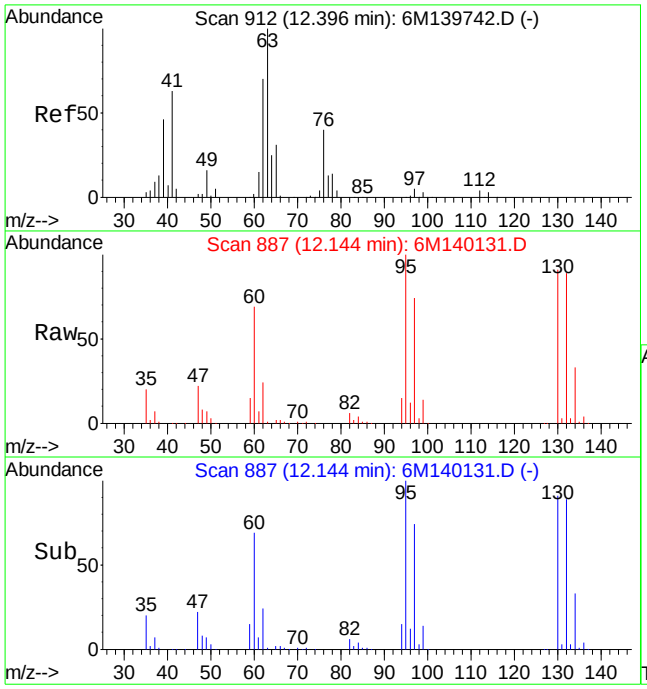

#49
1,2-Dichloropropane
Concen: 7.53 ug/L
RT: 12.14 min Scan# 887
Delta R.T. -0.25 min
Lab File: 6M140131.D
Acq: 17 Jun 2016 2:15

Tgt Ion: 63 Resp: 45415

Ion	Ratio	Lower	Upper
63	100		
76	0.0	24.2	56.4#

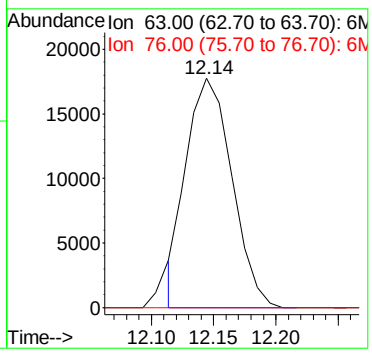

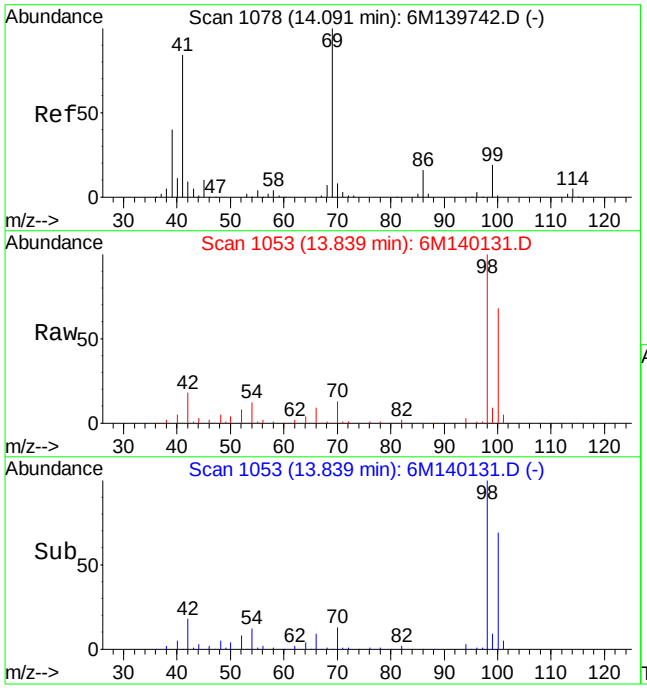

#60
Ethyl Methacrylate
Concen: 0.13 ug/L
RT: 13.84 min Scan# 1053
Delta R.T. -0.25 min
Lab File: 6M140131.D
Acq: 17 Jun 2016 2:15

Tgt Ion: 69 Resp: 783

Ion	Ratio	Lower	Upper
69	100		
41	104.3	51.4	120.0

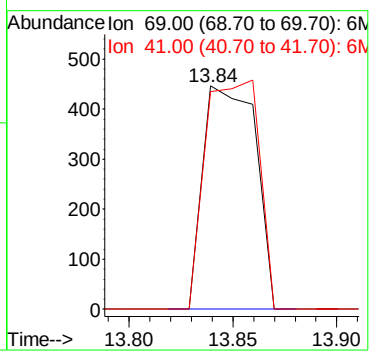

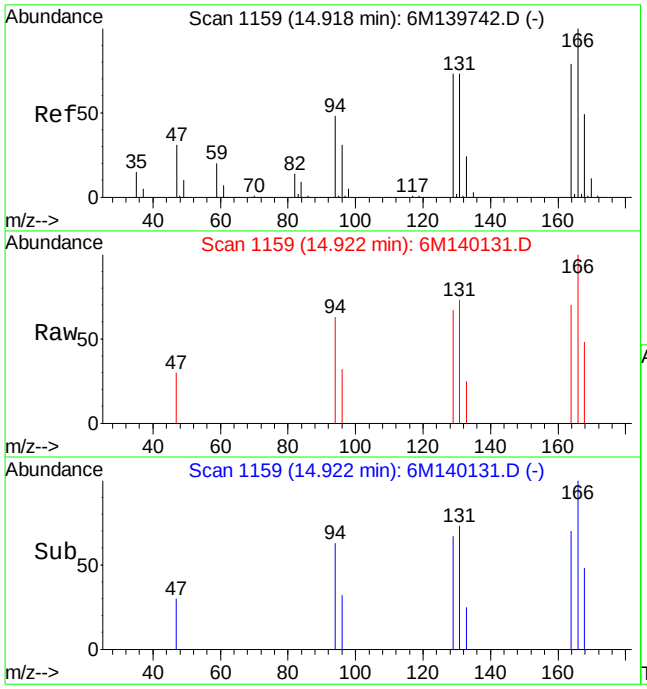

#66
Tetrachloroethene
Concen: 0.49 ug/L
RT: 14.92 min Scan# 1159
Delta R.T. -0.01 min
Lab File: 6M140131.D
Acq: 17 Jun 2016 2:15

Tgt Ion:166 Resp: 2916

Ion	Ratio	Lower	Upper
166	100		
129	72.7	43.5	101.5
94	47.8	27.8	64.8

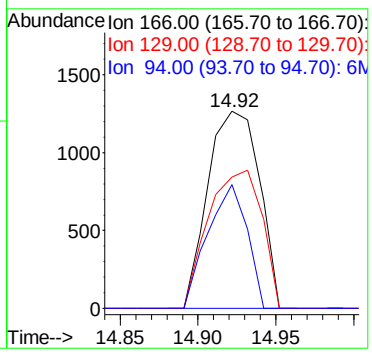

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061716\8M413071.D Vial: 13
Acq On : 17 Jun 2016 21:42 Operator: FJB
Sample : L16060822-04 50X B 826-LOW D1 Inst : HPMS8
Misc : 1,50 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 22:04:25 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	742726	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	559419	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	315183	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	219783	27.5419 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.16%		
43) 1,2-Dichloroethane-d4	10.30	65	242309	28.3187 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 113.28%		
58) Toluene-d8	12.68	98	770828	26.3284 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.32%		
80) p-Bromofluorobenzene	16.08	95	324607	24.8725 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.48%		

Target Compounds					Qvalue
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	196606	26.0650 ug/L	95
13) Acetone	6.20	43	419	0.5014 ug/L #	50
20) Carbon Disulfide	7.30	76	4106	0.1634 ug/L #	74
32) cis-1,2-Dichloroethene	9.16	96	12370	1.4509 ug/L	82
47) Trichloroethene	11.21	130	329608	40.5066 ug/L	98
98) 1,2,4-Trichlorobenzene	20.28	180	1748	0.1350 ug/L #	64
99) Hexachlorobutadiene	20.42	225	1166	0.1927 ug/L #	54
100) Naphthalene	20.65	128	8277	0.4303 ug/L #	73
101) 1,2,3-Trichlorobenzene	20.96	180	1622	0.1485 ug/L #	49

(#) = qualifier out of range (m) = manual integration
8M413071.D 8260WT.M Mon Jun 20 09:21:27 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061716\8M413071.D Vial: 13
Acq On : 17 Jun 2016 21:42 Operator: FJB
Sample : L16060822-04 50X B 826-LOW D1 Inst : HPMS8
Misc : 1,50 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 22:04 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

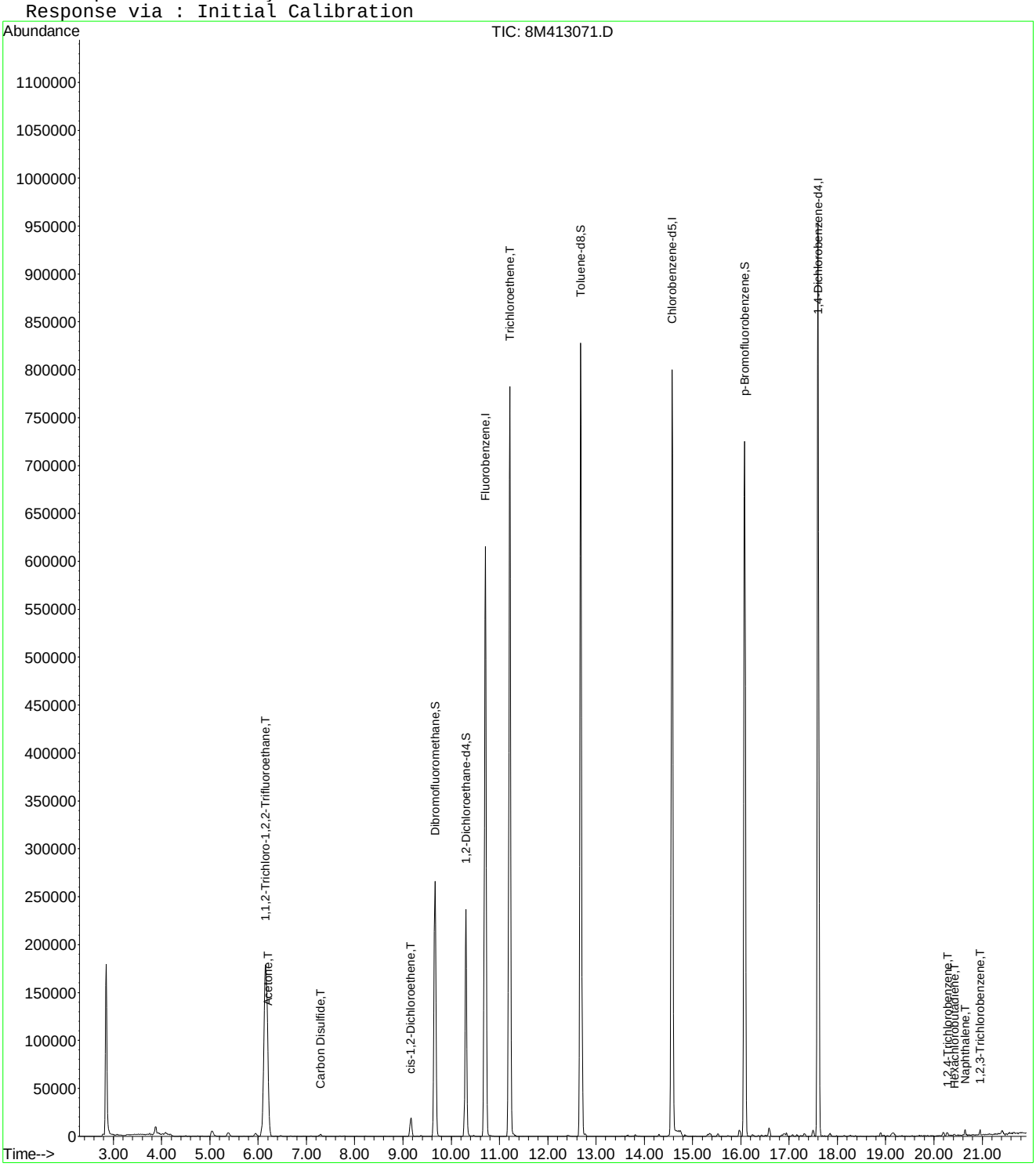

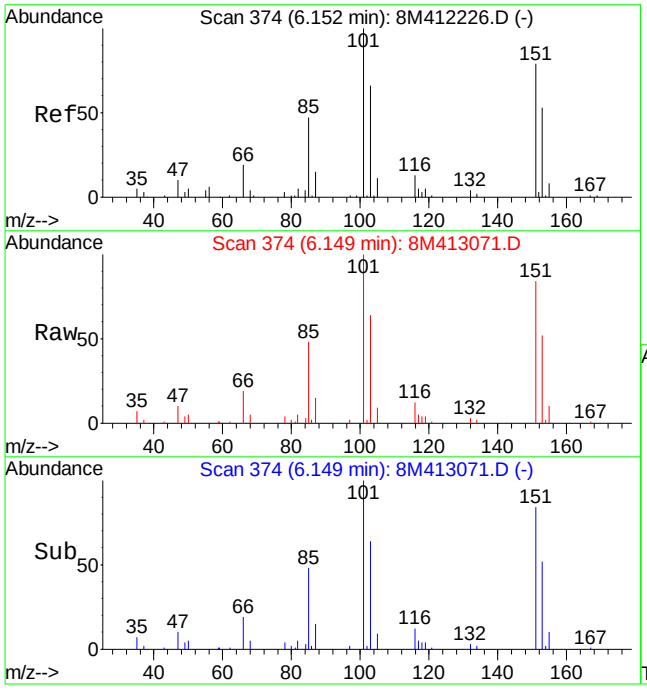

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 26.06 ug/L
RT: 6.15 min Scan# 374
Delta R.T. -0.00 min
Lab File: 8M413071.D
Acq: 17 Jun 2016 21:42

Tgt Ion:101 Resp: 196606

Ion	Ratio	Lower	Upper
101	100		
151	84.8	40.2	120.2

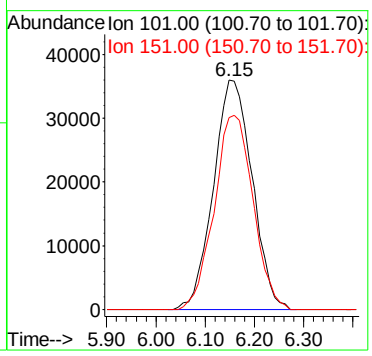

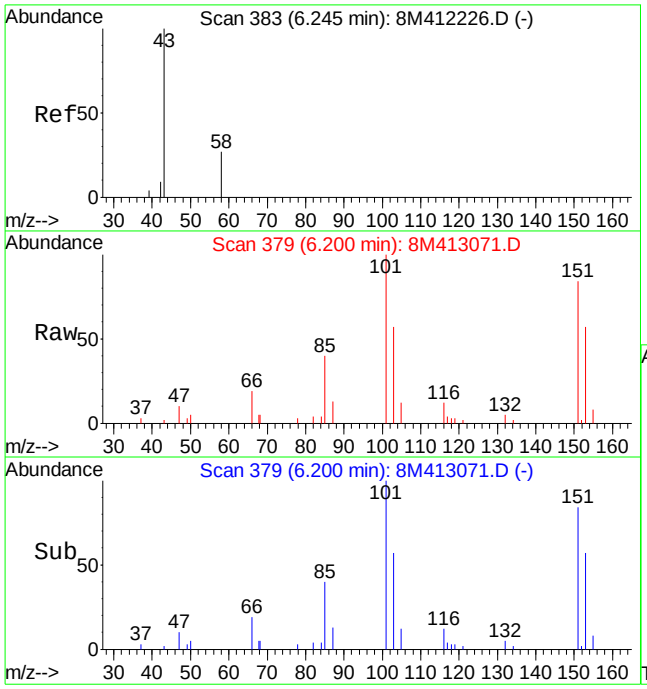

#13
Acetone
Concen: 0.50 ug/L
RT: 6.20 min Scan# 379
Delta R.T. -0.04 min
Lab File: 8M413071.D
Acq: 17 Jun 2016 21:42

Tgt Ion: 43 Resp: 419

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.2	35.4#

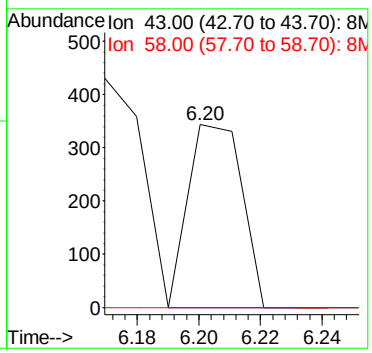

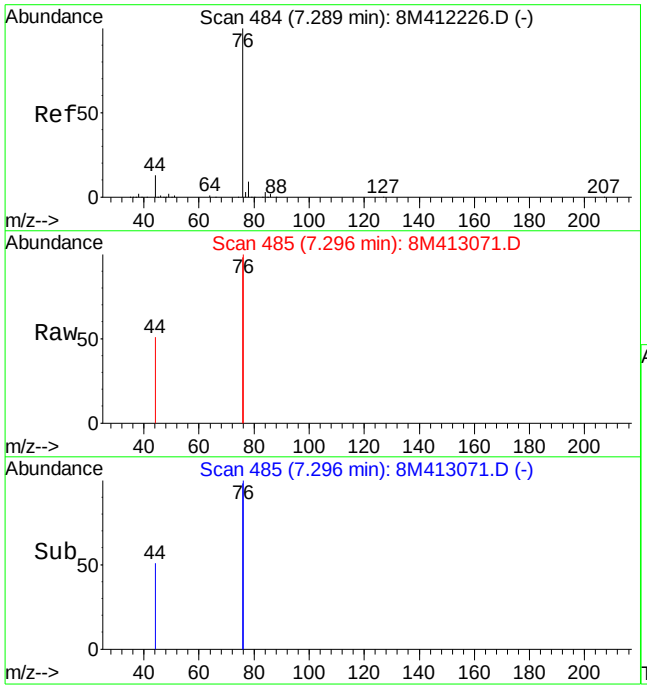

#20
Carbon Disulfide
Concen: 0.16 ug/L
RT: 7.30 min Scan# 485
Delta R.T. 0.01 min
Lab File: 8M413071.D
Acq: 17 Jun 2016 21:42

Tgt Ion: 76 Resp: 4106

Ion	Ratio	Lower	Upper
76	100		
78	0.0	5.6	13.0#

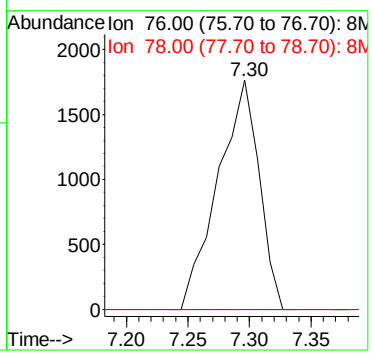

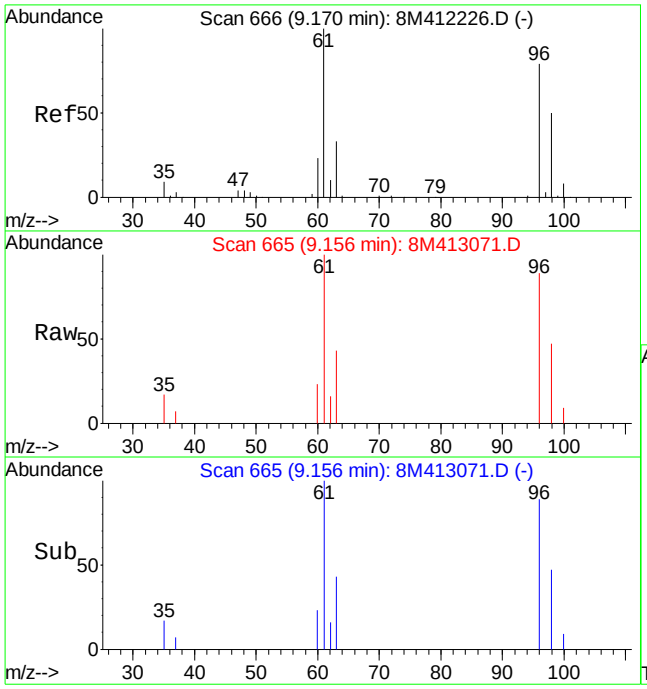

#32
cis-1,2-Dichloroethene
Concen: 1.45 ug/L
RT: 9.16 min Scan# 665
Delta R.T. -0.01 min
Lab File: 8M413071.D
Acq: 17 Jun 2016 21:42

Tgt Ion: 96 Resp: 12370

Ion	Ratio	Lower	Upper
96	100		
61	129.4	91.5	213.5

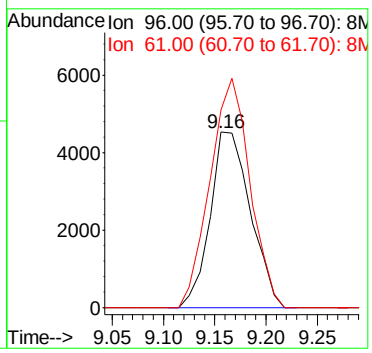

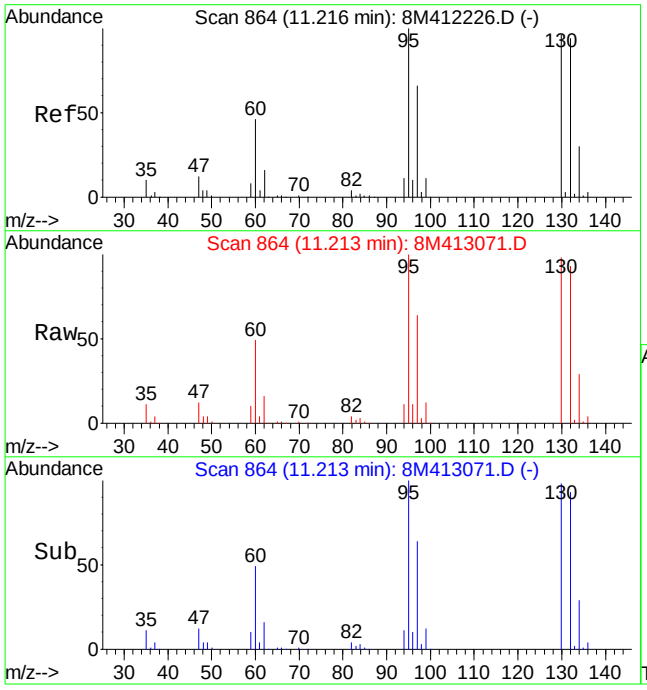

#47
Trichloroethene
Concen: 40.51 ug/L
RT: 11.21 min Scan# 864
Delta R.T. -0.00 min
Lab File: 8M413071.D
Acq: 17 Jun 2016 21:42

Tgt Ion:130 Resp: 329608

Ion	Ratio	Lower	Upper
130	100		
132	94.8	58.0	135.2
95	106.5	64.9	151.5

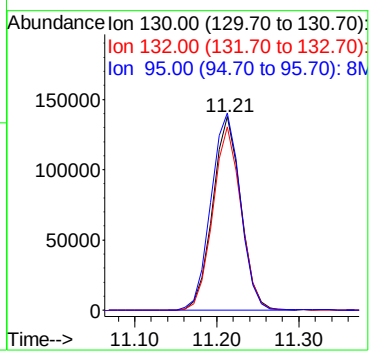

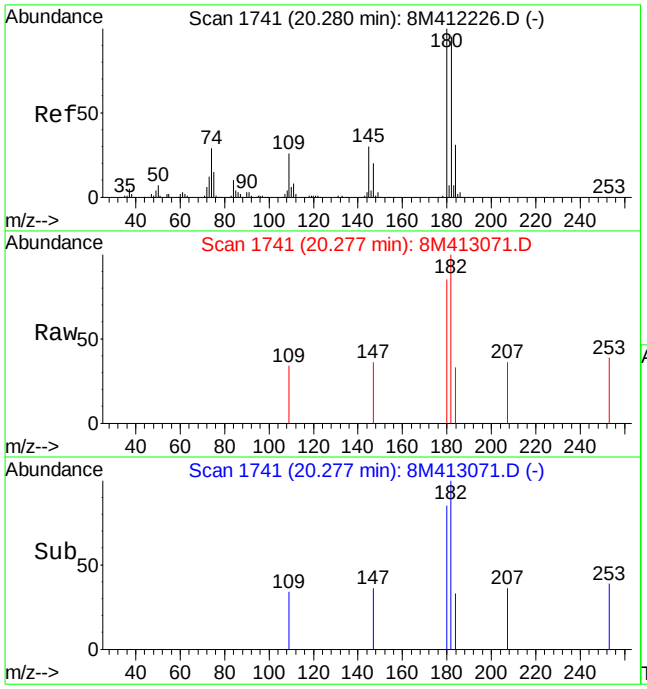

#98
1,2,4-Trichlorobenzene
Concen: 0.14 ug/L
RT: 20.28 min Scan# 1741
Delta R.T. -0.00 min
Lab File: 8M413071.D
Acq: 17 Jun 2016 21:42

Tgt Ion:180 Resp: 1748

Ion	Ratio	Lower	Upper
180	100		
182	122.7	56.8	132.4
145	0.0	18.4	42.8#

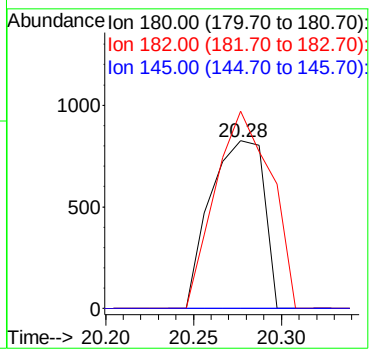

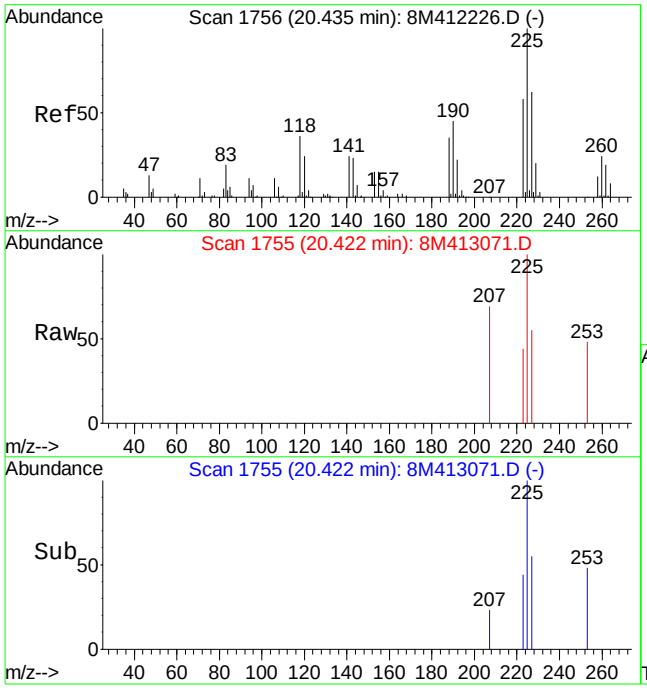

#99
Hexachlorobutadiene
Concen: 0.19 ug/L
RT: 20.42 min Scan# 1755
Delta R.T. -0.01 min
Lab File: 8M413071.D
Acq: 17 Jun 2016 21:42

Tgt Ion:225 Resp: 1166

Ion	Ratio	Lower	Upper
225	100		
223	40.9	36.8	85.8
190	0.0	28.3	66.1#

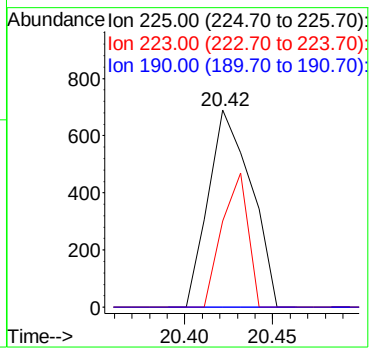

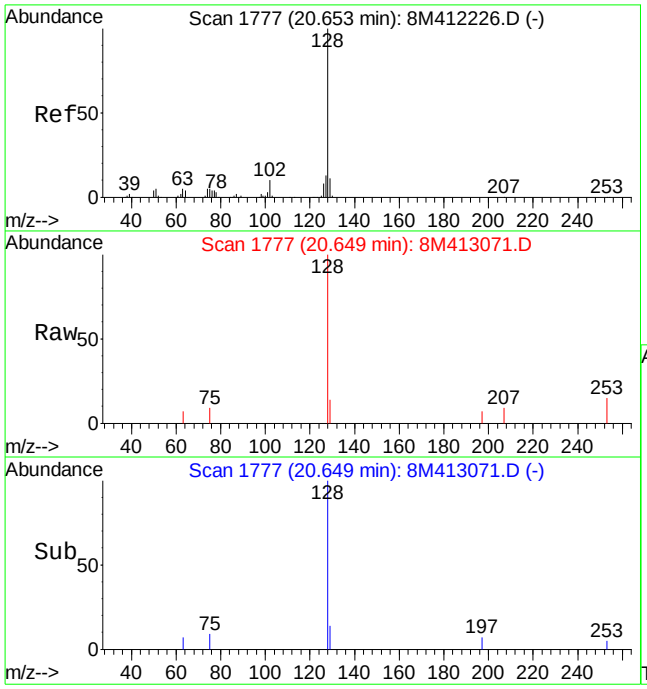

#100
Naphthalene
Concen: 0.43 ug/L
RT: 20.65 min Scan# 1777
Delta R.T. -0.00 min
Lab File: 8M413071.D
Acq: 17 Jun 2016 21:42

Tgt Ion:128 Resp: 8277

Ion	Ratio	Lower	Upper
128	100		
127	2.5	7.8	18.2#

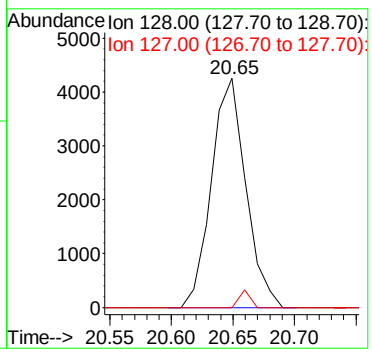

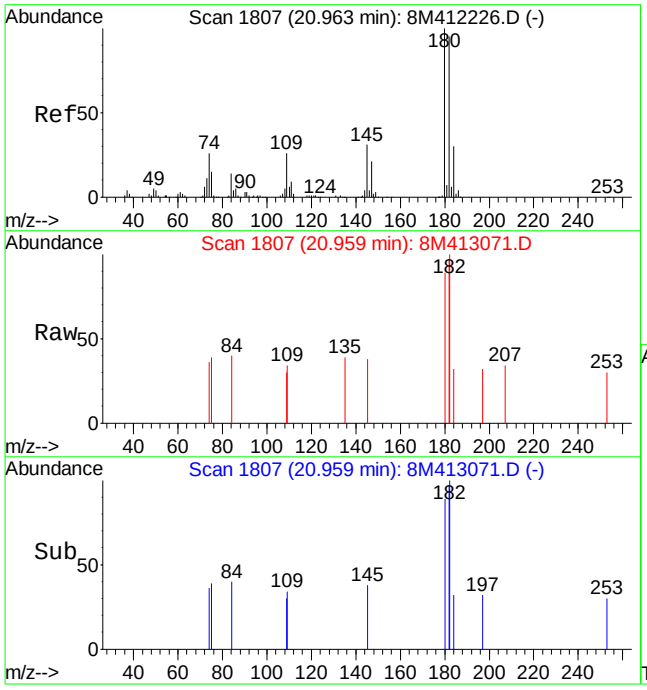

#101
1,2,3-Trichlorobenzene
Concen: 0.15 ug/L
RT: 20.96 min Scan# 1807
Delta R.T. -0.00 min
Lab File: 8M413071.D
Acq: 17 Jun 2016 21:42

Tgt Ion:180 Resp: 1622

Ion	Ratio	Lower	Upper
180	100		
182	152.2	57.8	135.0#
145	14.9	20.1	46.9#

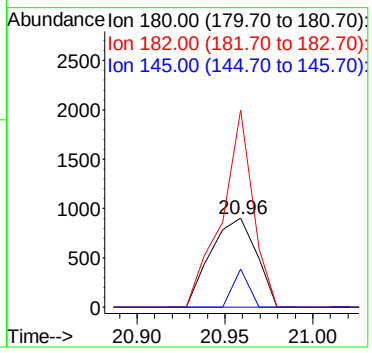

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061616\6M140132.D Vial: 20
Acq On : 17 Jun 2016 2:47 Operator: FJB
Sample : L16060822-05 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:37:39 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.56	96	526269	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	392746	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.64	152	210980	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	141505	25.9804 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.92%		
43) 1,2-Dichloroethane-d4	11.11	65	158635	26.4244 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 105.68%		
58) Toluene-d8	13.85	98	467571	24.8064 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.24%		
80) p-Bromofluorobenzene	17.84	95	194391	26.0919 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.36%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.36	85	30837	3.7018 ug/L #	59
3) Chloromethane	3.92	50	1273	0.1253 ug/L #	69
4) Vinyl Chloride	4.17	62	4320	0.6310 ug/L	84
8) Trichlorofluoromethane	5.73	101	10127	1.1046 ug/L #	65
9) Diethyl ether	6.55	59	72150	14.6349 ug/L #	15
10) Isoprene	6.55	67	43482	5.5786 ug/L #	10
12) 1,1,2-Trichloro-1,2,2-Trif	6.55	101	6672021	1273.9417 ug/L	97
13) Acetone	6.55	43	93081	61.4555 ug/L	90
14) 1,1-Dichloroethene	6.89	61	53464	5.7643 ug/L	98
15) Tert-Butyl Alcohol	6.90	59	1164	2.5571 ug/L #	57
19) Methylene Chloride	7.71	84	688	0.1203 ug/L	61
23) trans-1,2-Dichloroethene	8.21	96	3627	0.6709 ug/L	95
26) Vinyl Acetate	9.03	43	1434	0.1507 ug/L #	78
27) 1,1-Dichloroethane	8.90	63	3365	0.3106 ug/L #	74
32) cis-1,2-Dichloroethene	9.83	96	448993	76.2318 ug/L	98
33) Chloroform	10.06	83	32171	3.3346 ug/L	99
45) 1,2-Dichloroethane	11.25	62	35893	4.8409 ug/L	91
46) Benzene	11.29	78	13235	0.6122 ug/L	97
47) Trichloroethene	12.14	130	8423630	1525.5648 ug/L	75
48) Methylcyclohexane	12.14	83	152172	18.1776 ug/L #	1
49) 1,2-Dichloropropane	12.14	63	43881	7.3483 ug/L #	35
60) Ethyl Methacrylate	13.85	69	772	0.1263 ug/L #	51
66) Tetrachloroethene	14.92	166	3090	0.5282 ug/L	95

(#) = qualifier out of range (m) = manual integration
6M140132.D 8260WT.M Fri Jun 17 08:37:42 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061616\6M140132.D Vial: 20
Acq On : 17 Jun 2016 2:47 Operator: FJB
Sample : L16060822-05 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 8:37 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration

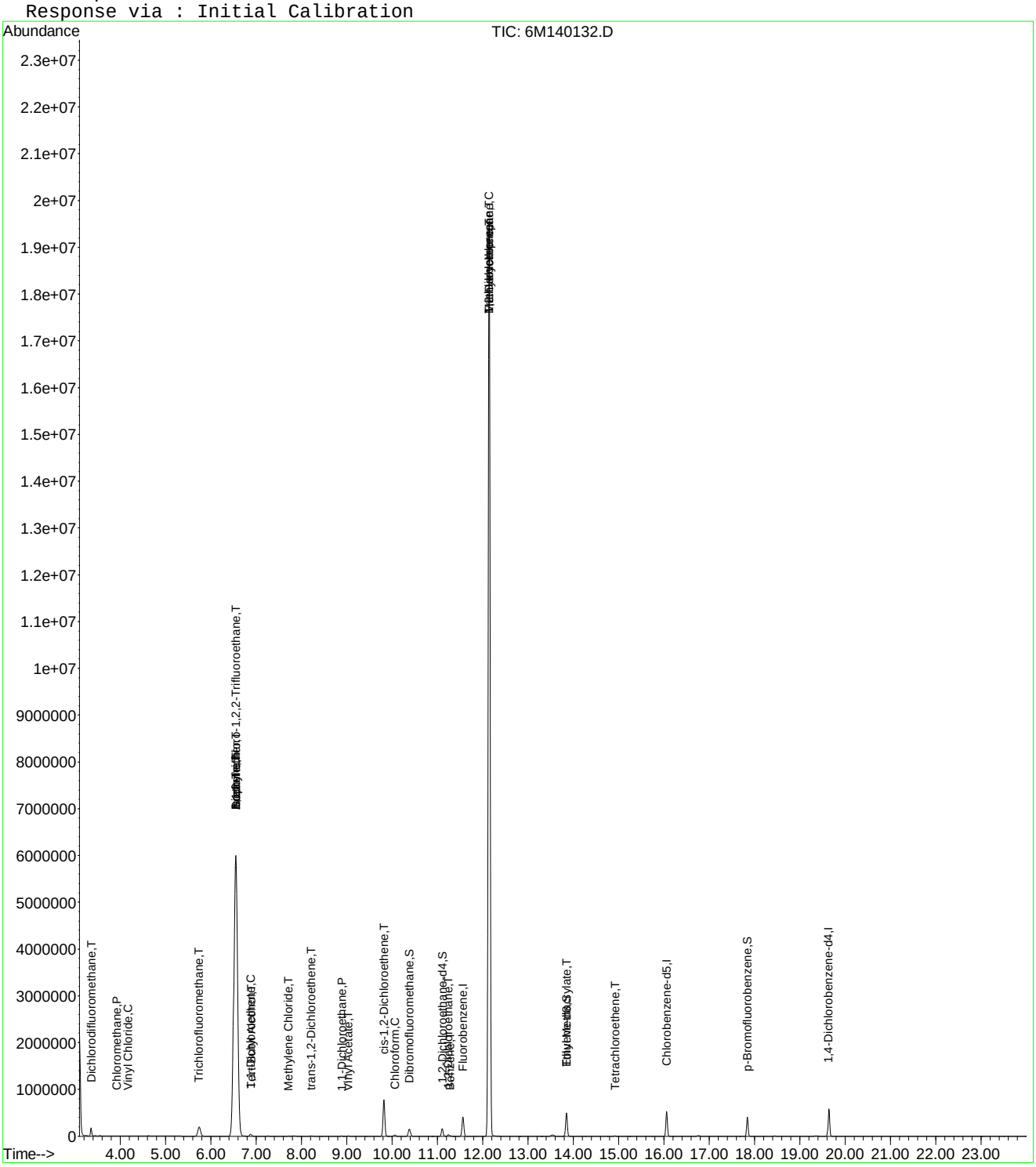

6M140132.D 8260WT.M Fri Jun 17 08:37:43 2016 Page 2

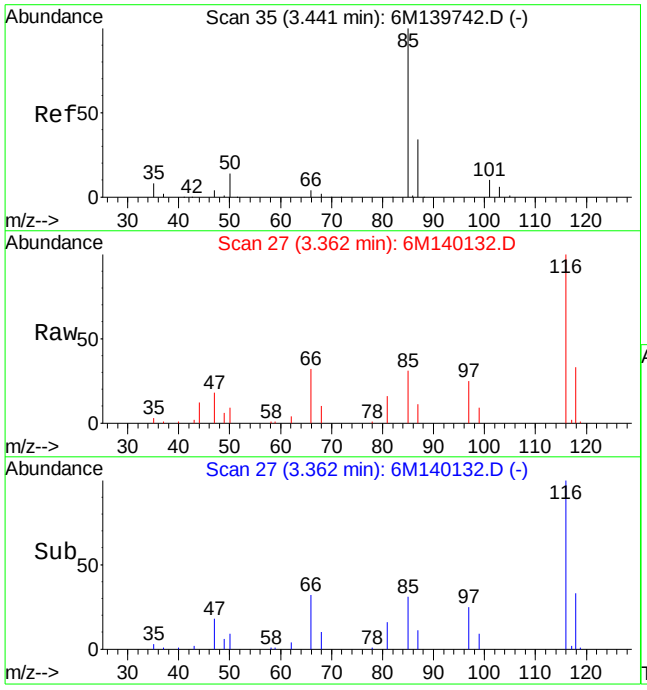

#2
Dichlorodifluoromethane
Concen: 3.70 ug/L
RT: 3.36 min Scan# 27
Delta R.T. -0.08 min
Lab File: 6M140132.D
Acq: 17 Jun 2016 2:47

Tgt Ion: 85 Resp: 30837

Ion	Ratio	Lower	Upper
85	100		
50	32.2	9.1	21.1#

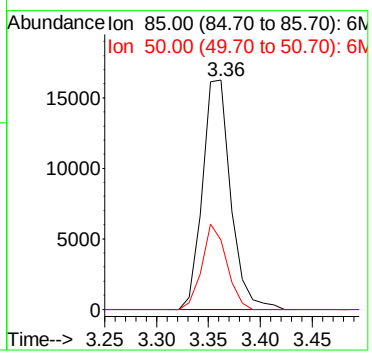

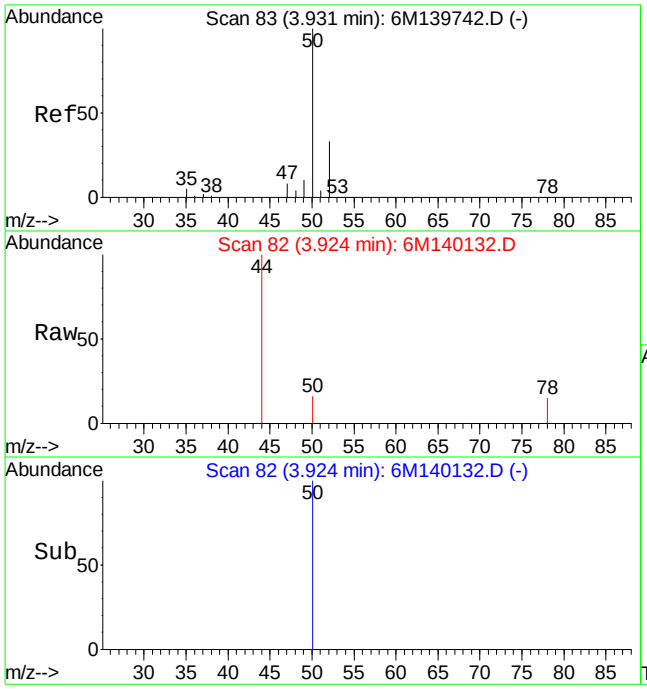

#3
Chloromethane
Concen: 0.13 ug/L
RT: 3.92 min Scan# 82
Delta R.T. -0.01 min
Lab File: 6M140132.D
Acq: 17 Jun 2016 2:47

Tgt Ion: 50 Resp: 1273

Ion	Ratio	Lower	Upper
50	100		
52	15.4	19.8	46.2#

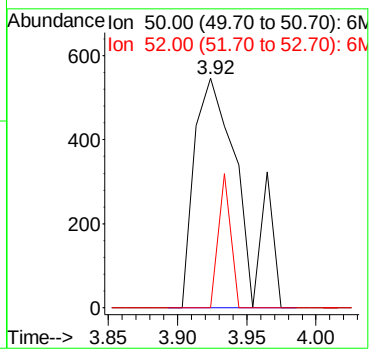

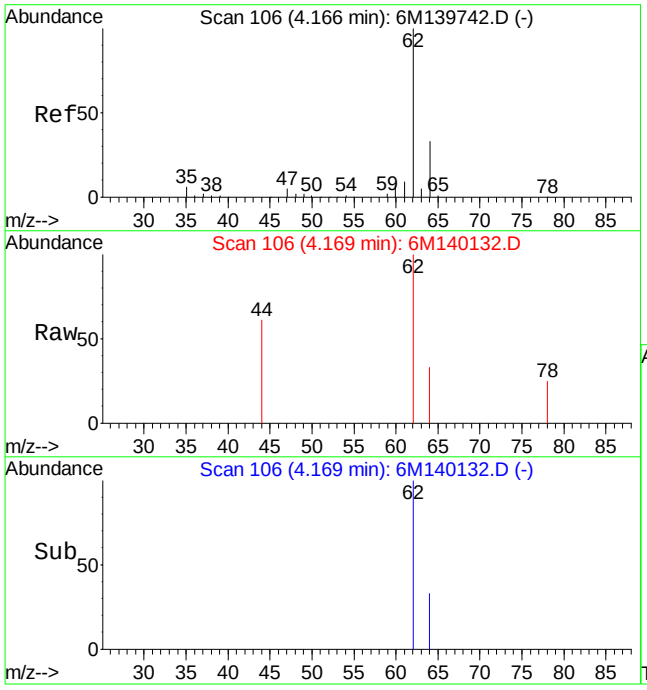

#4
Vinyl Chloride
Concen: 0.63 ug/L
RT: 4.17 min Scan# 106
Delta R.T. 0.01 min
Lab File: 6M140132.D
Acq: 17 Jun 2016 2:47

Tgt Ion: 62 Resp: 4320

Ion	Ratio	Lower	Upper
62	100		
64	23.3	19.3	45.1

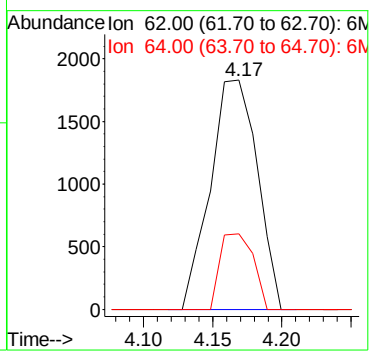

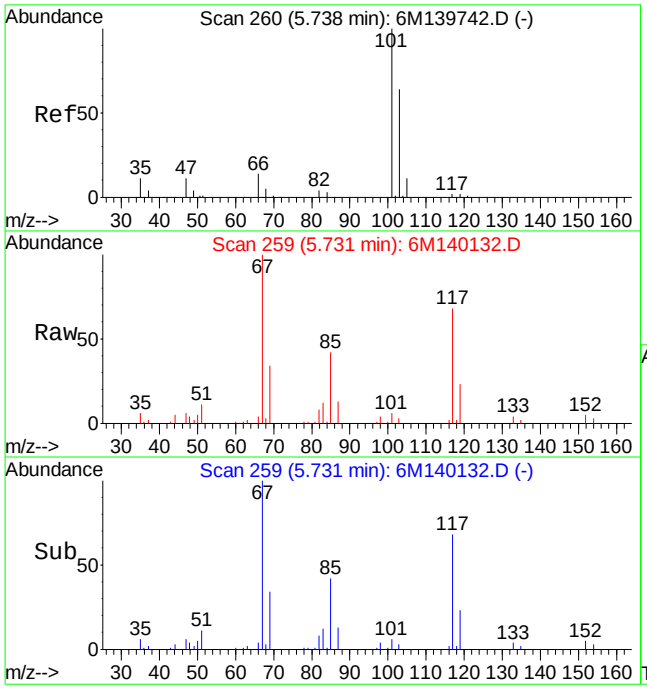

#8
Trichlorofluoromethane
Concen: 1.10 ug/L
RT: 5.73 min Scan# 259
Delta R.T. 0.01 min
Lab File: 6M140132.D
Acq: 17 Jun 2016 2:47

Tgt Ion:101 Resp: 10127

Ion	Ratio	Lower	Upper
101	100		
103	64.0	39.1	91.1
66	91.1	8.3	19.5#

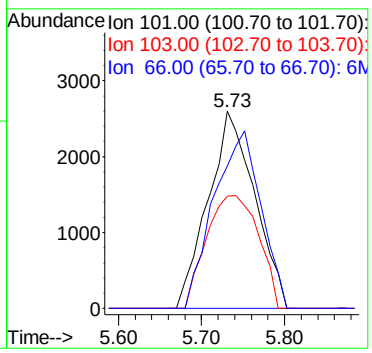

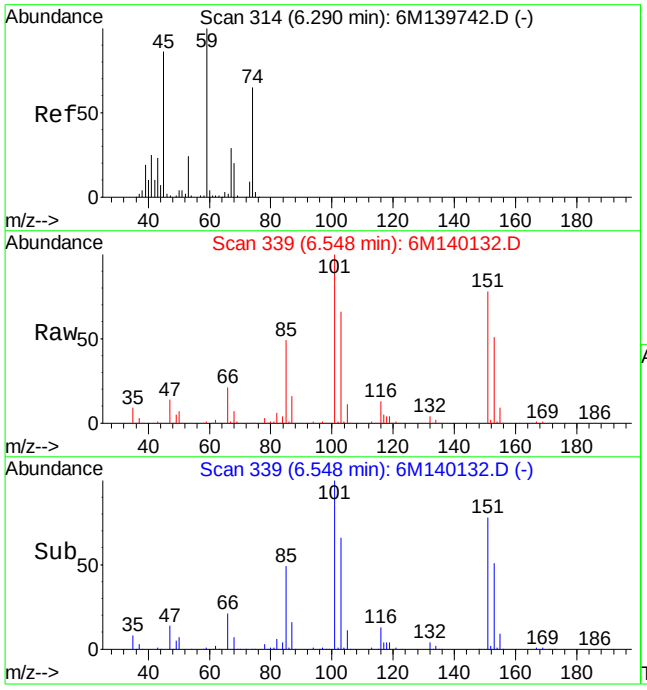

#9
Diethyl ether
Concen: 14.63 ug/L
RT: 6.55 min Scan# 339
Delta R.T. 0.26 min
Lab File: 6M140132.D
Acq: 17 Jun 2016 2:47

Tgt Ion: 59 Resp: 72150

Ion	Ratio	Lower	Upper
59	100		
45	0.3	51.5	120.3#
74	7.0	38.5	89.7#

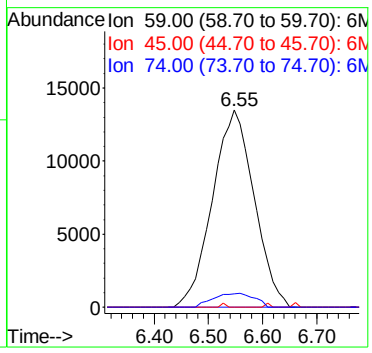

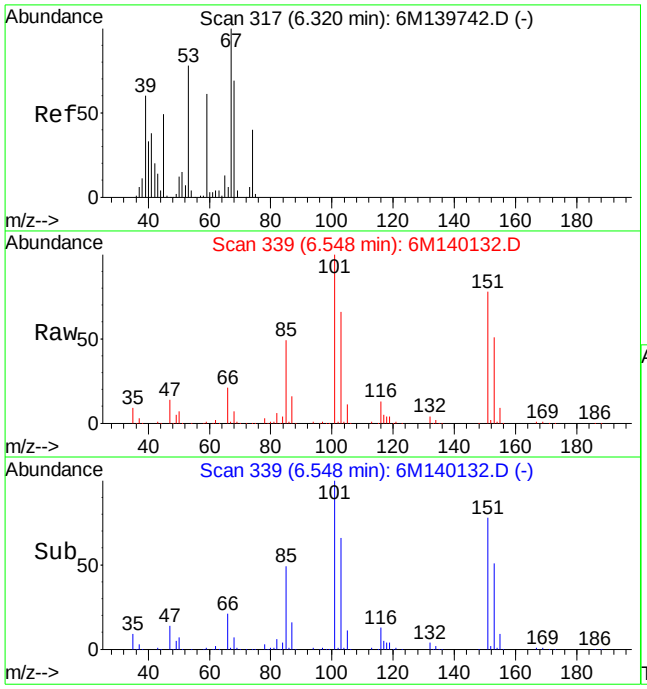

#10
Isoprene
Concen: 5.58 ug/L
RT: 6.55 min Scan# 339
Delta R.T. 0.23 min
Lab File: 6M140132.D
Acq: 17 Jun 2016 2:47

Tgt Ion: 67 Resp: 43482

Ion	Ratio	Lower	Upper
67	100		
53	0.0	47.4	110.6#

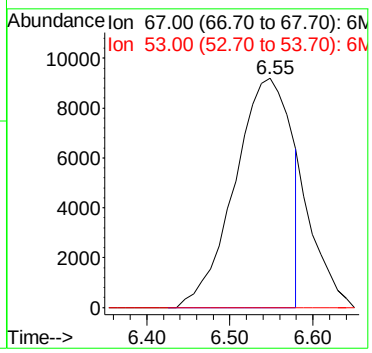

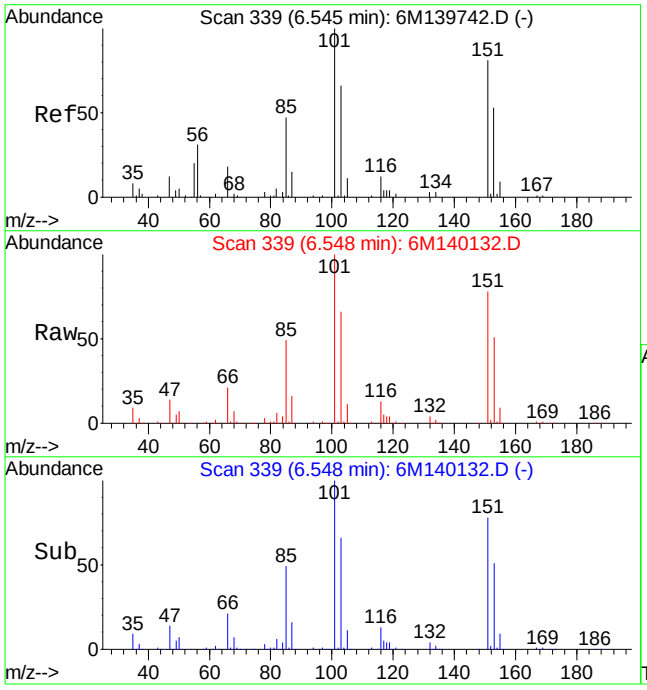

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 1273.94 ug/L
RT: 6.55 min Scan# 339
Delta R.T. 0.00 min
Lab File: 6M140132.D
Acq: 17 Jun 2016 2:47

Tgt Ion:101 Resp: 6672021

Ion	Ratio	Lower	Upper
101	100		
151	78.5	49.4	115.2
103	65.2	38.8	90.4

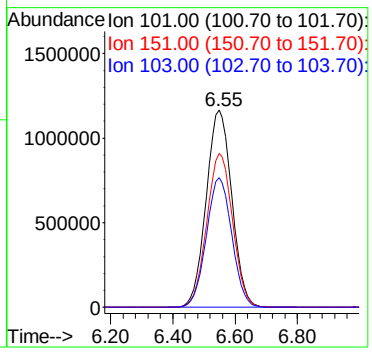

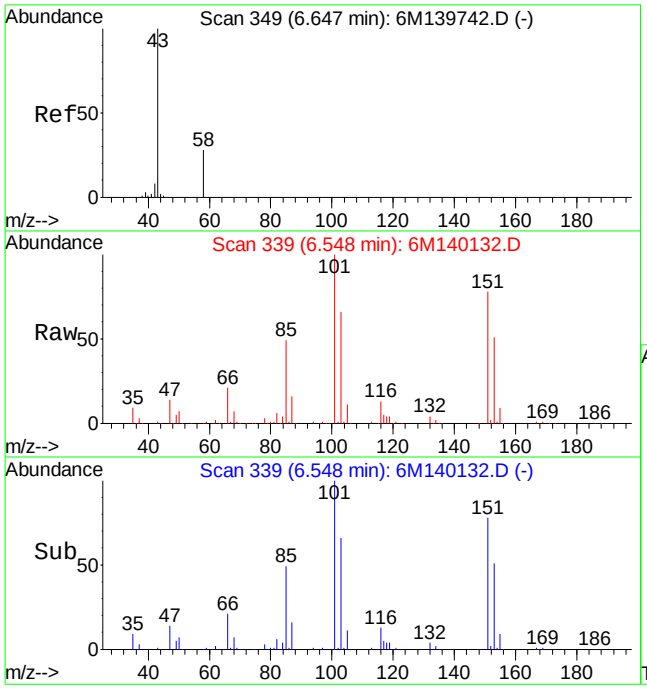

#13
Acetone
Concen: 61.46 ug/L
RT: 6.55 min Scan# 339
Delta R.T. -0.11 min
Lab File: 6M140132.D
Acq: 17 Jun 2016 2:47

Tgt Ion: 43 Resp: 93081

Ion	Ratio	Lower	Upper
43	100		
58	22.1	16.4	38.2

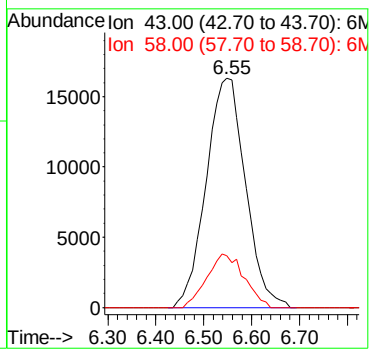

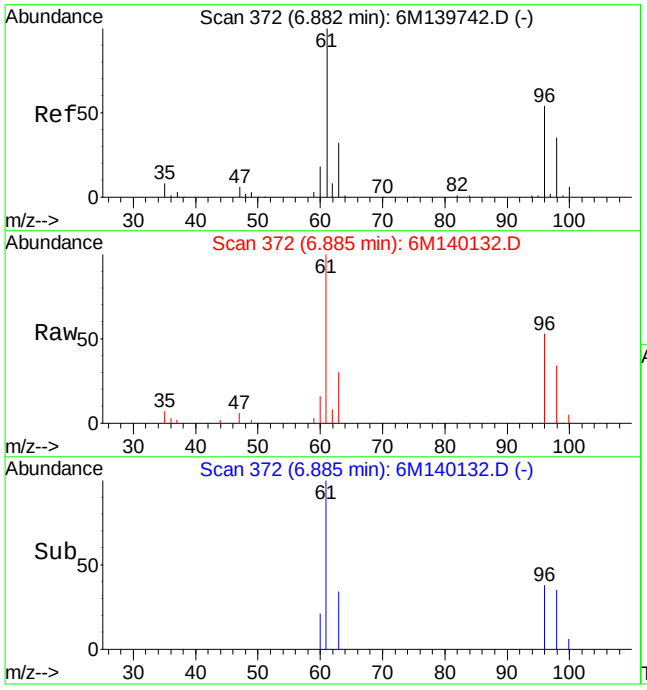

#14
1,1-Dichloroethene
Concen: 5.76 ug/L
RT: 6.89 min Scan# 372
Delta R.T. 0.01 min
Lab File: 6M140132.D
Acq: 17 Jun 2016 2:47

Tgt Ion: 61 Resp: 53464

Ion	Ratio	Lower	Upper
61	100		
96	51.9	32.0	74.6

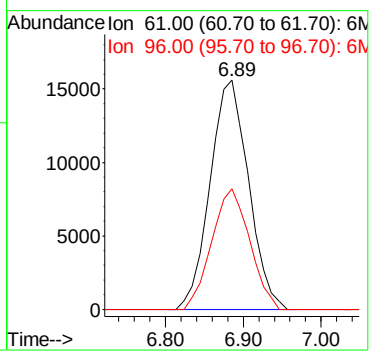

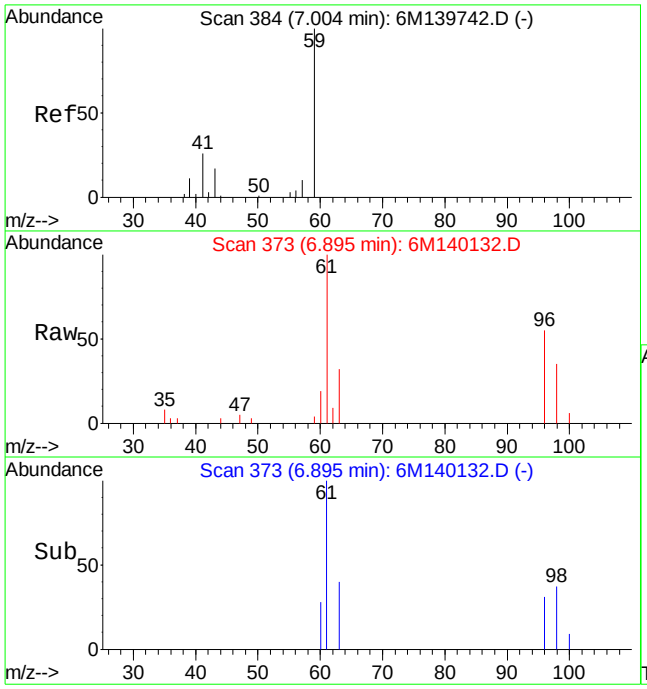

#15
Tert-Butyl Alcohol
Concen: 2.56 ug/L
RT: 6.90 min Scan# 373
Delta R.T. -0.15 min
Lab File: 6M140132.D
Acq: 17 Jun 2016 2:47

Tgt Ion: 59 Resp: 1164

Ion	Ratio	Lower	Upper
59	100		
41	0.0	14.6	34.0#
57	0.0	6.4	14.8#

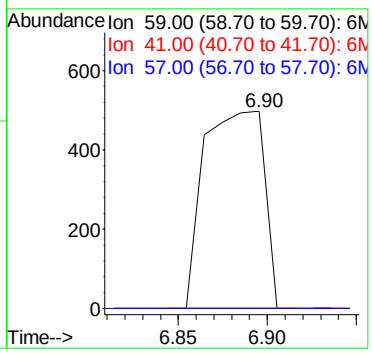

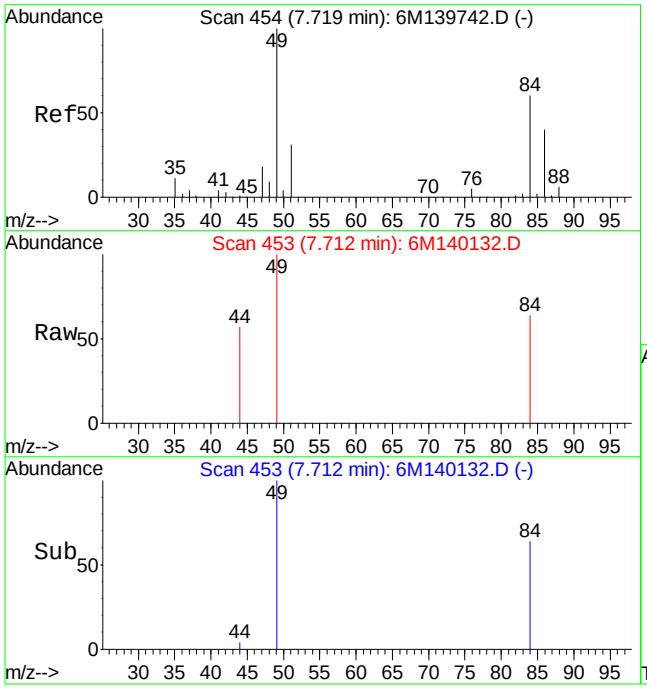

#19
Methylene Chloride
Concen: 0.12 ug/L
RT: 7.71 min Scan# 453
Delta R.T. -0.01 min
Lab File: 6M140132.D
Acq: 17 Jun 2016 2:47

Tgt Ion: 84 Resp: 688

Ion	Ratio	Lower	Upper
84	100		
49	217.6	99.3	231.7

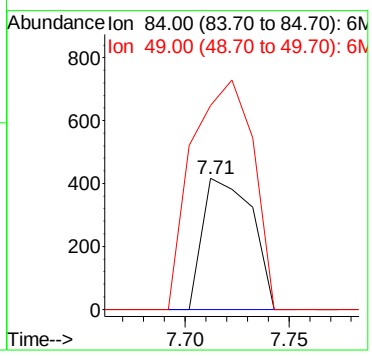

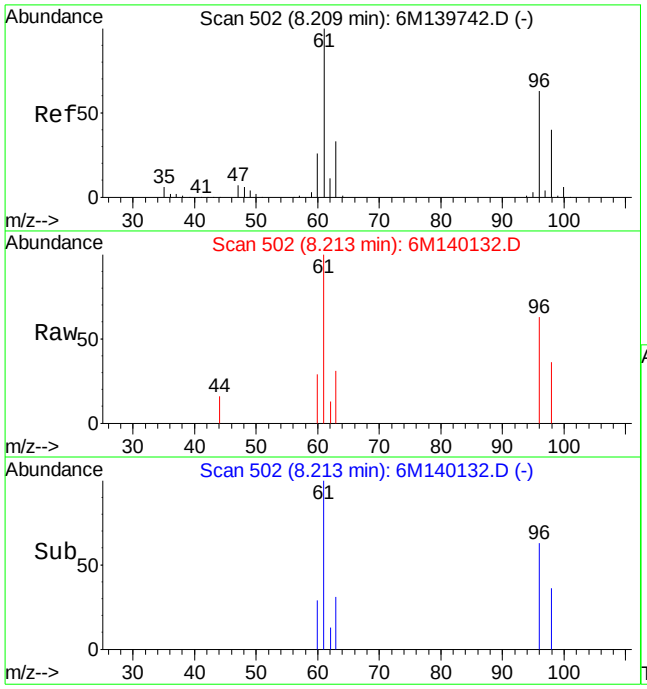

#23
trans-1,2-Dichloroethene
Concen: 0.67 ug/L
RT: 8.21 min Scan# 502
Delta R.T. 0.00 min
Lab File: 6M140132.D
Acq: 17 Jun 2016 2:47

Tgt Ion: 96 Resp: 3627

Ion	Ratio	Lower	Upper
96	100		
61	166.6	96.3	224.7

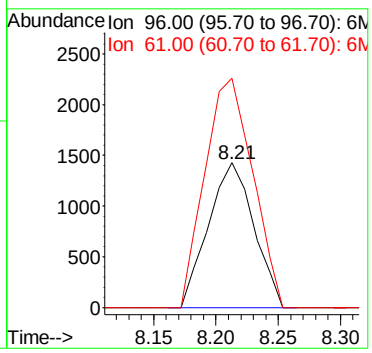

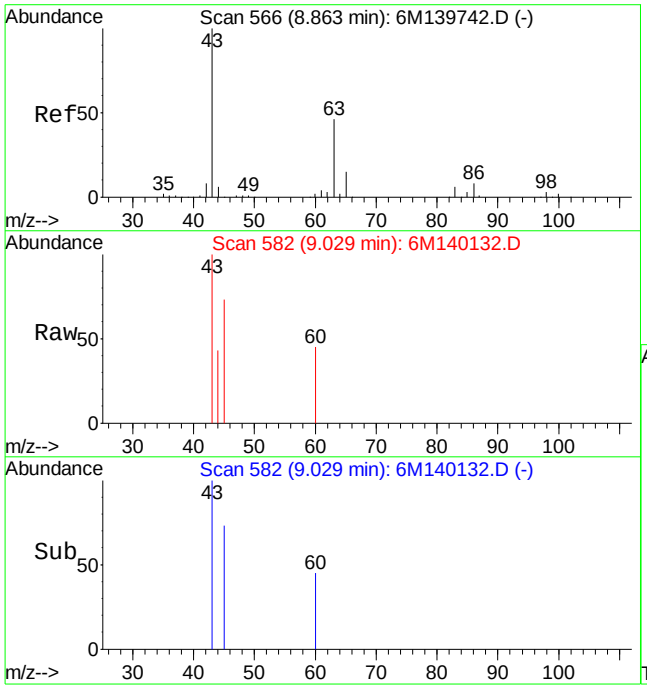

#26
Vinyl Acetate
Concen: 0.15 ug/L
RT: 9.03 min Scan# 582
Delta R.T. 0.17 min
Lab File: 6M140132.D
Acq: 17 Jun 2016 2:47

Tgt Ion: 43 Resp: 1434

Ion	Ratio	Lower	Upper
43	100		
86	0.0	4.5	10.5#

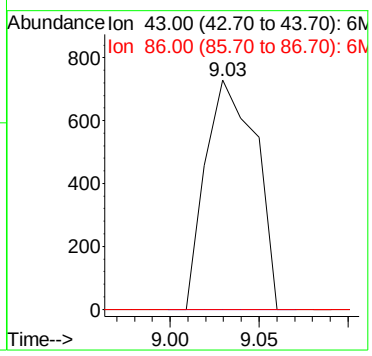

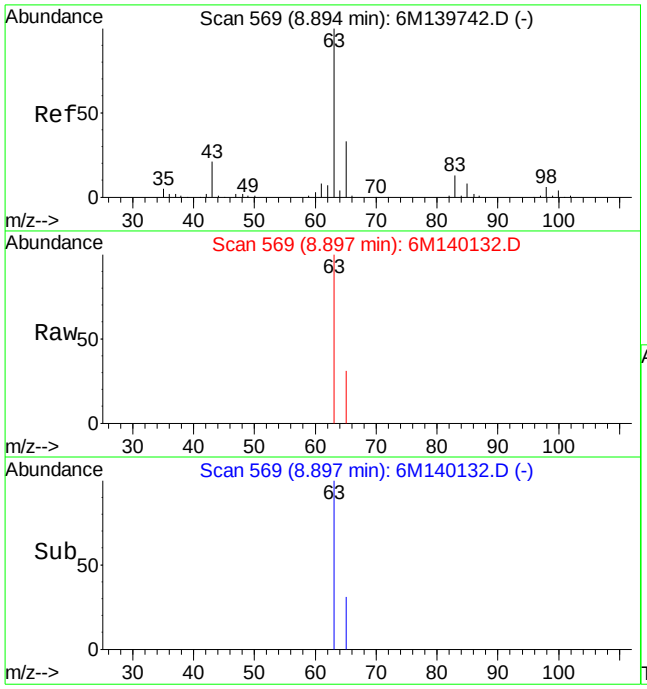

#27
1,1-Dichloroethane
Concen: 0.31 ug/L
RT: 8.90 min Scan# 569
Delta R.T. 0.00 min
Lab File: 6M140132.D
Acq: 17 Jun 2016 2:47

Tgt Ion: 63 Resp: 3365

Ion	Ratio	Lower	Upper
63	100		
65	17.8	19.3	44.9#

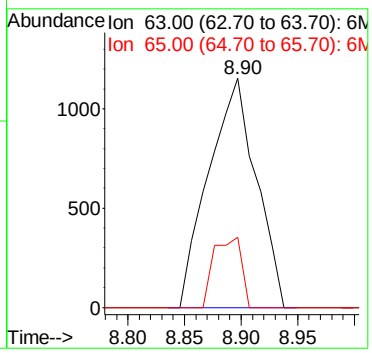

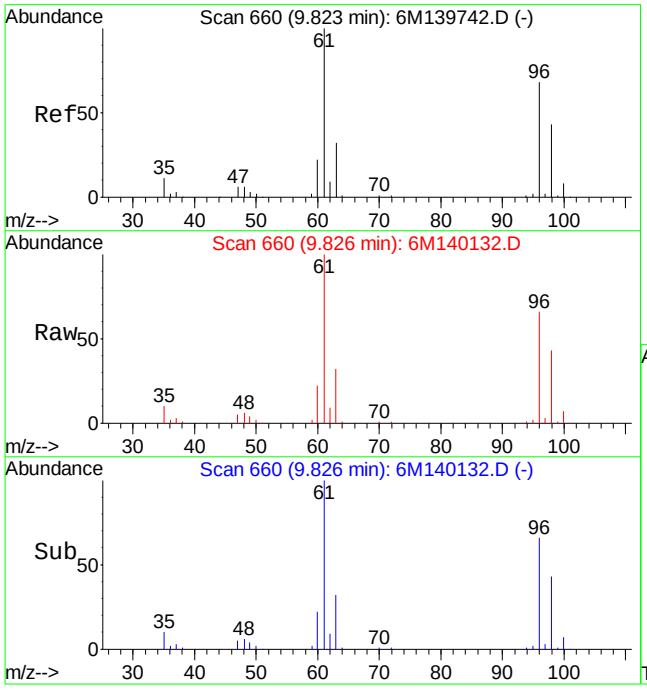

#32
cis-1,2-Dichloroethene
Concen: 76.23 ug/L
RT: 9.83 min Scan# 660
Delta R.T. 0.00 min
Lab File: 6M140132.D
Acq: 17 Jun 2016 2:47

Tgt Ion: 96 Resp: 448993

Ion	Ratio	Lower	Upper
96	100		
61	150.9	89.2	208.2

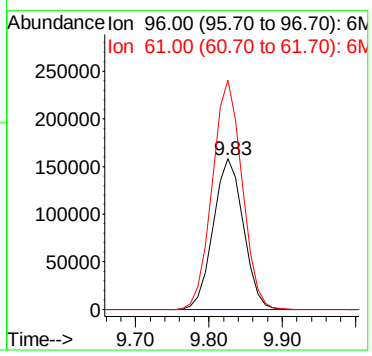

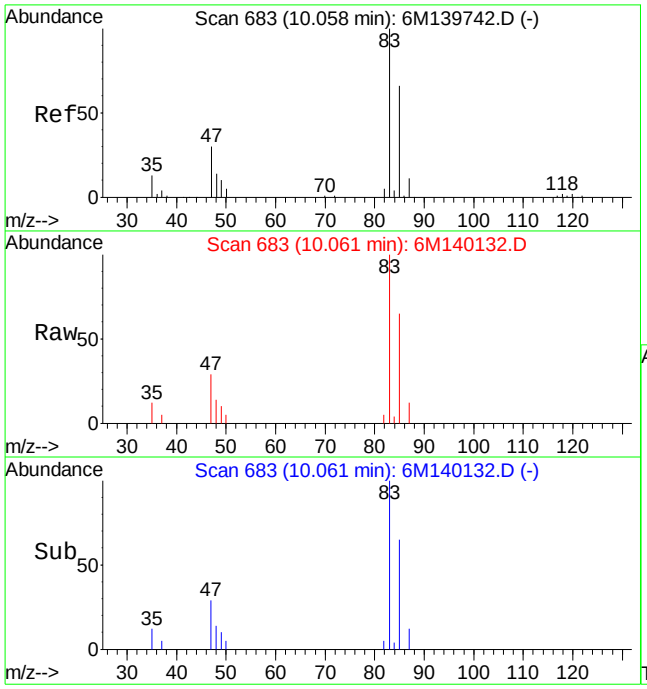

#33
Chloroform
Concen: 3.33 ug/L
RT: 10.06 min Scan# 683
Delta R.T. 0.00 min
Lab File: 6M140132.D
Acq: 17 Jun 2016 2:47

Tgt Ion: 83 Resp: 32171

Ion	Ratio	Lower	Upper
83	100		
85	65.8	39.0	91.0
47	30.5	18.5	43.1

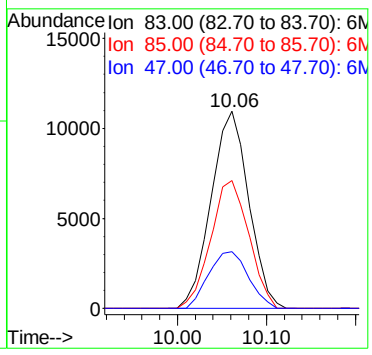

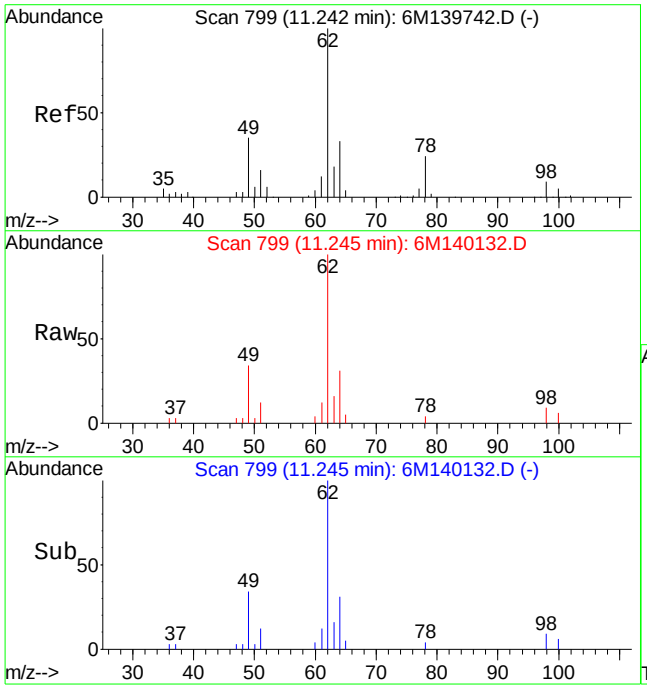

#45
1,2-Dichloroethane
Concen: 4.84 ug/L
RT: 11.25 min Scan# 799
Delta R.T. 0.00 min
Lab File: 6M140132.D
Acq: 17 Jun 2016 2:47

Tgt Ion: 62 Resp: 35893

Ion	Ratio	Lower	Upper
62	100		
49	35.5	25.1	58.5
98	7.8	5.2	12.0

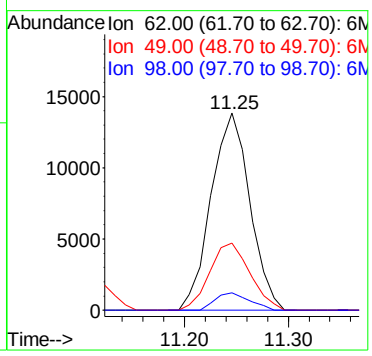

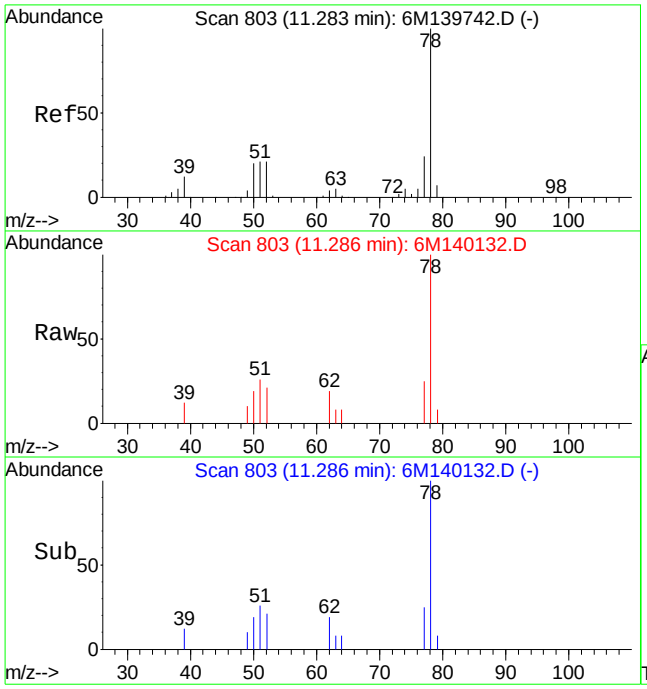

#46
Benzene
Concen: 0.61 ug/L
RT: 11.29 min Scan# 803
Delta R.T. 0.00 min
Lab File: 6M140132.D
Acq: 17 Jun 2016 2:47

Tgt Ion: 78 Resp: 13235

Ion	Ratio	Lower	Upper
78	100		
52	19.5	12.4	29.0

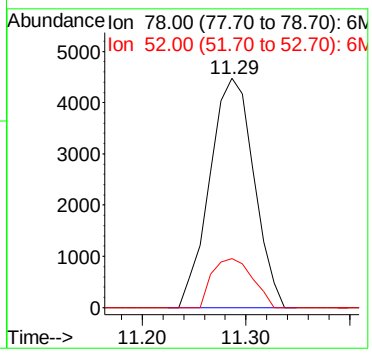

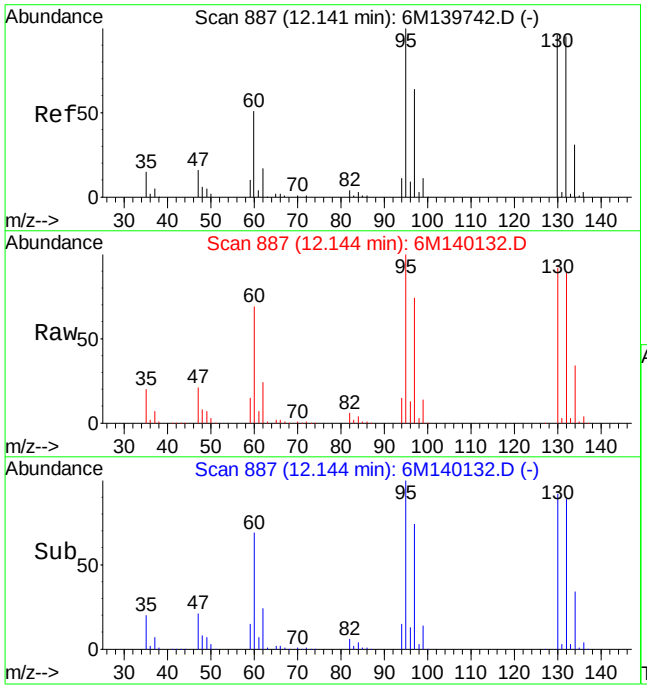

#47
Trichloroethene
Concen: 1525.56 ug/L
RT: 12.14 min Scan# 887
Delta R.T. -0.01 min
Lab File: 6M140132.D
Acq: 17 Jun 2016 2:47

Tgt Ion:130 Resp: 8423630

Ion	Ratio	Lower	Upper
130	100		
60	70.8	32.0	74.6

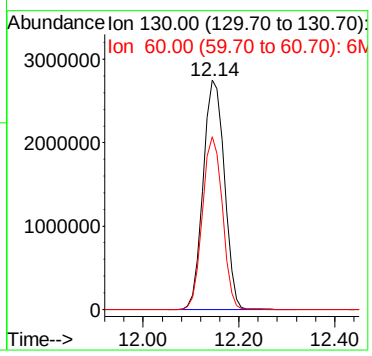

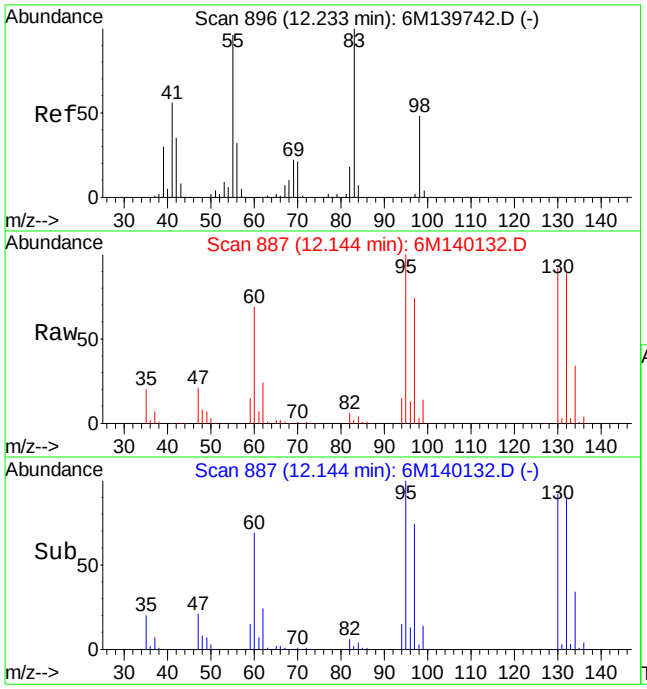

#48
Methylcyclohexane
Concen: 18.18 ug/L
RT: 12.14 min Scan# 887
Delta R.T. -0.09 min
Lab File: 6M140132.D
Acq: 17 Jun 2016 2:47

Tgt Ion: 83 Resp: 152172

Ion	Ratio	Lower	Upper
83	100		
55	0.0	56.3	131.3#
98	191.6	28.4	66.4#

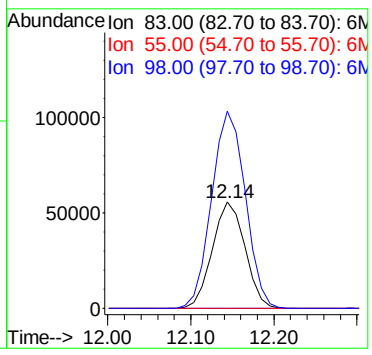

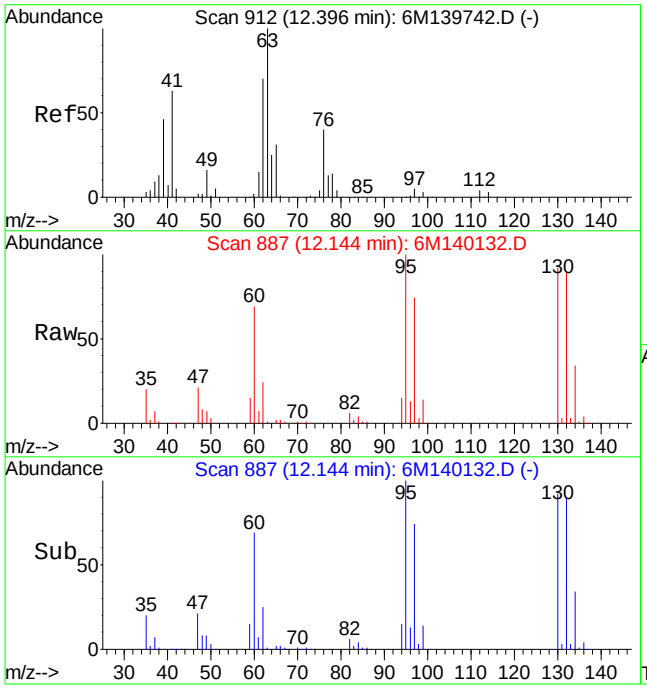

#49
1,2-Dichloropropane
Concen: 7.35 ug/L
RT: 12.14 min Scan# 887
Delta R.T. -0.25 min
Lab File: 6M140132.D
Acq: 17 Jun 2016 2:47

Tgt Ion: 63 Resp: 43881

Ion	Ratio	Lower	Upper
63	100		
76	0.0	24.2	56.4#

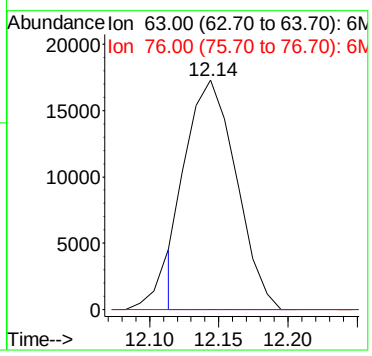

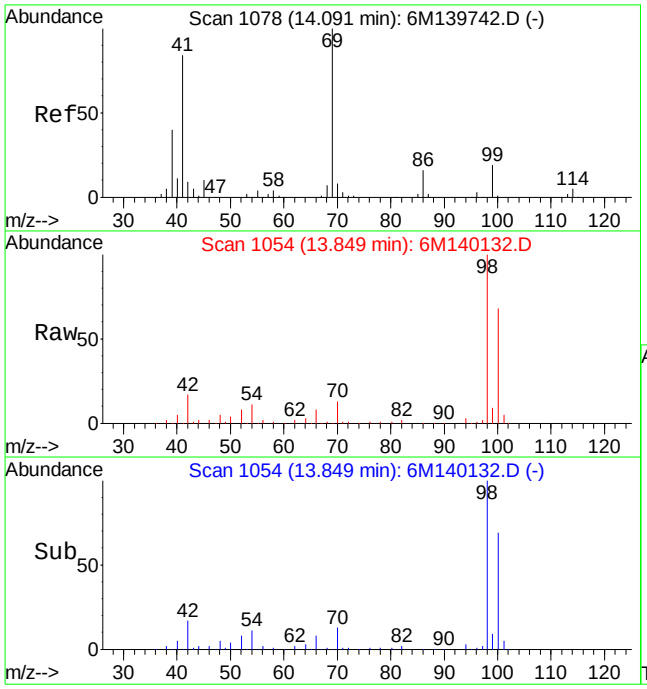

#60
Ethyl Methacrylate
Concen: 0.13 ug/L
RT: 13.85 min Scan# 1054
Delta R.T. -0.24 min
Lab File: 6M140132.D
Acq: 17 Jun 2016 2:47

Tgt Ion: 69 Resp: 772

Ion	Ratio	Lower	Upper
69	100		
41	130.4	51.4	120.0#

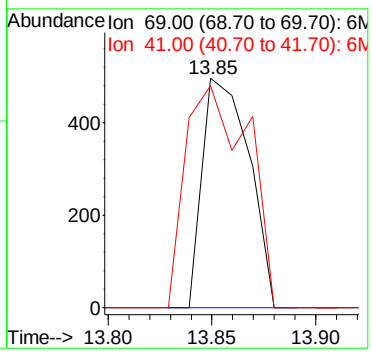

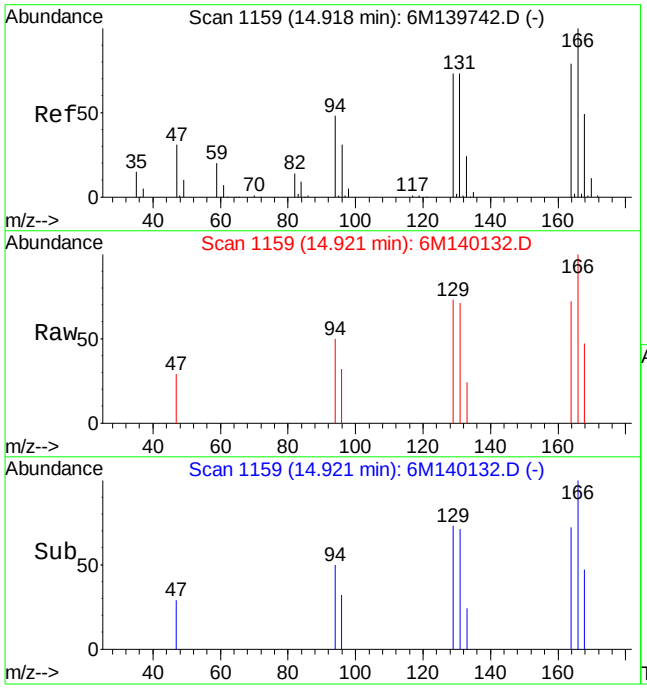

#66
Tetrachloroethene
Concen: 0.53 ug/L
RT: 14.92 min Scan# 1159
Delta R.T. -0.01 min
Lab File: 6M140132.D
Acq: 17 Jun 2016 2:47

Tgt Ion:166 Resp: 3090

Ion	Ratio	Lower	Upper
166	100		
129	73.1	43.5	101.5
94	38.6	27.8	64.8

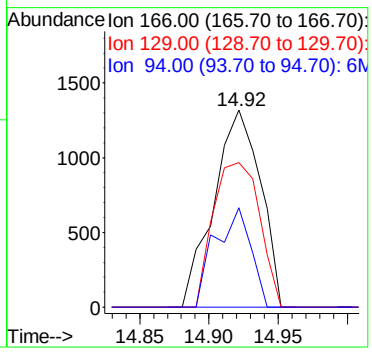

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061716\8M413072.D Vial: 14
Acq On : 17 Jun 2016 22:12 Operator: FJB
Sample : L16060822-05 50X B 826-LOW D1 Inst : HPMS8
Misc : 1,50 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 22:34:04 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	741577	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	559288	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	307393	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	216952	27.2292 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 108.92%		
43) 1,2-Dichloroethane-d4	10.30	65	233563	27.3388 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 109.36%		
58) Toluene-d8	12.68	98	766165	26.1753 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.72%		
80) p-Bromofluorobenzene	16.08	95	318429	25.0175 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.08%		
Target Compounds					Qvalue
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	187182	24.8541 ug/L	92
32) cis-1,2-Dichloroethene	9.18	96	11329	1.3309 ug/L	89
47) Trichloroethene	11.21	130	319033	39.2677 ug/L	98
48) Methylcyclohexane	11.21	83	3909	0.3167 ug/L #	1

(#) = qualifier out of range (m) = manual integration
8M413072.D 8260WT.M Mon Jun 20 09:21:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061716\8M413072.D Vial: 14
Acq On : 17 Jun 2016 22:12 Operator: FJB
Sample : L16060822-05 50X B 826-LOW D1 Inst : HPMS8
Misc : 1,50 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 22:34 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

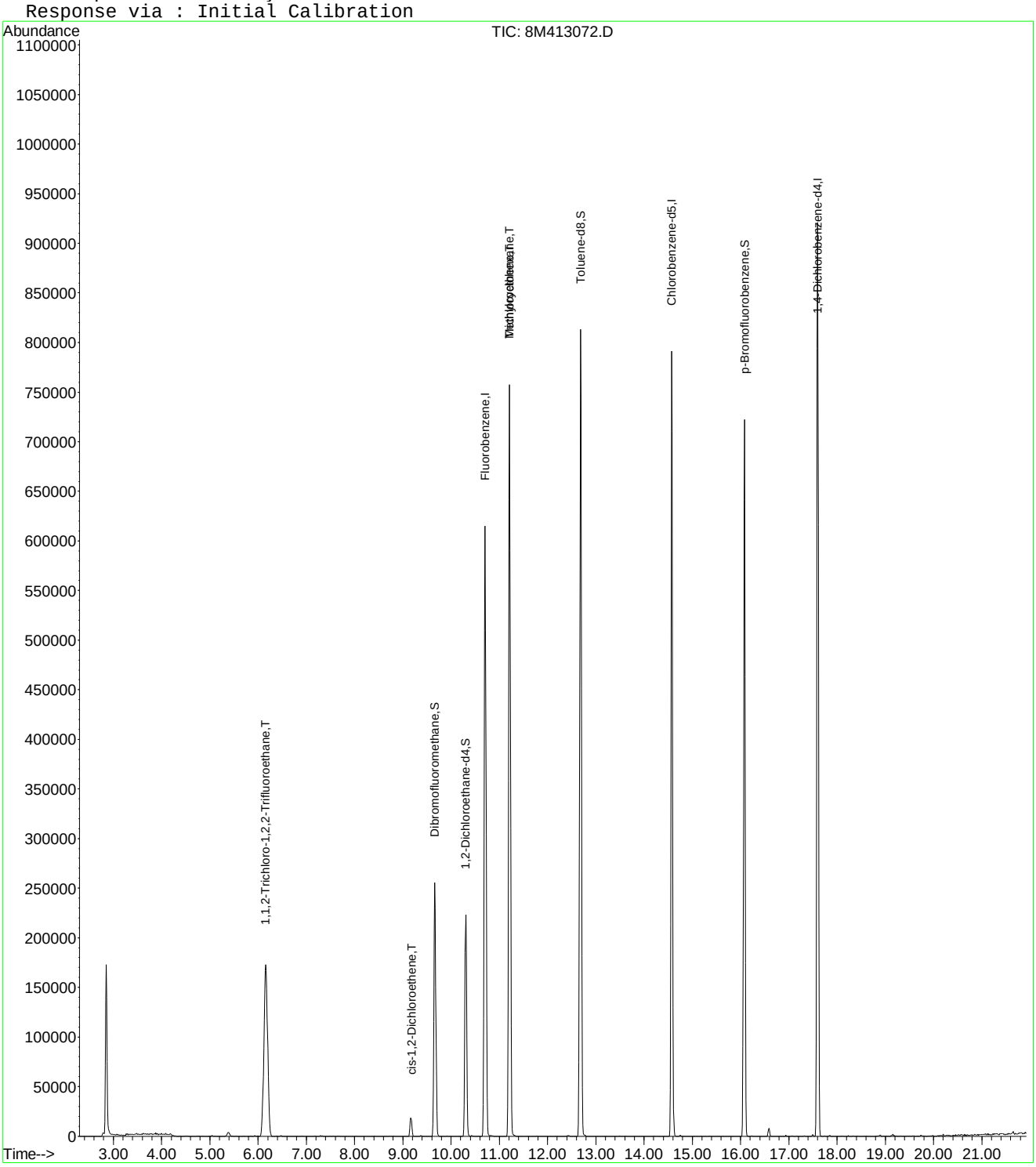

8M413072.D 8260WT.M Mon Jun 20 09:21:33 2016 Page 2

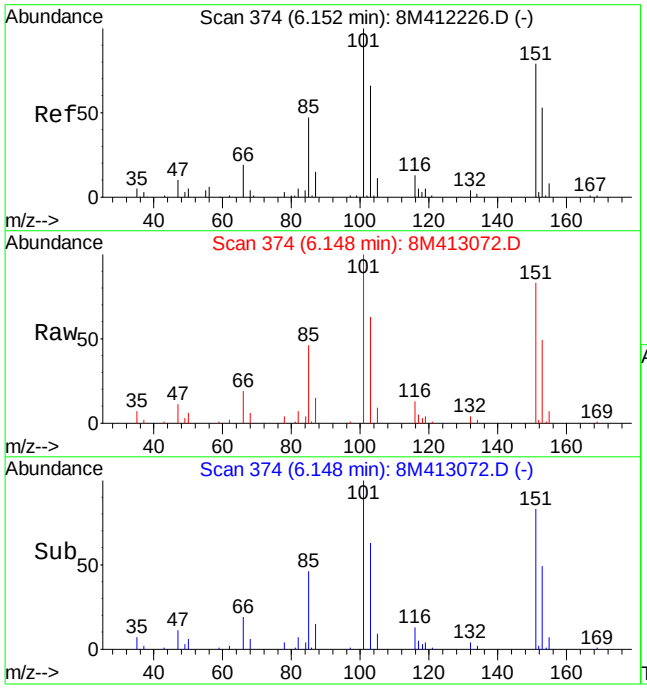

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 24.85 ug/L
RT: 6.15 min Scan# 374
Delta R.T. -0.00 min
Lab File: 8M413072.D
Acq: 17 Jun 2016 22:12

Tgt Ion:101 Resp: 187182

Ion	Ratio	Lower	Upper
101	100		
151	87.0	40.2	120.2

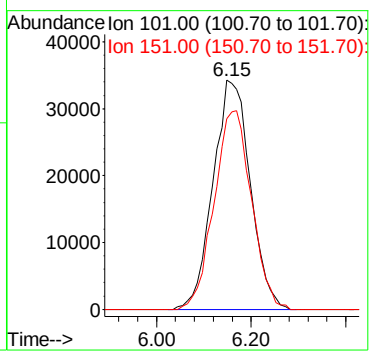

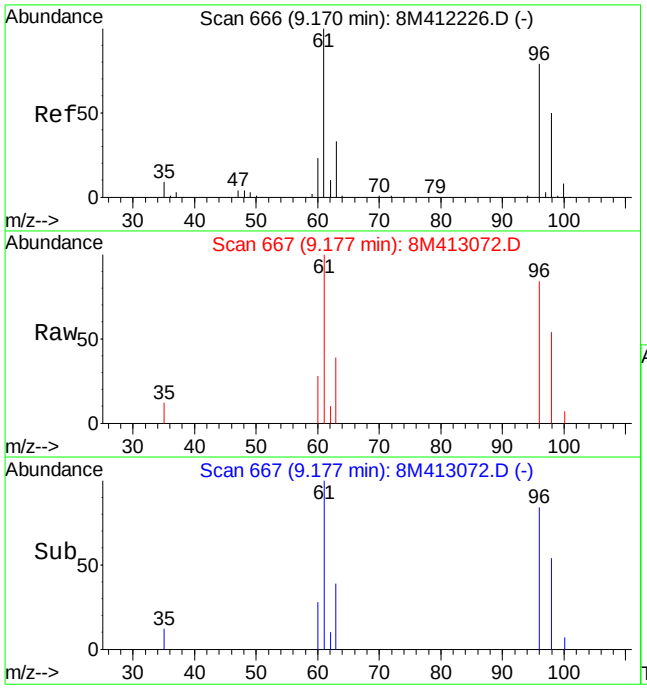

#32
cis-1,2-Dichloroethene
Concen: 1.33 ug/L
RT: 9.18 min Scan# 667
Delta R.T. 0.01 min
Lab File: 8M413072.D
Acq: 17 Jun 2016 22:12

Tgt Ion: 96 Resp: 11329

Ion	Ratio	Lower	Upper
96	100		
61	138.9	91.5	213.5

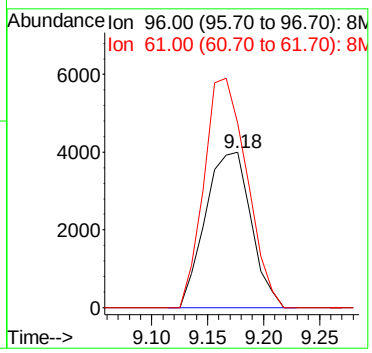

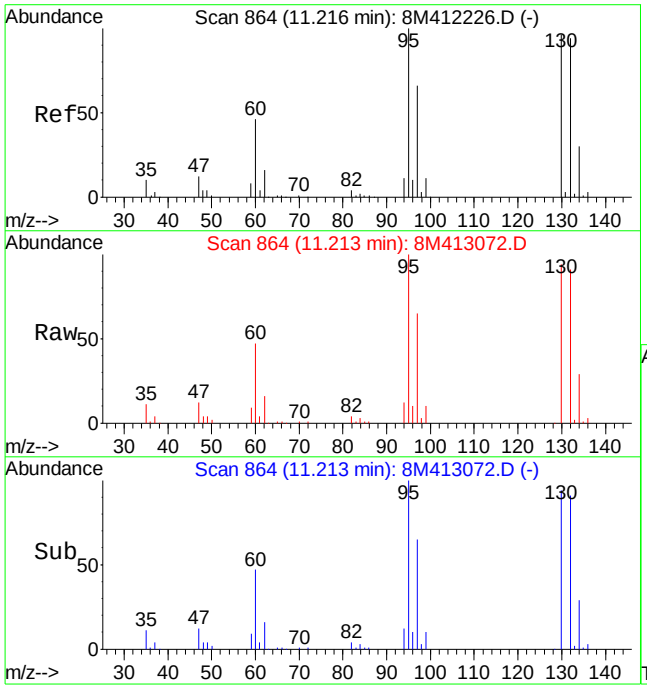

#47
Trichloroethene
Concen: 39.27 ug/L
RT: 11.21 min Scan# 864
Delta R.T. -0.00 min
Lab File: 8M413072.D
Acq: 17 Jun 2016 22:12

Tgt Ion:130 Resp: 319033

Ion	Ratio	Lower	Upper
130	100		
132	95.4	58.0	135.2
95	105.5	64.9	151.5

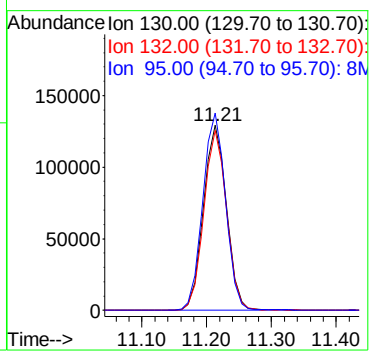

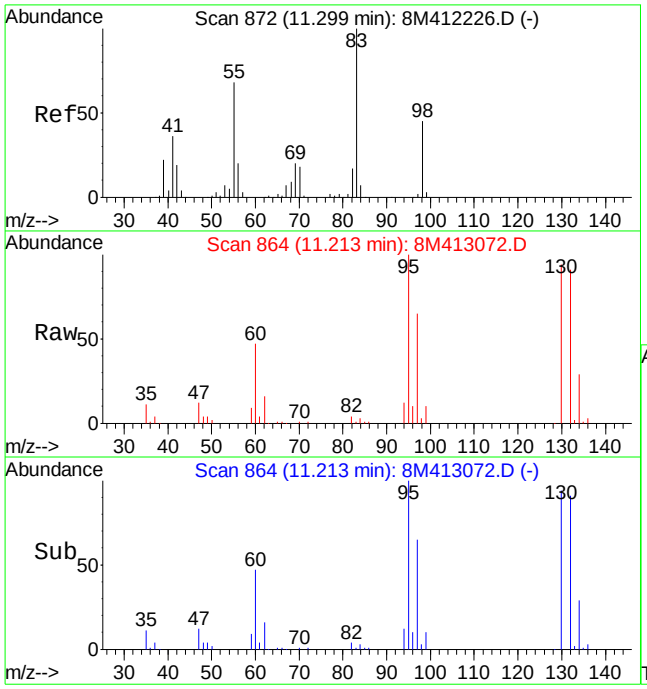

#48
Methylcyclohexane
Concen: 0.32 ug/L
RT: 11.21 min Scan# 864
Delta R.T. -0.09 min
Lab File: 8M413072.D
Acq: 17 Jun 2016 22:12

Tgt Ion: 83 Resp: 3909

Ion	Ratio	Lower	Upper
83	100		
55	0.0	40.9	95.3#
98	246.0	28.1	65.7#

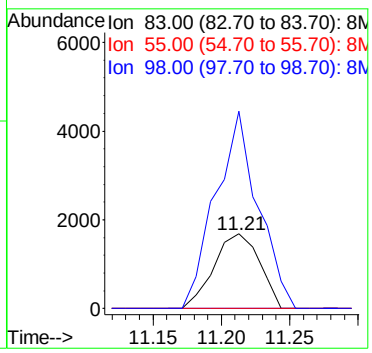

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061616\6M140126.D Vial: 14
Acq On : 16 Jun 2016 23:34 Operator: FJB
Sample : L16060822-06 TB A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:37:02 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	537933	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	402451	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.64	152	216671	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	141907	25.4893 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.96%		
43) 1,2-Dichloroethane-d4	11.11	65	161153	26.2618 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 105.04%		
58) Toluene-d8	13.85	98	477816	24.7386 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.96%		
80) p-Bromofluorobenzene	17.84	95	197235	25.7783 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.12%		

Target Compounds					Qvalue
13) Acetone	6.65	43	869	Below Cal	# 48
26) Vinyl Acetate	9.04	43	1831	0.1883 ug/L	# 78
36) Tetrahydrofuran	10.37	42	3351	2.0038 ug/L	# 68
60) Ethyl Methacrylate	13.85	69	991	0.1582 ug/L	71

(#) = qualifier out of range (m) = manual integration
6M140126.D 8260WT.M Fri Jun 17 08:37:05 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061616\6M140126.D Vial: 14
Acq On : 16 Jun 2016 23:34 Operator: FJB
Sample : L16060822-06 TB A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 8:37 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration

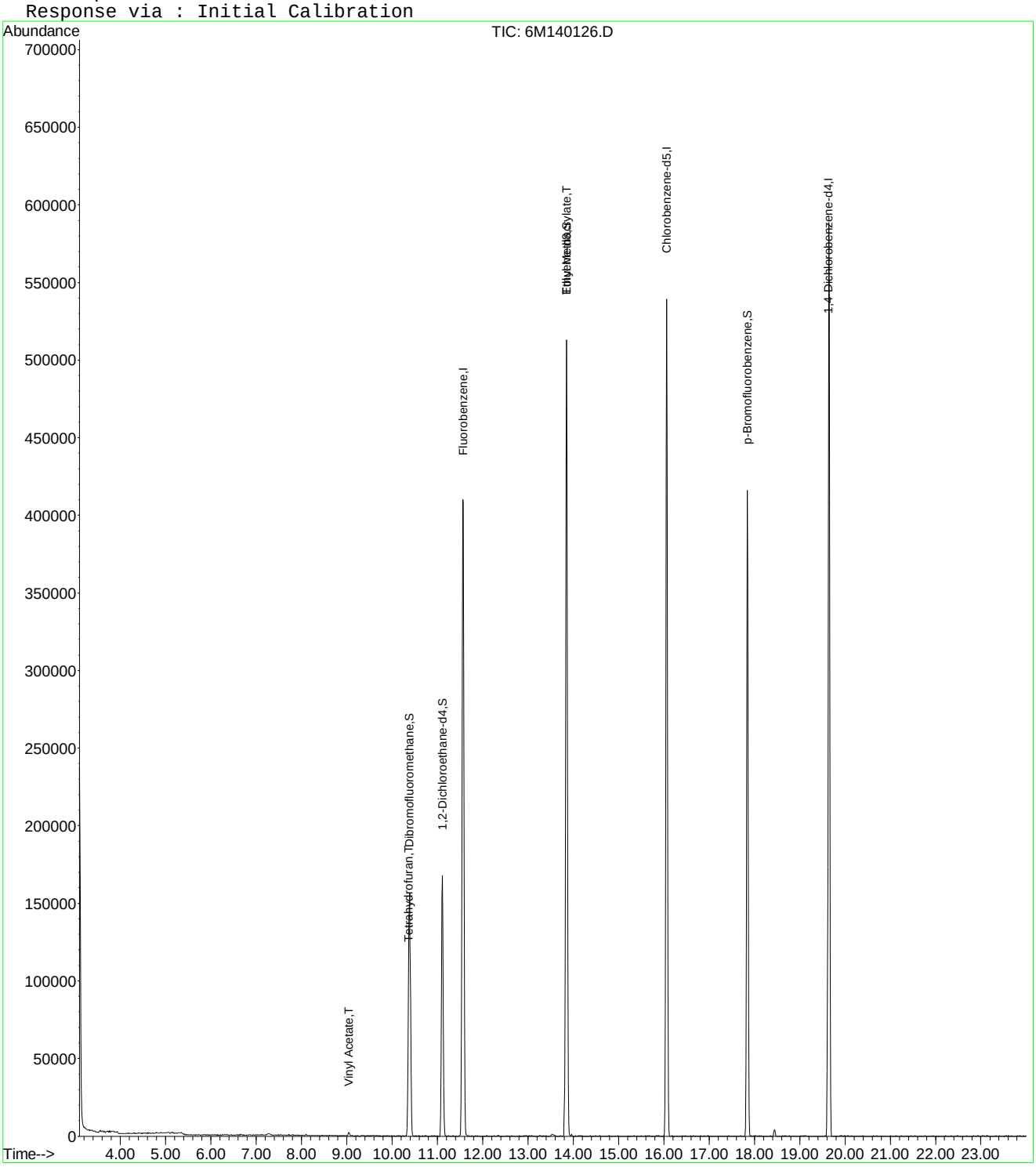

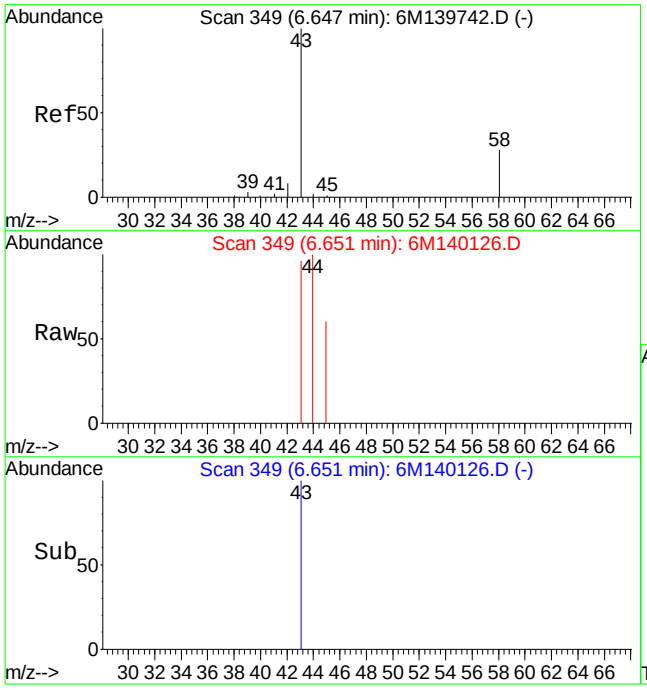

#13
Acetone
Concen: Below Cal
RT: 6.65 min Scan# 349
Delta R.T. -0.01 min
Lab File: 6M140126.D
Acq: 16 Jun 2016 23:34

Tgt Ion: 43 Resp: 869

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

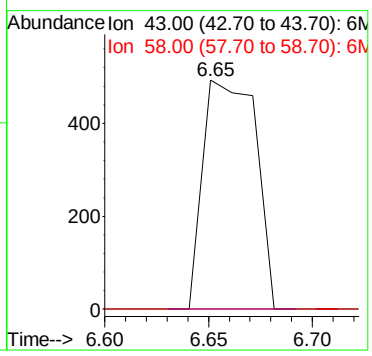

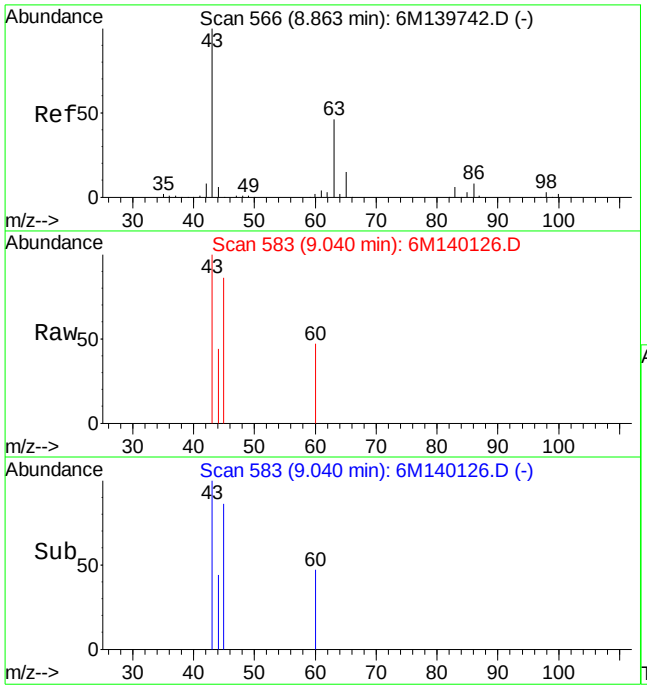

#26
Vinyl Acetate
Concen: 0.19 ug/L
RT: 9.04 min Scan# 583
Delta R.T. 0.18 min
Lab File: 6M140126.D
Acq: 16 Jun 2016 23:34

Tgt Ion: 43 Resp: 1831

Ion	Ratio	Lower	Upper
43	100		
86	0.0	4.5	10.5#

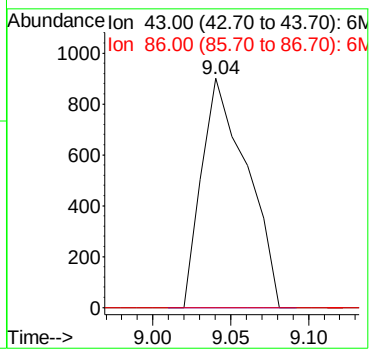

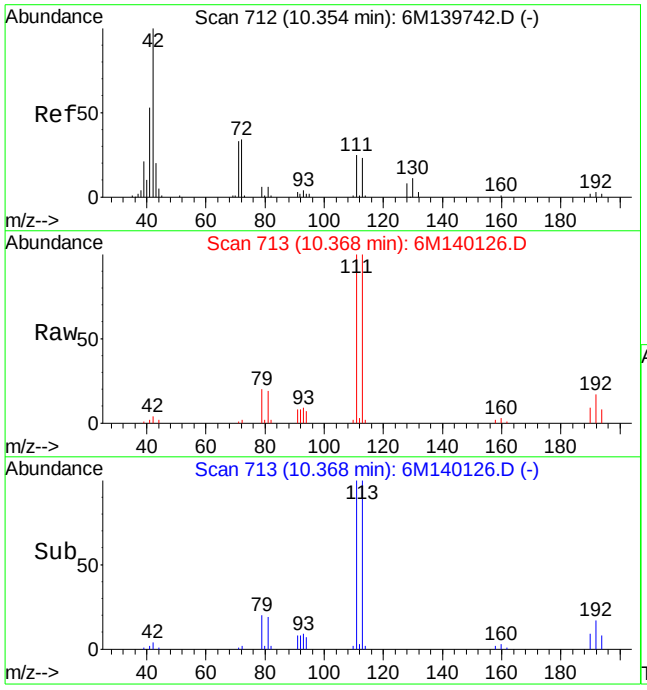

#36
Tetrahydrofuran
Concen: 2.00 ug/L
RT: 10.37 min Scan# 713
Delta R.T. 0.01 min
Lab File: 6M140126.D
Acq: 16 Jun 2016 23:34

Tgt Ion: 42 Resp: 3351

Ion	Ratio	Lower	Upper
42	100		
72	20.3	20.8	48.4#
71	11.3	19.9	46.5#

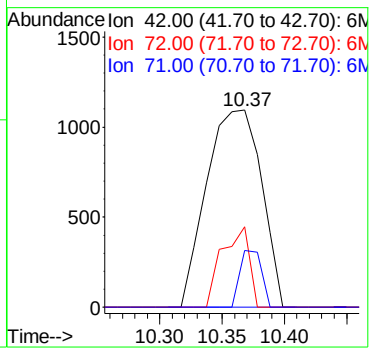

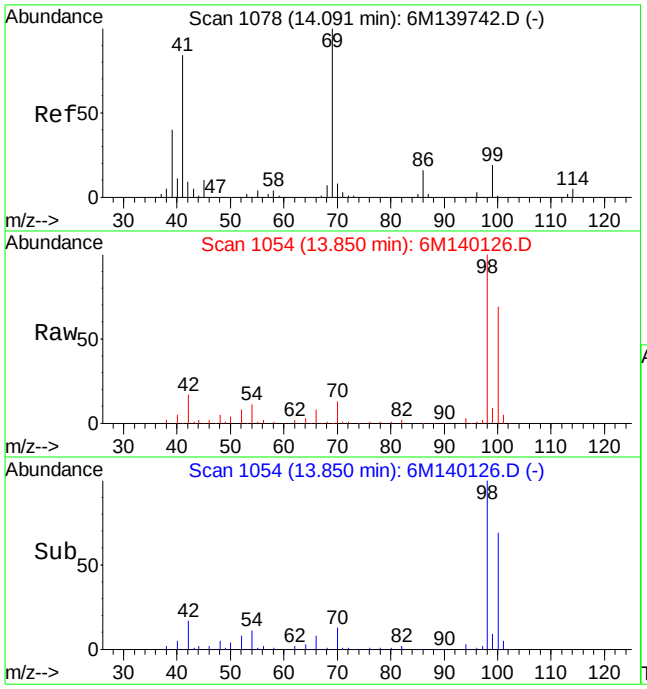

#60
Ethyl Methacrylate
Concen: 0.16 ug/L
RT: 13.85 min Scan# 1054
Delta R.T. -0.24 min
Lab File: 6M140126.D
Acq: 16 Jun 2016 23:34

Tgt Ion: 69 Resp: 991

Ion	Ratio	Lower	Upper
69	100		
41	112.3	51.4	120.0

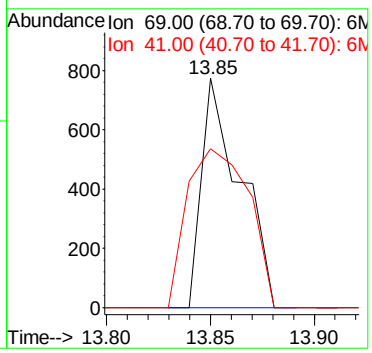

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:46 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	611118	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	473080	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	253718	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.40	111	173671	27.7488 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.00%		
43) 1,2-Dichloroethane-d4	11.12	65	203570	26.8000 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.20%		
58) Toluene-d8	13.86	98	554047	26.0139 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.04%		
80) p-Bromofluorobenzene	17.85	95	229998	27.1525 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 108.60%		

Target Compounds					Qvalue
13) Acetone	6.67	43	1325	0.6992 ug/L #	46
20) Carbon Disulfide	7.54	76	18747	0.9622 ug/L #	39
29) 2-Butanone	9.31	43	1188	0.4247 ug/L #	1
36) Tetrahydrofuran	10.36	42	2769	1.5196 ug/L #	58
60) Ethyl Methacrylate	13.87	69	899	0.1270 ug/L #	1

(#) = qualifier out of range (m) = manual integration
6M138751.D 8260WTR.M Mon Apr 25 09:22:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

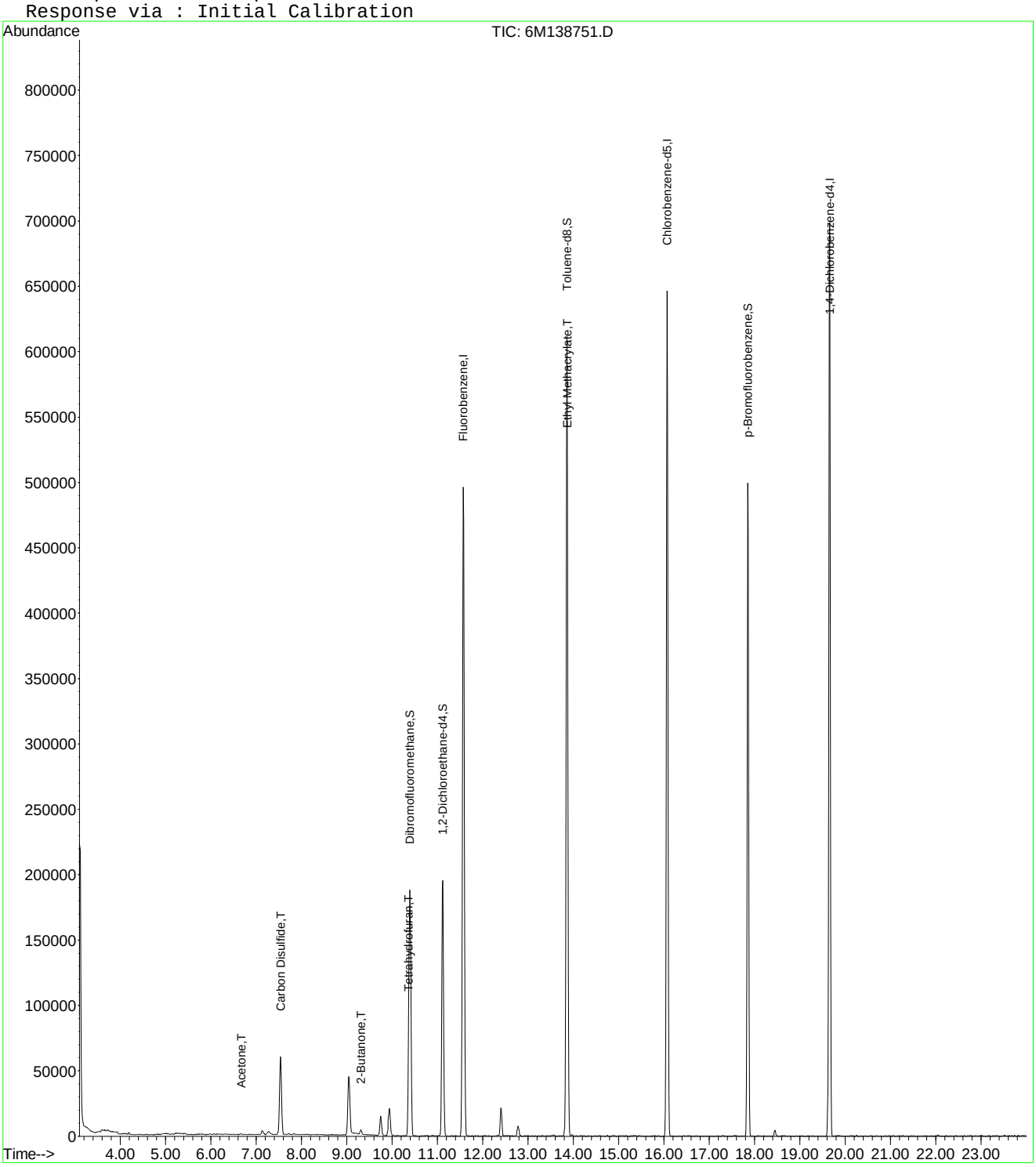

6M138751.D 8260WTR.M Mon Apr 25 09:22:46 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:52 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	611118	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	473080	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	253718	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.13	41	4366	3.7209 ug/L	76
3) 3-Chloro-1-propene	7.54	41	69268	4.2301 ug/L	92
4) 2-Chloro-1,3-butadiene	9.04	53	50753	3.6002 ug/L	85
5) Ethyl Acetate	9.75	43	28042	4.3499 ug/L #	90
6) Methacrylonitrile	9.94	67	8721	3.5173 ug/L #	55
7) Isobutyl Alcohol	9.94	43	1233	3.4767 ug/L #	85
9) Methyl methacrylate	12.40	41	19474	3.0338 ug/L	79
10) 2-Nitropropane	12.78	43	7076	3.7392 ug/L	93
13) Cyclohexanone	17.57	55	447	0.5159 ug/L #	25

(#) = qualifier out of range (m) = manual integration
6M138751.D A9FOOWT.M Mon Apr 25 15:45:52 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

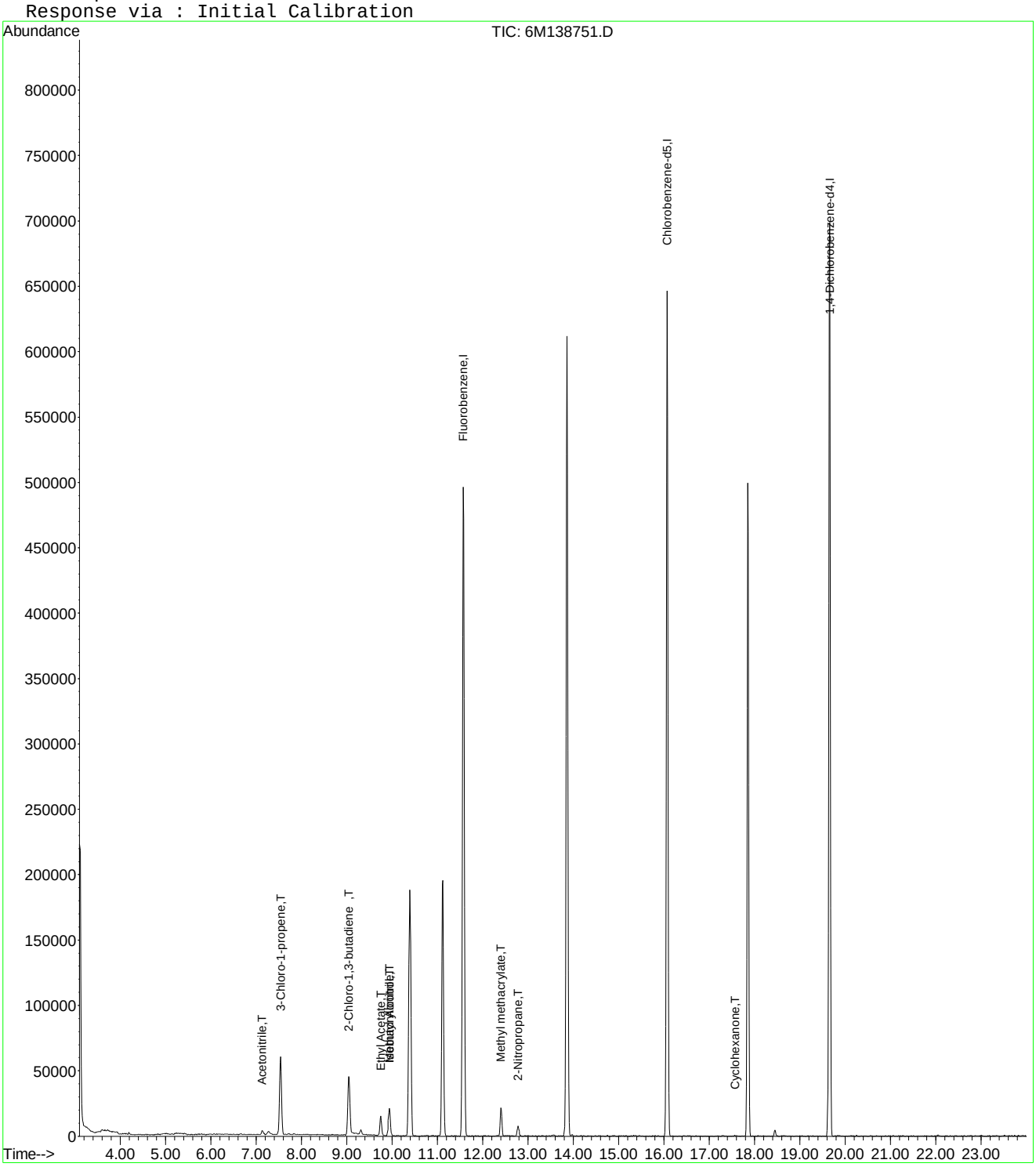

6M138751.D A9FOOWT.M Mon Apr 25 15:45:53 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:56 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	611118	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	473080	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	253718	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.13	41	4366	4.7698 ug/L	76
3) 3-Chloro-1-propene	7.54	41	69268	4.5408 ug/L	92
4) 2-Chloro-1,3-butadiene	9.04	53	50753	3.8775 ug/L	85
5) Ethyl Acetate	9.75	43	28042	4.2792 ug/L #	90
6) Methacrylonitrile	9.94	67	8721	3.8601 ug/L #	55
7) Isobutyl Alcohol	9.94	43	1233	5.9076 ug/L #	85
9) Methyl methacrylate	12.40	41	19474	3.5356 ug/L	79
10) 2-Nitropropane	12.78	43	7076	3.4543 ug/L	93
13) Cyclohexanone	17.57	55	447	1.4133 ug/L #	25

(#) = qualifier out of range (m) = manual integration
6M138751.D A9FOOWT.M Wed Apr 27 16:04:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

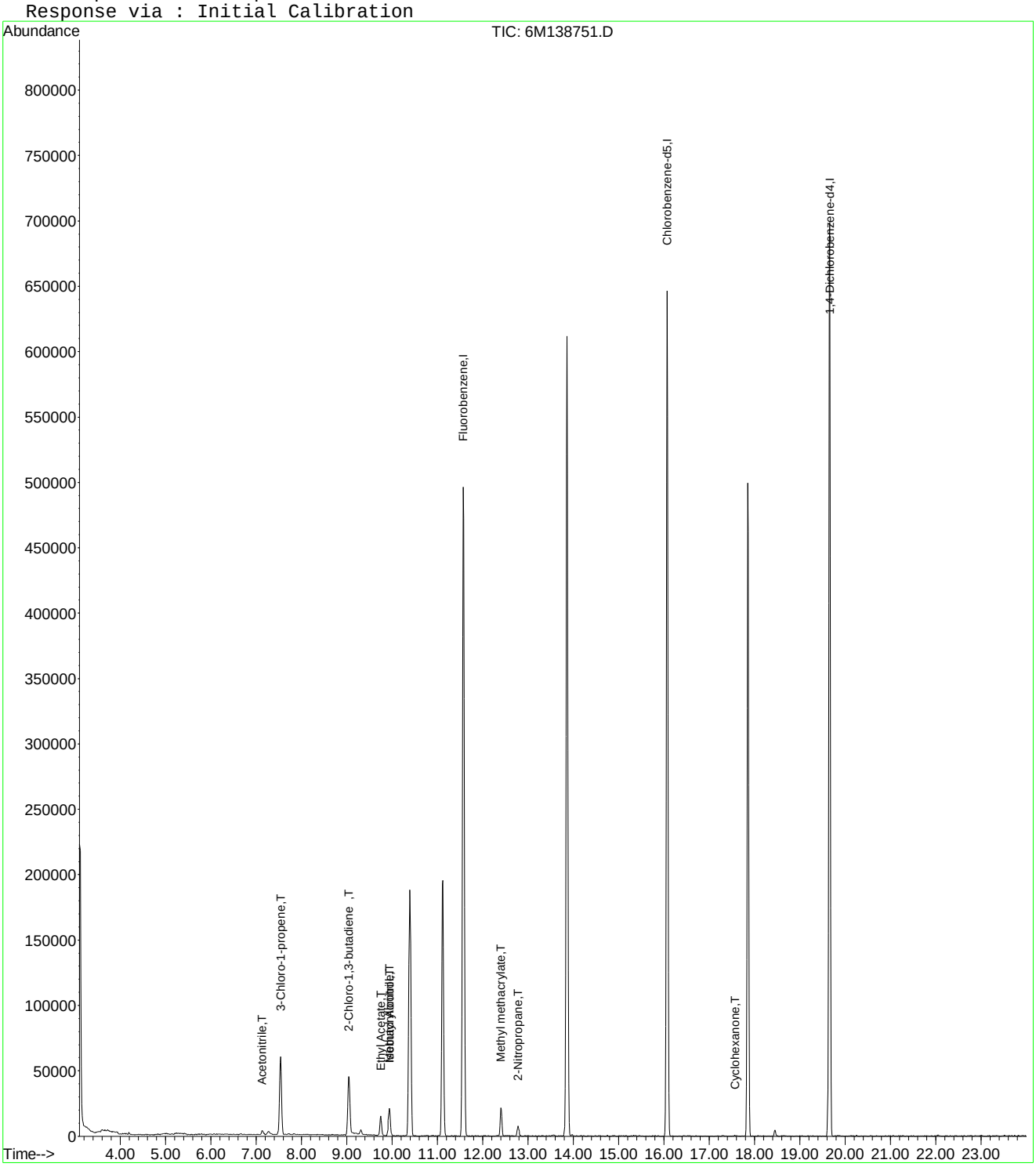

6M138751.D A9FOOWT.M Wed Apr 27 16:04:56 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	5.0000	4.7698	4.6	100	0.00
3	T	3-Chloro-1-propene	5.0000	4.5408	9.2	100	0.00
4	T	2-Chloro-1,3-butadiene	5.0000	3.8775	22.5	100	0.00
5	T	Ethyl Acetate	5.0000	4.2792	14.4	100	0.00
6	T	Methacrylonitrile	5.0000	3.8601	22.8	100	0.00
7	T	Isobutyl Alcohol	-1.0000	5.9076	0.0	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.99#
9	T	Methyl methacrylate	5.0000	3.5356	29.3	100	0.00
10	T	2-Nitropropane	-1.0000	3.4543	0.0	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	1.4133	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138751.D A9FOOWT.M Wed Apr 27 16:04:12 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:48 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	599043	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	463005	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	248475	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	171577	27.9669 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.88%		
43) 1,2-Dichloroethane-d4	11.12	65	207390	27.8532 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.40%		
58) Toluene-d8	13.86	98	547786	26.2796 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.12%		
80) p-Bromofluorobenzene	17.85	95	228171	27.5052 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 110.04%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	2739	1.4745 ug/L #	59
20) Carbon Disulfide	7.54	76	81493	4.2668 ug/L #	36
27) 1,1-Dichloroethane	9.05	63	3411	0.2688 ug/L #	42
29) 2-Butanone	9.31	43	3879	1.4148 ug/L #	1
36) Tetrahydrofuran	10.37	42	3350	1.8754 ug/L #	62
60) Ethyl Methacrylate	13.86	69	1183	0.1708 ug/L #	27

(#) = qualifier out of range (m) = manual integration
6M138752.D 8260WTR.M Mon Apr 25 09:22:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

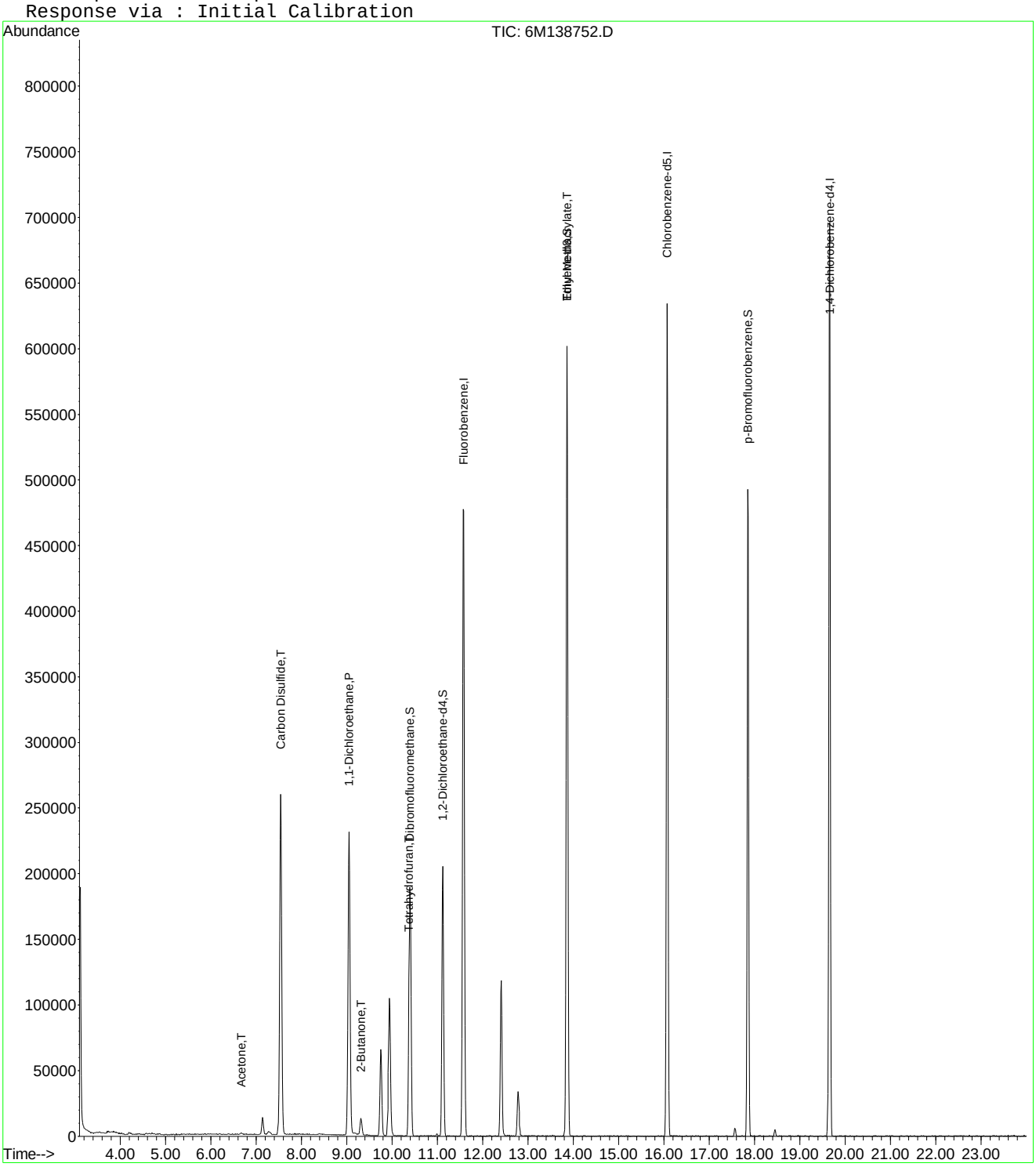

6M138752.D 8260WTR.M Mon Apr 25 09:22:48 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:54 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	599043	25.00 ug/L	-0.02
11) Chlorobenzene-d5	16.07	117	463005	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	248475	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	17741	15.4242 ug/L	95
3) 3-Chloro-1-propene	7.54	41	297686	18.5457 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	242962	17.5823 ug/L	84
5) Ethyl Acetate	9.75	43	124111	19.6403 ug/L	93
6) Methacrylonitrile	9.93	67	42708	17.5719 ug/L #	59
7) Isobutyl Alcohol	9.95	43	7968	22.9203 ug/L #	85
8) 1-Butanol	10.98	41	982	6.5662 ug/L #	52
9) Methyl methacrylate	12.41	41	95824	15.2291 ug/L	81
10) 2-Nitropropane	12.78	43	34207	18.4403 ug/L	92
13) Cyclohexanone	17.57	55	4053	4.7763 ug/L	81

(#) = qualifier out of range (m) = manual integration
6M138752.D A9FOOWT.M Mon Apr 25 15:45:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

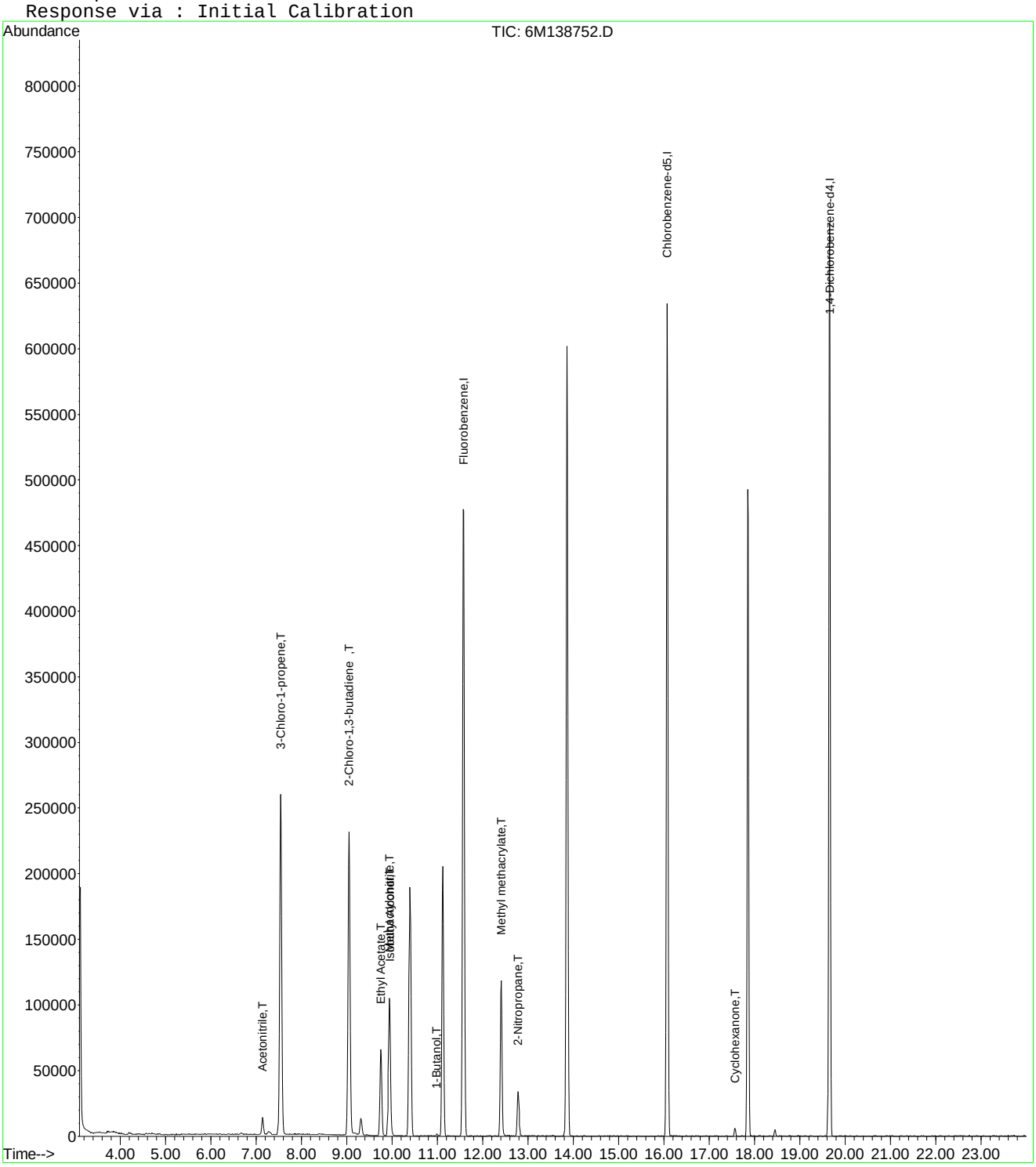

6M138752.D A9FOOWT.M Mon Apr 25 15:45:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:58 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	599043	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	463005	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	248475	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	17741	19.7725 ug/L	95
3) 3-Chloro-1-propene	7.54	41	297686	19.9080 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	242962	18.9362 ug/L	84
5) Ethyl Acetate	9.75	43	124111	19.3209 ug/L	93
6) Methacrylonitrile	9.93	67	42708	19.2846 ug/L #	59
7) Isobutyl Alcohol	9.95	43	7968	38.9462 ug/L #	85
9) Methyl methacrylate	12.41	41	95824	17.7480 ug/L	81
10) 2-Nitropropane	12.78	43	34207	17.0355 ug/L	92
13) Cyclohexanone	17.57	55	4053	13.0852 ug/L	81

(#) = qualifier out of range (m) = manual integration
6M138752.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

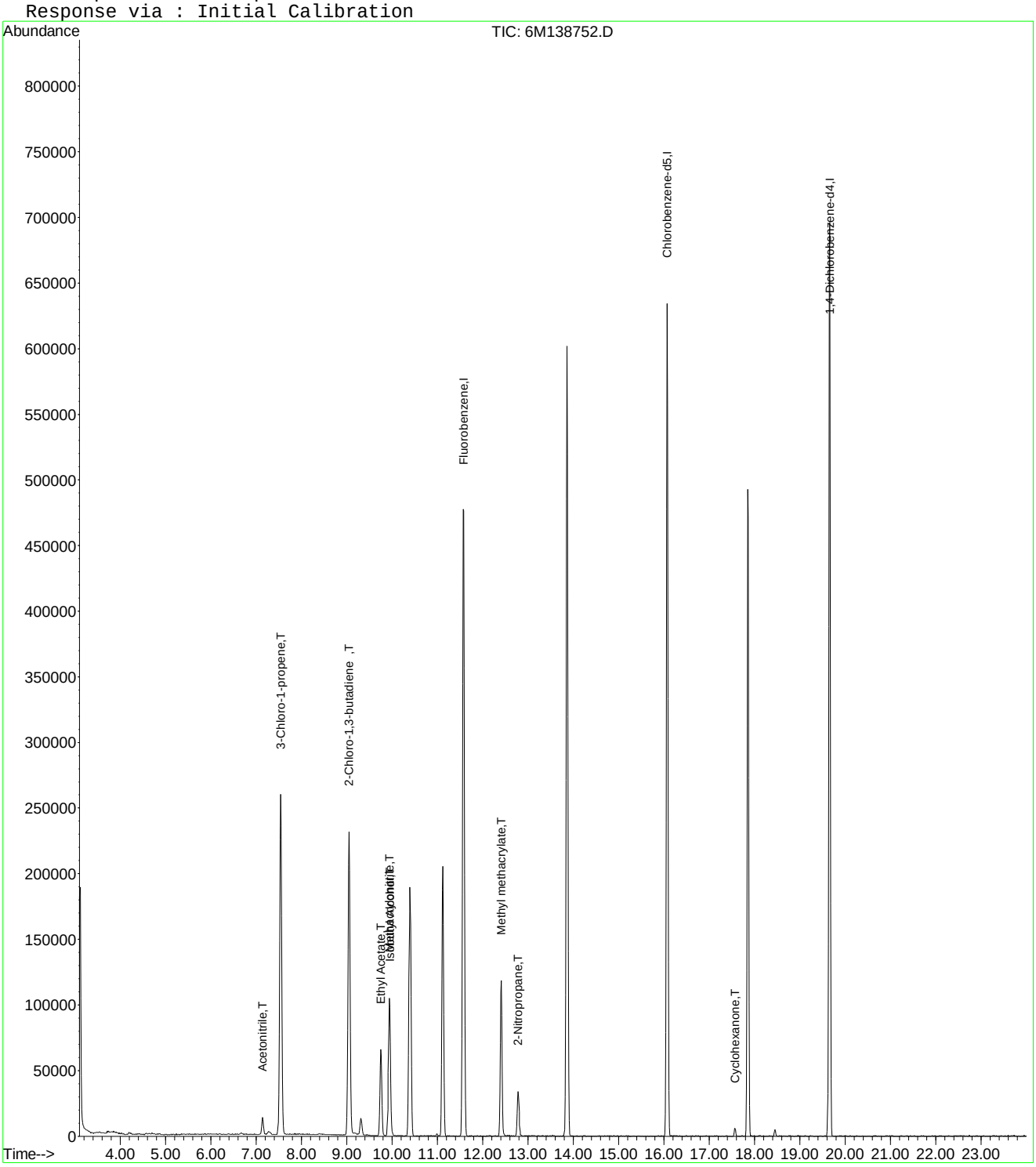

6M138752.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	19.7724	1.1	100	0.00
3	T	3-Chloro-1-propene	20.0000	19.9080	0.5	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	18.9362	5.3	100	0.00
5	T	Ethyl Acetate	20.0000	19.3209	3.4	100	0.00
6	T	Methacrylonitrile	20.0000	19.2846	3.6	100	0.00
7	T	Isobutyl Alcohol	40.0000	38.9462	2.6	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	20.0000	17.7480	11.3	100	0.00
10	T	2-Nitropropane	-1.0000	17.0355	0.0	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	13.0852	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138752.D A9FOOWT.M Wed Apr 27 16:04:26 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:48 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	604736	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	468574	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	254472	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.40	111	172256	27.8132 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.24%		
43) 1,2-Dichloroethane-d4	11.12	65	208744	27.7711 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.08%		
58) Toluene-d8	13.86	98	553191	26.2235 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.88%		
80) p-Bromofluorobenzene	17.85	95	239542	28.1954 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 112.80%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	3732	1.9901 ug/L #	57
20) Carbon Disulfide	7.54	76	220780	11.4508 ug/L #	36
26) Vinyl Acetate	9.04	43	2704	0.2791 ug/L #	8
27) 1,1-Dichloroethane	9.05	63	9803	0.7652 ug/L #	42
28) Ethyl-Tert-Butyl ether	9.31	59	152978	7.3579 ug/L #	39
29) 2-Butanone	9.53	43	660	0.2385 ug/L #	52
36) Tetrahydrofuran	10.37	42	3746	2.0774 ug/L #	62
60) Ethyl Methacrylate	13.86	69	1423	0.2030 ug/L #	9

(#) = qualifier out of range (m) = manual integration
6M138753.D 8260WTR.M Mon Apr 25 09:22:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

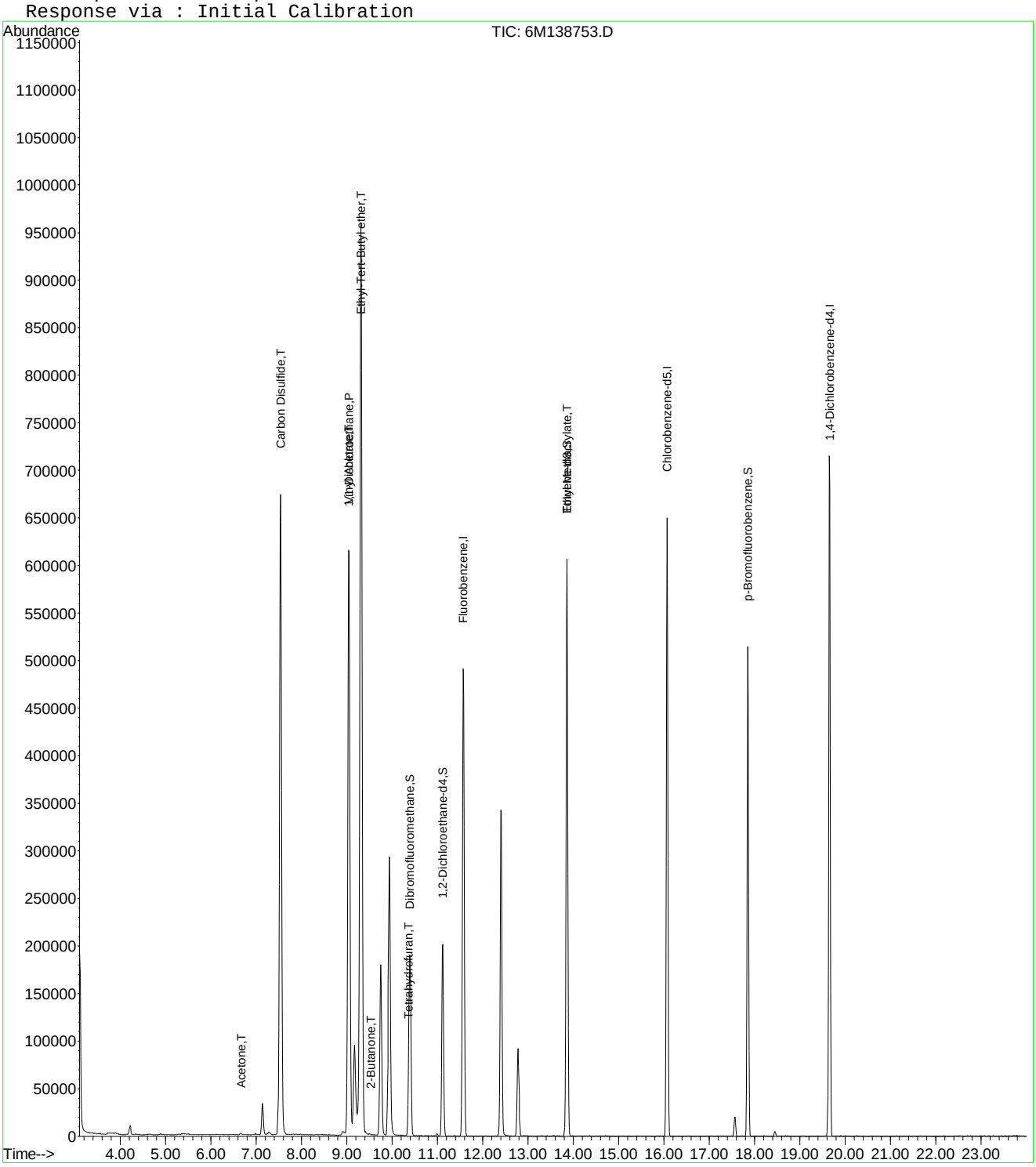

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:55 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	604736	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	468574	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	254472	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	46802	40.3072 ug/L	94
3) 3-Chloro-1-propene	7.54	41	793114	48.9454 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	674471	48.3496 ug/L	83
5) Ethyl Acetate	9.75	43	336975	52.8234 ug/L	93
6) Methacrylonitrile	9.94	67	119267	48.6097 ug/L #	62
7) Isobutyl Alcohol	9.95	43	20135	57.3741 ug/L #	99
8) 1-Butanol	10.98	41	1474	9.7632 ug/L	77
9) Methyl methacrylate	12.40	41	279157	43.9482 ug/L	81
10) 2-Nitropropane	12.79	43	95327	50.9052 ug/L	94
13) Cyclohexanone	17.56	55	13241	15.2363 ug/L	91

(#) = qualifier out of range (m) = manual integration
6M138753.D A9FOOWT.M Mon Apr 25 15:45:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

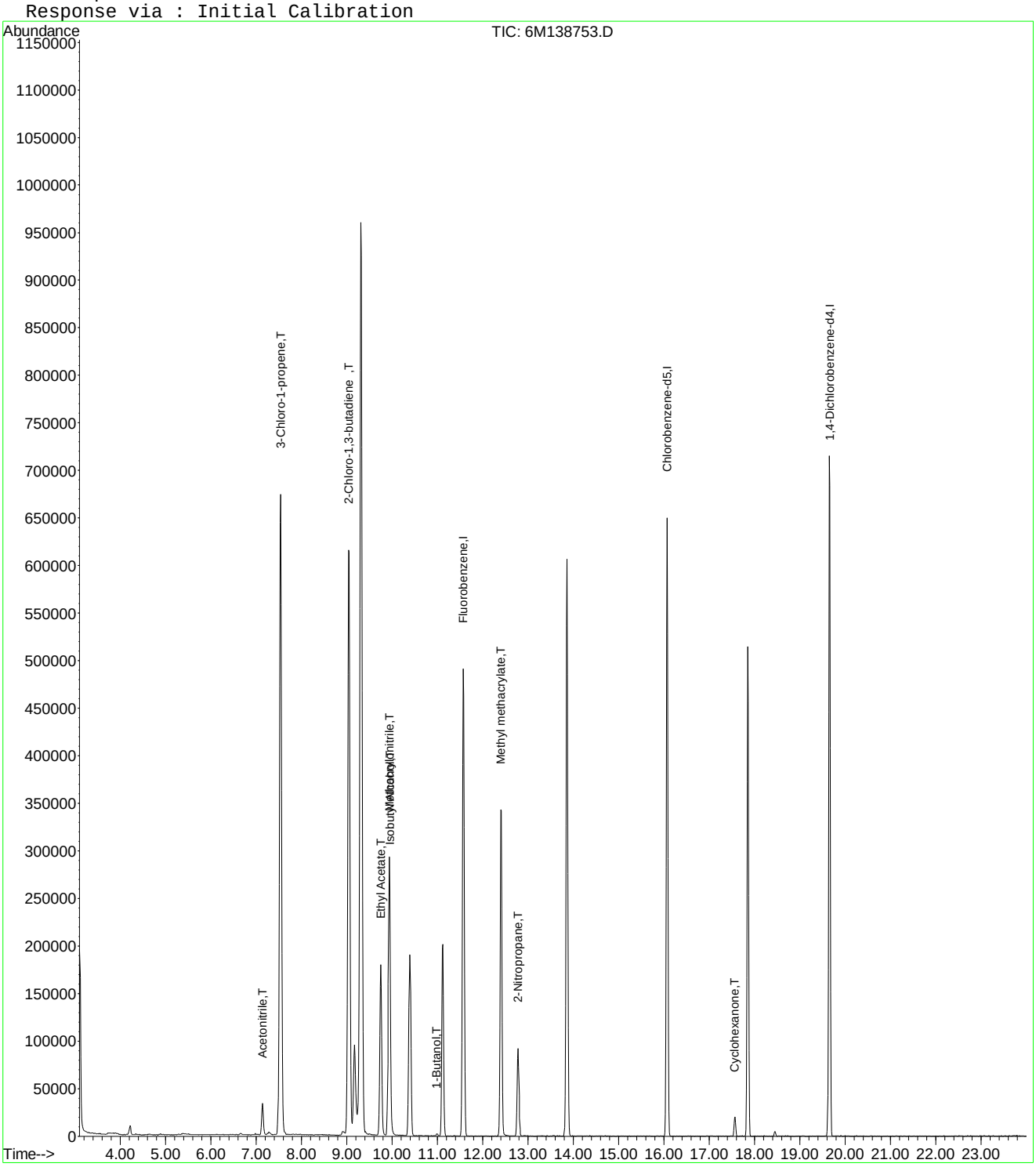

6M138753.D A9FOOWT.M Mon Apr 25 15:45:57 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:59 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	604736	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	468574	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	254472	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	46802	51.6701 ug/L	94
3) 3-Chloro-1-propene	7.54	41	793114	52.5409 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	674471	52.0726 ug/L	83
5) Ethyl Acetate	9.75	43	336975	51.9646 ug/L	93
6) Methacrylonitrile	9.94	67	119267	53.3476 ug/L #	62
7) Isobutyl Alcohol	9.95	43	20135	97.4900 ug/L #	99
9) Methyl methacrylate	12.40	41	279157	51.2171 ug/L	81
10) 2-Nitropropane	12.79	43	95327	47.0270 ug/L	94
13) Cyclohexanone	17.56	55	13241	41.7415 ug/L	91

(#) = qualifier out of range (m) = manual integration
6M138753.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

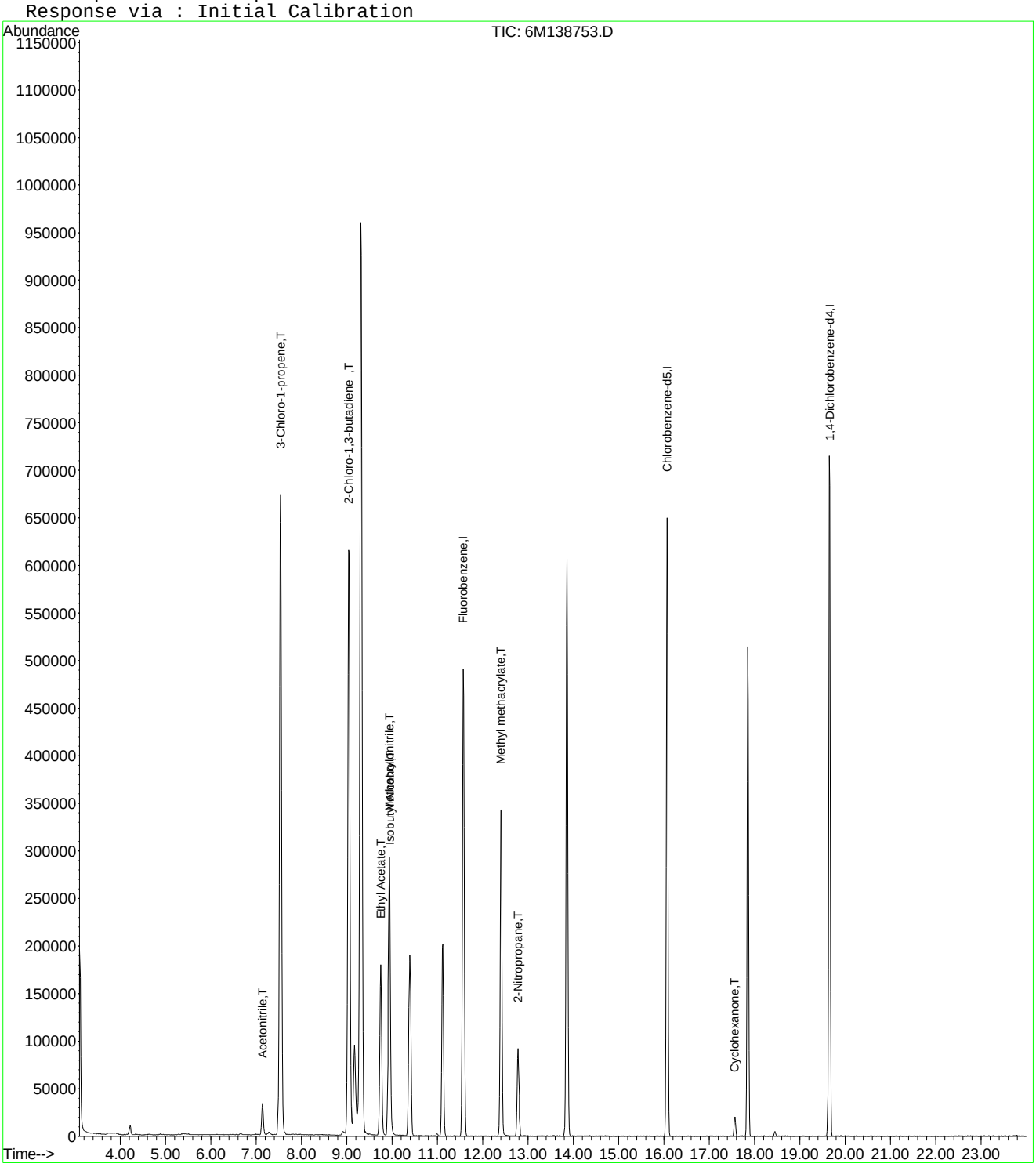

6M138753.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	51.6701	-3.3	100	0.00
3	T	3-Chloro-1-propene	50.0000	52.5409	-5.1	100	0.00
4	T	2-Chloro-1,3-butadiene	50.0000	52.0726	-4.1	100	0.00
5	T	Ethyl Acetate	50.0000	51.9646	-3.9	100	0.00
6	T	Methacrylonitrile	50.0000	53.3476	-6.7	100	0.00
7	T	Isobutyl Alcohol	100.0000	97.4900	2.5	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	50.0000	51.2171	-2.4	100	0.00
10	T	2-Nitropropane	50.0000	47.0270	5.9	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	50.0000	41.7415	16.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138753.D A9FOOWT.M Wed Apr 27 16:04:38 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:49 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	599121	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	467316	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	255798	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	169577	27.6373 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.56%		
43) 1,2-Dichloroethane-d4	11.12	65	210119	28.2161 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.88%		
58) Toluene-d8	13.86	98	550953	26.1877 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.76%		
80) p-Bromofluorobenzene	17.85	95	239480	28.0420 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 112.16%		

Target Compounds					Qvalue
13) Acetone	6.66	43	6960	3.7463 ug/L	82
16) Dimethyl Sulfide	7.15	62	732	0.1448 ug/L #	1
18) Methyl acetate	7.53	43	1419	0.2750 ug/L #	1
22) Methyl Tert Butyl Ether	7.96	73	2141	0.1320 ug/L #	72
27) 1,1-Dichloroethane	9.05	63	20725	1.6328 ug/L #	42
28) Ethyl-Tert-Butyl ether	9.31	59	76666	3.7220 ug/L #	39
29) 2-Butanone	9.53	43	1176	0.4289 ug/L #	52
34) 1-Bromopropane	10.00	122	702	0.6817 ug/L #	1
36) Tetrahydrofuran	10.35	42	4425	2.4769 ug/L #	60
48) Methylcyclohexane	12.41	83	1461	0.1681 ug/L #	1
60) Ethyl Methacrylate	13.87	69	1083	0.1549 ug/L #	1
79) 1,1,2,2-Tetrachloroethane	17.57	83	1910	0.3066 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138754.D 8260WTR.M Mon Apr 25 09:22:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

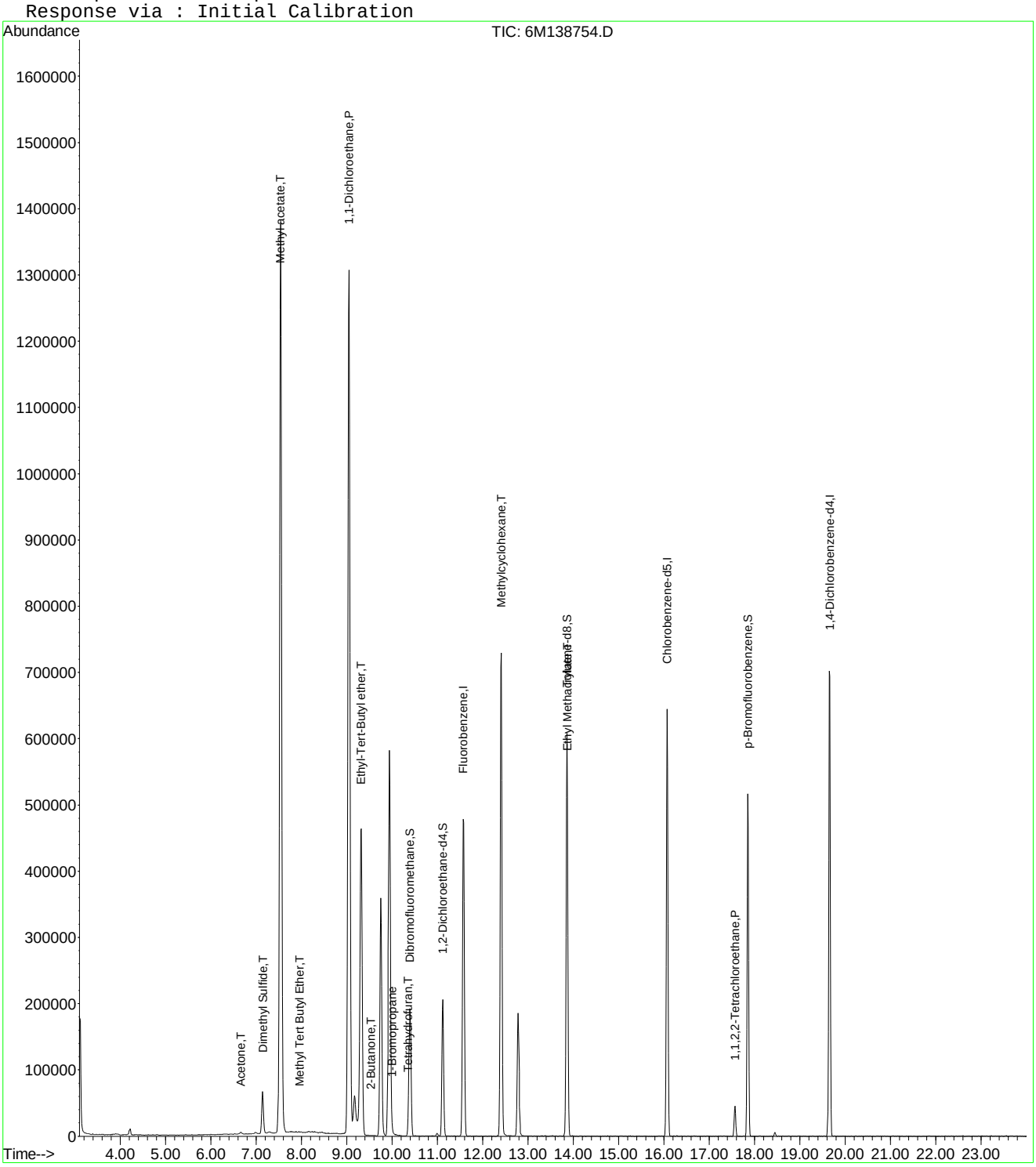

6M138754.D 8260WTR.M Mon Apr 25 09:22:50 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:57 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	599121	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	467316	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	255798	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	90880	79.0019 ug/L	95
3) 3-Chloro-1-propene	7.54	41	1610716	100.3335 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	1413663	102.2884 ug/L	83
5) Ethyl Acetate	9.75	43	673221	106.5217 ug/L	93
6) Methacrylonitrile	9.94	67	237219	97.5895 ug/L #	62
7) Isobutyl Alcohol	9.95	43	33897	97.4937 ug/L #	85
8) 1-Butanol	11.00	41	2978	19.9099 ug/L #	64
9) Methyl methacrylate	12.41	41	585839	93.0942 ug/L	80
10) 2-Nitropropane	12.78	43	197598	106.5074 ug/L	97
13) Cyclohexanone	17.57	55	27547	31.5338 ug/L	88

(#) = qualifier out of range (m) = manual integration
6M138754.D A9FOOWT.M Mon Apr 25 15:45:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

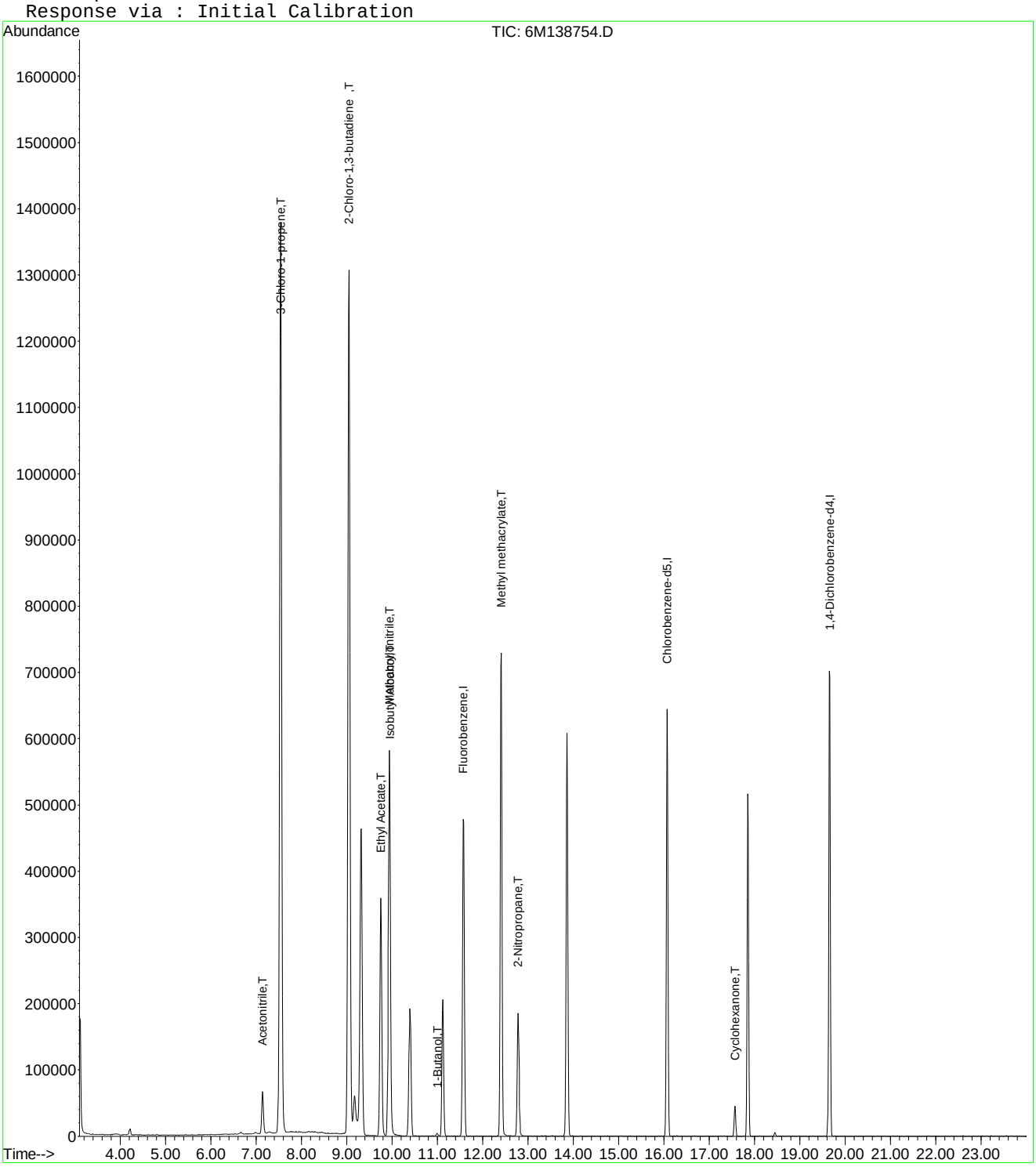

6M138754.D A9FOOWT.M Mon Apr 25 15:45:58 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:59 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	599121	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	467316	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	255798	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	90880	101.2731 ug/L	95
3) 3-Chloro-1-propene	7.54	41	1610716	107.7041 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	1413663	110.1648 ug/L	83
5) Ethyl Acetate	9.75	43	673221	104.7898 ug/L	93
6) Methacrylonitrile	9.94	67	237219	107.1014 ug/L #	62
7) Isobutyl Alcohol	9.95	43	33897	165.6613 ug/L #	85
9) Methyl methacrylate	12.41	41	585839	108.4917 ug/L	80
10) 2-Nitropropane	12.78	43	197598	98.3932 ug/L	97
13) Cyclohexanone	17.57	55	27547	86.3902 ug/L	88

(#) = qualifier out of range (m) = manual integration
6M138754.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

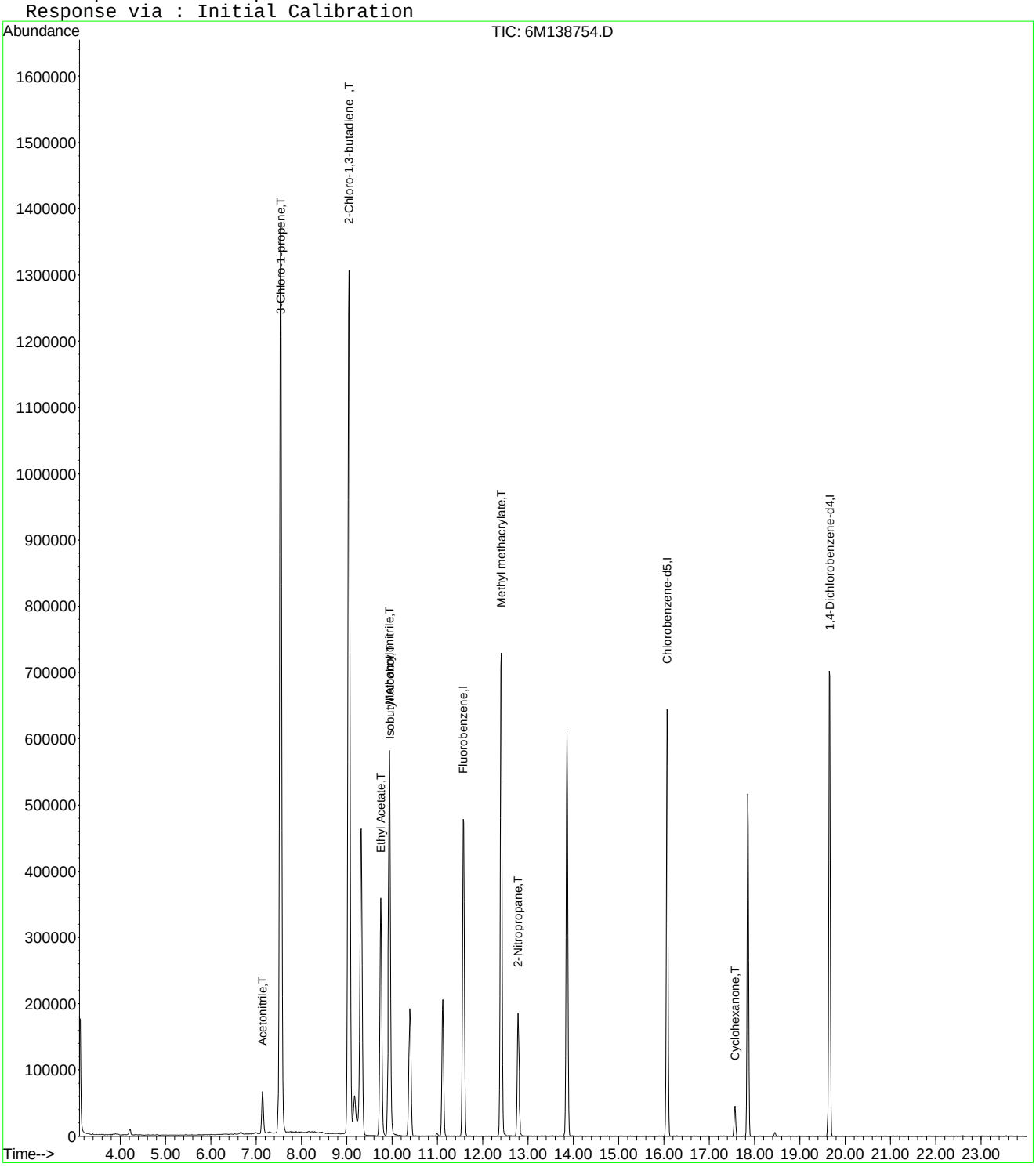

6M138754.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:50 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	607157	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	473187	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	259046	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.40	111	172341	27.7160 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.88%		
43) 1,2-Dichloroethane-d4	11.12	65	211249	27.9923 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.96%		
58) Toluene-d8	13.86	98	552831	25.9510 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.80%		
80) p-Bromofluorobenzene	17.85	95	247709	28.6419 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 114.56%		

Target Compounds

					Qvalue
9) Diethyl ether	6.31	59	653	0.1225 ug/L #	12
13) Acetone	6.66	43	9406	4.9959 ug/L #	64
15) Tert-Butyl Alcohol	6.98	59	449	0.8301 ug/L #	1
16) Dimethyl Sulfide	7.16	62	680	0.1328 ug/L #	1
22) Methyl Tert Butyl Ether	7.96	73	3926	0.2388 ug/L	83
24) n-Hexane	8.30	57	1777	0.2040 ug/L	87
27) 1,1-Dichloroethane	9.05	63	41640	3.2372 ug/L #	47
28) Ethyl-Tert-Butyl ether	9.31	59	272648	13.0615 ug/L #	38
29) 2-Butanone	9.51	43	2992	1.0767 ug/L #	67
30) Propionitrile	9.93	54	258	0.3232 ug/L #	57
34) 1-Bromopropane	9.99	122	1417	1.3579 ug/L #	1
36) Tetrahydrofuran	10.37	42	4839	2.6728 ug/L #	62
48) Methylcyclohexane	12.40	83	2976	0.3378 ug/L #	1
60) Ethyl Methacrylate	13.87	69	1202	0.1698 ug/L #	1
79) 1,1,2,2-Tetrachloroethane	17.57	83	5192	0.8231 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138755.D 8260WTR.M Mon Apr 25 09:22:50 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

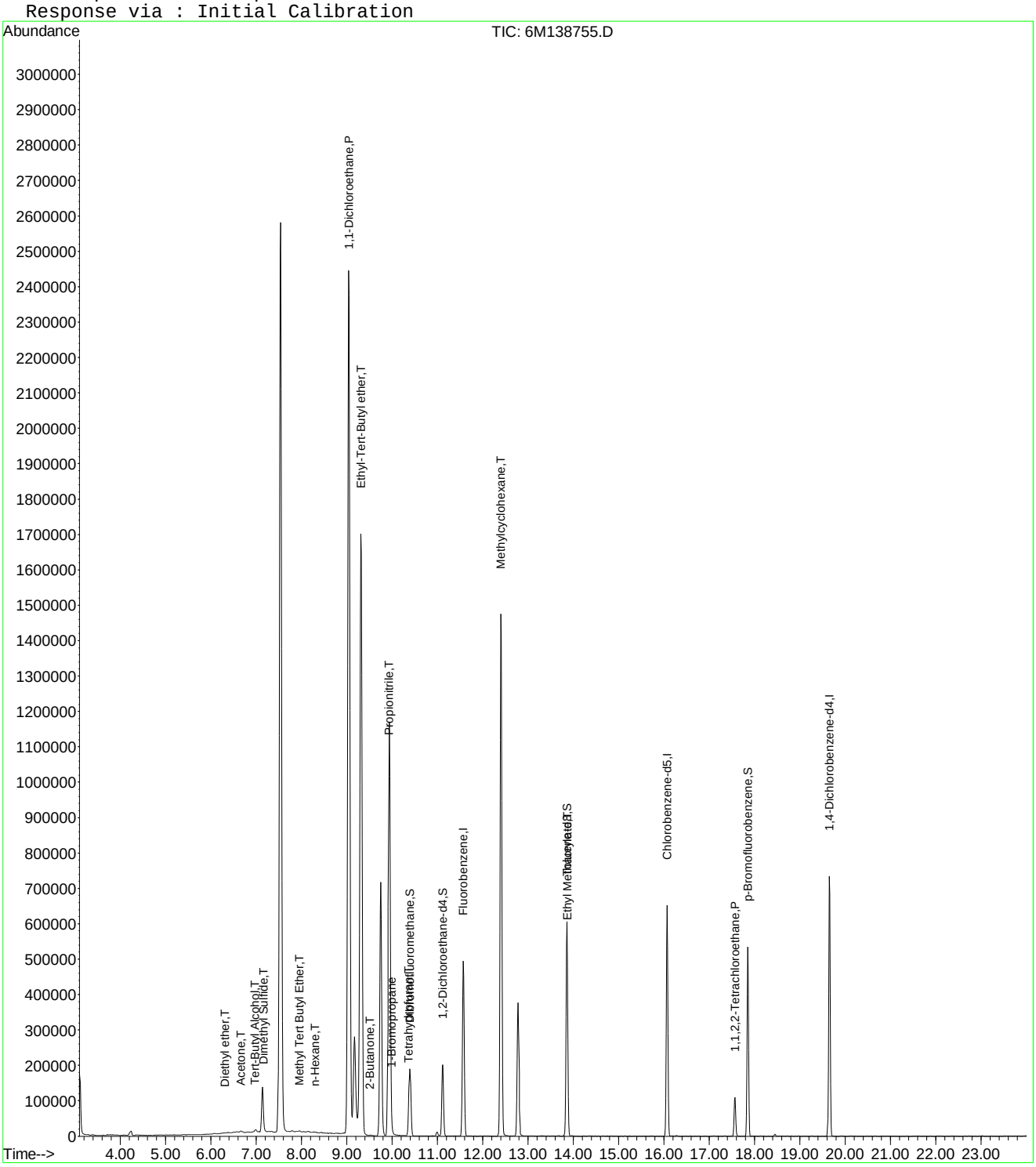

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:58 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	607157	25.00	ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	473187	25.00	ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.65	152	259046	25.00	ug/L	-0.03

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	183628	157.5150	ug/L	93
3) 3-Chloro-1-propene	7.54	41	3085939	189.6828	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	2709180	193.4336	ug/L	83
5) Ethyl Acetate	9.75	43	1346541	210.2391	ug/L	94
6) Methacrylonitrile	9.94	67	471538	191.4186	ug/L #	64
7) Isobutyl Alcohol	9.95	43	72755	206.4864	ug/L #	92
8) 1-Butanol	10.99	41	8815	58.1542	ug/L #	64
9) Methyl methacrylate	12.40	41	1186381	186.0295	ug/L	80
10) 2-Nitropropane	12.79	43	410702	218.4428	ug/L	99
13) Cyclohexanone	17.57	55	67080	75.8254	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138755.D A9FOOWT.M Mon Apr 25 15:45:58 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

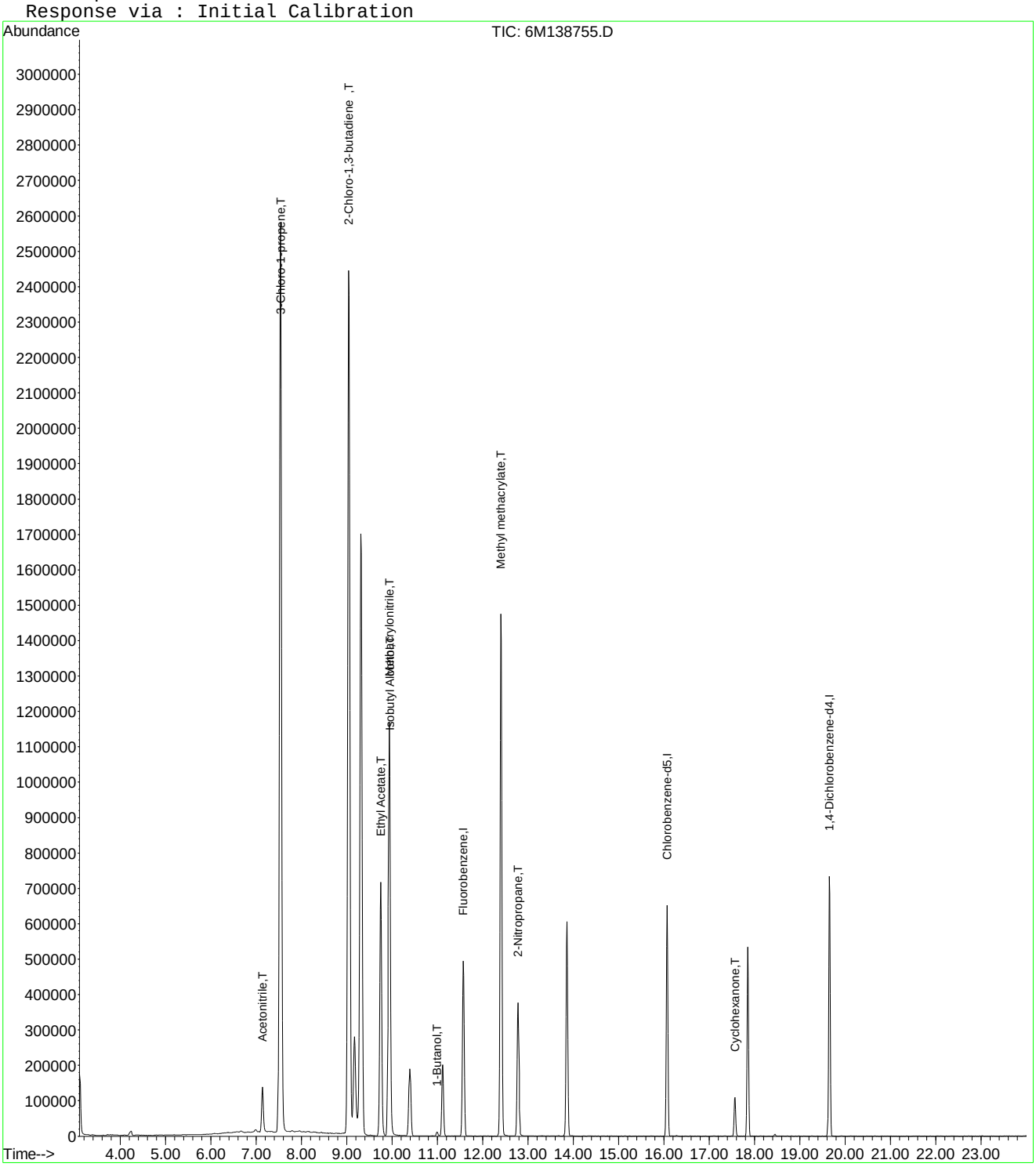

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	607157	25.00	ug/L	0.00
11) Chlorobenzene-d5	16.07	117	473187	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.65	152	259046	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	183628	201.9195	ug/L	93
3) 3-Chloro-1-propene	7.54	41	3085939	203.6170	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	2709180	208.3284	ug/L	83
5) Ethyl Acetate	9.75	43	1346541	206.8209	ug/L	94
6) Methacrylonitrile	9.94	67	471538	210.0757	ug/L #	64
7) Isobutyl Alcohol	9.95	43	72755	350.8618	ug/L #	92
9) Methyl methacrylate	12.40	41	1186381	216.7982	ug/L	80
10) 2-Nitropropane	12.79	43	410702	201.8008	ug/L	99
13) Cyclohexanone	17.57	55	67080	207.7320	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138755.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

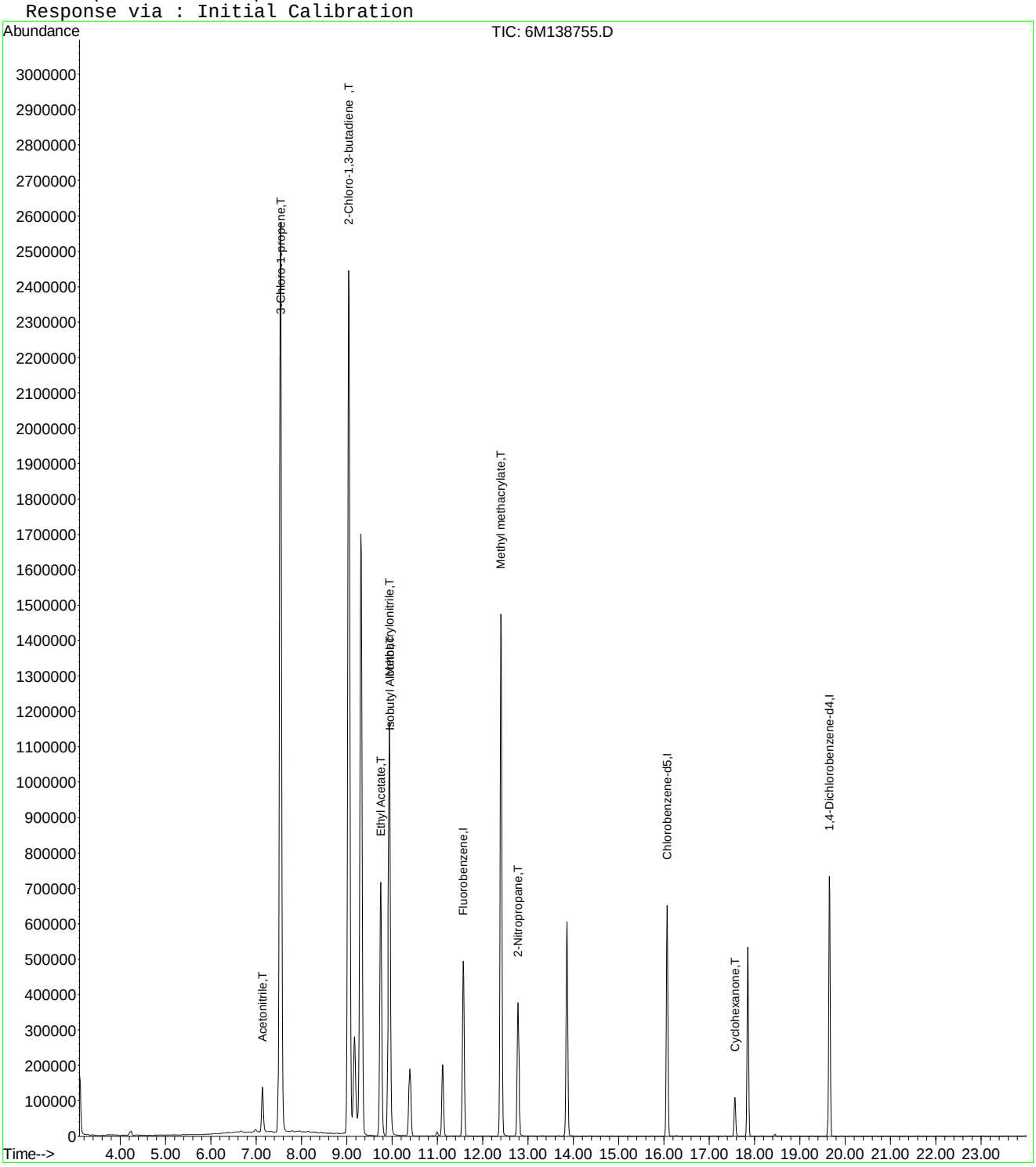

6M138755.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:50 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	602356	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	472685	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	264650	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	169983	27.5546 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.20%		
43) 1,2-Dichloroethane-d4	11.12	65	207199	27.6745 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 110.68%		
58) Toluene-d8	13.86	98	553023	25.9875 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.96%		
80) p-Bromofluorobenzene	17.85	95	247939	28.0615 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 112.24%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	13666	7.3164 ug/L #	77
15) Tert-Butyl Alcohol	7.06	59	467	0.8703 ug/L #	59
16) Dimethyl Sulfide	7.14	62	668	0.1315 ug/L #	1
18) Methyl acetate	7.54	43	3262	0.6289 ug/L #	1
22) Methyl Tert Butyl Ether	7.97	73	10591	0.6492 ug/L #	53
24) n-Hexane	8.28	57	3576	0.4138 ug/L #	56
27) 1,1-Dichloroethane	9.04	63	60743	4.7600 ug/L #	48
28) Ethyl-Tert-Butyl ether	9.31	59	155796	7.5231 ug/L #	39
29) 2-Butanone	9.52	43	4002	1.4516 ug/L	97
30) Propionitrile	9.95	54	1113	1.4052 ug/L #	1
34) 1-Bromopropane	9.99	122	1450	1.4006 ug/L #	1
36) Tetrahydrofuran	10.36	42	4902	2.7292 ug/L #	61
48) Methylcyclohexane	12.41	83	4626	0.5293 ug/L #	1
60) Ethyl Methacrylate	13.88	69	1599	0.2261 ug/L #	1
72) Ethylbenzene	16.28	106	1349	0.1427 ug/L	56
73) m-,p-Xylene	16.28	106	1349	0.1203 ug/L	81
79) 1,1,2,2-Tetrachloroethane	17.57	83	8744	1.3569 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138756.D 8260WTR.M Mon Apr 25 09:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

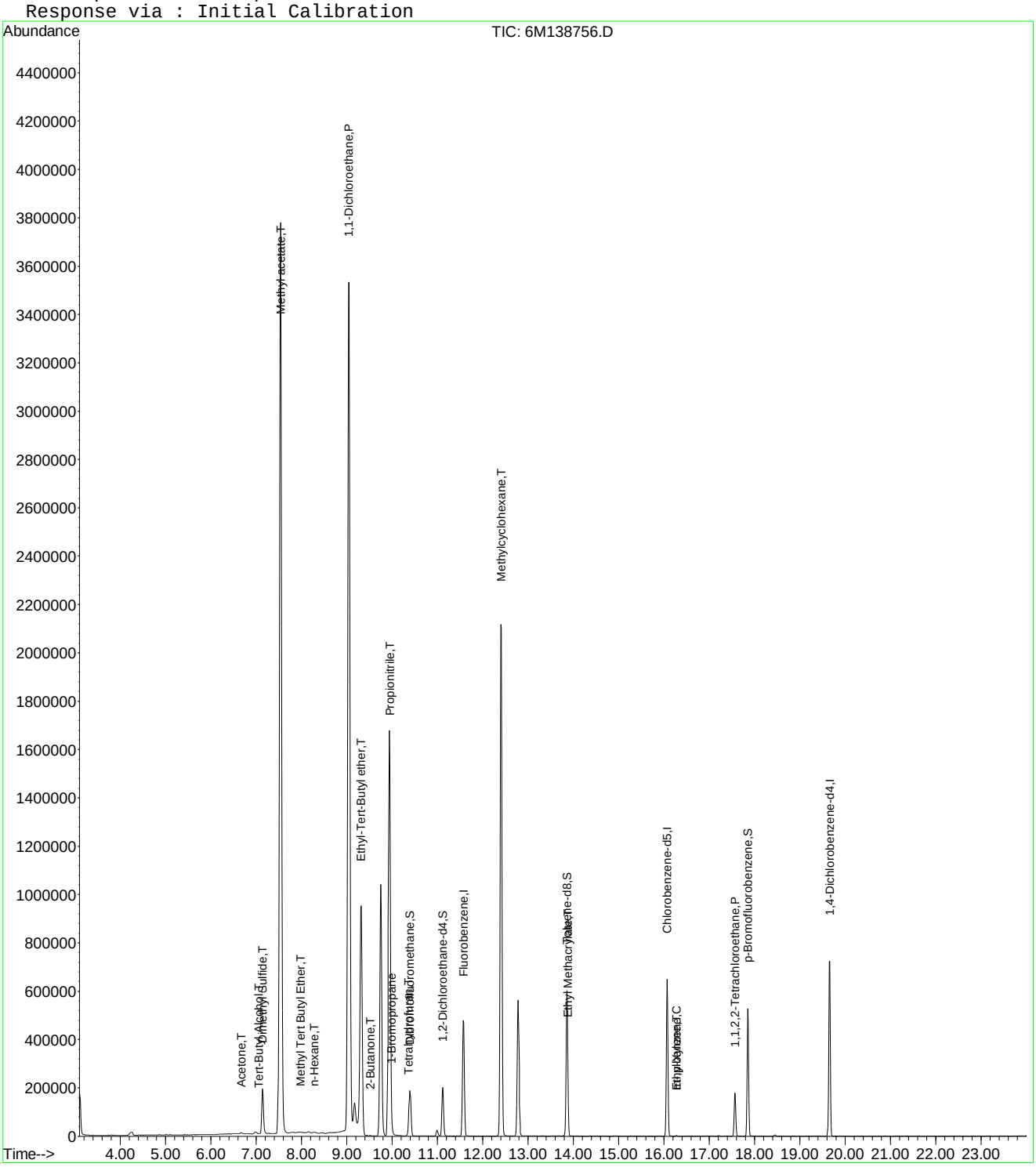

6M138756.D 8260WTR.M Mon Apr 25 09:22:51 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:59 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	602356	25.00 ug/L	-0.02
11) Chlorobenzene-d5	16.07	117	472685	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	264650	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	273003	236.0468 ug/L	93
3) 3-Chloro-1-propene	7.54	41	4493022	278.3729 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	3994938	287.5093 ug/L	83
5) Ethyl Acetate	9.75	43	1967613	309.6573 ug/L	94
6) Methacrylonitrile	9.94	67	686612	280.9484 ug/L #	63
7) Isobutyl Alcohol	9.95	43	121480	347.5212 ug/L #	90
8) 1-Butanol	10.99	41	18116	120.4672 ug/L	69
9) Methyl methacrylate	12.40	41	1742413	275.3954 ug/L	81
10) 2-Nitropropane	12.78	43	613081	328.6824 ug/L	99
13) Cyclohexanone	17.57	55	106618	117.9661 ug/L	87

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

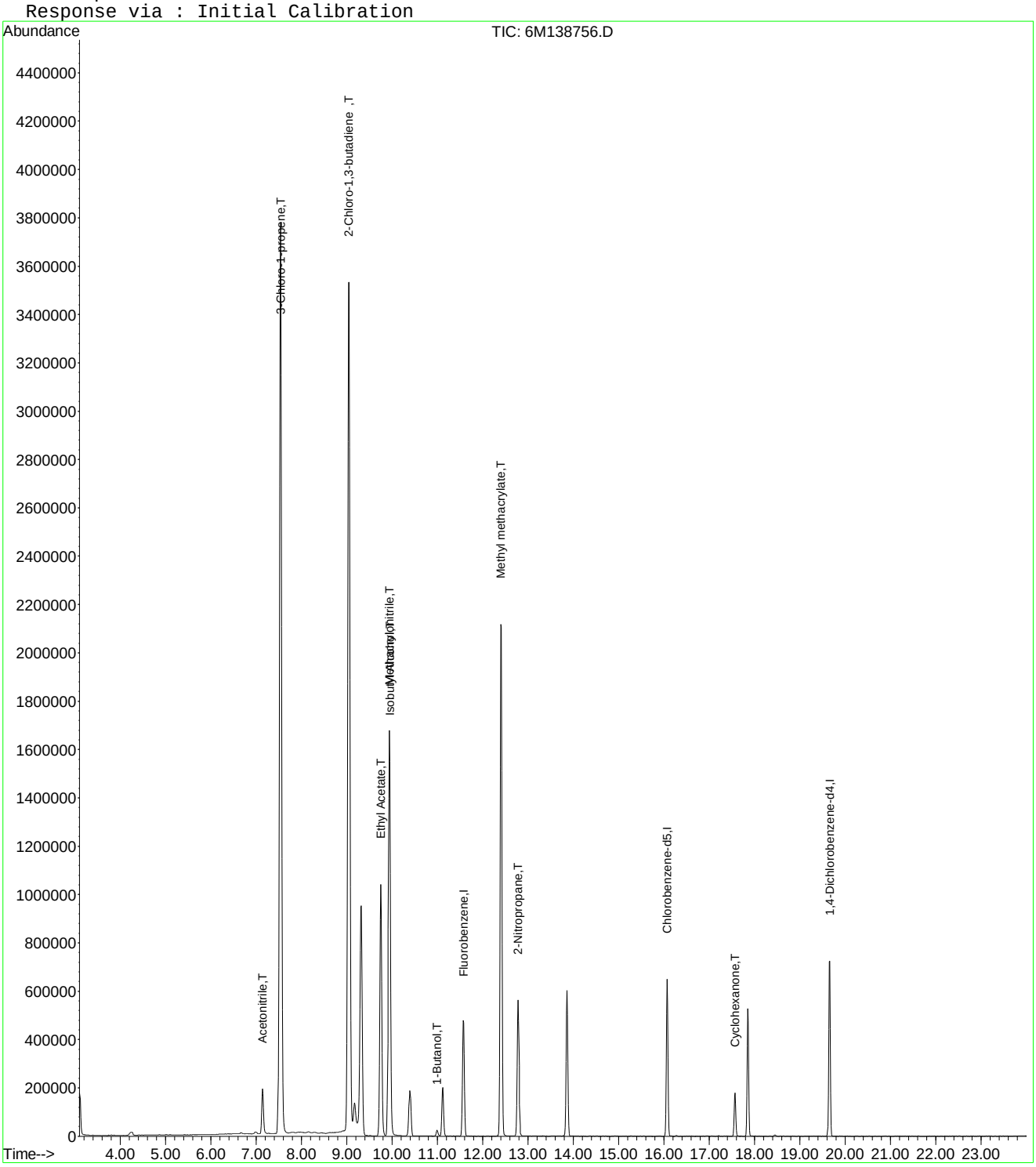

6M138756.D A9FOOWT.M Mon Apr 25 15:45:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.58	96	602356	25.00	ug/L	0.01
11) Chlorobenzene-d5	16.07	117	472685	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	264650	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	273003	302.5900	ug/L	93
3) 3-Chloro-1-propene	7.54	41	4493022	298.8224	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	3994938	309.6481	ug/L	83
5) Ethyl Acetate	9.75	43	1967613	304.6228	ug/L	94
6) Methacrylonitrile	9.94	67	686612	308.3318	ug/L #	63
7) Isobutyl Alcohol	9.95	43	121480	590.5081	ug/L #	90
9) Methyl methacrylate	12.40	41	1742413	320.9449	ug/L	81
10) 2-Nitropropane	12.78	43	613081	303.6419	ug/L	99
13) Cyclohexanone	17.57	55	106618	323.1811	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138756.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

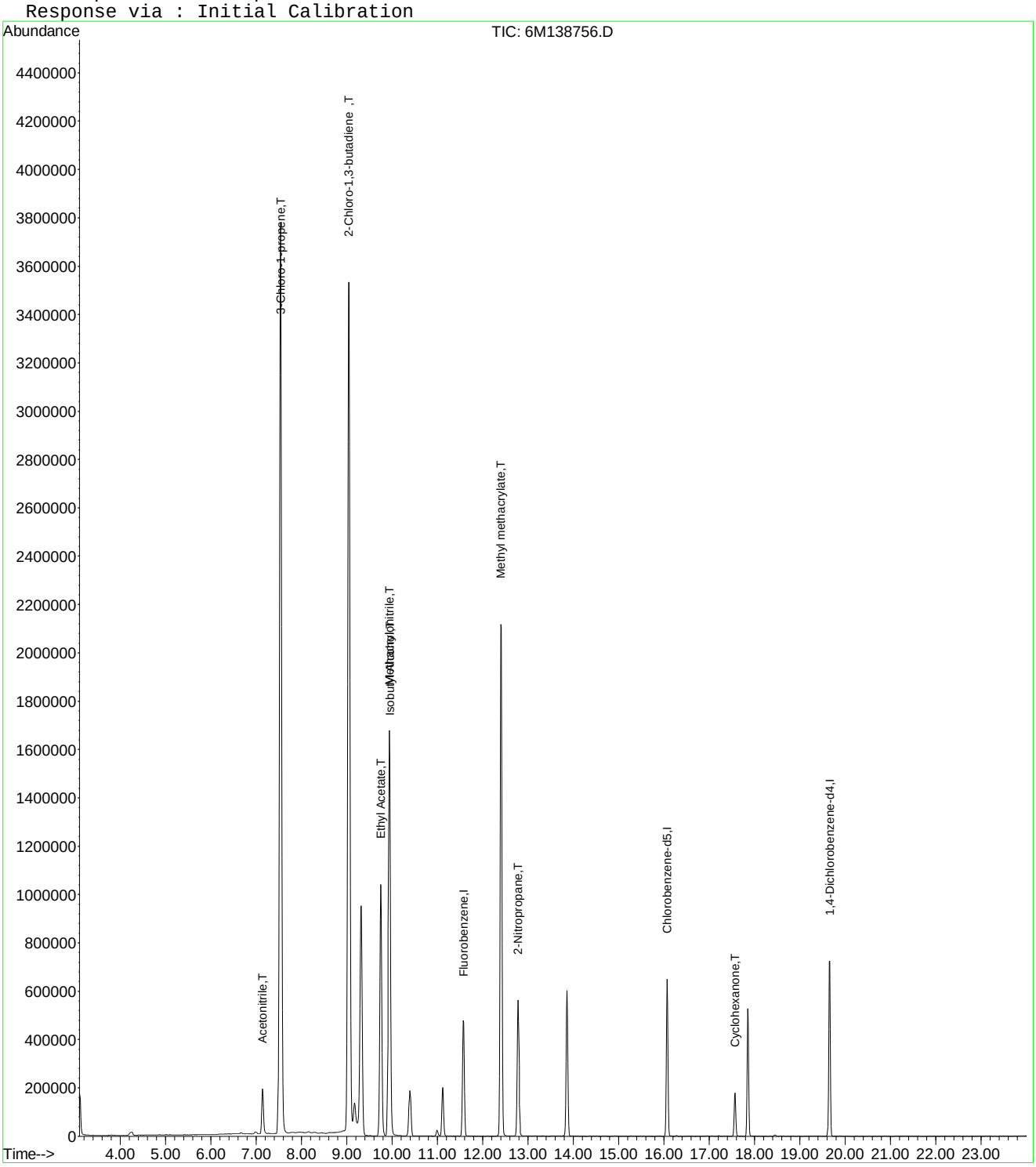

6M138756.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:51 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602625	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.08	117	475117	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	264739	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	170708	27.6598 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.64%		
43) 1,2-Dichloroethane-d4	11.11	65	208757	27.8702 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.48%		
58) Toluene-d8	13.86	98	554316	25.9150 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.64%		
80) p-Bromofluorobenzene	17.85	95	246698	27.9116 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 111.64%		

Target Compounds					Qvalue
13) Acetone	6.66	43	14063	7.5256 ug/L	99
15) Tert-Butyl Alcohol	7.05	59	807	1.5033 ug/L #	59
16) Dimethyl Sulfide	7.16	62	1034	0.2034 ug/L #	1
18) Methyl acetate	7.48	43	1103	0.2125 ug/L #	60
19) Methylene Chloride	7.73	84	1123	0.1699 ug/L #	40
22) Methyl Tert Butyl Ether	7.97	73	18318	1.1224 ug/L #	53
24) n-Hexane	8.28	57	5609	0.6488 ug/L	75
27) 1,1-Dichloroethane	9.04	63	82912	6.4943 ug/L #	48
28) Ethyl-Tert-Butyl ether	9.32	59	139043	6.7111 ug/L #	38
29) 2-Butanone	9.53	43	4129	1.4970 ug/L	86
30) Propionitrile	9.72	54	202	0.2549 ug/L #	1
34) 1-Bromopropane	9.99	122	1978	1.9098 ug/L #	1
36) Tetrahydrofuran	10.37	42	5444	3.0296 ug/L #	63
48) Methylcyclohexane	12.40	83	6593	0.7540 ug/L #	1
60) Ethyl Methacrylate	13.85	69	1165	0.1639 ug/L #	1
73) m-,p-Xylene	16.28	106	1795	0.1593 ug/L	72
79) 1,1,2,2-Tetrachloroethane	17.57	83	12875	1.9973 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138757.D 8260WTR.M Mon Apr 25 09:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

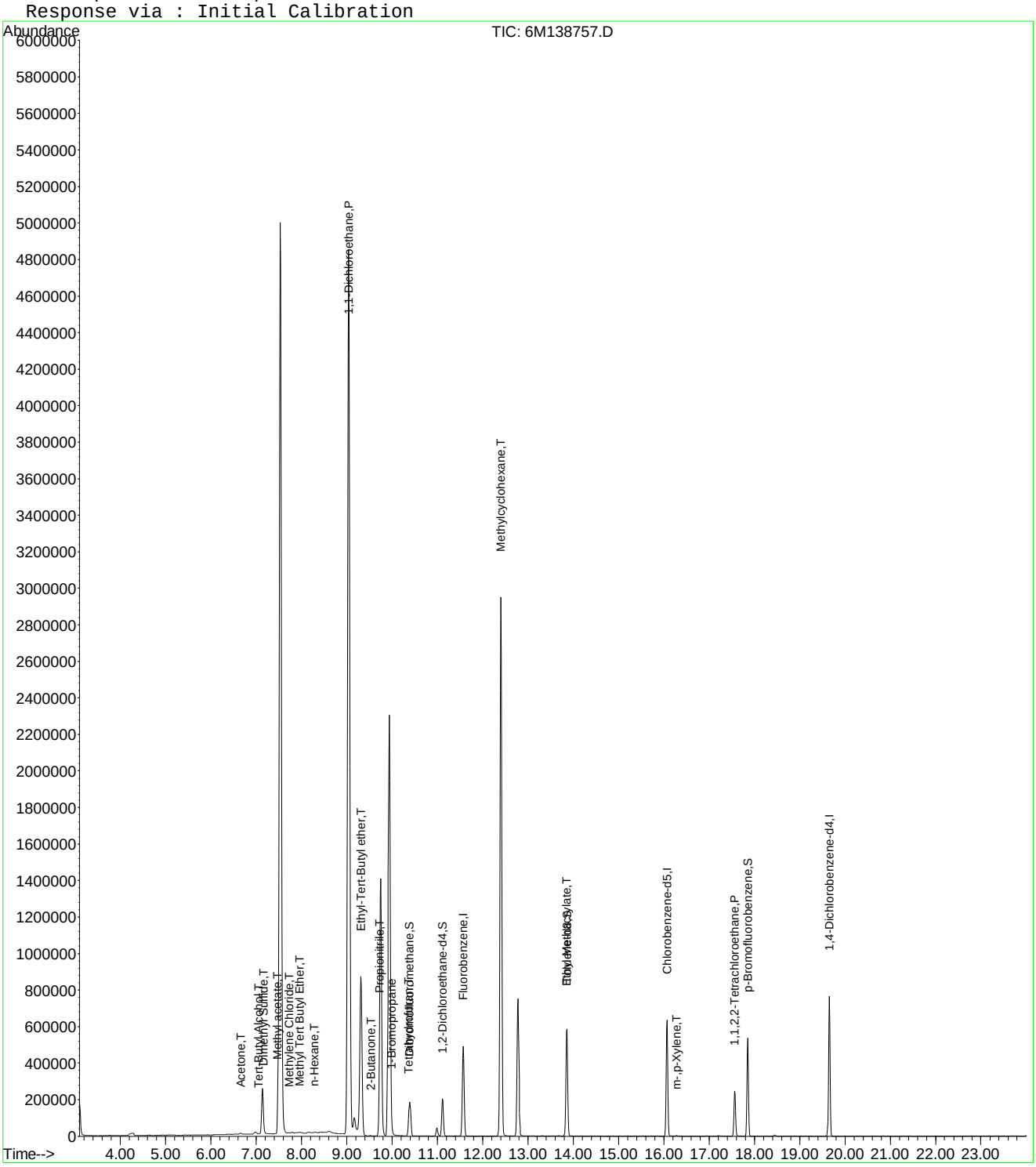

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602625	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.08	117	475117	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.65	152	264739	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	368012	318.0524 ug/L	93
3) 3-Chloro-1-propene	7.53	41	5948883	368.4088 ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	5359203	385.5211 ug/L	83
5) Ethyl Acetate	9.76	43	2690267	423.1975 ug/L	94
6) Methacrylonitrile	9.94	67	929265	380.0675 ug/L #	62
7) Isobutyl Alcohol	9.95	43	192560	550.6158 ug/L #	89
8) 1-Butanol	10.99	41	29815	198.1744 ug/L	75
9) Methyl methacrylate	12.40	41	2375132	375.2316 ug/L	81
10) 2-Nitropropane	12.79	43	849210	455.0717 ug/L	98
13) Cyclohexanone	17.57	55	149420	165.2683 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138757.D A9FOOWT.M Mon Apr 25 15:46:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

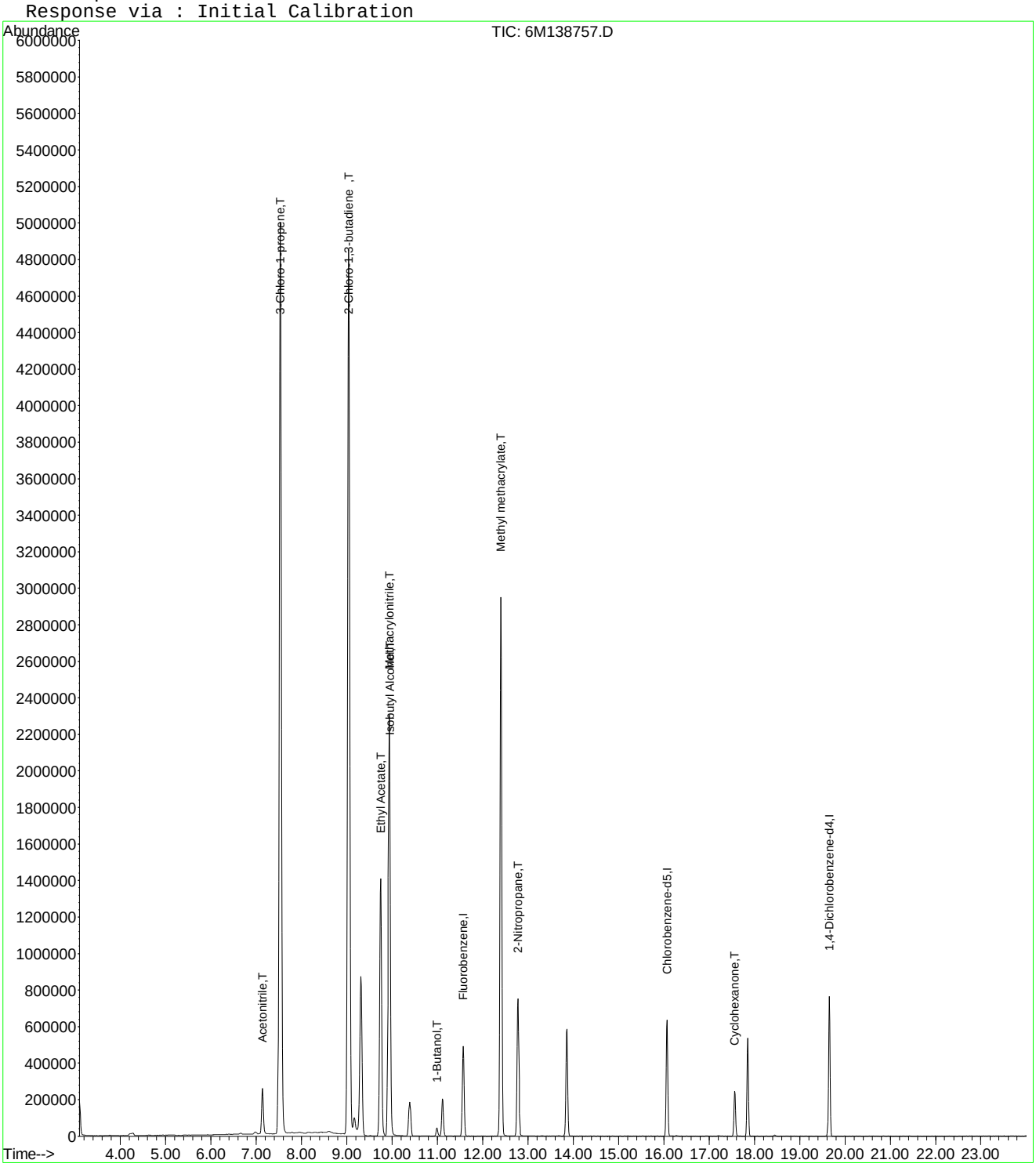

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:01 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602625	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.08	117	475117	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.65	152	264739	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	368012	407.7137 ug/L	93
3) 3-Chloro-1-propene	7.53	41	5948883	395.4723 ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	5359203	415.2070 ug/L	83
5) Ethyl Acetate	9.76	43	2690267	416.3170 ug/L	94
6) Methacrylonitrile	9.94	67	929265	417.1119 ug/L #	62
7) Isobutyl Alcohol	9.95	43	192560	935.6065 ug/L #	89
9) Methyl methacrylate	12.40	41	2375132	437.2937 ug/L	81
10) 2-Nitropropane	12.79	43	849210	420.4022 ug/L	98
13) Cyclohexanone	17.57	55	149420	452.7705 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138757.D A9FOOWT.M Wed Apr 27 16:05:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

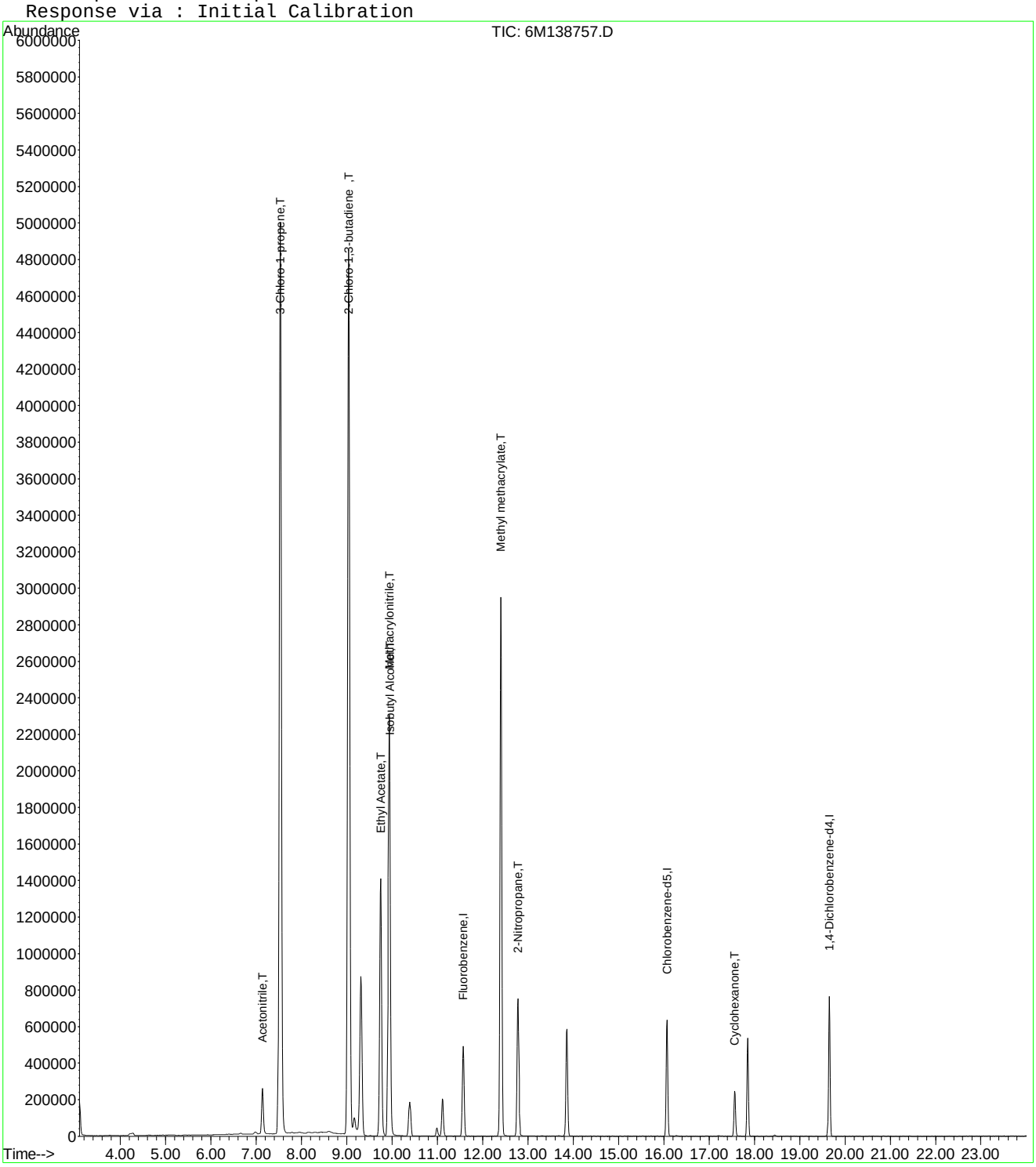

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:52 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	616486	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	485048	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	268890	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	175239	27.7556 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.04%		
43) 1,2-Dichloroethane-d4	11.12	65	210644	27.4898 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 109.96%		
58) Toluene-d8	13.86	98	563297	25.7957 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.20%		
80) p-Bromofluorobenzene	17.85	95	249406	27.7824 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 111.12%		

Target Compounds					Qvalue
13) Acetone	6.67	43	15233	7.9684 ug/L	89
15) Tert-Butyl Alcohol	7.06	59	370	0.6737 ug/L #	59
18) Methyl acetate	7.46	43	1079	0.2032 ug/L #	34
19) Methylene Chloride	7.73	84	1471	0.2176 ug/L	66
20) Carbon Disulfide	7.78	76	2765	0.1407 ug/L #	74
22) Methyl Tert Butyl Ether	7.96	73	25284	1.5144 ug/L #	53
24) n-Hexane	8.28	57	5266	0.5954 ug/L	97
27) 1,1-Dichloroethane	9.05	63	105121	8.0488 ug/L #	48
28) Ethyl-Tert-Butyl ether	9.31	59	124099	5.8551 ug/L #	39
29) 2-Butanone	9.52	43	4475	1.5860 ug/L #	72
30) Propionitrile	9.71	54	473	0.5835 ug/L #	1
34) 1-Bromopropane	10.00	122	2117	1.9980 ug/L #	1
36) Tetrahydrofuran	10.36	42	5652	3.0747 ug/L #	54
48) Methylcyclohexane	12.40	83	8011	0.8956 ug/L #	1
59) Toluene	13.98	91	3373	0.1249 ug/L	84
60) Ethyl Methacrylate	13.87	69	1585	0.2184 ug/L #	1
73) m-,p-Xylene	16.28	106	2521	0.2191 ug/L	79
79) 1,1,2,2-Tetrachloroethane	17.57	83	14350	2.1917 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138758.D 8260WTR.M Mon Apr 25 09:22:52 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

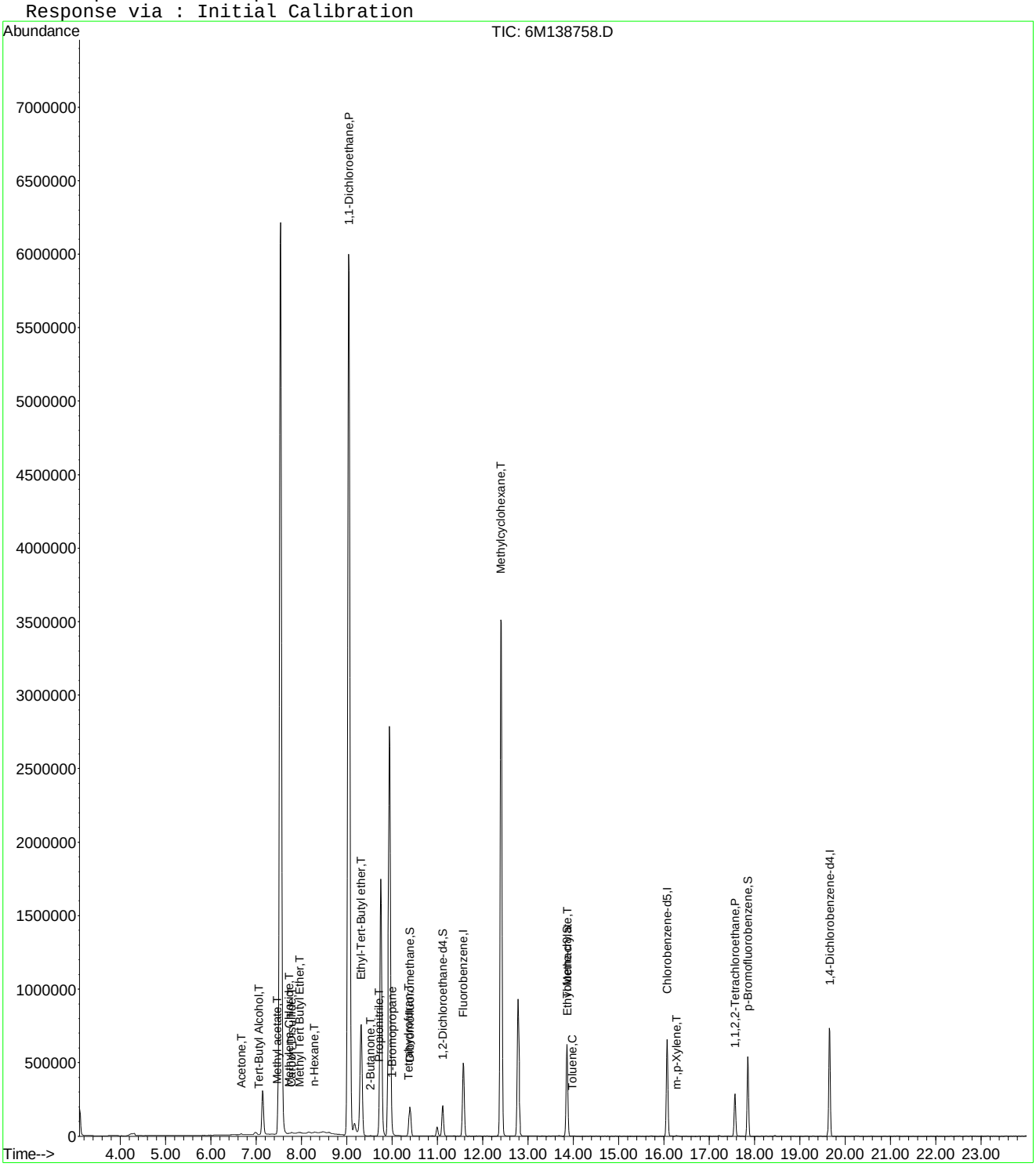

6M138758.D 8260WTR.M Mon Apr 25 09:22:52 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	616486	25.00	ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	485048	25.00	ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	268890	25.00	ug/L	-0.02

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	449583	379.8136	ug/L	92
3) 3-Chloro-1-propene	7.54	41	7430577	449.8223	ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	6752476	474.8265	ug/L	84
5) Ethyl Acetate	9.75	43	3307403	508.5794	ug/L	94
6) Methacrylonitrile	9.94	67	1145073	457.8027	ug/L #	63
7) Isobutyl Alcohol	9.95	43	251034	701.6799	ug/L #	90
8) 1-Butanol	10.99	41	42236	274.4224	ug/L	75
9) Methyl methacrylate	12.40	41	2914815	450.1389	ug/L	81
10) 2-Nitropropane	12.78	43	1036720	543.0629	ug/L	99
13) Cyclohexanone	17.57	55	176545	192.2558	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138758.D A9FOOWT.M Mon Apr 25 15:46:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

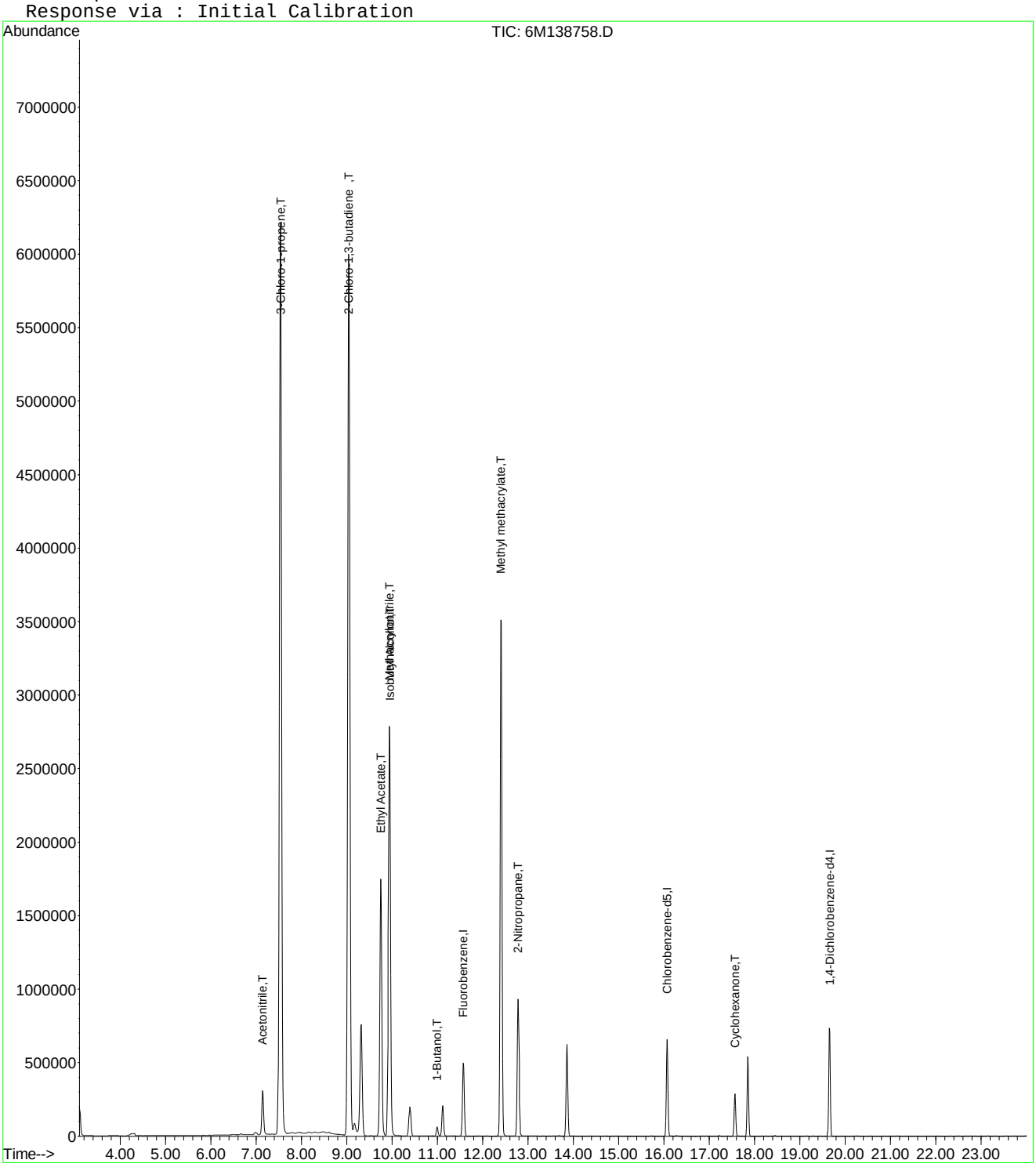

6M138758.D A9FOOWT.M Mon Apr 25 15:46:01 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:01 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	616486	25.00	ug/L	0.00
11) Chlorobenzene-d5	16.07	117	485048	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	268890	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	449583	486.8858	ug/L	92
3) 3-Chloro-1-propene	7.54	41	7430577	482.8665	ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	6752476	511.3891	ug/L	84
5) Ethyl Acetate	9.75	43	3307403	500.3107	ug/L	94
6) Methacrylonitrile	9.94	67	1145073	502.4237	ug/L #	63
7) Isobutyl Alcohol	9.95	43	251034	1192.2947	ug/L #	90
9) Methyl methacrylate	12.40	41	2914815	524.5904	ug/L	81
10) 2-Nitropropane	12.78	43	1036720	501.6898	ug/L	99
13) Cyclohexanone	17.57	55	176545	526.7057	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138758.D A9FOOWT.M Wed Apr 27 16:05:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

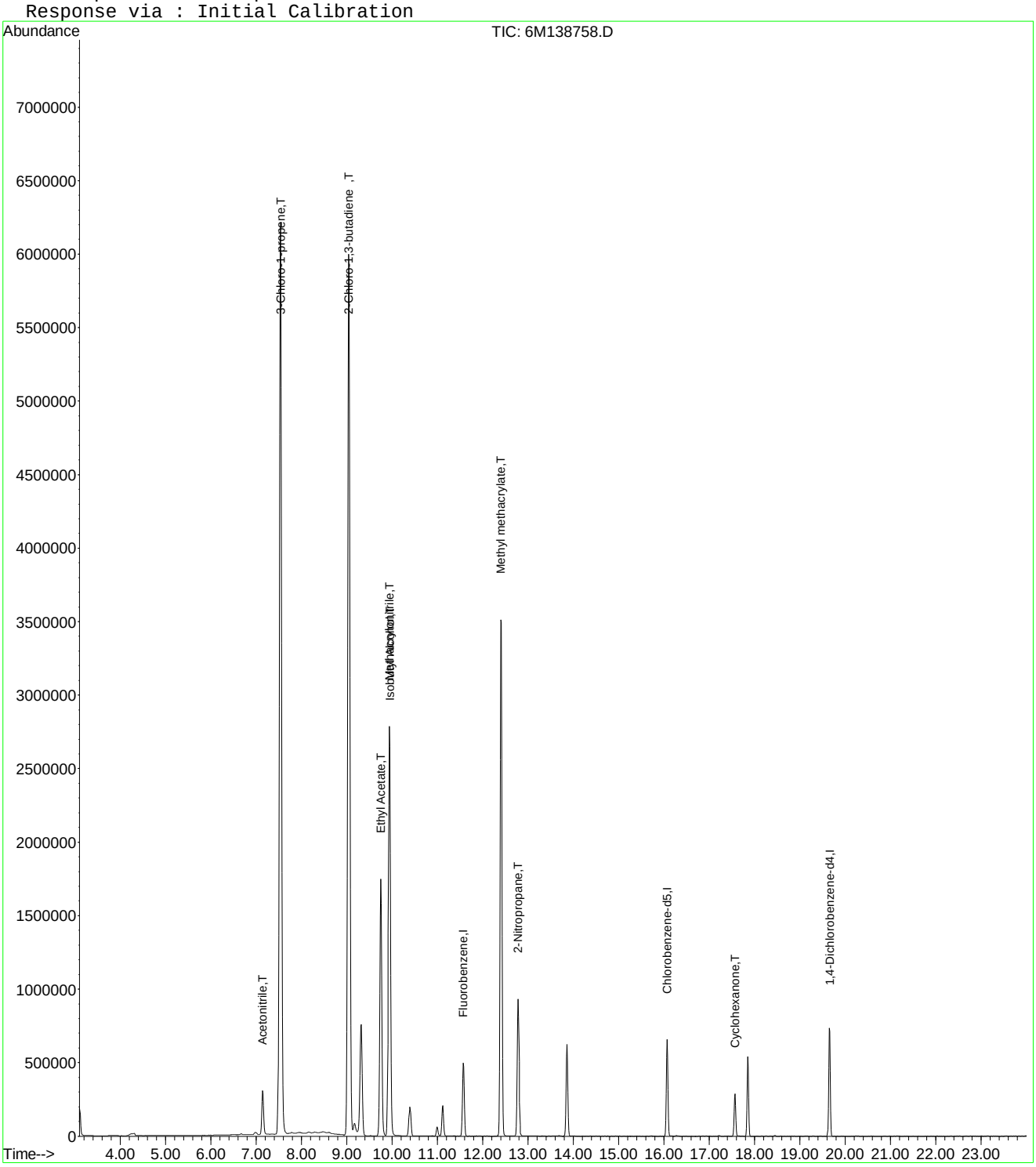

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:54 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602884	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	471639	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	256885	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.40	111	171708	27.8099 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.24%		
43) 1,2-Dichloroethane-d4	11.12	65	210067	28.0330 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.12%		
58) Toluene-d8	13.86	98	553825	26.0829 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.32%		
80) p-Bromofluorobenzene	17.85	95	243088	28.3441 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 113.36%		

Target Compounds					Qvalue
5) 1,3-Butadiene	4.21	54	367749	92.2302 ug/L	88
9) Diethyl ether	6.30	59	700386	132.3612 ug/L	92
13) Acetone	6.67	43	6570	3.5143 ug/L	81
16) Dimethyl Sulfide	7.14	62	2726	0.5361 ug/L #	1
20) Carbon Disulfide	7.54	76	432674	22.5096 ug/L #	36
22) Methyl Tert Butyl Ether	7.97	73	2916	0.1786 ug/L #	53
26) Vinyl Acetate	9.05	43	5230	0.5414 ug/L #	1
27) 1,1-Dichloroethane	9.04	63	22472	1.7594 ug/L #	42
28) Ethyl-Tert-Butyl ether	9.32	59	4063	0.1960 ug/L #	35
29) 2-Butanone	9.52	43	6076	2.2019 ug/L #	66
30) Propionitrile	9.64	54	91341	115.2239 ug/L	96
36) Tetrahydrofuran	10.36	42	4030	2.2418 ug/L #	52
39) Cyclohexane	10.69	56	2387	0.2138 ug/L	79
48) Methylcyclohexane	12.40	83	1353	0.1547 ug/L #	1
50) 1,4-Dioxane	12.73	88	9231	177.0935 ug/L	71
60) Ethyl Methacrylate	13.86	69	1222	0.1732 ug/L #	1
79) 1,1,2,2-Tetrachloroethane	17.57	83	1146	0.1832 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138761.D 8260WTR.M Mon Apr 25 09:22:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

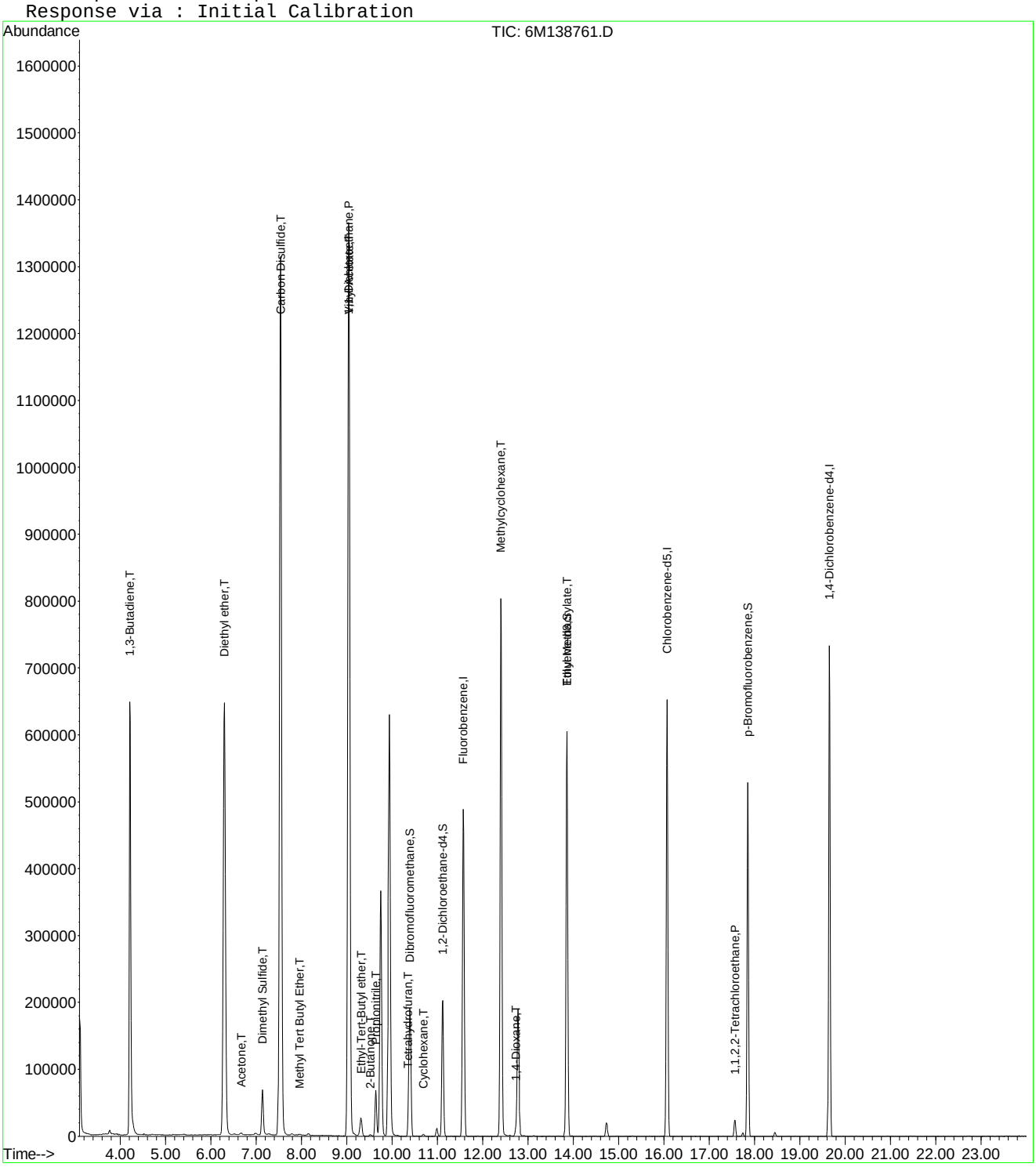

6M138761.D 8260WTR.M Mon Apr 25 09:22:54 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46:01 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602884	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	471639	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.65	152	256885	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	96564	83.4191 ug/L	96
3) 3-Chloro-1-propene	7.54	41	1552115	96.0797 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	1512761	108.7756 ug/L	83
5) Ethyl Acetate	9.75	43	691566	108.7414 ug/L	93
6) Methacrylonitrile	9.94	67	252030	103.0355 ug/L #	63
7) Isobutyl Alcohol	9.95	43	51165	146.2409 ug/L #	93
8) 1-Butanol	10.99	41	7584	50.3877 ug/L	72
9) Methyl methacrylate	12.40	41	635574	100.3670 ug/L	81
10) 2-Nitropropane	12.79	43	211020	113.0321 ug/L	98
13) Cyclohexanone	17.57	55	15491	17.6579 ug/L	85

(#) = qualifier out of range (m) = manual integration
6M138761.D A9FOOWT.M Mon Apr 25 15:46:02 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

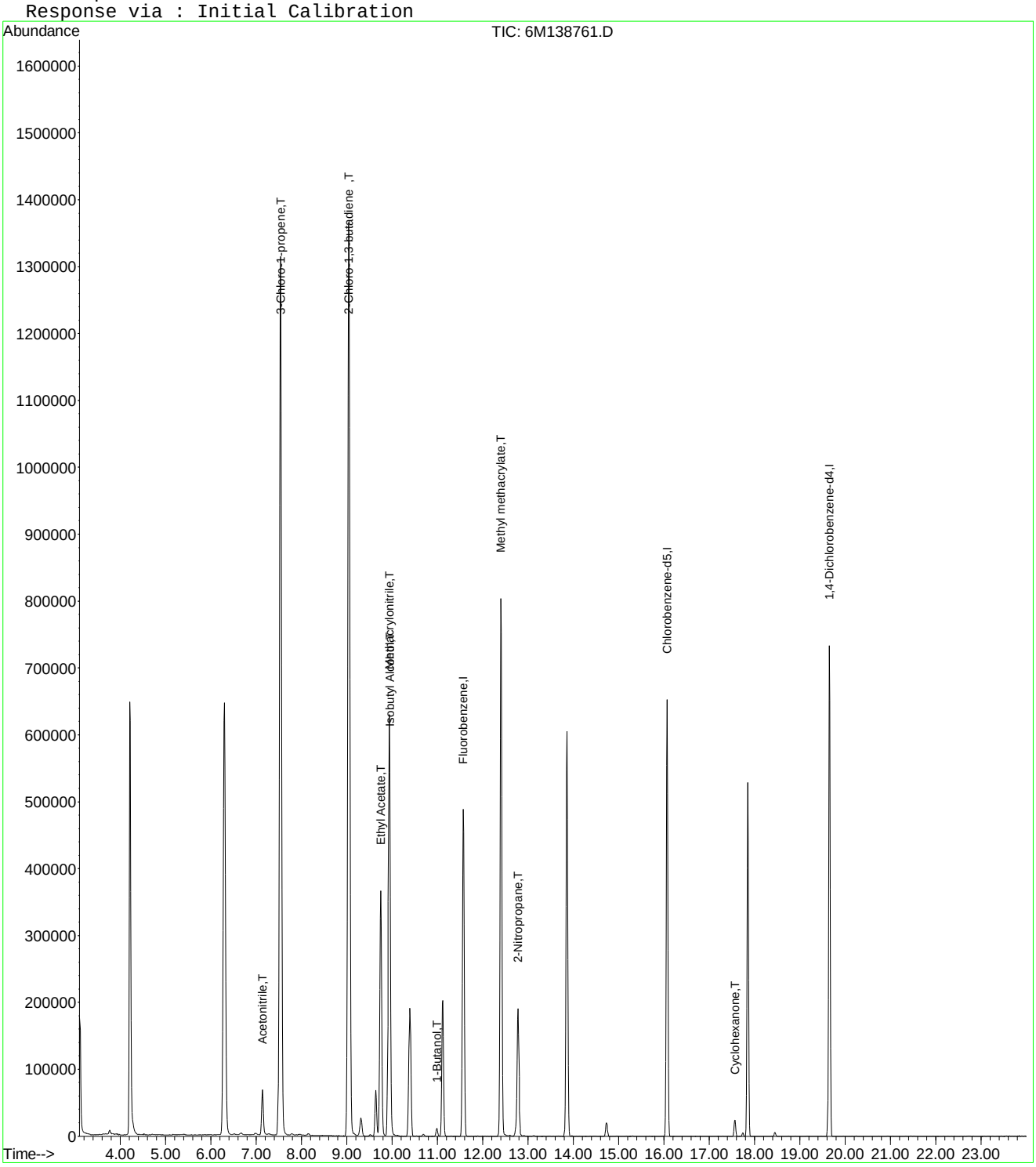

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:02 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	602884	25.00	ug/L	0.00
11) Chlorobenzene-d5	16.07	117	471639	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.65	152	256885	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	96564	106.9355	ug/L	96
3) 3-Chloro-1-propene	7.54	41	1552115	103.1378	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	1512761	117.1516	ug/L	83
5) Ethyl Acetate	9.75	43	691566	106.9734	ug/L	93
6) Methacrylonitrile	9.94	67	252030	113.0781	ug/L #	63
7) Isobutyl Alcohol	9.95	43	51165	248.4926	ug/L #	93
9) Methyl methacrylate	12.40	41	635574	116.9674	ug/L	81
10) 2-Nitropropane	12.79	43	211020	104.4208	ug/L	98
13) Cyclohexanone	17.57	55	15491	48.3758	ug/L	85

(#) = qualifier out of range (m) = manual integration
6M138761.D A9FOOWT.M Wed Apr 27 16:05:02 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

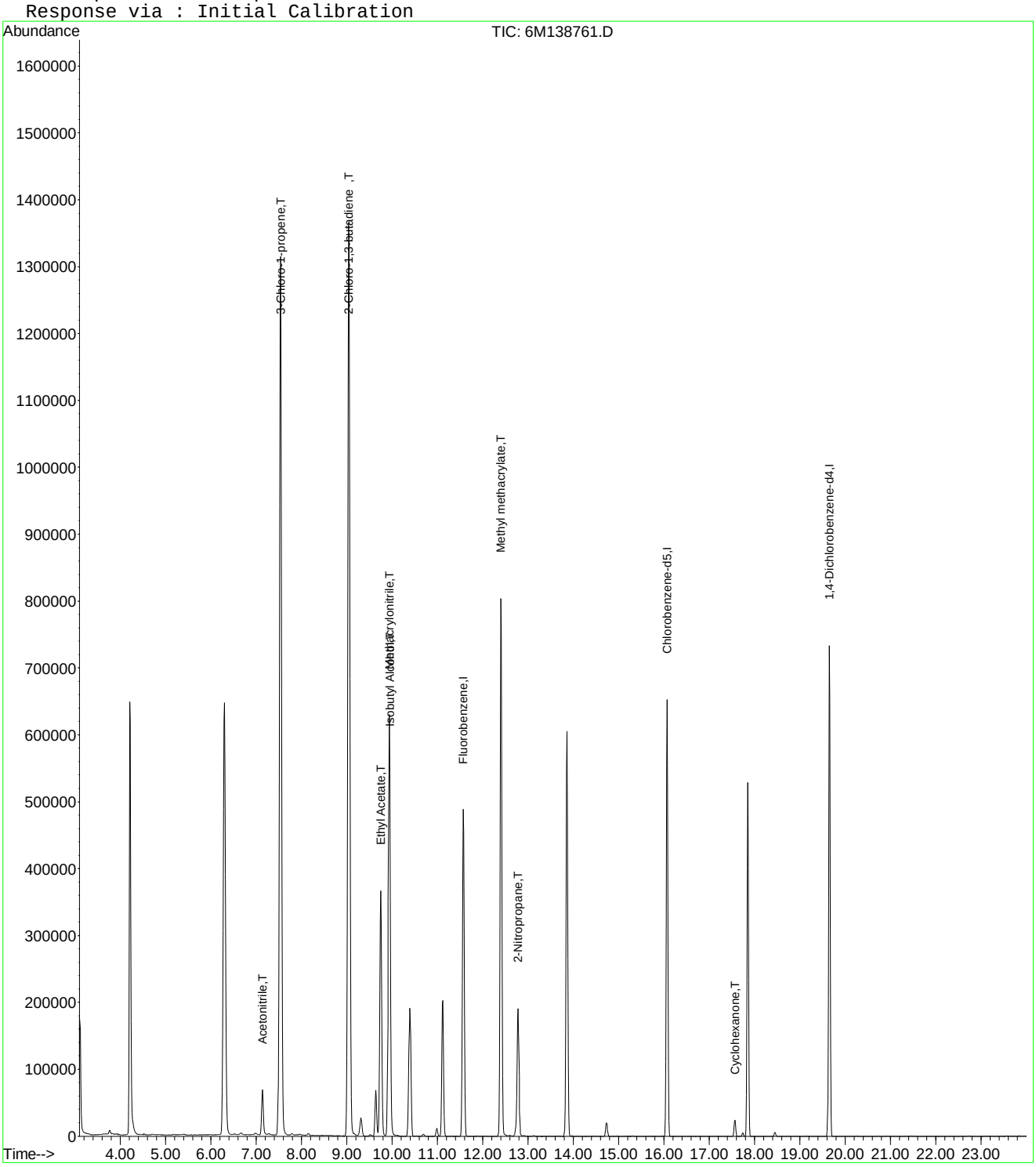

6M138761.D A9FOOWT.M Wed Apr 27 16:05:02 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	101	0.00
2	T	Acetonitrile	100.0000	106.9355	-6.9	106	0.00
3	T	3-Chloro-1-propene	100.0000	103.1378	-3.1	96	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	117.1516	-17.2	107	0.00
5	T	Ethyl Acetate	100.0000	106.9734	-7.0	103	0.00
6	T	Methacrylonitrile	100.0000	113.0781	-13.1	106	0.00
7	T	Isobutyl Alcohol	200.0000	248.4926	-24.2	151	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	100.0000	116.9674	-17.0	108	0.00
10	T	2-Nitropropane	100.0000	104.4208	-4.4	107	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	101	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	100.0000	48.3758	51.6	56	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138761.D A9FOOWT.M Wed Apr 27 16:05:40 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139736.D Vial: 2
Acq On : 1 Jun 2016 12:30 Operator: TMB
Sample : WG570915-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:16 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.56	96	813215	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.06	117	577965	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.64	152	301716	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.38	111	4283	0.5089 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	2.04%#	
43) 1,2-Dichloroethane-d4	11.10	65	4854	0.5232 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	2.08%#	
58) Toluene-d8	13.85	98	12480	0.4499 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	1.80%#	
80) p-Bromofluorobenzene	17.84	95	4709	0.4420 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	1.76%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	4144	0.3219 ug/L #	64
3) Chloromethane	3.94	50	8154	0.5196 ug/L	89
4) Vinyl Chloride	4.17	62	4049	0.3828 ug/L	83
5) 1,3-Butadiene	4.23	54	3789	Below Cal	82
6) Bromomethane	5.09	94	2017	0.3871 ug/L	67
7) Chloroethane	5.24	64	1907	0.2852 ug/L	78
8) Trichlorofluoromethane	5.74	101	5609	0.3959 ug/L #	90
10) Isoprene	6.32	67	4333	0.3598 ug/L	85
12) 1,1,2-Trichloro-1,2,2-Trif	6.53	101	2492	0.3079 ug/L #	51
13) Acetone	6.65	43	8781	1.3297 ug/L	95
14) 1,1-Dichloroethene	6.88	61	5302	0.3699 ug/L	94
16) Dimethyl Sulfide	7.16	62	1556	0.2366 ug/L	90
18) Methyl acetate	7.45	43	2371	0.3380 ug/L #	66
19) Methylene Chloride	7.72	84	3850	0.4356 ug/L	96
20) Carbon Disulfide	7.76	76	13710	0.4889 ug/L	97
22) Methyl Tert Butyl Ether	7.96	73	5876	0.2725 ug/L #	57
23) trans-1,2-Dichloroethene	8.21	96	2912	0.3486 ug/L	79
24) n-Hexane	8.27	57	6111	0.4698 ug/L	95
26) Vinyl Acetate	8.85	43	3338	0.2270 ug/L #	78
27) 1,1-Dichloroethane	8.90	63	5337	0.3188 ug/L	90
29) 2-Butanone	9.52	43	1477	0.4022 ug/L #	57
31) 2,2-Dichloropropane	9.75	77	3421	0.2803 ug/L	93
32) cis-1,2-Dichloroethene	9.82	96	3404	0.3740 ug/L	96
33) Chloroform	10.06	83	4699	0.3152 ug/L	89
35) Bromochloromethane	10.33	130	1415	0.2738 ug/L	97
36) Tetrahydrofuran	10.35	42	3272	1.2942 ug/L #	65
38) 1,1,1-Trichloroethane	10.65	97	3984	0.2996 ug/L	88
39) Cyclohexane	10.69	56	5836	0.3501 ug/L	89
40) 1,1-Dichloropropene	10.89	75	3675	0.3224 ug/L	88
42) Carbon Tetrachloride	11.04	117	3635	0.3064 ug/L #	88
45) 1,2-Dichloroethane	11.24	62	3851	0.3361 ug/L #	84
46) Benzene	11.29	78	13082	0.3916 ug/L	94
47) Trichloroethene	12.15	130	3379	0.3960 ug/L	90
48) Methylcyclohexane	12.23	83	4088	0.3160 ug/L	89
49) 1,2-Dichloropropane	12.39	63	2852	0.3091 ug/L	92
51) Bromodichloromethane	12.74	83	3241	0.2856 ug/L	93
52) Dibromomethane	12.84	93	1404	0.2949 ug/L	85
53) 2-Chloroethyl Vinyl Ether	13.09	63	565	0.1342 ug/L #	41
54) 4-Methyl-2-Pentanone	13.13	58	397	0.1416 ug/L #	38
55) cis-1,3-Dichloropropene	13.48	75	4146	0.3228 ug/L #	86

(#) = qualifier out of range (m) = manual integration
6M139736.D 8260WT.M Thu Jun 02 12:18:18 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139736.D Vial: 2
Acq On : 1 Jun 2016 12:30 Operator: TMB
Sample : WG570915-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:16 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
56)	Dimethyl Disulfide	13.79	79	1395	0.1885 ug/L #	47
59)	Toluene	13.96	91	12731	0.3879 ug/L	97
60)	Ethyl Methacrylate	14.08	69	2174	0.2417 ug/L	85
62)	trans-1,3-Dichloropropene	14.17	75	3169	0.2835 ug/L #	66
63)	1,1,2-Trichloroethane	14.43	97	1621	0.2594 ug/L	96
64)	2-Hexanone	14.36	43	1082	0.2041 ug/L #	28
65)	1,3-Dichloropropane	14.79	76	3110	0.2831 ug/L	83
66)	Tetrachloroethene	14.92	166	3177	0.3690 ug/L	86
67)	Dibromochloromethane	15.23	129	2098	0.2635 ug/L	96
68)	1,2-Dibromoethane	15.53	107	1937	0.3207 ug/L	77
69)	1-Chlorohexane	15.65	91	3354	0.3147 ug/L	92
70)	Chlorobenzene	16.13	112	8026	0.3655 ug/L	95
71)	1,1,1,2-Tetrachloroethane	16.17	131	2302	0.2890 ug/L	94
72)	Ethylbenzene	16.16	106	3722	0.3195 ug/L	74
73)	m-,p-Xylene	16.27	106	10149	0.7334 ug/L	99
74)	o-Xylene	16.92	106	4124	0.3016 ug/L	92
75)	Styrene	16.97	104	6703	0.2951 ug/L	96
76)	Bromoform	17.55	173	1095	0.2168 ug/L #	52
77)	Isopropylbenzene	17.43	105	10818	0.3152 ug/L	99
79)	1,1,2,2-Tetrachloroethane	17.70	83	1648	0.2266 ug/L	89
83)	n-Propylbenzene	18.03	91	15389	0.3935 ug/L #	95
84)	Bromobenzene	18.18	156	3040	0.3313 ug/L	88
85)	1,3,5-Trimethylbenzene	18.26	105	8430	0.3047 ug/L	95
86)	2-Chlorotoluene	18.35	91	9550	0.3565 ug/L	89
87)	4-Chlorotoluene	18.41	91	8247	0.3316 ug/L	98
88)	a-Methylstyrene	18.74	118	3516	0.2273 ug/L	85
89)	tert-Butylbenzene	18.80	134	1775	0.2910 ug/L	94
90)	1,2,4-Trimethylbenzene	18.86	105	8937	0.3086 ug/L	99
91)	sec-Butylbenzene	19.12	105	10994	0.3229 ug/L	94
92)	p-Isopropyltoluene	19.32	119	9119	0.3143 ug/L	92
93)	1,3-Dichlorobenzene	19.54	146	7014	0.3920 ug/L	92
94)	1,4-Dichlorobenzene	19.69	146	9787	0.3660 ug/L	92
95)	n-Butylbenzene	19.94	91	9532	0.3471 ug/L	97
96)	1,2-Dichlorobenzene	20.27	146	5584	0.3349 ug/L	92
98)	1,2,4-Trichlorobenzene	22.82	180	4377	0.3797 ug/L	96
99)	Hexachlorobutadiene	23.01	225	1664	0.3478 ug/L #	77
100)	Naphthalene	23.27	128	8470	0.3717 ug/L #	86
101)	1,2,3-Trichlorobenzene	23.69	180	3552	0.3256 ug/L	89

(#) = qualifier out of range (m) = manual integration
6M139736.D 8260WT.M Thu Jun 02 12:18:18 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139736.D Vial: 2
Acq On : 1 Jun 2016 12:30 Operator: TMB
Sample : WG570915-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 2 12:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration

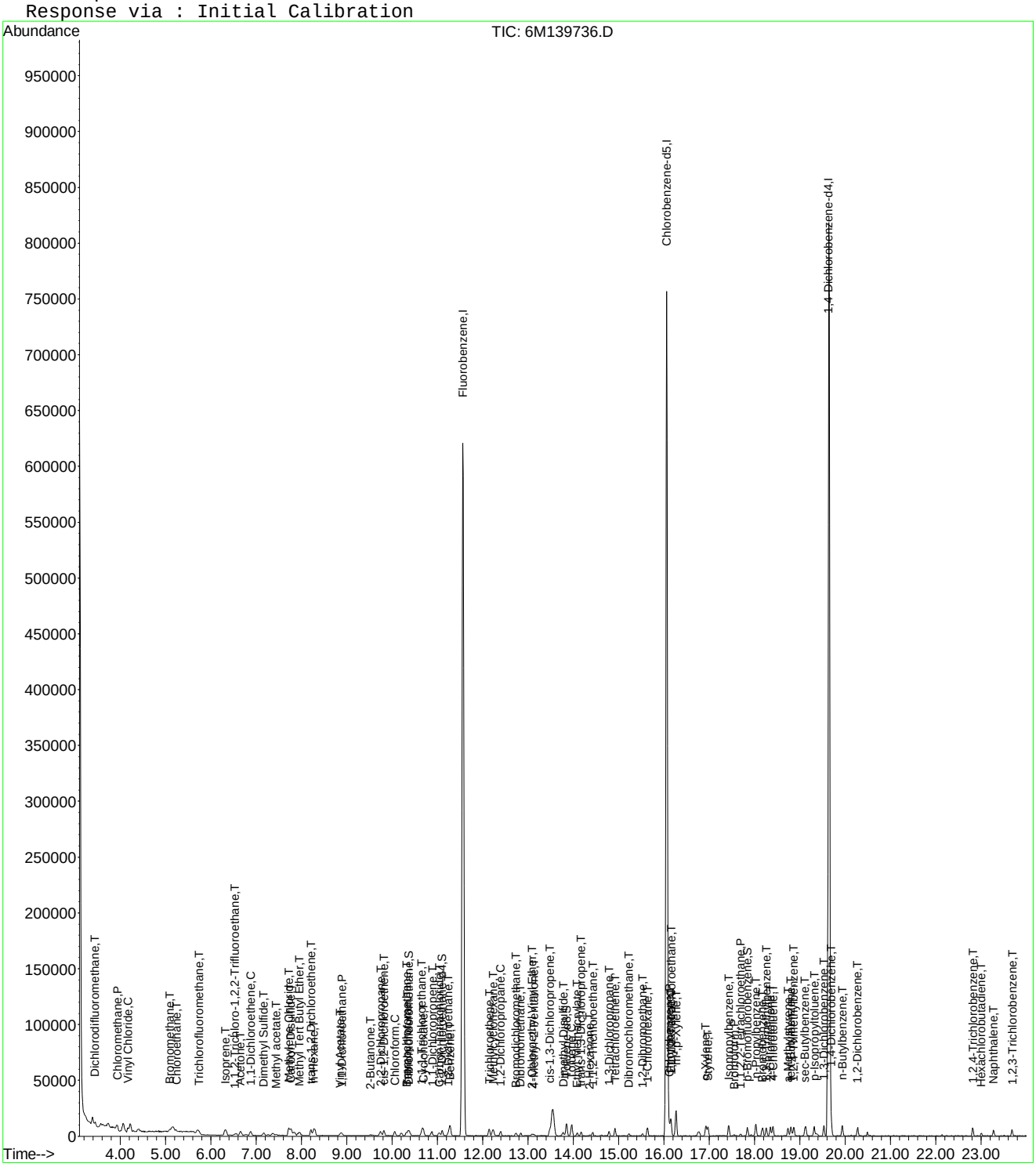

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\060116\6M139736.D Vial: 2
Acq On : 1 Jun 2016 12:30 Operator: TMB
Sample : WG570915-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.3219	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.5196	0.0	100	0.01
4	C	Vinyl Chloride	-1.0000	0.3828	0.0	100	0.01
5	T	1,3-Butadiene	-1.0000	-4.7832	0.0	0	0.03
6	T	Bromomethane	-1.0000	0.3871	0.0	100	0.02
7	T	Chloroethane	-1.0000	0.2852	0.0	100	0.01
8	T	Trichlorofluoromethane	-1.0000	0.3959	0.0	100	0.02
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.29#
10	T	Isoprene	-1.0000	0.3598	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.54#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3079	0.0	100	-0.02
13	T	Acetone	-1.0000	1.3297	0.0	0	0.00
14	C	1,1-Dichloroethene	-1.0000	0.3699	0.0	100	0.01
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-7.05#
16	T	Dimethyl Sulfide	-1.0000	0.2366	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.43#
18	T	Methyl acetate	-1.0000	0.3380	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4356	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4889	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.92#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2725	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	-1.0000	0.3486	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.4698	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.67#
26	T	Vinyl Acetate	-1.0000	0.2270	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.3188	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-9.30#
29	T	2-Butanone	-1.0000	0.4022	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.64#
31	T	2,2-Dichloropropane	-1.0000	0.2803	0.0	100	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.3740	0.0	100	0.00
33	C	Chloroform	0.3000	0.3152	-5.1	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-10.21#
35	T	Bromochloromethane	-1.0000	0.2738	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	1.2942	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.5089	0.0	100	0.00
38	T	1,1,1-Trichloroethane	-1.0000	0.2996	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.3501	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.3224	0.0	100	0.01
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-11.01#
42	T	Carbon Tetrachloride	-1.0000	0.3064	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.5232	0.0	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-11.01#
45	T	1,2-Dichloroethane	-1.0000	0.3361	0.0	100	0.00
46	T	Benzene	-1.0000	0.3916	0.0	100	0.00
47	T	Trichloroethene	-1.0000	0.3960	0.0	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3160	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.3091	0.0	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-12.74#
51	T	Bromodichloromethane	-1.0000	0.2856	0.0	100	0.00
52	T	Dibromomethane	-1.0000	0.2949	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1342	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.1416	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\060116\6M139736.D Vial: 2
Acq On : 1 Jun 2016 12:30 Operator: TMB
Sample : WG570915-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.3228	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.1885	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.4499	0.0	100	0.00
59	C	Toluene	-1.0000	0.3879	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2417	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.97#
62	T	trans-1,3-Dichloropropene	-1.0000	0.2835	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.2594	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.2041	0.0	100	0.00
65	T	1,3-Dichloropropane	-1.0000	0.2831	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.3690	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.2635	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.3207	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.3147	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.3655	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.2890	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.3195	0.0	100	0.00
73	T	m-,p-Xylene	-1.0000	0.7334	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.3016	0.0	100	0.00
75	T	Styrene	-1.0000	0.2951	0.0	100	0.00
76	P	Bromoform	-1.0000	0.2168	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.3152	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2266	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.4420	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-17.92#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-17.98#
83	T	n-Propylbenzene	-1.0000	0.3935	0.0	100	0.00
84	T	Bromobenzene	0.3000	0.3313	-10.4	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.3047	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.3565	0.0	100	0.00
87	T	4-Chlorotoluene	-1.0000	0.3316	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2273	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.2910	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.3086	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3229	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.3143	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.3920	0.0	100	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.3660	-22.0#	100	0.00
95	T	n-Butylbenzene	-1.0000	0.3471	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.3349	-11.6	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-21.46#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.3797	0.0	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.3478	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.3717	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.3256	-8.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M139736.D 8260WT.M Thu Jun 02 12:18:44 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139737.D Vial: 3
Acq On : 1 Jun 2016 13:01 Operator: TMB
Sample : WG570915-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:19 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.56	96	762881	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	549597	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.64	152	286787	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	13.85	98	1770	0.0671 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.28%#	
80) p-Bromofluorobenzene	17.83	95	697	0.0688 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	4460	0.3693 ug/L #	75
3) Chloromethane	3.93	50	7549	0.5128 ug/L	89
4) Vinyl Chloride	4.17	62	4900	0.4938 ug/L	79
5) 1,3-Butadiene	4.23	54	5430	Below Cal #	74
6) Bromomethane	5.08	94	1638	0.3351 ug/L	89
7) Chloroethane	5.24	64	2312	0.3686 ug/L #	72
8) Trichlorofluoromethane	5.73	101	5332	0.4012 ug/L #	89
10) Isoprene	6.33	67	4504	0.3986 ug/L	91
12) 1,1,2-Trichloro-1,2,2-Trif	6.55	101	2583	0.3402 ug/L	86
13) Acetone	6.66	43	2630	Below Cal #	48
14) 1,1-Dichloroethene	6.89	61	5658	0.4208 ug/L	91
16) Dimethyl Sulfide	7.17	62	2447	0.3966 ug/L	84
18) Methyl acetate	7.46	43	2637	0.4008 ug/L #	66
19) Methylene Chloride	7.72	84	3896	0.4699 ug/L	95
20) Carbon Disulfide	7.77	76	11879	0.4516 ug/L	90
22) Methyl Tert Butyl Ether	7.96	73	7778	0.3845 ug/L	88
23) trans-1,2-Dichloroethene	8.21	96	3104	0.3961 ug/L	95
24) n-Hexane	8.29	57	5504	0.4510 ug/L	100
26) Vinyl Acetate	8.86	43	4070	0.2951 ug/L #	78
27) 1,1-Dichloroethane	8.90	63	6427	0.4093 ug/L	93
29) 2-Butanone	9.51	43	1191	0.3457 ug/L #	57
31) 2,2-Dichloropropane	9.76	77	4571	0.3993 ug/L	92
32) cis-1,2-Dichloroethene	9.83	96	3207	0.3756 ug/L	85
33) Chloroform	10.06	83	5486	0.3923 ug/L	94
35) Bromochloromethane	10.33	130	1840	0.3795 ug/L	81
36) Tetrahydrofuran	10.36	42	3761	1.5858 ug/L	79
38) 1,1,1-Trichloroethane	10.65	97	5324	0.4267 ug/L	82
39) Cyclohexane	10.68	56	6403	0.4095 ug/L	90
40) 1,1-Dichloropropene	10.88	75	4176	0.3906 ug/L	95
42) Carbon Tetrachloride	11.04	117	4371	0.3927 ug/L #	92
45) 1,2-Dichloroethane	11.25	62	4453	0.4143 ug/L #	79
46) Benzene	11.29	78	13721	0.4378 ug/L	96
47) Trichloroethene	12.14	130	3152	0.3938 ug/L	99
48) Methylcyclohexane	12.23	83	4741	0.3907 ug/L	91
49) 1,2-Dichloropropane	12.39	63	3378	0.3902 ug/L	91
51) Bromodichloromethane	12.74	83	4050	0.3804 ug/L	98
52) Dibromomethane	12.84	93	1706	0.3819 ug/L	85
53) 2-Chloroethyl Vinyl Ether	13.08	63	1091	0.2761 ug/L #	41
55) cis-1,3-Dichloropropene	13.48	75	4324	0.3589 ug/L	91
56) Dimethyl Disulfide	13.78	79	1868	0.2691 ug/L #	47

(#) = qualifier out of range (m) = manual integration
6M139737.D 8260WT.M Thu Jun 02 12:18:19 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139737.D Vial: 3
Acq On : 1 Jun 2016 13:01 Operator: TMB
Sample : WG570915-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:19 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
59)	Toluene	13.96	91	12953	0.4150	ug/L		98
60)	Ethyl Methacrylate	14.10	69	2921	0.3415	ug/L		94
62)	trans-1,3-Dichloropropene	14.18	75	3597	0.3384	ug/L		88
63)	1,1,2-Trichloroethane	14.43	97	2395	0.4031	ug/L		98
64)	2-Hexanone	14.36	43	1748	0.3467	ug/L	#	68
65)	1,3-Dichloropropane	14.79	76	4110	0.3934	ug/L		93
66)	Tetrachloroethene	14.92	166	3316	0.4051	ug/L		95
67)	Dibromochloromethane	15.23	129	2940	0.3883	ug/L		88
68)	1,2-Dibromoethane	15.53	107	2255	0.3926	ug/L		97
69)	1-Chlorohexane	15.64	91	3691	0.3642	ug/L		89
70)	Chlorobenzene	16.13	112	8656	0.4145	ug/L		90
71)	1,1,1,2-Tetrachloroethane	16.16	131	2926	0.3863	ug/L		91
72)	Ethylbenzene	16.16	106	4269	0.3854	ug/L		86
73)	m-,p-Xylene	16.26	106	11025	0.8378	ug/L		99
74)	o-Xylene	16.93	106	4600	0.3537	ug/L		86
75)	Styrene	16.97	104	7188	0.3328	ug/L		90
76)	Bromoform	17.55	173	1259	0.2621	ug/L	#	68
77)	Isopropylbenzene	17.43	105	13008	0.3985	ug/L		93
79)	1,1,2,2-Tetrachloroethane	17.70	83	2694	0.3896	ug/L		90
81)	1,2,3-Trichloropropane	17.91	110	393	0.1963	ug/L	#	1
83)	n-Propylbenzene	18.04	91	15780	0.4246	ug/L	#	92
84)	Bromobenzene	18.18	156	3461	0.3968	ug/L		93
85)	1,3,5-Trimethylbenzene	18.26	105	9975	0.3793	ug/L		99
86)	2-Chlorotoluene	18.35	91	11254	0.4420	ug/L		95
87)	4-Chlorotoluene	18.41	91	9173	0.3881	ug/L		93
88)	a-Methylstyrene	18.74	118	4377	0.2977	ug/L		97
89)	tert-Butylbenzene	18.80	134	2203	0.3800	ug/L		87
90)	1,2,4-Trimethylbenzene	18.86	105	10590	0.3847	ug/L		99
91)	sec-Butylbenzene	19.13	105	12756	0.3942	ug/L		90
92)	p-Isopropyltoluene	19.32	119	10579	0.3836	ug/L		93
93)	1,3-Dichlorobenzene	19.54	146	7639	0.4492	ug/L		93
94)	1,4-Dichlorobenzene	19.69	146	8053	0.2880	ug/L		91
95)	n-Butylbenzene	19.94	91	10201	0.3908	ug/L		97
96)	1,2-Dichlorobenzene	20.28	146	6377	0.4024	ug/L		98
98)	1,2,4-Trichlorobenzene	22.83	180	4547	0.4149	ug/L		97
99)	Hexachlorobutadiene	23.01	225	1883	0.4141	ug/L		86
100)	Naphthalene	23.28	128	8429	0.3891	ug/L	#	82
101)	1,2,3-Trichlorobenzene	23.67	180	4307	0.4153	ug/L		94

(#) = qualifier out of range (m) = manual integration
6M139737.D 8260WT.M Thu Jun 02 12:18:19 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139737.D Vial: 3
Acq On : 1 Jun 2016 13:01 Operator: TMB
Sample : WG570915-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 2 12:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration

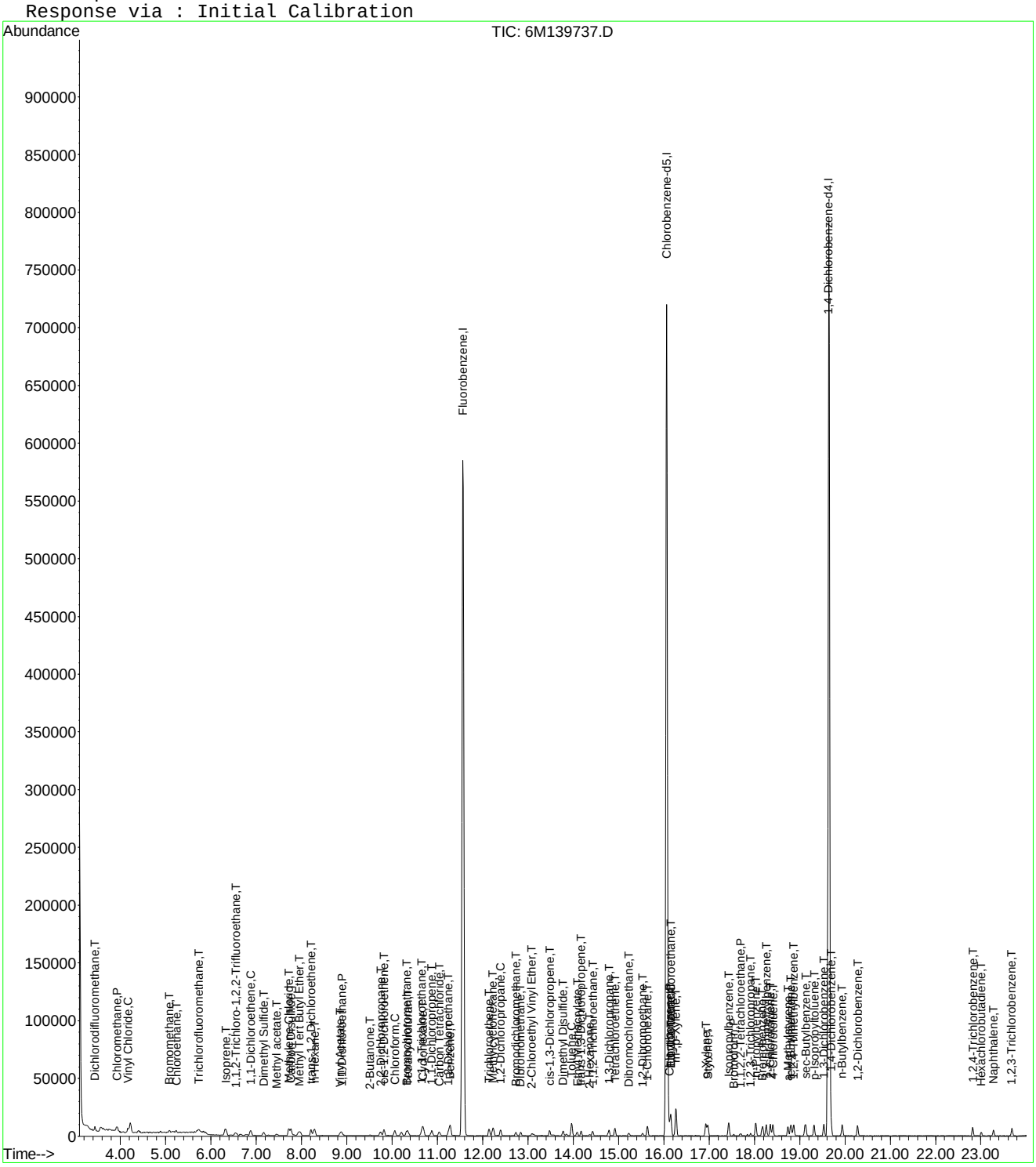

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\060116\6M139737.D Vial: 3
Acq On : 1 Jun 2016 13:01 Operator: TMB
Sample : WG570915-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.3693	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.5128	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.4938	-23.4#	100	0.01
5	T	1,3-Butadiene	-1.0000	-4.4099	0.0	0	0.03
6	T	Bromomethane	-1.0000	0.3351	0.0	100	0.01
7	T	Chloroethane	-1.0000	0.3686	0.0	100	0.01
8	T	Trichlorofluoromethane	0.4000	0.4012	-0.3	100	0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.29#
10	T	Isoprene	-1.0000	0.3986	0.0	100	0.01
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.54#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3402	0.0	100	0.00
13	T	Acetone	-1.0000	-1.3315	0.0	0	0.00
14	C	1,1-Dichloroethene	0.4000	0.4208	-5.2	100	0.01
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-7.05#
16	T	Dimethyl Sulfide	-1.0000	0.3966	0.0	100	0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.43#
18	T	Methyl acetate	-1.0000	0.4008	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4699	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4516	0.0	100	0.01
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.92#
22	T	Methyl Tert Butyl Ether	-1.0000	0.3845	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.3961	1.0	100	0.00
24	T	n-Hexane	-1.0000	0.4510	0.0	100	0.01
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.67#
26	T	Vinyl Acetate	-1.0000	0.2951	0.0	100	0.00
27	P	1,1-Dichloroethane	0.4000	0.4093	-2.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-9.30#
29	T	2-Butanone	-1.0000	0.3457	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.64#
31	T	2,2-Dichloropropane	0.4000	0.3993	0.2	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.3756	6.1	100	0.00
33	C	Chloroform	0.4000	0.3923	1.9	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-10.21#
35	T	Bromochloromethane	0.4000	0.3795	5.1	100	0.00
36	T	Tetrahydrofuran	-1.0000	1.5858	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-10.38#
38	T	1,1,1-Trichloroethane	0.4000	0.4268	-6.7	100	0.00
39	T	Cyclohexane	-1.0000	0.4095	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.3906	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-11.01#
42	T	Carbon Tetrachloride	0.4000	0.3927	1.8	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-11.11#
44		Heptane	-1.0000	0.0000	0.0	0	-11.01#
45	T	1,2-Dichloroethane	0.4000	0.4143	-3.6	100	0.00
46	T	Benzene	0.4000	0.4378	-9.5	100	0.00
47	T	Trichloroethene	0.4000	0.3938	1.6	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3907	0.0	100	0.00
49	C	1,2-Dichloropropane	0.4000	0.3902	2.4	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-12.74#
51	T	Bromodichloromethane	0.4000	0.3804	4.9	100	0.00
52	T	Dibromomethane	0.4000	0.3819	4.5	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2761	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0913	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\060116\6M139737.D Vial: 3
Acq On : 1 Jun 2016 13:01 Operator: TMB
Sample : WG570915-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3589	10.3	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2691	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0671	0.0	100	0.00
59	C	Toluene	0.4000	0.4150	-3.8	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3415	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.97#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3384	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.4031	-0.8	100	0.00
64	T	2-Hexanone	-1.0000	0.3467	0.0	100	0.00
65	T	1,3-Dichloropropane	0.4000	0.3934	1.6	100	0.00
66	T	Tetrachloroethene	0.4000	0.4051	-1.3	100	0.00
67	T	Dibromochloromethane	0.4000	0.3883	2.9	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.3926	1.8	100	0.00
69	T	1-Chlorohexane	0.4000	0.3642	8.9	100	0.00
70	P	Chlorobenzene	0.4000	0.4145	-3.6	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3863	3.4	100	0.00
72	C	Ethylbenzene	0.4000	0.3854	3.6	100	0.00
73	T	m-,p-Xylene	0.8000	0.8378	-4.7	100	0.00
74	T	o-Xylene	-1.0000	0.3537	0.0	100	0.00
75	T	Styrene	0.4000	0.3328	16.8	100	0.00
76	P	Bromoform	-1.0000	0.2621	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.3985	0.4	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.3896	2.6	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0688	0.0	100	-0.02
81	T	1,2,3-Trichloropropane	-1.0000	0.1963	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-17.98#
83	T	n-Propylbenzene	0.4000	0.4245	-6.1	100	0.00
84	T	Bromobenzene	0.4000	0.3968	0.8	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.3793	5.2	100	0.00
86	T	2-Chlorotoluene	0.4000	0.4420	-10.5	100	0.00
87	T	4-Chlorotoluene	0.4000	0.3881	3.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2977	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3800	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.3847	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3942	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.3836	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.4491	-12.3	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.2880	28.0#	100	0.00
95	T	n-Butylbenzene	-1.0000	0.3908	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.4024	-0.6	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-21.46#
98	T	1,2,4-Trichlorobenzene	0.4000	0.4149	-3.7	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.4141	-3.5	100	0.00
100	T	Naphthalene	0.4000	0.3891	2.7	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.4153	-3.8	100	-0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 1
6M139737.D 8260WT.M Thu Jun 02 12:18:53 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139738.D Vial: 4
Acq On : 1 Jun 2016 13:33 Operator: TMB
Sample : WG570915-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:19 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	735945	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.06	117	535564	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	279249	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.38	111	4107	0.5392 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	2.16%#	
43) 1,2-Dichloroethane-d4	11.11	65	4822	0.5744 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	2.28%#	
58) Toluene-d8	13.85	98	13936	0.5422 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.16%#	
80) p-Bromofluorobenzene	17.84	95	5325	0.5400 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.16%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	10837	0.9303 ug/L	94
3) Chloromethane	3.93	50	14951	1.0527 ug/L	95
4) Vinyl Chloride	4.17	62	10315	1.0775 ug/L	98
5) 1,3-Butadiene	4.23	54	11501	Below Cal #	71
6) Bromomethane	5.09	94	4678	0.9920 ug/L	91
7) Chloroethane	5.24	64	6242	1.0315 ug/L	93
8) Trichlorofluoromethane	5.74	101	13112	1.0227 ug/L	98
9) Diethyl ether	6.29	59	32367	4.6948 ug/L	95
10) Isoprene	6.32	67	10603	0.9728 ug/L	96
11) Acrolein	6.55	56	2886	2.4811 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.55	101	6983	0.9534 ug/L	99
13) Acetone	6.65	43	4248	Below Cal	88
14) 1,1-Dichloroethene	6.88	61	12693	0.9786 ug/L	95
15) Tert-Butyl Alcohol	7.01	59	5638	8.8569 ug/L #	91
16) Dimethyl Sulfide	7.16	62	5494	0.9230 ug/L	95
17) Iodomethane	7.44	142	206	1.4776 ug/L #	32
18) Methyl acetate	7.45	43	6108	0.9622 ug/L #	84
19) Methylene Chloride	7.72	84	8543	1.0681 ug/L	99
20) Carbon Disulfide	7.77	76	25589	1.0084 ug/L	97
21) Acrylonitrile	7.92	53	6481	2.3166 ug/L	99
22) Methyl Tert Butyl Ether	7.96	73	18778	0.9622 ug/L	98
23) trans-1,2-Dichloroethene	8.21	96	7417	0.9810 ug/L	94
24) n-Hexane	8.29	57	11426	0.9706 ug/L	99
25) Diisopropyl ether	8.67	45	153480	4.8980 ug/L	98
26) Vinyl Acetate	8.85	43	9400	0.7065 ug/L #	84
27) 1,1-Dichloroethane	8.89	63	15342	1.0128 ug/L	97
28) Ethyl-Tert-Butyl ether	9.30	59	123806	4.8277 ug/L	99
29) 2-Butanone	9.52	43	3323	0.9999 ug/L #	57
30) Propionitrile	9.63	54	4078	4.4461 ug/L #	67
31) 2,2-Dichloropropane	9.75	77	11462	1.0379 ug/L	97
32) cis-1,2-Dichloroethene	9.82	96	8252	1.0019 ug/L	100
33) Chloroform	10.06	83	13163	0.9757 ug/L	96
34) 1-Bromopropane	10.22	122	767	0.8504 ug/L	95
35) Bromochloromethane	10.32	130	4431	0.9473 ug/L	98
36) Tetrahydrofuran	10.35	42	13920	6.0841 ug/L	96
38) 1,1,1-Trichloroethane	10.66	97	11268	0.9363 ug/L	97
39) Cyclohexane	10.68	56	14333	0.9501 ug/L	97
40) 1,1-Dichloropropene	10.87	75	10019	0.9713 ug/L	98
41) Tert-Amyl-Methyl ether	11.00	73	94333	4.7510 ug/L	95
42) Carbon Tetrachloride	11.05	117	10227	0.9525 ug/L	96

(#) = qualifier out of range (m) = manual integration

Data File : C:\MSDCHEM\1\DATA\060116\6M139738.D Vial: 4
Acq On : 1 Jun 2016 13:33 Operator: TMB
Sample : WG570915-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:19 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	11.24	62	10141	0.9780 ug/L		97
46)	Benzene	11.28	78	31309	1.0356 ug/L		97
47)	Trichloroethene	12.14	130	7967	1.0318 ug/L		92
48)	Methylcyclohexane	12.24	83	11289	0.9643 ug/L		96
49)	1,2-Dichloropropane	12.40	63	8268	0.9901 ug/L		94
51)	Bromodichloromethane	12.73	83	10186	0.9919 ug/L		93
52)	Dibromomethane	12.84	93	4177	0.9693 ug/L		96
53)	2-Chloroethyl Vinyl Ether	13.09	63	3010	0.7897 ug/L		83
54)	4-Methyl-2-Pentanone	13.12	58	1877	0.7400 ug/L	#	55
55)	cis-1,3-Dichloropropene	13.48	75	10469	0.9007 ug/L		96
56)	Dimethyl Disulfide	13.79	79	4425	0.6608 ug/L		95
59)	Toluene	13.97	91	30558	1.0048 ug/L		98
60)	Ethyl Methacrylate	14.09	69	6558	0.7869 ug/L		93
62)	trans-1,3-Dichloropropene	14.18	75	9010	0.8699 ug/L		96
63)	1,1,2-Trichloroethane	14.43	97	5393	0.9314 ug/L		94
64)	2-Hexanone	14.36	43	4275	0.8701 ug/L		96
65)	1,3-Dichloropropane	14.79	76	10006	0.9829 ug/L		98
66)	Tetrachloroethene	14.92	166	8268	1.0364 ug/L		93
67)	Dibromochloromethane	15.24	129	7033	0.9532 ug/L		94
68)	1,2-Dibromoethane	15.53	107	5148	0.9198 ug/L		98
69)	1-Chlorohexane	15.64	91	8904	0.9017 ug/L		90
70)	Chlorobenzene	16.12	112	20831	1.0237 ug/L		95
71)	1,1,1,2-Tetrachloroethane	16.16	131	6905	0.9355 ug/L		97
72)	Ethylbenzene	16.15	106	10603	0.9824 ug/L		97
73)	m-,p-Xylene	16.27	106	25147	1.9611 ug/L		97
74)	o-Xylene	16.93	106	11865	0.9363 ug/L		96
75)	Styrene	16.97	104	18579	0.8828 ug/L		99
76)	Bromoform	17.55	173	4082	0.8720 ug/L		84
77)	Isopropylbenzene	17.43	105	31300	0.9840 ug/L		98
79)	1,1,2,2-Tetrachloroethane	17.70	83	6643	0.9867 ug/L		93
81)	1,2,3-Trichloropropane	17.92	110	1876	0.9624 ug/L		74
82)	trans-1,4-Dichloro-2-Buten	17.99	53	1194	1.2005 ug/L		94
83)	n-Propylbenzene	18.03	91	36550	1.0099 ug/L		97
84)	Bromobenzene	18.18	156	8529	1.0043 ug/L		98
85)	1,3,5-Trimethylbenzene	18.26	105	25491	0.9955 ug/L		96
86)	2-Chlorotoluene	18.35	91	25187	1.0160 ug/L		97
87)	4-Chlorotoluene	18.41	91	23659	1.0279 ug/L		98
88)	a-Methylstyrene	18.74	118	11586	0.8093 ug/L		95
89)	tert-Butylbenzene	18.81	134	5217	0.9241 ug/L		78
90)	1,2,4-Trimethylbenzene	18.87	105	25567	0.9538 ug/L		98
91)	sec-Butylbenzene	19.13	105	31783	1.0086 ug/L		97
92)	p-Isopropyltoluene	19.32	119	25687	0.9566 ug/L		98
93)	1,3-Dichlorobenzene	19.53	146	16574	1.0008 ug/L		100
94)	1,4-Dichlorobenzene	19.69	146	17812	0.9265 ug/L		92
95)	n-Butylbenzene	19.94	91	24011	0.9447 ug/L		95
96)	1,2-Dichlorobenzene	20.28	146	14898	0.9654 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	21.46	75	675	0.5583 ug/L		92
98)	1,2,4-Trichlorobenzene	22.82	180	10025	0.9396 ug/L		98
99)	Hexachlorobutadiene	23.01	225	4690	1.0591 ug/L		94
100)	Naphthalene	23.28	128	19311	0.9156 ug/L		98
101)	1,2,3-Trichlorobenzene	23.68	180	9754	0.9660 ug/L		98

(#) = qualifier out of range (m) = manual integration
6M139738.D 8260WT.M Thu Jun 02 12:18:20 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139738.D Vial: 4
Acq On : 1 Jun 2016 13:33 Operator: TMB
Sample : WG570915-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 2 12:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration

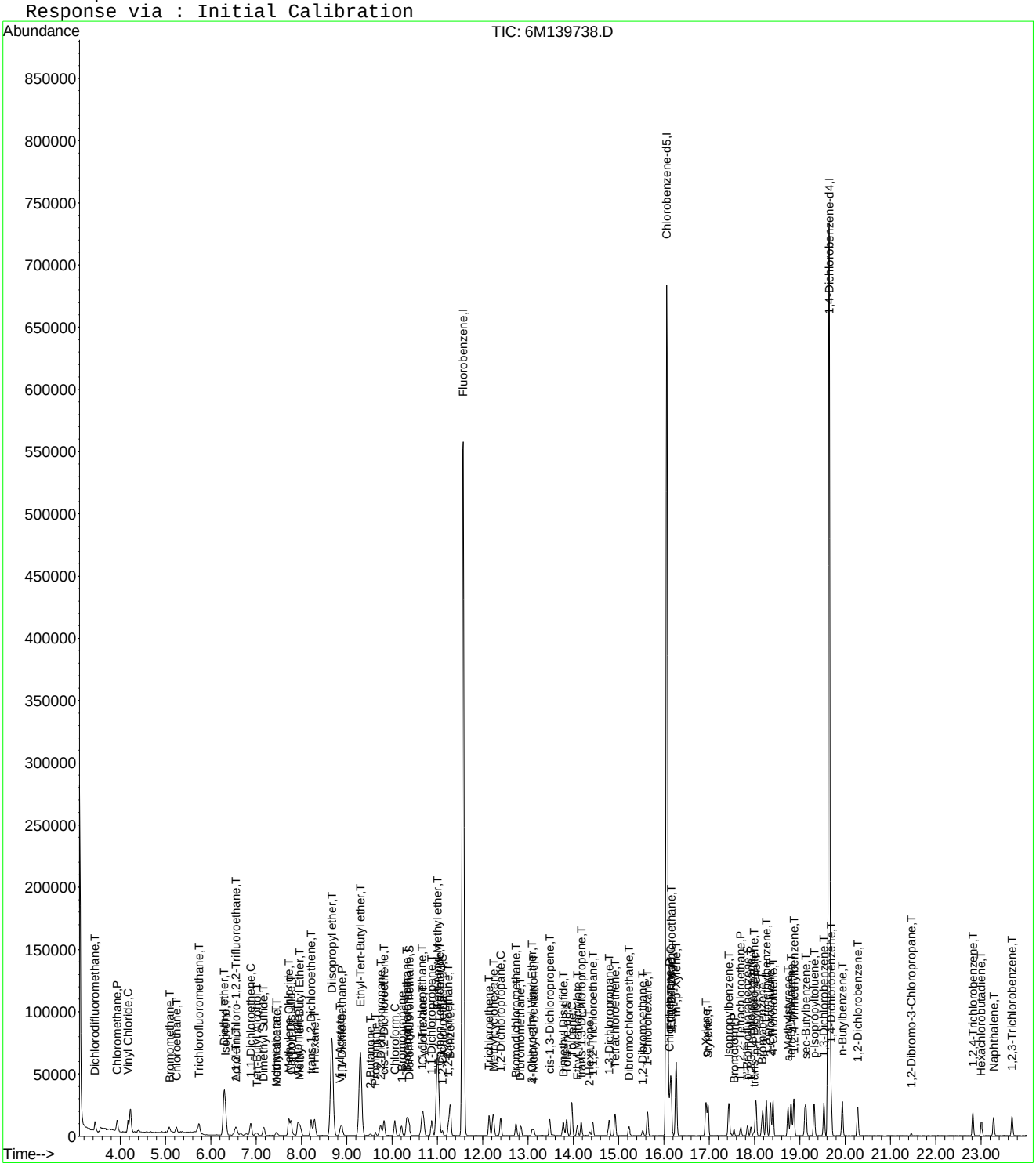

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\060116\6M139738.D Vial: 4
Acq On : 1 Jun 2016 13:33 Operator: TMB
Sample : WG570915-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9303	7.0	100	0.00
3	P	Chloromethane	1.0000	1.0527	-5.3	100	0.00
4	C	Vinyl Chloride	1.0000	1.0775	-7.7	100	0.01
5	T	1,3-Butadiene	-1.0000	-3.1177	0.0	0	0.03
6	T	Bromomethane	1.0000	0.9920	0.8	100	0.02
7	T	Chloroethane	1.0000	1.0315	-3.2	100	0.01
8	T	Trichlorofluoromethane	1.0000	1.0227	-2.3	100	0.02
9	T	Diethyl ether	5.0000	4.6948	6.1	100	0.00
10	T	Isoprene	-1.0000	0.9728	0.0	100	0.00
11	T	Acrolein	-1.0000	2.4811	0.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	0.9535	4.7	100	0.00
13	T	Acetone	-1.0000	-0.4899	0.0	0	0.00
14	C	1,1-Dichloroethene	1.0000	0.9786	2.1	100	0.01
15	T	Tert-Butyl Alcohol	10.0000	8.8569	11.4	100	-0.03
16	T	Dimethyl Sulfide	-1.0000	0.9230	0.0	100	0.00
17	T	Iodomethane	-1.0000	1.4776	0.0	0	0.01
18	T	Methyl acetate	-1.0000	0.9622	0.0	100	0.00
19	T	Methylene Chloride	1.0000	1.0681	-6.8	100	0.00
20	T	Carbon Disulfide	1.0000	1.0084	-0.8	100	0.01
21	T	Acrylonitrile	2.5000	2.3166	7.3	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9622	3.8	100	0.01
23	T	trans-1,2-Dichloroethene	1.0000	0.9810	1.9	100	0.00
24	T	n-Hexane	-1.0000	0.9706	0.0	100	0.01
25	T	Diisopropyl ether	5.0000	4.8979	2.0	100	0.00
26	T	Vinyl Acetate	-1.0000	0.7065	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0128	-1.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.8277	3.4	100	0.00
29	T	2-Butanone	-1.0000	0.9999	0.0	100	0.00
30	T	Propionitrile	5.0000	4.4461	11.1	100	0.00
31	T	2,2-Dichloropropane	1.0000	1.0379	-3.8	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	1.0019	-0.2	100	0.00
33	C	Chloroform	1.0000	0.9757	2.4	100	0.00
34		1-Bromopropane	1.0000	0.8504	15.0	100	0.01
35	T	Bromochloromethane	1.0000	0.9474	5.3	100	0.00
36	T	Tetrahydrofuran	5.0000	6.0841	-21.7#	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.5392	0.0	100	0.00
38	T	1,1,1-Trichloroethane	1.0000	0.9363	6.4	100	0.00
39	T	Cyclohexane	1.0000	0.9501	5.0	100	0.00
40	T	1,1-Dichloropropene	1.0000	0.9713	2.9	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	4.7510	5.0	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.9525	4.7	100	0.01
43	S	1,2-Dichloroethane-d4	-1.0000	0.5744	0.0	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	T	1,2-Dichloroethane	1.0000	0.9780	2.2	100	0.00
46	T	Benzene	1.0000	1.0356	-3.6	100	0.00
47	T	Trichloroethene	1.0000	1.0318	-3.2	100	0.00
48	T	Methylcyclohexane	-1.0000	0.9643	0.0	100	0.01
49	C	1,2-Dichloropropane	1.0000	0.9901	1.0	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-12.74#
51	T	Bromodichloromethane	1.0000	0.9919	0.8	100	0.00
52	T	Dibromomethane	1.0000	0.9693	3.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.7897	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.7400	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\060116\6M139738.D Vial: 4
Acq On : 1 Jun 2016 13:33 Operator: TMB
Sample : WG570915-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9007	9.9	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.6608	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.5422	0.0	100	0.00
59	C	Toluene	1.0000	1.0048	-0.5	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.7869	21.3#	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	1.0000	0.8699	13.0	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.9314	6.9	100	0.00
64	T	2-Hexanone	-1.0000	0.8701	0.0	100	0.00
65	T	1,3-Dichloropropane	1.0000	0.9829	1.7	100	0.00
66	T	Tetrachloroethene	1.0000	1.0364	-3.6	100	0.00
67	T	Dibromochloromethane	1.0000	0.9532	4.7	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.9198	8.0	100	0.00
69	T	1-Chlorohexane	1.0000	0.9017	9.8	100	0.00
70	P	Chlorobenzene	1.0000	1.0237	-2.4	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.9355	6.4	100	0.00
72	C	Ethylbenzene	1.0000	0.9823	1.8	100	0.00
73	T	m-,p-Xylene	2.0000	1.9611	1.9	100	0.00
74	T	o-Xylene	1.0000	0.9363	6.4	100	0.00
75	T	Styrene	1.0000	0.8828	11.7	100	0.00
76	P	Bromoform	1.0000	0.8720	12.8	100	0.00
77	T	Isopropylbenzene	1.0000	0.9840	1.6	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	0.9867	1.3	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5400	0.0	100	0.00
81	T	1,2,3-Trichloropropane	1.0000	0.9624	3.8	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	1.0000	1.2005	-20.1#	100	0.01
83	T	n-Propylbenzene	1.0000	1.0099	-1.0	100	0.00
84	T	Bromobenzene	1.0000	1.0043	-0.4	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	0.9954	0.5	100	0.00
86	T	2-Chlorotoluene	1.0000	1.0160	-1.6	100	0.00
87	T	4-Chlorotoluene	1.0000	1.0279	-2.8	100	0.00
88	T	a-Methylstyrene	-1.0000	0.8093	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	0.9241	7.6	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	0.9538	4.6	100	0.00
91	T	sec-Butylbenzene	1.0000	1.0086	-0.9	100	0.00
92	T	p-Isopropyltoluene	1.0000	0.9566	4.3	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0008	-0.1	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	0.9265	7.3	100	0.00
95	T	n-Butylbenzene	1.0000	0.9447	5.5	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	0.9654	3.5	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.5583	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	1.0000	0.9396	6.0	100	0.00
99	T	Hexachlorobutadiene	1.0000	1.0591	-5.9	100	0.00
100	T	Naphthalene	1.0000	0.9156	8.4	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	0.9660	3.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M139738.D 8260WT.M Thu Jun 02 12:19:02 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139739.D Vial: 5
Acq On : 1 Jun 2016 14:06 Operator: TMB
Sample : WG570915-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:20 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.56	96	742943	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	538524	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.64	152	285481	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.39	111	7626	0.9918 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.96%#	
43) 1,2-Dichloroethane-d4	11.11	65	8619	1.0170 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	4.08%#	
58) Toluene-d8	13.85	98	26951	1.0428 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.16%#	
80) p-Bromofluorobenzene	17.84	95	10079	0.9998 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	23119	1.9659 ug/L	97
3) Chloromethane	3.93	50	31601	2.2041 ug/L	99
4) Vinyl Chloride	4.17	62	20397	2.1105 ug/L	99
5) 1,3-Butadiene	4.22	54	23740	Below Cal	95
6) Bromomethane	5.09	94	9969	2.0940 ug/L	95
7) Chloroethane	5.24	64	13031	2.1332 ug/L	97
8) Trichlorofluoromethane	5.74	101	27906	2.1561 ug/L	100
9) Diethyl ether	6.29	59	183827	26.4128 ug/L	99
10) Isoprene	6.32	67	22261	2.0231 ug/L	100
11) Acrolein	6.55	56	14289	12.1687 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.54	101	16014	2.1659 ug/L	99
13) Acetone	6.65	43	7448	1.0499 ug/L	98
14) 1,1-Dichloroethene	6.88	61	27057	2.0664 ug/L	98
15) Tert-Butyl Alcohol	7.01	59	31691	49.3156 ug/L	95
16) Dimethyl Sulfide	7.16	62	11867	1.9748 ug/L	97
17) Iodomethane	7.43	142	2857	1.9552 ug/L	84
18) Methyl acetate	7.45	43	14589	2.2767 ug/L #	88
19) Methylene Chloride	7.72	84	17881	2.2145 ug/L	97
20) Carbon Disulfide	7.77	76	54515	2.1280 ug/L	99
21) Acrylonitrile	7.93	53	34183	12.1037 ug/L	95
22) Methyl Tert Butyl Ether	7.96	73	40745	2.0681 ug/L	98
23) trans-1,2-Dichloroethene	8.21	96	15961	2.0912 ug/L	98
24) n-Hexane	8.28	57	25065	2.1090 ug/L	97
25) Diisopropyl ether	8.67	45	827327	26.1535 ug/L	99
26) Vinyl Acetate	8.86	43	23762	1.7691 ug/L	96
27) 1,1-Dichloroethane	8.89	63	32311	2.1129 ug/L	99
28) Ethyl-Tert-Butyl ether	9.31	59	665309	25.6988 ug/L	100
29) 2-Butanone	9.51	43	7490	2.2325 ug/L	86
30) Propionitrile	9.63	54	24032	25.9544 ug/L	98
31) 2,2-Dichloropropane	9.75	77	24405	2.1890 ug/L	98
32) cis-1,2-Dichloroethene	9.83	96	17351	2.0868 ug/L	95
33) Chloroform	10.06	83	29158	2.1409 ug/L	99
34) 1-Bromopropane	10.21	122	2575	2.1509 ug/L	86
35) Bromochloromethane	10.32	130	9943	2.1058 ug/L	98
36) Tetrahydrofuran	10.36	42	57713	24.9874 ug/L	97
38) 1,1,1-Trichloroethane	10.65	97	25747	2.1191 ug/L	96
39) Cyclohexane	10.68	56	31781	2.0869 ug/L	97
40) 1,1-Dichloropropene	10.88	75	21286	2.0442 ug/L	99
41) Tert-Amyl-Methyl ether	11.00	73	511503	25.5189 ug/L	97
42) Carbon Tetrachloride	11.03	117	22465	2.0726 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M139739.D 8260WT.M Thu Jun 02 12:18:20 2016 Page 1

Data File : C:\MSDCHEM\1\DATA\060116\6M139739.D Vial: 5
Acq On : 1 Jun 2016 14:06 Operator: TMB
Sample : WG570915-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:20 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.25	62	22181	2.1191 ug/L	95
46)	Benzene	11.29	78	65773	2.1550 ug/L	99
47)	Trichloroethene	12.14	130	16332	2.0952 ug/L	97
48)	Methylcyclohexane	12.24	83	23681	2.0038 ug/L	98
49)	1,2-Dichloropropane	12.40	63	17445	2.0694 ug/L	98
50)	1,4-Dioxane	12.74	88	2396	39.8941 ug/L	93
51)	Bromodichloromethane	12.74	83	21332	2.0576 ug/L	100
52)	Dibromomethane	12.84	93	8776	2.0174 ug/L	97
53)	2-Chloroethyl Vinyl Ether	13.08	63	7129	1.8528 ug/L	92
54)	4-Methyl-2-Pentanone	13.12	58	4367	1.7054 ug/L	90
55)	cis-1,3-Dichloropropene	13.48	75	23627	2.0136 ug/L	97
56)	Dimethyl Disulfide	13.78	79	10612	1.5698 ug/L	92
59)	Toluene	13.96	91	65655	2.1470 ug/L	100
60)	Ethyl Methacrylate	14.08	69	15579	1.8591 ug/L	100
62)	trans-1,3-Dichloropropene	14.18	75	20491	1.9674 ug/L	100
63)	1,1,2-Trichloroethane	14.43	97	12151	2.0870 ug/L	98
64)	2-Hexanone	14.36	43	9676	1.9585 ug/L	91
65)	1,3-Dichloropropane	14.79	76	21467	2.0971 ug/L	97
66)	Tetrachloroethene	14.92	166	16914	2.1086 ug/L	97
67)	Dibromochloromethane	15.23	129	14673	1.9778 ug/L	97
68)	1,2-Dibromoethane	15.53	107	11510	2.0453 ug/L	97
69)	1-Chlorohexane	15.65	91	19668	1.9807 ug/L	95
70)	Chlorobenzene	16.13	112	44821	2.1905 ug/L	99
71)	1,1,1,2-Tetrachloroethane	16.16	131	14676	1.9775 ug/L	98
72)	Ethylbenzene	16.16	106	22360	2.0602 ug/L	99
73)	m-,p-Xylene	16.27	106	53821	4.1742 ug/L	96
74)	o-Xylene	16.93	106	25852	2.0289 ug/L	99
75)	Styrene	16.97	104	42355	2.0016 ug/L	99
76)	Bromoform	17.55	173	8554	1.8173 ug/L	98
77)	Isopropylbenzene	17.43	105	65691	2.0539 ug/L	99
79)	1,1,2,2-Tetrachloroethane	17.69	83	14598	2.1209 ug/L	98
81)	1,2,3-Trichloropropane	17.92	110	4381	2.1985 ug/L	91
82)	trans-1,4-Dichloro-2-Buten	17.98	53	3430	2.0845 ug/L	81
83)	n-Propylbenzene	18.04	91	81094	2.1918 ug/L	98
84)	Bromobenzene	18.18	156	18389	2.1180 ug/L	97
85)	1,3,5-Trimethylbenzene	18.26	105	55405	2.1164 ug/L	97
86)	2-Chlorotoluene	18.35	91	57133	2.2543 ug/L	98
87)	4-Chlorotoluene	18.40	91	49926	2.1217 ug/L	99
88)	a-Methylstyrene	18.74	118	25561	1.7465 ug/L	95
89)	tert-Butylbenzene	18.80	134	12038	2.0858 ug/L	71
90)	1,2,4-Trimethylbenzene	18.87	105	58343	2.1289 ug/L	100
91)	sec-Butylbenzene	19.13	105	68680	2.1320 ug/L	99
92)	p-Isopropyltoluene	19.31	119	57167	2.0824 ug/L	98
93)	1,3-Dichlorobenzene	19.54	146	35679	2.1074 ug/L	99
94)	1,4-Dichlorobenzene	19.69	146	37305	2.1227 ug/L	89
95)	n-Butylbenzene	19.94	91	53712	2.0671 ug/L	99
96)	1,2-Dichlorobenzene	20.27	146	34278	2.1727 ug/L	98
97)	1,2-Dibromo-3-Chloropropan	21.46	75	2052	1.6602 ug/L	93
98)	1,2,4-Trichlorobenzene	22.82	180	22161	2.0316 ug/L	100
99)	Hexachlorobutadiene	23.02	225	9292	2.0526 ug/L	97
100)	Naphthalene	23.27	128	42114	1.9531 ug/L	97
101)	1,2,3-Trichlorobenzene	23.68	180	21030	2.0373 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M139739.D 8260WT.M Thu Jun 02 12:18:20 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139739.D Vial: 5
Acq On : 1 Jun 2016 14:06 Operator: TMB
Sample : WG570915-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 2 12:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration

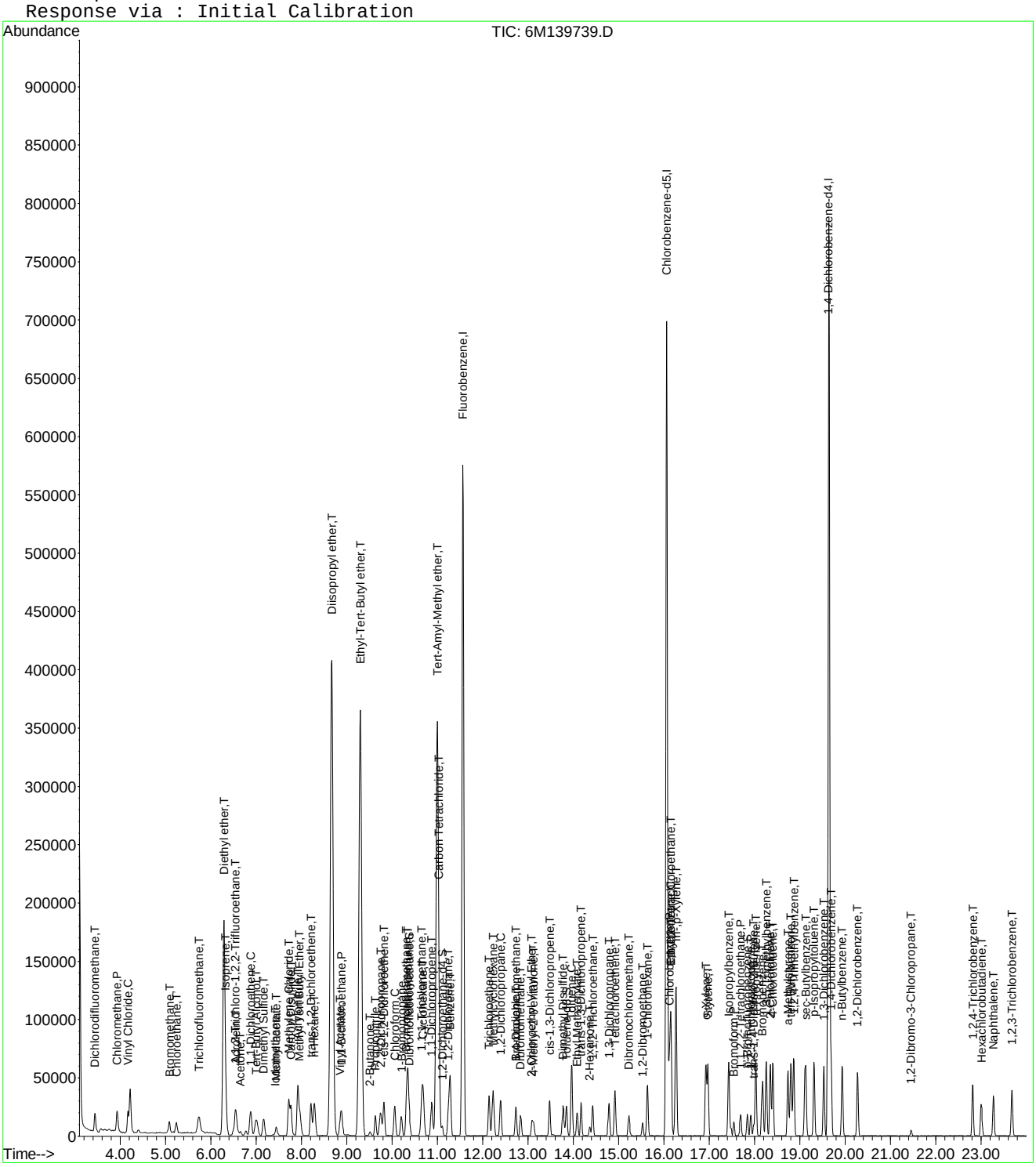

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\060116\6M139739.D Vial: 5
Acq On : 1 Jun 2016 14:06 Operator: TMB
Sample : WG570915-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.9659	1.7	100	0.00
3	P	Chloromethane	2.0000	2.2041	-10.2	100	0.00
4	C	Vinyl Chloride	2.0000	2.1105	-5.5	100	0.01
5	T	1,3-Butadiene	-1.0000	-0.6386	0.0	0	0.02
6	T	Bromomethane	2.0000	2.0940	-4.7	100	0.02
7	T	Chloroethane	2.0000	2.1332	-6.7	100	0.01
8	T	Trichlorofluoromethane	2.0000	2.1561	-7.8	100	0.02
9	T	Diethyl ether	25.0000	26.4128	-5.7	100	0.00
10	T	Isoprene	-1.0000	2.0231	0.0	100	0.00
11	T	Acrolein	12.5000	12.1687	2.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	2.1659	-8.3	100	0.00
13	T	Acetone	-1.0000	1.0499	0.0	0	0.00
14	C	1,1-Dichloroethene	2.0000	2.0664	-3.3	100	0.01
15	T	Tert-Butyl Alcohol	50.0000	49.3156	1.4	100	-0.04
16	T	Dimethyl Sulfide	-1.0000	1.9748	0.0	100	0.00
17	T	Iodomethane	2.0000	1.9552	2.2	100	0.00
18	T	Methyl acetate	-1.0000	2.2767	0.0	100	0.00
19	T	Methylene Chloride	2.0000	2.2145	-10.7	100	0.00
20	T	Carbon Disulfide	2.0000	2.1280	-6.4	100	0.01
21	T	Acrylonitrile	12.5000	12.1037	3.2	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	2.0681	-3.4	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	2.0913	-4.6	100	0.00
24	T	n-Hexane	-1.0000	2.1090	0.0	100	0.00
25	T	Diisopropyl ether	25.0000	26.1535	-4.6	100	0.00
26	T	Vinyl Acetate	-1.0000	1.7691	0.0	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.1129	-5.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	25.6988	-2.8	100	0.00
29	T	2-Butanone	-1.0000	2.2325	0.0	100	0.00
30	T	Propionitrile	25.0000	25.9544	-3.8	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1890	-9.5	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0868	-4.3	100	0.00
33	C	Chloroform	2.0000	2.1408	-7.0	100	0.00
34		1-Bromopropane	2.0000	2.1509	-7.5	100	0.00
35	T	Bromochloromethane	2.0000	2.1058	-5.3	100	0.00
36	T	Tetrahydrofuran	25.0000	24.9874	0.1	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9918	0.8	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	2.1191	-6.0	100	0.00
39	T	Cyclohexane	2.0000	2.0869	-4.3	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0442	-2.2	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	25.5189	-2.1	100	0.00
42	T	Carbon Tetrachloride	2.0000	2.0726	-3.6	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0170	-1.7	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	T	1,2-Dichloroethane	2.0000	2.1191	-6.0	100	0.00
46	T	Benzene	2.0000	2.1551	-7.8	100	0.00
47	T	Trichloroethene	2.0000	2.0952	-4.8	100	0.00
48	T	Methylcyclohexane	-1.0000	2.0038	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0694	-3.5	100	0.00
50	T	1,4-Dioxane	-1.0000	39.8941	0.0	100	0.00
51	T	Bromodichloromethane	2.0000	2.0576	-2.9	100	0.00
52	T	Dibromomethane	2.0000	2.0174	-0.9	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	1.8528	7.4	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.7054	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\060116\6M139739.D Vial: 5
Acq On : 1 Jun 2016 14:06 Operator: TMB
Sample : WG570915-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	2.0136	-0.7	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.5698	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	1.0428	-4.3	100	0.00
59	C	Toluene	2.0000	2.1470	-7.3	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.8591	7.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	2.0000	1.9674	1.6	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	2.0870	-4.3	100	0.00
64	T	2-Hexanone	-1.0000	1.9585	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.0970	-4.9	100	0.00
66	T	Tetrachloroethene	2.0000	2.1086	-5.4	100	0.00
67	T	Dibromochloromethane	2.0000	1.9778	1.1	100	0.00
68	T	1,2-Dibromoethane	2.0000	2.0453	-2.3	100	0.00
69	T	1-Chlorohexane	2.0000	1.9807	1.0	100	0.00
70	P	Chlorobenzene	2.0000	2.1905	-9.5	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.9775	1.1	100	0.00
72	C	Ethylbenzene	2.0000	2.0602	-3.0	100	0.00
73	T	m-,p-Xylene	4.0000	4.1742	-4.4	100	0.00
74	T	o-Xylene	2.0000	2.0289	-1.4	100	0.00
75	T	Styrene	2.0000	2.0016	-0.1	100	0.00
76	P	Bromoform	2.0000	1.8173	9.1	100	0.00
77	T	Isopropylbenzene	2.0000	2.0539	-2.7	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	2.1209	-6.0	100	0.00
80	S	p-Bromofluorobenzene	1.0000	0.9998	0.0	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	2.1985	-9.9	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	2.0845	-4.2	100	0.00
83	T	n-Propylbenzene	2.0000	2.1918	-9.6	100	0.00
84	T	Bromobenzene	2.0000	2.1180	-5.9	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.1164	-5.8	100	0.00
86	T	2-Chlorotoluene	2.0000	2.2543	-12.7	100	0.00
87	T	4-Chlorotoluene	2.0000	2.1217	-6.1	100	0.00
88	T	a-Methylstyrene	-1.0000	1.7465	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	2.0858	-4.3	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.1289	-6.4	100	0.00
91	T	sec-Butylbenzene	2.0000	2.1320	-6.6	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.0825	-4.1	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.1074	-5.4	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.1227	-6.1	100	0.00
95	T	n-Butylbenzene	2.0000	2.0671	-3.4	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.1727	-8.6	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.6602	17.0	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	2.0316	-1.6	100	0.00
99	T	Hexachlorobutadiene	2.0000	2.0526	-2.6	100	0.00
100	T	Naphthalene	2.0000	1.9531	2.3	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	2.0372	-1.9	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M139739.D 8260WT.M Thu Jun 02 12:19:13 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139740.D Vial: 6
Acq On : 1 Jun 2016 14:38 Operator: TMB
Sample : WG570915-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:21 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	739555	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.06	117	536758	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	19.65	152	288515	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.38	111	18845	2.4621 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	9.84%#	
43) 1,2-Dichloroethane-d4	11.11	65	20951	2.4834 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	9.92%#	
58) Toluene-d8	13.85	98	65932	2.5594 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	10.24%#	
80) p-Bromofluorobenzene	17.84	95	25405	2.4936 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	9.96%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	53233	4.5473 ug/L	97
3) Chloromethane	3.93	50	71846	5.0340 ug/L	100
4) Vinyl Chloride	4.17	62	46089	4.7908 ug/L	99
5) 1,3-Butadiene	4.21	54	42049	3.1429 ug/L	91
6) Bromomethane	5.08	94	21334	4.5018 ug/L	98
7) Chloroethane	5.24	64	31006	5.0990 ug/L	98
8) Trichlorofluoromethane	5.74	101	64044	4.9710 ug/L	100
9) Diethyl ether	6.29	59	349877	50.5016 ug/L	100
10) Isoprene	6.32	67	52571	4.7995 ug/L	99
11) Acrolein	6.54	56	29717	25.4233 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.55	101	36494	4.9585 ug/L	98
13) Acetone	6.65	43	15281	4.9011 ug/L	98
14) 1,1-Dichloroethene	6.88	61	64405	4.9413 ug/L	100
15) Tert-Butyl Alcohol	7.00	59	63946	99.9648 ug/L	98
16) Dimethyl Sulfide	7.17	62	28254	4.7234 ug/L	98
17) Iodomethane	7.43	142	15471	4.2422 ug/L	97
18) Methyl acetate	7.45	43	33236	5.2104 ug/L	95
19) Methylene Chloride	7.72	84	40736	5.0682 ug/L	99
20) Carbon Disulfide	7.77	76	126979	4.9794 ug/L	100
21) Acrylonitrile	7.92	53	66289	23.5794 ug/L	94
22) Methyl Tert Butyl Ether	7.95	73	96916	4.9418 ug/L	99
23) trans-1,2-Dichloroethene	8.21	96	37460	4.9306 ug/L	97
24) n-Hexane	8.29	57	60246	5.0925 ug/L	99
25) Diisopropyl ether	8.67	45	1610342	51.1394 ug/L	100
26) Vinyl Acetate	8.85	43	62309	4.6602 ug/L	97
27) 1,1-Dichloroethane	8.89	63	75144	4.9363 ug/L	99
28) Ethyl-Tert-Butyl ether	9.30	59	1306947	50.7146 ug/L	99
29) 2-Butanone	9.52	43	17941	5.3720 ug/L	96
30) Propionitrile	9.63	54	46508	50.4584 ug/L	100
31) 2,2-Dichloropropane	9.75	77	55908	5.0377 ug/L	98
32) cis-1,2-Dichloroethene	9.83	96	41514	5.0157 ug/L	100
33) Chloroform	10.06	83	67873	5.0062 ug/L	98
34) 1-Bromopropane	10.20	122	7077	5.4256 ug/L	95
35) Bromochloromethane	10.32	130	23487	4.9970 ug/L	97
36) Tetrahydrofuran	10.35	42	111625	48.5506 ug/L	97
38) 1,1,1-Trichloroethane	10.66	97	59147	4.8905 ug/L	100
39) Cyclohexane	10.69	56	73130	4.8241 ug/L	99
40) 1,1-Dichloropropene	10.87	75	51586	4.9768 ug/L	98
41) Tert-Amyl-Methyl ether	11.00	73	1001616	50.1996 ug/L	98
42) Carbon Tetrachloride	11.04	117	51776	4.7988 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M139740.D 8260WT.M Thu Jun 02 12:18:21 2016 Page 1

Data File : C:\MSDCHEM\1\DATA\060116\6M139740.D Vial: 6
Acq On : 1 Jun 2016 14:38 Operator: TMB
Sample : WG570915-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:21 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	11.24	62	51329	4.9263	ug/L	99
46)	Benzene	11.28	78	153403	5.0493	ug/L	99
47)	Trichloroethene	12.14	130	37892	4.8833	ug/L	100
48)	Methylcyclohexane	12.23	83	58249	4.9514	ug/L	99
49)	1,2-Dichloropropane	12.40	63	41911	4.9943	ug/L	99
50)	1,4-Dioxane	12.73	88	5253	87.8647	ug/L	94
51)	Bromodichloromethane	12.74	83	50357	4.8796	ug/L	100
52)	Dibromomethane	12.83	93	21481	4.9606	ug/L	99
53)	2-Chloroethyl Vinyl Ether	13.09	63	17503	4.5699	ug/L	99
54)	4-Methyl-2-Pentanone	13.13	58	11365	4.4586	ug/L	94
55)	cis-1,3-Dichloropropene	13.48	75	58485	5.0071	ug/L	97
56)	Dimethyl Disulfide	13.78	79	27006	4.0133	ug/L	98
59)	Toluene	13.97	91	156506	5.1347	ug/L	100
60)	Ethyl Methacrylate	14.09	69	39144	4.6865	ug/L	98
62)	trans-1,3-Dichloropropene	14.17	75	50230	4.8387	ug/L	98
63)	1,1,2-Trichloroethane	14.43	97	28765	4.9567	ug/L	99
64)	2-Hexanone	14.36	43	23751	4.8232	ug/L	98
65)	1,3-Dichloropropane	14.79	76	50356	4.9353	ug/L	97
66)	Tetrachloroethene	14.92	166	40511	5.0669	ug/L	99
67)	Dibromochloromethane	15.23	129	35926	4.8585	ug/L	97
68)	1,2-Dibromoethane	15.53	107	27314	4.8696	ug/L	98
69)	1-Chlorohexane	15.64	91	48413	4.8916	ug/L	97
70)	Chlorobenzene	16.12	112	104312	5.1147	ug/L	97
71)	1,1,1,2-Tetrachloroethane	16.16	131	36730	4.9654	ug/L	99
72)	Ethylbenzene	16.16	106	54248	5.0148	ug/L	98
73)	m-,p-Xylene	16.27	106	131323	10.2186	ug/L	100
74)	o-Xylene	16.93	106	63554	5.0043	ug/L	100
75)	Styrene	16.97	104	106058	5.0285	ug/L	100
76)	Bromoform	17.55	173	21214	4.5219	ug/L	98
77)	Isopropylbenzene	17.43	105	162047	5.0833	ug/L	99
79)	1,1,2,2-Tetrachloroethane	17.70	83	34171	4.9124	ug/L	99
81)	1,2,3-Trichloropropane	17.92	110	9377	4.6562	ug/L	72
82)	trans-1,4-Dichloro-2-Buten	17.98	53	9378	4.4249	ug/L	93
83)	n-Propylbenzene	18.03	91	196536	5.2560	ug/L	98
84)	Bromobenzene	18.18	156	43947	5.0085	ug/L	98
85)	1,3,5-Trimethylbenzene	18.26	105	135685	5.1285	ug/L	99
86)	2-Chlorotoluene	18.35	91	130402	5.0913	ug/L	99
87)	4-Chlorotoluene	18.41	91	124301	5.2269	ug/L	98
88)	a-Methylstyrene	18.74	118	68837	4.6540	ug/L	97
89)	tert-Butylbenzene	18.81	134	29765	5.1030	ug/L	98
90)	1,2,4-Trimethylbenzene	18.87	105	142438	5.1429	ug/L	100
91)	sec-Butylbenzene	19.13	105	168272	5.1687	ug/L	100
92)	p-Isopropyltoluene	19.32	119	142353	5.1310	ug/L	98
93)	1,3-Dichlorobenzene	19.53	146	86160	5.0357	ug/L	99
94)	1,4-Dichlorobenzene	19.70	146	84427	5.0188	ug/L	93
95)	n-Butylbenzene	19.94	91	133112	5.0690	ug/L	98
96)	1,2-Dichlorobenzene	20.28	146	79776	5.0034	ug/L	99
97)	1,2-Dibromo-3-Chloropropan	21.46	75	6079	4.8666	ug/L	92
98)	1,2,4-Trichlorobenzene	22.82	180	54492	4.9430	ug/L	100
99)	Hexachlorobutadiene	23.01	225	23856	5.2144	ug/L	97
100)	Naphthalene	23.28	128	107168	4.9178	ug/L	98
101)	1,2,3-Trichlorobenzene	23.69	180	51676	4.9534	ug/L	99

(#) = qualifier out of range (m) = manual integration
6M139740.D 8260WT.M Thu Jun 02 12:18:21 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139740.D Vial: 6
Acq On : 1 Jun 2016 14:38 Operator: TMB
Sample : WG570915-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 2 12:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration

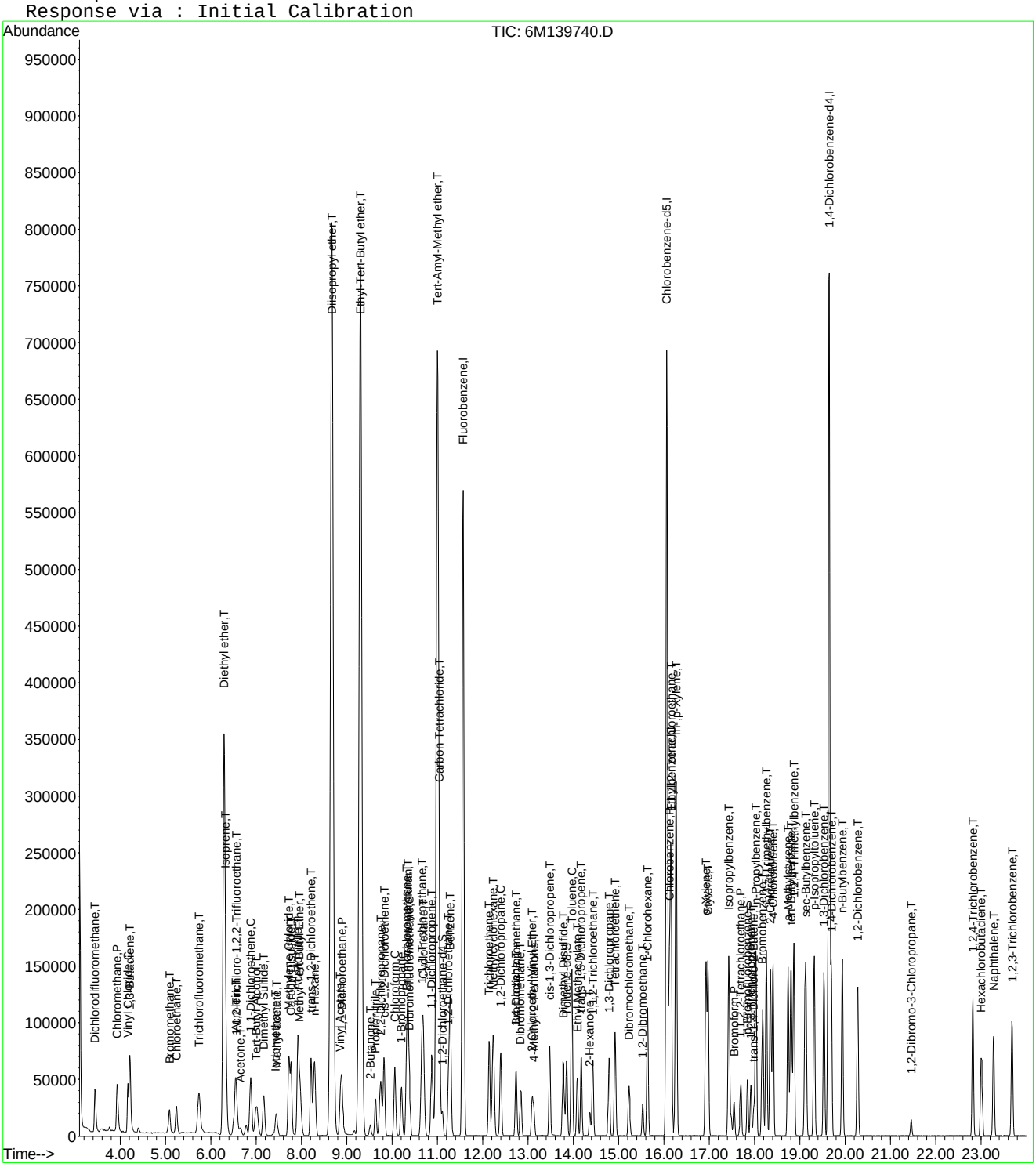

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\060116\6M139740.D Vial: 6
Acq On : 1 Jun 2016 14:38 Operator: TMB
Sample : WG570915-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.5473	9.1	100	0.00
3	P	Chloromethane	5.0000	5.0340	-0.7	100	0.00
4	C	Vinyl Chloride	5.0000	4.7908	4.2	100	0.00
5	T	1,3-Butadiene	5.0000	3.1429	37.1#	100	0.01
6	T	Bromomethane	5.0000	4.5018	10.0	100	0.02
7	T	Chloroethane	5.0000	5.0990	-2.0	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.9710	0.6	100	0.02
9	T	Diethyl ether	50.0000	50.5016	-1.0	100	0.00
10	T	Isoprene	5.0000	4.7995	4.0	100	0.00
11	T	Acrolein	25.0000	25.4233	-1.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.9585	0.8	100	0.00
13	T	Acetone	5.0000	4.9011	2.0	100	-0.01
14	C	1,1-Dichloroethene	5.0000	4.9413	1.2	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	99.9648	0.0	100	-0.04
16	T	Dimethyl Sulfide	5.0000	4.7234	5.5	100	0.00
17	T	Iodomethane	5.0000	4.2422	15.2	100	0.00
18	T	Methyl acetate	5.0000	5.2104	-4.2	100	0.00
19	T	Methylene Chloride	5.0000	5.0682	-1.4	100	0.00
20	T	Carbon Disulfide	5.0000	4.9794	0.4	100	0.00
21	T	Acrylonitrile	25.0000	23.5794	5.7	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.9418	1.2	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.9306	1.4	100	0.00
24	T	n-Hexane	5.0000	5.0925	-1.9	100	0.00
25	T	Diisopropyl ether	50.0000	51.1394	-2.3	100	0.00
26	T	Vinyl Acetate	5.0000	4.6602	6.8	100	-0.01
27	P	1,1-Dichloroethane	5.0000	4.9363	1.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	50.7146	-1.4	100	0.00
29	T	2-Butanone	5.0000	5.3720	-7.4	100	0.00
30	T	Propionitrile	50.0000	50.4584	-0.9	100	-0.01
31	T	2,2-Dichloropropane	5.0000	5.0377	-0.8	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	5.0157	-0.3	100	0.00
33	C	Chloroform	5.0000	5.0062	-0.1	100	0.00
34		1-Bromopropane	5.0000	5.4256	-8.5	100	0.00
35	T	Bromochloromethane	5.0000	4.9970	0.1	100	0.00
36	T	Tetrahydrofuran	50.0000	48.5506	2.9	100	0.00
37	S	Dibromofluoromethane	2.5000	2.4621	1.5	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.8905	2.2	100	0.00
39	T	Cyclohexane	5.0000	4.8242	3.5	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.9768	0.5	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	50.1996	-0.4	100	-0.01
42	T	Carbon Tetrachloride	5.0000	4.7988	4.0	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.4834	0.7	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	-0.01
45	T	1,2-Dichloroethane	5.0000	4.9262	1.5	100	0.00
46	T	Benzene	5.0000	5.0493	-1.0	100	0.00
47	T	Trichloroethene	5.0000	4.8833	2.3	100	-0.01
48	T	Methylcyclohexane	5.0000	4.9514	1.0	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.9943	0.1	100	0.00
50	T	1,4-Dioxane	100.0000	87.8647	12.1	100	-0.01
51	T	Bromodichloromethane	5.0000	4.8796	2.4	100	0.00
52	T	Dibromomethane	5.0000	4.9606	0.8	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.5699	8.6	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.4586	10.8	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\060116\6M139740.D Vial: 6
Acq On : 1 Jun 2016 14:38 Operator: TMB
Sample : WG570915-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	5.0071	-0.1	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.0133	19.7	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	-0.01
58	S	Toluene-d8	2.5000	2.5594	-2.4	100	0.00
59	C	Toluene	5.0000	5.1347	-2.7	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.6865	6.3	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	5.0000	4.8387	3.2	100	-0.01
63	T	1,1,2-Trichloroethane	5.0000	4.9567	0.9	100	0.00
64	T	2-Hexanone	5.0000	4.8232	3.5	100	-0.01
65	T	1,3-Dichloropropane	5.0000	4.9353	1.3	100	0.00
66	T	Tetrachloroethene	5.0000	5.0669	-1.3	100	-0.01
67	T	Dibromochloromethane	5.0000	4.8585	2.8	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.8696	2.6	100	0.00
69	T	1-Chlorohexane	5.0000	4.8916	2.2	100	0.00
70	P	Chlorobenzene	5.0000	5.1147	-2.3	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.9654	0.7	100	0.00
72	C	Ethylbenzene	5.0000	5.0148	-0.3	100	0.00
73	T	m-,p-Xylene	10.0000	10.2186	-2.2	100	0.00
74	T	o-Xylene	5.0000	5.0043	-0.1	100	0.00
75	T	Styrene	5.0000	5.0285	-0.6	100	-0.01
76	P	Bromoform	5.0000	4.5218	9.6	100	0.00
77	T	Isopropylbenzene	5.0000	5.0833	-1.7	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	4.9124	1.8	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.4936	0.3	100	-0.01
81	T	1,2,3-Trichloropropane	5.0000	4.6562	6.9	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.4249	11.5	100	0.00
83	T	n-Propylbenzene	5.0000	5.2560	-5.1	100	0.00
84	T	Bromobenzene	5.0000	5.0085	-0.2	100	-0.01
85	T	1,3,5-Trimethylbenzene	5.0000	5.1285	-2.6	100	-0.01
86	T	2-Chlorotoluene	5.0000	5.0913	-1.8	100	0.00
87	T	4-Chlorotoluene	5.0000	5.2269	-4.5	100	0.00
88	T	a-Methylstyrene	5.0000	4.6540	6.9	100	0.00
89	T	tert-Butylbenzene	5.0000	5.1030	-2.1	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.1429	-2.9	100	0.00
91	T	sec-Butylbenzene	5.0000	5.1687	-3.4	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.1310	-2.6	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	5.0357	-0.7	100	-0.01
94	T	1,4-Dichlorobenzene	5.0000	5.0188	-0.4	100	0.00
95	T	n-Butylbenzene	5.0000	5.0690	-1.4	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	5.0034	-0.1	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	4.8666	2.7	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.9430	1.1	100	0.00
99	T	Hexachlorobutadiene	5.0000	5.2143	-4.3	100	-0.01
100	T	Naphthalene	5.0000	4.9178	1.6	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.9534	0.9	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139741.D Vial: 7
Acq On : 1 Jun 2016 15:10 Operator: TMB
Sample : WG570915-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:22 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	741749	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.06	117	542308	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	300008	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.38	111	79708	10.3831 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 41.52%#		
43) 1,2-Dichloroethane-d4	11.11	65	88573	10.4679 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 41.88%#		
58) Toluene-d8	13.85	98	265815	10.2132 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 40.84%#		
80) p-Bromofluorobenzene	17.84	95	109890	10.3728 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 41.48%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	247381	21.0696 ug/L	98
3) Chloromethane	3.93	50	296797	20.7339 ug/L	99
4) Vinyl Chloride	4.17	62	191392	19.8356 ug/L	99
5) 1,3-Butadiene	4.21	54	157053	26.6603 ug/L	98
6) Bromomethane	5.09	94	81508	17.1486 ug/L	97
7) Chloroethane	5.24	64	122316	20.0554 ug/L	99
8) Trichlorofluoromethane	5.74	101	258878	20.0342 ug/L	99
9) Diethyl ether	6.29	59	547075	78.7318 ug/L	99
10) Isoprene	6.32	67	221464	20.1591 ug/L	99
11) Acrolein	6.55	56	44949	38.3408 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.55	101	145375	19.6939 ug/L	99
13) Acetone	6.65	43	44156	18.9729 ug/L	99
14) 1,1-Dichloroethene	6.88	61	254854	19.4952 ug/L	99
15) Tert-Butyl Alcohol	7.00	59	102719	160.1025 ug/L	98
16) Dimethyl Sulfide	7.17	62	122102	20.3521 ug/L	99
17) Iodomethane	7.43	142	111720	21.6149 ug/L	99
18) Methyl acetate	7.45	43	129311	20.2119 ug/L	99
19) Methylene Chloride	7.72	84	155771	19.3229 ug/L	100
20) Carbon Disulfide	7.77	76	520481	20.3498 ug/L	100
21) Acrylonitrile	7.92	53	110335	39.1307 ug/L	96
22) Methyl Tert Butyl Ether	7.95	73	388723	19.7626 ug/L	100
23) trans-1,2-Dichloroethene	8.21	96	151236	19.8472 ug/L	99
24) n-Hexane	8.29	57	239236	20.1625 ug/L	100
25) Diisopropyl ether	8.67	45	2507424	79.3924 ug/L	100
26) Vinyl Acetate	8.85	43	251396	18.7467 ug/L	99
27) 1,1-Dichloroethane	8.89	63	300042	19.6518 ug/L	100
28) Ethyl-Tert-Butyl ether	9.30	59	2050757	79.3419 ug/L	99
29) 2-Butanone	9.51	43	64868	19.3656 ug/L	99
30) Propionitrile	9.63	54	74857	80.9752 ug/L	100
31) 2,2-Dichloropropane	9.75	77	211176	18.9721 ug/L	99
32) cis-1,2-Dichloroethene	9.82	96	163903	19.7440 ug/L	100
33) Chloroform	10.06	83	267226	19.6520 ug/L	99
34) 1-Bromopropane	10.21	122	27047	19.8559 ug/L	99
35) Bromochloromethane	10.32	130	94683	20.0848 ug/L	99
36) Tetrahydrofuran	10.35	42	174854	75.8267 ug/L	98
38) 1,1,1-Trichloroethane	10.65	97	233161	19.2216 ug/L	100
39) Cyclohexane	10.69	56	306471	20.1571 ug/L	99
40) 1,1-Dichloropropene	10.88	75	204304	19.6521 ug/L	98
41) Tert-Amyl-Methyl ether	11.00	73	1581113	79.0088 ug/L	98
42) Carbon Tetrachloride	11.04	117	211271	19.5234 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139741.D Vial: 7
Acq On : 1 Jun 2016 15:10 Operator: TMB
Sample : WG570915-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:22 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.24	62	203687	19.4909 ug/L	99
46)	Benzene	11.28	78	596288	19.5688 ug/L	100
47)	Trichloroethene	12.14	130	153787	19.7607 ug/L	99
48)	Methylcyclohexane	12.23	83	238202	20.1882 ug/L	99
49)	1,2-Dichloropropane	12.40	63	164832	19.5842 ug/L	99
50)	1,4-Dioxane	12.73	88	9239	154.0797 ug/L	96
51)	Bromodichloromethane	12.74	83	203755	19.6854 ug/L	99
52)	Dibromomethane	12.84	93	86662	19.9537 ug/L	100
53)	2-Chloroethyl Vinyl Ether	13.09	63	78877	20.5333 ug/L	98
54)	4-Methyl-2-Pentanone	13.12	58	50584	19.7859 ug/L	99
55)	cis-1,3-Dichloropropene	13.48	75	236552	20.1922 ug/L	100
56)	Dimethyl Disulfide	13.78	79	129245	19.1502 ug/L	99
59)	Toluene	13.97	91	615093	19.9736 ug/L	99
60)	Ethyl Methacrylate	14.09	69	172598	20.4528 ug/L	100
62)	trans-1,3-Dichloropropene	14.17	75	207562	19.7898 ug/L	100
63)	1,1,2-Trichloroethane	14.43	97	116786	19.9183 ug/L	99
64)	2-Hexanone	14.36	43	94360	18.9657 ug/L	98
65)	1,3-Dichloropropane	14.79	76	205188	19.9044 ug/L	98
66)	Tetrachloroethene	14.92	166	156971	19.4321 ug/L	100
67)	Dibromochloromethane	15.24	129	147629	19.7605 ug/L	100
68)	1,2-Dibromoethane	15.53	107	114125	20.1383 ug/L	99
69)	1-Chlorohexane	15.64	91	204931	20.4942 ug/L	98
70)	Chlorobenzene	16.12	112	403304	19.5727 ug/L	98
71)	1,1,1,2-Tetrachloroethane	16.16	131	149046	19.9427 ug/L	99
72)	Ethylbenzene	16.16	106	213615	19.5450 ug/L	97
73)	m-,p-Xylene	16.27	106	522902	40.2721 ug/L	99
74)	o-Xylene	16.93	106	258312	20.1315 ug/L	99
75)	Styrene	16.97	104	444118	20.8412 ug/L	100
76)	Bromoform	17.55	173	92368	19.4871 ug/L	99
77)	Isopropylbenzene	17.43	105	656228	20.3746 ug/L	100
79)	1,1,2,2-Tetrachloroethane	17.70	83	139457	19.2803 ug/L	99
81)	1,2,3-Trichloropropane	17.92	110	40786	19.4765 ug/L	80
82)	trans-1,4-Dichloro-2-Buten	17.98	53	45829	18.1607 ug/L	96
83)	n-Propylbenzene	18.03	91	797340	20.5066 ug/L	100
84)	Bromobenzene	18.18	156	176971	19.3962 ug/L	98
85)	1,3,5-Trimethylbenzene	18.26	105	562167	20.4342 ug/L	100
86)	2-Chlorotoluene	18.35	91	522498	19.6183 ug/L	99
87)	4-Chlorotoluene	18.41	91	491019	19.8565 ug/L	99
88)	a-Methylstyrene	18.74	118	309473	20.1216 ug/L	99
89)	tert-Butylbenzene	18.81	134	120609	19.8853 ug/L	97
90)	1,2,4-Trimethylbenzene	18.87	105	587977	20.4163 ug/L	100
91)	sec-Butylbenzene	19.13	105	690021	20.3828 ug/L	99
92)	p-Isopropyltoluene	19.32	119	586819	20.3412 ug/L	100
93)	1,3-Dichlorobenzene	19.53	146	347927	19.5557 ug/L	100
94)	1,4-Dichlorobenzene	19.69	146	344416	20.3156 ug/L	98
95)	n-Butylbenzene	19.94	91	553574	20.2731 ug/L	99
96)	1,2-Dichlorobenzene	20.28	146	323149	19.4907 ug/L	99
97)	1,2-Dibromo-3-Chloropropan	21.46	75	24521	18.8784 ug/L	100
98)	1,2,4-Trichlorobenzene	22.82	180	229322	20.0052 ug/L	99
99)	Hexachlorobutadiene	23.02	225	92359	19.4141 ug/L	99
100)	Naphthalene	23.28	128	469355	20.7131 ug/L	99
101)	1,2,3-Trichlorobenzene	23.68	180	214161	19.7420 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M139741.D 8260WT.M Thu Jun 02 12:18:22 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139741.D Vial: 7
Acq On : 1 Jun 2016 15:10 Operator: TMB
Sample : WG570915-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 2 12:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration

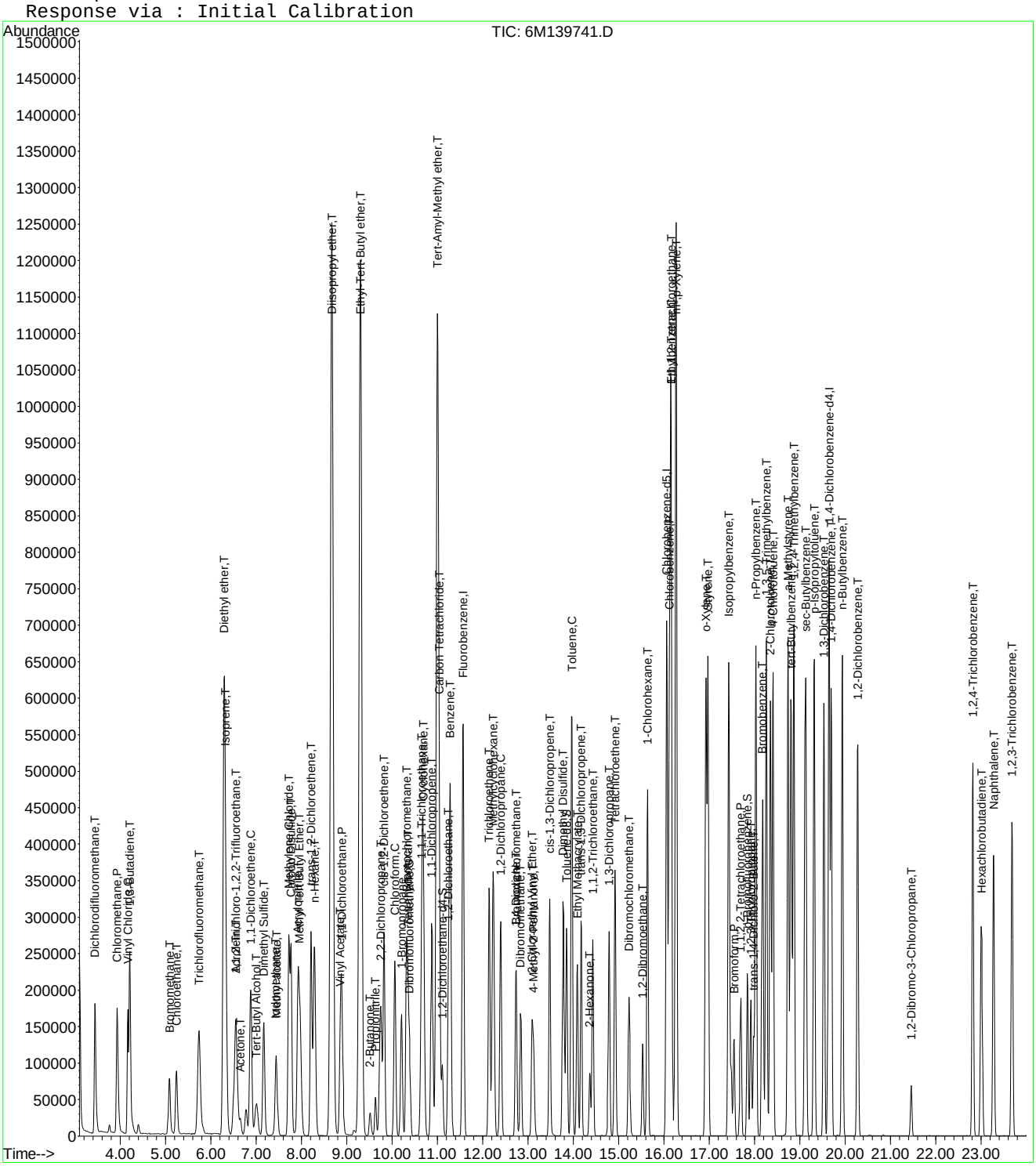

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139742.D Vial: 8
Acq On : 1 Jun 2016 15:43 Operator: TMB
Sample : WG570915-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:22 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	743292	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.06	117	551471	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	19.65	152	314779	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.38	111	194703	25.3102 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.24%		
43) 1,2-Dichloroethane-d4	11.11	65	214016	25.2407 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.96%		
58) Toluene-d8	13.85	98	648440	24.5005 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.00%		
80) p-Bromofluorobenzene	17.84	95	274770	24.7192 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.88%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	636760	54.1207 ug/L	98
3) Chloromethane	3.93	50	738547	51.4870 ug/L	100
4) Vinyl Chloride	4.17	62	471300	48.7435 ug/L	100
5) 1,3-Butadiene	4.21	54	275105	50.7103 ug/L	99
6) Bromomethane	5.07	94	226755	47.6082 ug/L	100
7) Chloroethane	5.24	64	303648	49.6840 ug/L	99
8) Trichlorofluoromethane	5.74	101	645944	49.8850 ug/L	100
9) Diethyl ether	6.29	59	702021	100.8209 ug/L	99
10) Isoprene	6.32	67	548707	49.8431 ug/L	100
11) Acrolein	6.54	56	58598	49.8794 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.54	101	369548	49.9587 ug/L	99
13) Acetone	6.65	43	111738	51.8463 ug/L	99
14) 1,1-Dichloroethene	6.88	61	651451	49.7296 ug/L	99
15) Tert-Butyl Alcohol	7.00	59	138578	215.5456 ug/L	99
16) Dimethyl Sulfide	7.17	62	302459	50.3095 ug/L	99
17) Iodomethane	7.43	142	285920	52.9654 ug/L	98
18) Methyl acetate	7.45	43	319270	49.7999 ug/L	100
19) Methylene Chloride	7.72	84	389825	48.2562 ug/L	100
20) Carbon Disulfide	7.77	76	1278901	49.8987 ug/L	100
21) Acrylonitrile	7.92	53	149508	52.9135 ug/L	99
22) Methyl Tert Butyl Ether	7.95	73	994073	50.4335 ug/L	100
23) trans-1,2-Dichloroethene	8.21	96	381485	49.9596 ug/L	99
24) n-Hexane	8.29	57	591079	49.7119 ug/L	99
25) Diisopropyl ether	8.67	45	3204444	101.2514 ug/L	99
26) Vinyl Acetate	8.86	43	674502	50.1936 ug/L	100
27) 1,1-Dichloroethane	8.89	63	750842	49.0756 ug/L	100
28) Ethyl-Tert-Butyl ether	9.30	59	2645854	102.1531 ug/L	99
29) 2-Butanone	9.51	43	169396	50.4663 ug/L	100
30) Propionitrile	9.63	54	99277	107.1681 ug/L	99
31) 2,2-Dichloropropane	9.75	77	537506	48.1895 ug/L	98
32) cis-1,2-Dichloroethene	9.82	96	418745	50.3378 ug/L	98
33) Chloroform	10.06	83	671266	49.2629 ug/L	99
34) 1-Bromopropane	10.21	122	68097	49.4474 ug/L	100
35) Bromochloromethane	10.32	130	239411	50.6801 ug/L	100
36) Tetrahydrofuran	10.35	42	229400	99.2745 ug/L	98
38) 1,1,1-Trichloroethane	10.65	97	600672	49.4161 ug/L	99
39) Cyclohexane	10.69	56	759332	49.8388 ug/L	98
40) 1,1-Dichloropropene	10.87	75	519993	49.9147 ug/L	98
41) Tert-Amyl-Methyl ether	11.00	73	2040976	101.7767 ug/L	99
42) Carbon Tetrachloride	11.04	117	549979	50.7176 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139742.D Vial: 8
Acq On : 1 Jun 2016 15:43 Operator: TMB
Sample : WG570915-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:22 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.24	62	520403	49.6941 ug/L	100
46)	Benzene	11.28	78	1501660	49.1787 ug/L	100
47)	Trichloroethene	12.14	130	389158	49.9006 ug/L	100
48)	Methylcyclohexane	12.23	83	588750	49.7945 ug/L	100
49)	1,2-Dichloropropane	12.40	63	421731	50.0030 ug/L	99
50)	1,4-Dioxane	12.73	88	13033	216.9015 ug/L	96
51)	Bromodichloromethane	12.74	83	527662	50.8733 ug/L	100
52)	Dibromomethane	12.84	93	222406	51.1020 ug/L	100
53)	2-Chloroethyl Vinyl Ether	13.09	63	209173	54.3390 ug/L	100
54)	4-Methyl-2-Pentanone	13.12	58	135553	52.9115 ug/L	100
55)	cis-1,3-Dichloropropene	13.48	75	613925	52.2962 ug/L	100
56)	Dimethyl Disulfide	13.77	79	343367	50.7709 ug/L	99
59)	Toluene	13.97	91	1553020	49.5926 ug/L	99
60)	Ethyl Methacrylate	14.09	69	453009	52.7895 ug/L	99
62)	trans-1,3-Dichloropropene	14.18	75	548907	51.4655 ug/L	100
63)	1,1,2-Trichloroethane	14.43	97	301382	50.5477 ug/L	100
64)	2-Hexanone	14.36	43	257451	50.8862 ug/L	100
65)	1,3-Dichloropropane	14.79	76	528668	50.4317 ug/L	98
66)	Tetrachloroethene	14.92	166	401722	48.9046 ug/L	99
67)	Dibromochloromethane	15.23	129	390196	51.3609 ug/L	100
68)	1,2-Dibromoethane	15.53	107	295388	51.2575 ug/L	99
69)	1-Chlorohexane	15.64	91	531557	52.2752 ug/L	100
70)	Chlorobenzene	16.12	112	1028906	49.1040 ug/L	99
71)	1,1,1,2-Tetrachloroethane	16.16	131	389576	51.2600 ug/L	99
72)	Ethylbenzene	16.16	106	560484	50.4301 ug/L	100
73)	m-,p-Xylene	16.27	106	1337468	101.2957 ug/L	100
74)	o-Xylene	16.93	106	664993	50.9649 ug/L	100
75)	Styrene	16.97	104	1162477	53.6454 ug/L	99
76)	Bromoform	17.55	173	251758	52.2316 ug/L	99
77)	Isopropylbenzene	17.43	105	1708173	52.1543 ug/L	100
79)	1,1,2,2-Tetrachloroethane	17.70	83	377511	49.7428 ug/L	100
81)	1,2,3-Trichloropropane	17.92	110	110787	50.4216 ug/L	85
82)	trans-1,4-Dichloro-2-Buten	17.98	53	128776	47.4405 ug/L	99
83)	n-Propylbenzene	18.03	91	2085439	51.1180 ug/L	99
84)	Bromobenzene	18.18	156	463664	48.4335 ug/L	99
85)	1,3,5-Trimethylbenzene	18.26	105	1474739	51.0898 ug/L	100
86)	2-Chlorotoluene	18.35	91	1349618	48.2965 ug/L	99
87)	4-Chlorotoluene	18.41	91	1298591	50.0499 ug/L	100
88)	a-Methylstyrene	18.74	118	813708	50.4237 ug/L	100
89)	tert-Butylbenzene	18.81	134	320084	50.2972 ug/L	81
90)	1,2,4-Trimethylbenzene	18.87	105	1542733	51.0547 ug/L	100
91)	sec-Butylbenzene	19.13	105	1811256	50.9928 ug/L	100
92)	p-Isopropyltoluene	19.32	119	1566478	51.7517 ug/L	100
93)	1,3-Dichlorobenzene	19.53	146	907226	48.5991 ug/L	98
94)	1,4-Dichlorobenzene	19.70	146	909939	51.4796 ug/L	99
95)	n-Butylbenzene	19.94	91	1484817	51.8256 ug/L	99
96)	1,2-Dichlorobenzene	20.28	146	855774	49.1938 ug/L	99
97)	1,2-Dibromo-3-Chloropropan	21.46	75	72400	53.1242 ug/L	97
98)	1,2,4-Trichlorobenzene	22.82	180	608734	50.6118 ug/L	99
99)	Hexachlorobutadiene	23.02	225	245206	49.1243 ug/L	100
100)	Naphthalene	23.28	128	1276187	53.6766 ug/L	100
101)	1,2,3-Trichlorobenzene	23.69	180	568536	49.9499 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139742.D Vial: 8
Acq On : 1 Jun 2016 15:43 Operator: TMB
Sample : WG570915-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 2 12:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration

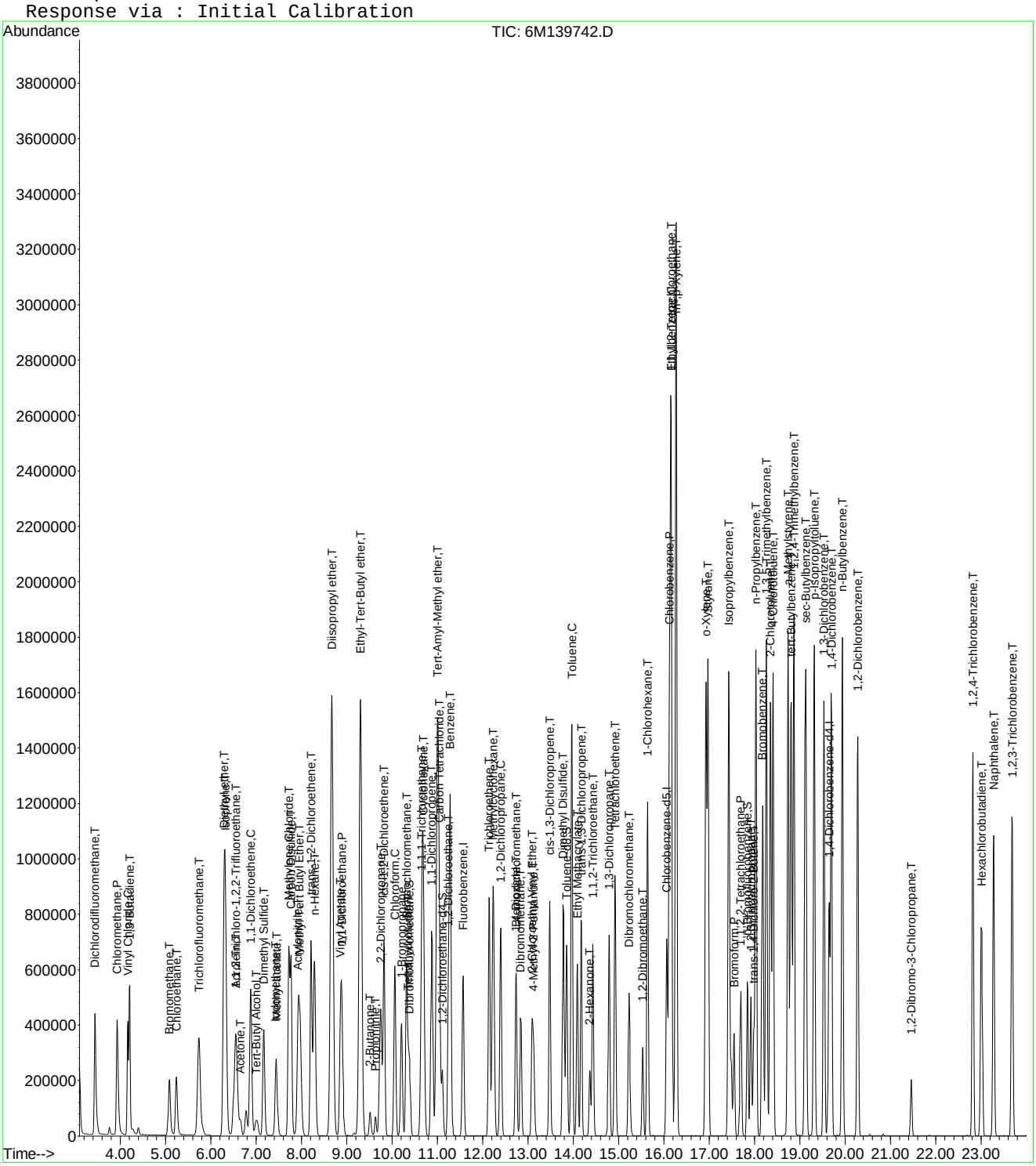

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139743.D Vial: 9
Acq On : 1 Jun 2016 16:15 Operator: TMB
Sample : WG570915-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:23 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.56	96	745219	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	553231	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.64	152	324979	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	381593	49.4765 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 197.92%#		
43) 1,2-Dichloroethane-d4	11.11	65	420324	49.4441 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 197.76%#		
58) Toluene-d8	13.85	98	1284388	48.3746 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 193.48%#		
80) p-Bromofluorobenzene	17.84	95	561184	48.9013 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 195.60%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	1271545	107.7942 ug/L	99
3) Chloromethane	3.93	50	1453604	101.0744 ug/L	99
4) Vinyl Chloride	4.16	62	940309	96.9986 ug/L	100
5) 1,3-Butadiene	4.20	54	543605	105.2748 ug/L	98
6) Bromomethane	5.08	94	507202	106.2139 ug/L	100
7) Chloroethane	5.23	64	607096	99.0784 ug/L	98
8) Trichlorofluoromethane	5.73	101	1293807	99.6599 ug/L	100
9) Diethyl ether	6.29	59	1412947	202.3960 ug/L	100
10) Isoprene	6.32	67	1134177	102.7593 ug/L	100
11) Acrolein	6.54	56	121987	103.5684 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.54	101	746025	100.5934 ug/L	99
13) Acetone	6.65	43	219673	104.1433 ug/L	97
14) 1,1-Dichloroethene	6.88	61	1312919	99.9646 ug/L	99
15) Tert-Butyl Alcohol	7.02	59	283142	439.2630 ug/L	100
16) Dimethyl Sulfide	7.16	62	610247	101.2429 ug/L	99
17) Iodomethane	7.44	142	578425	105.4079 ug/L	99
18) Methyl acetate	7.45	43	643020	100.0391 ug/L	99
19) Methylene Chloride	7.72	84	774654	95.6460 ug/L	100
20) Carbon Disulfide	7.76	76	2590427	100.8089 ug/L	100
21) Acrylonitrile	7.93	53	297985	105.1894 ug/L	99
22) Methyl Tert Butyl Ether	7.95	73	1991839	100.7930 ug/L	99
23) trans-1,2-Dichloroethene	8.21	96	766532	100.1262 ug/L	99
24) n-Hexane	8.28	57	1207948	101.3301 ug/L	99
25) Diisopropyl ether	8.67	45	6349652	200.1124 ug/L	100
26) Vinyl Acetate	8.86	43	1305411	96.8920 ug/L	100
27) 1,1-Dichloroethane	8.89	63	1510299	98.4590 ug/L	99
28) Ethyl-Tert-Butyl ether	9.31	59	5254811	202.3571 ug/L	99
29) 2-Butanone	9.51	43	343748	102.1442 ug/L	99
30) Propionitrile	9.63	54	195891	210.9148 ug/L	99
31) 2,2-Dichloropropane	9.74	77	1100861	98.4413 ug/L	97
32) cis-1,2-Dichloroethene	9.83	96	833939	99.9895 ug/L	98
33) Chloroform	10.06	83	1345458	98.4852 ug/L	99
34) 1-Bromopropane	10.20	122	139415	100.6685 ug/L	99
35) Bromochloromethane	10.32	130	481146	101.5887 ug/L	100
36) Tetrahydrofuran	10.35	42	450185	194.3170 ug/L	99
38) 1,1,1-Trichloroethane	10.65	97	1216226	99.7977 ug/L	99
39) Cyclohexane	10.68	56	1560090	102.1318 ug/L	98
40) 1,1-Dichloropropene	10.88	75	1059287	101.4191 ug/L	97
41) Tert-Amyl-Methyl ether	11.00	73	4120411	204.9398 ug/L	99
42) Carbon Tetrachloride	11.04	117	1123233	103.3138 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139743.D Vial: 9
Acq On : 1 Jun 2016 16:15 Operator: TMB
Sample : WG570915-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:23 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	11.25	62	1041653	99.2119	ug/L	99
46)	Benzene	11.29	78	2987728	97.5938	ug/L	100
47)	Trichloroethene	12.14	130	787643	100.7360	ug/L	100
48)	Methylcyclohexane	12.24	83	1207654	101.8752	ug/L	100
49)	1,2-Dichloropropane	12.39	63	848936	100.3948	ug/L	99
50)	1,4-Dioxane	12.73	88	26054	432.4820	ug/L	91
51)	Bromodichloromethane	12.74	83	1058042	101.7449	ug/L	99
52)	Dibromomethane	12.84	93	445604	102.1212	ug/L	100
53)	2-Chloroethyl Vinyl Ether	13.08	63	410765	106.4326	ug/L	100
54)	4-Methyl-2-Pentanone	13.12	58	270288	105.2308	ug/L	99
55)	cis-1,3-Dichloropropene	13.48	75	1235593	104.9798	ug/L	100
56)	Dimethyl Disulfide	13.78	79	719355	106.0902	ug/L	100
59)	Toluene	13.96	91	3103522	98.7895	ug/L	99
60)	Ethyl Methacrylate	14.08	69	931022	108.1477	ug/L	99
62)	trans-1,3-Dichloropropene	14.18	75	1108920	103.6415	ug/L	100
63)	1,1,2-Trichloroethane	14.43	97	600453	100.3874	ug/L	100
64)	2-Hexanone	14.36	43	525162	103.4700	ug/L	100
65)	1,3-Dichloropropane	14.79	76	1051661	100.0029	ug/L	98
66)	Tetrachloroethene	14.92	166	801128	97.2171	ug/L	99
67)	Dibromochloromethane	15.23	129	788751	103.4917	ug/L	100
68)	1,2-Dibromoethane	15.53	107	594770	102.8797	ug/L	100
69)	1-Chlorohexane	15.65	91	1078462	105.7225	ug/L	100
70)	Chlorobenzene	16.13	112	2048564	97.4556	ug/L	98
71)	1,1,1,2-Tetrachloroethane	16.17	131	787668	103.3109	ug/L	99
72)	Ethylbenzene	16.16	106	1123449	100.7619	ug/L	100
73)	m-,p-Xylene	16.27	106	2682669	202.5308	ug/L	98
74)	o-Xylene	16.93	106	1337407	102.1724	ug/L	100
75)	Styrene	16.97	104	2366159	108.8450	ug/L	98
76)	Bromoform	17.55	173	529470	109.4983	ug/L	99
77)	Isopropylbenzene	17.43	105	3429724	104.3838	ug/L	100
79)	1,1,2,2-Tetrachloroethane	17.70	83	780189	99.5752	ug/L	100
81)	1,2,3-Trichloropropane	17.92	110	228360	100.6695	ug/L	89
82)	trans-1,4-Dichloro-2-Buten	17.99	53	281575	99.6791	ug/L	90
83)	n-Propylbenzene	18.04	91	4178754	99.2142	ug/L	100
84)	Bromobenzene	18.18	156	945550	95.6704	ug/L	98
85)	1,3,5-Trimethylbenzene	18.26	105	3012486	101.0869	ug/L	100
86)	2-Chlorotoluene	18.35	91	2814456	97.5550	ug/L	100
87)	4-Chlorotoluene	18.41	91	2586619	96.5636	ug/L	100
88)	a-Methylstyrene	18.74	118	1716308	103.0177	ug/L	100
89)	tert-Butylbenzene	18.81	134	661932	100.7497	ug/L	99
90)	1,2,4-Trimethylbenzene	18.87	105	3165014	101.4544	ug/L	100
91)	sec-Butylbenzene	19.13	105	3724940	101.5778	ug/L	100
92)	p-Isopropyltoluene	19.31	119	3227971	103.2952	ug/L	100
93)	1,3-Dichlorobenzene	19.54	146	1880510	97.5751	ug/L	98
94)	1,4-Dichlorobenzene	19.69	146	1878131	103.1339	ug/L	98
95)	n-Butylbenzene	19.95	91	3081384	104.1760	ug/L	100
96)	1,2-Dichlorobenzene	20.27	146	1761523	98.0823	ug/L	98
97)	1,2-Dibromo-3-Chloropropan	21.46	75	150529	106.9853	ug/L	99
98)	1,2,4-Trichlorobenzene	22.83	180	1257020	101.2317	ug/L	99
99)	Hexachlorobutadiene	23.01	225	503637	97.7313	ug/L	100
100)	Naphthalene	23.27	128	2610257	106.3420	ug/L	100
101)	1,2,3-Trichlorobenzene	23.68	180	1163258	98.9927	ug/L	99

(#) = qualifier out of range (m) = manual integration
6M139743.D 8260WT.M Thu Jun 02 12:18:24 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139743.D Vial: 9
Acq On : 1 Jun 2016 16:15 Operator: TMB
Sample : WG570915-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 2 12:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration

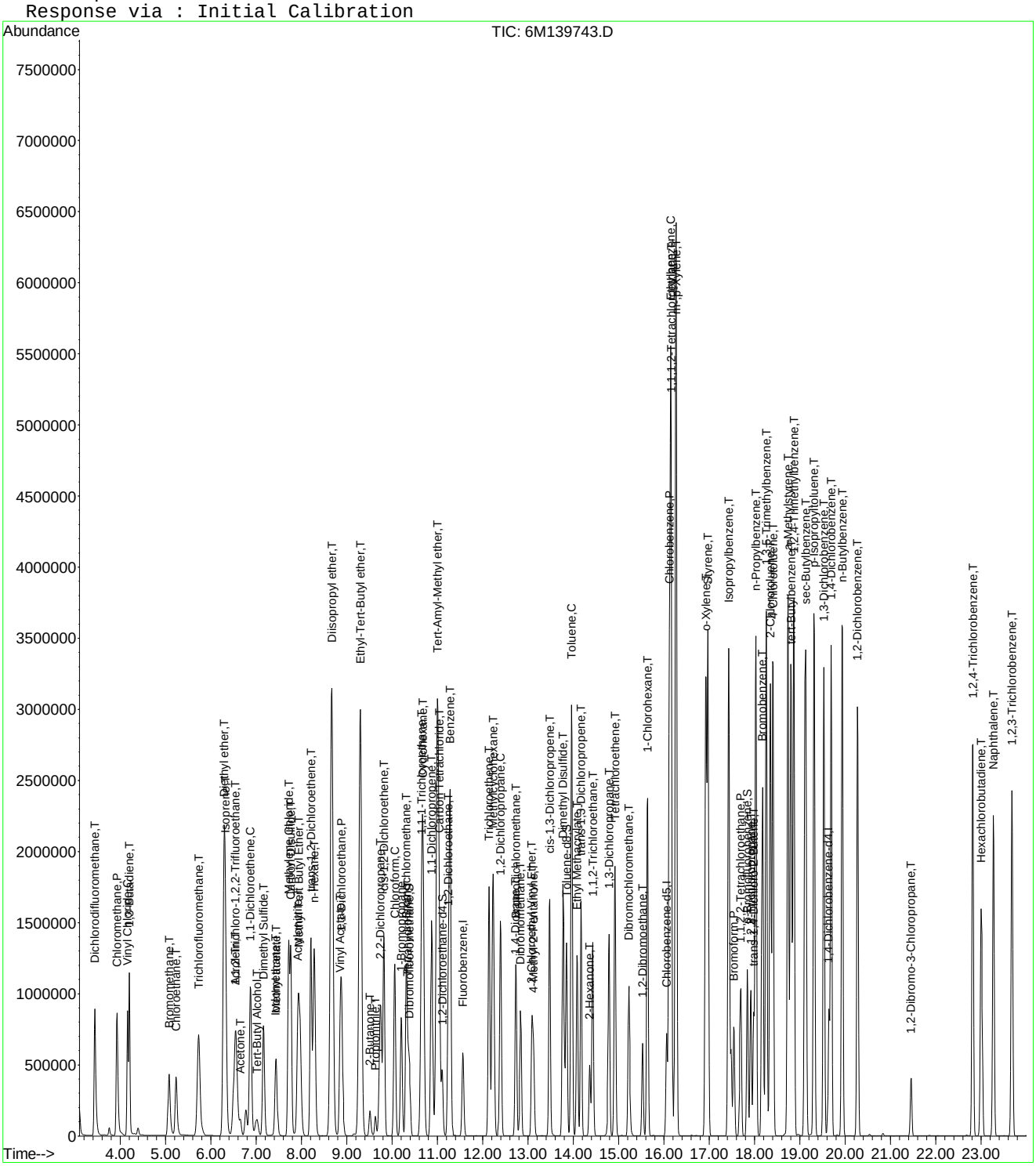

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139744.D Vial: 10
Acq On : 1 Jun 2016 16:47 Operator: TMB
Sample : WG570915-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:24 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	776064	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.06	117	573619	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	333724	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	806214	100.3772 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 401.52%#		
43) 1,2-Dichloroethane-d4	11.11	65	876933	99.0564 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 396.24%#		
58) Toluene-d8	13.85	98	2681218	97.3950 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 389.56%#		
80) p-Bromofluorobenzene	17.84	95	1179267	100.0680 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 400.28%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	2579822	210.0099 ug/L	99
3) Chloromethane	3.93	50	2884749	192.6148 ug/L	100
4) Vinyl Chloride	4.16	62	1885735	186.7936 ug/L	99
5) 1,3-Butadiene	4.20	54	1072988	204.4528 ug/L	98
6) Bromomethane	5.08	94	1138500	228.9390 ug/L	100
7) Chloroethane	5.23	64	1266416	198.4652 ug/L	99
8) Trichlorofluoromethane	5.73	101	2677396	198.0386 ug/L	100
9) Diethyl ether	6.30	59	2847	0.3916 ug/L #	47
10) Isoprene	6.32	67	2328586	202.5904 ug/L	100
11) Acrolein	6.55	56	4274	3.4845 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.55	101	1565121	202.6517 ug/L	99
13) Acetone	6.66	43	445796	205.3917 ug/L	97
14) 1,1-Dichloroethene	6.87	61	2774888	202.8805 ug/L	99
15) Tert-Butyl Alcohol	7.04	59	15311	22.8092 ug/L #	58
16) Dimethyl Sulfide	7.16	62	1276573	203.3718 ug/L	100
17) Iodomethane	7.43	142	1184276	205.8450 ug/L	97
18) Methyl acetate	7.46	43	1318166	196.9255 ug/L	98
19) Methylene Chloride	7.72	84	1656713	196.4233 ug/L	98
20) Carbon Disulfide	7.77	76	5292625	197.7812 ug/L	99
21) Acrylonitrile	7.95	53	52128	17.6699 ug/L #	39
22) Methyl Tert Butyl Ether	7.96	73	4208038	204.4759 ug/L	99
23) trans-1,2-Dichloroethene	8.21	96	1623775	203.6712 ug/L	100
24) n-Hexane	8.28	57	2478699	199.6643 ug/L	100
25) Diisopropyl ether	8.66	45	5024	0.1520 ug/L #	53
26) Vinyl Acetate	8.85	43	3085472	219.9118 ug/L	99
27) 1,1-Dichloroethane	8.88	63	3203758	200.5574 ug/L	99
28) Ethyl-Tert-Butyl ether	9.31	59	31362	1.1597 ug/L #	45
29) 2-Butanone	9.51	43	702047	200.3209 ug/L	100
30) Propionitrile	9.64	54	5995	6.1982 ug/L	92
31) 2,2-Dichloropropane	9.75	77	2335468	200.5419 ug/L	96
32) cis-1,2-Dichloroethene	9.82	96	1785062	205.5228 ug/L	99
33) Chloroform	10.06	83	2856444	200.7766 ug/L	99
34) 1-Bromopropane	10.21	122	290511	201.1427 ug/L	100
35) Bromochloromethane	10.32	130	1018815	206.5620 ug/L	100
36) Tetrahydrofuran	10.36	42	13533	5.6092 ug/L	97
38) 1,1,1-Trichloroethane	10.65	97	2601990	205.0210 ug/L	99
39) Cyclohexane	10.68	56	3250515	204.3384 ug/L	98
40) 1,1-Dichloropropene	10.88	75	2239923	205.9328 ug/L	97
41) Tert-Amyl-Methyl ether	11.01	73	4521	0.2159 ug/L	95
42) Carbon Tetrachloride	11.04	117	2354561	207.9624 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139744.D Vial: 10
Acq On : 1 Jun 2016 16:47 Operator: TMB
Sample : WG570915-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:24 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.24	62	2210694	202.1881 ug/L	99
46)	Benzene	11.28	78	6174905	193.6858 ug/L	98
47)	Trichloroethene	12.14	130	1643481	201.8396 ug/L	99
48)	Methylcyclohexane	12.23	83	2494638	202.0783 ug/L	100
49)	1,2-Dichloropropane	12.40	63	1813017	205.8849 ug/L	99
50)	1,4-Dioxane	12.73	88	4051	64.5717 ug/L #	42
51)	Bromodichloromethane	12.73	83	2256070	208.3284 ug/L	99
52)	Dibromomethane	12.84	93	947659	208.5476 ug/L	100
53)	2-Chloroethyl Vinyl Ether	13.09	63	834725	207.6879 ug/L	100
54)	4-Methyl-2-Pentanone	13.12	58	562095	210.1417 ug/L	99
55)	cis-1,3-Dichloropropene	13.48	75	2636809	215.1272 ug/L	100
56)	Dimethyl Disulfide	13.78	79	1544098	218.6720 ug/L	100
59)	Toluene	13.97	91	6343599	194.7487 ug/L	97
60)	Ethyl Methacrylate	14.09	69	1956368	219.1749 ug/L	99
62)	trans-1,3-Dichloropropene	14.17	75	2372003	213.8118 ug/L	100
63)	1,1,2-Trichloroethane	14.43	97	1265411	204.0398 ug/L	99
64)	2-Hexanone	14.36	43	1099274	208.8865 ug/L	99
65)	1,3-Dichloropropane	14.79	76	2208806	202.5711 ug/L	98
66)	Tetrachloroethene	14.92	166	1679955	196.6171 ug/L	97
67)	Dibromochloromethane	15.24	129	1662430	210.3740 ug/L	99
68)	1,2-Dibromoethane	15.53	107	1245613	207.8007 ug/L	100
69)	1-Chlorohexane	15.64	91	2230493	210.8853 ug/L	99
70)	Chlorobenzene	16.12	112	4254241	195.1921 ug/L	94
71)	1,1,1,2-Tetrachloroethane	16.17	131	1673381	211.6804 ug/L	98
72)	Ethylbenzene	16.17	106	2403044	207.8680 ug/L	91
73)	m-,p-Xylene	16.27	106	5429587	395.3427 ug/L	84
74)	o-Xylene	16.93	106	2810875	207.1070 ug/L	97
75)	Styrene	16.97	104	4915148	218.0641 ug/L	95
76)	Bromoform	17.55	173	1136738	226.7302 ug/L	99
77)	Isopropylbenzene	17.43	105	6859790	201.3575 ug/L	97
79)	1,1,2,2-Tetrachloroethane	17.70	83	1662819	206.6637 ug/L	99
81)	1,2,3-Trichloropropane	17.92	110	474236	203.5824 ug/L	82
82)	trans-1,4-Dichloro-2-Buten	17.98	53	585581	201.1368 ug/L	96
83)	n-Propylbenzene	18.03	91	8082495	186.8702 ug/L	96
84)	Bromobenzene	18.18	156	1996554	196.7170 ug/L	97
85)	1,3,5-Trimethylbenzene	18.26	105	6169530	201.5996 ug/L	98
86)	2-Chlorotoluene	18.35	91	5638837	190.3323 ug/L	99
87)	4-Chlorotoluene	18.41	91	5484270	199.3736 ug/L	98
88)	a-Methylstyrene	18.74	118	3512028	205.2781 ug/L	100
89)	tert-Butylbenzene	18.81	134	1381654	204.7847 ug/L	83
90)	1,2,4-Trimethylbenzene	18.87	105	6415254	200.2520 ug/L	97
91)	sec-Butylbenzene	19.13	105	7361358	195.4813 ug/L	97
92)	p-Isopropyltoluene	19.32	119	6417848	199.9897 ug/L	97
93)	1,3-Dichlorobenzene	19.54	146	3842248	194.1406 ug/L	96
94)	1,4-Dichlorobenzene	19.70	146	3828208	204.9208 ug/L	96
95)	n-Butylbenzene	19.94	91	6152441	202.5523 ug/L	98
96)	1,2-Dichlorobenzene	20.28	146	3581931	194.2170 ug/L	96
97)	1,2-Dibromo-3-Chloropropan	21.47	75	312895	216.5561 ug/L	99
98)	1,2,4-Trichlorobenzene	22.82	180	2607210	204.4647 ug/L	98
99)	Hexachlorobutadiene	23.02	225	1025399	193.7656 ug/L	99
100)	Naphthalene	23.28	128	5221771	207.1606 ug/L	98
101)	1,2,3-Trichlorobenzene	23.69	180	2383834	197.5473 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M139744.D 8260WT.M Thu Jun 02 12:18:24 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139744.D Vial: 10
Acq On : 1 Jun 2016 16:47 Operator: TMB
Sample : WG570915-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 2 12:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration

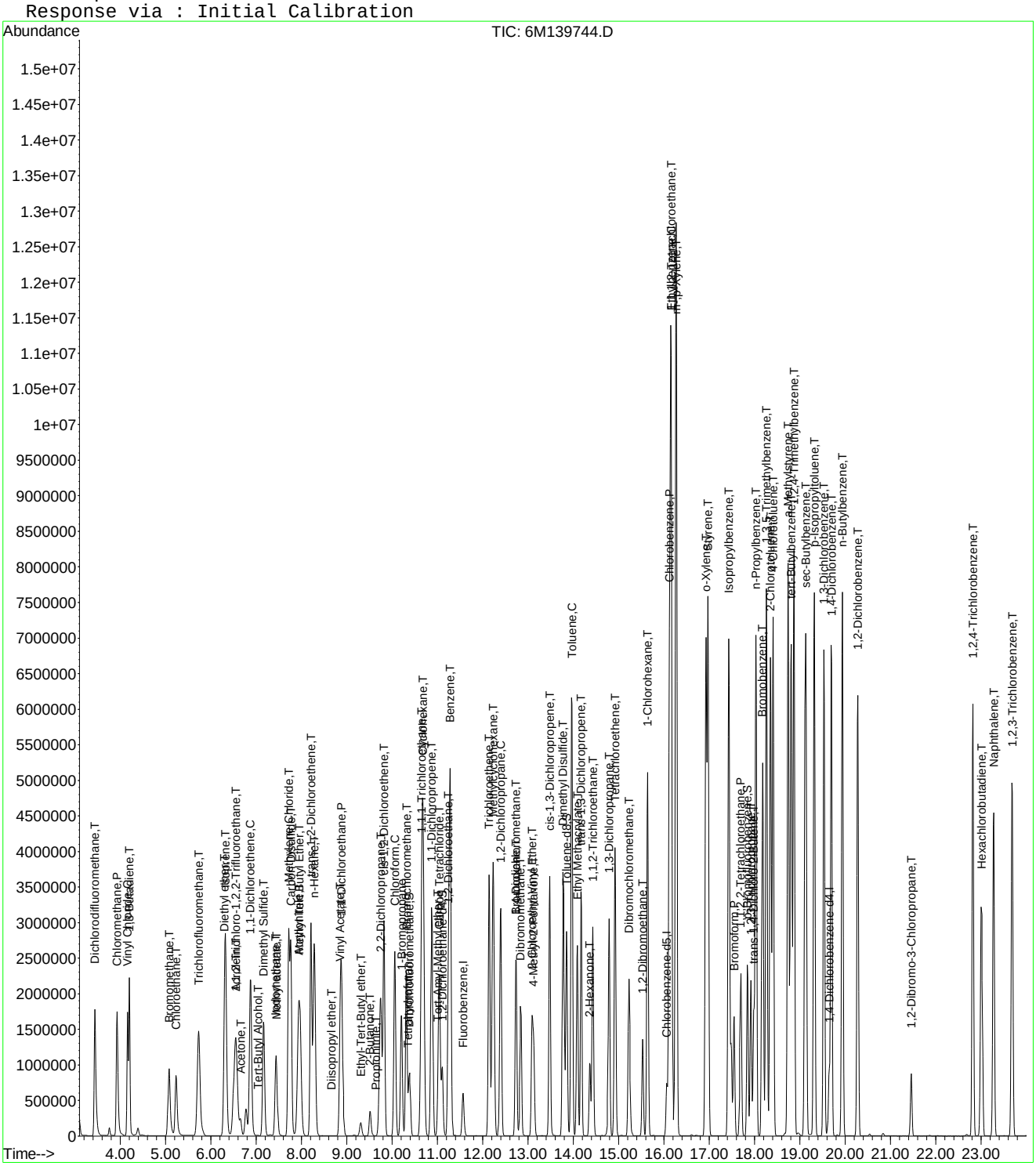

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139745.D Vial: 11
Acq On : 1 Jun 2016 17:19 Operator: TMB
Sample : WG570915-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:25 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	874785	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	603118	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	334735	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.38	111	1329975	146.9008 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 587.60%#		
43) 1,2-Dichloroethane-d4	11.11	65	1427686	143.0689 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 572.28%#		
58) Toluene-d8	13.85	98	4301159	148.5974 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 594.40%#		
80) p-Bromofluorobenzene	17.85	95	1769546	149.7033 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 598.80%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	3794421	274.0259 ug/L	99
3) Chloromethane	3.93	50	4042633	239.4651 ug/L	100
4) Vinyl Chloride	4.16	62	2745108	241.2331 ug/L	98
5) 1,3-Butadiene	4.20	54	1672121	284.7589 ug/L	99
6) Bromomethane	5.06	94	1745686	311.4219 ug/L	100
7) Chloroethane	5.23	64	1947490	270.7569 ug/L	99
8) Trichlorofluoromethane	5.72	101	4186804	274.7363 ug/L	100
9) Diethyl ether	6.29	59	2434269	297.0484 ug/L	99
10) Isoprene	6.32	67	3866380	298.4196 ug/L	100
11) Acrolein	6.54	56	211081	152.6671 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.54	101	2530270	290.6468 ug/L	99
13) Acetone	6.66	43	706320	289.7447 ug/L	95
14) 1,1-Dichloroethene	6.87	61	4460855	289.3404 ug/L	98
15) Tert-Butyl Alcohol	7.05	59	432972	572.2196 ug/L	99
16) Dimethyl Sulfide	7.16	62	2127423	300.6735 ug/L	99
17) Iodomethane	7.43	142	1850962	284.8611 ug/L	98
18) Methyl acetate	7.45	43	2187319	289.8946 ug/L	98
19) Methylene Chloride	7.72	84	2684397	282.3505 ug/L	98
20) Carbon Disulfide	7.76	76	8318935	275.7895 ug/L	97
21) Acrylonitrile	7.92	53	535439	161.0165 ug/L	97
22) Methyl Tert Butyl Ether	7.95	73	6877613	296.4807 ug/L	99
23) trans-1,2-Dichloroethene	8.21	96	2657970	295.7672 ug/L	100
24) n-Hexane	8.28	57	4061677	290.2540 ug/L	100
25) Diisopropyl ether	8.67	45	10570767	283.8005 ug/L	98
26) Vinyl Acetate	8.86	43	5021055	317.4813 ug/L	99
27) 1,1-Dichloroethane	8.89	63	5233579	290.6524 ug/L	98
28) Ethyl-Tert-Butyl ether	9.30	59	8844197	290.1365 ug/L	98
29) 2-Butanone	9.52	43	1096187	277.4859 ug/L	99
30) Propionitrile	9.64	54	302541	277.4977 ug/L	99
31) 2,2-Dichloropropane	9.75	77	3789844	288.7014 ug/L	96
32) cis-1,2-Dichloroethene	9.82	96	2910936	297.3278 ug/L	99
33) Chloroform	10.06	83	4641408	289.4232 ug/L	99
34) 1-Bromopropane	10.21	122	486129	298.4586 ug/L	99
35) Bromochloromethane	10.32	130	1642991	295.5197 ug/L	99
36) Tetrahydrofuran	10.35	42	734691	270.1512 ug/L	100
38) 1,1,1-Trichloroethane	10.66	97	4234747	296.0169 ug/L	100
39) Cyclohexane	10.69	56	5346656	298.1784 ug/L	98
40) 1,1-Dichloropropene	10.87	75	3628282	295.9305 ug/L	96
41) Tert-Amyl-Methyl ether	11.01	73	7044691	298.4904 ug/L	99
42) Carbon Tetrachloride	11.04	117	3852044	301.8300 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M139745.D 8260WT.M Thu Jun 02 12:18:25 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139745.D Vial: 11
Acq On : 1 Jun 2016 17:19 Operator: TMB
Sample : WG570915-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:25 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.24	62	3586153	290.9725 ug/L	98
46)	Benzene	11.28	78	9445205	262.8302 ug/L	94
47)	Trichloroethene	12.15	130	2634728	287.0606 ug/L	98
48)	Methylcyclohexane	12.23	83	4071369	292.5829 ug/L	99
49)	1,2-Dichloropropane	12.40	63	2942534	296.4424 ug/L	100
50)	1,4-Dioxane	12.74	88	42118	595.5853 ug/L	96
51)	Bromodichloromethane	12.74	83	3630814	297.4378 ug/L	99
52)	Dibromomethane	12.84	93	1523394	297.4141 ug/L	99
53)	2-Chloroethyl Vinyl Ether	13.09	63	1282176	283.0164 ug/L	100
54)	4-Methyl-2-Pentanone	13.13	58	866300	287.3208 ug/L	99
55)	cis-1,3-Dichloropropene	13.48	75	4198516	303.8845 ug/L	99
56)	Dimethyl Disulfide	13.78	79	2555342	321.0433 ug/L	99
59)	Toluene	13.97	91	9298621	271.5055 ug/L	92
60)	Ethyl Methacrylate	14.09	69	3070235	327.1395 ug/L	98
62)	trans-1,3-Dichloropropene	14.18	75	3689732	316.3243 ug/L	100
63)	1,1,2-Trichloroethane	14.43	97	1946854	298.5644 ug/L	99
64)	2-Hexanone	14.37	43	1643728	297.0678 ug/L	98
65)	1,3-Dichloropropane	14.79	76	3375035	294.3875 ug/L	98
66)	Tetrachloroethene	14.93	166	2636661	293.4940 ug/L	96
67)	Dibromochloromethane	15.23	129	2525879	304.0063 ug/L	98
68)	1,2-Dibromoethane	15.53	107	1894786	300.6389 ug/L	100
69)	1-Chlorohexane	15.64	91	3460425	311.1688 ug/L	98
70)	Chlorobenzene	16.12	112	6260439	273.1908 ug/L	89
71)	1,1,1,2-Tetrachloroethane	16.16	131	2501054	300.9055 ug/L	97
72)	Ethylbenzene	16.16	106	3603522	296.4656 ug/L	77
73)	m-,p-Xylene	16.27	106	7675830	531.5614 ug/L	72
74)	o-Xylene	16.93	106	4132097	289.5642 ug/L	91
75)	Styrene	16.98	104	7001942	295.4523 ug/L	90
76)	Bromoform	17.55	173	1687864	320.1900 ug/L	98
77)	Isopropylbenzene	17.43	105	9280334	259.0848 ug/L	93
79)	1,1,2,2-Tetrachloroethane	17.70	83	2441380	302.5109 ug/L	100
81)	1,2,3-Trichloropropane	17.92	110	701095	300.0606 ug/L	84
82)	trans-1,4-Dichloro-2-Buten	17.98	53	888429	303.8730 ug/L	92
83)	n-Propylbenzene	18.03	91	10509002	242.2381 ug/L	91
84)	Bromobenzene	18.19	156	2931431	287.9565 ug/L	97
85)	1,3,5-Trimethylbenzene	18.27	105	8380264	273.0120 ug/L	94
86)	2-Chlorotoluene	18.35	91	7661586	257.8267 ug/L	96
87)	4-Chlorotoluene	18.41	91	7776019	281.8333 ug/L	94
88)	a-Methylstyrene	18.74	118	5138258	299.4242 ug/L	98
89)	tert-Butylbenzene	18.81	134	1991224	294.2420 ug/L	95
90)	1,2,4-Trimethylbenzene	18.87	105	8632335	268.6443 ug/L	93
91)	sec-Butylbenzene	19.13	105	9738776	257.8326 ug/L	93
92)	p-Isopropyltoluene	19.32	119	8603731	267.2953 ug/L	93
93)	1,3-Dichlorobenzene	19.54	146	5474292	275.7689 ug/L	93
94)	1,4-Dichlorobenzene	19.70	146	5434751	290.1280 ug/L	93
95)	n-Butylbenzene	19.94	91	8255399	270.9656 ug/L	95
96)	1,2-Dichlorobenzene	20.28	146	5078448	274.5284 ug/L	93
97)	1,2-Dibromo-3-Chloropropan	21.46	75	451100	311.2655 ug/L	99
98)	1,2,4-Trichlorobenzene	22.82	180	3727725	291.4556 ug/L	97
99)	Hexachlorobutadiene	23.02	225	1492415	281.1640 ug/L	99
100)	Naphthalene	23.28	128	7153107	282.9244 ug/L	96
101)	1,2,3-Trichlorobenzene	23.69	180	3403591	281.2023 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M139745.D 8260WT.M Thu Jun 02 12:18:25 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139745.D Vial: 11
Acq On : 1 Jun 2016 17:19 Operator: TMB
Sample : WG570915-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 2 12:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration

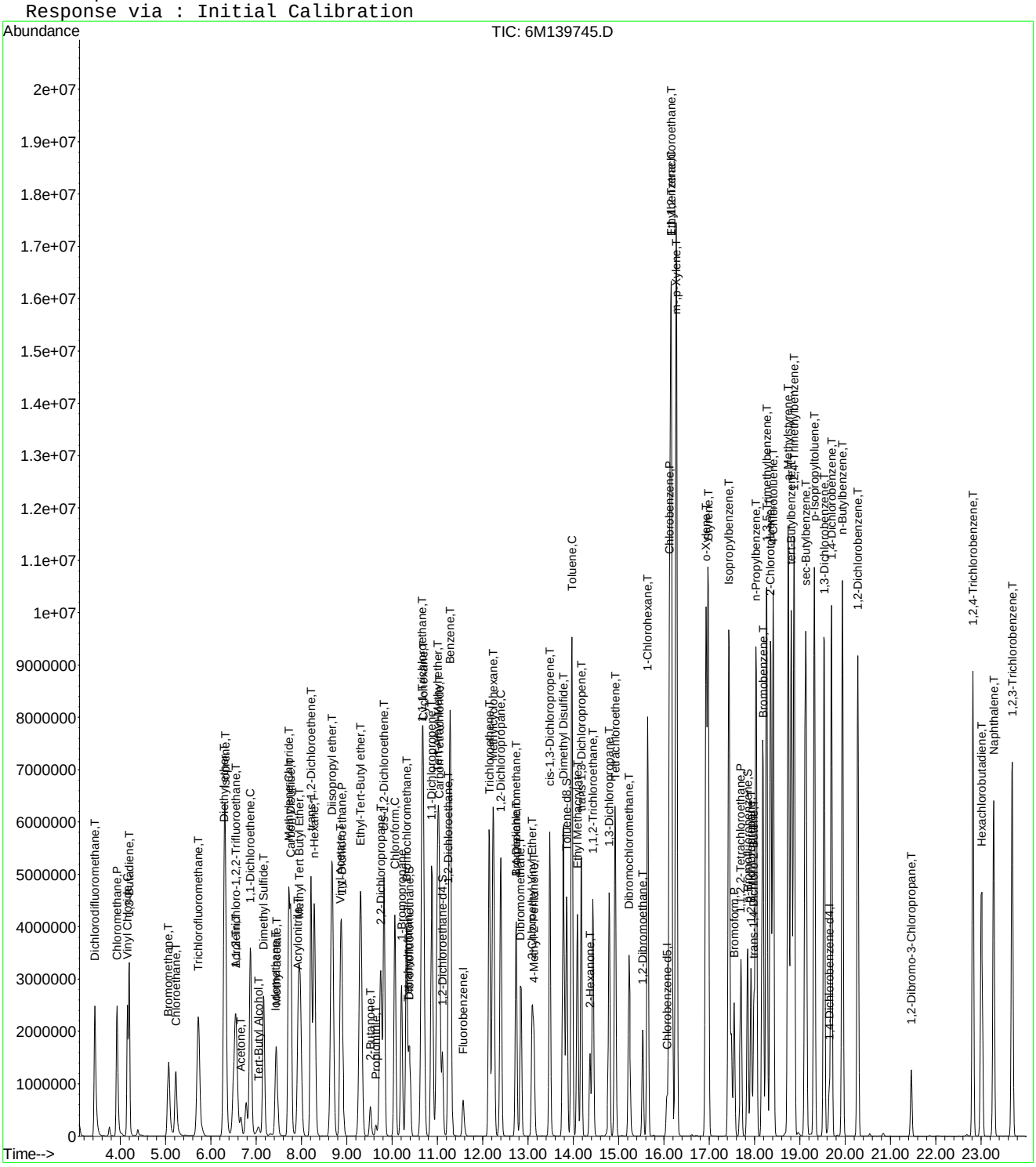

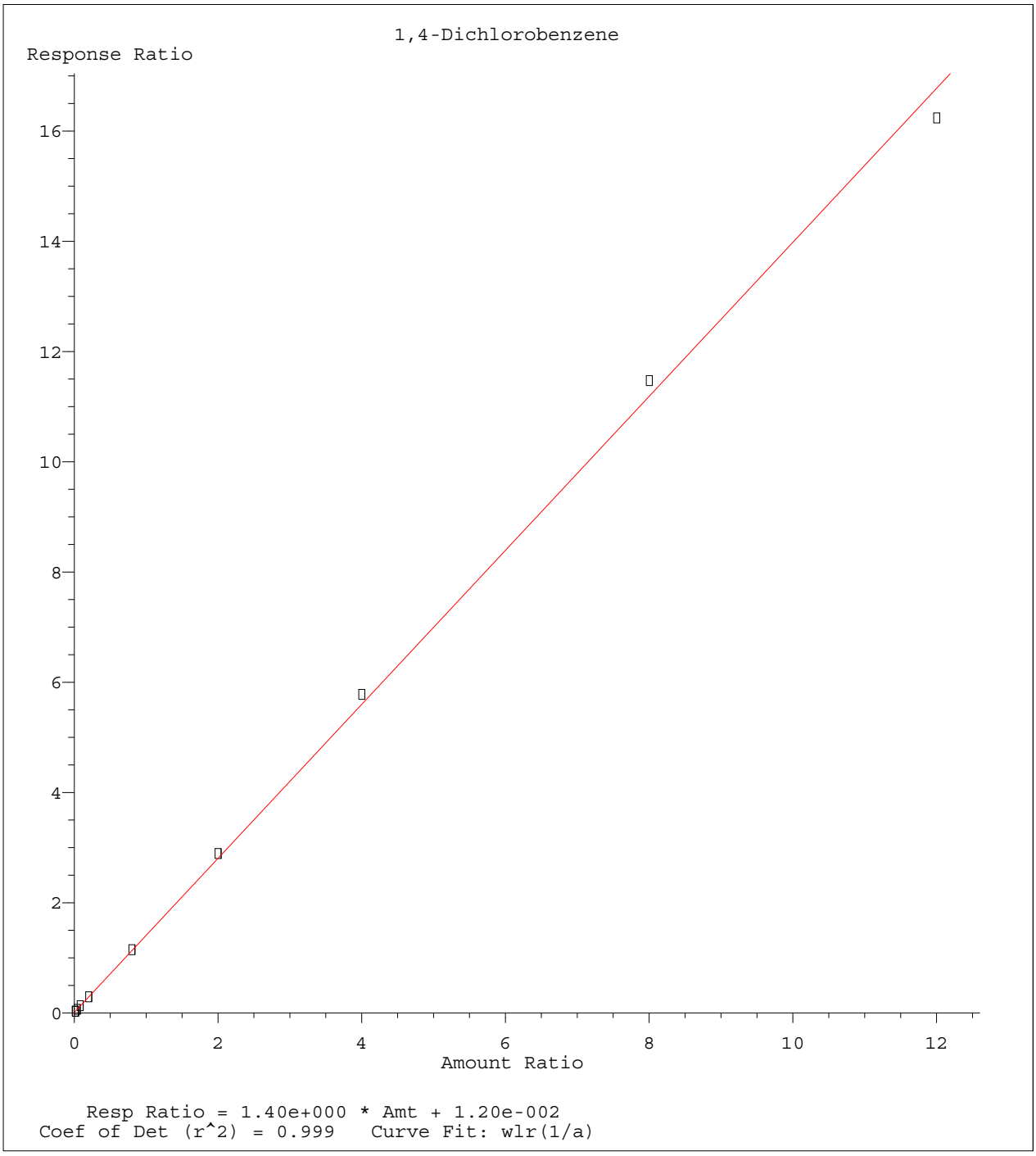

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Thu Jun 02 12:19:33 2016

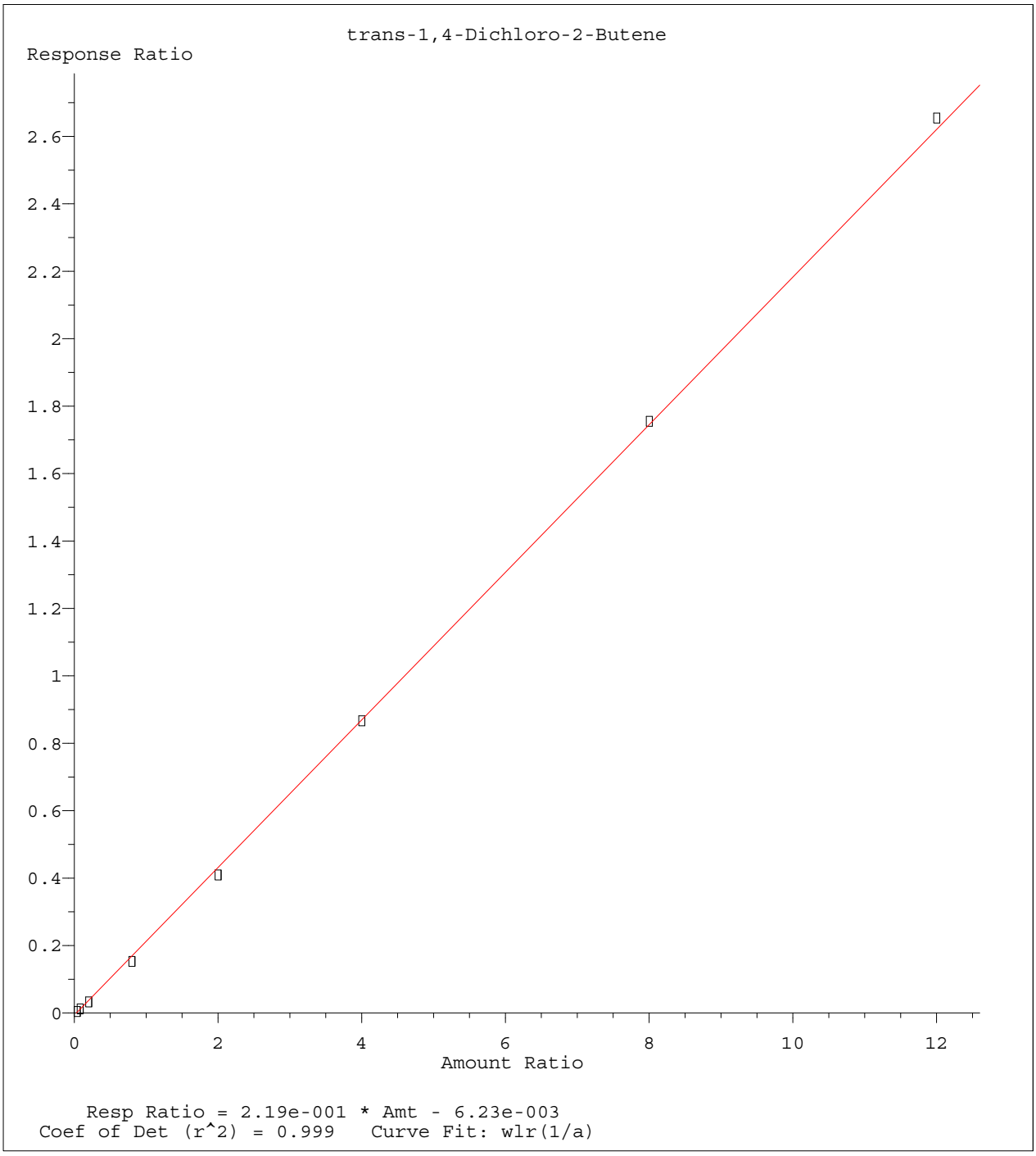

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Thu Jun 02 12:19:33 2016

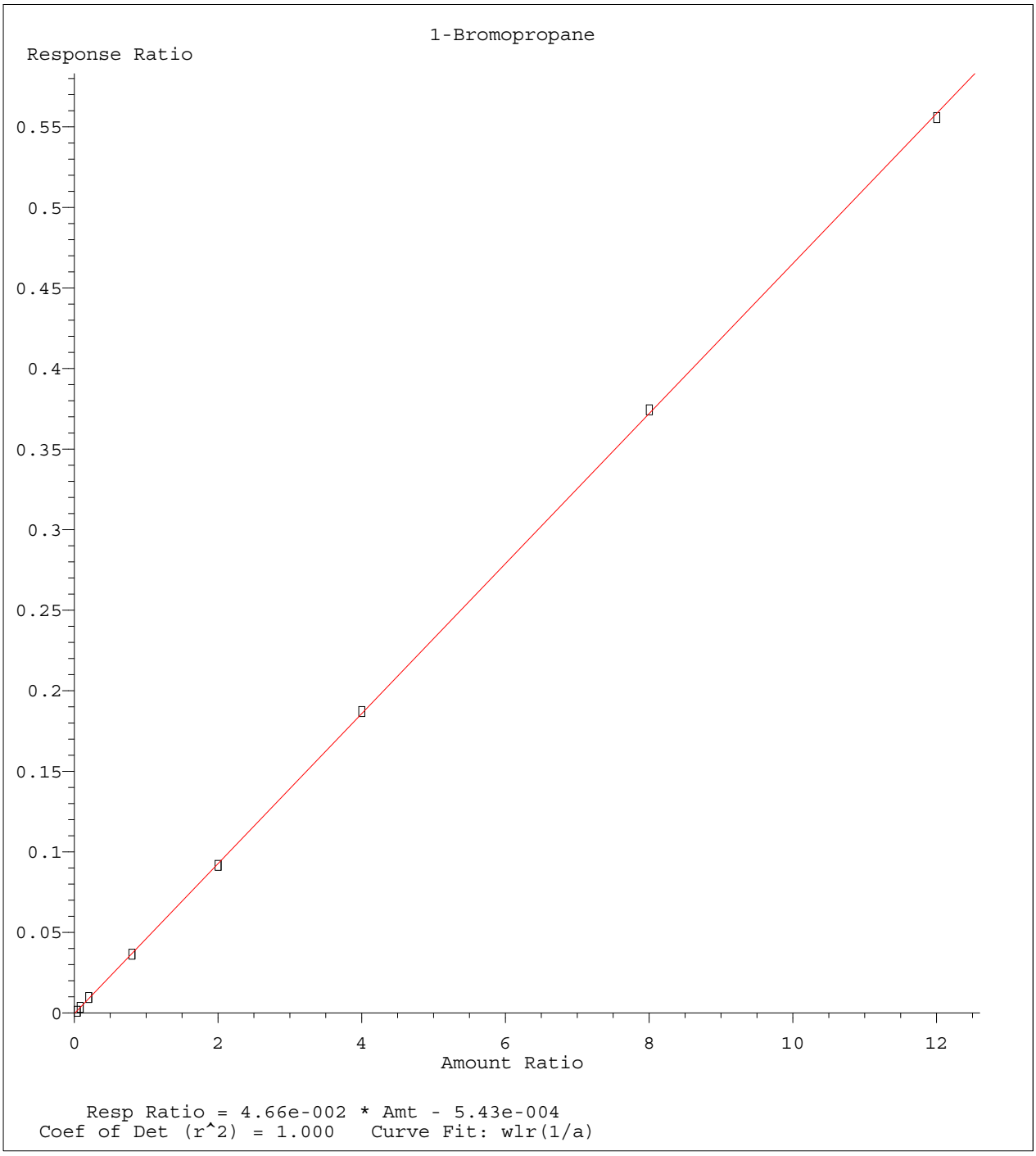

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Thu Jun 02 12:19:33 2016

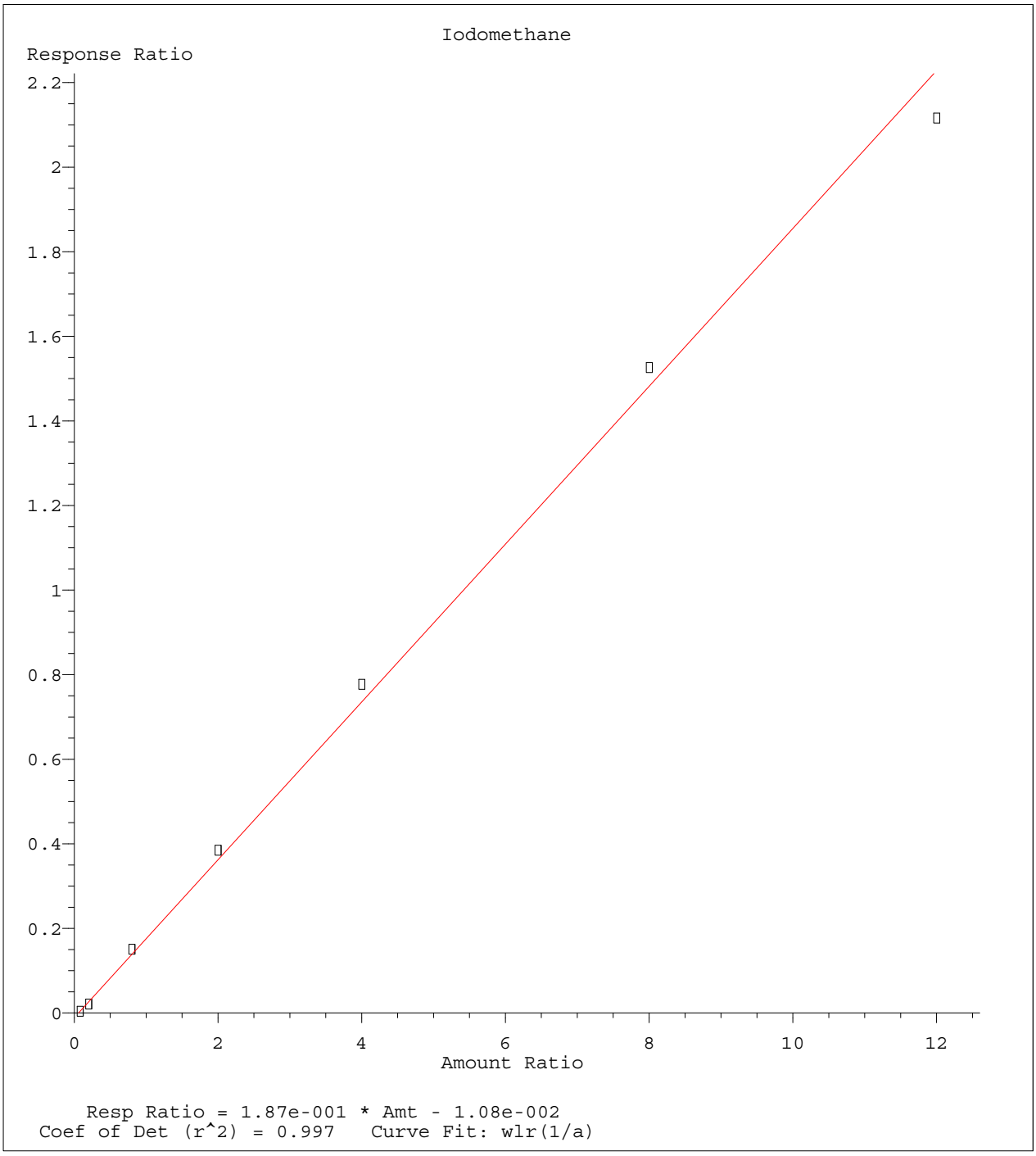

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Thu Jun 02 12:19:33 2016

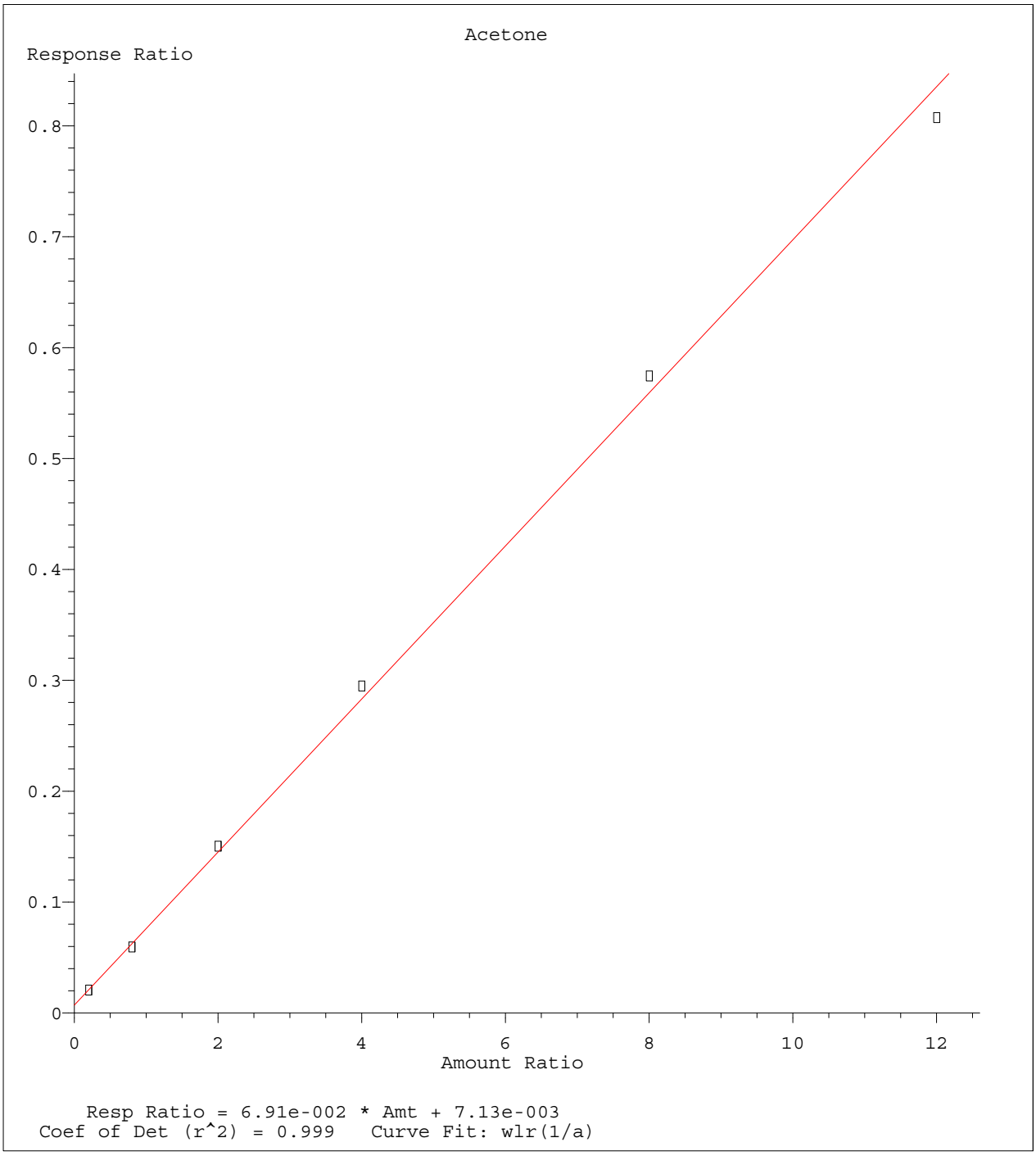

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Thu Jun 02 12:19:33 2016

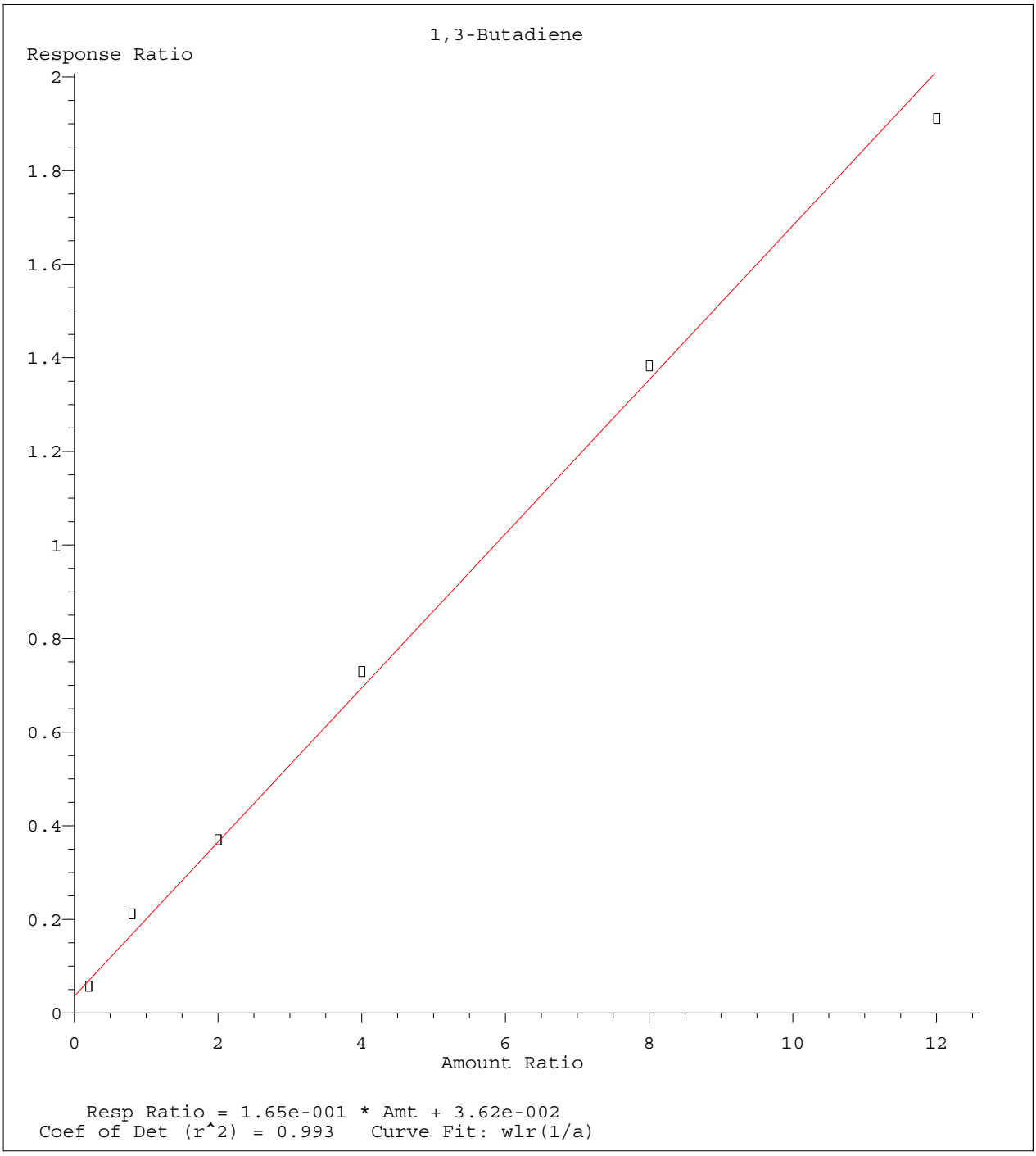

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Thu Jun 02 12:19:33 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139748.D Vial: 14
Acq On : 1 Jun 2016 18:56 Operator: TMB
Sample : WG570915-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76401 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:26 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	813057	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.06	117	589773	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	316393	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.39	111	199426	23.6997 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.80%		
43) 1,2-Dichloroethane-d4	11.11	65	218159	23.5215 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.08%		
58) Toluene-d8	13.85	98	670292	23.6814 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 94.72%		
80) p-Bromofluorobenzene	17.84	95	273340	24.4651 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.88%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	702608	54.5933 ug/L	98
3) Chloromethane	3.93	50	747480	47.6385 ug/L	99
4) Vinyl Chloride	4.16	62	515858	48.7740 ug/L	100
5) 1,3-Butadiene	4.20	54	214643	34.5960 ug/L	98
6) Bromomethane	5.07	94	237144	45.5172 ug/L	98
7) Chloroethane	5.23	64	343302	51.3524 ug/L	100
8) Trichlorofluoromethane	5.72	101	672942	47.5107 ug/L	100
9) Diethyl ether	6.29	59	786242	103.2275 ug/L	99
10) Isoprene	6.31	67	678234	56.3226 ug/L	100
11) Acrolein	6.55	56	140853	109.6081 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.54	101	414439	51.2200 ug/L	100
13) Acetone	6.66	43	118151	50.0319 ug/L	97
14) 1,1-Dichloroethene	6.87	61	689534	48.1202 ug/L	99
15) Tert-Butyl Alcohol	7.03	59	143024	203.3725 ug/L	99
16) Dimethyl Sulfide	7.16	62	615770	93.6354 ug/L	99
17) Iodomethane	7.43	142	452025	75.9094 ug/L	98
18) Methyl acetate	7.45	43	332389	47.3975 ug/L	98
19) Methylene Chloride	7.72	84	433555	49.0644 ug/L	99
20) Carbon Disulfide	7.76	76	1354672	48.3197 ug/L	100
21) Acrylonitrile	7.92	53	153905	49.7959 ug/L	99
22) Methyl Tert Butyl Ether	7.95	73	1128767	52.3532 ug/L	100
23) trans-1,2-Dichloroethene	8.21	96	425561	50.9498 ug/L	100
24) n-Hexane	8.28	57	642177	49.3751 ug/L	99
25) Diisopropyl ether	8.67	45	3642506	105.2173 ug/L	99
26) Vinyl Acetate	8.85	43	788393	53.6348 ug/L	99
27) 1,1-Dichloroethane	8.88	63	804025	48.0424 ug/L	100
28) Ethyl-Tert-Butyl ether	9.30	59	2815001	99.3580 ug/L	100
29) 2-Butanone	9.52	43	179165	48.7966 ug/L	100
30) Propionitrile	9.64	54	100730	99.4064 ug/L	99
31) 2,2-Dichloropropane	9.75	77	585369	47.9775 ug/L	97
32) cis-1,2-Dichloroethene	9.82	96	470672	51.7251 ug/L	99
33) Chloroform	10.06	83	737298	49.4660 ug/L	99
34) 1-Bromopropane	10.21	122	102822	68.1452 ug/L	100
35) Bromochloromethane	10.32	130	259428	50.2052 ug/L	100
36) Tetrahydrofuran	10.35	42	229614	90.8408 ug/L	99
38) 1,1,1-Trichloroethane	10.65	97	662124	49.7976 ug/L	99
39) Cyclohexane	10.68	56	844891	50.6962 ug/L	98
40) 1,1-Dichloropropene	10.88	75	566607	49.7223 ug/L	97
41) Tert-Amyl-Methyl ether	11.00	73	2310471	105.3293 ug/L	99
42) Carbon Tetrachloride	11.04	117	597488	50.3710 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M139748.D 8260WT.M Thu Jun 02 12:18:26 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139748.D Vial: 14
Acq On : 1 Jun 2016 18:56 Operator: TMB
Sample : WG570915-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76401 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:26 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	11.24	62	578724	50.5214	ug/L	100
46)	Benzene	11.28	78	1669568	49.9860	ug/L	100
47)	Trichloroethene	12.14	130	441901	51.8016	ug/L	100
48)	Methylcyclohexane	12.23	83	663944	51.3358	ug/L	99
49)	1,2-Dichloropropane	12.39	63	483336	52.3900	ug/L	100
50)	1,4-Dioxane	12.73	88	13070	198.8530	ug/L	92
51)	Bromodichloromethane	12.73	83	579293	51.0588	ug/L	99
52)	Dibromomethane	12.84	93	235154	49.3949	ug/L	100
53)	2-Chloroethyl Vinyl Ether	13.09	63	227071	53.9270	ug/L	99
54)	4-Methyl-2-Pentanone	13.12	58	140404	50.1024	ug/L	99
55)	cis-1,3-Dichloropropene	13.48	75	734218	57.1766	ug/L	100
56)	Dimethyl Disulfide	13.78	79	393408	53.1787	ug/L	99
59)	Toluene	13.96	91	1732060	51.7178	ug/L	100
60)	Ethyl Methacrylate	14.09	69	507926	55.3451	ug/L	96
62)	trans-1,3-Dichloropropene	14.17	75	602953	52.8614	ug/L	99
63)	1,1,2-Trichloroethane	14.43	97	330025	51.7570	ug/L	99
64)	2-Hexanone	14.36	43	262407	48.4974	ug/L	100
65)	1,3-Dichloropropane	14.79	76	612537	54.6375	ug/L	98
66)	Tetrachloroethene	14.92	166	430915	49.0517	ug/L	99
67)	Dibromochloromethane	15.24	129	417665	51.4062	ug/L	100
68)	1,2-Dibromoethane	15.53	107	322862	52.3865	ug/L	100
69)	1-Chlorohexane	15.64	91	575164	52.8903	ug/L	100
70)	Chlorobenzene	16.12	112	1148834	51.2668	ug/L	99
71)	1,1,1,2-Tetrachloroethane	16.16	131	427082	52.5455	ug/L	100
72)	Ethylbenzene	16.15	106	609992	51.3202	ug/L	99
73)	m-,p-Xylene	16.27	106	1491756	105.6436	ug/L	100
74)	o-Xylene	16.93	106	747716	53.5832	ug/L	100
75)	Styrene	16.97	104	1256580	54.2221	ug/L	99
76)	Bromoform	17.55	173	248794	48.2645	ug/L	99
77)	Isopropylbenzene	17.43	105	1869415	53.3705	ug/L	100
79)	1,1,2,2-Tetrachloroethane	17.70	83	394192	51.6759	ug/L	99
81)	1,2,3-Trichloropropane	17.92	110	116497	52.7498	ug/L	82
82)	trans-1,4-Dichloro-2-Buten	17.98	53	119870	43.9870	ug/L	99
83)	n-Propylbenzene	18.03	91	2259617	55.1049	ug/L	100
84)	Bromobenzene	18.18	156	480958	49.9837	ug/L	97
85)	1,3,5-Trimethylbenzene	18.26	105	1571815	54.1751	ug/L	100
86)	2-Chlorotoluene	18.35	91	1460482	51.9972	ug/L	99
87)	4-Chlorotoluene	18.41	91	1398653	53.6314	ug/L	100
88)	a-Methylstyrene	18.74	118	896576	55.2755	ug/L	100
89)	tert-Butylbenzene	18.81	134	341672	53.4156	ug/L	80
90)	1,2,4-Trimethylbenzene	18.87	105	1580583	52.0404	ug/L	100
91)	sec-Butylbenzene	19.13	105	1920297	53.7869	ug/L	99
92)	p-Isopropyltoluene	19.32	119	1617808	53.1748	ug/L	100
93)	1,3-Dichlorobenzene	19.53	146	945910	50.4129	ug/L	99
94)	1,4-Dichlorobenzene	19.70	146	963948	54.2685	ug/L	99
95)	n-Butylbenzene	19.94	91	1509669	52.4242	ug/L	99
96)	1,2-Dichlorobenzene	20.28	146	907052	51.8756	ug/L	98
97)	1,2-Dibromo-3-Chloropropan	21.46	75	73844	53.9073	ug/L	98
98)	1,2,4-Trichlorobenzene	22.82	180	630356	52.1421	ug/L	99
99)	Hexachlorobutadiene	23.02	225	268285	53.4738	ug/L	100
100)	Naphthalene	23.28	128	1168133	48.8812	ug/L	100
101)	1,2,3-Trichlorobenzene	23.69	180	572367	50.0300	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139748.D Vial: 14
Acq On : 1 Jun 2016 18:56 Operator: TMB
Sample : WG570915-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76401 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 2 12:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration

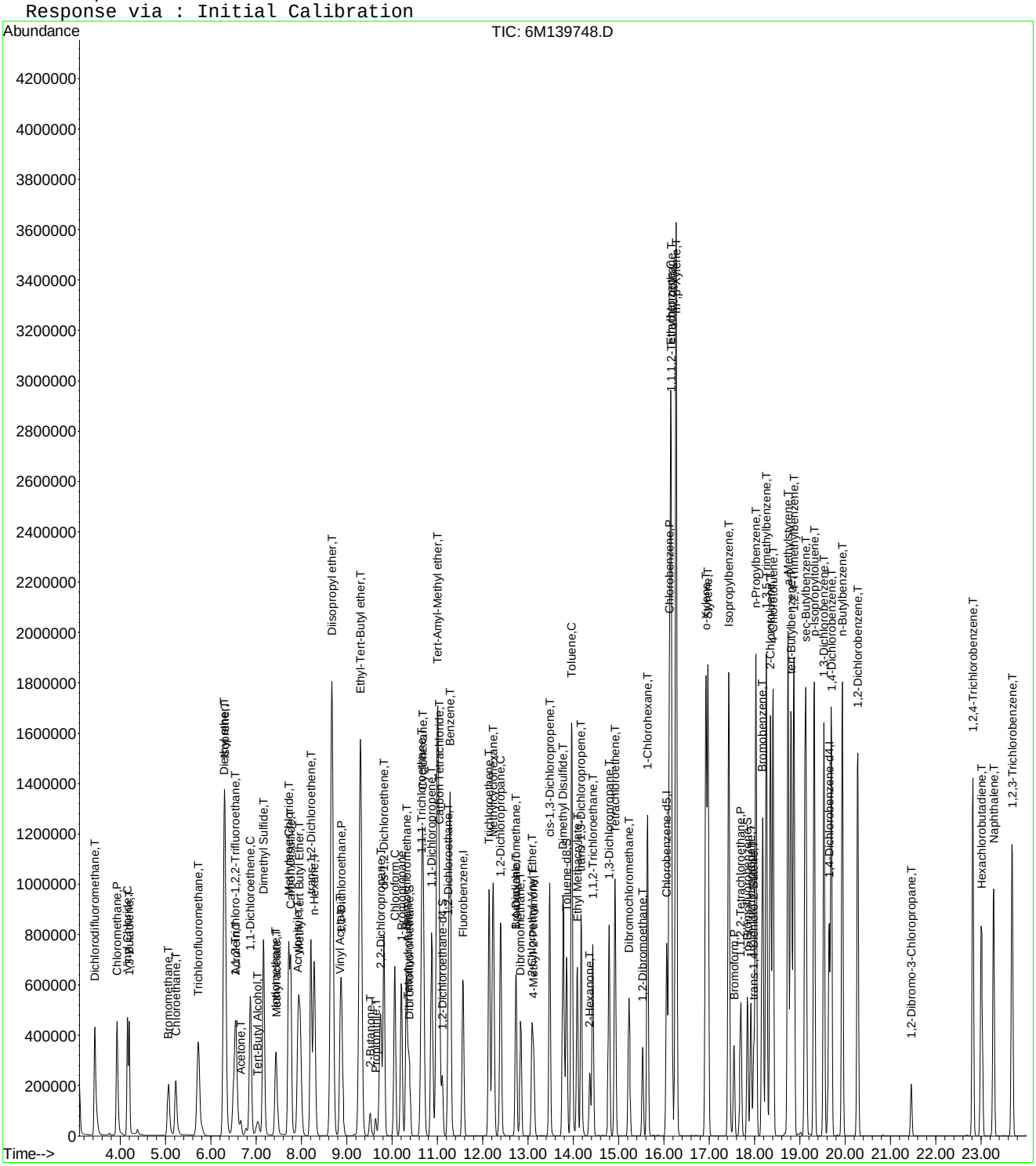

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\060116\6M139748.D Vial: 14
Acq On : 1 Jun 2016 18:56 Operator: TMB
Sample : WG570915-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76401 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	109	0.00
2	T	Dichlorodifluoromethane	50.0000	54.5933	-9.2	110	0.00
3	P	Chloromethane	50.0000	47.6385	4.7	101	0.00
4	C	Vinyl Chloride	50.0000	48.7740	2.5	109	0.00
5	T	1,3-Butadiene	50.0000	34.5960	30.8#	78	0.00
6	T	Bromomethane	50.0000	45.5172	9.0	105	0.00
7	T	Chloroethane	50.0000	51.3524	-2.7	113	0.00
8	T	Trichlorofluoromethane	50.0000	47.5107	5.0	104	0.00
9	T	Diethyl ether	100.0000	103.2275	-3.2	112	0.00
10	T	Isoprene	50.0000	56.3226	-12.6	124	0.00
11	T	Acrolein	50.0000	109.6081	-119.2#	240	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	51.2200	-2.4	112	0.00
13	T	Acetone	50.0000	50.0319	-0.1	106	0.00
14	C	1,1-Dichloroethene	50.0000	48.1202	3.8	106	0.00
15	T	Tert-Butyl Alcohol	200.0000	203.3725	-1.7	103	-0.02
16	T	Dimethyl Sulfide	50.0000	93.6354	-87.3#	204	0.00
17	T	Iodomethane	50.0000	75.9094	-51.8#	158	0.00
18	T	Methyl acetate	50.0000	47.3975	5.2	104	0.00
19	T	Methylene Chloride	50.0000	49.0644	1.9	111	0.00
20	T	Carbon Disulfide	50.0000	48.3197	3.4	106	0.00
21	T	Acrylonitrile	50.0000	49.7959	0.4	103	0.00
22	T	Methyl Tert Butyl Ether	50.0000	52.3532	-4.7	114	0.00
23	T	trans-1,2-Dichloroethene	50.0000	50.9498	-1.9	112	0.00
24	T	n-Hexane	50.0000	49.3751	1.2	109	0.00
25	T	Diisopropyl ether	100.0000	105.2173	-5.2	114	0.00
26	T	Vinyl Acetate	50.0000	53.6347	-7.3	117	0.00
27	P	1,1-Dichloroethane	50.0000	48.0424	3.9	107	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	99.3580	0.6	106	0.00
29	T	2-Butanone	50.0000	48.7966	2.4	106	0.00
30	T	Propionitrile	100.0000	99.4064	0.6	101	0.00
31	T	2,2-Dichloropropane	50.0000	47.9775	4.0	109	0.00
32	T	cis-1,2-Dichloroethene	50.0000	51.7251	-3.5	112	0.00
33	C	Chloroform	50.0000	49.4660	1.1	110	0.00
34		1-Bromopropane	50.0000	68.1452	-36.3#	151	0.00
35	T	Bromochloromethane	50.0000	50.2052	-0.4	108	0.00
36	T	Tetrahydrofuran	100.0000	90.8408	9.2	100	0.00
37	S	Dibromofluoromethane	25.0000	23.6997	5.2	102	0.00
38	T	1,1,1-Trichloroethane	50.0000	49.7976	0.4	110	0.00
39	T	Cyclohexane	50.0000	50.6962	-1.4	111	0.00
40	T	1,1-Dichloropropene	50.0000	49.7223	0.6	109	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	105.3293	-5.3	113	0.00
42	T	Carbon Tetrachloride	50.0000	50.3710	-0.7	109	0.00
43	S	1,2-Dichloroethane-d4	25.0000	23.5216	5.9	102	0.00
44		Heptane	-1.0000	0.0000	0.0	115	0.00
45	T	1,2-Dichloroethane	50.0000	50.5213	-1.0	111	0.00
46	T	Benzene	50.0000	49.9860	0.0	111	0.00
47	T	Trichloroethene	50.0000	51.8016	-3.6	114	0.00
48	T	Methylcyclohexane	50.0000	51.3358	-2.7	113	0.00
49	C	1,2-Dichloropropane	50.0000	52.3900	-4.8	115	0.00
50	T	1,4-Dioxane	200.0000	198.8530	0.6	100	0.00
51	T	Bromodichloromethane	50.0000	51.0588	-2.1	110	0.00
52	T	Dibromomethane	50.0000	49.3949	1.2	106	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	53.9270	-7.9	109	0.00
54	T	4-Methyl-2-Pentanone	50.0000	50.1024	-0.2	104	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\060116\6M139748.D Vial: 14
Acq On : 1 Jun 2016 18:56 Operator: TMB
Sample : WG570915-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76401 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	57.1766	-14.4	120	0.00
56	T	Dimethyl Disulfide	50.0000	53.1787	-6.4	115	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	107	0.00
58	S	Toluene-d8	25.0000	23.6814	5.3	103	0.00
59	C	Toluene	50.0000	51.7178	-3.4	112	0.00
60	T	Ethyl Methacrylate	50.0000	55.3451	-10.7	112	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	112	0.00
62	T	trans-1,3-Dichloropropene	50.0000	52.8614	-5.7	110	0.00
63	T	1,1,2-Trichloroethane	50.0000	51.7570	-3.5	110	0.00
64	T	2-Hexanone	50.0000	48.4974	3.0	102	0.00
65	T	1,3-Dichloropropane	50.0000	54.6375	-9.3	116	0.00
66	T	Tetrachloroethene	50.0000	49.0517	1.9	107	0.00
67	T	Dibromochloromethane	50.0000	51.4062	-2.8	107	0.00
68	T	1,2-Dibromoethane	50.0000	52.3865	-4.8	109	0.00
69	T	1-Chlorohexane	50.0000	52.8903	-5.8	108	0.00
70	P	Chlorobenzene	50.0000	51.2668	-2.5	112	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	52.5455	-5.1	110	0.00
72	C	Ethylbenzene	50.0000	51.3202	-2.6	109	0.00
73	T	m-,p-Xylene	100.0000	105.6436	-5.6	112	0.00
74	T	o-Xylene	50.0000	53.5832	-7.2	112	0.00
75	T	Styrene	50.0000	54.2221	-8.4	108	0.00
76	P	Bromoform	50.0000	48.2645	3.5	99	0.00
77	T	Isopropylbenzene	50.0000	53.3705	-6.7	109	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	101	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	51.6759	-3.4	104	0.00
80	S	p-Bromofluorobenzene	25.0000	24.4651	2.1	99	0.00
81	T	1,2,3-Trichloropropane	50.0000	52.7498	-5.5	105	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	43.9870	12.0	93	0.00
83	T	n-Propylbenzene	50.0000	55.1049	-10.2	108	0.00
84	T	Bromobenzene	50.0000	49.9837	0.0	104	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	54.1751	-8.4	107	0.00
86	T	2-Chlorotoluene	50.0000	51.9972	-4.0	108	0.00
87	T	4-Chlorotoluene	50.0000	53.6314	-7.3	108	0.00
88	T	a-Methylstyrene	50.0000	55.2754	-10.6	110	0.00
89	T	tert-Butylbenzene	50.0000	53.4156	-6.8	107	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	52.0404	-4.1	102	0.00
91	T	sec-Butylbenzene	50.0000	53.7869	-7.6	106	0.00
92	T	p-Isopropyltoluene	50.0000	53.1748	-6.3	103	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.4129	-0.8	104	0.00
94	T	1,4-Dichlorobenzene	50.0000	54.2685	-8.5	106	0.00
95	T	n-Butylbenzene	50.0000	52.4242	-4.8	102	0.00
96	T	1,2-Dichlorobenzene	50.0000	51.8756	-3.8	106	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	53.9073	-7.8	102	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	52.1421	-4.3	104	0.00
99	T	Hexachlorobutadiene	50.0000	53.4738	-6.9	109	0.00
100	T	Naphthalene	50.0000	48.8812	2.2	92	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	50.0300	-0.1	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M139748.D 8260WT.M Thu Jun 02 12:20:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:40:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	823748	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	571926	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	299321	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	12.68	98	567	0.0189 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.08%#	
80) p-Bromofluorobenzene	16.08	95	313	0.0253 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	3836	0.2778 ug/L	91
3) Chloromethane	3.62	50	3658	0.4537 ug/L	95
4) Vinyl Chloride	3.85	62	2516	0.2630 ug/L #	58
5) 1,3-Butadiene	3.91	54	2079	0.2592 ug/L	71
6) Bromomethane	4.73	94	1152	0.6530 ug/L #	55
7) Chloroethane	4.90	64	1112	0.2113 ug/L #	72
8) Trichlorofluoromethane	5.35	101	2706	0.1520 ug/L #	53
10) Isoprene	5.93	67	2147	0.1987 ug/L	85
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1746	0.2087 ug/L	97
14) 1,1-Dichloroethene	6.48	61	3332	0.2501 ug/L	75
16) Dimethyl Sulfide	6.73	62	1099	0.2308 ug/L	95
19) Methylene Chloride	7.26	84	3414	0.4028 ug/L	88
20) Carbon Disulfide	7.30	76	10739	0.3853 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	4927	0.2686 ug/L #	60
23) trans-1,2-Dichloroethene	7.70	61	3879	0.3170 ug/L	98
24) n-Hexane	7.78	57	2794	0.3075 ug/L	85
26) Vinyl Acetate	8.30	43	1973	0.2259 ug/L #	70
27) 1,1-Dichloroethane	8.33	63	4881	0.3212 ug/L #	88
31) 2,2-Dichloropropane	9.11	77	4966	0.3101 ug/L	89
32) cis-1,2-Dichloroethene	9.17	96	2958	0.3128 ug/L	87
33) Chloroform	9.37	83	5564	0.3101 ug/L	95
34) 1-Bromopropane	9.52	122	210	0.1551 ug/L #	1
35) Bromochloromethane	9.60	130	1386	0.2858 ug/L	76
36) Tetrahydrofuran	9.62	42	1849	2.0617 ug/L #	60
38) 1,1,1-Trichloroethane	9.91	97	4978	0.2921 ug/L	95
39) Cyclohexane	9.93	56	3120	0.2644 ug/L #	85
40) 1,1-Dichloropropene	10.11	75	3779	0.2909 ug/L	97
42) Carbon Tetrachloride	10.24	117	4835	0.3194 ug/L #	74
45) 1,2-Dichloroethane	10.43	62	3295	0.2853 ug/L #	81
46) Benzene	10.46	78	11279	0.3333 ug/L	93
47) Trichloroethene	11.20	130	2410	0.2670 ug/L	97
48) Methylcyclohexane	11.31	83	3936	0.2871 ug/L	84
49) 1,2-Dichloropropane	11.42	63	2136	0.2836 ug/L	88
50) Bromodichloromethane	11.73	83	3767	0.2845 ug/L #	91
52) Dibromomethane	11.82	93	700	0.1570 ug/L #	59
53) 2-Chloroethyl Vinyl Ether	12.02	63	847	0.2616 ug/L #	47
55) cis-1,3-Dichloropropene	12.36	75	4763	0.3535 ug/L	84
56) Dimethyl Disulfide	12.63	79	1647	0.2290 ug/L	82
59) Toluene	12.78	91	11513	0.3243 ug/L	92
60) Ethyl Methacrylate	12.89	69	1631	0.2392 ug/L #	64

(#) = qualifier out of range (m) = manual integration
8M412220.D 8260WT.M Tue May 17 11:40:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:40:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
62)	trans-1,3-Dichloropropene	12.96	75	3626	0.3047 ug/L		82
63)	1,1,2-Trichloroethane	13.18	97	1409	0.2515 ug/L		98
65)	1,3-Dichloropropane	13.49	76	2584	0.2590 ug/L		93
66)	Tetrachloroethene	13.61	164	2678	0.3520 ug/L	#	75
67)	Dibromochloromethane	13.87	129	2126	0.2599 ug/L		79
68)	1,2-Dibromoethane	14.12	107	1895	0.3394 ug/L		91
69)	1-Chlorohexane	14.21	91	3835	0.3164 ug/L		99
70)	Chlorobenzene	14.62	112	7968	0.3328 ug/L		88
71)	1,1,1,2-Tetrachloroethane	14.67	131	2872	0.3096 ug/L		87
72)	Ethylbenzene	14.64	106	3844	0.2934 ug/L		81
73)	m-,p-Xylene	14.75	106	10447	0.6799 ug/L		96
74)	o-Xylene	15.31	106	4577	0.3047 ug/L		97
75)	Styrene	15.35	104	7545	0.3062 ug/L		95
76)	Bromoform	15.84	173	1301	0.2681 ug/L	#	51
77)	Isopropylbenzene	15.74	105	13119	0.3287 ug/L		90
79)	1,1,2,2-Tetrachloroethane	15.96	83	1714	0.2853 ug/L	#	85
83)	n-Propylbenzene	16.24	91	15676	0.3357 ug/L		92
84)	Bromobenzene	16.38	156	2859	0.2977 ug/L		90
85)	1,3,5-Trimethylbenzene	16.43	105	10873	0.3196 ug/L		99
86)	2-Chlorotoluene	16.52	91	11133	0.3415 ug/L		96
87)	4-Chlorotoluene	16.56	91	10305	0.3499 ug/L		97
88)	a-Methylstyrene	16.83	118	4090	0.2534 ug/L		86
89)	tert-Butylbenzene	16.90	134	1734	0.2606 ug/L		72
90)	1,2,4-Trimethylbenzene	16.95	105	10734	0.3069 ug/L		89
91)	sec-Butylbenzene	17.16	105	13749	0.3436 ug/L		97
92)	p-Isopropyltoluene	17.32	119	10847	0.3192 ug/L		95
93)	1,3-Dichlorobenzene	17.52	146	6023	0.3257 ug/L		99
94)	1,4-Dichlorobenzene	17.65	146	6152	0.3299 ug/L	#	60
95)	n-Butylbenzene	17.85	91	11161	0.3323 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	5711	0.3472 ug/L		92
98)	1,2,4-Trichlorobenzene	20.29	180	4203	0.3418 ug/L		91
99)	Hexachlorobutadiene	20.43	225	1894	0.3297 ug/L		84
100)	Naphthalene	20.65	128	6039	0.3306 ug/L		91
101)	1,2,3-Trichlorobenzene	20.96	180	3279	0.3161 ug/L		86

(#) = qualifier out of range (m) = manual integration

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2778	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.4537	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.2630	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	0.2592	0.0	100	0.03
6	T	Bromomethane	-1.0000	0.9911	0.0	100	0.00
7	T	Chloroethane	-1.0000	0.2113	0.0	100	0.00
8	T	Trichlorofluoromethane	-1.0000	0.1520	0.0	100	-0.02
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.90#
10	T	Isoprene	-1.0000	0.1987	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.13#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2087	0.0	100	0.00
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	-1.0000	0.2501	0.0	100	0.02
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.58#
16	T	Dimethyl Sulfide	-1.0000	0.2308	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.0000	0.0	0	-7.00#
19	T	Methylene Chloride	-1.0000	0.4028	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.3853	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.43#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2686	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	-1.0000	0.3170	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.3075	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.2259	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.3212	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.98#
31	T	2,2-Dichloropropane	-1.0000	0.3101	0.0	100	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.3128	0.0	100	0.00
33	C	Chloroform	0.3000	0.3101	-3.4	100	0.00
34		1-Bromopropane	-1.0000	0.1551	0.0	100	0.00
35	T	Bromochloromethane	-1.0000	0.2858	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	2.0617	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	-1.0000	0.2921	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.2644	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.2909	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	-1.0000	0.3194	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	-1.0000	0.2853	0.0	100	0.00
46	T	Benzene	-1.0000	0.3333	0.0	100	0.00
47	T	Trichloroethene	-1.0000	0.2670	0.0	100	-0.01
48	T	Methylcyclohexane	-1.0000	0.2871	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2836	0.0	100	0.00
50	T	Bromodichloromethane	-1.0000	0.2845	0.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	-1.0000	0.1570	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2616	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.05#

(#) = Out of Range
8M412220.D 8260WT.M Sat May 14 18:03:33 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.3535	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2290	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0189	0.0	100	0.00
59	C	Toluene	-1.0000	0.3243	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2392	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3047	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.2515	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	-1.0000	0.2590	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.3520	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.2599	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.3394	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.3164	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.3328	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.3096	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.2934	0.0	100	-0.01
73	T	m-,p-Xylene	-1.0000	0.6799	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.3047	0.0	100	0.00
75	T	Styrene	-1.0000	0.3062	0.0	100	0.00
76	P	Bromoform	-1.0000	0.2681	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.3287	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2853	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0253	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.1103	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	-1.0000	0.3357	0.0	100	0.00
84	T	Bromobenzene	0.3000	0.2977	0.8	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.3196	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.3415	0.0	100	0.00
87	T	4-Chlorotoluene	-1.0000	0.3499	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2534	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.2606	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.3069	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3436	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.3192	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.3257	0.0	100	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.3299	-10.0	100	0.00
95	T	n-Butylbenzene	-1.0000	0.3323	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.3472	-15.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.3418	0.0	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.3297	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.3306	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.3161	-5.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412220.D 8260WT.M Sat May 14 18:03:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	801173	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	557498	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	293108	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
80) p-Bromofluorobenzene	16.08	95	343	0.0286 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	5478	0.3262 ug/L	79
3) Chloromethane	3.63	50	3930	0.2484 ug/L	85
4) Vinyl Chloride	3.84	62	3512	0.3288 ug/L	97
5) 1,3-Butadiene	3.90	54	2479	0.2375 ug/L #	75
6) Bromomethane	4.73	94	1343	0.9497 ug/L	85
7) Chloroethane	4.90	64	2219	0.3174 ug/L #	43
8) Trichlorofluoromethane	5.36	101	6974	0.3289 ug/L #	93
10) Isoprene	5.94	67	4288	0.3952 ug/L #	62
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	3168	0.3263 ug/L #	40
14) 1,1-Dichloroethene	6.47	61	5431	0.2882 ug/L	92
16) Dimethyl Sulfide	6.74	62	1708	0.2453 ug/L	64
19) Methylene Chloride	7.24	84	3785	0.4239 ug/L #	43
20) Carbon Disulfide	7.29	76	12437	0.4565 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	6580	0.3336 ug/L #	76
23) trans-1,2-Dichloroethene	7.71	61	4990	0.2928 ug/L	96
24) n-Hexane	7.79	57	3110	0.2011 ug/L	99
26) Vinyl Acetate	8.31	43	2753	0.1566 ug/L	100
27) 1,1-Dichloroethane	8.32	63	5655	0.2774 ug/L #	92
31) 2,2-Dichloropropane	9.10	77	6035	0.3360 ug/L	82
32) cis-1,2-Dichloroethene	9.16	96	3837	0.3762 ug/L	74
33) Chloroform	9.37	83	7267	0.3842 ug/L	100
34) 1-Bromopropane	9.50	122	234	0.1456 ug/L #	1
35) Bromochloromethane	9.60	130	1674	0.3137 ug/L	62
36) Tetrahydrofuran	9.62	42	447	0.2146 ug/L #	41
38) 1,1,1-Trichloroethane	9.91	97	6304	0.3305 ug/L	90
39) Cyclohexane	9.94	56	4658	0.2238 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	5172	0.3768 ug/L	80
42) Carbon Tetrachloride	10.25	117	5692	0.3172 ug/L	95
45) 1,2-Dichloroethane	10.43	62	4443	0.2796 ug/L #	63
46) Benzene	10.46	78	14456	0.4134 ug/L #	77
47) Trichloroethene	11.21	130	3659	0.3626 ug/L	98
48) Methylcyclohexane	11.29	83	5025	0.3562 ug/L	84
49) 1,2-Dichloropropane	11.42	63	3060	0.3007 ug/L	98
50) Bromodichloromethane	11.73	83	4734	0.3343 ug/L #	93
52) Dibromomethane	11.82	93	1805	0.3767 ug/L	84
55) cis-1,3-Dichloropropene	12.36	75	5008	0.3514 ug/L	90
56) Dimethyl Disulfide	12.63	79	1921	0.2573 ug/L	85
59) Toluene	12.78	91	14742	0.4416 ug/L	98
60) Ethyl Methacrylate	12.90	69	2062	0.3292 ug/L	66
62) trans-1,3-Dichloropropene	12.96	75	3693	0.3171 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M412221.D 8260WT.M Fri May 13 14:20:38 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
63)	1,1,2-Trichloroethane	13.18	97	2326	0.4391 ug/L	70
65)	1,3-Dichloropropane	13.49	76	3163	0.3219 ug/L	88
66)	Tetrachloroethene	13.61	164	3164	0.4185 ug/L	93
67)	Dibromochloromethane	13.87	129	3113	0.3727 ug/L	86
68)	1,2-Dibromoethane	14.12	107	2076	0.3760 ug/L	90
69)	1-Chlorohexane	14.21	91	4746	0.4174 ug/L	80
70)	Chlorobenzene	14.62	112	9180	0.3960 ug/L	98
71)	1,1,1,2-Tetrachloroethane	14.66	131	3501	0.3876 ug/L	95
72)	Ethylbenzene	14.65	106	5348	0.4066 ug/L	84
73)	m-,p-Xylene	14.75	106	13269	0.8757 ug/L	89
74)	o-Xylene	15.31	106	6019	0.3943 ug/L	97
75)	Styrene	15.35	104	9370	0.3849 ug/L	95
76)	Bromoform	15.83	173	1198	0.2500 ug/L #	76
77)	Isopropylbenzene	15.73	105	16528	0.4270 ug/L	92
79)	1,1,2,2-Tetrachloroethane	15.96	83	1999	0.3419 ug/L #	83
83)	n-Propylbenzene	16.25	91	19410	0.4297 ug/L	95
84)	Bromobenzene	16.37	156	3319	0.3524 ug/L	75
85)	1,3,5-Trimethylbenzene	16.42	105	13794	0.4127 ug/L	95
86)	2-Chlorotoluene	16.51	91	13678	0.4729 ug/L	90
87)	4-Chlorotoluene	16.56	91	12572	0.4219 ug/L	98
88)	a-Methylstyrene	16.84	118	5739	0.3485 ug/L	96
89)	tert-Butylbenzene	16.90	134	2254	0.3403 ug/L	55
90)	1,2,4-Trimethylbenzene	16.95	105	13859	0.4051 ug/L	90
91)	sec-Butylbenzene	17.17	105	17612	0.4382 ug/L	90
92)	p-Isopropyltoluene	17.32	119	13616	0.3968 ug/L	90
93)	1,3-Dichlorobenzene	17.52	146	6961	0.3724 ug/L	86
94)	1,4-Dichlorobenzene	17.64	146	7149	0.3832 ug/L #	1
95)	n-Butylbenzene	17.85	91	15223	0.4664 ug/L	91
96)	1,2-Dichlorobenzene	18.14	146	6129	0.3742 ug/L	92
98)	1,2,4-Trichlorobenzene	20.28	180	5035	0.3969 ug/L	97
99)	Hexachlorobutadiene	20.44	225	2420	0.4122 ug/L	83
100)	Naphthalene	20.65	128	7474	0.3874 ug/L #	84
101)	1,2,3-Trichlorobenzene	20.96	180	4378	0.4056 ug/L #	78

(#) = qualifier out of range (m) = manual integration
8M412221.D 8260WT.M Fri May 13 14:20:39 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

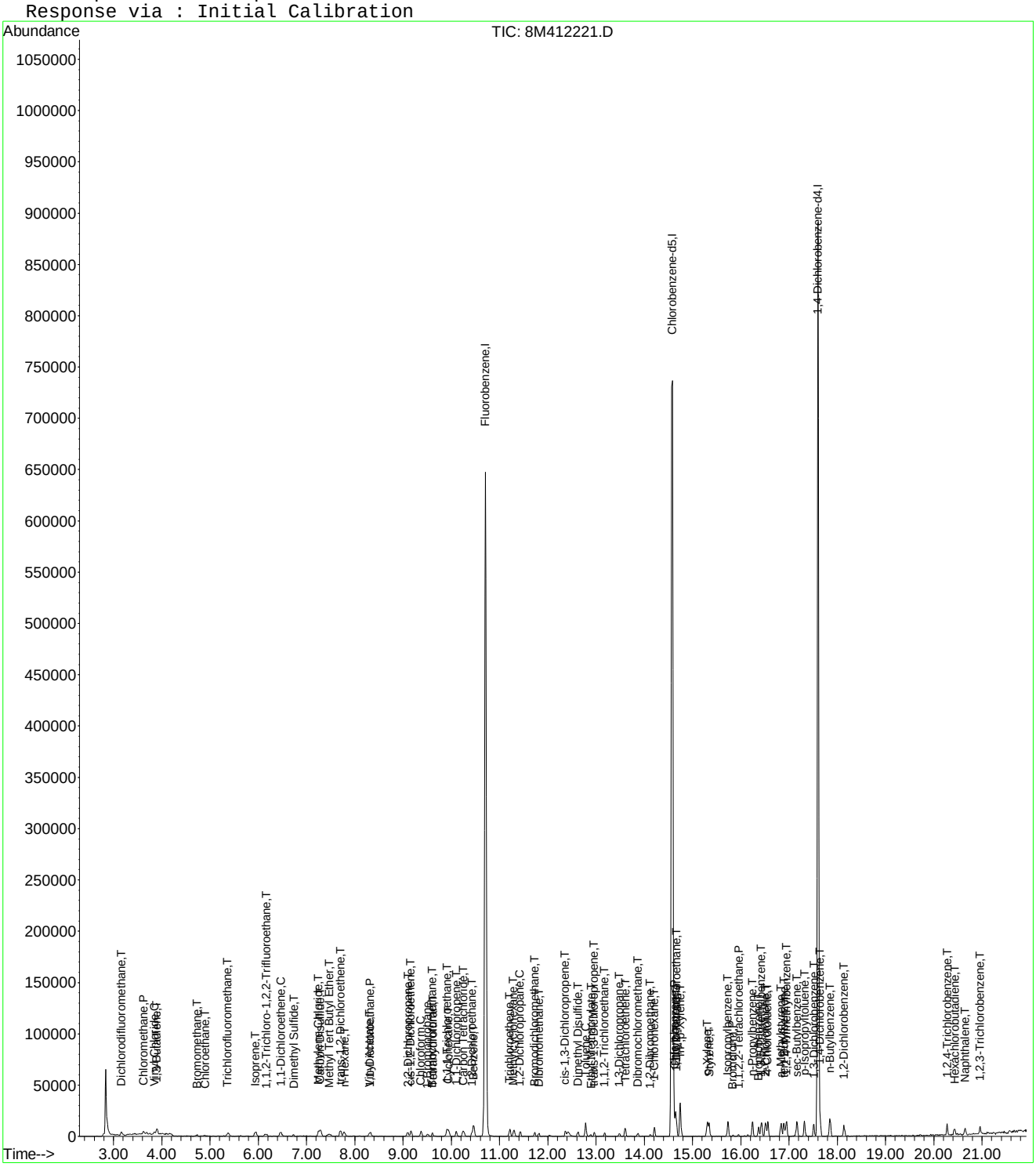

8M412221.D 8260WT.M Fri May 13 14:20:40 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	0.4000	0.4078	-2.0	100	0.00
3	P	Chloromethane	-1.0000	0.5012	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.3775	5.6	100	0.00
5	T	1,3-Butadiene	-1.0000	0.3178	0.0	100	0.02
6	T	Bromomethane	-1.0000	1.0253	0.0	100	0.00
7	T	Chloroethane	0.4000	0.4335	-8.4	100	0.00
8	T	Trichlorofluoromethane	0.4000	0.4029	-0.7	100	-0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.90#
10	T	Isoprene	0.4000	0.4079	-2.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.13#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3894	0.0	100	0.02
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	0.4000	0.4192	-4.8	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.58#
16	T	Dimethyl Sulfide	0.4000	0.3687	7.8	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.2179	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4591	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4587	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.43#
22	T	Methyl Tert Butyl Ether	-1.0000	0.3688	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.4193	-4.8	100	0.00
24	T	n-Hexane	-1.0000	0.3519	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.3241	0.0	100	0.02
27	P	1,1-Dichloroethane	0.4000	0.3826	4.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.98#
31	T	2,2-Dichloropropane	0.4000	0.3874	3.1	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.4172	-4.3	100	-0.01
33	C	Chloroform	0.4000	0.4164	-4.1	100	0.00
34		1-Bromopropane	-1.0000	0.1776	0.0	100	-0.01
35	T	Bromochloromethane	0.4000	0.3550	11.3	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.5125	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	0.4000	0.3803	4.9	100	0.00
39	T	Cyclohexane	-1.0000	0.4058	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4093	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	0.4000	0.3867	3.3	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	0.4000	0.3955	1.1	100	0.00
46	T	Benzene	0.4000	0.4393	-9.8	100	0.00
47	T	Trichloroethene	0.4000	0.4169	-4.2	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3768	0.0	100	-0.01
49	C	1,2-Dichloropropane	0.4000	0.4177	-4.4	100	0.00
50	T	Bromodichloromethane	0.4000	0.3676	8.1	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	0.4000	0.4162	-4.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1401	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.05#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3821	4.5	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2746	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0000	0.0	0	-12.68#
59	C	Toluene	0.4000	0.4259	-6.5	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3102	0.0	100	0.02
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3184	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.4259	-6.5	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	0.4000	0.3253	18.7	100	0.00
66	T	Tetrachloroethene	0.4000	0.4267	-6.7	100	0.00
67	T	Dibromochloromethane	0.4000	0.3904	2.4	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.3814	4.6	100	0.00
69	T	1-Chlorohexane	0.4000	0.4017	-0.4	100	0.00
70	P	Chlorobenzene	0.4000	0.3933	1.7	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3872	3.2	100	0.00
72	C	Ethylbenzene	0.4000	0.4188	-4.7	100	0.00
73	T	m-,p-Xylene	0.8000	0.8859	-10.7	100	0.00
74	T	o-Xylene	-1.0000	0.4110	0.0	100	0.00
75	T	Styrene	0.4000	0.3901	2.5	100	0.00
76	P	Bromoform	-1.0000	0.2533	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.4249	-6.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.3398	15.1	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0283	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.14#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	0.4000	0.4245	-6.1	100	0.00
84	T	Bromobenzene	0.4000	0.3529	11.8	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.4141	-3.5	100	0.00
86	T	2-Chlorotoluene	0.4000	0.4284	-7.1	100	0.00
87	T	4-Chlorotoluene	0.4000	0.4359	-9.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.3631	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3459	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	0.4000	0.4046	-1.2	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.4494	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4092	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.3844	3.9	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.3915	2.1	100	0.00
95	T	n-Butylbenzene	-1.0000	0.4628	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.3805	4.9	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	0.4000	0.4182	-4.5	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.4302	-7.5	100	0.00
100	T	Naphthalene	0.4000	0.4178	-4.5	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.4310	-7.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412221.D 8260WT.M Sat May 14 18:03:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	795577	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	547129	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	284579	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.65	111	3962	0.3966 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery	= 1.60%#	
43) 1,2-Dichloroethane-d4	10.31	65	3835	0.3356 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery	= 1.36%#	
58) Toluene-d8	12.68	98	14023	0.4957 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 2.00%#	
80) p-Bromofluorobenzene	16.08	95	6483	0.5565 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery	= 2.24%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	12402	0.7438 ug/L	97
3) Chloromethane	3.62	50	8415	0.5357 ug/L #	75
4) Vinyl Chloride	3.84	62	9412	0.8873 ug/L	89
5) 1,3-Butadiene	3.90	54	6974	0.6729 ug/L	81
6) Bromomethane	4.73	94	4114	1.3123 ug/L	92
7) Chloroethane	4.90	64	4983	0.7178 ug/L #	80
8) Trichlorofluoromethane	5.38	101	17133	0.8136 ug/L #	96
9) Diethyl ether	5.90	59	20707	3.2140 ug/L	84
10) Isoprene	5.94	67	11176	1.0373 ug/L	76
11) Acrolein	6.14	56	246	0.4300 ug/L #	15
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	8135	0.8438 ug/L	96
13) Acetone	6.24	43	413	0.2115 ug/L #	48
14) 1,1-Dichloroethene	6.46	61	12947	0.6919 ug/L	91
15) Tert-Butyl Alcohol	6.59	59	3316	7.3747 ug/L #	55
16) Dimethyl Sulfide	6.72	62	4505	0.6515 ug/L	79
18) Methyl acetate	7.00	43	2119	0.3630 ug/L #	66
19) Methylene Chloride	7.24	84	8723	0.9837 ug/L #	43
20) Carbon Disulfide	7.29	76	28246	1.0441 ug/L	100
21) Acrylonitrile	7.43	53	2164	0.8620 ug/L	76
22) Methyl Tert Butyl Ether	7.47	73	16998	0.8678 ug/L	84
23) trans-1,2-Dichloroethene	7.70	61	12571	0.7427 ug/L	100
24) n-Hexane	7.78	57	9382	0.6109 ug/L	82
25) Diisopropyl ether	8.12	45	95400	2.1939 ug/L #	91
26) Vinyl Acetate	8.30	43	6750	0.3867 ug/L #	89
27) 1,1-Dichloroethane	8.32	63	14721	0.7271 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	97972	3.2102 ug/L	88
29) 2-Butanone	8.88	43	380	0.1215 ug/L #	57
30) Propionitrile	8.99	54	1593	2.0138 ug/L #	56
31) 2,2-Dichloropropane	9.09	77	14691	0.8236 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	9482	0.9362 ug/L	72
33) Chloroform	9.37	83	18494	0.9845 ug/L	94
34) 1-Bromopropane	9.50	122	1092	0.6844 ug/L	80
35) Bromochloromethane	9.61	130	5234	0.9877 ug/L #	55
36) Tetrahydrofuran	9.63	42	5415	2.6185 ug/L #	68
38) 1,1,1-Trichloroethane	9.91	97	17074	0.9016 ug/L	92
39) Cyclohexane	9.94	56	11865	0.5740 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	13172	0.9663 ug/L	87
41) Tert-Amyl-Methyl ether	10.21	73	90255	4.6173 ug/L #	88
42) Carbon Tetrachloride	10.25	117	14515	0.8146 ug/L	95
45) 1,2-Dichloroethane	10.42	62	10675	0.6766 ug/L	85

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	10.47	78	34504	0.9938 ug/L		84
47)	Trichloroethene	11.21	130	8752	0.8735 ug/L		93
48)	Methylcyclohexane	11.30	83	13513	0.9646 ug/L		79
49)	1,2-Dichloropropane	11.43	63	7057	0.6982 ug/L	#	67
50)	Bromodichloromethane	11.73	83	12147	0.8638 ug/L		96
52)	Dibromomethane	11.81	93	4130	0.8681 ug/L		95
53)	2-Chloroethyl Vinyl Ether	12.03	63	2694	0.6366 ug/L		86
54)	4-Methyl-2-Pentanone	12.06	58	848	0.3671 ug/L	#	41
55)	cis-1,3-Dichloropropene	12.36	75	12521	0.8847 ug/L		97
56)	Dimethyl Disulfide	12.63	79	5799	0.7821 ug/L		96
59)	Toluene	12.79	91	37114	1.1328 ug/L		95
60)	Ethyl Methacrylate	12.88	69	5490	0.8930 ug/L		69
62)	trans-1,3-Dichloropropene	12.96	75	10328	0.9035 ug/L		92
63)	1,1,2-Trichloroethane	13.18	97	5274	1.0144 ug/L		93
64)	2-Hexanone	13.10	58	397	0.2127 ug/L	#	1
65)	1,3-Dichloropropane	13.49	76	9673	1.0032 ug/L		73
66)	Tetrachloroethene	13.61	164	7373	0.9937 ug/L		95
67)	Dibromochloromethane	13.87	129	7358	0.8977 ug/L		95
68)	1,2-Dibromoethane	14.13	107	5123	0.9454 ug/L		95
69)	1-Chlorohexane	14.21	91	12790	1.1461 ug/L		79
70)	Chlorobenzene	14.62	112	25662	1.1281 ug/L		89
71)	1,1,1,2-Tetrachloroethane	14.66	131	8722	0.9838 ug/L		94
72)	Ethylbenzene	14.65	106	13009	1.0078 ug/L		87
73)	m-,p-Xylene	14.75	106	30465	2.0486 ug/L		84
74)	o-Xylene	15.31	106	15133	1.0101 ug/L		84
75)	Styrene	15.35	104	23191	0.9707 ug/L		91
76)	Bromoform	15.84	173	3875	0.8240 ug/L		96
77)	Isopropylbenzene	15.74	105	41382	1.0895 ug/L		95
79)	1,1,2,2-Tetrachloroethane	15.95	83	5604	0.9873 ug/L	#	93
81)	1,2,3-Trichloropropane	16.15	110	1355	0.7428 ug/L	#	1
82)	trans-1,4-Dichloro-2-Buten	16.19	53	962	0.3479 ug/L	#	1
83)	n-Propylbenzene	16.25	91	48249	1.1002 ug/L		99
84)	Bromobenzene	16.37	156	9598	1.0497 ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	33355	1.0278 ug/L		96
86)	2-Chlorotoluene	16.51	91	33408	1.1895 ug/L		94
87)	4-Chlorotoluene	16.56	91	29548	1.0213 ug/L		95
88)	a-Methylstyrene	16.84	118	14414	0.9014 ug/L		91
89)	tert-Butylbenzene	16.89	134	6686	1.0398 ug/L		86
90)	1,2,4-Trimethylbenzene	16.95	105	36066	1.0857 ug/L		96
91)	sec-Butylbenzene	17.16	105	42128	1.0796 ug/L		96
92)	p-Isopropyltoluene	17.32	119	35424	1.0633 ug/L		94
93)	1,3-Dichlorobenzene	17.52	146	18409	1.0144 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	19031	1.0506 ug/L	#	62
95)	n-Butylbenzene	17.85	91	35772	1.1288 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	16104	1.0126 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.14	75	1262	1.0152 ug/L	#	53
98)	1,2,4-Trichlorobenzene	20.28	180	11494	0.9331 ug/L		98
99)	Hexachlorobutadiene	20.43	225	5421	0.9510 ug/L		98
100)	Naphthalene	20.65	128	16581	0.8853 ug/L		100
101)	1,2,3-Trichlorobenzene	20.96	180	10306	0.9835 ug/L		94

(#) = qualifier out of range (m) = manual integration
8M412222.D 8260WT.M Fri May 13 14:49:48 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

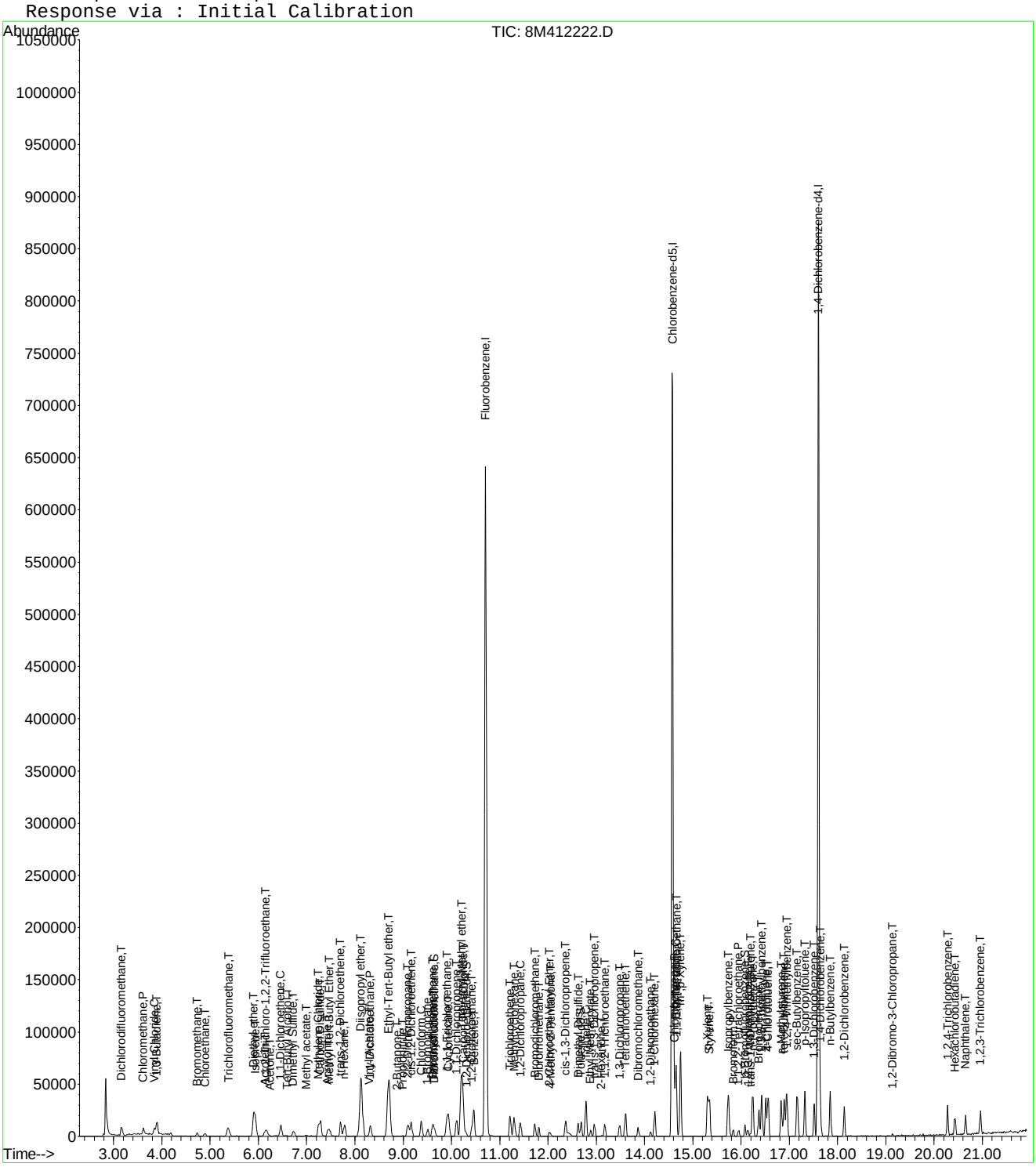

8M412222.D 8260WT.M Fri May 13 14:49:48 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:05:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9298	7.0	100	0.00
3	P	Chloromethane	1.0000	1.0808	-8.1	100	0.00
4	C	Vinyl Chloride	1.0000	1.0189	-1.9	100	0.00
5	T	1,3-Butadiene	-1.0000	0.9002	0.0	100	0.02
6	T	Bromomethane	1.0000	1.2082	-20.8	100	0.00
7	T	Chloroethane	1.0000	0.9803	2.0	100	0.00
8	T	Trichlorofluoromethane	1.0000	0.9968	0.3	100	0.00
9	T	Diethyl ether	5.0000	5.0462	-0.9	100	0.00
10	T	Isoprene	1.0000	1.0707	-7.1	100	0.00
11	T	Acrolein	-1.0000	0.6696	0.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0069	-0.7	100	0.00
13	T	Acetone	-1.0000	0.4614	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	1.0064	-0.6	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	11.5604	0.0	0	0.02
16	T	Dimethyl Sulfide	1.0000	0.9794	2.1	100	-0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.8758	0.0	100	0.00
19	T	Methylene Chloride	1.0000	1.0655	-6.5	100	0.00
20	T	Carbon Disulfide	1.0000	1.0492	-4.9	100	0.00
21	T	Acrylonitrile	2.5000	1.8633	25.5#	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9593	4.1	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	1.0636	-6.4	100	0.00
24	T	n-Hexane	-1.0000	1.0690	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	5.1784	-3.6	100	0.00
26	T	Vinyl Acetate	-1.0000	0.8002	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0029	-0.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.9635	0.7	100	0.00
29	T	2-Butanone	-1.0000	0.2889	0.0	100	0.00
30	T	Propionitrile	5.0000	4.1566	16.9	100	0.00
31	T	2,2-Dichloropropane	1.0000	0.9498	5.0	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	1.0383	-3.8	100	0.00
33	C	Chloroform	1.0000	1.0671	-6.7	100	0.00
34		1-Bromopropane	1.0000	0.8348	16.5	100	-0.01
35	T	Bromochloromethane	1.0000	1.1177	-11.8	100	0.00
36	T	Tetrahydrofuran	5.0000	6.2516	-25.0#	100	0.00
37	S	Dibromofluoromethane	0.5000	0.4635	7.3	100	-0.01
38	T	1,1,1-Trichloroethane	1.0000	1.0372	-3.7	100	0.00
39	T	Cyclohexane	1.0000	1.0411	-4.1	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0498	-5.0	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	5.0344	-0.7	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.9930	0.7	100	0.00
43	S	1,2-Dichloroethane-d4	0.5000	0.4184	16.3	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	1.0000	0.9570	4.3	100	0.00
46	T	Benzene	1.0000	1.0558	-5.6	100	0.00
47	T	Trichloroethene	1.0000	1.0041	-0.4	100	0.00
48	T	Methylcyclohexane	-1.0000	1.0205	0.0	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.9700	3.0	100	0.00
50	T	Bromodichloromethane	1.0000	0.9500	5.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	1.0000	0.9590	4.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.8616	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.6639	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:05:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9621	3.8	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.8348	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	0.5000	0.4897	2.1	100	0.00
59	C	Toluene	1.0000	1.0927	-9.3	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.8416	15.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	1.0000	0.9073	9.3	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.9840	1.6	100	0.00
64	T	2-Hexanone	-1.0000	0.3525	0.0	100	-0.01
65	T	1,3-Dichloropropane	1.0000	1.0137	-1.4	100	0.00
66	T	Tetrachloroethene	1.0000	1.0132	-1.3	100	0.00
67	T	Dibromochloromethane	1.0000	0.9402	6.0	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.9590	4.1	100	0.00
69	T	1-Chlorohexane	1.0000	1.1031	-10.3	100	0.00
70	P	Chlorobenzene	1.0000	1.1204	-12.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.9829	1.7	100	0.00
72	C	Ethylbenzene	1.0000	1.0381	-3.8	100	0.00
73	T	m-,p-Xylene	2.0000	2.0726	-3.6	100	0.00
74	T	o-Xylene	1.0000	1.0530	-5.3	100	0.00
75	T	Styrene	1.0000	0.9839	1.6	100	0.00
76	P	Bromoform	1.0000	0.8348	16.5	100	0.00
77	T	Isopropylbenzene	1.0000	1.0840	-8.4	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	0.9810	1.9	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5502	0.0	100	0.00
81	T	1,2,3-Trichloropropane	1.0000	0.7703	23.0	100	0.02
82	T	trans-1,4-Dichloro-2-Butene	1.0000	1.1443	-14.4	100	0.00
83	T	n-Propylbenzene	1.0000	1.0868	-8.7	100	0.00
84	T	Bromobenzene	1.0000	1.0510	-5.1	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	1.0314	-3.1	100	0.00
86	T	2-Chlorotoluene	1.0000	1.0778	-7.8	100	0.00
87	T	4-Chlorotoluene	1.0000	1.0553	-5.5	100	0.00
88	T	a-Methylstyrene	-1.0000	0.9394	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	1.0567	-5.7	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	1.0845	-8.5	100	0.00
91	T	sec-Butylbenzene	1.0000	1.1073	-10.7	100	0.00
92	T	p-Isopropyltoluene	1.0000	1.0966	-9.7	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0469	-4.7	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	1.0735	-7.3	100	0.00
95	T	n-Butylbenzene	1.0000	1.1201	-12.0	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0297	-3.0	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.1006	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	1.0000	0.9832	1.7	100	0.00
99	T	Hexachlorobutadiene	1.0000	0.9925	0.7	100	0.00
100	T	Naphthalene	1.0000	0.9547	4.5	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	1.0450	-4.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	782460	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.57	117	543252	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	286450	25.00	ug/L	0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	8161	0.8307	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.32%#		
43) 1,2-Dichloroethane-d4	10.30	65	9681	0.8613	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.44%#		
58) Toluene-d8	12.68	98	28135	1.0016	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.00%#		
80) p-Bromofluorobenzene	16.08	95	12079	1.0302	ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.12%#		

Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.16	85	24870	1.5166	ug/L	98
3) Chloromethane	3.62	50	16106	1.0425	ug/L	93
4) Vinyl Chloride	3.85	62	18562	1.7792	ug/L	94
5) 1,3-Butadiene	3.90	54	13617	1.3360	ug/L	92
6) Bromomethane	4.73	94	8329	1.8804	ug/L	94
7) Chloroethane	4.90	64	9562	1.4006	ug/L	86
8) Trichlorofluoromethane	5.39	101	34970	1.6885	ug/L	97
9) Diethyl ether	5.90	59	107986	17.0420	ug/L	79
10) Isoprene	5.93	67	20936	1.9757	ug/L	73
11) Acrolein	6.14	56	4864	8.6444	ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	16832	1.7751	ug/L	99
13) Acetone	6.23	43	1519	0.7908	ug/L #	48
14) 1,1-Dichloroethene	6.47	61	25394	1.3798	ug/L	89
15) Tert-Butyl Alcohol	6.58	59	14891	33.6725	ug/L	85
16) Dimethyl Sulfide	6.73	62	9489	1.3953	ug/L	79
17) Iodomethane	6.98	142	1211	1.3472	ug/L #	60
18) Methyl acetate	7.01	43	5064	0.8821	ug/L #	79
19) Methylene Chloride	7.25	84	16579	1.9010	ug/L	52
20) Carbon Disulfide	7.29	76	57693	2.1683	ug/L	98
21) Acrylonitrile	7.43	53	13848	5.6089	ug/L	93
22) Methyl Tert Butyl Ether	7.47	73	33991	1.7644	ug/L	84
23) trans-1,2-Dichloroethene	7.70	61	22786	1.3688	ug/L	88
24) n-Hexane	7.79	57	18282	1.2105	ug/L	84
25) Diisopropyl ether	8.12	45	475271	11.1128	ug/L #	92
26) Vinyl Acetate	8.29	43	15998	0.9318	ug/L	93
27) 1,1-Dichloroethane	8.32	63	30419	1.5277	ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	505010	16.8250	ug/L	89
29) 2-Butanone	8.90	43	2250	0.7313	ug/L #	57
30) Propionitrile	8.99	54	9373	12.0479	ug/L	86
31) 2,2-Dichloropropane	9.10	77	32521	1.8538	ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	18238	1.8309	ug/L	91
33) Chloroform	9.37	83	33543	1.8156	ug/L	99
34) 1-Bromopropane	9.52	122	2513	1.6014	ug/L	88
35) Bromochloromethane	9.60	130	9189	1.7632	ug/L	67
36) Tetrahydrofuran	9.63	42	22074	10.8529	ug/L #	66
38) 1,1,1-Trichloroethane	9.90	97	32268	1.7324	ug/L	96
39) Cyclohexane	9.93	56	23097	1.1362	ug/L #	65
40) 1,1-Dichloropropene	10.10	75	24988	1.8639	ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	459535	23.9029	ug/L	87
42) Carbon Tetrachloride	10.24	117	28935	1.6512	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412223.D 8260WT.M Fri May 13 15:18:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.42	62	22142	1.4270 ug/L #	83
46)	Benzene	10.46	78	67028	1.9629 ug/L	83
47)	Trichloroethene	11.21	130	17287	1.7543 ug/L	96
48)	Methylcyclohexane	11.30	83	26050	1.8907 ug/L	84
49)	1,2-Dichloropropane	11.42	63	14582	1.4670 ug/L	77
50)	Bromodichloromethane	11.73	83	25794	1.8651 ug/L	93
51)	1,4-Dioxane	11.73	88	1282	32.3515 ug/L	74
52)	Dibromomethane	11.81	93	8575	1.8325 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.02	63	6234	1.4979 ug/L	100
54)	4-Methyl-2-Pentanone	12.06	58	2139	0.9416 ug/L	84
55)	cis-1,3-Dichloropropene	12.37	75	24153	1.7353 ug/L	98
56)	Dimethyl Disulfide	12.62	79	12288	1.6851 ug/L	99
59)	Toluene	12.79	91	72944	2.2423 ug/L	95
60)	Ethyl Methacrylate	12.88	69	12716	2.0832 ug/L	71
62)	trans-1,3-Dichloropropene	12.96	75	22163	1.9527 ug/L	100
63)	1,1,2-Trichloroethane	13.18	97	10537	2.0412 ug/L	99
64)	2-Hexanone	13.13	58	2200	1.1873 ug/L #	65
65)	1,3-Dichloropropane	13.49	76	20212	2.1112 ug/L	72
66)	Tetrachloroethene	13.60	164	14595	1.9811 ug/L	90
67)	Dibromochloromethane	13.87	129	14698	1.8061 ug/L	98
68)	1,2-Dibromoethane	14.12	107	10152	1.8869 ug/L	95
69)	1-Chlorohexane	14.21	91	21960	1.9818 ug/L	89
70)	Chlorobenzene	14.62	112	47376	2.0974 ug/L	81
71)	1,1,1,2-Tetrachloroethane	14.66	131	17526	1.9910 ug/L	97
72)	Ethylbenzene	14.66	106	25628	1.9996 ug/L	92
73)	m-,p-Xylene	14.74	106	60087	4.0693 ug/L	84
74)	o-Xylene	15.31	106	28289	1.9017 ug/L	79
75)	Styrene	15.35	104	47644	2.0086 ug/L	92
76)	Bromoform	15.84	173	9145	1.9585 ug/L	95
77)	Isopropylbenzene	15.73	105	81301	2.1557 ug/L	97
79)	1,1,2,2-Tetrachloroethane	15.95	83	11538	2.0194 ug/L	95
81)	1,2,3-Trichloropropane	16.13	110	3630	1.9770 ug/L	94
82)	trans-1,4-Dichloro-2-Buten	16.19	53	2699	0.9698 ug/L #	36
83)	n-Propylbenzene	16.24	91	97233	2.2026 ug/L	96
84)	Bromobenzene	16.37	156	19174	2.0834 ug/L	92
85)	1,3,5-Trimethylbenzene	16.42	105	67395	2.0631 ug/L	97
86)	2-Chlorotoluene	16.51	91	67110	2.3739 ug/L	94
87)	4-Chlorotoluene	16.56	91	59154	2.0313 ug/L	92
88)	a-Methylstyrene	16.84	118	29415	1.8275 ug/L	86
89)	tert-Butylbenzene	16.89	134	12716	1.9647 ug/L	67
90)	1,2,4-Trimethylbenzene	16.95	105	71669	2.1435 ug/L	94
91)	sec-Butylbenzene	17.17	105	81038	2.0632 ug/L	98
92)	p-Isopropyltoluene	17.32	119	70170	2.0924 ug/L	92
93)	1,3-Dichlorobenzene	17.52	146	37289	2.0413 ug/L	93
94)	1,4-Dichlorobenzene	17.64	146	36528	2.0034 ug/L #	73
95)	n-Butylbenzene	17.85	91	67823	2.1262 ug/L	96
96)	1,2-Dichlorobenzene	18.14	146	32322	2.0190 ug/L	92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	1955	1.5624 ug/L	94
98)	1,2,4-Trichlorobenzene	20.28	180	23558	1.9000 ug/L	98
99)	Hexachlorobutadiene	20.43	225	11066	1.9286 ug/L	99
100)	Naphthalene	20.65	128	36066	1.9130 ug/L	99
101)	1,2,3-Trichlorobenzene	20.96	180	19765	1.8738 ug/L	95

(#) = qualifier out of range (m) = manual integration
8M412223.D 8260WT.M Fri May 13 15:18:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

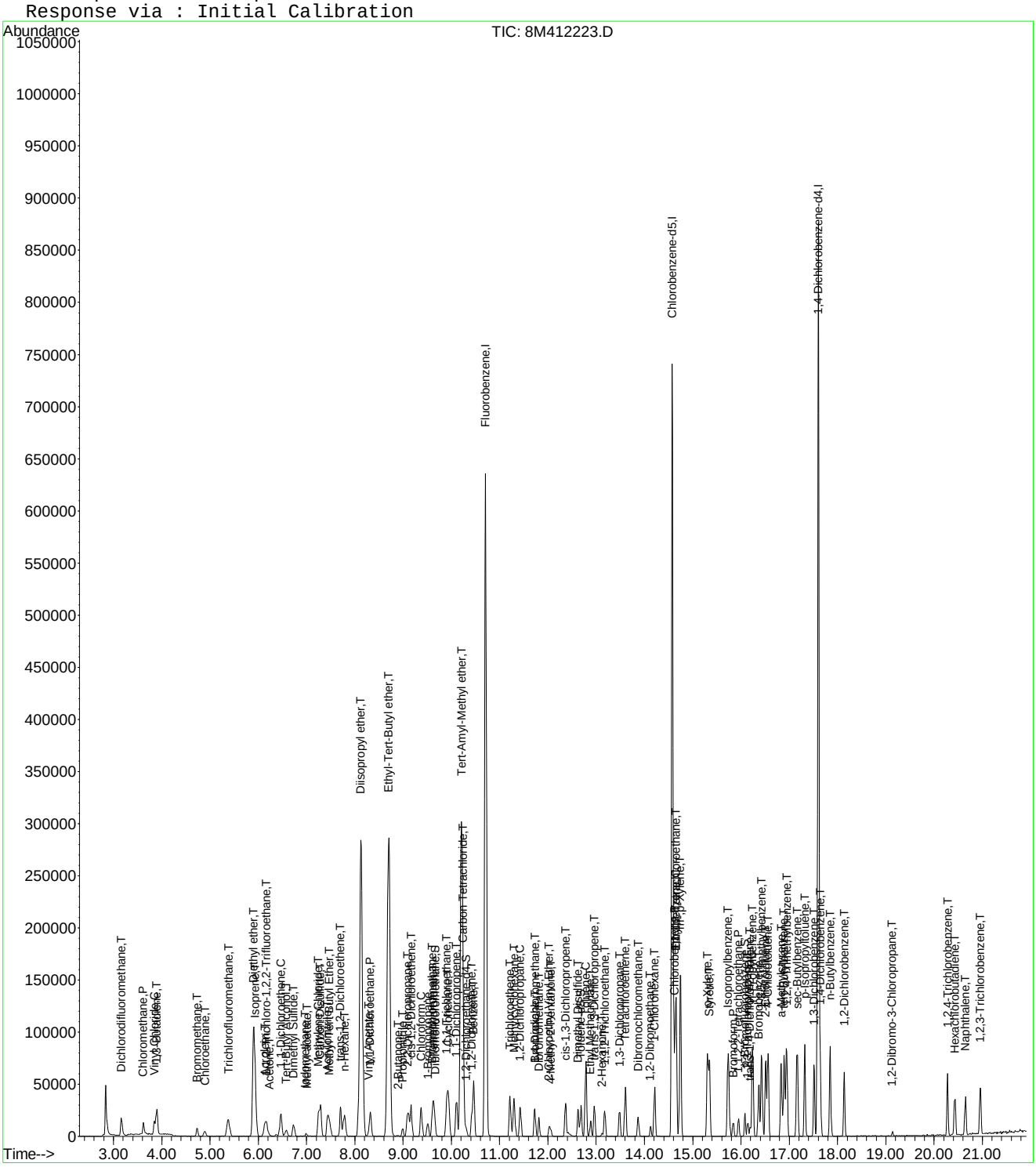

8M412223.D 8260WT.M Fri May 13 15:18:37 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.8958	5.2	100	0.00
3	P	Chloromethane	2.0000	2.1033	-5.2	100	0.00
4	C	Vinyl Chloride	2.0000	2.0431	-2.2	100	0.00
5	T	1,3-Butadiene	2.0000	1.7872	10.6	100	0.02
6	T	Bromomethane	2.0000	2.0126	-0.6	100	0.00
7	T	Chloroethane	2.0000	1.9127	4.4	100	0.00
8	T	Trichlorofluoromethane	2.0000	2.0686	-3.4	100	0.00
9	T	Diethyl ether	25.0000	26.7567	-7.0	100	0.00
10	T	Isoprene	2.0000	2.0394	-2.0	100	0.00
11	T	Acrolein	12.5000	13.4606	-7.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	2.1182	-5.9	100	0.02
13	T	Acetone	-1.0000	1.7255	0.0	100	-0.01
14	C	1,1-Dichloroethene	2.0000	2.0070	-0.4	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	52.7840	-5.6	100	0.00
16	T	Dimethyl Sulfide	2.0000	2.0975	-4.9	100	0.00
17	T	Iodomethane	2.0000	3.0680	-53.4#	100	0.00
18	T	Methyl acetate	-1.0000	2.1281	0.0	100	0.00
19	T	Methylene Chloride	2.0000	2.0590	-3.0	100	0.00
20	T	Carbon Disulfide	2.0000	2.1789	-8.9	100	0.00
21	T	Acrylonitrile	12.5000	12.1237	3.0	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.9505	2.5	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.9603	2.0	100	0.00
24	T	n-Hexane	-1.0000	2.1181	0.0	100	0.00
25	T	Diisopropyl ether	25.0000	26.2305	-4.9	100	0.00
26	T	Vinyl Acetate	2.0000	1.9284	3.6	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.1072	-5.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	26.0139	-4.1	100	0.00
29	T	2-Butanone	-1.0000	1.7396	0.0	100	0.02
30	T	Propionitrile	25.0000	24.8668	0.5	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1378	-6.9	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0306	-1.5	100	0.00
33	C	Chloroform	2.0000	1.9679	1.6	100	0.00
34		1-Bromopropane	2.0000	1.9533	2.3	100	0.00
35	T	Bromochloromethane	2.0000	1.9951	0.2	100	0.00
36	T	Tetrahydrofuran	25.0000	25.9117	-3.6	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9708	2.9	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.9930	0.3	100	0.00
39	T	Cyclohexane	2.0000	2.0605	-3.0	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0248	-1.2	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	26.0627	-4.3	100	0.00
42	T	Carbon Tetrachloride	2.0000	2.0126	-0.6	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0740	-7.4	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	2.0000	2.0183	-0.9	100	0.00
46	T	Benzene	2.0000	2.0854	-4.3	100	0.00
47	T	Trichloroethene	2.0000	2.0166	-0.8	100	0.00
48	T	Methylcyclohexane	-1.0000	2.0003	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0380	-1.9	100	0.00
50	T	Bromodichloromethane	2.0000	2.0511	-2.6	100	0.00
51	T	1,4-Dioxane	-1.0000	35.6688	0.0	100	0.02
52	T	Dibromomethane	2.0000	2.0246	-1.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	2.0271	-1.4	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.7027	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.8869	5.7	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.7986	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	0.9896	1.0	100	0.00
59	C	Toluene	2.0000	2.1628	-8.1	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.9633	1.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	2.0000	1.9609	2.0	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.9800	1.0	100	0.00
64	T	2-Hexanone	-1.0000	1.9672	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.1332	-6.7	100	0.00
66	T	Tetrachloroethene	2.0000	2.0198	-1.0	100	0.00
67	T	Dibromochloromethane	2.0000	1.8915	5.4	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.9141	4.3	100	0.00
69	T	1-Chlorohexane	2.0000	1.9075	4.6	100	0.00
70	P	Chlorobenzene	2.0000	2.0831	-4.2	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.9892	0.5	100	0.00
72	C	Ethylbenzene	2.0000	2.0596	-3.0	100	0.00
73	T	m-,p-Xylene	4.0000	4.1170	-2.9	100	0.00
74	T	o-Xylene	2.0000	1.9825	0.9	100	0.00
75	T	Styrene	2.0000	2.0358	-1.8	100	0.00
76	P	Bromoform	2.0000	1.9841	0.8	100	0.00
77	T	Isopropylbenzene	2.0000	2.1448	-7.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	2.0066	-0.3	100	0.00
80	S	p-Bromofluorobenzene	1.0000	1.0184	-1.8	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	2.0501	-2.5	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	2.0915	-4.6	100	0.00
83	T	n-Propylbenzene	2.0000	2.1757	-8.8	100	0.00
84	T	Bromobenzene	2.0000	2.0859	-4.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.0703	-3.5	100	0.00
86	T	2-Chlorotoluene	2.0000	2.1509	-7.5	100	0.00
87	T	4-Chlorotoluene	2.0000	2.0989	-4.9	100	0.00
88	T	a-Methylstyrene	-1.0000	1.9045	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	1.9967	0.2	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.1411	-7.1	100	0.00
91	T	sec-Butylbenzene	2.0000	2.1161	-5.8	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.1579	-7.9	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.1067	-5.3	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.0470	-2.4	100	0.00
95	T	n-Butylbenzene	2.0000	2.1098	-5.5	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0532	-2.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.6938	15.3	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	2.0021	-0.1	100	0.00
99	T	Hexachlorobutadiene	2.0000	2.0128	-0.6	100	0.00
100	T	Naphthalene	2.0000	2.0630	-3.2	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9910	0.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	768397	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	534372	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	274234	25.00 ug/L	0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	19775	2.0496 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	8.20%#	
43) 1,2-Dichloroethane-d4	10.30	65	21200	1.9207 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	7.68%#	
58) Toluene-d8	12.68	98	65647	2.3758 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	9.52%#	
80) p-Bromofluorobenzene	16.08	95	26759	2.3838 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	9.52%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	55961	3.4750 ug/L	99
3) Chloromethane	3.62	50	34194	2.2538 ug/L	100
4) Vinyl Chloride	3.84	62	42506	4.1488 ug/L	99
5) 1,3-Butadiene	3.89	54	32006	3.1976 ug/L	93
6) Bromomethane	4.72	94	19582	3.4204 ug/L	94
7) Chloroethane	4.90	64	22000	3.2814 ug/L	84
8) Trichlorofluoromethane	5.37	101	77715	3.8212 ug/L	96
9) Diethyl ether	5.90	59	188516	30.2955 ug/L	79
10) Isoprene	5.94	67	44975	4.3218 ug/L	78
11) Acrolein	6.15	56	7712	13.9568 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	36867	3.9591 ug/L	99
13) Acetone	6.24	43	3578	1.8967 ug/L	85
14) 1,1-Dichloroethene	6.47	61	59405	3.2870 ug/L	95
15) Tert-Butyl Alcohol	6.58	59	27833	64.0897 ug/L #	82
16) Dimethyl Sulfide	6.73	62	21102	3.1597 ug/L	77
17) Iodomethane	6.99	142	3667	1.8964 ug/L	95
18) Methyl acetate	7.00	43	11500	2.0398 ug/L #	86
19) Methylene Chloride	7.24	84	37533	4.3823 ug/L	52
20) Carbon Disulfide	7.29	76	123060	4.7097 ug/L	100
21) Acrylonitrile	7.43	53	25653	10.5804 ug/L	99
22) Methyl Tert Butyl Ether	7.47	73	80005	4.2289 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	54124	3.3108 ug/L	94
24) n-Hexane	7.78	57	40758	2.7480 ug/L	82
25) Diisopropyl ether	8.12	45	841400	20.0337 ug/L #	91
26) Vinyl Acetate	8.30	43	37284	2.2113 ug/L #	90
27) 1,1-Dichloroethane	8.32	63	66711	3.4116 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	907423	30.7852 ug/L	89
29) 2-Butanone	8.89	43	5359	1.7738 ug/L #	82
30) Propionitrile	8.99	54	17933	23.4726 ug/L	100
31) 2,2-Dichloropropane	9.10	77	73150	4.2462 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	41036	4.1950 ug/L	89
33) Chloroform	9.37	83	78227	4.3116 ug/L	99
34) 1-Bromopropane	9.52	122	6162	3.9986 ug/L	99
35) Bromochloromethane	9.60	130	20988	4.1009 ug/L #	62
36) Tetrahydrofuran	9.62	42	38098	19.0742 ug/L #	62
38) 1,1,1-Trichloroethane	9.91	97	76152	4.1633 ug/L	97
39) Cyclohexane	9.94	56	51439	2.5767 ug/L #	66
40) 1,1-Dichloropropene	10.11	75	56645	4.3027 ug/L	93
41) Tert-Amyl-Methyl ether	10.21	73	821180	43.4958 ug/L	87
42) Carbon Tetrachloride	10.25	117	67831	3.9416 ug/L	96

(#) = qualifier out of range (m) = manual integration
8M412224.D 8260WT.M Fri May 13 15:47:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	51708	3.3934 ug/L		85
46)	Benzene	10.46	78	150204	4.4792 ug/L		86
47)	Trichloroethene	11.21	130	38500	3.9784 ug/L		94
48)	Methylcyclohexane	11.30	83	60897	4.5008 ug/L		81
49)	1,2-Dichloropropane	11.43	63	31773	3.2549 ug/L		77
50)	Bromodichloromethane	11.73	83	59127	4.3535 ug/L		94
51)	1,4-Dioxane	11.71	88	2719	69.8702 ug/L	#	62
52)	Dibromomethane	11.81	93	19711	4.2894 ug/L		96
53)	2-Chloroethyl Vinyl Ether	12.03	63	12946	3.1676 ug/L		98
54)	4-Methyl-2-Pentanone	12.05	58	5129	2.2991 ug/L	#	78
55)	cis-1,3-Dichloropropene	12.36	75	61169	4.4752 ug/L		94
56)	Dimethyl Disulfide	12.62	79	27966	3.9053 ug/L		98
59)	Toluene	12.78	91	161007	5.0316 ug/L		97
60)	Ethyl Methacrylate	12.88	69	28595	4.7624 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	49791	4.4599 ug/L		97
63)	1,1,2-Trichloroethane	13.18	97	23678	4.6631 ug/L		99
64)	2-Hexanone	13.11	58	4499	2.4685 ug/L	#	97
65)	1,3-Dichloropropane	13.49	76	44838	4.7614 ug/L		73
66)	Tetrachloroethene	13.60	164	32715	4.5144 ug/L		97
67)	Dibromochloromethane	13.87	129	35009	4.3734 ug/L		98
68)	1,2-Dibromoethane	14.13	107	24247	4.5815 ug/L		99
69)	1-Chlorohexane	14.21	91	53599	4.9176 ug/L		84
70)	Chlorobenzene	14.62	112	107618	4.8437 ug/L		95
71)	1,1,1,2-Tetrachloroethane	14.65	131	38120	4.4025 ug/L		96
72)	Ethylbenzene	14.65	106	56905	4.5138 ug/L		91
73)	m-,p-Xylene	14.75	106	137390	9.4592 ug/L		86
74)	o-Xylene	15.31	106	65650	4.4866 ug/L		85
75)	Styrene	15.35	104	111433	4.7758 ug/L		91
76)	Bromoform	15.84	173	19346	4.2121 ug/L		97
77)	Isopropylbenzene	15.73	105	182523	4.9200 ug/L		96
79)	1,1,2,2-Tetrachloroethane	15.95	83	26655	4.8730 ug/L		99
81)	1,2,3-Trichloropropane	16.13	110	8840	5.0289 ug/L		81
82)	trans-1,4-Dichloro-2-Buten	16.19	53	6584	2.4712 ug/L	#	51
83)	n-Propylbenzene	16.24	91	222196	5.2576 ug/L		96
84)	Bromobenzene	16.37	156	42665	4.8423 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	155714	4.9790 ug/L		93
86)	2-Chlorotoluene	16.52	91	148764	5.4968 ug/L		94
87)	4-Chlorotoluene	16.56	91	135679	4.8666 ug/L		94
88)	a-Methylstyrene	16.84	118	68945	4.4743 ug/L		91
89)	tert-Butylbenzene	16.89	134	29069	4.6914 ug/L		77
90)	1,2,4-Trimethylbenzene	16.95	105	161016	5.0301 ug/L		94
91)	sec-Butylbenzene	17.17	105	191273	5.0866 ug/L		94
92)	p-Isopropyltoluene	17.32	119	159232	4.9597 ug/L		93
93)	1,3-Dichlorobenzene	17.52	146	83896	4.7972 ug/L		95
94)	1,4-Dichlorobenzene	17.64	146	82462	4.7242 ug/L		86
95)	n-Butylbenzene	17.85	91	158787	5.1996 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	72524	4.7321 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	5629	4.6990 ug/L		76
98)	1,2,4-Trichlorobenzene	20.28	180	53855	4.5369 ug/L		98
99)	Hexachlorobutadiene	20.43	225	24504	4.4608 ug/L		93
100)	Naphthalene	20.65	128	79806	4.4217 ug/L		98
101)	1,2,3-Trichlorobenzene	20.96	180	44150	4.3720 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412224.D 8260WT.M Fri May 13 15:47:44 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

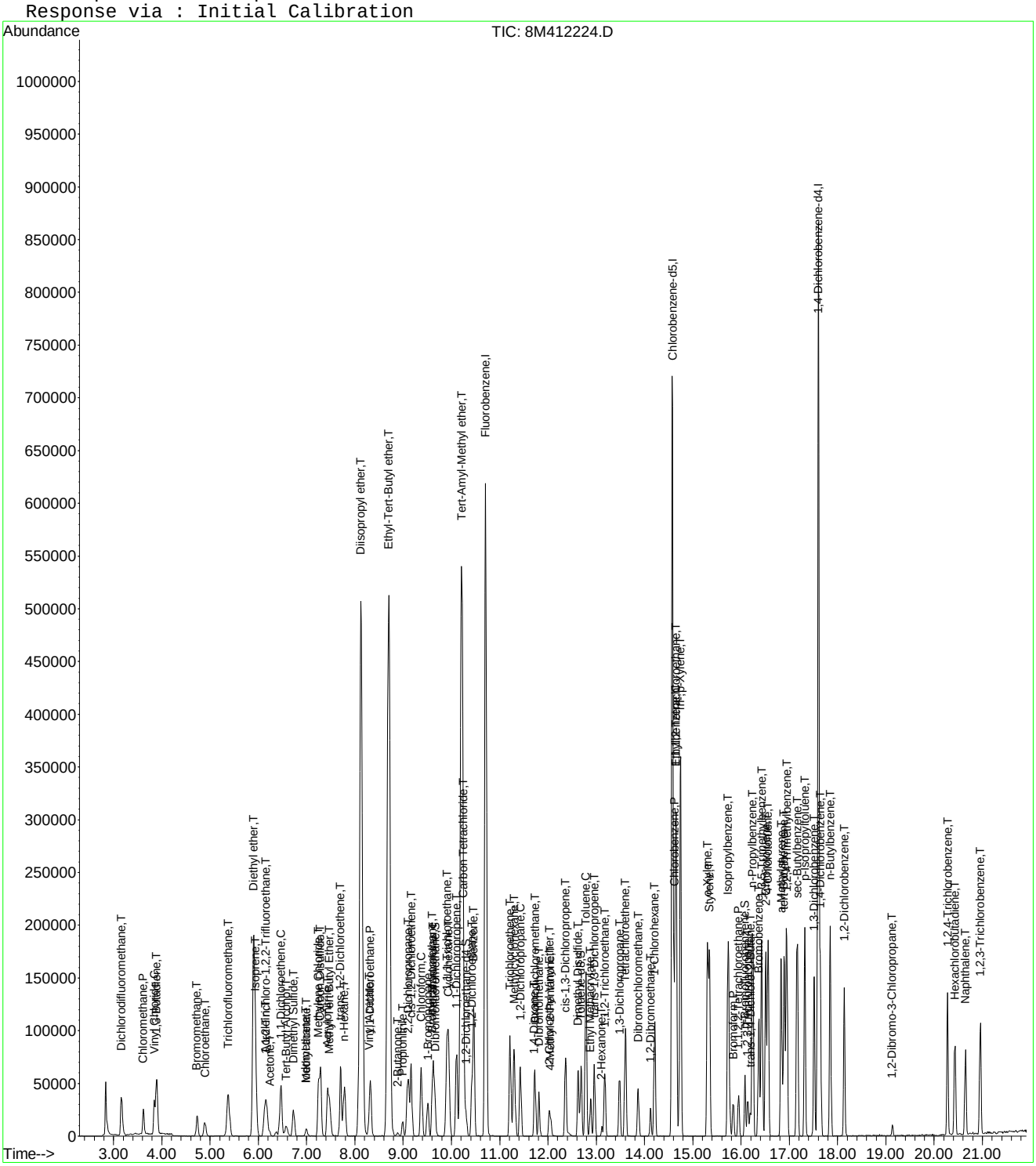

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.3438	13.1	100	0.00
3	P	Chloromethane	5.0000	4.5471	9.1	100	0.00
4	C	Vinyl Chloride	5.0000	4.7641	4.7	100	0.00
5	T	1,3-Butadiene	5.0000	4.2777	14.4	100	0.00
6	T	Bromomethane	5.0000	4.1880	16.2	100	-0.01
7	T	Chloroethane	5.0000	4.4813	10.4	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.6812	6.4	100	0.00
9	T	Diethyl ether	50.0000	47.5652	4.9	100	0.00
10	T	Isoprene	5.0000	4.4611	10.8	100	0.00
11	T	Acrolein	25.0000	21.7328	13.1	100	0.02
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.7244	5.5	100	0.00
13	T	Acetone	5.0000	4.1387	17.2	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.7810	4.4	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	100.4650	-0.5	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.7499	5.0	100	0.00
17	T	Iodomethane	5.0000	3.7634	24.7	100	0.00
18	T	Methyl acetate	5.0000	4.9211	1.6	100	0.00
19	T	Methylene Chloride	5.0000	4.7467	5.1	100	0.00
20	T	Carbon Disulfide	5.0000	4.7328	5.3	100	0.00
21	T	Acrylonitrile	25.0000	22.8698	8.5	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.6750	6.5	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.7415	5.2	100	0.00
24	T	n-Hexane	5.0000	4.8084	3.8	100	0.00
25	T	Diisopropyl ether	50.0000	47.2872	5.4	100	0.00
26	T	Vinyl Acetate	5.0000	4.5766	8.5	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.7058	5.9	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	47.5984	4.8	100	0.00
29	T	2-Butanone	5.0000	4.2191	15.6	100	0.00
30	T	Propionitrile	50.0000	48.4475	3.1	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.8965	2.1	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.6525	7.0	100	0.00
33	C	Chloroform	5.0000	4.6735	6.5	100	0.00
34		1-Bromopropane	5.0000	4.8774	2.5	100	0.00
35	T	Bromochloromethane	5.0000	4.6403	7.2	100	0.00
36	T	Tetrahydrofuran	50.0000	45.5400	8.9	100	-0.01
37	S	Dibromofluoromethane	2.5000	2.3953	4.2	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.7896	4.2	100	0.00
39	T	Cyclohexane	5.0000	4.6730	6.5	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.6741	6.5	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	47.6211	4.8	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.8044	3.9	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.3949	4.2	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	5.0000	4.7996	4.0	100	0.00
46	T	Benzene	5.0000	4.7588	4.8	100	0.00
47	T	Trichloroethene	5.0000	4.5733	8.5	100	0.00
48	T	Methylcyclohexane	5.0000	4.7616	4.8	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.5219	9.6	100	0.00
50	T	Bromodichloromethane	5.0000	4.7878	4.2	100	0.00
51	T	1,4-Dioxane	100.0000	77.0346	23.0	100	0.00
52	T	Dibromomethane	5.0000	4.7390	5.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.2867	14.3	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.1576	16.8	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.8662	2.7	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.1683	16.6	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.3473	6.1	100	0.00
59	C	Toluene	5.0000	4.8533	2.9	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.4883	10.2	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	5.0000	4.4786	10.4	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.5231	9.5	100	0.00
64	T	2-Hexanone	5.0000	4.0898	18.2	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.8109	3.8	100	0.00
66	T	Tetrachloroethene	5.0000	4.6028	7.9	100	0.00
67	T	Dibromochloromethane	5.0000	4.5802	8.4	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.6475	7.1	100	0.00
69	T	1-Chlorohexane	5.0000	4.7331	5.3	100	0.00
70	P	Chlorobenzene	5.0000	4.8107	3.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.3984	12.0	100	0.00
72	C	Ethylbenzene	5.0000	4.6492	7.0	100	0.00
73	T	m-,p-Xylene	10.0000	9.5700	4.3	100	0.00
74	T	o-Xylene	5.0000	4.6773	6.5	100	0.00
75	T	Styrene	5.0000	4.8405	3.2	100	0.00
76	P	Bromoform	5.0000	4.2672	14.7	100	0.00
77	T	Isopropylbenzene	5.0000	4.8951	2.1	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	4.8422	3.2	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.3565	5.7	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.2150	-4.3	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.3781	12.4	100	0.00
83	T	n-Propylbenzene	5.0000	5.1935	-3.9	100	0.00
84	T	Bromobenzene	5.0000	4.8483	3.0	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	4.9964	0.1	100	0.00
86	T	2-Chlorotoluene	5.0000	4.9803	0.4	100	0.00
87	T	4-Chlorotoluene	5.0000	5.0286	-0.6	100	0.00
88	T	a-Methylstyrene	5.0000	4.6629	6.7	100	0.00
89	T	tert-Butylbenzene	5.0000	4.7677	4.6	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.0245	-0.5	100	0.00
91	T	sec-Butylbenzene	5.0000	5.2170	-4.3	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.1150	-2.3	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	4.9511	1.0	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	4.8270	3.5	100	0.00
95	T	n-Butylbenzene	5.0000	5.1595	-3.2	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	4.8122	3.8	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	5.0942	-1.9	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.7808	4.4	100	0.00
99	T	Hexachlorobutadiene	5.0000	4.6555	6.9	100	0.00
100	T	Naphthalene	5.0000	4.7684	4.6	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.6455	7.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	770027	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	531490	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	283594	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	86295	10.9569 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 43.84%#		
43) 1,2-Dichloroethane-d4	10.30	65	96239	11.3450 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 45.36%#		
58) Toluene-d8	12.68	98	294491	10.9223 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 43.68%#		
80) p-Bromofluorobenzene	16.08	95	121459	10.5490 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 42.20%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	288235	23.7135 ug/L	99
3) Chloromethane	3.62	50	155712	20.3784 ug/L	98
4) Vinyl Chloride	3.84	62	184250	20.9368 ug/L	95
5) 1,3-Butadiene	3.89	54	149348	22.7750 ug/L	96
6) Bromomethane	4.73	94	100098	25.0143 ug/L	99
7) Chloroethane	4.89	64	100876	20.9404 ug/L	91
8) Trichlorofluoromethane	5.37	101	351299	21.2512 ug/L	98
9) Diethyl ether	5.90	59	324317	80.8265 ug/L	78
10) Isoprene	5.94	67	205842	20.3622 ug/L	77
11) Acrolein	6.14	56	12049	34.8201 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	159996	20.3859 ug/L	97
13) Acetone	6.25	43	18459	25.7405 ug/L	98
14) 1,1-Dichloroethene	6.47	61	256241	20.5065 ug/L	92
15) Tert-Butyl Alcohol	6.57	59	43922	153.5712 ug/L	93
16) Dimethyl Sulfide	6.73	62	89456	20.6087 ug/L	83
17) Iodomethane	6.99	142	40622	61.0474 ug/L	93
18) Methyl acetate	7.00	43	46598	20.2171 ug/L #	85
19) Methylene Chloride	7.25	84	161897	20.1338 ug/L	52
20) Carbon Disulfide	7.30	76	538090	20.0802 ug/L	98
21) Acrylonitrile	7.43	53	46305	46.9889 ug/L	100
22) Methyl Tert Butyl Ether	7.47	73	361116	22.0137 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	234754	20.3175 ug/L	90
24) n-Hexane	7.78	57	172498	21.1165 ug/L	84
25) Diisopropyl ether	8.12	45	1447822	80.3755 ug/L #	91
26) Vinyl Acetate	8.30	43	166501	21.7017 ug/L #	88
27) 1,1-Dichloroethane	8.33	63	300321	21.3849 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	1579265	83.0733 ug/L	89
29) 2-Butanone	8.88	43	25681	23.9099 ug/L	87
30) Propionitrile	8.98	54	30953	89.5673 ug/L	94
31) 2,2-Dichloropropane	9.10	77	309575	20.8527 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	181973	20.4488 ug/L	89
33) Chloroform	9.37	83	348925	20.5535 ug/L	96
34) 1-Bromopropane	9.52	122	26723	22.7206 ug/L	96
35) Bromochloromethane	9.61	130	94952	21.3181 ug/L	65
36) Tetrahydrofuran	9.63	42	63066	70.5772 ug/L #	57
38) 1,1,1-Trichloroethane	9.91	97	335486	21.3640 ug/L	99
39) Cyclohexane	9.94	56	221040	19.9984 ug/L #	64
40) 1,1-Dichloropropene	10.11	75	248373	20.4717 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1418183	81.7883 ug/L	88
42) Carbon Tetrachloride	10.25	117	296471	21.3449 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412225.D 8260WT.M Fri May 13 16:16:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	228665	21.6403	ug/L		85
46)	Benzene	10.46	78	668449	20.3769	ug/L		86
47)	Trichloroethene	11.21	130	174107	20.7980	ug/L		96
48)	Methylcyclohexane	11.29	83	262275	21.4887	ug/L		82
49)	1,2-Dichloropropane	11.43	63	146868	21.1883	ug/L	#	72
50)	Bromodichloromethane	11.73	83	262192	21.9986	ug/L		98
51)	1,4-Dioxane	11.71	88	5351	196.3837	ug/L		76
52)	Dibromomethane	11.81	93	86951	21.0734	ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	63586	22.4600	ug/L		91
54)	4-Methyl-2-Pentanone	12.05	58	25754	25.0531	ug/L	#	73
55)	cis-1,3-Dichloropropene	12.36	75	265439	21.9841	ug/L		99
56)	Dimethyl Disulfide	12.63	79	134192	23.9412	ug/L		100
59)	Toluene	12.78	91	700473	20.1722	ug/L		99
60)	Ethyl Methacrylate	12.88	69	133361	23.2046	ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	238585	23.2548	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	107901	21.0216	ug/L		99
64)	2-Hexanone	13.11	58	22561	25.2093	ug/L	#	85
65)	1,3-Dichloropropane	13.49	76	198804	22.2491	ug/L		74
66)	Tetrachloroethene	13.60	164	141791	20.0055	ug/L		94
67)	Dibromochloromethane	13.87	129	158465	22.0695	ug/L		99
68)	1,2-Dibromoethane	14.13	107	110085	22.3366	ug/L		100
69)	1-Chlorohexane	14.21	91	229753	20.3591	ug/L		83
70)	Chlorobenzene	14.62	112	467492	20.4613	ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.65	131	183079	22.2095	ug/L		96
72)	Ethylbenzene	14.65	106	249016	20.2289	ug/L		90
73)	m-,p-Xylene	14.75	106	606381	41.1308	ug/L		88
74)	o-Xylene	15.30	106	294106	21.2106	ug/L		90
75)	Styrene	15.35	104	492781	21.8207	ug/L		89
76)	Bromoform	15.83	173	95911	23.8070	ug/L		99
77)	Isopropylbenzene	15.73	105	806678	20.7280	ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	123253	22.7779	ug/L		95
81)	1,2,3-Trichloropropane	16.14	110	36712	22.1354	ug/L		94
82)	trans-1,4-Dichloro-2-Buten	16.18	53	33702	27.6513	ug/L	#	56
83)	n-Propylbenzene	16.24	91	962196	20.3511	ug/L		97
84)	Bromobenzene	16.37	156	190566	21.2033	ug/L		94
85)	1,3,5-Trimethylbenzene	16.43	105	692633	20.9615	ug/L		94
86)	2-Chlorotoluene	16.51	91	649077	19.9155	ug/L		96
87)	4-Chlorotoluene	16.56	91	595446	20.3225	ug/L		95
88)	a-Methylstyrene	16.83	118	318960	22.3680	ug/L		92
89)	tert-Butylbenzene	16.90	134	129440	20.4705	ug/L		83
90)	1,2,4-Trimethylbenzene	16.95	105	707749	20.4783	ug/L		94
91)	sec-Butylbenzene	17.17	105	818359	20.1802	ug/L		97
92)	p-Isopropyltoluene	17.32	119	677859	19.7492	ug/L		96
93)	1,3-Dichlorobenzene	17.52	146	364065	20.5126	ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	363066	19.9874	ug/L		92
95)	n-Butylbenzene	17.85	91	681055	20.0187	ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	318612	19.9358	ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	23070	21.6419	ug/L		93
98)	1,2,4-Trichlorobenzene	20.28	180	242455	20.8863	ug/L		98
99)	Hexachlorobutadiene	20.43	225	110384	20.2523	ug/L		96
100)	Naphthalene	20.65	128	369849	21.4526	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	198876	19.8356	ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration

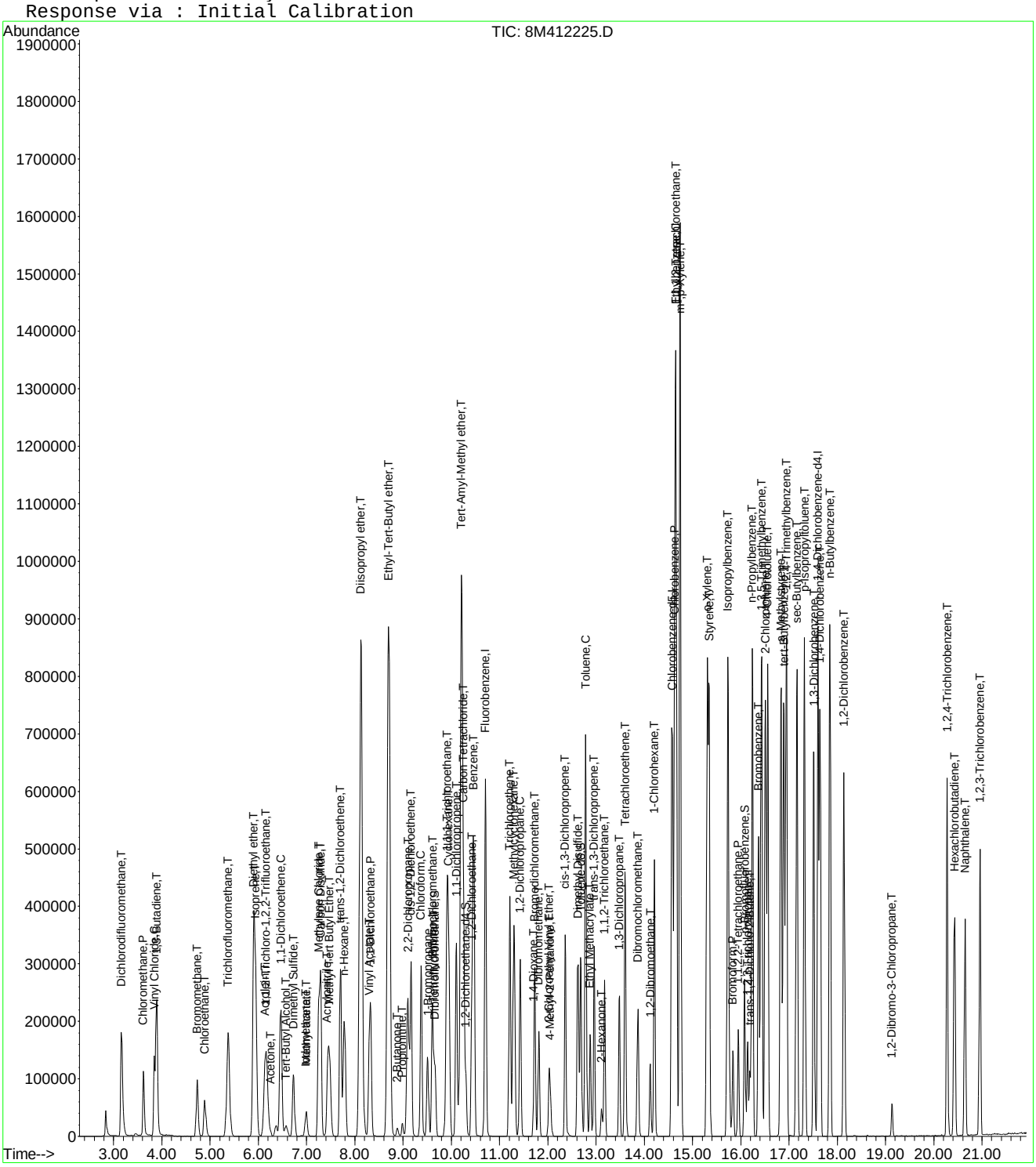

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45:30 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	778260	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	539116	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	288225	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	211053	26.5139 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.04%		
43) 1,2-Dichloroethane-d4	10.31	65	229348	26.7504 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.00%		
58) Toluene-d8	12.68	98	718491	26.2709 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.08%		
80) p-Bromofluorobenzene	16.07	95	292755	25.0180 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.08%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	682745	55.5761 ug/L	100
3) Chloromethane	3.62	50	372858	48.2806 ug/L	98
4) Vinyl Chloride	3.85	62	453905	51.0328 ug/L	96
5) 1,3-Butadiene	3.88	54	390501	58.9199 ug/L	99
6) Bromomethane	4.74	94	260493	64.4080 ug/L	97
7) Chloroethane	4.89	64	244336	50.1840 ug/L	91
8) Trichlorofluoromethane	5.38	101	837676	50.1376 ug/L	99
9) Diethyl ether	5.90	59	389327	96.0019 ug/L	79
10) Isoprene	5.94	67	498060	48.7477 ug/L	76
11) Acrolein	6.13	56	17644	50.4496 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	387643	48.8691 ug/L	97
13) Acetone	6.25	43	45901	63.3305 ug/L	97
14) 1,1-Dichloroethene	6.46	61	619744	49.0724 ug/L	94
15) Tert-Butyl Alcohol	6.58	59	53656	185.6211 ug/L	91
16) Dimethyl Sulfide	6.73	62	221107	50.3993 ug/L	82
17) Iodomethane	6.98	142	157872	234.7428 ug/L	94
18) Methyl acetate	7.00	43	114759	49.2629 ug/L #	81
19) Methylene Chloride	7.25	84	389653	47.9453 ug/L	52
20) Carbon Disulfide	7.29	76	1269941	46.8897 ug/L	99
21) Acrylonitrile	7.43	53	59882	60.1236 ug/L	97
22) Methyl Tert Butyl Ether	7.46	73	901668	54.3843 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	571507	48.9396 ug/L	93
24) n-Hexane	7.79	57	419656	50.8290 ug/L	83
25) Diisopropyl ether	8.13	45	1781012	97.8265 ug/L #	90
26) Vinyl Acetate	8.29	43	428708	55.2866 ug/L #	89
27) 1,1-Dichloroethane	8.32	63	722574	50.9078 ug/L	96
28) Ethyl-Tert-Butyl ether	8.71	59	1955100	101.7552 ug/L	89
29) 2-Butanone	8.88	43	66579	61.3316 ug/L #	82
30) Propionitrile	8.98	54	38235	109.4684 ug/L	95
31) 2,2-Dichloropropane	9.10	77	768496	51.2175 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	439590	48.8754 ug/L	91
33) Chloroform	9.38	83	844564	49.2230 ug/L	97
34) 1-Bromopropane	9.51	122	63442	53.3693 ug/L	99
35) Bromochloromethane	9.60	130	230119	51.1185 ug/L	66
36) Tetrahydrofuran	9.64	42	79437	87.9575 ug/L #	62
38) 1,1,1-Trichloroethane	9.90	97	817606	51.5150 ug/L	99
39) Cyclohexane	9.93	56	535882	47.9707 ug/L #	65
40) 1,1-Dichloropropene	10.10	75	615439	50.1899 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1769381	100.9628 ug/L	88
42) Carbon Tetrachloride	10.24	117	724058	51.5782 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412226.D 8260WT.M Fri May 13 16:45:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45:30 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	561107	52.5401 ug/L		85
46)	Benzene	10.46	78	1607407	48.4816 ug/L		86
47)	Trichloroethene	11.22	130	424998	50.2312 ug/L		96
48)	Methylcyclohexane	11.30	83	635339	51.5040 ug/L		83
49)	1,2-Dichloropropane	11.42	63	351908	50.2320 ug/L	#	71
50)	Bromodichloromethane	11.72	83	654943	54.3701 ug/L		97
51)	1,4-Dioxane	11.71	88	7573	274.9918 ug/L		73
52)	Dibromomethane	11.82	93	209167	50.1574 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	162319	56.7281 ug/L		93
54)	4-Methyl-2-Pentanone	12.05	58	64928	62.4928 ug/L		80
55)	cis-1,3-Dichloropropene	12.36	75	666861	54.6463 ug/L		98
56)	Dimethyl Disulfide	12.62	79	343446	60.6260 ug/L		96
59)	Toluene	12.79	91	1676069	47.5846 ug/L		100
60)	Ethyl Methacrylate	12.88	69	338996	58.1503 ug/L		69
62)	trans-1,3-Dichloropropene	12.96	75	594749	57.1499 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	268432	51.5570 ug/L		98
64)	2-Hexanone	13.12	58	56859	62.6347 ug/L	#	83
65)	1,3-Dichloropropane	13.48	76	489226	53.9770 ug/L		75
66)	Tetrachloroethene	13.60	164	350332	48.7296 ug/L		95
67)	Dibromochloromethane	13.86	129	401149	55.0780 ug/L		100
68)	1,2-Dibromoethane	14.12	107	273580	54.7252 ug/L		99
69)	1-Chlorohexane	14.21	91	560883	48.9984 ug/L		82
70)	Chlorobenzene	14.63	112	1117812	48.2326 ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	446892	53.4462 ug/L		99
72)	Ethylbenzene	14.66	106	603074	48.2980 ug/L		91
73)	m-,p-Xylene	14.74	106	1443780	96.5463 ug/L		90
74)	o-Xylene	15.31	106	709244	50.4265 ug/L		90
75)	Styrene	15.34	104	1212099	52.9133 ug/L		91
76)	Bromoform	15.84	173	238354	58.3272 ug/L		100
77)	Isopropylbenzene	15.73	105	1919993	48.6372 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	294266	53.5083 ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	89279	52.9656 ug/L		93
82)	trans-1,4-Dichloro-2-Buten	16.19	53	86829	70.0956 ug/L	#	53
83)	n-Propylbenzene	16.24	91	2278994	47.4277 ug/L		98
84)	Bromobenzene	16.37	156	459959	50.3549 ug/L		93
85)	1,3,5-Trimethylbenzene	16.43	105	1661486	49.4745 ug/L		95
86)	2-Chlorotoluene	16.51	91	1611031	48.6367 ug/L		97
87)	4-Chlorotoluene	16.56	91	1341051	45.0344 ug/L		95
88)	a-Methylstyrene	16.83	118	772611	53.3111 ug/L		90
89)	tert-Butylbenzene	16.89	134	307503	47.8493 ug/L		81
90)	1,2,4-Trimethylbenzene	16.94	105	1679809	47.8234 ug/L		95
91)	sec-Butylbenzene	17.16	105	1925411	46.7166 ug/L		97
92)	p-Isopropyltoluene	17.32	119	1621383	46.4795 ug/L		95
93)	1,3-Dichlorobenzene	17.51	146	882656	48.9327 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	871210	47.1909 ug/L		92
95)	n-Butylbenzene	17.85	91	1608832	46.5296 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	768548	47.3159 ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	59586	54.9992 ug/L		86
98)	1,2,4-Trichlorobenzene	20.28	180	583880	49.4902 ug/L		100
99)	Hexachlorobutadiene	20.44	225	264699	47.7844 ug/L		98
100)	Naphthalene	20.65	128	894629	51.0579 ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	475246	46.6387 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412226.D 8260WT.M Fri May 13 16:45:33 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration

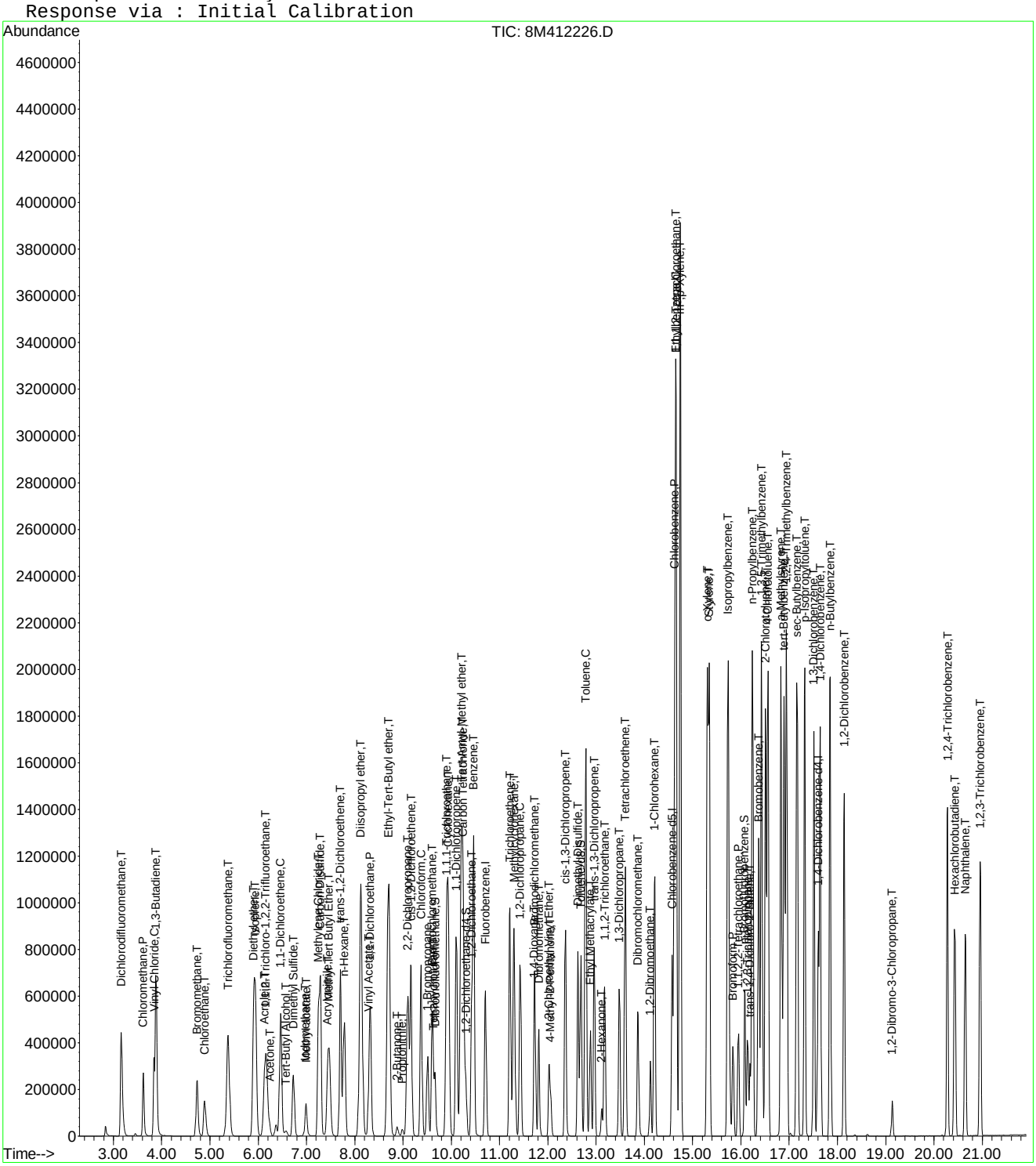

8M412226.D 8260WT.M Fri May 13 16:45:33 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	809533	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	559075	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	296193	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	460283	53.9056 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 215.64%#		
43) 1,2-Dichloroethane-d4	10.30	65	488116	52.5821 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 210.32%#		
58) Toluene-d8	12.68	98	1540572	52.8075 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 211.24%#		
80) p-Bromofluorobenzene	16.08	95	623735	51.1573 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 204.64%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	1463283	109.1068 ug/L	100
3) Chloromethane	3.62	50	778702	97.2380 ug/L	98
4) Vinyl Chloride	3.84	62	968312	103.4979 ug/L	95
5) 1,3-Butadiene	3.88	54	896569	120.4972 ug/L	95
6) Bromomethane	4.73	94	605228	129.8677 ug/L	99
7) Chloroethane	4.89	64	528153	103.4126 ug/L	90
8) Trichlorofluoromethane	5.37	101	1782726	101.4754 ug/L	99
9) Diethyl ether	5.90	59	828091	197.4770 ug/L	79
10) Isoprene	5.94	67	1080684	101.8037 ug/L	78
11) Acrolein	6.14	56	38655	109.5572 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	833546	101.0906 ug/L	97
13) Acetone	6.24	43	97515	109.1944 ug/L	100
14) 1,1-Dichloroethene	6.46	61	1323999	100.6729 ug/L	93
15) Tert-Butyl Alcohol	6.57	59	114220	387.5328 ug/L	91
16) Dimethyl Sulfide	6.73	62	489571	106.5996 ug/L	82
17) Iodomethane	6.99	142	416890	244.5557 ug/L	97
18) Methyl acetate	7.00	43	252444	104.3161 ug/L #	81
19) Methylene Chloride	7.24	84	827241	98.5346 ug/L	53
20) Carbon Disulfide	7.29	76	2766110	99.3432 ug/L	100
21) Acrylonitrile	7.43	53	126153	113.2272 ug/L	98
22) Methyl Tert Butyl Ether	7.46	73	1894494	105.8643 ug/L	87
23) trans-1,2-Dichloroethene	7.70	61	1203701	99.1822 ug/L	93
24) n-Hexane	7.78	57	926226	105.3097 ug/L	84
25) Diisopropyl ether	8.12	45	3699807	196.0386 ug/L #	90
26) Vinyl Acetate	8.29	43	860820	101.8643 ug/L #	88
27) 1,1-Dichloroethane	8.32	63	1521237	101.5567 ug/L	96
28) Ethyl-Tert-Butyl ether	8.70	59	4005676	198.2271 ug/L	89
29) 2-Butanone	8.88	43	145126	112.6698 ug/L #	81
30) Propionitrile	8.98	54	83038	219.1648 ug/L	97
31) 2,2-Dichloropropane	9.11	77	1610615	102.0557 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	935490	99.9944 ug/L	89
33) Chloroform	9.37	83	1766988	98.8341 ug/L	98
34) 1-Bromopropane	9.51	122	139657	108.5299 ug/L	100
35) Bromochloromethane	9.61	130	488678	102.8480 ug/L	66
36) Tetrahydrofuran	9.63	42	167812	187.5699 ug/L #	61
38) 1,1,1-Trichloroethane	9.91	97	1724504	102.7713 ug/L	100
39) Cyclohexane	9.94	56	1185537	102.8628 ug/L #	66
40) 1,1-Dichloropropene	10.11	75	1293224	100.8377 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	3634806	198.1264 ug/L	88
42) Carbon Tetrachloride	10.25	117	1534696	103.3979 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412227.D 8260WT.M Fri May 13 17:14:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	1177876	103.7352	ug/L		85
46)	Benzene	10.46	78	3298928	95.8405	ug/L		87
47)	Trichloroethene	11.21	130	903490	101.9036	ug/L		97
48)	Methylcyclohexane	11.30	83	1389528	104.6454	ug/L		83
49)	1,2-Dichloropropane	11.43	63	755128	102.5297	ug/L		73
50)	Bromodichloromethane	11.73	83	1351612	104.6036	ug/L		99
51)	1,4-Dioxane	11.72	88	16303	473.9624	ug/L		68
52)	Dibromomethane	11.81	93	445130	101.6543	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.02	63	333977	105.4228	ug/L		92
54)	4-Methyl-2-Pentanone	12.05	58	138980	110.1494	ug/L	#	77
55)	cis-1,3-Dichloropropene	12.36	75	1387475	105.9136	ug/L		100
56)	Dimethyl Disulfide	12.62	79	745504	111.3169	ug/L		97
59)	Toluene	12.78	91	3455614	95.2346	ug/L		99
60)	Ethyl Methacrylate	12.88	69	731009	113.5760	ug/L		70
62)	trans-1,3-Dichloropropene	12.96	75	1236182	107.9445	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	564076	103.0604	ug/L		99
64)	2-Hexanone	13.12	58	126268	114.5366	ug/L	#	79
65)	1,3-Dichloropropane	13.48	76	1021082	105.2672	ug/L		74
66)	Tetrachloroethene	13.60	164	752835	101.4023	ug/L		95
67)	Dibromochloromethane	13.87	129	856499	109.6525	ug/L		100
68)	1,2-Dibromoethane	14.12	107	577701	107.6426	ug/L		98
69)	1-Chlorohexane	14.21	91	1222720	103.0385	ug/L		82
70)	Chlorobenzene	14.62	112	2332247	97.2408	ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	947925	106.1463	ug/L		99
72)	Ethylbenzene	14.66	106	1275519	98.8771	ug/L		97
73)	m-,p-Xylene	14.75	106	3009424	194.2602	ug/L		98
74)	o-Xylene	15.31	106	1490638	100.8068	ug/L		93
75)	Styrene	15.35	104	2503721	102.8373	ug/L		88
76)	Bromoform	15.83	173	517827	114.0520	ug/L		100
77)	Isopropylbenzene	15.73	105	3913141	95.4433	ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	624965	106.8610	ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	192087	107.3268	ug/L		97
82)	trans-1,4-Dichloro-2-Buten	16.18	53	189214	128.4818	ug/L	#	59
83)	n-Propylbenzene	16.24	91	4599057	93.6644	ug/L		100
84)	Bromobenzene	16.37	156	968011	102.1426	ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	3401719	97.9556	ug/L		97
86)	2-Chlorotoluene	16.52	91	3177047	93.8267	ug/L		98
87)	4-Chlorotoluene	16.56	91	2899171	96.0712	ug/L		96
88)	a-Methylstyrene	16.84	118	1639166	103.6811	ug/L		90
89)	tert-Butylbenzene	16.90	134	654025	99.4199	ug/L		85
90)	1,2,4-Trimethylbenzene	16.95	105	3479295	96.7054	ug/L		97
91)	sec-Butylbenzene	17.17	105	3947832	94.2785	ug/L		98
92)	p-Isopropyltoluene	17.32	119	3328450	94.4148	ug/L		97
93)	1,3-Dichlorobenzene	17.52	146	1834740	98.9074	ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	1818309	96.6271	ug/L		92
95)	n-Butylbenzene	17.85	91	3308330	94.4002	ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	1606254	97.0179	ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	125368	107.7020	ug/L		87
98)	1,2,4-Trichlorobenzene	20.28	180	1227926	100.7076	ug/L		99
99)	Hexachlorobutadiene	20.43	225	569213	100.5231	ug/L		97
100)	Naphthalene	20.65	128	1852486	101.2968	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	1021163	98.5794	ug/L		100

(#) = qualifier out of range (m) = manual integration
8M412227.D 8260WT.M Fri May 13 17:14:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration

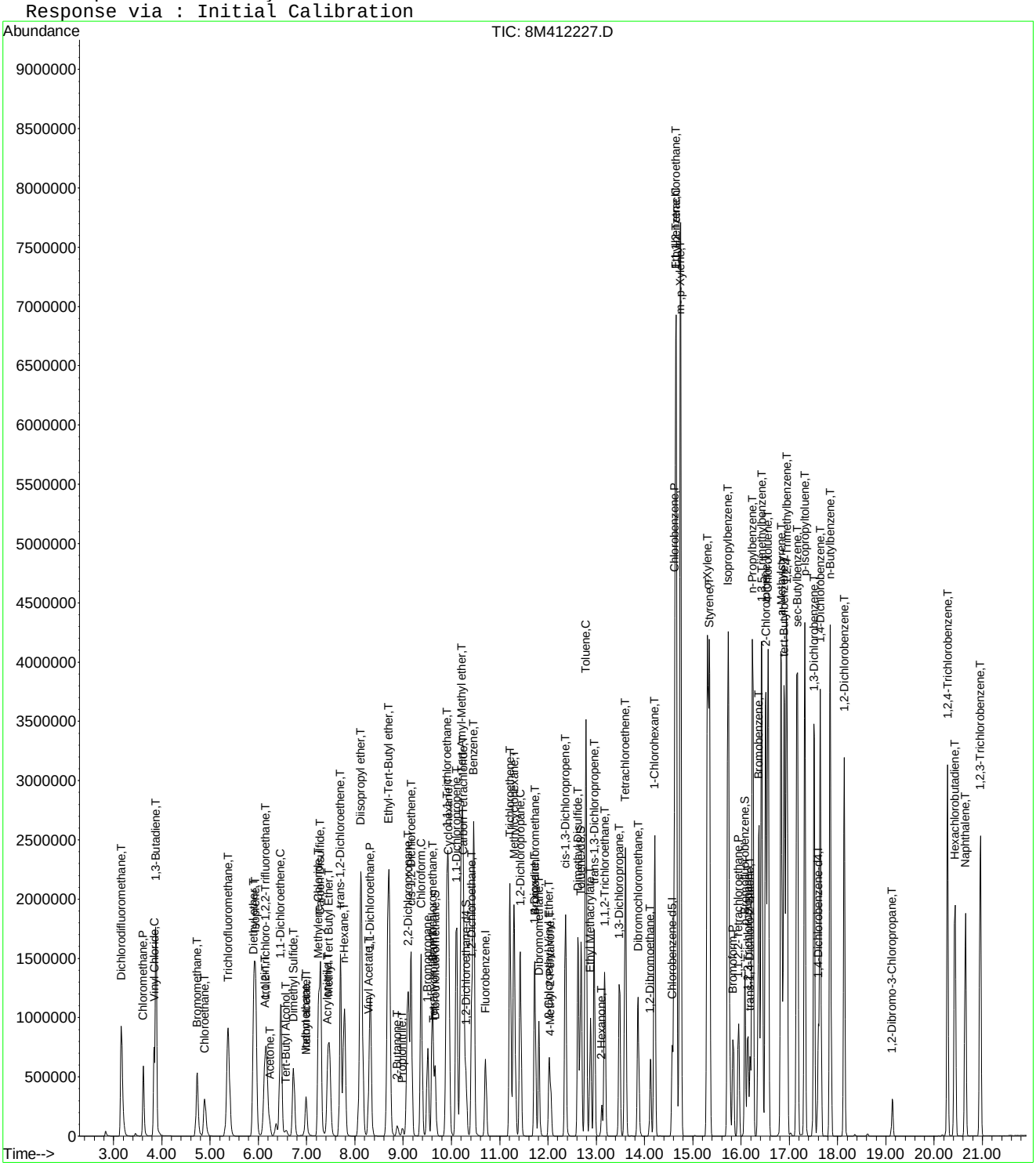

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	828540	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	578848	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	301401	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	898145	101.4517 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 405.80%#		
43) 1,2-Dichloroethane-d4	10.30	65	939848	98.0779 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 392.32%#		
58) Toluene-d8	12.68	98	2984162	97.8805 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 391.52%#		
80) p-Bromofluorobenzene	16.08	95	1242720	99.7023 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 398.80%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	2830517	203.5621 ug/L	98
3) Chloromethane	3.62	50	1586058	194.4056 ug/L	97
4) Vinyl Chloride	3.83	62	1935009	201.0738 ug/L	94
5) 1,3-Butadiene	3.88	54	1684964	212.5477 ug/L	94
6) Bromomethane	4.72	94	1358068	271.2231 ug/L	99
7) Chloroethane	4.89	64	1084803	206.5255 ug/L	90
8) Trichlorofluoromethane	5.37	101	3516760	195.1756 ug/L	99
10) Isoprene	5.94	67	2136665	196.1573 ug/L	78
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1662142	196.5993 ug/L	95
13) Acetone	6.24	43	187748	200.7963 ug/L	97
14) 1,1-Dichloroethene	6.46	61	2649821	196.6732 ug/L	92
15) Tert-Butyl Alcohol	6.58	59	6024	20.0950 ug/L #	87
16) Dimethyl Sulfide	6.73	62	976862	205.8822 ug/L	82
17) Iodomethane	6.99	142	896947	398.7987 ug/L	100
18) Methyl acetate	7.00	43	504293	201.4324 ug/L #	81
19) Methylene Chloride	7.25	84	1684780	196.5546 ug/L	52
20) Carbon Disulfide	7.29	76	5386210	189.2120 ug/L	99
21) Acrylonitrile	7.45	53	30354	26.0447 ug/L #	32
22) Methyl Tert Butyl Ether	7.46	73	3711011	200.6529 ug/L	87
23) trans-1,2-Dichloroethene	7.70	61	2410498	194.2902 ug/L	92
24) n-Hexane	7.78	57	1821777	199.7288 ug/L	84
26) Vinyl Acetate	8.29	43	1796217	206.9060 ug/L #	88
27) 1,1-Dichloroethane	8.32	63	3042055	197.9863 ug/L	95
29) 2-Butanone	8.88	43	271767	199.8193 ug/L #	77
30) Propionitrile	8.90	54	208	0.5280 ug/L #	1
31) 2,2-Dichloropropane	9.11	77	3202633	197.6970 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	1875631	195.8883 ug/L	89
33) Chloroform	9.37	83	3506648	191.9199 ug/L	99
34) 1-Bromopropane	9.51	122	286158	214.2313 ug/L	99
35) Bromochloromethane	9.60	130	980373	200.7807 ug/L	66
36) Tetrahydrofuran	9.62	42	2381	2.6275 ug/L	87
38) 1,1,1-Trichloroethane	9.91	97	3410306	197.7909 ug/L	99
39) Cyclohexane	9.94	56	2357393	198.8974 ug/L #	66
40) 1,1-Dichloropropene	10.10	75	2601175	197.8946 ug/L	96
42) Carbon Tetrachloride	10.25	117	3062767	200.6417 ug/L	99
45) 1,2-Dichloroethane	10.42	62	2313662	198.0324 ug/L	85
46) Benzene	10.46	78	6379817	182.1771 ug/L	89
47) Trichloroethene	11.21	130	1810459	198.9741 ug/L	97
48) Methylcyclohexane	11.30	83	2755373	200.4193 ug/L	83
49) 1,2-Dichloropropane	11.43	63	1528407	202.0331 ug/L	74

(#) = qualifier out of range (m) = manual integration
8M412228.D 8260WT.M Fri May 13 17:43:34 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
50)	Bromodichloromethane	11.73	83	2716764	204.0895 ug/L		99
51)	1,4-Dioxane	11.73	88	3865	104.9352 ug/L	#	18
52)	Dibromomethane	11.81	93	898971	200.1154 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.02	63	631656	192.7236 ug/L		90
54)	4-Methyl-2-Pentanone	12.05	58	262702	198.3957 ug/L	#	75
55)	cis-1,3-Dichloropropene	12.36	75	2784162	205.9153 ug/L		99
56)	Dimethyl Disulfide	12.62	79	1518705	215.4711 ug/L		95
59)	Toluene	12.78	91	6564353	175.9274 ug/L		96
60)	Ethyl Methacrylate	12.88	69	1429837	209.8161 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	2468609	205.4771 ug/L		98
63)	1,1,2-Trichloroethane	13.18	97	1124672	197.6019 ug/L		100
64)	2-Hexanone	13.12	58	237678	200.9290 ug/L	#	81
65)	1,3-Dichloropropane	13.48	76	2023247	199.9545 ug/L		76
66)	Tetrachloroethene	13.60	164	1546618	200.8018 ug/L		97
67)	Dibromochloromethane	13.87	129	1726523	210.5823 ug/L		100
68)	1,2-Dibromoethane	14.12	107	1163160	207.0667 ug/L		99
69)	1-Chlorohexane	14.21	91	2414147	195.6413 ug/L		83
70)	Chlorobenzene	14.62	112	4641169	187.6386 ug/L		94
71)	1,1,1,2-Tetrachloroethane	14.66	131	1929251	206.8372 ug/L		99
72)	Ethylbenzene	14.66	106	2611321	195.8267 ug/L		88
73)	m-,p-Xylene	14.75	106	5876234	367.8657 ug/L		83
74)	o-Xylene	15.31	106	3012318	196.4899 ug/L		98
75)	Styrene	15.35	104	4913204	194.1235 ug/L		86
76)	Bromoform	15.83	173	1052629	218.7989 ug/L		100
77)	Isopropylbenzene	15.73	105	7284624	172.7305 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	1237171	205.8673 ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	386738	209.7906 ug/L	#	54
82)	trans-1,4-Dichloro-2-Buten	16.19	53	382467	243.6526 ug/L		76
83)	n-Propylbenzene	16.24	91	8244387	166.5110 ug/L		93
84)	Bromobenzene	16.37	156	1935166	200.1305 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	6482975	183.9948 ug/L		98
86)	2-Chlorotoluene	16.52	91	6108308	178.8549 ug/L		99
87)	4-Chlorotoluene	16.56	91	5513221	180.5508 ug/L		99
88)	a-Methylstyrene	16.84	118	3255254	200.4995 ug/L		89
89)	tert-Butylbenzene	16.90	134	1351569	202.1005 ug/L		92
90)	1,2,4-Trimethylbenzene	16.95	105	6531416	179.2445 ug/L		97
91)	sec-Butylbenzene	17.17	105	7342730	173.9814 ug/L		97
92)	p-Isopropyltoluene	17.32	119	6352010	178.7315 ug/L		99
93)	1,3-Dichlorobenzene	17.52	146	3640547	193.1654 ug/L		90
94)	1,4-Dichlorobenzene	17.64	146	3593548	188.4603 ug/L		91
95)	n-Butylbenzene	17.85	91	6198060	175.4375 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	3171699	188.9651 ug/L		89
97)	1,2-Dibromo-3-Chloropropan	19.13	75	249646	207.5645 ug/L		88
98)	1,2,4-Trichlorobenzene	20.28	180	2480626	199.7296 ug/L		99
99)	Hexachlorobutadiene	20.43	225	1169411	202.7981 ug/L		98
100)	Naphthalene	20.65	128	3580198	192.0323 ug/L		97
101)	1,2,3-Trichlorobenzene	20.96	180	2040570	193.9298 ug/L		100

(#) = qualifier out of range (m) = manual integration
8M412228.D 8260WT.M Fri May 13 17:43:35 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration

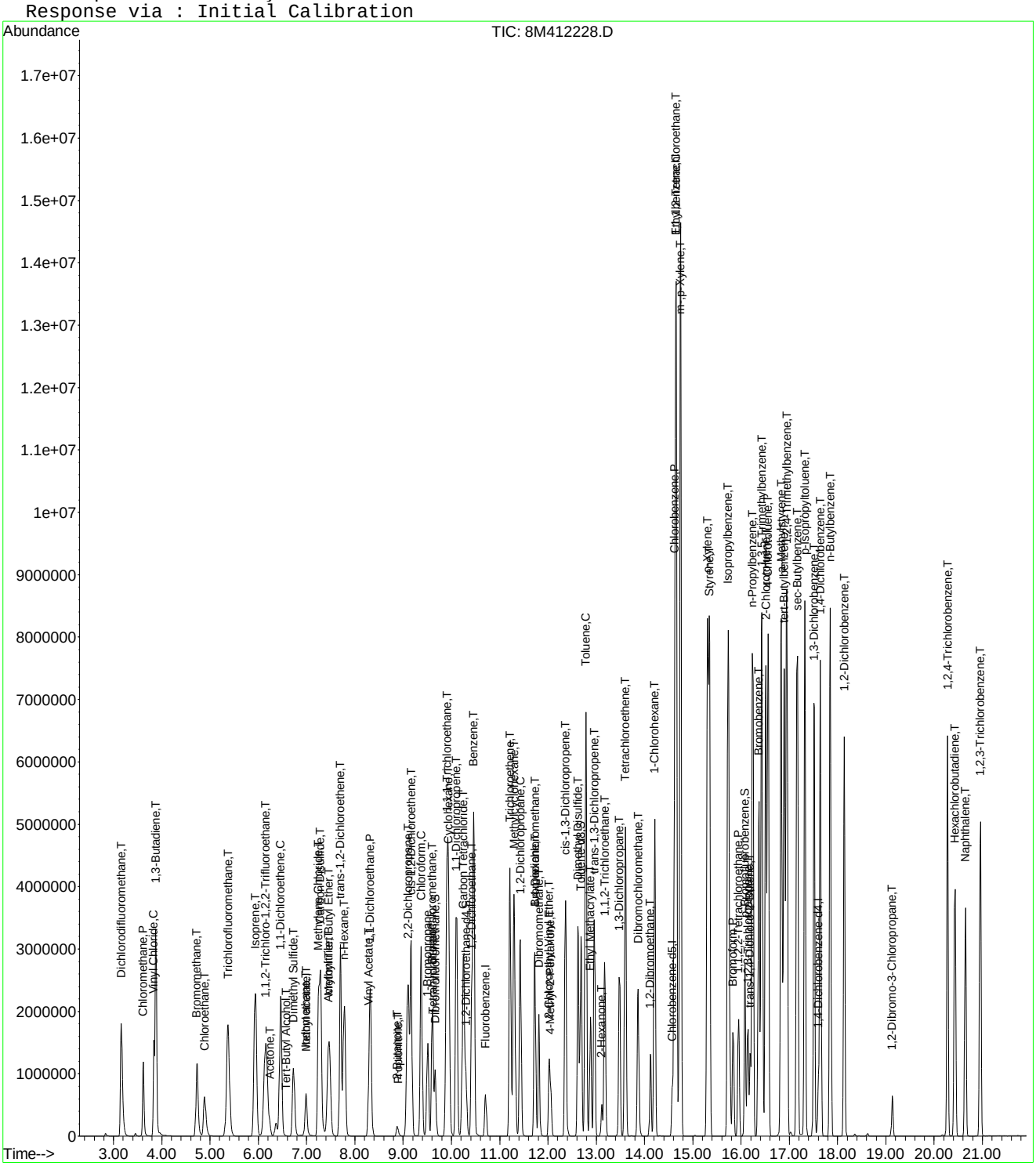

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	855409	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	599314	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	305726	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	1411837	154.4674 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 617.88%#		
43) 1,2-Dichloroethane-d4	10.30	65	1466019	148.1811 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 592.72%#		
58) Toluene-d8	12.69	98	4594713	145.5601 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 582.24%#		
80) p-Bromofluorobenzene	16.08	95	1918996	151.7813 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 607.12%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	4191932	292.0014 ug/L	97
3) Chloromethane	3.62	50	2474035	293.7212 ug/L	97
4) Vinyl Chloride	3.83	62	2956347	297.5552 ug/L	94
5) 1,3-Butadiene	3.87	54	2605506	318.3447 ug/L	94
6) Bromomethane	4.72	94	2177550	421.2239 ug/L	98
7) Chloroethane	4.89	64	1688005	311.2693 ug/L	90
8) Trichlorofluoromethane	5.37	101	5387662	289.6161 ug/L	99
9) Diethyl ether	5.90	59	1306432	295.4610 ug/L	80
10) Isoprene	5.93	67	3377164	300.3032 ug/L	78
11) Acrolein	6.14	56	70572	185.7401 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	2563878	293.7317 ug/L	94
13) Acetone	6.24	43	283185	293.3529 ug/L	90
14) 1,1-Dichloroethene	6.46	61	4031745	289.8421 ug/L	91
15) Tert-Butyl Alcohol	6.58	59	181796	587.3907 ug/L	90
16) Dimethyl Sulfide	6.73	62	1553493	317.1280 ug/L	81
17) Iodomethane	6.99	142	1347307	580.2206 ug/L	98
18) Methyl acetate	7.00	43	800046	309.5287 ug/L #	80
19) Methylene Chloride	7.24	84	2587731	292.4144 ug/L	52
20) Carbon Disulfide	7.29	76	8228181	279.9683 ug/L	98
21) Acrylonitrile	7.43	53	228227	189.6753 ug/L	94
22) Methyl Tert Butyl Ether	7.46	73	5605924	293.5892 ug/L	88
23) trans-1,2-Dichloroethene	7.70	61	3678699	287.1957 ug/L	92
24) n-Hexane	7.78	57	2863434	304.0691 ug/L	86
25) Diisopropyl ether	8.12	45	5819647	292.7898 ug/L #	89
26) Vinyl Acetate	8.30	43	2819503	314.5767 ug/L #	87
27) 1,1-Dichloroethane	8.32	63	4586531	289.1293 ug/L	94
28) Ethyl-Tert-Butyl ether	8.70	59	6190206	290.3321 ug/L	89
29) 2-Butanone	8.88	43	439359	312.8959 ug/L #	76
30) Propionitrile	8.99	54	133197	327.4673 ug/L	95
31) 2,2-Dichloropropane	9.10	77	4821388	288.2735 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	2847005	287.9976 ug/L	89
33) Chloroform	9.37	83	5197860	275.5447 ug/L	100
34) 1-Bromopropane	9.51	122	450012	326.3179 ug/L	100
35) Bromochloromethane	9.61	130	1490221	295.6112 ug/L	66
36) Tetrahydrofuran	9.63	42	271736	290.4491 ug/L #	62
38) 1,1,1-Trichloroethane	9.91	97	5126354	287.9792 ug/L	98
39) Cyclohexane	9.94	56	3733392	305.0987 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	3923871	289.1471 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	5639573	291.3713 ug/L	88
42) Carbon Tetrachloride	10.25	117	4598150	291.7629 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412229.D 8260WT.M Fri May 13 18:12:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.43	62	3468738	287.5726 ug/L	86
46)	Benzene	10.46	78	9065861	250.7462 ug/L	93
47)	Trichloroethene	11.21	130	2772282	295.1106 ug/L	97
48)	Methylcyclohexane	11.30	83	4327357	304.8748 ug/L	84
49)	1,2-Dichloropropane	11.43	63	2350729	300.9718 ug/L	74
50)	Bromodichloromethane	11.73	83	4051493	294.7973 ug/L	99
51)	1,4-Dioxane	11.72	88	26614	699.8767 ug/L	67
52)	Dibromomethane	11.81	93	1369945	295.3776 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.03	63	1006317	297.3917 ug/L	90
54)	4-Methyl-2-Pentanone	12.06	58	424684	310.6522 ug/L #	76
55)	cis-1,3-Dichloropropene	12.36	75	4156310	297.7431 ug/L	97
56)	Dimethyl Disulfide	12.63	79	2359825	324.2911 ug/L	94
59)	Toluene	12.78	91	9135213	236.4669 ug/L	90
60)	Ethyl Methacrylate	12.88	69	2228037	315.7801 ug/L	71
62)	trans-1,3-Dichloropropene	12.96	75	3700845	297.5240 ug/L	96
63)	1,1,2-Trichloroethane	13.18	97	1730199	293.6104 ug/L	100
64)	2-Hexanone	13.11	58	381967	311.8816 ug/L #	78
65)	1,3-Dichloropropane	13.49	76	3080177	294.0141 ug/L	76
66)	Tetrachloroethene	13.60	164	2374435	297.7522 ug/L	96
67)	Dibromochloromethane	13.87	129	2638145	310.7838 ug/L	100
68)	1,2-Dibromoethane	14.13	107	1778561	305.8085 ug/L	99
69)	1-Chlorohexane	14.21	91	3712592	290.5924 ug/L	84
70)	Chlorobenzene	14.63	112	6754240	263.7433 ug/L	90
71)	1,1,1,2-Tetrachloroethane	14.65	131	2967650	307.3001 ug/L	100
72)	Ethylbenzene	14.65	106	4014412	290.7661 ug/L	70
73)	m-,p-Xylene	14.75	106	8357822	505.3514 ug/L	70
74)	o-Xylene	15.31	106	4530840	285.4488 ug/L	88
75)	Styrene	15.35	104	7050702	269.0641 ug/L	82
76)	Bromoform	15.84	173	1602587	321.7373 ug/L	99
77)	Isopropylbenzene	15.73	105	9900817	226.7477 ug/L	90
79)	1,1,2,2-Tetrachloroethane	15.95	83	1885953	309.3861 ug/L	98
81)	1,2,3-Trichloropropane	16.14	110	581198	310.8176 ug/L	61
82)	trans-1,4-Dichloro-2-Buten	16.18	53	589705	370.3601 ug/L	82
83)	n-Propylbenzene	16.25	91	10768378	214.4110 ug/L	86
84)	Bromobenzene	16.37	156	2947671	300.5290 ug/L	99
85)	1,3,5-Trimethylbenzene	16.43	105	8890651	248.7580 ug/L	92
86)	2-Chlorotoluene	16.51	91	7868844	227.1449 ug/L	92
87)	4-Chlorotoluene	16.57	91	7782731	251.2687 ug/L	93
88)	a-Methylstyrene	16.84	118	4955768	300.9205 ug/L	86
89)	tert-Butylbenzene	16.90	134	2046401	301.6701 ug/L	95
90)	1,2,4-Trimethylbenzene	16.95	105	8903769	240.8932 ug/L	89
91)	sec-Butylbenzene	17.17	105	9867862	230.5051 ug/L	91
92)	p-Isopropyltoluene	17.32	119	8738927	242.4155 ug/L	94
93)	1,3-Dichlorobenzene	17.52	146	5319954	278.2806 ug/L	87
94)	1,4-Dichlorobenzene	17.64	146	5248511	271.3593 ug/L	88
95)	n-Butylbenzene	17.85	91	8408157	234.6279 ug/L	92
96)	1,2-Dichlorobenzene	18.14	146	4717385	277.0787 ug/L	87
97)	1,2-Dibromo-3-Chloropropan	19.13	75	377070	309.0741 ug/L	91
98)	1,2,4-Trichlorobenzene	20.28	180	3677657	291.9206 ug/L	98
99)	Hexachlorobutadiene	20.43	225	1780695	304.4378 ug/L	96
100)	Naphthalene	20.65	128	5216751	275.8542 ug/L	95
101)	1,2,3-Trichlorobenzene	20.96	180	3064908	287.1593 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412229.D 8260WT.M Fri May 13 18:12:36 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration

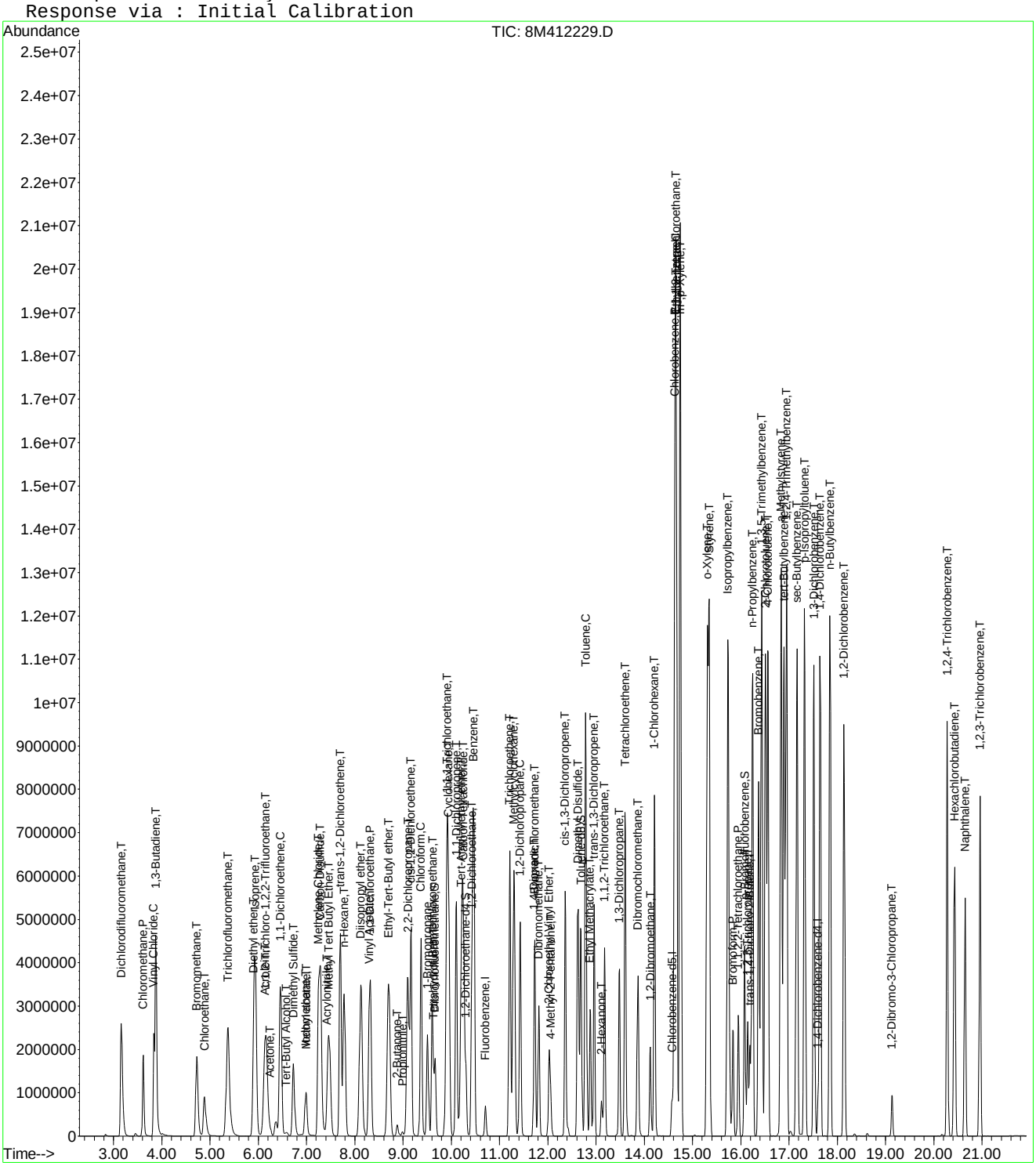

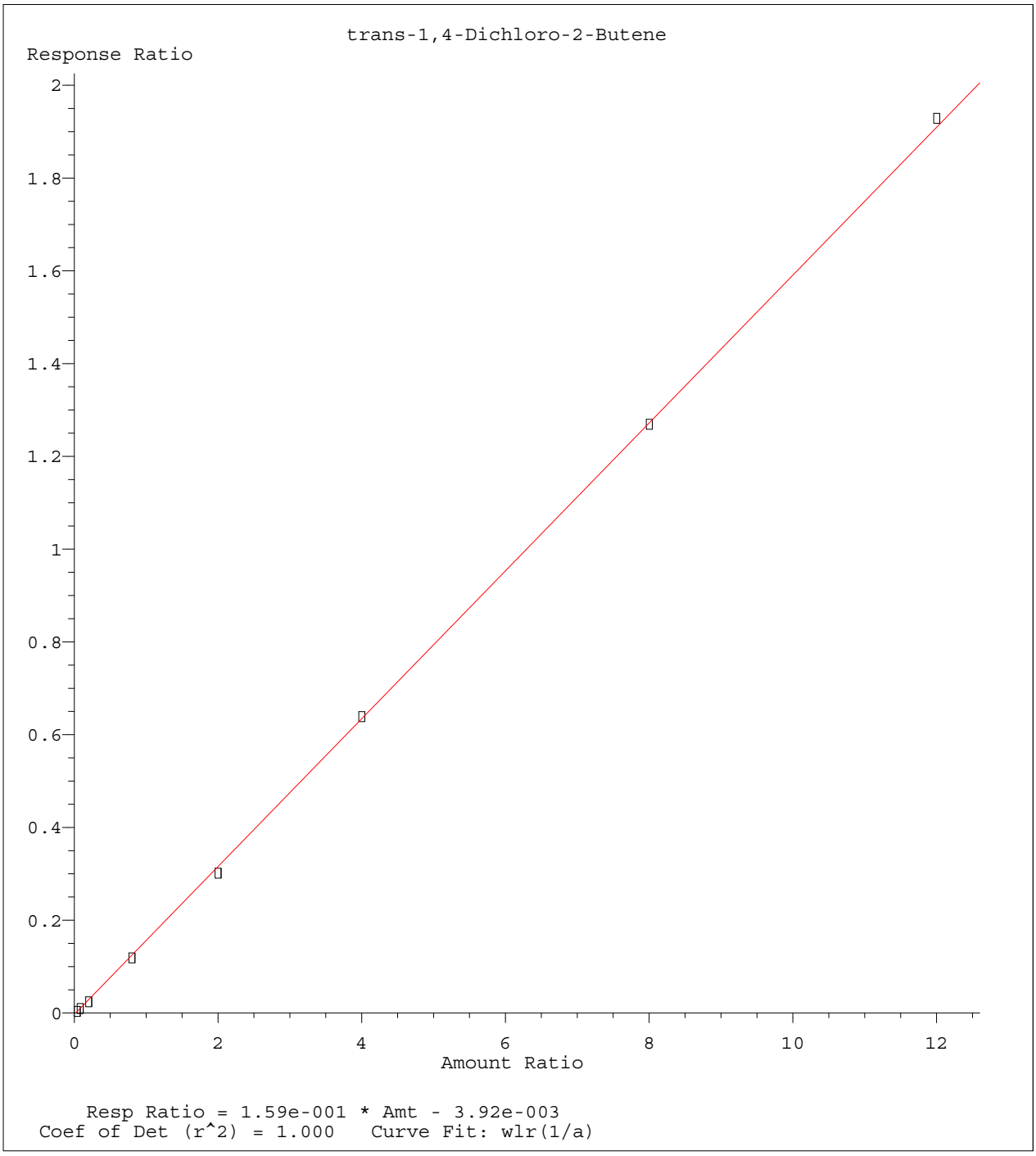

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

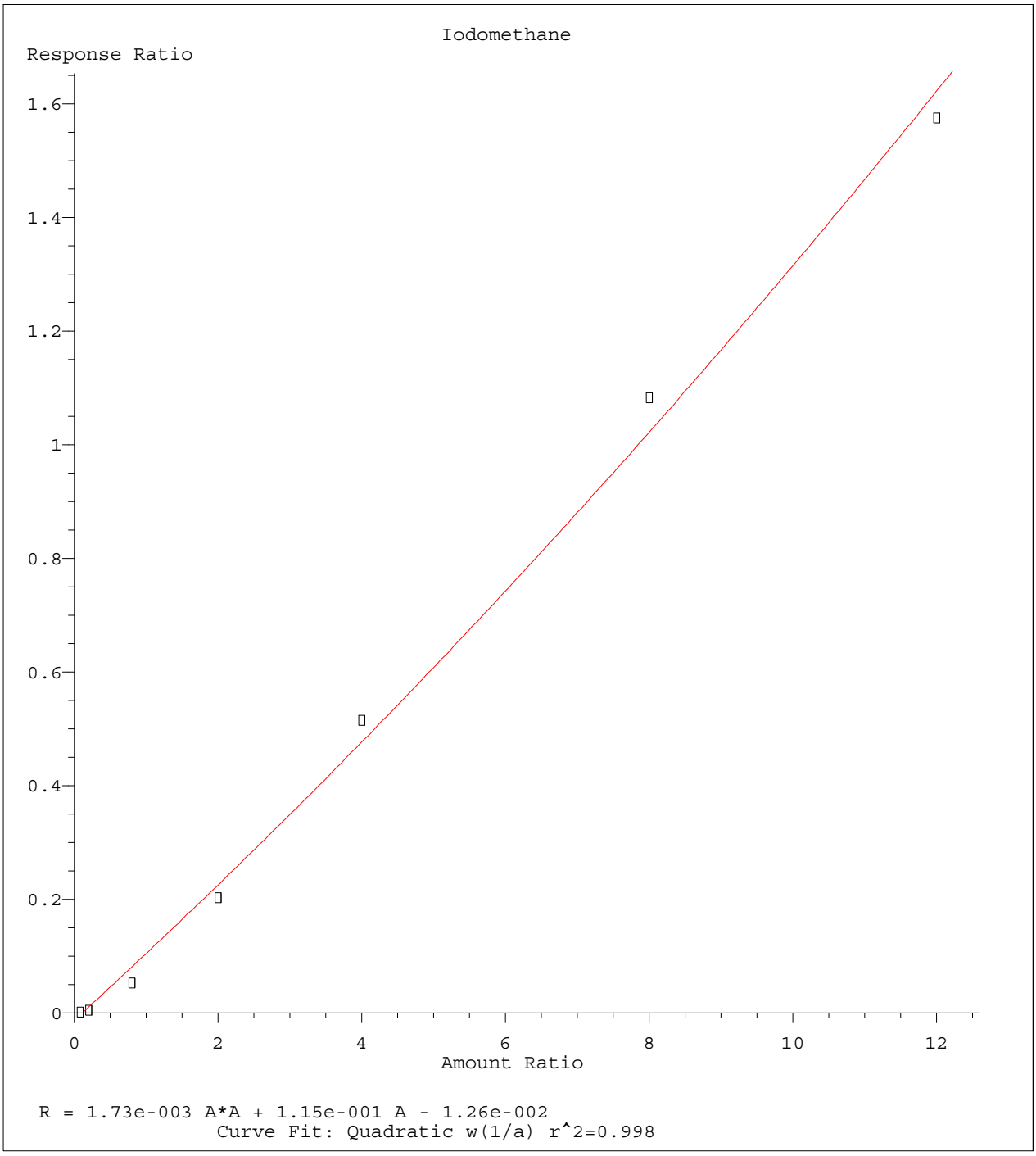

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

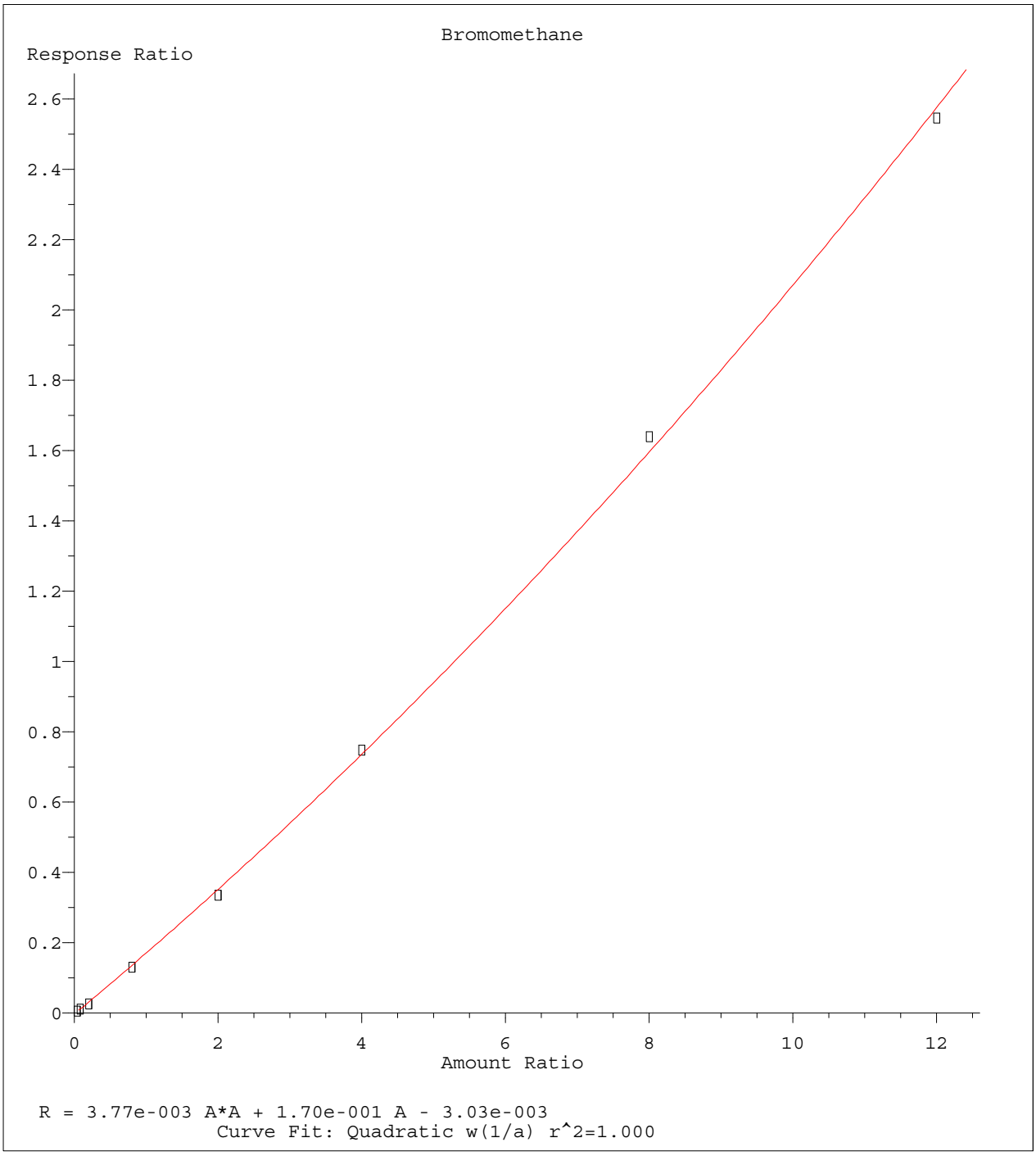

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:44:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Tue May 17 11:43:20 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	837879	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	574720	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	304324	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	229742	25.5204 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.08%		
43) 1,2-Dichloroethane-d4	10.31	65	238672	24.7259 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.92%		
58) Toluene-d8	12.68	98	776362	25.8115 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.24%		
80) p-Bromofluorobenzene	16.07	95	315683	25.0519 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.20%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	761591	54.2141 ug/L	99
3) Chloromethane	3.62	50	415589	50.6814 ug/L	100
4) Vinyl Chloride	3.84	62	509607	52.3810 ug/L	100
5) 1,3-Butadiene	3.88	54	347562	42.6002 ug/L	97
6) Bromomethane	4.73	94	272060	46.3924 ug/L	99
7) Chloroethane	4.88	64	285509	53.3336 ug/L	98
8) Trichlorofluoromethane	5.37	101	849580	46.9313 ug/L	100
9) Diethyl ether	5.90	59	451307	104.4282 ug/L	99
10) Isoprene	5.93	67	582863	53.0208 ug/L	99
11) Acrolein	6.13	56	38877	100.4722 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	419584	49.3091 ug/L	97
13) Acetone	6.23	43	54234	57.5310 ug/L	94
14) 1,1-Dichloroethene	6.46	61	622831	45.9700 ug/L	99
15) Tert-Butyl Alcohol	6.59	59	59797	197.9422 ug/L	97
16) Dimethyl Sulfide	6.73	62	351814	72.6234 ug/L	98
17) Iodomethane	6.99	142	92716	26.2832 ug/L	99
18) Methyl acetate	7.00	43	127540	50.0514 ug/L	98
19) Methylene Chloride	7.25	84	417642	48.4385 ug/L	99
20) Carbon Disulfide	7.29	76	1199899	42.3200 ug/L	100
21) Acrylonitrile	7.43	53	65324	53.4074 ug/L	93
22) Methyl Tert Butyl Ether	7.46	73	949572	50.8859 ug/L	97
23) trans-1,2-Dichloroethene	7.70	61	598296	48.0666 ug/L	99
24) n-Hexane	7.77	57	425106	45.9930 ug/L	99
25) Diisopropyl ether	8.13	45	2040382	105.1615 ug/L	98
26) Vinyl Acetate	8.29	43	415568	46.7802 ug/L	99
27) 1,1-Dichloroethane	8.32	63	721661	46.6846 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	2040020	98.1343 ug/L	99
29) 2-Butanone	8.88	43	73394	52.9905 ug/L	99
30) Propionitrile	8.98	54	42290	104.7756 ug/L	100
31) 2,2-Dichloropropane	9.10	77	780073	47.8861 ug/L	99
32) cis-1,2-Dichloroethene	9.16	96	470465	48.9162 ug/L	98
33) Chloroform	9.38	83	860252	47.1317 ug/L	100
34) 1-Bromopropane	9.51	122	98585	71.5615 ug/L	98
35) Bromochloromethane	9.60	130	234493	47.5456 ug/L	99
36) Tetrahydrofuran	9.62	42	86049	94.3281 ug/L	99
38) 1,1,1-Trichloroethane	9.90	97	825167	47.5949 ug/L	100
39) Cyclohexane	9.93	56	586721	48.8808 ug/L	97
40) 1,1-Dichloropropene	10.10	75	627217	47.4632 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1962875	103.9618 ug/L	99
42) Carbon Tetrachloride	10.24	117	711823	46.2363 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M412232.D 8260WT.M Tue May 17 11:44:38 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	108	0.00
2	T	Dichlorodifluoromethane	50.0000	54.2141	-8.4	112	0.00
3	P	Chloromethane	50.0000	50.6814	-1.4	111	0.00
4	C	Vinyl Chloride	50.0000	52.3811	-4.8	112	-0.01
5	T	1,3-Butadiene	50.0000	42.6002	14.8	89	0.00
6	T	Bromomethane	50.0000	46.3924	7.2	104	-0.01
7	T	Chloroethane	50.0000	53.3336	-6.7	117	-0.01
8	T	Trichlorofluoromethane	50.0000	46.9313	6.1	101	-0.01
9	T	Diethyl ether	100.0000	104.4282	-4.4	116	0.00
10	T	Isoprene	50.0000	53.0208	-6.0	117	0.00
11	T	Acrolein	50.0000	100.4722	-100.9#	220	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	49.3091	1.4	108	0.00
13	T	Acetone	50.0000	57.5310	-15.1	118	-0.01
14	C	1,1-Dichloroethene	50.0000	45.9700	8.1	100	0.00
15	T	Tert-Butyl Alcohol	200.0000	197.9423	1.0	108	0.01
16	T	Dimethyl Sulfide	50.0000	72.6234	-45.2#	159	0.00
17	T	Iodomethane	50.0000	26.2832	47.4#	59	0.01
18	T	Methyl acetate	50.0000	50.0514	-0.1	111	0.00
19	T	Methylene Chloride	50.0000	48.4385	3.1	107	0.00
20	T	Carbon Disulfide	50.0000	42.3200	15.4	94	0.00
21	T	Acrylonitrile	50.0000	53.4074	-6.8	109	0.00
22	T	Methyl Tert Butyl Ether	50.0000	50.8859	-1.8	105	0.00
23	T	trans-1,2-Dichloroethene	50.0000	48.0666	3.9	105	0.00
24	T	n-Hexane	50.0000	45.9930	8.0	101	-0.01
25	T	Diisopropyl ether	100.0000	105.1615	-5.2	115	0.00
26	T	Vinyl Acetate	50.0000	46.7802	6.4	97	0.00
27	P	1,1-Dichloroethane	50.0000	46.6846	6.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.1343	1.9	104	0.00
29	T	2-Butanone	50.0000	52.9905	-6.0	110	0.00
30	T	Propionitrile	100.0000	104.7756	-4.8	111	0.00
31	T	2,2-Dichloropropane	50.0000	47.8861	4.2	102	0.00
32	T	cis-1,2-Dichloroethene	50.0000	48.9162	2.2	107	-0.01
33	C	Chloroform	50.0000	47.1317	5.7	102	0.00
34		1-Bromopropane	50.0000	71.5615	-43.1#	155	0.00
35	T	Bromochloromethane	50.0000	47.5456	4.9	102	0.00
36	T	Tetrahydrofuran	100.0000	94.3281	5.7	108	-0.01
37	S	Dibromofluoromethane	25.0000	25.5204	-2.1	109	0.00
38	T	1,1,1-Trichloroethane	50.0000	47.5949	4.8	101	0.00
39	T	Cyclohexane	50.0000	48.8808	2.2	109	0.00
40	T	1,1-Dichloropropene	50.0000	47.4632	5.1	102	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	103.9618	-4.0	111	0.00
42	T	Carbon Tetrachloride	50.0000	46.2363	7.5	98	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.7259	1.1	104	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	49.0148	2.0	103	0.00
46	T	Benzene	50.0000	48.5232	3.0	104	0.00
47	T	Trichloroethene	50.0000	51.0658	-2.1	110	0.00
48	T	Methylcyclohexane	50.0000	49.8573	0.3	109	0.00
49	C	1,2-Dichloropropane	50.0000	50.9747	-1.9	111	0.00
50	T	Bromodichloromethane	50.0000	48.3053	3.4	99	0.00
51	T	1,4-Dioxane	200.0000	216.9538	-8.5	110	0.01
52	T	Dibromomethane	50.0000	45.8126	8.4	99	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	51.2623	-2.5	104	0.00
54	T	4-Methyl-2-Pentanone	50.0000	51.8715	-3.7	107	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.8979	-7.8	111	0.00
56	T	Dimethyl Disulfide	50.0000	52.2714	-4.5	111	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	107	0.00
58	S	Toluene-d8	25.0000	25.8115	-3.2	108	0.00
59	C	Toluene	50.0000	49.0912	1.8	105	0.00
60	T	Ethyl Methacrylate	50.0000	55.9509	-11.9	113	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	50.6740	-1.3	102	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.0377	1.9	103	0.00
64	T	2-Hexanone	50.0000	53.6057	-7.2	112	0.00
65	T	1,3-Dichloropropane	50.0000	53.6720	-7.3	110	0.00
66	T	Tetrachloroethene	50.0000	47.8053	4.4	104	0.00
67	T	Dibromochloromethane	50.0000	49.6585	0.7	102	0.00
68	T	1,2-Dibromoethane	50.0000	51.1121	-2.2	105	0.00
69	T	1-Chlorohexane	50.0000	51.0611	-2.1	111	0.00
70	P	Chlorobenzene	50.0000	50.1844	-0.4	108	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	49.3793	1.2	103	0.00
72	C	Ethylbenzene	50.0000	48.2013	3.6	105	0.00
73	T	m-,p-Xylene	100.0000	101.1341	-1.1	108	0.00
74	T	o-Xylene	50.0000	50.5675	-1.1	108	0.00
75	T	Styrene	50.0000	51.5086	-3.0	105	0.00
76	P	Bromoform	50.0000	48.2227	3.6	99	0.00
77	T	Isopropylbenzene	50.0000	51.1140	-2.2	107	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	106	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	49.6172	0.8	103	0.00
80	S	p-Bromofluorobenzene	25.0000	25.0519	-0.2	108	0.00
81	T	1,2,3-Trichloropropane	50.0000	50.0849	-0.2	106	0.01
82	T	trans-1,4-Dichloro-2-Butene	50.0000	39.2043	21.6	86	0.00
83	T	n-Propylbenzene	50.0000	51.9237	-3.8	108	0.00
84	T	Bromobenzene	50.0000	49.4648	1.1	105	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	51.6344	-3.3	107	0.00
86	T	2-Chlorotoluene	50.0000	51.5639	-3.1	106	0.00
87	T	4-Chlorotoluene	50.0000	48.2650	3.5	108	0.00
88	T	a-Methylstyrene	50.0000	56.4132	-12.8	120	0.00
89	T	tert-Butylbenzene	50.0000	50.9494	-1.9	112	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	49.6617	0.7	105	0.00
91	T	sec-Butylbenzene	50.0000	51.3386	-2.7	108	0.00
92	T	p-Isopropyltoluene	50.0000	50.1261	-0.3	107	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.8943	-1.8	108	0.00
94	T	1,4-Dichlorobenzene	50.0000	50.4742	-0.9	110	0.00
95	T	n-Butylbenzene	50.0000	49.6520	0.7	105	0.00
96	T	1,2-Dichlorobenzene	50.0000	50.4907	-1.0	110	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	48.4851	3.0	100	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	50.1129	-0.2	107	0.00
99	T	Hexachlorobutadiene	50.0000	52.0919	-4.2	115	0.00
100	T	Naphthalene	50.0000	45.8047	8.4	95	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	47.7353	4.5	106	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412232.D 8260WT.M Sat May 14 18:09:03 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:21 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	709364	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	505399	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	272922	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	27428	100.2132 ug/L	99
3) 3-Chloro-1-propene	7.07	41	940418	104.3259 ug/L	82
4) 2-Chloro-1,3-butadiene	8.45	53	1188994	104.3183 ug/L	86
5) Ethyl Acetate	9.10	43	283167	104.3264 ug/L	95
6) Methacrylonitrile	9.25	67	155775	104.5365 ug/L #	63
7) Isobutyl Alcohol	9.25	43	17893	197.3629 ug/L #	96
9) Methyl methacrylate	11.42	41	298802	102.0346 ug/L	70
10) 2-Nitropropane	11.75	43	121321	95.8263 ug/L	97
13) Cyclohexanone	15.84	55	11401	102.1363 ug/L #	70

(#) = qualifier out of range (m) = manual integration
8M412321.D A9FOOWT.M Thu May 19 09:01:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

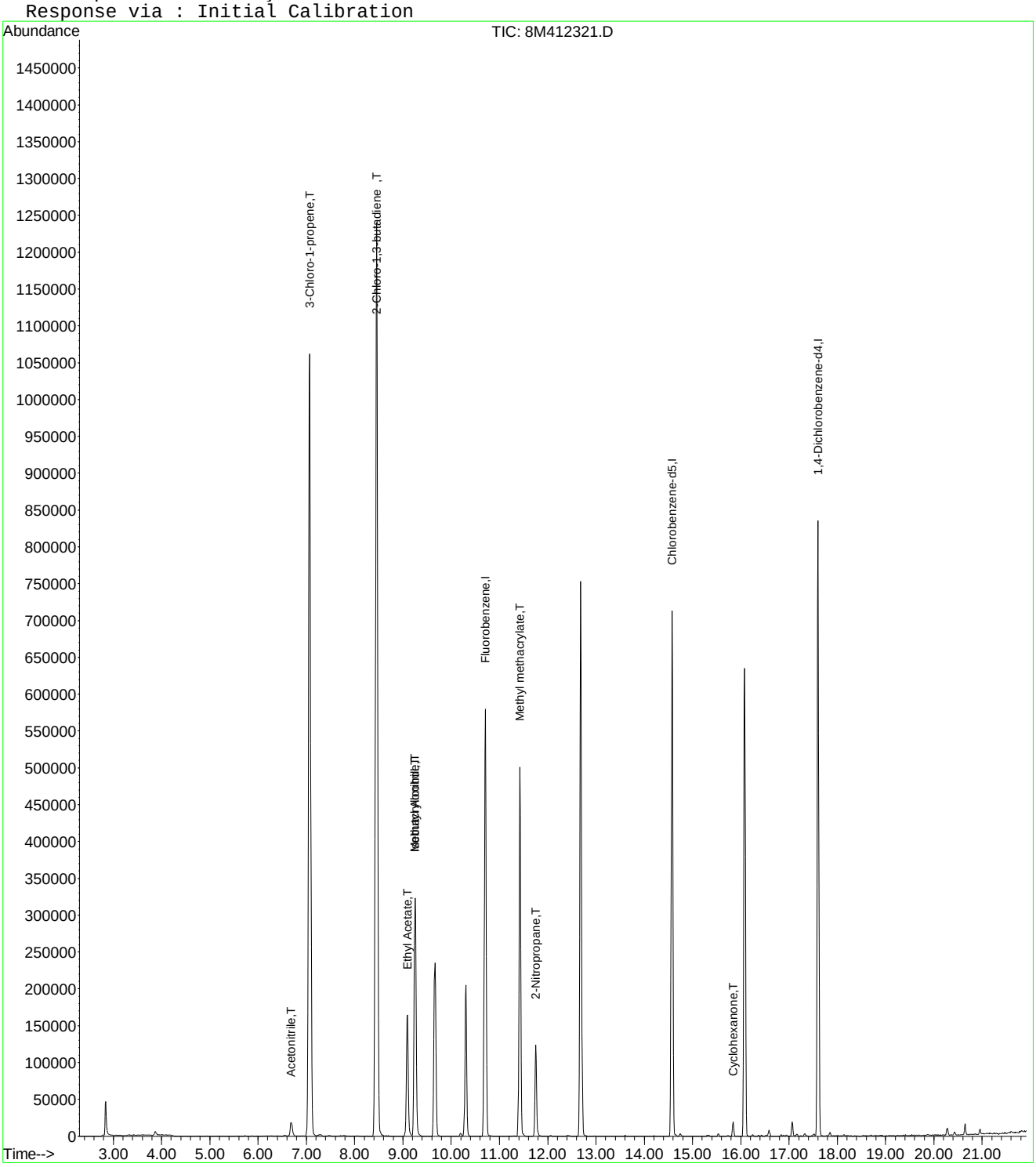

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	100.2132	-0.2	100	0.00
3	T	3-Chloro-1-propene	100.0000	104.3259	-4.3	100	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	104.3183	-4.3	100	0.00
5	T	Ethyl Acetate	100.0000	104.3264	-4.3	100	0.00
6	T	Methacrylonitrile	100.0000	104.5365	-4.5	100	0.00
7	T	Isobutyl Alcohol	200.0000	197.3629	1.3	100	-0.01
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.02
9	T	Methyl methacrylate	100.0000	102.0346	-2.0	100	0.00
10	T	2-Nitropropane	100.0000	95.8263	4.2	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	100.0000	102.1363	-2.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412321.D A9FOOWT.M Thu May 19 09:02:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:20:35 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	677339	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	488377	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	260939	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.69	41	13323	50.9795	ug/L	98
3) 3-Chloro-1-propene	7.07	41	453655	52.7060	ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	568765	52.2609	ug/L	87
5) Ethyl Acetate	9.09	43	131636	50.7913	ug/L	97
6) Methacrylonitrile	9.25	67	74064	52.0523	ug/L #	62
7) Isobutyl Alcohol	9.26	43	8483	97.9930	ug/L	95
9) Methyl methacrylate	11.42	41	143892	51.4593	ug/L	70
10) 2-Nitropropane	11.75	43	56559	46.7858	ug/L	95
13) Cyclohexanone	15.84	55	5225	48.9579	ug/L	83

(#) = qualifier out of range (m) = manual integration
8M412322.D A9FOOWT.M Thu May 19 09:20:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:19 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

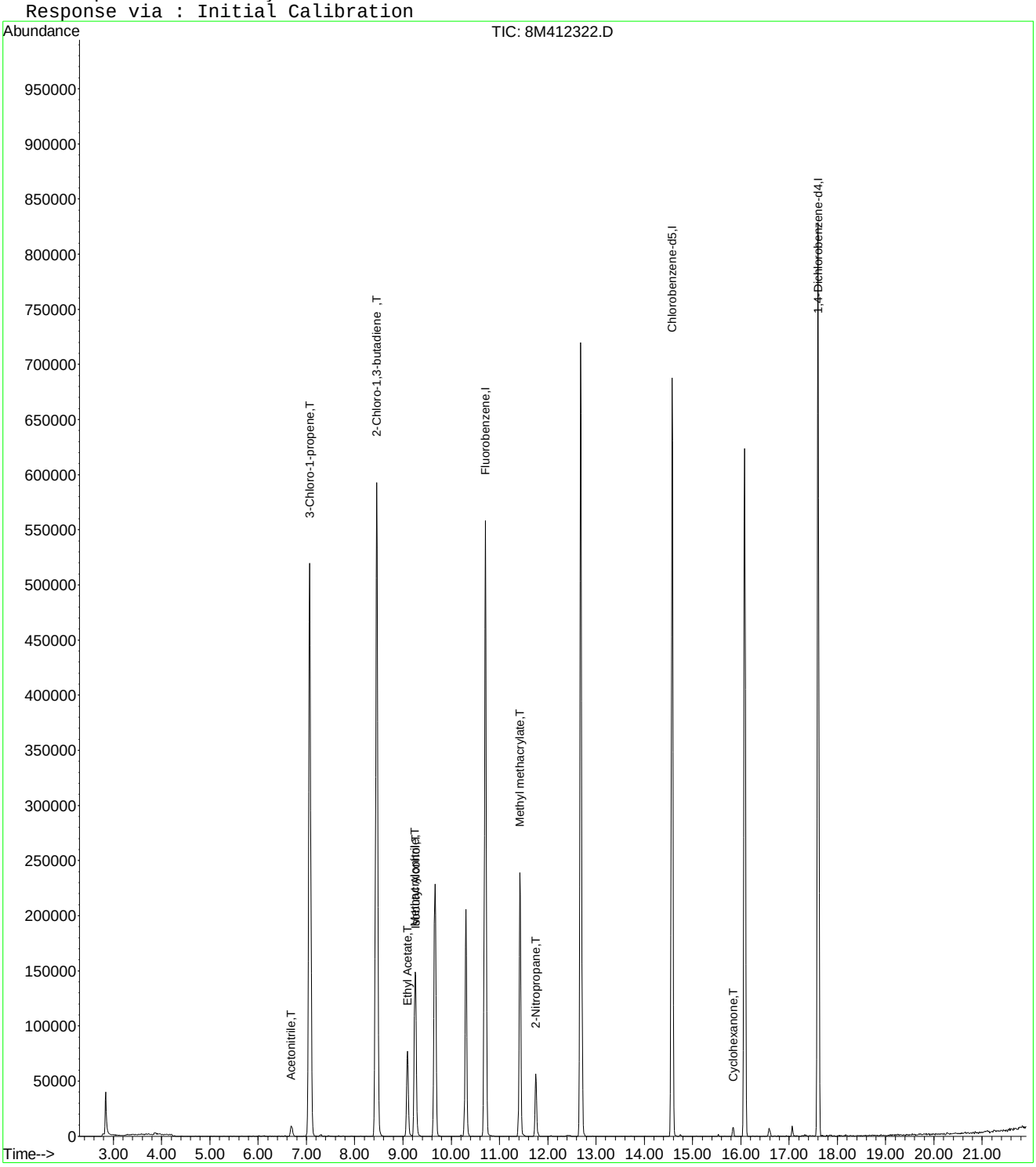

8M412322.D A9FOOWT.M Thu May 19 09:20:36 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	50.9795	-2.0	100	0.00
3	T	3-Chloro-1-propene	50.0000	52.7060	-5.4	100	0.00
4	T	2-Chloro-1,3-butadiene	50.0000	52.2609	-4.5	100	0.00
5	T	Ethyl Acetate	50.0000	50.7913	-1.6	100	0.00
6	T	Methacrylonitrile	50.0000	52.0523	-4.1	100	0.00
7	T	Isobutyl Alcohol	100.0000	97.9929	2.0	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.02
9	T	Methyl methacrylate	50.0000	51.4592	-2.9	100	0.00
10	T	2-Nitropropane	50.0000	46.7858	6.4	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	50.0000	48.9579	2.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412322.D A9FOOWT.M Thu May 19 09:02:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:22:33 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	652985	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	476539	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	256082	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	4873	19.3416 ug/L	80
3) 3-Chloro-1-propene	7.07	41	172467	20.7847 ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	219296	20.9015 ug/L	87
5) Ethyl Acetate	9.09	43	50385	20.1659 ug/L	100
6) Methacrylonitrile	9.26	67	28119	20.4992 ug/L #	63
7) Isobutyl Alcohol	9.27	43	2774	33.2395 ug/L #	8
9) Methyl methacrylate	11.42	41	55309	20.5176 ug/L	73
10) 2-Nitropropane	11.75	43	21584	18.5202 ug/L	99
13) Cyclohexanone	15.84	55	2230	21.2913 ug/L	87

(#) = qualifier out of range (m) = manual integration
8M412323.D A9FOOWT.M Thu May 19 09:22:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:21 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

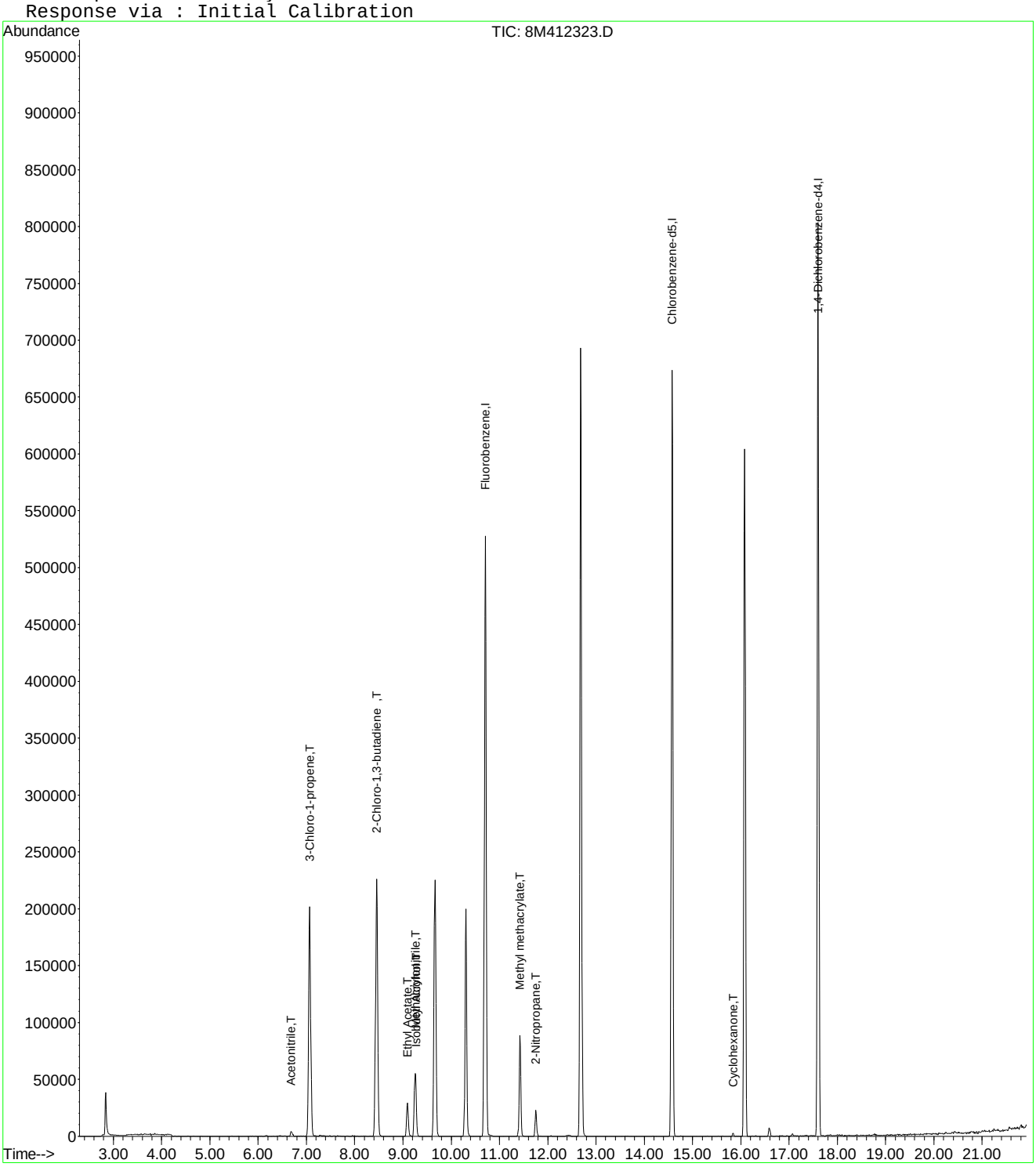

8M412323.D A9FOOWT.M Thu May 19 09:22:34 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	19.3416	3.3	100	0.00
3	T	3-Chloro-1-propene	20.0000	20.7847	-3.9	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	20.9015	-4.5	100	0.00
5	T	Ethyl Acetate	20.0000	20.1659	-0.8	100	0.00
6	T	Methacrylonitrile	20.0000	20.4992	-2.5	100	0.00
7	T	Isobutyl Alcohol	-1.0000	33.2395	0.0	0	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.18#
9	T	Methyl methacrylate	20.0000	20.5176	-2.6	100	0.00
10	T	2-Nitropropane	20.0000	18.5203	7.4	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	20.0000	21.2913	-6.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412323.D A9FOOWT.M Thu May 19 09:02:17 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:22:43 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	665645	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	483812	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	257678	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	405	1.5769 ug/L #	23
3) 3-Chloro-1-propene	7.07	41	40699	4.8115 ug/L	84
4) 2-Chloro-1,3-butadiene	8.45	53	48973	4.5789 ug/L	81
5) Ethyl Acetate	9.09	43	10675	4.1913 ug/L	95
6) Methacrylonitrile	9.26	67	5417	3.8740 ug/L #	72
7) Isobutyl Alcohol	9.27	43	441	5.1838 ug/L #	8
9) Methyl methacrylate	11.43	41	11811	4.2981 ug/L	65
10) 2-Nitropropane	11.76	43	4170	3.5100 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412324.D A9FOOWT.M Thu May 19 09:22:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:21 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

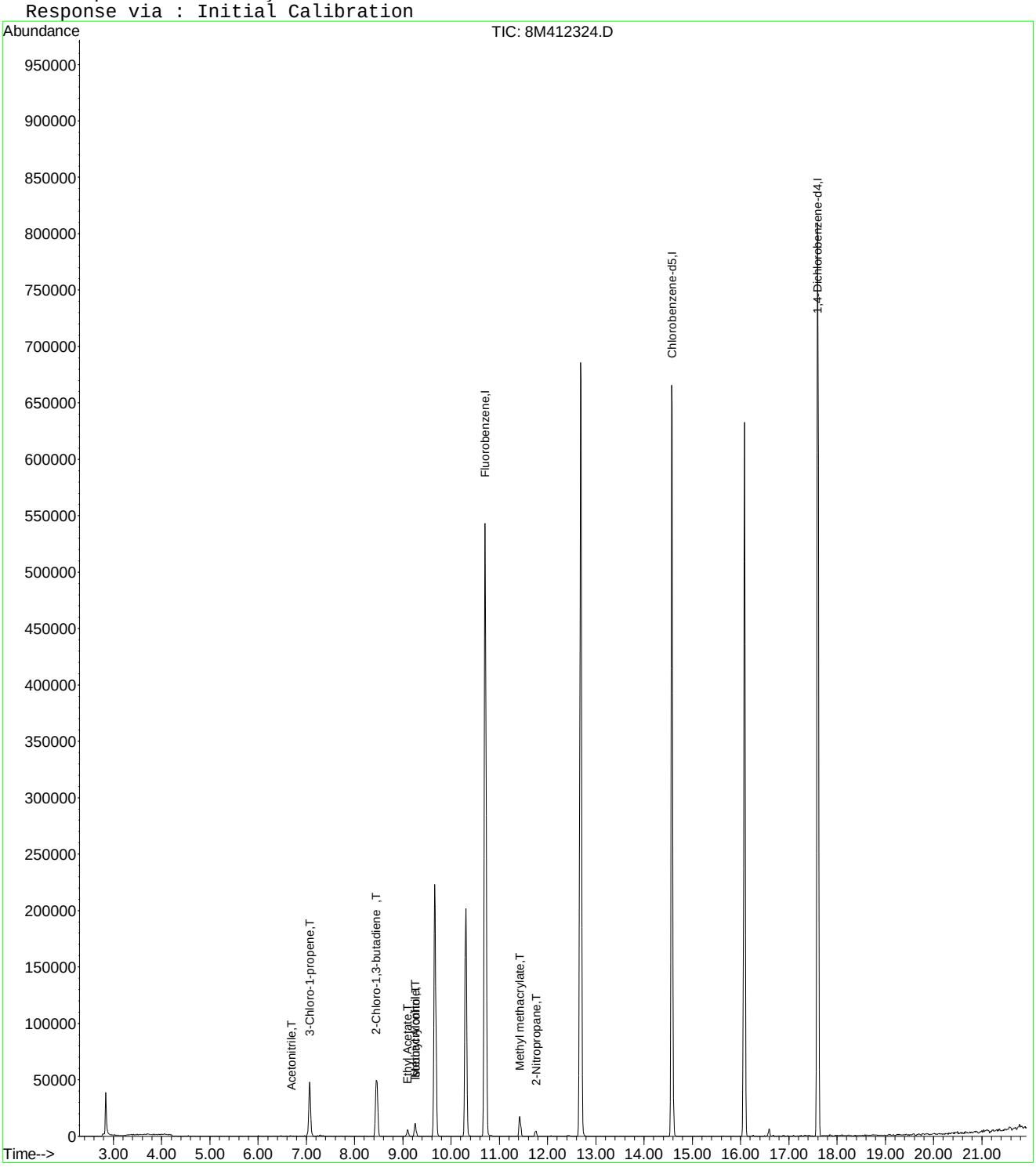

8M412324.D A9FOOWT.M Thu May 19 09:22:43 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	-1.0000	1.5769	0.0	0	0.00
3	T	3-Chloro-1-propene	5.0000	4.8115	3.8	100	0.00
4	T	2-Chloro-1,3-butadiene	5.0000	4.5789	8.4	100	0.00
5	T	Ethyl Acetate	5.0000	4.1913	16.2	100	0.00
6	T	Methacrylonitrile	5.0000	3.8740	22.5	100	0.00
7	T	Isobutyl Alcohol	-1.0000	5.1838	0.0	0	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.18#
9	T	Methyl methacrylate	5.0000	4.2981	14.0	100	0.00
10	T	2-Nitropropane	-1.0000	3.5100	0.0	0	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	0.0000	0.0	0	-15.84#

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412324.D A9FOOWT.M Thu May 19 09:02:03 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412325.D Vial: 7
Acq On : 17 May 2016 11:42 Operator: TMB
Sample : WG569079-06 200ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:27 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	682012	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	491515	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	261877	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.68	41	52022	197.6946 ug/L	97
3) 3-Chloro-1-propene	7.06	41	1768403	204.0468 ug/L	83
4) 2-Chloro-1,3-butadiene	8.46	53	2283706	208.4003 ug/L	87
5) Ethyl Acetate	9.09	43	537585	206.0040 ug/L	94
6) Methacrylonitrile	9.25	67	297408	207.5869 ug/L #	63
7) Isobutyl Alcohol	9.26	43	34441	395.1256 ug/L	95
9) Methyl methacrylate	11.42	41	577612	205.1526 ug/L	72
10) 2-Nitropropane	11.75	43	248395	204.0652 ug/L	95
13) Cyclohexanone	15.85	55	19752	184.4122 ug/L #	59

(#) = qualifier out of range (m) = manual integration
8M412325.D A9FOOWT.M Thu May 19 09:01:28 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412325.D Vial: 7
Acq On : 17 May 2016 11:42 Operator: TMB
Sample : WG569079-06 200ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

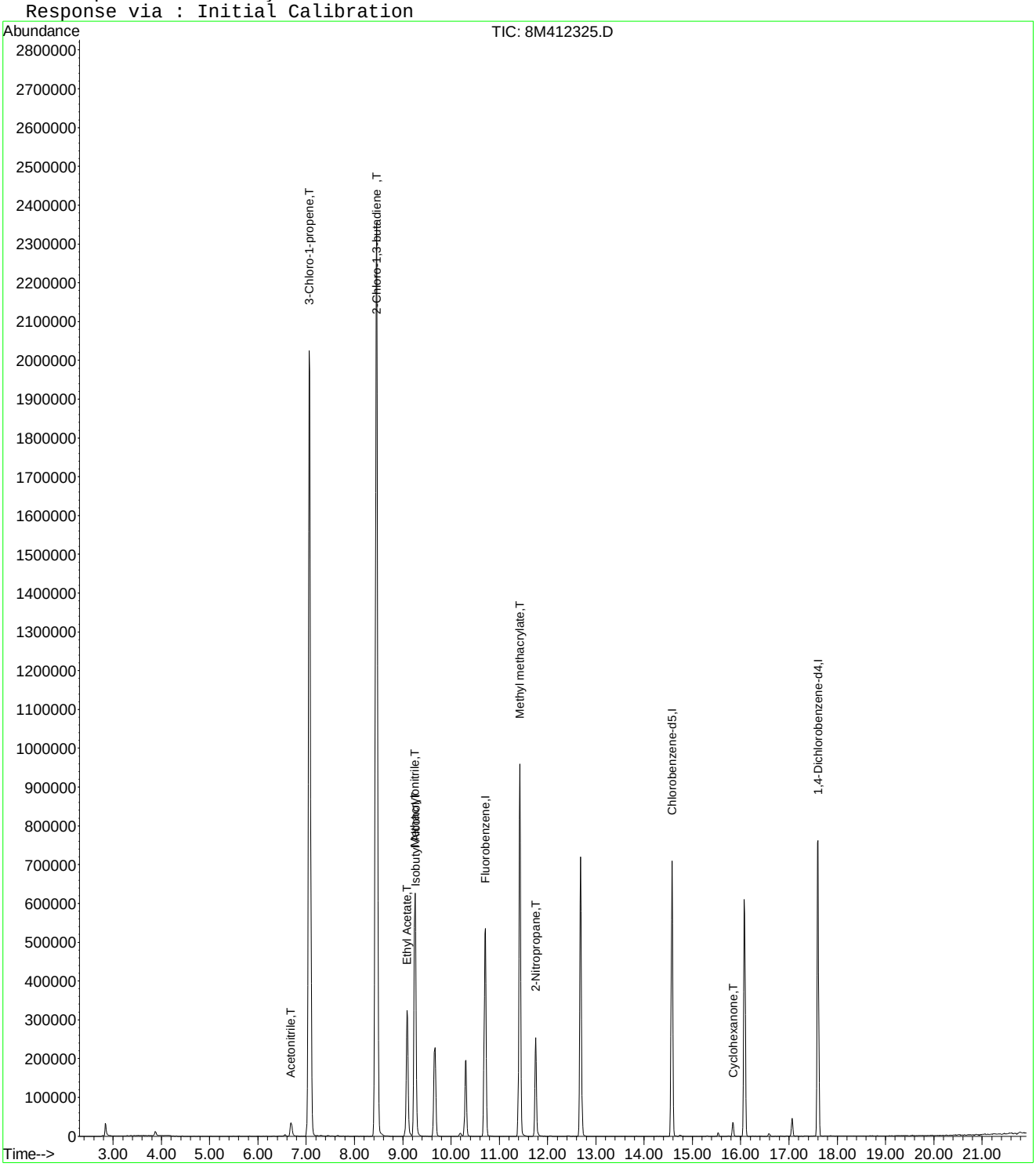

8M412325.D A9FOOWT.M Thu May 19 09:01:28 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412326.D Vial: 8
Acq On : 17 May 2016 12:40 Operator: TMB
Sample : WG569079-07 300ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:29 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	694903	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	496643	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	267309	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.69	41	81471	303.8636	ug/L	98
3) 3-Chloro-1-propene	7.06	41	2563559	290.3084	ug/L	83
4) 2-Chloro-1,3-butadiene	8.46	53	3270971	292.9562	ug/L	86
5) Ethyl Acetate	9.09	43	821184	308.8424	ug/L	95
6) Methacrylonitrile	9.25	67	451708	309.4374	ug/L #	62
7) Isobutyl Alcohol	9.26	43	55071	620.0836	ug/L	94
9) Methyl methacrylate	11.42	41	874430	304.8132	ug/L	70
10) 2-Nitropropane	11.75	43	392965	316.8456	ug/L	94
13) Cyclohexanone	15.84	55	33523	306.6233	ug/L #	61

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412326.D Vial: 8
Acq On : 17 May 2016 12:40 Operator: TMB
Sample : WG569079-07 300ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

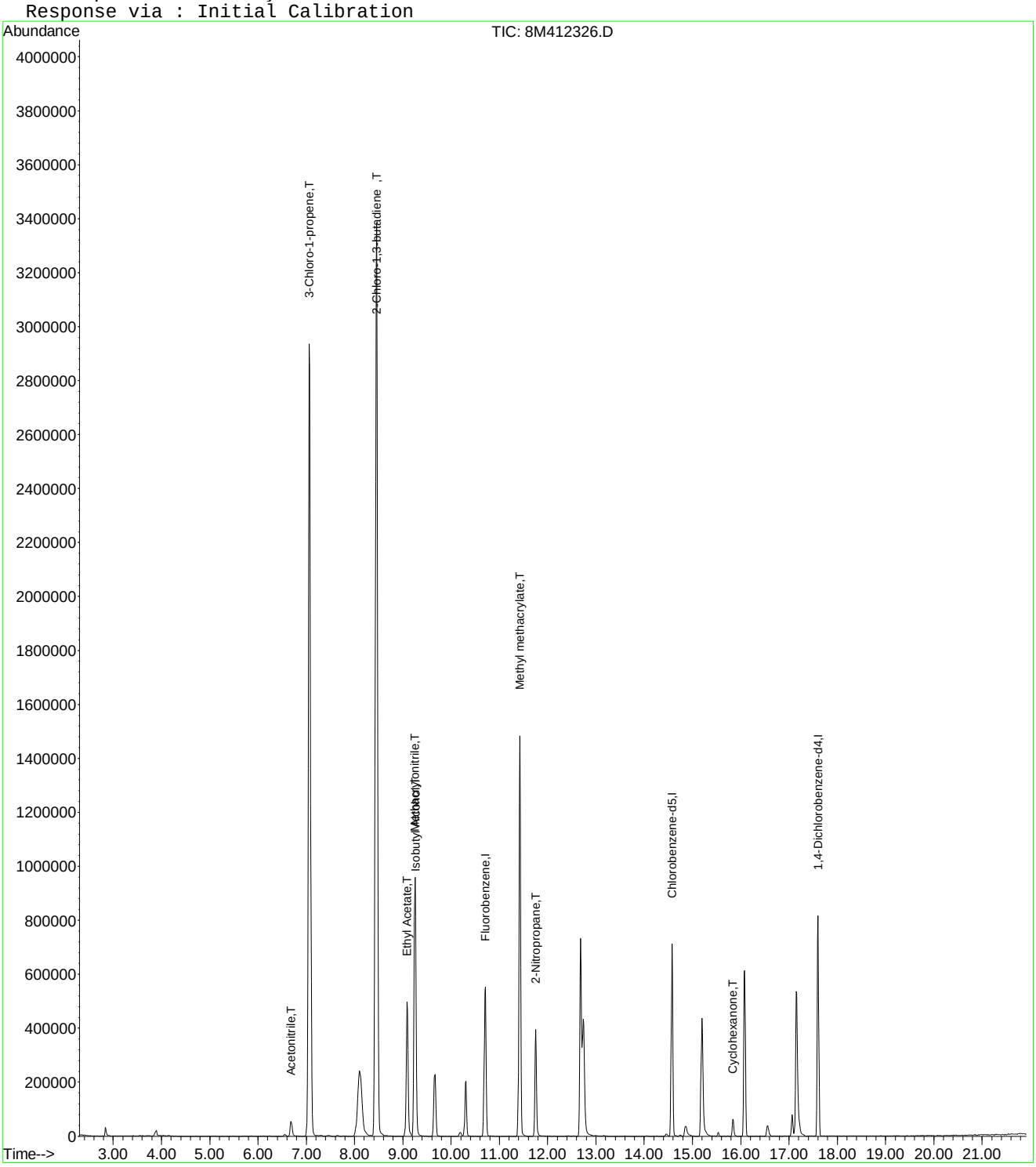

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412327.D Vial: 9
Acq On : 17 May 2016 13:10 Operator: TMB
Sample : WG569079-08 400ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:30 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	700514	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	502552	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	270883	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	110761	409.7980 ug/L	97
3) 3-Chloro-1-propene	7.07	41	3406131	382.6353 ug/L	82
4) 2-Chloro-1,3-butadiene	8.45	53	4356691	387.0705 ug/L	85
5) Ethyl Acetate	9.09	43	1116818	416.6642 ug/L	94
6) Methacrylonitrile	9.25	67	615482	418.2517 ug/L #	62
7) Isobutyl Alcohol	9.26	43	75472	842.9862 ug/L	97
9) Methyl methacrylate	11.42	41	1199317	414.7153 ug/L	71
10) 2-Nitropropane	11.75	43	538580	430.7760 ug/L	94
13) Cyclohexanone	15.84	55	45874	414.0575 ug/L #	55

(#) = qualifier out of range (m) = manual integration
8M412327.D A9FOOWT.M Thu May 19 09:01:31 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412327.D Vial: 9
Acq On : 17 May 2016 13:10 Operator: TMB
Sample : WG569079-08 400ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

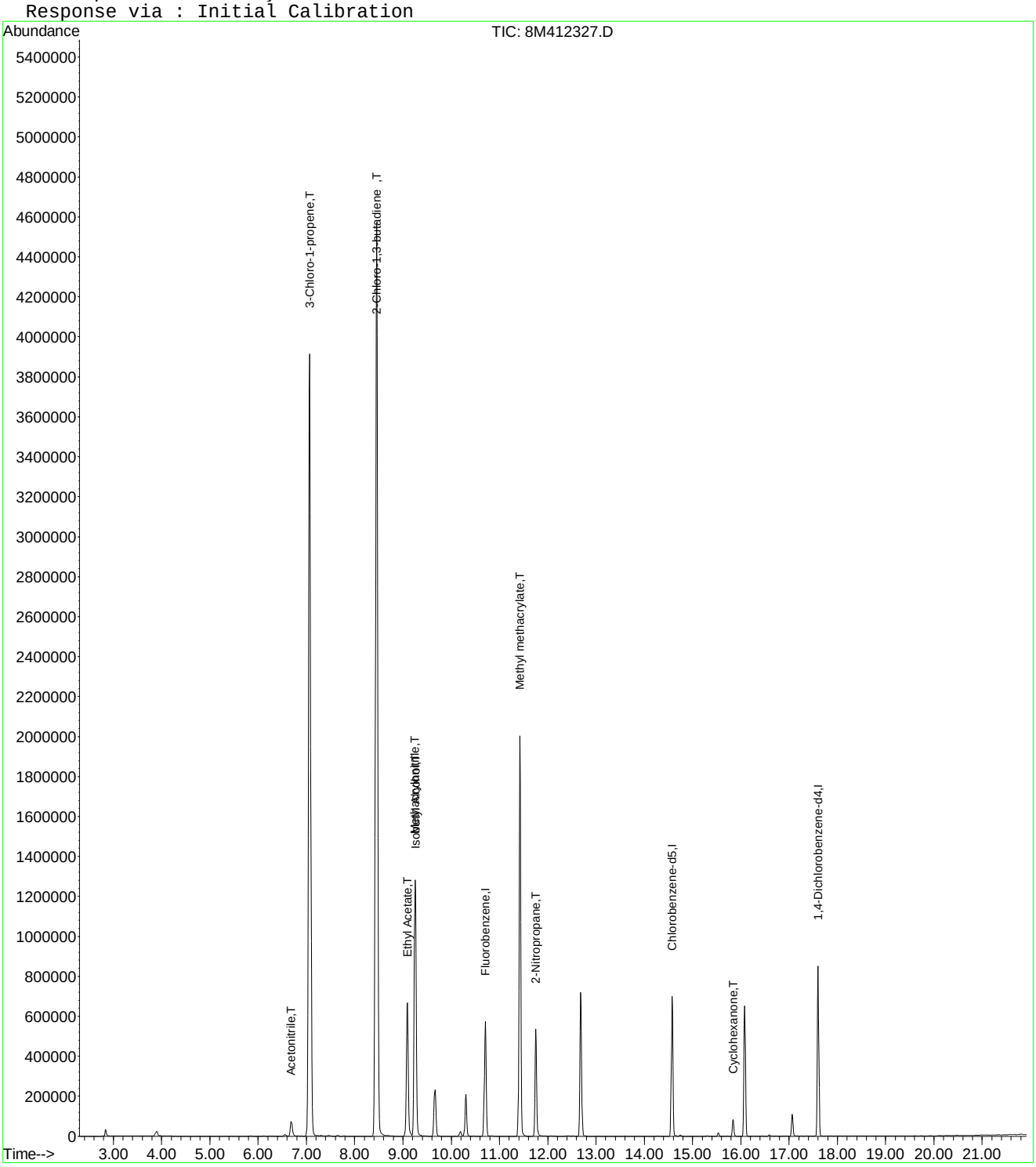

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412328.D Vial: 10
Acq On : 17 May 2016 13:39 Operator: TMB
Sample : WG569079-09 500ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:31 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	695694	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	495257	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	266442	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.69	41	132245	492.6753	ug/L	99
3) 3-Chloro-1-propene	7.06	41	4228273	478.2834	ug/L	82
4) 2-Chloro-1,3-butadiene	8.46	53	5390856	482.2693	ug/L	85
5) Ethyl Acetate	9.09	43	1321922	496.6017	ug/L	95
6) Methacrylonitrile	9.25	67	729852	499.4083	ug/L #	61
7) Isobutyl Alcohol	9.26	43	85200	958.2367	ug/L	96
9) Methyl methacrylate	11.42	41	1416438	493.1877	ug/L	72
10) 2-Nitropropane	11.75	43	637335	513.2956	ug/L	93
13) Cyclohexanone	15.84	55	52070	477.8160	ug/L #	61

(#) = qualifier out of range (m) = manual integration
8M412328.D A9FOOWT.M Thu May 19 09:01:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412328.D Vial: 10
Acq On : 17 May 2016 13:39 Operator: TMB
Sample : WG569079-09 500ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

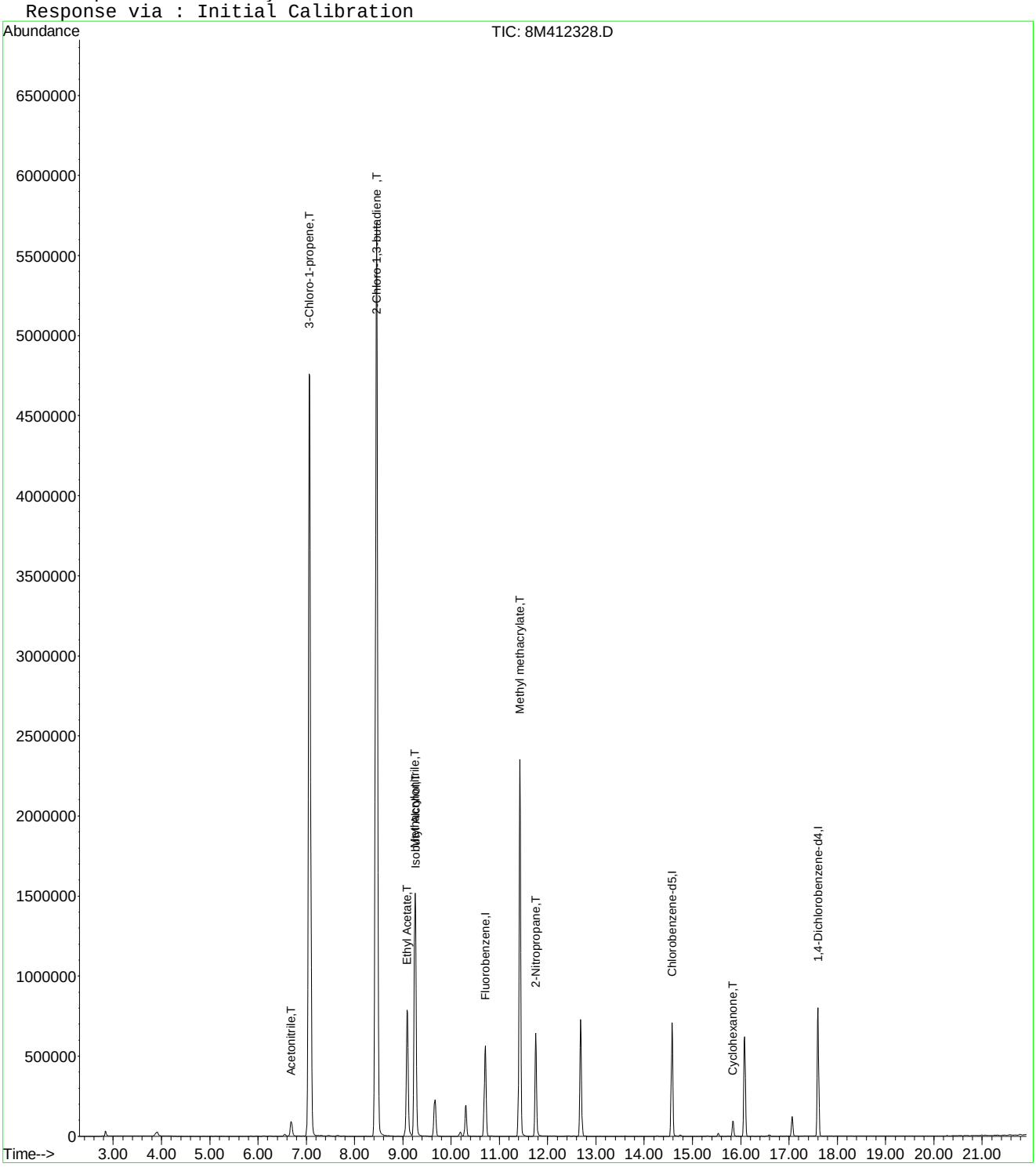

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:32 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	676765	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	486447	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	263036	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.69	41	29876	114.4154	ug/L	97
3) 3-Chloro-1-propene	7.07	41	858035	99.7718	ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	1224194	112.5803	ug/L	87
5) Ethyl Acetate	9.09	43	295545	114.1317	ug/L	96
6) Methacrylonitrile	9.25	67	161574	113.6509	ug/L #	63
7) Isobutyl Alcohol	9.26	43	19948	230.6285	ug/L	94
9) Methyl methacrylate	11.42	41	326465	116.8508	ug/L	72
10) 2-Nitropropane	11.75	43	131261	108.6716	ug/L	94
13) Cyclohexanone	15.83	55	10459	97.2189	ug/L #	74

(#) = qualifier out of range (m) = manual integration
8M412331.D A9FOOWT.M Thu May 19 09:01:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

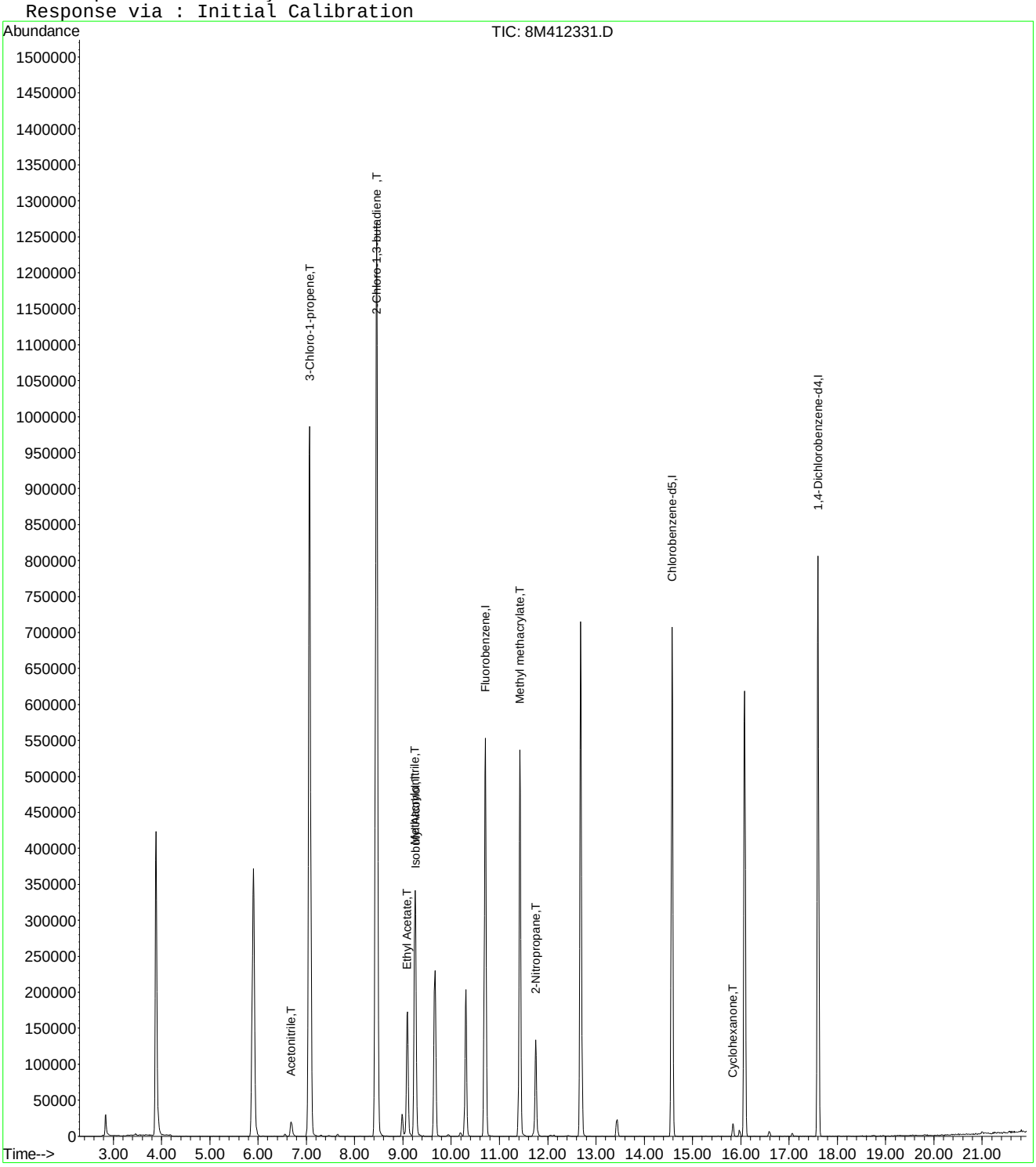

8M412331.D A9FOOWT.M Thu May 19 09:01:33 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	95	0.00
2	T	Acetonitrile	100.0000	114.4154	-14.4	109	0.00
3	T	3-Chloro-1-propene	100.0000	99.7718	0.2	91	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	112.5803	-12.6	103	0.00
5	T	Ethyl Acetate	100.0000	114.1317	-14.1	104	0.00
6	T	Methacrylonitrile	100.0000	113.6509	-13.7	104	0.00
7	T	Isobutyl Alcohol	200.0000	230.6285	-15.3	111	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.01
9	T	Methyl methacrylate	100.0000	116.8508	-16.9	109	0.00
10	T	2-Nitropropane	100.0000	108.6716	-8.7	108	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	96	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	96	0.00
13	T	Cyclohexanone	100.0000	97.2189	2.8	92	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412331.D A9FOOWT.M Thu May 19 09:03:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061616\6M140114.D Vial: 2
Acq On : 16 Jun 2016 16:59 Operator: FJB
Sample : WG573035-02 50ug/L CCV 8260 Inst : HPMS6
Misc : 1,1 STD76496 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 17:23:17 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	609223	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.06	117	455972	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	256090	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.39	111	160546	25.4627 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.84%		
43) 1,2-Dichloroethane-d4	11.11	65	172497	24.8210 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.28%		
58) Toluene-d8	13.85	98	549527	25.1119 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.44%		
80) p-Bromofluorobenzene	17.84	95	231854	25.6385 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.56%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	460860	47.7903 ug/L	98
3) Chloromethane	3.92	50	482787	41.0637 ug/L	99
4) Vinyl Chloride	4.16	62	344786	43.5063 ug/L	100
5) 1,3-Butadiene	4.20	54	277523	63.6809 ug/L	97
6) Bromomethane	5.08	94	168905	43.2664 ug/L	100
7) Chloroethane	5.23	64	203507	40.6264 ug/L	96
8) Trichlorofluoromethane	5.73	101	564318	53.1719 ug/L	100
9) Diethyl ether	6.29	59	551496	96.6331 ug/L	98
10) Isoprene	6.32	67	455539	50.4863 ug/L	98
11) Acrolein	6.55	56	38041	39.5069 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.55	101	301393	49.7115 ug/L	99
13) Acetone	6.66	43	78195	43.8898 ug/L	99
14) 1,1-Dichloroethene	6.88	61	542554	50.5311 ug/L	99
15) Tert-Butyl Alcohol	7.01	59	83032	157.5700 ug/L	98
16) Dimethyl Sulfide	7.17	62	250745	50.8860 ug/L	98
17) Iodomethane	7.43	142	229989	52.0070 ug/L	97
18) Methyl acetate	7.45	43	233383	44.4142 ug/L	99
19) Methylene Chloride	7.72	84	313309	47.3195 ug/L	98
20) Carbon Disulfide	7.77	76	1118644	53.2509 ug/L	100
21) Acrylonitrile	7.92	53	110810	47.8481 ug/L	98
22) Methyl Tert Butyl Ether	7.96	73	773194	47.8599 ug/L	99
23) trans-1,2-Dichloroethene	8.21	96	307942	49.2033 ug/L	97
24) n-Hexane	8.28	57	553326	56.7779 ug/L	99
25) Diisopropyl ether	8.67	45	2704807	104.2721 ug/L	99
26) Vinyl Acetate	8.85	43	685636	62.2504 ug/L	100
27) 1,1-Dichloroethane	8.88	63	616712	49.1793 ug/L	100
28) Ethyl-Tert-Butyl ether	9.30	59	2120034	99.8647 ug/L	100
29) 2-Butanone	9.51	43	123439	44.8677 ug/L	98
30) Propionitrile	9.63	54	68918	90.7680 ug/L	99
31) 2,2-Dichloropropane	9.75	77	496009	54.2553 ug/L	97
32) cis-1,2-Dichloroethene	9.82	96	338756	49.6838 ug/L	99
33) Chloroform	10.06	83	556525	49.8303 ug/L	99
34) 1-Bromopropane	10.21	122	57939	51.3188 ug/L	99
35) Bromochloromethane	10.32	130	191936	49.5716 ug/L	100
36) Tetrahydrofuran	10.35	42	163777	86.4729 ug/L	97
38) 1,1,1-Trichloroethane	10.65	97	506361	50.8246 ug/L	100
39) Cyclohexane	10.68	56	682303	54.6382 ug/L	98
40) 1,1-Dichloropropene	10.88	75	433618	50.7833 ug/L	99
41) Tert-Amyl-Methyl ether	11.00	73	1595961	97.0992 ug/L	98
42) Carbon Tetrachloride	11.04	117	468789	52.7441 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061616\6M140114.D Vial: 2
Acq On : 16 Jun 2016 16:59 Operator: FJB
Sample : WG573035-02 50ug/L CCV 8260 Inst : HPMS6
Misc : 1,1 STD76496 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 17:23:17 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	11.24	62	426062	49.6388	ug/L	99
46)	Benzene	11.28	78	1210046	48.3494	ug/L	98
47)	Trichloroethene	12.14	130	310264	48.5394	ug/L	98
48)	Methylcyclohexane	12.23	83	519836	53.6414	ug/L	98
49)	1,2-Dichloropropane	12.39	63	340219	49.2156	ug/L	99
50)	1,4-Dioxane	12.72	88	7528	152.8554	ug/L	91
51)	Bromodichloromethane	12.73	83	432606	50.8873	ug/L	99
52)	Dibromomethane	12.84	93	174011	48.7810	ug/L	100
53)	2-Chloroethyl Vinyl Ether	13.09	63	162700	51.5676	ug/L	99
54)	4-Methyl-2-Pentanone	13.12	58	95185	45.3307	ug/L	99
55)	cis-1,3-Dichloropropene	13.48	75	500827	52.0506	ug/L	100
56)	Dimethyl Disulfide	13.78	79	281352	50.7563	ug/L	99
59)	Toluene	13.97	91	1259026	48.6249	ug/L	100
60)	Ethyl Methacrylate	14.09	69	345573	48.7041	ug/L	98
62)	trans-1,3-Dichloropropene	14.17	75	444011	50.3495	ug/L	99
63)	1,1,2-Trichloroethane	14.43	97	233277	47.3196	ug/L	100
64)	2-Hexanone	14.36	43	182758	43.6884	ug/L	97
65)	1,3-Dichloropropane	14.79	76	411273	47.4499	ug/L	99
66)	Tetrachloroethene	14.92	166	327291	48.1885	ug/L	99
67)	Dibromochloromethane	15.24	129	311499	49.5896	ug/L	100
68)	1,2-Dibromoethane	15.53	107	225854	47.3998	ug/L	99
69)	1-Chlorohexane	15.64	91	460160	54.7318	ug/L	97
70)	Chlorobenzene	16.12	112	825529	47.6494	ug/L	98
71)	1,1,1,2-Tetrachloroethane	16.17	131	312470	49.7255	ug/L	98
72)	Ethylbenzene	16.15	106	443669	48.2803	ug/L	97
73)	m-,p-Xylene	16.27	106	1065591	97.6074	ug/L	98
74)	o-Xylene	16.93	106	531222	49.2396	ug/L	98
75)	Styrene	16.97	104	909933	50.7858	ug/L	97
76)	Bromoform	17.55	173	190145	47.7111	ug/L	99
77)	Isopropylbenzene	17.43	105	1374906	50.7710	ug/L	100
79)	1,1,2,2-Tetrachloroethane	17.70	83	281111	45.5294	ug/L	100
81)	1,2,3-Trichloropropane	17.92	110	80403	44.9793	ug/L	87
82)	trans-1,4-Dichloro-2-Buten	17.98	53	100122	45.3690	ug/L	92
83)	n-Propylbenzene	18.03	91	1696402	51.1115	ug/L	100
84)	Bromobenzene	18.18	156	367667	47.2074	ug/L	98
85)	1,3,5-Trimethylbenzene	18.26	105	1183868	50.4122	ug/L	99
86)	2-Chlorotoluene	18.35	91	1091886	48.0281	ug/L	99
87)	4-Chlorotoluene	18.41	91	1044130	49.4650	ug/L	99
88)	a-Methylstyrene	18.74	118	652158	49.6744	ug/L	100
89)	tert-Butylbenzene	18.81	134	251802	48.6354	ug/L	78
90)	1,2,4-Trimethylbenzene	18.87	105	1227716	49.9408	ug/L	99
91)	sec-Butylbenzene	19.13	105	1450199	50.1845	ug/L	99
92)	p-Isopropyltoluene	19.32	119	1257909	51.0813	ug/L	100
93)	1,3-Dichlorobenzene	19.53	146	724338	47.6944	ug/L	98
94)	1,4-Dichlorobenzene	19.70	146	722152	50.2134	ug/L	98
95)	n-Butylbenzene	19.94	91	1205970	51.7394	ug/L	99
96)	1,2-Dichlorobenzene	20.28	146	667354	47.1543	ug/L	97
97)	1,2-Dibromo-3-Chloropropan	21.46	75	52951	47.7574	ug/L	96
98)	1,2,4-Trichlorobenzene	22.82	180	488714	49.9450	ug/L	98
99)	Hexachlorobutadiene	23.02	225	202711	49.9179	ug/L	100
100)	Naphthalene	23.28	128	955454	49.3962	ug/L	100
101)	1,2,3-Trichlorobenzene	23.69	180	439641	47.4775	ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061616\6M140114.D Vial: 2
Acq On : 16 Jun 2016 16:59 Operator: FJB
Sample : WG573035-02 50ug/L CCV 8260 Inst : HPMS6
Misc : 1,1 STD76496 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 17:23 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration

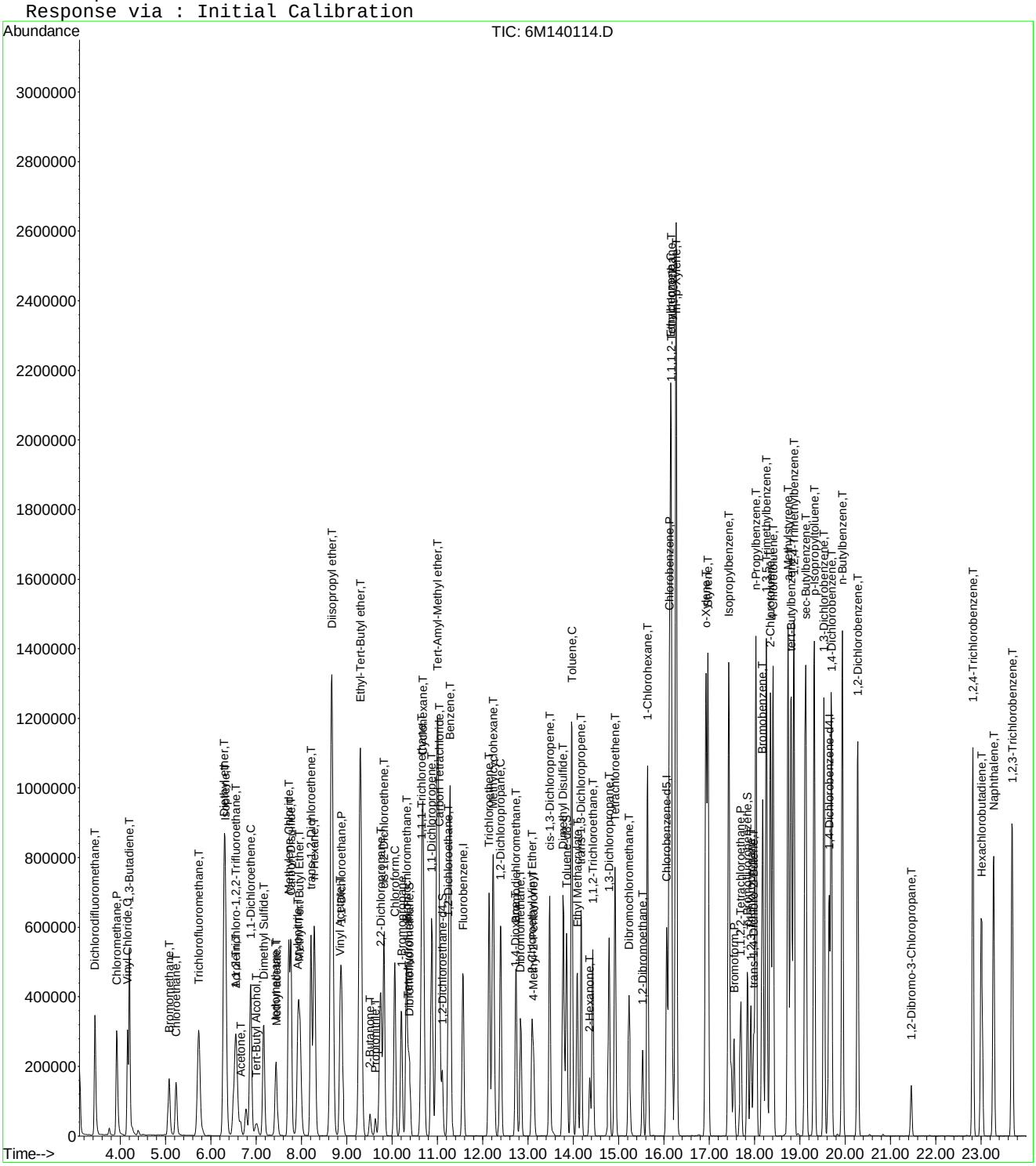

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061616\6M140114.D Vial: 2
Acq On : 16 Jun 2016 16:59 Operator: FJB
Sample : WG573035-02 50ug/L CCV 8260 Inst : HPMS6
Misc : 1,1 STD76496 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	82	0.00
2	T	Dichlorodifluoromethane	0.3957	0.3782	4.4	72	0.00
3	P	Chloromethane	0.4825	0.3962	17.9	65	0.00
4	C	Vinyl Chloride	0.3252	0.2830	13.0	73	0.00
5	T	1,3-Butadiene	0.2081	0.2278	-9.5	101	0.00
6	T	Bromomethane	0.1602	0.1386	13.5	74	0.01
7	T	Chloroethane	0.2056	0.1670	18.7	67	0.00
8	T	Trichlorofluoromethane	0.4355	0.4632	-6.3	87	0.01
9	T	Diethyl ether	0.2342	0.2263	3.4	79	0.00
10	T	Isoprene	0.3703	0.3739	-1.0	83	0.00
11	T	Acrolein	0.0395	0.0312	21.0#	65	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2488	0.2474	0.6	82	0.00
13	T	Acetone	0.0776	0.0642	17.3	70	0.00
14	C	1,1-Dichloroethene	0.4406	0.4453	-1.1	83	0.01
15	T	Tert-Butyl Alcohol	0.0216	0.0170	21.2#	60	-0.04
16	T	Dimethyl Sulfide	0.2022	0.2058	-1.8	83	0.01
17	T	Iodomethane	0.1564	0.1888	-20.7#	80	0.00
18	T	Methyl acetate	0.2156	0.1915	11.2	73	0.00
19	T	Methylene Chloride	0.2717	0.2571	5.4	80	0.00
20	T	Carbon Disulfide	0.8620	0.9181	-6.5	87	0.01
21	T	Acrylonitrile	0.0950	0.0909	4.3	74	0.00
22	T	Methyl Tert Butyl Ether	0.6630	0.6346	4.3	78	0.00
23	T	trans-1,2-Dichloroethene	0.2568	0.2527	1.6	81	0.00
24	T	n-Hexane	0.3999	0.4541	-13.6	94	0.00
25	T	Diisopropyl ether	1.0645	1.1099	-4.3	84	0.00
26	T	Vinyl Acetate	0.4520	0.5627	-24.5#	102	0.00
27	P	1,1-Dichloroethane	0.5146	0.5061	1.6	82	0.00
28	T	Ethyl-Tert-Butyl ether	0.8711	0.8700	0.1	80	0.00
29	T	2-Butanone	0.1129	0.1013	10.3	73	0.00
30	T	Propionitrile	0.0312	0.0283	9.2	69	0.00
31	T	2,2-Dichloropropane	0.3752	0.4071	-8.5	92	0.00
32	T	cis-1,2-Dichloroethene	0.2798	0.2780	0.6	81	0.00
33	C	Chloroform	0.4583	0.4567	0.3	83	0.00
34		1-Bromopropane	0.0436	0.0476	-9.2	85	0.00
35	T	Bromochloromethane	0.1589	0.1575	0.9	80	0.00
36	T	Tetrahydrofuran	0.0777	0.0672	13.5	71	0.00
37	S	Dibromofluoromethane	0.2587	0.2635	-1.9	82	0.00
38	T	1,1,1-Trichloroethane	0.4088	0.4156	-1.6	84	0.00
39	T	Cyclohexane	0.5124	0.5600	-9.3	90	0.00
40	T	1,1-Dichloropropene	0.3504	0.3559	-1.6	83	0.00
41	T	Tert-Amyl-Methyl ether	0.6745	0.6549	2.9	78	0.00
42	T	Carbon Tetrachloride	0.3647	0.3847	-5.5	85	0.00
43	S	1,2-Dichloroethane-d4	0.2852	0.2831	0.7	81	0.00
44		Heptane	0.0000	0.0000	0.0	81	0.00
45	T	1,2-Dichloroethane	0.3522	0.3497	0.7	82	0.00
46	T	Benzene	1.0270	0.9931	3.3	81	0.00
47	T	Trichloroethene	0.2623	0.2546	2.9	80	0.00
48	T	Methylcyclohexane	0.3977	0.4266	-7.3	88	0.00
49	C	1,2-Dichloropropane	0.2837	0.2792	1.6	81	0.00
50	T	1,4-Dioxane	0.0020	0.0015	23.8#	58	-0.02
51	T	Bromodichloromethane	0.3489	0.3550	-1.8	82	0.00
52	T	Dibromomethane	0.1464	0.1428	2.4	78	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1295	0.1335	-3.1	78	0.00
54	T	4-Methyl-2-Pentanone	0.0862	0.0781	9.3	70	0.00

(#) = Out of Range

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061616\6M140114.D Vial: 2
Acq On : 16 Jun 2016 16:59 Operator: FJB
Sample : WG573035-02 50ug/L CCV 8260 Inst : HPMS6
Misc : 1,1 STD76496 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.3948	0.4110	-4.1	82	0.00
56	T	Dimethyl Disulfide	0.2275	0.2309	-1.5	82	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	83	0.00
58	S	Toluene-d8	1.1998	1.2052	-0.4	85	0.00
59	C	Toluene	1.4196	1.3806	2.7	81	0.00
60	T	Ethyl Methacrylate	0.3890	0.3789	2.6	76	0.00
61		Paraldehyde	0.0000	0.0000	0.0	80	0.00
62	T	trans-1,3-Dichloropropene	0.4835	0.4869	-0.7	81	0.00
63	T	1,1,2-Trichloroethane	0.2703	0.2558	5.4	77	0.00
64	T	2-Hexanone	0.2294	0.2004	12.6	71	0.00
65	T	1,3-Dichloropropane	0.4752	0.4510	5.1	78	0.00
66	T	Tetrachloroethene	0.3724	0.3589	3.6	81	0.00
67	T	Dibromochloromethane	0.3444	0.3416	0.8	80	0.00
68	T	1,2-Dibromoethane	0.2612	0.2477	5.2	76	0.00
69	T	1-Chlorohexane	0.4610	0.5046	-9.5	87	0.00
70	P	Chlorobenzene	0.9499	0.9052	4.7	80	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3445	0.3426	0.5	80	0.00
72	C	Ethylbenzene	0.5038	0.4865	3.4	79	0.00
73	T	m-,p-Xylene	0.5986	0.5842	2.4	80	0.00
74	T	o-Xylene	0.5915	0.5825	1.5	80	0.00
75	T	Styrene	0.9824	0.9978	-1.6	78	0.00
76	P	Bromoform	0.2185	0.2085	4.6	76	0.00
77	T	Isopropylbenzene	1.4848	1.5077	-1.5	80	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	81	0.00
79	P	1,1,2,2-Tetrachloroethane	0.6027	0.5488	8.9	74	0.00
80	S	p-Bromofluorobenzene	0.8828	0.9054	-2.6	84	0.00
81	T	1,2,3-Trichloropropane	0.1745	0.1570	10.0	73	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1840	0.1955	-6.2	78	0.00
83	T	n-Propylbenzene	3.2401	3.3121	-2.2	81	0.00
84	T	Bromobenzene	0.7603	0.7178	5.6	79	0.00
85	T	1,3,5-Trimethylbenzene	2.2925	2.3114	-0.8	80	0.00
86	T	2-Chlorotoluene	2.2194	2.1318	3.9	81	0.00
87	T	4-Chlorotoluene	2.0606	2.0386	1.1	80	0.00
88	T	a-Methylstyrene	1.2817	1.2733	0.7	80	0.00
89	T	tert-Butylbenzene	0.5054	0.4916	2.7	79	0.00
90	T	1,2,4-Trimethylbenzene	2.3999	2.3970	0.1	80	0.00
91	T	sec-Butylbenzene	2.8210	2.8314	-0.4	80	0.00
92	T	p-Isopropyltoluene	2.4040	2.4560	-2.2	80	0.00
93	T	1,3-Dichlorobenzene	1.4826	1.4142	4.6	80	0.00
94	T	1,4-Dichlorobenzene	1.6261	1.4100	13.3	79	0.00
95	T	n-Butylbenzene	2.2754	2.3546	-3.5	81	0.00
96	T	1,2-Dichlorobenzene	1.3816	1.3030	5.7	78	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1082	0.1034	4.5	73	0.00
98	T	1,2,4-Trichlorobenzene	0.9552	0.9542	0.1	80	0.00
99	T	Hexachlorobutadiene	0.3964	0.3958	0.2	83	0.00
100	T	Naphthalene	1.8883	1.8655	1.2	75	0.00
101	T	1,2,3-Trichlorobenzene	0.9040	0.8584	5.0	77	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140114.D 8260WT.M Fri Jun 17 08:33:34 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061616\6M140114.D Vial: 2
Acq On : 16 Jun 2016 16:59 Operator: FJB
Sample : WG573035-02 50ug/L CCV 8260 Inst : HPMS6
Misc : 1,1 STD76496 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	82	0.00
2	T	Dichlorodifluoromethane	50.0000	47.7903	4.4	72	0.00
3	P	Chloromethane	50.0000	41.0637	17.9	65	0.00
4	C	Vinyl Chloride	50.0000	43.5063	13.0	73	0.00
5	T	1,3-Butadiene	50.0000	63.6809	-27.4#	101	0.00
6	T	Bromomethane	50.0000	43.2664	13.5	74	0.01
7	T	Chloroethane	50.0000	40.6264	18.7	67	0.00
8	T	Trichlorofluoromethane	50.0000	53.1719	-6.3	87	0.01
9	T	Diethyl ether	100.0000	96.6331	3.4	79	0.00
10	T	Isoprene	50.0000	50.4863	-1.0	83	0.00
11	T	Acrolein	50.0000	39.5069	21.0#	65	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	49.7115	0.6	82	0.00
13	T	Acetone	50.0000	43.8898	12.2	70	0.00
14	C	1,1-Dichloroethene	50.0000	50.5311	-1.1	83	0.01
15	T	Tert-Butyl Alcohol	200.0000	157.5700	21.2#	60	-0.04
16	T	Dimethyl Sulfide	50.0000	50.8860	-1.8	83	0.01
17	T	Iodomethane	50.0000	52.0070	-4.0	80	0.00
18	T	Methyl acetate	50.0000	44.4143	11.2	73	0.00
19	T	Methylene Chloride	50.0000	47.3195	5.4	80	0.00
20	T	Carbon Disulfide	50.0000	53.2509	-6.5	87	0.01
21	T	Acrylonitrile	50.0000	47.8481	4.3	74	0.00
22	T	Methyl Tert Butyl Ether	50.0000	47.8599	4.3	78	0.00
23	T	trans-1,2-Dichloroethene	50.0000	49.2033	1.6	81	0.00
24	T	n-Hexane	50.0000	56.7779	-13.6	94	0.00
25	T	Diisopropyl ether	100.0000	104.2721	-4.3	84	0.00
26	T	Vinyl Acetate	50.0000	62.2504	-24.5#	102	0.00
27	P	1,1-Dichloroethane	50.0000	49.1793	1.6	82	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	99.8647	0.1	80	0.00
29	T	2-Butanone	50.0000	44.8677	10.3	73	0.00
30	T	Propionitrile	100.0000	90.7680	9.2	69	0.00
31	T	2,2-Dichloropropane	50.0000	54.2553	-8.5	92	0.00
32	T	cis-1,2-Dichloroethene	50.0000	49.6838	0.6	81	0.00
33	C	Chloroform	50.0000	49.8303	0.3	83	0.00
34		1-Bromopropane	50.0000	51.3188	-2.6	85	0.00
35	T	Bromochloromethane	50.0000	49.5716	0.9	80	0.00
36	T	Tetrahydrofuran	100.0000	86.4729	13.5	71	0.00
37	S	Dibromofluoromethane	25.0000	25.4628	-1.9	82	0.00
38	T	1,1,1-Trichloroethane	50.0000	50.8246	-1.6	84	0.00
39	T	Cyclohexane	50.0000	54.6382	-9.3	90	0.00
40	T	1,1-Dichloropropene	50.0000	50.7833	-1.6	83	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	97.0992	2.9	78	0.00
42	T	Carbon Tetrachloride	50.0000	52.7441	-5.5	85	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.8210	0.7	81	0.00
44		Heptane	-1.0000	0.0000	0.0	81	0.00
45	T	1,2-Dichloroethane	50.0000	49.6388	0.7	82	0.00
46	T	Benzene	50.0000	48.3494	3.3	81	0.00
47	T	Trichloroethene	50.0000	48.5394	2.9	80	0.00
48	T	Methylcyclohexane	50.0000	53.6414	-7.3	88	0.00
49	C	1,2-Dichloropropane	50.0000	49.2156	1.6	81	0.00
50	T	1,4-Dioxane	200.0000	152.8554	23.6#	58	-0.02
51	T	Bromodichloromethane	50.0000	50.8873	-1.8	82	0.00
52	T	Dibromomethane	50.0000	48.7810	2.4	78	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	51.5675	-3.1	78	0.00
54	T	4-Methyl-2-Pentanone	50.0000	45.3307	9.3	70	0.00

(#) = Out of Range

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061616\6M140114.D Vial: 2
Acq On : 16 Jun 2016 16:59 Operator: FJB
Sample : WG573035-02 50ug/L CCV 8260 Inst : HPMS6
Misc : 1,1 STD76496 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	52.0506	-4.1	82	0.00
56	T	Dimethyl Disulfide	50.0000	50.7563	-1.5	82	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	83	0.00
58	S	Toluene-d8	25.0000	25.1119	-0.4	85	0.00
59	C	Toluene	50.0000	48.6249	2.8	81	0.00
60	T	Ethyl Methacrylate	50.0000	48.7041	2.6	76	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	80	0.00
62	T	trans-1,3-Dichloropropene	50.0000	50.3495	-0.7	81	0.00
63	T	1,1,2-Trichloroethane	50.0000	47.3196	5.4	77	0.00
64	T	2-Hexanone	50.0000	43.6884	12.6	71	0.00
65	T	1,3-Dichloropropane	50.0000	47.4499	5.1	78	0.00
66	T	Tetrachloroethene	50.0000	48.1885	3.6	81	0.00
67	T	Dibromochloromethane	50.0000	49.5896	0.8	80	0.00
68	T	1,2-Dibromoethane	50.0000	47.3998	5.2	76	0.00
69	T	1-Chlorohexane	50.0000	54.7318	-9.5	87	0.00
70	P	Chlorobenzene	50.0000	47.6494	4.7	80	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	49.7255	0.5	80	0.00
72	C	Ethylbenzene	50.0000	48.2803	3.4	79	0.00
73	T	m-,p-Xylene	100.0000	97.6074	2.4	80	0.00
74	T	o-Xylene	50.0000	49.2396	1.5	80	0.00
75	T	Styrene	50.0000	50.7858	-1.6	78	0.00
76	P	Bromoform	50.0000	47.7111	4.6	76	0.00
77	T	Isopropylbenzene	50.0000	50.7710	-1.5	80	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	81	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	45.5294	8.9	74	0.00
80	S	p-Bromofluorobenzene	25.0000	25.6385	-2.6	84	0.00
81	T	1,2,3-Trichloropropane	50.0000	44.9793	10.0	73	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	45.3690	9.3	78	0.00
83	T	n-Propylbenzene	50.0000	51.1115	-2.2	81	0.00
84	T	Bromobenzene	50.0000	47.2074	5.6	79	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	50.4122	-0.8	80	0.00
86	T	2-Chlorotoluene	50.0000	48.0281	3.9	81	0.00
87	T	4-Chlorotoluene	50.0000	49.4650	1.1	80	0.00
88	T	a-Methylstyrene	50.0000	49.6744	0.7	80	0.00
89	T	tert-Butylbenzene	50.0000	48.6354	2.7	79	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	49.9408	0.1	80	0.00
91	T	sec-Butylbenzene	50.0000	50.1845	-0.4	80	0.00
92	T	p-Isopropyltoluene	50.0000	51.0813	-2.2	80	0.00
93	T	1,3-Dichlorobenzene	50.0000	47.6944	4.6	80	0.00
94	T	1,4-Dichlorobenzene	50.0000	50.2134	-0.4	79	0.00
95	T	n-Butylbenzene	50.0000	51.7394	-3.5	81	0.00
96	T	1,2-Dichlorobenzene	50.0000	47.1543	5.7	78	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	47.7574	4.5	73	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	49.9450	0.1	80	0.00
99	T	Hexachlorobutadiene	50.0000	49.9179	0.2	83	0.00
100	T	Naphthalene	50.0000	49.3962	1.2	75	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	47.4775	5.0	77	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140114.D 8260WT.M Fri Jun 17 08:33:36 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061716\8M413060.D Vial: 2
Acq On : 17 Jun 2016 16:23 Operator: FJB
Sample : WG573252-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 16:45:53 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	699122	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	518270	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	296683	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	205056	27.2990 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.20%		
43) 1,2-Dichloroethane-d4	10.30	65	228273	28.3422 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 113.36%		
58) Toluene-d8	12.68	98	710755	26.2041 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.80%		
80) p-Bromofluorobenzene	16.08	95	308175	25.0859 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.36%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	623426	53.1868 ug/L	100
3) Chloromethane	3.62	50	300377	43.9015 ug/L	100
4) Vinyl Chloride	3.84	62	422699	52.0713 ug/L	100
5) 1,3-Butadiene	3.89	54	415461	61.0292 ug/L	96
6) Bromomethane	4.73	94	137868	28.7775 ug/L	99
7) Chloroethane	4.89	64	206931	46.3271 ug/L	95
8) Trichlorofluoromethane	5.37	101	851971	56.4042 ug/L	99
9) Diethyl ether	5.90	59	342623	95.0146 ug/L	97
10) Isoprene	5.94	67	423769	46.1995 ug/L	98
11) Acrolein	6.14	56	14627	45.3040 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	356208	50.1695 ug/L	95
13) Acetone	6.24	43	44365	56.4026 ug/L	96
14) 1,1-Dichloroethene	6.46	61	581851	51.4688 ug/L	98
15) Tert-Butyl Alcohol	6.58	59	54523	216.3053 ug/L #	87
16) Dimethyl Sulfide	6.73	62	187403	46.3627 ug/L	100
17) Iodomethane	6.99	142	42196	15.6597 ug/L	93
18) Methyl acetate	7.00	43	91653	43.1067 ug/L	98
19) Methylene Chloride	7.25	84	343322	47.7217 ug/L	98
20) Carbon Disulfide	7.29	76	1159644	49.0178 ug/L	100
21) Acrylonitrile	7.43	53	48738	47.7556 ug/L	95
22) Methyl Tert Butyl Ether	7.46	73	799007	51.3155 ug/L	98
23) trans-1,2-Dichloroethene	7.70	61	510226	49.1267 ug/L	99
24) n-Hexane	7.78	57	353499	45.8365 ug/L	100
25) Diisopropyl ether	8.12	45	1540853	95.1777 ug/L	95
26) Vinyl Acetate	8.30	43	345358	46.5927 ug/L	99
27) 1,1-Dichloroethane	8.32	63	647658	50.2128 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1784670	102.8899 ug/L	98
29) 2-Butanone	8.88	43	53558	46.3436 ug/L	96
30) Propionitrile	8.98	54	31315	92.9829 ug/L	93
31) 2,2-Dichloropropane	9.09	77	778632	57.2841 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	397374	49.5169 ug/L	98
33) Chloroform	9.37	83	805895	52.9169 ug/L	99
34) 1-Bromopropane	9.51	122	60651	52.7637 ug/L	99
35) Bromochloromethane	9.61	130	205405	49.9137 ug/L	95
36) Tetrahydrofuran	9.63	42	63981	84.0571 ug/L	94
38) 1,1,1-Trichloroethane	9.91	97	826193	57.1121 ug/L	99
39) Cyclohexane	9.94	56	464869	46.4157 ug/L	96
40) 1,1-Dichloropropene	10.11	75	567873	51.5014 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1609648	102.1740 ug/L	100
42) Carbon Tetrachloride	10.25	117	749994	58.3845 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413060.D 8260WT.M Mon Jun 20 09:14:31 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061716\8M413060.D Vial: 2
Acq On : 17 Jun 2016 16:23 Operator: FJB
Sample : WG573252-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 16:45:53 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	564259	57.5647 ug/L		97
46)	Benzene	10.46	78	1427454	49.7057 ug/L		99
47)	Trichloroethene	11.21	130	394718	51.5336 ug/L		99
48)	Methylcyclohexane	11.30	83	573986	49.3282 ug/L		98
49)	1,2-Dichloropropane	11.43	63	298715	46.7256 ug/L		86
50)	Bromodichloromethane	11.73	83	614292	54.6707 ug/L		99
51)	1,4-Dioxane	11.72	88	7460	232.2993 ug/L		99
52)	Dibromomethane	11.81	93	185790	49.0946 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.02	63	118919	43.2785 ug/L		96
54)	4-Methyl-2-Pentanone	12.06	58	49282	43.9069 ug/L		95
55)	cis-1,3-Dichloropropene	12.36	75	601654	52.6064 ug/L		99
56)	Dimethyl Disulfide	12.62	79	282584	46.2927 ug/L		100
59)	Toluene	12.78	91	1530940	47.5816 ug/L		100
60)	Ethyl Methacrylate	12.88	69	281218	45.5112 ug/L		96
62)	trans-1,3-Dichloropropene	12.96	75	537596	49.8584 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	229945	45.2905 ug/L		99
64)	2-Hexanone	13.11	58	44443	41.6557 ug/L	#	92
65)	1,3-Dichloropropane	13.48	76	423955	46.9014 ug/L		98
66)	Tetrachloroethene	13.60	164	344557	49.9830 ug/L		98
67)	Dibromochloromethane	13.87	129	369738	49.8753 ug/L		100
68)	1,2-Dibromoethane	14.12	107	234650	46.3733 ug/L		99
69)	1-Chlorohexane	14.21	91	517166	47.0877 ug/L		98
70)	Chlorobenzene	14.62	112	1030148	47.4797 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.65	131	429122	51.0522 ug/L		99
72)	Ethylbenzene	14.65	106	568765	47.9129 ug/L		100
73)	m-,p-Xylene	14.75	106	1358926	97.5973 ug/L		97
74)	o-Xylene	15.31	106	662717	48.6829 ug/L		98
75)	Styrene	15.35	104	1120192	50.1713 ug/L		95
76)	Bromoform	15.83	173	226525	51.5170 ug/L		99
77)	Isopropylbenzene	15.73	105	1851778	51.2060 ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	246486	41.3891 ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	81116	44.2321 ug/L		90
82)	trans-1,4-Dichloro-2-Buten	16.18	53	68708	36.9195 ug/L		95
83)	n-Propylbenzene	16.24	91	2187115	47.2524 ug/L		100
84)	Bromobenzene	16.37	156	434101	45.5967 ug/L		97
85)	1,3,5-Trimethylbenzene	16.43	105	1628830	48.3097 ug/L		100
86)	2-Chlorotoluene	16.52	91	1523671	47.1496 ug/L		99
87)	4-Chlorotoluene	16.56	91	1355367	46.4321 ug/L		100
88)	a-Methylstyrene	16.83	118	717962	44.8827 ug/L		99
89)	tert-Butylbenzene	16.89	134	304275	46.1292 ug/L		97
90)	1,2,4-Trimethylbenzene	16.94	105	1670172	48.1742 ug/L		100
91)	sec-Butylbenzene	17.16	105	1890564	47.6633 ug/L		99
92)	p-Isopropyltoluene	17.32	119	1616479	47.9971 ug/L		98
93)	1,3-Dichlorobenzene	17.51	146	869537	47.4325 ug/L		99
94)	1,4-Dichlorobenzene	17.64	146	851972	46.0975 ug/L		100
95)	n-Butylbenzene	17.85	91	1573125	47.2480 ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	743931	45.6275 ug/L		100
97)	1,2-Dibromo-3-Chloropropan	19.13	75	53495	44.7498 ug/L		99
98)	1,2,4-Trichlorobenzene	20.28	180	570171	46.7849 ug/L		99
99)	Hexachlorobutadiene	20.43	225	284554	49.9720 ug/L		97
100)	Naphthalene	20.65	128	780692	43.1166 ug/L		100
101)	1,2,3-Trichlorobenzene	20.96	180	454242	44.1795 ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061716\8M413060.D Vial: 2
Acq On : 17 Jun 2016 16:23 Operator: FJB
Sample : WG573252-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 16:45 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

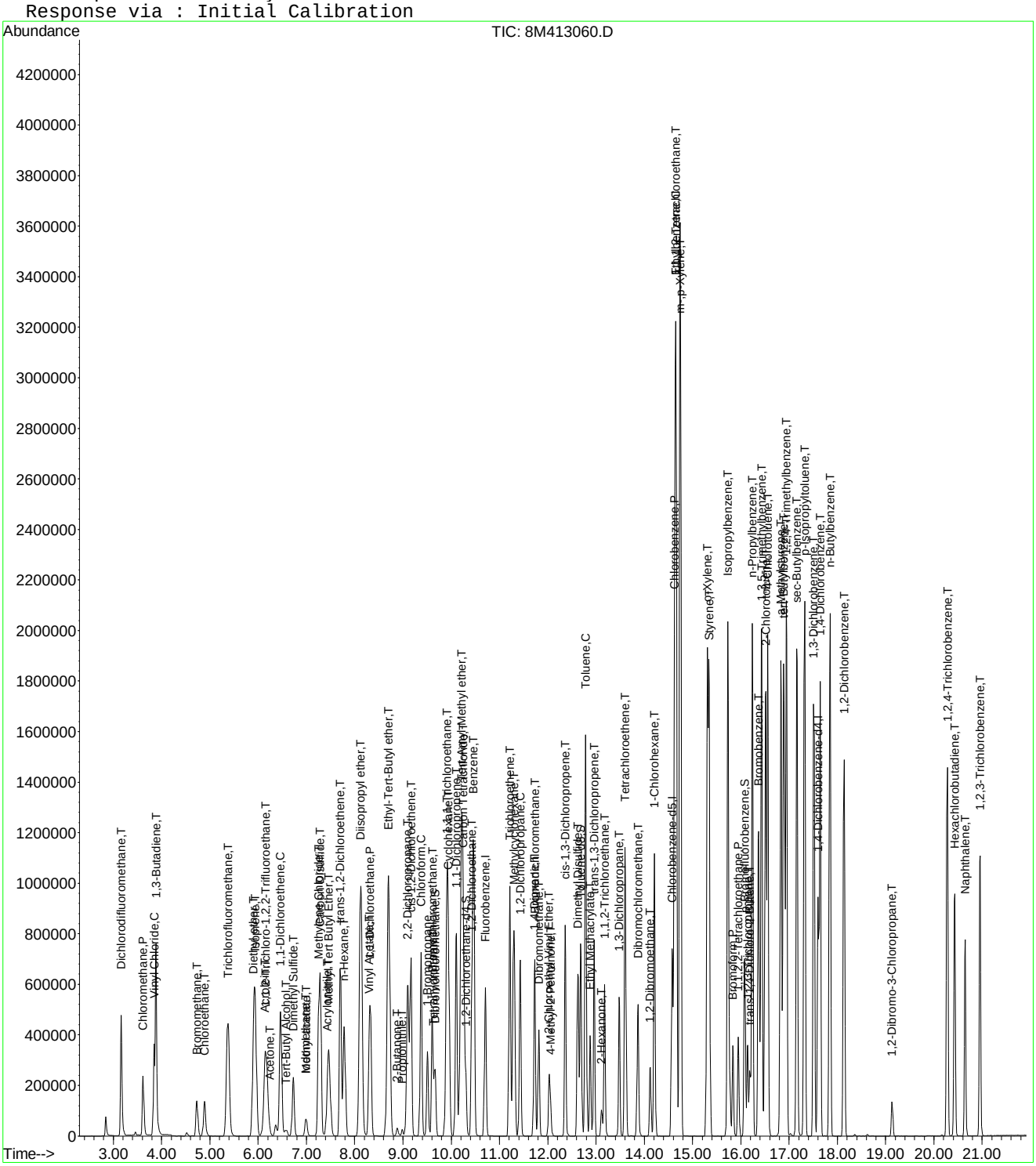

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061716\8M413060.D Vial: 2
Acq On : 17 Jun 2016 16:23 Operator: FJB
Sample : WG573252-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	90	0.00
2	T	Dichlorodifluoromethane	0.4192	0.4459	-6.4	91	0.00
3	P	Chloromethane	0.2447	0.2148	12.2	81	0.00
4	C	Vinyl Chloride	0.2903	0.3023	-4.1	93	0.00
5	T	1,3-Butadiene	0.2434	0.2971	-22.1	106	0.00
6	T	Bromomethane	0.1654	0.0986	40.4#	53	0.00
7	T	Chloroethane	0.1597	0.1480	7.3	85	0.00
8	T	Trichlorofluoromethane	0.5401	0.6093	-12.8	102	0.00
9	T	Diethyl ether	0.1290	0.1225	5.0	88	0.00
10	T	Isoprene	0.3280	0.3031	7.6	85	0.00
11	T	Acrolein	0.0116	0.0105	9.4	83	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2539	0.2547	-0.3	92	0.00
13	T	Acetone	0.0281	0.0317	-12.8	97	0.00
14	C	1,1-Dichloroethene	0.4043	0.4161	-2.9	94	0.00
15	T	Tert-Butyl Alcohol	0.0090	0.0098	-8.2	98	0.00
16	T	Dimethyl Sulfide	0.1445	0.1340	7.3	85	0.00
17	T	Iodomethane	0.0866	0.0302	65.1#	27#	0.00
18	T	Methyl acetate	0.0760	0.0655	13.8	80	0.00
19	T	Methylene Chloride	0.2573	0.2455	4.6	88	0.00
20	T	Carbon Disulfide	0.8460	0.8294	2.0	91	0.00
21	T	Acrylonitrile	0.0365	0.0349	4.5	81	0.00
22	T	Methyl Tert Butyl Ether	0.5568	0.5714	-2.6	89	0.00
23	T	trans-1,2-Dichloroethene	0.3714	0.3649	1.7	89	0.00
24	T	n-Hexane	0.2758	0.2528	8.3	84	0.00
25	T	Diisopropyl ether	0.5789	0.5510	4.8	87	0.00
26	T	Vinyl Acetate	0.2651	0.2470	6.8	81	0.00
27	P	1,1-Dichloroethane	0.4612	0.4632	-0.4	90	0.00
28	T	Ethyl-Tert-Butyl ether	0.6203	0.6382	-2.9	91	0.00
29	T	2-Butanone	0.0413	0.0383	7.3	80	0.00
30	T	Propionitrile	0.0120	0.0112	7.0	82	0.00
31	T	2,2-Dichloropropane	0.4860	0.5569	-14.6	101	0.00
32	T	cis-1,2-Dichloroethene	0.2870	0.2842	1.0	90	0.00
33	C	Chloroform	0.5446	0.5764	-5.8	95	0.00
34		1-Bromopropane	0.0411	0.0434	-5.5	96	0.00
35	T	Bromochloromethane	0.1472	0.1469	0.2	89	0.00
36	T	Tetrahydrofuran	0.0272	0.0229	15.9	81	0.00
37	S	Dibromofluoromethane	0.2686	0.2933	-9.2	97	0.00
38	T	1,1,1-Trichloroethane	0.5173	0.5909	-14.2	101	0.00
39	T	Cyclohexane	0.3581	0.3325	7.2	87	0.00
40	T	1,1-Dichloropropene	0.3943	0.4061	-3.0	92	0.00
41	T	Tert-Amyl-Methyl ether	0.5634	0.5756	-2.2	91	0.00
42	T	Carbon Tetrachloride	0.4593	0.5364	-16.8	104	0.00
43	S	1,2-Dichloroethane-d4	0.2880	0.3265	-13.4	100	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.3505	0.4036	-15.1	101	0.00
46	T	Benzene	1.0269	1.0209	0.6	89	0.00
47	T	Trichloroethene	0.2739	0.2823	-3.1	93	0.00
48	T	Methylcyclohexane	0.4161	0.4105	1.3	90	0.00
49	C	1,2-Dichloropropane	0.2286	0.2136	6.5	85	0.00
50	T	Bromodichloromethane	0.4018	0.4393	-9.3	94	0.00
51	T	1,4-Dioxane	0.0012	0.0013	-15.7	99	0.00
52	T	Dibromomethane	0.1353	0.1329	1.8	89	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0983	0.0851	13.4	73	0.00
54	T	4-Methyl-2-Pentanone	0.0401	0.0352	12.2	76	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061716\8M413060.D Vial: 2
Acq On : 17 Jun 2016 16:23 Operator: FJB
Sample : WG573252-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4090	0.4303	-5.2	90	0.00
56	T	Dimethyl Disulfide	0.2183	0.2021	7.4	82	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	96	0.00
58	S	Toluene-d8	1.3084	1.3714	-4.8	99	0.00
59	C	Toluene	1.5520	1.4770	4.8	91	0.00
60	T	Ethyl Methacrylate	0.2981	0.2713	9.0	83	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.5201	0.5186	0.3	90	0.00
63	T	1,1,2-Trichloroethane	0.2449	0.2218	9.4	86	0.00
64	T	2-Hexanone	0.0515	0.0429	16.7	78	0.00
65	T	1,3-Dichloropropane	0.4360	0.4090	6.2	87	0.00
66	T	Tetrachloroethene	0.3325	0.3324	0.0	98	0.00
67	T	Dibromochloromethane	0.3576	0.3567	0.3	92	0.00
68	T	1,2-Dibromoethane	0.2441	0.2264	7.3	86	0.00
69	T	1-Chlorohexane	0.5298	0.4989	5.8	92	0.00
70	P	Chlorobenzene	1.0466	0.9938	5.0	92	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4055	0.4140	-2.1	96	0.00
72	C	Ethylbenzene	0.5726	0.5487	4.2	94	0.00
73	T	m-,p-Xylene	0.6716	0.6555	2.4	94	0.00
74	T	o-Xylene	0.6566	0.6393	2.6	93	0.00
75	T	Styrene	1.0770	1.0807	-0.3	92	0.00
76	P	Bromoform	0.2121	0.2185	-3.0	95	0.00
77	T	Isopropylbenzene	1.7444	1.7865	-2.4	96	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	103	0.00
79	P	1,1,2,2-Tetrachloroethane	0.5018	0.4154	17.2	84	0.00
80	S	p-Bromofluorobenzene	1.0352	1.0387	-0.3	105	0.00
81	T	1,2,3-Trichloropropane	0.1545	0.1367	11.5	91	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1376	0.1158	15.8	79	0.00
83	T	n-Propylbenzene	3.9003	3.6860	5.5	96	0.00
84	T	Bromobenzene	0.8022	0.7316	8.8	94	0.00
85	T	1,3,5-Trimethylbenzene	2.8411	2.7451	3.4	98	0.00
86	T	2-Chlorotoluene	2.7231	2.5678	5.7	95	0.00
87	T	4-Chlorotoluene	2.4597	2.2842	7.1	101	0.00
88	T	a-Methylstyrene	1.3479	1.2100	10.2	93	0.00
89	T	tert-Butylbenzene	0.5558	0.5128	7.7	99	0.00
90	T	1,2,4-Trimethylbenzene	2.9214	2.8147	3.7	99	0.00
91	T	sec-Butylbenzene	3.3424	3.1862	4.7	98	0.00
92	T	p-Isopropyltoluene	2.8379	2.7243	4.0	100	0.00
93	T	1,3-Dichlorobenzene	1.5448	1.4654	5.1	99	0.00
94	T	1,4-Dichlorobenzene	1.5574	1.4358	7.8	98	0.00
95	T	n-Butylbenzene	2.8056	2.6512	5.5	98	0.00
96	T	1,2-Dichlorobenzene	1.3739	1.2537	8.7	97	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1007	0.0902	10.5	90	0.00
98	T	1,2,4-Trichlorobenzene	1.0269	0.9609	6.4	98	0.00
99	T	Hexachlorobutadiene	0.4798	0.4796	0.1	108	0.00
100	T	Naphthalene	1.5257	1.3157	13.8	87	0.00
101	T	1,2,3-Trichlorobenzene	0.8664	0.7655	11.6	96	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413060.D 8260WT.M Mon Jun 20 09:18:06 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061716\8M413060.D Vial: 2
Acq On : 17 Jun 2016 16:23 Operator: FJB
Sample : WG573252-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	90	0.00
2	T	Dichlorodifluoromethane	50.0000	53.1868	-6.4	91	0.00
3	P	Chloromethane	50.0000	43.9016	12.2	81	0.00
4	C	Vinyl Chloride	50.0000	52.0713	-4.1	93	0.00
5	T	1,3-Butadiene	50.0000	61.0292	-22.1	106	0.00
6	T	Bromomethane	50.0000	28.7775	42.4#	53	0.00
7	T	Chloroethane	50.0000	46.3271	7.3	85	0.00
8	T	Trichlorofluoromethane	50.0000	56.4042	-12.8	102	0.00
9	T	Diethyl ether	100.0000	95.0146	5.0	88	0.00
10	T	Isoprene	50.0000	46.1995	7.6	85	0.00
11	T	Acrolein	50.0000	45.3040	9.4	83	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	50.1696	-0.3	92	0.00
13	T	Acetone	50.0000	56.4026	-12.8	97	0.00
14	C	1,1-Dichloroethene	50.0000	51.4688	-2.9	94	0.00
15	T	Tert-Butyl Alcohol	200.0000	216.3053	-8.2	98	0.00
16	T	Dimethyl Sulfide	50.0000	46.3627	7.3	85	0.00
17	T	Iodomethane	50.0000	15.6597	68.7#	27	0.00
18	T	Methyl acetate	50.0000	43.1067	13.8	80	0.00
19	T	Methylene Chloride	50.0000	47.7217	4.6	88	0.00
20	T	Carbon Disulfide	50.0000	49.0178	2.0	91	0.00
21	T	Acrylonitrile	50.0000	47.7556	4.5	81	0.00
22	T	Methyl Tert Butyl Ether	50.0000	51.3155	-2.6	89	0.00
23	T	trans-1,2-Dichloroethene	50.0000	49.1268	1.7	89	0.00
24	T	n-Hexane	50.0000	45.8365	8.3	84	0.00
25	T	Diisopropyl ether	100.0000	95.1777	4.8	87	0.00
26	T	Vinyl Acetate	50.0000	46.5927	6.8	81	0.00
27	P	1,1-Dichloroethane	50.0000	50.2128	-0.4	90	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	102.8899	-2.9	91	0.00
29	T	2-Butanone	50.0000	46.3436	7.3	80	0.00
30	T	Propionitrile	100.0000	92.9829	7.0	82	0.00
31	T	2,2-Dichloropropane	50.0000	57.2841	-14.6	101	0.00
32	T	cis-1,2-Dichloroethene	50.0000	49.5169	1.0	90	0.00
33	C	Chloroform	50.0000	52.9169	-5.8	95	0.00
34		1-Bromopropane	50.0000	52.7636	-5.5	96	0.00
35	T	Bromochloromethane	50.0000	49.9137	0.2	89	0.00
36	T	Tetrahydrofuran	100.0000	84.0571	15.9	81	0.00
37	S	Dibromofluoromethane	25.0000	27.2990	-9.2	97	0.00
38	T	1,1,1-Trichloroethane	50.0000	57.1122	-14.2	101	0.00
39	T	Cyclohexane	50.0000	46.4157	7.2	87	0.00
40	T	1,1-Dichloropropene	50.0000	51.5014	-3.0	92	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	102.1740	-2.2	91	0.00
42	T	Carbon Tetrachloride	50.0000	58.3845	-16.8	104	0.00
43	S	1,2-Dichloroethane-d4	25.0000	28.3422	-13.4	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	57.5647	-15.1	101	0.00
46	T	Benzene	50.0000	49.7057	0.6	89	0.00
47	T	Trichloroethene	50.0000	51.5336	-3.1	93	0.00
48	T	Methylcyclohexane	50.0000	49.3282	1.3	90	0.00
49	C	1,2-Dichloropropane	50.0000	46.7256	6.5	85	0.00
50	T	Bromodichloromethane	50.0000	54.6707	-9.3	94	0.00
51	T	1,4-Dioxane	200.0000	232.2993	-16.1	99	0.00
52	T	Dibromomethane	50.0000	49.0946	1.8	89	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	43.2785	13.4	73	0.00
54	T	4-Methyl-2-Pentanone	50.0000	43.9069	12.2	76	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061716\8M413060.D Vial: 2
Acq On : 17 Jun 2016 16:23 Operator: FJB
Sample : WG573252-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	52.6064	-5.2	90	0.00
56	T	Dimethyl Disulfide	50.0000	46.2927	7.4	82	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	96	0.00
58	S	Toluene-d8	25.0000	26.2041	-4.8	99	0.00
59	C	Toluene	50.0000	47.5816	4.8	91	0.00
60	T	Ethyl Methacrylate	50.0000	45.5112	9.0	83	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	49.8584	0.3	90	0.00
63	T	1,1,2-Trichloroethane	50.0000	45.2905	9.4	86	0.00
64	T	2-Hexanone	50.0000	41.6557	16.7	78	0.00
65	T	1,3-Dichloropropane	50.0000	46.9014	6.2	87	0.00
66	T	Tetrachloroethene	50.0000	49.9830	0.0	98	0.00
67	T	Dibromochloromethane	50.0000	49.8753	0.2	92	0.00
68	T	1,2-Dibromoethane	50.0000	46.3734	7.3	86	0.00
69	T	1-Chlorohexane	50.0000	47.0877	5.8	92	0.00
70	P	Chlorobenzene	50.0000	47.4797	5.0	92	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	51.0522	-2.1	96	0.00
72	C	Ethylbenzene	50.0000	47.9129	4.2	94	0.00
73	T	m-,p-Xylene	100.0000	97.5973	2.4	94	0.00
74	T	o-Xylene	50.0000	48.6829	2.6	93	0.00
75	T	Styrene	50.0000	50.1713	-0.3	92	0.00
76	P	Bromoform	50.0000	51.5170	-3.0	95	0.00
77	T	Isopropylbenzene	50.0000	51.2060	-2.4	96	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	103	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	41.3891	17.2	84	0.00
80	S	p-Bromofluorobenzene	25.0000	25.0859	-0.3	105	0.00
81	T	1,2,3-Trichloropropane	50.0000	44.2321	11.5	91	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	36.9194	26.2#	79	0.00
83	T	n-Propylbenzene	50.0000	47.2524	5.5	96	0.00
84	T	Bromobenzene	50.0000	45.5966	8.8	94	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	48.3097	3.4	98	0.00
86	T	2-Chlorotoluene	50.0000	47.1496	5.7	95	0.00
87	T	4-Chlorotoluene	50.0000	46.4321	7.1	101	0.00
88	T	a-Methylstyrene	50.0000	44.8827	10.2	93	0.00
89	T	tert-Butylbenzene	50.0000	46.1292	7.7	99	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	48.1742	3.7	99	0.00
91	T	sec-Butylbenzene	50.0000	47.6633	4.7	98	0.00
92	T	p-Isopropyltoluene	50.0000	47.9971	4.0	100	0.00
93	T	1,3-Dichlorobenzene	50.0000	47.4325	5.1	99	0.00
94	T	1,4-Dichlorobenzene	50.0000	46.0975	7.8	98	0.00
95	T	n-Butylbenzene	50.0000	47.2480	5.5	98	0.00
96	T	1,2-Dichlorobenzene	50.0000	45.6275	8.7	97	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	44.7498	10.5	90	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	46.7849	6.4	98	0.00
99	T	Hexachlorobutadiene	50.0000	49.9720	0.1	108	0.00
100	T	Naphthalene	50.0000	43.1166	13.8	87	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	44.1795	11.6	96	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413060.D 8260WT.M Mon Jun 20 09:18:09 2016 Page 2

2.1.1.5 Raw QC Data

BFB

Data File : C:\MSDCHEM\1\DATA\042416\6M138750.D Vial: 1
Acq On : 24 Apr 2016 16:33 Operator: JDS
Sample : WG566155-01 50ng BFB 826-A9 Inst : HPMS6
Misc : 1,1 STD75485 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title : SOP: OVL MSV01

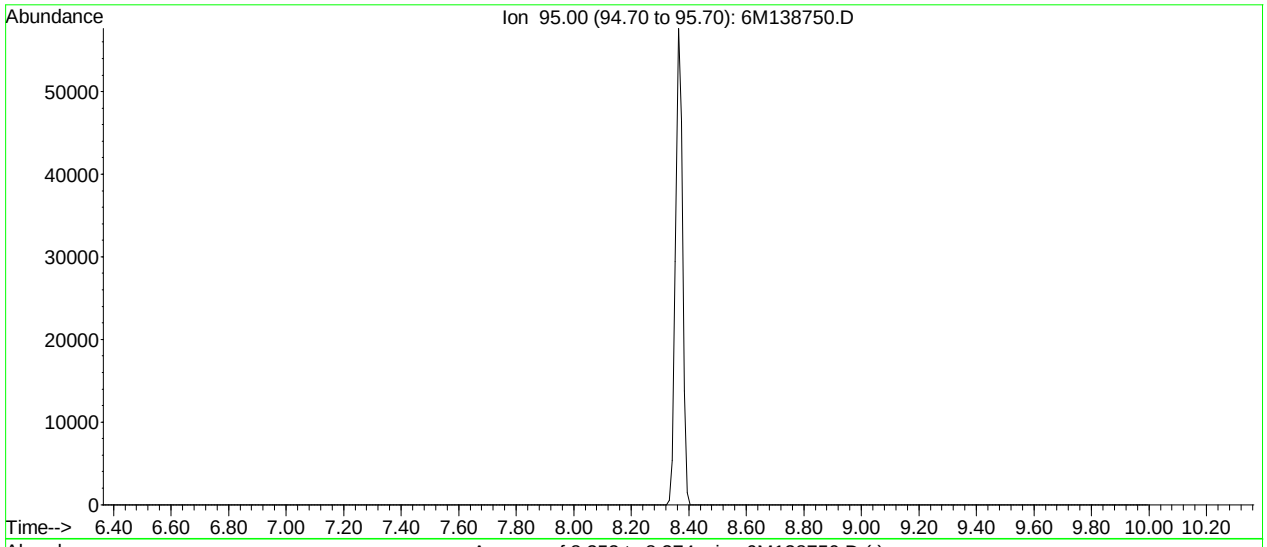

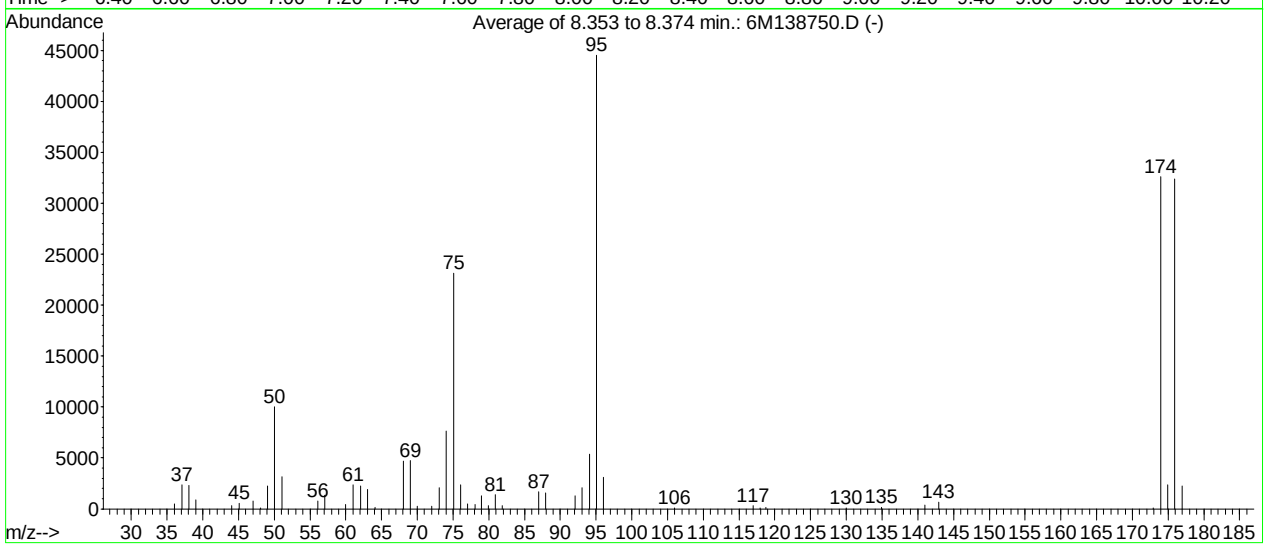

AutoFind: Scans 320, 321, 322; Background Corrected with Scan 315

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.5	10010	PASS
75	95	30	60	52.0	23152	PASS
95	95	100	100	100.0	44552	PASS
96	95	5	9	6.9	3085	PASS
173	174	0.00	2	0.3	113	PASS
174	95	50	100	73.2	32632	PASS
175	174	5	9	7.2	2336	PASS
176	174	95	101	99.2	32384	PASS
177	176	5	9	7.0	2251	PASS

6M138750.D BFB.M Mon Apr 25 09:21:54 2016

BFB

```
Data File : C:\MSDCHEM\2\DATA\051316\8M412218.D          Vial: 3
Acq On    : 13 May 2016  12:36                       Operator: TMB
Sample    : WG568561-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD76034                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
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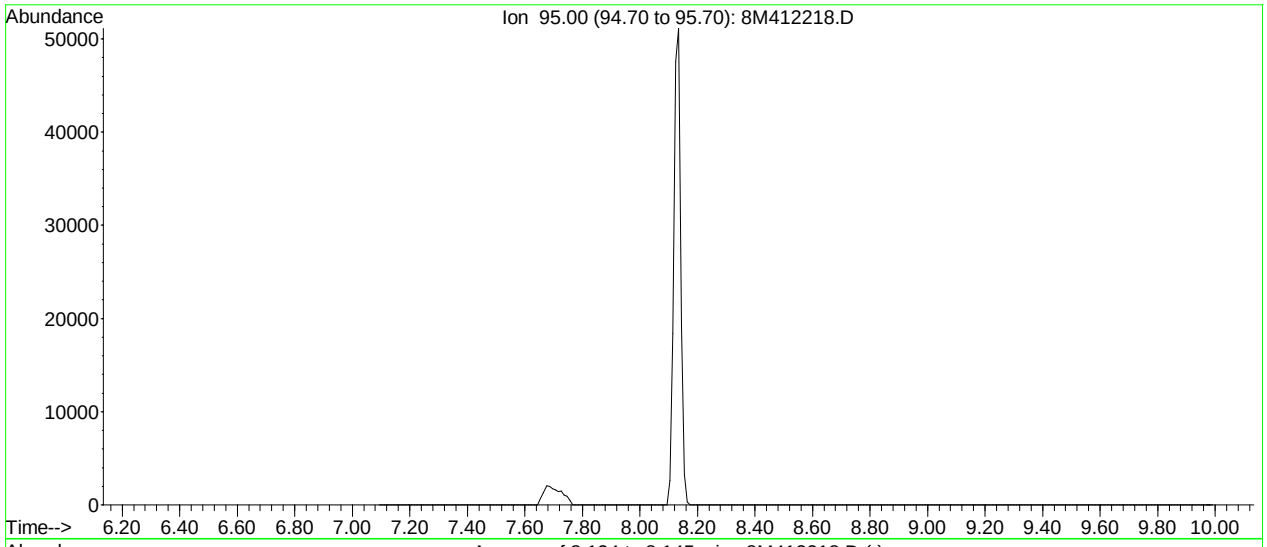

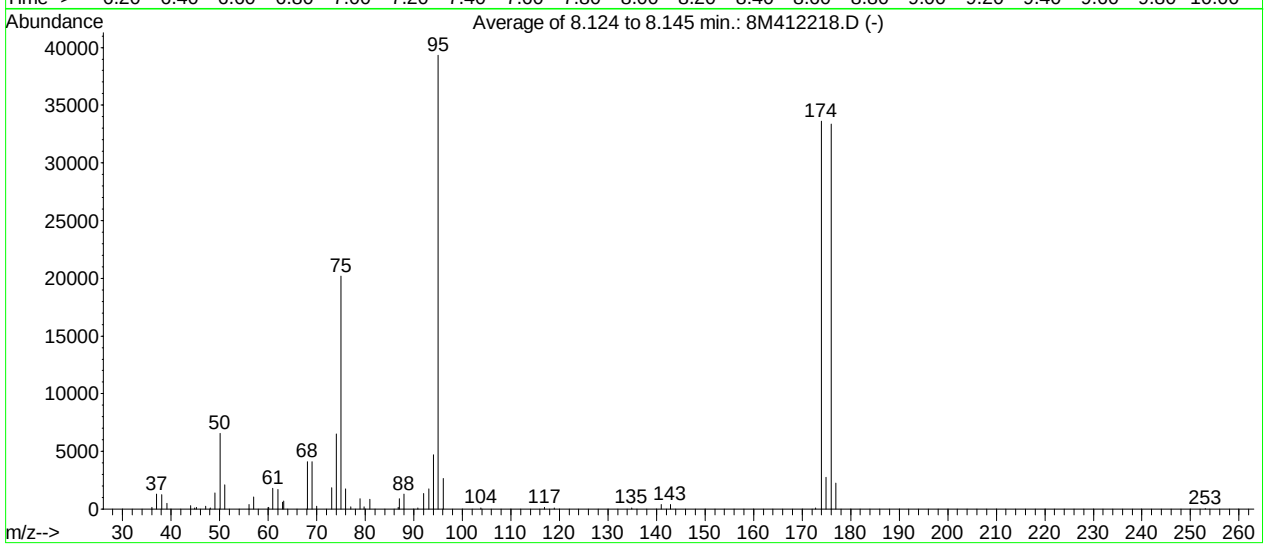

AutoFind: Scans 102, 103, 104; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.7	6575	PASS
75	95	30	60	51.3	20171	PASS
95	95	100	100	100.0	39312	PASS
96	95	5	9	6.7	2649	PASS
173	174	0.00	2	0.4	122	PASS
174	95	50	100	85.5	33616	PASS
175	174	5	9	8.2	2746	PASS
176	174	95	101	99.2	33360	PASS
177	176	5	9	6.8	2267	PASS

8M412218.D BFB.M Fri May 13 12:47:24 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\060116\6M139735.D          Vial: 1
Acq On    :  1 Jun 2016  12:04                       Operator: TMB
Sample    : WG570915-01 50ng BFB STD 8260            Inst    : HPMS6
Misc      : 1,1 STD76034                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP: OVL MSV01
```

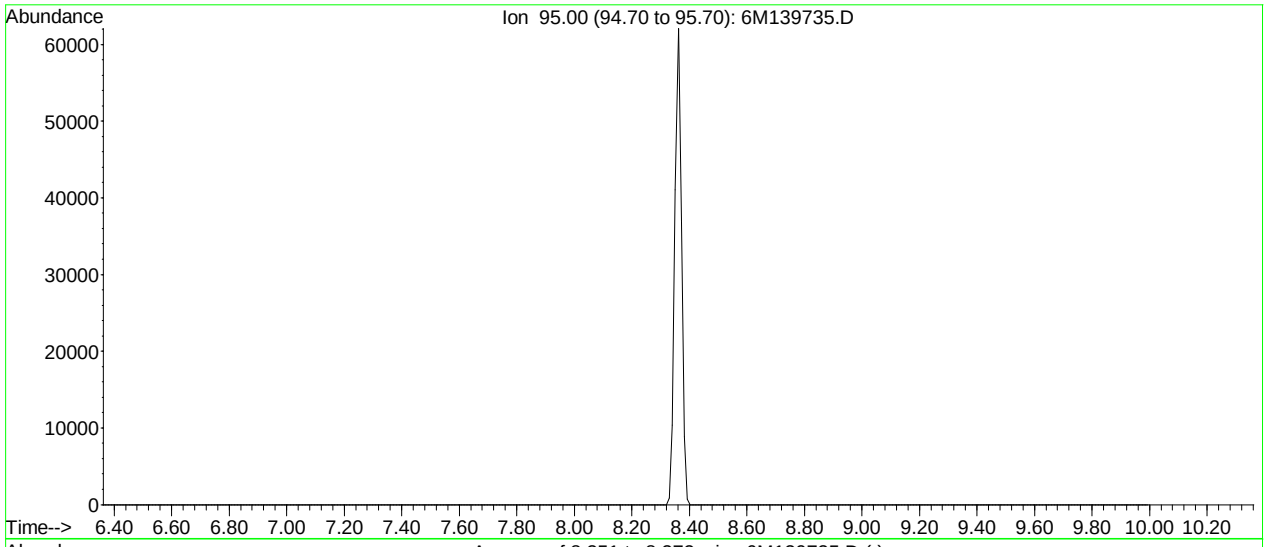

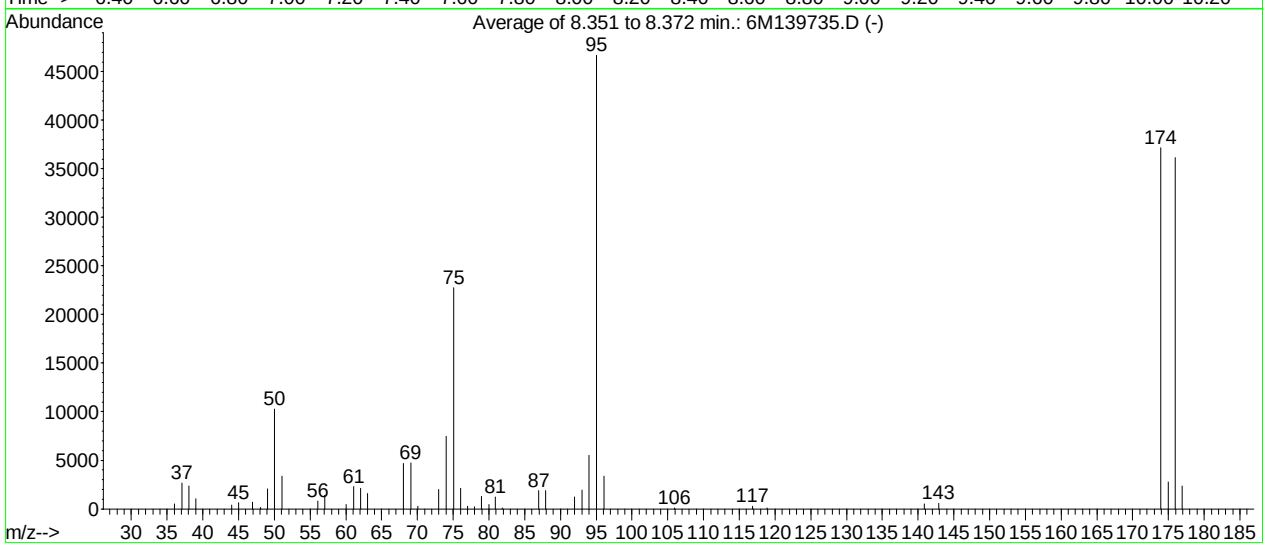

AutoFind: Scans 320, 321, 322; Background Corrected with Scan 315

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.0	10283	PASS
75	95	30	60	48.7	22744	PASS
95	95	100	100	100.0	46704	PASS
96	95	5	9	7.3	3392	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	79.6	37192	PASS
175	174	5	9	7.4	2756	PASS
176	174	95	101	97.2	36149	PASS
177	176	5	9	6.6	2378	PASS

6M139735.D BFB.M Wed Jun 01 12:15:03 2016

BFB

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061616\6M140113.D Vial: 1
Acq On : 16 Jun 2016 16:21 Operator: FJB
Sample : WG573035-01 BFB 50ng 8260 Inst : HPMS6
Misc : 1,1 STD76496 Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6

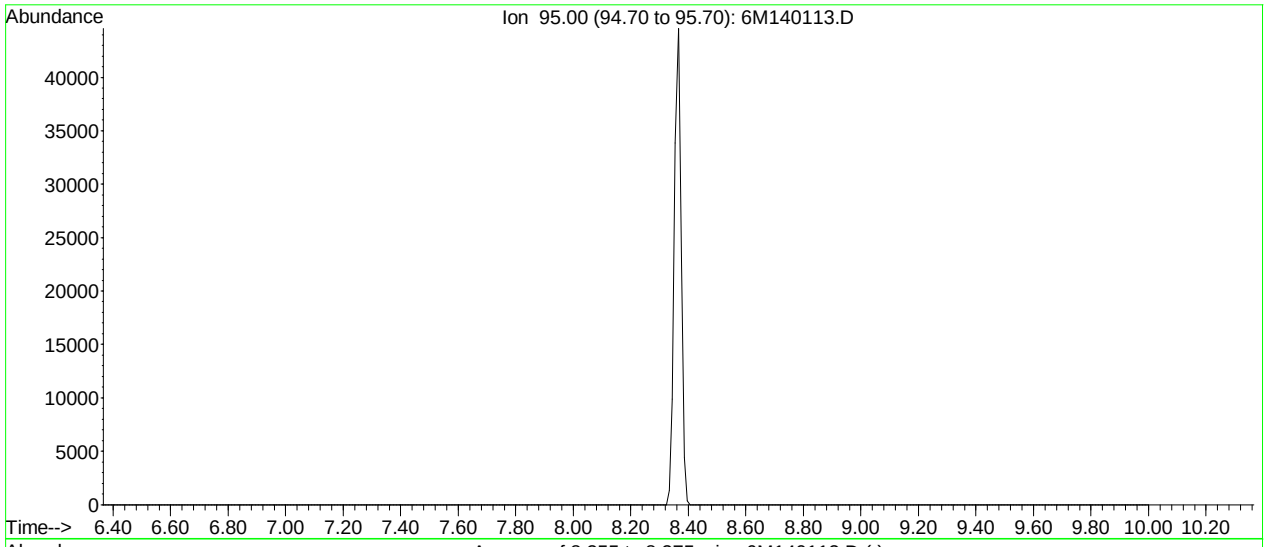

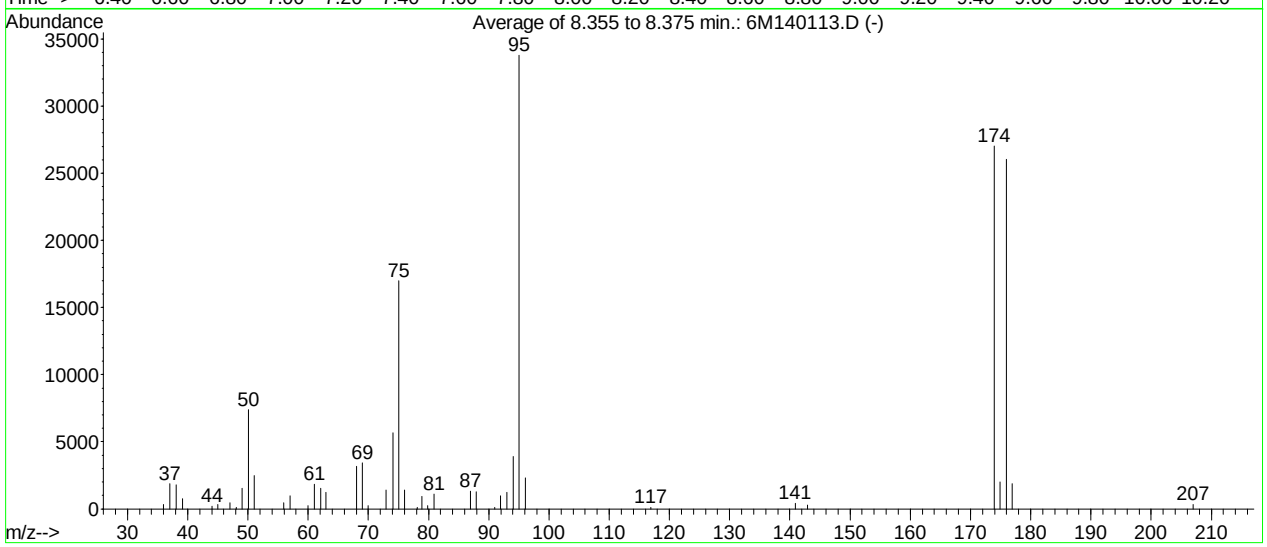

AutoFind: Scans 320, 321, 322; Background Corrected with Scan 315

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.9	7403	PASS
75	95	30	60	50.2	16974	PASS
95	95	100	100	100.0	33797	PASS
96	95	5	9	6.8	2302	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	80.0	27042	PASS
175	174	5	9	7.5	2016	PASS
176	174	95	101	96.3	26048	PASS
177	176	5	9	7.2	1864	PASS

6M140113.D 8260WT.M Fri Jun 17 08:33:10 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061716\8M413059.D Vial: 1
Acq On    : 17 Jun 2016  15:56                        Operator: FJB
Sample    : WG573252-01 BFB 50ng 8260                 Inst    : HPMS8
Misc      : 1,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title     : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
```

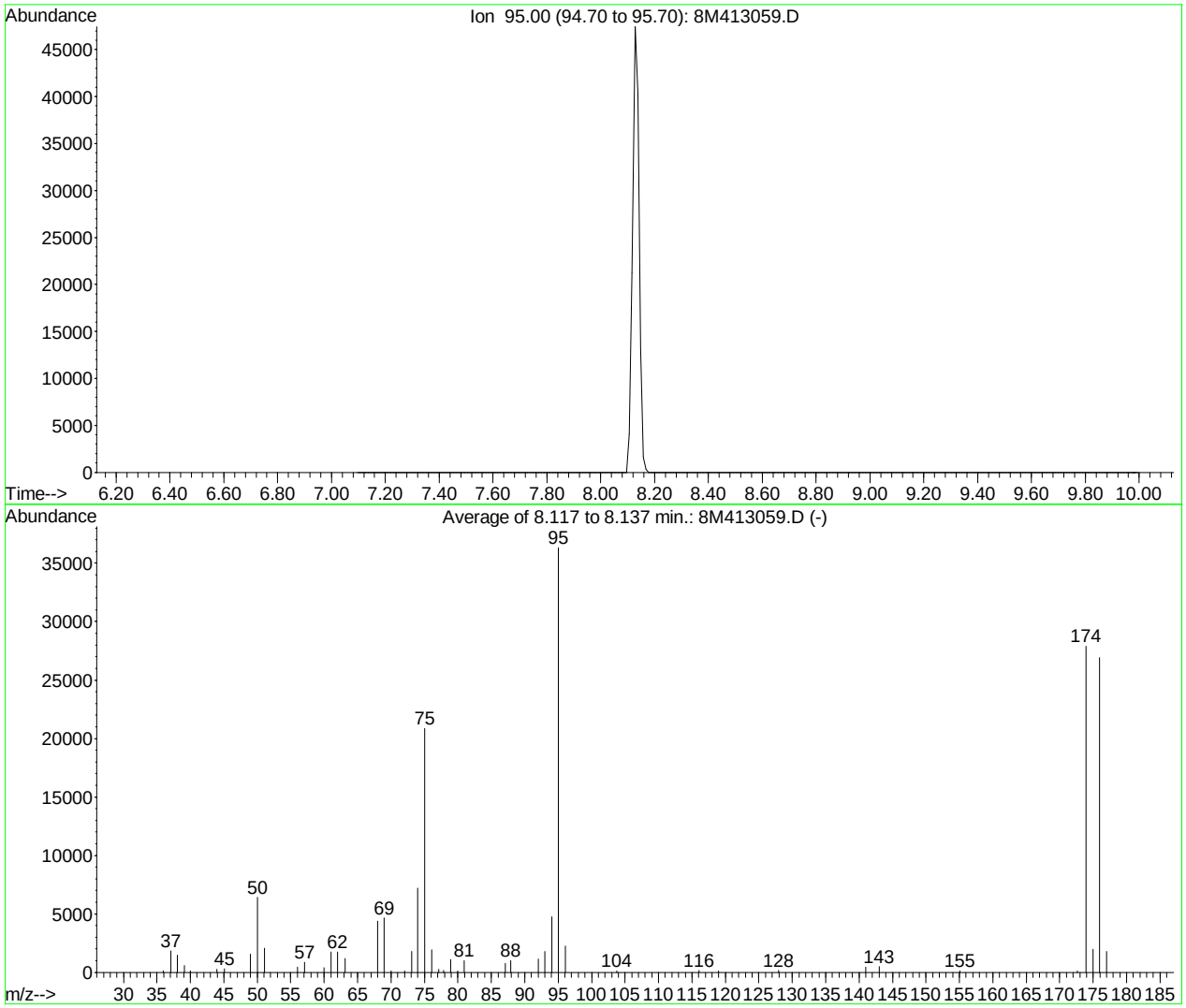

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.7	6432	PASS
75	95	30	60	57.5	20879	PASS
95	95	100	100	100.0	36330	PASS
96	95	5	9	6.1	2230	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	76.8	27909	PASS
175	174	5	9	7.0	1948	PASS
176	174	95	101	96.5	26925	PASS
177	176	5	9	6.6	1773	PASS

8M413059.D 8260WT.M Mon Jun 20 09:13:50 2016

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061616\6M140116.D Vial: 4
Acq On : 16 Jun 2016 18:13 Operator: FJB
Sample : WG573036-01 BLANK 6/16 8260 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:36:33 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	572141	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	423614	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.64	152	223731	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	150625	25.4376 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.76%		
43) 1,2-Dichloroethane-d4	11.11	65	169653	25.9939 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.96%		
58) Toluene-d8	13.85	98	506201	24.8989 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.60%		
80) p-Bromofluorobenzene	17.84	95	210801	26.6819 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 106.72%		

Target Compounds

					Qvalue
29) 2-Butanone	9.75	43	1026	0.3971 ug/L #	57
36) Tetrahydrofuran	10.36	42	3069	1.7254 ug/L #	74
94) 1,4-Dichlorobenzene	19.70	146	421	Below Cal #	36

(#) = qualifier out of range (m) = manual integration
6M140116.D 8260WT.M Fri Jun 17 08:36:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061616\6M140116.D Vial: 4
Acq On : 16 Jun 2016 18:13 Operator: FJB
Sample : WG573036-01 BLANK 6/16 8260 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 8:36 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration

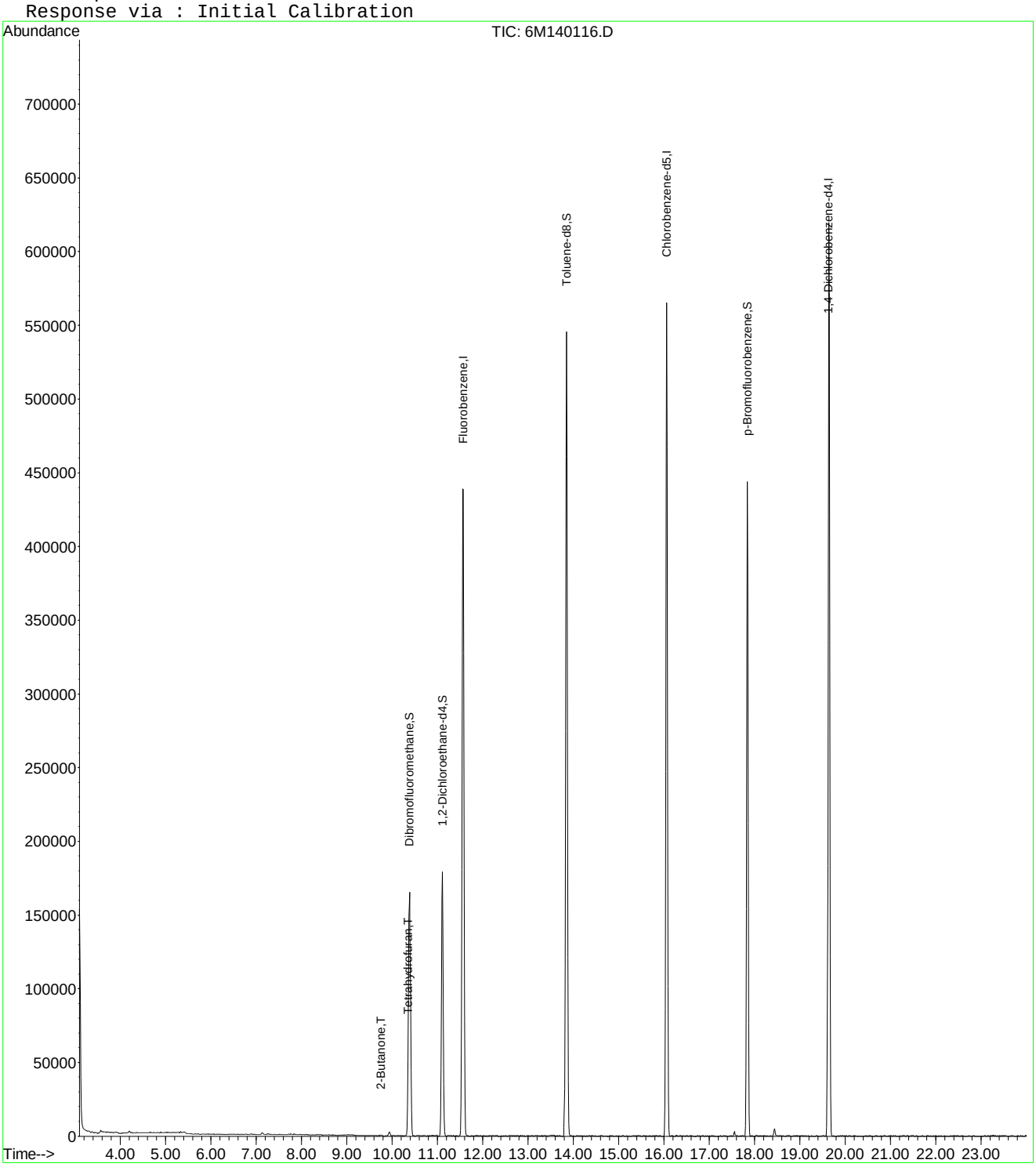

6M140116.D 8260WT.M Fri Jun 17 08:36:36 2016 Page 2

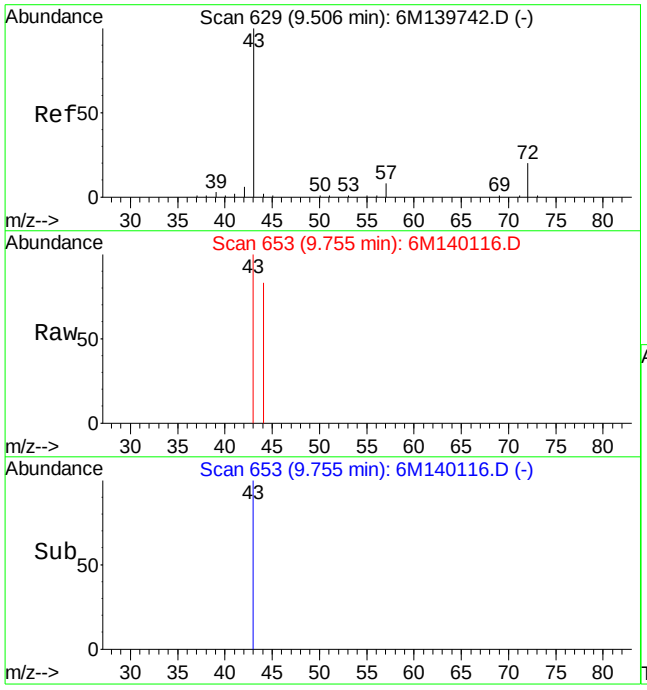

#29
2-Butanone
Concen: 0.40 ug/L
RT: 9.75 min Scan# 653
Delta R.T. 0.24 min
Lab File: 6M140116.D
Acq: 16 Jun 2016 18:13

Tgt Ion: 43 Resp: 1026

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.9	27.9#

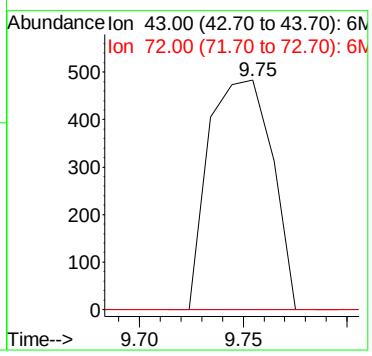

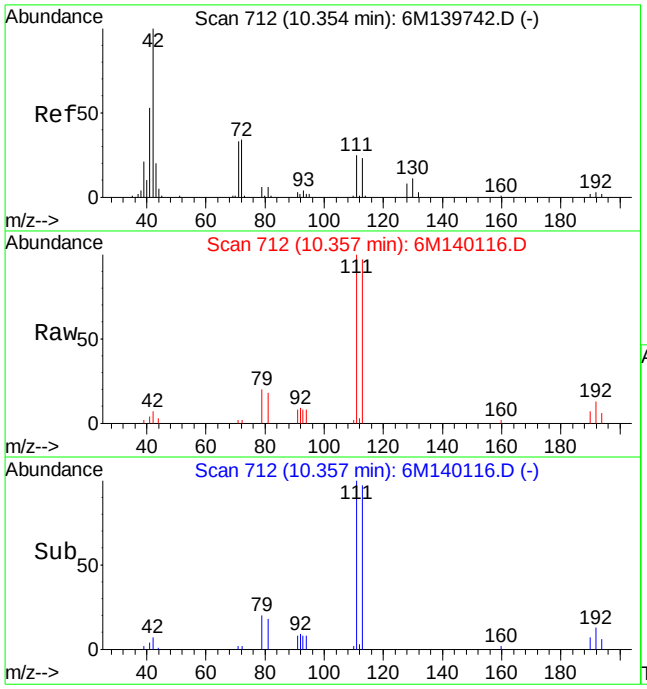

#36
Tetrahydrofuran
Concen: 1.73 ug/L
RT: 10.36 min Scan# 712
Delta R.T. 0.00 min
Lab File: 6M140116.D
Acq: 16 Jun 2016 18:13

Tgt Ion: 42 Resp: 3069

Ion	Ratio	Lower	Upper
42	100		
72	15.2	20.8	48.4#
71	22.5	19.9	46.5

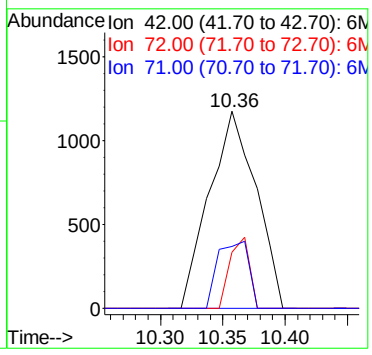

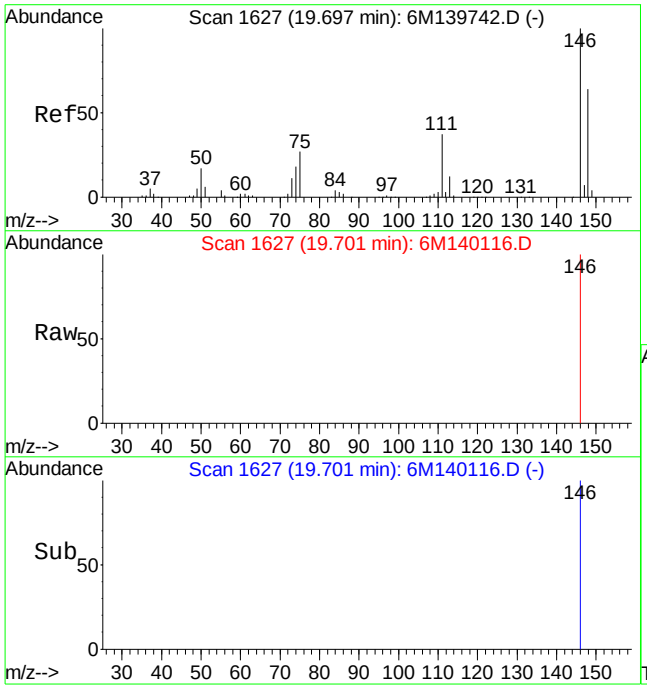

#94
1,4-Dichlorobenzene
Concen: Below Cal
RT: 19.70 min Scan# 1627
Delta R.T. 0.00 min
Lab File: 6M140116.D
Acq: 16 Jun 2016 18:13

Tgt Ion:146 Resp: 421

Ion	Ratio	Lower	Upper
146	100		
111	0.0	23.5	54.9#

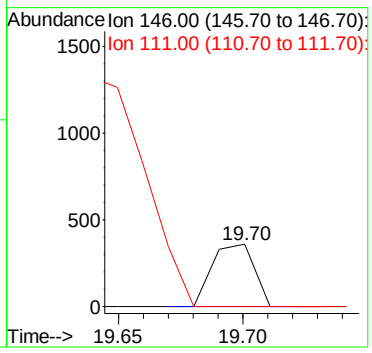

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061716\8M413062.D Vial: 4
Acq On : 17 Jun 2016 17:21 Operator: FJB
Sample : WG573253-01 BLANK 6/17 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 17:43:46 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	668097	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	509490	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	282360	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	200318	27.9067 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.64%		
43) 1,2-Dichloroethane-d4	10.30	65	227532	29.5621 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 118.24%		
58) Toluene-d8	12.68	98	695855	26.0968 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.40%		
80) p-Bromofluorobenzene	16.08	95	294047	25.1500 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.60%		

Target Compounds					Qvalue
36) Tetrahydrofuran	9.63	42	740	1.0173 ug/L #	59

(#) = qualifier out of range (m) = manual integration
8M413062.D 8260WT.M Mon Jun 20 09:21:04 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061716\8M413062.D Vial: 4
Acq On : 17 Jun 2016 17:21 Operator: FJB
Sample : WG573253-01 BLANK 6/17 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 17:43 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

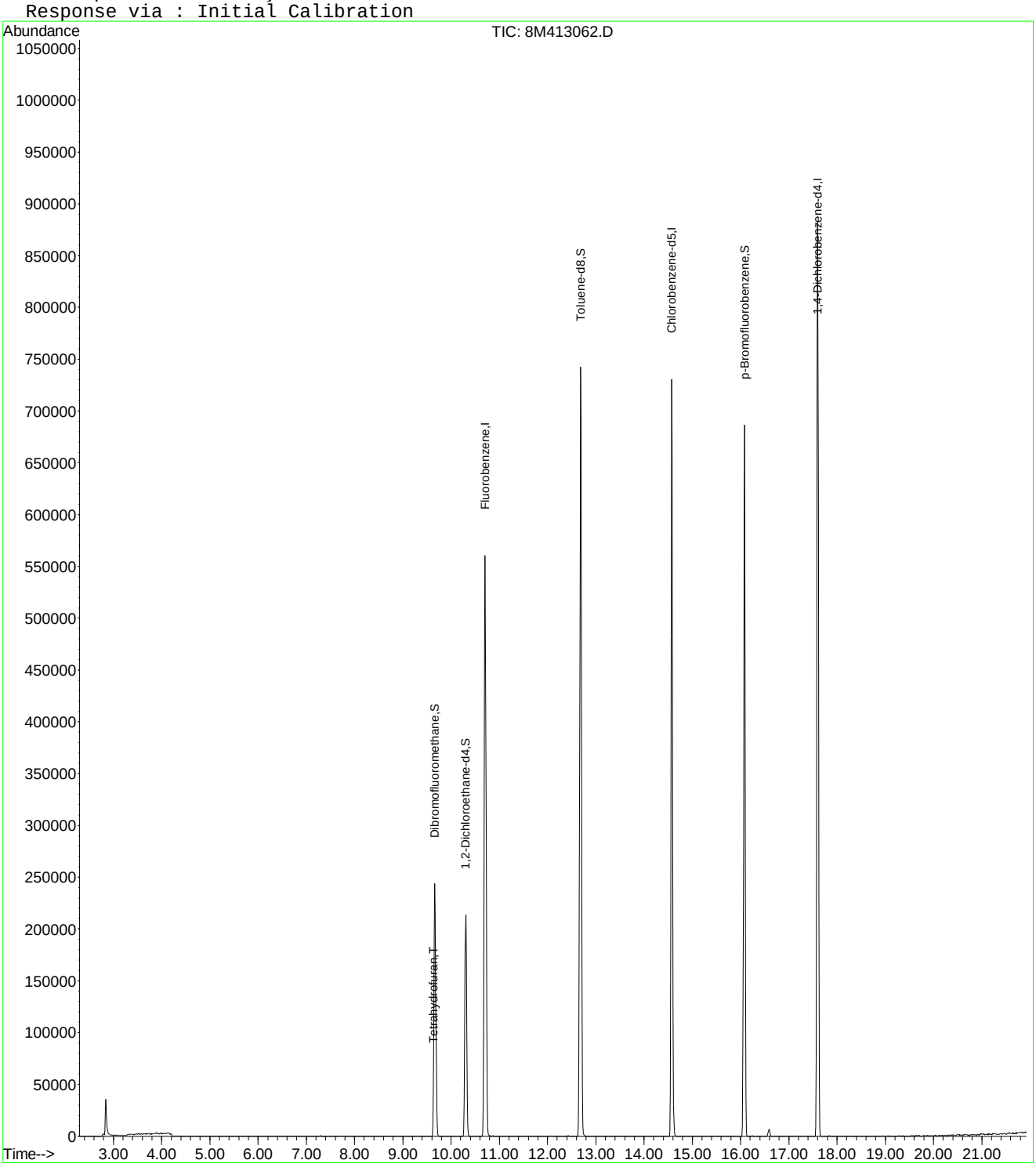

8M413062.D 8260WT.M Mon Jun 20 09:21:05 2016 Page 2

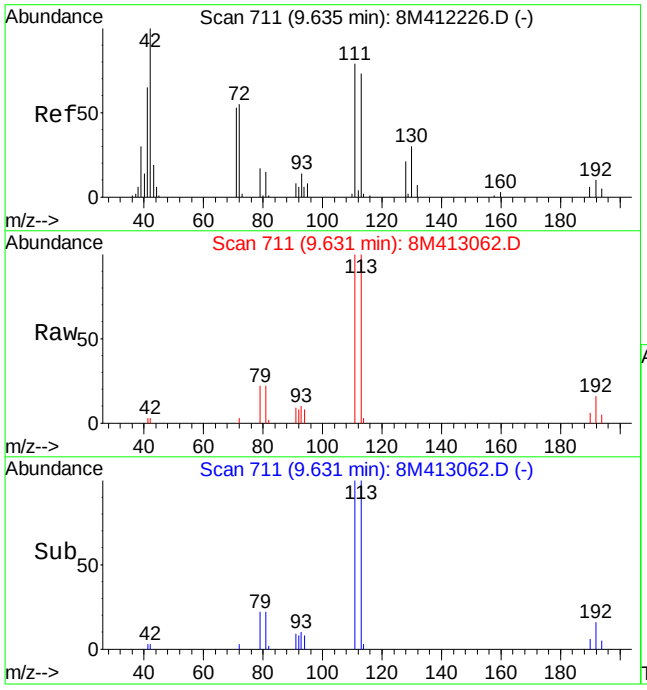

#36
Tetrahydrofuran
Concen: 1.02 ug/L
RT: 9.63 min Scan# 711
Delta R.T. -0.00 min
Lab File: 8M413062.D
Acq: 17 Jun 2016 17:21

Tgt Ion: 42 Resp: 740

Ion	Ratio	Lower	Upper
42	100		
72	62.4	33.8	78.8
71	0.0	32.0	74.8#

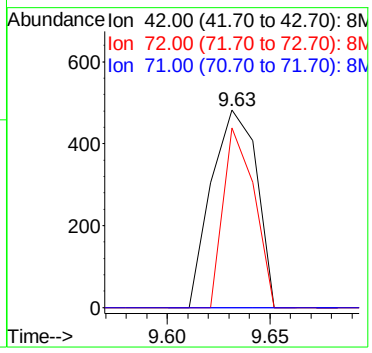

LSC Area Percent Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061716\8M413062.D Vial: 4
Acq On : 17 Jun 2016 17:21 Operator: FJB
Sample : WG573253-01 BLANK 6/17 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 200 Area counts
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Signal : TIC

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.492	111	117	118	rBV2	1301	3327	0.18%	0.035%
2	3.523	118	120	123	rBV2	1283	2197	0.12%	0.023%
3	3.565	123	124	127	rVB3	892	1442	0.08%	0.015%
4	3.637	127	131	132	rBV2	1134	2411	0.13%	0.026%
5	3.720	138	139	143	rVB	1552	2432	0.13%	0.026%
6	3.771	143	144	146	rBV	1321	1590	0.09%	0.017%
7	3.895	153	156	162	rVB3	1787	4543	0.25%	0.048%
8	3.988	162	165	168	rBV	1438	2794	0.15%	0.030%
9	4.050	168	171	172	rVV2	1069	2023	0.11%	0.021%
10	4.123	176	178	184	rVB2	1366	3973	0.22%	0.042%
11	4.278	191	193	195	rBB2	338	417	0.02%	0.004%
12	4.340	196	199	200	rBB2	360	434	0.02%	0.005%
13	4.360	200	201	203	rBB2	369	430	0.02%	0.005%
14	4.464	209	211	213	rBB2	326	202	0.01%	0.002%
15	4.981	259	261	263	rBB2	327	203	0.01%	0.002%
16	5.663	325	327	329	rBB2	355	220	0.01%	0.002%
17	6.458	402	404	406	rBB2	334	207	0.01%	0.002%
18	6.810	436	438	440	rBB2	326	202	0.01%	0.002%
19	7.296	481	485	488	rBB2	574	1062	0.06%	0.011%
20	7.461	499	501	503	rBB2	344	213	0.01%	0.002%
21	7.730	523	527	529	rBB2	345	417	0.02%	0.004%
22	7.792	531	533	535	rBB2	359	223	0.01%	0.002%
23	8.536	603	605	607	rBB2	354	219	0.01%	0.002%
24	8.980	646	648	650	rBB2	401	249	0.01%	0.003%
25	9.063	654	656	658	rBB2	398	247	0.01%	0.003%
26	9.290	676	678	680	rBB2	334	207	0.01%	0.002%
27	9.662	707	714	724	rBB	243669	656228	36.24%	6.941%
28	10.138	758	760	762	rBB	323	200	0.01%	0.002%
29	10.303	769	776	785	rBB	213717	523861	28.93%	5.541%
30	10.706	807	815	828	rBB	560614	1461797	80.72%	15.462%
31	10.861	829	830	833	rBB	682	659	0.04%	0.007%
32	11.688	908	910	912	rBB	373	231	0.01%	0.002%
33	12.070	944	947	949	rBB	358	411	0.02%	0.004%
34	12.432	978	982	985	rBB	535	1035	0.06%	0.011%
35	12.680	999	1006	1019	rBB	742469	1811025	100.00%	19.156%
36	13.021	1037	1039	1041	rBB	401	249	0.01%	0.003%
37	14.572	1183	1189	1199	rBB	730511	1643159	90.73%	17.380%
38	14.747	1204	1206	1208	rBB	413	256	0.01%	0.003%
39	16.081	1328	1335	1342	rBB	686594	1438972	79.46%	15.221%
40	16.246	1349	1351	1353	rBB	600	372	0.02%	0.004%
41	16.587	1379	1384	1389	rBB3	6856	16228	0.90%	0.172%
42	16.732	1396	1398	1400	rBB3	354	220	0.01%	0.002%

43	17.166	1437	1440	1442	rBB3	397	442	0.02%	0.005%
44	17.321	1453	1455	1458	rBB3	380	438	0.02%	0.005%
45	17.600	1476	1482	1489	rBB	882028	1792043	98.95%	18.955%
46	17.807	1500	1502	1503	rBB	333	206	0.01%	0.002%
47	17.838	1504	1505	1510	rBB	690	988	0.05%	0.010%
48	18.034	1522	1524	1526	rBB	333	206	0.01%	0.002%
49	18.437	1561	1563	1567	rBB	412	445	0.02%	0.005%
50	18.571	1574	1576	1580	rBB	383	445	0.02%	0.005%
51	18.778	1592	1596	1598	rBB	344	620	0.03%	0.007%
52	18.954	1611	1613	1616	rBB	334	598	0.03%	0.006%
53	19.036	1619	1621	1623	rBB	325	398	0.02%	0.004%
54	19.078	1624	1625	1627	rBB	700	434	0.02%	0.005%
55	19.140	1629	1631	1635	rBB	316	386	0.02%	0.004%
56	19.274	1640	1644	1645	rBB	403	650	0.04%	0.007%
57	19.305	1645	1647	1650	rBB	515	766	0.04%	0.008%
58	19.357	1651	1652	1655	rBB	693	618	0.03%	0.007%
59	19.408	1656	1657	1658	rBB	332	206	0.01%	0.002%
60	19.501	1664	1666	1668	rBB	316	383	0.02%	0.004%
61	19.543	1669	1670	1672	rBV	791	911	0.05%	0.010%
62	19.646	1678	1680	1682	rBV	1058	1334	0.07%	0.014%
63	19.698	1682	1685	1688	rVB	1098	1952	0.11%	0.021%
64	19.739	1688	1689	1691	rBB	485	574	0.03%	0.006%
65	19.791	1691	1694	1696	rBV	720	1517	0.08%	0.016%
66	19.832	1696	1698	1701	rVV	634	1068	0.06%	0.011%
67	19.874	1701	1702	1705	rVB	962	1453	0.08%	0.015%
68	19.946	1705	1709	1713	rBB	614	1900	0.10%	0.020%
69	20.039	1713	1718	1722	rBB	1108	3070	0.17%	0.032%
70	20.122	1722	1726	1729	rBV	998	3185	0.18%	0.034%
71	20.184	1729	1732	1734	rVB	835	1158	0.06%	0.012%
72	20.235	1734	1737	1739	rBV	715	1278	0.07%	0.014%
73	20.277	1740	1741	1742	rVB	1113	690	0.04%	0.007%
74	20.308	1742	1744	1747	rBV2	1222	2990	0.17%	0.032%
75	20.359	1747	1749	1752	rVV	944	1004	0.06%	0.011%
76	20.401	1752	1753	1758	rVB	876	1581	0.09%	0.017%
77	20.483	1758	1761	1766	rBV	1073	2963	0.16%	0.031%
78	20.607	1771	1773	1774	rBV	982	1154	0.06%	0.012%
79	20.638	1774	1776	1782	rBV	1475	4495	0.25%	0.048%
80	20.804	1786	1792	1795	rBV3	1993	7525	0.42%	0.080%
81	20.907	1800	1802	1806	rBV2	1841	3970	0.22%	0.042%
82	20.969	1806	1808	1809	rBV	1453	1761	0.10%	0.019%
83	21.031	1813	1814	1817	rVB3	1243	2105	0.12%	0.022%
84	21.093	1819	1820	1821	rBV	480	312	0.02%	0.003%
85	21.217	1831	1832	1835	rBV2	1685	2917	0.16%	0.031%
86	21.382	1846	1848	1852	rBV3	1059	2656	0.15%	0.028%
87	21.465	1854	1856	1860	rVB	1499	3151	0.17%	0.033%
88	21.527	1860	1862	1864	rBV	1465	2550	0.14%	0.027%
89	21.569	1864	1866	1869	rVV2	1519	2321	0.13%	0.025%
90	21.724	1880	1881	1884	rBV2	1867	3539	0.20%	0.037%

Sum of corrected areas: 9454143

LSC Report - Integrated Chromatogram

File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061716\8M413062.D
Operator : FJB
Acquired : 17 Jun 2016 17:21 using AcqMethod 8260WT
Instrument : HPMS8
Sample Name: WG573253-01 BLANK 6/17 8260
Misc Info : 1,1
Vial Number: 4
Quant File :8260WT.RES (RTE Integrator)

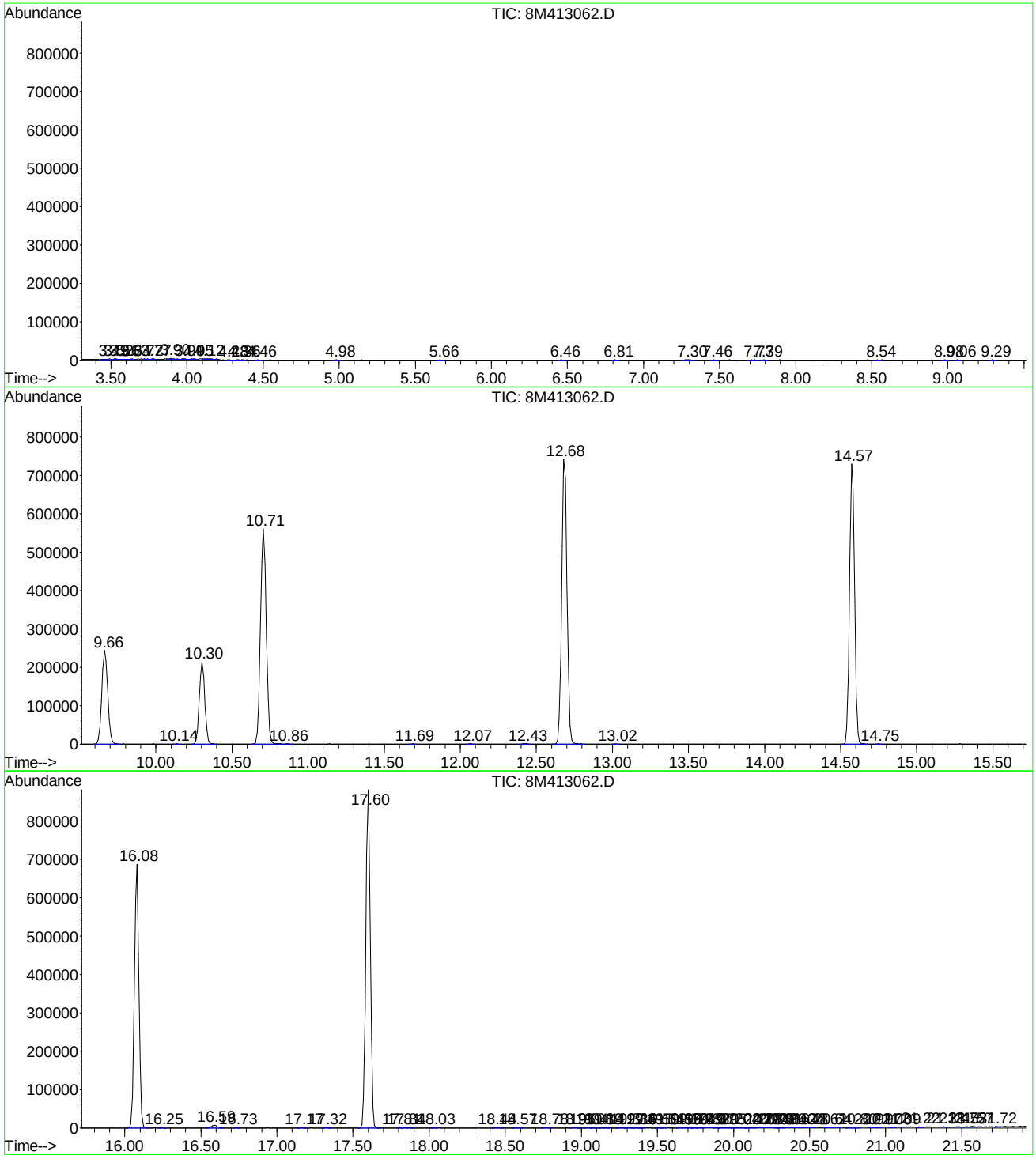

8M413062.D 8260WT.M Fri Jun 24 14:43:43 2016 Page 3

Tentatively Identified Compound (LSC) summary

Operator ID: FJB Date Acquired: 17 Jun 2016 17:21
Data File: K:\ORGANICS\VOLATILE\HPMS8\DATA\061716\8M413062.D
Name: WG573253-01 BLANK 6/17 8260
Misc: 1,1
Method: C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title: Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Library Searched: C:\DATABASE\NIST02.L

						Internal Standard		
TIC	Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061716\8M413085.D Vial: 27
Acq On : 18 Jun 2016 4:27 Operator: FJB
Sample : WG573253-06 BLANK 624 Inst : HPMS8
Misc : 2,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 18 04:49:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	672158	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	508672	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	283566	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	203438	28.1701 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 112.68%		
43) 1,2-Dichloroethane-d4	10.30	65	227709	29.4063 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 117.64%		
58) Toluene-d8	12.68	98	699890	26.2904 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.16%		
80) p-Bromofluorobenzene	16.07	95	296342	25.2385 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.96%		

Target Compounds					Qvalue
36) Tetrahydrofuran	9.63	42	980	1.3392 ug/L #	55

(#) = qualifier out of range (m) = manual integration
8M413085.D 8260WT.M Mon Jun 20 09:22:34 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061716\8M413085.D Vial: 27
Acq On : 18 Jun 2016 4:27 Operator: FJB
Sample : WG573253-06 BLANK 624 Inst : HPMS8
Misc : 2,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 18 4:49 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

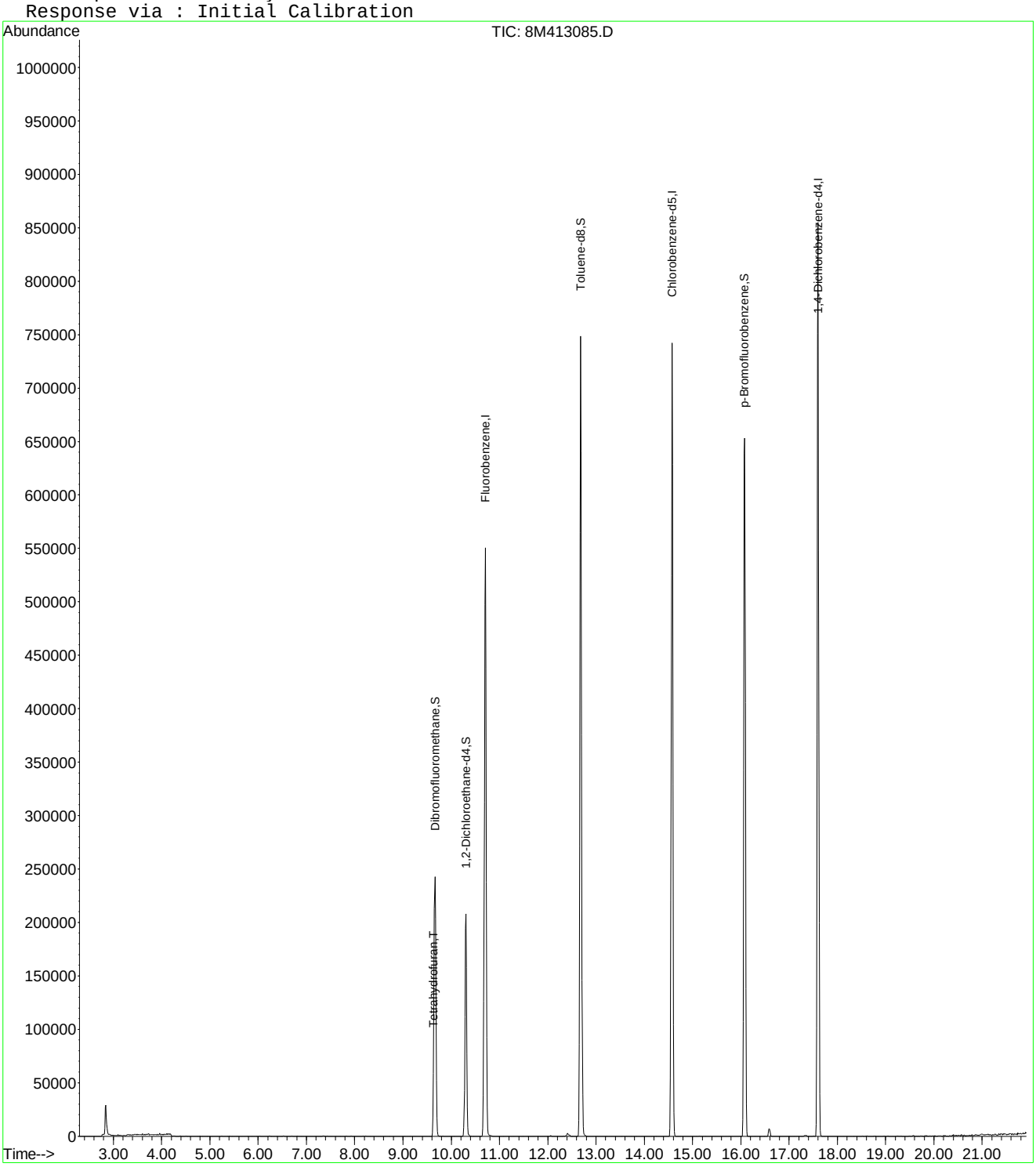

8M413085.D 8260WT.M Mon Jun 20 09:22:35 2016 Page 2

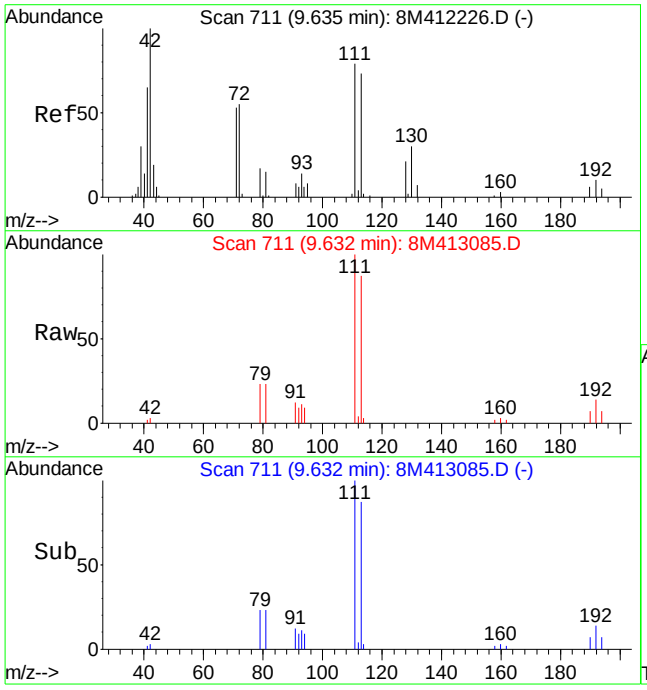

#36
Tetrahydrofuran
Concen: 1.34 ug/L
RT: 9.63 min Scan# 711
Delta R.T. -0.00 min
Lab File: 8M413085.D
Acq: 18 Jun 2016 4:27

Tgt Ion: 42 Resp: 980

Ion	Ratio	Lower	Upper
42	100		
72	44.1	33.8	78.8
71	0.0	32.0	74.8#

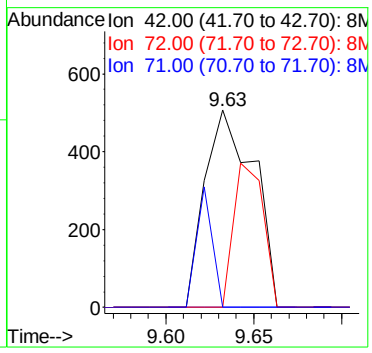

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061616\6M140117.D Vial: 5
Acq On : 16 Jun 2016 18:45 Operator: FJB
Sample : WG573036-02 20ug/L LCS 8260 Inst : HPMS6
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 19:09:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	567923	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.06	117	426092	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	240638	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	148775	25.3118 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.24%		
43) 1,2-Dichloroethane-d4	11.11	65	167488	25.8528 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.40%		
58) Toluene-d8	13.85	98	509739	24.9271 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.72%		
80) p-Bromofluorobenzene	17.84	95	215497	25.3599 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.44%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	174627	19.4254 ug/L	97
3) Chloromethane	3.93	50	186918	17.0546 ug/L	99
4) Vinyl Chloride	4.16	62	146908	19.8854 ug/L	99
5) 1,3-Butadiene	4.20	54	1052	Below Cal #	22
6) Bromomethane	5.08	94	65024	17.8677 ug/L	100
7) Chloroethane	5.23	64	86994	18.6297 ug/L	96
8) Trichlorofluoromethane	5.73	101	217851	22.0194 ug/L	99
9) Diethyl ether	6.30	59	97552	18.3361 ug/L	97
10) Isoprene	6.32	67	187689	22.3138 ug/L	97
11) Acrolein	6.55	56	32190	35.8616 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.55	101	122746	21.7179 ug/L	99
13) Acetone	6.66	43	35711	20.1859 ug/L	99
14) 1,1-Dichloroethene	6.88	61	195810	19.5631 ug/L	98
15) Tert-Butyl Alcohol	7.02	59	113345	230.7370 ug/L	98
16) Dimethyl Sulfide	7.17	62	177302	38.5982 ug/L	98
17) Iodomethane	7.43	142	121181	30.0213 ug/L	96
18) Methyl acetate	7.45	43	116341	23.7505 ug/L	98
19) Methylene Chloride	7.72	84	122409	19.8320 ug/L	93
20) Carbon Disulfide	7.77	76	376592	19.2306 ug/L	99
21) Acrylonitrile	7.92	53	47432	21.9707 ug/L	100
22) Methyl Tert Butyl Ether	7.96	73	340186	22.5885 ug/L	99
23) trans-1,2-Dichloroethene	8.21	96	119228	20.4357 ug/L	96
24) n-Hexane	8.29	57	190341	20.9516 ug/L	100
25) Diisopropyl ether	8.67	45	1717268	71.0161 ug/L	99
26) Vinyl Acetate	8.86	43	139038	13.5416 ug/L	100
27) 1,1-Dichloroethane	8.89	63	232683	19.9045 ug/L	100
28) Ethyl-Tert-Butyl ether	9.30	59	1363294	68.8883 ug/L	100
29) 2-Butanone	9.52	43	55327	21.5727 ug/L	96
30) Propionitrile	9.64	54	70332	99.3665 ug/L	99
31) 2,2-Dichloropropane	9.75	77	191057	22.4183 ug/L	97
32) cis-1,2-Dichloroethene	9.82	96	133514	21.0059 ug/L	96
33) Chloroform	10.06	83	220131	21.1435 ug/L	99
34) 1-Bromopropane	10.21	122	29701	28.3515 ug/L	100
35) Bromochloromethane	10.32	130	74506	20.6421 ug/L	100
36) Tetrahydrofuran	10.35	42	132960	75.3070 ug/L	96
38) 1,1,1-Trichloroethane	10.66	97	198903	21.4162 ug/L	99
39) Cyclohexane	10.69	56	248073	21.3101 ug/L	98
40) 1,1-Dichloropropene	10.88	75	163295	20.5151 ug/L	97
41) Tert-Amyl-Methyl ether	11.00	73	1375241	89.7551 ug/L	97
42) Carbon Tetrachloride	11.04	117	179128	21.6195 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140117.D 8260WT.M Fri Jun 17 08:34:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061616\6M140117.D Vial: 5
Acq On : 16 Jun 2016 18:45 Operator: FJB
Sample : WG573036-02 20ug/L LCS 8260 Inst : HPMS6
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 19:09:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	11.24	62	178443	22.3015	ug/L	99
46)	Benzene	11.28	78	481259	20.6279	ug/L	99
47)	Trichloroethene	12.14	130	125992	21.1443	ug/L	99
48)	Methylcyclohexane	12.23	83	193414	21.4096	ug/L	98
49)	1,2-Dichloropropane	12.40	63	141149	21.9032	ug/L	100
50)	1,4-Dioxane	12.73	88	6301	137.2453	ug/L	94
51)	Bromodichloromethane	12.74	83	172681	21.7896	ug/L	100
52)	Dibromomethane	12.84	93	68677	20.6525	ug/L	99
53)	2-Chloroethyl Vinyl Ether	13.09	63	68149	23.1705	ug/L	98
54)	4-Methyl-2-Pentanone	13.12	58	42182	21.5495	ug/L	97
55)	cis-1,3-Dichloropropene	13.48	75	214674	23.9334	ug/L	100
56)	Dimethyl Disulfide	13.78	79	111558	21.5887	ug/L	99
59)	Toluene	13.97	91	506642	20.9392	ug/L	100
60)	Ethyl Methacrylate	14.09	69	148602	22.4122	ug/L	99
62)	trans-1,3-Dichloropropene	14.17	75	183051	22.2131	ug/L	98
63)	1,1,2-Trichloroethane	14.43	97	98953	21.4799	ug/L	99
64)	2-Hexanone	14.36	43	81007	20.7227	ug/L	97
65)	1,3-Dichloropropane	14.79	76	182591	22.5434	ug/L	97
66)	Tetrachloroethene	14.92	166	126581	19.9440	ug/L	98
67)	Dibromochloromethane	15.24	129	127192	21.6685	ug/L	100
68)	1,2-Dibromoethane	15.53	107	95149	21.3692	ug/L	99
69)	1-Chlorohexane	15.64	91	172300	21.9306	ug/L	96
70)	Chlorobenzene	16.12	112	346298	21.3900	ug/L	99
71)	1,1,1,2-Tetrachloroethane	16.17	131	126851	21.6023	ug/L	99
72)	Ethylbenzene	16.17	106	178444	20.7801	ug/L	96
73)	m-,p-Xylene	16.27	106	440626	43.1914	ug/L	98
74)	o-Xylene	16.93	106	223061	22.1257	ug/L	99
75)	Styrene	16.97	104	371774	22.2048	ug/L	98
76)	Bromoform	17.55	173	76969	20.6674	ug/L	99
77)	Isopropylbenzene	17.43	105	570695	22.5518	ug/L	99
79)	1,1,2,2-Tetrachloroethane	17.70	83	124304	21.4253	ug/L	99
81)	1,2,3-Trichloropropane	17.92	110	35958	21.4074	ug/L	80
82)	trans-1,4-Dichloro-2-Buten	17.98	53	35920	17.7621	ug/L	98
83)	n-Propylbenzene	18.03	91	707707	22.6919	ug/L	99
84)	Bromobenzene	18.18	156	149794	20.4681	ug/L	98
85)	1,3,5-Trimethylbenzene	18.26	105	488906	22.1557	ug/L	99
86)	2-Chlorotoluene	18.35	91	455199	21.3082	ug/L	99
87)	4-Chlorotoluene	18.41	91	437429	22.0536	ug/L	99
88)	a-Methylstyrene	18.74	118	278088	22.5419	ug/L	99
89)	tert-Butylbenzene	18.81	134	106985	21.9910	ug/L	78
90)	1,2,4-Trimethylbenzene	18.87	105	495493	21.4498	ug/L	99
91)	sec-Butylbenzene	19.13	105	601994	22.1698	ug/L	99
92)	p-Isopropyltoluene	19.32	119	509727	22.0282	ug/L	99
93)	1,3-Dichlorobenzene	19.53	146	300436	21.0526	ug/L	99
94)	1,4-Dichlorobenzene	19.70	146	306654	22.5744	ug/L	98
95)	n-Butylbenzene	19.94	91	482716	22.0397	ug/L	98
96)	1,2-Dichlorobenzene	20.28	146	287812	21.6422	ug/L	98
97)	1,2-Dibromo-3-Chloropropan	21.46	75	23958	22.9956	ug/L	95
98)	1,2,4-Trichlorobenzene	22.82	180	203138	22.0931	ug/L	100
99)	Hexachlorobutadiene	23.02	225	87348	22.8907	ug/L	100
100)	Naphthalene	23.28	128	381523	20.9910	ug/L	100
101)	1,2,3-Trichlorobenzene	23.69	180	186949	21.4853	ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140117.D 8260WT.M Fri Jun 17 08:34:36 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061616\6M140117.D Vial: 5
Acq On : 16 Jun 2016 18:45 Operator: FJB
Sample : WG573036-02 20ug/L LCS 8260 Inst : HPMS6
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 19:09 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration

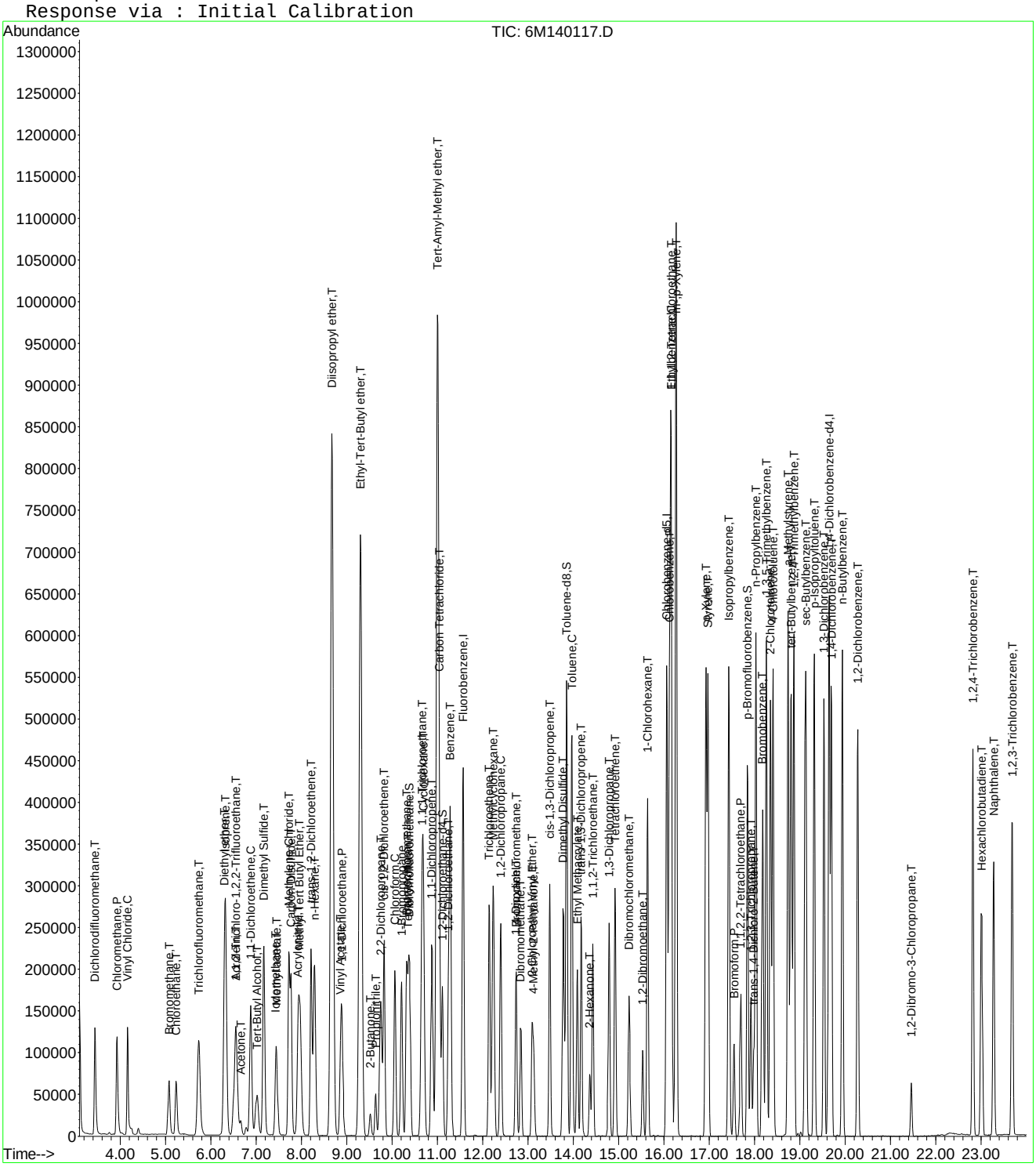

6M140117.D 8260WT.M Fri Jun 17 08:34:37 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061716\8M413068.D Vial: 10
Acq On : 17 Jun 2016 20:15 Operator: FJB
Sample : WG573253-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 20:37:16 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	672761	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	510872	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	286337	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	200776	27.7766 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.12%		
43) 1,2-Dichloroethane-d4	10.30	65	231241	29.8357 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 119.36%		
58) Toluene-d8	12.68	98	685607	25.6429 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.56%		
80) p-Bromofluorobenzene	16.08	95	299333	25.2466 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.00%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	230983	20.4782 ug/L	99
3) Chloromethane	3.62	50	119346	18.1265 ug/L	100
4) Vinyl Chloride	3.84	62	181672	23.2567 ug/L	98
5) 1,3-Butadiene	3.87	54	1065	0.1626 ug/L #	2
6) Bromomethane	4.73	94	55383	12.4436 ug/L	97
7) Chloroethane	4.89	64	88293	20.5413 ug/L	98
8) Trichlorofluoromethane	5.37	101	336040	23.1190 ug/L	99
9) Diethyl ether	5.90	59	352808	101.6727 ug/L	97
10) Isoprene	5.93	67	191638	21.7111 ug/L	97
11) Acrolein	6.14	56	27966	90.0127 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	147073	21.5259 ug/L	93
13) Acetone	6.24	43	16296	21.5294 ug/L	94
14) 1,1-Dichloroethene	6.46	61	209483	19.2563 ug/L	97
15) Tert-Butyl Alcohol	6.58	59	39289	161.9760 ug/L	96
16) Dimethyl Sulfide	6.73	62	134929	34.6888 ug/L	98
17) Iodomethane	6.97	142	23883	10.3607 ug/L	96
18) Methyl acetate	7.00	43	42602	20.8219 ug/L	99
19) Methylene Chloride	7.24	84	135443	19.5643 ug/L	96
20) Carbon Disulfide	7.29	76	408927	17.9625 ug/L	99
21) Acrylonitrile	7.43	53	18120	18.4505 ug/L	88
22) Methyl Tert Butyl Ether	7.46	73	338006	22.5587 ug/L	97
23) trans-1,2-Dichloroethene	7.70	61	204315	20.4432 ug/L	96
24) n-Hexane	7.78	57	134334	18.1009 ug/L	100
25) Diisopropyl ether	8.12	45	1564082	100.3981 ug/L	94
26) Vinyl Acetate	8.30	43	55968	7.8466 ug/L	99
27) 1,1-Dichloroethane	8.32	63	249079	20.0677 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1730260	103.6617 ug/L	98
29) 2-Butanone	8.88	43	21068	18.9444 ug/L	94
30) Propionitrile	8.98	54	30781	94.9786 ug/L	100
31) 2,2-Dichloropropane	9.10	77	288627	22.0664 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	161062	20.8564 ug/L	99
33) Chloroform	9.37	83	323891	22.1007 ug/L	99
34) 1-Bromopropane	9.51	122	33899	30.6462 ug/L	99
35) Bromochloromethane	9.60	130	81074	20.4731 ug/L	94
36) Tetrahydrofuran	9.63	42	61380	83.7997 ug/L	94
38) 1,1,1-Trichloroethane	9.91	97	336929	24.2035 ug/L	99
39) Cyclohexane	9.94	56	189222	19.6335 ug/L	95
40) 1,1-Dichloropropene	10.11	75	222250	20.9460 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1679966	110.8159 ug/L	100
42) Carbon Tetrachloride	10.24	117	293780	23.7659 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413068.D 8260WT.M Mon Jun 20 09:14:58 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061716\8M413068.D Vial: 10
Acq On : 17 Jun 2016 20:15 Operator: FJB
Sample : WG573253-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 20:37:16 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	232179	24.6146	ug/L		98
46)	Benzene	10.46	78	575599	20.8284	ug/L		99
47)	Trichloroethene	11.21	130	171340	23.2463	ug/L		99
48)	Methylcyclohexane	11.30	83	241063	21.5286	ug/L		98
49)	1,2-Dichloropropane	11.43	63	123803	20.1243	ug/L		85
50)	Bromodichloromethane	11.73	83	252342	23.3379	ug/L		99
51)	1,4-Dioxane	11.73	88	3314	107.2392	ug/L		82
52)	Dibromomethane	11.81	93	74973	20.5877	ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	49491	18.7171	ug/L		96
54)	4-Methyl-2-Pentanone	12.05	58	21317	19.7362	ug/L		96
55)	cis-1,3-Dichloropropene	12.36	75	258247	23.4649	ug/L		100
56)	Dimethyl Disulfide	12.62	79	126839	21.5928	ug/L		95
59)	Toluene	12.78	91	627677	19.7907	ug/L		100
60)	Ethyl Methacrylate	12.88	69	122121	20.0498	ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	222968	20.9782	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	98079	19.5976	ug/L		99
64)	2-Hexanone	13.11	58	19093	18.1547	ug/L	#	96
65)	1,3-Dichloropropane	13.49	76	185982	20.8728	ug/L		95
66)	Tetrachloroethene	13.60	164	136600	20.1028	ug/L		97
67)	Dibromochloromethane	13.87	129	152731	20.9008	ug/L		97
68)	1,2-Dibromoethane	14.12	107	100331	20.1153	ug/L		97
69)	1-Chlorohexane	14.21	91	210003	19.3976	ug/L		97
70)	Chlorobenzene	14.62	112	435153	20.3467	ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.65	131	178573	21.5523	ug/L		100
72)	Ethylbenzene	14.65	106	232759	19.8916	ug/L		98
73)	m-,p-Xylene	14.75	106	576257	41.9858	ug/L		97
74)	o-Xylene	15.31	106	282651	21.0641	ug/L		96
75)	Styrene	15.35	104	461371	20.9632	ug/L		95
76)	Bromoform	15.83	173	90269	20.8266	ug/L		98
77)	Isopropylbenzene	15.73	105	781406	21.9206	ug/L		98
79)	1,1,2,2-Tetrachloroethane	15.95	83	99467	17.3057	ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	35171	19.8715	ug/L		76
82)	trans-1,4-Dichloro-2-Buten	16.18	53	25737	14.7051	ug/L		93
83)	n-Propylbenzene	16.24	91	941501	21.0760	ug/L		99
84)	Bromobenzene	16.37	156	179809	19.5690	ug/L		96
85)	1,3,5-Trimethylbenzene	16.42	105	688403	21.1552	ug/L		99
86)	2-Chlorotoluene	16.51	91	641535	20.5694	ug/L		98
87)	4-Chlorotoluene	16.56	91	576181	20.4520	ug/L		100
88)	a-Methylstyrene	16.82	118	323057	20.9253	ug/L		100
89)	tert-Butylbenzene	16.89	134	128492	20.1837	ug/L		94
90)	1,2,4-Trimethylbenzene	16.94	105	682103	20.3854	ug/L		100
91)	sec-Butylbenzene	17.17	105	801469	20.9361	ug/L		100
92)	p-Isopropyltoluene	17.32	119	672642	20.6940	ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	365545	20.6607	ug/L		99
94)	1,4-Dichlorobenzene	17.64	146	358989	20.1256	ug/L		100
95)	n-Butylbenzene	17.85	91	631846	19.6629	ug/L		100
96)	1,2-Dichlorobenzene	18.14	146	317300	20.1641	ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	24478	21.2163	ug/L		91
98)	1,2,4-Trichlorobenzene	20.28	180	232717	19.7853	ug/L		100
99)	Hexachlorobutadiene	20.43	225	117790	21.4331	ug/L		97
100)	Naphthalene	20.65	128	303086	17.3439	ug/L		100
101)	1,2,3-Trichlorobenzene	20.96	180	190773	19.2250	ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061716\8M413068.D Vial: 10
Acq On : 17 Jun 2016 20:15 Operator: FJB
Sample : WG573253-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 20:37 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

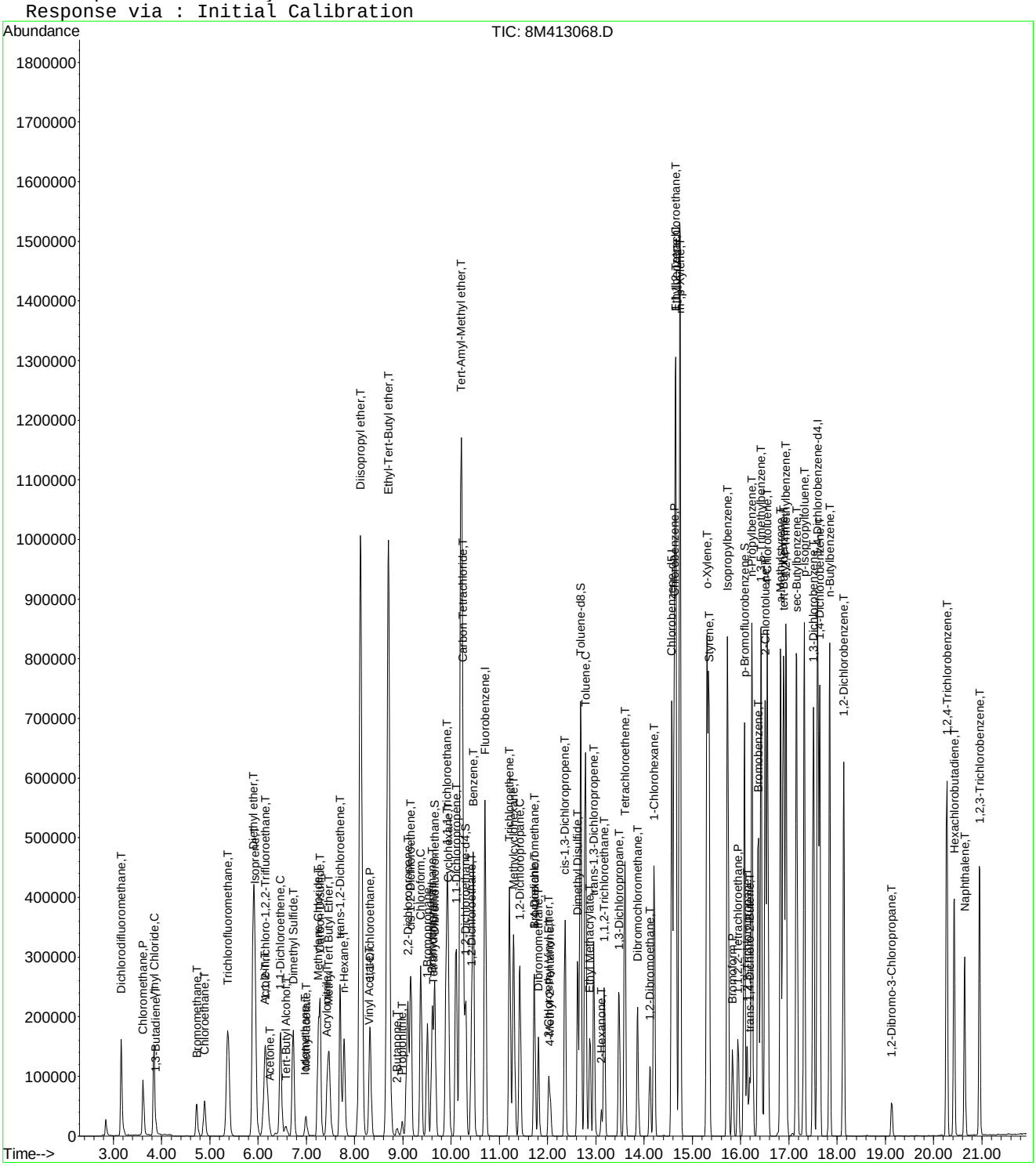

2.2 Semivolatiles Data

2.2.1 Semivolatiles GC/MS Data (Dioxane)

2.2.1.1 Summary Data

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18WW03-061416	**Prep Method:**	3520C	**Prep Date:**	06/15/2016 18:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573365	**Analyst:**	MES	**Run Date:**	06/21/2016 17:08
Collect Date:	06/14/2016 07:40	**Dilution:**	1	**File ID:**	15M18476
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	43.7	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW04SW-061416	**Prep Method:**	3520C	**Prep Date:**	06/15/2016 18:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573365	**Analyst:**	MES	**Run Date:**	06/21/2016 17:31
Collect Date:	06/14/2016 09:00	**Dilution:**	1	**File ID:**	15M18477
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	48.5	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW04-061416	**Prep Method:**	3520C	**Prep Date:**	06/15/2016 18:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573365	**Analyst:**	MES	**Run Date:**	06/21/2016 17:54
Collect Date:	06/14/2016 10:00	**Dilution:**	1	**File ID:**	15M18478
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.67	J	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	72.9	20	129	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW04FD-061416	**Prep Method:**	3520C	**Prep Date:**	06/15/2016 18:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573365	**Analyst:**	MES	**Run Date:**	06/21/2016 18:17
Collect Date:	06/14/2016 10:00	**Dilution:**	1	**File ID:**	15M18479
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	2.01		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	103	20	129	

2.2.1.2 QC Summary Data

Example 8270 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	1261197
Cis = Concentration of the specific internal standard (ug/mL)	40
Ais = Area of the characteristic ion of the specific internal standard	608044
Cx = Concentration of the compound in the standard being measured (ug/mL)	50
RF = Calculated Response Factor	**1.65935**

2.0 Calculating the concentration (C) of a compound in water using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Vi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Vi = Initial volume of sample extracted from prep log (mL)	1021
Cx = Concentration of the compound in the sample being measured (ug/mL)	0.016947
Cx = Concentration of the compound in the sample being measured (ug/L)	**16.947**

3.0 Calculating the concentration (C) of a compound in soil using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Wi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Wi = Initial weight of sample extracted (g) from prep log	30
Cx = Concentration of the compound in the sample being measured (ug/g)	0.576763
Cx = Concentration of the compound in the sample being measured (ug/kg)	**576.7627**

Dry weight correction:

Percent solids (PCT_S)	50
Cd = (Cx) (100)/PCT_S	**1153.525** ug/kg

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve plot

b = intercept from curve plot

Step 2: Calculate y from Quantitation Report

y = 16790/784838 = 0.02139

Step 3: Solve for x

x = (y - b)/m = [(0.02139 -(- 0.0435)]/ 0.0783 = 0.829

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.829) = 20.72 ug/L

Example Spreadsheet Calculation:

Slope from curve, m:	0.0783	
Intercept from curve, b:	-0.0435	
Area of analyte, Ax:	16790	
Area of Internal Standard , Ais:	784484	
Concentration of IS, Cis	25.00	ug/L
Response Ratio (y) :	0.021403	
Amount Ratio:	0.828897	
Concentration (Cx):	20.72241	ug/L

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**0.0259**	
Value of B from plot:	**0.0596**	
Value of C from plot:	**-0.0165**	
Area of analyte from quantitation report:	**203233**	
Area of IS from quantiation report:	**1425653**	
Response ratio, y:	**0.142554**	
C - y:	**-0.15905**	
Root 1 - Computed amount ratio , X1:	**-3.88278**	
Root 2 - Computed amount ratio , X2:	**1.581623**	use this solution
Concentration of IS, Cis:	**40.00**	
Concentration of analyte, Cx:	**63.26**	ug/L

Microbac Laboratories Inc.
Continuous Sample Extract Log

Workgroup: WG572806
Analyst: CPD
Spike Analyst: CPD
Method: 3520C
Run Date: 06/15/2016 18:01
SOP: EXB01 Revison 20
Spike Witness: JDH
Surr Solution: STD74051

TIME ON: 19:15 OFF: 13:30 ON: 17:50 OFF: 12:00

CH2CL2 Lot #: COA18982
sodium sulfate Lot #: COA18814
10N NaOH Lot #: RGT37076
1:1 H2SO4 Lot #: RGT36755

	SAMPLE #	Type	Reference	Prod	pH	Init Amnt	Surr Amnt	Spike Amnt	Spike Sol	Final Vol	Color
1	L16060730-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Colored
2	L16060730-02	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Colored
3	L16060730-03	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
4	L16060756-04	SAMP		827-DIOX	<2>12	1000 mL	.05 mL			1 mL	Colored
5	L16060809-03	SAMP		827-DIOX	<2>12	1000 mL	.05 mL			1 mL	Colored
6	L16060822-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Colored
7	L16060822-03	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
8	L16060822-04	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
9	L16060822-05	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
10	L16060823-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
11	L16060823-03	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Colored
12	L16060823-04	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
13	L16060854-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Colored
14	WG572806-01	BLANK		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
15	WG572806-02	LCS		827-DIOXANE	<2>12	1000 mL	.05 mL	.05 mL	STD75256	1 mL	Transparent
16	WG572806-03	LCS2		827-DIOXANE	<2>12	1000 mL	.05 mL	.05 mL	STD75256	1 mL	Transparent

Due to insufficient sample volume, this preparation batch failed to include the method prescribed MS and MSD.

LCS TV3 Cell 6
LCS DUP TV3 Cell 1

Analyst: Chelsea Davis

Reviewer: Chris Hill

EXTRACT - Modified 01/23/2009
PDF ID: 4813903
Report generated: 06/20/2016 08:50

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062116
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573365

Internal STD: STD76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: STD74214 MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18455	BAKEOUT	1	1		06/21/16 08:46
2	15M18456	WG573501-01 5PPM DFTPP STD	1	1	STD75016	06/21/16 09:05
3	15M18457	WG573501-01 5PPM DFTPP STD	1	1	STD75016	06/21/16 09:34
4	15M18458	WG573501-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 09:52
5	15M18459	WG573501-03 10 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 10:27
6	15M18460	WG573501-04 7.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 10:49
7	15M18461	WG573501-05 2.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:12
8	15M18462	WG573501-06 1 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:34
9	15M18463	WG573501-07 0.4 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:57
10	15M18464	WG573501-08 5PPM 1,4-DIOXANE ALT SRC	1	1	STD74214	06/21/16 12:20
11	15M18465	WG572806-01 BLANK 6/15	1	1		06/21/16 12:54
12	15M18466	WG572806-02 LCS 6/15	1	1		06/21/16 13:17
13	15M18467	WG572806-03 LCSDUP 6/15	1	1		06/21/16 13:40
14	15M18468	WG573008-01 BLANK 6/17	7	1	SOIL	06/21/16 14:03
15	15M18469	WG573008-02 LCS 6/17	7	1	SOIL	06/21/16 14:26
16	15M18470	WG573008-03 LCSDUP 6/17	7	1	SOIL	06/21/16 14:48
17	15M18471	L16060730-01	1	1		06/21/16 15:11
18	15M18472	L16060730-02	1	1		06/21/16 15:34
19	15M18473	L16060854-01	1	1		06/21/16 15:57
20	15M18474	L16060730-03	1	1		06/21/16 16:19
21	15M18475	L16060756-04 827-DIOX	1	1		06/21/16 16:46
22	15M18476	L16060822-01	1	1		06/21/16 17:08
23	15M18477	L16060822-03	1	1		06/21/16 17:31
24	15M18478	L16060822-04	1	1		06/21/16 17:54
25	15M18479	L16060822-05	1	1		06/21/16 18:17
26	15M18480	L16060823-01	1	1		06/21/16 18:40
27	15M18481	L16060823-03	1	1		06/21/16 19:02
28	15M18482	L16060823-04	1	1		06/21/16 19:25
29	15M18483	L16060809-03 827-DIOX	1	1		06/21/16 19:48
30	15M18484	L16060854-01 2X	1	2		06/21/16 20:10
31	15M18485	BAKEOUT	1	1		06/21/16 20:33
32	15M18486	BAKEOUT	1	1		06/21/16 20:55
33	15M18487	BAKEOUT	1	1		06/21/16 21:18

Page: 1 Approved: 22-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062116

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573365

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD: STD74214

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
	WG573501-01 5PPM DFTPP STD rerun DFTPP, pentachlorophenol tailing >2.			
14				
	WG573008-01 BLANK 6/17 DNR-not needed.			
15				
	WG573008-02 LCS DNR-not needed.			
16				
	WG573008-03 LCSDUP DNR-not needed.			
19	X	2	Over Calibration Range	
	L16060854-01			

Page: 2 Approved: 22-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 21-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75850
Analytical Workgroups: L16060730, 060756, 060809, 060822, 060823, 060854

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 22-JUN-2016

Secondary Reviewer: 22-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-22-2016 16:00:51

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8270D

AAB#: WG573365

Login Number: L16060822

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW03-061416	01	06/14/16					06/15/2016	1.4	7		06/21/16	6	40	
18CPTMW04SW-061416	03	06/14/16					06/15/2016	1.4	7		06/21/16	6	40	
18CPTMW04-061416	04	06/14/16					06/15/2016	1.3	7		06/21/16	6	40	
18CPTMW04FD-061416	05	06/14/16					06/15/2016	1.3	7		06/21/16	6	40	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4819071
Report generated 06/23/2016 13:27

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060822
Instrument Id: HPMS15
Workgroup (AAB#): WG573365

Method: 827-DIOXANE
CAL ID: HPMS15-21-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1
L16060822-01	1.00	01	43.7
L16060822-03	1.00	01	48.5
L16060822-04	1.00	01	72.9
L16060822-05	1.00	01	103
WG572806-01	1.00	02	61.7
WG572806-02	1.00	02	62.5
WG572806-03	1.00	02	46.5

Surrogates	Surrogate Limits
1 - 1,4-Dioxane-d8	20 - 129

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4819078
Report generated: 06/23/2016 13:27

METHOD BLANK SUMMARY

Login Number: L16060822
Blank File ID: 15M18465
Prep Date: 06/15/16 18:01
Analyzed Date: 06/21/16 12:54
Analyst: MES

Work Group: WG573365
Blank Sample ID: WG572806-01
Instrument ID: HPMS15
Method: 8270D

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572806-02	15M18466	06/21/16 13:17	02
LCS2	WG572806-03	15M18467	06/21/16 13:40	02
18WW03-061416	L16060822-01	15M18476	06/21/16 17:08	01
18CPTMW04SW-061416	L16060822-03	15M18477	06/21/16 17:31	01
18CPTMW04-061416	L16060822-04	15M18478	06/21/16 17:54	01
18CPTMW04FD-061416	L16060822-05	15M18479	06/21/16 18:17	01

Report Name: BLANK_SUMMARY
PDF File ID: 4821146
Report generated 06/23/2016 13:27

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060822 Prep Date: 06/15/16 18:01 Sample ID: WG572806-01
Instrument ID: HPMS15 Run Date: 06/21/16 12:54 Prep Method: 3520C
File ID: 15M18465 Analyst: MES Method: 8270D
Workgroup (AAB#): WG573365 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS15-21-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
1,4-Dioxane	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	61.7	20 - 129	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4819072
23-JUN-2016 13:27

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060822 Analyst: MES Prep Method: 3520C
Instrument ID: HPMS15 Matrix: Water Method: 8270D
Workgroup (AAB#): WG573365 Units: ug/L
QC Key: DOD4 Lot #: STD75256

Sample ID: WG572806-02 LCS File ID: 15M18466 Run Date: 06/21/2016 13:17
Sample ID: WG572806-03 LCS2 File ID: 15M18467 Run Date: 06/21/2016 13:40

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,4-Dioxane	5.00	3.03	60.6	5.00	2.27	45.5	28.6	30 - 104	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,4-Dioxane-d8	62.5	46.5	20 - 129	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4819073
Report generated: 06/23/2016 13:27

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16060822
Instrument: HPMS15
Analyst: MES
Workgroup: WG573501

Tune ID: WG573501-01
Run Date: 06/21/2016
Run Time: 09:34
File ID: 15M18457
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	38.8	34488	PASS
68.0	69.0	0	2.00	1.36	500	PASS
69.0	198	0	100	41.4	36833	PASS
70.0	69.0	0	2.00	0.467	172	PASS
127	198	40.0	60.0	51.9	46131	PASS
197	198	0	1.00	0	0	PASS
198	198	100	100	100	88880	PASS
199	198	5.00	9.00	6.66	5918	PASS
275	198	10.0	30.0	24.9	22090	PASS
365	198	1.00	100	2.65	2358	PASS
441	443	0.0100	100	75.7	9586	PASS
442	198	40.0	100	73.4	65261	PASS
443	442	17.0	23.0	19.4	12659	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573501-02	STD-CCV	01	06/21/2016 09:52	
WG573501-03	STD	01	06/21/2016 10:27	
WG573501-04	STD	01	06/21/2016 10:49	
WG573501-05	STD	01	06/21/2016 11:12	
WG573501-06	STD	01	06/21/2016 11:34	
WG573501-07	STD	01	06/21/2016 11:57	
WG573501-08	SSCV	01	06/21/2016 12:20	
WG572806-01	BLANK	02	06/21/2016 12:54	
WG572806-02	LCS	02	06/21/2016 13:17	
WG572806-03	LCS2	02	06/21/2016 13:40	
L16060822-01	18WW03-061416	01	06/21/2016 17:08	
L16060822-03	18CPTMW04SW-061416	01	06/21/2016 17:31	
L16060822-04	18CPTMW04-061416	01	06/21/2016 17:54	
L16060822-05	18CPTMW04FD-061416	01	06/21/2016 18:17	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4819076
Report generated 06/23/2016 13:27

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060822
Analytical Method: 8270D
ICAL Workgroup: WG573501

Instrument ID: HPMS15
Initial Calibration Date: 21-JUN-16 11:57
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
1,4-Dioxane		0.3060	2.56		

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4819074
Report generated 06/23/2016 13:27

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060822

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 21-JUN-16 11:57

Column ID: F

Analyte	WG573501-02			WG573501-03			WG573501-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	5.00	60883.0000	0.3073	10.0	138820.000	0.3164	7.50	103182.000	0.3106

INT_CAL - Modified 03/06/2008
PDF File ID: 4819074
Report generated 06/23/2016 13:27

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060822

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 21-JUN-16 11:57

Column ID: F

Analyte	WG573501-05			WG573501-06			WG573501-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	2.50	26333.0000	0.2969	1.00	13250.0000	0.2966	0.400	5650.00000	0.3081

INT_CAL - Modified 03/06/2008
PDF File ID: 4819074
Report generated 06/23/2016 13:27

Calibration Table Report
Method: DIOXANE_D8.M
Title: OVD MSS01 SIM 1,4-dioxane ICAL 062116
Last Calibration: Tue Jun 21 12:51:17 2016
Curve:WG573501
Calibration Files

Compound	10 15M18459.D	7.5 15M18460.D	5 15M18458.D	2.5 15M18461.D	1 15M18462.D	0.4 15M18463.D	Avg	%RSD
1,4-Dichlorobenzene-d4	ISTD							
1,4-Dioxane	0.316	0.311	0.307	0.297	0.297	0.308	0.306	2.558
1,4-Dioxane-d8	0.426	0.418	0.417	0.402	0.395		0.411	3.044
Nitrobenzene-d5	1.202	1.173	1.128	1.002	0.927	0.906	1.056	12.163
2-Fluorobiphenyl	2.735	2.736	2.691	2.621	2.563	2.651	2.666	2.548
p-Terphenyl-d14	2.793	2.774	2.622	2.460	2.367	2.405	2.570	7.266

Wed Jun 22 12:17:33 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060822 Run Date: 06/21/2016 Sample ID: WG573501-08
Instrument ID: HPMS15 Run Time: 12:20 Method: 8270D
File ID: 15M18464 Analyst: MES QC Key: DOD4
ICal Workgroup: WG573501 Cal ID: HPMS15 - 21-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
1,4-Dioxane		5000	5050	ug/L	0.309	0.900	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4819075
Report generated 06/23/2016 13:27

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060822
Instrument ID: HPMS15
Workgroup (AAB#): WG573365

ICAL CCV Number: WG573501-02
CAL ID: HPMS15 - 21-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG573501-02	NA	NA	39637
Upper Limit	NA	NA	79274
Lower Limit	NA	NA	19819
L16060822-01	1.00	01	33038
L16060822-03	1.00	01	24778
L16060822-04	1.00	01	29740
L16060822-05	1.00	01	24302
WG572806-01	1.00	02	38899
WG572806-02	1.00	02	27126
WG572806-03	1.00	02	34071

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4819077
Report generated 06/23/2016 13:27

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060822
Instrument ID: HPMS15
Workgroup (AAB#): WG573365

ICAL CCV Number: WG573501-02
CAL ID: HPMS15 - 21-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG573501-02	NA	NA	6.93
Upper Limit	NA	NA	7.43
Lower Limit	NA	NA	6.43
L16060822-01	1.00	01	6.936
L16060822-03	1.00	01	6.936
L16060822-04	1.00	01	6.936
L16060822-05	1.00	01	6.937
WG572806-01	1.00	02	6.936
WG572806-02	1.00	02	6.933
WG572806-03	1.00	02	6.933

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4821147
Report generated: 06/23/2016 13:27

2.2.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18476.D
Acq On : 21 Jun 2016 17:08
Operator : MES
Sample : L16060822-01
Misc : 1,1
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Jun 22 08:03:25 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.936	152	33038	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	29689	2.1839	ug/L	0.00
Spiked Amount 5.000			Recovery	=	43.60%	
4) Nitrobenzene-d5	7.436	82	5041	0.1445	ug/L	0.00
Spiked Amount 5.000			Recovery	=	2.80%	
5) 2-Fluorobiphenyl	8.926	172	5502	0.0625	ug/L	0.00
Spiked Amount 5.000			Recovery	=	1.20%	
6) p-Terphenyl-d14	12.210	244	2382	0.0281	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.60%	

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18476.D
Acq On : 21 Jun 2016 17:08
Operator : MES
Sample : L16060822-01
Misc : 1,1
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Jun 22 08:03:25 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

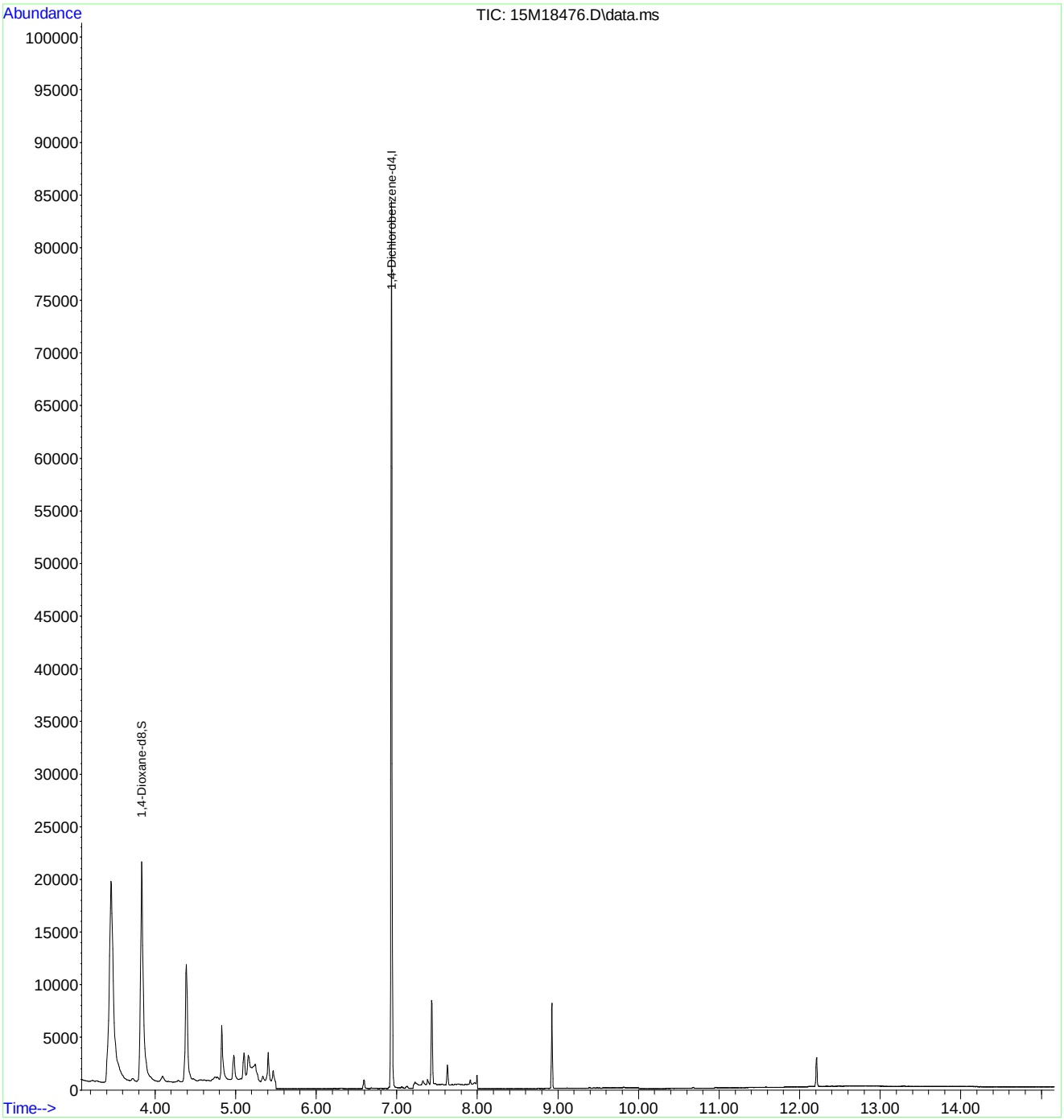

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18477.D
Acq On : 21 Jun 2016 17:31
Operator : MES
Sample : L16060822-03
Misc : 1,1
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Jun 22 08:03:28 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.936	152	24778	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.827	96	24726	2.4251	ug/L	0.00
Spiked Amount 5.000			Recovery	=	48.60%	
4) Nitrobenzene-d5	7.436	82	2358	0.0901	ug/L	0.00
Spiked Amount 5.000			Recovery	=	1.80%	
5) 2-Fluorobiphenyl	8.926	172	2168	0.0328	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.60%	
6) p-Terphenyl-d14	12.203	244	543	0.0085	ug/L	0.02
Spiked Amount 5.000			Recovery	=	0.20%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18477.D
Acq On : 21 Jun 2016 17:31
Operator : MES
Sample : L16060822-03
Misc : 1,1
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Jun 22 08:03:28 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

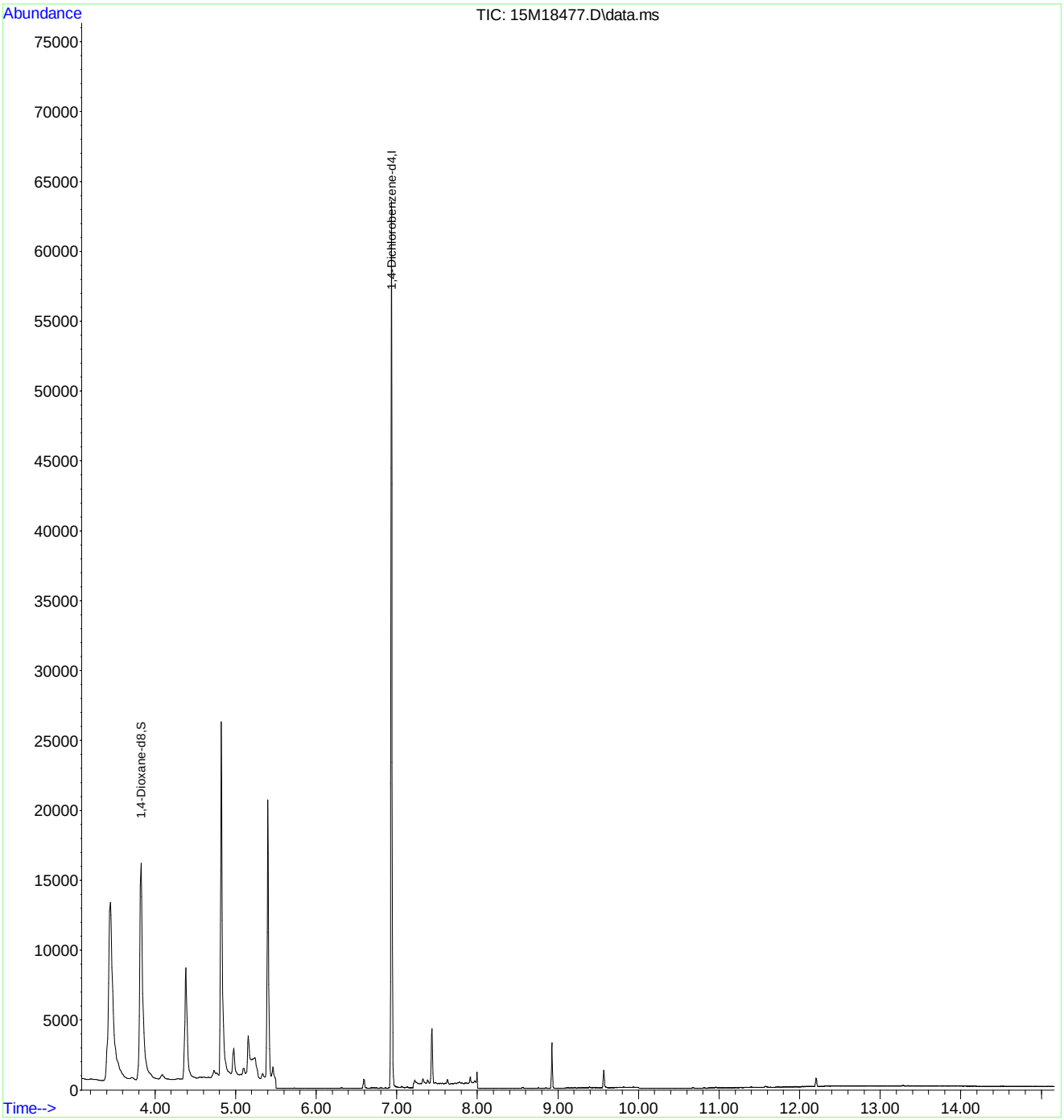

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18478.D
Acq On : 21 Jun 2016 17:54
Operator : MES
Sample : L16060822-04
Misc : 1,1
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Jun 22 08:03:31 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.936	152	29740	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	44621	3.6462	ug/L	0.00
Spiked Amount 5.000			Recovery	=	73.00%	
4) Nitrobenzene-d5	7.227	82	1407	0.0448	ug/L	-0.20
Spiked Amount 5.000			Recovery	=	0.80%	
5) 2-Fluorobiphenyl	8.926	172	136	0.0017	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.188	244	532	0.0070	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	15235	1.6743	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18478.D
Acq On : 21 Jun 2016 17:54
Operator : MES
Sample : L16060822-04
Misc : 1,1
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Jun 22 08:03:31 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

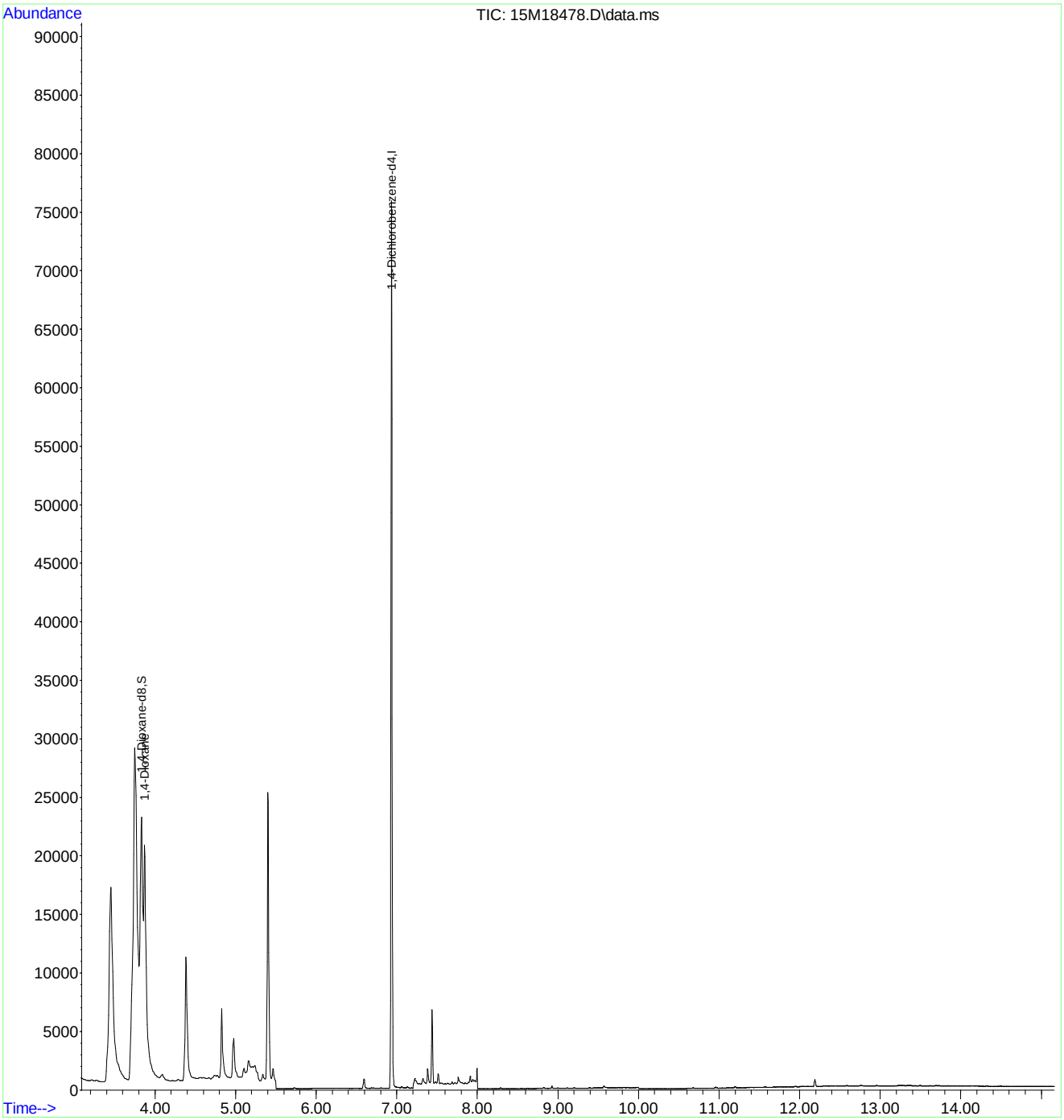

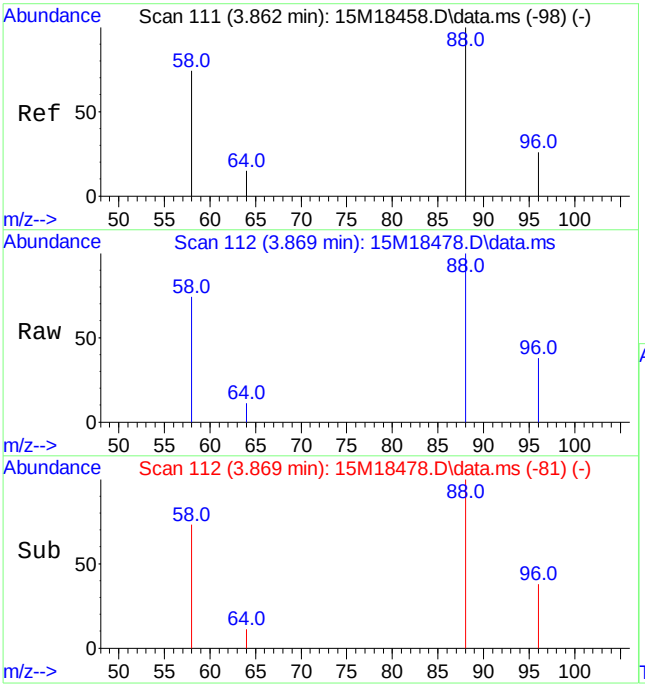

#2
1,4-Dioxane
Concen: 1.67 ug/L
RT: 3.869 min Scan# 112
Delta R.T. 0.007 min
Lab File: 15M18478.D
Acq: 21 Jun 2016 17:54

Tgt Ion: 58 Resp: 15235

Ion	Ratio	Lower	Upper
58	100		
88	150.5	103.1	240.7

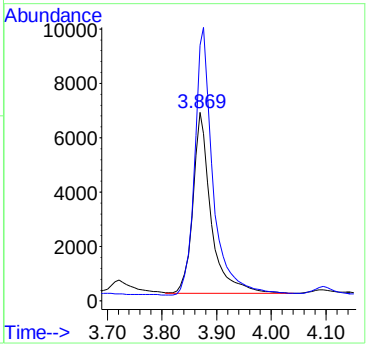

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18479.D
Acq On : 21 Jun 2016 18:17
Operator : MES
Sample : L16060822-05
Misc : 1,1
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Jun 22 08:03:34 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.937	152	24302	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.820	96	51485	5.1486	ug/L	0.00
Spiked Amount 5.000			Recovery	=	103.00%	
4) Nitrobenzene-d5	7.436	82	3648	0.1421	ug/L	0.00
Spiked Amount 5.000			Recovery	=	2.80%	
5) 2-Fluorobiphenyl	8.926	172	547	0.0084	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.20%	
6) p-Terphenyl-d14	12.188	244	582	0.0093	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.862	58	14926	2.0074	ug/L	82

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18479.D
Acq On : 21 Jun 2016 18:17
Operator : MES
Sample : L16060822-05
Misc : 1,1
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Jun 22 08:03:34 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

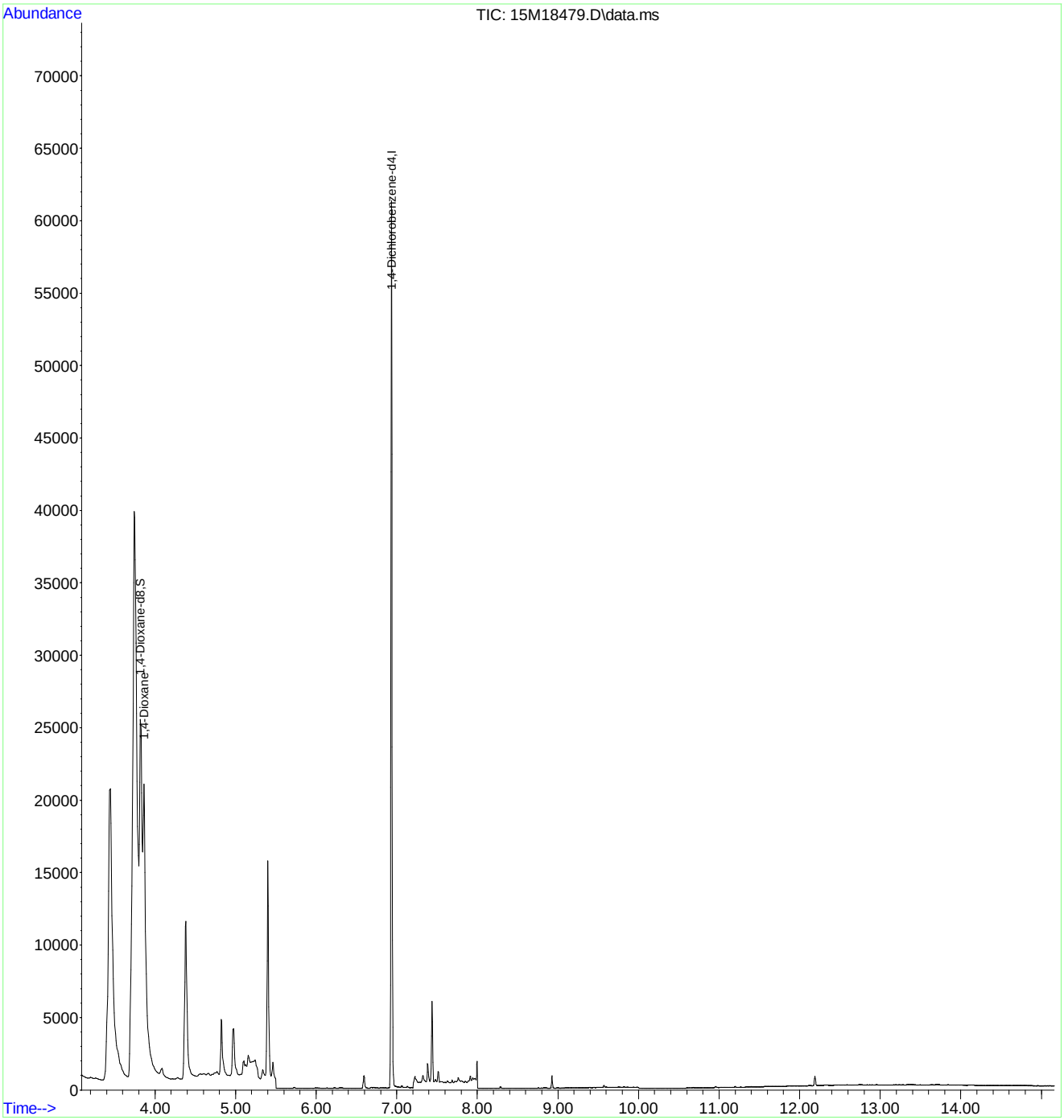

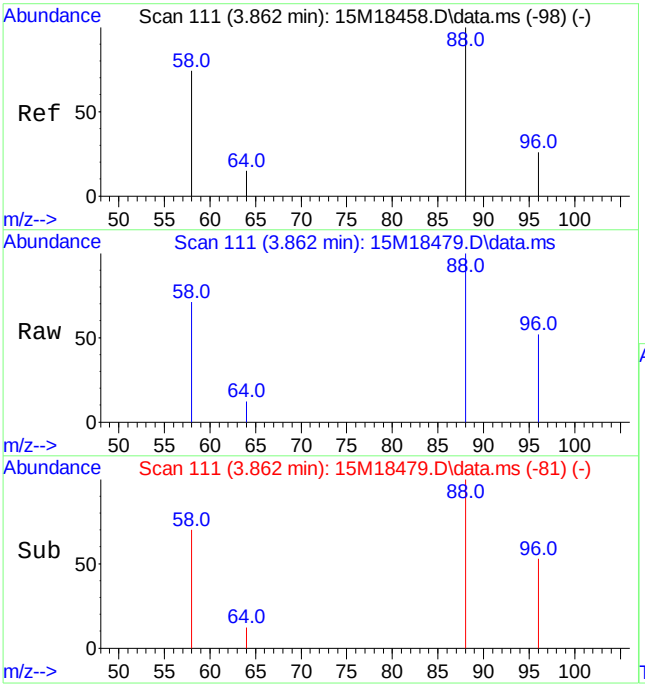

#2
1,4-Dioxane
Concen: 2.01 ug/L
RT: 3.862 min Scan# 111
Delta R.T. 0.000 min
Lab File: 15M18479.D
Acq: 21 Jun 2016 18:17

Tgt Ion: 58 Resp: 14926

Ion	Ratio	Lower	Upper
58	100		
88	147.6	103.1	240.7

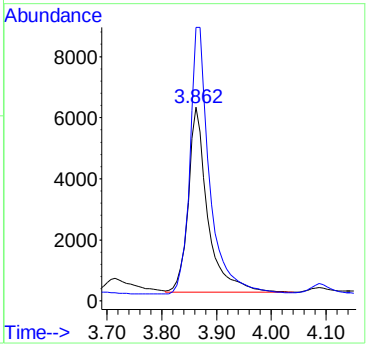

2.2.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 22 08:04:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	39637	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.827	96	82573	5.0627 ug/L	0.00
Spiked Amount 5.000			Recovery	= 101.20%	
4) Nitrobenzene-d5	7.431	82	223381	5.3353 ug/L	0.00
Spiked Amount 5.000			Recovery	= 106.80%	
5) 2-Fluorobiphenyl	8.922	172	533101	5.0444 ug/L	0.00
Spiked Amount 5.000			Recovery	= 100.80%	
6) p-Terphenyl-d14	12.184	244	519544	5.1003 ug/L	0.00
Spiked Amount 5.000			Recovery	= 102.00%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.862	58	60883	5.0202 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 22 08:04:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

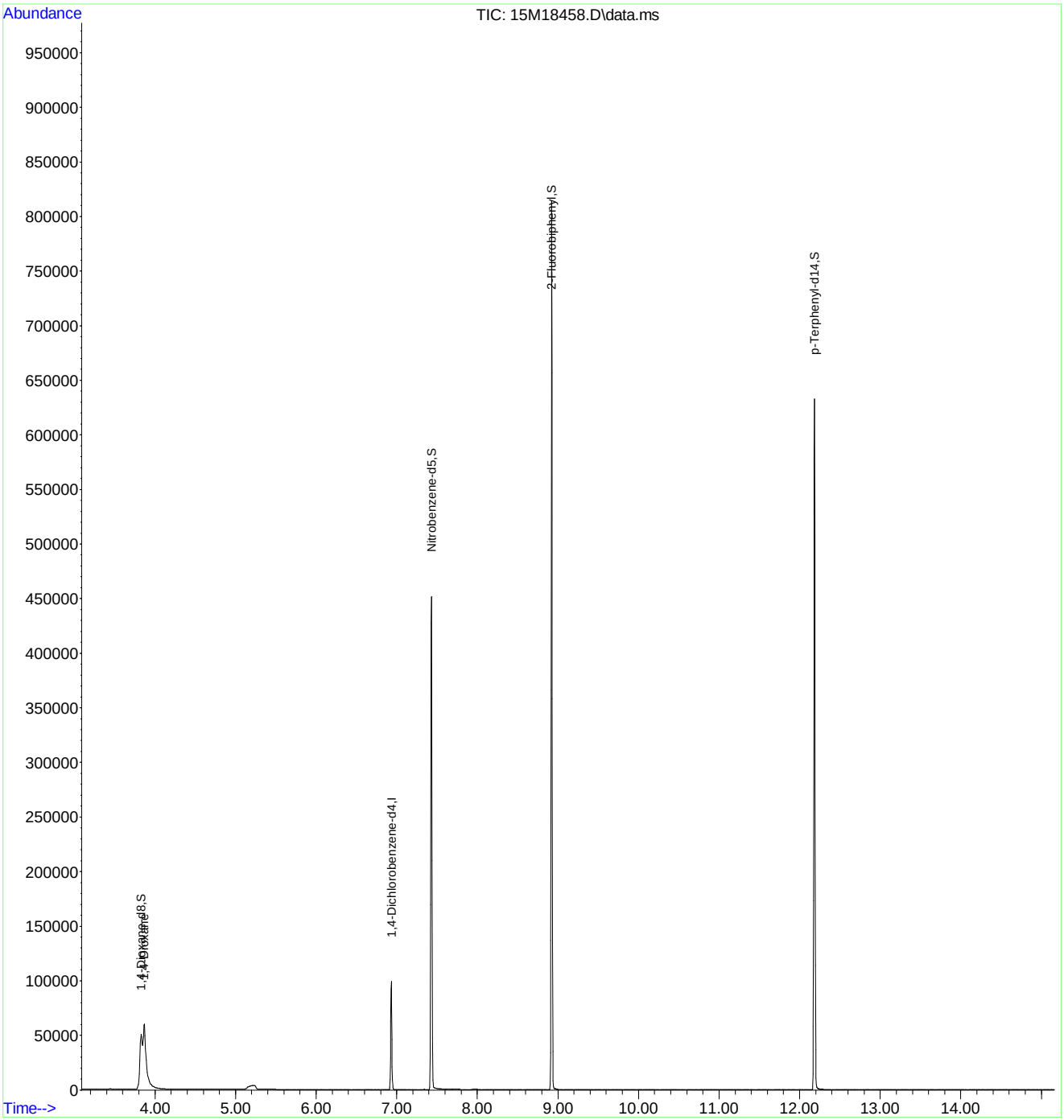

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18459.D
Acq On : 21 Jun 2016 10:27
Operator : MES
Sample : WG573501-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 22 08:04:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	43874	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	186767	10.3452	ug/L	0.00
Spiked Amount 5.000			Recovery = 207.00%			
4) Nitrobenzene-d5	7.431	82	527549	11.3834	ug/L	0.00
Spiked Amount 5.000			Recovery = 227.60%			
5) 2-Fluorobiphenyl	8.926	172	1199799	10.2565	ug/L	0.00
Spiked Amount 5.000			Recovery = 205.20%			
6) p-Terphenyl-d14	12.240	244	1225328	10.8672	ug/L	0.06
Spiked Amount 5.000			Recovery = 217.40%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	138820	10.3412	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18459.D
Acq On : 21 Jun 2016 10:27
Operator : MES
Sample : WG573501-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 22 08:04:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

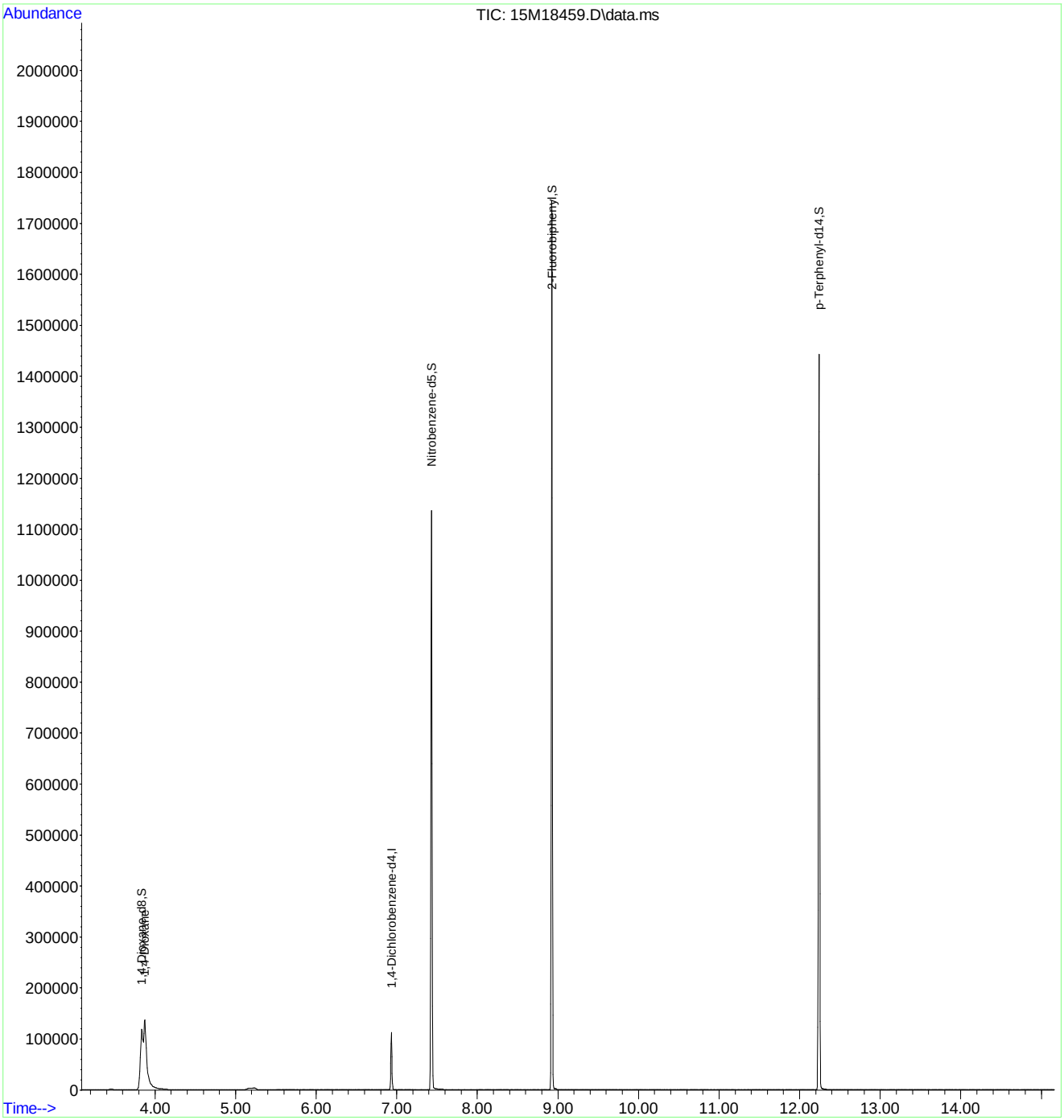

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18460.D
Acq On : 21 Jun 2016 10:49
Operator : MES
Sample : WG573501-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 22 08:04:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	44299	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.834	96	138833	7.6163 ug/L	0.00
Spiked Amount 5.000			Recovery	= 152.40%	
4) Nitrobenzene-d5	7.431	82	389810	8.3306 ug/L	0.00
Spiked Amount 5.000			Recovery	= 166.60%	
5) 2-Fluorobiphenyl	8.923	172	909050	7.6965 ug/L	0.00
Spiked Amount 5.000			Recovery	= 154.00%	
6) p-Terphenyl-d14	12.203	244	921380	8.0931 ug/L	0.02
Spiked Amount 5.000			Recovery	= 161.80%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.876	58	103182	7.6127 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18460.D
Acq On : 21 Jun 2016 10:49
Operator : MES
Sample : WG573501-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 22 08:04:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

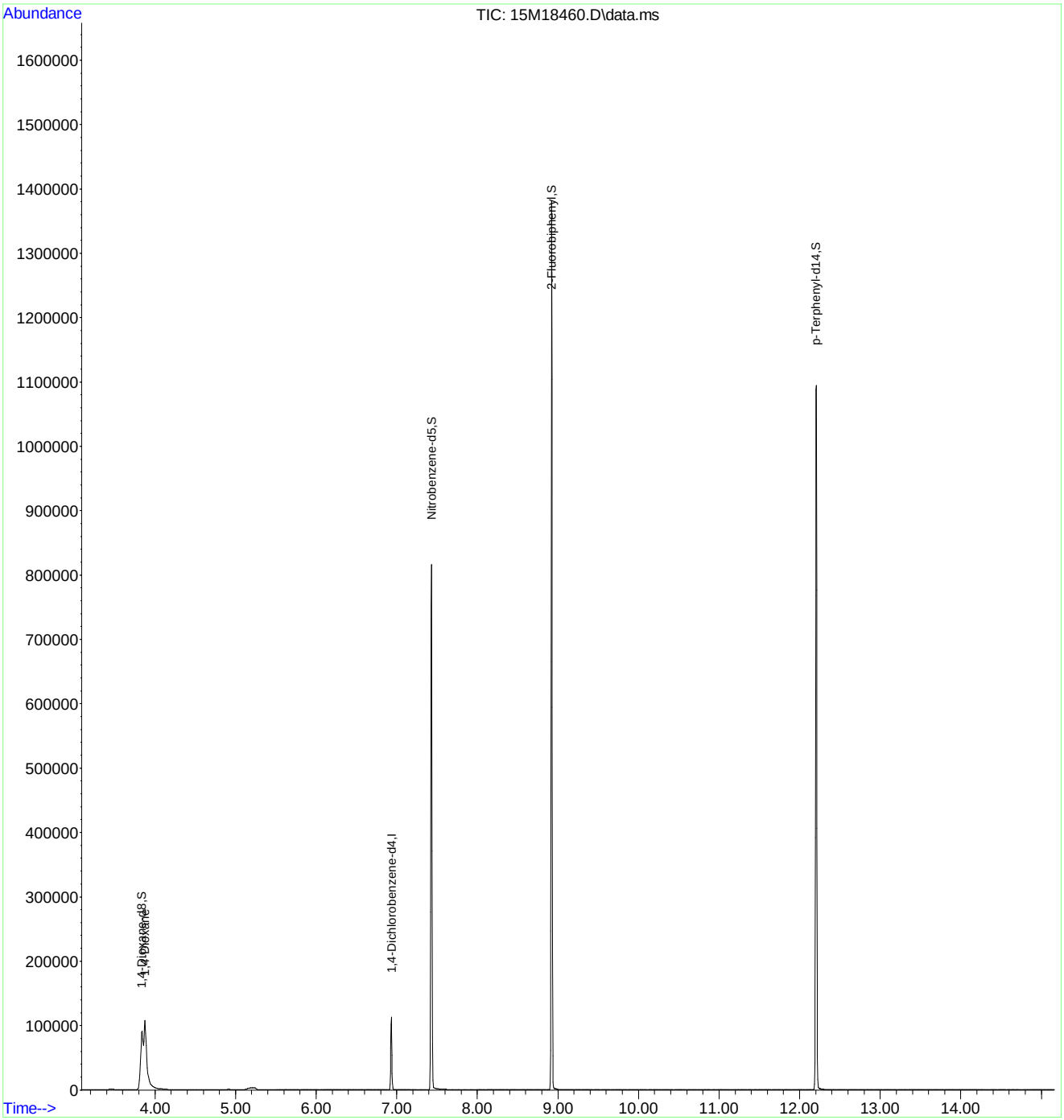

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18461.D
Acq On : 21 Jun 2016 11:12
Operator : MES
Sample : WG573501-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 22 08:04:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	35478	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.827	96	35630	2.4406 ug/L	0.00
Spiked Amount 5.000			Recovery	= 48.80%	
4) Nitrobenzene-d5	7.431	82	88869	2.3714 ug/L	0.00
Spiked Amount 5.000			Recovery	= 47.40%	
5) 2-Fluorobiphenyl	8.923	172	232500	2.4579 ug/L	0.00
Spiked Amount 5.000			Recovery	= 49.20%	
6) p-Terphenyl-d14	12.199	244	218191	2.3930 ug/L	0.02
Spiked Amount 5.000			Recovery	= 47.80%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.862	58	26333	2.4259 ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18461.D
Acq On : 21 Jun 2016 11:12
Operator : MES
Sample : WG573501-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 22 08:04:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

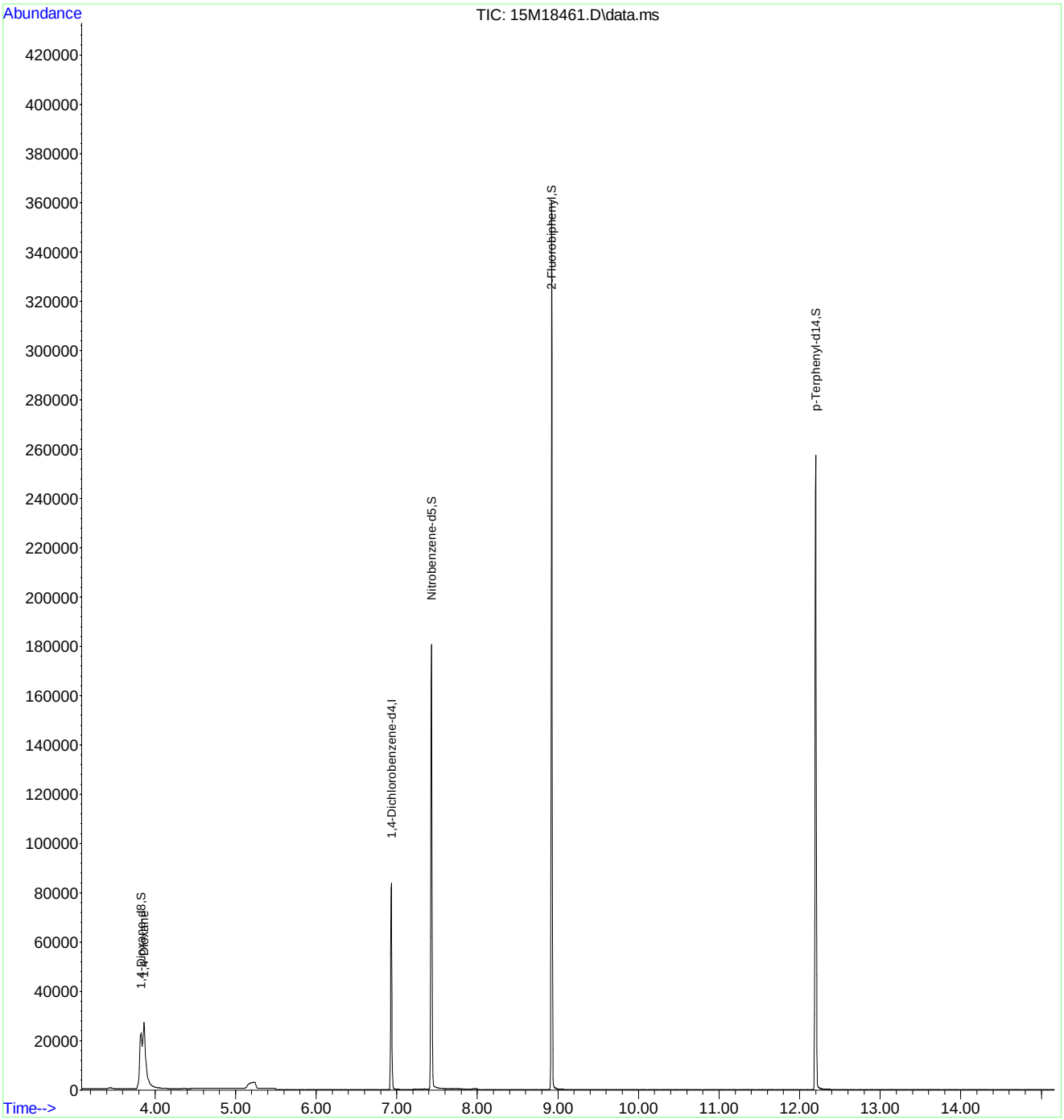

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18462.D
Acq On : 21 Jun 2016 11:34
Operator : MES
Sample : WG573501-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 22 08:04:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	44672	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.841	96	17660	0.9607 ug/L	0.01
Spiked Amount 5.000			Recovery	= 19.20%	
4) Nitrobenzene-d5	7.431	82	41409	0.8776 ug/L	0.00
Spiked Amount 5.000			Recovery	= 17.60%	
5) 2-Fluorobiphenyl	8.922	172	114491	0.9612 ug/L	0.00
Spiked Amount 5.000			Recovery	= 19.20%	
6) p-Terphenyl-d14	12.203	244	105713	0.9208 ug/L	0.02
Spiked Amount 5.000			Recovery	= 18.40%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.876	58	13250	0.9694 ug/L	82

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18462.D
Acq On : 21 Jun 2016 11:34
Operator : MES
Sample : WG573501-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 22 08:04:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

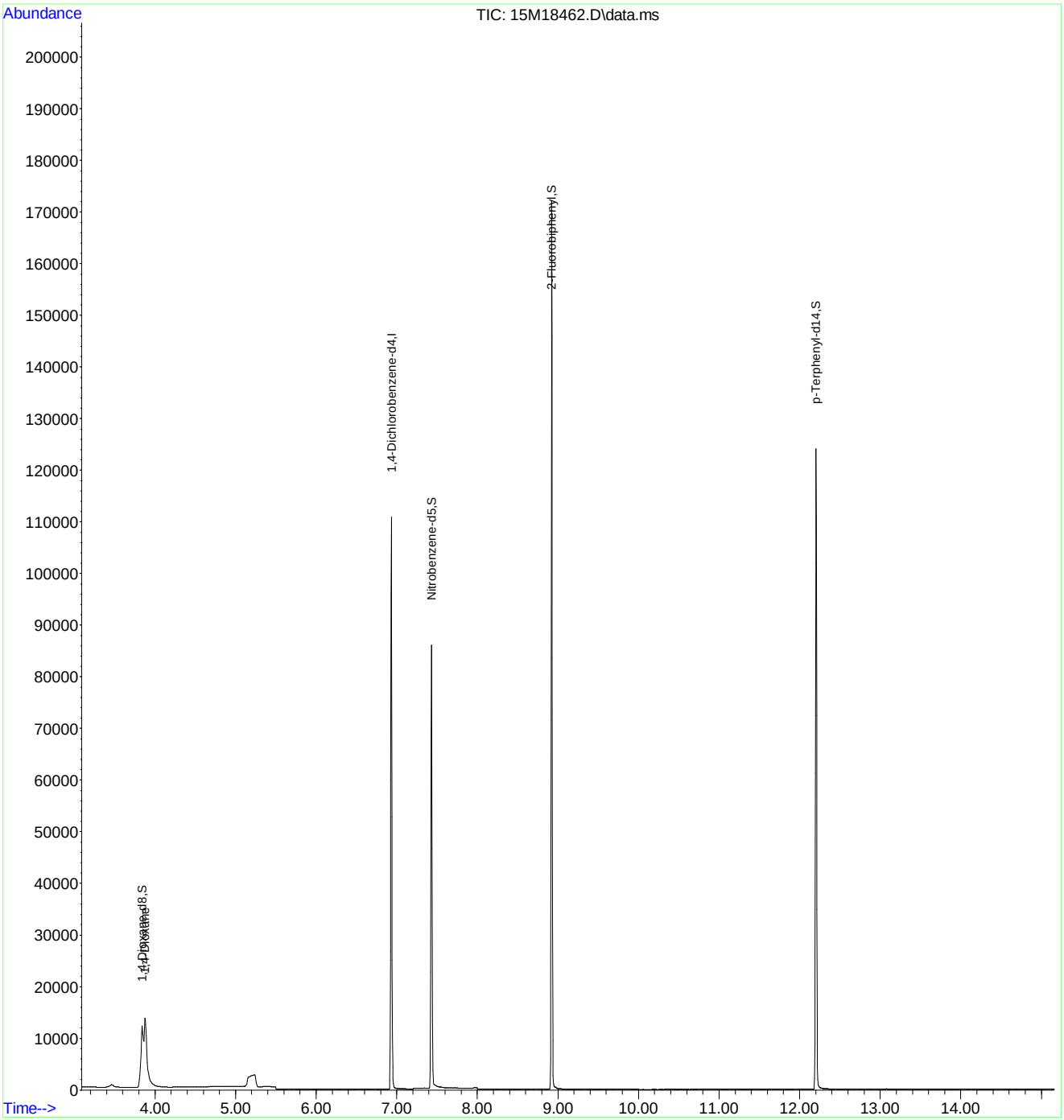

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18463.D
Acq On : 21 Jun 2016 11:57
Operator : MES
Sample : WG573501-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 22 08:04:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	45840	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.841	96	7629	0.4045	ug/L	0.01
Spiked Amount 5.000			Recovery	=	8.00%	
4) Nitrobenzene-d5	7.431	82	16604	0.3429	ug/L	0.00
Spiked Amount 5.000			Recovery	=	6.80%	
5) 2-Fluorobiphenyl	8.923	172	48617	0.3978	ug/L	0.00
Spiked Amount 5.000			Recovery	=	8.00%	
6) p-Terphenyl-d14	12.210	244	44097	0.3743	ug/L	0.03
Spiked Amount 5.000			Recovery	=	7.40%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.876	58	5650	0.4028	ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18463.D
Acq On : 21 Jun 2016 11:57
Operator : MES
Sample : WG573501-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 22 08:04:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

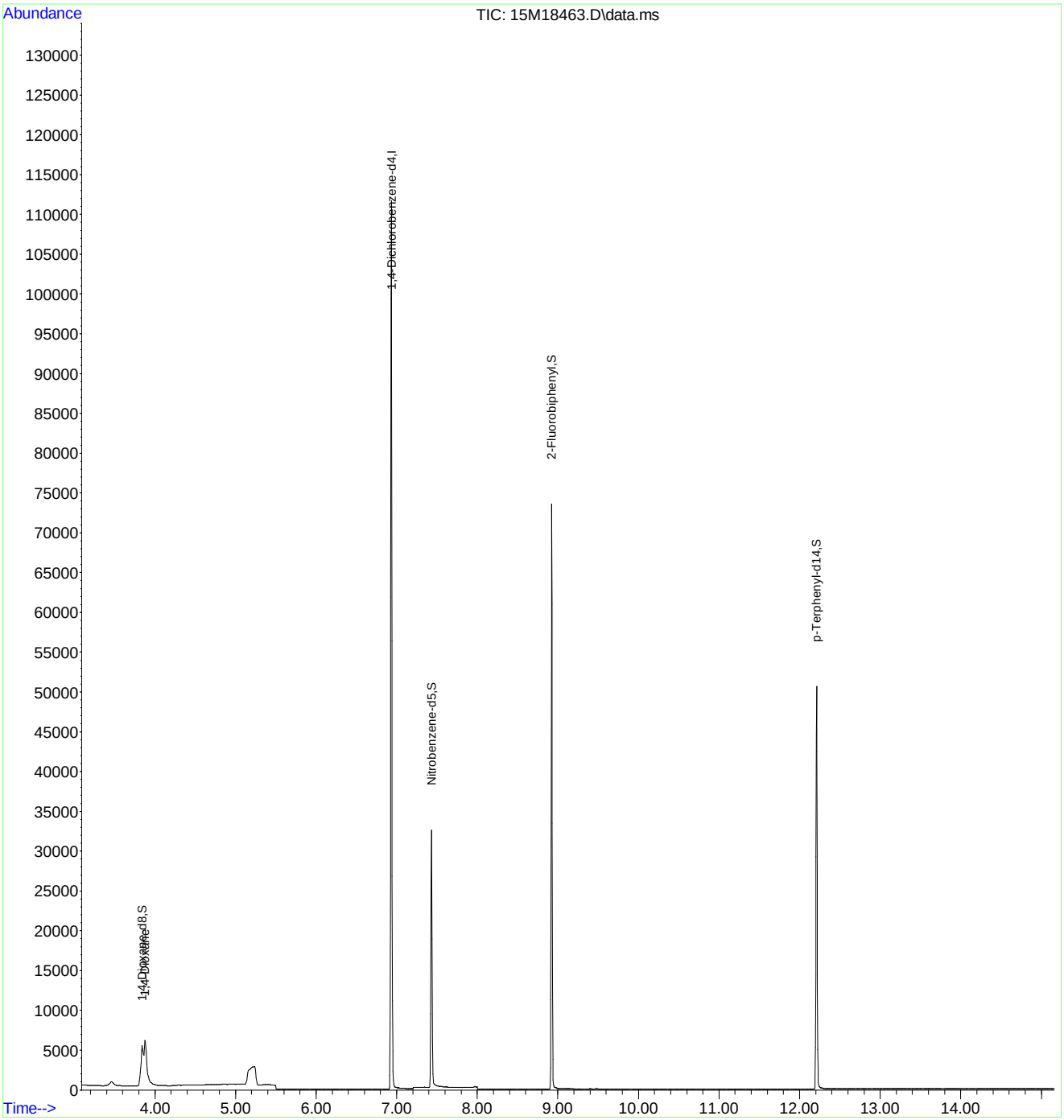

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	41944	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.792	96	22	0.0013	ug/L	-0.04
Spiked Amount 5.000			Recovery	=	0.00%	
4) Nitrobenzene-d5	7.436	82	56	0.0013	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
5) 2-Fluorobiphenyl	8.926	172	23	0.0002	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.214	244	128	0.0012	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	64750	5.0454	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

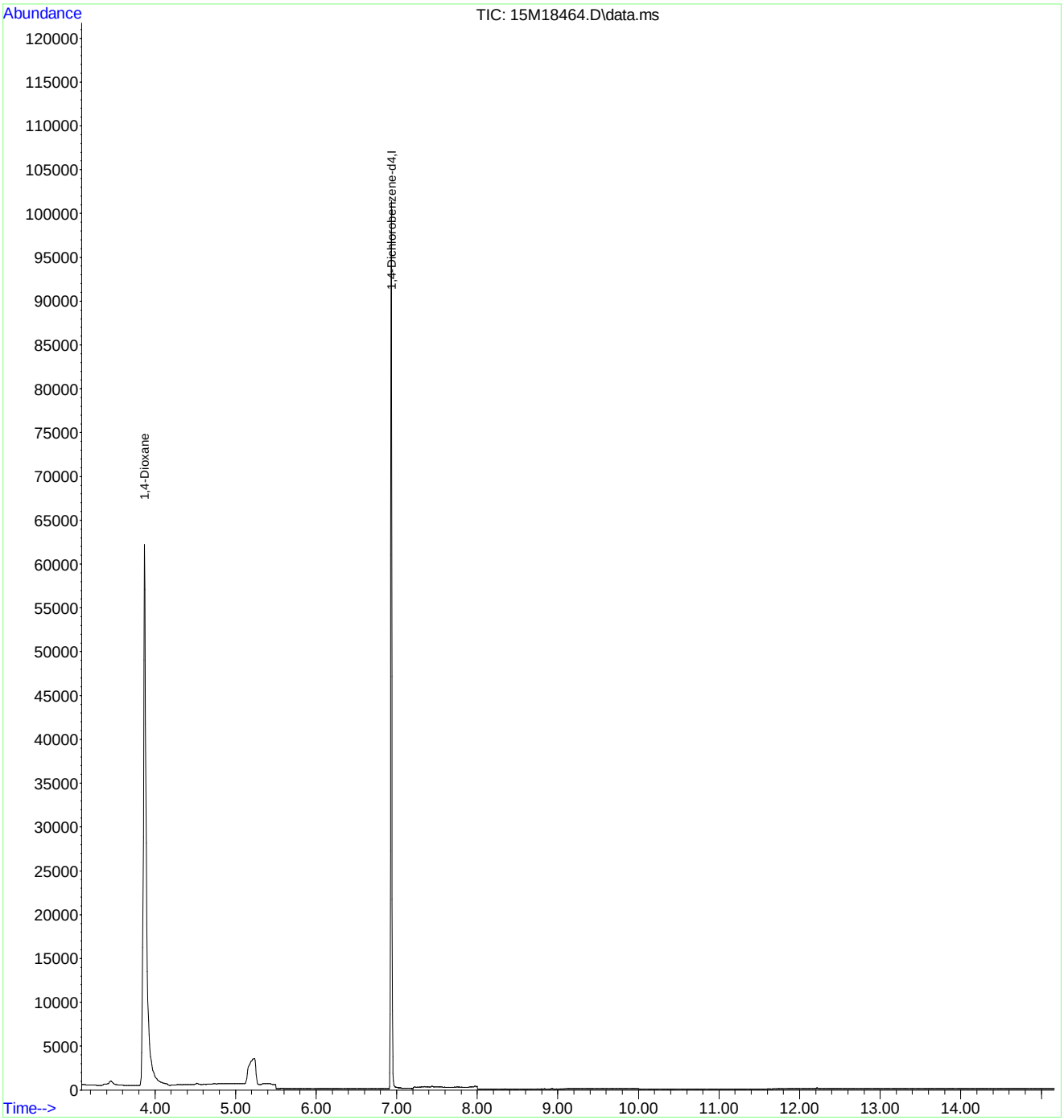

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	106	0.00
2		1,4-Dioxane	5.000	5.045	-0.9	106	0.00
3	S	1,4-Dioxane-d8	5.000	0.001	100.0#	0	-0.04
4	S	Nitrobenzene-d5	5.000	0.001	100.0#	0	0.00
5	S	2-Fluorobiphenyl	5.000	0.000	100.0#	0	0.00
6	S	p-Terphenyl-d14	5.000	0.001	100.0#	0	0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

2.2.1.5 Raw QC Data

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

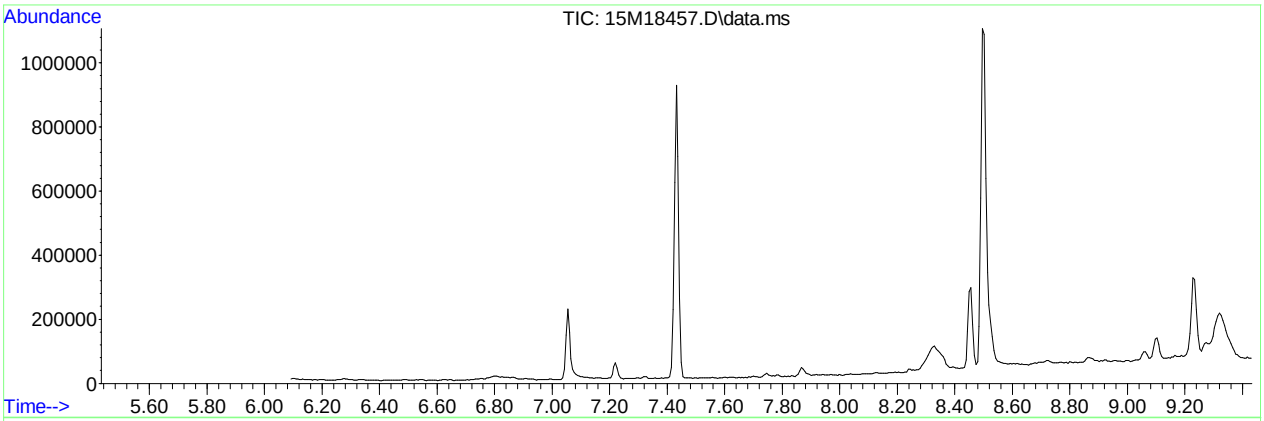

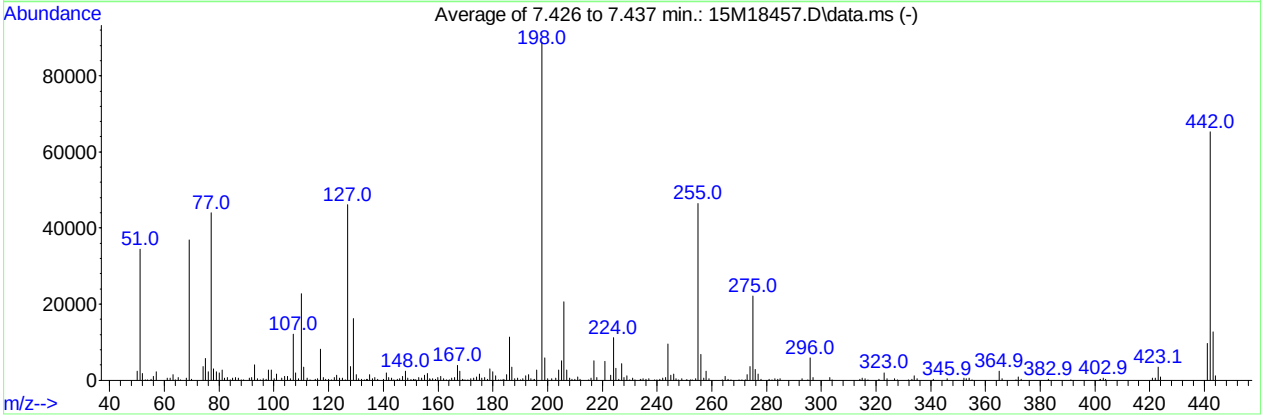

AutoFind: Scans 234, 235, 236; Background Corrected with Scan 228

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	38.8	34488	PASS
68	69	0.00	2	1.4	500	PASS
69	198	0.00	100	41.4	36833	PASS
70	69	0.00	2	0.5	172	PASS
127	198	40	60	51.9	46131	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	88880	PASS
199	198	5	9	6.7	5918	PASS
275	198	10	30	24.9	22090	PASS
365	198	1	100	2.7	2358	PASS
441	443	0.01	100	75.7	9586	PASS
442	198	40	100	73.4	65261	PASS
443	442	17	23	19.4	12659	PASS

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

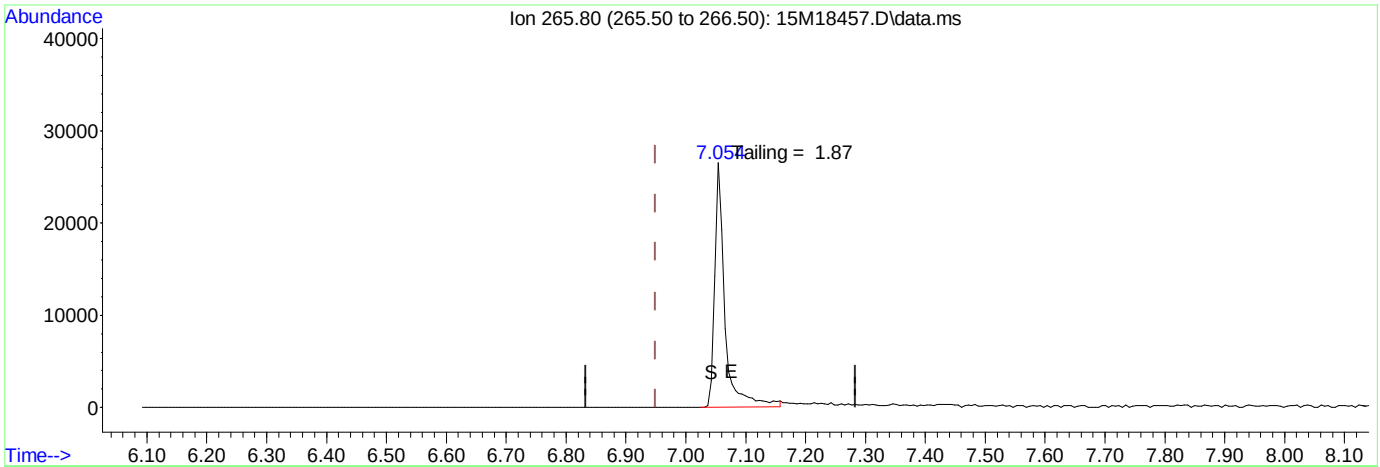

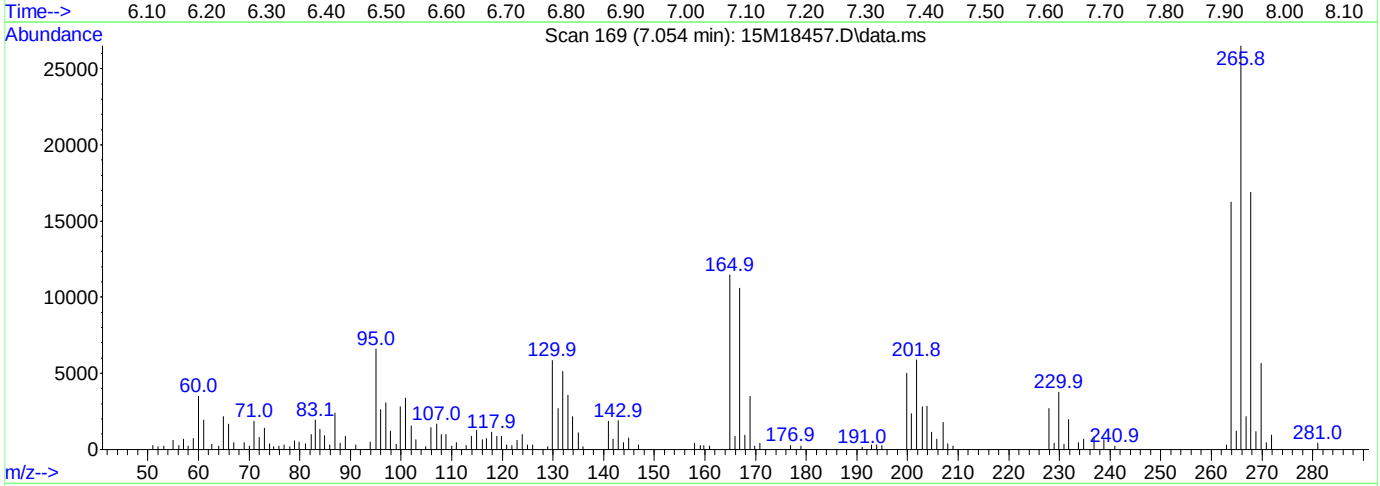

TIC: 15M18457.D\data.ms

(1) Pentachlorophenol

7.054min (+ 0.105) 0.00 ug/ml

response 30738

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

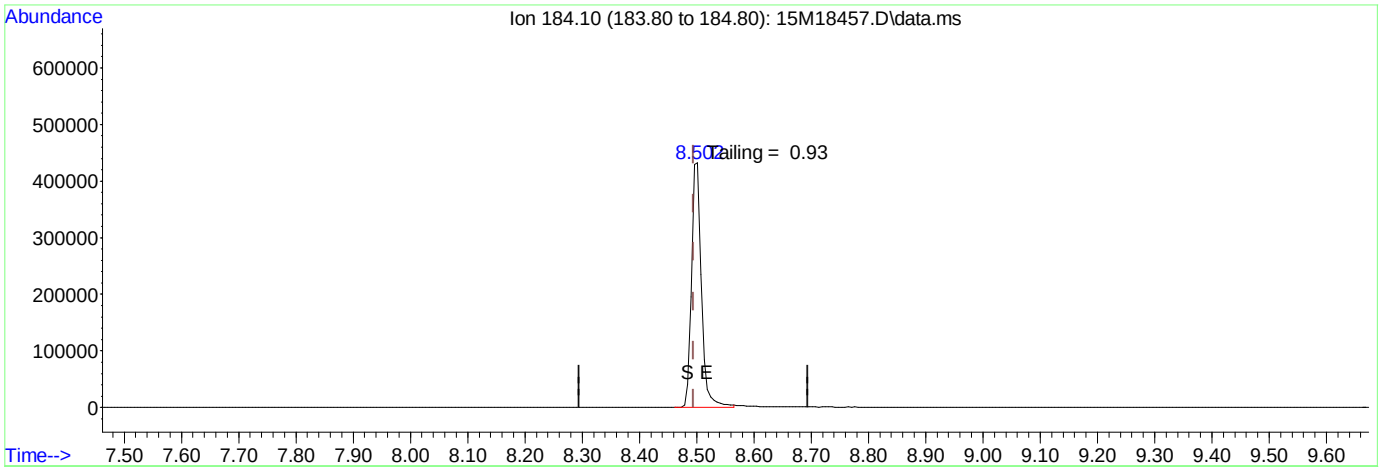

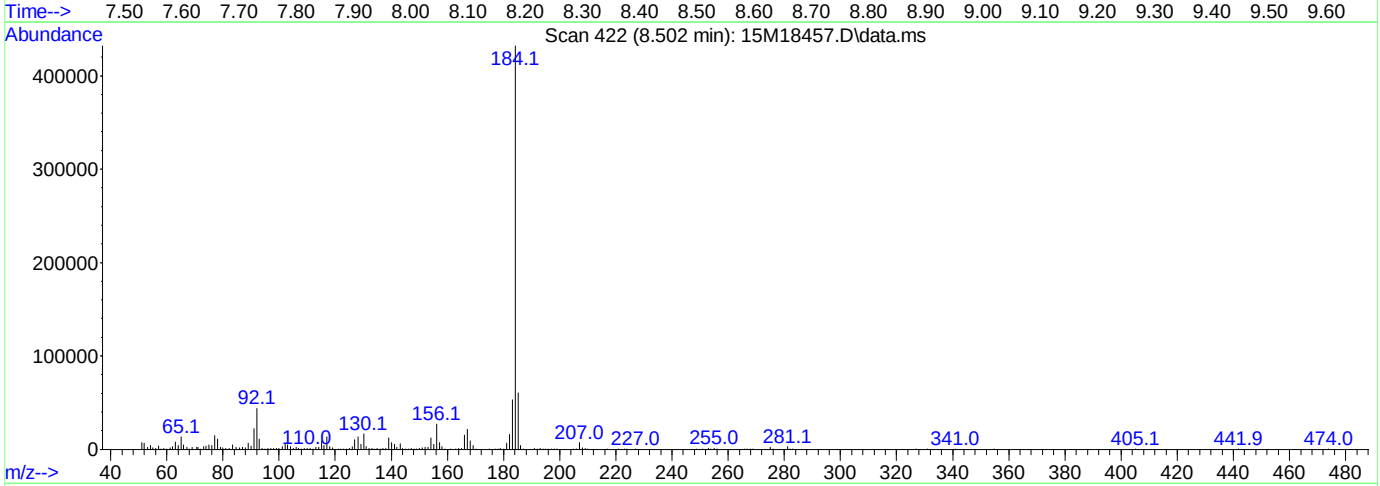

TIC: 15M18457.D\data.ms

(2) Benzidine

8.502min (+ 0.008) 0.00 ug/ml

response 532770

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

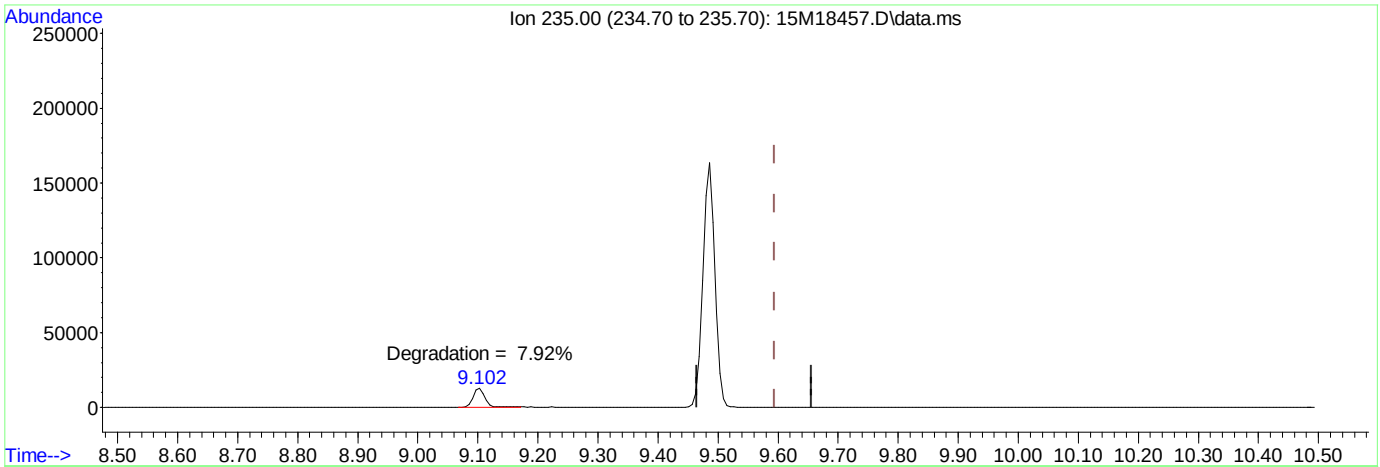

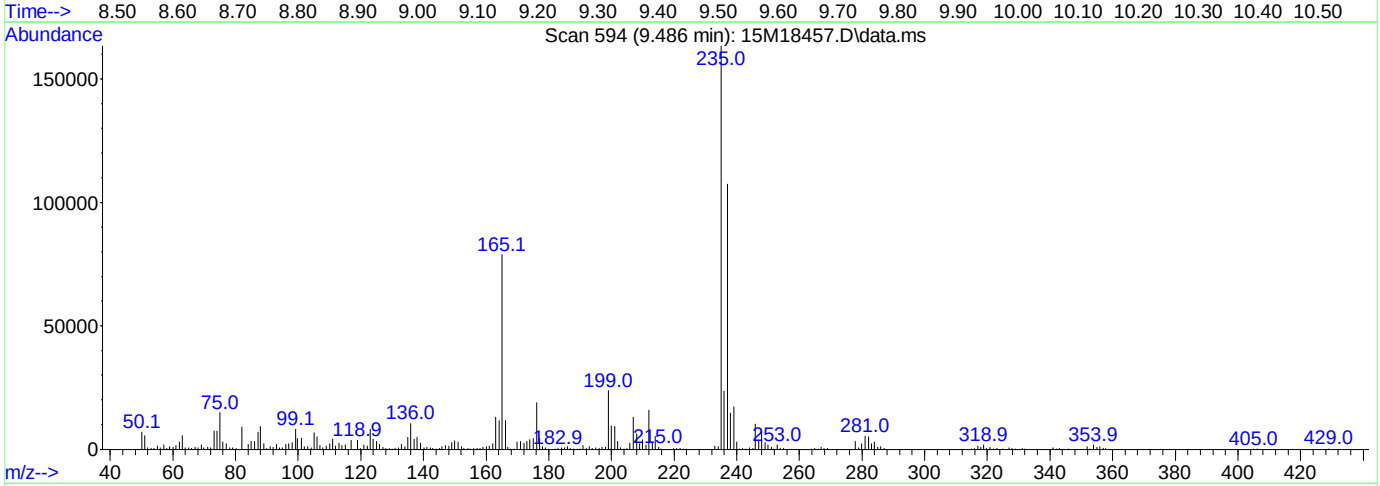

TIC: 15M18457.D\data.ms

(3) DDT

9.486min (-0.108) 0.00 ug/ml

response 180187

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18465.D
Acq On : 21 Jun 2016 12:54
Operator : MES
Sample : WG572806-01 BLANK 6/15
Misc : 1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 21 16:33:15 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.936	152	38899	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	49398	3.0862	ug/L	0.00
Spiked Amount 5.000			Recovery = 61.80%			
4) Nitrobenzene-d5	7.431	82	1663307	40.4808	ug/L	0.00
Spiked Amount 5.000			Recovery = 809.60%			
5) 2-Fluorobiphenyl	8.926	172	3076633	29.6644	ug/L	0.00
Spiked Amount 5.000			Recovery = 593.20%			
6) p-Terphenyl-d14	12.258	244	4064361	40.6562	ug/L	0.07
Spiked Amount 5.000			Recovery = 813.20%			

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18465.D
Acq On : 21 Jun 2016 12:54
Operator : MES
Sample : WG572806-01 BLANK 6/15
Misc : 1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 21 16:33:15 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

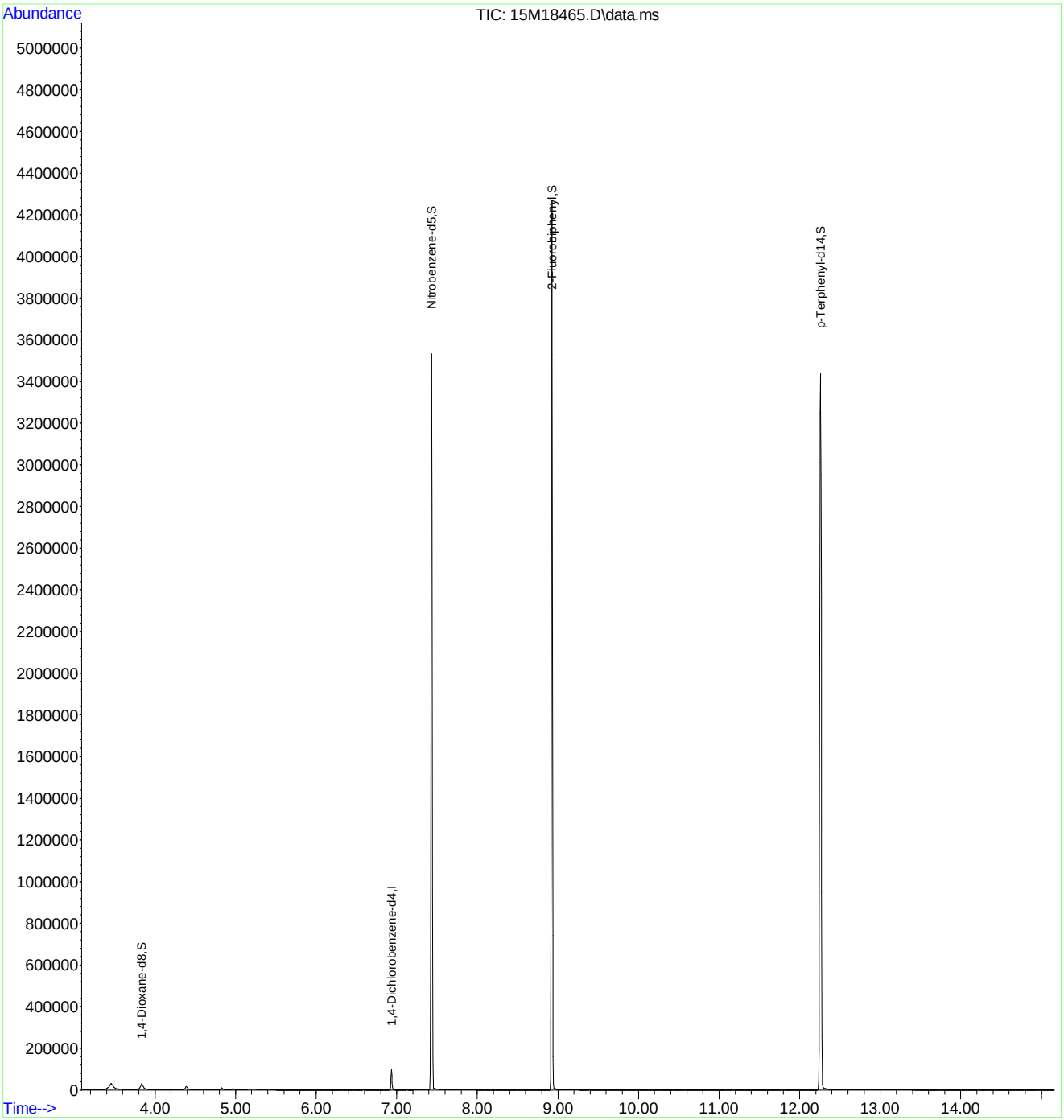

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18466.D
Acq On : 21 Jun 2016 13:17
Operator : MES
Sample : WG572806-02 LCS 6/15
Misc : 1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 22 08:05:00 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	27126	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.820	96	34886	3.1254	ug/L	0.00
Spiked Amount 5.000			Recovery	=	62.60%	
4) Nitrobenzene-d5	7.436	82	2047	0.0714	ug/L	0.00
Spiked Amount 5.000			Recovery	=	1.40%	
5) 2-Fluorobiphenyl	8.923	172	526	0.0073	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.20%	
6) p-Terphenyl-d14	12.229	244	1164	0.0167	ug/L	0.04
Spiked Amount 5.000			Recovery	=	0.40%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.855	58	25161	3.0316	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18466.D
Acq On : 21 Jun 2016 13:17
Operator : MES
Sample : WG572806-02 LCS 6/15
Misc : 1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 22 08:05:00 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

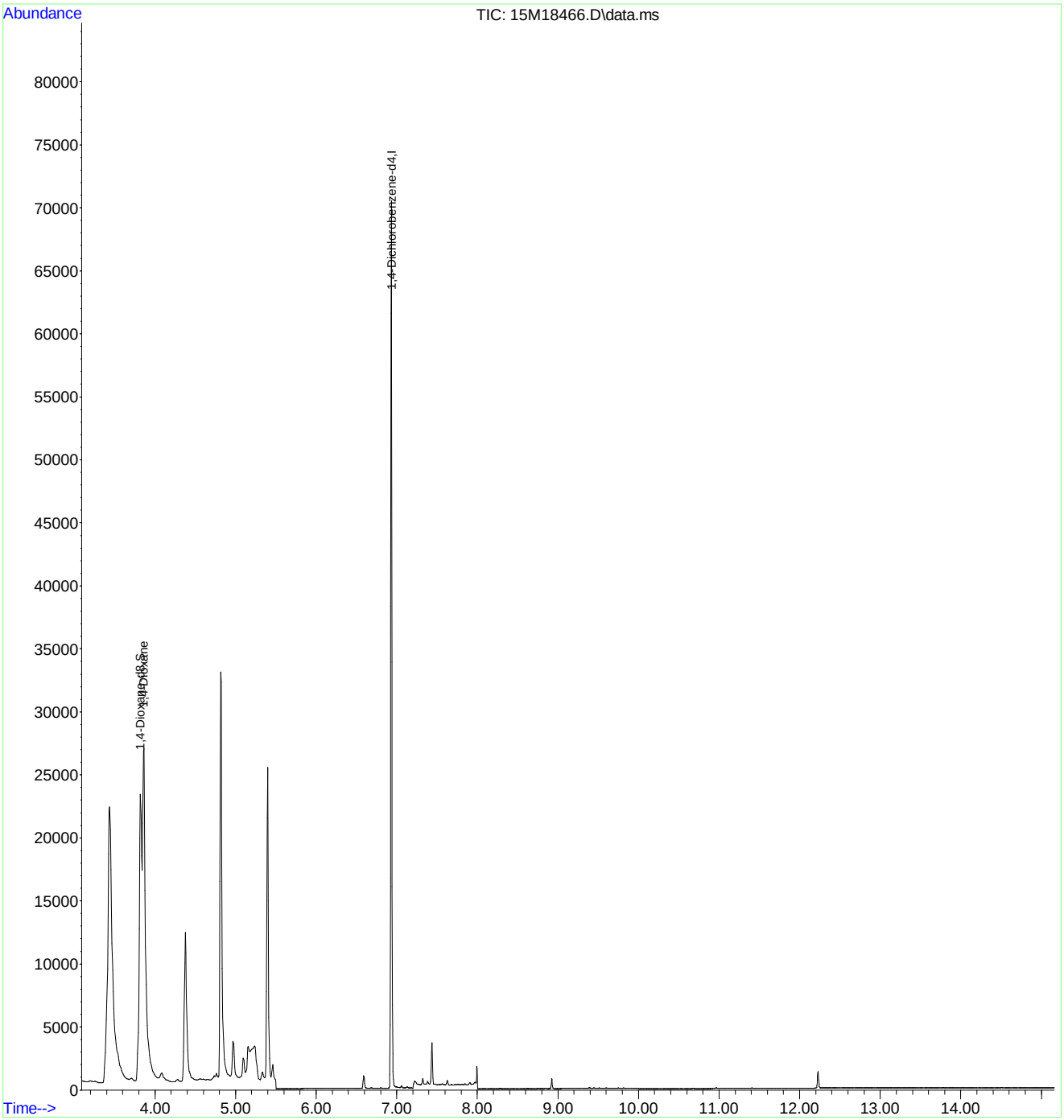

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18467.D
Acq On : 21 Jun 2016 13:40
Operator : MES
Sample : WG572806-03 LCSDUP 6/15
Misc : 1,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jun 22 08:05:03 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	34071	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	32606	2.3257	ug/L	0.00
Spiked Amount 5.000			Recovery	=	46.60%	
4) Nitrobenzene-d5	7.238	82	1167	0.0324	ug/L	-0.19
Spiked Amount 5.000			Recovery	=	0.60%	
5) 2-Fluorobiphenyl	8.923	172	1594	0.0175	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.40%	
6) p-Terphenyl-d14	12.207	244	949	0.0108	ug/L	0.02
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	23691	2.2726	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18467.D
Acq On : 21 Jun 2016 13:40
Operator : MES
Sample : WG572806-03 LCSDUP 6/15
Misc : 1,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jun 22 08:05:03 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

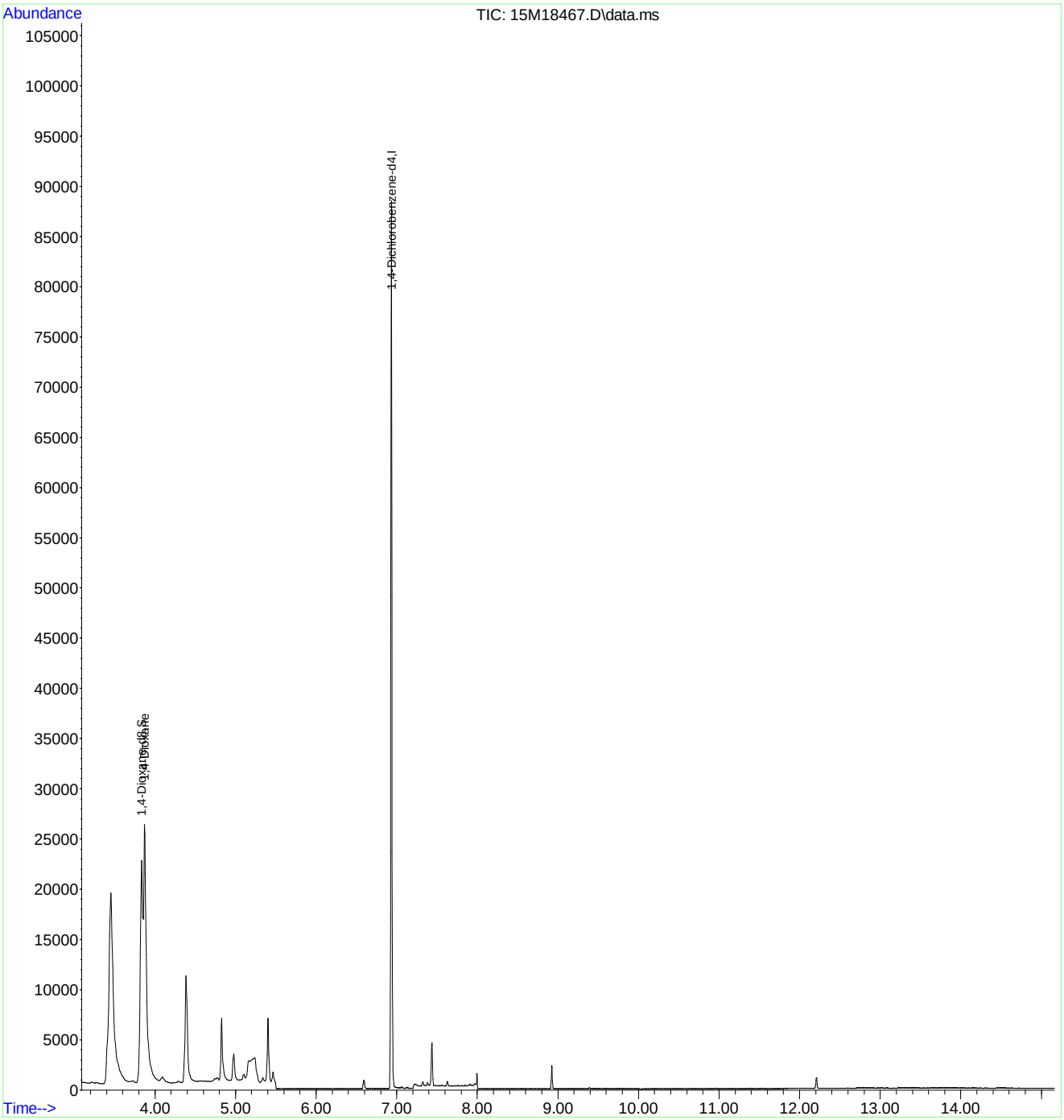

2.2 General Chromatography Data

2.2.2 6850 LC/MS Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW03-061416	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/23/2016 01:19
Collect Date:	06/14/2016 07:40	**Dilution:**	1	**File ID:**	1LM.LM35442
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW04SW-061416	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/23/2016 01:38
Collect Date:	06/14/2016 09:00	**Dilution:**	1	**File ID:**	1LM.LM35443
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.186	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW04-061416	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/23/2016 14:20
Collect Date:	06/14/2016 10:00	**Dilution:**	1000	**File ID:**	1LM.LM35457
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1360		400	200	100

Certificate of Analysis

Sample #:	L16060822-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW04FD-061416	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/23/2016 14:39
Collect Date:	06/14/2016 10:00	**Dilution:**	1000	**File ID:**	1LM.LM35458
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1380		400	200	100

2.2.2.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1401 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG573791-01 MCT	9,940.	
-02 Blank	0.34	
-03 LCS	0.41	
-04 LCS2	0.42	
L16060650-01	2,500.	
-02	1,505.	
-03	839.	
-04	1,830.	
-05	1,832.	
-06	1,104.	
-07	711.	
L16060730-01	4,900.	
-02	4,930.	
-03	10,050.	
L16060732-01	3,060.	
-02	2,940.	
L16060822-01	627.	
-03	1,199.	
-04	901.	
-05	899.	
L16060854-01	3,040.	
L16061180-01	3,020.	

Analyst: John Richards

Date/Time: 06/23/16 13:33

DCN#119262

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

Page: 1 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

Page: 2 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 062216_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG573791 (waters)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments: All samples were initially analyzed neat or at dilutions based on their historical results.
Samples tagged with (NR) did not conform to their historical results. These samples were reanalyzed on the end of the sequence, either neat or at a dilution, based on the results of their initial analysis.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35415	WG573797-01 CCB	1	1		06/22/16 16:48
2	1LM.LM35416	WG573797-02 CCV (1.0ug/L)	1	1	STD75510	06/22/16 17:06
3	1LM.LM35417	WG573791-05 MRL (0.2ug/L)	1	1	STD75510	06/22/16 17:25
4	1LM.LM35418	WG573791-01 MCT (0.2ug/L)	1	1	STD75512	06/22/16 17:44
5	1LM.LM35419	WG573791-02 BLANK	1	1		06/22/16 18:03
6	1LM.LM35420	WG573791-03 LCS (0.2ug/L)	1	1	STD75512	06/22/16 18:22
7	1LM.LM35421	WG573791-04 LCS2 (0.2ug/L)	1	1	STD75512	06/22/16 18:41
8	1LM.LM35422	L16061180-01	1	1		06/22/16 19:00
9	1LM.LM35423	L16060732-01	1	1		06/22/16 19:19
10	1LM.LM35424	L16060732-02	1	1		06/22/16 19:38
11	1LM.LM35425	L16060854-01	1	1		06/22/16 19:57
12	1LM.LM35426	L16060650-01 (10,000x)	1	10000		06/22/16 20:16
13	1LM.LM35427	L16060650-02 (10,000x)	1	10000		06/22/16 20:35
14	1LM.LM35428	WG573797-03 CCV (1.0ug/L)	1	1	STD75510	06/22/16 20:54
15	1LM.LM35429	WG573791-06 MRL (0.2ug/L)	1	1	STD75510	06/22/16 21:13
16	1LM.LM35430	WG573797-04 CCB	1	1		06/22/16 21:31
17	1LM.LM35431	L16060650-03	1	1		06/22/16 21:50
18	1LM.LM35432	L16060650-04 (5,000x) (NR)	1	5000		06/22/16 22:09
19	1LM.LM35433	L16060650-05 (5,000x) (NR)	1	5000		06/22/16 22:28
20	1LM.LM35434	L16060650-06 (100x) (NR)	1	100		06/22/16 22:47
21	1LM.LM35435	L16060650-07	1	1		06/22/16 23:06
22	1LM.LM35436	L16060730-01 (50x) (NR)	1	50		06/22/16 23:25
23	1LM.LM35437	L16060730-02 (50x) (NR)	1	50		06/22/16 23:44
24	1LM.LM35438	L16060730-03 (50x)	1	50		06/23/16 00:03
25	1LM.LM35439	WG573797-05 CCV (1.0ug/L)	1	1	STD75510	06/23/16 00:22
26	1LM.LM35440	WG573791-07 MRL (0.2ug/L)	1	1	STD75510	06/23/16 00:41
27	1LM.LM35441	WG573797-06 CCB	1	1		06/23/16 01:00
28	1LM.LM35442	L16060822-01	1	1		06/23/16 01:19
29	1LM.LM35443	L16060822-03	1	1		06/23/16 01:38
30	1LM.LM35444	L16060822-04 (NR)	1	1		06/23/16 01:57
31	1LM.LM35445	L16060822-05 (NR)	1	1		06/23/16 02:16
32	1LM.LM35446	WG573797-07 CCV (1.0ug/L)	1	1	STD75510	06/23/16 02:34
33	1LM.LM35447	WG573791-08 MRL (0.2ug/L)	1	1	STD75510	06/23/16 02:53

Page: 1 Approved: 24-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 062216_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG573791 (waters)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 NA

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM35448	WG573797-08 CCB	1	1		06/23/16 03:12
35	1LM.LM35449	WG573797-09 CCV (1.0ug/L)	1	1	STD75510	06/23/16 11:49
36	1LM.LM35450	WG573791-09 MRL (0.2ug/L)	1	1	STD75510	06/23/16 12:08
37	1LM.LM35451	WG573797-10 CCB	1	1		06/23/16 12:27
38	1LM.LM35452	L16060650-04 (RR 50x)	1	50		06/23/16 12:46
39	1LM.LM35453	L16060650-05 (RR 50x)	1	50		06/23/16 13:05
40	1LM.LM35454	L16060650-06 (RR Neat)	1	1		06/23/16 13:23
41	1LM.LM35455	L16060730-01 (RR 500x)	1	500		06/23/16 13:42
42	1LM.LM35456	L16060730-02 (RR 500x)	1	500		06/23/16 14:01
43	1LM.LM35457	L16060822-04 (RR 1000x)	1	1000		06/23/16 14:20
44	1LM.LM35458	L16060822-05 (RR 1000x)	1	1000		06/23/16 14:39
45	1LM.LM35459	WG573797-11 CCV (1.0ug/L)	1	1	STD75510	06/23/16 14:58
46	1LM.LM35460	WG573791-10 MRL (0.2ug/L)	1	1	STD75510	06/23/16 15:17
47	1LM.LM35461	WG573797-12 CCB	1	1		06/23/16 15:36

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 2 Approved: 24-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
04-MAY-2016
John Richards

Secondary Reviewer:
05-MAY-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 22-JUN-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 75891
Analytical Workgroups: L16060650, 0730, 0732, 0822, 0854, 1180

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
24-JUN-2016

Secondary Reviewer:
24-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-24-2016 11:54:16

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG573791

Login Number: L16060822

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW03-061416	01	06/14/16					06/22/2016	8.3	28		06/23/16	.4	28	
18CPTMW04SW-061416	03	06/14/16					06/22/2016	8.3	28		06/23/16	.4	28	
18CPTMW04-061416	04	06/14/16					06/22/2016	8.3	28		06/23/16	.9	28	
18CPTMW04FD-061416	05	06/14/16					06/22/2016	8.3	28		06/23/16	.9	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4822443
Report generated 06/27/2016 15:54

METHOD BLANK SUMMARY

Login Number: L16060822
Blank File ID: 1LM.LM35419
Prep Date: 06/22/16 16:00
Analyzed Date: 06/22/16 18:03
Analyst: JWR

Work Group: WG573791
Blank Sample ID: WG573791-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG573791-05	1LM.LM35417	06/22/16 17:25	01
MCT	WG573791-01	1LM.LM35418	06/22/16 17:44	01
LCS	WG573791-03	1LM.LM35420	06/22/16 18:22	01
LCS2	WG573791-04	1LM.LM35421	06/22/16 18:41	01
QCMRL	WG573791-06	1LM.LM35429	06/22/16 21:13	01
QCMRL	WG573791-07	1LM.LM35440	06/23/16 00:41	01
18WW03-061416	L16060822-01	1LM.LM35442	06/23/16 01:19	01
18CPTMW04SW-061416	L16060822-03	1LM.LM35443	06/23/16 01:38	01
QCMRL	WG573791-08	1LM.LM35447	06/23/16 02:53	01
QCMRL	WG573791-09	1LM.LM35450	06/23/16 12:08	01
18CPTMW04-061416	L16060822-04	1LM.LM35457	06/23/16 14:20	DL01
18CPTMW04FD-061416	L16060822-05	1LM.LM35458	06/23/16 14:39	DL01
QCMRL	WG573791-10	1LM.LM35460	06/23/16 15:17	01

Report Name: BLANK_SUMMARY
PDF File ID: 4822444
Report generated 06/27/2016 15:54

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060822 Prep Date: 06/22/16 16:00 Sample ID: WG573791-02
Instrument ID: LCMS1 Run Date: 06/22/16 18:03 Prep Method: 6850
File ID: 1LM.LM35419 Analyst: JWR Method: 6850
Workgroup (AAB#): WG573791 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4822445
27-JUN-2016 15:54

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060822 Analyst: JWR Prep Method: 6850
Instrument ID: LCMS1 Matrix: Water Method: 6850
Workgroup (AAB#): WG573791 Units: ug/L
QC Key: DOD4 Lot #: STD75512

Sample ID: WG573791-03 LCS File ID: 1LM.LM35420 Run Date: 06/22/2016 18:22
Sample ID: WG573791-04 LCS2 File ID: 1LM.LM35421 Run Date: 06/22/2016 18:41

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Perchlorate	0.200	0.201	101	0.200	0.215	108	6.73	80 - 120	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4822446
Report generated: 06/27/2016 15:54

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060822
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4822603
Report generated 06/27/2016 15:54

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060822

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4822603
Report generated 06/27/2016 15:54

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060822

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4822603
Report generated 06/27/2016 15:54

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060822

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008

PDF File ID: 4822603

Report generated 06/27/2016 15:54

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060822 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4822604
Report generated 06/27/2016 15:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/22/2016
Sample ID: WG573797-01
Instrument ID: LCMS1
Run Time: 16:48
Method: 6850
File ID: 1LM.LM35415
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822449
Report generated 06/27/2016 15:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/22/2016
Sample ID: WG573797-04
Instrument ID: LCMS1
Run Time: 21:31
Method: 6850
File ID: 1LM.LM35430
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822449
Report generated 06/27/2016 15:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/23/2016
Sample ID: WG573797-06
Instrument ID: LCMS1
Run Time: 01:00
Method: 6850
File ID: 1LM.LM35441
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822449
Report generated 06/27/2016 15:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/23/2016
Sample ID: WG573797-08
Instrument ID: LCMS1
Run Time: 03:12
Method: 6850
File ID: 1LM.LM35448
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822449
Report generated 06/27/2016 15:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/23/2016
Sample ID: WG573797-10
Instrument ID: LCMS1
Run Time: 12:27
Method: 6850
File ID: 1LM.LM35451
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822449
Report generated 06/27/2016 15:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/23/2016
Sample ID: WG573797-12
Instrument ID: LCMS1
Run Time: 15:36
Method: 6850
File ID: 1LM.LM35461
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822449
Report generated 06/27/2016 15:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822
Run Date: 06/22/2016
Sample ID: WG573797-02
Instrument ID: LCMS1
Run Time: 17:06
Method: 6850
File ID: 1LM.LM35416
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.997	ug/L	1.68	0.300	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822448
Report generated 06/27/2016 15:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822 Run Date: 06/22/2016 Sample ID: WG573797-03
Instrument ID: LCMS1 Run Time: 20:54 Method: 6850
File ID: 1LM.LM35428 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG573791 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.75	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822448
Report generated 06/27/2016 15:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822 Run Date: 06/23/2016 Sample ID: WG573797-05
Instrument ID: LCMS1 Run Time: 00:22 Method: 6850
File ID: 1LM.LM35439 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG573791 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.74	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822448
Report generated 06/27/2016 15:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822 Run Date: 06/23/2016 Sample ID: WG573797-07
Instrument ID: LCMS1 Run Time: 02:34 Method: 6850
File ID: 1LM.LM35446 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG573791 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.75	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822448
Report generated 06/27/2016 15:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822
Run Date: 06/23/2016
Sample ID: WG573797-09
Instrument ID: LCMS1
Run Time: 11:49
Method: 6850
File ID: 1LM.LM35449
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.71	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822448
Report generated 06/27/2016 15:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822
Run Date: 06/23/2016
Sample ID: WG573797-11
Instrument ID: LCMS1
Run Time: 14:58
Method: 6850
File ID: 1LM.LM35459
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.05	ug/L	1.77	5.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822448
Report generated 06/27/2016 15:54

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060822 Run Date: 06/22/2016 Sample ID: WG573791-05
Instrument ID: LCMS1 Run Time: 17:25 Prep Method: 6850
File ID: 1LM.LM35417 Analyst: JWR Method: 6850
Workgroup (AAB#): WG573791 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4822447
Report generated 06/27/2016 15:54

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060822 Run Date: 06/22/2016 Sample ID: WG573791-06

Instrument ID: LCMS1 Run Time: 21:13 Prep Method: 6850

File ID: 1LM.LM35429 Analyst: JWR Method: 6850

Workgroup (AAB#): WG573791 Matrix: Water Units: ug/L

Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.204	102	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4822447
Report generated 06/27/2016 15:54

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060822 Run Date: 06/23/2016 Sample ID: WG573791-07
Instrument ID: LCMS1 Run Time: 00:41 Prep Method: 6850
File ID: 1LM.LM35440 Analyst: JWR Method: 6850
Workgroup (AAB#): WG573791 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.210	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4822447
Report generated 06/27/2016 15:54

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060822 Run Date: 06/23/2016 Sample ID: WG573791-08
Instrument ID: LCMS1 Run Time: 02:53 Prep Method: 6850
File ID: 1LM.LM35447 Analyst: JWR Method: 6850
Workgroup (AAB#): WG573791 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.214	107	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4822447
Report generated 06/27/2016 15:54

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060822 Run Date: 06/23/2016 Sample ID: WG573791-09
Instrument ID: LCMS1 Run Time: 12:08 Prep Method: 6850
File ID: 1LM.LM35450 Analyst: JWR Method: 6850
Workgroup (AAB#): WG573791 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.209	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4822447
Report generated 06/27/2016 15:54

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060822 Run Date: 06/23/2016 Sample ID: WG573791-10
Instrument ID: LCMS1 Run Time: 15:17 Prep Method: 6850
File ID: 1LM.LM35460 Analyst: JWR Method: 6850
Workgroup (AAB#): WG573791 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.201	101	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4822447
Report generated 06/27/2016 15:54

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16060822
Instrument ID: LCMS1
Workgroup (AAB#): WG573791

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16060822-01	1.00	01	477000
L16060822-03	1.00	01	356000
L16060822-04	1000	DL01	445000
L16060822-05	1000	DL01	447000
WG573791-02	1.00	01	436000
WG573791-03	1.00	01	440000
WG573791-04	1.00	01	435000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4822450
Report generated 06/27/2016 15:54

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**	6850	**Samplenum:**	L16060822-01
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35442
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 01:19	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	2850	1730	1.65	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**	6850	**Samplenum:**	L16060822-03
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35443
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 01:38	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	22800	8190	2.78	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**	6850	**Samplenum:**	L16060822-04
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35457
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 14:20	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	204000	69400	2.94	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**	6850	**Samplenum:**	L16060822-05
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35458
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 14:39	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	208000	71500	2.91	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**	6850	**Samplenum:**	WG573791-01
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35418
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 17:44	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	28500	10000	2.85	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**	6850	**Samplenum:**	WG573791-02
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35419
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 18:03	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	505	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**	6850	**Samplenum:**	WG573791-03
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35420
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 18:22	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	30300	11500	2.63	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**	6850	**Samplenum:**	WG573791-04
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35421
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 18:41	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32000	11500	2.78	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**	6850	**Samplenum:**	WG573791-05
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35417
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 17:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	31200	11200	2.79	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**	6850	**Samplenum:**	WG573791-06
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35429
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 21:13	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34500	12500	2.76	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**	6850	**Samplenum:**	WG573791-07
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35440
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 00:41	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36700	12900	2.84	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**	6850	**Samplenum:**	WG573791-08
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35447
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 02:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34800	11700	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**	6850	**Samplenum:**	WG573791-09
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35450
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 12:08	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	30500	11000	2.77	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**	6850	**Samplenum:**	WG573791-10
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35460
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 15:17	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32000	12700	2.52	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**		**Samplenum:**	WG573797-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35415
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 16:48	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	583	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**		**Samplenum:**	WG573797-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35416
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 17:06	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	151000	54200	2.79	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**		**Samplenum:**	WG573797-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35428
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 20:54	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	172000	61400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**		**Samplenum:**	WG573797-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35430
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 21:31	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	223	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**		**Samplenum:**	WG573797-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35439
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 00:22	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	176000	61500	2.86	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**		**Samplenum:**	WG573797-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35441
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 01:00	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**		**Samplenum:**	WG573797-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35446
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 02:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	58500	2.89	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**		**Samplenum:**	WG573797-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35448
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 03:12	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**		**Samplenum:**	WG573797-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35449
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 11:49	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	142000	50700	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**		**Samplenum:**	WG573797-10
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35451
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 12:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	560	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**		**Samplenum:**	WG573797-11
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35459
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 14:58	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	167000	56000	2.98	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**		**Samplenum:**	WG573797-12
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35461
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 15:36	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

2.2.2.3 Sample Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/23/2016 5:02 PM

Data File	LM35442.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 1:19:12 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060822-01	**Injection Vial**	22.00
Data File	LM35442.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 1:19:12 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	L16060822-01	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.770e+05	9.34	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.850e+03	9.36	N/A	0.0139
Perchlorate conf	1.730e+03	9.35	N/A	0.012

O18LP (Internal Standard)

RT (Exp. RT): 9.34(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

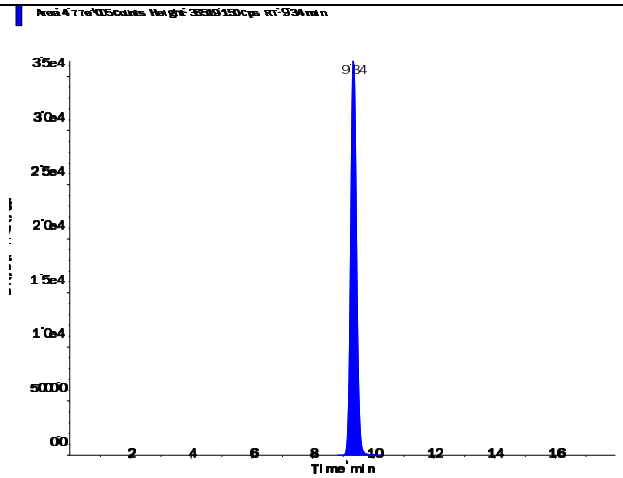

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.36 (9.84) min
Calculated conc:	0.0139 ng/ml
Area Ratio:	0.006
Sample Type:	(Unknown)

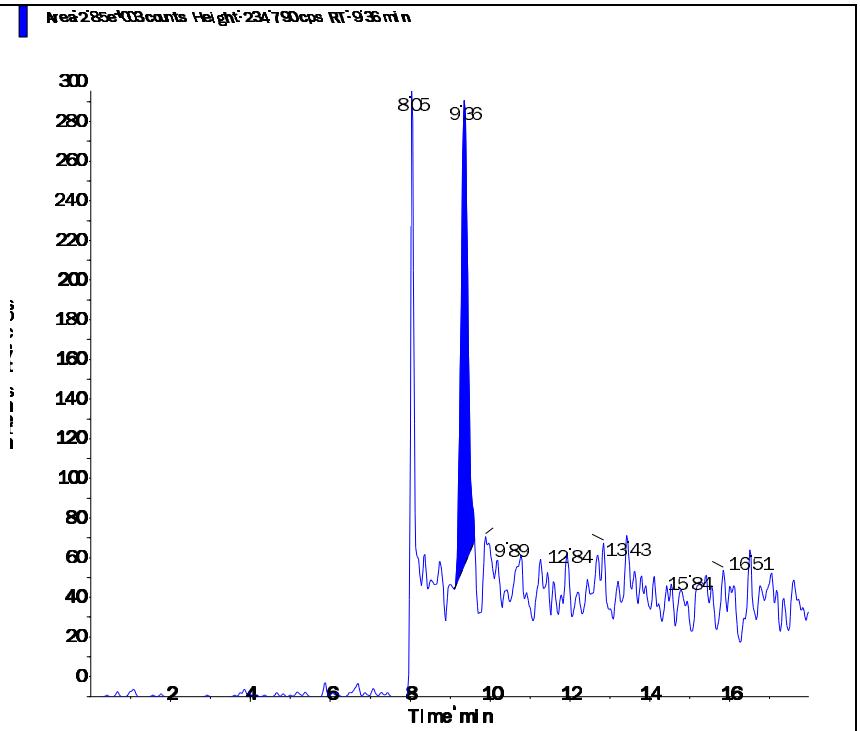

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	0.012 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)

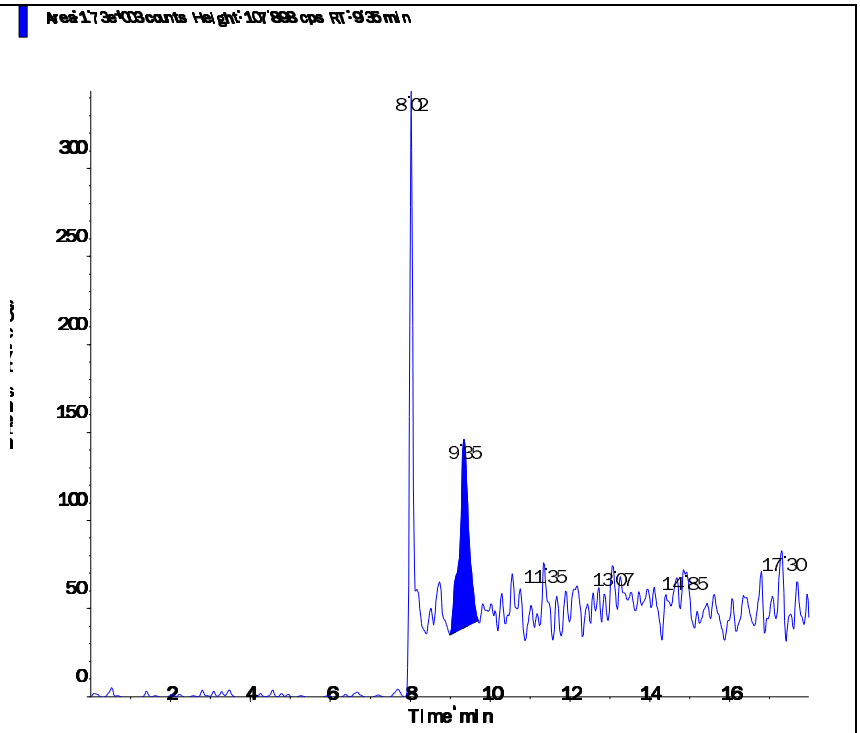

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Printed: 6/23/2016 5:02 PM

Data File	LM35443.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 1:38:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060822-03	**Injection Vial**	23.00
Data File	LM35443.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 1:38:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	L16060822-03	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.560e+05	9.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.280e+04	9.11	N/A	0.186
Perchlorate conf	8.190e+03	9.09	N/A	0.186

O18LP (Internal Standard)

RT (Exp. RT): 9.10(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

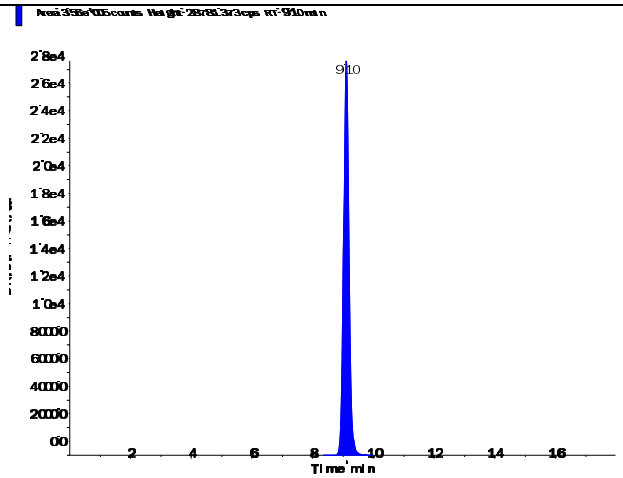

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.11 (9.84) min
Calculated conc:	0.186 ng/ml
Area Ratio:	0.064
Sample Type:	(Unknown)

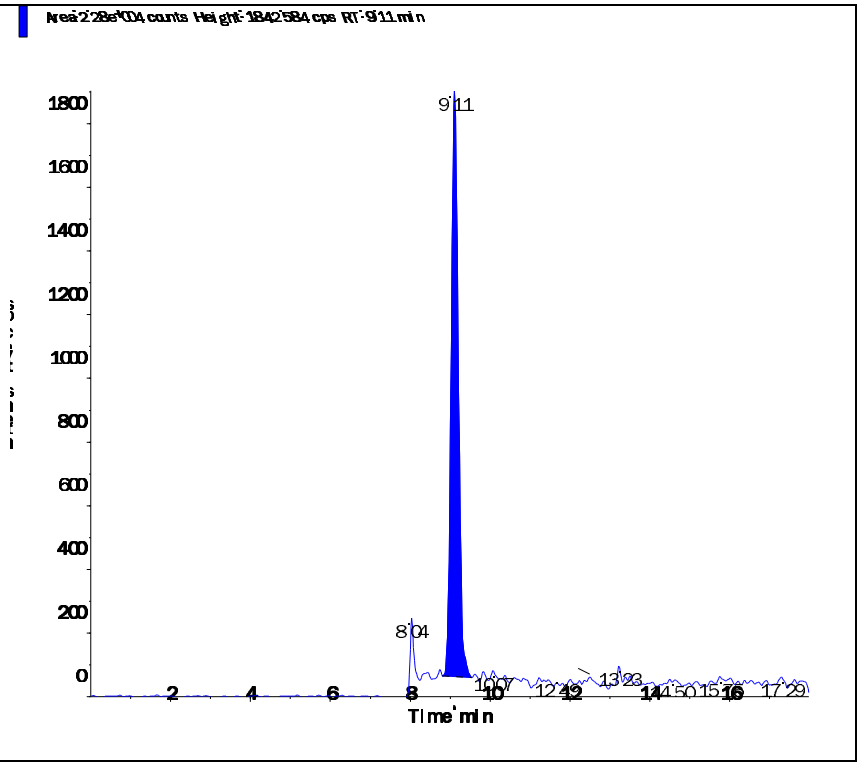

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.09 (9.84) min
Calculated conc:	0.186 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

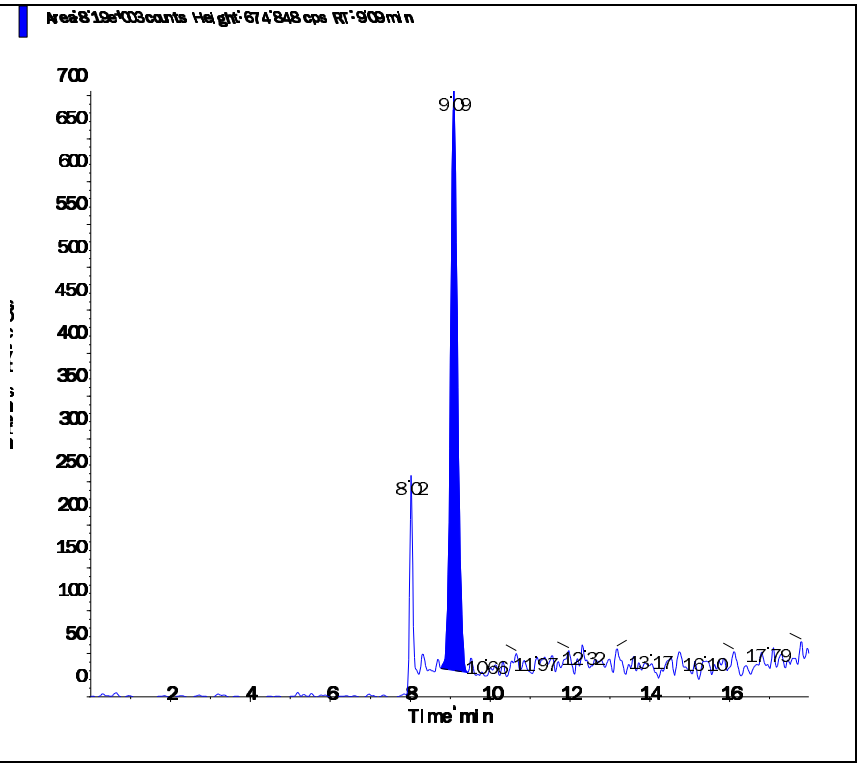

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Data File	LM35457.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 2:20:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060822-04 (RR 1000x)	**Injection Vial**	31.00
Data File	LM35457.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 2:20:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	L16060822-04	**Dilution Factor**	1.00
Sample Comment	11,000.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.450e+05	9.53	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.040e+05	9.54	N/A	1.36
Perchlorate conf	6.940e+04	9.53	N/A	1.38

O18LP (Internal Standard)

RT (Exp. RT): 9.53(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

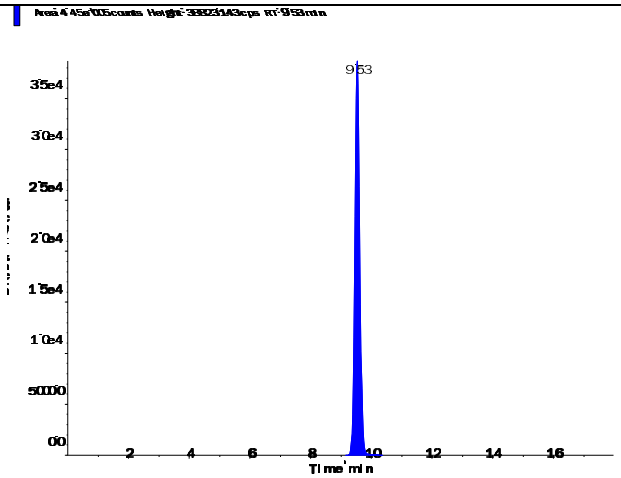

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.54 (9.84) min
Calculated conc:	1.36 ng/ml
Area Ratio:	0.459
Sample Type:	(Unknown)

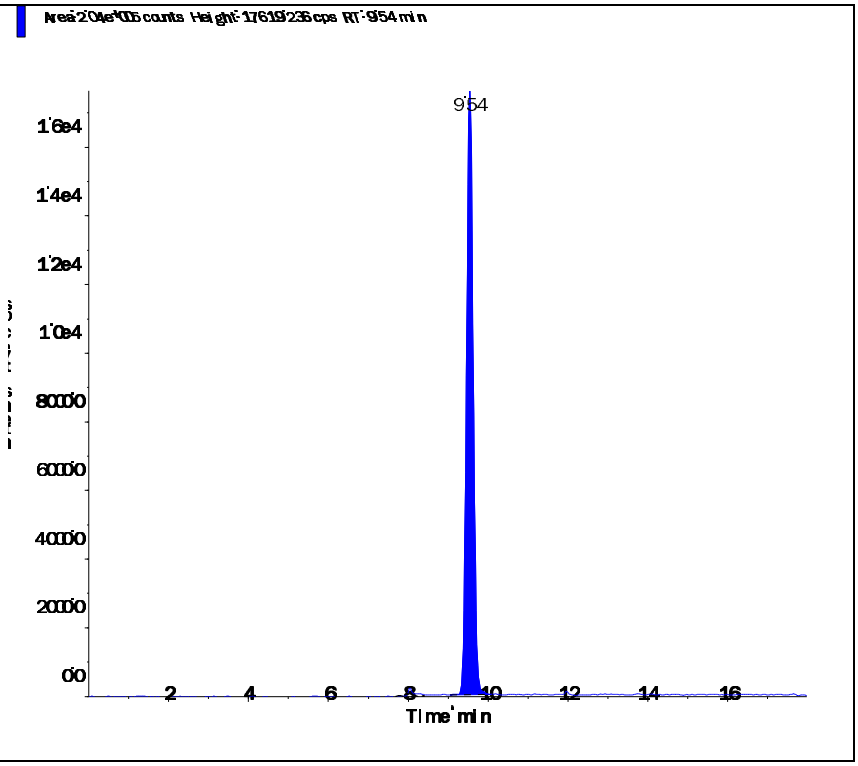

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.53 (9.84) min
Calculated conc:	1.38 ng/ml
Area Ratio:	0.156
Sample Type:	(Unknown)

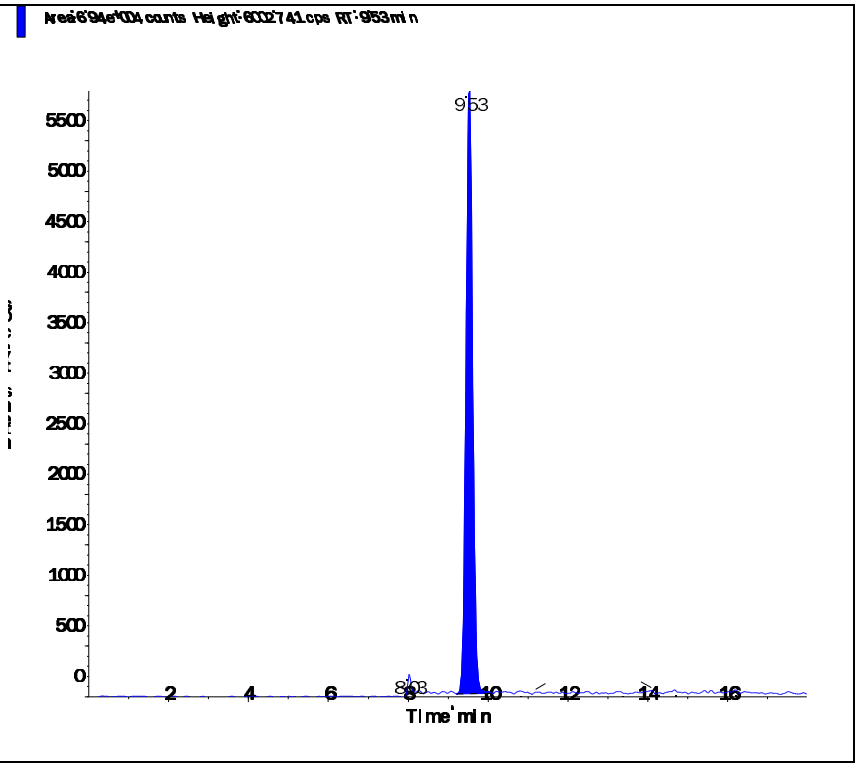

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Data File	LM35458.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 2:39:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060822-05 (RR 1000x)	**Injection Vial**	32.00
Data File	LM35458.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 2:39:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	L16060822-05	**Dilution Factor**	1.00
Sample Comment	11,000.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.470e+05	9.54	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.080e+05	9.54	N/A	1.38
Perchlorate conf	7.150e+04	9.53	N/A	1.41

O18LP (Internal Standard)

RT (Exp. RT): 9.54(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

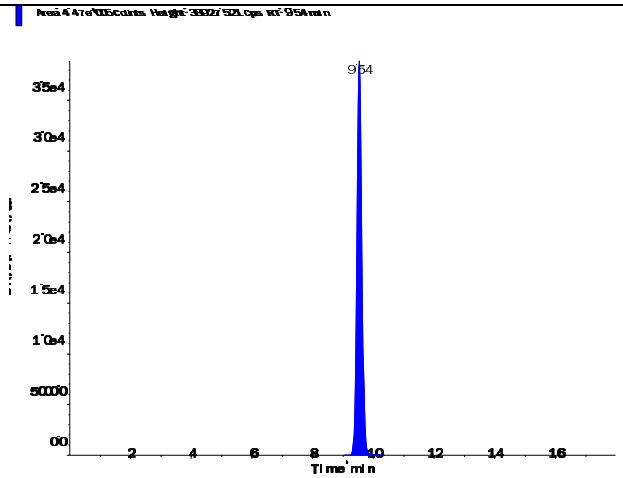

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.54 (9.84) min
Calculated conc:	1.38 ng/ml
Area Ratio:	0.467
Sample Type:	(Unknown)

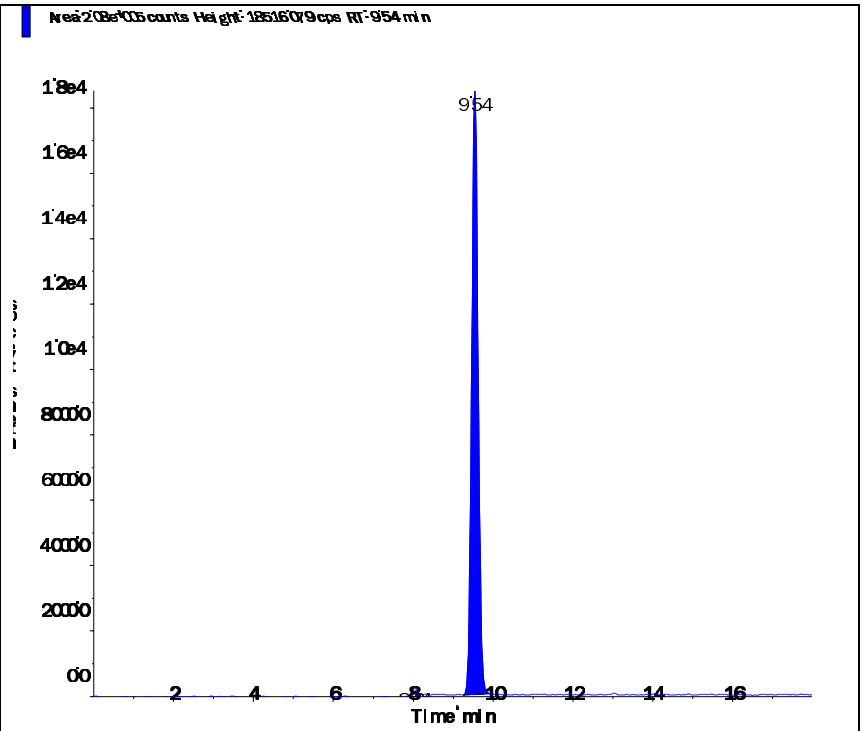

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.53 (9.84) min
Calculated conc:	1.41 ng/ml
Area Ratio:	0.16
Sample Type:	(Unknown)

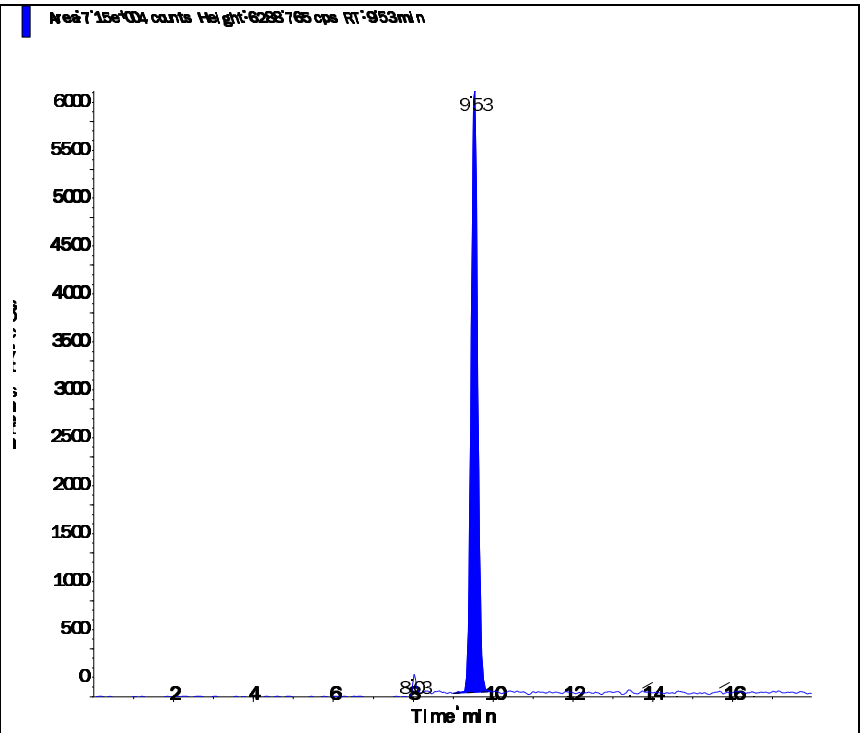

2.2.2.4 Standards Data

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Data File	LM34686.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

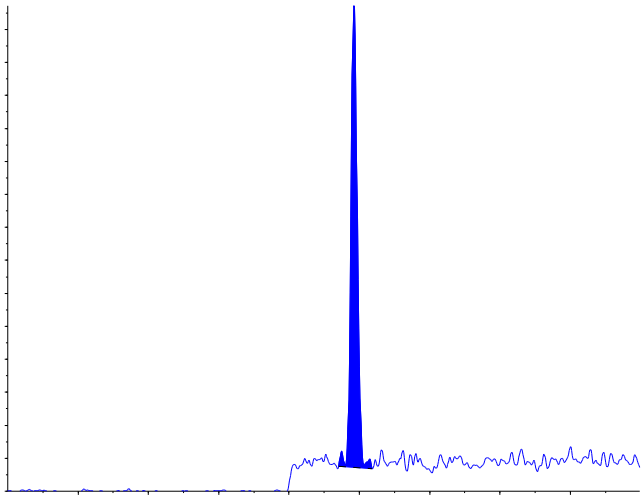

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	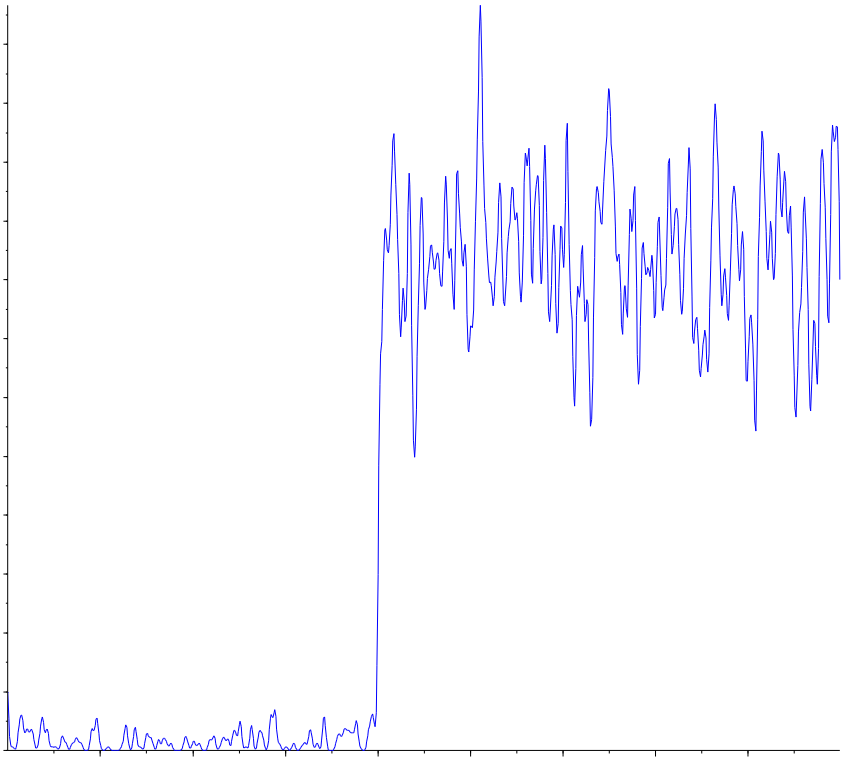
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	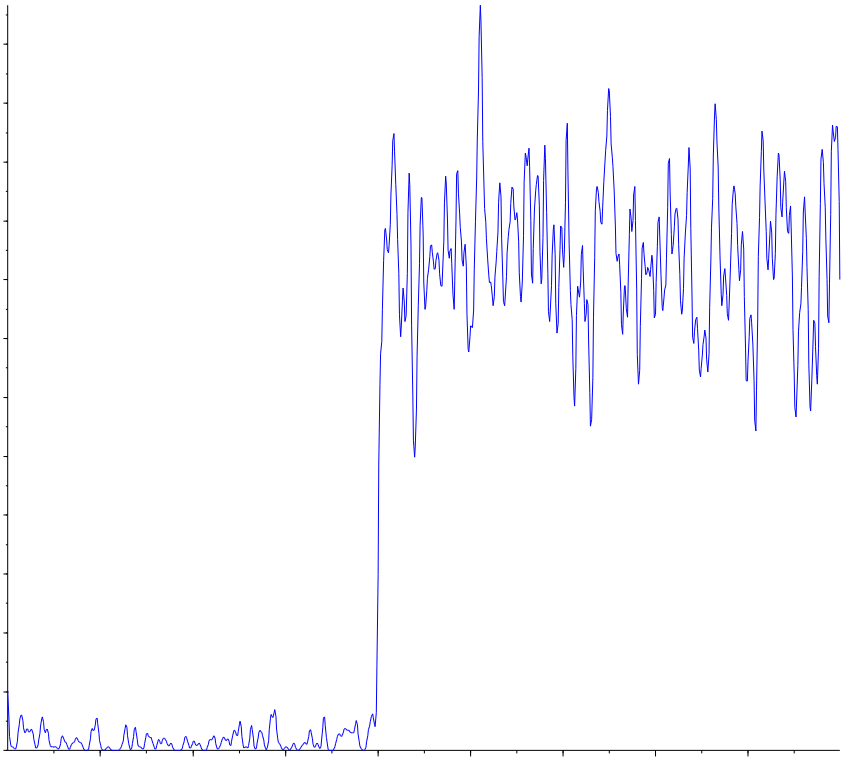

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Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

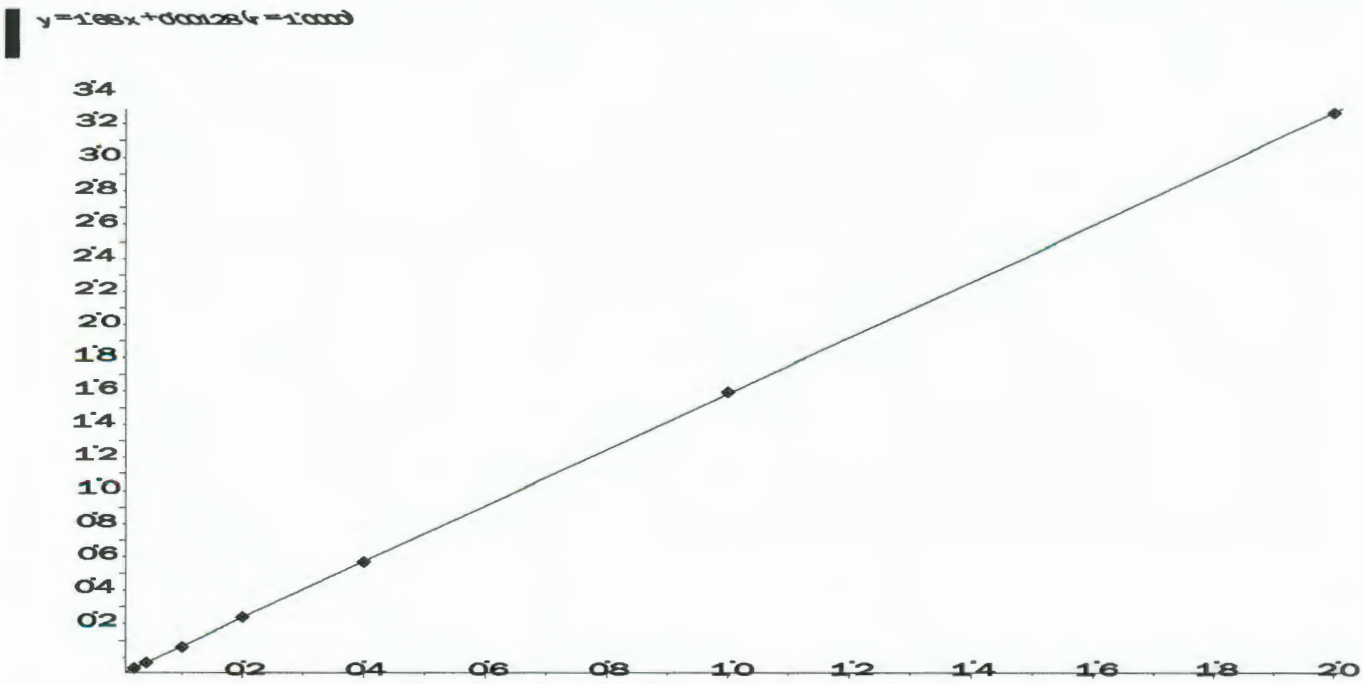

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Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

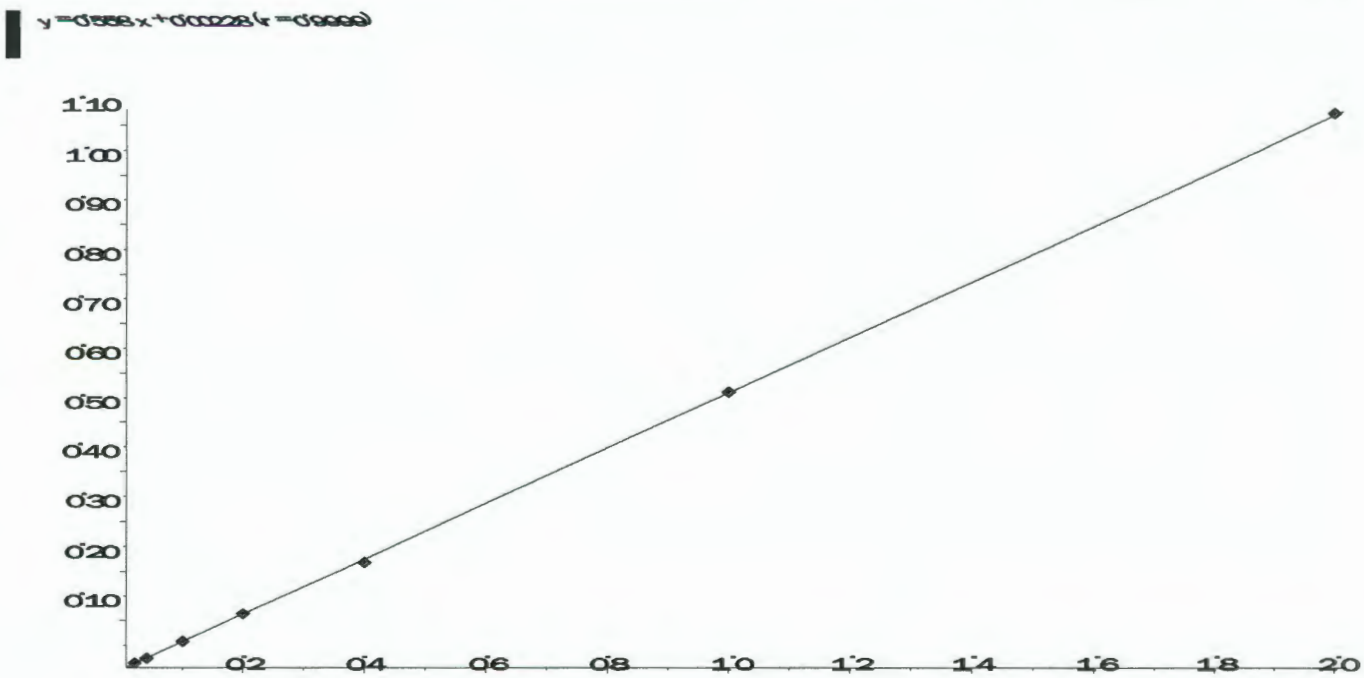

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Data File	LM34687.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

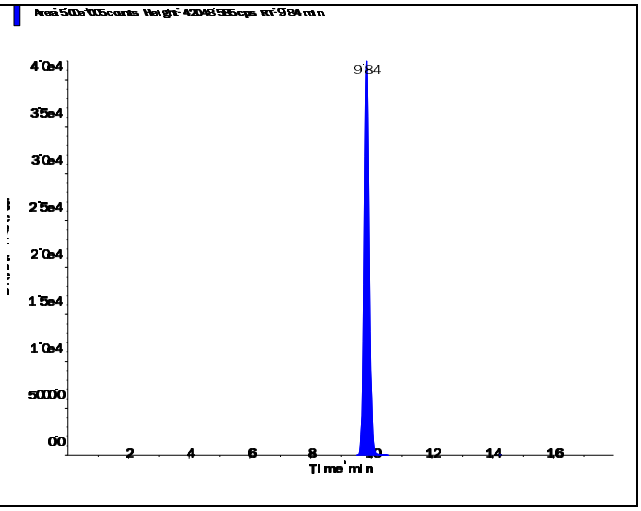

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.103 ng/ml
Area Ratio:	0.036
Sample Type:	(Standard)

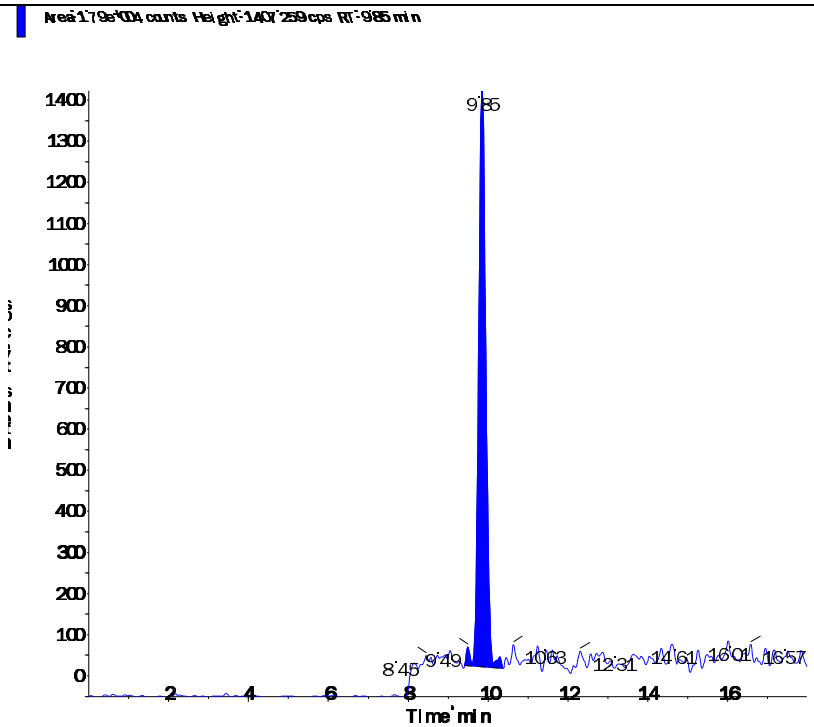

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.104 ng/ml
Area Ratio:	0.014
Sample Type:	(Standard)

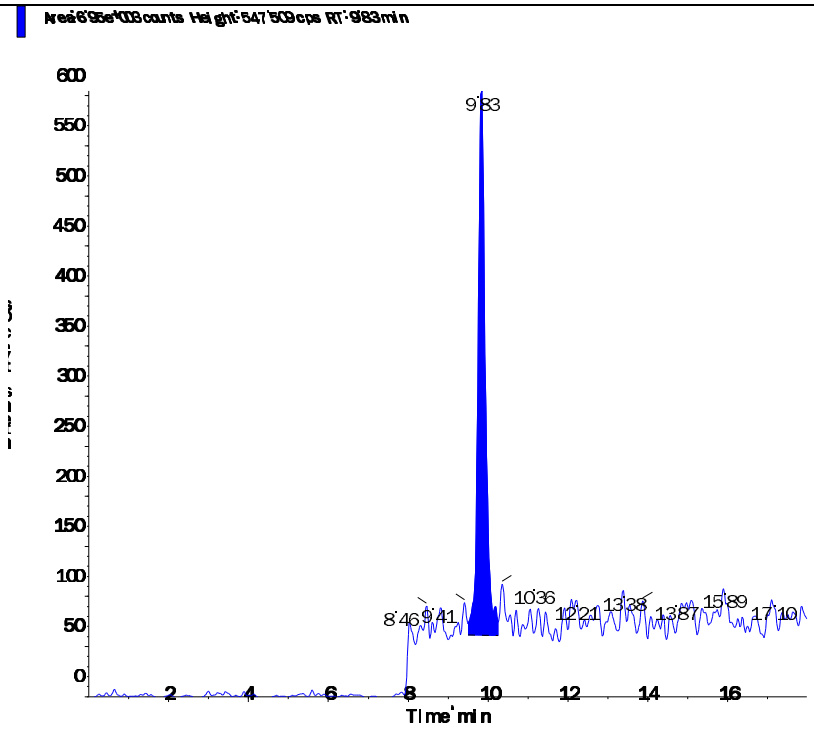

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Data File	LM34688.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

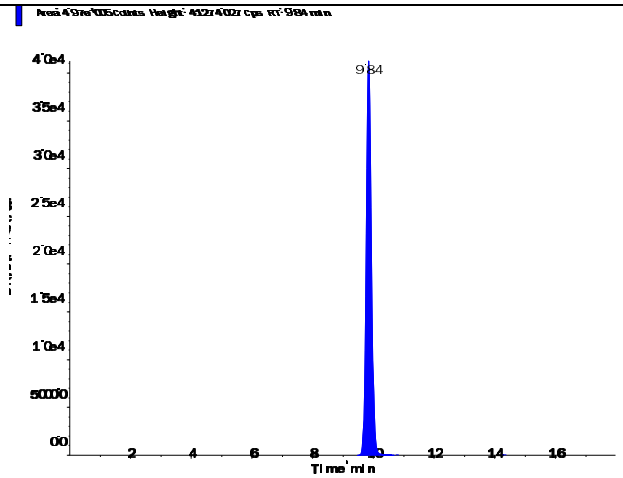

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

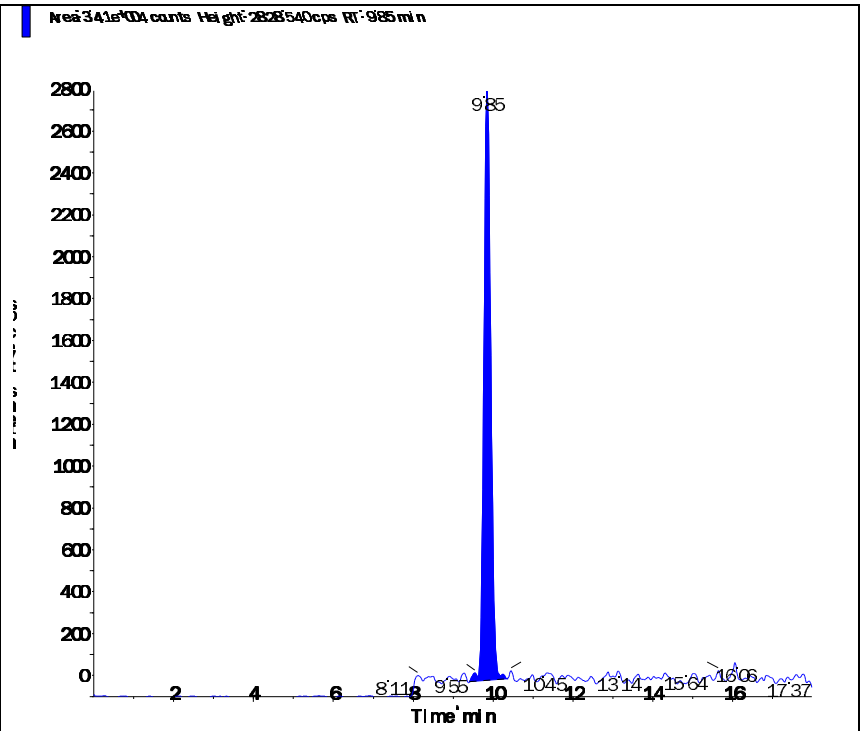

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

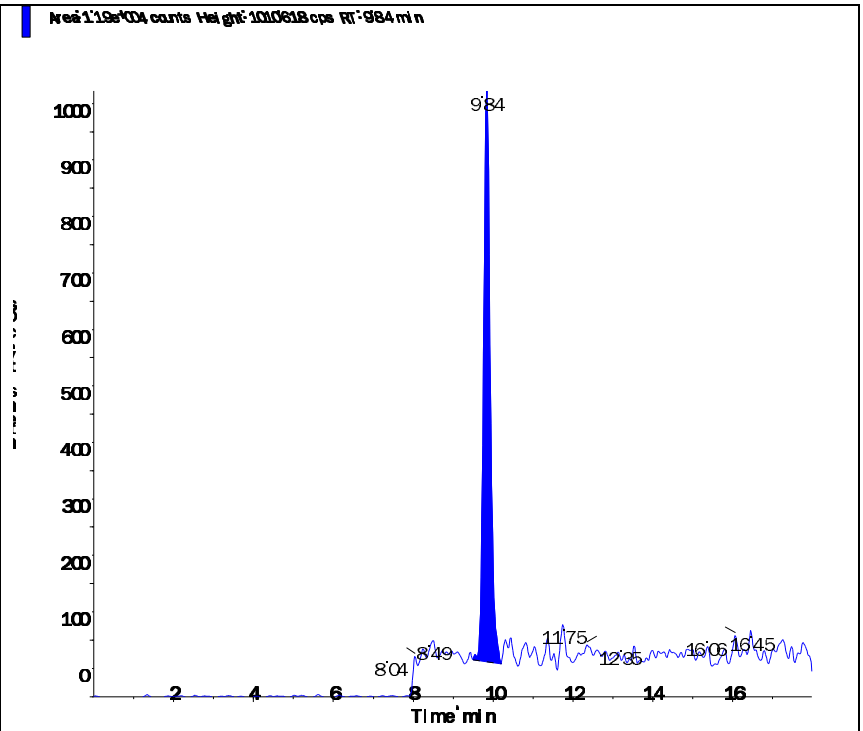

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Data File	LM34689.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

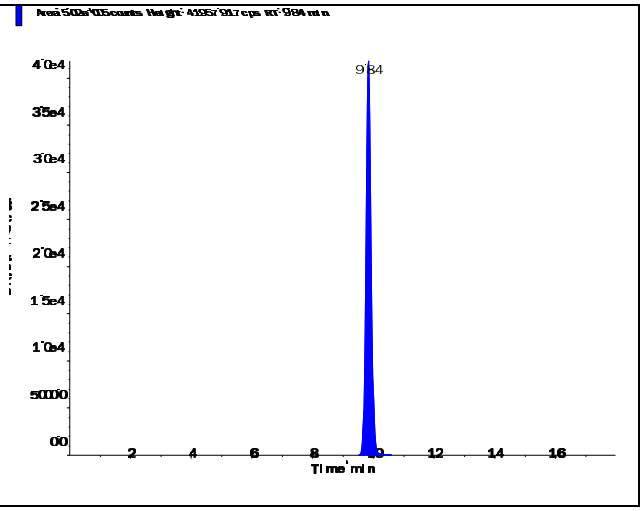

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.483 ng/ml
Area Ratio:	0.164
Sample Type:	(Standard)

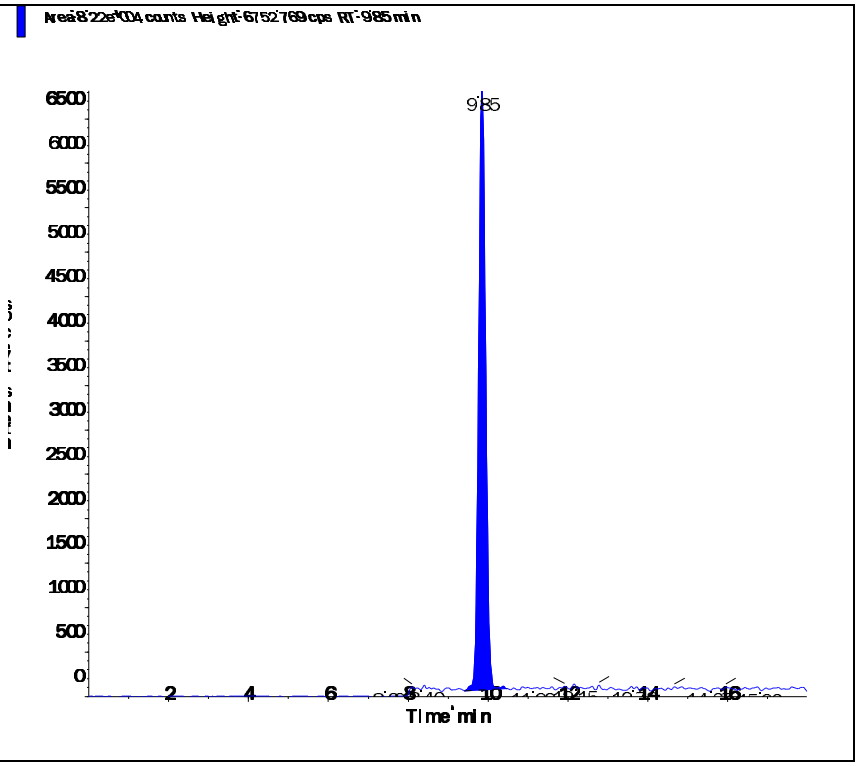

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.503 ng/ml
Area Ratio:	0.058
Sample Type:	(Standard)

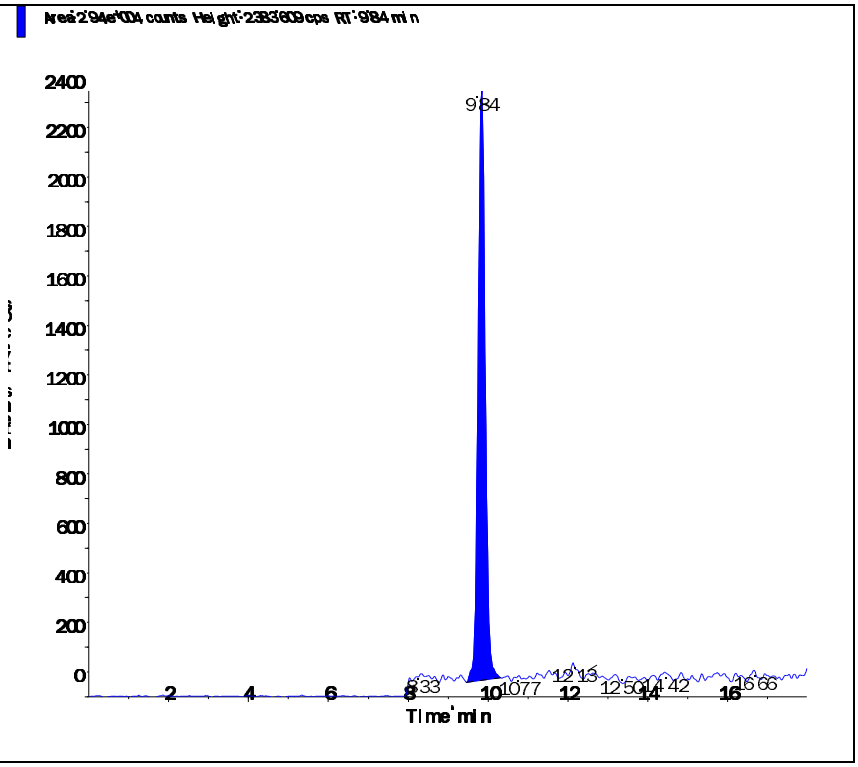

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Data File	LM34690.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

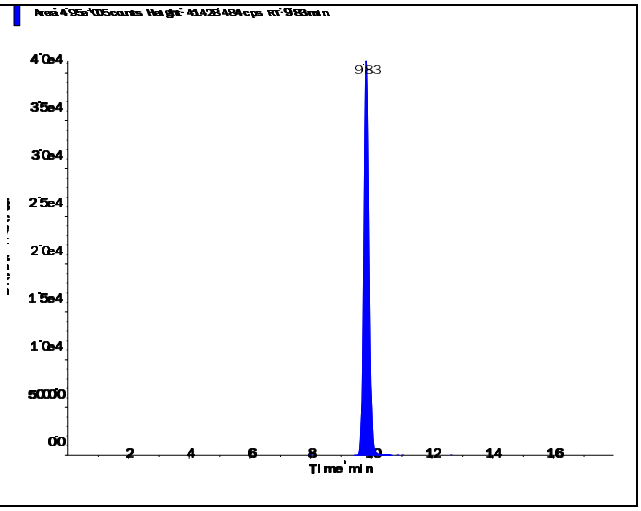

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

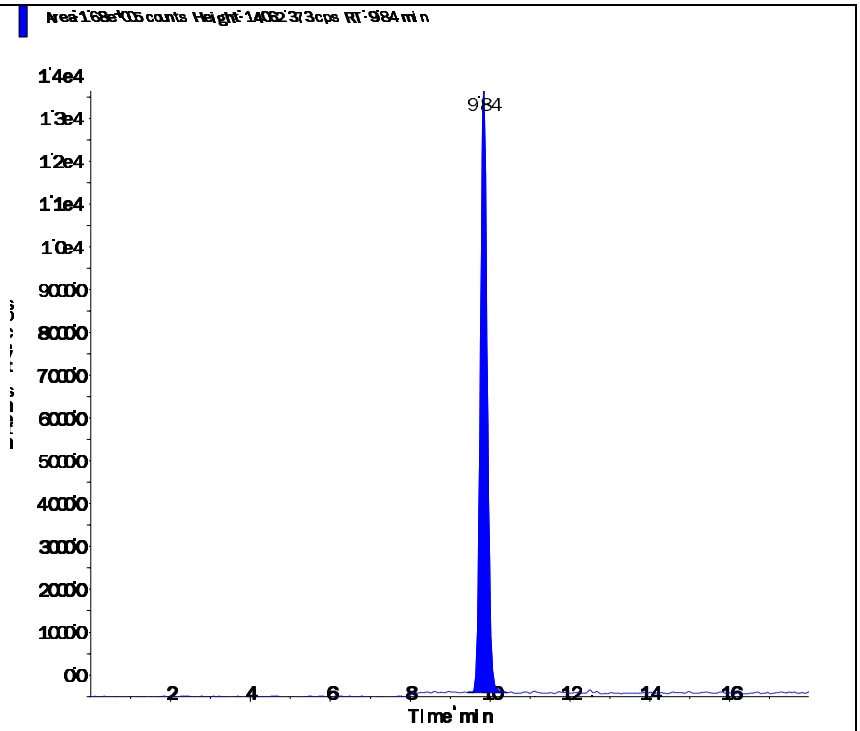

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

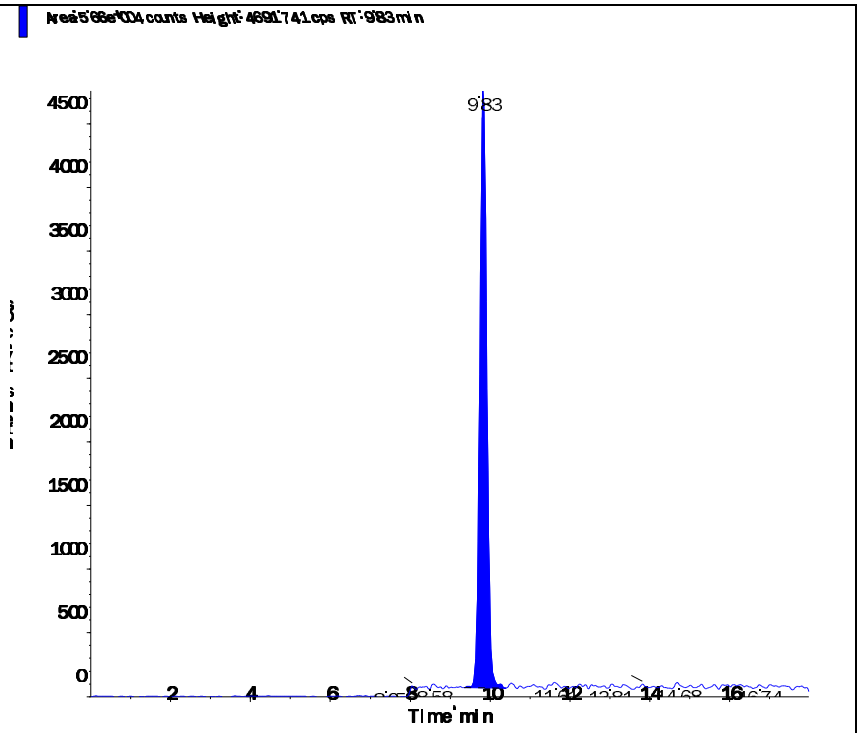

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Data File	LM34691.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

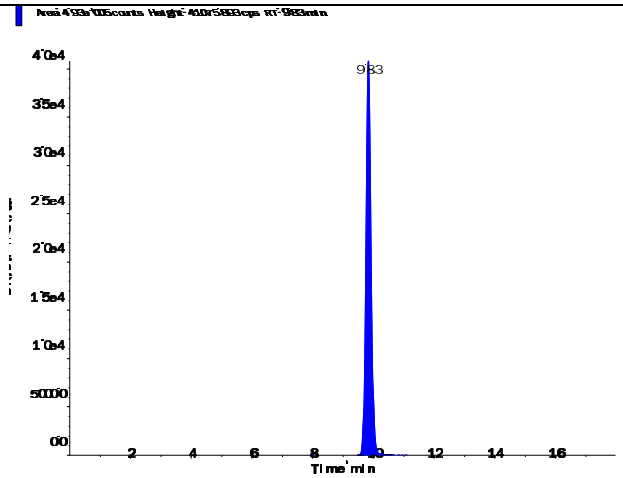

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.99 ng/ml
Area Ratio:	0.669
Sample Type:	(Standard)

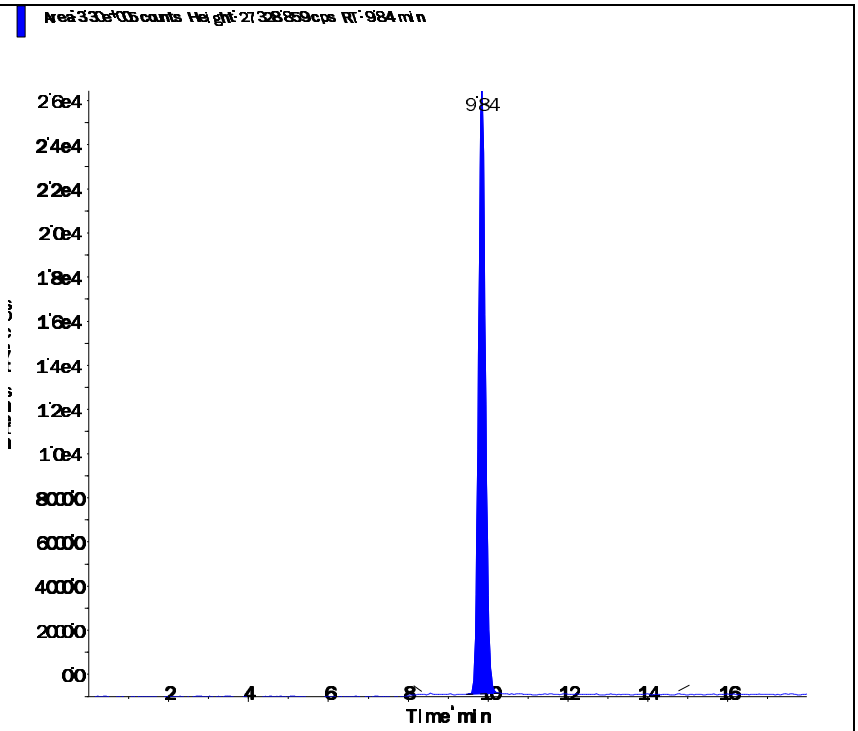

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.94 ng/ml
Area Ratio:	0.219
Sample Type:	(Standard)

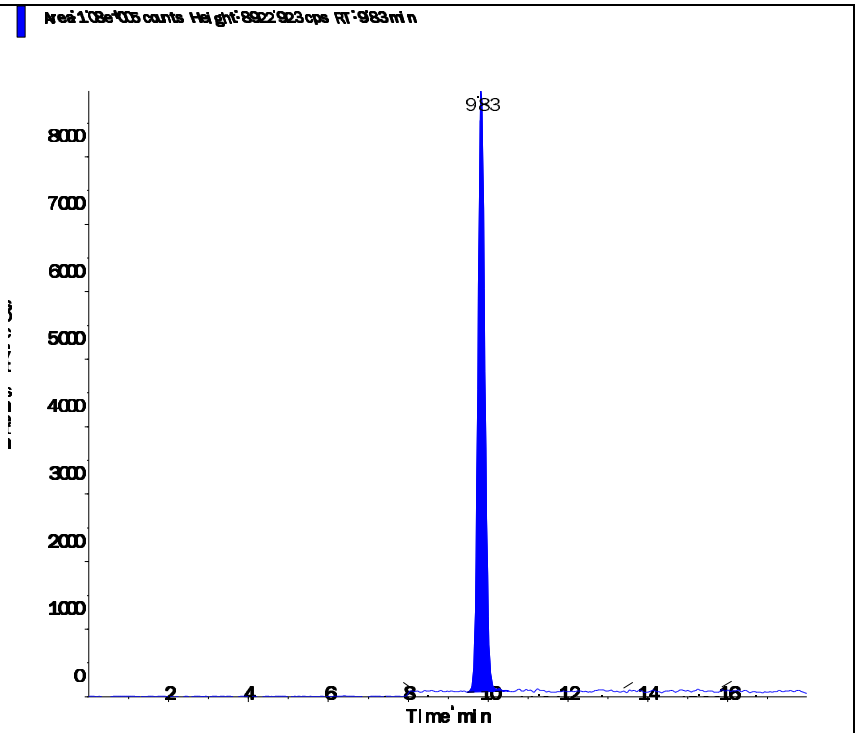

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Data File	LM34692.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

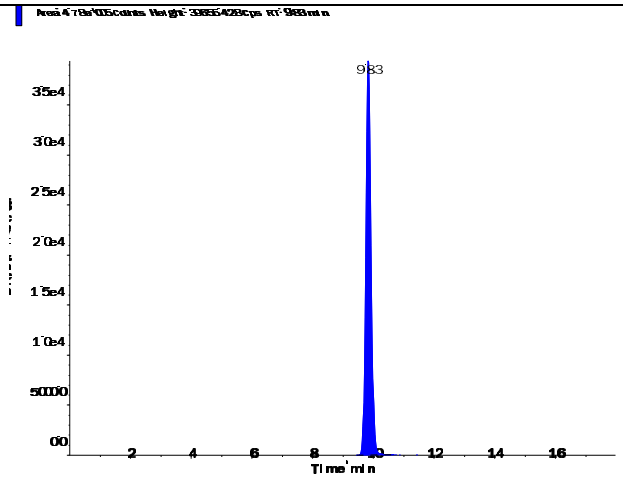

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

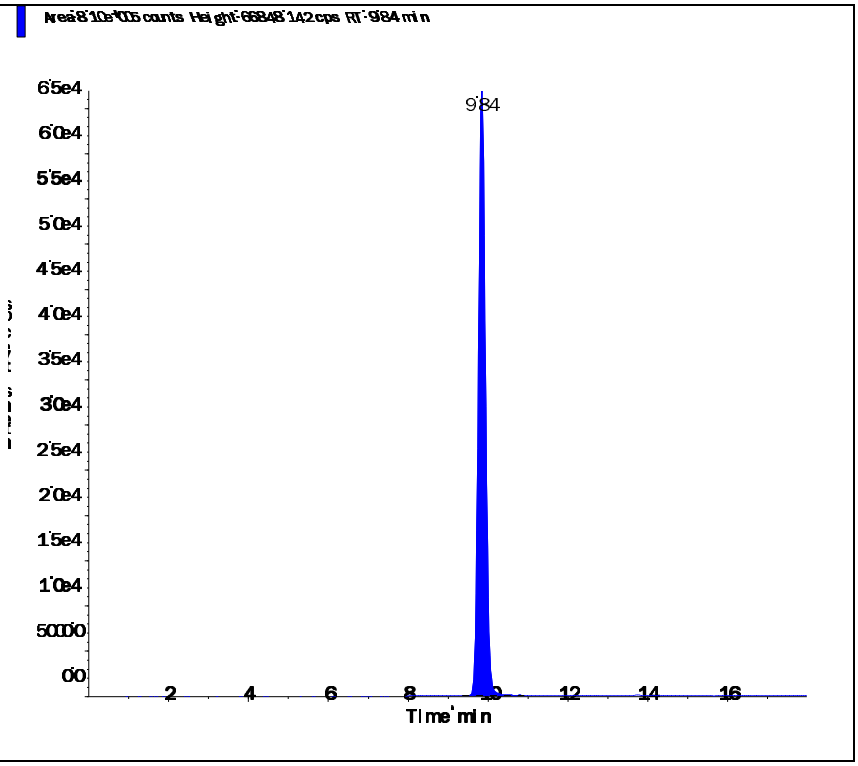

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

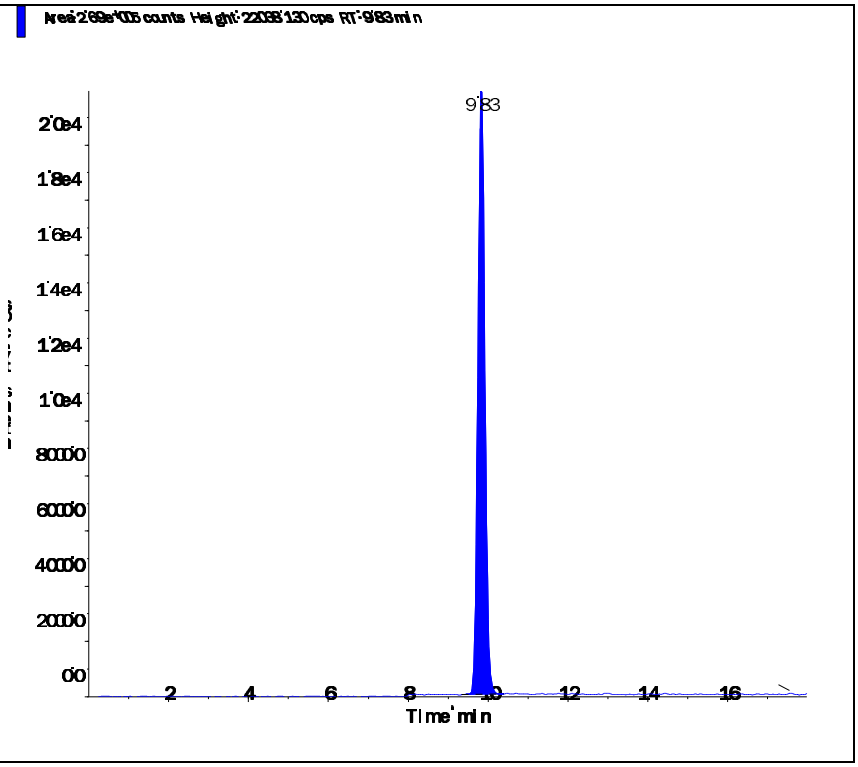

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Data File	LM34693.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

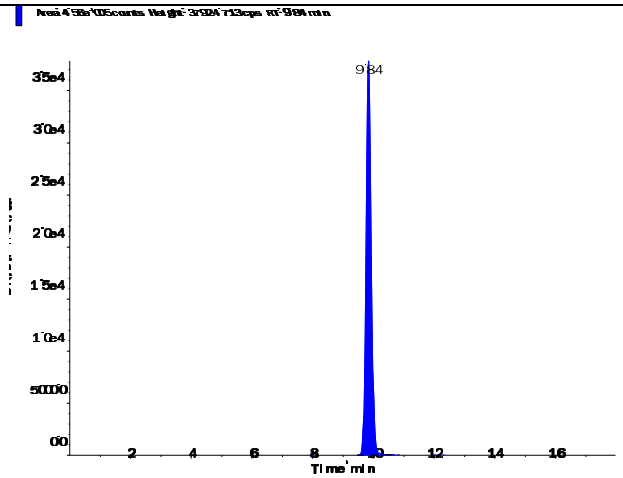

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 9.99 ng/ml Area Ratio: 3.36 Sample Type: (Standard)	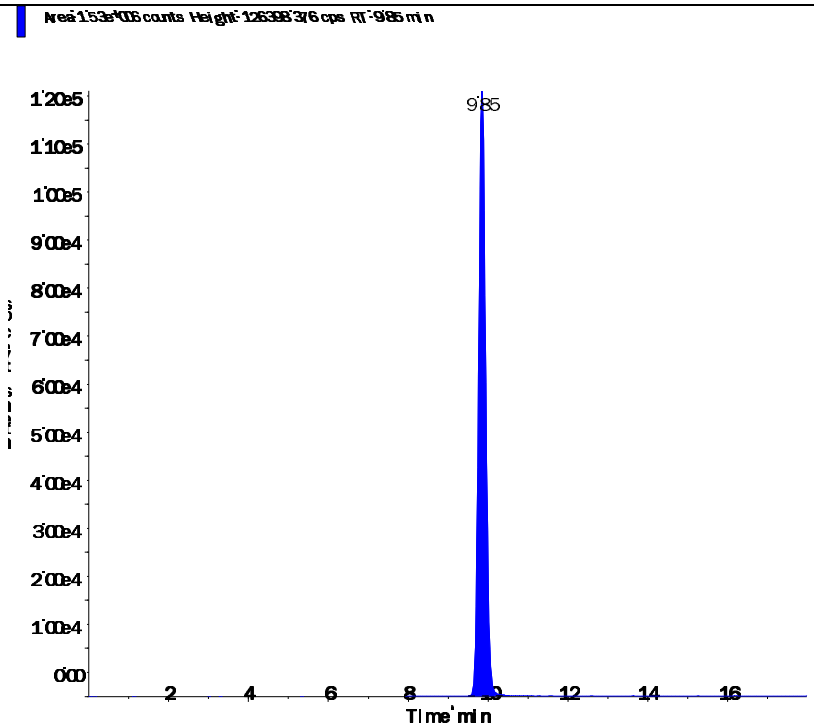
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 10.00 ng/ml Area Ratio: 1.122 Sample Type: (Standard)	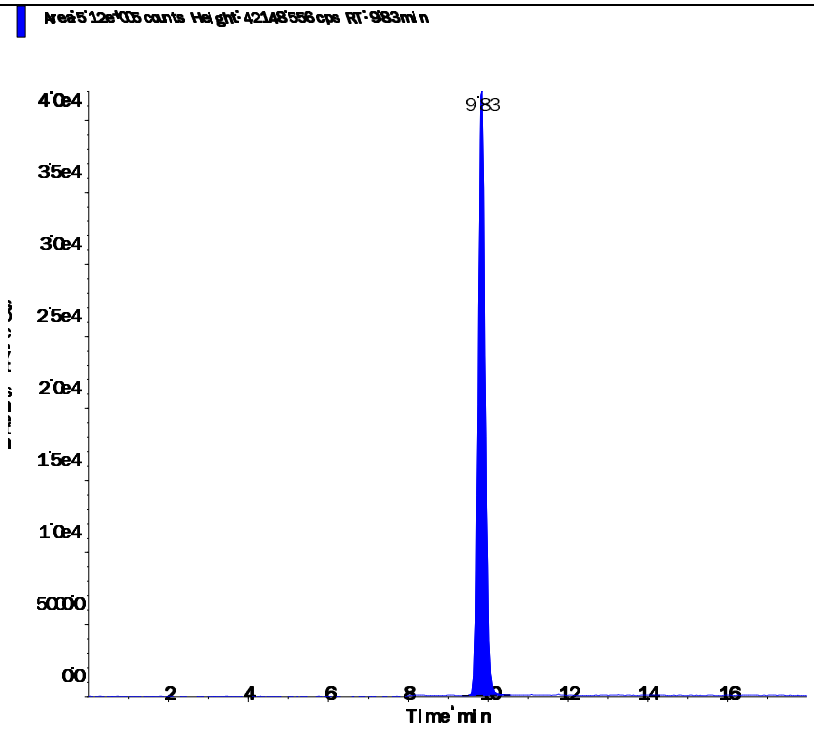

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Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

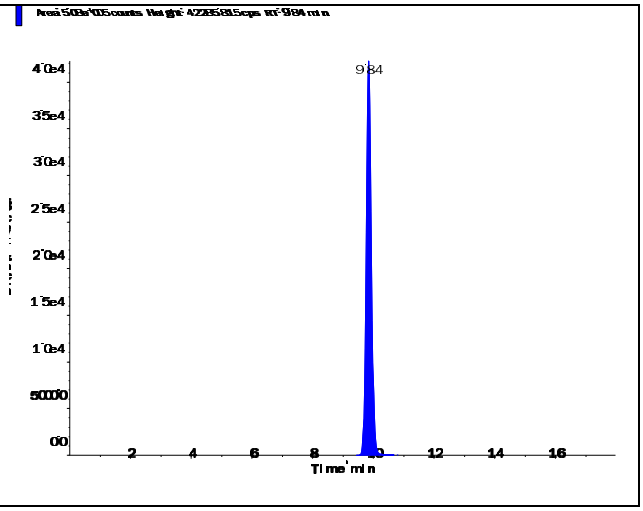

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.332
Sample Type:	(Quality Control)

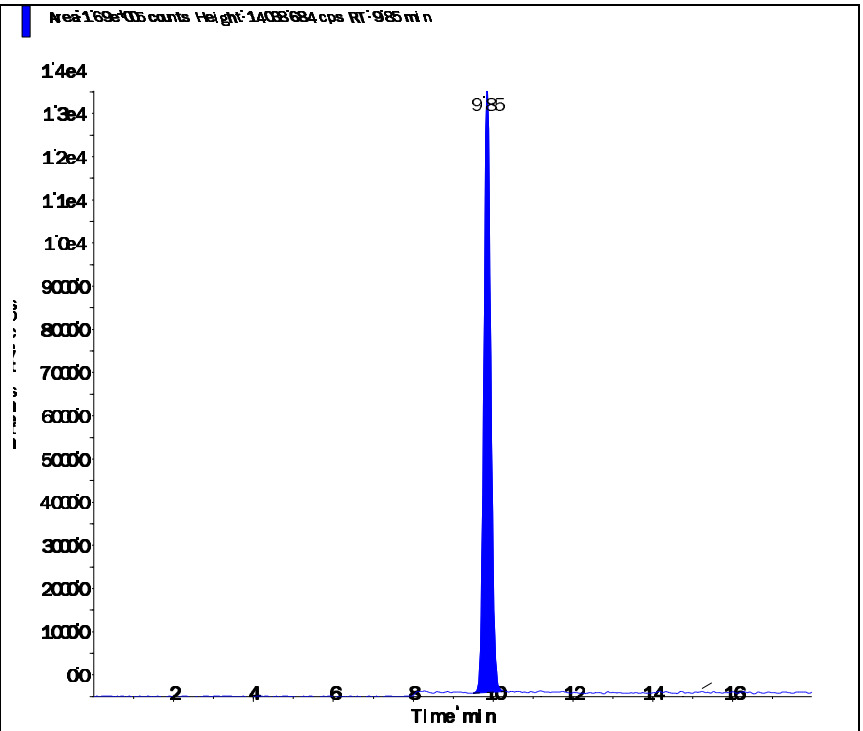

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

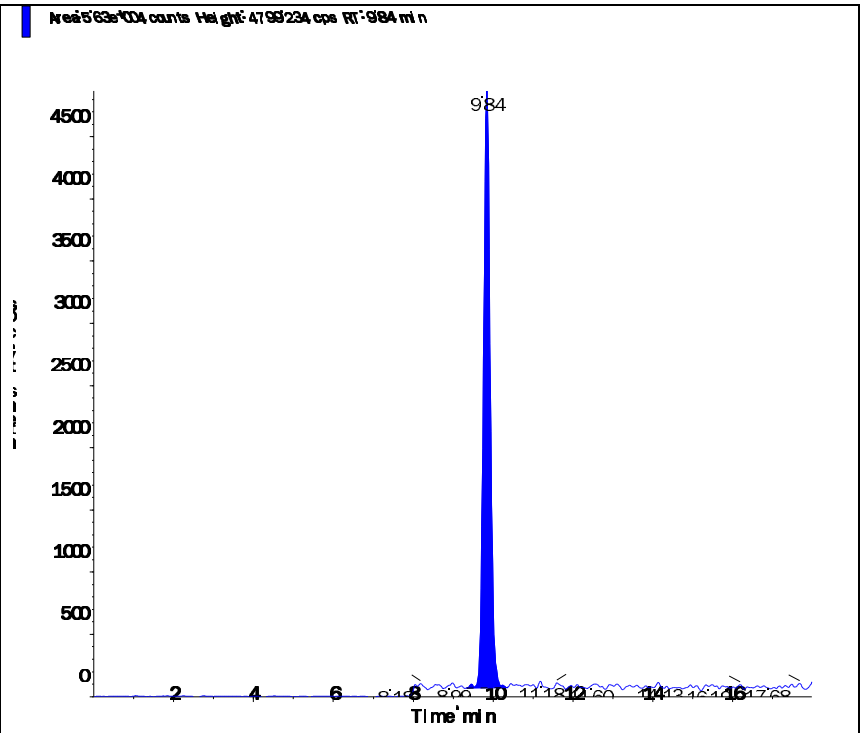

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Data File	LM35416.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 5:06:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35416.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 5:06:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.480e+05	9.13	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.510e+05	9.14	1.00	0.997
Perchlorate conf	5.420e+04	9.13	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 9.13(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

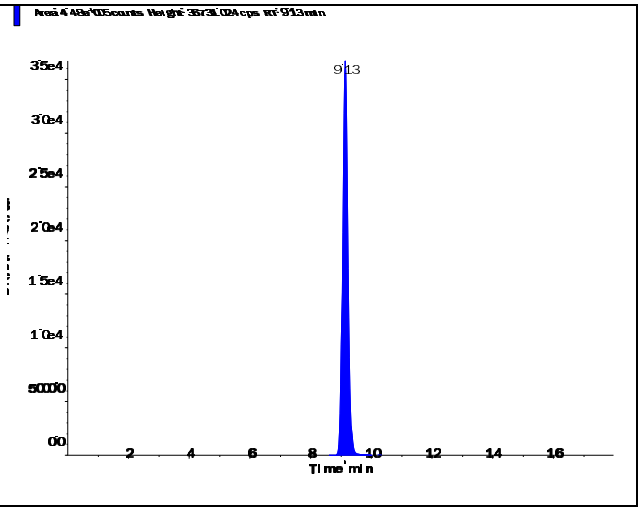

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.14 (9.84) min
Calculated conc:	0.997 ng/ml
Area Ratio:	0.336
Sample Type:	(Quality Control)

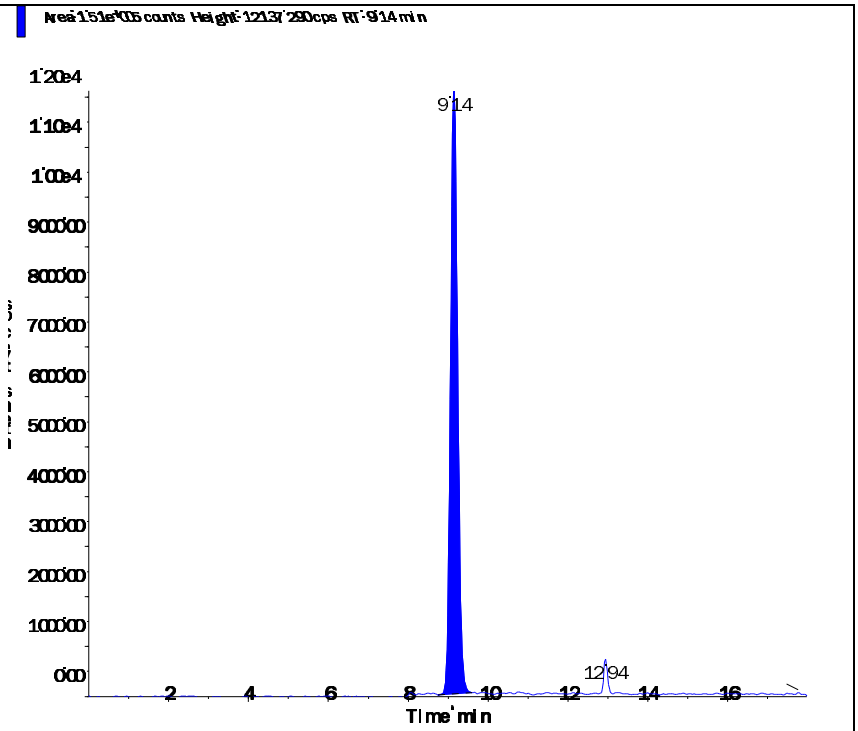

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.13 (9.84) min
Calculated conc:	1.07 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

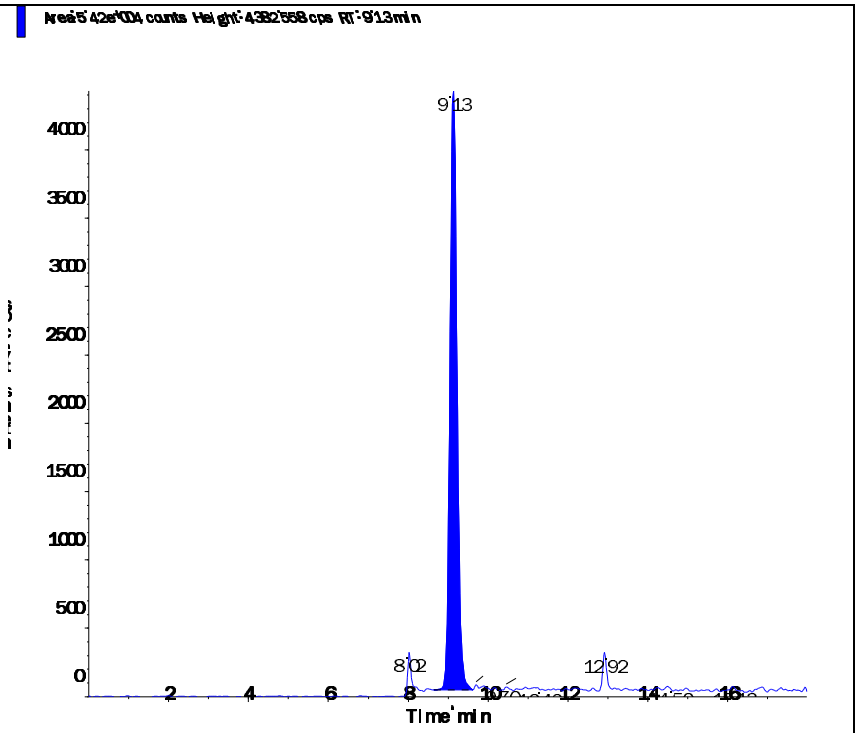

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Data File	LM35428.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 8:54:07 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35428.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 8:54:07 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.900e+05	9.17	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.720e+05	9.18	1.00	1.04
Perchlorate conf	6.140e+04	9.16	1.00	1.10

O18LP (Internal Standard)

RT (Exp. RT): 9.17(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

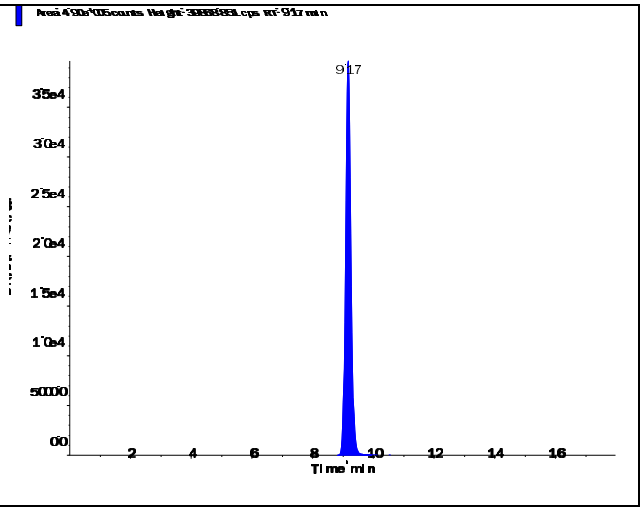

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.18 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.351
Sample Type:	(Quality Control)

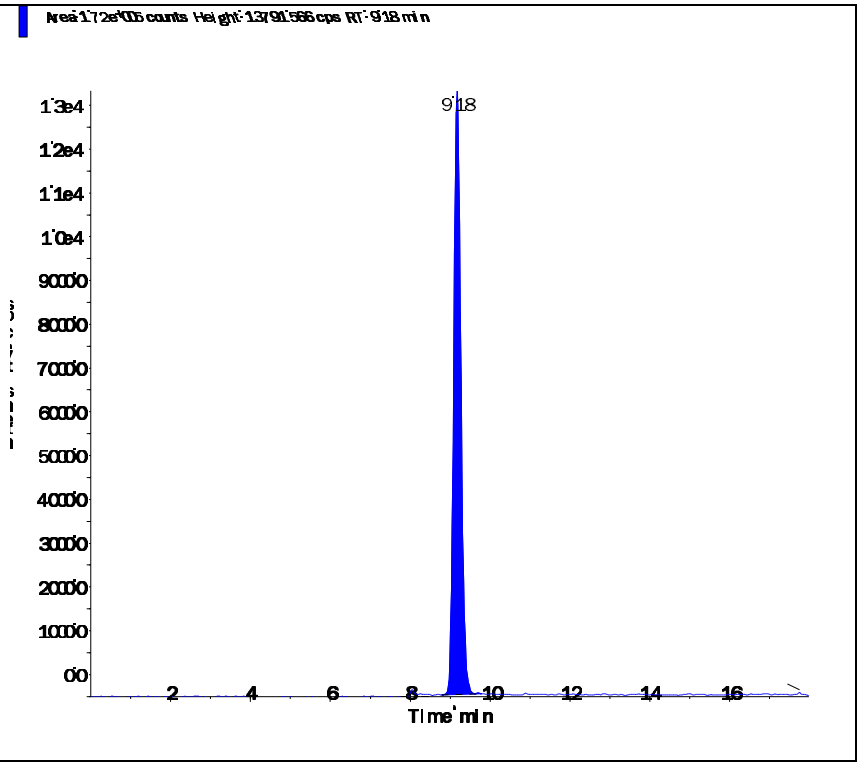

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.16 (9.84) min
Calculated conc:	1.10 ng/ml
Area Ratio:	0.125
Sample Type:	(Quality Control)

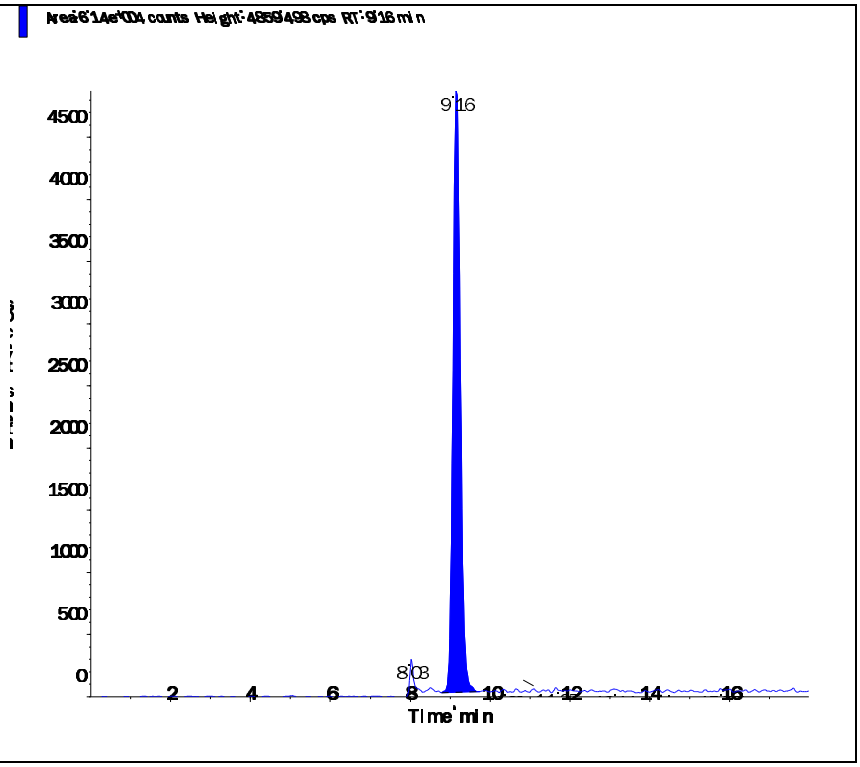

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Data File	LM35439.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 12:22:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35439.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 12:22:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.20	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.760e+05	9.22	1.00	1.03
Perchlorate conf	6.150e+04	9.20	1.00	1.06

O18LP (Internal Standard)

RT (Exp. RT): 9.20(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

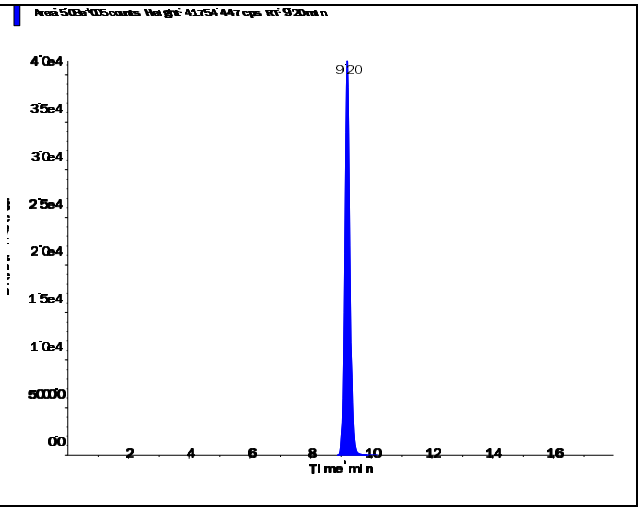

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.22 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.347
Sample Type:	(Quality Control)

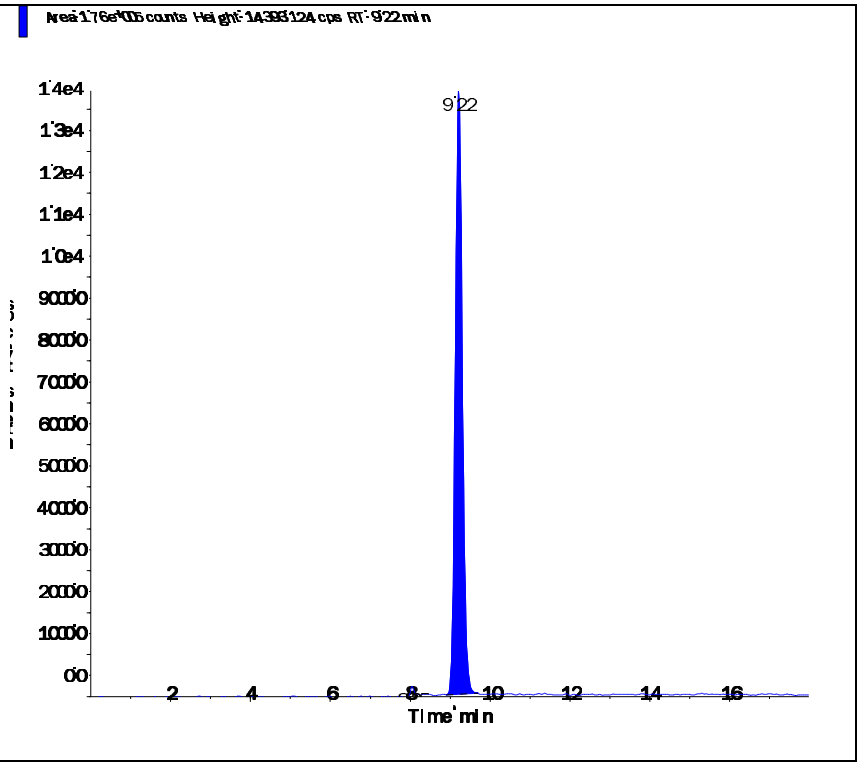

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.20 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

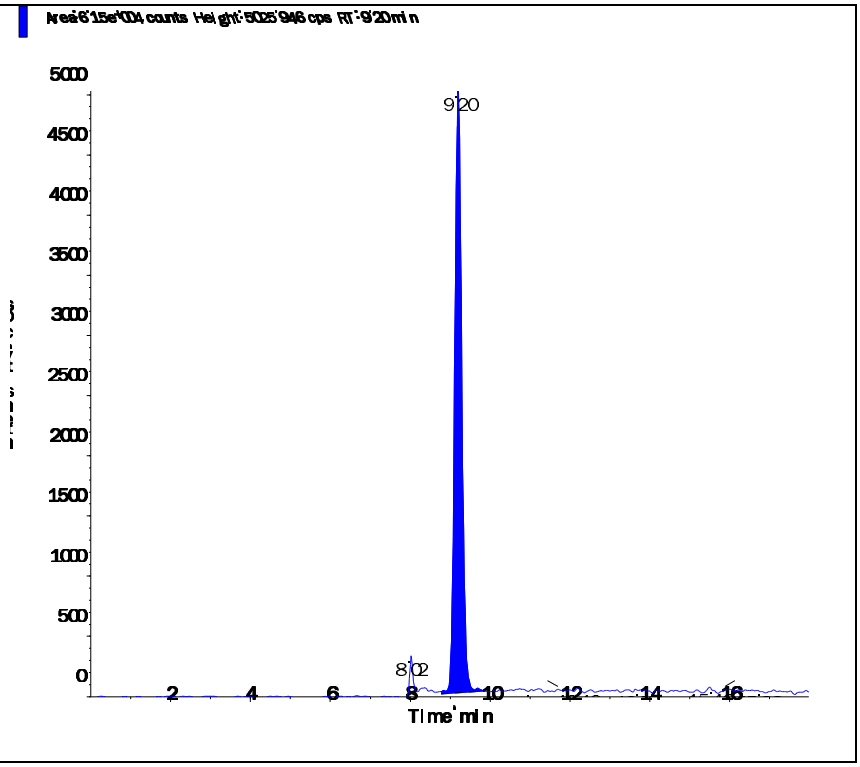

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Data File	LM35446.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 2:34:57 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35446.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 2:34:57 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.820e+05	9.22	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.23	1.00	1.04
Perchlorate conf	5.850e+04	9.22	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 9.22(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

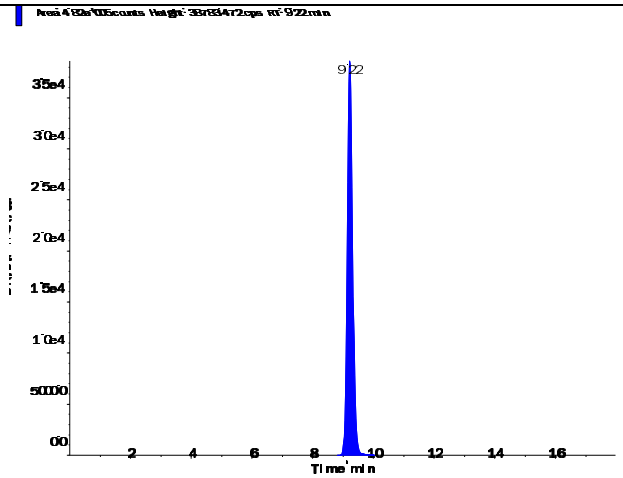

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.23 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.351
Sample Type:	(Quality Control)

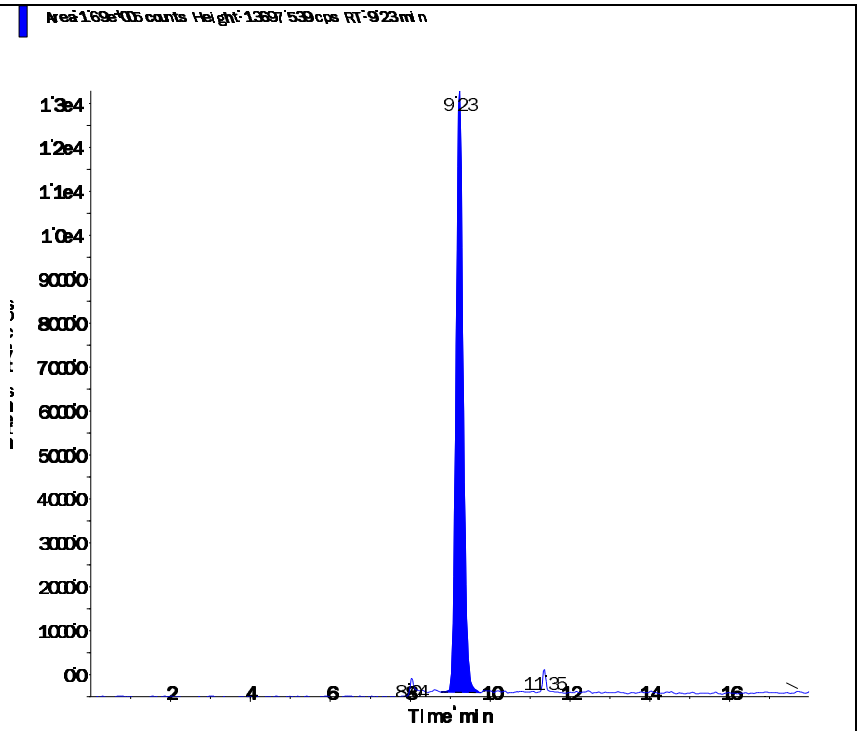

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.22 (9.84) min
Calculated conc:	1.07 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

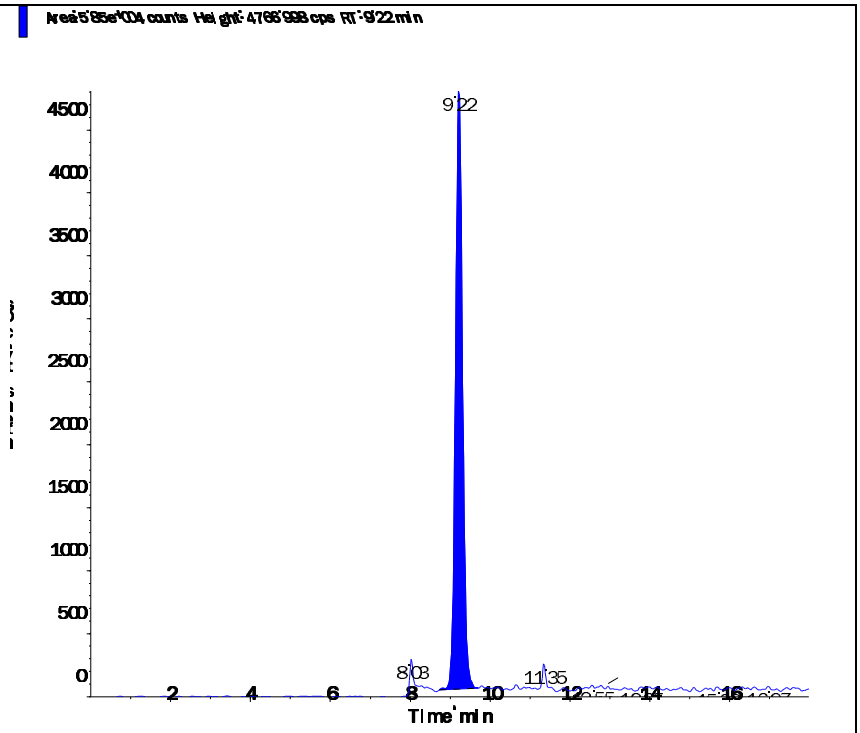

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Data File	LM35449.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 11:49:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35449.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 11:49:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.170e+05	9.26	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.420e+05	9.27	1.00	1.01
Perchlorate conf	5.070e+04	9.25	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 9.26(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

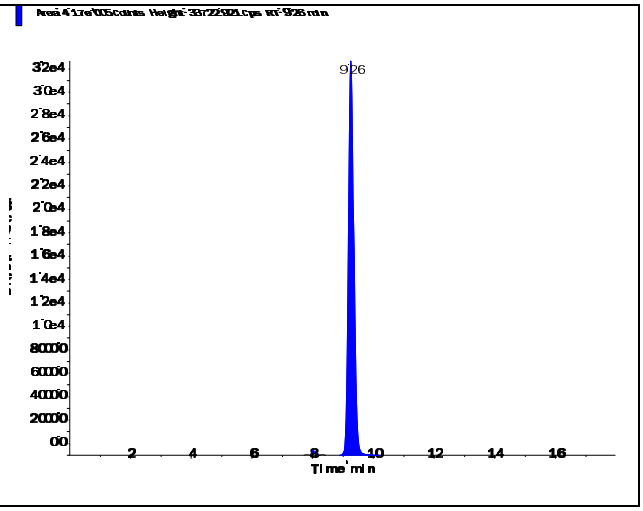

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.27 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.341
Sample Type:	(Quality Control)

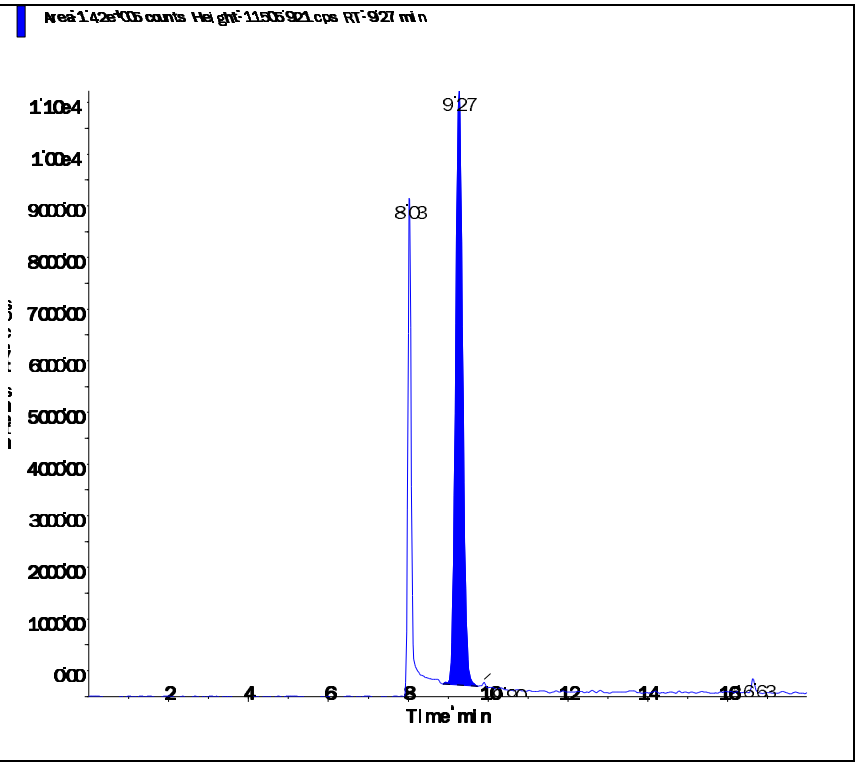

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.25 (9.84) min
Calculated conc:	1.07 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

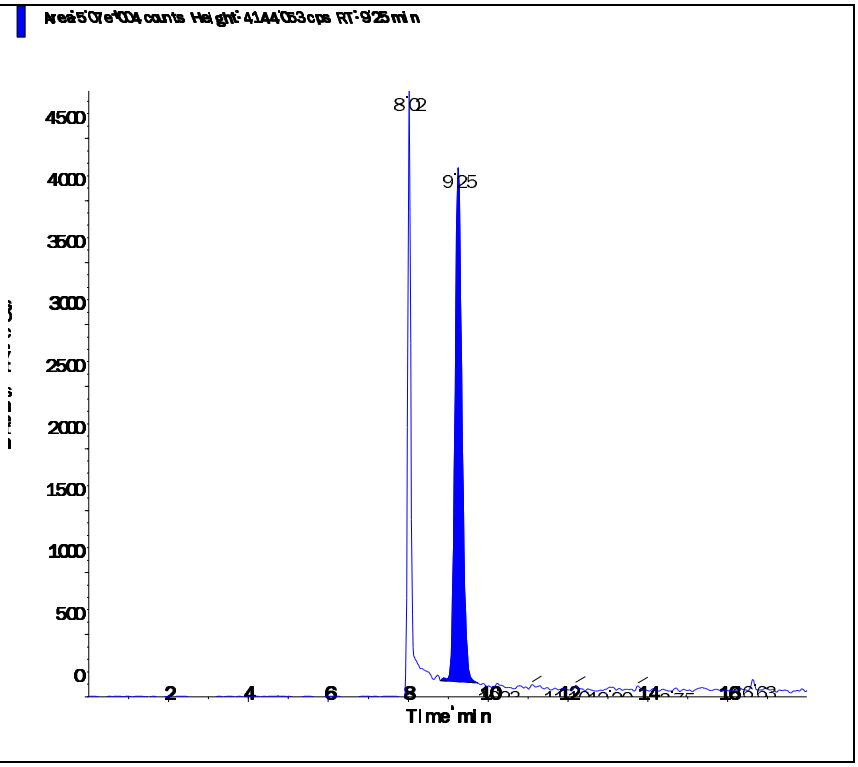

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Data File	LM35459.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 2:58:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-11 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35459.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 2:58:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.720e+05	9.28	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.670e+05	9.29	1.00	1.05
Perchlorate conf	5.600e+04	9.28	1.00	1.04

O18LP (Internal Standard)

RT (Exp. RT): 9.28(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

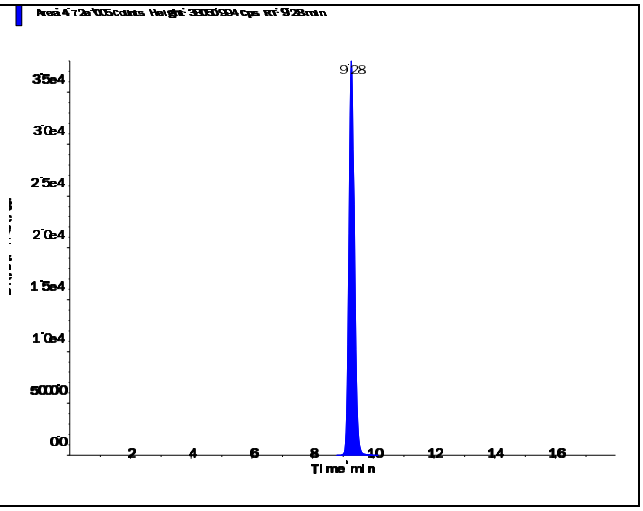

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.29 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.354
Sample Type:	(Quality Control)

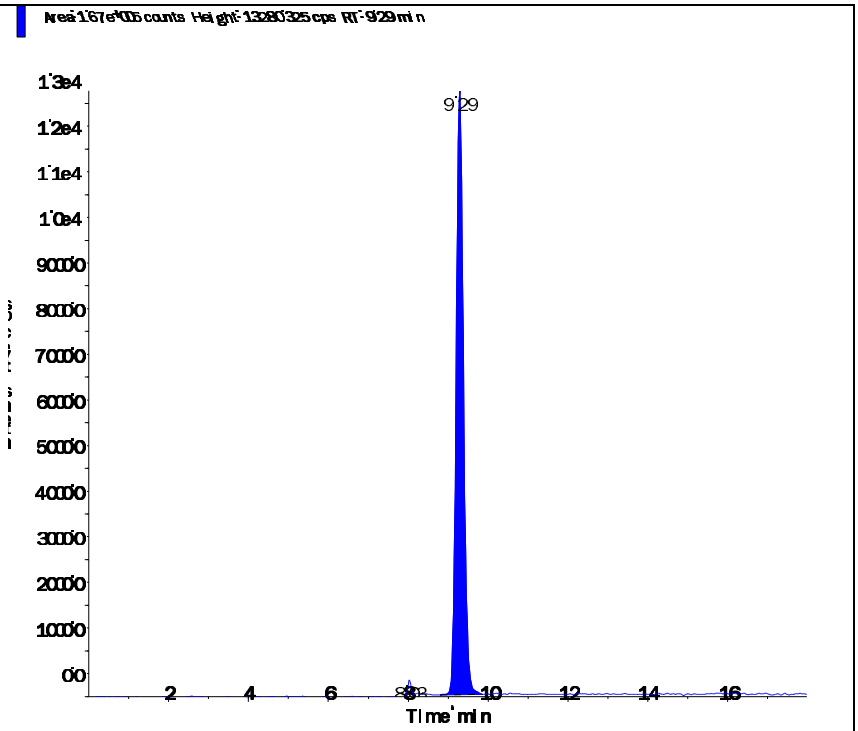

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.28 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

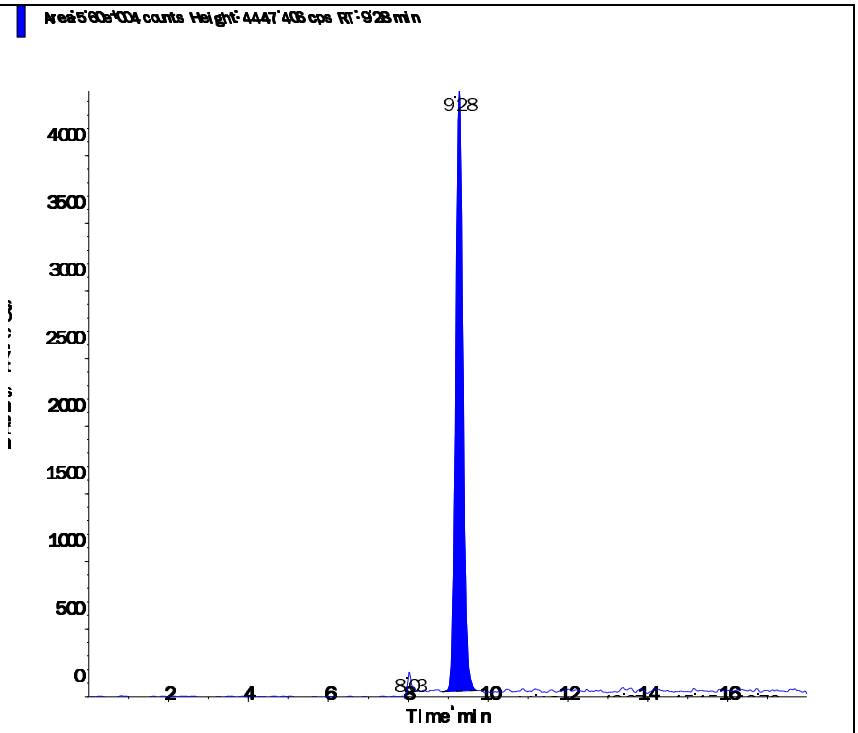

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Data File	LM35417.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 5:25:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-05 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35417.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 5:25:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.430e+05	9.19	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.120e+04	9.20	N/A	0.206
Perchlorate conf	1.120e+04	9.20	N/A	0.206

O18LP (Internal Standard)

RT (Exp. RT): 9.19(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

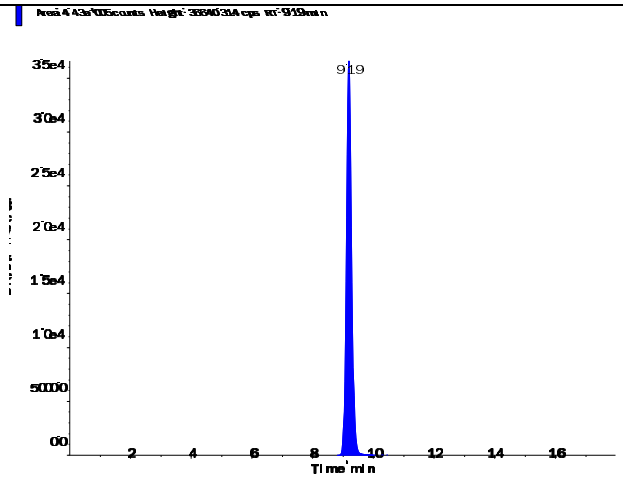

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.20 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

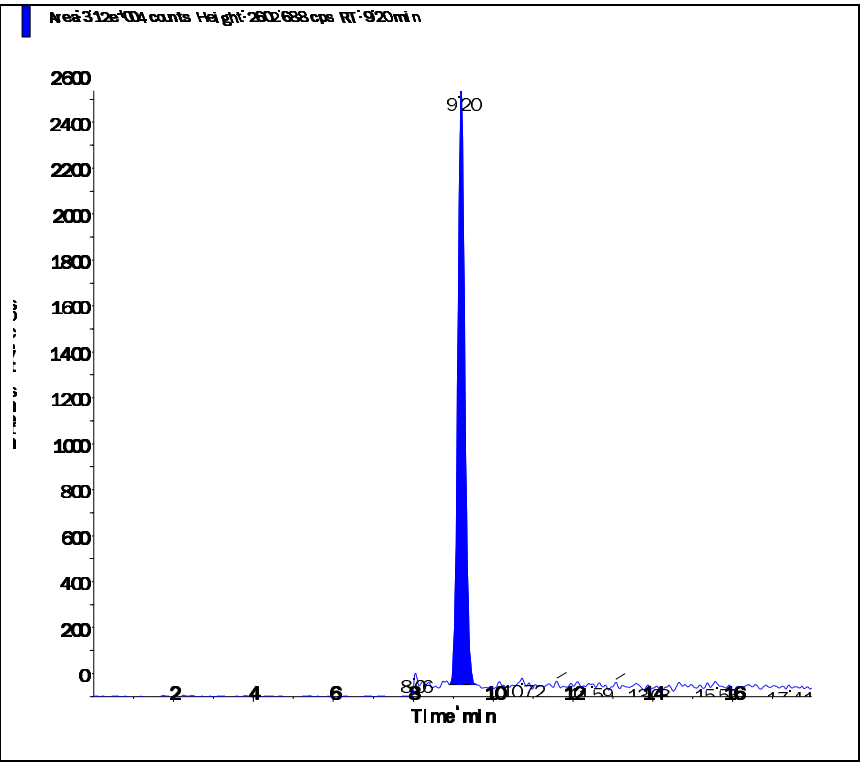

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.20 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

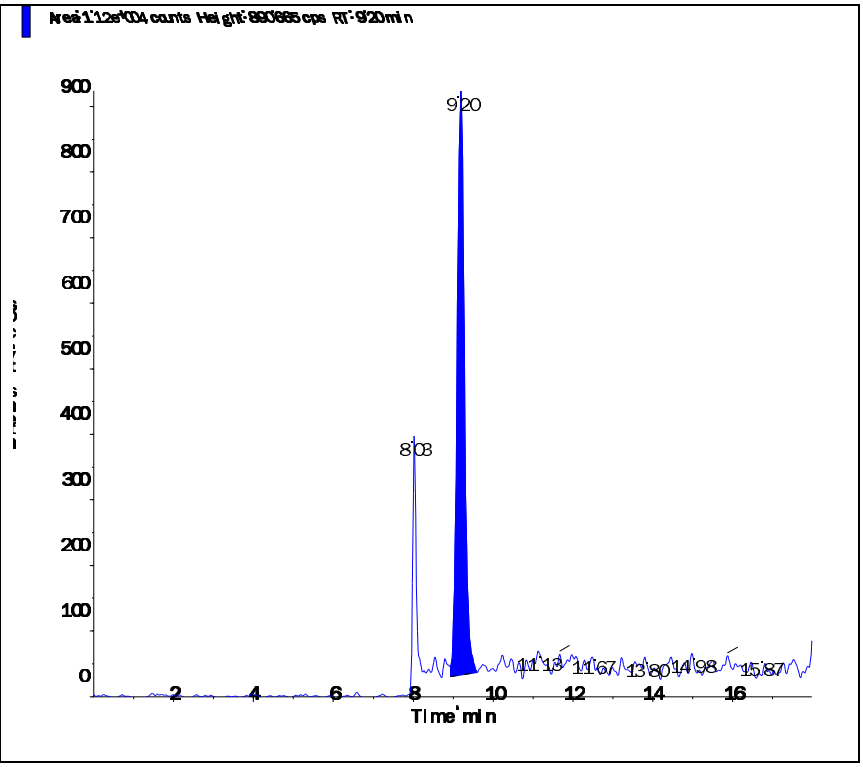

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Data File	LM35429.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 9:13:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-06 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35429.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 9:13:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.940e+05	9.23	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.450e+04	9.24	N/A	0.204
Perchlorate conf	1.250e+04	9.22	N/A	0.206

O18LP (Internal Standard)

RT (Exp. RT): 9.23(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

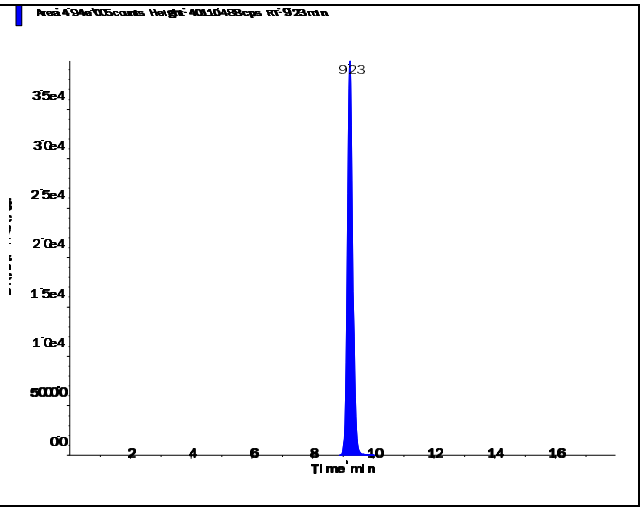

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.24 (9.84) min
Calculated conc:	0.204 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

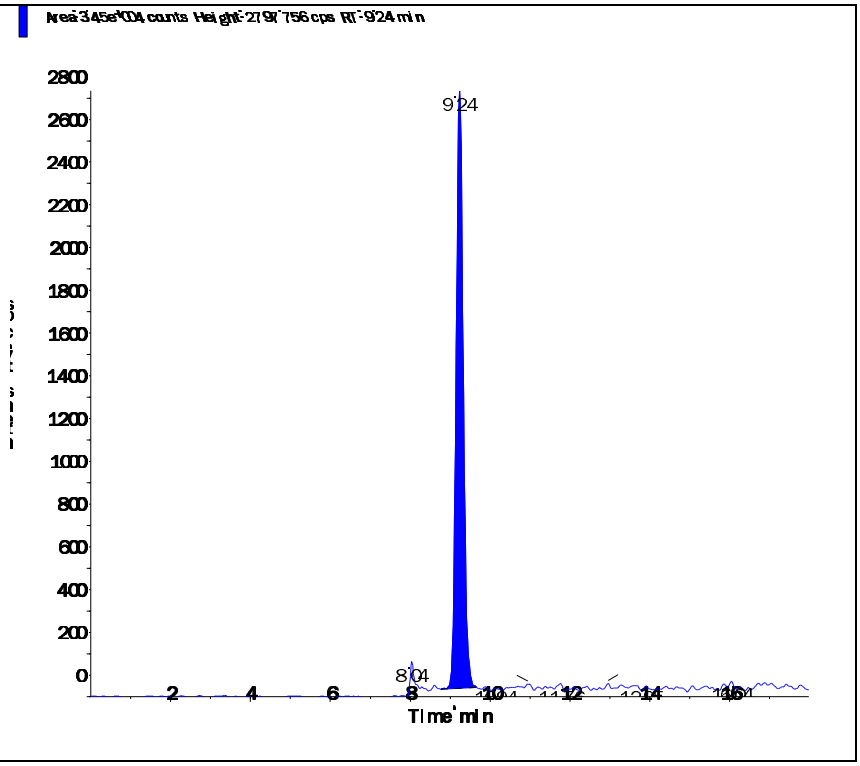

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.22 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

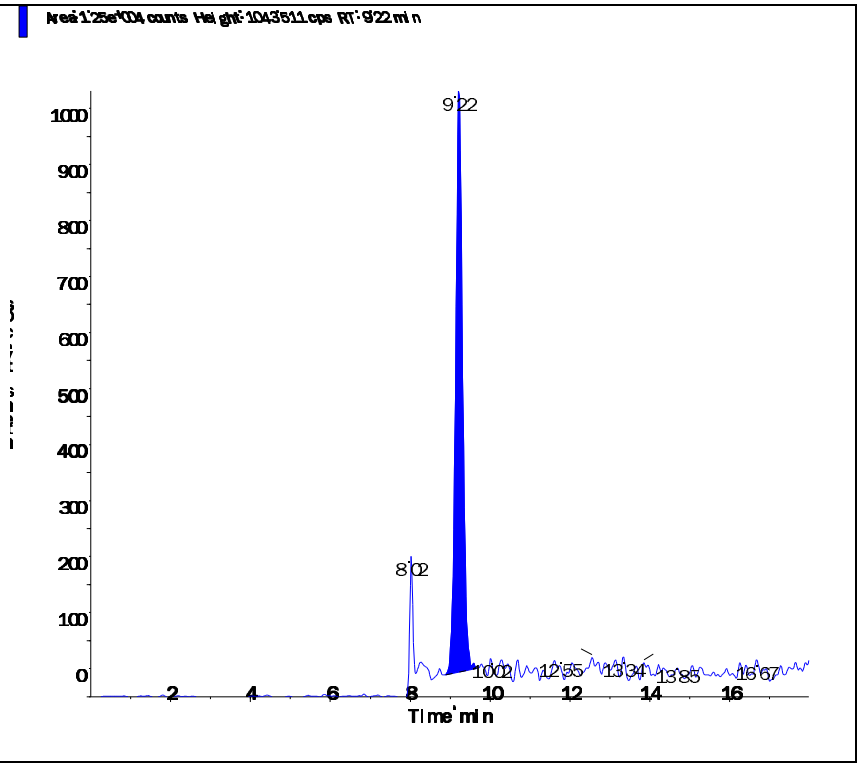

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Data File	LM35440.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 12:41:19 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35440.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 12:41:19 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.090e+05	9.26	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.670e+04	9.27	N/A	0.21
Perchlorate conf	1.290e+04	9.24	N/A	0.207

O18LP (Internal Standard)

RT (Exp. RT): 9.26(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

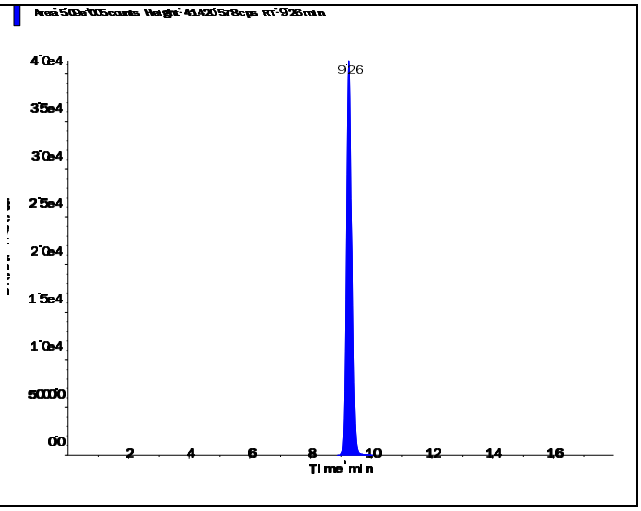

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.27 (9.84) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

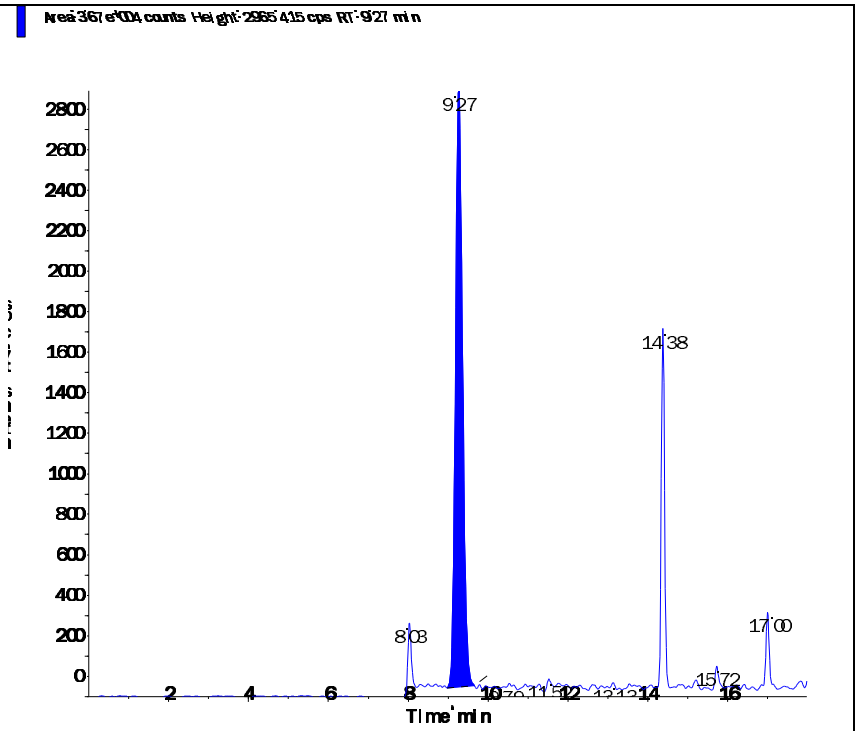

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.24 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

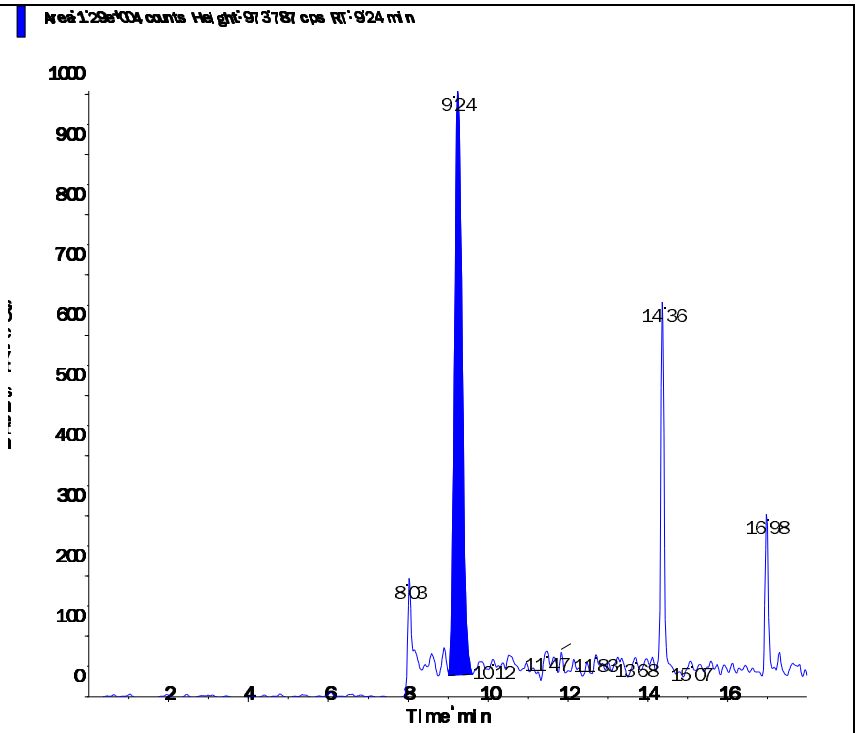

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Data File	LM35447.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 2:53:53 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-08 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35447.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 2:53:53 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.770e+05	9.27	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.480e+04	9.28	N/A	0.214
Perchlorate conf	1.170e+04	9.27	N/A	0.20

O18LP (Internal Standard)

RT (Exp. RT): 9.27(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

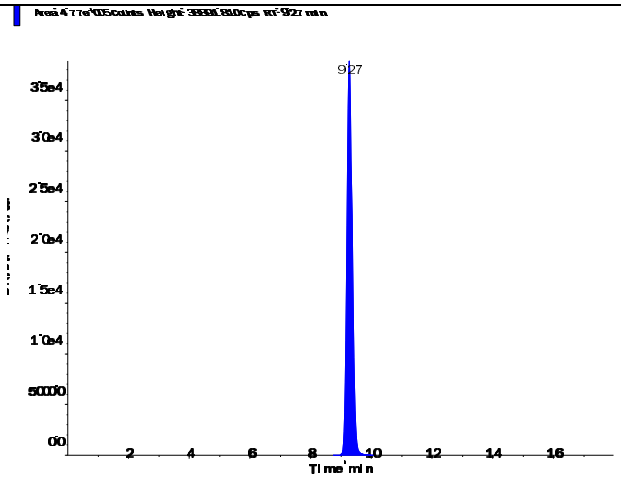

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.28 (9.84) min
Calculated conc:	0.214 ng/ml
Area Ratio:	0.073
Sample Type:	(Unknown)

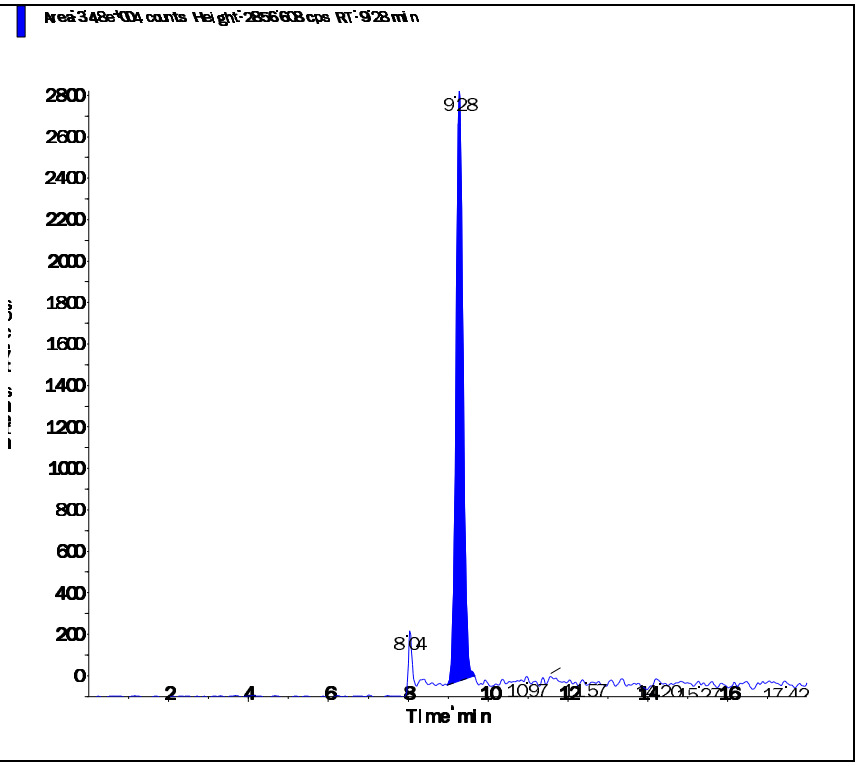

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.27 (9.84) min
Calculated conc:	0.20 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

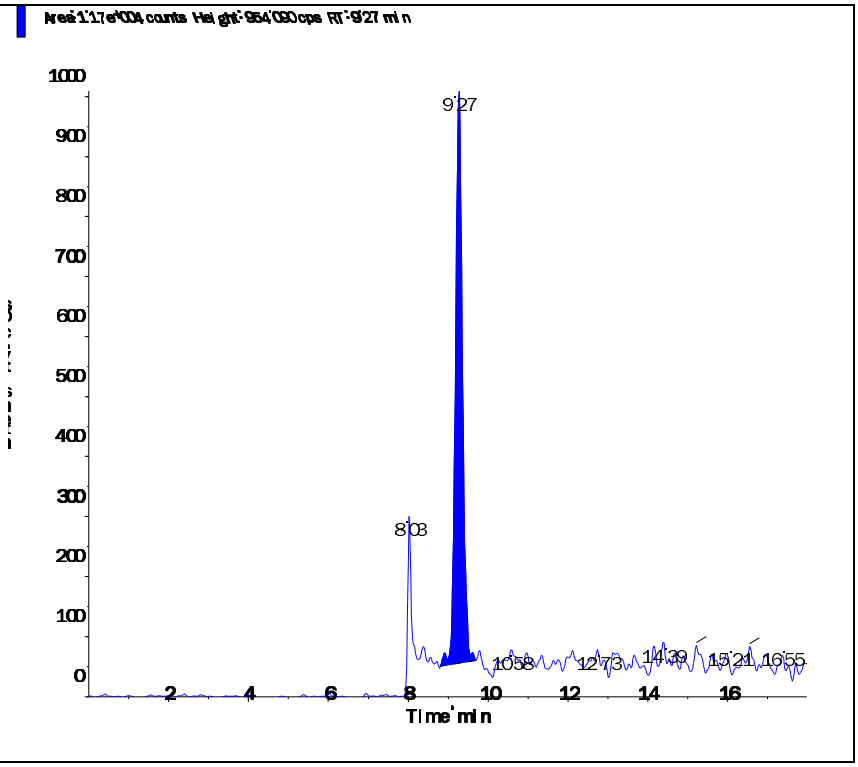

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Data File	LM35450.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 12:08:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-09 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35450.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 12:08:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.250e+05	9.31	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.050e+04	9.32	N/A	0.209
Perchlorate conf	1.100e+04	9.31	N/A	0.211

O18LP (Internal Standard)

RT (Exp. RT): 9.31(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

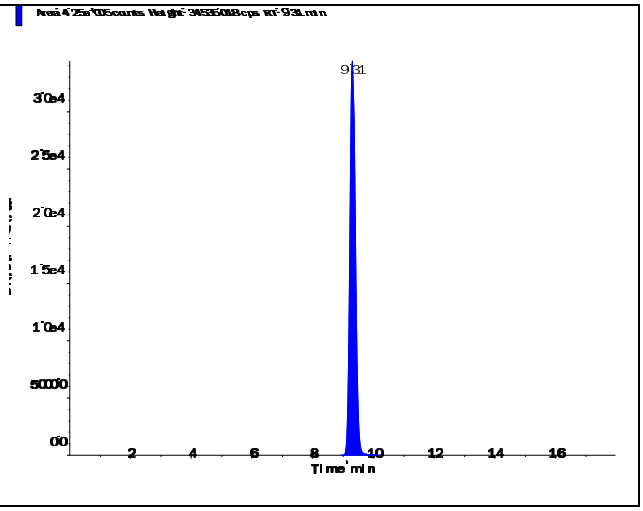

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.32 (9.84) min
Calculated conc:	0.209 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

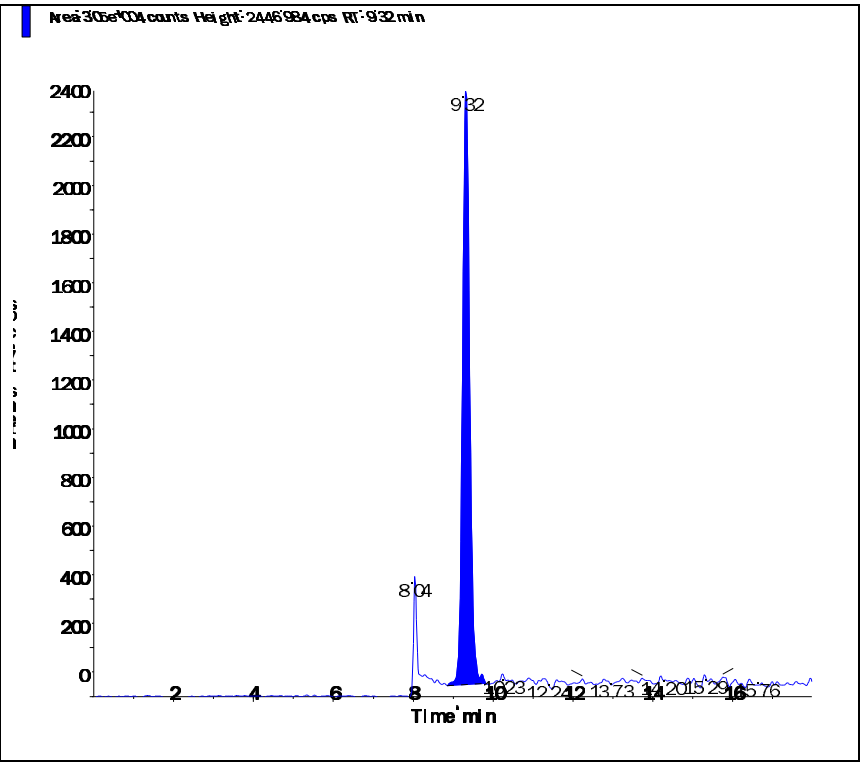

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.31 (9.84) min
Calculated conc:	0.211 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

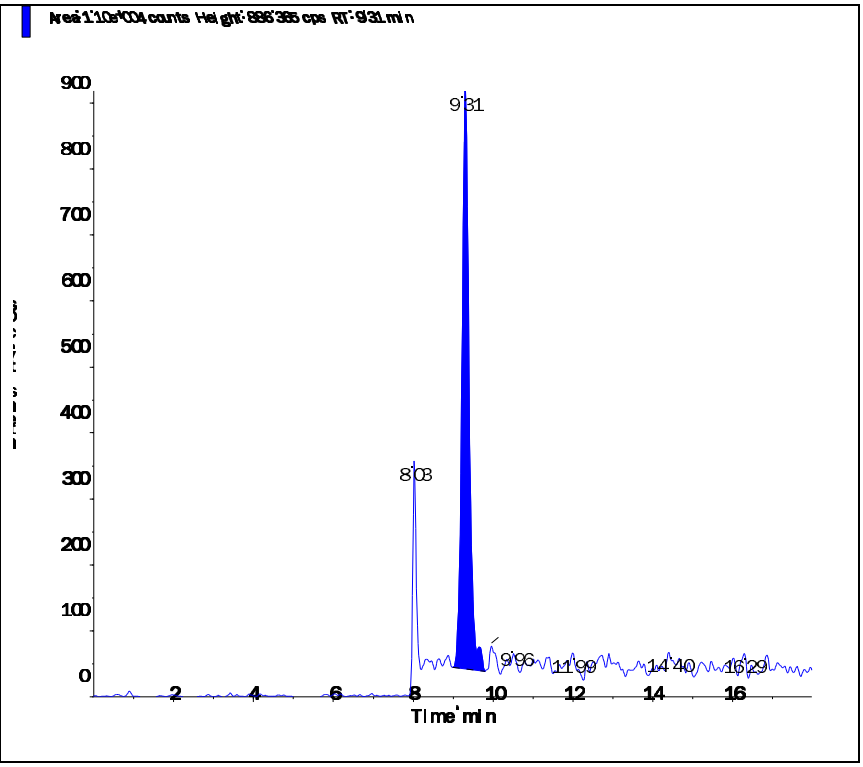

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Data File	LM35460.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 3:17:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-10 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35460.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 3:17:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-10	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.650e+05	9.33	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.200e+04	9.35	N/A	0.201
Perchlorate conf	1.270e+04	9.33	N/A	0.224

O18LP (Internal Standard)

RT (Exp. RT): 9.33(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

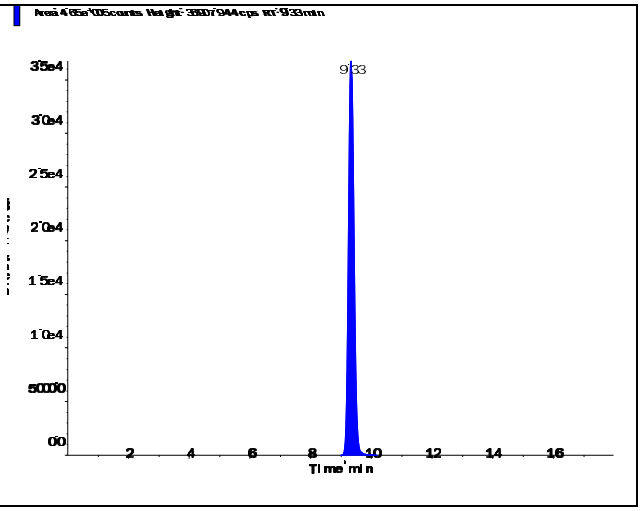

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

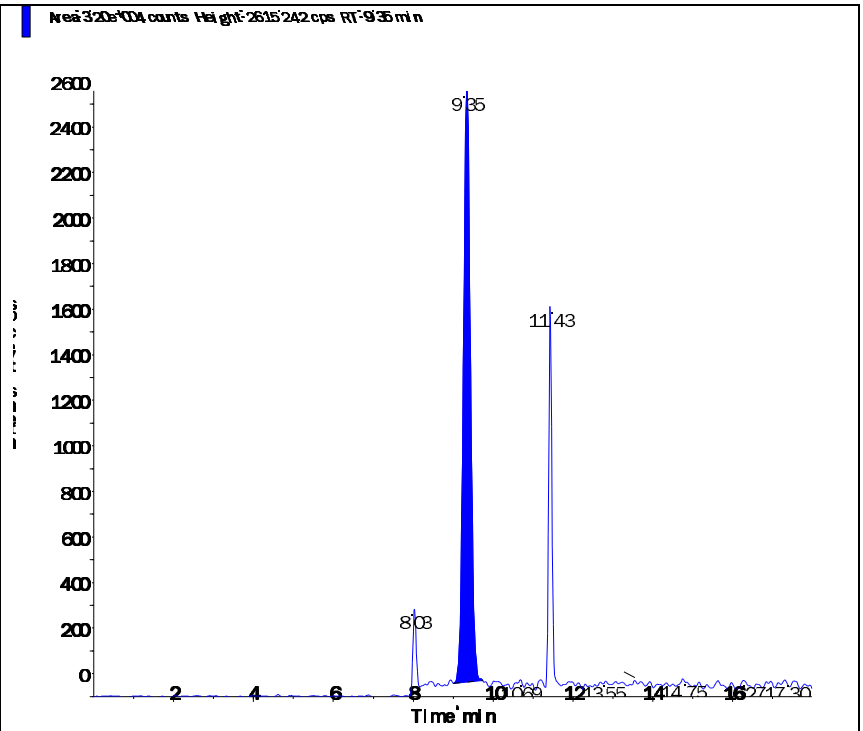

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.33 (9.84) min
Calculated conc:	0.224 ng/ml
Area Ratio:	0.027
Sample Type:	(Unknown)

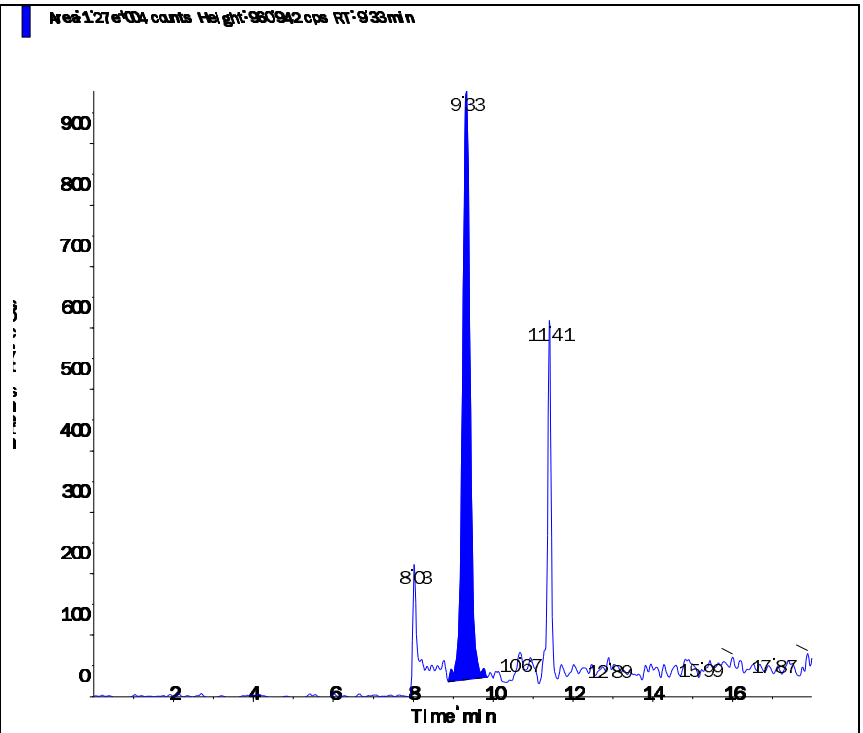

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Data File	LM35415.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 4:48:02 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-01 CCB	**Injection Vial**	1.00
Data File	LM35415.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 4:48:02 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.750e+05	9.37	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	5.830e+02	9.37	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.37(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

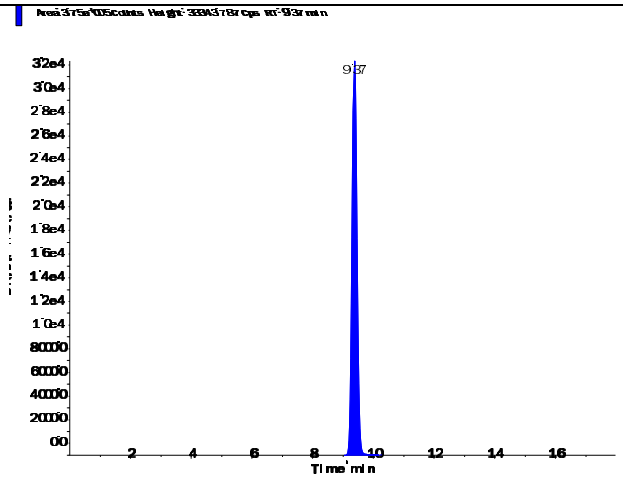

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	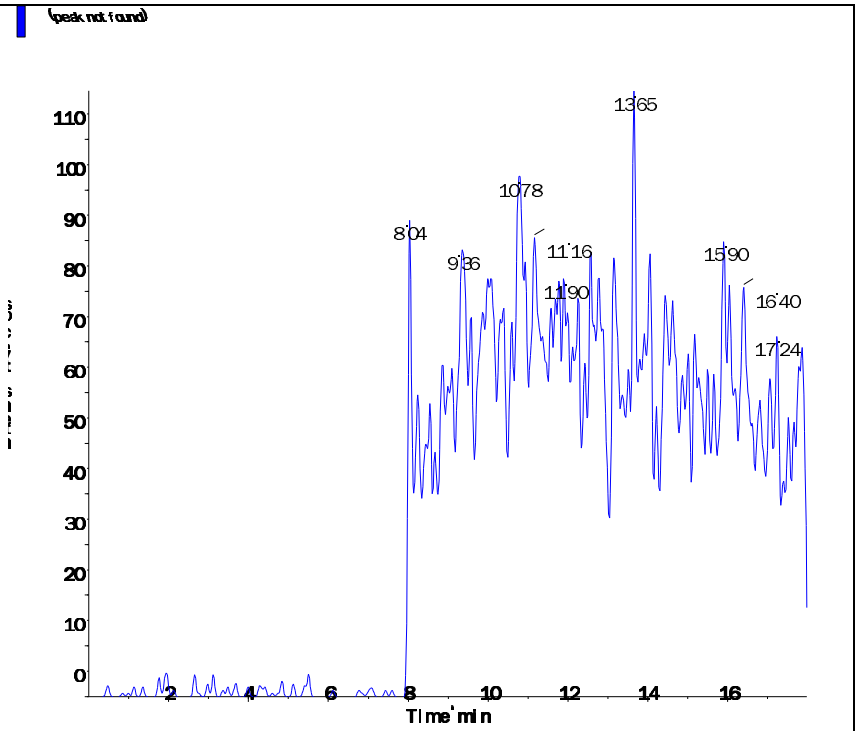
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.37 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	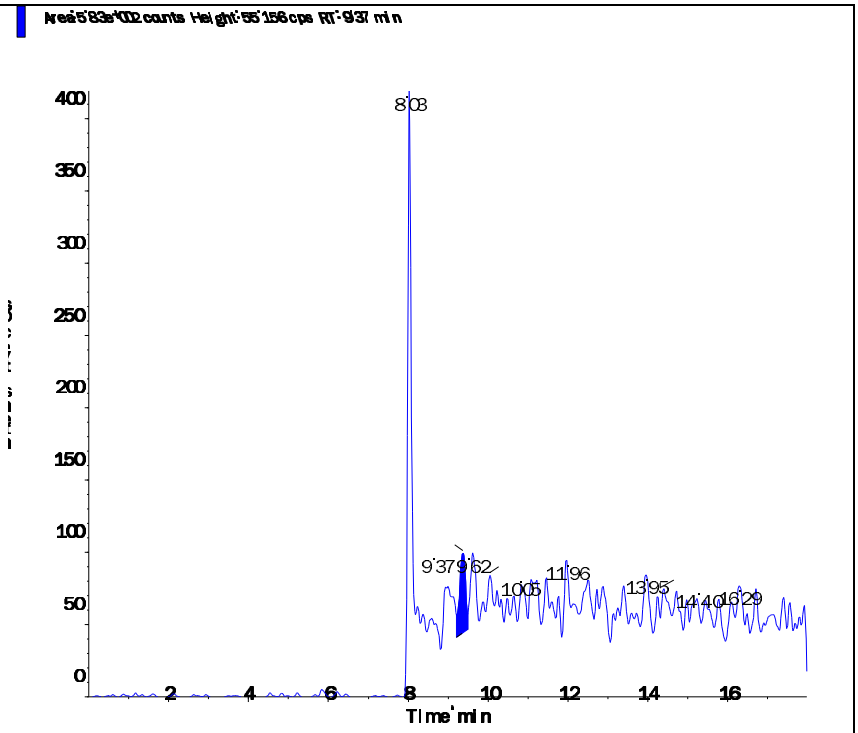

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Data File	LM35430.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 9:31:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-04 CCB	**Injection Vial**	1.00
Data File	LM35430.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 9:31:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.890e+05	9.42	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	2.230e+02	9.45	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.42(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

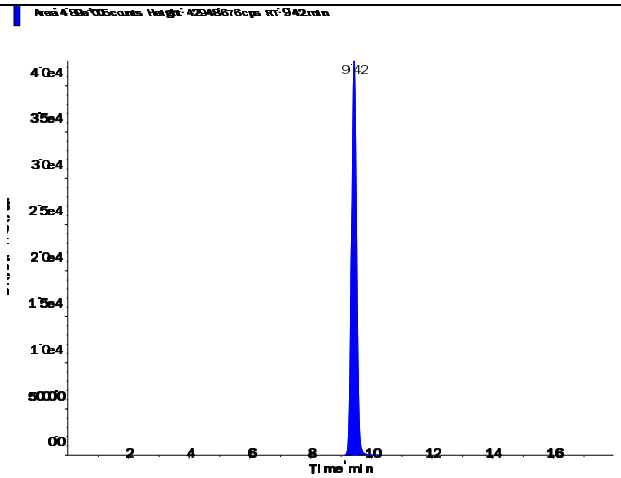

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	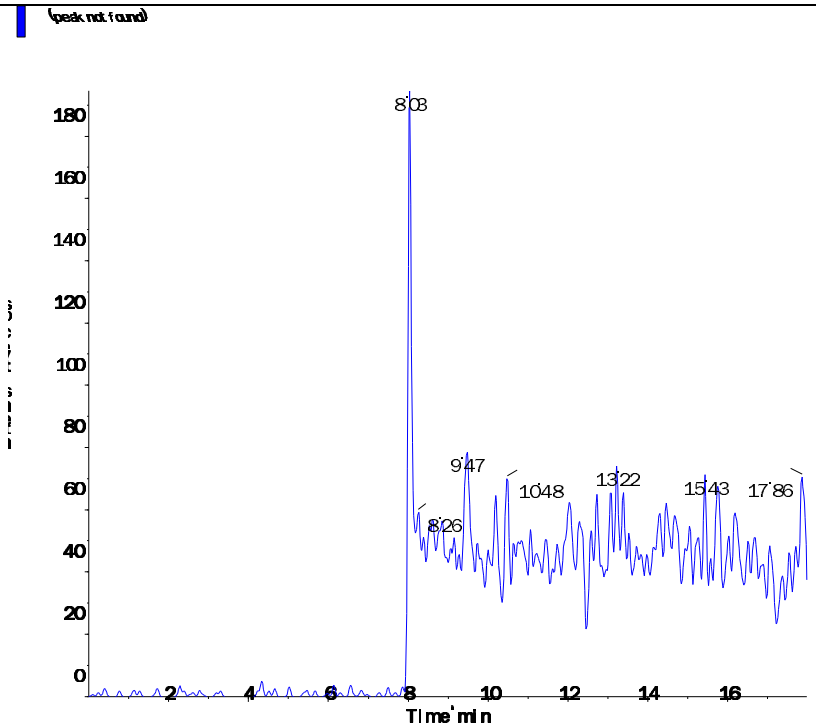
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.45 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	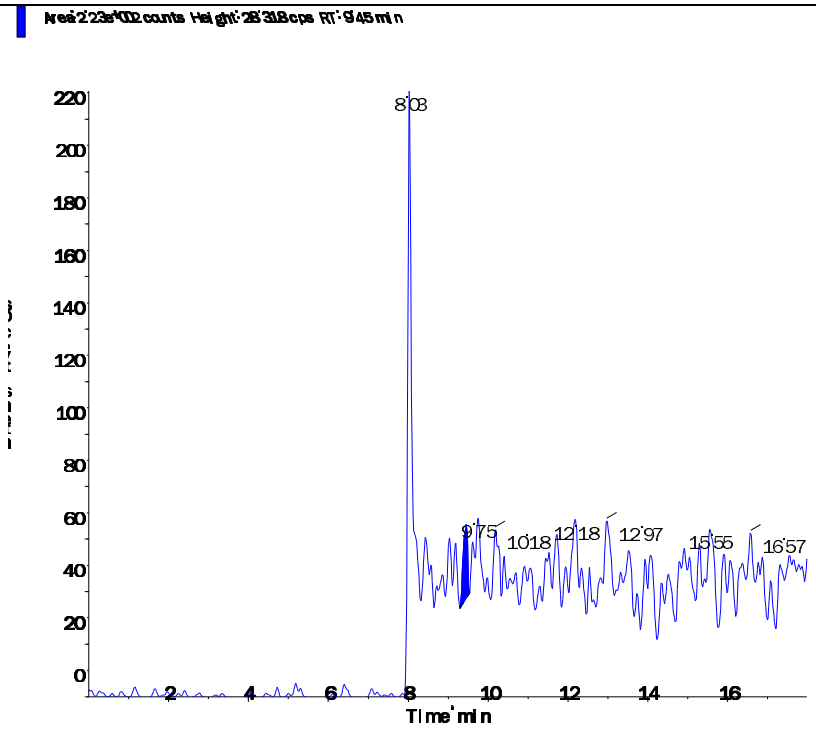

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Data File	LM35441.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 1:00:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-06 CCB	**Injection Vial**	1.00
Data File	LM35441.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 1:00:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.040e+05	9.46	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.46(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

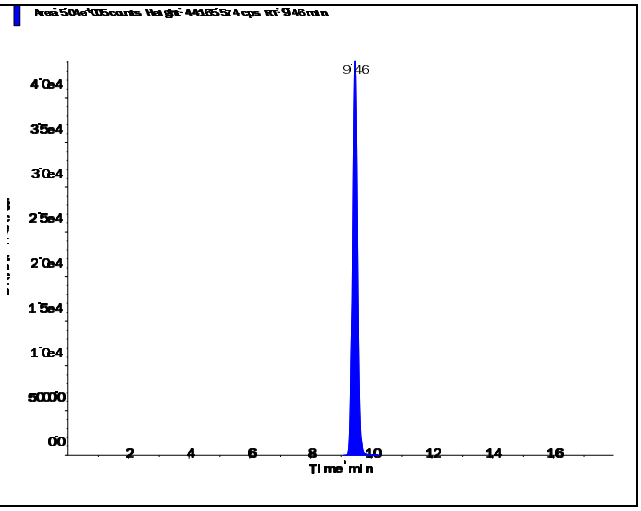

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

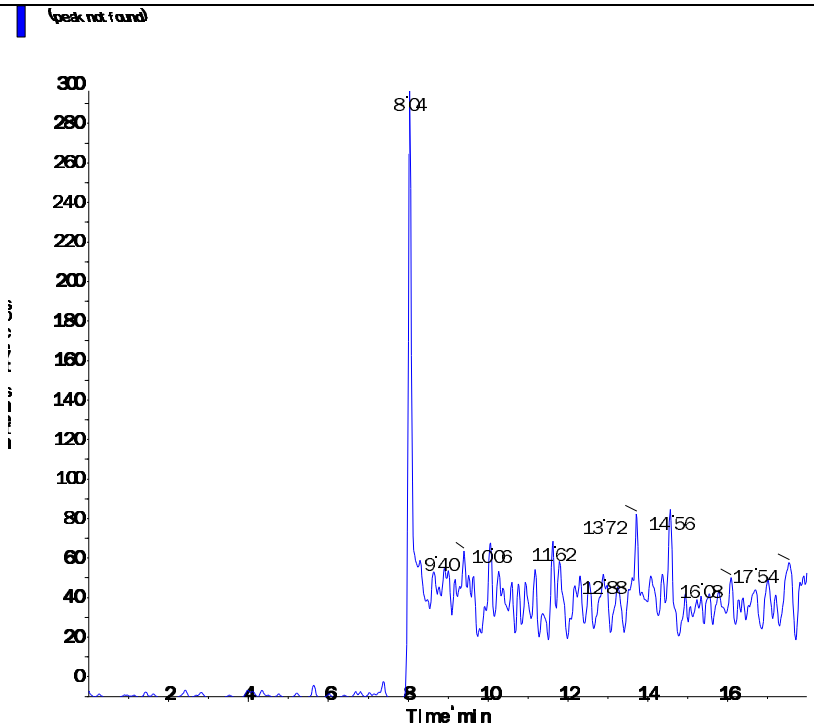

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

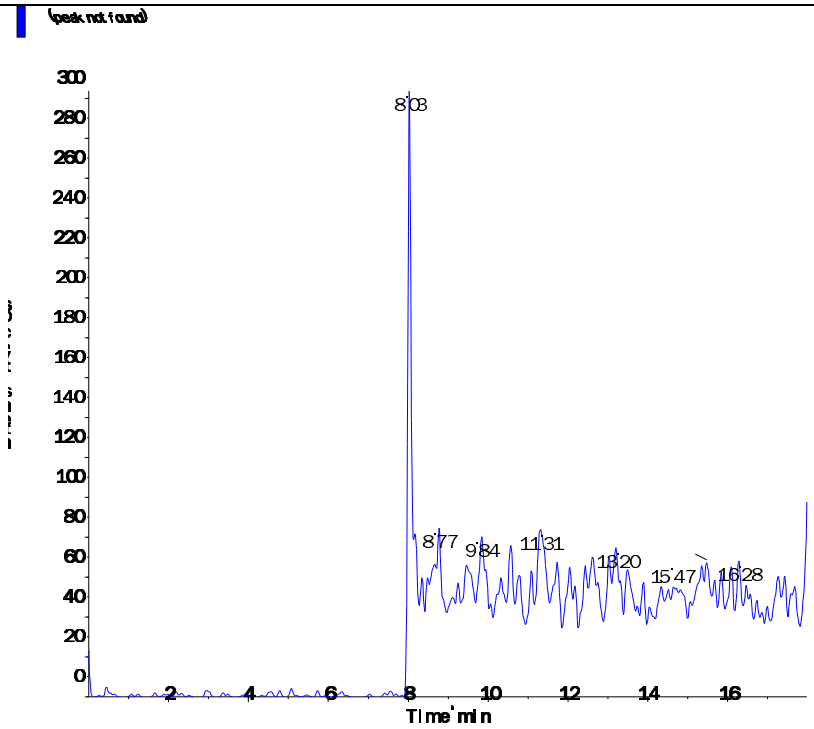

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Data File	LM35448.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 3:12:48 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-08 CCB	**Injection Vial**	1.00
Data File	LM35448.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 3:12:48 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.850e+05	9.47	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.47(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

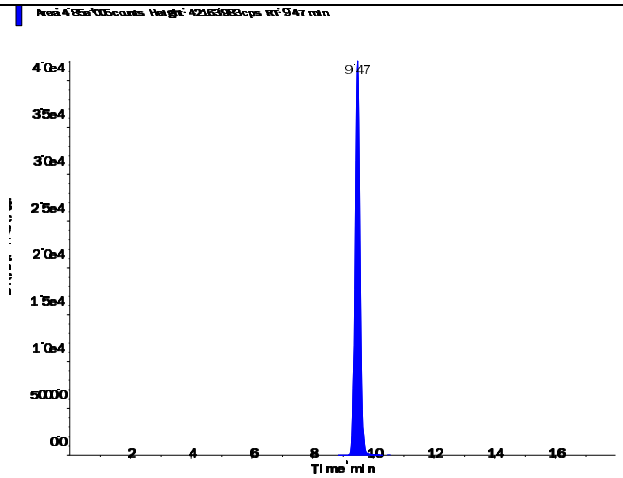

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

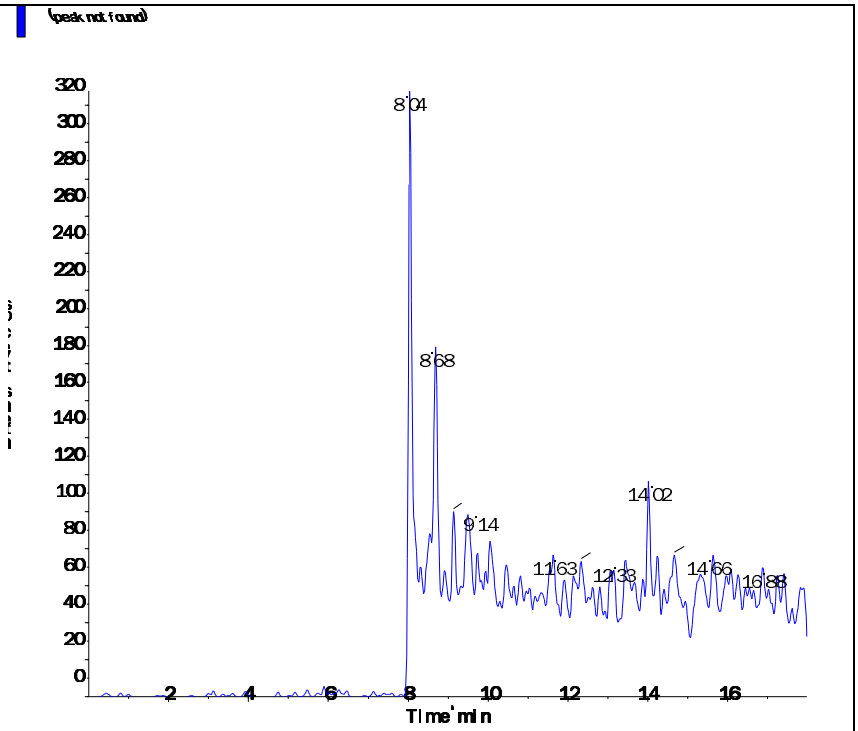

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

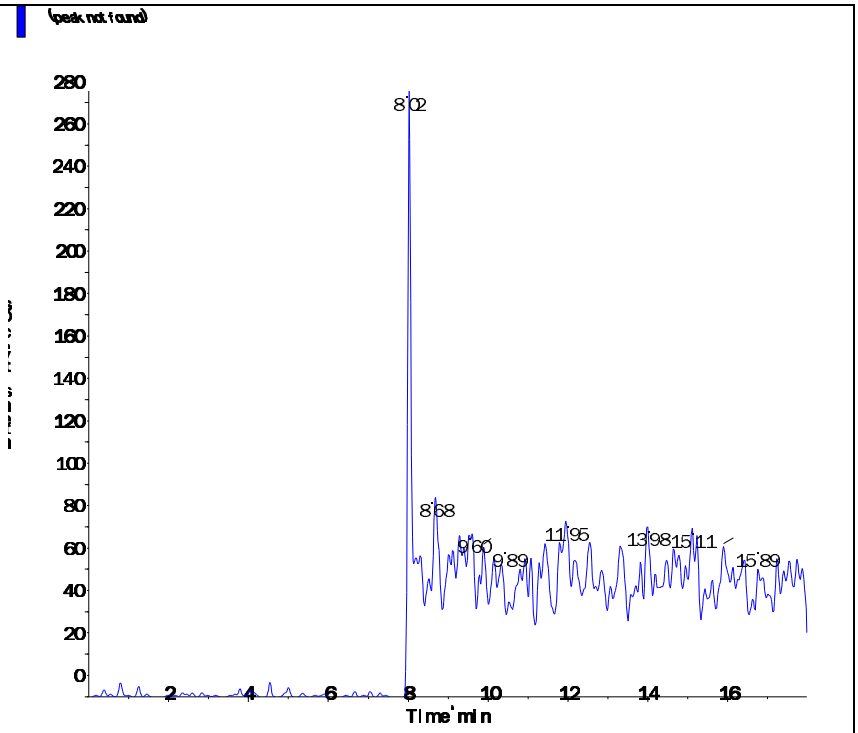

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Data File	LM35451.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 12:27:11 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-10 CCB	**Injection Vial**	1.00
Data File	LM35451.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 12:27:11 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.370e+05	9.51	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	5.600e+02	9.50	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.51(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

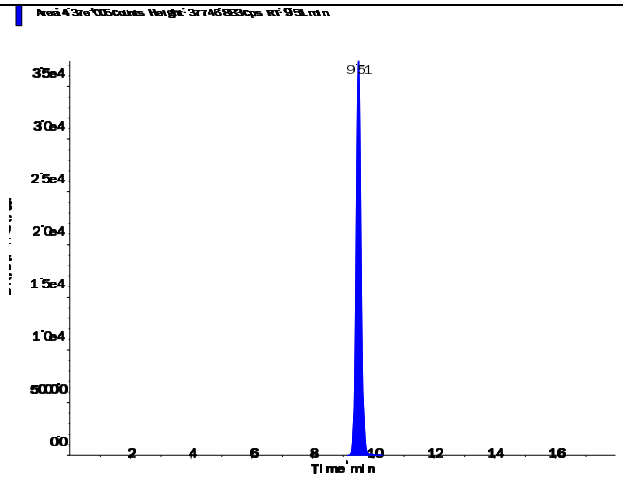

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

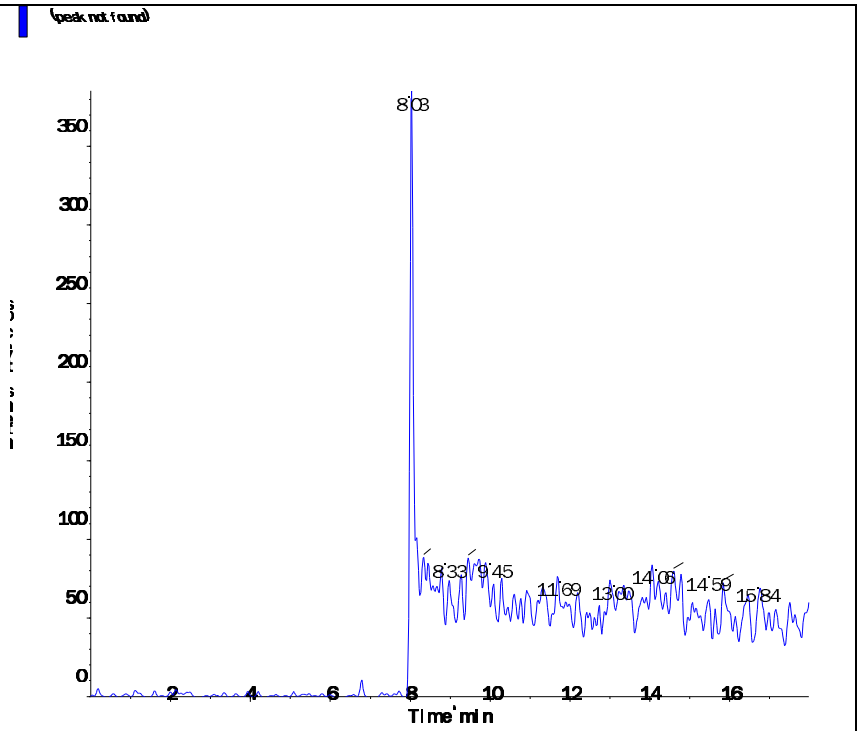

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.50 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

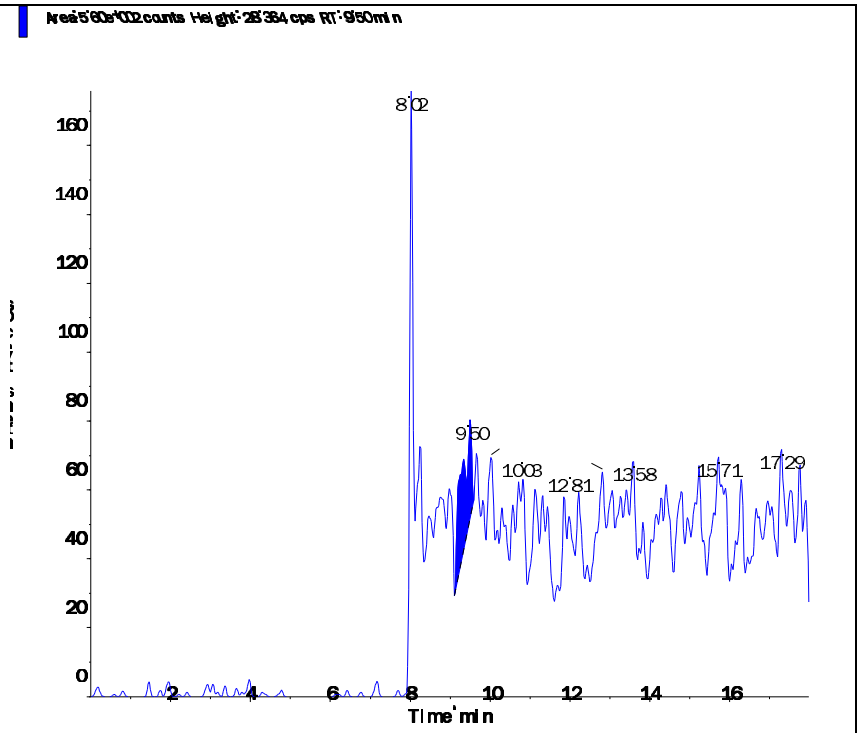

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Data File	LM35461.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 3:36:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-12 CCB	**Injection Vial**	1.00
Data File	LM35461.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 3:36:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-12	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.660e+05	9.52	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.52(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

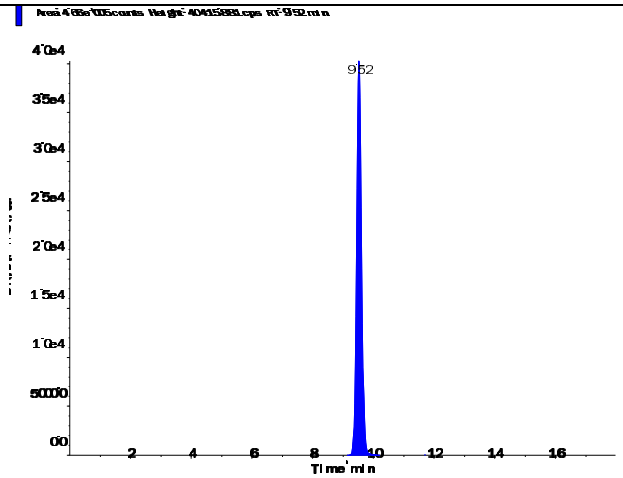

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

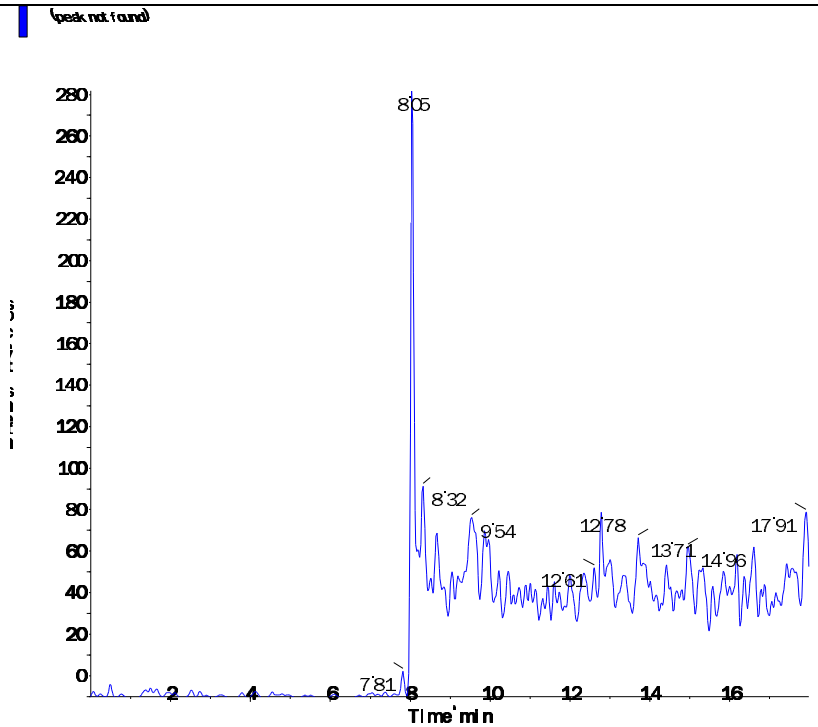

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

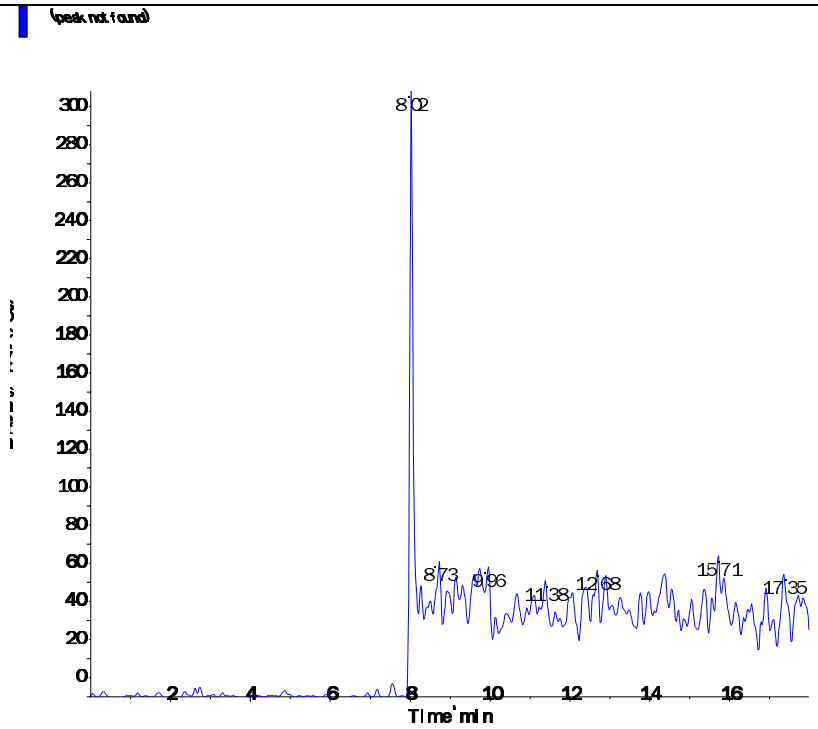

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/23/2016 4:53 PM

Data File	LM35418.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 5:44:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM35418.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 5:44:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.330e+05	8.77	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.850e+04	8.77	N/A	0.192
Perchlorate conf	1.000e+04	8.76	N/A	0.187

O18LP (Internal Standard)

RT (Exp. RT): 8.77(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

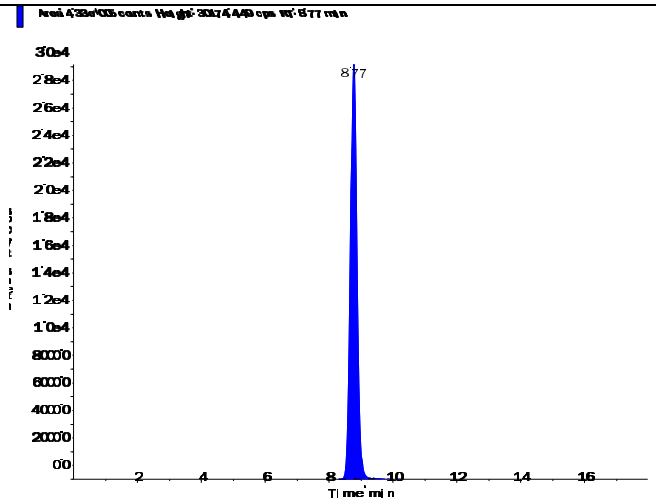

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/23/2016 4:53 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	8.77 (9.84) min
Calculated conc:	0.192 ng/ml
Area Ratio:	0.066
Sample Type:	(Unknown)

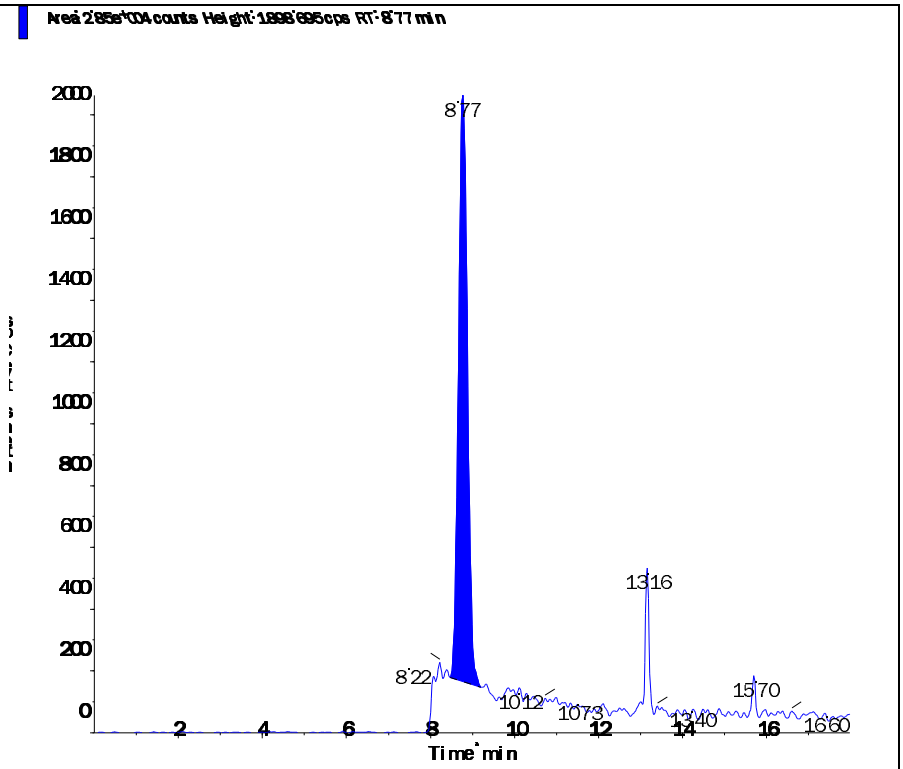

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	8.76 (9.84) min
Calculated conc:	0.187 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

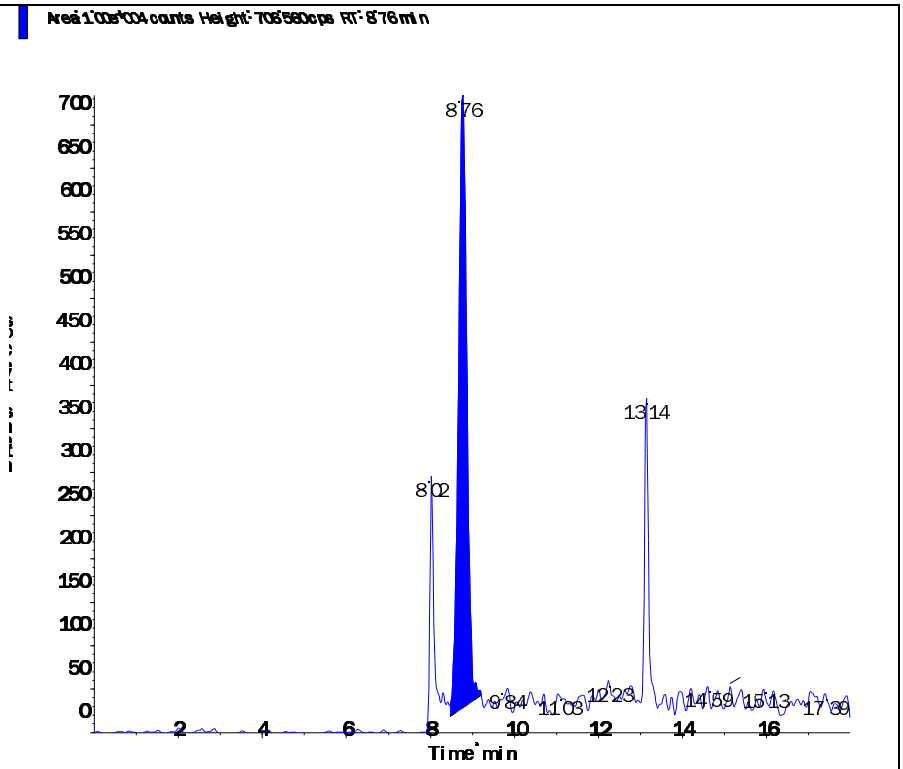

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Printing Time: 6:50:16 PM
Printing Date: Wednesday, June 22, 2016

Sample Name: "WG573791-01 MCT (0.2ug/L)" Sample ID: "WG573791-01" File: "LM35418.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index: 1
Sample Type: Unknown
Concentration: N/A
Calculated Conc: 0.230 ug/L
Acq. Date: 6/22/2016
Acq. Time: 5:44:45 PM

Modified: No
Proc. Algorithm: Analyst Classic
Smoothing Factor: 2
Noise Threshold: 18.48 cps
Area Threshold: 92.40 cps
Num. Smooths: 5
Sep. Width: 0.20
Sep. Height: 0.01
Exp. Peak Ratio: 5.00
Exp. Adj. Ratio: 4.00
Exp. Val. Ratio: 3.00
RT Window: 30.000 sec
Expected RT: 9.84 min
Use Relative RT: Yes

Int. Type: Valley
Retention Time: 8.77 min
Area: 3.40e+004 counts
Height: 1990.014 cps
Start Time: 8.303 min
End Time: 9.417 min

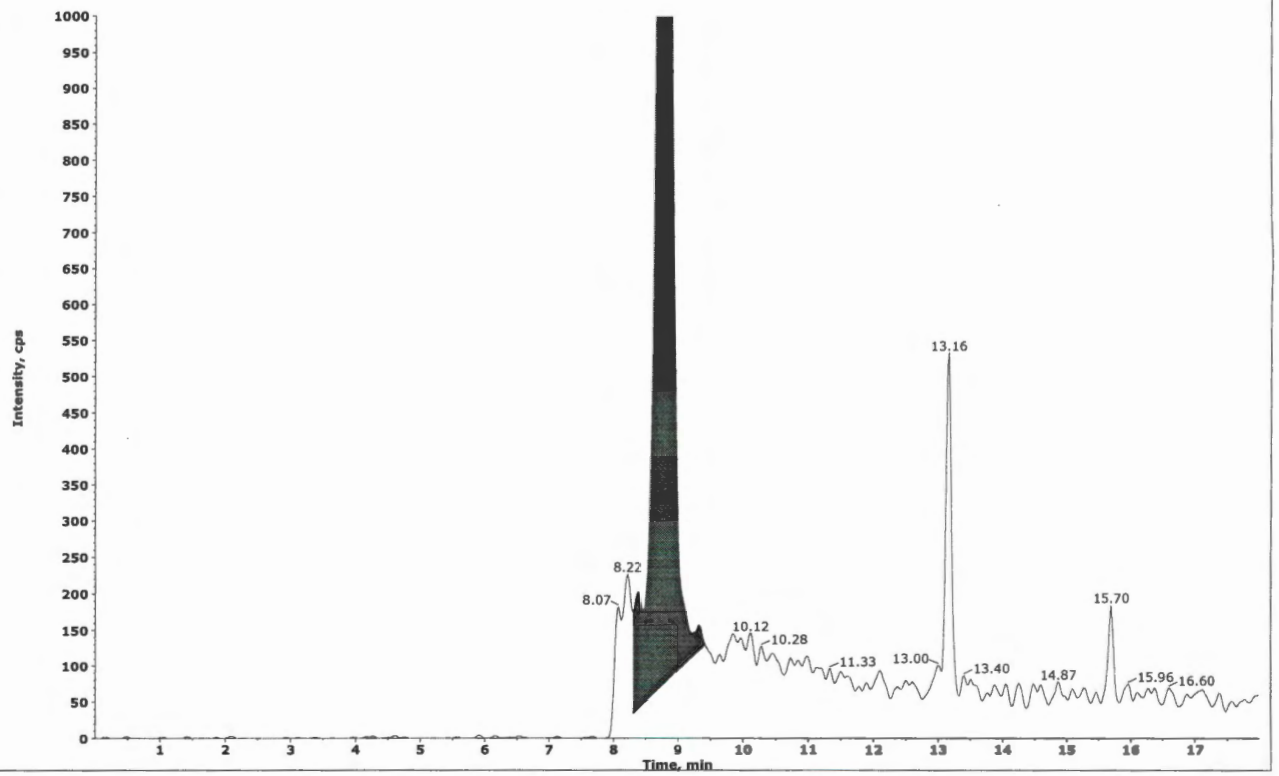

Collected by: N/A
Electronic Signature: no
Operator: lcmsl

Printing Time: 6:52:29 PM
Printing Date: Wednesday, June 22, 2016

Sample Name: "WG573791-01 MCT (0.2ug/L)" Sample ID: "WG573791-01" File: "LM35418.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index: 1
Sample Type: Unknown
Concentration: N/A
Calculated Conc: 0.192 ug/L
Acq. Date: 6/22/2016
Acq. Time: 5:44:45 PM

Modified: Yes
Proc. Algorithm: Analyst Classic
Smoothing Factor: 2
Noise Threshold: 18.48 cps
Area Threshold: 92.40 cps
Num. Smooths: 5
Sep. Width: 0.20
Sep. Height: 0.01
Exp. Peak Ratio: 5.00
Exp. Adj. Ratio: 4.00
Exp. Val. Ratio: 3.00
RT Window: 30.000 sec
Expected RT: 9.84 min
Use Relative RT: Yes

Int. Type: Manual
Retention Time: 8.77 min
Area: 2.85e+004 counts
Height: 1898.695 cps
Start Time: 8.465 min
End Time: 9.194 min

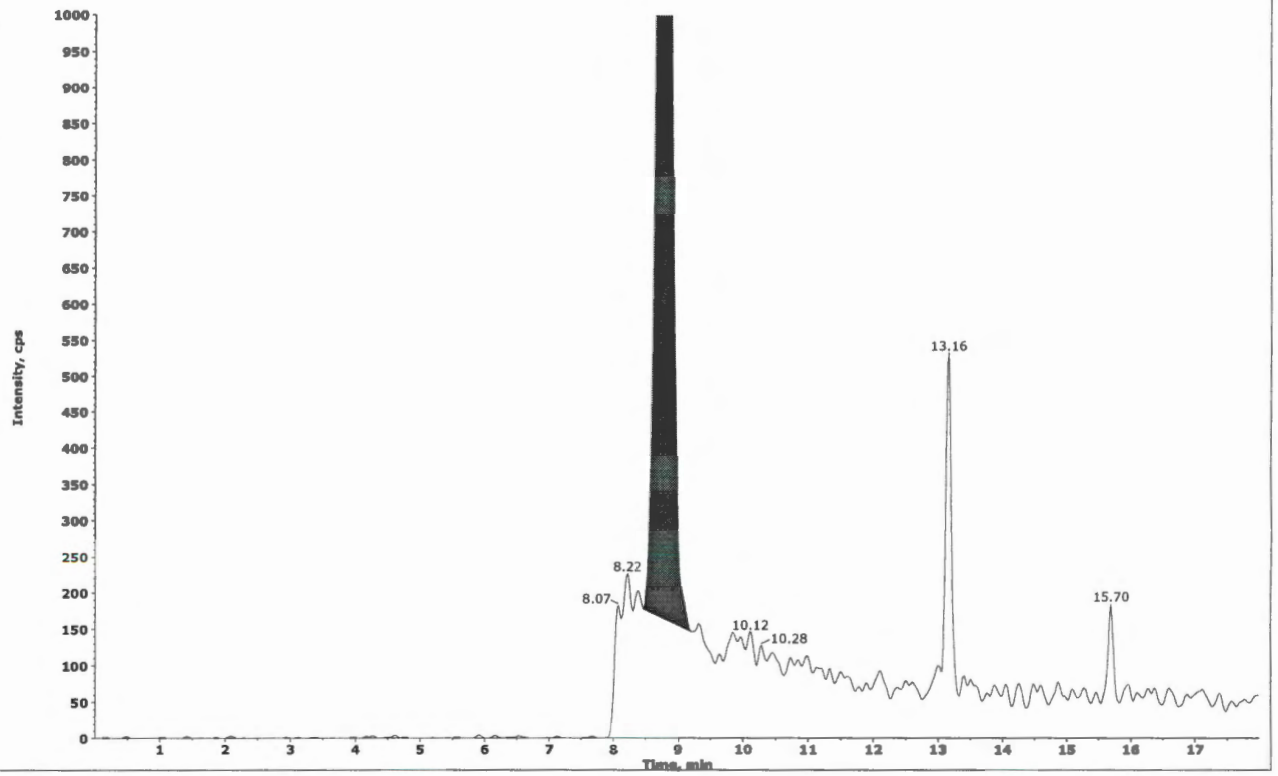

#4
JWR 06/22/16

✓ WD
6-24-16

Collected by: N/A
Electronic Signature: no
Operator: lcms1

2.2.2.5 Raw QC Data

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Created with Analyst Reporter
Printed: 6/23/2016 4:54 PM

Data File	LM35419.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 6:03:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-02 BLANK	**Injection Vial**	5.00
Data File	LM35419.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 6:03:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.360e+05	9.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	5.050e+02	9.25	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.30(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

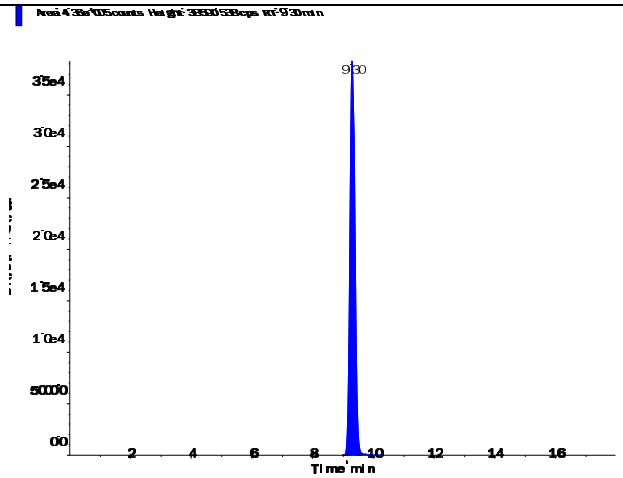

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Created with Analyst Reporter
Printed: 6/23/2016 4:54 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	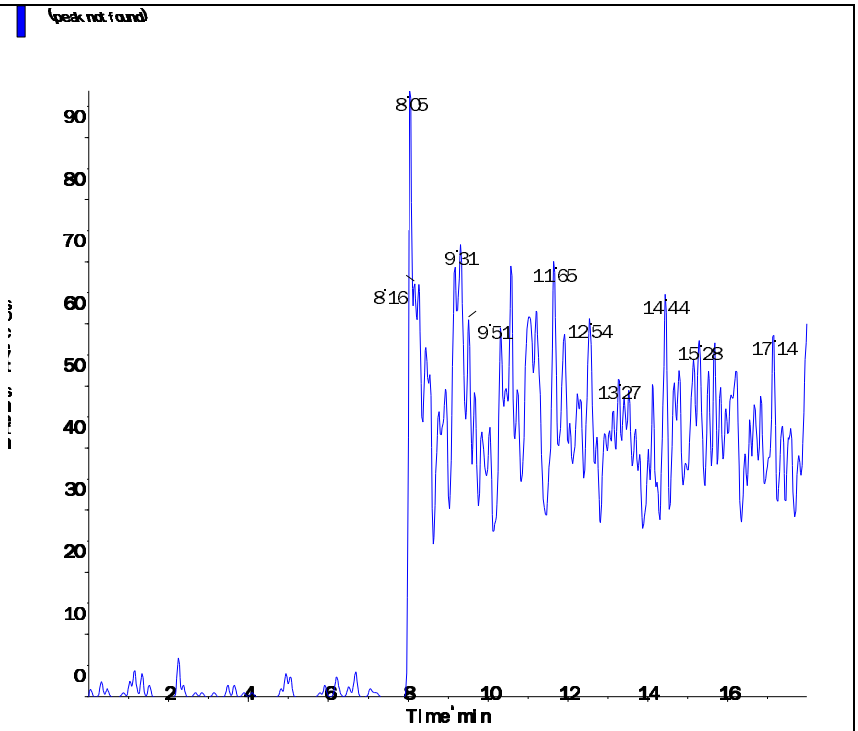
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.25 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	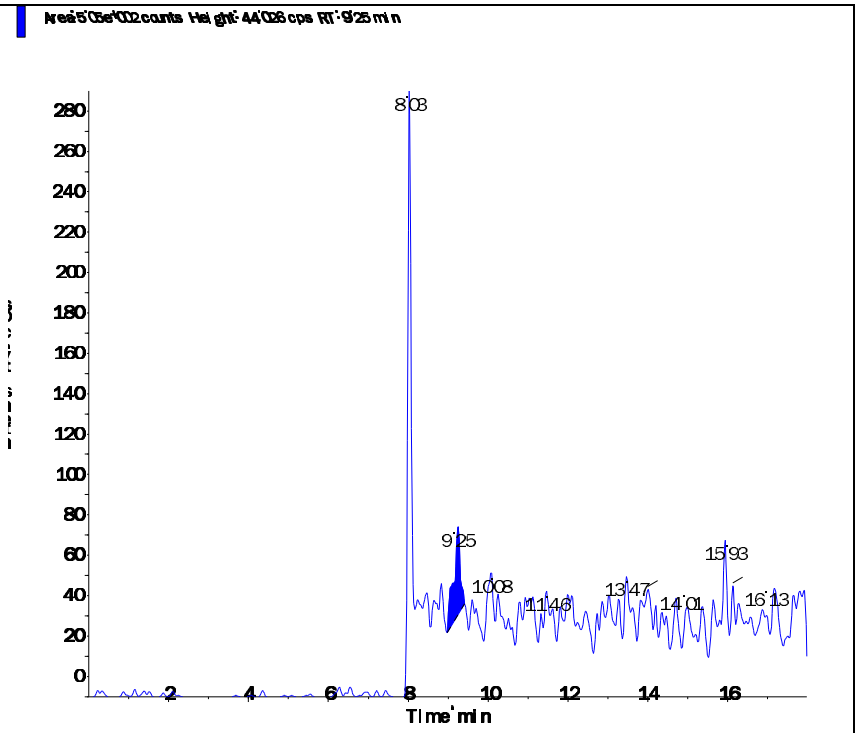

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Applied Biosystems | MDS SCIEX

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Printed: 6/23/2016 4:54 PM

Data File	LM35420.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 6:22:36 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM35420.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 6:22:36 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.400e+05	9.33	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.030e+04	9.35	N/A	0.201
Perchlorate conf	1.150e+04	9.33	N/A	0.213

O18LP (Internal Standard)

RT (Exp. RT): 9.33(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

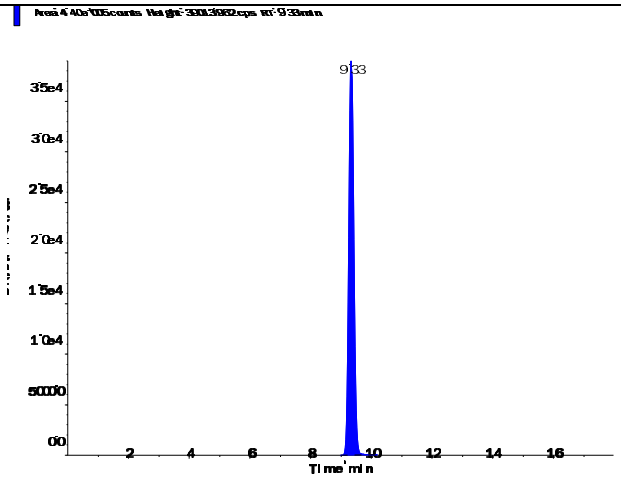

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

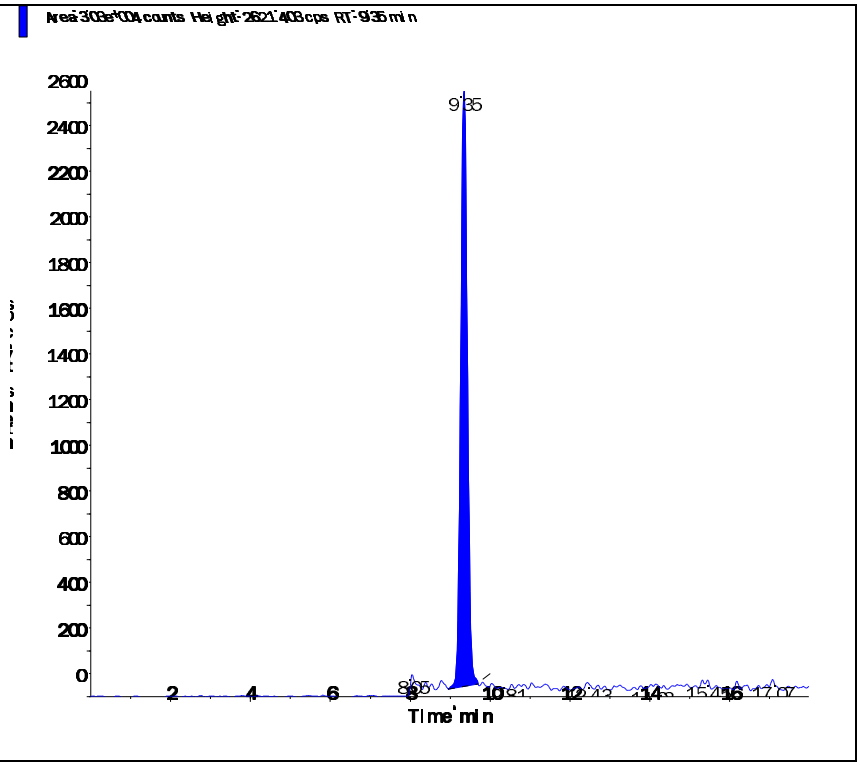

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.33 (9.84) min
Calculated conc:	0.213 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

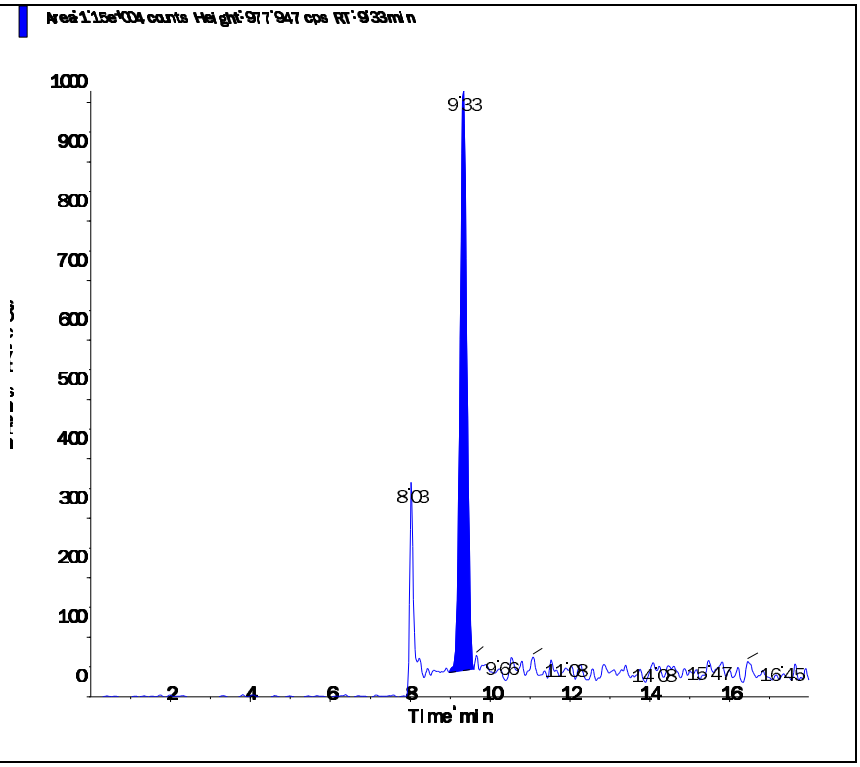

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Data File	LM35421.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 6:41:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-04 LCS2 (0.2ug/L)	**Injection Vial**	7.00
Data File	LM35421.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 6:41:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.350e+05	9.36	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.200e+04	9.38	N/A	0.215
Perchlorate conf	1.150e+04	9.36	N/A	0.216

O18LP (Internal Standard)

RT (Exp. RT): 9.36(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

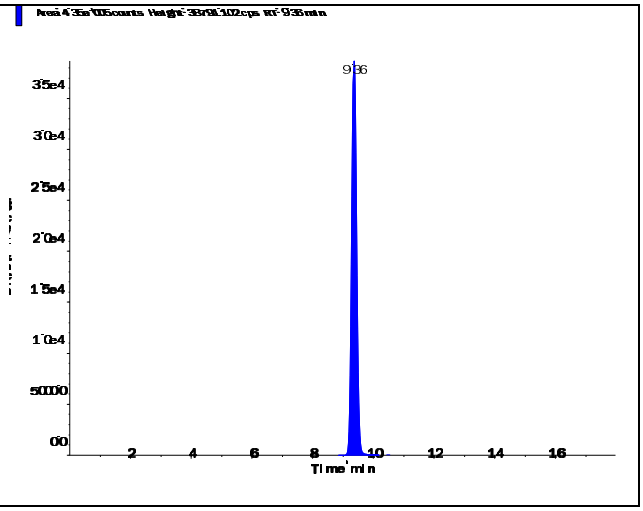

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Printed: 6/23/2016 4:55 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	0.215 ng/ml
Area Ratio:	0.074
Sample Type:	(Unknown)

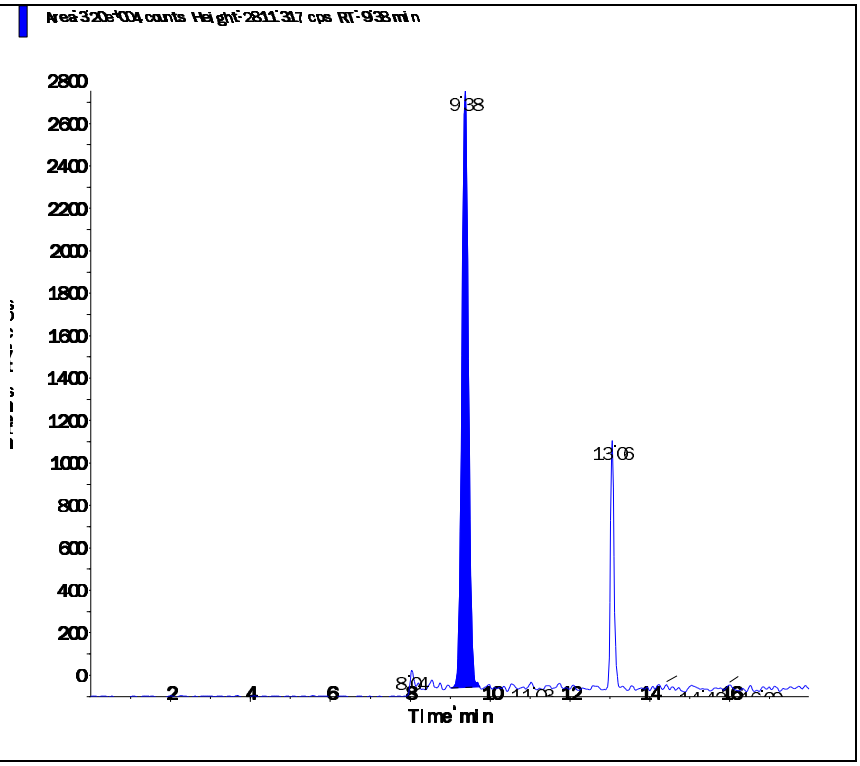

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.36 (9.84) min
Calculated conc:	0.216 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

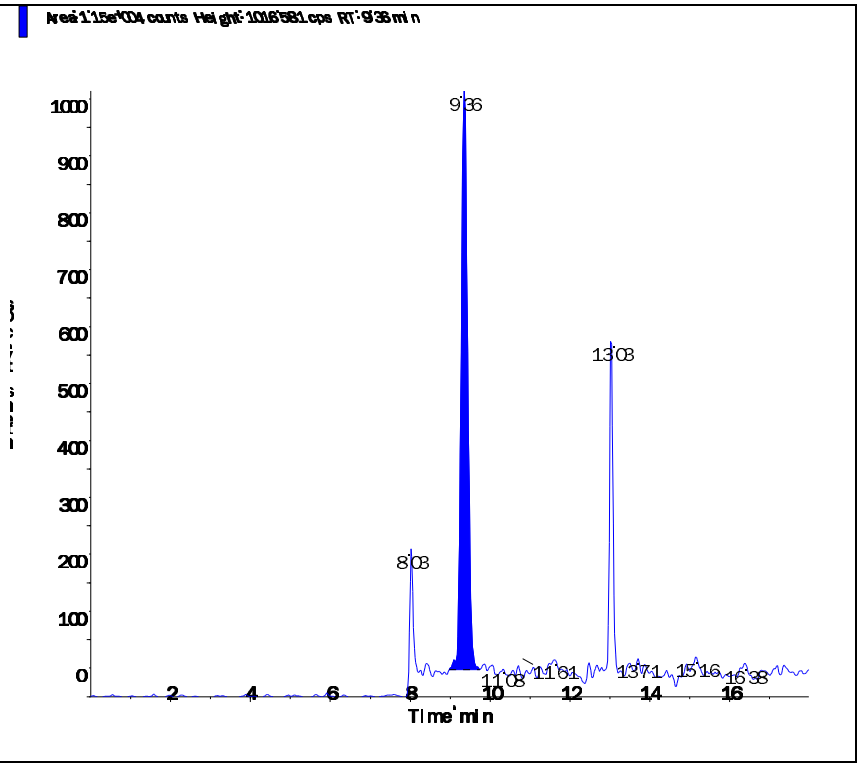

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2.3 Metals Data

2.3.1 Metals I C P Data

2.3.1.1 Summary Data

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW03F-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 16:45
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/23/2016 20:25
Collect Date:	06/14/2016 07:40	**Dilution:**	1	**File ID:**	T3.062316.202527
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.100	U	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	8.25		0.500	0.250	0.125
Iron, Total	7439-89-6	2.77		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	5.84		1.00	0.500	0.250
Potassium, Total	7440-09-7	2.16		2.00	1.00	0.500
Sodium, Total	7440-23-5	109		1.00	0.500	0.250

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW03F-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/25/2016 12:36
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/25/2016 13:40
Collect Date:	06/14/2016 07:40	**Dilution:**	1	**File ID:**	T3.062516.134058
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Selenium, Total	7782-49-2	0.00565	J	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW04SW-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/25/2016 12:36
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/25/2016 13:37
Collect Date:	06/14/2016 09:00	**Dilution:**	1	**File ID:**	T3.062516.133704
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW04SW-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 16:45
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/23/2016 20:29
Collect Date:	06/14/2016 09:00	**Dilution:**	1	**File ID:**	T3.062316.202923
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.0639	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	6.72		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	19.1		1.00	0.500	0.250
Potassium, Total	7440-09-7	64.8		2.00	1.00	0.500
Sodium, Total	7440-23-5	117		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW04SW-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 16:45
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/23/2016 21:28
Collect Date:	06/14/2016 09:00	**Dilution:**	20	**File ID:**	T3.062316.212816
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	38.2		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.3.1.2 QC Summary Data

Example 6010 Calculations
Thermo Scientific iCAP

1.0 Initial Calibration (ICAL) Parameters
For a multi-point calibration, the system performs linear regression from data consisting of a blank and four standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG573190
Analyst: REK
Spike Analyst: REK
Run Date: 06/17/2016 12:25
Method: 3015
Balance: BAL019
Instrument: MW-4
Instrument Start: 06/17/2016 12:36

SOP: ME407 Revison 19
Spike Solution: STD76576
Spike Witness: VC
HCL Lot #: COA18769
HNO3 Lot #: COA18905
40 & 50 ML. DIGESTION TU COA18987
ICP Filters- fisher-Lot# RGT35619

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG573190-03	BLANK	1	40 mL	50 mL	206.067 g	206.054 g		
2	WG573025-01	FBLK1	17	5 mL	50 mL	204.348 g	204.338 g		
3	WG573190-04	LCS	1	40 mL	50 mL	210.758 g	210.752 g	5 mL	
4	WG573190-01	REF	17	5 mL	50 mL	203.898 g	203.882 g		
5	L16060779-02	RS02	17	5 mL	50 mL	203.898 g	203.882 g		06/24/16
6	WG573190-05	MS	17	5 mL	50 mL	207.438 g	207.431 g	5 mL	
7	L16060779-05	MS02	17	5 mL	50 mL	207.438 g	207.431 g	5 mL	06/24/16
8	WG573190-06	MSD	17	5 mL	50 mL	208.146 g	208.126 g	5 mL	
9	L16060779-08	SD02	17	5 mL	50 mL	208.146 g	208.126 g	5 mL	06/24/16
10	L16060779-11	SAMP	17	5 mL	50 mL	203.893 g	203.879 g		06/24/16
11	L16060779-14	SAMP	17	5 mL	50 mL	205.834 g	205.819 g		06/24/16
12	WG573190-02	REF	1	40 mL	50 mL	205.508 g	205.498 g		
13	L16060808-01	RS01	1	40 mL	50 mL	205.508 g	205.498 g		06/24/16
14	WG573190-07	MS	1	40 mL	50 mL	210.145 g	210.129 g	5 mL	
15	L16060808-03	MS01	1	40 mL	50 mL	210.145 g	210.129 g	5 mL	06/24/16
16	WG573190-08	MSD	1	40 mL	50 mL	210.94 g	210.914 g	5 mL	
17	L16060808-04	SD01	1	40 mL	50 mL	210.94 g	210.914 g	5 mL	06/24/16
18	L16060822-02	SAMP	1	40 mL	50 mL	206.366 g	206.337 g		06/24/16
19	L16060822-03	SAMP	1	40 mL	50 mL	204.086 g	204.053 g		06/24/16
20	L16060823-02	SAMP	1	40 mL	50 mL	205.702 g	205.68 g		06/24/16
21	L16060823-03	SAMP	1	40 mL	50 mL	203.815 g	203.795 g		06/24/16
22	L16060823-04	SAMP	1	40 mL	50 mL	205.586 g	205.557 g		06/24/16
23	L16060883-02	SAMP	1	40 mL	50 mL	204.528 g	204.491 g		06/24/16
24	L16060884-01	SAMP	17	5 mL	50 mL	204.107 g	204.076 g		06/22/16
25	L16060896-01	SAMP	1	40 mL	50 mL	205.437 g	205.412 g		06/27/16
26	L16060896-02	SAMP	1	40 mL	50 mL	207.438 g	207.413 g		06/27/16
27	L16060896-03	SAMP	1	40 mL	50 mL	205.762 g	205.735 g		06/27/16
28	L16060896-04	SAMP	1	40 mL	50 mL	205.858 g	205.827 g		06/27/16
29	L16060896-05	SAMP	1	40 mL	50 mL	205.819 g	205.802 g		06/27/16
30	L16060896-07	SAMP	1	40 mL	50 mL	207.197 g	207.165 g		06/27/16

L16060883-02	FILTERED DIGESTATE

Analyst: [signature]

Reviewer: Erin Potter

MW_DIG - Modified 09/30/2009
PDF ID: 4812653
Report generated: 06/17/2016 13:12

Microbac

TCLP Non-Volatile

Analyst(s): CPD
Date: 6/16/16
Filter Lot #: 9486030
Microbac SOP: TCLP01 Rev #: 12

Analyst / Date		Analyst / Date	
CPD / AMA	6/16/16	CPD	6/17/16
Time On	Temp On °C	Time Off	Temp Off °C
1522	24.6	0814	22.1

Agitator Speed 30 ± 2 rpm ☑

Jug #	Sample #	Tests	Method	Fluid #	Matrix *	% Solid	Pretest pH Initial	Pretest pH Final	Int. Wt. (g)	Fluid Vol. (mL)	Final extract pH
D	06-0779-11	ME	1311	F1-181	S	100	7.01	1.82	25.50	510	4.92
	-02						7.20	1.96	25.35	507	5.01
	-05						7.10	1.78	25.40	508	4.97
	-08						7.13	1.76	25.36	507	4.96
	-14						7.04	1.75	25.35	507	4.98
G-29	06-0829-02	SV		F2-379			12.67	12.62	25.74	514	12.47
D	06-0888-01	300	1312	SPLPF1 -62	S	100	NA	NA	25.12	502	9.47
	-02								25.88	517	9.73
	-03								25.44	508	9.64
	-04								25.43	508	9.75
	-05								25.33	506	9.21
	-06								25.87	517	9.65
	-07								25.52	510	9.60
	-08								25.32	506	9.06
	-09								25.45	509	9.68
	-10								25.27	505	9.97
	-11								25.32	506	9.62
	-12								25.69	513	9.53
	06-0886-01								25.89	517	9.67
	-02								25.16	503	9.55
	-03								25.39	507	9.26
	-04								25.37	507	9.58
	06-0884-01	ME	1311	F1-181	S	100	8.33	3.63	25.22	504	5.61
NA	FBIK1	ME	1311	F1-181	NA	NA	NA	NA	100	100	4.88
	FBIK2	SV		F2-379							2.84
	SPLPF1	300	1312	SPLP F1-62							4.15

CPD 6/16/16

*Matrix Code: (S = solid, sand, soil or sludge) (P = paint) (O = organic) (W = water or aqueous waste)
D = Disposable plastic jug
TCLP Pretest weight will be 5.0 g (± 0.1) unless otherwise noted.
Temperature shall be maintained at 23° ± 2 for 18 ± 2 hours unless otherwise noted.

Comments: N/A

Peer Review By: Allie Alfred 06/17/16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062316T3.2

Analyst1: JYH Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 573973,573749,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.062316.162939	WG574093-01	Calibration Point		1		06/23/16 16:29
2	T3.062316.163338	WG574093-02	Calibration Point		1		06/23/16 16:33
3	T3.062316.163737	WG574093-03	Calibration Point		1		06/23/16 16:37
4	T3.062316.164136	WG574093-04	Calibration Point		1		06/23/16 16:41
5	T3.062316.164514	WG574093-05	Calibration Point		1		06/23/16 16:45
6	T3.062316.164851	WG574093-06	Initial Calibration Verification		1		06/23/16 16:48
7	T3.062316.165229	WG574093-07	Initial Calib Blank		1		06/23/16 16:52
8	T3.062316.165617	WG574093-08	Low Level Initial Calibration V		1		06/23/16 16:56
9	T3.062316.170014	WG574093-09	Low Level Initial Calibration V		1		06/23/16 17:00
10	T3.062316.170408	WG574093-10	Interference Check		1		06/23/16 17:04
11	T3.062316.170801	WG574093-11	Interference Check		1		06/23/16 17:08
12	T3.062316.171145	WG574093-12	CCV		1		06/23/16 17:11
13	T3.062316.171523	WG574093-13	CCB		1		06/23/16 17:15
14	T3.062316.171922	WG573484-02	Method/Prep Blank	40/50	1		06/23/16 17:19
15	T3.062316.172321	WG573484-03	Laboratory Control S	40/50	1		06/23/16 17:23
16	T3.062316.172701	WG573484-01	Reference Sample		1	L16060764-04	06/23/16 17:27
17	T3.062316.173057	WG573484-04	Matrix Spike	40/50	1	L16060764-04	06/23/16 17:30
18	T3.062316.173436	WG573484-05	Matrix Spike Duplica	40/50	1	L16060764-04	06/23/16 17:34
19	T3.062316.173816	L16061098-01	5004-G06-WQ-W0266	40/50	1		06/23/16 17:38
20	T3.062316.174215	L16061098-02	5240-G02-WQ-W0087	40/50	1		06/23/16 17:42
21	T3.062316.174614	WG573952-01	Post Digestion Spike		1	L16061098-02	06/23/16 17:46
22	T3.062316.174955	WG573952-02	Serial Dilution		5	L16061098-02	06/23/16 17:49
23	T3.062316.175355	WG573952-02	Serial Dilution		25	L16061098-02	06/23/16 17:53
24	T3.062316.175755	WG574093-14	CCV		1		06/23/16 17:57
25	T3.062316.180133	WG574093-15	CCB		1		06/23/16 18:01
26	T3.062316.180532	L16061098-03	5320-G02-WQ-W0183	40/50	1		06/23/16 18:05
27	T3.062316.180930	L16061098-04	5506-G02-WQ-W0164	40/50	1		06/23/16 18:09
28	T3.062316.181329	L16060764-01	MW-23-004	40/50	1		06/23/16 18:13
29	T3.062316.181726	L16060764-02	MW-23-002	40/50	1		06/23/16 18:17
30	T3.062316.182122	L16060764-03	FD-061316	40/50	1		06/23/16 18:21
31	T3.062316.182520	L16060957-01	15-12-13 S7	40/50	1		06/23/16 18:25
32	T3.062316.182915	L16060957-02	15-12-13 S7	40/50	1		06/23/16 18:29
33	T3.062316.183311	WG574093-16	CCV		1		06/23/16 18:33
34	T3.062316.183649	WG574093-17	CCB		1		06/23/16 18:36

Page: 1 Approved: June 26, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062316T3.2

Analyst1: JYH Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 573973,573749,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.062316.184048	L16060957-03	15-12-13 S8	40/50	1		06/23/16 18:40
36	T3.062316.184442	L16060957-04	15-12-13 S8	40/50	1		06/23/16 18:44
37	T3.062316.184837	L16060957-05	15-12-13 S5	40/50	1		06/23/16 18:48
38	T3.062316.185233	L16060961-01	GH58HS_MELZER_03-03-0	40/50	1		06/23/16 18:52
39	T3.062316.185630	L16060961-02	GH58HS_MELZER_03-03-0	40/50	1		06/23/16 18:56
40	T3.062316.190026	L16060991-02	MW31-061616		1		06/23/16 19:00
41	T3.062316.190423	L16060995-01	UNTREATED	40/50	1		06/23/16 19:04
42	T3.062316.190829	L16060995-02	AFTER	40/50	1		06/23/16 19:08
43	T3.062316.191235	L16061064-01	59-8-6.02 W1	40/50	1		06/23/16 19:12
44	T3.062316.191630	WG574093-18	CCV		1		06/23/16 19:16
45	T3.062316.192008	WG574093-19	CCB		1		06/23/16 19:20
46	T3.062316.192408	WG573190-03	Method/Prep Blank	40/50	1		06/23/16 19:24
47	T3.062316.192807	WG573190-04	Laboratory Control S	40/50	1		06/23/16 19:28
48	T3.062316.193148	WG573025-01	Fluid Blank 1		1		06/23/16 19:31
49	T3.062316.193546	WG573190-01	Reference Sample		1	L16060779-02	06/23/16 19:35
50	T3.062316.193944	WG573190-05	Matrix Spike	5/50	1	L16060779-02	06/23/16 19:39
51	T3.062316.194323	WG573190-06	Matrix Spike Duplica	5/50	1	L16060779-02	06/23/16 19:43
52	T3.062316.194701	L16060779-11	477-TS02-C0002	5/50	1		06/23/16 19:47
53	T3.062316.195059	WG573973-01	Post Digestion Spike		1	L16060779-11	06/23/16 19:50
54	T3.062316.195438	WG573973-02	Serial Dilution		5	L16060779-11	06/23/16 19:54
55	T3.062316.195838	WG573973-02	Serial Dilution		25	L16060779-11	06/23/16 19:58
56	T3.062316.200238	WG574093-20	CCV		1		06/23/16 20:02
57	T3.062316.200616	WG574093-21	CCB		1		06/23/16 20:06
58	T3.062316.201014	L16060779-14	477-TS01-C0003	5/50	1		06/23/16 20:10
59	T3.062316.201412	WG573190-02	Reference Sample		1	L16060808-01	06/23/16 20:14
60	T3.062316.201808	WG573190-07	Matrix Spike	40/50	1	L16060808-01	06/23/16 20:18
61	T3.062316.202147	WG573190-08	Matrix Spike Duplica	40/50	1	L16060808-01	06/23/16 20:21
62	T3.062316.202527	L16060822-02	18WW03F-061416	40/50	1		06/23/16 20:25
63	T3.062316.202923	L16060822-03	18CPTMW04SW-061416	40/50	1		06/23/16 20:29
64	T3.062316.203318	L16060823-02	126F-061416	40/50	1		06/23/16 20:33
65	T3.062316.203719	L16060823-03	C08-061416	40/50	1		06/23/16 20:37
66	T3.062316.204123	L16060823-04	C03-061416	40/50	1		06/23/16 20:41
67	T3.062316.204516	L16060883-02	WC02	40/50	1		06/23/16 20:45
68	T3.062316.204910	WG574093-22	CCV		1		06/23/16 20:49

Page: 2 Approved: June 26, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062316T3.2
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,573749,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.062316.205247	WG574093-23	CCB		1		06/23/16 20:52
70	T3.062316.205645	L16060884-01	NI CAKE	5/50	1		06/23/16 20:56
71	T3.062316.210040	L16060896-01	A08-MW02-Y1S2	40/50	1		06/23/16 21:00
72	T3.062316.210433	L16060896-02	A08-MW03-Y1S2	40/50	1		06/23/16 21:04
73	T3.062316.210831	L16060896-03	A08-MW10-Y1S2	40/50	1		06/23/16 21:08
74	T3.062316.211228	L16060896-04	FD-01	40/50	1		06/23/16 21:12
75	T3.062316.211622	L16060896-05	FD-03	40/50	1		06/23/16 21:16
76	T3.062316.212019	L16060896-07	RB01-06-15-16	40/50	1		06/23/16 21:20
77	T3.062316.212418	L16060822-02	18WW03F-061416		20		06/23/16 21:24
78	T3.062316.212816	L16060822-03	18CPTMW04SW-061416	40/50	20		06/23/16 21:28
79	T3.062316.213215	L16060823-02	126F-061416	40/50	20		06/23/16 21:32
80	T3.062316.213611	WG574093-24	CCV		1		06/23/16 21:36
81	T3.062316.213949	WG574093-25	CCB		1		06/23/16 21:39
82	T3.062316.214348	L16060823-03	C08-061416	40/50	20		06/23/16 21:43
83	T3.062316.214744	L16060823-04	C03-061416	40/50	20		06/23/16 21:47
84	T3.062316.215141	L16060883-02	WC02	40/50	20		06/23/16 21:51
85	T3.062316.215540	L16060896-01	A08-MW02-Y1S2	40/50	20		06/23/16 21:55
86	T3.062316.215938	L16060896-02	A08-MW03-Y1S2	40/50	20		06/23/16 21:59
87	T3.062316.220337	L16060896-03	A08-MW10-Y1S2	40/50	20		06/23/16 22:03
88	T3.062316.220736	L16060896-04	FD-01	40/50	20		06/23/16 22:07
89	T3.062316.221134	L16060896-05	FD-03	40/50	20		06/23/16 22:11
90	T3.062316.221533	L16060896-07	RB01-06-15-16	40/50	20		06/23/16 22:15
91	T3.062316.221931	WG574093-26	CCV		1		06/23/16 22:19
92	T3.062316.222310	WG574093-27	CCB		1		06/23/16 22:23
93	T3.062316.222708	WG574093-28	Low Level Continuing Calibra		1		06/23/16 22:27
94	T3.062316.223105	WG574093-29	Low Level Continuing Calibra		1		06/23/16 22:31
95	T3.062316.223500	WG573562-02	Method/Prep Blank	40/50	1		06/23/16 22:35
96	T3.062316.223859	WG573562-03	Laboratory Control S	40/50	1		06/23/16 22:38
97	T3.062316.224239	WG573353-01	Fluid Blank 1		1		06/23/16 22:42
98	T3.062316.224638	WG573353-02	Fluid Blank 2		1		06/23/16 22:46
99	T3.062316.225037	WG573562-01	Reference Sample		1	L16060974-01	06/23/16 22:50
100	T3.062316.225432	WG573562-04	Matrix Spike	40/50	1	L16060974-01	06/23/16 22:54
101	T3.062316.225812	WG573562-05	Matrix Spike Duplica	40/50	1	L16060974-01	06/23/16 22:58
102	T3.062316.230151	L16060903-01	LF30/31-EWTS-EFFLUENT-1	40/50	1		06/23/16 23:01

Page: 3 Approved: June 26, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062316T3.2

Analyst1: JYH Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 573973,573749,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T3.062316.230549	WG573749-03	Post Digestion Spike		1	L16060903-01	06/23/16 23:05
104	T3.062316.230928	WG573749-04	Serial Dilution		5	L16060903-01	06/23/16 23:09
105	T3.062316.231327	WG574093-30	CCV		1		06/23/16 23:13
106	T3.062316.231705	WG574093-31	CCB		1		06/23/16 23:17
107	T3.062316.232104	L16060903-02	LF30/31-EWTS-MH3-15JUNI	40/50	1		06/23/16 23:21
108	T3.062316.232500	L16060903-03	LF30/31-EWTS-MH2-15JUNI	40/50	1		06/23/16 23:25
109	T3.062316.232857	L16060903-04	LF30/31-EWTS-MH1-15JUNI	40/50	1		06/23/16 23:28
110	T3.062316.233254	L16060903-05	LF30/31-EWTS-INFLUENT-1	40/50	1		06/23/16 23:32
111	T3.062316.233650	L16060924-01	K6F0495-01	5/50	1		06/23/16 23:36
112	T3.062316.234055	DI7	DI7		20		06/23/16 23:40
113	T3.062316.234454	DI8	DI8		20		06/23/16 23:44
114	T3.062316.234853	DI9	DI9		20		06/23/16 23:48
115	T3.062316.235252	WG574093-32	CCV		1		06/23/16 23:52
116	T3.062316.235630	WG574093-33	CCB		1		06/23/16 23:56
117	T3.062416.000030	WG574093-34	ICSA		1		06/24/16 00:00
118	T3.062416.000429	WG574093-35	ICSAB		1		06/24/16 00:04
119	T3.062416.000822	WG574093-36	CCV		1		06/24/16 00:08
120	T3.062416.001200	WG574093-37	CCB		1		06/24/16 00:12
121	T3.062416.001600	WG574093-38	Low Level Continuing Calibra		1		06/24/16 00:16
122	T3.062416.001957	WG574093-39	Low Level Continuing Calibra		1		06/24/16 00:19

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Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062516T3.1R.TXT

Analyst1: JYH Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 573973,574055,574076,574216,574215,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.062516.122104	WG574249-01	Calibration Point		1		06/25/16 12:21
2	T3.062516.122502	WG574249-02	Calibration Point		1		06/25/16 12:25
3	T3.062516.122900	WG574249-03	Calibration Point		1		06/25/16 12:29
4	T3.062516.123256	WG574249-04	Calibration Point		1		06/25/16 12:32
5	T3.062516.123634	WG574249-05	Calibration Point		1		06/25/16 12:36
6	T3.062516.124009	WG574249-06	Initial Calibration Verification		1		06/25/16 12:40
7	T3.062516.124348	WG574249-07	Initial Calib Blank		1		06/25/16 12:43
8	T3.062516.124745	WG574249-08	Low Level Initial Calibration V		1		06/25/16 12:47
9	T3.062516.125139	WG574249-09	Low Level Initial Calibration V		1		06/25/16 12:51
10	T3.062516.125529	WG574249-10	Interference Check		1		06/25/16 12:55
11	T3.062516.125921	WG574249-11	Interference Check		1		06/25/16 12:59
12	T3.062516.130304	WG574249-12	CCV		1		06/25/16 13:03
13	T3.062516.130641	WG574249-13	CCB		1		06/25/16 13:06
14	T3.062516.131816	WG573190-03	Method/Prep Blank	40/50	1		06/25/16 13:18
15	T3.062516.132214	WG573190-04	Laboratory Control S	40/50	1		06/25/16 13:22
16	T3.062516.132554	WG573190-02	Reference Sample		1	L16060808-01	06/25/16 13:25
17	T3.062516.132950	WG573190-07	Matrix Spike	40/50	1	L16060808-01	06/25/16 13:29
18	T3.062516.133327	WG573190-08	Matrix Spike Duplica	40/50	1	L16060808-01	06/25/16 13:33
19	T3.062516.133704	L16060822-03	18CPTMW04SW-061416	40/50	1		06/25/16 13:37
20	T3.062516.134058	L16060822-02	18WW03F-061416	40/50	1		06/25/16 13:40
21	T3.062516.134452	WG573973-03	Post Digestion Spike		1	L16060822-02	06/25/16 13:44
22	T3.062516.134830	WG573973-04	Serial Dilution		5	L16060822-02	06/25/16 13:48
23	T3.062516.135227	WG573973-04	Serial Dilution		25	L16060822-02	06/25/16 13:52
24	T3.062516.135622	WG574249-14	CCV		1		06/25/16 13:56
25	T3.062516.140001	WG574249-15	CCB		1		06/25/16 14:00
26	T3.062516.140359	L16060823-02	126F-061416	40/50	1		06/25/16 14:03
27	T3.062516.140759	L16060823-03	C08-061416	40/50	1		06/25/16 14:07
28	T3.062516.141200	L16060823-04	C03-061416	40/50	1		06/25/16 14:12
29	T3.062516.141551	L16061148-01	DP005SW0513-007	40/50	1		06/25/16 14:15
30	T3.062516.141945	L16061148-02	DP005SW0514-007	40/50	1		06/25/16 14:19
31	T3.062516.142340	L16061150-01	SS007SW0709-007	40/50	1		06/25/16 14:23
32	T3.062516.142732	L16061150-02	SS007SW0710-007	40/50	1		06/25/16 14:27
33	T3.062516.143125	L16061151-02	LF003SW0311-007 DUP	40/50	1		06/25/16 14:31
34	T3.062516.143519	L16061151-05	LF003SW0312-007	40/50	1		06/25/16 14:35

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Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062516T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,574055,574076,574216,574215,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.062516.143913	WG573707-02	Reference Sample		1	L16061154-01	06/25/16 14:39
36	T3.062516.144313	WG574249-16	CCV		1		06/25/16 14:43
37	T3.062516.144639	WG574249-17	CCB		1		06/25/16 14:46
38	T3.062516.145037	WG573707-07	Matrix Spike	40/50	1	L16061154-01	06/25/16 14:50
39	T3.062516.145424	WG573707-08	Matrix Spike Duplica	40/50	1	L16061154-01	06/25/16 14:54
40	T3.062516.145809	L16061154-04	FQC-RB06201601-CB	40/50	1		06/25/16 14:58
41	T3.062516.150207	L16061155-01	ST008MW0812-007	40/50	1		06/25/16 15:02
42	T3.062516.150559	L16061155-02	ST008MW0809-007	40/50	1		06/25/16 15:05
43	T3.062516.150954	L16061155-03	ST008MW0816-007	40/50	1		06/25/16 15:09
44	T3.062516.151348	L16061178-01	2016PRE-7217NEWENGLAN	40/50	1		06/25/16 15:13
45	T3.062516.151743	L16061227-01	18WW22-062116	40/50	20		06/25/16 15:17
46	T3.062516.152125	L16061227-06	18CPTMW18-062116	40/50	20		06/25/16 15:21
47	T3.062516.152518	WG573994-01	Reference Sample		20	L16061279-02	06/25/16 15:25
48	T3.062516.152911	WG574249-18	CCV		1		06/25/16 15:29
49	T3.062516.153248	WG574249-19	CCB		1		06/25/16 15:32
50	T3.062516.153646	WG573994-04	Matrix Spike	40/50	20	L16061279-02	06/25/16 15:36
51	T3.062516.154039	WG573994-05	Matrix Spike Duplica	40/50	20	L16061279-02	06/25/16 15:40
52	T3.062516.154432	L16061289-01	MW21-062216	40/50	20		06/25/16 15:44
53	T3.062516.154826	L16061129-01	MW-22-002		20		06/25/16 15:48
54	T3.062516.155222	L16061129-02	MW-22-010		20		06/25/16 15:52
55	T3.062516.155620	L16061129-03	MW-22-007		20		06/25/16 15:56
56	T3.062516.160018	L16061129-04	FD061716		20		06/25/16 16:00
57	T3.062516.160415	L16061272-01	SS007MW0B18-007		20		06/25/16 16:04
58	T3.062516.160812	L16061272-02	SS007MWN752-007		20		06/25/16 16:08
59	T3.062516.161208	L16061279-01	XU936TW007A	40/50	20		06/25/16 16:12
60	T3.062516.161603	WG574249-20	CCV		1		06/25/16 16:16
61	T3.062516.161940	WG574249-21	CCB		1		06/25/16 16:19
62	T3.062516.162338	L16061279-05	XU936TW019A	40/50	20		06/25/16 16:23
63	T3.062516.162733	L16061148-01	DP005SW0513-007		20		06/25/16 16:27
64	T3.062516.163130	L16061148-02	DP005SW0514-007		20		06/25/16 16:31
65	T3.062516.163527	L16061150-01	SS007SW0709-007		20		06/25/16 16:35
66	T3.062516.163912	L16061151-02	LF003SW0311-007 DUP		20		06/25/16 16:39
67	T3.062516.164310	L16061151-05	LF003SW0312-007		20		06/25/16 16:43
68	T3.062516.164706	WG573707-02	Reference Sample		20	L16061154-01	06/25/16 16:47

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Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062516T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,574055,574076,574216,574215,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.062516.165101	WG573707-07	Matrix Spike	40/50	20	L16061154-01	06/25/16 16:51
70	T3.062516.165454	L16061279-08	XU936TW011MSD	40/50	20	WG573707-08	06/25/16 16:54
71	T3.062516.165848	WG574249-22	CCV		1		06/25/16 16:58
72	T3.062516.170225	WG574249-23	CCB		1		06/25/16 17:02
73	T3.062516.170624	L16061155-01	ST008MW0812-007		20		06/25/16 17:06
74	T3.062516.171010	L16061155-02	ST008MW0809-007		20		06/25/16 17:10
75	T3.062516.171407	L16061155-03	ST008MW0816-007		20		06/25/16 17:14
76	T3.062516.171804	WG574249-24	CCV		1		06/25/16 17:18
77	T3.062516.172142	WG574249-25	CCB		1		06/25/16 17:21
78	T3.062516.172540	WG574249-26	Low Level Continuing Calibra		1		06/25/16 17:25
79	T3.062516.172933	WG573530-03	Method/Prep Blank	40/50	1		06/25/16 17:29
80	T3.062516.173331	WG573530-04	Laboratory Control S	40/50	1		06/25/16 17:33
81	T3.062516.173711	WG573530-05	Filter Blank		1		06/25/16 17:37
82	T3.062516.174110	L16060986-02	MW-07-04	40/50	1		06/25/16 17:41
83	T3.062516.174505	L16060986-04	MW-01-10	40/50	1		06/25/16 17:45
84	T3.062516.174856	L16060986-06	MW-03-12	40/50	1		06/25/16 17:48
85	T3.062516.175251	L16060986-08	MW-01-07	40/50	1		06/25/16 17:52
86	T3.062516.175646	WG574216-01	Post Digestion Spike		1	L16060986-08	06/25/16 17:56
87	T3.062516.180025	WG574216-02	Serial Dilution		5	L16060986-08	06/25/16 18:00
88	T3.062516.180418	WG574216-02	Serial Dilution		25	L16060986-08	06/25/16 18:04
89	T3.062516.180815	WG574249-27	CCV		1		06/25/16 18:08
90	T3.062516.181152	WG574249-28	CCB		1		06/25/16 18:11
91	T3.062516.181548	L16060986-10	MW-03-11		1		06/25/16 18:15
92	T3.062516.181942	L16060986-12	MW-01-01		1		06/25/16 18:19
93	T3.062516.182332	L16060986-14	MW-03-09		1		06/25/16 18:23
94	T3.062516.182724	L16060986-16	MW-01-08		1		06/25/16 18:27
95	T3.062516.183114	L16060986-18	MW-03-06		1		06/25/16 18:31
96	T3.062516.183511	L16060986-20	MW-03-05		1		06/25/16 18:35
97	T3.062516.183905	WG573530-01	Reference Sample		1	L16060986-22	06/25/16 18:39
98	T3.062516.184258	WG573530-02	Reference Sample		1	L16060986-24	06/25/16 18:42
99	T3.062516.184649	L16060986-26	MW-01-02		1		06/25/16 18:46
100	T3.062516.185044	L16060986-28	DUP 1		1		06/25/16 18:50
101	T3.062516.185437	WG574249-29	CCV		1		06/25/16 18:54
102	T3.062516.185815	WG574249-30	CCB		1		06/25/16 18:58

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062516T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,574055,574076,574216,574215,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T3.062516.190211	L16060986-30	DUP 2		1		06/25/16 19:02
104	T3.062516.190604	WG573530-06	Matrix Spike		1	L16060986-22	06/25/16 19:06
105	T3.062516.190942	WG573530-07	Matrix Spike Duplica		1	L16060986-22	06/25/16 19:09
106	T3.062516.191321	WG573530-08	Matrix Spike		1	L16060986-24	06/25/16 19:13
107	T3.062516.191658	WG573530-09	Matrix Spike Duplica		1	L16060986-24	06/25/16 19:16
108	T3.062516.192035	L16060986-40	EQUIP BLANK 1		1		06/25/16 19:20
109	T3.062516.192431	L16060986-42	EQUIP BLANK 2		1		06/25/16 19:24
110	T3.062516.192827	WG574249-31	CCV		1		06/25/16 19:28
111	T3.062516.193205	WG574249-32	CCB		1		06/25/16 19:32
112	T3.062516.193603	WG573544-03	Method/Prep Blank	40/50	1		06/25/16 19:36
113	T3.062516.193959	WG573544-04	Laboratory Control S	40/50	1		06/25/16 19:39
114	T3.062516.194338	L16060907-23	MW36-061516	40/50	1		06/25/16 19:43
115	T3.062516.194731	L16060986-01	MW-07-04	40/50	1		06/25/16 19:47
116	T3.062516.195124	L16060986-03	MW-01-10	40/50	1		06/25/16 19:51
117	T3.062516.195515	L16060986-05	MW-03-12	40/50	1		06/25/16 19:55
118	T3.062516.195905	L16060986-07	MW-01-07	40/50	1		06/25/16 19:59
119	T3.062516.200300	WG574215-01	Post Digestion Spike		1	L16060986-07	06/25/16 20:03
120	T3.062516.200637	WG574215-02	Serial Dilution		5	L16060986-07	06/25/16 20:06
121	T3.062516.201030	WG574215-02	Serial Dilution		25	L16060986-07	06/25/16 20:10
122	T3.062516.201426	WG574249-33	CCV		1		06/25/16 20:14
123	T3.062516.201803	WG574249-34	CCB		1		06/25/16 20:18
124	T3.062516.202200	L16060986-09	MW-03-11	40/50	1		06/25/16 20:22
125	T3.062516.202553	L16060986-11	MW-01-01	40/50	1		06/25/16 20:25
126	T3.062516.202942	L16060986-13	MW-03-09	40/50	1		06/25/16 20:29
127	T3.062516.203332	L16060986-15	MW-01-08	40/50	1		06/25/16 20:33
128	T3.062516.203723	L16060986-17	MW-03-06	40/50	1		06/25/16 20:37
129	T3.062516.204116	L16060986-19	MW-03-05	40/50	1		06/25/16 20:41
130	T3.062516.204510	WG573544-01	Reference Sample		1	L16060986-21	06/25/16 20:45
131	T3.062516.204903	WG573544-02	Reference Sample		1	L16060986-23	06/25/16 20:49
132	T3.062516.205255	L16060986-25	MW-01-02	40/50	1		06/25/16 20:52
133	T3.062516.205646	L16060986-27	DUP 1	40/50	1		06/25/16 20:56
134	T3.062516.210036	WG574249-35	CCV		1		06/25/16 21:00
135	T3.062516.210414	WG574249-36	CCB		1		06/25/16 21:04
136	T3.062516.210812	L16060986-29	DUP 2	40/50	1		06/25/16 21:08

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Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062516T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,574055,574076,574216,574215,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	T3.062516.211202	WG573544-05	Matrix Spike	40/50	1	L16060986-21	06/25/16 21:12
138	T3.062516.211541	WG573544-06	Matrix Spike Duplica	40/50	1	L16060986-21	06/25/16 21:15
139	T3.062516.211919	WG573544-07	Matrix Spike	40/50	1	L16060986-23	06/25/16 21:19
140	T3.062516.212256	WG573544-08	Matrix Spike Duplica	40/50	1	L16060986-23	06/25/16 21:22
141	T3.062516.212633	L16060986-39	EQUIP BLANK 1	40/50	1		06/25/16 21:26
142	T3.062516.213031	L16060986-41	EQUIP BLANK 2	40/50	1		06/25/16 21:30
143	T3.062516.213430	WG574249-37	CCV		1		06/25/16 21:34
144	T3.062516.213807	WG574249-38	CCB		1		06/25/16 21:38
145	T3.062516.214203	WG573102-02	Method/Prep Blank	40/50	1		06/25/16 21:42
146	T3.062516.214559	WG573102-03	Laboratory Control S	40/50	1		06/25/16 21:45
147	T3.062516.214937	WG573102-04	Filter Blank		1		06/25/16 21:49
148	T3.062516.215335	WG573102-01	Reference Sample		1	L16060787-09	06/25/16 21:53
149	T3.062516.215728	WG573102-05	Matrix Spike	40/50	1	L16060787-09	06/25/16 21:57
150	T3.062516.220106	WG573102-06	Matrix Spike Duplica	40/50	1	L16060787-09	06/25/16 22:01
151	T3.062516.220444	L16060787-01	EB04	40/50	1		06/25/16 22:04
152	T3.062516.220842	WG573561-03	Post Digestion Spike		1	L16060787-01	06/25/16 22:08
153	T3.062516.221220	WG573561-04	Serial Dilution		5	L16060787-01	06/25/16 22:12
154	T3.062516.221616	WG573561-04	Serial Dilution		25	L16060787-01	06/25/16 22:16
155	T3.062516.222012	WG574249-39	CCV		1		06/25/16 22:20
156	T3.062516.222349	WG574249-40	CCB		1		06/25/16 22:23
157	T3.062516.222746	L16060787-10	U517TW006C	40/50	1		06/25/16 22:27
158	T3.062516.223140	L16060787-18	U517TW008A	40/50	1		06/25/16 22:31
159	T3.062516.223534	L16060787-19	EB05	40/50	1		06/25/16 22:35
160	T3.062516.223931	WG573102-01	Reference Sample		20	L16060787-09	06/25/16 22:39
161	T3.062516.224326	WG573102-05	Matrix Spike	40/50	20	L16060787-09	06/25/16 22:43
162	T3.062516.224719	WG573102-06	Matrix Spike Duplica	40/50	20	L16060787-09	06/25/16 22:47
163	T3.062516.225113	WG574249-41	CCV		1		06/25/16 22:51
164	T3.062516.225451	WG574249-42	CCB		1		06/25/16 22:54
165	T3.062516.225848	WG573484-02	Method/Prep Blank	40/50	1		06/25/16 22:58
166	T3.062516.230246	WG573484-03	Laboratory Control S	40/50	1		06/25/16 23:02
167	T3.062516.230624	WG573484-01	Reference Sample		1	L16060764-04	06/25/16 23:06
168	T3.062516.231017	WG573484-04	Matrix Spike	40/50	1	L16060764-04	06/25/16 23:10
169	T3.062516.231356	WG573484-05	Matrix Spike Duplica	40/50	1	L16060764-04	06/25/16 23:13
170	T3.062516.231733	L16060991-02	MW31-061616	40/50	10		06/25/16 23:17

Page: 5 Approved: June 27, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062516T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,574055,574076,574216,574215,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
171	T3.062516.232126	WG573952-03	Post Digestion Spike		10	L16060991-02	06/25/16 23:21
172	T3.062516.232503	WG573952-04	Serial Dilution		50	L16060991-02	06/25/16 23:25
173	T3.062516.232900	L16060995-01	UNTREATED	40/50	1000		06/25/16 23:29
174	T3.062516.233253	L16060995-02	AFTER	40/50	1000		06/25/16 23:32
175	T3.062516.233647	WG574249-43	CCV		1		06/25/16 23:36
176	T3.062516.234025	WG574249-44	CCB		1		06/25/16 23:40
177	T3.062516.234420	WG574249-45	Interference Check		1		06/25/16 23:44
178	T3.062516.234809	WG574249-46	Interference Check		1		06/25/16 23:48
179	T3.062516.235152	WG574249-47	CCV		1		06/25/16 23:51
180	T3.062516.235530	WG574249-48	CCB		1		06/25/16 23:55
181	T3.062516.235927	WG574249-49	Low Level Continuing Calibra		1		06/25/16 23:59

Comments

Seq.	Rerun	Dil.	Reason	Analytes
69				
Seq. 69-70: wrong WG numbers JYH				

Page: 6 Approved: June 27, 2016

Kim H. Rhoden

Microbac Laboratories Inc.

Data Checklist

Date: 23-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 574093
Runlog ID: 75909
Analytical Workgroups: 573973,573749,573952

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	764,808
Level 4	1098,779,822,823,883,896,903,924
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer:

Secondary Reviewer:
26-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-26-2016 07:48:33

Microbac Laboratories Inc.

Data Checklist

Date: 25-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 574249
Runlog ID: 75923
Analytical Workgroups: 573973,574055,574076,574216,574215,573952

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1178
Level 4	822,823,1148,1150,1151,1154,1155
	1227,1279,1289,986,787,991,995
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer: Secondary Reviewer: 27-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-27-2016 14:55:21

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010C

AAB#: WG573973

Login Number: L16060822

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW03F-061416	02	06/14/16					06/17/2016	3.2	180		06/25/16	11.3	180	
18WW03F-061416	02	06/14/16					06/17/2016	3.2	180		06/23/16	9.5	180	
18CPTMW04SW-061416	03	06/14/16					06/17/2016	3.1	180		06/23/16	9.5	180	
18CPTMW04SW-061416	03	06/14/16					06/17/2016	3.1	180		06/25/16	11.2	180	
18CPTMW04SW-061416	03	06/14/16					06/17/2016	3.1	180		06/23/16	9.5	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4823894
Report generated 06/27/2016 10:55

METHOD BLANK SUMMARY

Login Number: L16060822
Blank File ID: T3.062316.192408
Prep Date: 06/17/16 12:25
Analyzed Date: 06/23/16 19:24
Analyst: JYH

Work Group: WG573973
Blank Sample ID: WG573190-03
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573190-04	T3.062316.192807	06/23/16 19:28	01
18WW03F-061416	L16060822-02	T3.062316.202527	06/23/16 20:25	01
18CPTMW04SW-061416	L16060822-03	T3.062316.202923	06/23/16 20:29	01
18CPTMW04SW-061416	L16060822-03	T3.062316.212816	06/23/16 21:28	DL01
LCS	WG573190-04	T3.062516.132214	06/25/16 13:22	02
18CPTMW04SW-061416	L16060822-03	T3.062516.133704	06/25/16 13:37	02
18WW03F-061416	L16060822-02	T3.062516.134058	06/25/16 13:40	02

Report Name: BLANK_SUMMARY
PDF File ID: 4823895
Report generated 06/27/2016 10:55

METHOD BLANK SUMMARY

Login Number: L16060822
Blank File ID: T3.062516.131816
Prep Date: 06/17/16 12:25
Analyzed Date: 06/25/16 13:18
Analyst: JYH

Work Group: WG573973
Blank Sample ID: WG573190-03
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573190-04	T3.062316.192807	06/23/16 19:28	01
18WW03F-061416	L16060822-02	T3.062316.202527	06/23/16 20:25	01
18CPTMW04SW-061416	L16060822-03	T3.062316.202923	06/23/16 20:29	01
18CPTMW04SW-061416	L16060822-03	T3.062316.212816	06/23/16 21:28	DL01
LCS	WG573190-04	T3.062516.132214	06/25/16 13:22	02
18CPTMW04SW-061416	L16060822-03	T3.062516.133704	06/25/16 13:37	02
18WW03F-061416	L16060822-02	T3.062516.134058	06/25/16 13:40	02

Report Name: BLANK_SUMMARY
PDF File ID: 4823895
Report generated 06/27/2016 10:55

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060822 Prep Date: 06/17/16 12:25 Sample ID: WG573190-03
Instrument ID: ICP-THERMO3 Run Date: 06/23/16 19:24 Prep Method: 3015
File ID: T3.062316.192408 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG573973 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-23-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Aluminum, Total	0.0500	0.200	0.0500	1	U
Beryllium, Total	0.00500	0.0200	0.00500	1	U
Calcium, Total	0.125	0.500	0.125	1	U
Iron, Total	0.0500	0.200	0.0500	1	U
Magnesium, Total	0.250	1.00	0.250	1	U
Potassium, Total	0.500	2.00	0.500	1	U
Sodium, Total	0.250	1.00	0.412	1	J

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4823896
07-JUL-2016 15:12

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060822 Prep Date: 06/17/16 12:25 Sample ID: WG573190-03
Instrument ID: ICP-THERMO3 Run Date: 06/25/16 13:18 Prep Method: 3015
File ID: T3.062516.131816 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG573973 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-25-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Selenium, Total	0.00500	0.0200	0.00784	1	J

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4823896
07-JUL-2016 15:12

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060822 Run Date: 06/23/2016 Sample ID: WG573190-04
Instrument ID: ICP-THERMO3 Run Time: 19:28 Prep Method: 3015
File ID: T3.062316.192807 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG573973 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76576 Cal ID: ICP-TH-23-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Aluminum, Total	6.25	6.24	99.9	80 - 120	
Beryllium, Total	0.0313	0.0311	99.6	80 - 120	
Calcium, Total	6.25	6.64	106	80 - 120	
Iron, Total	2.50	2.60	104	80 - 120	
Magnesium, Total	6.25	6.49	104	80 - 120	
Potassium, Total	31.3	32.2	103	80 - 120	
Sodium, Total	31.3	32.4	104	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4823897
Report generated: 07/07/2016 15:12

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060822 Run Date: 06/25/2016 Sample ID: WG573190-04
Instrument ID: ICP-THERMO3 Run Time: 13:22 Prep Method: 3015
File ID: T3.062516.132214 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG573973 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76576 Cal ID: ICP-TH-25-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Selenium, Total	0.250	0.233	93.3	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4823897
Report generated: 07/07/2016 15:12

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060822 Cal ID: ICP-THERMO3 - Worknum: WG573973
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG573190-01 File ID: T3.062316.193546 Dil: 1 Matrix: WATER
Sample ID: WG573190-05 MS File ID: T3.062316.193944 Dil: 1 Units: mg/L
Sample ID: WG573190-06 MSD File ID: T3.062316.194323 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Aluminum	1.05	50.0	52.1	102	50.0	51.8	102	0.579	80 - 120	20	
Beryllium	ND	0.250	0.249	99.4	0.250	0.249	99.5	0.121	80 - 120	20	
Calcium	62.2	50.0	96.9	69.5	50.0	94.6	64.9	2.38	80 - 120	20	*
Iron	0.661	20.0	22.7	110	20.0	21.5	104	5.13	80 - 120	20	
Magnesium	19.2	50.0	60.6	82.9	50.0	61.7	85.1	1.81	80 - 120	20	
Potassium	8.32	250	263	102	250	260	101	1.02	80 - 120	20	
Selenium	ND	2.00	1.99	99.7	2.00	1.93	96.6	3.21	80 - 120	20	
Sodium	1470	250	1750	113	250	1670	81.3	4.64	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4823898
Report generated 07/07/2016 15:12

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060822 Cal ID: ICP-THERMO3 - Worknum: WG573973
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG573190-02 File ID: T3.062316.201412 Dil: 1 Matrix: WATER
Sample ID: WG573190-07 MS File ID: T3.062316.201808 Dil: 1 Units: mg/L
Sample ID: WG573190-08 MSD File ID: T3.062316.202147 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Aluminum	ND	6.25	6.24	99.9	6.25	6.28	101	0.589	80 - 120	20	
Beryllium	ND	0.0313	0.0310	99.3	0.0313	0.0314	100	1.16	80 - 120	20	
Calcium	66.5	6.25	71.3	76.5	6.25	73.1	106	2.53	80 - 120	20	*
Iron	0.336	2.50	2.91	103	2.50	2.93	104	0.788	80 - 120	20	
Magnesium	18.8	6.25	25.0	99.9	6.25	25.4	106	1.47	80 - 120	20	
Potassium	1.76	31.3	33.3	101	31.3	33.9	103	1.61	80 - 120	20	
Sodium	19.9	31.3	51.5	101	31.3	52.3	104	1.67	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4823898
Report generated 07/07/2016 15:12

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060822 Cal ID: ICP-THERMO3 - Worknum: WG573973
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG573190-02 File ID: T3.062516.132554 Dil: 1 Matrix: WATER
Sample ID: WG573190-07 MS File ID: T3.062516.132950 Dil: 1 Units: mg/L
Sample ID: WG573190-08 MSD File ID: T3.062516.133327 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Selenium	ND	0.250	0.241	96.4	0.250	0.240	96.0	0.437	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4823898
Report generated 07/07/2016 15:12

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16060822 **Worknum:** WG573973
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG573973-04 **File ID:** T3.062516.134830 **Dil:** 5 **Units:** ug/L
Sample: L16060822-02 **File ID:** T3.062516.134058 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	7.00		ND	U		
Beryllium	0.100		0.600		500.00	E
Calcium	6220		5990		3.69	
Iron	2080		2120		1.93	
Magnesium	4400		4250		3.40	
Potassium	1500		1580		5.21	
Selenium	4.52		ND	U		
Sodium	83200		84000		0.89	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4823892
06/27/2016 10:55

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16060822 **Worknum:** WG573973
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG573973-02 **File ID:** T3.062316.195438 **Dil:** 5 **Units:** ug/L
Sample: L16060779-11 **File ID:** T3.062316.194701 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	173		160		7.72	
Beryllium	0.0300	X	0.100	X	233.00	
Calcium	4280		3960		7.51	
Iron	98.8		139		40.50	E
Magnesium	726		289		60.30	E
Potassium	444		612		37.80	E
Selenium	ND	U	ND	U		
Sodium	142000		130000		8.61	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4823892
06/27/2016 10:55

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060822 **Worknum:** WG573973
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG573973-01 **File ID:** T3.062316.195059 **Dil:** 1 **Units:** ug/L
Sample ID: L16060779-11 **File ID:** T3.062316.194701 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	5140		173		5000	99.6	75 - 125	
BERYLLIUM	25.0		0	U	25	99.8	75 - 125	
CALCIUM	8980		4280		5000	102.5	75 - 125	
IRON	2120		98.8	F	2000	101.7	75 - 125	
MAGNESIUM	5660		726	F	5000	100.1	75 - 125	
POTASSIUM	25600		444	F	25000	100.7	75 - 125	
SELENIUM	192		0	U	200	96.2	75 - 125	
SODIUM	153000		142000		25000	101.9	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4823893
Report generated: 06/27/2016 10:55

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060822 **Worknum:** WG573973
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG573973-03 **File ID:** T3.062516.134452 **Dil:** 1 **Units:** ug/L
Sample ID: L16060822-02 **File ID:** T3.062516.134058 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	4880		0	U	5000	97.5	75 - 125	
BERYLLIUM	24.3		0	U	25	97.1	75 - 125	
CALCIUM	10600		6220		5000	101.0	75 - 125	
IRON	3850		2080		2000	99.0	75 - 125	
MAGNESIUM	8760		4400		5000	96.0	75 - 125	
POTASSIUM	25800		1500	F	25000	97.9	75 - 125	
SELENIUM	192		4.52	F	200	94.2	75 - 125	
SODIUM	100000		83200		25000	100.3	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4823893
Report generated: 06/27/2016 10:55

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16060822	Workgroup (AAB#):	WG573973
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG574093	Initial Calibration Date:	23-JUN-2016 16:45

	WG574093-01		WG574093-02		WG574093-03		WG574093-04		WG574093-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.00129	.1	0.00207	.2	0.00279	10	0.0950	20	0.188	.999993	
BERYLLIUM	0	0.000930	.0005	0.00138	.001	0.00179	.05	0.0552	.1	0.108	.99998	
CALCIUM	0	0.000280	.1	0.00433	.2	0.00735	10	0.497	20	0.993	.999968	
IRON	0	-0.000490	.04	0.000710	.08	0.000970	4	0.0998	8	0.200	.999657	
MAGNESIUM	0	-0.000700	NA	NA	.2	0.000790	10	0.0960	20	0.193	.999996	
POTASSIUM	0	-0.0106	.5	0.0183	1	0.0487	50	3.45	100	6.93	.999984	
SELENIUM	0	-0.000250	NA	NA	.008	-0.000140	.4	0.00687	.8	0.0139	.999993	
SODIUM	0	-0.0645	.5	0.0202	1	0.0962	50	9.63	100	19.4	.999985	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4823901
Report generated: 27-JUN-2016 10:56

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16060822	Workgroup (AAB#):	WG573973
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG574249	Initial Calibration Date:	25-JUN-2016 12:36

	WG574249-01		WG574249-02		WG574249-03		WG574249-04		WG574249-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000800	.1	0.00148	.2	0.00220	10	0.0828	20	0.162	.99995	
BERYLLIUM	0	0.000480	.0005	0.000970	.001	0.00139	.05	0.0482	.1	0.0948	.999766	
CALCIUM	0	0.00288	.1	0.00582	.2	0.00931	10	0.466	20	0.917	.99989	
IRON	0	-0.000710	.04	0.000330	.08	0.00148	4	0.0965	8	0.191	.99933	
MAGNESIUM	0	-0.000260	NA	NA	.2	0.00109	10	0.0796	20	0.159	.99999	
POTASSIUM	0	-0.00661	.5	0.0195	1	0.0419	50	3.07	100	6.10	.999988	
SELENIUM	0	-0.000510	NA	NA	.008	-0.000340	.4	0.00649	.8	0.0134	.999238	
SODIUM	0	-0.0478	.5	0.0267	1	0.108	50	9.20	100	18.4	.99999	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4823901
Report generated: 27-JUN-2016 10:56

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060822
Run Date: 06/23/2016
Sample ID: WG574093-07
Instrument ID: ICP-THERMO3
Run Time: 16:52
Method: 6010C
File ID: T3.062316.165229
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-THERI - 23-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	-.00449	F
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4823903
Report generated 06/27/2016 10:56

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060822
Run Date: 06/25/2016
Sample ID: WG574249-07
Instrument ID: ICP-THERMO3
Run Time: 12:43
Method: 6010C
File ID: T3.062516.124348
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-THERI - 25-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	.0087	*
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4823903
Report generated 06/27/2016 10:56

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/23/2016
Sample ID: WG574093-13
Instrument ID: ICP-THERMO3
Run Time: 17:15
Method: 6010C
File ID: T3.062316.171523
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4823906
Report generated 06/27/2016 10:56

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/23/2016
Sample ID: WG574093-19
Instrument ID: ICP-THERMO3
Run Time: 19:20
Method: 6010C
File ID: T3.062316.192008
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.423	F

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4823906
Report generated 06/27/2016 10:56

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/23/2016
Sample ID: WG574093-21
Instrument ID: ICP-THERMO3
Run Time: 20:06
Method: 6010C
File ID: T3.062316.200616
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4823906
Report generated 06/27/2016 10:56

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/23/2016
Sample ID: WG574093-23
Instrument ID: ICP-THERMO3
Run Time: 20:52
Method: 6010C
File ID: T3.062316.205247
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	-0.00415	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4823906
Report generated 06/27/2016 10:56

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/23/2016
Sample ID: WG574093-25
Instrument ID: ICP-THERMO3
Run Time: 21:39
Method: 6010C
File ID: T3.062316.213949
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4823906
Report generated 06/27/2016 10:56

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/25/2016
Sample ID: WG574249-13
Instrument ID: ICP-THERMO3
Run Time: 13:06
Method: 6010C
File ID: T3.062516.130641
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00482	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4823906
Report generated 06/27/2016 10:56

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/25/2016
Sample ID: WG574249-15
Instrument ID: ICP-THERMO3
Run Time: 14:00
Method: 6010C
File ID: T3.062516.140001
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4823906
Report generated 06/27/2016 10:56

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/25/2016
Sample ID: WG574249-44
Instrument ID: ICP-THERMO3
Run Time: 23:40
Method: 6010C
File ID: T3.062516.234025
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4823906
Report generated 06/27/2016 10:56

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/25/2016
Sample ID: WG574249-48
Instrument ID: ICP-THERMO3
Run Time: 23:55
Method: 6010C
File ID: T3.062516.235530
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4823906
Report generated 06/27/2016 10:56

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060822
Run Date: 06/23/2016
Sample ID: WG574093-06
Instrument ID: ICP-THERMO3
Run Time: 16:48
Method: 6010C
File ID: T3.062316.164851
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	10.0	100	90 - 110	
Beryllium		.05	0.0505	101	90 - 110	
Calcium		10	10.0	100	90 - 110	
Iron		4	4.01	100	90 - 110	
Magnesium		10	10.1	101	90 - 110	
Potassium		50	50.2	100	90 - 110	
Selenium		.4	0.399	99.8	90 - 110	
Sodium		50	50.1	100	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4823902
Report generated 06/27/2016 10:56

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060822
Run Date: 06/25/2016
Sample ID: WG574249-06
Instrument ID: ICP-THERMO3
Run Time: 12:40
Method: 6010C
File ID: T3.062516.124009
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 25-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	10.1	101	90 - 110	
Beryllium		.05	0.0504	101	90 - 110	
Calcium		10	10.1	101	90 - 110	
Iron		4	4.05	101	90 - 110	
Magnesium		10	10.1	101	90 - 110	
Potassium		50	50.3	101	90 - 110	
Selenium		.4	0.400	100	90 - 110	
Sodium		50	50.1	100	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4823902
Report generated 06/27/2016 10:56

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822
Run Date: 06/23/2016
Sample ID: WG574093-12
Instrument ID: ICP-THERMO3
Run Time: 17:11
Method: 6010C
File ID: T3.062316.171145
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.1	mg/L	101	90 - 110		
Beryllium		0.0500	0.0502	mg/L	100	90 - 110		
Calcium		10.0	10.1	mg/L	101	90 - 110		
Iron		4.00	4.06	mg/L	102	90 - 110		
Magnesium		10.0	10.2	mg/L	102	90 - 110		
Potassium		50.0	50.0	mg/L	100	90 - 110		
Selenium		0.400	0.397	mg/L	99.3	90 - 110		
Sodium		50.0	49.9	mg/L	99.8	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4823905
Report generated 06/27/2016 10:56

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822
Run Date: 06/23/2016
Sample ID: WG574093-18
Instrument ID: ICP-THERMO3
Run Time: 19:16
Method: 6010C
File ID: T3.062316.191630
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.45	mg/L	94.5	90 - 110		
Beryllium		0.0500	0.0476	mg/L	95.2	90 - 110		
Calcium		10.0	9.56	mg/L	95.6	90 - 110		
Iron		4.00	3.80	mg/L	95.0	90 - 110		
Magnesium		10.0	9.52	mg/L	95.2	90 - 110		
Potassium		50.0	47.8	mg/L	95.7	90 - 110		
Selenium		0.400	0.378	mg/L	94.5	90 - 110		
Sodium		50.0	48.1	mg/L	96.3	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4823905
Report generated 06/27/2016 10:56

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822
Run Date: 06/23/2016
Sample ID: WG574093-20
Instrument ID: ICP-THERMO3
Run Time: 20:02
Method: 6010C
File ID: T3.062316.200238
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.57	mg/L	95.7	90 - 110		
Beryllium		0.0500	0.0483	mg/L	96.5	90 - 110		
Calcium		10.0	9.59	mg/L	95.9	90 - 110		
Iron		4.00	3.86	mg/L	96.5	90 - 110		
Magnesium		10.0	9.65	mg/L	96.5	90 - 110		
Potassium		50.0	48.3	mg/L	96.5	90 - 110		
Selenium		0.400	0.384	mg/L	95.9	90 - 110		
Sodium		50.0	47.9	mg/L	95.9	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4823905
Report generated 06/27/2016 10:56

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822
Run Date: 06/23/2016
Sample ID: WG574093-22
Instrument ID: ICP-THERMO3
Run Time: 20:49
Method: 6010C
File ID: T3.062316.204910
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.91	mg/L	99.1	90 - 110		
Beryllium		0.0500	0.0500	mg/L	99.9	90 - 110		
Calcium		10.0	9.85	mg/L	98.5	90 - 110		
Iron		4.00	3.92	mg/L	98.0	90 - 110		
Magnesium		10.0	9.86	mg/L	98.6	90 - 110		
Potassium		50.0	49.3	mg/L	98.6	90 - 110		
Selenium		0.400	0.405	mg/L	101	90 - 110		
Sodium		50.0	49.2	mg/L	98.4	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4823905
Report generated 06/27/2016 10:56

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822
Run Date: 06/23/2016
Sample ID: WG574093-24
Instrument ID: ICP-THERMO3
Run Time: 21:36
Method: 6010C
File ID: T3.062316.213611
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.40	mg/L	94.0	90 - 110		
Beryllium		0.0500	0.0475	mg/L	95.0	90 - 110		
Calcium		10.0	9.50	mg/L	95.0	90 - 110		
Iron		4.00	3.81	mg/L	95.4	90 - 110		
Magnesium		10.0	9.53	mg/L	95.3	90 - 110		
Potassium		50.0	47.4	mg/L	94.9	90 - 110		
Selenium		0.400	0.380	mg/L	95.0	90 - 110		
Sodium		50.0	47.3	mg/L	94.6	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4823905
Report generated 06/27/2016 10:56

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822
Run Date: 06/25/2016
Sample ID: WG574249-12
Instrument ID: ICP-THERMO3
Run Time: 13:03
Method: 6010C
File ID: T3.062516.130304
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.0	mg/L	100	90 - 110		
Beryllium		0.0500	0.0498	mg/L	99.6	90 - 110		
Calcium		10.0	9.94	mg/L	99.4	90 - 110		
Iron		4.00	4.00	mg/L	99.9	90 - 110		
Magnesium		10.0	9.92	mg/L	99.2	90 - 110		
Potassium		50.0	49.2	mg/L	98.4	90 - 110		
Selenium		0.400	0.405	mg/L	101	90 - 110		
Sodium		50.0	49.3	mg/L	98.6	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4823905
Report generated 06/27/2016 10:56

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822
Run Date: 06/25/2016
Sample ID: WG574249-14
Instrument ID: ICP-THERMO3
Run Time: 13:56
Method: 6010C
File ID: T3.062516.135622
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.88	mg/L	98.8	90 - 110		
Beryllium		0.0500	0.0488	mg/L	97.5	90 - 110		
Calcium		10.0	9.94	mg/L	99.4	90 - 110		
Iron		4.00	3.96	mg/L	98.9	90 - 110		
Magnesium		10.0	9.70	mg/L	97.0	90 - 110		
Potassium		50.0	49.1	mg/L	98.2	90 - 110		
Selenium		0.400	0.395	mg/L	98.8	90 - 110		
Sodium		50.0	49.4	mg/L	98.8	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4823905
Report generated 06/27/2016 10:56

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822
Run Date: 06/25/2016
Sample ID: WG574249-43
Instrument ID: ICP-THERMO3
Run Time: 23:36
Method: 6010C
File ID: T3.062516.233647
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.2	mg/L	102	90 - 110		
Beryllium		0.0500	0.0497	mg/L	99.5	90 - 110		
Calcium		10.0	10.4	mg/L	104	90 - 110		
Iron		4.00	4.06	mg/L	102	90 - 110		
Magnesium		10.0	9.72	mg/L	97.2	90 - 110		
Potassium		50.0	51.1	mg/L	102	90 - 110		
Selenium		0.400	0.405	mg/L	101	90 - 110		
Sodium		50.0	52.1	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4823905
Report generated 06/27/2016 10:56

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822
Run Date: 06/25/2016
Sample ID: WG574249-47
Instrument ID: ICP-THERMO3
Run Time: 23:51
Method: 6010C
File ID: T3.062516.235152
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.3	mg/L	103	90 - 110		
Beryllium		0.0500	0.0502	mg/L	100	90 - 110		
Calcium		10.0	10.5	mg/L	105	90 - 110		
Iron		4.00	4.08	mg/L	102	90 - 110		
Magnesium		10.0	9.81	mg/L	98.1	90 - 110		
Potassium		50.0	51.1	mg/L	102	90 - 110		
Selenium		0.400	0.412	mg/L	103	90 - 110		
Sodium		50.0	51.8	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4823905
Report generated 06/27/2016 10:56

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060822
Run Date: 06/23/2016
Sample ID: WG574093-08
Instrument ID: ICP-THERMO3
Run Time: 16:56
Method: 6010C
File ID: T3.062316.165617
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.162	mg/L	101	70 - 130		
Beryllium		0.00160	0.00155	mg/L	96.9	70 - 130		
Calcium		0.400	0.451	mg/L	113	70 - 130		
Iron		0.0800	0.0758	mg/L	94.7	70 - 130		
Magnesium		0.400	0.430	mg/L	108	70 - 130		
Potassium		0.800	0.815	mg/L	102	70 - 130		
Sodium		0.400	0.447	mg/L	112	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4823907
Report generated 06/27/2016 10:56

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060822
Run Date: 06/23/2016
Sample ID: WG574093-28
Instrument ID: ICP-THERMO3
Run Time: 22:27
Method: 6010C
File ID: T3.062316.222708
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.137	mg/L	85.5	70 - 130		
Beryllium		0.00160	0.00136	mg/L	85.0	70 - 130		
Calcium		0.400	0.387	mg/L	96.8	70 - 130		
Iron		0.0800	0.0604	mg/L	75.5	70 - 130		
Magnesium		0.400	0.355	mg/L	88.8	70 - 130		
Potassium		0.800	0.745	mg/L	93.1	70 - 130		
Sodium		0.400	0.436	mg/L	109	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4823907
Report generated 06/27/2016 10:56

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060822
Run Date: 06/25/2016
Sample ID: WG574249-08
Instrument ID: ICP-THERMO3
Run Time: 12:47
Method: 6010C
File ID: T3.062516.124745
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.165	mg/L	103	70 - 130		
Beryllium		0.00160	0.00166	mg/L	104	70 - 130		
Calcium		0.400	0.414	mg/L	103	70 - 130		
Iron		0.0800	0.0939	mg/L	117	70 - 130		
Magnesium		0.400	0.441	mg/L	110	70 - 130		
Potassium		0.800	0.887	mg/L	111	70 - 130		
Selenium		0.0160	0.0204	mg/L	127	70 - 130		
Sodium		0.400	0.442	mg/L	110	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4823907
Report generated 06/27/2016 10:56

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060822
Run Date: 06/25/2016
Sample ID: WG574249-26
Instrument ID: ICP-THERMO3
Run Time: 17:25
Method: 6010C
File ID: T3.062516.172540
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.163	mg/L	102	70 - 130		
Beryllium		0.00160	0.00172	mg/L	108	70 - 130		
Calcium		0.400	0.375	mg/L	93.8	70 - 130		
Iron		0.0800	0.0950	mg/L	119	70 - 130		
Potassium		0.800	0.714	mg/L	89.2	70 - 130		
Selenium		0.0160	0.0209	mg/L	131	70 - 130		*
Sodium		0.400	0.408	mg/L	102	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4823907
Report generated 06/27/2016 10:56

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060822
Instrument ID: ICP-THERMO3
Sol. A : WG574093-10 **File ID:** T3.062316.170408
Sol. AB : WG574093-11 **File ID:** T3.062316.170801

Workgroup (AAB#): WG573973
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	266	106	250	265	106	
Beryllium	NS	0	NS	0.250	0.248	99.2	
Calcium	250	253	101	250	252	101	
Iron	100	99.7	99.7	100	97.4	97.4	
Magnesium	250	253	101	250	248	99.2	
Potassium	NS	0.163	NS	5.00	5.24	105	
Selenium	NS	-0.00219	NS	0.250	0.242	96.8	
Sodium	NS	0.0453	NS	5.00	5.37	107	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4823904
Report generated 06/27/2016 10:56

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060822
Instrument ID: ICP-THERMO3
Sol. A : WG574249-10 **File ID:** T3.062516.125529
Sol. AB : WG574249-11 **File ID:** T3.062516.125921

Workgroup (AAB#): WG573973
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	266	106	250	268	107	
Beryllium	NS	0.000110	NS	0.250	0.245	98.0	
Calcium	250	244	97.6	250	247	98.8	
Iron	100	96.8	96.8	100	96.5	96.5	
Magnesium	250	249	99.6	250	249	99.6	
Potassium	NS	0.0533	NS	5.00	5.19	104	
Selenium	NS	-0.00224	NS	0.250	0.249	99.6	
Sodium	NS	0.0404	NS	5.00	5.32	106	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4823904
Report generated 06/27/2016 10:56

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060822
Instrument ID: ICP-THERMO3
Sol. A : WG574249-45 **File ID:** T3.062516.234420
Sol. AB : WG574249-46 **File ID:** T3.062516.234809

Workgroup (AAB#): WG573973
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	263	105	250	271	108	
Beryllium	NS	0.000140	NS	0.250	0.244	97.6	
Calcium	250	248	99.2	250	254	102	
Iron	100	95.6	95.6	100	96.1	96.1	
Magnesium	250	236	94.4	250	239	95.6	
Potassium	NS	-0.0460	NS	5.00	5.21	104	
Selenium	NS	-0.00782	NS	0.250	0.238	95.2	
Sodium	NS	0.0818	NS	5.00	5.50	110	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
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Report generated 06/27/2016 10:56

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060822 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	AG	AL	AS	B	BA
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000410	0	0	0
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0.0115	0	-0.0000800
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0.000260	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	-0.000289	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	-0.0000490	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.0000120	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0.0000300	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4823900
Report generated: 06/27/2016 10:56

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060822 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	BE	CA	CD	CO	CR
ALUMINUM	308.20	0	0	0	-0.000820	0
ANTIMONY	206.80	0	0	0	0	0.0200
ARSENIC	189.00	0	0	0	0	-0.00190
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0.00343	0
CADMIUM	228.80	0	0	0	-0.00390	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	-0.000200
COPPER	224.70	0	0	0	0.0000770	-0.00100
IRON	261.10	0	0	0	0	-0.00100
LEAD	220.30	0	0	0	-0.0000130	-0.000132
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.0000500
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	-0.000860	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0.00000500	0	0	0
THALLIUM	190.80	0	0	0	0.00240	0.000276
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	-0.00480
ZINC	206.20	0	0	0	0	-0.00180
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4823900
Report generated: 06/27/2016 10:56

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060822 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	CU	FE	K	LI	MG
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000560	0	0	0
ARSENIC	189.00	0	-0.0000500	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0.000300	0	0	0
CADMIUM	228.80	0	-0.0000190	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000500	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0.00160	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0.000609	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.00000300
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0.0000420	0	0	0
PHOSPHORUS	214.90	-0.323	0.000900	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000270	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000400	0	0	0
VANADIUM	292.40	0	0.00000700	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	-0.0000300	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4823900
Report generated: 06/27/2016 10:56

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060822 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	MN	MO	NA	NI	P
ALUMINUM	308.20	0	0.0163	0	0	0
ANTIMONY	206.80	0	-0.00310	0	-0.00350	0
ARSENIC	189.00	0	0.00120	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	-0.00190	0	0	0
CADMIUM	228.80	0	0.0000320	0	-0.000770	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0.000360	0	0	0	0
COBALT	228.60	0	-0.00200	0	0.000100	0
COPPER	224.70	0	0.00160	0	-0.0123	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	-0.00210	0	0.000110	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	-0.00290	-0.0230	0	0	0
MANGANESE	257.60	0	0.0000300	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0.00710	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0.000600	0.000580	0	0	0
SILICON	212.40	0	0.0187	0	0	0
SILVER	328.00	0	-0.0000430	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0.00100	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000153	0	0	0
VANADIUM	292.40	-0.000200	-0.00830	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4823900
Report generated: 06/27/2016 10:56

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060822 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	PB	SB	SE	SI	SN
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0	0	0	-0.0220
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0.00440	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4823900
Report generated: 06/27/2016 10:56

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060822 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	SR	TI	TL	V	ZN
ALUMINUM	308.20	0	0	0	0.0950	0
ANTIMONY	206.80	0	0.00110	0	-0.00360	0
ARSENIC	189.00	0	0	0	0.000107	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	-0.00000700	0	0.000990	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0.000102	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000550	0	0	0
COBALT	228.60	0	0.00210	0	0.0000200	0
COPPER	224.70	0	0.000269	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	-0.000126	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	-0.00290	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	-0.000110	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	-0.00100	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000720	0	-0.000260	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.000800	0	-0.00490	0
TIN	189.90	0	-0.00190	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0.000820	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4823900
Report generated: 06/27/2016 10:56

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060822 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	ZR
ALUMINUM	308.20	0
ANTIMONY	206.80	0
ARSENIC	189.00	0
BARIUM	455.40	0
BERYLLIUM	313.10	0
BORON	249.60	0
CADMIUM	228.80	0
CALCIUM	422.60	0
CHROMIUM	267.70	0
COBALT	228.60	0
COPPER	224.70	0
IRON	261.10	0
LEAD	220.30	0
LITHIUM	670.70	0
MAGNESIUM	279.00	0
MANGANESE	257.60	0
MOLYBDENUM	202.00	0
NICKEL	231.60	0
PHOSPHORUS	214.90	0
POTASSIUM	766.40	0
SELENIUM	196.00	0
SILICON	212.40	0
SILVER	328.00	0
SODIUM	589.50	0
STRONTIUM	407.70	0
THALLIUM	190.80	0
TIN	189.90	0
TITANIUM	337.20	0
VANADIUM	292.40	0
ZINC	206.20	0
ZIRCONIUM	339.10	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4823900
Report generated: 06/27/2016 10:56

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16060822 **Date:** 04/29/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	900.0
Antimony	20.00	45.0
Arsenic	10.00	45.0
Barium	10.00	45.0
Beryllium	10.00	1.8
Boron	20.00	45.0
Cadmium	20.00	4.5
Calcium	5.00	270.0
Chromium	20.00	36.0
Cobalt	20.00	45.0
Copper	20.00	180.0
Iron	5.00	720.0
Lead	20.00	225.0
Lithium	5.00	36.0
Magnesium	5.00	900.0
Manganese	10.00	36.0
Molybdenum	20.00	27.0
Nickel	20.00	90.0
Phosphorus	20.00	180.0
Potassium	5.00	450.0
Selenium	20.00	90.0
Silicon	20.00	36.0
Silver	10.00	9.0
Sodium	5.00	270.0
Strontium	5.00	9.0
Thallium	20.00	18.0
Tin	20.00	45.0
Titanium	5.00	36.0
Vanadium	20.00	27.0
Zinc	20.00	45.0
Zirconium	10.00	45.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4823899
Report generated: 06/27/2016 10:56

2.3.1.3 Raw Data

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000292	0.057216	0.000000	1.000000
Al 308.215 {109}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.001288	0.009253	0.000000	1.000000
As 189.042 {478}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000077	0.027152	0.000000	1.000000
B 249.678 {135}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.000040	0.025100	0.000000	1.000000
Ba 455.403 { 74}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.031526	2.349165	0.000000	1.000000
Be 313.107 {108}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.000934	1.055405	0.000000	1.000000
Ca 422.673 { 80}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.000283	0.049609	0.000000	1.000000
Cd 228.802 {447}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000142	0.651471	0.000000	1.000000
Co 228.616 {447}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000247	0.409702	0.000000	1.000000
Cr 267.716 {126}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.000367	0.066578	0.000000	1.000000
Cu 224.700 {450}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000343	0.142601	0.000000	1.000000
Fe 261.187 {129}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000490	0.025122	0.000000	1.000000
K 766.490 { 44}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.010609	0.069349	0.000000	1.000000
Li 670.784 { 50}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.011827	1.674850	0.000000	1.000000
Mg 279.079 {121}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000702	0.009699	0.000000	1.000000
Mn 257.610 {131}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000277	0.317266	0.000000	1.000000
Mo 202.030 {467}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.000054	0.203043	0.000000	1.000000
Na 589.592 { 57}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.064533	0.194326	0.000000	1.000000
Ni 231.604 {446}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000942	0.155561	0.000000	1.000000
P 214.914 {457}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000263	0.015029	0.000000	1.000000
Pb 220.353 {453}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000678	0.070221	0.000000	1.000000
Sb 206.833 {463}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.000010	0.034653	0.000000	1.000000
Se 196.090 {472}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000253	0.017694	0.000000	1.000000
Si 212.412 {459}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.002512	0.043862	0.000000	1.000000
Sn 189.989 {477}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.000061	0.078522	0.000000	1.000000
Sr 407.771 { 83}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.002450	3.941080	0.000000	1.000000
Ti 337.280 {100}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.003027	0.134433	0.000000	1.000000
Tl 190.856 {477}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000414	0.032326	0.000000	1.000000
V 292.402 {115}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.000001	0.079042	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.000166	0.468267	0.000000	1.000000
Zr 339.198 { 99}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.019987	0.006947	0.000000	1.000000

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999400	0.000005	0.002814	0.009379	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999993	0.000002	0.011897	0.039658	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999595	0.000003	0.004016	0.013387	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999985	0.000001	0.003782	0.012607	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999987	0.000075	0.001344	0.004481	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999980	0.000002	0.000124	0.000413	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999968	0.000025	0.053022	0.176739	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999778	0.000005	0.000338	0.001128	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999932	0.000006	0.000516	0.001721	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999922	0.000003	0.001537	0.005123	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999931	0.000005	0.001747	0.005824	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999657	0.000017	0.028560	0.095199	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999984	0.000125	0.120772	0.402574	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999884	0.000250	0.004948	0.016494	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999996	0.000003	0.098587	0.328625	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999409	0.000035	0.003174	0.010580	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999985	0.000007	0.000553	0.001844	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999985	0.000335	0.039834	0.132780	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999721	0.000012	0.001443	0.004811	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999997	0.000002	0.009293	0.030977	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999947	0.000002	0.004623	0.015411	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999906	0.000004	0.005569	0.018563	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999993	0.000000	0.008923	0.029743	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999495	0.000044	0.003006	0.010020	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999929	0.000006	0.001139	0.003797	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999996	0.000074	0.000554	0.001846	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999177	0.000035	0.008833	0.029443	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999963	0.000001	0.003985	0.013284	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999980	0.000003	0.001255	0.004184	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999976	0.000021	0.000258	0.000861	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.347379	0.000119	0.361260	1.204198	OK.	1.000000	0.000000	1	0

Sample Name: S0 Acquired: 6/23/2016 16:29:39 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00029**	**.00129**	**-.00008**	**.00004**	**.03153**	**.00093**	**.00028**
Stddev	.00015	.00002	.00014	.00006	.00240	.00003	.00198
%RSD	52.623	1.3157	185.14	142.12	7.6014	3.6422	698.55
#1	-.00011	.00130	.00005	.00006	.03428	.00091	-.00196
#2	-.00038	.00127	-.00005	.00008	.03039	.00092	.00105
#3	-.00038	.00130	-.00023	-.00002	.02991	.00097	.00176

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00014**	**-.00025**	**.00037**	**-.00034**	**-.00049**	**-.01061**	**-.01182**
Stddev	.00021	.00007	.00007	.00028	.00069	.00571	.01080
%RSD	147.13	28.247	17.769	80.896	139.88	53.794	91.363
#1	-.00024	-.00033	.00043	-.00059	.00004	-.01711	-.01999
#2	.00010	-.00020	.00030	-.00004	-.00127	-.00832	.00042
#3	-.00029	-.00021	.00036	-.00039	-.00024	-.00641	-.01590

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00070**	**-.00028**	**.00005**	**-.06454**	**-.00094**	**-.00026**	**-.00068**
Stddev	.00069	.00044	.00010	.00127	.00021	.00003	.00023
%RSD	98.775	157.73	191.66	1.9745	22.162	11.455	33.344
#1	-.00130	.00016	-.00002	-.06443	-.00114	-.00027	-.00091
#2	-.00086	-.00028	.00017	-.06587	-.00072	-.00029	-.00046
#3	.00006	-.00072	.00001	-.06333	-.00096	-.00023	-.00067

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00001**	**-.00025**	**.00251**	**.00006**	**.00245**	**-.00303**	**-.00041**
Stddev	.00016	.00016	.00016	.00001	.00241	.00117	.00012
%RSD	1654.9	64.234	6.3986	13.348	98.630	38.681	28.019
#1	-.00002	-.00035	.00248	.00005	.00157	-.00260	-.00029
#2	-.00014	-.00034	.00237	.00007	.00059	-.00213	-.00042
#3	.00019	-.00007	.00269	.00006	.00518	-.00435	-.00053

Sample Name: S0 Acquired: 6/23/2016 16:29:39 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00000	.00017	-.01999
Stddev	.00010	.00005	.00203
%RSD	13188.	28.598	10.137
#1	.00004	.00021	-.01773
#2	-.00011	.00012	-.02164
#3	.00008	.00017	-.02061

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6699.4	41370.	2127.3
Stddev	40.4	297.	43.0
%RSD	.60365	.71762	2.0194
#1	6718.4	41699.	2078.6
#2	6726.8	41290.	2159.8
#3	6653.0	41122.	2143.5

Sample Name: S1 Acquired: 6/23/2016 16:33:38 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00002**	**.00207**	**.04860**	**.00138**	**.00433**	**.00022**	**.00042**
Stddev	.00014	.00009	.00373	.00005	.00188	.00012	.00011
%RSD	835.38	4.5773	7.6793	3.9714	43.525	57.028	26.394
#1	-.00012	.00203	.04518	.00133	.00557	.00008	.00054
#2	-.00007	.00218	.05258	.00138	.00216	.00025	.00040
#3	.00015	.00200	.04803	.00144	.00525	.00032	.00032

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00058**	**.00026**	**.00071**	**.01834**	**.00157**	**.00165**	**.02022**
Stddev	.00008	.00010	.00029	.00177	.00050	.00017	.00883
%RSD	13.891	39.383	40.273	9.6501	31.586	10.184	43.651
#1	.00049	.00020	.00042	.02032	.00204	.00159	.01736
#2	.00061	.00038	.00072	.01689	.00105	.00184	.01318
#3	.00064	.00021	.00099	.01782	.00163	.00152	.03013

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00007**	**.00087**	**-.00042**	**.00040**	**.00339**	**.00056**	**.03432**
Stddev	.00012	.00001	.00016	.00029	.00012	.00009	.00173
%RSD	168.70	1.1803	37.487	70.628	3.5276	16.358	5.0547
#1	-.00003	.00088	-.00031	.00019	.00333	.00066	.03349
#2	-.00020	.00086	-.00060	.00073	.00330	.00055	.03631
#3	.00002	.00087	-.00035	.00029	.00352	.00048	.03315

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00279**	**.00063**	**.00386**	**-.01703**
Stddev	.00101	.00006	.00004	.00240
%RSD	36.246	8.7705	.91033	14.105
#1	-.00167	.00068	.00390	-.01827
#2	-.00364	.00064	.00384	-.01856
#3	-.00305	.00057	.00384	-.01426

Sample Name: S1 Acquired: 6/23/2016 16:33:38 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6745.7**	**41805.**	**2129.8**
Stddev	22.3	250.	32.4
%RSD	.33088	.59789	1.5201
#1	6735.5	41617.	2128.0
#2	6730.4	42089.	2098.4
#3	6771.4	41710.	2163.1

Sample Name: S2 Acquired: 6/23/2016 16:37:37 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00004**	**.00279**	**.00016**	**.00026**	**.06973**	**.00179**	**.00735**
Stddev	.00008	.00007	.00007	.00002	.00127	.00005	.00035
%RSD	185.58	2.6503	44.732	8.8024	1.8178	2.7546	4.6908
#1	-.00013	.00287	.00008	.00023	.06878	.00184	.00697
#2	-.00000	.00273	.00022	.00027	.07117	.00174	.00747
#3	.00001	.00276	.00018	.00027	.06924	.00179	.00763

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00048**	**.00123**	**.00088**	**.00073**	**.00097**	**.04869**	**.00987**
Stddev	.00017	.00004	.00007	.00007	.00080	.01177	.00041
%RSD	36.245	2.8717	7.5775	10.086	82.497	24.183	4.1595
#1	.00028	.00126	.00081	.00081	.00163	.05564	.00947
#2	.00060	.00124	.00089	.00066	.00008	.03509	.01029
#3	.00056	.00119	.00095	.00072	.00119	.05534	.00985

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00079**	**.00313**	**.00327**	**.09617**	**.00018**	**.00208**	**-.00005**
Stddev	.00042	.00021	.00008	.00423	.00014	.00007	.00012
%RSD	53.033	6.7962	2.3656	4.4010	80.620	3.1401	235.98
#1	.00120	.00337	.00326	.09640	.00034	.00201	.00009
#2	.00080	.00296	.00319	.09182	.00013	.00215	-.00010
#3	.00036	.00306	.00335	.10028	.00006	.00208	-.00013

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00074**	**-.00014**	**.00523**	**.00123**	**.06780**	**-.00103**	**-.00017**
Stddev	.00018	.00007	.00014	.00004	.00229	.00100	.00009
%RSD	24.515	47.215	2.6523	3.3445	3.3781	97.203	54.232
#1	.00091	-.00021	.00538	.00120	.06958	-.00212	-.00021
#2	.00075	-.00013	.00511	.00121	.06861	-.00081	-.00007
#3	.00055	-.00008	.00519	.00127	.06522	-.00015	-.00025

Sample Name: S2 Acquired: 6/23/2016 16:37:37 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**.00124**	**.00773**	**-.01963**
Stddev	.00006	.00011	.00107
%RSD	4.9778	1.3726	5.4480
#1	.00125	.00769	-.01940
#2	.00117	.00765	-.01869
#3	.00129	.00785	-.02079
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6707.0**	**42016.**	**2132.5**
Stddev	31.7	150.	7.6
%RSD	.47214	.35787	.35792
#1	6673.0	41936.	2136.2
#2	6712.3	41922.	2137.6
#3	6735.6	42189.	2123.7

Sample Name: S3 Acquired: 6/23/2016 16:41:36 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.02256	.09496	.01071	.01256	2.3852	.05519	.49691
Stddev	.00004	.00014	.00002	.00013	.0192	.00031	.00535
%RSD	.17307	.15212	.16075	1.0212	.80533	.56599	1.0768
#1	.02258	.09479	.01070	.01253	2.3633	.05545	.49075
#2	.02251	.09505	.01073	.01245	2.3992	.05484	.50038
#3	.02258	.09504	.01070	.01270	2.3931	.05527	.49960

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.03562	.08233	.03402	.07207	.09984	3.4482	1.6795
Stddev	.00009	.00032	.00019	.00009	.00122	.0308	.0141
%RSD	.25272	.38620	.54823	.12427	1.2238	.89404	.83921
#1	.03572	.08197	.03404	.07201	.09875	3.4126	1.6633
#2	.03558	.08257	.03383	.07204	.09961	3.4653	1.6862
#3	.03556	.08245	.03420	.07218	.10116	3.4666	1.6890

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.09604	.15811	.20462	9.6297	.07778	.14758	.03484
Stddev	.00184	.00180	.00109	.0816	.00017	.00014	.00035
%RSD	1.9192	1.1373	.53383	.84731	.21367	.09481	1.0023
#1	.09394	.15608	.20545	9.5375	.07784	.14750	.03445
#2	.09678	.15875	.20503	9.6927	.07791	.14775	.03512
#3	.09739	.15949	.20338	9.6588	.07759	.14751	.03495

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.04088	.00687	.22552	.07884	3.9495	.13075	.01457
Stddev	.00018	.00008	.00024	.00017	.0426	.00233	.00002
%RSD	.43951	1.1502	.10703	.21290	1.0795	1.7820	.16844
#1	.04086	.00680	.22528	.07865	3.9016	.12806	.01460
#2	.04106	.00686	.22576	.07898	3.9835	.13221	.01455
#3	.04070	.00696	.22552	.07889	3.9633	.13197	.01456

Sample Name: S3 Acquired: 6/23/2016 16:41:36 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**.07955**	**.47276**	**-.01302**
Stddev	.00051	.00054	.00096
%RSD	.63790	.11390	7.4014
#1	.07969	.47336	-.01283
#2	.07898	.47259	-.01406
#3	.07996	.47232	-.01217
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6638.5**	**41219.**	**2121.0**
Stddev	46.3	234.	20.8
%RSD	.69679	.56802	.98295
#1	6589.4	41153.	2142.8
#2	6644.8	41479.	2101.2
#3	6681.3	41025.	2119.2

Sample Name: S4 Acquired: 6/23/2016 16:45:14 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.04536**	**.18763**	**.02145**	**.02504**	**4.7264**	**.10809**	**.99272**
Stddev	.00018	.00035	.00006	.00014	.0350	.00038	.00548
%RSD	.40723	.18482	.29786	.54138	.74034	.35140	.55236
#1	.04517	.18737	.02151	.02493	4.6879	.10794	.98645
#2	.04537	.18748	.02147	.02519	4.7563	.10781	.99661
#3	.04554	.18802	.02139	.02499	4.7351	.10852	.99512

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.07067**	**.16242**	**.06673**	**.14133**	**.20036**	**6.9280**	**3.3265**
Stddev	.00015	.00038	.00017	.00047	.00154	.0408	.0160
%RSD	.20929	.23179	.25203	.33195	.76659	.58859	.48243
#1	.07077	.16232	.06654	.14092	.19934	6.8881	3.3089
#2	.07075	.16283	.06687	.14184	.20213	6.9696	3.3403
#3	.07050	.16210	.06677	.14122	.19962	6.9263	3.3303

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.19280**	**.31594**	**.40461**	**19.378**	**.15355**	**.29587**	**.06972**
Stddev	.00166	.00297	.00142	.119	.00024	.00033	.00055
%RSD	.85870	.94051	.34987	.61191	.15345	.11299	.78837
#1	.19091	.31269	.40561	19.253	.15352	.29579	.06923
#2	.19352	.31659	.40524	19.489	.15380	.29623	.07032
#3	.19397	.31853	.40299	19.392	.15333	.29558	.06962

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.08150**	**.01388**	**.44160**	**.15662**	**7.8766**	**.26694**	**.02902**
Stddev	.00043	.00013	.00090	.00039	.0522	.00276	.00015
%RSD	.53112	.92390	.20356	.24938	.66265	1.0329	.50476
#1	.08128	.01397	.44144	.15669	7.8213	.26376	.02890
#2	.08200	.01394	.44257	.15697	7.9249	.26844	.02918
#3	.08123	.01374	.44079	.15620	7.8835	.26861	.02897

Sample Name: S4 Acquired: 6/23/2016 16:45:14 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**.15703**	**.93159**	**-.00927**
Stddev	.00036	.00158	.00064
%RSD	.22618	.16981	6.9563
#1	.15712	.93104	-.00858
#2	.15664	.93337	-.00938
#3	.15734	.93035	-.00985
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6531.9**	**40084.**	**2097.6**
Stddev	16.2	231.	6.3
%RSD	.24773	.57740	.30149
#1	6549.4	40239.	2103.9
#2	6517.6	40195.	2091.2
#3	6528.6	39818.	2097.7

Sample Name: ICV Acquired: 6/23/2016 16:48:51 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39953	10.024	.40138	.50599	1.0070	.05053	10.036
Stddev	.00339	.040	.00410	.00222	.0059	.00022	.101
%RSD	.84874	.40015	1.0204	.43801	.58442	.43218	1.0067
#1	.40015	10.065	.39887	.50853	1.0016	.05072	9.9340
#2	.39587	9.9844	.39916	.50451	1.0063	.05029	10.037
#3	.40256	10.022	.40610	.50491	1.0133	.05057	10.136
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05000	.20142	.50405	.50578	4.0103	50.167	1.0145
Stddev	.00018	.00074	.00219	.00236	.0323	.251	.0072
%RSD	.36119	.36866	.43440	.46709	.80429	.50069	.71348
#1	.04994	.20142	.50464	.50308	4.0274	49.888	1.0064
#2	.05021	.20217	.50162	.50746	3.9731	50.374	1.0203
#3	.04986	.20068	.50588	.50680	4.0305	50.241	1.0167
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.075	.50106	1.0146	50.102	.50246	9.9799	.50553
Stddev	.156	.00520	.0033	.232	.00089	.0190	.00257
%RSD	1.5448	1.0383	.32210	.46381	.17782	.18993	.50874
#1	9.9213	.49528	1.0136	49.851	.50217	9.9887	.50315
#2	10.071	.50252	1.0182	50.148	.50346	9.9928	.50825
#3	10.233	.50537	1.0119	50.309	.50174	9.9581	.50518
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: ICV Acquired: 6/23/2016 16:48:51 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2034**	**.39904**	**5.0662**	**1.0017**	**1.0068**	**.99368**	**.50263**
Stddev	.0053	.01223	.0118	.0027	.0059	.01682	.00169
%RSD	.44447	3.0652	.23394	.26994	.59001	1.6930	.33671
#1	1.2003	.41278	5.0644	1.0010	1.0005	.98203	.50067
#2	1.2095	.38936	5.0789	1.0047	1.0076	.98605	.50350
#3	1.2003	.39496	5.0554	.99945	1.0123	1.0130	.50370
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0106**	**1.0101**	F **.08377**
Stddev	.0013	.0017	.57243
%RSD	.13014	.17012	683.32
#1	1.0108	1.0096	.41336
#2	1.0092	1.0121	.41517
#3	1.0118	1.0088	-.57721
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-5.0000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6582.9**	**40798.**	**2104.4**
Stddev	57.1	288.	9.3
%RSD	.86719	.70695	.43973
#1	6642.0	40517.	2109.9
#2	6528.1	41093.	2109.6
#3	6578.7	40785.	2093.7

Sample Name: ICB Acquired: 6/23/2016 16:52:29 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00205	.00812	.00204	.00053	.00042	.00004	.08043	.00000
Stddev	.00123	.00380	.00409	.00171	.00048	.00007	.04843	.00019
%RSD	60.002	46.772	200.40	325.30	114.02	191.36	60.215	12542.
#1	.00117	.01182	.00568	-.00071	.00071	-.00005	.13570	.00020
#2	.00153	.00832	-.00239	.00248	.00068	.00009	.04544	-.00018
#3	.00346	.00423	.00283	-.00019	-.00013	.00007	.06015	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	-.00032	.00256	.01917	.26687	-.00090	-.01824	.00334
Stddev	.00068	.00118	.00062	.01550	.00597	.00344	.19098	.00120
%RSD	152.08	365.07	24.256	80.873	2.2373	382.34	1047.0	35.896
#1	.00109	.00091	.00301	.01950	.26758	.00158	-.16456	.00207
#2	-.00027	-.00043	.00283	.00350	.26057	.00055	-.08796	.00445
#3	.00052	-.00145	.00185	.03450	.27245	-.00483	.19780	.00349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00543	.02836	-.00115	.00608	-.00046	.00498	-.00449	-.00458
Stddev	.00101	.00804	.00072	.01165	.00093	.00238	.00576	.00313
%RSD	18.519	28.338	62.364	191.75	202.82	47.775	128.25	68.440
#1	.00443	.02219	-.00190	-.00553	.00045	.00510	-.01053	-.00111
#2	.00542	.03745	-.00110	.00598	-.00041	.00730	-.00387	-.00541
#3	.00644	.02544	-.00046	.01778	-.00141	.00254	.00094	-.00721
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: ICB Acquired: 6/23/2016 16:52:29 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.00059	-.00321	-.00285	-.00021	.00049	-.01967
Stddev	.00049	.00058	.00271	.00281	.00126	.00023	.30758
%RSD	1987.7	98.883	84.402	98.601	601.40	48.028	1563.4
#1	.00048	.00125	-.00307	-.00514	.00122	.00050	-.07765
#2	-.00050	.00018	-.00600	.00028	-.00069	.00072	.31277
#3	.00010	.00032	-.00058	-.00369	-.00116	.00025	-.29414
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6667.4	41423.	2115.8
Stddev	41.6	269.	6.3
%RSD	.62409	.64899	.29744
#1	6626.3	41592.	2109.7
#2	6666.3	41563.	2115.3
#3	6709.5	41113.	2122.3

Sample Name: LLICV Acquired: 6/23/2016 16:56:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00827	.16210	.00867	.07876	.00792	.00155	.45064	.00085
Stddev	.00069	.00016	.00152	.00325	.00022	.00012	.03526	.00030
%RSD	8.3443	.10048	17.555	4.1248	2.8338	7.9064	7.8234	35.681
#1	.00876	.16217	.00804	.07520	.00817	.00167	.42049	.00097
#2	.00858	.16223	.00757	.07953	.00782	.00155	.48940	.00050
#3	.00748	.16192	.01041	.08156	.00775	.00143	.44202	.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00411	.00286	.00483	.07579	.81519	.07605	.43031	.01159
Stddev	.00051	.00122	.00183	.02010	.08172	.00054	.07836	.00240
%RSD	12.383	42.665	37.852	26.521	10.025	.70809	18.211	20.716
#1	.00446	.00209	.00311	.08314	.72240	.07546	.51973	.01210
#2	.00353	.00427	.00463	.05305	.87645	.07652	.37359	.01370
#3	.00433	.00223	.00676	.09119	.84672	.07616	.39761	.00898
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00886	.44734	.01615	.77513	.00676	.08645	.01136	.83408
Stddev	.00038	.03636	.00114	.01025	.00094	.00237	.00475	.00045
%RSD	4.3027	8.1283	7.0552	1.3217	13.970	2.7462	41.818	.05401
#1	.00863	.41320	.01707	.76914	.00779	.08743	.00922	.83393
#2	.00866	.44325	.01488	.78696	.00652	.08374	.01680	.83373
#3	.00930	.48558	.01652	.76928	.00595	.08818	.00805	.83459
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: LLICV Acquired: 6/23/2016 16:56:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39937**	**.04063**	**.02339**	**.14972**	**.00726**	**.01640**	**20.158**
Stddev	.00149	.00022	.00849	.00368	.00013	.00008	.057
%RSD	.37294	.54009	36.301	2.4588	1.7938	.47839	.28459
#1	.40039	.04052	.01395	.15061	.00733	.01635	20.157
#2	.40005	.04089	.02583	.15288	.00711	.01649	20.101
#3	.39766	.04050	.03040	.14568	.00735	.01636	20.216
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6699.9**	**41507.**	**2122.8**
Stddev	10.7	321.	33.0
%RSD	.15908	.77425	1.5534
#1	6695.4	41349.	2085.0
#2	6692.2	41295.	2145.6
#3	6712.1	41877.	2137.8

Sample Name: LLICV Acquired: 6/23/2016 17:00:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01949	.39961	.01957	.19216	.01939	.00378	1.0069
Stddev	.00131	.00492	.00179	.00362	.00127	.00002	.0595
%RSD	6.7128	1.2306	9.1680	1.8843	6.5460	.43946	5.9133
#1	.02095	.40406	.02038	.19600	.02017	.00376	.96045
#2	.01841	.40043	.01752	.18881	.01792	.00378	.98624
#3	.01913	.39433	.02082	.19166	.02007	.00379	1.0740
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00195	.01011	.00920	.01111	.21788	2.0711	.19482
Stddev	.00022	.00045	.00124	.00158	.02611	.1150	.00581
%RSD	11.156	4.4276	13.477	14.191	11.985	5.5533	2.9817
#1	.00196	.01037	.01057	.01272	.21124	2.1436	.18839
#2	.00173	.01037	.00885	.00957	.19573	2.1311	.19636
#3	.00216	.00960	.00817	.01104	.24667	1.9385	.19970
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0302	.01992	.01953	.99004	.04110	1.9033	.01787
Stddev	.1225	.00176	.00044	.02149	.00123	.0089	.00330
%RSD	11.893	8.8312	2.2495	2.1708	2.9826	.46494	18.472
#1	.89819	.01975	.02003	.96810	.03968	1.8971	.02156
#2	1.0522	.01825	.01927	1.0110	.04177	1.9135	.01518
#3	1.1403	.02176	.01928	.99098	.04184	1.8995	.01689
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: LLICV Acquired: 6/23/2016 17:00:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20779	.03211	2.0518	.97692	.09846	.05795	.36369
Stddev	.00270	.00309	.0013	.00240	.00149	.00439	.00103
%RSD	1.2971	9.6240	.06110	.24594	1.5132	7.5738	.28252
#1	.21089	.03387	2.0505	.97555	.09739	.05293	.36373
#2	.20647	.02854	2.0530	.97969	.09783	.06107	.36264
#3	.20602	.03392	2.0519	.97551	.10016	.05984	.36469
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.01983	.04054	F 52.666
Stddev	.00096	.00030	.271
%RSD	4.8538	.74967	.51545
#1	.01995	.04039	52.957
#2	.01882	.04089	52.622
#3	.02073	.04034	52.420
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6722.9	41992.	2132.9
Stddev	4.6	356.	26.2
%RSD	.06888	.84767	1.2278
#1	6727.0	42116.	2114.2
#2	6723.9	42269.	2162.8
#3	6717.8	41590.	2121.7

Sample Name: ICSA Acquired: 6/23/2016 17:04:08 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00149**	**266.38**	**-.00372**	**.01062**	**.00153**	**.00000**	**253.32**
Stddev	.00133	.59	.00223	.00385	.00251	.00008	1.14
%RSD	89.471	.22308	59.913	36.253	163.63	4300.4	.45010
#1	-.00003	267.06	-.00307	.00628	.00113	-.00004	252.01
#2	.00202	266.01	-.00189	.01196	-.00075	-.00004	253.84
#3	.00246	266.05	-.00620	.01362	.00422	.00009	254.10
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00047**	**-.00114**	**-.00174**	**.00303**	**99.707**	**.16334**	**.00688**
Stddev	.00038	.00002	.00038	.00035	.605	.10414	.00241
%RSD	79.353	1.7935	21.793	11.497	.60634	63.757	34.985
#1	.00088	-.00115	-.00217	.00298	99.093	.28269	.00955
#2	.00015	-.00116	-.00144	.00340	99.728	.09096	.00486
#3	.00039	-.00112	-.00162	.00271	100.30	.11636	.00625
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**252.57**	**.00029**	**.00006**	**.04525**	**-.00141**	**.04327**	**-.00195**
Stddev	.76	.00143	.00058	.00703	.00150	.00827	.00429
%RSD	.29957	489.02	1021.2	15.529	106.39	19.108	220.24
#1	251.84	.00193	-.00061	.05054	-.00123	.05059	-.00454
#2	252.51	-.00031	.00047	.04793	-.00001	.04493	.00300
#3	253.35	-.00074	.00031	.03728	-.00299	.03430	-.00431
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: ICSA Acquired: 6/23/2016 17:04:08 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00596**	**-.00219**	**-.00062**	**.00088**	**.00057**	**-.00643**	**.00061**
Stddev	.00409	.01112	.00241	.00133	.00012	.00454	.00641
%RSD	68.491	508.56	387.55	152.27	20.327	70.638	1044.9
#1	-.01030	-.01132	.00215	.00215	.00049	-.00321	.00778
#2	-.00542	-.00543	-.00218	-.00050	.00052	-.00446	-.00133
#3	-.00218	.01019	-.00184	.00098	.00071	-.01163	-.00460
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00692**	**-.00188**	F **-.35802**
Stddev	.00157	.00029	.22129
%RSD	22.711	15.411	61.810
#1	-.00512	-.00157	-.10687
#2	-.00763	-.00196	-.44284
#3	-.00802	-.00213	-.52437
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02000
Low Limit			-.02000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6250.1**	**37849.**	**2031.8**
Stddev	54.8	56.	7.8
%RSD	.87682	.14906	.38488
#1	6190.3	37786.	2027.2
#2	6297.9	37868.	2027.4
#3	6262.0	37894.	2040.9

Sample Name: ICSAB Acquired: 6/23/2016 17:08:01 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52882	265.17	.25293	.00992	.25484	.24777	252.21
Stddev	.00098	.76	.00285	.00453	.00061	.00074	1.18
%RSD	.18558	.28502	1.1258	45.657	.23964	.29732	.46623
#1	.52981	264.89	.25009	.01062	.25418	.24751	252.99
#2	.52881	266.03	.25579	.00508	.25539	.24861	250.86
#3	.52785	264.59	.25291	.01406	.25495	.24721	252.79
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50186	.24161	.25459	.25471	97.424	5.2402	.00666
Stddev	.00151	.00122	.00264	.00209	.509	.0634	.00798
%RSD	.30055	.50701	1.0371	.81915	.52250	1.2106	119.82
#1	.50037	.24023	.25660	.25353	97.770	5.2868	.00639
#2	.50338	.24256	.25160	.25711	96.840	5.1680	.01477
#3	.50184	.24204	.25558	.25347	97.663	5.2658	-.00118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	247.66	.24890	-.00112	5.3746	.48553	.04636	.50217
Stddev	1.37	.00098	.00019	.0121	.00314	.00695	.00280
%RSD	.55427	.39569	17.374	.22614	.64678	14.982	.55722
#1	248.16	.24818	-.00127	5.3707	.48197	.04411	.50327
#2	246.11	.25002	-.00118	5.3648	.48669	.04082	.50425
#3	248.71	.24850	-.00090	5.3882	.48792	.05415	.49899
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: ICSAB Acquired: 6/23/2016 17:08:01 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50735**	**.24194**	**-.00758**	**-.00008**	**.00043**	**-.00758**	**.46915**
Stddev	.00346	.00285	.00236	.00064	.00025	.00399	.00306
%RSD	.68179	1.1790	31.189	795.11	59.086	52.651	.65264
#1	.51111	.24253	-.00918	-.00025	.00026	-.00923	.46976
#2	.50431	.23884	-.00486	.00062	.00031	-.00303	.46582
#3	.50662	.24445	-.00869	-.00061	.00072	-.01049	.47185
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.25055**	**.48484**	F **-.54156**
Stddev	.00015	.00117	.36388
%RSD	.05947	.24090	67.191
#1	.25062	.48352	-.86893
#2	.25038	.48574	-.14978
#3	.25065	.48526	-.60595
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02500
Low Limit			-.02500

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6244.9**	**38520.**	**2058.8**
Stddev	46.1	338.	32.6
%RSD	.73809	.87856	1.5823
#1	6288.3	38547.	2028.4
#2	6196.5	38169.	2093.1
#3	6249.8	38844.	2054.9

Sample Name: CCV Acquired: 6/23/2016 17:11:45 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39852	10.052	.40263	.49843	1.0023	.05021	10.092
Stddev	.00333	.028	.00314	.00166	.0006	.00016	.057
%RSD	.83575	.27814	.78076	.33361	.06012	.31593	.56540
#1	.39689	10.041	.39901	.49807	1.0017	.05007	10.131
#2	.40235	10.030	.40421	.49698	1.0029	.05018	10.027
#3	.39632	10.083	.40467	.50024	1.0023	.05038	10.118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04999	.20043	.50163	.50411	4.0601	50.005	1.0189
Stddev	.00015	.00042	.00302	.00115	.0027	.046	.0052
%RSD	.29315	.20823	.60186	.22714	.06779	.09107	.50520
#1	.05012	.20084	.49900	.50511	4.0627	50.032	1.0215
#2	.04983	.20000	.50096	.50286	4.0604	49.953	1.0130
#3	.05001	.20044	.50492	.50436	4.0572	50.031	1.0222
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.212	.49892	1.0009	49.902	.50256	9.9305	.50524
Stddev	.091	.00599	.0036	.189	.00114	.0123	.00430
%RSD	.88794	1.1999	.36370	.37915	.22664	.12410	.85170
#1	10.107	.49738	1.0047	49.717	.50312	9.9163	.50068
#2	10.266	.49386	1.0004	50.095	.50125	9.9365	.50580
#3	10.263	.50553	.99747	49.894	.50331	9.9386	.50923
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: CCV Acquired: 6/23/2016 17:11:45 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1976**	**.39739**	**5.0461**	**.99886**	**.99946**	**1.0004**	**.50205**
Stddev	.0044	.00576	.0095	.00286	.00488	.0097	.00380
%RSD	.36569	1.4500	.18873	.28629	.48793	.96796	.75754
#1	1.2025	.39818	5.0436	1.0005	.99383	.99232	.49767
#2	1.1964	.39127	5.0380	1.0005	1.0021	.99772	.50399
#3	1.1940	.40272	5.0566	.99556	1.0025	1.0111	.50449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0051**	**1.0042**	F **.84890**
Stddev	.0013	.0014	.43937
%RSD	.13211	.13734	51.758
#1	1.0042	1.0051	.99034
#2	1.0045	1.0026	.35623
#3	1.0066	1.0048	1.2001
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6596.3**	**41288.**	**2118.4**
Stddev	44.5	204.	20.3
%RSD	.67419	.49375	.95799
#1	6545.1	41449.	2095.9
#2	6618.2	41357.	2123.7
#3	6625.5	41059.	2135.5

Sample Name: CCB Acquired: 6/23/2016 17:15:23 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00313**	**.01723**	**.00317**	**.00223**	**-.00086**	**.00005**	**.05209**
Stddev	.00122	.00350	.00117	.00121	.00076	.00008	.06012
%RSD	38.963	20.296	36.752	54.255	88.561	155.39	115.43
#1	.00430	.02036	.00417	.00084	-.00098	.00005	.05688
#2	.00322	.01787	.00345	.00279	-.00004	.00013	.10967
#3	.00186	.01346	.00189	.00306	-.00155	-.00003	-.01029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**.00041**	**.00080**	**.00088**	**.00933**	**.12101**	**-.00019**
Stddev	.00009	.00032	.00113	.00031	.02938	.20550	.00178
%RSD	112.14	77.747	141.29	34.787	314.94	169.82	929.52
#1	-.00002	.00017	.00160	.00098	.03104	-.04316	-.00153
#2	.00015	.00030	.00129	.00054	-.02411	.35147	-.00087
#3	.00013	.00078	-.00049	.00114	.02106	.05472	.00183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.08095**	**.00318**	**.00354**	**.07516**	**-.00052**	**.00211**	**-.00169**
Stddev	.03617	.00076	.00074	.03642	.00171	.00399	.00228
%RSD	44.681	24.034	20.829	48.460	332.21	188.88	134.38
#1	.11808	.00257	.00275	.11180	-.00209	.00394	.00084
#2	.04583	.00292	.00421	.07473	-.00077	-.00247	-.00235
#3	.07893	.00403	.00365	.03896	.00131	.00486	-.00357
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: CCB Acquired: 6/23/2016 17:15:23 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00292**	**.00064**	**-.00112**	**.00037**	**.00055**	**.00009**	**-.00222**
Stddev	.00495	.00211	.00181	.00085	.00039	.00846	.00125
%RSD	169.66	329.79	161.50	228.24	71.494	9095.7	56.323
#1	.00726	.00025	-.00053	.00012	.00049	.00531	-.00357
#2	.00396	.00292	-.00315	.00131	.00097	-.00967	-.00109
#3	-.00247	-.00125	.00032	-.00032	.00019	.00464	-.00201
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00045**	**.00017**	F **-.31880**
Stddev	.00139	.00012	.06794
%RSD	311.50	72.605	21.311
#1	-.00109	.00003	-.30839
#2	.00115	.00026	-.39134
#3	-.00140	.00021	-.25666
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6671.9**	**41329.**	**2107.9**
Stddev	60.0	164.	15.1
%RSD	.89934	.39564	.71641
#1	6603.0	41427.	2098.9
#2	6712.5	41420.	2099.5
#3	6700.3	41140.	2125.4

Sample Name: PBW LJ Acquired: 6/23/2016 17:19:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00080**	**.01261**	**.00190**	**.00491**	**-.00092**	**-.00002**	**.05100**	**.00023**
Stddev	.00084	.00763	.00125	.00212	.00119	.00006	.03078	.00026
%RSD	103.96	60.561	65.725	43.302	129.08	259.98	60.367	110.85
#1	.00134	.02138	.00270	.00692	-.00108	-.00003	.01560	.00021
#2	-.00016	.00898	.00254	.00512	.00034	.00004	.07152	-.00001
#3	.00123	.00746	.00046	.00268	-.00203	-.00008	.06587	.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00037**	**-.00004**	**.00109**	**.01291**	**.08713**	**-.00094**	**.00517**	**.00144**
Stddev	.00024	.00123	.00204	.01662	.13771	.00409	.05412	.00202
%RSD	65.746	3083.5	187.27	128.71	158.06	434.61	1047.5	139.96
#1	.00019	-.00005	-.00097	-.00552	-.06256	.00328	.06512	-.00079
#2	.00064	-.00127	.00113	.02675	.20845	-.00488	-.00956	.00312
#3	.00026	.00119	.00311	.01750	.11550	-.00122	-.04006	.00199
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00095**	**.04152**	**-.00019**	**-.00390**	**-.00371**	**.00030**	**.00094**	**-.01516**
Stddev	.00059	.04832	.00205	.00634	.00397	.00313	.00086	.00318
%RSD	62.354	116.37	1063.0	162.76	106.95	1035.6	91.391	20.967
#1	.00033	.01830	-.00241	-.00387	-.00717	.00089	.00151	-.01165
#2	.00102	.00919	.00019	.00243	.00062	.00310	.00135	-.01599
#3	.00151	.09706	.00164	-.01025	-.00458	-.00308	-.00005	-.01784
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: PBW LJ Acquired: 6/23/2016 17:19:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00033**	**.00039**	**-.00004**	**-.00270**	**-.00095**	**.00140**	**.41056**
Stddev	.00027	.00036	.00305	.00089	.00074	.00017	.24431
%RSD	82.432	92.835	6840.9	33.104	77.766	12.399	59.505
#1	-.00063	.00081	-.00312	-.00373	-.00092	.00123	.69212
#2	-.00012	.00013	.00297	-.00211	-.00022	.00158	.28489
#3	-.00024	.00024	.00002	-.00226	-.00170	.00139	.25468
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6640.4**	**41625.**	**2128.5**
Stddev	17.6	211.	40.6
%RSD	.26566	.50582	1.9066
#1	6652.6	41596.	2081.7
#2	6648.4	41848.	2149.1
#3	6620.1	41430.	2154.5

Sample Name: LCSW LJ Acquired: 6/23/2016 17:23:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20319	5.0131	.20150	.99773	.51668	.02479	5.2442	.02487
Stddev	.00169	.0087	.00325	.00753	.00370	.00010	.0451	.00015
%RSD	.82977	.17310	1.6126	.75506	.71666	.41148	.86061	.60213
#1	.20357	5.0214	.19782	.99002	.52094	.02487	5.2832	.02481
#2	.20466	5.0041	.20272	1.0051	.51488	.02467	5.2546	.02476
#3	.20135	5.0138	.20397	.99808	.51422	.02483	5.1948	.02504
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10159	.25137	.25763	2.1220	25.452	.52645	5.1614	.25904
Stddev	.00032	.00052	.00140	.0264	.157	.00783	.0562	.00289
%RSD	.31802	.20500	.54330	1.2440	.61733	1.4875	1.0892	1.1168
#1	.10195	.25197	.25859	2.1525	25.633	.53504	5.1502	.26071
#2	.10149	.25109	.25602	2.1081	25.375	.52462	5.1116	.26070
#3	.10132	.25106	.25826	2.1055	25.349	.51970	5.2224	.25570
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51626	25.724	.25483	4.8485	.25110	.61184	.19096	2.6019
Stddev	.00266	.216	.00018	.0108	.00443	.00393	.01056	.0098
%RSD	.51446	.83901	.07257	.22239	1.7625	.64191	5.5294	.37803
#1	.51860	25.969	.25482	4.8553	.24906	.61631	.19143	2.6112
#2	.51337	25.641	.25502	4.8360	.24806	.60893	.18017	2.5916
#3	.51679	25.562	.25465	4.8540	.25618	.61029	.20127	2.6028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: LCSW LJ Acquired: 6/23/2016 17:23:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50721	.52436	.50961	.25007	.50364	.50657	.76573
Stddev	.00162	.00527	.01502	.00251	.00102	.00126	.62483
%RSD	.31955	1.0056	2.9465	1.0024	.20335	.24816	81.599
#1	.50743	.53024	.51039	.24815	.50410	.50766	1.3558
#2	.50550	.52279	.52423	.25290	.50247	.50519	.11116
#3	.50872	.52005	.49423	.24914	.50436	.50685	.83021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6575.8	41413.	2125.8
Stddev	38.0	254.	15.3
%RSD	.57733	.61440	.72050
#1	6590.8	41169.	2116.8
#2	6532.6	41394.	2117.1
#3	6603.9	41677.	2143.4

Sample Name: L1606076404 Acquired: 6/23/2016 17:27:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00032**	**.03451**	**.00124**	**.00949**	**.00772**	**.00001**	**37.580**	**.00027**
Stddev	.00100	.00434	.00233	.00396	.00016	.00008	.209	.00010
%RSD	315.71	12.583	187.37	41.736	2.0214	559.86	.55655	38.752
#1	-.00025	.02981	-.00143	.01269	.00789	-.00008	37.790	.00037
#2	.00065	.03535	.00232	.00506	.00758	.00004	37.371	.00027
#3	-.00135	.03837	.00283	.01072	.00769	.00008	37.578	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00036**	**.01239**	**.00232**	**.45824**	**5.1190**	**.00322**	**14.570**	**.10315**
Stddev	.00021	.00017	.00134	.02324	.0359	.00604	.145	.00332
%RSD	57.485	1.3945	57.779	5.0714	.70061	187.38	.99354	3.2187
#1	.00054	.01232	.00335	.43843	5.0785	.00539	14.664	.10664
#2	.00040	.01226	.00280	.48382	5.1320	-.00360	14.403	.10004
#3	.00014	.01258	.00080	.45248	5.1466	.00788	14.643	.10276
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00112**	**35.286**	**.00502**	**.02785**	**.00193**	**.00400**	**.00017**	**4.2205**
Stddev	.00017	.168	.00085	.00292	.00187	.00379	.00613	.0101
%RSD	15.273	.47690	16.934	10.483	97.237	94.733	3643.4	.24042
#1	.00102	35.461	.00444	.02992	.00018	.00832	-.00425	4.2311
#2	.00102	35.126	.00463	.02451	.00170	.00241	-.00240	4.2196
#3	.00131	35.269	.00600	.02912	.00390	.00126	.00716	4.2109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606076404 Acquired: 6/23/2016 17:27:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**.19838**	**-.00352**	**-.00316**	**-.00056**	**.00304**	**.05702**
Stddev	.00048	.00082	.00439	.00352	.00018	.00003	.32731
%RSD	532.68	.41544	124.63	111.42	32.096	1.0103	574.06
#1	-.00061	.19924	-.00146	-.00663	-.00039	.00305	.43214
#2	-.00001	.19830	-.00054	.00041	-.00055	.00306	-.17051
#3	.00035	.19760	-.00855	-.00325	-.00075	.00300	-.09057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6659.9**	**41441.**	**2148.1**
Stddev	17.8	39.	34.6
%RSD	.26678	.09458	1.6087
#1	6640.6	41401.	2109.0
#2	6663.2	41442.	2174.8
#3	6675.7	41479.	2160.4

Sample Name: L1606076405S Acquired: 6/23/2016 17:30:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20092	5.0385	.20312	.99798	.52837	.02495	44.005	.02497
Stddev	.00159	.0071	.00090	.00399	.00863	.00018	.536	.00030
%RSD	.78894	.14165	.44224	.39989	1.6338	.73761	1.2192	1.2169
#1	.20053	5.0320	.20215	1.0021	.53714	.02516	44.468	.02467
#2	.20266	5.0374	.20392	.99408	.52809	.02480	44.130	.02527
#3	.19957	5.0461	.20329	.99779	.51988	.02489	43.417	.02498
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10016	.26480	.25157	2.5877	30.715	.52688	20.416	.36208
Stddev	.00067	.00097	.00149	.0124	.632	.01078	.244	.00320
%RSD	.66866	.36563	.59363	.47820	2.0592	2.0459	1.1951	.88399
#1	.09940	.26587	.24988	2.6017	31.379	.53733	20.633	.36533
#2	.10067	.26457	.25208	2.5782	30.645	.52751	20.464	.36196
#3	.10042	.26397	.25273	2.5832	30.120	.51580	20.152	.35894
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52071	62.572	.25549	5.0021	.25301	.61345	.19142	7.0690
Stddev	.00097	.840	.00144	.0110	.00528	.00259	.00718	.0143
%RSD	.18659	1.3422	.56532	.21968	2.0876	.42179	3.7518	.20212
#1	.52096	63.421	.25626	4.9894	.25249	.61450	.18326	7.0650
#2	.52153	62.553	.25639	5.0088	.25853	.61534	.19422	7.0849
#3	.51964	61.741	.25383	5.0081	.24801	.61050	.19677	7.0571
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606076405S Acquired: 6/23/2016 17:30:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50671	.73344	.51400	.25052	.50766	.50196	.71683
Stddev	.00049	.00764	.00562	.00109	.00170	.00107	.08607
%RSD	.09604	1.0422	1.0940	.43503	.33403	.21255	12.007
#1	.50635	.74103	.51985	.25089	.50822	.50082	.65957
#2	.50651	.73352	.50864	.24929	.50576	.50294	.81581
#3	.50726	.72575	.51349	.25138	.50901	.50210	.67512
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6617.0	40888.	2108.3
Stddev	36.3	229.	43.4
%RSD	.54907	.56042	2.0607
#1	6597.9	40710.	2065.4
#2	6594.1	40808.	2107.2
#3	6658.9	41146.	2152.3

Sample Name: L1606076406SD Acquired: 6/23/2016 17:34:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20158	5.0081	.20119	.99289	.52520	.02487	44.269	.02478
Stddev	.00322	.0181	.00119	.00601	.00285	.00008	.382	.00037
%RSD	1.5962	.36106	.59360	.60498	.54186	.31907	.86303	1.4919
#1	.20051	5.0088	.20213	.99898	.52769	.02491	44.667	.02436
#2	.19904	5.0258	.20161	.99270	.52581	.02493	44.234	.02503
#3	.20520	4.9897	.19985	.98697	.52210	.02478	43.905	.02496
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09994	.26339	.24953	2.5877	30.662	.52181	20.366	.36158
Stddev	.00059	.00143	.00256	.0611	.222	.00474	.372	.00451
%RSD	.59271	.54249	1.0252	2.3607	.72504	.90810	1.8250	1.2464
#1	.09927	.26187	.24744	2.6536	30.906	.52560	20.793	.36652
#2	.10013	.26359	.24876	2.5330	30.471	.52334	20.120	.35770
#3	.10041	.26470	.25238	2.5764	30.609	.51650	20.184	.36051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51522	62.707	.25233	4.9723	.25332	.61176	.19301	7.0733
Stddev	.00118	.507	.00147	.0132	.00160	.00273	.00266	.0075
%RSD	.22851	.80791	.58315	.26561	.63178	.44609	1.3764	.10575
#1	.51652	63.283	.25117	4.9632	.25248	.61207	.19130	7.0646
#2	.51490	62.510	.25184	4.9664	.25231	.61431	.19166	7.0774
#3	.51423	62.328	.25399	4.9875	.25516	.60888	.19607	7.0778
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606076406SD Acquired: 6/23/2016 17:34:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50236	.73208	.50989	.24941	.50289	.49718	.41726
Stddev	.00239	.00589	.01162	.00247	.00231	.00067	.67397
%RSD	.47662	.80444	2.2794	.99175	.45970	.13482	161.52
#1	.49978	.73852	.52268	.24842	.50555	.49665	-.07543
#2	.50451	.73075	.49998	.25223	.50134	.49794	.14190
#3	.50280	.72697	.50700	.24759	.50179	.49697	1.1853
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6608.7	41166.	2120.3
Stddev	11.1	137.	19.6
%RSD	.16723	.33193	.92378
#1	6603.0	41323.	2097.8
#2	6621.5	41090.	2129.6
#3	6601.7	41083.	2133.5

Sample Name: L1606109801 Acquired: 6/23/2016 17:38:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00129**	**.01287**	**-.00287**	**.00614**	**-.00048**	**-.00003**	**.08304**	**.00009**
Stddev	.00159	.00811	.00192	.00213	.00074	.00007	.01337	.00013
%RSD	122.92	63.032	67.055	34.715	154.39	222.73	16.095	139.40
#1	.00212	.02216	-.00081	.00626	-.00008	-.00010	.09008	.00010
#2	.00231	.00925	-.00462	.00395	-.00134	.00003	.09142	-.00004
#3	-.00054	.00720	-.00317	.00821	-.00003	-.00001	.06763	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.00114**	**.00130**	**.02096**	**.10896**	**-.00006**	**-.03305**	**.00197**
Stddev	.00044	.00113	.00181	.01243	.08516	.00372	.07886	.00311
%RSD	453.08	99.110	139.52	59.304	78.156	6481.1	238.62	158.05
#1	-.00053	.00170	.00306	.02326	.19673	-.00420	-.07467	-.00106
#2	.00034	-.00016	-.00055	.03207	.02667	.00104	-.08238	.00515
#3	-.00009	.00187	.00138	.00754	.10349	.00299	.05790	.00182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00066**	**.45527**	**.00049**	**-.00366**	**.00153**	**.00122**	**.00971**	**-.00748**
Stddev	.00030	.03584	.00013	.00895	.00348	.00363	.01502	.00042
%RSD	45.839	7.8733	25.556	244.66	227.48	297.89	154.66	5.5803
#1	.00053	.41497	.00054	-.01374	.00021	.00522	.02568	-.00782
#2	.00044	.46723	.00035	-.00059	-.00110	-.00186	-.00414	-.00701
#3	.00100	.48360	.00058	.00335	.00548	.00030	.00761	-.00761
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606109801 Acquired: 6/23/2016 17:38:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.00480**	**-.00167**	**-.00415**	**-.00006**	**.00240**	**.05406**
Stddev	.00008	.00020	.00916	.00353	.00083	.00017	.09676
%RSD	178.62	4.1888	547.73	84.853	1386.4	7.2187	179.01
#1	-.00014	.00474	.00699	-.00318	.00001	.00255	.07032
#2	-.00003	.00462	-.01126	-.00807	-.00092	.00221	-.04981
#3	.00002	.00502	-.00075	-.00122	.00073	.00245	.14165
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6705.4**	**41704.**	**2110.9**
Stddev	33.1	203.	3.8
%RSD	.49393	.48693	.18234
#1	6717.5	41536.	2115.0
#2	6668.0	41646.	2110.1
#3	6730.8	41930.	2107.4

Sample Name: L1606109802 Acquired: 6/23/2016 17:42:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00131	.04120	.00085	.00475	.00003	.00006	.12679	.00004
Stddev	.00226	.00310	.00173	.00253	.00122	.00003	.01985	.00014
%RSD	172.44	7.5124	203.60	53.268	4293.6	44.669	15.655	354.39
#1	-.00391	.03975	.00123	.00360	.00116	.00006	.11393	-.00006
#2	-.00005	.04475	-.00104	.00766	.00019	.00008	.11680	.00020
#3	.00004	.03909	.00235	.00301	-.00126	.00003	.14965	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00021	.00349	.00237	.18011	.09946	-.00236	.07943	.00699
Stddev	.00033	.00204	.00114	.02015	.07387	.00179	.02978	.00080
%RSD	156.99	58.571	48.052	11.185	74.275	75.957	37.492	11.493
#1	.00015	.00129	.00134	.19792	.08997	-.00029	.05468	.00760
#2	-.00027	.00385	.00359	.18417	.17761	-.00335	.11249	.00608
#3	-.00051	.00533	.00218	.15825	.03079	-.00344	.07113	.00730
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00657	.08383	.00108	-.00632	.00042	.00155	-.00209	-.00610
Stddev	.00027	.01857	.00084	.00291	.00245	.00366	.00646	.00130
%RSD	4.0493	22.151	77.513	46.079	588.34	235.09	308.97	21.310
#1	.00687	.08551	.00034	-.00968	.00101	-.00057	-.00876	-.00625
#2	.00646	.10150	.00091	-.00476	.00251	.00578	.00414	-.00474
#3	.00637	.06448	.00199	-.00452	-.00227	-.00054	-.00165	-.00733
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606109802 Acquired: 6/23/2016 17:42:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00054**	**.00097**	**.00153**	**-.00310**	**-.00091**	**.00301**	**.27773**
Stddev	.00104	.00057	.00430	.00238	.00037	.00011	.05024
%RSD	194.32	58.620	280.21	76.638	40.878	3.7408	18.089
#1	-.00046	.00112	.00644	-.00519	-.00093	.00307	.33422
#2	.00046	.00144	-.00158	-.00051	-.00052	.00288	.23804
#3	-.00161	.00034	-.00025	-.00360	-.00127	.00309	.26094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6708.6**	**41920.**	**2143.4**
Stddev	42.4	304.	28.2
%RSD	.63177	.72485	1.3166
#1	6687.7	42255.	2139.9
#2	6680.7	41839.	2117.2
#3	6757.4	41664.	2173.3

Sample Name: L1606109802PS Acquired: 6/23/2016 17:46:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573952-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20295	4.9978	.19604	.97111	.51605	.02475	5.3316	.02478
Stddev	.00344	.0037	.00197	.00223	.00051	.00014	.0490	.00015
%RSD	1.6972	.07436	1.0027	.22973	.09917	.56068	.91841	.59158
#1	.19936	4.9935	.19463	.96974	.51663	.02489	5.2786	.02492
#2	.20326	5.0002	.19520	.96990	.51565	.02462	5.3752	.02463
#3	.20622	4.9996	.19828	.97368	.51588	.02474	5.3410	.02480
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10156	.25473	.25812	2.2174	25.577	.52251	5.2379	.25866
Stddev	.00037	.00076	.00168	.0428	.016	.00141	.1063	.00557
%RSD	.36206	.29734	.65016	1.9294	.06131	.27078	2.0291	2.1526
#1	.10143	.25529	.25897	2.1982	25.585	.52373	5.2689	.26416
#2	.10128	.25504	.25619	2.2664	25.559	.52096	5.3253	.25303
#3	.10198	.25387	.25920	2.1875	25.587	.52284	5.1196	.25880
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51904	25.731	.25472	4.8394	.25146	.60443	.18808	2.5389
Stddev	.00078	.051	.00178	.0161	.00652	.00703	.00446	.0097
%RSD	.15079	.19825	.69859	.33289	2.5939	1.1635	2.3736	.38131
#1	.51985	25.790	.25678	4.8266	.24420	.60484	.18767	2.5333
#2	.51829	25.701	.25365	4.8340	.25681	.59720	.18383	2.5332
#3	.51899	25.702	.25373	4.8575	.25338	.61125	.19273	2.5500
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606109802PS Acquired: 6/23/2016 17:46:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573952-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50319	.52125	.51263	.24941	.49856	.50658	.41681
Stddev	.00067	.00121	.00461	.00337	.00102	.00107	.18065
%RSD	.13272	.23307	.89973	1.3499	.20406	.21178	43.340
#1	.50331	.52232	.50810	.25329	.49739	.50643	.22345
#2	.50379	.52148	.51246	.24723	.49912	.50559	.44572
#3	.50247	.51993	.51732	.24772	.49918	.50772	.58125
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6634.2	41367.	2120.2
Stddev	45.5	136.	31.3
%RSD	.68551	.32832	1.4752
#1	6675.0	41309.	2085.8
#2	6642.5	41522.	2147.0
#3	6585.2	41269.	2127.8

Sample Name: L1606109802SDL Acquired: 6/23/2016 17:49:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573952-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00136**	**.01502**	**.00308**	**.00439**	**-.00102**	**.00008**	**.05957**	**.00033**
Stddev	.00139	.00670	.00298	.00095	.00092	.00003	.03476	.00004
%RSD	102.34	44.577	96.746	21.522	90.289	33.805	58.357	13.382
#1	.00126	.01153	.00023	.00498	-.00197	.00010	.02372	.00038
#2	.00281	.01080	.00283	.00489	-.00093	.00009	.06187	.00030
#3	.00002	.02274	.00619	.00330	-.00015	.00005	.09313	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**-.00017**	**.00113**	**.04078**	**.05810**	**.00210**	**.06165**	**.00226**
Stddev	.00020	.00084	.00062	.00773	.11892	.00364	.08929	.00317
%RSD	251.06	498.56	54.543	18.955	204.67	172.87	144.83	140.01
#1	-.00031	.00011	.00044	.04552	-.07722	.00243	-.01365	-.00138
#2	.00002	.00049	.00161	.03186	.14597	-.00169	.03832	.00380
#3	.00006	-.00111	.00136	.04496	.10555	.00557	.16029	.00437
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00155**	**.03886**	**.00061**	**.00728**	**.00025**	**-.00084**	**-.00741**	**-.00785**
Stddev	.00019	.02607	.00103	.00300	.00248	.00463	.00531	.00300
%RSD	12.485	67.084	170.41	41.143	1006.5	550.34	71.645	38.154
#1	.00155	.03807	-.00057	.00580	-.00067	-.00286	-.00354	-.01115
#2	.00174	.01319	.00103	.00532	.00306	.00445	-.01346	-.00530
#3	.00136	.06531	.00136	.01073	-.00164	-.00411	-.00522	-.00710
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606109802SDL Acquired: 6/23/2016 17:49:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573952-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00088**	**.00057**	**.00094**	**-.00409**	**.00019**	**.00149**	**.45954**
Stddev	.00075	.00043	.01378	.00250	.00054	.00013	.21882
%RSD	85.215	74.163	1462.5	61.137	279.61	9.0143	47.616
#1	-.00150	.00022	-.00662	-.00460	.00077	.00151	.33705
#2	-.00005	.00045	.01685	-.00138	-.00029	.00135	.71218
#3	-.00110	.00105	-.00740	-.00631	.00009	.00162	.32941
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6959.1**	**43239.**	**2203.0**
Stddev	42.9	568.	21.3
%RSD	.61702	1.3134	.96538
#1	6931.5	42983.	2192.4
#2	7008.6	43890.	2227.5
#3	6937.3	42844.	2189.1

Sample Name: L1606109802SDL Acquired: 6/23/2016 17:53:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573952-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00025**	**-.00848**	**.00213**	**-.00007**	**-.00079**	**-.00002**	**.00503**
Stddev	.00182	.00079	.00051	.00320	.00067	.00006	.00717
%RSD	715.84	9.3659	23.973	4723.2	84.264	337.91	142.65
#1	.00063	-.00798	.00169	-.00266	-.00014	-.00004	.01305
#2	.00185	-.00807	.00200	-.00107	-.00147	-.00006	.00280
#3	-.00172	-.00940	.00269	.00352	-.00077	.00005	-.00077
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	**.00018**	**.00059**	**-.00006**	**-.00347**	**.12523**	**.00146**
Stddev	.00022	.00029	.00107	.00164	.02019	.11611	.00742
%RSD	115.68	162.83	180.16	2901.7	582.00	92.721	507.00
#1	-.00042	.00014	.00077	.00098	.00022	-.00797	-.00642
#2	-.00018	.00048	-.00055	.00080	-.02525	.20510	.00830
#3	.00002	-.00009	.00157	-.00195	.01463	.17855	.00251
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04612**	**.00275**	**-.00011**	**.02502**	**-.00021**	**.01583**	**.00003**
Stddev	.09471	.00202	.00043	.02748	.00019	.00290	.00282
%RSD	205.33	73.453	401.99	109.83	87.851	18.294	10124.
#1	.13667	.00063	.00029	.00253	-.00023	.01917	-.00119
#2	-.05226	.00465	-.00004	.01688	-.00002	.01426	.00325
#3	.05396	.00298	-.00056	.05566	-.00039	.01406	-.00198
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: L1606109802SDL Acquired: 6/23/2016 17:53:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573952-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00091**	F **-.01196**	**-.01108**	**-.00050**	**.00003**	**-.00725**	**-.00124**
Stddev	.00148	.00527	.00232	.00100	.00102	.00296	.00502
%RSD	162.61	44.027	20.977	201.11	3086.6	40.796	405.85
#1	-.00253	-.00590	-.01377	-.00126	-.00114	-.00905	-.00509
#2	.00038	-.01454	-.00977	-.00086	.00061	-.00384	-.00306
#3	-.00058	-.01544	-.00971	.00063	.00062	-.00886	.00444
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		90.000					
Low Limit		-.01000					

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00077**	**.00084**	**.22312**
Stddev	.00068	.00020	.30532
%RSD	88.979	23.810	136.84
#1	-.00155	.00083	.52434
#2	-.00032	.00104	-.08613
#3	-.00043	.00064	.23116
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6981.3**	**43420.**	**2189.5**
Stddev	46.4	74.	50.4
%RSD	.66474	.17141	2.3033
#1	6946.3	43470.	2150.2
#2	7033.9	43456.	2171.9
#3	6963.6	43335.	2246.4

Sample Name: CCV Acquired: 6/23/2016 17:57:55 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39465	9.8592	.39426	.49051	.99575	.04951	9.9296
Stddev	.00130	.0543	.00077	.00725	.01287	.00025	.0980
%RSD	.33011	.55085	.19471	1.4789	1.2926	.50940	.98742
#1	.39334	9.8260	.39515	.49135	.98121	.04933	9.8278
#2	.39467	9.9219	.39384	.49731	1.0057	.04980	9.9378
#3	.39594	9.8298	.39380	.48287	1.0003	.04940	10.023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04931	.19809	.49689	.49699	3.9877	49.594	1.0016
Stddev	.00035	.00039	.00097	.00140	.0463	.339	.0098
%RSD	.69996	.19569	.19580	.28221	1.1620	.68359	.97475
#1	.04892	.19768	.49580	.49756	3.9856	49.220	.99073
#2	.04957	.19845	.49718	.49801	3.9424	49.882	1.0096
#3	.04943	.19814	.49768	.49539	4.0350	49.679	1.0045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.8713	.49596	.98783	49.518	.49712	9.8043	.49873
Stddev	.0582	.00613	.00477	.522	.00109	.0177	.00163
%RSD	.58979	1.2355	.48297	1.0550	.21900	.18012	.32630
#1	9.8044	.48970	.99184	48.919	.49799	9.7884	.49800
#2	9.9106	.50194	.98911	49.882	.49748	9.8233	.49759
#3	9.8989	.49623	.98255	49.751	.49590	9.8012	.50059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: CCV Acquired: 6/23/2016 17:57:55 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1826**	**.39764**	**4.9717**	**.98502**	**.99375**	**.98233**	**.49603**
Stddev	.0050	.01088	.0089	.00253	.01310	.00868	.00327
%RSD	.42000	2.7362	.17868	.25689	1.3184	.88336	.65997
#1	1.1879	.39017	4.9692	.98339	.97877	.98140	.49964
#2	1.1780	.41013	4.9816	.98794	1.0031	.99143	.49324
#3	1.1820	.39263	4.9643	.98374	.99940	.97415	.49523
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.99379**	**.99204**	F **.18789**
Stddev	.00563	.00149	.09910
%RSD	.56658	.15028	52.747
#1	.98993	.99220	.30141
#2	1.0003	.99344	.11863
#3	.99118	.99047	.14362
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6631.8**	**40728.**	**2099.0**
Stddev	45.9	503.	16.5
%RSD	.69181	1.2341	.78530
#1	6611.3	41075.	2107.2
#2	6599.8	40151.	2080.0
#3	6684.4	40956.	2109.8

Sample Name: CCB Acquired: 6/23/2016 18:01:33 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.01129	.00078	.00451	-.00045	.00008	-.00465
Stddev	.00148	.00039	.00155	.00327	.00048	.00013	.02449
%RSD	411.84	3.4907	199.15	72.530	105.95	171.62	526.45
#1	-.00053	.01164	.00012	.00090	.00005	.00000	-.02544
#2	.00207	.01087	.00255	.00727	-.00049	-.00000	.02235
#3	-.00046	.01137	-.00034	.00537	-.00091	.00022	-.01087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00018	.00054	.00011	-.01088	.09874	.00114
Stddev	.00029	.00030	.00119	.00044	.03748	.07317	.00332
%RSD	246.95	168.18	220.68	381.54	344.38	74.101	290.12
#1	.00045	.00022	-.00081	.00062	.01794	.03451	-.00267
#2	.00000	.00046	.00100	-.00013	-.05325	.08332	.00343
#3	-.00010	-.00014	.00143	-.00015	.00266	.17839	.00267
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00689	.00204	.00366	.02542	-.00029	.00140	-.00069
Stddev	.06132	.00361	.00131	.02117	.00182	.00788	.00343
%RSD	889.59	177.04	35.712	83.279	629.54	563.60	498.72
#1	.06069	-.00150	.00240	.01760	.00160	.00084	.00259
#2	-.02239	.00571	.00357	.00928	-.00043	.00955	-.00039
#3	-.05898	.00190	.00501	.04939	-.00204	-.00619	-.00426
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: CCB Acquired: 6/23/2016 18:01:33 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00612**	**-.00027**	**.00319**	**.00025**	**.00023**	**-.00325**	**-.00471**
Stddev	.00153	.00342	.00271	.00103	.00038	.00279	.00086
%RSD	25.064	1269.5	84.974	412.62	169.30	85.836	18.269
#1	.00449	-.00355	.00269	-.00074	-.00018	-.00174	-.00566
#2	.00753	-.00053	.00612	.00132	.00028	-.00154	-.00398
#3	.00634	.00327	.00077	.00017	.00058	-.00647	-.00449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00008**	**.00027**	F **.24105**
Stddev	.00092	.00012	.41150
%RSD	1209.9	46.847	170.71
#1	-.00098	.00021	.54842
#2	.00054	.00018	.40117
#3	.00067	.00041	-.22644
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6672.3**	**41768.**	**2119.7**
Stddev	57.6	262.	32.6
%RSD	.86323	.62780	1.5373
#1	6705.6	42016.	2128.0
#2	6705.5	41794.	2083.8
#3	6605.8	41493.	2147.4

Sample Name: L1606109803 Acquired: 6/23/2016 18:05:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00032**	**.03085**	**-.00127**	**.00183**	**-.00146**	**.00004**	**.19954**	**.00007**
Stddev	.00236	.01045	.00348	.00087	.00085	.00007	.02976	.00016
%RSD	746.66	33.859	274.17	47.779	57.997	158.69	14.912	230.00
#1	.00241	.03757	-.00520	.00147	-.00081	.00010	.20422	-.00011
#2	-.00171	.03617	.00140	.00283	-.00242	.00007	.22668	.00018
#3	-.00165	.01882	-.00001	.00120	-.00116	-.00003	.16772	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.00568**	**.00388**	**.39187**	**.10478**	**.00034**	**.12477**	**.01117**
Stddev	.00033	.00040	.00075	.05326	.14846	.00690	.09992	.00202
%RSD	1223.9	7.0496	19.420	13.590	141.68	2058.5	80.089	18.078
#1	-.00037	.00598	.00367	.36606	.20874	.00375	.01013	.01079
#2	.00028	.00523	.00472	.45311	.17085	.00486	.17078	.00937
#3	.00001	.00584	.00326	.35643	-.06524	-.00761	.19339	.01336
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01433**	**.14788**	**.00239**	**-.00401**	**-.00121**	**-.00112**	**-.00779**	**.00373**
Stddev	.00040	.04259	.00040	.00288	.00159	.00565	.00213	.00124
%RSD	2.7886	28.802	16.639	71.900	130.64	504.39	27.319	33.311
#1	.01390	.18295	.00247	-.00583	-.00301	.00539	-.01003	.00233
#2	.01440	.16021	.00274	-.00069	-.00001	-.00484	-.00757	.00419
#3	.01469	.10048	.00196	-.00551	-.00062	-.00391	-.00579	.00468
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606109803 Acquired: 6/23/2016 18:05:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.00160	.00432	-.00693	-.00031	.00470	.05902
Stddev	.00059	.00022	.00543	.00465	.00124	.00007	.04433
%RSD	337.40	13.821	125.73	67.076	399.03	1.4400	75.109
#1	.00054	.00138	-.00146	-.01029	-.00033	.00477	.10269
#2	-.00050	.00182	.00932	-.00163	.00094	.00464	.06031
#3	.00048	.00160	.00510	-.00886	-.00154	.00469	.01406
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6701.9	41737.	2133.3
Stddev	17.7	223.	23.6
%RSD	.26482	.53370	1.1066
#1	6684.0	41936.	2107.7
#2	6702.4	41778.	2138.2
#3	6719.4	41496.	2154.1

Sample Name: L1606109804 Acquired: 6/23/2016 18:09:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.00550	.00148	.00398	.00014	-.00000	.05639	.00011
Stddev	.00219	.00612	.00302	.00090	.00066	.00014	.02441	.00010
%RSD	8054.2	111.32	204.56	22.756	478.27	12248.	43.295	91.576
#1	.00205	-.00072	.00110	.00492	.00048	.00000	.08169	.00011
#2	.00034	.00570	.00467	.00389	-.00062	-.00014	.05452	.00020
#3	-.00231	.01151	-.00134	.00312	.00056	.00014	.03297	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	-.00048	.00039	.00509	.07226	-.00432	.08860	-.00098
Stddev	.00047	.00177	.00047	.00413	.11460	.00188	.02282	.00192
%RSD	981.46	369.62	120.47	81.176	158.60	43.602	25.750	195.61
#1	.00046	-.00226	.00002	.00662	.11487	-.00448	.08077	-.00230
#2	.00015	.00128	.00093	.00041	-.05755	-.00612	.11430	.00122
#3	-.00046	-.00045	.00024	.00823	.15944	-.00236	.07074	-.00186
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	.28447	-.00051	-.01137	-.00379	.00134	-.00025	-.01961
Stddev	.00030	.03222	.00045	.00801	.00241	.00677	.00472	.00119
%RSD	78.960	11.326	89.242	70.503	63.646	504.08	1916.6	6.0610
#1	.00007	.28282	-.00042	-.00434	-.00635	.00646	.00471	-.01950
#2	.00041	.31748	-.00099	-.02009	-.00156	-.00633	-.00469	-.01848
#3	.00066	.25310	-.00010	-.00967	-.00346	.00390	-.00076	-.02085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606109804 Acquired: 6/23/2016 18:09:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**.00727**	**-.00271**	**-.00425**	**.00021**	**.00148**	**-.01678**
Stddev	.00012	.00034	.00158	.00185	.00078	.00021	.29091
%RSD	149.43	4.6162	58.348	43.577	374.98	14.359	1733.8
#1	.00006	.00757	-.00433	-.00448	.00104	.00139	.18184
#2	-.00016	.00734	-.00263	-.00229	.00011	.00173	.11852
#3	-.00014	.00691	-.00117	-.00598	-.00052	.00134	-.35070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6688.2**	**41655.**	**2109.0**
Stddev	56.4	133.	18.7
%RSD	.84272	.31956	.88651
#1	6659.9	41774.	2087.4
#2	6753.1	41679.	2119.9
#3	6651.7	41511.	2119.7

Sample Name: L1606076401 Acquired: 6/23/2016 18:13:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00245	.67019	.00010	.00833	.01433	.00003	37.313	.00009
Stddev	.00064	.00585	.00478	.00400	.00127	.00014	.132	.00011
%RSD	26.141	.87236	4915.8	47.991	8.8257	429.53	.35301	115.20
#1	.00243	.67675	-.00530	.00372	.01377	.00008	37.462	.00013
#2	.00182	.66553	.00380	.01082	.01578	.00015	37.267	-.00003
#3	.00310	.66828	.00179	.01046	.01345	-.00013	37.211	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00177	.13494	.00493	2.1093	3.5116	.00538	12.516	.47690
Stddev	.00027	.00081	.00173	.0368	.1337	.00492	.251	.00425
%RSD	15.254	.60366	35.121	1.7452	3.8081	91.565	2.0071	.89198
#1	.00146	.13588	.00619	2.1427	3.6345	.01007	12.781	.48122
#2	.00191	.13437	.00564	2.0698	3.5309	.00580	12.487	.47677
#3	.00195	.13459	.00296	2.1153	3.3692	.00026	12.281	.47272
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00239	7.1134	.06661	.12519	.00353	.00172	.00189	5.8796
Stddev	.00028	.0421	.00053	.00389	.00278	.00471	.00179	.0247
%RSD	11.781	.59130	.79827	3.1089	78.703	273.59	94.695	.41985
#1	.00270	7.1321	.06712	.12451	.00584	-.00218	-.00008	5.8957
#2	.00230	7.0652	.06666	.12938	.00431	.00694	.00342	5.8512
#3	.00216	7.1429	.06605	.12168	.00045	.00040	.00234	5.8918
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606076401 Acquired: 6/23/2016 18:13:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.21848	.02711	-.00526	.00152	.01133	.29378
Stddev	.00053	.00139	.00262	.00115	.00075	.00027	.28967
%RSD	4257.4	.63577	9.6647	21.837	49.639	2.3502	98.600
#1	.00059	.22007	.03006	-.00608	.00213	.01140	.10070
#2	-.00044	.21748	.02623	-.00576	.00176	.01103	.15379
#3	-.00012	.21789	.02504	-.00395	.00068	.01155	.62685
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6666.0	41778.	2147.7
Stddev	21.7	229.	44.3
%RSD	.32537	.54913	2.0641
#1	6658.2	41696.	2121.5
#2	6690.5	41600.	2122.8
#3	6649.4	42037.	2198.9

Sample Name: L1606076402 Acquired: 6/23/2016 18:17:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00113	.17691	.00122	.01438	.01126	-.00007	47.643	.00046
Stddev	.00008	.00451	.00550	.00105	.00043	.00007	.152	.00035
%RSD	6.6984	2.5493	451.48	7.3081	3.8067	88.547	.31914	77.689
#1	-.00121	.17594	.00265	.01351	.01094	-.00002	47.529	.00010
#2	-.00113	.18183	-.00485	.01554	.01110	-.00005	47.816	.00045
#3	-.00106	.17297	.00586	.01408	.01175	-.00015	47.585	.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	.00770	.00173	.25827	3.3547	.00082	13.331	.01953
Stddev	.00066	.00082	.00180	.01292	.0490	.00546	.106	.00183
%RSD	140.89	10.586	103.87	5.0018	1.4609	664.19	.79675	9.3761
#1	-.00028	.00820	-.00034	.25716	3.3133	.00131	13.289	.02164
#2	.00073	.00815	.00288	.24595	3.4088	.00602	13.252	.01835
#3	.00096	.00676	.00265	.27171	3.3420	-.00487	13.451	.01861
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	85.841	.00393	.01987	.00031	.00407	-.00554	4.9290
Stddev	.00036	.284	.00086	.00461	.00230	.00232	.00977	.0097
%RSD	74.124	.33036	21.834	23.192	751.95	56.913	176.51	.19731
#1	.00064	85.671	.00313	.02519	-.00217	.00145	-.01667	4.9400
#2	.00074	85.684	.00381	.01712	.00238	.00583	.00165	4.9218
#3	.00007	86.169	.00484	.01729	.00072	.00495	-.00160	4.9251
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606076402 Acquired: 6/23/2016 18:17:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00172	.17262	-.00265	-.00410	-.00007	.00471	.40901
Stddev	.00082	.00082	.00405	.00250	.00091	.00010	.33393
%RSD	47.322	.47585	153.10	60.989	1359.2	2.0262	81.643
#1	.00252	.17344	-.00309	-.00186	-.00069	.00470	.53676
#2	.00089	.17264	.00161	-.00680	.00097	.00462	.03007
#3	.00176	.17180	-.00646	-.00364	-.00048	.00481	.66021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6546.5	40659.	2108.5
Stddev	28.1	201.	15.3
%RSD	.42958	.49347	.72557
#1	6561.7	40449.	2124.6
#2	6514.1	40849.	2106.9
#3	6563.7	40679.	2094.1

Sample Name: L1606076403 Acquired: 6/23/2016 18:21:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00137	.15342	.00118	.01561	.01121	.00003	46.708	.00034
Stddev	.00144	.01220	.00354	.00156	.00114	.00007	.333	.00016
%RSD	104.86	7.9497	299.98	10.017	10.172	207.11	.71252	47.105
#1	.00276	.15228	.00523	.01638	.01119	.00004	47.070	.00019
#2	.00148	.16615	-.00041	.01663	.01236	.00010	46.637	.00033
#3	-.00012	.14184	-.00128	.01381	.01008	-.00004	46.416	.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	.00847	.00160	.25037	3.2322	-.00343	13.109	.01732
Stddev	.00048	.00215	.00051	.01608	.1197	.00219	.140	.00025
%RSD	105.62	25.328	31.641	6.4231	3.7025	63.908	1.0676	1.4475
#1	.00099	.01061	.00135	.24721	3.1397	-.00591	13.252	.01732
#2	.00010	.00848	.00126	.26779	3.1895	-.00259	13.105	.01706
#3	.00026	.00632	.00218	.23609	3.3674	-.00178	12.972	.01756
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	83.906	.00432	.01477	.00450	.00054	-.00630	4.8394
Stddev	.00021	.704	.00062	.00496	.00594	.00823	.00533	.0108
%RSD	145.51	.83873	14.339	33.621	132.00	1523.4	84.657	.22390
#1	.00024	84.668	.00370	.00922	.00040	-.00564	-.00982	4.8447
#2	.00028	83.772	.00494	.01629	.01131	.00989	-.00890	4.8466
#3	-.00010	83.280	.00432	.01879	.00179	-.00263	-.00016	4.8270
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606076403 Acquired: 6/23/2016 18:21:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00189	.16928	-.00280	-.00350	-.00037	.00427	.33488
Stddev	.00087	.00110	.00261	.00165	.00108	.00027	.28811
%RSD	46.182	.64857	93.235	47.233	289.03	6.2712	86.033
#1	.00253	.17053	-.00577	-.00531	-.00161	.00439	.48732
#2	.00090	.16886	-.00085	-.00207	.00037	.00397	.00258
#3	.00224	.16845	-.00178	-.00311	.00012	.00447	.51476
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6581.0	40913.	2128.6
Stddev	5.4	301.	32.8
%RSD	.08278	.73656	1.5394
#1	6574.8	40952.	2106.9
#2	6584.5	40594.	2112.5
#3	6583.9	41193.	2166.3

Sample Name: L1606095701 Acquired: 6/23/2016 18:25:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.46956	.00251	.02030	.04833	.00003	49.298	.00021
Stddev	.00116	.00247	.00083	.00483	.00100	.00005	.380	.00019
%RSD	283.11	.52507	32.898	23.794	2.0760	143.19	.77063	90.357
#1	.00160	.46729	.00340	.01479	.04946	-.00001	49.398	.00006
#2	-.00072	.47218	.00235	.02380	.04755	.00003	49.618	.00041
#3	.00036	.46920	.00178	.02230	.04798	.00008	48.878	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.00117	.00294	.90286	1.5234	.00299	12.797	.07921
Stddev	.00016	.00017	.00150	.02505	.1258	.00416	.204	.00280
%RSD	34.195	14.848	50.801	2.7744	8.2581	138.79	1.5973	3.5404
#1	.00039	.00098	.00204	.92120	1.4450	-.00175	12.561	.07627
#2	.00038	.00131	.00212	.91306	1.4566	.00596	12.905	.08186
#3	.00067	.00123	.00467	.87432	1.6685	.00477	12.925	.07952
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	3.8733	.00033	.04837	.00336	-.00283	.00062	4.1822
Stddev	.00048	.0248	.00057	.00397	.00588	.00529	.00509	.0038
%RSD	106.40	.63975	174.89	8.1973	175.22	186.90	821.76	.09190
#1	.00063	3.9009	.00047	.05197	.00822	.00326	-.00493	4.1833
#2	-.00009	3.8529	.00082	.04903	-.00318	-.00552	.00170	4.1779
#3	.00081	3.8662	-.00030	.04412	.00504	-.00623	.00508	4.1853
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606095701 Acquired: 6/23/2016 18:25:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.26575	-.00460	-.00190	.00016	.00477	.18671
Stddev	.00076	.00141	.00397	.00470	.00026	.00014	.25228
%RSD	1127.9	.53205	86.124	248.06	165.00	2.9160	135.12
#1	.00070	.26627	-.00436	-.00420	.00020	.00486	-.03830
#2	-.00009	.26684	-.00077	.00352	.00040	.00485	.13898
#3	-.00081	.26416	-.00869	-.00501	-.00012	.00461	.45944
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6633.8	41376.	2099.5
Stddev	37.1	291.	7.1
%RSD	.55940	.70297	.33861
#1	6661.1	41062.	2100.6
#2	6648.8	41636.	2091.9
#3	6591.5	41431.	2106.0

Sample Name: L1606095702 Acquired: 6/23/2016 18:29:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.02149	-.00029	.01798	.04394	-.00005	48.548	.00016
Stddev	.00120	.00717	.00363	.00283	.00013	.00009	.113	.00020
%RSD	338.55	33.343	1265.1	15.710	.28482	186.99	.23191	128.29
#1	.00155	.02937	-.00024	.01478	.04391	-.00003	48.543	-.00006
#2	.00038	.01536	-.00394	.01905	.04383	.00003	48.664	.00019
#3	-.00086	.01975	.00332	.02012	.04408	-.00015	48.439	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	.00018	.00270	.01333	1.4334	.00181	12.360	.04977
Stddev	.00029	.00074	.00104	.00520	.0107	.00516	.188	.00147
%RSD	124.55	409.37	38.421	39.005	.74428	284.70	1.5241	2.9581
#1	.00010	-.00042	.00376	.01807	1.4222	-.00050	12.567	.04817
#2	-.00039	.00100	.00266	.00777	1.4347	.00772	12.199	.05008
#3	-.00041	-.00004	.00169	.01416	1.4434	-.00179	12.314	.05107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	3.8295	.00047	.00890	-.00152	.00413	-.00556	3.5646
Stddev	.00041	.0622	.00056	.00959	.00091	.00142	.00430	.0105
%RSD	89.215	1.6239	120.78	107.82	59.749	34.322	77.442	.29519
#1	.00025	3.8845	.00007	.00556	-.00178	.00386	-.00914	3.5766
#2	.00020	3.7620	.00111	.00142	-.00226	.00566	-.00674	3.5599
#3	.00094	3.8419	.00022	.01971	-.00051	.00286	-.00079	3.5572
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606095702 Acquired: 6/23/2016 18:29:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.25718	-.01617	-.00292	-.00158	.00276	.25728
Stddev	.00011	.00214	.00935	.00156	.00059	.00016	.40159
%RSD	34.052	.83289	57.848	53.296	37.039	5.8090	156.09
#1	.00022	.25955	-.02691	-.00442	-.00103	.00282	-.15534
#2	.00044	.25539	-.00976	-.00131	-.00219	.00288	.64684
#3	.00029	.25660	-.01185	-.00303	-.00152	.00258	.28035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6634.1	41520.	2136.4
Stddev	35.2	131.	44.7
%RSD	.53089	.31504	2.0909
#1	6598.3	41376.	2086.8
#2	6635.3	41551.	2148.8
#3	6668.7	41632.	2173.6

Sample Name: CCV Acquired: 6/23/2016 18:33:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.37892	9.4387	.37738	.47256	.94946	.04758	9.5075
Stddev	.00148	.0146	.00259	.00305	.00322	.00017	.0685
%RSD	.39011	.15488	.68700	.64544	.33864	.35065	.72027
#1	.38009	9.4240	.38032	.47530	.94608	.04771	9.4676
#2	.37942	9.4533	.37541	.46928	.94982	.04765	9.4684
#3	.37726	9.4389	.37641	.47312	.95247	.04739	9.5866
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04694	.19097	.47642	.48024	3.7454	47.589	.96391
Stddev	.00038	.00060	.00177	.00172	.0267	.209	.00531
%RSD	.81436	.31192	.37218	.35728	.71307	.43924	.55081
#1	.04714	.19166	.47496	.48079	3.7624	47.380	.95931
#2	.04717	.19062	.47589	.48161	3.7146	47.589	.96972
#3	.04649	.19064	.47839	.47831	3.7591	47.798	.96271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.5330	.47716	.95180	47.369	.47779	9.4288	.47264
Stddev	.1380	.00452	.00445	.136	.00101	.0198	.00044
%RSD	1.4480	.94690	.46703	.28759	.21184	.20944	.09281
#1	9.3868	.47739	.95630	47.213	.47768	9.4450	.47285
#2	9.6611	.47253	.95168	47.430	.47683	9.4068	.47292
#3	9.5511	.48156	.94742	47.463	.47885	9.4347	.47213
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: CCV Acquired: 6/23/2016 18:33:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1353**	**.38157**	**4.7878**	**.94812**	**.94630**	**.94801**	**.48121**
Stddev	.0015	.00111	.0073	.00312	.00312	.01023	.00217
%RSD	.12990	.29010	.15352	.32951	.33000	1.0787	.45189
#1	1.1366	.38222	4.7963	.95070	.94271	.93631	.48083
#2	1.1337	.38220	4.7828	.94465	.94841	.95529	.47925
#3	1.1356	.38030	4.7843	.94900	.94778	.95241	.48355
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.95198**	**.95325**	F **.09466**
Stddev	.00202	.00225	.27239
%RSD	.21241	.23553	287.76
#1	.95399	.95580	.19384
#2	.95199	.95239	-.21343
#3	.94995	.95157	.30356
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6829.4**	**42429.**	**2191.9**
Stddev	12.0	491.	25.5
%RSD	.17610	1.1575	1.1649
#1	6837.9	42290.	2175.1
#2	6834.7	42022.	2221.3
#3	6815.6	42975.	2179.4

Sample Name: CCB Acquired: 6/23/2016 18:36:49 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00322**	**.00107**	**-.00054**	**.00322**	**.00006**	**.00009**	**.02193**
Stddev	.00043	.00584	.00138	.00071	.00147	.00001	.03302
%RSD	13.435	544.37	257.70	22.014	2255.3	10.149	150.58
#1	.00309	.00723	.00106	.00367	-.00132	.00008	.01644
#2	.00371	.00039	-.00144	.00240	.00160	.00009	-.00800
#3	.00287	-.00440	-.00123	.00358	-.00009	.00010	.05735
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**.00018**	**-.00042**	**.00126**	**.02179**	**.11279**	**-.00067**
Stddev	.00014	.00038	.00167	.00134	.02326	.08636	.00587
%RSD	182.22	210.03	399.06	106.42	106.75	76.563	872.21
#1	.00024	.00056	-.00036	.00176	.03802	.20919	-.00743
#2	.00004	-.00020	.00122	-.00026	-.00486	.08667	.00222
#3	-.00004	.00019	-.00212	.00226	.03219	.04251	.00319
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02601**	**.00041**	**.00309**	**.08611**	**-.00017**	**.00201**	**-.00231**
Stddev	.00787	.00462	.00037	.06126	.00074	.00369	.00149
%RSD	30.276	1132.0	12.029	71.145	441.11	183.39	64.604
#1	.02246	-.00052	.00267	.06682	.00059	-.00054	-.00062
#2	.02053	.00542	.00337	.03682	-.00020	.00033	-.00285
#3	.03503	-.00368	.00324	.15470	-.00090	.00625	-.00346
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: CCB Acquired: 6/23/2016 18:36:49 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00178**	**.00235**	**.00300**	**.00030**	**.00073**	**-.00027**	**-.00344**
Stddev	.00352	.00736	.00017	.00075	.00010	.00192	.00271
%RSD	198.25	313.53	5.6604	253.34	13.143	700.32	78.666
#1	-.00221	.00539	.00284	.00092	.00062	-.00182	-.00634
#2	.00305	-.00605	.00318	-.00054	.00077	.00188	-.00302
#3	.00448	.00771	.00299	.00050	.00080	-.00088	-.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00023**	**.00017**	F **.30996**
Stddev	.00082	.00026	.44738
%RSD	353.90	152.67	144.34
#1	-.00013	.00031	.51733
#2	.00118	-.00013	-.20349
#3	-.00035	.00032	.61602
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6847.7**	**42764.**	**2190.8**
Stddev	18.6	212.	5.5
%RSD	.27202	.49617	.24955
#1	6838.4	42826.	2184.7
#2	6869.1	42938.	2192.8
#3	6835.5	42527.	2195.1

Sample Name: L1606095703 Acquired: 6/23/2016 18:40:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00157	.59442	.00345	.01544	.05978	.00002	36.179	.00021
Stddev	.00140	.00140	.00372	.00226	.00166	.00008	.233	.00017
%RSD	89.489	.23471	107.82	14.612	2.7840	315.39	.64331	79.288
#1	.00259	.59283	.00035	.01648	.06092	.00011	36.405	.00023
#2	.00214	.59501	.00758	.01285	.06056	-.00003	36.192	.00038
#3	-.00003	.59543	.00243	.01699	.05787	-.00000	35.940	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	.00171	.00235	.99066	1.0189	.00306	4.2466	.34135
Stddev	.00029	.00065	.00116	.00191	.1477	.00520	.1543	.00578
%RSD	57.273	38.095	49.421	.19284	14.493	170.05	3.6338	1.6936
#1	.00018	.00100	.00118	.99000	.97647	.00895	4.1429	.34787
#2	.00074	.00184	.00237	.98917	1.1832	.00113	4.4240	.33684
#3	.00059	.00229	.00350	.99281	.89714	-.00090	4.1730	.33935
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00158	9.9139	.00125	.06880	.00203	.00079	-.00517	4.4030
Stddev	.00038	.0706	.00076	.00768	.00168	.00577	.00107	.0083
%RSD	24.292	.71237	60.961	11.168	82.575	735.03	20.696	.18913
#1	.00191	9.9842	.00113	.06853	.00010	.00362	-.00400	4.4025
#2	.00167	9.8430	.00208	.07661	.00292	.00459	-.00539	4.3950
#3	.00116	9.9146	.00056	.06125	.00308	-.00586	-.00611	4.4116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606095703 Acquired: 6/23/2016 18:40:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.13708	.00451	-.00202	.00078	.00490	.22494
Stddev	.00088	.00079	.01428	.00267	.00035	.00024	.11125
%RSD	513.50	.57511	316.39	132.43	44.919	4.8544	49.458
#1	.00022	.13772	-.01170	-.00500	.00067	.00502	.12100
#2	.00102	.13733	.01523	-.00120	.00118	.00506	.21152
#3	-.00073	.13620	.01000	.00015	.00050	.00463	.34229
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6641.1	41542.	2110.2
Stddev	47.0	387.	42.7
%RSD	.70732	.93262	2.0250
#1	6610.2	41137.	2074.7
#2	6618.0	41909.	2098.4
#3	6695.1	41580.	2157.7

Sample Name: L1606095704 Acquired: 6/23/2016 18:44:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00171	.01427	-.00254	.01401	.04366	.00001	35.183	.00015
Stddev	.00187	.00827	.00245	.00145	.00176	.00007	.524	.00017
%RSD	109.40	57.926	96.490	10.332	4.0281	938.95	1.4883	116.97
#1	.00375	.01991	-.00531	.01561	.04341	-.00008	35.381	.00027
#2	.00007	.00478	-.00065	.01361	.04552	.00004	35.579	-.00005
#3	.00132	.01813	-.00167	.01280	.04203	.00006	34.589	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	.00023	.00314	.00854	.90554	-.00053	4.1738	.13131
Stddev	.00017	.00027	.00209	.01235	.04311	.00195	.0469	.00168
%RSD	61.984	120.89	66.548	144.50	4.7611	368.87	1.1239	1.2783
#1	-.00041	.00004	.00554	-.00223	.92277	.00023	4.1196	.13296
#2	-.00032	.00054	.00170	.02202	.93737	.00093	4.2002	.13137
#3	-.00008	.00010	.00219	.00585	.85648	-.00275	4.2015	.12960
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00146	9.9224	.00122	.02546	.00187	.00274	-.00609	3.6801
Stddev	.00034	.2004	.00114	.01084	.00327	.00376	.00550	.0062
%RSD	23.395	2.0192	93.082	42.580	174.85	137.20	90.310	.16848
#1	.00107	10.130	.00251	.01415	.00529	.00275	-.00747	3.6873
#2	.00171	9.9074	.00082	.02646	.00154	-.00102	-.01077	3.6761
#3	.00161	9.7299	.00034	.03577	-.00122	.00649	-.00003	3.6770
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606095704 Acquired: 6/23/2016 18:44:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00044**	**.13398**	**-.00259**	**-.00487**	**-.00042**	**.00404**	**.39599**
Stddev	.00030	.00097	.00767	.00290	.00014	.00020	.04470
%RSD	68.069	.72204	296.19	59.450	32.889	5.0229	11.288
#1	-.00031	.13510	.00380	-.00161	-.00033	.00423	.39112
#2	-.00079	.13343	-.00047	-.00585	-.00058	.00406	.35393
#3	-.00024	.13342	-.01109	-.00716	-.00035	.00383	.44293
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6691.6**	**41683.**	**2130.5**
Stddev	16.3	188.	44.8
%RSD	.24349	.45009	2.1019
#1	6674.7	41874.	2106.4
#2	6707.2	41499.	2102.9
#3	6692.9	41675.	2182.2

Sample Name: L1606095705 Acquired: 6/23/2016 18:48:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	.18137	.00132	.01393	.05227	.00000	47.576	-.00017
Stddev	.00022	.00236	.00336	.00262	.00068	.00006	.406	.00016
%RSD	27.412	1.3014	254.59	18.802	1.2936	1545.4	.85245	98.177
#1	.00055	.17984	-.00165	.01122	.05295	.00007	47.676	-.00014
#2	.00093	.18018	.00064	.01413	.05226	-.00001	47.129	-.00002
#3	.00093	.18409	.00497	.01644	.05160	-.00005	47.922	-.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.00081	.00165	.24818	.66421	-.00237	5.8917	.04016
Stddev	.00049	.00111	.00028	.02329	.15036	.00580	.1105	.00146
%RSD	327.66	136.79	16.738	9.3859	22.638	244.94	1.8758	3.6247
#1	.00050	.00005	.00195	.26948	.57304	-.00408	6.0110	.04145
#2	.00036	.00030	.00162	.22331	.58183	.00409	5.7928	.04046
#3	-.00041	.00208	.00140	.25176	.83776	-.00711	5.8714	.03858
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	4.2444	.00044	.02145	-.00147	.00210	-.00161	3.9144
Stddev	.00037	.0382	.00138	.00960	.00364	.00064	.00655	.0080
%RSD	69.362	.90092	314.47	44.765	248.05	30.375	406.75	.20417
#1	.00089	4.2867	-.00079	.03237	-.00565	.00257	-.00833	3.9237
#2	.00058	4.2341	.00193	.01434	.00101	.00137	-.00126	3.9100
#3	.00015	4.2123	.00017	.01764	.00024	.00235	.00476	3.9097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606095705 Acquired: 6/23/2016 18:48:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00124**	**.16651**	**-.01359**	**-.00521**	**.00084**	**.00210**	**.15995**
Stddev	.00099	.00174	.00564	.00062	.00055	.00006	.33370
%RSD	79.444	1.0457	41.504	11.980	65.519	2.7028	208.63
#1	-.00013	.16843	-.01365	-.00569	.00109	.00214	.50631
#2	-.00159	.16606	-.00792	-.00450	.00021	.00203	.13299
#3	-.00201	.16504	-.01920	-.00543	.00123	.00212	-.15945
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6676.1**	**41561.**	**2103.6**
Stddev	12.6	161.	24.0
%RSD	.18881	.38711	1.1405
#1	6690.1	41742.	2107.2
#2	6672.8	41433.	2125.6
#3	6665.6	41508.	2078.0

Sample Name: L1606096101 Acquired: 6/23/2016 18:52:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00082	.01430	.00369	.01759	.00065	-.00004	.04649	-.00016
Stddev	.00101	.00586	.00264	.00153	.00060	.00005	.04475	.00011
%RSD	122.72	40.990	71.487	8.6840	91.837	113.85	96.246	67.330
#1	-.00034	.00813	.00410	.01814	.00134	-.00010	.05237	-.00005
#2	.00136	.01498	.00087	.01587	.00033	.00000	.08801	-.00016
#3	.00144	.01979	.00609	.01877	.00028	-.00003	-.00090	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.00024	.01766	.09903	.10656	.00252	-.01866	.00398
Stddev	.00056	.00013	.00069	.02628	.09276	.00342	.06339	.00246
%RSD	164.44	55.453	3.9062	26.535	87.051	136.01	339.78	61.709
#1	.00024	.00020	.01732	.09611	.01800	.00645	-.08612	.00647
#2	-.00016	.00038	.01845	.12665	.09866	.00026	.03967	.00155
#3	.00095	.00013	.01720	.07434	.20302	.00083	-.00952	.00393
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	107.16	-.00002	.03665	.00304	.00296	-.00309	5.9627
Stddev	.00055	1.21	.00170	.00369	.00053	.00129	.00524	.0081
%RSD	1743.4	1.1249	7247.6	10.064	17.513	43.498	169.55	.13655
#1	.00064	108.50	.00194	.03929	.00277	.00155	-.00074	5.9648
#2	-.00012	106.16	-.00110	.03243	.00269	.00407	.00057	5.9537
#3	-.00042	106.82	-.00091	.03823	.00365	.00327	-.00910	5.9696
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606096101 Acquired: 6/23/2016 18:52:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00123**	**.00009**	**-.00012**	**-.00673**	**-.00085**	**.00397**	**.21821**
Stddev	.00042	.00025	.00564	.00413	.00089	.00018	.04757
%RSD	34.134	265.03	4817.0	61.413	103.95	4.5901	21.800
#1	.00144	-.00013	-.00483	-.00336	-.00072	.00394	.16868
#2	.00075	.00004	.00613	-.01134	-.00180	.00381	.26354
#3	.00150	.00037	-.00165	-.00548	-.00004	.00417	.22241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6592.8**	**41252.**	**2103.4**
Stddev	17.0	291.	47.5
%RSD	.25725	.70443	2.2575
#1	6595.4	40916.	2058.8
#2	6574.6	41415.	2153.3
#3	6608.2	41424.	2098.1

Sample Name: L1606096102 Acquired: 6/23/2016 18:56:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00079**	**.03478**	**.00589**	**.01533**	**.02658**	**-.00009**	**27.946**	**-.00005**
Stddev	.00186	.00579	.00137	.00335	.00018	.00004	.659	.00022
%RSD	235.75	16.640	23.210	21.834	.65976	40.468	2.3584	471.56
#1	.00069	.02830	.00447	.01574	.02649	-.00010	28.691	-.00000
#2	-.00287	.03661	.00719	.01180	.02646	-.00005	27.440	-.00029
#3	-.00019	.03942	.00601	.01846	.02678	-.00013	27.706	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**.00057**	**.00211**	**.07517**	**.95068**	**-.00017**	**4.4154**	**.12814**
Stddev	.00012	.00116	.00118	.01917	.12455	.00106	.0966	.00422
%RSD	122.50	204.26	55.846	25.503	13.101	623.39	2.1883	3.2924
#1	.00017	.00092	.00222	.09509	.80692	-.00137	4.5065	.13251
#2	.00017	.00152	.00323	.05686	1.0194	.00064	4.3140	.12782
#3	-.00004	-.00073	.00088	.07355	1.0258	.00022	4.4257	.12409
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00077**	**2.8960**	**.00155**	**.00675**	**-.00147**	**-.00079**	**-.00450**	**1.9147**
Stddev	.00018	.0986	.00062	.00402	.00109	.00203	.00538	.0058
%RSD	22.925	3.4051	39.619	59.594	74.555	256.57	119.66	.30207
#1	.00069	2.9809	.00179	.00220	-.00127	.00048	-.01064	1.9214
#2	.00097	2.7878	.00202	.00820	-.00048	-.00314	-.00059	1.9118
#3	.00065	2.9192	.00086	.00985	-.00264	.00028	-.00227	1.9110
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606096102 Acquired: 6/23/2016 18:56:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00047**	**.09203**	**-.00699**	**-.00581**	**.00001**	**.00122**	**.19167**
Stddev	.00152	.00238	.00325	.00218	.00060	.00015	.39664
%RSD	319.98	2.5851	46.457	37.509	4349.6	12.672	206.94
#1	.00001	.09410	-.00457	-.00773	.00065	.00107	.60420
#2	-.00217	.08943	-.01068	-.00344	-.00006	.00121	.15771
#3	.00074	.09257	-.00572	-.00625	-.00055	.00138	-.18689
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6690.9**	**41659.**	**2159.3**
Stddev	15.4	166.	23.9
%RSD	.22972	.39942	1.1048
#1	6679.1	41827.	2132.7
#2	6708.3	41655.	2166.7
#3	6685.3	41494.	2178.6

Sample Name: L1606099102 Acquired: 6/23/2016 19:00:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.18278	.01279	.07089	.02678	.00003	1.1753
Stddev	.00017	.00874	.00230	.00310	.00094	.00004	.0130
%RSD	197.98	4.7790	18.004	4.3721	3.5015	169.52	1.1019
#1	.00028	.18746	.01165	.06786	.02601	.00006	1.1606
#2	.00005	.18819	.01543	.07075	.02651	-.00002	1.1806
#3	-.00007	.17271	.01127	.07405	.02782	.00005	1.1848
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00374	.00173	.10547	.01142	.70686	2.4306	.00285
Stddev	.00031	.00017	.00069	.00091	.00672	.2276	.00410
%RSD	8.3801	9.8737	.65029	7.9351	.95134	9.3634	143.93
#1	.00362	.00160	.10540	.01211	.70453	2.2038	.00005
#2	.00409	.00192	.10482	.01039	.71445	2.4290	.00095
#3	.00349	.00167	.10619	.01174	.70162	2.6590	.00756
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.81483	.00610	.00617	F 411.44	.00858	.68987	.01663
Stddev	.08854	.00159	.00023	1.75	.00104	.00877	.00140
%RSD	10.866	26.091	3.7232	.42582	12.171	1.2720	8.4229
#1	.87256	.00435	.00592	410.10	.00774	.68564	.01502
#2	.71289	.00651	.00637	410.79	.00975	.69996	.01728
#3	.85904	.00745	.00621	413.42	.00825	.68401	.01758
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Sample Name: L1606099102 Acquired: 6/23/2016 19:00:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00429**	**-.00276**	**2.6532**	**.01212**	**.18283**	**.14118**	**-.00012**
Stddev	.00146	.00633	.0058	.00057	.00067	.01057	.00163
%RSD	33.919	229.47	.21752	4.7117	.36652	7.4900	1330.7
#1	.00526	-.00115	2.6467	.01254	.18210	.13107	.00136
#2	.00500	.00261	2.6548	.01147	.18294	.14030	-.00187
#3	.00262	-.00973	2.6579	.01236	.18343	.15217	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.02620**	**.14570**	**6.4213**
Stddev	.00048	.00024	.3214
%RSD	1.8484	.16660	5.0053
#1	.02567	.14542	6.6480
#2	.02632	.14589	6.0535
#3	.02662	.14577	6.5624
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6798.1**	**41761.**	**2199.9**
Stddev	24.0	167.	13.3
%RSD	.35371	.40060	.60321
#1	6803.8	41578.	2190.0
#2	6771.7	41906.	2194.6
#3	6818.8	41798.	2214.9

Sample Name: L1606099501 Acquired: 6/23/2016 19:04:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	.03319	.00198	4.2612	22.007	.00013	F 2231.4
Stddev	.00073	.00812	.00497	.0108	.140	.00007	10.9
%RSD	111.66	24.468	250.83	.25328	.63583	52.114	.49013
#1	.00010	.02381	.00383	4.2649	22.169	.00005	2238.3
#2	.00039	.03790	-.00365	4.2491	21.924	.00018	2218.8
#3	.00149	.03786	.00577	4.2697	21.929	.00017	2237.2
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00230	.00542	.00437	.00761	16.049	77.831	15.290
Stddev	.00066	.00043	.00087	.00268	.109	.457	.102
%RSD	28.682	8.0139	19.948	35.207	.68074	.58771	.66563
#1	.00204	.00521	.00375	.01070	16.175	78.291	15.407
#2	.00305	.00592	.00537	.00603	15.989	77.376	15.216
#3	.00181	.00514	.00400	.00609	15.983	77.827	15.248
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	289.46	2.5248	-.00161	F 5161.1	-.00605	-.04671	-.00084
Stddev	1.34	.0130	.00040	91.9	.00062	.01060	.00404
%RSD	.46449	.51604	24.821	1.7808	10.259	22.695	480.02
#1	290.80	2.5348	-.00118	5246.4	-.00638	-.03903	-.00094
#2	288.11	2.5101	-.00167	5063.8	-.00533	-.05880	.00324
#3	289.46	2.5296	-.00197	5173.3	-.00644	-.04229	-.00483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Sample Name: L1606099501 Acquired: 6/23/2016 19:04:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**.00060**	**1.7140**	**-.00270**	F **293.43**	F **-.23021**	**-.00582**
Stddev	.00390	.00430	.0091	.00145	3.55	.00343	.00281
%RSD	37587.	722.43	.53043	53.583	1.2096	1.4919	48.318
#1	.00450	-.00436	1.7206	-.00436	292.37	-.23049	-.00302
#2	-.00251	.00275	1.7036	-.00173	297.39	-.22665	-.00864
#3	-.00196	.00340	1.7177	-.00201	290.53	-.23350	-.00579
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Pass
High Limit					9.0000	36.000	
Low Limit					-.01000	-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00391**	**.46449**	F **-.84964**
Stddev	.00112	.00152	.26917
%RSD	28.498	.32684	31.680
#1	-.00485	.46570	-1.1604
#2	-.00421	.46278	-.69319
#3	-.00268	.46498	-.69528
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**5043.9**	**30664.**	**1834.7**
Stddev	16.9	150.	7.6
%RSD	.33492	.48802	.41407
#1	5024.6	30608.	1826.5
#2	5056.0	30834.	1836.3
#3	5051.1	30550.	1841.4

Sample Name: L1606099502 Acquired: 6/23/2016 19:08:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00345**	**.02306**	**-.00311**	**4.2770**	**21.493**	**.00016**	F **2199.4**
Stddev	.00099	.01662	.00473	.0112	.107	.00010	10.2
%RSD	28.739	72.096	152.37	.26279	.49855	65.563	.46331
#1	-.00260	.03568	.00094	4.2665	21.584	.00005	2207.7
#2	-.00454	.00422	-.00194	4.2758	21.375	.00025	2202.6
#3	-.00321	.02928	-.00831	4.2888	21.521	.00017	2188.0
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00258**	**.00505**	**.00245**	**.01034**	**14.967**	**76.431**	**15.054**
Stddev	.00018	.00018	.00130	.00137	.073	.482	.075
%RSD	6.8313	3.5760	52.982	13.296	.48454	.63040	.50059
#1	.00238	.00511	.00191	.00878	14.985	76.519	15.096
#2	.00271	.00519	.00151	.01138	14.888	75.911	14.967
#3	.00265	.00485	.00393	.01085	15.029	76.862	15.100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**285.71**	**2.4897**	**-.00104**	F **4892.3**	**-.00500**	**-.05393**	**.00746**
Stddev	1.59	.0149	.00055	124.5	.00081	.00583	.00104
%RSD	.55735	.59915	52.735	2.5451	16.181	10.801	13.884
#1	287.47	2.5069	-.00064	4942.1	-.00421	-.06066	.00665
#2	284.37	2.4802	-.00081	4984.2	-.00495	-.05038	.00710
#3	285.29	2.4820	-.00167	4750.6	-.00582	-.05076	.00863
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Sample Name: L1606099502 Acquired: 6/23/2016 19:08:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00124**	**.00073**	**1.5901**	**-.00205**	F **282.05**	F **-.22951**	**-.00301**
Stddev	.00214	.00258	.0105	.00077	1.08	.01217	.00231
%RSD	172.21	351.60	.66137	37.499	.38242	5.3030	76.703
#1	.00091	.00117	1.5782	-.00289	282.22	-.24190	-.00355
#2	-.00128	.00306	1.5942	-.00138	283.02	-.21757	-.00499
#3	-.00337	-.00204	1.5980	-.00189	280.89	-.22904	-.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Pass
High Limit					9.0000	36.000	
Low Limit					-.01000	-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00411**	**.45318**	F **-.64740**
Stddev	.00129	.00131	.07796
%RSD	31.297	.28971	12.042
#1	-.00333	.45167	-.58664
#2	-.00340	.45405	-.73530
#3	-.00559	.45381	-.62026
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**5048.8**	**30332.**	**1858.4**
Stddev	3.9	253.	17.7
%RSD	.07715	.83404	.95240
#1	5053.2	30378.	1844.8
#2	5046.9	30059.	1852.1
#3	5046.2	30558.	1878.4

Sample Name: L1606106401 Acquired: 6/23/2016 19:12:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00137	.93109	.00053	.03729	.05113	.00000	28.407	.00020
Stddev	.00252	.00902	.00338	.00153	.00202	.00011	.262	.00043
%RSD	183.56	.96930	639.15	4.0949	3.9481	2244.2	.92307	214.59
#1	-.00121	.93101	.00099	.03594	.05319	.00011	28.651	.00015
#2	.00151	.94015	.00365	.03894	.05104	.00001	28.439	-.00020
#3	.00382	.92210	-.00306	.03698	.04915	-.00011	28.129	.00066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00058	.00021	.00488	1.1389	1.0564	-.00108	2.9741	.01385
Stddev	.00032	.00086	.00142	.0345	.0930	.00288	.1109	.00248
%RSD	56.184	402.03	29.165	3.0303	8.7985	268.17	3.7294	17.924
#1	.00057	.00116	.00392	1.1770	1.0142	.00149	3.1007	.01663
#2	.00025	-.00002	.00421	1.1096	.99211	-.00052	2.9273	.01185
#3	.00090	-.00050	.00652	1.1303	1.1630	-.00420	2.8942	.01308
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00103	3.1622	.00158	.08777	.00276	.00045	-.00572	4.3193
Stddev	.00012	.1302	.00086	.00354	.00085	.00135	.01212	.0046
%RSD	11.727	4.1165	54.479	4.0300	30.606	297.83	212.07	.10550
#1	.00117	3.2928	.00230	.08694	.00254	-.00043	.00769	4.3152
#2	.00097	3.1615	.00063	.08472	.00205	.00201	-.01591	4.3242
#3	.00095	3.0324	.00181	.09165	.00370	-.00022	-.00892	4.3184
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606106401 Acquired: 6/23/2016 19:12:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	.09591	.01130	-.00267	.00099	.00793	.56831
Stddev	.00047	.00237	.00917	.00175	.00090	.00003	.52710
%RSD	78.603	2.4713	81.158	65.518	91.033	.34720	92.749
#1	.00074	.09837	.00228	-.00301	.00008	.00796	.23401
#2	.00098	.09572	.01099	-.00422	.00188	.00791	.29499
#3	.00007	.09364	.02061	-.00077	.00100	.00793	1.1759
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6738.4	41869.	2132.0
Stddev	11.1	208.	5.4
%RSD	.16498	.49610	.25526
#1	6728.6	41753.	2129.0
#2	6736.2	41746.	2138.3
#3	6750.5	42109.	2128.7

Sample Name: CCV Acquired: 6/23/2016 19:16:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.37919	9.4539	.37838	.47741	.95410	.04762	9.5636
Stddev	.00221	.0169	.00039	.00245	.00513	.00013	.0372
%RSD	.58374	.17847	.10355	.51410	.53813	.27668	.38859
#1	.38055	9.4678	.37878	.47468	.94817	.04774	9.5214
#2	.38039	9.4588	.37835	.47943	.95695	.04748	9.5914
#3	.37664	9.4351	.37800	.47812	.95718	.04762	9.5780
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04743	.19073	.47732	.47745	3.7981	47.840	.97103
Stddev	.00050	.00017	.00127	.00151	.0352	.199	.00699
%RSD	1.0527	.08963	.26621	.31598	.92728	.41493	.71955
#1	.04779	.19083	.47845	.47601	3.7576	47.614	.96329
#2	.04763	.19053	.47595	.47902	3.8152	47.921	.97687
#3	.04686	.19083	.47757	.47730	3.8215	47.986	.97295
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.5182	.47503	.95370	48.127	.47728	9.3799	.47857
Stddev	.1107	.00550	.00396	.203	.00099	.0039	.00307
%RSD	1.1627	1.1583	.41501	.42134	.20780	.04109	.64155
#1	9.6428	.46909	.95745	47.914	.47781	9.3770	.47874
#2	9.4313	.47605	.95408	48.150	.47790	9.3843	.48155
#3	9.4805	.47995	.94956	48.317	.47614	9.3784	.47541
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: CCV Acquired: 6/23/2016 19:16:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1355**	**.37785**	**4.7735**	**.94584**	**.95950**	**.94974**	**.48314**
Stddev	.0014	.00604	.0057	.00205	.00431	.00481	.00202
%RSD	.12258	1.5984	.11925	.21676	.44891	.50688	.41802
#1	1.1369	.38109	4.7670	.94374	.95466	.94648	.48517
#2	1.1341	.38158	4.7762	.94595	.96094	.95527	.48113
#3	1.1355	.37088	4.7773	.94784	.96291	.94747	.48313
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.95446**	**.95114**	F **.47272**
Stddev	.00286	.00014	.27938
%RSD	.29988	.01520	59.100
#1	.95768	.95118	.66932
#2	.95222	.95127	.15292
#3	.95348	.95099	.59591
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6901.5**	**42860.**	**2195.1**
Stddev	41.4	316.	16.1
%RSD	.60057	.73673	.73557
#1	6924.3	42538.	2183.7
#2	6853.6	42875.	2188.1
#3	6926.5	43169.	2213.6

Sample Name: CCB Acquired: 6/23/2016 19:20:08 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00238**	**-.01466**	**.00143**	**.00483**	**-.00003**	**.00001**	**.07786**
Stddev	.00049	.00200	.00149	.00453	.00214	.00009	.06354
%RSD	20.427	13.611	104.06	93.858	6527.4	940.84	81.613
#1	.00284	-.01261	.00199	.00972	.00118	.00006	.15097
#2	.00187	-.01659	-.00026	.00400	.00122	.00006	.03598
#3	.00244	-.01478	.00255	.00077	-.00250	-.00009	.04662
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**-.00031**	**.00022**	**.00039**	**.00442**	**.00595**	**.00280**
Stddev	.00007	.00052	.00124	.00132	.02693	.06585	.00064
%RSD	37.292	170.19	563.67	338.25	609.56	1107.4	22.926
#1	.00023	-.00057	.00004	-.00106	.01159	.04036	.00265
#2	.00011	-.00065	-.00092	.00069	-.02537	-.06998	.00350
#3	.00023	.00030	.00154	.00154	.02703	.04745	.00224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03600**	**.00167**	**.00345**	**.42320**	**-.00024**	**.00139**	F **-.00578**
Stddev	.09635	.00312	.00061	.03957	.00049	.00443	.00184
%RSD	267.61	187.01	17.568	9.3512	202.30	317.35	31.895
#1	.01890	-.00154	.00285	.45813	-.00079	.00606	-.00650
#2	.13975	.00185	.00406	.43125	.00015	.00087	-.00715
#3	-.05065	.00469	.00345	.38022	-.00009	-.00274	-.00368
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							.00500
Low Limit							-.00500

Sample Name: CCB Acquired: 6/23/2016 19:20:08 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00539**	**-.00364**	**.00090**	**-.00057**	**.00373**	**-.00314**	**.00032**
Stddev	.00515	.00131	.00038	.00067	.00020	.00469	.00190
%RSD	95.593	36.045	42.719	116.62	5.2758	149.60	585.89
#1	.01074	-.00478	.00116	-.00075	.00392	.00167	.00249
#2	.00495	-.00221	.00108	.00016	.00352	-.00771	-.00042
#3	.00047	-.00394	.00046	-.00113	.00373	-.00337	-.00110
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00043**	**.00005**	F **.04542**
Stddev	.00072	.00012	.34069
%RSD	169.53	237.68	750.04
#1	-.00008	-.00001	.43855
#2	-.00125	.00019	-.16363
#3	.00006	-.00003	-.13865
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6967.5**	**43395.**	**2190.0**
Stddev	41.4	704.	41.3
%RSD	.59409	1.6225	1.8846
#1	6953.3	43361.	2223.7
#2	6935.1	44115.	2144.0
#3	7014.1	42708.	2202.3

Sample Name: PBW MC Acquired: 6/23/2016 19:24:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	.01182	-.00092	.00493	-.00012	-.00010	.03899	.00002
Stddev	.00163	.00860	.00408	.00276	.00157	.00005	.01101	.00042
%RSD	702.25	72.769	445.47	56.096	1293.5	54.721	28.229	1843.4
#1	.00065	.00253	-.00537	.00388	.00151	-.00014	.04722	.00048
#2	.00161	.01951	.00264	.00806	-.00023	-.00011	.02649	-.00036
#3	-.00157	.01343	-.00001	.00284	-.00164	-.00004	.04326	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.00049	.00204	.00432	.17133	-.00238	.06048	.00264
Stddev	.00029	.00050	.00040	.03628	.08746	.00474	.03409	.00131
%RSD	168.82	101.29	19.724	840.04	51.052	199.46	56.354	49.484
#1	-.00010	.00067	.00239	-.02516	.27127	.00176	.03814	.00248
#2	-.00049	.00088	.00214	-.00672	.10876	-.00754	.09972	.00142
#3	.00007	-.00007	.00160	.04484	.13394	-.00135	.04360	.00402
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00096	.32980	.00109	-.00655	-.00048	.00411	-.00330	-.02137
Stddev	.00036	.05000	.00076	.00347	.00344	.00130	.00992	.00312
%RSD	37.319	15.161	69.359	52.886	720.16	31.721	300.60	14.588
#1	.00079	.36140	.00194	-.01016	-.00415	.00417	-.01302	-.02373
#2	.00072	.35584	.00049	-.00325	.00266	.00538	.00681	-.02254
#3	.00137	.27215	.00084	-.00625	.00005	.00278	-.00369	-.01784
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: PBW MC Acquired: 6/23/2016 19:24:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00040**	**.00085**	**-.00321**	**-.00159**	**.00013**	**.00182**	**-.03501**
Stddev	.00061	.00058	.00748	.00275	.00086	.00009	.26030
%RSD	153.26	68.513	233.36	172.78	656.72	4.7398	743.52
#1	.00056	.00034	.00354	.00057	-.00054	.00177	-.32167
#2	.00090	.00149	-.01126	-.00468	-.00016	.00177	.03005
#3	-.00028	.00073	-.00190	-.00066	.00110	.00192	.18659
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6713.5**	**41826.**	**2105.1**
Stddev	54.0	279.	25.0
%RSD	.80485	.66739	1.1867
#1	6727.2	41946.	2094.7
#2	6654.0	42025.	2087.1
#3	6759.4	41507.	2133.7

Sample Name: LCSW MC Acquired: 6/23/2016 19:28:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20350	4.9935	.19725	.98212	.51929	.02489	5.3105	.02494
Stddev	.00278	.0008	.00175	.00061	.00709	.00006	.0323	.00007
%RSD	1.3668	.01694	.88835	.06228	1.3650	.26082	.60923	.28776
#1	.20050	4.9929	.19553	.98183	.52566	.02483	5.3424	.02500
#2	.20403	4.9931	.19903	.98282	.52055	.02488	5.3113	.02486
#3	.20598	4.9945	.19719	.98170	.51165	.02496	5.2777	.02497
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10152	.25256	.25516	2.0797	25.740	.52639	5.1902	.25850
Stddev	.00055	.00072	.00042	.0675	.264	.00403	.0928	.00472
%RSD	.53818	.28671	.16566	3.2456	1.0251	.76543	1.7881	1.8242
#1	.10140	.25339	.25549	2.1412	25.923	.53020	5.2421	.26354
#2	.10211	.25215	.25468	2.0904	25.858	.52680	5.2454	.25420
#3	.10104	.25212	.25531	2.0075	25.437	.52218	5.0831	.25775
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51567	25.901	.25435	4.8264	.25513	.60348	.19064	2.5576
Stddev	.00163	.329	.00155	.0089	.00174	.00417	.00132	.0042
%RSD	.31684	1.2719	.61000	.18425	.68292	.69074	.69080	.16255
#1	.51692	26.132	.25556	4.8337	.25335	.60561	.19063	2.5545
#2	.51627	26.047	.25489	4.8291	.25683	.60615	.18933	2.5560
#3	.51382	25.523	.25260	4.8165	.25520	.59868	.19196	2.5623
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: LCSW MC Acquired: 6/23/2016 19:28:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50423	.52568	.51791	.25225	.50435	.50645	.50871
Stddev	.00241	.00482	.00534	.00263	.00086	.00034	.12302
%RSD	.47730	.91755	1.0320	1.0435	.16959	.06729	24.183
#1	.50649	.52965	.52307	.24922	.50405	.50684	.42537
#2	.50170	.52708	.51825	.25391	.50532	.50620	.65001
#3	.50450	.52032	.51240	.25363	.50369	.50631	.45076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6675.8	41467.	2105.7
Stddev	24.4	77.	45.0
%RSD	.36501	.18473	2.1351
#1	6674.7	41472.	2065.5
#2	6652.0	41541.	2097.5
#3	6700.7	41388.	2154.3

Sample Name: F BLANK Acquired: 6/23/2016 19:31:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573025-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00035**	**.01697**	**.00017**	**.00823**	**.00030**	**-.00002**	**.01424**	**.00010**
Stddev	.00143	.00343	.00368	.00159	.00073	.00006	.02636	.00016
%RSD	406.65	20.219	2149.5	19.295	245.04	366.35	185.13	161.49
#1	-.00146	.01939	.00373	.00699	-.00054	.00002	.03225	-.00007
#2	-.00084	.01848	.00040	.00767	.00069	.00002	.02649	.00012
#3	.00126	.01304	-.00362	.01002	.00075	-.00008	-.01602	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**.00071**	**.00022**	**-.00250**	**.21680**	**-.00037**	**.04710**	**.00203**
Stddev	.00058	.00084	.00113	.01048	.06228	.00321	.02108	.00203
%RSD	395.96	117.23	505.81	419.76	28.728	858.57	44.755	100.05
#1	-.00038	.00061	.00120	.00643	.26535	.00293	.05892	.00057
#2	.00005	-.00007	.00049	.00011	.14658	-.00348	.02276	.00117
#3	.00076	.00160	-.00102	-.01403	.23847	-.00057	.05962	.00435
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00063**	**146.49**	**.00027**	**.00148**	**-.00007**	**-.00070**	**-.00157**	**-.01682**
Stddev	.00016	.16	.00052	.00584	.00253	.00452	.00481	.00103
%RSD	25.353	.10971	193.88	395.20	3668.9	645.60	306.24	6.1510
#1	.00048	146.42	-.00030	-.00517	.00173	.00230	.00206	-.01801
#2	.00061	146.38	.00070	.00384	-.00296	.00151	-.00702	-.01610
#3	.00079	146.68	.00040	.00577	.00102	-.00590	.00025	-.01635
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: F BLANK Acquired: 6/23/2016 19:31:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573025-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00050**	**.00113**	**.00420**	**-.00413**	**.00010**	**.00416**	**.06618**
Stddev	.00105	.00030	.00358	.00325	.00062	.00033	.30902
%RSD	208.81	26.175	85.339	78.560	609.38	7.9682	466.95
#1	.00054	.00092	.00586	-.00501	.00082	.00444	.36201
#2	.00153	.00147	.00009	-.00685	-.00027	.00424	.09104
#3	-.00056	.00099	.00664	-.00054	-.00025	.00379	-.25452
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6739.3**	**41425.**	**2117.9**
Stddev	34.7	212.	17.6
%RSD	.51557	.51131	.83142
#1	6776.6	41379.	2104.1
#2	6733.4	41656.	2137.7
#3	6707.8	41240.	2111.8

Sample Name: L1606077902 Acquired: 6/23/2016 19:35:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00041	.10466	.00285	.06045	.05584	-.00002	6.2174	.00046
Stddev	.00116	.00710	.00203	.00084	.00161	.00004	.0446	.00027
%RSD	281.92	6.7835	71.407	1.3870	2.8912	266.76	.71767	58.204
#1	-.00169	.09707	.00256	.05995	.05497	-.00004	6.2605	.00076
#2	-.00009	.10577	.00097	.05998	.05770	-.00005	6.2202	.00025
#3	.00055	.11114	.00501	.06142	.05485	.00003	6.1714	.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	.00071	.00269	.06613	.83231	.00096	1.9162	.03669
Stddev	.00019	.00047	.00085	.02858	.05178	.00081	.1367	.00368
%RSD	41.445	66.440	31.592	43.213	6.2217	84.544	7.1320	10.038
#1	.00040	.00124	.00202	.09508	.77901	.00190	2.0666	.03505
#2	.00066	.00054	.00241	.03794	.88243	.00048	1.8822	.04090
#3	.00030	.00035	.00365	.06539	.83549	.00050	1.7997	.03410
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	146.89	.00039	.00511	.00718	-.00047	-.00261	.31279
Stddev	.00029	.83	.00077	.00679	.00094	.00278	.00523	.00191
%RSD	125.89	.56640	197.90	132.70	13.092	597.43	200.57	.60978
#1	.00003	147.12	.00125	.00567	.00825	-.00357	.00205	.31442
#2	.00057	147.59	-.00024	-.00193	.00647	.00180	-.00827	.31325
#3	.00010	145.97	.00016	.01160	.00682	.00038	-.00160	.31069
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606077902 Acquired: 6/23/2016 19:35:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00094**	**.03050**	**.00108**	**-.00165**	**-.00052**	**.01606**	**.48222**
Stddev	.00106	.00016	.00532	.00346	.00115	.00010	.08551
%RSD	113.09	.52207	493.59	209.68	220.39	.59709	17.733
#1	.00063	.03034	.00420	.00102	-.00167	.01612	.45722
#2	.00006	.03050	-.00506	-.00556	.00063	.01595	.57745
#3	.00212	.03066	.00410	-.00041	-.00053	.01610	.41199
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6708.2**	**41665.**	**2172.2**
Stddev	31.1	139.	27.0
%RSD	.46322	.33365	1.2422
#1	6681.0	41585.	2158.5
#2	6701.6	41584.	2154.7
#3	6742.1	41825.	2203.2

Sample Name: L1606077905S Acquired: 6/23/2016 19:39:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20228	5.2112	.20044	1.0337	.55827	.02485	9.6912	.02500
Stddev	.00166	.0132	.00213	.0032	.00578	.00010	.1284	.00041
%RSD	.82305	.25409	1.0603	.31079	1.0349	.40858	1.3248	1.6502
#1	.20387	5.2188	.19844	1.0331	.56463	.02478	9.8330	.02530
#2	.20055	5.1959	.20020	1.0371	.55682	.02480	9.6578	.02517
#3	.20241	5.2189	.20267	1.0308	.55335	.02497	9.5828	.02453
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09974	.24950	.25228	2.2679	26.280	.52442	6.0599	.27187
Stddev	.00013	.00041	.00146	.0210	.482	.00917	.1252	.00132
%RSD	.12865	.16628	.57688	.92528	1.8346	1.7485	2.0662	.48482
#1	.09988	.24904	.25061	2.2895	26.785	.53322	5.9629	.27277
#2	.09972	.24962	.25292	2.2477	26.232	.52510	6.2012	.27249
#3	.09962	.24984	.25330	2.2665	25.824	.51492	6.0156	.27036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51461	175.16	.24930	4.8996	.25282	.59906	.19939	3.1901
Stddev	.00031	1.57	.00247	.0075	.00056	.00386	.00642	.0017
%RSD	.06092	.89896	.99271	.15227	.22003	.64505	3.2200	.05219
#1	.51467	176.79	.25185	4.8930	.25302	.59517	.19207	3.1907
#2	.51427	175.03	.24915	4.9077	.25325	.60289	.20408	3.1882
#3	.51489	173.65	.24691	4.8982	.25219	.59912	.20203	3.1913
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606077905S Acquired: 6/23/2016 19:39:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50008	.54325	.51187	.24743	.50223	.51373	.44679
Stddev	.00071	.00377	.00743	.00180	.00201	.00029	.30975
%RSD	.14141	.69391	1.4524	.72816	.40098	.05697	69.327
#1	.49932	.54729	.51807	.24579	.50124	.51369	.24650
#2	.50021	.54262	.51392	.24714	.50091	.51403	.29031
#3	.50072	.53983	.50363	.24936	.50455	.51345	.80356
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6683.1	41005.	2151.4
Stddev	6.8	305.	41.0
%RSD	.10241	.74481	1.9080
#1	6678.0	40809.	2104.3
#2	6690.9	41357.	2179.3
#3	6680.4	40849.	2170.6

Sample Name: L1606077908SD Acquired: 6/23/2016 19:43:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20288	5.1811	.19942	1.0150	.55237	.02488	9.4634	.02476
Stddev	.00176	.0005	.00235	.0035	.00196	.00014	.0234	.00044
%RSD	.86650	.00922	1.1808	.34043	.35412	.56384	.24707	1.7705
#1	.20137	5.1816	.19728	1.0163	.55459	.02505	9.4654	.02526
#2	.20245	5.1810	.20195	1.0110	.55090	.02479	9.4391	.02451
#3	.20481	5.1807	.19904	1.0175	.55161	.02482	9.4857	.02450
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10026	.24869	.25215	2.1544	26.013	.51658	6.1704	.26979
Stddev	.00032	.00041	.00151	.0430	.062	.00117	.0894	.00386
%RSD	.31797	.16528	.59908	1.9976	.23856	.22630	1.4482	1.4295
#1	.10042	.24885	.25049	2.2010	26.026	.51657	6.2344	.26873
#2	.10048	.24900	.25345	2.1162	25.946	.51776	6.2085	.27407
#3	.09990	.24822	.25251	2.1458	26.068	.51542	6.0683	.26657
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51646	167.22	.25037	4.9060	.24566	.60333	.19310	3.1314
Stddev	.00260	.31	.00182	.0167	.00482	.00537	.00965	.0091
%RSD	.50438	.18479	.72893	.34087	1.9619	.89072	4.9996	.29092
#1	.51697	167.57	.24950	4.9167	.24626	.60535	.20424	3.1326
#2	.51877	167.00	.25246	4.9146	.25015	.60741	.18713	3.1398
#3	.51363	167.09	.24914	4.8868	.24056	.59724	.18793	3.1217
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606077908SD Acquired: 6/23/2016 19:43:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49955	.54302	.51966	.24675	.50221	.51185	.71645
Stddev	.00029	.00244	.00212	.00186	.00227	.00193	.20134
%RSD	.05847	.45013	.40726	.75321	.45223	.37767	28.103
#1	.49934	.54570	.52008	.24714	.50300	.51112	.72584
#2	.49989	.54245	.52153	.24839	.49965	.51404	.51058
#3	.49944	.54091	.51736	.24473	.50398	.51039	.91294
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6680.0	41465.	2146.4
Stddev	27.3	183.	22.0
%RSD	.40866	.44237	1.0253
#1	6690.0	41465.	2121.9
#2	6649.1	41648.	2153.0
#3	6700.8	41281.	2164.4

Sample Name: L1606077911 Acquired: 6/23/2016 19:47:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00061**	**.17290**	**.00164**	**.05825**	**.04624**	**.00003**	**4.2798**
Stddev	.00118	.00586	.00116	.00187	.00146	.00004	.0673
%RSD	194.32	3.3883	71.027	3.2055	3.1581	127.98	1.5735
#1	-.00071	.17964	.00069	.05609	.04622	.00002	4.3575
#2	.00096	.16999	.00128	.05931	.04771	.00007	4.2378
#3	.00156	.16906	.00294	.05934	.04479	-.00001	4.2442
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00024**	**.00029**	**-.00045**	**.00174**	**.09875**	**.44424**	**.00053**
Stddev	.00014	.00027	.00192	.00071	.01625	.12676	.00083
%RSD	58.518	92.659	422.78	40.567	16.451	28.534	157.87
#1	.00014	.00059	.00168	.00219	.10612	.58035	.00098
#2	.00017	.00020	-.00202	.00093	.11000	.42278	-.00043
#3	.00040	.00008	-.00103	.00212	.08013	.32958	.00104
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.72600**	**.00518**	**.00043**	**142.06**	**.00228**	**.00480**	**-.00087**
Stddev	.03723	.00162	.00026	.88	.00064	.00070	.00109
%RSD	5.1278	31.190	61.921	.61608	28.046	14.500	124.44
#1	.71844	.00688	.00028	143.07	.00166	.00434	.00015
#2	.76644	.00366	.00073	141.60	.00293	.00560	-.00076
#3	.69314	.00502	.00026	141.51	.00224	.00446	-.00201
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: L1606077911 Acquired: 6/23/2016 19:47:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00404**	**-.00935**	**.37687**	**.00027**	**.01793**	**.00337**	**-.00570**
Stddev	.00215	.00588	.00275	.00092	.00024	.00451	.00216
%RSD	53.318	62.841	.73023	343.85	1.3281	134.02	37.974
#1	.00159	-.01397	.37384	-.00077	.01800	-.00085	-.00756
#2	.00487	-.00274	.37757	.00097	.01812	.00283	-.00332
#3	.00566	-.01135	.37921	.00060	.01766	.00813	-.00622
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00079**	**.00664**	F **-.09970**
Stddev	.00084	.00026	.16681
%RSD	107.32	3.9795	167.31
#1	-.00163	.00690	-.09910
#2	.00005	.00665	.06681
#3	-.00078	.00638	-.26680
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6697.8**	**41398.**	**2131.1**
Stddev	24.2	144.	21.0
%RSD	.36115	.34894	.98383
#1	6693.3	41435.	2107.1
#2	6723.9	41521.	2140.2
#3	6676.1	41239.	2145.9

Sample Name: L1606077911PS Acquired: 6/23/2016 19:50:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573973-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20166	5.1361	.19947	1.0226	.54909	.02495	8.9751	.02473
Stddev	.00114	.0195	.00083	.0025	.00185	.00016	.0498	.00035
%RSD	.56716	.37888	.41683	.24775	.33639	.63847	.55502	1.4285
#1	.20230	5.1582	.20042	1.0247	.55108	.02513	8.9915	.02440
#2	.20234	5.1215	.19889	1.0198	.54877	.02481	9.0146	.02510
#3	.20034	5.1285	.19910	1.0233	.54742	.02492	8.9192	.02469
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10039	.24897	.25158	2.1225	25.565	.51154	5.6600	.25879
Stddev	.00018	.00163	.00180	.0342	.089	.00200	.0479	.00217
%RSD	.17967	.65380	.71732	1.6127	.34620	.39088	.84555	.83680
#1	.10051	.24824	.25076	2.1608	25.630	.51077	5.6851	.25647
#2	.10018	.24783	.25365	2.0948	25.465	.51005	5.6902	.26076
#3	.10047	.25083	.25032	2.1119	25.602	.51382	5.6048	.25913
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51470	153.34	.25033	4.8965	.24793	.59559	.19243	2.8850
Stddev	.00123	.64	.00055	.0032	.00147	.00310	.01290	.0015
%RSD	.23864	.41616	.22124	.06430	.59145	.52110	6.7059	.05201
#1	.51611	153.87	.25059	4.8983	.24682	.59605	.19308	2.8838
#2	.51410	153.52	.25070	4.8929	.24959	.59844	.17922	2.8846
#3	.51388	152.63	.24969	4.8984	.24737	.59228	.20500	2.8867
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606077911PS Acquired: 6/23/2016 19:50:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573973-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50192	.53133	.51057	.24460	.50225	.50838	.44531
Stddev	.00111	.00315	.01429	.00114	.00111	.00054	.18642
%RSD	.22110	.59328	2.7983	.46703	.22030	.10637	41.862
#1	.50147	.53348	.52543	.24579	.50343	.50865	.55546
#2	.50112	.53279	.49693	.24352	.50209	.50873	.55041
#3	.50319	.52771	.50934	.24448	.50123	.50775	.23008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6651.9	41058.	2146.9
Stddev	34.9	202.	7.0
%RSD	.52428	.49305	.32439
#1	6618.2	41118.	2148.4
#2	6649.8	40833.	2139.3
#3	6687.9	41224.	2153.0

Sample Name: L1606077911SDL Acquired: 6/23/2016 19:54:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573973-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00006**	**.03191**	**.00319**	**.01017**	**.00812**	**.00002**	**.79168**
Stddev	.00337	.01356	.00266	.00277	.00094	.00006	.04789
%RSD	5775.7	42.477	83.503	27.198	11.538	281.43	6.0487
#1	.00377	.04752	.00625	.01189	.00906	.00005	.74079
#2	-.00077	.02310	.00144	.01163	.00718	-.00005	.83586
#3	-.00282	.02511	.00188	.00698	.00812	.00006	.79839
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**.00020**	**-.00102**	**.00161**	**.02774**	**.12243**	**.00086**
Stddev	.00008	.00022	.00131	.00175	.00237	.07914	.00524
%RSD	112.15	111.56	128.35	108.58	8.5304	64.641	611.10
#1	.00015	-.00005	-.00253	-.00029	.02829	.21145	-.00473
#2	-.00001	.00027	-.00015	.00315	.02514	.09584	.00164
#3	.00009	.00038	-.00039	.00199	.02978	.06001	.00566
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05770**	**.00304**	**.00047**	**25.965**	**-.00008**	**.01273**	**.00119**
Stddev	.09190	.00232	.00015	.345	.00131	.01585	.00647
%RSD	159.28	76.323	31.599	1.3295	1579.4	124.52	542.72
#1	.15485	.00380	.00035	25.792	-.00140	.01160	.00004
#2	.04609	.00044	.00064	25.741	-.00007	.02911	-.00462
#3	-.02785	.00489	.00043	26.363	.00122	-.00253	.00817
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: L1606077911SDL Acquired: 6/23/2016 19:54:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573973-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00030**	**-.00465**	**.06796**	**.00020**	**.00397**	**-.00466**	**-.00173**
Stddev	.00330	.00198	.00111	.00072	.00038	.00590	.00388
%RSD	1090.6	42.606	1.6393	364.61	9.6242	126.80	224.33
#1	.00173	-.00263	.06819	.00039	.00374	-.01146	-.00420
#2	.00148	-.00660	.06894	-.00060	.00441	-.00094	-.00374
#3	-.00411	-.00472	.06675	.00080	.00377	-.00157	.00274
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00000**	**.00179**	F **-.14942**
Stddev	.00024	.00022	.27065
%RSD	17591.	12.069	181.14
#1	-.00010	.00175	-.05629
#2	-.00017	.00203	-.45434
#3	.00028	.00160	.06237
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6956.7**	**42908.**	**2182.4**
Stddev	24.4	138.	8.1
%RSD	.35082	.32162	.37002
#1	6945.3	43022.	2184.2
#2	6984.7	42948.	2173.6
#3	6940.1	42755.	2189.5

Sample Name: L1606077911SDL Acquired: 6/23/2016 19:58:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573973-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00091**	**.00551**	**-.00163**	**.00298**	**.00016**	**-.00004**	**.14622**	**-.00004**
Stddev	.00035	.00230	.00441	.00295	.00019	.00009	.00718	.00022
%RSD	37.880	41.654	270.73	98.999	121.74	255.43	4.9086	633.58
#1	-.00082	.00812	-.00328	.00338	.00020	.00005	.14190	-.00029
#2	-.00130	.00463	.00337	-.00015	.00033	-.00003	.14227	.00014
#3	-.00062	.00379	-.00498	.00571	-.00005	-.00013	.15451	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**-.00012**	**.00129**	**.01297**	**.07882**	**-.00139**	**.02445**	**.00297**
Stddev	.00029	.00066	.00139	.04085	.05847	.00356	.09577	.00349
%RSD	220.77	550.63	108.07	315.10	74.183	257.22	391.63	117.45
#1	-.00041	-.00064	.00208	-.02649	.01827	-.00070	-.02314	-.00101
#2	.00018	-.00034	.00210	.01030	.08323	.00179	-.03820	.00442
#3	-.00016	.00062	-.00032	.05509	.13495	-.00524	.13470	.00550
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**4.6601**	**.00016**	**.01099**	**-.00374**	**-.00006**	**-.00666**	**-.00121**
Stddev	.00064	.0487	.00101	.00932	.00214	.00271	.00377	.00406
%RSD	1145.3	1.0448	617.86	84.814	57.083	4166.1	56.580	334.61
#1	-.00077	4.6317	.00117	.02130	-.00354	.00054	-.01063	.00307
#2	.00017	4.7163	-.00086	.00316	-.00172	-.00302	-.00622	-.00502
#3	.00043	4.6322	.00019	.00850	-.00597	.00229	-.00313	-.00169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606077911SDL Acquired: 6/23/2016 19:58:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573973-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**.00016**	**.00324**	**-.00190**	**.00015**	**.00102**	**.45592**
Stddev	.00090	.00024	.00774	.00281	.00036	.00011	.15548
%RSD	242.24	152.87	238.78	147.46	242.78	10.924	34.103
#1	-.00010	-.00008	-.00569	-.00173	-.00002	.00104	.63162
#2	.00036	.00041	.00759	.00081	.00057	.00089	.33613
#3	-.00138	.00014	.00782	-.00479	-.00009	.00111	.40000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7002.1**	**43421.**	**2180.6**
Stddev	12.5	150.	18.1
%RSD	.17813	.34564	.82992
#1	7007.5	43338.	2178.3
#2	6987.9	43594.	2163.7
#3	7011.0	43331.	2199.7

Sample Name: CCV Acquired: 6/23/2016 20:02:38 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.38352	9.5676	.38149	.48360	.95868	.04827	9.5943
Stddev	.00322	.0401	.00429	.00105	.00492	.00022	.0294
%RSD	.83982	.41946	1.1243	.21691	.51367	.46090	.30624
#1	.38657	9.6123	.37703	.48417	.95340	.04832	9.5754
#2	.38382	9.5347	.38559	.48239	.95948	.04803	9.6282
#3	.38015	9.5558	.38184	.48424	.96315	.04846	9.5794
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04762	.19248	.48389	.48328	3.8584	48.266	.97868
Stddev	.00015	.00028	.00059	.00212	.0428	.089	.00720
%RSD	.31413	.14541	.12117	.43944	1.1080	.18417	.73546
#1	.04779	.19230	.48370	.48346	3.8177	48.266	.97363
#2	.04758	.19280	.48342	.48107	3.8546	48.177	.97549
#3	.04750	.19234	.48455	.48530	3.9029	48.355	.98692
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.6513	.48380	.96301	47.927	.48135	9.5102	.48331
Stddev	.2636	.00656	.00332	.072	.00114	.0199	.00231
%RSD	2.7313	1.3558	.34426	.15061	.23638	.20964	.47887
#1	9.3550	.47806	.96658	47.845	.48232	9.5216	.48282
#2	9.8597	.48238	.96243	47.981	.48165	9.4872	.48129
#3	9.7393	.49095	.96003	47.956	.48010	9.5218	.48584
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: CCV Acquired: 6/23/2016 20:02:38 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1479**	**.38358**	**4.8260**	**.95697**	**.96108**	**.96615**	**.48705**
Stddev	.0066	.01108	.0032	.00258	.00341	.00961	.00179
%RSD	.57598	2.8894	.06586	.26977	.35526	.99472	.36795
#1	1.1549	.37665	4.8269	.95791	.95718	.95798	.48502
#2	1.1417	.39636	4.8286	.95405	.96254	.96374	.48839
#3	1.1472	.37773	4.8224	.95895	.96352	.97674	.48775
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.96626**	**.96309**	F **.37739**
Stddev	.00265	.00068	.17080
%RSD	.27390	.07033	45.257
#1	.96486	.96244	.28567
#2	.96461	.96302	.27206
#3	.96931	.96379	.57445
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6922.0**	**42512.**	**2201.6**
Stddev	21.1	353.	11.3
%RSD	.30486	.83050	.51529
#1	6934.6	42346.	2213.8
#2	6933.8	42273.	2199.8
#3	6897.7	42918.	2191.3

Sample Name: CCB Acquired: 6/23/2016 20:06:16 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	-.00041	.00090	.00065	-.00017	-.00009	.03364	-.00010
Stddev	.00250	.00080	.00202	.00197	.00087	.00003	.02458	.00030
%RSD	1325.3	193.76	223.31	305.36	513.01	38.963	73.061	282.77
#1	-.00159	-.00083	-.00002	.00192	-.00117	-.00006	.00559	-.00032
#2	.00304	.00051	-.00049	.00164	.00038	-.00008	.04390	.00023
#3	-.00089	-.00092	.00322	-.00163	.00029	-.00012	.05142	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	.00089	.00107	.02622	.14403	.00140	.16533	.00084
Stddev	.00031	.00098	.00055	.02571	.09143	.00408	.10839	.00123
%RSD	276.41	109.41	51.427	98.056	63.481	291.75	65.560	147.25
#1	.00047	.00000	.00094	-.00236	.13572	.00290	.28604	.00006
#2	-.00006	.00194	.00060	.03356	.05704	.00451	.07632	.00226
#3	-.00008	.00074	.00168	.04747	.23934	-.00322	.13363	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00296	.11509	-.00013	.00085	.00094	.00629	-.00145	.00187
Stddev	.00021	.03731	.00042	.00219	.00279	.00604	.00094	.00124
%RSD	7.1713	32.413	339.72	257.22	298.65	96.053	64.718	66.434
#1	.00285	.13809	-.00049	.00212	.00095	.00557	-.00045	.00293
#2	.00321	.07205	.00034	.00212	.00372	.01265	-.00231	.00218
#3	.00283	.13514	-.00022	-.00168	-.00186	.00064	-.00160	.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB Acquired: 6/23/2016 20:06:16 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**-.00022**	**-.00145**	**-.00171**	**-.00068**	**.00008**	**.01839**
Stddev	.00140	.00022	.01047	.00376	.00047	.00019	.18176
%RSD	1871.4	101.49	723.55	219.98	69.299	243.52	988.14
#1	-.00163	-.00007	.01060	.00231	-.00016	.00013	.02617
#2	.00109	-.00047	-.00838	-.00514	-.00082	.00023	.19614
#3	.00032	-.00011	-.00656	-.00229	-.00108	-.00013	-.16713
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6970.0**	**43262.**	**2192.2**
Stddev	74.7	174.	9.5
%RSD	1.0710	.40250	.43124
#1	7003.8	43124.	2200.3
#2	7021.8	43458.	2194.3
#3	6884.5	43203.	2181.8

Sample Name: L1606077914 Acquired: 6/23/2016 20:10:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00149	.10628	.00096	.02840	.05288	-.00005	7.4368	.00027
Stddev	.00097	.00356	.00214	.00184	.00085	.00008	.1298	.00005
%RSD	64.971	3.3536	223.67	6.4703	1.6095	158.12	1.7453	17.347
#1	.00054	.10724	-.00146	.02628	.05351	-.00006	7.5825	.00032
#2	.00248	.10234	.00174	.02939	.05191	-.00012	7.3941	.00025
#3	.00145	.10927	.00259	.02952	.05322	.00003	7.3337	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00039	.00052	.00185	.08486	.70361	-.00341	1.3249	.01531
Stddev	.00024	.00198	.00037	.02791	.04945	.00257	.0384	.00314
%RSD	62.961	378.91	20.059	32.893	7.0277	75.397	2.8943	20.533
#1	.00050	.00276	.00177	.06380	.69565	-.00073	1.3540	.01542
#2	.00055	-.00104	.00226	.11652	.75656	-.00364	1.3392	.01211
#3	.00011	-.00015	.00153	.07425	.65863	-.00587	1.2814	.01840
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	136.97	.00087	.00420	.00004	.00045	-.00208	.33477
Stddev	.00023	.63	.00055	.00550	.00261	.00047	.00600	.00123
%RSD	39.437	.45874	63.261	131.00	7265.2	105.14	288.25	.36659
#1	.00032	137.68	.00147	.00987	-.00284	.00003	.00096	.33486
#2	.00071	136.77	.00073	.00385	.00070	.00095	.00179	.33594
#3	.00074	136.47	.00040	-.00112	.00225	.00036	-.00900	.33350
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606077914 Acquired: 6/23/2016 20:10:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.03351	-.00005	-.00700	-.00055	.00972	.13105
Stddev	.00062	.00057	.01222	.00229	.00057	.00011	.18984
%RSD	177.30	1.6905	24453.	32.742	102.06	1.1714	144.86
#1	-.00033	.03393	.00766	-.00548	.00007	.00981	.20911
#2	.00048	.03373	-.01414	-.00589	-.00071	.00959	.26943
#3	.00090	.03286	.00633	-.00964	-.00102	.00975	-.08538
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6756.2	41698.	2168.9
Stddev	15.0	223.	10.5
%RSD	.22178	.53392	.48265
#1	6768.0	41441.	2173.7
#2	6739.3	41816.	2176.1
#3	6761.2	41837.	2156.9

Sample Name: L1606080801 Acquired: 6/23/2016 20:14:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.00981	.00166	.02700	.00536	-.00004	53.221	.00023
Stddev	.00132	.00387	.00350	.00355	.00074	.00005	.458	.00031
%RSD	223.52	39.428	210.37	13.162	13.862	133.64	.86119	137.26
#1	-.00079	.01246	.00412	.02618	.00458	.00002	53.750	-.00010
#2	.00184	.00537	-.00234	.03090	.00606	-.00008	52.944	.00025
#3	.00072	.01160	.00322	.02393	.00543	-.00006	52.968	.00052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	-.00019	.00217	.26849	1.4108	-.00252	15.011	.12291
Stddev	.00031	.00023	.00068	.03341	.0586	.00219	.184	.00135
%RSD	424.72	122.66	31.151	12.444	4.1556	86.964	1.2259	1.0966
#1	-.00007	-.00003	.00235	.24539	1.3436	-.00503	15.179	.12150
#2	-.00038	-.00008	.00142	.25327	1.4510	-.00152	15.040	.12419
#3	.00023	-.00045	.00273	.30679	1.4380	-.00101	14.814	.12302
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	15.947	.00061	.00603	.00298	.00330	-.00384	5.1133
Stddev	.00030	.171	.00079	.00285	.00319	.00406	.01618	.0046
%RSD	57.821	1.0703	128.91	47.356	107.05	123.06	420.92	.09015
#1	.00017	16.102	-.00004	.00833	.00524	-.00067	-.02178	5.1184
#2	.00071	15.975	.00148	.00284	.00438	.00312	.00059	5.1096
#3	.00066	15.764	.00039	.00691	-.00067	.00744	.00965	5.1119
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606080801 Acquired: 6/23/2016 20:14:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00027**	**.17284**	**-.01553**	**-.00411**	**-.00044**	**.00368**	**.21621**
Stddev	.00054	.00134	.00554	.00196	.00032	.00035	.15335
%RSD	203.08	.77573	35.693	47.631	72.739	9.4159	70.926
#1	-.00035	.17423	-.01858	-.00259	-.00007	.00340	.36753
#2	.00031	.17155	-.00913	-.00632	-.00067	.00406	.22018
#3	-.00077	.17274	-.01887	-.00342	-.00059	.00356	.06091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6663.3**	**41709.**	**2149.6**
Stddev	10.8	204.	16.5
%RSD	.16157	.48945	.76736
#1	6671.1	41908.	2131.3
#2	6667.7	41719.	2154.5
#3	6651.0	41500.	2163.2

Sample Name: L1606080803S Acquired: 6/23/2016 20:18:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20531	4.9958	.20276	1.0092	.51435	.02483	57.046	.02496
Stddev	.00292	.0043	.00269	.0024	.00665	.00006	.768	.00030
%RSD	1.4202	.08567	1.3273	.24307	1.2934	.23022	1.3467	1.1942
#1	.20859	4.9909	.20264	1.0074	.52180	.02478	57.925	.02528
#2	.20436	4.9977	.20014	1.0120	.50900	.02489	56.503	.02470
#3	.20300	4.9987	.20552	1.0083	.51225	.02482	56.709	.02490
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09967	.25096	.25022	2.3265	26.678	.52152	20.005	.37815
Stddev	.00055	.00036	.00033	.0587	.264	.00877	.198	.00476
%RSD	.55302	.14274	.13074	2.5243	.98845	1.6818	.98772	1.2593
#1	.10016	.25128	.25042	2.3809	26.980	.53116	20.035	.38218
#2	.09976	.25104	.24984	2.2643	26.497	.51402	19.794	.37290
#3	.09907	.25057	.25040	2.3343	26.556	.51939	20.186	.37938
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52098	41.169	.25038	4.9597	.24975	.60811	.19088	7.6345
Stddev	.00121	.394	.00120	.0047	.00531	.00285	.00510	.0102
%RSD	.23295	.95680	.47973	.09548	2.1271	.46887	2.6703	.13352
#1	.52204	41.621	.25177	4.9644	.24365	.60722	.18517	7.6439
#2	.51965	40.900	.24967	4.9597	.25336	.61129	.19249	7.6237
#3	.52125	40.985	.24970	4.9549	.25223	.60580	.19497	7.6359
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606080803S Acquired: 6/23/2016 20:18:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50663	.69353	.50821	.24979	.50502	.50112	.56844
Stddev	.00206	.00495	.00984	.00132	.00161	.00059	.24983
%RSD	.40682	.71328	1.9372	.52651	.31873	.11783	43.949
#1	.50895	.69918	.50790	.24829	.50330	.50110	.76022
#2	.50591	.69001	.49852	.25075	.50528	.50054	.28593
#3	.50502	.69139	.51821	.25034	.50649	.50172	.65917
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6625.1	41184.	2141.2
Stddev	43.1	220.	34.4
%RSD	.65093	.53421	1.6047
#1	6575.6	40948.	2101.5
#2	6654.8	41222.	2162.6
#3	6644.9	41383.	2159.3

Sample Name: L1606080804SD Acquired: 6/23/2016 20:21:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20417	5.0253	.20216	1.0213	.52389	.02512	58.507	.02515
Stddev	.00061	.0013	.00476	.0019	.00456	.00016	.379	.00007
%RSD	.29699	.02608	2.3559	.18158	.87021	.62066	.64724	.26301
#1	.20348	5.0268	.19939	1.0192	.52806	.02496	58.865	.02518
#2	.20461	5.0245	.20766	1.0224	.52461	.02527	58.546	.02507
#3	.20443	5.0246	.19943	1.0224	.51902	.02514	58.111	.02519
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10013	.25277	.25192	2.3449	27.111	.52740	20.302	.37943
Stddev	.00006	.00076	.00111	.0178	.231	.00552	.216	.00380
%RSD	.06407	.29922	.44124	.75833	.85294	1.0468	1.0620	1.0007
#1	.10006	.25267	.25295	2.3582	27.342	.53203	20.543	.38169
#2	.10018	.25357	.25074	2.3247	27.111	.52888	20.233	.38156
#3	.10015	.25207	.25208	2.3517	26.880	.52129	20.129	.37505
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52376	41.862	.25037	4.9891	.25282	.61284	.19379	7.7402
Stddev	.00119	.339	.00131	.0038	.00458	.00414	.01024	.0102
%RSD	.22762	.81017	.52333	.07550	1.8112	.67508	5.2847	.13142
#1	.52513	42.192	.25099	4.9856	.25772	.61266	.19670	7.7511
#2	.52310	41.879	.25125	4.9931	.24866	.60879	.20226	7.7310
#3	.52304	41.514	.24886	4.9887	.25208	.61705	.18241	7.7384
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606080804SD Acquired: 6/23/2016 20:21:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50881	.70095	.50511	.25346	.50822	.50328	.36568
Stddev	.00118	.00336	.00758	.00055	.00107	.00052	.09051
%RSD	.23262	.47943	1.5010	.21780	.21111	.10273	24.750
#1	.50993	.70351	.51202	.25388	.50727	.50277	.45775
#2	.50891	.70221	.50631	.25366	.50938	.50380	.36245
#3	.50757	.69715	.49700	.25283	.50801	.50326	.27683
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6648.3	41256.	2167.1
Stddev	37.5	212.	35.6
%RSD	.56386	.51441	1.6437
#1	6687.1	41426.	2128.5
#2	6645.3	41018.	2174.1
#3	6612.3	41324.	2198.7

Sample Name: L1606082202 Acquired: 6/23/2016 20:25:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00152	.02026	-.00003	.10248	.15200	.00003	6.5973	.00005
Stddev	.00174	.00884	.00264	.00097	.00250	.00003	.1001	.00016
%RSD	114.35	43.656	8042.8	.94662	1.6469	112.93	1.5178	320.68
#1	-.00041	.02197	.00037	.10136	.15374	.00007	6.6625	.00019
#2	.00200	.02813	-.00285	.10296	.15311	.00001	6.6474	.00008
#3	.00298	.01069	.00238	.10312	.14913	.00001	6.4820	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	-.00052	.00142	2.2172	1.7251	.02347	4.6721	.08008
Stddev	.00019	.00160	.00145	.0203	.1370	.00447	.1537	.00373
%RSD	39.028	307.12	102.30	.91315	7.9439	19.041	3.2904	4.6534
#1	.00065	-.00214	.00215	2.1938	1.8809	.02224	4.7545	.08412
#2	.00052	.00105	-.00025	2.2287	1.6712	.01975	4.7670	.07933
#3	.00028	-.00047	.00236	2.2290	1.6232	.02843	4.4947	.07679
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00084	87.069	.00079	.09610	.00066	.00367	-.00338	12.803
Stddev	.00076	.850	.00109	.00417	.00060	.00400	.00476	.010
%RSD	90.058	.97655	138.31	4.3415	91.329	109.21	141.00	.07526
#1	-.00000	87.844	-.00046	.09129	-.00003	.00288	-.00767	12.795
#2	.00146	87.204	.00156	.09839	.00108	.00011	.00175	12.801
#3	.00107	86.159	.00126	.09864	.00092	.00800	-.00421	12.814
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606082202 Acquired: 6/23/2016 20:25:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00121	.22077	-.00522	-.00363	.00085	.00236	.22639
Stddev	.00050	.00200	.00719	.00112	.00069	.00021	.20548
%RSD	41.542	.90585	137.85	30.833	80.735	8.9617	90.766
#1	-.00156	.22257	-.00824	-.00440	.00009	.00222	.33820
#2	-.00063	.22113	-.01041	-.00235	.00143	.00261	.35171
#3	-.00143	.21862	.00299	-.00415	.00104	.00226	-.01076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6664.8	41248.	2126.9
Stddev	26.9	323.	26.2
%RSD	.40377	.78403	1.2328
#1	6695.8	40876.	2101.3
#2	6647.4	41460.	2125.7
#3	6651.2	41408.	2153.7

Sample Name: L1606082203 Acquired: 6/23/2016 20:29:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00153	.05110	.00192	.03595	.79888	.00004	32.443	.00019
Stddev	.00257	.00394	.00088	.00096	.00490	.00006	.223	.00012
%RSD	168.19	7.7097	45.736	2.6764	.61347	156.15	.68852	63.266
#1	.00450	.04867	.00097	.03585	.80394	.00006	32.700	.00006
#2	.00008	.05565	.00210	.03696	.79416	-.00003	32.293	.00030
#3	.00001	.04899	.00269	.03505	.79852	.00008	32.336	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00307	.00707	.00126	5.3792	51.825	.10776	15.276	.18167
Stddev	.00032	.00094	.00080	.0419	.270	.00194	.142	.00297
%RSD	10.345	13.245	64.108	.77858	.52117	1.8035	.92803	1.6345
#1	.00299	.00617	.00218	5.4159	52.078	.10909	15.426	.17840
#2	.00280	.00804	.00087	5.3881	51.541	.10866	15.144	.18240
#3	.00342	.00701	.00071	5.3336	51.857	.10553	15.259	.18420
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	93.634	.00315	-.00252	.00643	.00340	-.00637	11.872
Stddev	.00025	.401	.00140	.00666	.00138	.00643	.00382	.014
%RSD	298.72	.42875	44.327	264.34	21.428	189.23	59.894	.11647
#1	-.00020	94.085	.00392	-.00701	.00774	.00248	-.00439	11.857
#2	.00021	93.316	.00154	.00513	.00656	.01023	-.00396	11.885
#3	.00024	93.502	.00400	-.00568	.00499	-.00252	-.01077	11.874
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606082203 Acquired: 6/23/2016 20:29:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.82666**	**-.00447**	**-.00598**	**-.00056**	**.00596**	**.27009**
Stddev	.00125	.01637	.00340	.00085	.00033	.00013	.03306
%RSD	751.65	1.9807	76.005	14.225	59.976	2.2544	12.242
#1	.00127	.84555	-.00552	-.00599	-.00043	.00586	.28137
#2	-.00101	.81782	-.00722	-.00682	-.00030	.00611	.29603
#3	-.00076	.81660	-.00067	-.00512	-.00093	.00591	.23286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6576.7**	**40904.**	**2132.1**
Stddev	24.6	214.	16.8
%RSD	.37432	.52260	.78563
#1	6552.2	40790.	2112.8
#2	6576.5	40771.	2141.0
#3	6601.4	41150.	2142.6

Sample Name: L1606082302 Acquired: 6/23/2016 20:33:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00184	.02080	.00098	.02231	7.8783	.00017	255.75
Stddev	.00203	.01187	.00435	.00335	.0432	.00007	1.49
%RSD	110.13	57.087	445.14	15.024	.54831	41.236	.58087
#1	-.00150	.00710	.00584	.02555	7.9220	.00012	256.99
#2	-.00401	.02815	-.00256	.01885	7.8356	.00014	254.11
#3	-.00000	.02715	-.00034	.02253	7.8772	.00025	256.16
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.05342	.00242	.00486	4.7469	3.4904	.13833
Stddev	.00052	.00070	.00059	.00069	.0046	.0030	.00615
%RSD	55.632	1.3175	24.430	14.175	.09644	.08679	4.4491
#1	.00040	.05380	.00272	.00415	4.7522	3.4870	.14015
#2	.00098	.05261	.00174	.00553	4.7443	3.4928	.13147
#3	.00144	.05385	.00281	.00490	4.7442	3.4915	.14336
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	198.54	.84118	-.00019	F 709.80	.01731	.04470	.00329
Stddev	1.62	.00623	.00016	4.09	.00125	.01000	.00583
%RSD	.81609	.74094	85.381	.57589	7.2164	22.367	177.43
#1	200.41	.84837	-.00014	712.90	.01830	.03650	.00825
#2	197.48	.83796	-.00006	705.16	.01772	.04176	.00474
#3	197.74	.83722	-.00036	711.32	.01590	.05584	-.00313
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Sample Name: L1606082302 Acquired: 6/23/2016 20:33:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00699**	**-.00211**	**18.432**	**-.00053**	**5.9869**	F **-.04100**	**-.00343**
Stddev	.00326	.00362	.021	.00131	.0347	.00868	.00076
%RSD	46.731	171.57	.11640	247.46	.57940	21.163	22.234
#1	.00892	.00180	18.414	-.00131	6.0214	-.04734	-.00288
#2	.00882	-.00536	18.426	-.00125	5.9520	-.03111	-.00311
#3	.00322	-.00277	18.456	.00098	5.9872	-.04457	-.00430
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00262**	**.00921**	F **-.07344**
Stddev	.00140	.00009	.18020
%RSD	53.460	.99471	245.36
#1	-.00401	.00912	.10768
#2	-.00261	.00930	-.07530
#3	-.00122	.00920	-.25270
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6211.9**	**37943.**	**2065.9**
Stddev	10.7	171.	36.3
%RSD	.17281	.45038	1.7553
#1	6203.2	38131.	2024.8
#2	6223.9	37902.	2079.8
#3	6208.6	37796.	2093.2

Sample Name: L1606082303 Acquired: 6/23/2016 20:37:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	.09100	.00296	.01304	4.1939	-.00007	203.18
Stddev	.00140	.00531	.00327	.00376	.0297	.00006	1.67
%RSD	388.51	5.8358	110.60	28.801	.70801	88.134	.82056
#1	-.00165	.09683	.00075	.00892	4.2189	-.00004	204.69
#2	.00112	.08975	.00671	.01627	4.1611	-.00014	201.39
#3	-.00055	.08643	.00141	.01393	4.2018	-.00002	203.46
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00062	.00605	.00148	.00325	.50161	1.7415	.06042
Stddev	.00049	.00063	.00113	.00080	.03478	.1908	.00296
%RSD	79.462	10.371	76.602	24.650	6.9332	10.958	4.9058
#1	.00115	.00647	.00038	.00343	.46408	1.6330	.05783
#2	.00054	.00533	.00142	.00237	.53275	1.6297	.06365
#3	.00017	.00634	.00265	.00394	.50800	1.9619	.05979
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	118.15	2.3989	.00023	F 640.12	.00507	.01016	.00289
Stddev	.81	.0242	.00018	10.00	.00123	.00431	.00149
%RSD	.68254	1.0089	76.880	1.5615	24.328	42.407	51.612
#1	118.94	2.4148	.00038	650.69	.00487	.00561	.00152
#2	117.33	2.3711	.00027	630.82	.00639	.01069	.00267
#3	118.17	2.4110	.00003	638.86	.00395	.01418	.00448
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Sample Name: L1606082303 Acquired: 6/23/2016 20:37:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00012**	**-.00944**	**13.225**	**-.00084**	**3.8421**	F **-.03122**	**-.00075**
Stddev	.00335	.00541	.023	.00156	.0312	.00884	.00263
%RSD	2724.2	57.378	.17522	185.97	.81266	28.325	351.62
#1	.00362	-.00548	13.247	.00011	3.8716	-.02289	.00226
#2	-.00306	-.00723	13.225	-.00264	3.8094	-.04050	-.00263
#3	-.00019	-.01560	13.201	.00001	3.8453	-.03028	-.00187
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00215**	**.00570**	**.39111**
Stddev	.00161	.00012	.18787
%RSD	74.559	2.0758	48.034
#1	-.00169	.00568	.30759
#2	-.00394	.00583	.60626
#3	-.00083	.00559	.25948
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6278.4**	**38565.**	**2078.5**
Stddev	22.0	175.	41.0
%RSD	.35101	.45432	1.9726
#1	6265.3	38533.	2033.9
#2	6266.0	38754.	2114.5
#3	6303.8	38408.	2087.2

Sample Name: L1606082304 Acquired: 6/23/2016 20:41:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**.00982**	**.00065**	**.03078**	**1.3316**	**-.00001**	**46.431**
Stddev	.00324	.01473	.00404	.00488	.0087	.00012	.330
%RSD	781.99	150.01	619.18	15.855	.65651	2204.3	.71076
#1	.00226	.02597	.00499	.03065	1.3415	-.00014	46.804
#2	.00231	.00636	-.00301	.03572	1.3252	.00009	46.176
#3	-.00333	-.00287	-.00002	.02596	1.3280	.00003	46.315
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00066**	**-.00016**	F **-.00347**	**.00119**	**84.345**	**3.2107**	**.04191**
Stddev	.00021	.00040	.00039	.00149	.339	.1063	.00251
%RSD	31.873	248.01	11.380	125.50	.40248	3.3107	5.9779
#1	.00060	-.00031	-.00306	.00290	84.661	3.3331	.04445
#2	.00048	-.00046	-.00385	.00044	84.387	3.1411	.03944
#3	.00089	.00029	-.00349	.00022	83.986	3.1580	.04185
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-.00300				

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**29.094**	**1.4706**	**-.00067**	**141.52**	**.00104**	**.07644**	**.00312**
Stddev	.106	.0113	.00040	1.02	.00036	.00458	.00219
%RSD	.36352	.76758	59.671	.72353	34.222	5.9922	69.972
#1	29.216	1.4831	-.00079	142.69	.00136	.08096	.00145
#2	29.030	1.4675	-.00100	141.08	.00110	.07654	.00233
#3	29.037	1.4612	-.00023	140.78	.00066	.07180	.00560
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: L1606082304 Acquired: 6/23/2016 20:41:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**-.00444**	**16.946**	**-.00016**	**1.0594**	**.01618**	**-.00009**
Stddev	.00138	.00283	.014	.00045	.0066	.00613	.00273
%RSD	1084.7	63.725	.08315	282.51	.62739	37.902	3068.2
#1	-.00159	-.00414	16.934	.00035	1.0669	.01325	.00044
#2	.00005	-.00741	16.943	-.00032	1.0545	.02323	.00234
#3	.00116	-.00177	16.961	-.00051	1.0567	.01207	-.00305
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00431**	**.01323**	F **-.28757**
Stddev	.00070	.00016	.06453
%RSD	16.230	1.2047	22.439
#1	-.00354	.01326	-.33446
#2	-.00489	.01337	-.31427
#3	-.00452	.01306	-.21398
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6548.1**	**40764.**	**2104.8**
Stddev	18.7	118.	30.0
%RSD	.28493	.28837	1.4234
#1	6562.8	40898.	2079.6
#2	6554.4	40678.	2096.8
#3	6527.1	40717.	2137.9

Sample Name: L1606088302 Acquired: 6/23/2016 20:45:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00335	.84495	.01492	.13705	.35776	-.00016	61.342	.00073
Stddev	.00192	.00536	.00123	.00168	.00649	.00001	.914	.00037
%RSD	57.476	.63420	8.2502	1.2235	1.8144	6.0991	1.4894	50.484
#1	.00126	.85090	.01399	.13791	.36483	-.00016	62.379	.00100
#2	.00372	.84051	.01632	.13512	.35638	-.00017	60.987	.00089
#3	.00506	.84344	.01445	.13813	.35207	-.00015	60.658	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00790	.00132	.00561	5.6286	11.735	.00962	26.311	2.7437
Stddev	.00012	.00055	.00131	.0909	.087	.00112	.394	.0396
%RSD	1.4821	41.328	23.360	1.6145	.74143	11.624	1.4976	1.4443
#1	.00790	.00105	.00615	5.6698	11.835	.00907	26.689	2.7892
#2	.00779	.00096	.00657	5.6916	11.681	.00887	26.343	2.7252
#3	.00802	.00195	.00412	5.5244	11.688	.01090	25.902	2.7167
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01337	55.014	.02594	.07391	.01768	.00363	-.00148	7.7740
Stddev	.00021	.737	.00058	.00987	.00156	.00456	.00201	.0095
%RSD	1.5352	1.3397	2.2195	13.356	8.8413	125.65	135.81	.12214
#1	.01329	55.834	.02652	.06415	.01943	.00884	.00061	7.7638
#2	.01322	54.801	.02594	.08389	.01641	.00164	-.00340	7.7755
#3	.01361	54.406	.02537	.07370	.01720	.00040	-.00164	7.7826
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606088302 Acquired: 6/23/2016 20:45:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00090	.36986	.01540	-.00118	.00118	.12530	1.4316
Stddev	.00025	.00460	.01415	.00177	.00035	.00030	.3050
%RSD	27.990	1.2450	91.875	150.26	29.961	.24276	21.302
#1	.00061	.37482	.00658	-.00313	.00110	.12559	1.0819
#2	.00104	.36904	.00789	.00033	.00156	.12533	1.6421
#3	.00105	.36572	.03171	-.00073	.00087	.12498	1.5707
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7921.9	49318.	2693.6
Stddev	12.3	123.	25.0
%RSD	.15529	.24979	.92714
#1	7908.5	49427.	2667.6
#2	7924.8	49342.	2717.4
#3	7932.6	49184.	2695.7

Sample Name: CCV Acquired: 6/23/2016 20:49:10 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39590	9.9110	.39526	.48909	.98565	.04996	9.8451
Stddev	.00120	.0339	.00042	.00457	.02803	.00042	.3357
%RSD	.30353	.34216	.10738	.93432	2.8436	.84013	3.4103
#1	.39483	9.8747	.39503	.48786	.95368	.04993	9.4641
#2	.39720	9.9418	.39501	.48526	.99729	.04955	9.9733
#3	.39566	9.9167	.39575	.49415	1.0060	.05039	10.098
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05017	.20113	.49806	.50390	3.9193	49.281	.99930
Stddev	.00013	.00026	.00295	.00102	.1281	1.426	.02793
%RSD	.24979	.12923	.59274	.20262	3.2691	2.8935	2.7947
#1	.05003	.20121	.49990	.50316	3.7715	47.645	.96745
#2	.05025	.20083	.49465	.50347	3.9883	49.937	1.0109
#3	.05024	.20133	.49963	.50506	3.9981	50.261	1.0196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.8643	.49902	1.0085	49.184	.49977	9.8773	.49959
Stddev	.3185	.01772	.0043	1.350	.00010	.0178	.00372
%RSD	3.2291	3.5503	.42423	2.7456	.01960	.18066	.74560
#1	9.4975	.47954	1.0116	47.634	.49976	9.8611	.50047
#2	10.025	.50333	1.0103	49.812	.49987	9.8744	.49550
#3	10.071	.51418	1.0036	50.106	.49968	9.8964	.50280
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: CCV Acquired: 6/23/2016 20:49:10 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2048**	**.40490**	**5.0297**	**1.0004**	**.98725**	**.99313**	**.50297**
Stddev	.0042	.00796	.0039	.0034	.02832	.03209	.00363
%RSD	.34965	1.9650	.07741	.34428	2.8681	3.2307	.72121
#1	1.2087	.41298	5.0259	.99890	.95492	.95803	.50669
#2	1.2003	.40465	5.0296	.99795	.99923	1.0004	.49944
#3	1.2055	.39708	5.0337	1.0043	1.0076	1.0209	.50278
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.99558**	**1.0009**	F **.02289**
Stddev	.00580	.0022	.25371
%RSD	.58246	.21707	1108.2
#1	.99450	.99842	.14548
#2	.99040	1.0017	-.26883
#3	1.0018	1.0025	.19203
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6660.9**	**41801.**	**2169.0**
Stddev	32.3	28.	115.6
%RSD	.48534	.06597	5.3274
#1	6698.0	41774.	2302.5
#2	6639.4	41798.	2102.0
#3	6645.2	41829.	2102.6

Sample Name: CCB Acquired: 6/23/2016 20:52:47 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00186	-.00093	.00316	.00230	.00074	.00006	.02069
Stddev	.00123	.00851	.00342	.00122	.00124	.00008	.05541
%RSD	66.210	911.24	108.19	52.892	166.55	142.19	267.79
#1	.00059	-.01042	.00649	.00167	.00054	-.00003	-.00744
#2	.00195	.00160	.00333	.00153	-.00038	.00006	-.01500
#3	.00305	.00602	-.00034	.00370	.00206	.00014	.08452
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.00039	.00115	.00076	-.01535	.06062	-.00386
Stddev	.00025	.00015	.00083	.00156	.01904	.09913	.00805
%RSD	1273.3	38.748	71.888	205.02	124.01	163.52	208.55
#1	.00015	.00037	.00104	.00077	-.03627	-.05039	.00540
#2	-.00027	.00056	.00039	.00232	.00098	.09196	-.00780
#3	.00017	.00026	.00203	-.00080	-.01077	.14030	-.00918
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01451	-.00216	.00311	.14026	-.00019	.00962	.00081
Stddev	.08285	.00307	.00109	.02230	.00100	.00497	.00347
%RSD	570.85	141.96	34.905	15.899	521.75	51.686	430.66
#1	-.05222	-.00061	.00206	.16585	-.00076	.01507	.00163
#2	.10725	-.00570	.00305	.12497	-.00078	.00533	-.00300
#3	-.01149	-.00018	.00423	.12997	.00096	.00846	.00380
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: CCB Acquired: 6/23/2016 20:52:47 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00098**	**-.00415**	**.00357**	**.00020**	**.00045**	**-.00310**	**-.00314**
Stddev	.00119	.00276	.00144	.00034	.00013	.00169	.00399
%RSD	121.00	66.464	40.393	168.69	30.219	54.451	127.02
#1	-.00049	-.00098	.00477	.00034	.00060	-.00134	-.00058
#2	-.00234	-.00542	.00396	-.00019	.00034	-.00325	-.00773
#3	-.00012	-.00603	.00197	.00045	.00040	-.00471	-.00111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00114**	**.00020**	F **.30264**
Stddev	.00114	.00013	.32767
%RSD	99.237	64.632	108.27
#1	-.00245	.00019	.39170
#2	-.00061	.00033	-.06036
#3	-.00037	.00008	.57657
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6711.0**	**41762.**	**2107.6**
Stddev	39.0	171.	14.5
%RSD	.58138	.41024	.68723
#1	6710.2	41729.	2123.6
#2	6672.4	41947.	2095.3
#3	6750.5	41609.	2103.9

Sample Name: L1606088401 Acquired: 6/23/2016 20:56:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00138**	**.01701**	**.00493**	**.04852**	**.00618**	**-.00007**	**12.628**	**.00247**
Stddev	.00005	.00414	.00116	.00188	.00077	.00012	.147	.00032
%RSD	3.9151	24.333	23.511	3.8697	12.414	161.67	1.1647	12.874
#1	-.00141	.01981	.00570	.04698	.00662	.00006	12.792	.00280
#2	-.00141	.01895	.00549	.04798	.00529	-.00016	12.508	.00217
#3	-.00131	.01225	.00360	.05061	.00662	-.00013	12.584	.00245
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.33204**	**-.00005**	**.12713**	**.00004**	**.29521**	**1.5328**	**3.2466**	**.01448**
Stddev	.00034	.00102	.00048	.01339	.06956	.0143	.1805	.00109
%RSD	.10335	2250.3	.37814	32463.	23.564	.93016	5.5601	7.5480
#1	.33185	.00032	.12750	.00310	.34102	1.5490	3.4388	.01457
#2	.33183	.00074	.12659	-.01461	.32944	1.5271	3.0806	.01335
#3	.33243	-.00120	.12731	.01164	.21517	1.5222	3.2204	.01553
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00093**	**152.98**	**10.187**	**.09320**	**-.00036**	**-.00902**	**-.00316**	**.51224**
Stddev	.00032	1.78	.001	.01280	.00229	.00381	.00857	.00180
%RSD	34.564	1.1612	.01164	13.735	636.44	42.238	271.43	.35176
#1	.00071	155.02	10.189	.07854	-.00010	-.00788	-.00504	.51429
#2	.00079	151.86	10.188	.09884	-.00276	-.00591	.00620	.51148
#3	.00130	152.04	10.186	.10221	.00179	-.01327	-.01063	.51094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606088401 Acquired: 6/23/2016 20:56:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	.06978	-.00044	-.00366	-.00050	.00520	.35447
Stddev	.00021	.00053	.00665	.00240	.00048	.00018	.13127
%RSD	37.225	.76020	1503.3	65.540	95.032	3.3899	37.033
#1	.00077	.07037	-.00450	-.00503	-.00086	.00501	.20475
#2	.00053	.06936	-.00405	-.00089	-.00069	.00524	.40886
#3	.00036	.06960	.00723	-.00506	.00004	.00536	.44980
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6642.8	41062.	2131.9
Stddev	24.2	57.	30.4
%RSD	.36471	.13951	1.4260
#1	6639.2	41009.	2097.0
#2	6620.6	41122.	2152.2
#3	6668.6	41053.	2146.6

Sample Name: L1606089601 Acquired: 6/23/2016 21:00:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00276	.06592	.00541	.02208	.05123	-.00005	4.5311	.00038
Stddev	.00137	.00695	.00371	.00073	.00110	.00012	.0222	.00020
%RSD	49.858	10.542	68.509	3.3035	2.1551	257.77	.49075	51.621
#1	.00357	.06862	.00418	.02271	.05250	.00006	4.5567	.00056
#2	.00353	.05803	.00958	.02226	.05063	-.00017	4.5198	.00017
#3	.00117	.07112	.00247	.02128	.05055	-.00003	4.5168	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.06787	-.00161	.00146	42.996	.90153	-.00084	5.1151	6.0536
Stddev	.00044	.00070	.00153	.463	.08378	.00102	.1337	.0524
%RSD	.64651	43.319	104.57	1.0779	9.2930	121.94	2.6141	.86472
#1	.06763	-.00220	.00017	43.521	.97406	.00034	5.2374	6.1132
#2	.06761	-.00084	.00314	42.825	.80982	-.00134	4.9723	6.0323
#3	.06838	-.00179	.00107	42.642	.92069	-.00151	5.1355	6.0152
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	19.350	.00357	-.00356	.00111	.00096	-.00499	4.5346
Stddev	.00020	.125	.00141	.00838	.00156	.00212	.00300	.0153
%RSD	55.732	.64532	39.385	235.57	139.61	221.63	60.052	.33782
#1	-.00054	19.492	.00220	-.01302	-.00064	.00306	-.00344	4.5188
#2	-.00040	19.300	.00350	.00291	.00231	-.00118	-.00845	4.5355
#3	-.00014	19.259	.00500	-.00056	.00168	.00099	-.00309	4.5494
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606089601 Acquired: 6/23/2016 21:00:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00060**	**.03780**	**.00811**	**-.00381**	**-.00115**	**.00560**	**.10083**
Stddev	.00066	.00049	.00739	.00382	.00028	.00007	.23956
%RSD	110.76	1.2963	91.111	100.26	24.644	1.2642	237.60
#1	.00016	.03802	.00291	-.00026	-.00147	.00553	-.17268
#2	-.00087	.03815	.00485	-.00331	-.00104	.00559	.20174
#3	-.00109	.03724	.01658	-.00784	-.00094	.00567	.27342
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6699.7**	**41605.**	**2147.2**
Stddev	6.0	395.	20.8
%RSD	.08901	.94822	.96897
#1	6705.8	41196.	2129.6
#2	6699.3	41634.	2141.8
#3	6693.9	41984.	2170.2

Sample Name: L1606089602 Acquired: 6/23/2016 21:04:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00115	.04083	.00060	.00715	.00811	-.00006	.41120	.00010
Stddev	.00092	.00909	.00372	.00237	.00130	.00006	.07420	.00010
%RSD	79.895	22.273	617.42	33.111	16.069	103.37	18.045	95.174
#1	.00172	.03036	-.00348	.00464	.00961	-.00013	.44439	.00004
#2	.00163	.04672	.00380	.00935	.00726	-.00004	.46300	.00021
#3	.00009	.04541	.00149	.00745	.00746	-.00001	.32619	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	.00085	.00131	.07554	1.8076	-.00047	.25019	.00154
Stddev	.00047	.00183	.00071	.02271	.0472	.00199	.07424	.00073
%RSD	2125.6	214.06	54.320	30.062	2.6112	424.18	29.673	47.627
#1	-.00052	.00002	.00060	.10056	1.7705	.00136	.32911	.00152
#2	.00004	.00295	.00130	.05624	1.7915	-.00018	.18174	.00229
#3	.00042	-.00040	.00202	.06981	1.8607	-.00259	.23972	.00082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	8.3070	.00081	-.00279	.00077	-.00363	-.00191	9.3341
Stddev	.00042	.0355	.00152	.00730	.00368	.00212	.00752	.0120
%RSD	4219.9	.42734	186.83	261.51	478.27	58.376	393.78	.12811
#1	-.00026	8.3438	.00114	-.00340	.00064	-.00604	.00678	9.3471
#2	.00047	8.2730	-.00084	.00479	-.00284	-.00208	-.00623	9.3318
#3	-.00024	8.3042	.00214	-.00976	.00451	-.00276	-.00628	9.3235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606089602 Acquired: 6/23/2016 21:04:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00104**	**.00271**	**.00141**	**-.00441**	**.00055**	**.00294**	**.09481**
Stddev	.00076	.00065	.00707	.00096	.00059	.00032	.12117
%RSD	73.387	23.817	499.85	21.749	106.89	10.896	127.81
#1	-.00017	.00268	.00405	-.00333	.00004	.00305	.13413
#2	-.00159	.00337	.00678	-.00473	.00120	.00257	-.04114
#3	-.00135	.00208	-.00659	-.00517	.00043	.00318	.19143
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6686.8**	**41808.**	**2134.5**
Stddev	18.1	213.	20.0
%RSD	.27005	.50969	.93843
#1	6699.2	41631.	2111.6
#2	6666.1	41748.	2148.9
#3	6695.1	42044.	2142.9

Sample Name: L1606089603 Acquired: 6/23/2016 21:08:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00102	.11801	.00474	.00963	.06515	.00009	2.8598	-.00002
Stddev	.00304	.00302	.00162	.00102	.00099	.00007	.0117	.00049
%RSD	298.48	2.5577	34.279	10.645	1.5207	83.968	.40938	2310.2
#1	.00427	.12112	.00606	.01075	.06530	.00010	2.8502	-.00015
#2	.00053	.11781	.00292	.00939	.06607	.00015	2.8729	-.00043
#3	-.00175	.11509	.00524	.00874	.06410	.00001	2.8564	.00052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00155	-.00024	.00127	2.7358	3.5730	.00040	1.7276	.02916
Stddev	.00022	.00132	.00125	.0173	.1870	.00308	.0541	.00143
%RSD	13.914	551.57	98.352	.63220	5.2335	762.16	3.1323	4.9029
#1	.00170	-.00168	.00263	2.7557	3.7847	.00309	1.6947	.02869
#2	.00164	.00005	.00099	2.7247	3.4302	-.00295	1.7900	.03077
#3	.00130	.00091	.00018	2.7268	3.5042	.00107	1.6980	.02803
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00031	7.6284	.00235	.00047	-.00082	.00245	-.00905	5.4943
Stddev	.00032	.0301	.00079	.01031	.00433	.00306	.00148	.0133
%RSD	102.08	.39457	33.547	2191.2	526.63	125.12	16.371	.24152
#1	-.00063	7.6521	.00324	.00549	-.00579	.00459	-.00977	5.4890
#2	-.00033	7.6386	.00175	-.01139	.00215	-.00106	-.01004	5.4845
#3	.00001	7.5946	.00205	.00731	.00118	.00382	-.00735	5.5094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606089603 Acquired: 6/23/2016 21:08:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.02218	.00164	-.00426	-.00004	.00835	.14767
Stddev	.00040	.00013	.00288	.00161	.00009	.00018	.44819
%RSD	344.86	.60531	175.60	37.721	191.36	2.1138	303.52
#1	.00047	.02205	-.00008	-.00574	-.00012	.00836	-.32337
#2	-.00031	.02232	.00496	-.00255	.00005	.00853	.19752
#3	.00019	.02218	.00004	-.00448	-.00006	.00817	.56885
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6682.9	41728.	2128.8
Stddev	17.5	288.	26.5
%RSD	.26233	.68938	1.2452
#1	6675.1	41447.	2098.3
#2	6670.6	42022.	2146.0
#3	6703.0	41715.	2142.2

Sample Name: L1606089604 Acquired: 6/23/2016 21:12:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00189	.07787	.00274	.02534	.04671	-.00007	4.6127
Stddev	.00185	.01361	.00115	.00174	.00203	.00009	.0084
%RSD	97.576	17.475	41.979	6.8483	4.3441	132.30	.18280
#1	.00394	.07337	.00237	.02334	.04637	.00002	4.6224
#2	.00037	.09315	.00403	.02650	.04487	-.00016	4.6067
#3	.00136	.06707	.00182	.02616	.04888	-.00006	4.6091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	.07375	-.00139	.00045	44.265	.94195	-.00388
Stddev	.00010	.00022	.00095	.00149	.255	.04262	.00409
%RSD	21.656	.29660	68.674	332.55	.57666	4.5243	105.62
#1	.00034	.07398	-.00166	-.00009	44.524	.94561	-.00857
#2	.00051	.07354	-.00218	-.00070	44.257	.89762	-.00204
#3	.00052	.07372	-.00033	.00214	44.014	.98262	-.00102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.3790	6.1215	-.00097	19.253	.00495	-.00232	.00060
Stddev	.0237	.0305	.00040	.056	.00026	.00993	.00262
%RSD	.37160	.49866	40.991	.29188	5.2685	429.04	440.43
#1	6.3989	6.1509	-.00053	19.318	.00524	-.00316	-.00241
#2	6.3528	6.1237	-.00131	19.216	.00473	-.01180	.00179
#3	6.3853	6.0899	-.00108	19.227	.00489	.00801	.00241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: L1606089604 Acquired: 6/23/2016 21:12:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00465**	**-.00637**	**4.5161**	**-.00039**	**.04033**	**.00878**	**-.00291**
Stddev	.00319	.00325	.0073	.00021	.00012	.01173	.00069
%RSD	68.469	51.078	.16173	52.620	.29003	133.62	23.851
#1	.00106	-.00941	4.5223	-.00056	.04037	.01678	-.00220
#2	.00578	-.00675	4.5081	-.00016	.04019	.01426	-.00359
#3	.00712	-.00294	4.5179	-.00046	.04041	-.00469	-.00294
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00260**	**.00552**	F **-.09796**
Stddev	.00057	.00025	.21094
%RSD	21.873	4.5503	215.32
#1	-.00325	.00580	.14398
#2	-.00238	.00531	-.24325
#3	-.00218	.00544	-.19462
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6689.8**	**41666.**	**2101.2**
Stddev	9.9	402.	24.3
%RSD	.14842	.96487	1.1576
#1	6695.2	41372.	2073.4
#2	6678.4	42124.	2111.3
#3	6695.9	41503.	2118.8

Sample Name: L1606089605 Acquired: 6/23/2016 21:16:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.04830	-.00145	.00590	.06272	.00007	2.6789	.00041
Stddev	.00176	.01001	.00427	.00202	.00179	.00010	.0329	.00039
%RSD	2993.4	20.730	295.15	34.254	2.8603	144.40	1.2294	96.299
#1	-.00190	.05947	.00328	.00605	.06424	-.00005	2.7135	.00011
#2	.00153	.04527	-.00502	.00784	.06318	.00013	2.6479	.00085
#3	.00055	.04014	-.00260	.00381	.06074	.00012	2.6754	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00157	-.00035	.00184	.89250	3.4230	-.00452	1.6804	.01911
Stddev	.00028	.00023	.00080	.02843	.0162	.00117	.0608	.00353
%RSD	17.515	67.269	43.308	3.1854	.47175	25.991	3.6163	18.451
#1	.00131	-.00060	.00162	.86545	3.4125	-.00336	1.6187	.02198
#2	.00155	-.00014	.00273	.92213	3.4148	-.00448	1.7402	.01517
#3	.00186	-.00031	.00117	.88990	3.4416	-.00571	1.6824	.02016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00024	7.0650	.00185	-.00101	-.00247	.00326	-.00672	5.2164
Stddev	.00018	.0411	.00050	.00181	.00243	.00063	.00650	.0100
%RSD	75.478	.58180	27.196	179.64	98.576	19.406	96.645	.19223
#1	-.00033	7.1107	.00239	-.00299	-.00232	.00293	.00077	5.2089
#2	-.00037	7.0530	.00139	.00057	-.00497	.00286	-.01006	5.2125
#3	-.00003	7.0312	.00176	-.00061	-.00011	.00399	-.01087	5.2278
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606089605 Acquired: 6/23/2016 21:16:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00041	.02070	-.00116	-.00495	-.00050	.00647	.22434
Stddev	.00061	.00025	.00062	.00270	.00039	.00006	.14133
%RSD	147.06	1.2106	53.841	54.602	79.342	1.0037	62.996
#1	-.00061	.02054	-.00094	-.00697	-.00093	.00640	.33918
#2	.00027	.02099	-.00186	-.00188	-.00039	.00649	.26733
#3	-.00089	.02057	-.00067	-.00601	-.00017	.00652	.06651
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6679.9	41653.	2126.5
Stddev	8.5	193.	24.2
%RSD	.12769	.46319	1.1397
#1	6686.1	41709.	2098.6
#2	6670.2	41811.	2142.5
#3	6683.5	41438.	2138.4

Sample Name: L1606089607 Acquired: 6/23/2016 21:20:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**.00633**	**.00159**	**.00141**	**-.00044**	**-.00001**	**.07933**
Stddev	.00195	.00666	.00483	.00232	.00080	.00015	.08022
%RSD	1049.3	105.18	304.39	163.83	179.45	1810.1	101.12
#1	-.00175	.01203	-.00042	.00047	-.00070	-.00018	.13178
#2	.00017	.00795	.00710	-.00028	-.00108	.00005	-.01301
#3	.00214	-.00099	-.00192	.00405	.00045	.00010	.11922
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00011**	**.00023**	**.00018**	**.00261**	**-.00047**	**.03391**	**-.00323**
Stddev	.00029	.00036	.00083	.00135	.02031	.06552	.00128
%RSD	269.77	155.32	469.03	51.632	4346.1	193.24	39.606
#1	-.00002	.00060	-.00019	.00137	-.00573	.10021	-.00211
#2	-.00010	-.00011	.00113	.00242	.02196	-.03081	-.00295
#3	.00044	.00020	-.00041	.00405	-.01763	.03232	-.00462
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.02721**	**.00109**	**-.00056**	**.23253**	**.00049**	**-.00816**	**-.00015**
Stddev	.04069	.00341	.00026	.02524	.00107	.00624	.00442
%RSD	149.52	313.70	46.647	10.856	219.38	76.495	2897.5
#1	.01942	-.00058	-.00035	.24925	-.00074	-.01380	.00125
#2	-.05550	-.00117	-.00047	.20349	.00124	-.00145	-.00510
#3	-.04556	.00501	-.00085	.24484	.00096	-.00923	.00339
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: L1606089607 Acquired: 6/23/2016 21:20:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00194**	F **-.01015**	**.08416**	**.00022**	**-.00011**	**-.00212**	**-.00416**
Stddev	.00173	.00222	.00063	.00064	.00006	.01168	.00343
%RSD	89.180	21.886	.74271	295.50	49.832	550.35	82.554
#1	-.00101	-.00764	.08452	-.00003	-.00011	-.01340	-.00177
#2	-.00087	-.01186	.08451	-.00027	-.00006	.00993	-.00262
#3	-.00393	-.01095	.08344	.00095	-.00017	-.00289	-.00809
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		90.000					
Low Limit		-.01000					

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00083**	**.00158**	**.28593**
Stddev	.00029	.00007	.07024
%RSD	34.545	4.6737	24.566
#1	-.00055	.00150	.21816
#2	-.00081	.00165	.28123
#3	-.00112	.00159	.35840
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6700.8**	**41736.**	**2133.1**
Stddev	34.6	206.	28.2
%RSD	.51651	.49285	1.3235
#1	6660.9	41521.	2103.9
#2	6723.0	41931.	2160.2
#3	6718.5	41757.	2135.2

Sample Name: L1606082202 Acquired: 6/23/2016 21:24:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00194**	**-.00446**	**.00305**	**.00265**	**.00700**	**.00002**	**.35406**
Stddev	.00134	.00435	.00421	.00519	.00205	.00001	.05184
%RSD	68.787	97.453	137.81	196.12	29.341	37.190	14.641
#1	.00075	-.00690	-.00162	.00667	.00636	.00002	.30481
#2	.00338	.00056	.00423	-.00321	.00930	.00002	.40815
#3	.00169	-.00704	.00655	.00448	.00534	.00003	.34922
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**.00043**	**-.00077**	**.00285**	**.14848**	**-.04278**	**.00212**
Stddev	.00027	.00044	.00098	.00102	.00792	.02901	.00038
%RSD	394.25	102.19	127.46	35.949	5.3356	67.810	17.947
#1	-.00009	.00000	-.00184	.00239	.15626	-.06821	.00218
#2	.00038	.00041	.00008	.00403	.14874	-.04895	.00171
#3	-.00008	.00089	-.00054	.00214	.14043	-.01118	.00246
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.28223**	**.00480**	**-.00038**	**4.3287**	**-.00014**	**.01612**	**.00046**
Stddev	.10559	.00363	.00060	.1420	.00015	.00579	.00219
%RSD	37.411	75.632	157.86	3.2805	107.54	35.905	474.81
#1	.24611	.00764	-.00099	4.3698	-.00016	.01856	-.00192
#2	.19945	.00071	.00020	4.4456	-.00027	.02028	.00239
#3	.40114	.00605	-.00035	4.1706	.00002	.00951	.00092
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: L1606082202 Acquired: 6/23/2016 21:24:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**-.00096**	**.60016**	**-.00066**	**.01034**	**-.00345**	**-.00121**
Stddev	.00119	.00324	.00463	.00053	.00056	.00260	.00164
%RSD	9663.9	335.88	.77167	79.904	5.4479	75.303	135.44
#1	-.00094	.00170	.59620	-.00020	.00979	-.00115	-.00170
#2	.00134	-.00002	.59904	-.00124	.01092	-.00293	.00062
#3	-.00037	-.00457	.60525	-.00055	.01031	-.00627	-.00255
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00034**	**.00082**	F **-.14423**
Stddev	.00011	.00006	.30331
%RSD	33.594	7.1986	210.30
#1	.00036	.00078	-.38581
#2	.00045	.00089	-.24305
#3	.00022	.00079	.19617
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6775.7**	**42604.**	**2060.5**
Stddev	51.6	45.	84.1
%RSD	.76190	.10471	4.0814
#1	6799.5	42589.	2047.0
#2	6811.2	42654.	1984.0
#3	6716.5	42568.	2150.6

Sample Name: L1606082203 Acquired: 6/23/2016 21:28:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00145	.00184	.00074	-.00019	.03852	.00003	1.5262	.00007
Stddev	.00122	.00469	.00175	.00116	.00077	.00012	.0464	.00017
%RSD	84.264	255.24	237.52	615.42	2.0040	388.98	3.0406	258.31
#1	.00264	-.00346	.00229	-.00083	.03875	.00010	1.5782	-.00003
#2	.00020	.00352	.00109	-.00089	.03915	.00011	1.4889	-.00004
#3	.00151	.00546	-.00116	.00115	.03766	-.00011	1.5116	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.00018	.00108	.25045	2.4536	.00344	.67766	.01002
Stddev	.00037	.00129	.00050	.01436	.0243	.00221	.03143	.00186
%RSD	100.70	701.59	46.418	5.7329	.98953	64.075	4.6384	18.607
#1	.00035	.00006	.00058	.23440	2.4813	.00332	.65654	.01217
#2	.00075	.00153	.00159	.26208	2.4433	.00571	.71379	.00880
#3	.00001	-.00104	.00108	.25488	2.4361	.00130	.66266	.00909
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00035	4.5035	-.00023	.01290	-.00147	.00479	-.00584	.55304
Stddev	.00012	.0716	.00036	.00146	.00189	.00145	.00099	.00147
%RSD	35.728	1.5904	157.06	11.351	128.61	30.358	16.944	.26494
#1	-.00047	4.5590	.00019	.01295	-.00040	.00482	-.00623	.55146
#2	-.00035	4.5290	-.00045	.01141	-.00366	.00623	-.00472	.55435
#3	-.00023	4.4227	-.00042	.01433	-.00036	.00332	-.00658	.55332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606082203 Acquired: 6/23/2016 21:28:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.03922	-.00354	-.00320	-.00104	.00103	-.02734
Stddev	.00093	.00042	.00540	.00176	.00049	.00021	.22820
%RSD	4945.8	1.0630	152.76	54.899	47.016	20.853	834.62
#1	.00001	.03970	-.00944	-.00516	-.00118	.00102	.23169
#2	.00095	.03900	.00116	-.00265	-.00144	.00082	-.19873
#3	-.00091	.03895	-.00233	-.00178	-.00049	.00125	-.11499
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6687.3	41441.	2081.5
Stddev	25.3	113.	22.3
%RSD	.37870	.27264	1.0699
#1	6658.6	41368.	2073.0
#2	6706.4	41384.	2064.8
#3	6696.9	41571.	2106.8

Sample Name: L1606082302 Acquired: 6/23/2016 21:32:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**.00297**	**.00273**	**.00225**	**.36313**	**-.00000**	**11.836**
Stddev	.00174	.00449	.00180	.00282	.00235	.00016	.075
%RSD	415.32	151.16	65.994	125.04	.64751	6744.5	.63384
#1	-.00148	.00121	.00168	.00506	.36408	.00008	11.919
#2	.00080	.00807	.00170	.00226	.36486	-.00018	11.773
#3	.00194	-.00038	.00482	-.00057	.36045	.00010	11.815
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.00291**	**.00028**	**.00150**	**.22899**	**.13342**	**.00323**
Stddev	.00018	.00030	.00095	.00047	.02084	.11756	.00252
%RSD	113.97	10.305	343.96	31.522	9.1002	88.111	78.086
#1	-.00018	.00302	-.00007	.00192	.21561	.24582	.00054
#2	.00003	.00257	-.00045	.00158	.21836	.01130	.00554
#3	-.00032	.00314	.00135	.00099	.25300	.14315	.00359
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.3954**	**.04077**	**-.00002**	**33.177**	**.00094**	**.00875**	**-.00140**
Stddev	.0055	.00391	.00017	.158	.00081	.00388	.00293
%RSD	.05884	9.5814	818.90	.47682	86.099	44.289	209.14
#1	9.3987	.04528	.00014	33.360	.00025	.00895	-.00476
#2	9.3986	.03829	-.00000	33.085	.00074	.00478	.00055
#3	9.3891	.03876	-.00020	33.087	.00184	.01252	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: L1606082302 Acquired: 6/23/2016 21:32:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00211	F -.01027	.87158	-.00061	.28366	-.00294	-.00367
Stddev	.00335	.00460	.01165	.00033	.00032	.00246	.00356
%RSD	158.22	44.796	1.3368	53.749	.11189	83.646	96.934
#1	.00240	-.01556	.85944	-.00095	.28358	-.00225	-.00028
#2	.00531	-.00804	.87263	-.00029	.28401	-.00568	-.00738
#3	-.00136	-.00721	.88268	-.00060	.28339	-.00091	-.00335
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		90.000					
Low Limit		-.01000					

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00036	.00115	.04430
Stddev	.00028	.00013	.31486
%RSD	77.980	11.657	710.78
#1	-.00058	.00122	.37480
#2	-.00005	.00100	.01024
#3	-.00044	.00124	-.25215
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6666.9	40963.	2080.0
Stddev	54.9	248.	35.1
%RSD	.82321	.60425	1.6856
#1	6605.2	41025.	2039.5
#2	6685.2	40690.	2100.5
#3	6710.3	41173.	2100.0

Sample Name: CCV Acquired: 6/23/2016 21:36:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.37886	9.4008	.36977	.46580	.94543	.04748	9.4956
Stddev	.00192	.0240	.00492	.00165	.00279	.00009	.0298
%RSD	.50559	.25544	1.3304	.35366	.29493	.18359	.31411
#1	.37848	9.4279	.37519	.46422	.94745	.04749	9.4832
#2	.38093	9.3822	.36851	.46567	.94658	.04756	9.4739
#3	.37716	9.3923	.36560	.46751	.94225	.04739	9.5296
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04722	.18900	.47404	.47679	3.8147	47.440	.96725
Stddev	.00010	.00048	.00128	.00128	.0064	.112	.00455
%RSD	.21398	.25239	.26979	.26927	.16823	.23504	.47080
#1	.04722	.18886	.47544	.47536	3.8073	47.493	.96637
#2	.04711	.18861	.47292	.47785	3.8188	47.516	.97218
#3	.04731	.18953	.47377	.47715	3.8179	47.312	.96320
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.5275	.47798	.95150	47.323	.47305	9.3519	.47463
Stddev	.0772	.00629	.00356	.158	.00089	.0108	.00368
%RSD	.81075	1.3163	.37366	.33377	.18727	.11544	.77586
#1	9.5741	.48274	.95557	47.363	.47379	9.3402	.47038
#2	9.4383	.47085	.94902	47.457	.47331	9.3538	.47650
#3	9.5701	.48036	.94991	47.149	.47207	9.3616	.47699
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: CCV Acquired: 6/23/2016 21:36:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1248**	**.37983**	**4.7469**	**.94195**	**.94936**	**.95013**	**.47646**
Stddev	.0071	.00577	.0107	.00244	.00345	.00861	.00052
%RSD	.63160	1.5193	.22491	.25903	.36313	.90637	.10952
#1	1.1176	.38628	4.7372	.93943	.94930	.94189	.47702
#2	1.1251	.37515	4.7451	.94210	.95284	.94943	.47599
#3	1.1318	.37806	4.7583	.94431	.94595	.95907	.47637
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.94937**	**.94698**	F **.53390**
Stddev	.00172	.00064	.57416
%RSD	.18154	.06770	107.54
#1	.95103	.94624	-.12311
#2	.94951	.94740	.93934
#3	.94759	.94730	.78547
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6847.6**	**42330.**	**2179.9**
Stddev	26.3	36.	23.0
%RSD	.38348	.08457	1.0562
#1	6817.2	42321.	2206.4
#2	6862.7	42299.	2165.2
#3	6862.8	42369.	2168.0

Sample Name: CCB Acquired: 6/23/2016 21:39:49 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00034**	**-.00840**	**.00142**	**.00310**	**-.00097**	**-.00004**	**.04289**
Stddev	.00215	.00740	.00154	.00403	.00114	.00009	.02517
%RSD	634.22	88.117	107.88	130.11	117.13	211.10	58.687
#1	.00114	-.00019	.00313	.00134	-.00178	-.00003	.05755
#2	.00065	-.01045	.00097	.00025	-.00148	.00004	.01383
#3	-.00280	-.01457	.00016	.00772	.00033	-.00014	.05730
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**.00024**	**-.00021**	**.00099**	**.00681**	**.02724**	**.00474**
Stddev	.00017	.00030	.00131	.00197	.01403	.13786	.00231
%RSD	120.69	124.53	625.16	199.14	206.17	506.05	48.675
#1	-.00003	.00049	-.00143	.00036	-.00450	-.09799	.00738
#2	.00014	.00033	-.00037	.00320	.02251	.00476	.00369
#3	.00030	-.00009	.00117	-.00059	.00241	.17496	.00314
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.01627**	**.00349**	**.00316**	**.05656**	**.00129**	**.00259**	**.00220**
Stddev	.06560	.00061	.00054	.03460	.00090	.00126	.00512
%RSD	403.12	17.500	17.006	61.166	69.213	48.482	232.87
#1	.04308	.00418	.00337	.06648	.00145	.00133	.00302
#2	-.00519	.00302	.00356	.01809	.00033	.00384	-.00328
#3	-.08670	.00326	.00255	.08512	.00210	.00261	.00686
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: CCB Acquired: 6/23/2016 21:39:49 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00210**	**.00060**	**-.00131**	**-.00025**	**.00045**	**.00101**	**-.00537**
Stddev	.00282	.00202	.00149	.00144	.00024	.00715	.00270
%RSD	134.10	334.37	113.55	585.99	53.933	705.65	50.282
#1	.00467	-.00103	-.00073	-.00138	.00029	-.00721	-.00765
#2	-.00091	.00286	-.00300	-.00074	.00033	.00583	-.00608
#3	.00255	-.00002	-.00020	.00138	.00073	.00442	-.00239
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00036**	**.00019**	F **.41711**
Stddev	.00059	.00027	.26410
%RSD	164.24	139.43	63.317
#1	-.00011	-.00011	.71541
#2	.00007	.00039	.21306
#3	-.00103	.00030	.32286
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6996.3**	**43082.**	**2193.8**
Stddev	20.8	164.	36.3
%RSD	.29721	.37998	1.6551
#1	6972.3	42895.	2225.5
#2	7007.7	43194.	2201.8
#3	7008.9	43159.	2154.2

Sample Name: L1606082303 Acquired: 6/23/2016 21:43:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.00528	-.00158	.00205	.19615	.00000	9.5412	-.00005
Stddev	.00172	.00389	.00374	.00056	.00167	.00004	.0635	.00015
%RSD	531.26	73.680	236.25	27.382	.84980	2856.4	.66503	295.12
#1	.00039	.00192	-.00320	.00177	.19699	.00004	9.6087	.00011
#2	.00201	.00955	-.00424	.00168	.19423	-.00003	9.4828	-.00019
#3	-.00143	.00438	.00269	.00269	.19724	-.00001	9.5322	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	-.00003	.00137	.01816	.07360	-.00201	5.7035	.11460
Stddev	.00028	.00217	.00077	.02760	.04149	.00162	.1926	.00292
%RSD	57.802	7719.6	56.083	151.98	56.373	80.472	3.3772	2.5499
#1	.00048	-.00239	.00048	.04879	.11308	-.00147	5.9188	.11188
#2	.00020	.00186	.00178	-.00477	.07737	-.00383	5.5474	.11423
#3	.00076	.00045	.00184	.01046	.03036	-.00073	5.6443	.11769
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	30.457	.00028	.01105	.00022	.00112	-.00912	.60825
Stddev	.00054	.348	.00034	.00162	.00227	.00456	.00372	.00164
%RSD	210.59	1.1437	122.90	14.679	1048.7	408.61	40.764	.26908
#1	-.00033	30.637	-.00010	.01036	-.00046	-.00379	-.00828	.60645
#2	.00038	30.056	.00057	.01291	.00274	.00192	-.00590	.60965
#3	.00071	30.679	.00036	.00990	-.00164	.00522	-.01319	.60865
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606082303 Acquired: 6/23/2016 21:43:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00070**	**.18364**	**-.00297**	**-.00161**	**.00010**	**.00105**	**.18385**
Stddev	.00086	.00144	.00537	.00137	.00034	.00025	.28076
%RSD	122.13	.78353	180.76	84.915	342.41	23.814	152.71
#1	-.00168	.18402	-.00642	-.00247	-.00015	.00082	-.00761
#2	-.00010	.18205	.00322	-.00003	-.00005	.00103	.50616
#3	-.00032	.18485	-.00570	-.00232	.00050	.00132	.05301
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6737.6**	**41321.**	**2154.5**
Stddev	10.1	398.	10.5
%RSD	.15056	.96263	.48515
#1	6747.5	41745.	2162.1
#2	6727.2	41262.	2142.5
#3	6738.0	40956.	2158.7

Sample Name: L1606082304 Acquired: 6/23/2016 21:47:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00107	.00763	.00205	.00128	.06210	-.00005	2.2162	-.00002
Stddev	.00070	.00357	.00361	.00281	.00225	.00003	.0545	.00005
%RSD	65.790	46.743	175.75	220.17	3.6308	56.826	2.4590	342.73
#1	.00064	.01174	.00606	-.00197	.06015	-.00004	2.1625	-.00007
#2	.00188	.00577	-.00095	.00288	.06159	-.00009	2.2715	.00004
#3	.00068	.00537	.00106	.00292	.06457	-.00003	2.2145	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	-.00139	.00241	4.0573	.28730	.00089	1.4304	.07372
Stddev	.00015	.00065	.00132	.0516	.13779	.00299	.0553	.00403
%RSD	30.727	46.428	54.848	1.2708	47.960	334.26	3.8623	5.4701
#1	.00066	-.00136	.00091	4.0586	.13895	.00365	1.4701	.07443
#2	.00040	-.00206	.00293	4.0051	.41127	.00130	1.4537	.07736
#3	.00040	-.00076	.00340	4.1081	.31169	-.00228	1.3673	.06938
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	6.7673	.00003	.01064	-.00183	.00117	-.00224	.82027
Stddev	.00026	.0658	.00066	.00541	.00174	.00605	.00594	.00641
%RSD	1414.1	.97251	2005.0	50.852	95.153	515.39	265.01	.78184
#1	-.00017	6.7130	.00068	.01686	-.00367	.00122	-.00440	.81299
#2	-.00008	6.7484	.00006	.00808	-.00161	-.00490	-.00681	.82274
#3	.00031	6.8405	-.00064	.00698	-.00021	.00720	.00448	.82508
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606082304 Acquired: 6/23/2016 21:47:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00062**	**.05041**	**.00372**	**-.00162**	**-.00102**	**.00139**	**.02709**
Stddev	.00054	.00053	.00900	.00223	.00128	.00033	.20037
%RSD	86.087	1.0604	241.81	137.59	125.65	23.588	739.53
#1	-.00016	.04984	-.00362	-.00387	-.00076	.00168	-.08640
#2	-.00121	.05049	.01377	-.00158	-.00240	.00104	.25845
#3	-.00050	.05090	.00102	.00059	.00011	.00145	-.09076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6801.0**	**42034.**	**2119.8**
Stddev	49.8	142.	31.5
%RSD	.73210	.33806	1.4863
#1	6763.5	42178.	2123.4
#2	6782.1	42032.	2149.4
#3	6857.5	41894.	2086.7

Sample Name: L1606088302 Acquired: 6/23/2016 21:51:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.03900	.00448	.00430	.01505	-.00001	2.8996	-.00001
Stddev	.00124	.00075	.00243	.00233	.00060	.00004	.0350	.00023
%RSD	153.65	1.9305	54.189	54.088	3.9770	332.40	1.2074	2343.8
#1	-.00027	.03833	.00184	.00580	.01560	.00003	2.9325	.00014
#2	.00216	.03982	.00662	.00548	.01441	-.00003	2.8628	.00010
#3	.00053	.03886	.00496	.00162	.01514	-.00004	2.9035	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	-.00093	.00225	.26018	.53798	-.00133	1.2540	.13015
Stddev	.00005	.00064	.00096	.01052	.04447	.00237	.1006	.00182
%RSD	10.629	68.468	42.462	4.0434	8.2670	177.47	8.0229	1.3964
#1	.00052	-.00155	.00287	.26853	.50853	-.00040	1.3655	.12853
#2	.00056	-.00028	.00273	.26365	.51627	-.00403	1.2265	.12979
#3	.00045	-.00096	.00115	.24836	.58914	.00042	1.1700	.13212
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	2.6639	.00090	.01608	.00052	.00237	-.00249	.36519
Stddev	.00017	.0233	.00047	.00836	.00171	.00049	.00862	.00186
%RSD	72.830	.87410	52.415	51.991	330.96	20.707	346.32	.51020
#1	.00029	2.6639	.00099	.02573	.00209	.00189	.00736	.36326
#2	.00036	2.6406	.00039	.01116	.00078	.00287	-.00614	.36532
#3	.00004	2.6871	.00132	.01135	-.00131	.00234	-.00868	.36698
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606088302 Acquired: 6/23/2016 21:51:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.01730**	**.00326**	**-.00074**	**-.00020**	**.00699**	**.35536**
Stddev	.00047	.00025	.00678	.00023	.00043	.00024	.51910
%RSD	826.36	1.4568	208.35	30.989	219.10	3.4850	146.08
#1	.00036	.01713	.00871	-.00090	-.00020	.00693	-.23473
#2	-.00056	.01718	-.00434	-.00084	-.00062	.00678	.74156
#3	.00004	.01759	.00541	-.00048	.00024	.00726	.55925
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7019.0**	**43469.**	**2272.3**
Stddev	25.4	199.	24.4
%RSD	.36132	.45762	1.0740
#1	7020.2	43542.	2267.1
#2	6993.1	43621.	2298.9
#3	7043.7	43244.	2250.9

Sample Name: L1606089601 Acquired: 6/23/2016 21:55:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00420**	**.00523**	**.00334**	**.00237**	**.00219**	**.00008**	**.19980**
Stddev	.00278	.00696	.00261	.00237	.00063	.00004	.02591
%RSD	66.297	133.09	78.109	99.957	28.753	51.900	12.967
#1	.00741	.00603	.00348	.00033	.00147	.00009	.18026
#2	.00260	.01174	.00066	.00182	.00265	.00012	.22918
#3	.00258	-.00210	.00587	.00496	.00244	.00003	.18994
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.00302**	**.00023**	**.00052**	**2.0027**	**-.01208**	**-.00040**
Stddev	.00012	.00024	.00052	.00149	.0311	.05532	.00593
%RSD	79.007	7.8027	222.58	284.84	1.5506	458.05	1480.9
#1	-.00011	.00287	.00040	.00177	1.9805	.05152	-.00717
#2	-.00005	.00329	-.00035	-.00112	1.9893	-.03870	.00382
#3	-.00028	.00290	.00064	.00091	2.0382	-.04905	.00215
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.24211**	**.28328**	**-.00023**	**.95184**	**.00021**	**.00495**	**-.00083**
Stddev	.13780	.01030	.00015	.04331	.00103	.00358	.00274
%RSD	56.917	3.6352	65.757	4.5498	490.79	72.184	329.16
#1	.26334	.27250	-.00010	.90187	.00062	.00759	.00169
#2	.09492	.28431	-.00019	.97855	.00097	.00088	-.00043
#3	.36806	.29302	-.00040	.97509	-.00096	.00638	-.00376
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: L1606089601 Acquired: 6/23/2016 21:55:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00174**	**-.00552**	**.20894**	**-.00089**	**.00183**	**.00041**	**-.00355**
Stddev	.00455	.00357	.00152	.00075	.00028	.00397	.00196
%RSD	261.01	64.670	.72600	84.586	15.398	961.73	55.133
#1	-.00696	-.00337	.20831	-.00159	.00215	.00126	-.00263
#2	.00141	-.00964	.20784	-.00009	.00174	.00389	-.00222
#3	.00032	-.00355	.21067	-.00099	.00161	-.00391	-.00580
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00023**	**.00107**	F **-.16350**
Stddev	.00118	.00009	.38488
%RSD	512.00	8.7488	235.40
#1	-.00072	.00105	.00228
#2	-.00109	.00099	.11071
#3	.00111	.00117	-.60348
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6828.9**	**41943.**	**2135.6**
Stddev	63.3	286.	20.3
%RSD	.92751	.68281	.94968
#1	6763.6	42271.	2138.9
#2	6833.1	41741.	2154.0
#3	6890.1	41817.	2113.9

Sample Name: L1606089602 Acquired: 6/23/2016 21:59:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00116	.00173	.00317	.00184	-.00011	.00003	.00624	-.00003
Stddev	.00285	.00778	.00249	.00329	.00125	.00006	.05063	.00023
%RSD	245.09	449.18	78.692	179.21	1183.1	208.66	811.35	713.72
#1	-.00055	.01019	.00053	.00389	-.00026	-.00003	-.04528	.00022
#2	.00445	-.00512	.00349	.00357	-.00127	.00009	.05593	-.00023
#3	-.00041	.00012	.00549	-.00196	.00122	.00003	.00807	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.00046	.00165	-.00531	.07219	-.00031	.05667	.00209
Stddev	.00028	.00102	.00160	.03109	.09458	.00388	.05878	.00182
%RSD	116.13	222.95	97.271	585.63	131.01	1232.5	103.73	87.087
#1	.00001	.00001	.00226	.02472	.15298	-.00298	.09347	.00378
#2	.00016	-.00027	-.00017	-.00328	.09542	.00413	.08765	.00016
#3	.00055	.00163	.00285	-.03736	-.03184	-.00209	-.01113	.00234
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	.39833	-.00077	.00469	.00112	.00031	-.00922	.46168
Stddev	.00006	.02012	.00058	.00167	.00277	.00100	.00659	.00725
%RSD	11.375	5.0505	75.062	35.563	245.83	319.68	71.432	1.5707
#1	-.00061	.37822	-.00128	.00414	.00250	-.00075	-.01634	.45603
#2	-.00049	.39832	-.00088	.00656	-.00206	.00124	-.00799	.45917
#3	-.00057	.41846	-.00014	.00336	.00293	.00045	-.00334	.46986
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606089602 Acquired: 6/23/2016 21:59:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00058**	**.00007**	**-.00373**	**-.00407**	**-.00032**	**.00100**	**-.02035**
Stddev	.00028	.00019	.00957	.00088	.00078	.00036	.45457
%RSD	48.712	259.28	256.71	21.746	243.98	36.577	2234.1
#1	-.00053	.00018	.00727	-.00462	.00006	.00142	-.06540
#2	-.00033	.00018	-.00832	-.00454	.00020	.00080	.45507
#3	-.00089	-.00014	-.01012	-.00305	-.00121	.00077	-.45071
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6764.1**	**42193.**	**2152.3**
Stddev	51.5	150.	58.2
%RSD	.76176	.35597	2.7055
#1	6724.7	42019.	2097.0
#2	6745.2	42282.	2213.0
#3	6822.4	42277.	2146.9

Sample Name: L1606089603 Acquired: 6/23/2016 22:03:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00264**	**.00052**	**.00129**	**.00105**	**.00283**	**.00007**	**.13087**	**-.00015**
Stddev	.00174	.01588	.00262	.00317	.00277	.00004	.02295	.00021
%RSD	65.852	3062.5	203.49	301.32	97.964	60.620	17.533	135.33
#1	.00093	.01257	-.00138	.00463	.00302	.00005	.14125	.00004
#2	.00440	.00646	.00387	-.00005	.00549	.00004	.10457	-.00037
#3	.00259	-.01748	.00137	-.00142	-.00004	.00011	.14679	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00048**	**.00024**	**.00128**	**.12772**	**.20105**	**-.00470**	**.12553**	**.00043**
Stddev	.00031	.00150	.00216	.02497	.11408	.00639	.06203	.00287
%RSD	63.789	616.72	168.54	19.548	56.742	136.10	49.418	664.80
#1	.00045	.00194	-.00101	.11916	.09190	.00173	.17340	-.00027
#2	.00019	-.00030	.00156	.10815	.19176	-.00476	.14774	-.00202
#3	.00080	-.00091	.00330	.15584	.31949	-.01106	.05545	.00359
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.39363**	**-.00055**	**.01390**	**-.00151**	**.00183**	**-.00632**	**.24727**
Stddev	.00045	.04518	.00102	.00707	.00255	.00239	.00219	.00127
%RSD	1327.8	11.477	186.18	50.889	169.36	131.03	34.571	.51246
#1	-.00019	.43317	-.00107	.01491	-.00330	.00328	-.00397	.24716
#2	.00047	.34439	.00063	.02042	.00142	-.00094	-.00828	.24858
#3	-.00038	.40334	-.00121	.00638	-.00264	.00314	-.00672	.24606
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606089603 Acquired: 6/23/2016 22:03:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00047**	**.00125**	**-.01273**	**-.00400**	**-.00003**	**.00095**	**.10691**
Stddev	.00077	.00042	.00925	.00266	.00030	.00011	.21605
%RSD	161.90	33.664	72.615	66.501	1119.1	11.082	202.08
#1	-.00019	.00148	-.00295	-.00574	-.00008	.00101	-.14101
#2	-.00134	.00076	-.01391	-.00094	.00030	.00102	.20680
#3	.00011	.00150	-.02133	-.00533	-.00030	.00083	.25493
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6778.0**	**41534.**	**2155.4**
Stddev	33.3	392.	34.0
%RSD	.49153	.94350	1.5766
#1	6804.2	41394.	2116.9
#2	6740.5	41232.	2181.3
#3	6789.2	41977.	2167.8

Sample Name: L1606089604 Acquired: 6/23/2016 22:07:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00159	.01026	.00044	.00222	.00123	.00002	.21290	.00018
Stddev	.00043	.01032	.00191	.00166	.00091	.00006	.03422	.00024
%RSD	27.269	100.60	437.55	74.707	74.454	271.36	16.075	135.58
#1	.00148	.01567	.00246	.00277	.00044	.00008	.21883	-.00010
#2	.00207	.01676	-.00133	.00035	.00223	.00002	.24377	.00035
#3	.00122	-.00164	.00018	.00353	.00102	-.00004	.17610	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00372	-.00098	.00204	1.9871	.04803	-.00029	.27775	.28079
Stddev	.00019	.00146	.00258	.0500	.09028	.00333	.05841	.00512
%RSD	4.9815	148.68	126.42	2.5186	187.98	1134.6	21.028	1.8227
#1	.00391	-.00254	-.00094	1.9637	-.03733	-.00218	.34159	.28507
#2	.00373	.00037	.00345	1.9529	.03888	.00355	.22701	.27512
#3	.00354	-.00079	.00362	2.0445	.14254	-.00224	.26465	.28217
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	.88820	.00047	.00405	-.00241	-.00066	-.00911	.20760
Stddev	.00009	.05397	.00049	.00324	.00083	.00328	.00427	.00263
%RSD	33.170	6.0764	104.78	80.127	34.563	498.25	46.914	1.2688
#1	-.00017	.85983	.00038	.00127	-.00145	.00099	-.00982	.20605
#2	-.00027	.85432	.00100	.00326	-.00287	.00147	-.00453	.20610
#3	-.00035	.95043	.00003	.00761	-.00292	-.00443	-.01299	.21064
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606089604 Acquired: 6/23/2016 22:07:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.00180**	**.00146**	**-.00008**	**.00002**	**.00083**	**.01606**
Stddev	.00033	.00028	.00448	.00273	.00107	.00008	.15859
%RSD	645.35	15.485	305.81	3306.5	5321.6	9.5646	987.51
#1	-.00043	.00167	.00571	-.00323	-.00007	.00090	-.04948
#2	.00011	.00212	.00190	.00129	-.00100	.00085	-.09926
#3	.00017	.00161	-.00322	.00169	.00113	.00074	.19692
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6852.5**	**41879.**	**2133.3**
Stddev	55.4	422.	31.4
%RSD	.80848	1.0073	1.4729
#1	6793.1	41503.	2112.7
#2	6861.8	42335.	2169.5
#3	6902.7	41799.	2117.7

Sample Name: L1606089605 Acquired: 6/23/2016 22:11:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00325**	**-.00813**	**.00321**	**.00103**	**.00232**	**.00007**	**.13232**
Stddev	.00086	.00834	.00166	.00270	.00015	.00005	.04505
%RSD	26.517	102.62	51.687	262.17	6.5199	65.910	34.048
#1	.00357	-.00015	.00448	.00315	.00234	.00011	.13419
#2	.00227	-.00744	.00133	-.00201	.00246	.00002	.08636
#3	.00390	-.01679	.00380	.00194	.00216	.00008	.17641
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**.00019**	**-.00021**	**-.00051**	**.02399**	**.13993**	**-.00272**
Stddev	.00013	.00048	.00060	.00074	.02883	.04909	.00167
%RSD	59.092	248.65	278.22	144.43	120.17	35.082	61.414
#1	-.00034	.00000	-.00032	-.00045	-.00884	.19045	-.00464
#2	-.00023	.00074	.00043	-.00128	.04519	.13693	-.00190
#3	-.00008	-.00016	-.00075	.00019	.03563	.09241	-.00161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.13116**	**-.00087**	**-.00017**	**.35584**	**.00083**	**.00721**	**.00009**
Stddev	.12028	.00028	.00012	.03175	.00083	.00389	.00231
%RSD	91.707	32.079	72.680	8.9233	100.69	53.875	2586.3
#1	.15231	-.00055	-.00032	.37833	.00083	.00320	-.00213
#2	.23946	-.00098	-.00010	.31952	-.00001	.01096	.00248
#3	.00170	-.00108	-.00010	.36967	.00166	.00747	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: L1606089605 Acquired: 6/23/2016 22:11:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00575**	**.00189**	**.24045**	**-.00028**	**.00101**	**-.00455**	**-.00361**
Stddev	.00192	.00588	.00568	.00092	.00006	.01057	.00467
%RSD	33.402	311.30	2.3620	328.38	6.1198	232.48	129.52
#1	.00788	.00697	.23736	-.00119	.00106	-.01626	-.00722
#2	.00521	.00325	.23698	.00066	.00103	-.00167	-.00528
#3	.00416	-.00455	.24700	-.00032	.00094	.00429	.00167
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00106**	**.00104**	F **-.05759**
Stddev	.00074	.00009	.21862
%RSD	69.542	8.5436	379.61
#1	-.00181	.00101	.17219
#2	-.00033	.00097	-.26300
#3	-.00105	.00114	-.08197
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6837.2**	**42004.**	**2152.4**
Stddev	16.0	173.	9.0
%RSD	.23440	.41281	.41704
#1	6853.2	42014.	2142.1
#2	6821.1	41826.	2156.7
#3	6837.2	42172.	2158.4

Sample Name: L1606089607 Acquired: 6/23/2016 22:15:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00124**	**-.00686**	**.00409**	**.00130**	**-.00066**	**-.00005**	**.03206**	**-.00002**
Stddev	.00132	.01058	.00305	.00213	.00072	.00007	.01681	.00018
%RSD	105.94	154.08	74.558	163.59	109.05	125.85	52.443	856.76
#1	-.00264	-.01401	.00622	.00259	-.00111	-.00005	.04548	-.00001
#2	-.00105	-.01187	.00546	.00246	-.00105	.00001	.01320	.00015
#3	-.00003	.00529	.00060	-.00115	.00017	-.00012	.03751	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00031**	**.00074**	**.00061**	**-.00910**	**-.00529**	**-.00407**	**.02444**	**.00176**
Stddev	.00024	.00180	.00036	.03159	.06755	.00591	.05716	.00378
%RSD	78.629	244.31	60.097	347.19	1277.4	145.34	233.90	215.59
#1	.00037	.00281	.00094	.01641	.06833	-.00447	-.04095	.00014
#2	.00051	-.00035	.00022	-.04443	-.01978	-.00977	.04932	-.00095
#3	.00004	-.00025	.00066	.00073	-.06441	.00203	.06494	.00608
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00073**	**.00595**	**.00025**	**.00693**	**-.00226**	**-.00313**	**-.00892**	**-.00746**
Stddev	.00042	.03243	.00102	.00571	.00047	.00121	.00509	.00076
%RSD	57.397	545.12	410.30	82.361	20.886	38.630	57.024	10.142
#1	-.00072	.04302	.00024	.00636	-.00177	-.00362	-.00954	-.00789
#2	-.00116	-.01720	-.00077	.01291	-.00271	-.00175	-.01368	-.00792
#3	-.00032	-.00797	.00128	.00153	-.00229	-.00401	-.00356	-.00659
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606089607 Acquired: 6/23/2016 22:15:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00050**	**.00006**	**-.00267**	**-.00165**	**-.00070**	**.00059**	**.18991**
Stddev	.00084	.00062	.00845	.00365	.00135	.00010	.03400
%RSD	167.93	1027.2	316.03	221.52	192.73	16.308	17.901
#1	-.00037	-.00011	.00072	-.00580	.00084	.00058	.15066
#2	-.00140	.00075	-.01229	-.00022	-.00169	.00050	.20942
#3	.00027	-.00046	.00355	.00107	-.00126	.00069	.20967
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6854.9**	**42369.**	**2139.0**
Stddev	37.2	282.	6.9
%RSD	.54331	.66600	.32457
#1	6813.1	42056.	2146.4
#2	6867.1	42446.	2132.6
#3	6884.6	42604.	2138.0

Sample Name: CCV Acquired: 6/23/2016 22:19:31 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.37294	9.2890	.37002	.46325	.93343	.04671	9.3219
Stddev	.00058	.0248	.00029	.00298	.00858	.00002	.0885
%RSD	.15646	.26680	.07810	.64298	.91954	.04347	.94918
#1	.37306	9.3173	.36998	.46028	.92385	.04673	9.2510
#2	.37230	9.2715	.36976	.46623	.94043	.04670	9.2937
#3	.37345	9.2781	.37033	.46323	.93599	.04670	9.4210
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04629	.18580	.46699	.46774	3.7375	46.911	.95278
Stddev	.00023	.00060	.00144	.00134	.0018	.467	.00684
%RSD	.48818	.32069	.30929	.28620	.04690	.99443	.71816
#1	.04654	.18545	.46662	.46619	3.7368	46.377	.94493
#2	.04624	.18649	.46859	.46843	3.7395	47.239	.95591
#3	.04609	.18546	.46577	.46859	3.7362	47.116	.95750
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.2808	.46805	.93442	46.553	.46467	9.1850	.46445
Stddev	.1781	.00201	.00336	.432	.00229	.0141	.00099
%RSD	1.9192	.42908	.36011	.92728	.49257	.15361	.21367
#1	9.0878	.46660	.93610	46.055	.46543	9.1763	.46458
#2	9.4388	.47034	.93661	46.821	.46649	9.2013	.46537
#3	9.3158	.46721	.93054	46.783	.46210	9.1774	.46340
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: CCV Acquired: 6/23/2016 22:19:31 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1058**	**.37399**	**4.6590**	**.92793**	**.93602**	**.93884**	**.47136**
Stddev	.0068	.00623	.0143	.00333	.00809	.01829	.00375
%RSD	.61331	1.6668	.30694	.35899	.86439	1.9481	.79529
#1	1.1040	.37143	4.6586	.92611	.92682	.91846	.46721
#2	1.1133	.38110	4.6734	.93177	.94202	.94427	.47237
#3	1.1001	.36945	4.6448	.92590	.93921	.95381	.47450
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.93328**	**.93064**	F **.30272**
Stddev	.00145	.00126	.34844
%RSD	.15486	.13568	115.11
#1	.93249	.92922	.70352
#2	.93240	.93165	.07184
#3	.93495	.93106	.13279
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6994.5**	**42945.**	**2201.9**
Stddev	26.0	472.	17.5
%RSD	.37198	1.0980	.79423
#1	7017.9	42835.	2192.4
#2	6966.5	42539.	2222.1
#3	6999.0	43462.	2191.2

Sample Name: CCB Acquired: 6/23/2016 22:23:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00075**	**-.01234**	**.00307**	**.00387**	**-.00152**	**.00003**	**.02196**
Stddev	.00074	.00351	.00195	.00329	.00037	.00010	.03751
%RSD	98.761	28.475	63.502	85.024	24.368	329.31	170.81
#1	.00146	-.01497	.00353	.00757	-.00195	-.00000	.04383
#2	.00082	-.00835	.00475	.00124	-.00126	.00014	.04339
#3	-.00002	-.01370	.00093	.00281	-.00136	-.00005	-.02135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.00029**	**-.00074**	**.00053**	**-.01044**	**.06034**	**-.00158**
Stddev	.00023	.00031	.00153	.00009	.01838	.08449	.00205
%RSD	314.24	106.88	205.57	16.843	176.11	140.03	130.11
#1	-.00010	-.00004	-.00241	.00043	-.01522	.02142	-.00392
#2	-.00029	.00057	-.00042	.00060	.00986	.15728	-.00009
#3	.00017	.00033	.00060	.00054	-.02595	.00232	-.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.02604**	**-.00075**	**.00305**	**.06420**	**.00000**	**.00651**	**-.00362**
Stddev	.05654	.00328	.00069	.00709	.00080	.00504	.00339
%RSD	217.15	436.24	22.462	11.042	53218.	77.432	93.854
#1	.03584	-.00047	.00226	.06569	.00068	.00969	-.00632
#2	-.07502	.00238	.00342	.07043	-.00088	.00913	-.00473
#3	-.03894	-.00416	.00347	.05649	.00021	.00070	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: CCB Acquired: 6/23/2016 22:23:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00325	-.00859	-.00081	-.00049	.00016	.00095	-.00269
Stddev	.00288	.00100	.00106	.00098	.00044	.00395	.00131
%RSD	88.832	11.667	130.17	199.49	265.70	416.04	48.575
#1	.00425	-.00769	-.00116	-.00120	.00053	-.00220	-.00394
#2	-.00001	-.00968	.00037	.00062	.00028	-.00034	-.00133
#3	.00549	-.00841	-.00166	-.00089	-.00032	.00538	-.00281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00046	.00011	F .20521
Stddev	.00084	.00022	.40407
%RSD	184.00	201.71	196.91
#1	.00051	-.00006	.57360
#2	-.00094	.00036	-.22696
#3	-.00095	.00003	.26899
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6996.7	43446.	2222.8
Stddev	42.9	110.	21.9
%RSD	.61271	.25379	.98413
#1	6948.6	43485.	2197.6
#2	7030.8	43322.	2237.5
#3	7010.7	43532.	2233.2

Sample Name: LLCCV Acquired: 6/23/2016 22:27:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00907	.13685	.00722	.07327	.00636	.00136	.38737	.00083
Stddev	.00127	.00548	.00269	.00354	.00121	.00002	.02958	.00013
%RSD	14.057	4.0063	37.324	4.8356	18.957	1.6251	7.6350	15.322
#1	.00768	.13064	.00454	.06952	.00698	.00135	.41482	.00073
#2	.01019	.13890	.00718	.07656	.00497	.00135	.39124	.00078
#3	.00934	.14102	.00993	.07374	.00713	.00139	.35605	.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00356	.00351	.00643	.06036	.74512	.07304	.35518	.00670
Stddev	.00034	.00083	.00051	.03616	.18336	.00520	.11515	.00028
%RSD	9.6921	23.706	7.9731	59.906	24.608	7.1243	32.420	4.2320
#1	.00383	.00446	.00589	.02265	.76354	.06708	.45336	.00638
#2	.00367	.00316	.00691	.06369	.91857	.07668	.38374	.00683
#3	.00317	.00291	.00648	.09475	.55324	.07536	.22844	.00690
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00743	.43578	.01531	.74167	.00827	.07927	.00569	.77935
Stddev	.00037	.04956	.00080	.00526	.00366	.00493	.00102	.00095
%RSD	5.0056	11.373	5.2515	.70948	44.188	6.2194	17.916	.12251
#1	.00704	.38130	.01503	.74257	.01154	.08395	.00451	.78008
#2	.00779	.47820	.01469	.73602	.00432	.07413	.00628	.77827
#3	.00745	.44783	.01622	.74642	.00896	.07973	.00628	.77970
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: LLCCV Acquired: 6/23/2016 22:27:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.37348	.03865	.02465	.14094	.00676	.01578	19.333
Stddev	.00058	.00060	.00437	.00098	.00113	.00019	.577
%RSD	.15634	1.5628	17.713	.69785	16.700	1.2102	2.9862
#1	.37294	.03795	.02415	.14073	.00773	.01557	19.532
#2	.37410	.03901	.02924	.14008	.00552	.01583	19.783
#3	.37339	.03899	.02055	.14202	.00705	.01594	18.682
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6996.1	43552.	2208.7
Stddev	29.5	407.	29.7
%RSD	.42198	.93392	1.3436
#1	6976.9	43985.	2211.3
#2	7030.1	43494.	2236.9
#3	6981.2	43178.	2177.8

Sample Name: LLCCV Acquired: 6/23/2016 22:31:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02091	.36245	.02162	.18354	.01867	.00356	.98086
Stddev	.00237	.00484	.00558	.00414	.00095	.00018	.04469
%RSD	11.351	1.3361	25.792	2.2543	5.0969	5.1755	4.5561
#1	.01879	.36503	.01522	.18805	.01837	.00338	.94866
#2	.02045	.35687	.02541	.17992	.01791	.00356	.96204
#3	.02347	.36547	.02424	.18267	.01974	.00374	1.0319
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00183	.00959	.00895	.01155	.18702	1.8760	.19064
Stddev	.00040	.00066	.00025	.00083	.02563	.0398	.00709
%RSD	21.803	6.8545	2.7509	7.2203	13.702	2.1189	3.7192
#1	.00229	.01035	.00908	.01200	.20673	1.9212	.19761
#2	.00159	.00922	.00866	.01059	.15805	1.8607	.18344
#3	.00161	.00920	.00910	.01205	.19628	1.8463	.19086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.90135	.02189	.01808	1.0102	.03771	1.7925	.01852
Stddev	.03529	.00047	.00019	.0359	.00135	.0154	.00112
%RSD	3.9156	2.1507	1.0770	3.5580	3.5742	.86119	6.0288
#1	.87617	.02240	.01801	.97340	.03783	1.7983	.01932
#2	.88620	.02181	.01830	1.0119	.03900	1.8043	.01725
#3	.94169	.02146	.01794	1.0452	.03631	1.7750	.01900
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: LLCCV Acquired: 6/23/2016 22:31:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19437**	**.03462**	**1.8270**	**.92649**	**.09469**	**.05843**	**.34726**
Stddev	.00460	.00283	.0121	.00858	.00060	.00582	.00417
%RSD	2.3690	8.1675	.66332	.92568	.63058	9.9521	1.1997
#1	.19959	.03615	1.8304	.92739	.09439	.06509	.34780
#2	.19266	.03636	1.8370	.93459	.09431	.05586	.35113
#3	.19087	.03136	1.8135	.91750	.09538	.05435	.34285
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.01800**	**.03876**	F **49.426**
Stddev	.00023	.00022	.593
%RSD	1.2842	.57319	1.2005
#1	.01823	.03881	50.072
#2	.01777	.03895	48.906
#3	.01800	.03851	49.300
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7011.3**	**43477.**	**2210.1**
Stddev	20.4	40.	14.4
%RSD	.29146	.09218	.65240
#1	7004.2	43507.	2200.5
#2	6995.4	43491.	2226.7
#3	7034.3	43431.	2203.1

Sample Name: PBW 11 Acquired: 6/23/2016 22:35:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573562-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00032**	**.00826**	**.00073**	**.00097**	**-.00161**	**.00009**	**.02504**
Stddev	.00435	.00626	.00116	.00380	.00132	.00015	.01704
%RSD	1361.2	75.725	158.33	393.95	82.078	159.17	68.056
#1	-.00441	.01091	-.00035	.00280	-.00305	.00000	.03508
#2	.00122	.01276	.00059	.00350	-.00132	.00026	.03466
#3	.00414	.00112	.00196	-.00341	-.00045	.00001	.00536
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**-.00009**	**.00011**	**.00179**	**-.00443**	**.01747**	**-.00078**
Stddev	.00037	.00030	.00107	.00110	.02744	.11206	.00643
%RSD	372.56	345.12	981.79	61.211	619.83	641.53	826.74
#1	.00053	-.00038	.00079	.00288	.01410	-.01578	-.00199
#2	-.00009	.00021	-.00112	.00069	-.03595	.14238	.00617
#3	-.00014	-.00009	.00066	.00181	.00857	-.07420	-.00651
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.12116**	**.00145**	**-.00010**	**-.00638**	**-.00006**	**-.00844**	**-.00156**
Stddev	.07020	.00190	.00047	.05241	.00004	.00883	.00308
%RSD	57.940	131.08	475.47	821.85	65.273	104.67	197.22
#1	.10625	-.00074	-.00051	-.02102	-.00009	.00126	.00107
#2	.19761	.00240	-.00019	.05180	-.00002	-.01056	-.00495
#3	.05961	.00268	.00041	-.04991	-.00007	-.01601	-.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: PBW 11 Acquired: 6/23/2016 22:35:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573562-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00235**	F **-.01321**	**-.01211**	**.00005**	**.00012**	**-.01090**	**-.00481**
Stddev	.00434	.00615	.00423	.00130	.00022	.00717	.00224
%RSD	184.96	46.568	34.938	2403.9	182.36	65.767	46.622
#1	-.00650	-.00846	-.00872	-.00069	-.00007	-.00262	-.00253
#2	.00215	-.02016	-.01076	-.00070	.00007	-.01519	-.00488
#3	-.00268	-.01101	-.01685	.00155	.00036	-.01489	-.00701
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		90.000					
Low Limit		-.01000					

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00056**	**.00115**	F **-.06214**
Stddev	.00033	.00011	.40590
%RSD	58.758	9.4676	653.23
#1	-.00093	.00115	.04499
#2	-.00040	.00127	.27945
#3	-.00033	.00105	-.51085
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6526.0**	**40939.**	**2061.7**
Stddev	35.4	294.	34.1
%RSD	.54178	.71898	1.6547
#1	6541.9	40985.	2026.5
#2	6550.5	40624.	2063.9
#3	6485.4	41207.	2094.6

Sample Name: LCSW 11 Acquired: 6/23/2016 22:38:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573562-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20572	5.1016	.20434	.99099	.52273	.02551	5.4134	.02557
Stddev	.00209	.0119	.00205	.00539	.00783	.00018	.0860	.00030
%RSD	1.0158	.23413	1.0041	.54353	1.4983	.70326	1.5893	1.1859
#1	.20812	5.1093	.20580	.99664	.52935	.02536	5.5127	.02591
#2	.20432	5.1075	.20521	.99043	.52477	.02571	5.3662	.02536
#3	.20472	5.0878	.20199	.98591	.51409	.02545	5.3613	.02542
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10385	.25890	.26189	2.1195	25.823	.53451	5.3645	.26403
Stddev	.00010	.00080	.00098	.0266	.322	.00518	.0615	.00364
%RSD	.09428	.30942	.37489	1.2540	1.2452	.96918	1.1457	1.3773
#1	.10374	.25918	.26254	2.1199	26.125	.53986	5.3994	.26710
#2	.10385	.25953	.26237	2.1460	25.858	.53416	5.2935	.26002
#3	.10394	.25800	.26076	2.0928	25.485	.52952	5.4005	.26498
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53004	25.957	.26029	4.9232	.25825	.61920	.19466	2.6294
Stddev	.00026	.317	.00111	.0037	.00566	.00409	.00541	.0065
%RSD	.04851	1.2227	.42516	.07504	2.1932	.66079	2.7789	.24514
#1	.53022	26.268	.26156	4.9218	.25403	.62385	.18855	2.6314
#2	.53016	25.970	.25951	4.9204	.25605	.61617	.19656	2.6346
#3	.52975	25.634	.25981	4.9274	.26469	.61757	.19886	2.6222
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: LCSW 11 Acquired: 6/23/2016 22:38:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573562-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51706**	**.53317**	**.52168**	**.25600**	**.51571**	**.51503**	**1.3110**
Stddev	.00229	.00553	.01335	.00456	.00094	.00046	.2154
%RSD	.44200	1.0369	2.5594	1.7813	.18322	.08969	16.426
#1	.51564	.53801	.52874	.25386	.51673	.51503	1.4161
#2	.51585	.53436	.53002	.26124	.51555	.51550	1.4536
#3	.51970	.52714	.50628	.25291	.51486	.51457	1.0633
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6527.2**	**40455.**	**2087.1**
Stddev	31.3	163.	12.5
%RSD	.47880	.40351	.59802
#1	6563.2	40283.	2074.8
#2	6508.4	40474.	2086.8
#3	6509.8	40608.	2099.8

Sample Name: F BLANK Acquired: 6/23/2016 22:42:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573353-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00101	.01349	.00278	.00644	-.00048	.00013	.02829	-.00023
Stddev	.00147	.00646	.00238	.00275	.00027	.00015	.01012	.00024
%RSD	145.82	47.931	85.631	42.748	55.833	119.23	35.758	102.61
#1	-.00010	.00837	.00376	.00945	-.00079	.00030	.03838	-.00026
#2	.00267	.02075	.00451	.00583	-.00040	.00003	.02835	-.00045
#3	.00045	.01134	.00007	.00405	-.00027	.00005	.01815	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	-.00021	.00115	.01618	-.02636	.00022	-.03112	.00301
Stddev	.00025	.00041	.00050	.01401	.02024	.00227	.10093	.00056
%RSD	146.69	193.40	43.311	86.581	76.800	1041.8	324.28	18.733
#1	.00022	.00012	.00058	.01388	-.01342	.00194	.07257	.00362
#2	.00039	-.00067	.00140	.00346	-.01597	.00107	-.03691	.00250
#3	-.00010	-.00008	.00148	.03119	-.04969	-.00236	-.12903	.00293
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	131.96	-.00024	-.00817	-.00215	.00148	-.00969	-.00282
Stddev	.00010	.85	.00144	.01034	.00162	.00392	.00917	.00327
%RSD	22.241	.64765	607.00	126.51	75.376	266.02	94.572	115.83
#1	.00044	132.92	.00143	.00262	-.00398	.00318	-.01589	.00093
#2	.00053	131.28	-.00110	-.01799	-.00092	.00426	.00084	-.00431
#3	.00034	131.69	-.00104	-.00915	-.00154	-.00301	-.01402	-.00509
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: F BLANK Acquired: 6/23/2016 22:42:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573353-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**.00010**	**-.00200**	**-.00314**	**.00056**	**.00410**	**.11736**
Stddev	.00046	.00052	.00261	.00021	.00036	.00009	.48090
%RSD	288.96	535.97	130.24	6.7340	64.659	2.2677	409.76
#1	-.00023	.00063	-.00290	-.00292	.00037	.00404	.00662
#2	.00004	.00007	-.00404	-.00316	.00033	.00421	-.29851
#3	.00067	-.00041	.00094	-.00334	.00097	.00406	.64398
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6547.2**	**40321.**	**2096.8**
Stddev	27.3	101.	33.4
%RSD	.41693	.25042	1.5916
#1	6550.7	40326.	2062.9
#2	6572.6	40217.	2129.6
#3	6518.3	40419.	2098.0

Sample Name: F BLANK Acquired: 6/23/2016 22:46:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573353-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00205**	**.01458**	**.00104**	**.00093**	**-.00012**	**-.00011**	**.03413**	**.00007**
Stddev	.00257	.00695	.00149	.00158	.00097	.00015	.06625	.00024
%RSD	125.57	47.660	142.55	168.73	807.82	139.24	194.10	358.50
#1	.00306	.01748	.00276	.00220	-.00059	.00003	.00736	.00006
#2	.00395	.00665	.00032	-.00083	-.00077	-.00008	-.01455	-.00017
#3	-.00087	.01960	.00006	.00144	.00099	-.00027	.10958	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**-.00025**	**.00229**	**.01454**	**.10361**	**-.00161**	**-.00074**	**.00159**
Stddev	.00020	.00099	.00086	.02039	.12854	.00327	.04972	.00150
%RSD	270.27	392.29	37.466	140.25	124.05	203.19	6704.2	94.513
#1	-.00016	-.00139	.00199	-.00883	.15515	.00182	-.05789	.00331
#2	.00020	.00021	.00326	.02371	.19839	-.00196	.02308	.00082
#3	.00019	.00042	.00163	.02874	-.04269	-.00469	.03259	.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.08993**	**.00021**	**-.00044**	**.00171**	**.00115**	**-.00478**	**-.01618**
Stddev	.00021	.02749	.00122	.00310	.00251	.00690	.00614	.00197
%RSD	158.62	30.569	571.20	708.88	146.77	601.02	128.46	12.198
#1	.00007	.10546	-.00067	.00234	-.00022	.00773	-.00669	-.01496
#2	.00036	.10614	-.00029	.00012	.00081	.00175	.00209	-.01845
#3	-.00004	.05819	.00160	-.00377	.00454	-.00604	-.00974	-.01512
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: F BLANK Acquired: 6/23/2016 22:46:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573353-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.00000	-.00849	-.00355	.00002	.00375	.18786
Stddev	.00024	.00006	.00318	.00112	.00121	.00009	.14076
%RSD	171.57	4326.9	37.397	31.641	7603.4	2.4757	74.927
#1	.00012	.00006	-.01213	-.00271	-.00043	.00385	.34927
#2	.00039	-.00000	-.00626	-.00312	-.00090	.00367	.12376
#3	-.00009	-.00006	-.00708	-.00483	.00138	.00373	.09057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6645.1	41415.	2118.1
Stddev	51.0	148.	9.8
%RSD	.76790	.35755	.46386
#1	6671.8	41525.	2108.0
#2	6677.3	41246.	2127.6
#3	6586.3	41473.	2118.7

Sample Name: L1606097401 Acquired: 6/23/2016 22:50:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573562-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00187	.11141	.00185	.13976	.13124	.00006	11.923	.00025
Stddev	.00099	.00961	.00433	.00304	.00120	.00013	.085	.00026
%RSD	52.908	8.6272	234.23	2.1718	.91402	206.81	.71186	103.09
#1	-.00300	.11755	.00322	.14250	.13178	.00021	12.021	.00001
#2	-.00137	.11635	-.00300	.14028	.13207	-.00003	11.884	.00021
#3	-.00123	.10033	.00533	.13649	.12986	.00001	11.865	.00052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00325	.00082	.00243	1.0194	3.4016	.00412	14.829	.47953
Stddev	.00065	.00120	.00106	.0300	.0185	.00138	.053	.00284
%RSD	19.954	146.37	43.821	2.9431	.54459	33.491	.35710	.59200
#1	.00322	-.00007	.00334	.98836	3.3804	.00531	14.788	.47741
#2	.00262	.00219	.00268	1.0217	3.4096	.00444	14.889	.48276
#3	.00391	.00035	.00126	1.0482	3.4148	.00261	14.810	.47842
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	14.029	.00345	-.00115	.00096	.00344	.00640	6.1973
Stddev	.00012	.046	.00111	.00836	.00159	.00074	.00619	.0079
%RSD	73.635	.32793	32.058	726.14	165.09	21.404	96.675	.12766
#1	-.00003	14.048	.00367	-.00743	.00071	.00392	.01206	6.2055
#2	-.00020	14.062	.00443	-.00436	-.00049	.00379	-.00020	6.1968
#3	-.00025	13.976	.00225	.00834	.00266	.00259	.00734	6.1897
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606097401 Acquired: 6/23/2016 22:50:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573562-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.15663	-.00490	-.00350	-.00004	.00381	.27764
Stddev	.00040	.00118	.00403	.00013	.00036	.00005	.25173
%RSD	389.62	.75413	82.244	3.6390	976.32	1.2951	90.667
#1	-.00036	.15760	-.00950	-.00338	-.00044	.00385	.40246
#2	.00031	.15698	-.00318	-.00349	.00013	.00382	.44257
#3	.00036	.15532	-.00201	-.00363	.00021	.00375	-.01211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6619.1	40945.	2109.7
Stddev	10.2	451.	19.0
%RSD	.15337	1.1019	.89902
#1	6615.2	40453.	2097.8
#2	6611.5	41044.	2131.5
#3	6630.6	41339.	2099.6

Sample Name: L1606097409S Acquired: 6/23/2016 22:54:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573562-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20627	5.0015	.19707	1.0840	.63830	.02511	15.216	.02489
Stddev	.00439	.0470	.00646	.0138	.00496	.00023	.159	.00037
%RSD	2.1297	.93911	3.2784	1.2764	.77719	.91601	1.0457	1.4914
#1	.20993	5.0515	.18974	1.0963	.64340	.02535	15.397	.02529
#2	.20140	4.9583	.19954	1.0690	.63801	.02510	15.151	.02456
#3	.20748	4.9946	.20193	1.0866	.63349	.02489	15.099	.02483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10388	.25321	.25314	2.5849	28.688	.52179	17.865	.68847
Stddev	.00035	.00232	.00112	.0115	.394	.00543	.201	.00731
%RSD	.33918	.91513	.44229	.44279	1.3724	1.0405	1.1266	1.0613
#1	.10359	.25588	.25333	2.5862	29.131	.52794	18.088	.69576
#2	.10427	.25175	.25416	2.5957	28.557	.51978	17.697	.68851
#3	.10377	.25199	.25194	2.5729	28.377	.51766	17.810	.68114
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51876	38.405	.25390	4.8710	.24934	.59995	.18589	8.2835
Stddev	.00146	.259	.00011	.0108	.00345	.00191	.00207	.0089
%RSD	.28048	.67387	.04392	.22193	1.3854	.31868	1.1116	.10799
#1	.51718	38.681	.25401	4.8591	.24740	.60185	.18570	8.2732
#2	.51906	38.367	.25379	4.8738	.25333	.59803	.18393	8.2891
#3	.52005	38.168	.25392	4.8802	.24730	.59997	.18804	8.2882
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606097409S Acquired: 6/23/2016 22:54:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573562-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50349	.65950	.51762	.24758	.50743	.50246	.81618
Stddev	.00174	.00452	.01522	.00062	.00357	.00056	.23521
%RSD	.34477	.68510	2.9397	.25174	.70344	.11237	28.818
#1	.50344	.66471	.52198	.24830	.51109	.50181	.58167
#2	.50178	.65703	.53018	.24729	.50396	.50287	.81481
#3	.50525	.65675	.50070	.24716	.50723	.50268	1.0521
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6571.1	40649.	2099.3
Stddev	19.5	291.	11.1
%RSD	.29604	.71659	.53063
#1	6548.6	40317.	2086.9
#2	6582.6	40767.	2102.9
#3	6582.0	40862.	2108.3

Sample Name: L1606097411SD Acquired: 6/23/2016 22:58:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573562-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20301	5.0935	.20254	1.1135	.64720	.02513	17.005	.02529
Stddev	.00131	.0093	.00255	.0073	.00193	.00014	.125	.00014
%RSD	.64434	.18208	1.2591	.65223	.29801	.54856	.73583	.55871
#1	.20180	5.0830	.20062	1.1056	.64841	.02524	16.944	.02527
#2	.20284	5.0968	.20544	1.1153	.64821	.02498	17.149	.02543
#3	.20440	5.1006	.20156	1.1198	.64498	.02518	16.923	.02515
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10473	.25680	.25656	3.0216	28.787	.52889	19.740	.73225
Stddev	.00029	.00169	.00156	.0240	.291	.00510	.166	.00214
%RSD	.27243	.65998	.60790	.79299	1.0111	.96496	.83971	.29254
#1	.10453	.25746	.25836	3.0492	28.796	.52755	19.834	.73428
#2	.10462	.25806	.25556	3.0077	29.074	.53453	19.837	.73246
#3	.10506	.25487	.25576	3.0078	28.492	.52458	19.548	.73001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52618	39.581	.25576	4.8994	.25448	.60988	.19462	8.7250
Stddev	.00060	.184	.00118	.0146	.00431	.00152	.00488	.0127
%RSD	.11470	.46575	.46133	.29829	1.6939	.24983	2.5089	.14588
#1	.52623	39.585	.25707	4.8974	.25909	.60949	.19392	8.7122
#2	.52676	39.763	.25543	4.9148	.25381	.60859	.19982	8.7250
#3	.52555	39.395	.25478	4.8858	.25055	.61156	.19013	8.7376
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606097411SD Acquired: 6/23/2016 22:58:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573562-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50655	.68066	.51426	.25122	.50847	.50678	.50917
Stddev	.00036	.00376	.00731	.00121	.00054	.00037	.18705
%RSD	.07012	.55173	1.4206	.48320	.10539	.07293	36.736
#1	.50668	.67977	.51313	.25144	.50835	.50698	.47043
#2	.50615	.68478	.52206	.25231	.50800	.50700	.34452
#3	.50682	.67742	.50758	.24991	.50905	.50635	.71255
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6599.6	40879.	2125.2
Stddev	36.5	163.	36.7
%RSD	.55319	.39917	1.7271
#1	6558.7	40764.	2124.1
#2	6628.9	40808.	2089.1
#3	6611.1	41066.	2162.5

Sample Name: L1606090301 Acquired: 6/23/2016 23:01:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00171	.01564	.00294	.01850	.00898	-.00004	46.441	.00022
Stddev	.00082	.01258	.00166	.00390	.00087	.00003	.145	.00037
%RSD	47.964	80.448	56.393	21.081	9.6500	63.411	.31216	167.83
#1	.00264	.02660	.00383	.02298	.00987	-.00008	46.595	-.00020
#2	.00144	.01843	.00103	.01664	.00813	-.00002	46.423	.00039
#3	.00106	.00190	.00395	.01587	.00895	-.00004	46.307	.00049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	.00043	.00251	.04392	.36940	-.00187	6.4848	.00401
Stddev	.00055	.00082	.00124	.02745	.02893	.00702	.0718	.00293
%RSD	143.61	190.56	49.243	62.491	7.8320	374.64	1.1071	73.244
#1	.00082	-.00015	.00183	.02878	.35514	-.00147	6.5673	.00719
#2	.00055	.00137	.00394	.07561	.35036	.00493	6.4364	.00342
#3	-.00023	.00007	.00177	.02738	.40269	-.00908	6.4507	.00141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00124	2.3912	.00015	-.00111	.00175	-.00069	-.00611	2.4464
Stddev	.00019	.0146	.00065	.00585	.00193	.00258	.00753	.0043
%RSD	15.055	.61183	443.31	524.60	110.31	375.66	123.28	.17481
#1	.00123	2.3744	.00089	-.00577	.00397	.00193	-.00911	2.4476
#2	.00106	2.4012	-.00016	.00545	.00055	-.00077	.00246	2.4417
#3	.00143	2.3980	-.00029	-.00303	.00072	-.00322	-.01167	2.4500
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606090301 Acquired: 6/23/2016 23:01:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.05094	-.00942	-.00137	.00033	.00855	.12749
Stddev	.00120	.00036	.00450	.00125	.00064	.00008	.22777
%RSD	359.04	.70893	47.793	91.344	191.76	.98957	178.66
#1	-.00095	.05113	-.01374	-.00053	.00015	.00845	.36891
#2	.00142	.05116	-.00475	-.00281	-.00019	.00858	.09713
#3	.00053	.05052	-.00978	-.00077	.00105	.00861	-.08358
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6624.9	41305.	2113.7
Stddev	28.0	611.	12.8
%RSD	.42196	1.4799	.60649
#1	6599.0	41779.	2107.8
#2	6654.5	40615.	2128.4
#3	6621.1	41521.	2104.9

Sample Name: L1606090301PS Acquired: 6/23/2016 23:05:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573749-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20315	5.0351	.19933	.98509	.51723	.02533	46.108	.02517
Stddev	.00237	.0141	.00064	.00471	.00225	.00014	.292	.00010
%RSD	1.1667	.28092	.32345	.47796	.43513	.56006	.63289	.38937
#1	.20113	5.0207	.19918	.98035	.51851	.02535	46.344	.02507
#2	.20576	5.0490	.19878	.98516	.51463	.02547	45.781	.02527
#3	.20255	5.0357	.20004	.98977	.51856	.02518	46.198	.02516
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10028	.25408	.25247	2.0837	25.422	.52185	10.797	.26020
Stddev	.00048	.00013	.00281	.0115	.145	.00302	.049	.00165
%RSD	.47862	.05151	1.1142	.55075	.56995	.57813	.44947	.63512
#1	.10024	.25422	.24943	2.0968	25.589	.52416	10.827	.25832
#2	.10077	.25406	.25499	2.0788	25.328	.51844	10.822	.26141
#3	.09982	.25396	.25300	2.0754	25.349	.52296	10.741	.26088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52036	27.383	.25017	4.9546	.25694	.60707	.19089	4.8076
Stddev	.00073	.158	.00061	.0081	.00347	.00719	.00485	.0007
%RSD	.13971	.57670	.24497	.16395	1.3493	1.1850	2.5386	.01435
#1	.52119	27.447	.24958	4.9632	.25410	.61287	.18545	4.8079
#2	.51984	27.204	.25012	4.9471	.25592	.60931	.19246	4.8068
#3	.52004	27.500	.25080	4.9535	.26081	.59902	.19476	4.8080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606090301PS Acquired: 6/23/2016 23:05:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573749-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50644	.56158	.50038	.25206	.50977	.50584	.50366
Stddev	.00169	.00120	.00839	.00343	.00237	.00060	.30226
%RSD	.33432	.21309	1.6764	1.3594	.46441	.11817	60.013
#1	.50760	.56240	.50354	.25552	.50926	.50626	.73300
#2	.50722	.56020	.49087	.24866	.51235	.50516	.61683
#3	.50450	.56212	.50672	.25200	.50770	.50611	.16114
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6634.2	40772.	2114.5
Stddev	22.4	92.	10.2
%RSD	.33771	.22603	.48307
#1	6611.3	40856.	2104.9
#2	6656.0	40786.	2113.4
#3	6635.2	40673.	2125.2

Sample Name: L1606090301SDL Acquired: 6/23/2016 23:09:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573749-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00125**	**-.00211**	**.00104**	**.00614**	**.00089**	**-.00005**	**8.6724**	**-.00005**
Stddev	.00276	.00609	.00315	.00512	.00101	.00009	.0375	.00023
%RSD	221.14	289.17	302.21	83.373	113.85	164.72	.43247	430.30
#1	.00165	-.00654	-.00255	.00543	.00189	-.00005	8.6376	.00022
#2	.00379	.00484	.00330	.01158	.00093	-.00014	8.6675	-.00019
#3	-.00169	-.00462	.00238	.00141	-.00014	.00003	8.7121	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**-.00015**	**.00151**	**.01774**	**.05719**	**-.00032**	**1.2928**	**.00199**
Stddev	.00032	.00036	.00174	.01658	.07315	.00592	.1368	.00072
%RSD	433.89	237.55	115.25	93.432	127.89	1849.8	10.583	36.311
#1	-.00025	-.00023	.00291	.03261	.10693	.00122	1.1631	.00203
#2	.00038	-.00046	-.00044	-.00013	-.02679	.00468	1.4358	.00125
#3	.00008	.00024	.00207	.02075	.09145	-.00685	1.2797	.00269
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00062**	**.50288**	**.00020**	**.00422**	**-.00347**	**-.00009**	**-.00488**	**.45851**
Stddev	.00015	.01796	.00107	.00310	.00056	.00216	.00737	.00307
%RSD	24.656	3.5717	530.84	73.548	16.155	2299.3	151.12	.67016
#1	.00074	.48937	-.00102	.00065	-.00411	-.00250	-.01008	.45511
#2	.00045	.49600	.00097	.00624	-.00312	.00057	.00356	.46107
#3	.00067	.52326	.00066	.00577	-.00317	.00165	-.00811	.45936
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606090301SDL Acquired: 6/23/2016 23:09:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573749-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00043**	**.00975**	**-.00339**	**.00072**	**-.00071**	**.00182**	**.28982**
Stddev	.00076	.00047	.00412	.00137	.00059	.00016	.40983
%RSD	176.59	4.8404	121.60	190.63	83.639	8.7152	141.41
#1	.00038	.00960	.00073	.00044	-.00028	.00190	.42557
#2	-.00111	.01028	-.00752	.00221	-.00047	.00164	.61455
#3	-.00055	.00937	-.00339	-.00049	-.00139	.00193	-.17066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6811.4**	**42010.**	**2145.9**
Stddev	35.6	211.	19.5
%RSD	.52290	.50301	.90902
#1	6804.9	42193.	2150.1
#2	6779.4	42057.	2163.0
#3	6849.8	41779.	2124.7

Sample Name: CCV Acquired: 6/23/2016 23:13:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41326**	**10.290**	**.40933**	**.51318**	**1.0406**	**.05196**	**10.449**
Stddev	.00367	.031	.00303	.00454	.0017	.00056	.073
%RSD	.88729	.29649	.74071	.88463	.16560	1.0752	.70056
#1	.41222	10.266	.40583	.51598	1.0426	.05202	10.433
#2	.41023	10.281	.41097	.50794	1.0395	.05138	10.384
#3	.41734	10.325	.41118	.51561	1.0396	.05249	10.528
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05188**	**.20751**	**.51860**	**.52298**	**4.1404**	**51.810**	**1.0557**
Stddev	.00032	.00026	.00373	.00169	.0293	.081	.0044
%RSD	.62111	.12412	.72010	.32358	.70759	.15585	.41608
#1	.05162	.20739	.51967	.52267	4.1341	51.858	1.0535
#2	.05178	.20781	.51444	.52146	4.1148	51.717	1.0529
#3	.05224	.20734	.52168	.52480	4.1724	51.855	1.0608
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.434**	**.52450**	**1.0396**	**51.672**	**.51702**	**10.257**	**.51943**
Stddev	.147	.00403	.0017	.210	.00153	.061	.00236
%RSD	1.4125	.76876	.16574	.40642	.29546	.59705	.45451
#1	10.599	.52887	1.0415	51.851	.51530	10.207	.52009
#2	10.315	.52369	1.0381	51.441	.51819	10.240	.51680
#3	10.387	.52093	1.0392	51.724	.51759	10.325	.52138
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: CCV Acquired: 6/23/2016 23:13:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2432**	**.40702**	**5.1978**	**1.0337**	**1.0394**	**1.0354**	**.52041**
Stddev	.0039	.00046	.0143	.0031	.0042	.0035	.00214
%RSD	.31258	.11246	.27417	.30049	.40463	.33586	.41209
#1	1.2391	.40753	5.1883	1.0302	1.0436	1.0350	.52283
#2	1.2437	.40689	5.1909	1.0348	1.0352	1.0322	.51875
#3	1.2468	.40665	5.2142	1.0361	1.0396	1.0391	.51965
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0351**	**1.0403**	F **.25266**
Stddev	.0070	.0016	.10822
%RSD	.68141	.15403	42.834
#1	1.0383	1.0386	.34911
#2	1.0270	1.0404	.13562
#3	1.0400	1.0418	.27323
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6474.0**	**39804.**	**2056.5**
Stddev	41.9	151.	9.5
%RSD	.64647	.37833	.46144
#1	6447.9	39827.	2053.8
#2	6522.3	39942.	2048.6
#3	6451.9	39644.	2067.0

Sample Name: CCB Acquired: 6/23/2016 23:17:05 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00053**	**.01688**	**.00315**	**.00457**	**-.00011**	**.00013**	**.01891**	**.00020**
Stddev	.00350	.01032	.00748	.00212	.00110	.00006	.06314	.00005
%RSD	664.12	61.108	237.21	46.535	973.24	44.359	333.92	24.066
#1	-.00268	.02858	-.00372	.00470	.00043	.00018	.03807	.00024
#2	-.00001	.00908	.00206	.00662	.00061	.00007	-.05159	.00021
#3	.00427	.01299	.01112	.00238	-.00138	.00016	.07025	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**.00073**	**.00146**	**.01871**	**.09919**	**.00074**	**.03193**	**.00172**
Stddev	.00032	.00177	.00126	.01232	.12450	.00566	.07256	.00242
%RSD	651.38	241.69	86.427	65.838	125.51	769.76	227.22	140.80
#1	.00042	-.00122	.00034	.00498	-.03300	-.00467	.10382	.00139
#2	-.00019	.00221	.00282	.02879	.11637	.00026	-.04127	-.00052
#3	-.00008	.00121	.00121	.02235	.21421	.00662	.03325	.00429
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00396**	**.05479**	**-.00105**	**.00648**	**-.00101**	**.00564**	**-.00498**	**.00630**
Stddev	.00092	.03837	.00180	.00453	.00307	.00402	.00631	.00043
%RSD	23.350	70.024	171.44	69.981	304.27	71.194	126.78	6.8811
#1	.00290	.07487	.00083	.01030	.00189	.00526	-.01221	.00676
#2	.00456	.01055	-.00276	.00766	-.00422	.00984	-.00057	.00622
#3	.00443	.07894	-.00122	.00147	-.00069	.00183	-.00216	.00591
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB Acquired: 6/23/2016 23:17:05 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00055**	**-.00002**	**.00408**	**-.00193**	**.00037**	**.00005**	**.02228**
Stddev	.00023	.00019	.00879	.00186	.00041	.00007	.40623
%RSD	41.382	1063.2	215.26	96.532	110.70	135.03	1823.1
#1	.00069	-.00023	-.00341	-.00071	-.00006	-.00002	-.40274
#2	.00029	.00004	.01375	-.00101	.00043	.00013	.06292
#3	.00066	.00013	.00190	-.00407	.00076	.00005	.40667
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6464.5**	**39816.**	**2046.0**
Stddev	26.9	481.	41.8
%RSD	.41677	1.2077	2.0425
#1	6458.5	39261.	2010.7
#2	6441.1	40106.	2035.2
#3	6493.9	40080.	2092.2

Sample Name: L1606090302 Acquired: 6/23/2016 23:21:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00800	.00182	.01230	.01036	-.00005	47.673	.00026
Stddev	.00085	.00343	.00363	.00358	.00124	.00007	.280	.00015
%RSD	272.61	42.881	200.18	29.113	11.960	128.20	.58740	57.099
#1	.00031	.00879	-.00237	.00886	.01157	-.00001	47.890	.00037
#2	-.00053	.01096	.00415	.01601	.00909	-.00001	47.772	.00032
#3	.00116	.00424	.00367	.01205	.01042	-.00013	47.357	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	.00015	.00261	.09179	.46952	-.00272	6.7874	.01530
Stddev	.00029	.00088	.00094	.00788	.11796	.00383	.0475	.00163
%RSD	527.39	592.21	36.175	8.5807	25.123	140.65	.69987	10.685
#1	-.00038	.00116	.00159	.08468	.47413	-.00254	6.7436	.01564
#2	.00012	-.00040	.00278	.09044	.34932	.00101	6.7806	.01352
#3	.00010	-.00032	.00345	.10026	.58509	-.00664	6.8379	.01673
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00092	2.5218	-.00025	.00306	.00002	-.00071	-.00373	2.5222
Stddev	.00063	.0302	.00136	.00470	.00238	.00277	.00475	.0109
%RSD	68.779	1.1957	538.26	153.23	11843.	388.81	127.31	.43311
#1	.00032	2.5566	.00100	-.00086	.00039	.00133	.00175	2.5345
#2	.00086	2.5031	-.00169	.00178	.00219	.00040	-.00620	2.5136
#3	.00157	2.5056	-.00007	.00827	-.00252	-.00386	-.00675	2.5186
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606090302 Acquired: 6/23/2016 23:21:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**.05280**	**-.00935**	**-.00377**	**-.00005**	**.00235**	**.11164**
Stddev	.00108	.00027	.00453	.00048	.00146	.00015	.26019
%RSD	392.25	.51917	48.460	12.830	2892.9	6.5370	233.05
#1	-.00049	.05310	-.00574	-.00424	.00086	.00248	.33955
#2	.00090	.05256	-.01444	-.00328	.00072	.00218	-.17184
#3	-.00123	.05274	-.00787	-.00379	-.00173	.00238	.16722
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6545.6**	**41303.**	**2131.1**
Stddev	23.7	132.	13.6
%RSD	.36137	.32048	.63580
#1	6530.1	41250.	2117.0
#2	6572.8	41206.	2132.3
#3	6534.0	41454.	2144.0

Sample Name: L1606090303 Acquired: 6/23/2016 23:25:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00263	.00774	.00563	.00796	.00854	-.00002	45.954	.00013
Stddev	.00328	.00668	.00265	.00318	.00150	.00012	.228	.00034
%RSD	124.84	86.299	47.034	39.934	17.503	682.86	.49687	267.94
#1	.00506	.01059	.00367	.00860	.00804	-.00005	45.886	.00049
#2	-.00111	.01253	.00457	.01077	.01022	.00012	46.208	.00008
#3	.00394	.00011	.00864	.00451	.00737	-.00012	45.767	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	-.00004	.00264	.21996	.44485	.00448	6.7971	.02189
Stddev	.00017	.00063	.00127	.02132	.06435	.00051	.0747	.00331
%RSD	77.701	1729.3	48.231	9.6943	14.465	11.277	1.0984	15.131
#1	.00007	.00062	.00404	.23944	.50211	.00394	6.7547	.01807
#2	.00019	-.00009	.00157	.19718	.45723	.00494	6.8833	.02378
#3	.00041	-.00064	.00230	.22325	.37521	.00457	6.7534	.02384
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00090	2.4891	-.00031	.00226	-.00318	.00121	-.00101	2.4462
Stddev	.00023	.0385	.00053	.00868	.00252	.00105	.00896	.0110
%RSD	25.268	1.5452	169.73	384.84	79.079	87.283	885.01	.44916
#1	.00089	2.4503	-.00059	-.00015	-.00309	-.00001	-.00785	2.4500
#2	.00067	2.4900	.00030	.01188	-.00575	.00184	-.00433	2.4549
#3	.00113	2.5272	-.00064	-.00497	-.00072	.00180	.00914	2.4339
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606090303 Acquired: 6/23/2016 23:25:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.05042	-.00867	-.00405	-.00058	.00293	.21469
Stddev	.00068	.00039	.00321	.00395	.00086	.00012	.24147
%RSD	116.53	.76868	37.044	97.556	147.98	4.1433	112.48
#1	.00096	.05045	-.00617	-.00495	-.00048	.00287	.22391
#2	.00100	.05080	-.01229	-.00746	-.00148	.00307	.45141
#3	-.00020	.05002	-.00756	.00027	.00022	.00286	-.03127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6557.1	40614.	2090.8
Stddev	3.1	286.	4.7
%RSD	.04661	.70434	.22607
#1	6559.9	40616.	2093.3
#2	6553.9	40327.	2085.3
#3	6557.7	40899.	2093.7

Sample Name: L1606090304 Acquired: 6/23/2016 23:28:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00249	.01012	.00464	.01066	.00806	-.00002	46.697	.00023
Stddev	.00091	.01191	.00138	.00192	.00037	.00002	.216	.00013
%RSD	36.530	117.71	29.729	17.988	4.5683	108.87	.46335	55.814
#1	.00283	-.00243	.00466	.01137	.00780	-.00002	46.940	.00033
#2	.00319	.01152	.00601	.00849	.00791	.00000	46.527	.00026
#3	.00146	.02127	.00325	.01212	.00849	-.00003	46.623	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00033	.00062	.00100	.51001	.64738	.00217	6.6353	.05303
Stddev	.00037	.00064	.00122	.03061	.09484	.00222	.1713	.00028
%RSD	109.48	103.02	122.22	6.0022	14.650	102.21	2.5823	.52039
#1	-.00001	.00028	.00000	.50309	.73158	.00219	6.5308	.05285
#2	-.00026	.00023	.00063	.48345	.66592	.00439	6.8331	.05291
#3	-.00073	.00136	.00236	.54349	.54463	-.00006	6.5421	.05335
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	2.5222	.00010	.00174	.00050	.00128	-.00532	2.7225
Stddev	.00078	.0513	.00045	.01103	.00453	.00439	.00901	.0008
%RSD	156.95	2.0349	434.03	634.47	913.70	343.72	169.31	.03118
#1	-.00033	2.5754	.00043	-.00461	.00243	-.00315	-.01182	2.7217
#2	.00121	2.4730	-.00041	.01448	.00374	.00135	-.00910	2.7234
#3	.00061	2.5183	.00029	-.00465	-.00468	.00562	.00496	2.7225
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606090304 Acquired: 6/23/2016 23:28:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00081**	**.04960**	**-.00329**	**-.00196**	**-.00058**	**.00257**	**.19345**
Stddev	.00125	.00047	.00925	.00100	.00022	.00015	.14173
%RSD	153.83	.94383	281.36	50.890	37.305	5.7376	73.263
#1	-.00194	.04918	-.00253	-.00307	-.00034	.00241	.33632
#2	.00053	.04951	.00556	-.00167	-.00074	.00270	.19114
#3	-.00102	.05011	-.01289	-.00114	-.00067	.00259	.05289
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6594.2**	**40470.**	**2074.5**
Stddev	30.7	142.	46.3
%RSD	.46503	.35187	2.2319
#1	6626.4	40634.	2027.0
#2	6565.3	40392.	2077.0
#3	6590.8	40384.	2119.5

Sample Name: L1606090305 Acquired: 6/23/2016 23:32:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00213	.01717	-.00084	.01089	.00981	.00002	48.923	.00033
Stddev	.00269	.00400	.00320	.00082	.00051	.00009	.164	.00010
%RSD	126.20	23.278	380.73	7.5221	5.1474	403.64	.33444	29.068
#1	-.00080	.01450	.00248	.01170	.01029	.00012	49.107	.00031
#2	.00271	.02176	-.00390	.01090	.00928	.00001	48.795	.00044
#3	.00448	.01524	-.00110	.01007	.00986	-.00006	48.866	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	-.00068	.00177	1.5788	.44150	.00018	6.7726	.08864
Stddev	.00038	.00111	.00108	.0172	.06024	.00100	.1054	.00177
%RSD	191.06	162.17	60.718	1.0921	13.644	545.86	1.5565	1.9982
#1	-.00014	-.00131	.00085	1.5835	.49954	.00095	6.8808	.08930
#2	.00013	.00060	.00296	1.5597	.37928	.00054	6.7668	.08663
#3	.00060	-.00134	.00152	1.5932	.44569	-.00095	6.6702	.08998
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	2.4907	.00039	.00113	.00257	.00234	-.00366	3.0530
Stddev	.00062	.0095	.00077	.00213	.00167	.00385	.01135	.0045
%RSD	175.61	.38135	200.05	188.45	64.988	164.32	310.04	.14641
#1	-.00035	2.4923	-.00007	.00130	.00338	.00574	-.00469	3.0528
#2	.00078	2.4993	.00128	-.00108	.00370	-.00184	-.01446	3.0486
#3	.00062	2.4805	-.00005	.00317	.00065	.00313	.00817	3.0576
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606090305 Acquired: 6/23/2016 23:32:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00063**	**.05089**	**-.00933**	**-.00366**	**-.00080**	**.01192**	**.09534**
Stddev	.00059	.00042	.00867	.00169	.00053	.00018	.35498
%RSD	93.514	.82669	92.914	46.068	66.583	1.5108	372.34
#1	-.00036	.05120	-.01547	-.00172	-.00063	.01174	-.06523
#2	-.00022	.05105	.00059	-.00451	-.00139	.01210	.50224
#3	-.00130	.05041	-.01311	-.00475	-.00037	.01192	-.15099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6602.9**	**40942.**	**2135.9**
Stddev	6.9	324.	25.7
%RSD	.10425	.79054	1.2024
#1	6597.6	40623.	2114.4
#2	6610.7	41270.	2164.3
#3	6600.5	40933.	2129.0

Sample Name: L1606092401 Acquired: 6/23/2016 23:36:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00265	.03744	.60307	2.0253	.01194	.00006	59.280
Stddev	.00277	.00788	.00343	.0045	.00047	.00007	.270
%RSD	104.56	21.060	.56883	.22109	3.9165	122.30	.45465
#1	.00477	.04143	.60414	2.0202	.01227	.00013	59.521
#2	-.00048	.02835	.59924	2.0278	.01216	-.00002	58.989
#3	.00365	.04252	.60585	2.0280	.01141	.00007	59.330
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.00169	.04543	.00223	.02086	20.304	.12271
Stddev	.00012	.00069	.00181	.00172	.03477	.327	.00387
%RSD	33.446	40.936	3.9734	76.929	166.67	1.6108	3.1576
#1	.00045	.00112	.04573	.00336	.05783	20.550	.12442
#2	.00044	.00245	.04349	.00026	.01592	20.429	.12545
#3	.00023	.00148	.04706	.00308	-.01117	19.933	.11828
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.44128	.00138	.09389	F 925.96	-.00083	.00321	-.00198
Stddev	.02883	.00107	.00073	20.38	.00037	.00049	.00073
%RSD	6.5329	77.799	.77502	2.2006	45.088	15.416	37.027
#1	.47443	.00015	.09321	948.64	-.00126	.00268	-.00137
#2	.42732	.00186	.09382	909.19	-.00057	.00328	-.00178
#3	.42208	.00212	.09466	920.06	-.00066	.00367	-.00280
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Sample Name: L1606092401 Acquired: 6/23/2016 23:36:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02428**	**.03016**	**5.4351**	**-.00127**	**.13763**	**-.01760**	**-.00342**
Stddev	.00750	.01129	.0055	.00172	.00098	.00201	.00308
%RSD	30.891	37.425	.10042	135.11	.71182	11.421	90.086
#1	.02439	.02726	5.4392	.00004	.13847	-.01734	-.00405
#2	.03173	.04262	5.4371	-.00064	.13656	-.01973	-.00008
#3	.01673	.02061	5.4289	-.00322	.13787	-.01573	-.00615
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00453**	**.02225**	F **-.12201**
Stddev	.00050	.00015	.18874
%RSD	11.054	.67831	154.69
#1	.00443	.02208	-.21896
#2	.00408	.02238	-.24258
#3	.00507	.02228	.09550
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6296.4**	**38355.**	**2086.6**
Stddev	9.5	124.	22.4
%RSD	.15057	.32201	1.0746
#1	6287.1	38290.	2062.1
#2	6296.1	38498.	2106.2
#3	6306.0	38278.	2091.5

Sample Name: DI7 Acquired: 6/23/2016 23:40:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00122	-.00305	.00325	.01342	.00511	-.00003	.63457	.00006
Stddev	.00070	.00725	.00183	.00147	.00092	.00006	.03174	.00026
%RSD	57.204	237.69	56.132	10.964	18.001	169.74	5.0023	454.53
#1	.00129	-.01124	.00390	.01220	.00527	-.00006	.66854	.00019
#2	.00049	.00254	.00119	.01301	.00412	-.00007	.60566	-.00024
#3	.00189	-.00045	.00467	.01505	.00594	.00003	.62951	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	-.00105	.00137	.04887	.17552	-.00411	.67989	.02289
Stddev	.00029	.00066	.00135	.03758	.14542	.00295	.10949	.00017
%RSD	86.943	62.496	98.260	76.910	82.851	71.791	16.104	.73432
#1	.00007	-.00034	.00163	.08822	.25845	-.00273	.72653	.02297
#2	.00065	-.00118	.00257	.01334	.00761	-.00210	.75834	.02270
#3	.00029	-.00164	-.00009	.04504	.26051	-.00749	.55480	.02300
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00034	.88120	.00036	.00359	-.00382	-.00015	.00024	.27765
Stddev	.00027	.03865	.00120	.00516	.00377	.00137	.00372	.00507
%RSD	80.796	4.3866	328.28	143.80	98.655	910.66	1547.5	1.8265
#1	-.00036	.92576	.00056	.00038	-.00770	-.00061	-.00359	.27282
#2	-.00006	.85668	-.00092	.00954	-.00358	.00139	.00047	.27719
#3	-.00060	.86116	.00145	.00084	-.00017	-.00123	.00384	.28294
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: DI7 Acquired: 6/23/2016 23:40:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.00711**	**-.00708**	**-.00329**	**-.00065**	**.00225**	**.10588**
Stddev	.00142	.00039	.01416	.00145	.00012	.00019	.39638
%RSD	991.52	5.5260	199.93	44.028	18.378	8.2791	374.37
#1	-.00086	.00703	-.01555	-.00371	-.00072	.00228	.22011
#2	.00150	.00677	.00926	-.00449	-.00071	.00242	-.33508
#3	-.00107	.00754	-.01496	-.00168	-.00051	.00205	.43261
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6937.5**	**42404.**	**2145.0**
Stddev	31.4	540.	24.8
%RSD	.45241	1.2743	1.1557
#1	6923.1	42362.	2162.5
#2	6915.9	42964.	2155.8
#3	6973.5	41886.	2116.6

Sample Name: DI8 Acquired: 6/23/2016 23:44:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01092	.24637	.01430	.05175	.02804	.00125	.70558	.00137
Stddev	.00255	.00988	.00240	.00085	.00181	.00008	.05906	.00031
%RSD	23.343	4.0097	16.798	1.6422	6.4611	6.1453	8.3704	22.665
#1	.01275	.23892	.01336	.05090	.02859	.00117	.73476	.00163
#2	.01199	.25758	.01250	.05173	.02602	.00133	.63761	.00146
#3	.00801	.24262	.01702	.05260	.02952	.00124	.74437	.00102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00507	.01122	.01287	.11447	1.4023	.02306	.83494	.03245
Stddev	.00024	.00067	.00189	.02802	.1110	.00136	.03948	.00268
%RSD	4.7987	6.0062	14.707	24.480	7.9171	5.8811	4.7291	8.2701
#1	.00493	.01046	.01351	.14674	1.4178	.02155	.80587	.03520
#2	.00493	.01147	.01074	.10042	1.2843	.02345	.81905	.03233
#3	.00535	.01173	.01436	.09625	1.5047	.02418	.87989	.02983
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02127	1.8562	.01215	.23280	.01067	.03011	.00922	.37328
Stddev	.00053	.0342	.00120	.00909	.00269	.00363	.00276	.00458
%RSD	2.4934	1.8408	9.8651	3.9061	25.214	12.073	29.987	1.2271
#1	.02172	1.8278	.01327	.24205	.00898	.03426	.00781	.37038
#2	.02141	1.8468	.01231	.22387	.01377	.02752	.01240	.37091
#3	.02069	1.8941	.01088	.23248	.00925	.02853	.00745	.37856
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: DI8 Acquired: 6/23/2016 23:44:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02095	.02967	.01993	.00726	.02346	.02475	.30772
Stddev	.00032	.00011	.00361	.00564	.00093	.00004	.15766
%RSD	1.5278	.37363	18.102	77.691	3.9489	.16512	51.234
#1	.02080	.02956	.01706	.01372	.02253	.02472	.37227
#2	.02072	.02978	.02398	.00329	.02439	.02479	.42286
#3	.02131	.02968	.01875	.00477	.02345	.02473	.12803
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6883.6	42542.	2132.1
Stddev	35.9	81.	32.8
%RSD	.52157	.19075	1.5391
#1	6873.8	42453.	2096.2
#2	6923.4	42611.	2160.5
#3	6853.7	42564.	2139.6

Sample Name: DI9 Acquired: 6/23/2016 23:48:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01172**	**.24362**	**.00993**	**.05401**	**.02815**	**.00127**	**.79730**
Stddev	.00152	.00569	.00166	.00158	.00083	.00011	.02246
%RSD	12.924	2.3335	16.753	2.9338	2.9467	8.5602	2.8175
#1	.01069	.24626	.01067	.05290	.02910	.00116	.79850
#2	.01102	.23710	.01110	.05583	.02755	.00137	.81914
#3	.01346	.24751	.00803	.05330	.02780	.00127	.77426
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00129**	**.00488**	**.01079**	**.01208**	**.12723**	**1.2786**	**.02511**
Stddev	.00009	.00006	.00031	.00168	.01475	.0943	.00185
%RSD	6.9948	1.2164	2.8343	13.930	11.594	7.3784	7.3599
#1	.00122	.00481	.01066	.01339	.14076	1.1744	.02529
#2	.00139	.00493	.01057	.01268	.11150	1.3582	.02686
#3	.00125	.00489	.01114	.01018	.12944	1.3031	.02318
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.89576**	**.03366**	**.02131**	**1.9045**	**.01104**	**.23277**	**.01075**
Stddev	.05721	.00137	.00010	.0400	.00057	.00507	.00231
%RSD	6.3863	4.0674	.47440	2.0992	5.1553	2.1800	21.454
#1	.95963	.03212	.02142	1.8638	.01067	.23321	.01329
#2	.84922	.03409	.02122	1.9059	.01170	.22750	.00878
#3	.87844	.03476	.02130	1.9437	.01076	.23762	.01018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: DI9 Acquired: 6/23/2016 23:48:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03181**	**.00568**	**.38831**	**.02056**	**.03131**	**.02182**	**.01037**
Stddev	.00137	.01144	.00136	.00010	.00017	.00825	.00275
%RSD	4.3124	201.38	.34995	.48690	.53387	37.784	26.554
#1	.03338	.01685	.38970	.02064	.03120	.02474	.00719
#2	.03087	-.00602	.38824	.02045	.03123	.02822	.01188
#3	.03117	.00622	.38698	.02060	.03150	.01252	.01204
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.02300**	**.02452**	F **-.17091**
Stddev	.00069	.00018	.04679
%RSD	2.9886	.74679	27.377
#1	.02312	.02467	-.13285
#2	.02363	.02457	-.15673
#3	.02227	.02431	-.22315
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6863.0**	**42455.**	**2140.2**
Stddev	39.9	478.	31.6
%RSD	.58151	1.1260	1.4765
#1	6898.2	41962.	2103.8
#2	6819.6	42485.	2156.2
#3	6871.2	42917.	2160.6

Sample Name: CCV Acquired: 6/23/2016 23:52:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41335	10.421	.41508	.51836	1.0496	.05256	10.492
Stddev	.00039	.045	.00377	.00553	.0024	.00034	.011
%RSD	.09500	.43207	.90936	1.0674	.22730	.64627	.10764
#1	.41368	10.369	.41539	.51316	1.0470	.05217	10.480
#2	.41292	10.443	.41116	.51776	1.0502	.05276	10.503
#3	.41347	10.451	.41869	.52417	1.0517	.05276	10.494
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05201	.20974	.52865	.52594	4.2034	52.520	1.0760
Stddev	.00016	.00127	.00164	.00103	.0566	.261	.0077
%RSD	.30575	.60470	.30961	.19638	1.3473	.49635	.71934
#1	.05219	.20874	.52729	.52653	4.2121	52.227	1.0702
#2	.05189	.20932	.52820	.52475	4.1429	52.726	1.0848
#3	.05194	.21117	.53047	.52654	4.2552	52.606	1.0729
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.516	.52754	1.0503	52.353	.52349	10.349	.52208
Stddev	.065	.00345	.0031	.035	.00255	.035	.00042
%RSD	.61612	.65474	.29626	.06645	.48722	.33829	.08130
#1	10.587	.52445	1.0535	52.313	.52122	10.327	.52177
#2	10.461	.53127	1.0472	52.379	.52299	10.332	.52191
#3	10.500	.52692	1.0503	52.366	.52625	10.390	.52256
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: CCV Acquired: 6/23/2016 23:52:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2512**	**.41632**	**5.2448**	**1.0458**	**1.0501**	**1.0483**	**.52498**
Stddev	.0079	.00080	.0298	.0049	.0030	.0126	.00266
%RSD	.62850	.19294	.56895	.46593	.28810	1.2026	.50623
#1	1.2568	.41583	5.2243	1.0406	1.0479	1.0390	.52296
#2	1.2422	.41589	5.2311	1.0465	1.0488	1.0433	.52399
#3	1.2546	.41725	5.2791	1.0503	1.0535	1.0626	.52799
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0496**	**1.0495**	F **.09970**
Stddev	.0053	.0039	.10577
%RSD	.50966	.36953	106.08
#1	1.0434	1.0481	.19784
#2	1.0529	1.0466	.11360
#3	1.0524	1.0539	-.01233
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6372.6**	**39443.**	**2025.2**
Stddev	36.3	113.	32.7
%RSD	.56912	.28682	1.6135
#1	6379.4	39570.	1991.0
#2	6404.9	39404.	2028.4
#3	6333.4	39354.	2056.1

Sample Name: CCB Acquired: 6/23/2016 23:56:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00038**	**.01156**	**.00056**	**.00234**	**.00056**	**.00010**	**.03716**
Stddev	.00349	.01000	.00359	.00308	.00040	.00012	.04368
%RSD	913.43	86.498	638.46	132.02	72.010	128.40	117.56
#1	.00278	.00590	.00379	.00161	.00011	-.00003	.06293
#2	.00200	.02311	.00120	.00572	.00089	.00010	-.01328
#3	-.00362	.00567	-.00330	-.00032	.00068	.00022	.06182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00024**	**.00016**	**.00067**	**.00127**	**.01578**	**.03402**	**-.00346**
Stddev	.00007	.00014	.00147	.00047	.02063	.10839	.00477
%RSD	29.479	83.436	221.45	36.697	130.75	318.63	137.81
#1	.00027	.00008	-.00033	.00181	.00506	.08712	-.00283
#2	.00029	.00009	-.00003	.00096	.00272	-.09068	-.00851
#3	.00016	.00032	.00236	.00106	.03957	.10561	.00096
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00827**	**.00236**	**.00382**	**.04976**	**.00076**	**.00558**	**-.00126**
Stddev	.03186	.00300	.00012	.02808	.00054	.00951	.00325
%RSD	385.40	127.33	3.0647	56.434	70.960	170.62	257.97
#1	-.01385	.00576	.00377	.02300	.00097	.01389	-.00238
#2	-.00614	.00008	.00395	.07899	.00015	-.00480	.00240
#3	.04479	.00123	.00373	.04728	.00116	.00763	-.00379
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: CCB Acquired: 6/23/2016 23:56:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00469**	**-.00110**	**.00540**	**-.00045**	**.00020**	**-.00579**	**-.00171**
Stddev	.00519	.00566	.00080	.00082	.00023	.00790	.00277
%RSD	110.60	514.68	14.743	182.74	110.97	136.58	162.08
#1	.00345	.00405	.00520	.00050	.00023	-.00735	-.00373
#2	.01039	-.00018	.00628	-.00094	.00042	-.01279	.00145
#3	.00024	-.00717	.00473	-.00090	-.00003	.00278	-.00284
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00035**	**.00012**	F **-.30075**
Stddev	.00143	.00011	.38164
%RSD	413.19	92.936	126.90
#1	.00023	.00022	-.11902
#2	.00071	-.00000	-.73929
#3	-.00198	.00015	-.04394
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6443.5**	**39921.**	**2022.5**
Stddev	30.3	559.	26.8
%RSD	.46979	1.3996	1.3238
#1	6467.0	40295.	2021.5
#2	6409.3	40190.	1996.3
#3	6454.1	39279.	2049.8

Sample Name: ICSA Acquired: 6/24/2016 0:00:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	s -.00181	^F *****	k .00039	s .01077	F -16.124	s .00066
Stddev	.00405	-----	.00084	.01107	27.933	.00100
%RSD	224.07	-----	217.80	102.72	173.24	151.08
#1	s .00084	s .38723	k .00033	s .00228	-48.378	s -.00024
#2	s .00021	s 13.731	k .00125	s .00675	.0154	s .00048
#3	s -.00648	^ -----	k -.00043	s .02329	-.0093	s .00173
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit		300.00			.00400	
Low Limit		200.00			-.00400	

Elem	Ca4226	Cd2288	Co2286	Cr2677	Cu2247	Fe2611
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -17.795	kF -.00145	k .00006	s .00397	kF .00900	kF 13.080
Stddev	30.964	.00234	.00025	.00687	.00196	22.623
%RSD	174.00	161.85	431.98	173.11	21.777	172.95
#1	-53.549	k -.00415	k .00030	s -.00220	k .00711	k 39.203
#2	.1724	k .00000	k .00007	s .00273	k .00885	k .00481
#3	-.0087	k -.00020	k -.00020	s .01137	k .01102	k .03331
Check ?	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Fail
High Limit	300.00	.00080			.00400	120.00
Low Limit	200.00	-.00080			-.00400	80.000

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 303.15	F 17.009	kF 144.99	kF -2.2313	k .00055	F 349.42
Stddev	524.72	29.469	251.19	3.8674	.00057	605.42
%RSD	173.09	173.26	173.25	173.32	104.51	173.26
#1	909.05	51.038	k 435.03	k -6.6970	k -.00009	1048.5
#2	.2954	-.01212	k -.0973	k .00125	k .00102	-.464
#3	.1091	.00231	k .0233	k .00181	k .00071	.231
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Fail
High Limit	.40000	.08000	300.00	.00400		.25000
Low Limit	-.40000	-.08000	200.00	-.00400		-.25000

Sample Name: ICSA Acquired: 6/24/2016 0:00:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k **.00287**	k **.00325**	kF **.01305**	k **.00093**	k **-.00095**	k **-.02524**
Stddev	.00051	.00655	.00114	.00346	.00637	.00077
%RSD	17.929	201.56	8.7344	372.00	672.86	3.0546
#1	k .00291	k .00302	k .01321	k .00198	k -.00342	k -.02442
#2	k .00336	k .00992	k .01183	k .00374	k .00629	k -.02594
#3	k .00234	k -.00319	k .01409	k -.00293	k -.00571	k -.02536
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit			.00400			
Low Limit			-.00400			

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k **-.00038**	F **-.53580**	kF **27.418**	k **.00263**	s **-.00151**	k **.00080**
Stddev	.00064	.93031	47.540	.00108	.00198	.00005
%RSD	165.52	173.63	173.39	41.177	131.41	6.5158
#1	k -.00073	-1.6100	k 82.313	k .00161	s .00053	k .00074
#2	k -.00077	.00282	k -.07422	k .00377	s -.00163	k .00084
#3	k .00035	-.00020	k .01560	k .00250	s -.00343	k .00082
Check ?	Chk Pass	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit		.00800	.02400			
Low Limit		-.00800	-.02400			

Elem	Zr3391
Units	ppm
Avg	kF **2038.2**
Stddev	3532.4
%RSD	173.31
#1	k 6117.0
#2	k -4.501
#3	k 2.059
Check ?	Chk Fail
High Limit	.02000
Low Limit	-.02000

Sample Name: ICSA Acquired: 6/24/2016 0:00:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9727.2	^ *****	2367.9
Stddev	176.1	-----	3403.9
%RSD	1.8108	-----	143.75
#1	9699.2	^ -----	-.533
#2	9915.7	^ -----	835.60
#3	9566.8	^ -----	6268.6

Sample Name: ICSAB Acquired: 6/24/2016 0:04:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	sF .03510	^F *****	kF .02243	s -.00104	F -17.624	sF .01622
Stddev	.03890	-----	.00215	.00199	39.067	.01920
%RSD	110.83	-----	9.5662	190.62	221.67	118.34
#1	s .00126	s -.05314	k .01995	s -.00051	-62.399	s -.00008
#2	s .02644	^ -----	k .02376	s .00063	9.5264	s .01137
#3	s .07761	s 36.789	k .02358	s -.00324	-.0004	s .03738
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Fail	Chk Fail
High Limit	.60000	300.00	.30000		.30000	.30000
Low Limit	.40000	200.00	.20000		.20000	.20000

Elem	Ca4226	Cd2288	Co2286	Cr2677	Cu2247	Fe2611
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -41.394	kF .04368	kF .02300	sF .01591	kF .03181	kF -23.435
Stddev	80.483	.00655	.00163	.02148	.00204	29.861
%RSD	194.43	14.997	7.0968	135.04	6.3986	127.42
#1	-134.15	k .03613	k .02112	s -.00134	k .02989	k -57.047
#2	9.956	k .04777	k .02379	s .00909	k .03394	k -13.288
#3	.012	k .04715	k .02408	s .03996	k .03158	k .0307
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
High Limit	300.00	.60000	.30000	.30000	.30000	120.00
Low Limit	200.00	.40000	.20000	.20000	.20000	80.000

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 64.851	F 12.009	kF -20.121	kF 2.2589	k .00017	F 379.32
Stddev	297.64	30.686	17.446	6.5094	.00008	850.62
%RSD	458.96	255.52	86.705	288.17	49.010	224.25
#1	389.61	46.885	k -30.037	k 9.5964	k .00008	1353.6
#2	-194.93	-10.851	k -30.348	k -2.8212	k .00024	-215.77
#3	-.126	-.0058	k .0229	k .00136	k .00019	.137
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Fail
High Limit	6.0000	.10000	300.00	.30000		6.0000
Low Limit	4.0000	-.10000	200.00	.20000		4.0000

Sample Name: ICSAB Acquired: 6/24/2016 0:04:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	kF **.04829**	k **-.00766**	kF **.05850**	kF **.04638**	kF **.02738**	k **-.02638**
Stddev	.00365	.00766	.00306	.00425	.00303	.00499
%RSD	7.5565	99.904	5.2255	9.1610	11.057	18.931
#1	k .04412	k -.00318	k .05693	k .04159	k .03052	k -.02995
#2	k .05085	k -.00330	k .05656	k .04971	k .02448	k -.02852
#3	k .04991	k -.01650	k .06203	k .04783	k .02714	k -.02067
Check ?	Chk Fail	Chk Pass	Chk Fail	Chk Fail	Chk Fail	Chk Pass
High Limit	.60000		.60000	.60000	.30000	
Low Limit	.40000		.40000	.40000	.20000	

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k **-.00052**	F **.44241**	kF **29.066**	kF **.04366**	sF **.01717**	kF **.04537**
Stddev	.00035	.38366	66.439	.00317	.02029	.00340
%RSD	66.984	86.721	228.58	7.2485	118.19	7.4898
#1	k -.00035	.66466	k 105.09	k .04023	s -.00018	k .04144
#2	k -.00091	.66318	k -17.882	k .04647	s .01220	k .04733
#3	k -.00029	-.00061	k -.0063	k .04429	s .03948	k .04732
Check ?	Chk Pass	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
High Limit		.01000	.03000	.60000	.30000	.60000
Low Limit		-.01000	-.03000	.40000	.20000	.40000

Elem	Zr3391
Units	ppm
Avg	kF **4441.9**
Stddev	9705.7
%RSD	218.50
#1	k 15574.
#2	k -2248.1
#3	k .15
Check ?	Chk Fail
High Limit	.02500
Low Limit	-.02500

Sample Name: ICSAB Acquired: 6/24/2016 0:04:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9862.8	^ *****	713.41
Stddev	938.9	-----	1233.6
%RSD	9.5192	-----	172.91
#1	10665.	^ -----	-.471
#2	10093.	^ -----	2.867
#3	8830.2	^ -----	2137.8

Sample Name: CCV Acquired: 6/24/2016 0:08:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40571**	**10.252**	**.40176**	**.50352**	**1.0259**	**.05216**	**10.249**
Stddev	.00299	.036	.00436	.00116	.0046	.00015	.046
%RSD	.73722	.35335	1.0850	.22983	.44349	.28067	.44972
#1	.40902	10.294	.39676	.50219	1.0215	.05229	10.217
#2	.40321	10.228	.40475	.50401	1.0306	.05200	10.229
#3	.40489	10.234	.40377	.50434	1.0255	.05219	10.302
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05061**	**.20363**	**.51898**	**.51228**	**4.1370**	**50.997**	**1.0462**
Stddev	.00046	.00031	.00258	.00236	.0140	.262	.0028
%RSD	.90962	.15400	.49724	.46108	.33750	.51330	.27175
#1	.05077	.20360	.52152	.50960	4.1210	50.850	1.0429
#2	.05096	.20396	.51636	.51314	4.1438	51.299	1.0477
#3	.05008	.20334	.51907	.51408	4.1463	50.841	1.0479
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.348**	**.51498**	**1.0223**	**50.946**	**.51068**	**10.026**	**.51362**
Stddev	.113	.00344	.0028	.211	.00210	.018	.00135
%RSD	1.0914	.66705	.27479	.41321	.41141	.17759	.26270
#1	10.350	.51110	1.0252	50.805	.51092	10.041	.51220
#2	10.460	.51621	1.0220	51.188	.50847	10.031	.51488
#3	10.234	.51763	1.0196	50.845	.51265	10.006	.51378
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: CCV Acquired: 6/24/2016 0:08:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2074**	**.40666**	**5.0928**	**1.0152**	**1.0270**	**1.0159**	**.51326**
Stddev	.0053	.00225	.0089	.0020	.0057	.0060	.00130
%RSD	.43925	.55339	.17475	.20078	.55230	.59351	.25324
#1	1.2134	.40912	5.0829	1.0130	1.0205	1.0208	.51297
#2	1.2053	.40614	5.1001	1.0158	1.0309	1.0178	.51469
#3	1.2034	.40471	5.0956	1.0169	1.0297	1.0092	.51214
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0354**	**1.0194**	F **.15885**
Stddev	.0015	.0011	.28455
%RSD	.14387	.10553	179.12
#1	1.0371	1.0182	.48730
#2	1.0345	1.0199	-.01296
#3	1.0347	1.0202	.00222
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6365.1**	**39110.**	**2005.2**
Stddev	24.8	486.	19.1
%RSD	.39033	1.2423	.95151
#1	6367.8	38552.	2019.3
#2	6388.5	39438.	1983.5
#3	6339.0	39340.	2012.9

Sample Name: CCB Acquired: 6/24/2016 0:12:00 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00050**	**.01206**	**.00160**	**.00292**	**-.00076**	**.00002**	**.02662**	**.00027**
Stddev	.00084	.00666	.00259	.00138	.00101	.00006	.04195	.00026
%RSD	168.40	55.161	162.13	47.221	133.70	271.30	157.60	96.736
#1	-.00086	.01566	-.00084	.00208	-.00074	.00001	-.00269	.00055
#2	-.00111	.01615	.00432	.00217	.00024	.00009	.07467	.00003
#3	.00046	.00439	.00131	.00451	-.00178	-.00003	.00787	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00031**	**-.00012**	**.00191**	**.00930**	**-.00712**	**-.00214**	**.08690**	**.00263**
Stddev	.00007	.00094	.00113	.01540	.09612	.00388	.02902	.00322
%RSD	21.273	789.62	59.288	165.71	1349.4	181.57	33.396	122.26
#1	.00025	.00095	.00248	.00841	-.09353	-.00318	.11978	.00265
#2	.00039	-.00048	.00263	-.00565	-.02424	.00216	.06485	.00584
#3	.00031	-.00083	.00060	.02512	.09640	-.00539	.07607	-.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00355**	**.02859**	**-.00197**	**.00635**	**-.00184**	**.00648**	**-.00780**	**.00562**
Stddev	.00019	.02702	.00094	.00761	.00466	.00302	.00403	.00110
%RSD	5.3403	94.506	47.726	119.74	253.74	46.674	51.730	19.667
#1	.00349	.02662	-.00294	-.00235	-.00211	.00986	-.01231	.00668
#2	.00339	.00261	-.00192	.01175	-.00636	.00555	-.00455	.00447
#3	.00376	.05655	-.00106	.00967	.00296	.00403	-.00652	.00571
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB Acquired: 6/24/2016 0:12:00 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00037	-.00205	-.00398	-.00052	.00005	-.03486
Stddev	.00199	.00049	.00712	.00235	.00010	.00013	.29949
%RSD	737.85	134.70	347.62	58.933	18.924	280.33	859.07
#1	.00244	-.00019	-.00912	-.00572	-.00063	.00006	.11572
#2	-.00149	.00054	.00512	-.00493	-.00049	-.00009	.15945
#3	-.00013	.00074	-.00215	-.00131	-.00044	.00017	-.37976
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6385.3	39685.	2013.6
Stddev	13.4	625.	15.5
%RSD	.20981	1.5744	.76988
#1	6370.9	40406.	2004.4
#2	6397.5	39350.	2031.5
#3	6387.5	39298.	2004.9

Sample Name: LLCCV Acquired: 6/24/2016 0:16:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00692	.17280	.00777	.08023	.00816	.00159	.47649	.00097
Stddev	.00020	.00275	.00190	.00358	.00068	.00009	.02580	.00026
%RSD	2.8583	1.5889	24.477	4.4629	8.3509	5.9617	5.4139	26.520
#1	.00710	.16995	.00825	.08038	.00802	.00170	.44675	.00126
#2	.00671	.17543	.00940	.08374	.00756	.00154	.48987	.00076
#3	.00694	.17303	.00568	.07658	.00890	.00153	.49285	.00090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00419	.00395	.00595	.08433	.74272	.08170	.43560	.00898
Stddev	.00055	.00077	.00059	.03278	.15549	.00079	.02792	.00231
%RSD	13.081	19.592	9.9605	38.876	20.936	.96348	6.4091	25.784
#1	.00481	.00337	.00657	.12211	.85231	.08123	.41810	.00714
#2	.00397	.00365	.00539	.06743	.81110	.08127	.46780	.01158
#3	.00379	.00483	.00590	.06344	.56476	.08261	.42090	.00822
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00841	.43808	.01603	.80173	.00604	.08746	.00868	.86554
Stddev	.00048	.03267	.00038	.00808	.00286	.00565	.00374	.00329
%RSD	5.6889	7.4567	2.3907	1.0073	47.406	6.4564	43.147	.37989
#1	.00807	.47434	.01600	.80832	.00935	.08147	.01238	.86709
#2	.00820	.41094	.01567	.80416	.00429	.08820	.00489	.86176
#3	.00895	.42897	.01643	.79272	.00448	.09269	.00877	.86777
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: LLCCV Acquired: 6/24/2016 0:16:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41147**	**.04220**	**.01937**	**.15204**	**.00784**	**.01708**	**20.869**
Stddev	.00081	.00045	.00562	.00340	.00117	.00020	.318
%RSD	.19753	1.0715	29.021	2.2390	14.946	1.1523	1.5231
#1	.41153	.04213	.02561	.15455	.00880	.01720	21.227
#2	.41224	.04269	.01469	.15340	.00817	.01718	20.618
#3	.41062	.04179	.01783	.14816	.00653	.01685	20.762
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6476.0**	**40121.**	**2010.8**
Stddev	41.9	341.	10.1
%RSD	.64677	.85050	.50105
#1	6439.6	40107.	2010.7
#2	6521.8	39788.	2020.9
#3	6466.6	40470.	2000.7

Sample Name: LLCCV Acquired: 6/24/2016 0:19:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02136	.41629	.02112	.19510	.02080	.00407	1.0587
Stddev	.00041	.00284	.00410	.00052	.00091	.00010	.0154
%RSD	1.9202	.68293	19.397	.26774	4.3671	2.4437	1.4499
#1	.02183	.41875	.01725	.19543	.02070	.00418	1.0490
#2	.02111	.41695	.02541	.19450	.02176	.00402	1.0764
#3	.02114	.41318	.02071	.19539	.01995	.00401	1.0506
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00191	.01019	.00970	.01209	.22512	2.0312	.20560
Stddev	.00008	.00029	.00094	.00032	.02751	.1478	.00292
%RSD	3.9464	2.8921	9.6498	2.6079	12.219	7.2758	1.4184
#1	.00189	.00987	.00862	.01175	.23193	1.9599	.20462
#2	.00184	.01046	.01027	.01237	.19484	2.2011	.20331
#3	.00199	.01022	.01020	.01214	.24858	1.9325	.20889
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0419	.02143	.01974	1.0634	.04092	1.9580	.02354
Stddev	.1407	.00617	.00054	.0338	.00119	.0082	.00145
%RSD	13.508	28.783	2.7554	3.1802	2.8968	.41842	6.1627
#1	1.1704	.01821	.01917	1.0842	.04126	1.9586	.02462
#2	1.0638	.01754	.01982	1.0815	.03960	1.9658	.02189
#3	.89149	.02854	.02024	1.0243	.04189	1.9495	.02411
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: LLCCV Acquired: 6/24/2016 0:19:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21053**	**.03539**	**2.1191**	**1.0135**	**.10298**	**.05480**	**.37888**
Stddev	.00225	.00798	.0028	.0011	.00044	.01048	.00446
%RSD	1.0680	22.551	.13372	.10864	.43012	19.119	1.1784
#1	.21009	.02618	2.1179	1.0144	.10249	.04402	.38327
#2	.21296	.04014	2.1223	1.0138	.10312	.05543	.37434
#3	.20853	.03987	2.1170	1.0123	.10334	.06494	.37903
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.01937**	**.04203**	F **55.206**
Stddev	.00081	.00024	.600
%RSD	4.1646	.56559	1.0870
#1	.02030	.04231	55.899
#2	.01893	.04187	54.851
#3	.01888	.04193	54.868
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6500.2**	**40568.**	**2033.1**
Stddev	36.1	206.	33.6
%RSD	.55595	.50832	1.6527
#1	6459.1	40580.	1998.8
#2	6514.4	40767.	2065.9
#3	6527.1	40355.	2034.6

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000236	0.051213	0.000000	1.000000
Al 308.215 {109}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000796	0.008044	0.000000	1.000000
As 189.042 {478}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000007	0.025071	0.000000	1.000000
B 249.678 {135}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000040	0.023963	0.000000	1.000000
Ba 455.403 { 74}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.044484	2.168568	0.000000	1.000000
Be 313.107 {108}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000479	0.930119	0.000000	1.000000
Ca 422.673 { 80}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.002874	0.045862	0.000000	1.000000
Cd 228.802 {447}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000038	0.570455	0.000000	1.000000
Co 228.616 {447}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000129	0.339574	0.000000	1.000000
Cr 267.716 {126}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000254	0.058743	0.000000	1.000000
Cu 224.700 {450}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000063	0.129645	0.000000	1.000000
Fe 261.187 {129}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000714	0.024119	0.000000	1.000000
K 766.490 { 44}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.006604	0.061274	0.000000	1.000000
Li 670.784 { 50}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.009415	1.520559	0.000000	1.000000
Mg 279.079 {121}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000260	0.008000	0.000000	1.000000
Mn 257.610 {131}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000470	0.289814	0.000000	1.000000
Mo 202.030 {467}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000054	0.182736	0.000000	1.000000
Na 589.592 { 57}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.047777	0.184477	0.000000	1.000000
Ni 231.604 {446}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000734	0.138990	0.000000	1.000000
P 214.914 {457}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000172	0.014319	0.000000	1.000000
Pb 220.353 {453}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.001186	0.065283	0.000000	1.000000
Sb 206.833 {463}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000368	0.031084	0.000000	1.000000
Se 196.090 {472}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000508	0.017412	0.000000	1.000000
Si 212.412 {459}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.001467	0.039573	0.000000	1.000000
Sn 189.989 {477}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000022	0.066307	0.000000	1.000000
Sr 407.771 { 83}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.001060	3.591964	0.000000	1.000000
Ti 337.280 {100}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.002630	0.122957	0.000000	1.000000
Tl 190.856 {477}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000329	0.028655	0.000000	1.000000
V 292.402 {115}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000071	0.067328	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000142	0.437417	0.000000	1.000000
Zr 339.198 { 99}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.007106	1.219765	0.000000	1.000000

Approved: June 27, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999680	0.000003	0.002344	0.007814	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999950	0.000005	0.010188	0.033959	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999909	0.000001	0.003189	0.010630	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999961	0.000001	0.002963	0.009878	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999951	0.000136	0.001119	0.003729	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999766	0.000007	0.000105	0.000348	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999890	0.000043	0.043792	0.145974	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999970	0.000002	0.000282	0.000940	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999977	0.000003	0.000454	0.001514	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999978	0.000001	0.001307	0.004355	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999889	0.000006	0.001405	0.004682	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999330	0.000022	0.023003	0.076675	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999988	0.000096	0.104199	0.347330	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999977	0.000100	0.004201	0.014002	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999990	0.000003	0.092396	0.307987	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999236	0.000036	0.002652	0.008839	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999956	0.000011	0.000450	0.001500	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999990	0.000264	0.032289	0.107629	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999932	0.000005	0.001180	0.003935	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999990	0.000004	0.007138	0.023792	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999383	0.000007	0.003667	0.012223	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999854	0.000004	0.004516	0.015054	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999238	0.000003	0.006704	0.022346	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999594	0.000036	0.002443	0.008145	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999980	0.000003	0.000986	0.003287	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999952	0.000224	0.000467	0.001557	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999579	0.000023	0.007453	0.024845	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999831	0.000002	0.003284	0.010945	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999969	0.000003	0.001095	0.003650	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999941	0.000030	0.000202	0.000675	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.596446	0.010414	0.001594	0.005312	OK.	1.000000	0.000000	1	0

Approved: June 27, 2016

Sample Name: S0 Acquired: 6/25/2016 12:21:04 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00024**	**.00080**	**-.00001**	**.00004**	**.04448**	**.00048**	**.00288**
Stddev	.00008	.00004	.00007	.00002	.00170	.00005	.00169
%RSD	35.712	4.5527	977.99	54.959	3.8148	10.198	58.629
#1	-.00024	.00076	-.00006	.00003	.04635	.00042	.00096
#2	-.00015	.00081	.00007	.00006	.04405	.00050	.00353
#3	-.00032	.00083	-.00004	.00003	.04304	.00052	.00414

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00004**	**-.00013**	**.00025**	**-.00006**	**-.00071**	**-.00661**	**-.00941**
Stddev	.00006	.00005	.00003	.00023	.00026	.00355	.00965
%RSD	153.97	36.064	10.924	367.85	35.978	53.724	102.48
#1	-.00002	-.00016	.00028	-.00022	-.00093	-.00948	-.01508
#2	-.00010	-.00015	.00025	.00020	-.00043	-.00769	.00173
#3	.00001	-.00008	.00023	-.00018	-.00078	-.00264	-.01488

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00026**	**.00047**	**.00005**	**-.04778**	**-.00073**	**-.00017**	**-.00119**
Stddev	.00066	.00061	.00004	.00421	.00008	.00002	.00008
%RSD	255.00	128.77	78.942	8.8105	11.011	13.180	6.4052
#1	.00045	-.00015	.00007	-.05263	-.00065	-.00015	-.00110
#2	-.00086	.00049	.00001	-.04509	-.00082	-.00019	-.00123
#3	-.00037	.00107	.00009	-.04563	-.00073	-.00017	-.00123

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00037**	**-.00051**	**.00147**	**.00002**	**.00106**	**-.00263**	**-.00033**
Stddev	.00001	.00007	.00009	.00003	.00137	.00025	.00002
%RSD	3.7153	13.815	6.2921	126.34	130.24	9.4020	7.1687
#1	.00035	-.00043	.00157	.00002	.00203	-.00235	-.00030
#2	.00038	-.00057	.00145	-.00000	.00165	-.00283	-.00033
#3	.00037	-.00052	.00138	.00005	-.00052	-.00270	-.00035

Approved: June 27, 2016

Sample Name: S0 Acquired: 6/25/2016 12:21:04 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	-.00007	.00014	-.00710
Stddev	.00004	.00005	.00324
%RSD	58.279	35.146	45.700
#1	-.00004	.00009	-.00457
#2	-.00005	.00016	-.01076
#3	-.00012	.00018	-.00597
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9736.8	58329.	2962.8
Stddev	24.6	275.	12.4
%RSD	.25315	.47180	.41783
#1	9719.4	58177.	2949.0
#2	9725.9	58162.	2966.1
#3	9765.0	58646.	2973.1

Approved: June 27, 2016

Sample Name: S1 Acquired: 6/25/2016 12:25:02 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00000**	**.00148**	**.06336**	**.00097**	**.00582**	**.00018**	**.00038**
Stddev	.00004	.00005	.00419	.00009	.00234	.00011	.00006
%RSD	838.91	3.6655	6.6080	8.8478	40.284	60.110	16.615
#1	.00001	.00145	.05987	.00105	.00569	.00026	.00043
#2	-.00004	.00145	.06800	.00097	.00822	.00006	.00031
#3	.00004	.00155	.06221	.00088	.00354	.00023	.00041

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00050**	**.00053**	**.00033**	**.01950**	**.00077**	**.00143**	**.02669**
Stddev	.00003	.00011	.00021	.00355	.00009	.00011	.00332
%RSD	5.5692	20.305	62.737	18.223	11.862	7.4791	12.449
#1	.00049	.00060	.00053	.01550	.00083	.00145	.02356
#2	.00048	.00041	.00012	.02070	.00066	.00152	.03018
#3	.00053	.00058	.00034	.02230	.00081	.00131	.02634

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00018**	**.00100**	**-.00086**	**.00059**	**.00297**	**.00055**	**.03302**
Stddev	.00009	.00012	.00030	.00014	.00005	.00006	.00089
%RSD	52.159	12.366	34.406	23.539	1.7045	10.953	2.6942
#1	-.00010	.00113	-.00102	.00051	.00294	.00050	.03225
#2	-.00028	.00098	-.00052	.00075	.00302	.00062	.03399
#3	-.00016	.00088	-.00105	.00050	.00293	.00055	.03280

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00218**	**.00050**	**.00363**	**-.00591**
Stddev	.00071	.00003	.00003	.00134
%RSD	32.781	5.1557	.77751	22.659
#1	-.00139	.00050	.00365	-.00576
#2	-.00277	.00048	.00360	-.00465
#3	-.00237	.00053	.00364	-.00732

Approved: June 27, 2016

Sample Name: S1 Acquired: 6/25/2016 12:25:02 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9839.2**	**59021.**	**2974.6**
Stddev	35.8	140.	1.9
%RSD	.36397	.23691	.06440
#1	9811.4	58880.	2976.5
#2	9826.5	59023.	2972.7
#3	9879.6	59160.	2974.8

Approved: June 27, 2016

Sample Name: S2 Acquired: 6/25/2016 12:29:00 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00011**	**.00220**	**.00018**	**.00025**	**.08112**	**.00139**	**.00931**
Stddev	.00003	.00006	.00005	.00002	.00125	.00003	.00047
%RSD	29.658	2.5782	25.201	8.0082	1.5417	1.8740	5.0396
#1	.00012	.00221	.00013	.00026	.08191	.00140	.00905
#2	.00012	.00214	.00022	.00027	.08177	.00136	.00985
#3	.00007	.00225	.00019	.00023	.07968	.00140	.00903

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00041**	**.00102**	**.00072**	**.00104**	**.00148**	**.04190**	**.01415**
Stddev	.00007	.00003	.00001	.00014	.00030	.00236	.00012
%RSD	16.350	3.0292	1.5873	13.319	20.240	5.6312	.86545
#1	.00045	.00101	.00072	.00109	.00137	.04369	.01405
#2	.00033	.00099	.00073	.00088	.00125	.03923	.01429
#3	.00045	.00105	.00071	.00115	.00182	.04279	.01411

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00109**	**.00274**	**.00298**	**.10797**	**.00048**	**.00211**	**-.00045**
Stddev	.00041	.00057	.00005	.00406	.00013	.00008	.00017
%RSD	37.607	20.931	1.7509	3.7561	26.749	3.7519	39.075
#1	.00144	.00213	.00304	.11260	.00057	.00211	-.00064
#2	.00064	.00283	.00295	.10501	.00033	.00203	-.00031
#3	.00120	.00327	.00295	.10631	.00054	.00219	-.00039

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00105**	**-.00034**	**.00448**	**.00108**	**.06082**	**-.00047**	**-.00014**
Stddev	.00006	.00004	.00009	.00004	.00131	.00089	.00005
%RSD	6.0784	12.562	2.0565	3.6593	2.1502	187.41	36.276
#1	.00109	-.00029	.00447	.00110	.05950	-.00104	-.00016
#2	.00107	-.00037	.00458	.00110	.06212	-.00093	-.00008
#3	.00097	-.00035	.00440	.00103	.06083	.00055	-.00017

Approved: June 27, 2016

Sample Name: S2 Acquired: 6/25/2016 12:29:00 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00105	.00728	-.00437
Stddev	.00006	.00006	.00132
%RSD	5.7588	.85058	30.251
#1	.00102	.00735	-.00588
#2	.00112	.00727	-.00376
#3	.00101	.00722	-.00345
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9827.0	59373.	3004.6
Stddev	11.4	114.	4.0
%RSD	.11574	.19273	.13472
#1	9814.0	59255.	3000.6
#2	9832.7	59484.	3008.7
#3	9834.5	59381.	3004.6

Approved: June 27, 2016

Sample Name: S3 Acquired: 6/25/2016 12:32:56 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.02035	.08278	.00992	.01198	2.2359	.04820	.46599	.03126
Stddev	.00007	.00029	.00007	.00002	.0069	.00016	.00236	.00006
%RSD	.36344	.34990	.73624	.13878	.30693	.33862	.50730	.19965
#1	.02029	.08301	.00987	.01198	2.2433	.04825	.46861	.03126
#2	.02044	.08286	.01000	.01199	2.2346	.04833	.46401	.03132
#3	.02033	.08245	.00988	.01196	2.2297	.04802	.46536	.03119

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.06810	.02991	.06581	.09648	3.0722	1.5250	.07962	.14725
Stddev	.00012	.00021	.00002	.00063	.0027	.0048	.00098	.00051
%RSD	.17879	.70022	.03611	.65013	.08880	.31624	1.2353	.34909
#1	.06804	.03009	.06584	.09719	3.0745	1.5268	.07965	.14783
#2	.06801	.02997	.06579	.09600	3.0692	1.5288	.07861	.14685
#3	.06824	.02968	.06581	.09626	3.0730	1.5196	.08058	.14706

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.18510	9.1987	.06966	.14157	.03222	.03693	.00649	.20808
Stddev	.00068	.0276	.00008	.00029	.00023	.00011	.00003	.00004
%RSD	.36712	.29975	.11504	.20555	.70478	.30304	.43769	.01830
#1	.18567	9.2297	.06963	.14170	.03236	.03694	.00648	.20811
#2	.18529	9.1894	.06975	.14177	.03196	.03703	.00652	.20808
#3	.18435	9.1769	.06959	.14123	.03234	.03681	.00647	.20804

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.06680	3.6291	.12115	.01313	.06767	.44396	3.5474
Stddev	.00012	.0161	.00039	.00012	.00004	.00054	.0233
%RSD	.17282	.44347	.32200	.91385	.05243	.12075	.65596
#1	.06677	3.6476	.12157	.01325	.06770	.44451	3.5656
#2	.06671	3.6220	.12107	.01301	.06768	.44393	3.5554
#3	.06693	3.6179	.12080	.01311	.06763	.44344	3.5212

Approved: June 27, 2016

Sample Name: S3 Acquired: 6/25/2016 12:32:56 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9929.1	59890.	3083.9
Stddev	18.0	90.	16.7
%RSD	.18173	.14986	.54188
#1	9944.3	59787.	3069.2
#2	9933.7	59947.	3080.5
#3	9909.1	59936.	3102.1

Approved: June 27, 2016

Sample Name: S4 Acquired: 6/25/2016 12:36:34 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.04037	.16212	.01994	.02391	4.3553	.09476	.91725	.06225
Stddev	.00010	.00009	.00010	.00008	.0282	.00010	.00714	.00008
%RSD	.26004	.05310	.51424	.32854	.64632	.10278	.77855	.12431
#1	.04040	.16220	.02005	.02399	4.3445	.09472	.91430	.06220
#2	.04046	.16203	.01991	.02383	4.3342	.09469	.91205	.06220
#3	.04026	.16211	.01985	.02390	4.3873	.09487	.92539	.06233

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13502	.05877	.12834	.19056	6.1046	3.0186	.15914	.28946
Stddev	.00023	.00007	.00015	.00161	.0456	.0309	.00223	.00202
%RSD	.17276	.12518	.11394	.84544	.74756	1.0253	1.3995	.69732
#1	.13475	.05870	.12846	.19050	6.0869	3.0140	.15736	.28818
#2	.13515	.05878	.12838	.18897	6.0705	2.9902	.15842	.28841
#3	.13517	.05884	.12818	.19219	6.1564	3.0516	.16164	.29179

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.36324	18.368	.13725	.28094	.06365	.07367	.01336	.39092
Stddev	.00176	.146	.00020	.00054	.00019	.00012	.00006	.00048
%RSD	.48547	.79728	.14492	.19364	.30628	.15884	.42128	.12331
#1	.36486	18.303	.13728	.28153	.06355	.07380	.01339	.39147
#2	.36349	18.266	.13744	.28083	.06388	.07365	.01329	.39059
#3	.36136	18.536	.13705	.28046	.06354	.07357	.01339	.39071

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13179	7.1439	.24230	.02560	.13357	.86773	.12255
Stddev	.00029	.0568	.00280	.00005	.00025	.00172	.00222
%RSD	.21785	.79476	1.1551	.20145	.18401	.19856	1.8114
#1	.13210	7.1181	.24103	.02555	.13357	.86947	.12020
#2	.13172	7.1045	.24036	.02563	.13332	.86769	.12285
#3	.13154	7.2090	.24551	.02564	.13382	.86603	.12461

Approved: June 27, 2016

Sample Name: S4 Acquired: 6/25/2016 12:36:34 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9795.6**	**59125.**	**3064.9**
Stddev	6.6	26.	19.7
%RSD	.06757	.04412	.64222
#1	9799.1	59120.	3071.1
#2	9799.7	59153.	3080.8
#3	9787.9	59102.	3042.9

Approved: June 27, 2016

Sample Name: ICV Acquired: 6/25/2016 12:40:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40482**	**10.096**	**.40189**	**.50535**	**1.0085**	**.05038**	**10.096**
Stddev	.00169	.009	.00320	.00259	.0096	.00007	.103
%RSD	.41792	.09100	.79651	.51179	.95284	.13225	1.0175
#1	.40318	10.095	.40558	.50259	.99972	.05037	10.065
#2	.40656	10.106	.40020	.50771	1.0070	.05032	10.013
#3	.40473	10.088	.39988	.50575	1.0188	.05045	10.211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05022**	**.20172**	**.50610**	**.50772**	**4.0459**	**50.287**	**1.0069**
Stddev	.00031	.00057	.00078	.00110	.0398	.526	.0059
%RSD	.61395	.28458	.15454	.21701	.98466	1.0464	.58082
#1	.05048	.20224	.50644	.50864	4.0020	49.775	1.0012
#2	.05030	.20181	.50521	.50650	4.0559	50.260	1.0067
#3	.04988	.20110	.50666	.50803	4.0798	50.827	1.0128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.117**	**.50795**	**1.0200**	**50.068**	**.50832**	**10.053**	**.50460**
Stddev	.152	.00312	.0050	.377	.00054	.029	.00016
%RSD	1.5029	.61369	.49437	.75311	.10596	.28628	.03077
#1	9.9425	.50440	1.0241	49.665	.50829	10.073	.50452
#2	10.219	.50922	1.0214	50.126	.50888	10.066	.50449
#3	10.191	.51024	1.0144	50.412	.50780	10.020	.50477
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: ICV Acquired: 6/25/2016 12:40:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2132**	**.39981**	**5.2115**	**1.0100**	**1.0094**	**1.0076**	**.50967**
Stddev	.0090	.00367	.0220	.0047	.0093	.0117	.00340
%RSD	.74499	.91900	.42193	.46646	.92212	1.1612	.66719
#1	1.2228	.39652	5.1880	1.0139	.99976	.99418	.50608
#2	1.2117	.40378	5.2316	1.0112	1.0100	1.0128	.51284
#3	1.2049	.39915	5.2149	1.0048	1.0183	1.0157	.51010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0117**	**1.0154**	F **2.9010**
Stddev	.0015	.0015	.0057
%RSD	.14666	.14385	.19619
#1	1.0111	1.0164	2.9026
#2	1.0134	1.0160	2.8946
#3	1.0106	1.0137	2.9057
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			5.0000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9887.2**	**59604.**	**3090.1**
Stddev	2.6	87.	8.3
%RSD	.02633	.14631	.26858
#1	9888.5	59705.	3098.3
#2	9884.2	59557.	3090.3
#3	9888.9	59551.	3081.7

Approved: June 27, 2016

Sample Name: ICB Acquired: 6/25/2016 12:43:48 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00131	-.00019	.00035	.00523	.00097	.00005	-.00769	-.00024
Stddev	.00204	.00299	.00150	.00175	.00089	.00006	.00734	.00011
%RSD	155.46	1561.3	426.44	33.377	91.849	115.36	95.505	46.996
#1	.00317	-.00362	.00181	.00349	.00060	.00012	-.01556	-.00036
#2	-.00088	.00114	-.00118	.00522	.00198	.00002	-.00104	-.00017
#3	.00165	.00191	.00042	.00699	.00032	.00001	-.00646	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00000	.00019	.00069	.02190	.04427	.00252	.00787	.00050
Stddev	.00033	.00096	.00130	.00895	.02254	.00192	.08048	.00146
%RSD	40694.	494.95	189.51	40.889	50.920	76.061	1022.8	292.29
#1	-.00026	-.00067	-.00034	.02348	.04464	.00424	-.08504	-.00108
#2	-.00012	.00002	.00215	.01226	.06662	.00045	.05249	.00079
#3	.00038	.00123	.00025	.02996	.02154	.00288	.05615	.00179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00437	.07087	.00070	.00285	.00118	.00678	.00870	.00121
Stddev	.00041	.01151	.00054	.00868	.00197	.00381	.00450	.00189
%RSD	9.2912	16.248	77.044	304.78	167.53	56.206	51.723	156.22
#1	.00395	.08310	.00020	-.00283	.00108	.00337	.00854	.00310
#2	.00476	.06927	.00064	-.00147	.00320	.00608	.00428	.00120
#3	.00442	.06023	.00127	.01284	-.00074	.01090	.01328	-.00068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: ICB Acquired: 6/25/2016 12:43:48 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00063**	**.00059**	**.00116**	**.00143**	**.00111**	**.00117**	**.00345**
Stddev	.00049	.00006	.00559	.00387	.00033	.00016	.00039
%RSD	77.601	9.5579	481.47	269.75	29.521	13.916	11.209
#1	.00050	.00059	.00521	.00260	.00135	.00105	.00361
#2	.00117	.00064	.00349	-.00288	.00074	.00111	.00300
#3	.00022	.00053	-.00522	.00459	.00124	.00135	.00372
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9709.0**	**58834.**	**2997.3**
Stddev	13.6	105.	11.0
%RSD	.13963	.17854	.36570
#1	9693.7	58895.	2985.3
#2	9713.8	58895.	3006.9
#3	9719.5	58713.	2999.6

Approved: June 27, 2016

Sample Name: LLICV Acquired: 6/25/2016 12:47:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00947	.16517	.00750	.08209	.00794	.00166	.41368	.00078
Stddev	.00234	.00914	.00427	.00134	.00096	.00002	.01542	.00015
%RSD	24.742	5.5361	56.913	1.6344	12.112	1.4530	3.7271	18.963
#1	.01038	.17315	.00639	.08214	.00810	.00169	.40911	.00061
#2	.01123	.15519	.01222	.08341	.00690	.00166	.40107	.00083
#3	.00681	.16717	.00390	.08073	.00880	.00164	.43087	.00089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00435	.00476	.00462	.09393	.88733	.08419	.44121	.00701
Stddev	.00017	.00091	.00136	.00523	.14622	.00363	.12107	.00237
%RSD	3.8803	19.165	29.360	5.5689	16.479	4.3143	27.441	33.765
#1	.00455	.00411	.00608	.08852	.75945	.08105	.39471	.00889
#2	.00425	.00438	.00436	.09433	.85580	.08335	.57864	.00779
#3	.00425	.00581	.00341	.09896	1.0467	.08816	.35028	.00435
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00866	.44156	.01715	.79893	.00705	.08442	.02038	.79310
Stddev	.00052	.01049	.00062	.00929	.00266	.00215	.00191	.00106
%RSD	5.9984	2.3750	3.6174	1.1626	37.766	2.5524	9.3696	.13338
#1	.00809	.45038	.01661	.80194	.00796	.08678	.01818	.79326
#2	.00879	.42997	.01783	.80634	.00405	.08394	.02136	.79407
#3	.00910	.44434	.01701	.78851	.00913	.08255	.02160	.79197
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LLICV Acquired: 6/25/2016 12:47:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41130**	**.04174**	**.02562**	**.15269**	**.00881**	**.01717**	**.13277**
Stddev	.00223	.00064	.00303	.00060	.00064	.00024	.00310
%RSD	.54293	1.5249	11.843	.39147	7.2679	1.3907	2.3338
#1	.41347	.04173	.02710	.15201	.00926	.01741	.13005
#2	.41142	.04111	.02213	.15292	.00808	.01715	.13211
#3	.40901	.04238	.02764	.15314	.00909	.01694	.13614
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9760.6**	**59445.**	**3032.4**
Stddev	2.7	49.	16.0
%RSD	.02790	.08308	.52659
#1	9758.1	59502.	3050.3
#2	9763.5	59418.	3027.2
#3	9760.2	59415.	3019.7

Approved: June 27, 2016

Sample Name: LLICV Acquired: 6/25/2016 12:51:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02232**	**.40482**	**.02105**	**.19795**	**.01981**	**.00414**	**.94713**	**.00209**
Stddev	.00322	.01572	.00276	.00137	.00013	.00016	.01328	.00025
%RSD	14.431	3.8838	13.088	.69255	.67950	3.8114	1.4024	12.129
#1	.02018	.38785	.01788	.19912	.01996	.00396	.94307	.00218
#2	.02076	.40770	.02252	.19644	.01971	.00427	.93634	.00229
#3	.02603	.41890	.02277	.19828	.01975	.00419	.96196	.00181
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00992**	**.00950**	**.01082**	**.20111**	**1.9275**	**.20201**	**.97307**	**.01841**
Stddev	.00043	.00028	.00021	.02025	.1498	.00564	.04542	.00186
%RSD	4.3042	2.9103	1.9731	10.069	7.7699	2.7925	4.6682	10.079
#1	.01005	.00935	.01089	.20826	1.8000	.20412	1.0187	.02052
#2	.00945	.00934	.01100	.21682	1.8900	.19562	.97274	.01702
#3	.01028	.00982	.01059	.17825	2.0924	.20630	.92781	.01771
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01972**	**1.0340**	**.04153**	**1.9482**	**.02271**	**.20123**	**.04411**	**1.9392**
Stddev	.00048	.0096	.00031	.0042	.00204	.00295	.00361	.0022
%RSD	2.4591	.93077	.75288	.21380	8.9612	1.4657	8.1900	.11326
#1	.01969	1.0240	.04132	1.9520	.02496	.20436	.04094	1.9404
#2	.01925	1.0432	.04139	1.9437	.02217	.20085	.04804	1.9406
#3	.02022	1.0348	.04189	1.9488	.02100	.19850	.04333	1.9367
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LLICV Acquired: 6/25/2016 12:51:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0099**	**.10045**	**.06134**	**.37714**	**.02003**	**.04134**	**.29456**
Stddev	.0057	.00069	.00459	.00090	.00046	.00030	.00329
%RSD	.56948	.68667	7.4856	.23976	2.2900	.72946	1.1169
#1	1.0145	.09991	.06229	.37809	.02052	.04128	.29317
#2	1.0117	.10021	.05634	.37629	.01997	.04166	.29219
#3	1.0035	.10123	.06538	.37705	.01961	.04107	.29832
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9725.0**	**59145.**	**3053.0**
Stddev	6.0	91.	15.9
%RSD	.06216	.15348	.52133
#1	9731.9	59116.	3042.4
#2	9721.3	59247.	3071.3
#3	9721.7	59072.	3045.2

Approved: June 27, 2016

Sample Name: ICSA Acquired: 6/25/2016 12:55:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00027**	**265.97**	**.00161**	**-.00823**	**.00056**	**.00011**	**243.96**	**-.00018**
Stddev	.00121	.27	.00172	.00296	.00012	.00009	1.89	.00042
%RSD	450.36	.10204	106.61	35.970	21.237	81.140	.77435	230.52
#1	-.00046	265.69	.00220	-.01033	.00047	.00017	241.81	-.00048
#2	.00103	265.97	-.00032	-.00484	.00069	.00014	245.35	.00030
#3	-.00137	266.24	.00295	-.00951	.00051	.00001	244.72	-.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00099**	**-.00100**	**-.00098**	**96.848**	**.05329**	**.01035**	**248.71**	**-.00176**
Stddev	.00039	.00071	.00330	.692	.06120	.00255	1.99	.00096
%RSD	39.651	70.751	335.23	.71414	114.86	24.670	.80129	54.809
#1	-.00142	-.00119	.00263	96.056	.12150	.01230	246.41	-.00274
#2	-.00085	-.00160	-.00175	97.332	.03517	.00746	249.90	-.00082
#3	-.00068	-.00022	-.00383	97.155	.00318	.01129	249.83	-.00171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00066**	**.04038**	**-.00089**	**.02257**	**.00214**	**-.00550**	**-.00224**	**.00879**
Stddev	.00023	.00410	.00050	.00580	.00444	.00318	.00753	.00258
%RSD	34.448	10.162	56.288	25.707	206.94	57.856	337.10	29.379
#1	-.00088	.04493	-.00121	.01613	.00721	-.00186	.00631	.00581
#2	-.00043	.03696	-.00115	.02418	.00024	-.00776	-.00511	.01037
#3	-.00066	.03925	-.00031	.02740	-.00103	-.00688	-.00791	.01019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: ICSA Acquired: 6/25/2016 12:55:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00053**	**.00100**	**-.00403**	**-.00373**	**-.00305**	**-.00596**	**-.01388**
Stddev	.00149	.00018	.00805	.00252	.00022	.00010	.00081
%RSD	284.28	18.415	199.81	67.478	7.0947	1.6059	5.8325
#1	.00144	.00117	.00514	-.00549	-.00300	-.00603	-.01379
#2	.00134	.00081	-.00728	-.00085	-.00329	-.00601	-.01311
#3	-.00120	.00101	-.00995	-.00485	-.00287	-.00585	-.01473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9184.9**	**55126.**	**2960.9**
Stddev	19.5	129.	17.9
%RSD	.21199	.23455	.60311
#1	9165.3	55274.	2981.6
#2	9185.3	55069.	2950.7
#3	9204.2	55035.	2950.6

Approved: June 27, 2016

Sample Name: ICSAB Acquired: 6/25/2016 12:59:21 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51819**	**267.93**	**.25992**	**-.00749**	**.25012**	**.24499**	**247.43**	**.48653**
Stddev	.00274	.82	.00577	.00323	.00127	.00111	.96	.00069
%RSD	.52949	.30727	2.2185	43.201	.50926	.45301	.38893	.14255
#1	.51744	268.20	.26633	-.00904	.25065	.24547	247.63	.48716
#2	.52123	268.59	.25826	-.00965	.24866	.24578	246.38	.48579
#3	.51590	267.01	.25516	-.00377	.25104	.24372	248.28	.48665
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.24114**	**.25272**	**.25219**	**96.482**	**5.1931**	**.01181**	**249.25**	**.24440**
Stddev	.00029	.00219	.00111	.527	.0571	.00427	1.99	.00318
%RSD	.11831	.86807	.44033	.54597	1.0995	36.192	.80021	1.3017
#1	.24081	.25379	.25307	96.524	5.1297	.01134	249.32	.24432
#2	.24135	.25418	.25256	95.936	5.2405	.00779	247.22	.24763
#3	.24125	.25020	.25095	96.987	5.2091	.01630	251.20	.24127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00056**	**5.3241**	**.48364**	**.08508**	**.49426**	**.50665**	**.24857**	**.00554**
Stddev	.00038	.0216	.00155	.00195	.00579	.00649	.00790	.00251
%RSD	68.178	.40548	.32037	2.2888	1.1716	1.2807	3.1773	45.410
#1	-.00097	5.3151	.48290	.08463	.49996	.50736	.25719	.00434
#2	-.00022	5.3084	.48260	.08721	.48838	.49984	.24167	.00842
#3	-.00048	5.3487	.48542	.08340	.49443	.51276	.24687	.00384
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: ICSAB Acquired: 6/25/2016 12:59:21 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00018**	**.00065**	**-.00404**	**.46188**	**.25332**	**.48100**	**-.01374**
Stddev	.00129	.00010	.00503	.00318	.00107	.00194	.00218
%RSD	732.71	15.906	124.53	.68769	.42266	.40303	15.888
#1	.00146	.00072	-.00979	.45913	.25376	.48104	-.01122
#2	-.00112	.00053	-.00192	.46116	.25410	.48293	-.01498
#3	.00019	.00071	-.00042	.46536	.25210	.47905	-.01502
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9278.3**	**55833.**	**2985.5**
Stddev	15.8	186.	18.9
%RSD	.17001	.33320	.63177
#1	9263.8	55869.	2984.2
#2	9295.1	55632.	3004.9
#3	9275.9	55999.	2967.3

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 13:03:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39792	10.019	.39868	.49351	.99429	.04982	9.9377
Stddev	.00072	.017	.00144	.00412	.00753	.00017	.0996
%RSD	.18044	.17228	.36151	.83518	.75700	.33966	1.0022
#1	.39861	10.034	.39833	.49827	.98705	.04987	9.8876
#2	.39796	10.022	.40027	.49123	1.0021	.04997	10.052
#3	.39718	10.000	.39745	.49104	.99375	.04964	9.8731
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04945	.20002	.50114	.50617	3.9950	49.191	.99914
Stddev	.00013	.00034	.00115	.00138	.0385	.327	.00262
%RSD	.25449	.17079	.22943	.27257	.96478	.66521	.26204
#1	.04957	.20034	.49991	.50465	3.9625	48.889	.99615
#2	.04946	.20007	.50219	.50735	4.0376	49.538	1.0010
#3	.04932	.19966	.50132	.50650	3.9848	49.146	1.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.9162	.49766	1.0071	49.316	.50460	9.9534	.50217
Stddev	.1345	.00161	.0027	.281	.00141	.0056	.00090
%RSD	1.3564	.32258	.27182	.56936	.27993	.05661	.17861
#1	9.8004	.49634	1.0102	49.069	.50585	9.9507	.50282
#2	10.064	.49945	1.0061	49.622	.50307	9.9496	.50115
#3	9.8846	.49718	1.0051	49.257	.50488	9.9599	.50255
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 13:03:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1997**	**.40476**	**5.1642**	**1.0026**	**.99432**	**.99050**	**.50900**
Stddev	.0011	.00080	.0031	.0008	.00541	.00261	.00166
%RSD	.09538	.19644	.06047	.08057	.54374	.26324	.32573
#1	1.2008	.40408	5.1631	1.0035	.99081	.99348	.51044
#2	1.1985	.40563	5.1678	1.0020	1.0005	.98942	.50718
#3	1.1997	.40457	5.1618	1.0022	.99161	.98862	.50937
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0019**	**1.0053**	F **2.8691**
Stddev	.0036	.0009	.0111
%RSD	.35558	.09150	.38634
#1	.99784	1.0055	2.8628
#2	1.0045	1.0043	2.8819
#3	1.0033	1.0060	2.8625
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9877.8**	**59691.**	**3097.9**
Stddev	6.1	104.	11.8
%RSD	.06196	.17495	.38081
#1	9880.1	59766.	3105.5
#2	9870.8	59572.	3084.3
#3	9882.4	59736.	3103.8

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 13:06:41 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00082	.00013	.00057	.00151	.00063	.00002	-.01871	-.00022
Stddev	.00151	.00746	.00362	.00174	.00068	.00003	.02739	.00016
%RSD	185.23	5748.5	636.07	114.92	108.39	116.80	146.42	72.359
#1	.00201	.00304	-.00315	-.00049	.00141	.00001	-.04795	-.00036
#2	-.00088	-.00835	.00078	.00262	.00031	.00006	.00637	-.00027
#3	.00132	.00570	.00408	.00241	.00017	.00001	-.01455	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	.00054	.00076	.03608	.09214	-.00181	-.01859	-.00071
Stddev	.00025	.00025	.00080	.01975	.18930	.00302	.07756	.00052
%RSD	1039.3	46.422	105.73	54.731	205.46	166.60	417.27	72.248
#1	.00013	.00063	.00047	.01630	-.12492	-.00468	-.09449	-.00012
#2	.00011	.00026	.00167	.05580	.17827	.00135	-.02180	-.00101
#3	-.00032	.00073	.00014	.03615	.22306	-.00212	.06053	-.00101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00274	.04401	-.00040	.00332	.00144	-.00005	.00482	-.00649
Stddev	.00039	.03341	.00024	.00918	.00111	.00350	.00394	.00014
%RSD	14.320	75.897	59.933	276.22	77.091	6590.6	81.757	2.1187
#1	.00273	.08068	-.00054	-.00157	.00018	-.00177	.00919	-.00633
#2	.00236	.03606	-.00012	.01392	.00189	-.00236	.00153	-.00657
#3	.00314	.01530	-.00055	-.00237	.00225	.00397	.00375	-.00656
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 13:06:41 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.00039	.00186	-.00089	-.00002	.00003	.00447
Stddev	.00029	.00029	.00050	.00195	.00109	.00004	.00129
%RSD	58.864	74.770	26.876	218.22	5660.3	163.33	28.933
#1	.00018	.00056	.00153	-.00246	.00118	.00003	.00395
#2	.00076	.00054	.00162	-.00151	-.00095	.00007	.00352
#3	.00054	.00005	.00244	.00129	-.00029	-.00002	.00594
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9714.8	59220.	3006.6
Stddev	20.8	167.	18.8
%RSD	.21426	.28151	.62581
#1	9691.7	59319.	2985.4
#2	9732.2	59028.	3021.3
#3	9720.4	59314.	3013.1

Approved: June 27, 2016

Sample Name: PBW MC Acquired: 6/25/2016 13:18:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.00511**	**.00086**	**-.00212**	**.00115**	**.00002**	**-.06747**	**.00005**
Stddev	.00209	.01093	.00117	.00067	.00097	.00011	.03960	.00035
%RSD	552.93	213.69	135.59	31.434	84.150	461.31	58.695	692.60
#1	-.00263	-.00536	-.00048	-.00211	.00011	.00001	-.09775	.00040
#2	.00149	.00426	.00140	-.00146	.00202	-.00008	-.02265	-.00029
#3	.00000	.01644	.00166	-.00279	.00133	.00014	-.08201	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**-.00006**	**.00212**	**.02866**	**-.06431**	**.00509**	**.02259**	**-.00086**
Stddev	.00040	.00091	.00173	.01678	.07316	.00381	.05174	.00149
%RSD	400.23	1393.8	81.515	58.547	113.75	74.903	229.03	173.59
#1	.00052	-.00104	.00296	.02246	-.13473	.00394	-.01043	-.00102
#2	.00004	.00075	.00325	.01586	-.06951	.00199	-.00402	.00071
#3	-.00026	.00010	.00013	.04766	.01130	.00934	.08222	-.00227
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00087**	**-.00687**	**.00001**	**-.00017**	**.00005**	**-.00551**	**.00627**	**.00390**
Stddev	.00030	.03350	.00031	.00833	.00114	.00506	.00234	.00374
%RSD	34.257	487.68	3374.4	4899.3	2181.8	91.834	37.291	95.869
#1	.00091	.01218	.00037	.00506	.00058	-.00133	.00544	.00713
#2	.00056	-.04555	-.00014	-.00978	.00083	-.01113	.00446	-.00020
#3	.00115	.01276	-.00019	.00420	-.00126	-.00406	.00891	.00477
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: PBW MC Acquired: 6/25/2016 13:18:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00012**	**-.00022**	**-.00094**	**-.00120**	**.00059**	**.00019**	**.00136**
Stddev	.00090	.00014	.01001	.00401	.00016	.00009	.00212
%RSD	728.27	61.668	1066.1	333.15	27.157	48.058	155.52
#1	-.00022	-.00007	.00771	-.00405	.00041	.00016	-.00108
#2	.00115	-.00034	-.01190	.00338	.00070	.00012	.00241
#3	-.00056	-.00026	.00137	-.00294	.00066	.00029	.00275
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9802.9**	**59937.**	**3028.8**
Stddev	9.7	136.	16.1
%RSD	.09849	.22735	.53011
#1	9794.7	59785.	3046.3
#2	9813.5	59979.	3014.8
#3	9800.5	60047.	3025.3

Approved: June 27, 2016

Sample Name: LCSW MC Acquired: 6/25/2016 13:22:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19140**	**4.8040**	**.19266**	**.92897**	**.49049**	**.02396**	**4.9270**	**.02412**
Stddev	.00110	.0096	.00124	.00283	.00119	.00006	.0588	.00019
%RSD	.57611	.19942	.64179	.30493	.24273	.25817	1.1941	.78757
#1	.19253	4.7978	.19184	.92575	.49050	.02398	4.9121	.02430
#2	.19133	4.7992	.19408	.93105	.49168	.02402	4.8771	.02392
#3	.19033	4.8151	.19206	.93012	.48929	.02390	4.9919	.02415
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09725**	**.24390**	**.24732**	**1.9838**	**23.909**	**.49943**	**4.9211**	**.24209**
Stddev	.00025	.00056	.00120	.0346	.055	.00048	.0513	.00093
%RSD	.26181	.22973	.48504	1.7424	.23189	.09613	1.0429	.38463
#1	.09749	.24389	.24597	1.9470	23.904	.49915	4.9459	.24237
#2	.09699	.24447	.24774	1.9888	23.968	.49916	4.8621	.24284
#3	.09727	.24335	.24825	2.0156	23.857	.49999	4.9553	.24105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49737**	**24.381**	**.24620**	**4.6982**	**.24508**	**.58185**	**.18662**	**2.4109**
Stddev	.00101	.058	.00194	.0026	.00506	.00206	.00438	.0033
%RSD	.20378	.23960	.78649	.05522	2.0646	.35379	2.3449	.13777
#1	.49803	24.349	.24767	4.6983	.25078	.58403	.18417	2.4135
#2	.49787	24.449	.24692	4.7007	.24112	.57994	.18402	2.4071
#3	.49620	24.346	.24401	4.6956	.24334	.58158	.19167	2.4120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LCSW MC Acquired: 6/25/2016 13:22:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48537**	**.49494**	**.49102**	**.24360**	**.48594**	**.48236**	**.01763**
Stddev	.00248	.00157	.00916	.00175	.00116	.00127	.00304
%RSD	.51037	.31733	1.8663	.71814	.23927	.26228	17.214
#1	.48605	.49357	.49562	.24211	.48702	.48137	.01600
#2	.48744	.49666	.49698	.24315	.48610	.48194	.01576
#3	.48263	.49460	.48047	.24553	.48471	.48379	.02113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9802.2**	**59979.**	**3063.3**
Stddev	16.1	75.	6.7
%RSD	.16429	.12520	.21884
#1	9786.8	59978.	3070.3
#2	9800.7	59904.	3056.9
#3	9818.9	60054.	3062.8

Approved: June 27, 2016

Sample Name: L1606080801 Acquired: 6/25/2016 13:25:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00120	-.00080	-.00163	.02599	.00717	.00000	50.564	.00016
Stddev	.00152	.00397	.00290	.00206	.00115	.00005	.112	.00037
%RSD	125.91	493.45	178.32	7.9153	16.060	1214.4	.22137	235.03
#1	.00226	.00203	-.00429	.02577	.00588	.00002	50.480	.00003
#2	-.00053	.00090	.00147	.02405	.00757	.00004	50.521	-.00014
#3	.00188	-.00534	-.00207	.02815	.00807	-.00005	50.691	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.00083	.00107	.26409	1.2826	.00250	14.201	.11783
Stddev	.00018	.00044	.00061	.01139	.1290	.00132	.067	.00387
%RSD	127.01	53.307	57.172	4.3115	10.056	52.928	.47527	3.2872
#1	.00035	.00131	.00089	.27352	1.4315	.00167	14.162	.12070
#2	.00008	.00073	.00057	.25144	1.2130	.00180	14.162	.11343
#3	.00000	.00044	.00175	.26731	1.2035	.00402	14.279	.11937
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	15.281	.00045	.01127	-.00029	-.00250	-.00036	4.8502
Stddev	.00031	.048	.00109	.00496	.00257	.00086	.00870	.0263
%RSD	48.719	.31261	245.14	44.009	886.73	34.260	2404.6	.54311
#1	.00028	15.230	.00169	.00618	-.00269	-.00223	.00526	4.8717
#2	.00080	15.325	-.00034	.01609	.00243	-.00181	.00404	4.8581
#3	.00082	15.288	-.00001	.01154	-.00061	-.00346	-.01039	4.8208
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606080801 Acquired: 6/25/2016 13:25:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.16531	-.00520	-.00297	.00071	.00304	.00248
Stddev	.00021	.00042	.00147	.00169	.00080	.00019	.00016
%RSD	26.039	.25638	28.334	56.894	114.04	6.1375	6.5372
#1	.00100	.16514	-.00627	-.00112	.00132	.00299	.00242
#2	.00058	.16499	-.00352	-.00336	-.00020	.00288	.00235
#3	.00084	.16579	-.00581	-.00443	.00100	.00324	.00266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9767.4	60311.	3068.7
Stddev	25.3	182.	4.5
%RSD	.25865	.30239	.14809
#1	9787.8	60238.	3069.0
#2	9775.3	60177.	3064.1
#3	9739.2	60519.	3073.1

Approved: June 27, 2016

Sample Name: L1606080803S Acquired: 6/25/2016 13:29:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19425**	**4.8313**	**.19559**	**.97188**	**.49949**	**.02391**	**55.138**	**.02433**
Stddev	.00175	.0086	.00291	.00386	.00064	.00006	.286	.00001
%RSD	.89899	.17760	1.4870	.39759	.12859	.26078	.51899	.03982
#1	.19471	4.8260	.19892	.97122	.49908	.02384	54.823	.02434
#2	.19571	4.8412	.19357	.96839	.49916	.02394	55.383	.02434
#3	.19231	4.8266	.19428	.97603	.50023	.02395	55.206	.02432
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09623**	**.24025**	**.24291**	**2.2142**	**25.706**	**.49995**	**18.850**	**.36055**
Stddev	.00052	.00032	.00081	.0203	.056	.00310	.060	.00310
%RSD	.54129	.13263	.33315	.91450	.21668	.61973	.31584	.86069
#1	.09635	.23989	.24328	2.2335	25.718	.49651	18.866	.35746
#2	.09668	.24035	.24198	2.2161	25.755	.50082	18.784	.36367
#3	.09566	.24050	.24346	2.1931	25.645	.50252	18.899	.36052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50273**	**39.946**	**.24148**	**4.8211**	**.24377**	**.58841**	**.19283**	**7.2475**
Stddev	.00069	.089	.00226	.0078	.00185	.00329	.00168	.0253
%RSD	.13674	.22372	.93733	.16218	.76094	.55837	.87085	.34834
#1	.50346	39.846	.24394	4.8298	.24591	.59218	.19095	7.2767
#2	.50266	40.018	.24099	4.8187	.24276	.58614	.19336	7.2326
#3	.50209	39.974	.23950	4.8148	.24264	.58690	.19419	7.2333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606080803S Acquired: 6/25/2016 13:29:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48600	.66572	.49120	.24058	.48625	.48121	.00549
Stddev	.00062	.00113	.00488	.00183	.00111	.00310	.00062
%RSD	.12721	.16988	.99375	.75886	.22783	.64511	11.331
#1	.48664	.66443	.49684	.23968	.48515	.48355	.00538
#2	.48596	.66654	.48839	.24268	.48622	.48240	.00493
#3	.48540	.66619	.48838	.23938	.48737	.47769	.00616
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9640.1	59155.	3051.9
Stddev	28.9	91.	4.4
%RSD	.29949	.15374	.14285
#1	9607.9	59063.	3056.9
#2	9648.6	59158.	3049.0
#3	9663.8	59244.	3049.8

Approved: June 27, 2016

Sample Name: L1606080804SD Acquired: 6/25/2016 13:33:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19367**	**4.8696**	**.19395**	**.97468**	**.50079**	**.02428**	**55.592**	**.02458**
Stddev	.00103	.0189	.00351	.00126	.00119	.00004	.087	.00002
%RSD	.53221	.38806	1.8082	.12977	.23838	.15828	.15705	.06402
#1	.19313	4.8871	.19259	.97422	.49995	.02427	55.687	.02459
#2	.19486	4.8723	.19133	.97371	.50216	.02425	55.574	.02456
#3	.19302	4.8496	.19794	.97611	.50027	.02433	55.515	.02458
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09687**	**.24382**	**.24330**	**2.1942**	**25.602**	**.50391**	**18.927**	**.35670**
Stddev	.00034	.00139	.00044	.0216	.187	.00317	.145	.00440
%RSD	.35450	.56820	.18086	.98630	.73073	.62836	.76565	1.2346
#1	.09649	.24542	.24364	2.2182	25.415	.50090	18.778	.36166
#2	.09698	.24295	.24347	2.1881	25.600	.50721	19.067	.35519
#3	.09715	.24309	.24280	2.1762	25.789	.50361	18.935	.35325
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50687**	**40.011**	**.24239**	**4.8324**	**.24609**	**.59184**	**.19199**	**7.3269**
Stddev	.00174	.019	.00180	.0039	.00113	.00410	.00494	.0108
%RSD	.34421	.04769	.74422	.07995	.45954	.69206	2.5730	.14791
#1	.50863	40.009	.24329	4.8354	.24728	.59240	.18629	7.3276
#2	.50684	40.031	.24358	4.8338	.24503	.59563	.19457	7.3373
#3	.50514	39.993	.24032	4.8281	.24594	.58749	.19509	7.3157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606080804SD Acquired: 6/25/2016 13:33:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48884	.66564	.48806	.24641	.49385	.48167	.00481
Stddev	.00243	.00060	.00210	.00100	.00262	.00319	.00105
%RSD	.49731	.09007	.43005	.40687	.53028	.66320	21.781
#1	.48902	.66631	.48604	.24752	.49576	.48059	.00363
#2	.49118	.66515	.49023	.24612	.49493	.48526	.00518
#3	.48633	.66545	.48792	.24558	.49086	.47916	.00563
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9643.8	58961.	3032.4
Stddev	19.6	179.	14.4
%RSD	.20367	.30279	.47352
#1	9664.0	58941.	3022.3
#2	9624.8	58793.	3026.2
#3	9642.5	59149.	3048.8

Approved: June 27, 2016

Sample Name: L1606082203 Acquired: 6/25/2016 13:37:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	.03250	.00108	.03413	.76881	.00001	31.323	.00009
Stddev	.00326	.00113	.00298	.00231	.00291	.00007	.069	.00003
%RSD	461.08	3.4738	274.98	6.7818	.37861	986.76	.21967	35.456
#1	-.00056	.03174	-.00033	.03677	.76753	-.00000	31.323	.00006
#2	.00440	.03379	-.00093	.03317	.76676	.00008	31.255	.00011
#3	-.00173	.03195	.00451	.03246	.77215	-.00006	31.393	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00298	.00799	.00175	5.1531	49.440	.10315	14.307	.17132
Stddev	.00036	.00030	.00156	.0220	.158	.00201	.082	.00563
%RSD	12.200	3.7657	89.202	.42624	.31871	1.9519	.57045	3.2873
#1	.00316	.00823	.00355	5.1330	49.302	.10173	14.214	.17528
#2	.00323	.00810	.00078	5.1498	49.405	.10227	14.338	.17381
#3	.00256	.00765	.00092	5.1766	49.612	.10546	14.368	.16487
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	90.168	.00369	.00788	-.00122	.00230	.00147	11.287
Stddev	.00023	.210	.00039	.00442	.00289	.00119	.00467	.027
%RSD	50.114	.23246	10.480	56.105	237.50	51.496	317.01	.23968
#1	.00031	90.009	.00403	.01267	.00108	.00337	.00397	11.318
#2	.00033	90.090	.00327	.00394	-.00447	.00102	-.00391	11.275
#3	.00071	90.405	.00377	.00704	-.00027	.00252	.00436	11.268
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606082203 Acquired: 6/25/2016 13:37:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.79119**	**.00045**	**-.00075**	**.00043**	**.00534**	**-.00006**
Stddev	.00030	.00071	.00315	.00229	.00033	.00006	.00108
%RSD	437.99	.09029	691.72	303.10	75.619	1.1956	1667.5
#1	-.00035	.79036	-.00147	.00135	.00018	.00529	-.00108
#2	-.00009	.79165	-.00125	-.00319	.00032	.00542	.00108
#3	.00024	.79155	.00408	-.00042	.00080	.00532	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9649.6**	**58766.**	**3005.5**
Stddev	29.5	106.	1.2
%RSD	.30621	.18076	.04053
#1	9617.1	58644.	3006.7
#2	9657.0	58831.	3005.5
#3	9674.8	58825.	3004.3

Approved: June 27, 2016

Sample Name: L1606082202 Acquired: 6/25/2016 13:40:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573973-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00163**	**.00700**	**-.00255**	**.09063**	**.14584**	**.00010**	**6.2202**	**-.00011**
Stddev	.00068	.00493	.00215	.00172	.00146	.00002	.0817	.00004
%RSD	41.927	70.458	84.324	1.8967	.99792	21.043	1.3126	39.110
#1	.00225	.01016	-.00441	.09032	.14618	.00008	6.1515	-.00007
#2	.00090	.00132	-.00302	.08908	.14425	.00013	6.1986	-.00016
#3	.00175	.00952	-.00020	.09248	.14710	.00010	6.3104	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.00096**	**.00077**	**2.0756**	**1.5049**	**.02492**	**4.3992**	**.07622**
Stddev	.00041	.00002	.00085	.0056	.1629	.00329	.1257	.00201
%RSD	1133.0	2.0322	110.52	.26897	10.822	13.197	2.8567	2.6344
#1	-.00024	.00097	.00165	2.0692	1.6925	.02131	4.4123	.07724
#2	.00043	.00097	.00070	2.0781	1.3995	.02572	4.2675	.07752
#3	-.00030	.00094	-.00004	2.0795	1.4227	.02774	4.5178	.07391
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**83.246**	**.00061**	**.10079**	**.00421**	**-.00520**	**.00452**	**12.135**
Stddev	.00009	.263	.00086	.00636	.00131	.00271	.00174	.029
%RSD	36.387	.31568	140.09	6.3065	31.208	52.125	38.464	.24257
#1	-.00033	83.275	.00060	.10060	.00298	-.00301	.00254	12.154
#2	-.00015	82.970	.00147	.10724	.00559	-.00823	.00579	12.151
#3	-.00025	83.493	-.00024	.09454	.00404	-.00437	.00523	12.101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606082202 Acquired: 6/25/2016 13:40:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573973-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	.21054	.00087	-.00133	-.00012	.00182	.00052
Stddev	.00041	.00091	.00263	.00076	.00048	.00007	.00152
%RSD	145.47	.43126	300.38	57.105	397.63	3.7016	294.24
#1	.00007	.21002	.00237	-.00045	.00028	.00184	-.00094
#2	.00003	.21002	.00241	-.00174	.00001	.00175	.00210
#3	.00076	.21159	-.00216	-.00179	-.00065	.00188	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9729.1	59376.	3030.4
Stddev	8.6	260.	19.9
%RSD	.08835	.43738	.65516
#1	9720.3	59079.	3018.5
#2	9729.3	59490.	3053.3
#3	9737.5	59559.	3019.5

Approved: June 27, 2016

Sample Name: L1606082202PS Acquired: 6/25/2016 13:44:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573973-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19375**	**4.8752**	**.19613**	**1.0291**	**.62833**	**.02428**	**10.648**	**.02477**
Stddev	.00051	.0099	.00160	.0019	.00588	.00006	.170	.00011
%RSD	.26273	.20232	.81334	.18131	.93614	.24036	1.5959	.45206
#1	.19417	4.8642	.19702	1.0298	.63084	.02431	10.660	.02468
#2	.19391	4.8782	.19429	1.0305	.63254	.02431	10.812	.02489
#3	.19319	4.8832	.19709	1.0270	.62161	.02421	10.473	.02473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09829**	**.24324**	**.24855**	**3.8486**	**25.821**	**.52335**	**8.7582**	**.31225**
Stddev	.00082	.00053	.00056	.0314	.285	.00671	.0434	.00355
%RSD	.83225	.21842	.22566	.81716	1.1038	1.2812	.49530	1.1380
#1	.09742	.24374	.24849	3.8714	25.861	.52361	8.7634	.31338
#2	.09905	.24330	.24914	3.8618	26.083	.52993	8.7125	.31510
#3	.09841	.24268	.24802	3.8128	25.517	.51653	8.7988	.30827
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50486**	**99.997**	**.24562**	**4.8721**	**.24648**	**.59017**	**.19243**	**13.471**
Stddev	.00060	.660	.00153	.0054	.00424	.00393	.00054	.013
%RSD	.11858	.66045	.62190	.11137	1.7208	.66559	.28037	.09301
#1	.50422	100.35	.24553	4.8783	.24168	.58648	.19181	13.458
#2	.50541	100.41	.24414	4.8682	.24971	.59430	.19267	13.471
#3	.50494	99.235	.24719	4.8698	.24807	.58975	.19281	13.483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606082202PS Acquired: 6/25/2016 13:44:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573973-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48807**	**.68216**	**.50019**	**.24323**	**.49372**	**.48957**	**.00258**
Stddev	.00205	.00533	.01089	.00117	.00097	.00018	.00106
%RSD	.41999	.78112	2.1777	.48173	.19621	.03662	41.003
#1	.49029	.68537	.51266	.24188	.49454	.48951	.00281
#2	.48770	.68509	.49539	.24396	.49265	.48978	.00349
#3	.48624	.67601	.49252	.24385	.49397	.48943	.00142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9652.9**	**58738.**	**3022.5**
Stddev	16.4	44.	32.4
%RSD	.17031	.07498	1.0716
#1	9668.7	58757.	3005.1
#2	9654.1	58688.	3002.5
#3	9635.9	58769.	3059.8

Approved: June 27, 2016

Sample Name: L1606082202SDL Acquired: 6/25/2016 13:48:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573973-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00041	-.00874	.00232	.01966	.02846	.00012	1.1981	-.00020
Stddev	.00102	.00520	.00129	.00166	.00164	.00003	.0364	.00029
%RSD	249.96	59.552	55.713	8.4558	5.7787	28.080	3.0406	145.60
#1	-.00049	-.00387	.00244	.02114	.03034	.00013	1.2234	-.00054
#2	.00065	-.00812	.00098	.01996	.02778	.00008	1.1564	-.00008
#3	-.00139	-.01423	.00356	.01786	.02727	.00014	1.2146	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	.00097	.00049	.42314	.31666	.00414	.84994	.01478
Stddev	.00036	.00092	.00031	.02269	.03395	.00078	.10125	.00159
%RSD	202.36	94.832	64.039	5.3615	10.720	18.849	11.912	10.770
#1	-.00059	-.00007	.00031	.40193	.27970	.00483	.89447	.01388
#2	-.00002	.00128	.00031	.42043	.32384	.00429	.92129	.01385
#3	.00008	.00169	.00086	.44706	.34645	.00330	.73406	.01662
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	16.797	-.00010	.02573	.00379	-.00654	-.00062	2.4606
Stddev	.00016	.116	.00075	.00347	.00211	.00206	.00121	.0014
%RSD	105.18	.68795	766.63	13.470	55.760	31.494	195.90	.05654
#1	-.00025	16.870	-.00048	.02714	.00159	-.00786	-.00167	2.4590
#2	-.00024	16.856	-.00058	.02827	.00580	-.00417	-.00090	2.4616
#3	.00003	16.663	.00077	.02178	.00399	-.00761	.00071	2.4611
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606082202SDL Acquired: 6/25/2016 13:48:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573973-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00034**	**.04233**	**.00225**	**-.00298**	**.00005**	**.00069**	**.00014**
Stddev	.00035	.00076	.00380	.00312	.00068	.00008	.00023
%RSD	102.54	1.7878	169.10	104.78	1298.3	11.967	160.88
#1	-.00033	.04309	.00306	.00056	-.00034	.00074	-.00011
#2	.00000	.04232	.00558	-.00534	-.00035	.00059	.00032
#3	-.00071	.04157	-.00189	-.00415	.00084	.00073	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10112.**	**61959.**	**3102.5**
Stddev	25.	335.	21.2
%RSD	.24804	.54051	.68302
#1	10140.	62322.	3081.9
#2	10091.	61890.	3101.4
#3	10107.	61663.	3124.2

Approved: June 27, 2016

Sample Name: L1606082202SDL Acquired: 6/25/2016 13:52:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573973-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**-.00201**	**.00162**	**.00506**	**.00674**	**.00009**	**.22194**	**.00006**
Stddev	.00098	.00612	.00099	.00223	.00036	.00007	.03121	.00010
%RSD	701.06	303.84	61.332	44.136	5.3564	71.933	14.062	159.17
#1	-.00091	-.00825	.00149	.00575	.00715	.00008	.25227	.00003
#2	-.00048	-.00177	.00268	.00256	.00663	.00004	.22363	-.00001
#3	.00097	.00398	.00070	.00686	.00645	.00017	.18992	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.00003**	**.00093**	**.10294**	**.07211**	**-.00053**	**.11677**	**.00303**
Stddev	.00044	.00176	.00026	.00844	.06933	.00190	.04489	.00266
%RSD	660.12	5191.6	27.598	8.2017	96.144	360.65	38.441	87.562
#1	-.00052	.00076	.00092	.11264	.12436	-.00025	.12873	.00344
#2	.00037	-.00197	.00068	.09726	-.00654	-.00255	.06712	.00020
#3	-.00005	.00131	.00120	.09891	.09851	.00122	.15447	.00546
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00046**	**3.4626**	**-.00095**	**.01102**	**.00309**	**-.00448**	**.00254**	**.52285**
Stddev	.00009	.0579	.00053	.00740	.00233	.00663	.00646	.00911
%RSD	18.881	1.6714	55.686	67.190	75.440	147.88	254.92	1.7427
#1	-.00041	3.4180	-.00056	.01783	.00042	-.00172	-.00323	.51493
#2	-.00042	3.4418	-.00074	.01207	.00473	-.01205	.00952	.52082
#3	-.00056	3.5280	-.00155	.00314	.00412	.00032	.00131	.53281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606082202SDL Acquired: 6/25/2016 13:52:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573973-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00039**	**.00876**	**-.00160**	**-.00170**	**.00064**	**.00048**	**.00025**
Stddev	.00024	.00020	.00243	.00072	.00151	.00001	.00052
%RSD	61.212	2.3382	151.62	42.632	234.58	1.6034	205.72
#1	-.00036	.00876	-.00015	-.00219	-.00097	.00048	.00032
#2	-.00064	.00897	-.00025	-.00087	.00088	.00049	-.00030
#3	-.00017	.00856	-.00441	-.00204	.00202	.00048	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10010.**	**61091.**	**3050.7**
Stddev	14.	94.	16.7
%RSD	.14368	.15455	.54708
#1	9999.9	61099.	3067.0
#2	10027.	60993.	3033.7
#3	10004.	61182.	3051.5

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 13:56:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39703	9.8823	.39208	.48360	.99649	.04877	9.9442
Stddev	.00097	.0185	.00108	.00155	.00485	.00012	.0391
%RSD	.24464	.18766	.27635	.32015	.48698	.23806	.39293
#1	.39651	9.9033	.39094	.48432	.99107	.04885	9.8991
#2	.39815	9.8682	.39222	.48182	1.0004	.04883	9.9670
#3	.39642	9.8754	.39309	.48466	.99796	.04864	9.9665
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04952	.19590	.48861	.49872	3.9553	49.086	.99832
Stddev	.00026	.00028	.00039	.00131	.0110	.181	.00236
%RSD	.52554	.14170	.07934	.26171	.27922	.36920	.23624
#1	.04970	.19602	.48888	.50017	3.9554	48.878	.99571
#2	.04922	.19610	.48816	.49764	3.9662	49.210	1.0003
#3	.04964	.19559	.48877	.49836	3.9441	49.170	.99895
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.6989	.49966	.99513	49.378	.49577	9.7713	.49937
Stddev	.0286	.00128	.00487	.189	.00112	.0077	.00125
%RSD	.29470	.25687	.48908	.38358	.22653	.07875	.25024
#1	9.6936	.49933	.99926	49.226	.49626	9.7672	.49899
#2	9.6733	.50107	.99636	49.590	.49656	9.7802	.50076
#3	9.7297	.49857	.98976	49.317	.49448	9.7665	.49835
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 13:56:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1744**	**.39516**	**5.0749**	**.97934**	**.99997**	**.99747**	**.49995**
Stddev	.0050	.00337	.0045	.00061	.00261	.00842	.00315
%RSD	.42778	.85272	.08873	.06267	.26098	.84451	.63052
#1	1.1693	.39868	5.0732	.98005	.99777	.99280	.50104
#2	1.1793	.39197	5.0800	.97900	1.0028	1.0072	.49639
#3	1.1748	.39484	5.0715	.97897	.99928	.99242	.50240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.98727**	**.98962**	F **2.8790**
Stddev	.00224	.00122	.0125
%RSD	.22699	.12332	.43408
#1	.98696	.98924	2.8649
#2	.98519	.99098	2.8888
#3	.98965	.98864	2.8834
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9881.8**	**60025.**	**3051.6**
Stddev	7.5	117.	13.0
%RSD	.07613	.19437	.42745
#1	9874.3	60038.	3066.6
#2	9889.3	60134.	3043.0
#3	9881.9	59902.	3045.3

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 14:00:01 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00037	.00384	.00171	.00288	.00164	.00016	-.02160	-.00002
Stddev	.00056	.00607	.00179	.00157	.00101	.00008	.03268	.00008
%RSD	153.00	158.06	104.81	54.496	61.686	49.488	151.32	357.31
#1	-.00082	.00133	.00363	.00341	.00099	.00008	-.05876	.00002
#2	-.00054	.01077	.00142	.00412	.00280	.00016	-.00868	-.00011
#3	.00026	-.00057	.00008	.00112	.00111	.00023	.00265	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.00089	.00145	.02539	.05830	-.00178	-.00516	-.00289
Stddev	.00025	.00059	.00085	.02878	.16368	.00331	.04118	.00267
%RSD	184.36	65.782	58.421	113.33	280.73	185.62	797.74	92.366
#1	-.00007	.00150	.00078	.04856	-.06991	-.00470	-.03370	-.00034
#2	.00042	.00086	.00240	.03444	.24267	-.00246	.04205	-.00265
#3	.00006	.00033	.00117	-.00682	.00216	.00181	-.02383	-.00566
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00312	.01750	-.00036	.00463	.00110	.00408	.00171	-.00349
Stddev	.00035	.01788	.00074	.00054	.00119	.00430	.00409	.00216
%RSD	11.208	102.15	207.33	11.581	107.78	105.36	238.51	61.802
#1	.00276	.00856	.00044	.00497	-.00027	-.00057	.00622	-.00129
#2	.00346	.03809	-.00047	.00401	.00175	.00791	-.00177	-.00560
#3	.00314	.00586	-.00104	.00491	.00181	.00489	.00070	-.00357
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 14:00:01 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.00055	-.00034	-.00341	.00088	.00013	.00321
Stddev	.00088	.00013	.00661	.00148	.00029	.00021	.00123
%RSD	577.33	24.369	1964.7	43.438	32.521	159.30	38.279
#1	-.00076	.00044	.00453	-.00437	.00106	-.00009	.00194
#2	.00100	.00070	.00232	-.00416	.00055	.00032	.00329
#3	.00022	.00052	-.00786	-.00171	.00104	.00016	.00439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9674.1	59179.	2989.6
Stddev	10.8	80.	18.0
%RSD	.11204	.13474	.60268
#1	9680.4	59116.	2972.7
#2	9661.6	59269.	3008.6
#3	9680.2	59153.	2987.4

Approved: June 27, 2016

Sample Name: L1606082302 Acquired: 6/25/2016 14:03:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.01235**	**.00398**	**.02065**	**7.6114**	**.00014**	**242.99**
Stddev	.00016	.00738	.00092	.00248	.0086	.00009	.50
%RSD	156.01	59.723	23.024	12.009	.11234	64.318	.20416
#1	-.00023	.01740	.00411	.01789	7.6202	.00016	242.85
#2	-.00014	.01576	.00483	.02137	7.6109	.00023	243.54
#3	.00007	.00389	.00301	.02270	7.6032	.00004	242.58
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00045**	**.05380**	**.00122**	**.00261**	**4.4999**	**3.4068**	**.13022**
Stddev	.00043	.00087	.00035	.00011	.0119	.0234	.00431
%RSD	95.240	1.6084	28.402	4.2649	.26410	.68699	3.3105
#1	-.00003	.05465	.00142	.00253	4.4869	3.3837	.13493
#2	.00060	.05384	.00143	.00274	4.5026	3.4062	.12925
#3	.00078	.05292	.00082	.00256	4.5101	3.4305	.12648
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**186.55**	**.80417**	**.00043**	F **676.67**	**.01798**	**.04840**	**.00356**
Stddev	.43	.00344	.00029	5.78	.00081	.00767	.00232
%RSD	.22901	.42830	67.402	.85481	4.4962	15.839	65.024
#1	186.94	.80321	.00050	676.18	.01876	.05723	.00107
#2	186.09	.80800	.00067	682.68	.01714	.04349	.00566
#3	186.63	.80131	.00011	671.15	.01803	.04447	.00396
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 27, 2016

Sample Name: L1606082302 Acquired: 6/25/2016 14:03:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00329**	**-.00499**	**17.541**	**.00002**	**5.8024**	F **-.03279**	**-.00373**
Stddev	.00417	.00266	.115	.00016	.0077	.00249	.00217
%RSD	126.77	53.331	.65409	771.83	.13255	7.6037	58.233
#1	-.00765	-.00207	17.622	-.00016	5.8086	-.03219	-.00297
#2	-.00289	-.00563	17.591	.00008	5.8048	-.03065	-.00619
#3	.00066	-.00727	17.409	.00014	5.7938	-.03553	-.00205
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00105**	**.00822**	**.00588**
Stddev	.00081	.00012	.00100
%RSD	77.437	1.5051	16.931
#1	-.00020	.00826	.00695
#2	-.00112	.00832	.00498
#3	-.00182	.00808	.00571
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9001.2**	**54623.**	**2943.0**
Stddev	12.7	293.	11.3
%RSD	.14121	.53595	.38250
#1	8986.8	54359.	2937.9
#2	9010.8	54574.	2935.3
#3	9006.1	54938.	2955.9

Approved: June 27, 2016

Sample Name: L1606082303 Acquired: 6/25/2016 14:07:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00097**	**.07689**	**.00082**	**.01317**	**4.0611**	**.00008**	**194.35**
Stddev	.00087	.00794	.00214	.00140	.0013	.00002	.19
%RSD	89.857	10.324	259.83	10.655	.03277	29.564	.09947
#1	.00177	.08422	.00140	.01160	4.0625	.00007	194.28
#2	.00005	.07798	.00261	.01363	4.0599	.00006	194.19
#3	.00109	.06846	-.00155	.01429	4.0610	.00010	194.56
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**.00720**	**.00128**	**.00172**	**.48254**	**1.5553**	**.05921**
Stddev	.00016	.00037	.00008	.00037	.03011	.0518	.00214
%RSD	37.982	5.1555	6.4501	21.255	6.2390	3.3303	3.6194
#1	.00025	.00709	.00125	.00159	.48289	1.5549	.05878
#2	.00056	.00690	.00137	.00144	.45226	1.5037	.05732
#3	.00044	.00762	.00121	.00214	.51247	1.6073	.06154
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**110.52**	**2.3053**	**-.00008**	F **614.40**	**.00312**	**.00621**	**.00333**
Stddev	.38	.0070	.00038	4.80	.00050	.00738	.00101
%RSD	.34277	.30352	457.85	.78181	15.943	118.75	30.264
#1	110.96	2.3090	-.00052	609.47	.00307	-.00184	.00218
#2	110.30	2.2972	.00010	614.65	.00363	.01264	.00406
#3	110.30	2.3096	.00018	619.07	.00264	.00783	.00375
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 27, 2016

Sample Name: L1606082303 Acquired: 6/25/2016 14:07:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00131	-.00398	12.572	-.00061	3.7282	-.02186	-.00195
Stddev	.00101	.00138	.069	.00058	.0049	.00737	.00114
%RSD	77.475	34.690	.54565	95.484	.12996	33.713	58.500
#1	-.00178	-.00242	12.599	.00005	3.7247	-.01374	-.00282
#2	-.00014	-.00503	12.623	-.00084	3.7262	-.02372	-.00066
#3	-.00200	-.00451	12.494	-.00105	3.7337	-.02812	-.00237
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00017	.00519	.00587
Stddev	.00034	.00017	.00146
%RSD	196.61	3.3392	24.813
#1	.00020	.00538	.00454
#2	-.00026	.00515	.00565
#3	-.00046	.00504	.00743
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9113.2	55170.	2962.5
Stddev	17.2	284.	10.8
%RSD	.18895	.51491	.36572
#1	9120.9	54953.	2952.0
#2	9093.5	55065.	2973.6
#3	9125.3	55492.	2961.9

Approved: June 27, 2016

Sample Name: L1606082304 Acquired: 6/25/2016 14:12:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00108**	**.00282**	**.00375**	**.01195**	**1.2873**	**.00004**	**44.812**	**-.00032**
Stddev	.00081	.00175	.00233	.00191	.0068	.00003	.140	.00033
%RSD	75.442	62.066	62.147	15.958	.52861	68.482	.31190	102.13
#1	-.00032	.00374	.00333	.01352	1.2889	.00004	44.884	-.00060
#2	-.00194	.00392	.00166	.00983	1.2799	.00001	44.651	.00004
#3	-.00098	.00080	.00626	.01250	1.2932	.00007	44.900	-.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00062**	**-.00235**	**.00403**	**80.696**	**3.0351**	**.04425**	**27.190**	**1.4212**
Stddev	.00024	.00090	.00186	.288	.0674	.00194	.251	.0124
%RSD	38.213	38.227	46.192	.35704	2.2197	4.3802	.92249	.86964
#1	.00059	-.00132	.00534	80.883	2.9579	.04406	26.967	1.4224
#2	.00088	-.00276	.00485	80.364	3.0650	.04628	27.141	1.4083
#3	.00040	-.00297	.00190	80.840	3.0823	.04242	27.462	1.4329
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00083**	**136.40**	**.00117**	**.05473**	**.00702**	**-.00148**	**-.00406**	**16.093**
Stddev	.00029	.62	.00056	.00919	.00288	.00326	.00473	.052
%RSD	35.125	.45656	47.701	16.792	41.072	220.80	116.61	.32014
#1	-.00064	136.42	.00054	.06475	.00887	-.00465	-.00925	16.145
#2	-.00116	135.77	.00135	.05277	.00848	.00187	.00003	16.091
#3	-.00068	137.01	.00161	.04668	.00370	-.00165	-.00296	16.042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606082304 Acquired: 6/25/2016 14:12:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00141**	**1.0265**	**.02088**	**-.00129**	**-.00025**	**.01157**	**-.01042**
Stddev	.00052	.0054	.00601	.00283	.00173	.00020	.00036
%RSD	36.987	.52659	28.762	219.55	704.92	1.7611	3.4676
#1	.00201	1.0281	.02616	-.00374	-.00225	.01176	-.01080
#2	.00117	1.0205	.01435	.00181	.00074	.01159	-.01039
#3	.00105	1.0309	.02213	-.00193	.00077	.01136	-.01008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9584.5**	**58328.**	**2992.4**
Stddev	11.8	87.	5.0
%RSD	.12317	.14881	.16820
#1	9573.1	58228.	2986.6
#2	9583.6	58387.	2995.2
#3	9596.7	58368.	2995.4

Approved: June 27, 2016

Sample Name: L1606114801 Acquired: 6/25/2016 14:15:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00263	.73135	.00385	.12210	.08262	.00020	27.646	.00018
Stddev	.00073	.00428	.00128	.00118	.00156	.00004	.096	.00015
%RSD	27.764	.58467	33.324	.96789	1.8866	19.880	.34678	80.450
#1	.00220	.73627	.00263	.12346	.08403	.00016	27.689	.00009
#2	.00223	.72927	.00372	.12147	.08287	.00024	27.713	.00035
#3	.00348	.72851	.00519	.12136	.08095	.00020	27.536	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	.00138	.00319	.50952	4.5430	.00820	13.834	.02681
Stddev	.00058	.00089	.00080	.00314	.0592	.00406	.158	.00190
%RSD	107.78	64.361	25.113	.61565	1.3042	49.473	1.1398	7.0691
#1	-.00010	.00066	.00412	.50590	4.4785	.00685	13.879	.02807
#2	.00067	.00110	.00265	.51133	4.5951	.01276	13.964	.02463
#3	.00103	.00237	.00282	.51133	4.5554	.00499	13.658	.02774
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00124	65.018	.00157	.05465	.00287	-.00148	.00632	4.3760
Stddev	.00020	.232	.00022	.00221	.00233	.00288	.00218	.0207
%RSD	16.215	.35629	13.957	4.0445	81.267	194.34	34.507	.47244
#1	.00141	65.009	.00133	.05367	.00373	-.00288	.00878	4.3946
#2	.00130	65.254	.00176	.05719	.00465	-.00339	.00555	4.3795
#3	.00102	64.791	.00160	.05310	.00023	.00183	.00463	4.3537
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606114801 Acquired: 6/25/2016 14:15:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	.26681	.01202	-.00269	.00480	.00516	.00567
Stddev	.00125	.00125	.00081	.00070	.00038	.00011	.00071
%RSD	227.21	.46986	6.7372	25.927	7.9446	2.0641	12.451
#1	-.00072	.26656	.01275	-.00259	.00452	.00521	.00488
#2	.00178	.26818	.01115	-.00205	.00524	.00504	.00622
#3	.00058	.26571	.01216	-.00344	.00465	.00524	.00592
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9685.5	59237.	3013.9
Stddev	15.3	70.	21.8
%RSD	.15804	.11840	.72168
#1	9667.9	59212.	3004.6
#2	9692.8	59182.	2998.3
#3	9695.8	59316.	3038.7

Approved: June 27, 2016

Sample Name: L1606114802 Acquired: 6/25/2016 14:19:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00086	.02576	.00392	.13054	.14235	.00004	53.032	.00013
Stddev	.00161	.00264	.00128	.00304	.00093	.00006	.088	.00011
%RSD	186.85	10.249	32.777	2.3320	.65273	165.85	.16643	81.772
#1	-.00048	.02479	.00505	.13055	.14272	-.00002	52.942	.00017
#2	.00053	.02374	.00418	.13357	.14130	.00011	53.037	.00022
#3	-.00263	.02875	.00252	.12748	.14305	.00003	53.119	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.00416	.00255	.05069	2.7172	.00979	45.232	.00619
Stddev	.00057	.00090	.00135	.00895	.0969	.00331	.213	.00128
%RSD	70.201	21.666	53.148	17.648	3.5679	33.803	.47142	20.757
#1	.00109	.00488	.00157	.05068	2.6091	.01132	44.992	.00715
#2	.00016	.00315	.00198	.05964	2.7964	.01206	45.307	.00668
#3	.00119	.00444	.00409	.04175	2.7463	.00599	45.398	.00473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	113.30	.00198	.03363	.00397	-.00032	.00108	5.7426
Stddev	.00005	.15	.00097	.00220	.00496	.00242	.00246	.0270
%RSD	9.2544	.13423	48.767	6.5321	124.89	765.53	227.39	.46957
#1	.00062	113.13	.00098	.03204	.00115	-.00095	-.00128	5.7131
#2	.00062	113.39	.00206	.03614	.00107	.00236	.00363	5.7660
#3	.00052	113.39	.00290	.03272	.00971	-.00236	.00090	5.7486
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606114802 Acquired: 6/25/2016 14:19:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**.36906**	**-.00370**	**-.00072**	**.00779**	**.00692**	**.00331**
Stddev	.00028	.00064	.00411	.00265	.00075	.00021	.00138
%RSD	191.03	.17400	110.98	366.07	9.6620	3.0569	41.716
#1	-.00017	.36882	.00101	-.00049	.00853	.00671	.00489
#2	.00034	.36857	-.00557	.00180	.00703	.00713	.00270
#3	.00027	.36978	-.00654	-.00348	.00781	.00694	.00235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9627.8**	**58951.**	**3062.4**
Stddev	26.1	26.	1.9
%RSD	.27151	.04447	.06237
#1	9657.6	58927.	3060.7
#2	9617.0	58947.	3062.0
#3	9608.7	58979.	3064.5

Approved: June 27, 2016

Sample Name: L1606115001 Acquired: 6/25/2016 14:23:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00134	.94860	.00623	.13672	.10593	.00014	35.066	.00002
Stddev	.00163	.01243	.00298	.00233	.00120	.00009	.208	.00013
%RSD	122.05	1.3105	47.819	1.7071	1.1370	65.235	.59262	741.62
#1	-.00020	.96246	.00332	.13853	.10456	.00018	34.826	.00011
#2	.00116	.93843	.00928	.13754	.10682	.00004	35.168	-.00013
#3	.00306	.94490	.00609	.13408	.10640	.00021	35.202	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00095	.00115	.00402	.75423	2.6231	.00517	21.361	.05361
Stddev	.00038	.00077	.00076	.00983	.0329	.00134	.091	.00159
%RSD	39.586	67.102	19.015	1.3028	1.2541	25.927	.42723	2.9705
#1	.00055	.00114	.00333	.74497	2.6490	.00636	21.310	.05382
#2	.00102	.00192	.00389	.75319	2.6342	.00372	21.307	.05192
#3	.00129	.00038	.00484	.76454	2.5861	.00543	21.467	.05508
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00320	114.16	.00202	.11444	.00566	-.00032	.00352	5.0408
Stddev	.00062	.45	.00043	.00615	.00453	.00176	.00035	.0084
%RSD	19.542	.39163	21.028	5.3725	80.076	549.83	10.037	.16741
#1	.00290	113.69	.00211	.12072	.00935	.00043	.00314	5.0497
#2	.00278	114.20	.00240	.11417	.00060	.00094	.00356	5.0330
#3	.00392	114.58	.00156	.10843	.00702	-.00233	.00385	5.0397
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115001 Acquired: 6/25/2016 14:23:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**.24066**	**.01417**	**-.00245**	**.00766**	**.00892**	**.00404**
Stddev	.00021	.00154	.00348	.00225	.00065	.00011	.00127
%RSD	805.05	.63820	24.568	91.853	8.5297	1.1926	31.485
#1	.00024	.23889	.01059	-.00116	.00840	.00901	.00275
#2	.00001	.24171	.01754	-.00114	.00737	.00895	.00530
#3	-.00018	.24137	.01438	-.00504	.00719	.00880	.00407
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9688.5**	**58932.**	**3057.0**
Stddev	25.8	93.	13.7
%RSD	.26652	.15746	.44955
#1	9698.0	58835.	3047.2
#2	9708.3	59020.	3072.7
#3	9659.3	58940.	3051.0

Approved: June 27, 2016

Sample Name: L1606115002 Acquired: 6/25/2016 14:27:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00203	.48878	.00167	.06520	.04585	.00006	17.152	.00001
Stddev	.00268	.01554	.00141	.00090	.00204	.00009	.173	.00009
%RSD	131.70	3.1791	84.852	1.3869	4.4598	167.56	1.0064	934.85
#1	.00187	.50660	.00286	.06544	.04801	.00015	17.256	-.00009
#2	-.00056	.47801	.00204	.06596	.04394	-.00004	16.953	.00007
#3	.00479	.48175	.00010	.06420	.04559	.00005	17.247	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00168	.00243	.39846	4.7446	.00319	5.4375	.01729
Stddev	.00031	.00066	.00184	.00667	.1185	.00289	.0385	.00153
%RSD	100.89	39.152	75.822	1.6749	2.4966	90.823	.70870	8.8325
#1	.00065	.00096	.00122	.39954	4.7392	.00001	5.4553	.01884
#2	.00006	.00183	.00151	.39131	4.6289	.00567	5.3932	.01727
#3	.00020	.00224	.00454	.40452	4.8657	.00387	5.4638	.01578
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	38.880	.00010	.07228	.00433	-.00020	.00027	1.5503
Stddev	.00033	.402	.00056	.00820	.00375	.00324	.00590	.0251
%RSD	119.49	1.0347	568.40	11.341	86.648	1601.4	2189.5	1.6195
#1	-.00010	39.210	-.00001	.06867	.00198	.00127	.00262	1.5658
#2	.00053	38.432	.00070	.06650	.00235	-.00392	-.00644	1.5637
#3	.00040	38.999	-.00040	.08166	.00865	.00205	.00464	1.5213
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115002 Acquired: 6/25/2016 14:27:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.09712	.00701	-.00122	.00599	.00508	.00239
Stddev	.00062	.00057	.00249	.00352	.00080	.00018	.00169
%RSD	1544.5	.58817	35.547	288.53	13.353	3.5369	70.760
#1	.00058	.09776	.00445	-.00524	.00624	.00503	.00322
#2	-.00064	.09666	.00715	.00026	.00510	.00528	.00044
#3	.00018	.09693	.00942	.00132	.00664	.00493	.00349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9845.3	59884.	3057.5
Stddev	61.7	141.	28.2
%RSD	.62651	.23463	.92251
#1	9792.5	59732.	3034.3
#2	9830.2	60008.	3088.9
#3	9913.1	59914.	3049.2

Approved: June 27, 2016

Sample Name: L1606115102 Acquired: 6/25/2016 14:31:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00159	.14924	.00211	.10945	.07344	.00012	35.265	.00011
Stddev	.00084	.00304	.00150	.00214	.00141	.00005	.199	.00019
%RSD	53.011	2.0340	71.147	1.9507	1.9218	40.963	.56552	183.34
#1	.00069	.14626	.00205	.10856	.07211	.00007	35.174	.00027
#2	.00171	.15233	.00364	.10790	.07329	.00017	35.493	-.00011
#3	.00236	.14912	.00064	.11188	.07492	.00013	35.127	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.00053	.00363	.24070	2.2004	.00754	18.847	.05800
Stddev	.00037	.00064	.00076	.00439	.0134	.00192	.227	.00368
%RSD	71.691	119.20	20.837	1.8247	.61086	25.451	1.2033	6.3535
#1	.00009	-.00001	.00323	.23564	2.1949	.00870	18.615	.05962
#2	.00071	.00038	.00450	.24286	2.2158	.00532	19.068	.05378
#3	.00075	.00124	.00316	.24359	2.1907	.00860	18.858	.06059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00267	93.416	.00066	.05411	.00356	-.00299	.00235	4.9794
Stddev	.00025	.232	.00043	.00846	.00271	.00266	.00452	.0235
%RSD	9.2843	.24821	65.257	15.640	76.210	88.939	192.50	.47215
#1	.00239	93.189	.00082	.06384	.00043	-.00008	-.00245	4.9968
#2	.00274	93.652	.00099	.04849	.00522	-.00529	.00653	4.9888
#3	.00288	93.408	.00017	.05000	.00501	-.00360	.00296	4.9527
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115102 Acquired: 6/25/2016 14:31:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.22720	-.00049	-.00434	.00477	.01199	.00282
Stddev	.00094	.00191	.00341	.00316	.00052	.00018	.00083
%RSD	624.90	.83946	689.70	72.807	10.840	1.4772	29.345
#1	.00091	.22526	.00103	-.00351	.00496	.01201	.00271
#2	-.00090	.22907	-.00440	-.00783	.00516	.01216	.00370
#3	.00043	.22727	.00189	-.00168	.00418	.01181	.00206
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9596.9	58682.	3041.4
Stddev	35.1	192.	10.5
%RSD	.36599	.32727	.34598
#1	9558.5	58834.	3032.3
#2	9605.0	58747.	3039.1
#3	9627.4	58466.	3052.9

Approved: June 27, 2016

Sample Name: L1606115105 Acquired: 6/25/2016 14:35:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	.08611	.00385	.13923	.09101	.00009	44.089	.00002
Stddev	.00149	.00500	.00146	.00310	.00028	.00009	.047	.00004
%RSD	320.61	5.8036	37.928	2.2254	.30236	102.05	.10587	146.93
#1	-.00016	.08678	.00262	.14146	.09069	.00015	44.139	.00006
#2	-.00061	.09074	.00347	.13569	.09114	.00014	44.082	.00002
#3	.00216	.08081	.00547	.14055	.09119	-.00002	44.046	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.00077	.00300	.22257	1.9197	.00784	24.665	.07651
Stddev	.00017	.00044	.00144	.01624	.0794	.00414	.178	.00017
%RSD	34.605	57.594	48.079	7.2986	4.1341	52.815	.72144	.22200
#1	.00066	.00116	.00292	.22095	1.8333	.01224	24.592	.07669
#2	.00046	.00029	.00448	.23956	1.9894	.00402	24.534	.07635
#3	.00033	.00086	.00160	.20719	1.9365	.00726	24.867	.07649
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00251	121.52	.00039	.04724	.00176	-.00202	.00114	5.9103
Stddev	.00040	.42	.00024	.00471	.00159	.00145	.00478	.0521
%RSD	16.119	.34732	62.165	9.9710	90.693	71.551	420.31	.88218
#1	.00228	121.85	.00064	.05267	.00005	-.00053	.00361	5.8778
#2	.00297	121.67	.00016	.04481	.00202	-.00342	.00418	5.9704
#3	.00227	121.04	.00037	.04425	.00320	-.00211	-.00437	5.8826
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115105 Acquired: 6/25/2016 14:35:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00058	.28912	-.00001	-.00113	.00539	.00821	.00159
Stddev	.00104	.00030	.00390	.00110	.00033	.00010	.00078
%RSD	180.18	.10436	27479.	97.280	6.0662	1.2671	48.813
#1	.00169	.28878	.00322	.00014	.00577	.00817	.00171
#2	.00041	.28919	.00108	-.00182	.00517	.00833	.00230
#3	-.00037	.28937	-.00434	-.00172	.00524	.00813	.00076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9591.1	58078.	3001.7
Stddev	50.0	111.	7.0
%RSD	.52084	.19101	.23475
#1	9648.1	57963.	2993.9
#2	9554.9	58185.	3007.6
#3	9570.3	58085.	3003.7

Approved: June 27, 2016

Sample Name: L1606115401 Acquired: 6/25/2016 14:39:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**.06369**	**.00211**	**1.6713**	**.01926**	**.00010**	F **452.03**
Stddev	.00322	.00656	.00351	.0005	.00118	.00010	.89
%RSD	1157.9	10.295	166.24	.02810	6.1016	104.76	.19751
#1	.00114	.06870	-.00193	1.6717	.01795	.00008	451.94
#2	.00198	.05626	.00441	1.6715	.02023	.00000	452.97
#3	-.00396	.06610	.00386	1.6708	.01959	.00021	451.19
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**.00175**	**.00336**	**.00358**	**.08657**	**4.0470**	**.10636**
Stddev	.00024	.00006	.00098	.00171	.01546	.0608	.00217
%RSD	56.333	3.4162	29.186	47.723	17.854	1.5017	2.0382
#1	.00015	.00180	.00230	.00410	.09591	4.0001	.10764
#2	.00053	.00168	.00424	.00167	.09508	4.1156	.10386
#3	.00059	.00177	.00354	.00498	.06873	4.0251	.10759
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**104.45**	**.25861**	**.02316**	F **889.97**	**.00046**	**.03619**	**.00320**
Stddev	.32	.00175	.00063	8.94	.00094	.00407	.00206
%RSD	.30573	.67823	2.7369	1.0045	203.65	11.246	64.428
#1	104.40	.26014	.02389	897.40	-.00019	.03795	.00082
#2	104.79	.25898	.02276	892.47	.00155	.03153	.00442
#3	104.16	.25670	.02283	880.05	.00003	.03907	.00435
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 27, 2016

Sample Name: L1606115401 Acquired: 6/25/2016 14:39:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.04556**	**5.0652**	**-.00092**	**8.3910**	F **-.05563**	**-.00220**
Stddev	.00340	.00461	.0400	.00030	.0291	.00259	.00257
%RSD	2618.0	10.119	.78890	32.506	.34723	4.6498	116.61
#1	-.00398	.04208	5.1054	-.00114	8.4061	-.05807	-.00507
#2	.00246	.05079	5.0645	-.00058	8.4095	-.05590	-.00010
#3	.00113	.04380	5.0255	-.00104	8.3574	-.05292	-.00145
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.01649**	**.00488**	**.00303**
Stddev	.00056	.00014	.00088
%RSD	3.4018	2.9544	29.046
#1	.01604	.00505	.00374
#2	.01712	.00480	.00205
#3	.01632	.00480	.00329
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8680.3**	**53198.**	**2985.6**
Stddev	180.6	1315.	22.8
%RSD	2.0805	2.4712	.76305
#1	8472.3	54211.	3004.6
#2	8770.9	53671.	2960.4
#3	8797.6	51712.	2991.9

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 14:43:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41555	10.459	.41251	.50877	1.0374	.05191	10.456
Stddev	.00198	.038	.00049	.00412	.0216	.00011	.214
%RSD	.47730	.36575	.11809	.80911	2.0778	.21811	2.0454
#1	.41688	10.435	.41304	.50472	1.0594	.05178	10.677
#2	.41327	10.438	.41238	.51295	1.0163	.05199	10.250
#3	.41650	10.503	.41210	.50863	1.0364	.05195	10.439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05257	.20726	.51590	.53004	4.1313	50.651	1.0395
Stddev	.00009	.00077	.00185	.00200	.0874	1.016	.0162
%RSD	.16567	.37212	.35803	.37798	2.1147	2.0061	1.5578
#1	.05256	.20724	.51397	.52980	4.1823	51.735	1.0578
#2	.05249	.20650	.51606	.52817	4.0304	49.720	1.0270
#3	.05266	.20804	.51766	.53216	4.1811	50.499	1.0337
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.150	.52278	1.0570	51.369	.52494	10.305	.52104
Stddev	.208	.00621	.0043	.990	.00089	.023	.00138
%RSD	2.0459	1.1888	.41022	1.9281	.16882	.22613	.26480
#1	10.382	.52905	1.0620	52.419	.52481	10.311	.51949
#2	10.083	.51662	1.0546	50.452	.52412	10.279	.52151
#3	9.9835	.52267	1.0544	51.234	.52588	10.325	.52213
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 14:43:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2435**	**.41340**	**5.3297**	**1.0365**	**1.0404**	**1.0490**	**.52867**
Stddev	.0031	.00239	.0078	.0027	.0194	.0184	.00366
%RSD	.25127	.57838	.14640	.26182	1.8676	1.7498	.69286
#1	1.2461	.41607	5.3340	1.0379	1.0597	1.0678	.52786
#2	1.2400	.41146	5.3207	1.0334	1.0208	1.0311	.53267
#3	1.2443	.41266	5.3345	1.0383	1.0408	1.0483	.52548
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0507**	**1.0444**	F **3.0477**
Stddev	.0007	.0005	.0535
%RSD	.06848	.05207	1.7552
#1	1.0503	1.0446	3.1080
#2	1.0502	1.0438	3.0059
#3	1.0515	1.0449	3.0292
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9539.3**	**57751.**	**2940.1**
Stddev	31.6	140.	48.7
%RSD	.33120	.24295	1.6549
#1	9524.0	57816.	2886.9
#2	9575.6	57847.	2982.3
#3	9518.3	57590.	2951.2

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 14:46:39 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00165	.00284	.00176	.00388	.00113	.00012	-.05362	.00014
Stddev	.00125	.01178	.00236	.00154	.00084	.00005	.04538	.00017
%RSD	75.692	415.29	134.23	39.663	74.227	41.354	84.617	118.22
#1	.00309	-.01077	.00340	.00450	.00053	.00007	-.00140	.00006
#2	.00089	.00942	.00281	.00212	.00078	.00011	-.07612	.00034
#3	.00097	.00986	-.00094	.00500	.00209	.00017	-.08336	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.00081	-.00057	.03333	.05011	.00030	.06903	-.00046
Stddev	.00028	.00137	.00241	.00857	.04565	.00118	.08939	.00080
%RSD	113.95	168.04	420.16	25.719	91.103	392.02	129.50	172.20
#1	.00053	-.00076	.00045	.02973	.09790	.00058	.12386	.00033
#2	.00023	.00164	-.00333	.02715	.04546	-.00100	-.03412	-.00045
#3	-.00003	.00157	.00116	.04312	.00696	.00132	.11734	-.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00329	.09636	-.00015	.00820	-.00027	.00540	.00512	-.00542
Stddev	.00036	.02670	.00052	.00425	.00262	.00178	.00316	.00074
%RSD	10.874	27.706	348.06	51.818	968.89	32.864	61.650	13.619
#1	.00316	.11195	.00032	.01302	.00232	.00377	.00634	-.00562
#2	.00301	.11159	-.00071	.00662	-.00021	.00729	.00749	-.00604
#3	.00369	.06553	-.00007	.00498	-.00292	.00514	.00154	-.00460
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 14:46:39 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.00084	-.00314	-.00152	.00124	-.00002	.00422
Stddev	.00043	.00035	.00315	.00163	.00162	.00008	.00071
%RSD	142.14	41.948	100.51	107.27	131.28	387.02	16.743
#1	.00054	.00124	-.00369	-.00248	.00007	.00002	.00481
#2	.00057	.00059	.00026	.00036	.00055	-.00012	.00343
#3	-.00019	.00069	-.00597	-.00244	.00309	.00004	.00441
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9509.0	57769.	2936.8
Stddev	19.9	100.	17.6
%RSD	.20940	.17266	.59912
#1	9496.2	57883.	2947.5
#2	9532.0	57728.	2946.4
#3	9498.9	57697.	2916.5

Approved: June 27, 2016

Sample Name: L1606115402S Acquired: 6/25/2016 14:50:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20060**	**4.9650**	**.19517**	**2.5768**	**.50183**	**.02406**	F **444.38**
Stddev	.00064	.0130	.00068	.0061	.00191	.00013	.71
%RSD	.32075	.26173	.35003	.23805	.38088	.54060	.15891
#1	.20131	4.9565	.19473	2.5781	.50380	.02409	444.63
#2	.20005	4.9586	.19596	2.5701	.50170	.02392	443.58
#3	.20045	4.9800	.19484	2.5821	.49998	.02418	444.92
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02442**	**.09295**	**.23551**	**.23263**	**1.9191**	**28.985**	**.61166**
Stddev	.00012	.00006	.00093	.00115	.0123	.093	.00400
%RSD	.49172	.06109	.39479	.49604	.64319	.32038	.65326
#1	.02431	.09291	.23631	.23296	1.9231	29.086	.60738
#2	.02455	.09302	.23573	.23359	1.9290	28.966	.61529
#3	.02440	.09293	.23449	.23135	1.9053	28.904	.61230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**105.95**	**.47454**	**.51043**	F **884.75**	**.22811**	**4.9353**	**.22750**
Stddev	.25	.00567	.00309	9.80	.00122	.0272	.00524
%RSD	.23467	1.1953	.60519	1.1073	.53281	.55168	2.3044
#1	105.68	.47627	.51271	882.43	.22677	4.9309	.23221
#2	106.17	.47914	.51168	876.32	.22915	4.9645	.22843
#3	105.99	.46820	.50692	895.49	.22841	4.9105	.22185
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 27, 2016

Sample Name: L1606115402S Acquired: 6/25/2016 14:50:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-07

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.58292	.23516	7.5230	.45764	8.4638	.43138	.22024
Stddev	.00661	.00590	.0386	.00329	.0240	.00658	.00196
%RSD	1.1347	2.5090	.51250	.71986	.28403	1.5254	.88967
#1	.58964	.23313	7.5444	.46024	8.4871	.43835	.22044
#2	.58270	.23054	7.5461	.45874	8.4651	.43053	.22209
#3	.57642	.24181	7.4785	.45394	8.4391	.42527	.21819
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.50974	.45745	.02017
Stddev	.00182	.00152	.00279
%RSD	.35750	.33182	13.807
#1	.50798	.45815	.01724
#2	.50964	.45849	.02049
#3	.51162	.45571	.02279
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8784.0	53813.	2939.5
Stddev	58.9	564.	26.0
%RSD	.67031	1.0483	.88591
#1	8819.5	54202.	2951.8
#2	8816.5	54070.	2957.2
#3	8716.1	53166.	2909.6

Approved: June 27, 2016

Sample Name: L1606115403SD Acquired: 6/25/2016 14:54:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19884**	**5.0097**	**.20311**	**2.5960**	**.50146**	**.02443**	F **447.43**
Stddev	.00024	.0049	.00234	.0007	.00093	.00023	1.15
%RSD	.12160	.09827	1.1515	.02603	.18621	.94697	.25628
#1	.19893	5.0097	.20547	2.5958	.50254	.02464	447.39
#2	.19857	5.0047	.20308	2.5967	.50101	.02419	446.31
#3	.19903	5.0146	.20079	2.5954	.50084	.02448	448.60
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02483**	**.09451**	**.23821**	**.23915**	**1.9535**	**28.902**	**.60873**
Stddev	.00032	.00036	.00123	.00189	.0137	.108	.00282
%RSD	1.3026	.38369	.51502	.78901	.69899	.37351	.46252
#1	.02509	.09492	.23941	.23914	1.9479	29.020	.60854
#2	.02447	.09421	.23696	.23726	1.9691	28.808	.61163
#3	.02493	.09441	.23826	.24103	1.9435	28.877	.60601
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**106.60**	**.48110**	**.52231**	F **881.76**	**.23168**	**5.0586**	**.22685**
Stddev	.66	.00483	.00325	3.70	.00136	.0426	.00410
%RSD	.61507	1.0048	.62269	.41950	.58652	.84170	1.8079
#1	107.35	.47570	.52433	877.70	.23164	5.0964	.23130
#2	106.14	.48502	.51856	884.94	.23034	5.0125	.22604
#3	106.32	.48257	.52404	882.64	.23305	5.0670	.22322
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 27, 2016

Sample Name: L1606115403SD Acquired: 6/25/2016 14:54:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-08

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.59871**	**.24615**	**7.5687**	**.46699**	**8.5686**	**.42893**	**.22250**
Stddev	.00609	.00268	.0516	.00318	.0150	.00524	.00079
%RSD	1.0180	1.0870	.68153	.68125	.17550	1.2224	.35602
#1	.60575	.24920	7.6059	.46994	8.5810	.42717	.22334
#2	.59510	.24505	7.5098	.46362	8.5519	.42478	.22177
#3	.59529	.24419	7.5903	.46740	8.5730	.43482	.22237
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.51554**	**.46791**	**.00590**
Stddev	.00333	.00294	.00185
%RSD	.64552	.62860	31.408
#1	.51938	.47002	.00382
#2	.51356	.46455	.00651
#3	.51367	.46915	.00737
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8900.3**	**52138.**	**2849.7**
Stddev	61.9	226.	11.1
%RSD	.69538	.43440	.38823
#1	8858.0	51879.	2838.3
#2	8971.3	52295.	2860.4
#3	8871.6	52242.	2850.4

Approved: June 27, 2016

Sample Name: L1606115404 Acquired: 6/25/2016 14:58:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.00639	-.00036	.01270	.00241	.00013	.28017	.00009
Stddev	.00146	.00656	.00244	.00114	.00043	.00008	.03044	.00010
%RSD	248.07	102.69	686.61	9.0101	18.005	61.828	10.864	104.11
#1	.00089	-.00046	-.00313	.01156	.00227	.00022	.24651	.00012
#2	.00188	.01261	.00061	.01385	.00206	.00012	.28824	-.00001
#3	-.00100	.00700	.00146	.01270	.00289	.00005	.30576	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.01305	.00240	.07792	.04064	-.00228	.12469	.00253
Stddev	.00039	.00070	.00120	.00694	.09353	.00295	.18212	.00145
%RSD	747.32	5.3526	50.113	8.9064	230.14	129.38	146.06	57.512
#1	.00045	.01376	.00301	.08066	.00523	-.00157	.14106	.00090
#2	-.00033	.01305	.00317	.08306	.14671	-.00552	.29807	.00300
#3	.00004	.01236	.00101	.07002	-.03002	.00025	-.06507	.00369
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00228	.75291	.00807	.00690	.00300	-.00255	.00146	.13135
Stddev	.00024	.01638	.00065	.00315	.00148	.00424	.00328	.00151
%RSD	10.641	2.1753	8.1061	45.563	49.471	166.69	225.01	1.1485
#1	.00245	.73694	.00868	.00525	.00160	-.00242	-.00127	.13296
#2	.00238	.75210	.00738	.01053	.00455	-.00685	.00055	.13112
#3	.00200	.76967	.00814	.00493	.00285	.00163	.00509	.12997
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115404 Acquired: 6/25/2016 14:58:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00160	.00282	.00431	-.00324	.00105	.00371	.00033
Stddev	.00036	.00041	.00156	.00193	.00089	.00012	.00066
%RSD	22.302	14.434	36.136	59.618	84.281	3.3596	201.18
#1	.00136	.00295	.00420	-.00210	.00202	.00385	-.00028
#2	.00201	.00236	.00592	-.00547	.00085	.00361	.00023
#3	.00143	.00314	.00281	-.00214	.00028	.00369	.00104
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9713.7	59908.	3002.7
Stddev	32.6	164.	34.0
%RSD	.33561	.27353	1.1337
#1	9740.1	60011.	2965.4
#2	9677.2	59995.	3032.2
#3	9723.7	59719.	3010.3

Approved: June 27, 2016

Sample Name: L1606115501 Acquired: 6/25/2016 15:02:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00226	.00780	.00401	.26646	.17918	.00000	45.474	-.00004
Stddev	.00287	.00301	.00103	.00133	.00076	.00004	.222	.00008
%RSD	126.68	38.602	25.778	.50014	.42327	919.30	.48843	228.57
#1	.00509	.01128	.00462	.26750	.17974	.00002	45.718	.00006
#2	.00233	.00600	.00459	.26694	.17949	-.00004	45.422	-.00008
#3	-.00064	.00613	.00281	.26496	.17832	.00004	45.283	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.00088	.00134	.05774	1.5654	.00884	27.038	1.6699
Stddev	.00027	.00028	.00194	.01943	.1007	.00205	.083	.0027
%RSD	44.880	31.682	144.85	33.650	6.4312	23.214	.30796	.16065
#1	.00083	.00056	-.00088	.03531	1.4495	.00687	26.967	1.6730
#2	.00063	.00109	.00219	.06938	1.6158	.01096	27.130	1.6684
#3	.00031	.00099	.00272	.06852	1.6309	.00869	27.018	1.6684
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00414	74.521	.00232	.02280	.00145	-.00333	.00418	6.9589
Stddev	.00012	.362	.00063	.00622	.00648	.00099	.00335	.0172
%RSD	2.8693	.48589	27.089	27.292	447.38	29.598	80.140	.24675
#1	.00419	74.939	.00163	.02521	-.00229	-.00322	.00046	6.9755
#2	.00400	74.314	.00245	.02746	-.00229	-.00437	.00510	6.9601
#3	.00421	74.311	.00286	.01573	.00893	-.00240	.00696	6.9412
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115501 Acquired: 6/25/2016 15:02:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.31080**	**-.00408**	**-.00246**	**.00074**	**.00517**	**.00097**
Stddev	.00101	.00127	.01220	.00176	.00032	.00009	.00026
%RSD	589.50	.40720	299.39	71.557	43.195	1.7947	26.599
#1	.00067	.31223	.00838	-.00158	.00040	.00528	.00122
#2	-.00129	.30982	-.01601	-.00449	.00079	.00510	.00071
#3	.00011	.31036	-.00459	-.00131	.00103	.00514	.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9554.2**	**58064.**	**2987.7**
Stddev	24.6	152.	17.9
%RSD	.25722	.26211	.59940
#1	9527.5	57892.	2971.4
#2	9576.0	58182.	2984.9
#3	9559.0	58118.	3006.9

Approved: June 27, 2016

Sample Name: L1606115502 Acquired: 6/25/2016 15:05:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00077	.00104	.00250	.19417	.33327	.00001	49.969	.00011
Stddev	.00225	.00260	.00021	.00180	.00208	.00007	.144	.00004
%RSD	293.51	250.20	8.2634	.92950	.62356	535.11	.28842	36.458
#1	.00053	-.00100	.00271	.19484	.33088	.00006	50.109	.00015
#2	-.00336	.00396	.00251	.19555	.33470	.00004	49.821	.00012
#3	.00053	.00015	.00229	.19213	.33422	-.00007	49.978	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	.00039	.00161	4.4932	.30074	.00699	33.094	.46968
Stddev	.00024	.00046	.00055	.0210	.07361	.00374	.139	.00201
%RSD	82.593	118.92	34.456	.46819	24.475	53.562	.42105	.42764
#1	.00002	-.00012	.00218	4.4716	.35097	.00318	33.254	.46985
#2	.00046	.00051	.00108	4.5136	.21625	.00712	33.021	.47160
#3	.00039	.00078	.00156	4.4944	.33501	.01067	33.006	.46759
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00134	56.528	.00048	.02851	.00540	-.00461	.00421	7.9465
Stddev	.00013	.068	.00114	.00462	.00195	.00412	.00583	.0128
%RSD	9.8009	.11946	234.80	16.220	36.120	89.402	138.37	.16106
#1	.00123	56.559	.00179	.03249	.00375	-.00852	-.00246	7.9518
#2	.00130	56.451	-.00006	.02962	.00489	-.00500	.00681	7.9559
#3	.00149	56.575	-.00027	.02344	.00755	-.00031	.00829	7.9320
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115502 Acquired: 6/25/2016 15:05:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.41936	-.00337	-.00247	.00035	.00337	.00091
Stddev	.00022	.00050	.00295	.00045	.00041	.00006	.00160
%RSD	168.21	.11997	87.675	18.352	119.11	1.8649	175.07
#1	.00016	.41971	-.00131	-.00286	-.00012	.00341	-.00093
#2	.00033	.41958	-.00675	-.00259	.00050	.00330	.00173
#3	-.00010	.41878	-.00204	-.00197	.00066	.00341	.00194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9627.3	58565.	2988.6
Stddev	17.2	39.	5.1
%RSD	.17881	.06667	.17070
#1	9625.0	58521.	2993.1
#2	9645.6	58579.	2989.5
#3	9611.4	58596.	2983.0

Approved: June 27, 2016

Sample Name: L1606115503 Acquired: 6/25/2016 15:09:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00133	.01981	.00070	.15980	.12508	.00001	47.416	.00012
Stddev	.00149	.00690	.00351	.00313	.00043	.00010	.201	.00026
%RSD	112.43	34.815	504.28	1.9589	.34619	838.85	.42403	214.19
#1	.00108	.02777	-.00104	.15681	.12534	.00005	47.373	.00032
#2	-.00003	.01583	-.00161	.16306	.12532	.00009	47.635	.00022
#3	.00292	.01581	.00474	.15953	.12458	-.00010	47.240	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	.00032	.00351	1.3413	.87483	.00900	17.381	.47700
Stddev	.00046	.00045	.00082	.0140	.08308	.00172	.089	.00081
%RSD	429.81	139.46	23.247	1.0398	9.4971	19.124	.51021	.16934
#1	.00045	.00052	.00286	1.3297	.89461	.00799	17.319	.47725
#2	-.00041	.00065	.00443	1.3568	.78364	.01099	17.483	.47609
#3	.00028	-.00019	.00325	1.3373	.94624	.00803	17.342	.47764
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	48.369	.00082	.10919	.00167	-.00062	.00179	5.8799
Stddev	.00025	.203	.00140	.00660	.00170	.00395	.00827	.0280
%RSD	97.415	.41932	171.45	6.0459	101.94	641.48	462.74	.47549
#1	-.00003	48.343	.00233	.10833	.00101	-.00514	.00952	5.8933
#2	-.00053	48.584	.00055	.10306	.00039	.00119	.00277	5.8478
#3	-.00022	48.181	-.00043	.11618	.00360	.00211	-.00693	5.8986
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115503 Acquired: 6/25/2016 15:09:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.26600	-.00537	-.00338	.00017	.00914	.00020
Stddev	.00067	.00095	.00241	.00310	.00116	.00022	.00114
%RSD	345.33	.35889	44.987	91.459	671.24	2.4286	566.35
#1	-.00057	.26556	-.00315	-.00551	-.00106	.00889	.00099
#2	.00050	.26710	-.00794	.00017	.00033	.00931	-.00111
#3	.00065	.26535	-.00501	-.00481	.00125	.00922	.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9587.2	58263.	2972.1
Stddev	19.6	279.	4.9
%RSD	.20409	.47925	.16604
#1	9598.2	58004.	2969.9
#2	9598.7	58226.	2968.6
#3	9564.6	58559.	2977.8

Approved: June 27, 2016

Sample Name: L1606117801 Acquired: 6/25/2016 15:13:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00123	.01562	.00788	.04060	.02600	.00012	2.4592	.00007
Stddev	.00244	.00616	.00118	.00330	.00129	.00005	.0606	.00006
%RSD	197.99	39.461	15.044	8.1358	4.9545	44.901	2.4620	79.703
#1	.00387	.02096	.00725	.04075	.02646	.00010	2.5149	.00002
#2	-.00097	.00887	.00713	.04382	.02700	.00008	2.4680	.00013
#3	.00081	.01703	.00924	.03722	.02455	.00018	2.3948	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.00074	.00609	.02685	.43656	.00432	.57708	-.00111
Stddev	.00033	.00144	.00018	.01358	.05030	.00166	.05180	.00137
%RSD	1012.2	194.14	2.9070	50.575	11.522	38.411	8.9754	123.48
#1	-.00025	.00070	.00629	.04250	.40355	.00528	.52291	-.00216
#2	.00039	.00219	.00602	.01809	.49445	.00241	.62611	-.00159
#3	-.00004	-.00068	.00595	.01997	.41167	.00528	.58223	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00299	95.163	-.00070	.01050	.00222	-.00635	.00641	3.4783
Stddev	.00029	.186	.00058	.00517	.00074	.00345	.00307	.0048
%RSD	9.6245	.19542	82.717	49.206	33.276	54.334	47.947	.13892
#1	.00325	95.230	-.00082	.01297	.00142	-.01032	.00356	3.4792
#2	.00268	95.306	-.00121	.00456	.00236	-.00408	.00600	3.4827
#3	.00303	94.953	-.00007	.01396	.00287	-.00464	.00966	3.4731
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606117801 Acquired: 6/25/2016 15:13:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.11699	.00044	-.00188	.00105	.00210	.00054
Stddev	.00103	.00010	.00531	.00109	.00009	.00007	.00166
%RSD	275.08	.08958	1212.8	57.943	8.6567	3.2366	310.87
#1	.00154	.11703	-.00019	-.00063	.00114	.00212	-.00081
#2	-.00042	.11707	-.00453	-.00235	.00105	.00215	.00002
#3	-.00000	.11687	.00604	-.00264	.00096	.00202	.00240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9648.4	58829.	2994.3
Stddev	5.2	37.	6.7
%RSD	.05359	.06360	.22320
#1	9653.7	58809.	2992.7
#2	9643.3	58806.	2988.6
#3	9648.3	58873.	3001.7

Approved: June 27, 2016

Sample Name: L1606122701 Acquired: 6/25/2016 15:17:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00116	.09783	-.00055	.00242	.01519	.00006	7.7326	-.00002
Stddev	.00092	.00377	.00239	.00147	.00198	.00002	.1171	.00010
%RSD	79.355	3.8537	437.80	60.740	13.003	38.615	1.5138	459.39
#1	-.00047	.10163	-.00294	.00351	.01401	.00007	7.7569	.00006
#2	-.00220	.09409	.00184	.00075	.01747	.00007	7.8356	-.00013
#3	-.00081	.09776	-.00054	.00300	.01410	.00003	7.6053	.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00227	.00167	.03463	.33602	-.00038	-.01109	-.00127
Stddev	.00016	.00059	.00051	.00142	.06178	.00154	.10836	.00134
%RSD	58.524	25.933	30.520	4.0976	18.384	404.83	977.09	105.32
#1	.00014	.00159	.00133	.03617	.30512	-.00005	-.09610	-.00256
#2	.00023	.00261	.00225	.03337	.29580	-.00206	.11092	-.00136
#3	.00045	.00260	.00142	.03436	.40715	.00097	-.04809	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	2.3350	.00044	.00731	.00430	-.00426	.00383	1.1328
Stddev	.00020	.0307	.00076	.00233	.00100	.00159	.00576	.0032
%RSD	132.69	1.3153	170.74	31.908	23.273	37.398	150.44	.27905
#1	.00005	2.3000	.00116	.00516	.00531	-.00538	.00306	1.1309
#2	-.00036	2.3574	.00052	.00700	.00430	-.00496	-.00151	1.1310
#3	-.00016	2.3476	-.00035	.00979	.00330	-.00244	.00992	1.1364
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606122701 Acquired: 6/25/2016 15:17:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.25125	.00414	.00180	.00364	.00056	.00136
Stddev	.00018	.00103	.01324	.00145	.00074	.00007	.00130
%RSD	364.81	.41002	320.05	80.159	20.271	13.218	96.223
#1	.00011	.25131	-.01092	.00207	.00450	.00061	.00115
#2	.00019	.25224	.00936	.00024	.00328	.00047	.00016
#3	-.00016	.25018	.01397	.00310	.00316	.00058	.00275
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9969.0	60494.	3048.9
Stddev	15.1	129.	13.3
%RSD	.15159	.21283	.43564
#1	9969.3	60641.	3055.8
#2	9983.9	60438.	3033.6
#3	9953.7	60402.	3057.3

Approved: June 27, 2016

Sample Name: L1606122706 Acquired: 6/25/2016 15:21:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00063**	**.00567**	**.00083**	**.00123**	**.02806**	**.00015**	**13.472**	**-.00038**
Stddev	.00250	.00554	.00101	.00202	.00007	.00007	.038	.00019
%RSD	395.00	97.673	121.57	163.43	.25882	47.682	.28032	49.732
#1	.00247	-.00071	.00042	-.00047	.02810	.00007	13.487	-.00023
#2	.00165	.00924	.00199	.00346	.02810	.00021	13.429	-.00032
#3	-.00222	.00849	.00010	.00072	.02797	.00018	13.501	-.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00101**	**.00061**	**.00157**	**.10367**	**.20316**	**.00472**	**8.1185**	**.10636**
Stddev	.00008	.00062	.00064	.01594	.00836	.00156	.1274	.00158
%RSD	8.0012	102.28	40.873	15.374	4.1155	32.981	1.5689	1.4897
#1	.00092	-.00009	.00190	.11049	.21157	.00610	7.9808	.10550
#2	.00107	.00111	.00198	.11507	.19485	.00503	8.2322	.10539
#3	.00104	.00079	.00083	.08546	.20306	.00303	8.1425	.10819
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00044**	**33.974**	**.00004**	**.00429**	**-.00079**	**-.00333**	**.00187**	**.74797**
Stddev	.00043	.239	.00011	.00671	.00165	.00196	.00470	.01610
%RSD	97.916	.70374	251.40	156.52	208.37	58.883	251.58	2.1527
#1	-.00064	33.727	-.00007	.01191	-.00018	-.00196	-.00208	.73053
#2	-.00073	33.993	.00015	-.00074	.00047	-.00558	.00061	.75112
#3	.00005	34.204	.00006	.00169	-.00266	-.00246	.00707	.76226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606122706 Acquired: 6/25/2016 15:21:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.30857**	**.00233**	**-.00259**	**.00019**	**.00158**	**.00089**
Stddev	.00012	.00270	.00311	.00390	.00060	.00013	.00062
%RSD	87.894	.87470	133.51	150.50	319.58	8.2216	69.559
#1	-.00001	.30602	.00364	-.00319	-.00046	.00143	.00122
#2	-.00015	.30828	-.00122	.00157	.00073	.00163	.00127
#3	-.00026	.31139	.00457	-.00615	.00030	.00167	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9924.8**	**59991.**	**2995.5**
Stddev	18.6	172.	10.6
%RSD	.18782	.28732	.35313
#1	9924.0	59808.	2993.5
#2	9943.8	60150.	3007.0
#3	9906.6	60016.	2986.1

Approved: June 27, 2016

Sample Name: L1606127902 Acquired: 6/25/2016 15:25:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573994-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00298**	**.77289**	**.00033**	**.00803**	**.01053**	**.00016**	**9.3649**	**-.00023**
Stddev	.00188	.01227	.00104	.00267	.00091	.00007	.0910	.00007
%RSD	63.015	1.5872	311.80	33.213	8.6722	42.111	.97197	32.230
#1	.00105	.75975	.00114	.01109	.01057	.00009	9.3786	-.00026
#2	.00309	.78404	.00069	.00619	.01142	.00023	9.4483	-.00028
#3	.00480	.77489	-.00084	.00682	.00960	.00016	9.2678	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00067**	**.00209**	**.00225**	**1.1046**	**.20587**	**.00183**	**3.8329**	**.12468**
Stddev	.00025	.00124	.00151	.0075	.05413	.00323	.0374	.00185
%RSD	36.537	59.143	66.907	.67811	26.294	176.78	.97568	1.4875
#1	.00057	.00084	.00284	1.1048	.18555	.00515	3.8178	.12286
#2	.00096	.00331	.00337	1.1121	.26722	.00166	3.8755	.12657
#3	.00050	.00212	.00054	1.0971	.16483	-.00131	3.8054	.12461
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**.91553**	**.00104**	**.04284**	**.00087**	**-.00434**	**.00416**	**1.4218**
Stddev	.00049	.02558	.00097	.00374	.00128	.00145	.00383	.0304
%RSD	448.71	2.7944	92.896	8.7405	147.22	33.355	92.023	2.1368
#1	.00043	.88763	.00204	.04714	.00040	-.00289	.00799	1.3901
#2	-.00054	.92105	.00011	.04033	-.00011	-.00435	.00416	1.4246
#3	-.00022	.93790	.00097	.04105	.00232	-.00579	.00033	1.4507
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127902 Acquired: 6/25/2016 15:25:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573994-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**.04596**	**.00940**	**.00124**	**.00257**	**.00907**	**.00122**
Stddev	.00038	.00038	.00559	.00152	.00046	.00027	.00089
%RSD	147.88	.81748	59.487	122.54	17.946	3.0009	73.195
#1	.00017	.04588	.00305	-.00019	.00219	.00893	.00224
#2	-.00038	.04637	.01155	.00284	.00243	.00890	.00056
#3	-.00056	.04564	.01360	.00108	.00308	.00938	.00087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10039.**	**61079.**	**3063.3**
Stddev	16.	87.	16.8
%RSD	.15707	.14311	.54820
#1	10022.	60979.	3046.2
#2	10041.	61122.	3064.0
#3	10054.	61137.	3079.8

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 15:29:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41474**	**10.480**	**.41122**	**.51129**	**1.0445**	**.05223**	**10.384**
Stddev	.00157	.008	.00187	.00319	.0019	.00016	.024
%RSD	.37799	.07401	.45408	.62455	.18188	.31144	.22798
#1	.41325	10.484	.41182	.51035	1.0465	.05219	10.387
#2	.41461	10.484	.41272	.50866	1.0441	.05241	10.359
#3	.41637	10.471	.40913	.51484	1.0428	.05209	10.407
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05244**	**.20643**	**.51777**	**.52807**	**4.1528**	**50.626**	**1.0452**
Stddev	.00019	.00026	.00163	.00025	.0357	.257	.0080
%RSD	.36313	.12673	.31564	.04665	.85968	.50669	.76446
#1	.05244	.20669	.51592	.52825	4.1190	50.704	1.0431
#2	.05226	.20644	.51838	.52817	4.1901	50.835	1.0540
#3	.05264	.20617	.51902	.52779	4.1492	50.340	1.0385
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.9629**	**.52245**	**1.0531**	**51.247**	**.52506**	**10.312**	**.52216**
Stddev	.0274	.00433	.0047	.134	.00127	.013	.00461
%RSD	.27495	.82847	.44799	.26095	.24264	.12919	.88203
#1	9.9944	.51946	1.0578	51.179	.52653	10.320	.51773
#2	9.9492	.52742	1.0532	51.401	.52432	10.296	.52692
#3	9.9451	.52049	1.0484	51.161	.52433	10.319	.52182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 15:29:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2356**	**.41239**	**5.3381**	**1.0346**	**1.0460**	**1.0497**	**.53160**
Stddev	.0017	.00642	.0057	.0013	.0038	.0052	.00142
%RSD	.13528	1.5556	.10675	.12483	.36598	.49394	.26637
#1	1.2362	.41861	5.3408	1.0357	1.0443	1.0445	.53322
#2	1.2337	.40580	5.3420	1.0349	1.0504	1.0497	.53096
#3	1.2369	.41277	5.3316	1.0332	1.0433	1.0549	.53062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0558**	**1.0420**	F **3.0350**
Stddev	.0013	.0007	.0090
%RSD	.12612	.06683	.29605
#1	1.0548	1.0423	3.0277
#2	1.0553	1.0412	3.0451
#3	1.0573	1.0426	3.0323
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9586.8**	**58077.**	**2975.5**
Stddev	6.0	176.	6.3
%RSD	.06238	.30386	.21060
#1	9587.3	57874.	2969.1
#2	9592.5	58193.	2975.6
#3	9580.6	58165.	2981.7

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 15:32:48 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00000**	**.00002**	**-.00010**	**.00491**	**.00210**	**.00011**	**.00565**	**-.00003**
Stddev	.00087	.00719	.00078	.00229	.00030	.00005	.00049	.00029
%RSD	26249.	33697.	808.92	46.626	14.233	46.346	8.5911	909.94
#1	.00025	.00801	-.00086	.00753	.00176	.00017	.00542	-.00000
#2	.00073	-.00593	.00069	.00390	.00223	.00007	.00533	-.00034
#3	-.00097	-.00201	-.00012	.00330	.00231	.00010	.00621	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00020**	**.00011**	**.00064**	**.03500**	**.03424**	**-.00179**	**.02594**	**-.00052**
Stddev	.00009	.00046	.00051	.01471	.03973	.00240	.07741	.00156
%RSD	43.655	413.87	80.028	42.019	116.03	134.20	298.41	302.41
#1	.00012	-.00018	.00036	.01804	-.01111	-.00218	.05944	-.00155
#2	.00020	.00064	.00123	.04417	.05092	-.00397	.08095	.00128
#3	.00029	-.00013	.00033	.04280	.06290	.00078	-.06257	-.00128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00316**	**.04507**	**.00037**	**.00106**	**.00080**	**.00374**	**.00412**	**.00990**
Stddev	.00041	.02068	.00057	.00881	.00149	.00197	.00171	.00085
%RSD	13.022	45.885	154.95	828.64	185.93	52.502	41.416	8.5529
#1	.00281	.06772	-.00005	.00994	-.00040	.00294	.00217	.01067
#2	.00361	.02718	.00102	.00092	.00033	.00230	.00488	.01002
#3	.00306	.04031	.00014	-.00767	.00246	.00598	.00532	.00899
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 15:32:48 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.00057	.00333	-.00225	.00169	-.00006	.00439
Stddev	.00073	.00051	.00753	.00264	.00040	.00020	.00135
%RSD	152.10	89.662	226.48	117.22	23.766	306.69	30.851
#1	.00129	.00079	-.00329	-.00367	.00165	-.00017	.00283
#2	-.00014	-.00001	.01153	-.00387	.00130	-.00018	.00508
#3	.00029	.00092	.00174	.00079	.00210	.00016	.00526
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9759.3	59359.	3013.9
Stddev	2.3	121.	1.6
%RSD	.02366	.20394	.05186
#1	9761.6	59292.	3015.4
#2	9759.3	59287.	3013.9
#3	9756.9	59499.	3012.3

Approved: June 27, 2016

Sample Name: L1606127903S Acquired: 6/25/2016 15:36:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573994-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01197	1.1036	.01087	.05712	.03304	.00134	9.9729	.00124
Stddev	.00119	.0059	.00187	.00108	.00116	.00008	.0996	.00005
%RSD	9.9297	.53710	17.218	1.8903	3.5218	6.1377	.99838	3.7414
#1	.01115	1.1017	.01246	.05619	.03414	.00126	10.019	.00125
#2	.01142	1.1103	.00881	.05688	.03182	.00135	9.8587	.00119
#3	.01333	1.0989	.01134	.05830	.03317	.00142	10.041	.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00560	.01397	.01462	1.0767	1.4208	.02780	4.2261	.14457
Stddev	.00014	.00108	.00214	.0241	.1192	.00407	.0440	.00290
%RSD	2.4102	7.7598	14.602	2.2369	8.3867	14.648	1.0401	2.0070
#1	.00574	.01498	.01254	1.0620	1.3125	.02932	4.2372	.14280
#2	.00559	.01283	.01680	1.0635	1.4014	.02319	4.1777	.14299
#3	.00547	.01411	.01453	1.1045	1.5484	.03090	4.2635	.14792
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02152	2.1329	.01322	.29583	.01584	.02588	.00942	1.7458
Stddev	.00098	.0418	.00158	.00727	.00355	.00244	.00136	.0125
%RSD	4.5315	1.9579	11.965	2.4574	22.390	9.4200	14.478	.71438
#1	.02231	2.1343	.01139	.30417	.01767	.02397	.01094	1.7523
#2	.02182	2.0905	.01413	.29245	.01809	.02862	.00829	1.7537
#3	.02043	2.1740	.01413	.29086	.01175	.02503	.00905	1.7314
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127903S Acquired: 6/25/2016 15:36:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573994-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02137**	**.07160**	**.03468**	**.01383**	**.02654**	**.02985**	**.00242**
Stddev	.00036	.00081	.00438	.00291	.00046	.00010	.00158
%RSD	1.6937	1.1317	12.615	21.070	1.7354	.32151	65.388
#1	.02178	.07099	.02963	.01549	.02613	.02986	.00141
#2	.02110	.07130	.03735	.01047	.02704	.02975	.00424
#3	.02123	.07252	.03706	.01554	.02644	.02994	.00160
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9975.1**	**60274.**	**3041.7**
Stddev	49.0	118.	22.7
%RSD	.49139	.19506	.74582
#1	9940.1	60350.	3061.9
#2	9954.2	60332.	3046.1
#3	10031.	60138.	3017.2

Approved: June 27, 2016

Sample Name: L1606127904SD Acquired: 6/25/2016 15:40:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573994-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01103**	**1.1028**	**.01203**	**.05464**	**.03364**	**.00143**	**9.8642**	**.00121**
Stddev	.00186	.0090	.00180	.00231	.00086	.00004	.1305	.00006
%RSD	16.883	.81742	14.963	4.2286	2.5577	2.6326	1.3231	5.3301
#1	.00912	1.0960	.01267	.05217	.03303	.00146	9.7151	.00122
#2	.01113	1.1130	.00999	.05675	.03463	.00143	9.9198	.00114
#3	.01284	1.0994	.01342	.05499	.03327	.00139	9.9577	.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00590**	**.01420**	**.01484**	**1.0576**	**1.4598**	**.02493**	**4.2188**	**.14616**
Stddev	.00020	.00048	.00068	.0082	.1286	.00072	.1177	.00241
%RSD	3.3297	3.4140	4.5711	.77893	8.8104	2.9051	2.7895	1.6455
#1	.00602	.01364	.01562	1.0663	1.6059	.02466	4.0843	.14411
#2	.00567	.01444	.01454	1.0499	1.4099	.02439	4.2697	.14557
#3	.00601	.01451	.01437	1.0566	1.3636	.02576	4.3025	.14881
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02217**	**2.1040**	**.01418**	**.30006**	**.01556**	**.02408**	**.01453**	**1.7577**
Stddev	.00072	.0376	.00057	.00408	.00448	.00503	.00712	.0151
%RSD	3.2386	1.7891	4.0074	1.3597	28.796	20.896	49.023	.85907
#1	.02294	2.0606	.01353	.29698	.01280	.02854	.02252	1.7414
#2	.02203	2.1275	.01453	.30469	.02073	.02509	.00885	1.7604
#3	.02153	2.1239	.01449	.29851	.01315	.01862	.01221	1.7712
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127904SD Acquired: 6/25/2016 15:40:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573994-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02276**	**.07116**	**.03577**	**.01268**	**.02759**	**.03003**	**.00230**
Stddev	.00014	.00090	.00737	.00234	.00032	.00029	.00174
%RSD	.61715	1.2587	20.620	18.483	1.1623	.96154	75.576
#1	.02272	.07054	.03703	.01291	.02794	.02969	.00432
#2	.02292	.07076	.02784	.01490	.02752	.03021	.00132
#3	.02264	.07219	.04242	.01023	.02731	.03018	.00128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10006.**	**60810.**	**3063.3**
Stddev	5.	192.	18.4
%RSD	.04992	.31626	.60150
#1	10009.	61010.	3082.6
#2	10009.	60627.	3061.4
#3	10000.	60793.	3045.9

Approved: June 27, 2016

Sample Name: L1606128901 Acquired: 6/25/2016 15:44:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00215	.00687	.00324	.00036	.25940	.00003	8.5369	.00005
Stddev	.00051	.01020	.00141	.00225	.00475	.00006	.1296	.00011
%RSD	23.677	148.57	43.630	628.60	1.8323	170.08	1.5176	227.30
#1	.00216	.01614	.00358	-.00039	.25471	.00001	8.3890	.00017
#2	.00265	.00852	.00169	.00289	.26421	.00010	8.6303	-.00003
#3	.00163	-.00406	.00445	-.00143	.25928	-.00000	8.5913	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00259	.00588	.00175	.08631	.04218	.00151	6.5072	.07542
Stddev	.00040	.00134	.00073	.02244	.04887	.00193	.2142	.00074
%RSD	15.316	22.711	41.571	26.002	115.87	127.81	3.2912	.97595
#1	.00214	.00436	.00096	.06469	.09555	-.00070	6.2873	.07459
#2	.00279	.00683	.00239	.10949	-.00039	.00286	6.5191	.07570
#3	.00285	.00647	.00190	.08474	.03137	.00237	6.7151	.07598
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	23.216	.03092	.00614	.00300	-.00111	.00640	.97050
Stddev	.00039	.461	.00078	.00363	.00087	.00404	.00265	.00247
%RSD	280.63	1.9852	2.5231	59.153	29.021	362.80	41.403	.25451
#1	-.00028	22.689	.03110	.00526	.00208	-.00358	.00616	.97332
#2	.00048	23.539	.03160	.01013	.00311	-.00330	.00916	.96949
#3	.00022	23.422	.03007	.00303	.00381	.00355	.00387	.96870
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606128901 Acquired: 6/25/2016 15:44:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00051**	**.16522**	**-.00360**	**-.00090**	**.00125**	**.00115**	**.00088**
Stddev	.00057	.00251	.00574	.00300	.00085	.00009	.00100
%RSD	111.15	1.5196	159.60	334.58	68.243	8.1341	114.01
#1	-.00005	.16233	-.01006	-.00433	.00031	.00125	.00060
#2	.00108	.16651	.00089	.00117	.00197	.00107	.00199
#3	.00050	.16682	-.00162	.00047	.00148	.00112	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9940.0**	**60088.**	**3038.6**
Stddev	4.2	150.	44.1
%RSD	.04218	.24912	1.4500
#1	9935.3	60256.	3084.8
#2	9941.7	60040.	2997.0
#3	9943.1	59969.	3034.2

Approved: June 27, 2016

Sample Name: L1606112901 Acquired: 6/25/2016 15:48:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00126	-.00046	-.00005	-.00065	.00318	.00006	4.1415	-.00016
Stddev	.00197	.00573	.00201	.00160	.00151	.00005	.0124	.00023
%RSD	156.91	1238.2	4274.9	245.00	47.612	81.871	.30015	142.20
#1	.00341	-.00015	-.00215	-.00141	.00362	.00006	4.1534	-.00032
#2	-.00045	.00511	.00185	.00118	.00150	.00012	4.1425	.00010
#3	.00081	-.00635	.00016	-.00173	.00443	.00001	4.1286	-.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.00058	.00066	.05376	.10451	-.00223	.92501	.00486
Stddev	.00022	.00057	.00151	.01103	.06065	.00348	.08081	.00144
%RSD	3258.5	98.481	227.65	20.514	58.030	156.17	8.7365	29.653
#1	-.00025	.00121	.00094	.05934	.12513	.00172	.91232	.00510
#2	.00010	.00039	-.00097	.04105	.03624	-.00357	1.0114	.00331
#3	.00016	.00012	.00201	.06088	.15216	-.00484	.85130	.00616
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	3.0376	-.00008	.00578	.00044	-.00230	.00144	.21434
Stddev	.00025	.0744	.00053	.00529	.00227	.00178	.00420	.00577
%RSD	93.741	2.4506	639.89	91.432	509.94	77.275	291.44	2.6916
#1	-.00011	2.9794	.00051	.00238	.00289	-.00166	.00573	.20865
#2	-.00014	3.0119	-.00050	.00310	-.00159	-.00431	-.00267	.21418
#3	-.00056	3.1215	-.00026	.01187	.00003	-.00093	.00126	.22019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606112901 Acquired: 6/25/2016 15:48:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.01265**	**.00270**	**.00064**	**.00099**	**.00067**	**.00092**
Stddev	.00055	.00035	.00371	.00238	.00052	.00018	.00051
%RSD	272.21	2.7272	137.50	373.62	52.293	26.328	55.163
#1	-.00083	.01259	.00376	-.00183	.00159	.00059	.00050
#2	.00008	.01234	-.00143	.00082	.00070	.00087	.00077
#3	.00015	.01303	.00576	.00292	.00069	.00054	.00148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9969.3**	**60775.**	**3044.6**
Stddev	21.9	129.	15.2
%RSD	.22015	.21273	.49841
#1	9984.3	60920.	3056.8
#2	9944.1	60732.	3049.4
#3	9979.5	60672.	3027.6

Approved: June 27, 2016

Sample Name: L1606112902 Acquired: 6/25/2016 15:52:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	.00804	.00035	-.00128	.00288	.00010	2.9594	-.00006
Stddev	.00058	.00641	.00226	.00137	.00187	.00003	.0055	.00010
%RSD	221.07	79.747	653.27	107.46	64.882	33.893	.18419	164.92
#1	.00004	.00818	.00185	.00031	.00398	.00007	2.9654	.00000
#2	.00011	.00156	.00144	-.00200	.00072	.00009	2.9582	-.00001
#3	-.00094	.01439	-.00226	-.00213	.00394	.00014	2.9547	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.00045	.00076	.08667	.10793	.00221	.95476	.02200
Stddev	.00021	.00074	.00096	.00189	.05164	.00058	.08086	.00168
%RSD	3252.3	165.35	125.16	2.1842	47.845	26.260	8.4687	7.6363
#1	.00009	.00055	.00166	.08573	.06794	.00282	.86999	.02017
#2	-.00024	-.00034	.00088	.08885	.16623	.00215	.96327	.02346
#3	.00016	.00114	-.00024	.08543	.08961	.00166	1.0310	.02238
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	1.4239	.00014	.00542	.00025	-.00059	.00178	.20161
Stddev	.00013	.0489	.00086	.00331	.00120	.00643	.00247	.00182
%RSD	52.086	3.4352	596.95	60.989	470.84	1086.5	138.88	.90303
#1	-.00010	1.4077	-.00013	.00438	-.00113	.00173	.00080	.20089
#2	-.00031	1.4789	-.00055	.00913	.00091	-.00786	-.00005	.20368
#3	-.00033	1.3852	.00110	.00276	.00098	.00435	.00459	.20026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606112902 Acquired: 6/25/2016 15:52:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00083	.01066	.00349	-.00281	.00049	.00074	-.00046
Stddev	.00025	.00027	.00348	.00166	.00046	.00011	.00023
%RSD	30.685	2.4916	99.744	59.148	94.747	14.382	50.877
#1	.00087	.01070	.00643	-.00461	.00075	.00069	-.00046
#2	.00056	.01090	.00439	-.00132	-.00005	.00087	-.00023
#3	.00106	.01038	-.00035	-.00252	.00076	.00067	-.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9989.3	60825.	3066.0
Stddev	18.4	89.	4.0
%RSD	.18402	.14693	.13203
#1	10008.	60870.	3065.9
#2	9971.8	60722.	3062.0
#3	9987.6	60883.	3070.1

Approved: June 27, 2016

Sample Name: L1606112903 Acquired: 6/25/2016 15:56:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00034**	**-.00746**	**.00009**	**.00007**	**.00214**	**.00016**	**4.2282**	**-.00031**
Stddev	.00178	.00543	.00185	.00098	.00088	.00001	.1021	.00011
%RSD	518.14	72.757	1962.2	1427.6	41.098	3.6332	2.4147	36.326
#1	-.00212	-.00132	-.00121	.00003	.00116	.00017	4.2310	-.00019
#2	.00143	-.00942	.00221	-.00089	.00287	.00016	4.3288	-.00035
#3	-.00034	-.01164	-.00072	.00107	.00238	.00015	4.1247	-.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00027**	**-.00057**	**-.00029**	**.07902**	**-.03881**	**.00121**	**1.0358**	**.00397**
Stddev	.00063	.00094	.00019	.01076	.01948	.00237	.1206	.00030
%RSD	236.86	166.12	66.025	13.622	50.186	195.96	11.648	7.4974
#1	-.00020	-.00113	-.00052	.06755	-.06059	-.00026	.93657	.00379
#2	.00099	.00052	-.00021	.08890	-.02305	-.00005	1.1701	.00431
#3	.00002	-.00109	-.00016	.08063	-.03281	.00395	1.0007	.00380
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00055**	**2.1503**	**-.00065**	**.00144**	**.00315**	**-.00171**	**-.00059**	**.27406**
Stddev	.00026	.0349	.00083	.00721	.00266	.00193	.00290	.00085
%RSD	47.062	1.6229	127.58	500.84	84.421	112.70	495.02	.31027
#1	-.00082	2.1700	-.00132	-.00288	.00271	.00020	-.00182	.27322
#2	-.00053	2.1710	.00028	-.00257	.00074	-.00366	.00273	.27492
#3	-.00030	2.1101	-.00091	.00976	.00599	-.00168	-.00267	.27403
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606112903 Acquired: 6/25/2016 15:56:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.01267	.00761	-.00035	.00044	.00047	.00034
Stddev	.00036	.00010	.00488	.00192	.00076	.00017	.00099
%RSD	75.051	.78508	64.089	556.65	172.53	36.380	290.00
#1	.00045	.01256	.01172	-.00046	-.00009	.00039	-.00046
#2	.00086	.01267	.00891	.00163	.00010	.00066	.00145
#3	.00013	.01276	.00222	-.00221	.00131	.00034	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9986.0	60665.	3026.9
Stddev	20.7	145.	17.8
%RSD	.20708	.23844	.58822
#1	10007.	60770.	3014.6
#2	9984.8	60726.	3018.9
#3	9966.0	60500.	3047.3

Approved: June 27, 2016

Sample Name: L1606112904 Acquired: 6/25/2016 16:00:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00143**	**.00782**	**.00014**	**-.00105**	**.00318**	**.00018**	**2.9065**	**-.00009**
Stddev	.00049	.00478	.00214	.00233	.00102	.00003	.0438	.00019
%RSD	34.335	61.153	1520.7	221.14	32.071	15.659	1.5085	207.21
#1	.00199	.01026	-.00194	.00103	.00202	.00019	2.8571	-.00015
#2	.00122	.00231	.00002	-.00063	.00358	.00019	2.9407	.00012
#3	.00108	.01088	.00233	-.00357	.00394	.00014	2.9218	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00050**	**.00045**	**.00112**	**.05226**	**.04902**	**.00077**	**.91311**	**.02436**
Stddev	.00068	.00160	.00112	.00414	.07439	.00531	.01971	.00311
%RSD	135.32	357.44	99.972	7.9272	151.77	691.64	2.1590	12.769
#1	.00007	.00219	.00019	.05089	.09310	-.00511	.93142	.02095
#2	.00129	.00012	.00080	.04898	.09083	.00221	.91566	.02510
#3	.00015	-.00096	.00236	.05692	-.03687	.00521	.89224	.02704
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**1.3676**	**-.00081**	**.00778**	**.00502**	**-.00289**	**.00478**	**.20680**
Stddev	.00041	.0202	.00063	.00381	.00153	.00221	.00206	.00531
%RSD	176.12	1.4731	77.366	49.002	30.478	76.529	43.075	2.5661
#1	-.00056	1.3492	-.00140	.01136	.00503	-.00266	.00633	.20082
#2	-.00037	1.3644	-.00015	.00819	.00655	-.00520	.00556	.20859
#3	.00023	1.3891	-.00088	.00377	.00348	-.00080	.00244	.21097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606112904 Acquired: 6/25/2016 16:00:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.01047	.00111	-.00019	.00078	.00080	-.00006
Stddev	.00022	.00018	.00665	.00270	.00041	.00022	.00073
%RSD	116.67	1.7478	597.28	1390.3	52.913	27.125	1123.9
#1	.00044	.01026	.00785	.00028	.00121	.00056	.00012
#2	.00008	.01056	.00093	.00224	.00075	.00085	.00055
#3	.00005	.01059	-.00544	-.00310	.00038	.00099	-.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9957.7	60557.	3030.1
Stddev	15.8	177.	8.6
%RSD	.15901	.29213	.28426
#1	9975.9	60586.	3020.4
#2	9949.3	60718.	3033.0
#3	9947.7	60368.	3036.9

Approved: June 27, 2016

Sample Name: L1606127201 Acquired: 6/25/2016 16:04:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	-.00887	-.00183	.00197	.00056	.00010	.95406	-.00003
Stddev	.00091	.01117	.00052	.00188	.00043	.00011	.05017	.00010
%RSD	325.46	125.87	28.528	95.488	77.565	107.58	5.2586	289.02
#1	.00022	-.02176	-.00218	.00027	.00085	.00010	.90480	.00002
#2	.00122	-.00213	-.00123	.00398	.00076	-.00001	.95228	.00003
#3	-.00060	-.00272	-.00207	.00165	.00006	.00021	1.0051	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	-.00128	.00046	.02799	-.07233	.00197	.21481	.00019
Stddev	.00061	.00045	.00022	.01180	.06961	.00022	.12156	.00200
%RSD	1838.2	35.569	48.564	42.171	96.239	11.394	56.590	1042.3
#1	-.00013	-.00080	.00028	.03989	-.13804	.00212	.34118	.00130
#2	-.00048	-.00170	.00071	.01628	.00061	.00171	.09871	-.00212
#3	.00071	-.00133	.00040	.02780	-.07955	.00208	.20454	.00139
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00067	6.5927	-.00041	.00599	.00226	-.00187	.00139	.23314
Stddev	.00039	.0563	.00074	.00538	.00192	.00575	.00169	.00199
%RSD	58.032	.85407	180.55	89.733	84.902	308.02	122.23	.85400
#1	-.00069	6.5318	-.00010	.00974	.00276	.00008	.00216	.23308
#2	-.00105	6.6428	-.00125	-.00017	.00014	-.00834	-.00056	.23517
#3	-.00027	6.6034	.00012	.00842	.00389	.00266	.00255	.23118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127201 Acquired: 6/25/2016 16:04:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**.00331**	**.00248**	**.00096**	**.00107**	**.00085**	**.00133**
Stddev	.00044	.00056	.00254	.00297	.00078	.00012	.00063
%RSD	192.52	16.945	102.26	309.29	73.373	14.693	47.329
#1	.00017	.00395	.00360	.00246	.00196	.00094	.00062
#2	-.00070	.00291	.00428	.00288	.00074	.00089	.00180
#3	-.00016	.00306	-.00042	-.00246	.00050	.00071	.00159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9972.6**	**60217.**	**3037.7**
Stddev	14.0	83.	14.1
%RSD	.14049	.13799	.46569
#1	9988.5	60309.	3026.4
#2	9967.3	60146.	3033.1
#3	9962.1	60196.	3053.5

Approved: June 27, 2016

Sample Name: L1606127202 Acquired: 6/25/2016 16:08:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**.01060**	**.00084**	**.01591**	**.00482**	**.00013**	**4.8874**	**.00012**
Stddev	.00147	.00116	.00295	.00196	.00045	.00002	.0512	.00031
%RSD	570.05	10.898	350.53	12.303	9.3008	12.581	1.0477	272.03
#1	-.00187	.01061	.00261	.01812	.00447	.00014	4.8299	.00013
#2	.00100	.00945	-.00256	.01523	.00533	.00015	4.9279	.00042
#3	.00009	.01176	.00248	.01439	.00467	.00011	4.9046	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**-.00046**	**.00025**	**.03059**	**.03395**	**.00208**	**2.7028**	**-.00061**
Stddev	.00015	.00087	.00083	.01638	.06594	.00230	.1335	.00149
%RSD	81.112	189.49	337.36	53.558	194.25	110.69	4.9393	243.32
#1	.00003	-.00146	.00109	.04846	-.00968	-.00038	2.8372	-.00173
#2	.00034	.00002	-.00057	.01628	.00172	.00418	2.5702	.00108
#3	.00021	.00006	.00022	.02703	.10981	.00243	2.7010	-.00120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**13.742**	**-.00085**	**.00227**	**.00279**	**-.00269**	**-.00193**	**.47645**
Stddev	.00056	.155	.00030	.00745	.00217	.00177	.00170	.00665
%RSD	217.74	1.1297	35.156	328.49	77.588	65.958	88.159	1.3954
#1	-.00002	13.587	-.00065	-.00435	.00526	-.00088	-.00382	.46927
#2	-.00089	13.898	-.00120	.00082	.00118	-.00276	-.00050	.47768
#3	.00014	13.742	-.00071	.01033	.00194	-.00443	-.00148	.48240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127202 Acquired: 6/25/2016 16:08:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00018**	**.05092**	**.00177**	**.00024**	**.00137**	**.00071**	**.00162**
Stddev	.00083	.00100	.00998	.00193	.00052	.00009	.00084
%RSD	474.40	1.9658	565.04	789.52	37.663	12.612	51.686
#1	-.00049	.05003	.00781	-.00019	.00196	.00074	.00252
#2	-.00081	.05200	-.00975	.00235	.00120	.00078	.00148
#3	.00077	.05072	.00724	-.00143	.00097	.00061	.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9920.3**	**59957.**	**3053.1**
Stddev	9.3	97.	28.1
%RSD	.09367	.16197	.92019
#1	9910.9	59874.	3056.5
#2	9929.5	60064.	3023.5
#3	9920.6	59932.	3079.4

Approved: June 27, 2016

Sample Name: L1606127901 Acquired: 6/25/2016 16:12:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00079**	**.23343**	**-.00035**	**.00697**	**.01048**	**.00010**	**5.5956**	**-.00004**
Stddev	.00151	.00808	.00093	.00046	.00038	.00003	.0897	.00007
%RSD	191.07	3.4604	268.33	6.6127	3.6255	27.106	1.6038	155.88
#1	-.00012	.24183	.00073	.00738	.01041	.00014	5.5127	-.00007
#2	.00027	.23274	-.00087	.00647	.01090	.00009	5.5834	-.00010
#3	-.00251	.22572	-.00090	.00704	.01015	.00009	5.6909	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00030**	**.00040**	**.00104**	**.37949**	**.02999**	**.00120**	**2.2214**	**.04375**
Stddev	.00022	.00063	.00117	.02000	.03448	.00297	.1047	.00042
%RSD	72.888	155.32	112.12	5.2704	114.98	248.44	4.7142	.95613
#1	.00020	.00102	-.00030	.35646	.01685	.00172	2.1668	.04335
#2	.00015	-.00023	.00181	.39248	.06911	.00387	2.1552	.04372
#3	.00056	.00042	.00162	.38953	.00401	-.00200	2.3421	.04419
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.40372**	**.00002**	**.01800**	**.00182**	**-.00229**	**.00534**	**.76285**
Stddev	.00016	.02832	.00029	.00724	.00294	.00133	.00501	.02556
%RSD	124.97	7.0152	1295.9	40.230	161.43	58.036	93.812	3.3508
#1	-.00031	.38955	.00035	.01067	.00373	-.00090	.01054	.73582
#2	-.00001	.38528	-.00008	.01820	-.00157	-.00355	.00492	.76609
#3	-.00007	.43633	-.00020	.02515	.00330	-.00243	.00055	.78664
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127901 Acquired: 6/25/2016 16:12:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00000**	**.02802**	**.00639**	**-.00424**	**.00104**	**.00686**	**-.00053**
Stddev	.00059	.00084	.00088	.00033	.00039	.00027	.00162
%RSD	12664.	3.0023	13.821	7.8780	37.381	4.0081	307.76
#1	.00044	.02706	.00703	-.00390	.00138	.00661	.00100
#2	.00022	.02835	.00538	-.00425	.00062	.00681	-.00222
#3	-.00068	.02864	.00675	-.00456	.00114	.00715	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9995.1**	**60569.**	**3072.5**
Stddev	18.8	83.	17.9
%RSD	.18798	.13702	.58354
#1	10017.	60498.	3093.1
#2	9983.0	60660.	3060.2
#3	9985.6	60548.	3064.2

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 16:16:03 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41279**	**10.433**	**.40298**	**.50323**	**1.0184**	**.05236**	**10.146**
Stddev	.00062	.023	.00491	.00242	.0037	.00006	.030
%RSD	.14995	.22399	1.2186	.48043	.36729	.12018	.29415
#1	.41231	10.415	.40384	.50055	1.0220	.05229	10.131
#2	.41349	10.459	.39769	.50390	1.0146	.05241	10.126
#3	.41257	10.425	.40740	.50524	1.0186	.05238	10.180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05206**	**.20294**	**.51645**	**.52099**	**4.0952**	**49.051**	**1.0295**
Stddev	.00043	.00065	.00457	.00121	.0025	.142	.0088
%RSD	.83054	.31937	.88415	.23159	.06120	.28862	.85476
#1	.05248	.20360	.51186	.52157	4.0943	49.074	1.0305
#2	.05210	.20291	.52099	.52180	4.0933	48.900	1.0203
#3	.05161	.20230	.51649	.51960	4.0980	49.180	1.0378
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.7277**	**.51414**	**1.0402**	**49.935**	**.51586**	**10.134**	**.51189**
Stddev	.0462	.00321	.0047	.095	.00165	.031	.00166
%RSD	.47447	.62359	.45388	.19063	.31918	.30495	.32486
#1	9.7465	.51782	1.0451	50.021	.51766	10.168	.51381
#2	9.6751	.51192	1.0398	49.833	.51549	10.123	.51086
#3	9.7615	.51270	1.0357	49.951	.51442	10.109	.51101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 16:16:03 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2153	.40661	5.2188	1.0211	1.0187	1.0271	.52415
Stddev	.0058	.00386	.0120	.0013	.0031	.0069	.00046
%RSD	.47598	.95000	.22957	.12690	.30817	.67428	.08834
#1	1.2162	.40345	5.2255	1.0218	1.0207	1.0286	.52363
#2	1.2206	.41091	5.2258	1.0219	1.0150	1.0195	.52433
#3	1.2091	.40546	5.2049	1.0196	1.0203	1.0331	.52450
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0611	1.0269	F 2.9985
Stddev	.0021	.0010	.0124
%RSD	.19830	.09638	.41405
#1	1.0631	1.0270	3.0047
#2	1.0614	1.0279	2.9842
#3	1.0589	1.0259	3.0065
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9559.6	57599.	2986.8
Stddev	4.9	130.	10.5
%RSD	.05148	.22635	.35191
#1	9564.0	57612.	2977.9
#2	9560.6	57462.	2998.4
#3	9554.3	57722.	2984.0

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 16:19:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00185	.00626	-.00023	.00044	.00278	.00005	-.04464	.00001
Stddev	.00025	.00998	.00075	.00197	.00045	.00006	.01589	.00008
%RSD	13.751	159.28	328.05	451.88	16.156	122.09	35.589	834.92
#1	.00158	.01229	-.00019	.00230	.00236	.00010	-.04122	-.00004
#2	.00190	-.00525	.00050	.00063	.00326	-.00002	-.03074	-.00004
#3	.00208	.01176	-.00099	-.00162	.00274	.00006	-.06195	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	.00030	.00108	.01891	-.08883	.00028	.04170	-.00007
Stddev	.00014	.00149	.00123	.02463	.04133	.00158	.04172	.00069
%RSD	37.231	490.44	114.38	130.22	46.533	569.52	100.03	937.33
#1	-.00023	.00135	.00225	.04102	-.10527	-.00061	.02819	.00053
#2	-.00043	.00096	-.00021	.02335	-.11941	.00210	.00842	.00008
#3	-.00050	-.00140	.00119	-.00763	-.04180	-.00066	.08850	-.00082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00343	.00251	-.00012	.00363	.00401	.00489	.00879	-.00487
Stddev	.00038	.01645	.00050	.00608	.00167	.00193	.00298	.00028
%RSD	11.063	654.49	431.61	167.28	41.713	39.486	33.953	5.7618
#1	.00299	.00408	-.00004	.00277	.00588	.00378	.00970	-.00459
#2	.00370	-.01467	-.00065	-.00196	.00352	.00712	.01122	-.00515
#3	.00359	.01813	.00034	.01010	.00264	.00378	.00546	-.00487
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 16:19:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00028	.00057	.00214	-.00157	.00060	-.00006	.00421
Stddev	.00055	.00026	.00424	.00416	.00034	.00004	.00038
%RSD	193.42	45.468	198.11	264.68	55.851	78.634	9.1291
#1	-.00056	.00032	.00612	.00235	.00061	-.00008	.00456
#2	-.00063	.00083	-.00232	-.00593	.00093	-.00001	.00426
#3	.00035	.00056	.00262	-.00114	.00026	-.00008	.00380
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9751.1	59011.	2998.0
Stddev	16.0	92.	16.9
%RSD	.16409	.15669	.56327
#1	9735.8	59057.	2997.7
#2	9767.8	59072.	2981.2
#3	9749.7	58905.	3015.0

Approved: June 27, 2016

Sample Name: L1606127905 Acquired: 6/25/2016 16:23:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00112**	**.42892**	**.00254**	**.00885**	**.00931**	**.00014**	**4.1101**	**-.00014**
Stddev	.00085	.00960	.00110	.00026	.00054	.00008	.0226	.00009
%RSD	76.091	2.2373	43.205	2.9736	5.7541	61.416	.54879	60.631
#1	.00187	.41894	.00336	.00888	.00991	.00015	4.0848	-.00017
#2	.00019	.43809	.00129	.00858	.00890	.00022	4.1178	-.00005
#3	.00131	.42973	.00298	.00910	.00911	.00005	4.1279	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00064**	**.00072**	**.00093**	**.46806**	**-.04215**	**.00375**	**2.3175**	**.01534**
Stddev	.00025	.00122	.00082	.01630	.03381	.00237	.0180	.00171
%RSD	38.393	169.05	88.133	3.4825	80.210	63.236	.77530	11.156
#1	.00092	.00051	.00011	.45372	-.08111	.00533	2.3322	.01684
#2	.00057	-.00038	.00092	.46467	-.02046	.00102	2.2974	.01572
#3	.00044	.00203	.00175	.48579	-.02489	.00491	2.3228	.01348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**.79830**	**.00036**	**.03423**	**.00164**	**-.00327**	**.00568**	**1.0453**
Stddev	.00055	.00874	.00054	.00334	.00066	.00436	.00399	.0205
%RSD	130.46	1.0949	148.73	9.7489	39.962	133.66	70.190	1.9601
#1	-.00012	.80324	-.00001	.03061	.00234	-.00815	.00802	1.0252
#2	.00040	.78821	.00099	.03719	.00155	-.00191	.00794	1.0445
#3	.00099	.80344	.00012	.03489	.00104	.00026	.00108	1.0662
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127905 Acquired: 6/25/2016 16:23:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**.01799**	**.00482**	**-.00230**	**.00189**	**.01109**	**.00007**
Stddev	.00065	.00037	.00226	.00232	.00074	.00029	.00211
%RSD	715.49	2.0334	47.005	100.92	39.126	2.6113	3180.6
#1	-.00003	.01830	.00310	.00003	.00148	.01082	.00082
#2	.00080	.01809	.00396	-.00232	.00274	.01107	-.00231
#3	-.00049	.01759	.00738	-.00462	.00144	.01140	.00169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9972.5**	**60381.**	**3064.6**
Stddev	33.3	69.	2.8
%RSD	.33435	.11363	.09242
#1	10010.	60351.	3061.5
#2	9961.5	60333.	3067.1
#3	9946.1	60460.	3065.2

Approved: June 27, 2016

Sample Name: L1606114801 Acquired: 6/25/2016 16:27:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.03462	.00065	.00821	.00587	.00014	1.4096	-.00013
Stddev	.00034	.00628	.00229	.00098	.00178	.00003	.0346	.00033
%RSD	57.407	18.141	351.58	11.960	30.235	19.203	2.4561	248.47
#1	.00054	.03990	-.00071	.00924	.00790	.00011	1.3926	.00011
#2	.00095	.02767	-.00063	.00729	.00463	.00014	1.4495	-.00000
#3	.00028	.03630	.00329	.00809	.00508	.00016	1.3868	-.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00001	.00030	.04215	.21418	.00024	.69121	.00161
Stddev	.00012	.00038	.00134	.02269	.07335	.00510	.07378	.00189
%RSD	127.75	2953.4	439.05	53.849	34.250	2116.0	10.674	117.34
#1	.00006	.00044	.00117	.03668	.16871	.00256	.67687	-.00053
#2	-.00001	-.00026	.00097	.06707	.29880	.00377	.77111	.00305
#3	.00022	-.00014	-.00123	.02268	.17502	-.00561	.62565	.00230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00000	3.4091	-.00039	.01019	-.00019	-.00195	.00226	.25600
Stddev	.00027	.0299	.00017	.00142	.00263	.00116	.00241	.00788
%RSD	8569.8	.87827	42.602	13.923	1405.5	59.228	106.91	3.0774
#1	.00029	3.3757	-.00048	.01168	-.00018	-.00094	.00166	.24819
#2	-.00005	3.4183	-.00020	.01005	.00244	-.00171	.00492	.25587
#3	-.00025	3.4335	-.00049	.00885	-.00282	-.00321	.00020	.26394
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606114801 Acquired: 6/25/2016 16:27:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00043**	**.01395**	**.00070**	**-.00087**	**.00132**	**.00137**	**.00142**
Stddev	.00051	.00044	.00486	.00154	.00026	.00005	.00170
%RSD	118.61	3.1779	695.33	177.20	19.933	3.3203	119.70
#1	-.00063	.01431	.00581	-.00155	.00155	.00135	.00002
#2	.00015	.01345	.00013	-.00194	.00103	.00135	.00093
#3	-.00082	.01408	-.00385	.00089	.00136	.00143	.00331
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9913.2**	**60132.**	**3023.4**
Stddev	14.6	83.	23.3
%RSD	.14679	.13818	.77035
#1	9929.6	60151.	3030.8
#2	9901.6	60041.	2997.3
#3	9908.5	60204.	3042.1

Approved: June 27, 2016

Sample Name: L1606114802 Acquired: 6/25/2016 16:31:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00158	-.00408	.00026	.00633	.00904	.00015	2.7703	-.00011
Stddev	.00108	.00521	.00166	.00204	.00121	.00009	.0227	.00014
%RSD	68.438	127.59	628.67	32.297	13.379	59.313	.82092	123.10
#1	.00072	-.00923	-.00155	.00429	.00969	.00008	2.7476	-.00002
#2	.00123	.00119	.00169	.00631	.00978	.00025	2.7930	-.00027
#3	.00279	-.00421	.00065	.00838	.00764	.00012	2.7703	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.00002	.00060	.02383	.06717	.00040	2.3757	.00083
Stddev	.00028	.00081	.00057	.01240	.09428	.00275	.0633	.00197
%RSD	81.635	5221.9	93.832	52.028	140.36	693.38	2.6650	237.49
#1	.00044	-.00078	.00046	.02298	.16159	-.00259	2.3743	.00224
#2	.00003	-.00000	.00012	.01188	-.02697	.00095	2.4397	.00167
#3	.00055	.00084	.00122	.03663	.06688	.00283	2.3131	-.00142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	6.0259	-.00040	.00438	.00227	-.00140	.00185	.32995
Stddev	.00024	.0927	.00045	.00883	.00074	.00370	.00550	.00769
%RSD	208.31	1.5391	111.52	201.54	32.728	264.56	298.09	2.3316
#1	.00039	5.9438	-.00070	.01456	.00143	-.00567	.00483	.32126
#2	-.00003	6.1265	.00011	-.00011	.00282	.00058	.00521	.33270
#3	-.00002	6.0074	-.00061	-.00130	.00258	.00089	-.00450	.33589
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606114802 Acquired: 6/25/2016 16:31:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.01996	.00356	-.00001	.00116	.00095	-.00024
Stddev	.00040	.00029	.00718	.00102	.00055	.00026	.00029
%RSD	136.64	1.4402	201.93	7537.5	47.304	27.165	121.82
#1	-.00006	.02008	.00861	-.00117	.00177	.00075	-.00049
#2	.00022	.02016	-.00466	.00037	.00099	.00086	-.00028
#3	.00074	.01963	.00672	.00076	.00071	.00124	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9925.6	60099.	3031.8
Stddev	7.7	64.	18.1
%RSD	.07799	.10696	.59652
#1	9922.2	60109.	3022.9
#2	9920.2	60157.	3019.9
#3	9934.5	60030.	3052.6

Approved: June 27, 2016

Sample Name: L1606115001 Acquired: 6/25/2016 16:35:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00166	.05641	.00050	.00663	.00676	.00016	1.7818	.00015
Stddev	.00049	.00787	.00304	.00311	.00055	.00011	.0479	.00031
%RSD	29.631	13.947	601.42	46.927	8.1582	71.613	2.6886	203.48
#1	.00200	.06510	-.00294	.00991	.00739	.00005	1.7526	.00038
#2	.00109	.05435	.00166	.00372	.00635	.00014	1.8371	-.00020
#3	.00188	.04978	.00279	.00626	.00655	.00027	1.7557	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.00048	.00100	.04970	.00137	.00112	1.1341	.00143
Stddev	.00049	.00051	.00115	.01548	.09645	.00218	.0897	.00096
%RSD	745.24	106.17	114.47	31.142	7038.5	195.00	7.9106	67.253
#1	-.00002	.00105	.00223	.06756	-.03266	.00315	1.0361	.00043
#2	-.00057	.00034	.00081	.04145	.11022	-.00118	1.2123	.00235
#3	.00040	.00005	-.00004	.04010	-.07346	.00137	1.1537	.00152
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	5.9717	-.00015	.00950	-.00176	-.00302	.00622	.28058
Stddev	.00014	.0718	.00043	.00093	.00081	.00221	.00277	.00537
%RSD	53.804	1.2031	276.46	9.7789	45.909	73.167	44.558	1.9140
#1	-.00010	5.9074	-.00014	.01003	-.00249	-.00320	.00355	.27441
#2	-.00036	6.0493	-.00058	.01005	-.00089	-.00072	.00603	.28316
#3	-.00034	5.9584	.00027	.00843	-.00189	-.00513	.00908	.28418
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115001 Acquired: 6/25/2016 16:35:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.01287	.00136	-.00194	.00110	.00114	.00062
Stddev	.00058	.00017	.00295	.00426	.00072	.00013	.00087
%RSD	762.02	1.3177	217.51	219.83	65.867	11.722	140.33
#1	.00015	.01301	.00162	-.00450	.00182	.00119	.00034
#2	-.00054	.01292	.00417	-.00429	.00110	.00099	-.00008
#3	.00061	.01268	-.00172	.00298	.00038	.00124	.00159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9919.3	60059.	3016.8
Stddev	34.5	56.	13.7
%RSD	.34767	.09285	.45386
#1	9942.2	60062.	3013.8
#2	9936.0	60114.	3004.8
#3	9879.6	60002.	3031.7

Approved: June 27, 2016

Sample Name: L1606115102 Acquired: 6/25/2016 16:39:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00105	.00214	.00018	.00362	.00526	.00013	1.7820	.00006
Stddev	.00166	.00346	.00084	.00176	.00021	.00005	.0144	.00011
%RSD	158.53	161.68	476.67	48.690	4.0116	41.814	.80931	182.53
#1	.00213	.00451	-.00003	.00223	.00549	.00009	1.7780	.00003
#2	-.00086	-.00183	-.00054	.00560	.00521	.00010	1.7700	-.00003
#3	.00188	.00375	.00110	.00302	.00507	.00019	1.7980	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.00030	.00081	.02568	-.04054	.00233	1.0068	.00278
Stddev	.00009	.00056	.00053	.02210	.04687	.00374	.0618	.00296
%RSD	39.196	184.13	65.165	86.089	115.61	160.62	6.1428	106.56
#1	.00032	.00005	.00046	.05079	-.00224	.00526	1.0696	.00587
#2	.00013	-.00008	.00055	.00916	-.02657	.00361	.94591	-.00003
#3	.00026	.00094	.00141	.01708	-.09281	-.00188	1.0048	.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00000	4.8272	.00042	.00764	.00031	-.00602	.00252	.26699
Stddev	.00027	.0498	.00058	.00427	.00107	.00140	.00418	.00420
%RSD	7088.8	1.0326	136.65	55.913	346.71	23.202	166.24	1.5735
#1	-.00018	4.7713	.00031	.01044	.00076	-.00742	-.00226	.26233
#2	-.00015	4.8672	-.00009	.00272	.00108	-.00462	.00551	.26815
#3	.00031	4.8430	.00105	.00974	-.00091	-.00602	.00431	.27049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115102 Acquired: 6/25/2016 16:39:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00036**	**.01171**	**-.00105**	**-.00167**	**.00048**	**.00111**	**-.00010**
Stddev	.00036	.00032	.00211	.00218	.00034	.00004	.00053
%RSD	98.761	2.7498	200.92	130.51	71.305	3.3481	503.34
#1	-.00064	.01138	-.00295	-.00411	.00028	.00107	-.00046
#2	-.00048	.01174	.00122	-.00099	.00029	.00113	.00050
#3	.00004	.01202	-.00143	.00009	.00088	.00113	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9924.7**	**60209.**	**3035.9**
Stddev	21.0	164.	13.4
%RSD	.21110	.27319	.44278
#1	9945.2	60212.	3050.8
#2	9925.5	60043.	3024.7
#3	9903.3	60372.	3032.1

Approved: June 27, 2016

Sample Name: L1606115105 Acquired: 6/25/2016 16:43:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00211	.00219	.00055	.00586	.00711	.00018	2.2105	.00001
Stddev	.00101	.00795	.00092	.00071	.00025	.00010	.0174	.00025
%RSD	47.839	363.29	167.06	12.119	3.4464	53.942	.78551	4197.7
#1	.00096	-.00697	.00162	.00634	.00685	.00013	2.1935	-.00020
#2	.00251	.00621	-.00001	.00619	.00715	.00012	2.2282	.00029
#3	.00286	.00732	.00005	.00504	.00733	.00030	2.2098	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	-.00001	.00002	.02737	.01189	.00109	1.3118	.00125
Stddev	.00029	.00051	.00146	.02301	.05921	.00366	.0639	.00239
%RSD	827.06	7244.7	6104.0	84.080	497.84	335.35	4.8727	191.19
#1	.00035	.00040	.00134	.00788	.02968	-.00236	1.3142	.00227
#2	-.00003	.00015	.00027	.02147	.06017	.00070	1.3745	.00297
#3	-.00022	-.00058	-.00154	.05276	-.05417	.00493	1.2467	-.00148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	6.1621	.00034	.00603	.00215	-.00121	.00114	.31741
Stddev	.00059	.0852	.00146	.00590	.00148	.00098	.00444	.00674
%RSD	252.32	1.3824	433.95	97.933	68.608	80.696	390.40	2.1227
#1	-.00086	6.0786	-.00133	.00455	.00384	-.00161	.00564	.31056
#2	-.00015	6.2489	.00098	.00101	.00153	-.00010	.00100	.31765
#3	.00031	6.1588	.00136	.01253	.00108	-.00192	-.00323	.32403
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115105 Acquired: 6/25/2016 16:43:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.01487**	**-.00053**	**-.00166**	**.00081**	**.00090**	**.00078**
Stddev	.00083	.00056	.00515	.00250	.00073	.00004	.00134
%RSD	533.32	3.7472	973.66	150.50	89.693	4.1812	172.14
#1	-.00110	.01433	.00470	-.00448	.00103	.00087	.00219
#2	.00015	.01545	-.00069	-.00074	.00000	.00094	.00064
#3	.00048	.01482	-.00560	.00025	.00141	.00089	-.00049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9886.5**	**59788.**	**3007.6**
Stddev	13.0	185.	33.5
%RSD	.13157	.30931	1.1137
#1	9901.4	60001.	3037.0
#2	9880.8	59677.	2971.1
#3	9877.4	59685.	3014.8

Approved: June 27, 2016

Sample Name: L1606115401 Acquired: 6/25/2016 16:47:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573707-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	.00056	-.00040	.08474	.00202	.00013	25.077	-.00002
Stddev	.00048	.01146	.00100	.00137	.00093	.00006	.183	.00004
%RSD	125.93	2038.5	249.32	1.6179	46.237	47.434	.73077	179.25
#1	-.00014	.00766	-.00156	.08632	.00308	.00006	25.288	-.00005
#2	.00079	.00669	.00017	.08409	.00131	.00017	24.966	-.00003
#3	.00048	-.01266	.00019	.08382	.00167	.00016	24.976	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	-.00049	.00090	.03824	.13932	.00586	5.7156	.01284
Stddev	.00012	.00049	.00033	.01141	.04539	.00340	.0899	.00260
%RSD	49.754	99.993	36.739	29.841	32.583	57.965	1.5726	20.218
#1	.00011	-.00085	.00123	.04902	.09367	.00206	5.7030	.01056
#2	.00028	-.00069	.00089	.02629	.18446	.00861	5.6327	.01230
#3	.00036	.00007	.00057	.03940	.13984	.00691	5.8112	.01567
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	48.626	-.00075	.01117	.00114	-.00491	.00349	.27480
Stddev	.00026	.111	.00066	.00745	.00133	.00248	.00272	.00312
%RSD	52.573	.22800	87.964	66.704	116.26	50.491	77.811	1.1358
#1	.00024	48.499	-.00062	.01513	.00176	-.00250	.00652	.27222
#2	.00075	48.707	-.00147	.01582	.00206	-.00745	.00269	.27392
#3	.00048	48.670	-.00016	.00258	-.00038	-.00478	.00127	.27827
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115401 Acquired: 6/25/2016 16:47:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573707-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.45176	-.00366	.00143	.00149	.00078	.00089
Stddev	.00028	.00268	.00362	.00047	.00058	.00004	.00106
%RSD	304.19	.59263	98.732	33.094	39.124	5.2122	119.26
#1	.00040	.44867	-.00000	.00088	.00209	.00083	-.00013
#2	-.00012	.45326	-.00375	.00168	.00093	.00076	.00081
#3	-.00001	.45335	-.00723	.00172	.00145	.00075	.00200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9797.1	59243.	3012.9
Stddev	17.5	107.	17.7
%RSD	.17826	.18036	.58631
#1	9776.9	59361.	2997.1
#2	9806.9	59214.	3009.7
#3	9807.4	59153.	3032.0

Approved: June 27, 2016

Sample Name: L1606115402S Acquired: 6/25/2016 16:51:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: ~~WG573994-~~04 WG573707-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01309**	**.25824**	**.01110**	**.13590**	**.02825**	**.00141**	**24.615**	**.00126**
Stddev	.00068	.00760	.00152	.00169	.00035	.00008	.204	.00013
%RSD	5.1924	2.9441	13.682	1.2425	1.2428	5.6800	.82995	10.655
#1	.01329	.24951	.01277	.13422	.02816	.00148	24.549	.00132
#2	.01365	.26341	.01072	.13589	.02864	.00133	24.844	.00111
#3	.01234	.26179	.00981	.13760	.02795	.00143	24.452	.00136
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00516**	**.01347**	**.01556**	**.12663**	**1.3534**	**.03179**	**5.7750**	**.02544**
Stddev	.00029	.00054	.00043	.02761	.0228	.00410	.0699	.00285
%RSD	5.6307	4.0382	2.7758	21.808	1.6862	12.889	1.2101	11.189
#1	.00539	.01407	.01514	.12414	1.3303	.03536	5.8428	.02774
#2	.00525	.01301	.01552	.15541	1.3541	.02732	5.7789	.02226
#3	.00483	.01334	.01600	.10034	1.3759	.03267	5.7032	.02633
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02479**	**48.072**	**.01332**	**.27819**	**.01575**	**.03066**	**.01661**	**.41681**
Stddev	.00011	.553	.00070	.01153	.00513	.00307	.00921	.00803
%RSD	.43243	1.1513	5.2238	4.1456	32.553	10.027	55.466	1.9271
#1	.02491	47.545	.01404	.27355	.01630	.02789	.02173	.40846
#2	.02475	48.649	.01266	.26969	.02058	.03397	.02212	.41747
#3	.02470	48.023	.01326	.29132	.01037	.03013	.00597	.42449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115402S Acquired: 6/25/2016 16:51:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: ~~WG573994-04~~ WG573707-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02366**	**.45706**	**.02085**	**.01353**	**.02750**	**.02826**	**.00274**
Stddev	.00062	.00423	.00301	.00109	.00044	.00035	.00077
%RSD	2.6070	.92537	14.446	8.0746	1.5967	1.2498	28.151
#1	.02338	.45248	.01904	.01478	.02755	.02786	.00198
#2	.02436	.46082	.01917	.01306	.02704	.02846	.00352
#3	.02323	.45789	.02432	.01275	.02792	.02848	.00271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9814.2**	**59172.**	**3008.6**
Stddev	14.0	133.	22.5
%RSD	.14277	.22528	.74717
#1	9829.8	59323.	3030.6
#2	9810.3	59073.	2985.6
#3	9802.6	59119.	3009.6

Approved: June 27, 2016

Sample Name: L1606115403SD Acquired: 6/25/2016 16:54:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: ~~WG573994-05~~ WG573707-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01239	.28748	.01145	.14150	.02764	.00148	24.958	.00130
Stddev	.00114	.00888	.00065	.00093	.00147	.00009	.077	.00038
%RSD	9.2124	3.0872	5.6507	.65421	5.3298	6.1781	.30772	29.306
#1	.01125	.28330	.01179	.14053	.02888	.00144	25.006	.00087
#2	.01353	.28146	.01070	.14159	.02802	.00141	24.999	.00161
#3	.01238	.29767	.01185	.14238	.02601	.00158	24.870	.00142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00611	.01431	.01527	.13086	1.3857	.03280	5.7817	.02287
Stddev	.00054	.00136	.00145	.01260	.0370	.00239	.0561	.00299
%RSD	8.8509	9.4861	9.4751	9.6283	2.6697	7.2716	.97114	13.075
#1	.00671	.01585	.01436	.14435	1.3780	.03556	5.7473	.02433
#2	.00566	.01329	.01452	.11939	1.4259	.03138	5.8465	.01943
#3	.00597	.01379	.01694	.12885	1.3532	.03147	5.7513	.02484
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02737	48.881	.01504	.29126	.01658	.02795	.01955	.43672
Stddev	.00021	.600	.00152	.00741	.00249	.00243	.00943	.00693
%RSD	.75532	1.2279	10.076	2.5426	15.013	8.6768	48.242	1.5861
#1	.02720	48.195	.01331	.29382	.01763	.03060	.01049	.42891
#2	.02732	49.311	.01567	.29705	.01373	.02742	.02931	.43914
#3	.02760	49.136	.01613	.28292	.01836	.02584	.01885	.44211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115403SD Acquired: 6/25/2016 16:54:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: ~~WG573994-05~~ WG573707-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02590	.47018	.02569	.01379	.02893	.02996	.00113
Stddev	.00080	.00475	.00439	.00029	.00110	.00076	.00027
%RSD	3.0868	1.0106	17.097	2.0910	3.8168	2.5433	23.745
#1	.02499	.46471	.02819	.01349	.02776	.02918	.00138
#2	.02647	.47252	.02061	.01406	.02908	.03000	.00115
#3	.02625	.47331	.02825	.01382	.02996	.03071	.00085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9727.4	58906.	3022.7
Stddev	40.6	23.	25.7
%RSD	.41767	.03969	.84864
#1	9765.9	58911.	3039.9
#2	9731.2	58926.	2993.2
#3	9685.0	58880.	3035.0

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 16:58:48 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41361	10.445	.40516	.50612	1.0259	.05224	10.203
Stddev	.00260	.021	.00144	.00287	.0033	.00020	.046
%RSD	.62922	.20256	.35469	.56757	.31739	.38953	.44884
#1	.41655	10.462	.40524	.50908	1.0271	.05242	10.224
#2	.41159	10.421	.40656	.50592	1.0284	.05202	10.235
#3	.41269	10.451	.40369	.50335	1.0222	.05229	10.150
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05215	.20471	.51698	.52477	4.0648	49.423	1.0320
Stddev	.00013	.00021	.00148	.00103	.0369	.189	.0006
%RSD	.23994	.10391	.28587	.19687	.90838	.38306	.06170
#1	.05201	.20470	.51640	.52461	4.1007	49.428	1.0316
#2	.05218	.20450	.51865	.52588	4.0269	49.610	1.0327
#3	.05226	.20492	.51587	.52383	4.0668	49.231	1.0316
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.8590	.51551	1.0404	50.331	.51945	10.229	.51430
Stddev	.0965	.00144	.0039	.173	.00106	.010	.00570
%RSD	.97927	.27876	.37864	.34422	.20472	.09385	1.1081
#1	9.9705	.51433	1.0396	50.428	.51822	10.232	.51032
#2	9.8060	.51711	1.0369	50.435	.52013	10.218	.51175
#3	9.8006	.51508	1.0447	50.131	.51999	10.236	.52083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 16:58:48 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2288	.41352	5.2624	1.0315	1.0269	1.0279	.53017
Stddev	.0104	.00168	.0015	.0026	.0016	.0023	.00514
%RSD	.84208	.40618	.02811	.25583	.15527	.22255	.96993
#1	1.2288	.41198	5.2628	1.0285	1.0283	1.0298	.53564
#2	1.2391	.41326	5.2608	1.0336	1.0273	1.0286	.52543
#3	1.2184	.41531	5.2637	1.0323	1.0252	1.0254	.52943
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0564	1.0308	F 3.0180
Stddev	.0015	.0001	.0119
%RSD	.14240	.01349	.39369
#1	1.0580	1.0307	3.0121
#2	1.0561	1.0310	3.0317
#3	1.0550	1.0308	3.0102
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9528.1	57486.	2960.8
Stddev	9.3	201.	17.3
%RSD	.09776	.34979	.58425
#1	9517.6	57273.	2962.9
#2	9535.3	57514.	2942.6
#3	9531.5	57672.	2977.0

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 17:02:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00045**	**.00226**	**.00067**	**.00055**	**.00185**	**.00013**	**-.07167**	**-.00014**
Stddev	.00085	.00279	.00119	.00264	.00042	.00005	.02175	.00033
%RSD	189.88	123.24	177.00	483.17	22.573	35.869	30.346	234.73
#1	.00019	-.00053	.00152	-.00019	.00233	.00018	-.09322	-.00050
#2	-.00141	.00505	-.00069	-.00165	.00153	.00012	-.04973	.00014
#3	-.00012	.00226	.00119	.00348	.00171	.00009	-.07206	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.00057**	**.00076**	**.03056**	**-.09613**	**.00228**	**-.13259**	**.00051**
Stddev	.00039	.00056	.00130	.01338	.02053	.00471	.02062	.00136
%RSD	1720.9	98.019	170.60	43.800	21.361	206.77	15.553	268.18
#1	.00020	.00017	-.00074	.01806	-.09726	-.00131	-.14855	-.00092
#2	.00020	.00121	.00148	.02892	-.07505	.00054	-.10931	.00179
#3	-.00047	.00034	.00155	.04468	-.11607	.00761	-.13993	.00066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00325**	**.04047**	**-.00081**	**.00150**	**.00148**	**.00530**	**.00256**	**-.00673**
Stddev	.00022	.01175	.00096	.00183	.00289	.00260	.00237	.00167
%RSD	6.7467	29.033	119.00	121.89	195.62	48.929	92.639	24.783
#1	.00325	.05342	-.00016	.00278	.00470	.00570	.00309	-.00596
#2	.00303	.03049	-.00036	.00231	.00063	.00768	-.00003	-.00558
#3	.00347	.03751	-.00192	-.00059	-.00090	.00253	.00461	-.00864
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 17:02:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**.00044**	**.00426**	**-.00209**	**.00094**	**.00001**	**.00353**
Stddev	.00052	.00045	.00463	.00321	.00096	.00021	.00070
%RSD	128.76	102.93	108.80	153.83	102.68	1611.6	19.702
#1	.00048	.00069	.00959	-.00418	.00024	-.00012	.00320
#2	.00089	.00071	.00120	.00161	.00204	-.00009	.00306
#3	-.00015	-.00008	.00198	-.00369	.00053	.00025	.00433
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9729.2**	**58924.**	**2982.2**
Stddev	14.1	124.	20.8
%RSD	.14444	.21107	.69802
#1	9725.0	58912.	2962.2
#2	9744.9	58806.	3003.8
#3	9717.8	59054.	2980.7

Approved: June 27, 2016

Sample Name: L1606115501 Acquired: 6/25/2016 17:06:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00033**	**.00180**	**.00125**	**.01161**	**.01032**	**.00011**	**2.3136**	**-.00007**
Stddev	.00230	.00043	.00160	.00137	.00099	.00007	.0269	.00019
%RSD	694.54	23.757	128.16	11.776	9.5715	61.393	1.1630	281.96
#1	.00225	.00218	.00194	.01272	.00925	.00003	2.3397	.00009
#2	-.00214	.00134	.00239	.01008	.01120	.00016	2.2860	-.00001
#3	-.00111	.00188	-.00058	.01203	.01051	.00015	2.3151	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.00014**	**-.00018**	**.02935**	**.09569**	**-.00047**	**1.4383**	**.08572**
Stddev	.00040	.00048	.00052	.00252	.08702	.00314	.0635	.00277
%RSD	831.42	341.03	289.17	8.5796	90.931	664.03	4.4136	3.2299
#1	.00005	.00069	-.00054	.02667	.18563	.00276	1.4626	.08626
#2	.00029	-.00017	.00042	.03166	.01192	-.00066	1.4861	.08273
#3	-.00048	-.00010	-.00042	.02972	.08953	-.00352	1.3663	.08818
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00023**	**3.8750**	**.00064**	**.00454**	**.00264**	**-.00168**	**.00429**	**.37174**
Stddev	.00028	.0249	.00026	.00324	.00293	.00204	.00272	.00091
%RSD	124.52	.64140	39.830	71.430	111.04	121.37	63.452	.24386
#1	-.00008	3.8959	.00063	.00081	.00037	-.00400	.00736	.37278
#2	.00028	3.8475	.00040	.00665	.00594	-.00087	.00338	.37129
#3	.00048	3.8816	.00091	.00616	.00160	-.00017	.00214	.37115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115501 Acquired: 6/25/2016 17:06:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.01613**	**.00436**	**.00049**	**-.00004**	**.00087**	**.00142**
Stddev	.00092	.00051	.00120	.00199	.00066	.00012	.00191
%RSD	2230.2	3.1791	27.456	410.68	1766.6	13.339	134.89
#1	.00087	.01607	.00571	.00178	-.00027	.00083	.00247
#2	-.00002	.01565	.00341	-.00181	.00071	.00100	-.00079
#3	-.00097	.01667	.00397	.00149	-.00055	.00078	.00257
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9938.9**	**60110.**	**3041.6**
Stddev	14.3	99.	8.4
%RSD	.14384	.16440	.27454
#1	9922.4	60057.	3050.1
#2	9946.9	60224.	3033.5
#3	9947.4	60049.	3041.2

Approved: June 27, 2016

Sample Name: L1606115502 Acquired: 6/25/2016 17:10:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00066**	**-.00453**	**-.00033**	**.00989**	**.01794**	**.00013**	**2.4889**	**.00011**
Stddev	.00144	.01600	.00099	.00264	.00078	.00009	.0280	.00014
%RSD	216.56	353.18	295.78	26.673	4.3403	71.235	1.1261	129.84
#1	.00231	.00655	-.00001	.00702	.01871	.00024	2.4937	.00027
#2	.00001	-.02287	-.00144	.01220	.01715	.00010	2.5143	-.00000
#3	-.00033	.00273	.00045	.01047	.01798	.00006	2.4588	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**-.00044**	**.00104**	**.24605**	**-.07520**	**-.00217**	**1.6643**	**.02363**
Stddev	.00022	.00012	.00019	.01179	.12175	.00286	.0624	.00224
%RSD	272.66	27.286	18.718	4.7938	161.89	131.42	3.7522	9.4751
#1	.00027	-.00041	.00090	.23638	.00559	-.00035	1.5996	.02553
#2	.00015	-.00033	.00126	.24256	-.01597	-.00070	1.6689	.02116
#3	-.00017	-.00057	.00095	.25919	-.21524	-.00546	1.7243	.02420
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00021**	**2.8989**	**.00016**	**.00365**	**.00260**	**-.00217**	**.00870**	**.42450**
Stddev	.00065	.0101	.00120	.00396	.00147	.00150	.00507	.00601
%RSD	314.77	.35003	759.93	108.45	56.477	68.876	58.304	1.4160
#1	-.00082	2.8946	-.00099	.00772	.00422	-.00382	.01102	.41775
#2	-.00027	2.9105	.00140	-.00019	.00221	-.00091	.01219	.42650
#3	.00047	2.8917	.00006	.00342	.00137	-.00178	.00288	.42926
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115502 Acquired: 6/25/2016 17:10:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00038**	**.02139**	**.00454**	**-.00050**	**.00021**	**.00050**	**.00118**
Stddev	.00016	.00022	.00843	.00114	.00027	.00017	.00137
%RSD	41.986	1.0329	185.67	229.51	129.67	34.277	116.06
#1	.00030	.02116	.00016	.00076	.00041	.00055	-.00040
#2	.00027	.02139	.01426	-.00146	.00031	.00031	.00208
#3	.00056	.02161	-.00080	-.00078	-.00010	.00064	.00187
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9945.8**	**60248.**	**3055.3**
Stddev	9.2	94.	11.4
%RSD	.09217	.15541	.37444
#1	9945.9	60314.	3061.2
#2	9954.9	60289.	3042.1
#3	9936.5	60141.	3062.6

Approved: June 27, 2016

Sample Name: L1606115503 Acquired: 6/25/2016 17:14:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00200	-.00135	-.00104	.00757	.00737	.00014	2.3997	-.00010
Stddev	.00192	.00661	.00046	.00116	.00061	.00003	.0309	.00022
%RSD	96.141	489.89	44.488	15.290	8.2167	21.217	1.2897	218.06
#1	.00406	-.00575	-.00051	.00624	.00716	.00012	2.3659	-.00020
#2	.00025	-.00456	-.00131	.00835	.00689	.00017	2.4268	-.00025
#3	.00170	.00625	-.00131	.00813	.00805	.00012	2.4063	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	-.00044	-.00019	.10432	-.04481	.00004	.91519	.02191
Stddev	.00035	.00082	.00101	.01415	.09851	.00279	.09371	.00121
%RSD	3296.1	188.98	541.26	13.565	219.83	6329.0	10.240	5.5295
#1	-.00033	.00027	.00027	.10406	-.13456	.00163	.99135	.02326
#2	-.00007	-.00023	-.00134	.09030	-.06048	.00168	.94369	.02093
#3	.00037	-.00134	.00052	.11860	.06059	-.00317	.81054	.02153
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	2.4900	.00017	.00956	.00115	-.00111	.00305	.32330
Stddev	.00005	.0408	.00057	.00296	.00162	.00041	.00349	.00479
%RSD	56.574	1.6398	345.24	30.912	140.85	37.279	114.64	1.4819
#1	-.00011	2.4429	.00078	.00752	.00187	-.00066	-.00055	.31801
#2	-.00013	2.5161	.00008	.00822	-.00070	-.00119	.00642	.32454
#3	-.00003	2.5109	-.00036	.01295	.00229	-.00148	.00327	.32735
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115503 Acquired: 6/25/2016 17:14:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.01387	.00305	-.00065	.00052	.00084	.00071
Stddev	.00081	.00016	.00789	.00174	.00073	.00004	.00140
%RSD	953.07	1.1448	258.94	265.86	139.13	5.0666	198.28
#1	-.00013	.01403	.00198	-.00023	.00032	.00082	.00133
#2	-.00088	.01386	-.00426	.00083	-.00008	.00082	.00169
#3	.00075	.01371	.01142	-.00257	.00133	.00089	-.00090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9910.7	60184.	3019.4
Stddev	10.3	175.	9.0
%RSD	.10381	.29035	.29953
#1	9910.7	60334.	3026.1
#2	9921.0	60225.	3023.1
#3	9900.4	59992.	3009.1

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 17:18:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41531**	**10.447**	**.40916**	**.50533**	**1.0238**	**.05217**	**10.225**
Stddev	.00091	.032	.00132	.00054	.0034	.00011	.030
%RSD	.21998	.31066	.32348	.10618	.32870	.20293	.29201
#1	.41613	10.474	.41061	.50566	1.0229	.05229	10.191
#2	.41432	10.411	.40886	.50561	1.0276	.05213	10.247
#3	.41546	10.455	.40801	.50471	1.0211	.05209	10.235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05225**	**.20370**	**.51712**	**.52549**	**4.0444**	**49.392**	**1.0301**
Stddev	.00031	.00034	.00175	.00197	.0184	.117	.0048
%RSD	.59442	.16603	.33927	.37570	.45604	.23752	.46659
#1	.05229	.20396	.51906	.52418	4.0394	49.465	1.0330
#2	.05254	.20382	.51666	.52776	4.0648	49.455	1.0327
#3	.05192	.20332	.51564	.52452	4.0290	49.257	1.0245
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.7951**	**.51327**	**1.0423**	**50.236**	**.51912**	**10.208**	**.51997**
Stddev	.0472	.00504	.0084	.169	.00170	.017	.00372
%RSD	.48165	.98200	.80990	.33677	.32826	.16636	.71476
#1	9.7523	.51223	1.0511	50.262	.52046	10.219	.52035
#2	9.7875	.51875	1.0343	50.391	.51968	10.189	.51607
#3	9.8457	.50883	1.0415	50.056	.51720	10.217	.52348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 17:18:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2238**	**.40709**	**5.2468**	**1.0260**	**1.0230**	**1.0304**	**.52875**
Stddev	.0084	.00511	.0098	.0012	.0023	.0127	.00327
%RSD	.68659	1.2545	.18586	.11540	.22459	1.2311	.61859
#1	1.2260	.40344	5.2580	1.0271	1.0231	1.0165	.53252
#2	1.2308	.40491	5.2428	1.0262	1.0252	1.0415	.52673
#3	1.2145	.41292	5.2398	1.0248	1.0206	1.0331	.52699
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0570**	**1.0310**	F **3.0075**
Stddev	.0056	.0001	.0207
%RSD	.53103	.00939	.68856
#1	1.0633	1.0311	3.0004
#2	1.0553	1.0309	3.0308
#3	1.0525	1.0310	2.9913
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9557.2**	**57623.**	**2979.5**
Stddev	9.7	193.	16.3
%RSD	.10109	.33465	.54600
#1	9546.7	57405.	2979.8
#2	9565.7	57771.	2963.0
#3	9559.4	57693.	2995.6

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 17:21:42 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**-.00563**	**.00200**	**-.00100**	**.00189**	**.00009**	**-.01127**	**-.00004**
Stddev	.00104	.00334	.00233	.00184	.00120	.00004	.03123	.00010
%RSD	1246.5	59.297	116.54	184.11	63.245	40.940	277.20	226.69
#1	-.00074	-.00335	.00466	-.00138	.00302	.00011	-.03377	.00004
#2	-.00027	-.00407	.00108	-.00263	.00202	.00005	.02439	-.00015
#3	.00126	-.00946	.00027	.00100	.00064	.00010	-.02442	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**.00048**	**.00089**	**.00955**	**-.03243**	**.00071**	**-.01124**	**-.00013**
Stddev	.00017	.00075	.00043	.01226	.03763	.00268	.07316	.00129
%RSD	103.61	157.05	48.720	128.38	116.03	378.57	650.98	975.30
#1	.00002	.00095	.00059	-.00410	-.06003	-.00175	-.02665	-.00039
#2	.00035	.00087	.00069	.01962	.01043	.00031	-.07547	-.00128
#3	.00012	-.00039	.00138	.01314	-.04771	.00356	.06840	.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00323**	**.02898**	**-.00046**	**.00432**	**.00328**	**.00454**	**.00410**	**-.00425**
Stddev	.00029	.02008	.00095	.00359	.00221	.00123	.00133	.00064
%RSD	9.1168	69.292	208.78	82.910	67.490	26.995	32.528	15.135
#1	.00298	.02490	-.00038	.00845	.00352	.00323	.00275	-.00470
#2	.00356	.01126	-.00144	.00261	.00095	.00566	.00541	-.00351
#3	.00316	.05079	.00046	.00192	.00536	.00474	.00413	-.00454
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 17:21:42 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	.00021	.00375	-.00110	.00108	-.00009	.00393
Stddev	.00059	.00011	.00446	.00333	.00027	.00003	.00087
%RSD	86.694	51.296	119.05	302.86	25.045	36.058	22.188
#1	.00135	.00012	.00567	.00135	.00136	-.00006	.00491
#2	.00024	.00018	-.00135	.00024	.00107	-.00012	.00363
#3	.00044	.00033	.00692	-.00489	.00082	-.00008	.00324
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9706.7	59138.	3007.6
Stddev	9.6	122.	14.5
%RSD	.09901	.20648	.48341
#1	9697.1	58997.	2992.2
#2	9716.3	59217.	3009.4
#3	9706.6	59200.	3021.1

Approved: June 27, 2016

Sample Name: LLCCV Acquired: 6/25/2016 17:25:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00682	.16326	.00787	.08110	.01015	.00172	.37504	.00080
Stddev	.00230	.01176	.00393	.00058	.00060	.00002	.03274	.00014
%RSD	33.789	7.2031	49.909	.72089	5.8834	1.2548	8.7301	17.457
#1	.00456	.16635	.01239	.08173	.01084	.00173	.33805	.00070
#2	.00916	.17317	.00587	.08058	.00985	.00173	.40031	.00075
#3	.00674	.15026	.00534	.08099	.00976	.00169	.38675	.00096
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00446	.00390	.00484	.09497	.71355	.08241	.33888	.00741
Stddev	.00036	.00087	.00066	.01610	.00812	.00379	.00870	.00176
%RSD	8.1660	22.291	13.622	16.951	1.1379	4.5949	2.5673	23.707
#1	.00488	.00490	.00494	.08463	.70937	.08497	.33660	.00920
#2	.00426	.00332	.00413	.08675	.70838	.08419	.34850	.00734
#3	.00424	.00348	.00544	.11352	.72291	.07806	.33155	.00569
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00855	.40833	.01678	.78916	.01199	.08269	.02089	.77549
Stddev	.00007	.02661	.00076	.00972	.00016	.00111	.00270	.00482
%RSD	.82014	6.5175	4.5074	1.2317	1.3733	1.3390	12.938	.62171
#1	.00856	.42291	.01686	.80033	.01215	.08397	.01985	.78057
#2	.00847	.42447	.01749	.78261	.01182	.08216	.01886	.77494
#3	.00861	.37762	.01598	.78454	.01200	.08195	.02396	.77097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LLCCV Acquired: 6/25/2016 17:25:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40481**	**.04214**	**.02257**	**.15413**	**.00994**	**.01699**	**.13476**
Stddev	.00262	.00003	.00404	.00144	.00108	.00007	.00396
%RSD	.64734	.07891	17.895	.93373	10.832	.40613	2.9378
#1	.40763	.04217	.02259	.15502	.01117	.01705	.13268
#2	.40435	.04210	.02661	.15491	.00942	.01692	.13226
#3	.40245	.04214	.01853	.15247	.00922	.01700	.13932
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9757.6**	**59331.**	**3007.6**
Stddev	3.7	156.	34.2
%RSD	.03744	.26375	1.1357
#1	9754.3	59400.	3008.1
#2	9757.0	59152.	3041.5
#3	9761.5	59441.	2973.2

Approved: June 27, 2016

Sample Name: PBW Y5 Acquired: 6/25/2016 17:29:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00185	.00116	-.00112	-.00084	.00120	.00011	-.01961	-.00006
Stddev	.00045	.01041	.00198	.00240	.00080	.00010	.05200	.00016
%RSD	24.231	897.41	176.31	284.10	67.234	89.198	265.17	288.76
#1	.00153	-.00604	-.00020	.00070	.00046	.00020	.01383	-.00024
#2	.00236	-.00358	.00023	-.00360	.00107	.00014	-.07952	.00007
#3	.00166	.01310	-.00339	.00037	.00206	.00000	.00686	.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	-.00018	.00105	.03412	-.07407	.00236	.02694	.00162
Stddev	.00024	.00064	.00070	.02542	.08098	.00211	.02742	.00224
%RSD	248.33	362.92	67.168	74.514	109.32	89.477	101.81	137.94
#1	.00030	-.00083	.00024	.00498	-.16192	.00417	.01237	.00092
#2	.00016	-.00014	.00146	.05181	-.05788	.00285	.00987	.00413
#3	-.00017	.00044	.00145	.04557	-.00242	.00004	.05857	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	.01025	-.00077	.00507	.00386	-.00192	-.00109	.00437
Stddev	.00004	.01479	.00185	.00580	.00053	.00084	.00245	.00068
%RSD	28.058	144.27	239.74	114.27	13.817	43.798	224.68	15.497
#1	-.00010	.02026	-.00256	.00797	.00348	-.00273	.00112	.00408
#2	-.00015	-.00674	.00113	.00885	.00447	-.00198	-.00067	.00389
#3	-.00017	.01724	-.00088	-.00160	.00363	-.00105	-.00372	.00515
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: PBW Y5 Acquired: 6/25/2016 17:29:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	.00044	.00538	-.00184	.00071	.00062	.00198
Stddev	.00057	.00040	.00350	.00250	.00039	.00016	.00115
%RSD	73.146	89.773	65.128	135.94	54.397	26.345	58.223
#1	.00143	.00035	.00942	-.00427	.00062	.00079	.00279
#2	.00040	.00088	.00331	.00073	.00114	.00048	.00066
#3	.00049	.00010	.00340	-.00198	.00038	.00058	.00249
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9880.3	60109.	3027.1
Stddev	31.5	73.	6.6
%RSD	.31885	.12179	.21761
#1	9847.3	60149.	3030.6
#2	9910.1	60154.	3019.5
#3	9883.5	60025.	3031.2

Approved: June 27, 2016

Sample Name: LCSW Y5 Acquired: 6/25/2016 17:33:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18967**	**4.7620**	**.18828**	**.90013**	**.47555**	**.02395**	**4.7950**	**.02373**
Stddev	.00250	.0081	.00104	.00471	.00273	.00006	.0213	.00018
%RSD	1.3192	.17078	.55148	.52284	.57347	.24848	.44480	.74408
#1	.18907	4.7578	.18718	.89893	.47827	.02388	4.7819	.02392
#2	.19242	4.7714	.18841	.90532	.47282	.02399	4.8196	.02370
#3	.18753	4.7569	.18924	.89614	.47557	.02397	4.7835	.02357
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09489**	**.23803**	**.24292**	**1.9123**	**22.817**	**.48875**	**4.5669**	**.24181**
Stddev	.00039	.00120	.00156	.0298	.036	.00284	.0465	.00007
%RSD	.41346	.50457	.64104	1.5597	.15629	.58110	1.0173	.02751
#1	.09520	.23794	.24291	1.9317	22.780	.48603	4.5750	.24188
#2	.09501	.23927	.24447	1.8779	22.852	.49170	4.5170	.24174
#3	.09445	.23687	.24136	1.9272	22.818	.48851	4.6088	.24180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49027**	**23.490**	**.24091**	**4.5553**	**.24063**	**.56646**	**.18382**	**2.3525**
Stddev	.00145	.113	.00040	.0084	.00352	.00190	.00239	.0014
%RSD	.29550	.48187	.16805	.18553	1.4632	.33509	1.2995	.06062
#1	.48963	23.608	.24065	4.5528	.24014	.56531	.18109	2.3541
#2	.49193	23.382	.24137	4.5647	.24437	.56542	.18555	2.3519
#3	.48925	23.480	.24069	4.5484	.23738	.56865	.18482	2.3515
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LCSW Y5 Acquired: 6/25/2016 17:33:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47085**	**.48454**	**.47923**	**.24546**	**.48968**	**.47202**	**.01198**
Stddev	.00082	.00070	.00116	.00117	.00078	.00042	.00247
%RSD	.17390	.14504	.24256	.47677	.15993	.08855	20.639
#1	.47170	.48509	.47789	.24652	.48877	.47178	.00945
#2	.47079	.48375	.47984	.24421	.49011	.47251	.01208
#3	.47006	.48479	.47995	.24566	.49015	.47178	.01439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9888.6**	**60001.**	**3090.1**
Stddev	19.1	149.	26.5
%RSD	.19299	.24892	.85667
#1	9894.9	60052.	3063.1
#2	9867.1	59834.	3091.3
#3	9903.7	60119.	3116.0

Approved: June 27, 2016

Sample Name: F BLANK Acquired: 6/25/2016 17:37:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00166	-.00148	.00090	.00227	.00163	.00011	-.00468	.00008
Stddev	.00130	.00490	.00188	.00068	.00037	.00003	.02546	.00022
%RSD	78.305	330.55	208.29	29.974	22.968	25.204	544.18	269.24
#1	.00033	-.00239	.00275	.00286	.00197	.00009	-.03398	.00015
#2	.00173	.00381	-.00100	.00243	.00123	.00014	.01206	.00026
#3	.00293	-.00586	.00096	.00153	.00167	.00010	.00788	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.00058	.00129	.04476	.01060	-.00161	-.05710	.00063
Stddev	.00029	.00122	.00029	.02153	.02075	.00622	.06303	.00318
%RSD	276.09	211.55	22.793	48.099	195.81	387.03	110.39	502.59
#1	-.00039	.00184	.00121	.03412	-.00619	.00062	-.09553	.00029
#2	.00018	-.00059	.00161	.06953	.03381	.00319	-.09140	.00397
#3	-.00010	.00048	.00104	.03061	.00418	-.00863	.01564	-.00236
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.05677	-.00011	.00316	.00576	-.00381	.00560	-.00010
Stddev	.00040	.03222	.00050	.00162	.00079	.00329	.00231	.00141
%RSD	72.047	56.761	453.37	51.247	13.705	86.399	41.256	1388.8
#1	.00085	.07680	-.00069	.00292	.00611	-.00013	.00434	-.00092
#2	.00073	.01960	.00014	.00168	.00631	-.00483	.00420	-.00091
#3	.00010	.07391	.00021	.00489	.00485	-.00647	.00827	.00153
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: F BLANK Acquired: 6/25/2016 17:37:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.00021	-.00396	-.00081	.00112	.00164	.00166
Stddev	.00084	.00011	.00377	.00288	.00053	.00013	.00011
%RSD	1212.1	52.839	95.183	357.63	47.087	8.1028	6.9152
#1	-.00082	.00025	-.00813	-.00413	.00144	.00151	.00159
#2	.00085	.00029	-.00300	.00065	.00141	.00165	.00179
#3	.00018	.00008	-.00077	.00106	.00051	.00177	.00159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10015.	61314.	3090.8
Stddev	16.	177.	23.0
%RSD	.15522	.28891	.74279
#1	10012.	61143.	3064.6
#2	10032.	61303.	3107.1
#3	10001.	61497.	3100.8

Approved: June 27, 2016

Sample Name: L1606098602 Acquired: 6/25/2016 17:41:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	-.00042	-.00040	.09099	.02315	.00010	31.081	-.00006
Stddev	.00141	.00402	.00168	.00026	.00060	.00002	.292	.00002
%RSD	160.55	951.46	416.45	.28845	2.5949	20.817	.93935	37.551
#1	.00197	.00339	-.00222	.09093	.02306	.00008	31.173	-.00006
#2	-.00072	-.00463	.00109	.09127	.02259	.00012	30.754	-.00004
#3	.00139	-.00003	-.00008	.09076	.02379	.00010	31.315	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.00059	.00094	.04555	.98402	.01199	5.7014	.03480
Stddev	.00048	.00016	.00041	.01573	.08850	.00357	.0718	.00212
%RSD	197.55	26.299	43.232	34.544	8.9935	29.756	1.2595	6.0810
#1	.00072	.00042	.00054	.02747	.88485	.01459	5.6202	.03718
#2	-.00024	.00064	.00135	.05303	1.0122	.01345	5.7566	.03314
#3	.00026	.00072	.00092	.05614	1.0550	.00792	5.7274	.03406
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00142	119.95	.00080	.00488	.00205	-.00278	-.00166	3.2347
Stddev	.00007	.78	.00132	.00386	.00179	.00227	.00673	.0109
%RSD	4.5853	.65032	165.26	79.044	87.096	81.844	406.14	.33815
#1	.00137	120.20	.00201	.00062	.00137	-.00037	-.00009	3.2461
#2	.00149	119.07	.00100	.00813	.00409	-.00489	.00415	3.2336
#3	.00140	120.57	-.00061	.00590	.00071	-.00307	-.00903	3.2243
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098602 Acquired: 6/25/2016 17:41:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00169	.54147	-.00161	-.00445	.00062	.00187	.00166
Stddev	.00060	.00457	.00418	.00188	.00027	.00011	.00091
%RSD	35.360	.84355	259.35	42.200	43.191	5.8148	54.635
#1	.00106	.54395	-.00040	-.00269	.00035	.00198	.00205
#2	.00225	.53620	.00182	-.00642	.00063	.00186	.00062
#3	.00175	.54425	-.00626	-.00422	.00089	.00176	.00230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9793.0	59457.	3063.6
Stddev	12.2	310.	25.9
%RSD	.12488	.52191	.84399
#1	9783.4	59142.	3057.4
#2	9788.8	59467.	3092.0
#3	9806.7	59762.	3041.4

Approved: June 27, 2016

Sample Name: L1606098604 Acquired: 6/25/2016 17:45:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00188**	**.00192**	**.00240**	**.01933**	**.01606**	**.00017**	**258.27**
Stddev	.00168	.00663	.00025	.00142	.00064	.00002	.74
%RSD	89.608	344.23	10.527	7.3208	4.0034	12.550	.28551
#1	.00265	-.00052	.00267	.01828	.01569	.00019	258.08
#2	.00303	-.00313	.00217	.01877	.01568	.00016	257.65
#3	-.00005	.00943	.00237	.02094	.01680	.00015	259.09
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00045**	**.00038**	**.00085**	**.01097**	**.02808**	**1.7243**	**.01739**
Stddev	.00023	.00042	.00027	.00107	.01426	.0758	.00077
%RSD	50.915	110.30	31.401	9.7605	50.795	4.3949	4.4280
#1	.00057	.00083	.00065	.01199	.02723	1.7078	.01656
#2	.00019	.00033	.00115	.00986	.01426	1.6581	.01808
#3	.00061	-.00001	.00075	.01107	.04275	1.8069	.01753
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**67.436**	**1.3917**	**.00099**	**14.380**	**.00387**	**.00116**	**.00177**
Stddev	.211	.0043	.00004	.031	.00051	.00485	.00143
%RSD	.31235	.30797	4.3492	.21337	13.178	419.65	80.619
#1	67.195	1.3899	.00099	14.411	.00414	.00253	.00287
#2	67.533	1.3886	.00103	14.350	.00328	-.00423	.00229
#3	67.581	1.3966	.00095	14.377	.00419	.00517	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 27, 2016

Sample Name: L1606098604 Acquired: 6/25/2016 17:45:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00130**	**.00146**	**3.7576**	**.00044**	**1.2471**	F **-.03982**	**-.00203**
Stddev	.00495	.00434	.0110	.00062	.0034	.00406	.00082
%RSD	381.66	297.39	.29276	142.20	.26857	10.186	40.503
#1	-.00325	.00313	3.7635	.00113	1.2483	-.04298	-.00122
#2	.00433	.00472	3.7644	.00025	1.2433	-.03524	-.00200
#3	-.00498	-.00347	3.7449	-.00007	1.2496	-.04122	-.00286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00050**	**.03051**	**.00151**
Stddev	.00029	.00016	.00074
%RSD	57.554	.53953	48.929
#1	-.00084	.03044	.00164
#2	-.00033	.03070	.00216
#3	-.00034	.03040	.00071
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9610.5**	**58897.**	**3044.6**
Stddev	3.8	97.	5.6
%RSD	.03917	.16551	.18408
#1	9614.6	58944.	3043.4
#2	9607.2	58961.	3050.7
#3	9609.7	58785.	3039.7

Approved: June 27, 2016

Sample Name: L1606098606 Acquired: 6/25/2016 17:48:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00223	.00972	-.00038	.01373	.06613	.00026	77.440	.00018
Stddev	.00105	.00309	.00132	.00205	.00021	.00009	.075	.00021
%RSD	47.129	31.833	346.72	14.955	.32162	33.087	.09643	116.74
#1	.00235	.00691	-.00086	.01602	.06623	.00027	77.417	.00042
#2	.00112	.00920	-.00139	.01205	.06589	.00034	77.379	.00001
#3	.00321	.01303	.00111	.01311	.06628	.00017	77.523	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00039	.00108	.01311	.03469	1.0666	.00528	22.814	.00226
Stddev	.00015	.00032	.00053	.01962	.0266	.00092	.288	.00095
%RSD	37.987	29.419	4.0055	56.546	2.4929	17.478	1.2638	41.753
#1	.00056	.00082	.01330	.03776	1.0701	.00541	22.650	.00309
#2	.00027	.00143	.01252	.05259	1.0384	.00430	22.645	.00123
#3	.00036	.00097	.01352	.01372	1.0912	.00613	23.147	.00247
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	16.230	.00086	.01073	.00099	-.00405	.00160	2.3863
Stddev	.00023	.056	.00046	.00069	.00181	.00317	.00143	.0169
%RSD	59.834	.34372	53.276	6.4188	182.38	78.406	89.367	.70593
#1	.00032	16.197	.00073	.01029	.00246	-.00129	-.00004	2.4028
#2	.00063	16.198	.00137	.01153	-.00103	-.00752	.00258	2.3871
#3	.00019	16.294	.00048	.01038	.00155	-.00333	.00227	2.3691
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098606 Acquired: 6/25/2016 17:48:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00004**	**.39726**	**-.00928**	**-.00135**	**-.00044**	**.03812**	**.00202**
Stddev	.00081	.00077	.00327	.00251	.00044	.00033	.00118
%RSD	1967.6	.19375	35.277	185.96	101.24	.85896	58.324
#1	.00088	.39645	-.00551	-.00111	-.00048	.03844	.00108
#2	-.00002	.39799	-.01103	.00103	.00002	.03814	.00334
#3	-.00074	.39735	-.01131	-.00397	-.00086	.03779	.00164
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9875.4**	**60112.**	**3085.9**
Stddev	17.7	60.	4.4
%RSD	.17969	.09972	.14239
#1	9863.6	60084.	3084.9
#2	9866.7	60181.	3090.7
#3	9895.8	60072.	3082.1

Approved: June 27, 2016

Sample Name: L1606098608 Acquired: 6/25/2016 17:52:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.00115	.00027	.01585	.03262	.00011	84.217	.00013
Stddev	.00235	.00513	.00111	.00136	.00141	.00004	.314	.00017
%RSD	2475.5	446.86	409.02	8.5842	4.3250	37.715	.37277	125.68
#1	-.00262	.00404	-.00099	.01740	.03376	.00010	84.484	.00019
#2	.00142	-.00477	.00110	.01531	.03104	.00016	84.297	.00026
#3	.00149	.00417	.00071	.01485	.03305	.00008	83.871	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	.00177	.00567	.03434	1.2401	.01415	23.228	.02727
Stddev	.00046	.00068	.00058	.01787	.0425	.00095	.227	.00106
%RSD	299.90	38.444	10.195	52.028	3.4256	6.6956	.97712	3.8827
#1	-.00049	.00241	.00506	.05413	1.2665	.01352	23.122	.02850
#2	.00037	.00184	.00573	.01939	1.1911	.01369	23.489	.02663
#3	-.00034	.00105	.00621	.02950	1.2628	.01524	23.073	.02669
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	12.660	.00033	.00413	.00179	-.00334	-.00002	3.4869
Stddev	.00017	.055	.00044	.00392	.00093	.00378	.00639	.0225
%RSD	23.632	.43231	134.67	94.801	51.837	113.14	36088.	.64396
#1	.00093	12.716	.00084	.00852	.00134	-.00400	-.00400	3.4968
#2	.00069	12.657	.00002	.00099	.00117	-.00675	-.00341	3.5027
#3	.00059	12.607	.00013	.00288	.00285	.00073	.00736	3.4612
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098608 Acquired: 6/25/2016 17:52:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	**.83876**	**-.00998**	**-.00331**	**.00001**	**.01681**	**.00058**
Stddev	.00022	.00442	.00442	.00242	.00077	.00018	.00259
%RSD	112.09	.52651	44.282	73.168	6824.2	1.0650	446.63
#1	-.00039	.84240	-.01091	-.00183	-.00011	.01673	-.00103
#2	-.00022	.84004	-.00517	-.00610	-.00069	.01701	.00357
#3	.00004	.83385	-.01387	-.00199	.00083	.01668	-.00080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9863.7**	**59966.**	**3069.4**
Stddev	33.8	107.	16.4
%RSD	.34299	.17793	.53396
#1	9879.3	59844.	3052.8
#2	9824.9	60042.	3069.7
#3	9886.9	60012.	3085.6

Approved: June 27, 2016

Sample Name: L1606098608PS Acquired: 6/25/2016 17:56:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574216-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19012	4.7962	.18985	.92761	.50579	.02416	80.589	.02376
Stddev	.00115	.0181	.00324	.00188	.00153	.00010	.509	.00031
%RSD	.60416	.37710	1.7085	.20237	.30247	.42369	.63122	1.3080
#1	.18881	4.7997	.18690	.92863	.50534	.02415	80.494	.02389
#2	.19096	4.8123	.19332	.92876	.50750	.02427	81.138	.02341
#3	.19058	4.7766	.18933	.92544	.50454	.02406	80.134	.02399
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09205	.23624	.24131	1.9065	24.291	.50517	25.434	.26103
Stddev	.00018	.00146	.00130	.0143	.039	.00496	.150	.00626
%RSD	.19260	.61641	.53797	.74911	.16017	.98165	.59175	2.3977
#1	.09210	.23659	.24071	1.9177	24.287	.49968	25.563	.26590
#2	.09186	.23464	.24280	1.9113	24.254	.50647	25.268	.26320
#3	.09221	.23749	.24041	1.8904	24.332	.50934	25.470	.25397
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49345	34.822	.23345	4.6884	.23609	.56850	.18268	5.5114
Stddev	.00019	.169	.00142	.0142	.00258	.00539	.00604	.0369
%RSD	.03860	.48533	.60979	.30359	1.0940	.94754	3.3047	.66920
#1	.49323	34.790	.23475	4.6782	.23789	.57472	.18356	5.4689
#2	.49357	35.005	.23367	4.6823	.23725	.56528	.18824	5.5341
#3	.49354	34.671	.23193	4.7047	.23313	.56551	.17626	5.5313
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098608PS Acquired: 6/25/2016 17:56:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574216-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.47094	1.2232	.47334	.23988	.49331	.47631	.00522
Stddev	.00189	.0075	.00962	.00117	.00125	.00347	.00156
%RSD	.40190	.61543	2.0323	.48785	.25347	.72879	29.825
#1	.47068	1.2227	.46319	.24082	.49476	.47230	.00351
#2	.47295	1.2310	.48233	.23857	.49254	.47818	.00558
#3	.46920	1.2160	.47451	.24025	.49265	.47845	.00657
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9831.9	59526.	3075.8
Stddev	15.2	194.	19.0
%RSD	.15421	.32611	.61679
#1	9829.8	59604.	3066.0
#2	9817.9	59305.	3063.8
#3	9848.0	59669.	3097.7

Approved: June 27, 2016

Sample Name: L1606098608SDL Acquired: 6/25/2016 18:00:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574216-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00260	-.00514	.00187	.00508	.00868	.00012	17.605	-.00015
Stddev	.00156	.01146	.00424	.00200	.00063	.00008	.142	.00010
%RSD	60.035	222.87	226.36	39.430	7.2120	66.284	.80739	66.159
#1	.00437	.00780	.00118	.00739	.00923	.00013	17.451	-.00025
#2	.00143	-.00924	.00642	.00396	.00881	.00020	17.731	-.00007
#3	.00199	-.01399	-.00198	.00389	.00800	.00004	17.633	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	.00006	.00193	.02399	.21059	-.00038	4.9921	.00509
Stddev	.00017	.00044	.00078	.00583	.02318	.00216	.0797	.00111
%RSD	97.856	772.57	40.443	24.318	11.008	572.98	1.5970	21.792
#1	-.00004	-.00041	.00282	.01859	.23319	.00193	5.0036	.00623
#2	-.00037	.00046	.00138	.03017	.18686	-.00072	4.9072	.00402
#3	-.00011	.00012	.00158	.02319	.21171	-.00234	5.0654	.00500
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	2.6677	-.00071	.00513	.00009	-.00286	-.00058	.72991
Stddev	.00017	.0114	.00035	.00552	.00151	.00279	.00302	.00273
%RSD	51.097	.42653	49.400	107.62	1685.9	97.489	522.92	.37384
#1	.00017	2.6710	-.00044	.00122	.00180	.00001	.00149	.72939
#2	.00033	2.6550	-.00058	.01144	-.00102	-.00304	-.00405	.73285
#3	.00051	2.6770	-.00110	.00273	-.00051	-.00555	.00083	.72747
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098608SDL Acquired: 6/25/2016 18:00:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574216-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.17684**	**.00226**	**.00019**	**.00052**	**.00413**	**.00011**
Stddev	.00027	.00102	.00232	.00368	.00057	.00014	.00068
%RSD	464.39	.57572	102.44	1951.0	110.67	3.3962	623.50
#1	-.00013	.17748	.00403	.00128	.00008	.00397	.00059
#2	.00024	.17567	-.00036	.00320	.00031	.00420	.00041
#3	-.00028	.17737	.00312	-.00392	.00117	.00423	-.00067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9896.0**	**60261.**	**3042.3**
Stddev	25.0	81.	28.3
%RSD	.25242	.13391	.92921
#1	9907.7	60289.	3040.8
#2	9913.0	60324.	3071.3
#3	9867.3	60170.	3014.9

Approved: June 27, 2016

Sample Name: L1606098608SDL Acquired: 6/25/2016 18:04:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574216-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00175	-.00807	-.00063	-.00078	.00182	.00014	3.3399	-.00019
Stddev	.00147	.00382	.00127	.00273	.00016	.00003	.0946	.00023
%RSD	83.969	47.279	200.74	348.35	8.5330	23.588	2.8330	121.57
#1	.00097	-.00874	.00010	.00038	.00196	.00018	3.2721	-.00045
#2	.00084	-.00396	.00010	.00117	.00166	.00011	3.4480	-.00012
#3	.00344	-.01151	-.00210	-.00390	.00185	.00014	3.2995	-.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	-.00037	.00107	.01769	-.08284	.00119	.94569	.00052
Stddev	.00047	.00133	.00130	.01702	.09737	.00358	.05932	.00055
%RSD	1445.4	360.33	120.72	96.212	117.53	302.26	6.2728	105.20
#1	.00035	-.00086	.00167	-.00174	-.18470	.00532	.88043	.00057
#2	-.00050	-.00138	-.00041	.02995	-.07314	-.00085	.96028	.00105
#3	.00025	.00113	.00196	.02486	.00931	-.00092	.99635	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00012	.49987	-.00021	.00755	.00303	-.00541	.00850	.13812
Stddev	.00032	.04592	.00020	.00386	.00188	.00314	.00116	.00966
%RSD	265.16	9.1856	96.762	51.054	62.049	58.070	13.660	6.9939
#1	.00001	.44687	-.00020	.01173	.00086	-.00531	.00838	.12921
#2	-.00049	.52761	-.00041	.00680	.00410	-.00232	.00740	.13676
#3	.00011	.52513	-.00001	.00413	.00413	-.00859	.00972	.14839
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098608SDL Acquired: 6/25/2016 18:04:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574216-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00039**	**.03350**	**.00349**	**.00073**	**.00046**	**.00106**	**.00161**
Stddev	.00032	.00105	.00672	.00069	.00093	.00001	.00112
%RSD	80.289	3.1425	192.33	93.894	202.19	.93440	69.701
#1	.00063	.03282	.00553	-.00006	-.00031	.00105	.00058
#2	.00051	.03471	.00896	.00114	.00020	.00107	.00146
#3	.00004	.03296	-.00401	.00113	.00149	.00107	.00281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10400.**	**61068.**	**3085.8**
Stddev	302.	416.	38.3
%RSD	2.9005	.68044	1.2414
#1	10744.	61402.	3085.7
#2	10277.	61200.	3047.5
#3	10180.	60603.	3124.1

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 18:08:15 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40600	10.196	.39897	.49353	1.0097	.05111	10.072
Stddev	.00134	.005	.00384	.00145	.0055	.00016	.108
%RSD	.32964	.04609	.96241	.29468	.54041	.30777	1.0683
#1	.40454	10.197	.40224	.49289	1.0058	.05115	10.014
#2	.40717	10.200	.39474	.49519	1.0073	.05125	10.006
#3	.40630	10.191	.39992	.49250	1.0159	.05094	10.196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05085	.19930	.50343	.51248	4.0210	48.769	1.0170
Stddev	.00016	.00069	.00173	.00042	.0444	.141	.0095
%RSD	.31221	.34558	.34304	.08145	1.1049	.29004	.93218
#1	.05072	.20005	.50491	.51259	3.9923	48.842	1.0084
#2	.05079	.19915	.50386	.51282	3.9985	48.605	1.0154
#3	.05103	.19869	.50153	.51201	4.0722	48.858	1.0271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.6470	.50568	1.0217	49.589	.50657	9.9463	.50897
Stddev	.0505	.00379	.0050	.266	.00174	.0145	.00224
%RSD	.52402	.74931	.49273	.53683	.34444	.14541	.44016
#1	9.7040	.50521	1.0275	49.574	.50855	9.9602	.50639
#2	9.6294	.50215	1.0196	49.330	.50589	9.9313	.51042
#3	9.6076	.50969	1.0181	49.862	.50527	9.9474	.51010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 18:08:15 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1949**	**.39405**	**5.1402**	**1.0022**	**1.0107**	**.99866**	**.51518**
Stddev	.0031	.00179	.0100	.0005	.0053	.01659	.00058
%RSD	.25554	.45308	.19427	.05270	.52786	1.6608	.11222
#1	1.1981	.39492	5.1482	1.0028	1.0100	1.0024	.51475
#2	1.1944	.39525	5.1290	1.0020	1.0058	.98052	.51584
#3	1.1920	.39200	5.1434	1.0018	1.0164	1.0131	.51497
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0309**	**1.0070**	F **2.9451**
Stddev	.0008	.0014	.0223
%RSD	.08066	.13880	.75803
#1	1.0316	1.0084	2.9555
#2	1.0300	1.0069	2.9195
#3	1.0311	1.0056	2.9603
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9649.2**	**58096.**	**2982.6**
Stddev	5.7	114.	17.5
%RSD	.05915	.19560	.58802
#1	9648.4	58223.	2978.9
#2	9644.0	58003.	3001.7
#3	9655.3	58062.	2967.2

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 18:11:52 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00062**	**.00113**	**.00060**	**-.00134**	**.00269**	**.00016**	**-.00509**	**-.00011**
Stddev	.00447	.01287	.00139	.00141	.00058	.00006	.00999	.00008
%RSD	723.56	1142.0	234.30	105.23	21.456	39.000	196.19	75.399
#1	-.00262	.00580	.00212	.00028	.00233	.00022	-.01646	-.00020
#2	.00450	-.01343	-.00061	-.00230	.00238	.00017	.00228	-.00009
#3	-.00373	.01101	.00028	-.00199	.00335	.00009	-.00109	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.00031**	**.00131**	**.01880**	**-.14052**	**-.00173**	**.03086**	**-.00243**
Stddev	.00043	.00144	.00103	.01556	.08453	.00290	.07623	.00189
%RSD	438.61	470.86	78.889	82.745	60.152	168.14	247.00	77.536
#1	.00038	.00014	.00051	.03667	-.04368	.00153	-.05463	-.00186
#2	-.00045	-.00104	.00248	.01148	-.17839	-.00266	.09175	-.00090
#3	-.00022	.00182	.00094	.00826	-.19949	-.00404	.05546	-.00454
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00375**	**-.00702**	**.00000**	**.00544**	**-.00002**	**.00180**	**.00158**	**.03715**
Stddev	.00019	.01848	.00030	.00537	.00129	.00320	.00255	.00232
%RSD	5.0585	263.40	8008.1	98.759	6600.5	177.29	161.59	6.2433
#1	.00382	-.02711	-.00030	.01149	.00142	.00145	-.00134	.03895
#2	.00354	-.00319	.00002	.00357	-.00108	.00516	.00266	.03453
#3	.00390	.00925	.00029	.00125	-.00040	-.00120	.00341	.03795
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 18:11:52 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00026**	**.00036**	**-.00017**	**-.00186**	**.00075**	**.00012**	**.00425**
Stddev	.00040	.00044	.01020	.00315	.00028	.00007	.00095
%RSD	153.60	122.95	5879.7	169.59	36.989	59.021	22.345
#1	.00000	.00086	.00219	-.00527	.00044	.00006	.00508
#2	.00073	.00017	.00864	-.00126	.00081	.00010	.00321
#3	.00006	.00004	-.01135	.00095	.00098	.00019	.00446
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9372.1**	**56632.**	**2874.9**
Stddev	24.8	50.	14.1
%RSD	.26420	.08878	.48885
#1	9350.8	56589.	2886.0
#2	9366.2	56619.	2859.1
#3	9399.3	56687.	2879.7

Approved: June 27, 2016

Sample Name: L1606098610 Acquired: 6/25/2016 18:15:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00168	.00613	.00026	.00622	.01341	.00005	115.37	.00029
Stddev	.00132	.00327	.00219	.00120	.00108	.00003	.56	.00010
%RSD	78.702	53.342	840.89	19.355	8.0675	55.551	.48696	35.866
#1	.00017	.00551	-.00222	.00662	.01310	.00009	115.81	.00019
#2	.00222	.00322	.00107	.00487	.01252	.00003	114.73	.00040
#3	.00265	.00967	.00193	.00717	.01462	.00004	115.55	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	.00098	.00166	.06083	.38326	.00831	27.726	.01242
Stddev	.00045	.00011	.00061	.01132	.08932	.00154	.200	.00158
%RSD	1035.7	11.515	36.634	18.614	23.306	18.467	.72137	12.708
#1	-.00034	.00088	.00210	.06356	.35599	.00912	27.699	.01068
#2	-.00027	.00110	.00191	.04839	.48304	.00927	27.542	.01377
#3	.00048	.00096	.00096	.07054	.31076	.00654	27.939	.01280
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	14.397	.00169	.00670	.00176	-.00418	.00480	3.9389
Stddev	.00003	.096	.00045	.00675	.00408	.00345	.00343	.0208
%RSD	3.3704	.66673	26.485	100.67	231.83	82.446	71.530	.52736
#1	.00075	14.373	.00205	.00909	-.00024	-.00395	.00094	3.9592
#2	.00074	14.315	.00119	.01193	.00646	-.00774	.00595	3.9398
#3	.00079	14.503	.00185	-.00091	-.00093	-.00086	.00752	3.9176
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098610 Acquired: 6/25/2016 18:15:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00034**	**.52737**	**-.01662**	**-.00476**	**.00053**	**.01128**	**.00653**
Stddev	.00061	.00238	.00515	.00157	.00069	.00008	.00193
%RSD	181.06	.45087	31.015	32.913	130.43	.73884	29.481
#1	-.00078	.52702	-.01240	-.00297	.00012	.01121	.00451
#2	.00036	.52519	-.01509	-.00547	.00132	.01137	.00674
#3	-.00059	.52991	-.02236	-.00585	.00014	.01126	.00835
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9795.7**	**59337.**	**3075.9**
Stddev	21.1	178.	25.1
%RSD	.21493	.29915	.81568
#1	9771.4	59262.	3048.2
#2	9807.4	59210.	3082.7
#3	9808.3	59540.	3097.0

Approved: June 27, 2016

Sample Name: L1606098612 Acquired: 6/25/2016 18:19:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00237	.00267	-.00060	.08716	.06662	.00041	142.66	.00007
Stddev	.00073	.00275	.00337	.00141	.00149	.00002	1.19	.00021
%RSD	30.688	102.87	562.71	1.6192	2.2393	3.9782	.83233	319.26
#1	.00315	.00518	-.00334	.08576	.06575	.00041	141.33	.00027
#2	.00225	-.00027	-.00161	.08858	.06577	.00039	143.01	.00007
#3	.00171	.00310	.00316	.08713	.06835	.00042	143.63	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.00135	.04528	.02649	1.6602	.01963	40.720	.03253
Stddev	.00034	.00053	.00134	.03733	.1018	.00353	.262	.00324
%RSD	339.50	39.036	2.9680	140.93	6.1325	17.994	.64244	9.9559
#1	.00034	.00170	.04668	.04343	1.6128	.02218	40.440	.02879
#2	-.00029	.00162	.04400	-.01631	1.5907	.02112	40.763	.03448
#3	.00024	.00075	.04516	.05234	1.7770	.01560	40.958	.03432
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00115	26.540	.00106	.02312	.00172	-.00084	.00204	2.4275
Stddev	.00029	.172	.00094	.00593	.00284	.00147	.00269	.0046
%RSD	25.080	.64693	88.979	25.661	164.80	174.96	131.78	.18880
#1	.00089	26.345	.00153	.02349	.00164	-.00125	.00490	2.4289
#2	.00110	26.607	.00167	.01701	.00461	-.00205	-.00043	2.4311
#3	.00146	26.668	-.00003	.02886	-.00107	.00079	.00165	2.4223
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098612 Acquired: 6/25/2016 18:19:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**1.7410**	**-.01626**	**-.00241**	**.00038**	**.05602**	**.00415**
Stddev	.00061	.0138	.00313	.00137	.00051	.00009	.00053
%RSD	273.86	.79166	19.237	56.738	134.14	.16489	12.835
#1	-.00019	1.7255	-.01265	-.00306	.00050	.05591	.00443
#2	.00092	1.7457	-.01795	-.00084	.00081	.05608	.00354
#3	-.00006	1.7519	-.01818	-.00334	-.00018	.05607	.00449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9747.5**	**58989.**	**3047.5**
Stddev	4.1	78.	13.8
%RSD	.04198	.13200	.45213
#1	9749.1	58936.	3063.4
#2	9750.6	59079.	3039.1
#3	9742.9	58952.	3040.0

Approved: June 27, 2016

Sample Name: L1606098614 Acquired: 6/25/2016 18:23:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00279	.01008	-.00066	.03390	.03124	.00010	196.20	.00021
Stddev	.00112	.00383	.00147	.00206	.00013	.00007	.85	.00008
%RSD	40.043	38.038	221.13	6.0906	.42986	73.782	.43251	39.178
#1	.00183	.00766	.00090	.03506	.03108	.00016	195.71	.00030
#2	.00402	.00807	-.00201	.03513	.03132	.00002	195.70	.00014
#3	.00253	.01449	-.00089	.03152	.03131	.00013	197.18	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.00088	.00840	.02428	2.9211	.02334	75.647	.04008
Stddev	.00023	.00045	.00064	.00605	.0291	.00193	.677	.00318
%RSD	446.71	50.770	7.6701	24.929	.99693	8.2676	.89445	7.9254
#1	-.00007	.00063	.00780	.03006	2.8958	.02251	74.950	.04023
#2	.00031	.00062	.00908	.02477	2.9529	.02197	75.691	.03683
#3	-.00009	.00140	.00832	.01799	2.9145	.02555	76.301	.04318
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	22.556	.00040	.01184	.00385	-.00016	.00418	3.4833
Stddev	.00033	.097	.00156	.00464	.00193	.00051	.00681	.0215
%RSD	46.348	.43032	390.32	39.236	50.052	315.18	162.82	.61768
#1	.00068	22.526	-.00110	.00655	.00167	-.00006	.01171	3.5066
#2	.00040	22.478	.00029	.01372	.00533	-.00072	-.00154	3.4792
#3	.00106	22.665	.00201	.01524	.00455	.00029	.00237	3.4641
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098614 Acquired: 6/25/2016 18:23:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**2.3670**	**-.02425**	**-.00232**	**-.00024**	**.02160**	**.00232**
Stddev	.00092	.0076	.00398	.00117	.00100	.00003	.00161
%RSD	715.81	.32195	16.401	50.456	415.47	.12320	69.325
#1	.00091	2.3659	-.02580	-.00236	.00091	.02157	.00413
#2	-.00082	2.3599	-.02722	-.00113	-.00075	.02159	.00107
#3	-.00048	2.3751	-.01973	-.00348	-.00089	.02163	.00175
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9640.5**	**58425.**	**3058.6**
Stddev	20.6	100.	4.7
%RSD	.21337	.17110	.15390
#1	9631.4	58473.	3059.7
#2	9664.1	58492.	3062.6
#3	9626.1	58310.	3053.4

Approved: June 27, 2016

Sample Name: L1606098616 Acquired: 6/25/2016 18:27:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00115	.03265	.00256	.11861	.01251	.00029	229.75	.00020
Stddev	.00195	.00899	.00533	.00161	.00061	.00014	.36	.00016
%RSD	169.27	27.532	208.27	1.3580	4.8819	47.504	.15530	78.536
#1	.00069	.04218	-.00197	.11885	.01280	.00014	229.65	.00038
#2	-.00053	.02433	.00844	.12008	.01292	.00030	229.45	.00006
#3	.00329	.03143	.00122	.11689	.01181	.00042	230.15	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00062	.00178	.06744	.03108	3.2126	.03682	84.360	.29574
Stddev	.00023	.00069	.00047	.01537	.1307	.00386	.426	.00133
%RSD	37.410	38.666	.69994	49.454	4.0677	10.480	.50488	.44809
#1	.00042	.00192	.06781	.02007	3.0741	.03526	83.896	.29633
#2	.00087	.00239	.06691	.04863	3.2299	.03400	84.450	.29422
#3	.00056	.00104	.06760	.02452	3.3338	.04122	84.734	.29667
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00072	71.143	.00123	.03078	.00375	-.00200	.00018	5.1619
Stddev	.00027	.049	.00055	.00199	.00114	.00238	.00481	.0107
%RSD	37.642	.06818	44.575	6.4658	30.424	119.08	2715.0	.20775
#1	.00061	71.192	.00158	.03108	.00244	-.00009	.00517	5.1511
#2	.00102	71.095	.00060	.02865	.00425	-.00467	-.00442	5.1621
#3	.00051	71.141	.00151	.03260	.00456	-.00125	-.00023	5.1725
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098616 Acquired: 6/25/2016 18:27:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	6.5212	-.02963	-.00177	-.00109	.08946	.00332
Stddev	.00060	.0079	.00654	.00230	.00079	.00019	.00190
%RSD	161.30	.12151	22.085	130.49	72.258	.21177	57.202
#1	.00105	6.5204	-.02657	.00051	-.00123	.08936	.00540
#2	.00018	6.5138	-.02518	-.00171	-.00179	.08968	.00287
#3	-.00011	6.5296	-.03715	-.00409	-.00024	.08933	.00168
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9566.8	58078.	3050.1
Stddev	16.9	52.	19.7
%RSD	.17631	.08955	.64584
#1	9563.8	58018.	3068.4
#2	9585.0	58111.	3029.2
#3	9551.7	58106.	3052.7

Approved: June 27, 2016

Sample Name: L1606098618 Acquired: 6/25/2016 18:31:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00155	-.00096	.00289	.04251	.02915	.00005	62.293	-.00011
Stddev	.00038	.00238	.00029	.00109	.00082	.00008	.092	.00019
%RSD	24.410	246.77	9.9664	2.5737	2.7985	149.80	.14819	166.73
#1	.00113	.00168	.00257	.04189	.03009	-.00003	62.335	-.00017
#2	.00185	-.00164	.00314	.04186	.02874	.00005	62.357	.00010
#3	.00168	-.00294	.00296	.04377	.02862	.00013	62.187	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00031	.00347	.01624	1.9071	.02198	20.259	.01093
Stddev	.00021	.00046	.00016	.00938	.1214	.00171	.067	.00376
%RSD	243.30	146.24	4.6588	57.772	6.3644	7.7782	.33311	34.347
#1	.00028	.00083	.00329	.00573	1.8306	.02394	20.336	.01303
#2	.00011	.00015	.00350	.01922	2.0470	.02118	20.230	.00660
#3	-.00013	-.00004	.00361	.02377	1.8435	.02082	20.211	.01318
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00102	25.999	-.00042	.00444	.00244	-.00359	.00392	3.1846
Stddev	.00023	.100	.00069	.00545	.00095	.00188	.00301	.0187
%RSD	22.864	.38558	161.73	122.87	39.121	52.433	76.809	.58628
#1	.00106	26.085	-.00101	-.00067	.00273	-.00311	.00526	3.2018
#2	.00123	26.024	.00033	.00381	.00321	-.00199	.00047	3.1874
#3	.00077	25.889	-.00059	.01018	.00137	-.00566	.00602	3.1647
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098618 Acquired: 6/25/2016 18:31:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	1.4545	-.00154	-.00233	.00037	.00832	.00208
Stddev	.00132	.0032	.00357	.00066	.00141	.00007	.00021
%RSD	228.95	.22347	232.21	28.221	386.86	.88012	10.206
#1	.00206	1.4546	-.00325	-.00241	-.00025	.00825	.00199
#2	-.00043	1.4577	-.00393	-.00294	-.00063	.00831	.00233
#3	.00009	1.4512	.00257	-.00163	.00198	.00839	.00193
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9841.2	59299.	3061.4
Stddev	105.5	272.	4.9
%RSD	1.0718	.45797	.16152
#1	9746.5	58986.	3061.4
#2	9822.2	59458.	3056.4
#3	9954.9	59454.	3066.3

Approved: June 27, 2016

Sample Name: L1606098620 Acquired: 6/25/2016 18:35:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.03312	.00066	.07608	.03474	.00017	4.5650	.00010
Stddev	.00141	.00304	.00168	.00356	.00133	.00010	.0156	.00016
%RSD	3777.7	9.1736	255.45	4.6823	3.8419	59.446	.34129	166.50
#1	-.00004	.03663	-.00075	.08018	.03521	.00029	4.5712	.00011
#2	.00149	.03142	.00252	.07372	.03577	.00014	4.5766	.00025
#3	-.00133	.03132	.00020	.07433	.03323	.00009	4.5473	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00112	.00060	.00299	.05475	.56414	.00988	1.7714	.01450
Stddev	.00021	.00082	.00143	.01752	.07965	.00243	.0462	.00322
%RSD	18.384	137.46	47.864	31.992	14.119	24.596	2.6071	22.223
#1	.00132	.00110	.00244	.06300	.59505	.00894	1.8247	.01687
#2	.00115	.00105	.00462	.03463	.62370	.00806	1.7436	.01579
#3	.00091	-.00035	.00192	.06662	.47367	.01264	1.7459	.01083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00137	251.01	-.00057	.03777	.00214	-.00589	.00108	2.0603
Stddev	.00029	.75	.00178	.00427	.00057	.00380	.00694	.0083
%RSD	21.156	.29997	313.28	11.296	26.364	64.542	640.75	.40056
#1	.00125	251.39	-.00025	.04217	.00279	-.00381	-.00651	2.0621
#2	.00170	251.50	-.00248	.03365	.00178	-.01028	.00710	2.0676
#3	.00115	250.15	.00103	.03749	.00186	-.00358	.00266	2.0514
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098620 Acquired: 6/25/2016 18:35:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00101**	**.14703**	**.00470**	**-.00231**	**.00100**	**.00923**	**.00423**
Stddev	.00046	.00057	.00299	.00179	.00041	.00019	.00094
%RSD	44.993	.38637	63.686	77.674	41.001	2.0938	22.219
#1	.00049	.14737	.00735	-.00044	.00130	.00917	.00391
#2	.00129	.14734	.00531	-.00246	.00116	.00906	.00349
#3	.00126	.14637	.00145	-.00402	.00053	.00944	.00529
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9725.3**	**58367.**	**3028.8**
Stddev	17.5	120.	15.3
%RSD	.18040	.20576	.50451
#1	9742.7	58420.	3020.7
#2	9707.6	58451.	3019.2
#3	9725.6	58230.	3046.4

Approved: June 27, 2016

Sample Name: L1606098622 Acquired: 6/25/2016 18:39:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	-.00596	.00037	.05747	.02764	.00023	127.72	.00011
Stddev	.00093	.00925	.00122	.00204	.00088	.00005	1.04	.00012
%RSD	79.226	155.22	327.64	3.5486	3.1759	23.660	.81279	108.09
#1	.00125	-.01464	.00026	.05716	.02813	.00022	127.35	.00021
#2	.00205	-.00701	-.00078	.05560	.02662	.00018	126.92	.00013
#3	.00020	.00377	.00164	.05965	.02815	.00028	128.89	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00090	.01009	.02031	2.5853	.01995	32.558	.04793
Stddev	.00056	.00109	.00042	.00894	.0945	.00518	.278	.00190
%RSD	208.67	121.92	4.1494	44.026	3.6562	25.950	.85453	3.9665
#1	.00085	.00146	.01042	.02811	2.6682	.02326	32.522	.05007
#2	.00021	-.00036	.01022	.02229	2.4824	.01399	32.299	.04730
#3	-.00026	.00160	.00962	.01055	2.6053	.02261	32.852	.04643
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	46.975	.00038	.00992	.00378	-.00381	.00198	3.5382
Stddev	.00001	.389	.00033	.00514	.00270	.00385	.00283	.0119
%RSD	1.5146	.82774	87.053	51.791	71.542	100.88	142.89	.33659
#1	.00038	46.842	.00000	.00464	.00569	-.00293	.00001	3.5245
#2	.00039	46.670	.00061	.01491	.00068	-.00048	.00522	3.5450
#3	.00039	47.413	.00052	.01022	.00497	-.00802	.00070	3.5451
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098622 Acquired: 6/25/2016 18:39:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	1.7827	-.01653	-.00317	-.00057	.00858	.00262
Stddev	.00056	.0144	.00634	.00502	.00088	.00017	.00024
%RSD	326.45	.80805	38.350	158.35	154.19	1.9458	9.0067
#1	-.00048	1.7747	-.02093	-.00538	-.00155	.00859	.00236
#2	.00051	1.7740	-.00927	.00258	.00014	.00841	.00281
#3	.00049	1.7993	-.01940	-.00671	-.00029	.00875	.00270
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9602.2	57749.	2959.9
Stddev	40.4	252.	26.3
%RSD	.42032	.43708	.88902
#1	9555.9	57561.	2977.4
#2	9630.3	57650.	2972.6
#3	9620.3	58036.	2929.6

Approved: June 27, 2016

Sample Name: L1606098624 Acquired: 6/25/2016 18:42:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00037**	**.00561**	**.00154**	**.40348**	**.02348**	**.00039**	**237.24**
Stddev	.00142	.00394	.00506	.00070	.00039	.00006	.43
%RSD	386.92	70.246	327.66	.17357	1.6661	16.452	.18001
#1	.00014	.00128	.00004	.40369	.02381	.00037	237.56
#2	-.00093	.00658	-.00259	.40270	.02305	.00046	237.41
#3	.00189	.00898	.00718	.40405	.02358	.00034	236.75
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**-.00007**	**.00152**	**.02649**	**.02448**	**5.9223**	**.01174**
Stddev	.00017	.00052	.00056	.00200	.00699	.0587	.00396
%RSD	362.68	725.31	36.507	7.5377	28.540	.99123	33.722
#1	-.00014	.00052	.00185	.02553	.03123	5.8563	.01398
#2	-.00015	-.00040	.00183	.02879	.02493	5.9416	.00717
#3	.00015	-.00034	.00088	.02516	.01728	5.9689	.01408
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**66.698**	**.32515**	**.00019**	**63.762**	**.00021**	**.01502**	**.00144**
Stddev	.426	.00095	.00039	.087	.00030	.00323	.00065
%RSD	.63897	.29073	207.41	.13653	145.82	21.500	44.732
#1	66.222	.32513	-.00023	63.794	-.00012	.01765	.00108
#2	67.045	.32421	.00055	63.829	.00049	.01601	.00219
#3	66.826	.32610	.00024	63.663	.00025	.01142	.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 27, 2016

Sample Name: L1606098624 Acquired: 6/25/2016 18:42:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00149**	**.00522**	**3.3709**	**-.00072**	**1.6690**	F **-.03355**	**-.00155**
Stddev	.00099	.00177	.0249	.00122	.0015	.00264	.00229
%RSD	66.177	33.876	.73770	169.83	.08806	7.8818	147.53
#1	-.00080	.00419	3.3514	-.00109	1.6686	-.03207	.00107
#2	-.00262	.00726	3.3989	-.00171	1.6706	-.03199	-.00316
#3	-.00106	.00421	3.3624	.00064	1.6678	-.03661	-.00256
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00040**	**.00877**	**.00210**
Stddev	.00049	.00015	.00054
%RSD	123.14	1.7509	25.986
#1	-.00082	.00894	.00208
#2	.00014	.00865	.00156
#3	-.00050	.00870	.00265
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9491.7**	**57630.**	**3009.2**
Stddev	78.4	156.	15.6
%RSD	.82592	.27138	.51996
#1	9550.0	57451.	2991.3
#2	9402.6	57694.	3015.7
#3	9522.6	57743.	3020.5

Approved: June 27, 2016

Sample Name: L1606098626 Acquired: 6/25/2016 18:46:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00327	.00679	.00038	.03972	.02631	.00014	117.32	.00023
Stddev	.00072	.00538	.00107	.00258	.00068	.00005	.34	.00019
%RSD	22.022	79.326	284.61	6.5079	2.6006	35.377	.28683	83.944
#1	.00409	.00166	-.00067	.03695	.02674	.00014	117.70	.00003
#2	.00295	.01240	.00033	.04014	.02552	.00019	117.19	.00023
#3	.00276	.00630	.00147	.04206	.02666	.00009	117.07	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.00126	.00604	.03025	1.5600	.01598	35.418	-.00162
Stddev	.00014	.00104	.00157	.00896	.0430	.00117	.155	.00177
%RSD	71.567	82.474	25.938	29.612	2.7589	7.3145	.43775	108.92
#1	.00004	.00238	.00775	.03493	1.5696	.01501	35.426	-.00126
#2	.00029	.00033	.00573	.01992	1.5974	.01567	35.569	-.00006
#3	.00026	.00107	.00466	.03588	1.5130	.01728	35.259	-.00354
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	17.994	-.00024	.00950	.00273	-.00253	.00429	2.8578
Stddev	.00029	.066	.00113	.00146	.00267	.00313	.00183	.0046
%RSD	65.363	.36928	461.23	15.318	98.010	123.57	42.598	.16060
#1	.00011	18.060	.00031	.00854	.00072	.00062	.00280	2.8530
#2	.00057	17.927	.00050	.00879	.00170	-.00564	.00374	2.8621
#3	.00066	17.996	-.00154	.01118	.00576	-.00258	.00633	2.8583
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098626 Acquired: 6/25/2016 18:46:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00012**	**.95352**	**-.01676**	**-.00181**	**.00025**	**.00656**	**.00282**
Stddev	.00004	.00361	.00400	.00055	.00086	.00005	.00124
%RSD	36.480	.37812	23.874	30.252	341.08	.79230	44.156
#1	.00017	.95765	-.01632	-.00120	.00116	.00654	.00348
#2	.00013	.95102	-.02097	-.00198	-.00055	.00661	.00138
#3	.00008	.95189	-.01300	-.00225	.00014	.00651	.00358
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9709.6**	**59301.**	**3058.5**
Stddev	45.7	137.	18.4
%RSD	.47038	.23115	.60138
#1	9758.2	59149.	3039.9
#2	9703.1	59336.	3058.7
#3	9667.6	59417.	3076.7

Approved: June 27, 2016

Sample Name: L1606098628 Acquired: 6/25/2016 18:50:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00127**	**.00062**	**.00226**	**.03408**	**.02631**	**.00011**	**202.60**
Stddev	.00142	.00505	.00320	.00146	.00145	.00006	1.09
%RSD	111.97	810.26	141.74	4.2925	5.4989	52.470	.53642
#1	.00192	-.00172	.00570	.03364	.02795	.00015	202.20
#2	.00225	-.00283	-.00063	.03289	.02521	.00012	201.76
#3	-.00036	.00642	.00171	.03571	.02576	.00005	203.83
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**-.00018**	**.00230**	**.00706**	**.02884**	**3.1108**	**.02231**
Stddev	.00015	.00008	.00109	.00066	.02764	.1253	.00468
%RSD	173.92	43.590	47.288	9.3696	95.862	4.0286	20.962
#1	.00015	-.00019	.00355	.00741	.06027	3.2199	.01700
#2	-.00008	-.00010	.00186	.00630	.00830	2.9739	.02412
#3	.00019	-.00026	.00151	.00747	.01794	3.1385	.02581
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**77.982**	**.03186**	**.00054**	**22.893**	**.00124**	**.00646**	**.00417**
Stddev	.421	.00093	.00029	.135	.00089	.00201	.00077
%RSD	.53979	2.9039	53.423	.59091	71.804	31.048	18.563
#1	77.763	.03137	.00064	22.869	.00109	.00439	.00500
#2	77.715	.03128	.00078	22.771	.00220	.00660	.00405
#3	78.467	.03292	.00022	23.039	.00044	.00839	.00347
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 27, 2016

Sample Name: L1606098628 Acquired: 6/25/2016 18:50:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00202**	**.00107**	**3.6233**	**.00060**	**2.4441**	F **-.03051**	**-.00323**
Stddev	.00386	.00287	.0015	.00175	.0120	.00406	.00089
%RSD	190.96	268.98	.04080	291.82	.49257	13.319	27.545
#1	.00200	.00365	3.6232	-.00046	2.4407	-.03513	-.00322
#2	-.00236	-.00203	3.6248	-.00036	2.4341	-.02890	-.00413
#3	-.00571	.00158	3.6218	.00262	2.4575	-.02750	-.00235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00057**	**.01373**	**.00279**
Stddev	.00055	.00005	.00121
%RSD	96.088	.39414	43.503
#1	-.00086	.01376	.00139
#2	-.00092	.01376	.00355
#3	.00006	.01367	.00343
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9549.4**	**58061.**	**2994.7**
Stddev	10.8	342.	16.3
%RSD	.11322	.58988	.54589
#1	9556.3	57786.	2984.2
#2	9554.9	57953.	3013.5
#3	9536.9	58445.	2986.3

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 18:54:37 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.36142	9.0966	F .35164	F .43504	F .88841	.04556	F 8.8985
Stddev	.00063	.0241	.00214	.00359	.00668	.00015	.0636
%RSD	.17458	.26527	.60772	.82605	.75211	.32062	.71530
#1	.36081	9.1069	.35253	.43880	.88074	.04567	8.8250
#2	.36138	9.0691	.35318	.43467	.89150	.04539	8.9365
#3	.36207	9.1139	.34920	.43164	.89299	.04562	8.9341
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Fail
Value			.40000	.50000	1.0000		10.000
Range			-10.000%	-10.000%	-10.000%		-10.000%

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04504	F .17683	F .44843	.45584	F 3.5682	F 43.223	.90012
Stddev	.00036	.00059	.00210	.00028	.0180	.402	.00642
%RSD	.79578	.33417	.46848	.06078	.50416	.93081	.71346
#1	.04493	.17615	.45006	.45571	3.5475	42.758	.89283
#2	.04475	.17711	.44916	.45565	3.5796	43.446	.90262
#3	.04544	.17723	.44606	.45616	3.5775	43.464	.90492
Check ?	Chk Pass	Chk Fail	Chk Fail	Chk Pass	Chk Fail	Chk Fail	Chk Pass
Value		.20000	.50000		4.0000	50.000	
Range		-10.000%	-10.000%		-10.000%	-10.000%	

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 8.4568	F .44683	.90610	F 43.837	.45006	F 8.8106	F .44997
Stddev	.1941	.00153	.00307	.290	.00031	.0184	.00285
%RSD	2.2957	.34349	.33891	.66256	.06941	.20845	.63417
#1	8.2816	.44509	.90942	43.504	.44975	8.7897	.44790
#2	8.6655	.44738	.90552	43.973	.45037	8.8181	.44879
#3	8.4231	.44801	.90336	44.035	.45007	8.8241	.45322
Check ?	Chk Fail	Chk Fail	Chk Pass	Chk Fail	Chk Pass	Chk Fail	Chk Fail
Value	10.000	.50000		50.000		10.000	.50000
Range	-10.000%	-10.000%		-10.000%		-10.000%	-10.000%

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 18:54:37 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 1.0511	F .35868	4.5430	F .88663	F .88982	F .89732	.46317
Stddev	.0038	.00393	.0064	.00114	.00700	.00126	.00115
%RSD	.35733	1.0963	.14052	.12909	.78679	.14039	.24883
#1	1.0514	.35522	4.5358	.88537	.88186	.89705	.46442
#2	1.0547	.35787	4.5453	.88691	.89256	.89622	.46295
#3	1.0472	.36295	4.5480	.88760	.89503	.89870	.46215
Check ?	Chk Fail	Chk Fail	Chk Pass	Chk Fail	Chk Fail	Chk Fail	Chk Pass
Value	1.2000	.40000		1.0000	1.0000	1.0000	
Range	-10.000%	-10.000%		-10.000%	-10.000%	-10.000%	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.92451	F .89326	F 2.6142
Stddev	.00239	.00079	.0303
%RSD	.25806	.08826	1.1591
#1	.92697	.89416	2.5794
#2	.92435	.89291	2.6285
#3	.92221	.89270	2.6347
Check ?	Chk Pass	Chk Fail	Chk Fail
Value		1.0000	1.0000
Range		-10.000%	10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10436.	62603.	3229.6
Stddev	7.	58.	39.3
%RSD	.06851	.09259	1.2179
#1	10435.	62597.	3274.8
#2	10443.	62548.	3203.4
#3	10429.	62663.	3210.5

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 18:58:15 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00102	-.00634	.00315	-.00143	.00123	.00009	-.03120	-.00001
Stddev	.00036	.00615	.00146	.00223	.00014	.00007	.03757	.00022
%RSD	35.623	96.910	46.271	156.16	11.328	79.889	120.40	3000.5
#1	.00142	-.00623	.00470	-.00112	.00129	.00016	.01024	.00017
#2	.00091	-.01255	.00293	-.00379	.00133	.00004	-.06303	-.00025
#3	.00072	-.00026	.00181	.00063	.00107	.00005	-.04081	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	-.00012	.00040	.00652	.00729	-.00094	.01960	-.00009
Stddev	.00003	.00070	.00057	.00448	.10732	.00258	.12813	.00039
%RSD	340.66	581.54	142.03	68.614	1471.3	275.05	653.72	408.22
#1	-.00000	.00019	-.00025	.00247	.06763	-.00204	-.01079	.00011
#2	.00004	-.00093	.00068	.01133	.07087	.00201	.16019	-.00054
#3	-.00001	.00037	.00077	.00577	-.11662	-.00279	-.09060	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00312	.01765	-.00021	.00497	.00440	.00279	.00542	.03094
Stddev	.00023	.01443	.00123	.00520	.00590	.00458	.00181	.00198
%RSD	7.4573	81.775	586.87	104.64	134.12	164.15	33.357	6.4039
#1	.00298	.03423	-.00101	.00374	.00273	.00293	.00481	.03016
#2	.00339	.00793	-.00083	.01067	.01095	-.00186	.00399	.03319
#3	.00300	.01078	.00121	.00049	-.00049	.00730	.00745	.02947
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 18:58:15 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	.00057	.00328	-.00363	.00052	.00010	.00222
Stddev	.00020	.00050	.00575	.00205	.00106	.00011	.00064
%RSD	66.832	88.088	175.09	56.396	206.25	116.18	28.891
#1	.00017	.00114	-.00137	-.00544	-.00047	.00019	.00164
#2	.00052	.00028	.00971	-.00141	.00038	-.00003	.00291
#3	.00019	.00027	.00151	-.00405	.00164	.00012	.00210
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10029.	60890.	3064.8
Stddev	14.	97.	13.9
%RSD	.13680	.15850	.45397
#1	10045.	60780.	3055.3
#2	10022.	60930.	3080.8
#3	10020.	60960.	3058.3

Approved: June 27, 2016

Sample Name: L1606098630 Acquired: 6/25/2016 19:02:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00160**	**.04734**	**-.00156**	**.13569**	**.01871**	**.00015**	**238.04**
Stddev	.00181	.00348	.00404	.00135	.00123	.00008	.85
%RSD	113.48	7.3553	258.52	.99665	6.5967	52.824	.35679
#1	.00017	.04905	-.00155	.13421	.01822	.00022	239.01
#2	.00364	.04964	.00247	.13685	.01779	.00007	237.71
#3	.00098	.04333	-.00561	.13603	.02011	.00014	237.41
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00026**	**.00032**	**.00251**	**.01182**	**.03060**	**3.4183**	**.04090**
Stddev	.00010	.00018	.00081	.00072	.01332	.0462	.00200
%RSD	39.577	56.009	32.204	6.0677	43.540	1.3506	4.8796
#1	.00014	.00047	.00287	.01260	.01963	3.3856	.03874
#2	.00034	.00036	.00308	.01119	.04543	3.4711	.04128
#3	.00028	.00012	.00159	.01167	.02674	3.3981	.04268
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**90.439**	**.21655**	**.00156**	**78.879**	**.00140**	**.01756**	**.00033**
Stddev	.173	.00121	.00013	.416	.00068	.00677	.00046
%RSD	.19086	.55720	8.0204	.52709	48.349	38.536	138.30
#1	90.626	.21726	.00143	79.353	.00191	.01647	.00076
#2	90.405	.21515	.00168	78.710	.00063	.02480	-.00016
#3	90.286	.21722	.00157	78.574	.00166	.01140	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 27, 2016

Sample Name: L1606098630 Acquired: 6/25/2016 19:02:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00294**	**-.00177**	**5.6111**	**-.00017**	**7.0275**	F **-.03316**	**-.00254**
Stddev	.00229	.00087	.0076	.00038	.0379	.00293	.00099
%RSD	77.743	49.294	.13521	227.38	.53946	8.8247	38.798
#1	-.00354	-.00250	5.6121	-.00026	7.0707	-.03043	-.00171
#2	-.00042	-.00199	5.6030	-.00050	7.0124	-.03625	-.00363
#3	-.00488	-.00081	5.6181	.00025	6.9995	-.03280	-.00229
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00065**	**.02003**	**.00667**
Stddev	.00064	.00007	.00116
%RSD	98.374	.34297	17.407
#1	-.00116	.01996	.00557
#2	-.00088	.02003	.00654
#3	.00007	.02010	.00788
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9361.9**	**56594.**	**2990.6**
Stddev	23.4	147.	20.1
%RSD	.24995	.25968	.67365
#1	9379.7	56762.	2967.6
#2	9370.7	56528.	3005.2
#3	9335.4	56491.	2998.9

Approved: June 27, 2016

Sample Name: L1606098632S Acquired: 6/25/2016 19:06:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18902**	**4.8212**	**.19116**	**.97374**	**.50077**	**.02402**	**134.52**	**.02388**
Stddev	.00088	.0081	.00239	.00462	.00118	.00003	.34	.00017
%RSD	.46488	.16867	1.2481	.47438	.23617	.14314	.25228	.70472
#1	.18980	4.8271	.19377	.97198	.50123	.02406	134.68	.02373
#2	.18919	4.8246	.18910	.97898	.49943	.02400	134.13	.02406
#3	.18807	4.8119	.19060	.97026	.50165	.02400	134.75	.02386
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09189**	**.23665**	**.24218**	**1.8859**	**25.617**	**.51395**	**37.596**	**.28166**
Stddev	.00021	.00120	.00028	.0089	.037	.00043	.192	.00203
%RSD	.23170	.50673	.11712	.47202	.14467	.08375	.50984	.71945
#1	.09190	.23534	.24190	1.8828	25.580	.51444	37.585	.28070
#2	.09167	.23691	.24247	1.8960	25.619	.51376	37.792	.28399
#3	.09210	.23769	.24219	1.8790	25.654	.51365	37.409	.28029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49448**	**71.230**	**.23175**	**4.7310**	**.23416**	**.56777**	**.18400**	**6.1097**
Stddev	.00088	.164	.00128	.0060	.00191	.00602	.00319	.0038
%RSD	.17884	.22978	.55101	.12688	.81554	1.0604	1.7354	.06148
#1	.49529	71.252	.23067	4.7327	.23616	.57278	.18033	6.1129
#2	.49354	71.056	.23316	4.7244	.23394	.56944	.18613	6.1108
#3	.49461	71.382	.23142	4.7360	.23236	.56109	.18555	6.1056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098632S Acquired: 6/25/2016 19:06:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.46869	2.2839	.45630	.23531	.49366	.46774	.01477
Stddev	.00224	.0055	.00571	.00163	.00079	.00046	.00310
%RSD	.47718	.23955	1.2515	.69229	.16011	.09871	21.022
#1	.47047	2.2847	.45118	.23550	.49390	.46819	.01151
#2	.46942	2.2781	.45528	.23360	.49431	.46777	.01510
#3	.46618	2.2889	.46246	.23684	.49278	.46726	.01769
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9505.1	57443.	2995.1
Stddev	12.6	181.	7.9
%RSD	.13263	.31567	.26290
#1	9490.9	57238.	2989.7
#2	9509.8	57583.	3004.2
#3	9514.8	57507.	2991.6

Approved: June 27, 2016

Sample Name: L1606098634S Acquired: 6/25/2016 19:09:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19165**	**4.8639**	**.19259**	**.98224**	**.50433**	**.02434**	**136.41**	**.02397**
Stddev	.00283	.0058	.00215	.00673	.00181	.00002	.41	.00039
%RSD	1.4742	.11932	1.1143	.68564	.35885	.08391	.29851	1.6453
#1	.19474	4.8576	.19410	.97512	.50399	.02434	136.06	.02438
#2	.19099	4.8690	.19014	.98851	.50272	.02431	136.30	.02394
#3	.18921	4.8651	.19354	.98310	.50629	.02435	136.86	.02359
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09370**	**.23944**	**.24457**	**1.9014**	**25.851**	**.51838**	**38.336**	**.27292**
Stddev	.00027	.00087	.00143	.0128	.044	.00156	.167	.00356
%RSD	.28910	.36336	.58497	.67456	.17178	.30011	.43499	1.3028
#1	.09395	.23880	.24603	1.9045	25.902	.51991	38.172	.27676
#2	.09341	.23909	.24449	1.9124	25.822	.51842	38.330	.27226
#3	.09373	.24043	.24318	1.8873	25.829	.51680	38.505	.26974
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49947**	**74.848**	**.23412**	**4.7760**	**.23373**	**.57493**	**.18272**	**6.1711**
Stddev	.00101	.224	.00114	.0149	.00097	.00427	.00635	.0140
%RSD	.20163	.29965	.48754	.31111	.41349	.74220	3.4752	.22725
#1	.50053	74.661	.23450	4.7820	.23289	.57819	.18571	6.1610
#2	.49852	74.786	.23283	4.7591	.23352	.57010	.18702	6.1652
#3	.49936	75.096	.23502	4.7869	.23478	.57650	.17542	6.1871
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098634S Acquired: 6/25/2016 19:09:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47482**	**2.3307**	**.45927**	**.23900**	**.49848**	**.47191**	**.00533**
Stddev	.00086	.0091	.01368	.00122	.00164	.00108	.00076
%RSD	.18068	.39132	2.9792	.51192	.32871	.22881	14.237
#1	.47581	2.3242	.47279	.23871	.49842	.47284	.00492
#2	.47440	2.3268	.44543	.23794	.50015	.47073	.00620
#3	.47425	2.3411	.45961	.24034	.49687	.47217	.00485
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9464.2**	**57182.**	**2975.2**
Stddev	11.1	55.	14.2
%RSD	.11755	.09672	.47580
#1	9463.1	57128.	2991.6
#2	9475.9	57180.	2967.1
#3	9453.7	57239.	2967.1

Approved: June 27, 2016

Sample Name: L1606098636SD Acquired: 6/25/2016 19:13:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19162**	**4.8756**	**.19532**	**1.3252**	**.50705**	**.02431**	**243.19**	**.02436**
Stddev	.00178	.0135	.00259	.0039	.00540	.00016	2.22	.00014
%RSD	.92905	.27765	1.3247	.29569	1.0646	.65896	.91281	.56637
#1	.19240	4.8805	.19500	1.3207	.51326	.02435	245.71	.02449
#2	.18958	4.8859	.19805	1.3282	.50441	.02444	242.33	.02421
#3	.19287	4.8603	.19291	1.3265	.50349	.02413	241.52	.02439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09290**	**.23671**	**.29685**	**1.9145**	**29.596**	**.51587**	**71.839**	**.60737**
Stddev	.00022	.00172	.00059	.0369	.191	.00194	.252	.00417
%RSD	.23161	.72762	.19867	1.9280	.64372	.37694	.35080	.68663
#1	.09280	.23499	.29694	1.9564	29.779	.51781	72.039	.61218
#2	.09315	.23843	.29739	1.9005	29.610	.51588	71.921	.60495
#3	.09276	.23672	.29622	1.8867	29.399	.51393	71.556	.60497
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49958**	**89.482**	**.23320**	**4.8335**	**.23655**	**.57885**	**.18210**	**6.3388**
Stddev	.00153	.784	.00050	.0076	.00169	.00511	.00473	.0094
%RSD	.30585	.87569	.21296	.15803	.71424	.88252	2.5997	.14817
#1	.49951	90.366	.23335	4.8331	.23580	.57825	.18575	6.3355
#2	.50114	89.209	.23361	4.8414	.23849	.57407	.18379	6.3494
#3	.49809	88.872	.23265	4.8261	.23537	.58424	.17675	6.3314
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098636SD Acquired: 6/25/2016 19:13:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47318**	**2.1504**	**.45196**	**.23380**	**.49243**	**.47726**	**.00396**
Stddev	.00235	.0203	.01296	.00229	.00254	.00239	.00140
%RSD	.49768	.94209	2.8683	.97909	.51630	.50171	35.414
#1	.47220	2.1736	.45301	.23117	.49302	.48002	.00408
#2	.47587	2.1417	.46436	.23534	.49462	.47583	.00530
#3	.47148	2.1359	.43850	.23489	.48964	.47592	.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9466.5**	**57687.**	**3000.7**
Stddev	28.5	42.	21.4
%RSD	.30105	.07212	.71153
#1	9499.3	57706.	2976.5
#2	9448.1	57639.	3017.0
#3	9452.0	57716.	3008.4

Approved: June 27, 2016

Sample Name: L1606098638SD Acquired: 6/25/2016 19:16:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-09

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19635**	**5.0111**	**.19662**	**1.3658**	**.50590**	**.02455**	**238.74**	**.02470**
Stddev	.00189	.0495	.00202	.0129	.00507	.00013	2.44	.00046
%RSD	.96164	.98714	1.0288	.94297	1.0027	.51871	1.0237	1.8632
#1	.19421	4.9540	.19875	1.3513	.50004	.02440	236.05	.02465
#2	.19777	5.0396	.19638	1.3761	.50894	.02464	240.82	.02518
#3	.19706	5.0398	.19472	1.3699	.50872	.02461	239.35	.02426
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09456**	**.24315**	**.24888**	**1.9280**	**29.506**	**.51676**	**69.466**	**.60260**
Stddev	.00054	.00286	.00145	.0328	.362	.00473	.757	.00806
%RSD	.56749	1.1744	.58163	1.6990	1.2271	.91552	1.0898	1.3377
#1	.09518	.24020	.24797	1.8914	29.119	.51186	68.628	.59529
#2	.09432	.24590	.25055	1.9547	29.837	.52131	70.101	.61124
#3	.09419	.24336	.24812	1.9378	29.562	.51712	69.668	.60126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50828**	**86.839**	**.23731**	**4.9079**	**.23796**	**.58722**	**.18727**	**6.3571**
Stddev	.00153	.812	.00040	.0105	.00122	.00763	.00717	.0147
%RSD	.30188	.93521	.16702	.21476	.51147	1.2987	3.8265	.23138
#1	.50998	85.938	.23758	4.9185	.23889	.59365	.18466	6.3682
#2	.50784	87.516	.23685	4.9076	.23841	.58922	.19537	6.3627
#3	.50701	87.061	.23748	4.8975	.23659	.57879	.18177	6.3405
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098638SD Acquired: 6/25/2016 19:16:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-09

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48230**	**2.1413**	**.45206**	**.24148**	**.50819**	**.47197**	**.00465**
Stddev	.00016	.0221	.00841	.00203	.00480	.00162	.00175
%RSD	.03337	1.0323	1.8614	.84256	.94539	.34380	37.692
#1	.48228	2.1164	.44367	.23931	.50264	.47335	.00633
#2	.48215	2.1586	.45201	.24177	.51108	.47237	.00283
#3	.48247	2.1488	.46050	.24334	.51084	.47018	.00481
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9367.1**	**56617.**	**3005.4**
Stddev	24.2	279.	8.9
%RSD	.25886	.49353	.29743
#1	9345.0	56900.	3015.6
#2	9363.2	56609.	2998.7
#3	9393.0	56341.	3002.0

Approved: June 27, 2016

Sample Name: L1606098640 Acquired: 6/25/2016 19:20:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00070	.00014	.00047	.01204	.00394	.00013	2.2418	.00009
Stddev	.00052	.00246	.00354	.00206	.00041	.00015	.0448	.00026
%RSD	75.327	1722.8	753.06	17.114	10.437	111.96	1.9977	298.05
#1	-.00120	.00298	.00434	.01328	.00360	.00001	2.2906	-.00017
#2	-.00073	-.00107	-.00032	.00966	.00384	.00009	2.2025	.00008
#3	-.00016	-.00148	-.00261	.01318	.00440	.00029	2.2324	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	-.00023	.00162	.03197	.19488	-.00199	.70657	-.00157
Stddev	.00020	.00043	.00063	.03003	.05117	.00159	.10487	.00034
%RSD	172.28	188.43	38.822	93.912	26.255	79.698	14.843	21.723
#1	-.00014	.00024	.00129	.06510	.20250	-.00219	.77648	-.00118
#2	.00010	-.00061	.00122	.00654	.14033	-.00346	.58598	-.00170
#3	-.00030	-.00032	.00234	.02429	.24180	-.00031	.75725	-.00182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	1.3245	-.00000	-.00132	.00155	-.00034	.00103	1.8661
Stddev	.00043	.0047	.00128	.00539	.00283	.00334	.00522	.0030
%RSD	69.622	.35334	42382.	408.47	183.18	979.63	508.03	.16155
#1	.00110	1.3264	-.00135	.00378	-.00057	-.00417	-.00062	1.8696
#2	.00029	1.3279	.00121	-.00695	.00477	.00193	.00687	1.8648
#3	.00045	1.3192	.00013	-.00078	.00045	.00122	-.00317	1.8641
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098640 Acquired: 6/25/2016 19:20:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	.02890	-.00018	-.00245	.00125	.00316	.00092
Stddev	.00104	.00022	.00313	.00122	.00036	.00008	.00187
%RSD	172.87	.75581	1755.3	49.848	28.928	2.5446	202.44
#1	-.00053	.02865	.00335	-.00105	.00165	.00322	-.00102
#2	.00152	.02900	-.00128	-.00328	.00095	.00320	.00271
#3	.00082	.02905	-.00260	-.00302	.00115	.00307	.00108
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9902.6	60698.	3047.4
Stddev	11.3	88.	21.1
%RSD	.11376	.14441	.69149
#1	9915.6	60659.	3066.8
#2	9895.9	60798.	3025.0
#3	9896.3	60636.	3050.3

Approved: June 27, 2016

Sample Name: L1606098642 Acquired: 6/25/2016 19:24:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00084	-.00125	.00012	.00714	.00291	.00014	2.2957	-.00008
Stddev	.00151	.00416	.00315	.00149	.00136	.00010	.0287	.00011
%RSD	179.62	331.72	2535.0	20.853	46.790	76.580	1.2503	140.66
#1	.00086	.00295	-.00350	.00543	.00443	.00023	2.2645	-.00020
#2	-.00134	-.00134	.00221	.00806	.00180	.00015	2.3210	.00001
#3	-.00204	-.00537	.00167	.00794	.00250	.00002	2.3016	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00054	.00126	.01879	.13459	.00101	.70251	-.00031
Stddev	.00021	.00073	.00033	.01779	.06299	.00139	.04015	.00188
%RSD	76.216	135.58	26.342	94.669	46.805	137.70	5.7150	613.21
#1	.00043	.00109	.00162	.03687	.13442	.00244	.65916	.00151
#2	.00035	-.00029	.00096	.01820	.19766	.00092	.73842	-.00224
#3	.00004	.00081	.00121	.00130	.07167	-.00034	.70994	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	1.3914	-.00012	.00599	-.00050	-.00197	.00192	1.9147
Stddev	.00031	.0274	.00128	.00446	.00248	.00478	.00405	.0013
%RSD	265.01	1.9704	1039.6	74.477	491.66	243.04	211.10	.06740
#1	-.00017	1.4067	.00078	.00869	.00158	.00334	.00542	1.9141
#2	.00008	1.4078	.00044	.00843	.00015	-.00331	-.00251	1.9137
#3	.00044	1.3598	-.00159	.00084	-.00325	-.00593	.00284	1.9161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098642 Acquired: 6/25/2016 19:24:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.02978**	**.00659**	**-.00224**	**.00021**	**.00288**	**.00046**
Stddev	.00041	.00031	.00898	.00218	.00024	.00011	.00203
%RSD	319.77	1.0309	136.22	97.103	115.48	3.6974	442.65
#1	.00034	.02969	.01094	-.00308	.00030	.00286	-.00018
#2	-.00043	.03012	.01258	.00023	.00040	.00300	.00273
#3	-.00030	.02953	-.00373	-.00388	-.00006	.00279	-.00117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9910.0**	**60405.**	**3027.1**
Stddev	8.6	109.	25.1
%RSD	.08719	.18086	.83024
#1	9909.0	60400.	3001.0
#2	9919.1	60298.	3029.3
#3	9901.9	60516.	3051.1

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 19:28:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.38218	9.6308	.37557	.46431	.95962	.04828	9.5695
Stddev	.00218	.0178	.00127	.00116	.00217	.00012	.0717
%RSD	.57165	.18471	.33835	.24921	.22635	.23895	.74942
#1	.37992	9.6388	.37606	.46299	.96032	.04841	9.5557
#2	.38232	9.6104	.37652	.46516	.96137	.04820	9.6471
#3	.38429	9.6432	.37413	.46479	.95719	.04823	9.5057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04801	.18801	.47395	.48473	3.7689	46.355	.97311
Stddev	.00014	.00020	.00045	.00153	.0264	.220	.00378
%RSD	.29427	.10445	.09483	.31643	.70136	.47512	.38849
#1	.04785	.18823	.47438	.48634	3.7952	46.500	.97746
#2	.04812	.18785	.47399	.48328	3.7693	46.464	.97068
#3	.04806	.18795	.47348	.48458	3.7423	46.102	.97118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.0717	.47590	.96524	47.107	.47852	9.3733	.47882
Stddev	.0608	.00396	.00399	.173	.00072	.0111	.00296
%RSD	.67059	.83199	.41378	.36832	.15104	.11884	.61810
#1	9.0038	.47335	.96959	47.188	.47773	9.3765	.47551
#2	9.1213	.48046	.96440	47.226	.47916	9.3609	.48123
#3	9.0900	.47388	.96173	46.908	.47866	9.3825	.47971
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 19:28:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1223**	**.37795**	**4.8400**	**.94463**	**.95969**	**.96684**	**.48966**
Stddev	.0016	.00541	.0100	.00151	.00470	.01176	.00307
%RSD	.14404	1.4313	.20631	.15941	.49016	1.2167	.62598
#1	1.1238	.37410	4.8492	.94636	.96229	.96908	.48613
#2	1.1206	.37562	4.8414	.94360	.96253	.97732	.49169
#3	1.1224	.38414	4.8294	.94394	.95426	.95412	.49116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.97958**	**.95235**	F **2.8246**
Stddev	.00154	.00042	.0035
%RSD	.15724	.04377	.12384
#1	.97882	.95263	2.8278
#2	.97857	.95254	2.8252
#3	.98136	.95187	2.8208
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10132.**	**61264.**	**3100.4**
Stddev	.	134.	6.9
%RSD	.00202	.21941	.22117
#1	10132.	61202.	3092.6
#2	10132.	61418.	3103.3
#3	10132.	61171.	3105.3

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 19:32:05 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00027**	**-.00034**	**.00165**	**-.00065**	**.00143**	**.00014**	**-.04509**	**-.00015**
Stddev	.00053	.00835	.00116	.00135	.00075	.00012	.04632	.00018
%RSD	198.69	2437.1	70.395	208.11	52.425	84.191	102.74	120.05
#1	.00081	.00499	.00229	-.00108	.00058	.00001	-.09453	-.00022
#2	.00023	-.00997	.00235	-.00174	.00173	.00020	-.03804	.00005
#3	-.00025	.00395	.00031	.00087	.00199	.00023	-.00270	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**-.00017**	**.00065**	**.02423**	**-.06433**	**-.00295**	**-.01903**	**-.00066**
Stddev	.00013	.00077	.00059	.01555	.07126	.00237	.08401	.00260
%RSD	162.10	456.13	90.441	64.178	110.77	80.373	441.41	395.33
#1	-.00022	-.00087	-.00002	.03897	.01654	-.00026	-.10302	.00036
#2	-.00006	.00066	.00091	.02575	-.09166	-.00387	.06499	-.00361
#3	.00004	-.00030	.00106	.00798	-.11789	-.00472	-.01907	.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00313**	**.02145**	**.00120**	**.00197**	**.00164**	**.00212**	**.00101**	**.04112**
Stddev	.00013	.00743	.00050	.00366	.00312	.00166	.00069	.00272
%RSD	4.1237	34.660	41.579	185.66	190.04	78.472	68.223	6.6255
#1	.00318	.03002	.00170	.00620	.00310	.00128	.00172	.03946
#2	.00323	.01754	.00070	-.00004	.00377	.00104	.00035	.04426
#3	.00298	.01678	.00121	-.00024	-.00194	.00404	.00097	.03964
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 19:32:05 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00072**	**.00051**	**-.00006**	**-.00149**	**-.00026**	**.00006**	**.00316**
Stddev	.00004	.00041	.00466	.00123	.00016	.00032	.00144
%RSD	4.9365	80.523	8195.1	82.501	61.089	521.42	45.405
#1	.00073	.00010	.00498	-.00182	-.00044	-.00016	.00318
#2	.00068	.00091	-.00094	-.00252	-.00020	.00042	.00172
#3	.00075	.00050	-.00421	-.00013	-.00014	-.00008	.00459
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9625.9**	**58446.**	**2947.7**
Stddev	17.4	102.	8.2
%RSD	.18036	.17465	.27941
#1	9605.9	58491.	2954.6
#2	9635.9	58518.	2950.0
#3	9636.0	58329.	2938.6

Approved: June 27, 2016

Sample Name: PBW LH Acquired: 6/25/2016 19:36:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	-.00480	.00297	-.00088	.00071	.00016	-.03609	-.00030
Stddev	.00096	.00538	.00061	.00047	.00081	.00006	.00576	.00022
%RSD	436.54	112.05	20.402	53.250	112.94	41.040	15.975	74.291
#1	-.00063	-.00271	.00258	-.00071	.00057	.00010	-.04014	-.00038
#2	.00002	-.00078	.00267	-.00141	-.00001	.00022	-.03863	-.00005
#3	.00126	-.01092	.00367	-.00052	.00158	.00014	-.02949	-.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.00027	.00021	.03551	.02057	.00058	-.03422	.00199
Stddev	.00019	.00046	.00040	.00062	.11033	.00127	.05831	.00213
%RSD	211.66	173.58	192.44	1.7348	536.36	218.26	170.39	107.33
#1	.00009	.00043	-.00014	.03559	.14793	.00205	.01703	.00051
#2	-.00029	.00063	.00065	.03485	-.04548	-.00019	-.09766	.00101
#3	-.00007	-.00025	.00012	.03607	-.04075	-.00011	-.02203	.00443
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	.01920	-.00013	.00015	.00308	-.00169	.00218	.00530
Stddev	.00020	.01381	.00043	.00436	.00410	.00157	.00344	.00135
%RSD	72.649	71.919	323.98	2952.6	133.25	92.573	157.59	25.417
#1	-.00050	.00540	-.00047	-.00185	.00268	-.00008	.00514	.00605
#2	-.00014	.01919	.00035	-.00286	.00737	-.00321	.00301	.00374
#3	-.00017	.03301	-.00027	.00515	-.00081	-.00179	-.00160	.00610
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: PBW LH Acquired: 6/25/2016 19:36:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.00001**	**.00007**	**-.00205**	**.00056**	**-.00012**	**.00138**
Stddev	.00105	.00006	.00526	.00274	.00041	.00008	.00122
%RSD	278.35	503.89	7708.4	133.89	73.183	68.172	88.458
#1	.00057	-.00005	.00045	-.00401	.00011	-.00018	.00093
#2	-.00020	.00002	-.00537	-.00321	.00065	-.00003	.00045
#3	-.00151	.00007	.00513	.00108	.00091	-.00016	.00276
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10355.**	**62690.**	**3143.1**
Stddev	14.	21.	40.1
%RSD	.13810	.03356	1.2743
#1	10371.	62711.	3176.8
#2	10343.	62669.	3098.8
#3	10351.	62689.	3153.6

Approved: June 27, 2016

Sample Name: LCSW LH Acquired: 6/25/2016 19:39:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19366**	**4.9137**	**.19220**	**.93203**	**.49068**	**.02467**	**4.9632**	**.02443**
Stddev	.00070	.0138	.00341	.00396	.00423	.00007	.0538	.00016
%RSD	.36335	.28142	1.7740	.42472	.86189	.28277	1.0835	.64799
#1	.19288	4.8983	.19002	.92766	.48616	.02461	4.9413	.02459
#2	.19385	4.9180	.19044	.93305	.49453	.02465	5.0244	.02441
#3	.19425	4.9249	.19613	.93537	.49136	.02474	4.9238	.02428
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09715**	**.24544**	**.24999**	**1.9443**	**23.472**	**.50293**	**4.6813**	**.24132**
Stddev	.00066	.00263	.00041	.0106	.182	.00291	.0938	.00318
%RSD	.68088	1.0726	.16565	.54556	.77586	.57762	2.0038	1.3188
#1	.09680	.24301	.25039	1.9373	23.301	.50365	4.6704	.23802
#2	.09792	.24824	.24956	1.9391	23.664	.50540	4.7800	.24157
#3	.09674	.24506	.25002	1.9565	23.450	.49973	4.5934	.24437
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50304**	**24.148**	**.24571**	**4.6828**	**.24554**	**.57884**	**.18202**	**2.4064**
Stddev	.00049	.122	.00061	.0125	.00123	.00461	.00367	.0046
%RSD	.09743	.50324	.24625	.26789	.50266	.79649	2.0171	.19316
#1	.50339	24.028	.24640	4.6758	.24587	.57352	.17868	2.4078
#2	.50325	24.271	.24545	4.6973	.24658	.58167	.18595	2.4102
#3	.50248	24.145	.24528	4.6753	.24418	.58132	.18143	2.4012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LCSW LH Acquired: 6/25/2016 19:39:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48493**	**.49684**	**.48674**	**.24907**	**.50464**	**.48284**	**.01676**
Stddev	.00108	.00397	.00310	.00041	.00236	.00325	.00211
%RSD	.22287	.79928	.63744	.16637	.46686	.67256	12.564
#1	.48462	.49378	.48665	.24947	.50200	.48055	.01435
#2	.48613	.50133	.48369	.24909	.50538	.48656	.01775
#3	.48404	.49542	.48989	.24864	.50653	.48141	.01820
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9761.3**	**59171.**	**3026.9**
Stddev	5.3	58.	23.7
%RSD	.05400	.09751	.78195
#1	9766.4	59236.	3050.7
#2	9755.9	59148.	3003.3
#3	9761.7	59127.	3026.7

Approved: June 27, 2016

Sample Name: L1606090723 Acquired: 6/25/2016 19:43:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	.01800	.14333	.20159	.04322	.00011	82.135	.00062
Stddev	.00074	.00440	.00262	.00108	.00176	.00009	.153	.00002
%RSD	81.113	24.457	1.8284	.53531	4.0750	85.790	.18660	3.6806
#1	.00039	.02274	.14560	.20094	.04396	.00020	82.043	.00061
#2	.00058	.01723	.14046	.20283	.04121	.00011	82.051	.00064
#3	.00176	.01403	.14393	.20099	.04450	.00001	82.312	.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00085	.00186	.00181	3.0759	4.3146	.03826	51.383	.03252
Stddev	.00009	.00076	.00070	.0448	.0921	.00398	.083	.00353
%RSD	10.346	41.113	38.683	1.4576	2.1337	10.401	.16137	10.870
#1	.00081	.00098	.00242	3.0253	4.2316	.04144	51.475	.03488
#2	.00094	.00223	.00197	3.0916	4.4136	.03380	51.362	.02845
#3	.00078	.00237	.00105	3.1108	4.2984	.03956	51.313	.03422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00258	133.73	-.00015	.01191	.00179	-.00228	.00665	8.0891
Stddev	.00008	.12	.00113	.00694	.00129	.00283	.00532	.0280
%RSD	3.2153	.09189	747.26	58.268	71.933	124.12	79.994	.34670
#1	.00264	133.81	-.00126	.01916	.00318	-.00553	.01195	8.1130
#2	.00249	133.59	.00099	.00533	.00159	-.00033	.00671	8.0582
#3	.00262	133.80	-.00018	.01123	.00062	-.00099	.00131	8.0960
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606090723 Acquired: 6/25/2016 19:43:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**2.6416**	**-.00732**	**-.00182**	**-.00046**	**.00542**	**.00128**
Stddev	.00038	.0023	.00771	.00082	.00062	.00021	.00019
%RSD	7616.2	.08543	105.44	45.025	136.48	3.8805	14.578
#1	.00020	2.6400	-.01112	-.00260	-.00073	.00544	.00120
#2	.00025	2.6406	.00156	-.00189	.00026	.00563	.00115
#3	-.00044	2.6441	-.01239	-.00097	-.00089	.00521	.00149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9566.3**	**57706.**	**3016.3**
Stddev	21.2	40.	8.6
%RSD	.22170	.06981	.28561
#1	9583.7	57737.	3006.9
#2	9572.5	57660.	3023.9
#3	9542.7	57721.	3018.2

Approved: June 27, 2016

Sample Name: L1606098601 Acquired: 6/25/2016 19:47:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	.63226	.00101	.09520	.04126	.00012	31.325	.00014
Stddev	.00183	.00734	.00119	.00196	.00050	.00007	.135	.00021
%RSD	298.65	1.1612	118.08	2.0630	1.2197	57.984	.43030	153.25
#1	.00185	.62395	-.00028	.09744	.04176	.00005	31.451	-.00001
#2	-.00149	.63786	.00207	.09436	.04076	.00018	31.183	.00005
#3	.00148	.63498	.00124	.09379	.04125	.00013	31.342	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	.00251	.00378	1.4621	1.2075	.01677	5.9028	.04892
Stddev	.00024	.00020	.00199	.0362	.0294	.00358	.0605	.00066
%RSD	20.175	7.8011	52.767	2.4785	2.4351	21.330	1.0243	1.3538
#1	.00129	.00246	.00338	1.4981	1.1821	.01735	5.9016	.04861
#2	.00090	.00272	.00594	1.4256	1.2008	.02003	5.8430	.04848
#3	.00133	.00234	.00201	1.4624	1.2397	.01294	5.9639	.04969
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00119	122.45	.00122	.03952	.00058	-.00189	.00677	4.0503
Stddev	.00024	.35	.00124	.00581	.00157	.00112	.00463	.0371
%RSD	19.925	.28250	101.52	14.694	270.52	59.209	68.294	.91471
#1	.00135	122.68	.00181	.04077	.00200	-.00256	.00933	4.0789
#2	.00131	122.05	-.00020	.04460	-.00110	-.00252	.00956	4.0634
#3	.00092	122.62	.00206	.03319	.00084	-.00060	.00143	4.0084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098601 Acquired: 6/25/2016 19:47:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.54428**	**.01566**	**-.00252**	**.00147**	**.03503**	**.00138**
Stddev	.00052	.00100	.00262	.00158	.00115	.00040	.00180
%RSD	330.58	.18426	16.757	62.766	78.497	1.1335	130.15
#1	-.00032	.54517	.01814	-.00107	.00112	.03533	.00331
#2	-.00057	.54319	.01592	-.00228	.00275	.03517	-.00024
#3	.00042	.54448	.01291	-.00422	.00053	.03458	.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9674.1**	**58435.**	**3018.4**
Stddev	45.2	129.	18.2
%RSD	.46720	.22152	.60258
#1	9673.0	58340.	2997.4
#2	9719.9	58382.	3028.7
#3	9629.5	58582.	3029.1

Approved: June 27, 2016

Sample Name: L1606098603 Acquired: 6/25/2016 19:51:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00113**	**.08091**	**.00257**	**.02612**	**.02343**	**.00026**	**258.72**
Stddev	.00364	.00403	.00338	.00065	.00023	.00010	.22
%RSD	322.73	4.9793	131.60	2.5002	.99712	37.911	.08495
#1	-.00201	.07953	.00151	.02617	.02317	.00019	258.95
#2	.00512	.08545	-.00015	.02675	.02363	.00037	258.52
#3	.00028	.07776	.00635	.02545	.02348	.00021	258.68
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00056**	**.00486**	**.00101**	**.01760**	**1.6277**	**1.7887**	**.01926**
Stddev	.00018	.00049	.00101	.00048	.0214	.0748	.00269
%RSD	32.935	10.099	100.65	2.7241	1.3157	4.1799	13.963
#1	.00053	.00446	.00070	.01814	1.6519	1.7719	.02232
#2	.00040	.00472	.00018	.01725	1.6198	1.8705	.01729
#3	.00076	.00541	.00214	.01740	1.6113	1.7238	.01816
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**67.571**	**3.7591**	**.00091**	**16.176**	**.00450**	**.03792**	**.00200**
Stddev	.265	.0091	.00013	.042	.00050	.00459	.00102
%RSD	.39176	.24313	14.640	.25963	11.081	12.099	51.049
#1	67.875	3.7689	.00083	16.148	.00428	.03292	.00317
#2	67.391	3.7508	.00083	16.224	.00415	.03891	.00158
#3	67.448	3.7575	.00106	16.157	.00507	.04193	.00126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 27, 2016

Sample Name: L1606098603 Acquired: 6/25/2016 19:51:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00201**	**-.00717**	**3.9929**	**.00071**	**1.4034**	F **-.03512**	**-.00302**
Stddev	.00033	.00269	.0187	.00006	.0013	.00376	.00159
%RSD	16.650	37.521	.46951	8.6416	.08919	10.706	52.853
#1	-.00201	-.00583	3.9724	.00069	1.4035	-.03701	-.00329
#2	-.00234	-.01026	3.9969	.00078	1.4046	-.03756	-.00130
#3	-.00167	-.00541	4.0093	.00066	1.4021	-.03079	-.00446
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00011**	**.03959**	**.00096**
Stddev	.00028	.00012	.00361
%RSD	248.38	.29182	376.14
#1	.00034	.03947	.00158
#2	-.00020	.03969	.00421
#3	.00020	.03962	-.00292
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9451.5**	**57637.**	**3009.6**
Stddev	22.8	186.	22.0
%RSD	.24088	.32311	.72999
#1	9477.8	57852.	2986.4
#2	9439.3	57520.	3012.4
#3	9437.5	57540.	3030.0

Approved: June 27, 2016

Sample Name: L1606098605 Acquired: 6/25/2016 19:55:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00137	.11904	-.00057	.01716	.07339	.00069	79.533	.00007
Stddev	.00111	.00237	.00183	.00141	.00107	.00010	.468	.00014
%RSD	81.063	1.9908	322.69	8.2448	1.4582	14.460	.58849	215.58
#1	-.00160	.12158	.00130	.01581	.07215	.00080	78.994	-.00002
#2	-.00016	.11865	-.00237	.01703	.07401	.00066	79.770	-.00001
#3	-.00235	.11689	-.00063	.01863	.07401	.00061	79.836	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00197	.03453	.22031	1.0996	.00600	23.636	.02412
Stddev	.00010	.00062	.00164	.01719	.0321	.00378	.124	.00114
%RSD	58.539	31.534	4.7611	7.8016	2.9198	62.984	.52590	4.7055
#1	.00028	.00148	.03642	.22738	1.1284	.00174	23.677	.02484
#2	.00008	.00176	.03343	.23283	1.0650	.00731	23.734	.02281
#3	.00016	.00266	.03374	.20072	1.1054	.00895	23.496	.02471
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	16.543	.00139	.02145	.00230	-.00291	.00287	2.5906
Stddev	.00010	.077	.00029	.00514	.00167	.00113	.00378	.0043
%RSD	11.067	.46265	20.622	23.950	72.689	38.933	132.03	.16499
#1	.00094	16.521	.00147	.02583	.00422	-.00367	.00465	2.5950
#2	.00093	16.628	.00163	.02271	.00152	-.00161	-.00148	2.5865
#3	.00076	16.480	.00107	.01580	.00116	-.00345	.00543	2.5902
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098605 Acquired: 6/25/2016 19:55:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.41216	-.00457	-.00401	.00095	.08292	.00137
Stddev	.00045	.00253	.00113	.00092	.00095	.00025	.00112
%RSD	198.91	.61368	24.692	22.922	99.932	.30169	82.337
#1	.00020	.40988	-.00328	-.00486	-.00009	.08312	.00008
#2	.00068	.41488	-.00504	-.00303	.00116	.08301	.00218
#3	-.00021	.41173	-.00539	-.00414	.00177	.08264	.00183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9691.4	59019.	3013.1
Stddev	15.7	113.	12.9
%RSD	.16185	.19156	.42939
#1	9673.9	58889.	3028.0
#2	9704.2	59073.	3004.1
#3	9696.2	59095.	3007.4

Approved: June 27, 2016

Sample Name: L1606098607 Acquired: 6/25/2016 19:59:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00078	.03854	.00139	.01595	.03639	.00021	86.351	.00013
Stddev	.00196	.00438	.00171	.00299	.00069	.00005	.183	.00018
%RSD	252.38	11.356	122.54	18.743	1.8946	25.559	.21179	130.52
#1	-.00064	.04027	.00252	.01429	.03564	.00026	86.561	.00033
#2	-.00004	.03356	-.00057	.01941	.03654	.00022	86.226	.00007
#3	.00302	.04179	.00223	.01417	.03700	.00015	86.267	-.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	.00096	.00901	.09595	1.3588	.01896	23.947	.13765
Stddev	.00012	.00155	.00054	.00336	.0905	.00285	.152	.00156
%RSD	14.271	161.05	6.0176	3.5057	6.6619	15.032	.63449	1.1314
#1	.00074	.00257	.00840	.09606	1.2544	.01772	23.782	.13585
#2	.00084	-.00052	.00942	.09926	1.4148	.02223	24.081	.13859
#3	.00099	.00083	.00922	.09254	1.4072	.01695	23.978	.13851
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	12.868	.00006	.00776	.00294	-.00141	.00160	3.6487
Stddev	.00036	.033	.00069	.00647	.00245	.00292	.00413	.0140
%RSD	74.294	.25857	1239.7	83.320	83.569	207.44	258.10	.38292
#1	.00008	12.905	-.00031	.01172	.00013	.00158	.00626	3.6621
#2	.00078	12.859	.00085	.01126	.00466	-.00154	-.00162	3.6496
#3	.00059	12.840	-.00038	.00030	.00403	-.00426	.00017	3.6342
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098607 Acquired: 6/25/2016 19:59:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.85925**	**-.01297**	**-.00261**	**.00027**	**.01872**	**-.00023**
Stddev	.00058	.00368	.00482	.00118	.00049	.00005	.00100
%RSD	1135.5	.42821	37.150	45.319	182.28	.27976	440.95
#1	.00028	.86236	-.00802	-.00398	-.00019	.01878	.00007
#2	-.00072	.86019	-.01323	-.00183	.00021	.01871	.00059
#3	.00028	.85519	-.01765	-.00203	.00079	.01868	-.00134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9667.2**	**58651.**	**3007.8**
Stddev	38.0	90.	17.4
%RSD	.39269	.15372	.57760
#1	9636.2	58610.	2989.6
#2	9655.8	58589.	3009.4
#3	9709.5	58755.	3024.3

Approved: June 27, 2016

Sample Name: L1606098607PS Acquired: 6/25/2016 20:03:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574215-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19549**	**4.9683**	**.19699**	**.95431**	**.52192**	**.02489**	**83.384**	**.02448**
Stddev	.00145	.0012	.00037	.00069	.00335	.00004	.351	.00015
%RSD	.74419	.02324	.18968	.07193	.64144	.17436	.42141	.59448
#1	.19431	4.9671	.19669	.95367	.51889	.02485	83.062	.02455
#2	.19712	4.9693	.19740	.95504	.52551	.02494	83.759	.02458
#3	.19505	4.9687	.19686	.95422	.52137	.02490	83.330	.02431
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09612**	**.24445**	**.24901**	**2.0095**	**25.021**	**.52274**	**26.551**	**.36466**
Stddev	.00060	.00204	.00132	.0079	.209	.00262	.211	.00375
%RSD	.62715	.83504	.52860	.39401	.83514	.50106	.79467	1.0287
#1	.09620	.24322	.24870	2.0100	24.845	.52124	26.458	.36188
#2	.09668	.24681	.25046	2.0172	25.252	.52577	26.792	.36317
#3	.09548	.24332	.24788	2.0014	24.965	.52123	26.403	.36893
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50539**	**35.868**	**.24056**	**4.8300**	**.24330**	**.58213**	**.19141**	**5.6770**
Stddev	.00256	.121	.00174	.0165	.00225	.00117	.00102	.0113
%RSD	.50685	.33731	.72421	.34266	.92572	.20086	.53487	.19978
#1	.50625	35.730	.24173	4.8368	.24292	.58281	.19254	5.6837
#2	.50742	35.956	.24138	4.8421	.24572	.58078	.19056	5.6833
#3	.50251	35.919	.23856	4.8112	.24127	.58280	.19112	5.6639
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098607PS Acquired: 6/25/2016 20:03:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574215-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48483**	**1.2623**	**.48068**	**.24615**	**.50488**	**.48944**	**.00427**
Stddev	.00147	.0060	.00508	.00275	.00238	.00115	.00064
%RSD	.30392	.47569	1.0573	1.1154	.47121	.23489	15.068
#1	.48451	1.2555	.47807	.24920	.50216	.48999	.00389
#2	.48644	1.2668	.48654	.24388	.50587	.49021	.00501
#3	.48354	1.2646	.47744	.24537	.50660	.48812	.00390
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9610.5**	**58019.**	**3004.1**
Stddev	20.4	180.	8.2
%RSD	.21278	.31055	.27313
#1	9607.7	58202.	3005.9
#2	9591.6	58012.	2995.2
#3	9632.2	57842.	3011.3

Approved: June 27, 2016

Sample Name: L1606098607SDL Acquired: 6/25/2016 20:06:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574215-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	.00334	.00170	.00445	.00847	.00009	17.139	.00008
Stddev	.00049	.00730	.00411	.00207	.00008	.00007	.249	.00023
%RSD	88.649	218.69	241.70	46.624	.94243	75.660	1.4519	290.72
#1	.00089	.00593	.00612	.00219	.00843	.00006	17.426	.00034
#2	-.00001	.00899	-.00200	.00488	.00843	.00004	17.001	-.00003
#3	.00078	-.00490	.00098	.00627	.00857	.00017	16.989	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.00037	.00191	.01894	.32539	.00400	4.9234	.02615
Stddev	.00005	.00023	.00083	.00475	.10069	.00194	.1236	.00303
%RSD	9.1063	60.795	43.755	25.087	30.943	48.604	2.5107	11.568
#1	.00062	.00059	.00284	.02402	.21108	.00176	4.9976	.02622
#2	.00053	.00038	.00165	.01821	.40094	.00496	4.9918	.02914
#3	.00053	.00014	.00123	.01460	.36416	.00527	4.7807	.02309
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	2.5977	.00028	.00852	.00297	.00160	.00156	.72149
Stddev	.00021	.0380	.00123	.00414	.00293	.00068	.00366	.00246
%RSD	66.333	1.4636	438.92	48.637	98.645	42.261	235.25	.34147
#1	.00008	2.6376	-.00081	.01268	-.00028	.00113	-.00104	.72244
#2	.00048	2.5938	.00004	.00439	.00377	.00130	.00574	.71869
#3	.00037	2.5619	.00161	.00849	.00542	.00238	-.00003	.72333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098607SDL Acquired: 6/25/2016 20:06:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574215-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.17255**	**.00033**	**-.00095**	**.00100**	**.00419**	**.00060**
Stddev	.00072	.00063	.00618	.00123	.00055	.00013	.00060
%RSD	1344.6	.36773	1857.8	129.31	55.083	2.9985	99.890
#1	-.00060	.17322	-.00395	-.00224	.00116	.00417	-.00009
#2	.00076	.17246	-.00247	-.00083	.00039	.00432	.00094
#3	-.00032	.17196	.00742	.00021	.00145	.00407	.00094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10100.**	**61152.**	**3087.7**
Stddev	17.	221.	3.3
%RSD	.16887	.36180	.10673
#1	10112.	61407.	3088.4
#2	10080.	61005.	3090.6
#3	10107.	61046.	3084.1

Approved: June 27, 2016

Sample Name: L1606098607SDL Acquired: 6/25/2016 20:10:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574215-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**-.00220**	**-.00032**	**-.00063**	**.00197**	**.00015**	**3.3784**	**-.00009**
Stddev	.00281	.00599	.00141	.00122	.00070	.00004	.0403	.00029
%RSD	1738.4	271.64	438.98	193.96	35.714	23.124	1.1918	310.09
#1	.00289	-.00340	.00101	-.00187	.00220	.00018	3.3321	-.00013
#2	-.00273	.00429	-.00181	-.00058	.00253	.00017	3.3977	-.00037
#3	.00033	-.00751	-.00017	.00056	.00118	.00011	3.4054	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**-.00057**	**.00039**	**.03496**	**.02799**	**.00189**	**.96584**	**.00502**
Stddev	.00041	.00109	.00122	.02559	.02173	.00316	.06365	.00248
%RSD	5673.0	191.57	314.78	73.189	77.636	167.39	6.5899	49.517
#1	.00017	-.00161	.00178	.00957	.03029	.00425	1.0133	.00340
#2	.00028	-.00067	-.00011	.06074	.04847	.00313	.99069	.00377
#3	-.00047	.00057	-.00050	.03458	.00520	-.00171	.89352	.00788
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**.48659**	**-.00001**	**.00389**	**.00194**	**-.00589**	**.00123**	**.14706**
Stddev	.00019	.02107	.00027	.00257	.00032	.00198	.00158	.00411
%RSD	50.403	4.3293	3257.2	66.021	16.675	33.653	128.28	2.7928
#1	-.00035	.50181	-.00003	.00472	.00177	-.00726	-.00048	.14268
#2	-.00056	.46255	.00027	.00101	.00173	-.00680	.00263	.15082
#3	-.00019	.49542	-.00027	.00595	.00231	-.00362	.00154	.14770
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098607SDL Acquired: 6/25/2016 20:10:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574215-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**.03404**	**-.00096**	**.00109**	**.00053**	**.00095**	**-.00050**
Stddev	.00021	.00026	.00497	.00270	.00028	.00007	.00147
%RSD	93.819	.76060	519.10	248.53	53.226	6.9237	292.99
#1	-.00042	.03414	.00415	-.00145	.00059	.00088	.00090
#2	-.00001	.03374	-.00578	.00079	.00078	.00097	-.00204
#3	-.00022	.03423	-.00124	.00392	.00022	.00101	-.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10132.**	**61150.**	**3069.8**
Stddev	20.	142.	13.8
%RSD	.19324	.23287	.44985
#1	10144.	61269.	3085.6
#2	10109.	61188.	3063.7
#3	10143.	60992.	3060.0

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 20:14:26 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39742**	**10.037**	**.39212**	**.48448**	**.99926**	**.05007**	**9.9665**
Stddev	.00078	.015	.00234	.00170	.00686	.00012	.0639
%RSD	.19741	.14886	.59686	.35046	.68696	.24571	.64080
#1	.39794	10.020	.39189	.48304	1.0007	.05009	10.032
#2	.39780	10.040	.39457	.48635	.99181	.05018	9.9043
#3	.39651	10.049	.38991	.48406	1.0053	.04994	9.9633
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04995**	**.19662**	**.49719**	**.50408**	**3.9345**	**48.425**	**1.0056**
Stddev	.00017	.00028	.00293	.00085	.0512	.336	.0066
%RSD	.33202	.14096	.58868	.16772	1.3013	.69474	.65876
#1	.05012	.19642	.49505	.50367	3.9195	48.601	1.0066
#2	.04993	.19694	.50053	.50505	3.8924	48.037	.99858
#3	.04979	.19651	.49600	.50351	3.9915	48.637	1.0117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.6539**	**.49874**	**1.0057**	**49.161**	**.50061**	**9.8144**	**.49889**
Stddev	.1152	.00402	.0014	.263	.00048	.0158	.00214
%RSD	1.1928	.80691	.13850	.53437	.09607	.16108	.42961
#1	9.7007	.49641	1.0053	49.311	.50117	9.7964	.49662
#2	9.5228	.49643	1.0072	48.858	.50038	9.8207	.49919
#3	9.7383	.50339	1.0045	49.316	.50029	9.8261	.50087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 20:14:26 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1787**	**.38972**	**5.0552**	**.98705**	**.99934**	**.99527**	**.50770**
Stddev	.0014	.00525	.0102	.00133	.00573	.00628	.00313
%RSD	.12146	1.3477	.20130	.13498	.57306	.63102	.61635
#1	1.1790	.38370	5.0434	.98688	1.0013	.99951	.50582
#2	1.1772	.39212	5.0610	.98581	.99288	.98805	.50598
#3	1.1800	.39334	5.0611	.98846	1.0038	.99824	.51132
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0147**	**.99253**	F **2.9496**
Stddev	.0017	.00087	.0127
%RSD	.16286	.08813	.43029
#1	1.0131	.99259	2.9390
#2	1.0147	.99336	2.9462
#3	1.0164	.99162	2.9637
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9868.5**	**58806.**	**2964.6**
Stddev	19.7	151.	1.8
%RSD	.19965	.25680	.06126
#1	9885.2	58672.	2966.0
#2	9873.5	58776.	2965.4
#3	9846.8	58969.	2962.6

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 20:18:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00132	-.00340	-.00049	.00031	.00192	.00008	-.02002	-.00008
Stddev	.00216	.00700	.00114	.00069	.00099	.00015	.01568	.00025
%RSD	163.88	205.77	232.07	221.43	51.768	179.89	78.343	317.94
#1	.00112	.00138	-.00179	.00077	.00240	-.00004	-.03265	.00011
#2	.00357	-.00014	-.00002	.00066	.00258	.00004	-.00247	-.00036
#3	-.00074	-.01144	.00034	-.00049	.00078	.00025	-.02493	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	.00038	.00063	.02332	-.07555	-.00123	.02786	-.00147
Stddev	.00036	.00095	.00188	.02448	.09270	.00682	.09570	.00329
%RSD	47.976	247.76	298.28	104.94	122.70	553.52	343.47	223.66
#1	.00080	.00146	-.00061	.04476	-.06611	.00634	-.06528	.00195
#2	.00036	.00002	.00279	-.00335	-.17262	-.00687	.02294	-.00462
#3	.00107	-.00033	-.00029	.02856	.01207	-.00317	.12594	-.00174
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00377	.03770	.00015	.00241	-.00006	.00325	.00675	.03903
Stddev	.00019	.01915	.00084	.00431	.00100	.00269	.00806	.00132
%RSD	5.0202	50.799	576.30	178.78	1573.6	82.788	119.45	3.3700
#1	.00388	.01718	.00046	.00371	.00063	.00040	.01512	.04015
#2	.00389	.04082	.00078	-.00240	-.00121	.00574	.00608	.03936
#3	.00355	.05510	-.00080	.00592	.00039	.00360	-.00096	.03758
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 20:18:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.00027**	**.00088**	**-.00106**	**.00004**	**-.00003**	**.00449**
Stddev	.00046	.00064	.00516	.00225	.00089	.00028	.00124
%RSD	6827.2	239.61	583.41	212.27	2439.5	892.40	27.555
#1	.00053	-.00043	-.00417	-.00308	-.00098	.00021	.00367
#2	-.00031	.00040	.00068	.00137	.00041	.00004	.00389
#3	-.00023	.00082	.00615	-.00147	.00068	-.00034	.00592
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9631.9**	**58363.**	**2969.7**
Stddev	4.5	93.	16.5
%RSD	.04685	.16010	.55454
#1	9627.4	58461.	2965.8
#2	9636.4	58275.	2987.8
#3	9631.8	58353.	2955.6

Approved: June 27, 2016

Sample Name: L1606098609 Acquired: 6/25/2016 20:22:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.68625	.00096	.00637	.02063	.00019	116.68	.00011
Stddev	.00130	.00243	.00203	.00124	.00115	.00006	.34	.00020
%RSD	161.33	.35410	210.74	19.489	5.5807	30.863	.28955	179.93
#1	.00013	.68352	.00323	.00768	.02147	.00021	116.54	.00014
#2	.00231	.68708	-.00070	.00521	.01932	.00023	116.43	-.00010
#3	-.00002	.68816	.00037	.00620	.02109	.00012	117.06	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.00251	.00589	.80058	.71511	.00736	28.613	.02306
Stddev	.00014	.00088	.00100	.02799	.18771	.00368	.079	.00071
%RSD	23.262	34.910	17.057	3.4966	26.250	49.956	.27754	3.0949
#1	.00051	.00150	.00680	.80914	.91494	.01159	28.526	.02382
#2	.00075	.00293	.00481	.76931	.68792	.00556	28.632	.02293
#3	.00052	.00310	.00605	.82330	.54247	.00492	28.681	.02241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	14.713	.00303	.03333	.00106	-.00272	.00365	4.8889
Stddev	.00024	.075	.00054	.00378	.00114	.00271	.00111	.0101
%RSD	32.746	.50774	17.920	11.335	108.20	99.808	30.510	.20564
#1	.00047	14.684	.00299	.03128	.00107	-.00577	.00444	4.8999
#2	.00095	14.656	.00359	.03769	-.00009	-.00056	.00238	4.8868
#3	.00081	14.797	.00251	.03102	.00220	-.00183	.00413	4.8801
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098609 Acquired: 6/25/2016 20:22:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**.51888**	**.00260**	**-.00246**	**.00196**	**.03426**	**.00729**
Stddev	.00032	.00275	.00453	.00099	.00037	.00011	.00028
%RSD	1222.6	.53076	174.15	40.180	18.856	.31556	3.8509
#1	.00009	.51844	-.00256	-.00245	.00220	.03417	.00723
#2	-.00032	.51637	.00591	-.00346	.00153	.03438	.00705
#3	.00031	.52183	.00446	-.00148	.00215	.03423	.00760
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9797.7**	**59515.**	**3093.6**
Stddev	11.0	17.	11.2
%RSD	.11267	.02773	.36079
#1	9791.0	59496.	3083.8
#2	9810.4	59520.	3105.7
#3	9791.6	59528.	3091.1

Approved: June 27, 2016

Sample Name: L1606098611 Acquired: 6/25/2016 20:25:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	.67808	-.00318	.08715	.06918	.00114	148.14	.00017
Stddev	.00037	.00569	.00382	.00198	.00070	.00012	.69	.00021
%RSD	151.84	.83972	120.10	2.2728	1.0151	10.946	.46623	125.05
#1	-.00014	.67215	-.00172	.08491	.06933	.00099	148.49	.00006
#2	.00061	.68350	-.00031	.08867	.06980	.00119	147.34	.00003
#3	.00027	.67861	-.00751	.08788	.06842	.00123	148.59	.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00363	.00334	.07531	1.1555	1.9378	.02263	43.443	.16489
Stddev	.00025	.00064	.00057	.0192	.0114	.00045	.331	.00288
%RSD	6.9167	19.099	.75123	1.6613	.58882	1.9873	.76282	1.7487
#1	.00388	.00297	.07511	1.1584	1.9507	.02262	43.610	.16408
#2	.00338	.00297	.07595	1.1731	1.9292	.02219	43.061	.16250
#3	.00362	.00407	.07487	1.1351	1.9335	.02309	43.657	.16809
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00248	25.675	.00454	.04285	.00455	-.00035	-.00286	3.7826
Stddev	.00024	.125	.00067	.00695	.00113	.00106	.00555	.0053
%RSD	9.7863	.48812	14.843	16.217	24.766	306.62	194.07	.13999
#1	.00260	25.775	.00423	.04366	.00585	.00053	-.00927	3.7791
#2	.00220	25.535	.00409	.03554	.00387	-.00004	.00020	3.7887
#3	.00264	25.716	.00532	.04936	.00394	-.00153	.00049	3.7799
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098611 Acquired: 6/25/2016 20:25:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	2.0876	-.00638	-.00280	.00142	.06566	.00394
Stddev	.00055	.0096	.00925	.00066	.00022	.00017	.00141
%RSD	713.59	.45905	144.86	23.607	15.199	.25178	35.771
#1	-.00017	2.0923	-.00754	-.00222	.00163	.06585	.00254
#2	-.00031	2.0765	-.01500	-.00266	.00143	.06556	.00536
#3	.00071	2.0939	.00339	-.00351	.00120	.06556	.00393
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9695.5	58902.	3054.3
Stddev	10.1	156.	10.7
%RSD	.10398	.26470	.35100
#1	9691.1	59006.	3048.2
#2	9688.3	58978.	3066.6
#3	9707.0	58723.	3048.0

Approved: June 27, 2016

Sample Name: L1606098613 Acquired: 6/25/2016 20:29:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00174	5.5730	.00432	.03801	.11035	.00130	203.09	-.00001
Stddev	.00149	.0359	.00264	.00141	.00031	.00003	.17	.00016
%RSD	85.559	.64338	61.135	3.7127	.27868	2.0129	.08522	1090.1
#1	.00010	5.6007	.00735	.03819	.11034	.00128	203.27	.00012
#2	.00211	5.5858	.00310	.03932	.11006	.00133	203.05	.00003
#3	.00302	5.5325	.00251	.03651	.11067	.00131	202.93	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00373	.00967	.08024	7.4517	4.1196	.03087	79.593	.34313
Stddev	.00008	.00046	.00072	.0194	.0319	.00148	.239	.00219
%RSD	2.0959	4.7129	.90070	.26051	.77317	4.7986	.30050	.63957
#1	.00364	.00917	.07941	7.4293	4.0890	.03222	79.370	.34059
#2	.00377	.01007	.08072	7.4635	4.1171	.03112	79.565	.34436
#3	.00379	.00978	.08059	7.4624	4.1526	.02929	79.846	.34443
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00182	24.658	.00975	.17618	.00825	.00008	.00248	10.141
Stddev	.00040	.019	.00024	.00598	.00295	.00311	.00271	.073
%RSD	21.744	.07518	2.5015	3.3961	35.754	3886.1	109.35	.72041
#1	.00146	24.670	.00990	.17816	.00502	.00353	.00373	10.058
#2	.00175	24.669	.00947	.16946	.00891	-.00250	.00433	10.169
#3	.00224	24.637	.00989	.18093	.01080	-.00079	-.00063	10.196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098613 Acquired: 6/25/2016 20:29:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	2.4743	.05397	-.00080	.01073	.41856	.00624
Stddev	.00027	.0052	.00665	.00236	.00131	.00229	.00115
%RSD	39.960	.21077	12.313	294.11	12.169	.54671	18.419
#1	.00089	2.4751	.05254	-.00353	.01217	.41596	.00756
#2	.00073	2.4791	.04816	.00063	.00962	.42027	.00548
#3	.00037	2.4687	.06122	.00049	.01040	.41945	.00567
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9619.4	58503.	3058.9
Stddev	38.3	135.	15.7
%RSD	.39844	.23102	.51315
#1	9576.0	58658.	3041.4
#2	9633.7	58414.	3071.7
#3	9648.5	58435.	3063.7

Approved: June 27, 2016

Sample Name: L1606098615 Acquired: 6/25/2016 20:33:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00201	.53689	.00109	.12769	.02932	.00091	261.33	.00014
Stddev	.00048	.01300	.00276	.00142	.00104	.00011	1.37	.00008
%RSD	23.740	2.4215	252.93	1.1120	3.5600	12.063	.52322	55.108
#1	.00148	.54532	.00299	.12707	.02978	.00081	261.04	.00021
#2	.00215	.54344	.00237	.12931	.03005	.00088	262.83	.00006
#3	.00240	.52192	-.00208	.12669	.02812	.00103	260.14	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	.00167	.04808	1.7755	3.9837	.04482	96.121	.35461
Stddev	.00009	.00172	.00105	.0329	.0639	.00305	.330	.00305
%RSD	12.352	103.13	2.1885	1.8532	1.6044	6.8091	.34352	.86008
#1	.00068	.00125	.04714	1.8121	3.9806	.04242	96.172	.35269
#2	.00071	.00356	.04922	1.7483	4.0491	.04379	96.422	.35813
#3	.00085	.00020	.04788	1.7662	3.9214	.04825	95.768	.35302
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	71.586	.00152	.06528	.00543	-.00023	-.00042	6.3830
Stddev	.00049	.359	.00083	.00282	.00224	.00292	.00309	.0073
%RSD	60.493	.50193	55.060	4.3183	41.272	1275.7	729.65	.11354
#1	.00036	71.588	.00097	.06827	.00795	-.00316	.00167	6.3913
#2	.00132	71.945	.00248	.06488	.00468	-.00019	.00103	6.3782
#3	.00072	71.227	.00110	.06267	.00366	.00267	-.00398	6.3795
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098615 Acquired: 6/25/2016 20:33:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00066**	**6.9477**	**-.01868**	**-.00208**	**-.00036**	**.07416**	**.00363**
Stddev	.00094	.0407	.00365	.00070	.00044	.00028	.00062
%RSD	142.12	.58617	19.553	33.577	122.09	.37861	17.066
#1	.00171	6.9428	-.02024	-.00215	-.00034	.07441	.00412
#2	.00039	6.9907	-.01451	-.00134	-.00081	.07386	.00293
#3	-.00011	6.9097	-.02130	-.00273	.00007	.07420	.00382
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9482.1**	**57521.**	**3041.1**
Stddev	15.4	119.	13.0
%RSD	.16231	.20772	.42869
#1	9472.3	57649.	3053.5
#2	9499.8	57500.	3027.5
#3	9474.1	57412.	3042.2

Approved: June 27, 2016

Sample Name: L1606098617 Acquired: 6/25/2016 20:37:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00154	.20547	.00214	.04863	.05628	.00015	62.798	.00005
Stddev	.00260	.00707	.00399	.00222	.00076	.00003	.506	.00026
%RSD	168.84	3.4433	186.39	4.5608	1.3548	21.842	.80652	579.39
#1	.00162	.19836	-.00117	.04752	.05710	.00015	63.380	-.00016
#2	.00410	.20553	.00657	.05118	.05613	.00018	62.459	.00034
#3	-.00110	.21251	.00102	.04718	.05560	.00012	62.555	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.00139	.00754	.49751	2.0420	.02056	20.601	.01571
Stddev	.00024	.00096	.00096	.02565	.1117	.00244	.034	.00089
%RSD	70.093	68.878	12.744	5.1552	5.4689	11.879	.16418	5.6341
#1	.00059	.00246	.00739	.47113	2.0254	.02185	20.628	.01672
#2	.00012	.00112	.00857	.52236	1.9395	.01774	20.613	.01507
#3	.00031	.00060	.00666	.49904	2.1610	.02209	20.563	.01535
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00090	26.598	.00080	.00703	.00246	-.00325	.00131	3.4906
Stddev	.00064	.178	.00058	.00500	.00246	.00605	.00554	.0173
%RSD	70.655	.66988	72.589	71.163	99.983	186.20	421.53	.49585
#1	.00155	26.804	.00039	.00280	.00327	-.00237	-.00267	3.5042
#2	.00088	26.495	.00146	.00574	-.00030	-.00969	.00764	3.4966
#3	.00027	26.495	.00054	.01256	.00441	.00231	-.00103	3.4711
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098617 Acquired: 6/25/2016 20:37:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	1.5150	-.00311	-.00236	-.00015	.01447	.00341
Stddev	.00072	.0088	.00641	.00068	.00005	.00011	.00060
%RSD	226.25	.58268	206.23	28.717	34.447	.73139	17.615
#1	.00066	1.5251	-.00263	-.00291	-.00009	.01435	.00287
#2	.00080	1.5088	.00305	-.00160	-.00015	.01454	.00406
#3	-.00051	1.5111	-.00975	-.00256	-.00020	.01452	.00331
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9830.7	59822.	3082.9
Stddev	15.5	147.	23.6
%RSD	.15717	.24641	.76693
#1	9813.6	59963.	3057.5
#2	9843.5	59835.	3104.4
#3	9835.1	59669.	3086.7

Approved: June 27, 2016

Sample Name: L1606098619 Acquired: 6/25/2016 20:41:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00113	.27749	.00069	.06930	.05323	.00039	10.214	.00034
Stddev	.00263	.00318	.00178	.00081	.00134	.00007	.065	.00038
%RSD	232.09	1.1459	258.13	1.1649	2.5186	17.965	.63738	111.28
#1	.00355	.27762	.00105	.06852	.05477	.00042	10.240	.00066
#2	-.00167	.28061	.00227	.06924	.05251	.00044	10.140	.00044
#3	.00153	.27425	-.00125	.07014	.05240	.00031	10.262	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00108	.00071	.02585	.24748	1.2811	.01465	4.6162	.00999
Stddev	.00051	.00114	.00067	.00474	.0573	.00378	.0318	.00359
%RSD	46.988	159.40	2.5887	1.9167	4.4759	25.817	.68816	35.904
#1	.00062	.00202	.02645	.25048	1.2371	.01153	4.5886	.01278
#2	.00162	-.00003	.02513	.24201	1.3460	.01356	4.6509	.01123
#3	.00099	.00015	.02599	.24994	1.2604	.01885	4.6090	.00594
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00123	228.52	.00044	.07963	.00371	-.00207	.00619	2.5103
Stddev	.00028	1.82	.00063	.00808	.00266	.00077	.00393	.0173
%RSD	22.669	.79720	141.35	10.151	71.562	37.379	63.490	.68709
#1	.00153	229.52	.00003	.07034	.00201	-.00126	.00175	2.5018
#2	.00118	226.42	.00013	.08504	.00235	-.00280	.00758	2.4989
#3	.00097	229.62	.00117	.08351	.00677	-.00216	.00924	2.5301
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098619 Acquired: 6/25/2016 20:41:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.22967	.00683	-.00264	.00219	.02256	.00408
Stddev	.00091	.00074	.00628	.00047	.00030	.00021	.00266
%RSD	1371.8	.32350	91.943	17.727	13.766	.92425	65.101
#1	-.00024	.23041	.00516	-.00255	.00222	.02259	.00112
#2	-.00065	.22892	.00155	-.00314	.00188	.02235	.00625
#3	.00109	.22967	.01377	-.00222	.00248	.02276	.00487
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9702.8	58480.	3067.3
Stddev	45.7	28.	15.6
%RSD	.47062	.04775	.50880
#1	9725.9	58510.	3053.5
#2	9732.4	58474.	3084.2
#3	9650.3	58455.	3064.3

Approved: June 27, 2016

Sample Name: L1606098621 Acquired: 6/25/2016 20:45:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	.00121	.00179	.05746	.02986	.00029	128.59	-.00000
Stddev	.00056	.00275	.00384	.00358	.00132	.00008	.53	.00025
%RSD	97.573	226.34	214.60	6.2318	4.4201	27.216	.41011	6271.6
#1	.00040	-.00100	.00602	.06157	.03100	.00034	129.12	-.00029
#2	.00120	.00036	-.00148	.05576	.03017	.00020	128.07	.00019
#3	.00012	.00429	.00083	.05504	.02841	.00032	128.57	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.00173	.01434	.05981	2.5098	.02550	33.269	.15420
Stddev	.00017	.00097	.00185	.00891	.0950	.00146	.060	.00170
%RSD	92.832	55.806	12.905	14.892	3.7837	5.7272	.18077	1.1012
#1	.00010	.00269	.01260	.05052	2.5555	.02390	33.334	.15465
#2	.00007	.00177	.01629	.06064	2.4007	.02586	33.216	.15563
#3	.00038	.00075	.01412	.06828	2.5733	.02675	33.257	.15232
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	47.893	-.00000	.01004	.00162	-.00276	-.00417	3.5790
Stddev	.00060	.257	.00189	.00801	.00056	.00235	.00172	.0047
%RSD	106.13	.53712	269880.	79.763	34.469	85.173	41.117	.13102
#1	.00071	48.149	.00182	.00080	.00218	-.00406	-.00514	3.5827
#2	-.00009	47.634	.00013	.01426	.00163	-.00417	-.00519	3.5737
#3	.00107	47.897	-.00195	.01505	.00106	-.00005	-.00219	3.5806
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098621 Acquired: 6/25/2016 20:45:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**1.8050**	**-.02231**	**-.00291**	**.00001**	**.01004**	**.00207**
Stddev	.00095	.0120	.00564	.00294	.00125	.00002	.00101
%RSD	393.73	.66689	25.288	100.88	21161.	.16952	48.549
#1	.00057	1.8173	-.02371	-.00622	-.00119	.01005	.00218
#2	-.00128	1.7932	-.02711	-.00189	.00130	.01004	.00102
#3	-.00001	1.8046	-.01610	-.00062	-.00009	.01002	.00302
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9662.5**	**58180.**	**3042.4**
Stddev	14.0	47.	7.3
%RSD	.14521	.08141	.24078
#1	9658.0	58146.	3035.1
#2	9678.2	58161.	3042.4
#3	9651.2	58234.	3049.8

Approved: June 27, 2016

Sample Name: L1606098623 Acquired: 6/25/2016 20:49:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00139	.10705	.00198	.41392	.02623	.00027	243.17	.00017
Stddev	.00218	.00541	.00096	.00428	.00052	.00003	1.41	.00011
%RSD	157.63	5.0515	48.506	1.0332	1.9773	12.148	.58072	65.505
#1	.00177	.11044	.00295	.41225	.02682	.00026	243.56	.00005
#2	.00336	.10081	.00102	.41878	.02603	.00030	244.34	.00020
#3	-.00096	.10989	.00198	.41074	.02584	.00024	241.60	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.00125	.02256	.13395	6.1008	.01177	68.965	.45308
Stddev	.00021	.00090	.00053	.00942	.0335	.00473	.254	.00553
%RSD	267.67	72.031	2.3661	7.0298	.54942	40.196	.36871	1.2196
#1	-.00012	.00056	.02318	.12309	6.1028	.01598	68.820	.44996
#2	.00031	.00093	.02221	.13890	6.0663	.00665	69.259	.45946
#3	.00005	.00227	.02231	.13986	6.1333	.01267	68.816	.44983
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00044	66.667	.00075	.01360	.00015	-.00234	.00238	3.6345
Stddev	.00039	.343	.00118	.00476	.00283	.00395	.00376	.0082
%RSD	88.357	.51401	157.96	35.012	1938.3	168.93	158.02	.22548
#1	.00001	66.765	.00108	.01427	-.00296	-.00415	.00669	3.6345
#2	.00056	66.950	-.00056	.00853	.00082	.00219	.00057	3.6426
#3	.00076	66.286	.00172	.01798	.00259	-.00506	-.00014	3.6263
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098623 Acquired: 6/25/2016 20:49:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	1.6999	-.02956	-.00156	.00030	.00857	.00329
Stddev	.00028	.0081	.00507	.00230	.00048	.00011	.00135
%RSD	598.12	.47536	17.163	147.79	160.42	1.3327	41.067
#1	.00005	1.7017	-.03255	.00072	-.00015	.00844	.00173
#2	.00033	1.7069	-.02370	-.00388	.00023	.00859	.00400
#3	-.00023	1.6911	-.03242	-.00151	.00081	.00866	.00415
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9416.4	57429.	3035.8
Stddev	48.0	130.	25.1
%RSD	.51009	.22575	.82551
#1	9467.2	57482.	3016.2
#2	9410.3	57282.	3027.1
#3	9371.8	57525.	3064.1

Approved: June 27, 2016

Sample Name: L1606098625 Acquired: 6/25/2016 20:52:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00225	2.3612	.00034	.04147	.11975	.00023	121.59	.00037
Stddev	.00036	.0069	.00441	.00209	.00117	.00012	.33	.00010
%RSD	15.843	.29306	1297.6	5.0487	.97876	50.808	.26806	27.630
#1	.00211	2.3674	.00539	.03961	.11950	.00036	121.76	.00028
#2	.00199	2.3537	-.00273	.04106	.11872	.00014	121.21	.00033
#3	.00266	2.3625	-.00164	.04374	.12102	.00019	121.79	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00161	.00414	.00666	2.3953	2.5999	.01491	37.526	1.0679
Stddev	.00025	.00072	.00102	.0202	.0477	.00333	.332	.0124
%RSD	15.696	17.478	15.382	.84513	1.8346	22.308	.88561	1.1598
#1	.00188	.00385	.00549	2.3789	2.6109	.01808	37.493	1.0637
#2	.00138	.00496	.00714	2.4179	2.5476	.01145	37.212	1.0581
#3	.00156	.00361	.00736	2.3890	2.6411	.01519	37.874	1.0818
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	18.226	.00269	.05391	.00651	-.00190	.00505	5.9129
Stddev	.00020	.052	.00077	.00146	.00208	.00291	.00127	.0400
%RSD	30.881	.28797	28.786	2.7065	31.918	152.94	25.077	.67624
#1	.00067	18.245	.00228	.05412	.00658	-.00209	.00366	5.9121
#2	.00082	18.167	.00221	.05526	.00440	.00110	.00533	5.9533
#3	.00043	18.267	.00358	.05236	.00855	-.00472	.00614	5.8733
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098625 Acquired: 6/25/2016 20:52:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00035**	**.99462**	**.03044**	**-.00185**	**.00457**	**.15726**	**.00437**
Stddev	.00053	.00442	.00913	.00019	.00047	.00042	.00072
%RSD	150.91	.44485	29.990	10.187	10.282	.27017	16.565
#1	.00010	.99601	.03923	-.00207	.00503	.15763	.00393
#2	-.00093	.98967	.02100	-.00171	.00410	.15735	.00520
#3	-.00022	.99819	.03111	-.00178	.00457	.15680	.00397
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9574.3**	**58285.**	**3022.7**
Stddev	18.0	80.	21.3
%RSD	.18820	.13801	.70548
#1	9553.8	58363.	3008.3
#2	9581.8	58202.	3047.2
#3	9587.4	58291.	3012.6

Approved: June 27, 2016

Sample Name: L1606098627 Acquired: 6/25/2016 20:56:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00254	4.6384	.00407	.03588	.08487	.00132	200.73	.00005
Stddev	.00192	.0173	.00097	.00149	.00032	.00011	.32	.00023
%RSD	75.499	.37394	23.741	4.1641	.37451	8.4866	.15998	422.09
#1	.00186	4.6215	.00464	.03631	.08521	.00120	200.37	.00006
#2	.00106	4.6377	.00461	.03711	.08483	.00141	200.85	-.00018
#3	.00471	4.6561	.00295	.03422	.08457	.00136	200.98	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00295	.00847	.07661	6.3761	4.0467	.02688	78.393	.28594
Stddev	.00029	.00096	.00098	.0153	.0946	.00177	.290	.00214
%RSD	9.9470	11.337	1.2842	.24023	2.3374	6.5906	.37011	.74836
#1	.00263	.00958	.07761	6.3586	3.9534	.02860	78.140	.28832
#2	.00299	.00791	.07658	6.3825	4.0443	.02506	78.709	.28419
#3	.00322	.00791	.07564	6.3872	4.1425	.02698	78.329	.28530
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00106	25.068	.00713	.15173	.00678	-.00194	.00054	8.9965
Stddev	.00058	.104	.00038	.00131	.00344	.00137	.00531	.0286
%RSD	55.068	.41293	5.2660	.86550	50.818	70.752	976.81	.31838
#1	.00130	24.949	.00680	.15078	.01021	-.00340	-.00348	9.0111
#2	.00040	25.140	.00754	.15323	.00679	-.00068	-.00144	9.0150
#3	.00149	25.114	.00704	.15117	.00333	-.00174	.00656	8.9635
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098627 Acquired: 6/25/2016 20:56:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	2.4772	.04490	-.00127	.00901	.16031	.00422
Stddev	.00154	.0067	.00796	.00182	.00061	.00117	.00055
%RSD	173.10	.26965	17.717	142.95	6.7328	.72957	12.944
#1	.00142	2.4695	.04447	-.00241	.00911	.16067	.00359
#2	.00210	2.4809	.03717	.00082	.00836	.16126	.00459
#3	-.00085	2.4812	.05306	-.00223	.00956	.15900	.00448
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9465.6	57841.	2995.1
Stddev	68.7	160.	17.6
%RSD	.72586	.27642	.58883
#1	9445.1	57701.	3013.7
#2	9409.5	58015.	2978.6
#3	9542.2	57807.	2993.1

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 21:00:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40235**	**10.185**	**.39842**	**.49195**	**1.0203**	**.05034**	**10.153**
Stddev	.00325	.028	.00193	.00194	.0055	.00031	.030
%RSD	.80675	.27855	.48505	.39452	.53912	.62290	.29151
#1	.39985	10.214	.39899	.49235	1.0140	.05068	10.126
#2	.40602	10.183	.40000	.49365	1.0227	.05026	10.185
#3	.40118	10.157	.39627	.48984	1.0242	.05007	10.150
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05123**	**.19988**	**.50288**	**.51330**	**4.0070**	**49.596**	**1.0284**
Stddev	.00026	.00047	.00335	.00193	.0033	.230	.0041
%RSD	.51360	.23712	.66679	.37527	.08271	.46359	.40302
#1	.05102	.20030	.50672	.51551	4.0072	49.649	1.0258
#2	.05153	.19997	.50051	.51234	4.0102	49.344	1.0261
#3	.05115	.19937	.50141	.51204	4.0036	49.795	1.0332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.5669**	**.50781**	**1.0249**	**50.362**	**.50842**	**9.9814**	**.50557**
Stddev	.0485	.00742	.0065	.234	.00100	.0181	.00207
%RSD	.50657	1.4609	.62973	.46520	.19680	.18135	.40980
#1	9.6226	.50131	1.0311	50.266	.50877	9.9736	.50596
#2	9.5340	.50622	1.0255	50.191	.50920	10.002	.50742
#3	9.5442	.51589	1.0183	50.629	.50729	9.9685	.50333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 21:00:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2045**	**.39202**	**5.1444**	**1.0010**	**1.0190**	**1.0190**	**.51206**
Stddev	.0033	.00153	.0072	.0031	.0045	.0084	.00251
%RSD	.27464	.38961	.14055	.30711	.44063	.82168	.49020
#1	1.2010	.39059	5.1361	1.0039	1.0167	1.0152	.51490
#2	1.2047	.39363	5.1492	1.0015	1.0162	1.0132	.51015
#3	1.2076	.39184	5.1479	.99778	1.0242	1.0286	.51112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0223**	**1.0141**	F **2.9929**
Stddev	.0031	.0001	.0241
%RSD	.30006	.01208	.80650
#1	1.0229	1.0141	3.0133
#2	1.0190	1.0142	2.9663
#3	1.0251	1.0139	2.9992
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9649.2**	**58649.**	**2955.6**
Stddev	2.7	54.	16.9
%RSD	.02842	.09258	.57071
#1	9646.1	58667.	2944.4
#2	9650.3	58588.	2975.0
#3	9651.2	58692.	2947.5

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 21:04:14 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00098**	**-.00081**	**.00091**	**.00315**	**.00292**	**.00009**	**-.03474**	**.00002**
Stddev	.00124	.00864	.00092	.00201	.00133	.00005	.02919	.00008
%RSD	125.96	1064.0	100.48	64.019	45.548	52.705	84.022	417.72
#1	.00043	-.00670	.00067	.00330	.00336	.00005	-.02620	.00002
#2	-.00151	.00910	.00014	.00508	.00142	.00009	-.01077	-.00006
#3	-.00188	-.00483	.00193	.00106	.00397	.00014	-.06724	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.00125**	**.00083**	**.02088**	**-.14334**	**.00212**	**-.02955**	**.00114**
Stddev	.00066	.00051	.00122	.01391	.04593	.00105	.09306	.00075
%RSD	1530.9	41.168	147.43	66.595	32.046	49.608	314.87	66.235
#1	.00067	.00069	.00144	.03293	-.09030	.00098	-.05631	.00047
#2	-.00016	.00170	-.00058	.02406	-.17011	.00232	-.10630	.00196
#3	-.00064	.00135	.00162	.00566	-.16960	.00305	.07395	.00100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00323**	**.05080**	**-.00020**	**.00483**	**.00058**	**.00191**	**.00111**	**.03921**
Stddev	.00021	.02575	.00089	.00353	.00235	.00387	.00242	.00153
%RSD	6.4882	50.676	441.28	73.104	406.34	202.21	216.78	3.9059
#1	.00300	.07783	.00045	.00259	-.00201	.00626	-.00135	.03746
#2	.00339	.02657	-.00122	.00300	.00257	.00062	.00121	.03991
#3	.00331	.04802	.00016	.00889	.00117	-.00114	.00348	.04027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 21:04:14 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.00029	-.00007	-.00513	.00041	-.00001	.00470
Stddev	.00027	.00000	.00626	.00369	.00015	.00012	.00055
%RSD	55.343	1.4693	8856.4	71.949	37.134	916.05	11.589
#1	.00081	.00028	.00338	-.00666	.00031	.00010	.00427
#2	.00033	.00029	-.00730	-.00092	.00059	.00000	.00453
#3	.00034	.00028	.00370	-.00780	.00035	-.00014	.00531
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9506.6	58497.	2929.7
Stddev	22.3	113.	12.0
%RSD	.23433	.19372	.40841
#1	9532.3	58628.	2919.5
#2	9494.8	58435.	2926.6
#3	9492.6	58429.	2942.8

Approved: June 27, 2016

Sample Name: L1606098629 Acquired: 6/25/2016 21:08:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00070	1.3154	-.00179	.12516	.05800	.00081	247.18	.00018
Stddev	.00097	.0064	.00105	.00195	.00108	.00003	.31	.00008
%RSD	137.44	.48564	58.530	1.5550	1.8687	3.6829	.12350	43.911
#1	.00160	1.3100	-.00292	.12302	.05810	.00083	246.92	.00018
#2	.00082	1.3224	-.00085	.12682	.05904	.00078	247.52	.00010
#3	-.00032	1.3138	-.00160	.12563	.05687	.00083	247.09	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00119	.00401	.04528	2.4364	3.9714	.04409	89.669	.34274
Stddev	.00048	.00063	.00072	.0178	.1152	.00255	.458	.00095
%RSD	40.012	15.569	1.5917	.73079	2.9014	5.7752	.51098	.27642
#1	.00152	.00449	.04490	2.4275	3.9851	.04702	90.007	.34368
#2	.00141	.00424	.04612	2.4569	4.0792	.04281	89.852	.34276
#3	.00065	.00331	.04484	2.4248	3.8500	.04243	89.147	.34178
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00084	72.159	.00306	.12842	.00472	-.00245	-.00232	7.1068
Stddev	.00019	.103	.00116	.00307	.00202	.00283	.00582	.0122
%RSD	22.591	.14315	38.091	2.3898	42.715	115.64	250.20	.17182
#1	.00062	72.124	.00297	.12975	.00386	-.00541	-.00257	7.1178
#2	.00090	72.275	.00194	.13059	.00327	-.00216	-.00801	7.1089
#3	.00099	72.077	.00426	.12491	.00702	.00023	.00361	7.0937
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098629 Acquired: 6/25/2016 21:08:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00063**	**6.8039**	**.00261**	**-.00311**	**.00203**	**.14656**	**.00713**
Stddev	.00109	.0140	.00201	.00153	.00039	.00030	.00139
%RSD	174.70	.20570	77.238	49.135	18.962	.20399	19.505
#1	.00026	6.7979	.00196	-.00298	.00228	.14634	.00715
#2	-.00024	6.8199	.00487	-.00165	.00159	.14690	.00573
#3	.00185	6.7939	.00100	-.00469	.00223	.14643	.00851
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9470.9**	**57988.**	**3007.5**
Stddev	19.0	71.	5.1
%RSD	.20079	.12320	.16890
#1	9472.3	57910.	3001.8
#2	9451.2	58005.	3011.5
#3	9489.2	58049.	3009.1

Approved: June 27, 2016

Sample Name: L1606098631S Acquired: 6/25/2016 21:12:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18827**	**4.8059**	**.19457**	**.97775**	**.51082**	**.02368**	**136.28**	**.02401**
Stddev	.00146	.0060	.00214	.00486	.00158	.00008	.55	.00011
%RSD	.77669	.12402	1.0980	.49690	.30853	.31910	.40245	.44044
#1	.18949	4.8104	.19700	.98276	.50954	.02372	135.66	.02402
#2	.18665	4.7991	.19298	.97305	.51258	.02359	136.67	.02389
#3	.18867	4.8083	.19374	.97744	.51033	.02373	136.53	.02410
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09298**	**.23341**	**.25035**	**1.9823**	**26.282**	**.52091**	**38.371**	**.48555**
Stddev	.00063	.00083	.00168	.0210	.198	.00132	.105	.00060
%RSD	.67753	.35580	.67127	1.0601	.75241	.25420	.27268	.12393
#1	.09358	.23411	.25193	1.9586	26.065	.52066	38.253	.48489
#2	.09232	.23249	.25054	1.9895	26.453	.52234	38.408	.48570
#3	.09303	.23364	.24858	1.9987	26.329	.51972	38.452	.48607
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49539**	**77.049**	**.23394**	**4.7766**	**.23491**	**.57914**	**.18644**	**6.1257**
Stddev	.00233	.345	.00087	.0076	.00312	.00333	.00623	.0072
%RSD	.47123	.44745	.37273	.15954	1.3288	.57493	3.3395	.11822
#1	.49753	76.664	.23461	4.7848	.23800	.57665	.18760	6.1339
#2	.49574	77.327	.23426	4.7754	.23176	.57786	.17971	6.1201
#3	.49290	77.158	.23296	4.7697	.23495	.58292	.19200	6.1230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098631S Acquired: 6/25/2016 21:12:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47308**	**2.3488**	**.46537**	**.23713**	**.48550**	**.47406**	**.01603**
Stddev	.00180	.0057	.00826	.00130	.00209	.00072	.00324
%RSD	.38025	.24432	1.7741	.54866	.42967	.15151	20.234
#1	.47478	2.3426	.46034	.23744	.48500	.47482	.01233
#2	.47325	2.3539	.46086	.23825	.48371	.47397	.01737
#3	.47120	2.3498	.47490	.23571	.48779	.47340	.01839
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9509.0**	**58216.**	**3011.6**
Stddev	7.0	203.	15.7
%RSD	.07407	.34863	.52135
#1	9501.0	58067.	3028.6
#2	9511.6	58447.	2997.6
#3	9514.3	58134.	3008.7

Approved: June 27, 2016

Sample Name: L1606098633SD Acquired: 6/25/2016 21:15:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19322**	**4.9340**	**.19821**	**1.0094**	**.52302**	**.02438**	**139.13**	**.02459**
Stddev	.00378	.0145	.00351	.0014	.00226	.00009	.67	.00034
%RSD	1.9571	.29336	1.7708	.13572	.43296	.36107	.48341	1.3705
#1	.18918	4.9313	.20201	1.0102	.52283	.02442	139.33	.02427
#2	.19667	4.9211	.19752	1.0078	.52537	.02443	139.68	.02494
#3	.19382	4.9497	.19509	1.0102	.52086	.02428	138.38	.02455
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09514**	**.23910**	**.25336**	**2.0284**	**26.984**	**.53592**	**39.198**	**.43704**
Stddev	.00042	.00077	.00150	.0114	.096	.00060	.184	.00451
%RSD	.44105	.32091	.59054	.56072	.35526	.11184	.46916	1.0308
#1	.09541	.23859	.25475	2.0343	27.015	.53581	38.996	.43232
#2	.09535	.23873	.25356	2.0357	27.059	.53539	39.242	.44129
#3	.09465	.23999	.25178	2.0153	26.876	.53657	39.356	.43751
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50931**	**78.441**	**.23759**	**4.8949**	**.24046**	**.58794**	**.19015**	**6.2655**
Stddev	.00186	.336	.00142	.0178	.00324	.00596	.00110	.0092
%RSD	.36520	.42898	.59954	.36432	1.3470	1.0133	.57938	.14668
#1	.51115	78.549	.23885	4.9125	.24157	.58732	.19136	6.2719
#2	.50933	78.710	.23604	4.8953	.23682	.59419	.18990	6.2695
#3	.50743	78.063	.23787	4.8768	.24301	.58232	.18920	6.2549
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098633SD Acquired: 6/25/2016 21:15:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48269**	**2.3976**	**.47749**	**.23961**	**.50144**	**.48370**	**.00655**
Stddev	.00278	.0083	.00742	.00256	.00242	.00154	.00139
%RSD	.57608	.34786	1.5549	1.0679	.48318	.31822	21.270
#1	.48505	2.3997	.47422	.24207	.50191	.48531	.00572
#2	.48340	2.4047	.47226	.23981	.49882	.48355	.00816
#3	.47963	2.3884	.48599	.23696	.50360	.48224	.00577
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9541.3**	**57975.**	**3017.9**
Stddev	6.7	58.	25.7
%RSD	.06977	.09979	.85022
#1	9537.4	57946.	3002.1
#2	9549.0	58042.	3004.1
#3	9537.6	57938.	3047.5

Approved: June 27, 2016

Sample Name: L1606098635S Acquired: 6/25/2016 21:19:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19277	4.9885	.19579	1.3512	.50932	.02402	246.59	.02462
Stddev	.00213	.0073	.00137	.0073	.00284	.00001	1.33	.00040
%RSD	1.1047	.14711	.70076	.54069	.55753	.03190	.53842	1.6295
#1	.19260	4.9802	.19687	1.3428	.50650	.02402	245.12	.02488
#2	.19498	4.9915	.19425	1.3565	.50929	.02401	246.97	.02416
#3	.19074	4.9939	.19626	1.3542	.51218	.02403	247.69	.02483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09311	.23510	.26651	1.9710	30.025	.51865	72.396	.67936
Stddev	.00111	.00066	.00283	.0124	.152	.00282	.624	.00361
%RSD	1.1973	.28134	1.0623	.63080	.50639	.54413	.86161	.53080
#1	.09375	.23474	.26754	1.9611	29.892	.51908	71.843	.67568
#2	.09182	.23470	.26331	1.9669	29.993	.51564	72.272	.67951
#3	.09375	.23586	.26869	1.9849	30.191	.52123	73.072	.68289
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49951	91.017	.23206	4.8553	.23760	.58301	.18517	6.5213
Stddev	.00475	.491	.00241	.0437	.00246	.00711	.00329	.0728
%RSD	.95179	.53976	1.0367	.89938	1.0354	1.2190	1.7758	1.1160
#1	.50253	90.509	.23402	4.8765	.23815	.58650	.18639	6.5577
#2	.49403	91.051	.22938	4.8051	.23491	.57483	.18144	6.4375
#3	.50197	91.490	.23278	4.8843	.23974	.58769	.18767	6.5687
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098635S Acquired: 6/25/2016 21:19:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47340**	**2.1822**	**.45682**	**.23569**	**.48957**	**.47212**	**.00440**
Stddev	.00586	.0116	.00441	.00472	.00317	.00386	.00078
%RSD	1.2388	.53009	.96525	2.0030	.64754	.81664	17.679
#1	.47626	2.1692	.45177	.23827	.48595	.47646	.00457
#2	.46666	2.1856	.45986	.23024	.49090	.46909	.00508
#3	.47729	2.1916	.45885	.23856	.49186	.47080	.00355
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9474.0**	**57681.**	**2990.6**
Stddev	86.2	193.	10.0
%RSD	.90991	.33483	.33371
#1	9421.7	57902.	3000.6
#2	9573.5	57545.	2990.5
#3	9426.8	57595.	2980.6

Approved: June 27, 2016

Sample Name: L1606098637SD Acquired: 6/25/2016 21:22:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18854**	**4.9112**	**.19745**	**1.3462**	**.50578**	**.02318**	**246.84**	**.02457**
Stddev	.00237	.0122	.00114	.0020	.00229	.00008	1.01	.00037
%RSD	1.2581	.24857	.57516	.14562	.45291	.33396	.40736	1.5133
#1	.18824	4.9085	.19618	1.3456	.50836	.02311	247.86	.02498
#2	.18633	4.9245	.19780	1.3447	.50496	.02326	245.85	.02445
#3	.19105	4.9006	.19837	1.3484	.50401	.02315	246.80	.02427
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09368**	**.23124**	**.24645**	**1.9652**	**29.866**	**.51243**	**71.961**	**.67062**
Stddev	.00032	.00174	.00162	.0103	.162	.00260	.245	.00120
%RSD	.34157	.75435	.65887	.52496	.54204	.50740	.33982	.17871
#1	.09405	.23044	.24793	1.9540	30.010	.51110	72.114	.67080
#2	.09349	.23325	.24471	1.9744	29.691	.51543	71.679	.66935
#3	.09350	.23005	.24671	1.9671	29.897	.51077	72.089	.67172
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50362**	**90.574**	**.23429**	**4.8998**	**.23803**	**.58838**	**.19013**	**6.6122**
Stddev	.00184	.311	.00137	.0310	.00392	.00166	.00571	.0196
%RSD	.36548	.34377	.58644	.63360	1.6481	.28131	3.0018	.29638
#1	.50535	90.891	.23522	4.9314	.24008	.58995	.18521	6.6237
#2	.50169	90.269	.23272	4.8693	.24051	.58666	.19639	6.5896
#3	.50382	90.562	.23494	4.8987	.23351	.58854	.18878	6.6233
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098637SD Acquired: 6/25/2016 21:22:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47518**	**2.1930**	**.45556**	**.23535**	**.47970**	**.47047**	**.00421**
Stddev	.00224	.0050	.00619	.00164	.00083	.00231	.00126
%RSD	.47229	.22774	1.3595	.69822	.17220	.49043	29.868
#1	.47661	2.1987	.46015	.23423	.48048	.47206	.00301
#2	.47259	2.1891	.45801	.23458	.47883	.46782	.00552
#3	.47634	2.1914	.44851	.23723	.47980	.47152	.00409
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9517.7**	**58425.**	**3034.0**
Stddev	30.6	371.	4.3
%RSD	.32191	.63434	.14141
#1	9523.8	58332.	3029.9
#2	9544.8	58110.	3038.5
#3	9484.5	58834.	3033.6

Approved: June 27, 2016

Sample Name: L1606098639 Acquired: 6/25/2016 21:26:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.00422**	**.00040**	**.00975**	**.00108**	**.00009**	**.14419**	**-.00005**
Stddev	.00042	.00758	.00073	.00126	.00087	.00008	.01744	.00009
%RSD	1118.0	179.89	181.74	12.897	80.476	90.859	12.096	178.96
#1	.00028	.01060	-.00028	.01106	.00209	.00013	.16280	-.00014
#2	.00012	-.00417	.00116	.00964	.00057	-.00000	.14155	-.00004
#3	-.00051	.00622	.00032	.00856	.00059	.00013	.12822	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00044**	**.00035**	**.00305**	**.04079**	**-.00706**	**.00203**	**-.02733**	**-.00024**
Stddev	.00042	.00030	.00090	.02484	.04162	.00092	.03833	.00264
%RSD	93.882	85.053	29.494	60.907	589.18	45.533	140.24	1117.6
#1	.00013	.00037	.00205	.05000	-.05467	.00295	-.00835	-.00277
#2	.00091	.00004	.00332	.05971	.01106	.00204	-.00220	-.00044
#3	.00028	.00063	.00378	.01266	.02242	.00110	-.07145	.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00046**	**.23384**	**.00002**	**.00301**	**.00223**	**-.00336**	**.00424**	**.10834**
Stddev	.00025	.02078	.00057	.00488	.00185	.00118	.00213	.00216
%RSD	54.203	8.8874	3135.0	161.94	83.035	35.176	50.129	1.9925
#1	.00023	.25768	.00001	-.00120	.00258	-.00441	.00208	.11078
#2	.00073	.22428	.00059	.00188	.00389	-.00208	.00633	.10755
#3	.00043	.21955	-.00055	.00835	.00023	-.00360	.00432	.10668
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098639 Acquired: 6/25/2016 21:26:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.00188	.00201	-.00117	.00072	.00941	.00130
Stddev	.00073	.00051	.00315	.00081	.00019	.00001	.00060
%RSD	203.49	27.359	156.60	69.426	26.854	.12705	46.035
#1	.00061	.00146	.00564	-.00068	.00081	.00940	.00116
#2	.00093	.00173	.00038	-.00211	.00085	.00941	.00078
#3	-.00047	.00245	.00001	-.00072	.00050	.00942	.00196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9979.7	61621.	3102.9
Stddev	10.2	118.	6.8
%RSD	.10173	.19116	.21926
#1	9983.1	61738.	3101.0
#2	9987.7	61621.	3110.5
#3	9968.3	61503.	3097.3

Approved: June 27, 2016

Sample Name: L1606098641 Acquired: 6/25/2016 21:30:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00155	.00228	-.00074	.00681	.00240	.00007	2.3285	.00015
Stddev	.00195	.00437	.00132	.00259	.00010	.00002	.0225	.00014
%RSD	125.93	191.41	178.17	38.016	4.0011	29.007	.96410	94.650
#1	.00016	.00624	-.00146	.00963	.00251	.00005	2.3542	.00003
#2	.00071	.00302	-.00156	.00453	.00235	.00009	2.3184	.00011
#3	.00378	-.00241	.00078	.00628	.00234	.00008	2.3128	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00014	.00163	.03413	.24665	.00092	.81266	-.00079
Stddev	.00068	.00062	.00075	.01156	.02854	.00423	.01745	.00318
%RSD	1106.1	456.64	45.829	33.860	11.573	458.16	2.1475	404.35
#1	-.00033	.00085	.00092	.03095	.24915	.00580	.81529	.00231
#2	.00085	-.00023	.00241	.02450	.27386	-.00166	.79404	-.00404
#3	-.00034	-.00022	.00156	.04694	.21693	-.00138	.82864	-.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	1.5234	-.00034	.00759	.00193	-.00110	-.00056	1.9225
Stddev	.00028	.0181	.00053	.00504	.00328	.00190	.00524	.0055
%RSD	316.47	1.1895	155.07	66.429	170.02	173.25	938.70	.28386
#1	-.00021	1.5412	-.00096	.00263	.00004	-.00329	-.00638	1.9218
#2	.00035	1.5240	.00002	.00743	.00571	-.00014	.00092	1.9283
#3	.00013	1.5050	-.00009	.01271	.00003	.00014	.00379	1.9175
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098641 Acquired: 6/25/2016 21:30:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.02979**	**.00925**	**-.00425**	**.00079**	**.00575**	**.00161**
Stddev	.00070	.00033	.00260	.00161	.00118	.00006	.00128
%RSD	2613.1	1.1094	28.082	37.920	148.25	1.0430	79.495
#1	-.00014	.02957	.00917	-.00541	.00147	.00579	.00219
#2	.00072	.03017	.01188	-.00492	.00148	.00578	.00014
#3	-.00067	.02963	.00669	-.00241	-.00057	.00568	.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9984.0**	**61505.**	**3103.5**
Stddev	25.4	97.	8.6
%RSD	.25425	.15693	.27670
#1	10013.	61422.	3093.7
#2	9966.4	61611.	3106.9
#3	9972.6	61483.	3109.8

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 21:34:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40382	10.228	.39903	.49252	1.0184	.05057	10.132
Stddev	.00317	.045	.00339	.00303	.0029	.00010	.084
%RSD	.78510	.44126	.84879	.61522	.28786	.20129	.82686
#1	.40329	10.193	.40176	.48985	1.0165	.05045	10.103
#2	.40723	10.279	.39524	.49189	1.0170	.05064	10.066
#3	.40095	10.211	.40009	.49581	1.0218	.05061	10.226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05109	.20032	.50425	.51389	3.9993	49.456	1.0271
Stddev	.00034	.00030	.00243	.00134	.0288	.230	.0087
%RSD	.66912	.15054	.48104	.26170	.72080	.46581	.84751
#1	.05096	.20027	.50150	.51248	3.9697	49.237	1.0193
#2	.05148	.20064	.50519	.51515	4.0273	49.435	1.0365
#3	.05084	.20004	.50607	.51404	4.0011	49.697	1.0255
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.5965	.50354	1.0171	50.205	.50852	9.9839	.50630
Stddev	.0605	.00125	.0104	.188	.00105	.0190	.00443
%RSD	.63000	.24843	1.0188	.37433	.20655	.18977	.87552
#1	9.5498	.50228	1.0149	50.026	.50872	9.9714	.50177
#2	9.5748	.50478	1.0283	50.189	.50945	10.006	.51063
#3	9.6648	.50354	1.0080	50.400	.50738	9.9747	.50650
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 21:34:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2057**	**.39535**	**5.1622**	**1.0068**	**1.0152**	**1.0163**	**.51868**
Stddev	.0009	.00724	.0066	.0035	.0056	.0047	.00189
%RSD	.07645	1.8317	.12822	.34938	.55282	.46463	.36343
#1	1.2067	.40045	5.1563	1.0056	1.0088	1.0109	.51803
#2	1.2055	.39854	5.1610	1.0107	1.0174	1.0194	.51721
#3	1.2048	.38706	5.1694	1.0040	1.0193	1.0187	.52081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0297**	**1.0108**	F **2.9654**
Stddev	.0010	.0013	.0124
%RSD	.09618	.12981	.41944
#1	1.0297	1.0109	2.9530
#2	1.0307	1.0120	2.9654
#3	1.0287	1.0094	2.9779
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9765.3**	**59222.**	**3028.4**
Stddev	12.6	103.	19.9
%RSD	.12950	.17379	.65564
#1	9777.2	59331.	3048.9
#2	9752.0	59127.	3027.1
#3	9766.5	59207.	3009.2

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 21:38:07 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00048**	**-.00056**	**.00159**	**.00238**	**.00173**	**.00014**	**-.05704**	**-.00011**
Stddev	.00089	.00372	.00374	.00230	.00036	.00002	.05178	.00017
%RSD	185.89	660.56	234.30	96.559	20.708	14.400	90.783	156.11
#1	-.00133	.00080	.00118	.00024	.00195	.00012	-.11682	-.00027
#2	-.00055	-.00477	-.00192	.00481	.00132	.00016	-.02846	-.00014
#3	.00045	.00228	.00552	.00209	.00192	.00015	-.02584	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00017**	**.00048**	**.00001**	**.01554**	**-.08094**	**.00031**	**-.00960**	**.00059**
Stddev	.00009	.00037	.00173	.01679	.11260	.00565	.05873	.00171
%RSD	56.610	77.335	20230.	108.07	139.11	1853.2	611.58	288.38
#1	.00024	.00066	.00194	-.00104	.01136	.00158	-.02063	.00007
#2	.00020	.00072	-.00054	.03254	-.20639	-.00588	.05386	.00251
#3	.00006	.00005	-.00138	.01511	-.04780	.00521	-.06203	-.00080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00336**	**.02885**	**-.00050**	**.00712**	**.00213**	**.00602**	**-.00054**	**.04214**
Stddev	.00024	.02974	.00074	.00312	.00180	.00158	.00069	.00013
%RSD	7.0582	103.10	148.29	43.907	84.214	26.247	127.12	.29697
#1	.00323	-.00548	.00008	.00759	.00359	.00782	.00008	.04201
#2	.00321	.04496	-.00024	.00998	.00013	.00485	-.00042	.04226
#3	.00363	.04705	-.00133	.00378	.00268	.00540	-.00129	.04215
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 21:38:07 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00047**	**.00065**	**-.00177**	**-.00021**	**.00113**	**.00005**	**.00375**
Stddev	.00100	.00044	.00221	.00418	.00029	.00020	.00087
%RSD	212.41	68.047	125.42	1958.4	25.944	435.57	23.135
#1	.00160	.00080	.00075	-.00080	.00139	-.00005	.00437
#2	-.00031	.00015	-.00341	-.00407	.00081	.00028	.00276
#3	.00012	.00100	-.00264	.00422	.00119	-.00009	.00413
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9540.4**	**58573.**	**2934.4**
Stddev	6.2	75.	17.1
%RSD	.06498	.12729	.58178
#1	9533.2	58646.	2919.8
#2	9543.3	58575.	2953.2
#3	9544.6	58497.	2930.3

Approved: June 27, 2016

Sample Name: PBW 9A Acquired: 6/25/2016 21:42:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.00614**	**.00175**	**.00056**	**.00231**	**.00012**	**-.04646**	**-.00007**
Stddev	.00171	.00204	.00393	.00252	.00071	.00020	.04124	.00026
%RSD	1283.4	33.141	224.26	449.74	30.683	160.24	88.765	365.50
#1	.00182	.00611	.00626	-.00197	.00237	.00018	-.00258	-.00036
#2	-.00137	.00820	-.00088	.00057	.00157	.00029	-.08442	.00014
#3	-.00085	.00413	-.00013	.00307	.00298	-.00010	-.05240	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**.00010**	**.00080**	**.02407**	**-.12665**	**.00141**	**-.00997**	**-.00231**
Stddev	.00033	.00034	.00081	.01192	.12266	.00378	.02213	.00072
%RSD	90.436	329.64	101.91	49.545	96.850	267.21	222.01	31.042
#1	-.00000	-.00017	-.00014	.03113	-.25310	.00322	.01487	-.00193
#2	-.00045	.00048	.00118	.03078	-.11869	.00395	-.02759	-.00185
#3	-.00065	-.00000	.00135	.01030	-.00816	-.00293	-.01718	-.00313
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00037**	**.03613**	**.00006**	**.00672**	**.00326**	**-.00431**	**-.00184**	**.00566**
Stddev	.00007	.03275	.00077	.00152	.00253	.00485	.00591	.00059
%RSD	18.235	90.627	1212.2	22.673	77.664	112.59	322.28	10.478
#1	.00035	.07347	.00060	.00612	.00546	-.00044	-.00125	.00618
#2	.00032	.02263	-.00082	.00846	.00049	-.00975	.00376	.00501
#3	.00045	.01230	.00041	.00559	.00385	-.00274	-.00802	.00578
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: PBW 9A Acquired: 6/25/2016 21:42:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	.00033	-.00143	-.00317	.00125	.00161	.00218
Stddev	.00053	.00015	.00130	.00329	.00039	.00011	.00081
%RSD	84.270	46.594	90.758	103.97	30.982	7.0758	37.192
#1	.00094	.00050	-.00075	-.00532	.00080	.00148	.00195
#2	.00002	.00020	-.00062	-.00481	.00145	.00171	.00150
#3	.00092	.00028	-.00293	.00062	.00150	.00162	.00308
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9585.8	59115.	2963.7
Stddev	26.3	98.	6.0
%RSD	.27487	.16506	.20388
#1	9574.9	59148.	2962.9
#2	9615.8	59005.	2958.2
#3	9566.6	59192.	2970.2

Approved: June 27, 2016

Sample Name: LCSW 9A Acquired: 6/25/2016 21:45:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19278**	**4.8645**	**.19357**	**.92620**	**.49567**	**.02388**	**4.9744**	**.02438**
Stddev	.00059	.0150	.00172	.00296	.00123	.00001	.0131	.00027
%RSD	.30529	.30879	.88618	.31973	.24905	.05168	.26315	1.0959
#1	.19266	4.8773	.19194	.92961	.49521	.02387	4.9745	.02469
#2	.19342	4.8480	.19536	.92439	.49707	.02389	4.9613	.02424
#3	.19226	4.8682	.19339	.92458	.49473	.02389	4.9875	.02421
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09756**	**.24011**	**.24908**	**1.9287**	**23.845**	**.50347**	**4.7458**	**.24452**
Stddev	.00018	.00063	.00057	.0379	.076	.00304	.1100	.00304
%RSD	.18802	.26044	.22811	1.9678	.32025	.60437	2.3184	1.2446
#1	.09771	.24070	.24970	1.9204	23.902	.50653	4.7834	.24200
#2	.09761	.23946	.24858	1.9701	23.875	.50343	4.6218	.24790
#3	.09735	.24018	.24895	1.8956	23.758	.50044	4.8320	.24367
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50361**	**24.550**	**.24652**	**4.6792**	**.24585**	**.57643**	**.18945**	**2.4007**
Stddev	.00079	.045	.00091	.0152	.00374	.00321	.00289	.0038
%RSD	.15600	.18503	.37091	.32489	1.5220	.55613	1.5253	.15739
#1	.50355	24.561	.24748	4.6824	.24789	.57981	.19277	2.4049
#2	.50442	24.588	.24565	4.6926	.24153	.57604	.18748	2.3993
#3	.50285	24.500	.24642	4.6627	.24812	.57343	.18811	2.3978
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LCSW 9A Acquired: 6/25/2016 21:45:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48346	.50078	.49876	.24644	.49280	.48316	.01652
Stddev	.00157	.00182	.00430	.00290	.00093	.00040	.00416
%RSD	.32431	.36335	.86149	1.1750	.18883	.08190	25.157
#1	.48465	.50112	.49719	.24479	.49339	.48270	.01275
#2	.48404	.50241	.49547	.24978	.49173	.48334	.01583
#3	.48168	.49882	.50362	.24474	.49328	.48342	.02097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9876.1	60275.	3070.8
Stddev	6.3	180.	12.0
%RSD	.06355	.29822	.39033
#1	9874.5	60221.	3071.7
#2	9883.0	60476.	3058.4
#3	9870.8	60129.	3082.3

Approved: June 27, 2016

Sample Name: F BLANK Acquired: 6/25/2016 21:49:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	-.00126	-.00015	.00486	.00128	.00012	-.00459	.00000
Stddev	.00056	.00100	.00110	.00023	.00095	.00001	.02969	.00020
%RSD	100.53	79.131	736.67	4.6731	74.371	6.7718	646.26	7554.0
#1	.00064	-.00237	-.00130	.00509	.00028	.00012	.02032	.00019
#2	.00106	-.00043	-.00004	.00484	.00217	.00011	-.03745	-.00020
#3	-.00004	-.00099	.00090	.00463	.00139	.00012	.00335	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.00026	.00088	.03134	-.11502	-.00026	.03535	-.00044
Stddev	.00018	.00121	.00068	.00659	.05233	.00265	.10514	.00096
%RSD	49.613	468.36	76.871	21.019	45.492	1017.6	297.45	218.87
#1	.00058	.00075	.00159	.02374	-.13830	.00130	-.07629	.00060
#2	.00024	.00114	.00082	.03485	-.15168	.00124	.13249	-.00129
#3	.00028	-.00112	.00024	.03543	-.05510	-.00331	.04985	-.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.07370	.00132	.00313	.00117	-.00091	.00077	-.00309
Stddev	.00026	.00588	.00035	.00217	.00118	.00090	.00482	.00173
%RSD	45.817	7.9801	26.636	69.209	100.20	98.397	629.48	56.034
#1	.00085	.06695	.00170	.00515	.00095	-.00029	-.00041	-.00378
#2	.00042	.07645	.00125	.00084	.00245	-.00194	-.00336	-.00438
#3	.00040	.07770	.00101	.00340	.00013	-.00050	.00606	-.00112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: F BLANK Acquired: 6/25/2016 21:49:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00033**	**.00302**	**-.00048**	**-.00333**	**.00002**	**.00245**	**.00132**
Stddev	.00077	.00023	.00928	.00236	.00016	.00009	.00057
%RSD	230.12	7.5634	1914.7	70.982	654.43	3.7966	42.974
#1	.00023	.00325	-.01051	-.00146	-.00016	.00251	.00071
#2	.00115	.00279	.00127	-.00253	.00008	.00234	.00183
#3	-.00038	.00303	.00779	-.00598	.00016	.00250	.00143
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9948.0**	**61128.**	**3082.2**
Stddev	8.3	35.	19.2
%RSD	.08376	.05747	.62310
#1	9943.7	61136.	3060.8
#2	9942.7	61089.	3097.9
#3	9957.6	61158.	3087.8

Approved: June 27, 2016

Sample Name: L1606078709 Acquired: 6/25/2016 21:53:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00106	.32067	.00199	.03822	.08666	.00012	52.298	.00025
Stddev	.00033	.00225	.00178	.00083	.00065	.00013	.384	.00005
%RSD	31.425	.70249	89.821	2.1841	.74667	104.78	.73398	21.021
#1	.00100	.32316	.00023	.03790	.08700	-.00002	52.414	.00024
#2	.00077	.32010	.00380	.03760	.08707	.00018	51.870	.00021
#3	.00143	.31876	.00193	.03917	.08592	.00021	52.611	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.00232	.00233	.31407	.84091	.00625	16.422	.01281
Stddev	.00025	.00123	.00162	.01381	.09733	.00295	.087	.00086
%RSD	177.99	52.851	69.798	4.3981	11.574	47.203	.53048	6.7172
#1	-.00001	.00331	.00164	.32378	.73706	.00531	16.422	.01228
#2	.00000	.00271	.00116	.32018	.93004	.00389	16.510	.01236
#3	.00043	.00095	.00418	.29826	.85562	.00956	16.336	.01381
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	3.5331	.00030	.18004	.00409	-.00180	.00164	8.5479
Stddev	.00032	.0286	.00045	.00328	.00158	.00258	.00446	.0078
%RSD	137.02	.80985	147.61	1.8192	38.579	143.43	271.62	.09172
#1	-.00011	3.5554	-.00012	.17874	.00498	-.00359	.00673	8.5558
#2	.00052	3.5008	.00077	.17762	.00503	-.00297	-.00020	8.5477
#3	.00028	3.5432	.00026	.18377	.00227	.00116	-.00161	8.5401
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078709 Acquired: 6/25/2016 21:53:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.13816	-.00281	-.00107	.00371	.00875	.00154
Stddev	.00042	.00078	.00681	.00141	.00081	.00007	.00044
%RSD	132.89	.56285	242.62	131.61	21.926	.80395	28.630
#1	-.00012	.13842	.00500	-.00130	.00416	.00881	.00162
#2	.00035	.13728	-.00586	-.00235	.00277	.00878	.00193
#3	.00072	.13877	-.00757	.00044	.00421	.00867	.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9876.5	60888.	3069.7
Stddev	11.3	192.	3.6
%RSD	.11437	.31559	.11816
#1	9889.0	60702.	3066.7
#2	9866.9	60874.	3073.8
#3	9873.6	61086.	3068.7

Approved: June 27, 2016

Sample Name: L1606078711S Acquired: 6/25/2016 21:57:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19226**	**5.2769**	**.19700**	**.97637**	**.57407**	**.02377**	**55.412**	**.02464**
Stddev	.00232	.0172	.00210	.00695	.00123	.00006	.275	.00018
%RSD	1.2075	.32678	1.0663	.71175	.21357	.23547	.49636	.71677
#1	.19492	5.2928	.19484	.98432	.57271	.02383	55.376	.02446
#2	.19066	5.2586	.19711	.97142	.57439	.02373	55.156	.02465
#3	.19119	5.2792	.19903	.97337	.57510	.02375	55.703	.02481
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09590**	**.23900**	**.24525**	**2.2503**	**24.873**	**.51320**	**20.375**	**.25171**
Stddev	.00047	.00136	.00161	.0156	.173	.01009	.023	.00267
%RSD	.48644	.56990	.65491	.69491	.69517	1.9665	.11329	1.0594
#1	.09633	.24013	.24639	2.2591	25.016	.52369	20.389	.25241
#2	.09595	.23749	.24595	2.2322	24.681	.50356	20.349	.25396
#3	.09541	.23938	.24342	2.2595	24.921	.51234	20.388	.24877
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50427**	**27.841**	**.24087**	**4.9542**	**.24449**	**.58622**	**.18341**	**11.076**
Stddev	.00227	.102	.00131	.0062	.00416	.00262	.00666	.019
%RSD	.45102	.36806	.54487	.12407	1.6996	.44696	3.6299	.17466
#1	.50494	27.874	.24041	4.9608	.24621	.58442	.18291	11.063
#2	.50614	27.726	.24235	4.9486	.23975	.58502	.19031	11.099
#3	.50174	27.923	.23985	4.9531	.24750	.58923	.17702	11.068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078711S Acquired: 6/25/2016 21:57:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48537**	**.63044**	**.49547**	**.24660**	**.49048**	**.48728**	**.00709**
Stddev	.00041	.00808	.00649	.00259	.00192	.00292	.00024
%RSD	.08494	1.2823	1.3100	1.0500	.39154	.59943	3.4352
#1	.48528	.63362	.48907	.24492	.49247	.49009	.00732
#2	.48501	.63645	.50205	.24958	.48864	.48426	.00711
#3	.48582	.62125	.49531	.24529	.49034	.48750	.00684
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9767.2**	**59939.**	**3081.9**
Stddev	8.4	151.	2.2
%RSD	.08617	.25130	.07156
#1	9776.8	59826.	3083.9
#2	9761.1	60110.	3082.2
#3	9763.8	59880.	3079.5

Approved: June 27, 2016

Sample Name: L1606078712SD Acquired: 6/25/2016 22:01:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19422**	**6.5547**	**.19616**	**.97909**	**.58447**	**.02412**	**57.272**	**.02449**
Stddev	.00043	.0174	.00206	.00320	.00356	.00008	.255	.00025
%RSD	.22056	.26500	1.0502	.32643	.60985	.31860	.44461	1.0216
#1	.19468	6.5722	.19401	.98024	.58211	.02413	57.018	.02471
#2	.19383	6.5546	.19811	.97548	.58857	.02404	57.527	.02422
#3	.19415	6.5375	.19636	.98156	.58273	.02419	57.272	.02454
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09680**	**.24221**	**.24688**	**3.2519**	**25.085**	**.51256**	**21.272**	**.29044**
Stddev	.00024	.00084	.00160	.0305	.123	.00182	.123	.00255
%RSD	.25204	.34673	.64632	.93681	.48984	.35468	.57596	.87927
#1	.09682	.24178	.24538	3.2175	24.965	.51125	21.131	.28769
#2	.09704	.24318	.24856	3.2756	25.081	.51179	21.342	.29274
#3	.09655	.24168	.24672	3.2624	25.210	.51464	21.344	.29089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50646**	**28.018**	**.24386**	**4.9818**	**.24358**	**.58240**	**.18769**	**13.764**
Stddev	.00076	.167	.00147	.0053	.00228	.00382	.00425	.008
%RSD	.15029	.59670	.60238	.10534	.93711	.65545	2.2629	.06131
#1	.50691	27.825	.24251	4.9763	.24111	.57903	.18298	13.756
#2	.50690	28.112	.24543	4.9823	.24561	.58163	.18886	13.772
#3	.50558	28.117	.24364	4.9868	.24402	.58655	.19123	13.765
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078712SD Acquired: 6/25/2016 22:01:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48752**	**.63979**	**.50344**	**.24632**	**.49636**	**.48329**	**.00682**
Stddev	.00123	.00383	.00416	.00077	.00180	.00044	.00097
%RSD	.25232	.59818	.82653	.31336	.36344	.09176	14.263
#1	.48785	.63646	.50591	.24591	.49538	.48373	.00713
#2	.48616	.64397	.49864	.24584	.49525	.48329	.00761
#3	.48856	.63895	.50578	.24721	.49844	.48284	.00573
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9745.6**	**59867.**	**3081.8**
Stddev	9.9	91.	26.0
%RSD	.10194	.15198	.84468
#1	9734.5	59851.	3110.8
#2	9753.6	59965.	3060.5
#3	9748.6	59785.	3074.0

Approved: June 27, 2016

Sample Name: L1606078701 Acquired: 6/25/2016 22:04:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00206	-.00089	-.00017	.00563	.00151	.00011	.08615	.00015
Stddev	.00234	.00167	.00131	.00160	.00060	.00001	.02054	.00021
%RSD	113.42	187.14	751.31	28.470	39.897	9.3705	23.846	140.35
#1	.00316	-.00269	.00118	.00529	.00196	.00012	.07852	-.00008
#2	-.00062	-.00061	-.00144	.00737	.00083	.00010	.07052	.00033
#3	.00364	.00062	-.00027	.00422	.00173	.00012	.10942	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.00093	.00322	.06115	.01246	.00241	.02800	.00003
Stddev	.00003	.00076	.00095	.00519	.08806	.00216	.01589	.00083
%RSD	20.822	82.163	29.586	8.4819	706.92	89.891	56.731	2625.4
#1	.00011	.00029	.00408	.06573	-.03307	.00026	.04634	-.00085
#2	.00017	.00177	.00219	.05552	.11396	.00458	.01831	.00015
#3	.00013	.00071	.00338	.06220	-.04352	.00238	.01936	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	.44862	.00009	.00157	.00319	-.00012	.00644	.10535
Stddev	.00015	.01169	.00041	.00200	.00252	.00436	.00247	.00160
%RSD	36.378	2.6064	429.23	127.80	78.785	3632.8	38.299	1.5199
#1	.00041	.45408	.00056	-.00069	.00238	-.00321	.00918	.10450
#2	.00025	.45659	-.00021	.00226	.00118	.00487	.00438	.10720
#3	.00054	.43520	-.00006	.00313	.00602	-.00202	.00577	.10436
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078701 Acquired: 6/25/2016 22:04:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00114	.00134	.00464	-.00236	.00126	.00852	.00204
Stddev	.00023	.00031	.01117	.00170	.00022	.00013	.00133
%RSD	19.939	23.344	240.52	72.025	17.171	1.4749	64.993
#1	.00100	.00168	-.00728	-.00407	.00147	.00841	.00183
#2	.00140	.00106	.01487	-.00232	.00127	.00866	.00083
#3	.00102	.00128	.00634	-.00068	.00104	.00851	.00346
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9978.6	61725.	3108.7
Stddev	25.8	52.	12.8
%RSD	.25894	.08436	.41157
#1	9949.5	61751.	3109.2
#2	9998.7	61759.	3121.3
#3	9987.8	61665.	3095.7

Approved: June 27, 2016

Sample Name: L1606078701PS Acquired: 6/25/2016 22:08:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573561-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19562**	**4.8670**	**.19417**	**.93274**	**.49617**	**.02396**	**5.0466**	**.02449**
Stddev	.00101	.0014	.00206	.00077	.00126	.00015	.0443	.00024
%RSD	.51610	.02767	1.0615	.08264	.25431	.60837	.87718	.96002
#1	.19561	4.8655	.19531	.93216	.49577	.02379	5.0119	.02471
#2	.19461	4.8672	.19179	.93245	.49515	.02407	5.0964	.02451
#3	.19663	4.8682	.19541	.93362	.49758	.02401	5.0313	.02424
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09815**	**.24178**	**.25186**	**1.9475**	**23.902**	**.50912**	**4.6690**	**.24615**
Stddev	.00038	.00032	.00085	.0476	.079	.00280	.1745	.00176
%RSD	.38848	.13325	.33570	2.4417	.33116	.54926	3.7379	.71493
#1	.09847	.24215	.25095	2.0020	23.984	.51180	4.5199	.24606
#2	.09825	.24158	.25263	1.9144	23.825	.50622	4.6262	.24443
#3	.09773	.24160	.25200	1.9261	23.897	.50934	4.8609	.24795
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50547**	**24.979**	**.24871**	**4.7191**	**.25003**	**.58513**	**.18331**	**2.5397**
Stddev	.00148	.047	.00145	.0045	.00153	.00133	.00963	.0085
%RSD	.29370	.18695	.58415	.09482	.61173	.22744	5.2541	.33396
#1	.50679	24.962	.24995	4.7237	.24937	.58423	.17385	2.5470
#2	.50576	24.943	.24906	4.7186	.24895	.58665	.18298	2.5417
#3	.50387	25.032	.24711	4.7148	.25178	.58449	.19310	2.5304
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078701PS Acquired: 6/25/2016 22:08:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573561-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48806**	**.50437**	**.49939**	**.24983**	**.48939**	**.48880**	**.00250**
Stddev	.00273	.00349	.00591	.00248	.00296	.00032	.00045
%RSD	.55970	.69122	1.1836	.99157	.60527	.06447	18.096
#1	.48918	.50154	.50066	.25202	.49256	.48872	.00242
#2	.49005	.50331	.49295	.25032	.48893	.48914	.00298
#3	.48494	.50827	.50457	.24714	.48669	.48853	.00209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9876.1**	**60662.**	**3087.6**
Stddev	12.0	38.	4.3
%RSD	.12163	.06253	.13975
#1	9869.1	60619.	3083.6
#2	9869.3	60677.	3092.2
#3	9890.0	60690.	3087.1

Approved: June 27, 2016

Sample Name: L1606078701SDL Acquired: 6/25/2016 22:12:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573561-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00226**	**-.00962**	**.00257**	**.00372**	**.00008**	**.00010**	**-.05467**	**-.00005**
Stddev	.00390	.01062	.00091	.00131	.00131	.00006	.03854	.00004
%RSD	172.35	110.37	35.549	35.155	1747.1	57.750	70.491	84.699
#1	.00675	-.01272	.00350	.00225	-.00089	.00014	-.04307	-.00000
#2	.00027	-.01835	.00254	.00475	.00157	.00012	-.09767	-.00007
#3	-.00023	.00220	.00167	.00417	-.00046	.00003	-.02326	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.00076**	**.00146**	**.02792**	**-.10756**	**-.00176**	**-.01577**	**.00085**
Stddev	.00022	.00111	.00071	.01781	.06853	.00352	.01010	.00145
%RSD	144.06	146.16	48.411	63.806	63.714	199.76	64.076	169.31
#1	.00010	.00182	.00216	.04804	-.06727	-.00153	-.01532	-.00005
#2	-.00026	-.00038	.00146	.01416	-.18668	.00163	-.02609	.00009
#3	-.00029	.00083	.00075	.02156	-.06871	-.00539	-.00589	.00252
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00035**	**.12025**	**-.00037**	**.00742**	**.00388**	**-.00036**	**.00693**	**.02501**
Stddev	.00028	.02622	.00009	.00699	.00334	.00491	.00079	.00132
%RSD	80.313	21.803	23.237	94.157	86.143	1346.9	11.341	5.2920
#1	.00057	.14797	-.00041	.00450	.00651	.00107	.00746	.02626
#2	.00045	.09585	-.00027	.01539	.00501	-.00584	.00603	.02362
#3	.00003	.11693	-.00042	.00237	.00012	.00367	.00731	.02515
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078701SDL Acquired: 6/25/2016 22:12:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573561-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00036**	**.00027**	**.00391**	**-.00239**	**.00091**	**.00198**	**.00117**
Stddev	.00062	.00058	.00259	.00083	.00057	.00021	.00105
%RSD	170.80	217.03	66.210	34.804	62.977	10.839	89.133
#1	.00032	-.00015	.00203	-.00335	.00041	.00217	.00108
#2	-.00024	.00003	.00686	-.00188	.00153	.00175	.00018
#3	.00100	.00093	.00284	-.00194	.00079	.00202	.00227
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10481.**	**64804.**	**3221.0**
Stddev	25.	98.	4.2
%RSD	.23393	.15113	.13029
#1	10501.	64916.	3225.8
#2	10489.	64737.	3219.2
#3	10454.	64758.	3217.9

Approved: June 27, 2016

Sample Name: L1606078701SDL Acquired: 6/25/2016 22:16:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573561-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00050**	**-.01671**	**.00066**	**.00174**	**.00117**	**.00007**	**-.03873**	**-.00006**
Stddev	.00055	.00595	.00077	.00373	.00047	.00003	.02526	.00023
%RSD	110.50	35.627	115.52	214.66	39.929	36.665	65.224	418.10
#1	.00087	-.01063	-.00016	.00037	.00065	.00010	-.06018	.00018
#2	-.00014	-.02253	.00136	-.00111	.00156	.00005	-.01089	-.00029
#3	.00077	-.01699	.00080	.00596	.00129	.00006	-.04513	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00020**	**-.00027**	**.00015**	**.01537**	**-.08473**	**-.00313**	**-.04452**	**.00037**
Stddev	.00041	.00031	.00072	.00667	.12317	.00148	.02793	.00217
%RSD	208.97	115.52	489.41	43.427	145.37	47.326	62.733	580.66
#1	.00051	-.00025	-.00010	.01465	-.11440	-.00155	-.01300	-.00212
#2	-.00027	-.00059	-.00042	.02238	.05057	-.00335	-.06618	.00176
#3	.00035	.00003	.00096	.00908	-.19035	-.00448	-.05440	.00148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00052**	**.04068**	**-.00002**	**.00630**	**.00223**	**-.00439**	**.00789**	**.00775**
Stddev	.00014	.01560	.00098	.00605	.00105	.00119	.00333	.00034
%RSD	26.596	38.347	4828.5	96.010	47.199	27.128	42.126	4.3419
#1	-.00068	.05533	-.00110	-.00065	.00121	-.00319	.01093	.00736
#2	-.00042	.02428	.00080	.00920	.00218	-.00557	.00434	.00794
#3	-.00046	.04243	.00023	.01036	.00331	-.00443	.00841	.00794
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078701SDL Acquired: 6/25/2016 22:16:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573561-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00078**	**.00049**	**.00611**	**-.00169**	**-.00019**	**.00076**	**.00104**
Stddev	.00047	.00028	.00364	.00121	.00086	.00008	.00084
%RSD	59.598	55.989	59.553	71.357	443.84	10.636	80.846
#1	-.00025	.00020	.00285	-.00078	-.00105	.00067	.00138
#2	-.00100	.00075	.00545	-.00306	-.00021	.00078	.00165
#3	-.00110	.00052	.01004	-.00123	.00067	.00082	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10473.**	**64343.**	**3185.8**
Stddev	11.	88.	33.4
%RSD	.10369	.13736	1.0486
#1	10479.	64432.	3210.0
#2	10479.	64255.	3199.9
#3	10461.	64342.	3147.7

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 22:20:12 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39676**	**10.011**	**.39200**	**.48774**	**1.0072**	**.04931**	**9.9627**
Stddev	.00166	.042	.00060	.00247	.0020	.00016	.0336
%RSD	.41961	.41526	.15324	.50705	.19487	.32345	.33737
#1	.39852	10.036	.39268	.48499	1.0052	.04934	9.9285
#2	.39656	10.035	.39180	.48843	1.0074	.04945	9.9639
#3	.39521	9.9633	.39153	.48979	1.0091	.04914	9.9956
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05046**	**.19748**	**.49159**	**.50549**	**3.9250**	**48.860**	**1.0117**
Stddev	.00033	.00063	.00167	.00263	.0491	.051	.0023
%RSD	.66275	.32062	.34000	.52017	1.2522	.10387	.22425
#1	.05068	.19812	.49231	.50540	3.8948	48.907	1.0140
#2	.05064	.19745	.49279	.50817	3.9817	48.806	1.0118
#3	.05008	.19686	.48968	.50291	3.8986	48.867	1.0095
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.4449**	**.49486**	**1.0080**	**49.891**	**.50156**	**9.8436**	**.50078**
Stddev	.0163	.00095	.0079	.070	.00172	.0350	.00128
%RSD	.17297	.19183	.78730	.13958	.34250	.35531	.25500
#1	9.4275	.49541	1.0170	49.848	.50286	9.8791	.50070
#2	9.4600	.49376	1.0019	49.971	.50221	9.8426	.49954
#3	9.4471	.49540	1.0052	49.853	.49961	9.8092	.50209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 22:20:12 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1892**	**.38968**	**5.0794**	**.99180**	**1.0052**	**1.0145**	**.50829**
Stddev	.0070	.00637	.0139	.00335	.0009	.0065	.00390
%RSD	.58775	1.6349	.27365	.33789	.09319	.64413	.76634
#1	1.1970	.39094	5.0928	.99452	1.0044	1.0072	.50887
#2	1.1869	.38277	5.0804	.99283	1.0062	1.0197	.51187
#3	1.1836	.39532	5.0651	.98805	1.0048	1.0166	.50414
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0022**	**.99700**	F **2.9158**
Stddev	.0042	.00301	.0038
%RSD	.42153	.30191	.13010
#1	1.0066	.99806	2.9128
#2	1.0017	.99934	2.9201
#3	.99824	.99361	2.9145
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9930.6**	**60612.**	**3086.3**
Stddev	10.1	73.	9.8
%RSD	.10207	.12111	.31687
#1	9941.9	60647.	3097.4
#2	9922.1	60528.	3082.4
#3	9927.9	60661.	3079.1

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 22:23:49 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00100**	**-.00695**	**.00023**	**.00246**	**.00203**	**.00014**	**-.01220**	**.00014**
Stddev	.00181	.00287	.00117	.00195	.00133	.00002	.03027	.00029
%RSD	181.13	41.303	500.29	79.096	65.555	16.180	248.16	212.80
#1	-.00109	-.00504	-.00098	.00360	.00305	.00017	-.03745	.00025
#2	.00205	-.00555	.00136	.00021	.00053	.00014	.02136	-.00019
#3	.00203	-.01025	.00032	.00357	.00251	.00013	-.02050	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**-.00000**	**.00097**	**.02954**	**-.02965**	**-.00129**	**.00088**	**.00163**
Stddev	.00011	.00082	.00136	.00883	.01713	.00234	.03199	.00271
%RSD	74.595	562770.	140.78	29.900	57.784	181.57	3634.1	165.69
#1	.00008	.00083	.00213	.03726	-.04191	-.00397	.03754	.00233
#2	.00008	-.00001	.00130	.01991	-.03697	-.00018	-.01355	.00393
#3	.00027	-.00081	-.00053	.03145	-.01007	.00029	-.02135	-.00135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00354**	**.01474**	**-.00023**	**.00359**	**.00237**	**.00219**	**.00418**	**.03627**
Stddev	.00058	.04847	.00031	.00245	.00060	.00526	.00484	.00058
%RSD	16.314	328.86	136.11	68.357	25.126	240.59	115.86	1.6055
#1	.00288	-.00030	-.00040	.00322	.00284	.00365	.00822	.03616
#2	.00384	.06894	.00013	.00134	.00170	.00656	.00551	.03575
#3	.00391	-.02443	-.00042	.00620	.00257	-.00365	-.00119	.03690
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 22:23:49 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**.00039**	**.00181**	**-.00370**	**.00020**	**.00004**	**.00435**
Stddev	.00110	.00025	.00867	.00085	.00051	.00012	.00191
%RSD	689.85	64.301	479.78	22.978	253.56	271.57	43.946
#1	-.00106	.00012	.00915	-.00439	-.00031	.00014	.00375
#2	.00108	.00042	.00404	-.00397	.00020	.00008	.00281
#3	.00046	.00061	-.00776	-.00275	.00071	-.00009	.00649
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9799.0**	**60424.**	**3020.0**
Stddev	11.5	135.	11.0
%RSD	.11760	.22419	.36496
#1	9789.9	60445.	3025.5
#2	9795.1	60547.	3027.2
#3	9812.0	60279.	3007.3

Approved: June 27, 2016

Sample Name: L1606078710 Acquired: 6/25/2016 22:27:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.22720	.00214	.03806	.08552	.00012	52.208	.00022
Stddev	.00078	.00436	.00063	.00014	.00079	.00005	.232	.00016
%RSD	450.39	1.9170	29.562	.37345	.92041	43.173	.44436	71.173
#1	.00025	.22486	.00206	.03796	.08534	.00008	52.380	.00034
#2	.00030	.22452	.00280	.03822	.08638	.00018	52.301	.00028
#3	-.00108	.23223	.00155	.03799	.08484	.00010	51.944	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.00186	.00266	.23670	.85794	.00848	16.196	.00759
Stddev	.00014	.00018	.00107	.03451	.05555	.00209	.053	.00200
%RSD	849.17	9.9559	40.055	14.580	6.4743	24.705	.32764	26.366
#1	-.00011	.00187	.00273	.22408	.80379	.01054	16.251	.00990
#2	.00017	.00167	.00156	.27574	.91479	.00636	16.192	.00643
#3	-.00001	.00204	.00369	.21027	.85526	.00853	16.145	.00644
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00109	3.4758	.00069	.17816	.00790	-.00197	-.00080	8.3609
Stddev	.00043	.0348	.00145	.00114	.00265	.00100	.00335	.0283
%RSD	39.553	1.0002	208.84	.63768	33.519	50.807	416.39	.33868
#1	.00115	3.5101	.00211	.17685	.00777	-.00150	.00187	8.3874
#2	.00149	3.4766	.00076	.17877	.00531	-.00312	.00028	8.3643
#3	.00063	3.4406	-.00079	.17886	.01060	-.00129	-.00456	8.3311
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078710 Acquired: 6/25/2016 22:27:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00106	.13692	-.00198	-.00343	.00351	.00457	.00538
Stddev	.00037	.00076	.00399	.00152	.00135	.00005	.00158
%RSD	34.945	.55142	201.79	44.378	38.390	1.0573	29.298
#1	.00117	.13773	-.00276	-.00427	.00288	.00452	.00538
#2	.00136	.13624	.00235	-.00167	.00505	.00462	.00381
#3	.00065	.13680	-.00552	-.00433	.00259	.00458	.00696
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9837.0	60854.	3075.5
Stddev	21.0	87.	13.2
%RSD	.21328	.14286	.42972
#1	9813.4	60881.	3070.1
#2	9853.7	60757.	3065.8
#3	9843.8	60924.	3090.5

Approved: June 27, 2016

Sample Name: L1606078718 Acquired: 6/25/2016 22:31:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	1.2702	.00086	.07193	.15344	.00016	53.535	.00010
Stddev	.00088	.0133	.00129	.00289	.00068	.00006	.315	.00014
%RSD	504.87	1.0437	151.37	4.0242	.44552	39.145	.58814	143.56
#1	.00078	1.2717	-.00017	.07191	.15299	.00023	53.705	-.00002
#2	-.00096	1.2563	.00043	.07484	.15310	.00014	53.172	.00025
#3	-.00034	1.2827	.00231	.06905	.15423	.00011	53.729	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00093	.00320	.00404	1.3343	1.2661	.00990	20.655	.10718
Stddev	.00038	.00017	.00073	.0192	.0597	.00249	.173	.00269
%RSD	40.455	5.3029	17.991	1.4379	4.7192	25.172	.83716	2.5057
#1	.00050	.00331	.00423	1.3126	1.1986	.01278	20.828	.10559
#2	.00122	.00328	.00465	1.3416	1.2875	.00842	20.482	.11029
#3	.00107	.00300	.00324	1.3489	1.3123	.00851	20.655	.10568
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00197	9.5571	.00271	.15727	.00713	-.00001	-.00213	9.2004
Stddev	.00025	.0745	.00060	.00312	.00099	.00396	.00180	.0136
%RSD	12.754	.77965	22.028	1.9854	13.840	44119.	84.428	.14793
#1	.00222	9.6099	.00232	.16018	.00745	-.00238	-.00366	9.2098
#2	.00198	9.4719	.00242	.15397	.00602	-.00222	-.00015	9.2066
#3	.00172	9.5895	.00340	.15765	.00792	.00457	-.00260	9.1848
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078718 Acquired: 6/25/2016 22:31:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.21832**	**.00935**	**-.00138**	**.00550**	**.00807**	**.00587**
Stddev	.00077	.00070	.00368	.00189	.00037	.00008	.00139
%RSD	1050.3	.31961	39.319	137.43	6.8010	.96236	23.773
#1	.00067	.21839	.00655	-.00216	.00508	.00811	.00494
#2	-.00003	.21758	.00798	.00078	.00561	.00812	.00519
#3	-.00086	.21897	.01351	-.00275	.00580	.00798	.00747
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9846.3**	**60728.**	**3091.9**
Stddev	3.6	208.	32.5
%RSD	.03671	.34247	1.0518
#1	9850.4	60702.	3069.6
#2	9844.9	60535.	3129.2
#3	9843.6	60948.	3076.8

Approved: June 27, 2016

Sample Name: L1606078719 Acquired: 6/25/2016 22:35:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	-.00125	.00081	-.00052	.00163	.00015	.05700	.00032
Stddev	.00275	.01314	.00222	.00254	.00035	.00003	.05177	.00012
%RSD	1222.4	1048.7	273.08	489.15	21.203	21.890	90.827	38.965
#1	-.00200	-.00415	-.00134	.00209	.00158	.00017	.05365	.00040
#2	.00294	.01310	.00068	-.00066	.00200	.00012	.00698	.00018
#3	-.00162	-.01271	.00310	-.00298	.00131	.00018	.11035	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00052	.00450	.02391	-.05991	-.00020	.04697	-.00036
Stddev	.00016	.00162	.00035	.01615	.07304	.00309	.12538	.00213
%RSD	276.80	313.97	7.6965	67.537	121.91	1526.0	266.94	591.72
#1	.00015	.00207	.00475	.04225	-.11673	.00336	-.03849	-.00282
#2	-.00012	.00065	.00464	.01187	-.08546	-.00225	-.01151	.00086
#3	.00015	-.00117	.00410	.01759	.02247	-.00171	.19090	.00088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.25593	-.00012	.00090	.00315	-.00362	.00327	.05573
Stddev	.00023	.02584	.00048	.00460	.00186	.00138	.00112	.00365
%RSD	74.483	10.098	393.31	510.33	59.051	38.233	34.210	6.5471
#1	.00052	.27908	.00017	.00590	.00100	-.00516	.00452	.05848
#2	.00007	.22805	.00014	-.00005	.00421	-.00248	.00234	.05711
#3	.00032	.26066	-.00068	-.00315	.00425	-.00323	.00296	.05159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078719 Acquired: 6/25/2016 22:35:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00098**	**.00207**	**-.00026**	**-.00547**	**.00052**	**.00525**	**.00241**
Stddev	.00027	.00008	.00293	.00052	.00032	.00008	.00097
%RSD	27.115	4.0421	1136.5	9.5358	61.869	1.5786	40.264
#1	.00096	.00217	-.00025	-.00546	.00057	.00519	.00232
#2	.00073	.00203	-.00319	-.00495	.00081	.00521	.00342
#3	.00126	.00203	.00267	-.00599	.00017	.00534	.00149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9914.0**	**61492.**	**3065.3**
Stddev	9.7	119.	10.3
%RSD	.09735	.19352	.33672
#1	9905.1	61523.	3061.5
#2	9924.3	61360.	3057.3
#3	9912.7	61592.	3076.9

Approved: June 27, 2016

Sample Name: L1606078709 Acquired: 6/25/2016 22:39:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573102-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	.01725	.00020	.00148	.00412	.00007	2.5193	.00009
Stddev	.00160	.00300	.00146	.00122	.00055	.00007	.0273	.00025
%RSD	256.33	17.406	733.70	82.744	13.249	105.70	1.0828	269.34
#1	-.00115	.01430	.00189	.00205	.00368	.00003	2.5430	-.00015
#2	.00106	.02030	-.00065	.00007	.00396	.00002	2.4895	.00008
#3	.00197	.01716	-.00064	.00231	.00474	.00015	2.5253	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.00087	.00073	.04349	.03288	.00266	.76988	-.00075
Stddev	.00037	.00063	.00114	.01165	.16835	.00415	.07900	.00106
%RSD	107.35	72.316	156.53	26.779	512.03	155.84	10.261	141.15
#1	.00070	.00029	.00142	.03927	-.06801	.00606	.83027	.00043
#2	-.00004	.00153	.00135	.03454	-.06058	.00390	.79891	-.00163
#3	.00039	.00078	-.00059	.05665	.22723	-.00196	.68048	-.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	.20336	.00039	.01881	.00195	-.00218	-.00099	.41497
Stddev	.00052	.02965	.00044	.00286	.00086	.00256	.00440	.00248
%RSD	323.08	14.579	115.44	15.203	44.305	117.44	445.87	.59653
#1	-.00058	.19785	-.00012	.01994	.00207	-.00390	.00409	.41320
#2	.00043	.23538	.00054	.02093	.00103	-.00339	-.00379	.41391
#3	-.00033	.17686	.00073	.01556	.00275	.00076	-.00326	.41779
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078709 Acquired: 6/25/2016 22:39:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573102-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**.00684**	**.01005**	**.00002**	**.00088**	**.00094**	**.00070**
Stddev	.00032	.00012	.00959	.00200	.00079	.00012	.00147
%RSD	375.67	1.7762	95.434	11093.	88.946	12.687	210.40
#1	.00028	.00687	.01212	-.00222	.00129	.00101	.00212
#2	.00025	.00693	-.00041	.00064	.00138	.00101	.00079
#3	-.00028	.00670	.01844	.00163	-.00002	.00080	-.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10438.**	**64428.**	**3210.2**
Stddev	16.	116.	22.5
%RSD	.15594	.18047	.70191
#1	10456.	64522.	3184.5
#2	10433.	64464.	3226.3
#3	10424.	64298.	3219.8

Approved: June 27, 2016

Sample Name: L1606078711S Acquired: 6/25/2016 22:43:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573102-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00901	.25091	.00908	.04716	.02857	.00129	2.7206	.00112
Stddev	.00226	.00893	.00272	.00090	.00098	.00003	.0190	.00018
%RSD	25.135	3.5576	29.953	1.9149	3.4212	2.0076	.69811	15.952
#1	.00654	.24156	.01090	.04731	.02948	.00128	2.7394	.00096
#2	.00949	.25183	.00595	.04798	.02754	.00132	2.7210	.00131
#3	.01099	.25934	.01039	.04620	.02870	.00128	2.7014	.00109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00484	.01138	.01241	.12881	1.1056	.02562	.95895	.01155
Stddev	.00047	.00095	.00054	.02178	.0733	.00325	.08330	.00186
%RSD	9.6843	8.3365	4.3248	16.912	6.6280	12.671	8.6861	16.074
#1	.00430	.01246	.01288	.12748	1.1086	.02193	.86824	.01328
#2	.00510	.01069	.01253	.10772	1.1774	.02802	1.0320	.00959
#3	.00513	.01099	.01183	.15123	1.0309	.02692	.97661	.01179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02077	1.4247	.01204	.24038	.01720	.02493	.01091	.53474
Stddev	.00067	.0371	.00126	.00484	.00256	.00194	.00301	.00121
%RSD	3.2317	2.6069	10.481	2.0127	14.893	7.7710	27.534	.22565
#1	.02144	1.3934	.01127	.24412	.01465	.02673	.00768	.53472
#2	.02075	1.4149	.01350	.23492	.01719	.02518	.01362	.53595
#3	.02010	1.4657	.01136	.24211	.01977	.02288	.01143	.53354
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078711S Acquired: 6/25/2016 22:43:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573102-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02007**	**.03079**	**.02489**	**.01057**	**.02372**	**.02477**	**.00180**
Stddev	.00062	.00022	.00917	.00037	.00088	.00015	.00112
%RSD	3.0692	.70951	36.838	3.4629	3.6971	.59147	62.402
#1	.02076	.03087	.02809	.01029	.02425	.02492	.00062
#2	.01959	.03097	.01455	.01045	.02271	.02462	.00193
#3	.01984	.03055	.03204	.01098	.02420	.02478	.00285
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10426.**	**64070.**	**3185.9**
Stddev	11.	72.	10.0
%RSD	.10672	.11272	.31382
#1	10417.	64076.	3184.7
#2	10423.	64138.	3176.5
#3	10439.	63994.	3196.4

Approved: June 27, 2016

Sample Name: L1606078712SD Acquired: 6/25/2016 22:47:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573102-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00985	.31033	.01141	.04692	.02793	.00122	2.7514	.00123
Stddev	.00217	.01120	.00035	.00183	.00030	.00009	.0322	.00017
%RSD	21.999	3.6078	3.0998	3.8902	1.0783	7.5455	1.1711	13.538
#1	.00744	.30133	.01139	.04489	.02771	.00131	2.7147	.00104
#2	.01165	.32286	.01106	.04746	.02780	.00124	2.7644	.00130
#3	.01046	.30678	.01177	.04842	.02827	.00112	2.7751	.00135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00442	.01187	.01326	.16770	1.1233	.02635	1.0271	.01377
Stddev	.00036	.00059	.00082	.01226	.1089	.00034	.0701	.00235
%RSD	8.1823	4.9929	6.1530	7.3088	9.6965	1.2889	6.8269	17.054
#1	.00413	.01121	.01277	.16233	1.0153	.02615	1.0429	.01385
#2	.00482	.01235	.01421	.15905	1.2332	.02617	1.0881	.01607
#3	.00430	.01207	.01281	.18173	1.1215	.02675	.95049	.01138
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02146	1.3700	.01235	.24640	.01637	.02615	.01276	.67342
Stddev	.00028	.0367	.00082	.00464	.00030	.00374	.00186	.00470
%RSD	1.2904	2.6782	6.6457	1.8816	1.8039	14.304	14.555	.69838
#1	.02172	1.3476	.01220	.24696	.01603	.02416	.01223	.67004
#2	.02148	1.3500	.01162	.25073	.01656	.02383	.01483	.67143
#3	.02117	1.4123	.01324	.24151	.01651	.03046	.01123	.67879
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078712SD Acquired: 6/25/2016 22:47:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573102-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02141**	**.03084**	**.02074**	**.01089**	**.02357**	**.02510**	**.00112**
Stddev	.00030	.00031	.00329	.00303	.00061	.00018	.00144
%RSD	1.3990	1.0105	15.854	27.843	2.5684	.72342	128.59
#1	.02165	.03055	.02352	.00739	.02416	.02497	-.00034
#2	.02107	.03117	.01711	.01260	.02359	.02501	.00117
#3	.02151	.03078	.02157	.01268	.02295	.02530	.00254
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10421.**	**63887.**	**3174.5**
Stddev	13.	153.	11.8
%RSD	.12017	.23969	.37110
#1	10421.	64063.	3186.8
#2	10434.	63786.	3163.4
#3	10409.	63811.	3173.3

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 22:51:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39829**	**10.014**	**.39328**	**.48763**	**1.0098**	**.04913**	**9.9981**
Stddev	.00170	.014	.00352	.00156	.0114	.00024	.0222
%RSD	.42599	.13477	.89524	.31896	1.1283	.49183	.22224
#1	.39634	10.025	.39615	.48872	1.0228	.04926	10.024
#2	.39905	9.9992	.38935	.48585	1.0049	.04885	9.9823
#3	.39946	10.019	.39433	.48833	1.0016	.04927	9.9886
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05040**	**.19854**	**.49076**	**.50671**	**3.9457**	**49.325**	**1.0128**
Stddev	.00023	.00052	.00245	.00059	.0608	.368	.0109
%RSD	.45580	.25959	.49941	.11597	1.5404	.74655	1.0755
#1	.05026	.19800	.48916	.50736	4.0058	49.743	1.0249
#2	.05027	.19858	.48954	.50622	3.9470	49.185	1.0101
#3	.05066	.19903	.49358	.50654	3.8842	49.047	1.0036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.4894**	**.49712**	**1.0151**	**50.056**	**.50217**	**9.8694**	**.50095**
Stddev	.2168	.00232	.0035	.479	.00145	.0113	.00387
%RSD	2.2847	.46695	.34803	.95643	.28811	.11418	.77216
#1	9.7395	.49968	1.0186	50.588	.50383	9.8565	.50471
#2	9.3739	.49655	1.0152	49.919	.50140	9.8745	.49698
#3	9.3548	.49515	1.0115	49.660	.50126	9.8772	.50116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 22:51:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1957**	**.39554**	**5.0959**	**.99417**	**1.0077**	**1.0177**	**.50994**
Stddev	.0055	.00372	.0051	.00169	.0107	.0101	.00264
%RSD	.46066	.94108	.09932	.17029	1.0641	.98980	.51770
#1	1.1919	.39655	5.0908	.99223	1.0196	1.0259	.51299
#2	1.2020	.39866	5.0958	.99500	1.0048	1.0064	.50861
#3	1.1932	.39142	5.1010	.99530	.99871	1.0207	.50824
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.99906**	**1.0000**	F **2.9202**
Stddev	.00128	.0004	.0305
%RSD	.12818	.03891	1.0450
#1	1.0005	1.0005	2.9552
#2	.99795	.99972	2.9065
#3	.99877	.99993	2.8990
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9918.3**	**60256.**	**3072.6**
Stddev	6.2	156.	34.9
%RSD	.06223	.25822	1.1374
#1	9919.7	60085.	3032.6
#2	9923.7	60388.	3088.2
#3	9911.6	60295.	3097.1

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 22:54:51 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.00017**	**.00165**	**.00199**	**.00201**	**.00011**	**-.05290**	**-.00006**
Stddev	.00211	.00653	.00321	.00079	.00009	.00008	.03288	.00016
%RSD	1282.1	3936.0	193.87	39.670	4.4194	70.107	62.164	240.48
#1	-.00117	.00347	.00046	.00135	.00191	.00015	-.05612	-.00004
#2	.00226	-.00735	.00528	.00288	.00202	.00015	-.08405	.00008
#3	-.00158	.00438	-.00078	.00176	.00209	.00002	-.01852	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.00100**	**.00120**	**.03069**	**-.03948**	**.00003**	**-.00536**	**.00015**
Stddev	.00013	.00044	.00061	.00550	.07927	.00292	.09167	.00308
%RSD	995.60	43.627	50.884	17.919	200.80	8764.3	1709.0	2010.9
#1	-.00014	.00145	.00060	.03538	.05200	-.00061	-.10767	.00091
#2	.00000	.00096	.00116	.03205	-.08238	-.00251	.06932	.00278
#3	.00011	.00058	.00182	.02464	-.08805	.00322	.02226	-.00324
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00351**	**.02455**	**-.00057**	**.00388**	**.00014**	**.00562**	**.00087**	**.03540**
Stddev	.00076	.01905	.00055	.00530	.00438	.00343	.00632	.00172
%RSD	21.717	77.584	95.045	136.67	3025.0	61.032	726.47	4.8534
#1	.00266	.03539	-.00120	-.00182	.00487	.00872	.00338	.03589
#2	.00374	.03571	-.00017	.00867	-.00067	.00193	.00554	.03683
#3	.00413	.00256	-.00036	.00480	-.00377	.00622	-.00632	.03349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 22:54:51 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00099**	**.00045**	**.00606**	**-.00120**	**.00030**	**-.00008**	**.00363**
Stddev	.00065	.00027	.00156	.00179	.00040	.00006	.00038
%RSD	65.956	60.056	25.746	148.69	132.31	80.432	10.554
#1	.00115	.00019	.00786	-.00316	.00076	-.00006	.00364
#2	.00155	.00073	.00529	-.00079	.00014	-.00015	.00325
#3	.00027	.00044	.00504	.00034	.00001	-.00003	.00401
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9678.8**	**59649.**	**2985.7**
Stddev	6.9	105.	9.5
%RSD	.07084	.17603	.31957
#1	9671.2	59575.	2994.0
#2	9681.0	59769.	2975.3
#3	9684.3	59604.	2987.7

Approved: June 27, 2016

Sample Name: PBW LJ Acquired: 6/25/2016 22:58:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00058**	**-.00592**	**.00193**	**-.00086**	**.00070**	**.00018**	**-.07344**	**-.00023**
Stddev	.00178	.00410	.00330	.00167	.00093	.00007	.04096	.00010
%RSD	307.62	69.294	170.45	194.42	133.02	36.643	55.774	43.143
#1	-.00092	-.00625	.00300	-.00003	-.00002	.00015	-.02635	-.00025
#2	-.00217	-.00166	.00456	.00023	.00174	.00026	-.10082	-.00033
#3	.00135	-.00985	-.00176	-.00279	.00036	.00013	-.09313	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.00069**	**.00074**	**.03692**	**-.07694**	**.00146**	**.06376**	**.00092**
Stddev	.00002	.00038	.00020	.01230	.06836	.00025	.04368	.00067
%RSD	10.723	54.599	26.935	33.312	88.851	16.877	68.506	72.982
#1	-.00017	.00098	.00051	.02894	-.09438	.00132	.11194	.00086
#2	-.00017	.00026	.00082	.03073	-.13489	.00174	.05264	.00161
#3	-.00014	.00084	.00088	.05108	-.00155	.00131	.02672	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**.03492**	**.00034**	**.00729**	**.00159**	**-.00194**	**.00113**	**.00052**
Stddev	.00031	.01196	.00046	.00336	.00147	.00263	.00402	.00268
%RSD	159.07	34.258	134.06	46.125	92.547	135.75	357.58	520.37
#1	.00038	.02883	.00039	.00624	.00208	.00024	-.00125	.00071
#2	.00036	.04870	-.00014	.00458	.00275	-.00120	-.00114	.00309
#3	-.00016	.02722	.00078	.01105	-.00006	-.00487	.00577	-.00226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: PBW LJ Acquired: 6/25/2016 22:58:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**-.00008**	**.00508**	**-.00273**	**.00114**	**.00044**	**.00066**
Stddev	.00164	.00051	.01008	.00394	.00109	.00015	.00112
%RSD	14590.	648.58	198.46	144.23	96.326	34.462	168.97
#1	.00174	.00051	.01609	.00176	.00157	.00053	.00180
#2	-.00150	-.00033	-.00371	-.00561	-.00011	.00026	-.00044
#3	-.00028	-.00041	.00287	-.00433	.00195	.00052	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10135.**	**62589.**	**3095.8**
Stddev	24.	186.	5.7
%RSD	.23247	.29671	.18319
#1	10143.	62746.	3101.4
#2	10152.	62637.	3095.9
#3	10108.	62384.	3090.1

Approved: June 27, 2016

Sample Name: LCSW LJ Acquired: 6/25/2016 23:02:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19432**	**4.8961**	**.19607**	**.95390**	**.50477**	**.02378**	**5.0869**	**.02467**
Stddev	.00176	.0169	.00036	.00515	.00157	.00015	.0469	.00006
%RSD	.90778	.34589	.18422	.54033	.31152	.61673	.92299	.23915
#1	.19242	4.8827	.19640	.95171	.50641	.02365	5.1361	.02462
#2	.19591	4.9152	.19569	.95978	.50463	.02394	5.0425	.02466
#3	.19461	4.8905	.19612	.95020	.50328	.02375	5.0822	.02474
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09889**	**.24063**	**.25385**	**1.9878**	**24.436**	**.51652**	**4.7044**	**.24710**
Stddev	.00023	.00063	.00116	.0095	.067	.00203	.0278	.00275
%RSD	.23212	.26116	.45751	.47691	.27355	.39333	.59179	1.1124
#1	.09867	.24099	.25369	1.9863	24.386	.51588	4.7289	.24429
#2	.09913	.24100	.25509	1.9791	24.512	.51880	4.6741	.24978
#3	.09888	.23991	.25278	1.9979	24.411	.51489	4.7100	.24724
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51030**	**25.148**	**.24989**	**4.7689**	**.24945**	**.59139**	**.18766**	**2.4779**
Stddev	.00067	.056	.00070	.0091	.00347	.00400	.01211	.0014
%RSD	.13092	.22440	.27941	.19073	1.3920	.67662	6.4536	.05441
#1	.50970	25.212	.24981	4.7624	.25341	.58680	.17389	2.4770
#2	.51102	25.108	.25063	4.7793	.24803	.59411	.19668	2.4795
#3	.51019	25.124	.24924	4.7649	.24691	.59326	.19239	2.4773
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LCSW LJ Acquired: 6/25/2016 23:02:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49047**	**.51082**	**.50961**	**.24925**	**.49196**	**.48864**	**.01928**
Stddev	.00103	.00205	.00391	.00102	.00174	.00019	.00329
%RSD	.20978	.40119	.76774	.40835	.35306	.03834	17.088
#1	.49156	.51042	.51051	.24964	.49257	.48859	.01592
#2	.49032	.50900	.50533	.25000	.49331	.48848	.01940
#3	.48952	.51304	.51300	.24809	.49000	.48885	.02251
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9771.5**	**60209.**	**3050.2**
Stddev	3.0	103.	25.9
%RSD	.03108	.17103	.84982
#1	9769.0	60280.	3044.5
#2	9774.9	60091.	3027.6
#3	9770.6	60258.	3078.5

Approved: June 27, 2016

Sample Name: L1606076404 Acquired: 6/25/2016 23:06:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00050**	**.02745**	**.00034**	**.00861**	**.00996**	**.00009**	**36.605**	**.00012**
Stddev	.00060	.00628	.00209	.00113	.00041	.00005	.105	.00023
%RSD	119.14	22.865	609.72	13.086	4.1637	53.570	.28645	187.24
#1	.00015	.03394	.00014	.00762	.01044	.00014	36.606	.00007
#2	.00016	.02699	-.00164	.00984	.00971	.00010	36.500	.00038
#3	.00120	.02142	.00253	.00837	.00974	.00004	36.710	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**.01147**	**.00175**	**.46715**	**4.7234**	**.00625**	**13.388**	**.09951**
Stddev	.00015	.00054	.00191	.01948	.0341	.00248	.058	.00203
%RSD	171.91	4.6728	109.26	4.1703	.72246	39.751	.43505	2.0444
#1	.00001	.01158	-.00043	.45694	4.6849	.00912	13.373	.10058
#2	-.00027	.01194	.00254	.48961	4.7498	.00477	13.339	.09716
#3	-.00001	.01088	.00314	.45489	4.7356	.00486	13.453	.10078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00119**	**34.643**	**.00396**	**.03562**	**.00752**	**.00339**	**.00429**	**4.0453**
Stddev	.00028	.078	.00076	.00870	.00150	.00394	.00341	.0166
%RSD	23.933	.22458	19.114	24.436	19.891	116.11	79.423	.40956
#1	.00087	34.732	.00311	.02910	.00894	.00791	.00692	4.0642
#2	.00131	34.587	.00454	.03225	.00766	.00162	.00551	4.0386
#3	.00140	34.610	.00424	.04550	.00596	.00065	.00044	4.0331
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606076404 Acquired: 6/25/2016 23:06:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	.19364	.00117	-.00333	.00101	.00286	.00160
Stddev	.00025	.00044	.00456	.00363	.00019	.00020	.00097
%RSD	28.325	.22814	391.45	108.96	18.806	7.1675	60.613
#1	.00083	.19387	-.00007	-.00660	.00107	.00306	.00048
#2	.00116	.19313	.00622	-.00396	.00116	.00265	.00224
#3	.00066	.19392	-.00265	.00057	.00080	.00286	.00207
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9727.8	59976.	3053.1
Stddev	23.9	148.	4.4
%RSD	.24547	.24636	.14325
#1	9700.3	60146.	3049.4
#2	9741.5	59877.	3057.9
#3	9741.8	59905.	3052.0

Approved: June 27, 2016

Sample Name: L1606076405S Acquired: 6/25/2016 23:10:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19582**	**4.9527**	**.19879**	**.95673**	**.51438**	**.02432**	**42.805**	**.02505**
Stddev	.00335	.0137	.00128	.00425	.00065	.00003	.112	.00030
%RSD	1.7110	.27715	.64557	.44412	.12542	.14170	.26049	1.1988
#1	.19856	4.9529	.19764	.95186	.51480	.02435	42.707	.02530
#2	.19683	4.9664	.19856	.95967	.51471	.02433	42.926	.02513
#3	.19208	4.9389	.20017	.95866	.51364	.02429	42.781	.02472
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09757**	**.25598**	**.24917**	**2.4354**	**29.536**	**.52338**	**18.805**	**.34995**
Stddev	.00078	.00042	.00127	.0181	.040	.00393	.025	.00506
%RSD	.79936	.16278	.51136	.74393	.13605	.74997	.13071	1.4469
#1	.09813	.25630	.25060	2.4222	29.582	.51885	18.805	.34467
#2	.09790	.25551	.24817	2.4278	29.516	.52547	18.830	.35476
#3	.09668	.25612	.24874	2.4560	29.509	.52582	18.780	.35044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51541**	**61.224**	**.25128**	**4.8968**	**.24942**	**.59855**	**.19087**	**6.6449**
Stddev	.00129	.228	.00073	.0088	.00234	.00299	.00293	.0075
%RSD	.25084	.37164	.28907	.17909	.93699	.50010	1.5365	.11257
#1	.51663	61.311	.25055	4.9006	.24863	.59583	.18976	6.6461
#2	.51554	61.394	.25129	4.9031	.24758	.60176	.19420	6.6517
#3	.51406	60.965	.25200	4.8868	.25205	.59805	.18866	6.6369
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606076405S Acquired: 6/25/2016 23:10:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49233	.70070	.50542	.24860	.50000	.48511	.00505
Stddev	.00086	.00402	.00572	.00107	.00163	.00066	.00072
%RSD	.17371	.57387	1.1319	.43103	.32683	.13619	14.263
#1	.49184	.70101	.51171	.24742	.49924	.48572	.00441
#2	.49332	.70456	.50403	.24884	.49889	.48521	.00491
#3	.49184	.69653	.50053	.24953	.50188	.48441	.00583
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9652.6	59187.	3022.5
Stddev	17.6	118.	14.2
%RSD	.18215	.19875	.46825
#1	9645.4	59224.	3018.6
#2	9639.7	59281.	3010.7
#3	9672.6	59055.	3038.2

Approved: June 27, 2016

Sample Name: L1606076406SD Acquired: 6/25/2016 23:13:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19161**	**4.9186**	**.19913**	**.95429**	**.51211**	**.02396**	**42.977**	**.02467**
Stddev	.00161	.0125	.00343	.00448	.00436	.00009	.276	.00017
%RSD	.83957	.25322	1.7203	.46971	.85098	.36242	.64279	.68812
#1	.19148	4.9258	.19753	.95898	.51664	.02396	43.237	.02475
#2	.19328	4.9042	.19680	.95004	.51174	.02387	43.008	.02479
#3	.19007	4.9258	.20306	.95385	.50794	.02404	42.687	.02448
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09706**	**.25178**	**.24789**	**2.4233**	**29.585**	**.51807**	**18.712**	**.35011**
Stddev	.00057	.00068	.00034	.0356	.112	.00327	.182	.00396
%RSD	.58951	.26961	.13796	1.4688	.37990	.63166	.97051	1.1325
#1	.09772	.25103	.24806	2.4608	29.711	.51534	18.898	.35283
#2	.09684	.25235	.24811	2.4189	29.497	.52170	18.704	.34556
#3	.09664	.25196	.24749	2.3900	29.545	.51719	18.535	.35193
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51262**	**61.425**	**.24874**	**4.8787**	**.24757**	**.59558**	**.18865**	**6.6917**
Stddev	.00159	.310	.00133	.0141	.00184	.00348	.00465	.0131
%RSD	.30991	.50524	.53301	.28958	.74220	.58390	2.4654	.19574
#1	.51304	61.773	.24994	4.8746	.24617	.59720	.19309	6.6816
#2	.51396	61.322	.24897	4.8944	.24965	.59795	.18905	6.7065
#3	.51087	61.178	.24732	4.8670	.24689	.59159	.18381	6.6870
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606076406SD Acquired: 6/25/2016 23:13:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48585	.69992	.50428	.08491	.49039	.49499	.00464
Stddev	.00076	.00443	.00835	.00108	.00225	.00372	.00157
%RSD	.15628	.63319	1.6562	1.2751	.45854	.75207	33.818
#1	.48649	.70500	.51389	.08368	.49168	.49197	.00317
#2	.48606	.69789	.49873	.08571	.48779	.49386	.00446
#3	.48501	.69687	.50023	.08535	.49169	.49915	.00630
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9674.4	59675.	3057.4
Stddev	5.6	128.	11.6
%RSD	.05826	.21445	.38044
#1	9670.2	59575.	3048.3
#2	9680.8	59819.	3053.4
#3	9672.1	59630.	3070.5

Approved: June 27, 2016

Sample Name: L1606099102 Acquired: 6/25/2016 23:17:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00035	.08527	.00559	.04109	.01538	.00019	.57467	.00159
Stddev	.00233	.00869	.00189	.00114	.00133	.00004	.01094	.00013
%RSD	663.84	10.192	33.720	2.7694	8.6207	22.830	1.9043	7.9131
#1	.00210	.09496	.00628	.04240	.01605	.00016	.56261	.00167
#2	-.00061	.08272	.00346	.04040	.01386	.00017	.57746	.00145
#3	-.00255	.07815	.00704	.04046	.01624	.00024	.58395	.00167
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00096	.05412	.00582	.38755	1.2527	.00289	.47003	.00071
Stddev	.00015	.00024	.00026	.01093	.0635	.00116	.03189	.00162
%RSD	15.476	.43524	4.4250	2.8204	5.0656	40.155	6.7852	226.02
#1	.00113	.05437	.00590	.40001	1.1922	.00164	.49884	-.00098
#2	.00091	.05406	.00602	.38303	1.3188	.00308	.43576	.00089
#3	.00085	.05391	.00553	.37960	1.2473	.00394	.47550	.00224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00360	218.01	.00389	.36041	.01046	-.00372	.00482	1.3728
Stddev	.00017	.12	.00068	.00488	.00162	.00083	.00193	.0038
%RSD	4.7149	.05666	17.447	1.3551	15.457	22.416	40.114	.27490
#1	.00375	218.03	.00311	.35572	.01225	-.00460	.00284	1.3685
#2	.00365	218.13	.00423	.36547	.01003	-.00293	.00492	1.3754
#3	.00341	217.88	.00434	.36004	.00911	-.00364	.00670	1.3745
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606099102 Acquired: 6/25/2016 23:17:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00632**	**.09765**	**.07700**	**-.00067**	**.01524**	**.07845**	**.01879**
Stddev	.00056	.00044	.00219	.00203	.00068	.00014	.00089
%RSD	8.9139	.45291	2.8381	300.30	4.4598	.18118	4.7496
#1	.00609	.09718	.07562	.00166	.01602	.07833	.01918
#2	.00590	.09770	.07952	-.00172	.01485	.07841	.01777
#3	.00696	.09806	.07586	-.00197	.01484	.07861	.01943
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10241.**	**62264.**	**3185.5**
Stddev	15.	196.	4.7
%RSD	.14516	.31405	.14616
#1	10253.	62395.	3189.9
#2	10245.	62357.	3185.8
#3	10224.	62039.	3180.6

Approved: June 27, 2016

Sample Name: L1606099102PS Acquired: 6/25/2016 23:21:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG573952-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20426**	**5.2585**	**.21569**	**1.0545**	**.53374**	**.02552**	**5.8510**	**.02789**
Stddev	.00128	.0258	.00476	.0057	.01070	.00022	.0799	.00005
%RSD	.62816	.49053	2.2048	.54061	2.0041	.85107	1.3656	.17945
#1	.20288	5.2399	.21984	1.0489	.54587	.02533	5.9343	.02786
#2	.20446	5.2478	.21673	1.0543	.52973	.02547	5.7750	.02786
#3	.20543	5.2880	.21050	1.0603	.52563	.02576	5.8438	.02795
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10258**	**.30280**	**.26705**	**2.4069**	**27.035**	**.52853**	**5.3059**	**.25725**
Stddev	.00041	.00101	.00181	.0614	.546	.00889	.1709	.00709
%RSD	.40425	.33448	.67841	2.5526	2.0183	1.6821	3.2205	2.7577
#1	.10253	.30184	.26742	2.4708	27.658	.53822	5.4655	.26479
#2	.10301	.30272	.26864	2.4018	26.642	.52076	5.1256	.25071
#3	.10219	.30386	.26508	2.3482	26.805	.52661	5.3266	.25626
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52291**	**252.79**	**.26034**	**5.5827**	**.26863**	**.62508**	**.20920**	**4.0596**
Stddev	.00363	5.13	.00069	.0240	.00232	.00165	.00657	.0117
%RSD	.69330	2.0298	.26564	.43012	.86233	.26363	3.1385	.28905
#1	.52662	258.69	.26066	5.6009	.26650	.62318	.21182	4.0655
#2	.52272	250.27	.26082	5.5917	.26829	.62599	.21406	4.0673
#3	.51938	249.40	.25955	5.5555	.27109	.62608	.20173	4.0461
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606099102PS Acquired: 6/25/2016 23:21:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG573952-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51599**	**.62613**	**.61043**	**.25381**	**.52664**	**.60277**	**.02286**
Stddev	.00198	.01306	.01573	.00527	.00286	.00158	.00057
%RSD	.38295	2.0851	2.5770	2.0756	.54391	.26285	2.4777
#1	.51752	.64119	.62824	.25887	.52456	.60412	.02234
#2	.51668	.61903	.59844	.25420	.52545	.60318	.02277
#3	.51376	.61815	.60462	.24835	.52991	.60103	.02347
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9624.7**	**58159.**	**2980.0**
Stddev	48.4	89.	45.7
%RSD	.50312	.15320	1.5350
#1	9582.5	58170.	2928.1
#2	9614.0	58242.	2997.3
#3	9677.6	58064.	3014.5

Approved: June 27, 2016

Sample Name: L1606099102SDL Acquired: 6/25/2016 23:25:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 50 Custom ID2: Custom ID3:
Comment: WG573952-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	.01283	.00236	.01119	.00550	.00018	.08026	.00026
Stddev	.00047	.00301	.00204	.00193	.00071	.00008	.03574	.00006
%RSD	40.405	23.474	86.372	17.221	12.910	46.045	44.534	24.105
#1	.00083	.01247	.00021	.01333	.00520	.00027	.04235	.00026
#2	.00098	.01601	.00261	.01064	.00630	.00011	.11335	.00020
#3	.00172	.01002	.00427	.00960	.00498	.00015	.08510	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.01258	.00098	.10105	.18990	-.00151	.06238	.00028
Stddev	.00006	.00091	.00048	.00767	.08103	.00626	.02555	.00271
%RSD	25.732	7.2135	49.236	7.5891	42.670	413.92	40.953	970.07
#1	.00026	.01275	.00118	.09700	.21903	.00544	.04558	.00279
#2	.00015	.01339	.00043	.10990	.09833	-.00328	.04979	.00064
#3	.00024	.01160	.00132	.09626	.25235	-.00669	.09179	-.00259
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00205	47.703	.00017	.08239	.00525	-.00365	.00219	.31315
Stddev	.00019	.192	.00051	.00485	.00385	.00400	.00870	.00335
%RSD	9.3003	.40144	294.11	5.8889	73.348	109.43	397.40	1.0688
#1	.00183	47.834	.00076	.07694	.00083	-.00754	.00399	.31041
#2	.00217	47.483	-.00009	.08400	.00786	-.00387	-.00727	.31216
#3	.00215	47.792	-.00015	.08624	.00708	.00045	.00985	.31688
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606099102SDL Acquired: 6/25/2016 23:25:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 50 Custom ID2: Custom ID3:
Comment: WG573952-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00128**	**.02176**	**.02063**	**.00132**	**.00408**	**.01800**	**.00415**
Stddev	.00053	.00039	.00638	.00109	.00052	.00037	.00045
%RSD	41.627	1.7773	30.936	82.221	12.786	2.0724	10.786
#1	.00158	.02176	.02171	.00142	.00446	.01762	.00425
#2	.00067	.02138	.02640	.00236	.00348	.01802	.00454
#3	.00160	.02215	.01377	.00019	.00429	.01836	.00366
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9804.5**	**59680.**	**2983.6**
Stddev	22.5	103.	15.3
%RSD	.22901	.17203	.51306
#1	9824.1	59682.	2991.0
#2	9809.6	59782.	2993.9
#3	9780.0	59577.	2966.0

Approved: June 27, 2016

Sample Name: L1606099501 Acquired: 6/25/2016 23:29:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	.00231	.00190	.02254	.12371	.00015	15.528	-.00008
Stddev	.00014	.00712	.00142	.00137	.00163	.00003	.200	.00022
%RSD	16.093	308.09	74.696	6.0976	1.3212	21.126	1.2862	282.14
#1	.00100	.01032	.00271	.02232	.12196	.00014	15.307	.00002
#2	.00072	-.00013	.00272	.02129	.12520	.00012	15.695	.00008
#3	.00085	-.00326	.00026	.02401	.12396	.00018	15.583	-.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00027	.00136	.08102	.36083	.08036	1.7207	.01281
Stddev	.00017	.00026	.00081	.01723	.08162	.00488	.0426	.00381
%RSD	55.449	94.239	59.356	21.269	22.620	6.0696	2.4776	29.711
#1	.00018	.00004	.00043	.07010	.45158	.07724	1.7124	.01021
#2	.00026	.00024	.00186	.07209	.29342	.07785	1.6828	.01718
#3	.00051	.00055	.00179	.10089	.33750	.08598	1.7669	.01103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	40.169	.00020	.00739	.00147	-.00261	.00048	.01475
Stddev	.00007	.358	.00037	.00186	.00129	.00197	.00359	.00082
%RSD	116.52	.89035	187.93	25.143	87.719	75.441	741.63	5.5637
#1	.00010	39.803	.00022	.00902	.00206	-.00263	-.00044	.01382
#2	.00008	40.518	.00056	.00537	.00236	-.00063	-.00256	.01539
#3	-.00002	40.186	-.00019	.00779	-.00001	-.00456	.00445	.01503
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606099501 Acquired: 6/25/2016 23:29:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	2.0444	.00152	-.00059	-.00017	.00315	.00110
Stddev	.00034	.0207	.00598	.00278	.00059	.00019	.00107
%RSD	58.480	1.0109	393.49	469.74	343.26	6.1207	97.322
#1	.00020	2.0228	.00742	-.00167	.00024	.00305	.00162
#2	.00070	2.0639	.00167	-.00267	-.00085	.00303	-.00013
#3	.00086	2.0465	-.00453	.00256	.00009	.00337	.00180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9773.4	59741.	3000.7
Stddev	10.5	113.	31.9
%RSD	.10719	.18996	1.0628
#1	9785.4	59856.	3037.0
#2	9766.5	59737.	2977.2
#3	9768.1	59629.	2987.9

Approved: June 27, 2016

Sample Name: L1606099502 Acquired: 6/25/2016 23:32:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	-.00479	-.00049	.02240	.12357	.00014	15.278	-.00007
Stddev	.00142	.00423	.00253	.00505	.00148	.00006	.144	.00014
%RSD	22192.	88.307	518.91	22.533	1.1984	44.965	.94397	206.25
#1	.00014	-.00965	-.00218	.02478	.12272	.00011	15.115	-.00014
#2	.00133	-.00281	-.00170	.02581	.12271	.00021	15.329	.00010
#3	-.00149	-.00191	.00242	.01660	.12528	.00010	15.390	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.00065	.00042	.06837	.37746	.07803	1.6184	.01419
Stddev	.00041	.00112	.00027	.00656	.03147	.00401	.0513	.00310
%RSD	83.614	171.25	62.991	9.6001	8.3371	5.1380	3.1674	21.849
#1	.00050	-.00064	.00063	.07323	.35510	.08210	1.6690	.01383
#2	.00090	.00123	.00012	.06091	.36384	.07791	1.6197	.01745
#3	.00007	.00137	.00052	.07098	.41345	.07408	1.5665	.01128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	39.920	-.00037	.00510	.00199	-.00064	.00335	.01167
Stddev	.00036	.366	.00054	.01025	.00130	.00317	.00244	.00126
%RSD	102.18	.91613	144.37	200.85	65.670	494.36	72.931	10.832
#1	-.00077	39.520	-.00039	.00961	.00071	-.00417	.00384	.01302
#2	-.00018	40.239	-.00090	.01233	.00193	.00029	.00550	.01150
#3	-.00011	40.000	.00017	-.00663	.00331	.00196	.00070	.01051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606099502 Acquired: 6/25/2016 23:32:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00055**	**2.0217**	**-.00337**	**-.00055**	**.00074**	**.00315**	**.00087**
Stddev	.00116	.0191	.00559	.00170	.00084	.00020	.00103
%RSD	210.74	.94683	165.64	307.06	114.28	6.4714	118.16
#1	-.00142	2.0010	.00194	-.00241	.00129	.00330	.00185
#2	.00077	2.0388	-.00920	-.00018	-.00023	.00292	.00097
#3	-.00100	2.0253	-.00287	.00093	.00117	.00324	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9730.5**	**59619.**	**2989.3**
Stddev	18.2	229.	29.6
%RSD	.18733	.38360	.99126
#1	9750.6	59882.	3021.9
#2	9715.1	59468.	2964.1
#3	9725.8	59506.	2981.9

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 23:36:47 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40930**	**10.238**	**.40819**	**.50228**	**1.0459**	**.04973**	**10.404**
Stddev	.00043	.021	.00043	.00341	.0044	.00005	.020
%RSD	.10460	.20815	.10461	.67892	.41689	.09834	.19571
#1	.40883	10.251	.40851	.50622	1.0496	.04974	10.381
#2	.40944	10.250	.40771	.50027	1.0411	.04968	10.418
#3	.40965	10.214	.40835	.50036	1.0470	.04978	10.414
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05210**	**.20379**	**.49816**	**.52303**	**4.0622**	**51.067**	**1.0469**
Stddev	.00019	.00042	.00279	.00142	.0372	.160	.0078
%RSD	.35747	.20724	.56062	.27079	.91500	.31299	.74725
#1	.05231	.20342	.50024	.52229	4.1047	51.143	1.0555
#2	.05194	.20371	.49926	.52467	4.0462	50.883	1.0402
#3	.05207	.20425	.49499	.52215	4.0357	51.175	1.0449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.7214**	**.51746**	**1.0407**	**52.052**	**.51652**	**10.202**	**.51928**
Stddev	.0660	.00152	.0096	.278	.00085	.015	.00145
%RSD	.67863	.29343	.92144	.53407	.16386	.14443	.27838
#1	9.7320	.51900	1.0479	52.343	.51582	10.200	.51894
#2	9.7814	.51597	1.0444	51.789	.51627	10.218	.52086
#3	9.6508	.51742	1.0298	52.022	.51746	10.189	.51803
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 23:36:47 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2277**	**.40544**	**5.2555**	**1.0220**	**1.0464**	**1.0514**	**.52265**
Stddev	.0051	.00303	.0032	.0024	.0054	.0078	.00372
%RSD	.41461	.74796	.06070	.23053	.51974	.73901	.71099
#1	1.2332	.40616	5.2590	1.0221	1.0521	1.0443	.52536
#2	1.2232	.40805	5.2526	1.0196	1.0413	1.0597	.52418
#3	1.2265	.40211	5.2550	1.0243	1.0458	1.0502	.51841
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0117**	**1.0320**	F **2.9933**
Stddev	.0025	.0009	.0109
%RSD	.24458	.08681	.36389
#1	1.0144	1.0330	3.0053
#2	1.0111	1.0312	2.9841
#3	1.0096	1.0318	2.9905
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9691.0**	**59432.**	**3012.0**
Stddev	5.1	44.	12.8
%RSD	.05245	.07397	.42554
#1	9696.2	59404.	2998.2
#2	9686.1	59410.	3023.6
#3	9690.7	59483.	3014.1

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 23:40:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00145**	**-.00660**	**-.00143**	**.00292**	**.00177**	**.00016**	**-.01784**	**.00008**
Stddev	.00180	.00657	.00282	.00130	.00082	.00003	.03649	.00007
%RSD	124.44	99.487	197.72	44.383	46.493	20.281	204.59	79.919
#1	.00061	-.01208	-.00468	.00217	.00185	.00015	-.05680	.00016
#2	-.00276	-.00840	.00028	.00442	.00255	.00019	-.01224	.00005
#3	-.00219	.00068	.00012	.00218	.00091	.00013	.01553	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.00038**	**.00052**	**.02154**	**-.09198**	**-.00110**	**-.01322**	**.00018**
Stddev	.00024	.00088	.00138	.01483	.10535	.00141	.06861	.00246
%RSD	523.34	234.01	265.29	68.833	114.54	127.62	519.13	1371.8
#1	-.00015	.00090	-.00012	.01936	.02327	-.00076	.06137	-.00117
#2	-.00022	-.00064	-.00042	.03733	-.18333	-.00265	-.02738	.00302
#3	.00023	.00086	.00210	.00792	-.11589	.00010	-.07365	-.00132
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00348**	**.04821**	**.00016**	**.00585**	**.00443**	**.00314**	**.00156**	**.03553**
Stddev	.00065	.02773	.00095	.00367	.00371	.00275	.00114	.00188
%RSD	18.560	57.517	582.95	62.725	83.852	87.739	73.200	5.2906
#1	.00289	.07448	.00125	.00268	.00440	.00563	.00189	.03713
#2	.00338	.05093	-.00027	.00499	.00073	.00018	.00029	.03346
#3	.00417	.01922	-.00050	.00987	.00816	.00360	.00249	.03599
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 23:40:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00025**	**.00051**	**.00604**	**-.00528**	**.00062**	**.00012**	**.00482**
Stddev	.00070	.00006	.00458	.00163	.00029	.00008	.00094
%RSD	280.85	11.978	75.793	30.927	46.562	68.537	19.510
#1	.00047	.00050	.00150	-.00357	.00036	.00006	.00376
#2	.00081	.00057	.01066	-.00682	.00057	.00008	.00556
#3	-.00053	.00045	.00597	-.00546	.00093	.00021	.00513
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9759.5**	**60265.**	**3013.5**
Stddev	10.8	85.	17.4
%RSD	.11040	.14047	.57599
#1	9754.6	60307.	3032.0
#2	9771.9	60320.	2997.5
#3	9752.1	60167.	3011.1

Approved: June 27, 2016

Sample Name: ICSA Acquired: 6/25/2016 23:44:20 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -.00562	263.10	.00178	-.00976	.00140	.00014	248.10
Stddev	.00117	.16	.00383	.00309	.00113	.00004	.61
%RSD	20.823	.06041	215.50	31.614	80.449	26.067	.24782
#1	-.00542	263.25	-.00154	-.01064	.00266	.00012	248.67
#2	-.00456	262.94	.00597	-.00633	.00047	.00013	247.45
#3	-.00688	263.13	.00090	-.01231	.00109	.00019	248.17
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.00400						
Low Limit	-.00400						

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	-.00060	-.00056	F .01039	95.630	-.04599	.01242
Stddev	.00016	.00022	.00039	.00101	.248	.03226	.00307
%RSD	92.869	36.608	70.420	9.7281	.25928	70.136	24.681
#1	-.00031	-.00080	-.00098	.00928	95.904	-.06101	.01295
#2	-.00020	-.00063	-.00021	.01127	95.420	-.06800	.01519
#3	.00000	-.00037	-.00048	.01062	95.566	-.00896	.00913
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				.00400			
Low Limit				-.00400			

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	236.10	.00050	-.00055	.08182	-.00122	.03425	.00395
Stddev	.41	.00175	.00028	.01035	.00129	.00383	.00558
%RSD	.17524	347.68	51.671	12.652	105.94	11.172	141.13
#1	236.13	.00226	-.00079	.09323	-.00097	.03151	-.00194
#2	235.67	.00051	-.00062	.07920	-.00262	.03262	.00465
#3	236.50	-.00125	-.00024	.07303	-.00007	.03862	.00916
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 27, 2016

Sample Name: ICSA Acquired: 6/25/2016 23:44:20 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00072	-.00782	.00827	.00013	.00094	-.00929	-.00404
Stddev	.00319	.00204	.00198	.00005	.00018	.00784	.00342
%RSD	442.40	26.134	23.931	35.338	18.766	84.463	84.650
#1	.00212	-.01015	.01018	.00009	.00088	-.00188	-.00347
#2	-.00417	-.00696	.00842	.00012	.00080	-.01750	-.00771
#3	-.00012	-.00634	.00622	.00018	.00114	-.00848	-.00094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00163	-.00560	-.01351
Stddev	.00058	.00018	.00078
%RSD	35.475	3.3032	5.7782
#1	-.00221	-.00565	-.01421
#2	-.00162	-.00574	-.01366
#3	-.00105	-.00539	-.01267
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9256.6	56705.	2976.7
Stddev	13.6	91.	12.8
%RSD	.14727	.16098	.43054
#1	9241.1	56650.	2963.0
#2	9266.9	56811.	2988.4
#3	9261.8	56655.	2978.7

Approved: June 27, 2016

Sample Name: ICSAB Acquired: 6/25/2016 23:48:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52011**	**271.09**	**.26014**	**-.01193**	**.26131**	**.24391**	**254.06**	**.49893**
Stddev	.00309	.31	.00108	.00072	.00207	.00022	1.57	.00035
%RSD	.59470	.11617	.41599	6.0451	.79127	.08930	.61634	.06930
#1	.51910	271.29	.26138	-.01172	.26259	.24374	255.54	.49856
#2	.51765	270.73	.25938	-.01274	.26241	.24383	254.23	.49898
#3	.52358	271.26	.25965	-.01134	.25892	.24415	252.42	.49925
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.24094**	**.25041**	**.26416**	**96.077**	**5.2095**	**.01124**	**238.55**	**.24627**
Stddev	.00056	.00142	.00058	.420	.1352	.00179	1.07	.00329
%RSD	.23299	.56520	.21819	.43687	2.5957	15.928	.44935	1.3378
#1	.24046	.25065	.26387	96.381	5.3478	.01132	239.59	.24346
#2	.24081	.24889	.26378	96.252	5.2032	.00941	238.63	.24545
#3	.24156	.25169	.26482	95.598	5.0776	.01299	237.45	.24990
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00041**	**5.4959**	**.48742**	**.09841**	**.49766**	**.51195**	**.23776**	**.00256**
Stddev	.00052	.0364	.00161	.00635	.00144	.00162	.00501	.00193
%RSD	128.92	.66237	.33105	6.4479	.28893	.31661	2.1076	75.415
#1	-.00068	5.5313	.48557	.09364	.49656	.51344	.24335	.00339
#2	-.00073	5.4979	.48847	.09597	.49929	.51023	.23366	.00393
#3	.00020	5.4586	.48823	.10561	.49712	.51219	.23626	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: ICSAB Acquired: 6/25/2016 23:48:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00140**	**.00103**	**-.00323**	**.47273**	**.25455**	**.48271**	**-.01305**
Stddev	.00059	.00027	.00250	.00229	.00097	.00045	.00046
%RSD	41.750	26.302	77.431	.48347	.38190	.09250	3.5206
#1	.00144	.00120	-.00356	.47420	.25352	.48220	-.01343
#2	.00197	.00072	-.00058	.47010	.25467	.48293	-.01317
#3	.00080	.00116	-.00555	.47390	.25546	.48302	-.01254
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9240.5**	**56174.**	**2955.7**
Stddev	9.6	118.	17.7
%RSD	.10383	.20921	.59797
#1	9251.6	56039.	2946.0
#2	9234.1	56253.	2944.9
#3	9235.9	56229.	2976.1

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 23:51:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41108	10.316	.40843	.50327	1.0436	.05024	10.459
Stddev	.00161	.013	.00298	.00077	.0011	.00011	.030
%RSD	.39215	.12124	.73007	.15382	.10203	.22382	.28694
#1	.41119	10.324	.40804	.50264	1.0446	.05015	10.464
#2	.41263	10.302	.40566	.50304	1.0438	.05037	10.487
#3	.40941	10.323	.41158	.50413	1.0425	.05022	10.428
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05234	.20485	.50201	.52446	4.0759	51.088	1.0484
Stddev	.00020	.00025	.00165	.00123	.0669	.060	.0059
%RSD	.38699	.12298	.32889	.23505	1.6409	.11683	.55819
#1	.05251	.20498	.50023	.52357	4.1126	51.031	1.0491
#2	.05240	.20456	.50349	.52586	3.9987	51.083	1.0423
#3	.05212	.20501	.50230	.52393	4.1164	51.150	1.0539
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.8126	.50786	1.0468	51.847	.51713	10.210	.51778
Stddev	.0274	.00264	.0020	.030	.00045	.013	.00098
%RSD	.27960	.52030	.19073	.05848	.08757	.13121	.18906
#1	9.8005	.51090	1.0485	51.876	.51722	10.201	.51858
#2	9.7933	.50648	1.0474	51.816	.51663	10.204	.51807
#3	9.8440	.50619	1.0446	51.848	.51752	10.226	.51669
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 23:51:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2406**	**.41201**	**5.2627**	**1.0255**	**1.0428**	**1.0401**	**.52263**
Stddev	.0022	.00564	.0065	.0018	.0016	.0094	.00276
%RSD	.17501	1.3693	.12412	.17227	.15774	.90409	.52737
#1	1.2431	.41191	5.2553	1.0271	1.0421	1.0459	.52461
#2	1.2392	.40642	5.2651	1.0236	1.0417	1.0292	.52380
#3	1.2396	.41770	5.2677	1.0258	1.0447	1.0451	.51948
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0216**	**1.0330**	F **3.0271**
Stddev	.0027	.0013	.0163
%RSD	.26838	.12831	.53748
#1	1.0227	1.0315	3.0446
#2	1.0236	1.0335	3.0125
#3	1.0185	1.0340	3.0242
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9680.4**	**59250.**	**3000.1**
Stddev	28.5	27.	16.9
%RSD	.29390	.04497	.56388
#1	9711.9	59280.	2982.6
#2	9672.8	59242.	3016.3
#3	9656.6	59229.	3001.5

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 23:55:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00125**	**.00182**	**.00085**	**.00036**	**.00255**	**.00017**	**-.02838**	**-.00012**
Stddev	.00082	.00761	.00304	.00225	.00150	.00005	.02296	.00019
%RSD	65.454	418.99	358.52	623.67	58.837	28.075	80.890	157.58
#1	.00189	-.00688	.00358	-.00006	.00362	.00012	-.00325	-.00021
#2	.00153	.00513	.00139	-.00165	.00321	.00020	-.04827	-.00024
#3	.00033	.00720	-.00242	.00279	.00083	.00021	-.03363	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**.00075**	**.00113**	**.02762**	**-.02056**	**.00086**	**-.01380**	**-.00101**
Stddev	.00025	.00070	.00060	.00527	.01321	.00185	.01535	.00114
%RSD	279.31	93.710	52.614	19.071	64.270	216.68	111.21	112.81
#1	-.00016	.00013	.00054	.02156	-.02746	-.00001	-.01846	.00029
#2	.00010	.00151	.00112	.03019	-.02889	-.00040	-.02627	-.00181
#3	.00033	.00061	.00173	.03110	-.00532	.00298	.00334	-.00151
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00326**	**.05197**	**-.00006**	**.00537**	**-.00040**	**.00432**	**.00298**	**.03440**
Stddev	.00030	.03661	.00066	.00611	.00131	.00120	.00482	.00043
%RSD	9.1019	70.433	1169.2	113.80	328.70	27.704	161.98	1.2407
#1	.00299	.03235	.00066	.00591	.00062	.00425	-.00005	.03422
#2	.00322	.09421	-.00018	.01119	-.00187	.00556	.00044	.03489
#3	.00358	.02936	-.00065	-.00099	.00005	.00317	.00854	.03409
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 23:55:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**.00044**	**.00562**	**-.00278**	**.00100**	**.00010**	**.00427**
Stddev	.00044	.00041	.00677	.00064	.00081	.00020	.00057
%RSD	558.27	93.814	120.49	22.928	80.799	205.25	13.474
#1	.00052	-.00002	.00467	-.00264	.00112	.00024	.00360
#2	.00007	.00078	.01282	-.00348	.00014	-.00013	.00461
#3	-.00036	.00055	-.00063	-.00223	.00174	.00017	.00459
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9746.4**	**60216.**	**3006.7**
Stddev	3.8	76.	7.9
%RSD	.03876	.12554	.26429
#1	9742.9	60301.	3002.9
#2	9746.0	60157.	3001.3
#3	9750.4	60189.	3015.8

Approved: June 27, 2016

Sample Name: LLCCV Acquired: 6/25/2016 23:59:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00916	.16469	.00814	.08024	.01010	.00165	.38196	.00067
Stddev	.00085	.00884	.00209	.00058	.00103	.00003	.03578	.00008
%RSD	9.3027	5.3671	25.632	.71975	10.222	1.6058	9.3673	12.378
#1	.00982	.16059	.01037	.08090	.01024	.00166	.39925	.00061
#2	.00944	.15864	.00624	.07981	.01105	.00162	.40581	.00076
#3	.00820	.17483	.00780	.08002	.00900	.00168	.34082	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00411	.00454	.00520	.10552	.68660	.08825	.42307	.00800
Stddev	.00033	.00070	.00174	.01827	.09614	.00099	.09575	.00252
%RSD	7.9024	15.364	33.422	17.313	14.002	1.1218	22.633	31.490
#1	.00383	.00377	.00720	.10444	.59286	.08799	.31358	.00534
#2	.00447	.00514	.00437	.12431	.68197	.08934	.49110	.01035
#3	.00404	.00471	.00403	.08782	.78497	.08741	.46454	.00831
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00870	.45736	.01598	.79373	.00972	.08303	.01581	.78238
Stddev	.00060	.01151	.00062	.00779	.00188	.00162	.00507	.00288
%RSD	6.8723	2.5158	3.9084	.98133	19.382	1.9461	32.090	.36823
#1	.00805	.45897	.01600	.80272	.00902	.08401	.02162	.78192
#2	.00924	.44514	.01534	.78909	.01186	.08117	.01226	.78546
#3	.00881	.46798	.01659	.78938	.00829	.08392	.01355	.77975
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LLCCV Acquired: 6/25/2016 23:59:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40813**	**.04261**	**.02883**	**.15405**	**.00896**	**.01738**	**.13453**
Stddev	.00156	.00009	.00723	.00166	.00036	.00005	.00136
%RSD	.38342	.20072	25.085	1.0771	4.0551	.28767	1.0139
#1	.40866	.04260	.02755	.15254	.00855	.01741	.13450
#2	.40935	.04253	.02233	.15583	.00907	.01742	.13318
#3	.40636	.04270	.03662	.15377	.00925	.01733	.13591
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9793.5**	**60446.**	**3011.5**
Stddev	14.7	195.	8.9
%RSD	.15029	.32191	.29401
#1	9810.3	60377.	3006.1
#2	9783.4	60295.	3006.7
#3	9786.6	60666.	3021.7

Approved: June 27, 2016

2.3.2 Metals ICP-MS Data

2.3.2.1 Summary Data

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW03F-061416	**Prep Method:**	3015	**Prep Date:**	06/27/2016 08:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/28/2016 13:15
Workgroup #:	WG574570	**Analyst:**	BKT	**Run Date:**	06/28/2016 20:42
Collect Date:	06/14/2016 07:40	**Dilution:**	1	**File ID:**	NI.062816.204236
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.000919	J	0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.173		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00200	U	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00100	U	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00200	U	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.0960		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00400	U	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW04SW-061416	**Prep Method:**	3015	**Prep Date:**	06/27/2016 08:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/28/2016 13:15
Workgroup #:	WG574570	**Analyst:**	BKT	**Run Date:**	06/28/2016 20:45
Collect Date:	06/14/2016 09:00	**Dilution:**	1	**File ID:**	NI.062816.204547
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00407		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00950		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00368		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00200	U	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.213		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00574	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW04SW-061416	**Prep Method:**	3015	**Prep Date:**	06/27/2016 08:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/29/2016 11:35
Workgroup #:	WG574570	**Analyst:**	BKT	**Run Date:**	06/29/2016 12:25
Collect Date:	06/14/2016 09:00	**Dilution:**	10	**File ID:**	NI.062916.122501
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.936		0.0600	0.0300	0.0150

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer NexION 300X

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	100
Vi = Initial volume	40
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/L)	0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	200
Vi = Initial volume	0.5
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/kg)	40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	40
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	50

50 ug/kg = 0.050 mg/kg

Perkin Elmer NexION ICP/MS

STANDARDS KEY

QC Std 1 - ICV
QC Std 2 - ICB
QC Std 3 - LLICV
QC Std 4 - ICSA
QC Std 5 - ICSAB
QC Std 6 - CCV
QC Std 7 - CCB
QC Std 8 - LLCCV

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.00005	0.05	0.1
Sb	10	0	0.00005	0.05	0.1
As	10	0	0.00005	0.05	0.1
Ba	10	0	0.00005	0.05	0.1
Be	10	0	0.00005	0.05	0.1
Ca	1000	0	0.005	5	10
Cd	10	0	0.0005	0.05	0.1
Cr	10	0	0.0005	0.05	0.1
Co	10	0	0.0005	0.05	0.1
Cu	10	0	0.0005	0.05	0.1
Fe	1000	0	0.005	5	10
Pb	10	0	0.00005	0.05	0.1
Mg	1000	0	0.005	5	10
Mn	10	0	0.00005	0.05	0.1
Ni	10	0	0.00005	0.05	0.1
K	1000	0	0.005	5	10
Se	10	0	0.00005	0.05	0.1
Ag	10	0	0.00005	0.05	0.1
Na	1000	0	0.005	5	10
Tl	10	0	0.00005	0.05	0.1
V	10	0	0.00005	0.05	0.1
U	1000	0	0.00005	0.05	0.1
Zn	10	0	0.00005	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG574242
Analyst: VC
Spike Analyst: VC
Run Date: 06/27/2016 08:30
Method: 3015
Balance: BAL016
Instrument: MW-3
Instrument Start: 06/27/2016 08:39

SOP: ME407 Revison 19
Spike Solution: STD75998
Spike Witness: ERP
HNO3 Lot #: COA18905
40 & 50 ML. DIGESTION TU COA18987
MS Filters- fisher-Lot#R RGT35621

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG574242-02	BLANK	1	20 mL	50 mL	182.814 g	182.793 g		
2	WG574242-03	LCS	1	20 mL	50 mL	183.56 g	183.549 g	.25 mL	
3	L16060794-01	SAMP	1	20 mL	50 mL	184.361 g	184.346 g		06/24/16
4	L16060794-02	SAMP	1	20 mL	50 mL	183.398 g	183.379 g		06/24/16
5	L16060794-03	SAMP	1	20 mL	50 mL	184.044 g	184.009 g		06/24/16
6	L16060794-04	SAMP	1	20 mL	50 mL	182.433 g	182.424 g		06/24/16
7	L16060822-02	SAMP	1	20 mL	50 mL	182.575 g	182.563 g		06/24/16
8	L16060822-03	SAMP	1	20 mL	50 mL	182.733 g	182.696 g		06/24/16
9	L16060823-02	SAMP	1	20 mL	50 mL	184.331 g	184.334 g		06/24/16
10	L16060823-03	SAMP	1	20 mL	50 mL	181.954 g	181.917 g		06/24/16
11	L16060823-04	SAMP	1	20 mL	50 mL	184.816 g	184.809 g		06/24/16
12	WG574242-01	REF	2	20 mL	50 mL	183.706 g	183.7 g		
13	L16060839-01	SAMP	2	20 mL	50 mL	183.706 g	183.7 g		06/22/16
14	L16060843-01	SAMP	2	20 mL	50 mL	179.215 g	179.196 g		06/22/16
15	L16060843-02	SAMP	2	20 mL	50 mL	181.896 g	181.872 g		06/22/16
16	L16061410-01	SAMP	1	20 mL	50 mL	181.139 g	181.127 g		07/01/16
17	L16061412-01	SAMP	1	20 mL	50 mL	181.093 g	181.089 g		07/01/16
18	L16061412-02	SAMP	1	20 mL	50 mL	184.474 g	184.466 g		07/01/16
19	L16061413-01	SAMP	1	20 mL	50 mL	181.294 g	181.262 g		07/01/16
20	L16061416-01	SAMP	1	20 mL	50 mL	183.477 g	183.459 g		07/01/16
21	L16061416-02	SAMP	1	20 mL	50 mL	179.518 g	178.772 g		07/01/16
22	L16061421-01	SAMP	1	20 mL	50 mL	183.973 g	183.93 g		07/01/16
23	WG574242-04	DUP	1	20 mL	50 mL	183.873 g	183.86 g		
24	WG574242-05	MS	1	20 mL	50 mL	181.12 g	181.111 g	.25 mL	
25	WG574242-06	MSD	1	20 mL	50 mL	183.984 g	183.969 g	.25 mL	

Analyst: Vicki Collins

Reviewer: Erin Potter

MW_DIG - Modified 09/30/2009
PDF ID: 4825468
Report generated: 06/27/2016 09:45

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062816A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 572184,573475,574522,574570,574571,574573

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.062816.130257	Blank	Blank		1		06/28/16 13:02
2	NI.062816.130609	WG574537-01	Calibration Point		1		06/28/16 13:06
3	NI.062816.130921	WG574537-02	Calibration Point		1		06/28/16 13:09
4	NI.062816.131232	WG574537-03	Calibration Point		1		06/28/16 13:12
5	NI.062816.131544	WG574537-04	Calibration Point		1		06/28/16 13:15
6	NI.062816.131857	WG574537-05	Initial Calibration Verification		1		06/28/16 13:18
7	NI.062816.132210	WG574537-06	Initial Calib Blank		1		06/28/16 13:22
8	NI.062816.132523	WG574537-07	Low Level Initial Calibration V		1		06/28/16 13:25
9	NI.062816.132834	WG574537-08	Interference Check		1		06/28/16 13:28
10	NI.062816.133145	WG574537-09	Interference Check		1		06/28/16 13:31
11	NI.062816.133459	WG574537-10	CCV		1		06/28/16 13:34
12	NI.062816.133810	WG574537-11	CCB		1		06/28/16 13:38
13	NI.062816.134122	L16060362-03	6060227-03		10		06/28/16 13:41
14	NI.062816.134434	L16060362-04	6060227-04		1		06/28/16 13:44
15	NI.062816.134903	L16060362-03	6060227-03	20/50	10		06/28/16 13:49
16	NI.062816.135218	L16060362-04	6060227-04	20/50	1		06/28/16 13:52
17	NI.062816.135925	L16060362-05	6060227-05	20/50	1		06/28/16 13:59
18	NI.062816.140236	L16060362-06	6060227-06	20/50	1		06/28/16 14:02
19	NI.062816.140602	L16060362-07	6060227-07	20/50	1		06/28/16 14:06
20	NI.062816.140914	L16060362-08	6060227-08	20/50	1		06/28/16 14:09
21	NI.062816.141225	L16060362-09	6060227-09	20/50	1		06/28/16 14:12
22	NI.062816.141537	L16060362-10	6060227-10	20/50	1		06/28/16 14:15
23	NI.062816.141850	WG574537-12	CCV		1		06/28/16 14:18
24	NI.062816.142201	WG574537-13	CCB		1		06/28/16 14:22
25	NI.062816.142514	L16060362-11	6060227-11	20/50	1		06/28/16 14:25
26	NI.062816.142825	L16060362-12	6060227-12	20/50	1		06/28/16 14:28
27	NI.062816.143138	WG574537-14	CCV		1		06/28/16 14:31
28	NI.062816.143450	WG574537-15	CCB		1		06/28/16 14:34
29	NI.062816.143803	WG573333-03	Method/Prep Blank	.25/100	1		06/28/16 14:38
30	NI.062816.144114	WG573333-04	Laboratory Control S	.25/100	1		06/28/16 14:41
31	NI.062816.144426	WG573333-02	Reference Sample		1	L16061053-01	06/28/16 14:44
32	NI.062816.144737	WG573333-07	Matrix Spike	.253/100	1	L16061053-01	06/28/16 14:47
33	NI.062816.145049	WG573333-08	Matrix Spike Duplica	.252/100	1	L16061053-01	06/28/16 14:50
34	NI.062816.145400	L16061048-01	TR0062	.252/100	5		06/28/16 14:54

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Kim H. Rhoden

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Instrument Run Log

Instrument: ICP-MS2 Dataset: 062816A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 572184,573475,574522,574570,574571,574573

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.062816.145711	WG573475-03	Post Digestion Spike		5	L16061048-01	06/28/16 14:57
36	NI.062816.150023	WG573475-04	Serial Dilution		25	L16061048-01	06/28/16 15:00
37	NI.062816.150336	WG574537-16	Interference Check		1		06/28/16 15:03
38	NI.062816.150647	WG574537-17	Interference Check		1		06/28/16 15:06
39	NI.062816.151001	WG574537-18	CCV		1		06/28/16 15:10
40	NI.062816.151312	WG574537-19	CCB		1		06/28/16 15:13
41	NI.062816.151629	WG574537-20	Low Level Continuing Calibra		1		06/28/16 15:16
42	NI.062816.152424	WG573333-01	Reference Sample		10	L16060787-03	06/28/16 15:24
43	NI.062816.152735	WG573333-05	Matrix Spike	.256/100	10	L16060787-03	06/28/16 15:27
44	NI.062816.153046	WG573333-06	Matrix Spike Duplica	.253/100	10	L16060787-03	06/28/16 15:30
45	NI.062816.153358	L16060787-06	U517SS00512A	.256/100	10		06/28/16 15:33
46	NI.062816.153709	L16060787-08	U517SS00612A	.254/100	10		06/28/16 15:37
47	NI.062816.154021	L16060787-13	U517SS00708A	.252/100	10		06/28/16 15:40
48	NI.062816.154332	L16060787-15	U517SS00808A	.257/100	10		06/28/16 15:43
49	NI.062816.154644	L16060787-16	U517SS00808C	.255/100	10		06/28/16 15:46
50	NI.062816.154955	L16060787-17	U517SS00810A	.259/100	10		06/28/16 15:49
51	NI.062816.155308	WG574537-21	CCV		1		06/28/16 15:53
52	NI.062816.155620	WG574537-22	CCB		1		06/28/16 15:56
53	NI.062816.155933	WG573751-04	Method/Prep Blank	20/50	1		06/28/16 15:59
54	NI.062816.160244	WG573751-05	Laboratory Control S	20/50	1		06/28/16 16:02
55	NI.062816.160556	WG573751-02	Reference Sample		1	L16061151-01	06/28/16 16:05
56	NI.062816.160907	WG573751-07	Matrix Spike	20/50	1	L16061151-01	06/28/16 16:09
57	NI.062816.161219	WG573751-08	Matrix Spike Duplica	20/50	1	L16061151-01	06/28/16 16:12
58	NI.062816.161530	WG573751-01	Reference Sample		1	L16060916-02	06/28/16 16:15
59	NI.062816.161841	WG573751-06	Duplicate	20/50	1	L16060916-02	06/28/16 16:18
60	NI.062816.162153	L16060916-01	PHL 1 FRESHWATER IMPO	20/50	1		06/28/16 16:21
61	NI.062816.162504	WG574522-01	Post Digestion Spike		1	L16060916-01	06/28/16 16:25
62	NI.062816.162816	WG574522-02	Serial Dilution		5	L16060916-01	06/28/16 16:28
63	NI.062816.163129	WG574537-23	CCV		1		06/28/16 16:31
64	NI.062816.163441	WG574537-24	CCB		1		06/28/16 16:34
65	NI.062816.163754	WG574522-02	Serial Dilution		25	L16060916-01	06/28/16 16:37
66	NI.062816.164105	L16061142-01	18WW20-062016	20/50	1		06/28/16 16:41
67	NI.062816.164417	L16061142-03	18WW19F-062016	20/50	1		06/28/16 16:44
68	NI.062816.164728	L16061142-05	18WW19FFD-062016	20/50	1		06/28/16 16:47

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Instrument Run Log

Instrument: ICP-MS2 Dataset: 062816A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 572184,573475,574522,574570,574571,574573

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.062816.165039	L16061151-02	LF003SW0311-007 DUP	20/50	1		06/28/16 16:50
70	NI.062816.165351	L16061151-05	LF003SW0312-007	20/50	1		06/28/16 16:53
71	NI.062816.165702	WG573751-03	Reference Sample		1	L16061154-01	06/28/16 16:57
72	NI.062816.170014	WG573751-09	Matrix Spike	20/50	1	L16061154-01	06/28/16 17:00
73	NI.062816.170325	WG573751-10	Matrix Spike Duplica	20/50	1	L16061154-01	06/28/16 17:03
74	NI.062816.170637	L16061154-04	FQC-RB06201601-CB	20/50	1		06/28/16 17:06
75	NI.062816.170950	WG574537-25	CCV		1		06/28/16 17:09
76	NI.062816.171301	WG574537-26	CCB		1		06/28/16 17:13
77	NI.062816.171614	L16061155-01	ST008MW0812-007	20/50	1		06/28/16 17:16
78	NI.062816.171926	L16061155-02	ST008MW0809-007	20/50	1		06/28/16 17:19
79	NI.062816.172237	L16061155-03	ST008MW0816-007	20/50	1		06/28/16 17:22
80	NI.062816.172550	WG574537-27	CCV		1		06/28/16 17:25
81	NI.062816.172902	WG574537-28	CCB		1		06/28/16 17:29
82	NI.062816.184632	L16061142-01	18WW20-062016	20/50	10		06/28/16 18:46
83	NI.062816.184946	WG574537-29	CCV		1		06/28/16 18:49
84	NI.062816.185257	WG574537-30	CCB		1		06/28/16 18:52
85	NI.062816.185610	WG574537-31	Low Level Continuing Calibra		1		06/28/16 18:56
86	NI.062816.195129	WG574242-02	Method/Prep Blank	20/50	1		06/28/16 19:51
87	NI.062816.195440	WG574242-03	Laboratory Control S	20/50	1		06/28/16 19:54
88	NI.062816.195752	WG574242-01	Reference Sample		1	L16060839-01	06/28/16 19:57
89	NI.062816.200103	WG574242-04	Duplicate	20/50	1	L16060839-01	06/28/16 20:01
90	NI.062816.200414	WG574242-05	Matrix Spike	20/50	1	L16060839-01	06/28/16 20:04
91	NI.062816.200726	WG574242-06	Matrix Spike Duplica	20/50	1	L16060839-01	06/28/16 20:07
92	NI.062816.201037	L16060843-01	6060966-01	20/50	1		06/28/16 20:10
93	NI.062816.201349	WG574570-01	Post Digestion Spike		1	L16060843-01	06/28/16 20:13
94	NI.062816.201700	WG574570-02	Serial Dilution		5	L16060843-01	06/28/16 20:17
95	NI.062816.202012	WG574570-02	Serial Dilution		25	L16060843-01	06/28/16 20:20
96	NI.062816.202325	WG574537-32	CCV		1		06/28/16 20:23
97	NI.062816.202637	WG574537-33	CCB		1		06/28/16 20:26
98	NI.062816.202950	L16060794-01	A08-MW06-Y1S2	20/50	1		06/28/16 20:29
99	NI.062816.203301	L16060794-02	A08-MW09-Y1S2	20/50	1		06/28/16 20:33
100	NI.062816.203613	L16060794-03	A09-MW02-Y1S2	20/50	1		06/28/16 20:36
101	NI.062816.203924	L16060794-04	A09-MW07-Y1S2	20/50	1		06/28/16 20:39
102	NI.062816.204236	L16060822-02	18WW03F-061416	20/50	1		06/28/16 20:42

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Instrument Run Log

Instrument: ICP-MS2 Dataset: 062816A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 572184,573475,574522,574570,574571,574573

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.062816.204547	L16060822-03	18CPTMW04SW-061416	20/50	1		06/28/16 20:45
104	NI.062816.204859	L16060823-02	126F-061416	20/50	1		06/28/16 20:48
105	NI.062816.205210	L16060823-03	C08-061416	20/50	1		06/28/16 20:52
106	NI.062816.205522	L16060823-04	C03-061416	20/50	1		06/28/16 20:55
107	NI.062816.205833	L16060843-02	6060966-02	20/50	1		06/28/16 20:58
108	NI.062816.210146	WG574537-34	CCV		1		06/28/16 21:01
109	NI.062816.210457	WG574537-35	CCB		1		06/28/16 21:04
110	NI.062816.210810	L16061410-01	SS007MW0704-007	20/50	1		06/28/16 21:08
111	NI.062816.211122	L16061412-01	SS007MW0B05-007	20/50	1		06/28/16 21:11
112	NI.062816.211433	L16061412-02	SS007MW0B02-007	20/50	1		06/28/16 21:14
113	NI.062816.211745	L16061413-01	DP005MW0504-007	20/50	1		06/28/16 21:17
114	NI.062816.212056	L16061416-01	DP005MW0509-007	20/50	1		06/28/16 21:20
115	NI.062816.212408	L16061416-02	DP005MW0518-007	20/50	1		06/28/16 21:24
116	NI.062816.212719	L16061421-01	LF003MW03	20/50	1		06/28/16 21:27
117	NI.062816.213032	WG574537-36	CCV		1		06/28/16 21:30
118	NI.062816.213343	WG574537-37	CCB		1		06/28/16 21:33
119	NI.062816.213655	WG574205-02	Method/Prep Blank	20/50	1		06/28/16 21:36
120	NI.062816.214007	WG574205-03	Laboratory Control S	20/50	1		06/28/16 21:40
121	NI.062816.214318	WG574205-01	Reference Sample		1	L16061343-01	06/28/16 21:43
122	NI.062816.214630	WG574205-04	Duplicate	20/50	1	L16061343-01	06/28/16 21:46
123	NI.062816.214941	WG574205-05	Matrix Spike	20/50	1	L16061343-01	06/28/16 21:49
124	NI.062816.215253	WG574205-06	Matrix Spike Duplica	20/50	1	L16061343-01	06/28/16 21:52
125	NI.062816.215604	L16060732-01	LH18/24-SP650-6371-GRAB	20/50	1		06/28/16 21:56
126	NI.062816.215915	WG574571-01	Post Digestion Spike		1	L16060732-01	06/28/16 21:59
127	NI.062816.220227	WG574571-02	Serial Dilution		5	L16060732-01	06/28/16 22:02
128	NI.062816.220538	WG574571-02	Serial Dilution		25	L16060732-01	06/28/16 22:05
129	NI.062816.220851	WG574537-38	CCV		1		06/28/16 22:08
130	NI.062816.221202	WG574537-39	CCB		1		06/28/16 22:12
131	NI.062816.221514	L16060732-02	LH18/24-SP650-6371-COMP	20/50	1		06/28/16 22:15
132	NI.062816.221825	L16060762-01	MW-24-001	20/50	1		06/28/16 22:18
133	NI.062816.222137	L16061380-01	XU936TW003A	20/50	1		06/28/16 22:21
134	NI.062816.222448	L16061380-02	XU936TW003C	20/50	1		06/28/16 22:24
135	NI.062816.222800	L16061381-06	EB02	20/50	1		06/28/16 22:28
136	NI.062816.223111	L16061393-01	S6F0627-01	20/50	1		06/28/16 22:31

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Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062816A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 572184,573475,574522,574570,574571,574573

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	NI.062816.223423	L16061393-02	S6F0627-02	20/50	1		06/28/16 22:34
138	NI.062816.223734	L16061393-03	S6F0627-03	20/50	1		06/28/16 22:37
139	NI.062816.224046	L16061393-04	S6F0627-04	20/50	1		06/28/16 22:40
140	NI.062816.224357	L16061393-05	S6F0627-05	20/50	1		06/28/16 22:43
141	NI.062816.224710	WG574537-40	CCV		1		06/28/16 22:47
142	NI.062816.225022	WG574537-41	CCB		1		06/28/16 22:50
143	NI.062816.225335	L16061393-06	S6F0627-06	20/50	1		06/28/16 22:53
144	NI.062816.225646	L16061393-07	S6F0627-07	20/50	1		06/28/16 22:56
145	NI.062816.225958	L16061401-01	DP005MW0501-007	20/50	1		06/28/16 22:59
146	NI.062816.230309	L16061402-01	SS007MW0715-007	20/50	1		06/28/16 23:03
147	NI.062816.230621	L16061404-01	DP005MW0503-007	20/50	1		06/28/16 23:06
148	NI.062816.230932	L16061408-01	DP005MW0508-007	20/50	1		06/28/16 23:09
149	NI.062816.231244	L16061409-01	ST008MW0818-007	20/50	1		06/28/16 23:12
150	NI.062816.231556	WG574537-42	CCV		1		06/28/16 23:15
151	NI.062816.231908	WG574537-43	CCB		1		06/28/16 23:19
152	NI.062816.232221	WG574537-44	Low Level Continuing Calibra		1		06/28/16 23:22
153	NI.062816.232534	WG574306-02	Method/Prep Blank	.25/100	1		06/28/16 23:25
154	NI.062816.232845	WG574306-03	Laboratory Control S	.25/100	1		06/28/16 23:28
155	NI.062816.233157	L16061297-07	XU936DS01700A		1	WG574306-01	06/28/16 23:31
156	NI.062816.233508	L16061297-08	XU936DS01700MS	.253/100	1	WG574306-04	06/28/16 23:35
157	NI.062816.233819	L16061297-09	XU936DS01700MSD	.255/100	1	WG574306-05	06/28/16 23:38
158	NI.062816.234131	L16061443-01	GS042QACF035SB062416-E	.256/100	1		06/28/16 23:41
159	NI.062816.234442	L16061443-02	GS042QACF035SB062416-E	.256/100	1		06/28/16 23:44
160	NI.062816.234754	WG574573-01	Post Digestion Spike		1	L16061443-02	06/28/16 23:47
161	NI.062816.235105	WG574573-02	Serial Dilution		5	L16061443-02	06/28/16 23:51
162	NI.062816.235417	WG574573-02	Serial Dilution		25	L16061443-02	06/28/16 23:54
163	NI.062816.235730	WG574537-45	CCV		1		06/28/16 23:57
164	NI.062916.000041	WG574537-46	CCB		1		06/29/16 00:00

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Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062916A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573722,574570,574572,573717,574688,574690,573790

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.062916.112234	Blank	Blank		1		06/29/16 11:22
2	NI.062916.112545	WG574676-01	Calibration Point		1		06/29/16 11:25
3	NI.062916.112857	WG574676-02	Calibration Point		1		06/29/16 11:28
4	NI.062916.113208	WG574676-03	Calibration Point		1		06/29/16 11:32
5	NI.062916.113520	WG574676-04	Calibration Point		1		06/29/16 11:35
6	NI.062916.113833	WG574676-05	Initial Calibration Verification		1		06/29/16 11:38
7	NI.062916.114146	WG574676-06	Initial Calib Blank		1		06/29/16 11:41
8	NI.062916.114653	WG574676-07	Low Level Initial Calibration V		1		06/29/16 11:46
9	NI.062916.115053	WG574676-08	Interference Check		1		06/29/16 11:50
10	NI.062916.115447	WG574676-09	Interference Check		1		06/29/16 11:54
11	NI.062916.120010	WG574676-10	CCV		1		06/29/16 12:00
12	NI.062916.120734	WG574676-11	CCB		1		06/29/16 12:07
13	NI.062916.121215	L16060661-06	US23SS02502A	.253/100	1		06/29/16 12:12
14	NI.062916.121526	L16060661-07	US23SS02505A	.257/100	1		06/29/16 12:15
15	NI.062916.121838	L16060661-08	US23SS02602A	.257/100	1		06/29/16 12:18
16	NI.062916.122149	L16060661-09	US23SS02605A	.25/100	1		06/29/16 12:21
17	NI.062916.122501	L16060822-03	18CPTMW04SW-061416	20/50	10		06/29/16 12:25
18	NI.062916.122812	L16060823-02	126F-061416	20/50	50		06/29/16 12:28
19	NI.062916.123124	L16060823-03	C08-061416	20/50	50		06/29/16 12:31
20	NI.062916.123435	L16060823-04	C03-061416	20/50	50		06/29/16 12:34
21	NI.062916.123748	WG574676-12	CCV		1		06/29/16 12:37
22	NI.062916.124059	WG574676-13	CCB		1		06/29/16 12:40
23	NI.062916.124412	WG574676-14	Low Level Continuing Calibra		1		06/29/16 12:44
24	NI.062916.125354	WG573548-02	Method/Prep Blank	20/50	1		06/29/16 12:53
25	NI.062916.125705	WG573548-03	Laboratory Control S	20/50	1		06/29/16 12:57
26	NI.062916.130017	WG573548-01	Reference Sample		1	L16060986-23	06/29/16 13:00
27	NI.062916.130328	WG573548-04	Matrix Spike	20/50	1	L16060986-23	06/29/16 13:03
28	NI.062916.130639	WG573548-05	Matrix Spike Duplica	20/50	1	L16060986-23	06/29/16 13:06
29	NI.062916.130951	L16060986-01	MW-07-04	20/50	1		06/29/16 13:09
30	NI.062916.131302	L16060986-03	MW-01-10	20/50	1		06/29/16 13:13
31	NI.062916.131614	WG574572-01	Post Digestion Spike		1	L16060986-03	06/29/16 13:16
32	NI.062916.131925	WG574572-02	Serial Dilution		5	L16060986-03	06/29/16 13:19
33	NI.062916.132237	WG574572-02	Serial Dilution		25	L16060986-03	06/29/16 13:22
34	NI.062916.132550	WG574676-15	CCV		1		06/29/16 13:25

Page: 1 Approved: July 05, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062916A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573722,574570,574572,573717,574688,574690,573790

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.062916.132901	WG574676-16	CCB		1		06/29/16 13:29
36	NI.062916.133214	L16060986-05	MW-03-12	20/50	1		06/29/16 13:32
37	NI.062916.133526	L16060986-07	MW-01-07	20/50	1		06/29/16 13:35
38	NI.062916.133837	L16060986-09	MW-03-11	20/50	1		06/29/16 13:38
39	NI.062916.134150	L16060986-11	MW-01-01	20/50	1		06/29/16 13:41
40	NI.062916.134502	L16060986-13	MW-03-09	20/50	1		06/29/16 13:45
41	NI.062916.134813	L16060986-15	MW-01-08	20/50	1		06/29/16 13:48
42	NI.062916.135125	L16060986-17	MW-03-06	20/50	1		06/29/16 13:51
43	NI.062916.135436	L16060986-19	MW-03-05	20/50	1		06/29/16 13:54
44	NI.062916.135748	L16060986-25	MW-01-02	20/50	1		06/29/16 13:57
45	NI.062916.140059	L16060986-27	DUP 1	20/50	1		06/29/16 14:00
46	NI.062916.140412	WG574676-17	CCV		1		06/29/16 14:04
47	NI.062916.140723	WG574676-18	CCB		1		06/29/16 14:07
48	NI.062916.141036	L16060986-29	DUP 2	20/50	1		06/29/16 14:10
49	NI.062916.141347	L16060986-39	EQUIP BLANK 1	20/50	1		06/29/16 14:13
50	NI.062916.141659	L16060986-41	EQUIP BLANK 2	20/50	1		06/29/16 14:16
51	NI.062916.145120	L16061026-02	18WW16F-061616	20/50	1		06/29/16 14:51
52	NI.062916.145431	L16061026-04	129-061616	20/50	1		06/29/16 14:54
53	NI.062916.145742	L16061026-06	120F-061616	20/50	1		06/29/16 14:57
54	NI.062916.150054	L16061026-07	123-061616	20/50	1		06/29/16 15:00
55	NI.062916.150407	WG574676-19	CCV		1		06/29/16 15:04
56	NI.062916.150718	WG574676-20	CCB		1		06/29/16 15:07
57	NI.062916.151032	WG573099-02	Method/Prep Blank	.25/100	1		06/29/16 15:10
58	NI.062916.151343	WG573099-03	Laboratory Control S	.25/100	1		06/29/16 15:13
59	NI.062916.151655	WG573099-01	Reference Sample		10	L16060888-03	06/29/16 15:16
60	NI.062916.152006	WG573099-04	Matrix Spike	.255/100	10	L16060888-03	06/29/16 15:20
61	NI.062916.152318	WG573099-05	Matrix Spike Duplica	.254/100	10	L16060888-03	06/29/16 15:23
62	NI.062916.152629	L16060883-01	WC01	.252/100	1		06/29/16 15:26
63	NI.062916.152941	L16060912-01	WH8011	.25/100	1		06/29/16 15:29
64	NI.062916.153252	WG573717-03	Post Digestion Spike		1	L16060912-01	06/29/16 15:32
65	NI.062916.153604	WG573717-04	Serial Dilution		5	L16060912-01	06/29/16 15:36
66	NI.062916.153915	WG573717-04	Serial Dilution		25	L16060912-01	06/29/16 15:39
67	NI.062916.154228	WG574676-21	CCV		1		06/29/16 15:42
68	NI.062916.154540	WG574676-22	CCB		1		06/29/16 15:45

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062916A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573722,574570,574572,573717,574688,574690,573790

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.062916.154853	WG574001-04	Method/Prep Blank	20/50	1		06/29/16 15:48
70	NI.062916.155204	WG574001-05	Laboratory Control S	20/50	1		06/29/16 15:52
71	NI.062916.155516	WG574001-01	Reference Sample		1	L16061247-02	06/29/16 15:55
72	NI.062916.155827	WG574001-06	Duplicate	20/50	1	L16061247-02	06/29/16 15:58
73	NI.062916.160139	WG574001-02	Reference Sample		1	L16061265-01	06/29/16 16:01
74	NI.062916.160450	WG574001-07	Matrix Spike	20/50	1	L16061265-01	06/29/16 16:04
75	NI.062916.160802	WG574001-08	Matrix Spike Duplica	20/50	1	L16061265-01	06/29/16 16:08
76	NI.062916.161113	L16061247-01	WMB09	20/50	1		06/29/16 16:11
77	NI.062916.161425	WG574688-01	Post Digestion Spike		1	L16061247-01	06/29/16 16:14
78	NI.062916.161736	WG574688-02	Serial Dilution		5	L16061247-01	06/29/16 16:17
79	NI.062916.162049	WG574676-23	CCV		1		06/29/16 16:20
80	NI.062916.162401	WG574676-24	CCB		1		06/29/16 16:24
81	NI.062916.162713	WG574688-02	Serial Dilution		25	L16061247-01	06/29/16 16:27
82	NI.062916.163025	L16061265-04	SS007MWOB16-007	20/50	1		06/29/16 16:30
83	NI.062916.163336	L16061265-05	SS007MWOB21-007	20/50	1		06/29/16 16:33
84	NI.062916.163648	L16061265-06	FQC-RB06211601-CC	20/50	1		06/29/16 16:36
85	NI.062916.163959	L16061266-01	ST008MW0805-007	20/50	1		06/29/16 16:39
86	NI.062916.164310	L16061269-01	FT002MW0204-007	20/50	1		06/29/16 16:43
87	NI.062916.164622	L16061272-01	SS007MW0B18-007	20/50	1		06/29/16 16:46
88	NI.062916.164933	L16061272-02	SS007MWN752-007	20/50	1		06/29/16 16:49
89	NI.062916.165245	L16061279-01	XU936TW007A	20/50	1		06/29/16 16:52
90	NI.062916.165556	L16061279-01	XU936TW007A	20/50	50		06/29/16 16:55
91	NI.062916.165909	WG574676-25	CCV		1		06/29/16 16:59
92	NI.062916.170220	WG574676-26	CCB		1		06/29/16 17:02
93	NI.062916.170533	WG574001-03	Reference Sample		1	L16061279-02	06/29/16 17:05
94	NI.062916.170845	WG574001-03	Reference Sample		50	L16061279-02	06/29/16 17:08
95	NI.062916.171156	WG574001-09	Matrix Spike	20/50	1	L16061279-02	06/29/16 17:11
96	NI.062916.171508	WG574001-09	Matrix Spike	20/50	50	L16061279-02	06/29/16 17:15
97	NI.062916.171819	WG574001-10	Matrix Spike Duplica	20/50	1	L16061279-02	06/29/16 17:18
98	NI.062916.172131	WG574001-10	Matrix Spike Duplica	20/50	50	L16061279-02	06/29/16 17:21
99	NI.062916.172442	L16061279-05	XU936TW019A	20/50	1		06/29/16 17:24
100	NI.062916.172754	L16061279-05	XU936TW019A	20/50	50		06/29/16 17:27
101	NI.062916.173105	L16061281-01	J6F0803-01	20/50	1		06/29/16 17:31
102	NI.062916.173419	WG574676-27	CCV		1		06/29/16 17:34

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Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062916A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573722,574570,574572,573717,574688,574690,573790

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.062916.173730	WG574676-28	CCB		1		06/29/16 17:37
104	NI.062916.174043	L16061294-03	EB01	20/50	1		06/29/16 17:40
105	NI.062916.174355	L16061294-03	EB01	20/50	50		06/29/16 17:43
106	NI.062916.174706	L16061296-01	OUTFALL 002/COMP	20/50	1		06/29/16 17:47
107	NI.062916.175019	WG574676-29	Interference Check		1		06/29/16 17:50
108	NI.062916.175331	WG574676-30	Interference Check		1		06/29/16 17:53
109	NI.062916.175644	WG574676-31	CCV		1		06/29/16 17:56
110	NI.062916.175955	WG574676-32	CCB		1		06/29/16 17:59
111	NI.062916.180308	WG574676-33	Low Level Continuing Calibra		1		06/29/16 18:03
112	NI.062916.180621	WG574192-02	Method/Prep Blank	.25/100	1		06/29/16 18:06
113	NI.062916.180932	WG574192-03	Laboratory Control S	.25/100	1		06/29/16 18:09
114	NI.062916.181244	WG574192-01	Reference Sample		1	L16061206-01	06/29/16 18:12
115	NI.062916.181555	L16061206-02	LF003SD0311-007 DUP	.251/100	1		06/29/16 18:15
116	NI.062916.181907	WG574192-04	Matrix Spike	.25/100	1	L16061206-01	06/29/16 18:19
117	NI.062916.182218	WG574192-05	Matrix Spike Duplica	.253/100	1	L16061206-01	06/29/16 18:22
118	NI.062916.182530	L16061206-05	LF003SD0312-007	.25/100	1		06/29/16 18:25
119	NI.062916.182841	WG574690-01	Post Digestion Spike		1	L16061206-05	06/29/16 18:28
120	NI.062916.183153	WG574690-02	Serial Dilution		5	L16061206-05	06/29/16 18:31
121	NI.062916.183504	WG574690-02	Serial Dilution		25	L16061206-05	06/29/16 18:35
122	NI.062916.183818	WG574676-34	CCV		1		06/29/16 18:38
123	NI.062916.184129	WG574676-35	CCB		1		06/29/16 18:41
124	NI.062916.184442	L16061207-01	SS007SD0709-007	.251/100	1		06/29/16 18:44
125	NI.062916.184754	L16061207-02	SS007SD0710-007	.25/100	1		06/29/16 18:47
126	NI.062916.185105	L16061208-01	DP005SD0513-007	.252/100	1		06/29/16 18:51
127	NI.062916.185417	L16061208-02	DP005SD0514-007	.251/100	1		06/29/16 18:54
128	NI.062916.185728	L16061291-01	V6F0270-01	.253/100	1		06/29/16 18:57
129	NI.062916.190040	L16061381-01	XU936DS00500A	.254/100	1		06/29/16 19:00
130	NI.062916.190351	L16061381-01	XU936DS00500A	.254/100	50		06/29/16 19:03
131	NI.062916.190703	L16061381-02	XU936DS00505A	.258/100	1		06/29/16 19:07
132	NI.062916.191014	L16061381-02	XU936DS00505A	.258/100	50		06/29/16 19:10
133	NI.062916.191327	WG574676-36	CCV		1		06/29/16 19:13
134	NI.062916.191639	WG574676-37	CCB		1		06/29/16 19:16
135	NI.062916.191952	L16061381-03	XU936DS00300A	.252/100	1		06/29/16 19:19
136	NI.062916.192303	L16061381-03	XU936DS00300A	.252/100	50		06/29/16 19:23

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062916A.REP

Analyst1: BKT Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705

ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607

CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345

Stannous : Hydroxylamine :

Workgroups: 573722,574570,574572,573717,574688,574690,573790

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	NI.062916.192615	L16061381-04	XU936DS00305A	.25/100	1		06/29/16 19:26
138	NI.062916.192926	L16061381-04	XU936DS00305A	.25/100	50		06/29/16 19:29
139	NI.062916.193237	L16061381-05	XU936DS00305C	.253/100	1		06/29/16 19:32
140	NI.062916.193550	L16061381-05	XU936DS00305C	.253/100	50		06/29/16 19:35
141	NI.062916.193901	L16061381-07	XU936DS00400A	.252/100	1		06/29/16 19:39
142	NI.062916.194213	L16061381-07	XU936DS00400A	.252/100	50		06/29/16 19:42
143	NI.062916.194524	L16061384-02	BFB-16-019	.253/100	1		06/29/16 19:45
144	NI.062916.194835	L16061384-04	BFB-16-020	.253/100	1		06/29/16 19:48
145	NI.062916.195149	WG574676-38	CCV		1		06/29/16 19:51
146	NI.062916.195500	WG574676-39	CCB		1		06/29/16 19:55
147	NI.062916.195813	L16061384-06	BFB-16-021	.253/100	1		06/29/16 19:58
148	NI.062916.200124	L16061384-08	BFB-16-022	.251/100	1		06/29/16 20:01
149	NI.062916.200436	L16061384-10	BFB-16-023	.254/100	1		06/29/16 20:04
150	NI.062916.200747	L16061384-12	BFB-16-024	.254/100	1		06/29/16 20:07
151	NI.062916.201101	WG574676-40	CCV		1		06/29/16 20:11
152	NI.062916.201412	WG574676-41	CCB		1		06/29/16 20:14
153	NI.062916.201726	WG573291-03	Method/Prep Blank	20/50	1		06/29/16 20:17
154	NI.062916.202037	WG573291-04	Laboratory Control S	20/50	1		06/29/16 20:20
155	NI.062916.202348	WG573291-01	Reference Sample		1	L16060974-01	06/29/16 20:23
156	NI.062916.202700	WG573291-05	Matrix Spike	20/50	1	L16060974-01	06/29/16 20:27
157	NI.062916.203011	WG573291-06	Matrix Spike Duplica	20/50	1	L16060974-01	06/29/16 20:30
158	NI.062916.203323	WG573790-03	Post Digestion Spike		1	L16060974-01	06/29/16 20:33
159	NI.062916.203634	WG573790-04	Serial Dilution		5	L16060974-01	06/29/16 20:36
160	NI.062916.203946	WG573790-04	Serial Dilution		25	L16060974-01	06/29/16 20:39
161	NI.062916.204259	WG574676-42	CCV		1		06/29/16 20:42
162	NI.062916.204611	WG574676-43	CCB		1		06/29/16 20:46

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Microbac Laboratories Inc.

Data Checklist

Date: 28-JUN-2016
Analyst: BKT
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 574537
Runlog ID: 75986
Analytical Workgroups: 572184,573475,574522,574570,574571,574573

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	762,1380,1381
Level 4	732,787,822,823,1048,1142,1151,1154
Level 4	1155,1401,1402,1404,1408,1409,1410
Level 4	1412,1413,1416,1421,1443
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BKT
Secondary Reviewer	KHR
Comments	

Primary Reviewer:
29-JUN-2016

Secondary Reviewer:
29-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-29-2016 15:32:08

Microbac Laboratories Inc.

Data Checklist

Date: 29-JUN-2016
Analyst: BKT
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 574676
Runlog ID: 76013
Analytical Workgroups: 573722,574570,574572,573717,574688,574690,573790

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1279,1294,1381,1384
Level 4	661,822,823,883,912,974,986,1026
Level 4	1206,1207,1208,1265,1266,1269,1272
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BKT
Secondary Reviewer	JYH
Comments	

Primary Reviewer:
04-JUL-2016

Secondary Reviewer:
05-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-05-2016 12:36:33

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG574570

Login Number: L16060822

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW03F-061416	02	06/14/16					06/27/2016	13	180		06/28/16	14.5	180	
18CPTMW04SW-061416	03	06/14/16					06/27/2016	13	180		06/29/16	15.1	180	
18CPTMW04SW-061416	03	06/14/16					06/27/2016	13	180		06/28/16	14.5	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4829693
Report generated 06/30/2016 09:23

METHOD BLANK SUMMARY

Login Number: L16060822
Blank File ID: NI.062816.195129
Prep Date: 06/27/16 08:30
Analyzed Date: 06/28/16 19:51
Analyst: BKT

Work Group: WG574570
Blank Sample ID: WG574242-02
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG574242-03	NI.062816.195440	06/28/16 19:54	01
DUP	WG574242-04	NI.062816.200103	06/28/16 20:01	01
18WW03F-061416	L16060822-02	NI.062816.204236	06/28/16 20:42	02
18CPTMW04SW-061416	L16060822-03	NI.062816.204547	06/28/16 20:45	02
18CPTMW04SW-061416	L16060822-03	NI.062916.122501	06/29/16 12:25	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4829694
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060822 Prep Date: 06/27/16 08:30 Sample ID: WG574242-02
Instrument ID: ICP-MS2 Run Date: 06/28/16 19:51 Prep Method: 3015
File ID: NI.062816.195129 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG574570 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-28-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Antimony, Total	0.000500	0.00200	0.000500	1	U
Arsenic, Total	0.000500	0.00200	0.000500	1	U
Barium, Total	0.00150	0.00600	0.00150	1	U
Cadmium, Total	0.000300	0.00120	0.000300	1	U
Chromium, Total	0.00100	0.00400	0.00100	1	U
Cobalt, Total	0.000500	0.00200	0.000500	1	U
Copper, Total	0.00100	0.00400	0.00100	1	U
Lead, Total	0.000500	0.00200	0.000500	1	U
Manganese, Total	0.00100	0.00400	0.00100	1	U
Nickel, Total	0.00200	0.00800	0.00200	1	U
Silver, Total	0.000500	0.00200	0.000500	1	U
Thallium, Total	0.000100	0.000400	0.000100	1	U
Vanadium, Total	0.000500	0.00200	0.000500	1	U
Zinc, Total	0.0125	0.0500	0.0125	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4829695
29-JUN-2016 08:34

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060822 Run Date: 06/28/2016 Sample ID: WG574242-03
Instrument ID: ICP-MS2 Run Time: 19:54 Prep Method: 3015
File ID: NI.062816.195440 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG574570 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD75998 Cal ID: ICP-MS-28-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Antimony, Total	0.125	0.120	96.4	80 - 120	
Arsenic, Total	0.125	0.124	99.0	80 - 120	
Barium, Total	0.125	0.121	96.5	80 - 120	
Cadmium, Total	0.125	0.120	95.7	80 - 120	
Chromium, Total	0.125	0.125	100	80 - 120	
Cobalt, Total	0.125	0.122	97.6	80 - 120	
Copper, Total	0.125	0.127	102	80 - 120	
Lead, Total	0.125	0.125	99.8	80 - 120	
Manganese, Total	0.125	0.128	103	80 - 120	
Nickel, Total	0.125	0.126	100	80 - 120	
Silver, Total	0.125	0.123	98.2	80 - 120	
Thallium, Total	0.125	0.122	97.3	80 - 120	
Vanadium, Total	0.125	0.123	98.1	80 - 120	
Zinc, Total	0.125	0.129	103	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4829696
Report generated: 06/29/2016 08:34

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060822 | Cal ID: ICP-MS2- | Worknum: WG574570
Instrument ID: ICP-MS2 | Contract #: | Method: 6020A
Parent ID: WG574242-01 | File ID: NI.062816.195752 | Dil: 1 | Matrix: WATER
Sample ID: WG574242-05 MS | File ID: NI.062816.200414 | Dil: 1 | Units: mg/L
Sample ID: WG574242-06 MSD | File ID: NI.062816.200726 | Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Antimony	0.000998	0.125	0.123	97.9	0.125	0.120	95.5	2.49	80 - 120	20	
Arsenic	0.00141	0.125	0.127	101	0.125	0.126	99.9	0.561	80 - 120	20	
Barium	0.0414	0.125	0.160	95.3	0.125	0.156	92.0	2.54	80 - 120	20	
Cadmium	ND	0.125	0.121	97.2	0.125	0.118	94.0	3.31	80 - 120	20	
Chromium	ND	0.125	0.121	96.6	0.125	0.124	99.2	2.65	80 - 120	20	
Cobalt	ND	0.125	0.121	97.2	0.125	0.120	96.3	0.931	80 - 120	20	
Copper	0.00439	0.125	0.124	95.7	0.125	0.125	96.4	0.655	80 - 120	20	
Lead	0.00115	0.125	0.126	100	0.125	0.124	98.6	1.64	80 - 120	20	
Manganese	0.00611	0.125	0.129	98.4	0.125	0.129	98.3	0.106	80 - 120	20	
Nickel	0.00410	0.125	0.123	95.0	0.125	0.125	96.9	1.96	80 - 120	20	
Silver	ND	0.125	0.122	97.6	0.125	0.118	94.3	3.46	80 - 120	20	
Thallium	ND	0.125	0.123	98.5	0.125	0.121	97.0	1.54	80 - 120	20	
Vanadium	0.00107	0.125	0.124	98.5	0.125	0.123	97.8	0.621	80 - 120	20	
Zinc	0.0337	0.125	0.154	96.2	0.125	0.156	97.7	1.20	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4829697
Report generated 06/29/2016 08:34

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16060822 **Worknum:** WG574570
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG574570-02 **File ID:** NI.062816.201700 **Dil:** 5 **Units:** ug/L
Sample: L16060843-01 **File ID:** NI.062816.201037 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	0.382	F	2.24	F	486.00	
Arsenic	ND	U	ND	U		
Barium	29.9	X	30.7	X	2.82	
Cadmium	0.151	F	ND	U		
Chromium	ND	U	ND	U		
Cobalt	7.40	X	7.21	X	2.48	
Copper	0.509	F	ND	U		
Lead	ND	U	ND	U		
Manganese	716		689		3.69	
Nickel	17.5	X	17.0	X	2.69	
Silver	ND	U	ND	U		
Thallium	ND	U	ND	U		
Vanadium	ND	U	ND	U		
Zinc	55.5	X	55.3	F	0.51	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4829691
06/29/2016 08:34

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060822 **Worknum:** WG574570
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG574570-01 **File ID:** NI.062816.201349 **Dil:** 1 **Units:** ug/L
Sample ID: L16060843-01 **File ID:** NI.062816.201037 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	49.7		0.382	F	50	98.7	75 - 125	
ARSENIC	51.2		0	U	50	102.5	75 - 125	
BARIUM	78.1		29.9		50	96.4	75 - 125	
CADMIUM	49.2		0.151	F	50	98.1	75 - 125	
CHROMIUM	50.1		0	U	50	100.1	75 - 125	
COBALT	59.3		7.40		50	103.7	75 - 125	
COPPER	50.9		0.509	F	50	100.8	75 - 125	
LEAD	52.4		0	U	50	104.7	75 - 125	
MANGANESE	748		716		50	63.6	75 - 125	N
NICKEL	66.6		17.5		50	98.2	75 - 125	
SILVER	48.6		0	U	50	97.3	75 - 125	
THALLIUM	50.9		0	U	50	101.8	75 - 125	
VANADIUM	50.8		0	U	50	101.7	75 - 125	
ZINC	115		55.5		50	119.5	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4829692
Report generated: 06/29/2016 08:34

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16060822	Workgroup (AAB#):	WG574570
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG574537	Initial Calibration Date:	28-JUN-2016 13:15

	WG574537-01		WG574537-02		WG574537-03		WG574537-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	47.7	.4	303	50	245000	100	482000	.999953	
ARSENIC	0	-33.8	.4	11.1	50	59300	100	117000	.999972	
BARIUM	0	33.7	.4	159	50	107000	100	212000	.999991	
CADMIUM	0	3.30	.4	116	50	110000	100	219000	.999985	
CHROMIUM	0	7410	.4	8070	50	376000	100	727000	.999989	
COBALT	0	227	.4	599	50	370000	100	731000	.999947	
COPPER	0	135	.4	280	50	102000	100	195000	.999984	
LEAD	0	933	.4	2130	50	978000	100	1950000	.999942	
MANGANESE	0	835	.4	1350	50	340000	100	679000	.99986	
NICKEL	0	183	.4	306	50	100000	100	194000	1	
SILVER	0	79.0	.4	455	50	352000	100	679000	.999803	
THALLIUM	0	5.30	.4	473	50	438000	100	866000	.999971	
VANADIUM	0	1490	.4	1870	50	370000	100	719000	.999996	
ZINC	0	520	.4	1010	50	59300	100	114000	.999999	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4829700
Report generated: 30-JUN-2016 09:23

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16060822	Workgroup (AAB#):	WG574570
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG574676	Initial Calibration Date:	29-JUN-2016 11:35

	WG574676-01		WG574676-02		WG574676-03		WG574676-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	28.2	.4	255	50	227000	100	448000	.999981	
ARSENIC	0	-40.0	.4	-10.4	50	57000	100	110000	.999904	
BARIUM	0	25.3	.4	136	50	99600	100	196000	.999974	
CADMIUM	0	1.30	.4	122	50	102000	100	200000	.999946	
CHROMIUM	0	7540	.4	7930	50	379000	100	748000	.999997	
COBALT	0	239	.4	575	50	337000	100	648000	.99988	
COPPER	0	103	.4	285	50	94300	100	184000	.999979	
LEAD	0	873	.4	2280	50	926000	100	1830000	.999949	
MANGANESE	0	784	.4	1380	50	355000	100	686000	.999925	
NICKEL	0	221	.4	324	50	94600	100	186000	.999991	
SILVER	0	86.3	.4	412	50	318000	100	624000	.999961	
THALLIUM	0	1.70	.4	417	50	406000	100	804000	.999963	
VANADIUM	0	1430	.4	1850	50	385000	100	745000	.999935	
ZINC	0	365	.4	549	50	56000	100	108000	.999932	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4829700
Report generated: 30-JUN-2016 09:23

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060822
Run Date: 06/28/2016
Sample ID: WG574537-06
Instrument ID: ICP-MS2
Run Time: 13:22
Method: 6020A
File ID: NI.062816.132210
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574570
Cal ID: ICP-MS2 - 28-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
COPPER	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.405	*
THALLIUM	.04	.16	.04	U
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4829702
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060822
Run Date: 06/29/2016
Sample ID: WG574676-06
Instrument ID: ICP-MS2
Run Time: 11:41
Method: 6020A
File ID: NI.062916.114146
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574570
Cal ID: ICP-MS2 - 29-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
COPPER	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.335	F
THALLIUM	.04	.16	.04	U
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4829702
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/28/2016
Sample ID: WG574537-11
Instrument ID: ICP-MS2
Run Time: 13:38
Method: 6020A
File ID: NI.062816.133810
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.259	F
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4829705
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/28/2016
Sample ID: WG574537-15
Instrument ID: ICP-MS2
Run Time: 14:34
Method: 6020A
File ID: NI.062816.143450
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4829705
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/28/2016
Sample ID: WG574537-19
Instrument ID: ICP-MS2
Run Time: 15:13
Method: 6020A
File ID: NI.062816.151312
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.263	F
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4829705
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/28/2016
Sample ID: WG574537-30
Instrument ID: ICP-MS2
Run Time: 18:52
Method: 6020A
File ID: NI.062816.185257
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4829705
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/28/2016
Sample ID: WG574537-33
Instrument ID: ICP-MS2
Run Time: 20:26
Method: 6020A
File ID: NI.062816.202637
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/28/2016
Sample ID: WG574537-35
Instrument ID: ICP-MS2
Run Time: 21:04
Method: 6020A
File ID: NI.062816.210457
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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PDF File ID: 4829705
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/29/2016
Sample ID: WG574676-11
Instrument ID: ICP-MS2
Run Time: 12:07
Method: 6020A
File ID: NI.062916.120734
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Report generated 06/30/2016 09:23

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/29/2016
Sample ID: WG574676-13
Instrument ID: ICP-MS2
Run Time: 12:40
Method: 6020A
File ID: NI.062916.124059
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4829705
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060822 Run Date: 06/29/2016 Sample ID: WG574676-05
Instrument ID: ICP-MS2 Run Time: 11:38 Method: 6020A
File ID: NI.062916.113833 Analyst: BKT Units: ug/L
Workgroup (AAB#): WG574570 Cal ID: ICP-MS - 29-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	49.8	99.7	90 - 110	
Arsenic		50	50.9	102	90 - 110	
Barium		50	49.9	99.9	90 - 110	
Cadmium		50	50.3	101	90 - 110	
Chromium		50	50.0	100	90 - 110	
Cobalt		50	50.4	101	90 - 110	
Copper		50	50.8	102	90 - 110	
Lead		50	51.0	102	90 - 110	
Manganese		50	51.9	104	90 - 110	
Nickel		50	50.6	101	90 - 110	
Silver		50	50.9	102	90 - 110	
Thallium		50	50.7	101	90 - 110	
Vanadium		50	51.2	102	90 - 110	
Zinc		50	52.1	104	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4829701
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060822 Run Date: 06/28/2016 Sample ID: WG574537-05
Instrument ID: ICP-MS2 Run Time: 13:18 Method: 6020A
File ID: NI.062816.131857 Analyst: BKT Units: ug/L
Workgroup (AAB#): WG574570 Cal ID: ICP-MS - 28-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	48.3	96.6	90 - 110	
Arsenic		50	50.3	101	90 - 110	
Barium		50	48.2	96.4	90 - 110	
Cadmium		50	49.0	98.0	90 - 110	
Chromium		50	50.0	100	90 - 110	
Cobalt		50	50.2	100	90 - 110	
Copper		50	50.1	100	90 - 110	
Lead		50	48.9	97.7	90 - 110	
Manganese		50	50.2	100	90 - 110	
Nickel		50	49.7	99.4	90 - 110	
Silver		50	49.3	98.6	90 - 110	
Thallium		50	49.1	98.2	90 - 110	
Vanadium		50	49.7	99.5	90 - 110	
Zinc		50	50.7	101	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4829701
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822
Run Date: 06/28/2016
Sample ID: WG574537-10
Instrument ID: ICP-MS2
Run Time: 13:34
Method: 6020A
File ID: NI.062816.133459
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0492	mg/L	98.4	90 - 110		
Arsenic		0.0500	0.0495	mg/L	99.0	90 - 110		
Barium		0.0500	0.0487	mg/L	97.5	90 - 110		
Cadmium		0.0500	0.0487	mg/L	97.4	90 - 110		
Chromium		0.0500	0.0494	mg/L	98.8	90 - 110		
Cobalt		0.0500	0.0512	mg/L	102	90 - 110		
Copper		0.0500	0.0496	mg/L	99.2	90 - 110		
Lead		0.0500	0.0496	mg/L	99.3	90 - 110		
Manganese		0.0500	0.0497	mg/L	99.5	90 - 110		
Nickel		0.0500	0.0495	mg/L	98.9	90 - 110		
Silver		0.0500	0.0487	mg/L	97.3	90 - 110		
Thallium		0.0500	0.0489	mg/L	97.7	90 - 110		
Vanadium		0.0500	0.0499	mg/L	99.8	90 - 110		
Zinc		0.0500	0.0495	mg/L	99.0	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4829704
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822 Run Date: 06/28/2016 Sample ID: WG574537-14
Instrument ID: ICP-MS2 Run Time: 14:31 Method: 6020A
File ID: NI.062816.143138 Analyst: BKT QC Key: DOD4
Workgroup (AAB#): WG574570 Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0480	mg/L	96.1	90 - 110		
Arsenic		0.0500	0.0501	mg/L	100	90 - 110		
Barium		0.0500	0.0474	mg/L	94.9	90 - 110		
Cadmium		0.0500	0.0480	mg/L	96.1	90 - 110		
Chromium		0.0500	0.0496	mg/L	99.1	90 - 110		
Cobalt		0.0500	0.0531	mg/L	106	90 - 110		
Copper		0.0500	0.0499	mg/L	99.7	90 - 110		
Lead		0.0500	0.0506	mg/L	101	90 - 110		
Manganese		0.0500	0.0492	mg/L	98.5	90 - 110		
Nickel		0.0500	0.0495	mg/L	99.0	90 - 110		
Silver		0.0500	0.0484	mg/L	96.8	90 - 110		
Thallium		0.0500	0.0490	mg/L	98.1	90 - 110		
Vanadium		0.0500	0.0508	mg/L	102	90 - 110		
Zinc		0.0500	0.0501	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4829704
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822
Run Date: 06/28/2016
Sample ID: WG574537-18
Instrument ID: ICP-MS2
Run Time: 15:10
Method: 6020A
File ID: NI.062816.151001
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0504	mg/L	101	90 - 110		
Arsenic		0.0500	0.0499	mg/L	99.7	90 - 110		
Barium		0.0500	0.0485	mg/L	96.9	90 - 110		
Cadmium		0.0500	0.0487	mg/L	97.5	90 - 110		
Chromium		0.0500	0.0489	mg/L	97.9	90 - 110		
Cobalt		0.0500	0.0517	mg/L	103	90 - 110		
Copper		0.0500	0.0490	mg/L	97.9	90 - 110		
Lead		0.0500	0.0514	mg/L	103	90 - 110		
Manganese		0.0500	0.0487	mg/L	97.5	90 - 110		
Nickel		0.0500	0.0484	mg/L	96.8	90 - 110		
Silver		0.0500	0.0495	mg/L	98.9	90 - 110		
Thallium		0.0500	0.0506	mg/L	101	90 - 110		
Vanadium		0.0500	0.0498	mg/L	99.6	90 - 110		
Zinc		0.0500	0.0494	mg/L	98.9	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4829704
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822
Run Date: 06/28/2016
Sample ID: WG574537-29
Instrument ID: ICP-MS2
Run Time: 18:49
Method: 6020A
File ID: NI.062816.184946
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0481	mg/L	96.2	90 - 110		
Arsenic		0.0500	0.0471	mg/L	94.1	90 - 110		
Barium		0.0500	0.0464	mg/L	92.9	90 - 110		
Cadmium		0.0500	0.0463	mg/L	92.7	90 - 110		
Chromium		0.0500	0.0469	mg/L	93.8	90 - 110		
Cobalt		0.0500	0.0469	mg/L	93.8	90 - 110		
Copper		0.0500	0.0475	mg/L	94.9	90 - 110		
Lead		0.0500	0.0484	mg/L	96.7	90 - 110		
Manganese		0.0500	0.0473	mg/L	94.6	90 - 110		
Nickel		0.0500	0.0476	mg/L	95.1	90 - 110		
Silver		0.0500	0.0474	mg/L	94.8	90 - 110		
Thallium		0.0500	0.0474	mg/L	94.8	90 - 110		
Vanadium		0.0500	0.0472	mg/L	94.5	90 - 110		
Zinc		0.0500	0.0472	mg/L	94.5	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4829704
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822
Run Date: 06/28/2016
Sample ID: WG574537-32
Instrument ID: ICP-MS2
Run Time: 20:23
Method: 6020A
File ID: NI.062816.202325
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0502	mg/L	100	90 - 110		
Arsenic		0.0500	0.0499	mg/L	99.8	90 - 110		
Barium		0.0500	0.0488	mg/L	97.7	90 - 110		
Cadmium		0.0500	0.0494	mg/L	98.8	90 - 110		
Chromium		0.0500	0.0508	mg/L	102	90 - 110		
Cobalt		0.0500	0.0517	mg/L	103	90 - 110		
Copper		0.0500	0.0507	mg/L	101	90 - 110		
Lead		0.0500	0.0515	mg/L	103	90 - 110		
Manganese		0.0500	0.0509	mg/L	102	90 - 110		
Nickel		0.0500	0.0501	mg/L	100	90 - 110		
Silver		0.0500	0.0500	mg/L	99.9	90 - 110		
Thallium		0.0500	0.0504	mg/L	101	90 - 110		
Vanadium		0.0500	0.0505	mg/L	101	90 - 110		
Zinc		0.0500	0.0506	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822
Run Date: 06/28/2016
Sample ID: WG574537-34
Instrument ID: ICP-MS2
Run Time: 21:01
Method: 6020A
File ID: NI.062816.210146
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0494	mg/L	98.8	90 - 110		
Arsenic		0.0500	0.0505	mg/L	101	90 - 110		
Barium		0.0500	0.0490	mg/L	98.1	90 - 110		
Cadmium		0.0500	0.0492	mg/L	98.4	90 - 110		
Chromium		0.0500	0.0506	mg/L	101	90 - 110		
Cobalt		0.0500	0.0511	mg/L	102	90 - 110		
Copper		0.0500	0.0509	mg/L	102	90 - 110		
Lead		0.0500	0.0534	mg/L	107	90 - 110		
Manganese		0.0500	0.0526	mg/L	105	90 - 110		
Nickel		0.0500	0.0509	mg/L	102	90 - 110		
Silver		0.0500	0.0485	mg/L	96.9	90 - 110		
Thallium		0.0500	0.0506	mg/L	101	90 - 110		
Vanadium		0.0500	0.0505	mg/L	101	90 - 110		
Zinc		0.0500	0.0506	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822
Run Date: 06/29/2016
Sample ID: WG574676-10
Instrument ID: ICP-MS2
Run Time: 12:00
Method: 6020A
File ID: NI.062916.120010
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0508	mg/L	102	90 - 110		
Arsenic		0.0500	0.0514	mg/L	103	90 - 110		
Barium		0.0500	0.0505	mg/L	101	90 - 110		
Cadmium		0.0500	0.0516	mg/L	103	90 - 110		
Chromium		0.0500	0.0504	mg/L	101	90 - 110		
Cobalt		0.0500	0.0538	mg/L	108	90 - 110		
Copper		0.0500	0.0507	mg/L	101	90 - 110		
Lead		0.0500	0.0529	mg/L	106	90 - 110		
Manganese		0.0500	0.0534	mg/L	107	90 - 110		
Nickel		0.0500	0.0502	mg/L	100	90 - 110		
Silver		0.0500	0.0508	mg/L	102	90 - 110		
Thallium		0.0500	0.0519	mg/L	104	90 - 110		
Vanadium		0.0500	0.0516	mg/L	103	90 - 110		
Zinc		0.0500	0.0510	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4829704
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822
Run Date: 06/29/2016
Sample ID: WG574676-12
Instrument ID: ICP-MS2
Run Time: 12:37
Method: 6020A
File ID: NI.062916.123748
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0505	mg/L	101	90 - 110		
Arsenic		0.0500	0.0498	mg/L	99.6	90 - 110		
Barium		0.0500	0.0499	mg/L	99.8	90 - 110		
Cadmium		0.0500	0.0506	mg/L	101	90 - 110		
Chromium		0.0500	0.0489	mg/L	97.8	90 - 110		
Cobalt		0.0500	0.0506	mg/L	101	90 - 110		
Copper		0.0500	0.0500	mg/L	99.9	90 - 110		
Lead		0.0500	0.0499	mg/L	99.7	90 - 110		
Manganese		0.0500	0.0500	mg/L	99.9	90 - 110		
Nickel		0.0500	0.0491	mg/L	98.2	90 - 110		
Silver		0.0500	0.0505	mg/L	101	90 - 110		
Thallium		0.0500	0.0497	mg/L	99.4	90 - 110		
Vanadium		0.0500	0.0503	mg/L	101	90 - 110		
Zinc		0.0500	0.0498	mg/L	99.7	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4829704
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060822
Run Date: 06/28/2016
Sample ID: WG574537-07
Instrument ID: ICP-MS2
Run Time: 13:25
Method: 6020A
File ID: NI.062816.132523
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.414	ug/L	104	70 - 130		
Arsenic		0.400	0.419	ug/L	105	70 - 130		
Barium		0.750	0.681	ug/L	90.8	70 - 130		
Cadmium		0.240	0.234	ug/L	97.7	70 - 130		
Chromium		0.800	0.628	ug/L	78.5	70 - 130		
Cobalt		0.400	0.384	ug/L	96.1	70 - 130		
Copper		0.800	0.759	ug/L	94.9	70 - 130		
Lead		0.200	0.183	ug/L	91.6	70 - 130		
Manganese		0.500	0.437	ug/L	87.4	70 - 130		
Nickel		1.60	1.53	ug/L	95.5	70 - 130		
Silver		0.400	0.372	ug/L	92.9	70 - 130		
Thallium		0.0800	0.0768	ug/L	96.0	70 - 130		
Vanadium		0.400	0.332	ug/L	83.0	70 - 130		
Zinc		6.25	6.14	ug/L	98.3	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4829706
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060822
Run Date: 06/28/2016
Sample ID: WG574537-20
Instrument ID: ICP-MS2
Run Time: 15:16
Method: 6020A
File ID: NI.062816.151629
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.429	ug/L	107	70 - 130		
Arsenic		0.400	0.377	ug/L	94.2	70 - 130		
Barium		0.750	0.677	ug/L	90.2	70 - 130		
Cadmium		0.240	0.235	ug/L	98.1	70 - 130		
Chromium		0.800	0.595	ug/L	74.4	70 - 130		
Cobalt		0.400	0.388	ug/L	97.1	70 - 130		
Copper		0.800	0.739	ug/L	92.4	70 - 130		
Lead		0.200	0.192	ug/L	96.0	70 - 130		
Manganese		0.500	0.408	ug/L	81.6	70 - 130		
Nickel		1.60	1.48	ug/L	92.6	70 - 130		
Silver		0.400	0.384	ug/L	96.0	70 - 130		
Thallium		0.0800	0.0804	ug/L	101	70 - 130		
Vanadium		0.400	0.327	ug/L	81.9	70 - 130		
Zinc		6.25	6.24	ug/L	99.9	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4829706
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060822
Run Date: 06/28/2016
Sample ID: WG574537-31
Instrument ID: ICP-MS2
Run Time: 18:56
Method: 6020A
File ID: NI.062816.185610
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.386	ug/L	96.6	70 - 130		
Arsenic		0.400	0.381	ug/L	95.2	70 - 130		
Barium		0.750	0.671	ug/L	89.5	70 - 130		
Cadmium		0.240	0.217	ug/L	90.2	70 - 130		
Chromium		0.800	0.581	ug/L	72.7	70 - 130		
Cobalt		0.400	0.365	ug/L	91.2	70 - 130		
Copper		0.800	0.726	ug/L	90.7	70 - 130		
Lead		0.200	0.188	ug/L	93.9	70 - 130		
Manganese		0.500	0.396	ug/L	79.2	70 - 130		
Nickel		1.60	1.44	ug/L	89.7	70 - 130		
Silver		0.400	0.365	ug/L	91.2	70 - 130		
Thallium		0.0800	0.0752	ug/L	94.0	70 - 130		
Vanadium		0.400	0.309	ug/L	77.3	70 - 130		
Zinc		6.25	5.67	ug/L	90.8	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4829706
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060822
Run Date: 06/28/2016
Sample ID: WG574537-44
Instrument ID: ICP-MS2
Run Time: 23:22
Method: 6020A
File ID: NI.062816.232221
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.384	ug/L	96.1	70 - 130		
Arsenic		0.400	0.418	ug/L	105	70 - 130		
Barium		0.750	0.696	ug/L	92.8	70 - 130		
Cadmium		0.240	0.223	ug/L	92.9	70 - 130		
Chromium		0.800	0.654	ug/L	81.8	70 - 130		
Cobalt		0.400	0.379	ug/L	94.6	70 - 130		
Copper		0.800	0.746	ug/L	93.2	70 - 130		
Lead		0.200	0.200	ug/L	100	70 - 130		
Manganese		0.500	0.444	ug/L	88.8	70 - 130		
Nickel		1.60	1.53	ug/L	95.6	70 - 130		
Silver		0.400	0.372	ug/L	93.0	70 - 130		
Thallium		0.0800	0.0774	ug/L	96.8	70 - 130		
Vanadium		0.400	0.335	ug/L	83.8	70 - 130		
Zinc		6.25	5.99	ug/L	95.8	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4829706
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060822
Run Date: 06/29/2016
Sample ID: WG574676-07
Instrument ID: ICP-MS2
Run Time: 11:46
Method: 6020A
File ID: NI.062916.114653
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.456	ug/L	114	70 - 130		
Arsenic		0.400	0.429	ug/L	107	70 - 130		
Barium		0.750	0.733	ug/L	97.8	70 - 130		
Cadmium		0.240	0.237	ug/L	98.5	70 - 130		
Chromium		0.800	0.739	ug/L	92.4	70 - 130		
Cobalt		0.400	0.414	ug/L	103	70 - 130		
Copper		0.800	0.768	ug/L	96.0	70 - 130		
Lead		0.200	0.181	ug/L	90.3	70 - 130		
Manganese		0.500	0.468	ug/L	93.6	70 - 130		
Nickel		1.60	1.56	ug/L	97.7	70 - 130		
Silver		0.400	0.390	ug/L	97.5	70 - 130		
Thallium		0.0800	0.0871	ug/L	109	70 - 130		
Vanadium		0.400	0.382	ug/L	95.5	70 - 130		
Zinc		6.25	6.64	ug/L	106	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4829706
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060822
Run Date: 06/29/2016
Sample ID: WG574676-14
Instrument ID: ICP-MS2
Run Time: 12:44
Method: 6020A
File ID: NI.062916.124412
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.401	ug/L	100	70 - 130		
Arsenic		0.400	0.394	ug/L	98.6	70 - 130		
Barium		0.750	0.718	ug/L	95.7	70 - 130		
Cadmium		0.240	0.227	ug/L	94.7	70 - 130		
Chromium		0.800	0.768	ug/L	96.0	70 - 130		
Cobalt		0.400	0.405	ug/L	101	70 - 130		
Copper		0.800	0.751	ug/L	93.9	70 - 130		
Lead		0.200	0.179	ug/L	89.4	70 - 130		
Manganese		0.500	0.469	ug/L	93.8	70 - 130		
Nickel		1.60	1.53	ug/L	95.6	70 - 130		
Silver		0.400	0.383	ug/L	95.7	70 - 130		
Thallium		0.0800	0.0809	ug/L	101	70 - 130		
Vanadium		0.400	0.370	ug/L	92.4	70 - 130		
Zinc		6.25	6.89	ug/L	110	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4829706
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060822
Instrument ID: ICP-MS2
Sol. A : WG574537-08 **File ID:** NI.062816.132834
Sol. AB : WG574537-09 **File ID:** NI.062816.133145

Workgroup (AAB#): WG574570
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.0836	NS	100	94.7	94.7	
Arsenic	NS	-0.0118	NS	100	98.9	98.9	
Barium	NS	0.266	NS	100	94.5	94.5	
Cadmium	NS	-0.106	NS	100	95.6	95.6	
Chromium	NS	-0.0468	NS	100	96.5	96.5	
Cobalt	NS	0.0276	NS	100	97.7	97.7	
Copper	NS	0.231	NS	100	96.5	96.5	
Lead	NS	0.0352	NS	100	98.2	98.2	
Manganese	NS	0.0680	NS	100	97.7	97.7	
Nickel	NS	0.332	NS	100	96.0	96.0	
Silver	NS	0.0254	NS	100	89.5	89.5	
Thallium	NS	0.0257	NS	100	96.4	96.4	
Vanadium	NS	-0.0466	NS	100	96.5	96.5	
Zinc	NS	0.903	NS	100	101	101	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4829703
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060822
Instrument ID: ICP-MS2
Sol. A : WG574537-16 **File ID:** NI.062816.150336
Sol. AB : WG574537-17 **File ID:** NI.062816.150647

Workgroup (AAB#): WG574570
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.126	NS	100	101	101	
Arsenic	NS	-0.0170	NS	100	102	102	
Barium	NS	0.271	NS	100	98.3	98.3	
Cadmium	NS	-0.0956	NS	100	99.8	99.8	
Chromium	NS	-0.00590	NS	100	97.3	97.3	
Cobalt	NS	0.0242	NS	100	102	102	
Copper	NS	0.234	NS	100	97.4	97.4	
Lead	NS	0.0422	NS	100	102	102	
Manganese	NS	0.0683	NS	100	97.7	97.7	
Nickel	NS	0.343	NS	100	95.9	95.9	
Silver	NS	0.0228	NS	100	91.0	91.0	
Thallium	NS	0.0182	NS	100	99.2	99.2	
Vanadium	NS	-0.0922	NS	100	100	100	
Zinc	NS	0.968	NS	100	103	103	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4829703
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060822
Instrument ID: ICP-MS2
Sol. A : WG574676-08 **File ID:** NI.062916.115053
Sol. AB : WG574676-09 **File ID:** NI.062916.115447

Workgroup (AAB#): WG574570
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.0658	NS	100	100	100	
Arsenic	NS	0.0161	NS	100	105	105	
Barium	NS	0.303	NS	100	98.4	98.4	
Cadmium	NS	-0.103	NS	100	101	101	
Chromium	NS	0.0680	NS	100	101	101	
Cobalt	NS	0.0292	NS	100	105	105	
Copper	NS	0.245	NS	100	100	100	
Lead	NS	0.0174	NS	100	102	102	
Manganese	NS	0.0629	NS	100	105	105	
Nickel	NS	0.331	NS	100	100	100	
Silver	NS	0.0271	NS	100	95.3	95.3	
Thallium	NS	0.0271	NS	100	100	100	
Vanadium	NS	0.0706	NS	100	103	103	
Zinc	NS	1.14	NS	100	104	104	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
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Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060822 **Analytical Method:** 6020
Analytical Workgroup: WG574570 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 28-JUN-2016 13:06

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060822-02	SAMP	28-JUN-2016 20:42	96.563	98.195	99.724
L16060822-03	SAMP	28-JUN-2016 20:45	99.671	105.218	101.024
WG574242-02	BLANK	28-JUN-2016 19:51	99.476	99.537	97.857
WG574242-03	LCS	28-JUN-2016 19:54	99.956	99.501	98.669
WG574537-05	ICV	28-JUN-2016 13:18	106.21	104.263	104.758
WG574537-06	ICB	28-JUN-2016 13:22	103.902	104.951	103.59
WG574537-07	LLICV	28-JUN-2016 13:25	104.131	100.167	102.925
WG574537-08	ICS	28-JUN-2016 13:28	105.453	105.812	102.55
WG574537-09	ICS	28-JUN-2016 13:31	104.707	103.975	104.833
WG574537-10	CCV	28-JUN-2016 13:34	105.977	103.288	105.534
WG574537-11	CCB	28-JUN-2016 13:38	102.403	102.67	102.767
WG574537-14	CCV	28-JUN-2016 14:31	103.407	95.988	101.793
WG574537-15	CCB	28-JUN-2016 14:34	104.225	98.805	100.724
WG574537-16	ICS	28-JUN-2016 15:03	99.952	99.435	100.043
WG574537-17	ICS	28-JUN-2016 15:06	101.575	99.874	97.332
WG574537-18	CCV	28-JUN-2016 15:10	100.244	98.973	99.201
WG574537-19	CCB	28-JUN-2016 15:13	103.776	99.505	101.81
WG574537-20	LLCCV	28-JUN-2016 15:16	99.051	96.111	96.093
WG574537-29	CCV	28-JUN-2016 18:49	100.019	101.137	98.931
WG574537-30	CCB	28-JUN-2016 18:52	100.148	99.202	100.624
WG574537-31	LLCCV	28-JUN-2016 18:56	95.839	97.87	93.931
WG574537-32	CCV	28-JUN-2016 20:23	102.351	100.903	101.064
WG574537-33	CCB	28-JUN-2016 20:26	99.219	96.376	100.773
WG574537-34	CCV	28-JUN-2016 21:01	96.559	99.919	99.677
WG574537-35	CCB	28-JUN-2016 21:04	100.258	102.056	98.569
WG574537-44	LLCCV	28-JUN-2016 23:22	91.439	93.342	91.269
WG574570-01	PSPK	28-JUN-2016 20:13	100.708	100.256	100.218
WG574570-02	SERIAL	28-JUN-2016 20:17	103.535	103.697	101.2

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4829699
Report generated: 06/30/2016 09:23

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060822 **Analytical Method:** 6020
Analytical Workgroup: WG574570 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 29-JUN-2016 11:25

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060822-03	SAMP	29-JUN-2016 12:25	99.273	98.877	99.813
WG574676-05	ICV	29-JUN-2016 11:38	98.257	100.661	96.465
WG574676-06	ICB	29-JUN-2016 11:41	98.914	99.091	98.14
WG574676-07	LLICV	29-JUN-2016 11:46	95.79	95.394	93.877
WG574676-08	ICS	29-JUN-2016 11:50	98.596	98.274	96.165
WG574676-09	ICS	29-JUN-2016 11:54	97.891	98.362	95.991
WG574676-10	CCV	29-JUN-2016 12:00	96.559	97.448	96.281
WG574676-11	CCB	29-JUN-2016 12:07	98.969	97.431	96.855
WG574676-12	CCV	29-JUN-2016 12:37	99.303	102.045	96.376
WG574676-13	CCB	29-JUN-2016 12:40	100.991	102.01	98.548
WG574676-14	LLCCV	29-JUN-2016 12:44	96.535	95.69	95.451

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4829699
Report generated: 06/30/2016 09:23

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060822 **Analytical Method:** 6020
Analytical Workgroup: WG574570 **Matrix:** 2
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 28-JUN-2016 13:06

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060843-01	SAMP	28-JUN-2016 20:10	97.785	95.068	99.061

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4829699
Report generated: 06/30/2016 09:23

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16060822 **Date:** 04/19/2016
Insturment ID: ICP-MS2 **Method:** 6020A

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Uranium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4829698
Report generated: 06/29/2016 08:34

2.3.2.3 Raw Data

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Tuesday, June 28, 2016 12:45:36

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1331	2024	0.706	
Mg	23.985	24.025	4508	2020	0.701	
Co	58.933	58.925	11686	2022	0.701	
In	114.904	114.875	22861	2028	0.696	
U	238.050	238.025	47455	2043	0.688	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	5.573
5.575	2.596
5.625	3.076
5.675	2.368
5.725	2.568
5.775	3.011
5.825	2.517
5.875	2.694
5.925	1.595
5.975	3.373
6.025	3.068
6.075	2.439
6.125	2.845
6.175	3.293
6.225	6.959
6.275	54.149
6.325	79.756
6.375	69.722
6.425	99.103
6.475	35.972
6.525	19.569
6.575	4.348
6.625	4.647
6.675	4.116
6.725	2.239
6.775	2.849
6.825	1.600

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6.875	3.248
6.925	2.794
6.975	1.665
7.025	2.844
7.075	2.994
7.125	3.503
7.175	2.980
7.225	3.713
7.275	5.087
7.325	35.264
7.375	93.541
7.425	136.931
7.475	82.402
7.525	71.261
7.575	39.123
7.625	180.662
7.675	64.358
7.725	47.507
7.775	71.261
7.825	70.711
7.875	52.705
7.925	46.481
7.975	63.888
8.025	74.689
8.075	64.359
8.125	63.888
8.175	34.401
8.225	46.481
8.275	49.793
8.325	81.441
8.375	60.858
8.425	67.420
8.475	108.653
22.525	223.607
22.575	90.014
22.625	44.605
22.675	65.617
22.725	58.975
22.775	40.945
22.825	35.460
22.875	18.054
22.925	42.061
22.975	53.715
23.025	19.357
23.075	24.491
23.125	8.438
23.175	12.837

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23.225	30.858
23.275	24.845
23.325	45.141
23.375	26.438
23.425	14.816
23.475	14.263
23.525	12.137
23.575	3.832
23.625	2.363
23.675	1.595
23.725	2.170
23.775	2.317
23.825	1.497
23.875	1.501
23.925	1.731
23.975	0.863
24.025	2.634
24.075	2.734
24.125	2.053
24.175	2.398
24.225	2.993
24.275	2.883
24.325	7.686
24.375	28.384
24.425	36.617
24.475	12.141
24.525	3.189
24.575	0.926
24.625	1.585
24.675	1.547
24.725	2.051
24.775	1.408
24.825	2.678
24.875	1.711
24.925	1.949
24.975	2.595
25.025	3.005
25.075	2.962
25.125	2.366
25.175	2.463
25.225	2.722
25.275	9.971
25.325	31.599
25.375	47.140
25.425	64.885
25.475	6.734
57.525	8.866

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57.575	5.291
57.625	3.440
57.675	3.697
57.725	3.076
57.775	2.567
57.825	2.416
57.875	1.794
57.925	2.766
57.975	2.199
58.025	1.926
58.075	2.254
58.125	1.436
58.175	1.390
58.225	3.504
58.275	5.534
58.325	34.267
58.375	33.055
58.425	20.772
58.475	14.356
58.525	5.854
58.575	3.115
58.625	4.057
58.675	2.315
58.725	2.604
58.775	2.171
58.825	1.290
58.875	1.298
58.925	2.935
58.975	1.929
59.025	1.078
59.075	1.921
59.125	2.163
59.175	2.388
59.225	3.289
59.275	8.929
59.325	38.030
59.375	58.736
59.425	28.284
59.475	17.563
59.525	12.128
59.575	6.526
59.625	2.279
59.675	2.377
59.725	6.247
59.775	4.326
59.825	2.635
59.875	3.246

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59.925	1.954
59.975	3.753
60.025	5.882
60.075	3.380
60.125	2.788
60.175	3.075
60.225	4.430
60.275	18.947
60.325	43.241
60.375	22.017
60.425	79.756
60.475	50.461
113.525	7.111
113.575	1.614
113.625	3.295
113.675	3.378
113.725	2.143
113.775	2.366
113.825	3.191
113.875	4.581
113.925	1.498
113.975	2.463
114.025	3.675
114.075	2.767
114.125	4.064
114.175	2.276
114.225	6.994
114.275	28.008
114.325	41.691
114.375	17.526
114.425	9.127
114.475	6.547
114.525	3.985
114.575	2.757
114.625	3.785
114.675	2.945
114.725	3.014
114.775	2.252
114.825	1.319
114.875	1.984
114.925	1.415
114.975	0.577
115.025	0.422
115.075	1.851
115.125	0.695
115.175	3.426
115.225	3.732

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115.275	9.818
115.325	57.810
115.375	52.705
115.425	23.458
115.475	18.657
115.525	4.767
115.575	6.521
115.625	4.984
115.675	3.649
115.725	7.463
115.775	7.302
115.825	2.294
115.875	3.587
115.925	2.925
115.975	3.587
116.025	4.548
116.075	6.187
116.125	2.246
116.175	11.560
116.225	3.389
116.275	17.538
116.325	51.618
116.375	52.705
116.425	42.127
116.475	34.312
236.525	
236.575	28.853
236.625	56.165
236.675	51.701
236.725	11.620
236.775	50.775
236.825	27.217
236.875	33.431
236.925	29.881
236.975	45.955
237.025	46.771
237.075	7.402
237.125	30.162
237.175	24.686
237.225	34.297
237.275	16.110
237.325	20.328
237.375	28.770
237.425	26.702
237.475	18.887
237.525	24.816
237.575	6.725

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237.625	8.740
237.675	3.668
237.725	2.023
237.775	1.587
237.825	3.110
237.875	1.530
237.925	2.794
237.975	3.068
238.025	2.967
238.075	2.352
238.125	2.652
238.175	2.474
238.225	2.129
238.275	1.500
238.325	2.197
238.375	3.421
238.425	3.111
238.475	6.669
238.525	16.077
238.575	17.557
238.625	21.969
238.675	32.775
238.725	22.232
238.775	26.146
238.825	21.694
238.875	19.088
238.925	8.384
238.975	17.180
239.025	59.843
239.075	31.485
239.125	33.497
239.175	31.181
239.225	27.834
239.275	28.743
239.325	26.503
239.375	17.174
239.425	9.195
239.475	35.446

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SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 6/28/2016 12:50:43 PM
End Time: 6/28/2016 12:52:55 PM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 5221.30
        Obtained Intensity (Mg 23.985): 136183.87
        Obtained Intensity (In 114.904): 66441.11
        Obtained Intensity (U 238.05): 147068.09
        Obtained Intensity (Bkgd 220): 0.20
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.018 (=3731.53 / 205818.69)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.004 (=890.23 / 205818.69)
```

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SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 6/28/2016 12:50:43 PM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 5221.30
                Obtained Intensity (Mg 23.985): 136183.87
                Obtained Intensity (In 114.904): 66441.11
                Obtained Intensity (U 238.05): 147068.09
                Obtained Intensity (Bkgd 220): 0.20
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.018 (=3731.53 / 205818.69)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.004 (=890.23 / 205818.69)
[Passed]  Optimum value(s): N/A

End Time: 6/28/2016 12:52:55 PM
```


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Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Tuesday, June 28, 2016 13:02:57
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81760.1	2.0				ug/L		Standard
	Be	9	16.7	75.5				ug/L		Standard
	Al	27	1410.1	2.3				ug/L		Standard
	Sc	45	39543.2	2.7				ug/L		Standard
	Ti	47	39.0	9.2				ug/L		Standard
	V	51	1415.2	6.8				ug/L		Standard
	Cr	52	6946.3	1.7				ug/L		Standard
	Cr	53	328.3	14.1				ug/L		Standard
	Mn	55	823.0	8.8				ug/L		Standard
	Co	59	251.7	9.6				ug/L		Standard
	Ni	60	192.0	8.0				ug/L		Standard
	Cu	65	140.7	5.3				ug/L		Standard
	Zn	66	490.7	3.4				ug/L		Standard
>	Ge	72	515086.9	1.2				ug/L		Standard
	As	75	19.8	169.9				ug/L		Standard
	Se	82	15.3	19.8				ug/L		Standard
	Se-1	77	48.0	15.7				ug/L		Standard
>	Ga	71	90.0	5.6				mg/L		Standard
	Rb	85	23.3	68.9				ug/L		Standard
	Y	89	448509.9	0.5				ug/L		Standard
>	Rh	103	15.0	66.7				ug/L		Standard
	Mo	98	10.9	19.2				ug/L		Standard
	Ag	107	134.0	44.7				ug/L		Standard
	Cd	111	6.6	57.0				mg/L		Standard
	Cd	114	16.1	68.4				ug/L		Standard
>	In	115	611116.5	1.9				ug/L		Standard
	Sn	118	518.3	7.2				ug/L		Standard
	Sb	123	126.7	13.8				ug/L		Standard
	Ba	135	45.3	39.8				ug/L		Standard
	Ce	140	298.3	72.3				ug/L		Standard
>	Tb	159	977942.3	1.0				ug/L		Standard
	Ho	165	11.7	24.7				ug/L		Standard
	Tl	203	30.7	114.0				ug/L		Standard
	Tl	205	20.0	152.1				ug/L		Standard
	Pb	206	285.7	7.2				ug/L		Standard
	Pb	207	257.0	5.7				ug/L		Standard
	Pb	208	955.7	3.9				ug/L		Standard
	U	238	17.0	67.8				ug/L		Standard
>	Bi	209	557080.4	0.4				ug/L		Standard

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	Na	23	0.0		mg/L	Standard
	Mg	24	31.7	36.5	mg/L	Standard
	K	39	30.0	57.7	mg/L	Standard
	Ca	43	48.3	43.1	mg/L	Standard
	Fe	54	159.3	19.3	mg/L	Standard
	Fe	57	195.0	11.2	mg/L	Standard
>	**Sc-1**	45	39543.2	2.7	mg/L	Standard
	Cl	35	27641.9	2.8	ug/L	Standard
	Kr	83	2.0	50.0	ug/L	Standard
	Br	81	1646.8	11.1	ug/L	Standard
	P	31	15231.0	1.6	ug/L	Standard
	S	34	1845.1	7.5	ug/L	Standard
	Sr	88	70.0	12.4	ug/L	Standard
	C	12	113.3	28.4	mg/L	Standard
	N	14	0.0		mg/L	Standard
	Hg	202	0.0		mg/L	Standard
	Dy	164	12.4	122.2	mg/L	Standard
	Ho-1	165	11.7	24.7	mg/L	Standard
	Er	166	20.0	50.0	mg/L	Standard
	I	127	1161.7	12.0	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⎣	Rb	85
⎡	Y	89
⎣>	Rh	103
⎡	Mo	98
⎢	Ag	107
⎢	Cd	111
⎢	Cd	114
⎢>	In	115
⎢	Sn	118
⎢	Sb	123
⎣	Ba	135
⎡	Ce	140
⎣>	Tb	159
⎡	Ho	165
⎢	Tl	203
⎢	Tl	205
⎢	Pb	206
⎢	Pb	207
⎢	Pb	208
⎢	U	238
⎣>	Bi	209
⎡	Na	23
⎢	Mg	24
⎢	K	39
⎢	Ca	43
⎢	Fe	54
⎢	Fe	57
⎣>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Tuesday, June 28, 2016 13:06:09
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83638.6	0.9				ug/L	81760	Standard
	Be	9	11.7	49.5				ug/L	17	Standard
	Al	27	1445.1	4.5				ug/L	1410	Standard
	Sc	45	40184.9	2.0				ug/L	39543	Standard
	Ti	47	38.3	12.0				ug/L	39	Standard
	V	51	1492.6	2.6				ug/L	1415	Standard
	Cr	52	7409.5	2.1				ug/L	6946	Standard
	Cr	53	321.7	15.3				ug/L	328	Standard
	Mn	55	835.0	1.8				ug/L	823	Standard
	Co	59	226.7	11.0				ug/L	252	Standard
	Ni	60	182.7	5.1				ug/L	192	Standard
	Cu	65	134.7	15.9				ug/L	141	Standard
	Zn	66	519.7	4.6				ug/L	491	Standard
>	**Ge**	72	517782.5	2.4				ug/L	515087	Standard
	As	75	-33.8	72.0				ug/L	20	Standard
	Se	82	16.9	27.2				ug/L	15	Standard
	Se-1	77	48.7	14.9				ug/L	48	Standard
>	**Ga**	71	95.0	19.0				mg/L	90	Standard
	Rb	85	33.3	82.6				ug/L	23	Standard
	Y	89	456301.2	1.1				ug/L	448510	Standard
>	**Rh**	103	21.7	58.1				ug/L	15	Standard
	Mo	98	8.3	58.9				ug/L	11	Standard
	Ag	107	79.0	9.1				ug/L	134	Standard
	Cd	111	3.3	17.5				mg/L	7	Standard
	Cd	114	6.2	12.1				ug/L	16	Standard
>	**In**	115	624714.7	2.4				ug/L	611117	Standard
	Sn	118	515.0	5.4				ug/L	518	Standard
	Sb	123	47.7	15.0				ug/L	127	Standard
	Ba	135	33.7	27.6				ug/L	45	Standard
	Ce	140	86.7	24.0				ug/L	298	Standard
>	**Tb**	159	1001347.1	1.8				ug/L	977942	Standard
	Ho	165	6.7	43.3				ug/L	12	Standard
	Tl	203	5.3	60.3				ug/L	31	Standard
	Tl	205	3.3	86.6				ug/L	20	Standard
	Pb	206	276.7	3.7				ug/L	286	Standard
	Pb	207	213.3	7.3				ug/L	257	Standard
	Pb	208	933.0	3.4				ug/L	956	Standard
	U	238	4.7	12.4				ug/L	17	Standard
>	**Bi**	209	562888.8	0.9				ug/L	557080	Standard

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	Na	23	0.0		mg/L	0	Standard
	Mg	24	36.7	7.9	mg/L	32	Standard
	K	39	28.3	44.4	mg/L	30	Standard
	Ca	43	36.7	28.4	mg/L	48	Standard
	Fe	54	172.5	32.0	mg/L	159	Standard
	Fe	57	211.7	34.4	mg/L	195	Standard
>	**Sc-1**	45	40184.9	2.0	mg/L	39543	Standard
	Cl	35	29114.6	1.1	ug/L	27642	Standard
	Kr	83	3.3	96.4	ug/L	2	Standard
	Br	81	1676.8	6.8	ug/L	1647	Standard
	P	31	15918.4	1.2	ug/L	15231	Standard
	S	34	1885.1	11.3	ug/L	1845	Standard
	Sr	88	58.3	21.6	ug/L	70	Standard
	C	12	116.7	24.7	mg/L	113	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	0.0		mg/L	0	Standard
	Dy	164	16.2	93.4	mg/L	12	Standard
	Ho-1	165	6.7	43.3	mg/L	12	Standard
	Er	166	10.0	100.0	mg/L	20	Standard
	I	127	1170.0	16.3	mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 1
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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Tuesday, June 28, 2016 13:09:21
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82626.5	2.9				ug/L	81760	Standard
	Be	9	60.0	14.4				ug/L	17	Standard
	Al	27	10023.3	4.0				ug/L	1410	Standard
	Sc	45	41007.1	1.4				ug/L	39543	Standard
	Ti	47	69.0	5.8				ug/L	39	Standard
	V	51	1868.4	2.4				ug/L	1415	Standard
	Cr	52	8071.5	1.1				ug/L	6946	Standard
	Cr	53	360.0	4.2				ug/L	328	Standard
	Mn	55	1347.7	1.9				ug/L	823	Standard
	Co	59	599.0	5.9				ug/L	252	Standard
	Ni	60	305.7	5.8				ug/L	192	Standard
	Cu	65	280.3	2.3				ug/L	141	Standard
	Zn	66	1008.0	4.7				ug/L	491	Standard
>	**Ge**	72	539572.1	1.8				ug/L	515087	Standard
	As	75	11.1	230.1				ug/L	20	Standard
	Se	82	20.4	17.1				ug/L	15	Standard
	Se-1	77	60.7	1.9				ug/L	48	Standard
>	**Ga**	71	83.3	19.3				mg/L	90	Standard
	Rb	85	31.7	48.2				ug/L	23	Standard
	Y	89	463986.2	1.2				ug/L	448510	Standard
>	**Rh**	103	13.3	57.3				ug/L	15	Standard
	Mo	98	329.5	2.8				ug/L	11	Standard
	Ag	107	455.0	1.5				ug/L	134	Standard
	Cd	111	115.7	6.5				mg/L	7	Standard
	Cd	114	292.0	6.0				ug/L	16	Standard
>	**In**	115	625608.8	0.7				ug/L	611117	Standard
	Sn	118	920.0	9.2				ug/L	518	Standard
	Sb	123	303.4	7.6				ug/L	127	Standard
	Ba	135	158.7	8.0				ug/L	45	Standard
	Ce	140	88.3	42.5				ug/L	298	Standard
>	**Tb**	159	1002874.0	1.4				ug/L	977942	Standard
	Ho	165	11.7	24.7				ug/L	12	Standard
	Tl	203	472.7	2.0				ug/L	31	Standard
	Tl	205	391.7	11.0				ug/L	20	Standard
	Pb	206	628.7	5.7				ug/L	286	Standard
	Pb	207	539.3	6.7				ug/L	257	Standard
	Pb	208	2133.7	2.7				ug/L	956	Standard
	U	238	388.7	5.1				ug/L	17	Standard
>	**Bi**	209	570508.1	0.4				ug/L	557080	Standard

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	Na	23	0.0		mg/L	0	Standard
	Mg	24	48.3	26.0	mg/L	32	Standard
	K	39	45.0	19.2	mg/L	30	Standard
	Ca	43	36.7	43.8	mg/L	48	Standard
	Fe	54	162.5	17.6	mg/L	159	Standard
	Fe	57	193.3	3.0	mg/L	195	Standard
>	**Sc-1**	45	41007.1	1.4	mg/L	39543	Standard
	Cl	35	29715.1	0.6	ug/L	27642	Standard
	Kr	83	3.0	33.3	ug/L	2	Standard
	Br	81	1836.8	4.6	ug/L	1647	Standard
	P	31	16030.1	3.1	ug/L	15231	Standard
	S	34	1895.1	1.4	ug/L	1845	Standard
	Sr	88	61.7	9.4	ug/L	70	Standard
	C	12	143.3	21.3	mg/L	113	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	0.0		mg/L	0	Standard
	Dy	164	19.5	50.0	mg/L	12	Standard
	Ho-1	165	11.7	24.7	mg/L	12	Standard
	Er	166	10.0	100.0	mg/L	20	Standard
	I	127	1208.4	23.1	mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Tuesday, June 28, 2016 13:12:32
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83151.0	2.6				ug/L	81760	Standard
	Be	9	50594.4	3.3	**50.0000**	0.655	1.3	ug/L	17	Standard
	Al	27	7832644.8	2.3	**50.0000**	1.818	3.6	ug/L	1410	Standard
	Sc	45	42972.5	0.7				ug/L	39543	Standard
	Ti	47	26044.7	0.2	**100.0000**	1.044	1.0	ug/L	39	Standard
	V	51	369925.9	1.5	**50.0000**	0.431	0.9	ug/L	1415	Standard
	Cr	52	376035.2	0.6	**50.0000**	0.381	0.8	ug/L	6946	Standard
	Cr	53	47201.8	2.5	**50.0000**	1.648	3.3	ug/L	328	Standard
	Mn	55	339840.1	0.9	**50.0000**	0.028	0.1	ug/L	823	Standard
	Co	59	369835.8	1.4	**50.0000**	0.329	0.7	ug/L	252	Standard
	Ni	60	100390.8	0.3	**50.0000**	0.410	0.8	ug/L	192	Standard
	Cu	65	101743.1	0.9	**50.0000**	0.203	0.4	ug/L	141	Standard
	Zn	66	59304.5	0.9	**50.0000**	0.371	0.7	ug/L	491	Standard
>	**Ge**	72	547553.1	0.8				ug/L	515087	Standard
	As	75	59263.2	0.8	**50.0000**	0.205	0.4	ug/L	20	Standard
	Se	82	6019.0	1.0	**50.0000**	0.596	1.2	ug/L	15	Standard
	Se-1	77	4068.9	1.3	**50.0000**	0.434	0.9	ug/L	48	Standard
>	**Ga**	71	120.0	22.0				mg/L	90	Standard
	Rb	85	803.4	2.6				ug/L	23	Standard
	Y	89	462085.4	0.0				ug/L	448510	Standard
>	**Rh**	103	33.3	52.7				ug/L	15	Standard
	Mo	98	278482.4	0.5	**100.0000**	0.941	0.9	ug/L	11	Standard
	Ag	107	351728.0	0.3	**50.0000**	0.642	1.3	ug/L	134	Standard
	Cd	111	110396.3	1.4	**50.0000**	0.556	1.1	mg/L	7	Standard
	Cd	114	267604.2	1.4	**50.0000**	0.663	1.3	ug/L	16	Standard
>	**In**	115	627830.2	1.2				ug/L	611117	Standard
	Sn	118	304675.0	1.7	**50.0000**	0.618	1.2	ug/L	518	Standard
	Sb	123	244739.5	0.4	**50.0000**	0.675	1.4	ug/L	127	Standard
	Ba	135	106555.1	1.0	**50.0000**	0.097	0.2	ug/L	45	Standard
	Ce	140	116.7	9.9				ug/L	298	Standard
>	**Tb**	159	1018565.7	2.1				ug/L	977942	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	438004.0	1.2	**50.0000**	0.427	0.9	ug/L	31	Standard
	Tl	205	379940.6	1.7	**50.0000**	0.597	1.2	ug/L	20	Standard
	Pb	206	284208.1	0.3	**50.0000**	0.335	0.7	ug/L	286	Standard
	Pb	207	256392.2	0.5	**50.0000**	0.374	0.7	ug/L	257	Standard
	Pb	208	978425.0	1.4	**50.0000**	0.588	1.2	ug/L	956	Standard
	U	238	371095.6	0.5	**50.0000**	0.490	1.0	ug/L	17	Standard
>	**Bi**	209	583572.7	0.6				ug/L	557080	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	4002.2	2.2	**5.0000**	0.144	2.9	mg/L	32	Standard
K	39	1640.1	4.4	**5.0000**	0.220	4.4	mg/L	30	Standard
Ca	43	73.3	27.6	**5.0000**	2.832	56.6	mg/L	48	Standard
Fe	54	6006.1	1.4	**5.0000**	0.034	0.7	mg/L	159	Standard
Fe	57	1818.4	10.7	**5.0000**	0.606	12.1	mg/L	195	Standard
> **Sc-1**	45	42972.5	0.7				mg/L	39543	Standard
Cl	35	31584.9	0.4				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1736.8	12.0				ug/L	1647	Standard
P	31	18696.5	1.2				ug/L	15231	Standard
S	34	2423.5	4.1				ug/L	1845	Standard
Sr	88	71.7	21.3				ug/L	70	Standard
C	12	110.0	39.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	18.6	110.3				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	30.0	33.3				mg/L	20	Standard
I	127	1405.1	8.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Tuesday, June 28, 2016 13:15:44
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81919.2	1.8				ug/L	81760	Standard
	Be	9	99366.8	4.2	**99.8402**	3.215	3.2	ug/L	17	Standard
	Al	27	15456145.8	2.8	**100.0514**	1.254	1.3	ug/L	1410	Standard
	Sc	45	41889.5	2.4				ug/L	39543	Standard
	Ti	47	52065.7	3.9	**203.2707**	7.861	3.9	ug/L	39	Standard
	V	51	718696.0	1.3	**100.2818**	2.594	2.6	ug/L	1415	Standard
	Cr	52	727396.2	2.7	**100.4747**	2.418	2.4	ug/L	6946	Standard
	Cr	53	90202.9	3.4	**99.4979**	3.023	3.0	ug/L	328	Standard
	Mn	55	679268.3	1.6	**101.6708**	2.363	2.3	ug/L	823	Standard
	Co	59	730686.9	1.6	**101.0312**	2.535	2.5	ug/L	252	Standard
	Ni	60	193870.4	2.0	**99.9159**	1.756	1.8	ug/L	192	Standard
	Cu	65	194619.8	1.4	**99.4389**	1.906	1.9	ug/L	141	Standard
	Zn	66	113576.2	1.7	**99.8564**	1.521	1.5	ug/L	491	Standard
>	Ge	72	530148.8	1.5				ug/L	515087	Standard
	As	75	116520.9	0.8	**100.7477**	1.604	1.6	ug/L	20	Standard
	Se	82	12083.5	1.4	**101.8724**	2.244	2.2	ug/L	15	Standard
	Se-1	77	7795.3	2.5	**99.8242**	2.540	2.5	ug/L	48	Standard
>	Ga	71	125.0	22.3				mg/L	90	Standard
	Rb	85	1618.4	10.1				ug/L	23	Standard
	Y	89	461192.2	0.4				ug/L	448510	Standard
>	Rh	103	56.7	20.4				ug/L	15	Standard
	Mo	98	556218.8	1.0	**199.4538**	3.118	1.6	ug/L	11	Standard
	Ag	107	678834.5	1.8	**98.0160**	2.327	2.4	ug/L	134	Standard
	Cd	111	219330.5	1.3	**99.4613**	1.808	1.8	mg/L	7	Standard
	Cd	114	534582.7	2.1	**99.7362**	2.615	2.6	ug/L	16	Standard
>	In	115	630478.6	0.6				ug/L	611117	Standard
	Sn	118	609964.7	1.0	**99.8933**	1.520	1.5	ug/L	518	Standard
	Sb	123	482106.0	1.2	**99.0353**	1.710	1.7	ug/L	127	Standard
	Ba	135	212119.9	0.9	**99.5711**	1.444	1.4	ug/L	45	Standard
	Ce	140	165.0	42.7				ug/L	298	Standard
>	Tb	159	1009801.9	0.4				ug/L	977942	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	865813.4	1.1	**100.7605**	1.348	1.3	ug/L	31	Standard
	Tl	205	752692.6	1.1	**100.8681**	0.657	0.7	ug/L	20	Standard
	Pb	206	549987.8	0.2	**99.7256**	0.843	0.8	ug/L	286	Standard
	Pb	207	495989.2	0.5	**99.7047**	0.496	0.5	ug/L	257	Standard
	Pb	208	1945321.0	0.5	**101.0779**	0.484	0.5	ug/L	956	Standard
	U	238	738847.3	0.4	**101.1182**	1.306	1.3	ug/L	17	Standard
>	Bi	209	568134.9	1.0				ug/L	557080	Standard

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Na	23	3.3	86.6	**19.9850**	17.308	86.6	mg/L	0	Standard
Mg	24	8245.6	0.3	**10.3081**	0.247	2.4	mg/L	32	Standard
K	39	3202.0	9.6	**10.0847**	1.159	11.5	mg/L	30	Standard
Ca	43	108.3	26.2	**10.2160**	4.199	41.1	mg/L	48	Standard
Fe	54	12180.7	3.3	**10.2708**	0.331	3.2	mg/L	159	Standard
Fe	57	3313.7	6.4	**9.9500**	0.928	9.3	mg/L	195	Standard
Sc-1	45	41889.5	2.4				mg/L	39543	Standard
Cl	35	30969.0	3.8				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1773.4	7.0				ug/L	1647	Standard
P	31	19072.0	2.1				ug/L	15231	Standard
S	34	2495.2	5.2				ug/L	1845	Standard
Sr	88	56.7	5.1				ug/L	70	Standard
C	12	143.3	29.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	13.0	113.4				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	6.7	173.2				mg/L	20	Standard
I	127	1551.7	12.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Tuesday, June 28, 2016 13:18:57
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81910.8	1.2				ug/L	81760	Standard
	Be	9	50188.0	2.5	**50.4285**	0.671	1.3	ug/L	17	Standard
	Al	27	7919939.7	1.3	**51.2716**	0.184	0.4	ug/L	1410	Standard
	Sc	45	42151.9	1.0				ug/L	39543	Standard
	Ti	47	26799.3	0.9	**103.2216**	1.931	1.9	ug/L	39	Standard
	V	51	362002.1	2.3	**49.7477**	0.555	1.1	ug/L	1415	Standard
	Cr	52	370323.8	0.7	**49.9789**	0.741	1.5	ug/L	6946	Standard
	Cr	53	45478.3	5.4	**49.3268**	1.623	3.3	ug/L	328	Standard
	Mn	55	340081.6	0.1	**50.1792**	1.001	2.0	ug/L	823	Standard
	Co	59	367567.5	0.6	**50.1558**	0.780	1.6	ug/L	252	Standard
	Ni	60	97767.5	1.8	**49.6873**	0.150	0.3	ug/L	192	Standard
	Cu	65	99441.7	2.0	**50.1064**	0.391	0.8	ug/L	141	Standard
	Zn	66	58882.6	2.1	**50.6983**	0.019	0.0	ug/L	491	Standard
>	Ge	72	537043.0	2.1				ug/L	515087	Standard
	As	75	58926.0	1.4	**50.3136**	0.381	0.8	ug/L	20	Standard
	Se	82	6003.9	1.4	**49.9034**	0.396	0.8	ug/L	15	Standard
	Se-1	77	4037.5	1.3	**50.7056**	1.619	3.2	ug/L	48	Standard
>	Ga	71	113.3	22.2				mg/L	90	Standard
	Rb	85	626.7	7.4				ug/L	23	Standard
	Y	89	465817.4	0.7				ug/L	448510	Standard
>	Rh	103	43.3	24.0				ug/L	15	Standard
	Mo	98	284447.8	1.6	**100.4857**	3.626	3.6	ug/L	11	Standard
	Ag	107	346501.9	1.0	**49.2778**	1.406	2.9	ug/L	134	Standard
	Cd	111	109630.9	1.1	**48.9766**	1.535	3.1	mg/L	7	Standard
	Cd	114	266600.1	1.2	**48.9905**	1.146	2.3	ug/L	16	Standard
>	In	115	640190.8	2.0				ug/L	611117	Standard
	Sn	118	332613.3	1.3	**53.6148**	1.570	2.9	ug/L	518	Standard
	Sb	123	238639.0	2.2	**48.2943**	2.007	4.2	ug/L	127	Standard
	Ba	135	104330.0	1.0	**48.2232**	0.702	1.5	ug/L	45	Standard
	Ce	140	120.0	15.0				ug/L	298	Standard
>	Tb	159	1038346.1	1.3				ug/L	977942	Standard
	Ho	165	16.7	34.6				ug/L	12	Standard
	Tl	203	439433.3	1.3	**49.1017**	0.655	1.3	ug/L	31	Standard
	Tl	205	379171.3	1.2	**48.7970**	1.107	2.3	ug/L	20	Standard
	Pb	206	282861.9	1.4	**49.2211**	1.133	2.3	ug/L	286	Standard
	Pb	207	247275.0	1.2	**47.7052**	1.056	2.2	ug/L	257	Standard
	Pb	208	979823.4	0.2	**48.8569**	0.617	1.3	ug/L	956	Standard
	U	238	361651.7	0.7	**47.5263**	0.839	1.8	ug/L	17	Standard
>	Bi	209	591677.6	1.0				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.0435**	17.387	173.1	mg/L	0	Standard
Mg	24	4277.3	3.5	**5.2835**	0.147	2.8	mg/L	32	Standard
K	39	1651.8	3.6	**5.0931**	0.136	2.7	mg/L	30	Standard
Ca	43	81.7	30.2	**6.2885**	3.508	55.8	mg/L	48	Standard
Fe	54	5996.6	1.6	**4.9548**	0.129	2.6	mg/L	159	Standard
Fe	57	1723.4	6.4	**4.8356**	0.391	8.1	mg/L	195	Standard
Sc-1	45	42151.9	1.0				mg/L	39543	Standard
Cl	35	29861.4	1.9				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1713.4	14.2				ug/L	1647	Standard
P	31	18880.1	1.3				ug/L	15231	Standard
S	34	2316.8	4.8				ug/L	1845	Standard
Sr	88	70.0	35.7				ug/L	70	Standard
C	12	156.7	32.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	46.2	33.1				mg/L	12	Standard
Ho-1	165	16.7	34.6				mg/L	12	Standard
Er	166	10.0					mg/L	20	Standard
I	127	1246.7	11.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	100.857		
Al	27	102.543		
Sc	45			
Ti	47	103.222		
V	51	99.495		
Cr	52	99.958		
Cr	53			
Mn	55	100.358		
Co	59	100.312		
Ni	60	99.375		
Cu	65	100.213		
Zn	66	101.397		
Ge	72		104.263	
As	75	100.627		
Se	82	99.807		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	100.486		
Ag	107	98.556		
Cd	111	97.953		
Cd	114			
> In	115		104.758	
Sn	118	107.230		
Sb	123	96.589		
Ba	135	96.446		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.203		
Tl	205			
Pb	206	98.442		
Pb	207	95.410		
Pb	208	97.714		
U	238	95.053		
> Bi	209		106.210	
Na	23	200.869		
Mg	24	105.670		
K	39	101.861		
Ca	43	125.771		
Fe	54	99.097		
Fe	57	96.711		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Tuesday, June 28, 2016 13:22:10
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81098.1	0.9				ug/L	81760	Standard
	Be	9	35.0	14.3	**0.0258**	0.005	18.6	ug/L	17	Standard
	Al	27	2568.6	16.6	**0.0024**	0.003	117.4	ug/L	1410	Standard
	Sc	45	40706.3	0.9				ug/L	39543	Standard
	Ti	47	40.7	7.5	**-0.0093**	0.010	110.5	ug/L	39	Standard
	V	51	1184.2	4.7	**-0.0443**	0.005	11.8	ug/L	1415	Standard
	Cr	52	6261.3	1.2	**-0.1999**	0.018	9.1	ug/L	6946	Standard
	Cr	53	338.3	3.7	**0.0258**	0.014	55.9	ug/L	328	Standard
	Mn	55	842.4	4.2	**-0.0247**	0.005	18.3	ug/L	823	Standard
	Co	59	286.0	9.3	**0.0074**	0.003	40.3	ug/L	252	Standard
	Ni	60	199.7	6.5	**-0.0040**	0.005	124.9	ug/L	192	Standard
	Cu	65	142.3	4.7	**-0.0195**	0.003	13.5	ug/L	141	Standard
	Zn	66	529.7	2.7	**-0.3672**	0.009	2.6	ug/L	491	Standard
>	**Ge**	72	540586.6	1.6				ug/L	515087	Standard
	As	75	16.4	99.5	**0.0543**	0.014	25.8	ug/L	20	Standard
	Se	82	18.7	7.6	**0.0353**	0.014	40.6	ug/L	15	Standard
	Se-1	77	50.3	10.9	**-0.0819**	0.075	91.1	ug/L	48	Standard
>	**Ga**	71	86.7	18.5				mg/L	90	Standard
	Rb	85	13.3	78.1				ug/L	23	Standard
	Y	89	464568.8	2.3				ug/L	448510	Standard
>	**Rh**	103	18.3	15.7				ug/L	15	Standard
	Mo	98	439.4	21.7	**0.1377**	0.033	23.9	ug/L	11	Standard
	Ag	107	149.7	25.4	**0.0053**	0.005	102.3	ug/L	134	Standard
	Cd	111	15.2	39.6	**0.0040**	0.003	67.9	mg/L	7	Standard
	Cd	114	45.8	32.1	**0.0036**	0.003	74.9	ug/L	16	Standard
>	**In**	115	633054.7	0.7				ug/L	611117	Standard
	Sn	118	1025.0	34.7	**0.0655**	0.058	89.1	ug/L	518	Standard
	Sb	123	2042.3	25.6	**0.4053**	0.108	26.7	ug/L	127	Standard
	Ba	135	49.7	4.2	**-0.0019**	0.001	60.7	ug/L	45	Standard
	Ce	140	36.7	20.8				ug/L	298	Standard
>	**Tb**	159	1001668.5	0.7				ug/L	977942	Standard
	Ho	165	10.0					ug/L	12	Standard
	Tl	203	78.0	41.6	**0.0041**	0.004	88.8	ug/L	31	Standard
	Tl	205	58.3	47.2	**0.0054**	0.004	66.7	ug/L	20	Standard
	Pb	206	315.3	11.1	**-0.0075**	0.006	81.9	ug/L	286	Standard
	Pb	207	291.3	4.8	**-0.0005**	0.003	477.4	ug/L	257	Standard
	Pb	208	1079.0	5.9	**-0.0054**	0.003	55.4	ug/L	956	Standard
	U	238	63.3	42.9	**0.0055**	0.004	65.2	ug/L	17	Standard
>	**Bi**	209	578819.3	0.5				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	25.0	40.0	**-0.0249**	0.013	50.9	mg/L	32	Standard
K	39	31.7	9.1	**-0.0375**	0.009	24.5	mg/L	30	Standard
Ca	43	41.7	36.7	**0.7901**	2.216	280.5	mg/L	48	Standard
Fe	54	146.0	8.6	**-0.0087**	0.010	113.7	mg/L	159	Standard
Fe	57	195.0	25.3	**0.0139**	0.156	1122.4	mg/L	195	Standard
Sc-1	45	40706.3	0.9				mg/L	39543	Standard
Cl	35	29554.8	2.8				ug/L	27642	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	1693.4	6.8				ug/L	1647	Standard
P	31	17536.8	2.2				ug/L	15231	Standard
S	34	2233.5	3.0				ug/L	1845	Standard
Sr	88	66.7	15.6				ug/L	70	Standard
C	12	96.7	33.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.7	49.8				mg/L	12	Standard
Ho-1	165	10.0					mg/L	12	Standard
Er	166	13.3	86.6				mg/L	20	Standard
I	127	1260.1	15.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		104.951	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.590
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.902
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Tuesday, June 28, 2016 13:25:23
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79486.3	1.5				ug/L	81760	Standard
	Be	9	236.7	23.6	**0.2350**	0.054	23.1	ug/L	17	Standard
	Al	27	1635.1	14.9	**-0.0035**	0.001	42.0	ug/L	1410	Standard
	Sc	45	39860.7	2.7				ug/L	39543	Standard
	Ti	47	39.7	2.9	**-0.0059**	0.005	91.5	ug/L	39	Standard
	V	51	3750.6	3.6	**0.3321**	0.019	5.7	ug/L	1415	Standard
	Cr	52	11750.6	2.2	**0.6283**	0.044	7.0	ug/L	6946	Standard
	Cr	53	1020.0	3.7	**0.8185**	0.038	4.7	ug/L	328	Standard
	Mn	55	3800.5	0.2	**0.4368**	0.004	0.8	ug/L	823	Standard
	Co	59	2925.3	4.6	**0.3843**	0.020	5.3	ug/L	252	Standard
	Ni	60	3080.3	1.6	**1.5280**	0.033	2.2	ug/L	192	Standard
	Cu	65	1617.4	2.7	**0.7591**	0.027	3.5	ug/L	141	Standard
	Zn	66	7652.9	2.4	**6.1434**	0.191	3.1	ug/L	491	Standard
>	**Ge**	72	515947.7	0.4				ug/L	515087	Standard
	As	75	426.1	10.9	**0.4186**	0.040	9.6	ug/L	20	Standard
	Se	82	65.5	20.2	**0.4487**	0.114	25.5	ug/L	15	Standard
	Se-1	77	77.0	13.5	**0.3017**	0.140	46.4	ug/L	48	Standard
>	**Ga**	71	75.0	29.1				mg/L	90	Standard
	Rb	85	11.7	49.5				ug/L	23	Standard
	Y	89	454544.4	2.9				ug/L	448510	Standard
>	**Rh**	103	11.7	65.5				ug/L	15	Standard
	Mo	98	144.3	6.8	**0.0328**	0.004	11.5	ug/L	11	Standard
	Ag	107	2677.9	4.8	**0.3715**	0.022	5.8	ug/L	134	Standard
	Cd	111	522.1	8.6	**0.2344**	0.020	8.5	mg/L	7	Standard
	Cd	114	1313.6	1.7	**0.2408**	0.006	2.4	ug/L	16	Standard
>	**In**	115	628989.1	0.7				ug/L	611117	Standard
	Sn	118	611.7	1.9	**-0.0014**	0.001	96.1	ug/L	518	Standard
	Sb	123	2074.6	8.0	**0.4143**	0.033	7.9	ug/L	127	Standard
	Ba	135	1500.7	4.3	**0.6813**	0.036	5.2	ug/L	45	Standard
	Ce	140	23.3	24.7				ug/L	298	Standard
>	**Tb**	159	1002704.6	1.0				ug/L	977942	Standard
	Ho	165	21.7	35.3				ug/L	12	Standard
	Tl	203	715.4	2.1	**0.0768**	0.002	2.1	ug/L	31	Standard
	Tl	205	653.3	9.4	**0.0835**	0.008	10.1	ug/L	20	Standard
	Pb	206	1358.4	2.4	**0.1778**	0.007	3.8	ug/L	286	Standard
	Pb	207	1172.0	3.3	**0.1729**	0.010	5.8	ug/L	257	Standard
	Pb	208	4784.3	0.9	**0.1832**	0.004	2.4	ug/L	956	Standard
	U	238	2840.3	2.6	**0.3778**	0.014	3.6	ug/L	17	Standard
>	**Bi**	209	580093.5	1.0				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	33.3	22.9	**-0.0129**	0.011	85.9	mg/L	32	Standard
K	39	38.3	45.8	**-0.0130**	0.059	454.3	mg/L	30	Standard
Ca	43	38.3	41.9	**0.4748**	2.540	535.0	mg/L	48	Standard
Fe	54	103.9	16.3	**-0.0436**	0.016	37.7	mg/L	159	Standard
Fe	57	210.0	19.5	**0.0806**	0.150	185.6	mg/L	195	Standard
> **Sc-1**	45	39860.7	2.7				mg/L	39543	Standard
Cl	35	28271.0	1.2				ug/L	27642	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	1630.1	3.7				ug/L	1647	Standard
P	31	12470.1	4.9				ug/L	15231	Standard
S	34	2090.1	6.4				ug/L	1845	Standard
Sr	88	61.7	72.7				ug/L	70	Standard
C	12	146.7	7.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	26.0	116.4				mg/L	12	Standard
Ho-1	165	21.7	35.3				mg/L	12	Standard
Er	166	13.3	43.3				mg/L	20	Standard
I	127	1031.7	25.9				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	117.475		
	Al	27	-0.351		
	Sc	45			
	Ti	47			
	V	51	83.021		
	Cr	52	78.533		
	Cr	53			
	Mn	55	87.355		
	Co	59	96.082		
	Ni	60	95.499		
	Cu	65	94.881		
	Zn	66	98.294		
>	Ge	72		100.167	
	As	75	104.644		
	Se	82	112.180		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	92.871		
Cd	111	97.662		
Cd	114			
> In	115			102.925
Sn	118			
Sb	123	103.570		
Ba	135	90.845		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	95.941		
Tl	205			
Pb	206			
Pb	207			
Pb	208	91.584		
U	238	94.451		
> Bi	209			104.131
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Tuesday, June 28, 2016 13:28:34
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85379.9	0.7				ug/L	81760	Standard
	Be	9	28.3	44.4	**0.0176**	0.012	68.3	ug/L	17	Standard
	Al	27	7582301.1	0.5	**47.0918**	0.449	1.0	ug/L	1410	Standard
	Sc	45	42481.1	0.8				ug/L	39543	Standard
	Ti	47	26924.2	1.2	**102.1971**	2.644	2.6	ug/L	39	Standard
	V	51	1177.2	11.7	**-0.0466**	0.017	37.5	ug/L	1415	Standard
	Cr	52	7440.5	1.6	**-0.0468**	0.011	24.4	ug/L	6946	Standard
	Cr	53	2938.6	8.1	**2.8263**	0.310	11.0	ug/L	328	Standard
	Mn	55	1484.1	0.5	**0.0680**	0.007	9.9	ug/L	823	Standard
	Co	59	438.3	7.6	**0.0276**	0.004	13.4	ug/L	252	Standard
	Ni	60	870.4	2.5	**0.3318**	0.004	1.2	ug/L	192	Standard
	Cu	65	647.0	5.3	**0.2309**	0.010	4.5	ug/L	141	Standard
	Zn	66	2006.5	1.8	**0.9027**	0.019	2.1	ug/L	491	Standard
>	**Ge**	72	545025.5	2.5				ug/L	515087	Standard
	As	75	-62.2	34.4	**-0.0118**	0.017	144.3	ug/L	20	Standard
	Se	82	23.6	6.2	**0.0746**	0.009	12.7	ug/L	15	Standard
	Se-1	77	231.7	5.9	**2.1902**	0.222	10.1	ug/L	48	Standard
>	**Ga**	71	171.7	17.1				mg/L	90	Standard
	Rb	85	1090.0	4.4				ug/L	23	Standard
	Y	89	452797.1	1.4				ug/L	448510	Standard
>	**Rh**	103	10.0	100.0				ug/L	15	Standard
	Mo	98	263118.9	1.1	**94.9055**	0.578	0.6	ug/L	11	Standard
	Ag	107	286.7	3.7	**0.0254**	0.002	6.6	ug/L	134	Standard
	Cd	111	-226.3	7.3	**-0.1062**	0.009	8.1	mg/L	7	Standard
	Cd	114	466.4	13.0	**0.0826**	0.011	12.8	ug/L	16	Standard
>	**In**	115	626700.1	1.0				ug/L	611117	Standard
	Sn	118	941.7	5.7	**0.0533**	0.007	13.8	ug/L	518	Standard
	Sb	123	466.3	29.2	**0.0836**	0.028	33.8	ug/L	127	Standard
	Ba	135	616.7	6.0	**0.2662**	0.017	6.2	ug/L	45	Standard
	Ce	140	233.3	17.2				ug/L	298	Standard
>	**Tb**	159	1019781.5	0.4				ug/L	977942	Standard
	Ho	165	28.3	27.0				ug/L	12	Standard
	Tl	203	270.7	14.6	**0.0257**	0.004	17.2	ug/L	31	Standard
	Tl	205	205.0	17.1	**0.0243**	0.005	18.8	ug/L	20	Standard
	Pb	206	568.7	4.5	**0.0362**	0.004	12.0	ug/L	286	Standard
	Pb	207	508.0	2.4	**0.0408**	0.002	5.7	ug/L	257	Standard
	Pb	208	1902.0	8.6	**0.0352**	0.008	23.2	ug/L	956	Standard
	U	238	71.7	54.2	**0.0065**	0.005	78.6	ug/L	17	Standard
>	**Bi**	209	587460.1	0.4				ug/L	557080	Standard

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Na	23	5.0	100.0	**29.8288**	29.665	99.5	mg/L	0	Standard
Mg	24	10050.0	1.2	**12.3961**	0.163	1.3	mg/L	32	Standard
K	39	1535.1	9.7	**4.6887**	0.503	10.7	mg/L	30	Standard
Ca	43	211.7	14.4	**24.5987**	4.529	18.4	mg/L	48	Standard
Fe	54	14184.2	1.5	**11.8132**	0.271	2.3	mg/L	159	Standard
Fe	57	3883.8	1.7	**11.5795**	0.109	0.9	mg/L	195	Standard
Sc-1	45	42481.1	0.8				mg/L	39543	Standard
Cl	35	27442.8	1.7				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1816.8	6.7				ug/L	1647	Standard
P	31	16744.2	0.2				ug/L	15231	Standard
S	34	1956.8	7.4				ug/L	1845	Standard
Sr	88	48.3	53.1				ug/L	70	Standard
C	12	220.0	25.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	27.0				mg/L	0	Standard
Dy	164	24.9	47.6				mg/L	12	Standard
Ho-1	165	28.3	27.0				mg/L	12	Standard
Er	166	36.7	56.8				mg/L	20	Standard
I	127	1896.8	6.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27	0.942		
Sc	45			
Ti	47	102.197		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		105.812	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	94.905		
Ag	107			
Cd	111			
Cd	114			
In	115			102.550
Sn	118			
Sb	123			
Ba	135			
Ce	140			
Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
Bi	209			105.453
Na	23	238.631		
Mg	24	247.921		
K	39	93.774		
Ca	43	163.991		
Fe	54	94.506		
Fe	57	92.636		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	

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QC Std 4	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Tuesday, June 28, 2016 13:31:45
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	87031.0	2.2				ug/L	81760	Standard
	Be	9	104600.0	3.1	**98.9445**	2.636	2.7	ug/L	17	Standard
	Al	27	8235764.9	2.8	**50.1881**	1.494	3.0	ug/L	1410	Standard
	Sc	45	40814.9	1.3				ug/L	39543	Standard
	Ti	47	28557.9	2.6	**110.3128**	3.806	3.5	ug/L	39	Standard
	V	51	698774.9	0.6	**96.5097**	2.203	2.3	ug/L	1415	Standard
	Cr	52	706026.0	2.3	**96.5109**	2.799	2.9	ug/L	6946	Standard
	Cr	53	91691.9	3.7	**100.1429**	4.249	4.2	ug/L	328	Standard
	Mn	55	659133.1	0.8	**97.6603**	2.181	2.2	ug/L	823	Standard
	Co	59	714164.5	1.5	**97.7493**	2.387	2.4	ug/L	252	Standard
	Ni	60	188241.9	2.2	**96.0473**	2.835	3.0	ug/L	192	Standard
	Cu	65	190773.3	1.3	**96.4911**	2.052	2.1	ug/L	141	Standard
	Zn	66	115799.2	0.5	**100.8065**	2.067	2.1	ug/L	491	Standard
>	**Ge**	72	535562.3	1.7				ug/L	515087	Standard
	As	75	115513.0	0.8	**98.8727**	1.879	1.9	ug/L	20	Standard
	Se	82	11807.8	0.8	**98.5471**	2.365	2.4	ug/L	15	Standard
	Se-1	77	7973.8	0.6	**101.0979**	1.926	1.9	ug/L	48	Standard
>	**Ga**	71	195.0	2.6				mg/L	90	Standard
	Rb	85	900.0	5.1				ug/L	23	Standard
	Y	89	467512.1	1.1				ug/L	448510	Standard
>	**Rh**	103	41.7	61.6				ug/L	15	Standard
	Mo	98	278616.6	1.0	**98.3192**	1.671	1.7	ug/L	11	Standard
	Ag	107	629653.8	2.5	**89.4581**	1.609	1.8	ug/L	134	Standard
	Cd	111	214179.9	0.7	**95.5849**	1.082	1.1	mg/L	7	Standard
	Cd	114	513207.5	0.9	**94.2229**	0.578	0.6	ug/L	16	Standard
>	**In**	115	640649.3	1.3				ug/L	611117	Standard
	Sn	118	1085.0	2.4	**0.0732**	0.006	8.8	ug/L	518	Standard
	Sb	123	468645.5	2.2	**94.7292**	1.132	1.2	ug/L	127	Standard
	Ba	135	204538.3	1.7	**94.4814**	1.088	1.2	ug/L	45	Standard
	Ce	140	98.3	7.8				ug/L	298	Standard
>	**Tb**	159	1030592.0	2.2				ug/L	977942	Standard
	Ho	165	16.7	45.8				ug/L	12	Standard
	Tl	203	850272.7	1.9	**96.3847**	2.377	2.5	ug/L	31	Standard
	Tl	205	753805.3	1.5	**98.4067**	2.429	2.5	ug/L	20	Standard
	Pb	206	560444.8	0.3	**98.9799**	0.961	1.0	ug/L	286	Standard
	Pb	207	485626.8	0.4	**95.0861**	1.259	1.3	ug/L	257	Standard
	Pb	208	1940003.2	1.2	**98.1909**	2.155	2.2	ug/L	956	Standard
	U	238	731621.6	1.7	**97.5330**	2.488	2.6	ug/L	17	Standard
>	**Bi**	209	583301.0	1.0				ug/L	557080	Standard

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Na	23	5.0	100.0	**30.9951**	30.718	99.1	mg/L	0	Standard
Mg	24	10642.1	4.7	**13.6704**	0.697	5.1	mg/L	32	Standard
K	39	1555.1	3.7	**4.9498**	0.207	4.2	mg/L	30	Standard
Ca	43	191.7	19.9	**22.8900**	5.801	25.3	mg/L	48	Standard
Fe	54	15478.2	1.2	**13.4350**	0.150	1.1	mg/L	159	Standard
Fe	57	4137.2	0.8	**12.9082**	0.151	1.2	mg/L	195	Standard
Sc-1	45	40814.9	1.3				mg/L	39543	Standard
Cl	35	27689.3	2.5				ug/L	27642	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	1876.8	10.9				ug/L	1647	Standard
P	31	15799.9	3.3				ug/L	15231	Standard
S	34	1943.5	5.2				ug/L	1845	Standard
Sr	88	65.0	27.7				ug/L	70	Standard
C	12	256.7	13.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	15.9	127.8				mg/L	12	Standard
Ho-1	165	16.7	45.8				mg/L	12	Standard
Er	166	16.7	69.3				mg/L	20	Standard
I	127	1231.7	9.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	98.944		
Al	27	1.004		
Sc	45			
Ti	47	110.313		
V	51	96.510		
Cr	52	96.511		
Cr	53			
Mn	55	97.660		
Co	59	97.749		
Ni	60	96.047		
Cu	65	96.491		
Zn	66	100.807		
Ge	72		103.975	
As	75	98.873		
Se	82	98.547		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	98.319		
Ag	107	89.458		
Cd	111	95.585		
Cd	114			
In	115		104.833	
Sn	118			
Sb	123	94.729		
Ba	135	94.481		
Ce	140			
Tb	159			
Ho	165			
Tl	203	96.385		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.191		
U	238	97.533		
Bi	209		104.707	
Na	23	247.961		
Mg	24	273.408		
K	39	98.997		
Ca	43	152.600		
Fe	54	107.480		
Fe	57	103.265		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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QC Std 5	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 13:34:59
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85572.8	3.1				ug/L	81760	Standard
	Be	9	51348.6	3.0	**49.4131**	1.801	3.6	ug/L	17	Standard
	Al	27	7869928.8	0.7	**48.7904**	1.162	2.4	ug/L	1410	Standard
	Sc	45	41500.1	1.3				ug/L	39543	Standard
	Ti	47	25257.0	1.4	**98.1904**	2.232	2.3	ug/L	39	Standard
	V	51	359717.6	0.9	**49.9155**	1.252	2.5	ug/L	1415	Standard
	Cr	52	362752.3	1.0	**49.4079**	0.954	1.9	ug/L	6946	Standard
	Cr	53	45483.2	1.3	**49.8439**	1.589	3.2	ug/L	328	Standard
	Mn	55	333977.4	0.1	**49.7416**	1.012	2.0	ug/L	823	Standard
	Co	59	371364.3	0.2	**51.1559**	1.087	2.1	ug/L	252	Standard
	Ni	60	96391.0	0.8	**49.4567**	0.760	1.5	ug/L	192	Standard
	Cu	65	97494.7	0.8	**49.5943**	0.620	1.2	ug/L	141	Standard
	Zn	66	56948.5	0.8	**49.4853**	0.762	1.5	ug/L	491	Standard
>	**Ge**	72	532023.1	2.0				ug/L	515087	Standard
	As	75	57437.4	0.6	**49.5161**	1.180	2.4	ug/L	20	Standard
	Se	82	5946.0	0.9	**49.9013**	1.415	2.8	ug/L	15	Standard
	Se-1	77	4004.5	1.6	**50.7471**	0.199	0.4	ug/L	48	Standard
>	**Ga**	71	93.3	16.4				mg/L	90	Standard
	Rb	85	881.7	8.3				ug/L	23	Standard
	Y	89	456900.1	0.4				ug/L	448510	Standard
>	**Rh**	103	26.7	60.3				ug/L	15	Standard
	Mo	98	274645.7	0.6	**96.2670**	1.141	1.2	ug/L	11	Standard
	Ag	107	344865.6	0.2	**48.6675**	0.302	0.6	ug/L	134	Standard
	Cd	111	109918.0	0.6	**48.7237**	0.167	0.3	mg/L	7	Standard
	Cd	114	266820.9	0.9	**48.6598**	0.652	1.3	ug/L	16	Standard
>	**In**	115	644937.8	0.8				ug/L	611117	Standard
	Sn	118	304766.5	1.2	**48.7367**	0.172	0.4	ug/L	518	Standard
	Sb	123	245072.6	0.1	**49.2072**	0.383	0.8	ug/L	127	Standard
	Ba	135	106223.8	1.1	**48.7299**	0.483	1.0	ug/L	45	Standard
	Ce	140	76.7	21.0				ug/L	298	Standard
>	**Tb**	159	1040424.8	0.9				ug/L	977942	Standard
	Ho	165	11.7	89.2				ug/L	12	Standard
	Tl	203	436254.3	0.9	**48.8621**	1.048	2.1	ug/L	31	Standard
	Tl	205	382952.9	1.1	**49.3898**	0.698	1.4	ug/L	20	Standard
	Pb	206	278752.3	0.9	**48.6168**	1.163	2.4	ug/L	286	Standard
	Pb	207	252906.4	1.0	**48.9055**	1.215	2.5	ug/L	257	Standard
	Pb	208	993060.2	1.0	**49.6339**	1.159	2.3	ug/L	956	Standard
	U	238	369537.8	0.4	**48.6731**	0.911	1.9	ug/L	17	Standard
>	**Bi**	209	590375.8	1.5				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4017.2	5.2	**5.0405**	0.318	6.3	mg/L	32	Standard
K	39	1600.1	5.0	**5.0128**	0.329	6.6	mg/L	30	Standard
Ca	43	98.3	19.3	**8.9105**	2.944	33.0	mg/L	48	Standard
Fe	54	5965.0	1.0	**5.0068**	0.016	0.3	mg/L	159	Standard
Fe	57	1785.1	5.1	**5.1208**	0.370	7.2	mg/L	195	Standard
> **Sc-1**	45	41500.1	1.3				mg/L	39543	Standard
Cl	35	29160.0	1.9				ug/L	27642	Standard
Kr	83	3.3	45.8				ug/L	2	Standard
Br	81	1670.1	8.2				ug/L	1647	Standard
P	31	17116.3	2.7				ug/L	15231	Standard
S	34	2186.8	7.3				ug/L	1845	Standard
Sr	88	41.7	34.6				ug/L	70	Standard
C	12	130.0	42.8				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	23.3	24.7				mg/L	12	Standard
Ho-1	165	11.7	89.2				mg/L	12	Standard
Er	166	0.0					mg/L	20	Standard
I	127	1351.7	14.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	98.826		
Al	27	97.581		
Sc	45			
Ti	47	98.190		
V	51	99.831		
Cr	52	98.816		
Cr	53			
Mn	55	99.483		
Co	59	102.312		
Ni	60	98.913		
Cu	65	99.189		
Zn	66	98.971		
> Ge	72		103.288	
As	75	99.032		
Se	82	99.803		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	96.267		
Ag	107	97.335		
Cd	111	97.447		
Cd	114			
In	115			105.534
Sn	118	97.473		
Sb	123	98.414		
Ba	135	97.460		
Ce	140			
Tb	159			
Ho	165			
Tl	203	97.724		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.268		
U	238	97.346		
Bi	209			105.977
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 13:38:10
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82763.8	0.7				ug/L	81760	Standard
	Be	9	40.0	57.3	**0.0300**	0.023	75.9	ug/L	17	Standard
	Al	27	4257.4	63.2	**0.0129**	0.017	134.4	ug/L	1410	Standard
	Sc	45	40355.3	1.7				ug/L	39543	Standard
	Ti	47	44.3	23.5	**0.0085**	0.041	476.8	ug/L	39	Standard
	V	51	1283.7	14.1	**-0.0268**	0.025	92.2	ug/L	1415	Standard
	Cr	52	6366.3	1.6	**-0.1663**	0.013	7.9	ug/L	6946	Standard
	Cr	53	461.7	3.5	**0.1707**	0.014	8.3	ug/L	328	Standard
	Mn	55	939.4	15.6	**-0.0074**	0.022	294.6	ug/L	823	Standard
	Co	59	428.3	39.2	**0.0280**	0.023	82.9	ug/L	252	Standard
	Ni	60	218.7	25.5	**0.0081**	0.029	354.3	ug/L	192	Standard
	Cu	65	184.3	18.2	**0.0036**	0.017	469.2	ug/L	141	Standard
	Zn	66	515.3	2.3	**-0.3696**	0.014	3.7	ug/L	491	Standard
>	**Ge**	72	528838.2	0.8				ug/L	515087	Standard
	As	75	8.3	324.4	**0.0475**	0.023	49.1	ug/L	20	Standard
	Se	82	19.9	12.2	**0.0491**	0.021	43.7	ug/L	15	Standard
	Se-1	77	55.0	4.8	**-0.0079**	0.029	369.8	ug/L	48	Standard
>	**Ga**	71	56.7	39.8				mg/L	90	Standard
	Rb	85	10.0					ug/L	23	Standard
	Y	89	469796.8	1.6				ug/L	448510	Standard
>	**Rh**	103	20.0	25.0				ug/L	15	Standard
	Mo	98	452.3	25.3	**0.1439**	0.042	29.5	ug/L	11	Standard
	Ag	107	307.7	67.7	**0.0286**	0.031	108.2	ug/L	134	Standard
	Cd	111	45.2	95.8	**0.0178**	0.020	112.8	mg/L	7	Standard
	Cd	114	114.8	113.1	**0.0168**	0.025	147.3	ug/L	16	Standard
>	**In**	115	628024.0	1.4				ug/L	611117	Standard
	Sn	118	940.0	23.7	**0.0531**	0.039	73.1	ug/L	518	Standard
	Sb	123	1312.1	39.0	**0.2588**	0.110	42.3	ug/L	127	Standard
	Ba	135	79.3	75.1	**0.0125**	0.029	229.7	ug/L	45	Standard
	Ce	140	28.3	36.7				ug/L	298	Standard
>	**Tb**	159	1003248.8	1.6				ug/L	977942	Standard
	Ho	165	15.0	88.2				ug/L	12	Standard
	Tl	203	265.0	107.1	**0.0261**	0.033	127.7	ug/L	31	Standard
	Tl	205	163.3	84.5	**0.0196**	0.019	95.5	ug/L	20	Standard
	Pb	206	421.0	42.3	**0.0127**	0.033	261.4	ug/L	286	Standard
	Pb	207	362.0	44.3	**0.0147**	0.033	224.6	ug/L	257	Standard
	Pb	208	1358.7	30.8	**0.0100**	0.022	223.6	ug/L	956	Standard
	U	238	139.0	84.9	**0.0161**	0.016	101.8	ug/L	17	Standard
>	**Bi**	209	570467.7	1.7				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.3221**	17.870	173.1	mg/L	0	Standard
Mg	24	30.0	28.9	**-0.0179**	0.012	67.0	mg/L	32	Standard
K	39	31.7	24.1	**-0.0367**	0.024	65.4	mg/L	30	Standard
Ca	43	38.3	15.1	**0.3686**	0.952	258.2	mg/L	48	Standard
Fe	54	115.7	16.2	**-0.0344**	0.017	49.5	mg/L	159	Standard
Fe	57	198.3	8.1	**0.0320**	0.061	191.3	mg/L	195	Standard
> **Sc-1**	45	40355.3	1.7				mg/L	39543	Standard
Cl	35	29509.4	2.2				ug/L	27642	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	1783.4	4.3				ug/L	1647	Standard
P	31	17421.7	1.2				ug/L	15231	Standard
S	34	2170.2	3.8				ug/L	1845	Standard
Sr	88	55.0	15.7				ug/L	70	Standard
C	12	93.3	40.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	8.9	120.7				mg/L	12	Standard
Ho-1	165	15.0	88.2				mg/L	12	Standard
Er	166	23.3	65.5				mg/L	20	Standard
I	127	1233.4	14.2				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		102.670	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 7
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.767
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.403
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

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Method 6020 - Summary Report

Sample ID: L1606036203
Sample Date/Time: Tuesday, June 28, 2016 13:41:22
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83400.5	10.2				ug/L	81760	Standard
	Be	9	11.7	65.5	**0.0015**	0.006	425.0	ug/L	17	Standard
	Al	27	3017.0	39.5	**0.0053**	0.009	165.2	ug/L	1410	Standard
	Sc	45	40218.8	12.0				ug/L	39543	Standard
	Ti	47	37.0	23.6	**-0.0163**	0.022	135.1	ug/L	39	Standard
	V	51	613.8	4.6	**-0.1167**	0.012	10.1	ug/L	1415	Standard
	Cr	52	3481.1	12.6	**-0.5531**	0.019	3.4	ug/L	6946	Standard
	Cr	53	250.0	27.5	**-0.0570**	0.057	99.8	ug/L	328	Standard
	Mn	55	1041.4	26.2	**0.0117**	0.027	231.5	ug/L	823	Standard
	Co	59	254.7	5.9	**0.0055**	0.004	71.3	ug/L	252	Standard
	Ni	60	206.3	13.3	**0.0056**	0.009	153.1	ug/L	192	Standard
	Cu	65	131.7	19.5	**-0.0206**	0.013	65.4	ug/L	141	Standard
	Zn	66	531.7	22.4	**-0.3419**	0.069	20.1	ug/L	491	Standard
>	**Ge**	72	510441.4	10.5				ug/L	515087	Standard
	As	75	44.6	25.0	**0.0799**	0.006	7.8	ug/L	20	Standard
	Se	82	38.3	36.8	**0.2107**	0.093	44.1	ug/L	15	Standard
	Se-1	77	32.0	11.3	**-0.2872**	0.062	21.6	ug/L	48	Standard
>	**Ga**	71	61.7	4.7				mg/L	90	Standard
	Rb	85	33.3	37.7				ug/L	23	Standard
	Y	89	399549.3	20.8				ug/L	448510	Standard
>	**Rh**	103	11.7	65.5				ug/L	15	Standard
	Mo	98	155.9	22.2	**0.0482**	0.023	47.8	ug/L	11	Standard
	Ag	107	121.0	24.4	**0.0044**	0.005	118.2	ug/L	134	Standard
	Cd	111	13.4	45.5	**0.0046**	0.004	96.5	mg/L	7	Standard
	Cd	114	43.9	10.7	**0.0047**	0.001	14.6	ug/L	16	Standard
>	**In**	115	541793.5	15.9				ug/L	611117	Standard
	Sn	118	351.7	31.7	**-0.0361**	0.012	32.5	ug/L	518	Standard
	Sb	123	283.1	30.2	**0.0538**	0.012	21.7	ug/L	127	Standard
	Ba	135	37.0	32.8	**-0.0052**	0.004	82.4	ug/L	45	Standard
	Ce	140	30.0	28.9				ug/L	298	Standard
>	**Tb**	159	879683.0	16.9				ug/L	977942	Standard
	Ho	165	8.3	34.6				ug/L	12	Standard
	Tl	203	99.7	75.1	**0.0097**	0.013	137.9	ug/L	31	Standard
	Tl	205	85.0	86.7	**0.0121**	0.015	120.6	ug/L	20	Standard
	Pb	206	313.0	1.9	**0.0011**	0.012	1036.8	ug/L	286	Standard
	Pb	207	266.0	5.5	**0.0034**	0.015	442.4	ug/L	257	Standard
	Pb	208	1233.7	12.3	**0.0133**	0.020	150.4	ug/L	956	Standard
	U	238	39.3	36.7	**0.0031**	0.002	60.3	ug/L	17	Standard
>	**Bi**	209	508733.8	16.9				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	21.7	13.3	**-0.0282**	0.008	27.2	mg/L	32	Standard
K	39	25.0	34.6	**-0.0591**	0.022	36.5	mg/L	30	Standard
Ca	43	40.0	12.5	**0.7483**	1.524	203.6	mg/L	48	Standard
Fe	54	113.2	25.1	**-0.0334**	0.039	117.8	mg/L	159	Standard
Fe	57	238.3	14.7	**0.1717**	0.127	73.7	mg/L	195	Standard
> **Sc-1**	45	40218.8	12.0				mg/L	39543	Standard
Cl	35	13831.7	10.0				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	810.0	8.9				ug/L	1647	Standard
P	31	10527.1	24.9				ug/L	15231	Standard
S	34	970.0	6.2				ug/L	1845	Standard
Sr	88	66.7	11.5				ug/L	70	Standard
C	12	110.0	9.1				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.4	124.8				mg/L	12	Standard
Ho-1	165	8.3	34.6				mg/L	12	Standard
Er	166	20.0	50.0				mg/L	20	Standard
I	127	523.3	19.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.006	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.098	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	88.656
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	91.321
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 52 Lower	Cr	52	

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Method 6020 - Summary Report

Sample ID: L1606036204
Sample Date/Time: Tuesday, June 28, 2016 13:44:34
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83225.5	7.5				ug/L	81760	Standard
	Be	9	31228.6	61.6	**31.9371**	21.971	68.8	ug/L	17	Standard
	Al	27	8471.1	48.6	**0.0411**	0.031	75.9	ug/L	1410	Standard
	Sc	45	40830.0	2.2				ug/L	39543	Standard
	Ti	47	34.3	11.8	**-0.0297**	0.018	59.1	ug/L	39	Standard
	V	51	224078.9	58.8	**31.3360**	18.302	58.4	ug/L	1415	Standard
	Cr	52	238015.8	57.7	**32.3999**	19.040	58.8	ug/L	6946	Standard
	Cr	53	29690.7	58.7	**32.7502**	19.168	58.5	ug/L	328	Standard
	Mn	55	213724.7	56.8	**32.1044**	18.055	56.2	ug/L	823	Standard
	Co	59	222487.2	58.7	**30.9454**	17.938	58.0	ug/L	252	Standard
	Ni	60	62090.3	57.3	**32.1492**	18.240	56.7	ug/L	192	Standard
	Cu	65	63757.0	57.0	**32.7355**	18.436	56.3	ug/L	141	Standard
	Zn	66	38227.9	57.9	**33.2873**	19.476	58.5	ug/L	491	Standard
>	**Ge**	72	525473.2	1.2				ug/L	515087	Standard
	As	75	36453.5	56.6	**31.7527**	17.695	55.7	ug/L	20	Standard
	Se	82	3780.3	55.0	**31.9968**	17.401	54.4	ug/L	15	Standard
	Se-1	77	2538.3	56.6	**32.2335**	18.366	57.0	ug/L	48	Standard
>	**Ga**	71	76.7	26.4				mg/L	90	Standard
	Rb	85	43.3	17.6				ug/L	23	Standard
	Y	89	474726.4	7.6				ug/L	448510	Standard
>	**Rh**	103	26.7	21.7				ug/L	15	Standard
	Mo	98	564.0	40.4	**0.1823**	0.089	49.0	ug/L	11	Standard
	Ag	107	212096.4	59.4	**30.6350**	19.274	62.9	ug/L	134	Standard
	Cd	111	68030.3	54.2	**30.8198**	17.865	58.0	mg/L	7	Standard
	Cd	114	165078.2	56.3	**30.7839**	18.487	60.1	ug/L	16	Standard
>	**In**	115	641067.2	4.2				ug/L	611117	Standard
	Sn	118	550.0	28.6	**-0.0125**	0.029	234.3	ug/L	518	Standard
	Sb	123	143570.7	60.9	**29.5172**	18.974	64.3	ug/L	127	Standard
	Ba	135	66133.4	54.2	**31.0035**	17.964	57.9	ug/L	45	Standard
	Ce	140	83.3	81.7				ug/L	298	Standard
>	**Tb**	159	1026938.7	4.8				ug/L	977942	Standard
	Ho	165	11.7	65.5				ug/L	12	Standard
	Tl	203	274073.1	56.4	**30.7538**	17.663	57.4	ug/L	31	Standard
	Tl	205	243234.0	54.4	**31.4411**	17.425	55.4	ug/L	20	Standard
	Pb	206	180330.9	55.5	**31.4753**	17.798	56.5	ug/L	286	Standard
	Pb	207	158009.7	55.1	**30.5868**	17.206	56.3	ug/L	257	Standard
	Pb	208	646417.5	54.5	**32.3514**	17.977	55.6	ug/L	956	Standard
	U	238	234720.5	55.2	**30.9733**	17.414	56.2	ug/L	17	Standard
>	**Bi**	209	588853.8	4.4				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.1717**	17.609	173.1	mg/L	0	Standard
Mg	24	26.7	10.8	**-0.0228**	0.004	16.0	mg/L	32	Standard
K	39	36.7	43.8	**-0.0214**	0.052	244.2	mg/L	30	Standard
Ca	43	30.0	66.7	**-0.9172**	2.942	320.7	mg/L	48	Standard
Fe	54	107.6	36.8	**-0.0427**	0.035	81.3	mg/L	159	Standard
Fe	57	220.0	9.9	**0.0952**	0.078	81.4	mg/L	195	Standard
> **Sc-1**	45	40830.0	2.2				mg/L	39543	Standard
Cl	35	20640.2	29.5				ug/L	27642	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	1230.1	37.8				ug/L	1647	Standard
P	31	11926.4	10.7				ug/L	15231	Standard
S	34	1536.7	28.4				ug/L	1845	Standard
Sr	88	66.7	11.5				ug/L	70	Standard
C	12	146.7	27.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	5.9	100.8				mg/L	12	Standard
Ho-1	165	11.7	65.5				mg/L	12	Standard
Er	166	16.7	34.6				mg/L	20	Standard
I	127	785.0	24.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.792	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.016	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.901
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.704
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606036203
Sample Date/Time: Tuesday, June 28, 2016 13:49:03
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90942.6	5.2				ug/L	81760	Standard
	Be	9	53.3	85.1	**0.0399**	0.045	111.9	ug/L	17	Standard
	Al	27	693137.8	2.1	**4.0335**	0.159	3.9	ug/L	1410	Standard
	Sc	45	39909.2	1.1				ug/L	39543	Standard
	Ti	47	362.3	4.5	**1.2955**	0.068	5.3	ug/L	39	Standard
	V	51	2278.9	9.8	**0.1220**	0.031	25.8	ug/L	1415	Standard
	Cr	52	6909.6	1.4	**-0.0622**	0.012	19.7	ug/L	6946	Standard
	Cr	53	1090.0	12.5	**0.9032**	0.155	17.1	ug/L	328	Standard
	Mn	55	5526773.3	1.7	**854.3657**	14.322	1.7	ug/L	823	Standard
	Co	59	9370.2	5.6	**1.3053**	0.073	5.6	ug/L	252	Standard
	Ni	60	2122.5	1.2	**1.0247**	0.015	1.4	ug/L	192	Standard
	Cu	65	2498.9	0.1	**1.2274**	0.002	0.2	ug/L	141	Standard
	Zn	66	6516.4	0.8	**5.1316**	0.039	0.8	ug/L	491	Standard
>	**Ge**	72	513880.5	0.2				ug/L	515087	Standard
	As	75	3228.7	3.4	**2.9189**	0.105	3.6	ug/L	20	Standard
	Se	82	922.2	2.2	**7.9103**	0.196	2.5	ug/L	15	Standard
	Se-1	77	155.0	10.7	**1.3431**	0.217	16.2	ug/L	48	Standard
>	**Ga**	71	388.3	17.5				mg/L	90	Standard
	Rb	85	68372.4	3.2				ug/L	23	Standard
	Y	89	447009.0	1.5				ug/L	448510	Standard
>	**Rh**	103	111.7	20.2				ug/L	15	Standard
	Mo	98	1200247.1	0.8	**451.3790**	8.919	2.0	ug/L	11	Standard
	Ag	107	153.3	18.9	**0.0070**	0.004	61.8	ug/L	134	Standard
	Cd	111	-1054.6	0.6	**-0.5044**	0.004	0.7	mg/L	7	Standard
	Cd	114	1800.6	2.5	**0.3474**	0.013	3.8	ug/L	16	Standard
>	**In**	115	601262.2	1.3				ug/L	611117	Standard
	Sn	118	788.4	4.6	**0.0336**	0.006	17.8	ug/L	518	Standard
	Sb	123	1882.7	34.8	**0.3916**	0.136	34.8	ug/L	127	Standard
	Ba	135	4520.7	1.0	**2.2009**	0.051	2.3	ug/L	45	Standard
	Ce	140	6458.0	2.1				ug/L	298	Standard
>	**Tb**	159	1000527.6	0.4				ug/L	977942	Standard
	Ho	165	130.0	21.4				ug/L	12	Standard
	Tl	203	285.7	2.5	**0.0299**	0.000	1.6	ug/L	31	Standard
	Tl	205	403.3	76.1	**0.0543**	0.043	79.9	ug/L	20	Standard
	Pb	206	899.7	2.3	**0.1068**	0.005	4.7	ug/L	286	Standard
	Pb	207	732.0	4.6	**0.0957**	0.009	9.0	ug/L	257	Standard
	Pb	208	3524.8	26.8	**0.1310**	0.052	40.0	ug/L	956	Standard
	U	238	352.3	76.1	**0.0475**	0.039	81.4	ug/L	17	Standard
>	**Bi**	209	544253.0	1.1				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.4757**	18.136	173.1	mg/L	0	Standard
Mg	24	122834.3	0.9	**161.9583**	0.885	0.5	mg/L	32	Standard
K	39	4865.8	5.3	**16.1536**	1.001	6.2	mg/L	30	Standard
Ca	43	186.7	17.4	**22.7843**	5.205	22.8	mg/L	48	Standard
Fe	54	927.7	8.4	**0.6952**	0.076	10.9	mg/L	159	Standard
Fe	57	461.7	8.7	**0.9208**	0.151	16.4	mg/L	195	Standard
> **Sc-1**	45	39909.2	1.1				mg/L	39543	Standard
Cl	35	47371.9	1.0				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	196320.5	1.2				ug/L	1647	Standard
P	31	16525.7	2.7				ug/L	15231	Standard
S	34	2001.8	3.8				ug/L	1845	Standard
Sr	88	358.3	4.3				ug/L	70	Standard
C	12	246.7	19.2				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	211.1	26.7				mg/L	12	Standard
Ho-1	165	130.0	21.4				mg/L	12	Standard
Er	166	116.7	51.7				mg/L	20	Standard
I	127	1244078.5	12.9				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		111.231	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.766	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.387
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.697
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

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Method 6020 - Summary Report

Sample ID: L1606036204
Sample Date/Time: Tuesday, June 28, 2016 13:52:18
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	103725.5	0.9				ug/L	81760	Standard
	Be	9	18.3	41.7	**0.0048**	0.006	125.1	ug/L	17	Standard
	Al	27	23803073.4	2.1	**121.7007**	1.863	1.5	ug/L	1410	Standard
	Sc	45	41989.8	2.5				ug/L	39543	Standard
	Ti	47	198.3	8.2	**0.6152**	0.056	9.1	ug/L	39	Standard
	V	51	2022.8	10.2	**0.0784**	0.030	38.8	ug/L	1415	Standard
	Cr	52	8025.5	3.2	**0.0718**	0.049	68.1	ug/L	6946	Standard
	Cr	53	1725.1	14.9	**1.5845**	0.307	19.4	ug/L	328	Standard
	Mn	55	8347.3	4.1	**1.1117**	0.038	3.4	ug/L	823	Standard
	Co	59	1991.1	1.1	**0.2461**	0.003	1.1	ug/L	252	Standard
	Ni	60	2784.9	2.6	**1.3428**	0.049	3.7	ug/L	192	Standard
	Cu	65	1676.4	9.2	**0.7724**	0.072	9.4	ug/L	141	Standard
	Zn	66	3951.5	5.5	**2.7003**	0.153	5.7	ug/L	491	Standard
>	**Ge**	72	526193.8	1.1				ug/L	515087	Standard
	As	75	658.8	2.1	**0.6140**	0.018	3.0	ug/L	20	Standard
	Se	82	229.7	4.0	**1.8340**	0.092	5.0	ug/L	15	Standard
	Se-1	77	153.0	9.2	**1.2707**	0.204	16.0	ug/L	48	Standard
>	**Ga**	71	148.3	16.6				mg/L	90	Standard
	Rb	85	683.3	4.9				ug/L	23	Standard
	Y	89	453248.0	2.1				ug/L	448510	Standard
>	**Rh**	103	91.7	27.5				ug/L	15	Standard
	Mo	98	5026.0	6.3	**1.8280**	0.098	5.4	ug/L	11	Standard
	Ag	107	95.3	7.7	**-0.0021**	0.001	57.5	ug/L	134	Standard
	Cd	111	8.0	39.8	**0.0008**	0.001	178.0	mg/L	7	Standard
	Cd	114	50.5	30.0	**0.0047**	0.003	60.8	ug/L	16	Standard
>	**In**	115	615030.5	1.6				ug/L	611117	Standard
	Sn	118	1100.0	6.8	**0.0830**	0.014	16.4	ug/L	518	Standard
	Sb	123	686.5	31.6	**0.1319**	0.046	34.9	ug/L	127	Standard
	Ba	135	22769.8	0.9	**10.9347**	0.080	0.7	ug/L	45	Standard
	Ce	140	320.0	14.9				ug/L	298	Standard
>	**Tb**	159	1016190.3	1.0				ug/L	977942	Standard
	Ho	165	48.3	15.8				ug/L	12	Standard
	Tl	203	156.0	5.7	**0.0132**	0.001	7.6	ug/L	31	Standard
	Tl	205	153.3	14.7	**0.0181**	0.003	17.2	ug/L	20	Standard
	Pb	206	466.3	6.0	**0.0202**	0.005	24.4	ug/L	286	Standard
	Pb	207	405.3	5.2	**0.0227**	0.004	15.6	ug/L	257	Standard
	Pb	208	1478.0	2.2	**0.0157**	0.002	13.7	ug/L	956	Standard
	U	238	1957.8	2.0	**0.2625**	0.004	1.4	ug/L	17	Standard
>	**Bi**	209	573383.4	0.9				ug/L	557080	Standard

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Na	23	8.3	34.6	**50.1179**	16.456	32.8	mg/L	0	Standard
Mg	24	58420.8	1.2	**73.2244**	2.756	3.8	mg/L	32	Standard
K	39	723.4	8.7	**2.1601**	0.187	8.7	mg/L	30	Standard
Ca	43	463.3	11.9	**60.9213**	7.520	12.3	mg/L	48	Standard
Fe	54	191.2	7.7	**0.0260**	0.014	55.5	mg/L	159	Standard
Fe	57	531.7	2.7	**1.0656**	0.010	0.9	mg/L	195	Standard
> **Sc-1**	45	41989.8	2.5				mg/L	39543	Standard
Cl	35	37603.3	1.8				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	30841.4	4.4				ug/L	1647	Standard
P	31	21757.3	1.3				ug/L	15231	Standard
S	34	1778.4	1.5				ug/L	1845	Standard
Sr	88	246.7	9.1				ug/L	70	Standard
C	12	216.7	7.1				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	60.8	24.7				mg/L	12	Standard
Ho-1	165	48.3	15.8				mg/L	12	Standard
Er	166	53.3	10.8				mg/L	20	Standard
I	127	78536.8	23.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		126.866	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.156	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.640
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.927
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606036205
Sample Date/Time: Tuesday, June 28, 2016 13:59:25
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	103215.4	0.9				ug/L	81760	Standard
	Be	9	20.0	50.0	**0.0063**	0.008	129.0	ug/L	17	Standard
	Al	27	14439258.9	3.3	**74.2049**	3.024	4.1	ug/L	1410	Standard
	Sc	45	39693.6	2.3				ug/L	39543	Standard
	Ti	47	140.0	4.0	**0.4180**	0.020	4.8	ug/L	39	Standard
	V	51	3604.7	5.2	**0.3305**	0.025	7.7	ug/L	1415	Standard
	Cr	52	7555.2	2.8	**0.0671**	0.025	36.8	ug/L	6946	Standard
	Cr	53	1441.7	2.8	**1.3602**	0.060	4.4	ug/L	328	Standard
	Mn	55	692335.2	1.4	**110.4896**	2.247	2.0	ug/L	823	Standard
	Co	59	1760.4	3.6	**0.2283**	0.011	4.9	ug/L	252	Standard
	Ni	60	2996.0	4.5	**1.5433**	0.085	5.5	ug/L	192	Standard
	Cu	65	1684.1	4.6	**0.8273**	0.040	4.8	ug/L	141	Standard
	Zn	66	2371.2	1.2	**1.4134**	0.020	1.4	ug/L	491	Standard
>	**Ge**	72	497232.9	0.8				ug/L	515087	Standard
	As	75	475.6	6.3	**0.4785**	0.029	6.0	ug/L	20	Standard
	Se	82	111.0	8.1	**0.8794**	0.084	9.6	ug/L	15	Standard
	Se-1	77	118.0	5.1	**0.9042**	0.095	10.5	ug/L	48	Standard
>	**Ga**	71	108.3	35.3				mg/L	90	Standard
	Rb	85	57350.0	0.9				ug/L	23	Standard
	Y	89	457066.8	2.1				ug/L	448510	Standard
>	**Rh**	103	28.3	44.4				ug/L	15	Standard
	Mo	98	255967.1	1.2	**93.6404**	2.667	2.8	ug/L	11	Standard
	Ag	107	89.3	9.3	**-0.0031**	0.001	44.5	ug/L	134	Standard
	Cd	111	-197.3	3.0	**-0.0942**	0.001	1.4	mg/L	7	Standard
	Cd	114	425.0	6.1	**0.0760**	0.006	8.0	ug/L	16	Standard
>	**In**	115	618093.1	1.7				ug/L	611117	Standard
	Sn	118	871.7	7.6	**0.0437**	0.009	20.3	ug/L	518	Standard
	Sb	123	474.5	27.0	**0.0866**	0.026	30.6	ug/L	127	Standard
	Ba	135	13314.9	2.5	**6.3544**	0.263	4.1	ug/L	45	Standard
	Ce	140	228.3	6.3				ug/L	298	Standard
>	**Tb**	159	1010942.5	1.3				ug/L	977942	Standard
	Ho	165	25.0	72.1				ug/L	12	Standard
	Tl	203	239.7	6.5	**0.0241**	0.002	9.5	ug/L	31	Standard
	Tl	205	181.7	22.1	**0.0230**	0.006	26.1	ug/L	20	Standard
	Pb	206	319.7	6.3	**-0.0035**	0.004	108.4	ug/L	286	Standard
	Pb	207	282.7	2.0	**0.0009**	0.002	252.3	ug/L	257	Standard
	Pb	208	1120.3	3.0	**-0.0001**	0.003	3300.1	ug/L	956	Standard
	U	238	733.7	3.0	**0.1011**	0.005	4.9	ug/L	17	Standard
>	**Bi**	209	548318.3	1.8				ug/L	557080	Standard

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Na	23	3.3	173.2	**21.6860**	37.553	173.2	mg/L	0	Standard
Mg	24	97569.9	1.9	**129.3694**	3.560	2.8	mg/L	32	Standard
K	39	4389.0	6.2	**14.6373**	1.001	6.8	mg/L	30	Standard
Ca	43	378.3	2.8	**51.9377**	2.720	5.2	mg/L	48	Standard
Fe	54	155.8	7.4	**0.0035**	0.012	336.9	mg/L	159	Standard
Fe	57	446.7	11.3	**0.8756**	0.135	15.4	mg/L	195	Standard
> **Sc-1**	45	39693.6	2.3				mg/L	39543	Standard
Cl	35	45044.9	1.9				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	18554.7	4.8				ug/L	1647	Standard
P	31	20283.6	3.2				ug/L	15231	Standard
S	34	1950.1	2.9				ug/L	1845	Standard
Sr	88	140.0	14.3				ug/L	70	Standard
C	12	253.3	26.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	47.4	35.9				mg/L	12	Standard
Ho-1	165	25.0	72.1				mg/L	12	Standard
Er	166	53.3	21.7				mg/L	20	Standard
I	127	81681.7	5.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		126.242	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.534	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.142	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.427	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606036206
Sample Date/Time: Tuesday, June 28, 2016 14:02:36
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	108188.3	1.9				ug/L	81760	Standard
	Be	9	25.0	69.3	**0.0094**	0.014	144.0	ug/L	17	Standard
	Al	27	23235387.8	1.2	**113.9176**	1.672	1.5	ug/L	1410	Standard
	Sc	45	42060.0	3.5				ug/L	39543	Standard
	Ti	47	152.7	7.7	**0.4364**	0.055	12.6	ug/L	39	Standard
	V	51	2674.6	4.0	**0.1700**	0.012	6.8	ug/L	1415	Standard
	Cr	52	8527.1	1.1	**0.1424**	0.031	21.5	ug/L	6946	Standard
	Cr	53	1513.4	3.0	**1.3470**	0.073	5.5	ug/L	328	Standard
	Mn	55	17845.5	5.4	**2.5461**	0.135	5.3	ug/L	823	Standard
	Co	59	1119.4	15.5	**0.1245**	0.023	18.8	ug/L	252	Standard
	Ni	60	2702.9	1.5	**1.3004**	0.041	3.1	ug/L	192	Standard
	Cu	65	753.4	4.7	**0.2972**	0.013	4.4	ug/L	141	Standard
	Zn	66	1481.1	2.0	**0.4954**	0.035	7.0	ug/L	491	Standard
>	**Ge**	72	526170.8	1.4				ug/L	515087	Standard
	As	75	291.6	5.2	**0.2943**	0.014	4.7	ug/L	20	Standard
	Se	82	87.6	19.6	**0.6269**	0.155	24.7	ug/L	15	Standard
	Se-1	77	124.0	13.8	**0.8941**	0.239	26.7	ug/L	48	Standard
>	**Ga**	71	93.3	13.5				mg/L	90	Standard
	Rb	85	1890.1	1.5				ug/L	23	Standard
	Y	89	457488.4	1.5				ug/L	448510	Standard
>	**Rh**	103	41.7	45.4				ug/L	15	Standard
	Mo	98	1289.7	27.8	**0.4294**	0.125	29.1	ug/L	11	Standard
	Ag	107	132.0	62.6	**0.0022**	0.011	517.7	ug/L	134	Standard
	Cd	111	14.8	9.0	**0.0036**	0.001	18.2	mg/L	7	Standard
	Cd	114	35.3	64.8	**0.0015**	0.004	279.2	ug/L	16	Standard
>	**In**	115	650440.2	1.2				ug/L	611117	Standard
	Sn	118	795.0	5.8	**0.0244**	0.006	26.1	ug/L	518	Standard
	Sb	123	299.9	40.5	**0.0467**	0.023	50.3	ug/L	127	Standard
	Ba	135	16583.1	1.2	**7.5223**	0.109	1.5	ug/L	45	Standard
	Ce	140	573.3	12.7				ug/L	298	Standard
>	**Tb**	159	1070413.0	0.5				ug/L	977942	Standard
	Ho	165	35.0	14.3				ug/L	12	Standard
	Tl	203	143.0	68.4	**0.0109**	0.011	100.1	ug/L	31	Standard
	Tl	205	173.3	55.8	**0.0194**	0.012	61.7	ug/L	20	Standard
	Pb	206	407.0	5.8	**0.0055**	0.005	85.2	ug/L	286	Standard
	Pb	207	361.0	20.9	**0.0099**	0.014	143.4	ug/L	257	Standard
	Pb	208	1551.4	24.3	**0.0150**	0.018	119.8	ug/L	956	Standard
	U	238	2137.8	4.4	**0.2708**	0.011	4.2	ug/L	17	Standard
>	**Bi**	209	607194.4	1.0				ug/L	557080	Standard

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Na	23	15.0	57.7	**91.7381**	54.279	59.2	mg/L	0	Standard
Mg	24	7570.2	0.6	**9.4255**	0.372	3.9	mg/L	32	Standard
K	39	228.3	12.1	**0.5833**	0.074	12.7	mg/L	30	Standard
Ca	43	403.3	9.3	**52.3767**	6.757	12.9	mg/L	48	Standard
Fe	54	189.4	6.8	**0.0240**	0.007	29.2	mg/L	159	Standard
Fe	57	486.7	15.4	**0.9208**	0.241	26.2	mg/L	195	Standard
> **Sc-1**	45	42060.0	3.5				mg/L	39543	Standard
Cl	35	35390.6	1.2				ug/L	27642	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	8392.3	5.9				ug/L	1647	Standard
P	31	21440.2	3.3				ug/L	15231	Standard
S	34	2026.8	8.3				ug/L	1845	Standard
Sr	88	143.3	29.0				ug/L	70	Standard
C	12	223.3	9.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	47.9	21.4				mg/L	12	Standard
Ho-1	165	35.0	14.3				mg/L	12	Standard
Er	166	43.3	35.3				mg/L	20	Standard
I	127	10155.1	10.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.324	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.152	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.435
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.996
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606036207
Sample Date/Time: Tuesday, June 28, 2016 14:06:02
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	107639.4	1.9				ug/L	81760	Standard
	Be	9	20.0	0.0	**0.0056**	0.000	5.4	ug/L	17	Standard
	Al	27	3476504.2	1.7	**17.1173**	0.043	0.3	ug/L	1410	Standard
	Sc	45	39367.8	2.7				ug/L	39543	Standard
	Ti	47	100.3	3.5	**0.2518**	0.007	3.0	ug/L	39	Standard
	V	51	5441.1	3.8	**0.6024**	0.020	3.4	ug/L	1415	Standard
	Cr	52	7747.6	3.6	**0.0931**	0.026	27.8	ug/L	6946	Standard
	Cr	53	1961.8	9.7	**1.9650**	0.153	7.8	ug/L	328	Standard
	Mn	55	12138.9	1.5	**1.7871**	0.034	1.9	ug/L	823	Standard
	Co	59	2054.5	1.6	**0.2711**	0.013	4.9	ug/L	252	Standard
	Ni	60	1564.4	4.1	**0.7535**	0.028	3.7	ug/L	192	Standard
	Cu	65	3547.1	3.0	**1.8404**	0.110	6.0	ug/L	141	Standard
	Zn	66	3174.7	2.0	**2.1684**	0.146	6.7	ug/L	491	Standard
>	Ge	72	498440.9	3.0				ug/L	515087	Standard
	As	75	2063.4	4.9	**1.9397**	0.147	7.6	ug/L	20	Standard
	Se	82	279.9	8.8	**2.3986**	0.288	12.0	ug/L	15	Standard
	Se-1	77	196.7	12.4	**1.9867**	0.408	20.5	ug/L	48	Standard
>	Ga	71	203.3	22.3				mg/L	90	Standard
	Rb	85	4590.7	1.6				ug/L	23	Standard
	Y	89	429873.2	1.1				ug/L	448510	Standard
>	Rh	103	36.7	15.7				ug/L	15	Standard
	Mo	98	411573.4	1.6	**157.7590**	2.905	1.8	ug/L	11	Standard
	Ag	107	97.0	12.7	**-0.0013**	0.002	144.7	ug/L	134	Standard
	Cd	111	-313.3	8.5	**-0.1547**	0.012	7.7	mg/L	7	Standard
	Cd	114	654.0	5.6	**0.1255**	0.007	5.6	ug/L	16	Standard
>	In	115	589803.8	0.9				ug/L	611117	Standard
	Sn	118	783.4	15.3	**0.0353**	0.020	57.5	ug/L	518	Standard
	Sb	123	727.4	9.3	**0.1468**	0.014	9.3	ug/L	127	Standard
	Ba	135	15565.3	1.0	**7.7872**	0.095	1.2	ug/L	45	Standard
	Ce	140	646.7	2.7				ug/L	298	Standard
>	Tb	159	991896.0	2.4				ug/L	977942	Standard
	Ho	165	86.7	18.5				ug/L	12	Standard
	Tl	203	276.7	3.3	**0.0282**	0.002	5.4	ug/L	31	Standard
	Tl	205	283.3	3.7	**0.0365**	0.002	4.5	ug/L	20	Standard
	Pb	206	399.0	5.4	**0.0104**	0.005	44.3	ug/L	286	Standard
	Pb	207	325.3	5.9	**0.0089**	0.004	45.8	ug/L	257	Standard
	Pb	208	1296.0	0.3	**0.0084**	0.001	12.8	ug/L	956	Standard
	U	238	1382.7	4.5	**0.1905**	0.008	4.1	ug/L	17	Standard
>	Bi	209	555677.7	1.4				ug/L	557080	Standard

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Na	23	3.3	86.6	**21.6985**	18.802	86.6	mg/L	0	Standard
Mg	24	201508.1	2.0	**269.4503**	5.984	2.2	mg/L	32	Standard
K	39	1843.4	2.4	**6.1200**	0.302	4.9	mg/L	30	Standard
Ca	43	86.7	16.7	**7.9004**	2.376	30.1	mg/L	48	Standard
Fe	54	134.1	6.8	**-0.0152**	0.007	45.6	mg/L	159	Standard
Fe	57	218.3	31.3	**0.1119**	0.215	192.0	mg/L	195	Standard
> **Sc-1**	45	39367.8	2.7				mg/L	39543	Standard
Cl	35	57177.0	0.5				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	35885.9	6.7				ug/L	1647	Standard
P	31	17845.5	1.4				ug/L	15231	Standard
S	34	1995.1	3.9				ug/L	1845	Standard
Sr	88	96.7	26.5				ug/L	70	Standard
C	12	250.0	28.0				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	68.0	19.9				mg/L	12	Standard
Ho-1	165	86.7	18.5				mg/L	12	Standard
Er	166	180.0	33.3				mg/L	20	Standard
I	127	352295.0	10.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		131.653	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.768	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.512
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.748
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

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Method 6020 - Summary Report

Sample ID: L1606036208
Sample Date/Time: Tuesday, June 28, 2016 14:09:14
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	113878.0	0.7				ug/L	81760	Standard
	Be	9	15.0	33.3	**0.0011**	0.004	325.9	ug/L	17	Standard
	Al	27	36051659.4	1.3	**167.9026**	1.365	0.8	ug/L	1410	Standard
	Sc	45	40123.1	2.7				ug/L	39543	Standard
	Ti	47	157.7	1.6	**0.4795**	0.006	1.3	ug/L	39	Standard
	V	51	2374.4	7.5	**0.1409**	0.028	20.1	ug/L	1415	Standard
	Cr	52	8200.6	0.9	**0.1408**	0.017	11.9	ug/L	6946	Standard
	Cr	53	1531.7	7.2	**1.4329**	0.130	9.1	ug/L	328	Standard
	Mn	55	2760.9	2.4	**0.2845**	0.009	3.3	ug/L	823	Standard
	Co	59	1114.0	4.4	**0.1299**	0.007	5.8	ug/L	252	Standard
	Ni	60	3861.2	1.0	**1.9798**	0.033	1.7	ug/L	192	Standard
	Cu	65	1286.1	5.6	**0.5974**	0.039	6.5	ug/L	141	Standard
	Zn	66	2133.2	3.4	**1.1513**	0.069	6.0	ug/L	491	Standard
>	**Ge**	72	506573.0	0.6				ug/L	515087	Standard
	As	75	124.6	44.5	**0.1528**	0.050	32.6	ug/L	20	Standard
	Se	82	87.7	7.6	**0.6552**	0.055	8.5	ug/L	15	Standard
	Se-1	77	126.7	6.6	**0.9909**	0.116	11.7	ug/L	48	Standard
>	**Ga**	71	56.7	45.3				mg/L	90	Standard
	Rb	85	275.0	18.5				ug/L	23	Standard
	Y	89	450902.0	1.5				ug/L	448510	Standard
>	**Rh**	103	46.7	32.7				ug/L	15	Standard
	Mo	98	3181.2	4.8	**1.1379**	0.054	4.7	ug/L	11	Standard
	Ag	107	86.0	6.5	**-0.0036**	0.001	24.6	ug/L	134	Standard
	Cd	111	11.8	23.2	**0.0025**	0.001	50.9	mg/L	7	Standard
	Cd	114	54.8	27.0	**0.0054**	0.003	50.7	ug/L	16	Standard
>	**In**	115	621612.8	0.6				ug/L	611117	Standard
	Sn	118	878.4	13.7	**0.0442**	0.021	46.4	ug/L	518	Standard
	Sb	123	218.7	21.6	**0.0327**	0.010	30.0	ug/L	127	Standard
	Ba	135	24511.5	2.2	**11.6480**	0.297	2.5	ug/L	45	Standard
	Ce	140	126.7	17.8				ug/L	298	Standard
>	**Tb**	159	1020349.4	1.6				ug/L	977942	Standard
	Ho	165	38.3	41.9				ug/L	12	Standard
	Tl	203	70.7	5.4	**0.0034**	0.000	14.1	ug/L	31	Standard
	Tl	205	50.0	36.1	**0.0044**	0.002	54.4	ug/L	20	Standard
	Pb	206	339.3	6.0	**-0.0025**	0.003	133.5	ug/L	286	Standard
	Pb	207	287.3	3.0	**-0.0007**	0.002	279.9	ug/L	257	Standard
	Pb	208	1133.4	0.9	**-0.0020**	0.001	40.2	ug/L	956	Standard
	U	238	2248.5	2.1	**0.3023**	0.005	1.6	ug/L	17	Standard
>	**Bi**	209	572724.5	0.5				ug/L	557080	Standard

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Na	23	11.7	65.5	**74.1428**	49.752	67.1	mg/L	0	Standard
Mg	24	18449.6	1.2	**24.1624**	0.882	3.7	mg/L	32	Standard
K	39	318.3	12.8	**0.9203**	0.151	16.4	mg/L	30	Standard
Ca	43	671.7	8.0	**95.1609**	6.901	7.3	mg/L	48	Standard
Fe	54	172.3	21.8	**0.0165**	0.033	197.4	mg/L	159	Standard
Fe	57	548.3	9.0	**1.2014**	0.184	15.3	mg/L	195	Standard
> **Sc-1**	45	40123.1	2.7				mg/L	39543	Standard
Cl	35	45031.5	1.7				ug/L	27642	Standard
Kr	83	2.3	89.2				ug/L	2	Standard
Br	81	9216.1	3.8				ug/L	1647	Standard
P	31	22331.4	1.4				ug/L	15231	Standard
S	34	2088.5	6.2				ug/L	1845	Standard
Sr	88	246.7	15.5				ug/L	70	Standard
C	12	346.7	6.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	37.4	4.1				mg/L	12	Standard
Ho-1	165	38.3	41.9				mg/L	12	Standard
Er	166	53.3	60.3				mg/L	20	Standard
I	127	16496.5	38.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		139.283	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.347	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.718
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.808
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606036209
Sample Date/Time: Tuesday, June 28, 2016 14:12:25
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	107575.7	2.1				ug/L	81760	Standard
	Be	9	15.0	33.3	**0.0018**	0.004	223.3	ug/L	17	Standard
	Al	27	24368759.8	1.3	**120.1696**	2.653	2.2	ug/L	1410	Standard
	Sc	45	40144.8	3.7				ug/L	39543	Standard
	Ti	47	175.7	9.7	**0.5394**	0.064	11.9	ug/L	39	Standard
	V	51	1717.1	6.1	**0.0398**	0.013	33.2	ug/L	1415	Standard
	Cr	52	8804.6	0.4	**0.2048**	0.007	3.4	ug/L	6946	Standard
	Cr	53	1576.7	7.9	**1.4512**	0.154	10.6	ug/L	328	Standard
	Mn	55	1083613.1	0.9	**166.6059**	0.333	0.2	ug/L	823	Standard
	Co	59	2591.6	2.6	**0.3366**	0.007	2.1	ug/L	252	Standard
	Ni	60	4161.2	1.9	**2.0993**	0.030	1.4	ug/L	192	Standard
	Cu	65	1088.7	1.4	**0.4808**	0.011	2.3	ug/L	141	Standard
	Zn	66	3226.7	2.3	**2.1094**	0.068	3.2	ug/L	491	Standard
>	**Ge**	72	516304.1	0.8				ug/L	515087	Standard
	As	75	854.1	2.3	**0.7983**	0.019	2.4	ug/L	20	Standard
	Se	82	52.5	11.5	**0.3355**	0.056	16.6	ug/L	15	Standard
	Se-1	77	105.7	6.3	**0.6809**	0.097	14.3	ug/L	48	Standard
>	**Ga**	71	153.3	30.3				mg/L	90	Standard
	Rb	85	15286.0	2.4				ug/L	23	Standard
	Y	89	449805.6	1.9				ug/L	448510	Standard
>	**Rh**	103	36.7	43.8				ug/L	15	Standard
	Mo	98	1903.1	2.7	**0.6696**	0.018	2.6	ug/L	11	Standard
	Ag	107	88.0	6.3	**-0.0034**	0.001	30.6	ug/L	134	Standard
	Cd	111	24.4	20.6	**0.0083**	0.002	29.8	mg/L	7	Standard
	Cd	114	75.3	47.3	**0.0092**	0.007	71.3	ug/L	16	Standard
>	**In**	115	624865.1	1.8				ug/L	611117	Standard
	Sn	118	858.4	10.9	**0.0403**	0.018	44.8	ug/L	518	Standard
	Sb	123	598.6	8.7	**0.1114**	0.013	11.4	ug/L	127	Standard
	Ba	135	79235.0	1.1	**37.5150**	0.511	1.4	ug/L	45	Standard
	Ce	140	1043.4	5.0				ug/L	298	Standard
>	**Tb**	159	1006271.6	1.0				ug/L	977942	Standard
	Ho	165	31.7	55.5				ug/L	12	Standard
	Tl	203	94.7	10.4	**0.0060**	0.001	17.2	ug/L	31	Standard
	Tl	205	103.3	26.6	**0.0113**	0.003	31.1	ug/L	20	Standard
	Pb	206	1317.1	2.4	**0.1704**	0.008	4.5	ug/L	286	Standard
	Pb	207	1098.7	2.3	**0.1583**	0.006	3.8	ug/L	257	Standard
	Pb	208	4505.3	1.8	**0.1689**	0.006	3.3	ug/L	956	Standard
	U	238	1688.4	2.2	**0.2232**	0.003	1.5	ug/L	17	Standard
>	**Bi**	209	580367.6	0.9				ug/L	557080	Standard

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Na	23	5.0	100.0	**32.4402**	32.912	101.5	mg/L	0	Standard
Mg	24	8242.2	2.3	**10.7549**	0.236	2.2	mg/L	32	Standard
K	39	375.0	23.7	**1.1102**	0.318	28.6	mg/L	30	Standard
Ca	43	428.3	18.6	**58.5393**	9.751	16.7	mg/L	48	Standard
Fe	54	1288.6	9.8	**1.0145**	0.141	13.9	mg/L	159	Standard
Fe	57	713.4	8.9	**1.7461**	0.160	9.2	mg/L	195	Standard
> **Sc-1**	45	40144.8	3.7				mg/L	39543	Standard
Cl	35	37853.9	1.3				ug/L	27642	Standard
Kr	83	2.3	173.2				ug/L	2	Standard
Br	81	8949.3	3.3				ug/L	1647	Standard
P	31	22830.5	2.4				ug/L	15231	Standard
S	34	2348.5	6.0				ug/L	1845	Standard
Sr	88	131.7	18.7				ug/L	70	Standard
C	12	320.0	23.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	57.1	19.2				mg/L	12	Standard
Ho-1	165	31.7	55.5				mg/L	12	Standard
Er	166	60.0	44.1				mg/L	20	Standard
I	127	12798.7	0.9				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		131.575	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.236	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.250
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.180
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606036210
Sample Date/Time: Tuesday, June 28, 2016 14:15:37
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	112279.5	1.4				ug/L	81760	Standard
	Be	9	23.3	32.7	**0.0074**	0.006	75.4	ug/L	17	Standard
	Al	27	11519588.8	0.5	**54.4098**	0.542	1.0	ug/L	1410	Standard
	Sc	45	38345.1	1.2				ug/L	39543	Standard
	Ti	47	94.7	7.9	**0.2480**	0.026	10.6	ug/L	39	Standard
	V	51	2217.7	3.9	**0.1400**	0.014	10.3	ug/L	1415	Standard
	Cr	52	7580.6	0.1	**0.1258**	0.020	16.0	ug/L	6946	Standard
	Cr	53	2436.9	5.1	**2.6754**	0.201	7.5	ug/L	328	Standard
	Mn	55	75388.8	2.2	**12.4826**	0.333	2.7	ug/L	823	Standard
	Co	59	4144.2	3.9	**0.6094**	0.028	4.6	ug/L	252	Standard
	Ni	60	4832.4	1.6	**2.6820**	0.049	1.8	ug/L	192	Standard
	Cu	65	4625.4	2.6	**2.5532**	0.075	2.9	ug/L	141	Standard
	Zn	66	4203.9	2.1	**3.3383**	0.098	2.9	ug/L	491	Standard
>	**Ge**	72	474293.4	1.6				ug/L	515087	Standard
	As	75	1073.0	2.0	**1.0772**	0.038	3.5	ug/L	20	Standard
	Se	82	351.4	3.1	**3.1960**	0.130	4.1	ug/L	15	Standard
	Se-1	77	210.7	7.1	**2.3175**	0.198	8.5	ug/L	48	Standard
>	**Ga**	71	73.3	33.6				mg/L	90	Standard
	Rb	85	56526.9	1.1				ug/L	23	Standard
	Y	89	421082.0	1.6				ug/L	448510	Standard
>	**Rh**	103	96.7	14.9				ug/L	15	Standard
	Mo	98	257904.5	1.0	**100.5156**	1.205	1.2	ug/L	11	Standard
	Ag	107	79.7	12.8	**-0.0037**	0.002	45.1	ug/L	134	Standard
	Cd	111	-189.4	16.3	**-0.0962**	0.015	15.7	mg/L	7	Standard
	Cd	114	358.5	16.9	**0.0677**	0.012	17.5	ug/L	16	Standard
>	**In**	115	580013.8	0.6				ug/L	611117	Standard
	Sn	118	865.0	5.3	**0.0522**	0.009	16.9	ug/L	518	Standard
	Sb	123	234.3	5.5	**0.0395**	0.003	7.3	ug/L	127	Standard
	Ba	135	12298.0	0.4	**6.2513**	0.035	0.6	ug/L	45	Standard
	Ce	140	386.7	8.8				ug/L	298	Standard
>	**Tb**	159	979000.4	0.2				ug/L	977942	Standard
	Ho	165	86.7	26.6				ug/L	12	Standard
	Tl	203	556.3	8.3	**0.0635**	0.006	10.1	ug/L	31	Standard
	Tl	205	491.7	8.6	**0.0672**	0.007	10.1	ug/L	20	Standard
	Pb	206	339.7	4.4	**0.0013**	0.002	176.0	ug/L	286	Standard
	Pb	207	303.3	2.7	**0.0062**	0.001	17.9	ug/L	257	Standard
	Pb	208	1090.3	1.9	**-0.0007**	0.002	299.6	ug/L	956	Standard
	U	238	117.3	12.8	**0.0140**	0.002	17.0	ug/L	17	Standard
>	**Bi**	209	539461.3	1.8				ug/L	557080	Standard

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Na	23	8.3	34.6	**55.0323**	18.599	33.8	mg/L	0	Standard
Mg	24	255159.1	1.2	**350.2417**	6.027	1.7	mg/L	32	Standard
K	39	5237.6	3.5	**18.1047**	0.448	2.5	mg/L	30	Standard
Ca	43	815.0	11.2	**122.4307**	15.864	13.0	mg/L	48	Standard
Fe	54	150.7	21.1	**0.0038**	0.031	813.1	mg/L	159	Standard
Fe	57	818.4	11.3	**2.2227**	0.299	13.5	mg/L	195	Standard
> **Sc-1**	45	38345.1	1.2				mg/L	39543	Standard
Cl	35	84049.9	1.6				ug/L	27642	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	57144.3	3.2				ug/L	1647	Standard
P	31	18494.6	4.2				ug/L	15231	Standard
S	34	1918.5	8.3				ug/L	1845	Standard
Sr	88	445.0	8.9				ug/L	70	Standard
C	12	253.3	16.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	64.7	80.3				mg/L	12	Standard
Ho-1	165	86.7	26.6				mg/L	12	Standard
Er	166	110.0	9.1				mg/L	20	Standard
I	127	999438.0	9.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		137.328	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.080	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.911
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.837
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 14:18:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	108145.2	5.1				ug/L	81760	Standard
	Be	9	64242.8	4.5	**48.9113**	0.992	2.0	ug/L	17	Standard
	Al	27	8304059.2	3.3	**40.7429**	1.039	2.5	ug/L	1410	Standard
	Sc	45	37765.4	4.0				ug/L	39543	Standard
	Ti	47	23471.8	2.0	**97.1021**	1.269	1.3	ug/L	39	Standard
	V	51	349107.5	0.6	**51.5604**	0.772	1.5	ug/L	1415	Standard
	Cr	52	335198.9	1.2	**48.5745**	0.974	2.0	ug/L	6946	Standard
	Cr	53	41869.4	1.3	**48.8267**	1.454	3.0	ug/L	328	Standard
	Mn	55	314993.6	1.3	**49.9295**	0.954	1.9	ug/L	823	Standard
	Co	59	375345.6	0.1	**55.0339**	1.228	2.2	ug/L	252	Standard
	Ni	60	88766.6	0.5	**48.4746**	0.838	1.7	ug/L	192	Standard
	Cu	65	90675.9	1.2	**49.0916**	0.682	1.4	ug/L	141	Standard
	Zn	66	53067.8	0.6	**49.0759**	0.955	1.9	ug/L	491	Standard
>	**Ge**	72	499870.2	2.1				ug/L	515087	Standard
	As	75	55072.1	0.8	**50.5344**	1.449	2.9	ug/L	20	Standard
	Se	82	6022.1	1.2	**53.7900**	0.803	1.5	ug/L	15	Standard
	Se-1	77	3835.5	2.7	**51.7480**	1.296	2.5	ug/L	48	Standard
>	**Ga**	71	68.3	34.6				mg/L	90	Standard
	Rb	85	878.4	4.0				ug/L	23	Standard
	Y	89	444195.9	1.0				ug/L	448510	Standard
>	**Rh**	103	36.7	7.9				ug/L	15	Standard
	Mo	98	271765.3	0.4	**101.0586**	1.139	1.1	ug/L	11	Standard
	Ag	107	335937.1	0.8	**50.2935**	0.228	0.5	ug/L	134	Standard
	Cd	111	104881.4	1.9	**49.3201**	0.733	1.5	mg/L	7	Standard
	Cd	114	258223.7	2.1	**49.9610**	1.276	2.6	ug/L	16	Standard
>	**In**	115	607920.9	0.8				ug/L	611117	Standard
	Sn	118	297159.7	1.8	**50.4160**	0.583	1.2	ug/L	518	Standard
	Sb	123	233566.6	0.5	**49.7525**	0.427	0.9	ug/L	127	Standard
	Ba	135	100029.2	1.5	**48.6806**	0.509	1.0	ug/L	45	Standard
	Ce	140	56.7	27.0				ug/L	298	Standard
>	**Tb**	159	990459.3	1.9				ug/L	977942	Standard
	Ho	165	13.3	21.7				ug/L	12	Standard
	Tl	203	438180.8	0.9	**49.9571**	0.368	0.7	ug/L	31	Standard
	Tl	205	400912.4	1.6	**52.6337**	0.214	0.4	ug/L	20	Standard
	Pb	206	285968.6	0.8	**50.7733**	0.808	1.6	ug/L	286	Standard
	Pb	207	258378.5	0.4	**50.8616**	0.645	1.3	ug/L	257	Standard
	Pb	208	1010283.1	0.5	**51.4021**	0.498	1.0	ug/L	956	Standard
	U	238	389330.8	1.6	**52.1963**	0.349	0.7	ug/L	17	Standard
>	**Bi**	209	579902.5	1.4				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4220.6	3.3	**5.8326**	0.328	5.6	mg/L	32	Standard
K	39	1343.4	3.1	**4.6154**	0.216	4.7	mg/L	30	Standard
Ca	43	66.7	37.7	**5.1699**	3.623	70.1	mg/L	48	Standard
Fe	54	5699.2	5.0	**5.2644**	0.205	3.9	mg/L	159	Standard
Fe	57	1620.1	3.2	**5.1052**	0.186	3.6	mg/L	195	Standard
> **Sc-1**	45	37765.4	4.0				mg/L	39543	Standard
Cl	35	31900.9	3.3				ug/L	27642	Standard
Kr	83	2.3	89.2				ug/L	2	Standard
Br	81	2500.2	16.5				ug/L	1647	Standard
P	31	18272.7	3.1				ug/L	15231	Standard
S	34	2018.5	1.5				ug/L	1845	Standard
Sr	88	43.3	24.0				ug/L	70	Standard
C	12	196.7	21.2				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.4	50.3				mg/L	12	Standard
Ho-1	165	13.3	21.7				mg/L	12	Standard
Er	166	20.0	86.6				mg/L	20	Standard
I	127	32500.9	63.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	97.823		
Al	27	81.486		
Sc	45			
Ti	47	97.102		
V	51	103.121		
Cr	52	97.149		
Cr	53			
Mn	55	99.859		
Co	59	110.068		
Ni	60	96.949		
Cu	65	98.183		
Zn	66	98.152		
> Ge	72		97.046	
As	75	101.069		
Se	82	107.580		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.059		
Ag	107	100.587		
Cd	111	98.640		
Cd	114			
In	115		99.477	
Sn	118	100.832		
Sb	123	99.505		
Ba	135	97.361		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.914		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.804		
U	238	104.393		
Bi	209		104.097	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	
QC Std 6	Co	59	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 14:22:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	101364.8	2.9				ug/L	81760	Standard
	Be	9	38.3	49.4	**0.0216**	0.016	74.7	ug/L	17	Standard
	Al	27	15489.3	94.8	**0.0675**	0.079	117.4	ug/L	1410	Standard
	Sc	45	38064.4	0.9				ug/L	39543	Standard
	Ti	47	37.3	29.4	**-0.0111**	0.045	403.8	ug/L	39	Standard
	V	51	1161.3	1.6	**-0.0351**	0.002	6.4	ug/L	1415	Standard
	Cr	52	5982.8	2.5	**-0.1747**	0.020	11.4	ug/L	6946	Standard
	Cr	53	318.3	7.1	**0.0308**	0.025	81.8	ug/L	328	Standard
	Mn	55	894.7	9.5	**-0.0068**	0.013	197.2	ug/L	823	Standard
	Co	59	241.0	14.9	**0.0039**	0.005	138.8	ug/L	252	Standard
	Ni	60	266.0	10.4	**0.0400**	0.015	37.4	ug/L	192	Standard
	Cu	65	200.0	8.9	**0.0172**	0.009	54.5	ug/L	141	Standard
	Zn	66	430.0	7.9	**-0.4249**	0.030	7.1	ug/L	491	Standard
>	**Ge**	72	501700.0	0.4				ug/L	515087	Standard
	As	75	1.5	1379.3	**0.0417**	0.019	44.5	ug/L	20	Standard
	Se	82	27.3	19.7	**0.1242**	0.049	39.3	ug/L	15	Standard
	Se-1	77	54.3	18.4	**0.0219**	0.139	635.7	ug/L	48	Standard
>	**Ga**	71	63.3	9.1				mg/L	90	Standard
	Rb	85	26.7	28.6				ug/L	23	Standard
	Y	89	434979.7	1.5				ug/L	448510	Standard
>	**Rh**	103	11.7	89.2				ug/L	15	Standard
	Mo	98	412.1	20.1	**0.1325**	0.026	19.5	ug/L	11	Standard
	Ag	107	133.7	24.7	**0.0036**	0.005	131.9	ug/L	134	Standard
	Cd	111	17.6	36.9	**0.0053**	0.003	55.6	mg/L	7	Standard
	Cd	114	37.0	22.5	**0.0022**	0.002	81.0	ug/L	16	Standard
>	**In**	115	612643.0	3.0				ug/L	611117	Standard
	Sn	118	796.7	19.5	**0.0328**	0.028	85.4	ug/L	518	Standard
	Sb	123	465.9	23.7	**0.0860**	0.025	29.2	ug/L	127	Standard
	Ba	135	55.7	25.4	**0.0018**	0.007	380.6	ug/L	45	Standard
	Ce	140	23.3	53.9				ug/L	298	Standard
>	**Tb**	159	991657.2	2.1				ug/L	977942	Standard
	Ho	165	6.7	114.6				ug/L	12	Standard
	Tl	203	81.3	30.4	**0.0043**	0.003	63.5	ug/L	31	Standard
	Tl	205	65.0	13.3	**0.0061**	0.001	17.5	ug/L	20	Standard
	Pb	206	313.0	2.4	**-0.0091**	0.002	17.1	ug/L	286	Standard
	Pb	207	268.3	2.3	**-0.0063**	0.001	16.7	ug/L	257	Standard
	Pb	208	1057.3	6.3	**-0.0078**	0.003	38.5	ug/L	956	Standard
	U	238	61.3	40.7	**0.0051**	0.003	63.9	ug/L	17	Standard
>	**Bi**	209	592397.8	0.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	95.0	63.8	**0.0743**	0.084	112.6	mg/L	32	Standard
K	39	16.7	17.3	**-0.0829**	0.011	12.9	mg/L	30	Standard
Ca	43	31.7	36.5	**-0.3389**	1.874	552.9	mg/L	48	Standard
Fe	54	110.8	32.6	**-0.0331**	0.033	100.8	mg/L	159	Standard
Fe	57	168.3	28.5	**-0.0341**	0.169	494.5	mg/L	195	Standard
> **Sc-1**	45	38064.4	0.9				mg/L	39543	Standard
Cl	35	31593.6	0.5				ug/L	27642	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	1856.8	9.2				ug/L	1647	Standard
P	31	17672.0	1.1				ug/L	15231	Standard
S	34	2055.1	6.3				ug/L	1845	Standard
Sr	88	56.7	18.4				ug/L	70	Standard
C	12	170.0	20.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.3	173.2				mg/L	12	Standard
Ho-1	165	6.7	114.6				mg/L	12	Standard
Er	166	6.7	173.2				mg/L	20	Standard
I	127	7793.7	20.7				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.401	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.250
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.340
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 28, 2016 14:24:18
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Method 6020 - Summary Report

Sample ID: L1606036211
Sample Date/Time: Tuesday, June 28, 2016 14:25:14
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	100807.6	1.2				ug/L	81760	Standard
	Be	9	76.7	13.6	**0.0528**	0.008	15.0	ug/L	17	Standard
	Al	27	23829161.3	1.5	**125.3655**	0.841	0.7	ug/L	1410	Standard
	Sc	45	39760.5	3.7				ug/L	39543	Standard
	Ti	47	180.7	0.8	**0.5860**	0.014	2.4	ug/L	39	Standard
	V	51	2583.8	5.2	**0.1775**	0.016	9.1	ug/L	1415	Standard
	Cr	52	8684.5	0.7	**0.2325**	0.005	2.3	ug/L	6946	Standard
	Cr	53	1498.4	3.7	**1.4227**	0.048	3.4	ug/L	328	Standard
	Mn	55	44479.2	1.1	**6.9441**	0.116	1.7	ug/L	823	Standard
	Co	59	1598.1	1.9	**0.2038**	0.006	2.9	ug/L	252	Standard
	Ni	60	3161.3	2.5	**1.6303**	0.047	2.9	ug/L	192	Standard
	Cu	65	697.7	3.7	**0.2888**	0.018	6.1	ug/L	141	Standard
	Zn	66	2205.8	4.6	**1.2527**	0.096	7.7	ug/L	491	Standard
>	**Ge**	72	498311.0	1.0				ug/L	515087	Standard
	As	75	175.3	10.2	**0.2014**	0.015	7.3	ug/L	20	Standard
	Se	82	90.2	6.0	**0.6901**	0.041	6.0	ug/L	15	Standard
	Se-1	77	104.3	15.6	**0.7141**	0.236	33.0	ug/L	48	Standard
>	**Ga**	71	91.7	19.2				mg/L	90	Standard
	Rb	85	3617.1	1.0				ug/L	23	Standard
	Y	89	438807.3	1.1				ug/L	448510	Standard
>	**Rh**	103	23.3	24.7				ug/L	15	Standard
	Mo	98	5340.3	1.5	**1.9620**	0.035	1.8	ug/L	11	Standard
	Ag	107	313.7	8.5	**0.0307**	0.004	14.3	ug/L	134	Standard
	Cd	111	102.5	10.0	**0.0451**	0.004	9.9	mg/L	7	Standard
	Cd	114	269.5	9.6	**0.0471**	0.005	11.0	ug/L	16	Standard
>	**In**	115	609490.3	1.0				ug/L	611117	Standard
	Sn	118	888.4	6.3	**0.0488**	0.011	22.0	ug/L	518	Standard
	Sb	123	739.4	5.4	**0.1443**	0.009	6.4	ug/L	127	Standard
	Ba	135	23651.8	1.3	**11.4620**	0.117	1.0	ug/L	45	Standard
	Ce	140	2515.2	8.7				ug/L	298	Standard
>	**Tb**	159	994391.3	1.1				ug/L	977942	Standard
	Ho	165	61.7	16.9				ug/L	12	Standard
	Tl	203	495.7	2.3	**0.0524**	0.001	2.2	ug/L	31	Standard
	Tl	205	451.7	6.1	**0.0577**	0.003	5.9	ug/L	20	Standard
	Pb	206	782.0	4.2	**0.0770**	0.005	7.0	ug/L	286	Standard
	Pb	207	638.7	5.2	**0.0693**	0.006	8.1	ug/L	257	Standard
	Pb	208	2612.4	2.6	**0.0742**	0.003	3.5	ug/L	956	Standard
	U	238	3078.0	1.8	**0.4146**	0.006	1.5	ug/L	17	Standard
>	**Bi**	209	573149.3	0.8				ug/L	557080	Standard

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Na	23	10.0	50.0	**63.1287**	29.742	47.1	mg/L	0	Standard
Mg	24	8182.2	4.0	**10.7839**	0.556	5.2	mg/L	32	Standard
K	39	235.0	11.8	**0.6477**	0.082	12.7	mg/L	30	Standard
Ca	43	488.3	8.8	**68.4110**	5.631	8.2	mg/L	48	Standard
Fe	54	190.4	22.3	**0.0341**	0.036	104.7	mg/L	159	Standard
Fe	57	451.7	3.2	**0.8921**	0.019	2.1	mg/L	195	Standard
> **Sc-1**	45	39760.5	3.7				mg/L	39543	Standard
Cl	35	36572.1	2.1				ug/L	27642	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	15501.3	5.9				ug/L	1647	Standard
P	31	22299.7	2.1				ug/L	15231	Standard
S	34	2183.5	4.1				ug/L	1845	Standard
Sr	88	141.7	11.3				ug/L	70	Standard
C	12	286.7	23.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	128.1	22.2				mg/L	12	Standard
Ho-1	165	61.7	16.9				mg/L	12	Standard
Er	166	110.0	63.6				mg/L	20	Standard
I	127	9539.7	2.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.297	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.743	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.734	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	102.884	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606036212
Sample Date/Time: Tuesday, June 28, 2016 14:28:25
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	101556.0	2.3				ug/L	81760	Standard
	Be	9	16.7	34.6	**0.0037**	0.005	121.7	ug/L	17	Standard
	Al	27	17765744.4	2.3	**92.8094**	3.109	3.3	ug/L	1410	Standard
	Sc	45	39087.0	2.2				ug/L	39543	Standard
	Ti	47	247.0	6.3	**0.8686**	0.057	6.6	ug/L	39	Standard
	V	51	2382.1	6.3	**0.1501**	0.021	13.9	ug/L	1415	Standard
	Cr	52	8300.6	1.1	**0.1842**	0.008	4.2	ug/L	6946	Standard
	Cr	53	1501.7	3.0	**1.4394**	0.046	3.2	ug/L	328	Standard
	Mn	55	1258376.0	0.7	**201.9190**	0.817	0.4	ug/L	823	Standard
	Co	59	3356.7	1.5	**0.4660**	0.012	2.5	ug/L	252	Standard
	Ni	60	3550.4	0.9	**1.8576**	0.023	1.3	ug/L	192	Standard
	Cu	65	1089.7	4.5	**0.5061**	0.022	4.4	ug/L	141	Standard
	Zn	66	2532.2	4.9	**1.5769**	0.099	6.3	ug/L	491	Standard
>	**Ge**	72	494799.1	0.8				ug/L	515087	Standard
	As	75	371.2	4.5	**0.3840**	0.014	3.7	ug/L	20	Standard
	Se	82	96.6	14.9	**0.7542**	0.127	16.9	ug/L	15	Standard
	Se-1	77	117.3	12.8	**0.9020**	0.200	22.2	ug/L	48	Standard
>	**Ga**	71	161.7	20.6				mg/L	90	Standard
	Rb	85	5996.2	5.2				ug/L	23	Standard
	Y	89	446186.9	1.4				ug/L	448510	Standard
>	**Rh**	103	35.0	37.8				ug/L	15	Standard
	Mo	98	1982.4	1.7	**0.7175**	0.021	3.0	ug/L	11	Standard
	Ag	107	87.7	6.7	**-0.0031**	0.001	30.7	ug/L	134	Standard
	Cd	111	81.3	17.6	**0.0353**	0.007	20.5	mg/L	7	Standard
	Cd	114	230.7	12.0	**0.0397**	0.006	14.9	ug/L	16	Standard
>	**In**	115	608659.5	1.3				ug/L	611117	Standard
	Sn	118	906.7	3.5	**0.0521**	0.007	12.9	ug/L	518	Standard
	Sb	123	394.5	7.6	**0.0711**	0.006	8.6	ug/L	127	Standard
	Ba	135	51224.8	1.3	**24.8890**	0.366	1.5	ug/L	45	Standard
	Ce	140	3013.6	4.4				ug/L	298	Standard
>	**Tb**	159	974496.5	1.8				ug/L	977942	Standard
	Ho	165	80.0	16.5				ug/L	12	Standard
	Tl	203	128.3	8.3	**0.0104**	0.001	10.4	ug/L	31	Standard
	Tl	205	91.7	22.0	**0.0102**	0.003	28.0	ug/L	20	Standard
	Pb	206	755.4	5.1	**0.0757**	0.008	10.8	ug/L	286	Standard
	Pb	207	644.0	3.0	**0.0736**	0.005	7.3	ug/L	257	Standard
	Pb	208	2468.4	2.8	**0.0700**	0.005	7.5	ug/L	956	Standard
	U	238	1502.1	3.5	**0.2059**	0.006	2.8	ug/L	17	Standard
>	**Bi**	209	559159.1	1.2				ug/L	557080	Standard

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Na	23	5.0	0.0	**32.4897**	0.713	2.2	mg/L	0	Standard
Mg	24	34367.3	2.9	**46.2225**	0.714	1.5	mg/L	32	Standard
K	39	518.3	10.6	**1.6321**	0.206	12.7	mg/L	30	Standard
Ca	43	333.3	3.5	**45.8704**	1.237	2.7	mg/L	48	Standard
Fe	54	313.8	12.6	**0.1508**	0.042	28.0	mg/L	159	Standard
Fe	57	493.3	3.3	**1.0616**	0.089	8.4	mg/L	195	Standard
> **Sc-1**	45	39087.0	2.2				mg/L	39543	Standard
Cl	35	40128.4	3.1				ug/L	27642	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	13105.7	7.2				ug/L	1647	Standard
P	31	21068.0	1.2				ug/L	15231	Standard
S	34	2031.8	3.8				ug/L	1845	Standard
Sr	88	195.0	14.3				ug/L	70	Standard
C	12	220.0	19.8				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	113.5	27.0				mg/L	12	Standard
Ho-1	165	80.0	16.5				mg/L	12	Standard
Er	166	66.7	48.2				mg/L	20	Standard
I	127	14735.5	4.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.212	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.061	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.598	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.373	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 14:31:38
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	96993.2	4.5				ug/L	81760	Standard
	Be	9	59018.4	6.5	**50.0965**	2.769	5.5	ug/L	17	Standard
	Al	27	7977258.4	4.2	**43.6214**	1.029	2.4	ug/L	1410	Standard
	Sc	45	38238.2	1.6				ug/L	39543	Standard
	Ti	47	23612.4	4.0	**98.7594**	3.955	4.0	ug/L	39	Standard
	V	51	340072.0	1.7	**50.7725**	1.247	2.5	ug/L	1415	Standard
	Cr	52	338200.8	3.5	**49.5590**	1.660	3.3	ug/L	6946	Standard
	Cr	53	42016.5	3.2	**49.5286**	1.703	3.4	ug/L	328	Standard
	Mn	55	307360.3	1.5	**49.2454**	0.735	1.5	ug/L	823	Standard
	Co	59	358545.3	2.7	**53.1356**	1.497	2.8	ug/L	252	Standard
	Ni	60	89705.8	2.1	**49.5206**	1.132	2.3	ug/L	192	Standard
	Cu	65	91128.3	2.1	**49.8745**	1.003	2.0	ug/L	141	Standard
	Zn	66	53559.8	1.4	**50.0843**	0.931	1.9	ug/L	491	Standard
>	**Ge**	72	494423.7	1.0				ug/L	515087	Standard
	As	75	53994.0	0.9	**50.0733**	0.496	1.0	ug/L	20	Standard
	Se	82	5715.9	0.2	**51.6065**	0.476	0.9	ug/L	15	Standard
	Se-1	77	3736.8	1.4	**50.9602**	0.952	1.9	ug/L	48	Standard
>	**Ga**	71	70.0	28.6				mg/L	90	Standard
	Rb	85	770.0	3.6				ug/L	23	Standard
	Y	89	445528.9	0.6				ug/L	448510	Standard
>	**Rh**	103	23.3	44.6				ug/L	15	Standard
	Mo	98	264652.3	1.1	**96.1672**	0.791	0.8	ug/L	11	Standard
	Ag	107	331013.3	2.8	**48.4244**	1.155	2.4	ug/L	134	Standard
	Cd	111	104542.0	2.3	**48.0434**	1.120	2.3	mg/L	7	Standard
	Cd	114	255433.5	4.1	**48.2912**	1.921	4.0	ug/L	16	Standard
>	**In**	115	622075.2	0.5				ug/L	611117	Standard
	Sn	118	295472.2	1.9	**48.9864**	0.743	1.5	ug/L	518	Standard
	Sb	123	230757.9	1.7	**48.0319**	0.618	1.3	ug/L	127	Standard
	Ba	135	99769.8	2.2	**47.4498**	0.988	2.1	ug/L	45	Standard
	Ce	140	73.3	7.9				ug/L	298	Standard
>	**Tb**	159	1000112.3	1.5				ug/L	977942	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	427237.6	2.4	**49.0359**	1.247	2.5	ug/L	31	Standard
	Tl	205	388094.9	2.7	**51.3011**	1.717	3.3	ug/L	20	Standard
	Pb	206	274003.7	2.0	**48.9721**	1.261	2.6	ug/L	286	Standard
	Pb	207	249924.4	1.5	**49.5263**	1.133	2.3	ug/L	257	Standard
	Pb	208	988217.1	0.7	**50.6156**	0.799	1.6	ug/L	956	Standard
	U	238	380024.3	2.2	**51.3005**	1.621	3.2	ug/L	17	Standard
>	**Bi**	209	576058.0	1.3				ug/L	557080	Standard

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Na	23	5.0	100.0	**33.2699**	32.995	99.2	mg/L	0	Standard
Mg	24	4203.9	5.4	**5.7315**	0.340	5.9	mg/L	32	Standard
K	39	1220.0	6.7	**4.1203**	0.250	6.1	mg/L	30	Standard
Ca	43	103.3	14.8	**10.9126**	2.675	24.5	mg/L	48	Standard
Fe	54	5915.4	3.1	**5.3996**	0.173	3.2	mg/L	159	Standard
Fe	57	1661.8	2.4	**5.1766**	0.085	1.6	mg/L	195	Standard
> **Sc-1**	45	38238.2	1.6				mg/L	39543	Standard
Cl	35	33728.9	2.6				ug/L	27642	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	1893.5	8.5				ug/L	1647	Standard
P	31	18936.8	1.0				ug/L	15231	Standard
S	34	2451.9	4.7				ug/L	1845	Standard
Sr	88	73.3	14.2				ug/L	70	Standard
C	12	160.0	43.3				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.2	6.0				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	16.7	69.3				mg/L	20	Standard
I	127	3007.0	16.4				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	100.193		
	Al	27	87.243		
	Sc	45			
	Ti	47	98.759		
	V	51	101.545		
	Cr	52	99.118		
	Cr	53			
	Mn	55	98.491		
	Co	59	106.271		
	Ni	60	99.041		
	Cu	65	99.749		
	Zn	66	100.169		
>	Ge	72		95.988	
	As	75	100.147		
	Se	82	103.213		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	96.167		
Ag	107	96.849		
Cd	111	96.087		
Cd	114			
In	115		101.793	
Sn	118	97.973		
Sb	123	96.064		
Ba	135	94.900		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.072		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.231		
U	238	102.601		
Bi	209		103.407	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 14:34:50
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92870.5	2.0				ug/L	81760	Standard
	Be	9	15.0	66.7	**0.0036**	0.009	245.7	ug/L	17	Standard
	Al	27	2743.6	21.7	**0.0013**	0.004	284.3	ug/L	1410	Standard
	Sc	45	38460.4	1.3				ug/L	39543	Standard
	Ti	47	30.7	8.2	**-0.0403**	0.010	23.8	ug/L	39	Standard
	V	51	1134.9	2.6	**-0.0414**	0.005	11.0	ug/L	1415	Standard
	Cr	52	5878.1	2.2	**-0.2023**	0.026	12.8	ug/L	6946	Standard
	Cr	53	310.0	1.6	**0.0160**	0.005	29.1	ug/L	328	Standard
	Mn	55	709.4	9.1	**-0.0377**	0.010	26.9	ug/L	823	Standard
	Co	59	233.7	1.1	**0.0023**	0.001	24.5	ug/L	252	Standard
	Ni	60	211.0	9.6	**0.0084**	0.011	126.5	ug/L	192	Standard
	Cu	65	155.3	8.6	**-0.0081**	0.008	96.4	ug/L	141	Standard
	Zn	66	394.0	4.1	**-0.4638**	0.014	3.1	ug/L	491	Standard
>	**Ge**	72	508932.6	0.9				ug/L	515087	Standard
	As	75	-34.1	13.4	**0.0096**	0.004	45.1	ug/L	20	Standard
	Se	82	19.4	20.9	**0.0515**	0.036	69.8	ug/L	15	Standard
	Se-1	77	46.7	12.2	**-0.0918**	0.077	84.0	ug/L	48	Standard
>	**Ga**	71	66.7	8.7				mg/L	90	Standard
	Rb	85	15.0	33.3				ug/L	23	Standard
	Y	89	445570.9	1.5				ug/L	448510	Standard
>	**Rh**	103	15.0	88.2				ug/L	15	Standard
	Mo	98	287.3	16.9	**0.0864**	0.017	20.0	ug/L	11	Standard
	Ag	107	124.0	22.6	**0.0021**	0.004	200.7	ug/L	134	Standard
	Cd	111	14.8	9.5	**0.0040**	0.001	16.6	mg/L	7	Standard
	Cd	114	48.0	37.7	**0.0043**	0.004	82.8	ug/L	16	Standard
>	**In**	115	615541.5	0.9				ug/L	611117	Standard
	Sn	118	883.4	22.9	**0.0465**	0.035	74.9	ug/L	518	Standard
	Sb	123	479.5	25.7	**0.0882**	0.027	30.1	ug/L	127	Standard
	Ba	135	35.7	10.6	**-0.0080**	0.002	22.2	ug/L	45	Standard
	Ce	140	21.7	48.0				ug/L	298	Standard
>	**Tb**	159	980265.4	0.4				ug/L	977942	Standard
	Ho	165	16.7	45.8				ug/L	12	Standard
	Tl	203	63.0	23.1	**0.0024**	0.002	67.2	ug/L	31	Standard
	Tl	205	63.3	31.9	**0.0060**	0.003	42.7	ug/L	20	Standard
	Pb	206	313.3	5.4	**-0.0080**	0.003	36.6	ug/L	286	Standard
	Pb	207	273.0	6.7	**-0.0043**	0.004	87.0	ug/L	257	Standard
	Pb	208	1087.7	7.3	**-0.0051**	0.004	85.3	ug/L	956	Standard
	U	238	49.0	30.5	**0.0036**	0.002	56.1	ug/L	17	Standard
>	**Bi**	209	580619.2	1.2				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	35.0	28.6	**-0.0091**	0.014	156.5	mg/L	32	Standard
K	39	36.7	28.4	**-0.0142**	0.035	248.1	mg/L	30	Standard
Ca	43	26.7	57.3	**-1.1996**	2.339	195.0	mg/L	48	Standard
Fe	54	140.8	15.9	**-0.0061**	0.021	341.9	mg/L	159	Standard
Fe	57	151.7	6.9	**-0.0978**	0.042	43.3	mg/L	195	Standard
> **Sc-1**	45	38460.4	1.3				mg/L	39543	Standard
Cl	35	32500.2	3.2				ug/L	27642	Standard
Kr	83	3.0	0.0				ug/L	2	Standard
Br	81	1736.8	3.3				ug/L	1647	Standard
P	31	17698.7	3.2				ug/L	15231	Standard
S	34	2320.2	10.5				ug/L	1845	Standard
Sr	88	73.3	21.9				ug/L	70	Standard
C	12	133.3	15.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.0	113.3				mg/L	12	Standard
Ho-1	165	16.7	45.8				mg/L	12	Standard
Er	166	20.0	50.0				mg/L	20	Standard
I	127	2206.8	20.4				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.805	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.724
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.225
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBS M7 WG573333-03
Sample Date/Time: Tuesday, June 28, 2016 14:38:03
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	95050.7	3.1				ug/L	81760	Standard
	Be	9	18.3	87.7	**0.0062**	0.014	223.6	ug/L	17	Standard
	Al	27	17488.4	2.4	**0.0832**	0.003	3.2	ug/L	1410	Standard
	Sc	45	39132.2	2.7				ug/L	39543	Standard
	Ti	47	49.7	51.3	**0.0353**	0.101	286.1	ug/L	39	Standard
	V	51	1251.1	3.7	**-0.0255**	0.008	31.0	ug/L	1415	Standard
	Cr	52	8706.2	0.9	**0.2013**	0.013	6.2	ug/L	6946	Standard
	Cr	53	700.0	11.0	**0.4613**	0.093	20.2	ug/L	328	Standard
	Mn	55	1542.7	1.5	**0.0910**	0.006	6.6	ug/L	823	Standard
	Co	59	278.7	9.1	**0.0085**	0.003	38.3	ug/L	252	Standard
	Ni	60	602.0	5.9	**0.2166**	0.018	8.1	ug/L	192	Standard
	Cu	65	210.7	10.6	**0.0207**	0.012	58.0	ug/L	141	Standard
	Zn	66	1817.8	2.7	**0.8408**	0.028	3.4	ug/L	491	Standard
>	**Ge**	72	511962.6	1.0				ug/L	515087	Standard
	As	75	-35.9	60.1	**0.0082**	0.019	234.7	ug/L	20	Standard
	Se	82	20.1	18.9	**0.0563**	0.034	59.9	ug/L	15	Standard
	Se-1	77	44.7	10.1	**-0.1225**	0.058	47.0	ug/L	48	Standard
>	**Ga**	71	48.3	15.8				mg/L	90	Standard
	Rb	85	66.7	31.2				ug/L	23	Standard
	Y	89	442200.8	1.3				ug/L	448510	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	193.0	16.8	**0.0509**	0.011	21.8	ug/L	11	Standard
	Ag	107	97.0	17.0	**-0.0021**	0.002	110.1	ug/L	134	Standard
	Cd	111	7.4	64.2	**0.0005**	0.002	466.2	mg/L	7	Standard
	Cd	114	31.4	28.6	**0.0010**	0.002	163.8	ug/L	16	Standard
>	**In**	115	622890.2	1.7				ug/L	611117	Standard
	Sn	118	691.7	5.6	**0.0128**	0.005	38.1	ug/L	518	Standard
	Sb	123	212.1	15.5	**0.0312**	0.006	20.3	ug/L	127	Standard
	Ba	135	298.3	2.4	**0.1167**	0.001	1.2	ug/L	45	Standard
	Ce	140	113.3	24.3				ug/L	298	Standard
>	**Tb**	159	998579.7	1.5				ug/L	977942	Standard
	Ho	165	16.7	17.3				ug/L	12	Standard
	Tl	203	39.0	48.9	**-0.0004**	0.002	526.4	ug/L	31	Standard
	Tl	205	20.0	50.0	**0.0003**	0.001	421.9	ug/L	20	Standard
	Pb	206	313.7	9.3	**-0.0086**	0.005	56.5	ug/L	286	Standard
	Pb	207	273.0	2.4	**-0.0050**	0.001	28.4	ug/L	257	Standard
	Pb	208	1093.3	1.9	**-0.0055**	0.001	16.3	ug/L	956	Standard
	U	238	24.3	55.2	**0.0002**	0.002	711.6	ug/L	17	Standard
>	**Bi**	209	587793.8	0.5				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	36.7	7.9	**-0.0078**	0.003	35.7	mg/L	32	Standard
K	39	35.0	51.5	**-0.0208**	0.064	309.0	mg/L	30	Standard
Ca	43	25.0	34.6	**-1.5082**	1.327	88.0	mg/L	48	Standard
Fe	54	165.5	15.5	**0.0140**	0.019	138.8	mg/L	159	Standard
Fe	57	203.3	9.9	**0.0704**	0.084	119.9	mg/L	195	Standard
> **Sc-1**	45	39132.2	2.7				mg/L	39543	Standard
Cl	35	33734.8	0.7				ug/L	27642	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	1786.8	3.4				ug/L	1647	Standard
P	31	17722.0	1.9				ug/L	15231	Standard
S	34	2341.8	1.1				ug/L	1845	Standard
Sr	88	65.0	27.7				ug/L	70	Standard
C	12	180.0	47.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	18.7	93.3				mg/L	12	Standard
Ho-1	165	16.7	17.3				mg/L	12	Standard
Er	166	26.7	21.7				mg/L	20	Standard
I	127	1696.8	8.9				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		116.256	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.393	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.927
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.513
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSS M7 WG573333-04
Sample Date/Time: Tuesday, June 28, 2016 14:41:14
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92927.6	3.1				ug/L	81760	Standard
	Be	9	30111.6	3.7	**26.7031**	1.769	6.6	ug/L	17	Standard
	Al	27	18035.9	13.5	**0.0888**	0.016	18.2	ug/L	1410	Standard
	Sc	45	39361.1	1.9				ug/L	39543	Standard
	Ti	47	37.0	28.2	**-0.0130**	0.042	322.2	ug/L	39	Standard
	V	51	182372.3	3.8	**26.6531**	1.518	5.7	ug/L	1415	Standard
	Cr	52	189442.3	3.6	**26.8012**	1.501	5.6	ug/L	6946	Standard
	Cr	53	22922.3	1.8	**26.3866**	1.122	4.3	ug/L	328	Standard
	Mn	55	169435.1	3.2	**26.6017**	1.285	4.8	ug/L	823	Standard
	Co	59	193981.0	3.8	**28.2331**	1.651	5.8	ug/L	252	Standard
	Ni	60	48862.7	3.3	**26.4525**	1.352	5.1	ug/L	192	Standard
	Cu	65	49743.6	2.7	**26.7036**	1.173	4.4	ug/L	141	Standard
	Zn	66	30362.1	3.5	**27.5261**	1.455	5.3	ug/L	491	Standard
>	**Ge**	72	503563.1	2.3				ug/L	515087	Standard
	As	75	29155.1	3.3	**26.5827**	1.325	5.0	ug/L	20	Standard
	Se	82	3055.7	1.7	**27.0468**	1.107	4.1	ug/L	15	Standard
	Se-1	77	2068.5	3.5	**27.3757**	1.137	4.2	ug/L	48	Standard
>	**Ga**	71	53.3	14.3				mg/L	90	Standard
	Rb	85	78.3	16.1				ug/L	23	Standard
	Y	89	444634.7	2.0				ug/L	448510	Standard
>	**Rh**	103	18.3	41.7				ug/L	15	Standard
	Mo	98	104.5	23.9	**0.0190**	0.010	51.3	ug/L	11	Standard
	Ag	107	179344.1	3.7	**26.2092**	1.706	6.5	ug/L	134	Standard
	Cd	111	55845.5	2.3	**25.6355**	1.334	5.2	mg/L	7	Standard
	Cd	114	136877.4	2.6	**25.8483**	1.371	5.3	ug/L	16	Standard
>	**In**	115	623373.0	3.0				ug/L	611117	Standard
	Sn	118	755.0	11.3	**0.0235**	0.016	68.2	ug/L	518	Standard
	Sb	123	124890.1	3.5	**25.9676**	1.618	6.2	ug/L	127	Standard
	Ba	135	53944.6	3.3	**25.6212**	1.575	6.1	ug/L	45	Standard
	Ce	140	106.7	9.8				ug/L	298	Standard
>	**Tb**	159	976375.9	3.3				ug/L	977942	Standard
	Ho	165	15.0	57.7				ug/L	12	Standard
	Tl	203	229696.9	2.8	**26.5184**	1.549	5.8	ug/L	31	Standard
	Tl	205	205993.8	3.8	**27.3937**	1.852	6.8	ug/L	20	Standard
	Pb	206	150555.8	3.2	**27.0395**	1.637	6.1	ug/L	286	Standard
	Pb	207	130667.9	3.7	**26.0217**	1.699	6.5	ug/L	257	Standard
	Pb	208	532429.0	3.5	**27.4071**	1.756	6.4	ug/L	956	Standard
	U	238	197217.2	3.4	**26.7798**	1.720	6.4	ug/L	17	Standard
>	**Bi**	209	573273.6	3.1				ug/L	557080	Standard

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Na	23	3.3	86.6	**21.2655**	18.412	86.6	mg/L	0	Standard
Mg	24	50.0	43.6	**0.0096**	0.028	296.2	mg/L	32	Standard
K	39	30.0	100.0	**-0.0395**	0.101	254.9	mg/L	30	Standard
Ca	43	25.0	40.0	**-1.5307**	1.509	98.6	mg/L	48	Standard
Fe	54	141.7	2.7	**-0.0082**	0.003	33.7	mg/L	159	Standard
Fe	57	226.7	9.9	**0.1435**	0.065	45.0	mg/L	195	Standard
Sc-1	45	39361.1	1.9				mg/L	39543	Standard
Cl	35	35061.2	2.7				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1886.8	4.9				ug/L	1647	Standard
P	31	18956.9	6.3				ug/L	15231	Standard
S	34	2375.2	1.6				ug/L	1845	Standard
Sr	88	65.0	30.8				ug/L	70	Standard
C	12	170.0	38.6				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	12.7	49.8				mg/L	12	Standard
Ho-1	165	15.0	57.7				mg/L	12	Standard
Er	166	13.3	86.6				mg/L	20	Standard
I	127	1553.4	15.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.659	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.763	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.006
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.907
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606105301 WG573333-02
Sample Date/Time: Tuesday, June 28, 2016 14:44:26
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92504.9	1.8				ug/L	81760	Standard
	Be	9	211.7	3.6	**0.1787**	0.009	5.2	ug/L	17	Standard
	Al	27	476632.7	0.6	**2.7192**	0.058	2.1	ug/L	1410	Standard
	Sc	45	39899.1	1.7				ug/L	39543	Standard
	Ti	47	7508.9	2.4	**29.9625**	0.867	2.9	ug/L	39	Standard
	V	51	54226.8	0.3	**7.5775**	0.105	1.4	ug/L	1415	Standard
	Cr	52	35510.9	0.6	**4.0327**	0.059	1.5	ug/L	6946	Standard
	Cr	53	3988.9	7.5	**4.1910**	0.323	7.7	ug/L	328	Standard
	Mn	55	226862.1	2.5	**34.7724**	1.274	3.7	ug/L	823	Standard
	Co	59	8803.9	0.2	**1.2188**	0.017	1.4	ug/L	252	Standard
	Ni	60	5989.2	1.6	**3.0677**	0.039	1.3	ug/L	192	Standard
	Cu	65	4442.7	0.7	**2.2418**	0.014	0.6	ug/L	141	Standard
	Zn	66	19698.8	1.0	**17.1048**	0.367	2.1	ug/L	491	Standard
>	**Ge**	72	516312.9	1.2				ug/L	515087	Standard
	As	75	2960.6	0.8	**2.6677**	0.048	1.8	ug/L	20	Standard
	Se	82	53.9	7.9	**0.3477**	0.042	12.1	ug/L	15	Standard
	Se-1	77	82.0	6.8	**0.3676**	0.085	23.1	ug/L	48	Standard
>	**Ga**	71	5075.9	3.2				mg/L	90	Standard
	Rb	85	19981.5	3.8				ug/L	23	Standard
	Y	89	472017.4	2.4				ug/L	448510	Standard
>	**Rh**	103	21.7	26.6				ug/L	15	Standard
	Mo	98	6655.2	1.4	**2.4116**	0.043	1.8	ug/L	11	Standard
	Ag	107	178.7	11.3	**0.0101**	0.003	29.0	ug/L	134	Standard
	Cd	111	244.9	9.1	**0.1102**	0.010	9.1	mg/L	7	Standard
	Cd	114	621.2	5.8	**0.1131**	0.007	6.2	ug/L	16	Standard
>	**In**	115	619055.2	0.3				ug/L	611117	Standard
	Sn	118	640.0	5.5	**0.0049**	0.006	124.7	ug/L	518	Standard
	Sb	123	463.5	5.3	**0.0841**	0.005	6.4	ug/L	127	Standard
	Ba	135	41539.5	1.0	**19.8378**	0.203	1.0	ug/L	45	Standard
	Ce	140	324520.8	1.6				ug/L	298	Standard
>	**Tb**	159	988287.6	1.4				ug/L	977942	Standard
	Ho	165	2263.5	6.3				ug/L	12	Standard
	Tl	203	550.3	1.1	**0.0581**	0.001	1.2	ug/L	31	Standard
	Tl	205	506.7	1.1	**0.0644**	0.001	1.1	ug/L	20	Standard
	Pb	206	143402.5	0.9	**25.4978**	0.319	1.3	ug/L	286	Standard
	Pb	207	120708.6	0.6	**23.7943**	0.166	0.7	ug/L	257	Standard
	Pb	208	491539.2	1.4	**25.0461**	0.389	1.6	ug/L	956	Standard
	U	238	1919.1	2.3	**0.2551**	0.006	2.5	ug/L	17	Standard
>	**Bi**	209	578289.7	0.5				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.6918**	18.510	173.1	mg/L	0	Standard
Mg	24	41.7	30.2	**-0.0023**	0.016	678.2	mg/L	32	Standard
K	39	48.3	15.8	**0.0204**	0.026	126.1	mg/L	30	Standard
Ca	43	38.3	27.2	**0.4078**	1.458	357.4	mg/L	48	Standard
Fe	54	3682.2	3.4	**3.1665**	0.134	4.2	mg/L	159	Standard
Fe	57	1100.0	9.6	**3.0601**	0.408	13.3	mg/L	195	Standard
Sc-1	45	39899.1	1.7				mg/L	39543	Standard
Cl	35	32895.7	2.7				ug/L	27642	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	2153.5	9.2				ug/L	1647	Standard
P	31	17883.9	3.0				ug/L	15231	Standard
S	34	2195.2	9.1				ug/L	1845	Standard
Sr	88	71.7	4.0				ug/L	70	Standard
C	12	220.0	19.8				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	40.0	25.0				mg/L	0	Standard
Dy	164	4107.1	8.5				mg/L	12	Standard
Ho-1	165	2263.5	6.3				mg/L	12	Standard
Er	166	2160.2	2.1				mg/L	20	Standard
I	127	7528.5	2.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		113.142	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.238	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.299
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.807
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606105302S WG573333-07
Sample Date/Time: Tuesday, June 28, 2016 14:47:37
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	91483.8	2.5				ug/L	81760	Standard
	Be	9	28575.3	3.7	**25.7021**	0.502	2.0	ug/L	17	Standard
	Al	27	472647.5	0.9	**2.7267**	0.044	1.6	ug/L	1410	Standard
	Sc	45	40355.4	2.6				ug/L	39543	Standard
	Ti	47	8788.9	2.8	**34.8074**	0.551	1.6	ug/L	39	Standard
	V	51	216754.8	1.8	**30.6603**	0.748	2.4	ug/L	1415	Standard
	Cr	52	202224.9	0.6	**27.6955**	0.221	0.8	ug/L	6946	Standard
	Cr	53	25461.4	2.5	**28.3619**	0.467	1.6	ug/L	328	Standard
	Mn	55	374661.4	3.0	**57.0462**	1.611	2.8	ug/L	823	Standard
	Co	59	185021.8	2.1	**26.0317**	0.592	2.3	ug/L	252	Standard
	Ni	60	51684.0	1.6	**27.0535**	0.107	0.4	ug/L	192	Standard
	Cu	65	52133.2	1.4	**27.0623**	0.171	0.6	ug/L	141	Standard
	Zn	66	46187.6	0.8	**40.8778**	0.267	0.7	ug/L	491	Standard
>	**Ge**	72	520472.6	1.2				ug/L	515087	Standard
	As	75	27327.3	2.3	**24.0946**	0.465	1.9	ug/L	20	Standard
	Se	82	2628.8	2.4	**22.4788**	0.502	2.2	ug/L	15	Standard
	Se-1	77	1784.1	1.0	**22.7201**	0.347	1.5	ug/L	48	Standard
>	**Ga**	71	5215.9	5.7				mg/L	90	Standard
	Rb	85	16937.8	2.3				ug/L	23	Standard
	Y	89	458647.4	1.3				ug/L	448510	Standard
>	**Rh**	103	30.0	44.1				ug/L	15	Standard
	Mo	98	18905.8	1.4	**6.8731**	0.106	1.5	ug/L	11	Standard
	Ag	107	155307.6	0.6	**22.7819**	0.123	0.5	ug/L	134	Standard
	Cd	111	52492.7	0.7	**24.1959**	0.317	1.3	mg/L	7	Standard
	Cd	114	128079.2	0.4	**24.2856**	0.076	0.3	ug/L	16	Standard
>	**In**	115	620204.7	0.6				ug/L	611117	Standard
	Sn	118	685.0	20.9	**0.0121**	0.023	191.0	ug/L	518	Standard
	Sb	123	65087.0	0.8	**13.5800**	0.099	0.7	ug/L	127	Standard
	Ba	135	93846.7	0.6	**44.7672**	0.375	0.8	ug/L	45	Standard
	Ce	140	331961.2	1.7				ug/L	298	Standard
>	**Tb**	159	981697.8	0.7				ug/L	977942	Standard
	Ho	165	1903.5	2.0				ug/L	12	Standard
	Tl	203	213525.6	1.3	**24.5875**	0.365	1.5	ug/L	31	Standard
	Tl	205	191177.1	1.7	**25.3529**	0.481	1.9	ug/L	20	Standard
	Pb	206	446032.3	1.2	**80.0233**	1.190	1.5	ug/L	286	Standard
	Pb	207	376762.1	1.5	**74.9381**	1.277	1.7	ug/L	257	Standard
	Pb	208	1506170.9	0.7	**77.4336**	0.690	0.9	ug/L	956	Standard
	U	238	183525.9	0.8	**24.8532**	0.261	1.1	ug/L	17	Standard
>	**Bi**	209	574082.0	0.2				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	51.7	22.3	**0.0106**	0.017	161.8	mg/L	32	Standard
K	39	33.3	8.7	**-0.0312**	0.007	21.8	mg/L	30	Standard
Ca	43	38.3	15.1	**0.3768**	1.024	271.7	mg/L	48	Standard
Fe	54	2984.3	5.7	**2.5132**	0.224	8.9	mg/L	159	Standard
Fe	57	1001.7	4.5	**2.6914**	0.198	7.3	mg/L	195	Standard
> **Sc-1**	45	40355.4	2.6				mg/L	39543	Standard
Cl	35	31360.4	1.4				ug/L	27642	Standard
Kr	83	1.0	173.2				ug/L	2	Standard
Br	81	2753.6	4.6				ug/L	1647	Standard
P	31	16745.9	1.5				ug/L	15231	Standard
S	34	2118.5	5.5				ug/L	1845	Standard
Sr	88	78.3	9.8				ug/L	70	Standard
C	12	286.7	29.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	100.3				mg/L	0	Standard
Dy	164	3434.6	3.8				mg/L	12	Standard
Ho-1	165	1903.5	2.0				mg/L	12	Standard
Er	166	1860.1	3.3				mg/L	20	Standard
I	127	5512.7	1.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.893	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.046	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.487
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.052
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606105303SD WG573333-08
Sample Date/Time: Tuesday, June 28, 2016 14:50:49
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90707.5	2.1				ug/L	81760	Standard
	Be	9	28490.1	1.5	**25.8507**	0.239	0.9	ug/L	17	Standard
	Al	27	517242.7	0.8	**3.0108**	0.045	1.5	ug/L	1410	Standard
	Sc	45	41104.0	1.1				ug/L	39543	Standard
	Ti	47	9706.8	1.9	**39.3684**	1.018	2.6	ug/L	39	Standard
	V	51	220560.4	0.1	**31.9323**	0.545	1.7	ug/L	1415	Standard
	Cr	52	204805.0	1.1	**28.7389**	0.342	1.2	ug/L	6946	Standard
	Cr	53	25147.5	3.9	**28.6674**	1.000	3.5	ug/L	328	Standard
	Mn	55	371807.0	1.2	**57.9433**	1.578	2.7	ug/L	823	Standard
	Co	59	187737.3	0.6	**27.0316**	0.558	2.1	ug/L	252	Standard
	Ni	60	52302.5	0.6	**28.0202**	0.336	1.2	ug/L	192	Standard
	Cu	65	51530.8	0.8	**27.3738**	0.234	0.9	ug/L	141	Standard
	Zn	66	58955.2	1.6	**53.6399**	0.321	0.6	ug/L	491	Standard
>	**Ge**	72	508670.0	1.6				ug/L	515087	Standard
	As	75	26613.2	0.3	**24.0128**	0.310	1.3	ug/L	20	Standard
	Se	82	2643.5	1.0	**23.1344**	0.377	1.6	ug/L	15	Standard
	Se-1	77	1782.1	1.4	**23.2396**	0.549	2.4	ug/L	48	Standard
>	**Ga**	71	5607.7	2.4				mg/L	90	Standard
	Rb	85	19120.4	0.8				ug/L	23	Standard
	Y	89	464944.5	0.8				ug/L	448510	Standard
>	**Rh**	103	20.0	66.1				ug/L	15	Standard
	Mo	98	6589.1	2.9	**2.3569**	0.065	2.7	ug/L	11	Standard
	Ag	107	161248.5	0.9	**23.3982**	0.239	1.0	ug/L	134	Standard
	Cd	111	52808.4	0.9	**24.0772**	0.233	1.0	mg/L	7	Standard
	Cd	114	128062.2	0.6	**24.0198**	0.192	0.8	ug/L	16	Standard
>	**In**	115	626980.9	0.2				ug/L	611117	Standard
	Sn	118	691.7	6.1	**0.0121**	0.007	57.7	ug/L	518	Standard
	Sb	123	64415.1	1.9	**13.2945**	0.276	2.1	ug/L	127	Standard
	Ba	135	100181.1	0.9	**47.2728**	0.453	1.0	ug/L	45	Standard
	Ce	140	306983.9	0.9				ug/L	298	Standard
>	**Tb**	159	992773.6	1.4				ug/L	977942	Standard
	Ho	165	1925.1	2.4				ug/L	12	Standard
	Tl	203	213931.4	0.2	**24.2345**	0.027	0.1	ug/L	31	Standard
	Tl	205	188875.1	1.2	**24.6411**	0.299	1.2	ug/L	20	Standard
	Pb	206	399455.5	0.3	**70.4964**	0.248	0.4	ug/L	286	Standard
	Pb	207	335397.3	0.3	**65.6206**	0.221	0.3	ug/L	257	Standard
	Pb	208	1377394.4	0.8	**69.6587**	0.536	0.8	ug/L	956	Standard
	U	238	183479.9	0.5	**24.4438**	0.133	0.5	ug/L	17	Standard
>	**Bi**	209	583538.4	0.1				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	45.0	11.1	**0.0005**	0.006	1275.5	mg/L	32	Standard
K	39	46.7	12.4	**0.0102**	0.018	179.3	mg/L	30	Standard
Ca	43	46.7	40.6	**1.4697**	2.764	188.0	mg/L	48	Standard
Fe	54	3552.4	2.1	**2.9565**	0.098	3.3	mg/L	159	Standard
Fe	57	1123.4	10.8	**3.0231**	0.384	12.7	mg/L	195	Standard
> **Sc-1**	45	41104.0	1.1				mg/L	39543	Standard
Cl	35	31493.4	1.6				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	2126.8	11.6				ug/L	1647	Standard
P	31	16392.2	2.4				ug/L	15231	Standard
S	34	1988.5	3.7				ug/L	1845	Standard
Sr	88	56.7	20.4				ug/L	70	Standard
C	12	256.7	29.2				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	34.3				mg/L	0	Standard
Dy	164	3598.5	4.6				mg/L	12	Standard
Ho-1	165	1925.1	2.4				mg/L	12	Standard
Er	166	1710.1	5.6				mg/L	20	Standard
I	127	5772.8	6.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.943	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.754	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606105303SD WG573333-08
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.596
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.749
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606104801
Sample Date/Time: Tuesday, June 28, 2016 14:54:00
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	87619.5	3.9				ug/L	81760	Standard
	Be	9	323.3	11.2	**0.2951**	0.044	15.0	ug/L	17	Standard
	Al	27	1546436.6	2.8	**9.3502**	0.142	1.5	ug/L	1410	Standard
	Sc	45	40666.2	2.1				ug/L	39543	Standard
	Ti	47	348.0	4.5	**1.2425**	0.055	4.4	ug/L	39	Standard
	V	51	27678.8	0.4	**3.7995**	0.033	0.9	ug/L	1415	Standard
	Cr	52	26992.7	1.5	**2.8437**	0.051	1.8	ug/L	6946	Standard
	Cr	53	2932.0	5.7	**3.0177**	0.170	5.6	ug/L	328	Standard
	Mn	55	139361.0	0.9	**21.4761**	0.101	0.5	ug/L	823	Standard
	Co	59	8883.9	1.8	**1.2405**	0.015	1.2	ug/L	252	Standard
	Ni	60	10083.0	1.9	**5.2809**	0.102	1.9	ug/L	192	Standard
	Cu	65	17655.3	1.5	**9.2565**	0.148	1.6	ug/L	141	Standard
	Zn	66	24172.6	2.4	**21.3574**	0.493	2.3	ug/L	491	Standard
>	**Ge**	72	512038.2	0.7				ug/L	515087	Standard
	As	75	255.5	6.8	**0.2688**	0.014	5.3	ug/L	20	Standard
	Se	82	53.2	11.2	**0.3458**	0.053	15.2	ug/L	15	Standard
	Se-1	77	80.3	12.8	**0.3545**	0.144	40.6	ug/L	48	Standard
>	**Ga**	71	3018.6	3.1				mg/L	90	Standard
	Rb	85	16969.5	1.9				ug/L	23	Standard
	Y	89	529226.2	0.9				ug/L	448510	Standard
>	**Rh**	103	10.0					ug/L	15	Standard
	Mo	98	313.0	4.7	**0.0960**	0.005	5.5	ug/L	11	Standard
	Ag	107	442.0	1.6	**0.0492**	0.001	1.7	ug/L	134	Standard
	Cd	111	534.5	3.9	**0.2456**	0.011	4.4	mg/L	7	Standard
	Cd	114	1438.1	5.6	**0.2703**	0.019	7.1	ug/L	16	Standard
>	**In**	115	614980.8	1.4				ug/L	611117	Standard
	Sn	118	1005.0	9.0	**0.0670**	0.016	23.2	ug/L	518	Standard
	Sb	123	831.9	19.2	**0.1627**	0.036	21.9	ug/L	127	Standard
	Ba	135	51902.4	2.2	**24.9562**	0.305	1.2	ug/L	45	Standard
	Ce	140	320029.2	2.5				ug/L	298	Standard
>	**Tb**	159	977861.1	0.7				ug/L	977942	Standard
	Ho	165	6373.0	4.5				ug/L	12	Standard
	Tl	203	276.7	7.5	**0.0277**	0.002	8.0	ug/L	31	Standard
	Tl	205	265.0	17.0	**0.0335**	0.006	17.4	ug/L	20	Standard
	Pb	206	33506.0	0.9	**6.0646**	0.072	1.2	ug/L	286	Standard
	Pb	207	27548.0	1.0	**5.5276**	0.068	1.2	ug/L	257	Standard
	Pb	208	115638.2	1.3	**6.0000**	0.078	1.3	ug/L	956	Standard
	U	238	6967.9	1.8	**0.9584**	0.022	2.3	ug/L	17	Standard
>	**Bi**	209	563593.3	0.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	48.3	36.3	**0.0057**	0.024	420.3	mg/L	32	Standard
K	39	71.7	21.3	**0.0944**	0.052	54.8	mg/L	30	Standard
Ca	43	58.3	17.8	**3.2603**	1.450	44.5	mg/L	48	Standard
Fe	54	2389.6	6.6	**1.9680**	0.178	9.0	mg/L	159	Standard
Fe	57	746.7	5.6	**1.8289**	0.182	10.0	mg/L	195	Standard
Sc-1	45	40666.2	2.1				mg/L	39543	Standard
Cl	35	32405.3	1.2				ug/L	27642	Standard
Kr	83	4.0	43.3				ug/L	2	Standard
Br	81	2003.5	7.8				ug/L	1647	Standard
P	31	17084.6	3.9				ug/L	15231	Standard
S	34	2108.5	4.8				ug/L	1845	Standard
Sr	88	73.3	30.7				ug/L	70	Standard
C	12	240.0	38.2				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	20.0				mg/L	0	Standard
Dy	164	9760.8	1.5				mg/L	12	Standard
Ho-1	165	6373.0	4.5				mg/L	12	Standard
Er	166	5897.8	8.3				mg/L	20	Standard
I	127	2141.8	10.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.167	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.408	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.632
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.169
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606104801PS WG573475-03
Sample Date/Time: Tuesday, June 28, 2016 14:57:11
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90811.3	0.7				ug/L	81760	Standard
	Be	9	56498.5	1.8	**51.2132**	1.080	2.1	ug/L	17	Standard
	Al	27	1545775.3	0.6	**9.0143**	0.017	0.2	ug/L	1410	Standard
	Sc	45	41961.4	1.6				ug/L	39543	Standard
	Ti	47	342.0	11.2	**1.1864**	0.157	13.2	ug/L	39	Standard
	V	51	392129.2	0.5	**55.2170**	0.488	0.9	ug/L	1415	Standard
	Cr	52	384433.3	0.4	**53.1980**	0.445	0.8	ug/L	6946	Standard
	Cr	53	48853.7	2.8	**54.3367**	1.767	3.3	ug/L	328	Standard
	Mn	55	478138.1	0.8	**72.3045**	0.492	0.7	ug/L	823	Standard
	Co	59	389747.9	0.3	**54.4630**	0.290	0.5	ug/L	252	Standard
	Ni	60	106262.0	0.3	**55.3242**	0.400	0.7	ug/L	192	Standard
	Cu	65	114943.7	0.4	**59.3369**	0.368	0.6	ug/L	141	Standard
	Zn	66	80976.1	0.1	**71.7501**	0.396	0.6	ug/L	491	Standard
>	**Ge**	72	524333.4	0.5				ug/L	515087	Standard
	As	75	59243.0	1.9	**51.8077**	1.242	2.4	ug/L	20	Standard
	Se	82	6211.1	2.1	**52.8798**	1.213	2.3	ug/L	15	Standard
	Se-1	77	4085.6	1.2	**52.5558**	0.559	1.1	ug/L	48	Standard
>	**Ga**	71	3287.0	1.8				mg/L	90	Standard
	Rb	85	16744.3	3.7				ug/L	23	Standard
	Y	89	522998.5	1.8				ug/L	448510	Standard
>	**Rh**	103	28.3	36.7				ug/L	15	Standard
	Mo	98	332.0	9.1	**0.1017**	0.011	11.1	ug/L	11	Standard
	Ag	107	350941.4	1.0	**51.3750**	0.335	0.7	ug/L	134	Standard
	Cd	111	110107.7	1.0	**50.6313**	0.348	0.7	mg/L	7	Standard
	Cd	114	268982.1	1.5	**50.8849**	0.677	1.3	ug/L	16	Standard
>	**In**	115	621693.0	0.4				ug/L	611117	Standard
	Sn	118	1258.4	5.6	**0.1073**	0.012	10.9	ug/L	518	Standard
	Sb	123	241746.4	1.3	**50.3512**	0.498	1.0	ug/L	127	Standard
	Ba	135	155747.4	0.9	**74.1325**	0.655	0.9	ug/L	45	Standard
	Ce	140	312396.1	0.8				ug/L	298	Standard
>	**Tb**	159	997317.5	1.6				ug/L	977942	Standard
	Ho	165	6548.1	1.9				ug/L	12	Standard
	Tl	203	447292.7	0.3	**50.4657**	0.615	1.2	ug/L	31	Standard
	Tl	205	398193.6	1.5	**51.7351**	0.805	1.6	ug/L	20	Standard
	Pb	206	325033.3	0.1	**57.1116**	0.488	0.9	ug/L	286	Standard
	Pb	207	282464.7	0.8	**55.0228**	0.100	0.2	ug/L	257	Standard
	Pb	208	1144735.7	1.0	**57.6431**	0.938	1.6	ug/L	956	Standard
	U	238	386201.4	1.1	**51.2415**	0.797	1.6	ug/L	17	Standard
>	**Bi**	209	586004.9	0.9				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	48.3	41.8	**0.0038**	0.026	698.9	mg/L	32	Standard
K	39	65.0	20.4	**0.0660**	0.045	68.1	mg/L	30	Standard
Ca	43	46.7	27.0	**1.3158**	1.694	128.8	mg/L	48	Standard
Fe	54	2337.7	11.4	**1.8584**	0.246	13.3	mg/L	159	Standard
Fe	57	760.0	13.2	**1.7916**	0.300	16.7	mg/L	195	Standard
> **Sc-1**	45	41961.4	1.6				mg/L	39543	Standard
Cl	35	32737.3	1.7				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	2180.2	6.6				ug/L	1647	Standard
P	31	17061.3	3.2				ug/L	15231	Standard
S	34	2245.2	3.3				ug/L	1845	Standard
Sr	88	81.7	12.7				ug/L	70	Standard
C	12	226.7	6.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	32.7				mg/L	0	Standard
Dy	164	10105.0	3.1				mg/L	12	Standard
Ho-1	165	6548.1	1.9				mg/L	12	Standard
Er	166	5884.5	3.8				mg/L	20	Standard
I	127	2158.5	15.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.071	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.795	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.731
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.192
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606104801SDL WG573475-04
Sample Date/Time: Tuesday, June 28, 2016 15:00:23
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89188.5	2.4				ug/L	81760	Standard
	Be	9	71.7	4.0	**0.0564**	0.001	2.3	ug/L	17	Standard
	Al	27	302683.6	0.7	**1.7866**	0.056	3.1	ug/L	1410	Standard
	Sc	45	41125.8	3.4				ug/L	39543	Standard
	Ti	47	82.7	6.2	**0.1644**	0.030	18.2	ug/L	39	Standard
	V	51	6527.8	1.5	**0.7233**	0.030	4.1	ug/L	1415	Standard
	Cr	52	10512.6	0.6	**0.4384**	0.054	12.4	ug/L	6946	Standard
	Cr	53	805.0	22.0	**0.5666**	0.199	35.2	ug/L	328	Standard
	Mn	55	27749.4	1.2	**4.0892**	0.112	2.7	ug/L	823	Standard
	Co	59	1936.1	6.5	**0.2412**	0.012	4.8	ug/L	252	Standard
	Ni	60	2147.2	1.2	**1.0241**	0.047	4.6	ug/L	192	Standard
	Cu	65	3398.4	1.3	**1.6803**	0.070	4.1	ug/L	141	Standard
	Zn	66	7011.6	1.2	**5.5054**	0.150	2.7	ug/L	491	Standard
>	**Ge**	72	520536.2	3.0				ug/L	515087	Standard
	As	75	60.9	66.9	**0.0932**	0.035	37.4	ug/L	20	Standard
	Se	82	24.2	49.2	**0.0869**	0.099	113.8	ug/L	15	Standard
	Se-1	77	55.3	11.8	**0.0096**	0.103	1081.5	ug/L	48	Standard
>	**Ga**	71	663.3	7.6				mg/L	90	Standard
	Rb	85	3270.4	5.2				ug/L	23	Standard
	Y	89	464717.5	1.9				ug/L	448510	Standard
>	**Rh**	103	16.7	121.2				ug/L	15	Standard
	Mo	98	80.8	3.1	**0.0096**	0.001	7.0	ug/L	11	Standard
	Ag	107	180.0	20.5	**0.0094**	0.005	54.7	ug/L	134	Standard
	Cd	111	113.9	5.5	**0.0481**	0.003	5.7	mg/L	7	Standard
	Cd	114	303.5	12.8	**0.0510**	0.007	13.8	ug/L	16	Standard
>	**In**	115	638226.3	1.3				ug/L	611117	Standard
	Sn	118	801.7	13.2	**0.0279**	0.017	59.8	ug/L	518	Standard
	Sb	123	2112.7	26.2	**0.4158**	0.111	26.6	ug/L	127	Standard
	Ba	135	10186.4	1.4	**4.7001**	0.102	2.2	ug/L	45	Standard
	Ce	140	62112.1	0.6				ug/L	298	Standard
>	**Tb**	159	1019737.0	1.0				ug/L	977942	Standard
	Ho	165	1263.4	4.0				ug/L	12	Standard
	Tl	203	113.0	16.9	**0.0078**	0.002	24.0	ug/L	31	Standard
	Tl	205	118.3	30.6	**0.0128**	0.004	33.6	ug/L	20	Standard
	Pb	206	6901.2	1.0	**1.1348**	0.029	2.6	ug/L	286	Standard
	Pb	207	5663.1	0.8	**1.0321**	0.019	1.9	ug/L	257	Standard
	Pb	208	22745.7	0.6	**1.0713**	0.025	2.3	ug/L	956	Standard
	U	238	1347.1	2.4	**0.1734**	0.003	1.5	ug/L	17	Standard
>	**Bi**	209	593755.8	1.9				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	45.0	40.1	**0.0009**	0.025	2626.8	mg/L	32	Standard
K	39	30.0	28.9	**-0.0443**	0.026	58.3	mg/L	30	Standard
Ca	43	28.3	20.4	**-1.2169**	0.752	61.8	mg/L	48	Standard
Fe	54	584.0	13.3	**0.3714**	0.068	18.2	mg/L	159	Standard
Fe	57	295.0	14.5	**0.3314**	0.118	35.5	mg/L	195	Standard
> **Sc-1**	45	41125.8	3.4				mg/L	39543	Standard
Cl	35	31826.1	1.1				ug/L	27642	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	1903.5	3.4				ug/L	1647	Standard
P	31	16692.5	3.1				ug/L	15231	Standard
S	34	2128.5	4.6				ug/L	1845	Standard
Sr	88	68.3	36.1				ug/L	70	Standard
C	12	176.7	42.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	1953.3	7.3				mg/L	12	Standard
Ho-1	165	1263.4	4.0				mg/L	12	Standard
Er	166	1116.7	6.8				mg/L	20	Standard
I	127	1450.1	11.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.086	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.058	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606104801SDL WG573475-04
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.436
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.584
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Tuesday, June 28, 2016 15:03:36
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	89282.3	1.4				ug/L	81760	Standard
	Be	9	15.0	33.3	**0.0041**	0.005	114.8	ug/L	17	Standard
	Al	27	7897505.8	1.4	**46.9037**	0.018	0.0	ug/L	1410	Standard
	Sc	45	39757.1	3.6				ug/L	39543	Standard
	Ti	47	27232.5	2.5	**109.9775**	3.234	2.9	ug/L	39	Standard
	V	51	789.3	35.9	**-0.0922**	0.042	45.6	ug/L	1415	Standard
	Cr	52	7275.7	2.2	**-0.0059**	0.028	478.1	ug/L	6946	Standard
	Cr	53	6823.2	10.4	**7.4758**	0.819	11.0	ug/L	328	Standard
	Mn	55	1397.7	2.4	**0.0683**	0.004	5.9	ug/L	823	Standard
	Co	59	388.0	3.6	**0.0242**	0.002	7.5	ug/L	252	Standard
	Ni	60	839.0	6.3	**0.3431**	0.028	8.3	ug/L	192	Standard
	Cu	65	614.0	0.9	**0.2341**	0.001	0.3	ug/L	141	Standard
	Zn	66	1957.1	1.8	**0.9682**	0.037	3.8	ug/L	491	Standard
>	Ge	72	512179.1	1.0				ug/L	515087	Standard
	As	75	-64.0	70.1	**-0.0170**	0.040	237.0	ug/L	20	Standard
	Se	82	21.9	13.2	**0.0720**	0.027	37.3	ug/L	15	Standard
	Se-1	77	397.7	7.2	**4.5923**	0.428	9.3	ug/L	48	Standard
>	Ga	71	168.3	7.5				mg/L	90	Standard
	Rb	85	1135.0	8.9				ug/L	23	Standard
	Y	89	442720.4	1.1				ug/L	448510	Standard
>	Rh	103	10.0	50.0				ug/L	15	Standard
	Mo	98	272741.3	0.7	**100.8481**	1.185	1.2	ug/L	11	Standard
	Ag	107	262.0	2.0	**0.0228**	0.001	4.1	ug/L	134	Standard
	Cd	111	-198.2	9.3	**-0.0956**	0.008	8.7	mg/L	7	Standard
	Cd	114	465.1	17.4	**0.0845**	0.015	17.7	ug/L	16	Standard
>	In	115	611378.2	0.9				ug/L	611117	Standard
	Sn	118	743.4	13.4	**0.0238**	0.017	73.3	ug/L	518	Standard
	Sb	123	656.7	25.2	**0.1264**	0.036	28.5	ug/L	127	Standard
	Ba	135	610.7	6.5	**0.2705**	0.017	6.2	ug/L	45	Standard
	Ce	140	266.7	9.2				ug/L	298	Standard
>	Tb	159	977869.4	2.5				ug/L	977942	Standard
	Ho	165	16.7	17.3				ug/L	12	Standard
	Tl	203	193.3	8.8	**0.0182**	0.002	10.2	ug/L	31	Standard
	Tl	205	168.3	10.4	**0.0207**	0.002	10.8	ug/L	20	Standard
	Pb	206	552.7	5.7	**0.0387**	0.005	12.2	ug/L	286	Standard
	Pb	207	474.0	2.6	**0.0392**	0.001	3.3	ug/L	257	Standard
	Pb	208	1934.7	0.9	**0.0422**	0.002	5.1	ug/L	956	Standard
	U	238	35.3	29.7	**0.0020**	0.001	71.8	ug/L	17	Standard
>	Bi	209	556811.8	1.3				ug/L	557080	Standard

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Na	23	3.3	173.2	**20.5038**	35.505	173.2	mg/L	0	Standard
Mg	24	10406.9	1.4	**13.7318**	0.472	3.4	mg/L	32	Standard
K	39	1353.4	4.9	**4.4093**	0.243	5.5	mg/L	30	Standard
Ca	43	183.3	3.1	**22.3899**	1.779	7.9	mg/L	48	Standard
Fe	54	14710.0	1.7	**13.1205**	0.693	5.3	mg/L	159	Standard
Fe	57	4182.2	3.4	**13.4196**	0.181	1.3	mg/L	195	Standard
Sc-1	45	39757.1	3.6				mg/L	39543	Standard
Cl	35	33087.4	2.4				ug/L	27642	Standard
Kr	83	1.3	173.2				ug/L	2	Standard
Br	81	1766.8	6.4				ug/L	1647	Standard
P	31	17728.7	3.7				ug/L	15231	Standard
S	34	2340.2	3.3				ug/L	1845	Standard
Sr	88	45.0	0.0				ug/L	70	Standard
C	12	306.7	6.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	93.3	12.4				mg/L	0	Standard
Dy	164	15.1	45.8				mg/L	12	Standard
Ho-1	165	16.7	17.3				mg/L	12	Standard
Er	166	33.3	75.5				mg/L	20	Standard
I	127	1891.8	6.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27	0.938		
Sc	45			
Ti	47	109.978		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.435	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	100.848		
Ag	107			
Cd	111			
Cd	114			
> In	115		100.043	
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209		99.952	
Na	23	164.030		
Mg	24	274.635		
K	39	88.187		
Ca	43	149.266		
Fe	54	104.964		
Fe	57	107.357		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	

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QC Std 4	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Tuesday, June 28, 2016 15:06:47
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	87968.0	1.5				ug/L	81760	Standard
	Be	9	111223.4	1.1	**104.1090**	2.678	2.6	ug/L	17	Standard
	Al	27	8303576.6	1.0	**50.0632**	1.083	2.2	ug/L	1410	Standard
	Sc	45	38970.1	2.5				ug/L	39543	Standard
	Ti	47	28030.6	1.5	**112.6949**	1.093	1.0	ug/L	39	Standard
	V	51	696349.8	1.4	**100.1131**	1.784	1.8	ug/L	1415	Standard
	Cr	52	683707.3	0.8	**97.2904**	0.687	0.7	ug/L	6946	Standard
	Cr	53	91713.5	1.8	**104.2725**	1.761	1.7	ug/L	328	Standard
	Mn	55	633248.9	0.6	**97.6578**	0.701	0.7	ug/L	823	Standard
	Co	59	716430.9	0.3	**102.0719**	1.125	1.1	ug/L	252	Standard
	Ni	60	180604.4	0.8	**95.9232**	1.625	1.7	ug/L	192	Standard
	Cu	65	185052.2	0.7	**97.4326**	1.562	1.6	ug/L	141	Standard
	Zn	66	113502.2	0.3	**102.8618**	0.650	0.6	ug/L	491	Standard
>	Ge	72	514438.0	0.9				ug/L	515087	Standard
	As	75	114188.1	0.3	**101.7361**	0.865	0.8	ug/L	20	Standard
	Se	82	11752.5	0.4	**102.0988**	1.402	1.4	ug/L	15	Standard
	Se-1	77	8079.2	0.7	**106.6610**	0.727	0.7	ug/L	48	Standard
>	Ga	71	190.0	7.0				mg/L	90	Standard
	Rb	85	893.4	6.0				ug/L	23	Standard
	Y	89	434662.6	1.6				ug/L	448510	Standard
>	Rh	103	38.3	52.7				ug/L	15	Standard
	Mo	98	282406.5	1.5	**107.3339**	1.537	1.4	ug/L	11	Standard
	Ag	107	594345.7	0.8	**90.9666**	1.393	1.5	ug/L	134	Standard
	Cd	111	207638.0	0.2	**99.8149**	1.587	1.6	mg/L	7	Standard
	Cd	114	499764.2	0.7	**98.8323**	1.071	1.1	ug/L	16	Standard
>	In	115	594810.8	1.6				ug/L	611117	Standard
	Sn	118	1138.4	7.8	**0.0959**	0.015	15.6	ug/L	518	Standard
	Sb	123	463528.1	1.1	**100.9493**	2.612	2.6	ug/L	127	Standard
	Ba	135	197524.5	0.1	**98.2892**	1.431	1.5	ug/L	45	Standard
	Ce	140	85.0	21.2				ug/L	298	Standard
>	Tb	159	967938.8	1.8				ug/L	977942	Standard
	Ho	165	8.3	69.3				ug/L	12	Standard
	Tl	203	848553.4	0.8	**99.1555**	1.255	1.3	ug/L	31	Standard
	Tl	205	762572.5	0.3	**102.6175**	1.400	1.4	ug/L	20	Standard
	Pb	206	559247.5	0.6	**101.8213**	1.258	1.2	ug/L	286	Standard
	Pb	207	488004.9	0.6	**98.5027**	1.226	1.2	ug/L	257	Standard
	Pb	208	1955600.4	0.4	**102.0354**	1.641	1.6	ug/L	956	Standard
	U	238	737824.6	0.7	**101.3974**	2.083	2.1	ug/L	17	Standard
>	Bi	209	565855.3	1.5				ug/L	557080	Standard

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Na	23	3.3	86.6	**21.8863**	18.964	86.6	mg/L	0	Standard
Mg	24	10742.1	1.4	**14.4601**	0.490	3.4	mg/L	32	Standard
K	39	1261.7	7.3	**4.1815**	0.232	5.5	mg/L	30	Standard
Ca	43	183.3	29.9	**22.9918**	8.781	38.2	mg/L	48	Standard
Fe	54	15164.6	1.1	**13.7950**	0.409	3.0	mg/L	159	Standard
Fe	57	4003.9	4.1	**13.0952**	0.606	4.6	mg/L	195	Standard
Sc-1	45	38970.1	2.5				mg/L	39543	Standard
Cl	35	31476.7	2.0				ug/L	27642	Standard
Kr	83	3.3	75.5				ug/L	2	Standard
Br	81	1726.8	7.1				ug/L	1647	Standard
P	31	16804.3	1.0				ug/L	15231	Standard
S	34	2221.8	2.4				ug/L	1845	Standard
Sr	88	46.7	22.3				ug/L	70	Standard
C	12	280.0	21.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	25.2	45.9				mg/L	12	Standard
Ho-1	165	8.3	69.3				mg/L	12	Standard
Er	166	30.0	66.7				mg/L	20	Standard
I	127	1238.4	19.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	104.109		
Al	27	1.001		
Sc	45			
Ti	47	112.695		
V	51	100.113		
Cr	52	97.290		
Cr	53			
Mn	55	97.658		
Co	59	102.072		
Ni	60	95.923		
Cu	65	97.433		
Zn	66	102.862		
Ge	72		99.874	
As	75	101.736		
Se	82	102.099		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	107.334		
Ag	107	90.967		
Cd	111	99.815		
Cd	114			
> In	115		97.332	
Sn	118			
Sb	123	100.949		
Ba	135	98.289		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.155		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.035		
U	238	101.397		
> Bi	209		101.575	
Na	23	175.090		
Mg	24	289.203		
K	39	83.630		
Ca	43	153.278		
Fe	54	110.360		
Fe	57	104.761		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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QC Std 5	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 15:10:01
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85172.2	3.3				ug/L	81760	Standard
	Be	9	53236.8	4.1	**51.4767**	2.435	4.7	ug/L	17	Standard
	Al	27	7628795.8	0.6	**47.5256**	1.416	3.0	ug/L	1410	Standard
	Sc	45	37696.8	2.0				ug/L	39543	Standard
	Ti	47	24164.9	0.9	**98.0401**	2.312	2.4	ug/L	39	Standard
	V	51	343835.2	0.1	**49.7831**	0.751	1.5	ug/L	1415	Standard
	Cr	52	344282.1	1.0	**48.9253**	1.054	2.2	ug/L	6946	Standard
	Cr	53	43472.3	1.9	**49.7131**	1.693	3.4	ug/L	328	Standard
	Mn	55	313567.9	1.4	**48.7360**	1.405	2.9	ug/L	823	Standard
	Co	59	359786.6	1.1	**51.7171**	1.082	2.1	ug/L	252	Standard
	Ni	60	90351.3	0.3	**48.3759**	0.827	1.7	ug/L	192	Standard
	Cu	65	92251.0	0.7	**48.9699**	0.708	1.4	ug/L	141	Standard
	Zn	66	54515.2	1.1	**49.4372**	1.191	2.4	ug/L	491	Standard
>	**Ge**	72	509796.1	1.5				ug/L	515087	Standard
	As	75	55417.4	0.8	**49.8530**	1.118	2.2	ug/L	20	Standard
	Se	82	5885.8	2.0	**51.5527**	1.791	3.5	ug/L	15	Standard
	Se-1	77	3913.8	2.3	**51.7920**	1.979	3.8	ug/L	48	Standard
>	**Ga**	71	60.0	14.4				mg/L	90	Standard
	Rb	85	760.0	3.9				ug/L	23	Standard
	Y	89	437496.8	1.0				ug/L	448510	Standard
>	**Rh**	103	35.0	28.6				ug/L	15	Standard
	Mo	98	271668.8	0.6	**101.2993**	0.747	0.7	ug/L	11	Standard
	Ag	107	329448.9	0.2	**49.4598**	0.339	0.7	ug/L	134	Standard
	Cd	111	103364.2	1.7	**48.7409**	0.531	1.1	mg/L	7	Standard
	Cd	114	251263.5	1.7	**48.7432**	0.553	1.1	ug/L	16	Standard
>	**In**	115	606236.0	0.6				ug/L	611117	Standard
	Sn	118	288784.4	0.3	**49.1320**	0.341	0.7	ug/L	518	Standard
	Sb	123	235993.4	0.4	**50.4089**	0.456	0.9	ug/L	127	Standard
	Ba	135	99324.5	0.4	**48.4735**	0.237	0.5	ug/L	45	Standard
	Ce	140	126.7	35.6				ug/L	298	Standard
>	**Tb**	159	959991.8	0.1				ug/L	977942	Standard
	Ho	165	8.3	34.6				ug/L	12	Standard
	Tl	203	427212.2	0.6	**50.5774**	0.492	1.0	ug/L	31	Standard
	Tl	205	380951.0	2.1	**51.9422**	1.422	2.7	ug/L	20	Standard
	Pb	206	273119.7	0.4	**50.3511**	0.572	1.1	ug/L	286	Standard
	Pb	207	248886.2	0.4	**50.8720**	0.472	0.9	ug/L	257	Standard
	Pb	208	972505.1	1.3	**51.3811**	0.993	1.9	ug/L	956	Standard
	U	238	367751.0	1.4	**51.2030**	1.055	2.1	ug/L	17	Standard
>	**Bi**	209	558440.3	0.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4133.9	5.5	**5.7164**	0.326	5.7	mg/L	32	Standard
K	39	1253.4	8.2	**4.3011**	0.352	8.2	mg/L	30	Standard
Ca	43	70.0	37.8	**5.7557**	4.052	70.4	mg/L	48	Standard
Fe	54	5742.0	2.6	**5.3173**	0.253	4.8	mg/L	159	Standard
Fe	57	1578.4	3.1	**4.9652**	0.143	2.9	mg/L	195	Standard
Sc-1	45	37696.8	2.0				mg/L	39543	Standard
Cl	35	31580.2	0.9				ug/L	27642	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	1660.1	9.6				ug/L	1647	Standard
P	31	16826.0	2.3				ug/L	15231	Standard
S	34	2313.5	5.0				ug/L	1845	Standard
Sr	88	61.7	26.1				ug/L	70	Standard
C	12	133.3	18.9				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	13.3	114.6				mg/L	12	Standard
Ho-1	165	8.3	34.6				mg/L	12	Standard
Er	166	0.0					mg/L	20	Standard
I	127	1290.1	24.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.953		
Al	27	95.051		
Sc	45			
Ti	47	98.040		
V	51	99.566		
Cr	52	97.851		
Cr	53			
Mn	55	97.472		
Co	59	103.434		
Ni	60	96.752		
Cu	65	97.940		
Zn	66	98.874		
Ge	72		98.973	
As	75	99.706		
Se	82	103.105		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.299		
Ag	107	98.920		
Cd	111	97.482		
Cd	114			
In	115			99.201
Sn	118	98.264		
Sb	123	100.818		
Ba	135	96.947		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.155		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.762		
U	238	102.406		
Bi	209			100.244
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 15:13:12
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88670.5	2.8				ug/L	81760	Standard
	Be	9	51.7	24.4	**0.0381**	0.010	27.4	ug/L	17	Standard
	Al	27	5021.0	57.4	**0.0153**	0.016	105.4	ug/L	1410	Standard
	Sc	45	39924.2	3.2				ug/L	39543	Standard
	Ti	47	36.7	33.9	**-0.0173**	0.048	276.4	ug/L	39	Standard
	V	51	1293.4	14.6	**-0.0198**	0.025	126.5	ug/L	1415	Standard
	Cr	52	6153.2	0.9	**-0.1686**	0.020	12.1	ug/L	6946	Standard
	Cr	53	480.0	7.9	**0.2078**	0.038	18.2	ug/L	328	Standard
	Mn	55	818.0	20.7	**-0.0219**	0.025	112.7	ug/L	823	Standard
	Co	59	362.0	35.7	**0.0203**	0.018	87.2	ug/L	252	Standard
	Ni	60	216.7	22.5	**0.0105**	0.024	233.6	ug/L	192	Standard
	Cu	65	206.0	48.8	**0.0177**	0.051	290.8	ug/L	141	Standard
	Zn	66	512.3	23.8	**-0.3586**	0.106	29.6	ug/L	491	Standard
>	**Ge**	72	512537.5	1.6				ug/L	515087	Standard
	As	75	16.6	529.1	**0.0544**	0.078	142.5	ug/L	20	Standard
	Se	82	20.8	66.0	**0.0610**	0.117	191.3	ug/L	15	Standard
	Se-1	77	56.0	20.1	**0.0270**	0.140	518.0	ug/L	48	Standard
>	**Ga**	71	48.3	15.8				mg/L	90	Standard
	Rb	85	23.3	32.7				ug/L	23	Standard
	Y	89	442158.0	1.4				ug/L	448510	Standard
>	**Rh**	103	8.3	69.3				ug/L	15	Standard
	Mo	98	390.5	34.5	**0.1230**	0.050	40.8	ug/L	11	Standard
	Ag	107	293.7	71.4	**0.0269**	0.031	115.5	ug/L	134	Standard
	Cd	111	93.5	118.9	**0.0403**	0.052	128.0	mg/L	7	Standard
	Cd	114	191.9	127.3	**0.0316**	0.047	147.6	ug/L	16	Standard
>	**In**	115	622178.9	0.7				ug/L	611117	Standard
	Sn	118	798.4	19.1	**0.0306**	0.025	81.3	ug/L	518	Standard
	Sb	123	1327.2	22.5	**0.2633**	0.061	23.3	ug/L	127	Standard
	Ba	135	121.3	95.4	**0.0329**	0.056	169.3	ug/L	45	Standard
	Ce	140	156.7	109.9				ug/L	298	Standard
>	**Tb**	159	979098.8	1.1				ug/L	977942	Standard
	Ho	165	8.3	124.9				ug/L	12	Standard
	Tl	203	319.0	100.9	**0.0316**	0.036	115.5	ug/L	31	Standard
	Tl	205	186.7	86.1	**0.0222**	0.021	94.2	ug/L	20	Standard
	Pb	206	461.3	35.4	**0.0186**	0.029	153.9	ug/L	286	Standard
	Pb	207	392.3	40.1	**0.0194**	0.031	157.4	ug/L	257	Standard
	Pb	208	1505.0	29.2	**0.0164**	0.022	134.2	ug/L	956	Standard
	U	238	157.3	69.9	**0.0181**	0.015	80.5	ug/L	17	Standard
>	**Bi**	209	578116.8	1.4				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	31.7	18.2	**-0.0152**	0.009	57.6	mg/L	32	Standard
K	39	23.3	49.5	**-0.0625**	0.040	64.6	mg/L	30	Standard
Ca	43	25.0	40.0	**-1.6032**	1.411	88.0	mg/L	48	Standard
Fe	54	127.6	20.0	**-0.0223**	0.025	111.2	mg/L	159	Standard
Fe	57	173.3	7.3	**-0.0450**	0.038	85.1	mg/L	195	Standard
Sc-1	45	39924.2	3.2				mg/L	39543	Standard
Cl	35	32496.1	0.6				ug/L	27642	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	1573.4	6.5				ug/L	1647	Standard
P	31	17568.5	2.8				ug/L	15231	Standard
S	34	2373.5	3.0				ug/L	1845	Standard
Sr	88	50.0	26.5				ug/L	70	Standard
C	12	106.7	19.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.5	38.4				mg/L	12	Standard
Ho-1	165	8.3	124.9				mg/L	12	Standard
Er	166	16.7	124.9				mg/L	20	Standard
I	127	1251.7	20.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.505	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.810
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.776
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Tuesday, June 28, 2016 15:16:29
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81011.1	2.2				ug/L	81760	Standard
	Be	9	195.0	20.5	**0.1880**	0.037	19.7	ug/L	17	Standard
	Al	27	1493.4	21.7	**-0.0047**	0.002	41.0	ug/L	1410	Standard
	Sc	45	36542.4	1.6				ug/L	39543	Standard
	Ti	47	30.7	9.4	**-0.0369**	0.011	30.3	ug/L	39	Standard
	V	51	3567.1	2.8	**0.3274**	0.017	5.3	ug/L	1415	Standard
	Cr	52	11052.7	0.9	**0.5951**	0.027	4.6	ug/L	6946	Standard
	Cr	53	1095.0	4.8	**0.9563**	0.056	5.9	ug/L	328	Standard
	Mn	55	3466.7	0.6	**0.4079**	0.007	1.6	ug/L	823	Standard
	Co	59	2834.6	2.1	**0.3884**	0.006	1.6	ug/L	252	Standard
	Ni	60	2871.9	0.5	**1.4818**	0.019	1.3	ug/L	192	Standard
	Cu	65	1515.4	2.2	**0.7391**	0.023	3.1	ug/L	141	Standard
	Zn	66	7448.8	1.9	**6.2435**	0.137	2.2	ug/L	491	Standard
>	**Ge**	72	495055.6	0.7				ug/L	515087	Standard
	As	75	363.8	8.2	**0.3769**	0.025	6.6	ug/L	20	Standard
	Se	82	58.7	3.6	**0.4109**	0.015	3.7	ug/L	15	Standard
	Se-1	77	71.3	17.1	**0.2665**	0.171	64.2	ug/L	48	Standard
>	**Ga**	71	38.3	19.9				mg/L	90	Standard
	Rb	85	26.7	28.6				ug/L	23	Standard
	Y	89	415588.9	2.9				ug/L	448510	Standard
>	**Rh**	103	6.7	43.3				ug/L	15	Standard
	Mo	98	101.2	14.2	**0.0199**	0.005	26.4	ug/L	11	Standard
	Ag	107	2581.2	2.0	**0.3840**	0.010	2.6	ug/L	134	Standard
	Cd	111	489.5	5.9	**0.2354**	0.013	5.3	mg/L	7	Standard
	Cd	114	1118.1	7.7	**0.2189**	0.015	6.9	ug/L	16	Standard
>	**In**	115	587241.6	1.2				ug/L	611117	Standard
	Sn	118	508.3	8.2	**-0.0124**	0.008	65.2	ug/L	518	Standard
	Sb	123	2001.1	5.7	**0.4288**	0.031	7.2	ug/L	127	Standard
	Ba	135	1392.4	6.1	**0.6767**	0.039	5.8	ug/L	45	Standard
	Ce	140	30.0	44.1				ug/L	298	Standard
>	**Tb**	159	929212.6	0.4				ug/L	977942	Standard
	Ho	165	13.3	57.3				ug/L	12	Standard
	Tl	203	711.0	4.8	**0.0804**	0.004	5.1	ug/L	31	Standard
	Tl	205	656.7	5.8	**0.0883**	0.005	5.1	ug/L	20	Standard
	Pb	206	1347.1	1.6	**0.1880**	0.004	2.0	ug/L	286	Standard
	Pb	207	1117.4	2.9	**0.1733**	0.005	3.1	ug/L	257	Standard
	Pb	208	4713.3	2.2	**0.1919**	0.007	3.7	ug/L	956	Standard
	U	238	2843.3	0.8	**0.3977**	0.005	1.3	ug/L	17	Standard
>	**Bi**	209	551791.7	0.8				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	26.7	39.0	**-0.0189**	0.015	77.3	mg/L	32	Standard
K	39	20.0	25.0	**-0.0684**	0.018	25.7	mg/L	30	Standard
Ca	43	25.0	40.0	**-1.2235**	1.703	139.2	mg/L	48	Standard
Fe	54	112.3	6.9	**-0.0270**	0.008	31.0	mg/L	159	Standard
Fe	57	200.0	28.8	**0.1050**	0.205	195.5	mg/L	195	Standard
Sc-1	45	36542.4	1.6				mg/L	39543	Standard
Cl	35	31755.9	1.1				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1523.4	8.9				ug/L	1647	Standard
P	31	12263.3	0.6				ug/L	15231	Standard
S	34	2283.5	2.6				ug/L	1845	Standard
Sr	88	63.3	25.4				ug/L	70	Standard
C	12	146.7	38.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	15.9	37.5				mg/L	12	Standard
Ho-1	165	13.3	57.3				mg/L	12	Standard
Er	166	16.7	91.7				mg/L	20	Standard
I	127	1103.4	23.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	94.012		
Al	27			
Sc	45			
Ti	47			
V	51	81.855		
Cr	52	74.385		
Cr	53			
Mn	55	81.586		
Co	59	97.096		
Ni	60	92.611		
Cu	65	92.383		
Zn	66	99.896		
Ge	72		96.111	
As	75	94.213		
Se	82	102.730		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	96.001		
Cd	111	98.068		
Cd	114			
> In	115			96.093
Sn	118			
Sb	123	107.193		
Ba	135	90.223		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.519		
Tl	205			
Pb	206			
Pb	207			
Pb	208	95.932		
U	238	99.422		
> Bi	209			99.051
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
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Method 6020 - Summary Report

Sample ID: L1606078703 WG573333-01
Sample Date/Time: Tuesday, June 28, 2016 15:24:24
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77973.6	3.5				ug/L	81760	Standard
	Be	9	93.3	32.7	**0.0882**	0.029	33.1	ug/L	17	Standard
	Al	27	522182.4	1.6	**3.5410**	0.149	4.2	ug/L	1410	Standard
	Sc	45	36268.4	3.8				ug/L	39543	Standard
	Ti	47	171.7	14.8	**0.5849**	0.118	20.2	ug/L	39	Standard
	V	51	8345.2	3.6	**1.0965**	0.041	3.8	ug/L	1415	Standard
	Cr	52	9135.4	1.3	**0.3675**	0.032	8.6	ug/L	6946	Standard
	Cr	53	715.0	6.0	**0.5424**	0.045	8.2	ug/L	328	Standard
	Mn	55	230272.3	2.4	**38.4029**	0.677	1.8	ug/L	823	Standard
	Co	59	4116.2	4.4	**0.6044**	0.024	3.9	ug/L	252	Standard
	Ni	60	2251.2	4.1	**1.1925**	0.054	4.6	ug/L	192	Standard
	Cu	65	1784.1	4.6	**0.9285**	0.051	5.5	ug/L	141	Standard
	Zn	66	3508.4	21.7	**2.6509**	0.786	29.6	ug/L	491	Standard
>	**Ge**	72	474556.6	0.9				ug/L	515087	Standard
	As	75	172.3	13.5	**0.2068**	0.024	11.5	ug/L	20	Standard
	Se	82	19.4	8.6	**0.0638**	0.017	27.3	ug/L	15	Standard
	Se-1	77	47.7	3.2	**-0.0320**	0.028	88.4	ug/L	48	Standard
>	**Ga**	71	883.4	11.6				mg/L	90	Standard
	Rb	85	7710.3	5.5				ug/L	23	Standard
	Y	89	442484.5	1.8				ug/L	448510	Standard
>	**Rh**	103	20.0	25.0				ug/L	15	Standard
	Mo	98	50.0	20.9	**0.0005**	0.004	864.7	ug/L	11	Standard
	Ag	107	103.7	35.8	**0.0001**	0.006	5294.7	ug/L	134	Standard
	Cd	111	33.9	43.4	**0.0139**	0.007	52.6	mg/L	7	Standard
	Cd	114	75.2	57.1	**0.0104**	0.009	84.2	ug/L	16	Standard
>	**In**	115	577946.8	0.2				ug/L	611117	Standard
	Sn	118	366.7	11.4	**-0.0364**	0.008	20.8	ug/L	518	Standard
	Sb	123	219.5	27.2	**0.0364**	0.013	37.0	ug/L	127	Standard
	Ba	135	15089.5	2.8	**7.7036**	0.230	3.0	ug/L	45	Standard
	Ce	140	101663.3	0.5				ug/L	298	Standard
>	**Tb**	159	912358.4	0.5				ug/L	977942	Standard
	Ho	165	1823.4	12.2				ug/L	12	Standard
	Tl	203	96.3	39.3	**0.0070**	0.005	65.1	ug/L	31	Standard
	Tl	205	60.0	22.0	**0.0062**	0.002	29.8	ug/L	20	Standard
	Pb	206	5271.9	0.9	**0.9471**	0.013	1.4	ug/L	286	Standard
	Pb	207	4329.0	2.2	**0.8620**	0.023	2.7	ug/L	257	Standard
	Pb	208	18126.6	1.5	**0.9354**	0.019	2.1	ug/L	956	Standard
	U	238	313.3	4.9	**0.0423**	0.002	4.7	ug/L	17	Standard
>	**Bi**	209	537668.4	0.5				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	30.0	60.1	**-0.0138**	0.025	183.5	mg/L	32	Standard
K	39	53.3	37.9	**0.0534**	0.067	124.6	mg/L	30	Standard
Ca	43	48.3	6.0	**2.6636**	0.532	20.0	mg/L	48	Standard
Fe	54	632.5	2.4	**0.4873**	0.016	3.2	mg/L	159	Standard
Fe	57	343.3	3.0	**0.6393**	0.010	1.6	mg/L	195	Standard
> **Sc-1**	45	36268.4	3.8				mg/L	39543	Standard
Cl	35	30788.6	1.3				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1480.1	1.8				ug/L	1647	Standard
P	31	7060.0	1.2				ug/L	15231	Standard
S	34	2285.2	6.0				ug/L	1845	Standard
Sr	88	48.3	21.5				ug/L	70	Standard
C	12	146.7	76.6				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	3101.1	5.7				mg/L	12	Standard
Ho-1	165	1823.4	12.2				mg/L	12	Standard
Er	166	1723.4	3.7				mg/L	20	Standard
I	127	1973.5	19.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.369	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.131	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.572
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.515
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606078704S WG573333-05
Sample Date/Time: Tuesday, June 28, 2016 15:27:35
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77117.5	2.8				ug/L	81760	Standard
	Be	9	2866.9	4.2	**3.0501**	0.044	1.4	ug/L	17	Standard
	Al	27	530634.0	2.5	**3.6356**	0.032	0.9	ug/L	1410	Standard
	Sc	45	36769.6	1.1				ug/L	39543	Standard
	Ti	47	373.0	7.6	**1.4053**	0.111	7.9	ug/L	39	Standard
	V	51	27357.6	1.0	**3.9153**	0.028	0.7	ug/L	1415	Standard
	Cr	52	27754.1	2.5	**3.1178**	0.072	2.3	ug/L	6946	Standard
	Cr	53	3205.3	2.9	**3.4822**	0.093	2.7	ug/L	328	Standard
	Mn	55	199454.4	1.6	**32.0700**	0.433	1.4	ug/L	823	Standard
	Co	59	21527.3	1.4	**3.1772**	0.038	1.2	ug/L	252	Standard
	Ni	60	6879.6	1.3	**3.7203**	0.017	0.5	ug/L	192	Standard
	Cu	65	6482.7	2.3	**3.4817**	0.050	1.4	ug/L	141	Standard
	Zn	66	6297.6	0.7	**5.1896**	0.074	1.4	ug/L	491	Standard
>	**Ge**	72	491870.4	0.9				ug/L	515087	Standard
	As	75	2731.5	2.2	**2.5846**	0.063	2.4	ug/L	20	Standard
	Se	82	265.3	2.1	**2.2945**	0.068	3.0	ug/L	15	Standard
	Se-1	77	206.7	1.5	**2.1542**	0.060	2.8	ug/L	48	Standard
>	**Ga**	71	993.4	9.7				mg/L	90	Standard
	Rb	85	7418.5	3.4				ug/L	23	Standard
	Y	89	432036.7	0.9				ug/L	448510	Standard
>	**Rh**	103	6.7	86.6				ug/L	15	Standard
	Mo	98	97.6	12.4	**0.0190**	0.004	23.4	ug/L	11	Standard
	Ag	107	16692.5	1.2	**2.6046**	0.053	2.0	ug/L	134	Standard
	Cd	111	5558.2	2.0	**2.7376**	0.075	2.7	mg/L	7	Standard
	Cd	114	13660.0	0.7	**2.7659**	0.042	1.5	ug/L	16	Standard
>	**In**	115	579914.2	0.8				ug/L	611117	Standard
	Sn	118	355.0	9.2	**-0.0387**	0.005	13.8	ug/L	518	Standard
	Sb	123	2408.5	2.5	**0.5252**	0.017	3.2	ug/L	127	Standard
	Ba	135	18788.0	0.3	**9.5654**	0.079	0.8	ug/L	45	Standard
	Ce	140	97333.3	0.8				ug/L	298	Standard
>	**Tb**	159	916801.1	0.1				ug/L	977942	Standard
	Ho	165	2003.5	4.3				ug/L	12	Standard
	Tl	203	21211.2	1.5	**2.5655**	0.023	0.9	ug/L	31	Standard
	Tl	205	18352.8	1.2	**2.5587**	0.022	0.9	ug/L	20	Standard
	Pb	206	18796.3	1.3	**3.4874**	0.034	1.0	ug/L	286	Standard
	Pb	207	16054.8	0.9	**3.3044**	0.015	0.5	ug/L	257	Standard
	Pb	208	66020.8	0.7	**3.5136**	0.008	0.2	ug/L	956	Standard
	U	238	18577.7	1.3	**2.6444**	0.019	0.7	ug/L	17	Standard
>	**Bi**	209	545605.1	0.6				ug/L	557080	Standard

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Na	23	3.3	86.6	**23.0608**	19.970	86.6	mg/L	0	Standard
Mg	24	33.3	17.3	**-0.0095**	0.008	83.3	mg/L	32	Standard
K	39	50.0	30.0	**0.0407**	0.057	139.0	mg/L	30	Standard
Ca	43	23.3	86.6	**-1.5565**	3.262	209.6	mg/L	48	Standard
Fe	54	789.3	5.9	**0.6315**	0.054	8.6	mg/L	159	Standard
Fe	57	388.3	19.5	**0.7873**	0.291	37.0	mg/L	195	Standard
> **Sc-1**	45	36769.6	1.1				mg/L	39543	Standard
Cl	35	31616.3	0.3				ug/L	27642	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	1516.7	10.3				ug/L	1647	Standard
P	31	7133.3	2.5				ug/L	15231	Standard
S	34	2288.5	0.7				ug/L	1845	Standard
Sr	88	63.3	12.1				ug/L	70	Standard
C	12	90.0	50.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	3099.8	4.3				mg/L	12	Standard
Ho-1	165	2003.5	4.3				mg/L	12	Standard
Er	166	1750.1	2.1				mg/L	20	Standard
I	127	2031.8	18.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.322	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.493	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.894
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.940
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606078705SD WG573333-06
Sample Date/Time: Tuesday, June 28, 2016 15:30:46
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74501.2	2.9				ug/L	81760	Standard
	Be	9	2816.9	5.3	**3.1033**	0.143	4.6	ug/L	17	Standard
	Al	27	652490.2	1.4	**4.6325**	0.073	1.6	ug/L	1410	Standard
	Sc	45	35373.0	4.0				ug/L	39543	Standard
	Ti	47	288.0	4.5	**1.0503**	0.068	6.5	ug/L	39	Standard
	V	51	27556.1	4.5	**3.9507**	0.115	2.9	ug/L	1415	Standard
	Cr	52	29741.5	2.7	**3.4242**	0.036	1.1	ug/L	6946	Standard
	Cr	53	3408.7	4.0	**3.7308**	0.095	2.5	ug/L	328	Standard
	Mn	55	239390.4	1.7	**38.5872**	0.363	0.9	ug/L	823	Standard
	Co	59	21175.8	2.9	**3.1300**	0.064	2.1	ug/L	252	Standard
	Ni	60	7152.0	2.5	**3.8782**	0.013	0.3	ug/L	192	Standard
	Cu	65	6817.5	3.4	**3.6719**	0.046	1.3	ug/L	141	Standard
	Zn	66	6491.4	2.6	**5.3843**	0.067	1.2	ug/L	491	Standard
>	**Ge**	72	491074.4	2.2				ug/L	515087	Standard
	As	75	2669.0	1.7	**2.5305**	0.018	0.7	ug/L	20	Standard
	Se	82	259.6	0.9	**2.2467**	0.073	3.2	ug/L	15	Standard
	Se-1	77	214.7	9.1	**2.2690**	0.247	10.9	ug/L	48	Standard
>	**Ga**	71	1028.4	8.9				mg/L	90	Standard
	Rb	85	7220.1	2.0				ug/L	23	Standard
	Y	89	434100.4	1.8				ug/L	448510	Standard
>	**Rh**	103	11.7	24.7				ug/L	15	Standard
	Mo	98	220.7	3.6	**0.0685**	0.004	5.3	ug/L	11	Standard
	Ag	107	16241.0	2.2	**2.5784**	0.042	1.6	ug/L	134	Standard
	Cd	111	5563.7	4.0	**2.7880**	0.091	3.3	mg/L	7	Standard
	Cd	114	13468.2	1.0	**2.7750**	0.021	0.8	ug/L	16	Standard
>	**In**	115	569849.5	0.7				ug/L	611117	Standard
	Sn	118	353.3	16.1	**-0.0379**	0.010	26.3	ug/L	518	Standard
	Sb	123	2719.7	5.6	**0.6052**	0.030	5.0	ug/L	127	Standard
	Ba	135	20622.4	3.5	**10.6862**	0.314	2.9	ug/L	45	Standard
	Ce	140	98046.3	2.6				ug/L	298	Standard
>	**Tb**	159	907491.8	2.5				ug/L	977942	Standard
	Ho	165	2030.1	2.1				ug/L	12	Standard
	Tl	203	20792.6	2.1	**2.5412**	0.024	1.0	ug/L	31	Standard
	Tl	205	18564.7	0.9	**2.6157**	0.018	0.7	ug/L	20	Standard
	Pb	206	19134.8	4.2	**3.5891**	0.137	3.8	ug/L	286	Standard
	Pb	207	16318.5	3.9	**3.3949**	0.097	2.9	ug/L	257	Standard
	Pb	208	68373.0	0.9	**3.6800**	0.027	0.7	ug/L	956	Standard
	U	238	18425.5	1.4	**2.6505**	0.039	1.5	ug/L	17	Standard
>	**Bi**	209	539937.0	1.4				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	30.0	44.1	**-0.0120**	0.022	182.1	mg/L	32	Standard
K	39	43.3	29.0	**0.0214**	0.044	203.2	mg/L	30	Standard
Ca	43	31.7	50.8	**-0.0240**	2.524	10500.7	mg/L	48	Standard
Fe	54	837.2	3.3	**0.7115**	0.061	8.6	mg/L	159	Standard
Fe	57	390.0	5.9	**0.8507**	0.142	16.6	mg/L	195	Standard
> **Sc-1**	45	35373.0	4.0				mg/L	39543	Standard
Cl	35	30539.4	1.3				ug/L	27642	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	1456.7	10.3				ug/L	1647	Standard
P	31	7050.0	3.7				ug/L	15231	Standard
S	34	2141.8	2.3				ug/L	1845	Standard
Sr	88	61.7	12.4				ug/L	70	Standard
C	12	110.0	32.8				mg/L	113	Standard
N	14	6.7	86.6				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	3163.0	6.4				mg/L	12	Standard
Ho-1	165	2030.1	2.1				mg/L	12	Standard
Er	166	1753.4	8.6				mg/L	20	Standard
I	127	1965.1	14.8				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		91.122	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.338	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		93.247
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		96.923
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606078706
Sample Date/Time: Tuesday, June 28, 2016 15:33:58
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76028.8	3.5				ug/L	81760	Standard
	Be	9	38.3	19.9	**0.0318**	0.009	27.2	ug/L	17	Standard
	Al	27	238262.4	1.5	**1.6489**	0.050	3.0	ug/L	1410	Standard
	Sc	45	37198.9	1.1				ug/L	39543	Standard
	Ti	47	135.7	11.8	**0.3914**	0.065	16.6	ug/L	39	Standard
	V	51	5276.5	1.4	**0.5679**	0.012	2.1	ug/L	1415	Standard
	Cr	52	6498.4	1.5	**-0.1047**	0.015	14.1	ug/L	6946	Standard
	Cr	53	391.7	9.7	**0.1138**	0.045	39.3	ug/L	328	Standard
	Mn	55	119285.7	3.0	**18.6233**	0.543	2.9	ug/L	823	Standard
	Co	59	1493.7	2.3	**0.1855**	0.005	2.9	ug/L	252	Standard
	Ni	60	894.4	1.7	**0.3795**	0.008	2.0	ug/L	192	Standard
	Cu	65	697.3	2.0	**0.2836**	0.007	2.5	ug/L	141	Standard
	Zn	66	2625.6	1.0	**1.6163**	0.028	1.8	ug/L	491	Standard
>	**Ge**	72	504872.7	0.1				ug/L	515087	Standard
	As	75	131.9	5.5	**0.1599**	0.007	4.3	ug/L	20	Standard
	Se	82	16.6	26.9	**0.0277**	0.040	143.8	ug/L	15	Standard
	Se-1	77	42.3	11.2	**-0.1455**	0.065	44.4	ug/L	48	Standard
>	**Ga**	71	331.7	11.3				mg/L	90	Standard
	Rb	85	2800.3	5.6				ug/L	23	Standard
	Y	89	425969.9	0.3				ug/L	448510	Standard
>	**Rh**	103	21.7	96.1				ug/L	15	Standard
	Mo	98	33.2	18.6	**-0.0062**	0.003	40.5	ug/L	11	Standard
	Ag	107	87.7	13.4	**-0.0025**	0.002	77.6	ug/L	134	Standard
	Cd	111	11.3	20.5	**0.0026**	0.001	43.1	mg/L	7	Standard
	Cd	114	30.9	19.2	**0.0013**	0.001	87.3	ug/L	16	Standard
>	**In**	115	583702.0	1.1				ug/L	611117	Standard
	Sn	118	278.3	22.7	**-0.0527**	0.011	20.3	ug/L	518	Standard
	Sb	123	103.7	16.2	**0.0102**	0.004	35.3	ug/L	127	Standard
	Ba	135	9187.1	1.4	**4.6338**	0.016	0.3	ug/L	45	Standard
	Ce	140	45456.4	1.3				ug/L	298	Standard
>	**Tb**	159	930779.6	1.7				ug/L	977942	Standard
	Ho	165	850.0	2.4				ug/L	12	Standard
	Tl	203	23.3	23.6	**-0.0020**	0.001	31.7	ug/L	31	Standard
	Tl	205	35.0	37.8	**0.0025**	0.002	71.7	ug/L	20	Standard
	Pb	206	2536.5	1.2	**0.4062**	0.009	2.2	ug/L	286	Standard
	Pb	207	2050.5	1.7	**0.3630**	0.010	2.7	ug/L	257	Standard
	Pb	208	8421.9	1.7	**0.3865**	0.010	2.6	ug/L	956	Standard
	U	238	103.3	13.1	**0.0115**	0.002	17.1	ug/L	17	Standard
>	**Bi**	209	556617.5	0.8				ug/L	557080	Standard

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Na	23	1.7	173.2	**11.3116**	19.584	173.1	mg/L	0	Standard
Mg	24	31.7	9.1	**-0.0123**	0.005	37.6	mg/L	32	Standard
K	39	50.0	10.0	**0.0383**	0.020	51.6	mg/L	30	Standard
Ca	43	18.3	103.3	**-2.3989**	3.033	126.4	mg/L	48	Standard
Fe	54	317.8	14.7	**0.1684**	0.043	25.3	mg/L	159	Standard
Fe	57	280.0	19.3	**0.3807**	0.196	51.6	mg/L	195	Standard
> **Sc-1**	45	37198.9	1.1				mg/L	39543	Standard
Cl	35	30150.0	0.9				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1330.1	6.0				ug/L	1647	Standard
P	31	7115.0	3.6				ug/L	15231	Standard
S	34	2203.5	6.4				ug/L	1845	Standard
Sr	88	73.3	23.9				ug/L	70	Standard
C	12	136.7	33.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	1461.3	2.6				mg/L	12	Standard
Ho-1	165	850.0	2.4				mg/L	12	Standard
Er	166	740.0	2.3				mg/L	20	Standard
I	127	1331.7	15.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.990	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.017	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.514
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.917
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606078708
Sample Date/Time: Tuesday, June 28, 2016 15:37:09
Number of Replicates: 3
Autosampler Position: 227
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75812.6	2.8				ug/L	81760	Standard
	Be	9	48.3	21.5	**0.0428**	0.011	26.6	ug/L	17	Standard
	Al	27	1071474.1	1.0	**7.4874**	0.284	3.8	ug/L	1410	Standard
	Sc	45	37513.1	2.1				ug/L	39543	Standard
	Ti	47	158.0	12.8	**0.5014**	0.093	18.5	ug/L	39	Standard
	V	51	6689.1	0.4	**0.8020**	0.010	1.2	ug/L	1415	Standard
	Cr	52	7515.2	0.4	**0.0743**	0.008	10.8	ug/L	6946	Standard
	Cr	53	588.3	8.1	**0.3608**	0.056	15.4	ug/L	328	Standard
	Mn	55	205213.7	2.8	**33.0324**	1.280	3.9	ug/L	823	Standard
	Co	59	2212.5	3.2	**0.2987**	0.013	4.3	ug/L	252	Standard
	Ni	60	1404.4	3.4	**0.6767**	0.035	5.1	ug/L	192	Standard
	Cu	65	1102.0	3.5	**0.5169**	0.018	3.4	ug/L	141	Standard
	Zn	66	2607.9	0.9	**1.6660**	0.041	2.5	ug/L	491	Standard
>	**Ge**	72	491532.3	1.1				ug/L	515087	Standard
	As	75	127.5	11.1	**0.1592**	0.014	8.7	ug/L	20	Standard
	Se	82	17.3	29.3	**0.0385**	0.047	123.2	ug/L	15	Standard
	Se-1	77	43.3	11.6	**-0.1157**	0.075	64.9	ug/L	48	Standard
>	**Ga**	71	450.0	13.5				mg/L	90	Standard
	Rb	85	3788.8	1.3				ug/L	23	Standard
	Y	89	433725.3	2.1				ug/L	448510	Standard
>	**Rh**	103	18.3	31.5				ug/L	15	Standard
	Mo	98	38.5	4.2	**-0.0045**	0.000	10.9	ug/L	11	Standard
	Ag	107	93.3	12.0	**-0.0020**	0.002	78.2	ug/L	134	Standard
	Cd	111	23.9	23.2	**0.0085**	0.003	31.3	mg/L	7	Standard
	Cd	114	45.7	16.0	**0.0041**	0.001	34.3	ug/L	16	Standard
>	**In**	115	598611.3	0.9				ug/L	611117	Standard
	Sn	118	346.7	46.9	**-0.0421**	0.028	66.0	ug/L	518	Standard
	Sb	123	86.1	26.8	**0.0058**	0.005	89.2	ug/L	127	Standard
	Ba	135	10124.4	4.3	**4.9826**	0.248	5.0	ug/L	45	Standard
	Ce	140	56269.4	3.6				ug/L	298	Standard
>	**Tb**	159	935742.2	1.5				ug/L	977942	Standard
	Ho	165	1033.4	8.1				ug/L	12	Standard
	Tl	203	29.7	5.1	**-0.0013**	0.000	18.3	ug/L	31	Standard
	Tl	205	31.7	18.2	**0.0020**	0.001	35.8	ug/L	20	Standard
	Pb	206	3055.6	2.0	**0.5003**	0.022	4.4	ug/L	286	Standard
	Pb	207	2503.2	3.8	**0.4542**	0.030	6.6	ug/L	257	Standard
	Pb	208	10181.4	1.0	**0.4779**	0.016	3.3	ug/L	956	Standard
	U	238	166.3	6.9	**0.0202**	0.002	9.9	ug/L	17	Standard
>	**Bi**	209	558847.5	2.0				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	26.7	28.6	**-0.0198**	0.010	52.5	mg/L	32	Standard
K	39	46.7	22.3	**0.0253**	0.040	158.3	mg/L	30	Standard
Ca	43	46.7	43.3	**2.1703**	3.421	157.6	mg/L	48	Standard
Fe	54	430.9	12.9	**0.2746**	0.059	21.6	mg/L	159	Standard
Fe	57	336.7	7.3	**0.5728**	0.068	12.0	mg/L	195	Standard
> **Sc-1**	45	37513.1	2.1				mg/L	39543	Standard
Cl	35	31262.2	0.8				ug/L	27642	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	1390.1	8.3				ug/L	1647	Standard
P	31	7195.0	0.6				ug/L	15231	Standard
S	34	2350.2	4.3				ug/L	1845	Standard
Sr	88	86.7	13.3				ug/L	70	Standard
C	12	130.0	15.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	1824.8	9.6				mg/L	12	Standard
Ho-1	165	1033.4	8.1				mg/L	12	Standard
Er	166	946.7	6.2				mg/L	20	Standard
I	127	1363.4	17.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.726	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.427	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	97.954	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.317	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606078713
Sample Date/Time: Tuesday, June 28, 2016 15:40:21
Number of Replicates: 3
Autosampler Position: 228
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75663.5	2.7				ug/L	81760	Standard
	Be	9	81.7	30.2	**0.0793**	0.028	34.9	ug/L	17	Standard
	Al	27	416574.6	1.3	**2.9066**	0.048	1.7	ug/L	1410	Standard
	Sc	45	36378.7	3.4				ug/L	39543	Standard
	Ti	47	126.3	10.5	**0.3773**	0.057	15.2	ug/L	39	Standard
	V	51	8315.3	0.5	**1.0708**	0.007	0.7	ug/L	1415	Standard
	Cr	52	8765.5	1.6	**0.2875**	0.022	7.8	ug/L	6946	Standard
	Cr	53	728.4	7.9	**0.5445**	0.070	12.8	ug/L	328	Standard
	Mn	55	93455.4	1.8	**15.2441**	0.287	1.9	ug/L	823	Standard
	Co	59	3649.1	3.3	**0.5232**	0.019	3.5	ug/L	252	Standard
	Ni	60	1651.1	5.4	**0.8312**	0.052	6.2	ug/L	192	Standard
	Cu	65	1200.0	2.8	**0.5835**	0.019	3.3	ug/L	141	Standard
	Zn	66	2593.9	1.4	**1.6993**	0.037	2.2	ug/L	491	Standard
>	**Ge**	72	482399.4	0.1				ug/L	515087	Standard
	As	75	167.0	21.6	**0.1989**	0.034	17.3	ug/L	20	Standard
	Se	82	15.9	30.3	**0.0282**	0.045	158.8	ug/L	15	Standard
	Se-1	77	52.3	6.7	**0.0228**	0.050	216.8	ug/L	48	Standard
>	**Ga**	71	573.3	13.4				mg/L	90	Standard
	Rb	85	5119.2	1.4				ug/L	23	Standard
	Y	89	439888.1	1.2				ug/L	448510	Standard
>	**Rh**	103	13.3	78.1				ug/L	15	Standard
	Mo	98	43.4	10.8	**-0.0024**	0.002	79.1	ug/L	11	Standard
	Ag	107	106.7	10.0	**0.0002**	0.002	826.8	ug/L	134	Standard
	Cd	111	22.9	46.1	**0.0082**	0.005	63.6	mg/L	7	Standard
	Cd	114	51.2	44.0	**0.0052**	0.004	84.1	ug/L	16	Standard
>	**In**	115	591171.7	0.9				ug/L	611117	Standard
	Sn	118	328.3	8.7	**-0.0445**	0.005	12.1	ug/L	518	Standard
	Sb	123	88.5	32.5	**0.0066**	0.006	98.7	ug/L	127	Standard
	Ba	135	15979.8	0.8	**7.9763**	0.029	0.4	ug/L	45	Standard
	Ce	140	70630.9	0.7				ug/L	298	Standard
>	**Tb**	159	919155.3	2.1				ug/L	977942	Standard
	Ho	165	1308.4	8.9				ug/L	12	Standard
	Tl	203	43.3	33.8	**0.0005**	0.002	355.9	ug/L	31	Standard
	Tl	205	45.0	58.8	**0.0041**	0.004	93.0	ug/L	20	Standard
	Pb	206	4127.6	1.0	**0.7213**	0.011	1.5	ug/L	286	Standard
	Pb	207	3419.4	2.4	**0.6628**	0.016	2.5	ug/L	257	Standard
	Pb	208	14423.4	1.0	**0.7255**	0.013	1.8	ug/L	956	Standard
	U	238	157.3	5.4	**0.0196**	0.001	6.2	ug/L	17	Standard
>	**Bi**	209	542054.4	0.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	38.3	7.5	**-0.0016**	0.005	296.7	mg/L	32	Standard
K	39	31.7	55.5	**-0.0245**	0.065	264.7	mg/L	30	Standard
Ca	43	18.3	56.8	**-2.3425**	1.620	69.1	mg/L	48	Standard
Fe	54	638.8	9.9	**0.4927**	0.076	15.4	mg/L	159	Standard
Fe	57	368.3	10.9	**0.7248**	0.101	14.0	mg/L	195	Standard
> **Sc-1**	45	36378.7	3.4				mg/L	39543	Standard
Cl	35	31640.3	1.2				ug/L	27642	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	1476.7	9.6				ug/L	1647	Standard
P	31	7046.6	3.0				ug/L	15231	Standard
S	34	2278.5	11.1				ug/L	1845	Standard
Sr	88	80.0	28.6				ug/L	70	Standard
C	12	116.7	26.2				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2168.9	5.7				mg/L	12	Standard
Ho-1	165	1308.4	8.9				mg/L	12	Standard
Er	166	1140.0	7.8				mg/L	20	Standard
I	127	1385.1	16.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.543	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.654	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.736
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.303
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078715
Sample Date/Time: Tuesday, June 28, 2016 15:43:32
Number of Replicates: 3
Autosampler Position: 229
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72672.4	3.8				ug/L	81760	Standard
	Be	9	136.7	16.5	**0.1453**	0.027	18.6	ug/L	17	Standard
	Al	27	1143496.8	3.3	**8.3341**	0.197	2.4	ug/L	1410	Standard
	Sc	45	36597.5	3.0				ug/L	39543	Standard
	Ti	47	230.0	1.3	**0.8041**	0.017	2.1	ug/L	39	Standard
	V	51	11413.9	1.0	**1.5144**	0.038	2.5	ug/L	1415	Standard
	Cr	52	15036.8	0.3	**1.2067**	0.029	2.4	ug/L	6946	Standard
	Cr	53	1373.4	5.7	**1.2975**	0.078	6.0	ug/L	328	Standard
	Mn	55	293360.4	0.3	**47.2738**	0.683	1.4	ug/L	823	Standard
	Co	59	6852.2	0.9	**0.9907**	0.018	1.8	ug/L	252	Standard
	Ni	60	4182.9	0.4	**2.2225**	0.021	0.9	ug/L	192	Standard
	Cu	65	2749.2	1.6	**1.4253**	0.010	0.7	ug/L	141	Standard
	Zn	66	5934.8	0.5	**4.8465**	0.046	1.0	ug/L	491	Standard
>	**Ge**	72	491565.9	1.3				ug/L	515087	Standard
	As	75	281.2	9.9	**0.3023**	0.024	7.9	ug/L	20	Standard
	Se	82	16.6	41.5	**0.0313**	0.062	197.6	ug/L	15	Standard
	Se-1	77	52.7	11.4	**0.0136**	0.082	602.5	ug/L	48	Standard
>	**Ga**	71	1726.8	3.8				mg/L	90	Standard
	Rb	85	17453.4	2.4				ug/L	23	Standard
	Y	89	433246.4	2.7				ug/L	448510	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	40.4	18.8	**-0.0027**	0.003	116.5	ug/L	11	Standard
	Ag	107	118.3	7.6	**0.0030**	0.002	54.7	ug/L	134	Standard
	Cd	111	36.9	12.4	**0.0159**	0.002	13.6	mg/L	7	Standard
	Cd	114	100.1	28.9	**0.0161**	0.006	36.4	ug/L	16	Standard
>	**In**	115	559969.6	1.0				ug/L	611117	Standard
	Sn	118	245.0	14.3	**-0.0567**	0.006	11.1	ug/L	518	Standard
	Sb	123	73.5	14.6	**0.0042**	0.003	63.0	ug/L	127	Standard
	Ba	135	26697.5	0.7	**14.0890**	0.209	1.5	ug/L	45	Standard
	Ce	140	126090.9	1.2				ug/L	298	Standard
>	**Tb**	159	888471.0	0.2				ug/L	977942	Standard
	Ho	165	2013.5	3.3				ug/L	12	Standard
	Tl	203	105.3	16.7	**0.0083**	0.002	26.4	ug/L	31	Standard
	Tl	205	98.3	26.1	**0.0118**	0.004	31.7	ug/L	20	Standard
	Pb	206	7239.7	1.0	**1.3394**	0.022	1.6	ug/L	286	Standard
	Pb	207	5907.2	0.7	**1.2110**	0.009	0.7	ug/L	257	Standard
	Pb	208	24779.9	1.0	**1.3155**	0.008	0.6	ug/L	956	Standard
	U	238	285.0	3.3	**0.0387**	0.001	3.3	ug/L	17	Standard
>	**Bi**	209	531928.0	0.6				ug/L	557080	Standard

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Na	23	1.7	173.2	**11.1992**	19.389	173.1	mg/L	0	Standard
Mg	24	35.0	0.0	**-0.0068**	0.002	22.3	mg/L	32	Standard
K	39	70.0	24.7	**0.1145**	0.065	56.7	mg/L	30	Standard
Ca	43	41.7	48.5	**1.5107**	3.417	226.2	mg/L	48	Standard
Fe	54	1498.6	2.3	**1.3298**	0.075	5.6	mg/L	159	Standard
Fe	57	515.0	3.5	**1.2558**	0.109	8.7	mg/L	195	Standard
> **Sc-1**	45	36597.5	3.0				mg/L	39543	Standard
Cl	35	30785.2	1.5				ug/L	27642	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	1506.7	9.5				ug/L	1647	Standard
P	31	6974.9	2.8				ug/L	15231	Standard
S	34	2301.8	4.8				ug/L	1845	Standard
Sr	88	70.0	28.6				ug/L	70	Standard
C	12	113.3	31.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	3365.6	4.6				mg/L	12	Standard
Ho-1	165	2013.5	3.3				mg/L	12	Standard
Er	166	1770.1	9.2				mg/L	20	Standard
I	127	1690.1	9.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.885	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.434	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.631
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.485
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606078716
Sample Date/Time: Tuesday, June 28, 2016 15:46:44
Number of Replicates: 3
Autosampler Position: 230
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72657.2	3.0				ug/L	81760	Standard
	Be	9	110.0	13.6	**0.1151**	0.019	16.6	ug/L	17	Standard
	Al	27	964168.3	0.2	**7.0283**	0.202	2.9	ug/L	1410	Standard
	Sc	45	36550.7	1.7				ug/L	39543	Standard
	Ti	47	122.3	2.9	**0.3511**	0.018	5.2	ug/L	39	Standard
	V	51	5582.1	3.3	**0.6361**	0.029	4.5	ug/L	1415	Standard
	Cr	52	12113.5	1.9	**0.7686**	0.019	2.4	ug/L	6946	Standard
	Cr	53	1075.0	5.2	**0.9442**	0.085	9.0	ug/L	328	Standard
	Mn	55	296391.3	0.6	**47.8289**	1.096	2.3	ug/L	823	Standard
	Co	59	5108.9	2.5	**0.7319**	0.032	4.3	ug/L	252	Standard
	Ni	60	3102.7	1.4	**1.6241**	0.056	3.4	ug/L	192	Standard
	Cu	65	3067.6	0.7	**1.6034**	0.043	2.7	ug/L	141	Standard
	Zn	66	5597.7	1.7	**4.5323**	0.178	3.9	ug/L	491	Standard
>	**Ge**	72	490975.8	1.9				ug/L	515087	Standard
	As	75	34.9	42.7	**0.0731**	0.015	20.1	ug/L	20	Standard
	Se	82	17.1	13.6	**0.0368**	0.020	54.2	ug/L	15	Standard
	Se-1	77	53.7	6.0	**0.0281**	0.032	114.8	ug/L	48	Standard
>	**Ga**	71	1235.1	6.5				mg/L	90	Standard
	Rb	85	7633.6	0.9				ug/L	23	Standard
	Y	89	431776.8	2.6				ug/L	448510	Standard
>	**Rh**	103	15.0	66.7				ug/L	15	Standard
	Mo	98	19.3	30.7	**-0.0115**	0.002	20.4	ug/L	11	Standard
	Ag	107	114.7	7.5	**0.0018**	0.001	48.3	ug/L	134	Standard
	Cd	111	65.3	10.2	**0.0294**	0.003	8.8	mg/L	7	Standard
	Cd	114	154.6	13.1	**0.0266**	0.003	12.9	ug/L	16	Standard
>	**In**	115	577281.8	2.6				ug/L	611117	Standard
	Sn	118	261.7	10.5	**-0.0551**	0.004	6.8	ug/L	518	Standard
	Sb	123	70.5	12.0	**0.0029**	0.001	50.3	ug/L	127	Standard
	Ba	135	31515.4	1.1	**16.1422**	0.456	2.8	ug/L	45	Standard
	Ce	140	108483.7	1.5				ug/L	298	Standard
>	**Tb**	159	919053.3	0.1				ug/L	977942	Standard
	Ho	165	2146.8	3.5				ug/L	12	Standard
	Tl	203	55.7	15.3	**0.0020**	0.001	51.1	ug/L	31	Standard
	Tl	205	56.7	10.2	**0.0057**	0.001	13.8	ug/L	20	Standard
	Pb	206	8383.7	0.8	**1.5358**	0.026	1.7	ug/L	286	Standard
	Pb	207	6950.9	2.1	**1.4122**	0.046	3.3	ug/L	257	Standard
	Pb	208	28623.6	0.6	**1.5044**	0.028	1.9	ug/L	956	Standard
	U	238	278.7	6.7	**0.0371**	0.002	6.0	ug/L	17	Standard
>	**Bi**	209	540360.9	1.3				ug/L	557080	Standard

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Na	23	3.3	86.6	**23.0232**	19.940	86.6	mg/L	0	Standard
Mg	24	31.7	36.5	**-0.0117**	0.016	134.2	mg/L	32	Standard
K	39	40.0	57.3	**0.0042**	0.082	1950.6	mg/L	30	Standard
Ca	43	45.0	19.2	**2.0338**	1.285	63.2	mg/L	48	Standard
Fe	54	558.7	3.5	**0.4103**	0.028	6.8	mg/L	159	Standard
Fe	57	366.7	19.3	**0.7123**	0.240	33.7	mg/L	195	Standard
> **Sc-1**	45	36550.7	1.7				mg/L	39543	Standard
Cl	35	30424.5	0.4				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	1540.1	8.3				ug/L	1647	Standard
P	31	6878.2	1.3				ug/L	15231	Standard
S	34	2278.5	4.6				ug/L	1845	Standard
Sr	88	71.7	29.0				ug/L	70	Standard
C	12	150.0	33.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	0	Standard
Dy	164	3587.7	5.2				mg/L	12	Standard
Ho-1	165	2146.8	3.5				mg/L	12	Standard
Er	166	1936.8	10.5				mg/L	20	Standard
I	127	1943.5	8.8				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.866	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.319	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.463
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.999
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078717
Sample Date/Time: Tuesday, June 28, 2016 15:49:55
Number of Replicates: 3
Autosampler Position: 231
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72923.4	1.2				ug/L	81760	Standard
	Be	9	50.0	43.6	**0.0466**	0.024	52.0	ug/L	17	Standard
	Al	27	245816.4	0.3	**1.7738**	0.027	1.5	ug/L	1410	Standard
	Sc	45	37411.1	1.3				ug/L	39543	Standard
	Ti	47	150.7	7.6	**0.4619**	0.045	9.8	ug/L	39	Standard
	V	51	5992.6	2.2	**0.6857**	0.015	2.1	ug/L	1415	Standard
	Cr	52	7687.3	1.9	**0.0860**	0.027	31.9	ug/L	6946	Standard
	Cr	53	518.3	10.1	**0.2697**	0.061	22.7	ug/L	328	Standard
	Mn	55	119301.5	0.3	**18.8992**	0.085	0.4	ug/L	823	Standard
	Co	59	2188.2	2.9	**0.2910**	0.008	2.8	ug/L	252	Standard
	Ni	60	1191.7	0.5	**0.5500**	0.007	1.2	ug/L	192	Standard
	Cu	65	843.0	2.1	**0.3684**	0.010	2.8	ug/L	141	Standard
	Zn	66	2526.9	1.6	**1.5588**	0.051	3.2	ug/L	491	Standard
>	**Ge**	72	497647.3	0.6				ug/L	515087	Standard
	As	75	96.2	13.8	**0.1289**	0.013	9.7	ug/L	20	Standard
	Se	82	10.6	36.2	**-0.0241**	0.035	144.8	ug/L	15	Standard
	Se-1	77	46.0	14.3	**-0.0871**	0.088	100.8	ug/L	48	Standard
>	**Ga**	71	388.3	9.7				mg/L	90	Standard
	Rb	85	3552.1	4.5				ug/L	23	Standard
	Y	89	408184.3	3.4				ug/L	448510	Standard
>	**Rh**	103	16.7	17.3				ug/L	15	Standard
	Mo	98	62.0	6.5	**0.0053**	0.001	22.5	ug/L	11	Standard
	Ag	107	95.7	11.7	**-0.0010**	0.002	195.1	ug/L	134	Standard
	Cd	111	10.9	9.2	**0.0025**	0.001	23.6	mg/L	7	Standard
	Cd	114	23.2	24.4	**-0.0002**	0.001	811.4	ug/L	16	Standard
>	**In**	115	574185.6	1.8				ug/L	611117	Standard
	Sn	118	255.0	18.7	**-0.0561**	0.008	14.6	ug/L	518	Standard
	Sb	123	68.2	5.6	**0.0025**	0.001	35.8	ug/L	127	Standard
	Ba	135	10138.1	0.2	**5.2024**	0.085	1.6	ug/L	45	Standard
	Ce	140	49457.3	0.9				ug/L	298	Standard
>	**Tb**	159	906877.5	2.2				ug/L	977942	Standard
	Ho	165	853.4	7.8				ug/L	12	Standard
	Tl	203	26.0	16.8	**-0.0016**	0.001	32.4	ug/L	31	Standard
	Tl	205	21.7	26.6	**0.0008**	0.001	106.7	ug/L	20	Standard
	Pb	206	2799.3	1.6	**0.4682**	0.011	2.3	ug/L	286	Standard
	Pb	207	2286.8	2.0	**0.4236**	0.011	2.7	ug/L	257	Standard
	Pb	208	9380.8	1.4	**0.4502**	0.009	2.0	ug/L	956	Standard
	U	238	106.7	2.9	**0.0123**	0.000	3.6	ug/L	17	Standard
>	**Bi**	209	542636.2	0.5				ug/L	557080	Standard

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Na	23	3.3	86.6	**22.4620**	19.449	86.6	mg/L	0	Standard
Mg	24	26.7	21.7	**-0.0196**	0.008	42.2	mg/L	32	Standard
K	39	36.7	7.9	**-0.0105**	0.010	94.8	mg/L	30	Standard
Ca	43	36.7	56.8	**0.5265**	3.309	628.5	mg/L	48	Standard
Fe	54	389.3	2.1	**0.2354**	0.013	5.4	mg/L	159	Standard
Fe	57	280.0	3.1	**0.3744**	0.024	6.3	mg/L	195	Standard
Sc-1	45	37411.1	1.3				mg/L	39543	Standard
Cl	35	30529.4	0.4				ug/L	27642	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1530.1	5.4				ug/L	1647	Standard
P	31	7263.4	2.6				ug/L	15231	Standard
S	34	2140.2	5.9				ug/L	1845	Standard
Sr	88	53.3	23.6				ug/L	70	Standard
C	12	100.0	75.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	1448.1	5.9				mg/L	12	Standard
Ho-1	165	853.4	7.8				mg/L	12	Standard
Er	166	736.7	15.9				mg/L	20	Standard
I	127	6059.5	4.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		89.192	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.614	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.957
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.407
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 15:53:08
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80037.6	2.2				ug/L	81760	Standard
	Be	9	50415.4	0.4	**51.8632**	1.062	2.0	ug/L	17	Standard
	Al	27	7611642.9	1.2	**50.4371**	0.677	1.3	ug/L	1410	Standard
	Sc	45	41097.3	0.2				ug/L	39543	Standard
	Ti	47	25369.9	1.7	**101.8781**	2.068	2.0	ug/L	39	Standard
	V	51	351293.9	2.1	**50.3394**	0.543	1.1	ug/L	1415	Standard
	Cr	52	361193.1	2.4	**50.8341**	0.636	1.3	ug/L	6946	Standard
	Cr	53	45189.0	2.1	**51.1421**	0.625	1.2	ug/L	328	Standard
	Mn	55	322540.4	1.4	**49.6098**	0.122	0.2	ug/L	823	Standard
	Co	59	356756.8	0.9	**50.7536**	0.285	0.6	ug/L	252	Standard
	Ni	60	97064.3	2.1	**51.4369**	0.357	0.7	ug/L	192	Standard
	Cu	65	97360.2	2.2	**51.1525**	0.591	1.2	ug/L	141	Standard
	Zn	66	56918.1	2.1	**51.1056**	0.446	0.9	ug/L	491	Standard
>	Ge	72	515026.5	1.4				ug/L	515087	Standard
	As	75	56903.6	1.1	**50.6598**	0.179	0.4	ug/L	20	Standard
	Se	82	5856.2	1.8	**50.7515**	0.222	0.4	ug/L	15	Standard
	Se-1	77	3927.8	0.7	**51.4293**	0.511	1.0	ug/L	48	Standard
>	Ga	71	66.7	30.3				mg/L	90	Standard
	Rb	85	760.0	4.6				ug/L	23	Standard
	Y	89	447852.9	1.0				ug/L	448510	Standard
>	Rh	103	25.0	34.6				ug/L	15	Standard
	Mo	98	271272.3	0.9	**98.6404**	1.710	1.7	ug/L	11	Standard
	Ag	107	339950.6	2.5	**49.7752**	1.742	3.5	ug/L	134	Standard
	Cd	111	107240.7	1.0	**49.3177**	0.985	2.0	mg/L	7	Standard
	Cd	114	262943.6	0.6	**49.7461**	0.816	1.6	ug/L	16	Standard
>	In	115	621725.8	1.1				ug/L	611117	Standard
	Sn	118	299388.1	2.0	**49.6643**	0.590	1.2	ug/L	518	Standard
	Sb	123	239448.5	1.8	**49.8807**	1.390	2.8	ug/L	127	Standard
	Ba	135	102748.9	0.7	**48.8974**	0.441	0.9	ug/L	45	Standard
	Ce	140	90.0	5.6				ug/L	298	Standard
>	Tb	159	985013.6	1.3				ug/L	977942	Standard
	Ho	165	16.7	45.8				ug/L	12	Standard
	Tl	203	430595.1	1.2	**49.9408**	0.227	0.5	ug/L	31	Standard
	Tl	205	380549.9	0.8	**50.8302**	0.446	0.9	ug/L	20	Standard
	Pb	206	272066.9	1.5	**49.1343**	0.429	0.9	ug/L	286	Standard
	Pb	207	246215.9	1.8	**49.3013**	0.781	1.6	ug/L	257	Standard
	Pb	208	985827.4	0.9	**51.0241**	0.323	0.6	ug/L	956	Standard
	U	238	363383.0	0.6	**49.5660**	0.508	1.0	ug/L	17	Standard
>	Bi	209	570034.9	1.5				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.2894**	17.813	173.1	mg/L	0	Standard
Mg	24	3815.5	2.6	**4.8299**	0.134	2.8	mg/L	32	Standard
K	39	1281.7	1.9	**4.0254**	0.078	1.9	mg/L	30	Standard
Ca	43	63.3	19.9	**3.9099**	1.840	47.1	mg/L	48	Standard
Fe	54	5945.2	1.8	**5.0400**	0.102	2.0	mg/L	159	Standard
Fe	57	1733.4	4.2	**5.0061**	0.238	4.8	mg/L	195	Standard
> **Sc-1**	45	41097.3	0.2				mg/L	39543	Standard
Cl	35	35020.4	1.1				ug/L	27642	Standard
Kr	83	3.0	57.7				ug/L	2	Standard
Br	81	1666.8	6.4				ug/L	1647	Standard
P	31	18748.3	2.5				ug/L	15231	Standard
S	34	2583.6	5.3				ug/L	1845	Standard
Sr	88	53.3	28.6				ug/L	70	Standard
C	12	110.0	24.1				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.4	101.7				mg/L	12	Standard
Ho-1	165	16.7	45.8				mg/L	12	Standard
Er	166	13.3	86.6				mg/L	20	Standard
I	127	1388.4	22.1				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	103.726		
	Al	27	100.874		
	Sc	45			
	Ti	47	101.878		
	V	51	100.679		
	Cr	52	101.668		
	Cr	53			
	Mn	55	99.220		
	Co	59	101.507		
	Ni	60	102.874		
	Cu	65	102.305		
	Zn	66	102.211		
>	Ge	72		99.988	
	As	75	101.320		
	Se	82	101.503		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	98.640		
Ag	107	99.550		
Cd	111	98.635		
Cd	114			
In	115			101.736
Sn	118	99.329		
Sb	123	99.761		
Ba	135	97.795		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.882		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.048		
U	238	99.132		
Bi	209			102.325
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 15:56:20
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79843.2	1.6				ug/L	81760	Standard
	Be	9	23.3	75.3	**0.0144**	0.018	125.7	ug/L	17	Standard
	Al	27	2505.2	18.4	**0.0022**	0.003	136.7	ug/L	1410	Standard
	Sc	45	39966.0	1.7				ug/L	39543	Standard
	Ti	47	35.3	11.4	**-0.0209**	0.017	83.6	ug/L	39	Standard
	V	51	1133.0	9.8	**-0.0412**	0.016	39.7	ug/L	1415	Standard
	Cr	52	6206.9	2.0	**-0.1524**	0.017	11.1	ug/L	6946	Standard
	Cr	53	315.0	2.7	**0.0227**	0.013	56.9	ug/L	328	Standard
	Mn	55	686.0	7.5	**-0.0412**	0.007	17.6	ug/L	823	Standard
	Co	59	254.3	2.2	**0.0054**	0.001	12.6	ug/L	252	Standard
	Ni	60	171.3	1.2	**-0.0127**	0.001	8.3	ug/L	192	Standard
	Cu	65	123.3	12.6	**-0.0250**	0.008	31.0	ug/L	141	Standard
	Zn	66	449.3	3.1	**-0.4117**	0.013	3.2	ug/L	491	Standard
>	**Ge**	72	507665.8	0.8				ug/L	515087	Standard
	As	75	-25.2	101.2	**0.0174**	0.023	132.3	ug/L	20	Standard
	Se	82	17.2	13.7	**0.0322**	0.020	60.6	ug/L	15	Standard
	Se-1	77	51.3	10.7	**-0.0277**	0.072	260.3	ug/L	48	Standard
>	**Ga**	71	48.3	15.8				mg/L	90	Standard
	Rb	85	30.0	44.1				ug/L	23	Standard
	Y	89	444982.9	1.9				ug/L	448510	Standard
>	**Rh**	103	16.7	34.6				ug/L	15	Standard
	Mo	98	252.7	24.3	**0.0725**	0.022	30.7	ug/L	11	Standard
	Ag	107	129.7	3.6	**0.0027**	0.001	26.2	ug/L	134	Standard
	Cd	111	17.2	9.0	**0.0050**	0.001	14.0	mg/L	7	Standard
	Cd	114	47.7	10.5	**0.0041**	0.001	23.1	ug/L	16	Standard
>	**In**	115	623883.8	0.1				ug/L	611117	Standard
	Sn	118	770.0	14.1	**0.0256**	0.018	70.0	ug/L	518	Standard
	Sb	123	507.4	30.1	**0.0925**	0.032	34.2	ug/L	127	Standard
	Ba	135	38.7	5.4	**-0.0068**	0.001	14.6	ug/L	45	Standard
	Ce	140	40.0	21.7				ug/L	298	Standard
>	**Tb**	159	974680.3	0.5				ug/L	977942	Standard
	Ho	165	13.3	78.1				ug/L	12	Standard
	Tl	203	68.0	6.7	**0.0032**	0.001	15.5	ug/L	31	Standard
	Tl	205	66.7	11.5	**0.0068**	0.001	14.7	ug/L	20	Standard
	Pb	206	289.3	1.4	**-0.0104**	0.001	6.9	ug/L	286	Standard
	Pb	207	250.7	7.8	**-0.0070**	0.004	55.4	ug/L	257	Standard
	Pb	208	1099.7	2.8	**-0.0025**	0.002	60.9	ug/L	956	Standard
	U	238	62.3	42.5	**0.0057**	0.004	64.1	ug/L	17	Standard
>	**Bi**	209	560756.1	0.5				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	33.3	45.8	**-0.0130**	0.021	161.7	mg/L	32	Standard
K	39	33.3	17.3	**-0.0301**	0.018	60.0	mg/L	30	Standard
Ca	43	38.3	27.2	**0.4086**	1.513	370.3	mg/L	48	Standard
Fe	54	141.0	17.0	**-0.0107**	0.022	208.8	mg/L	159	Standard
Fe	57	213.3	13.7	**0.0887**	0.105	118.5	mg/L	195	Standard
> **Sc-1**	45	39966.0	1.7				mg/L	39543	Standard
Cl	35	34581.4	2.4				ug/L	27642	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	1706.8	4.2				ug/L	1647	Standard
P	31	18139.2	2.9				ug/L	15231	Standard
S	34	2418.5	8.0				ug/L	1845	Standard
Sr	88	68.3	11.2				ug/L	70	Standard
C	12	130.0	53.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.8	101.7				mg/L	12	Standard
Ho-1	165	13.3	78.1				mg/L	12	Standard
Er	166	3.3	173.2				mg/L	20	Standard
I	127	1121.7	18.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.559	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.089
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.660
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: PBW 45 WG573751-04
Sample Date/Time: Tuesday, June 28, 2016 15:59:33
Number of Replicates: 3
Autosampler Position: 232
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80427.9	0.7				ug/L	81760	Standard
	Be	9	20.0	43.3	**0.0107**	0.009	82.0	ug/L	17	Standard
	Al	27	16896.1	3.6	**0.0970**	0.004	4.0	ug/L	1410	Standard
	Sc	45	39630.1	2.3				ug/L	39543	Standard
	Ti	47	34.3	28.0	**-0.0290**	0.037	127.4	ug/L	39	Standard
	V	51	1241.7	7.6	**-0.0303**	0.012	39.4	ug/L	1415	Standard
	Cr	52	8808.2	2.5	**0.1923**	0.015	7.8	ug/L	6946	Standard
	Cr	53	705.0	11.9	**0.4526**	0.107	23.5	ug/L	328	Standard
	Mn	55	5471.7	0.3	**0.6851**	0.014	2.1	ug/L	823	Standard
	Co	59	272.7	7.3	**0.0070**	0.003	48.0	ug/L	252	Standard
	Ni	60	321.0	11.4	**0.0633**	0.019	30.2	ug/L	192	Standard
	Cu	65	232.7	11.6	**0.0301**	0.014	46.8	ug/L	141	Standard
	Zn	66	2018.1	1.4	**0.9905**	0.004	0.4	ug/L	491	Standard
>	**Ge**	72	521638.1	1.4				ug/L	515087	Standard
	As	75	-54.9	36.7	**-0.0079**	0.017	218.9	ug/L	20	Standard
	Se	82	10.0	20.3	**-0.0338**	0.018	54.1	ug/L	15	Standard
	Se-1	77	48.0	14.4	**-0.0888**	0.100	112.7	ug/L	48	Standard
>	**Ga**	71	53.3	28.6				mg/L	90	Standard
	Rb	85	156.7	21.7				ug/L	23	Standard
	Y	89	436462.5	0.8				ug/L	448510	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	82.2	21.1	**0.0108**	0.006	59.5	ug/L	11	Standard
	Ag	107	93.7	16.2	**-0.0025**	0.002	87.2	ug/L	134	Standard
	Cd	111	11.9	25.2	**0.0025**	0.001	54.5	mg/L	7	Standard
	Cd	114	46.6	47.9	**0.0039**	0.004	108.7	ug/L	16	Standard
>	**In**	115	622987.2	0.5				ug/L	611117	Standard
	Sn	118	873.4	7.7	**0.0429**	0.010	24.2	ug/L	518	Standard
	Sb	123	225.0	36.0	**0.0339**	0.017	49.6	ug/L	127	Standard
	Ba	135	668.7	0.9	**0.2926**	0.004	1.5	ug/L	45	Standard
	Ce	140	103.3	7.4				ug/L	298	Standard
>	**Tb**	159	980754.1	0.6				ug/L	977942	Standard
	Ho	165	13.3	78.1				ug/L	12	Standard
	Tl	203	31.7	30.7	**-0.0012**	0.001	94.5	ug/L	31	Standard
	Tl	205	30.0	86.6	**0.0017**	0.003	203.8	ug/L	20	Standard
	Pb	206	380.3	5.4	**0.0044**	0.003	72.4	ug/L	286	Standard
	Pb	207	331.3	8.5	**0.0076**	0.005	67.3	ug/L	257	Standard
	Pb	208	1302.7	2.5	**0.0063**	0.001	19.3	ug/L	956	Standard
	U	238	25.3	53.6	**0.0004**	0.002	408.2	ug/L	17	Standard
>	**Bi**	209	576453.2	0.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	33.3	8.7	**-0.0129**	0.003	22.5	mg/L	32	Standard
K	39	48.3	15.8	**0.0218**	0.028	129.2	mg/L	30	Standard
Ca	43	18.3	78.7	**-2.5918**	2.118	81.7	mg/L	48	Standard
Fe	54	122.7	28.9	**-0.0266**	0.030	114.3	mg/L	159	Standard
Fe	57	223.3	24.1	**0.1269**	0.176	138.7	mg/L	195	Standard
Sc-1	45	39630.1	2.3				mg/L	39543	Standard
Cl	35	33807.0	1.7				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1633.4	2.0				ug/L	1647	Standard
P	31	17535.1	2.2				ug/L	15231	Standard
S	34	2338.5	7.5				ug/L	1845	Standard
Sr	88	75.0	30.6				ug/L	70	Standard
C	12	106.7	19.5				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.4	3.0				mg/L	12	Standard
Ho-1	165	13.3	78.1				mg/L	12	Standard
Er	166	13.3	43.3				mg/L	20	Standard
I	127	955.0	19.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		98.371	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.272	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.942
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.478
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: LCSW 45 WG573451-05
Sample Date/Time: Tuesday, June 28, 2016 16:02:44
Number of Replicates: 3
Autosampler Position: 233
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81285.8	1.4				ug/L	81760	Standard
	Be	9	49444.0	4.0	**50.0648**	1.744	3.5	ug/L	17	Standard
	Al	27	14440.2	1.6	**0.0798**	0.002	2.1	ug/L	1410	Standard
	Sc	45	40522.5	4.2				ug/L	39543	Standard
	Ti	47	35.7	14.1	**-0.0217**	0.021	96.5	ug/L	39	Standard
	V	51	343445.8	1.5	**49.2175**	1.714	3.5	ug/L	1415	Standard
	Cr	52	355835.3	1.6	**50.0593**	1.026	2.0	ug/L	6946	Standard
	Cr	53	43403.8	4.1	**49.0831**	1.336	2.7	ug/L	328	Standard
	Mn	55	327263.1	1.9	**50.3439**	1.847	3.7	ug/L	823	Standard
	Co	59	357909.9	1.9	**50.9146**	1.589	3.1	ug/L	252	Standard
	Ni	60	94484.4	2.0	**50.0595**	0.992	2.0	ug/L	192	Standard
	Cu	65	95887.5	1.7	**50.3702**	0.997	2.0	ug/L	141	Standard
	Zn	66	56697.9	0.9	**50.8990**	0.801	1.6	ug/L	491	Standard
>	**Ge**	72	515232.3	2.4				ug/L	515087	Standard
	As	75	56137.8	1.3	**49.9742**	1.270	2.5	ug/L	20	Standard
	Se	82	5754.2	0.4	**49.8676**	1.316	2.6	ug/L	15	Standard
	Se-1	77	3847.2	2.4	**50.3547**	1.829	3.6	ug/L	48	Standard
>	**Ga**	71	80.0	38.0				mg/L	90	Standard
	Rb	85	45.0	58.8				ug/L	23	Standard
	Y	89	449389.0	2.2				ug/L	448510	Standard
>	**Rh**	103	28.3	66.8				ug/L	15	Standard
	Mo	98	72.0	12.6	**0.0070**	0.003	48.7	ug/L	11	Standard
	Ag	107	332360.6	2.0	**48.5009**	1.256	2.6	ug/L	134	Standard
	Cd	111	105950.1	2.1	**48.5677**	1.420	2.9	mg/L	7	Standard
	Cd	114	259244.9	2.6	**48.8950**	1.818	3.7	ug/L	16	Standard
>	**In**	115	623755.7	1.2				ug/L	611117	Standard
	Sn	118	950.0	6.3	**0.0554**	0.008	14.9	ug/L	518	Standard
	Sb	123	235787.4	1.4	**48.9583**	1.261	2.6	ug/L	127	Standard
	Ba	135	101234.2	2.5	**48.0272**	1.604	3.3	ug/L	45	Standard
	Ce	140	53.3	5.4				ug/L	298	Standard
>	**Tb**	159	962831.7	2.3				ug/L	977942	Standard
	Ho	165	6.7	114.6				ug/L	12	Standard
	Tl	203	424492.3	2.2	**49.7361**	1.545	3.1	ug/L	31	Standard
	Tl	205	378457.4	1.6	**51.0672**	1.520	3.0	ug/L	20	Standard
	Pb	206	276584.3	1.3	**50.4636**	1.380	2.7	ug/L	286	Standard
	Pb	207	241372.6	1.3	**48.8258**	1.366	2.8	ug/L	257	Standard
	Pb	208	990155.6	1.9	**51.7752**	1.712	3.3	ug/L	956	Standard
	U	238	358184.2	2.6	**49.3578**	1.903	3.9	ug/L	17	Standard
>	**Bi**	209	564381.2	1.4				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.8762**	18.829	173.1	mg/L	0	Standard
Mg	24	28.3	71.3	**-0.0199**	0.028	139.9	mg/L	32	Standard
K	39	45.0	40.1	**0.0061**	0.057	941.7	mg/L	30	Standard
Ca	43	25.0	60.0	**-1.6629**	2.211	133.0	mg/L	48	Standard
Fe	54	141.6	12.0	**-0.0123**	0.010	79.8	mg/L	159	Standard
Fe	57	180.0	5.6	**-0.0319**	0.009	26.7	mg/L	195	Standard
> **Sc-1**	45	40522.5	4.2				mg/L	39543	Standard
Cl	35	33285.9	3.1				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	5364.3	7.6				ug/L	1647	Standard
P	31	17471.7	4.0				ug/L	15231	Standard
S	34	2361.9	6.4				ug/L	1845	Standard
Sr	88	63.3	24.1				ug/L	70	Standard
C	12	126.7	43.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	15.9	34.8				mg/L	12	Standard
Ho-1	165	6.7	114.6				mg/L	12	Standard
Er	166	16.7	69.3				mg/L	20	Standard
I	127	856.7	31.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.420	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.028	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.068
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.311
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 45 WG573451-05
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Method 6020 - Summary Report

Sample ID: L1606115101 WG573751-02
Sample Date/Time: Tuesday, June 28, 2016 16:05:56
Number of Replicates: 3
Autosampler Position: 234
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77671.9	1.4				ug/L	81760	Standard
	Be	9	26.7	39.0	**0.0185**	0.011	58.4	ug/L	17	Standard
	Al	27	13955917.4	1.2	**95.3134**	2.493	2.6	ug/L	1410	Standard
	Sc	45	39321.0	0.9				ug/L	39543	Standard
	Ti	47	301.7	10.7	**1.0707**	0.148	13.8	ug/L	39	Standard
	V	51	16198.5	2.2	**2.1650**	0.025	1.2	ug/L	1415	Standard
	Cr	52	10911.9	4.6	**0.5376**	0.044	8.1	ug/L	6946	Standard
	Cr	53	3267.0	16.4	**3.4384**	0.551	16.0	ug/L	328	Standard
	Mn	55	181411.8	1.7	**28.3397**	0.987	3.5	ug/L	823	Standard
	Co	59	976.7	3.3	**0.1102**	0.006	5.4	ug/L	252	Standard
	Ni	60	1471.7	0.7	**0.6905**	0.022	3.2	ug/L	192	Standard
	Cu	65	1872.1	2.6	**0.9119**	0.023	2.5	ug/L	141	Standard
	Zn	66	6550.4	2.0	**5.2541**	0.063	1.2	ug/L	491	Standard
>	**Ge**	72	506178.8	2.0				ug/L	515087	Standard
	As	75	931.2	4.4	**0.8837**	0.051	5.8	ug/L	20	Standard
	Se	82	231.2	4.1	**1.9256**	0.108	5.6	ug/L	15	Standard
	Se-1	77	230.7	3.7	**2.3974**	0.119	5.0	ug/L	48	Standard
>	**Ga**	71	195.0	5.1				mg/L	90	Standard
	Rb	85	19537.6	1.2				ug/L	23	Standard
	Y	89	432314.6	1.1				ug/L	448510	Standard
>	**Rh**	103	61.7	12.4				ug/L	15	Standard
	Mo	98	3291.8	1.3	**1.2330**	0.013	1.0	ug/L	11	Standard
	Ag	107	150.7	8.2	**0.0069**	0.002	29.9	ug/L	134	Standard
	Cd	111	62.2	4.0	**0.0270**	0.001	5.4	mg/L	7	Standard
	Cd	114	153.0	45.9	**0.0254**	0.014	55.2	ug/L	16	Standard
>	**In**	115	594394.0	1.1				ug/L	611117	Standard
	Sn	118	883.4	9.5	**0.0516**	0.013	25.0	ug/L	518	Standard
	Sb	123	639.6	8.2	**0.1265**	0.011	8.6	ug/L	127	Standard
	Ba	135	68518.2	0.3	**34.1005**	0.460	1.3	ug/L	45	Standard
	Ce	140	2645.2	17.9				ug/L	298	Standard
>	**Tb**	159	950271.0	0.7				ug/L	977942	Standard
	Ho	165	53.3	10.8				ug/L	12	Standard
	Tl	203	411.7	14.6	**0.0459**	0.008	17.1	ug/L	31	Standard
	Tl	205	376.7	19.3	**0.0511**	0.011	20.8	ug/L	20	Standard
	Pb	206	1679.8	1.4	**0.2582**	0.003	1.3	ug/L	286	Standard
	Pb	207	1366.4	3.8	**0.2322**	0.009	3.7	ug/L	257	Standard
	Pb	208	5841.1	1.9	**0.2602**	0.004	1.4	ug/L	956	Standard
	U	238	9731.1	2.1	**1.4034**	0.022	1.5	ug/L	17	Standard
>	**Bi**	209	537950.1	0.8				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	34736.4	1.4	**46.4420**	0.278	0.6	mg/L	32	Standard
K	39	261.7	6.7	**0.7474**	0.052	7.0	mg/L	30	Standard
Ca	43	178.3	24.5	**21.8549**	6.453	29.5	mg/L	48	Standard
Fe	54	262.3	8.0	**0.1018**	0.020	19.8	mg/L	159	Standard
Fe	57	341.7	2.2	**0.5353**	0.023	4.3	mg/L	195	Standard
Sc-1	45	39321.0	0.9				mg/L	39543	Standard
Cl	35	35275.1	3.8				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	35124.1	4.7				ug/L	1647	Standard
P	31	18164.2	1.2				ug/L	15231	Standard
S	34	2260.2	2.8				ug/L	1845	Standard
Sr	88	231.7	13.9				ug/L	70	Standard
C	12	256.7	41.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	63.6	33.9				mg/L	12	Standard
Ho-1	165	53.3	10.8				mg/L	12	Standard
Er	166	63.3	36.5				mg/L	20	Standard
I	127	311901.7	7.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.000	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.271	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606115101 WG573751-02
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.264
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.566
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606115103S WG573751-07
Sample Date/Time: Tuesday, June 28, 2016 16:09:07
Number of Replicates: 3
Autosampler Position: 235
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82738.6	0.2				ug/L	81760	Standard
	Be	9	50932.1	1.3	**50.6700**	0.765	1.5	ug/L	17	Standard
	Al	27	14256616.7	2.2	**91.3792**	1.822	2.0	ug/L	1410	Standard
	Sc	45	41140.8	1.3				ug/L	39543	Standard
	Ti	47	371.0	4.6	**1.3119**	0.075	5.7	ug/L	39	Standard
	V	51	355266.5	2.0	**50.3881**	1.016	2.0	ug/L	1415	Standard
	Cr	52	348734.5	0.9	**48.5348**	0.604	1.2	ug/L	6946	Standard
	Cr	53	45906.1	1.2	**51.4332**	1.330	2.6	ug/L	328	Standard
	Mn	55	484874.0	0.4	**73.8916**	1.228	1.7	ug/L	823	Standard
	Co	59	330526.6	1.2	**46.5427**	1.213	2.6	ug/L	252	Standard
	Ni	60	91208.4	1.4	**47.8307**	0.262	0.5	ug/L	192	Standard
	Cu	65	93139.1	0.3	**48.4331**	0.711	1.5	ug/L	141	Standard
	Zn	66	61775.3	0.7	**54.9696**	1.209	2.2	ug/L	491	Standard
>	**Ge**	72	520412.6	1.6				ug/L	515087	Standard
	As	75	57188.6	0.5	**50.3925**	0.724	1.4	ug/L	20	Standard
	Se	82	5643.2	0.1	**48.4036**	0.791	1.6	ug/L	15	Standard
	Se-1	77	3992.2	4.4	**51.7398**	2.452	4.7	ug/L	48	Standard
>	**Ga**	71	230.0	28.3				mg/L	90	Standard
	Rb	85	19777.9	1.1				ug/L	23	Standard
	Y	89	433897.5	1.4				ug/L	448510	Standard
>	**Rh**	103	81.7	39.4				ug/L	15	Standard
	Mo	98	3301.1	2.4	**1.2202**	0.040	3.3	ug/L	11	Standard
	Ag	107	315385.8	0.9	**47.6558**	0.862	1.8	ug/L	134	Standard
	Cd	111	99498.3	0.6	**47.2265**	0.833	1.8	mg/L	7	Standard
	Cd	114	242671.7	0.4	**47.3834**	0.530	1.1	ug/L	16	Standard
>	**In**	115	602380.0	1.2				ug/L	611117	Standard
	Sn	118	866.7	11.7	**0.0467**	0.016	33.5	ug/L	518	Standard
	Sb	123	233832.7	0.4	**50.2714**	0.769	1.5	ug/L	127	Standard
	Ba	135	168472.5	0.5	**82.7716**	1.205	1.5	ug/L	45	Standard
	Ce	140	3190.3	1.8				ug/L	298	Standard
>	**Tb**	159	975538.4	0.7				ug/L	977942	Standard
	Ho	165	55.0	50.6				ug/L	12	Standard
	Tl	203	405391.8	0.6	**48.6809**	0.381	0.8	ug/L	31	Standard
	Tl	205	349844.8	1.2	**48.3796**	0.623	1.3	ug/L	20	Standard
	Pb	206	268733.3	0.7	**50.2550**	0.909	1.8	ug/L	286	Standard
	Pb	207	232854.8	1.2	**48.2799**	1.141	2.4	ug/L	257	Standard
	Pb	208	923192.2	0.6	**49.4693**	0.366	0.7	ug/L	956	Standard
	U	238	355626.8	0.4	**50.2227**	0.621	1.2	ug/L	17	Standard
>	**Bi**	209	550570.6	1.2				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	35867.4	1.9	**45.8327**	0.548	1.2	mg/L	32	Standard
K	39	318.3	2.4	**0.8927**	0.038	4.2	mg/L	30	Standard
Ca	43	141.7	5.4	**15.3452**	1.333	8.7	mg/L	48	Standard
Fe	54	233.9	13.6	**0.0666**	0.029	43.8	mg/L	159	Standard
Fe	57	373.3	5.1	**0.5873**	0.073	12.3	mg/L	195	Standard
> **Sc-1**	45	41140.8	1.3				mg/L	39543	Standard
Cl	35	36665.0	1.2				ug/L	27642	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	38074.5	2.7				ug/L	1647	Standard
P	31	19512.6	0.4				ug/L	15231	Standard
S	34	2426.9	4.9				ug/L	1845	Standard
Sr	88	241.7	11.4				ug/L	70	Standard
C	12	183.3	31.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	66.3	40.2				mg/L	12	Standard
Ho-1	165	55.0	50.6				mg/L	12	Standard
Er	166	76.7	15.1				mg/L	20	Standard
I	127	311628.4	3.8				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		101.197	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.034	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.570
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.831
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606115304SD WG573751-08
Sample Date/Time: Tuesday, June 28, 2016 16:12:19
Number of Replicates: 3
Autosampler Position: 236
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82914.6	1.7				ug/L	81760	Standard
	Be	9	51258.3	2.2	**50.8925**	1.250	2.5	ug/L	17	Standard
	Al	27	15399778.5	0.9	**98.5192**	1.923	2.0	ug/L	1410	Standard
	Sc	45	40084.7	2.9				ug/L	39543	Standard
	Ti	47	640.0	9.7	**2.4715**	0.230	9.3	ug/L	39	Standard
	V	51	358753.7	1.2	**52.7008**	0.680	1.3	ug/L	1415	Standard
	Cr	52	354784.4	1.1	**51.1849**	0.073	0.1	ug/L	6946	Standard
	Cr	53	47661.6	3.5	**55.3029**	1.433	2.6	ug/L	328	Standard
	Mn	55	529314.6	1.5	**83.5469**	1.579	1.9	ug/L	823	Standard
	Co	59	345503.9	1.1	**50.3773**	0.891	1.8	ug/L	252	Standard
	Ni	60	92308.7	1.0	**50.1355**	0.426	0.9	ug/L	192	Standard
	Cu	65	93613.0	1.4	**50.4100**	0.723	1.4	ug/L	141	Standard
	Zn	66	64567.0	0.6	**59.5553**	0.411	0.7	ug/L	491	Standard
>	**Ge**	72	502524.4	1.0				ug/L	515087	Standard
	As	75	56933.1	0.7	**51.9453**	0.162	0.3	ug/L	20	Standard
	Se	82	5947.1	1.7	**52.8275**	0.666	1.3	ug/L	15	Standard
	Se-1	77	3965.5	2.7	**53.2435**	1.801	3.4	ug/L	48	Standard
>	**Ga**	71	291.7	11.2				mg/L	90	Standard
	Rb	85	22576.8	1.0				ug/L	23	Standard
	Y	89	439067.8	2.2				ug/L	448510	Standard
>	**Rh**	103	73.3	7.9				ug/L	15	Standard
	Mo	98	3536.7	2.2	**1.2876**	0.021	1.6	ug/L	11	Standard
	Ag	107	318639.0	0.2	**47.3947**	0.683	1.4	ug/L	134	Standard
	Cd	111	102545.7	0.7	**47.9082**	0.269	0.6	mg/L	7	Standard
	Cd	114	249882.8	0.5	**48.0284**	0.370	0.8	ug/L	16	Standard
>	**In**	115	611940.4	1.2				ug/L	611117	Standard
	Sn	118	1045.0	4.1	**0.0745**	0.005	6.8	ug/L	518	Standard
	Sb	123	235512.7	0.7	**49.8406**	0.693	1.4	ug/L	127	Standard
	Ba	135	174610.3	1.9	**84.4342**	0.545	0.6	ug/L	45	Standard
	Ce	140	5954.5	2.4				ug/L	298	Standard
>	**Tb**	159	973344.6	0.2				ug/L	977942	Standard
	Ho	165	121.7	6.3				ug/L	12	Standard
	Tl	203	413217.7	0.6	**49.7797**	0.456	0.9	ug/L	31	Standard
	Tl	205	363310.0	1.7	**50.4036**	0.986	2.0	ug/L	20	Standard
	Pb	206	270026.6	0.5	**50.6539**	0.212	0.4	ug/L	286	Standard
	Pb	207	235774.0	0.4	**49.0358**	0.293	0.6	ug/L	257	Standard
	Pb	208	947837.4	0.9	**50.9548**	0.634	1.2	ug/L	956	Standard
	U	238	363550.4	1.8	**51.5051**	1.028	2.0	ug/L	17	Standard
>	**Bi**	209	548791.6	0.3				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.4900**	18.160	173.1	mg/L	0	Standard
Mg	24	38714.4	0.7	**50.8180**	1.880	3.7	mg/L	32	Standard
K	39	343.3	15.2	**1.0066**	0.203	20.2	mg/L	30	Standard
Ca	43	156.7	1.8	**18.1495**	1.124	6.2	mg/L	48	Standard
Fe	54	374.0	6.7	**0.1967**	0.015	7.7	mg/L	159	Standard
Fe	57	400.0	0.0	**0.7083**	0.040	5.6	mg/L	195	Standard
> **Sc-1**	45	40084.7	2.9				mg/L	39543	Standard
Cl	35	38416.6	0.8				ug/L	27642	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	40474.1	6.0				ug/L	1647	Standard
P	31	20383.7	1.9				ug/L	15231	Standard
S	34	2388.5	6.8				ug/L	1845	Standard
Sr	88	235.0	8.5				ug/L	70	Standard
C	12	253.3	25.1				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	175.2	19.1				mg/L	12	Standard
Ho-1	165	121.7	6.3				mg/L	12	Standard
Er	166	100.0	26.5				mg/L	20	Standard
I	127	354555.7	8.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.412	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.561	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.135
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.512
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606091602 WG573751-01
Sample Date/Time: Tuesday, June 28, 2016 16:15:30
Number of Replicates: 3
Autosampler Position: 237
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83752.6	2.6				ug/L	81760	Standard
	Be	9	50.0	26.5	**0.0395**	0.014	34.7	ug/L	17	Standard
	Al	27	2701508.7	2.5	**17.0954**	0.130	0.8	ug/L	1410	Standard
	Sc	45	39755.5	3.1				ug/L	39543	Standard
	Ti	47	56.0	11.2	**0.0633**	0.027	42.8	ug/L	39	Standard
	V	51	1924.8	3.9	**0.0741**	0.009	12.6	ug/L	1415	Standard
	Cr	52	10285.8	1.8	**0.4408**	0.012	2.7	ug/L	6946	Standard
	Cr	53	1156.7	1.7	**0.9947**	0.041	4.2	ug/L	328	Standard
	Mn	55	253930.8	1.4	**39.5649**	0.851	2.1	ug/L	823	Standard
	Co	59	1951.8	2.9	**0.2502**	0.004	1.8	ug/L	252	Standard
	Ni	60	1859.1	3.7	**0.8956**	0.027	3.0	ug/L	192	Standard
	Cu	65	1000.0	2.6	**0.4428**	0.017	3.9	ug/L	141	Standard
	Zn	66	2280.8	1.9	**1.2819**	0.026	2.1	ug/L	491	Standard
>	**Ge**	72	508105.2	1.4				ug/L	515087	Standard
	As	75	151.5	17.1	**0.1768**	0.022	12.7	ug/L	20	Standard
	Se	82	39.2	12.0	**0.2256**	0.041	18.4	ug/L	15	Standard
	Se-1	77	70.3	2.2	**0.2277**	0.025	11.1	ug/L	48	Standard
>	**Ga**	71	73.3	3.9				mg/L	90	Standard
	Rb	85	9319.5	3.0				ug/L	23	Standard
	Y	89	446629.7	1.4				ug/L	448510	Standard
>	**Rh**	103	35.0	37.8				ug/L	15	Standard
	Mo	98	255.3	4.6	**0.0742**	0.003	4.3	ug/L	11	Standard
	Ag	107	140.0	17.3	**0.0044**	0.004	86.0	ug/L	134	Standard
	Cd	111	34.5	15.3	**0.0130**	0.002	17.2	mg/L	7	Standard
	Cd	114	78.1	40.8	**0.0099**	0.006	59.3	ug/L	16	Standard
>	**In**	115	618896.7	1.2				ug/L	611117	Standard
	Sn	118	878.4	9.4	**0.0447**	0.013	28.2	ug/L	518	Standard
	Sb	123	309.3	20.5	**0.0520**	0.014	26.9	ug/L	127	Standard
	Ba	135	35857.7	1.5	**17.1253**	0.158	0.9	ug/L	45	Standard
	Ce	140	1368.4	3.3				ug/L	298	Standard
>	**Tb**	159	968292.7	1.7				ug/L	977942	Standard
	Ho	165	100.0	15.0				ug/L	12	Standard
	Tl	203	175.7	13.5	**0.0159**	0.003	15.9	ug/L	31	Standard
	Tl	205	158.3	30.0	**0.0192**	0.006	31.5	ug/L	20	Standard
	Pb	206	469.3	2.7	**0.0227**	0.001	2.5	ug/L	286	Standard
	Pb	207	387.3	8.4	**0.0210**	0.006	30.5	ug/L	257	Standard
	Pb	208	1635.4	0.6	**0.0258**	0.001	5.1	ug/L	956	Standard
	U	238	220.3	6.6	**0.0276**	0.001	5.0	ug/L	17	Standard
>	**Bi**	209	560335.5	2.1				ug/L	557080	Standard

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Na	23	3.3	173.2	**20.5537**	35.591	173.2	mg/L	0	Standard
Mg	24	3380.4	0.3	**4.4213**	0.131	3.0	mg/L	32	Standard
K	39	168.3	9.1	**0.4237**	0.034	8.1	mg/L	30	Standard
Ca	43	108.3	14.8	**11.0098**	2.304	20.9	mg/L	48	Standard
Fe	54	282.4	10.4	**0.1178**	0.034	28.5	mg/L	159	Standard
Fe	57	291.7	21.2	**0.3561**	0.217	61.0	mg/L	195	Standard
> **Sc-1**	45	39755.5	3.1				mg/L	39543	Standard
Cl	35	40081.0	2.5				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	4644.1	13.8				ug/L	1647	Standard
P	31	18102.5	2.7				ug/L	15231	Standard
S	34	2331.8	2.8				ug/L	1845	Standard
Sr	88	118.3	8.8				ug/L	70	Standard
C	12	123.3	9.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	117.9	56.1				mg/L	12	Standard
Ho-1	165	100.0	15.0				mg/L	12	Standard
Er	166	43.3	48.0				mg/L	20	Standard
I	127	21574.4	25.8				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.437	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.645	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606091602 WG573751-01
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.273
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.584
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606091602DP WG573751-06
Sample Date/Time: Tuesday, June 28, 2016 16:18:41
Number of Replicates: 3
Autosampler Position: 238
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81912.6	2.5				ug/L	81760	Standard
	Be	9	38.3	32.8	**0.0286**	0.012	41.1	ug/L	17	Standard
	Al	27	2661315.3	2.5	**17.2245**	0.558	3.2	ug/L	1410	Standard
	Sc	45	39553.2	2.2				ug/L	39543	Standard
	Ti	47	60.3	10.8	**0.0810**	0.030	36.5	ug/L	39	Standard
	V	51	1771.3	1.7	**0.0516**	0.003	5.3	ug/L	1415	Standard
	Cr	52	10216.4	1.4	**0.4303**	0.018	4.2	ug/L	6946	Standard
	Cr	53	1328.4	4.4	**1.1923**	0.072	6.1	ug/L	328	Standard
	Mn	55	248102.9	0.7	**38.6399**	0.746	1.9	ug/L	823	Standard
	Co	59	1844.8	1.4	**0.2347**	0.001	0.3	ug/L	252	Standard
	Ni	60	1828.1	4.4	**0.8792**	0.056	6.4	ug/L	192	Standard
	Cu	65	995.0	2.4	**0.4399**	0.012	2.7	ug/L	141	Standard
	Zn	66	2165.5	0.6	**1.1746**	0.022	1.8	ug/L	491	Standard
>	**Ge**	72	508291.1	1.3				ug/L	515087	Standard
	As	75	90.4	12.4	**0.1217**	0.009	7.5	ug/L	20	Standard
	Se	82	34.1	11.8	**0.1803**	0.032	17.6	ug/L	15	Standard
	Se-1	77	74.3	14.5	**0.2819**	0.154	54.5	ug/L	48	Standard
>	**Ga**	71	68.3	30.5				mg/L	90	Standard
	Rb	85	9142.8	6.3				ug/L	23	Standard
	Y	89	450226.3	2.8				ug/L	448510	Standard
>	**Rh**	103	21.7	58.1				ug/L	15	Standard
	Mo	98	245.2	4.8	**0.0704**	0.005	7.4	ug/L	11	Standard
	Ag	107	87.7	6.3	**-0.0033**	0.001	21.6	ug/L	134	Standard
	Cd	111	23.2	17.5	**0.0078**	0.002	23.8	mg/L	7	Standard
	Cd	114	58.3	13.8	**0.0061**	0.001	23.6	ug/L	16	Standard
>	**In**	115	619551.5	1.3				ug/L	611117	Standard
	Sn	118	933.4	2.4	**0.0538**	0.006	10.7	ug/L	518	Standard
	Sb	123	201.2	19.7	**0.0293**	0.009	30.0	ug/L	127	Standard
	Ba	135	34661.9	0.9	**16.5369**	0.177	1.1	ug/L	45	Standard
	Ce	140	1260.1	4.6				ug/L	298	Standard
>	**Tb**	159	963340.8	1.2				ug/L	977942	Standard
	Ho	165	88.3	18.2				ug/L	12	Standard
	Tl	203	85.3	6.5	**0.0054**	0.001	13.0	ug/L	31	Standard
	Tl	205	83.3	17.3	**0.0091**	0.002	21.1	ug/L	20	Standard
	Pb	206	415.0	2.1	**0.0134**	0.001	8.9	ug/L	286	Standard
	Pb	207	359.0	2.4	**0.0158**	0.001	8.8	ug/L	257	Standard
	Pb	208	1485.0	2.9	**0.0185**	0.003	14.1	ug/L	956	Standard
	U	238	164.0	3.4	**0.0200**	0.001	3.7	ug/L	17	Standard
>	**Bi**	209	555403.6	0.6				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	3443.7	5.9	**4.5314**	0.377	8.3	mg/L	32	Standard
K	39	158.3	7.9	**0.3934**	0.041	10.4	mg/L	30	Standard
Ca	43	93.3	12.4	**8.8061**	1.479	16.8	mg/L	48	Standard
Fe	54	304.0	6.5	**0.1380**	0.017	12.0	mg/L	159	Standard
Fe	57	313.3	6.4	**0.4340**	0.087	20.1	mg/L	195	Standard
> **Sc-1**	45	39553.2	2.2				mg/L	39543	Standard
Cl	35	40893.8	1.8				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	3857.2	4.5				ug/L	1647	Standard
P	31	18868.4	1.0				ug/L	15231	Standard
S	34	2383.5	7.0				ug/L	1845	Standard
Sr	88	95.0	13.9				ug/L	70	Standard
C	12	200.0	17.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	96.2	30.5				mg/L	12	Standard
Ho-1	165	88.3	18.2				mg/L	12	Standard
Er	166	80.0	37.5				mg/L	20	Standard
I	127	15653.1	0.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.187	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.681	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.380	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.699	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606091601
Sample Date/Time: Tuesday, June 28, 2016 16:21:53
Number of Replicates: 3
Autosampler Position: 239
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81664.5	1.8				ug/L	81760	Standard
	Be	9	26.7	28.6	**0.0172**	0.008	47.1	ug/L	17	Standard
	Al	27	4275643.4	2.5	**27.7561**	0.463	1.7	ug/L	1410	Standard
	Sc	45	38087.8	3.0				ug/L	39543	Standard
	Ti	47	54.7	26.0	**0.0548**	0.059	108.3	ug/L	39	Standard
	V	51	1697.6	8.1	**0.0374**	0.021	56.8	ug/L	1415	Standard
	Cr	52	10296.2	0.8	**0.4201**	0.020	4.7	ug/L	6946	Standard
	Cr	53	1460.1	7.5	**1.3201**	0.135	10.2	ug/L	328	Standard
	Mn	55	64493.4	3.0	**9.7887**	0.389	4.0	ug/L	823	Standard
	Co	59	427.0	5.1	**0.0294**	0.004	12.3	ug/L	252	Standard
	Ni	60	847.0	2.5	**0.3443**	0.016	4.7	ug/L	192	Standard
	Cu	65	826.7	6.2	**0.3435**	0.022	6.5	ug/L	141	Standard
	Zn	66	9487.6	0.7	**7.8171**	0.052	0.7	ug/L	491	Standard
>	**Ge**	72	515789.8	1.2				ug/L	515087	Standard
	As	75	95.2	47.1	**0.1249**	0.040	32.1	ug/L	20	Standard
	Se	82	32.5	28.2	**0.1620**	0.079	48.7	ug/L	15	Standard
	Se-1	77	78.3	8.3	**0.3202**	0.098	30.6	ug/L	48	Standard
>	**Ga**	71	58.3	50.2				mg/L	90	Standard
	Rb	85	8367.3	1.9				ug/L	23	Standard
	Y	89	424791.4	2.4				ug/L	448510	Standard
>	**Rh**	103	81.7	19.7				ug/L	15	Standard
	Mo	98	367.2	2.9	**0.1192**	0.004	3.5	ug/L	11	Standard
	Ag	107	119.3	48.0	**0.0019**	0.009	460.3	ug/L	134	Standard
	Cd	111	50.7	68.6	**0.0212**	0.017	78.0	mg/L	7	Standard
	Cd	114	102.4	71.8	**0.0151**	0.014	95.2	ug/L	16	Standard
>	**In**	115	600349.6	1.0				ug/L	611117	Standard
	Sn	118	1276.7	2.5	**0.1178**	0.004	3.0	ug/L	518	Standard
	Sb	123	200.9	15.6	**0.0306**	0.007	23.5	ug/L	127	Standard
	Ba	135	168683.5	0.8	**83.1505**	0.843	1.0	ug/L	45	Standard
	Ce	140	160.0	17.4				ug/L	298	Standard
>	**Tb**	159	943339.1	0.8				ug/L	977942	Standard
	Ho	165	5.0	100.0				ug/L	12	Standard
	Tl	203	103.7	83.0	**0.0076**	0.010	135.3	ug/L	31	Standard
	Tl	205	65.0	38.5	**0.0066**	0.003	51.6	ug/L	20	Standard
	Pb	206	449.7	4.5	**0.0200**	0.004	18.4	ug/L	286	Standard
	Pb	207	373.7	5.2	**0.0190**	0.004	20.9	ug/L	257	Standard
	Pb	208	1469.0	1.7	**0.0178**	0.001	8.0	ug/L	956	Standard
	U	238	195.0	9.9	**0.0244**	0.003	11.1	ug/L	17	Standard
>	**Bi**	209	554105.5	0.2				ug/L	557080	Standard

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Na	23	1.7	173.2	**11.2769**	19.523	173.1	mg/L	0	Standard
Mg	24	4872.5	3.1	**6.6831**	0.365	5.5	mg/L	32	Standard
K	39	180.0	11.1	**0.4891**	0.054	11.0	mg/L	30	Standard
Ca	43	71.7	49.5	**5.8566**	5.217	89.1	mg/L	48	Standard
Fe	54	187.0	32.7	**0.0391**	0.060	153.5	mg/L	159	Standard
Fe	57	275.0	13.7	**0.3422**	0.158	46.1	mg/L	195	Standard
> **Sc-1**	45	38087.8	3.0				mg/L	39543	Standard
Cl	35	39985.4	2.3				ug/L	27642	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	5007.5	9.4				ug/L	1647	Standard
P	31	18170.9	2.8				ug/L	15231	Standard
S	34	2413.5	5.6				ug/L	1845	Standard
Sr	88	318.3	14.3				ug/L	70	Standard
C	12	223.3	5.2				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	59.7	16.8				mg/L	12	Standard
Ho-1	165	5.0	100.0				mg/L	12	Standard
Er	166	6.7	86.6				mg/L	20	Standard
I	127	27700.4	6.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.883	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.136	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.238
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.466
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606091601PS WG574522-01
Sample Date/Time: Tuesday, June 28, 2016 16:25:04
Number of Replicates: 3
Autosampler Position: 240
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84128.0	1.7				ug/L	81760	Standard
	Be	9	52619.6	0.9	**51.4982**	1.298	2.5	ug/L	17	Standard
	Al	27	4326633.2	0.4	**27.2707**	0.550	2.0	ug/L	1410	Standard
	Sc	45	39650.1	0.7				ug/L	39543	Standard
	Ti	47	62.3	14.0	**0.0872**	0.038	43.9	ug/L	39	Standard
	V	51	353435.0	1.4	**50.9243**	0.391	0.8	ug/L	1415	Standard
	Cr	52	362779.9	0.9	**51.3507**	0.534	1.0	ug/L	6946	Standard
	Cr	53	45635.3	3.2	**51.9244**	0.938	1.8	ug/L	328	Standard
	Mn	55	384138.6	0.3	**59.4407**	0.957	1.6	ug/L	823	Standard
	Co	59	352427.3	0.4	**50.4121**	0.778	1.5	ug/L	252	Standard
	Ni	60	95802.0	1.3	**51.0471**	0.630	1.2	ug/L	192	Standard
	Cu	65	98413.6	0.9	**51.9931**	0.640	1.2	ug/L	141	Standard
	Zn	66	63162.1	1.4	**57.1168**	0.348	0.6	ug/L	491	Standard
>	**Ge**	72	512293.3	1.9				ug/L	515087	Standard
	As	75	56566.0	1.5	**50.6330**	0.812	1.6	ug/L	20	Standard
	Se	82	5805.6	1.0	**50.5901**	0.677	1.3	ug/L	15	Standard
	Se-1	77	3921.2	1.4	**51.6223**	0.909	1.8	ug/L	48	Standard
>	**Ga**	71	60.0	50.7				mg/L	90	Standard
	Rb	85	8215.6	0.6				ug/L	23	Standard
	Y	89	438501.2	1.8				ug/L	448510	Standard
>	**Rh**	103	71.7	28.2				ug/L	15	Standard
	Mo	98	368.8	5.9	**0.1169**	0.008	6.7	ug/L	11	Standard
	Ag	107	334626.2	0.5	**49.6506**	0.360	0.7	ug/L	134	Standard
	Cd	111	105047.6	0.7	**48.9601**	0.529	1.1	mg/L	7	Standard
	Cd	114	254060.7	2.8	**48.7162**	1.522	3.1	ug/L	16	Standard
>	**In**	115	613389.4	0.3				ug/L	611117	Standard
	Sn	118	1936.8	37.5	**0.2241**	0.121	54.0	ug/L	518	Standard
	Sb	123	237358.9	1.9	**50.1080**	0.980	2.0	ug/L	127	Standard
	Ba	135	267735.0	1.3	**129.1838**	2.081	1.6	ug/L	45	Standard
	Ce	140	231.7	21.3				ug/L	298	Standard
>	**Tb**	159	964479.2	1.1				ug/L	977942	Standard
	Ho	165	18.3	56.8				ug/L	12	Standard
	Tl	203	432424.0	0.5	**50.0145**	0.262	0.5	ug/L	31	Standard
	Tl	205	382714.9	0.3	**50.9759**	0.183	0.4	ug/L	20	Standard
	Pb	206	282966.8	1.1	**50.9646**	0.635	1.2	ug/L	286	Standard
	Pb	207	246387.7	1.3	**49.1992**	0.690	1.4	ug/L	257	Standard
	Pb	208	985942.4	0.8	**50.8876**	0.399	0.8	ug/L	956	Standard
	U	238	365334.3	1.0	**49.6910**	0.475	1.0	ug/L	17	Standard
>	**Bi**	209	571593.5	0.1				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4890.8	3.1	**6.4355**	0.187	2.9	mg/L	32	Standard
K	39	161.7	23.2	**0.4031**	0.125	30.9	mg/L	30	Standard
Ca	43	113.3	24.3	**11.8087**	4.086	34.6	mg/L	48	Standard
Fe	54	177.2	7.7	**0.0228**	0.011	49.5	mg/L	159	Standard
Fe	57	255.0	15.6	**0.2338**	0.132	56.3	mg/L	195	Standard
> **Sc-1**	45	39650.1	0.7				mg/L	39543	Standard
Cl	35	40732.7	2.1				ug/L	27642	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	4914.1	11.2				ug/L	1647	Standard
P	31	18529.7	1.8				ug/L	15231	Standard
S	34	2476.9	6.8				ug/L	1845	Standard
Sr	88	310.0	4.8				ug/L	70	Standard
C	12	160.0	18.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	12.7	117.1				mg/L	12	Standard
Ho-1	165	18.3	56.8				mg/L	12	Standard
Er	166	13.3	86.6				mg/L	20	Standard
I	127	27421.5	4.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.896	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.458	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606091601PS WG574522-01
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.372
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.605
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606091601PS WG574522-01
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Method 6020 - Summary Report

Sample ID: L1606091601SDL WG574522-02
Sample Date/Time: Tuesday, June 28, 2016 16:28:16
Number of Replicates: 3
Autosampler Position: 241
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82723.6	2.3				ug/L	81760	Standard
	Be	9	23.3	12.4	**0.0135**	0.003	18.7	ug/L	17	Standard
	Al	27	900313.9	2.1	**5.7596**	0.136	2.4	ug/L	1410	Standard
	Sc	45	39763.8	0.8				ug/L	39543	Standard
	Ti	47	29.7	9.7	**-0.0430**	0.012	28.1	ug/L	39	Standard
	V	51	1735.9	7.6	**0.0491**	0.020	40.6	ug/L	1415	Standard
	Cr	52	8352.3	2.2	**0.1715**	0.035	20.7	ug/L	6946	Standard
	Cr	53	645.0	2.8	**0.4109**	0.024	5.9	ug/L	328	Standard
	Mn	55	14377.5	0.8	**2.1221**	0.018	0.8	ug/L	823	Standard
	Co	59	301.0	11.3	**0.0125**	0.005	41.5	ug/L	252	Standard
	Ni	60	410.7	1.2	**0.1183**	0.004	3.1	ug/L	192	Standard
	Cu	65	611.3	5.6	**0.2385**	0.017	7.2	ug/L	141	Standard
	Zn	66	7975.8	0.8	**6.6226**	0.085	1.3	ug/L	491	Standard
>	**Ge**	72	503109.1	0.7				ug/L	515087	Standard
	As	75	19.7	109.3	**0.0582**	0.020	33.7	ug/L	20	Standard
	Se	82	17.8	58.3	**0.0388**	0.092	237.9	ug/L	15	Standard
	Se-1	77	57.7	14.7	**0.0653**	0.120	183.5	ug/L	48	Standard
>	**Ga**	71	58.3	44.0				mg/L	90	Standard
	Rb	85	1753.4	3.2				ug/L	23	Standard
	Y	89	444634.9	0.6				ug/L	448510	Standard
>	**Rh**	103	21.7	48.0				ug/L	15	Standard
	Mo	98	88.5	3.1	**0.0131**	0.001	5.4	ug/L	11	Standard
	Ag	107	142.0	4.2	**0.0046**	0.001	16.3	ug/L	134	Standard
	Cd	111	23.2	23.8	**0.0077**	0.002	31.6	mg/L	7	Standard
	Cd	114	28.0	34.6	**0.0004**	0.002	477.3	ug/L	16	Standard
>	**In**	115	620921.1	1.0				ug/L	611117	Standard
	Sn	118	821.7	5.2	**0.0348**	0.006	16.8	ug/L	518	Standard
	Sb	123	2051.2	21.4	**0.4156**	0.096	23.0	ug/L	127	Standard
	Ba	135	34796.2	0.2	**16.5640**	0.119	0.7	ug/L	45	Standard
	Ce	140	63.3	12.1				ug/L	298	Standard
>	**Tb**	159	973024.2	1.8				ug/L	977942	Standard
	Ho	165	8.3	124.9				ug/L	12	Standard
	Tl	203	97.0	5.7	**0.0066**	0.000	6.5	ug/L	31	Standard
	Tl	205	68.3	44.1	**0.0070**	0.004	57.1	ug/L	20	Standard
	Pb	206	360.7	11.0	**0.0024**	0.006	236.3	ug/L	286	Standard
	Pb	207	322.3	9.7	**0.0075**	0.006	86.2	ug/L	257	Standard
	Pb	208	1339.4	1.1	**0.0099**	0.001	10.7	ug/L	956	Standard
	U	238	86.3	6.6	**0.0090**	0.001	5.9	ug/L	17	Standard
>	**Bi**	209	562189.7	2.5				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	991.7	7.3	**1.2554**	0.092	7.3	mg/L	32	Standard
K	39	51.7	11.2	**0.0323**	0.021	64.1	mg/L	30	Standard
Ca	43	40.0	45.1	**0.6884**	2.694	391.4	mg/L	48	Standard
Fe	54	140.9	19.7	**-0.0104**	0.024	229.0	mg/L	159	Standard
Fe	57	241.7	4.8	**0.1865**	0.032	17.2	mg/L	195	Standard
> **Sc-1**	45	39763.8	0.8				mg/L	39543	Standard
Cl	35	40635.1	0.7				ug/L	27642	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	2310.2	7.5				ug/L	1647	Standard
P	31	19332.3	4.6				ug/L	15231	Standard
S	34	2451.9	6.9				ug/L	1845	Standard
Sr	88	125.0	21.2				ug/L	70	Standard
C	12	163.3	25.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.5	88.8				mg/L	12	Standard
Ho-1	165	8.3	124.9				mg/L	12	Standard
Er	166	10.0	100.0				mg/L	20	Standard
I	127	7598.6	6.6				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		101.179	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.675	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.604
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.917
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 16:31:29
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79881.8	2.3				ug/L	81760	Standard
	Be	9	50840.2	1.3	**52.4015**	1.145	2.2	ug/L	17	Standard
	Al	27	7585830.9	1.9	**50.3677**	1.194	2.4	ug/L	1410	Standard
	Sc	45	39128.8	0.6				ug/L	39543	Standard
	Ti	47	24998.6	0.9	**102.1788**	1.762	1.7	ug/L	39	Standard
	V	51	348429.9	1.4	**50.8229**	0.271	0.5	ug/L	1415	Standard
	Cr	52	355416.3	0.4	**50.9232**	0.579	1.1	ug/L	6946	Standard
	Cr	53	44443.4	1.1	**51.2031**	0.906	1.8	ug/L	328	Standard
	Mn	55	315927.2	0.8	**49.4624**	0.575	1.2	ug/L	823	Standard
	Co	59	353189.3	0.9	**51.1457**	0.854	1.7	ug/L	252	Standard
	Ni	60	94600.8	0.9	**51.0293**	0.136	0.3	ug/L	192	Standard
	Cu	65	95833.5	0.4	**51.2541**	0.406	0.8	ug/L	141	Standard
	Zn	66	56109.7	0.5	**51.2906**	0.852	1.7	ug/L	491	Standard
>	**Ge**	72	505999.1	1.2				ug/L	515087	Standard
	As	75	55945.5	0.4	**50.6968**	0.402	0.8	ug/L	20	Standard
	Se	82	5756.3	0.8	**50.7852**	1.001	2.0	ug/L	15	Standard
	Se-1	77	3889.8	1.1	**51.8484**	1.021	2.0	ug/L	48	Standard
>	**Ga**	71	51.7	20.1				mg/L	90	Standard
	Rb	85	811.7	9.0				ug/L	23	Standard
	Y	89	426423.1	2.5				ug/L	448510	Standard
>	**Rh**	103	31.7	24.1				ug/L	15	Standard
	Mo	98	265386.1	0.2	**99.3199**	0.619	0.6	ug/L	11	Standard
	Ag	107	333927.0	1.2	**50.3137**	0.313	0.6	ug/L	134	Standard
	Cd	111	105484.6	1.1	**49.9277**	0.764	1.5	mg/L	7	Standard
	Cd	114	258596.4	2.6	**50.3494**	1.108	2.2	ug/L	16	Standard
>	**In**	115	604027.1	0.8				ug/L	611117	Standard
	Sn	118	295796.4	1.2	**50.5150**	0.923	1.8	ug/L	518	Standard
	Sb	123	237014.9	1.1	**50.8107**	0.333	0.7	ug/L	127	Standard
	Ba	135	100914.0	1.4	**49.4318**	0.852	1.7	ug/L	45	Standard
	Ce	140	80.0	0.0				ug/L	298	Standard
>	**Tb**	159	968181.4	1.1				ug/L	977942	Standard
	Ho	165	8.3	69.3				ug/L	12	Standard
	Tl	203	430250.2	1.2	**50.7804**	1.115	2.2	ug/L	31	Standard
	Tl	205	381434.8	2.3	**51.8414**	1.366	2.6	ug/L	20	Standard
	Pb	206	273103.8	0.8	**50.1867**	0.395	0.8	ug/L	286	Standard
	Pb	207	246704.6	0.5	**50.2667**	0.621	1.2	ug/L	257	Standard
	Pb	208	974193.4	0.6	**51.3084**	0.901	1.8	ug/L	956	Standard
	U	238	366221.1	0.4	**50.8280**	0.746	1.5	ug/L	17	Standard
>	**Bi**	209	560252.8	1.6				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	3943.8	5.4	**5.2490**	0.301	5.7	mg/L	32	Standard
K	39	1356.7	5.3	**4.4904**	0.223	5.0	mg/L	30	Standard
Ca	43	83.3	18.3	**7.4389**	2.295	30.8	mg/L	48	Standard
Fe	54	5957.3	2.0	**5.3112**	0.093	1.8	mg/L	159	Standard
Fe	57	1600.1	10.0	**4.8365**	0.580	12.0	mg/L	195	Standard
Sc-1	45	39128.8	0.6				mg/L	39543	Standard
Cl	35	37049.3	3.3				ug/L	27642	Standard
Kr	83	2.0	132.3				ug/L	2	Standard
Br	81	1520.1	14.1				ug/L	1647	Standard
P	31	19898.1	2.1				ug/L	15231	Standard
S	34	2718.6	2.9				ug/L	1845	Standard
Sr	88	73.3	20.8				ug/L	70	Standard
C	12	120.0	43.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.0	113.3				mg/L	12	Standard
Ho-1	165	8.3	69.3				mg/L	12	Standard
Er	166	20.0	50.0				mg/L	20	Standard
I	127	2098.5	16.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	104.803		
Al	27	100.735		
Sc	45			
Ti	47	102.179		
V	51	101.646		
Cr	52	101.846		
Cr	53			
Mn	55	98.925		
Co	59	102.291		
Ni	60	102.059		
Cu	65	102.508		
Zn	66	102.581		
Ge	72		98.236	
As	75	101.394		
Se	82	101.570		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	99.320		
Ag	107	100.627		
Cd	111	99.855		
Cd	114			
In	115			98.840
Sn	118	101.030		
Sb	123	101.621		
Ba	135	98.864		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.561		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.617		
U	238	101.656		
Bi	209			100.569
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 16:34:41
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77653.6	3.2				ug/L	81760	Standard
	Be	9	28.3	27.0	**0.0205**	0.009	43.8	ug/L	17	Standard
	Al	27	2033.5	6.8	**-0.0005**	0.001	113.9	ug/L	1410	Standard
	Sc	45	38149.6	0.7				ug/L	39543	Standard
	Ti	47	33.0	16.0	**-0.0290**	0.023	78.1	ug/L	39	Standard
	V	51	1124.7	5.5	**-0.0407**	0.010	23.8	ug/L	1415	Standard
	Cr	52	6085.9	0.6	**-0.1604**	0.016	10.1	ug/L	6946	Standard
	Cr	53	345.0	11.5	**0.0612**	0.041	67.1	ug/L	328	Standard
	Mn	55	652.0	2.2	**-0.0453**	0.002	5.1	ug/L	823	Standard
	Co	59	236.0	7.4	**0.0031**	0.003	92.5	ug/L	252	Standard
	Ni	60	163.3	9.5	**-0.0160**	0.008	51.9	ug/L	192	Standard
	Cu	65	132.3	11.7	**-0.0193**	0.009	47.2	ug/L	141	Standard
	Zn	66	446.3	5.3	**-0.4102**	0.017	4.3	ug/L	491	Standard
>	**Ge**	72	502289.8	1.3				ug/L	515087	Standard
	As	75	-42.3	118.5	**0.0014**	0.046	3304.8	ug/L	20	Standard
	Se	82	15.3	48.7	**0.0168**	0.064	382.8	ug/L	15	Standard
	Se-1	77	51.0	21.6	**-0.0257**	0.142	551.0	ug/L	48	Standard
>	**Ga**	71	38.3	27.2				mg/L	90	Standard
	Rb	85	10.0	86.6				ug/L	23	Standard
	Y	89	438316.4	0.6				ug/L	448510	Standard
>	**Rh**	103	15.0	0.0				ug/L	15	Standard
	Mo	98	228.3	18.4	**0.0667**	0.015	22.0	ug/L	11	Standard
	Ag	107	123.7	9.2	**0.0025**	0.002	72.5	ug/L	134	Standard
	Cd	111	11.3	56.7	**0.0024**	0.003	123.9	mg/L	7	Standard
	Cd	114	32.3	39.0	**0.0014**	0.003	178.7	ug/L	16	Standard
>	**In**	115	601315.6	1.3				ug/L	611117	Standard
	Sn	118	783.4	33.2	**0.0331**	0.047	140.5	ug/L	518	Standard
	Sb	123	646.2	31.1	**0.1267**	0.045	35.7	ug/L	127	Standard
	Ba	135	40.3	7.6	**-0.0052**	0.002	33.4	ug/L	45	Standard
	Ce	140	38.3	19.9				ug/L	298	Standard
>	**Tb**	159	937082.2	1.4				ug/L	977942	Standard
	Ho	165	5.0	100.0				ug/L	12	Standard
	Tl	203	49.7	12.9	**0.0012**	0.001	66.7	ug/L	31	Standard
	Tl	205	40.0	57.3	**0.0033**	0.003	97.6	ug/L	20	Standard
	Pb	206	275.3	5.0	**-0.0116**	0.003	25.8	ug/L	286	Standard
	Pb	207	258.0	7.0	**-0.0041**	0.003	84.6	ug/L	257	Standard
	Pb	208	1051.3	3.4	**-0.0036**	0.002	41.9	ug/L	956	Standard
	U	238	50.3	16.2	**0.0042**	0.001	28.1	ug/L	17	Standard
>	**Bi**	209	546028.7	0.7				ug/L	557080	Standard

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Na	23	3.3	86.6	**22.1550**	19.184	86.6	mg/L	0	Standard
Mg	24	31.7	50.8	**-0.0134**	0.022	167.6	mg/L	32	Standard
K	39	30.0	28.9	**-0.0362**	0.031	85.5	mg/L	30	Standard
Ca	43	30.0	66.7	**-0.6084**	3.177	522.1	mg/L	48	Standard
Fe	54	168.0	24.0	**0.0206**	0.039	187.8	mg/L	159	Standard
Fe	57	143.3	24.5	**-0.1229**	0.124	101.2	mg/L	195	Standard
Sc-1	45	38149.6	0.7				mg/L	39543	Standard
Cl	35	36673.0	2.0				ug/L	27642	Standard
Kr	83	1.0	173.2				ug/L	2	Standard
Br	81	1570.1	7.0				ug/L	1647	Standard
P	31	19050.3	3.5				ug/L	15231	Standard
S	34	2736.9	0.8				ug/L	1845	Standard
Sr	88	48.3	15.8				ug/L	70	Standard
C	12	133.3	4.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	5.7	217.0				mg/L	12	Standard
Ho-1	165	5.0	100.0				mg/L	12	Standard
Er	166	20.0	100.0				mg/L	20	Standard
I	127	1683.4	18.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.516	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.396
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.016
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606091601SDL WG574522-02
Sample Date/Time: Tuesday, June 28, 2016 16:37:54
Number of Replicates: 3
Autosampler Position: 242
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80481.5	1.5				ug/L	81760	Standard
	Be	9	31.7	9.1	**0.0226**	0.003	11.9	ug/L	17	Standard
	Al	27	181010.0	1.7	**1.1789**	0.039	3.3	ug/L	1410	Standard
	Sc	45	40285.2	2.7				ug/L	39543	Standard
	Ti	47	30.3	10.1	**-0.0420**	0.014	34.3	ug/L	39	Standard
	V	51	1262.3	9.3	**-0.0236**	0.014	61.0	ug/L	1415	Standard
	Cr	52	6637.8	2.8	**-0.0958**	0.014	14.1	ug/L	6946	Standard
	Cr	53	403.3	17.4	**0.1211**	0.074	61.5	ug/L	328	Standard
	Mn	55	3292.4	3.2	**0.3636**	0.014	3.8	ug/L	823	Standard
	Co	59	275.7	13.5	**0.0082**	0.005	64.5	ug/L	252	Standard
	Ni	60	218.7	22.1	**0.0120**	0.025	207.8	ug/L	192	Standard
	Cu	65	189.7	2.7	**0.0098**	0.003	33.4	ug/L	141	Standard
	Zn	66	2022.1	5.3	**1.0328**	0.100	9.7	ug/L	491	Standard
>	**Ge**	72	510876.9	1.9				ug/L	515087	Standard
	As	75	-16.1	411.9	**0.0255**	0.059	233.0	ug/L	20	Standard
	Se	82	17.9	79.1	**0.0373**	0.123	328.7	ug/L	15	Standard
	Se-1	77	53.0	5.0	**-0.0093**	0.040	429.4	ug/L	48	Standard
>	**Ga**	71	26.7	10.8				mg/L	90	Standard
	Rb	85	385.0	11.5				ug/L	23	Standard
	Y	89	434970.9	1.3				ug/L	448510	Standard
>	**Rh**	103	13.3	57.3				ug/L	15	Standard
	Mo	98	105.1	23.0	**0.0193**	0.009	45.6	ug/L	11	Standard
	Ag	107	160.3	33.6	**0.0074**	0.008	107.2	ug/L	134	Standard
	Cd	111	27.8	77.7	**0.0099**	0.010	100.3	mg/L	7	Standard
	Cd	114	89.4	76.6	**0.0121**	0.013	107.6	ug/L	16	Standard
>	**In**	115	618555.8	0.1				ug/L	611117	Standard
	Sn	118	705.0	14.2	**0.0159**	0.017	105.2	ug/L	518	Standard
	Sb	123	323.1	28.2	**0.0548**	0.019	34.7	ug/L	127	Standard
	Ba	135	6967.6	1.3	**3.3092**	0.040	1.2	ug/L	45	Standard
	Ce	140	23.3	65.5				ug/L	298	Standard
>	**Tb**	159	976647.8	1.4				ug/L	977942	Standard
	Ho	165	15.0	57.7				ug/L	12	Standard
	Tl	203	112.7	67.1	**0.0081**	0.009	105.4	ug/L	31	Standard
	Tl	205	90.0	29.4	**0.0096**	0.003	35.2	ug/L	20	Standard
	Pb	206	345.7	14.3	**-0.0019**	0.008	437.8	ug/L	286	Standard
	Pb	207	297.3	11.3	**0.0008**	0.006	736.1	ug/L	257	Standard
	Pb	208	1206.4	8.6	**0.0013**	0.005	370.6	ug/L	956	Standard
	U	238	79.3	55.4	**0.0077**	0.006	75.6	ug/L	17	Standard
>	**Bi**	209	576852.7	1.1				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	251.7	21.2	**0.2729**	0.077	28.4	mg/L	32	Standard
K	39	35.0	75.6	**-0.0238**	0.089	375.8	mg/L	30	Standard
Ca	43	41.7	66.1	**0.8623**	4.157	482.1	mg/L	48	Standard
Fe	54	139.7	6.2	**-0.0128**	0.010	79.6	mg/L	159	Standard
Fe	57	215.0	8.1	**0.0878**	0.054	61.5	mg/L	195	Standard
Sc-1	45	40285.2	2.7				mg/L	39543	Standard
Cl	35	36209.9	2.0				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1783.4	3.4				ug/L	1647	Standard
P	31	18659.8	1.9				ug/L	15231	Standard
S	34	2565.2	1.9				ug/L	1845	Standard
Sr	88	76.7	26.4				ug/L	70	Standard
C	12	126.7	24.1				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	19.2	52.1				mg/L	12	Standard
Ho-1	165	15.0	57.7				mg/L	12	Standard
Er	166	16.7	34.6				mg/L	20	Standard
I	127	2670.2	2.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		98.436	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.183	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.217
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.549
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606114201
Sample Date/Time: Tuesday, June 28, 2016 16:41:05
Number of Replicates: 3
Autosampler Position: 243
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80520.1	1.9				ug/L	81760	Standard
	Be	9	30.0	16.7	**0.0209**	0.005	21.7	ug/L	17	Standard
	Al	27	1224587.7	1.8	**8.0560**	0.286	3.6	ug/L	1410	Standard
	Sc	45	42140.2	1.9				ug/L	39543	Standard
	Ti	47	397.3	21.3	**1.4906**	0.359	24.1	ug/L	39	Standard
	V	51	2122.9	0.3	**0.1097**	0.002	1.5	ug/L	1415	Standard
	Cr	52	14472.9	1.3	**1.0963**	0.024	2.2	ug/L	6946	Standard
	Cr	53	2878.6	1.5	**3.0550**	0.050	1.6	ug/L	328	Standard
	Mn	55	698464.2	0.4	**111.4396**	0.282	0.3	ug/L	823	Standard
	Co	59	22132.5	0.4	**3.2312**	0.012	0.4	ug/L	252	Standard
	Ni	60	7435.8	1.3	**3.9843**	0.043	1.1	ug/L	192	Standard
	Cu	65	724.4	2.6	**0.3040**	0.008	2.7	ug/L	141	Standard
	Zn	66	6121.2	1.0	**4.9565**	0.034	0.7	ug/L	491	Standard
>	**Ge**	72	497323.9	0.5				ug/L	515087	Standard
	As	75	171.3	19.9	**0.1980**	0.031	15.4	ug/L	20	Standard
	Se	82	64.0	10.3	**0.4560**	0.056	12.4	ug/L	15	Standard
	Se-1	77	106.7	7.0	**0.7479**	0.110	14.7	ug/L	48	Standard
>	**Ga**	71	88.3	6.5				mg/L	90	Standard
	Rb	85	4614.0	1.5				ug/L	23	Standard
	Y	89	442742.2	2.0				ug/L	448510	Standard
>	**Rh**	103	21.7	35.3				ug/L	15	Standard
	Mo	98	335.3	5.4	**0.1033**	0.008	7.8	ug/L	11	Standard
	Ag	107	92.0	14.2	**-0.0027**	0.002	71.5	ug/L	134	Standard
	Cd	111	86.4	7.6	**0.0370**	0.004	9.6	mg/L	7	Standard
	Cd	114	204.2	9.6	**0.0339**	0.004	12.0	ug/L	16	Standard
>	**In**	115	619678.1	1.4				ug/L	611117	Standard
	Sn	118	898.4	6.0	**0.0480**	0.011	22.7	ug/L	518	Standard
	Sb	123	324.0	26.0	**0.0551**	0.019	33.6	ug/L	127	Standard
	Ba	135	76873.5	0.9	**36.7017**	0.677	1.8	ug/L	45	Standard
	Ce	140	3832.2	0.5				ug/L	298	Standard
>	**Tb**	159	963958.5	1.3				ug/L	977942	Standard
	Ho	165	96.7	23.3				ug/L	12	Standard
	Tl	203	122.3	9.5	**0.0098**	0.001	14.0	ug/L	31	Standard
	Tl	205	126.7	13.9	**0.0151**	0.002	14.9	ug/L	20	Standard
	Pb	206	564.7	2.8	**0.0417**	0.003	6.6	ug/L	286	Standard
	Pb	207	477.0	3.5	**0.0406**	0.003	8.6	ug/L	257	Standard
	Pb	208	2018.4	2.1	**0.0474**	0.002	3.2	ug/L	956	Standard
	U	238	92.7	4.5	**0.0101**	0.001	6.9	ug/L	17	Standard
>	**Bi**	209	552929.6	1.0				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.1351**	17.546	173.1	mg/L	0	Standard
Mg	24	7430.2	1.6	**9.2261**	0.222	2.4	mg/L	32	Standard
K	39	131.7	22.3	**0.2750**	0.084	30.6	mg/L	30	Standard
Ca	43	50.0	10.0	**1.7747**	0.605	34.1	mg/L	48	Standard
Fe	54	2749.1	1.6	**2.1977**	0.008	0.4	mg/L	159	Standard
Fe	57	918.4	0.8	**2.2851**	0.038	1.7	mg/L	195	Standard
> **Sc-1**	45	42140.2	1.9				mg/L	39543	Standard
Cl	35	36101.6	0.8				ug/L	27642	Standard
Kr	83	3.3	75.5				ug/L	2	Standard
Br	81	12138.2	7.4				ug/L	1647	Standard
P	31	25736.8	1.2				ug/L	15231	Standard
S	34	2443.5	6.8				ug/L	1845	Standard
Sr	88	88.3	31.2				ug/L	70	Standard
C	12	360.0	10.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	87.0	21.3				mg/L	12	Standard
Ho-1	165	96.7	23.3				mg/L	12	Standard
Er	166	63.3	48.2				mg/L	20	Standard
I	127	223077.6	8.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.483	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.551	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	101.401
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.255
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606114203
Sample Date/Time: Tuesday, June 28, 2016 16:44:17
Number of Replicates: 3
Autosampler Position: 244
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81992.9	1.1				ug/L	81760	Standard
	Be	9	28.3	27.0	**0.0187**	0.008	41.6	ug/L	17	Standard
	Al	27	794059.8	1.7	**5.1234**	0.139	2.7	ug/L	1410	Standard
	Sc	45	39785.5	1.2				ug/L	39543	Standard
	Ti	47	377.0	7.0	**1.3367**	0.105	7.9	ug/L	39	Standard
	V	51	6234.1	1.0	**0.6819**	0.005	0.8	ug/L	1415	Standard
	Cr	52	12611.2	0.3	**0.7377**	0.006	0.8	ug/L	6946	Standard
	Cr	53	1423.4	7.9	**1.2652**	0.132	10.4	ug/L	328	Standard
	Mn	55	579693.3	1.0	**88.4369**	1.228	1.4	ug/L	823	Standard
	Co	59	3503.7	1.5	**0.4627**	0.007	1.6	ug/L	252	Standard
	Ni	60	3465.4	2.9	**1.7179**	0.054	3.1	ug/L	192	Standard
	Cu	65	1070.0	1.6	**0.4670**	0.008	1.6	ug/L	141	Standard
	Zn	66	3004.0	2.3	**1.8876**	0.071	3.8	ug/L	491	Standard
>	**Ge**	72	519952.2	0.4				ug/L	515087	Standard
	As	75	346.7	9.3	**0.3458**	0.028	8.2	ug/L	20	Standard
	Se	82	27.6	23.7	**0.1179**	0.056	47.6	ug/L	15	Standard
	Se-1	77	61.3	6.2	**0.0875**	0.047	53.2	ug/L	48	Standard
>	**Ga**	71	168.3	22.5				mg/L	90	Standard
	Rb	85	8202.2	4.2				ug/L	23	Standard
	Y	89	450084.2	2.9				ug/L	448510	Standard
>	**Rh**	103	20.0	50.0				ug/L	15	Standard
	Mo	98	804.4	3.7	**0.2777**	0.016	5.8	ug/L	11	Standard
	Ag	107	104.7	4.0	**-0.0007**	0.001	91.7	ug/L	134	Standard
	Cd	111	177.3	6.3	**0.0797**	0.005	6.4	mg/L	7	Standard
	Cd	114	412.5	12.7	**0.0743**	0.011	14.2	ug/L	16	Standard
>	**In**	115	613204.5	2.4				ug/L	611117	Standard
	Sn	118	838.4	3.1	**0.0394**	0.004	11.4	ug/L	518	Standard
	Sb	123	255.2	2.7	**0.0411**	0.003	6.6	ug/L	127	Standard
	Ba	135	46232.8	2.2	**22.2974**	0.510	2.3	ug/L	45	Standard
	Ce	140	10413.6	4.0				ug/L	298	Standard
>	**Tb**	159	959024.8	2.1				ug/L	977942	Standard
	Ho	165	235.0	14.0				ug/L	12	Standard
	Tl	203	65.0	35.5	**0.0028**	0.003	94.5	ug/L	31	Standard
	Tl	205	33.3	45.8	**0.0022**	0.002	93.6	ug/L	20	Standard
	Pb	206	995.4	6.0	**0.1186**	0.010	8.6	ug/L	286	Standard
	Pb	207	825.7	1.1	**0.1096**	0.003	2.3	ug/L	257	Standard
	Pb	208	3331.5	0.8	**0.1144**	0.002	1.9	ug/L	956	Standard
	U	238	237.0	6.0	**0.0298**	0.002	6.6	ug/L	17	Standard
>	**Bi**	209	562917.3	0.4				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	1456.7	5.2	**1.8709**	0.119	6.4	mg/L	32	Standard
K	39	195.0	2.6	**0.5136**	0.022	4.3	mg/L	30	Standard
Ca	43	66.7	37.7	**4.7333**	3.876	81.9	mg/L	48	Standard
Fe	54	1995.7	3.8	**1.6587**	0.089	5.4	mg/L	159	Standard
Fe	57	716.7	4.0	**1.7796**	0.068	3.8	mg/L	195	Standard
> **Sc-1**	45	39785.5	1.2				mg/L	39543	Standard
Cl	35	34494.6	2.9				ug/L	27642	Standard
Kr	83	1.3	173.2				ug/L	2	Standard
Br	81	3500.4	9.9				ug/L	1647	Standard
P	31	20160.1	3.5				ug/L	15231	Standard
S	34	2286.8	4.4				ug/L	1845	Standard
Sr	88	110.0	28.4				ug/L	70	Standard
C	12	216.7	25.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	341.7	16.9				mg/L	12	Standard
Ho-1	165	235.0	14.0				mg/L	12	Standard
Er	166	243.3	11.9				mg/L	20	Standard
I	127	25506.6	11.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.285	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.945	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.342
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.048
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606114205
Sample Date/Time: Tuesday, June 28, 2016 16:47:28
Number of Replicates: 3
Autosampler Position: 245
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82787.3	1.4				ug/L	81760	Standard
	Be	9	48.3	23.9	**0.0383**	0.011	29.1	ug/L	17	Standard
	Al	27	819185.4	1.5	**5.2350**	0.125	2.4	ug/L	1410	Standard
	Sc	45	40940.2	1.5				ug/L	39543	Standard
	Ti	47	480.0	5.9	**1.6939**	0.112	6.6	ug/L	39	Standard
	V	51	6800.6	1.0	**0.7356**	0.007	0.9	ug/L	1415	Standard
	Cr	52	13980.4	1.6	**0.8771**	0.035	4.0	ug/L	6946	Standard
	Cr	53	1753.4	3.0	**1.5823**	0.062	3.9	ug/L	328	Standard
	Mn	55	596277.6	1.3	**88.4306**	1.209	1.4	ug/L	823	Standard
	Co	59	3687.4	0.3	**0.4741**	0.004	0.7	ug/L	252	Standard
	Ni	60	3717.1	1.3	**1.7958**	0.025	1.4	ug/L	192	Standard
	Cu	65	1213.0	2.2	**0.5240**	0.015	2.9	ug/L	141	Standard
	Zn	66	2977.6	2.2	**1.7886**	0.052	2.9	ug/L	491	Standard
>	**Ge**	72	534849.8	0.4				ug/L	515087	Standard
	As	75	377.9	7.0	**0.3640**	0.023	6.2	ug/L	20	Standard
	Se	82	30.4	15.6	**0.1347**	0.040	29.6	ug/L	15	Standard
	Se-1	77	66.7	7.4	**0.1333**	0.063	47.3	ug/L	48	Standard
>	**Ga**	71	223.3	16.2				mg/L	90	Standard
	Rb	85	9057.7	1.9				ug/L	23	Standard
	Y	89	448330.1	1.0				ug/L	448510	Standard
>	**Rh**	103	13.3	21.7				ug/L	15	Standard
	Mo	98	830.0	4.5	**0.2872**	0.016	5.5	ug/L	11	Standard
	Ag	107	122.7	18.8	**0.0020**	0.004	175.3	ug/L	134	Standard
	Cd	111	156.2	7.4	**0.0700**	0.006	8.4	mg/L	7	Standard
	Cd	114	373.1	12.2	**0.0667**	0.009	13.8	ug/L	16	Standard
>	**In**	115	612810.6	0.7				ug/L	611117	Standard
	Sn	118	755.0	9.6	**0.0254**	0.012	48.6	ug/L	518	Standard
	Sb	123	285.8	9.7	**0.0476**	0.006	12.8	ug/L	127	Standard
	Ba	135	48731.6	0.5	**23.5144**	0.057	0.2	ug/L	45	Standard
	Ce	140	12518.5	3.0				ug/L	298	Standard
>	**Tb**	159	979236.7	1.3				ug/L	977942	Standard
	Ho	165	273.3	12.2				ug/L	12	Standard
	Tl	203	95.3	25.1	**0.0062**	0.003	47.7	ug/L	31	Standard
	Tl	205	61.7	4.7	**0.0059**	0.000	5.9	ug/L	20	Standard
	Pb	206	1176.7	3.8	**0.1481**	0.011	7.4	ug/L	286	Standard
	Pb	207	985.7	2.0	**0.1385**	0.005	4.0	ug/L	257	Standard
	Pb	208	4033.5	3.6	**0.1475**	0.011	7.5	ug/L	956	Standard
	U	238	279.0	8.7	**0.0349**	0.004	10.9	ug/L	17	Standard
>	**Bi**	209	573358.0	1.7				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.1692**	17.605	173.1	mg/L	0	Standard
Mg	24	1471.7	7.4	**1.8343**	0.119	6.5	mg/L	32	Standard
K	39	181.7	21.4	**0.4516**	0.129	28.5	mg/L	30	Standard
Ca	43	60.0	36.3	**3.4344**	3.118	90.8	mg/L	48	Standard
Fe	54	2300.2	8.7	**1.8724**	0.148	7.9	mg/L	159	Standard
Fe	57	716.7	8.3	**1.7108**	0.158	9.3	mg/L	195	Standard
> **Sc-1**	45	40940.2	1.5				mg/L	39543	Standard
Cl	35	34657.6	1.8				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	3160.3	4.1				ug/L	1647	Standard
P	31	20585.6	2.1				ug/L	15231	Standard
S	34	2273.5	1.5				ug/L	1845	Standard
Sr	88	120.0	11.0				ug/L	70	Standard
C	12	246.7	23.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	334.1	26.2				mg/L	12	Standard
Ho-1	165	273.3	12.2				mg/L	12	Standard
Er	166	263.3	24.4				mg/L	20	Standard
I	127	21154.8	6.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.256	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.837	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.277
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.922
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606115102
Sample Date/Time: Tuesday, June 28, 2016 16:50:39
Number of Replicates: 3
Autosampler Position: 246
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83962.1	2.2				ug/L	81760	Standard
	Be	9	23.3	32.7	**0.0132**	0.008	57.7	ug/L	17	Standard
	Al	27	14475219.3	2.2	**91.4576**	2.716	3.0	ug/L	1410	Standard
	Sc	45	40821.6	0.4				ug/L	39543	Standard
	Ti	47	413.3	6.2	**1.5180**	0.138	9.1	ug/L	39	Standard
	V	51	16629.8	2.6	**2.2151**	0.113	5.1	ug/L	1415	Standard
	Cr	52	10947.0	2.1	**0.5345**	0.067	12.6	ug/L	6946	Standard
	Cr	53	3965.5	4.7	**4.2265**	0.126	3.0	ug/L	328	Standard
	Mn	55	185468.7	3.9	**28.8128**	1.697	5.9	ug/L	823	Standard
	Co	59	997.7	2.0	**0.1124**	0.006	4.9	ug/L	252	Standard
	Ni	60	1478.4	4.6	**0.6898**	0.053	7.7	ug/L	192	Standard
	Cu	65	1958.8	1.9	**0.9525**	0.040	4.2	ug/L	141	Standard
	Zn	66	8106.5	2.8	**6.6572**	0.319	4.8	ug/L	491	Standard
>	**Ge**	72	509236.4	2.2				ug/L	515087	Standard
	As	75	962.9	2.3	**0.9070**	0.035	3.9	ug/L	20	Standard
	Se	82	228.1	4.7	**1.8861**	0.120	6.4	ug/L	15	Standard
	Se-1	77	223.7	5.0	**2.2872**	0.212	9.3	ug/L	48	Standard
>	**Ga**	71	265.0	37.9				mg/L	90	Standard
	Rb	85	21039.6	2.1				ug/L	23	Standard
	Y	89	444144.2	0.6				ug/L	448510	Standard
>	**Rh**	103	50.0	20.0				ug/L	15	Standard
	Mo	98	3394.4	4.1	**1.2339**	0.051	4.2	ug/L	11	Standard
	Ag	107	107.3	13.1	**-0.0003**	0.002	751.8	ug/L	134	Standard
	Cd	111	62.6	4.9	**0.0263**	0.001	5.7	mg/L	7	Standard
	Cd	114	195.9	21.1	**0.0327**	0.008	24.5	ug/L	16	Standard
>	**In**	115	612517.0	0.3				ug/L	611117	Standard
	Sn	118	836.7	5.7	**0.0392**	0.008	20.1	ug/L	518	Standard
	Sb	123	547.1	4.7	**0.1028**	0.005	5.0	ug/L	127	Standard
	Ba	135	71666.8	2.3	**34.6081**	0.699	2.0	ug/L	45	Standard
	Ce	140	3362.0	2.6				ug/L	298	Standard
>	**Tb**	159	988372.6	0.5				ug/L	977942	Standard
	Ho	165	63.3	75.9				ug/L	12	Standard
	Tl	203	105.7	10.4	**0.0078**	0.001	16.0	ug/L	31	Standard
	Tl	205	108.3	39.8	**0.0125**	0.006	45.9	ug/L	20	Standard
	Pb	206	1800.1	2.5	**0.2697**	0.008	3.1	ug/L	286	Standard
	Pb	207	1518.4	2.6	**0.2536**	0.007	2.9	ug/L	257	Standard
	Pb	208	6212.5	1.8	**0.2692**	0.011	4.0	ug/L	956	Standard
	U	238	10075.0	2.3	**1.4043**	0.047	3.4	ug/L	17	Standard
>	**Bi**	209	556782.3	1.6				ug/L	557080	Standard

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Na	23	3.3	86.6	**20.7586**	17.973	86.6	mg/L	0	Standard
Mg	24	36599.2	3.6	**47.1388**	1.781	3.8	mg/L	32	Standard
K	39	311.7	20.3	**0.8782**	0.204	23.2	mg/L	30	Standard
Ca	43	200.0	10.0	**24.0730**	2.845	11.8	mg/L	48	Standard
Fe	54	272.4	27.9	**0.1018**	0.067	65.8	mg/L	159	Standard
Fe	57	400.0	17.2	**0.6830**	0.221	32.3	mg/L	195	Standard
> **Sc-1**	45	40821.6	0.4				mg/L	39543	Standard
Cl	35	37764.4	4.8				ug/L	27642	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	41179.3	5.9				ug/L	1647	Standard
P	31	20392.0	1.6				ug/L	15231	Standard
S	34	2350.2	4.9				ug/L	1845	Standard
Sr	88	246.7	3.1				ug/L	70	Standard
C	12	240.0	16.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	93.2	27.3				mg/L	12	Standard
Ho-1	165	63.3	75.9				mg/L	12	Standard
Er	166	73.3	7.9				mg/L	20	Standard
I	127	267945.4	8.8				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.693	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.864	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.229
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.946
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606115105
Sample Date/Time: Tuesday, June 28, 2016 16:53:51
Number of Replicates: 3
Autosampler Position: 247
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81681.4	3.1				ug/L	81760	Standard
	Be	9	16.7	45.8	**0.0069**	0.007	104.2	ug/L	17	Standard
	Al	27	18070414.8	1.1	**117.3803**	2.444	2.1	ug/L	1410	Standard
	Sc	45	40721.3	2.6				ug/L	39543	Standard
	Ti	47	244.7	8.0	**0.8457**	0.069	8.1	ug/L	39	Standard
	V	51	17618.4	3.0	**2.3985**	0.046	1.9	ug/L	1415	Standard
	Cr	52	10888.2	1.3	**0.5506**	0.002	0.4	ug/L	6946	Standard
	Cr	53	4290.6	7.0	**4.6855**	0.402	8.6	ug/L	328	Standard
	Mn	55	234137.7	1.0	**36.9743**	0.056	0.2	ug/L	823	Standard
	Co	59	907.0	1.1	**0.1013**	0.001	0.9	ug/L	252	Standard
	Ni	60	1595.4	2.1	**0.7658**	0.017	2.3	ug/L	192	Standard
	Cu	65	1678.8	2.6	**0.8172**	0.017	2.1	ug/L	141	Standard
	Zn	66	5525.3	1.2	**4.3540**	0.048	1.1	ug/L	491	Standard
>	**Ge**	72	501124.8	1.2				ug/L	515087	Standard
	As	75	1072.7	4.1	**1.0212**	0.046	4.5	ug/L	20	Standard
	Se	82	264.0	5.9	**2.2378**	0.139	6.2	ug/L	15	Standard
	Se-1	77	284.0	16.7	**3.1586**	0.667	21.1	ug/L	48	Standard
>	**Ga**	71	116.7	13.8				mg/L	90	Standard
	Rb	85	15923.4	4.0				ug/L	23	Standard
	Y	89	444308.5	1.8				ug/L	448510	Standard
>	**Rh**	103	68.3	40.3				ug/L	15	Standard
	Mo	98	3823.6	1.7	**1.4182**	0.006	0.4	ug/L	11	Standard
	Ag	107	76.3	4.0	**-0.0047**	0.001	10.8	ug/L	134	Standard
	Cd	111	40.8	13.4	**0.0165**	0.003	15.5	mg/L	7	Standard
	Cd	114	111.3	16.3	**0.0169**	0.004	22.4	ug/L	16	Standard
>	**In**	115	601437.2	1.6				ug/L	611117	Standard
	Sn	118	1256.7	47.3	**0.1130**	0.098	86.7	ug/L	518	Standard
	Sb	123	502.0	6.8	**0.0953**	0.009	9.3	ug/L	127	Standard
	Ba	135	85456.0	1.5	**42.0358**	0.440	1.0	ug/L	45	Standard
	Ce	140	1221.7	20.4				ug/L	298	Standard
>	**Tb**	159	951914.7	0.8				ug/L	977942	Standard
	Ho	165	38.3	39.8				ug/L	12	Standard
	Tl	203	109.0	4.0	**0.0087**	0.001	7.8	ug/L	31	Standard
	Tl	205	100.0	13.2	**0.0120**	0.002	15.9	ug/L	20	Standard
	Pb	206	942.7	3.4	**0.1187**	0.004	3.7	ug/L	286	Standard
	Pb	207	751.4	3.5	**0.1031**	0.007	7.3	ug/L	257	Standard
	Pb	208	3320.1	1.9	**0.1235**	0.005	4.4	ug/L	956	Standard
	U	238	12716.0	1.7	**1.8521**	0.048	2.6	ug/L	17	Standard
>	**Bi**	209	533061.4	1.1				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.4978**	18.174	173.1	mg/L	0	Standard
Mg	24	45127.2	3.7	**58.2718**	1.297	2.2	mg/L	32	Standard
K	39	268.3	17.6	**0.7391**	0.156	21.1	mg/L	30	Standard
Ca	43	230.0	5.8	**28.6229**	2.753	9.6	mg/L	48	Standard
Fe	54	227.2	16.5	**0.0631**	0.037	58.2	mg/L	159	Standard
Fe	57	321.7	8.6	**0.4294**	0.079	18.3	mg/L	195	Standard
Sc-1	45	40721.3	2.6				mg/L	39543	Standard
Cl	35	40535.5	2.1				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	42472.8	3.2				ug/L	1647	Standard
P	31	21144.7	2.2				ug/L	15231	Standard
S	34	2520.2	4.3				ug/L	1845	Standard
Sr	88	268.3	23.3				ug/L	70	Standard
C	12	270.0	30.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	48.6	21.1				mg/L	12	Standard
Ho-1	165	38.3	39.8				mg/L	12	Standard
Er	166	30.0	33.3				mg/L	20	Standard
I	127	357293.3	4.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.904	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.289	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606115105
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.416
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.688
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606115401 WG573751-03
Sample Date/Time: Tuesday, June 28, 2016 16:57:02
Number of Replicates: 3
Autosampler Position: 248
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	100430.3	2.8				ug/L	81760	Standard
	Be	9	28.3	56.7	**0.0134**	0.013	96.3	ug/L	17	Standard
	Al	27	81335563.7	1.7	**429.6767**	8.046	1.9	ug/L	1410	Standard
	Sc	45	36054.5	1.3				ug/L	39543	Standard
	Ti	47	276.7	4.4	**1.0861**	0.041	3.8	ug/L	39	Standard
	V	51	56034.7	2.7	**8.8625**	0.243	2.7	ug/L	1415	Standard
	Cr	52	12377.7	0.7	**0.9433**	0.019	2.0	ug/L	6946	Standard
	Cr	53	23940.6	3.3	**30.3443**	1.215	4.0	ug/L	328	Standard
	Mn	55	741944.6	0.9	**128.6152**	2.806	2.2	ug/L	823	Standard
	Co	59	3502.1	2.3	**0.5295**	0.021	4.0	ug/L	252	Standard
	Ni	60	10135.4	1.6	**5.9492**	0.102	1.7	ug/L	192	Standard
	Cu	65	4993.5	1.7	**2.8661**	0.085	3.0	ug/L	141	Standard
	Zn	66	5821.5	1.7	**5.1486**	0.184	3.6	ug/L	491	Standard
>	**Ge**	72	457910.9	1.5				ug/L	515087	Standard
	As	75	1957.2	6.1	**1.9997**	0.145	7.2	ug/L	20	Standard
	Se	82	3071.1	3.5	**29.9014**	1.486	5.0	ug/L	15	Standard
	Se-1	77	4244.3	1.8	**62.6742**	2.070	3.3	ug/L	48	Standard
>	**Ga**	71	138.3	10.4				mg/L	90	Standard
	Rb	85	9993.3	0.6				ug/L	23	Standard
	Y	89	397349.5	0.4				ug/L	448510	Standard
>	**Rh**	103	1400.1	6.9				ug/L	15	Standard
	Mo	98	28731.5	0.6	**12.2349**	0.110	0.9	ug/L	11	Standard
	Ag	107	395.7	2.6	**0.0517**	0.002	4.3	ug/L	134	Standard
	Cd	111	92.0	15.6	**0.0467**	0.008	17.2	mg/L	7	Standard
	Cd	114	319.4	5.6	**0.0659**	0.004	5.6	ug/L	16	Standard
>	**In**	115	530125.1	0.7				ug/L	611117	Standard
	Sn	118	1140.0	5.3	**0.1203**	0.011	8.8	ug/L	518	Standard
	Sb	123	532.5	6.0	**0.1172**	0.007	5.9	ug/L	127	Standard
	Ba	135	16736.6	1.8	**9.3206**	0.182	2.0	ug/L	45	Standard
	Ce	140	1620.1	9.0				ug/L	298	Standard
>	**Tb**	159	890828.2	2.0				ug/L	977942	Standard
	Ho	165	38.3	27.2				ug/L	12	Standard
	Tl	203	267.7	7.7	**0.0327**	0.003	10.1	ug/L	31	Standard
	Tl	205	231.7	6.6	**0.0350**	0.002	6.9	ug/L	20	Standard
	Pb	206	883.7	4.8	**0.1290**	0.007	5.4	ug/L	286	Standard
	Pb	207	738.7	4.5	**0.1206**	0.010	8.0	ug/L	257	Standard
	Pb	208	2811.4	0.6	**0.1152**	0.004	3.5	ug/L	956	Standard
	U	238	63722.1	1.7	**10.4767**	0.095	0.9	ug/L	17	Standard
>	**Bi**	209	472777.8	1.7				ug/L	557080	Standard

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Na	23	15.0	33.3	**105.9031**	36.283	34.3	mg/L	0	Standard
Mg	24	356514.1	0.8	**520.5310**	10.800	2.1	mg/L	32	Standard
K	39	430.0	2.3	**1.4525**	0.056	3.9	mg/L	30	Standard
Ca	43	1840.1	5.6	**301.0738**	13.488	4.5	mg/L	48	Standard
Fe	54	188.6	12.1	**0.0500**	0.021	41.8	mg/L	159	Standard
Fe	57	1585.1	2.5	**5.2457**	0.200	3.8	mg/L	195	Standard
> **Sc-1**	45	36054.5	1.3				mg/L	39543	Standard
Cl	35	90598.1	1.3				ug/L	27642	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	42312.4	3.9				ug/L	1647	Standard
P	31	19347.4	2.8				ug/L	15231	Standard
S	34	2421.9	2.4				ug/L	1845	Standard
Sr	88	6231.3	0.9				ug/L	70	Standard
C	12	243.3	12.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	37.9	25.6				mg/L	12	Standard
Ho-1	165	38.3	27.2				mg/L	12	Standard
Er	166	43.3	96.1				mg/L	20	Standard
I	127	118064.4	6.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		122.835	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		88.900	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	86.747
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	84.867
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606115402S WG573751-09
Sample Date/Time: Tuesday, June 28, 2016 17:00:14
Number of Replicates: 3
Autosampler Position: 249
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	111794.4	2.2				ug/L	81760	Standard
	Be	9	61074.6	3.8	**44.9573**	0.853	1.9	ug/L	17	Standard
	Al	27	84589452.8	4.6	**401.1886**	9.792	2.4	ug/L	1410	Standard
	Sc	45	39148.9	4.1				ug/L	39543	Standard
	Ti	47	272.0	24.8	**0.9934**	0.318	32.0	ug/L	39	Standard
	V	51	406216.4	3.4	**61.4172**	0.609	1.0	ug/L	1415	Standard
	Cr	52	347340.1	3.9	**51.5532**	0.830	1.6	ug/L	6946	Standard
	Cr	53	63548.0	2.3	**76.0057**	0.198	0.3	ug/L	328	Standard
	Mn	55	986761.6	2.9	**160.3601**	1.162	0.7	ug/L	823	Standard
	Co	59	344414.5	2.6	**51.6648**	0.567	1.1	ug/L	252	Standard
	Ni	60	96461.7	3.6	**53.9005**	0.670	1.2	ug/L	192	Standard
	Cu	65	88941.7	2.7	**49.2712**	0.171	0.3	ug/L	141	Standard
	Zn	66	55366.0	3.1	**52.4384**	0.443	0.8	ug/L	491	Standard
>	**Ge**	72	488431.6	2.5				ug/L	515087	Standard
	As	75	59145.7	4.0	**55.5035**	0.877	1.6	ug/L	20	Standard
	Se	82	9257.9	4.7	**84.6512**	1.891	2.2	ug/L	15	Standard
	Se-1	77	8241.9	2.0	**114.6628**	0.599	0.5	ug/L	48	Standard
>	**Ga**	71	135.0	3.7				mg/L	90	Standard
	Rb	85	11232.5	8.2				ug/L	23	Standard
	Y	89	424780.5	4.2				ug/L	448510	Standard
>	**Rh**	103	1410.1	5.3				ug/L	15	Standard
	Mo	98	28554.4	4.0	**11.2353**	0.049	0.4	ug/L	11	Standard
	Ag	107	298500.0	4.4	**47.3531**	0.325	0.7	ug/L	134	Standard
	Cd	111	96838.7	4.3	**48.2572**	0.264	0.5	mg/L	7	Standard
	Cd	114	236461.6	3.9	**48.4818**	0.307	0.6	ug/L	16	Standard
>	**In**	115	573601.2	3.7				ug/L	611117	Standard
	Sn	118	926.7	16.3	**0.0649**	0.025	39.2	ug/L	518	Standard
	Sb	123	232072.7	4.2	**52.3852**	0.509	1.0	ug/L	127	Standard
	Ba	135	113861.5	4.7	**58.7202**	0.562	1.0	ug/L	45	Standard
	Ce	140	1120.0	4.0				ug/L	298	Standard
>	**Tb**	159	960238.4	4.5				ug/L	977942	Standard
	Ho	165	33.3	75.5				ug/L	12	Standard
	Tl	203	395828.3	3.1	**51.4711**	0.762	1.5	ug/L	31	Standard
	Tl	205	346560.1	3.5	**51.8878**	0.159	0.3	ug/L	20	Standard
	Pb	206	263890.3	2.7	**53.4438**	0.979	1.8	ug/L	286	Standard
	Pb	207	230261.5	2.5	**51.7030**	0.928	1.8	ug/L	257	Standard
	Pb	208	887552.6	2.9	**51.5030**	0.554	1.1	ug/L	956	Standard
	U	238	419873.0	2.9	**64.2072**	0.642	1.0	ug/L	17	Standard
>	**Bi**	209	508536.8	3.8				ug/L	557080	Standard

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Na	23	21.7	35.3	**139.6053**	45.304	32.5	mg/L	0	Standard
Mg	24	357824.7	2.8	**481.2852**	10.577	2.2	mg/L	32	Standard
K	39	491.7	6.5	**1.5399**	0.155	10.1	mg/L	30	Standard
Ca	43	1775.1	1.7	**267.3999**	15.688	5.9	mg/L	48	Standard
Fe	54	171.9	15.3	**0.0199**	0.020	102.8	mg/L	159	Standard
Fe	57	1550.1	0.6	**4.6666**	0.208	4.5	mg/L	195	Standard
Sc-1	45	39148.9	4.1				mg/L	39543	Standard
Cl	35	91435.3	3.5				ug/L	27642	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	45418.1	6.1				ug/L	1647	Standard
P	31	20330.3	5.5				ug/L	15231	Standard
S	34	2288.5	3.3				ug/L	1845	Standard
Sr	88	6416.4	6.4				ug/L	70	Standard
C	12	206.7	37.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	21.9	50.9				mg/L	12	Standard
Ho-1	165	33.3	75.5				mg/L	12	Standard
Er	166	30.0	57.7				mg/L	20	Standard
I	127	49499.1	2.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		136.735	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.825	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	93.861
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	91.286
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Se-1 77 Upper, S, EEE	Se-1	77	

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Method 6020 - Summary Report

Sample ID: L1606115403SD WG573751-10
Sample Date/Time: Tuesday, June 28, 2016 17:03:25
Number of Replicates: 3
Autosampler Position: 250
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	118994.0	2.6				ug/L	81760	Standard
	Be	9	64654.3	0.9	**44.7357**	0.820	1.8	ug/L	17	Standard
	Al	27	87741403.7	3.4	**391.0655**	6.582	1.7	ug/L	1410	Standard
	Sc	45	41172.5	1.6				ug/L	39543	Standard
	Ti	47	259.3	3.7	**0.9238**	0.057	6.2	ug/L	39	Standard
	V	51	425385.5	3.2	**63.6566**	1.295	2.0	ug/L	1415	Standard
	Cr	52	362069.3	1.9	**53.2267**	0.604	1.1	ug/L	6946	Standard
	Cr	53	64441.8	2.0	**76.2717**	0.872	1.1	ug/L	328	Standard
	Mn	55	1073606.3	3.1	**172.6721**	4.096	2.4	ug/L	823	Standard
	Co	59	369825.3	3.2	**54.8942**	1.128	2.1	ug/L	252	Standard
	Ni	60	100548.2	1.5	**55.6131**	0.149	0.3	ug/L	192	Standard
	Cu	65	92359.0	1.3	**50.6385**	0.319	0.6	ug/L	141	Standard
	Zn	66	57865.3	2.6	**54.2651**	0.864	1.6	ug/L	491	Standard
>	**Ge**	72	493572.0	1.8				ug/L	515087	Standard
	As	75	61885.0	3.3	**57.4777**	1.381	2.4	ug/L	20	Standard
	Se	82	9664.4	3.7	**87.4717**	2.250	2.6	ug/L	15	Standard
	Se-1	77	8366.3	3.5	**115.1653**	2.897	2.5	ug/L	48	Standard
>	**Ga**	71	118.3	21.7				mg/L	90	Standard
	Rb	85	11170.8	6.4				ug/L	23	Standard
	Y	89	447220.0	3.1				ug/L	448510	Standard
>	**Rh**	103	1640.1	8.8				ug/L	15	Standard
	Mo	98	29726.0	4.1	**11.0857**	0.160	1.4	ug/L	11	Standard
	Ag	107	312572.9	2.2	**47.0220**	0.762	1.6	ug/L	134	Standard
	Cd	111	102356.1	3.3	**48.3584**	0.794	1.6	mg/L	7	Standard
	Cd	114	246212.9	4.6	**47.8408**	0.884	1.8	ug/L	16	Standard
>	**In**	115	605206.5	3.7				ug/L	611117	Standard
	Sn	118	1233.4	10.6	**0.1085**	0.018	16.3	ug/L	518	Standard
	Sb	123	240651.4	1.9	**51.5127**	0.935	1.8	ug/L	127	Standard
	Ba	135	117995.0	3.4	**57.6913**	0.169	0.3	ug/L	45	Standard
	Ce	140	1415.1	2.3				ug/L	298	Standard
>	**Tb**	159	994298.0	3.0				ug/L	977942	Standard
	Ho	165	46.7	12.4				ug/L	12	Standard
	Tl	203	412661.0	1.3	**51.8933**	0.197	0.4	ug/L	31	Standard
	Tl	205	366877.2	3.6	**53.1179**	1.107	2.1	ug/L	20	Standard
	Pb	206	275320.1	2.3	**53.9118**	0.413	0.8	ug/L	286	Standard
	Pb	207	238830.1	2.6	**51.8469**	0.552	1.1	ug/L	257	Standard
	Pb	208	936516.1	2.9	**52.5472**	0.756	1.4	ug/L	956	Standard
	U	238	442147.9	3.9	**65.3698**	1.598	2.4	ug/L	17	Standard
>	**Bi**	209	525736.2	1.5				ug/L	557080	Standard

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Na	23	31.7	48.2	**194.7966**	93.559	48.0	mg/L	0	Standard
Mg	24	381865.2	2.0	**488.2175**	12.226	2.5	mg/L	32	Standard
K	39	475.0	11.9	**1.3985**	0.159	11.4	mg/L	30	Standard
Ca	43	1828.4	7.5	**261.2707**	17.620	6.7	mg/L	48	Standard
Fe	54	210.4	5.2	**0.0459**	0.012	26.9	mg/L	159	Standard
Fe	57	1693.4	5.0	**4.8640**	0.189	3.9	mg/L	195	Standard
> **Sc-1**	45	41172.5	1.6				mg/L	39543	Standard
Cl	35	96785.1	3.5				ug/L	27642	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	48665.0	7.0				ug/L	1647	Standard
P	31	21074.7	3.4				ug/L	15231	Standard
S	34	2411.9	0.6				ug/L	1845	Standard
Sr	88	7001.6	9.4				ug/L	70	Standard
C	12	253.3	28.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	54.1	45.2				mg/L	12	Standard
Ho-1	165	46.7	12.4				mg/L	12	Standard
Er	166	53.3	28.6				mg/L	20	Standard
I	127	96813.1	12.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		145.540	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.823	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.033
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.373
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Se-1 77 Upper, S, EEE	Se-1	77	

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Method 6020 - Summary Report

Sample ID: L1606115404
Sample Date/Time: Tuesday, June 28, 2016 17:06:37
Number of Replicates: 3
Autosampler Position: 251
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	100804.3	1.4				ug/L	81760	Standard
	Be	9	43.3	6.7	**0.0257**	0.002	9.1	ug/L	17	Standard
	Al	27	95134.9	5.2	**0.4862**	0.026	5.4	ug/L	1410	Standard
	Sc	45	38767.9	2.5				ug/L	39543	Standard
	Ti	47	56.0	17.6	**0.0568**	0.042	74.0	ug/L	39	Standard
	V	51	2653.2	7.2	**0.1688**	0.023	13.6	ug/L	1415	Standard
	Cr	52	16846.0	0.3	**1.3242**	0.040	3.0	ug/L	6946	Standard
	Cr	53	2448.5	10.3	**2.4055**	0.318	13.2	ug/L	328	Standard
	Mn	55	6416.4	0.3	**0.8254**	0.012	1.5	ug/L	823	Standard
	Co	59	385.0	5.1	**0.0226**	0.003	13.2	ug/L	252	Standard
	Ni	60	1595.4	9.2	**0.7282**	0.071	9.8	ug/L	192	Standard
	Cu	65	1383.7	5.1	**0.6260**	0.046	7.3	ug/L	141	Standard
	Zn	66	3329.0	1.8	**2.1614**	0.092	4.3	ug/L	491	Standard
>	**Ge**	72	523540.2	1.3				ug/L	515087	Standard
	As	75	21.6	288.4	**0.0594**	0.054	91.4	ug/L	20	Standard
	Se	82	48.4	30.2	**0.2956**	0.131	44.3	ug/L	15	Standard
	Se-1	77	118.7	6.2	**0.8319**	0.117	14.0	ug/L	48	Standard
>	**Ga**	71	35.0	51.5				mg/L	90	Standard
	Rb	85	285.0	10.7				ug/L	23	Standard
	Y	89	449294.4	0.5				ug/L	448510	Standard
>	**Rh**	103	35.0	14.3				ug/L	15	Standard
	Mo	98	461.6	2.9	**0.1485**	0.005	3.0	ug/L	11	Standard
	Ag	107	143.3	7.2	**0.0047**	0.002	32.8	ug/L	134	Standard
	Cd	111	43.9	7.3	**0.0172**	0.002	8.8	mg/L	7	Standard
	Cd	114	151.5	5.9	**0.0237**	0.002	7.4	ug/L	16	Standard
>	**In**	115	622732.4	0.3				ug/L	611117	Standard
	Sn	118	3920.5	2.1	**0.5488**	0.015	2.8	ug/L	518	Standard
	Sb	123	270.3	27.2	**0.0434**	0.015	35.5	ug/L	127	Standard
	Ba	135	1327.1	1.7	**0.6057**	0.011	1.9	ug/L	45	Standard
	Ce	140	168.3	16.4				ug/L	298	Standard
>	**Tb**	159	980536.6	0.9				ug/L	977942	Standard
	Ho	165	21.7	13.3				ug/L	12	Standard
	Tl	203	266.3	8.1	**0.0259**	0.003	10.5	ug/L	31	Standard
	Tl	205	201.7	5.7	**0.0244**	0.001	5.0	ug/L	20	Standard
	Pb	206	459.0	5.5	**0.0188**	0.005	29.2	ug/L	286	Standard
	Pb	207	389.7	6.3	**0.0195**	0.006	29.5	ug/L	257	Standard
	Pb	208	1625.7	6.2	**0.0231**	0.006	26.8	ug/L	956	Standard
	U	238	121.7	7.4	**0.0135**	0.001	9.9	ug/L	17	Standard
>	**Bi**	209	574701.5	1.2				ug/L	557080	Standard

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Na	23	5.0	100.0	**32.7163**	32.227	98.5	mg/L	0	Standard
Mg	24	330.0	22.9	**0.3898**	0.094	24.2	mg/L	32	Standard
K	39	33.3	43.3	**-0.0268**	0.048	179.7	mg/L	30	Standard
Ca	43	33.3	43.3	**-0.2011**	2.146	1067.4	mg/L	48	Standard
Fe	54	141.8	17.1	**-0.0059**	0.025	416.6	mg/L	159	Standard
Fe	57	216.7	23.3	**0.1207**	0.166	137.9	mg/L	195	Standard
> **Sc-1**	45	38767.9	2.5				mg/L	39543	Standard
Cl	35	43132.0	0.5				ug/L	27642	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	3107.0	8.7				ug/L	1647	Standard
P	31	17094.6	3.8				ug/L	15231	Standard
S	34	2171.8	4.7				ug/L	1845	Standard
Sr	88	71.7	31.5				ug/L	70	Standard
C	12	180.0	44.1				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.3	86.6				mg/L	12	Standard
Ho-1	165	21.7	13.3				mg/L	12	Standard
Er	166	6.7	86.6				mg/L	20	Standard
I	127	6683.3	38.1				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		123.293	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.641	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.901
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.163
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 17:09:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	98106.9	3.9				ug/L	81760	Standard
	Be	9	60781.9	5.8	**50.9762**	1.224	2.4	ug/L	17	Standard
	Al	27	8271215.1	2.8	**44.7180**	0.568	1.3	ug/L	1410	Standard
	Sc	45	39052.0	5.6				ug/L	39543	Standard
	Ti	47	24646.4	4.4	**101.4481**	2.619	2.6	ug/L	39	Standard
	V	51	347970.7	1.4	**51.1411**	0.534	1.0	ug/L	1415	Standard
	Cr	52	354198.6	3.4	**51.1178**	0.779	1.5	ug/L	6946	Standard
	Cr	53	44595.6	4.3	**51.7475**	1.396	2.7	ug/L	328	Standard
	Mn	55	315347.9	1.9	**49.7410**	0.694	1.4	ug/L	823	Standard
	Co	59	365725.5	2.3	**53.3530**	0.828	1.6	ug/L	252	Standard
	Ni	60	93315.9	2.3	**50.7083**	0.301	0.6	ug/L	192	Standard
	Cu	65	94072.6	2.8	**50.6778**	0.428	0.8	ug/L	141	Standard
	Zn	66	55586.5	1.6	**51.1865**	0.432	0.8	ug/L	491	Standard
>	**Ge**	72	502280.1	2.3				ug/L	515087	Standard
	As	75	55868.4	1.2	**51.0087**	0.746	1.5	ug/L	20	Standard
	Se	82	5921.1	2.6	**52.6309**	1.371	2.6	ug/L	15	Standard
	Se-1	77	3936.2	0.2	**52.8821**	1.332	2.5	ug/L	48	Standard
>	**Ga**	71	43.3	6.7				mg/L	90	Standard
	Rb	85	853.4	12.0				ug/L	23	Standard
	Y	89	445806.9	0.5				ug/L	448510	Standard
>	**Rh**	103	45.0	61.9				ug/L	15	Standard
	Mo	98	273081.8	2.1	**98.9265**	1.774	1.8	ug/L	11	Standard
	Ag	107	339843.9	2.2	**49.5651**	0.762	1.5	ug/L	134	Standard
	Cd	111	106758.1	1.3	**48.9107**	0.367	0.7	mg/L	7	Standard
	Cd	114	258025.9	1.5	**48.6321**	0.403	0.8	ug/L	16	Standard
>	**In**	115	623979.7	0.7				ug/L	611117	Standard
	Sn	118	298451.0	1.1	**49.3312**	0.224	0.5	ug/L	518	Standard
	Sb	123	238781.4	2.0	**49.5506**	0.796	1.6	ug/L	127	Standard
	Ba	135	101752.9	1.4	**48.2444**	0.388	0.8	ug/L	45	Standard
	Ce	140	83.3	6.9				ug/L	298	Standard
>	**Tb**	159	999812.3	3.7				ug/L	977942	Standard
	Ho	165	18.3	56.8				ug/L	12	Standard
	Tl	203	438487.8	2.0	**50.5214**	0.372	0.7	ug/L	31	Standard
	Tl	205	396911.7	0.7	**52.6785**	1.200	2.3	ug/L	20	Standard
	Pb	206	278860.8	1.5	**50.0350**	0.542	1.1	ug/L	286	Standard
	Pb	207	252734.9	2.4	**50.2714**	0.461	0.9	ug/L	257	Standard
	Pb	208	1008405.1	1.0	**51.8566**	0.775	1.5	ug/L	956	Standard
	U	238	385967.4	0.9	**52.3060**	0.849	1.6	ug/L	17	Standard
>	**Bi**	209	573840.1	2.4				ug/L	557080	Standard

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Na	23	6.7	43.3	**42.7715**	15.957	37.3	mg/L	0	Standard
Mg	24	4330.6	4.7	**5.7850**	0.241	4.2	mg/L	32	Standard
K	39	1310.1	5.5	**4.3410**	0.087	2.0	mg/L	30	Standard
Ca	43	75.0	17.6	**6.2533**	2.500	40.0	mg/L	48	Standard
Fe	54	6082.2	3.3	**5.4477**	0.350	6.4	mg/L	159	Standard
Fe	57	1690.1	5.8	**5.1531**	0.140	2.7	mg/L	195	Standard
Sc-1	45	39052.0	5.6				mg/L	39543	Standard
Cl	35	36312.2	3.9				ug/L	27642	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	2130.1	3.3				ug/L	1647	Standard
P	31	18776.6	1.2				ug/L	15231	Standard
S	34	2388.5	6.0				ug/L	1845	Standard
Sr	88	65.0	13.3				ug/L	70	Standard
C	12	133.3	33.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.7	43.5				mg/L	12	Standard
Ho-1	165	18.3	56.8				mg/L	12	Standard
Er	166	13.3	86.6				mg/L	20	Standard
I	127	2708.6	18.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	101.952		
Al	27	89.436		
Sc	45			
Ti	47	101.448		
V	51	102.282		
Cr	52	102.236		
Cr	53			
Mn	55	99.482		
Co	59	106.706		
Ni	60	101.417		
Cu	65	101.356		
Zn	66	102.373		
Ge	72		97.514	
As	75	102.017		
Se	82	105.262		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	98.926		
Ag	107	99.130		
Cd	111	97.821		
Cd	114			
In	115		102.105	
Sn	118	98.662		
Sb	123	99.101		
Ba	135	96.489		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.043		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.713		
U	238	104.612		
Bi	209		103.008	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 17:13:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92565.4	2.9				ug/L	81760	Standard
	Be	9	53.3	124.8	**0.0389**	0.062	158.6	ug/L	17	Standard
	Al	27	40870.6	146.9	**0.2266**	0.357	157.4	ug/L	1410	Standard
	Sc	45	37247.5	4.3				ug/L	39543	Standard
	Ti	47	28.7	28.0	**-0.0471**	0.033	70.8	ug/L	39	Standard
	V	51	1306.5	27.0	**-0.0143**	0.053	368.2	ug/L	1415	Standard
	Cr	52	6317.0	3.9	**-0.1289**	0.039	29.9	ug/L	6946	Standard
	Cr	53	723.4	11.4	**0.5015**	0.098	19.5	ug/L	328	Standard
	Mn	55	1084.7	54.0	**0.0228**	0.093	407.7	ug/L	823	Standard
	Co	59	338.3	37.8	**0.0179**	0.019	104.7	ug/L	252	Standard
	Ni	60	322.7	24.3	**0.0703**	0.043	61.2	ug/L	192	Standard
	Cu	65	237.7	21.2	**0.0371**	0.027	74.0	ug/L	141	Standard
	Zn	66	487.7	9.0	**-0.3725**	0.041	11.1	ug/L	491	Standard
>	**Ge**	72	503592.6	0.3				ug/L	515087	Standard
	As	75	-19.3	188.6	**0.0227**	0.033	146.0	ug/L	20	Standard
	Se	82	22.8	34.7	**0.0835**	0.070	83.8	ug/L	15	Standard
	Se-1	77	71.3	3.2	**0.2496**	0.032	12.8	ug/L	48	Standard
>	**Ga**	71	43.3	46.6				mg/L	90	Standard
	Rb	85	33.3	37.7				ug/L	23	Standard
	Y	89	434857.2	0.6				ug/L	448510	Standard
>	**Rh**	103	13.3	43.3				ug/L	15	Standard
	Mo	98	288.2	19.1	**0.0890**	0.021	23.1	ug/L	11	Standard
	Ag	107	295.0	92.5	**0.0287**	0.042	146.5	ug/L	134	Standard
	Cd	111	58.8	115.8	**0.0253**	0.033	130.1	mg/L	7	Standard
	Cd	114	179.7	150.5	**0.0306**	0.054	175.0	ug/L	16	Standard
>	**In**	115	602649.0	1.7				ug/L	611117	Standard
	Sn	118	880.0	23.1	**0.0494**	0.037	75.1	ug/L	518	Standard
	Sb	123	564.4	53.6	**0.1091**	0.067	61.4	ug/L	127	Standard
	Ba	135	113.7	104.6	**0.0312**	0.059	190.7	ug/L	45	Standard
	Ce	140	26.7	21.7				ug/L	298	Standard
>	**Tb**	159	956287.2	0.6				ug/L	977942	Standard
	Ho	165	6.7	173.2				ug/L	12	Standard
	Tl	203	302.3	107.0	**0.0307**	0.038	123.1	ug/L	31	Standard
	Tl	205	353.3	119.4	**0.0454**	0.057	124.8	ug/L	20	Standard
	Pb	206	425.3	47.1	**0.0143**	0.036	251.9	ug/L	286	Standard
	Pb	207	353.0	32.9	**0.0137**	0.023	168.1	ug/L	257	Standard
	Pb	208	1674.0	55.6	**0.0274**	0.048	175.9	ug/L	956	Standard
	U	238	298.0	132.6	**0.0381**	0.054	142.5	ug/L	17	Standard
>	**Bi**	209	561401.5	0.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	206.7	141.8	**0.2403**	0.424	176.4	mg/L	32	Standard
K	39	28.3	71.3	**-0.0379**	0.076	200.2	mg/L	30	Standard
Ca	43	35.0	24.7	**0.2817**	1.299	461.1	mg/L	48	Standard
Fe	54	147.7	17.2	**0.0057**	0.030	525.6	mg/L	159	Standard
Fe	57	195.0	14.3	**0.0744**	0.099	133.6	mg/L	195	Standard
> **Sc-1**	45	37247.5	4.3				mg/L	39543	Standard
Cl	35	35032.5	2.2				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1893.5	11.2				ug/L	1647	Standard
P	31	18479.6	2.3				ug/L	15231	Standard
S	34	2273.5	3.9				ug/L	1845	Standard
Sr	88	81.7	3.5				ug/L	70	Standard
C	12	186.7	15.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.5	186.3				mg/L	12	Standard
Ho-1	165	6.7	173.2				mg/L	12	Standard
Er	166	10.0	100.0				mg/L	20	Standard
I	127	2043.5	19.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.768	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.614	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.776	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 28, 2016 17:15:18
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Method 6020 - Summary Report

Sample ID: L1606115501
Sample Date/Time: Tuesday, June 28, 2016 17:16:14
Number of Replicates: 3
Autosampler Position: 252
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92590.4	1.6				ug/L	81760	Standard
	Be	9	26.7	47.2	**0.0141**	0.012	82.4	ug/L	17	Standard
	Al	27	22123057.0	1.6	**126.7281**	1.652	1.3	ug/L	1410	Standard
	Sc	45	39028.5	1.1				ug/L	39543	Standard
	Ti	47	160.7	8.5	**0.5119**	0.051	9.9	ug/L	39	Standard
	V	51	4388.8	2.7	**0.4554**	0.016	3.5	ug/L	1415	Standard
	Cr	52	10159.7	1.1	**0.4737**	0.053	11.2	ug/L	6946	Standard
	Cr	53	1711.8	8.9	**1.7064**	0.233	13.7	ug/L	328	Standard
	Mn	55	4816073.5	0.9	**779.0277**	27.654	3.5	ug/L	823	Standard
	Co	59	2714.6	0.9	**0.3738**	0.009	2.5	ug/L	252	Standard
	Ni	60	3772.1	1.1	**1.9951**	0.039	2.0	ug/L	192	Standard
	Cu	65	754.7	3.1	**0.3255**	0.008	2.4	ug/L	141	Standard
	Zn	66	4017.9	2.4	**3.0152**	0.057	1.9	ug/L	491	Standard
>	**Ge**	72	491414.0	2.7				ug/L	515087	Standard
	As	75	1051.2	2.3	**1.0210**	0.045	4.4	ug/L	20	Standard
	Se	82	143.6	4.5	**1.1879**	0.030	2.5	ug/L	15	Standard
	Se-1	77	105.7	15.2	**0.7547**	0.249	32.9	ug/L	48	Standard
>	**Ga**	71	188.3	17.7				mg/L	90	Standard
	Rb	85	950.0	0.9				ug/L	23	Standard
	Y	89	424439.8	0.9				ug/L	448510	Standard
>	**Rh**	103	96.7	7.9				ug/L	15	Standard
	Mo	98	5849.5	0.5	**2.2126**	0.029	1.3	ug/L	11	Standard
	Ag	107	89.7	21.1	**-0.0024**	0.003	128.8	ug/L	134	Standard
	Cd	111	11.8	58.9	**0.0028**	0.003	121.4	mg/L	7	Standard
	Cd	114	46.1	44.3	**0.0042**	0.004	96.2	ug/L	16	Standard
>	**In**	115	592706.9	1.7				ug/L	611117	Standard
	Sn	118	891.7	9.5	**0.0535**	0.013	23.6	ug/L	518	Standard
	Sb	123	236.5	14.9	**0.0388**	0.007	18.8	ug/L	127	Standard
	Ba	135	171509.6	0.5	**85.6510**	1.837	2.1	ug/L	45	Standard
	Ce	140	703.3	3.9				ug/L	298	Standard
>	**Tb**	159	954495.6	1.0				ug/L	977942	Standard
	Ho	165	26.7	60.3				ug/L	12	Standard
	Tl	203	128.7	6.5	**0.0108**	0.001	9.4	ug/L	31	Standard
	Tl	205	116.7	2.5	**0.0140**	0.000	2.9	ug/L	20	Standard
	Pb	206	518.0	5.9	**0.0341**	0.006	17.0	ug/L	286	Standard
	Pb	207	434.7	5.8	**0.0328**	0.005	16.1	ug/L	257	Standard
	Pb	208	1843.7	3.4	**0.0392**	0.003	8.9	ug/L	956	Standard
	U	238	11694.2	0.7	**1.6602**	0.012	0.7	ug/L	17	Standard
>	**Bi**	209	546693.4	0.1				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.9680**	18.988	173.1	mg/L	0	Standard
Mg	24	30276.9	1.0	**40.7793**	0.477	1.2	mg/L	32	Standard
K	39	240.0	12.5	**0.6798**	0.099	14.5	mg/L	30	Standard
Ca	43	255.0	15.3	**33.9356**	6.415	18.9	mg/L	48	Standard
Fe	54	184.3	20.5	**0.0318**	0.034	107.2	mg/L	159	Standard
Fe	57	341.7	3.0	**0.5441**	0.035	6.5	mg/L	195	Standard
> **Sc-1**	45	39028.5	1.1				mg/L	39543	Standard
Cl	35	37440.9	1.2				ug/L	27642	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	32190.8	1.7				ug/L	1647	Standard
P	31	22541.8	0.7				ug/L	15231	Standard
S	34	2386.9	3.2				ug/L	1845	Standard
Sr	88	303.3	20.6				ug/L	70	Standard
C	12	480.0	6.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	27.6	75.9				mg/L	12	Standard
Ho-1	165	26.7	60.3				mg/L	12	Standard
Er	166	50.0	40.0				mg/L	20	Standard
I	127	1264643.9	6.0				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		113.247	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.404	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.988
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.135
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606115502
Sample Date/Time: Tuesday, June 28, 2016 17:19:26
Number of Replicates: 3
Autosampler Position: 253
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	94157.1	4.7				ug/L	81760	Standard
	Be	9	20.0	50.0	**0.0078**	0.009	115.3	ug/L	17	Standard
	Al	27	28931934.4	4.0	**163.0048**	1.392	0.9	ug/L	1410	Standard
	Sc	45	40320.3	3.5				ug/L	39543	Standard
	Ti	47	168.3	17.1	**0.5232**	0.117	22.4	ug/L	39	Standard
	V	51	1551.4	10.5	**0.0205**	0.027	130.5	ug/L	1415	Standard
	Cr	52	10328.9	2.0	**0.4515**	0.024	5.3	ug/L	6946	Standard
	Cr	53	2665.2	7.9	**2.7435**	0.199	7.2	ug/L	328	Standard
	Mn	55	1534029.1	1.0	**240.4438**	3.129	1.3	ug/L	823	Standard
	Co	59	1102.0	2.8	**0.1281**	0.004	3.4	ug/L	252	Standard
	Ni	60	1786.8	2.8	**0.8597**	0.029	3.3	ug/L	192	Standard
	Cu	65	955.7	1.4	**0.4206**	0.012	3.0	ug/L	141	Standard
	Zn	66	3611.4	2.8	**2.5229**	0.115	4.5	ug/L	491	Standard
>	**Ge**	72	506659.2	1.8				ug/L	515087	Standard
	As	75	1883.3	1.6	**1.7433**	0.024	1.4	ug/L	20	Standard
	Se	82	155.4	0.8	**1.2536**	0.030	2.4	ug/L	15	Standard
	Se-1	77	168.7	6.6	**1.5590**	0.181	11.6	ug/L	48	Standard
>	**Ga**	71	140.0	15.6				mg/L	90	Standard
	Rb	85	1435.1	8.2				ug/L	23	Standard
	Y	89	449200.8	1.5				ug/L	448510	Standard
>	**Rh**	103	93.3	16.4				ug/L	15	Standard
	Mo	98	2699.1	0.6	**0.9667**	0.027	2.8	ug/L	11	Standard
	Ag	107	94.7	12.7	**-0.0023**	0.002	96.2	ug/L	134	Standard
	Cd	111	15.7	16.0	**0.0044**	0.001	31.4	mg/L	7	Standard
	Cd	114	28.9	55.3	**0.0006**	0.003	513.8	ug/L	16	Standard
>	**In**	115	619397.8	3.1				ug/L	611117	Standard
	Sn	118	1035.0	8.9	**0.0707**	0.012	17.4	ug/L	518	Standard
	Sb	123	177.5	18.8	**0.0244**	0.008	32.9	ug/L	127	Standard
	Ba	135	342505.9	1.5	**163.7121**	2.675	1.6	ug/L	45	Standard
	Ce	140	470.0	1.8				ug/L	298	Standard
>	**Tb**	159	978535.3	2.3				ug/L	977942	Standard
	Ho	165	33.3	17.3				ug/L	12	Standard
	Tl	203	95.7	2.4	**0.0067**	0.000	2.7	ug/L	31	Standard
	Tl	205	98.3	7.8	**0.0112**	0.001	8.1	ug/L	20	Standard
	Pb	206	616.7	3.3	**0.0513**	0.003	5.5	ug/L	286	Standard
	Pb	207	520.0	3.8	**0.0494**	0.003	5.9	ug/L	257	Standard
	Pb	208	2224.4	1.1	**0.0583**	0.001	1.4	ug/L	956	Standard
	U	238	39.7	29.5	**0.0026**	0.002	61.0	ug/L	17	Standard
>	**Bi**	209	553220.4	1.1				ug/L	557080	Standard

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Na	23	5.0	0.0	**31.5109**	1.087	3.4	mg/L	0	Standard
Mg	24	25140.9	3.4	**32.7721**	0.865	2.6	mg/L	32	Standard
K	39	73.3	23.9	**0.1023**	0.063	61.8	mg/L	30	Standard
Ca	43	243.3	6.6	**30.9203**	2.535	8.2	mg/L	48	Standard
Fe	54	2629.1	2.7	**2.1972**	0.059	2.7	mg/L	159	Standard
Fe	57	1076.7	7.2	**2.9489**	0.380	12.9	mg/L	195	Standard
> **Sc-1**	45	40320.3	3.5				mg/L	39543	Standard
Cl	35	39998.8	2.6				ug/L	27642	Standard
Kr	83	2.7	43.3				ug/L	2	Standard
Br	81	32989.2	3.3				ug/L	1647	Standard
P	31	24089.1	1.8				ug/L	15231	Standard
S	34	2583.6	5.0				ug/L	1845	Standard
Sr	88	433.3	4.7				ug/L	70	Standard
C	12	350.0	5.7				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	25.7	20.9				mg/L	12	Standard
Ho-1	165	33.3	17.3				mg/L	12	Standard
Er	166	20.0	50.0				mg/L	20	Standard
I	127	377170.1	0.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.163	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.364	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.355	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.307	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606115503
Sample Date/Time: Tuesday, June 28, 2016 17:22:37
Number of Replicates: 3
Autosampler Position: 254
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	93460.7	0.5				ug/L	81760	Standard
	Be	9	35.0	14.3	**0.0211**	0.004	21.2	ug/L	17	Standard
	Al	27	14187081.3	1.7	**80.5012**	1.275	1.6	ug/L	1410	Standard
	Sc	45	39556.6	4.7				ug/L	39543	Standard
	Ti	47	229.0	18.7	**0.7435**	0.168	22.5	ug/L	39	Standard
	V	51	2172.0	8.1	**0.1016**	0.022	21.3	ug/L	1415	Standard
	Cr	52	10167.4	1.5	**0.3846**	0.034	8.8	ug/L	6946	Standard
	Cr	53	1090.0	15.2	**0.8840**	0.185	20.9	ug/L	328	Standard
	Mn	55	1432250.3	1.3	**217.9180**	5.450	2.5	ug/L	823	Standard
	Co	59	795.7	6.2	**0.0804**	0.008	9.7	ug/L	252	Standard
	Ni	60	1574.1	4.4	**0.7198**	0.033	4.6	ug/L	192	Standard
	Cu	65	1999.1	3.4	**0.9475**	0.036	3.8	ug/L	141	Standard
	Zn	66	5797.8	1.6	**4.3927**	0.080	1.8	ug/L	491	Standard
>	**Ge**	72	521945.3	1.2				ug/L	515087	Standard
	As	75	168.7	6.2	**0.1883**	0.009	4.6	ug/L	20	Standard
	Se	82	81.0	7.2	**0.5749**	0.055	9.6	ug/L	15	Standard
	Se-1	77	72.3	14.9	**0.2276**	0.131	57.6	ug/L	48	Standard
>	**Ga**	71	155.0	23.3				mg/L	90	Standard
	Rb	85	10031.7	2.6				ug/L	23	Standard
	Y	89	435099.7	2.5				ug/L	448510	Standard
>	**Rh**	103	70.0	28.6				ug/L	15	Standard
	Mo	98	145.2	5.2	**0.0354**	0.003	8.7	ug/L	11	Standard
	Ag	107	85.3	8.5	**-0.0033**	0.001	30.7	ug/L	134	Standard
	Cd	111	76.7	2.3	**0.0335**	0.001	2.5	mg/L	7	Standard
	Cd	114	203.1	19.3	**0.0347**	0.008	22.4	ug/L	16	Standard
>	**In**	115	602973.5	0.6				ug/L	611117	Standard
	Sn	118	941.7	4.9	**0.0595**	0.009	14.6	ug/L	518	Standard
	Sb	123	323.8	6.4	**0.0567**	0.004	7.5	ug/L	127	Standard
	Ba	135	119338.2	0.9	**58.5639**	0.899	1.5	ug/L	45	Standard
	Ce	140	855.0	10.9				ug/L	298	Standard
>	**Tb**	159	952983.8	1.5				ug/L	977942	Standard
	Ho	165	36.7	41.7				ug/L	12	Standard
	Tl	203	88.7	6.9	**0.0057**	0.001	14.0	ug/L	31	Standard
	Tl	205	55.0	27.3	**0.0052**	0.002	38.2	ug/L	20	Standard
	Pb	206	861.0	5.9	**0.0956**	0.010	10.1	ug/L	286	Standard
	Pb	207	708.7	5.0	**0.0873**	0.008	9.7	ug/L	257	Standard
	Pb	208	2964.1	2.3	**0.0967**	0.005	5.3	ug/L	956	Standard
	U	238	696.7	2.0	**0.0942**	0.003	2.9	ug/L	17	Standard
>	**Bi**	209	557355.1	1.0				ug/L	557080	Standard

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Na	23	6.7	43.3	**42.2849**	16.098	38.1	mg/L	0	Standard
Mg	24	19544.3	4.8	**25.9961**	1.909	7.3	mg/L	32	Standard
K	39	113.3	15.5	**0.2405**	0.047	19.5	mg/L	30	Standard
Ca	43	286.7	25.9	**38.5627**	12.897	33.4	mg/L	48	Standard
Fe	54	997.4	5.8	**0.7664**	0.064	8.4	mg/L	159	Standard
Fe	57	530.0	13.9	**1.1674**	0.275	23.5	mg/L	195	Standard
> **Sc-1**	45	39556.6	4.7				mg/L	39543	Standard
Cl	35	38409.3	3.3				ug/L	27642	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	17249.8	6.1				ug/L	1647	Standard
P	31	22414.9	3.0				ug/L	15231	Standard
S	34	2625.2	3.4				ug/L	1845	Standard
Sr	88	228.3	6.7				ug/L	70	Standard
C	12	260.0	15.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	21.4	67.1				mg/L	12	Standard
Ho-1	165	36.7	41.7				mg/L	12	Standard
Er	166	40.0	75.0				mg/L	20	Standard
I	127	663837.8	8.8				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.311	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.332	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.668
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.049
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606115503
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 17:25:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	91554.4	4.0				ug/L	81760	Standard
	Be	9	59302.5	0.5	**53.3655**	1.843	3.5	ug/L	17	Standard
	Al	27	8323459.6	1.6	**48.2773**	2.634	5.5	ug/L	1410	Standard
	Sc	45	40460.6	1.5				ug/L	39543	Standard
	Ti	47	25609.3	2.1	**100.1533**	1.793	1.8	ug/L	39	Standard
	V	51	364470.3	1.4	**50.8781**	0.853	1.7	ug/L	1415	Standard
	Cr	52	366105.1	1.7	**50.1771**	0.675	1.3	ug/L	6946	Standard
	Cr	53	45260.8	0.4	**49.8893**	0.509	1.0	ug/L	328	Standard
	Mn	55	332731.4	2.3	**49.8507**	1.205	2.4	ug/L	823	Standard
	Co	59	382266.4	2.9	**52.9683**	1.437	2.7	ug/L	252	Standard
	Ni	60	97387.3	1.2	**50.2694**	0.545	1.1	ug/L	192	Standard
	Cu	65	98831.3	1.3	**50.5786**	0.557	1.1	ug/L	141	Standard
	Zn	66	57834.9	1.6	**50.5762**	0.877	1.7	ug/L	491	Standard
>	**Ge**	72	528768.9	1.2				ug/L	515087	Standard
	As	75	58724.5	1.2	**50.9203**	0.224	0.4	ug/L	20	Standard
	Se	82	6151.0	1.0	**51.9261**	0.245	0.5	ug/L	15	Standard
	Se-1	77	4089.2	2.2	**52.1522**	0.563	1.1	ug/L	48	Standard
>	**Ga**	71	85.0	21.2				mg/L	90	Standard
	Rb	85	851.7	6.5				ug/L	23	Standard
	Y	89	456324.8	0.4				ug/L	448510	Standard
>	**Rh**	103	36.7	39.4				ug/L	15	Standard
	Mo	98	284202.4	1.9	**102.0947**	3.648	3.6	ug/L	11	Standard
	Ag	107	351396.4	1.1	**50.8197**	1.435	2.8	ug/L	134	Standard
	Cd	111	110732.8	1.5	**50.3025**	1.470	2.9	mg/L	7	Standard
	Cd	114	271688.9	2.3	**50.7793**	1.915	3.8	ug/L	16	Standard
>	**In**	115	629514.4	1.7				ug/L	611117	Standard
	Sn	118	310739.2	0.7	**50.9245**	0.924	1.8	ug/L	518	Standard
	Sb	123	246166.6	1.6	**50.6553**	1.659	3.3	ug/L	127	Standard
	Ba	135	104825.0	0.9	**49.2805**	1.265	2.6	ug/L	45	Standard
	Ce	140	70.0	55.8				ug/L	298	Standard
>	**Tb**	159	987475.2	1.7				ug/L	977942	Standard
	Ho	165	5.0	100.0				ug/L	12	Standard
	Tl	203	444397.7	1.4	**50.9180**	1.232	2.4	ug/L	31	Standard
	Tl	205	396866.3	1.6	**52.3722**	1.695	3.2	ug/L	20	Standard
	Pb	206	284750.7	1.1	**50.8069**	1.281	2.5	ug/L	286	Standard
	Pb	207	259280.5	1.3	**51.2940**	1.414	2.8	ug/L	257	Standard
	Pb	208	1040337.0	1.7	**53.1998**	1.656	3.1	ug/L	956	Standard
	U	238	390662.1	1.3	**52.6405**	1.349	2.6	ug/L	17	Standard
>	**Bi**	209	577126.2	1.6				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4445.7	6.0	**5.7289**	0.397	6.9	mg/L	32	Standard
K	39	1320.1	5.5	**4.2194**	0.276	6.5	mg/L	30	Standard
Ca	43	81.7	24.7	**6.7579**	2.904	43.0	mg/L	48	Standard
Fe	54	5927.1	5.8	**5.1036**	0.243	4.8	mg/L	159	Standard
Fe	57	1661.8	3.7	**4.8569**	0.121	2.5	mg/L	195	Standard
Sc-1	45	40460.6	1.5				mg/L	39543	Standard
Cl	35	38764.2	1.7				ug/L	27642	Standard
Kr	83	2.3	107.9				ug/L	2	Standard
Br	81	2123.5	9.4				ug/L	1647	Standard
P	31	21915.8	3.2				ug/L	15231	Standard
S	34	2866.9	6.9				ug/L	1845	Standard
Sr	88	56.7	10.2				ug/L	70	Standard
C	12	170.0	44.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	173.2				mg/L	0	Standard
Dy	164	9.7	103.3				mg/L	12	Standard
Ho-1	165	5.0	100.0				mg/L	12	Standard
Er	166	6.7	86.6				mg/L	20	Standard
I	127	21360.9	50.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	106.731		
Al	27	96.555		
Sc	45			
Ti	47	100.153		
V	51	101.756		
Cr	52	100.354		
Cr	53			
Mn	55	99.701		
Co	59	105.937		
Ni	60	100.539		
Cu	65	101.157		
Zn	66	101.152		
Ge	72		102.656	
As	75	101.841		
Se	82	103.852		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	102.095		
Ag	107	101.639		
Cd	111	100.605		
Cd	114			
In	115			103.011
Sn	118	101.849		
Sb	123	101.311		
Ba	135	98.561		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.836		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.400		
U	238	105.281		
Bi	209			103.598
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 17:29:02
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89289.0	1.1				ug/L	81760	Standard
	Be	9	35.0	51.5	**0.0225**	0.017	74.1	ug/L	17	Standard
	Al	27	14272.5	142.7	**0.0706**	0.122	172.0	ug/L	1410	Standard
	Sc	45	39427.9	1.8				ug/L	39543	Standard
	Ti	47	28.0	28.3	**-0.0534**	0.032	59.3	ug/L	39	Standard
	V	51	1205.0	11.4	**-0.0346**	0.020	56.4	ug/L	1415	Standard
	Cr	52	6173.6	1.1	**-0.1773**	0.009	5.0	ug/L	6946	Standard
	Cr	53	500.0	6.0	**0.2236**	0.034	15.3	ug/L	328	Standard
	Mn	55	1435.1	83.0	**0.0711**	0.182	256.2	ug/L	823	Standard
	Co	59	252.7	26.0	**0.0043**	0.009	214.7	ug/L	252	Standard
	Ni	60	265.7	8.4	**0.0350**	0.012	33.5	ug/L	192	Standard
	Cu	65	144.0	13.3	**-0.0157**	0.010	63.6	ug/L	141	Standard
	Zn	66	428.7	4.3	**-0.4396**	0.017	3.8	ug/L	491	Standard
>	**Ge**	72	519199.6	0.1				ug/L	515087	Standard
	As	75	-13.2	109.3	**0.0287**	0.013	44.2	ug/L	20	Standard
	Se	82	24.7	35.1	**0.0933**	0.075	79.8	ug/L	15	Standard
	Se-1	77	53.0	16.4	**-0.0209**	0.115	551.4	ug/L	48	Standard
>	**Ga**	71	56.7	41.7				mg/L	90	Standard
	Rb	85	13.3	78.1				ug/L	23	Standard
	Y	89	435848.4	0.6				ug/L	448510	Standard
>	**Rh**	103	16.7	45.8				ug/L	15	Standard
	Mo	98	252.5	21.9	**0.0755**	0.022	29.1	ug/L	11	Standard
	Ag	107	123.0	3.3	**0.0023**	0.000	14.7	ug/L	134	Standard
	Cd	111	11.8	114.0	**0.0027**	0.006	236.7	mg/L	7	Standard
	Cd	114	47.6	83.9	**0.0044**	0.008	178.8	ug/L	16	Standard
>	**In**	115	604937.7	1.9				ug/L	611117	Standard
	Sn	118	835.0	26.8	**0.0403**	0.035	87.6	ug/L	518	Standard
	Sb	123	438.3	28.1	**0.0807**	0.025	30.6	ug/L	127	Standard
	Ba	135	40.7	30.0	**-0.0052**	0.006	117.6	ug/L	45	Standard
	Ce	140	35.0	37.8				ug/L	298	Standard
>	**Tb**	159	968167.7	1.8				ug/L	977942	Standard
	Ho	165	8.3	124.9				ug/L	12	Standard
	Tl	203	65.7	40.9	**0.0028**	0.003	111.1	ug/L	31	Standard
	Tl	205	198.3	119.2	**0.0243**	0.032	131.1	ug/L	20	Standard
	Pb	206	312.0	4.9	**-0.0071**	0.003	48.0	ug/L	286	Standard
	Pb	207	265.7	2.9	**-0.0047**	0.002	47.8	ug/L	257	Standard
	Pb	208	1274.7	38.3	**0.0057**	0.026	450.9	ug/L	956	Standard
	U	238	172.3	130.6	**0.0207**	0.031	149.9	ug/L	17	Standard
>	**Bi**	209	569803.2	1.6				ug/L	557080	Standard

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Na	23	3.3	86.6	**21.6890**	18.779	86.6	mg/L	0	Standard
Mg	24	61.7	47.5	**0.0256**	0.040	158.0	mg/L	32	Standard
K	39	26.7	10.8	**-0.0510**	0.010	20.5	mg/L	30	Standard
Ca	43	21.7	48.0	**-2.0553**	1.552	75.5	mg/L	48	Standard
Fe	54	129.4	21.4	**-0.0198**	0.024	119.8	mg/L	159	Standard
Fe	57	196.7	34.5	**0.0395**	0.221	559.0	mg/L	195	Standard
Sc-1	45	39427.9	1.8				mg/L	39543	Standard
Cl	35	37196.3	1.0				ug/L	27642	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	1853.4	7.9				ug/L	1647	Standard
P	31	20680.8	2.7				ug/L	15231	Standard
S	34	2700.2	3.5				ug/L	1845	Standard
Sr	88	68.3	23.5				ug/L	70	Standard
C	12	133.3	38.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.5	107.6				mg/L	12	Standard
Ho-1	165	8.3	124.9				mg/L	12	Standard
Er	166	10.0	100.0				mg/L	20	Standard
I	127	7115.0	15.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.798	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.989	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	102.284	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606114201
Sample Date/Time: Tuesday, June 28, 2016 18:46:32
Number of Replicates: 3
Autosampler Position: 255
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78164.5	2.4				ug/L	81760	Standard
	Be	9	18.3	41.7	**0.0097**	0.008	86.8	ug/L	17	Standard
	Al	27	121659.9	1.7	**0.8116**	0.028	3.5	ug/L	1410	Standard
	Sc	45	40555.9	2.8				ug/L	39543	Standard
	Ti	47	55.7	15.0	**0.0583**	0.036	61.2	ug/L	39	Standard
	V	51	1460.1	6.7	**0.0028**	0.012	438.4	ug/L	1415	Standard
	Cr	52	7975.8	0.8	**0.0855**	0.018	21.3	ug/L	6946	Standard
	Cr	53	690.0	12.1	**0.4421**	0.091	20.5	ug/L	328	Standard
	Mn	55	73452.6	0.4	**11.1499**	0.088	0.8	ug/L	823	Standard
	Co	59	2365.9	3.2	**0.3044**	0.010	3.2	ug/L	252	Standard
	Ni	60	956.0	2.8	**0.4012**	0.010	2.4	ug/L	192	Standard
	Cu	65	203.7	5.3	**0.0160**	0.005	33.1	ug/L	141	Standard
	Zn	66	1994.1	0.1	**0.9866**	0.018	1.8	ug/L	491	Standard
>	**Ge**	72	516559.4	1.0				ug/L	515087	Standard
	As	75	-28.9	32.9	**0.0147**	0.008	56.4	ug/L	20	Standard
	Se	82	19.3	15.0	**0.0479**	0.026	53.5	ug/L	15	Standard
	Se-1	77	59.0	13.2	**0.0614**	0.097	157.2	ug/L	48	Standard
>	**Ga**	71	36.7	51.6				mg/L	90	Standard
	Rb	85	463.3	2.5				ug/L	23	Standard
	Y	89	448462.9	2.6				ug/L	448510	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	65.9	7.4	**0.0053**	0.002	42.6	ug/L	11	Standard
	Ag	107	82.7	4.2	**-0.0039**	0.001	16.6	ug/L	134	Standard
	Cd	111	8.9	29.8	**0.0012**	0.001	94.7	mg/L	7	Standard
	Cd	114	20.4	73.3	**-0.0010**	0.003	278.6	ug/L	16	Standard
>	**In**	115	611220.6	1.9				ug/L	611117	Standard
	Sn	118	670.0	14.0	**0.0115**	0.017	148.1	ug/L	518	Standard
	Sb	123	214.2	30.6	**0.0326**	0.014	43.4	ug/L	127	Standard
	Ba	135	7677.9	3.5	**3.6947**	0.165	4.5	ug/L	45	Standard
	Ce	140	396.7	10.7				ug/L	298	Standard
>	**Tb**	159	963569.5	0.7				ug/L	977942	Standard
	Ho	165	16.7	45.8				ug/L	12	Standard
	Tl	203	21.7	17.5	**-0.0022**	0.000	19.5	ug/L	31	Standard
	Tl	205	13.3	21.7	**-0.0005**	0.000	79.8	ug/L	20	Standard
	Pb	206	368.7	4.6	**0.0040**	0.003	86.3	ug/L	286	Standard
	Pb	207	283.0	4.1	**-0.0005**	0.002	459.4	ug/L	257	Standard
	Pb	208	1139.7	3.0	**-0.0006**	0.002	246.5	ug/L	956	Standard
	U	238	10.3	39.1	**-0.0015**	0.001	36.3	ug/L	17	Standard
>	**Bi**	209	562456.7	0.5				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	763.4	13.7	**0.9351**	0.146	15.6	mg/L	32	Standard
K	39	31.7	39.7	**-0.0363**	0.045	123.6	mg/L	30	Standard
Ca	43	18.3	31.5	**-2.6404**	0.796	30.1	mg/L	48	Standard
Fe	54	359.1	17.1	**0.1792**	0.047	26.3	mg/L	159	Standard
Fe	57	273.3	13.7	**0.2778**	0.149	53.6	mg/L	195	Standard
> **Sc-1**	45	40555.9	2.8				mg/L	39543	Standard
Cl	35	37427.5	0.7				ug/L	27642	Standard
Kr	83	0.0					ug/L	2	Standard
Br	81	2536.9	6.5				ug/L	1647	Standard
P	31	19003.6	0.9				ug/L	15231	Standard
S	34	2375.2	4.8				ug/L	1845	Standard
Sr	88	91.7	13.7				ug/L	70	Standard
C	12	86.7	29.0				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	29.2	34.3				mg/L	12	Standard
Ho-1	165	16.7	45.8				mg/L	12	Standard
Er	166	16.7	34.6				mg/L	20	Standard
I	127	22815.7	12.2				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		95.602	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.286	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.017
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.965
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 18:49:46
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77476.0	3.1				ug/L	81760	Standard
	Be	9	45015.2	3.8	**47.8878**	3.193	6.7	ug/L	17	Standard
	Al	27	6953697.9	2.2	**47.6359**	2.288	4.8	ug/L	1410	Standard
	Sc	45	38896.5	2.1				ug/L	39543	Standard
	Ti	47	23530.3	2.9	**93.4171**	3.639	3.9	ug/L	39	Standard
	V	51	333406.5	0.5	**47.2267**	0.631	1.3	ug/L	1415	Standard
	Cr	52	337441.2	2.6	**46.8861**	1.719	3.7	ug/L	6946	Standard
	Cr	53	42128.5	3.1	**47.1231**	1.874	4.0	ug/L	328	Standard
	Mn	55	311025.1	1.6	**47.2965**	1.233	2.6	ug/L	823	Standard
	Co	59	333541.6	0.3	**46.9106**	0.523	1.1	ug/L	252	Standard
	Ni	60	90766.5	2.7	**47.5598**	1.737	3.7	ug/L	192	Standard
	Cu	65	91363.1	2.5	**47.4629**	1.646	3.5	ug/L	141	Standard
	Zn	66	53283.5	1.9	**47.2487**	1.367	2.9	ug/L	491	Standard
>	Ge	72	520941.4	1.0				ug/L	515087	Standard
	As	75	53453.8	0.5	**47.0530**	0.571	1.2	ug/L	20	Standard
	Se	82	5409.0	0.9	**46.3406**	0.883	1.9	ug/L	15	Standard
	Se-1	77	3695.1	1.5	**47.7773**	0.360	0.8	ug/L	48	Standard
>	Ga	71	58.3	27.6				mg/L	90	Standard
	Rb	85	731.7	6.2				ug/L	23	Standard
	Y	89	433135.5	0.5				ug/L	448510	Standard
>	Rh	103	21.7	13.3				ug/L	15	Standard
	Mo	98	251705.5	0.6	**94.1208**	1.331	1.4	ug/L	11	Standard
	Ag	107	314845.2	1.8	**47.3955**	0.605	1.3	ug/L	134	Standard
	Cd	111	98007.4	2.2	**46.3425**	0.750	1.6	mg/L	7	Standard
	Cd	114	239351.7	3.2	**46.5659**	1.544	3.3	ug/L	16	Standard
>	In	115	604583.1	1.4				ug/L	611117	Standard
	Sn	118	276455.2	2.3	**47.1543**	0.498	1.1	ug/L	518	Standard
	Sb	123	224560.9	2.5	**48.0923**	0.641	1.3	ug/L	127	Standard
	Ba	135	94923.9	3.0	**46.4488**	1.094	2.4	ug/L	45	Standard
	Ce	140	80.0	22.5				ug/L	298	Standard
>	Tb	159	958457.8	2.2				ug/L	977942	Standard
	Ho	165	13.3	21.7				ug/L	12	Standard
	Tl	203	399564.4	2.5	**47.4112**	1.332	2.8	ug/L	31	Standard
	Tl	205	347775.3	2.0	**47.5216**	1.083	2.3	ug/L	20	Standard
	Pb	206	259967.8	1.3	**48.0301**	0.722	1.5	ug/L	286	Standard
	Pb	207	236539.5	0.9	**48.4530**	0.488	1.0	ug/L	257	Standard
	Pb	208	913309.7	2.1	**48.3569**	1.176	2.4	ug/L	956	Standard
	U	238	337839.3	1.6	**47.1413**	0.910	1.9	ug/L	17	Standard
>	Bi	209	557186.5	0.3				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	3633.8	7.1	**4.8666**	0.455	9.3	mg/L	32	Standard
K	39	1313.4	12.2	**4.3752**	0.599	13.7	mg/L	30	Standard
Ca	43	51.7	20.1	**2.6371**	1.625	61.6	mg/L	48	Standard
Fe	54	5289.1	7.8	**4.7357**	0.483	10.2	mg/L	159	Standard
Fe	57	1531.7	10.1	**4.6389**	0.613	13.2	mg/L	195	Standard
> **Sc-1**	45	38896.5	2.1				mg/L	39543	Standard
Cl	35	35022.4	1.4				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	1490.1	8.7				ug/L	1647	Standard
P	31	19075.3	3.9				ug/L	15231	Standard
S	34	2581.9	1.6				ug/L	1845	Standard
Sr	88	70.0	18.9				ug/L	70	Standard
C	12	143.3	33.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	6.0	193.9				mg/L	12	Standard
Ho-1	165	13.3	21.7				mg/L	12	Standard
Er	166	13.3	43.3				mg/L	20	Standard
I	127	2193.5	28.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	95.776		
Al	27	95.272		
Sc	45			
Ti	47	93.417		
V	51	94.453		
Cr	52	93.772		
Cr	53			
Mn	55	94.593		
Co	59	93.821		
Ni	60	95.120		
Cu	65	94.926		
Zn	66	94.497		
> Ge	72		101.137	
As	75	94.106		
Se	82	92.681		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	94.121		
Ag	107	94.791		
Cd	111	92.685		
Cd	114			
> In	115			98.931
Sn	118	94.309		
Sb	123	96.185		
Ba	135	92.898		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	94.822		
Tl	205			
Pb	206			
Pb	207			
Pb	208	96.714		
U	238	94.283		
> Bi	209			100.019
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 18:52:57
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75264.9	3.1				ug/L	81760	Standard
	Be	9	28.3	44.4	**0.0211**	0.013	62.2	ug/L	17	Standard
	Al	27	1848.4	7.3	**-0.0014**	0.001	57.2	ug/L	1410	Standard
	Sc	45	39733.8	3.9				ug/L	39543	Standard
	Ti	47	30.7	21.2	**-0.0408**	0.026	64.0	ug/L	39	Standard
	V	51	1157.9	3.5	**-0.0386**	0.007	18.1	ug/L	1415	Standard
	Cr	52	6209.6	2.0	**-0.1578**	0.015	9.7	ug/L	6946	Standard
	Cr	53	373.3	6.7	**0.0873**	0.028	32.1	ug/L	328	Standard
	Mn	55	647.3	1.5	**-0.0478**	0.002	4.7	ug/L	823	Standard
	Co	59	232.0	9.1	**0.0019**	0.003	163.0	ug/L	252	Standard
	Ni	60	166.3	9.0	**-0.0160**	0.007	44.1	ug/L	192	Standard
	Cu	65	124.7	14.0	**-0.0248**	0.008	34.1	ug/L	141	Standard
	Zn	66	405.0	8.1	**-0.4552**	0.029	6.3	ug/L	491	Standard
>	**Ge**	72	510975.0	1.4				ug/L	515087	Standard
	As	75	-43.1	41.4	**0.0017**	0.016	900.9	ug/L	20	Standard
	Se	82	19.6	25.0	**0.0525**	0.045	86.4	ug/L	15	Standard
	Se-1	77	59.7	5.9	**0.0797**	0.050	62.7	ug/L	48	Standard
>	**Ga**	71	36.7	39.4				mg/L	90	Standard
	Rb	85	23.3	32.7				ug/L	23	Standard
	Y	89	435979.5	2.5				ug/L	448510	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	250.3	25.6	**0.0730**	0.024	32.3	ug/L	11	Standard
	Ag	107	100.0	11.8	**-0.0014**	0.002	125.8	ug/L	134	Standard
	Cd	111	11.9	34.0	**0.0026**	0.002	71.6	mg/L	7	Standard
	Cd	114	45.3	6.7	**0.0038**	0.000	13.0	ug/L	16	Standard
>	**In**	115	614932.8	1.3				ug/L	611117	Standard
	Sn	118	795.0	23.6	**0.0316**	0.031	97.7	ug/L	518	Standard
	Sb	123	431.0	25.7	**0.0779**	0.023	29.6	ug/L	127	Standard
	Ba	135	30.3	24.3	**-0.0105**	0.003	32.1	ug/L	45	Standard
	Ce	140	20.0	66.1				ug/L	298	Standard
>	**Tb**	159	946813.4	1.4				ug/L	977942	Standard
	Ho	165	11.7	89.2				ug/L	12	Standard
	Tl	203	48.3	29.0	**0.0009**	0.002	172.8	ug/L	31	Standard
	Tl	205	35.0	86.9	**0.0025**	0.004	165.9	ug/L	20	Standard
	Pb	206	284.0	5.8	**-0.0111**	0.003	26.2	ug/L	286	Standard
	Pb	207	257.7	11.7	**-0.0053**	0.006	110.9	ug/L	257	Standard
	Pb	208	990.3	3.8	**-0.0080**	0.002	20.6	ug/L	956	Standard
	U	238	43.0	24.2	**0.0030**	0.001	48.0	ug/L	17	Standard
>	**Bi**	209	557905.1	0.6				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	31.7	18.2	**-0.0149**	0.009	60.8	mg/L	32	Standard
K	39	20.0	50.0	**-0.0742**	0.034	46.2	mg/L	30	Standard
Ca	43	35.0	62.3	**-0.0114**	3.447	30330.8	mg/L	48	Standard
Fe	54	144.1	21.6	**-0.0065**	0.032	498.8	mg/L	159	Standard
Fe	57	238.3	3.2	**0.1775**	0.054	30.7	mg/L	195	Standard
Sc-1	45	39733.8	3.9				mg/L	39543	Standard
Cl	35	35783.5	1.7				ug/L	27642	Standard
Kr	83	3.3	45.8				ug/L	2	Standard
Br	81	1466.7	6.9				ug/L	1647	Standard
P	31	19612.7	1.4				ug/L	15231	Standard
S	34	2756.9	2.6				ug/L	1845	Standard
Sr	88	66.7	37.0				ug/L	70	Standard
C	12	86.7	6.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	32.7	47.4				mg/L	12	Standard
Ho-1	165	11.7	89.2				mg/L	12	Standard
Er	166	13.3	43.3				mg/L	20	Standard
I	127	1593.4	21.8				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.202	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.624
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.148
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Tuesday, June 28, 2016 18:56:10
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71096.5	2.9				ug/L	81760	Standard
	Be	9	180.0	15.5	**0.1982**	0.026	13.3	ug/L	17	Standard
	Al	27	1130.0	11.5	**-0.0060**	0.001	12.9	ug/L	1410	Standard
	Sc	45	37422.8	0.9				ug/L	39543	Standard
	Ti	47	25.0	10.6	**-0.0625**	0.010	16.0	ug/L	39	Standard
	V	51	3508.6	1.4	**0.3092**	0.005	1.6	ug/L	1415	Standard
	Cr	52	11162.1	1.4	**0.5814**	0.031	5.3	ug/L	6946	Standard
	Cr	53	975.0	4.9	**0.7938**	0.066	8.3	ug/L	328	Standard
	Mn	55	3454.1	1.9	**0.3960**	0.015	3.8	ug/L	823	Standard
	Co	59	2721.9	4.1	**0.3646**	0.019	5.1	ug/L	252	Standard
	Ni	60	2839.3	1.0	**1.4356**	0.026	1.8	ug/L	192	Standard
	Cu	65	1518.4	2.5	**0.7258**	0.025	3.5	ug/L	141	Standard
	Zn	66	6972.6	1.8	**5.6720**	0.065	1.1	ug/L	491	Standard
>	**Ge**	72	504116.3	0.9				ug/L	515087	Standard
	As	75	374.9	9.7	**0.3808**	0.031	8.0	ug/L	20	Standard
	Se	82	63.0	8.6	**0.4404**	0.052	11.9	ug/L	15	Standard
	Se-1	77	80.7	10.3	**0.3758**	0.122	32.5	ug/L	48	Standard
>	**Ga**	71	33.3	52.7				mg/L	90	Standard
	Rb	85	16.7	96.4				ug/L	23	Standard
	Y	89	427965.8	1.5				ug/L	448510	Standard
>	**Rh**	103	20.0	25.0				ug/L	15	Standard
	Mo	98	72.3	5.2	**0.0094**	0.001	12.5	ug/L	11	Standard
	Ag	107	2402.2	4.6	**0.3647**	0.015	4.1	ug/L	134	Standard
	Cd	111	440.5	3.4	**0.2165**	0.007	3.2	mg/L	7	Standard
	Cd	114	1158.4	0.8	**0.2324**	0.001	0.2	ug/L	16	Standard
>	**In**	115	574029.4	1.1				ug/L	611117	Standard
	Sn	118	496.7	16.4	**-0.0124**	0.016	125.3	ug/L	518	Standard
	Sb	123	1769.4	0.8	**0.3864**	0.003	0.7	ug/L	127	Standard
	Ba	135	1350.1	0.7	**0.6712**	0.012	1.8	ug/L	45	Standard
	Ce	140	15.0	0.0				ug/L	298	Standard
>	**Tb**	159	914394.0	1.1				ug/L	977942	Standard
	Ho	165	6.7	43.3				ug/L	12	Standard
	Tl	203	645.7	4.5	**0.0752**	0.004	4.8	ug/L	31	Standard
	Tl	205	546.7	2.9	**0.0757**	0.002	3.3	ug/L	20	Standard
	Pb	206	1234.7	1.4	**0.1748**	0.002	1.1	ug/L	286	Standard
	Pb	207	1077.0	1.2	**0.1725**	0.004	2.3	ug/L	257	Standard
	Pb	208	4484.6	3.2	**0.1877**	0.008	4.4	ug/L	956	Standard
	U	238	2602.6	1.7	**0.3761**	0.010	2.6	ug/L	17	Standard
>	**Bi**	209	533901.6	0.9				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	26.7	10.8	**-0.0196**	0.004	19.0	mg/L	32	Standard
K	39	28.3	10.2	**-0.0403**	0.010	24.0	mg/L	30	Standard
Ca	43	38.3	7.5	**0.8090**	0.513	63.4	mg/L	48	Standard
Fe	54	99.0	17.7	**-0.0423**	0.018	41.4	mg/L	159	Standard
Fe	57	198.3	16.4	**0.0831**	0.119	142.8	mg/L	195	Standard
Sc-1	45	37422.8	0.9				mg/L	39543	Standard
Cl	35	34311.5	2.9				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1263.4	4.0				ug/L	1647	Standard
P	31	12998.9	1.6				ug/L	15231	Standard
S	34	2533.5	5.7				ug/L	1845	Standard
Sr	88	71.7	29.0				ug/L	70	Standard
C	12	70.0	24.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	5.9	100.8				mg/L	12	Standard
Ho-1	165	6.7	43.3				mg/L	12	Standard
Er	166	16.7	34.6				mg/L	20	Standard
I	127	1311.7	25.8				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	99.121		
Al	27			
Sc	45			
Ti	47			
V	51	77.290		
Cr	52	72.680		
Cr	53			
Mn	55	79.198		
Co	59	91.138		
Ni	60	89.723		
Cu	65	90.724		
Zn	66	90.752		
Ge	72		97.870	
As	75	95.209		
Se	82	110.096		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	91.178		
Cd	111	90.212		
Cd	114			
> In	115			93.931
Sn	118			
Sb	123	96.601		
Ba	135	89.490		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	93.978		
Tl	205			
Pb	206			
Pb	207			
Pb	208	93.825		
U	238	94.023		
> Bi	209			95.839
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
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Method 6020 - Summary Report

Sample ID: PBW A9 WG572242-02
Sample Date/Time: Tuesday, June 28, 2016 19:51:29
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73456.0	1.1				ug/L	81760	Standard
	Be	9	13.3	21.7	**0.0052**	0.003	59.5	ug/L	17	Standard
	Al	27	9322.9	1.9	**0.0529**	0.001	1.2	ug/L	1410	Standard
	Sc	45	38756.2	2.9				ug/L	39543	Standard
	Ti	47	33.7	15.2	**-0.0290**	0.022	74.1	ug/L	39	Standard
	V	51	1394.3	5.5	**-0.0051**	0.010	198.0	ug/L	1415	Standard
	Cr	52	7883.4	0.8	**0.0807**	0.013	16.5	ug/L	6946	Standard
	Cr	53	506.7	16.0	**0.2387**	0.095	39.9	ug/L	328	Standard
	Mn	55	1210.0	2.0	**0.0390**	0.005	11.7	ug/L	823	Standard
	Co	59	188.0	6.5	**-0.0045**	0.002	42.5	ug/L	252	Standard
	Ni	60	230.3	1.3	**0.0179**	0.002	10.0	ug/L	192	Standard
	Cu	65	157.0	8.9	**-0.0078**	0.008	102.0	ug/L	141	Standard
	Zn	66	1546.4	2.1	**0.5897**	0.023	3.8	ug/L	491	Standard
>	**Ge**	72	512703.5	0.7				ug/L	515087	Standard
	As	75	-32.6	48.2	**0.0111**	0.014	127.3	ug/L	20	Standard
	Se	82	19.2	20.1	**0.0486**	0.034	70.8	ug/L	15	Standard
	Se-1	77	50.0	10.6	**-0.0518**	0.075	145.3	ug/L	48	Standard
>	**Ga**	71	33.3	34.6				mg/L	90	Standard
	Rb	85	33.3	31.2				ug/L	23	Standard
	Y	89	438886.4	1.2				ug/L	448510	Standard
>	**Rh**	103	13.3	43.3				ug/L	15	Standard
	Mo	98	27.2	14.3	**-0.0088**	0.001	17.0	ug/L	11	Standard
	Ag	107	75.7	8.8	**-0.0047**	0.001	18.4	ug/L	134	Standard
	Cd	111	4.3	48.7	**-0.0009**	0.001	113.9	mg/L	7	Standard
	Cd	114	21.5	41.2	**-0.0007**	0.002	246.6	ug/L	16	Standard
>	**In**	115	598021.6	1.3				ug/L	611117	Standard
	Sn	118	688.3	6.3	**0.0170**	0.007	40.8	ug/L	518	Standard
	Sb	123	162.8	37.0	**0.0223**	0.013	56.3	ug/L	127	Standard
	Ba	135	50.0	12.0	**-0.0003**	0.003	1000.2	ug/L	45	Standard
	Ce	140	36.7	78.7				ug/L	298	Standard
>	**Tb**	159	940667.7	2.2				ug/L	977942	Standard
	Ho	165	18.3	56.8				ug/L	12	Standard
	Tl	203	9.0	22.2	**-0.0037**	0.000	6.2	ug/L	31	Standard
	Tl	205	5.0	0.0	**-0.0016**	0.000	0.7	ug/L	20	Standard
	Pb	206	302.0	8.3	**-0.0074**	0.006	75.2	ug/L	286	Standard
	Pb	207	237.7	5.4	**-0.0090**	0.003	32.3	ug/L	257	Standard
	Pb	208	966.3	1.0	**-0.0090**	0.001	6.5	ug/L	956	Standard
	U	238	4.3	48.0	**-0.0024**	0.000	12.3	ug/L	17	Standard
>	**Bi**	209	554162.6	1.6				ug/L	557080	Standard

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	Na	23	0.0		**0.0050**			mg/L	0	Standard
	Mg	24	41.7	18.3	**-0.0005**	0.010	2017.0	mg/L	32	Standard
	K	39	30.0	33.3	**-0.0385**	0.033	84.7	mg/L	30	Standard
	Ca	43	16.7	91.7	**-2.7218**	2.434	89.4	mg/L	48	Standard
	Fe	54	121.1	16.6	**-0.0249**	0.021	84.8	mg/L	159	Standard
	Fe	57	230.0	15.2	**0.1658**	0.100	60.0	mg/L	195	Standard
>	**Sc-1**	45	38756.2	2.9				mg/L	39543	Standard
	Cl	35	36900.9	1.9				ug/L	27642	Standard
	Kr	83	1.3	43.3				ug/L	2	Standard
	Br	81	1656.8	8.0				ug/L	1647	Standard
	P	31	17782.1	2.2				ug/L	15231	Standard
	S	34	2408.5	10.1				ug/L	1845	Standard
	Sr	88	75.0	29.1				ug/L	70	Standard
	C	12	50.0	52.9				mg/L	113	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	0	Standard
	Dy	164	9.5	105.0				mg/L	12	Standard
	Ho-1	165	18.3	56.8				mg/L	12	Standard
	Er	166	10.0					mg/L	20	Standard
	I	127	1248.4	23.8				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		89.843	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.537	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.857
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.476
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW A9 WG572242-03
Sample Date/Time: Tuesday, June 28, 2016 19:54:40
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74125.9	0.7				ug/L	81760	Standard
	Be	9	45613.6	2.5	**50.6567**	1.536	3.0	ug/L	17	Standard
	Al	27	52265.0	2.7	**0.3596**	0.008	2.3	ug/L	1410	Standard
	Sc	45	39738.7	2.1				ug/L	39543	Standard
	Ti	47	34.0	10.6	**-0.0277**	0.015	52.7	ug/L	39	Standard
	V	51	340531.5	1.6	**49.0319**	0.683	1.4	ug/L	1415	Standard
	Cr	52	354579.7	0.6	**50.1386**	0.494	1.0	ug/L	6946	Standard
	Cr	53	44436.8	3.3	**50.5389**	1.845	3.7	ug/L	328	Standard
	Mn	55	331885.6	0.6	**51.3034**	0.483	0.9	ug/L	823	Standard
	Co	59	341252.7	1.0	**48.7823**	0.497	1.0	ug/L	252	Standard
	Ni	60	94292.8	0.4	**50.2138**	0.089	0.2	ug/L	192	Standard
	Cu	65	96497.7	0.5	**50.9494**	0.130	0.3	ug/L	141	Standard
	Zn	66	57251.0	0.4	**51.6689**	0.417	0.8	ug/L	491	Standard
>	**Ge**	72	512516.5	0.4				ug/L	515087	Standard
	As	75	55356.1	0.6	**49.5225**	0.094	0.2	ug/L	20	Standard
	Se	82	5489.9	0.8	**47.8062**	0.574	1.2	ug/L	15	Standard
	Se-1	77	3699.5	2.3	**48.6318**	0.978	2.0	ug/L	48	Standard
>	**Ga**	71	51.7	29.6				mg/L	90	Standard
	Rb	85	58.3	27.6				ug/L	23	Standard
	Y	89	427399.3	0.3				ug/L	448510	Standard
>	**Rh**	103	20.0	66.1				ug/L	15	Standard
	Mo	98	50.9	5.4	**0.0000**	0.001	4406.4	ug/L	11	Standard
	Ag	107	325451.5	0.2	**49.1242**	0.412	0.8	ug/L	134	Standard
	Cd	111	100950.5	1.5	**47.8617**	0.611	1.3	mg/L	7	Standard
	Cd	114	243935.8	0.5	**47.5806**	0.389	0.8	ug/L	16	Standard
>	**In**	115	602979.8	0.8				ug/L	611117	Standard
	Sn	118	653.3	9.2	**0.0100**	0.010	97.1	ug/L	518	Standard
	Sb	123	224336.4	0.4	**48.1778**	0.461	1.0	ug/L	127	Standard
	Ba	135	98286.4	0.2	**48.2270**	0.385	0.8	ug/L	45	Standard
	Ce	140	205.0	19.4				ug/L	298	Standard
>	**Tb**	159	962904.7	0.9				ug/L	977942	Standard
	Ho	165	11.7	49.5				ug/L	12	Standard
	Tl	203	409811.5	0.9	**48.6592**	0.503	1.0	ug/L	31	Standard
	Tl	205	358097.5	0.9	**48.9662**	0.679	1.4	ug/L	20	Standard
	Pb	206	272798.6	0.1	**50.4414**	0.712	1.4	ug/L	286	Standard
	Pb	207	236678.2	0.4	**48.5210**	0.945	1.9	ug/L	257	Standard
	Pb	208	941837.1	1.1	**49.9011**	0.393	0.8	ug/L	956	Standard
	U	238	343975.4	0.3	**48.0328**	0.703	1.5	ug/L	17	Standard
>	**Bi**	209	556837.1	1.5				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.3983**	18.002	173.1	mg/L	0	Standard
Mg	24	58.3	27.6	**0.0205**	0.023	110.8	mg/L	32	Standard
K	39	16.7	45.8	**-0.0851**	0.027	31.2	mg/L	30	Standard
Ca	43	23.3	32.7	**-1.8206**	1.160	63.7	mg/L	48	Standard
Fe	54	118.7	10.7	**-0.0303**	0.010	31.4	mg/L	159	Standard
Fe	57	200.0	10.0	**0.0482**	0.079	163.5	mg/L	195	Standard
Sc-1	45	39738.7	2.1				mg/L	39543	Standard
Cl	35	36016.8	1.9				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	3627.1	7.0				ug/L	1647	Standard
P	31	18584.7	0.6				ug/L	15231	Standard
S	34	2266.8	5.1				ug/L	1845	Standard
Sr	88	53.3	23.6				ug/L	70	Standard
C	12	126.7	32.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	9.0	105.3				mg/L	12	Standard
Ho-1	165	11.7	49.5				mg/L	12	Standard
Er	166	20.0	50.0				mg/L	20	Standard
I	127	1253.4	17.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.663	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.501	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.669
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.956
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606083901 WG574242-01
Sample Date/Time: Tuesday, June 28, 2016 19:57:52
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73849.6	1.9				ug/L	81760	Standard
	Be	9	25.0	0.0	**0.0181**	0.001	2.9	ug/L	17	Standard
	Al	27	15521751.4	1.0	**111.4854**	1.467	1.3	ug/L	1410	Standard
	Sc	45	39103.8	3.8				ug/L	39543	Standard
	Ti	47	591.7	5.1	**2.3246**	0.153	6.6	ug/L	39	Standard
	V	51	4219.1	3.4	**0.4282**	0.015	3.5	ug/L	1415	Standard
	Cr	52	8895.6	2.0	**0.2798**	0.040	14.2	ug/L	6946	Standard
	Cr	53	3360.4	10.4	**3.6642**	0.437	11.9	ug/L	328	Standard
	Mn	55	16077.2	1.4	**2.4454**	0.007	0.3	ug/L	823	Standard
	Co	59	1032.0	3.9	**0.1223**	0.006	4.9	ug/L	252	Standard
	Ni	60	3143.3	2.0	**1.6407**	0.018	1.1	ug/L	192	Standard
	Cu	65	3355.0	2.0	**1.7559**	0.016	0.9	ug/L	141	Standard
	Zn	66	14991.7	0.7	**13.4797**	0.137	1.0	ug/L	491	Standard
>	**Ge**	72	492452.2	1.1				ug/L	515087	Standard
	As	75	562.8	15.9	**0.5640**	0.084	14.9	ug/L	20	Standard
	Se	82	67.0	15.0	**0.4895**	0.090	18.3	ug/L	15	Standard
	Se-1	77	207.3	11.8	**2.1604**	0.344	15.9	ug/L	48	Standard
>	**Ga**	71	103.3	23.9				mg/L	90	Standard
	Rb	85	20340.3	1.9				ug/L	23	Standard
	Y	89	439150.3	1.0				ug/L	448510	Standard
>	**Rh**	103	18.3	15.7				ug/L	15	Standard
	Mo	98	1185.2	3.1	**0.4267**	0.016	3.7	ug/L	11	Standard
	Ag	107	124.0	3.2	**0.0026**	0.001	26.5	ug/L	134	Standard
	Cd	111	35.9	29.2	**0.0141**	0.005	34.6	mg/L	7	Standard
	Cd	114	96.0	6.6	**0.0139**	0.001	9.0	ug/L	16	Standard
>	**In**	115	601194.2	0.6				ug/L	611117	Standard
	Sn	118	770.0	3.2	**0.0304**	0.004	13.3	ug/L	518	Standard
	Sb	123	1910.7	20.7	**0.3992**	0.088	22.0	ug/L	127	Standard
	Ba	135	33674.7	0.4	**16.5556**	0.054	0.3	ug/L	45	Standard
	Ce	140	1643.4	3.5				ug/L	298	Standard
>	**Tb**	159	946228.9	1.7				ug/L	977942	Standard
	Ho	165	41.7	36.7				ug/L	12	Standard
	Tl	203	211.3	8.6	**0.0215**	0.002	11.4	ug/L	31	Standard
	Tl	205	188.3	11.1	**0.0247**	0.003	12.3	ug/L	20	Standard
	Pb	206	2721.9	1.8	**0.4638**	0.014	3.1	ug/L	286	Standard
	Pb	207	2208.8	1.5	**0.4164**	0.010	2.4	ug/L	257	Standard
	Pb	208	9386.5	1.8	**0.4607**	0.014	3.1	ug/L	956	Standard
	U	238	2364.2	1.6	**0.3425**	0.008	2.2	ug/L	17	Standard
>	**Bi**	209	532104.5	1.0				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.9240**	18.912	173.1	mg/L	0	Standard
Mg	24	14932.4	1.8	**20.0717**	1.109	5.5	mg/L	32	Standard
K	39	851.7	12.5	**2.7753**	0.419	15.1	mg/L	30	Standard
Ca	43	323.3	7.9	**44.3168**	3.500	7.9	mg/L	48	Standard
Fe	54	180.7	15.7	**0.0282**	0.024	84.5	mg/L	159	Standard
Fe	57	355.0	6.1	**0.5869**	0.046	7.9	mg/L	195	Standard
> **Sc-1**	45	39103.8	3.8				mg/L	39543	Standard
Cl	35	38446.7	1.8				ug/L	27642	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	10497.0	5.2				ug/L	1647	Standard
P	31	21567.0	1.7				ug/L	15231	Standard
S	34	2493.5	2.8				ug/L	1845	Standard
Sr	88	151.7	7.6				ug/L	70	Standard
C	12	210.0	39.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	67.9	17.5				mg/L	12	Standard
Ho-1	165	41.7	36.7				mg/L	12	Standard
Er	166	43.3	93.3				mg/L	20	Standard
I	127	29340.1	3.5				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		90.325	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.606	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.376
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.517
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606083901DP WG574242-04
Sample Date/Time: Tuesday, June 28, 2016 20:01:03
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74496.0	1.1				ug/L	81760	Standard
	Be	9	20.0	25.0	**0.0124**	0.006	45.8	ug/L	17	Standard
	Al	27	15458448.5	1.4	**110.0484**	0.587	0.5	ug/L	1410	Standard
	Sc	45	38253.3	3.4				ug/L	39543	Standard
	Ti	47	558.7	5.4	**2.1548**	0.155	7.2	ug/L	39	Standard
	V	51	4067.8	2.6	**0.3973**	0.009	2.2	ug/L	1415	Standard
	Cr	52	9024.7	1.6	**0.2811**	0.031	11.1	ug/L	6946	Standard
	Cr	53	3592.1	3.4	**3.8809**	0.090	2.3	ug/L	328	Standard
	Mn	55	13517.4	2.1	**2.0039**	0.068	3.4	ug/L	823	Standard
	Co	59	1022.7	3.5	**0.1189**	0.006	5.0	ug/L	252	Standard
	Ni	60	3054.6	1.9	**1.5691**	0.041	2.6	ug/L	192	Standard
	Cu	65	3452.1	3.2	**1.7838**	0.034	1.9	ug/L	141	Standard
	Zn	66	14844.3	0.5	**13.1506**	0.169	1.3	ug/L	491	Standard
>	**Ge**	72	499109.4	1.4				ug/L	515087	Standard
	As	75	584.5	8.0	**0.5768**	0.041	7.2	ug/L	20	Standard
	Se	82	58.0	10.0	**0.3998**	0.046	11.4	ug/L	15	Standard
	Se-1	77	200.7	10.2	**2.0328**	0.318	15.6	ug/L	48	Standard
>	**Ga**	71	100.0	13.2				mg/L	90	Standard
	Rb	85	19739.5	1.7				ug/L	23	Standard
	Y	89	436250.9	1.8				ug/L	448510	Standard
>	**Rh**	103	38.3	7.5				ug/L	15	Standard
	Mo	98	1219.4	1.0	**0.4525**	0.003	0.7	ug/L	11	Standard
	Ag	107	99.7	5.7	**-0.0007**	0.001	125.7	ug/L	134	Standard
	Cd	111	32.6	12.4	**0.0130**	0.002	14.9	mg/L	7	Standard
	Cd	114	81.5	18.5	**0.0115**	0.003	24.6	ug/L	16	Standard
>	**In**	115	584572.0	1.4				ug/L	611117	Standard
	Sn	118	751.7	6.1	**0.0310**	0.009	27.5	ug/L	518	Standard
	Sb	123	786.1	12.1	**0.1616**	0.023	14.4	ug/L	127	Standard
	Ba	135	32184.1	0.9	**16.2729**	0.095	0.6	ug/L	45	Standard
	Ce	140	490.0	7.4				ug/L	298	Standard
>	**Tb**	159	929479.8	0.3				ug/L	977942	Standard
	Ho	165	31.7	24.1				ug/L	12	Standard
	Tl	203	152.7	10.6	**0.0145**	0.002	14.7	ug/L	31	Standard
	Tl	205	146.7	17.2	**0.0191**	0.004	18.8	ug/L	20	Standard
	Pb	206	2610.2	1.4	**0.4511**	0.005	1.2	ug/L	286	Standard
	Pb	207	2110.5	2.5	**0.4033**	0.013	3.2	ug/L	257	Standard
	Pb	208	8866.0	0.9	**0.4405**	0.006	1.4	ug/L	956	Standard
	U	238	2335.8	3.1	**0.3444**	0.010	2.9	ug/L	17	Standard
>	**Bi**	209	522741.7	0.4				ug/L	557080	Standard

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Na	23	1.7	173.2	**11.1196**	19.251	173.1	mg/L	0	Standard
Mg	24	14720.5	1.4	**20.2196**	0.936	4.6	mg/L	32	Standard
K	39	903.4	10.8	**3.0129**	0.317	10.5	mg/L	30	Standard
Ca	43	308.3	1.9	**43.1033**	1.939	4.5	mg/L	48	Standard
Fe	54	132.3	23.0	**-0.0139**	0.024	174.3	mg/L	159	Standard
Fe	57	371.7	11.8	**0.6755**	0.185	27.4	mg/L	195	Standard
> **Sc-1**	45	38253.3	3.4				mg/L	39543	Standard
Cl	35	39853.0	2.0				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	7995.4	3.8				ug/L	1647	Standard
P	31	20689.1	2.4				ug/L	15231	Standard
S	34	2350.2	5.7				ug/L	1845	Standard
Sr	88	115.0	7.5				ug/L	70	Standard
C	12	266.7	11.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	41.7	57.7				mg/L	12	Standard
Ho-1	165	31.7	24.1				mg/L	12	Standard
Er	166	33.3	75.5				mg/L	20	Standard
I	127	28308.1	3.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.115	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.898	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.656
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.836
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606083901S WG574242-05
Sample Date/Time: Tuesday, June 28, 2016 20:04:14
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77052.1	1.2				ug/L	81760	Standard
	Be	9	48365.4	1.4	**51.6767**	1.282	2.5	ug/L	17	Standard
	Al	27	15205678.0	0.8	**104.6750**	1.999	1.9	ug/L	1410	Standard
	Sc	45	39767.1	2.3				ug/L	39543	Standard
	Ti	47	566.0	2.6	**2.1182**	0.041	1.9	ug/L	39	Standard
	V	51	345428.5	0.5	**49.6572**	0.625	1.3	ug/L	1415	Standard
	Cr	52	342558.9	0.4	**48.3219**	0.886	1.8	ug/L	6946	Standard
	Cr	53	45610.2	2.6	**51.7999**	1.901	3.7	ug/L	328	Standard
	Mn	55	334844.2	1.7	**51.6671**	0.130	0.3	ug/L	823	Standard
	Co	59	340587.2	2.1	**48.5963**	0.256	0.5	ug/L	252	Standard
	Ni	60	92425.4	0.6	**49.1352**	0.675	1.4	ug/L	192	Standard
	Cu	65	94140.2	0.6	**49.6217**	0.865	1.7	ug/L	141	Standard
	Zn	66	68169.3	0.4	**61.5791**	1.173	1.9	ug/L	491	Standard
>	**Ge**	72	513441.7	1.6				ug/L	515087	Standard
	As	75	56899.2	0.6	**50.8164**	0.583	1.1	ug/L	20	Standard
	Se	82	5653.4	1.3	**49.1454**	0.462	0.9	ug/L	15	Standard
	Se-1	77	3932.8	1.5	**51.6632**	1.250	2.4	ug/L	48	Standard
>	**Ga**	71	93.3	35.7				mg/L	90	Standard
	Rb	85	19300.6	2.7				ug/L	23	Standard
	Y	89	425453.4	2.7				ug/L	448510	Standard
>	**Rh**	103	45.0	19.2				ug/L	15	Standard
	Mo	98	1218.6	0.9	**0.4503**	0.008	1.7	ug/L	11	Standard
	Ag	107	314898.7	0.6	**48.8175**	0.102	0.2	ug/L	134	Standard
	Cd	111	99777.7	0.5	**48.5906**	0.622	1.3	mg/L	7	Standard
	Cd	114	243059.8	0.9	**48.6969**	0.795	1.6	ug/L	16	Standard
>	**In**	115	587073.7	0.8				ug/L	611117	Standard
	Sn	118	733.4	7.3	**0.0272**	0.010	36.7	ug/L	518	Standard
	Sb	123	223776.0	1.4	**49.3561**	0.290	0.6	ug/L	127	Standard
	Ba	135	127336.9	0.7	**64.1810**	0.344	0.5	ug/L	45	Standard
	Ce	140	335.0	9.1				ug/L	298	Standard
>	**Tb**	159	937062.8	1.0				ug/L	977942	Standard
	Ho	165	41.7	79.9				ug/L	12	Standard
	Tl	203	401801.7	0.6	**49.2378**	0.579	1.2	ug/L	31	Standard
	Tl	205	351031.6	0.7	**49.5383**	0.691	1.4	ug/L	20	Standard
	Pb	206	267916.7	0.7	**51.1246**	0.591	1.2	ug/L	286	Standard
	Pb	207	234005.3	0.9	**49.5047**	0.372	0.8	ug/L	257	Standard
	Pb	208	924903.3	0.8	**50.5781**	0.765	1.5	ug/L	956	Standard
	U	238	349197.5	0.5	**50.3229**	0.614	1.2	ug/L	17	Standard
>	**Bi**	209	539520.7	0.7				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.8832**	18.842	173.1	mg/L	0	Standard
Mg	24	14542.0	3.3	**19.1893**	0.286	1.5	mg/L	32	Standard
K	39	753.4	10.6	**2.3925**	0.305	12.7	mg/L	30	Standard
Ca	43	295.0	12.2	**39.3051**	6.421	16.3	mg/L	48	Standard
Fe	54	140.6	16.7	**-0.0107**	0.020	183.5	mg/L	159	Standard
Fe	57	348.3	9.1	**0.5437**	0.082	15.1	mg/L	195	Standard
> **Sc-1**	45	39767.1	2.3				mg/L	39543	Standard
Cl	35	39860.4	1.2				ug/L	27642	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	7565.2	10.7				ug/L	1647	Standard
P	31	21044.6	3.8				ug/L	15231	Standard
S	34	2540.2	5.7				ug/L	1845	Standard
Sr	88	145.0	22.6				ug/L	70	Standard
C	12	196.7	11.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	48.4	54.7				mg/L	12	Standard
Ho-1	165	41.7	79.9				mg/L	12	Standard
Er	166	33.3	45.8				mg/L	20	Standard
I	127	26943.9	1.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.242	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.681	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.066
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.848
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606083901SD WG574242-06
Sample Date/Time: Tuesday, June 28, 2016 20:07:26
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77184.4	1.1				ug/L	81760	Standard
	Be	9	48315.3	1.2	**51.5258**	0.436	0.8	ug/L	17	Standard
	Al	27	15387465.4	1.3	**105.7299**	0.773	0.7	ug/L	1410	Standard
	Sc	45	40039.5	2.3				ug/L	39543	Standard
	Ti	47	554.0	4.1	**2.1409**	0.093	4.3	ug/L	39	Standard
	V	51	332776.2	1.5	**49.3498**	0.268	0.5	ug/L	1415	Standard
	Cr	52	340776.8	0.8	**49.6175**	0.095	0.2	ug/L	6946	Standard
	Cr	53	45466.5	0.7	**53.2763**	0.775	1.5	ug/L	328	Standard
	Mn	55	324192.4	1.4	**51.6123**	0.258	0.5	ug/L	823	Standard
	Co	59	327045.3	2.1	**48.1461**	0.569	1.2	ug/L	252	Standard
	Ni	60	91364.7	1.1	**50.1099**	0.072	0.1	ug/L	192	Standard
	Cu	65	91854.3	0.9	**49.9479**	0.081	0.2	ug/L	141	Standard
	Zn	66	66866.6	0.8	**62.3204**	0.118	0.2	ug/L	491	Standard
>	**Ge**	72	497622.9	1.0				ug/L	515087	Standard
	As	75	54845.8	1.7	**50.5323**	0.480	1.0	ug/L	20	Standard
	Se	82	5429.5	1.2	**48.6954**	0.265	0.5	ug/L	15	Standard
	Se-1	77	3850.8	1.9	**52.1872**	0.544	1.0	ug/L	48	Standard
>	**Ga**	71	85.0	11.8				mg/L	90	Standard
	Rb	85	19015.3	1.2				ug/L	23	Standard
	Y	89	421533.6	0.8				ug/L	448510	Standard
>	**Rh**	103	55.0	15.7				ug/L	15	Standard
	Mo	98	1205.1	2.4	**0.4408**	0.012	2.7	ug/L	11	Standard
	Ag	107	307002.5	0.8	**47.1551**	0.386	0.8	ug/L	134	Standard
	Cd	111	97425.8	0.9	**47.0062**	0.430	0.9	mg/L	7	Standard
	Cd	114	239795.9	0.5	**47.5975**	0.300	0.6	ug/L	16	Standard
>	**In**	115	592518.8	0.1				ug/L	611117	Standard
	Sn	118	761.7	9.1	**0.0309**	0.012	38.7	ug/L	518	Standard
	Sb	123	220298.1	1.2	**48.1440**	0.631	1.3	ug/L	127	Standard
	Ba	135	125301.0	0.6	**62.5732**	0.412	0.7	ug/L	45	Standard
	Ce	140	340.0	1.5				ug/L	298	Standard
>	**Tb**	159	948091.3	1.9				ug/L	977942	Standard
	Ho	165	23.3	65.5				ug/L	12	Standard
	Tl	203	394026.8	0.4	**48.4831**	0.151	0.3	ug/L	31	Standard
	Tl	205	348699.1	1.4	**49.4146**	1.048	2.1	ug/L	20	Standard
	Pb	206	261711.9	1.4	**50.1430**	0.483	1.0	ug/L	286	Standard
	Pb	207	228078.7	1.5	**48.4479**	0.479	1.0	ug/L	257	Standard
	Pb	208	906176.6	0.5	**49.7571**	0.517	1.0	ug/L	956	Standard
	U	238	340376.9	0.5	**49.2541**	0.514	1.0	ug/L	17	Standard
>	**Bi**	209	537295.6	0.7				ug/L	557080	Standard

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Na	23	3.3	86.6	**20.8666**	18.067	86.6	mg/L	0	Standard
Mg	24	14582.0	2.3	**19.1163**	0.419	2.2	mg/L	32	Standard
K	39	795.0	3.8	**2.5139**	0.164	6.5	mg/L	30	Standard
Ca	43	345.0	2.9	**46.4459**	2.697	5.8	mg/L	48	Standard
Fe	54	142.5	14.7	**-0.0097**	0.018	187.3	mg/L	159	Standard
Fe	57	408.3	2.5	**0.7378**	0.065	8.9	mg/L	195	Standard
> **Sc-1**	45	40039.5	2.3				mg/L	39543	Standard
Cl	35	39300.2	1.1				ug/L	27642	Standard
Kr	83	1.7	173.2				ug/L	2	Standard
Br	81	7651.9	3.5				ug/L	1647	Standard
P	31	20634.0	3.2				ug/L	15231	Standard
S	34	2398.5	2.0				ug/L	1845	Standard
Sr	88	180.0	15.5				ug/L	70	Standard
C	12	226.7	27.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	27.4	58.7				mg/L	12	Standard
Ho-1	165	23.3	65.5				mg/L	12	Standard
Er	166	53.3	108.3				mg/L	20	Standard
I	127	27065.8	3.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.404	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.610	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.957
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.448
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606084301
Sample Date/Time: Tuesday, June 28, 2016 20:10:37
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80372.6	1.6				ug/L	81760	Standard
	Be	9	41.7	45.4	**0.0330**	0.020	59.2	ug/L	17	Standard
	Al	27	7042054.5	1.4	**46.4726**	1.334	2.9	ug/L	1410	Standard
	Sc	45	38211.6	5.6				ug/L	39543	Standard
	Ti	47	149.3	19.8	**0.4676**	0.133	28.4	ug/L	39	Standard
	V	51	1769.8	3.9	**0.0612**	0.007	10.9	ug/L	1415	Standard
	Cr	52	8360.6	4.6	**0.2060**	0.044	21.1	ug/L	6946	Standard
	Cr	53	938.4	5.4	**0.7826**	0.048	6.1	ug/L	328	Standard
	Mn	55	4412856.2	0.9	**715.8990**	5.361	0.7	ug/L	823	Standard
	Co	59	49628.8	1.9	**7.3983**	0.034	0.5	ug/L	252	Standard
	Ni	60	31518.1	1.1	**17.4994**	0.073	0.4	ug/L	192	Standard
	Cu	65	1083.7	2.3	**0.5092**	0.018	3.5	ug/L	141	Standard
	Zn	66	58737.0	1.3	**55.5464**	0.787	1.4	ug/L	491	Standard
>	**Ge**	72	489683.3	1.5				ug/L	515087	Standard
	As	75	118.1	28.8	**0.1508**	0.032	21.2	ug/L	20	Standard
	Se	82	133.7	3.3	**1.1023**	0.049	4.4	ug/L	15	Standard
	Se-1	77	146.3	10.3	**1.3266**	0.239	18.0	ug/L	48	Standard
>	**Ga**	71	230.0	39.9				mg/L	90	Standard
	Rb	85	13262.5	1.5				ug/L	23	Standard
	Y	89	437622.3	1.3				ug/L	448510	Standard
>	**Rh**	103	40.0	43.3				ug/L	15	Standard
	Mo	98	84.3	2.5	**0.0124**	0.001	5.4	ug/L	11	Standard
	Ag	107	135.7	14.4	**0.0042**	0.003	69.6	ug/L	134	Standard
	Cd	111	325.5	6.3	**0.1508**	0.009	6.1	mg/L	7	Standard
	Cd	114	800.8	5.2	**0.1507**	0.008	5.1	ug/L	16	Standard
>	**In**	115	605376.8	0.3				ug/L	611117	Standard
	Sn	118	716.7	15.8	**0.0204**	0.019	93.4	ug/L	518	Standard
	Sb	123	1846.5	24.8	**0.3824**	0.099	25.9	ug/L	127	Standard
	Ba	135	61196.0	0.7	**29.8977**	0.107	0.4	ug/L	45	Standard
	Ce	140	4327.3	3.4				ug/L	298	Standard
>	**Tb**	159	946751.9	1.1				ug/L	977942	Standard
	Ho	165	113.3	17.8				ug/L	12	Standard
	Tl	203	274.7	6.5	**0.0286**	0.002	7.3	ug/L	31	Standard
	Tl	205	308.3	53.1	**0.0408**	0.023	55.8	ug/L	20	Standard
	Pb	206	584.3	5.1	**0.0470**	0.006	11.8	ug/L	286	Standard
	Pb	207	484.3	1.7	**0.0436**	0.002	3.9	ug/L	257	Standard
	Pb	208	2242.1	13.2	**0.0611**	0.016	25.8	ug/L	956	Standard
	U	238	167.0	68.8	**0.0208**	0.016	78.4	ug/L	17	Standard
>	**Bi**	209	544741.6	0.3				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	6142.9	1.9	**8.4190**	0.399	4.7	mg/L	32	Standard
K	39	320.0	19.2	**0.9720**	0.149	15.3	mg/L	30	Standard
Ca	43	193.3	18.7	**25.2140**	6.755	26.8	mg/L	48	Standard
Fe	54	272.9	8.2	**0.1197**	0.034	28.2	mg/L	159	Standard
Fe	57	298.3	20.0	**0.4171**	0.202	48.3	mg/L	195	Standard
Sc-1	45	38211.6	5.6				mg/L	39543	Standard
Cl	35	43040.4	2.1				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	3493.7	8.6				ug/L	1647	Standard
P	31	19535.9	3.1				ug/L	15231	Standard
S	34	2298.5	3.2				ug/L	1845	Standard
Sr	88	191.7	4.0				ug/L	70	Standard
C	12	103.3	24.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	171.7	2.4				mg/L	12	Standard
Ho-1	165	113.3	17.8				mg/L	12	Standard
Er	166	103.3	43.6				mg/L	20	Standard
I	127	15184.3	1.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		98.303	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.068	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.061
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.785
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606084301PS WG574570-01
Sample Date/Time: Tuesday, June 28, 2016 20:13:49
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84132.9	0.3				ug/L	81760	Standard
	Be	9	53800.4	2.5	**52.6389**	1.459	2.8	ug/L	17	Standard
	Al	27	7286262.3	0.5	**45.9217**	0.095	0.2	ug/L	1410	Standard
	Sc	45	39187.3	1.8				ug/L	39543	Standard
	Ti	47	167.0	8.4	**0.5053**	0.064	12.8	ug/L	39	Standard
	V	51	355576.0	1.4	**50.8299**	0.802	1.6	ug/L	1415	Standard
	Cr	52	356673.6	1.0	**50.0684**	1.233	2.5	ug/L	6946	Standard
	Cr	53	44503.6	1.2	**50.2498**	1.575	3.1	ug/L	328	Standard
	Mn	55	4859292.5	1.8	**747.6759**	17.580	2.4	ug/L	823	Standard
	Co	59	417615.7	1.3	**59.2660**	0.892	1.5	ug/L	252	Standard
	Ni	60	125871.4	1.4	**66.5870**	2.033	3.1	ug/L	192	Standard
	Cu	65	97106.5	1.0	**50.8947**	0.717	1.4	ug/L	141	Standard
	Zn	66	127581.2	0.7	**115.3025**	1.913	1.7	ug/L	491	Standard
>	**Ge**	72	516403.0	2.2				ug/L	515087	Standard
	As	75	57691.6	2.0	**51.2302**	0.986	1.9	ug/L	20	Standard
	Se	82	6053.8	2.8	**52.3316**	1.116	2.1	ug/L	15	Standard
	Se-1	77	3949.2	3.8	**51.5591**	1.119	2.2	ug/L	48	Standard
>	**Ga**	71	251.7	10.0				mg/L	90	Standard
	Rb	85	13841.3	3.1				ug/L	23	Standard
	Y	89	444794.9	3.0				ug/L	448510	Standard
>	**Rh**	103	78.3	24.2				ug/L	15	Standard
	Mo	98	86.4	4.3	**0.0128**	0.001	7.7	ug/L	11	Standard
	Ag	107	327259.4	2.3	**48.6313**	0.643	1.3	ug/L	134	Standard
	Cd	111	105349.6	1.3	**49.1793**	0.322	0.7	mg/L	7	Standard
	Cd	114	257271.1	1.0	**49.4173**	1.101	2.2	ug/L	16	Standard
>	**In**	115	612449.2	2.0				ug/L	611117	Standard
	Sn	118	941.7	3.9	**0.0570**	0.004	7.5	ug/L	518	Standard
	Sb	123	235069.6	1.3	**49.7050**	0.359	0.7	ug/L	127	Standard
	Ba	135	161643.1	1.4	**78.1070**	0.551	0.7	ug/L	45	Standard
	Ce	140	4429.0	1.8				ug/L	298	Standard
>	**Tb**	159	958659.2	2.3				ug/L	977942	Standard
	Ho	165	101.7	15.0				ug/L	12	Standard
	Tl	203	432017.4	2.0	**50.9163**	0.725	1.4	ug/L	31	Standard
	Tl	205	384793.0	2.1	**52.2411**	1.764	3.4	ug/L	20	Standard
	Pb	206	286141.9	1.8	**52.5195**	0.925	1.8	ug/L	286	Standard
	Pb	207	249240.4	1.8	**50.7143**	0.544	1.1	ug/L	257	Standard
	Pb	208	995726.4	2.1	**52.3723**	1.044	2.0	ug/L	956	Standard
	U	238	370701.4	1.5	**51.3906**	1.394	2.7	ug/L	17	Standard
>	**Bi**	209	561025.3	2.5				ug/L	557080	Standard

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Na	23	5.0	0.0	**32.4034**	0.594	1.8	mg/L	0	Standard
Mg	24	6414.7	1.1	**8.5623**	0.246	2.9	mg/L	32	Standard
K	39	321.7	9.1	**0.9561**	0.110	11.5	mg/L	30	Standard
Ca	43	185.0	8.1	**22.9936**	1.940	8.4	mg/L	48	Standard
Fe	54	250.2	14.1	**0.0912**	0.029	32.3	mg/L	159	Standard
Fe	57	306.7	15.8	**0.4183**	0.145	34.7	mg/L	195	Standard
> **Sc-1**	45	39187.3	1.8				mg/L	39543	Standard
Cl	35	43079.8	1.6				ug/L	27642	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	3410.4	11.2				ug/L	1647	Standard
P	31	19879.7	4.3				ug/L	15231	Standard
S	34	2313.5	2.6				ug/L	1845	Standard
Sr	88	201.7	5.2				ug/L	70	Standard
C	12	140.0	32.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	196.2	20.7				mg/L	12	Standard
Ho-1	165	101.7	15.0				mg/L	12	Standard
Er	166	80.0	76.0				mg/L	20	Standard
I	127	16267.1	4.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.902	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.256	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.218
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.708
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1606084301SDL WG574570-02
Sample Date/Time: Tuesday, June 28, 2016 20:17:00
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84610.6	1.2				ug/L	81760	Standard
	Be	9	31.7	24.1	**0.0210**	0.007	33.6	ug/L	17	Standard
	Al	27	1535529.0	0.5	**9.6123**	0.084	0.9	ug/L	1410	Standard
	Sc	45	40586.0	2.0				ug/L	39543	Standard
	Ti	47	54.0	14.5	**0.0442**	0.029	66.4	ug/L	39	Standard
	V	51	1510.6	4.6	**0.0030**	0.011	356.0	ug/L	1415	Standard
	Cr	52	7700.6	1.7	**0.0097**	0.022	221.3	ug/L	6946	Standard
	Cr	53	548.3	6.2	**0.2609**	0.037	14.0	ug/L	328	Standard
	Mn	55	927997.3	1.4	**137.8897**	1.374	1.0	ug/L	823	Standard
	Co	59	10741.5	3.1	**1.4429**	0.042	2.9	ug/L	252	Standard
	Ni	60	6856.2	1.9	**3.4057**	0.060	1.7	ug/L	192	Standard
	Cu	65	384.3	5.5	**0.1042**	0.011	10.3	ug/L	141	Standard
	Zn	66	13504.0	1.8	**11.0531**	0.162	1.5	ug/L	491	Standard
>	**Ge**	72	534132.0	0.6				ug/L	515087	Standard
	As	75	-8.2	426.8	**0.0333**	0.030	90.7	ug/L	20	Standard
	Se	82	34.3	14.2	**0.1678**	0.041	24.5	ug/L	15	Standard
	Se-1	77	77.7	7.3	**0.2756**	0.079	28.6	ug/L	48	Standard
>	**Ga**	71	133.3	12.1				mg/L	90	Standard
	Rb	85	2885.3	6.5				ug/L	23	Standard
	Y	89	438369.8	1.0				ug/L	448510	Standard
>	**Rh**	103	21.7	13.3				ug/L	15	Standard
	Mo	98	33.0	37.7	**-0.0070**	0.005	64.6	ug/L	11	Standard
	Ag	107	108.0	7.3	**-0.0003**	0.002	523.1	ug/L	134	Standard
	Cd	111	82.3	4.3	**0.0351**	0.001	2.2	mg/L	7	Standard
	Cd	114	247.3	23.3	**0.0421**	0.011	25.9	ug/L	16	Standard
>	**In**	115	618448.1	2.5				ug/L	611117	Standard
	Sn	118	536.7	11.9	**-0.0124**	0.008	66.9	ug/L	518	Standard
	Sb	123	2208.8	28.0	**0.4480**	0.119	26.5	ug/L	127	Standard
	Ba	135	12894.8	1.5	**6.1480**	0.082	1.3	ug/L	45	Standard
	Ce	140	871.7	9.1				ug/L	298	Standard
>	**Tb**	159	974992.3	2.7				ug/L	977942	Standard
	Ho	165	33.3	48.2				ug/L	12	Standard
	Tl	203	98.0	7.7	**0.0064**	0.001	11.0	ug/L	31	Standard
	Tl	205	90.0	24.2	**0.0096**	0.003	27.9	ug/L	20	Standard
	Pb	206	392.7	2.7	**0.0066**	0.003	42.8	ug/L	286	Standard
	Pb	207	318.0	2.7	**0.0050**	0.001	23.7	ug/L	257	Standard
	Pb	208	1352.7	4.0	**0.0088**	0.002	18.5	ug/L	956	Standard
	U	238	56.0	29.8	**0.0046**	0.002	47.0	ug/L	17	Standard
>	**Bi**	209	576774.8	1.6				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.6259**	18.396	173.1	mg/L	0	Standard
Mg	24	1335.1	0.6	**1.6748**	0.038	2.2	mg/L	32	Standard
K	39	83.3	27.1	**0.1320**	0.069	52.2	mg/L	30	Standard
Ca	43	66.7	4.3	**4.5227**	0.490	10.8	mg/L	48	Standard
Fe	54	158.9	15.8	**0.0030**	0.021	715.4	mg/L	159	Standard
Fe	57	226.7	20.8	**0.1225**	0.167	136.7	mg/L	195	Standard
> **Sc-1**	45	40586.0	2.0				mg/L	39543	Standard
Cl	35	41629.1	0.8				ug/L	27642	Standard
Kr	83	4.7	24.7				ug/L	2	Standard
Br	81	2016.8	5.8				ug/L	1647	Standard
P	31	19454.2	1.7				ug/L	15231	Standard
S	34	2286.8	4.6				ug/L	1845	Standard
Sr	88	108.3	9.6				ug/L	70	Standard
C	12	106.7	39.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	58.6	31.0				mg/L	12	Standard
Ho-1	165	33.3	48.2				mg/L	12	Standard
Er	166	30.0	57.7				mg/L	20	Standard
I	127	4460.7	6.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.486	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.697	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.200
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.535
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606084301SDL WG574570-02
Sample Date/Time: Tuesday, June 28, 2016 20:20:12
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84917.5	3.2				ug/L	81760	Standard
	Be	9	15.0	66.7	**0.0050**	0.010	200.3	ug/L	17	Standard
	Al	27	312447.8	1.9	**1.9378**	0.034	1.7	ug/L	1410	Standard
	Sc	45	41284.5	3.3				ug/L	39543	Standard
	Ti	47	45.7	48.8	**0.0117**	0.082	700.7	ug/L	39	Standard
	V	51	1463.2	5.6	**-0.0026**	0.007	263.9	ug/L	1415	Standard
	Cr	52	7659.3	1.8	**0.0098**	0.004	44.8	ug/L	6946	Standard
	Cr	53	423.3	16.3	**0.1274**	0.086	67.2	ug/L	328	Standard
	Mn	55	187375.9	0.8	**27.8813**	0.482	1.7	ug/L	823	Standard
	Co	59	2308.5	0.8	**0.2873**	0.008	2.8	ug/L	252	Standard
	Ni	60	1540.7	3.0	**0.6883**	0.022	3.2	ug/L	192	Standard
	Cu	65	216.7	7.3	**0.0197**	0.006	31.0	ug/L	141	Standard
	Zn	66	4319.6	1.9	**2.9936**	0.025	0.8	ug/L	491	Standard
>	**Ge**	72	531260.9	2.2				ug/L	515087	Standard
	As	75	-47.8	76.7	**-0.0014**	0.032	2343.8	ug/L	20	Standard
	Se	82	17.0	17.8	**0.0237**	0.023	96.9	ug/L	15	Standard
	Se-1	77	59.0	6.1	**0.0400**	0.030	74.0	ug/L	48	Standard
>	**Ga**	71	86.7	31.8				mg/L	90	Standard
	Rb	85	596.7	10.5				ug/L	23	Standard
	Y	89	453907.4	1.0				ug/L	448510	Standard
>	**Rh**	103	8.3	34.6				ug/L	15	Standard
	Mo	98	28.3	9.0	**-0.0090**	0.001	10.4	ug/L	11	Standard
	Ag	107	92.0	2.2	**-0.0030**	0.000	8.2	ug/L	134	Standard
	Cd	111	15.3	15.1	**0.0040**	0.001	27.2	mg/L	7	Standard
	Cd	114	38.2	13.4	**0.0022**	0.001	41.3	ug/L	16	Standard
>	**In**	115	632674.4	0.8				ug/L	611117	Standard
	Sn	118	625.0	9.7	**0.0002**	0.010	5977.1	ug/L	518	Standard
	Sb	123	614.9	31.7	**0.1128**	0.039	34.5	ug/L	127	Standard
	Ba	135	2594.2	0.9	**1.1887**	0.008	0.6	ug/L	45	Standard
	Ce	140	198.3	20.2				ug/L	298	Standard
>	**Tb**	159	988615.6	0.9				ug/L	977942	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	26.7	16.9	**-0.0018**	0.000	28.3	ug/L	31	Standard
	Tl	205	16.7	75.5	**-0.0001**	0.002	1448.6	ug/L	20	Standard
	Pb	206	345.0	3.1	**-0.0028**	0.002	58.3	ug/L	286	Standard
	Pb	207	303.3	7.6	**0.0012**	0.004	352.8	ug/L	257	Standard
	Pb	208	1152.7	2.7	**-0.0023**	0.002	71.0	ug/L	956	Standard
	U	238	16.0	21.7	**-0.0008**	0.000	54.8	ug/L	17	Standard
>	**Bi**	209	585233.9	0.6				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	291.7	12.4	**0.3140**	0.035	11.1	mg/L	32	Standard
K	39	48.3	6.0	**0.0153**	0.013	86.9	mg/L	30	Standard
Ca	43	35.0	28.6	**-0.2811**	1.306	464.6	mg/L	48	Standard
Fe	54	153.8	34.6	**-0.0038**	0.045	1180.2	mg/L	159	Standard
Fe	57	170.0	8.8	**-0.0754**	0.036	48.4	mg/L	195	Standard
Sc-1	45	41284.5	3.3				mg/L	39543	Standard
Cl	35	41099.7	0.8				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1820.1	5.7				ug/L	1647	Standard
P	31	19375.7	1.6				ug/L	15231	Standard
S	34	2545.2	4.1				ug/L	1845	Standard
Sr	88	58.3	27.6				ug/L	70	Standard
C	12	110.0	39.6				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	28.2	93.4				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	36.7	15.7				mg/L	20	Standard
I	127	1790.1	13.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.862	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.140	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.528
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.054
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 20:23:25
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82271.2	2.6				ug/L	81760	Standard
	Be	9	51878.7	2.6	**51.9060**	0.474	0.9	ug/L	17	Standard
	Al	27	7912369.8	3.4	**50.9914**	0.481	0.9	ug/L	1410	Standard
	Sc	45	40149.8	1.3				ug/L	39543	Standard
	Ti	47	25445.3	0.9	**101.2486**	0.646	0.6	ug/L	39	Standard
	V	51	355257.7	1.2	**50.4501**	0.253	0.5	ug/L	1415	Standard
	Cr	52	364176.4	2.0	**50.7897**	0.304	0.6	ug/L	6946	Standard
	Cr	53	45239.1	0.4	**50.7395**	0.592	1.2	ug/L	328	Standard
	Mn	55	333791.7	0.4	**50.8845**	0.584	1.1	ug/L	823	Standard
	Co	59	367088.8	1.7	**51.7480**	0.425	0.8	ug/L	252	Standard
	Ni	60	95399.1	1.8	**50.0959**	0.391	0.8	ug/L	192	Standard
	Cu	65	97309.2	2.1	**50.6606**	0.365	0.7	ug/L	141	Standard
	Zn	66	56912.4	2.6	**50.6269**	0.602	1.2	ug/L	491	Standard
>	**Ge**	72	519736.7	1.5				ug/L	515087	Standard
	As	75	56554.6	1.5	**49.8917**	0.034	0.1	ug/L	20	Standard
	Se	82	5843.7	2.8	**50.1784**	0.757	1.5	ug/L	15	Standard
	Se-1	77	3965.5	1.4	**51.4490**	0.315	0.6	ug/L	48	Standard
>	**Ga**	71	118.3	13.6				mg/L	90	Standard
	Rb	85	848.4	6.2				ug/L	23	Standard
	Y	89	451425.6	1.6				ug/L	448510	Standard
>	**Rh**	103	31.7	71.2				ug/L	15	Standard
	Mo	98	272060.7	0.6	**99.5752**	0.551	0.6	ug/L	11	Standard
	Ag	107	339081.9	1.7	**49.9711**	1.119	2.2	ug/L	134	Standard
	Cd	111	106686.1	0.8	**49.3843**	0.588	1.2	mg/L	7	Standard
	Cd	114	259655.5	1.7	**49.4494**	1.121	2.3	ug/L	16	Standard
>	**In**	115	617617.8	0.6				ug/L	611117	Standard
	Sn	118	302897.0	2.2	**50.5905**	1.415	2.8	ug/L	518	Standard
	Sb	123	239436.4	1.3	**50.2037**	0.916	1.8	ug/L	127	Standard
	Ba	135	101930.1	0.6	**48.8299**	0.530	1.1	ug/L	45	Standard
	Ce	140	63.3	9.1				ug/L	298	Standard
>	**Tb**	159	978625.5	0.9				ug/L	977942	Standard
	Ho	165	8.3	69.3				ug/L	12	Standard
	Tl	203	434700.2	0.8	**50.4033**	0.455	0.9	ug/L	31	Standard
	Tl	205	381183.1	1.9	**50.8972**	0.874	1.7	ug/L	20	Standard
	Pb	206	277544.1	1.7	**50.1113**	0.892	1.8	ug/L	286	Standard
	Pb	207	250965.9	2.0	**50.2393**	1.021	2.0	ug/L	257	Standard
	Pb	208	994830.3	0.3	**51.4752**	0.269	0.5	ug/L	956	Standard
	U	238	372750.7	1.1	**50.8268**	0.592	1.2	ug/L	17	Standard
>	**Bi**	209	570174.9	0.2				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4207.3	2.1	**5.4598**	0.160	2.9	mg/L	32	Standard
K	39	1353.4	1.9	**4.3620**	0.034	0.8	mg/L	30	Standard
Ca	43	68.3	23.5	**4.8558**	2.284	47.0	mg/L	48	Standard
Fe	54	6096.4	4.5	**5.2968**	0.235	4.4	mg/L	159	Standard
Fe	57	1726.8	6.1	**5.1204**	0.425	8.3	mg/L	195	Standard
Sc-1	45	40149.8	1.3				mg/L	39543	Standard
Cl	35	38223.5	2.9				ug/L	27642	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	1710.1	6.5				ug/L	1647	Standard
P	31	20984.5	3.6				ug/L	15231	Standard
S	34	2836.9	3.0				ug/L	1845	Standard
Sr	88	73.3	32.2				ug/L	70	Standard
C	12	176.7	8.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	26.3	80.0				mg/L	12	Standard
Ho-1	165	8.3	69.3				mg/L	12	Standard
Er	166	6.7	86.6				mg/L	20	Standard
I	127	1388.4	24.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	103.812		
Al	27	101.983		
Sc	45			
Ti	47	101.249		
V	51	100.900		
Cr	52	101.579		
Cr	53			
Mn	55	101.769		
Co	59	103.496		
Ni	60	100.192		
Cu	65	101.321		
Zn	66	101.254		
Ge	72		100.903	
As	75	99.783		
Se	82	100.357		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	99.575		
Ag	107	99.942		
Cd	111	98.769		
Cd	114			
> In	115			101.064
Sn	118	101.181		
Sb	123	100.407		
Ba	135	97.660		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.807		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.950		
U	238	101.654		
> Bi	209			102.351
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 20:26:37
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77291.7	2.7				ug/L	81760	Standard
	Be	9	25.0	40.0	**0.0170**	0.011	63.1	ug/L	17	Standard
	Al	27	2576.9	24.9	**0.0032**	0.004	126.1	ug/L	1410	Standard
	Sc	45	39050.3	1.7				ug/L	39543	Standard
	Ti	47	33.7	13.4	**-0.0246**	0.019	78.0	ug/L	39	Standard
	V	51	1167.6	8.0	**-0.0323**	0.013	41.5	ug/L	1415	Standard
	Cr	52	6011.5	1.2	**-0.1610**	0.012	7.3	ug/L	6946	Standard
	Cr	53	398.3	5.1	**0.1293**	0.022	17.0	ug/L	328	Standard
	Mn	55	883.7	9.4	**-0.0071**	0.013	183.2	ug/L	823	Standard
	Co	59	243.0	13.8	**0.0045**	0.005	107.7	ug/L	252	Standard
	Ni	60	165.0	10.4	**-0.0141**	0.009	65.1	ug/L	192	Standard
	Cu	65	129.3	4.3	**-0.0202**	0.003	14.1	ug/L	141	Standard
	Zn	66	451.0	1.9	**-0.4007**	0.009	2.3	ug/L	491	Standard
>	**Ge**	72	496420.0	0.5				ug/L	515087	Standard
	As	75	-52.8	22.7	**-0.0085**	0.011	133.2	ug/L	20	Standard
	Se	82	7.8	31.0	**-0.0491**	0.022	44.9	ug/L	15	Standard
	Se-1	77	52.0	3.8	**-0.0027**	0.026	948.5	ug/L	48	Standard
>	**Ga**	71	61.7	18.7				mg/L	90	Standard
	Rb	85	18.3	103.3				ug/L	23	Standard
	Y	89	442161.2	1.2				ug/L	448510	Standard
>	**Rh**	103	6.7	43.3				ug/L	15	Standard
	Mo	98	281.8	35.5	**0.0839**	0.034	41.1	ug/L	11	Standard
	Ag	107	122.3	22.2	**0.0018**	0.004	200.6	ug/L	134	Standard
	Cd	111	14.5	44.1	**0.0038**	0.003	74.5	mg/L	7	Standard
	Cd	114	43.1	30.3	**0.0033**	0.002	70.6	ug/L	16	Standard
>	**In**	115	615841.7	2.0				ug/L	611117	Standard
	Sn	118	753.4	17.4	**0.0248**	0.024	98.6	ug/L	518	Standard
	Sb	123	596.8	25.3	**0.1131**	0.034	30.2	ug/L	127	Standard
	Ba	135	38.0	16.0	**-0.0069**	0.003	39.0	ug/L	45	Standard
	Ce	140	8.3	91.7				ug/L	298	Standard
>	**Tb**	159	956084.4	3.2				ug/L	977942	Standard
	Ho	165	5.0	100.0				ug/L	12	Standard
	Tl	203	73.0	30.8	**0.0039**	0.003	64.7	ug/L	31	Standard
	Tl	205	60.0	44.1	**0.0059**	0.003	58.6	ug/L	20	Standard
	Pb	206	307.3	5.4	**-0.0063**	0.002	32.6	ug/L	286	Standard
	Pb	207	254.3	1.8	**-0.0055**	0.000	8.7	ug/L	257	Standard
	Pb	208	1093.3	8.1	**-0.0021**	0.004	180.6	ug/L	956	Standard
	U	238	62.0	42.0	**0.0057**	0.004	62.4	ug/L	17	Standard
>	**Bi**	209	552726.9	1.8				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.8094**	18.714	173.1	mg/L	0	Standard
Mg	24	20.0	100.0	**-0.0300**	0.027	91.7	mg/L	32	Standard
K	39	31.7	50.8	**-0.0336**	0.053	157.9	mg/L	30	Standard
Ca	43	16.7	17.3	**-2.7773**	0.490	17.6	mg/L	48	Standard
Fe	54	136.0	26.0	**-0.0122**	0.034	282.8	mg/L	159	Standard
Fe	57	233.3	19.3	**0.1724**	0.147	85.5	mg/L	195	Standard
> **Sc-1**	45	39050.3	1.7				mg/L	39543	Standard
Cl	35	37106.7	0.9				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	1596.8	5.3				ug/L	1647	Standard
P	31	19597.7	1.6				ug/L	15231	Standard
S	34	2643.6	3.6				ug/L	1845	Standard
Sr	88	53.3	61.0				ug/L	70	Standard
C	12	110.0	32.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	9.4	104.3				mg/L	12	Standard
Ho-1	165	5.0	100.0				mg/L	12	Standard
Er	166	13.3	43.3				mg/L	20	Standard
I	127	1173.4	25.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.376	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.773
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.219
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606079401
Sample Date/Time: Tuesday, June 28, 2016 20:29:50
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76244.9	4.1				ug/L	81760	Standard
	Be	9	31.7	63.8	**0.0239**	0.020	83.5	ug/L	17	Standard
	Al	27	4859544.3	1.6	**33.8379**	1.720	5.1	ug/L	1410	Standard
	Sc	45	41316.3	3.1				ug/L	39543	Standard
	Ti	47	1613.1	8.6	**6.3222**	0.521	8.2	ug/L	39	Standard
	V	51	5296.6	3.8	**0.5556**	0.022	4.0	ug/L	1415	Standard
	Cr	52	9948.6	1.0	**0.3727**	0.012	3.3	ug/L	6946	Standard
	Cr	53	1300.1	3.5	**1.1398**	0.032	2.8	ug/L	328	Standard
	Mn	55	10830112.5	0.4	**1671.2513**	23.447	1.4	ug/L	823	Standard
	Co	59	98900.4	0.9	**14.0508**	0.072	0.5	ug/L	252	Standard
	Ni	60	5918.2	0.8	**3.0389**	0.039	1.3	ug/L	192	Standard
	Cu	65	1492.7	4.1	**0.6949**	0.022	3.2	ug/L	141	Standard
	Zn	66	3606.1	2.5	**2.4634**	0.043	1.7	ug/L	491	Standard
>	**Ge**	72	514893.7	1.4				ug/L	515087	Standard
	As	75	2838.5	0.7	**2.5661**	0.029	1.1	ug/L	20	Standard
	Se	82	67.5	5.6	**0.4677**	0.041	8.7	ug/L	15	Standard
	Se-1	77	72.7	2.9	**0.2462**	0.031	12.7	ug/L	48	Standard
>	**Ga**	71	795.0	2.5				mg/L	90	Standard
	Rb	85	32504.8	2.3				ug/L	23	Standard
	Y	89	435925.3	2.8				ug/L	448510	Standard
>	**Rh**	103	93.3	3.1				ug/L	15	Standard
	Mo	98	343.6	1.5	**0.1114**	0.005	4.3	ug/L	11	Standard
	Ag	107	117.7	11.3	**0.0018**	0.002	118.8	ug/L	134	Standard
	Cd	111	40.7	19.8	**0.0166**	0.004	21.3	mg/L	7	Standard
	Cd	114	97.5	38.9	**0.0145**	0.008	54.8	ug/L	16	Standard
>	**In**	115	595657.1	2.2				ug/L	611117	Standard
	Sn	118	961.7	5.9	**0.0649**	0.008	12.2	ug/L	518	Standard
	Sb	123	345.9	22.0	**0.0622**	0.015	24.5	ug/L	127	Standard
	Ba	135	208994.2	0.7	**103.8626**	2.069	2.0	ug/L	45	Standard
	Ce	140	33943.0	0.8				ug/L	298	Standard
>	**Tb**	159	940708.8	1.0				ug/L	977942	Standard
	Ho	165	610.0	7.0				ug/L	12	Standard
	Tl	203	714.0	4.8	**0.0811**	0.003	4.2	ug/L	31	Standard
	Tl	205	651.7	8.6	**0.0881**	0.009	9.8	ug/L	20	Standard
	Pb	206	1354.7	2.2	**0.1905**	0.003	1.6	ug/L	286	Standard
	Pb	207	1119.4	1.4	**0.1747**	0.005	2.8	ug/L	257	Standard
	Pb	208	4748.3	2.1	**0.1947**	0.004	1.9	ug/L	956	Standard
	U	238	416.3	2.3	**0.0559**	0.002	3.0	ug/L	17	Standard
>	**Bi**	209	549596.9	1.2				ug/L	557080	Standard

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Na	23	6.7	114.6	**41.1239**	47.883	116.4	mg/L	0	Standard
Mg	24	3483.7	2.6	**4.3856**	0.231	5.3	mg/L	32	Standard
K	39	496.7	14.5	**1.4639**	0.222	15.1	mg/L	30	Standard
Ca	43	190.0	16.0	**22.2436**	4.083	18.4	mg/L	48	Standard
Fe	54	7377.0	1.5	**6.2559**	0.190	3.0	mg/L	159	Standard
Fe	57	2103.5	3.2	**6.1801**	0.414	6.7	mg/L	195	Standard
> **Sc-1**	45	41316.3	3.1				mg/L	39543	Standard
Cl	35	35106.6	2.5				ug/L	27642	Standard
Kr	83	2.3	107.9				ug/L	2	Standard
Br	81	13476.0	5.7				ug/L	1647	Standard
P	31	22598.5	5.8				ug/L	15231	Standard
S	34	2571.9	2.2				ug/L	1845	Standard
Sr	88	433.3	9.8				ug/L	70	Standard
C	12	150.0	35.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	882.4	15.5				mg/L	12	Standard
Ho-1	165	610.0	7.0				mg/L	12	Standard
Er	166	576.7	6.6				mg/L	20	Standard
I	127	50022.6	4.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.254	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.963	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.470
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.657
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606079402
Sample Date/Time: Tuesday, June 28, 2016 20:33:01
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75678.5	1.2				ug/L	81760	Standard
	Be	9	111.7	13.7	**0.1118**	0.017	15.0	ug/L	17	Standard
	Al	27	1429595.1	1.1	**10.0072**	0.228	2.3	ug/L	1410	Standard
	Sc	45	39138.8	1.6				ug/L	39543	Standard
	Ti	47	278.3	21.3	**0.9895**	0.212	21.4	ug/L	39	Standard
	V	51	1557.1	6.8	**0.0252**	0.009	34.9	ug/L	1415	Standard
	Cr	52	8352.6	6.5	**0.1848**	0.041	22.0	ug/L	6946	Standard
	Cr	53	1770.1	12.2	**1.7430**	0.191	11.0	ug/L	328	Standard
	Mn	55	34175.5	2.4	**5.3156**	0.224	4.2	ug/L	823	Standard
	Co	59	3266.0	5.1	**0.4499**	0.010	2.1	ug/L	252	Standard
	Ni	60	1953.8	3.9	**0.9695**	0.017	1.8	ug/L	192	Standard
	Cu	65	1358.7	2.9	**0.6499**	0.011	1.6	ug/L	141	Standard
	Zn	66	4870.4	2.4	**3.7758**	0.058	1.5	ug/L	491	Standard
>	**Ge**	72	497312.9	3.3				ug/L	515087	Standard
	As	75	54.7	94.2	**0.0915**	0.049	53.2	ug/L	20	Standard
	Se	82	40.7	27.3	**0.2488**	0.112	45.1	ug/L	15	Standard
	Se-1	77	77.0	9.4	**0.3389**	0.077	22.7	ug/L	48	Standard
>	**Ga**	71	155.0	28.1				mg/L	90	Standard
	Rb	85	30158.3	1.3				ug/L	23	Standard
	Y	89	432228.9	1.1				ug/L	448510	Standard
>	**Rh**	103	11.7	49.5				ug/L	15	Standard
	Mo	98	72.4	21.3	**0.0082**	0.006	70.5	ug/L	11	Standard
	Ag	107	118.3	24.0	**0.0017**	0.004	249.1	ug/L	134	Standard
	Cd	111	44.6	10.6	**0.0183**	0.002	12.1	mg/L	7	Standard
	Cd	114	123.7	31.0	**0.0193**	0.007	38.8	ug/L	16	Standard
>	**In**	115	600554.1	0.2				ug/L	611117	Standard
	Sn	118	733.4	8.7	**0.0243**	0.011	44.6	ug/L	518	Standard
	Sb	123	231.2	28.1	**0.0370**	0.014	37.8	ug/L	127	Standard
	Ba	135	65483.6	1.3	**32.2516**	0.425	1.3	ug/L	45	Standard
	Ce	140	2745.2	3.0				ug/L	298	Standard
>	**Tb**	159	936903.6	1.4				ug/L	977942	Standard
	Ho	165	75.0	17.6				ug/L	12	Standard
	Tl	203	221.3	13.5	**0.0222**	0.003	15.7	ug/L	31	Standard
	Tl	205	186.7	13.2	**0.0239**	0.003	14.3	ug/L	20	Standard
	Pb	206	523.0	7.4	**0.0358**	0.006	17.6	ug/L	286	Standard
	Pb	207	464.7	6.5	**0.0400**	0.008	19.0	ug/L	257	Standard
	Pb	208	1837.7	5.9	**0.0397**	0.005	13.6	ug/L	956	Standard
	U	238	125.7	23.1	**0.0151**	0.004	27.1	ug/L	17	Standard
>	**Bi**	209	541937.8	1.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	2726.9	0.4	**3.6111**	0.076	2.1	mg/L	32	Standard
K	39	506.7	5.1	**1.5885**	0.091	5.7	mg/L	30	Standard
Ca	43	36.7	15.7	**0.2847**	0.917	322.3	mg/L	48	Standard
Fe	54	182.6	18.3	**0.0302**	0.033	110.1	mg/L	159	Standard
Fe	57	203.3	25.6	**0.0706**	0.187	264.3	mg/L	195	Standard
Sc-1	45	39138.8	1.6				mg/L	39543	Standard
Cl	35	34567.4	3.2				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	6558.1	13.2				ug/L	1647	Standard
P	31	21156.4	3.6				ug/L	15231	Standard
S	34	2326.8	9.7				ug/L	1845	Standard
Sr	88	76.7	13.6				ug/L	70	Standard
C	12	236.7	44.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	150.6	9.6				mg/L	12	Standard
Ho-1	165	75.0	17.6				mg/L	12	Standard
Er	166	56.7	40.8				mg/L	20	Standard
I	127	9424.6	4.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		92.562	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.549	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.272
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.282
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606079403
Sample Date/Time: Tuesday, June 28, 2016 20:36:13
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76753.9	0.3				ug/L	81760	Standard
	Be	9	53.3	32.9	**0.0475**	0.019	39.7	ug/L	17	Standard
	Al	27	2019995.9	2.1	**13.9455**	0.321	2.3	ug/L	1410	Standard
	Sc	45	39648.5	2.7				ug/L	39543	Standard
	Ti	47	884.4	21.1	**3.3748**	0.755	22.4	ug/L	39	Standard
	V	51	4216.0	3.5	**0.3970**	0.022	5.5	ug/L	1415	Standard
	Cr	52	11350.6	1.0	**0.5656**	0.020	3.6	ug/L	6946	Standard
	Cr	53	3082.0	1.2	**3.1525**	0.043	1.4	ug/L	328	Standard
	Mn	55	1462715.3	1.2	**224.3814**	2.702	1.2	ug/L	823	Standard
	Co	59	3343.0	3.0	**0.4421**	0.013	2.9	ug/L	252	Standard
	Ni	60	3343.7	2.8	**1.6618**	0.047	2.8	ug/L	192	Standard
	Cu	65	1050.7	3.0	**0.4594**	0.015	3.2	ug/L	141	Standard
	Zn	66	4988.5	1.4	**3.7017**	0.077	2.1	ug/L	491	Standard
>	**Ge**	72	517603.4	0.3				ug/L	515087	Standard
	As	75	193.9	14.0	**0.2119**	0.024	11.1	ug/L	20	Standard
	Se	82	57.1	5.5	**0.3743**	0.026	6.9	ug/L	15	Standard
	Se-1	77	124.7	7.3	**0.9281**	0.125	13.4	ug/L	48	Standard
>	**Ga**	71	286.7	21.7				mg/L	90	Standard
	Rb	85	31280.6	0.6				ug/L	23	Standard
	Y	89	445698.9	0.7				ug/L	448510	Standard
>	**Rh**	103	16.7	45.8				ug/L	15	Standard
	Mo	98	229.5	3.6	**0.0662**	0.004	6.0	ug/L	11	Standard
	Ag	107	129.3	14.3	**0.0031**	0.003	91.8	ug/L	134	Standard
	Cd	111	79.6	15.3	**0.0346**	0.006	17.8	mg/L	7	Standard
	Cd	114	219.2	32.9	**0.0375**	0.014	38.3	ug/L	16	Standard
>	**In**	115	608521.7	1.3				ug/L	611117	Standard
	Sn	118	713.4	5.3	**0.0192**	0.007	34.1	ug/L	518	Standard
	Sb	123	215.5	21.1	**0.0330**	0.009	27.4	ug/L	127	Standard
	Ba	135	73971.5	1.1	**35.9586**	0.191	0.5	ug/L	45	Standard
	Ce	140	14728.8	3.9				ug/L	298	Standard
>	**Tb**	159	956871.9	1.4				ug/L	977942	Standard
	Ho	165	336.7	6.7				ug/L	12	Standard
	Tl	203	279.3	8.0	**0.0283**	0.003	10.3	ug/L	31	Standard
	Tl	205	295.0	11.9	**0.0379**	0.004	11.8	ug/L	20	Standard
	Pb	206	724.7	2.0	**0.0702**	0.002	2.4	ug/L	286	Standard
	Pb	207	605.7	5.7	**0.0660**	0.008	12.2	ug/L	257	Standard
	Pb	208	2584.1	3.2	**0.0763**	0.006	7.3	ug/L	956	Standard
	U	238	605.0	8.8	**0.0814**	0.008	10.1	ug/L	17	Standard
>	**Bi**	209	558048.4	1.1				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4734.1	2.7	**6.2297**	0.190	3.1	mg/L	32	Standard
K	39	378.3	13.8	**1.1326**	0.165	14.5	mg/L	30	Standard
Ca	43	55.0	18.2	**3.0097**	1.672	55.5	mg/L	48	Standard
Fe	54	512.5	3.2	**0.3260**	0.027	8.3	mg/L	159	Standard
Fe	57	288.3	19.9	**0.3473**	0.203	58.5	mg/L	195	Standard
> **Sc-1**	45	39648.5	2.7				mg/L	39543	Standard
Cl	35	35720.7	1.2				ug/L	27642	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	10650.4	4.7				ug/L	1647	Standard
P	31	21555.3	1.7				ug/L	15231	Standard
S	34	2313.5	4.4				ug/L	1845	Standard
Sr	88	90.0	14.7				ug/L	70	Standard
C	12	206.7	17.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	611.8	5.5				mg/L	12	Standard
Ho-1	165	336.7	6.7				mg/L	12	Standard
Er	166	310.0	11.6				mg/L	20	Standard
I	127	51010.9	6.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.877	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.489	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.575
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.174
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606079404
Sample Date/Time: Tuesday, June 28, 2016 20:39:24
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77373.8	1.6				ug/L	81760	Standard
	Be	9	33.3	45.8	**0.0257**	0.016	61.7	ug/L	17	Standard
	Al	27	6530294.9	1.7	**44.7685**	1.484	3.3	ug/L	1410	Standard
	Sc	45	40462.3	2.9				ug/L	39543	Standard
	Ti	47	1753.8	22.2	**6.9932**	1.564	22.4	ug/L	39	Standard
	V	51	4913.4	4.4	**0.5113**	0.026	5.2	ug/L	1415	Standard
	Cr	52	10044.0	5.5	**0.4080**	0.064	15.7	ug/L	6946	Standard
	Cr	53	2381.9	7.8	**2.4159**	0.236	9.8	ug/L	328	Standard
	Mn	55	8647420.3	0.2	**1354.8198**	14.536	1.1	ug/L	823	Standard
	Co	59	169235.6	0.5	**24.4356**	0.161	0.7	ug/L	252	Standard
	Ni	60	12361.0	0.9	**6.5619**	0.023	0.4	ug/L	192	Standard
	Cu	65	806.0	0.9	**0.3401**	0.009	2.5	ug/L	141	Standard
	Zn	66	7577.2	1.7	**6.1942**	0.082	1.3	ug/L	491	Standard
>	**Ge**	72	507111.0	1.2				ug/L	515087	Standard
	As	75	265.8	16.5	**0.2802**	0.037	13.2	ug/L	20	Standard
	Se	82	64.6	10.0	**0.4504**	0.053	11.9	ug/L	15	Standard
	Se-1	77	107.0	10.8	**0.7228**	0.140	19.4	ug/L	48	Standard
>	**Ga**	71	598.3	9.8				mg/L	90	Standard
	Rb	85	32554.9	1.8				ug/L	23	Standard
	Y	89	447221.5	3.0				ug/L	448510	Standard
>	**Rh**	103	20.0	50.0				ug/L	15	Standard
	Mo	98	99.0	16.4	**0.0174**	0.006	35.0	ug/L	11	Standard
	Ag	107	155.7	70.8	**0.0069**	0.016	237.9	ug/L	134	Standard
	Cd	111	107.8	50.7	**0.0474**	0.026	54.2	mg/L	7	Standard
	Cd	114	265.0	52.4	**0.0460**	0.027	58.4	ug/L	16	Standard
>	**In**	115	613219.8	0.3				ug/L	611117	Standard
	Sn	118	870.0	6.6	**0.0447**	0.010	22.4	ug/L	518	Standard
	Sb	123	214.6	24.5	**0.0325**	0.011	34.6	ug/L	127	Standard
	Ba	135	118463.0	0.8	**57.1584**	0.254	0.4	ug/L	45	Standard
	Ce	140	43559.2	3.6				ug/L	298	Standard
>	**Tb**	159	953430.3	1.1				ug/L	977942	Standard
	Ho	165	631.7	5.3				ug/L	12	Standard
	Tl	203	508.0	24.8	**0.0560**	0.015	27.1	ug/L	31	Standard
	Tl	205	431.7	17.4	**0.0571**	0.010	17.4	ug/L	20	Standard
	Pb	206	1022.0	12.5	**0.1271**	0.024	19.0	ug/L	286	Standard
	Pb	207	848.0	9.6	**0.1173**	0.017	14.2	ug/L	257	Standard
	Pb	208	3317.1	5.1	**0.1168**	0.009	7.7	ug/L	956	Standard
	U	238	210.3	17.6	**0.0266**	0.005	19.3	ug/L	17	Standard
>	**Bi**	209	552632.4	0.7				ug/L	557080	Standard

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Na	23	3.3	86.6	**20.7118**	17.947	86.6	mg/L	0	Standard
Mg	24	5764.4	1.5	**7.4467**	0.270	3.6	mg/L	32	Standard
K	39	563.3	10.2	**1.7170**	0.152	8.8	mg/L	30	Standard
Ca	43	75.0	17.6	**5.8105**	2.161	37.2	mg/L	48	Standard
Fe	54	999.2	5.7	**0.7481**	0.074	9.9	mg/L	159	Standard
Fe	57	490.0	3.5	**0.9936**	0.094	9.5	mg/L	195	Standard
> **Sc-1**	45	40462.3	2.9				mg/L	39543	Standard
Cl	35	35374.6	1.6				ug/L	27642	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	12395.1	8.6				ug/L	1647	Standard
P	31	20597.3	1.4				ug/L	15231	Standard
S	34	2416.9	2.7				ug/L	1845	Standard
Sr	88	128.3	19.6				ug/L	70	Standard
C	12	236.7	2.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	1138.1	44.8				mg/L	12	Standard
Ho-1	165	631.7	5.3				mg/L	12	Standard
Er	166	596.7	6.3				mg/L	20	Standard
I	127	203787.2	10.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.635	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.452	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.344
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.202
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606082202
Sample Date/Time: Tuesday, June 28, 2016 20:42:36
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79831.5	1.5				ug/L	81760	Standard
	Be	9	18.3	63.0	**0.0091**	0.012	129.5	ug/L	17	Standard
	Al	27	3326140.8	2.2	**22.0876**	0.529	2.4	ug/L	1410	Standard
	Sc	45	40903.5	2.4				ug/L	39543	Standard
	Ti	47	258.3	7.7	**0.8950**	0.111	12.4	ug/L	39	Standard
	V	51	1427.8	26.8	**0.0038**	0.061	1620.7	ug/L	1415	Standard
	Cr	52	8606.8	1.2	**0.2025**	0.023	11.3	ug/L	6946	Standard
	Cr	53	7031.6	3.4	**7.8173**	0.215	2.7	ug/L	328	Standard
	Mn	55	245282.9	2.4	**38.3872**	0.371	1.0	ug/L	823	Standard
	Co	59	360.0	5.7	**0.0208**	0.001	6.7	ug/L	252	Standard
	Ni	60	675.7	7.1	**0.2607**	0.030	11.7	ug/L	192	Standard
	Cu	65	319.3	4.0	**0.0805**	0.011	13.1	ug/L	141	Standard
	Zn	66	1777.8	5.5	**0.8236**	0.060	7.3	ug/L	491	Standard
>	**Ge**	72	505790.0	3.0				ug/L	515087	Standard
	As	75	361.2	27.3	**0.3676**	0.091	24.7	ug/L	20	Standard
	Se	82	151.2	10.8	**1.2184**	0.141	11.6	ug/L	15	Standard
	Se-1	77	286.7	5.2	**3.1548**	0.107	3.4	ug/L	48	Standard
>	**Ga**	71	148.3	15.6				mg/L	90	Standard
	Rb	85	12600.2	4.8				ug/L	23	Standard
	Y	89	440998.1	2.4				ug/L	448510	Standard
>	**Rh**	103	48.3	6.0				ug/L	15	Standard
	Mo	98	329.5	7.2	**0.1031**	0.007	6.5	ug/L	11	Standard
	Ag	107	82.7	3.0	**-0.0039**	0.000	4.5	ug/L	134	Standard
	Cd	111	39.1	14.9	**0.0154**	0.002	16.0	mg/L	7	Standard
	Cd	114	93.5	42.9	**0.0131**	0.008	57.9	ug/L	16	Standard
>	**In**	115	609428.7	1.7				ug/L	611117	Standard
	Sn	118	616.7	6.1	**0.0027**	0.008	296.4	ug/L	518	Standard
	Sb	123	172.8	22.7	**0.0238**	0.008	32.2	ug/L	127	Standard
	Ba	135	142178.1	1.8	**69.0335**	0.137	0.2	ug/L	45	Standard
	Ce	140	378.3	16.5				ug/L	298	Standard
>	**Tb**	159	949587.4	3.3				ug/L	977942	Standard
	Ho	165	25.0	20.0				ug/L	12	Standard
	Tl	203	147.7	1.7	**0.0134**	0.001	4.1	ug/L	31	Standard
	Tl	205	166.7	29.1	**0.0214**	0.007	33.5	ug/L	20	Standard
	Pb	206	309.7	2.3	**-0.0043**	0.001	31.8	ug/L	286	Standard
	Pb	207	262.7	4.1	**-0.0022**	0.002	83.4	ug/L	257	Standard
	Pb	208	1080.7	3.0	**-0.0011**	0.001	98.3	ug/L	956	Standard
	U	238	30.0	28.9	**0.0014**	0.001	94.3	ug/L	17	Standard
>	**Bi**	209	537934.0	1.4				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.6139**	18.375	173.1	mg/L	0	Standard
Mg	24	32371.2	3.9	**41.6322**	2.388	5.7	mg/L	32	Standard
K	39	260.0	20.1	**0.7087**	0.176	24.8	mg/L	30	Standard
Ca	43	58.3	19.8	**3.1978**	1.533	48.0	mg/L	48	Standard
Fe	54	1294.3	5.1	**0.9965**	0.083	8.3	mg/L	159	Standard
Fe	57	445.0	8.5	**0.8270**	0.105	12.6	mg/L	195	Standard
> **Sc-1**	45	40903.5	2.4				mg/L	39543	Standard
Cl	35	36431.1	1.6				ug/L	27642	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	35805.7	4.9				ug/L	1647	Standard
P	31	25079.1	3.1				ug/L	15231	Standard
S	34	2408.5	3.8				ug/L	1845	Standard
Sr	88	206.7	19.6				ug/L	70	Standard
C	12	176.7	45.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	28.1	3.0				mg/L	12	Standard
Ho-1	165	25.0	20.0				mg/L	12	Standard
Er	166	40.0	43.3				mg/L	20	Standard
I	127	201681.5	7.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.641	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.195	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.724
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.563
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606082203
Sample Date/Time: Tuesday, June 28, 2016 20:45:47
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90191.0	1.0				ug/L	81760	Standard
	Be	9	23.3	68.9	**0.0116**	0.015	127.2	ug/L	17	Standard
	Al	27	11365406.0	0.9	**66.8332**	1.185	1.8	ug/L	1410	Standard
	Sc	45	43861.8	3.4				ug/L	39543	Standard
	Ti	47	293.7	8.7	**0.9575**	0.101	10.6	ug/L	39	Standard
	V	51	2061.8	11.0	**0.0753**	0.031	41.0	ug/L	1415	Standard
	Cr	52	35560.4	1.1	**3.7982**	0.065	1.7	ug/L	6946	Standard
	Cr	53	13979.8	6.4	**14.7966**	1.011	6.8	ug/L	328	Standard
	Mn	55	581441.7	2.8	**85.0974**	2.668	3.1	ug/L	823	Standard
	Co	59	11104.7	2.7	**1.4708**	0.043	3.0	ug/L	252	Standard
	Ni	60	4756.1	1.3	**2.2951**	0.027	1.2	ug/L	192	Standard
	Cu	65	585.0	3.7	**0.2018**	0.012	5.9	ug/L	141	Standard
	Zn	66	4219.9	2.2	**2.8317**	0.093	3.3	ug/L	491	Standard
>	**Ge**	72	541965.4	0.4				ug/L	515087	Standard
	As	75	1879.3	4.8	**1.6291**	0.081	5.0	ug/L	20	Standard
	Se	82	403.3	6.2	**3.2102**	0.210	6.5	ug/L	15	Standard
	Se-1	77	499.0	5.4	**5.5758**	0.322	5.8	ug/L	48	Standard
>	**Ga**	71	170.0	12.8				mg/L	90	Standard
	Rb	85	898318.0	1.7				ug/L	23	Standard
	Y	89	454033.5	1.6				ug/L	448510	Standard
>	**Rh**	103	158.3	15.6				ug/L	15	Standard
	Mo	98	390.2	3.3	**0.1238**	0.006	4.6	ug/L	11	Standard
	Ag	107	91.7	18.8	**-0.0027**	0.003	94.7	ug/L	134	Standard
	Cd	111	57.3	18.5	**0.0236**	0.005	19.9	mg/L	7	Standard
	Cd	114	162.3	23.5	**0.0261**	0.008	29.2	ug/L	16	Standard
>	**In**	115	617377.1	1.4				ug/L	611117	Standard
	Sn	118	971.7	10.6	**0.0609**	0.019	30.8	ug/L	518	Standard
	Sb	123	275.2	12.0	**0.0450**	0.008	16.8	ug/L	127	Standard
	Ba	135	754414.8	1.4	**361.7131**	4.988	1.4	ug/L	45	Standard
	Ce	140	4038.9	3.4				ug/L	298	Standard
>	**Tb**	159	972701.2	1.2				ug/L	977942	Standard
	Ho	165	60.0					ug/L	12	Standard
	Tl	203	156.0	13.2	**0.0138**	0.002	16.1	ug/L	31	Standard
	Tl	205	116.7	13.1	**0.0137**	0.002	15.9	ug/L	20	Standard
	Pb	206	526.0	2.4	**0.0341**	0.004	10.3	ug/L	286	Standard
	Pb	207	425.7	3.6	**0.0296**	0.004	13.9	ug/L	257	Standard
	Pb	208	1793.4	1.5	**0.0349**	0.002	5.6	ug/L	956	Standard
	U	238	113.7	2.7	**0.0130**	0.001	4.0	ug/L	17	Standard
>	**Bi**	209	555248.6	1.3				ug/L	557080	Standard

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Na	23	1.7	173.2	**9.3851**	16.247	173.1	mg/L	0	Standard
Mg	24	35620.2	1.5	**42.7261**	1.684	3.9	mg/L	32	Standard
K	39	6901.6	2.1	**20.9070**	1.156	5.5	mg/L	30	Standard
Ca	43	215.0	12.3	**24.1234**	3.813	15.8	mg/L	48	Standard
Fe	54	3077.7	3.9	**2.3743**	0.067	2.8	mg/L	159	Standard
Fe	57	1036.7	11.9	**2.5246**	0.275	10.9	mg/L	195	Standard
Sc-1	45	43861.8	3.4				mg/L	39543	Standard
Cl	35	37418.9	4.6				ug/L	27642	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	90214.6	3.4				ug/L	1647	Standard
P	31	25815.3	2.7				ug/L	15231	Standard
S	34	2615.2	3.8				ug/L	1845	Standard
Sr	88	703.3	5.7				ug/L	70	Standard
C	12	206.7	5.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	96.0	27.7				mg/L	12	Standard
Ho-1	165	60.0					mg/L	12	Standard
Er	166	83.3	6.9				mg/L	20	Standard
I	127	135411.8	5.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.312	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.218	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.024	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.671	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606082302
Sample Date/Time: Tuesday, June 28, 2016 20:48:59
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	108277.4	2.9				ug/L	81760	Standard
	Be	9	45.0	44.4	**0.0244**	0.015	61.4	ug/L	17	Standard
	Al	27	155300534.6	2.6	**761.2127**	30.613	4.0	ug/L	1410	Standard
	Sc	45	45277.6	3.5				ug/L	39543	Standard
	Ti	47	403.3	5.8	**1.4273**	0.064	4.5	ug/L	39	Standard
	V	51	3112.6	16.0	**0.2334**	0.070	30.2	ug/L	1415	Standard
	Cr	52	14043.2	7.2	**0.9232**	0.105	11.4	ug/L	6946	Standard
	Cr	53	48930.1	15.5	**54.3111**	7.500	13.8	ug/L	328	Standard
	Mn	55	2748271.5	3.9	**416.1426**	7.847	1.9	ug/L	823	Standard
	Co	59	187853.6	1.8	**26.2312**	0.060	0.2	ug/L	252	Standard
	Ni	60	24191.7	7.1	**12.5042**	0.665	5.3	ug/L	192	Standard
	Cu	65	2608.9	7.7	**1.2568**	0.078	6.2	ug/L	141	Standard
	Zn	66	8434.7	3.5	**6.7297**	0.123	1.8	ug/L	491	Standard
>	**Ge**	72	524401.5	2.0				ug/L	515087	Standard
	As	75	6667.1	7.6	**5.8608**	0.340	5.8	ug/L	20	Standard
	Se	82	2463.0	3.4	**20.8902**	0.307	1.5	ug/L	15	Standard
	Se-1	77	5803.1	9.1	**74.8730**	5.475	7.3	ug/L	48	Standard
>	**Ga**	71	283.3	11.5				mg/L	90	Standard
	Rb	85	14086.5	1.8				ug/L	23	Standard
	Y	89	450377.0	4.3				ug/L	448510	Standard
>	**Rh**	103	1153.4	2.0				ug/L	15	Standard
	Mo	98	228.3	2.1	**0.0678**	0.002	2.3	ug/L	11	Standard
	Ag	107	100.7	7.3	**-0.0008**	0.001	114.3	ug/L	134	Standard
	Cd	111	85.9	11.5	**0.0385**	0.005	14.0	mg/L	7	Standard
	Cd	114	207.5	20.1	**0.0360**	0.007	20.1	ug/L	16	Standard
>	**In**	115	594734.3	2.8				ug/L	611117	Standard
	Sn	118	838.4	7.1	**0.0436**	0.007	15.0	ug/L	518	Standard
	Sb	123	341.7	13.9	**0.0614**	0.008	13.7	ug/L	127	Standard
	Ba	135	7531184.6	2.9	**3748.3398**	4.365	0.1	ug/L	45	Standard
	Ce	140	2656.9	7.0				ug/L	298	Standard
>	**Tb**	159	994456.1	1.2				ug/L	977942	Standard
	Ho	165	153.3	5.0				ug/L	12	Standard
	Tl	203	149.0	11.0	**0.0143**	0.002	16.0	ug/L	31	Standard
	Tl	205	131.7	44.0	**0.0171**	0.008	49.5	ug/L	20	Standard
	Pb	206	558.3	2.7	**0.0476**	0.002	3.6	ug/L	286	Standard
	Pb	207	480.7	4.4	**0.0481**	0.004	8.4	ug/L	257	Standard
	Pb	208	1800.4	1.7	**0.0423**	0.001	2.5	ug/L	956	Standard
	U	238	2848.6	3.5	**0.4250**	0.011	2.7	ug/L	17	Standard
>	**Bi**	209	517504.0	1.7				ug/L	557080	Standard

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Na	23	15.0	33.3	**83.8040**	26.058	31.1	mg/L	0	Standard
Mg	24	304856.8	3.2	**354.4066**	5.599	1.6	mg/L	32	Standard
K	39	523.3	14.8	**1.3989**	0.174	12.4	mg/L	30	Standard
Ca	43	1175.0	5.2	**150.6324**	9.407	6.2	mg/L	48	Standard
Fe	54	2706.9	4.6	**2.0025**	0.071	3.5	mg/L	159	Standard
Fe	57	1593.4	6.7	**4.0698**	0.154	3.8	mg/L	195	Standard
> **Sc-1**	45	45277.6	3.5				mg/L	39543	Standard
Cl	35	40644.4	1.3				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	610984.3	3.4				ug/L	1647	Standard
P	31	30180.0	2.7				ug/L	15231	Standard
S	34	2781.9	5.2				ug/L	1845	Standard
Sr	88	4374.0	2.8				ug/L	70	Standard
C	12	443.3	22.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	166.1	26.6				mg/L	12	Standard
Ho-1	165	153.3	5.0				mg/L	12	Standard
Er	166	220.0	28.4				mg/L	20	Standard
I	127	589063.3	13.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.433	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.808	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.319
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	92.896
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606082303
Sample Date/Time: Tuesday, June 28, 2016 20:52:10
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	93244.4	1.1				ug/L	81760	Standard
	Be	9	28.3	10.2	**0.0153**	0.003	16.9	ug/L	17	Standard
	Al	27	94744933.1	0.6	**538.9798**	6.462	1.2	ug/L	1410	Standard
	Sc	45	47113.2	4.5				ug/L	39543	Standard
	Ti	47	553.7	11.7	**2.0175**	0.206	10.2	ug/L	39	Standard
	V	51	4328.2	13.5	**0.4057**	0.092	22.6	ug/L	1415	Standard
	Cr	52	14490.9	2.4	**0.9864**	0.018	1.8	ug/L	6946	Standard
	Cr	53	43709.7	3.6	**48.5418**	1.565	3.2	ug/L	328	Standard
	Mn	55	8319616.3	2.0	**1259.6840**	13.722	1.1	ug/L	823	Standard
	Co	59	19767.9	2.2	**2.7309**	0.056	2.1	ug/L	252	Standard
	Ni	60	10810.2	4.4	**5.5279**	0.127	2.3	ug/L	192	Standard
	Cu	65	2456.2	2.4	**1.1782**	0.021	1.8	ug/L	141	Standard
	Zn	66	5426.0	2.4	**4.0320**	0.062	1.5	ug/L	491	Standard
>	**Ge**	72	524719.7	2.2				ug/L	515087	Standard
	As	75	3752.6	7.8	**3.3171**	0.255	7.7	ug/L	20	Standard
	Se	82	1738.6	3.2	**14.7077**	0.502	3.4	ug/L	15	Standard
	Se-1	77	4761.1	4.1	**61.3297**	2.628	4.3	ug/L	48	Standard
>	**Ga**	71	408.3	8.7				mg/L	90	Standard
	Rb	85	9714.8	3.7				ug/L	23	Standard
	Y	89	460620.0	3.3				ug/L	448510	Standard
>	**Rh**	103	891.7	10.4				ug/L	15	Standard
	Mo	98	389.5	4.4	**0.1260**	0.003	2.4	ug/L	11	Standard
	Ag	107	110.7	7.4	**0.0004**	0.001	272.1	ug/L	134	Standard
	Cd	111	332.6	3.0	**0.1538**	0.007	4.3	mg/L	7	Standard
	Cd	114	853.2	3.8	**0.1605**	0.008	5.1	ug/L	16	Standard
>	**In**	115	607039.3	2.6				ug/L	611117	Standard
	Sn	118	751.7	13.7	**0.0260**	0.016	61.8	ug/L	518	Standard
	Sb	123	376.4	10.5	**0.0674**	0.007	10.4	ug/L	127	Standard
	Ba	135	4357695.0	1.8	**2125.2206**	17.296	0.8	ug/L	45	Standard
	Ce	140	11329.2	2.7				ug/L	298	Standard
>	**Tb**	159	992575.1	2.0				ug/L	977942	Standard
	Ho	165	278.3	9.0				ug/L	12	Standard
	Tl	203	135.0	5.8	**0.0123**	0.001	6.8	ug/L	31	Standard
	Tl	205	110.0	27.6	**0.0138**	0.004	31.4	ug/L	20	Standard
	Pb	206	907.4	3.0	**0.1159**	0.005	4.7	ug/L	286	Standard
	Pb	207	750.0	6.5	**0.1064**	0.009	8.4	ug/L	257	Standard
	Pb	208	3103.1	4.1	**0.1154**	0.005	4.4	ug/L	956	Standard
	U	238	44356.2	2.2	**6.6145**	0.107	1.6	ug/L	17	Standard
>	**Bi**	209	521151.7	1.4				ug/L	557080	Standard

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Na	23	10.0	86.6	**54.6526**	47.439	86.8	mg/L	0	Standard
Mg	24	287663.3	3.0	**321.5385**	8.440	2.6	mg/L	32	Standard
K	39	226.7	14.2	**0.5032**	0.104	20.6	mg/L	30	Standard
Ca	43	1070.0	2.9	**131.3674**	10.299	7.8	mg/L	48	Standard
Fe	54	476.6	5.9	**0.2261**	0.038	16.9	mg/L	159	Standard
Fe	57	1008.4	3.2	**2.2367**	0.165	7.4	mg/L	195	Standard
> **Sc-1**	45	47113.2	4.5				mg/L	39543	Standard
Cl	35	40790.8	0.7				ug/L	27642	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	436089.5	3.9				ug/L	1647	Standard
P	31	27271.2	4.0				ug/L	15231	Standard
S	34	2836.9	4.2				ug/L	1845	Standard
Sr	88	2816.9	2.8				ug/L	70	Standard
C	12	376.7	12.5				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	0	Standard
Dy	164	345.0	17.3				mg/L	12	Standard
Ho-1	165	278.3	9.0				mg/L	12	Standard
Er	166	243.3	18.5				mg/L	20	Standard
I	127	900084.0	10.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.046	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.870	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.333
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.551
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606082304
Sample Date/Time: Tuesday, June 28, 2016 20:55:22
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74476.1	3.3				ug/L	81760	Standard
	Be	9	15.0	115.5	**0.0072**	0.020	276.2	ug/L	17	Standard
	Al	27	20080706.8	2.9	**143.0136**	1.080	0.8	ug/L	1410	Standard
	Sc	45	42894.0	3.7				ug/L	39543	Standard
	Ti	47	325.7	10.6	**1.1562**	0.137	11.8	ug/L	39	Standard
	V	51	1429.9	29.9	**0.0011**	0.063	5474.1	ug/L	1415	Standard
	Cr	52	7720.6	1.3	**0.0621**	0.011	18.4	ug/L	6946	Standard
	Cr	53	9723.1	6.1	**10.8363**	0.676	6.2	ug/L	328	Standard
	Mn	55	4663144.1	0.8	**725.7255**	4.778	0.7	ug/L	823	Standard
	Co	59	1828.4	1.1	**0.2313**	0.003	1.3	ug/L	252	Standard
	Ni	60	1442.4	3.3	**0.6679**	0.026	3.9	ug/L	192	Standard
	Cu	65	719.0	5.1	**0.2910**	0.019	6.5	ug/L	141	Standard
	Zn	66	7525.5	1.3	**6.1013**	0.101	1.7	ug/L	491	Standard
>	**Ge**	72	510419.4	0.4				ug/L	515087	Standard
	As	75	3004.5	4.7	**2.7368**	0.118	4.3	ug/L	20	Standard
	Se	82	527.6	3.3	**4.5049**	0.149	3.3	ug/L	15	Standard
	Se-1	77	877.0	5.5	**11.0280**	0.616	5.6	ug/L	48	Standard
>	**Ga**	71	135.0	44.9				mg/L	90	Standard
	Rb	85	21460.2	1.4				ug/L	23	Standard
	Y	89	449502.6	1.2				ug/L	448510	Standard
>	**Rh**	103	240.0	18.2				ug/L	15	Standard
	Mo	98	71.6	8.8	**0.0080**	0.002	28.5	ug/L	11	Standard
	Ag	107	77.3	9.2	**-0.0044**	0.001	24.3	ug/L	134	Standard
	Cd	111	102.2	7.3	**0.0460**	0.004	8.2	mg/L	7	Standard
	Cd	114	276.1	15.2	**0.0494**	0.008	16.6	ug/L	16	Standard
>	**In**	115	597587.3	0.9				ug/L	611117	Standard
	Sn	118	641.7	5.5	**0.0090**	0.005	57.4	ug/L	518	Standard
	Sb	123	117.8	11.7	**0.0127**	0.003	24.6	ug/L	127	Standard
	Ba	135	1219381.1	1.8	**603.9591**	5.851	1.0	ug/L	45	Standard
	Ce	140	360.0	14.7				ug/L	298	Standard
>	**Tb**	159	948906.4	1.3				ug/L	977942	Standard
	Ho	165	16.7	17.3				ug/L	12	Standard
	Tl	203	82.3	3.1	**0.0057**	0.000	3.2	ug/L	31	Standard
	Tl	205	61.7	24.8	**0.0067**	0.002	33.3	ug/L	20	Standard
	Pb	206	418.0	3.1	**0.0190**	0.003	17.6	ug/L	286	Standard
	Pb	207	378.0	5.3	**0.0247**	0.003	13.2	ug/L	257	Standard
	Pb	208	1532.7	1.1	**0.0263**	0.002	6.1	ug/L	956	Standard
	U	238	34.3	24.8	**0.0022**	0.001	61.6	ug/L	17	Standard
>	**Bi**	209	521633.3	1.5				ug/L	557080	Standard

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Na	23	3.3	173.2	**19.9869**	34.610	173.2	mg/L	0	Standard
Mg	24	52154.6	2.1	**63.9697**	1.039	1.6	mg/L	32	Standard
K	39	548.3	16.2	**1.5625**	0.223	14.3	mg/L	30	Standard
Ca	43	246.7	5.1	**29.2175**	2.054	7.0	mg/L	48	Standard
Fe	54	45285.0	1.2	**37.6782**	1.468	3.9	mg/L	159	Standard
Fe	57	11722.9	3.7	**35.8594**	0.146	0.4	mg/L	195	Standard
> **Sc-1**	45	42894.0	3.7				mg/L	39543	Standard
Cl	35	35015.1	2.5				ug/L	27642	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	123689.6	1.5				ug/L	1647	Standard
P	31	28713.9	1.8				ug/L	15231	Standard
S	34	2633.6	10.4				ug/L	1845	Standard
Sr	88	703.3	3.4				ug/L	70	Standard
C	12	210.0	12.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	32.1	16.4				mg/L	12	Standard
Ho-1	165	16.7	17.3				mg/L	12	Standard
Er	166	26.7	57.3				mg/L	20	Standard
I	127	194264.8	2.9				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		91.091	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.094	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.786
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.637
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606084302
Sample Date/Time: Tuesday, June 28, 2016 20:58:33
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77271.6	2.1				ug/L	81760	Standard
	Be	9	30.0	44.1	**0.0221**	0.014	61.6	ug/L	17	Standard
	Al	27	13023291.9	1.0	**89.3957**	1.109	1.2	ug/L	1410	Standard
	Sc	45	41354.7	3.2				ug/L	39543	Standard
	Ti	47	172.3	20.3	**0.4975**	0.149	29.9	ug/L	39	Standard
	V	51	1869.8	10.2	**0.0496**	0.023	45.4	ug/L	1415	Standard
	Cr	52	9029.4	5.3	**0.1789**	0.049	27.5	ug/L	6946	Standard
	Cr	53	1933.5	16.3	**1.7631**	0.385	21.8	ug/L	328	Standard
	Mn	55	2010517.0	2.2	**295.6150**	12.044	4.1	ug/L	823	Standard
	Co	59	28381.9	0.9	**3.8204**	0.101	2.6	ug/L	252	Standard
	Ni	60	51973.3	1.5	**26.2049**	0.504	1.9	ug/L	192	Standard
	Cu	65	2375.5	2.3	**1.1012**	0.038	3.5	ug/L	141	Standard
	Zn	66	19572.0	0.3	**16.1981**	0.371	2.3	ug/L	491	Standard
>	**Ge**	72	540385.6	2.0				ug/L	515087	Standard
	As	75	349.5	8.0	**0.3364**	0.018	5.2	ug/L	20	Standard
	Se	82	126.5	4.8	**0.9278**	0.047	5.1	ug/L	15	Standard
	Se-1	77	166.7	13.3	**1.3933**	0.317	22.7	ug/L	48	Standard
>	**Ga**	71	106.7	22.2				mg/L	90	Standard
	Rb	85	40220.0	0.6				ug/L	23	Standard
	Y	89	449597.2	1.4				ug/L	448510	Standard
>	**Rh**	103	146.7	12.0				ug/L	15	Standard
	Mo	98	594.8	3.0	**0.2021**	0.008	3.8	ug/L	11	Standard
	Ag	107	92.7	31.3	**-0.0024**	0.004	183.9	ug/L	134	Standard
	Cd	111	161.3	7.4	**0.0729**	0.005	7.5	mg/L	7	Standard
	Cd	114	441.9	5.3	**0.0806**	0.004	5.2	ug/L	16	Standard
>	**In**	115	608035.7	0.5				ug/L	611117	Standard
	Sn	118	676.7	9.6	**0.0131**	0.012	88.5	ug/L	518	Standard
	Sb	123	188.3	22.2	**0.0273**	0.009	32.4	ug/L	127	Standard
	Ba	135	24154.9	0.6	**11.7345**	0.088	0.8	ug/L	45	Standard
	Ce	140	2120.1	7.8				ug/L	298	Standard
>	**Tb**	159	946861.5	2.0				ug/L	977942	Standard
	Ho	165	63.3	29.9				ug/L	12	Standard
	Tl	203	1826.8	0.7	**0.2203**	0.002	1.1	ug/L	31	Standard
	Tl	205	1685.1	3.3	**0.2367**	0.005	2.2	ug/L	20	Standard
	Pb	206	439.0	7.7	**0.0207**	0.006	26.8	ug/L	286	Standard
	Pb	207	381.0	5.7	**0.0231**	0.004	17.6	ug/L	257	Standard
	Pb	208	1509.0	1.3	**0.0226**	0.000	0.8	ug/L	956	Standard
	U	238	1189.4	4.4	**0.1693**	0.007	4.4	ug/L	17	Standard
>	**Bi**	209	536700.0	1.2				ug/L	557080	Standard

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Na	23	5.0	100.0	**30.9676**	31.632	102.1	mg/L	0	Standard
Mg	24	21311.6	1.7	**27.0900**	1.076	4.0	mg/L	32	Standard
K	39	978.4	4.6	**3.0186**	0.057	1.9	mg/L	30	Standard
Ca	43	386.7	7.5	**50.8608**	4.765	9.4	mg/L	48	Standard
Fe	54	204.3	23.4	**0.0400**	0.042	106.1	mg/L	159	Standard
Fe	57	446.7	11.3	**0.8216**	0.208	25.3	mg/L	195	Standard
Sc-1	45	41354.7	3.2				mg/L	39543	Standard
Cl	35	48993.8	3.0				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	7075.0	5.6				ug/L	1647	Standard
P	31	18566.4	1.9				ug/L	15231	Standard
S	34	2263.5	0.1				ug/L	1845	Standard
Sr	88	423.3	3.6				ug/L	70	Standard
C	12	123.3	40.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	104.0	29.5				mg/L	12	Standard
Ho-1	165	63.3	29.9				mg/L	12	Standard
Er	166	56.7	27.0				mg/L	20	Standard
I	127	48509.5	7.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.510	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.912	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.496
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.342
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 21:01:46
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77410.6	1.1				ug/L	81760	Standard
	Be	9	48694.9	4.0	**51.7876**	2.330	4.5	ug/L	17	Standard
	Al	27	7498260.2	2.7	**51.3685**	1.536	3.0	ug/L	1410	Standard
	Sc	45	39994.4	1.6				ug/L	39543	Standard
	Ti	47	24919.8	1.5	**100.1235**	0.955	1.0	ug/L	39	Standard
	V	51	352037.7	1.5	**50.4818**	0.410	0.8	ug/L	1415	Standard
	Cr	52	359056.3	3.2	**50.5608**	1.258	2.5	ug/L	6946	Standard
	Cr	53	45264.2	3.2	**51.2590**	1.232	2.4	ug/L	328	Standard
	Mn	55	341978.2	1.6	**52.6439**	0.559	1.1	ug/L	823	Standard
	Co	59	358967.4	0.9	**51.1022**	0.460	0.9	ug/L	252	Standard
	Ni	60	95904.1	3.3	**50.8527**	1.284	2.5	ug/L	192	Standard
	Cu	65	96846.7	3.1	**50.9133**	1.132	2.2	ug/L	141	Standard
	Zn	66	56366.4	2.4	**50.6359**	0.804	1.6	ug/L	491	Standard
>	Ge	72	514670.0	0.9				ug/L	515087	Standard
	As	75	56653.0	2.7	**50.4646**	0.946	1.9	ug/L	20	Standard
	Se	82	5738.6	2.7	**49.7611**	0.957	1.9	ug/L	15	Standard
	Se-1	77	3922.2	4.5	**51.3791**	2.097	4.1	ug/L	48	Standard
>	Ga	71	78.3	3.7				mg/L	90	Standard
	Rb	85	913.4	7.9				ug/L	23	Standard
	Y	89	449629.1	4.0				ug/L	448510	Standard
>	Rh	103	26.7	60.3				ug/L	15	Standard
	Mo	98	269192.0	0.5	**99.9193**	1.745	1.7	ug/L	11	Standard
	Ag	107	324356.7	1.6	**48.4664**	0.560	1.2	ug/L	134	Standard
	Cd	111	104800.0	2.8	**49.1868**	1.080	2.2	mg/L	7	Standard
	Cd	114	253765.7	3.7	**48.9997**	1.658	3.4	ug/L	16	Standard
>	In	115	609141.6	2.1				ug/L	611117	Standard
	Sn	118	292076.9	3.3	**49.4485**	0.824	1.7	ug/L	518	Standard
	Sb	123	232366.9	1.6	**49.3998**	0.394	0.8	ug/L	127	Standard
	Ba	135	100964.1	2.8	**49.0412**	1.097	2.2	ug/L	45	Standard
	Ce	140	81.7	25.5				ug/L	298	Standard
>	Tb	159	939122.1	2.3				ug/L	977942	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	411985.1	1.5	**50.6376**	0.301	0.6	ug/L	31	Standard
	Tl	205	371737.4	2.9	**52.6085**	0.609	1.2	ug/L	20	Standard
	Pb	206	267607.7	0.9	**51.2233**	0.555	1.1	ug/L	286	Standard
	Pb	207	243032.3	0.6	**51.5800**	0.780	1.5	ug/L	257	Standard
	Pb	208	974203.2	1.1	**53.4395**	0.502	0.9	ug/L	956	Standard
	U	238	359093.2	2.3	**51.8989**	0.179	0.3	ug/L	17	Standard
>	Bi	209	537912.3	2.0				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	3960.5	5.8	**5.1535**	0.239	4.6	mg/L	32	Standard
K	39	1450.1	5.1	**4.7011**	0.180	3.8	mg/L	30	Standard
Ca	43	56.7	22.2	**3.1676**	1.896	59.9	mg/L	48	Standard
Fe	54	5602.2	1.3	**4.8773**	0.145	3.0	mg/L	159	Standard
Fe	57	1671.8	3.1	**4.9554**	0.149	3.0	mg/L	195	Standard
Sc-1	45	39994.4	1.6				mg/L	39543	Standard
Cl	35	34924.3	5.3				ug/L	27642	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	3010.3	3.5				ug/L	1647	Standard
P	31	18342.8	3.8				ug/L	15231	Standard
S	34	2438.5	4.7				ug/L	1845	Standard
Sr	88	55.0	47.2				ug/L	70	Standard
C	12	96.7	23.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	23.2	100.3				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	3.3	173.2				mg/L	20	Standard
I	127	10668.8	10.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	103.575		
Al	27	102.737		
Sc	45			
Ti	47	100.123		
V	51	100.964		
Cr	52	101.122		
Cr	53			
Mn	55	105.288		
Co	59	102.204		
Ni	60	101.705		
Cu	65	101.827		
Zn	66	101.272		
Ge	72		99.919	
As	75	100.929		
Se	82	99.522		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	99.919		
Ag	107	96.933		
Cd	111	98.374		
Cd	114			
In	115			99.677
Sn	118	98.897		
Sb	123	98.800		
Ba	135	98.082		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.275		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.879		
U	238	103.798		
Bi	209			96.559
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 21:04:57
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76325.1	1.4				ug/L	81760	Standard
	Be	9	36.7	47.9	**0.0297**	0.018	61.9	ug/L	17	Standard
	Al	27	7433.8	52.1	**0.0370**	0.026	70.5	ug/L	1410	Standard
	Sc	45	39083.7	0.3				ug/L	39543	Standard
	Ti	47	29.0	21.5	**-0.0509**	0.024	47.8	ug/L	39	Standard
	V	51	1130.0	4.7	**-0.0473**	0.008	16.3	ug/L	1415	Standard
	Cr	52	6124.9	1.6	**-0.1950**	0.012	6.3	ug/L	6946	Standard
	Cr	53	786.7	2.0	**0.5367**	0.019	3.5	ug/L	328	Standard
	Mn	55	1151.0	22.6	**0.0255**	0.040	155.2	ug/L	823	Standard
	Co	59	234.7	8.8	**0.0014**	0.003	211.9	ug/L	252	Standard
	Ni	60	158.3	5.7	**-0.0226**	0.005	21.5	ug/L	192	Standard
	Cu	65	164.3	12.7	**-0.0061**	0.011	179.5	ug/L	141	Standard
	Zn	66	470.3	2.4	**-0.4072**	0.010	2.5	ug/L	491	Standard
>	**Ge**	72	525676.3	0.2				ug/L	515087	Standard
	As	75	-22.3	21.6	**0.0209**	0.004	19.9	ug/L	20	Standard
	Se	82	22.8	31.8	**0.0747**	0.062	82.4	ug/L	15	Standard
	Se-1	77	66.0	18.9	**0.1398**	0.164	117.4	ug/L	48	Standard
>	**Ga**	71	56.7	10.2				mg/L	90	Standard
	Rb	85	51.7	11.2				ug/L	23	Standard
	Y	89	445574.4	3.2				ug/L	448510	Standard
>	**Rh**	103	28.3	36.7				ug/L	15	Standard
	Mo	98	286.8	35.9	**0.0884**	0.038	42.5	ug/L	11	Standard
	Ag	107	119.3	19.2	**0.0018**	0.003	188.2	ug/L	134	Standard
	Cd	111	12.1	17.7	**0.0028**	0.001	35.0	mg/L	7	Standard
	Cd	114	42.6	30.2	**0.0034**	0.003	75.4	ug/L	16	Standard
>	**In**	115	602370.1	0.9				ug/L	611117	Standard
	Sn	118	773.4	17.1	**0.0309**	0.024	76.6	ug/L	518	Standard
	Sb	123	433.3	25.4	**0.0805**	0.024	30.2	ug/L	127	Standard
	Ba	135	290.7	43.2	**0.1174**	0.060	51.4	ug/L	45	Standard
	Ce	140	18.3	56.8				ug/L	298	Standard
>	**Tb**	159	950012.1	0.7				ug/L	977942	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	71.7	40.5	**0.0037**	0.004	95.1	ug/L	31	Standard
	Tl	205	85.0	56.1	**0.0094**	0.007	71.5	ug/L	20	Standard
	Pb	206	271.0	4.2	**-0.0136**	0.003	20.1	ug/L	286	Standard
	Pb	207	260.3	8.3	**-0.0047**	0.005	107.3	ug/L	257	Standard
	Pb	208	1029.7	7.7	**-0.0060**	0.005	82.3	ug/L	956	Standard
	U	238	47.7	42.8	**0.0037**	0.003	79.6	ug/L	17	Standard
>	**Bi**	209	558519.2	1.3				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	48.3	11.9	**0.0079**	0.008	95.2	mg/L	32	Standard
K	39	18.3	56.8	**-0.0788**	0.036	45.2	mg/L	30	Standard
Ca	43	31.7	24.1	**-0.4803**	1.172	244.0	mg/L	48	Standard
Fe	54	125.9	16.2	**-0.0218**	0.019	87.4	mg/L	159	Standard
Fe	57	238.3	12.6	**0.1894**	0.102	54.0	mg/L	195	Standard
> **Sc-1**	45	39083.7	0.3				mg/L	39543	Standard
Cl	35	33723.5	2.9				ug/L	27642	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	2386.9	5.5				ug/L	1647	Standard
P	31	18112.5	4.7				ug/L	15231	Standard
S	34	2391.9	4.0				ug/L	1845	Standard
Sr	88	68.3	29.6				ug/L	70	Standard
C	12	100.0	36.1				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	18.9	54.4				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	23.3	65.5				mg/L	20	Standard
I	127	7351.8	8.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.056	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.569	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.258	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606141001
Sample Date/Time: Tuesday, June 28, 2016 21:08:10
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79030.6	2.3				ug/L	81760	Standard
	Be	9	11.7	89.2	**0.0026**	0.011	425.8	ug/L	17	Standard
	Al	27	44776805.2	0.7	**300.5948**	6.187	2.1	ug/L	1410	Standard
	Sc	45	43343.6	2.1				ug/L	39543	Standard
	Ti	47	192.3	8.0	**0.6107**	0.056	9.2	ug/L	39	Standard
	V	51	4772.2	4.6	**0.4823**	0.029	6.1	ug/L	1415	Standard
	Cr	52	9840.2	0.5	**0.3614**	0.015	4.2	ug/L	6946	Standard
	Cr	53	1230.1	5.5	**1.0645**	0.072	6.7	ug/L	328	Standard
	Mn	55	4769620.0	0.5	**738.1503**	9.110	1.2	ug/L	823	Standard
	Co	59	9207.1	1.6	**1.2837**	0.028	2.2	ug/L	252	Standard
	Ni	60	5238.9	2.1	**2.6865**	0.062	2.3	ug/L	192	Standard
	Cu	65	718.7	4.1	**0.2886**	0.013	4.4	ug/L	141	Standard
	Zn	66	2924.3	0.9	**1.8496**	0.029	1.6	ug/L	491	Standard
>	**Ge**	72	513321.3	0.8				ug/L	515087	Standard
	As	75	4203.4	1.1	**3.7919**	0.050	1.3	ug/L	20	Standard
	Se	82	127.5	8.3	**0.9927**	0.098	9.9	ug/L	15	Standard
	Se-1	77	88.3	31.6	**0.4581**	0.375	81.9	ug/L	48	Standard
>	**Ga**	71	145.0	24.1				mg/L	90	Standard
	Rb	85	2930.3	3.3				ug/L	23	Standard
	Y	89	443412.2	1.4				ug/L	448510	Standard
>	**Rh**	103	140.0	15.6				ug/L	15	Standard
	Mo	98	1185.9	4.8	**0.4170**	0.022	5.4	ug/L	11	Standard
	Ag	107	98.0	15.7	**-0.0017**	0.002	128.2	ug/L	134	Standard
	Cd	111	19.9	13.4	**0.0063**	0.001	18.0	mg/L	7	Standard
	Cd	114	87.1	38.1	**0.0117**	0.006	53.6	ug/L	16	Standard
>	**In**	115	614969.4	1.2				ug/L	611117	Standard
	Sn	118	790.0	17.2	**0.0309**	0.023	75.8	ug/L	518	Standard
	Sb	123	280.0	20.4	**0.0462**	0.012	26.5	ug/L	127	Standard
	Ba	135	192282.6	1.4	**92.5375**	1.689	1.8	ug/L	45	Standard
	Ce	140	2006.8	4.1				ug/L	298	Standard
>	**Tb**	159	961897.3	2.5				ug/L	977942	Standard
	Ho	165	81.7	52.8				ug/L	12	Standard
	Tl	203	119.7	8.5	**0.0099**	0.002	15.4	ug/L	31	Standard
	Tl	205	98.3	15.5	**0.0116**	0.002	19.8	ug/L	20	Standard
	Pb	206	482.7	4.9	**0.0287**	0.002	8.4	ug/L	286	Standard
	Pb	207	424.0	4.8	**0.0319**	0.005	14.5	ug/L	257	Standard
	Pb	208	1694.0	1.8	**0.0325**	0.004	11.5	ug/L	956	Standard
	U	238	15563.7	1.1	**2.2446**	0.071	3.2	ug/L	17	Standard
>	**Bi**	209	538649.3	2.3				ug/L	557080	Standard

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Na	23	16.7	75.5	**98.5166**	75.230	76.4	mg/L	0	Standard
Mg	24	9014.3	3.2	**10.8981**	0.573	5.3	mg/L	32	Standard
K	39	116.7	19.3	**0.2184**	0.072	32.8	mg/L	30	Standard
Ca	43	525.0	6.7	**67.4527**	5.707	8.5	mg/L	48	Standard
Fe	54	1820.8	2.9	**1.3668**	0.058	4.2	mg/L	159	Standard
Fe	57	973.4	7.5	**2.3749**	0.248	10.4	mg/L	195	Standard
Sc-1	45	43343.6	2.1				mg/L	39543	Standard
Cl	35	38331.8	2.6				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	27825.5	3.4				ug/L	1647	Standard
P	31	23363.0	0.7				ug/L	15231	Standard
S	34	2495.2	2.5				ug/L	1845	Standard
Sr	88	533.3	5.7				ug/L	70	Standard
C	12	353.3	5.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	83.6	23.1				mg/L	12	Standard
Ho-1	165	81.7	52.8				mg/L	12	Standard
Er	166	63.3	50.8				mg/L	20	Standard
I	127	532195.8	11.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		96.662	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.657	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.630
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.691
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606141201
Sample Date/Time: Tuesday, June 28, 2016 21:11:22
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79318.7	0.7				ug/L	81760	Standard
	Be	9	16.7	45.8	**0.0076**	0.008	106.2	ug/L	17	Standard
	Al	27	14913651.7	1.4	**99.7256**	2.143	2.1	ug/L	1410	Standard
	Sc	45	40395.5	2.6				ug/L	39543	Standard
	Ti	47	500.3	4.7	**1.8979**	0.055	2.9	ug/L	39	Standard
	V	51	36055.9	2.6	**5.1139**	0.040	0.8	ug/L	1415	Standard
	Cr	52	13456.3	2.4	**0.9269**	0.086	9.3	ug/L	6946	Standard
	Cr	53	9844.9	11.5	**11.1480**	1.101	9.9	ug/L	328	Standard
	Mn	55	27340.3	1.0	**4.1779**	0.048	1.1	ug/L	823	Standard
	Co	59	924.7	1.8	**0.1037**	0.005	4.9	ug/L	252	Standard
	Ni	60	2165.5	2.9	**1.0744**	0.025	2.4	ug/L	192	Standard
	Cu	65	1308.7	4.1	**0.6156**	0.023	3.7	ug/L	141	Standard
	Zn	66	7243.7	2.3	**5.9517**	0.120	2.0	ug/L	491	Standard
>	**Ge**	72	502171.0	2.0				ug/L	515087	Standard
	As	75	1256.7	3.1	**1.1867**	0.017	1.5	ug/L	20	Standard
	Se	82	736.7	2.2	**6.4443**	0.037	0.6	ug/L	15	Standard
	Se-1	77	926.0	3.3	**11.8887**	0.285	2.4	ug/L	48	Standard
>	**Ga**	71	176.7	6.5				mg/L	90	Standard
	Rb	85	2561.9	8.5				ug/L	23	Standard
	Y	89	439495.0	0.9				ug/L	448510	Standard
>	**Rh**	103	90.0	38.9				ug/L	15	Standard
	Mo	98	758.7	2.1	**0.2744**	0.005	1.7	ug/L	11	Standard
	Ag	107	112.7	8.8	**0.0013**	0.001	110.1	ug/L	134	Standard
	Cd	111	18.4	13.8	**0.0061**	0.001	20.0	mg/L	7	Standard
	Cd	114	55.1	29.0	**0.0062**	0.003	52.0	ug/L	16	Standard
>	**In**	115	584464.7	0.6				ug/L	611117	Standard
	Sn	118	741.7	7.5	**0.0292**	0.010	34.2	ug/L	518	Standard
	Sb	123	322.5	19.3	**0.0586**	0.014	23.6	ug/L	127	Standard
	Ba	135	23648.1	1.5	**11.9524**	0.216	1.8	ug/L	45	Standard
	Ce	140	4514.0	4.6				ug/L	298	Standard
>	**Tb**	159	922323.8	0.6				ug/L	977942	Standard
	Ho	165	91.7	12.6				ug/L	12	Standard
	Tl	203	130.7	10.2	**0.0124**	0.002	15.2	ug/L	31	Standard
	Tl	205	113.3	46.8	**0.0149**	0.008	53.9	ug/L	20	Standard
	Pb	206	585.3	3.6	**0.0562**	0.004	7.1	ug/L	286	Standard
	Pb	207	533.0	4.2	**0.0629**	0.005	7.8	ug/L	257	Standard
	Pb	208	2107.4	5.4	**0.0632**	0.008	12.1	ug/L	956	Standard
	U	238	32845.9	1.3	**5.0682**	0.050	1.0	ug/L	17	Standard
>	**Bi**	209	503585.9	0.8				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	118021.2	0.8	**153.7808**	2.811	1.8	mg/L	32	Standard
K	39	101.7	17.3	**0.1948**	0.058	29.7	mg/L	30	Standard
Ca	43	335.0	15.7	**44.3505**	6.519	14.7	mg/L	48	Standard
Fe	54	237.2	9.3	**0.0729**	0.016	22.5	mg/L	159	Standard
Fe	57	498.3	12.0	**1.0226**	0.198	19.4	mg/L	195	Standard
> **Sc-1**	45	40395.5	2.6				mg/L	39543	Standard
Cl	35	43781.2	1.0				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	58978.2	6.0				ug/L	1647	Standard
P	31	22017.7	1.7				ug/L	15231	Standard
S	34	2351.8	1.8				ug/L	1845	Standard
Sr	88	240.0	11.0				ug/L	70	Standard
C	12	356.7	26.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	169.3	7.0				mg/L	12	Standard
Ho-1	165	91.7	12.6				mg/L	12	Standard
Er	166	83.3	13.9				mg/L	20	Standard
I	127	31387.7	30.0				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		97.014	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.492	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.639
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.397
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606141202
Sample Date/Time: Tuesday, June 28, 2016 21:14:33
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83650.3	1.0				ug/L	81760	Standard
	Be	9	21.7	53.3	**0.0115**	0.011	97.0	ug/L	17	Standard
	Al	27	38632215.5	2.3	**244.9578**	5.868	2.4	ug/L	1410	Standard
	Sc	45	43420.5	1.6				ug/L	39543	Standard
	Ti	47	186.0	10.8	**0.5354**	0.077	14.4	ug/L	39	Standard
	V	51	26880.1	4.2	**3.4128**	0.061	1.8	ug/L	1415	Standard
	Cr	52	10918.6	2.1	**0.4115**	0.017	4.1	ug/L	6946	Standard
	Cr	53	7481.8	4.1	**7.6462**	0.526	6.9	ug/L	328	Standard
	Mn	55	33664.4	1.6	**4.7149**	0.144	3.1	ug/L	823	Standard
	Co	59	762.7	5.1	**0.0704**	0.007	10.1	ug/L	252	Standard
	Ni	60	2375.2	1.6	**1.0759**	0.011	1.0	ug/L	192	Standard
	Cu	65	711.7	7.3	**0.2600**	0.027	10.4	ug/L	141	Standard
	Zn	66	3134.0	1.7	**1.8510**	0.112	6.1	ug/L	491	Standard
>	**Ge**	72	550214.2	2.6				ug/L	515087	Standard
	As	75	794.1	8.2	**0.7027**	0.072	10.2	ug/L	20	Standard
	Se	82	234.2	3.9	**1.7863**	0.091	5.1	ug/L	15	Standard
	Se-1	77	482.0	4.4	**5.2700**	0.176	3.3	ug/L	48	Standard
>	**Ga**	71	80.0	16.5				mg/L	90	Standard
	Rb	85	1268.4	2.0				ug/L	23	Standard
	Y	89	467702.3	2.0				ug/L	448510	Standard
>	**Rh**	103	125.0	4.0				ug/L	15	Standard
	Mo	98	395.0	8.4	**0.1254**	0.010	8.1	ug/L	11	Standard
	Ag	107	91.7	6.0	**-0.0027**	0.001	31.4	ug/L	134	Standard
	Cd	111	17.7	18.1	**0.0053**	0.002	30.5	mg/L	7	Standard
	Cd	114	70.4	32.3	**0.0084**	0.004	47.5	ug/L	16	Standard
>	**In**	115	618005.7	2.3				ug/L	611117	Standard
	Sn	118	668.3	14.3	**0.0101**	0.018	180.4	ug/L	518	Standard
	Sb	123	172.5	13.4	**0.0233**	0.005	22.3	ug/L	127	Standard
	Ba	135	80657.5	2.0	**38.6136**	0.662	1.7	ug/L	45	Standard
	Ce	140	231.7	23.7				ug/L	298	Standard
>	**Tb**	159	976289.5	2.7				ug/L	977942	Standard
	Ho	165	20.0	50.0				ug/L	12	Standard
	Tl	203	130.7	0.4	**0.0112**	0.000	4.3	ug/L	31	Standard
	Tl	205	103.3	15.6	**0.0123**	0.003	20.6	ug/L	20	Standard
	Pb	206	343.3	3.7	**0.0019**	0.004	206.6	ug/L	286	Standard
	Pb	207	309.0	3.8	**0.0073**	0.004	55.0	ug/L	257	Standard
	Pb	208	1267.4	6.3	**0.0088**	0.006	66.3	ug/L	956	Standard
	U	238	23437.4	1.1	**3.3661**	0.068	2.0	ug/L	17	Standard
>	**Bi**	209	541066.6	2.7				ug/L	557080	Standard

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Na	23	10.0	100.0	**57.8886**	57.492	99.3	mg/L	0	Standard
Mg	24	42571.4	0.8	**51.5637**	1.207	2.3	mg/L	32	Standard
K	39	90.0	30.9	**0.1357**	0.087	64.2	mg/L	30	Standard
Ca	43	438.3	26.2	**55.1842**	15.190	27.5	mg/L	48	Standard
Fe	54	177.1	8.1	**0.0090**	0.012	139.0	mg/L	159	Standard
Fe	57	461.7	5.0	**0.7949**	0.071	8.9	mg/L	195	Standard
> **Sc-1**	45	43420.5	1.6				mg/L	39543	Standard
Cl	35	42170.0	2.1				ug/L	27642	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	34382.4	5.6				ug/L	1647	Standard
P	31	23767.0	4.2				ug/L	15231	Standard
S	34	2608.6	3.1				ug/L	1845	Standard
Sr	88	431.7	5.4				ug/L	70	Standard
C	12	273.3	10.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	32.2	46.2				mg/L	12	Standard
Ho-1	165	20.0	50.0				mg/L	12	Standard
Er	166	23.3	89.2				mg/L	20	Standard
I	127	35633.6	4.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.312	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.820	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.127	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.125	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606141301
Sample Date/Time: Tuesday, June 28, 2016 21:17:45
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79916.9	1.5				ug/L	81760	Standard
	Be	9	28.3	27.0	**0.0194**	0.007	38.6	ug/L	17	Standard
	Al	27	38023288.5	2.1	**252.3385**	1.857	0.7	ug/L	1410	Standard
	Sc	45	42571.5	4.4				ug/L	39543	Standard
	Ti	47	396.7	7.8	**1.4239**	0.097	6.8	ug/L	39	Standard
	V	51	6119.0	6.6	**0.6719**	0.073	10.9	ug/L	1415	Standard
	Cr	52	11441.3	0.3	**0.5818**	0.031	5.4	ug/L	6946	Standard
	Cr	53	9654.8	11.4	**10.6403**	1.449	13.6	ug/L	328	Standard
	Mn	55	1634887.0	2.2	**251.2478**	2.194	0.9	ug/L	823	Standard
	Co	59	3215.3	1.8	**0.4249**	0.007	1.5	ug/L	252	Standard
	Ni	60	4170.9	0.8	**2.1033**	0.039	1.9	ug/L	192	Standard
	Cu	65	1200.4	3.8	**0.5391**	0.026	4.9	ug/L	141	Standard
	Zn	66	3234.7	1.4	**2.1147**	0.035	1.7	ug/L	491	Standard
>	**Ge**	72	516685.2	1.8				ug/L	515087	Standard
	As	75	16545.6	0.8	**14.7132**	0.205	1.4	ug/L	20	Standard
	Se	82	192.8	5.0	**1.5497**	0.062	4.0	ug/L	15	Standard
	Se-1	77	648.0	6.7	**7.8638**	0.716	9.1	ug/L	48	Standard
>	**Ga**	71	125.0	18.3				mg/L	90	Standard
	Rb	85	1723.4	7.4				ug/L	23	Standard
	Y	89	425819.3	3.1				ug/L	448510	Standard
>	**Rh**	103	118.3	17.1				ug/L	15	Standard
	Mo	98	4050.2	1.8	**1.5330**	0.030	2.0	ug/L	11	Standard
	Ag	107	94.7	12.2	**-0.0016**	0.002	127.1	ug/L	134	Standard
	Cd	111	117.7	9.5	**0.0542**	0.007	12.3	mg/L	7	Standard
	Cd	114	297.9	4.3	**0.0546**	0.005	8.5	ug/L	16	Standard
>	**In**	115	590223.7	3.4				ug/L	611117	Standard
	Sn	118	1010.0	10.9	**0.0746**	0.013	17.7	ug/L	518	Standard
	Sb	123	1963.6	1.5	**0.4183**	0.013	3.0	ug/L	127	Standard
	Ba	135	194231.1	1.1	**97.4394**	2.308	2.4	ug/L	45	Standard
	Ce	140	3857.2	6.5				ug/L	298	Standard
>	**Tb**	159	963155.2	4.7				ug/L	977942	Standard
	Ho	165	81.7	25.5				ug/L	12	Standard
	Tl	203	50.3	12.9	**0.0015**	0.001	66.6	ug/L	31	Standard
	Tl	205	46.7	32.7	**0.0044**	0.002	52.1	ug/L	20	Standard
	Pb	206	2455.5	1.0	**0.4110**	0.018	4.4	ug/L	286	Standard
	Pb	207	2061.1	1.1	**0.3836**	0.016	4.1	ug/L	257	Standard
	Pb	208	8494.6	1.5	**0.4098**	0.011	2.7	ug/L	956	Standard
	U	238	9671.1	1.3	**1.4065**	0.038	2.7	ug/L	17	Standard
>	**Bi**	209	533828.4	3.8				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	104970.9	3.0	**129.8006**	2.883	2.2	mg/L	32	Standard
K	39	241.7	3.2	**0.6187**	0.058	9.4	mg/L	30	Standard
Ca	43	386.7	15.6	**49.0389**	6.282	12.8	mg/L	48	Standard
Fe	54	7303.8	3.7	**6.0094**	0.321	5.3	mg/L	159	Standard
Fe	57	2221.8	6.0	**6.3400**	0.172	2.7	mg/L	195	Standard
> **Sc-1**	45	42571.5	4.4				mg/L	39543	Standard
Cl	35	37833.2	3.5				ug/L	27642	Standard
Kr	83	4.7	44.6				ug/L	2	Standard
Br	81	42533.0	4.1				ug/L	1647	Standard
P	31	23852.1	1.0				ug/L	15231	Standard
S	34	2610.2	4.2				ug/L	1845	Standard
Sr	88	403.3	5.0				ug/L	70	Standard
C	12	1170.0	10.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	0	Standard
Dy	164	115.7	9.7				mg/L	12	Standard
Ho-1	165	81.7	25.5				mg/L	12	Standard
Er	166	90.0	29.4				mg/L	20	Standard
I	127	137002.4	10.0				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		97.746	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.310	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.581
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.826
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606141601
Sample Date/Time: Tuesday, June 28, 2016 21:20:56
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92372.4	1.4				ug/L	81760	Standard
	Be	9	16.7	45.8	**0.0051**	0.007	132.4	ug/L	17	Standard
	Al	27	74980741.0	2.1	**430.5985**	11.194	2.6	ug/L	1410	Standard
	Sc	45	42273.9	1.4				ug/L	39543	Standard
	Ti	47	206.0	5.5	**0.6860**	0.049	7.2	ug/L	39	Standard
	V	51	76665.0	2.1	**11.1242**	0.138	1.2	ug/L	1415	Standard
	Cr	52	20589.0	2.5	**1.9813**	0.052	2.6	ug/L	6946	Standard
	Cr	53	16427.3	7.3	**18.8858**	1.445	7.7	ug/L	328	Standard
	Mn	55	4403.6	9.9	**0.5498**	0.075	13.7	ug/L	823	Standard
	Co	59	1375.4	0.7	**0.1698**	0.002	1.0	ug/L	252	Standard
	Ni	60	4849.1	3.4	**2.5400**	0.080	3.2	ug/L	192	Standard
	Cu	65	2467.2	2.0	**1.2432**	0.032	2.6	ug/L	141	Standard
	Zn	66	3268.7	3.6	**2.2359**	0.099	4.4	ug/L	491	Standard
>	**Ge**	72	501391.0	1.2				ug/L	515087	Standard
	As	75	1723.8	1.9	**1.6153**	0.015	1.0	ug/L	20	Standard
	Se	82	1818.6	2.0	**16.1069**	0.131	0.8	ug/L	15	Standard
	Se-1	77	2238.8	2.0	**29.8099**	0.421	1.4	ug/L	48	Standard
>	**Ga**	71	70.0	35.7				mg/L	90	Standard
	Rb	85	6024.5	1.3				ug/L	23	Standard
	Y	89	451516.3	2.4				ug/L	448510	Standard
>	**Rh**	103	580.0	3.0				ug/L	15	Standard
	Mo	98	4894.1	3.5	**1.7784**	0.027	1.5	ug/L	11	Standard
	Ag	107	107.3	12.0	**-0.0004**	0.002	428.3	ug/L	134	Standard
	Cd	111	61.6	14.8	**0.0258**	0.005	19.6	mg/L	7	Standard
	Cd	114	169.0	6.0	**0.0274**	0.002	5.8	ug/L	16	Standard
>	**In**	115	615602.8	3.1				ug/L	611117	Standard
	Sn	118	783.4	1.3	**0.0296**	0.003	11.3	ug/L	518	Standard
	Sb	123	203.3	3.5	**0.0299**	0.001	4.8	ug/L	127	Standard
	Ba	135	8199.6	0.5	**3.9202**	0.126	3.2	ug/L	45	Standard
	Ce	140	360.0	9.7				ug/L	298	Standard
>	**Tb**	159	979932.9	1.3				ug/L	977942	Standard
	Ho	165	28.3	20.4				ug/L	12	Standard
	Tl	203	89.3	17.1	**0.0065**	0.002	28.6	ug/L	31	Standard
	Tl	205	80.0	25.0	**0.0093**	0.003	29.8	ug/L	20	Standard
	Pb	206	345.7	2.0	**0.0043**	0.002	47.1	ug/L	286	Standard
	Pb	207	309.7	5.2	**0.0094**	0.004	39.7	ug/L	257	Standard
	Pb	208	1290.0	0.3	**0.0121**	0.001	10.3	ug/L	956	Standard
	U	238	27903.3	2.3	**4.1288**	0.057	1.4	ug/L	17	Standard
>	**Bi**	209	525055.5	1.5				ug/L	557080	Standard

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Na	23	21.7	48.0	**130.4724**	63.085	48.4	mg/L	0	Standard
Mg	24	101248.9	2.2	**126.0185**	2.508	2.0	mg/L	32	Standard
K	39	313.3	18.1	**0.8505**	0.192	22.6	mg/L	30	Standard
Ca	43	933.4	7.3	**127.1886**	7.858	6.2	mg/L	48	Standard
Fe	54	133.4	13.8	**-0.0242**	0.015	63.9	mg/L	159	Standard
Fe	57	858.4	5.3	**2.0873**	0.173	8.3	mg/L	195	Standard
> **Sc-1**	45	42273.9	1.4				mg/L	39543	Standard
Cl	35	65275.0	2.4				ug/L	27642	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	32608.5	7.2				ug/L	1647	Standard
P	31	23807.1	4.7				ug/L	15231	Standard
S	34	2403.5	5.0				ug/L	1845	Standard
Sr	88	2410.2	4.8				ug/L	70	Standard
C	12	193.3	34.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	21.1	69.3				mg/L	12	Standard
Ho-1	165	28.3	20.4				mg/L	12	Standard
Er	166	46.7	53.9				mg/L	20	Standard
I	127	42467.9	5.2				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		112.980	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.341	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.734	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	94.251	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606141602
Sample Date/Time: Tuesday, June 28, 2016 21:24:08
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88434.1	2.2				ug/L	81760	Standard
	Be	9	13.3	57.3	**0.0028**	0.007	262.6	ug/L	17	Standard
	Al	27	52144460.9	0.4	**312.8622**	8.112	2.6	ug/L	1410	Standard
	Sc	45	37740.3	1.5				ug/L	39543	Standard
	Ti	47	227.7	10.0	**0.8076**	0.101	12.5	ug/L	39	Standard
	V	51	38489.9	1.8	**5.6761**	0.140	2.5	ug/L	1415	Standard
	Cr	52	19640.1	1.0	**1.9398**	0.010	0.5	ug/L	6946	Standard
	Cr	53	17715.4	1.9	**21.0942**	0.301	1.4	ug/L	328	Standard
	Mn	55	4373.0	6.9	**0.5679**	0.048	8.4	ug/L	823	Standard
	Co	59	870.4	1.6	**0.1002**	0.001	1.2	ug/L	252	Standard
	Ni	60	2666.6	2.1	**1.3989**	0.023	1.6	ug/L	192	Standard
	Cu	65	1074.7	4.8	**0.5100**	0.030	5.9	ug/L	141	Standard
	Zn	66	2890.6	2.0	**1.9736**	0.048	2.4	ug/L	491	Standard
>	**Ge**	72	484924.7	0.7				ug/L	515087	Standard
	As	75	2458.8	5.8	**2.3632**	0.133	5.6	ug/L	20	Standard
	Se	82	892.7	6.7	**8.1181**	0.571	7.0	ug/L	15	Standard
	Se-1	77	1757.1	0.5	**24.0557**	0.109	0.5	ug/L	48	Standard
>	**Ga**	71	76.7	13.6				mg/L	90	Standard
	Rb	85	4900.8	2.1				ug/L	23	Standard
	Y	89	417881.5	5.4				ug/L	448510	Standard
>	**Rh**	103	255.0	18.7				ug/L	15	Standard
	Mo	98	772.2	2.1	**0.2950**	0.006	2.2	ug/L	11	Standard
	Ag	107	68.7	21.6	**-0.0049**	0.003	53.5	ug/L	134	Standard
	Cd	111	15.0	33.1	**0.0048**	0.003	56.9	mg/L	7	Standard
	Cd	114	24.6	131.5	**0.0004**	0.007	1725.2	ug/L	16	Standard
>	**In**	115	555990.7	3.0				ug/L	611117	Standard
	Sn	118	696.7	10.1	**0.0278**	0.015	54.6	ug/L	518	Standard
	Sb	123	106.5	16.8	**0.0120**	0.005	38.5	ug/L	127	Standard
	Ba	135	12524.8	3.0	**6.6489**	0.344	5.2	ug/L	45	Standard
	Ce	140	808.4	5.3				ug/L	298	Standard
>	**Tb**	159	897664.5	1.7				ug/L	977942	Standard
	Ho	165	23.3	68.9				ug/L	12	Standard
	Tl	203	89.0	17.6	**0.0071**	0.002	31.3	ug/L	31	Standard
	Tl	205	90.0	0.0	**0.0115**	0.000	1.5	ug/L	20	Standard
	Pb	206	365.7	4.1	**0.0124**	0.004	32.4	ug/L	286	Standard
	Pb	207	325.3	1.4	**0.0169**	0.000	0.6	ug/L	257	Standard
	Pb	208	1289.4	1.1	**0.0163**	0.000	2.7	ug/L	956	Standard
	U	238	25222.0	1.6	**3.9519**	0.013	0.3	ug/L	17	Standard
>	**Bi**	209	495840.1	1.2				ug/L	557080	Standard

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Na	23	3.3	86.6	**22.3577**	19.364	86.6	mg/L	0	Standard
Mg	24	65916.4	2.1	**91.8901**	2.205	2.4	mg/L	32	Standard
K	39	221.7	4.7	**0.6432**	0.031	4.9	mg/L	30	Standard
Ca	43	530.0	9.4	**79.0853**	9.116	11.5	mg/L	48	Standard
Fe	54	138.0	10.0	**-0.0062**	0.012	195.9	mg/L	159	Standard
Fe	57	510.0	5.1	**1.1793**	0.086	7.3	mg/L	195	Standard
> **Sc-1**	45	37740.3	1.5				mg/L	39543	Standard
Cl	35	44130.9	1.6				ug/L	27642	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	28483.4	4.0				ug/L	1647	Standard
P	31	20263.6	4.9				ug/L	15231	Standard
S	34	2148.5	1.6				ug/L	1845	Standard
Sr	88	1128.4	6.6				ug/L	70	Standard
C	12	163.3	25.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	36.0	33.6				mg/L	12	Standard
Ho-1	165	23.3	68.9				mg/L	12	Standard
Er	166	13.3	114.6				mg/L	20	Standard
I	127	19656.1	3.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.163	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.144	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.979
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		89.007
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606142101
Sample Date/Time: Tuesday, June 28, 2016 21:27:19
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86072.2	1.7				ug/L	81760	Standard
	Be	9	31.7	65.7	**0.0204**	0.019	95.2	ug/L	17	Standard
	Al	27	37149346.8	0.4	**228.9677**	4.521	2.0	ug/L	1410	Standard
	Sc	45	40693.0	3.6				ug/L	39543	Standard
	Ti	47	211.7	4.5	**0.7055**	0.031	4.4	ug/L	39	Standard
	V	51	19470.4	0.9	**2.6593**	0.027	1.0	ug/L	1415	Standard
	Cr	52	9577.4	0.5	**0.3506**	0.020	5.8	ug/L	6946	Standard
	Cr	53	13504.4	2.9	**15.3965**	0.370	2.4	ug/L	328	Standard
	Mn	55	2482687.2	1.9	**391.6677**	8.445	2.2	ug/L	823	Standard
	Co	59	1010.4	4.1	**0.1158**	0.006	5.6	ug/L	252	Standard
	Ni	60	2375.2	1.3	**1.1855**	0.029	2.4	ug/L	192	Standard
	Cu	65	1289.7	5.2	**0.6034**	0.030	5.0	ug/L	141	Standard
	Zn	66	3124.3	3.5	**2.0882**	0.083	4.0	ug/L	491	Standard
>	**Ge**	72	503476.5	0.9				ug/L	515087	Standard
	As	75	9860.1	0.9	**9.0129**	0.111	1.2	ug/L	20	Standard
	Se	82	502.3	2.2	**4.3447**	0.140	3.2	ug/L	15	Standard
	Se-1	77	853.4	2.0	**10.8689**	0.134	1.2	ug/L	48	Standard
>	**Ga**	71	115.0	32.8				mg/L	90	Standard
	Rb	85	655.0	2.3				ug/L	23	Standard
	Y	89	413248.4	1.0				ug/L	448510	Standard
>	**Rh**	103	123.3	18.3				ug/L	15	Standard
	Mo	98	77.7	17.1	**0.0125**	0.006	46.7	ug/L	11	Standard
	Ag	107	81.3	4.3	**-0.0029**	0.001	26.3	ug/L	134	Standard
	Cd	111	15.2	10.0	**0.0049**	0.001	14.6	mg/L	7	Standard
	Cd	114	38.3	10.8	**0.0032**	0.001	30.4	ug/L	16	Standard
>	**In**	115	557968.8	1.5				ug/L	611117	Standard
	Sn	118	745.0	12.3	**0.0359**	0.015	41.7	ug/L	518	Standard
	Sb	123	991.0	1.5	**0.2172**	0.002	1.1	ug/L	127	Standard
	Ba	135	220850.7	1.1	**117.1448**	0.521	0.4	ug/L	45	Standard
	Ce	140	1566.7	2.4				ug/L	298	Standard
>	**Tb**	159	920767.6	2.2				ug/L	977942	Standard
	Ho	165	58.3	38.7				ug/L	12	Standard
	Tl	203	55.7	23.2	**0.0023**	0.002	74.7	ug/L	31	Standard
	Tl	205	45.0	38.5	**0.0043**	0.003	60.7	ug/L	20	Standard
	Pb	206	169197.9	0.8	**33.4745**	0.521	1.6	ug/L	286	Standard
	Pb	207	142071.0	0.5	**31.1598**	0.218	0.7	ug/L	257	Standard
	Pb	208	579992.3	2.5	**32.8772**	0.549	1.7	ug/L	956	Standard
	U	238	648.7	2.7	**0.0940**	0.004	4.0	ug/L	17	Standard
>	**Bi**	209	520066.6	1.1				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.0185**	17.344	173.1	mg/L	0	Standard
Mg	24	83474.3	1.3	**108.0258**	4.532	4.2	mg/L	32	Standard
K	39	53.3	28.6	**0.0335**	0.050	147.9	mg/L	30	Standard
Ca	43	435.0	11.3	**58.7409**	4.908	8.4	mg/L	48	Standard
Fe	54	1115.5	8.0	**0.8464**	0.111	13.2	mg/L	159	Standard
Fe	57	721.7	4.0	**1.7451**	0.132	7.5	mg/L	195	Standard
Sc-1	45	40693.0	3.6				mg/L	39543	Standard
Cl	35	37196.3	1.1				ug/L	27642	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	117004.1	4.8				ug/L	1647	Standard
P	31	21849.1	2.8				ug/L	15231	Standard
S	34	2463.5	4.3				ug/L	1845	Standard
Sr	88	470.0	11.8				ug/L	70	Standard
C	12	400.0	4.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	47.0	20.8				mg/L	12	Standard
Ho-1	165	58.3	38.7				mg/L	12	Standard
Er	166	63.3	9.1				mg/L	20	Standard
I	127	290371.1	9.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.274	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.746	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	91.303
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.356
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 21:30:32
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80064.5	3.2				ug/L	81760	Standard
	Be	9	49945.6	4.7	**51.3339**	1.054	2.1	ug/L	17	Standard
	Al	27	7446953.3	1.3	**49.3416**	1.021	2.1	ug/L	1410	Standard
	Sc	45	39994.4	3.1				ug/L	39543	Standard
	Ti	47	24563.6	1.8	**103.4611**	0.538	0.5	ug/L	39	Standard
	V	51	332459.7	1.4	**49.9760**	0.258	0.5	ug/L	1415	Standard
	Cr	52	346732.4	1.5	**51.2013**	0.219	0.4	ug/L	6946	Standard
	Cr	53	44092.4	3.1	**52.3486**	0.902	1.7	ug/L	328	Standard
	Mn	55	316773.7	1.0	**51.1225**	0.963	1.9	ug/L	823	Standard
	Co	59	338255.6	0.9	**50.4803**	0.452	0.9	ug/L	252	Standard
	Ni	60	91110.2	2.0	**50.6466**	0.186	0.4	ug/L	192	Standard
	Cu	65	91902.3	2.1	**50.6488**	0.160	0.3	ug/L	141	Standard
	Zn	66	53757.9	1.1	**50.6325**	0.663	1.3	ug/L	491	Standard
>	**Ge**	72	490984.9	1.8				ug/L	515087	Standard
	As	75	53512.8	1.1	**49.9767**	0.363	0.7	ug/L	20	Standard
	Se	82	5576.6	0.4	**50.7061**	0.891	1.8	ug/L	15	Standard
	Se-1	77	3693.5	2.8	**50.7124**	1.021	2.0	ug/L	48	Standard
>	**Ga**	71	63.3	29.9				mg/L	90	Standard
	Rb	85	831.7	5.0				ug/L	23	Standard
	Y	89	421530.5	1.2				ug/L	448510	Standard
>	**Rh**	103	28.3	44.4				ug/L	15	Standard
	Mo	98	254944.7	0.2	**97.5527**	0.365	0.4	ug/L	11	Standard
	Ag	107	312741.7	1.2	**48.1812**	0.687	1.4	ug/L	134	Standard
	Cd	111	100992.4	1.1	**48.8720**	0.473	1.0	mg/L	7	Standard
	Cd	114	246539.5	0.8	**49.0819**	0.317	0.6	ug/L	16	Standard
>	**In**	115	590755.4	0.3				ug/L	611117	Standard
	Sn	118	285297.8	0.9	**49.8102**	0.309	0.6	ug/L	518	Standard
	Sb	123	223087.7	1.5	**48.8998**	0.798	1.6	ug/L	127	Standard
	Ba	135	97286.0	1.5	**48.7240**	0.868	1.8	ug/L	45	Standard
	Ce	140	78.3	36.9				ug/L	298	Standard
>	**Tb**	159	940662.6	1.7				ug/L	977942	Standard
	Ho	165	20.0	25.0				ug/L	12	Standard
	Tl	203	402817.7	0.9	**49.5894**	0.553	1.1	ug/L	31	Standard
	Tl	205	361515.5	0.7	**51.2534**	0.688	1.3	ug/L	20	Standard
	Pb	206	256836.7	1.0	**49.2334**	0.527	1.1	ug/L	286	Standard
	Pb	207	233772.2	1.4	**49.6819**	0.304	0.6	ug/L	257	Standard
	Pb	208	939106.3	0.8	**51.5898**	0.228	0.4	ug/L	956	Standard
	U	238	351652.3	0.3	**50.9098**	0.427	0.8	ug/L	17	Standard
>	**Bi**	209	537054.5	1.2				ug/L	557080	Standard

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Na	23	5.0	173.2	**32.8471**	56.884	173.2	mg/L	0	Standard
Mg	24	4075.5	3.9	**5.3128**	0.340	6.4	mg/L	32	Standard
K	39	1373.4	2.2	**4.4475**	0.053	1.2	mg/L	30	Standard
Ca	43	71.7	22.4	**5.4062**	2.324	43.0	mg/L	48	Standard
Fe	54	5589.4	3.1	**4.8672**	0.205	4.2	mg/L	159	Standard
Fe	57	1635.1	4.9	**4.8331**	0.203	4.2	mg/L	195	Standard
> **Sc-1**	45	39994.4	3.1				mg/L	39543	Standard
Cl	35	35754.8	4.0				ug/L	27642	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	3610.5	34.2				ug/L	1647	Standard
P	31	19324.0	4.2				ug/L	15231	Standard
S	34	2706.9	5.1				ug/L	1845	Standard
Sr	88	63.3	27.7				ug/L	70	Standard
C	12	143.3	42.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	5.9	100.8				mg/L	12	Standard
Ho-1	165	20.0	25.0				mg/L	12	Standard
Er	166	16.7	34.6				mg/L	20	Standard
I	127	9711.8	44.1				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	102.668		
	Al	27	98.683		
	Sc	45			
	Ti	47	103.461		
	V	51	99.952		
	Cr	52	102.403		
	Cr	53			
	Mn	55	102.245		
	Co	59	100.961		
	Ni	60	101.293		
	Cu	65	101.298		
	Zn	66	101.265		
>	Ge	72		95.321	
	As	75	99.953		
	Se	82	101.412		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	97.553		
Ag	107	96.362		
Cd	111	97.744		
Cd	114			
> In	115			96.668
Sn	118	99.620		
Sb	123	97.800		
Ba	135	97.448		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.179		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.180		
U	238	101.820		
> Bi	209			96.405
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 21:33:43
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77306.8	2.0				ug/L	81760	Standard
	Be	9	21.7	26.6	**0.0134**	0.006	48.3	ug/L	17	Standard
	Al	27	7303.5	27.4	**0.0355**	0.013	36.3	ug/L	1410	Standard
	Sc	45	38198.1	0.8				ug/L	39543	Standard
	Ti	47	25.7	25.3	**-0.0566**	0.027	47.6	ug/L	39	Standard
	V	51	1109.0	7.8	**-0.0386**	0.015	38.5	ug/L	1415	Standard
	Cr	52	6097.9	0.7	**-0.1350**	0.015	10.8	ug/L	6946	Standard
	Cr	53	763.4	6.1	**0.5733**	0.039	6.9	ug/L	328	Standard
	Mn	55	836.4	10.1	**-0.0128**	0.011	87.4	ug/L	823	Standard
	Co	59	230.3	21.5	**0.0031**	0.007	222.1	ug/L	252	Standard
	Ni	60	176.3	3.3	**-0.0064**	0.005	75.2	ug/L	192	Standard
	Cu	65	147.3	9.8	**-0.0093**	0.007	71.2	ug/L	141	Standard
	Zn	66	414.7	6.5	**-0.4297**	0.019	4.3	ug/L	491	Standard
>	**Ge**	72	489415.0	1.8				ug/L	515087	Standard
	As	75	-13.4	315.6	**0.0274**	0.040	146.9	ug/L	20	Standard
	Se	82	21.4	39.0	**0.0756**	0.076	100.0	ug/L	15	Standard
	Se-1	77	62.3	3.3	**0.1522**	0.035	23.1	ug/L	48	Standard
>	**Ga**	71	55.0	41.7				mg/L	90	Standard
	Rb	85	21.7	26.6				ug/L	23	Standard
	Y	89	425437.4	1.2				ug/L	448510	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	273.7	29.6	**0.0854**	0.031	36.3	ug/L	11	Standard
	Ag	107	107.7	30.0	**0.0003**	0.005	1550.1	ug/L	134	Standard
	Cd	111	12.2	52.2	**0.0030**	0.003	103.1	mg/L	7	Standard
	Cd	114	23.6	69.2	**-0.0002**	0.003	1385.1	ug/L	16	Standard
>	**In**	115	592746.5	0.3				ug/L	611117	Standard
	Sn	118	735.0	15.8	**0.0262**	0.020	76.7	ug/L	518	Standard
	Sb	123	418.9	32.2	**0.0787**	0.029	37.2	ug/L	127	Standard
	Ba	135	58.7	27.6	**0.0042**	0.008	193.4	ug/L	45	Standard
	Ce	140	16.7	34.6				ug/L	298	Standard
>	**Tb**	159	928666.7	1.6				ug/L	977942	Standard
	Ho	165	11.7	89.2				ug/L	12	Standard
	Tl	203	77.0	34.1	**0.0046**	0.003	68.4	ug/L	31	Standard
	Tl	205	76.7	35.9	**0.0085**	0.004	45.8	ug/L	20	Standard
	Pb	206	287.0	11.8	**-0.0088**	0.007	78.2	ug/L	286	Standard
	Pb	207	252.0	6.9	**-0.0047**	0.004	83.8	ug/L	257	Standard
	Pb	208	1038.7	6.8	**-0.0037**	0.004	102.1	ug/L	956	Standard
	U	238	52.3	19.6	**0.0046**	0.001	32.5	ug/L	17	Standard
>	**Bi**	209	540535.6	1.1				ug/L	557080	Standard

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Na	23	1.7	173.2	**11.1254**	19.261	173.1	mg/L	0	Standard
Mg	24	41.7	25.0	**0.0002**	0.014	5858.2	mg/L	32	Standard
K	39	25.0	20.0	**-0.0539**	0.018	33.4	mg/L	30	Standard
Ca	43	40.0	25.0	**0.9508**	1.613	169.6	mg/L	48	Standard
Fe	54	117.8	25.5	**-0.0268**	0.028	102.8	mg/L	159	Standard
Fe	57	235.0	7.7	**0.1964**	0.057	28.8	mg/L	195	Standard
Sc-1	45	38198.1	0.8				mg/L	39543	Standard
Cl	35	35245.6	1.5				ug/L	27642	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	2320.2	7.7				ug/L	1647	Standard
P	31	18950.2	2.2				ug/L	15231	Standard
S	34	2475.2	4.2				ug/L	1845	Standard
Sr	88	68.3	27.7				ug/L	70	Standard
C	12	103.3	5.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	0	Standard
Dy	164	8.9	118.0				mg/L	12	Standard
Ho-1	165	11.7	89.2				mg/L	12	Standard
Er	166	23.3	49.5				mg/L	20	Standard
I	127	4469.0	13.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.016	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.994
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.030
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW 82 WG574205-02
Sample Date/Time: Tuesday, June 28, 2016 21:36:55
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77750.7	1.6				ug/L	81760	Standard
	Be	9	23.3	24.7	**0.0149**	0.006	38.5	ug/L	17	Standard
	Al	27	11095.9	27.0	**0.0614**	0.021	33.8	ug/L	1410	Standard
	Sc	45	39309.3	3.2				ug/L	39543	Standard
	Ti	47	35.7	19.9	**-0.0160**	0.027	171.9	ug/L	39	Standard
	V	51	1269.4	3.8	**-0.0162**	0.012	71.1	ug/L	1415	Standard
	Cr	52	7452.2	2.1	**0.0582**	0.015	26.3	ug/L	6946	Standard
	Cr	53	805.0	4.3	**0.6140**	0.043	7.0	ug/L	328	Standard
	Mn	55	3268.0	4.0	**0.3772**	0.034	9.1	ug/L	823	Standard
	Co	59	296.7	4.7	**0.0126**	0.001	9.3	ug/L	252	Standard
	Ni	60	300.3	5.8	**0.0613**	0.013	21.5	ug/L	192	Standard
	Cu	65	252.7	4.2	**0.0478**	0.009	19.3	ug/L	141	Standard
	Zn	66	1868.1	1.9	**0.9480**	0.028	3.0	ug/L	491	Standard
>	**Ge**	72	494530.1	2.9				ug/L	515087	Standard
	As	75	-37.6	66.7	**0.0055**	0.023	429.2	ug/L	20	Standard
	Se	82	15.9	27.5	**0.0238**	0.038	158.5	ug/L	15	Standard
	Se-1	77	56.7	8.0	**0.0642**	0.051	79.2	ug/L	48	Standard
>	**Ga**	71	51.7	31.1				mg/L	90	Standard
	Rb	85	45.0	48.4				ug/L	23	Standard
	Y	89	413936.1	2.9				ug/L	448510	Standard
>	**Rh**	103	23.3	32.7				ug/L	15	Standard
	Mo	98	83.2	8.2	**0.0127**	0.003	23.0	ug/L	11	Standard
	Ag	107	95.3	10.0	**-0.0016**	0.002	102.9	ug/L	134	Standard
	Cd	111	39.5	14.4	**0.0162**	0.003	18.5	mg/L	7	Standard
	Cd	114	83.7	13.3	**0.0117**	0.002	21.2	ug/L	16	Standard
>	**In**	115	592344.0	1.8				ug/L	611117	Standard
	Sn	118	795.0	11.2	**0.0369**	0.017	47.0	ug/L	518	Standard
	Sb	123	176.9	20.5	**0.0258**	0.007	28.3	ug/L	127	Standard
	Ba	135	88.3	8.2	**0.0191**	0.004	22.5	ug/L	45	Standard
	Ce	140	48.3	15.8				ug/L	298	Standard
>	**Tb**	159	936174.2	1.5				ug/L	977942	Standard
	Ho	165	6.7	114.6				ug/L	12	Standard
	Tl	203	128.0	4.9	**0.0106**	0.001	7.1	ug/L	31	Standard
	Tl	205	116.7	44.6	**0.0139**	0.007	52.1	ug/L	20	Standard
	Pb	206	358.0	3.9	**0.0036**	0.003	73.1	ug/L	286	Standard
	Pb	207	341.0	6.5	**0.0129**	0.005	36.4	ug/L	257	Standard
	Pb	208	1292.4	1.6	**0.0090**	0.001	13.2	ug/L	956	Standard
	U	238	93.7	24.0	**0.0103**	0.003	31.1	ug/L	17	Standard
>	**Bi**	209	549438.7	0.1				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.5912**	18.336	173.1	mg/L	0	Standard
Mg	24	55.0	47.2	**0.0170**	0.036	211.2	mg/L	32	Standard
K	39	38.3	52.7	**-0.0104**	0.070	678.8	mg/L	30	Standard
Ca	43	46.7	16.4	**1.7858**	1.139	63.8	mg/L	48	Standard
Fe	54	125.7	11.9	**-0.0224**	0.015	66.3	mg/L	159	Standard
Fe	57	226.7	12.1	**0.1455**	0.093	63.6	mg/L	195	Standard
> **Sc-1**	45	39309.3	3.2				mg/L	39543	Standard
Cl	35	34398.3	0.8				ug/L	27642	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	1940.1	5.9				ug/L	1647	Standard
P	31	18074.1	0.8				ug/L	15231	Standard
S	34	2498.5	3.0				ug/L	1845	Standard
Sr	88	61.7	46.1				ug/L	70	Standard
C	12	113.3	13.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	9.2	3.0				mg/L	12	Standard
Ho-1	165	6.7	114.6				mg/L	12	Standard
Er	166	16.7	34.6				mg/L	20	Standard
I	127	3242.0	12.4				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		95.096	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.009	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.928
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.628
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 82 WG574205-03
Sample Date/Time: Tuesday, June 28, 2016 21:40:07
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77370.5	2.5				ug/L	81760	Standard
	Be	9	47069.7	3.6	**50.0685**	0.762	1.5	ug/L	17	Standard
	Al	27	8339.0	0.8	**0.0428**	0.001	2.3	ug/L	1410	Standard
	Sc	45	38442.1	2.3				ug/L	39543	Standard
	Ti	47	32.3	15.3	**-0.0274**	0.023	83.9	ug/L	39	Standard
	V	51	328373.9	1.3	**49.7728**	1.098	2.2	ug/L	1415	Standard
	Cr	52	340284.0	1.1	**50.6522**	0.528	1.0	ug/L	6946	Standard
	Cr	53	43268.4	1.2	**51.8066**	1.337	2.6	ug/L	328	Standard
	Mn	55	314954.5	0.2	**51.2439**	0.720	1.4	ug/L	823	Standard
	Co	59	331722.8	0.6	**49.9116**	0.628	1.3	ug/L	252	Standard
	Ni	60	91188.9	0.7	**51.1120**	0.365	0.7	ug/L	192	Standard
	Cu	65	91760.4	1.1	**50.9900**	0.227	0.4	ug/L	141	Standard
	Zn	66	54150.6	1.3	**51.4287**	0.106	0.2	ug/L	491	Standard
>	Ge	72	486985.3	1.4				ug/L	515087	Standard
	As	75	52577.5	0.5	**49.5070**	0.430	0.9	ug/L	20	Standard
	Se	82	5439.8	1.4	**49.8572**	0.058	0.1	ug/L	15	Standard
	Se-1	77	3674.8	1.0	**50.8806**	0.838	1.6	ug/L	48	Standard
>	Ga	71	70.0	21.4				mg/L	90	Standard
	Rb	85	35.0	37.8				ug/L	23	Standard
	Y	89	431830.9	0.7				ug/L	448510	Standard
>	Rh	103	38.3	15.1				ug/L	15	Standard
	Mo	98	69.3	10.5	**0.0074**	0.003	42.1	ug/L	11	Standard
	Ag	107	312423.9	0.2	**48.0443**	1.285	2.7	ug/L	134	Standard
	Cd	111	99250.2	0.2	**47.9394**	1.102	2.3	mg/L	7	Standard
	Cd	114	241436.3	0.5	**47.9735**	0.947	2.0	ug/L	16	Standard
>	In	115	592091.2	2.5				ug/L	611117	Standard
	Sn	118	838.4	9.3	**0.0444**	0.014	30.4	ug/L	518	Standard
	Sb	123	213126.5	0.4	**46.6279**	1.103	2.4	ug/L	127	Standard
	Ba	135	94941.2	1.6	**47.4531**	1.010	2.1	ug/L	45	Standard
	Ce	140	68.3	22.4				ug/L	298	Standard
>	Tb	159	920874.0	1.0				ug/L	977942	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	395784.4	0.5	**49.2144**	0.506	1.0	ug/L	31	Standard
	Tl	205	352148.8	0.9	**50.4246**	0.261	0.5	ug/L	20	Standard
	Pb	206	261292.0	1.2	**50.5931**	0.633	1.3	ug/L	286	Standard
	Pb	207	229140.8	1.1	**49.1895**	0.516	1.0	ug/L	257	Standard
	Pb	208	939702.2	0.3	**52.1447**	0.484	0.9	ug/L	956	Standard
	U	238	338970.6	0.7	**49.5659**	0.166	0.3	ug/L	17	Standard
>	Bi	209	531689.3	0.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	35.0	0.0	**-0.0092**	0.001	12.0	mg/L	32	Standard
K	39	35.0	42.9	**-0.0195**	0.052	268.3	mg/L	30	Standard
Ca	43	38.3	32.8	**0.6220**	1.885	303.1	mg/L	48	Standard
Fe	54	132.7	8.8	**-0.0133**	0.014	103.8	mg/L	159	Standard
Fe	57	226.7	10.4	**0.1628**	0.084	51.6	mg/L	195	Standard
Sc-1	45	38442.1	2.3				mg/L	39543	Standard
Cl	35	35188.8	3.0				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1823.4	6.0				ug/L	1647	Standard
P	31	17611.9	0.6				ug/L	15231	Standard
S	34	2310.2	2.3				ug/L	1845	Standard
Sr	88	75.0	17.6				ug/L	70	Standard
C	12	96.7	46.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	5.9	194.5				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	16.7	34.6				mg/L	20	Standard
I	127	2716.9	12.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.631	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.544	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.887
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.442
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606134301 WG574205-01
Sample Date/Time: Tuesday, June 28, 2016 21:43:18
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74323.5	0.8				ug/L	81760	Standard
	Be	9	31.7	36.5	**0.0253**	0.013	49.8	ug/L	17	Standard
	Al	27	2998278.2	0.6	**21.3833**	0.050	0.2	ug/L	1410	Standard
	Sc	45	38510.6	3.3				ug/L	39543	Standard
	Ti	47	232.7	4.1	**0.8126**	0.032	3.9	ug/L	39	Standard
	V	51	1652.5	23.4	**0.0414**	0.055	131.6	ug/L	1415	Standard
	Cr	52	135321.3	0.7	**19.2638**	0.330	1.7	ug/L	6946	Standard
	Cr	53	19187.1	1.5	**22.5044**	0.281	1.2	ug/L	328	Standard
	Mn	55	3959.9	4.4	**0.4904**	0.040	8.1	ug/L	823	Standard
	Co	59	833.7	4.3	**0.0927**	0.008	8.3	ug/L	252	Standard
	Ni	60	44655.7	0.7	**24.6837**	0.632	2.6	ug/L	192	Standard
	Cu	65	31746.9	0.7	**17.3740**	0.276	1.6	ug/L	141	Standard
	Zn	66	57137.2	0.4	**53.6669**	1.121	2.1	ug/L	491	Standard
>	**Ge**	72	492860.3	1.9				ug/L	515087	Standard
	As	75	122.8	20.0	**0.1545**	0.023	14.7	ug/L	20	Standard
	Se	82	36.2	8.8	**0.2097**	0.035	16.8	ug/L	15	Standard
	Se-1	77	205.3	7.5	**2.1323**	0.253	11.9	ug/L	48	Standard
>	**Ga**	71	501.7	15.2				mg/L	90	Standard
	Rb	85	10964.0	0.9				ug/L	23	Standard
	Y	89	418533.1	1.8				ug/L	448510	Standard
>	**Rh**	103	56.7	31.0				ug/L	15	Standard
	Mo	98	2829.4	1.2	**1.1053**	0.009	0.8	ug/L	11	Standard
	Ag	107	25274.7	1.2	**4.0283**	0.033	0.8	ug/L	134	Standard
	Cd	111	119.1	9.1	**0.0569**	0.005	9.6	mg/L	7	Standard
	Cd	114	490.9	6.4	**0.0966**	0.006	6.7	ug/L	16	Standard
>	**In**	115	568910.2	0.4				ug/L	611117	Standard
	Sn	118	49674.7	2.3	**8.9227**	0.228	2.6	ug/L	518	Standard
	Sb	123	2415.2	17.6	**0.5368**	0.095	17.6	ug/L	127	Standard
	Ba	135	20410.1	0.9	**10.5946**	0.091	0.9	ug/L	45	Standard
	Ce	140	566.7	11.5				ug/L	298	Standard
>	**Tb**	159	895351.1	0.7				ug/L	977942	Standard
	Ho	165	20.0	25.0				ug/L	12	Standard
	Tl	203	216.3	14.7	**0.0231**	0.004	18.6	ug/L	31	Standard
	Tl	205	211.7	17.7	**0.0291**	0.005	18.1	ug/L	20	Standard
	Pb	206	14582.7	1.0	**2.8682**	0.053	1.8	ug/L	286	Standard
	Pb	207	11703.2	0.8	**2.5502**	0.014	0.5	ug/L	257	Standard
	Pb	208	49274.0	0.6	**2.7782**	0.042	1.5	ug/L	956	Standard
	U	238	116.0	23.9	**0.0146**	0.004	29.7	ug/L	17	Standard
>	**Bi**	209	512746.8	0.9				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	23663.5	1.4	**32.3162**	1.385	4.3	mg/L	32	Standard
K	39	683.3	9.3	**2.2286**	0.197	8.8	mg/L	30	Standard
Ca	43	95.0	32.9	**9.3774**	4.330	46.2	mg/L	48	Standard
Fe	54	183.2	7.6	**0.0331**	0.009	27.1	mg/L	159	Standard
Fe	57	263.3	14.4	**0.2873**	0.119	41.4	mg/L	195	Standard
> **Sc-1**	45	38510.6	3.3				mg/L	39543	Standard
Cl	35	35170.8	1.9				ug/L	27642	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	3347.0	4.4				ug/L	1647	Standard
P	31	18034.1	2.9				ug/L	15231	Standard
S	34	2231.8	5.1				ug/L	1845	Standard
Sr	88	143.3	22.7				ug/L	70	Standard
C	12	123.3	47.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	12.4	90.1				mg/L	12	Standard
Ho-1	165	20.0	25.0				mg/L	12	Standard
Er	166	20.0	86.6				mg/L	20	Standard
I	127	33806.0	2.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.904	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.685	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.094
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.042
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606134301DP WG574205-04
Sample Date/Time: Tuesday, June 28, 2016 21:46:30
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75650.1	1.3				ug/L	81760	Standard
	Be	9	38.3	7.5	**0.0320**	0.004	11.5	ug/L	17	Standard
	Al	27	3034197.2	1.7	**21.2640**	0.568	2.7	ug/L	1410	Standard
	Sc	45	38358.5	1.6				ug/L	39543	Standard
	Ti	47	242.3	3.4	**0.8481**	0.030	3.6	ug/L	39	Standard
	V	51	2921.5	21.4	**0.2301**	0.091	39.7	ug/L	1415	Standard
	Cr	52	132102.7	0.7	**18.6755**	0.034	0.2	ug/L	6946	Standard
	Cr	53	19672.8	2.2	**22.9627**	0.596	2.6	ug/L	328	Standard
	Mn	55	13082.6	2.2	**1.9497**	0.036	1.8	ug/L	823	Standard
	Co	59	922.0	4.8	**0.1051**	0.006	5.6	ug/L	252	Standard
	Ni	60	44071.0	1.0	**24.2264**	0.187	0.8	ug/L	192	Standard
	Cu	65	31222.8	1.1	**16.9947**	0.096	0.6	ug/L	141	Standard
	Zn	66	55768.5	0.9	**52.0764**	0.197	0.4	ug/L	491	Standard
>	**Ge**	72	495382.5	0.5				ug/L	515087	Standard
	As	75	105.3	17.2	**0.1377**	0.017	12.5	ug/L	20	Standard
	Se	82	31.4	9.3	**0.1642**	0.025	15.2	ug/L	15	Standard
	Se-1	77	224.7	3.6	**2.3824**	0.126	5.3	ug/L	48	Standard
>	**Ga**	71	485.0	9.9				mg/L	90	Standard
	Rb	85	10640.4	0.2				ug/L	23	Standard
	Y	89	407749.6	1.6				ug/L	448510	Standard
>	**Rh**	103	56.7	27.0				ug/L	15	Standard
	Mo	98	2759.9	2.4	**1.0902**	0.013	1.1	ug/L	11	Standard
	Ag	107	24718.5	0.6	**3.9851**	0.067	1.7	ug/L	134	Standard
	Cd	111	119.1	7.2	**0.0577**	0.005	8.8	mg/L	7	Standard
	Cd	114	389.6	30.3	**0.0764**	0.024	30.9	ug/L	16	Standard
>	**In**	115	562489.2	1.2				ug/L	611117	Standard
	Sn	118	48104.7	5.2	**8.7400**	0.532	6.1	ug/L	518	Standard
	Sb	123	1085.9	11.8	**0.2370**	0.026	11.2	ug/L	127	Standard
	Ba	135	21279.9	0.9	**11.1745**	0.156	1.4	ug/L	45	Standard
	Ce	140	1446.7	1.7				ug/L	298	Standard
>	**Tb**	159	899809.7	0.9				ug/L	977942	Standard
	Ho	165	38.3	37.7				ug/L	12	Standard
	Tl	203	211.3	8.9	**0.0223**	0.003	11.4	ug/L	31	Standard
	Tl	205	171.7	14.4	**0.0230**	0.004	16.6	ug/L	20	Standard
	Pb	206	14329.4	1.7	**2.7934**	0.069	2.5	ug/L	286	Standard
	Pb	207	11471.7	1.5	**2.4775**	0.050	2.0	ug/L	257	Standard
	Pb	208	48196.5	1.3	**2.6929**	0.035	1.3	ug/L	956	Standard
	U	238	162.0	9.3	**0.0214**	0.002	11.2	ug/L	17	Standard
>	**Bi**	209	517046.0	0.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	23364.7	1.2	**32.0144**	0.886	2.8	mg/L	32	Standard
K	39	620.0	6.9	**2.0197**	0.176	8.7	mg/L	30	Standard
Ca	43	98.3	39.5	**10.0220**	6.022	60.1	mg/L	48	Standard
Fe	54	175.4	14.5	**0.0269**	0.026	96.7	mg/L	159	Standard
Fe	57	298.3	7.6	**0.4146**	0.094	22.7	mg/L	195	Standard
> **Sc-1**	45	38358.5	1.6				mg/L	39543	Standard
Cl	35	35843.0	1.2				ug/L	27642	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	4177.2	4.7				ug/L	1647	Standard
P	31	18070.8	1.2				ug/L	15231	Standard
S	34	2273.5	5.8				ug/L	1845	Standard
Sr	88	125.0	20.0				ug/L	70	Standard
C	12	143.3	21.3				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	0	Standard
Dy	164	45.4	50.3				mg/L	12	Standard
Ho-1	165	38.3	37.7				mg/L	12	Standard
Er	166	26.7	21.7				mg/L	20	Standard
I	127	32309.4	0.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.527	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.175	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606134301DP WG574205-04
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		92.043
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.814
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606134301S WG574205-05
Sample Date/Time: Tuesday, June 28, 2016 21:49:41
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76159.4	2.8				ug/L	81760	Standard
	Be	9	48450.7	1.7	**52.3785**	0.949	1.8	ug/L	17	Standard
	Al	27	2895043.9	1.0	**20.1618**	0.737	3.7	ug/L	1410	Standard
	Sc	45	38742.8	1.9				ug/L	39543	Standard
	Ti	47	240.0	7.2	**0.8720**	0.082	9.4	ug/L	39	Standard
	V	51	323841.2	0.8	**49.8512**	0.902	1.8	ug/L	1415	Standard
	Cr	52	453207.8	1.4	**68.8842**	0.591	0.9	ug/L	6946	Standard
	Cr	53	60472.1	1.8	**73.6607**	0.780	1.1	ug/L	328	Standard
	Mn	55	309167.0	1.2	**51.0846**	0.705	1.4	ug/L	823	Standard
	Co	59	322466.2	0.8	**49.2767**	0.754	1.5	ug/L	252	Standard
	Ni	60	129806.7	1.0	**73.9391**	0.553	0.7	ug/L	192	Standard
	Cu	65	118360.2	1.2	**66.8253**	0.317	0.5	ug/L	141	Standard
	Zn	66	105137.5	0.6	**102.2235**	1.030	1.0	ug/L	491	Standard
>	**Ge**	72	479488.8	1.1				ug/L	515087	Standard
	As	75	53941.4	1.7	**51.5891**	1.400	2.7	ug/L	20	Standard
	Se	82	5350.1	0.9	**49.8082**	0.982	2.0	ug/L	15	Standard
	Se-1	77	3727.1	2.1	**52.4361**	1.513	2.9	ug/L	48	Standard
>	**Ga**	71	476.7	2.2				mg/L	90	Standard
	Rb	85	10533.7	3.9				ug/L	23	Standard
	Y	89	417307.7	1.3				ug/L	448510	Standard
>	**Rh**	103	73.3	25.8				ug/L	15	Standard
	Mo	98	2762.6	0.6	**1.0591**	0.012	1.2	ug/L	11	Standard
	Ag	107	321242.3	0.9	**50.4672**	0.741	1.5	ug/L	134	Standard
	Cd	111	96845.5	0.4	**47.7898**	0.498	1.0	mg/L	7	Standard
	Cd	114	233334.7	1.1	**47.3688**	0.646	1.4	ug/L	16	Standard
>	**In**	115	579360.0	0.8				ug/L	611117	Standard
	Sn	118	55146.4	13.8	**9.7304**	1.292	13.3	ug/L	518	Standard
	Sb	123	221114.9	0.1	**49.4220**	0.385	0.8	ug/L	127	Standard
	Ba	135	112895.7	0.5	**57.6594**	0.626	1.1	ug/L	45	Standard
	Ce	140	313.3	11.5				ug/L	298	Standard
>	**Tb**	159	912553.5	0.8				ug/L	977942	Standard
	Ho	165	15.0	66.7				ug/L	12	Standard
	Tl	203	384933.8	0.5	**49.0255**	0.608	1.2	ug/L	31	Standard
	Tl	205	344367.9	0.4	**50.5097**	0.783	1.5	ug/L	20	Standard
	Pb	206	266968.5	0.3	**52.9500**	0.690	1.3	ug/L	286	Standard
	Pb	207	232893.3	0.6	**51.2096**	0.463	0.9	ug/L	257	Standard
	Pb	208	948808.9	1.4	**53.9303**	1.097	2.0	ug/L	956	Standard
	U	238	335133.4	0.9	**50.1950**	0.747	1.5	ug/L	17	Standard
>	**Bi**	209	519140.8	1.4				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	23122.6	1.5	**31.3670**	0.821	2.6	mg/L	32	Standard
K	39	550.0	13.4	**1.7528**	0.224	12.8	mg/L	30	Standard
Ca	43	93.3	3.1	**9.1209**	0.222	2.4	mg/L	48	Standard
Fe	54	147.8	38.5	**0.0002**	0.055	34709.4	mg/L	159	Standard
Fe	57	261.7	11.7	**0.2782**	0.120	43.1	mg/L	195	Standard
> **Sc-1**	45	38742.8	1.9				mg/L	39543	Standard
Cl	35	35887.1	0.6				ug/L	27642	Standard
Kr	83	2.3	89.2				ug/L	2	Standard
Br	81	3013.6	4.3				ug/L	1647	Standard
P	31	18511.3	3.1				ug/L	15231	Standard
S	34	2173.5	7.9				ug/L	1845	Standard
Sr	88	115.0	4.3				ug/L	70	Standard
C	12	143.3	35.1				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	12.7	50.0				mg/L	12	Standard
Ho-1	165	15.0	66.7				mg/L	12	Standard
Er	166	13.3	114.6				mg/L	20	Standard
I	127	29318.3	1.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.150	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.089	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.804
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.190
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1606134301SD WG574205-06
Sample Date/Time: Tuesday, June 28, 2016 21:52:53
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74233.3	4.4				ug/L	81760	Standard
	Be	9	46944.3	0.7	**52.1161**	2.208	4.2	ug/L	17	Standard
	Al	27	2867977.1	1.8	**20.5130**	1.211	5.9	ug/L	1410	Standard
	Sc	45	37107.1	4.7				ug/L	39543	Standard
	Ti	47	208.3	2.4	**0.7439**	0.023	3.1	ug/L	39	Standard
	V	51	314357.5	0.7	**48.8632**	0.269	0.5	ug/L	1415	Standard
	Cr	52	443013.9	1.2	**67.9920**	0.699	1.0	ug/L	6946	Standard
	Cr	53	57726.4	1.5	**71.0049**	0.771	1.1	ug/L	328	Standard
	Mn	55	299003.6	1.5	**49.8899**	0.541	1.1	ug/L	823	Standard
	Co	59	310607.5	1.9	**47.9296**	0.658	1.4	ug/L	252	Standard
	Ni	60	125816.0	1.4	**72.3742**	0.740	1.0	ug/L	192	Standard
	Cu	65	116930.9	2.0	**66.6728**	1.005	1.5	ug/L	141	Standard
	Zn	66	105389.9	0.9	**103.4925**	0.359	0.3	ug/L	491	Standard
>	**Ge**	72	474757.8	0.5				ug/L	515087	Standard
	As	75	52320.0	1.0	**50.5276**	0.214	0.4	ug/L	20	Standard
	Se	82	5199.8	1.3	**48.8839**	0.776	1.6	ug/L	15	Standard
	Se-1	77	3645.4	2.7	**51.7794**	1.336	2.6	ug/L	48	Standard
>	**Ga**	71	471.7	1.2				mg/L	90	Standard
	Rb	85	10923.9	0.7				ug/L	23	Standard
	Y	89	414912.1	1.8				ug/L	448510	Standard
>	**Rh**	103	51.7	22.3				ug/L	15	Standard
	Mo	98	2810.6	3.1	**1.1098**	0.050	4.5	ug/L	11	Standard
	Ag	107	309794.3	1.1	**50.0964**	1.925	3.8	ug/L	134	Standard
	Cd	111	92939.1	0.1	**47.2004**	1.405	3.0	mg/L	7	Standard
	Cd	114	227712.2	0.8	**47.5835**	1.757	3.7	ug/L	16	Standard
>	**In**	115	563239.5	3.0				ug/L	611117	Standard
	Sn	118	48800.3	6.0	**8.8657**	0.749	8.5	ug/L	518	Standard
	Sb	123	213681.9	0.5	**49.1574**	1.598	3.3	ug/L	127	Standard
	Ba	135	108173.8	0.8	**56.8630**	1.899	3.3	ug/L	45	Standard
	Ce	140	258.3	11.8				ug/L	298	Standard
>	**Tb**	159	874543.1	3.3				ug/L	977942	Standard
	Ho	165	16.7	62.4				ug/L	12	Standard
	Tl	203	370949.6	0.9	**49.2226**	1.185	2.4	ug/L	31	Standard
	Tl	205	332170.0	0.6	**50.7579**	1.084	2.1	ug/L	20	Standard
	Pb	206	260124.0	0.8	**53.7518**	1.191	2.2	ug/L	286	Standard
	Pb	207	226333.8	1.1	**51.8538**	1.336	2.6	ug/L	257	Standard
	Pb	208	924176.8	1.2	**54.7310**	1.509	2.8	ug/L	956	Standard
	U	238	327055.2	1.2	**51.0349**	1.235	2.4	ug/L	17	Standard
>	**Bi**	209	498348.0	1.6				ug/L	557080	Standard

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Na	23	5.0	173.2	**33.3751**	57.799	173.2	mg/L	0	Standard
Mg	24	22616.9	1.7	**32.0867**	1.983	6.2	mg/L	32	Standard
K	39	585.0	8.2	**1.9630**	0.088	4.5	mg/L	30	Standard
Ca	43	106.7	21.1	**11.9418**	3.627	30.4	mg/L	48	Standard
Fe	54	143.6	9.6	**0.0016**	0.013	810.1	mg/L	159	Standard
Fe	57	260.0	25.0	**0.3188**	0.279	87.4	mg/L	195	Standard
> **Sc-1**	45	37107.1	4.7				mg/L	39543	Standard
Cl	35	35012.4	2.2				ug/L	27642	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	3463.7	1.0				ug/L	1647	Standard
P	31	17954.0	1.9				ug/L	15231	Standard
S	34	2235.2	3.1				ug/L	1845	Standard
Sr	88	115.0	27.2				ug/L	70	Standard
C	12	173.3	16.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	0	Standard
Dy	164	16.2	97.3				mg/L	12	Standard
Ho-1	165	16.7	62.4				mg/L	12	Standard
Er	166	10.0	100.0				mg/L	20	Standard
I	127	29468.6	2.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.794	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.170	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		92.166
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		89.457
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1606073201
Sample Date/Time: Tuesday, June 28, 2016 21:56:04
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79995.7	1.9				ug/L	81760	Standard
	Be	9	111.7	43.0	**0.1055**	0.050	47.4	ug/L	17	Standard
	Al	27	26418031.8	2.7	**175.1861**	5.381	3.1	ug/L	1410	Standard
	Sc	45	39758.8	3.3				ug/L	39543	Standard
	Ti	47	586.7	3.3	**2.3079**	0.104	4.5	ug/L	39	Standard
	V	51	2345.3	13.2	**0.1468**	0.044	29.9	ug/L	1415	Standard
	Cr	52	26092.8	3.1	**2.8709**	0.089	3.1	ug/L	6946	Standard
	Cr	53	22536.8	6.4	**26.5559**	1.479	5.6	ug/L	328	Standard
	Mn	55	128770.6	1.1	**20.6681**	0.068	0.3	ug/L	823	Standard
	Co	59	4370.6	1.2	**0.6206**	0.009	1.4	ug/L	252	Standard
	Ni	60	4217.9	1.8	**2.2421**	0.029	1.3	ug/L	192	Standard
	Cu	65	1551.7	2.2	**0.7650**	0.010	1.3	ug/L	141	Standard
	Zn	66	53557.8	1.5	**50.3807**	0.333	0.7	ug/L	491	Standard
>	**Ge**	72	491490.5	1.0				ug/L	515087	Standard
	As	75	918.5	14.0	**0.8957**	0.112	12.5	ug/L	20	Standard
	Se	82	316.6	5.4	**2.7619**	0.129	4.7	ug/L	15	Standard
	Se-1	77	1234.4	4.8	**16.4500**	0.704	4.3	ug/L	48	Standard
>	**Ga**	71	80.0	6.3				mg/L	90	Standard
	Rb	85	7720.3	1.4				ug/L	23	Standard
	Y	89	403861.7	0.4				ug/L	448510	Standard
>	**Rh**	103	80.0	50.0				ug/L	15	Standard
	Mo	98	355.0	5.6	**0.1283**	0.008	5.9	ug/L	11	Standard
	Ag	107	141.3	9.2	**0.0074**	0.002	31.2	ug/L	134	Standard
	Cd	111	202.7	10.3	**0.1036**	0.012	11.2	mg/L	7	Standard
	Cd	114	507.6	13.6	**0.1047**	0.015	13.9	ug/L	16	Standard
>	**In**	115	544497.8	0.6				ug/L	611117	Standard
	Sn	118	1023.4	24.9	**0.0925**	0.050	53.7	ug/L	518	Standard
	Sb	123	669.1	12.6	**0.1463**	0.019	13.2	ug/L	127	Standard
	Ba	135	206763.5	2.5	**112.3722**	2.187	1.9	ug/L	45	Standard
	Ce	140	411.7	6.1				ug/L	298	Standard
>	**Tb**	159	889575.8	1.3				ug/L	977942	Standard
	Ho	165	35.0	37.8				ug/L	12	Standard
	Tl	203	749.0	2.3	**0.0953**	0.003	3.6	ug/L	31	Standard
	Tl	205	685.0	13.9	**0.1029**	0.013	12.2	ug/L	20	Standard
	Pb	206	776.0	1.1	**0.0981**	0.006	5.8	ug/L	286	Standard
	Pb	207	670.3	1.0	**0.0968**	0.005	4.8	ug/L	257	Standard
	Pb	208	2692.4	0.9	**0.1003**	0.005	4.6	ug/L	956	Standard
	U	238	1446.7	3.3	**0.2244**	0.006	2.7	ug/L	17	Standard
>	**Bi**	209	494871.3	2.5				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.6945**	18.515	173.1	mg/L	0	Standard
Mg	24	122893.2	2.3	**162.6797**	1.668	1.0	mg/L	32	Standard
K	39	163.3	4.7	**0.4080**	0.035	8.6	mg/L	30	Standard
Ca	43	160.0	24.8	**18.8525**	6.186	32.8	mg/L	48	Standard
Fe	54	210.9	15.7	**0.0529**	0.031	58.0	mg/L	159	Standard
Fe	57	311.7	8.2	**0.4207**	0.052	12.3	mg/L	195	Standard
> **Sc-1**	45	39758.8	3.3				mg/L	39543	Standard
Cl	35	36983.1	0.7				ug/L	27642	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	75233.3	4.9				ug/L	1647	Standard
P	31	24466.4	2.9				ug/L	15231	Standard
S	34	2258.5	3.0				ug/L	1845	Standard
Sr	88	378.3	24.5				ug/L	70	Standard
C	12	350.0	10.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	120.9	45.9				mg/L	12	Standard
Ho-1	165	35.0	37.8				mg/L	12	Standard
Er	166	50.0	20.0				mg/L	20	Standard
I	127	539973.2	10.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.842	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.419	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.099
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		88.833
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606073201PS WG574571-01
Sample Date/Time: Tuesday, June 28, 2016 21:59:15
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83254.8	1.5				ug/L	81760	Standard
	Be	9	50562.6	1.1	**49.9976**	0.969	1.9	ug/L	17	Standard
	Al	27	27107676.6	2.1	**172.7073**	3.970	2.3	ug/L	1410	Standard
	Sc	45	41809.3	4.0				ug/L	39543	Standard
	Ti	47	632.7	1.1	**2.4753**	0.055	2.2	ug/L	39	Standard
	V	51	341856.0	1.3	**50.8320**	0.708	1.4	ug/L	1415	Standard
	Cr	52	363663.1	1.5	**53.1642**	1.402	2.6	ug/L	6946	Standard
	Cr	53	65238.5	1.6	**76.7756**	0.750	1.0	ug/L	328	Standard
	Mn	55	438903.0	0.5	**70.1258**	2.130	3.0	ug/L	823	Standard
	Co	59	331676.0	1.2	**48.9632**	1.267	2.6	ug/L	252	Standard
	Ni	60	91787.9	1.2	**50.4717**	0.832	1.6	ug/L	192	Standard
	Cu	65	90254.4	2.3	**49.1926**	0.475	1.0	ug/L	141	Standard
	Zn	66	107316.4	1.1	**100.7774**	1.488	1.5	ug/L	491	Standard
>	**Ge**	72	496483.6	2.5				ug/L	515087	Standard
	As	75	55410.9	1.5	**51.1805**	0.552	1.1	ug/L	20	Standard
	Se	82	5728.8	0.9	**51.5315**	1.616	3.1	ug/L	15	Standard
	Se-1	77	4873.5	1.7	**66.4041**	0.559	0.8	ug/L	48	Standard
>	**Ga**	71	86.7	34.8				mg/L	90	Standard
	Rb	85	8242.2	2.9				ug/L	23	Standard
	Y	89	419418.3	1.5				ug/L	448510	Standard
>	**Rh**	103	96.7	18.2				ug/L	15	Standard
	Mo	98	373.5	3.6	**0.1304**	0.006	4.5	ug/L	11	Standard
	Ag	107	276030.5	2.3	**44.4706**	1.418	3.2	ug/L	134	Standard
	Cd	111	97190.1	1.0	**49.1769**	0.174	0.4	mg/L	7	Standard
	Cd	114	234963.3	0.8	**48.9150**	0.797	1.6	ug/L	16	Standard
>	**In**	115	564991.8	0.9				ug/L	611117	Standard
	Sn	118	1183.4	5.3	**0.1145**	0.011	9.2	ug/L	518	Standard
	Sb	123	221298.1	1.9	**50.7268**	1.390	2.7	ug/L	127	Standard
	Ba	135	302634.3	0.9	**158.5372**	1.746	1.1	ug/L	45	Standard
	Ce	140	460.0	11.5				ug/L	298	Standard
>	**Tb**	159	913205.8	1.2				ug/L	977942	Standard
	Ho	165	30.0	16.7				ug/L	12	Standard
	Tl	203	392737.2	0.1	**50.5926**	0.297	0.6	ug/L	31	Standard
	Tl	205	346685.2	1.3	**51.4296**	0.576	1.1	ug/L	20	Standard
	Pb	206	257242.2	1.9	**51.6050**	1.169	2.3	ug/L	286	Standard
	Pb	207	223447.5	1.6	**49.6960**	0.910	1.8	ug/L	257	Standard
	Pb	208	904356.3	0.4	**51.9882**	0.250	0.5	ug/L	956	Standard
	U	238	346838.0	0.8	**52.5438**	0.601	1.1	ug/L	17	Standard
>	**Bi**	209	513215.0	0.6				ug/L	557080	Standard

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Na	23	1.7	173.2	**9.7143**	16.817	173.1	mg/L	0	Standard
Mg	24	126816.9	1.1	**159.8003**	7.491	4.7	mg/L	32	Standard
K	39	205.0	11.2	**0.5135**	0.066	12.9	mg/L	30	Standard
Ca	43	170.0	5.9	**19.0779**	1.160	6.1	mg/L	48	Standard
Fe	54	195.8	12.4	**0.0303**	0.016	52.3	mg/L	159	Standard
Fe	57	350.0	26.8	**0.4863**	0.252	51.8	mg/L	195	Standard
> **Sc-1**	45	41809.3	4.0				mg/L	39543	Standard
Cl	35	38499.5	1.5				ug/L	27642	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	75812.6	2.8				ug/L	1647	Standard
P	31	25067.4	2.7				ug/L	15231	Standard
S	34	2465.2	4.5				ug/L	1845	Standard
Sr	88	373.3	2.8				ug/L	70	Standard
C	12	380.0	17.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	29.2	88.7				mg/L	12	Standard
Ho-1	165	30.0	16.7				mg/L	12	Standard
Er	166	16.7	69.3				mg/L	20	Standard
I	127	574284.0	7.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.828	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.388	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	92.452
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	92.126
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606073202SDL WG574571-02
Sample Date/Time: Tuesday, June 28, 2016 22:02:27
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80721.2	1.7				ug/L	81760	Standard
	Be	9	38.3	19.9	**0.0293**	0.007	25.3	ug/L	17	Standard
	Al	27	5438081.5	1.8	**35.7222**	0.611	1.7	ug/L	1410	Standard
	Sc	45	40838.3	2.8				ug/L	39543	Standard
	Ti	47	147.3	1.4	**0.4611**	0.014	3.1	ug/L	39	Standard
	V	51	1818.8	6.0	**0.0702**	0.022	30.8	ug/L	1415	Standard
	Cr	52	11457.0	0.2	**0.6827**	0.037	5.5	ug/L	6946	Standard
	Cr	53	6112.9	0.7	**7.0202**	0.190	2.7	ug/L	328	Standard
	Mn	55	27400.4	0.7	**4.3193**	0.101	2.3	ug/L	823	Standard
	Co	59	1102.0	5.1	**0.1343**	0.005	3.9	ug/L	252	Standard
	Ni	60	1029.7	4.0	**0.4727**	0.014	2.9	ug/L	192	Standard
	Cu	65	552.3	3.6	**0.2164**	0.013	6.0	ug/L	141	Standard
	Zn	66	17277.2	1.2	**15.8333**	0.273	1.7	ug/L	491	Standard
>	**Ge**	72	487411.0	2.0				ug/L	515087	Standard
	As	75	241.2	19.0	**0.2666**	0.040	15.0	ug/L	20	Standard
	Se	82	96.0	8.9	**0.7616**	0.066	8.7	ug/L	15	Standard
	Se-1	77	318.7	3.3	**3.7527**	0.181	4.8	ug/L	48	Standard
>	**Ga**	71	61.7	24.8				mg/L	90	Standard
	Rb	85	1698.4	2.7				ug/L	23	Standard
	Y	89	428587.6	1.1				ug/L	448510	Standard
>	**Rh**	103	33.3	37.7				ug/L	15	Standard
	Mo	98	99.2	5.5	**0.0185**	0.002	11.0	ug/L	11	Standard
	Ag	107	280.0	31.3	**0.0265**	0.013	49.6	ug/L	134	Standard
	Cd	111	57.2	23.8	**0.0245**	0.006	26.0	mg/L	7	Standard
	Cd	114	159.7	10.5	**0.0266**	0.003	11.9	ug/L	16	Standard
>	**In**	115	596430.5	0.6				ug/L	611117	Standard
	Sn	118	631.7	19.2	**0.0076**	0.022	282.9	ug/L	518	Standard
	Sb	123	2037.7	21.9	**0.4301**	0.100	23.2	ug/L	127	Standard
	Ba	135	42595.5	1.1	**21.1150**	0.168	0.8	ug/L	45	Standard
	Ce	140	145.0	24.9				ug/L	298	Standard
>	**Tb**	159	930009.8	1.5				ug/L	977942	Standard
	Ho	165	10.0					ug/L	12	Standard
	Tl	203	287.0	3.9	**0.0311**	0.001	3.3	ug/L	31	Standard
	Tl	205	238.3	17.8	**0.0321**	0.006	20.0	ug/L	20	Standard
	Pb	206	467.7	4.1	**0.0276**	0.003	10.6	ug/L	286	Standard
	Pb	207	403.3	2.0	**0.0292**	0.001	2.3	ug/L	257	Standard
	Pb	208	1685.7	2.5	**0.0338**	0.002	5.7	ug/L	956	Standard
	U	238	344.0	11.7	**0.0476**	0.005	11.0	ug/L	17	Standard
>	**Bi**	209	528241.9	1.3				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	25095.8	1.4	**32.3042**	0.912	2.8	mg/L	32	Standard
K	39	53.3	28.6	**0.0336**	0.053	158.1	mg/L	30	Standard
Ca	43	51.7	14.8	**2.2359**	0.907	40.5	mg/L	48	Standard
Fe	54	140.6	10.4	**-0.0136**	0.016	114.2	mg/L	159	Standard
Fe	57	253.3	13.1	**0.2033**	0.104	51.3	mg/L	195	Standard
> **Sc-1**	45	40838.3	2.8				mg/L	39543	Standard
Cl	35	38490.2	0.9				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	17116.3	3.1				ug/L	1647	Standard
P	31	18993.6	2.2				ug/L	15231	Standard
S	34	2316.8	7.4				ug/L	1845	Standard
Sr	88	121.7	17.1				ug/L	70	Standard
C	12	150.0	13.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	5.2	126.3				mg/L	12	Standard
Ho-1	165	10.0					mg/L	12	Standard
Er	166	30.0	57.7				mg/L	20	Standard
I	127	133767.9	0.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.729	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.627	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.597
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.823
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606073202SDL WG574571-02
Sample Date/Time: Tuesday, June 28, 2016 22:05:38
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76053.8	2.7				ug/L	81760	Standard
	Be	9	25.0	34.6	**0.0174**	0.009	54.5	ug/L	17	Standard
	Al	27	1128796.7	0.4	**7.8615**	0.198	2.5	ug/L	1410	Standard
	Sc	45	38686.0	0.8				ug/L	39543	Standard
	Ti	47	55.3	34.5	**0.0617**	0.078	127.2	ug/L	39	Standard
	V	51	1638.9	5.5	**0.0337**	0.013	38.4	ug/L	1415	Standard
	Cr	52	8717.5	0.5	**0.2193**	0.011	4.9	ug/L	6946	Standard
	Cr	53	2070.1	6.6	**2.0621**	0.160	7.7	ug/L	328	Standard
	Mn	55	6629.8	1.0	**0.8938**	0.008	0.9	ug/L	823	Standard
	Co	59	385.0	3.7	**0.0245**	0.002	8.1	ug/L	252	Standard
	Ni	60	384.7	1.7	**0.1032**	0.003	2.7	ug/L	192	Standard
	Cu	65	339.7	2.9	**0.0913**	0.005	5.2	ug/L	141	Standard
	Zn	66	9883.2	1.3	**8.3627**	0.143	1.7	ug/L	491	Standard
>	**Ge**	72	505388.6	0.3				ug/L	515087	Standard
	As	75	-13.0	254.9	**0.0286**	0.030	104.7	ug/L	20	Standard
	Se	82	27.4	29.7	**0.1233**	0.072	58.7	ug/L	15	Standard
	Se-1	77	108.0	8.5	**0.7425**	0.129	17.3	ug/L	48	Standard
>	**Ga**	71	48.3	46.6				mg/L	90	Standard
	Rb	85	370.0	8.2				ug/L	23	Standard
	Y	89	428119.2	2.9				ug/L	448510	Standard
>	**Rh**	103	23.3	44.6				ug/L	15	Standard
	Mo	98	45.2	4.1	**-0.0015**	0.001	60.8	ug/L	11	Standard
	Ag	107	113.3	16.4	**0.0016**	0.003	172.3	ug/L	134	Standard
	Cd	111	14.3	24.6	**0.0041**	0.002	39.1	mg/L	7	Standard
	Cd	114	49.9	58.5	**0.0052**	0.006	113.8	ug/L	16	Standard
>	**In**	115	579695.7	1.7				ug/L	611117	Standard
	Sn	118	626.7	2.3	**0.0098**	0.004	44.1	ug/L	518	Standard
	Sb	123	500.2	33.4	**0.0994**	0.039	39.6	ug/L	127	Standard
	Ba	135	8786.5	0.8	**4.4621**	0.051	1.1	ug/L	45	Standard
	Ce	140	53.3	19.5				ug/L	298	Standard
>	**Tb**	159	899038.1	0.5				ug/L	977942	Standard
	Ho	165	3.3	86.6				ug/L	12	Standard
	Tl	203	124.3	3.7	**0.0110**	0.001	5.1	ug/L	31	Standard
	Tl	205	108.3	13.3	**0.0136**	0.002	15.1	ug/L	20	Standard
	Pb	206	338.3	5.2	**0.0034**	0.004	109.0	ug/L	286	Standard
	Pb	207	309.3	7.0	**0.0098**	0.005	45.9	ug/L	257	Standard
	Pb	208	1266.0	2.0	**0.0114**	0.001	11.9	ug/L	956	Standard
	U	238	68.0	9.6	**0.0072**	0.001	13.2	ug/L	17	Standard
>	**Bi**	209	520681.9	0.4				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	5104.2	1.7	**6.8887**	0.170	2.5	mg/L	32	Standard
K	39	40.0	37.5	**-0.0032**	0.052	1630.6	mg/L	30	Standard
Ca	43	30.0	57.7	**-0.6841**	2.704	395.3	mg/L	48	Standard
Fe	54	149.1	25.4	**0.0007**	0.034	4947.2	mg/L	159	Standard
Fe	57	220.0	14.9	**0.1340**	0.108	80.4	mg/L	195	Standard
Sc-1	45	38686.0	0.8				mg/L	39543	Standard
Cl	35	39148.5	1.2				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	4957.5	4.0				ug/L	1647	Standard
P	31	18357.8	2.1				ug/L	15231	Standard
S	34	2318.5	4.4				ug/L	1845	Standard
Sr	88	78.3	18.4				ug/L	70	Standard
C	12	130.0	27.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.2	116.5				mg/L	12	Standard
Ho-1	165	3.3	86.6				mg/L	12	Standard
Er	166	16.7	91.7				mg/L	20	Standard
I	127	32523.3	5.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		93.021	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.117	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.858
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.466
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 22:08:51
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74027.2	2.8				ug/L	81760	Standard
	Be	9	46885.8	2.2	**52.1458**	1.090	2.1	ug/L	17	Standard
	Al	27	7258519.9	1.3	**52.0333**	2.108	4.1	ug/L	1410	Standard
	Sc	45	37711.9	1.9				ug/L	39543	Standard
	Ti	47	24276.8	0.9	**101.7561**	0.915	0.9	ug/L	39	Standard
	V	51	338117.2	0.9	**50.5811**	0.467	0.9	ug/L	1415	Standard
	Cr	52	344759.2	1.1	**50.6515**	0.612	1.2	ug/L	6946	Standard
	Cr	53	43998.8	1.8	**51.9886**	0.950	1.8	ug/L	328	Standard
	Mn	55	319756.8	1.7	**51.3453**	0.844	1.6	ug/L	823	Standard
	Co	59	342187.7	2.1	**50.8146**	1.023	2.0	ug/L	252	Standard
	Ni	60	91463.9	0.8	**50.5986**	0.401	0.8	ug/L	192	Standard
	Cu	65	92539.7	0.2	**50.7558**	0.132	0.3	ug/L	141	Standard
	Zn	66	54475.1	1.3	**51.0616**	0.732	1.4	ug/L	491	Standard
>	Ge	72	493368.3	0.1				ug/L	515087	Standard
	As	75	54361.0	0.4	**50.5191**	0.195	0.4	ug/L	20	Standard
	Se	82	5570.4	0.7	**50.3948**	0.327	0.6	ug/L	15	Standard
	Se-1	77	3889.2	2.7	**53.1789**	1.513	2.8	ug/L	48	Standard
>	Ga	71	56.7	13.5				mg/L	90	Standard
	Rb	85	710.0	9.2				ug/L	23	Standard
	Y	89	427120.1	2.2				ug/L	448510	Standard
>	Rh	103	20.0	50.0				ug/L	15	Standard
	Mo	98	255476.4	1.0	**100.3761**	0.479	0.5	ug/L	11	Standard
	Ag	107	311158.3	0.6	**49.2259**	0.757	1.5	ug/L	134	Standard
	Cd	111	98620.7	1.2	**49.0052**	0.618	1.3	mg/L	7	Standard
	Cd	114	238558.2	0.5	**48.7672**	0.251	0.5	ug/L	16	Standard
>	In	115	575337.5	0.9				ug/L	611117	Standard
	Sn	118	277257.2	0.9	**49.7064**	0.586	1.2	ug/L	518	Standard
	Sb	123	223054.4	0.8	**50.2070**	0.812	1.6	ug/L	127	Standard
	Ba	135	94954.3	0.7	**48.8337**	0.782	1.6	ug/L	45	Standard
	Ce	140	61.7	16.9				ug/L	298	Standard
>	Tb	159	913449.5	0.5				ug/L	977942	Standard
	Ho	165	10.0	86.6				ug/L	12	Standard
	Tl	203	397249.4	0.6	**50.3639**	0.352	0.7	ug/L	31	Standard
	Tl	205	354959.8	0.3	**51.8245**	0.065	0.1	ug/L	20	Standard
	Pb	206	256290.8	0.6	**50.5971**	0.273	0.5	ug/L	286	Standard
	Pb	207	233188.9	1.2	**51.0418**	0.565	1.1	ug/L	257	Standard
	Pb	208	935979.9	1.1	**52.9561**	0.623	1.2	ug/L	956	Standard
	U	238	344850.7	0.5	**51.4151**	0.322	0.6	ug/L	17	Standard
>	Bi	209	521458.9	0.2				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	3802.1	3.0	**5.2525**	0.237	4.5	mg/L	32	Standard
K	39	1311.7	9.2	**4.5102**	0.493	10.9	mg/L	30	Standard
Ca	43	78.3	7.4	**7.1225**	0.723	10.1	mg/L	48	Standard
Fe	54	5407.8	4.5	**4.9980**	0.312	6.2	mg/L	159	Standard
Fe	57	1643.4	4.4	**5.1911**	0.156	3.0	mg/L	195	Standard
> **Sc-1**	45	37711.9	1.9				mg/L	39543	Standard
Cl	35	36184.5	2.9				ug/L	27642	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	1690.1	2.4				ug/L	1647	Standard
P	31	19537.6	2.2				ug/L	15231	Standard
S	34	2665.2	5.3				ug/L	1845	Standard
Sr	88	80.0	12.5				ug/L	70	Standard
C	12	116.7	9.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	9.4	109.4				mg/L	12	Standard
Ho-1	165	10.0	86.6				mg/L	12	Standard
Er	166	13.3	43.3				mg/L	20	Standard
I	127	5821.1	15.1				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	104.292		
	Al	27	104.067		
	Sc	45			
	Ti	47	101.756		
	V	51	101.162		
	Cr	52	101.303		
	Cr	53			
	Mn	55	102.691		
	Co	59	101.629		
	Ni	60	101.197		
	Cu	65	101.512		
	Zn	66	102.123		
>	Ge	72		95.784	
	As	75	101.038		
	Se	82	100.790		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	100.376		
Ag	107	98.452		
Cd	111	98.010		
Cd	114			
In	115		94.145	
Sn	118	99.413		
Sb	123	100.414		
Ba	135	97.667		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.728		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.912		
U	238	102.830		
Bi	209		93.606	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 22:12:02
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72720.8	1.4				ug/L	81760	Standard
	Be	9	31.7	9.1	**0.0261**	0.003	13.4	ug/L	17	Standard
	Al	27	3567.1	29.0	**0.0117**	0.008	67.2	ug/L	1410	Standard
	Sc	45	39132.1	1.1				ug/L	39543	Standard
	Ti	47	37.0	21.5	**-0.0116**	0.034	290.1	ug/L	39	Standard
	V	51	1125.9	7.5	**-0.0395**	0.013	33.1	ug/L	1415	Standard
	Cr	52	6280.0	4.7	**-0.1269**	0.043	33.9	ug/L	6946	Standard
	Cr	53	665.0	3.8	**0.4397**	0.027	6.1	ug/L	328	Standard
	Mn	55	716.0	7.9	**-0.0346**	0.009	26.9	ug/L	823	Standard
	Co	59	261.7	5.4	**0.0070**	0.002	26.9	ug/L	252	Standard
	Ni	60	220.7	25.5	**0.0158**	0.031	194.2	ug/L	192	Standard
	Cu	65	175.7	31.3	**0.0045**	0.030	664.0	ug/L	141	Standard
	Zn	66	494.7	12.2	**-0.3623**	0.056	15.6	ug/L	491	Standard
>	**Ge**	72	499522.9	0.5				ug/L	515087	Standard
	As	75	-22.4	199.4	**0.0197**	0.041	208.7	ug/L	20	Standard
	Se	82	18.1	44.1	**0.0430**	0.071	165.8	ug/L	15	Standard
	Se-1	77	56.7	13.4	**0.0566**	0.102	180.9	ug/L	48	Standard
>	**Ga**	71	45.0	38.5				mg/L	90	Standard
	Rb	85	31.7	45.6				ug/L	23	Standard
	Y	89	417360.5	0.9				ug/L	448510	Standard
>	**Rh**	103	6.7	114.6				ug/L	15	Standard
	Mo	98	287.6	23.9	**0.0927**	0.026	27.9	ug/L	11	Standard
	Ag	107	190.3	4.8	**0.0136**	0.002	11.9	ug/L	134	Standard
	Cd	111	25.8	62.0	**0.0098**	0.008	81.4	mg/L	7	Standard
	Cd	114	75.5	64.7	**0.0104**	0.010	96.5	ug/L	16	Standard
>	**In**	115	581386.0	1.0				ug/L	611117	Standard
	Sn	118	788.4	29.5	**0.0382**	0.041	108.2	ug/L	518	Standard
	Sb	123	553.2	30.8	**0.1105**	0.038	34.6	ug/L	127	Standard
	Ba	135	104.3	62.1	**0.0282**	0.034	119.2	ug/L	45	Standard
	Ce	140	15.0	88.2				ug/L	298	Standard
>	**Tb**	159	916886.1	2.0				ug/L	977942	Standard
	Ho	165	6.7	43.3				ug/L	12	Standard
	Tl	203	96.0	40.0	**0.0072**	0.005	66.3	ug/L	31	Standard
	Tl	205	80.0	25.0	**0.0092**	0.003	29.7	ug/L	20	Standard
	Pb	206	283.3	0.7	**-0.0085**	0.001	14.2	ug/L	286	Standard
	Pb	207	242.3	7.5	**-0.0058**	0.004	64.9	ug/L	257	Standard
	Pb	208	1066.3	4.7	**-0.0011**	0.002	176.0	ug/L	956	Standard
	U	238	68.3	24.9	**0.0070**	0.002	33.1	ug/L	17	Standard
>	**Bi**	209	530213.7	1.5				ug/L	557080	Standard

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Na	23	5.0	100.0	**32.2313**	32.195	99.9	mg/L	0	Standard
Mg	24	43.3	46.6	**0.0012**	0.027	2331.0	mg/L	32	Standard
K	39	38.3	41.9	**-0.0103**	0.056	538.4	mg/L	30	Standard
Ca	43	25.0	20.0	**-1.5137**	0.732	48.3	mg/L	48	Standard
Fe	54	136.0	18.8	**-0.0125**	0.025	197.8	mg/L	159	Standard
Fe	57	235.0	17.0	**0.1764**	0.130	73.9	mg/L	195	Standard
Sc-1	45	39132.1	1.1				mg/L	39543	Standard
Cl	35	35003.7	1.3				ug/L	27642	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1530.1	14.2				ug/L	1647	Standard
P	31	18486.3	1.6				ug/L	15231	Standard
S	34	2496.9	3.2				ug/L	1845	Standard
Sr	88	51.7	31.1				ug/L	70	Standard
C	12	86.7	52.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.5	5.0				mg/L	12	Standard
Ho-1	165	6.7	43.3				mg/L	12	Standard
Er	166	10.0	100.0				mg/L	20	Standard
I	127	4170.6	14.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.978	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.135
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.177
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606073202
Sample Date/Time: Tuesday, June 28, 2016 22:15:14
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76318.4	2.0				ug/L	81760	Standard
	Be	9	40.0	69.6	**0.0330**	0.029	88.9	ug/L	17	Standard
	Al	27	23571551.0	1.4	**163.8296**	2.147	1.3	ug/L	1410	Standard
	Sc	45	39020.2	3.0				ug/L	39543	Standard
	Ti	47	595.0	5.6	**2.3771**	0.145	6.1	ug/L	39	Standard
	V	51	1578.4	25.4	**0.0346**	0.061	176.4	ug/L	1415	Standard
	Cr	52	21713.5	1.1	**2.2571**	0.032	1.4	ug/L	6946	Standard
	Cr	53	25227.7	4.6	**30.1930**	1.400	4.6	ug/L	328	Standard
	Mn	55	113835.4	1.3	**18.5078**	0.247	1.3	ug/L	823	Standard
	Co	59	3991.2	2.2	**0.5722**	0.015	2.6	ug/L	252	Standard
	Ni	60	3905.8	1.2	**2.0985**	0.020	1.0	ug/L	192	Standard
	Cu	65	1542.7	2.9	**0.7718**	0.023	3.0	ug/L	141	Standard
	Zn	66	25635.3	1.1	**24.0224**	0.322	1.3	ug/L	491	Standard
>	**Ge**	72	484802.3	0.3				ug/L	515087	Standard
	As	75	911.4	10.9	**0.9016**	0.094	10.4	ug/L	20	Standard
	Se	82	285.6	1.4	**2.5161**	0.032	1.3	ug/L	15	Standard
	Se-1	77	1182.4	4.2	**15.9563**	0.701	4.4	ug/L	48	Standard
>	**Ga**	71	88.3	32.7				mg/L	90	Standard
	Rb	85	8777.5	4.2				ug/L	23	Standard
	Y	89	401864.9	0.9				ug/L	448510	Standard
>	**Rh**	103	95.0	19.0				ug/L	15	Standard
	Mo	98	789.3	4.8	**0.3176**	0.018	5.8	ug/L	11	Standard
	Ag	107	101.3	14.3	**0.0012**	0.002	197.6	ug/L	134	Standard
	Cd	111	81.6	8.8	**0.0411**	0.003	8.4	mg/L	7	Standard
	Cd	114	236.0	13.0	**0.0475**	0.007	15.0	ug/L	16	Standard
>	**In**	115	530144.7	1.0				ug/L	611117	Standard
	Sn	118	770.0	10.1	**0.0481**	0.014	28.6	ug/L	518	Standard
	Sb	123	728.9	13.4	**0.1651**	0.022	13.6	ug/L	127	Standard
	Ba	135	185424.0	0.3	**103.5140**	0.966	0.9	ug/L	45	Standard
	Ce	140	496.7	18.3				ug/L	298	Standard
>	**Tb**	159	867434.9	1.9				ug/L	977942	Standard
	Ho	165	20.0	0.0				ug/L	12	Standard
	Tl	203	239.3	4.0	**0.0278**	0.001	4.3	ug/L	31	Standard
	Tl	205	225.0	20.4	**0.0330**	0.007	22.5	ug/L	20	Standard
	Pb	206	582.0	1.5	**0.0598**	0.001	1.4	ug/L	286	Standard
	Pb	207	480.3	3.9	**0.0549**	0.005	9.4	ug/L	257	Standard
	Pb	208	1935.7	1.6	**0.0572**	0.003	4.8	ug/L	956	Standard
	U	238	1057.0	6.3	**0.1661**	0.010	5.7	ug/L	17	Standard
>	**Bi**	209	486031.1	0.8				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	123145.1	1.2	**166.1283**	3.309	2.0	mg/L	32	Standard
K	39	193.3	27.9	**0.5225**	0.193	37.0	mg/L	30	Standard
Ca	43	155.0	19.6	**18.5842**	5.220	28.1	mg/L	48	Standard
Fe	54	201.4	15.9	**0.0482**	0.034	70.8	mg/L	159	Standard
Fe	57	301.7	7.8	**0.4095**	0.108	26.4	mg/L	195	Standard
Sc-1	45	39020.2	3.0				mg/L	39543	Standard
Cl	35	36882.8	1.2				ug/L	27642	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	66321.6	2.9				ug/L	1647	Standard
P	31	23950.6	0.8				ug/L	15231	Standard
S	34	2285.2	3.2				ug/L	1845	Standard
Sr	88	326.7	6.4				ug/L	70	Standard
C	12	383.3	11.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	24.1	87.6				mg/L	12	Standard
Ho-1	165	20.0	0.0				mg/L	12	Standard
Er	166	53.3	28.6				mg/L	20	Standard
I	127	490270.4	8.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		93.344	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		94.121	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	86.750
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	87.246
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606076201
Sample Date/Time: Tuesday, June 28, 2016 22:18:25
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74725.5	1.6				ug/L	81760	Standard
	Be	9	33.3	56.8	**0.0272**	0.022	79.2	ug/L	17	Standard
	Al	27	1272215.4	1.6	**9.0180**	0.230	2.5	ug/L	1410	Standard
	Sc	45	40079.6	0.9				ug/L	39543	Standard
	Ti	47	73.0	21.4	**0.1312**	0.065	49.6	ug/L	39	Standard
	V	51	1912.1	11.7	**0.0708**	0.033	46.3	ug/L	1415	Standard
	Cr	52	9243.8	1.7	**0.2820**	0.015	5.4	ug/L	6946	Standard
	Cr	53	1550.1	16.6	**1.4381**	0.284	19.7	ug/L	328	Standard
	Mn	55	4050.6	51.7	**0.4818**	0.327	67.8	ug/L	823	Standard
	Co	59	576.0	42.1	**0.0513**	0.035	68.0	ug/L	252	Standard
	Ni	60	659.3	6.6	**0.2481**	0.023	9.5	ug/L	192	Standard
	Cu	65	493.7	5.0	**0.1712**	0.013	7.5	ug/L	141	Standard
	Zn	66	2294.8	5.3	**1.2839**	0.114	8.9	ug/L	491	Standard
>	**Ge**	72	510757.4	0.7				ug/L	515087	Standard
	As	75	-15.4	127.0	**0.0265**	0.018	66.6	ug/L	20	Standard
	Se	82	23.9	38.0	**0.0895**	0.079	87.8	ug/L	15	Standard
	Se-1	77	93.7	16.1	**0.5342**	0.193	36.2	ug/L	48	Standard
>	**Ga**	71	58.3	17.8				mg/L	90	Standard
	Rb	85	1476.7	6.6				ug/L	23	Standard
	Y	89	432514.2	1.7				ug/L	448510	Standard
>	**Rh**	103	26.7	39.0				ug/L	15	Standard
	Mo	98	146.0	48.2	**0.0371**	0.027	72.5	ug/L	11	Standard
	Ag	107	112.7	13.4	**0.0013**	0.002	181.1	ug/L	134	Standard
	Cd	111	43.2	14.9	**0.0182**	0.003	18.1	mg/L	7	Standard
	Cd	114	109.3	34.7	**0.0170**	0.007	43.8	ug/L	16	Standard
>	**In**	115	586396.8	0.9				ug/L	611117	Standard
	Sn	118	771.7	15.6	**0.0341**	0.022	63.3	ug/L	518	Standard
	Sb	123	236.4	15.7	**0.0394**	0.008	21.0	ug/L	127	Standard
	Ba	135	3173.0	2.9	**1.5769**	0.056	3.5	ug/L	45	Standard
	Ce	140	2270.2	3.3				ug/L	298	Standard
>	**Tb**	159	916697.6	0.7				ug/L	977942	Standard
	Ho	165	490.0	12.4				ug/L	12	Standard
	Tl	203	130.7	10.3	**0.0114**	0.002	13.6	ug/L	31	Standard
	Tl	205	215.0	77.4	**0.0282**	0.023	82.9	ug/L	20	Standard
	Pb	206	395.3	3.6	**0.0126**	0.003	22.5	ug/L	286	Standard
	Pb	207	368.7	19.2	**0.0207**	0.015	70.3	ug/L	257	Standard
	Pb	208	1630.7	27.1	**0.0295**	0.024	80.4	ug/L	956	Standard
	U	238	158.7	69.5	**0.0200**	0.016	79.0	ug/L	17	Standard
>	**Bi**	209	534609.1	0.7				ug/L	557080	Standard

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Na	23	5.0	100.0	**31.5470**	31.355	99.4	mg/L	0	Standard
Mg	24	598.3	11.5	**0.7287**	0.091	12.5	mg/L	32	Standard
K	39	176.7	18.2	**0.4475**	0.107	24.0	mg/L	30	Standard
Ca	43	93.3	48.6	**8.6233**	6.782	78.6	mg/L	48	Standard
Fe	54	114.2	15.8	**-0.0351**	0.016	46.3	mg/L	159	Standard
Fe	57	271.7	7.4	**0.2806**	0.074	26.3	mg/L	195	Standard
> **Sc-1**	45	40079.6	0.9				mg/L	39543	Standard
Cl	35	37059.3	1.9				ug/L	27642	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	3193.7	9.3				ug/L	1647	Standard
P	31	19133.7	1.0				ug/L	15231	Standard
S	34	2435.2	3.0				ug/L	1845	Standard
Sr	88	116.7	19.8				ug/L	70	Standard
C	12	110.0	24.1				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	699.7	7.7				mg/L	12	Standard
Ho-1	165	490.0	12.4				mg/L	12	Standard
Er	166	563.3	4.5				mg/L	20	Standard
I	127	24296.3	37.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.396	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.159	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.955
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.966
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606138001
Sample Date/Time: Tuesday, June 28, 2016 22:21:37
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79317.1	2.1				ug/L	81760	Standard
	Be	9	923.4	3.6	**0.9491**	0.046	4.8	ug/L	17	Standard
	Al	27	22322355.7	1.2	**149.2842**	1.816	1.2	ug/L	1410	Standard
	Sc	45	50147.9	2.6				ug/L	39543	Standard
	Ti	47	26223.7	0.7	**107.9697**	0.846	0.8	ug/L	39	Standard
	V	51	127306.3	1.5	**18.5751**	0.291	1.6	ug/L	1415	Standard
	Cr	52	100654.9	1.1	**13.7705**	0.145	1.1	ug/L	6946	Standard
	Cr	53	12865.5	4.5	**14.6884**	0.707	4.8	ug/L	328	Standard
	Mn	55	4304305.9	0.4	**680.6871**	4.381	0.6	ug/L	823	Standard
	Co	59	49359.3	0.1	**7.1725**	0.024	0.3	ug/L	252	Standard
	Ni	60	30538.1	1.5	**16.5228**	0.280	1.7	ug/L	192	Standard
	Cu	65	24616.6	0.6	**13.1942**	0.101	0.8	ug/L	141	Standard
	Zn	66	126791.0	1.1	**117.7932**	1.321	1.1	ug/L	491	Standard
>	**Ge**	72	502314.8	0.3				ug/L	515087	Standard
	As	75	6358.7	2.6	**5.8397**	0.152	2.6	ug/L	20	Standard
	Se	82	52.0	15.4	**0.3436**	0.072	20.9	ug/L	15	Standard
	Se-1	77	111.0	6.5	**0.7919**	0.097	12.2	ug/L	48	Standard
>	**Ga**	71	15155.9	0.2				mg/L	90	Standard
	Rb	85	244761.5	1.6				ug/L	23	Standard
	Y	89	581808.2	2.1				ug/L	448510	Standard
>	**Rh**	103	81.7	28.3				ug/L	15	Standard
	Mo	98	7400.1	1.4	**2.8571**	0.099	3.5	ug/L	11	Standard
	Ag	107	359.7	8.1	**0.0401**	0.005	12.7	ug/L	134	Standard
	Cd	111	226.0	4.7	**0.1082**	0.006	6.0	mg/L	7	Standard
	Cd	114	572.5	10.7	**0.1110**	0.014	12.9	ug/L	16	Standard
>	**In**	115	581977.2	2.1				ug/L	611117	Standard
	Sn	118	1150.0	8.4	**0.1021**	0.013	12.6	ug/L	518	Standard
	Sb	123	1041.4	3.0	**0.2191**	0.011	5.1	ug/L	127	Standard
	Ba	135	264934.9	0.4	**134.7601**	2.267	1.7	ug/L	45	Standard
	Ce	140	872470.7	0.6				ug/L	298	Standard
>	**Tb**	159	944063.2	1.7				ug/L	977942	Standard
	Ho	165	13182.4	3.3				ug/L	12	Standard
	Tl	203	1500.7	3.5	**0.1808**	0.008	4.2	ug/L	31	Standard
	Tl	205	1268.4	3.4	**0.1783**	0.007	4.2	ug/L	20	Standard
	Pb	206	85066.5	1.3	**16.3322**	0.328	2.0	ug/L	286	Standard
	Pb	207	70090.8	1.2	**14.9184**	0.287	1.9	ug/L	257	Standard
	Pb	208	293052.1	0.7	**16.1237**	0.113	0.7	ug/L	956	Standard
	U	238	6791.5	1.5	**0.9844**	0.021	2.1	ug/L	17	Standard
>	**Bi**	209	534845.3	0.8				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	2491.9	2.3	**2.5590**	0.057	2.2	mg/L	32	Standard
K	39	860.0	5.6	**2.1528**	0.183	8.5	mg/L	30	Standard
Ca	43	481.7	3.2	**52.3892**	3.048	5.8	mg/L	48	Standard
Fe	54	14060.9	4.3	**9.8944**	0.202	2.0	mg/L	159	Standard
Fe	57	4057.2	4.0	**10.1835**	0.599	5.9	mg/L	195	Standard
Sc-1	45	50147.9	2.6				mg/L	39543	Standard
Cl	35	34061.6	1.3				ug/L	27642	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	3443.7	4.1				ug/L	1647	Standard
P	31	33871.2	1.5				ug/L	15231	Standard
S	34	2461.9	2.1				ug/L	1845	Standard
Sr	88	305.0	8.2				ug/L	70	Standard
C	12	206.7	29.6				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	40.0	50.0				mg/L	0	Standard
Dy	164	22121.1	1.8				mg/L	12	Standard
Ho-1	165	13182.4	3.3				mg/L	12	Standard
Er	166	12021.4	0.9				mg/L	20	Standard
I	127	158658.4	11.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.012	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.520	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.232
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.009
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	

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Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606138002
Sample Date/Time: Tuesday, June 28, 2016 22:24:48
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80508.4	1.6				ug/L	81760	Standard
	Be	9	865.0	8.5	**0.8749**	0.075	8.6	ug/L	17	Standard
	Al	27	22868958.8	1.7	**150.6704**	2.885	1.9	ug/L	1410	Standard
	Sc	45	49400.4	2.8				ug/L	39543	Standard
	Ti	47	23164.7	1.4	**96.5938**	1.528	1.6	ug/L	39	Standard
	V	51	124883.8	1.8	**18.4559**	0.304	1.6	ug/L	1415	Standard
	Cr	52	103466.8	1.3	**14.3825**	0.239	1.7	ug/L	6946	Standard
	Cr	53	12758.7	1.5	**14.7559**	0.244	1.7	ug/L	328	Standard
	Mn	55	4407919.2	0.3	**706.0993**	3.755	0.5	ug/L	823	Standard
	Co	59	51228.1	1.3	**7.5421**	0.111	1.5	ug/L	252	Standard
	Ni	60	30969.0	1.2	**16.9756**	0.235	1.4	ug/L	192	Standard
	Cu	65	25034.7	0.7	**13.5947**	0.118	0.9	ug/L	141	Standard
	Zn	66	152662.0	1.2	**143.8470**	1.906	1.3	ug/L	491	Standard
>	**Ge**	72	495895.8	0.2				ug/L	515087	Standard
	As	75	6401.6	1.0	**5.9544**	0.051	0.9	ug/L	20	Standard
	Se	82	65.6	3.6	**0.4728**	0.020	4.3	ug/L	15	Standard
	Se-1	77	120.3	12.9	**0.9403**	0.215	22.9	ug/L	48	Standard
>	**Ga**	71	15282.7	1.5				mg/L	90	Standard
	Rb	85	248664.6	2.3				ug/L	23	Standard
	Y	89	598252.6	1.6				ug/L	448510	Standard
>	**Rh**	103	61.7	4.7				ug/L	15	Standard
	Mo	98	8173.4	1.7	**3.0442**	0.032	1.1	ug/L	11	Standard
	Ag	107	334.0	5.8	**0.0342**	0.003	8.9	ug/L	134	Standard
	Cd	111	175.2	4.5	**0.0802**	0.004	5.0	mg/L	7	Standard
	Cd	114	424.7	8.5	**0.0779**	0.007	8.4	ug/L	16	Standard
>	**In**	115	603234.5	0.7				ug/L	611117	Standard
	Sn	118	1006.7	2.2	**0.0706**	0.004	6.0	ug/L	518	Standard
	Sb	123	981.2	4.8	**0.1979**	0.011	5.8	ug/L	127	Standard
	Ba	135	265403.3	0.1	**130.2141**	0.915	0.7	ug/L	45	Standard
	Ce	140	904460.6	1.2				ug/L	298	Standard
>	**Tb**	159	953156.2	1.3				ug/L	977942	Standard
	Ho	165	13287.5	2.7				ug/L	12	Standard
	Tl	203	1338.1	1.2	**0.1623**	0.004	2.2	ug/L	31	Standard
	Tl	205	1380.1	21.0	**0.1966**	0.045	23.0	ug/L	20	Standard
	Pb	206	85143.9	1.2	**16.5139**	0.424	2.6	ug/L	286	Standard
	Pb	207	70337.2	0.8	**15.1235**	0.335	2.2	ug/L	257	Standard
	Pb	208	299122.5	0.5	**16.6275**	0.345	2.1	ug/L	956	Standard
	U	238	7037.6	3.1	**1.0308**	0.048	4.7	ug/L	17	Standard
>	**Bi**	209	529543.6	1.6				ug/L	557080	Standard

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Na	23	5.0	0.0	**25.7128**	0.720	2.8	mg/L	0	Standard
Mg	24	2751.9	1.6	**2.8760**	0.054	1.9	mg/L	32	Standard
K	39	820.0	12.4	**2.0772**	0.274	13.2	mg/L	30	Standard
Ca	43	460.0	15.1	**50.7618**	10.089	19.9	mg/L	48	Standard
Fe	54	14800.2	1.5	**10.5924**	0.445	4.2	mg/L	159	Standard
Fe	57	4213.9	2.7	**10.7740**	0.623	5.8	mg/L	195	Standard
Sc-1	45	49400.4	2.8				mg/L	39543	Standard
Cl	35	34900.8	0.4				ug/L	27642	Standard
Kr	83	3.0	0.0				ug/L	2	Standard
Br	81	3303.7	3.6				ug/L	1647	Standard
P	31	33101.1	2.4				ug/L	15231	Standard
S	34	2478.5	3.3				ug/L	1845	Standard
Sr	88	288.3	13.9				ug/L	70	Standard
C	12	206.7	17.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	53.3	65.8				mg/L	0	Standard
Dy	164	23538.0	3.9				mg/L	12	Standard
Ho-1	165	13287.5	2.7				mg/L	12	Standard
Er	166	12271.6	4.5				mg/L	20	Standard
I	127	174817.7	8.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		98.469	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.274	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.710	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	95.057	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606138106
Sample Date/Time: Tuesday, June 28, 2016 22:28:00
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75884.6	2.0				ug/L	81760	Standard
	Be	9	26.7	10.8	**0.0192**	0.003	17.5	ug/L	17	Standard
	Al	27	26057.5	7.4	**0.1676**	0.010	6.0	ug/L	1410	Standard
	Sc	45	39473.0	0.8				ug/L	39543	Standard
	Ti	47	39.3	21.6	**-0.0051**	0.035	681.9	ug/L	39	Standard
	V	51	1622.1	7.1	**0.0295**	0.017	56.8	ug/L	1415	Standard
	Cr	52	8616.4	0.2	**0.1952**	0.003	1.5	ug/L	6946	Standard
	Cr	53	775.0	5.7	**0.5518**	0.051	9.2	ug/L	328	Standard
	Mn	55	5073.2	5.2	**0.6432**	0.042	6.5	ug/L	823	Standard
	Co	59	305.3	2.9	**0.0126**	0.001	10.1	ug/L	252	Standard
	Ni	60	336.7	8.9	**0.0759**	0.016	21.2	ug/L	192	Standard
	Cu	65	1953.8	0.6	**0.9495**	0.006	0.6	ug/L	141	Standard
	Zn	66	2327.2	0.6	**1.3204**	0.013	1.0	ug/L	491	Standard
>	**Ge**	72	509122.8	0.0				ug/L	515087	Standard
	As	75	-29.7	15.9	**0.0136**	0.004	31.1	ug/L	20	Standard
	Se	82	19.1	15.2	**0.0489**	0.026	52.3	ug/L	15	Standard
	Se-1	77	54.3	12.9	**0.0108**	0.094	874.4	ug/L	48	Standard
>	**Ga**	71	61.7	23.4				mg/L	90	Standard
	Rb	85	193.3	9.8				ug/L	23	Standard
	Y	89	438080.9	2.7				ug/L	448510	Standard
>	**Rh**	103	13.3	94.4				ug/L	15	Standard
	Mo	98	1348.1	2.9	**0.4917**	0.018	3.6	ug/L	11	Standard
	Ag	107	96.0	6.3	**-0.0016**	0.001	59.2	ug/L	134	Standard
	Cd	111	29.0	10.6	**0.0110**	0.001	13.2	mg/L	7	Standard
	Cd	114	62.4	58.3	**0.0074**	0.007	97.2	ug/L	16	Standard
>	**In**	115	596825.6	0.5				ug/L	611117	Standard
	Sn	118	1153.4	11.3	**0.0978**	0.023	23.4	ug/L	518	Standard
	Sb	123	161.5	18.7	**0.0222**	0.007	29.7	ug/L	127	Standard
	Ba	135	505.0	6.7	**0.2253**	0.016	7.0	ug/L	45	Standard
	Ce	140	233.3	21.5				ug/L	298	Standard
>	**Tb**	159	918727.2	0.8				ug/L	977942	Standard
	Ho	165	6.7	43.3				ug/L	12	Standard
	Tl	203	77.0	15.3	**0.0048**	0.001	30.3	ug/L	31	Standard
	Tl	205	70.0	7.1	**0.0078**	0.001	10.7	ug/L	20	Standard
	Pb	206	353.0	8.2	**0.0052**	0.006	124.2	ug/L	286	Standard
	Pb	207	316.0	5.0	**0.0102**	0.004	41.5	ug/L	257	Standard
	Pb	208	1279.0	2.9	**0.0109**	0.002	20.1	ug/L	956	Standard
	U	238	66.0	9.1	**0.0067**	0.001	13.4	ug/L	17	Standard
>	**Bi**	209	529518.6	1.3				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.6931**	18.512	173.1	mg/L	0	Standard
Mg	24	105.0	31.2	**0.0830**	0.044	52.9	mg/L	32	Standard
K	39	31.7	9.1	**-0.0342**	0.011	31.1	mg/L	30	Standard
Ca	43	30.0	66.7	**-0.7662**	3.081	402.2	mg/L	48	Standard
Fe	54	132.0	13.9	**-0.0174**	0.016	93.3	mg/L	159	Standard
Fe	57	243.3	16.5	**0.1990**	0.142	71.4	mg/L	195	Standard
Sc-1	45	39473.0	0.8				mg/L	39543	Standard
Cl	35	35269.0	1.4				ug/L	27642	Standard
Kr	83	2.3	107.9				ug/L	2	Standard
Br	81	2306.8	8.4				ug/L	1647	Standard
P	31	16594.1	0.5				ug/L	15231	Standard
S	34	2131.8	6.4				ug/L	1845	Standard
Sr	88	88.3	36.8				ug/L	70	Standard
C	12	163.3	23.2				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	9.0	110.6				mg/L	12	Standard
Ho-1	165	6.7	43.3				mg/L	12	Standard
Er	166	20.0	0.0				mg/L	20	Standard
I	127	8462.7	47.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		92.814	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.842	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.661
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.052
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606139301
Sample Date/Time: Tuesday, June 28, 2016 22:31:11
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75653.4	0.9				ug/L	81760	Standard
	Be	9	36.7	15.7	**0.0301**	0.006	19.8	ug/L	17	Standard
	Al	27	730309.3	1.1	**5.1065**	0.100	1.9	ug/L	1410	Standard
	Sc	45	40455.6	1.8				ug/L	39543	Standard
	Ti	47	3049.6	0.8	**12.0214**	0.208	1.7	ug/L	39	Standard
	V	51	20044.5	0.4	**2.6590**	0.030	1.1	ug/L	1415	Standard
	Cr	52	14783.9	1.2	**1.0533**	0.031	2.9	ug/L	6946	Standard
	Cr	53	1555.1	3.4	**1.4185**	0.043	3.0	ug/L	328	Standard
	Mn	55	57374.1	1.8	**8.6446**	0.070	0.8	ug/L	823	Standard
	Co	59	1706.1	0.5	**0.2099**	0.002	1.1	ug/L	252	Standard
	Ni	60	1958.1	2.2	**0.9282**	0.028	3.1	ug/L	192	Standard
	Cu	65	11994.7	1.9	**6.1812**	0.063	1.0	ug/L	141	Standard
	Zn	66	20161.1	0.6	**17.4500**	0.168	1.0	ug/L	491	Standard
>	**Ge**	72	518413.1	1.4				ug/L	515087	Standard
	As	75	157.8	25.1	**0.1801**	0.037	20.6	ug/L	20	Standard
	Se	82	23.1	48.8	**0.0801**	0.098	121.9	ug/L	15	Standard
	Se-1	77	63.3	7.3	**0.1169**	0.069	59.2	ug/L	48	Standard
>	**Ga**	71	505.0	4.5				mg/L	90	Standard
	Rb	85	7842.0	2.0				ug/L	23	Standard
	Y	89	431479.5	0.9				ug/L	448510	Standard
>	**Rh**	103	15.0	100.0				ug/L	15	Standard
	Mo	98	468.3	2.4	**0.1592**	0.005	3.4	ug/L	11	Standard
	Ag	107	177.3	7.3	**0.0110**	0.002	18.6	ug/L	134	Standard
	Cd	111	203.8	5.3	**0.0952**	0.005	5.7	mg/L	7	Standard
	Cd	114	524.4	13.4	**0.0989**	0.013	13.5	ug/L	16	Standard
>	**In**	115	593880.8	0.6				ug/L	611117	Standard
	Sn	118	2320.2	4.6	**0.3018**	0.016	5.3	ug/L	518	Standard
	Sb	123	1520.6	3.7	**0.3188**	0.011	3.4	ug/L	127	Standard
	Ba	135	21231.5	1.4	**10.5571**	0.086	0.8	ug/L	45	Standard
	Ce	140	21453.5	1.1				ug/L	298	Standard
>	**Tb**	159	941666.6	1.6				ug/L	977942	Standard
	Ho	165	511.7	11.3				ug/L	12	Standard
	Tl	203	106.0	9.9	**0.0082**	0.001	16.0	ug/L	31	Standard
	Tl	205	85.0	31.1	**0.0097**	0.004	38.6	ug/L	20	Standard
	Pb	206	17358.9	1.4	**3.2466**	0.044	1.3	ug/L	286	Standard
	Pb	207	14395.2	1.0	**2.9852**	0.035	1.2	ug/L	257	Standard
	Pb	208	59327.6	0.5	**3.1814**	0.019	0.6	ug/L	956	Standard
	U	238	205.3	8.1	**0.0266**	0.002	9.0	ug/L	17	Standard
>	**Bi**	209	540531.5	0.2				ug/L	557080	Standard

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Na	23	3.3	173.2	**21.0062**	36.375	173.2	mg/L	0	Standard
Mg	24	250.0	13.1	**0.2677**	0.037	13.9	mg/L	32	Standard
K	39	110.0	28.4	**0.2220**	0.104	47.1	mg/L	30	Standard
Ca	43	51.7	20.1	**2.3448**	1.674	71.4	mg/L	48	Standard
Fe	54	595.3	12.6	**0.3888**	0.057	14.6	mg/L	159	Standard
Fe	57	388.3	11.5	**0.6585**	0.168	25.5	mg/L	195	Standard
> **Sc-1**	45	40455.6	1.8				mg/L	39543	Standard
Cl	35	34669.0	0.4				ug/L	27642	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	3693.8	7.2				ug/L	1647	Standard
P	31	17358.3	1.4				ug/L	15231	Standard
S	34	2180.2	7.0				ug/L	1845	Standard
Sr	88	80.0	38.0				ug/L	70	Standard
C	12	186.7	21.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	0	Standard
Dy	164	723.1	8.6				mg/L	12	Standard
Ho-1	165	511.7	11.3				mg/L	12	Standard
Er	166	493.3	12.2				mg/L	20	Standard
I	127	46309.3	8.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.531	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.646	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.180
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.029
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606139302
Sample Date/Time: Tuesday, June 28, 2016 22:34:23
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76487.6	0.6				ug/L	81760	Standard
	Be	9	26.7	57.3	**0.0190**	0.016	86.6	ug/L	17	Standard
	Al	27	422387.9	1.8	**2.9148**	0.060	2.0	ug/L	1410	Standard
	Sc	45	40846.7	1.8				ug/L	39543	Standard
	Ti	47	1809.8	2.0	**7.1474**	0.208	2.9	ug/L	39	Standard
	V	51	13250.7	0.8	**1.7088**	0.032	1.8	ug/L	1415	Standard
	Cr	52	14384.8	1.8	**1.0188**	0.008	0.8	ug/L	6946	Standard
	Cr	53	1510.1	5.3	**1.3859**	0.061	4.4	ug/L	328	Standard
	Mn	55	44577.2	1.1	**6.7600**	0.108	1.6	ug/L	823	Standard
	Co	59	1155.0	3.6	**0.1339**	0.008	5.8	ug/L	252	Standard
	Ni	60	2034.1	3.4	**0.9799**	0.027	2.8	ug/L	192	Standard
	Cu	65	13331.2	1.6	**6.9601**	0.242	3.5	ug/L	141	Standard
	Zn	66	18863.7	1.1	**16.4635**	0.229	1.4	ug/L	491	Standard
>	**Ge**	72	512762.7	2.0				ug/L	515087	Standard
	As	75	120.3	20.8	**0.1481**	0.025	16.6	ug/L	20	Standard
	Se	82	22.7	50.1	**0.0800**	0.103	128.5	ug/L	15	Standard
	Se-1	77	66.7	3.8	**0.1706**	0.046	27.2	ug/L	48	Standard
>	**Ga**	71	313.3	7.5				mg/L	90	Standard
	Rb	85	9062.7	6.6				ug/L	23	Standard
	Y	89	438095.5	1.1				ug/L	448510	Standard
>	**Rh**	103	11.7	65.5				ug/L	15	Standard
	Mo	98	749.7	5.2	**0.2622**	0.015	5.9	ug/L	11	Standard
	Ag	107	250.0	4.9	**0.0215**	0.002	9.3	ug/L	134	Standard
	Cd	111	268.7	5.4	**0.1246**	0.007	5.7	mg/L	7	Standard
	Cd	114	686.3	8.9	**0.1290**	0.012	9.4	ug/L	16	Standard
>	**In**	115	602735.5	0.4				ug/L	611117	Standard
	Sn	118	2001.8	9.6	**0.2412**	0.032	13.1	ug/L	518	Standard
	Sb	123	1551.7	1.3	**0.3206**	0.005	1.5	ug/L	127	Standard
	Ba	135	10171.4	0.7	**4.9702**	0.026	0.5	ug/L	45	Standard
	Ce	140	10203.4	3.4				ug/L	298	Standard
>	**Tb**	159	943711.5	1.3				ug/L	977942	Standard
	Ho	165	201.7	2.9				ug/L	12	Standard
	Tl	203	136.7	14.9	**0.0117**	0.003	21.7	ug/L	31	Standard
	Tl	205	126.7	4.6	**0.0153**	0.001	5.0	ug/L	20	Standard
	Pb	206	13666.8	0.5	**2.5119**	0.014	0.6	ug/L	286	Standard
	Pb	207	11351.3	1.7	**2.3133**	0.023	1.0	ug/L	257	Standard
	Pb	208	47777.6	0.4	**2.5197**	0.028	1.1	ug/L	956	Standard
	U	238	179.7	5.5	**0.0226**	0.001	5.2	ug/L	17	Standard
>	**Bi**	209	546981.3	0.8				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	296.7	10.2	**0.3250**	0.036	11.0	mg/L	32	Standard
K	39	131.7	25.3	**0.2905**	0.116	40.0	mg/L	30	Standard
Ca	43	28.3	44.4	**-1.1569**	1.919	165.9	mg/L	48	Standard
Fe	54	412.0	10.8	**0.2238**	0.038	16.8	mg/L	159	Standard
Fe	57	300.0	5.8	**0.3560**	0.058	16.2	mg/L	195	Standard
> **Sc-1**	45	40846.7	1.8				mg/L	39543	Standard
Cl	35	35351.2	2.0				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	2080.1	6.1				ug/L	1647	Standard
P	31	17501.8	0.9				ug/L	15231	Standard
S	34	2256.8	4.2				ug/L	1845	Standard
Sr	88	83.3	24.2				ug/L	70	Standard
C	12	216.7	41.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	66.7				mg/L	0	Standard
Dy	164	374.4	8.4				mg/L	12	Standard
Ho-1	165	201.7	2.9				mg/L	12	Standard
Er	166	186.7	17.2				mg/L	20	Standard
I	127	9588.0	8.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.551	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.549	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.629
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.187
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606139303
Sample Date/Time: Tuesday, June 28, 2016 22:37:34
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75224.7	2.8				ug/L	81760	Standard
	Be	9	26.7	47.2	**0.0195**	0.014	72.7	ug/L	17	Standard
	Al	27	335427.7	1.4	**2.3514**	0.039	1.7	ug/L	1410	Standard
	Sc	45	40873.4	3.2				ug/L	39543	Standard
	Ti	47	1306.7	3.3	**5.2014**	0.227	4.4	ug/L	39	Standard
	V	51	16739.3	1.3	**2.2527**	0.061	2.7	ug/L	1415	Standard
	Cr	52	12212.3	0.6	**0.7342**	0.019	2.6	ug/L	6946	Standard
	Cr	53	1208.4	9.2	**1.0637**	0.123	11.6	ug/L	328	Standard
	Mn	55	30356.4	1.8	**4.6331**	0.125	2.7	ug/L	823	Standard
	Co	59	971.0	0.7	**0.1098**	0.003	2.3	ug/L	252	Standard
	Ni	60	1423.4	2.9	**0.6666**	0.013	2.0	ug/L	192	Standard
	Cu	65	8494.4	2.1	**4.4744**	0.140	3.1	ug/L	141	Standard
	Zn	66	12099.5	0.6	**10.4446**	0.200	1.9	ug/L	491	Standard
>	**Ge**	72	504506.4	1.3				ug/L	515087	Standard
	As	75	95.4	18.1	**0.1269**	0.016	12.6	ug/L	20	Standard
	Se	82	22.1	16.3	**0.0773**	0.034	44.4	ug/L	15	Standard
	Se-1	77	59.3	9.3	**0.0847**	0.065	76.5	ug/L	48	Standard
>	**Ga**	71	286.7	13.3				mg/L	90	Standard
	Rb	85	4860.8	3.1				ug/L	23	Standard
	Y	89	447487.9	1.5				ug/L	448510	Standard
>	**Rh**	103	10.0	50.0				ug/L	15	Standard
	Mo	98	335.7	2.2	**0.1056**	0.003	3.1	ug/L	11	Standard
	Ag	107	149.3	7.8	**0.0061**	0.002	27.6	ug/L	134	Standard
	Cd	111	92.8	5.9	**0.0407**	0.003	6.7	mg/L	7	Standard
	Cd	114	275.4	18.0	**0.0483**	0.009	19.4	ug/L	16	Standard
>	**In**	115	608945.1	0.4				ug/L	611117	Standard
	Sn	118	2160.2	6.9	**0.2646**	0.024	9.0	ug/L	518	Standard
	Sb	123	1475.9	3.1	**0.3011**	0.011	3.5	ug/L	127	Standard
	Ba	135	7298.8	1.0	**3.5230**	0.049	1.4	ug/L	45	Standard
	Ce	140	7186.7	3.0				ug/L	298	Standard
>	**Tb**	159	941207.0	0.6				ug/L	977942	Standard
	Ho	165	175.0	29.8				ug/L	12	Standard
	Tl	203	127.3	10.7	**0.0108**	0.002	16.0	ug/L	31	Standard
	Tl	205	91.7	22.0	**0.0106**	0.003	26.7	ug/L	20	Standard
	Pb	206	10382.9	0.6	**1.9175**	0.012	0.6	ug/L	286	Standard
	Pb	207	8724.8	0.9	**1.7876**	0.028	1.6	ug/L	257	Standard
	Pb	208	36599.7	1.1	**1.9407**	0.035	1.8	ug/L	956	Standard
	U	238	138.7	9.6	**0.0170**	0.002	11.7	ug/L	17	Standard
>	**Bi**	209	540229.2	0.6				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	201.7	23.0	**0.2027**	0.061	30.0	mg/L	32	Standard
K	39	85.0	15.6	**0.1365**	0.043	31.8	mg/L	30	Standard
Ca	43	46.7	34.4	**1.4659**	2.107	143.8	mg/L	48	Standard
Fe	54	348.6	7.5	**0.1680**	0.018	11.0	mg/L	159	Standard
Fe	57	325.0	9.4	**0.4364**	0.086	19.7	mg/L	195	Standard
> **Sc-1**	45	40873.4	3.2				mg/L	39543	Standard
Cl	35	35045.8	0.8				ug/L	27642	Standard
Kr	83	2.3	107.9				ug/L	2	Standard
Br	81	1873.4	9.4				ug/L	1647	Standard
P	31	17319.9	1.5				ug/L	15231	Standard
S	34	2126.8	6.5				ug/L	1845	Standard
Sr	88	78.3	28.8				ug/L	70	Standard
C	12	160.0	25.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	78.1				mg/L	0	Standard
Dy	164	223.9	25.3				mg/L	12	Standard
Ho-1	165	175.0	29.8				mg/L	12	Standard
Er	166	126.7	25.4				mg/L	20	Standard
I	127	7363.5	5.1				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		92.007	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.946	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.645
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.975
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606139304
Sample Date/Time: Tuesday, June 28, 2016 22:40:46
Number of Replicates: 3
Autosampler Position: 346
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74628.4	2.8				ug/L	81760	Standard
	Be	9	20.0	25.0	**0.0122**	0.005	40.5	ug/L	17	Standard
	Al	27	327323.4	5.6	**2.3109**	0.073	3.1	ug/L	1410	Standard
	Sc	45	39232.4	1.5				ug/L	39543	Standard
	Ti	47	1081.7	2.8	**4.2827**	0.197	4.6	ug/L	39	Standard
	V	51	17364.8	3.6	**2.3462**	0.053	2.3	ug/L	1415	Standard
	Cr	52	11969.4	3.2	**0.6998**	0.018	2.6	ug/L	6946	Standard
	Cr	53	1151.7	1.8	**0.9999**	0.045	4.5	ug/L	328	Standard
	Mn	55	27710.7	5.0	**4.2196**	0.194	4.6	ug/L	823	Standard
	Co	59	805.7	4.4	**0.0858**	0.004	4.6	ug/L	252	Standard
	Ni	60	1156.4	2.7	**0.5226**	0.014	2.7	ug/L	192	Standard
	Cu	65	7318.8	3.6	**3.8448**	0.072	1.9	ug/L	141	Standard
	Zn	66	9717.1	4.5	**8.2301**	0.259	3.2	ug/L	491	Standard
>	**Ge**	72	504100.5	3.0				ug/L	515087	Standard
	As	75	86.2	19.2	**0.1185**	0.013	11.2	ug/L	20	Standard
	Se	82	21.0	26.2	**0.0675**	0.052	77.2	ug/L	15	Standard
	Se-1	77	57.7	9.6	**0.0648**	0.094	144.5	ug/L	48	Standard
>	**Ga**	71	233.3	13.9				mg/L	90	Standard
	Rb	85	3882.2	6.3				ug/L	23	Standard
	Y	89	430223.1	5.6				ug/L	448510	Standard
>	**Rh**	103	8.3	124.9				ug/L	15	Standard
	Mo	98	801.5	6.3	**0.2860**	0.012	4.3	ug/L	11	Standard
	Ag	107	120.7	5.8	**0.0023**	0.000	18.3	ug/L	134	Standard
	Cd	111	92.6	9.2	**0.0417**	0.004	9.3	mg/L	7	Standard
	Cd	114	241.3	24.7	**0.0431**	0.013	29.2	ug/L	16	Standard
>	**In**	115	593856.9	3.7				ug/L	611117	Standard
	Sn	118	1755.1	4.0	**0.2036**	0.011	5.3	ug/L	518	Standard
	Sb	123	1169.8	3.7	**0.2423**	0.004	1.7	ug/L	127	Standard
	Ba	135	5956.2	4.1	**2.9440**	0.065	2.2	ug/L	45	Standard
	Ce	140	5319.3	7.3				ug/L	298	Standard
>	**Tb**	159	910819.3	2.0				ug/L	977942	Standard
	Ho	165	128.3	12.5				ug/L	12	Standard
	Tl	203	88.0	5.7	**0.0062**	0.001	12.2	ug/L	31	Standard
	Tl	205	70.0	25.8	**0.0077**	0.003	33.5	ug/L	20	Standard
	Pb	206	8718.5	3.6	**1.6271**	0.072	4.4	ug/L	286	Standard
	Pb	207	7163.0	4.3	**1.4818**	0.072	4.9	ug/L	257	Standard
	Pb	208	29853.9	4.1	**1.5981**	0.065	4.1	ug/L	956	Standard
	U	238	115.3	2.6	**0.0139**	0.000	1.6	ug/L	17	Standard
>	**Bi**	209	531672.0	1.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	220.0	2.3	**0.2381**	0.006	2.4	mg/L	32	Standard
K	39	73.3	3.9	**0.1083**	0.007	6.4	mg/L	30	Standard
Ca	43	31.7	24.1	**-0.5049**	1.115	220.9	mg/L	48	Standard
Fe	54	263.9	12.4	**0.1035**	0.028	27.1	mg/L	159	Standard
Fe	57	248.3	16.1	**0.2213**	0.145	65.6	mg/L	195	Standard
> **Sc-1**	45	39232.4	1.5				mg/L	39543	Standard
Cl	35	34033.6	5.9				ug/L	27642	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	1946.8	12.8				ug/L	1647	Standard
P	31	16857.7	2.7				ug/L	15231	Standard
S	34	2100.1	4.5				ug/L	1845	Standard
Sr	88	66.7	28.4				ug/L	70	Standard
C	12	176.7	23.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	134.9	39.4				mg/L	12	Standard
Ho-1	165	128.3	12.5				mg/L	12	Standard
Er	166	106.7	10.8				mg/L	20	Standard
I	127	6791.5	2.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.277	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.867	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.176
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.439
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606139305
Sample Date/Time: Tuesday, June 28, 2016 22:43:57
Number of Replicates: 3
Autosampler Position: 347
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74899.7	0.9				ug/L	81760	Standard
	Be	9	18.3	15.7	**0.0104**	0.003	29.0	ug/L	17	Standard
	Al	27	328437.1	1.5	**2.3115**	0.035	1.5	ug/L	1410	Standard
	Sc	45	40647.8	2.1				ug/L	39543	Standard
	Ti	47	1117.7	1.6	**4.2600**	0.050	1.2	ug/L	39	Standard
	V	51	13332.6	0.8	**1.6821**	0.023	1.4	ug/L	1415	Standard
	Cr	52	11640.1	0.5	**0.5893**	0.015	2.6	ug/L	6946	Standard
	Cr	53	1158.4	10.6	**0.9575**	0.132	13.8	ug/L	328	Standard
	Mn	55	25508.1	0.7	**3.7255**	0.023	0.6	ug/L	823	Standard
	Co	59	795.0	2.3	**0.0800**	0.002	2.0	ug/L	252	Standard
	Ni	60	1111.4	4.5	**0.4759**	0.022	4.7	ug/L	192	Standard
	Cu	65	7781.0	2.0	**3.9419**	0.127	3.2	ug/L	141	Standard
	Zn	66	11686.8	2.5	**9.6690**	0.148	1.5	ug/L	491	Standard
>	**Ge**	72	523177.1	1.2				ug/L	515087	Standard
	As	75	150.7	20.5	**0.1724**	0.029	16.5	ug/L	20	Standard
	Se	82	42.9	7.7	**0.2478**	0.029	11.9	ug/L	15	Standard
	Se-1	77	60.7	2.5	**0.0739**	0.016	21.3	ug/L	48	Standard
>	**Ga**	71	226.7	1.3				mg/L	90	Standard
	Rb	85	5315.9	7.9				ug/L	23	Standard
	Y	89	431953.8	1.9				ug/L	448510	Standard
>	**Rh**	103	15.0	66.7				ug/L	15	Standard
	Mo	98	276.3	6.3	**0.0857**	0.006	6.9	ug/L	11	Standard
	Ag	107	169.0	7.2	**0.0096**	0.002	19.7	ug/L	134	Standard
	Cd	111	162.4	6.5	**0.0750**	0.005	6.0	mg/L	7	Standard
	Cd	114	335.5	8.9	**0.0613**	0.005	8.9	ug/L	16	Standard
>	**In**	115	595959.3	0.7				ug/L	611117	Standard
	Sn	118	1471.7	5.0	**0.1534**	0.014	9.4	ug/L	518	Standard
	Sb	123	1173.4	5.5	**0.2422**	0.014	5.7	ug/L	127	Standard
	Ba	135	5837.1	3.3	**2.8740**	0.084	2.9	ug/L	45	Standard
	Ce	140	5496.0	2.0				ug/L	298	Standard
>	**Tb**	159	937149.5	1.0				ug/L	977942	Standard
	Ho	165	138.3	7.5				ug/L	12	Standard
	Tl	203	94.3	16.1	**0.0066**	0.002	26.5	ug/L	31	Standard
	Tl	205	66.7	26.3	**0.0070**	0.002	32.8	ug/L	20	Standard
	Pb	206	8082.5	0.7	**1.4592**	0.036	2.4	ug/L	286	Standard
	Pb	207	6688.5	1.5	**1.3390**	0.041	3.1	ug/L	257	Standard
	Pb	208	27392.7	1.4	**1.4181**	0.004	0.2	ug/L	956	Standard
	U	238	108.7	8.4	**0.0125**	0.002	12.3	ug/L	17	Standard
>	**Bi**	209	547233.0	1.6				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.3347**	17.892	173.1	mg/L	0	Standard
Mg	24	221.7	15.4	**0.2295**	0.039	17.1	mg/L	32	Standard
K	39	100.0	17.3	**0.1871**	0.055	29.3	mg/L	30	Standard
Ca	43	26.7	60.3	**-1.4304**	2.300	160.8	mg/L	48	Standard
Fe	54	289.4	9.6	**0.1178**	0.025	21.2	mg/L	159	Standard
Fe	57	271.7	9.3	**0.2686**	0.097	36.1	mg/L	195	Standard
Sc-1	45	40647.8	2.1				mg/L	39543	Standard
Cl	35	33690.1	1.5				ug/L	27642	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	7261.7	1.9				ug/L	1647	Standard
P	31	16325.5	0.4				ug/L	15231	Standard
S	34	1950.1	10.4				ug/L	1845	Standard
Sr	88	81.7	9.4				ug/L	70	Standard
C	12	186.7	18.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	222.3	16.3				mg/L	12	Standard
Ho-1	165	138.3	7.5				mg/L	12	Standard
Er	166	160.0	6.3				mg/L	20	Standard
I	127	6493.1	4.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		91.609	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.571	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.520
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.232
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 22:47:10
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71793.2	3.7				ug/L	81760	Standard
	Be	9	44618.9	1.2	**51.1958**	1.696	3.3	ug/L	17	Standard
	Al	27	6865175.8	2.0	**50.7482**	1.963	3.9	ug/L	1410	Standard
	Sc	45	39468.0	3.1				ug/L	39543	Standard
	Ti	47	23906.5	1.3	**96.7870**	2.402	2.5	ug/L	39	Standard
	V	51	334011.6	0.6	**48.2557**	0.941	2.0	ug/L	1415	Standard
	Cr	52	340377.2	0.5	**48.2561**	1.001	2.1	ug/L	6946	Standard
	Cr	53	42902.3	1.0	**48.9484**	1.164	2.4	ug/L	328	Standard
	Mn	55	309303.1	1.2	**47.9606**	0.591	1.2	ug/L	823	Standard
	Co	59	332037.9	0.8	**47.6215**	0.384	0.8	ug/L	252	Standard
	Ni	60	90431.4	0.3	**48.3175**	0.794	1.6	ug/L	192	Standard
	Cu	65	91394.5	0.3	**48.4155**	0.851	1.8	ug/L	141	Standard
	Zn	66	53482.9	1.3	**48.3851**	1.341	2.8	ug/L	491	Standard
>	**Ge**	72	510859.4	1.5				ug/L	515087	Standard
	As	75	54007.5	0.9	**48.4846**	1.105	2.3	ug/L	20	Standard
	Se	82	5360.1	0.8	**46.8280**	0.601	1.3	ug/L	15	Standard
	Se-1	77	3686.4	1.7	**48.6230**	0.812	1.7	ug/L	48	Standard
>	**Ga**	71	56.7	18.4				mg/L	90	Standard
	Rb	85	810.0	4.5				ug/L	23	Standard
	Y	89	431931.2	2.6				ug/L	448510	Standard
>	**Rh**	103	26.7	43.3				ug/L	15	Standard
	Mo	98	251225.1	0.7	**96.8468**	1.378	1.4	ug/L	11	Standard
	Ag	107	304440.8	0.4	**47.2505**	0.474	1.0	ug/L	134	Standard
	Cd	111	96060.5	0.9	**46.8341**	0.834	1.8	mg/L	7	Standard
	Cd	114	238889.8	1.2	**47.9103**	0.301	0.6	ug/L	16	Standard
>	**In**	115	586435.3	1.3				ug/L	611117	Standard
	Sn	118	269259.0	2.4	**47.3660**	1.700	3.6	ug/L	518	Standard
	Sb	123	219432.6	0.9	**48.4541**	0.360	0.7	ug/L	127	Standard
	Ba	135	92563.9	0.7	**46.7027**	0.660	1.4	ug/L	45	Standard
	Ce	140	88.3	61.1				ug/L	298	Standard
>	**Tb**	159	918919.9	0.8				ug/L	977942	Standard
	Ho	165	13.3	21.7				ug/L	12	Standard
	Tl	203	386832.4	0.9	**48.5637**	0.777	1.6	ug/L	31	Standard
	Tl	205	343277.1	1.0	**49.6247**	0.132	0.3	ug/L	20	Standard
	Pb	206	249448.7	0.4	**48.7606**	0.291	0.6	ug/L	286	Standard
	Pb	207	228146.2	0.6	**49.4471**	0.531	1.1	ug/L	257	Standard
	Pb	208	902842.6	0.2	**50.5774**	0.397	0.8	ug/L	956	Standard
	U	238	333363.3	0.9	**49.2162**	0.753	1.5	ug/L	17	Standard
>	**Bi**	209	526646.5	0.9				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.4874**	18.156	173.1	mg/L	0	Standard
Mg	24	3567.1	3.5	**4.7067**	0.317	6.7	mg/L	32	Standard
K	39	1421.7	5.7	**4.6773**	0.373	8.0	mg/L	30	Standard
Ca	43	60.0	8.3	**3.7779**	0.573	15.2	mg/L	48	Standard
Fe	54	5303.1	4.9	**4.6695**	0.087	1.9	mg/L	159	Standard
Fe	57	1570.1	3.9	**4.6916**	0.328	7.0	mg/L	195	Standard
Sc-1	45	39468.0	3.1				mg/L	39543	Standard
Cl	35	34178.5	1.9				ug/L	27642	Standard
Kr	83	1.7	124.9				ug/L	2	Standard
Br	81	1696.8	1.5				ug/L	1647	Standard
P	31	17313.2	2.3				ug/L	15231	Standard
S	34	2535.2	5.3				ug/L	1845	Standard
Sr	88	81.7	40.8				ug/L	70	Standard
C	12	120.0	14.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	8.9	11.2				mg/L	12	Standard
Ho-1	165	13.3	21.7				mg/L	12	Standard
Er	166	23.3	89.2				mg/L	20	Standard
I	127	2468.5	18.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.392		
Al	27	101.496		
Sc	45			
Ti	47	96.787		
V	51	96.511		
Cr	52	96.512		
Cr	53			
Mn	55	95.921		
Co	59	95.243		
Ni	60	96.635		
Cu	65	96.831		
Zn	66	96.770		
Ge	72		99.179	
As	75	96.969		
Se	82	93.656		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	96.847		
Ag	107	94.501		
Cd	111	93.668		
Cd	114			
In	115			95.961
Sn	118	94.732		
Sb	123	96.908		
Ba	135	93.405		
Ce	140			
Tb	159			
Ho	165			
Tl	203	97.127		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.155		
U	238	98.432		
Bi	209			94.537
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 22:50:22
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72519.8	1.9				ug/L	81760	Standard
	Be	9	21.7	113.8	**0.0146**	0.027	188.1	ug/L	17	Standard
	Al	27	2256.8	25.0	**0.0021**	0.004	187.1	ug/L	1410	Standard
	Sc	45	39016.8	1.3				ug/L	39543	Standard
	Ti	47	28.7	19.2	**-0.0470**	0.020	43.5	ug/L	39	Standard
	V	51	1194.9	2.1	**-0.0301**	0.006	21.3	ug/L	1415	Standard
	Cr	52	6354.0	0.6	**-0.1199**	0.015	12.7	ug/L	6946	Standard
	Cr	53	495.0	4.6	**0.2373**	0.020	8.3	ug/L	328	Standard
	Mn	55	724.7	7.6	**-0.0338**	0.007	19.6	ug/L	823	Standard
	Co	59	253.7	9.1	**0.0057**	0.003	47.4	ug/L	252	Standard
	Ni	60	174.7	5.0	**-0.0098**	0.003	33.3	ug/L	192	Standard
	Cu	65	124.0	10.1	**-0.0239**	0.006	23.4	ug/L	141	Standard
	Zn	66	416.7	1.4	**-0.4373**	0.011	2.5	ug/L	491	Standard
>	**Ge**	72	501758.9	1.8				ug/L	515087	Standard
	As	75	-30.1	127.3	**0.0123**	0.035	285.9	ug/L	20	Standard
	Se	82	17.1	40.3	**0.0328**	0.058	178.2	ug/L	15	Standard
	Se-1	77	51.3	18.1	**-0.0207**	0.113	545.7	ug/L	48	Standard
>	**Ga**	71	38.3	27.2				mg/L	90	Standard
	Rb	85	28.3	36.7				ug/L	23	Standard
	Y	89	432168.4	0.3				ug/L	448510	Standard
>	**Rh**	103	15.0	66.7				ug/L	15	Standard
	Mo	98	274.3	30.4	**0.0862**	0.033	37.9	ug/L	11	Standard
	Ag	107	126.3	11.5	**0.0033**	0.002	71.2	ug/L	134	Standard
	Cd	111	15.5	45.6	**0.0046**	0.003	75.0	mg/L	7	Standard
	Cd	114	32.8	69.1	**0.0016**	0.005	280.8	ug/L	16	Standard
>	**In**	115	589750.3	1.0				ug/L	611117	Standard
	Sn	118	705.0	18.1	**0.0215**	0.021	98.3	ug/L	518	Standard
	Sb	123	430.7	24.1	**0.0816**	0.022	27.0	ug/L	127	Standard
	Ba	135	35.7	21.2	**-0.0072**	0.004	55.2	ug/L	45	Standard
	Ce	140	38.3	41.9				ug/L	298	Standard
>	**Tb**	159	920829.0	0.8				ug/L	977942	Standard
	Ho	165	5.0	100.0				ug/L	12	Standard
	Tl	203	59.7	35.8	**0.0027**	0.003	98.6	ug/L	31	Standard
	Tl	205	48.3	29.9	**0.0047**	0.002	43.8	ug/L	20	Standard
	Pb	206	270.0	6.9	**-0.0110**	0.004	33.8	ug/L	286	Standard
	Pb	207	257.3	3.4	**-0.0024**	0.002	65.9	ug/L	257	Standard
	Pb	208	1000.7	8.0	**-0.0046**	0.004	92.2	ug/L	956	Standard
	U	238	61.0	23.2	**0.0060**	0.002	34.0	ug/L	17	Standard
>	**Bi**	209	528739.4	0.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	23.3	86.6	**-0.0259**	0.027	103.6	mg/L	32	Standard
K	39	31.7	48.2	**-0.0333**	0.052	155.8	mg/L	30	Standard
Ca	43	30.0	72.6	**-0.7014**	3.391	483.5	mg/L	48	Standard
Fe	54	129.4	20.1	**-0.0182**	0.025	139.3	mg/L	159	Standard
Fe	57	250.0	16.4	**0.2316**	0.148	64.1	mg/L	195	Standard
Sc-1	45	39016.8	1.3				mg/L	39543	Standard
Cl	35	33625.3	1.5				ug/L	27642	Standard
Kr	83	3.3	124.9				ug/L	2	Standard
Br	81	1580.1	13.5				ug/L	1647	Standard
P	31	17735.4	1.8				ug/L	15231	Standard
S	34	2481.9	5.6				ug/L	1845	Standard
Sr	88	73.3	14.2				ug/L	70	Standard
C	12	113.3	41.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	9.4	5.9				mg/L	12	Standard
Ho-1	165	5.0	100.0				mg/L	12	Standard
Er	166	13.3	86.6				mg/L	20	Standard
I	127	1860.1	15.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.412	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.504
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.913
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606139306
Sample Date/Time: Tuesday, June 28, 2016 22:53:35
Number of Replicates: 3
Autosampler Position: 348
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70220.8	3.4				ug/L	81760	Standard
	Be	9	21.7	48.0	**0.0156**	0.012	75.7	ug/L	17	Standard
	Al	27	339019.6	1.3	**2.5478**	0.066	2.6	ug/L	1410	Standard
	Sc	45	39077.0	1.3				ug/L	39543	Standard
	Ti	47	1359.1	3.4	**5.3458**	0.211	3.9	ug/L	39	Standard
	V	51	13893.8	2.6	**1.8093**	0.072	4.0	ug/L	1415	Standard
	Cr	52	10697.1	2.4	**0.4928**	0.058	11.9	ug/L	6946	Standard
	Cr	53	1106.7	6.2	**0.9306**	0.098	10.5	ug/L	328	Standard
	Mn	55	27827.9	2.7	**4.1809**	0.179	4.3	ug/L	823	Standard
	Co	59	887.0	0.6	**0.0960**	0.003	2.8	ug/L	252	Standard
	Ni	60	1041.0	6.1	**0.4528**	0.043	9.5	ug/L	192	Standard
	Cu	65	6718.2	2.4	**3.4752**	0.137	3.9	ug/L	141	Standard
	Zn	66	10492.3	2.9	**8.8264**	0.376	4.3	ug/L	491	Standard
>	**Ge**	72	510902.9	1.6				ug/L	515087	Standard
	As	75	95.4	28.2	**0.1256**	0.023	18.4	ug/L	20	Standard
	Se	82	17.2	18.1	**0.0307**	0.025	82.4	ug/L	15	Standard
	Se-1	77	52.3	18.1	**-0.0171**	0.139	811.5	ug/L	48	Standard
>	**Ga**	71	256.7	6.0				mg/L	90	Standard
	Rb	85	4037.2	4.0				ug/L	23	Standard
	Y	89	441838.7	1.2				ug/L	448510	Standard
>	**Rh**	103	13.3	43.3				ug/L	15	Standard
	Mo	98	321.3	2.1	**0.1057**	0.004	4.2	ug/L	11	Standard
	Ag	107	134.7	13.7	**0.0048**	0.003	55.1	ug/L	134	Standard
	Cd	111	94.4	13.5	**0.0434**	0.006	14.4	mg/L	7	Standard
	Cd	114	184.5	30.3	**0.0322**	0.011	33.4	ug/L	16	Standard
>	**In**	115	582517.6	1.6				ug/L	611117	Standard
	Sn	118	1633.4	8.5	**0.1881**	0.027	14.5	ug/L	518	Standard
	Sb	123	1202.8	2.0	**0.2547**	0.009	3.5	ug/L	127	Standard
	Ba	135	5625.0	0.7	**2.8338**	0.047	1.7	ug/L	45	Standard
	Ce	140	7943.7	1.7				ug/L	298	Standard
>	**Tb**	159	895525.5	0.4				ug/L	977942	Standard
	Ho	165	181.7	15.7				ug/L	12	Standard
	Tl	203	104.3	12.5	**0.0084**	0.002	20.6	ug/L	31	Standard
	Tl	205	91.7	22.0	**0.0111**	0.003	27.4	ug/L	20	Standard
	Pb	206	6727.8	0.5	**1.2603**	0.018	1.4	ug/L	286	Standard
	Pb	207	5614.0	0.6	**1.1666**	0.017	1.4	ug/L	257	Standard
	Pb	208	23664.6	2.1	**1.2740**	0.038	3.0	ug/L	956	Standard
	U	238	141.7	17.4	**0.0181**	0.004	20.7	ug/L	17	Standard
>	**Bi**	209	523874.2	0.9				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	196.7	25.5	**0.2078**	0.067	32.2	mg/L	32	Standard
K	39	58.3	32.5	**0.0586**	0.068	115.6	mg/L	30	Standard
Ca	43	33.3	48.2	**-0.2427**	2.425	998.9	mg/L	48	Standard
Fe	54	342.2	5.9	**0.1765**	0.023	12.8	mg/L	159	Standard
Fe	57	293.3	7.1	**0.3778**	0.076	20.2	mg/L	195	Standard
Sc-1	45	39077.0	1.3				mg/L	39543	Standard
Cl	35	33443.5	2.1				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1690.1	11.7				ug/L	1647	Standard
P	31	17176.4	4.2				ug/L	15231	Standard
S	34	2306.8	4.6				ug/L	1845	Standard
Sr	88	88.3	31.2				ug/L	70	Standard
C	12	143.3	10.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	0	Standard
Dy	164	280.6	4.7				mg/L	12	Standard
Ho-1	165	181.7	15.7				mg/L	12	Standard
Er	166	196.7	36.8				mg/L	20	Standard
I	127	4592.4	1.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		85.886	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.188	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.320
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.039
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606139307
Sample Date/Time: Tuesday, June 28, 2016 22:56:46
Number of Replicates: 3
Autosampler Position: 349
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72494.7	0.8				ug/L	81760	Standard
	Be	9	18.3	15.7	**0.0111**	0.003	30.5	ug/L	17	Standard
	Al	27	342418.0	1.1	**2.4911**	0.036	1.4	ug/L	1410	Standard
	Sc	45	40101.3	1.0				ug/L	39543	Standard
	Ti	47	932.7	2.7	**3.5634**	0.149	4.2	ug/L	39	Standard
	V	51	14612.8	2.1	**1.8826**	0.024	1.3	ug/L	1415	Standard
	Cr	52	11386.6	1.0	**0.5692**	0.057	10.1	ug/L	6946	Standard
	Cr	53	1260.1	6.9	**1.0869**	0.132	12.1	ug/L	328	Standard
	Mn	55	23640.1	1.0	**3.4768**	0.122	3.5	ug/L	823	Standard
	Co	59	741.4	0.2	**0.0735**	0.003	3.5	ug/L	252	Standard
	Ni	60	1110.0	3.0	**0.4811**	0.030	6.3	ug/L	192	Standard
	Cu	65	7534.9	0.8	**3.8515**	0.130	3.4	ug/L	141	Standard
	Zn	66	11297.5	1.4	**9.4161**	0.135	1.4	ug/L	491	Standard
>	**Ge**	72	518404.2	2.6				ug/L	515087	Standard
	As	75	185.7	13.2	**0.2041**	0.018	8.6	ug/L	20	Standard
	Se	82	58.4	11.2	**0.3845**	0.051	13.1	ug/L	15	Standard
	Se-1	77	57.0	12.3	**0.0333**	0.095	284.1	ug/L	48	Standard
>	**Ga**	71	201.7	7.6				mg/L	90	Standard
	Rb	85	5255.9	2.3				ug/L	23	Standard
	Y	89	429044.9	0.4				ug/L	448510	Standard
>	**Rh**	103	18.3	68.6				ug/L	15	Standard
	Mo	98	299.7	1.8	**0.0961**	0.002	1.9	ug/L	11	Standard
	Ag	107	153.3	22.0	**0.0075**	0.005	67.1	ug/L	134	Standard
	Cd	111	143.0	17.2	**0.0665**	0.011	16.8	mg/L	7	Standard
	Cd	114	356.8	31.1	**0.0663**	0.022	32.5	ug/L	16	Standard
>	**In**	115	588246.1	1.2				ug/L	611117	Standard
	Sn	118	1550.1	10.3	**0.1702**	0.025	14.7	ug/L	518	Standard
	Sb	123	1125.9	6.3	**0.2350**	0.013	5.6	ug/L	127	Standard
	Ba	135	5627.4	4.0	**2.8066**	0.107	3.8	ug/L	45	Standard
	Ce	140	5279.3	1.4				ug/L	298	Standard
>	**Tb**	159	929768.7	1.5				ug/L	977942	Standard
	Ho	165	90.0	24.2				ug/L	12	Standard
	Tl	203	125.7	60.8	**0.0104**	0.009	86.4	ug/L	31	Standard
	Tl	205	76.7	65.3	**0.0084**	0.007	82.2	ug/L	20	Standard
	Pb	206	9321.2	0.6	**1.7003**	0.038	2.2	ug/L	286	Standard
	Pb	207	7700.6	1.2	**1.5576**	0.043	2.8	ug/L	257	Standard
	Pb	208	32126.4	0.5	**1.6815**	0.027	1.6	ug/L	956	Standard
	U	238	95.0	19.2	**0.0106**	0.002	23.3	ug/L	17	Standard
>	**Bi**	209	544815.4	1.6				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	241.7	8.4	**0.2600**	0.024	9.1	mg/L	32	Standard
K	39	93.3	13.5	**0.1697**	0.044	25.8	mg/L	30	Standard
Ca	43	48.3	11.9	**1.8938**	0.874	46.1	mg/L	48	Standard
Fe	54	296.6	3.5	**0.1277**	0.009	7.4	mg/L	159	Standard
Fe	57	275.0	13.7	**0.2917**	0.134	46.0	mg/L	195	Standard
> **Sc-1**	45	40101.3	1.0				mg/L	39543	Standard
Cl	35	33371.4	1.5				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	12191.6	6.9				ug/L	1647	Standard
P	31	16642.5	2.2				ug/L	15231	Standard
S	34	2221.8	1.3				ug/L	1845	Standard
Sr	88	81.7	3.5				ug/L	70	Standard
C	12	180.0	14.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	78.1				mg/L	0	Standard
Dy	164	179.2	25.7				mg/L	12	Standard
Ho-1	165	90.0	24.2				mg/L	12	Standard
Er	166	86.7	26.6				mg/L	20	Standard
I	127	5902.8	5.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.668	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.644	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.258
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.798
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606140101
Sample Date/Time: Tuesday, June 28, 2016 22:59:58
Number of Replicates: 3
Autosampler Position: 350
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81815.4	2.6				ug/L	81760	Standard
	Be	9	21.7	13.3	**0.0121**	0.003	22.9	ug/L	17	Standard
	Al	27	45785308.7	4.2	**296.7336**	5.244	1.8	ug/L	1410	Standard
	Sc	45	41065.6	3.8				ug/L	39543	Standard
	Ti	47	178.0	12.2	**0.5887**	0.089	15.1	ug/L	39	Standard
	V	51	35448.4	4.1	**5.1643**	0.153	3.0	ug/L	1415	Standard
	Cr	52	9787.8	5.7	**0.4235**	0.068	16.1	ug/L	6946	Standard
	Cr	53	17411.8	14.2	**20.5297**	2.734	13.3	ug/L	328	Standard
	Mn	55	165972.1	5.7	**26.8086**	1.220	4.6	ug/L	823	Standard
	Co	59	1056.4	5.8	**0.1270**	0.007	5.7	ug/L	252	Standard
	Ni	60	3143.3	7.3	**1.6522**	0.109	6.6	ug/L	192	Standard
	Cu	65	2057.8	4.7	**1.0496**	0.040	3.9	ug/L	141	Standard
	Zn	66	6024.5	5.7	**4.9599**	0.261	5.3	ug/L	491	Standard
>	**Ge**	72	489001.5	1.3				ug/L	515087	Standard
	As	75	1112.2	8.9	**1.0817**	0.080	7.4	ug/L	20	Standard
	Se	82	302.7	9.2	**2.6482**	0.222	8.4	ug/L	15	Standard
	Se-1	77	1245.1	18.8	**16.6637**	3.078	18.5	ug/L	48	Standard
>	**Ga**	71	58.3	55.1				mg/L	90	Standard
	Rb	85	2691.9	5.7				ug/L	23	Standard
	Y	89	432812.2	6.0				ug/L	448510	Standard
>	**Rh**	103	128.3	14.8				ug/L	15	Standard
	Mo	98	642.1	7.2	**0.2310**	0.011	4.8	ug/L	11	Standard
	Ag	107	89.7	20.6	**-0.0021**	0.003	162.7	ug/L	134	Standard
	Cd	111	183.2	13.1	**0.0876**	0.014	15.6	mg/L	7	Standard
	Cd	114	423.4	6.2	**0.0810**	0.006	6.9	ug/L	16	Standard
>	**In**	115	580206.4	3.0				ug/L	611117	Standard
	Sn	118	1115.0	4.7	**0.0968**	0.010	9.8	ug/L	518	Standard
	Sb	123	200.7	10.2	**0.0319**	0.003	10.9	ug/L	127	Standard
	Ba	135	44440.1	3.3	**22.6462**	0.082	0.4	ug/L	45	Standard
	Ce	140	446.7	12.1				ug/L	298	Standard
>	**Tb**	159	929235.2	2.2				ug/L	977942	Standard
	Ho	165	38.3	7.5				ug/L	12	Standard
	Tl	203	126.0	16.1	**0.0119**	0.003	21.7	ug/L	31	Standard
	Tl	205	103.3	17.0	**0.0135**	0.003	21.8	ug/L	20	Standard
	Pb	206	396.7	5.3	**0.0183**	0.002	11.9	ug/L	286	Standard
	Pb	207	341.7	4.5	**0.0202**	0.002	8.5	ug/L	257	Standard
	Pb	208	1505.0	2.0	**0.0286**	0.002	5.8	ug/L	956	Standard
	U	238	10687.1	4.8	**1.6615**	0.054	3.3	ug/L	17	Standard
>	**Bi**	209	499114.9	2.7				ug/L	557080	Standard

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Na	23	8.3	91.7	**52.4138**	47.655	90.9	mg/L	0	Standard
Mg	24	165387.3	4.5	**211.9511**	6.406	3.0	mg/L	32	Standard
K	39	600.0	13.6	**1.8174**	0.318	17.5	mg/L	30	Standard
Ca	43	581.7	9.4	**79.6243**	5.149	6.5	mg/L	48	Standard
Fe	54	126.1	20.1	**-0.0269**	0.024	89.8	mg/L	159	Standard
Fe	57	591.7	6.9	**1.2999**	0.139	10.7	mg/L	195	Standard
> **Sc-1**	45	41065.6	3.8				mg/L	39543	Standard
Cl	35	47499.7	3.6				ug/L	27642	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	60832.3	7.6				ug/L	1647	Standard
P	31	21663.8	6.1				ug/L	15231	Standard
S	34	2320.2	3.1				ug/L	1845	Standard
Sr	88	470.0	1.1				ug/L	70	Standard
C	12	286.7	5.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	31.1	36.4				mg/L	12	Standard
Ho-1	165	38.3	7.5				mg/L	12	Standard
Er	166	46.7	44.6				mg/L	20	Standard
I	127	79897.5	13.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.068	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.936	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.942
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		89.595
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606140201
Sample Date/Time: Tuesday, June 28, 2016 23:03:09
Number of Replicates: 3
Autosampler Position: 351
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76605.0	3.1				ug/L	81760	Standard
	Be	9	21.7	13.3	**0.0135**	0.003	20.6	ug/L	17	Standard
	Al	27	26105502.1	1.1	**180.8194**	3.801	2.1	ug/L	1410	Standard
	Sc	45	39097.0	0.2				ug/L	39543	Standard
	Ti	47	562.0	2.4	**2.2655**	0.057	2.5	ug/L	39	Standard
	V	51	4742.4	3.6	**0.5271**	0.022	4.2	ug/L	1415	Standard
	Cr	52	10082.4	1.2	**0.5007**	0.019	3.8	ug/L	6946	Standard
	Cr	53	12313.3	5.4	**14.7485**	0.907	6.2	ug/L	328	Standard
	Mn	55	1295871.4	1.2	**214.8489**	3.945	1.8	ug/L	823	Standard
	Co	59	1407.4	1.1	**0.1841**	0.002	1.1	ug/L	252	Standard
	Ni	60	4305.3	1.8	**2.3535**	0.034	1.4	ug/L	192	Standard
	Cu	65	1020.0	5.2	**0.4867**	0.034	6.9	ug/L	141	Standard
	Zn	66	18219.9	0.4	**17.0511**	0.173	1.0	ug/L	491	Standard
>	**Ge**	72	478933.9	0.7				ug/L	515087	Standard
	As	75	17040.6	2.0	**16.3399**	0.219	1.3	ug/L	20	Standard
	Se	82	892.6	3.4	**8.2180**	0.229	2.8	ug/L	15	Standard
	Se-1	77	753.4	7.3	**10.0390**	0.842	8.4	ug/L	48	Standard
>	**Ga**	71	218.3	6.6				mg/L	90	Standard
	Rb	85	3558.8	1.6				ug/L	23	Standard
	Y	89	416573.3	1.7				ug/L	448510	Standard
>	**Rh**	103	118.3	21.3				ug/L	15	Standard
	Mo	98	260.0	1.1	**0.0877**	0.004	4.4	ug/L	11	Standard
	Ag	107	80.3	26.9	**-0.0029**	0.004	134.9	ug/L	134	Standard
	Cd	111	40.9	26.1	**0.0184**	0.006	33.2	mg/L	7	Standard
	Cd	114	102.6	27.3	**0.0171**	0.006	37.8	ug/L	16	Standard
>	**In**	115	551143.5	2.5				ug/L	611117	Standard
	Sn	118	835.0	12.0	**0.0548**	0.020	37.1	ug/L	518	Standard
	Sb	123	829.1	3.5	**0.1820**	0.004	2.4	ug/L	127	Standard
	Ba	135	332622.5	0.7	**178.6804**	3.714	2.1	ug/L	45	Standard
	Ce	140	6094.6	2.7				ug/L	298	Standard
>	**Tb**	159	884304.9	2.4				ug/L	977942	Standard
	Ho	165	73.3	20.8				ug/L	12	Standard
	Tl	203	115.3	18.9	**0.0110**	0.003	28.4	ug/L	31	Standard
	Tl	205	95.0	13.9	**0.0127**	0.002	15.2	ug/L	20	Standard
	Pb	206	48021.0	1.3	**10.1649**	0.107	1.1	ug/L	286	Standard
	Pb	207	40222.3	0.8	**9.4401**	0.093	1.0	ug/L	257	Standard
	Pb	208	168471.0	1.1	**10.2223**	0.060	0.6	ug/L	956	Standard
	U	238	714.0	7.4	**0.1118**	0.009	8.4	ug/L	17	Standard
>	**Bi**	209	483931.7	1.1				ug/L	557080	Standard

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Na	23	8.3	34.6	**54.1394**	18.829	34.8	mg/L	0	Standard
Mg	24	106065.1	2.2	**142.7401**	3.063	2.1	mg/L	32	Standard
K	39	148.3	8.5	**0.3655**	0.044	12.0	mg/L	30	Standard
Ca	43	363.3	11.2	**50.4710**	6.294	12.5	mg/L	48	Standard
Fe	54	1618.9	1.4	**1.3448**	0.023	1.7	mg/L	159	Standard
Fe	57	835.0	5.7	**2.2263**	0.157	7.1	mg/L	195	Standard
> **Sc-1**	45	39097.0	0.2				mg/L	39543	Standard
Cl	35	36261.3	1.4				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	214333.6	4.1				ug/L	1647	Standard
P	31	21892.5	1.8				ug/L	15231	Standard
S	34	2305.2	3.8				ug/L	1845	Standard
Sr	88	363.3	12.3				ug/L	70	Standard
C	12	390.0	0.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	133.0	23.5				mg/L	12	Standard
Ho-1	165	73.3	20.8				mg/L	12	Standard
Er	166	76.7	66.9				mg/L	20	Standard
I	127	398539.7	6.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.695	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.981	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.186
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		86.869
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606140201
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Method 6020 - Summary Report

Sample ID: L1606140401
Sample Date/Time: Tuesday, June 28, 2016 23:06:21
Number of Replicates: 3
Autosampler Position: 352
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74993.5	0.5				ug/L	81760	Standard
	Be	9	21.7	13.3	**0.0141**	0.003	22.5	ug/L	17	Standard
	Al	27	30278310.9	1.4	**214.1402**	2.917	1.4	ug/L	1410	Standard
	Sc	45	39486.4	2.9				ug/L	39543	Standard
	Ti	47	193.3	4.5	**0.6334**	0.048	7.5	ug/L	39	Standard
	V	51	22966.6	2.4	**3.1851**	0.035	1.1	ug/L	1415	Standard
	Cr	52	11319.6	0.7	**0.6125**	0.031	5.1	ug/L	6946	Standard
	Cr	53	1811.8	4.8	**1.7776**	0.107	6.0	ug/L	328	Standard
	Mn	55	8657.1	1.2	**1.2226**	0.034	2.8	ug/L	823	Standard
	Co	59	565.7	7.8	**0.0513**	0.007	13.0	ug/L	252	Standard
	Ni	60	1945.8	2.7	**0.9557**	0.026	2.7	ug/L	192	Standard
	Cu	65	60353.0	0.9	**32.5191**	0.515	1.6	ug/L	141	Standard
	Zn	66	48175.8	1.3	**44.3004**	1.008	2.3	ug/L	491	Standard
>	**Ge**	72	501772.7	1.4				ug/L	515087	Standard
	As	75	367.9	8.8	**0.3760**	0.025	6.7	ug/L	20	Standard
	Se	82	110.4	13.6	**0.8639**	0.120	13.9	ug/L	15	Standard
	Se-1	77	129.0	8.1	**1.0381**	0.123	11.8	ug/L	48	Standard
>	**Ga**	71	68.3	27.7				mg/L	90	Standard
	Rb	85	1198.4	2.3				ug/L	23	Standard
	Y	89	417957.0	1.4				ug/L	448510	Standard
>	**Rh**	103	78.3	35.2				ug/L	15	Standard
	Mo	98	388.3	6.2	**0.1355**	0.009	6.9	ug/L	11	Standard
	Ag	107	94.3	4.8	**-0.0011**	0.001	61.6	ug/L	134	Standard
	Cd	111	42.7	19.5	**0.0186**	0.004	22.3	mg/L	7	Standard
	Cd	114	106.8	24.4	**0.0172**	0.005	31.6	ug/L	16	Standard
>	**In**	115	568064.8	0.3				ug/L	611117	Standard
	Sn	118	741.7	8.4	**0.0330**	0.012	35.5	ug/L	518	Standard
	Sb	123	163.0	3.3	**0.0243**	0.001	4.6	ug/L	127	Standard
	Ba	135	87619.3	0.7	**45.6318**	0.199	0.4	ug/L	45	Standard
	Ce	140	530.0	5.7				ug/L	298	Standard
>	**Tb**	159	902463.1	0.6				ug/L	977942	Standard
	Ho	165	31.7	24.1				ug/L	12	Standard
	Tl	203	89.3	3.6	**0.0068**	0.000	7.0	ug/L	31	Standard
	Tl	205	80.0	18.8	**0.0096**	0.002	23.2	ug/L	20	Standard
	Pb	206	4637.4	0.5	**0.8697**	0.009	1.0	ug/L	286	Standard
	Pb	207	3892.8	1.5	**0.8106**	0.017	2.1	ug/L	257	Standard
	Pb	208	15697.9	1.6	**0.8448**	0.009	1.1	ug/L	956	Standard
	U	238	6211.6	0.5	**0.9400**	0.010	1.1	ug/L	17	Standard
>	**Bi**	209	512163.0	0.7				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.8762**	18.829	173.1	mg/L	0	Standard
Mg	24	25888.8	0.8	**34.4779**	1.238	3.6	mg/L	32	Standard
K	39	206.7	17.0	**0.5565**	0.104	18.6	mg/L	30	Standard
Ca	43	238.3	20.2	**30.9565**	7.726	25.0	mg/L	48	Standard
Fe	54	118.7	26.0	**-0.0297**	0.026	88.1	mg/L	159	Standard
Fe	57	376.7	12.0	**0.6523**	0.186	28.5	mg/L	195	Standard
> **Sc-1**	45	39486.4	2.9				mg/L	39543	Standard
Cl	35	38202.8	1.2				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	11808.0	7.7				ug/L	1647	Standard
P	31	21151.4	0.3				ug/L	15231	Standard
S	34	2466.9	2.1				ug/L	1845	Standard
Sr	88	291.7	10.5				ug/L	70	Standard
C	12	196.7	43.2				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	28.2	2.0				mg/L	12	Standard
Ho-1	165	31.7	24.1				mg/L	12	Standard
Er	166	36.7	31.5				mg/L	20	Standard
I	127	34317.5	11.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.724	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.415	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		92.955
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.937
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606140801
Sample Date/Time: Tuesday, June 28, 2016 23:09:32
Number of Replicates: 3
Autosampler Position: 353
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78174.6	2.2				ug/L	81760	Standard
	Be	9	35.0	24.7	**0.0270**	0.008	30.6	ug/L	17	Standard
	Al	27	18286645.8	1.2	**124.0948**	2.663	2.1	ug/L	1410	Standard
	Sc	45	40988.7	1.5				ug/L	39543	Standard
	Ti	47	225.3	13.4	**0.7985**	0.121	15.1	ug/L	39	Standard
	V	51	51258.6	3.2	**7.6390**	0.153	2.0	ug/L	1415	Standard
	Cr	52	11486.4	2.6	**0.6992**	0.069	9.9	ug/L	6946	Standard
	Cr	53	8145.5	5.8	**9.5287**	0.474	5.0	ug/L	328	Standard
	Mn	55	98520.0	1.7	**16.0208**	0.120	0.7	ug/L	823	Standard
	Co	59	769.4	2.9	**0.0851**	0.002	2.7	ug/L	252	Standard
	Ni	60	1615.4	2.4	**0.8080**	0.032	4.0	ug/L	192	Standard
	Cu	65	1131.0	3.0	**0.5425**	0.014	2.7	ug/L	141	Standard
	Zn	66	4403.0	3.4	**3.4460**	0.103	3.0	ug/L	491	Standard
>	**Ge**	72	484103.1	1.4				ug/L	515087	Standard
	As	75	1970.8	6.0	**1.9047**	0.087	4.5	ug/L	20	Standard
	Se	82	191.5	8.8	**1.6489**	0.132	8.0	ug/L	15	Standard
	Se-1	77	529.7	10.7	**6.7555**	0.697	10.3	ug/L	48	Standard
>	**Ga**	71	85.0	31.1				mg/L	90	Standard
	Rb	85	2531.9	3.1				ug/L	23	Standard
	Y	89	421592.5	4.0				ug/L	448510	Standard
>	**Rh**	103	66.7	30.3				ug/L	15	Standard
	Mo	98	353.3	5.0	**0.1209**	0.007	5.4	ug/L	11	Standard
	Ag	107	105.0	57.1	**0.0006**	0.010	1741.0	ug/L	134	Standard
	Cd	111	58.7	7.1	**0.0265**	0.001	5.4	mg/L	7	Standard
	Cd	114	139.6	12.3	**0.0238**	0.003	13.4	ug/L	16	Standard
>	**In**	115	570844.6	2.8				ug/L	611117	Standard
	Sn	118	760.0	5.7	**0.0358**	0.009	25.3	ug/L	518	Standard
	Sb	123	136.8	41.6	**0.0182**	0.013	71.7	ug/L	127	Standard
	Ba	135	27343.0	2.9	**14.1534**	0.097	0.7	ug/L	45	Standard
	Ce	140	1776.8	2.1				ug/L	298	Standard
>	**Tb**	159	907261.5	0.9				ug/L	977942	Standard
	Ho	165	38.3	32.8				ug/L	12	Standard
	Tl	203	160.7	51.8	**0.0162**	0.011	66.8	ug/L	31	Standard
	Tl	205	123.3	9.4	**0.0162**	0.002	11.0	ug/L	20	Standard
	Pb	206	469.0	16.1	**0.0318**	0.015	47.2	ug/L	286	Standard
	Pb	207	405.3	12.5	**0.0333**	0.011	33.4	ug/L	257	Standard
	Pb	208	1576.7	3.7	**0.0314**	0.003	10.7	ug/L	956	Standard
	U	238	14465.9	3.7	**2.2164**	0.080	3.6	ug/L	17	Standard
>	**Bi**	209	506765.8	0.4				ug/L	557080	Standard

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Na	23	3.3	86.6	**20.4816**	17.733	86.6	mg/L	0	Standard
Mg	24	76429.0	2.1	**98.0879**	0.872	0.9	mg/L	32	Standard
K	39	103.3	20.1	**0.1958**	0.071	36.2	mg/L	30	Standard
Ca	43	268.3	18.7	**34.0467**	7.923	23.3	mg/L	48	Standard
Fe	54	210.5	5.9	**0.0466**	0.009	18.4	mg/L	159	Standard
Fe	57	346.7	13.1	**0.5032**	0.132	26.3	mg/L	195	Standard
Sc-1	45	40988.7	1.5				mg/L	39543	Standard
Cl	35	41040.2	0.8				ug/L	27642	Standard
Kr	83	2.0	173.2				ug/L	2	Standard
Br	81	20580.7	5.3				ug/L	1647	Standard
P	31	21832.4	1.0				ug/L	15231	Standard
S	34	2461.9	6.1				ug/L	1845	Standard
Sr	88	228.3	13.2				ug/L	70	Standard
C	12	196.7	34.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	38.1	77.6				mg/L	12	Standard
Ho-1	165	38.3	32.8				mg/L	12	Standard
Er	166	40.0	90.1				mg/L	20	Standard
I	127	105209.9	5.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.615	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.985	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.410
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.968
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606140801
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Method 6020 - Summary Report

Sample ID: L1606140901
Sample Date/Time: Tuesday, June 28, 2016 23:12:44
Number of Replicates: 3
Autosampler Position: 354
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78595.1	3.1				ug/L	81760	Standard
	Be	9	26.7	57.3	**0.0179**	0.015	85.3	ug/L	17	Standard
	Al	27	20167615.6	1.1	**136.1889**	4.854	3.6	ug/L	1410	Standard
	Sc	45	39818.9	1.9				ug/L	39543	Standard
	Ti	47	311.7	10.4	**1.1846**	0.135	11.4	ug/L	39	Standard
	V	51	55787.4	0.6	**8.4391**	0.018	0.2	ug/L	1415	Standard
	Cr	52	16179.6	1.9	**1.4466**	0.047	3.2	ug/L	6946	Standard
	Cr	53	12833.8	2.8	**15.4070**	0.434	2.8	ug/L	328	Standard
	Mn	55	13187.4	1.1	**2.0427**	0.028	1.4	ug/L	823	Standard
	Co	59	670.0	4.7	**0.0714**	0.005	7.2	ug/L	252	Standard
	Ni	60	2540.2	2.3	**1.3479**	0.032	2.4	ug/L	192	Standard
	Cu	65	810.4	1.3	**0.3686**	0.005	1.5	ug/L	141	Standard
	Zn	66	2808.3	3.3	**1.9320**	0.083	4.3	ug/L	491	Standard
>	**Ge**	72	478186.0	0.4				ug/L	515087	Standard
	As	75	1572.1	0.9	**1.5465**	0.010	0.6	ug/L	20	Standard
	Se	82	338.5	3.3	**3.0475**	0.114	3.7	ug/L	15	Standard
	Se-1	77	792.0	6.7	**10.6055**	0.757	7.1	ug/L	48	Standard
>	**Ga**	71	71.7	10.7				mg/L	90	Standard
	Rb	85	3450.4	2.1				ug/L	23	Standard
	Y	89	421286.0	4.0				ug/L	448510	Standard
>	**Rh**	103	76.7	10.0				ug/L	15	Standard
	Mo	98	1179.3	2.2	**0.4594**	0.016	3.6	ug/L	11	Standard
	Ag	107	70.0	6.5	**-0.0048**	0.001	13.6	ug/L	134	Standard
	Cd	111	26.3	13.5	**0.0106**	0.002	18.0	mg/L	7	Standard
	Cd	114	71.5	14.0	**0.0102**	0.002	20.9	ug/L	16	Standard
>	**In**	115	557486.7	1.6				ug/L	611117	Standard
	Sn	118	753.4	2.1	**0.0377**	0.003	7.4	ug/L	518	Standard
	Sb	123	140.1	13.9	**0.0197**	0.005	23.1	ug/L	127	Standard
	Ba	135	30044.1	2.0	**15.9271**	0.116	0.7	ug/L	45	Standard
	Ce	140	1501.7	8.9				ug/L	298	Standard
>	**Tb**	159	887600.8	1.1				ug/L	977942	Standard
	Ho	165	38.3	27.2				ug/L	12	Standard
	Tl	203	136.3	15.5	**0.0135**	0.003	21.6	ug/L	31	Standard
	Tl	205	116.7	8.9	**0.0158**	0.002	10.2	ug/L	20	Standard
	Pb	206	477.7	6.1	**0.0364**	0.006	16.6	ug/L	286	Standard
	Pb	207	398.0	3.8	**0.0344**	0.003	8.7	ug/L	257	Standard
	Pb	208	1707.0	2.5	**0.0420**	0.002	4.6	ug/L	956	Standard
	U	238	23354.0	0.6	**3.6864**	0.026	0.7	ug/L	17	Standard
>	**Bi**	209	492176.6	0.6				ug/L	557080	Standard

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Na	23	8.3	124.9	**53.9308**	68.028	126.1	mg/L	0	Standard
Mg	24	78221.4	0.2	**103.3688**	1.796	1.7	mg/L	32	Standard
K	39	181.7	9.7	**0.4684**	0.061	12.9	mg/L	30	Standard
Ca	43	295.0	5.9	**39.1939**	3.495	8.9	mg/L	48	Standard
Fe	54	173.9	5.6	**0.0192**	0.007	35.0	mg/L	159	Standard
Fe	57	403.3	17.1	**0.7302**	0.251	34.4	mg/L	195	Standard
Sc-1	45	39818.9	1.9				mg/L	39543	Standard
Cl	35	38063.1	1.8				ug/L	27642	Standard
Kr	83	1.3	173.2				ug/L	2	Standard
Br	81	39401.2	2.9				ug/L	1647	Standard
P	31	23753.6	2.5				ug/L	15231	Standard
S	34	2233.5	3.9				ug/L	1845	Standard
Sr	88	295.0	6.1				ug/L	70	Standard
C	12	220.0	31.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	222.1	127.8				mg/L	12	Standard
Ho-1	165	38.3	27.2				mg/L	12	Standard
Er	166	26.7	78.1				mg/L	20	Standard
I	127	56189.0	1.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		96.129	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.836	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.224
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		88.349
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606140901
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 23:15:56
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73471.1	1.2				ug/L	81760	Standard
	Be	9	47618.1	3.0	**53.3659**	2.229	4.2	ug/L	17	Standard
	Al	27	7287296.4	1.0	**52.5966**	0.249	0.5	ug/L	1410	Standard
	Sc	45	40183.2	3.0				ug/L	39543	Standard
	Ti	47	24656.7	0.7	**99.9368**	1.445	1.4	ug/L	39	Standard
	V	51	342959.6	1.5	**49.6067**	0.741	1.5	ug/L	1415	Standard
	Cr	52	350575.7	1.6	**49.7880**	0.923	1.9	ug/L	6946	Standard
	Cr	53	44859.7	1.2	**51.2482**	0.358	0.7	ug/L	328	Standard
	Mn	55	313688.7	1.9	**48.6980**	0.765	1.6	ug/L	823	Standard
	Co	59	336351.1	1.2	**48.2963**	0.507	1.1	ug/L	252	Standard
	Ni	60	92893.3	2.1	**49.6893**	0.993	2.0	ug/L	192	Standard
	Cu	65	92858.0	0.8	**49.2454**	0.445	0.9	ug/L	141	Standard
	Zn	66	54854.1	1.5	**49.6985**	0.961	1.9	ug/L	491	Standard
>	**Ge**	72	510232.1	0.7				ug/L	515087	Standard
	As	75	53972.2	1.6	**48.5043**	0.935	1.9	ug/L	20	Standard
	Se	82	5467.9	0.8	**47.8296**	0.724	1.5	ug/L	15	Standard
	Se-1	77	3829.5	1.2	**50.5966**	0.465	0.9	ug/L	48	Standard
>	**Ga**	71	55.0	32.8				mg/L	90	Standard
	Rb	85	740.0	22.2				ug/L	23	Standard
	Y	89	417471.8	0.9				ug/L	448510	Standard
>	**Rh**	103	28.3	40.8				ug/L	15	Standard
	Mo	98	255774.9	1.1	**100.4324**	1.068	1.1	ug/L	11	Standard
	Ag	107	314263.4	0.6	**49.6826**	0.310	0.6	ug/L	134	Standard
	Cd	111	99244.0	2.0	**49.2800**	0.642	1.3	mg/L	7	Standard
	Cd	114	244609.6	0.7	**49.9721**	0.117	0.2	ug/L	16	Standard
>	**In**	115	575695.1	0.7				ug/L	611117	Standard
	Sn	118	277518.7	1.2	**49.7196**	0.393	0.8	ug/L	518	Standard
	Sb	123	223405.3	1.0	**50.2498**	0.315	0.6	ug/L	127	Standard
	Ba	135	95362.2	0.9	**49.0082**	0.194	0.4	ug/L	45	Standard
	Ce	140	66.7	18.9				ug/L	298	Standard
>	**Tb**	159	900469.8	1.2				ug/L	977942	Standard
	Ho	165	0.0					ug/L	12	Standard
	Tl	203	399704.8	0.8	**50.1537**	0.324	0.6	ug/L	31	Standard
	Tl	205	354566.9	2.1	**51.2307**	0.689	1.3	ug/L	20	Standard
	Pb	206	258134.8	1.1	**50.4360**	0.346	0.7	ug/L	286	Standard
	Pb	207	234508.0	1.0	**50.8014**	0.140	0.3	ug/L	257	Standard
	Pb	208	934488.0	0.8	**52.3272**	0.390	0.7	ug/L	956	Standard
	U	238	348175.4	0.3	**51.3787**	0.514	1.0	ug/L	17	Standard
>	**Bi**	209	526902.0	1.3				ug/L	557080	Standard

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Na	23	5.0	100.0	**32.0442**	31.868	99.5	mg/L	0	Standard
Mg	24	3947.2	3.3	**5.1157**	0.206	4.0	mg/L	32	Standard
K	39	1291.7	6.0	**4.1569**	0.313	7.5	mg/L	30	Standard
Ca	43	78.3	13.3	**6.3383**	1.191	18.8	mg/L	48	Standard
Fe	54	5567.6	3.6	**4.8270**	0.308	6.4	mg/L	159	Standard
Fe	57	1653.4	2.1	**4.8734**	0.265	5.4	mg/L	195	Standard
Sc-1	45	40183.2	3.0				mg/L	39543	Standard
Cl	35	36099.6	2.2				ug/L	27642	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	2486.9	19.4				ug/L	1647	Standard
P	31	18199.3	2.9				ug/L	15231	Standard
S	34	2558.5	2.4				ug/L	1845	Standard
Sr	88	88.3	13.1				ug/L	70	Standard
C	12	123.3	18.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.5	205.9				mg/L	12	Standard
Ho-1	165	0.0					mg/L	12	Standard
Er	166	16.7	69.3				mg/L	20	Standard
I	127	3410.4	24.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	106.732		
Al	27	105.193		
Sc	45			
Ti	47	99.937		
V	51	99.213		
Cr	52	99.576		
Cr	53			
Mn	55	97.396		
Co	59	96.593		
Ni	60	99.379		
Cu	65	98.491		
Zn	66	99.397		
> Ge	72		99.057	
As	75	97.009		
Se	82	95.659		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	100.432		
Ag	107	99.365		
Cd	111	98.560		
Cd	114			
In	115			94.204
Sn	118	99.439		
Sb	123	100.500		
Ba	135	98.016		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.307		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.654		
U	238	102.757		
Bi	209			94.583
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 23:19:08
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74688.6	0.5				ug/L	81760	Standard
	Be	9	23.3	68.9	**0.0159**	0.018	110.7	ug/L	17	Standard
	Al	27	6963.5	51.4	**0.0350**	0.025	72.0	ug/L	1410	Standard
	Sc	45	39526.5	2.8				ug/L	39543	Standard
	Ti	47	29.3	2.0	**-0.0430**	0.003	6.9	ug/L	39	Standard
	V	51	1022.6	3.0	**-0.0543**	0.006	11.1	ug/L	1415	Standard
	Cr	52	6275.6	1.6	**-0.1243**	0.005	4.1	ug/L	6946	Standard
	Cr	53	655.0	2.0	**0.4308**	0.021	5.0	ug/L	328	Standard
	Mn	55	708.0	10.7	**-0.0355**	0.011	31.8	ug/L	823	Standard
	Co	59	254.0	9.4	**0.0060**	0.003	53.0	ug/L	252	Standard
	Ni	60	190.7	1.6	**-0.0002**	0.001	475.8	ug/L	192	Standard
	Cu	65	144.3	16.1	**-0.0123**	0.012	100.6	ug/L	141	Standard
	Zn	66	441.0	4.3	**-0.4114**	0.015	3.7	ug/L	491	Standard
>	**Ge**	72	497792.7	1.0				ug/L	515087	Standard
	As	75	-15.2	258.6	**0.0262**	0.036	138.8	ug/L	20	Standard
	Se	82	23.5	16.0	**0.0916**	0.033	35.7	ug/L	15	Standard
	Se-1	77	63.7	3.3	**0.1558**	0.037	23.6	ug/L	48	Standard
>	**Ga**	71	50.0	34.6				mg/L	90	Standard
	Rb	85	33.3	56.8				ug/L	23	Standard
	Y	89	425942.8	1.0				ug/L	448510	Standard
>	**Rh**	103	6.7	43.3				ug/L	15	Standard
	Mo	98	281.0	37.4	**0.0876**	0.040	45.9	ug/L	11	Standard
	Ag	107	137.7	21.7	**0.0048**	0.005	95.8	ug/L	134	Standard
	Cd	111	15.2	29.8	**0.0044**	0.002	50.1	mg/L	7	Standard
	Cd	114	43.1	89.6	**0.0036**	0.008	212.7	ug/L	16	Standard
>	**In**	115	595727.8	0.7				ug/L	611117	Standard
	Sn	118	753.4	17.4	**0.0287**	0.023	78.8	ug/L	518	Standard
	Sb	123	441.8	17.1	**0.0832**	0.016	19.8	ug/L	127	Standard
	Ba	135	56.0	54.4	**0.0027**	0.015	556.5	ug/L	45	Standard
	Ce	140	23.3	12.4				ug/L	298	Standard
>	**Tb**	159	931120.0	0.7				ug/L	977942	Standard
	Ho	165	10.0	86.6				ug/L	12	Standard
	Tl	203	88.3	51.6	**0.0060**	0.006	92.0	ug/L	31	Standard
	Tl	205	63.3	63.8	**0.0066**	0.006	85.2	ug/L	20	Standard
	Pb	206	308.0	15.6	**-0.0049**	0.009	177.6	ug/L	286	Standard
	Pb	207	259.7	11.6	**-0.0032**	0.006	187.4	ug/L	257	Standard
	Pb	208	1046.3	7.8	**-0.0033**	0.004	126.3	ug/L	956	Standard
	U	238	64.3	43.1	**0.0063**	0.004	62.8	ug/L	17	Standard
>	**Bi**	209	540861.2	0.7				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.5148**	18.203	173.1	mg/L	0	Standard
Mg	24	55.0	41.7	**0.0162**	0.030	187.5	mg/L	32	Standard
K	39	25.0	20.0	**-0.0566**	0.019	34.0	mg/L	30	Standard
Ca	43	33.3	34.6	**-0.2594**	1.827	704.2	mg/L	48	Standard
Fe	54	134.2	10.1	**-0.0157**	0.009	57.1	mg/L	159	Standard
Fe	57	241.7	9.3	**0.1932**	0.098	50.6	mg/L	195	Standard
Sc-1	45	39526.5	2.8				mg/L	39543	Standard
Cl	35	35813.0	1.8				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1830.1	10.1				ug/L	1647	Standard
P	31	18830.0	1.9				ug/L	15231	Standard
S	34	2625.2	3.0				ug/L	1845	Standard
Sr	88	65.0	33.5				ug/L	70	Standard
C	12	80.0	21.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	19.2	93.8				mg/L	12	Standard
Ho-1	165	10.0	86.6				mg/L	12	Standard
Er	166	16.7	91.7				mg/L	20	Standard
I	127	2391.9	12.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.642	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.482
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.089
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Tuesday, June 28, 2016 23:22:21
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70209.0	1.7				ug/L	81760	Standard
	Be	9	180.0	16.9	**0.2017**	0.039	19.3	ug/L	17	Standard
	Al	27	5133.2	109.4	**0.0240**	0.041	173.1	ug/L	1410	Standard
	Sc	45	36931.6	2.6				ug/L	39543	Standard
	Ti	47	20.7	36.3	**-0.0758**	0.033	44.0	ug/L	39	Standard
	V	51	3515.4	3.3	**0.3352**	0.014	4.2	ug/L	1415	Standard
	Cr	52	11116.7	0.6	**0.6541**	0.028	4.2	ug/L	6946	Standard
	Cr	53	1220.0	4.0	**1.1474**	0.049	4.3	ug/L	328	Standard
	Mn	55	3585.8	2.9	**0.4442**	0.023	5.1	ug/L	823	Standard
	Co	59	2687.2	1.7	**0.3785**	0.013	3.3	ug/L	252	Standard
	Ni	60	2873.6	1.1	**1.5299**	0.031	2.0	ug/L	192	Standard
	Cu	65	1483.4	2.9	**0.7455**	0.015	2.0	ug/L	141	Standard
	Zn	66	6969.9	1.2	**5.9869**	0.185	3.1	ug/L	491	Standard
>	**Ge**	72	480794.8	1.6				ug/L	515087	Standard
	As	75	396.5	4.3	**0.4183**	0.021	5.0	ug/L	20	Standard
	Se	82	61.9	5.1	**0.4561**	0.020	4.4	ug/L	15	Standard
	Se-1	77	78.3	14.0	**0.3969**	0.172	43.4	ug/L	48	Standard
>	**Ga**	71	46.7	32.7				mg/L	90	Standard
	Rb	85	21.7	13.3				ug/L	23	Standard
	Y	89	400775.4	1.5				ug/L	448510	Standard
>	**Rh**	103	13.3	21.7				ug/L	15	Standard
	Mo	98	70.5	1.1	**0.0095**	0.000	1.9	ug/L	11	Standard
	Ag	107	2377.2	2.1	**0.3719**	0.012	3.3	ug/L	134	Standard
	Cd	111	440.9	3.8	**0.2230**	0.005	2.1	mg/L	7	Standard
	Cd	114	1065.8	11.0	**0.2200**	0.026	11.9	ug/L	16	Standard
>	**In**	115	557761.4	1.6				ug/L	611117	Standard
	Sn	118	468.3	18.8	**-0.0150**	0.017	116.5	ug/L	518	Standard
	Sb	123	1709.9	1.5	**0.3843**	0.009	2.4	ug/L	127	Standard
	Ba	135	1358.4	3.9	**0.6957**	0.022	3.2	ug/L	45	Standard
	Ce	140	15.0	33.3				ug/L	298	Standard
>	**Tb**	159	873882.2	1.3				ug/L	977942	Standard
	Ho	165	8.3	124.9				ug/L	12	Standard
	Tl	203	633.3	2.0	**0.0774**	0.002	2.5	ug/L	31	Standard
	Tl	205	590.0	17.7	**0.0858**	0.015	17.2	ug/L	20	Standard
	Pb	206	1230.0	0.6	**0.1853**	0.002	0.8	ug/L	286	Standard
	Pb	207	1060.4	4.9	**0.1798**	0.012	6.4	ug/L	257	Standard
	Pb	208	4496.6	3.9	**0.2002**	0.009	4.3	ug/L	956	Standard
	U	238	2637.6	2.9	**0.3996**	0.008	2.0	ug/L	17	Standard
>	**Bi**	209	509391.4	0.9				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	38.3	30.1	**-0.0027**	0.016	586.9	mg/L	32	Standard
K	39	28.3	44.4	**-0.0396**	0.043	109.0	mg/L	30	Standard
Ca	43	26.7	43.3	**-1.0379**	1.747	168.3	mg/L	48	Standard
Fe	54	112.3	22.9	**-0.0284**	0.024	85.0	mg/L	159	Standard
Fe	57	253.3	17.2	**0.2902**	0.150	51.8	mg/L	195	Standard
Sc-1	45	36931.6	2.6				mg/L	39543	Standard
Cl	35	34628.2	2.2				ug/L	27642	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1663.4	2.8				ug/L	1647	Standard
P	31	13167.4	6.3				ug/L	15231	Standard
S	34	2550.2	3.7				ug/L	1845	Standard
Sr	88	81.7	12.7				ug/L	70	Standard
C	12	96.7	15.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	22.7	104.3				mg/L	12	Standard
Ho-1	165	8.3	124.9				mg/L	12	Standard
Er	166	13.3	173.2				mg/L	20	Standard
I	127	1815.1	19.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	100.854		
Al	27			
Sc	45			
Ti	47			
V	51	83.798		
Cr	52	81.760		
Cr	53			
Mn	55	88.848		
Co	59	94.629		
Ni	60	95.622		
Cu	65	93.183		
Zn	66	95.791		
Ge	72		93.342	
As	75	104.574		
Se	82	114.027		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	92.977		
Cd	111	92.929		
Cd	114			
> In	115			91.269
Sn	118			
Sb	123	96.075		
Ba	135	92.766		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	96.789		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.122		
U	238	99.892		
> Bi	209			91.439
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBS M4 WG574306-02
Sample Date/Time: Tuesday, June 28, 2016 23:25:34
Number of Replicates: 3
Autosampler Position: 401
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73219.9	2.0				ug/L	81760	Standard
	Be	9	21.7	13.3	**0.0146**	0.003	19.0	ug/L	17	Standard
	Al	27	8870.9	1.6	**0.0499**	0.001	2.1	ug/L	1410	Standard
	Sc	45	39242.4	3.0				ug/L	39543	Standard
	Ti	47	26.0	21.4	**-0.0565**	0.021	37.8	ug/L	39	Standard
	V	51	1183.1	4.4	**-0.0293**	0.008	27.7	ug/L	1415	Standard
	Cr	52	7819.4	0.5	**0.1132**	0.035	31.1	ug/L	6946	Standard
	Cr	53	706.7	5.7	**0.4968**	0.043	8.6	ug/L	328	Standard
	Mn	55	910.4	1.2	**-0.0022**	0.005	247.3	ug/L	823	Standard
	Co	59	210.7	7.4	**-0.0001**	0.003	2281.1	ug/L	252	Standard
	Ni	60	270.7	10.1	**0.0449**	0.018	40.4	ug/L	192	Standard
	Cu	65	197.3	7.2	**0.0174**	0.009	50.7	ug/L	141	Standard
	Zn	66	1637.4	3.9	**0.7282**	0.056	7.7	ug/L	491	Standard
>	**Ge**	72	494675.2	2.7				ug/L	515087	Standard
	As	75	-22.9	72.5	**0.0188**	0.016	85.6	ug/L	20	Standard
	Se	82	19.6	24.9	**0.0572**	0.041	70.8	ug/L	15	Standard
	Se-1	77	57.0	14.0	**0.0674**	0.090	134.0	ug/L	48	Standard
>	**Ga**	71	43.3	17.6				mg/L	90	Standard
	Rb	85	43.3	35.3				ug/L	23	Standard
	Y	89	424600.8	0.9				ug/L	448510	Standard
>	**Rh**	103	15.0	66.7				ug/L	15	Standard
	Mo	98	68.5	24.2	**0.0070**	0.006	90.8	ug/L	11	Standard
	Ag	107	79.3	10.7	**-0.0041**	0.001	32.3	ug/L	134	Standard
	Cd	111	8.5	44.3	**0.0012**	0.002	151.3	mg/L	7	Standard
	Cd	114	29.3	97.6	**0.0009**	0.006	647.6	ug/L	16	Standard
>	**In**	115	594639.0	0.2				ug/L	611117	Standard
	Sn	118	648.3	4.2	**0.0107**	0.005	42.7	ug/L	518	Standard
	Sb	123	146.0	12.4	**0.0190**	0.004	20.5	ug/L	127	Standard
	Ba	135	94.3	2.4	**0.0219**	0.001	5.5	ug/L	45	Standard
	Ce	140	41.7	27.7				ug/L	298	Standard
>	**Tb**	159	926166.4	1.8				ug/L	977942	Standard
	Ho	165	11.7	24.7				ug/L	12	Standard
	Tl	203	20.7	43.9	**-0.0022**	0.001	49.4	ug/L	31	Standard
	Tl	205	15.0	33.3	**-0.0001**	0.001	484.0	ug/L	20	Standard
	Pb	206	313.0	7.9	**-0.0032**	0.004	138.6	ug/L	286	Standard
	Pb	207	286.3	1.1	**0.0033**	0.001	36.5	ug/L	257	Standard
	Pb	208	1144.7	1.9	**0.0029**	0.001	51.3	ug/L	956	Standard
	U	238	10.7	32.9	**-0.0014**	0.001	35.7	ug/L	17	Standard
>	**Bi**	209	533593.4	0.9				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	31.7	39.7	**-0.0149**	0.016	104.8	mg/L	32	Standard
K	39	41.7	69.3	**0.0013**	0.101	7981.1	mg/L	30	Standard
Ca	43	18.3	15.7	**-2.5418**	0.422	16.6	mg/L	48	Standard
Fe	54	144.2	9.3	**-0.0052**	0.016	301.7	mg/L	159	Standard
Fe	57	226.7	13.5	**0.1451**	0.083	57.3	mg/L	195	Standard
Sc-1	45	39242.4	3.0				mg/L	39543	Standard
Cl	35	36295.4	2.3				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	2233.5	3.2				ug/L	1647	Standard
P	31	18441.2	3.0				ug/L	15231	Standard
S	34	2560.2	3.7				ug/L	1845	Standard
Sr	88	61.7	26.1				ug/L	70	Standard
C	12	130.0	20.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	22.9	112.2				mg/L	12	Standard
Ho-1	165	11.7	24.7				mg/L	12	Standard
Er	166	10.0	100.0				mg/L	20	Standard
I	127	1601.8	24.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.555	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.037	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.304
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.784
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBS M4 WG574306-02
Report Date/Time: Tuesday, June 28, 2016 23:27:51
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Method 6020 - Summary Report

Sample ID: LCSS M4 WG574306-03
Sample Date/Time: Tuesday, June 28, 2016 23:28:45
Number of Replicates: 3
Autosampler Position: 402
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72376.0	3.8				ug/L	81760	Standard
	Be	9	23423.1	1.4	**26.6532**	0.807	3.0	ug/L	17	Standard
	Al	27	9074.4	3.8	**0.0521**	0.003	4.9	ug/L	1410	Standard
	Sc	45	39197.3	2.4				ug/L	39543	Standard
	Ti	47	29.3	7.1	**-0.0442**	0.007	16.8	ug/L	39	Standard
	V	51	169885.7	0.8	**24.8594**	0.272	1.1	ug/L	1415	Standard
	Cr	52	181506.5	1.2	**25.6821**	0.081	0.3	ug/L	6946	Standard
	Cr	53	22394.9	2.0	**25.8190**	0.261	1.0	ug/L	328	Standard
	Mn	55	162938.5	1.1	**25.6253**	0.137	0.5	ug/L	823	Standard
	Co	59	171171.6	1.4	**24.9527**	0.363	1.5	ug/L	252	Standard
	Ni	60	47214.1	1.2	**25.6031**	0.067	0.3	ug/L	192	Standard
	Cu	65	47011.2	0.9	**25.2811**	0.042	0.2	ug/L	141	Standard
	Zn	66	28788.3	1.3	**26.1066**	0.165	0.6	ug/L	491	Standard
>	**Ge**	72	502290.9	1.0				ug/L	515087	Standard
	As	75	27387.3	0.6	**25.0208**	0.130	0.5	ug/L	20	Standard
	Se	82	2754.4	0.7	**24.4154**	0.147	0.6	ug/L	15	Standard
	Se-1	77	1916.1	0.9	**25.3637**	0.129	0.5	ug/L	48	Standard
>	**Ga**	71	55.0	18.2				mg/L	90	Standard
	Rb	85	31.7	18.2				ug/L	23	Standard
	Y	89	439399.0	0.9				ug/L	448510	Standard
>	**Rh**	103	31.7	24.1				ug/L	15	Standard
	Mo	98	98.7	7.7	**0.0186**	0.002	12.0	ug/L	11	Standard
	Ag	107	158446.9	0.8	**24.3265**	0.298	1.2	ug/L	134	Standard
	Cd	111	51639.0	0.8	**24.9106**	0.321	1.3	mg/L	7	Standard
	Cd	114	123238.5	0.9	**24.4562**	0.275	1.1	ug/L	16	Standard
>	**In**	115	592677.3	1.9				ug/L	611117	Standard
	Sn	118	653.3	6.2	**0.0119**	0.005	41.0	ug/L	518	Standard
	Sb	123	110361.6	0.7	**24.1094**	0.310	1.3	ug/L	127	Standard
	Ba	135	48745.3	0.9	**24.3246**	0.340	1.4	ug/L	45	Standard
	Ce	140	51.7	39.1				ug/L	298	Standard
>	**Tb**	159	905963.3	1.2				ug/L	977942	Standard
	Ho	165	11.7	65.5				ug/L	12	Standard
	Tl	203	202415.8	0.8	**25.4126**	0.129	0.5	ug/L	31	Standard
	Tl	205	180512.3	0.1	**26.1008**	0.236	0.9	ug/L	20	Standard
	Pb	206	132596.7	0.6	**25.8949**	0.268	1.0	ug/L	286	Standard
	Pb	207	115831.1	1.1	**25.0809**	0.349	1.4	ug/L	257	Standard
	Pb	208	485807.7	1.5	**27.1937**	0.548	2.0	ug/L	956	Standard
	U	238	174705.5	0.6	**25.7950**	0.133	0.5	ug/L	17	Standard
>	**Bi**	209	526543.8	0.9				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	28.3	53.9	**-0.0192**	0.020	104.0	mg/L	32	Standard
K	39	18.3	78.7	**-0.0794**	0.048	60.3	mg/L	30	Standard
Ca	43	26.7	21.7	**-1.2726**	0.799	62.8	mg/L	48	Standard
Fe	54	143.6	13.2	**-0.0059**	0.017	289.5	mg/L	159	Standard
Fe	57	241.7	12.5	**0.2002**	0.121	60.5	mg/L	195	Standard
> **Sc-1**	45	39197.3	2.4				mg/L	39543	Standard
Cl	35	35988.7	2.8				ug/L	27642	Standard
Kr	83	3.3	17.3				ug/L	2	Standard
Br	81	1690.1	11.1				ug/L	1647	Standard
P	31	17910.6	1.0				ug/L	15231	Standard
S	34	2548.5	6.5				ug/L	1845	Standard
Sr	88	75.0	24.0				ug/L	70	Standard
C	12	120.0	16.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	16.5	68.3				mg/L	12	Standard
Ho-1	165	11.7	65.5				mg/L	12	Standard
Er	166	3.3	173.2				mg/L	20	Standard
I	127	1618.4	15.4				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		88.522	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.516	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.983
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.518
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129707 WG574306-01
Sample Date/Time: Tuesday, June 28, 2016 23:31:57
Number of Replicates: 3
Autosampler Position: 403
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73039.0	1.3				ug/L	81760	Standard
	Be	9	626.7	10.9	**0.6973**	0.086	12.3	ug/L	17	Standard
	Al	27	6016122.3	2.0	**43.6794**	0.992	2.3	ug/L	1410	Standard
	Sc	45	43592.6	1.8				ug/L	39543	Standard
	Ti	47	1645.1	1.5	**6.4955**	0.085	1.3	ug/L	39	Standard
	V	51	103833.7	2.4	**14.8338**	0.288	1.9	ug/L	1415	Standard
	Cr	52	59851.7	1.4	**7.6005**	0.153	2.0	ug/L	6946	Standard
	Cr	53	7268.4	3.1	**7.9966**	0.305	3.8	ug/L	328	Standard
	Mn	55	3268160.2	1.2	**507.4707**	9.760	1.9	ug/L	823	Standard
	Co	59	39533.2	0.9	**5.6343**	0.098	1.7	ug/L	252	Standard
	Ni	60	18874.4	2.7	**9.9863**	0.299	3.0	ug/L	192	Standard
	Cu	65	69246.2	1.1	**36.6021**	0.305	0.8	ug/L	141	Standard
	Zn	66	86637.7	0.8	**78.7605**	0.745	0.9	ug/L	491	Standard
>	**Ge**	72	511586.4	0.8				ug/L	515087	Standard
	As	75	4823.9	1.5	**4.3600**	0.029	0.7	ug/L	20	Standard
	Se	82	100.3	6.0	**0.7578**	0.047	6.2	ug/L	15	Standard
	Se-1	77	133.3	1.1	**1.0631**	0.006	0.6	ug/L	48	Standard
>	**Ga**	71	7216.7	0.8				mg/L	90	Standard
	Rb	85	77067.2	0.1				ug/L	23	Standard
	Y	89	607493.8	2.8				ug/L	448510	Standard
>	**Rh**	103	25.0	34.6				ug/L	15	Standard
	Mo	98	512.0	2.8	**0.1759**	0.005	2.9	ug/L	11	Standard
	Ag	107	750.4	6.7	**0.0988**	0.008	7.8	ug/L	134	Standard
	Cd	111	815.5	1.0	**0.3898**	0.005	1.3	mg/L	7	Standard
	Cd	114	2038.2	2.1	**0.3989**	0.010	2.4	ug/L	16	Standard
>	**In**	115	593721.9	0.4				ug/L	611117	Standard
	Sn	118	941.7	10.4	**0.0620**	0.016	26.6	ug/L	518	Standard
	Sb	123	1005.8	16.4	**0.2066**	0.037	17.7	ug/L	127	Standard
	Ba	135	393236.3	1.1	**196.0335**	2.433	1.2	ug/L	45	Standard
	Ce	140	857283.3	2.5				ug/L	298	Standard
>	**Tb**	159	944884.3	0.7				ug/L	977942	Standard
	Ho	165	15139.2	2.1				ug/L	12	Standard
	Tl	203	479.0	10.1	**0.0546**	0.006	10.6	ug/L	31	Standard
	Tl	205	396.7	12.4	**0.0544**	0.008	14.1	ug/L	20	Standard
	Pb	206	209606.6	0.8	**40.4302**	0.428	1.1	ug/L	286	Standard
	Pb	207	173972.5	0.8	**37.2011**	0.310	0.8	ug/L	257	Standard
	Pb	208	734775.6	0.6	**40.6204**	0.824	2.0	ug/L	956	Standard
	U	238	3055.0	2.6	**0.4423**	0.014	3.2	ug/L	17	Standard
>	**Bi**	209	533598.4	1.5				ug/L	557080	Standard

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Na	23	3.3	173.2	**19.2926**	33.407	173.2	mg/L	0	Standard
Mg	24	75.0	26.7	**0.0334**	0.024	70.8	mg/L	32	Standard
K	39	210.0	4.8	**0.5021**	0.023	4.7	mg/L	30	Standard
Ca	43	75.0	29.1	**4.9537**	2.848	57.5	mg/L	48	Standard
Fe	54	6552.0	2.8	**5.2441**	0.230	4.4	mg/L	159	Standard
Fe	57	1841.8	2.3	**5.0156**	0.091	1.8	mg/L	195	Standard
> **Sc-1**	45	43592.6	1.8				mg/L	39543	Standard
Cl	35	34528.0	1.5				ug/L	27642	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	3080.3	6.6				ug/L	1647	Standard
P	31	18262.7	4.8				ug/L	15231	Standard
S	34	2550.2	4.9				ug/L	1845	Standard
Sr	88	106.7	7.2				ug/L	70	Standard
C	12	370.0	20.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	40.0				mg/L	0	Standard
Dy	164	25551.2	3.2				mg/L	12	Standard
Ho-1	165	15139.2	2.1				mg/L	12	Standard
Er	166	14156.6	1.1				mg/L	20	Standard
I	127	14104.9	1.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.333	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.320	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.154
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.785
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129708S WG574306-04
Sample Date/Time: Tuesday, June 28, 2016 23:35:08
Number of Replicates: 3
Autosampler Position: 404
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77425.7	0.5				ug/L	81760	Standard
	Be	9	24978.9	2.1	**26.5514**	0.597	2.2	ug/L	17	Standard
	Al	27	20723622.4	0.1	**141.9584**	0.685	0.5	ug/L	1410	Standard
	Sc	45	47225.2	3.2				ug/L	39543	Standard
	Ti	47	4499.3	2.9	**18.2724**	0.558	3.1	ug/L	39	Standard
	V	51	344846.0	0.3	**50.3538**	0.699	1.4	ug/L	1415	Standard
	Cr	52	312957.5	0.8	**44.7646**	1.096	2.4	ug/L	6946	Standard
	Cr	53	39581.6	1.4	**45.6150**	1.229	2.7	ug/L	328	Standard
	Mn	55	5573425.5	1.4	**875.8629**	6.350	0.7	ug/L	823	Standard
	Co	59	254404.2	1.0	**36.8653**	0.333	0.9	ug/L	252	Standard
	Ni	60	98601.5	0.1	**53.2500**	0.840	1.6	ug/L	192	Standard
	Cu	65	83052.3	0.8	**44.4536**	0.827	1.9	ug/L	141	Standard
	Zn	66	91760.7	0.8	**84.4843**	0.972	1.2	ug/L	491	Standard
>	**Ge**	72	505521.9	1.6				ug/L	515087	Standard
	As	75	29384.3	0.4	**26.6737**	0.341	1.3	ug/L	20	Standard
	Se	82	1902.3	1.0	**16.7176**	0.177	1.1	ug/L	15	Standard
	Se-1	77	1368.1	4.0	**17.7813**	0.553	3.1	ug/L	48	Standard
>	**Ga**	71	22081.1	1.8				mg/L	90	Standard
	Rb	85	217862.7	3.0				ug/L	23	Standard
	Y	89	681158.2	0.5				ug/L	448510	Standard
>	**Rh**	103	41.7	13.9				ug/L	15	Standard
	Mo	98	502.0	0.9	**0.1763**	0.003	1.6	ug/L	11	Standard
	Ag	107	151390.6	0.2	**23.7106**	0.326	1.4	ug/L	134	Standard
	Cd	111	50168.4	0.1	**24.6878**	0.285	1.2	mg/L	7	Standard
	Cd	114	122073.8	0.4	**24.7133**	0.372	1.5	ug/L	16	Standard
>	**In**	115	580961.0	1.3				ug/L	611117	Standard
	Sn	118	790.0	7.7	**0.0385**	0.009	23.5	ug/L	518	Standard
	Sb	123	3165.4	5.9	**0.6928**	0.037	5.4	ug/L	127	Standard
	Ba	135	532338.7	0.4	**271.2464**	4.110	1.5	ug/L	45	Standard
	Ce	140	1309534.5	1.1				ug/L	298	Standard
>	**Tb**	159	945803.3	0.3				ug/L	977942	Standard
	Ho	165	21665.5	2.8				ug/L	12	Standard
	Tl	203	195988.5	0.7	**24.3661**	0.181	0.7	ug/L	31	Standard
	Tl	205	172319.6	2.0	**24.6721**	0.452	1.8	ug/L	20	Standard
	Pb	206	254741.0	0.7	**49.3204**	0.423	0.9	ug/L	286	Standard
	Pb	207	216152.1	1.4	**46.3962**	0.722	1.6	ug/L	257	Standard
	Pb	208	888930.7	0.3	**49.3200**	0.099	0.2	ug/L	956	Standard
	U	238	171966.4	0.9	**25.1430**	0.188	0.7	ug/L	17	Standard
>	**Bi**	209	531711.1	0.2				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	125.0	34.9	**0.0812**	0.045	55.3	mg/L	32	Standard
K	39	518.3	8.6	**1.3288**	0.177	13.3	mg/L	30	Standard
Ca	43	238.3	9.5	**24.9959**	3.131	12.5	mg/L	48	Standard
Fe	54	18930.5	0.8	**14.2167**	0.407	2.9	mg/L	159	Standard
Fe	57	5154.2	3.0	**13.9467**	0.213	1.5	mg/L	195	Standard
> **Sc-1**	45	47225.2	3.2				mg/L	39543	Standard
Cl	35	33388.1	1.2				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2326.8	4.2				ug/L	1647	Standard
P	31	19087.0	1.5				ug/L	15231	Standard
S	34	2648.6	1.1				ug/L	1845	Standard
Sr	88	121.7	17.1				ug/L	70	Standard
C	12	206.7	36.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	56.8				mg/L	0	Standard
Dy	164	35480.3	0.5				mg/L	12	Standard
Ho-1	165	21665.5	2.8				mg/L	12	Standard
Er	166	19556.0	2.5				mg/L	20	Standard
I	127	13694.5	2.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.699	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.143	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.065
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.446
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129708S WG574306-04
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Method 6020 - Summary Report

Sample ID: L1606129709SD WG574306-05
Sample Date/Time: Tuesday, June 28, 2016 23:38:19
Number of Replicates: 3
Autosampler Position: 405
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74161.1	1.1				ug/L	81760	Standard
	Be	9	23705.2	3.8	**26.3039**	0.872	3.3	ug/L	17	Standard
	Al	27	6111125.0	1.3	**43.6951**	0.516	1.2	ug/L	1410	Standard
	Sc	45	44620.6	1.2				ug/L	39543	Standard
	Ti	47	2932.6	3.4	**11.8635**	0.492	4.1	ug/L	39	Standard
	V	51	246865.2	0.2	**36.0158**	0.450	1.2	ug/L	1415	Standard
	Cr	52	213059.8	1.6	**30.1549**	0.173	0.6	ug/L	6946	Standard
	Cr	53	26094.1	1.0	**29.9771**	0.650	2.2	ug/L	328	Standard
	Mn	55	1521366.7	1.6	**239.1613**	2.815	1.2	ug/L	823	Standard
	Co	59	194513.2	1.8	**28.2005**	0.410	1.5	ug/L	252	Standard
	Ni	60	61728.2	1.1	**33.3195**	0.163	0.5	ug/L	192	Standard
	Cu	65	74436.8	1.3	**39.8619**	0.705	1.8	ug/L	141	Standard
	Zn	66	58904.3	0.8	**53.9789**	0.545	1.0	ug/L	491	Standard
>	Ge	72	505111.3	1.2				ug/L	515087	Standard
	As	75	31837.0	1.5	**28.9187**	0.503	1.7	ug/L	20	Standard
	Se	82	2328.1	1.1	**20.5054**	0.470	2.3	ug/L	15	Standard
	Se-1	77	1619.4	1.4	**21.2042**	0.440	2.1	ug/L	48	Standard
>	Ga	71	6334.7	3.0				mg/L	90	Standard
	Rb	85	74980.1	1.6				ug/L	23	Standard
	Y	89	605551.0	0.9				ug/L	448510	Standard
>	Rh	103	31.7	39.7				ug/L	15	Standard
	Mo	98	404.4	5.7	**0.1335**	0.008	5.8	ug/L	11	Standard
	Ag	107	149725.6	1.6	**22.7377**	0.610	2.7	ug/L	134	Standard
	Cd	111	49979.3	1.2	**23.8462**	0.386	1.6	mg/L	7	Standard
	Cd	114	121386.1	1.5	**23.8269**	0.554	2.3	ug/L	16	Standard
>	In	115	599198.2	1.3				ug/L	611117	Standard
	Sn	118	811.7	7.5	**0.0382**	0.012	32.5	ug/L	518	Standard
	Sb	123	19138.7	1.5	**4.1252**	0.117	2.8	ug/L	127	Standard
	Ba	135	258930.8	0.8	**127.9040**	1.896	1.5	ug/L	45	Standard
	Ce	140	760518.7	0.8				ug/L	298	Standard
>	Tb	159	951283.8	0.9				ug/L	977942	Standard
	Ho	165	14106.6	0.1				ug/L	12	Standard
	Tl	203	188730.2	0.5	**23.1187**	0.087	0.4	ug/L	31	Standard
	Tl	205	170134.9	1.0	**24.0027**	0.337	1.4	ug/L	20	Standard
	Pb	206	208981.3	1.7	**39.8515**	0.361	0.9	ug/L	286	Standard
	Pb	207	178505.4	0.4	**37.7421**	0.330	0.9	ug/L	257	Standard
	Pb	208	755416.1	1.2	**41.2868**	0.479	1.2	ug/L	956	Standard
	U	238	170025.1	1.0	**24.4935**	0.095	0.4	ug/L	17	Standard
>	Bi	209	539649.3	0.9				ug/L	557080	Standard

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Na	23	3.3	86.6	**19.0051**	16.458	86.6	mg/L	0	Standard
Mg	24	83.3	27.7	**0.0410**	0.026	64.1	mg/L	32	Standard
K	39	181.7	7.9	**0.4027**	0.045	11.2	mg/L	30	Standard
Ca	43	75.0	26.7	**4.7351**	2.622	55.4	mg/L	48	Standard
Fe	54	5650.5	3.5	**4.3963**	0.211	4.8	mg/L	159	Standard
Fe	57	1623.4	7.9	**4.2316**	0.365	8.6	mg/L	195	Standard
> **Sc-1**	45	44620.6	1.2				mg/L	39543	Standard
Cl	35	32136.0	1.3				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1900.1	7.1				ug/L	1647	Standard
P	31	17840.5	2.2				ug/L	15231	Standard
S	34	2363.5	5.1				ug/L	1845	Standard
Sr	88	98.3	20.5				ug/L	70	Standard
C	12	150.0	37.1				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	20.0				mg/L	0	Standard
Dy	164	23948.7	0.5				mg/L	12	Standard
Ho-1	165	14106.6	0.1				mg/L	12	Standard
Er	166	12898.8	4.1				mg/L	20	Standard
I	127	5567.7	3.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.706	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.063	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.050
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.871
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144301
Sample Date/Time: Tuesday, June 28, 2016 23:41:31
Number of Replicates: 3
Autosampler Position: 406
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72988.8	2.0				ug/L	81760	Standard
	Be	9	916.7	4.9	**1.0251**	0.070	6.9	ug/L	17	Standard
	Al	27	29327581.2	1.7	**213.1994**	7.066	3.3	ug/L	1410	Standard
	Sc	45	42180.3	1.1				ug/L	39543	Standard
	Ti	47	15217.0	2.1	**62.4530**	1.008	1.6	ug/L	39	Standard
	V	51	58550.8	0.3	**8.4144**	0.093	1.1	ug/L	1415	Standard
	Cr	52	50375.3	2.1	**6.3484**	0.119	1.9	ug/L	6946	Standard
	Cr	53	5892.8	2.4	**6.5282**	0.148	2.3	ug/L	328	Standard
	Mn	55	1501608.8	1.0	**236.8837**	1.387	0.6	ug/L	823	Standard
	Co	59	11082.4	1.1	**1.5829**	0.023	1.4	ug/L	252	Standard
	Ni	60	9938.9	1.0	**5.2962**	0.105	2.0	ug/L	192	Standard
	Cu	65	12880.8	1.6	**6.8461**	0.032	0.5	ug/L	141	Standard
	Zn	66	52551.7	1.1	**48.2375**	0.337	0.7	ug/L	491	Standard
>	**Ge**	72	503346.2	1.1				ug/L	515087	Standard
	As	75	9638.5	1.8	**8.8128**	0.107	1.2	ug/L	20	Standard
	Se	82	89.1	11.5	**0.6728**	0.088	13.1	ug/L	15	Standard
	Se-1	77	112.0	20.6	**0.8047**	0.328	40.8	ug/L	48	Standard
>	**Ga**	71	5402.6	1.6				mg/L	90	Standard
	Rb	85	27092.5	2.9				ug/L	23	Standard
	Y	89	512619.4	0.7				ug/L	448510	Standard
>	**Rh**	103	40.0	45.1				ug/L	15	Standard
	Mo	98	2129.4	2.5	**0.7922**	0.032	4.0	ug/L	11	Standard
	Ag	107	397.3	28.5	**0.0446**	0.016	36.8	ug/L	134	Standard
	Cd	111	847.6	0.8	**0.4054**	0.009	2.1	mg/L	7	Standard
	Cd	114	2047.7	3.4	**0.4008**	0.011	2.7	ug/L	16	Standard
>	**In**	115	593663.8	1.5				ug/L	611117	Standard
	Sn	118	1955.1	5.4	**0.2386**	0.021	8.9	ug/L	518	Standard
	Sb	123	857.9	5.2	**0.1744**	0.012	7.0	ug/L	127	Standard
	Ba	135	91007.2	1.4	**45.3648**	1.263	2.8	ug/L	45	Standard
	Ce	140	427372.5	1.2				ug/L	298	Standard
>	**Tb**	159	914890.2	3.3				ug/L	977942	Standard
	Ho	165	5369.3	2.3				ug/L	12	Standard
	Tl	203	3260.4	2.3	**0.4133**	0.015	3.6	ug/L	31	Standard
	Tl	205	2856.9	4.2	**0.4193**	0.011	2.7	ug/L	20	Standard
	Pb	206	241551.6	0.7	**48.2276**	1.641	3.4	ug/L	286	Standard
	Pb	207	199984.5	0.7	**44.2621**	1.381	3.1	ug/L	257	Standard
	Pb	208	845904.8	0.5	**48.3946**	1.395	2.9	ug/L	956	Standard
	U	238	4244.6	0.7	**0.6370**	0.016	2.5	ug/L	17	Standard
>	**Bi**	209	515907.9	2.8				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.1607**	17.590	173.1	mg/L	0	Standard
Mg	24	176.7	13.4	**0.1635**	0.031	19.2	mg/L	32	Standard
K	39	111.7	29.8	**0.2126**	0.107	50.1	mg/L	30	Standard
Ca	43	486.7	20.1	**63.9109**	13.520	21.2	mg/L	48	Standard
Fe	54	4570.1	3.9	**3.7396**	0.111	3.0	mg/L	159	Standard
Fe	57	1611.8	3.6	**4.4774**	0.217	4.9	mg/L	195	Standard
Sc-1	45	42180.3	1.1				mg/L	39543	Standard
Cl	35	34952.3	0.5				ug/L	27642	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	2820.3	6.2				ug/L	1647	Standard
P	31	18733.3	7.5				ug/L	15231	Standard
S	34	2421.9	7.6				ug/L	1845	Standard
Sr	88	105.0	16.5				ug/L	70	Standard
C	12	266.7	9.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	83.3	60.4				mg/L	0	Standard
Dy	164	8334.8	4.4				mg/L	12	Standard
Ho-1	165	5369.3	2.3				mg/L	12	Standard
Er	166	5100.9	4.8				mg/L	20	Standard
I	127	10480.3	8.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.272	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.721	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.144
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	92.609
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606144302
Sample Date/Time: Tuesday, June 28, 2016 23:44:42
Number of Replicates: 3
Autosampler Position: 407
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71243.8	1.4				ug/L	81760	Standard
	Be	9	1080.0	8.5	**1.2377**	0.094	7.6	ug/L	17	Standard
	Al	27	5504266.2	2.7	**40.9647**	0.928	2.3	ug/L	1410	Standard
	Sc	45	42188.7	3.4				ug/L	39543	Standard
	Ti	47	15737.8	0.6	**62.0152**	0.652	1.1	ug/L	39	Standard
	V	51	45512.4	1.5	**6.2276**	0.158	2.5	ug/L	1415	Standard
	Cr	52	44821.9	1.8	**5.2702**	0.176	3.3	ug/L	6946	Standard
	Cr	53	5345.9	2.2	**5.6430**	0.187	3.3	ug/L	328	Standard
	Mn	55	1510551.7	1.4	**228.8078**	5.482	2.4	ug/L	823	Standard
	Co	59	8314.6	0.3	**1.1314**	0.011	1.0	ug/L	252	Standard
	Ni	60	7372.1	1.0	**3.7410**	0.046	1.2	ug/L	192	Standard
	Cu	65	13129.7	1.4	**6.6988**	0.146	2.2	ug/L	141	Standard
	Zn	66	50712.1	0.8	**44.6331**	0.723	1.6	ug/L	491	Standard
>	**Ge**	72	524277.6	1.0				ug/L	515087	Standard
	As	75	7848.1	0.4	**6.8989**	0.093	1.3	ug/L	20	Standard
	Se	82	94.2	13.2	**0.6849**	0.109	15.9	ug/L	15	Standard
	Se-1	77	110.0	9.5	**0.7149**	0.123	17.2	ug/L	48	Standard
>	**Ga**	71	4740.7	7.0				mg/L	90	Standard
	Rb	85	22735.4	3.5				ug/L	23	Standard
	Y	89	510942.2	1.8				ug/L	448510	Standard
>	**Rh**	103	18.3	110.2				ug/L	15	Standard
	Mo	98	3616.2	2.9	**1.3869**	0.053	3.8	ug/L	11	Standard
	Ag	107	415.3	27.2	**0.0487**	0.017	35.1	ug/L	134	Standard
	Cd	111	879.6	1.3	**0.4294**	0.003	0.8	mg/L	7	Standard
	Cd	114	2156.4	4.6	**0.4311**	0.017	3.9	ug/L	16	Standard
>	**In**	115	581659.3	1.0				ug/L	611117	Standard
	Sn	118	1941.8	8.1	**0.2429**	0.025	10.2	ug/L	518	Standard
	Sb	123	795.2	3.5	**0.1642**	0.005	3.1	ug/L	127	Standard
	Ba	135	105670.2	0.5	**53.7566**	0.798	1.5	ug/L	45	Standard
	Ce	140	489350.3	0.7				ug/L	298	Standard
>	**Tb**	159	914906.3	0.9				ug/L	977942	Standard
	Ho	165	5852.8	3.2				ug/L	12	Standard
	Tl	203	2193.8	7.0	**0.2695**	0.018	6.5	ug/L	31	Standard
	Tl	205	1858.4	8.2	**0.2655**	0.024	8.9	ug/L	20	Standard
	Pb	206	250441.6	1.0	**48.7728**	1.107	2.3	ug/L	286	Standard
	Pb	207	208820.1	0.2	**45.0828**	0.807	1.8	ug/L	257	Standard
	Pb	208	871187.9	1.2	**48.6248**	1.437	3.0	ug/L	956	Standard
	U	238	4748.1	0.9	**0.6954**	0.016	2.3	ug/L	17	Standard
>	**Bi**	209	528719.9	1.7				ug/L	557080	Standard

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Na	23	6.7	43.3	**39.8641**	16.152	40.5	mg/L	0	Standard
Mg	24	568.3	2.7	**0.6523**	0.023	3.6	mg/L	32	Standard
K	39	88.3	11.8	**0.1385**	0.034	24.4	mg/L	30	Standard
Ca	43	236.7	18.2	**28.4335**	6.608	23.2	mg/L	48	Standard
Fe	54	3607.3	1.4	**2.9257**	0.132	4.5	mg/L	159	Standard
Fe	57	1208.4	3.1	**3.2044**	0.245	7.6	mg/L	195	Standard
> **Sc-1**	45	42188.7	3.4				mg/L	39543	Standard
Cl	35	33795.0	1.6				ug/L	27642	Standard
Kr	83	3.3	75.5				ug/L	2	Standard
Br	81	2200.2	4.1				ug/L	1647	Standard
P	31	17892.2	3.9				ug/L	15231	Standard
S	34	2398.5	0.8				ug/L	1845	Standard
Sr	88	86.7	23.3				ug/L	70	Standard
C	12	246.7	15.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	76.7	30.1				mg/L	0	Standard
Dy	164	8934.1	5.5				mg/L	12	Standard
Ho-1	165	5852.8	3.2				mg/L	12	Standard
Er	166	5817.8	2.9				mg/L	20	Standard
I	127	10927.3	3.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		87.138	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.784	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.180
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.909
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606144302PS WG574573-01
Sample Date/Time: Tuesday, June 28, 2016 23:47:54
Number of Replicates: 3
Autosampler Position: 408
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74517.8	1.0				ug/L	81760	Standard
	Be	9	49025.9	0.9	**54.1590**	0.839	1.5	ug/L	17	Standard
	Al	27	5488864.5	1.0	**39.0606**	0.777	2.0	ug/L	1410	Standard
	Sc	45	43992.1	1.6				ug/L	39543	Standard
	Ti	47	15590.7	1.3	**62.0794**	2.775	4.5	ug/L	39	Standard
	V	51	384779.8	0.6	**54.7401**	1.764	3.2	ug/L	1415	Standard
	Cr	52	400124.0	1.3	**56.0091**	2.445	4.4	ug/L	6946	Standard
	Cr	53	50664.6	1.6	**56.9262**	0.956	1.7	ug/L	328	Standard
	Mn	55	1785071.4	0.4	**273.1709**	9.729	3.6	ug/L	823	Standard
	Co	59	343226.4	0.5	**48.4551**	1.560	3.2	ug/L	252	Standard
	Ni	60	101539.8	1.7	**53.4214**	2.390	4.5	ug/L	192	Standard
	Cu	65	107630.3	0.5	**56.1285**	1.666	3.0	ug/L	141	Standard
	Zn	66	105446.7	0.4	**94.6554**	2.823	3.0	ug/L	491	Standard
>	**Ge**	72	519316.9	3.3				ug/L	515087	Standard
	As	75	63635.8	1.4	**56.2203**	2.024	3.6	ug/L	20	Standard
	Se	82	5672.0	2.3	**48.8026**	2.645	5.4	ug/L	15	Standard
	Se-1	77	3855.8	0.1	**50.0819**	1.642	3.3	ug/L	48	Standard
>	**Ga**	71	4749.1	6.7				mg/L	90	Standard
	Rb	85	22398.2	1.3				ug/L	23	Standard
	Y	89	511504.7	2.1				ug/L	448510	Standard
>	**Rh**	103	58.3	34.6				ug/L	15	Standard
	Mo	98	3550.9	0.5	**1.3279**	0.015	1.1	ug/L	11	Standard
	Ag	107	317741.2	0.8	**48.5166**	0.462	1.0	ug/L	134	Standard
	Cd	111	103027.6	1.2	**49.4156**	0.686	1.4	mg/L	7	Standard
	Cd	114	250223.1	1.7	**49.3820**	1.399	2.8	ug/L	16	Standard
>	**In**	115	596094.6	1.6				ug/L	611117	Standard
	Sn	118	2016.8	5.9	**0.2476**	0.017	6.7	ug/L	518	Standard
	Sb	123	226110.3	0.9	**49.1269**	0.970	2.0	ug/L	127	Standard
	Ba	135	199376.6	0.4	**98.9961**	1.356	1.4	ug/L	45	Standard
	Ce	140	473631.7	1.6				ug/L	298	Standard
>	**Tb**	159	946510.9	0.6				ug/L	977942	Standard
	Ho	165	5706.1	1.8				ug/L	12	Standard
	Tl	203	404565.2	1.6	**49.2192**	0.432	0.9	ug/L	31	Standard
	Tl	205	358549.4	2.4	**50.2279**	0.323	0.6	ug/L	20	Standard
	Pb	206	506766.3	0.6	**96.0764**	1.688	1.8	ug/L	286	Standard
	Pb	207	430425.5	0.4	**90.4686**	1.648	1.8	ug/L	257	Standard
	Pb	208	1789019.3	1.0	**97.1851**	0.775	0.8	ug/L	956	Standard
	U	238	348425.0	0.3	**49.8561**	0.765	1.5	ug/L	17	Standard
>	**Bi**	209	543434.9	1.8				ug/L	557080	Standard

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Na	23	3.3	86.6	**19.2423**	16.666	86.6	mg/L	0	Standard
Mg	24	530.0	3.8	**0.5773**	0.030	5.2	mg/L	32	Standard
K	39	95.0	5.3	**0.1471**	0.014	9.3	mg/L	30	Standard
Ca	43	235.0	26.6	**26.8058**	8.969	33.5	mg/L	48	Standard
Fe	54	3632.6	2.6	**2.8189**	0.112	4.0	mg/L	159	Standard
Fe	57	1290.1	7.8	**3.2920**	0.337	10.2	mg/L	195	Standard
> **Sc-1**	45	43992.1	1.6				mg/L	39543	Standard
Cl	35	33127.5	1.3				ug/L	27642	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	2050.1	2.6				ug/L	1647	Standard
P	31	18372.8	5.1				ug/L	15231	Standard
S	34	2410.2	0.9				ug/L	1845	Standard
Sr	88	108.3	17.5				ug/L	70	Standard
C	12	236.7	47.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	86.7	70.5				mg/L	0	Standard
Dy	164	8282.4	2.8				mg/L	12	Standard
Ho-1	165	5706.1	1.8				mg/L	12	Standard
Er	166	5427.6	1.3				mg/L	20	Standard
I	127	10600.4	5.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.142	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.821	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.542
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.551
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606144302SDL WG574573-02
Sample Date/Time: Tuesday, June 28, 2016 23:51:05
Number of Replicates: 3
Autosampler Position: 409
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73539.7	0.5				ug/L	81760	Standard
	Be	9	228.3	17.7	**0.2458**	0.045	18.1	ug/L	17	Standard
	Al	27	1128305.0	2.6	**8.1231**	0.173	2.1	ug/L	1410	Standard
	Sc	45	40995.4	3.1				ug/L	39543	Standard
	Ti	47	3133.3	3.6	**12.6953**	0.331	2.6	ug/L	39	Standard
	V	51	9700.8	3.1	**1.2183**	0.050	4.1	ug/L	1415	Standard
	Cr	52	13743.6	3.1	**0.9582**	0.044	4.6	ug/L	6946	Standard
	Cr	53	1285.1	5.5	**1.1537**	0.099	8.6	ug/L	328	Standard
	Mn	55	302649.7	2.2	**47.5055**	0.538	1.1	ug/L	823	Standard
	Co	59	1856.8	5.3	**0.2384**	0.012	4.9	ug/L	252	Standard
	Ni	60	1619.8	3.4	**0.7729**	0.024	3.1	ug/L	192	Standard
	Cu	65	2766.6	1.1	**1.3956**	0.008	0.6	ug/L	141	Standard
	Zn	66	11859.0	1.8	**10.2169**	0.056	0.5	ug/L	491	Standard
>	**Ge**	72	504593.5	1.7				ug/L	515087	Standard
	As	75	1530.8	2.0	**1.4307**	0.048	3.3	ug/L	20	Standard
	Se	82	33.4	31.2	**0.1774**	0.094	53.0	ug/L	15	Standard
	Se-1	77	64.7	12.6	**0.1577**	0.113	71.7	ug/L	48	Standard
>	**Ga**	71	975.0	10.5				mg/L	90	Standard
	Rb	85	4577.4	4.1				ug/L	23	Standard
	Y	89	452862.0	1.2				ug/L	448510	Standard
>	**Rh**	103	23.3	32.7				ug/L	15	Standard
	Mo	98	722.3	4.5	**0.2491**	0.011	4.3	ug/L	11	Standard
	Ag	107	159.0	11.1	**0.0076**	0.003	35.4	ug/L	134	Standard
	Cd	111	175.3	14.8	**0.0794**	0.012	14.8	mg/L	7	Standard
	Cd	114	462.3	4.9	**0.0844**	0.004	4.5	ug/L	16	Standard
>	**In**	115	608749.5	0.7				ug/L	611117	Standard
	Sn	118	845.0	9.9	**0.0416**	0.014	34.5	ug/L	518	Standard
	Sb	123	2112.7	19.6	**0.4370**	0.091	20.8	ug/L	127	Standard
	Ba	135	21046.6	3.7	**10.2079**	0.317	3.1	ug/L	45	Standard
	Ce	140	96335.3	1.6				ug/L	298	Standard
>	**Tb**	159	932545.8	1.3				ug/L	977942	Standard
	Ho	165	1166.7	10.3				ug/L	12	Standard
	Tl	203	511.3	6.9	**0.0588**	0.004	6.8	ug/L	31	Standard
	Tl	205	456.7	14.9	**0.0631**	0.009	14.8	ug/L	20	Standard
	Pb	206	50001.0	0.8	**9.6268**	0.026	0.3	ug/L	286	Standard
	Pb	207	41687.9	1.1	**8.8985**	0.042	0.5	ug/L	257	Standard
	Pb	208	175842.9	0.5	**9.7051**	0.030	0.3	ug/L	956	Standard
	U	238	977.7	3.5	**0.1400**	0.006	4.1	ug/L	17	Standard
>	**Bi**	209	531859.1	0.7				ug/L	557080	Standard

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Na	23	3.3	86.6	**20.9199**	18.126	86.6	mg/L	0	Standard
Mg	24	148.3	20.6	**0.1326**	0.034	25.5	mg/L	32	Standard
K	39	35.0	24.7	**-0.0267**	0.032	120.4	mg/L	30	Standard
Ca	43	75.0	20.0	**5.6602**	2.270	40.1	mg/L	48	Standard
Fe	54	775.4	6.3	**0.5410**	0.062	11.5	mg/L	159	Standard
Fe	57	435.0	3.0	**0.7919**	0.003	0.4	mg/L	195	Standard
> **Sc-1**	45	40995.4	3.1				mg/L	39543	Standard
Cl	35	32746.0	2.5				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1743.4	12.5				ug/L	1647	Standard
P	31	17056.3	1.5				ug/L	15231	Standard
S	34	2336.8	6.2				ug/L	1845	Standard
Sr	88	78.3	20.5				ug/L	70	Standard
C	12	126.7	27.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	89.2				mg/L	0	Standard
Dy	164	1870.0	3.5				mg/L	12	Standard
Ho-1	165	1166.7	10.3				mg/L	12	Standard
Er	166	1116.7	18.2				mg/L	20	Standard
I	127	3388.7	11.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.946	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.963	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	99.613
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	95.473
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606144302SDL WG574573-02
Sample Date/Time: Tuesday, June 28, 2016 23:54:17
Number of Replicates: 3
Autosampler Position: 410
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70935.7	2.2				ug/L	81760	Standard
	Be	9	55.0	15.7	**0.0540**	0.009	16.0	ug/L	17	Standard
	Al	27	218570.5	1.6	**1.6201**	0.011	0.7	ug/L	1410	Standard
	Sc	45	39984.4	1.2				ug/L	39543	Standard
	Ti	47	627.7	4.3	**2.4198**	0.114	4.7	ug/L	39	Standard
	V	51	2847.0	3.0	**0.2129**	0.013	6.1	ug/L	1415	Standard
	Cr	52	7618.6	1.2	**0.0637**	0.011	17.1	ug/L	6946	Standard
	Cr	53	580.0	9.6	**0.3354**	0.068	20.2	ug/L	328	Standard
	Mn	55	61547.4	1.3	**9.5745**	0.188	2.0	ug/L	823	Standard
	Co	59	523.0	3.3	**0.0449**	0.003	6.0	ug/L	252	Standard
	Ni	60	493.7	5.6	**0.1635**	0.016	10.1	ug/L	192	Standard
	Cu	65	675.0	3.2	**0.2729**	0.010	3.6	ug/L	141	Standard
	Zn	66	4565.4	1.3	**3.4380**	0.075	2.2	ug/L	491	Standard
>	**Ge**	72	502988.1	0.7				ug/L	515087	Standard
	As	75	269.2	10.7	**0.2856**	0.028	9.7	ug/L	20	Standard
	Se	82	20.7	22.3	**0.0646**	0.042	64.7	ug/L	15	Standard
	Se-1	77	45.7	15.4	**-0.0984**	0.093	94.5	ug/L	48	Standard
>	**Ga**	71	186.7	12.1				mg/L	90	Standard
	Rb	85	835.0	12.4				ug/L	23	Standard
	Y	89	441201.2	2.7				ug/L	448510	Standard
>	**Rh**	103	13.3	94.4				ug/L	15	Standard
	Mo	98	189.0	7.0	**0.0532**	0.006	12.0	ug/L	11	Standard
	Ag	107	91.3	11.0	**-0.0021**	0.002	87.0	ug/L	134	Standard
	Cd	111	37.0	12.7	**0.0150**	0.002	15.9	mg/L	7	Standard
	Cd	114	85.9	30.8	**0.0122**	0.005	43.3	ug/L	16	Standard
>	**In**	115	591854.8	2.3				ug/L	611117	Standard
	Sn	118	648.3	6.3	**0.0113**	0.007	65.4	ug/L	518	Standard
	Sb	123	522.8	33.2	**0.1022**	0.041	39.7	ug/L	127	Standard
	Ba	135	4107.2	1.3	**2.0294**	0.025	1.2	ug/L	45	Standard
	Ce	140	18988.6	1.0				ug/L	298	Standard
>	**Tb**	159	914076.3	1.3				ug/L	977942	Standard
	Ho	165	253.3	13.1				ug/L	12	Standard
	Tl	203	112.3	10.6	**0.0094**	0.002	17.3	ug/L	31	Standard
	Tl	205	90.0	29.4	**0.0108**	0.004	36.1	ug/L	20	Standard
	Pb	206	10230.5	2.1	**1.9438**	0.049	2.5	ug/L	286	Standard
	Pb	207	8531.4	1.5	**1.7976**	0.010	0.6	ug/L	257	Standard
	Pb	208	36086.5	0.6	**1.9686**	0.029	1.5	ug/L	956	Standard
	U	238	209.0	10.0	**0.0280**	0.003	11.9	ug/L	17	Standard
>	**Bi**	209	525348.3	0.9				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	68.3	18.4	**0.0329**	0.017	52.2	mg/L	32	Standard
K	39	41.7	42.1	**-0.0025**	0.057	2323.2	mg/L	30	Standard
Ca	43	35.0	49.5	**-0.0873**	2.606	2984.1	mg/L	48	Standard
Fe	54	276.1	10.3	**0.1102**	0.028	25.1	mg/L	159	Standard
Fe	57	273.3	14.9	**0.2889**	0.146	50.5	mg/L	195	Standard
> **Sc-1**	45	39984.4	1.2				mg/L	39543	Standard
Cl	35	32328.5	1.4				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1603.4	8.8				ug/L	1647	Standard
P	31	16148.6	1.7				ug/L	15231	Standard
S	34	2251.8	6.8				ug/L	1845	Standard
Sr	88	76.7	35.9				ug/L	70	Standard
C	12	146.7	10.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	330.4	18.3				mg/L	12	Standard
Ho-1	165	253.3	13.1				mg/L	12	Standard
Er	166	270.0	22.5				mg/L	20	Standard
I	127	1720.1	18.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		86.761	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.651	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	96.848
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	94.304
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 23:57:30
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72062.8	4.4				ug/L	81760	Standard
	Be	9	45152.2	3.9	**51.5939**	1.461	2.8	ug/L	17	Standard
	Al	27	7383002.3	3.7	**54.3407**	0.756	1.4	ug/L	1410	Standard
	Sc	45	39518.2	3.2				ug/L	39543	Standard
	Ti	47	24690.4	0.9	**102.0722**	0.550	0.5	ug/L	39	Standard
	V	51	333814.0	1.2	**49.2501**	0.769	1.6	ug/L	1415	Standard
	Cr	52	345665.5	1.2	**50.0774**	0.577	1.2	ug/L	6946	Standard
	Cr	53	43291.8	1.9	**50.4406**	0.792	1.6	ug/L	328	Standard
	Mn	55	319563.2	0.6	**50.6110**	0.452	0.9	ug/L	823	Standard
	Co	59	337944.7	0.8	**49.4985**	0.535	1.1	ug/L	252	Standard
	Ni	60	91064.9	0.9	**49.6861**	0.418	0.8	ug/L	192	Standard
	Cu	65	92447.5	0.3	**50.0106**	0.369	0.7	ug/L	141	Standard
	Zn	66	53973.0	1.5	**49.8813**	0.957	1.9	ug/L	491	Standard
>	Ge	72	500217.2	0.4				ug/L	515087	Standard
	As	75	53742.2	1.5	**49.2630**	0.862	1.7	ug/L	20	Standard
	Se	82	5467.6	1.7	**48.7858**	1.017	2.1	ug/L	15	Standard
	Se-1	77	3788.8	1.0	**51.0702**	0.720	1.4	ug/L	48	Standard
>	Ga	71	51.7	5.6				mg/L	90	Standard
	Rb	85	820.0	10.6				ug/L	23	Standard
	Y	89	441206.7	0.2				ug/L	448510	Standard
>	Rh	103	33.3	8.7				ug/L	15	Standard
	Mo	98	251795.6	1.0	**94.4274**	1.474	1.6	ug/L	11	Standard
	Ag	107	307525.6	0.6	**46.4306**	0.349	0.8	ug/L	134	Standard
	Cd	111	100206.1	1.3	**47.5308**	1.177	2.5	mg/L	7	Standard
	Cd	114	244073.0	1.7	**47.6209**	0.821	1.7	ug/L	16	Standard
>	In	115	602825.2	1.4				ug/L	611117	Standard
	Sn	118	281047.8	1.1	**48.0844**	0.236	0.5	ug/L	518	Standard
	Sb	123	222239.4	0.2	**47.7427**	0.588	1.2	ug/L	127	Standard
	Ba	135	96470.5	0.6	**47.3499**	0.512	1.1	ug/L	45	Standard
	Ce	140	125.0	48.0				ug/L	298	Standard
>	Tb	159	921870.8	1.1				ug/L	977942	Standard
	Ho	165	11.7	65.5				ug/L	12	Standard
	Tl	203	392459.6	0.5	**49.4989**	0.479	1.0	ug/L	31	Standard
	Tl	205	352339.7	0.4	**51.1783**	0.770	1.5	ug/L	20	Standard
	Pb	206	250499.8	0.3	**49.1963**	0.428	0.9	ug/L	286	Standard
	Pb	207	226961.6	0.5	**49.4195**	0.337	0.7	ug/L	257	Standard
	Pb	208	926488.8	0.6	**52.1497**	0.850	1.6	ug/L	956	Standard
	U	238	343296.3	1.3	**50.9156**	0.444	0.9	ug/L	17	Standard
>	Bi	209	524204.3	1.1				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.4692**	18.124	173.1	mg/L	0	Standard
Mg	24	3737.1	0.3	**4.9245**	0.180	3.7	mg/L	32	Standard
K	39	1403.4	10.2	**4.6088**	0.536	11.6	mg/L	30	Standard
Ca	43	78.3	16.1	**6.5318**	1.619	24.8	mg/L	48	Standard
Fe	54	5604.3	1.6	**4.9425**	0.217	4.4	mg/L	159	Standard
Fe	57	1713.4	2.9	**5.1658**	0.187	3.6	mg/L	195	Standard
Sc-1	45	39518.2	3.2				mg/L	39543	Standard
Cl	35	33439.5	0.8				ug/L	27642	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	1523.4	5.0				ug/L	1647	Standard
P	31	18217.6	1.7				ug/L	15231	Standard
S	34	2641.9	8.4				ug/L	1845	Standard
Sr	88	48.3	11.9				ug/L	70	Standard
C	12	93.3	12.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	9.4	104.5				mg/L	12	Standard
Ho-1	165	11.7	65.5				mg/L	12	Standard
Er	166	13.3	114.6				mg/L	20	Standard
I	127	1510.1	17.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	103.188		
Al	27	108.681		
Sc	45			
Ti	47	102.072		
V	51	98.500		
Cr	52	100.155		
Cr	53			
Mn	55	101.222		
Co	59	98.997		
Ni	60	99.372		
Cu	65	100.021		
Zn	66	99.763		
Ge	72		97.113	
As	75	98.526		
Se	82	97.572		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	94.427		
Ag	107	92.861		
Cd	111	95.062		
Cd	114			
In	115			98.643
Sn	118	96.169		
Sb	123	95.485		
Ba	135	94.700		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.998		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.299		
U	238	101.831		
Bi	209			94.098
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 00:00:41
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70070.0	1.8				ug/L	81760	Standard
	Be	9	30.0	16.7	**0.0256**	0.006	25.2	ug/L	17	Standard
	Al	27	3812.2	30.7	**0.0144**	0.008	57.9	ug/L	1410	Standard
	Sc	45	40014.5	4.3				ug/L	39543	Standard
	Ti	47	26.7	12.1	**-0.0568**	0.013	23.6	ug/L	39	Standard
	V	51	1145.1	6.3	**-0.0403**	0.010	25.4	ug/L	1415	Standard
	Cr	52	6171.9	1.7	**-0.1619**	0.014	8.6	ug/L	6946	Standard
	Cr	53	411.7	3.9	**0.1320**	0.019	14.5	ug/L	328	Standard
	Mn	55	924.7	19.7	**-0.0044**	0.029	653.9	ug/L	823	Standard
	Co	59	261.3	12.2	**0.0062**	0.005	75.0	ug/L	252	Standard
	Ni	60	171.3	8.8	**-0.0131**	0.008	64.0	ug/L	192	Standard
	Cu	65	132.0	5.3	**-0.0207**	0.004	18.6	ug/L	141	Standard
	Zn	66	427.3	9.5	**-0.4339**	0.039	8.9	ug/L	491	Standard
>	**Ge**	72	510161.6	0.4				ug/L	515087	Standard
	As	75	-21.8	127.1	**0.0207**	0.025	120.4	ug/L	20	Standard
	Se	82	17.0	25.9	**0.0293**	0.038	129.6	ug/L	15	Standard
	Se-1	77	53.7	12.0	**0.0005**	0.088	17869.4	ug/L	48	Standard
>	**Ga**	71	35.0	28.6				mg/L	90	Standard
	Rb	85	33.3	60.6				ug/L	23	Standard
	Y	89	437929.1	1.0				ug/L	448510	Standard
>	**Rh**	103	6.7	43.3				ug/L	15	Standard
	Mo	98	269.2	32.9	**0.0838**	0.033	39.3	ug/L	11	Standard
	Ag	107	120.7	16.7	**0.0024**	0.003	124.0	ug/L	134	Standard
	Cd	111	21.8	34.3	**0.0077**	0.004	48.1	mg/L	7	Standard
	Cd	114	36.7	62.4	**0.0024**	0.005	190.6	ug/L	16	Standard
>	**In**	115	590666.4	0.9				ug/L	611117	Standard
	Sn	118	743.4	12.2	**0.0282**	0.017	60.4	ug/L	518	Standard
	Sb	123	532.5	22.4	**0.1040**	0.027	25.7	ug/L	127	Standard
	Ba	135	71.0	29.1	**0.0104**	0.010	96.8	ug/L	45	Standard
	Ce	140	91.7	65.8				ug/L	298	Standard
>	**Tb**	159	911246.7	0.8				ug/L	977942	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	81.7	41.2	**0.0055**	0.004	77.1	ug/L	31	Standard
	Tl	205	68.3	66.0	**0.0076**	0.007	85.7	ug/L	20	Standard
	Pb	206	297.7	10.9	**-0.0054**	0.007	123.4	ug/L	286	Standard
	Pb	207	283.7	16.0	**0.0035**	0.010	283.6	ug/L	257	Standard
	Pb	208	1155.4	11.3	**0.0043**	0.008	176.0	ug/L	956	Standard
	U	238	70.3	39.4	**0.0074**	0.004	55.5	ug/L	17	Standard
>	**Bi**	209	527005.8	1.2				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	25.0	20.0	**-0.0244**	0.005	21.9	mg/L	32	Standard
K	39	18.3	31.5	**-0.0799**	0.021	26.0	mg/L	30	Standard
Ca	43	16.7	17.3	**-2.8535**	0.318	11.1	mg/L	48	Standard
Fe	54	122.6	39.6	**-0.0261**	0.047	179.6	mg/L	159	Standard
Fe	57	230.0	17.0	**0.1451**	0.148	101.7	mg/L	195	Standard
> **Sc-1**	45	40014.5	4.3				mg/L	39543	Standard
Cl	35	33255.8	1.4				ug/L	27642	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	1523.4	4.7				ug/L	1647	Standard
P	31	17488.4	2.6				ug/L	15231	Standard
S	34	2358.5	3.1				ug/L	1845	Standard
Sr	88	70.0	25.8				ug/L	70	Standard
C	12	73.3	39.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.5	100.0				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	10.0	100.0				mg/L	20	Standard
I	127	1368.4	18.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.044	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.654
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.601
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

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Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	6.975	1323	2024	0.699	
Mg	23.985	23.975	4506	2020	0.705	
Co	58.933	58.975	11694	2022	0.697	
In	114.904	114.925	22865	2028	0.690	
U	238.050	238.025	47450	2043	0.688	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	9.254
5.575	1.459
5.625	2.417
5.675	3.442
5.725	2.231
5.775	2.296
5.825	3.784
5.875	3.197
5.925	2.400
5.975	1.087
6.025	1.670
6.075	3.521
6.125	2.277
6.175	2.559
6.225	20.588
6.275	74.689
6.325	108.327
6.375	83.853
6.425	69.722
6.475	32.808
6.525	10.642
6.575	8.985
6.625	1.429
6.675	0.941
6.725	0.857
6.775	3.333
6.825	0.822

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6.875	1.277
6.925	1.899
6.975	1.561
7.025	1.195
7.075	1.059
7.125	1.545
7.175	1.743
7.225	3.248
7.275	8.142
7.325	57.701
7.375	91.287
7.425	51.602
7.475	55.902
7.525	100.000
7.575	69.869
7.625	81.441
7.675	81.441
7.725	70.711
7.775	55.902
7.825	59.266
7.875	49.793
7.925	104.583
7.975	98.543
8.025	94.786
8.075	223.607
8.125	81.441
8.175	84.265
8.225	61.237
8.275	81.312
8.325	81.441
8.375	91.287
8.425	82.402
8.475	22.822
22.525	149.071
22.575	52.705
22.625	46.771
22.675	48.627
22.725	39.087
22.775	18.109
22.825	22.048
22.875	36.422
22.925	32.723
22.975	82.685
23.025	39.239
23.075	25.529
23.125	43.064
23.175	21.317

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23.225	22.232
23.275	15.408
23.325	42.127
23.375	37.172
23.425	24.296
23.475	14.668
23.525	3.807
23.575	1.593
23.625	2.258
23.675	1.180
23.725	1.542
23.775	1.943
23.825	1.185
23.875	1.595
23.925	1.324
23.975	1.055
24.025	1.809
24.075	1.103
24.125	1.249
24.175	0.652
24.225	1.203
24.275	3.614
24.325	39.316
24.375	52.355
24.425	20.738
24.475	5.001
24.525	5.067
24.575	0.930
24.625	1.241
24.675	0.972
24.725	1.552
24.775	0.581
24.825	0.736
24.875	1.684
24.925	0.952
24.975	1.395
25.025	0.762
25.075	1.498
25.125	1.418
25.175	1.145
25.225	6.288
25.275	44.605
25.325	50.990
25.375	73.823
25.425	57.334
25.475	7.010
57.525	8.193

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57.575	3.609
57.625	2.367
57.675	3.747
57.725	3.869
57.775	3.226
57.825	1.406
57.875	2.220
57.925	2.049
57.975	2.397
58.025	3.045
58.075	0.897
58.125	1.397
58.175	1.608
58.225	1.481
58.275	5.244
58.325	6.996
58.375	14.816
58.425	39.994
58.475	18.390
58.525	7.862
58.575	1.876
58.625	1.684
58.675	0.757
58.725	2.431
58.775	2.139
58.825	2.293
58.875	1.987
58.925	2.134
58.975	1.760
59.025	2.893
59.075	1.855
59.125	4.126
59.175	3.545
59.225	2.980
59.275	6.918
59.325	57.198
59.375	79.057
59.425	39.123
59.475	32.983
59.525	7.337
59.575	10.704
59.625	4.888
59.675	5.230
59.725	3.575
59.775	2.279
59.825	3.495
59.875	0.859

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59.925	2.164
59.975	4.187
60.025	3.749
60.075	1.767
60.125	4.373
60.175	1.581
60.225	1.647
60.275	29.768
60.325	42.377
60.375	71.261
60.425	71.261
60.475	69.722
113.525	10.800
113.575	6.260
113.625	1.672
113.675	1.646
113.725	1.420
113.775	2.281
113.825	1.446
113.875	0.820
113.925	1.607
113.975	1.407
114.025	1.046
114.075	2.403
114.125	2.090
114.175	3.331
114.225	5.316
114.275	12.354
114.325	37.872
114.375	26.082
114.425	15.800
114.475	3.831
114.525	4.062
114.575	1.808
114.625	2.980
114.675	3.272
114.725	2.895
114.775	1.904
114.825	1.941
114.875	1.809
114.925	0.906
114.975	0.414
115.025	2.617
115.075	0.808
115.125	1.618
115.175	2.428
115.225	3.339

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115.275	5.459
115.325	14.203
115.375	69.869
115.425	66.254
115.475	26.966
115.525	18.235
115.575	7.589
115.625	3.788
115.675	2.661
115.725	3.661
115.775	2.867
115.825	3.952
115.875	6.794
115.925	4.558
115.975	5.421
116.025	1.319
116.075	4.928
116.125	7.259
116.175	4.689
116.225	9.289
116.275	22.491
116.325	26.307
116.375	26.146
116.425	67.711
116.475	40.825
236.525	
236.575	13.258
236.625	39.219
236.675	66.333
236.725	37.815
236.775	20.039
236.825	39.510
236.875	22.934
236.925	27.407
236.975	8.537
237.025	28.853
237.075	45.928
237.125	41.937
237.175	36.377
237.225	26.058
237.275	27.285
237.325	43.196
237.375	45.018
237.425	23.111
237.475	20.908
237.525	26.413
237.575	10.671

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237.625	6.558
237.675	4.584
237.725	2.707
237.775	1.019
237.825	0.867
237.875	0.837
237.925	1.315
237.975	0.556
238.025	1.099
238.075	0.473
238.125	0.980
238.175	0.943
238.225	1.564
238.275	1.714
238.325	1.785
238.375	2.057
238.425	2.571
238.475	6.163
238.525	10.798
238.575	23.407
238.625	35.493
238.675	33.171
238.725	15.721
238.775	9.421
238.825	23.516
238.875	27.721
238.925	14.417
238.975	30.010
239.025	24.993
239.075	29.933
239.125	17.678
239.175	38.433
239.225	46.981
239.275	15.215
239.325	48.601
239.375	50.659
239.425	23.570
239.475	38.955

Approved: July 04, 2016

SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 6/29/2016 10:01:57 AM
End Time: 6/29/2016 10:04:08 AM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 4651.78
        Obtained Intensity (Mg 23.985): 162439.88
        Obtained Intensity (In 114.904): 66202.13
        Obtained Intensity (U 238.05): 140216.56
        Obtained Intensity (Bkgd 220): 0.33
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.018 (=3640.50 / 205153.73)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.004 (=909.89 / 205153.73)
```

Report Date/Time: Wednesday, June 29, 2016 10:04:08
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SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 6/29/2016 10:01:57 AM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 4651.78
                Obtained Intensity (Mg 23.985): 162439.88
                Obtained Intensity (In 114.904): 66202.13
                Obtained Intensity (U 238.05): 140216.56
                Obtained Intensity (Bkgd 220): 0.33
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.018 (=3640.50 / 205153.73)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.004 (=909.89 / 205153.73)
[Passed]  Optimum value(s): N/A

End Time: 6/29/2016 10:04:08 AM
```


Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Wednesday, June 29, 2016 11:22:34
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74698.8	3.1				ug/L		Standard
	Be	9	8.3	124.9				ug/L		Standard
	Al	27	1493.4	9.1				ug/L		Standard
	Sc	45	61029.4	2.9				ug/L		Standard
	Ti	47	35.0	12.5				ug/L		Standard
	V	51	1434.8	4.3				ug/L		Standard
	Cr	52	7634.6	2.5				ug/L		Standard
	Cr	53	363.3	0.8				ug/L		Standard
	Mn	55	747.0	1.6				ug/L		Standard
	Co	59	233.7	7.1				ug/L		Standard
	Ni	60	214.7	3.5				ug/L		Standard
	Cu	65	104.0	12.0				ug/L		Standard
	Zn	66	363.0	3.8				ug/L		Standard
>	Ge	72	495142.3	1.3				ug/L		Standard
	As	75	-49.8	7.8				ug/L		Standard
	Se	82	13.7	23.9				ug/L		Standard
	Se-1	77	42.3	9.8				ug/L		Standard
>	Ga	71	41.7	25.0				mg/L		Standard
	Rb	85	16.7	91.7				ug/L		Standard
	Y	89	417098.4	0.9				ug/L		Standard
>	Rh	103	13.3	86.6				ug/L		Standard
	Mo	98	10.7	10.9				ug/L		Standard
	Ag	107	68.0	6.4				ug/L		Standard
	Cd	111	2.3	24.9				mg/L		Standard
	Cd	114	11.7	106.5				ug/L		Standard
>	In	115	587441.1	0.5				ug/L		Standard
	Sn	118	496.7	9.7				ug/L		Standard
	Sb	123	77.7	34.7				ug/L		Standard
	Ba	135	24.3	19.4				ug/L		Standard
	Ce	140	25.0	20.0				ug/L		Standard
>	Tb	159	939701.0	1.8				ug/L		Standard
	Ho	165	10.0	50.0				ug/L		Standard
	Tl	203	4.0	25.0				ug/L		Standard
	Tl	205	1.7	173.2				ug/L		Standard
	Pb	206	239.7	3.6				ug/L		Standard
	Pb	207	197.7	3.9				ug/L		Standard
	Pb	208	883.3	3.3				ug/L		Standard
	U	238	3.3	17.3				ug/L		Standard
>	Bi	209	523984.5	1.3				ug/L		Standard

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	Na	23	0.0		mg/L	Standard
	Mg	24	36.7	55.1	mg/L	Standard
	K	39	38.3	52.7	mg/L	Standard
	Ca	43	10.0	50.0	mg/L	Standard
	Fe	54	179.1	14.9	mg/L	Standard
	Fe	57	335.0	10.3	mg/L	Standard
>	**Sc-1**	45	61029.4	2.9	mg/L	Standard
	Cl	35	20194.8	0.8	ug/L	Standard
	Kr	83	4.3	70.5	ug/L	Standard
	Br	81	1546.7	2.4	ug/L	Standard
	P	31	15286.0	3.7	ug/L	Standard
	S	34	1571.7	2.7	ug/L	Standard
	Sr	88	73.3	3.9	ug/L	Standard
	C	12	63.3	24.1	mg/L	Standard
	N	14	0.0		mg/L	Standard
	Hg	202	3.3	173.2	mg/L	Standard
	Dy	164	6.0	187.1	mg/L	Standard
	Ho-1	165	10.0	50.0	mg/L	Standard
	Er	166	13.3	86.6	mg/L	Standard
	I	127	1391.7	17.5	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Blank
Report Date/Time: Wednesday, June 29, 2016 11:24:51
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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Wednesday, June 29, 2016 11:25:45
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75658.5	2.0				ug/L	74699	Standard
	Be	9	1.7	173.2				ug/L	8	Standard
	Al	27	1555.1	3.1				ug/L	1493	Standard
	Sc	45	60145.9	2.9				ug/L	61029	Standard
	Ti	47	32.7	4.7				ug/L	35	Standard
	V	51	1434.9	4.0				ug/L	1435	Standard
	Cr	52	7544.5	2.5				ug/L	7635	Standard
	Cr	53	365.0	18.0				ug/L	363	Standard
	Mn	55	783.7	0.8				ug/L	747	Standard
	Co	59	239.0	2.9				ug/L	234	Standard
	Ni	60	220.7	1.8				ug/L	215	Standard
	Cu	65	103.0	8.3				ug/L	104	Standard
	Zn	66	365.0	4.1				ug/L	363	Standard
>	**Ge**	72	495351.7	2.1				ug/L	495142	Standard
	As	75	-40.0	8.7				ug/L	-50	Standard
	Se	82	19.1	38.4				ug/L	14	Standard
	Se-1	77	47.3	15.6				ug/L	42	Standard
>	**Ga**	71	53.3	47.2				mg/L	42	Standard
	Rb	85	15.0	88.2				ug/L	17	Standard
	Y	89	427717.4	1.6				ug/L	417098	Standard
>	**Rh**	103	8.3	34.6				ug/L	13	Standard
	Mo	98	11.1	31.8				ug/L	11	Standard
	Ag	107	86.3	19.8				ug/L	68	Standard
	Cd	111	1.3	43.8				mg/L	2	Standard
	Cd	114	3.6	152.7				ug/L	12	Standard
>	**In**	115	599155.0	1.0				ug/L	587441	Standard
	Sn	118	486.7	3.3				ug/L	497	Standard
	Sb	123	28.2	25.8				ug/L	78	Standard
	Ba	135	25.3	13.9				ug/L	24	Standard
	Ce	140	31.7	59.8				ug/L	25	Standard
>	**Tb**	159	985563.2	0.5				ug/L	939701	Standard
	Ho	165	6.7	86.6				ug/L	10	Standard
	Tl	203	1.7	91.7				ug/L	4	Standard
	Tl	205	0.0					ug/L	2	Standard
	Pb	206	249.7	4.0				ug/L	240	Standard
	Pb	207	216.0	2.0				ug/L	198	Standard
	Pb	208	873.0	4.1				ug/L	883	Standard
	U	238	3.3	34.6				ug/L	3	Standard
>	**Bi**	209	535312.9	0.6				ug/L	523984	Standard

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Na	23	3.3	173.2	mg/L	0	Standard
Mg	24	31.7	18.2	mg/L	37	Standard
K	39	26.7	28.6	mg/L	38	Standard
Ca	43	35.0	24.7	mg/L	10	Standard
Fe	54	130.8	15.0	mg/L	179	Standard
Fe	57	305.0	2.8	mg/L	335	Standard
Sc-1	45	60145.9	2.9	mg/L	61029	Standard
Cl	35	20341.6	1.8	ug/L	20195	Standard
Kr	83	3.0	33.3	ug/L	4	Standard
Br	81	1546.7	10.4	ug/L	1547	Standard
P	31	15145.9	1.8	ug/L	15286	Standard
S	34	1610.1	6.1	ug/L	1572	Standard
Sr	88	86.7	14.5	ug/L	73	Standard
C	12	60.0	28.9	mg/L	63	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	0.0		mg/L	3	Standard
Dy	164	5.7	108.5	mg/L	6	Standard
Ho-1	165	6.7	86.6	mg/L	10	Standard
Er	166	20.0	50.0	mg/L	13	Standard
I	127	1368.4	7.8	mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 1
Report Date/Time: Wednesday, June 29, 2016 11:28:02
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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Wednesday, June 29, 2016 11:28:57
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73081.0	3.5				ug/L	74699	Standard
	Be	9	36.7	56.8				ug/L	8	Standard
	Al	27	9102.7	2.7				ug/L	1493	Standard
	Sc	45	58226.8	3.4				ug/L	61029	Standard
	Ti	47	79.0	2.2				ug/L	35	Standard
	V	51	1848.7	2.3				ug/L	1435	Standard
	Cr	52	7933.1	1.4				ug/L	7635	Standard
	Cr	53	350.0	15.1				ug/L	363	Standard
	Mn	55	1375.4	4.6				ug/L	747	Standard
	Co	59	574.7	5.8				ug/L	234	Standard
	Ni	60	324.3	7.6				ug/L	215	Standard
	Cu	65	285.0	4.9				ug/L	104	Standard
	Zn	66	549.3	0.4				ug/L	363	Standard
>	**Ge**	72	493663.5	1.5				ug/L	495142	Standard
	As	75	-10.4	282.1				ug/L	-50	Standard
	Se	82	20.6	18.5				ug/L	14	Standard
	Se-1	77	49.0	19.5				ug/L	42	Standard
>	**Ga**	71	58.3	27.6				mg/L	42	Standard
	Rb	85	25.0	60.0				ug/L	17	Standard
	Y	89	437555.0	0.8				ug/L	417098	Standard
>	**Rh**	103	25.0	34.6				ug/L	13	Standard
	Mo	98	283.4	4.8				ug/L	11	Standard
	Ag	107	412.3	3.2				ug/L	68	Standard
	Cd	111	121.8	9.1				mg/L	2	Standard
	Cd	114	268.9	5.0				ug/L	12	Standard
>	**In**	115	590951.3	0.9				ug/L	587441	Standard
	Sn	118	850.0	6.4				ug/L	497	Standard
	Sb	123	254.5	2.7				ug/L	78	Standard
	Ba	135	136.0	15.7				ug/L	24	Standard
	Ce	140	18.3	56.8				ug/L	25	Standard
>	**Tb**	159	941723.8	1.9				ug/L	939701	Standard
	Ho	165	3.3	86.6				ug/L	10	Standard
	Tl	203	417.3	5.5				ug/L	4	Standard
	Tl	205	348.3	7.4				ug/L	2	Standard
	Pb	206	633.0	0.8				ug/L	240	Standard
	Pb	207	557.0	2.2				ug/L	198	Standard
	Pb	208	2275.4	1.7				ug/L	883	Standard
	U	238	366.3	0.7				ug/L	3	Standard
>	**Bi**	209	512414.5	1.5				ug/L	523984	Standard

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	Na	23	0.0		mg/L	0	Standard
	Mg	24	51.7	24.4	mg/L	37	Standard
	K	39	51.7	24.4	mg/L	38	Standard
	Ca	43	38.3	19.9	mg/L	10	Standard
	Fe	54	160.9	17.5	mg/L	179	Standard
	Fe	57	303.3	9.1	mg/L	335	Standard
>	**Sc-1**	45	58226.8	3.4	mg/L	61029	Standard
	Cl	35	20887.7	1.1	ug/L	20195	Standard
	Kr	83	2.3	107.9	ug/L	4	Standard
	Br	81	1533.4	9.8	ug/L	1547	Standard
	P	31	14952.4	2.3	ug/L	15286	Standard
	S	34	1701.8	4.5	ug/L	1572	Standard
	Sr	88	66.7	31.2	ug/L	73	Standard
	C	12	46.7	65.5	mg/L	63	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	0.0		mg/L	3	Standard
	Dy	164	12.7	89.9	mg/L	6	Standard
	Ho-1	165	3.3	86.6	mg/L	10	Standard
	Er	166	13.3	43.3	mg/L	13	Standard
	I	127	1343.4	21.4	mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: Standard 2
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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 2
Report Date/Time: Wednesday, June 29, 2016 11:31:14
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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Wednesday, June 29, 2016 11:32:08
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70836.9	0.7				ug/L	74699	Standard
	Be	9	41495.2	4.9	**50.0000**	2.291	4.6	ug/L	8	Standard
	Al	27	6913642.3	1.4	**50.0000**	0.333	0.7	ug/L	1493	Standard
	Sc	45	58109.6	1.6				ug/L	61029	Standard
	Ti	47	38024.7	0.9	**100.0000**	1.896	1.9	ug/L	35	Standard
	V	51	385028.2	1.3	**50.0000**	1.023	2.0	ug/L	1435	Standard
	Cr	52	378864.5	0.8	**50.0000**	0.813	1.6	ug/L	7635	Standard
	Cr	53	46780.4	0.7	**50.0000**	0.853	1.7	ug/L	363	Standard
	Mn	55	354877.0	1.3	**50.0000**	1.137	2.3	ug/L	747	Standard
	Co	59	336932.8	1.2	**50.0000**	1.027	2.1	ug/L	234	Standard
	Ni	60	94633.6	0.8	**50.0000**	0.638	1.3	ug/L	215	Standard
	Cu	65	94252.3	1.0	**50.0000**	0.913	1.8	ug/L	104	Standard
	Zn	66	55983.3	1.5	**50.0000**	1.110	2.2	ug/L	363	Standard
>	**Ge**	72	497274.4	1.0				ug/L	495142	Standard
	As	75	56952.3	0.9	**50.0000**	0.907	1.8	ug/L	-50	Standard
	Se	82	5614.6	2.5	**50.0000**	1.630	3.3	ug/L	14	Standard
	Se-1	77	3760.8	2.5	**50.0000**	1.757	3.5	ug/L	42	Standard
>	**Ga**	71	60.0	22.0				mg/L	42	Standard
	Rb	85	735.0	7.4				ug/L	17	Standard
	Y	89	413691.0	2.8				ug/L	417098	Standard
>	**Rh**	103	28.3	27.0				ug/L	13	Standard
	Mo	98	261684.0	1.3	**100.0000**	1.411	1.4	ug/L	11	Standard
	Ag	107	317580.7	1.1	**50.0000**	0.030	0.1	ug/L	68	Standard
	Cd	111	102024.7	1.3	**50.0000**	0.465	0.9	mg/L	2	Standard
	Cd	114	251691.0	1.5	**50.0000**	1.089	2.2	ug/L	12	Standard
>	**In**	115	567339.3	1.1				ug/L	587441	Standard
	Sn	118	284919.2	1.1	**50.0000**	0.694	1.4	ug/L	497	Standard
	Sb	123	226852.6	0.2	**50.0000**	0.610	1.2	ug/L	78	Standard
	Ba	135	99575.8	0.1	**50.0000**	0.595	1.2	ug/L	24	Standard
	Ce	140	83.3	34.6				ug/L	25	Standard
>	**Tb**	159	932165.5	0.9				ug/L	939701	Standard
	Ho	165	13.3	21.7				ug/L	10	Standard
	Tl	203	405993.6	0.4	**50.0000**	0.749	1.5	ug/L	4	Standard
	Tl	205	349857.0	1.5	**50.0000**	0.282	0.6	ug/L	2	Standard
	Pb	206	265201.9	0.6	**50.0000**	0.817	1.6	ug/L	240	Standard
	Pb	207	235754.7	0.6	**50.0000**	0.829	1.7	ug/L	198	Standard
	Pb	208	926203.5	0.6	**50.0000**	0.626	1.3	ug/L	883	Standard
	U	238	337413.2	1.0	**50.0000**	0.543	1.1	ug/L	3	Standard
>	**Bi**	209	511781.8	1.3				ug/L	523984	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	3782.1	6.2	**5.0000**	0.388	7.8	mg/L	37	Standard
K	39	2271.8	5.5	**5.0000**	0.254	5.1	mg/L	38	Standard
Ca	43	120.0	23.2	**5.0000**	1.671	33.4	mg/L	10	Standard
Fe	54	5877.0	6.9	**5.0000**	0.418	8.4	mg/L	179	Standard
Fe	57	1703.4	4.4	**5.0000**	0.228	4.6	mg/L	335	Standard
> **Sc-1**	45	58109.6	1.6				mg/L	61029	Standard
Cl	35	22061.4	1.9				ug/L	20195	Standard
Kr	83	2.7	94.4				ug/L	4	Standard
Br	81	1433.4	2.5				ug/L	1547	Standard
P	31	17349.9	2.8				ug/L	15286	Standard
S	34	2026.8	6.8				ug/L	1572	Standard
Sr	88	76.7	26.4				ug/L	73	Standard
C	12	43.3	48.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	33.0	63.6				mg/L	6	Standard
Ho-1	165	13.3	21.7				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	1500.1	14.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Wednesday, June 29, 2016 11:35:20
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	70562.3	0.6				ug/L	74699	Standard
	Be	9	83650.3	2.2	**100.5872**	1.689	1.7	ug/L	8	Standard
	Al	27	13996690.0	1.6	**100.8115**	1.548	1.5	ug/L	1493	Standard
	Sc	45	58977.9	1.4				ug/L	61029	Standard
	Ti	47	75710.7	1.4	**200.4046**	3.310	1.7	ug/L	35	Standard
	V	51	745374.0	1.7	**98.8583**	0.465	0.5	ug/L	1435	Standard
	Cr	52	747654.3	1.6	**100.2327**	0.593	0.6	ug/L	7635	Standard
	Cr	53	92243.3	0.8	**99.8509**	0.489	0.5	ug/L	363	Standard
	Mn	55	686210.3	1.7	**98.7774**	1.044	1.1	ug/L	747	Standard
	Co	59	647972.6	0.9	**98.4550**	0.479	0.5	ug/L	234	Standard
	Ni	60	186003.6	1.6	**99.5867**	0.367	0.4	ug/L	215	Standard
	Cu	65	184421.8	1.6	**99.3502**	0.739	0.7	ug/L	104	Standard
	Zn	66	108058.7	1.7	**98.8348**	0.723	0.7	ug/L	363	Standard
>	Ge	72	493312.7	1.3				ug/L	495142	Standard
	As	75	109996.7	2.4	**98.6160**	1.152	1.2	ug/L	-50	Standard
	Se	82	10772.1	0.2	**98.3851**	1.295	1.3	ug/L	14	Standard
	Se-1	77	7226.7	2.3	**98.6814**	1.085	1.1	ug/L	42	Standard
>	Ga	71	88.3	19.9				mg/L	42	Standard
	Rb	85	1528.4	8.2				ug/L	17	Standard
	Y	89	411133.1	2.0				ug/L	417098	Standard
>	Rh	103	50.0	20.0				ug/L	13	Standard
	Mo	98	506691.6	2.0	**196.6866**	6.239	3.2	ug/L	11	Standard
	Ag	107	624459.9	0.9	**99.1146**	1.822	1.8	ug/L	68	Standard
	Cd	111	200021.3	0.6	**98.9639**	1.657	1.7	mg/L	2	Standard
	Cd	114	487602.9	1.3	**98.3617**	2.136	2.2	ug/L	12	Standard
>	In	115	567890.6	1.1				ug/L	587441	Standard
	Sn	118	560558.1	0.7	**99.1782**	1.388	1.4	ug/L	497	Standard
	Sb	123	448476.6	1.3	**99.3779**	2.340	2.4	ug/L	78	Standard
	Ba	135	196432.8	0.6	**99.2744**	1.775	1.8	ug/L	24	Standard
	Ce	140	161.7	46.3				ug/L	25	Standard
>	Tb	159	938936.1	1.2				ug/L	939701	Standard
	Ho	165	10.0					ug/L	10	Standard
	Tl	203	803908.2	0.6	**99.1382**	1.002	1.0	ug/L	4	Standard
	Tl	205	702848.2	0.9	**99.8673**	1.348	1.3	ug/L	2	Standard
	Pb	206	517801.9	1.0	**98.4705**	1.644	1.7	ug/L	240	Standard
	Pb	207	459764.9	1.8	**98.4124**	2.372	2.4	ug/L	198	Standard
	Pb	208	1827348.6	0.4	**98.9940**	0.966	1.0	ug/L	883	Standard
	U	238	674609.9	0.9	**99.6270**	1.321	1.3	ug/L	3	Standard
>	Bi	209	515462.4	0.6				ug/L	523984	Standard

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Na	23	1.7	173.2	**19.9850**	34.606	173.2	mg/L	0	Standard
Mg	24	7435.2	2.2	**9.8676**	0.257	2.6	mg/L	37	Standard
K	39	4282.3	4.3	**9.6823**	0.481	5.0	mg/L	38	Standard
Ca	43	178.3	18.2	**9.1297**	2.109	23.1	mg/L	10	Standard
Fe	54	11328.6	1.8	**9.8033**	0.307	3.1	mg/L	179	Standard
Fe	57	3145.3	5.1	**9.9880**	0.532	5.3	mg/L	335	Standard
Sc-1	45	58977.9	1.4				mg/L	61029	Standard
Cl	35	21244.2	2.5				ug/L	20195	Standard
Kr	83	1.7	34.6				ug/L	4	Standard
Br	81	1583.4	3.9				ug/L	1547	Standard
P	31	17550.2	2.6				ug/L	15286	Standard
S	34	2090.1	3.5				ug/L	1572	Standard
Sr	88	83.3	42.6				ug/L	73	Standard
C	12	56.7	62.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	22.9	66.8				mg/L	6	Standard
Ho-1	165	10.0					mg/L	10	Standard
Er	166	10.0					mg/L	13	Standard
I	127	1638.4	19.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998
Corr. Coef.	Ca	43	Correlation coefficient < 0.998

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Wednesday, June 29, 2016 11:38:33
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	69383.6	2.2				ug/L	74699	Standard
	Be	9	41665.5	1.0	**50.9761**	1.262	2.5	ug/L	8	Standard
	Al	27	7007266.1	0.7	**51.3351**	1.064	2.1	ug/L	1493	Standard
	Sc	45	57040.5	0.5				ug/L	61029	Standard
	Ti	47	39782.2	0.5	**104.1738**	1.427	1.4	ug/L	35	Standard
	V	51	390724.1	1.4	**51.2089**	1.334	2.6	ug/L	1435	Standard
	Cr	52	380689.4	0.9	**50.0149**	1.033	2.1	ug/L	7635	Standard
	Cr	53	46596.6	2.0	**49.7615**	1.193	2.4	ug/L	363	Standard
	Mn	55	364452.5	1.9	**51.8606**	1.232	2.4	ug/L	747	Standard
	Co	59	335357.4	2.0	**50.4145**	0.943	1.9	ug/L	234	Standard
	Ni	60	95528.2	0.6	**50.5685**	0.768	1.5	ug/L	215	Standard
	Cu	65	95355.8	0.8	**50.7995**	0.891	1.8	ug/L	104	Standard
	Zn	66	57795.4	0.9	**52.1095**	0.303	0.6	ug/L	363	Standard
>	Ge	72	498415.5	1.2				ug/L	495142	Standard
	As	75	57290.2	0.4	**50.8755**	0.674	1.3	ug/L	-50	Standard
	Se	82	5486.5	1.1	**49.5278**	0.838	1.7	ug/L	14	Standard
	Se-1	77	3797.8	2.0	**51.0456**	1.569	3.1	ug/L	42	Standard
>	Ga	71	88.3	43.2				mg/L	42	Standard
	Rb	85	576.7	2.8				ug/L	17	Standard
	Y	89	413113.3	1.2				ug/L	417098	Standard
>	Rh	103	26.7	92.5				ug/L	13	Standard
	Mo	98	275236.9	1.8	**107.0386**	1.474	1.4	ug/L	11	Standard
	Ag	107	320241.4	0.9	**50.9276**	0.747	1.5	ug/L	68	Standard
	Cd	111	101502.5	0.4	**50.3185**	0.332	0.7	mg/L	2	Standard
	Cd	114	248344.9	2.5	**50.2016**	1.511	3.0	ug/L	12	Standard
>	In	115	566676.1	0.5				ug/L	587441	Standard
	Sn	118	310270.4	1.9	**54.9671**	1.097	2.0	ug/L	497	Standard
	Sb	123	224427.6	0.4	**49.8273**	0.118	0.2	ug/L	78	Standard
	Ba	135	98607.5	0.6	**49.9289**	0.574	1.1	ug/L	24	Standard
	Ce	140	138.3	11.0				ug/L	25	Standard
>	Tb	159	931841.4	1.3				ug/L	939701	Standard
	Ho	165	10.0	86.6				ug/L	10	Standard
	Tl	203	410286.1	0.9	**50.6578**	0.710	1.4	ug/L	4	Standard
	Tl	205	350970.1	0.3	**49.9294**	0.473	0.9	ug/L	2	Standard
	Pb	206	272426.4	0.6	**51.8371**	0.812	1.6	ug/L	240	Standard
	Pb	207	234103.7	0.5	**50.1331**	0.525	1.0	ug/L	198	Standard
	Pb	208	940824.8	0.3	**50.9948**	0.649	1.3	ug/L	883	Standard
	U	238	333596.8	0.3	**49.3228**	0.442	0.9	ug/L	3	Standard
>	Bi	209	514849.0	1.0				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3822.1	2.3	**5.2142**	0.148	2.8	mg/L	37	Standard
K	39	2126.8	6.1	**4.9163**	0.328	6.7	mg/L	38	Standard
Ca	43	118.3	24.4	**5.4681**	1.919	35.1	mg/L	10	Standard
Fe	54	5948.1	0.7	**5.2575**	0.061	1.2	mg/L	179	Standard
Fe	57	1791.8	1.9	**5.4420**	0.142	2.6	mg/L	335	Standard
> **Sc-1**	45	57040.5	0.5				mg/L	61029	Standard
Cl	35	20895.1	0.7				ug/L	20195	Standard
Kr	83	2.7	57.3				ug/L	4	Standard
Br	81	1520.1	6.3				ug/L	1547	Standard
P	31	17665.3	1.6				ug/L	15286	Standard
S	34	2033.5	1.7				ug/L	1572	Standard
Sr	88	80.0	10.8				ug/L	73	Standard
C	12	70.0	24.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	23.0	24.5				mg/L	6	Standard
Ho-1	165	10.0	86.6				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	1353.4	28.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	101.952		
Al	27	102.670		
Sc	45			
Ti	47	104.174		
V	51	102.418		
Cr	52	100.030		
Cr	53			
Mn	55	103.721		
Co	59	100.829		
Ni	60	101.137		
Cu	65	101.599		
Zn	66	104.219		
> Ge	72		100.661	
As	75	101.751		
Se	82	99.056		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	107.039		
Ag	107	101.855		
Cd	111	100.637		
Cd	114			
In	115		96.465	
Sn	118	109.934		
Sb	123	99.655		
Ba	135	99.858		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.316		
Tl	205			
Pb	206	103.674		
Pb	207	100.266		
Pb	208	101.990		
U	238	98.646		
Bi	209		98.257	
Na	23	0.100		
Mg	24	104.283		
K	39	98.326		
Ca	43	109.361		
Fe	54	105.151		
Fe	57	108.840		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	

Sample ID: QC Std 1
Report Date/Time: Wednesday, June 29, 2016 11:40:50
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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Wednesday, June 29, 2016 11:41:46
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70378.1	2.5				ug/L	74699	Standard
	Be	9	20.0	25.0	**0.0316**	0.005	17.2	ug/L	8	Standard
	Al	27	2221.8	11.1	**0.0027**	0.002	62.7	ug/L	1493	Standard
	Sc	45	58138.1	3.2				ug/L	61029	Standard
	Ti	47	47.0	20.3	**0.0161**	0.026	158.4	ug/L	35	Standard
	V	51	1216.9	5.3	**-0.0330**	0.008	24.4	ug/L	1435	Standard
	Cr	52	6478.4	1.5	**-0.1416**	0.009	6.0	ug/L	7635	Standard
	Cr	53	358.3	10.7	**0.0617**	0.046	74.0	ug/L	363	Standard
	Mn	55	785.0	2.1	**-0.0343**	0.003	7.5	ug/L	747	Standard
	Co	59	292.7	8.2	**0.0075**	0.004	50.2	ug/L	234	Standard
	Ni	60	209.7	4.3	**-0.0109**	0.006	51.3	ug/L	215	Standard
	Cu	65	121.0	5.8	**-0.0381**	0.003	8.4	ug/L	104	Standard
	Zn	66	398.3	6.4	**-0.0865**	0.023	26.3	ug/L	363	Standard
>	**Ge**	72	490643.1	1.0				ug/L	495142	Standard
	As	75	-2.3	851.2	**0.0577**	0.017	30.2	ug/L	-50	Standard
	Se	82	15.9	39.8	**0.0087**	0.059	680.3	ug/L	14	Standard
	Se-1	77	51.3	11.1	**0.0869**	0.077	88.1	ug/L	42	Standard
>	**Ga**	71	46.7	16.4				mg/L	42	Standard
	Rb	85	33.3	45.8				ug/L	17	Standard
	Y	89	424498.7	1.6				ug/L	417098	Standard
>	**Rh**	103	10.0	50.0				ug/L	13	Standard
	Mo	98	405.0	23.6	**0.1487**	0.033	22.3	ug/L	11	Standard
	Ag	107	128.3	5.2	**0.0071**	0.001	8.6	ug/L	68	Standard
	Cd	111	15.0	38.7	**-0.0006**	0.003	474.1	mg/L	2	Standard
	Cd	114	47.2	8.1	**0.0073**	0.001	11.6	ug/L	12	Standard
>	**In**	115	576512.9	2.1				ug/L	587441	Standard
	Sn	118	851.7	19.9	**0.0543**	0.032	58.8	ug/L	497	Standard
	Sb	123	1550.0	28.1	**0.3352**	0.100	29.7	ug/L	78	Standard
	Ba	135	36.7	23.2	**0.0022**	0.004	189.8	ug/L	24	Standard
	Ce	140	21.7	93.3				ug/L	25	Standard
>	**Tb**	159	924023.3	3.2				ug/L	939701	Standard
	Ho	165	10.0	100.0				ug/L	10	Standard
	Tl	203	60.7	18.1	**0.0057**	0.001	22.9	ug/L	4	Standard
	Tl	205	61.7	61.4	**0.0089**	0.005	59.3	ug/L	2	Standard
	Pb	206	271.3	7.0	**-0.0198**	0.004	19.8	ug/L	240	Standard
	Pb	207	237.3	7.1	**-0.0194**	0.004	21.0	ug/L	198	Standard
	Pb	208	1028.3	6.0	**-0.0187**	0.003	15.4	ug/L	883	Standard
	U	238	47.7	28.5	**0.0026**	0.002	78.0	ug/L	3	Standard
>	**Bi**	209	518292.4	0.9				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	35.0	42.9	**-0.0179**	0.019	107.8	mg/L	37	Standard
K	39	36.7	39.4	**-0.0284**	0.035	124.9	mg/L	38	Standard
Ca	43	25.0	40.0	**-0.8569**	0.683	79.6	mg/L	10	Standard
Fe	54	125.6	8.4	**-0.0262**	0.013	49.1	mg/L	179	Standard
Fe	57	296.7	4.9	**-0.0150**	0.061	408.2	mg/L	335	Standard
> **Sc-1**	45	58138.1	3.2				mg/L	61029	Standard
Cl	35	20966.5	2.9				ug/L	20195	Standard
Kr	83	2.3	89.2				ug/L	4	Standard
Br	81	1540.1	1.7				ug/L	1547	Standard
P	31	17027.9	2.4				ug/L	15286	Standard
S	34	1976.8	0.6				ug/L	1572	Standard
Sr	88	85.0	5.9				ug/L	73	Standard
C	12	30.0	33.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	6.3	86.9				mg/L	6	Standard
Ho-1	165	10.0	100.0				mg/L	10	Standard
Er	166	6.7	173.2				mg/L	13	Standard
I	127	1458.4	25.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.091	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.140
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.914
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Wednesday, June 29, 2016 11:46:53
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66549.2	2.6				ug/L	74699	Standard
	Be	9	181.7	3.2	**0.2393**	0.009	3.6	ug/L	8	Standard
	Al	27	1430.1	59.0	**-0.0024**	0.007	267.2	ug/L	1493	Standard
	Sc	45	54693.6	2.6				ug/L	61029	Standard
	Ti	47	40.3	11.5	**0.0025**	0.013	506.9	ug/L	35	Standard
	V	51	4161.2	3.6	**0.3819**	0.016	4.1	ug/L	1435	Standard
	Cr	52	12463.1	1.9	**0.7390**	0.018	2.5	ug/L	7635	Standard
	Cr	53	996.7	1.0	**0.8006**	0.013	1.6	ug/L	363	Standard
	Mn	55	4091.6	2.3	**0.4679**	0.008	1.8	ug/L	747	Standard
	Co	59	2840.6	1.4	**0.4137**	0.010	2.4	ug/L	234	Standard
	Ni	60	3014.0	1.2	**1.5638**	0.035	2.2	ug/L	215	Standard
	Cu	65	1546.7	1.4	**0.7676**	0.020	2.7	ug/L	104	Standard
	Zn	66	7394.5	0.3	**6.6420**	0.044	0.7	ug/L	363	Standard
>	**Ge**	72	472336.8	0.9				ug/L	495142	Standard
	As	75	394.7	6.3	**0.4290**	0.024	5.7	ug/L	-50	Standard
	Se	82	54.4	27.0	**0.3818**	0.143	37.5	ug/L	14	Standard
	Se-1	77	75.3	14.2	**0.4599**	0.162	35.3	ug/L	42	Standard
>	**Ga**	71	58.3	44.0				mg/L	42	Standard
	Rb	85	8.3	34.6				ug/L	17	Standard
	Y	89	402582.8	1.9				ug/L	417098	Standard
>	**Rh**	103	5.0	100.0				ug/L	13	Standard
	Mo	98	114.4	34.0	**0.0400**	0.016	39.3	ug/L	11	Standard
	Ag	107	2464.9	1.7	**0.3900**	0.008	2.1	ug/L	68	Standard
	Cd	111	479.8	5.6	**0.2365**	0.013	5.7	mg/L	2	Standard
	Cd	114	1217.0	2.5	**0.2507**	0.007	2.6	ug/L	12	Standard
>	**In**	115	551471.6	0.4				ug/L	587441	Standard
	Sn	118	548.3	23.3	**0.0053**	0.024	443.1	ug/L	497	Standard
	Sb	123	2017.6	6.1	**0.4562**	0.029	6.4	ug/L	78	Standard
	Ba	135	1439.7	3.7	**0.7333**	0.029	4.0	ug/L	24	Standard
	Ce	140	11.7	49.5				ug/L	25	Standard
>	**Tb**	159	887425.9	1.8				ug/L	939701	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	701.7	6.6	**0.0871**	0.005	5.3	ug/L	4	Standard
	Tl	205	588.3	14.1	**0.0861**	0.013	15.2	ug/L	2	Standard
	Pb	206	1333.4	2.9	**0.1894**	0.006	3.1	ug/L	240	Standard
	Pb	207	1083.0	1.4	**0.1683**	0.005	3.1	ug/L	198	Standard
	Pb	208	4575.3	2.2	**0.1806**	0.004	2.0	ug/L	883	Standard
	U	238	2677.9	3.2	**0.4017**	0.012	2.9	ug/L	3	Standard
>	**Bi**	209	501924.0	1.5				ug/L	523984	Standard

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Na	23	1.7	173.2	**21.9523**	38.014	173.2	mg/L	0	Standard
Mg	24	43.3	29.0	**-0.0023**	0.020	841.8	mg/L	37	Standard
K	39	33.3	37.7	**-0.0317**	0.032	101.1	mg/L	38	Standard
Ca	43	46.7	12.4	**0.7738**	0.482	62.2	mg/L	10	Standard
Fe	54	100.7	18.6	**-0.0432**	0.016	36.6	mg/L	179	Standard
Fe	57	325.0	8.1	**0.1578**	0.085	53.5	mg/L	335	Standard
> **Sc-1**	45	54693.6	2.6				mg/L	61029	Standard
Cl	35	21199.5	1.6				ug/L	20195	Standard
Kr	83	3.3	17.3				ug/L	4	Standard
Br	81	1403.4	5.3				ug/L	1547	Standard
P	31	11833.0	1.6				ug/L	15286	Standard
S	34	2000.1	8.0				ug/L	1572	Standard
Sr	88	93.3	20.3				ug/L	73	Standard
C	12	56.7	10.2				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	13.0	89.8				mg/L	6	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	1430.1	34.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	119.656		
Al	27	-0.244		
Sc	45			
Ti	47			
V	51	95.473		
Cr	52	92.381		
Cr	53			
Mn	55	93.583		
Co	59	103.429		
Ni	60	97.737		
Cu	65	95.951		
Zn	66	106.273		
> Ge	72		95.394	
As	75	107.259		
Se	82	95.456		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	97.496		
Cd	111	98.556		
Cd	114			
> In	115			93.877
Sn	118			
Sb	123	114.045		
Ba	135	97.779		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	108.827		
Tl	205			
Pb	206			
Pb	207			
Pb	208	90.316		
U	238	100.429		
> Bi	209			95.790
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Wednesday, June 29, 2016 11:50:53
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	71628.9	1.8				ug/L	74699	Standard
	Be	9	13.3	43.3	**0.0235**	0.007	30.3	ug/L	8	Standard
	Al	27	7079214.4	1.4	**50.2405**	1.571	3.1	ug/L	1493	Standard
	Sc	45	57092.4	1.6				ug/L	61029	Standard
	Ti	47	41841.7	1.2	**112.2257**	1.296	1.2	ug/L	35	Standard
	V	51	1975.7	11.7	**0.0706**	0.031	44.3	ug/L	1435	Standard
	Cr	52	7951.4	1.4	**0.0680**	0.015	21.7	ug/L	7635	Standard
	Cr	53	3292.0	3.5	**3.2946**	0.126	3.8	ug/L	363	Standard
	Mn	55	1443.4	4.1	**0.0629**	0.009	13.6	ug/L	747	Standard
	Co	59	431.3	5.1	**0.0292**	0.003	11.6	ug/L	234	Standard
	Ni	60	837.4	1.6	**0.3312**	0.007	2.2	ug/L	215	Standard
	Cu	65	638.0	4.2	**0.2451**	0.015	6.0	ug/L	104	Standard
	Zn	66	1716.8	2.4	**1.1448**	0.039	3.4	ug/L	363	Standard
>	Ge	72	486594.7	0.0				ug/L	495142	Standard
	As	75	-47.8	111.3	**0.0161**	0.048	300.1	ug/L	-50	Standard
	Se	82	12.5	17.3	**-0.0221**	0.020	90.2	ug/L	14	Standard
	Se-1	77	285.3	3.8	**3.3530**	0.150	4.5	ug/L	42	Standard
>	Ga	71	146.7	5.2				mg/L	42	Standard
	Rb	85	1056.7	1.8				ug/L	17	Standard
	Y	89	409909.2	0.2				ug/L	417098	Standard
>	Rh	103	11.7	99.0				ug/L	13	Standard
	Mo	98	258876.2	1.4	**101.0110**	2.466	2.4	ug/L	11	Standard
	Ag	107	250.7	8.2	**0.0271**	0.004	13.5	ug/L	68	Standard
	Cd	111	-191.4	6.3	**-0.1031**	0.005	5.1	mg/L	2	Standard
	Cd	114	476.2	9.0	**0.0945**	0.009	9.4	ug/L	12	Standard
>	In	115	564912.9	1.1				ug/L	587441	Standard
	Sn	118	765.0	2.0	**0.0415**	0.002	5.8	ug/L	497	Standard
	Sb	123	314.8	31.7	**0.0658**	0.022	32.8	ug/L	78	Standard
	Ba	135	628.0	0.0	**0.3031**	0.004	1.2	ug/L	24	Standard
	Ce	140	243.3	10.5				ug/L	25	Standard
>	Tb	159	934364.8	1.3				ug/L	939701	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	234.7	3.6	**0.0271**	0.001	3.8	ug/L	4	Standard
	Tl	205	175.0	22.3	**0.0250**	0.006	22.8	ug/L	2	Standard
	Pb	206	514.7	3.8	**0.0265**	0.004	16.6	ug/L	240	Standard
	Pb	207	427.7	5.6	**0.0214**	0.005	22.5	ug/L	198	Standard
	Pb	208	1691.4	2.8	**0.0174**	0.002	11.4	ug/L	883	Standard
	U	238	20.7	10.1	**-0.0014**	0.000	22.7	ug/L	3	Standard
>	Bi	209	516629.8	0.9				ug/L	523984	Standard

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Na	23	8.3	34.6	**102.8074**	36.030	35.0	mg/L	0	Standard
Mg	24	9604.7	1.9	**13.1909**	0.366	2.8	mg/L	37	Standard
K	39	2033.5	6.6	**4.6893**	0.286	6.1	mg/L	38	Standard
Ca	43	250.0	4.0	**14.3615**	0.772	5.4	mg/L	10	Standard
Fe	54	14441.1	1.7	**12.9538**	0.416	3.2	mg/L	179	Standard
Fe	57	3845.5	3.6	**12.9047**	0.714	5.5	mg/L	335	Standard
> **Sc-1**	45	57092.4	1.6				mg/L	61029	Standard
Cl	35	20428.4	2.1				ug/L	20195	Standard
Kr	83	3.0	57.7				ug/L	4	Standard
Br	81	1493.4	8.7				ug/L	1547	Standard
P	31	15903.3	2.0				ug/L	15286	Standard
S	34	1818.4	8.5				ug/L	1572	Standard
Sr	88	70.0	35.7				ug/L	73	Standard
C	12	136.7	22.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	86.6				mg/L	3	Standard
Dy	164	12.2	93.4				mg/L	6	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	23.3	24.7				mg/L	13	Standard
I	127	2226.8	19.3				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27	1.005		
	Sc	45			
	Ti	47	112.226		
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.274	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	101.011		
Ag	107			
Cd	111			
Cd	114			
> In	115		96.165	
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209		98.596	
Na	23	822.459		
Mg	24	263.819		
K	39	93.787		
Ca	43	95.743		
Fe	54	103.630		
Fe	57	103.238		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	

Sample ID: QC Std 4
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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Wednesday, June 29, 2016 11:54:47
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72764.4	2.4				ug/L	74699	Standard
	Be	9	86093.9	0.6	**100.4334**	2.352	2.3	ug/L	8	Standard
	Al	27	7577089.0	1.5	**52.9410**	1.751	3.3	ug/L	1493	Standard
	Sc	45	54926.1	3.1				ug/L	61029	Standard
	Ti	47	43156.4	1.1	**115.6496**	0.651	0.6	ug/L	35	Standard
	V	51	767037.5	0.7	**103.0563**	0.476	0.5	ug/L	1435	Standard
	Cr	52	743370.8	0.7	**100.9527**	0.091	0.1	ug/L	7635	Standard
	Cr	53	95736.5	0.4	**104.9834**	0.488	0.5	ug/L	363	Standard
	Mn	55	719673.0	1.2	**104.9487**	1.961	1.9	ug/L	747	Standard
	Co	59	684381.8	1.6	**105.3392**	2.464	2.3	ug/L	234	Standard
	Ni	60	184775.9	0.8	**100.2112**	0.878	0.9	ug/L	215	Standard
	Cu	65	183945.6	0.7	**100.3790**	1.285	1.3	ug/L	104	Standard
	Zn	66	111716.4	0.5	**103.5231**	0.465	0.4	ug/L	363	Standard
>	**Ge**	72	487033.1	0.8				ug/L	495142	Standard
	As	75	115123.8	0.6	**104.5507**	0.234	0.2	ug/L	-50	Standard
	Se	82	11162.3	1.3	**103.2681**	1.937	1.9	ug/L	14	Standard
	Se-1	77	7790.3	1.4	**107.8133**	0.940	0.9	ug/L	42	Standard
>	**Ga**	71	155.0	24.4				mg/L	42	Standard
	Rb	85	853.4	12.0				ug/L	17	Standard
	Y	89	414937.1	1.1				ug/L	417098	Standard
>	**Rh**	103	48.3	21.5				ug/L	13	Standard
	Mo	98	271334.5	0.2	**106.0489**	0.711	0.7	ug/L	11	Standard
	Ag	107	596492.9	1.3	**95.3413**	1.752	1.8	ug/L	68	Standard
	Cd	111	202245.3	1.2	**100.7713**	1.934	1.9	mg/L	2	Standard
	Cd	114	489634.1	0.4	**99.4602**	0.649	0.7	ug/L	12	Standard
>	**In**	115	563893.1	0.8				ug/L	587441	Standard
	Sn	118	898.4	12.5	**0.0654**	0.019	28.7	ug/L	497	Standard
	Sb	123	448934.9	1.4	**100.1777**	2.039	2.0	ug/L	78	Standard
	Ba	135	193320.5	0.8	**98.3885**	1.494	1.5	ug/L	24	Standard
	Ce	140	68.3	16.9				ug/L	25	Standard
>	**Tb**	159	922182.5	1.6				ug/L	939701	Standard
	Ho	165	15.0	57.7				ug/L	10	Standard
	Tl	203	808287.0	0.7	**100.1763**	1.478	1.5	ug/L	4	Standard
	Tl	205	710155.2	1.4	**101.4182**	2.560	2.5	ug/L	2	Standard
	Pb	206	542765.1	0.5	**103.7300**	0.986	1.0	ug/L	240	Standard
	Pb	207	466015.8	1.0	**100.2432**	1.559	1.6	ug/L	198	Standard
	Pb	208	1879754.6	0.3	**102.3429**	1.262	1.2	ug/L	883	Standard
	U	238	673426.3	1.1	**99.9548**	2.202	2.2	ug/L	3	Standard
>	**Bi**	209	512933.6	1.2				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	10138.4	1.8	**14.4874**	0.596	4.1	mg/L	37	Standard
K	39	2125.1	3.3	**5.1060**	0.147	2.9	mg/L	38	Standard
Ca	43	265.0	8.2	**16.1201**	2.142	13.3	mg/L	10	Standard
Fe	54	14876.0	0.8	**13.8828**	0.353	2.5	mg/L	179	Standard
Fe	57	3958.9	4.0	**13.8986**	1.069	7.7	mg/L	335	Standard
Sc-1	45	54926.1	3.1				mg/L	61029	Standard
Cl	35	20351.0	1.2				ug/L	20195	Standard
Kr	83	1.7	91.7				ug/L	4	Standard
Br	81	1600.1	9.2				ug/L	1547	Standard
P	31	14895.7	0.4				ug/L	15286	Standard
S	34	1618.4	8.3				ug/L	1572	Standard
Sr	88	85.0	10.2				ug/L	73	Standard
C	12	116.7	71.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	16.2	38.3				mg/L	6	Standard
Ho-1	165	15.0	57.7				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	1496.7	25.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	100.433		
Al	27	1.059		
Sc	45			
Ti	47	115.650		
V	51	103.056		
Cr	52	100.953		
Cr	53			
Mn	55	104.949		
Co	59	105.339		
Ni	60	100.211		
Cu	65	100.379		
Zn	66	103.523		
Ge	72		98.362	
As	75	104.551		
Se	82	103.268		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	106.049		
Ag	107	95.341		
Cd	111	100.771		
Cd	114			
> In	115		95.991	
Sn	118			
Sb	123	100.178		
Ba	135	98.389		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.176		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.343		
U	238	99.955		
> Bi	209		97.891	
Na	23	0.040		
Mg	24	289.748		
K	39	102.121		
Ca	43	107.468		
Fe	54	111.063		
Fe	57	111.189		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 12:00:10
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74127.8	4.1				ug/L	74699	Standard
	Be	9	44057.3	2.0	**50.4723**	1.532	3.0	ug/L	8	Standard
	Al	27	7182862.5	0.8	**49.2846**	1.691	3.4	ug/L	1493	Standard
	Sc	45	54972.9	1.9				ug/L	61029	Standard
	Ti	47	37035.5	1.0	**100.2235**	3.375	3.4	ug/L	35	Standard
	V	51	380987.7	1.2	**51.6037**	1.920	3.7	ug/L	1435	Standard
	Cr	52	371095.9	0.5	**50.3905**	1.647	3.3	ug/L	7635	Standard
	Cr	53	45648.7	0.9	**50.3715**	0.927	1.8	ug/L	363	Standard
	Mn	55	362758.6	1.1	**53.3556**	2.033	3.8	ug/L	747	Standard
	Co	59	346170.1	1.6	**53.7955**	2.203	4.1	ug/L	234	Standard
	Ni	60	91822.1	1.5	**50.2407**	2.119	4.2	ug/L	215	Standard
	Cu	65	92043.5	2.0	**50.6873**	2.359	4.7	ug/L	104	Standard
	Zn	66	54708.9	1.1	**50.9762**	1.937	3.8	ug/L	363	Standard
>	Ge	72	482505.9	2.7				ug/L	495142	Standard
	As	75	56019.2	1.2	**51.4117**	1.775	3.5	ug/L	-50	Standard
	Se	82	5615.5	1.4	**52.4035**	2.100	4.0	ug/L	14	Standard
	Se-1	77	3787.5	1.5	**52.6293**	2.112	4.0	ug/L	42	Standard
>	Ga	71	63.3	9.1				mg/L	42	Standard
	Rb	85	771.7	5.9				ug/L	17	Standard
	Y	89	419939.4	2.7				ug/L	417098	Standard
>	Rh	103	31.7	9.1				ug/L	13	Standard
	Mo	98	262674.3	2.0	**102.5093**	6.034	5.9	ug/L	11	Standard
	Ag	107	318557.4	0.8	**50.8058**	2.007	4.0	ug/L	68	Standard
	Cd	111	103808.6	0.6	**51.6156**	2.157	4.2	mg/L	2	Standard
	Cd	114	253134.5	2.1	**51.2889**	1.034	2.0	ug/L	12	Standard
>	In	115	565595.5	4.0				ug/L	587441	Standard
	Sn	118	290084.1	1.0	**51.5381**	2.174	4.2	ug/L	497	Standard
	Sb	123	228198.9	1.3	**50.8307**	2.651	5.2	ug/L	78	Standard
	Ba	135	99366.1	0.6	**50.4579**	1.943	3.9	ug/L	24	Standard
	Ce	140	78.3	13.3				ug/L	25	Standard
>	Tb	159	913248.6	2.6				ug/L	939701	Standard
	Ho	165	3.3	86.6				ug/L	10	Standard
	Tl	203	413066.5	1.0	**51.9084**	1.016	2.0	ug/L	4	Standard
	Tl	205	363184.8	0.9	**52.5982**	1.678	3.2	ug/L	2	Standard
	Pb	206	268800.2	0.8	**52.0649**	1.553	3.0	ug/L	240	Standard
	Pb	207	239468.7	1.2	**52.2107**	1.790	3.4	ug/L	198	Standard
	Pb	208	958802.6	0.9	**52.9068**	1.662	3.1	ug/L	883	Standard
	U	238	349772.5	0.2	**52.6413**	1.317	2.5	ug/L	3	Standard
>	Bi	209	505954.2	2.3				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3805.5	5.3	**5.3881**	0.260	4.8	mg/L	37	Standard
K	39	2106.8	1.9	**5.0574**	0.179	3.5	mg/L	38	Standard
Ca	43	101.7	5.7	**4.6110**	0.501	10.9	mg/L	10	Standard
Fe	54	5879.5	1.7	**5.3975**	0.172	3.2	mg/L	179	Standard
Fe	57	1785.1	7.3	**5.6694**	0.625	11.0	mg/L	335	Standard
> **Sc-1**	45	54972.9	1.9				mg/L	61029	Standard
Cl	35	21821.7	0.9				ug/L	20195	Standard
Kr	83	2.0	0.0				ug/L	4	Standard
Br	81	1470.1	4.5				ug/L	1547	Standard
P	31	16677.5	6.0				ug/L	15286	Standard
S	34	1955.1	4.5				ug/L	1572	Standard
Sr	88	73.3	14.2				ug/L	73	Standard
C	12	80.0	66.1				mg/L	63	Standard
N	14	6.7	86.6				mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	15.9	32.3				mg/L	6	Standard
Ho-1	165	3.3	86.6				mg/L	10	Standard
Er	166	16.7	124.9				mg/L	13	Standard
I	127	1668.4	28.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	100.945		
Al	27	98.569		
Sc	45			
Ti	47	100.224		
V	51	103.207		
Cr	52	100.781		
Cr	53			
Mn	55	106.711		
Co	59	107.591		
Ni	60	100.481		
Cu	65	101.375		
Zn	66	101.952		
> Ge	72		97.448	
As	75	102.823		
Se	82	104.807		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	102.509		
Ag	107	101.612		
Cd	111	103.231		
Cd	114			
In	115			96.281
Sn	118	103.076		
Sb	123	101.661		
Ba	135	100.916		
Ce	140			
Tb	159			
Ho	165			
Tl	203	103.817		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.814		
U	238	105.283		
Bi	209			96.559
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 12:07:34
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74348.6	1.0				ug/L	74699	Standard
	Be	9	21.7	26.6	**0.0324**	0.007	20.7	ug/L	8	Standard
	Al	27	1840.1	21.7	**-0.0008**	0.003	358.1	ug/L	1493	Standard
	Sc	45	56396.5	2.8				ug/L	61029	Standard
	Ti	47	36.7	15.0	**-0.0098**	0.014	147.0	ug/L	35	Standard
	V	51	1326.6	5.0	**-0.0153**	0.008	51.0	ug/L	1435	Standard
	Cr	52	6702.5	2.0	**-0.0955**	0.015	16.1	ug/L	7635	Standard
	Cr	53	393.3	15.3	**0.1070**	0.067	63.0	ug/L	363	Standard
	Mn	55	742.7	5.5	**-0.0386**	0.005	13.8	ug/L	747	Standard
	Co	59	250.3	1.5	**0.0016**	0.000	18.8	ug/L	234	Standard
	Ni	60	195.0	9.2	**-0.0170**	0.010	58.7	ug/L	215	Standard
	Cu	65	108.7	1.4	**-0.0438**	0.000	1.1	ug/L	104	Standard
	Zn	66	377.3	7.3	**-0.1000**	0.024	24.2	ug/L	363	Standard
>	**Ge**	72	482419.6	0.7				ug/L	495142	Standard
	As	75	-16.3	122.1	**0.0447**	0.018	40.8	ug/L	-50	Standard
	Se	82	12.2	10.1	**-0.0240**	0.012	49.4	ug/L	14	Standard
	Se-1	77	52.7	12.2	**0.1177**	0.089	75.6	ug/L	42	Standard
>	**Ga**	71	61.7	33.8				mg/L	42	Standard
	Rb	85	30.0	50.0				ug/L	17	Standard
	Y	89	414790.7	2.9				ug/L	417098	Standard
>	**Rh**	103	1.7	173.2				ug/L	13	Standard
	Mo	98	135.9	9.5	**0.0469**	0.005	10.2	ug/L	11	Standard
	Ag	107	96.3	7.3	**0.0024**	0.001	45.2	ug/L	68	Standard
	Cd	111	7.4	43.0	**-0.0042**	0.002	37.1	mg/L	2	Standard
	Cd	114	24.8	51.6	**0.0029**	0.003	88.9	ug/L	12	Standard
>	**In**	115	568967.0	0.5				ug/L	587441	Standard
	Sn	118	628.3	16.1	**0.0164**	0.018	110.8	ug/L	497	Standard
	Sb	123	617.2	40.6	**0.1324**	0.056	42.3	ug/L	78	Standard
	Ba	135	30.7	16.1	**-0.0005**	0.003	469.7	ug/L	24	Standard
	Ce	140	23.3	68.9				ug/L	25	Standard
>	**Tb**	159	918183.5	1.2				ug/L	939701	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	30.3	14.9	**0.0020**	0.001	31.1	ug/L	4	Standard
	Tl	205	23.3	24.7	**0.0035**	0.001	22.2	ug/L	2	Standard
	Pb	206	259.3	0.6	**-0.0221**	0.001	4.2	ug/L	240	Standard
	Pb	207	198.7	1.6	**-0.0277**	0.001	4.0	ug/L	198	Standard
	Pb	208	894.0	2.8	**-0.0259**	0.002	7.7	ug/L	883	Standard
	U	238	15.0	35.3	**-0.0022**	0.001	35.0	ug/L	3	Standard
>	**Bi**	209	518580.7	1.8				ug/L	523984	Standard

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Na	23	1.7	173.2	**20.6253**	35.715	173.2	mg/L	0	Standard
Mg	24	31.7	32.9	**-0.0207**	0.015	73.7	mg/L	37	Standard
K	39	51.7	24.4	**0.0090**	0.027	299.1	mg/L	38	Standard
Ca	43	33.3	31.2	**-0.2319**	0.781	336.6	mg/L	10	Standard
Fe	54	140.8	7.6	**-0.0093**	0.006	67.4	mg/L	179	Standard
Fe	57	256.7	18.9	**-0.1295**	0.180	138.6	mg/L	335	Standard
> **Sc-1**	45	56396.5	2.8				mg/L	61029	Standard
Cl	35	21372.4	1.3				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	1540.1	8.8				ug/L	1547	Standard
P	31	15931.7	0.9				ug/L	15286	Standard
S	34	1863.4	1.4				ug/L	1572	Standard
Sr	88	58.3	17.8				ug/L	73	Standard
C	12	56.7	27.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	6.2	186.6				mg/L	6	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	10.0					mg/L	13	Standard
I	127	1518.4	26.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.431	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.855
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.969
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Wednesday, June 29, 2016 12:09:51
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Method 6020 - Summary Report

Sample ID: L1606066106
Sample Date/Time: Wednesday, June 29, 2016 12:12:15
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78301.9	3.0				ug/L	74699	Standard
	Be	9	591.7	15.8	**0.6482**	0.094	14.5	ug/L	8	Standard
	Al	27	14033022.6	1.2	**91.1117**	1.566	1.7	ug/L	1493	Standard
	Sc	45	64031.7	1.2				ug/L	61029	Standard
	Ti	47	6936.9	1.2	**18.7002**	0.397	2.1	ug/L	35	Standard
	V	51	136379.5	0.6	**18.3618**	0.342	1.9	ug/L	1435	Standard
	Cr	52	135090.6	0.2	**17.7119**	0.504	2.8	ug/L	7635	Standard
	Cr	53	16100.2	3.4	**17.5840**	1.043	5.9	ug/L	363	Standard
	Mn	55	2727656.7	0.9	**402.5207**	10.967	2.7	ug/L	747	Standard
	Co	59	46530.0	0.2	**7.2050**	0.195	2.7	ug/L	234	Standard
	Ni	60	31243.2	1.0	**17.0295**	0.585	3.4	ug/L	215	Standard
	Cu	65	40278.5	0.5	**22.1396**	0.604	2.7	ug/L	104	Standard
	Zn	66	62615.1	0.3	**58.4626**	1.558	2.7	ug/L	363	Standard
>	**Ge**	72	481946.2	2.4				ug/L	495142	Standard
	As	75	4644.7	1.4	**4.3222**	0.154	3.6	ug/L	-50	Standard
	Se	82	54.0	14.6	**0.3688**	0.086	23.4	ug/L	14	Standard
	Se-1	77	96.0	5.2	**0.7275**	0.040	5.5	ug/L	42	Standard
>	**Ga**	71	12810.4	4.6				mg/L	42	Standard
	Rb	85	116256.0	0.7				ug/L	17	Standard
	Y	89	585719.0	1.0				ug/L	417098	Standard
>	**Rh**	103	45.0	33.3				ug/L	13	Standard
	Mo	98	935.2	3.6	**0.3550**	0.010	2.8	ug/L	11	Standard
	Ag	107	931.4	1.2	**0.1340**	0.001	0.5	ug/L	68	Standard
	Cd	111	782.7	0.6	**0.3771**	0.007	1.8	mg/L	2	Standard
	Cd	114	1959.7	7.4	**0.3906**	0.025	6.5	ug/L	12	Standard
>	**In**	115	571359.2	1.2				ug/L	587441	Standard
	Sn	118	1011.7	7.7	**0.0833**	0.012	14.7	ug/L	497	Standard
	Sb	123	336.5	28.9	**0.0698**	0.021	29.4	ug/L	78	Standard
	Ba	135	394959.7	1.6	**198.3814**	1.476	0.7	ug/L	24	Standard
	Ce	140	893729.8	1.7				ug/L	25	Standard
>	**Tb**	159	948738.0	1.3				ug/L	939701	Standard
	Ho	165	15724.8	2.6				ug/L	10	Standard
	Tl	203	658.0	2.7	**0.0791**	0.002	2.2	ug/L	4	Standard
	Tl	205	583.3	11.6	**0.0828**	0.010	12.2	ug/L	2	Standard
	Pb	206	370590.1	1.2	**70.2116**	0.816	1.2	ug/L	240	Standard
	Pb	207	304396.4	0.8	**64.9093**	0.988	1.5	ug/L	198	Standard
	Pb	208	1254498.7	1.7	**67.7133**	1.716	2.5	ug/L	883	Standard
	U	238	3382.4	2.2	**0.4935**	0.016	3.3	ug/L	3	Standard
>	**Bi**	209	517229.2	1.1				ug/L	523984	Standard

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Na	23	3.3	173.2	**36.6019**	63.388	173.2	mg/L	0	Standard
Mg	24	128.3	15.7	**0.0927**	0.024	25.5	mg/L	37	Standard
K	39	566.7	14.3	**1.0807**	0.180	16.7	mg/L	38	Standard
Ca	43	418.3	12.7	**22.6893**	3.491	15.4	mg/L	10	Standard
Fe	54	12793.3	3.0	**10.1983**	0.198	1.9	mg/L	179	Standard
Fe	57	3678.8	1.9	**10.8461**	0.363	3.4	mg/L	335	Standard
Sc-1	45	64031.7	1.2				mg/L	61029	Standard
Cl	35	22050.7	1.1				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	2173.5	11.7				ug/L	1547	Standard
P	31	16252.1	5.4				ug/L	15286	Standard
S	34	2065.1	4.4				ug/L	1572	Standard
Sr	88	140.0	9.4				ug/L	73	Standard
C	12	143.3	22.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	203.3	10.2				mg/L	3	Standard
Dy	164	25060.4	3.8				mg/L	6	Standard
Ho-1	165	15724.8	2.6				mg/L	10	Standard
Er	166	13529.4	4.1				mg/L	13	Standard
I	127	8297.3	2.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		104.824	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.335	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.262
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.711
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606066107
Sample Date/Time: Wednesday, June 29, 2016 12:15:26
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79855.0	3.3				ug/L	74699	Standard
	Be	9	765.0	6.8	**0.8219**	0.077	9.4	ug/L	8	Standard
	Al	27	26230756.6	0.7	**167.0452**	4.333	2.6	ug/L	1493	Standard
	Sc	45	64585.8	4.1				ug/L	61029	Standard
	Ti	47	7966.1	1.8	**21.8574**	0.352	1.6	ug/L	35	Standard
	V	51	155637.7	1.4	**21.3440**	0.459	2.1	ug/L	1435	Standard
	Cr	52	137713.7	0.8	**18.3989**	0.313	1.7	ug/L	7635	Standard
	Cr	53	16806.0	3.9	**18.6780**	0.841	4.5	ug/L	363	Standard
	Mn	55	4726467.2	1.1	**709.3402**	2.876	0.4	ug/L	747	Standard
	Co	59	64550.2	0.1	**10.1794**	0.081	0.8	ug/L	234	Standard
	Ni	60	42709.8	0.1	**23.7183**	0.226	1.0	ug/L	215	Standard
	Cu	65	23683.8	1.0	**13.1970**	0.251	1.9	ug/L	104	Standard
	Zn	66	44795.8	1.0	**42.4101**	0.817	1.9	ug/L	363	Standard
>	**Ge**	72	473762.9	0.9				ug/L	495142	Standard
	As	75	7180.0	1.6	**6.7588**	0.066	1.0	ug/L	-50	Standard
	Se	82	142.2	5.2	**1.2157**	0.067	5.5	ug/L	14	Standard
	Se-1	77	110.3	7.6	**0.9569**	0.126	13.2	ug/L	42	Standard
>	**Ga**	71	17858.9	0.4				mg/L	42	Standard
	Rb	85	152815.2	1.7				ug/L	17	Standard
	Y	89	630725.5	1.5				ug/L	417098	Standard
>	**Rh**	103	41.7	25.0				ug/L	13	Standard
	Mo	98	1176.0	1.0	**0.4476**	0.010	2.2	ug/L	11	Standard
	Ag	107	471.0	1.7	**0.0613**	0.002	3.5	ug/L	68	Standard
	Cd	111	231.8	9.8	**0.1061**	0.013	12.1	mg/L	2	Standard
	Cd	114	548.2	12.6	**0.1078**	0.015	13.9	ug/L	12	Standard
>	**In**	115	571871.5	1.5				ug/L	587441	Standard
	Sn	118	1063.4	7.5	**0.0923**	0.015	16.1	ug/L	497	Standard
	Sb	123	198.5	41.2	**0.0396**	0.018	46.2	ug/L	78	Standard
	Ba	135	410562.2	0.2	**206.0643**	2.723	1.3	ug/L	24	Standard
	Ce	140	1020863.3	0.8				ug/L	25	Standard
>	**Tb**	159	935971.5	1.4				ug/L	939701	Standard
	Ho	165	18616.4	1.9				ug/L	10	Standard
	Tl	203	969.7	3.1	**0.1217**	0.006	4.6	ug/L	4	Standard
	Tl	205	781.7	5.1	**0.1148**	0.005	4.1	ug/L	2	Standard
	Pb	206	74583.8	0.8	**14.5751**	0.129	0.9	ug/L	240	Standard
	Pb	207	60293.4	1.5	**13.2552**	0.050	0.4	ug/L	198	Standard
	Pb	208	253434.0	0.7	**14.1059**	0.309	2.2	ug/L	883	Standard
	U	238	4763.7	0.8	**0.7216**	0.012	1.7	ug/L	3	Standard
>	**Bi**	209	499544.2	1.5				ug/L	523984	Standard

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Na	23	8.3	34.6	**90.1824**	29.248	32.4	mg/L	0	Standard
Mg	24	323.3	10.9	**0.3294**	0.041	12.6	mg/L	37	Standard
K	39	788.4	10.3	**1.5298**	0.110	7.2	mg/L	38	Standard
Ca	43	663.3	6.3	**37.0621**	1.711	4.6	mg/L	10	Standard
Fe	54	18630.5	1.2	**14.8018**	0.561	3.8	mg/L	179	Standard
Fe	57	5110.9	3.8	**15.3724**	1.217	7.9	mg/L	335	Standard
Sc-1	45	64585.8	4.1				mg/L	61029	Standard
Cl	35	22235.6	2.9				ug/L	20195	Standard
Kr	83	0.7	173.2				ug/L	4	Standard
Br	81	23104.3	4.2				ug/L	1547	Standard
P	31	15829.9	2.1				ug/L	15286	Standard
S	34	2033.5	3.2				ug/L	1572	Standard
Sr	88	161.7	12.5				ug/L	73	Standard
C	12	96.7	41.8				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	31177.2	1.6				mg/L	6	Standard
Ho-1	165	18616.4	1.9				mg/L	10	Standard
Er	166	16976.2	1.7				mg/L	13	Standard
I	127	9242.8	4.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		106.903	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.682	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.350
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.336
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606066108
Sample Date/Time: Wednesday, June 29, 2016 12:18:38
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77986.9	1.5				ug/L	74699	Standard
	Be	9	848.4	8.3	**0.9313**	0.087	9.4	ug/L	8	Standard
	Al	27	17300686.4	1.1	**112.7510**	0.475	0.4	ug/L	1493	Standard
	Sc	45	64965.7	2.0				ug/L	61029	Standard
	Ti	47	6993.9	0.6	**18.3803**	0.198	1.1	ug/L	35	Standard
	V	51	170039.3	0.3	**22.3624**	0.095	0.4	ug/L	1435	Standard
	Cr	52	135852.7	1.1	**17.3429**	0.173	1.0	ug/L	7635	Standard
	Cr	53	16400.5	1.1	**17.4496**	0.150	0.9	ug/L	363	Standard
	Mn	55	3732645.2	0.8	**537.0232**	5.661	1.1	ug/L	747	Standard
	Co	59	59499.9	1.1	**8.9910**	0.146	1.6	ug/L	234	Standard
	Ni	60	38977.4	1.0	**20.7345**	0.185	0.9	ug/L	215	Standard
	Cu	65	32324.4	0.5	**17.2976**	0.098	0.6	ug/L	104	Standard
	Zn	66	55484.7	0.8	**50.4392**	0.445	0.9	ug/L	363	Standard
>	**Ge**	72	494184.7	0.5				ug/L	495142	Standard
	As	75	5935.1	0.6	**5.3688**	0.057	1.1	ug/L	-50	Standard
	Se	82	56.5	10.0	**0.3782**	0.052	13.7	ug/L	14	Standard
	Se-1	77	118.0	0.8	**0.9965**	0.019	1.9	ug/L	42	Standard
>	**Ga**	71	16687.5	1.9				mg/L	42	Standard
	Rb	85	157851.4	1.2				ug/L	17	Standard
	Y	89	635672.9	1.6				ug/L	417098	Standard
>	**Rh**	103	68.3	27.7				ug/L	13	Standard
	Mo	98	1214.1	0.7	**0.4777**	0.002	0.4	ug/L	11	Standard
	Ag	107	767.0	3.0	**0.1120**	0.004	3.7	ug/L	68	Standard
	Cd	111	562.6	3.0	**0.2776**	0.008	3.0	mg/L	2	Standard
	Cd	114	1264.6	12.4	**0.2596**	0.032	12.4	ug/L	12	Standard
>	**In**	115	553515.9	0.3				ug/L	587441	Standard
	Sn	118	763.4	11.0	**0.0440**	0.015	34.7	ug/L	497	Standard
	Sb	123	242.9	15.0	**0.0510**	0.008	16.4	ug/L	78	Standard
	Ba	135	429181.6	1.6	**222.5293**	3.912	1.8	ug/L	24	Standard
	Ce	140	1102655.1	2.3				ug/L	25	Standard
>	**Tb**	159	923824.1	1.4				ug/L	939701	Standard
	Ho	165	18663.2	2.9				ug/L	10	Standard
	Tl	203	782.7	3.6	**0.0981**	0.005	5.3	ug/L	4	Standard
	Tl	205	701.7	8.6	**0.1034**	0.010	10.1	ug/L	2	Standard
	Pb	206	213507.8	0.5	**41.9534**	0.898	2.1	ug/L	240	Standard
	Pb	207	175202.2	0.5	**38.7416**	0.683	1.8	ug/L	198	Standard
	Pb	208	727362.3	0.6	**40.7140**	1.033	2.5	ug/L	883	Standard
	U	238	4175.6	1.0	**0.6335**	0.018	2.9	ug/L	3	Standard
>	**Bi**	209	498479.4	1.9				ug/L	523984	Standard

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Na	23	1.7	173.2	**18.0364**	31.231	173.2	mg/L	0	Standard
Mg	24	140.0	21.7	**0.1047**	0.037	35.2	mg/L	37	Standard
K	39	708.4	12.8	**1.3550**	0.168	12.4	mg/L	38	Standard
Ca	43	508.3	5.0	**27.6291**	0.895	3.2	mg/L	10	Standard
Fe	54	15324.4	1.1	**12.0707**	0.309	2.6	mg/L	179	Standard
Fe	57	4262.3	3.3	**12.5338**	0.279	2.2	mg/L	335	Standard
> **Sc-1**	45	64965.7	2.0				mg/L	61029	Standard
Cl	35	21927.9	1.6				ug/L	20195	Standard
Kr	83	2.7	78.1				ug/L	4	Standard
Br	81	2823.6	3.3				ug/L	1547	Standard
P	31	16612.4	1.0				ug/L	15286	Standard
S	34	2085.1	7.7				ug/L	1572	Standard
Sr	88	245.0	14.1				ug/L	73	Standard
C	12	116.7	27.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	93.3	49.5				mg/L	3	Standard
Dy	164	30954.0	1.2				mg/L	6	Standard
Ho-1	165	18663.2	2.9				mg/L	10	Standard
Er	166	16615.8	2.6				mg/L	13	Standard
I	127	11766.2	5.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.402	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.807	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.225
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.132
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606066109
Sample Date/Time: Wednesday, June 29, 2016 12:21:49
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77037.0	1.5				ug/L	74699	Standard
	Be	9	378.3	6.2	**0.4242**	0.022	5.2	ug/L	8	Standard
	Al	27	13254869.5	1.3	**87.4672**	2.449	2.8	ug/L	1493	Standard
	Sc	45	63133.0	3.0				ug/L	61029	Standard
	Ti	47	8144.2	1.7	**21.2616**	0.854	4.0	ug/L	35	Standard
	V	51	109381.5	1.5	**14.2029**	0.301	2.1	ug/L	1435	Standard
	Cr	52	127693.7	2.3	**16.1132**	0.755	4.7	ug/L	7635	Standard
	Cr	53	15149.2	3.9	**15.9774**	1.000	6.3	ug/L	363	Standard
	Mn	55	3010101.1	0.9	**429.7771**	13.412	3.1	ug/L	747	Standard
	Co	59	32158.1	0.7	**4.8045**	0.098	2.0	ug/L	234	Standard
	Ni	60	23283.5	0.8	**12.2424**	0.383	3.1	ug/L	215	Standard
	Cu	65	9940.9	0.4	**5.2071**	0.131	2.5	ug/L	104	Standard
	Zn	66	24785.3	0.2	**22.1054**	0.470	2.1	ug/L	363	Standard
>	**Ge**	72	498160.0	2.3				ug/L	495142	Standard
	As	75	2943.4	0.7	**2.6727**	0.077	2.9	ug/L	-50	Standard
	Se	82	39.1	13.2	**0.2170**	0.054	24.7	ug/L	14	Standard
	Se-1	77	75.7	11.2	**0.4068**	0.103	25.3	ug/L	42	Standard
>	**Ga**	71	9034.4	2.0				mg/L	42	Standard
	Rb	85	68682.0	2.5				ug/L	17	Standard
	Y	89	539979.1	1.9				ug/L	417098	Standard
>	**Rh**	103	11.7	24.7				ug/L	13	Standard
	Mo	98	3058.1	1.5	**1.1809**	0.018	1.5	ug/L	11	Standard
	Ag	107	334.3	34.2	**0.0400**	0.017	43.3	ug/L	68	Standard
	Cd	111	137.9	39.4	**0.0601**	0.026	43.1	mg/L	2	Standard
	Cd	114	340.6	39.5	**0.0664**	0.026	39.4	ug/L	12	Standard
>	**In**	115	568023.6	1.3				ug/L	587441	Standard
	Sn	118	973.4	3.3	**0.0776**	0.003	4.4	ug/L	497	Standard
	Sb	123	217.2	33.7	**0.0438**	0.016	35.6	ug/L	78	Standard
	Ba	135	138215.3	1.3	**69.8220**	0.106	0.2	ug/L	24	Standard
	Ce	140	545871.5	1.0				ug/L	25	Standard
>	**Tb**	159	946980.1	0.3				ug/L	939701	Standard
	Ho	165	11547.7	1.8				ug/L	10	Standard
	Tl	203	458.7	30.8	**0.0539**	0.017	31.9	ug/L	4	Standard
	Tl	205	360.0	14.1	**0.0505**	0.007	14.1	ug/L	2	Standard
	Pb	206	30575.5	1.0	**5.6549**	0.063	1.1	ug/L	240	Standard
	Pb	207	24590.3	1.3	**5.1132**	0.071	1.4	ug/L	198	Standard
	Pb	208	101567.1	0.7	**5.3447**	0.038	0.7	ug/L	883	Standard
	U	238	5591.0	1.3	**0.8082**	0.011	1.4	ug/L	3	Standard
>	**Bi**	209	523773.4	0.1				ug/L	523984	Standard

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Na	23	1.7	173.2	**19.1528**	33.165	173.2	mg/L	0	Standard
Mg	24	88.3	26.1	**0.0447**	0.026	57.5	mg/L	37	Standard
K	39	410.0	24.0	**0.7638**	0.217	28.4	mg/L	38	Standard
Ca	43	368.3	13.4	**20.0310**	3.643	18.2	mg/L	10	Standard
Fe	54	11096.4	1.9	**8.9581**	0.101	1.1	mg/L	179	Standard
Fe	57	2985.3	3.6	**8.7334**	0.110	1.3	mg/L	335	Standard
Sc-1	45	63133.0	3.0				mg/L	61029	Standard
Cl	35	21859.8	1.0				ug/L	20195	Standard
Kr	83	1.0	0.0				ug/L	4	Standard
Br	81	1696.8	5.1				ug/L	1547	Standard
P	31	15684.8	2.6				ug/L	15286	Standard
S	34	1883.5	4.2				ug/L	1572	Standard
Sr	88	116.7	19.3				ug/L	73	Standard
C	12	100.0	26.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	18768.7	3.5				mg/L	6	Standard
Ho-1	165	11547.7	1.8				mg/L	10	Standard
Er	166	10790.5	1.6				mg/L	13	Standard
I	127	6703.2	5.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		103.130	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.609	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.695
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.960
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606082203
Sample Date/Time: Wednesday, June 29, 2016 12:25:01
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75246.5	2.8				ug/L	74699	Standard
	Be	9	6.7	114.6	**0.0150**	0.008	55.4	ug/L	8	Standard
	Al	27	1140453.8	1.3	**7.6935**	0.186	2.4	ug/L	1493	Standard
	Sc	45	58880.9	1.2				ug/L	61029	Standard
	Ti	47	77.7	5.2	**0.0982**	0.010	10.0	ug/L	35	Standard
	V	51	1502.7	7.0	**0.0058**	0.017	290.5	ug/L	1435	Standard
	Cr	52	10404.9	0.3	**0.3964**	0.023	5.7	ug/L	7635	Standard
	Cr	53	878.4	11.3	**0.6323**	0.120	19.0	ug/L	363	Standard
	Mn	55	64288.8	1.0	**9.1920**	0.174	1.9	ug/L	747	Standard
	Co	59	1249.1	3.1	**0.1540**	0.006	4.1	ug/L	234	Standard
	Ni	60	673.3	4.1	**0.2398**	0.011	4.6	ug/L	215	Standard
	Cu	65	229.7	8.0	**0.0211**	0.010	48.0	ug/L	104	Standard
	Zn	66	2146.2	1.5	**1.5328**	0.038	2.5	ug/L	363	Standard
>	**Ge**	72	489582.8	1.5				ug/L	495142	Standard
	As	75	99.3	9.7	**0.1492**	0.008	5.6	ug/L	-50	Standard
	Se	82	43.5	22.3	**0.2617**	0.085	32.3	ug/L	14	Standard
	Se-1	77	67.7	6.2	**0.3148**	0.059	18.8	ug/L	42	Standard
>	**Ga**	71	61.7	40.8				mg/L	42	Standard
	Rb	85	88606.7	2.0				ug/L	17	Standard
	Y	89	430024.7	1.6				ug/L	417098	Standard
>	**Rh**	103	28.3	50.9				ug/L	13	Standard
	Mo	98	81.5	16.2	**0.0249**	0.005	20.1	ug/L	11	Standard
	Ag	107	97.7	18.1	**0.0021**	0.003	124.3	ug/L	68	Standard
	Cd	111	13.9	57.3	**-0.0013**	0.004	291.1	mg/L	2	Standard
	Cd	114	23.0	35.9	**0.0024**	0.002	67.9	ug/L	12	Standard
>	**In**	115	586341.4	0.7				ug/L	587441	Standard
	Sn	118	508.3	13.9	**-0.0076**	0.011	151.7	ug/L	497	Standard
	Sb	123	156.7	24.2	**0.0294**	0.008	27.7	ug/L	78	Standard
	Ba	135	76489.9	1.2	**37.4252**	0.302	0.8	ug/L	24	Standard
	Ce	140	665.0	13.3				ug/L	25	Standard
>	**Tb**	159	934158.4	1.1				ug/L	939701	Standard
	Ho	165	15.0	66.7				ug/L	10	Standard
	Tl	203	113.7	11.3	**0.0121**	0.002	13.7	ug/L	4	Standard
	Tl	205	93.3	44.6	**0.0133**	0.006	44.3	ug/L	2	Standard
	Pb	206	362.0	5.5	**-0.0029**	0.004	131.1	ug/L	240	Standard
	Pb	207	281.3	6.6	**-0.0103**	0.004	38.7	ug/L	198	Standard
	Pb	208	1197.0	7.1	**-0.0098**	0.005	49.2	ug/L	883	Standard
	U	238	25.0	34.9	**-0.0008**	0.001	168.5	ug/L	3	Standard
>	**Bi**	209	520173.1	0.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3547.1	5.1	**4.6793**	0.186	4.0	mg/L	37	Standard
K	39	1096.7	1.1	**2.3987**	0.055	2.3	mg/L	38	Standard
Ca	43	51.7	27.9	**0.8562**	0.931	108.7	mg/L	10	Standard
Fe	54	433.8	1.2	**0.2430**	0.009	3.5	mg/L	179	Standard
Fe	57	376.7	13.8	**0.2532**	0.189	74.5	mg/L	335	Standard
> **Sc-1**	45	58880.9	1.2				mg/L	61029	Standard
Cl	35	22906.6	0.4				ug/L	20195	Standard
Kr	83	2.3	65.5				ug/L	4	Standard
Br	81	9496.3	3.0				ug/L	1547	Standard
P	31	16589.1	2.9				ug/L	15286	Standard
S	34	2071.8	1.6				ug/L	1572	Standard
Sr	88	118.3	17.1				ug/L	73	Standard
C	12	53.3	10.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	19.0	47.5				mg/L	6	Standard
Ho-1	165	15.0	66.7				mg/L	10	Standard
Er	166	20.0	100.0				mg/L	13	Standard
I	127	14315.1	5.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.733	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.877	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.813
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.273
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606082302
Sample Date/Time: Wednesday, June 29, 2016 12:28:12
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75794.1	0.6				ug/L	74699	Standard
	Be	9	13.3	21.7	**0.0225**	0.003	14.2	ug/L	8	Standard
	Al	27	2805598.0	0.7	**18.8025**	0.242	1.3	ug/L	1493	Standard
	Sc	45	59848.0	1.2				ug/L	61029	Standard
	Ti	47	42.3	20.1	**0.0017**	0.021	1272.3	ug/L	35	Standard
	V	51	1764.1	8.5	**0.0361**	0.018	49.9	ug/L	1435	Standard
	Cr	52	8282.9	3.5	**0.0853**	0.037	43.4	ug/L	7635	Standard
	Cr	53	906.7	14.2	**0.6437**	0.138	21.5	ug/L	363	Standard
	Mn	55	61274.7	1.5	**8.5848**	0.068	0.8	ug/L	747	Standard
	Co	59	3907.8	2.1	**0.5500**	0.015	2.7	ug/L	234	Standard
	Ni	60	654.7	3.9	**0.2231**	0.012	5.6	ug/L	215	Standard
	Cu	65	222.3	1.8	**0.0148**	0.001	8.1	ug/L	104	Standard
	Zn	66	2204.5	3.0	**1.5481**	0.054	3.5	ug/L	363	Standard
>	**Ge**	72	498979.3	0.8				ug/L	495142	Standard
	As	75	72.7	46.8	**0.1239**	0.030	24.0	ug/L	-50	Standard
	Se	82	52.0	6.1	**0.3317**	0.029	8.6	ug/L	14	Standard
	Se-1	77	105.0	8.3	**0.8037**	0.108	13.5	ug/L	42	Standard
>	**Ga**	71	56.7	13.5				mg/L	42	Standard
	Rb	85	343.3	5.1				ug/L	17	Standard
	Y	89	428520.0	1.9				ug/L	417098	Standard
>	**Rh**	103	38.3	27.2				ug/L	13	Standard
	Mo	98	38.4	23.3	**0.0089**	0.004	39.5	ug/L	11	Standard
	Ag	107	77.7	2.7	**-0.0008**	0.000	47.2	ug/L	68	Standard
	Cd	111	5.6	57.3	**-0.0052**	0.002	30.1	mg/L	2	Standard
	Cd	114	18.7	97.5	**0.0016**	0.004	227.0	ug/L	12	Standard
>	**In**	115	580343.3	0.7				ug/L	587441	Standard
	Sn	118	485.0	23.2	**-0.0106**	0.020	190.8	ug/L	497	Standard
	Sb	123	114.5	31.8	**0.0207**	0.008	39.1	ug/L	78	Standard
	Ba	135	150889.3	1.2	**74.6061**	0.512	0.7	ug/L	24	Standard
	Ce	140	123.3	15.3				ug/L	25	Standard
>	**Tb**	159	936316.1	1.2				ug/L	939701	Standard
	Ho	165	18.3	31.5				ug/L	10	Standard
	Tl	203	189.0	9.5	**0.0214**	0.002	8.8	ug/L	4	Standard
	Tl	205	161.7	6.4	**0.0230**	0.002	7.6	ug/L	2	Standard
	Pb	206	327.3	6.0	**-0.0093**	0.004	47.2	ug/L	240	Standard
	Pb	207	269.3	8.1	**-0.0127**	0.005	36.6	ug/L	198	Standard
	Pb	208	1102.3	4.7	**-0.0147**	0.003	21.5	ug/L	883	Standard
	U	238	62.7	10.4	**0.0048**	0.001	17.9	ug/L	3	Standard
>	**Bi**	209	519166.0	1.5				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	5325.9	0.2	**6.9463**	0.099	1.4	mg/L	37	Standard
K	39	75.0	37.1	**0.0544**	0.061	111.8	mg/L	38	Standard
Ca	43	86.7	3.3	**3.0583**	0.130	4.3	mg/L	10	Standard
Fe	54	170.8	11.8	**0.0094**	0.018	186.9	mg/L	179	Standard
Fe	57	311.7	10.3	**0.0068**	0.121	1775.6	mg/L	335	Standard
> **Sc-1**	45	59848.0	1.2				mg/L	61029	Standard
Cl	35	23747.3	1.3				ug/L	20195	Standard
Kr	83	2.7	78.1				ug/L	4	Standard
Br	81	11654.5	4.8				ug/L	1547	Standard
P	31	16051.8	4.0				ug/L	15286	Standard
S	34	1918.5	1.8				ug/L	1572	Standard
Sr	88	140.0	9.4				ug/L	73	Standard
C	12	53.3	39.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	12.2	186.8				mg/L	6	Standard
Ho-1	165	18.3	31.5				mg/L	10	Standard
Er	166	23.3	24.7				mg/L	13	Standard
I	127	13899.7	5.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.466	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.775	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.792
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.080
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606082303
Sample Date/Time: Wednesday, June 29, 2016 12:31:24
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76244.7	1.6				ug/L	74699	Standard
	Be	9	10.0	50.0	**0.0187**	0.005	28.8	ug/L	8	Standard
	Al	27	1789441.8	2.2	**11.9153**	0.077	0.6	ug/L	1493	Standard
	Sc	45	61370.7	1.9				ug/L	61029	Standard
	Ti	47	59.7	11.8	**0.0448**	0.018	40.0	ug/L	35	Standard
	V	51	1976.3	1.1	**0.0601**	0.005	8.2	ug/L	1435	Standard
	Cr	52	8828.6	1.1	**0.1403**	0.016	11.5	ug/L	7635	Standard
	Cr	53	945.0	0.5	**0.6692**	0.006	1.0	ug/L	363	Standard
	Mn	55	180374.5	2.7	**25.1617**	0.439	1.7	ug/L	747	Standard
	Co	59	619.0	3.1	**0.0543**	0.004	7.0	ug/L	234	Standard
	Ni	60	405.7	6.0	**0.0878**	0.011	12.8	ug/L	215	Standard
	Cu	65	208.0	10.3	**0.0056**	0.012	222.0	ug/L	104	Standard
	Zn	66	6989.3	1.3	**5.7979**	0.130	2.2	ug/L	363	Standard
>	**Ge**	72	506777.4	1.1				ug/L	495142	Standard
	As	75	17.4	166.6	**0.0747**	0.025	33.6	ug/L	-50	Standard
	Se	82	43.0	5.9	**0.2447**	0.022	8.9	ug/L	14	Standard
	Se-1	77	89.0	9.0	**0.5677**	0.097	17.0	ug/L	42	Standard
>	**Ga**	71	55.0	18.2				mg/L	42	Standard
	Rb	85	226.7	20.8				ug/L	17	Standard
	Y	89	430230.4	1.6				ug/L	417098	Standard
>	**Rh**	103	23.3	12.4				ug/L	13	Standard
	Mo	98	43.4	8.2	**0.0107**	0.002	14.5	ug/L	11	Standard
	Ag	107	80.3	9.2	**-0.0005**	0.001	248.5	ug/L	68	Standard
	Cd	111	11.9	16.8	**-0.0022**	0.001	43.2	mg/L	2	Standard
	Cd	114	28.1	50.1	**0.0034**	0.003	82.8	ug/L	12	Standard
>	**In**	115	584282.7	1.3				ug/L	587441	Standard
	Sn	118	445.0	7.0	**-0.0181**	0.005	24.8	ug/L	497	Standard
	Sb	123	113.1	24.2	**0.0201**	0.006	28.5	ug/L	78	Standard
	Ba	135	83408.3	1.0	**40.9596**	0.601	1.5	ug/L	24	Standard
	Ce	140	301.7	22.6				ug/L	25	Standard
>	**Tb**	159	946714.8	0.6				ug/L	939701	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	182.7	3.3	**0.0205**	0.001	3.9	ug/L	4	Standard
	Tl	205	160.0	30.8	**0.0227**	0.007	30.9	ug/L	2	Standard
	Pb	206	288.0	1.3	**-0.0170**	0.001	5.3	ug/L	240	Standard
	Pb	207	270.7	6.0	**-0.0126**	0.003	25.4	ug/L	198	Standard
	Pb	208	1097.0	10.5	**-0.0153**	0.006	38.6	ug/L	883	Standard
	U	238	866.7	1.0	**0.1222**	0.001	0.8	ug/L	3	Standard
>	**Bi**	209	520921.7	0.5				ug/L	523984	Standard

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Na	23	1.7	173.2	**19.3655**	33.533	173.2	mg/L	0	Standard
Mg	24	4915.8	1.0	**6.2466**	0.131	2.1	mg/L	37	Standard
K	39	50.0	20.0	**-0.0042**	0.023	541.6	mg/L	38	Standard
Ca	43	65.0	0.0	**1.5606**	0.079	5.0	mg/L	10	Standard
Fe	54	160.0	11.0	**-0.0035**	0.013	359.3	mg/L	179	Standard
Fe	57	281.7	9.1	**-0.1230**	0.068	55.3	mg/L	335	Standard
> **Sc-1**	45	61370.7	1.9				mg/L	61029	Standard
Cl	35	23872.8	0.3				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	8675.8	8.1				ug/L	1547	Standard
P	31	16263.7	3.0				ug/L	15286	Standard
S	34	1945.1	6.6				ug/L	1572	Standard
Sr	88	130.0	24.0				ug/L	73	Standard
C	12	46.7	44.6				mg/L	63	Standard
N	14	6.7	86.6				mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	19.0	57.5				mg/L	6	Standard
Ho-1	165	8.3	34.6				mg/L	10	Standard
Er	166	20.0	100.0				mg/L	13	Standard
I	127	19577.6	2.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.070	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.350	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.462
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.415
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606082304
Sample Date/Time: Wednesday, June 29, 2016 12:34:35
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76966.7	2.1				ug/L	74699	Standard
	Be	9	8.3	91.7	**0.0169**	0.009	50.5	ug/L	8	Standard
	Al	27	441491.6	0.4	**2.9030**	0.060	2.1	ug/L	1493	Standard
	Sc	45	60155.9	2.7				ug/L	61029	Standard
	Ti	47	44.0	12.0	**0.0058**	0.013	219.4	ug/L	35	Standard
	V	51	1675.2	9.7	**0.0239**	0.019	79.8	ug/L	1435	Standard
	Cr	52	8137.2	4.7	**0.0630**	0.039	62.0	ug/L	7635	Standard
	Cr	53	611.7	11.7	**0.3248**	0.069	21.3	ug/L	363	Standard
	Mn	55	105254.7	1.8	**14.8182**	0.156	1.1	ug/L	747	Standard
	Co	59	259.7	5.8	**0.0017**	0.003	156.1	ug/L	234	Standard
	Ni	60	230.0	4.9	**-0.0022**	0.007	321.8	ug/L	215	Standard
	Cu	65	165.3	1.5	**-0.0157**	0.002	12.9	ug/L	104	Standard
	Zn	66	2212.5	1.5	**1.5507**	0.010	0.6	ug/L	363	Standard
>	**Ge**	72	500132.0	1.1				ug/L	495142	Standard
	As	75	21.8	38.4	**0.0789**	0.008	9.6	ug/L	-50	Standard
	Se	82	26.9	8.6	**0.1047**	0.023	22.2	ug/L	14	Standard
	Se-1	77	64.0	26.1	**0.2460**	0.230	93.4	ug/L	42	Standard
>	**Ga**	71	55.0	41.7				mg/L	42	Standard
	Rb	85	421.7	18.5				ug/L	17	Standard
	Y	89	429897.2	1.0				ug/L	417098	Standard
>	**Rh**	103	6.7	43.3				ug/L	13	Standard
	Mo	98	29.2	13.0	**0.0052**	0.001	25.4	ug/L	11	Standard
	Ag	107	87.7	6.3	**0.0005**	0.001	182.2	ug/L	68	Standard
	Cd	111	7.0	28.7	**-0.0046**	0.001	19.4	mg/L	2	Standard
	Cd	114	21.6	74.7	**0.0021**	0.003	150.8	ug/L	12	Standard
>	**In**	115	589054.0	1.8				ug/L	587441	Standard
	Sn	118	438.3	5.7	**-0.0199**	0.003	16.6	ug/L	497	Standard
	Sb	123	106.2	8.9	**0.0185**	0.002	12.5	ug/L	78	Standard
	Ba	135	25689.8	1.2	**12.5057**	0.379	3.0	ug/L	24	Standard
	Ce	140	65.0	26.6				ug/L	25	Standard
>	**Tb**	159	953435.2	1.7				ug/L	939701	Standard
	Ho	165	13.3	43.3				ug/L	10	Standard
	Tl	203	91.7	10.9	**0.0091**	0.001	12.8	ug/L	4	Standard
	Tl	205	101.7	11.4	**0.0141**	0.002	11.0	ug/L	2	Standard
	Pb	206	281.0	2.2	**-0.0197**	0.001	5.9	ug/L	240	Standard
	Pb	207	219.0	9.1	**-0.0248**	0.004	16.3	ug/L	198	Standard
	Pb	208	999.0	3.0	**-0.0219**	0.001	6.3	ug/L	883	Standard
	U	238	2.7	21.7	**-0.0040**	0.000	2.0	ug/L	3	Standard
>	**Bi**	209	535313.4	0.3				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	1101.7	8.8	**1.3766**	0.099	7.2	mg/L	37	Standard
K	39	50.0	26.5	**-0.0017**	0.031	1783.7	mg/L	38	Standard
Ca	43	43.3	17.6	**0.2622**	0.555	211.4	mg/L	10	Standard
Fe	54	1079.1	4.5	**0.7903**	0.045	5.7	mg/L	179	Standard
Fe	57	550.0	4.8	**0.8245**	0.134	16.2	mg/L	335	Standard
> **Sc-1**	45	60155.9	2.7				mg/L	61029	Standard
Cl	35	23751.9	0.9				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	3913.8	0.4				ug/L	1547	Standard
P	31	16552.4	4.0				ug/L	15286	Standard
S	34	1948.5	5.9				ug/L	1572	Standard
Sr	88	68.3	30.5				ug/L	73	Standard
C	12	63.3	36.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	19.7	135.8				mg/L	6	Standard
Ho-1	165	13.3	43.3				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	5207.6	8.4				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		103.036	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.008	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.275
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.162
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 12:37:48
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72653.8	1.6				ug/L	74699	Standard
	Be	9	42693.4	2.4	**49.8778**	1.581	3.2	ug/L	8	Standard
	Al	27	7018269.3	1.5	**49.0877**	0.211	0.4	ug/L	1493	Standard
	Sc	45	58700.2	1.7				ug/L	61029	Standard
	Ti	47	37360.7	1.5	**96.4941**	1.122	1.2	ug/L	35	Standard
	V	51	389361.0	0.6	**50.3345**	0.950	1.9	ug/L	1435	Standard
	Cr	52	377308.6	0.5	**48.8761**	0.835	1.7	ug/L	7635	Standard
	Cr	53	46063.3	3.3	**48.5325**	2.229	4.6	ug/L	363	Standard
	Mn	55	355991.7	2.4	**49.9570**	0.746	1.5	ug/L	747	Standard
	Co	59	341523.2	1.7	**50.6452**	0.528	1.0	ug/L	234	Standard
	Ni	60	94080.5	0.6	**49.1230**	0.490	1.0	ug/L	215	Standard
	Cu	65	95078.4	0.9	**49.9689**	1.178	2.4	ug/L	104	Standard
	Zn	66	56040.5	0.8	**49.8274**	0.722	1.4	ug/L	363	Standard
>	Ge	72	505267.2	1.6				ug/L	495142	Standard
	As	75	56871.7	1.3	**49.8175**	0.372	0.7	ug/L	-50	Standard
	Se	82	5593.2	2.1	**49.8004**	0.347	0.7	ug/L	14	Standard
	Se-1	77	3775.1	1.7	**50.0311**	0.568	1.1	ug/L	42	Standard
>	Ga	71	75.0	13.3				mg/L	42	Standard
	Rb	85	800.0	10.3				ug/L	17	Standard
	Y	89	408700.7	0.8				ug/L	417098	Standard
>	Rh	103	18.3	41.7				ug/L	13	Standard
	Mo	98	257910.1	1.9	**100.4657**	4.126	4.1	ug/L	11	Standard
	Ag	107	316989.6	1.3	**50.4692**	0.906	1.8	ug/L	68	Standard
	Cd	111	101914.0	1.0	**50.5948**	1.545	3.1	mg/L	2	Standard
	Cd	114	242699.9	2.4	**49.1311**	2.013	4.1	ug/L	12	Standard
>	In	115	566154.7	2.7				ug/L	587441	Standard
	Sn	118	281464.1	1.7	**49.9153**	1.113	2.2	ug/L	497	Standard
	Sb	123	227316.6	0.8	**50.5420**	1.534	3.0	ug/L	78	Standard
	Ba	135	98379.4	0.9	**49.8785**	1.233	2.5	ug/L	24	Standard
	Ce	140	113.3	20.8				ug/L	25	Standard
>	Tb	159	932106.1	1.1				ug/L	939701	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	406761.4	0.1	**49.7003**	0.911	1.8	ug/L	4	Standard
	Tl	205	354916.5	2.0	**49.9771**	1.877	3.8	ug/L	2	Standard
	Pb	206	263562.6	0.6	**49.6234**	0.874	1.8	ug/L	240	Standard
	Pb	207	235278.4	0.8	**49.8612**	1.016	2.0	ug/L	198	Standard
	Pb	208	929662.3	0.8	**49.8673**	1.247	2.5	ug/L	883	Standard
	U	238	336021.4	1.5	**49.1730**	1.579	3.2	ug/L	3	Standard
>	Bi	209	520331.8	1.7				ug/L	523984	Standard

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Na	23	1.7	173.2	**19.5945**	33.930	173.2	mg/L	0	Standard
Mg	24	3858.8	4.6	**5.1144**	0.246	4.8	mg/L	37	Standard
K	39	2055.1	3.6	**4.6098**	0.203	4.4	mg/L	38	Standard
Ca	43	130.0	23.4	**5.9979**	1.898	31.6	mg/L	10	Standard
Fe	54	5737.9	3.9	**4.9227**	0.278	5.7	mg/L	179	Standard
Fe	57	1583.4	3.8	**4.5245**	0.301	6.7	mg/L	335	Standard
> **Sc-1**	45	58700.2	1.7				mg/L	61029	Standard
Cl	35	23099.6	1.9				ug/L	20195	Standard
Kr	83	2.3	65.5				ug/L	4	Standard
Br	81	1760.1	10.8				ug/L	1547	Standard
P	31	17002.9	0.9				ug/L	15286	Standard
S	34	2305.2	8.6				ug/L	1572	Standard
Sr	88	76.7	10.0				ug/L	73	Standard
C	12	60.0	33.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	9.0	191.6				mg/L	6	Standard
Ho-1	165	8.3	91.7				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	2030.1	31.8				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	99.756		
	Al	27	98.175		
	Sc	45			
	Ti	47	96.494		
	V	51	100.669		
	Cr	52	97.752		
	Cr	53			
	Mn	55	99.914		
	Co	59	101.290		
	Ni	60	98.246		
	Cu	65	99.938		
	Zn	66	99.655		
>	Ge	72		102.045	
	As	75	99.635		
	Se	82	99.601		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	100.466		
Ag	107	100.938		
Cd	111	101.190		
Cd	114			
> In	115			96.376
Sn	118	99.831		
Sb	123	101.084		
Ba	135	99.757		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.401		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.735		
U	238	98.346		
> Bi	209			99.303
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 12:40:59
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73745.7	1.0				ug/L	74699	Standard
	Be	9	45.0	86.8	**0.0596**	0.045	76.2	ug/L	8	Standard
	Al	27	10763.7	138.2	**0.0612**	0.103	168.8	ug/L	1493	Standard
	Sc	45	59794.4	0.5				ug/L	61029	Standard
	Ti	47	63.7	40.2	**0.0565**	0.070	123.9	ug/L	35	Standard
	V	51	1309.0	5.1	**-0.0256**	0.009	36.2	ug/L	1435	Standard
	Cr	52	7144.0	4.7	**-0.0780**	0.064	81.5	ug/L	7635	Standard
	Cr	53	391.7	5.2	**0.0859**	0.030	34.5	ug/L	363	Standard
	Mn	55	2203.3	114.3	**0.1667**	0.364	218.6	ug/L	747	Standard
	Co	59	375.0	36.8	**0.0187**	0.022	116.6	ug/L	234	Standard
	Ni	60	226.7	25.3	**-0.0048**	0.033	679.9	ug/L	215	Standard
	Cu	65	137.7	45.7	**-0.0307**	0.035	113.4	ug/L	104	Standard
	Zn	66	391.7	8.9	**-0.1025**	0.038	37.5	ug/L	363	Standard
>	**Ge**	72	505094.9	1.9				ug/L	495142	Standard
	As	75	-30.0	135.0	**0.0336**	0.035	105.0	ug/L	-50	Standard
	Se	82	18.1	21.6	**0.0240**	0.035	145.0	ug/L	14	Standard
	Se-1	77	51.7	16.7	**0.0700**	0.104	148.9	ug/L	42	Standard
>	**Ga**	71	55.0	27.3				mg/L	42	Standard
	Rb	85	30.0	72.6				ug/L	17	Standard
	Y	89	416389.1	0.5				ug/L	417098	Standard
>	**Rh**	103	18.3	56.8				ug/L	13	Standard
	Mo	98	292.6	24.5	**0.1060**	0.029	27.7	ug/L	11	Standard
	Ag	107	123.7	36.8	**0.0063**	0.007	108.0	ug/L	68	Standard
	Cd	111	19.1	60.5	**0.0013**	0.005	411.5	mg/L	2	Standard
	Cd	114	51.4	75.2	**0.0080**	0.007	93.3	ug/L	12	Standard
>	**In**	115	578912.4	1.7				ug/L	587441	Standard
	Sn	118	756.7	23.6	**0.0364**	0.029	79.3	ug/L	497	Standard
	Sb	123	391.4	30.7	**0.0806**	0.025	30.9	ug/L	78	Standard
	Ba	135	64.3	74.2	**0.0157**	0.023	147.1	ug/L	24	Standard
	Ce	140	98.3	142.4				ug/L	25	Standard
>	**Tb**	159	938659.9	2.1				ug/L	939701	Standard
	Ho	165	16.7	45.8				ug/L	10	Standard
	Tl	203	80.3	33.4	**0.0079**	0.003	39.1	ug/L	4	Standard
	Tl	205	263.3	142.0	**0.0362**	0.051	140.6	ug/L	2	Standard
	Pb	206	290.0	20.9	**-0.0175**	0.011	60.1	ug/L	240	Standard
	Pb	207	255.0	4.1	**-0.0168**	0.002	14.3	ug/L	198	Standard
	Pb	208	1806.4	80.0	**0.0207**	0.074	360.4	ug/L	883	Standard
	U	238	234.3	149.2	**0.0289**	0.049	171.5	ug/L	3	Standard
>	**Bi**	209	529175.1	1.6				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	48.3	47.8	**-0.0014**	0.030	2108.5	mg/L	37	Standard
K	39	68.3	15.2	**0.0400**	0.023	56.9	mg/L	38	Standard
Ca	43	21.7	74.2	**-1.1227**	1.047	93.2	mg/L	10	Standard
Fe	54	169.2	23.1	**0.0081**	0.034	414.8	mg/L	179	Standard
Fe	57	310.0	16.4	**0.0019**	0.182	9789.6	mg/L	335	Standard
Sc-1	45	59794.4	0.5				mg/L	61029	Standard
Cl	35	23378.7	0.4				ug/L	20195	Standard
Kr	83	4.3	58.1				ug/L	4	Standard
Br	81	1630.1	3.1				ug/L	1547	Standard
P	31	16767.6	2.6				ug/L	15286	Standard
S	34	2153.5	8.8				ug/L	1572	Standard
Sr	88	65.0	27.7				ug/L	73	Standard
C	12	66.7	17.3				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	9.4	186.5				mg/L	6	Standard
Ho-1	165	16.7	45.8				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	1680.1	29.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.010	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.548	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.991	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Wednesday, June 29, 2016 12:44:12
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71218.7	0.8				ug/L	74699	Standard
	Be	9	178.3	13.3	**0.2201**	0.029	13.2	ug/L	8	Standard
	Al	27	1766.8	29.5	**-0.0008**	0.004	458.8	ug/L	1493	Standard
	Sc	45	56025.1	1.1				ug/L	61029	Standard
	Ti	47	28.0	7.1	**-0.0318**	0.007	20.5	ug/L	35	Standard
	V	51	4079.9	5.1	**0.3696**	0.041	11.2	ug/L	1435	Standard
	Cr	52	12699.0	0.7	**0.7676**	0.041	5.4	ug/L	7635	Standard
	Cr	53	1050.0	6.6	**0.8579**	0.085	9.9	ug/L	363	Standard
	Mn	55	4110.2	0.9	**0.4692**	0.021	4.5	ug/L	747	Standard
	Co	59	2790.3	0.6	**0.4045**	0.014	3.5	ug/L	234	Standard
	Ni	60	2962.3	1.6	**1.5299**	0.023	1.5	ug/L	215	Standard
	Cu	65	1521.1	1.5	**0.7509**	0.034	4.5	ug/L	104	Standard
	Zn	66	7672.3	2.1	**6.8861**	0.035	0.5	ug/L	363	Standard
>	**Ge**	72	473802.8	2.6				ug/L	495142	Standard
	As	75	358.5	4.9	**0.3943**	0.021	5.3	ug/L	-50	Standard
	Se	82	48.3	16.1	**0.3230**	0.086	26.5	ug/L	14	Standard
	Se-1	77	78.0	9.0	**0.4927**	0.075	15.2	ug/L	42	Standard
>	**Ga**	71	35.0	24.7				mg/L	42	Standard
	Rb	85	21.7	35.3				ug/L	17	Standard
	Y	89	406616.3	2.6				ug/L	417098	Standard
>	**Rh**	103	13.3	43.3				ug/L	13	Standard
	Mo	98	80.8	10.7	**0.0260**	0.003	11.1	ug/L	11	Standard
	Ag	107	2461.5	2.7	**0.3827**	0.004	1.0	ug/L	68	Standard
	Cd	111	469.2	3.6	**0.2272**	0.006	2.5	mg/L	2	Standard
	Cd	114	1121.7	10.1	**0.2273**	0.026	11.5	ug/L	12	Standard
>	**In**	115	560717.1	1.7				ug/L	587441	Standard
	Sn	118	496.7	12.6	**-0.0055**	0.012	217.4	ug/L	497	Standard
	Sb	123	1804.7	2.2	**0.4010**	0.016	3.9	ug/L	78	Standard
	Ba	135	1433.1	2.6	**0.7176**	0.020	2.8	ug/L	24	Standard
	Ce	140	53.3	43.3				ug/L	25	Standard
>	**Tb**	159	901191.9	2.3				ug/L	939701	Standard
	Ho	165	5.0	0.0				ug/L	10	Standard
	Tl	203	658.3	6.7	**0.0809**	0.005	6.0	ug/L	4	Standard
	Tl	205	580.0	6.7	**0.0841**	0.005	5.7	ug/L	2	Standard
	Pb	206	1314.1	4.2	**0.1836**	0.008	4.1	ug/L	240	Standard
	Pb	207	1090.4	5.0	**0.1679**	0.009	5.1	ug/L	198	Standard
	Pb	208	4577.3	1.3	**0.1788**	0.005	3.0	ug/L	883	Standard
	U	238	2625.2	2.7	**0.3906**	0.007	1.9	ug/L	3	Standard
>	**Bi**	209	505831.0	1.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	40.0	12.5	**-0.0088**	0.007	78.9	mg/L	37	Standard
K	39	38.3	19.9	**-0.0218**	0.018	84.6	mg/L	38	Standard
Ca	43	36.7	75.1	**-0.0119**	1.877	15817.5	mg/L	10	Standard
Fe	54	97.1	24.3	**-0.0484**	0.023	47.3	mg/L	179	Standard
Fe	57	295.0	11.9	**0.0175**	0.123	699.1	mg/L	335	Standard
Sc-1	45	56025.1	1.1				mg/L	61029	Standard
Cl	35	22767.8	1.3				ug/L	20195	Standard
Kr	83	2.7	57.3				ug/L	4	Standard
Br	81	1303.4	5.0				ug/L	1547	Standard
P	31	11956.4	1.3				ug/L	15286	Standard
S	34	2061.8	6.1				ug/L	1572	Standard
Sr	88	80.0	22.5				ug/L	73	Standard
C	12	80.0	33.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	0.0					mg/L	6	Standard
Ho-1	165	5.0	0.0				mg/L	10	Standard
Er	166	0.0					mg/L	13	Standard
I	127	1360.1	35.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	110.075		
Al	27			
Sc	45			
Ti	47			
V	51	92.400		
Cr	52	95.955		
Cr	53			
Mn	55	93.844		
Co	59	101.134		
Ni	60	95.616		
Cu	65	93.867		
Zn	66	110.178		
Ge	72		95.690	
As	75	98.586		
Se	82	80.738		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	95.685		
Cd	111	94.646		
Cd	114			
> In	115			95.451
Sn	118			
Sb	123	100.239		
Ba	135	95.683		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.186		
Tl	205			
Pb	206			
Pb	207			
Pb	208	89.410		
U	238	97.655		
> Bi	209			96.535
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW 7 WG573548-02
Sample Date/Time: Wednesday, June 29, 2016 12:53:54
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74857.8	1.6				ug/L	74699	Standard
	Be	9	16.7	75.5	**0.0264**	0.014	53.3	ug/L	8	Standard
	Al	27	80794.9	2.0	**0.5353**	0.014	2.5	ug/L	1493	Standard
	Sc	45	58461.0	3.0				ug/L	61029	Standard
	Ti	47	78.0	5.9	**0.0921**	0.013	14.5	ug/L	35	Standard
	V	51	1804.8	0.8	**0.0380**	0.004	11.0	ug/L	1435	Standard
	Cr	52	9792.5	0.9	**0.2676**	0.021	7.7	ug/L	7635	Standard
	Cr	53	633.3	5.7	**0.3397**	0.038	11.1	ug/L	363	Standard
	Mn	55	7868.0	0.9	**0.9563**	0.019	2.0	ug/L	747	Standard
	Co	59	389.7	6.7	**0.0204**	0.003	16.2	ug/L	234	Standard
	Ni	60	396.3	4.2	**0.0829**	0.008	9.4	ug/L	215	Standard
	Cu	65	182.0	8.2	**-0.0081**	0.009	109.2	ug/L	104	Standard
	Zn	66	1432.4	5.9	**0.8274**	0.087	10.5	ug/L	363	Standard
>	**Ge**	72	506709.7	1.0				ug/L	495142	Standard
	As	75	61.7	54.0	**0.1136**	0.029	25.8	ug/L	-50	Standard
	Se	82	57.7	7.0	**0.3762**	0.040	10.6	ug/L	14	Standard
	Se-1	77	48.3	5.2	**0.0243**	0.031	128.3	ug/L	42	Standard
>	**Ga**	71	106.7	35.5				mg/L	42	Standard
	Rb	85	413.3	4.9				ug/L	17	Standard
	Y	89	414741.4	0.4				ug/L	417098	Standard
>	**Rh**	103	15.0	100.0				ug/L	13	Standard
	Mo	98	46.5	23.9	**0.0125**	0.004	33.5	ug/L	11	Standard
	Ag	107	1549.7	3.3	**0.2354**	0.012	5.1	ug/L	68	Standard
	Cd	111	17.2	8.9	**0.0007**	0.001	113.7	mg/L	2	Standard
	Cd	114	63.6	36.2	**0.0109**	0.005	44.4	ug/L	12	Standard
>	**In**	115	562869.1	1.7				ug/L	587441	Standard
	Sn	118	736.7	11.6	**0.0370**	0.017	44.6	ug/L	497	Standard
	Sb	123	216.9	10.9	**0.0443**	0.006	12.6	ug/L	78	Standard
	Ba	135	906.0	5.8	**0.4461**	0.030	6.6	ug/L	24	Standard
	Ce	140	1735.1	5.3				ug/L	25	Standard
>	**Tb**	159	918530.3	1.8				ug/L	939701	Standard
	Ho	165	31.7	32.9				ug/L	10	Standard
	Tl	203	89.3	15.5	**0.0092**	0.002	18.3	ug/L	4	Standard
	Tl	205	86.7	13.3	**0.0124**	0.002	13.0	ug/L	2	Standard
	Pb	206	378.0	4.1	**0.0001**	0.003	2503.4	ug/L	240	Standard
	Pb	207	310.7	3.7	**-0.0040**	0.002	56.8	ug/L	198	Standard
	Pb	208	1268.7	1.9	**-0.0059**	0.001	22.1	ug/L	883	Standard
	U	238	52.0	18.9	**0.0032**	0.001	44.2	ug/L	3	Standard
>	**Bi**	209	520017.2	0.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	98.3	32.7	**0.0678**	0.045	67.0	mg/L	37	Standard
K	39	61.7	9.4	**0.0281**	0.012	42.4	mg/L	38	Standard
Ca	43	31.7	55.5	**-0.4154**	1.202	289.4	mg/L	10	Standard
Fe	54	153.7	8.4	**-0.0024**	0.007	308.5	mg/L	179	Standard
Fe	57	316.7	15.8	**0.0490**	0.173	353.8	mg/L	335	Standard
> **Sc-1**	45	58461.0	3.0				mg/L	61029	Standard
Cl	35	22819.8	1.0				ug/L	20195	Standard
Kr	83	3.7	31.5				ug/L	4	Standard
Br	81	12281.6	4.1				ug/L	1547	Standard
P	31	15094.2	2.5				ug/L	15286	Standard
S	34	1958.5	7.0				ug/L	1572	Standard
Sr	88	78.3	19.5				ug/L	73	Standard
C	12	96.7	21.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	48.1	42.1				mg/L	6	Standard
Ho-1	165	31.7	32.9				mg/L	10	Standard
Er	166	40.0	25.0				mg/L	13	Standard
I	127	2060.1	27.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.213	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.336	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.817
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.243
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 7 WG573548-02
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Method 6020 - Summary Report

Sample ID: LCSW 7 WG573548-03
Sample Date/Time: Wednesday, June 29, 2016 12:57:05
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75779.1	1.4				ug/L	74699	Standard
	Be	9	44266.3	2.0	**49.5806**	1.413	2.8	ug/L	8	Standard
	Al	27	95277.1	2.2	**0.6259**	0.022	3.5	ug/L	1493	Standard
	Sc	45	60008.6	1.7				ug/L	61029	Standard
	Ti	47	61.3	19.5	**0.0533**	0.033	61.1	ug/L	35	Standard
	V	51	383994.5	1.5	**50.7641**	0.334	0.7	ug/L	1435	Standard
	Cr	52	391642.5	1.8	**51.9470**	0.996	1.9	ug/L	7635	Standard
	Cr	53	48176.5	1.3	**51.9174**	0.408	0.8	ug/L	363	Standard
	Mn	55	379234.4	0.1	**54.4505**	0.406	0.7	ug/L	747	Standard
	Co	59	337441.4	0.9	**51.1841**	0.650	1.3	ug/L	234	Standard
	Ni	60	96944.2	1.6	**51.7745**	0.652	1.3	ug/L	215	Standard
	Cu	65	97447.4	0.9	**52.3759**	0.338	0.6	ug/L	104	Standard
	Zn	66	58710.9	1.4	**53.4195**	0.683	1.3	ug/L	363	Standard
>	**Ge**	72	493989.7	0.8				ug/L	495142	Standard
	As	75	54420.0	2.0	**48.7560**	0.745	1.5	ug/L	-50	Standard
	Se	82	5499.8	2.1	**50.0913**	1.110	2.2	ug/L	14	Standard
	Se-1	77	3757.5	2.3	**50.9460**	1.277	2.5	ug/L	42	Standard
>	**Ga**	71	331.7	6.3				mg/L	42	Standard
	Rb	85	1905.1	7.7				ug/L	17	Standard
	Y	89	430193.5	2.2				ug/L	417098	Standard
>	**Rh**	103	21.7	13.3				ug/L	13	Standard
	Mo	98	200.3	5.0	**0.0686**	0.004	5.6	ug/L	11	Standard
	Ag	107	325181.2	0.5	**49.3255**	0.456	0.9	ug/L	68	Standard
	Cd	111	102382.7	0.7	**48.4138**	0.589	1.2	mg/L	2	Standard
	Cd	114	246010.3	1.2	**47.4297**	0.453	1.0	ug/L	12	Standard
>	**In**	115	594099.2	0.9				ug/L	587441	Standard
	Sn	118	733.4	7.5	**0.0295**	0.010	35.4	ug/L	497	Standard
	Sb	123	222790.7	0.6	**47.1842**	0.681	1.4	ug/L	78	Standard
	Ba	135	100456.3	0.7	**48.5175**	0.574	1.2	ug/L	24	Standard
	Ce	140	3297.0	2.9				ug/L	25	Standard
>	**Tb**	159	953975.0	2.3				ug/L	939701	Standard
	Ho	165	81.7	3.5				ug/L	10	Standard
	Tl	203	411383.7	1.0	**49.0691**	0.983	2.0	ug/L	4	Standard
	Tl	205	358822.0	2.1	**49.3118**	1.192	2.4	ug/L	2	Standard
	Pb	206	272876.4	0.6	**50.1549**	0.805	1.6	ug/L	240	Standard
	Pb	207	232281.8	1.2	**48.0517**	0.976	2.0	ug/L	198	Standard
	Pb	208	938885.2	1.2	**49.1601**	1.120	2.3	ug/L	883	Standard
	U	238	337957.9	0.3	**48.2703**	0.691	1.4	ug/L	3	Standard
>	**Bi**	209	532979.3	1.2				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	40.0	12.5	**-0.0126**	0.007	52.7	mg/L	37	Standard
K	39	58.3	21.6	**0.0173**	0.030	174.9	mg/L	38	Standard
Ca	43	60.0	16.7	**1.3313**	0.636	47.7	mg/L	10	Standard
Fe	54	427.3	5.7	**0.2300**	0.018	7.6	mg/L	179	Standard
Fe	57	393.3	4.8	**0.2864**	0.089	31.1	mg/L	335	Standard
> **Sc-1**	45	60008.6	1.7				mg/L	61029	Standard
Cl	35	22904.0	1.4				ug/L	20195	Standard
Kr	83	0.7	86.6				ug/L	4	Standard
Br	81	1933.5	11.4				ug/L	1547	Standard
P	31	15693.1	2.0				ug/L	15286	Standard
S	34	1913.5	5.4				ug/L	1572	Standard
Sr	88	85.0	21.2				ug/L	73	Standard
C	12	106.7	37.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	149.3	43.4				mg/L	6	Standard
Ho-1	165	81.7	3.5				mg/L	10	Standard
Er	166	83.3	45.4				mg/L	13	Standard
I	127	1690.1	32.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.446	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.767	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.133
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.717
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606098623 WG573548-01
Sample Date/Time: Wednesday, June 29, 2016 13:00:17
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85536.1	4.6				ug/L	74699	Standard
	Be	9	131.7	4.4	**0.1385**	0.009	6.7	ug/L	8	Standard
	Al	27	51229429.5	1.9	**304.6734**	8.454	2.8	ug/L	1493	Standard
	Sc	45	58156.4	0.7				ug/L	61029	Standard
	Ti	47	291.7	4.0	**0.6976**	0.027	3.9	ug/L	35	Standard
	V	51	2731.2	8.5	**0.1837**	0.035	19.3	ug/L	1435	Standard
	Cr	52	11798.6	2.2	**0.6453**	0.034	5.3	ug/L	7635	Standard
	Cr	53	1541.7	10.7	**1.4199**	0.200	14.1	ug/L	363	Standard
	Mn	55	1519614.4	1.3	**228.6645**	1.850	0.8	ug/L	747	Standard
	Co	59	1958.8	0.9	**0.2737**	0.000	0.1	ug/L	234	Standard
	Ni	60	5664.7	1.6	**3.0483**	0.071	2.3	ug/L	215	Standard
	Cu	65	19925.4	0.1	**11.1201**	0.082	0.7	ug/L	104	Standard
	Zn	66	6263.0	2.6	**5.5559**	0.126	2.3	ug/L	363	Standard
>	**Ge**	72	472304.7	0.8				ug/L	495142	Standard
	As	75	721.9	3.2	**0.7353**	0.022	3.1	ug/L	-50	Standard
	Se	82	400.4	3.0	**3.6870**	0.142	3.9	ug/L	14	Standard
	Se-1	77	187.0	7.2	**2.0610**	0.173	8.4	ug/L	42	Standard
>	**Ga**	71	100.0	8.7				mg/L	42	Standard
	Rb	85	5192.6	2.9				ug/L	17	Standard
	Y	89	424150.6	2.5				ug/L	417098	Standard
>	**Rh**	103	291.7	21.8				ug/L	13	Standard
	Mo	98	1037.1	3.0	**0.3904**	0.016	4.1	ug/L	11	Standard
	Ag	107	150.3	11.8	**0.0106**	0.003	25.5	ug/L	68	Standard
	Cd	111	86.5	9.0	**0.0342**	0.004	11.5	mg/L	2	Standard
	Cd	114	235.1	23.0	**0.0445**	0.010	23.2	ug/L	12	Standard
>	**In**	115	577173.5	1.1				ug/L	587441	Standard
	Sn	118	1115.0	2.8	**0.0996**	0.004	4.3	ug/L	497	Standard
	Sb	123	1725.9	23.2	**0.3715**	0.084	22.5	ug/L	78	Standard
	Ba	135	22344.1	0.8	**11.0965**	0.201	1.8	ug/L	24	Standard
	Ce	140	1543.4	4.9				ug/L	25	Standard
>	**Tb**	159	936227.5	1.2				ug/L	939701	Standard
	Ho	165	78.3	35.2				ug/L	10	Standard
	Tl	203	240.0	4.8	**0.0287**	0.001	5.1	ug/L	4	Standard
	Tl	205	171.7	9.4	**0.0253**	0.002	9.3	ug/L	2	Standard
	Pb	206	666.7	6.9	**0.0592**	0.009	15.2	ug/L	240	Standard
	Pb	207	558.7	0.1	**0.0529**	0.000	0.3	ug/L	198	Standard
	Pb	208	2267.7	0.3	**0.0522**	0.000	0.9	ug/L	883	Standard
	U	238	28225.3	0.9	**4.2785**	0.042	1.0	ug/L	3	Standard
>	**Bi**	209	501665.1	0.1				ug/L	523984	Standard

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Na	23	13.3	43.3	**161.5718**	71.131	44.0	mg/L	0	Standard
Mg	24	24900.4	1.1	**33.6647**	0.149	0.4	mg/L	37	Standard
K	39	1233.4	1.4	**2.7469**	0.062	2.2	mg/L	38	Standard
Ca	43	1560.1	5.5	**100.8648**	4.911	4.9	mg/L	10	Standard
Fe	54	167.1	25.8	**0.0105**	0.039	372.7	mg/L	179	Standard
Fe	57	958.4	6.3	**2.3440**	0.212	9.0	mg/L	335	Standard
Sc-1	45	58156.4	0.7				mg/L	61029	Standard
Cl	35	40465.3	2.5				ug/L	20195	Standard
Kr	83	2.7	57.3				ug/L	4	Standard
Br	81	58241.9	4.1				ug/L	1547	Standard
P	31	17453.4	1.6				ug/L	15286	Standard
S	34	1810.1	8.9				ug/L	1572	Standard
Sr	88	1313.4	8.1				ug/L	73	Standard
C	12	273.3	15.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	3	Standard
Dy	164	89.3	16.3				mg/L	6	Standard
Ho-1	165	78.3	35.2				mg/L	10	Standard
Er	166	83.3	18.3				mg/L	13	Standard
I	127	135078.2	7.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		114.508	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.388	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.252
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.740
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606098635S WG573548-04
Sample Date/Time: Wednesday, June 29, 2016 13:03:28
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	96645.6	0.2				ug/L	74699	Standard
	Be	9	56332.9	2.6	**49.4619**	1.222	2.5	ug/L	8	Standard
	Al	27	56565131.5	1.0	**297.4859**	3.609	1.2	ug/L	1493	Standard
	Sc	45	58999.8	4.0				ug/L	61029	Standard
	Ti	47	369.0	11.5	**0.8968**	0.108	12.0	ug/L	35	Standard
	V	51	390242.6	0.5	**53.2266**	0.984	1.8	ug/L	1435	Standard
	Cr	52	371857.5	2.1	**50.8419**	0.408	0.8	ug/L	7635	Standard
	Cr	53	46974.4	2.3	**52.2114**	1.040	2.0	ug/L	363	Standard
	Mn	55	1851169.7	0.3	**274.7367**	3.654	1.3	ug/L	747	Standard
	Co	59	350457.1	0.5	**54.8326**	0.988	1.8	ug/L	234	Standard
	Ni	60	94372.4	2.0	**51.9777**	0.274	0.5	ug/L	215	Standard
	Cu	65	115580.4	2.6	**64.0828**	0.734	1.1	ug/L	104	Standard
	Zn	66	61118.4	0.5	**57.3902**	0.612	1.1	ug/L	363	Standard
>	**Ge**	72	478993.7	1.6				ug/L	495142	Standard
	As	75	59122.1	0.8	**54.6260**	0.454	0.8	ug/L	-50	Standard
	Se	82	6294.5	0.9	**59.1515**	0.578	1.0	ug/L	14	Standard
	Se-1	77	4101.2	2.7	**57.4162**	0.662	1.2	ug/L	42	Standard
>	**Ga**	71	100.0	18.0				mg/L	42	Standard
	Rb	85	5364.3	1.3				ug/L	17	Standard
	Y	89	423648.2	2.3				ug/L	417098	Standard
>	**Rh**	103	290.0	15.8				ug/L	13	Standard
	Mo	98	1231.1	6.2	**0.4537**	0.027	5.8	ug/L	11	Standard
	Ag	107	140053.7	1.3	**21.3673**	0.341	1.6	ug/L	68	Standard
	Cd	111	101619.5	1.1	**48.3438**	0.154	0.3	mg/L	2	Standard
	Cd	114	248812.6	0.3	**48.2667**	0.577	1.2	ug/L	12	Standard
>	**In**	115	590497.7	1.3				ug/L	587441	Standard
	Sn	118	1276.7	2.9	**0.1227**	0.007	5.6	ug/L	497	Standard
	Sb	123	230648.9	1.4	**49.1452**	0.703	1.4	ug/L	78	Standard
	Ba	135	121100.4	1.0	**58.8551**	1.255	2.1	ug/L	24	Standard
	Ce	140	1580.1	12.1				ug/L	25	Standard
>	**Tb**	159	967679.2	1.8				ug/L	939701	Standard
	Ho	165	70.0	12.4				ug/L	10	Standard
	Tl	203	411213.8	0.9	**50.0486**	0.144	0.3	ug/L	4	Standard
	Tl	205	371375.3	1.6	**52.0881**	1.342	2.6	ug/L	2	Standard
	Pb	206	271184.0	0.3	**50.8655**	0.565	1.1	ug/L	240	Standard
	Pb	207	230172.1	0.3	**48.5918**	0.740	1.5	ug/L	198	Standard
	Pb	208	934549.0	0.8	**49.9358**	0.874	1.8	ug/L	883	Standard
	U	238	386476.6	1.1	**56.3336**	1.024	1.8	ug/L	3	Standard
>	**Bi**	209	522269.6	1.2				ug/L	523984	Standard

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Na	23	8.3	91.7	**99.7813**	89.869	90.1	mg/L	0	Standard
Mg	24	26446.4	1.6	**35.2703**	0.863	2.4	mg/L	37	Standard
K	39	1201.7	4.6	**2.6333**	0.063	2.4	mg/L	38	Standard
Ca	43	1648.4	4.4	**105.1755**	1.490	1.4	mg/L	10	Standard
Fe	54	207.2	35.2	**0.0431**	0.061	140.9	mg/L	179	Standard
Fe	57	976.7	6.7	**2.3580**	0.131	5.6	mg/L	335	Standard
Sc-1	45	58999.8	4.0				mg/L	61029	Standard
Cl	35	42664.0	0.9				ug/L	20195	Standard
Kr	83	3.0	33.3				ug/L	4	Standard
Br	81	62512.1	2.5				ug/L	1547	Standard
P	31	18094.1	2.0				ug/L	15286	Standard
S	34	1855.1	3.1				ug/L	1572	Standard
Sr	88	1376.7	4.2				ug/L	73	Standard
C	12	206.7	24.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	73.5	28.0				mg/L	6	Standard
Ho-1	165	70.0	12.4				mg/L	10	Standard
Er	166	66.7	34.6				mg/L	13	Standard
I	127	146421.6	4.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		129.380	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.739	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.520
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.673
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606098637SD WG573548-05
Sample Date/Time: Wednesday, June 29, 2016 13:06:39
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	99478.9	1.8				ug/L	74699	Standard
	Be	9	55809.3	1.7	**47.6121**	0.679	1.4	ug/L	8	Standard
	Al	27	57079276.5	2.7	**291.6498**	6.801	2.3	ug/L	1493	Standard
	Sc	45	56220.8	1.7				ug/L	61029	Standard
	Ti	47	357.7	29.4	**0.8728**	0.310	35.5	ug/L	35	Standard
	V	51	392795.1	0.3	**53.7087**	1.385	2.6	ug/L	1435	Standard
	Cr	52	364211.2	1.2	**49.9063**	1.054	2.1	ug/L	7635	Standard
	Cr	53	45092.0	2.6	**50.2220**	0.967	1.9	ug/L	363	Standard
	Mn	55	1864825.2	1.1	**277.4410**	6.534	2.4	ug/L	747	Standard
	Co	59	357216.6	1.3	**56.0166**	0.665	1.2	ug/L	234	Standard
	Ni	60	94064.4	0.7	**51.9434**	1.099	2.1	ug/L	215	Standard
	Cu	65	96872.1	1.3	**53.8290**	0.581	1.1	ug/L	104	Standard
	Zn	66	56756.1	1.1	**53.3877**	0.715	1.3	ug/L	363	Standard
>	**Ge**	72	477920.9	2.4				ug/L	495142	Standard
	As	75	58834.8	0.8	**54.4924**	0.918	1.7	ug/L	-50	Standard
	Se	82	6411.7	0.6	**60.4029**	1.057	1.7	ug/L	14	Standard
	Se-1	77	4156.6	3.0	**58.3446**	1.540	2.6	ug/L	42	Standard
>	**Ga**	71	126.7	16.4				mg/L	42	Standard
	Rb	85	5344.3	1.7				ug/L	17	Standard
	Y	89	425761.1	0.9				ug/L	417098	Standard
>	**Rh**	103	338.3	14.4				ug/L	13	Standard
	Mo	98	943.7	3.1	**0.3564**	0.013	3.7	ug/L	11	Standard
	Ag	107	126054.2	0.9	**19.7696**	0.296	1.5	ug/L	68	Standard
	Cd	111	100507.1	1.6	**49.1528**	0.361	0.7	mg/L	2	Standard
	Cd	114	240725.5	3.1	**47.9933**	0.862	1.8	ug/L	12	Standard
>	**In**	115	574417.4	1.5				ug/L	587441	Standard
	Sn	118	1058.4	4.2	**0.0905**	0.005	5.8	ug/L	497	Standard
	Sb	123	229849.5	0.5	**50.3475**	0.456	0.9	ug/L	78	Standard
	Ba	135	119199.1	0.7	**59.5474**	0.534	0.9	ug/L	24	Standard
	Ce	140	1411.7	10.5				ug/L	25	Standard
>	**Tb**	159	946510.5	1.0				ug/L	939701	Standard
	Ho	165	61.7	32.8				ug/L	10	Standard
	Tl	203	404314.5	1.0	**50.2968**	0.720	1.4	ug/L	4	Standard
	Tl	205	368989.1	0.6	**52.8952**	1.157	2.2	ug/L	2	Standard
	Pb	206	274418.5	1.5	**52.6043**	0.331	0.6	ug/L	240	Standard
	Pb	207	233408.5	1.0	**50.3596**	0.394	0.8	ug/L	198	Standard
	Pb	208	945417.2	0.6	**51.6312**	0.704	1.4	ug/L	883	Standard
	U	238	390395.6	1.2	**58.1569**	0.854	1.5	ug/L	3	Standard
>	**Bi**	209	511024.4	1.7				ug/L	523984	Standard

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Na	23	13.3	21.7	**167.0389**	37.375	22.4	mg/L	0	Standard
Mg	24	26820.4	2.0	**37.5161**	0.222	0.6	mg/L	37	Standard
K	39	1165.0	5.8	**2.6799**	0.118	4.4	mg/L	38	Standard
Ca	43	1491.7	10.9	**99.7885**	11.256	11.3	mg/L	10	Standard
Fe	54	157.1	11.5	**0.0062**	0.015	238.1	mg/L	179	Standard
Fe	57	1011.7	5.7	**2.6573**	0.164	6.2	mg/L	335	Standard
Sc-1	45	56220.8	1.7				mg/L	61029	Standard
Cl	35	42892.6	1.5				ug/L	20195	Standard
Kr	83	2.7	43.3				ug/L	4	Standard
Br	81	62984.0	1.3				ug/L	1547	Standard
P	31	17081.3	3.0				ug/L	15286	Standard
S	34	1805.1	2.7				ug/L	1572	Standard
Sr	88	1383.4	10.5				ug/L	73	Standard
C	12	180.0	14.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	124.6	33.0				mg/L	6	Standard
Ho-1	165	61.7	32.8				mg/L	10	Standard
Er	166	43.3	35.3				mg/L	13	Standard
I	127	140810.4	4.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		133.173	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.522	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.783
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.527
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606098601
Sample Date/Time: Wednesday, June 29, 2016 13:09:51
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	102324.4	1.8				ug/L	74699	Standard
	Be	9	88.3	32.2	**0.0810**	0.024	30.0	ug/L	8	Standard
	Al	27	5114148.7	1.9	**25.3952**	0.605	2.4	ug/L	1493	Standard
	Sc	45	60191.0	1.9				ug/L	61029	Standard
	Ti	47	2779.9	0.6	**7.0936**	0.108	1.5	ug/L	35	Standard
	V	51	5111.4	5.6	**0.4688**	0.033	7.0	ug/L	1435	Standard
	Cr	52	13420.3	3.5	**0.7542**	0.051	6.8	ug/L	7635	Standard
	Cr	53	1458.4	3.3	**1.2196**	0.051	4.2	ug/L	363	Standard
	Mn	55	181173.8	0.3	**25.4046**	0.180	0.7	ug/L	747	Standard
	Co	59	2348.5	2.0	**0.3119**	0.007	2.1	ug/L	234	Standard
	Ni	60	2310.5	3.1	**1.0878**	0.031	2.9	ug/L	215	Standard
	Cu	65	2308.5	3.6	**1.1141**	0.034	3.0	ug/L	104	Standard
	Zn	66	22662.3	0.5	**19.9177**	0.090	0.4	ug/L	363	Standard
>	**Ge**	72	504254.4	0.9				ug/L	495142	Standard
	As	75	859.1	5.1	**0.8126**	0.036	4.5	ug/L	-50	Standard
	Se	82	56.8	14.9	**0.3708**	0.079	21.2	ug/L	14	Standard
	Se-1	77	87.3	17.2	**0.5507**	0.190	34.5	ug/L	42	Standard
>	**Ga**	71	526.7	8.3				mg/L	42	Standard
	Rb	85	16517.3	5.3				ug/L	17	Standard
	Y	89	430302.4	1.6				ug/L	417098	Standard
>	**Rh**	103	86.7	33.8				ug/L	13	Standard
	Mo	98	1898.6	1.4	**0.7136**	0.022	3.1	ug/L	11	Standard
	Ag	107	115.3	8.0	**0.0050**	0.001	29.0	ug/L	68	Standard
	Cd	111	60.8	33.2	**0.0215**	0.010	47.6	mg/L	2	Standard
	Cd	114	128.6	20.8	**0.0232**	0.005	20.9	ug/L	12	Standard
>	**In**	115	581907.5	1.7				ug/L	587441	Standard
	Sn	118	1231.7	10.8	**0.1183**	0.024	20.7	ug/L	497	Standard
	Sb	123	520.8	14.7	**0.1084**	0.016	15.1	ug/L	78	Standard
	Ba	135	41346.0	0.9	**20.3791**	0.217	1.1	ug/L	24	Standard
	Ce	140	23020.8	2.4				ug/L	25	Standard
>	**Tb**	159	964144.3	1.8				ug/L	939701	Standard
	Ho	165	513.3	9.3				ug/L	10	Standard
	Tl	203	211.3	12.7	**0.0234**	0.003	14.7	ug/L	4	Standard
	Tl	205	253.3	62.3	**0.0350**	0.022	63.0	ug/L	2	Standard
	Pb	206	1500.1	2.6	**0.2039**	0.008	4.0	ug/L	240	Standard
	Pb	207	1190.0	4.0	**0.1756**	0.010	5.7	ug/L	198	Standard
	Pb	208	4936.0	2.0	**0.1838**	0.008	4.3	ug/L	883	Standard
	U	238	2034.5	10.8	**0.2852**	0.034	11.8	ug/L	3	Standard
>	**Bi**	209	535012.0	1.1				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	50263.2	0.4	**65.7389**	1.477	2.2	mg/L	37	Standard
K	39	250.0	7.2	**0.4466**	0.047	10.5	mg/L	38	Standard
Ca	43	233.3	8.9	**12.4104**	1.127	9.1	mg/L	10	Standard
Fe	54	825.5	3.8	**0.5718**	0.038	6.7	mg/L	179	Standard
Fe	57	516.7	4.4	**0.7058**	0.045	6.4	mg/L	335	Standard
> **Sc-1**	45	60191.0	1.9				mg/L	61029	Standard
Cl	35	28383.9	2.7				ug/L	20195	Standard
Kr	83	2.0	0.0				ug/L	4	Standard
Br	81	8439.0	2.4				ug/L	1547	Standard
P	31	17857.2	2.8				ug/L	15286	Standard
S	34	1791.8	4.6				ug/L	1572	Standard
Sr	88	506.7	4.7				ug/L	73	Standard
C	12	153.3	22.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	893.4	9.1				mg/L	6	Standard
Ho-1	165	513.3	9.3				mg/L	10	Standard
Er	166	416.7	13.2				mg/L	13	Standard
I	127	18778.3	7.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		136.983	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.840	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.058	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	102.105	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606098603
Sample Date/Time: Wednesday, June 29, 2016 13:13:02
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	106961.3	1.6				ug/L	74699	Standard
	Be	9	178.3	7.1	**0.1492**	0.012	8.2	ug/L	8	Standard
	Al	27	64490531.4	4.4	**306.3886**	9.864	3.2	ug/L	1493	Standard
	Sc	45	59811.2	2.1				ug/L	61029	Standard
	Ti	47	416.0	0.2	**0.9910**	0.025	2.5	ug/L	35	Standard
	V	51	3004.3	2.1	**0.2029**	0.003	1.2	ug/L	1435	Standard
	Cr	52	11901.7	1.5	**0.5854**	0.019	3.3	ug/L	7635	Standard
	Cr	53	991.7	2.3	**0.7459**	0.050	6.7	ug/L	363	Standard
	Mn	55	12370472.2	4.2	**1779.3602**	31.656	1.8	ug/L	747	Standard
	Co	59	18875.4	5.7	**2.8249**	0.100	3.5	ug/L	234	Standard
	Ni	60	12202.3	4.0	**6.4037**	0.114	1.8	ug/L	215	Standard
	Cu	65	16836.0	2.8	**8.9582**	0.039	0.4	ug/L	104	Standard
	Zn	66	24869.4	2.3	**22.3549**	0.039	0.2	ug/L	363	Standard
>	**Ge**	72	494237.2	2.4				ug/L	495142	Standard
	As	75	1554.4	6.7	**1.4489**	0.061	4.2	ug/L	-50	Standard
	Se	82	71.5	7.7	**0.5142**	0.037	7.1	ug/L	14	Standard
	Se-1	77	63.0	12.4	**0.2431**	0.119	49.1	ug/L	42	Standard
>	**Ga**	71	356.7	10.3				mg/L	42	Standard
	Rb	85	9309.5	2.8				ug/L	17	Standard
	Y	89	460268.8	4.1				ug/L	417098	Standard
>	**Rh**	103	310.0	9.7				ug/L	13	Standard
	Mo	98	1407.8	3.5	**0.5012**	0.005	1.0	ug/L	11	Standard
	Ag	107	101.3	22.9	**0.0020**	0.003	151.7	ug/L	68	Standard
	Cd	111	246.3	7.9	**0.1051**	0.008	7.2	mg/L	2	Standard
	Cd	114	605.6	11.0	**0.1111**	0.009	8.4	ug/L	12	Standard
>	**In**	115	612194.6	4.4				ug/L	587441	Standard
	Sn	118	1470.1	15.0	**0.1461**	0.027	18.7	ug/L	497	Standard
	Sb	123	727.1	5.4	**0.1452**	0.003	2.2	ug/L	78	Standard
	Ba	135	24533.2	4.5	**11.4855**	0.055	0.5	ug/L	24	Standard
	Ce	140	44839.6	2.7				ug/L	25	Standard
>	**Tb**	159	1002318.5	3.7				ug/L	939701	Standard
	Ho	165	778.4	7.8				ug/L	10	Standard
	Tl	203	123.7	14.4	**0.0129**	0.002	13.5	ug/L	4	Standard
	Tl	205	116.7	9.9	**0.0161**	0.001	9.2	ug/L	2	Standard
	Pb	206	819.0	5.9	**0.0785**	0.008	10.4	ug/L	240	Standard
	Pb	207	658.0	2.8	**0.0655**	0.007	10.9	ug/L	198	Standard
	Pb	208	2733.4	3.4	**0.0682**	0.002	2.2	ug/L	883	Standard
	U	238	29463.0	4.0	**4.1728**	0.071	1.7	ug/L	3	Standard
>	**Bi**	209	536825.9	2.9				ug/L	523984	Standard

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Na	23	18.3	31.5	**216.6166**	73.255	33.8	mg/L	0	Standard
Mg	24	7246.7	2.5	**9.4794**	0.084	0.9	mg/L	37	Standard
K	39	393.3	11.0	**0.7727**	0.091	11.8	mg/L	38	Standard
Ca	43	1938.5	3.9	**122.4130**	4.002	3.3	mg/L	10	Standard
Fe	54	1213.7	6.6	**0.9123**	0.078	8.6	mg/L	179	Standard
Fe	57	1360.1	3.5	**3.6434**	0.167	4.6	mg/L	335	Standard
Sc-1	45	59811.2	2.1				mg/L	61029	Standard
Cl	35	41831.0	3.4				ug/L	20195	Standard
Kr	83	1.7	91.7				ug/L	4	Standard
Br	81	8062.1	5.5				ug/L	1547	Standard
P	31	19340.7	4.7				ug/L	15286	Standard
S	34	2026.8	7.6				ug/L	1572	Standard
Sr	88	1283.4	13.4				ug/L	73	Standard
C	12	153.3	19.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	1258.4	10.3				mg/L	6	Standard
Ho-1	165	778.4	7.8				mg/L	10	Standard
Er	166	800.0	9.9				mg/L	13	Standard
I	127	76815.4	9.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		143.190	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.817	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.214
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.451
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606098603PS WG574572-01
Sample Date/Time: Wednesday, June 29, 2016 13:16:14
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	107768.6	1.4				ug/L	74699	Standard
	Be	9	63154.7	2.1	**49.7293**	0.735	1.5	ug/L	8	Standard
	Al	27	62883924.9	0.4	**296.6156**	4.197	1.4	ug/L	1493	Standard
	Sc	45	60669.6	1.7				ug/L	61029	Standard
	Ti	47	431.3	11.1	**1.0313**	0.120	11.7	ug/L	35	Standard
	V	51	423481.5	0.7	**56.0150**	0.782	1.4	ug/L	1435	Standard
	Cr	52	394353.4	1.0	**52.3183**	0.613	1.2	ug/L	7635	Standard
	Cr	53	48385.5	1.4	**52.1545**	1.086	2.1	ug/L	363	Standard
	Mn	55	12676353.0	0.9	**1825.0939**	28.984	1.6	ug/L	747	Standard
	Co	59	406698.1	0.5	**61.7025**	0.702	1.1	ug/L	234	Standard
	Ni	60	105609.8	0.7	**56.4229**	0.793	1.4	ug/L	215	Standard
	Cu	65	109624.8	0.4	**58.9403**	0.355	0.6	ug/L	104	Standard
	Zn	66	80974.1	1.0	**73.8592**	1.163	1.6	ug/L	363	Standard
>	Ge	72	493944.8	0.7				ug/L	495142	Standard
	As	75	62963.2	0.4	**56.4099**	0.584	1.0	ug/L	-50	Standard
	Se	82	6528.2	1.4	**59.4919**	1.250	2.1	ug/L	14	Standard
	Se-1	77	4208.9	2.0	**57.1456**	1.224	2.1	ug/L	42	Standard
>	Ga	71	341.7	3.7				mg/L	42	Standard
	Rb	85	9437.9	2.3				ug/L	17	Standard
	Y	89	453637.5	2.0				ug/L	417098	Standard
>	Rh	103	333.3	4.8				ug/L	13	Standard
	Mo	98	1406.8	1.9	**0.5023**	0.008	1.6	ug/L	11	Standard
	Ag	107	336751.7	1.1	**49.7241**	0.838	1.7	ug/L	68	Standard
	Cd	111	110645.7	0.7	**50.9305**	0.669	1.3	mg/L	2	Standard
	Cd	114	268194.0	0.5	**50.3333**	0.438	0.9	ug/L	12	Standard
>	In	115	610323.2	0.7				ug/L	587441	Standard
	Sn	118	1538.4	2.3	**0.1588**	0.006	3.5	ug/L	497	Standard
	Sb	123	241381.6	1.1	**49.7617**	0.807	1.6	ug/L	78	Standard
	Ba	135	126394.4	1.4	**59.4274**	1.193	2.0	ug/L	24	Standard
	Ce	140	44334.8	0.8				ug/L	25	Standard
>	Tb	159	999714.8	1.0				ug/L	939701	Standard
	Ho	165	786.7	10.3				ug/L	10	Standard
	Tl	203	445077.8	1.6	**52.3048**	0.918	1.8	ug/L	4	Standard
	Tl	205	409895.5	2.2	**55.5017**	1.265	2.3	ug/L	2	Standard
	Pb	206	293321.0	0.4	**53.1218**	0.228	0.4	ug/L	240	Standard
	Pb	207	252054.7	0.9	**51.3779**	0.617	1.2	ug/L	198	Standard
	Pb	208	1026149.4	0.5	**52.9396**	0.195	0.4	ug/L	883	Standard
	U	238	420484.7	1.6	**59.1737**	0.984	1.7	ug/L	3	Standard
>	Bi	209	540895.8	0.3				ug/L	523984	Standard

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Na	23	16.7	45.8	**192.4294**	85.849	44.6	mg/L	0	Standard
Mg	24	7256.7	2.5	**9.3609**	0.349	3.7	mg/L	37	Standard
K	39	406.7	8.6	**0.7894**	0.064	8.1	mg/L	38	Standard
Ca	43	1853.4	4.6	**115.2974**	6.640	5.8	mg/L	10	Standard
Fe	54	1091.3	5.4	**0.7921**	0.036	4.5	mg/L	179	Standard
Fe	57	1315.1	6.5	**3.4198**	0.224	6.6	mg/L	335	Standard
> **Sc-1**	45	60669.6	1.7				mg/L	61029	Standard
Cl	35	43150.7	2.4				ug/L	20195	Standard
Kr	83	2.3	49.5				ug/L	4	Standard
Br	81	7932.1	5.6				ug/L	1547	Standard
P	31	18981.9	3.1				ug/L	15286	Standard
S	34	1910.1	1.6				ug/L	1572	Standard
Sr	88	1396.7	9.1				ug/L	73	Standard
C	12	166.7	22.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	1221.7	7.2				mg/L	6	Standard
Ho-1	165	786.7	10.3				mg/L	10	Standard
Er	166	800.0	7.6				mg/L	13	Standard
I	127	76722.5	5.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		144.271	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.758	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.895
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.227
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606098603SDL WG574572-02
Sample Date/Time: Wednesday, June 29, 2016 13:19:25
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	109627.0	2.2				ug/L	74699	Standard
	Be	9	55.0	32.8	**0.0501**	0.014	27.0	ug/L	8	Standard
	Al	27	13052757.9	2.1	**60.5215**	1.604	2.7	ug/L	1493	Standard
	Sc	45	62358.1	1.0				ug/L	61029	Standard
	Ti	47	123.0	14.7	**0.1926**	0.050	25.7	ug/L	35	Standard
	V	51	2451.6	1.0	**0.1057**	0.008	7.9	ug/L	1435	Standard
	Cr	52	10290.8	1.8	**0.2648**	0.008	2.8	ug/L	7635	Standard
	Cr	53	588.3	10.7	**0.2610**	0.063	24.3	ug/L	363	Standard
	Mn	55	2629853.6	1.6	**350.4744**	10.232	2.9	ug/L	747	Standard
	Co	59	4233.3	3.1	**0.5577**	0.018	3.3	ug/L	234	Standard
	Ni	60	2886.6	1.8	**1.3071**	0.037	2.8	ug/L	215	Standard
	Cu	65	3859.5	1.6	**1.8207**	0.021	1.2	ug/L	104	Standard
	Zn	66	7087.3	1.2	**5.5680**	0.153	2.7	ug/L	363	Standard
>	**Ge**	72	533577.2	1.8				ug/L	495142	Standard
	As	75	314.5	3.2	**0.3203**	0.010	3.2	ug/L	-50	Standard
	Se	82	28.2	16.0	**0.1004**	0.037	37.2	ug/L	14	Standard
	Se-1	77	51.7	9.9	**0.0349**	0.075	214.8	ug/L	42	Standard
>	**Ga**	71	153.3	21.0				mg/L	42	Standard
	Rb	85	1916.8	2.5				ug/L	17	Standard
	Y	89	457911.1	1.7				ug/L	417098	Standard
>	**Rh**	103	73.3	17.2				ug/L	13	Standard
	Mo	98	334.8	7.8	**0.1120**	0.009	8.5	ug/L	11	Standard
	Ag	107	142.0	14.1	**0.0075**	0.003	37.0	ug/L	68	Standard
	Cd	111	78.8	16.1	**0.0274**	0.006	20.4	mg/L	2	Standard
	Cd	114	171.7	29.4	**0.0293**	0.009	31.0	ug/L	12	Standard
>	**In**	115	626915.6	0.6				ug/L	587441	Standard
	Sn	118	618.3	15.8	**0.0044**	0.015	338.7	ug/L	497	Standard
	Sb	123	2031.6	21.7	**0.4032**	0.086	21.3	ug/L	78	Standard
	Ba	135	5054.8	0.4	**2.2983**	0.024	1.0	ug/L	24	Standard
	Ce	140	9302.9	0.9				ug/L	25	Standard
>	**Tb**	159	1014481.9	2.3				ug/L	939701	Standard
	Ho	165	175.0	2.9				ug/L	10	Standard
	Tl	203	125.0	17.4	**0.0120**	0.002	18.4	ug/L	4	Standard
	Tl	205	85.0	15.6	**0.0110**	0.002	15.7	ug/L	2	Standard
	Pb	206	501.3	9.2	**0.0141**	0.008	53.2	ug/L	240	Standard
	Pb	207	392.0	5.3	**0.0051**	0.005	98.5	ug/L	198	Standard
	Pb	208	1534.0	5.0	**0.0003**	0.005	1457.8	ug/L	883	Standard
	U	238	6033.2	1.4	**0.7925**	0.020	2.5	ug/L	3	Standard
>	**Bi**	209	576425.9	1.5				ug/L	523984	Standard

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Na	23	3.3	173.2	**37.9583**	65.737	173.2	mg/L	0	Standard
Mg	24	1580.1	4.3	**1.9318**	0.105	5.4	mg/L	37	Standard
K	39	138.3	24.1	**0.1853**	0.073	39.3	mg/L	38	Standard
Ca	43	413.3	5.7	**23.0292**	1.446	6.3	mg/L	10	Standard
Fe	54	367.9	5.4	**0.1671**	0.019	11.4	mg/L	179	Standard
Fe	57	475.0	7.9	**0.5062**	0.132	26.1	mg/L	335	Standard
Sc-1	45	62358.1	1.0				mg/L	61029	Standard
Cl	35	34619.5	1.5				ug/L	20195	Standard
Kr	83	1.3	86.6				ug/L	4	Standard
Br	81	3197.0	3.6				ug/L	1547	Standard
P	31	18749.9	1.5				ug/L	15286	Standard
S	34	2010.1	3.0				ug/L	1572	Standard
Sr	88	305.0	20.5				ug/L	73	Standard
C	12	113.3	31.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	348.8	17.3				mg/L	6	Standard
Ho-1	165	175.0	2.9				mg/L	10	Standard
Er	166	163.3	52.8				mg/L	13	Standard
I	127	19115.4	2.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		146.759	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		107.762	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.720
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.008
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606098603SDL WG574572-02
Sample Date/Time: Wednesday, June 29, 2016 13:22:37
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	107882.7	0.8				ug/L	74699	Standard
	Be	9	30.0	44.1	**0.0312**	0.010	32.7	ug/L	8	Standard
	Al	27	2675117.5	0.8	**12.5917**	0.213	1.7	ug/L	1493	Standard
	Sc	45	65760.7	1.1				ug/L	61029	Standard
	Ti	47	48.3	10.6	**0.0072**	0.012	160.2	ug/L	35	Standard
	V	51	2266.6	5.1	**0.0781**	0.015	19.5	ug/L	1435	Standard
	Cr	52	10143.4	2.6	**0.2243**	0.020	8.9	ug/L	7635	Standard
	Cr	53	413.3	17.1	**0.0775**	0.065	83.8	ug/L	363	Standard
	Mn	55	539662.1	1.4	**70.5366**	0.569	0.8	ug/L	747	Standard
	Co	59	1015.0	2.6	**0.1030**	0.006	5.9	ug/L	234	Standard
	Ni	60	769.4	2.6	**0.2509**	0.010	4.1	ug/L	215	Standard
	Cu	65	948.0	4.2	**0.3607**	0.016	4.4	ug/L	104	Standard
	Zn	66	2642.9	1.7	**1.7518**	0.018	1.1	ug/L	363	Standard
>	**Ge**	72	543000.4	1.8				ug/L	495142	Standard
	As	75	12.5	225.4	**0.0698**	0.023	32.5	ug/L	-50	Standard
	Se	82	15.8	49.7	**-0.0063**	0.066	1051.8	ug/L	14	Standard
	Se-1	77	45.3	17.1	**-0.0563**	0.096	170.3	ug/L	42	Standard
>	**Ga**	71	85.0	15.6				mg/L	42	Standard
	Rb	85	428.3	11.2				ug/L	17	Standard
	Y	89	460200.9	1.8				ug/L	417098	Standard
>	**Rh**	103	35.0	24.7				ug/L	13	Standard
	Mo	98	83.6	11.1	**0.0226**	0.003	14.3	ug/L	11	Standard
	Ag	107	112.7	14.2	**0.0027**	0.002	80.0	ug/L	68	Standard
	Cd	111	20.9	22.0	**0.0011**	0.002	176.9	mg/L	2	Standard
	Cd	114	53.5	39.5	**0.0073**	0.004	50.6	ug/L	12	Standard
>	**In**	115	649578.1	0.2				ug/L	587441	Standard
	Sn	118	553.3	9.5	**-0.0090**	0.008	92.4	ug/L	497	Standard
	Sb	123	558.9	31.9	**0.1041**	0.035	33.4	ug/L	78	Standard
	Ba	135	1064.4	0.7	**0.4543**	0.003	0.7	ug/L	24	Standard
	Ce	140	1928.5	4.3				ug/L	25	Standard
>	**Tb**	159	1049822.6	1.3				ug/L	939701	Standard
	Ho	165	40.0	33.1				ug/L	10	Standard
	Tl	203	40.7	35.8	**0.0026**	0.002	59.7	ug/L	4	Standard
	Tl	205	45.0	38.5	**0.0057**	0.002	36.9	ug/L	2	Standard
	Pb	206	372.0	6.6	**-0.0102**	0.004	38.7	ug/L	240	Standard
	Pb	207	294.7	6.9	**-0.0156**	0.004	25.6	ug/L	198	Standard
	Pb	208	1159.4	2.3	**-0.0199**	0.001	7.3	ug/L	883	Standard
	U	238	1206.0	0.9	**0.1490**	0.002	1.2	ug/L	3	Standard
>	**Bi**	209	598311.7	0.5				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.6400**	30.545	173.2	mg/L	0	Standard
Mg	24	363.3	29.0	**0.3711**	0.131	35.3	mg/L	37	Standard
K	39	63.3	27.7	**0.0157**	0.035	226.7	mg/L	38	Standard
Ca	43	110.0	12.0	**3.9202**	0.707	18.0	mg/L	10	Standard
Fe	54	190.5	10.6	**0.0117**	0.017	142.3	mg/L	179	Standard
Fe	57	268.3	12.0	**-0.2271**	0.110	48.6	mg/L	335	Standard
> **Sc-1**	45	65760.7	1.1				mg/L	61029	Standard
Cl	35	34122.4	1.0				ug/L	20195	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	2286.8	8.5				ug/L	1547	Standard
P	31	19529.2	1.3				ug/L	15286	Standard
S	34	2301.8	4.6				ug/L	1572	Standard
Sr	88	130.0	32.9				ug/L	73	Standard
C	12	83.3	6.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	60.8	35.4				mg/L	6	Standard
Ho-1	165	40.0	33.1				mg/L	10	Standard
Er	166	53.3	28.6				mg/L	13	Standard
I	127	5874.5	8.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		144.424	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.666	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.578
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		114.185
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 13:25:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	96295.4	4.3				ug/L	74699	Standard
	Be	9	56739.5	4.7	**50.0144**	1.617	3.2	ug/L	8	Standard
	Al	27	8198811.7	1.9	**43.2979**	1.271	2.9	ug/L	1493	Standard
	Sc	45	60020.3	2.0				ug/L	61029	Standard
	Ti	47	38068.4	0.4	**97.0435**	0.523	0.5	ug/L	35	Standard
	V	51	407671.2	1.0	**52.0137**	0.145	0.3	ug/L	1435	Standard
	Cr	52	382711.8	0.9	**48.9253**	0.135	0.3	ug/L	7635	Standard
	Cr	53	47653.2	2.5	**49.5394**	1.027	2.1	ug/L	363	Standard
	Mn	55	366963.7	3.6	**50.8236**	1.362	2.7	ug/L	747	Standard
	Co	59	380449.1	2.9	**55.6813**	1.097	2.0	ug/L	234	Standard
	Ni	60	94585.7	1.1	**48.7401**	0.435	0.9	ug/L	215	Standard
	Cu	65	94763.8	1.5	**49.1432**	0.553	1.1	ug/L	104	Standard
	Zn	66	56752.8	2.3	**49.7949**	0.707	1.4	ug/L	363	Standard
>	Ge	72	511914.0	0.9				ug/L	495142	Standard
	As	75	57985.2	1.9	**50.1285**	0.568	1.1	ug/L	-50	Standard
	Se	82	5989.4	2.5	**52.6418**	0.964	1.8	ug/L	14	Standard
	Se-1	77	3921.2	2.5	**51.3010**	0.802	1.6	ug/L	42	Standard
>	Ga	71	220.0	19.4				mg/L	42	Standard
	Rb	85	765.0	2.0				ug/L	17	Standard
	Y	89	446724.4	3.3				ug/L	417098	Standard
>	Rh	103	20.0	43.3				ug/L	13	Standard
	Mo	98	280984.3	2.1	**102.0498**	2.098	2.1	ug/L	11	Standard
	Ag	107	335763.8	0.9	**49.8677**	1.010	2.0	ug/L	68	Standard
	Cd	111	105816.2	1.8	**48.9835**	0.569	1.2	mg/L	2	Standard
	Cd	114	257781.1	1.6	**48.6563**	0.589	1.2	ug/L	12	Standard
>	In	115	606960.1	2.8				ug/L	587441	Standard
	Sn	118	295693.2	2.0	**48.9061**	0.749	1.5	ug/L	497	Standard
	Sb	123	236523.1	0.9	**49.0438**	0.901	1.8	ug/L	78	Standard
	Ba	135	99992.2	1.5	**47.2781**	0.609	1.3	ug/L	24	Standard
	Ce	140	91.7	6.3				ug/L	25	Standard
>	Tb	159	985978.7	1.6				ug/L	939701	Standard
	Ho	165	11.7	89.2				ug/L	10	Standard
	Tl	203	433708.5	1.0	**49.3829**	0.257	0.5	ug/L	4	Standard
	Tl	205	391770.8	1.1	**51.3967**	0.163	0.3	ug/L	2	Standard
	Pb	206	284957.7	0.7	**50.0002**	0.477	1.0	ug/L	240	Standard
	Pb	207	255175.6	1.7	**50.3910**	0.211	0.4	ug/L	198	Standard
	Pb	208	1010912.5	1.9	**50.5251**	0.466	0.9	ug/L	883	Standard
	U	238	378758.8	0.6	**51.6451**	0.416	0.8	ug/L	3	Standard
>	Bi	209	558275.4	1.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4168.9	2.3	**5.4065**	0.021	0.4	mg/L	37	Standard
K	39	1983.5	2.5	**4.3432**	0.044	1.0	mg/L	38	Standard
Ca	43	106.7	26.7	**4.3258**	1.829	42.3	mg/L	10	Standard
Fe	54	6165.0	5.0	**5.1771**	0.265	5.1	mg/L	179	Standard
Fe	57	1720.1	9.9	**4.8644**	0.466	9.6	mg/L	335	Standard
> **Sc-1**	45	60020.3	2.0				mg/L	61029	Standard
Cl	35	28213.0	5.7				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	1853.5	23.0				ug/L	1547	Standard
P	31	20223.5	3.5				ug/L	15286	Standard
S	34	2575.2	6.1				ug/L	1572	Standard
Sr	88	78.3	26.6				ug/L	73	Standard
C	12	100.0	34.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	9.2	116.5				mg/L	6	Standard
Ho-1	165	11.7	89.2				mg/L	10	Standard
Er	166	16.7	91.7				mg/L	13	Standard
I	127	2436.9	25.7				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	100.029		
	Al	27	86.596		
	Sc	45			
	Ti	47	97.044		
	V	51	104.027		
	Cr	52	97.851		
	Cr	53			
	Mn	55	101.647		
	Co	59	111.363		
	Ni	60	97.480		
	Cu	65	98.286		
	Zn	66	99.590		
>	Ge	72		103.387	
	As	75	100.257		
	Se	82	105.284		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	102.050		
Ag	107	99.735		
Cd	111	97.967		
Cd	114			
In	115		103.323	
Sn	118	97.812		
Sb	123	98.088		
Ba	135	94.556		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.766		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.050		
U	238	103.290		
Bi	209		106.544	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	
QC Std 6	Co	59	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 13:29:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	94691.7	1.8				ug/L	74699	Standard
	Be	9	76.7	106.2	**0.0755**	0.071	94.2	ug/L	8	Standard
	Al	27	36843.1	136.1	**0.1814**	0.263	145.0	ug/L	1493	Standard
	Sc	45	60632.8	2.3				ug/L	61029	Standard
	Ti	47	43.0	36.1	**-0.0010**	0.038	3637.8	ug/L	35	Standard
	V	51	1519.7	11.1	**-0.0035**	0.019	532.9	ug/L	1435	Standard
	Cr	52	7045.6	5.2	**-0.1157**	0.044	37.8	ug/L	7635	Standard
	Cr	53	391.7	11.6	**0.0747**	0.044	59.2	ug/L	363	Standard
	Mn	55	7226.9	125.7	**0.8342**	1.228	147.2	ug/L	747	Standard
	Co	59	517.7	90.4	**0.0371**	0.066	179.1	ug/L	234	Standard
	Ni	60	246.3	39.3	**0.0014**	0.048	3317.1	ug/L	215	Standard
	Cu	65	191.7	56.6	**-0.0057**	0.054	949.5	ug/L	104	Standard
	Zn	66	417.3	10.8	**-0.0898**	0.036	40.1	ug/L	363	Standard
>	**Ge**	72	518398.0	1.4				ug/L	495142	Standard
	As	75	-30.5	76.0	**0.0334**	0.020	59.9	ug/L	-50	Standard
	Se	82	13.4	12.4	**-0.0212**	0.016	76.0	ug/L	14	Standard
	Se-1	77	53.3	15.9	**0.0746**	0.106	141.7	ug/L	42	Standard
>	**Ga**	71	155.0	18.0				mg/L	42	Standard
	Rb	85	21.7	93.3				ug/L	17	Standard
	Y	89	436745.4	0.7				ug/L	417098	Standard
>	**Rh**	103	15.0	33.3				ug/L	13	Standard
	Mo	98	315.2	32.1	**0.1069**	0.036	33.6	ug/L	11	Standard
	Ag	107	222.7	75.6	**0.0196**	0.025	125.0	ug/L	68	Standard
	Cd	111	57.8	114.5	**0.0184**	0.030	163.6	mg/L	2	Standard
	Cd	114	159.0	130.1	**0.0274**	0.038	140.1	ug/L	12	Standard
>	**In**	115	616374.3	0.2				ug/L	587441	Standard
	Sn	118	845.0	17.1	**0.0432**	0.024	55.2	ug/L	497	Standard
	Sb	123	593.6	13.2	**0.1170**	0.016	13.9	ug/L	78	Standard
	Ba	135	102.7	102.4	**0.0317**	0.049	153.8	ug/L	24	Standard
	Ce	140	58.3	55.8				ug/L	25	Standard
>	**Tb**	159	995160.6	1.6				ug/L	939701	Standard
	Ho	165	15.0	100.0				ug/L	10	Standard
	Tl	203	219.0	114.2	**0.0226**	0.028	122.3	ug/L	4	Standard
	Tl	205	381.7	141.6	**0.0491**	0.069	140.6	ug/L	2	Standard
	Pb	206	388.0	38.6	**-0.0042**	0.025	597.1	ug/L	240	Standard
	Pb	207	336.0	35.9	**-0.0047**	0.023	485.4	ug/L	198	Standard
	Pb	208	2012.1	79.6	**0.0246**	0.078	315.7	ug/L	883	Standard
	U	238	395.3	145.1	**0.0482**	0.076	157.9	ug/L	3	Standard
>	**Bi**	209	567355.9	1.2				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	58.3	34.6	**0.0111**	0.028	248.5	mg/L	37	Standard
K	39	40.0	12.5	**-0.0251**	0.012	46.0	mg/L	38	Standard
Ca	43	31.7	9.1	**-0.5078**	0.213	41.9	mg/L	10	Standard
Fe	54	155.5	6.6	**-0.0056**	0.009	155.5	mg/L	179	Standard
Fe	57	230.0	7.8	**-0.2862**	0.078	27.3	mg/L	335	Standard
> **Sc-1**	45	60632.8	2.3				mg/L	61029	Standard
Cl	35	27178.4	0.6				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	1736.8	2.2				ug/L	1547	Standard
P	31	19502.5	1.8				ug/L	15286	Standard
S	34	2301.8	3.7				ug/L	1572	Standard
Sr	88	75.0	26.7				ug/L	73	Standard
C	12	86.7	17.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	12.7	93.2				mg/L	6	Standard
Ho-1	165	15.0	100.0				mg/L	10	Standard
Er	166	13.3	86.6				mg/L	13	Standard
I	127	1935.1	25.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.697	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.925
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	108.277
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606098605
Sample Date/Time: Wednesday, June 29, 2016 13:32:14
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	93251.1	1.7				ug/L	74699	Standard
	Be	9	326.7	10.4	**0.3052**	0.035	11.6	ug/L	8	Standard
	Al	27	19740200.2	0.7	**107.5996**	1.185	1.1	ug/L	1493	Standard
	Sc	45	60365.1	2.3				ug/L	61029	Standard
	Ti	47	450.3	3.0	**1.0603**	0.030	2.8	ug/L	35	Standard
	V	51	4644.9	8.0	**0.4097**	0.047	11.5	ug/L	1435	Standard
	Cr	52	12104.2	0.3	**0.5838**	0.010	1.7	ug/L	7635	Standard
	Cr	53	928.4	3.1	**0.6586**	0.026	3.9	ug/L	363	Standard
	Mn	55	98559.3	4.8	**13.7841**	0.650	4.7	ug/L	747	Standard
	Co	59	3296.0	4.6	**0.4539**	0.021	4.7	ug/L	234	Standard
	Ni	60	3163.0	1.8	**1.5389**	0.038	2.4	ug/L	215	Standard
	Cu	65	32310.7	0.8	**16.9827**	0.169	1.0	ug/L	104	Standard
	Zn	66	47105.4	0.5	**41.9893**	0.365	0.9	ug/L	363	Standard
>	**Ge**	72	503086.3	0.5				ug/L	495142	Standard
	As	75	294.8	15.7	**0.3186**	0.040	12.5	ug/L	-50	Standard
	Se	82	52.3	21.7	**0.3309**	0.101	30.6	ug/L	14	Standard
	Se-1	77	70.7	11.4	**0.3303**	0.114	34.4	ug/L	42	Standard
>	**Ga**	71	295.0	9.0				mg/L	42	Standard
	Rb	85	9109.4	3.7				ug/L	17	Standard
	Y	89	448266.6	2.2				ug/L	417098	Standard
>	**Rh**	103	83.3	28.4				ug/L	13	Standard
	Mo	98	1843.0	5.2	**0.6500**	0.034	5.3	ug/L	11	Standard
	Ag	107	226.3	74.5	**0.0200**	0.024	121.9	ug/L	68	Standard
	Cd	111	104.1	84.7	**0.0392**	0.040	101.3	mg/L	2	Standard
	Cd	114	254.7	74.3	**0.0449**	0.035	77.3	ug/L	12	Standard
>	**In**	115	619535.9	1.6				ug/L	587441	Standard
	Sn	118	1750.1	13.2	**0.1895**	0.038	20.1	ug/L	497	Standard
	Sb	123	790.9	17.9	**0.1564**	0.028	18.0	ug/L	78	Standard
	Ba	135	72683.9	1.3	**33.6664**	0.969	2.9	ug/L	24	Standard
	Ce	140	5139.2	3.4				ug/L	25	Standard
>	**Tb**	159	985815.7	2.2				ug/L	939701	Standard
	Ho	165	223.3	9.3				ug/L	10	Standard
	Tl	203	317.0	96.7	**0.0353**	0.035	100.6	ug/L	4	Standard
	Tl	205	193.3	47.9	**0.0263**	0.012	46.4	ug/L	2	Standard
	Pb	206	1382.4	8.3	**0.1795**	0.018	10.0	ug/L	240	Standard
	Pb	207	1152.7	10.0	**0.1653**	0.022	13.1	ug/L	198	Standard
	Pb	208	4722.3	7.7	**0.1699**	0.018	10.3	ug/L	883	Standard
	U	238	9861.9	3.5	**1.3841**	0.043	3.1	ug/L	3	Standard
>	**Bi**	209	540670.7	1.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	6986.6	1.5	**9.0573**	0.310	3.4	mg/L	37	Standard
K	39	308.3	17.9	**0.5733**	0.109	19.0	mg/L	38	Standard
Ca	43	606.7	4.1	**36.2577**	2.485	6.9	mg/L	10	Standard
Fe	54	348.6	15.4	**0.1605**	0.045	28.3	mg/L	179	Standard
Fe	57	585.0	8.4	**0.9378**	0.194	20.7	mg/L	335	Standard
> **Sc-1**	45	60365.1	2.3				mg/L	61029	Standard
Cl	35	31561.5	3.4				ug/L	20195	Standard
Kr	83	0.7	173.2				ug/L	4	Standard
Br	81	4964.2	11.3				ug/L	1547	Standard
P	31	20053.3	1.8				ug/L	15286	Standard
S	34	2155.2	4.8				ug/L	1572	Standard
Sr	88	343.3	18.3				ug/L	73	Standard
C	12	163.3	34.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	294.3	16.7				mg/L	6	Standard
Ho-1	165	223.3	9.3				mg/L	10	Standard
Er	166	120.0	16.7				mg/L	13	Standard
I	127	9371.2	3.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.836	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.604	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.463
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.184
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606098607
Sample Date/Time: Wednesday, June 29, 2016 13:35:26
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	96566.8	1.9				ug/L	74699	Standard
	Be	9	85.0	29.4	**0.0821**	0.021	25.7	ug/L	8	Standard
	Al	27	20333697.9	3.0	**107.0230**	2.931	2.7	ug/L	1493	Standard
	Sc	45	62230.9	2.2				ug/L	61029	Standard
	Ti	47	287.7	7.2	**0.6119**	0.056	9.2	ug/L	35	Standard
	V	51	3941.3	2.6	**0.3001**	0.017	5.7	ug/L	1435	Standard
	Cr	52	11512.0	2.6	**0.4518**	0.053	11.8	ug/L	7635	Standard
	Cr	53	838.4	4.6	**0.5317**	0.044	8.4	ug/L	363	Standard
	Mn	55	502202.8	0.8	**68.3542**	0.721	1.1	ug/L	747	Standard
	Co	59	4570.7	1.4	**0.6201**	0.010	1.6	ug/L	234	Standard
	Ni	60	3293.0	0.7	**1.5464**	0.014	0.9	ug/L	215	Standard
	Cu	65	6694.1	1.0	**3.3123**	0.070	2.1	ug/L	104	Standard
	Zn	66	11579.4	0.2	**9.6129**	0.092	1.0	ug/L	363	Standard
>	**Ge**	72	521399.1	1.0				ug/L	495142	Standard
	As	75	65.2	31.2	**0.1148**	0.017	14.9	ug/L	-50	Standard
	Se	82	28.9	16.0	**0.1117**	0.041	36.5	ug/L	14	Standard
	Se-1	77	63.7	8.1	**0.2056**	0.068	33.2	ug/L	42	Standard
>	**Ga**	71	136.7	35.5				mg/L	42	Standard
	Rb	85	5054.2	2.4				ug/L	17	Standard
	Y	89	452894.0	2.8				ug/L	417098	Standard
>	**Rh**	103	165.0	28.9				ug/L	13	Standard
	Mo	98	1211.0	1.7	**0.4303**	0.008	1.9	ug/L	11	Standard
	Ag	107	106.3	11.0	**0.0028**	0.002	64.6	ug/L	68	Standard
	Cd	111	72.3	5.5	**0.0253**	0.002	7.2	mg/L	2	Standard
	Cd	114	189.4	18.5	**0.0333**	0.006	19.3	ug/L	12	Standard
>	**In**	115	612132.4	0.4				ug/L	587441	Standard
	Sn	118	1080.0	6.7	**0.0827**	0.012	15.0	ug/L	497	Standard
	Sb	123	567.1	13.2	**0.1124**	0.015	13.5	ug/L	78	Standard
	Ba	135	35457.1	0.1	**16.6089**	0.050	0.3	ug/L	24	Standard
	Ce	140	1880.1	4.7				ug/L	25	Standard
>	**Tb**	159	996852.4	0.7				ug/L	939701	Standard
	Ho	165	58.3	17.8				ug/L	10	Standard
	Tl	203	60.0	16.9	**0.0051**	0.001	23.4	ug/L	4	Standard
	Tl	205	60.0	16.7	**0.0081**	0.001	15.8	ug/L	2	Standard
	Pb	206	636.0	0.7	**0.0415**	0.001	3.4	ug/L	240	Standard
	Pb	207	529.0	3.2	**0.0355**	0.003	9.7	ug/L	198	Standard
	Pb	208	2291.4	2.0	**0.0416**	0.003	7.7	ug/L	883	Standard
	U	238	20180.8	2.1	**2.7702**	0.079	2.9	ug/L	3	Standard
>	**Bi**	209	553749.9	0.8				ug/L	523984	Standard

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Na	23	5.0	100.0	**57.0696**	57.922	101.5	mg/L	0	Standard
Mg	24	5551.0	3.6	**6.9630**	0.244	3.5	mg/L	37	Standard
K	39	316.7	11.2	**0.5727**	0.081	14.1	mg/L	38	Standard
Ca	43	636.7	7.9	**36.9594**	3.698	10.0	mg/L	10	Standard
Fe	54	176.9	14.5	**0.0085**	0.018	212.8	mg/L	179	Standard
Fe	57	531.7	3.6	**0.6989**	0.084	12.0	mg/L	335	Standard
> **Sc-1**	45	62230.9	2.2				mg/L	61029	Standard
Cl	35	31386.5	1.7				ug/L	20195	Standard
Kr	83	2.3	89.2				ug/L	4	Standard
Br	81	3093.6	2.6				ug/L	1547	Standard
P	31	20912.8	5.9				ug/L	15286	Standard
S	34	2228.5	4.5				ug/L	1572	Standard
Sr	88	703.3	5.1				ug/L	73	Standard
C	12	126.7	40.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	102.2	30.1				mg/L	6	Standard
Ho-1	165	58.3	17.8				mg/L	10	Standard
Er	166	93.3	6.2				mg/L	13	Standard
I	127	29892.9	5.9				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		129.275	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		105.303	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.203
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.681
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606098609
Sample Date/Time: Wednesday, June 29, 2016 13:38:37
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	96550.0	0.2				ug/L	74699	Standard
	Be	9	53.3	14.3	**0.0545**	0.007	12.5	ug/L	8	Standard
	Al	27	22878376.4	1.6	**120.4307**	1.945	1.6	ug/L	1493	Standard
	Sc	45	62031.7	0.8				ug/L	61029	Standard
	Ti	47	1850.4	1.6	**4.6226**	0.192	4.2	ug/L	35	Standard
	V	51	5461.8	0.6	**0.5052**	0.022	4.3	ug/L	1435	Standard
	Cr	52	13396.9	1.2	**0.7280**	0.058	8.0	ug/L	7635	Standard
	Cr	53	1881.8	4.3	**1.6444**	0.138	8.4	ug/L	363	Standard
	Mn	55	79733.3	1.7	**10.9451**	0.135	1.2	ug/L	747	Standard
	Co	59	2496.2	2.4	**0.3289**	0.007	2.0	ug/L	234	Standard
	Ni	60	4821.8	0.8	**2.3714**	0.068	2.9	ug/L	215	Standard
	Cu	65	4208.3	2.7	**2.0873**	0.088	4.2	ug/L	104	Standard
	Zn	66	20900.1	0.5	**18.0858**	0.567	3.1	ug/L	363	Standard
>	**Ge**	72	511251.4	2.6				ug/L	495142	Standard
	As	75	201.6	14.3	**0.2338**	0.023	9.7	ug/L	-50	Standard
	Se	82	54.1	5.4	**0.3394**	0.016	4.7	ug/L	14	Standard
	Se-1	77	103.0	11.2	**0.7418**	0.124	16.8	ug/L	42	Standard
>	**Ga**	71	510.0	8.0				mg/L	42	Standard
	Rb	85	13392.6	2.9				ug/L	17	Standard
	Y	89	437578.5	1.9				ug/L	417098	Standard
>	**Rh**	103	115.0	21.7				ug/L	13	Standard
	Mo	98	379.6	2.6	**0.1321**	0.004	2.9	ug/L	11	Standard
	Ag	107	107.7	0.5	**0.0031**	0.000	8.0	ug/L	68	Standard
	Cd	111	160.7	1.3	**0.0664**	0.001	1.0	mg/L	2	Standard
	Cd	114	395.9	2.3	**0.0726**	0.002	3.0	ug/L	12	Standard
>	**In**	115	607119.7	1.0				ug/L	587441	Standard
	Sn	118	1270.1	2.5	**0.1157**	0.007	5.8	ug/L	497	Standard
	Sb	123	941.4	6.3	**0.1909**	0.012	6.2	ug/L	78	Standard
	Ba	135	18081.1	0.3	**8.5321**	0.064	0.8	ug/L	24	Standard
	Ce	140	9564.7	2.3				ug/L	25	Standard
>	**Tb**	159	994932.9	1.3				ug/L	939701	Standard
	Ho	165	368.3	5.1				ug/L	10	Standard
	Tl	203	147.3	4.5	**0.0153**	0.001	4.3	ug/L	4	Standard
	Tl	205	150.0	15.3	**0.0202**	0.003	16.2	ug/L	2	Standard
	Pb	206	1807.1	1.2	**0.2512**	0.001	0.3	ug/L	240	Standard
	Pb	207	1489.4	1.7	**0.2291**	0.005	2.2	ug/L	198	Standard
	Pb	208	6035.1	2.4	**0.2326**	0.004	1.7	ug/L	883	Standard
	U	238	2872.6	2.3	**0.3933**	0.005	1.2	ug/L	3	Standard
>	**Bi**	209	549776.1	1.1				ug/L	523984	Standard

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Na	23	6.7	114.6	**75.5001**	86.744	114.9	mg/L	0	Standard
Mg	24	5847.8	3.3	**7.3629**	0.301	4.1	mg/L	37	Standard
K	39	155.0	19.6	**0.2229**	0.066	29.5	mg/L	38	Standard
Ca	43	803.4	3.4	**47.4095**	2.024	4.3	mg/L	10	Standard
Fe	54	459.0	5.6	**0.2447**	0.024	9.9	mg/L	179	Standard
Fe	57	691.7	11.1	**1.2400**	0.273	22.0	mg/L	335	Standard
Sc-1	45	62031.7	0.8				mg/L	61029	Standard
Cl	35	35055.2	1.5				ug/L	20195	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	8335.6	0.3				ug/L	1547	Standard
P	31	19207.2	4.0				ug/L	15286	Standard
S	34	2091.8	7.3				ug/L	1572	Standard
Sr	88	440.0	15.9				ug/L	73	Standard
C	12	146.7	7.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	580.9	19.4				mg/L	6	Standard
Ho-1	165	368.3	5.1				mg/L	10	Standard
Er	166	330.0	13.9				mg/L	13	Standard
I	127	13649.5	1.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		129.252	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.253	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.350
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.922
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606098611
Sample Date/Time: Wednesday, June 29, 2016 13:41:50
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	94928.2	1.7				ug/L	74699	Standard
	Be	9	611.7	2.1	**0.5543**	0.002	0.4	ug/L	8	Standard
	Al	27	35531075.2	1.8	**190.3104**	6.477	3.4	ug/L	1493	Standard
	Sc	45	58926.0	1.1				ug/L	61029	Standard
	Ti	47	1221.7	3.3	**3.0767**	0.071	2.3	ug/L	35	Standard
	V	51	7317.6	1.4	**0.7622**	0.017	2.2	ug/L	1435	Standard
	Cr	52	16086.9	1.7	**1.1219**	0.012	1.1	ug/L	7635	Standard
	Cr	53	9996.6	2.0	**10.3612**	0.096	0.9	ug/L	363	Standard
	Mn	55	583301.8	0.5	**82.6724**	0.812	1.0	ug/L	747	Standard
	Co	59	14960.7	0.8	**2.2024**	0.031	1.4	ug/L	234	Standard
	Ni	60	6882.6	4.3	**3.5089**	0.114	3.2	ug/L	215	Standard
	Cu	65	67223.1	1.5	**35.5977**	0.129	0.4	ug/L	104	Standard
	Zn	66	37202.6	1.0	**33.2122**	0.242	0.7	ug/L	363	Standard
>	**Ge**	72	500908.0	1.1				ug/L	495142	Standard
	As	75	1307.8	5.6	**1.2134**	0.054	4.4	ug/L	-50	Standard
	Se	82	362.7	2.0	**3.1282**	0.043	1.4	ug/L	14	Standard
	Se-1	77	555.0	5.1	**6.8873**	0.307	4.5	ug/L	42	Standard
>	**Ga**	71	435.0	11.9				mg/L	42	Standard
	Rb	85	18344.4	2.4				ug/L	17	Standard
	Y	89	436166.7	1.7				ug/L	417098	Standard
>	**Rh**	103	445.0	7.4				ug/L	13	Standard
	Mo	98	3054.9	0.8	**1.1522**	0.023	2.0	ug/L	11	Standard
	Ag	107	121.7	12.3	**0.0060**	0.002	41.3	ug/L	68	Standard
	Cd	111	41.7	14.4	**0.0123**	0.003	24.8	mg/L	2	Standard
	Cd	114	142.6	14.6	**0.0260**	0.004	14.4	ug/L	12	Standard
>	**In**	115	581588.5	1.2				ug/L	587441	Standard
	Sn	118	2201.8	2.3	**0.2861**	0.011	3.9	ug/L	497	Standard
	Sb	123	1347.5	5.7	**0.2874**	0.019	6.6	ug/L	78	Standard
	Ba	135	63997.2	1.5	**31.5730**	0.849	2.7	ug/L	24	Standard
	Ce	140	22939.0	3.1				ug/L	25	Standard
>	**Tb**	159	946929.2	0.6				ug/L	939701	Standard
	Ho	165	348.3	12.2				ug/L	10	Standard
	Tl	203	270.7	7.5	**0.0312**	0.002	6.9	ug/L	4	Standard
	Tl	205	231.7	2.5	**0.0327**	0.001	2.0	ug/L	2	Standard
	Pb	206	3400.0	1.8	**0.5672**	0.008	1.4	ug/L	240	Standard
	Pb	207	2794.6	0.7	**0.5207**	0.008	1.5	ug/L	198	Standard
	Pb	208	11397.0	1.2	**0.5356**	0.008	1.6	ug/L	883	Standard
	U	238	7265.4	1.1	**1.0543**	0.007	0.7	ug/L	3	Standard
>	**Bi**	209	522379.2	0.9				ug/L	523984	Standard

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Na	23	10.0	50.0	**119.8009**	60.997	50.9	mg/L	0	Standard
Mg	24	10421.9	2.0	**13.8711**	0.425	3.1	mg/L	37	Standard
K	39	453.3	5.1	**0.9237**	0.053	5.7	mg/L	38	Standard
Ca	43	1046.7	6.1	**65.9862**	4.937	7.5	mg/L	10	Standard
Fe	54	728.6	2.4	**0.5015**	0.016	3.2	mg/L	179	Standard
Fe	57	860.0	12.2	**1.9559**	0.399	20.4	mg/L	335	Standard
> **Sc-1**	45	58926.0	1.1				mg/L	61029	Standard
Cl	35	32129.4	1.2				ug/L	20195	Standard
Kr	83	1.0	0.0				ug/L	4	Standard
Br	81	75514.4	2.1				ug/L	1547	Standard
P	31	20090.0	4.4				ug/L	15286	Standard
S	34	2098.5	7.9				ug/L	1572	Standard
Sr	88	1583.4	4.7				ug/L	73	Standard
C	12	130.0	7.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	561.0	7.3				mg/L	6	Standard
Ho-1	165	348.3	12.2				mg/L	10	Standard
Er	166	256.7	6.0				mg/L	13	Standard
I	127	84570.2	9.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		127.081	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.164	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.004
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.694
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606098613
Sample Date/Time: Wednesday, June 29, 2016 13:45:02
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	101811.1	2.5				ug/L	74699	Standard
	Be	9	780.0	6.8	**0.6573**	0.030	4.5	ug/L	8	Standard
	Al	27	69460342.3	2.9	**346.7492**	1.873	0.5	ug/L	1493	Standard
	Sc	45	66852.2	1.8				ug/L	61029	Standard
	Ti	47	16395.2	2.4	**40.4139**	0.750	1.9	ug/L	35	Standard
	V	51	44929.4	0.9	**5.3782**	0.102	1.9	ug/L	1435	Standard
	Cr	52	38038.0	1.4	**3.7847**	0.045	1.2	ug/L	7635	Standard
	Cr	53	5357.6	0.6	**5.1013**	0.082	1.6	ug/L	363	Standard
	Mn	55	1205027.8	2.1	**162.0424**	5.610	3.5	ug/L	747	Standard
	Co	59	15267.0	2.9	**2.1291**	0.080	3.8	ug/L	234	Standard
	Ni	60	13379.6	2.6	**6.5697**	0.065	1.0	ug/L	215	Standard
	Cu	65	74766.0	1.3	**37.5331**	0.708	1.9	ug/L	104	Standard
	Zn	66	182914.0	1.7	**156.4214**	2.327	1.5	ug/L	363	Standard
>	**Ge**	72	528583.9	2.0				ug/L	495142	Standard
	As	75	2539.4	2.2	**2.1832**	0.013	0.6	ug/L	-50	Standard
	Se	82	108.7	5.6	**0.7905**	0.071	9.0	ug/L	14	Standard
	Se-1	77	150.3	9.2	**1.3050**	0.161	12.3	ug/L	42	Standard
>	**Ga**	71	5017.5	0.9				mg/L	42	Standard
	Rb	85	95755.1	2.6				ug/L	17	Standard
	Y	89	484844.4	1.2				ug/L	417098	Standard
>	**Rh**	103	451.7	17.2				ug/L	13	Standard
	Mo	98	2711.0	1.7	**0.9675**	0.010	1.1	ug/L	11	Standard
	Ag	107	547.0	8.0	**0.0673**	0.005	7.7	ug/L	68	Standard
	Cd	111	100.9	10.4	**0.0383**	0.005	14.0	mg/L	2	Standard
	Cd	114	263.2	6.1	**0.0470**	0.003	5.8	ug/L	12	Standard
>	**In**	115	613966.8	2.2				ug/L	587441	Standard
	Sn	118	1991.8	3.6	**0.2317**	0.015	6.6	ug/L	497	Standard
	Sb	123	971.4	9.0	**0.1947**	0.014	7.1	ug/L	78	Standard
	Ba	135	97214.2	0.8	**45.4386**	0.665	1.5	ug/L	24	Standard
	Ce	140	163522.7	0.6				ug/L	25	Standard
>	**Tb**	159	1011575.1	2.5				ug/L	939701	Standard
	Ho	165	4682.4	4.2				ug/L	10	Standard
	Tl	203	573.7	3.0	**0.0642**	0.003	4.6	ug/L	4	Standard
	Tl	205	525.0	7.2	**0.0698**	0.005	7.8	ug/L	2	Standard
	Pb	206	15938.7	1.8	**2.7562**	0.018	0.6	ug/L	240	Standard
	Pb	207	13053.6	0.6	**2.5367**	0.043	1.7	ug/L	198	Standard
	Pb	208	53401.0	1.9	**2.6245**	0.013	0.5	ug/L	883	Standard
	U	238	38818.0	2.5	**5.3391**	0.057	1.1	ug/L	3	Standard
>	**Bi**	209	553002.2	2.3				ug/L	523984	Standard

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Na	23	8.3	34.6	**88.0394**	31.556	35.8	mg/L	0	Standard
Mg	24	10193.4	4.3	**11.9448**	0.378	3.2	mg/L	37	Standard
K	39	798.4	2.0	**1.4974**	0.060	4.0	mg/L	38	Standard
Ca	43	1498.4	4.4	**83.9112**	4.508	5.4	mg/L	10	Standard
Fe	54	4251.3	3.0	**3.1535**	0.141	4.5	mg/L	179	Standard
Fe	57	1956.8	0.6	**4.9983**	0.081	1.6	mg/L	335	Standard
Sc-1	45	66852.2	1.8				mg/L	61029	Standard
Cl	35	38555.7	1.3				ug/L	20195	Standard
Kr	83	2.7	78.1				ug/L	4	Standard
Br	81	16405.6	4.1				ug/L	1547	Standard
P	31	22243.0	1.3				ug/L	15286	Standard
S	34	1961.8	3.3				ug/L	1572	Standard
Sr	88	2096.8	8.9				ug/L	73	Standard
C	12	170.0	21.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	107.9				mg/L	3	Standard
Dy	164	7687.7	5.1				mg/L	6	Standard
Ho-1	165	4682.4	4.2				mg/L	10	Standard
Er	166	4197.2	1.1				mg/L	13	Standard
I	127	34873.4	0.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		136.295	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.754	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.515
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.538
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Zn 66 Upper, S, EEE	Zn	66

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Method 6020 - Summary Report

Sample ID: L1606098615
Sample Date/Time: Wednesday, June 29, 2016 13:48:13
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	104439.3	4.8				ug/L	74699	Standard
	Be	9	536.7	12.4	**0.4427**	0.037	8.4	ug/L	8	Standard
	Al	27	77862989.2	8.3	**378.5121**	14.291	3.8	ug/L	1493	Standard
	Sc	45	58982.2	11.3				ug/L	61029	Standard
	Ti	47	2461.2	11.7	**6.5990**	0.434	6.6	ug/L	35	Standard
	V	51	4945.2	8.0	**0.4817**	0.017	3.5	ug/L	1435	Standard
	Cr	52	13134.4	7.3	**0.8107**	0.065	8.0	ug/L	7635	Standard
	Cr	53	1810.1	8.3	**1.6977**	0.117	6.9	ug/L	363	Standard
	Mn	55	1145096.1	8.2	**169.9719**	4.564	2.7	ug/L	747	Standard
	Co	59	4019.2	11.3	**0.5913**	0.032	5.4	ug/L	234	Standard
	Ni	60	7177.1	13.9	**3.8310**	0.314	8.2	ug/L	215	Standard
	Cu	65	41403.8	8.7	**22.8999**	0.588	2.6	ug/L	104	Standard
	Zn	66	43831.2	7.7	**41.0562**	0.750	1.8	ug/L	363	Standard
>	**Ge**	72	478398.7	6.6				ug/L	495142	Standard
	As	75	638.2	9.5	**0.6495**	0.045	6.9	ug/L	-50	Standard
	Se	82	102.9	17.3	**0.8353**	0.172	20.6	ug/L	14	Standard
	Se-1	77	94.0	19.4	**0.7027**	0.185	26.4	ug/L	42	Standard
>	**Ga**	71	463.3	11.0				mg/L	42	Standard
	Rb	85	23055.9	7.7				ug/L	17	Standard
	Y	89	432649.5	7.6				ug/L	417098	Standard
>	**Rh**	103	1188.4	10.3				ug/L	13	Standard
	Mo	98	1350.9	6.9	**0.5044**	0.013	2.5	ug/L	11	Standard
	Ag	107	139.0	6.4	**0.0086**	0.002	19.3	ug/L	68	Standard
	Cd	111	44.6	6.8	**0.0137**	0.002	16.4	mg/L	2	Standard
	Cd	114	129.2	31.8	**0.0237**	0.010	43.4	ug/L	12	Standard
>	**In**	115	583863.5	7.1				ug/L	587441	Standard
	Sn	118	2513.5	5.1	**0.3387**	0.012	3.5	ug/L	497	Standard
	Sb	123	705.1	6.8	**0.1478**	0.002	1.6	ug/L	78	Standard
	Ba	135	26452.2	7.2	**12.9866**	0.138	1.1	ug/L	24	Standard
	Ce	140	27398.2	9.1				ug/L	25	Standard
>	**Tb**	159	958605.6	6.1				ug/L	939701	Standard
	Ho	165	645.0	4.0				ug/L	10	Standard
	Tl	203	134.0	9.5	**0.0146**	0.001	7.1	ug/L	4	Standard
	Tl	205	118.3	6.5	**0.0169**	0.002	13.2	ug/L	2	Standard
	Pb	206	2508.9	7.1	**0.4009**	0.002	0.4	ug/L	240	Standard
	Pb	207	1976.5	6.7	**0.3487**	0.007	2.0	ug/L	198	Standard
	Pb	208	8160.9	6.7	**0.3634**	0.004	1.2	ug/L	883	Standard
	U	238	17292.6	7.2	**2.5205**	0.006	0.2	ug/L	3	Standard
>	**Bi**	209	521380.1	7.3				ug/L	523984	Standard

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Na	23	15.0	57.7	**176.9361**	92.757	52.4	mg/L	0	Standard
Mg	24	28440.1	8.6	**38.0068**	1.323	3.5	mg/L	37	Standard
K	39	673.3	1.9	**1.4418**	0.213	14.8	mg/L	38	Standard
Ca	43	1596.8	5.0	**102.4296**	8.312	8.1	mg/L	10	Standard
Fe	54	1077.2	5.0	**0.8118**	0.070	8.7	mg/L	179	Standard
Fe	57	1203.4	10.1	**3.1714**	0.327	10.3	mg/L	335	Standard
> **Sc-1**	45	58982.2	11.3				mg/L	61029	Standard
Cl	35	41482.2	7.1				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	15648.1	7.3				ug/L	1547	Standard
P	31	20014.9	6.8				ug/L	15286	Standard
S	34	1913.5	9.5				ug/L	1572	Standard
Sr	88	5429.3	11.3				ug/L	73	Standard
C	12	203.3	27.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	3	Standard
Dy	164	1127.2	20.3				mg/L	6	Standard
Ho-1	165	645.0	4.0				mg/L	10	Standard
Er	166	546.7	6.4				mg/L	13	Standard
I	127	112969.0	6.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		139.814	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.618	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.391
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.503
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606098617
Sample Date/Time: Wednesday, June 29, 2016 13:51:25
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	95101.0	2.9				ug/L	74699	Standard
	Be	9	61.7	9.4	**0.0626**	0.004	5.8	ug/L	8	Standard
	Al	27	16761639.5	0.8	**89.6118**	1.975	2.2	ug/L	1493	Standard
	Sc	45	53828.8	0.6				ug/L	61029	Standard
	Ti	47	756.4	12.3	**2.0144**	0.253	12.6	ug/L	35	Standard
	V	51	3040.4	3.6	**0.2328**	0.013	5.5	ug/L	1435	Standard
	Cr	52	11892.0	0.9	**0.6842**	0.022	3.3	ug/L	7635	Standard
	Cr	53	1066.7	2.7	**0.8986**	0.036	4.1	ug/L	363	Standard
	Mn	55	57447.7	1.9	**8.6332**	0.089	1.0	ug/L	747	Standard
	Co	59	1276.7	2.2	**0.1685**	0.005	2.7	ug/L	234	Standard
	Ni	60	2114.5	5.4	**1.0778**	0.056	5.2	ug/L	215	Standard
	Cu	65	5578.0	1.5	**3.0859**	0.022	0.7	ug/L	104	Standard
	Zn	66	8715.8	0.2	**8.0380**	0.061	0.8	ug/L	363	Standard
>	**Ge**	72	465226.7	0.9				ug/L	495142	Standard
	As	75	386.7	5.7	**0.4269**	0.018	4.2	ug/L	-50	Standard
	Se	82	42.7	8.0	**0.2761**	0.036	13.2	ug/L	14	Standard
	Se-1	77	67.0	16.1	**0.3532**	0.150	42.5	ug/L	42	Standard
>	**Ga**	71	183.3	18.2				mg/L	42	Standard
	Rb	85	8882.6	2.7				ug/L	17	Standard
	Y	89	409246.0	2.8				ug/L	417098	Standard
>	**Rh**	103	295.0	13.6				ug/L	13	Standard
	Mo	98	1514.9	3.6	**0.5995**	0.027	4.5	ug/L	11	Standard
	Ag	107	86.3	3.5	**0.0012**	0.001	48.9	ug/L	68	Standard
	Cd	111	45.4	6.6	**0.0152**	0.002	11.0	mg/L	2	Standard
	Cd	114	119.3	31.2	**0.0227**	0.008	33.9	ug/L	12	Standard
>	**In**	115	551838.0	2.1				ug/L	587441	Standard
	Sn	118	896.7	9.3	**0.0688**	0.017	24.4	ug/L	497	Standard
	Sb	123	476.3	5.5	**0.1045**	0.008	7.8	ug/L	78	Standard
	Ba	135	51101.0	1.7	**26.5634**	0.162	0.6	ug/L	24	Standard
	Ce	140	4162.2	9.3				ug/L	25	Standard
>	**Tb**	159	892953.9	1.2				ug/L	939701	Standard
	Ho	165	111.7	20.2				ug/L	10	Standard
	Tl	203	71.0	9.8	**0.0072**	0.001	12.5	ug/L	4	Standard
	Tl	205	50.0	10.0	**0.0075**	0.001	10.0	ug/L	2	Standard
	Pb	206	834.7	3.9	**0.0918**	0.006	7.0	ug/L	240	Standard
	Pb	207	668.0	3.0	**0.0768**	0.004	5.0	ug/L	198	Standard
	Pb	208	2813.8	1.3	**0.0825**	0.002	2.7	ug/L	883	Standard
	U	238	2276.2	2.7	**0.3405**	0.008	2.4	ug/L	3	Standard
>	**Bi**	209	502274.9	0.4				ug/L	523984	Standard

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Na	23	1.7	173.2	**21.6273**	37.451	173.2	mg/L	0	Standard
Mg	24	11037.4	4.7	**16.0863**	0.689	4.3	mg/L	37	Standard
K	39	470.0	10.1	**1.0642**	0.126	11.9	mg/L	38	Standard
Ca	43	383.3	8.5	**24.9281**	2.309	9.3	mg/L	10	Standard
Fe	54	307.3	17.1	**0.1571**	0.051	32.4	mg/L	179	Standard
Fe	57	490.0	5.4	**0.8143**	0.108	13.3	mg/L	335	Standard
> **Sc-1**	45	53828.8	0.6				mg/L	61029	Standard
Cl	35	29673.0	1.2				ug/L	20195	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	4564.0	9.2				ug/L	1547	Standard
P	31	17653.6	5.5				ug/L	15286	Standard
S	34	1876.8	5.1				ug/L	1572	Standard
Sr	88	1206.7	6.6				ug/L	73	Standard
C	12	186.7	18.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	3	Standard
Dy	164	173.0	22.9				mg/L	6	Standard
Ho-1	165	111.7	20.2				mg/L	10	Standard
Er	166	76.7	30.1				mg/L	13	Standard
I	127	8810.9	16.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		127.313	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.958	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.939
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.857
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606098619
Sample Date/Time: Wednesday, June 29, 2016 13:54:36
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	96013.3	1.6				ug/L	74699	Standard
	Be	9	225.0	13.5	**0.2062**	0.024	11.6	ug/L	8	Standard
	Al	27	3833929.3	1.4	**20.2847**	0.231	1.1	ug/L	1493	Standard
	Sc	45	56757.9	4.8				ug/L	61029	Standard
	Ti	47	657.0	3.0	**1.6551**	0.023	1.4	ug/L	35	Standard
	V	51	6468.0	2.1	**0.6763**	0.022	3.3	ug/L	1435	Standard
	Cr	52	12143.2	0.5	**0.6446**	0.043	6.7	ug/L	7635	Standard
	Cr	53	1533.4	8.3	**1.3595**	0.147	10.8	ug/L	363	Standard
	Mn	55	41319.9	1.1	**5.8936**	0.094	1.6	ug/L	747	Standard
	Co	59	1041.4	1.4	**0.1233**	0.005	3.8	ug/L	234	Standard
	Ni	60	1381.7	2.6	**0.6272**	0.001	0.2	ug/L	215	Standard
	Cu	65	22006.0	2.1	**11.9309**	0.100	0.8	ug/L	104	Standard
	Zn	66	12936.5	1.8	**11.6003**	0.101	0.9	ug/L	363	Standard
>	**Ge**	72	486496.6	2.4				ug/L	495142	Standard
	As	75	1429.3	4.7	**1.3578**	0.030	2.2	ug/L	-50	Standard
	Se	82	368.2	2.0	**3.2780**	0.104	3.2	ug/L	14	Standard
	Se-1	77	166.3	2.4	**1.6971**	0.106	6.2	ug/L	42	Standard
>	**Ga**	71	256.7	8.8				mg/L	42	Standard
	Rb	85	6678.1	5.5				ug/L	17	Standard
	Y	89	411615.1	2.5				ug/L	417098	Standard
>	**Rh**	103	45.0	40.1				ug/L	13	Standard
	Mo	98	2416.6	3.5	**0.9418**	0.055	5.8	ug/L	11	Standard
	Ag	107	106.0	14.6	**0.0040**	0.002	49.0	ug/L	68	Standard
	Cd	111	306.3	1.8	**0.1451**	0.002	1.4	mg/L	2	Standard
	Cd	114	658.6	9.3	**0.1319**	0.011	8.6	ug/L	12	Standard
>	**In**	115	562685.3	3.0				ug/L	587441	Standard
	Sn	118	1296.7	5.8	**0.1370**	0.009	6.5	ug/L	497	Standard
	Sb	123	1866.5	3.1	**0.4132**	0.007	1.8	ug/L	78	Standard
	Ba	135	49124.5	1.8	**25.0474**	0.324	1.3	ug/L	24	Standard
	Ce	140	4487.3	4.7				ug/L	25	Standard
>	**Tb**	159	930596.3	3.6				ug/L	939701	Standard
	Ho	165	203.3	14.2				ug/L	10	Standard
	Tl	203	145.3	15.0	**0.0163**	0.002	14.2	ug/L	4	Standard
	Tl	205	131.7	4.4	**0.0191**	0.000	1.8	ug/L	2	Standard
	Pb	206	1800.8	1.2	**0.2755**	0.007	2.5	ug/L	240	Standard
	Pb	207	1451.7	2.6	**0.2445**	0.002	0.8	ug/L	198	Standard
	Pb	208	5832.1	0.4	**0.2459**	0.009	3.7	ug/L	883	Standard
	U	238	34205.2	1.0	**5.1077**	0.154	3.0	ug/L	3	Standard
>	**Bi**	209	509656.0	3.1				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	92209.8	1.7	**128.1856**	8.381	6.5	mg/L	37	Standard
K	39	298.3	3.5	**0.5957**	0.033	5.6	mg/L	38	Standard
Ca	43	80.0	6.3	**2.9252**	0.551	18.8	mg/L	10	Standard
Fe	54	254.0	14.7	**0.0930**	0.030	32.4	mg/L	179	Standard
Fe	57	333.3	5.3	**0.1453**	0.073	50.0	mg/L	335	Standard
> **Sc-1**	45	56757.9	4.8				mg/L	61029	Standard
Cl	35	31152.7	1.5				ug/L	20195	Standard
Kr	83	0.7	86.6				ug/L	4	Standard
Br	81	53109.7	4.4				ug/L	1547	Standard
P	31	17403.3	2.0				ug/L	15286	Standard
S	34	1883.5	7.3				ug/L	1572	Standard
Sr	88	213.3	3.6				ug/L	73	Standard
C	12	256.7	12.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	288.4	16.8				mg/L	6	Standard
Ho-1	165	203.3	14.2				mg/L	10	Standard
Er	166	173.3	23.3				mg/L	13	Standard
I	127	470221.1	5.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.534	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.254	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606098619
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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.786
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.265
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606098625
Sample Date/Time: Wednesday, June 29, 2016 13:57:48
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	102613.0	0.8				ug/L	74699	Standard
	Be	9	78.3	9.8	**0.0724**	0.006	8.8	ug/L	8	Standard
	Al	27	33905192.3	1.5	**167.9500**	3.413	2.0	ug/L	1493	Standard
	Sc	45	63494.4	0.7				ug/L	61029	Standard
	Ti	47	6149.2	2.1	**15.7581**	0.447	2.8	ug/L	35	Standard
	V	51	12969.6	1.6	**1.4837**	0.027	1.8	ug/L	1435	Standard
	Cr	52	17892.2	0.6	**1.3372**	0.031	2.3	ug/L	7635	Standard
	Cr	53	3548.7	0.7	**3.4248**	0.009	0.3	ug/L	363	Standard
	Mn	55	3105877.1	1.7	**436.1197**	10.576	2.4	ug/L	747	Standard
	Co	59	6022.9	2.6	**0.8547**	0.030	3.5	ug/L	234	Standard
	Ni	60	6318.7	1.1	**3.1764**	0.053	1.7	ug/L	215	Standard
	Cu	65	5119.5	1.0	**2.5860**	0.011	0.4	ug/L	104	Standard
	Zn	66	19836.6	0.9	**17.3044**	0.276	1.6	ug/L	363	Standard
>	**Ge**	72	506357.7	0.8				ug/L	495142	Standard
	As	75	1090.3	6.9	**1.0117**	0.071	7.0	ug/L	-50	Standard
	Se	82	334.6	3.6	**2.8439**	0.125	4.4	ug/L	14	Standard
	Se-1	77	270.0	7.0	**2.9935**	0.272	9.1	ug/L	42	Standard
>	**Ga**	71	1363.4	8.0				mg/L	42	Standard
	Rb	85	42725.2	0.9				ug/L	17	Standard
	Y	89	453938.8	1.4				ug/L	417098	Standard
>	**Rh**	103	198.3	19.1				ug/L	13	Standard
	Mo	98	1348.4	1.8	**0.4789**	0.005	1.1	ug/L	11	Standard
	Ag	107	259.3	4.5	**0.0252**	0.002	7.6	ug/L	68	Standard
	Cd	111	351.0	2.3	**0.1529**	0.002	1.6	mg/L	2	Standard
	Cd	114	808.7	5.9	**0.1490**	0.010	6.6	ug/L	12	Standard
>	**In**	115	613191.6	0.9				ug/L	587441	Standard
	Sn	118	795.0	1.9	**0.0357**	0.003	9.4	ug/L	497	Standard
	Sb	123	319.9	2.9	**0.0614**	0.002	3.0	ug/L	78	Standard
	Ba	135	112678.5	1.7	**52.7237**	0.702	1.3	ug/L	24	Standard
	Ce	140	37260.8	2.0				ug/L	25	Standard
>	**Tb**	159	1001354.7	0.4				ug/L	939701	Standard
	Ho	165	1051.7	3.8				ug/L	10	Standard
	Tl	203	322.7	6.7	**0.0353**	0.003	7.6	ug/L	4	Standard
	Tl	205	283.3	17.7	**0.0376**	0.006	16.6	ug/L	2	Standard
	Pb	206	8100.8	1.1	**1.3649**	0.025	1.8	ug/L	240	Standard
	Pb	207	6526.4	1.1	**1.2323**	0.027	2.2	ug/L	198	Standard
	Pb	208	27115.2	0.7	**1.2953**	0.018	1.4	ug/L	883	Standard
	U	238	26591.0	2.4	**3.6542**	0.116	3.2	ug/L	3	Standard
>	**Bi**	209	553363.8	1.0				ug/L	523984	Standard

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Na	23	5.0	100.0	**55.1859**	55.233	100.1	mg/L	0	Standard
Mg	24	8027.1	0.4	**9.8947**	0.087	0.9	mg/L	37	Standard
K	39	523.3	14.3	**0.9970**	0.152	15.2	mg/L	38	Standard
Ca	43	861.7	11.2	**49.8050**	6.018	12.1	mg/L	10	Standard
Fe	54	1108.4	4.4	**0.7648**	0.035	4.5	mg/L	179	Standard
Fe	57	975.0	10.7	**2.1112**	0.341	16.2	mg/L	335	Standard
> **Sc-1**	45	63494.4	0.7				mg/L	61029	Standard
Cl	35	33805.7	1.3				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	35418.0	3.4				ug/L	1547	Standard
P	31	20113.3	1.1				ug/L	15286	Standard
S	34	2053.5	4.6				ug/L	1572	Standard
Sr	88	896.7	5.2				ug/L	73	Standard
C	12	130.0	35.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	1595.5	8.0				mg/L	6	Standard
Ho-1	165	1051.7	3.8				mg/L	10	Standard
Er	166	1000.0	4.0				mg/L	13	Standard
I	127	43091.5	8.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		137.369	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.265	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.384
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.607
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606098627
Sample Date/Time: Wednesday, June 29, 2016 14:00:59
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	98891.7	1.0				ug/L	74699	Standard
	Be	9	638.3	5.3	**0.5552**	0.024	4.3	ug/L	8	Standard
	Al	27	63228292.3	2.4	**324.9422**	4.583	1.4	ug/L	1493	Standard
	Sc	45	59185.4	3.1				ug/L	61029	Standard
	Ti	47	12099.8	1.5	**31.9570**	0.495	1.6	ug/L	35	Standard
	V	51	31610.6	0.8	**4.0089**	0.089	2.2	ug/L	1435	Standard
	Cr	52	29501.7	2.0	**2.9745**	0.066	2.2	ug/L	7635	Standard
	Cr	53	4110.6	4.5	**4.1359**	0.142	3.4	ug/L	363	Standard
	Mn	55	939161.3	0.8	**135.3408**	0.783	0.6	ug/L	747	Standard
	Co	59	11927.7	1.5	**1.7769**	0.013	0.7	ug/L	234	Standard
	Ni	60	10174.7	1.2	**5.3344**	0.025	0.5	ug/L	215	Standard
	Cu	65	63138.6	0.6	**33.9717**	0.415	1.2	ug/L	104	Standard
	Zn	66	96624.1	0.5	**88.3979**	1.021	1.2	ug/L	363	Standard
>	**Ge**	72	492984.7	1.4				ug/L	495142	Standard
	As	75	1814.9	1.7	**1.6870**	0.014	0.9	ug/L	-50	Standard
	Se	82	95.5	0.5	**0.7363**	0.016	2.2	ug/L	14	Standard
	Se-1	77	118.3	17.1	**1.0027**	0.256	25.5	ug/L	42	Standard
>	**Ga**	71	3340.4	1.3				mg/L	42	Standard
	Rb	85	72434.4	1.9				ug/L	17	Standard
	Y	89	474043.5	0.9				ug/L	417098	Standard
>	**Rh**	103	386.7	16.4				ug/L	13	Standard
	Mo	98	2396.5	0.7	**0.9091**	0.018	1.9	ug/L	11	Standard
	Ag	107	338.3	4.7	**0.0399**	0.003	6.7	ug/L	68	Standard
	Cd	111	101.2	9.9	**0.0414**	0.005	12.6	mg/L	2	Standard
	Cd	114	230.2	21.2	**0.0435**	0.009	20.9	ug/L	12	Standard
>	**In**	115	577417.6	1.2				ug/L	587441	Standard
	Sn	118	1793.4	6.6	**0.2178**	0.023	10.5	ug/L	497	Standard
	Sb	123	600.3	4.8	**0.1267**	0.008	6.1	ug/L	78	Standard
	Ba	135	70114.5	1.5	**34.8357**	0.414	1.2	ug/L	24	Standard
	Ce	140	125576.7	1.8				ug/L	25	Standard
>	**Tb**	159	953741.7	1.0				ug/L	939701	Standard
	Ho	165	3755.5	3.8				ug/L	10	Standard
	Tl	203	452.7	12.3	**0.0539**	0.006	11.6	ug/L	4	Standard
	Tl	205	385.0	10.1	**0.0548**	0.005	9.0	ug/L	2	Standard
	Pb	206	12183.9	0.5	**2.2443**	0.020	0.9	ug/L	240	Standard
	Pb	207	9920.2	0.8	**2.0519**	0.018	0.9	ug/L	198	Standard
	Pb	208	42107.7	1.6	**2.2055**	0.026	1.2	ug/L	883	Standard
	U	238	36138.4	1.7	**5.3249**	0.032	0.6	ug/L	3	Standard
>	**Bi**	209	516181.2	1.2				ug/L	523984	Standard

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Na	23	8.3	91.7	**99.8498**	90.493	90.6	mg/L	0	Standard
Mg	24	9524.7	1.9	**12.6179**	0.315	2.5	mg/L	37	Standard
K	39	723.4	10.8	**1.5367**	0.198	12.9	mg/L	38	Standard
Ca	43	1308.4	8.3	**82.6186**	4.814	5.8	mg/L	10	Standard
Fe	54	3102.8	2.2	**2.5749**	0.034	1.3	mg/L	179	Standard
Fe	57	1665.1	3.0	**4.7616**	0.022	0.5	mg/L	335	Standard
Sc-1	45	59185.4	3.1				mg/L	61029	Standard
Cl	35	38114.5	0.9				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	13185.7	5.6				ug/L	1547	Standard
P	31	20465.5	3.4				ug/L	15286	Standard
S	34	1960.1	7.7				ug/L	1572	Standard
Sr	88	1940.1	7.4				ug/L	73	Standard
C	12	216.7	23.7				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	3	Standard
Dy	164	5933.6	2.4				mg/L	6	Standard
Ho-1	165	3755.5	3.8				mg/L	10	Standard
Er	166	3430.4	0.6				mg/L	13	Standard
I	127	31850.1	1.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		132.387	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.564	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.294
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.511
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606098627
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 14:04:12
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	95022.8	6.4				ug/L	74699	Standard
	Be	9	57413.6	2.5	**51.3575**	1.980	3.9	ug/L	8	Standard
	Al	27	7949888.2	1.3	**42.6051**	2.208	5.2	ug/L	1493	Standard
	Sc	45	58088.0	4.8				ug/L	61029	Standard
	Ti	47	37651.4	1.9	**100.2698**	3.249	3.2	ug/L	35	Standard
	V	51	404346.6	1.8	**53.8882**	0.844	1.6	ug/L	1435	Standard
	Cr	52	381698.1	1.1	**51.0223**	1.642	3.2	ug/L	7635	Standard
	Cr	53	47042.9	0.3	**51.1128**	1.842	3.6	ug/L	363	Standard
	Mn	55	357326.2	3.2	**51.6830**	0.417	0.8	ug/L	747	Standard
	Co	59	371699.6	2.5	**56.8155**	0.522	0.9	ug/L	234	Standard
	Ni	60	94541.7	1.4	**50.9011**	1.597	3.1	ug/L	215	Standard
	Cu	65	94983.8	1.5	**51.4773**	2.133	4.1	ug/L	104	Standard
	Zn	66	56900.0	0.7	**52.1829**	1.541	3.0	ug/L	363	Standard
>	Ge	72	490310.3	3.4				ug/L	495142	Standard
	As	75	57867.9	1.8	**52.2509**	0.921	1.8	ug/L	-50	Standard
	Se	82	5817.8	2.4	**53.4067**	0.847	1.6	ug/L	14	Standard
	Se-1	77	4012.5	1.4	**54.8814**	1.095	2.0	ug/L	42	Standard
>	Ga	71	80.0	6.3				mg/L	42	Standard
	Rb	85	831.7	8.5				ug/L	17	Standard
	Y	89	423000.5	2.4				ug/L	417098	Standard
>	Rh	103	26.7	57.3				ug/L	13	Standard
	Mo	98	279510.1	1.2	**103.0732**	1.481	1.4	ug/L	11	Standard
	Ag	107	337025.9	0.7	**50.8187**	0.653	1.3	ug/L	68	Standard
	Cd	111	104719.9	1.6	**49.2197**	0.492	1.0	mg/L	2	Standard
	Cd	114	254484.5	1.8	**48.7789**	1.357	2.8	ug/L	12	Standard
>	In	115	597695.8	1.6				ug/L	587441	Standard
	Sn	118	297589.5	3.3	**49.9660**	0.932	1.9	ug/L	497	Standard
	Sb	123	237800.4	0.6	**50.0611**	0.480	1.0	ug/L	78	Standard
	Ba	135	98785.4	1.3	**47.4247**	0.676	1.4	ug/L	24	Standard
	Ce	140	118.3	6.5				ug/L	25	Standard
>	Tb	159	962162.8	1.8				ug/L	939701	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	431721.7	1.4	**50.5906**	0.299	0.6	ug/L	4	Standard
	Tl	205	386667.7	1.8	**52.2055**	0.331	0.6	ug/L	2	Standard
	Pb	206	286495.7	0.6	**51.7458**	1.032	2.0	ug/L	240	Standard
	Pb	207	254256.8	1.2	**51.6830**	0.707	1.4	ug/L	198	Standard
	Pb	208	993731.8	1.4	**51.1193**	0.294	0.6	ug/L	883	Standard
	U	238	371822.3	1.0	**52.1805**	0.682	1.3	ug/L	3	Standard
>	Bi	209	542470.6	1.9				ug/L	523984	Standard

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Na	23	1.7	173.2	**20.6892**	35.826	173.2	mg/L	0	Standard
Mg	24	4115.6	5.8	**5.5148**	0.066	1.2	mg/L	37	Standard
K	39	1971.8	1.5	**4.4711**	0.214	4.8	mg/L	38	Standard
Ca	43	71.7	16.1	**2.2502**	0.891	39.6	mg/L	10	Standard
Fe	54	5897.1	1.5	**5.1229**	0.272	5.3	mg/L	179	Standard
Fe	57	1798.4	2.6	**5.3592**	0.387	7.2	mg/L	335	Standard
Sc-1	45	58088.0	4.8				mg/L	61029	Standard
Cl	35	26443.8	4.7				ug/L	20195	Standard
Kr	83	1.0	0.0				ug/L	4	Standard
Br	81	1943.5	9.9				ug/L	1547	Standard
P	31	18503.0	1.3				ug/L	15286	Standard
S	34	2213.5	3.2				ug/L	1572	Standard
Sr	88	76.7	10.0				ug/L	73	Standard
C	12	120.0	43.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	2.9	217.0				mg/L	6	Standard
Ho-1	165	8.3	34.6				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	3483.8	25.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.715		
Al	27	85.210		
Sc	45			
Ti	47	100.270		
V	51	107.776		
Cr	52	102.045		
Cr	53			
Mn	55	103.366		
Co	59	113.631		
Ni	60	101.802		
Cu	65	102.955		
Zn	66	104.366		
Ge	72		99.024	
As	75	104.502		
Se	82	106.813		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
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Rb	85			
Y	89			
Rh	103			
Mo	98	103.073		
Ag	107	101.637		
Cd	111	98.439		
Cd	114			
In	115		101.746	
Sn	118	99.932		
Sb	123	100.122		
Ba	135	94.849		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.181		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.239		
U	238	104.361		
Bi	209		103.528	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	
QC Std 6	Co	59	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 14:07:23
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	87483.9	4.7				ug/L	74699	Standard
	Be	9	21.7	96.1	**0.0292**	0.021	73.0	ug/L	8	Standard
	Al	27	18230.8	94.8	**0.0950**	0.107	112.2	ug/L	1493	Standard
	Sc	45	56471.8	3.5				ug/L	61029	Standard
	Ti	47	36.0	46.7	**-0.0098**	0.050	510.8	ug/L	35	Standard
	V	51	1334.8	2.3	**-0.0125**	0.010	80.4	ug/L	1435	Standard
	Cr	52	6684.1	1.9	**-0.0897**	0.031	35.0	ug/L	7635	Standard
	Cr	53	393.3	6.4	**0.1115**	0.043	38.6	ug/L	363	Standard
	Mn	55	1346.4	57.0	**0.0546**	0.123	224.6	ug/L	747	Standard
	Co	59	278.3	17.3	**0.0065**	0.009	139.3	ug/L	234	Standard
	Ni	60	177.0	5.9	**-0.0261**	0.004	17.0	ug/L	215	Standard
	Cu	65	145.0	10.8	**-0.0230**	0.009	41.3	ug/L	104	Standard
	Zn	66	399.3	2.4	**-0.0757**	0.021	28.0	ug/L	363	Standard
>	**Ge**	72	478426.6	3.3				ug/L	495142	Standard
	As	75	-39.3	49.9	**0.0231**	0.019	81.6	ug/L	-50	Standard
	Se	82	16.5	11.7	**0.0181**	0.023	124.9	ug/L	14	Standard
	Se-1	77	38.7	26.9	**-0.0773**	0.131	170.1	ug/L	42	Standard
>	**Ga**	71	66.7	15.6				mg/L	42	Standard
	Rb	85	18.3	41.7				ug/L	17	Standard
	Y	89	416242.9	2.8				ug/L	417098	Standard
>	**Rh**	103	15.0	57.7				ug/L	13	Standard
	Mo	98	272.1	23.3	**0.0976**	0.024	24.4	ug/L	11	Standard
	Ag	107	106.0	6.8	**0.0036**	0.001	28.2	ug/L	68	Standard
	Cd	111	10.2	22.2	**-0.0030**	0.001	37.6	mg/L	2	Standard
	Cd	114	31.6	53.8	**0.0041**	0.003	80.7	ug/L	12	Standard
>	**In**	115	580179.3	0.7				ug/L	587441	Standard
	Sn	118	746.7	16.1	**0.0348**	0.022	62.5	ug/L	497	Standard
	Sb	123	368.4	24.4	**0.0758**	0.020	26.4	ug/L	78	Standard
	Ba	135	41.0	10.6	**0.0043**	0.002	51.4	ug/L	24	Standard
	Ce	140	38.3	61.6				ug/L	25	Standard
>	**Tb**	159	945404.9	0.5				ug/L	939701	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	65.7	8.7	**0.0061**	0.001	8.8	ug/L	4	Standard
	Tl	205	95.0	45.9	**0.0133**	0.006	45.0	ug/L	2	Standard
	Pb	206	276.0	7.9	**-0.0202**	0.003	15.8	ug/L	240	Standard
	Pb	207	258.0	12.6	**-0.0163**	0.006	36.3	ug/L	198	Standard
	Pb	208	1134.3	12.6	**-0.0143**	0.008	56.7	ug/L	883	Standard
	U	238	91.0	75.8	**0.0087**	0.010	115.9	ug/L	3	Standard
>	**Bi**	209	530301.2	1.8				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	46.7	81.1	**0.0007**	0.054	7923.6	mg/L	37	Standard
K	39	40.0	45.1	**-0.0194**	0.039	202.6	mg/L	38	Standard
Ca	43	28.3	20.4	**-0.5841**	0.427	73.1	mg/L	10	Standard
Fe	54	129.2	39.5	**-0.0191**	0.049	258.2	mg/L	179	Standard
Fe	57	241.7	27.6	**-0.1803**	0.270	149.7	mg/L	335	Standard
> **Sc-1**	45	56471.8	3.5				mg/L	61029	Standard
Cl	35	26027.0	1.3				ug/L	20195	Standard
Kr	83	3.0	57.7				ug/L	4	Standard
Br	81	1783.4	6.5				ug/L	1547	Standard
P	31	18152.5	2.7				ug/L	15286	Standard
S	34	2168.5	1.2				ug/L	1572	Standard
Sr	88	56.7	27.0				ug/L	73	Standard
C	12	93.3	24.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	6.5	86.7				mg/L	6	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	2606.9	21.7				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.624	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.764	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	101.206	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606098629
Sample Date/Time: Wednesday, June 29, 2016 14:10:36
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	98303.0	2.6				ug/L	74699	Standard
	Be	9	480.0	19.8	**0.4216**	0.078	18.5	ug/L	8	Standard
	Al	27	74581592.0	2.0	**385.7852**	11.899	3.1	ug/L	1493	Standard
	Sc	45	57877.0	1.4				ug/L	61029	Standard
	Ti	47	6572.4	2.9	**18.4374**	0.321	1.7	ug/L	35	Standard
	V	51	8784.7	0.2	**1.0487**	0.019	1.8	ug/L	1435	Standard
	Cr	52	16164.0	1.7	**1.3092**	0.018	1.4	ug/L	7635	Standard
	Cr	53	2105.1	0.9	**2.1070**	0.052	2.5	ug/L	363	Standard
	Mn	55	1145494.2	1.1	**175.8506**	2.171	1.2	ug/L	747	Standard
	Co	59	6198.3	3.2	**0.9668**	0.035	3.6	ug/L	234	Standard
	Ni	60	8328.3	2.3	**4.6339**	0.069	1.5	ug/L	215	Standard
	Cu	65	39558.9	1.3	**22.6316**	0.139	0.6	ug/L	104	Standard
	Zn	66	37507.0	2.0	**36.2726**	0.401	1.1	ug/L	363	Standard
>	**Ge**	72	462898.1	1.3				ug/L	495142	Standard
	As	75	729.1	4.9	**0.7559**	0.035	4.6	ug/L	-50	Standard
	Se	82	97.9	9.3	**0.8168**	0.100	12.2	ug/L	14	Standard
	Se-1	77	92.7	14.7	**0.7365**	0.213	29.0	ug/L	42	Standard
>	**Ga**	71	1238.4	2.6				mg/L	42	Standard
	Rb	85	36981.8	1.6				ug/L	17	Standard
	Y	89	423750.9	0.9				ug/L	417098	Standard
>	**Rh**	103	1170.0	7.1				ug/L	13	Standard
	Mo	98	1333.1	1.3	**0.5111**	0.005	0.9	ug/L	11	Standard
	Ag	107	159.7	2.8	**0.0124**	0.001	8.3	ug/L	68	Standard
	Cd	111	50.7	12.0	**0.0171**	0.003	15.0	mg/L	2	Standard
	Cd	114	154.3	14.1	**0.0289**	0.004	13.0	ug/L	12	Standard
>	**In**	115	568573.6	2.1				ug/L	587441	Standard
	Sn	118	2385.2	8.8	**0.3269**	0.032	9.8	ug/L	497	Standard
	Sb	123	701.5	2.0	**0.1511**	0.004	2.9	ug/L	78	Standard
	Ba	135	49620.1	0.4	**25.0380**	0.447	1.8	ug/L	24	Standard
	Ce	140	69524.2	1.7				ug/L	25	Standard
>	**Tb**	159	941672.2	2.5				ug/L	939701	Standard
	Ho	165	1511.7	2.5				ug/L	10	Standard
	Tl	203	215.3	8.2	**0.0254**	0.002	6.7	ug/L	4	Standard
	Tl	205	171.7	4.4	**0.0251**	0.001	2.6	ug/L	2	Standard
	Pb	206	5244.6	2.1	**0.9485**	0.002	0.2	ug/L	240	Standard
	Pb	207	4168.9	1.9	**0.8423**	0.008	0.9	ug/L	198	Standard
	Pb	208	17565.0	0.7	**0.8990**	0.013	1.4	ug/L	883	Standard
	U	238	17410.3	1.3	**2.6228**	0.019	0.7	ug/L	3	Standard
>	**Bi**	209	504494.7	1.9				ug/L	523984	Standard

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Na	23	13.3	78.1	**161.6266**	126.012	78.0	mg/L	0	Standard
Mg	24	27959.1	0.6	**37.9939**	0.282	0.7	mg/L	37	Standard
K	39	733.4	5.5	**1.5946**	0.079	5.0	mg/L	38	Standard
Ca	43	1693.4	2.8	**110.2950**	4.030	3.7	mg/L	10	Standard
Fe	54	1507.3	3.7	**1.2090**	0.035	2.9	mg/L	179	Standard
Fe	57	1286.7	5.0	**3.5362**	0.177	5.0	mg/L	335	Standard
Sc-1	45	57877.0	1.4				mg/L	61029	Standard
Cl	35	39812.2	0.7				ug/L	20195	Standard
Kr	83	2.3	24.7				ug/L	4	Standard
Br	81	15855.0	0.8				ug/L	1547	Standard
P	31	19874.7	1.1				ug/L	15286	Standard
S	34	1861.8	8.3				ug/L	1572	Standard
Sr	88	5489.3	0.8				ug/L	73	Standard
C	12	143.3	29.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	2426.6	8.1				mg/L	6	Standard
Ho-1	165	1511.7	2.5				mg/L	10	Standard
Er	166	1466.7	15.1				mg/L	13	Standard
I	127	114010.2	6.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		131.599	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		93.488	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.788
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.280
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606098629
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Method 6020 - Summary Report

Sample ID: L1606098639
Sample Date/Time: Wednesday, June 29, 2016 14:13:47
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	95709.8	2.9				ug/L	74699	Standard
	Be	9	26.7	92.5	**0.0314**	0.022	70.9	ug/L	8	Standard
	Al	27	47777.1	19.3	**0.2396**	0.041	17.2	ug/L	1493	Standard
	Sc	45	57199.5	2.6				ug/L	61029	Standard
	Ti	47	140.3	60.7	**0.2633**	0.227	86.2	ug/L	35	Standard
	V	51	2113.6	5.5	**0.0856**	0.015	17.8	ug/L	1435	Standard
	Cr	52	11519.7	1.7	**0.5382**	0.024	4.4	ug/L	7635	Standard
	Cr	53	731.7	8.2	**0.4658**	0.068	14.5	ug/L	363	Standard
	Mn	55	10046.3	0.4	**1.3019**	0.003	0.2	ug/L	747	Standard
	Co	59	277.3	4.9	**0.0049**	0.002	38.1	ug/L	234	Standard
	Ni	60	403.7	2.5	**0.0928**	0.006	6.6	ug/L	215	Standard
	Cu	65	2594.2	1.0	**1.2969**	0.011	0.8	ug/L	104	Standard
	Zn	66	5488.0	1.5	**4.5940**	0.065	1.4	ug/L	363	Standard
>	**Ge**	72	492746.6	0.5				ug/L	495142	Standard
	As	75	-23.9	159.7	**0.0381**	0.034	90.0	ug/L	-50	Standard
	Se	82	16.9	42.3	**0.0162**	0.065	398.3	ug/L	14	Standard
	Se-1	77	44.7	15.2	**-0.0080**	0.091	1136.4	ug/L	42	Standard
>	**Ga**	71	35.0	24.7				mg/L	42	Standard
	Rb	85	228.3	6.7				ug/L	17	Standard
	Y	89	426313.2	2.4				ug/L	417098	Standard
>	**Rh**	103	20.0	66.1				ug/L	13	Standard
	Mo	98	146.2	8.6	**0.0487**	0.005	10.8	ug/L	11	Standard
	Ag	107	84.7	10.6	**-0.0000**	0.001	3427.7	ug/L	68	Standard
	Cd	111	14.4	26.2	**-0.0011**	0.002	163.5	mg/L	2	Standard
	Cd	114	36.0	7.5	**0.0048**	0.001	11.2	ug/L	12	Standard
>	**In**	115	592771.3	1.1				ug/L	587441	Standard
	Sn	118	1206.7	2.0	**0.1101**	0.007	6.0	ug/L	497	Standard
	Sb	123	2747.6	2.7	**0.5790**	0.016	2.8	ug/L	78	Standard
	Ba	135	327.7	1.8	**0.1426**	0.002	1.3	ug/L	24	Standard
	Ce	140	215.0	46.7				ug/L	25	Standard
>	**Tb**	159	942434.8	1.8				ug/L	939701	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	30.7	28.5	**0.0019**	0.001	54.2	ug/L	4	Standard
	Tl	205	31.7	59.8	**0.0045**	0.003	57.0	ug/L	2	Standard
	Pb	206	347.7	8.5	**-0.0077**	0.005	63.4	ug/L	240	Standard
	Pb	207	296.0	3.8	**-0.0091**	0.002	22.4	ug/L	198	Standard
	Pb	208	1207.0	5.0	**-0.0113**	0.003	23.3	ug/L	883	Standard
	U	238	16.7	21.1	**-0.0021**	0.000	23.4	ug/L	3	Standard
>	**Bi**	209	536687.4	0.8				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	78.3	9.8	**0.0427**	0.008	19.8	mg/L	37	Standard
K	39	33.3	56.8	**-0.0347**	0.047	136.1	mg/L	38	Standard
Ca	43	38.3	27.2	**0.0551**	0.672	1218.0	mg/L	10	Standard
Fe	54	152.5	13.6	**-0.0001**	0.021	24429.9	mg/L	179	Standard
Fe	57	270.0	10.3	**-0.0961**	0.083	86.0	mg/L	335	Standard
Sc-1	45	57199.5	2.6				mg/L	61029	Standard
Cl	35	30633.6	0.6				ug/L	20195	Standard
Kr	83	2.7	78.1				ug/L	4	Standard
Br	81	2093.5	12.2				ug/L	1547	Standard
P	31	17446.7	2.4				ug/L	15286	Standard
S	34	1971.8	2.9				ug/L	1572	Standard
Sr	88	48.3	26.0				ug/L	73	Standard
C	12	116.7	34.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	9.0	108.0				mg/L	6	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	4304.0	50.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		128.128	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.516	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.907
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.424
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: L1606098639
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Method 6020 - Summary Report

Sample ID: L1606098641
Sample Date/Time: Wednesday, June 29, 2016 14:16:59
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	87267.4	3.2				ug/L	74699	Standard
	Be	9	11.7	49.5	**0.0189**	0.005	28.8	ug/L	8	Standard
	Al	27	605511.0	1.7	**3.5149**	0.083	2.4	ug/L	1493	Standard
	Sc	45	54390.8	2.9				ug/L	61029	Standard
	Ti	47	93.0	12.4	**0.1442**	0.032	22.4	ug/L	35	Standard
	V	51	1794.1	5.9	**0.0496**	0.015	30.2	ug/L	1435	Standard
	Cr	52	10365.2	1.5	**0.4195**	0.024	5.7	ug/L	7635	Standard
	Cr	53	613.3	8.2	**0.3551**	0.058	16.5	ug/L	363	Standard
	Mn	55	4513.0	1.6	**0.5208**	0.012	2.3	ug/L	747	Standard
	Co	59	310.3	5.3	**0.0112**	0.002	21.0	ug/L	234	Standard
	Ni	60	490.0	6.7	**0.1461**	0.017	11.6	ug/L	215	Standard
	Cu	65	1018.0	2.6	**0.4608**	0.017	3.7	ug/L	104	Standard
	Zn	66	3968.5	2.5	**3.2944**	0.091	2.8	ug/L	363	Standard
>	**Ge**	72	479837.7	0.4				ug/L	495142	Standard
	As	75	-18.8	39.3	**0.0423**	0.007	15.9	ug/L	-50	Standard
	Se	82	16.1	20.6	**0.0139**	0.032	229.1	ug/L	14	Standard
	Se-1	77	51.0	14.8	**0.0980**	0.104	105.7	ug/L	42	Standard
>	**Ga**	71	46.7	22.3				mg/L	42	Standard
	Rb	85	2146.8	6.0				ug/L	17	Standard
	Y	89	405082.7	1.5				ug/L	417098	Standard
>	**Rh**	103	10.0	86.6				ug/L	13	Standard
	Mo	98	183.9	8.1	**0.0672**	0.006	9.5	ug/L	11	Standard
	Ag	107	85.0	8.5	**0.0009**	0.001	123.2	ug/L	68	Standard
	Cd	111	58.3	9.8	**0.0215**	0.003	12.3	mg/L	2	Standard
	Cd	114	162.0	10.0	**0.0312**	0.003	9.6	ug/L	12	Standard
>	**In**	115	556306.9	1.6				ug/L	587441	Standard
	Sn	118	983.4	6.5	**0.0831**	0.013	16.0	ug/L	497	Standard
	Sb	123	290.8	14.6	**0.0617**	0.011	17.2	ug/L	78	Standard
	Ba	135	1301.4	2.0	**0.6554**	0.007	1.1	ug/L	24	Standard
	Ce	140	1251.7	2.7				ug/L	25	Standard
>	**Tb**	159	894371.7	2.0				ug/L	939701	Standard
	Ho	165	23.3	61.9				ug/L	10	Standard
	Tl	203	26.7	21.3	**0.0015**	0.001	46.3	ug/L	4	Standard
	Tl	205	18.3	68.6	**0.0028**	0.002	63.1	ug/L	2	Standard
	Pb	206	368.7	5.0	**-0.0008**	0.004	496.5	ug/L	240	Standard
	Pb	207	301.3	5.5	**-0.0052**	0.004	82.3	ug/L	198	Standard
	Pb	208	1198.4	1.5	**-0.0089**	0.002	20.6	ug/L	883	Standard
	U	238	7.7	32.8	**-0.0033**	0.000	11.3	ug/L	3	Standard
>	**Bi**	209	513924.4	1.5				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	638.3	13.6	**0.8624**	0.151	17.5	mg/L	37	Standard
K	39	86.7	3.3	**0.1010**	0.012	12.3	mg/L	38	Standard
Ca	43	31.7	48.2	**-0.2871**	1.074	374.0	mg/L	10	Standard
Fe	54	129.1	21.5	**-0.0150**	0.029	192.4	mg/L	179	Standard
Fe	57	250.0	12.2	**-0.1181**	0.141	119.7	mg/L	335	Standard
Sc-1	45	54390.8	2.9				mg/L	61029	Standard
Cl	35	28123.4	3.1				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	1706.8	4.2				ug/L	1547	Standard
P	31	17456.7	1.2				ug/L	15286	Standard
S	34	1960.1	4.3				ug/L	1572	Standard
Sr	88	86.7	3.3				ug/L	73	Standard
C	12	86.7	35.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	22.9	67.6				mg/L	6	Standard
Ho-1	165	23.3	61.9				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	6631.5	5.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		116.826	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.909	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.700
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.080
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606102602
Sample Date/Time: Wednesday, June 29, 2016 14:51:20
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	98959.1	4.1				ug/L	74699	Standard
	Be	9	893.4	7.1	**0.7730**	0.024	3.1	ug/L	8	Standard
	Al	27	86838575.1	3.0	**446.1622**	5.675	1.3	ug/L	1493	Standard
	Sc	45	59841.3	1.2				ug/L	61029	Standard
	Ti	47	724.7	2.7	**1.9675**	0.086	4.4	ug/L	35	Standard
	V	51	-99401.9	27.0	**-14.4927**	3.863	26.7	ug/L	1435	Standard
	Cr	52	14286817.6	0.7	**2092.1702**	38.595	1.8	ug/L	7635	Standard
	Cr	53	1819264.9	1.0	**2136.8631**	30.527	1.4	ug/L	363	Standard
	Mn	55	9369393.8	2.3	**1460.7209**	18.166	1.2	ug/L	747	Standard
	Co	59	953653.0	0.8	**156.7618**	2.325	1.5	ug/L	234	Standard
	Ni	60	10094931.6	0.5	**5854.0954**	89.919	1.5	ug/L	215	Standard
	Cu	65	555284.9	0.4	**323.8508**	6.370	2.0	ug/L	104	Standard
	Zn	66	64094.6	1.0	**63.2545**	1.058	1.7	ug/L	363	Standard
>	**Ge**	72	456115.5	1.9				ug/L	495142	Standard
	As	75	3627.2	1.9	**3.5767**	0.135	3.8	ug/L	-50	Standard
	Se	82	1754.2	3.0	**17.2111**	0.289	1.7	ug/L	14	Standard
	Se-1	77	3450.1	4.6	**50.7001**	3.400	6.7	ug/L	42	Standard
>	**Ga**	71	493.3	9.8				mg/L	42	Standard
	Rb	85	15579.7	1.3				ug/L	17	Standard
	Y	89	510259.3	1.5				ug/L	417098	Standard
>	**Rh**	103	536.7	10.8				ug/L	13	Standard
	Mo	98	52406.3	2.2	**22.0721**	0.200	0.9	ug/L	11	Standard
	Ag	107	797.7	2.2	**0.1246**	0.004	3.1	ug/L	68	Standard
	Cd	111	4820.0	1.8	**2.5808**	0.025	1.0	mg/L	2	Standard
	Cd	114	11654.3	2.8	**2.5494**	0.039	1.5	ug/L	12	Standard
>	**In**	115	523117.8	1.3				ug/L	587441	Standard
	Sn	118	2368.5	5.4	**0.3606**	0.023	6.4	ug/L	497	Standard
	Sb	123	2240.5	1.3	**0.5347**	0.001	0.2	ug/L	78	Standard
	Ba	135	135783.1	0.9	**74.4848**	0.361	0.5	ug/L	24	Standard
	Ce	140	104687.1	1.1				ug/L	25	Standard
>	**Tb**	159	898543.7	0.7				ug/L	939701	Standard
	Ho	165	6684.8	2.2				ug/L	10	Standard
	Tl	203	178.0	4.1	**0.0225**	0.001	5.6	ug/L	4	Standard
	Tl	205	203.3	37.2	**0.0321**	0.012	38.4	ug/L	2	Standard
	Pb	206	1304.4	5.0	**0.2026**	0.016	8.1	ug/L	240	Standard
	Pb	207	1055.7	2.5	**0.1793**	0.004	2.5	ug/L	198	Standard
	Pb	208	4341.2	2.0	**0.1854**	0.004	2.0	ug/L	883	Standard
	U	238	4585.0	0.8	**0.7423**	0.007	0.9	ug/L	3	Standard
>	**Bi**	209	467454.5	1.3				ug/L	523984	Standard

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Na	23	5.0	0.0	**58.7812**	0.729	1.2	mg/L	0	Standard
Mg	24	188890.8	2.9	**248.6881**	10.353	4.2	mg/L	37	Standard
K	39	2185.2	4.4	**4.8106**	0.175	3.6	mg/L	38	Standard
Ca	43	1135.0	6.5	**70.5642**	3.873	5.5	mg/L	10	Standard
Fe	54	9878.2	4.8	**8.4031**	0.399	4.8	mg/L	179	Standard
Fe	57	3267.0	5.5	**10.2558**	0.748	7.3	mg/L	335	Standard
> **Sc-1**	45	59841.3	1.2				mg/L	61029	Standard
Cl	35	28240.3	1.1				ug/L	20195	Standard
Kr	83	2.7	142.0				ug/L	4	Standard
Br	81	339155.5	2.6				ug/L	1547	Standard
P	31	29607.2	0.7				ug/L	15286	Standard
S	34	2378.5	1.9				ug/L	1572	Standard
Sr	88	1895.1	7.4				ug/L	73	Standard
C	12	120.0	28.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	86.7	35.3				mg/L	3	Standard
Dy	164	9299.8	2.7				mg/L	6	Standard
Ho-1	165	6684.8	2.2				mg/L	10	Standard
Er	166	6331.3	1.7				mg/L	13	Standard
I	127	153619.9	12.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.478	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.118	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	89.050
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	89.212
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
V 51 Lower	V	51	

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Cr 52 Upper, S, EEE	Cr	52
Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Co 59 Upper, S, EEE	Co	59
Ni 60 Upper, S, EEE	Ni	60
Cu 65 Upper, S, EEE	Cu	65

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Method 6020 - Summary Report

Sample ID: L1606102604
Sample Date/Time: Wednesday, June 29, 2016 14:54:31
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82386.8	1.6				ug/L	74699	Standard
	Be	9	41.7	50.0	**0.0505**	0.021	41.9	ug/L	8	Standard
	Al	27	6418180.7	1.0	**39.5946**	1.017	2.6	ug/L	1493	Standard
	Sc	45	68191.6	3.4				ug/L	61029	Standard
	Ti	47	2431.5	5.8	**6.2763**	0.263	4.2	ug/L	35	Standard
	V	51	8932.1	2.8	**0.9822**	0.034	3.4	ug/L	1435	Standard
	Cr	52	19971.2	5.8	**1.6585**	0.113	6.8	ug/L	7635	Standard
	Cr	53	16018.5	1.2	**16.9336**	0.479	2.8	ug/L	363	Standard
	Mn	55	134583.1	0.5	**19.1035**	0.326	1.7	ug/L	747	Standard
	Co	59	5374.0	2.6	**0.7730**	0.008	1.1	ug/L	234	Standard
	Ni	60	7430.2	8.6	**3.8249**	0.274	7.2	ug/L	215	Standard
	Cu	65	1488.1	5.9	**0.6921**	0.035	5.0	ug/L	104	Standard
	Zn	66	5451.0	0.8	**4.5156**	0.102	2.3	ug/L	363	Standard
>	**Ge**	72	497254.0	1.7				ug/L	495142	Standard
	As	75	427.8	16.4	**0.4399**	0.063	14.3	ug/L	-50	Standard
	Se	82	161.6	5.9	**1.3278**	0.065	4.9	ug/L	14	Standard
	Se-1	77	695.3	4.1	**8.8552**	0.225	2.5	ug/L	42	Standard
>	**Ga**	71	420.0	2.4				mg/L	42	Standard
	Rb	85	8292.3	2.6				ug/L	17	Standard
	Y	89	430205.9	2.4				ug/L	417098	Standard
>	**Rh**	103	40.0	12.5				ug/L	13	Standard
	Mo	98	177.9	8.2	**0.0624**	0.005	8.3	ug/L	11	Standard
	Ag	107	97.3	5.7	**0.0023**	0.001	38.0	ug/L	68	Standard
	Cd	111	330.0	5.3	**0.1533**	0.008	5.4	mg/L	2	Standard
	Cd	114	777.4	4.0	**0.1527**	0.007	4.3	ug/L	12	Standard
>	**In**	115	575297.3	2.0				ug/L	587441	Standard
	Sn	118	1836.8	3.5	**0.2263**	0.005	2.3	ug/L	497	Standard
	Sb	123	541.3	2.5	**0.1143**	0.005	4.2	ug/L	78	Standard
	Ba	135	259403.2	1.0	**129.4148**	1.250	1.0	ug/L	24	Standard
	Ce	140	48153.1	1.6				ug/L	25	Standard
>	**Tb**	159	953820.3	0.6				ug/L	939701	Standard
	Ho	165	763.4	3.9				ug/L	10	Standard
	Tl	203	147.7	11.5	**0.0162**	0.002	12.5	ug/L	4	Standard
	Tl	205	135.0	25.9	**0.0192**	0.005	26.2	ug/L	2	Standard
	Pb	206	2333.8	1.6	**0.3679**	0.004	1.0	ug/L	240	Standard
	Pb	207	1897.5	1.5	**0.3318**	0.006	1.8	ug/L	198	Standard
	Pb	208	7911.8	1.2	**0.3500**	0.006	1.7	ug/L	883	Standard
	U	238	272.0	3.5	**0.0353**	0.002	4.3	ug/L	3	Standard
>	**Bi**	209	521315.2	0.9				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	45454.8	3.6	**52.4459**	0.539	1.0	mg/L	37	Standard
K	39	88.3	3.3	**0.0609**	0.011	18.4	mg/L	38	Standard
Ca	43	100.0	8.7	**3.1440**	0.659	21.0	mg/L	10	Standard
Fe	54	556.2	7.6	**0.2841**	0.037	12.9	mg/L	179	Standard
Fe	57	410.0	16.9	**0.1734**	0.212	122.1	mg/L	335	Standard
> **Sc-1**	45	68191.6	3.4				mg/L	61029	Standard
Cl	35	26725.6	1.1				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	35244.3	3.6				ug/L	1547	Standard
P	31	35015.4	1.7				ug/L	15286	Standard
S	34	2091.8	5.9				ug/L	1572	Standard
Sr	88	225.0	20.0				ug/L	73	Standard
C	12	103.3	39.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	93.3	12.4				mg/L	3	Standard
Dy	164	1034.1	12.7				mg/L	6	Standard
Ho-1	165	763.4	3.9				mg/L	10	Standard
Er	166	680.0	15.4				mg/L	13	Standard
I	127	80476.5	1.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.292	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.426	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.933
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.491
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606102606
Sample Date/Time: Wednesday, June 29, 2016 14:57:42
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	93356.7	0.9				ug/L	74699	Standard
	Be	9	136.7	43.6	**0.1318**	0.054	40.9	ug/L	8	Standard
	Al	27	4727947.0	2.8	**25.7324**	0.870	3.4	ug/L	1493	Standard
	Sc	45	71265.6	1.4				ug/L	61029	Standard
	Ti	47	7167.7	1.1	**18.5395**	0.116	0.6	ug/L	35	Standard
	V	51	33631.6	0.4	**4.1963**	0.093	2.2	ug/L	1435	Standard
	Cr	52	43684.3	3.9	**4.7878**	0.170	3.6	ug/L	7635	Standard
	Cr	53	18915.1	0.4	**19.8540**	0.330	1.7	ug/L	363	Standard
	Mn	55	527300.2	1.1	**74.5358**	0.480	0.6	ug/L	747	Standard
	Co	59	47125.2	1.5	**6.9996**	0.016	0.2	ug/L	234	Standard
	Ni	60	57578.9	1.0	**30.2025**	0.274	0.9	ug/L	215	Standard
	Cu	65	3787.5	1.8	**1.9028**	0.007	0.4	ug/L	104	Standard
	Zn	66	29686.7	1.5	**26.3448**	0.262	1.0	ug/L	363	Standard
>	**Ge**	72	502153.4	1.7				ug/L	495142	Standard
	As	75	1552.5	5.8	**1.4257**	0.058	4.0	ug/L	-50	Standard
	Se	82	328.6	4.9	**2.8136**	0.101	3.6	ug/L	14	Standard
	Se-1	77	866.0	3.6	**11.0672**	0.235	2.1	ug/L	42	Standard
>	**Ga**	71	2006.8	3.5				mg/L	42	Standard
	Rb	85	28431.7	2.8				ug/L	17	Standard
	Y	89	467809.8	1.5				ug/L	417098	Standard
>	**Rh**	103	28.3	36.7				ug/L	13	Standard
	Mo	98	2788.7	2.4	**1.0189**	0.018	1.8	ug/L	11	Standard
	Ag	107	187.0	8.5	**0.0152**	0.002	14.7	ug/L	68	Standard
	Cd	111	184.5	8.6	**0.0785**	0.007	8.5	mg/L	2	Standard
	Cd	114	502.9	12.6	**0.0940**	0.013	13.9	ug/L	12	Standard
>	**In**	115	599816.0	1.2				ug/L	587441	Standard
	Sn	118	1385.1	2.5	**0.1375**	0.003	2.2	ug/L	497	Standard
	Sb	123	315.5	7.5	**0.0620**	0.005	7.5	ug/L	78	Standard
	Ba	135	37805.8	2.1	**18.0728**	0.162	0.9	ug/L	24	Standard
	Ce	140	83749.2	1.1				ug/L	25	Standard
>	**Tb**	159	971524.4	1.2				ug/L	939701	Standard
	Ho	165	1393.4	2.1				ug/L	10	Standard
	Tl	203	289.7	7.1	**0.0339**	0.002	6.5	ug/L	4	Standard
	Tl	205	258.3	11.0	**0.0368**	0.004	11.7	ug/L	2	Standard
	Pb	206	3853.2	1.2	**0.6604**	0.004	0.6	ug/L	240	Standard
	Pb	207	3010.0	1.5	**0.5732**	0.009	1.6	ug/L	198	Standard
	Pb	208	13337.3	2.3	**0.6473**	0.013	1.9	ug/L	883	Standard
	U	238	859.0	4.4	**0.1221**	0.005	4.0	ug/L	3	Standard
>	**Bi**	209	516635.2	0.9				ug/L	523984	Standard

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Na	23	1.7	173.2	**16.3563**	28.321	173.2	mg/L	0	Standard
Mg	24	103702.1	2.0	**114.5988**	3.552	3.1	mg/L	37	Standard
K	39	251.7	12.0	**0.3627**	0.062	17.2	mg/L	38	Standard
Ca	43	61.7	26.1	**0.8208**	0.922	112.4	mg/L	10	Standard
Fe	54	1412.4	2.3	**0.8871**	0.015	1.7	mg/L	179	Standard
Fe	57	645.0	2.8	**0.8030**	0.026	3.3	mg/L	335	Standard
> **Sc-1**	45	71265.6	1.4				mg/L	61029	Standard
Cl	35	28407.3	0.4				ug/L	20195	Standard
Kr	83	1.7	34.6				ug/L	4	Standard
Br	81	49253.3	3.6				ug/L	1547	Standard
P	31	41409.9	2.5				ug/L	15286	Standard
S	34	2068.5	4.4				ug/L	1572	Standard
Sr	88	155.0	22.6				ug/L	73	Standard
C	12	133.3	34.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	57.3				mg/L	3	Standard
Dy	164	2353.9	2.8				mg/L	6	Standard
Ho-1	165	1393.4	2.1				mg/L	10	Standard
Er	166	1453.4	9.2				mg/L	13	Standard
I	127	3067238.7	11.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.978	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.416	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.107	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.597	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606102607
Sample Date/Time: Wednesday, June 29, 2016 15:00:54
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86025.2	1.8				ug/L	74699	Standard
	Be	9	83.3	29.6	**0.0901**	0.026	28.3	ug/L	8	Standard
	Al	27	3430436.9	1.2	**20.2582**	0.272	1.3	ug/L	1493	Standard
	Sc	45	67818.2	2.7				ug/L	61029	Standard
	Ti	47	2650.2	2.1	**6.1960**	0.095	1.5	ug/L	35	Standard
	V	51	9706.1	1.4	**0.9634**	0.025	2.6	ug/L	1435	Standard
	Cr	52	14237.0	2.0	**0.7086**	0.035	4.9	ug/L	7635	Standard
	Cr	53	2521.9	11.8	**2.1295**	0.275	12.9	ug/L	363	Standard
	Mn	55	50752.2	3.1	**6.4246**	0.167	2.6	ug/L	747	Standard
	Co	59	8541.7	4.1	**1.1290**	0.040	3.6	ug/L	234	Standard
	Ni	60	2905.6	5.8	**1.2753**	0.074	5.8	ug/L	215	Standard
	Cu	65	1384.7	3.1	**0.5672**	0.017	3.0	ug/L	104	Standard
	Zn	66	5145.2	1.6	**3.7928**	0.039	1.0	ug/L	363	Standard
>	**Ge**	72	549096.7	0.7				ug/L	495142	Standard
	As	75	307.3	24.2	**0.3069**	0.059	19.1	ug/L	-50	Standard
	Se	82	131.2	8.7	**0.9395**	0.088	9.3	ug/L	14	Standard
	Se-1	77	177.7	11.5	**1.5705**	0.241	15.4	ug/L	42	Standard
>	**Ga**	71	765.0	18.4				mg/L	42	Standard
	Rb	85	11574.4	1.2				ug/L	17	Standard
	Y	89	476523.2	1.2				ug/L	417098	Standard
>	**Rh**	103	40.0	54.5				ug/L	13	Standard
	Mo	98	552.0	3.2	**0.1876**	0.008	4.1	ug/L	11	Standard
	Ag	107	103.3	5.6	**0.0019**	0.001	51.8	ug/L	68	Standard
	Cd	111	131.7	9.5	**0.0509**	0.006	12.0	mg/L	2	Standard
	Cd	114	303.7	9.9	**0.0531**	0.005	10.1	ug/L	12	Standard
>	**In**	115	629575.3	1.6				ug/L	587441	Standard
	Sn	118	1851.8	1.5	**0.2011**	0.002	0.9	ug/L	497	Standard
	Sb	123	475.2	2.5	**0.0908**	0.004	4.2	ug/L	78	Standard
	Ba	135	119108.2	2.3	**54.2912**	1.481	2.7	ug/L	24	Standard
	Ce	140	65755.7	1.8				ug/L	25	Standard
>	**Tb**	159	1004571.7	2.5				ug/L	939701	Standard
	Ho	165	1471.7	8.7				ug/L	10	Standard
	Tl	203	123.3	5.2	**0.0121**	0.001	4.7	ug/L	4	Standard
	Tl	205	98.3	10.6	**0.0129**	0.002	11.8	ug/L	2	Standard
	Pb	206	2854.9	1.5	**0.4229**	0.014	3.4	ug/L	240	Standard
	Pb	207	2325.8	2.5	**0.3831**	0.018	4.6	ug/L	198	Standard
	Pb	208	9906.6	0.9	**0.4144**	0.011	2.7	ug/L	883	Standard
	U	238	660.3	1.2	**0.0843**	0.002	2.3	ug/L	3	Standard
>	**Bi**	209	566874.3	1.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	9059.4	5.1	**10.4668**	0.674	6.4	mg/L	37	Standard
K	39	175.0	7.6	**0.2337**	0.017	7.4	mg/L	38	Standard
Ca	43	76.7	10.0	**1.8315**	0.359	19.6	mg/L	10	Standard
Fe	54	778.8	6.8	**0.4564**	0.046	10.1	mg/L	179	Standard
Fe	57	450.0	7.8	**0.3039**	0.129	42.4	mg/L	335	Standard
> **Sc-1**	45	67818.2	2.7				mg/L	61029	Standard
Cl	35	27265.2	1.0				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	4797.4	2.1				ug/L	1547	Standard
P	31	22328.1	2.9				ug/L	15286	Standard
S	34	1868.4	11.0				ug/L	1572	Standard
Sr	88	170.0	23.0				ug/L	73	Standard
C	12	116.7	4.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	2276.8	3.2				mg/L	6	Standard
Ho-1	165	1471.7	8.7				mg/L	10	Standard
Er	166	1323.4	4.9				mg/L	13	Standard
I	127	142556.3	31.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.163	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.897	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.172
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.185
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606102607
Report Date/Time: Wednesday, June 29, 2016 15:03:11
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 15:04:07
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83434.4	4.1				ug/L	74699	Standard
	Be	9	52151.3	1.6	**53.0799**	1.438	2.7	ug/L	8	Standard
	Al	27	8001829.5	1.2	**48.7762**	1.563	3.2	ug/L	1493	Standard
	Sc	45	63472.7	2.1				ug/L	61029	Standard
	Ti	47	41544.5	0.5	**100.8598**	1.507	1.5	ug/L	35	Standard
	V	51	430823.0	0.6	**52.3478**	0.567	1.1	ug/L	1435	Standard
	Cr	52	414183.8	1.0	**50.4520**	0.020	0.0	ug/L	7635	Standard
	Cr	53	51435.5	2.1	**50.9262**	0.597	1.2	ug/L	363	Standard
	Mn	55	402509.0	2.2	**53.1108**	1.647	3.1	ug/L	747	Standard
	Co	59	395807.1	0.7	**55.1753**	0.902	1.6	ug/L	234	Standard
	Ni	60	102515.7	1.1	**50.3079**	0.215	0.4	ug/L	215	Standard
	Cu	65	102297.5	1.1	**50.5232**	0.685	1.4	ug/L	104	Standard
	Zn	66	61288.7	1.4	**51.2272**	0.860	1.7	ug/L	363	Standard
>	Ge	72	537577.7	1.0				ug/L	495142	Standard
	As	75	61234.0	0.5	**50.4168**	0.738	1.5	ug/L	-50	Standard
	Se	82	6132.0	1.1	**51.3300**	1.089	2.1	ug/L	14	Standard
	Se-1	77	4299.6	0.9	**53.6055**	0.977	1.8	ug/L	42	Standard
>	Ga	71	78.3	42.5				mg/L	42	Standard
	Rb	85	866.7	7.4				ug/L	17	Standard
	Y	89	460058.1	1.7				ug/L	417098	Standard
>	Rh	103	33.3	31.2				ug/L	13	Standard
	Mo	98	295506.5	0.5	**103.9241**	2.114	2.0	ug/L	11	Standard
	Ag	107	348188.0	0.5	**50.0657**	0.748	1.5	ug/L	68	Standard
	Cd	111	111062.0	1.3	**49.7777**	0.346	0.7	mg/L	2	Standard
	Cd	114	271614.5	0.9	**49.6432**	0.990	2.0	ug/L	12	Standard
>	In	115	626816.0	1.9				ug/L	587441	Standard
	Sn	118	313548.1	1.3	**50.2246**	1.384	2.8	ug/L	497	Standard
	Sb	123	246409.0	0.1	**49.4692**	0.867	1.8	ug/L	78	Standard
	Ba	135	105775.6	0.8	**48.4328**	1.255	2.6	ug/L	24	Standard
	Ce	140	66.7	48.8				ug/L	25	Standard
>	Tb	159	996778.4	1.8				ug/L	939701	Standard
	Ho	165	16.7	34.6				ug/L	10	Standard
	Tl	203	442598.6	0.7	**50.9461**	0.764	1.5	ug/L	4	Standard
	Tl	205	402531.2	1.7	**53.3816**	0.705	1.3	ug/L	2	Standard
	Pb	206	287928.0	0.2	**51.0713**	0.393	0.8	ug/L	240	Standard
	Pb	207	257921.1	0.2	**51.4941**	0.566	1.1	ug/L	198	Standard
	Pb	208	1040092.9	0.4	**52.5571**	0.545	1.0	ug/L	883	Standard
	U	238	381264.5	1.2	**52.5495**	0.479	0.9	ug/L	3	Standard
>	Bi	209	552262.9	0.9				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4305.6	5.5	**5.2771**	0.213	4.0	mg/L	37	Standard
K	39	2275.2	2.4	**4.7239**	0.217	4.6	mg/L	38	Standard
Ca	43	126.7	42.6	**5.1579**	3.228	62.6	mg/L	10	Standard
Fe	54	6415.2	4.5	**5.0956**	0.328	6.4	mg/L	179	Standard
Fe	57	1851.8	4.1	**4.9827**	0.373	7.5	mg/L	335	Standard
Sc-1	45	63472.7	2.1				mg/L	61029	Standard
Cl	35	28119.4	1.3				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	2310.2	13.5				ug/L	1547	Standard
P	31	19991.5	1.1				ug/L	15286	Standard
S	34	2273.5	5.1				ug/L	1572	Standard
Sr	88	71.7	10.7				ug/L	73	Standard
C	12	66.7	8.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	8.6	116.8				mg/L	6	Standard
Ho-1	165	16.7	34.6				mg/L	10	Standard
Er	166	30.0	0.0				mg/L	13	Standard
I	127	25116.6	23.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	106.160		
Al	27	97.552		
Sc	45			
Ti	47	100.860		
V	51	104.696		
Cr	52	100.904		
Cr	53			
Mn	55	106.222		
Co	59	110.351		
Ni	60	100.616		
Cu	65	101.046		
Zn	66	102.454		
Ge	72		108.570	
As	75	100.834		
Se	82	102.660		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	103.924		
Ag	107	100.131		
Cd	111	99.555		
Cd	114			
In	115			106.703
Sn	118	100.449		
Sb	123	98.938		
Ba	135	96.866		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.892		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.114		
U	238	105.099		
Bi	209			105.397
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Co	59	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 15:07:18
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85012.9	2.0				ug/L	74699	Standard
	Be	9	28.3	27.0	**0.0359**	0.008	21.1	ug/L	8	Standard
	Al	27	3885.6	39.7	**0.0100**	0.010	97.9	ug/L	1493	Standard
	Sc	45	66216.1	1.0				ug/L	61029	Standard
	Ti	47	42.3	11.2	**-0.0066**	0.011	167.9	ug/L	35	Standard
	V	51	1610.8	4.5	**0.0001**	0.010	18188.0	ug/L	1435	Standard
	Cr	52	7733.0	4.2	**-0.0667**	0.042	62.7	ug/L	7635	Standard
	Cr	53	656.7	7.6	**0.3218**	0.049	15.4	ug/L	363	Standard
	Mn	55	934.4	2.8	**-0.0250**	0.004	15.9	ug/L	747	Standard
	Co	59	270.3	16.3	**0.0003**	0.006	2278.1	ug/L	234	Standard
	Ni	60	353.0	46.0	**0.0492**	0.080	162.9	ug/L	215	Standard
	Cu	65	160.7	5.6	**-0.0245**	0.004	18.2	ug/L	104	Standard
	Zn	66	427.3	1.4	**-0.0957**	0.006	6.2	ug/L	363	Standard
>	**Ge**	72	539852.0	0.5				ug/L	495142	Standard
	As	75	-35.2	72.3	**0.0308**	0.021	67.1	ug/L	-50	Standard
	Se	82	23.4	13.4	**0.0577**	0.027	47.1	ug/L	14	Standard
	Se-1	77	65.0	15.6	**0.1944**	0.131	67.4	ug/L	42	Standard
>	**Ga**	71	48.3	15.8				mg/L	42	Standard
	Rb	85	13.3	21.7				ug/L	17	Standard
	Y	89	460334.1	1.4				ug/L	417098	Standard
>	**Rh**	103	15.0	57.7				ug/L	13	Standard
	Mo	98	325.6	30.7	**0.1063**	0.035	33.0	ug/L	11	Standard
	Ag	107	121.0	14.9	**0.0041**	0.003	62.9	ug/L	68	Standard
	Cd	111	13.2	31.2	**-0.0021**	0.002	85.0	mg/L	2	Standard
	Cd	114	51.9	43.2	**0.0072**	0.004	56.5	ug/L	12	Standard
>	**In**	115	641477.2	0.6				ug/L	587441	Standard
	Sn	118	860.0	23.5	**0.0400**	0.031	77.0	ug/L	497	Standard
	Sb	123	396.3	20.9	**0.0735**	0.016	21.4	ug/L	78	Standard
	Ba	135	45.3	20.4	**0.0043**	0.004	99.1	ug/L	24	Standard
	Ce	140	36.7	15.7				ug/L	25	Standard
>	**Tb**	159	1015779.3	0.6				ug/L	939701	Standard
	Ho	165	5.0	100.0				ug/L	10	Standard
	Tl	203	76.0	35.5	**0.0066**	0.003	43.8	ug/L	4	Standard
	Tl	205	63.3	18.2	**0.0082**	0.001	17.5	ug/L	2	Standard
	Pb	206	309.7	4.7	**-0.0185**	0.002	12.2	ug/L	240	Standard
	Pb	207	263.0	6.6	**-0.0197**	0.003	14.7	ug/L	198	Standard
	Pb	208	1081.0	8.8	**-0.0217**	0.004	19.1	ug/L	883	Standard
	U	238	55.3	39.0	**0.0029**	0.003	97.3	ug/L	3	Standard
>	**Bi**	209	576716.4	0.8				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.8612**	30.928	173.2	mg/L	0	Standard
Mg	24	48.3	39.2	**-0.0075**	0.023	309.1	mg/L	37	Standard
K	39	65.0	38.5	**0.0181**	0.050	275.9	mg/L	38	Standard
Ca	43	31.7	9.1	**-0.6795**	0.172	25.4	mg/L	10	Standard
Fe	54	165.7	15.0	**-0.0089**	0.019	210.6	mg/L	179	Standard
Fe	57	258.3	12.9	**-0.2654**	0.099	37.5	mg/L	335	Standard
Sc-1	45	66216.1	1.0				mg/L	61029	Standard
Cl	35	27856.9	0.3				ug/L	20195	Standard
Kr	83	4.0	43.3				ug/L	4	Standard
Br	81	1983.5	3.1				ug/L	1547	Standard
P	31	20308.6	3.1				ug/L	15286	Standard
S	34	2271.8	3.7				ug/L	1572	Standard
Sr	88	51.7	22.3				ug/L	73	Standard
C	12	73.3	34.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	20.0	86.6				mg/L	6	Standard
Ho-1	165	5.0	100.0				mg/L	10	Standard
Er	166	0.0					mg/L	13	Standard
I	127	13137.4	11.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		109.030	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.199
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.064
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBS M5 WG573099-02
Sample Date/Time: Wednesday, June 29, 2016 15:10:32
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82837.5	1.4				ug/L	74699	Standard
	Be	9	20.0	75.0	**0.0280**	0.015	53.9	ug/L	8	Standard
	Al	27	15988.5	12.5	**0.0848**	0.014	16.0	ug/L	1493	Standard
	Sc	45	64671.1	2.4				ug/L	61029	Standard
	Ti	47	45.0	20.0	**-0.0015**	0.023	1562.0	ug/L	35	Standard
	V	51	1647.0	1.8	**0.0017**	0.004	236.7	ug/L	1435	Standard
	Cr	52	11218.5	4.3	**0.3456**	0.052	15.0	ug/L	7635	Standard
	Cr	53	1063.4	5.0	**0.7116**	0.068	9.6	ug/L	363	Standard
	Mn	55	1756.1	5.1	**0.0801**	0.011	14.2	ug/L	747	Standard
	Co	59	312.3	6.3	**0.0055**	0.003	48.1	ug/L	234	Standard
	Ni	60	1377.4	15.3	**0.5415**	0.099	18.4	ug/L	215	Standard
	Cu	65	261.7	8.1	**0.0235**	0.011	45.2	ug/L	104	Standard
	Zn	66	1613.1	3.7	**0.8814**	0.040	4.6	ug/L	363	Standard
>	**Ge**	72	547319.5	1.5				ug/L	495142	Standard
	As	75	-42.5	100.6	**0.0255**	0.034	133.0	ug/L	-50	Standard
	Se	82	18.0	18.7	**0.0100**	0.027	272.2	ug/L	14	Standard
	Se-1	77	65.0	16.6	**0.1841**	0.145	78.6	ug/L	42	Standard
>	**Ga**	71	66.7	22.9				mg/L	42	Standard
	Rb	85	36.7	56.8				ug/L	17	Standard
	Y	89	450480.7	0.9				ug/L	417098	Standard
>	**Rh**	103	26.7	10.8				ug/L	13	Standard
	Mo	98	139.4	1.7	**0.0435**	0.001	2.2	ug/L	11	Standard
	Ag	107	102.7	18.1	**0.0019**	0.003	140.0	ug/L	68	Standard
	Cd	111	13.1	71.9	**-0.0020**	0.004	209.6	mg/L	2	Standard
	Cd	114	24.5	136.0	**0.0024**	0.006	256.9	ug/L	12	Standard
>	**In**	115	624818.4	0.5				ug/L	587441	Standard
	Sn	118	765.0	2.8	**0.0284**	0.003	12.0	ug/L	497	Standard
	Sb	123	189.1	20.4	**0.0339**	0.008	23.4	ug/L	78	Standard
	Ba	135	83.0	7.9	**0.0221**	0.003	14.0	ug/L	24	Standard
	Ce	140	301.7	18.8				ug/L	25	Standard
>	**Tb**	159	992078.8	0.6				ug/L	939701	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	40.0	57.5	**0.0027**	0.003	94.2	ug/L	4	Standard
	Tl	205	43.3	29.0	**0.0058**	0.002	28.5	ug/L	2	Standard
	Pb	206	319.7	11.1	**-0.0160**	0.006	36.6	ug/L	240	Standard
	Pb	207	262.0	4.6	**-0.0191**	0.002	12.7	ug/L	198	Standard
	Pb	208	1094.7	2.8	**-0.0202**	0.002	8.1	ug/L	883	Standard
	U	238	22.0	58.0	**-0.0015**	0.002	114.9	ug/L	3	Standard
>	**Bi**	209	568214.1	0.6				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	43.3	17.6	**-0.0124**	0.008	67.7	mg/L	37	Standard
K	39	35.0	51.5	**-0.0416**	0.036	86.5	mg/L	38	Standard
Ca	43	30.0	28.9	**-0.7286**	0.543	74.5	mg/L	10	Standard
Fe	54	174.1	18.8	**0.0014**	0.029	2030.6	mg/L	179	Standard
Fe	57	266.7	22.0	**-0.2161**	0.204	94.4	mg/L	335	Standard
> **Sc-1**	45	64671.1	2.4				mg/L	61029	Standard
Cl	35	28617.0	1.0				ug/L	20195	Standard
Kr	83	2.0	100.0				ug/L	4	Standard
Br	81	1953.5	6.4				ug/L	1547	Standard
P	31	19132.1	3.4				ug/L	15286	Standard
S	34	2278.5	6.0				ug/L	1572	Standard
Sr	88	68.3	29.6				ug/L	73	Standard
C	12	83.3	13.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	15.5	39.0				mg/L	6	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	23.3	49.5				mg/L	13	Standard
I	127	8569.1	14.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.895	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.538	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.363
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.441
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBS M5 WG573099-02
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Method 6020 - Summary Report

Sample ID: LCSS M5 WG573099-03
Sample Date/Time: Wednesday, June 29, 2016 15:13:43
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83551.5	2.3				ug/L	74699	Standard
	Be	9	25751.9	2.9	**26.1593**	0.514	2.0	ug/L	8	Standard
	Al	27	17496.8	6.9	**0.0930**	0.006	6.2	ug/L	1493	Standard
	Sc	45	66115.6	1.8				ug/L	61029	Standard
	Ti	47	52.7	14.3	**0.0175**	0.016	92.6	ug/L	35	Standard
	V	51	220707.2	1.1	**26.4464**	0.390	1.5	ug/L	1435	Standard
	Cr	52	221818.0	0.7	**26.2660**	0.546	2.1	ug/L	7635	Standard
	Cr	53	27359.7	0.9	**26.6591**	0.406	1.5	ug/L	363	Standard
	Mn	55	204818.9	1.5	**26.6717**	0.451	1.7	ug/L	747	Standard
	Co	59	196776.0	1.4	**27.1279**	0.304	1.1	ug/L	234	Standard
	Ni	60	55651.4	0.4	**26.9765**	0.492	1.8	ug/L	215	Standard
	Cu	65	54836.4	0.8	**26.7594**	0.556	2.1	ug/L	104	Standard
	Zn	66	32934.1	1.1	**27.0387**	0.809	3.0	ug/L	363	Standard
>	**Ge**	72	543210.6	2.2				ug/L	495142	Standard
	As	75	31720.5	1.5	**25.8765**	0.351	1.4	ug/L	-50	Standard
	Se	82	3103.9	1.9	**25.6428**	0.383	1.5	ug/L	14	Standard
	Se-1	77	2231.2	2.7	**27.2211**	0.278	1.0	ug/L	42	Standard
>	**Ga**	71	55.0	47.2				mg/L	42	Standard
	Rb	85	35.0	42.9				ug/L	17	Standard
	Y	89	467716.3	0.8				ug/L	417098	Standard
>	**Rh**	103	13.3	43.3				ug/L	13	Standard
	Mo	98	194.8	10.9	**0.0603**	0.008	12.8	ug/L	11	Standard
	Ag	107	10349.2	1.8	**1.4201**	0.038	2.7	ug/L	68	Standard
	Cd	111	56717.0	1.5	**24.4699**	0.504	2.1	mg/L	2	Standard
	Cd	114	136634.8	1.7	**24.0382**	0.506	2.1	ug/L	12	Standard
>	**In**	115	651063.9	0.8				ug/L	587441	Standard
	Sn	118	761.7	5.5	**0.0229**	0.007	28.6	ug/L	497	Standard
	Sb	123	128047.0	1.0	**24.7441**	0.436	1.8	ug/L	78	Standard
	Ba	135	54350.3	0.9	**23.9455**	0.395	1.6	ug/L	24	Standard
	Ce	140	61.7	26.1				ug/L	25	Standard
>	**Tb**	159	1033159.0	0.5				ug/L	939701	Standard
	Ho	165	16.7	17.3				ug/L	10	Standard
	Tl	203	227266.1	0.5	**24.7175**	0.218	0.9	ug/L	4	Standard
	Tl	205	203485.9	1.6	**25.5015**	0.511	2.0	ug/L	2	Standard
	Pb	206	152382.5	0.6	**25.5050**	0.255	1.0	ug/L	240	Standard
	Pb	207	130131.8	0.7	**24.5130**	0.243	1.0	ug/L	198	Standard
	Pb	208	530327.1	0.9	**25.2835**	0.262	1.0	ug/L	883	Standard
	U	238	189200.1	1.2	**24.6397**	0.334	1.4	ug/L	3	Standard
>	**Bi**	209	584433.1	0.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	41.7	36.7	**-0.0156**	0.017	112.1	mg/L	37	Standard
K	39	38.3	52.7	**-0.0354**	0.042	119.1	mg/L	38	Standard
Ca	43	25.0	52.9	**-1.0705**	0.758	70.8	mg/L	10	Standard
Fe	54	141.4	21.3	**-0.0274**	0.025	92.5	mg/L	179	Standard
Fe	57	241.7	15.7	**-0.3151**	0.126	40.1	mg/L	335	Standard
Sc-1	45	66115.6	1.8				mg/L	61029	Standard
Cl	35	28385.2	0.6				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	2056.8	1.5				ug/L	1547	Standard
P	31	18911.8	2.1				ug/L	15286	Standard
S	34	2256.8	4.9				ug/L	1572	Standard
Sr	88	70.0	39.8				ug/L	73	Standard
C	12	60.0	66.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	9.5	5.0				mg/L	6	Standard
Ho-1	165	16.7	17.3				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	6019.5	14.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		111.851	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		109.708	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.831
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		111.536
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSS M5 WG573099-03
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Method 6020 - Summary Report

Sample ID: L1606088803 WG573099-01
Sample Date/Time: Wednesday, June 29, 2016 15:16:55
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	87864.2	2.8				ug/L	74699	Standard
	Be	9	1871.8	7.3	**1.8142**	0.100	5.5	ug/L	8	Standard
	Al	27	17464438.5	2.2	**101.0382**	1.686	1.7	ug/L	1493	Standard
	Sc	45	88916.8	1.0				ug/L	61029	Standard
	Ti	47	8105.2	1.6	**20.2503**	0.364	1.8	ug/L	35	Standard
	V	51	266665.9	0.8	**33.4185**	0.188	0.6	ug/L	1435	Standard
	Cr	52	308197.4	0.8	**38.5684**	0.415	1.1	ug/L	7635	Standard
	Cr	53	37658.4	2.2	**38.4602**	0.742	1.9	ug/L	363	Standard
	Mn	55	19789542.3	0.8	**2705.9402**	31.717	1.2	ug/L	747	Standard
	Co	59	276278.5	0.6	**39.7944**	0.401	1.0	ug/L	234	Standard
	Ni	60	160372.4	1.4	**81.4241**	1.275	1.6	ug/L	215	Standard
	Cu	65	107769.0	1.4	**55.0229**	0.902	1.6	ug/L	104	Standard
	Zn	66	213527.8	0.7	**185.6475**	1.406	0.8	ug/L	363	Standard
>	**Ge**	72	520092.2	0.4				ug/L	495142	Standard
	As	75	6170.4	1.0	**5.3042**	0.070	1.3	ug/L	-50	Standard
	Se	82	90.8	2.7	**0.6494**	0.023	3.5	ug/L	14	Standard
	Se-1	77	157.7	4.9	**1.4330**	0.106	7.4	ug/L	42	Standard
>	**Ga**	71	47343.9	1.1				mg/L	42	Standard
	Rb	85	380728.2	1.5				ug/L	17	Standard
	Y	89	1106618.3	0.2				ug/L	417098	Standard
>	**Rh**	103	63.3	24.1				ug/L	13	Standard
	Mo	98	980.4	3.2	**0.3366**	0.010	3.0	ug/L	11	Standard
	Ag	107	955.0	6.8	**0.1236**	0.011	9.1	ug/L	68	Standard
	Cd	111	2225.7	2.0	**0.9829**	0.017	1.8	mg/L	2	Standard
	Cd	114	5479.9	1.8	**0.9924**	0.001	0.1	ug/L	12	Standard
>	**In**	115	631161.9	1.7				ug/L	587441	Standard
	Sn	118	413.3	14.8	**-0.0289**	0.009	31.0	ug/L	497	Standard
	Sb	123	370.7	34.4	**0.0695**	0.025	35.4	ug/L	78	Standard
	Ba	135	385428.4	1.0	**175.2729**	2.367	1.4	ug/L	24	Standard
	Ce	140	2007459.4	3.6				ug/L	25	Standard
>	**Tb**	159	1048778.2	1.5				ug/L	939701	Standard
	Ho	165	53168.1	1.9				ug/L	10	Standard
	Tl	203	2332.8	1.5	**0.2668**	0.007	2.6	ug/L	4	Standard
	Tl	205	2056.8	1.1	**0.2730**	0.001	0.5	ug/L	2	Standard
	Pb	206	102474.4	0.3	**18.1326**	0.189	1.0	ug/L	240	Standard
	Pb	207	82544.6	1.5	**16.4326**	0.141	0.9	ug/L	198	Standard
	Pb	208	353310.3	0.4	**17.8060**	0.180	1.0	ug/L	883	Standard
	U	238	9355.9	0.7	**1.2854**	0.017	1.3	ug/L	3	Standard
>	**Bi**	209	552227.6	1.4				ug/L	523984	Standard

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Na	23	1.7	173.2	**13.3403**	23.097	173.1	mg/L	0	Standard
Mg	24	320.0	5.6	**0.2185**	0.016	7.5	mg/L	37	Standard
K	39	1080.0	10.5	**1.5233**	0.156	10.2	mg/L	38	Standard
Ca	43	916.7	12.0	**37.2112**	4.625	12.4	mg/L	10	Standard
Fe	54	75887.5	2.1	**44.0256**	1.050	2.4	mg/L	179	Standard
Fe	57	19502.5	1.2	**44.4256**	0.652	1.5	mg/L	335	Standard
> **Sc-1**	45	88916.8	1.0				mg/L	61029	Standard
Cl	35	27513.6	0.5				ug/L	20195	Standard
Kr	83	0.3	173.2				ug/L	4	Standard
Br	81	3467.1	2.9				ug/L	1547	Standard
P	31	21865.8	2.4				ug/L	15286	Standard
S	34	2631.9	4.0				ug/L	1572	Standard
Sr	88	220.0	6.0				ug/L	73	Standard
C	12	66.7	37.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	15.7				mg/L	3	Standard
Dy	164	86599.4	2.5				mg/L	6	Standard
Ho-1	165	53168.1	1.9				mg/L	10	Standard
Er	166	47260.3	0.7				mg/L	13	Standard
I	127	6809.9	9.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.625	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.039	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.443
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.390
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606088803S WG573099-04
Sample Date/Time: Wednesday, June 29, 2016 15:20:06
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88784.5	2.9				ug/L	74699	Standard
	Be	9	27508.3	0.4	**26.3080**	0.631	2.4	ug/L	8	Standard
	Al	27	20794150.5	3.6	**119.0173**	0.902	0.8	ug/L	1493	Standard
	Sc	45	96992.9	2.3				ug/L	61029	Standard
	Ti	47	11606.4	2.4	**28.2553**	0.997	3.5	ug/L	35	Standard
	V	51	594819.7	3.2	**72.7593**	3.186	4.4	ug/L	1435	Standard
	Cr	52	602098.1	1.8	**74.2282**	2.325	3.1	ug/L	7635	Standard
	Cr	53	74295.1	1.5	**74.1206**	1.783	2.4	ug/L	363	Standard
	Mn	55	28090211.5	1.2	**3736.5671**	85.696	2.3	ug/L	747	Standard
	Co	59	552502.8	1.4	**77.4533**	1.929	2.5	ug/L	234	Standard
	Ni	60	270132.5	1.6	**133.5117**	3.898	2.9	ug/L	215	Standard
	Cu	65	201432.2	2.2	**100.1412**	3.335	3.3	ug/L	104	Standard
	Zn	66	320182.0	2.8	**271.0655**	11.001	4.1	ug/L	363	Standard
>	**Ge**	72	534719.5	1.4				ug/L	495142	Standard
	As	75	41934.7	2.3	**34.7370**	1.197	3.4	ug/L	-50	Standard
	Se	82	2480.2	1.5	**20.7934**	0.607	2.9	ug/L	14	Standard
	Se-1	77	1799.1	2.3	**22.1951**	0.836	3.8	ug/L	42	Standard
>	**Ga**	71	63861.1	4.0				mg/L	42	Standard
	Rb	85	554637.9	1.8				ug/L	17	Standard
	Y	89	1250941.0	3.4				ug/L	417098	Standard
>	**Rh**	103	88.3	8.6				ug/L	13	Standard
	Mo	98	1454.1	4.8	**0.5217**	0.033	6.4	ug/L	11	Standard
	Ag	107	4814.4	4.1	**0.7006**	0.018	2.6	ug/L	68	Standard
	Cd	111	56224.0	1.3	**25.9728**	0.111	0.4	mg/L	2	Standard
	Cd	114	138439.7	3.6	**26.0717**	0.493	1.9	ug/L	12	Standard
>	**In**	115	608045.3	1.7				ug/L	587441	Standard
	Sn	118	518.3	2.0	**-0.0090**	0.001	16.4	ug/L	497	Standard
	Sb	123	2325.7	1.7	**0.4771**	0.008	1.7	ug/L	78	Standard
	Ba	135	587827.7	1.5	**277.4602**	0.795	0.3	ug/L	24	Standard
	Ce	140	2927642.8	0.6				ug/L	25	Standard
>	**Tb**	159	1033681.4	2.7				ug/L	939701	Standard
	Ho	165	68191.4	0.6				ug/L	10	Standard
	Tl	203	212892.3	0.8	**25.4932**	0.083	0.3	ug/L	4	Standard
	Tl	205	191048.7	1.2	**26.3598**	0.091	0.3	ug/L	2	Standard
	Pb	206	260602.6	2.5	**48.0843**	0.971	2.0	ug/L	240	Standard
	Pb	207	216580.3	1.8	**44.9759**	0.652	1.4	ug/L	198	Standard
	Pb	208	918219.8	1.2	**48.2652**	0.290	0.6	ug/L	883	Standard
	U	238	196774.7	2.4	**28.2131**	0.460	1.6	ug/L	3	Standard
>	**Bi**	209	530811.0	1.1				ug/L	523984	Standard

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Na	23	1.7	173.2	**12.2205**	21.158	173.1	mg/L	0	Standard
Mg	24	365.0	3.6	**0.2314**	0.007	3.2	mg/L	37	Standard
K	39	1516.7	5.6	**1.9963**	0.137	6.9	mg/L	38	Standard
Ca	43	726.7	5.8	**26.3770**	1.992	7.6	mg/L	10	Standard
Fe	54	108682.6	3.2	**57.8341**	0.799	1.4	mg/L	179	Standard
Fe	57	27718.7	1.4	**58.2169**	0.892	1.5	mg/L	335	Standard
Sc-1	45	96992.9	2.3				mg/L	61029	Standard
Cl	35	26216.7	4.4				ug/L	20195	Standard
Kr	83	3.0	33.3				ug/L	4	Standard
Br	81	4344.0	8.1				ug/L	1547	Standard
P	31	22273.0	3.2				ug/L	15286	Standard
S	34	2523.5	5.1				ug/L	1572	Standard
Sr	88	263.3	11.4				ug/L	73	Standard
C	12	56.7	10.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	52.9				mg/L	3	Standard
Dy	164	111985.6	3.7				mg/L	6	Standard
Ho-1	165	68191.4	0.6				mg/L	10	Standard
Er	166	57569.3	4.1				mg/L	13	Standard
I	127	6513.1	8.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.857	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.993	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.507
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.303
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	

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Cu 65 Upper, S, EEE	Cu	65
Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606088803SD WG573099-05
Sample Date/Time: Wednesday, June 29, 2016 15:23:18
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86779.6	2.9				ug/L	74699	Standard
	Be	9	26783.7	4.5	**26.1889**	0.607	2.3	ug/L	8	Standard
	Al	27	17495490.1	2.1	**102.4852**	1.702	1.7	ug/L	1493	Standard
	Sc	45	84971.1	3.4				ug/L	61029	Standard
	Ti	47	11032.7	2.5	**25.6633**	0.769	3.0	ug/L	35	Standard
	V	51	492228.0	0.7	**57.5050**	0.764	1.3	ug/L	1435	Standard
	Cr	52	556079.4	1.4	**65.4064**	1.154	1.8	ug/L	7635	Standard
	Cr	53	67044.7	1.2	**63.8916**	0.827	1.3	ug/L	363	Standard
	Mn	55	16288704.5	1.7	**2071.2097**	47.470	2.3	ug/L	747	Standard
	Co	59	487642.9	2.1	**65.3439**	1.764	2.7	ug/L	234	Standard
	Ni	60	230286.3	2.0	**108.7653**	2.155	2.0	ug/L	215	Standard
	Cu	65	186555.0	1.4	**88.6352**	1.512	1.7	ug/L	104	Standard
	Zn	66	269449.8	1.5	**217.9309**	3.745	1.7	ug/L	363	Standard
>	**Ge**	72	559301.6	0.7				ug/L	495142	Standard
	As	75	32569.4	2.0	**25.8033**	0.648	2.5	ug/L	-50	Standard
	Se	82	2764.3	2.2	**22.1623**	0.630	2.8	ug/L	14	Standard
	Se-1	77	1950.8	4.1	**23.0256**	1.042	4.5	ug/L	42	Standard
>	**Ga**	71	55862.8	2.2				mg/L	42	Standard
	Rb	85	472783.4	2.1				ug/L	17	Standard
	Y	89	931018.8	1.5				ug/L	417098	Standard
>	**Rh**	103	36.7	47.9				ug/L	13	Standard
	Mo	98	833.5	3.5	**0.3003**	0.015	5.0	ug/L	11	Standard
	Ag	107	3972.2	0.3	**0.5833**	0.011	1.9	ug/L	68	Standard
	Cd	111	54996.2	0.6	**25.7204**	0.316	1.2	mg/L	2	Standard
	Cd	114	133681.6	2.4	**25.4888**	0.206	0.8	ug/L	12	Standard
>	**In**	115	600647.8	1.6				ug/L	587441	Standard
	Sn	118	466.7	16.3	**-0.0167**	0.012	70.0	ug/L	497	Standard
	Sb	123	3387.1	2.7	**0.7053**	0.008	1.2	ug/L	78	Standard
	Ba	135	467382.4	1.0	**223.3343**	2.175	1.0	ug/L	24	Standard
	Ce	140	1516729.6	1.2				ug/L	25	Standard
>	**Tb**	159	1007426.2	2.1				ug/L	939701	Standard
	Ho	165	39640.1	1.9				ug/L	10	Standard
	Tl	203	211811.1	1.3	**24.5598**	0.357	1.5	ug/L	4	Standard
	Tl	205	187359.9	1.8	**25.0339**	0.597	2.4	ug/L	2	Standard
	Pb	206	219015.7	1.1	**39.1225**	0.790	2.0	ug/L	240	Standard
	Pb	207	182856.8	0.5	**36.7608**	0.679	1.8	ug/L	198	Standard
	Pb	208	768036.7	1.8	**39.0813**	0.960	2.5	ug/L	883	Standard
	U	238	187429.9	1.2	**26.0258**	0.546	2.1	ug/L	3	Standard
>	**Bi**	209	548237.3	1.8				ug/L	523984	Standard

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Na	23	6.7	43.3	**55.5842**	25.460	45.8	mg/L	0	Standard
Mg	24	348.3	15.5	**0.2571**	0.039	15.2	mg/L	37	Standard
K	39	1421.7	3.5	**2.1441**	0.098	4.5	mg/L	38	Standard
Ca	43	383.3	17.4	**14.9477**	3.560	23.8	mg/L	10	Standard
Fe	54	86673.1	2.4	**52.6645**	1.510	2.9	mg/L	179	Standard
Fe	57	21795.7	3.1	**52.2085**	3.369	6.5	mg/L	335	Standard
> **Sc-1**	45	84971.1	3.4				mg/L	61029	Standard
Cl	35	24892.4	3.3				ug/L	20195	Standard
Kr	83	2.3	65.5				ug/L	4	Standard
Br	81	3257.0	4.5				ug/L	1547	Standard
P	31	20836.0	2.5				ug/L	15286	Standard
S	34	2406.9	4.4				ug/L	1572	Standard
Sr	88	191.7	46.0				ug/L	73	Standard
C	12	76.7	15.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	20.0				mg/L	3	Standard
Dy	164	63526.1	1.7				mg/L	6	Standard
Ho-1	165	39640.1	1.9				mg/L	10	Standard
Er	166	35224.2	2.0				mg/L	13	Standard
I	127	5139.2	9.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.173	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		112.958	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.248
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.629
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	

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Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

Sample ID: L1606088803SD WG573099-05
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Method 6020 - Summary Report

Sample ID: L1606088301
Sample Date/Time: Wednesday, June 29, 2016 15:26:29
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84384.4	1.7				ug/L	74699	Standard
	Be	9	1073.4	1.5	**1.0872**	0.032	3.0	ug/L	8	Standard
	Al	27	11940771.9	2.8	**71.9363**	2.792	3.9	ug/L	1493	Standard
	Sc	45	76626.6	1.2				ug/L	61029	Standard
	Ti	47	4374.3	2.0	**10.2834**	0.247	2.4	ug/L	35	Standard
	V	51	162703.8	1.0	**19.2014**	0.098	0.5	ug/L	1435	Standard
	Cr	52	132016.8	1.7	**15.0167**	0.347	2.3	ug/L	7635	Standard
	Cr	53	16153.6	0.8	**15.4073**	0.063	0.4	ug/L	363	Standard
	Mn	55	3262876.5	0.6	**421.8414**	5.005	1.2	ug/L	747	Standard
	Co	59	67832.8	0.7	**9.2120**	0.089	1.0	ug/L	234	Standard
	Ni	60	42623.2	1.3	**20.3743**	0.274	1.3	ug/L	215	Standard
	Cu	65	31205.8	0.3	**14.9935**	0.149	1.0	ug/L	104	Standard
	Zn	66	53134.7	1.9	**43.3429**	0.711	1.6	ug/L	363	Standard
>	**Ge**	72	549915.9	0.8				ug/L	495142	Standard
	As	75	3335.6	3.0	**2.7409**	0.080	2.9	ug/L	-50	Standard
	Se	82	46.6	19.0	**0.2449**	0.076	30.9	ug/L	14	Standard
	Se-1	77	111.7	5.1	**0.7542**	0.066	8.8	ug/L	42	Standard
>	**Ga**	71	17852.2	2.1				mg/L	42	Standard
	Rb	85	173572.1	2.0				ug/L	17	Standard
	Y	89	703667.4	2.2				ug/L	417098	Standard
>	**Rh**	103	33.3	34.6				ug/L	13	Standard
	Mo	98	357.4	3.8	**0.1158**	0.007	6.2	ug/L	11	Standard
	Ag	107	550.0	6.6	**0.0636**	0.007	11.1	ug/L	68	Standard
	Cd	111	273.3	3.2	**0.1105**	0.006	5.2	mg/L	2	Standard
	Cd	114	617.1	4.0	**0.1069**	0.006	5.7	ug/L	12	Standard
>	**In**	115	648944.8	3.3				ug/L	587441	Standard
	Sn	118	606.7	6.6	**-0.0008**	0.003	418.3	ug/L	497	Standard
	Sb	123	137.4	14.1	**0.0224**	0.003	13.8	ug/L	78	Standard
	Ba	135	318337.1	2.2	**140.8176**	2.386	1.7	ug/L	24	Standard
	Ce	140	1211648.5	1.9				ug/L	25	Standard
>	**Tb**	159	1041543.0	2.5				ug/L	939701	Standard
	Ho	165	19666.1	3.2				ug/L	10	Standard
	Tl	203	1035.0	3.0	**0.1143**	0.004	3.7	ug/L	4	Standard
	Tl	205	953.4	8.0	**0.1233**	0.009	7.5	ug/L	2	Standard
	Pb	206	127279.7	1.1	**21.9443**	0.442	2.0	ug/L	240	Standard
	Pb	207	103046.6	1.5	**19.9907**	0.426	2.1	ug/L	198	Standard
	Pb	208	441148.5	1.4	**21.6612**	0.196	0.9	ug/L	883	Standard
	U	238	5034.2	0.5	**0.6713**	0.005	0.8	ug/L	3	Standard
>	**Bi**	209	567168.2	1.1				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	340.0	3.9	**0.2844**	0.011	3.7	mg/L	37	Standard
K	39	688.3	2.3	**1.0975**	0.019	1.8	mg/L	38	Standard
Ca	43	145.0	15.8	**4.7718**	1.160	24.3	mg/L	10	Standard
Fe	54	17324.9	3.4	**11.5598**	0.337	2.9	mg/L	179	Standard
Fe	57	4550.7	3.6	**11.2444**	0.399	3.5	mg/L	335	Standard
> **Sc-1**	45	76626.6	1.2				mg/L	61029	Standard
Cl	35	25558.2	1.3				ug/L	20195	Standard
Kr	83	0.7	173.2				ug/L	4	Standard
Br	81	2263.5	8.1				ug/L	1547	Standard
P	31	20323.6	0.9				ug/L	15286	Standard
S	34	2258.5	1.1				ug/L	1572	Standard
Sr	88	101.7	10.2				ug/L	73	Standard
C	12	116.7	13.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	49.5				mg/L	3	Standard
Dy	164	32996.6	2.0				mg/L	6	Standard
Ho-1	165	19666.1	3.2				mg/L	10	Standard
Er	166	17349.9	3.1				mg/L	13	Standard
I	127	11507.7	1.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.966	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.062	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	110.470
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	108.241
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606091201
Sample Date/Time: Wednesday, June 29, 2016 15:29:41
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84277.1	1.0				ug/L	74699	Standard
	Be	9	1593.4	6.0	**1.6114**	0.083	5.1	ug/L	8	Standard
	Al	27	15243679.1	1.9	**91.9299**	1.967	2.1	ug/L	1493	Standard
	Sc	45	83538.1	3.1				ug/L	61029	Standard
	Ti	47	10307.8	1.1	**23.4331**	0.360	1.5	ug/L	35	Standard
	V	51	410563.1	0.8	**46.8597**	0.438	0.9	ug/L	1435	Standard
	Cr	52	261972.4	0.3	**29.5747**	0.180	0.6	ug/L	7635	Standard
	Cr	53	32057.2	1.7	**29.6933**	0.417	1.4	ug/L	363	Standard
	Mn	55	12908980.1	3.2	**1604.9549**	58.354	3.6	ug/L	747	Standard
	Co	59	181241.6	3.1	**23.7226**	0.846	3.6	ug/L	234	Standard
	Ni	60	66685.8	0.9	**30.7063**	0.259	0.8	ug/L	215	Standard
	Cu	65	73374.2	0.7	**34.0220**	0.398	1.2	ug/L	104	Standard
	Zn	66	143517.2	0.9	**113.2755**	1.322	1.2	ug/L	363	Standard
>	**Ge**	72	572023.7	0.5				ug/L	495142	Standard
	As	75	16668.5	2.4	**12.9416**	0.353	2.7	ug/L	-50	Standard
	Se	82	187.7	6.4	**1.3421**	0.095	7.1	ug/L	14	Standard
	Se-1	77	232.0	7.5	**2.1278**	0.217	10.2	ug/L	42	Standard
>	**Ga**	71	37605.0	3.4				mg/L	42	Standard
	Rb	85	431124.7	1.0				ug/L	17	Standard
	Y	89	907846.1	0.7				ug/L	417098	Standard
>	**Rh**	103	28.3	27.0				ug/L	13	Standard
	Mo	98	1317.8	2.4	**0.4515**	0.009	1.9	ug/L	11	Standard
	Ag	107	1338.4	1.8	**0.1770**	0.004	2.5	ug/L	68	Standard
	Cd	111	803.3	6.8	**0.3473**	0.022	6.2	mg/L	2	Standard
	Cd	114	1888.8	7.2	**0.3384**	0.023	6.7	ug/L	12	Standard
>	**In**	115	635240.6	1.1				ug/L	587441	Standard
	Sn	118	608.3	2.5	**0.0016**	0.002	109.2	ug/L	497	Standard
	Sb	123	242.0	3.6	**0.0438**	0.002	4.9	ug/L	78	Standard
	Ba	135	645480.7	0.7	**291.6323**	1.817	0.6	ug/L	24	Standard
	Ce	140	2459220.7	0.8				ug/L	25	Standard
>	**Tb**	159	1043691.8	1.6				ug/L	939701	Standard
	Ho	165	34592.8	2.2				ug/L	10	Standard
	Tl	203	3164.7	1.5	**0.3540**	0.007	2.0	ug/L	4	Standard
	Tl	205	2843.6	5.4	**0.3684**	0.020	5.4	ug/L	2	Standard
	Pb	206	325793.2	0.7	**56.4391**	0.926	1.6	ug/L	240	Standard
	Pb	207	262124.0	0.3	**51.1005**	0.344	0.7	ug/L	198	Standard
	Pb	208	1122453.0	1.2	**55.3927**	1.161	2.1	ug/L	883	Standard
	U	238	18503.6	0.6	**2.4863**	0.037	1.5	ug/L	3	Standard
>	**Bi**	209	565563.6	0.9				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	148.3	19.2	**0.0751**	0.029	38.8	mg/L	37	Standard
K	39	1071.7	2.8	**1.6167**	0.038	2.4	mg/L	38	Standard
Ca	43	301.7	16.4	**11.4520**	2.661	23.2	mg/L	10	Standard
Fe	54	45977.7	1.1	**28.3556**	0.839	3.0	mg/L	179	Standard
Fe	57	11742.9	4.0	**28.0839**	0.746	2.7	mg/L	335	Standard
> **Sc-1**	45	83538.1	3.1				mg/L	61029	Standard
Cl	35	25586.9	0.8				ug/L	20195	Standard
Kr	83	2.3	65.5				ug/L	4	Standard
Br	81	3940.5	1.8				ug/L	1547	Standard
P	31	20170.1	2.1				ug/L	15286	Standard
S	34	2405.2	3.2				ug/L	1572	Standard
Sr	88	111.7	6.8				ug/L	73	Standard
C	12	316.7	15.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	146.7	35.0				mg/L	3	Standard
Dy	164	57194.9	2.2				mg/L	6	Standard
Ho-1	165	34592.8	2.2				mg/L	10	Standard
Er	166	32892.3	1.1				mg/L	13	Standard
I	127	48256.8	4.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.823	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		115.527	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	108.137
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	107.935
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606091201PS WG573717-03
Sample Date/Time: Wednesday, June 29, 2016 15:32:52
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84925.7	1.3				ug/L	74699	Standard
	Be	9	54409.2	0.5	**54.3741**	0.919	1.7	ug/L	8	Standard
	Al	27	15619580.7	1.4	**93.4869**	2.147	2.3	ug/L	1493	Standard
	Sc	45	84914.0	2.3				ug/L	61029	Standard
	Ti	47	10489.6	2.4	**24.7035**	0.475	1.9	ug/L	35	Standard
	V	51	847646.1	0.7	**100.4344**	1.074	1.1	ug/L	1435	Standard
	Cr	52	696222.3	1.3	**83.2031**	0.580	0.7	ug/L	7635	Standard
	Cr	53	86425.9	2.6	**83.5032**	1.546	1.9	ug/L	363	Standard
	Mn	55	12964778.0	1.1	**1669.4256**	16.996	1.0	ug/L	747	Standard
	Co	59	568224.0	0.4	**77.1151**	0.744	1.0	ug/L	234	Standard
	Ni	60	176707.0	1.9	**84.4902**	0.918	1.1	ug/L	215	Standard
	Cu	65	181984.3	1.8	**87.5571**	0.864	1.0	ug/L	104	Standard
	Zn	66	208968.8	1.8	**171.0579**	1.957	1.1	ug/L	363	Standard
>	**Ge**	72	552256.5	0.8				ug/L	495142	Standard
	As	75	82371.4	1.6	**65.9929**	0.953	1.4	ug/L	-50	Standard
	Se	82	6597.3	1.6	**53.7542**	0.590	1.1	ug/L	14	Standard
	Se-1	77	4584.4	1.6	**55.6563**	1.034	1.9	ug/L	42	Standard
>	**Ga**	71	37593.3	1.5				mg/L	42	Standard
	Rb	85	428376.8	2.4				ug/L	17	Standard
	Y	89	890825.8	0.7				ug/L	417098	Standard
>	**Rh**	103	50.0	10.0				ug/L	13	Standard
	Mo	98	1335.6	2.9	**0.4503**	0.014	3.2	ug/L	11	Standard
	Ag	107	364007.1	1.3	**50.8126**	0.330	0.6	ug/L	68	Standard
	Cd	111	115695.5	1.2	**50.3468**	0.384	0.8	mg/L	2	Standard
	Cd	114	280904.1	1.9	**49.8365**	0.143	0.3	ug/L	12	Standard
>	**In**	115	645589.3	1.8				ug/L	587441	Standard
	Sn	118	755.0	4.3	**0.0229**	0.003	13.2	ug/L	497	Standard
	Sb	123	254065.1	1.3	**49.5173**	0.623	1.3	ug/L	78	Standard
	Ba	135	752068.0	1.2	**334.3566**	2.055	0.6	ug/L	24	Standard
	Ce	140	2468196.2	1.3				ug/L	25	Standard
>	**Tb**	159	1069312.5	1.3				ug/L	939701	Standard
	Ho	165	35102.3	1.1				ug/L	10	Standard
	Tl	203	458369.6	1.1	**50.4504**	0.349	0.7	ug/L	4	Standard
	Tl	205	409805.1	0.9	**51.9806**	1.259	2.4	ug/L	2	Standard
	Pb	206	619020.9	0.8	**105.0729**	1.076	1.0	ug/L	240	Standard
	Pb	207	511972.0	0.6	**97.8107**	1.381	1.4	ug/L	198	Standard
	Pb	208	2150459.1	0.4	**103.9876**	1.211	1.2	ug/L	883	Standard
	U	238	395808.0	0.4	**52.1735**	0.789	1.5	ug/L	3	Standard
>	**Bi**	209	577539.6	1.5				ug/L	523984	Standard

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Na	23	6.7	43.3	**54.9152**	22.487	40.9	mg/L	0	Standard
Mg	24	118.3	17.1	**0.0444**	0.016	36.3	mg/L	37	Standard
K	39	1026.7	7.6	**1.5167**	0.116	7.6	mg/L	38	Standard
Ca	43	296.7	14.3	**10.9789**	2.237	20.4	mg/L	10	Standard
Fe	54	45524.1	0.4	**27.6104**	0.565	2.0	mg/L	179	Standard
Fe	57	12291.7	1.9	**28.9717**	1.259	4.3	mg/L	335	Standard
> **Sc-1**	45	84914.0	2.3				mg/L	61029	Standard
Cl	35	25819.3	0.8				ug/L	20195	Standard
Kr	83	2.0	0.0				ug/L	4	Standard
Br	81	3963.9	6.7				ug/L	1547	Standard
P	31	20629.0	3.4				ug/L	15286	Standard
S	34	2280.2	5.7				ug/L	1572	Standard
Sr	88	103.3	12.2				ug/L	73	Standard
C	12	333.3	17.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	140.0	7.1				mg/L	3	Standard
Dy	164	56592.8	3.3				mg/L	6	Standard
Ho-1	165	35102.3	1.1				mg/L	10	Standard
Er	166	32397.9	1.1				mg/L	13	Standard
I	127	48815.3	4.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.691	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.535	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	109.899
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	110.221
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Upper, S, EEE	V	51	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135
Pb 206 Upper, S, EEE	Pb	206
Pb 208 Upper, S, EEE	Pb	208

Sample ID: L1606091201PS WG573717-03
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Method 6020 - Summary Report

Sample ID: L1606091201SDL WG573717-04
Sample Date/Time: Wednesday, June 29, 2016 15:36:04
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83450.9	2.1				ug/L	74699	Standard
	Be	9	378.3	16.7	**0.3916**	0.058	14.9	ug/L	8	Standard
	Al	27	3082760.3	2.5	**18.7625**	0.099	0.5	ug/L	1493	Standard
	Sc	45	72303.8	2.1				ug/L	61029	Standard
	Ti	47	2033.1	4.6	**4.7237**	0.243	5.1	ug/L	35	Standard
	V	51	79797.1	0.9	**9.3216**	0.052	0.6	ug/L	1435	Standard
	Cr	52	57744.9	2.6	**5.9945**	0.158	2.6	ug/L	7635	Standard
	Cr	53	6483.1	2.8	**5.9884**	0.155	2.6	ug/L	363	Standard
	Mn	55	2512242.8	1.3	**324.8710**	1.825	0.6	ug/L	747	Standard
	Co	59	34712.7	2.2	**4.6975**	0.071	1.5	ug/L	234	Standard
	Ni	60	13460.0	2.9	**6.3513**	0.158	2.5	ug/L	215	Standard
	Cu	65	15009.4	2.6	**7.1598**	0.141	2.0	ug/L	104	Standard
	Zn	66	29256.2	2.4	**23.6692**	0.389	1.6	ug/L	363	Standard
>	**Ge**	72	549686.2	0.8				ug/L	495142	Standard
	As	75	3156.6	2.0	**2.5979**	0.033	1.3	ug/L	-50	Standard
	Se	82	47.1	17.6	**0.2490**	0.070	28.2	ug/L	14	Standard
	Se-1	77	77.0	11.9	**0.3268**	0.106	32.4	ug/L	42	Standard
>	**Ga**	71	7136.7	1.1				mg/L	42	Standard
	Rb	85	84221.8	1.7				ug/L	17	Standard
	Y	89	569587.4	0.8				ug/L	417098	Standard
>	**Rh**	103	25.0	91.7				ug/L	13	Standard
	Mo	98	271.1	6.9	**0.0847**	0.006	6.6	ug/L	11	Standard
	Ag	107	378.0	10.8	**0.0387**	0.005	13.9	ug/L	68	Standard
	Cd	111	185.8	10.3	**0.0712**	0.009	12.3	mg/L	2	Standard
	Cd	114	406.5	6.5	**0.0684**	0.004	6.4	ug/L	12	Standard
>	**In**	115	660230.6	1.0				ug/L	587441	Standard
	Sn	118	501.7	8.5	**-0.0183**	0.006	32.3	ug/L	497	Standard
	Sb	123	1797.9	20.8	**0.3384**	0.070	20.8	ug/L	78	Standard
	Ba	135	129725.4	1.6	**56.3802**	0.972	1.7	ug/L	24	Standard
	Ce	140	480517.5	2.7				ug/L	25	Standard
>	**Tb**	159	1042248.3	0.8				ug/L	939701	Standard
	Ho	165	6823.2	4.6				ug/L	10	Standard
	Tl	203	727.7	7.7	**0.0794**	0.006	7.1	ug/L	4	Standard
	Tl	205	616.7	4.2	**0.0795**	0.002	2.4	ug/L	2	Standard
	Pb	206	64359.4	2.2	**11.0114**	0.128	1.2	ug/L	240	Standard
	Pb	207	51665.3	2.6	**9.9429**	0.134	1.3	ug/L	198	Standard
	Pb	208	222946.4	0.6	**10.8660**	0.247	2.3	ug/L	883	Standard
	U	238	3701.1	2.3	**0.4902**	0.006	1.1	ug/L	3	Standard
>	**Bi**	209	569638.6	2.0				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	61.7	28.5	**0.0019**	0.018	942.5	mg/L	37	Standard
K	39	203.3	18.5	**0.2649**	0.067	25.4	mg/L	38	Standard
Ca	43	75.0	26.7	**1.4632**	0.987	67.5	mg/L	10	Standard
Fe	54	9325.9	3.5	**6.5358**	0.204	3.1	mg/L	179	Standard
Fe	57	2630.2	2.1	**6.4718**	0.055	0.8	mg/L	335	Standard
> **Sc-1**	45	72303.8	2.1				mg/L	61029	Standard
Cl	35	24972.6	0.9				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	2286.8	8.4				ug/L	1547	Standard
P	31	19043.6	4.4				ug/L	15286	Standard
S	34	2180.2	1.2				ug/L	1572	Standard
Sr	88	81.7	35.9				ug/L	73	Standard
C	12	93.3	22.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	57.3				mg/L	3	Standard
Dy	164	11677.0	2.4				mg/L	6	Standard
Ho-1	165	6823.2	4.6				mg/L	10	Standard
Er	166	6424.7	2.9				mg/L	13	Standard
I	127	12089.8	7.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.717	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.016	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.391
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.713
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606091201SDL WG573717-04
Sample Date/Time: Wednesday, June 29, 2016 15:39:15
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80082.8	1.5				ug/L	74699	Standard
	Be	9	80.0	10.8	**0.0924**	0.009	10.2	ug/L	8	Standard
	Al	27	638793.5	0.9	**4.0416**	0.057	1.4	ug/L	1493	Standard
	Sc	45	66977.8	2.5				ug/L	61029	Standard
	Ti	47	422.3	5.3	**0.8899**	0.044	4.9	ug/L	35	Standard
	V	51	17807.2	0.8	**1.9190**	0.038	2.0	ug/L	1435	Standard
	Cr	52	18051.7	1.5	**1.1605**	0.015	1.3	ug/L	7635	Standard
	Cr	53	1846.8	4.0	**1.4619**	0.067	4.6	ug/L	363	Standard
	Mn	55	540671.4	1.9	**69.4959**	1.549	2.2	ug/L	747	Standard
	Co	59	7520.2	3.3	**0.9841**	0.038	3.8	ug/L	234	Standard
	Ni	60	2912.3	1.6	**1.2710**	0.019	1.5	ug/L	215	Standard
	Cu	65	3203.0	1.2	**1.4395**	0.003	0.2	ug/L	104	Standard
	Zn	66	8550.1	1.3	**6.5648**	0.083	1.3	ug/L	363	Standard
>	**Ge**	72	552153.4	1.0				ug/L	495142	Standard
	As	75	624.0	5.3	**0.5591**	0.024	4.4	ug/L	-50	Standard
	Se	82	21.8	25.1	**0.0396**	0.043	108.7	ug/L	14	Standard
	Se-1	77	57.0	8.0	**0.0772**	0.050	64.2	ug/L	42	Standard
>	**Ga**	71	1470.1	2.9				mg/L	42	Standard
	Rb	85	17425.0	3.8				ug/L	17	Standard
	Y	89	497203.9	1.3				ug/L	417098	Standard
>	**Rh**	103	10.0	50.0				ug/L	13	Standard
	Mo	98	65.7	10.1	**0.0165**	0.003	15.8	ug/L	11	Standard
	Ag	107	156.7	8.7	**0.0087**	0.002	18.0	ug/L	68	Standard
	Cd	111	38.9	11.8	**0.0089**	0.002	23.3	mg/L	2	Standard
	Cd	114	108.8	14.4	**0.0170**	0.003	15.1	ug/L	12	Standard
>	**In**	115	651862.8	1.7				ug/L	587441	Standard
	Sn	118	480.0	4.2	**-0.0206**	0.003	16.7	ug/L	497	Standard
	Sb	123	490.3	31.4	**0.0908**	0.031	34.3	ug/L	78	Standard
	Ba	135	26415.7	0.1	**11.6170**	0.204	1.8	ug/L	24	Standard
	Ce	140	98329.7	0.4				ug/L	25	Standard
>	**Tb**	159	1007324.2	1.5				ug/L	939701	Standard
	Ho	165	1405.1	5.7				ug/L	10	Standard
	Tl	203	169.0	1.6	**0.0177**	0.000	0.8	ug/L	4	Standard
	Tl	205	175.0	8.6	**0.0234**	0.002	8.3	ug/L	2	Standard
	Pb	206	13505.0	1.4	**2.3274**	0.057	2.5	ug/L	240	Standard
	Pb	207	10900.6	1.3	**2.1089**	0.044	2.1	ug/L	198	Standard
	Pb	208	47029.6	1.3	**2.3051**	0.014	0.6	ug/L	883	Standard
	U	238	743.4	3.4	**0.0980**	0.002	2.1	ug/L	3	Standard
>	**Bi**	209	552389.3	1.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	33.3	17.3	**-0.0260**	0.006	22.5	mg/L	37	Standard
K	39	50.0	36.1	**-0.0133**	0.037	281.6	mg/L	38	Standard
Ca	43	41.7	48.5	**-0.1354**	1.146	846.9	mg/L	10	Standard
Fe	54	2020.3	1.1	**1.4233**	0.051	3.6	mg/L	179	Standard
Fe	57	728.4	10.0	**1.1787**	0.168	14.2	mg/L	335	Standard
> **Sc-1**	45	66977.8	2.5				mg/L	61029	Standard
Cl	35	24720.8	1.1				ug/L	20195	Standard
Kr	83	2.7	43.3				ug/L	4	Standard
Br	81	1860.1	4.8				ug/L	1547	Standard
P	31	18349.4	1.0				ug/L	15286	Standard
S	34	1845.1	4.4				ug/L	1572	Standard
Sr	88	65.0	27.7				ug/L	73	Standard
C	12	66.7	31.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	2304.6	5.8				mg/L	6	Standard
Ho-1	165	1405.1	5.7				mg/L	10	Standard
Er	166	1370.1	4.1				mg/L	13	Standard
I	127	4489.0	15.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.208	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.514	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.966
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.421
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 15:42:28
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79858.3	1.9				ug/L	74699	Standard
	Be	9	50198.1	2.5	**53.3484**	1.401	2.6	ug/L	8	Standard
	Al	27	8066966.3	0.3	**51.3427**	0.865	1.7	ug/L	1493	Standard
	Sc	45	68357.2	2.3				ug/L	61029	Standard
	Ti	47	43587.6	0.3	**105.7066**	1.724	1.6	ug/L	35	Standard
	V	51	433103.8	0.8	**52.5653**	0.576	1.1	ug/L	1435	Standard
	Cr	52	431112.3	0.9	**52.4990**	0.789	1.5	ug/L	7635	Standard
	Cr	53	52653.0	1.0	**52.0862**	0.689	1.3	ug/L	363	Standard
	Mn	55	405815.5	1.7	**53.4827**	1.214	2.3	ug/L	747	Standard
	Co	59	390955.7	1.0	**54.4418**	1.354	2.5	ug/L	234	Standard
	Ni	60	105213.1	1.7	**51.5742**	0.488	0.9	ug/L	215	Standard
	Cu	65	104377.6	0.2	**51.4980**	0.905	1.8	ug/L	104	Standard
	Zn	66	61654.9	0.7	**51.4853**	1.289	2.5	ug/L	363	Standard
>	**Ge**	72	538231.7	1.8				ug/L	495142	Standard
	As	75	61802.6	0.2	**50.8282**	0.881	1.7	ug/L	-50	Standard
	Se	82	6211.6	1.2	**51.9313**	0.364	0.7	ug/L	14	Standard
	Se-1	77	4323.6	2.0	**53.8508**	1.659	3.1	ug/L	42	Standard
>	**Ga**	71	60.0	28.9				mg/L	42	Standard
	Rb	85	955.0	5.2				ug/L	17	Standard
	Y	89	475770.1	1.3				ug/L	417098	Standard
>	**Rh**	103	25.0	34.6				ug/L	13	Standard
	Mo	98	290643.5	0.8	**97.6712**	0.653	0.7	ug/L	11	Standard
	Ag	107	354998.2	1.8	**48.7852**	1.288	2.6	ug/L	68	Standard
	Cd	111	115105.3	1.2	**49.3038**	0.151	0.3	mg/L	2	Standard
	Cd	114	278592.4	1.8	**48.6531**	0.360	0.7	ug/L	12	Standard
>	**In**	115	655825.0	1.0				ug/L	587441	Standard
	Sn	118	319548.2	1.2	**48.9035**	0.256	0.5	ug/L	497	Standard
	Sb	123	249456.0	1.2	**47.8604**	0.919	1.9	ug/L	78	Standard
	Ba	135	108215.4	0.8	**47.3455**	0.546	1.2	ug/L	24	Standard
	Ce	140	256.7	76.3				ug/L	25	Standard
>	**Tb**	159	1025574.2	1.9				ug/L	939701	Standard
	Ho	165	15.0	0.0				ug/L	10	Standard
	Tl	203	443897.9	1.2	**50.1327**	1.058	2.1	ug/L	4	Standard
	Tl	205	398087.0	0.7	**51.8003**	0.814	1.6	ug/L	2	Standard
	Pb	206	280554.3	0.5	**48.8226**	0.728	1.5	ug/L	240	Standard
	Pb	207	249585.9	0.6	**48.8846**	0.533	1.1	ug/L	198	Standard
	Pb	208	1026713.8	0.6	**50.9050**	1.131	2.2	ug/L	883	Standard
	U	238	372550.1	0.8	**50.3866**	1.127	2.2	ug/L	3	Standard
>	**Bi**	209	562933.7	1.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4292.3	1.6	**4.8821**	0.035	0.7	mg/L	37	Standard
K	39	2345.2	3.1	**4.5133**	0.080	1.8	mg/L	38	Standard
Ca	43	103.3	10.1	**3.3018**	0.528	16.0	mg/L	10	Standard
Fe	54	6681.2	2.2	**4.9206**	0.153	3.1	mg/L	179	Standard
Fe	57	1928.5	4.0	**4.7824**	0.344	7.2	mg/L	335	Standard
Sc-1	45	68357.2	2.3				mg/L	61029	Standard
Cl	35	26753.6	0.7				ug/L	20195	Standard
Kr	83	3.3	45.8				ug/L	4	Standard
Br	81	1833.4	8.1				ug/L	1547	Standard
P	31	20395.4	2.2				ug/L	15286	Standard
S	34	2408.5	8.3				ug/L	1572	Standard
Sr	88	85.0	25.6				ug/L	73	Standard
C	12	53.3	28.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	15.2	35.5				mg/L	6	Standard
Ho-1	165	15.0	0.0				mg/L	10	Standard
Er	166	30.0	57.7				mg/L	13	Standard
I	127	2536.9	16.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	106.697		
Al	27	102.685		
Sc	45			
Ti	47	105.707		
V	51	105.131		
Cr	52	104.998		
Cr	53			
Mn	55	106.965		
Co	59	108.884		
Ni	60	103.148		
Cu	65	102.996		
Zn	66	102.971		
Ge	72		108.702	
As	75	101.656		
Se	82	103.863		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	97.671		
Ag	107	97.570		
Cd	111	98.608		
Cd	114			
In	115			111.641
Sn	118	97.807		
Sb	123	95.721		
Ba	135	94.691		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.265		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.810		
U	238	100.773		
Bi	209			107.433
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 15:45:40
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76618.3	2.3				ug/L	74699	Standard
	Be	9	25.0	40.0	**0.0352**	0.010	29.8	ug/L	8	Standard
	Al	27	2451.9	23.9	**0.0029**	0.004	131.5	ug/L	1493	Standard
	Sc	45	64234.2	1.5				ug/L	61029	Standard
	Ti	47	38.0	9.5	**-0.0165**	0.010	60.4	ug/L	35	Standard
	V	51	1363.5	4.5	**-0.0292**	0.006	19.9	ug/L	1435	Standard
	Cr	52	7102.3	0.4	**-0.1401**	0.016	11.4	ug/L	7635	Standard
	Cr	53	373.3	16.1	**0.0429**	0.063	148.1	ug/L	363	Standard
	Mn	55	1097.0	20.0	**-0.0025**	0.031	1279.7	ug/L	747	Standard
	Co	59	247.3	6.4	**-0.0027**	0.003	101.3	ug/L	234	Standard
	Ni	60	180.3	4.0	**-0.0351**	0.003	7.6	ug/L	215	Standard
	Cu	65	132.0	9.2	**-0.0382**	0.007	18.6	ug/L	104	Standard
	Zn	66	415.3	4.4	**-0.1038**	0.019	18.2	ug/L	363	Standard
>	**Ge**	72	537099.7	1.7				ug/L	495142	Standard
	As	75	-44.5	23.9	**0.0230**	0.008	35.8	ug/L	-50	Standard
	Se	82	14.3	4.3	**-0.0180**	0.004	23.6	ug/L	14	Standard
	Se-1	77	59.7	7.9	**0.1303**	0.047	35.8	ug/L	42	Standard
>	**Ga**	71	51.7	29.6				mg/L	42	Standard
	Rb	85	35.0	0.0				ug/L	17	Standard
	Y	89	479758.9	0.4				ug/L	417098	Standard
>	**Rh**	103	8.3	34.6				ug/L	13	Standard
	Mo	98	277.2	29.2	**0.0885**	0.026	29.3	ug/L	11	Standard
	Ag	107	131.7	17.8	**0.0055**	0.003	58.6	ug/L	68	Standard
	Cd	111	17.2	29.5	**-0.0005**	0.002	465.0	mg/L	2	Standard
	Cd	114	40.7	69.7	**0.0051**	0.005	98.6	ug/L	12	Standard
>	**In**	115	646048.6	1.6				ug/L	587441	Standard
	Sn	118	843.4	4.5	**0.0366**	0.007	19.0	ug/L	497	Standard
	Sb	123	501.9	29.2	**0.0939**	0.030	32.1	ug/L	78	Standard
	Ba	135	52.0	15.0	**0.0071**	0.003	45.6	ug/L	24	Standard
	Ce	140	70.0	58.5				ug/L	25	Standard
>	**Tb**	159	979678.9	1.9				ug/L	939701	Standard
	Ho	165	13.3	114.6				ug/L	10	Standard
	Tl	203	68.0	38.6	**0.0062**	0.003	47.0	ug/L	4	Standard
	Tl	205	56.7	27.0	**0.0078**	0.002	25.4	ug/L	2	Standard
	Pb	206	311.7	5.0	**-0.0149**	0.002	16.8	ug/L	240	Standard
	Pb	207	257.0	6.3	**-0.0177**	0.002	12.3	ug/L	198	Standard
	Pb	208	1140.4	10.1	**-0.0154**	0.005	31.9	ug/L	883	Standard
	U	238	55.7	48.1	**0.0033**	0.004	107.8	ug/L	3	Standard
>	**Bi**	209	542619.7	2.4				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.9504**	31.082	173.2	mg/L	0	Standard
Mg	24	40.0	54.5	**-0.0162**	0.026	161.8	mg/L	37	Standard
K	39	53.3	59.5	**-0.0020**	0.067	3445.3	mg/L	38	Standard
Ca	43	18.3	103.3	**-1.4157**	1.156	81.6	mg/L	10	Standard
Fe	54	130.7	11.8	**-0.0329**	0.014	41.5	mg/L	179	Standard
Fe	57	301.7	9.1	**-0.1005**	0.081	80.3	mg/L	335	Standard
> **Sc-1**	45	64234.2	1.5				mg/L	61029	Standard
Cl	35	26295.5	2.8				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	1633.4	7.7				ug/L	1547	Standard
P	31	19669.4	2.1				ug/L	15286	Standard
S	34	2230.2	5.1				ug/L	1572	Standard
Sr	88	70.0	21.4				ug/L	73	Standard
C	12	46.7	61.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	12.2	49.4				mg/L	6	Standard
Ho-1	165	13.3	114.6				mg/L	10	Standard
Er	166	23.3	107.9				mg/L	13	Standard
I	127	1980.1	22.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.474	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.977
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.556
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW 60 WG574001-04
Sample Date/Time: Wednesday, June 29, 2016 15:48:53
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79282.0	2.9				ug/L	74699	Standard
	Be	9	31.7	134.3	**0.0407**	0.044	108.3	ug/L	8	Standard
	Al	27	19345.2	59.5	**0.1093**	0.069	63.4	ug/L	1493	Standard
	Sc	45	67500.3	4.8				ug/L	61029	Standard
	Ti	47	51.7	27.5	**0.0181**	0.032	177.8	ug/L	35	Standard
	V	51	1877.4	33.1	**0.0362**	0.072	198.6	ug/L	1435	Standard
	Cr	52	9295.2	4.7	**0.1500**	0.032	21.3	ug/L	7635	Standard
	Cr	53	908.4	6.4	**0.5905**	0.063	10.7	ug/L	363	Standard
	Mn	55	10971.3	111.8	**1.3060**	1.603	122.8	ug/L	747	Standard
	Co	59	555.3	78.4	**0.0407**	0.060	146.5	ug/L	234	Standard
	Ni	60	485.3	47.2	**0.1173**	0.109	92.6	ug/L	215	Standard
	Cu	65	307.3	25.1	**0.0504**	0.035	70.1	ug/L	104	Standard
	Zn	66	1901.5	5.5	**1.1744**	0.056	4.8	ug/L	363	Standard
>	**Ge**	72	528898.5	2.0				ug/L	495142	Standard
	As	75	-0.1	63053.1	**0.0590**	0.043	73.0	ug/L	-50	Standard
	Se	82	20.7	41.6	**0.0373**	0.070	187.2	ug/L	14	Standard
	Se-1	77	69.7	5.4	**0.2713**	0.061	22.4	ug/L	42	Standard
>	**Ga**	71	70.0	75.3				mg/L	42	Standard
	Rb	85	391.7	126.9				ug/L	17	Standard
	Y	89	488721.1	2.3				ug/L	417098	Standard
>	**Rh**	103	16.7	105.4				ug/L	13	Standard
	Mo	98	140.7	71.4	**0.0402**	0.032	80.6	ug/L	11	Standard
	Ag	107	241.3	88.8	**0.0193**	0.028	147.0	ug/L	68	Standard
	Cd	111	97.4	139.8	**0.0324**	0.056	173.4	mg/L	2	Standard
	Cd	114	250.4	134.1	**0.0402**	0.057	140.7	ug/L	12	Standard
>	**In**	115	673056.2	1.0				ug/L	587441	Standard
	Sn	118	918.4	10.7	**0.0424**	0.014	32.3	ug/L	497	Standard
	Sb	123	377.5	33.3	**0.0663**	0.023	34.5	ug/L	78	Standard
	Ba	135	710.7	130.6	**0.2849**	0.392	137.5	ug/L	24	Standard
	Ce	140	2190.4	144.6				ug/L	25	Standard
>	**Tb**	159	1033072.6	2.9				ug/L	939701	Standard
	Ho	165	46.7	118.0				ug/L	10	Standard
	Tl	203	354.0	129.7	**0.0375**	0.050	134.0	ug/L	4	Standard
	Tl	205	175.0	119.3	**0.0226**	0.026	116.3	ug/L	2	Standard
	Pb	206	584.7	65.9	**0.0302**	0.064	211.0	ug/L	240	Standard
	Pb	207	508.0	67.6	**0.0291**	0.064	219.9	ug/L	198	Standard
	Pb	208	1976.7	53.7	**0.0238**	0.049	207.9	ug/L	883	Standard
	U	238	147.7	117.1	**0.0152**	0.023	148.4	ug/L	3	Standard
>	**Bi**	209	558931.4	2.9				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	38.3	32.8	**-0.0206**	0.014	67.5	mg/L	37	Standard
K	39	46.7	37.6	**-0.0214**	0.032	149.6	mg/L	38	Standard
Ca	43	20.0	0.0	**-1.3794**	0.055	4.0	mg/L	10	Standard
Fe	54	191.0	21.0	**0.0073**	0.024	325.9	mg/L	179	Standard
Fe	57	261.7	19.2	**-0.2718**	0.132	48.6	mg/L	335	Standard
> **Sc-1**	45	67500.3	4.8				mg/L	61029	Standard
Cl	35	25962.2	2.0				ug/L	20195	Standard
Kr	83	3.0	33.3				ug/L	4	Standard
Br	81	2216.8	6.9				ug/L	1547	Standard
P	31	19524.2	2.3				ug/L	15286	Standard
S	34	2248.5	4.1				ug/L	1572	Standard
Sr	88	73.3	27.6				ug/L	73	Standard
C	12	46.7	44.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	67.1	124.3				mg/L	6	Standard
Ho-1	165	46.7	118.0				mg/L	10	Standard
Er	166	60.0	130.2				mg/L	13	Standard
I	127	1978.5	35.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.136	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.817	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.574
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.669
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 60 WG574001-05
Sample Date/Time: Wednesday, June 29, 2016 15:52:04
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78008.7	2.7				ug/L	74699	Standard
	Be	9	49798.4	3.1	**54.1693**	0.583	1.1	ug/L	8	Standard
	Al	27	8265.6	3.2	**0.0405**	0.001	2.7	ug/L	1493	Standard
	Sc	45	64878.8	4.3				ug/L	61029	Standard
	Ti	47	43.0	16.3	**-0.0042**	0.019	444.7	ug/L	35	Standard
	V	51	424123.5	0.9	**51.5862**	0.653	1.3	ug/L	1435	Standard
	Cr	52	430096.1	0.4	**52.4970**	1.185	2.3	ug/L	7635	Standard
	Cr	53	53307.0	1.3	**52.8599**	1.230	2.3	ug/L	363	Standard
	Mn	55	405428.0	0.3	**53.5518**	1.000	1.9	ug/L	747	Standard
	Co	59	387903.4	0.1	**54.1349**	1.154	2.1	ug/L	234	Standard
	Ni	60	106395.6	1.4	**52.2826**	1.359	2.6	ug/L	215	Standard
	Cu	65	107418.5	1.1	**53.1215**	1.283	2.4	ug/L	104	Standard
	Zn	66	63602.2	0.4	**53.2433**	1.221	2.3	ug/L	363	Standard
>	**Ge**	72	537059.3	2.0				ug/L	495142	Standard
	As	75	62286.8	1.3	**51.3419**	1.295	2.5	ug/L	-50	Standard
	Se	82	6132.0	1.6	**51.3807**	0.931	1.8	ug/L	14	Standard
	Se-1	77	4215.6	1.2	**52.6015**	0.951	1.8	ug/L	42	Standard
>	**Ga**	71	76.7	32.8				mg/L	42	Standard
	Rb	85	50.0	36.1				ug/L	17	Standard
	Y	89	473307.8	1.1				ug/L	417098	Standard
>	**Rh**	103	23.3	75.3				ug/L	13	Standard
	Mo	98	59.9	20.8	**0.0148**	0.004	26.5	ug/L	11	Standard
	Ag	107	358191.0	0.9	**50.3679**	1.706	3.4	ug/L	68	Standard
	Cd	111	112882.0	2.3	**49.4684**	1.332	2.7	mg/L	2	Standard
	Cd	114	273909.8	1.0	**48.9526**	1.484	3.0	ug/L	12	Standard
>	**In**	115	641215.1	2.7				ug/L	587441	Standard
	Sn	118	785.0	7.1	**0.0286**	0.011	37.9	ug/L	497	Standard
	Sb	123	249794.4	1.0	**49.0383**	1.564	3.2	ug/L	78	Standard
	Ba	135	107708.9	1.4	**48.2176**	1.451	3.0	ug/L	24	Standard
	Ce	140	101.7	27.1				ug/L	25	Standard
>	**Tb**	159	990038.9	2.7				ug/L	939701	Standard
	Ho	165	11.7	99.0				ug/L	10	Standard
	Tl	203	439976.8	0.4	**51.4932**	0.969	1.9	ug/L	4	Standard
	Tl	205	398605.3	0.6	**53.7491**	0.791	1.5	ug/L	2	Standard
	Pb	206	290681.6	0.4	**52.4241**	0.636	1.2	ug/L	240	Standard
	Pb	207	247225.7	0.4	**50.1841**	0.852	1.7	ug/L	198	Standard
	Pb	208	1030904.4	0.6	**52.9701**	1.178	2.2	ug/L	883	Standard
	U	238	368133.3	0.5	**51.5924**	0.851	1.6	ug/L	3	Standard
>	**Bi**	209	543222.2	1.6				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	35.0	28.6	**-0.0227**	0.012	52.0	mg/L	37	Standard
K	39	28.3	50.9	**-0.0559**	0.027	48.5	mg/L	38	Standard
Ca	43	35.0	28.6	**-0.4579**	0.506	110.5	mg/L	10	Standard
Fe	54	138.7	22.6	**-0.0277**	0.025	88.8	mg/L	179	Standard
Fe	57	243.3	16.6	**-0.2916**	0.161	55.3	mg/L	335	Standard
> **Sc-1**	45	64878.8	4.3				mg/L	61029	Standard
Cl	35	24949.9	2.3				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	1880.1	6.1				ug/L	1547	Standard
P	31	18362.8	1.6				ug/L	15286	Standard
S	34	2046.8	4.1				ug/L	1572	Standard
Sr	88	70.0	18.9				ug/L	73	Standard
C	12	56.7	56.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	2.2	249.0				mg/L	6	Standard
Ho-1	165	11.7	99.0				mg/L	10	Standard
Er	166	23.3	49.5				mg/L	13	Standard
I	127	1781.8	25.5				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		104.431	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		108.466	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.154
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.671
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 60 WG574001-05
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Method 6020 - Summary Report

Sample ID: L1606124702 WG574001-01
Sample Date/Time: Wednesday, June 29, 2016 15:55:16
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	134635.3	6.0				ug/L	74699	Standard
	Be	9	80.0	18.8	**0.0585**	0.013	21.4	ug/L	8	Standard
	Al	27	38117257.0	1.5	**144.1796**	7.359	5.1	ug/L	1493	Standard
	Sc	45	57575.9	1.8				ug/L	61029	Standard
	Ti	47	164.0	8.6	**0.3117**	0.039	12.5	ug/L	35	Standard
	V	51	2694.7	7.4	**0.1512**	0.027	17.7	ug/L	1435	Standard
	Cr	52	13340.2	1.7	**0.7256**	0.017	2.4	ug/L	7635	Standard
	Cr	53	1556.7	8.2	**1.3078**	0.145	11.1	ug/L	363	Standard
	Mn	55	855520.0	4.5	**119.2592**	4.647	3.9	ug/L	747	Standard
	Co	59	4433.3	4.9	**0.6151**	0.027	4.4	ug/L	234	Standard
	Ni	60	11360.3	1.4	**5.7737**	0.123	2.1	ug/L	215	Standard
	Cu	65	4582.0	1.3	**2.2889**	0.015	0.7	ug/L	104	Standard
	Zn	66	3866.8	1.4	**2.9861**	0.052	1.7	ug/L	363	Standard
>	**Ge**	72	509457.0	0.7				ug/L	495142	Standard
	As	75	332.4	10.8	**0.3479**	0.030	8.6	ug/L	-50	Standard
	Se	82	161.9	7.9	**1.2952**	0.108	8.4	ug/L	14	Standard
	Se-1	77	102.3	14.4	**0.7391**	0.192	26.0	ug/L	42	Standard
>	**Ga**	71	95.0	18.2				mg/L	42	Standard
	Rb	85	141592.2	2.6				ug/L	17	Standard
	Y	89	417616.8	3.6				ug/L	417098	Standard
>	**Rh**	103	198.3	13.9				ug/L	13	Standard
	Mo	98	173.0	3.6	**0.0623**	0.003	5.6	ug/L	11	Standard
	Ag	107	339.3	7.8	**0.0417**	0.005	13.0	ug/L	68	Standard
	Cd	111	139.7	8.2	**0.0622**	0.007	10.5	mg/L	2	Standard
	Cd	114	358.4	9.8	**0.0712**	0.009	12.2	ug/L	12	Standard
>	**In**	115	560534.9	2.1				ug/L	587441	Standard
	Sn	118	620.0	5.6	**0.0166**	0.008	49.6	ug/L	497	Standard
	Sb	123	641.7	15.5	**0.1401**	0.024	17.2	ug/L	78	Standard
	Ba	135	5098.9	2.7	**2.5958**	0.100	3.9	ug/L	24	Standard
	Ce	140	815.0	33.2				ug/L	25	Standard
>	**Tb**	159	928792.3	1.3				ug/L	939701	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	1143.7	8.4	**0.1440**	0.014	9.4	ug/L	4	Standard
	Tl	205	1088.4	7.4	**0.1600**	0.012	7.4	ug/L	2	Standard
	Pb	206	578.7	9.2	**0.0425**	0.010	23.1	ug/L	240	Standard
	Pb	207	493.0	9.5	**0.0393**	0.012	31.8	ug/L	198	Standard
	Pb	208	1938.4	3.0	**0.0345**	0.004	12.8	ug/L	883	Standard
	U	238	1219.0	4.3	**0.1816**	0.009	5.1	ug/L	3	Standard
>	**Bi**	209	499083.1	3.3				ug/L	523984	Standard

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Na	23	20.0	43.3	**245.3647**	110.079	44.9	mg/L	0	Standard
Mg	24	80086.1	0.7	**109.5385**	2.239	2.0	mg/L	37	Standard
K	39	1376.7	6.5	**3.1098**	0.163	5.2	mg/L	38	Standard
Ca	43	2828.6	6.5	**186.7611**	8.963	4.8	mg/L	10	Standard
Fe	54	188.7	25.7	**0.0318**	0.047	146.5	mg/L	179	Standard
Fe	57	1751.8	4.9	**5.2348**	0.203	3.9	mg/L	335	Standard
Sc-1	45	57575.9	1.8				mg/L	61029	Standard
Cl	35	65110.3	1.2				ug/L	20195	Standard
Kr	83	3.7	68.6				ug/L	4	Standard
Br	81	22346.5	6.5				ug/L	1547	Standard
P	31	17116.3	3.4				ug/L	15286	Standard
S	34	2223.5	6.9				ug/L	1572	Standard
Sr	88	836.7	13.9				ug/L	73	Standard
C	12	76.7	74.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	52.1	77.4				mg/L	6	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	26.7	57.3				mg/L	13	Standard
I	127	41219.6	7.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		180.238	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.891	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.420
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.248
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606124702DP WG574001-06
Sample Date/Time: Wednesday, June 29, 2016 15:58:27
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	151702.5	2.0				ug/L	74699	Standard
	Be	9	51.7	59.1	**0.0368**	0.018	48.5	ug/L	8	Standard
	Al	27	41839885.7	0.1	**140.2128**	2.854	2.0	ug/L	1493	Standard
	Sc	45	56811.4	3.1				ug/L	61029	Standard
	Ti	47	131.7	6.1	**0.2545**	0.026	10.2	ug/L	35	Standard
	V	51	2376.3	9.9	**0.1332**	0.026	19.9	ug/L	1435	Standard
	Cr	52	12951.9	1.5	**0.8048**	0.052	6.4	ug/L	7635	Standard
	Cr	53	1565.1	1.7	**1.4417**	0.042	2.9	ug/L	363	Standard
	Mn	55	867683.1	1.0	**130.2493**	3.502	2.7	ug/L	747	Standard
	Co	59	4344.6	3.7	**0.6509**	0.022	3.4	ug/L	234	Standard
	Ni	60	12342.7	0.7	**6.7729**	0.126	1.9	ug/L	215	Standard
	Cu	65	4552.0	1.4	**2.4548**	0.036	1.5	ug/L	104	Standard
	Zn	66	4125.6	2.3	**3.4960**	0.055	1.6	ug/L	363	Standard
>	**Ge**	72	473381.7	2.0				ug/L	495142	Standard
	As	75	389.2	1.9	**0.4231**	0.002	0.6	ug/L	-50	Standard
	Se	82	181.1	4.2	**1.5888**	0.099	6.2	ug/L	14	Standard
	Se-1	77	106.3	18.0	**0.8981**	0.248	27.6	ug/L	42	Standard
>	**Ga**	71	78.3	22.4				mg/L	42	Standard
	Rb	85	147149.5	0.7				ug/L	17	Standard
	Y	89	405581.1	1.8				ug/L	417098	Standard
>	**Rh**	103	178.3	29.5				ug/L	13	Standard
	Mo	98	220.6	12.3	**0.0817**	0.013	15.7	ug/L	11	Standard
	Ag	107	177.0	68.0	**0.0160**	0.020	127.1	ug/L	68	Standard
	Cd	111	65.9	51.9	**0.0256**	0.018	71.0	mg/L	2	Standard
	Cd	114	151.1	49.7	**0.0291**	0.016	55.4	ug/L	12	Standard
>	**In**	115	557347.0	2.4				ug/L	587441	Standard
	Sn	118	766.7	0.4	**0.0437**	0.004	8.6	ug/L	497	Standard
	Sb	123	305.8	17.0	**0.0650**	0.013	20.6	ug/L	78	Standard
	Ba	135	5047.2	3.4	**2.5853**	0.149	5.7	ug/L	24	Standard
	Ce	140	491.7	100.3				ug/L	25	Standard
>	**Tb**	159	935324.5	2.7				ug/L	939701	Standard
	Ho	165	18.3	103.3				ug/L	10	Standard
	Tl	203	947.0	9.8	**0.1179**	0.014	11.5	ug/L	4	Standard
	Tl	205	846.7	27.0	**0.1237**	0.035	28.6	ug/L	2	Standard
	Pb	206	418.3	37.6	**0.0106**	0.032	302.9	ug/L	240	Standard
	Pb	207	351.7	32.0	**0.0074**	0.026	354.3	ug/L	198	Standard
	Pb	208	1404.0	30.0	**0.0041**	0.025	608.6	ug/L	883	Standard
	U	238	972.4	9.3	**0.1427**	0.016	11.1	ug/L	3	Standard
>	**Bi**	209	503603.8	1.5				ug/L	523984	Standard

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Na	23	25.0	34.6	**311.2656**	112.939	36.3	mg/L	0	Standard
Mg	24	85343.0	0.9	**118.3682**	4.384	3.7	mg/L	37	Standard
K	39	1298.4	2.9	**2.9712**	0.147	4.9	mg/L	38	Standard
Ca	43	2830.3	7.5	**189.4839**	12.043	6.4	mg/L	10	Standard
Fe	54	146.6	14.0	**-0.0044**	0.021	483.2	mg/L	179	Standard
Fe	57	1698.4	7.8	**5.1376**	0.623	12.1	mg/L	335	Standard
> **Sc-1**	45	56811.4	3.1				mg/L	61029	Standard
Cl	35	65999.5	1.4				ug/L	20195	Standard
Kr	83	1.3	114.6				ug/L	4	Standard
Br	81	22520.1	6.6				ug/L	1547	Standard
P	31	16799.3	3.7				ug/L	15286	Standard
S	34	2040.1	3.0				ug/L	1572	Standard
Sr	88	920.0	8.9				ug/L	73	Standard
C	12	83.3	25.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	3	Standard
Dy	164	32.1	98.6				mg/L	6	Standard
Ho-1	165	18.3	103.3				mg/L	10	Standard
Er	166	26.7	43.3				mg/L	13	Standard
I	127	45859.6	7.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		203.086	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.605	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.877
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.110
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606124702DP WG574001-06
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Method 6020 - Summary Report

Sample ID: L1606126501 WG574001-02
Sample Date/Time: Wednesday, June 29, 2016 16:01:39
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	112017.9	3.5				ug/L	74699	Standard
	Be	9	21.7	35.3	**0.0242**	0.006	26.3	ug/L	8	Standard
	Al	27	58851331.1	1.0	**267.2037**	7.701	2.9	ug/L	1493	Standard
	Sc	45	63265.2	2.1				ug/L	61029	Standard
	Ti	47	314.3	6.0	**0.7250**	0.050	6.9	ug/L	35	Standard
	V	51	84379.6	0.6	**11.0401**	0.098	0.9	ug/L	1435	Standard
	Cr	52	25344.2	1.7	**2.4155**	0.065	2.7	ug/L	7635	Standard
	Cr	53	30644.3	3.7	**33.0161**	1.295	3.9	ug/L	363	Standard
	Mn	55	3058.3	0.3	**0.2937**	0.003	0.9	ug/L	747	Standard
	Co	59	981.4	1.2	**0.1122**	0.002	1.4	ug/L	234	Standard
	Ni	60	4598.7	1.8	**2.3463**	0.051	2.2	ug/L	215	Standard
	Cu	65	1226.7	2.1	**0.5592**	0.015	2.8	ug/L	104	Standard
	Zn	66	2978.0	3.2	**2.2873**	0.091	4.0	ug/L	363	Standard
>	**Ge**	72	492356.2	0.3				ug/L	495142	Standard
	As	75	3467.1	5.3	**3.1728**	0.175	5.5	ug/L	-50	Standard
	Se	82	1561.8	3.2	**14.1732**	0.483	3.4	ug/L	14	Standard
	Se-1	77	3085.3	7.4	**41.8633**	3.228	7.7	ug/L	42	Standard
>	**Ga**	71	63.3	27.7				mg/L	42	Standard
	Rb	85	9206.1	3.0				ug/L	17	Standard
	Y	89	442169.1	3.5				ug/L	417098	Standard
>	**Rh**	103	255.0	11.9				ug/L	13	Standard
	Mo	98	5205.2	3.3	**1.8993**	0.033	1.7	ug/L	11	Standard
	Ag	107	803.7	5.3	**0.1074**	0.005	4.8	ug/L	68	Standard
	Cd	111	45.0	9.2	**0.0131**	0.002	16.6	mg/L	2	Standard
	Cd	114	163.3	22.8	**0.0289**	0.007	22.9	ug/L	12	Standard
>	**In**	115	602229.8	3.0				ug/L	587441	Standard
	Sn	118	683.3	9.8	**0.0193**	0.009	45.4	ug/L	497	Standard
	Sb	123	210.7	19.8	**0.0397**	0.008	19.9	ug/L	78	Standard
	Ba	135	21407.4	0.7	**10.1914**	0.253	2.5	ug/L	24	Standard
	Ce	140	328.3	10.1				ug/L	25	Standard
>	**Tb**	159	984916.0	0.2				ug/L	939701	Standard
	Ho	165	35.0	24.7				ug/L	10	Standard
	Tl	203	94.3	9.0	**0.0098**	0.001	12.0	ug/L	4	Standard
	Tl	205	65.0	40.7	**0.0094**	0.004	40.6	ug/L	2	Standard
	Pb	206	401.3	3.0	**0.0049**	0.001	28.2	ug/L	240	Standard
	Pb	207	354.0	5.2	**0.0056**	0.003	55.2	ug/L	198	Standard
	Pb	208	1436.0	3.5	**0.0035**	0.003	74.9	ug/L	883	Standard
	U	238	31993.4	1.5	**4.7067**	0.092	1.9	ug/L	3	Standard
>	**Bi**	209	517006.9	1.2				ug/L	523984	Standard

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Na	23	5.0	100.0	**55.9813**	56.756	101.4	mg/L	0	Standard
Mg	24	180057.1	1.6	**224.1644**	1.858	0.8	mg/L	37	Standard
K	39	641.7	5.8	**1.2549**	0.096	7.6	mg/L	38	Standard
Ca	43	708.3	7.0	**40.6474**	3.060	7.5	mg/L	10	Standard
Fe	54	157.9	5.8	**-0.0091**	0.008	86.4	mg/L	179	Standard
Fe	57	550.0	17.3	**0.7314**	0.333	45.5	mg/L	335	Standard
> **Sc-1**	45	63265.2	2.1				mg/L	61029	Standard
Cl	35	33676.1	1.7				ug/L	20195	Standard
Kr	83	0.3	173.2				ug/L	4	Standard
Br	81	48808.6	5.5				ug/L	1547	Standard
P	31	23084.3	3.5				ug/L	15286	Standard
S	34	2106.8	4.3				ug/L	1572	Standard
Sr	88	1195.0	6.7				ug/L	73	Standard
C	12	130.0	40.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	9.0	113.3				mg/L	6	Standard
Ho-1	165	35.0	24.7				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	49504.2	3.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		149.959	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.437	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.517	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.668	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606126501 WG574001-02
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Method 6020 - Summary Report

Sample ID: L1606126502S WG574001-07
Sample Date/Time: Wednesday, June 29, 2016 16:04:50
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	109865.8	4.5				ug/L	74699	Standard
	Be	9	61395.8	1.0	**47.4912**	2.348	4.9	ug/L	8	Standard
	Al	27	61297739.1	1.7	**284.0961**	17.361	6.1	ug/L	1493	Standard
	Sc	45	64222.6	2.9				ug/L	61029	Standard
	Ti	47	334.7	6.1	**0.7462**	0.065	8.7	ug/L	35	Standard
	V	51	514269.3	0.9	**65.7128**	0.488	0.7	ug/L	1435	Standard
	Cr	52	414721.1	1.2	**53.1400**	0.316	0.6	ug/L	7635	Standard
	Cr	53	79122.8	2.2	**82.5246**	0.802	1.0	ug/L	363	Standard
	Mn	55	379075.2	0.4	**52.5566**	0.801	1.5	ug/L	747	Standard
	Co	59	375122.1	1.7	**54.9533**	1.379	2.5	ug/L	234	Standard
	Ni	60	98886.4	1.8	**50.9941**	0.435	0.9	ug/L	215	Standard
	Cu	65	94781.9	0.9	**49.1885**	0.428	0.9	ug/L	104	Standard
	Zn	66	59708.1	1.0	**52.4531**	0.349	0.7	ug/L	363	Standard
>	Ge	72	511580.8	1.5				ug/L	495142	Standard
	As	75	64226.1	0.6	**55.5617**	0.582	1.0	ug/L	-50	Standard
	Se	82	7637.7	1.0	**67.2251**	1.117	1.7	ug/L	14	Standard
	Se-1	77	7177.4	2.9	**94.4764**	1.329	1.4	ug/L	42	Standard
>	Ga	71	96.7	7.9				mg/L	42	Standard
	Rb	85	9571.4	0.6				ug/L	17	Standard
	Y	89	459795.2	1.7				ug/L	417098	Standard
>	Rh	103	293.3	12.0				ug/L	13	Standard
	Mo	98	5421.1	3.7	**1.9704**	0.066	3.4	ug/L	11	Standard
	Ag	107	318338.0	1.0	**47.4485**	0.356	0.8	ug/L	68	Standard
	Cd	111	104991.2	1.0	**48.7852**	0.464	1.0	mg/L	2	Standard
	Cd	114	250399.7	1.5	**47.4405**	0.760	1.6	ug/L	12	Standard
>	In	115	604563.1	0.3				ug/L	587441	Standard
	Sn	118	798.4	4.4	**0.0381**	0.006	16.0	ug/L	497	Standard
	Sb	123	240747.3	1.0	**50.1002**	0.397	0.8	ug/L	78	Standard
	Ba	135	122571.5	0.3	**58.1746**	0.379	0.7	ug/L	24	Standard
	Ce	140	328.3	0.9				ug/L	25	Standard
>	Tb	159	981221.4	1.4				ug/L	939701	Standard
	Ho	165	28.3	44.4				ug/L	10	Standard
	Tl	203	414235.7	0.7	**51.0974**	0.645	1.3	ug/L	4	Standard
	Tl	205	378219.2	0.6	**53.7534**	0.090	0.2	ug/L	2	Standard
	Pb	206	277784.6	0.1	**52.8053**	0.305	0.6	ug/L	240	Standard
	Pb	207	237018.9	0.5	**50.7105**	0.514	1.0	ug/L	198	Standard
	Pb	208	965977.0	0.4	**52.3096**	0.506	1.0	ug/L	883	Standard
	U	238	407586.9	0.7	**60.2072**	0.700	1.2	ug/L	3	Standard
>	Bi	209	515321.0	0.6				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.6720**	30.600	173.2	mg/L	0	Standard
Mg	24	189285.1	1.3	**232.3057**	9.548	4.1	mg/L	37	Standard
K	39	641.7	6.1	**1.2328**	0.045	3.6	mg/L	38	Standard
Ca	43	760.0	12.3	**43.0240**	4.391	10.2	mg/L	10	Standard
Fe	54	185.4	16.8	**0.0114**	0.028	245.2	mg/L	179	Standard
Fe	57	630.0	4.2	**0.9612**	0.087	9.0	mg/L	335	Standard
> **Sc-1**	45	64222.6	2.9				mg/L	61029	Standard
Cl	35	34933.6	1.5				ug/L	20195	Standard
Kr	83	2.7	114.6				ug/L	4	Standard
Br	81	53306.9	1.0				ug/L	1547	Standard
P	31	23740.3	1.4				ug/L	15286	Standard
S	34	2118.5	3.3				ug/L	1572	Standard
Sr	88	1145.0	3.3				ug/L	73	Standard
C	12	140.0	21.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	28.6	38.4				mg/L	6	Standard
Ho-1	165	28.3	44.4				mg/L	10	Standard
Er	166	30.0	66.7				mg/L	13	Standard
I	127	81496.0	7.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		147.078	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.320	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.915	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.347	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606126503SD WG574001-08
Sample Date/Time: Wednesday, June 29, 2016 16:08:02
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	108017.3	3.5				ug/L	74699	Standard
	Be	9	61104.9	5.2	**47.9870**	0.846	1.8	ug/L	8	Standard
	Al	27	60436124.3	2.1	**284.5445**	9.073	3.2	ug/L	1493	Standard
	Sc	45	65195.1	3.6				ug/L	61029	Standard
	Ti	47	321.3	5.9	**0.6738**	0.054	8.0	ug/L	35	Standard
	V	51	521782.6	1.8	**63.5667**	1.206	1.9	ug/L	1435	Standard
	Cr	52	431117.5	0.3	**52.6702**	0.983	1.9	ug/L	7635	Standard
	Cr	53	81998.0	1.1	**81.5509**	0.729	0.9	ug/L	363	Standard
	Mn	55	379421.8	1.7	**50.1647**	1.838	3.7	ug/L	747	Standard
	Co	59	378746.6	2.0	**52.9167**	2.098	4.0	ug/L	234	Standard
	Ni	60	101643.5	0.7	**49.9872**	1.144	2.3	ug/L	215	Standard
	Cu	65	96036.4	1.2	**47.5169**	0.455	1.0	ug/L	104	Standard
	Zn	66	60629.4	1.5	**50.7689**	0.479	0.9	ug/L	363	Standard
>	**Ge**	72	536566.5	1.9				ug/L	495142	Standard
	As	75	65668.7	0.7	**54.1701**	0.796	1.5	ug/L	-50	Standard
	Se	82	7769.6	1.1	**65.2136**	1.970	3.0	ug/L	14	Standard
	Se-1	77	7316.4	1.6	**91.8340**	1.824	2.0	ug/L	42	Standard
>	**Ga**	71	56.7	22.2				mg/L	42	Standard
	Rb	85	9684.8	3.9				ug/L	17	Standard
	Y	89	458590.9	3.1				ug/L	417098	Standard
>	**Rh**	103	275.0	12.6				ug/L	13	Standard
	Mo	98	5397.9	1.9	**1.9792**	0.040	2.0	ug/L	11	Standard
	Ag	107	315299.7	0.9	**47.4082**	1.008	2.1	ug/L	68	Standard
	Cd	111	105649.0	0.5	**49.5183**	0.751	1.5	mg/L	2	Standard
	Cd	114	256574.5	1.5	**49.0334**	1.028	2.1	ug/L	12	Standard
>	**In**	115	599465.1	2.0				ug/L	587441	Standard
	Sn	118	820.0	11.4	**0.0428**	0.015	34.4	ug/L	497	Standard
	Sb	123	245153.5	0.2	**51.4644**	0.950	1.8	ug/L	78	Standard
	Ba	135	122768.4	0.8	**58.7829**	1.524	2.6	ug/L	24	Standard
	Ce	140	333.3	10.5				ug/L	25	Standard
>	**Tb**	159	983758.7	0.8				ug/L	939701	Standard
	Ho	165	18.3	41.7				ug/L	10	Standard
	Tl	203	416470.0	0.7	**50.8907**	0.470	0.9	ug/L	4	Standard
	Tl	205	377588.7	0.1	**53.1619**	0.172	0.3	ug/L	2	Standard
	Pb	206	279930.3	0.5	**52.7144**	0.351	0.7	ug/L	240	Standard
	Pb	207	238634.3	0.7	**50.5762**	0.275	0.5	ug/L	198	Standard
	Pb	208	958199.8	1.0	**51.4011**	0.688	1.3	ug/L	883	Standard
	U	238	405052.0	0.8	**59.2716**	0.671	1.1	ug/L	3	Standard
>	**Bi**	209	520189.0	0.3				ug/L	523984	Standard

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Na	23	5.0	173.2	**51.9909**	90.042	173.2	mg/L	0	Standard
Mg	24	184795.4	2.1	**223.5320**	12.550	5.6	mg/L	37	Standard
K	39	668.3	13.7	**1.2668**	0.164	13.0	mg/L	38	Standard
Ca	43	725.0	7.3	**40.3567**	2.975	7.4	mg/L	10	Standard
Fe	54	151.4	21.3	**-0.0183**	0.024	132.3	mg/L	179	Standard
Fe	57	623.3	16.5	**0.9045**	0.268	29.6	mg/L	335	Standard
> **Sc-1**	45	65195.1	3.6				mg/L	61029	Standard
Cl	35	33686.7	1.5				ug/L	20195	Standard
Kr	83	1.7	91.7				ug/L	4	Standard
Br	81	51370.3	3.2				ug/L	1547	Standard
P	31	23124.3	1.4				ug/L	15286	Standard
S	34	2101.8	2.3				ug/L	1572	Standard
Sr	88	1251.7	9.6				ug/L	73	Standard
C	12	163.3	19.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	9.4	104.3				mg/L	6	Standard
Ho-1	165	18.3	41.7				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	90519.1	8.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		144.604	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.366	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.047	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.276	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606126503SD WG574001-08
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Method 6020 - Summary Report

Sample ID: L1606124701
Sample Date/Time: Wednesday, June 29, 2016 16:11:13
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	160464.4	3.8				ug/L	74699	Standard
	Be	9	12485.1	1.8	**6.6126**	0.132	2.0	ug/L	8	Standard
	Al	27	129371635.5	1.7	**410.0067**	8.683	2.1	ug/L	1493	Standard
	Sc	45	97873.5	2.0				ug/L	61029	Standard
	Ti	47	12940.2	2.9	**32.4229**	1.439	4.4	ug/L	35	Standard
	V	51	62587.9	0.8	**7.6988**	0.173	2.3	ug/L	1435	Standard
	Cr	52	130472.4	1.2	**15.7449**	0.176	1.1	ug/L	7635	Standard
	Cr	53	17299.9	2.8	**17.4949**	0.102	0.6	ug/L	363	Standard
	Mn	55	53885293.3	1.0	**7372.4056**	142.217	1.9	ug/L	747	Standard
	Co	59	1486809.2	2.0	**214.4609**	6.754	3.1	ug/L	234	Standard
	Ni	60	953927.1	1.9	**485.1518**	7.673	1.6	ug/L	215	Standard
	Cu	65	14021.8	2.7	**7.0705**	0.048	0.7	ug/L	104	Standard
	Zn	66	1250022.8	1.4	**1089.5042**	11.046	1.0	ug/L	363	Standard
>	**Ge**	72	519921.5	2.2				ug/L	495142	Standard
	As	75	2369.9	1.5	**2.0748**	0.031	1.5	ug/L	-50	Standard
	Se	82	334.2	2.8	**2.7639**	0.140	5.1	ug/L	14	Standard
	Se-1	77	477.7	9.4	**5.6016**	0.492	8.8	ug/L	42	Standard
>	**Ga**	71	3503.7	1.4				mg/L	42	Standard
	Rb	85	155749.9	1.6				ug/L	17	Standard
	Y	89	3051185.4	0.7				ug/L	417098	Standard
>	**Rh**	103	200.0	9.0				ug/L	13	Standard
	Mo	98	648.1	0.8	**0.2277**	0.002	1.0	ug/L	11	Standard
	Ag	107	406.3	10.5	**0.0469**	0.006	13.8	ug/L	68	Standard
	Cd	111	4037.2	2.2	**1.8458**	0.056	3.0	mg/L	2	Standard
	Cd	114	10321.7	4.5	**1.9292**	0.065	3.4	ug/L	12	Standard
>	**In**	115	612067.4	1.8				ug/L	587441	Standard
	Sn	118	936.7	6.3	**0.0593**	0.012	20.5	ug/L	497	Standard
	Sb	123	674.3	5.8	**0.1344**	0.006	4.1	ug/L	78	Standard
	Ba	135	15717.8	1.3	**7.3556**	0.136	1.8	ug/L	24	Standard
	Ce	140	2639736.8	0.7				ug/L	25	Standard
>	**Tb**	159	1213429.7	1.8				ug/L	939701	Standard
	Ho	165	212831.1	0.7				ug/L	10	Standard
	Tl	203	2423.5	3.4	**0.2853**	0.011	3.9	ug/L	4	Standard
	Tl	205	2225.2	6.3	**0.3038**	0.017	5.8	ug/L	2	Standard
	Pb	206	7086.3	0.1	**1.2240**	0.010	0.8	ug/L	240	Standard
	Pb	207	5547.0	2.2	**1.0710**	0.022	2.1	ug/L	198	Standard
	Pb	208	23218.6	1.0	**1.1348**	0.005	0.5	ug/L	883	Standard
	U	238	25740.2	1.8	**3.6463**	0.044	1.2	ug/L	3	Standard
>	**Bi**	209	536711.9	0.7				ug/L	523984	Standard

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Na	23	40.0	57.3	**285.3574**	160.270	56.2	mg/L	0	Standard
Mg	24	87773.6	1.9	**70.5914**	1.090	1.5	mg/L	37	Standard
K	39	1211.7	2.8	**1.5562**	0.053	3.4	mg/L	38	Standard
Ca	43	3308.7	4.2	**127.7939**	4.640	3.6	mg/L	10	Standard
Fe	54	180981.2	2.7	**95.5321**	0.892	0.9	mg/L	179	Standard
Fe	57	48873.8	3.4	**102.4969**	2.098	2.0	mg/L	335	Standard
Sc-1	45	97873.5	2.0				mg/L	61029	Standard
Cl	35	64420.7	1.3				ug/L	20195	Standard
Kr	83	1.3	86.6				ug/L	4	Standard
Br	81	26873.8	3.7				ug/L	1547	Standard
P	31	52208.1	1.4				ug/L	15286	Standard
S	34	1956.8	2.0				ug/L	1572	Standard
Sr	88	1171.7	10.6				ug/L	73	Standard
C	12	126.7	46.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	329920.1	1.3				mg/L	6	Standard
Ho-1	165	212831.1	0.7				mg/L	10	Standard
Er	166	185158.1	1.8				mg/L	13	Standard
I	127	88143.1	6.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		214.815	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		105.004	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.192
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.429
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Co 59 Upper, S, EEE	Co	59
Ni 60 Upper, S, EEE	Ni	60
Zn 66 Upper, S, EEE	Zn	66

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Method 6020 - Summary Report

Sample ID: L1606124701PS WG574688-01
Sample Date/Time: Wednesday, June 29, 2016 16:14:25
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	166369.0	3.1				ug/L	74699	Standard
	Be	9	78228.1	1.5	**39.9183**	0.744	1.9	ug/L	8	Standard
	Al	27	127858501.0	1.9	**390.7420**	6.863	1.8	ug/L	1493	Standard
	Sc	45	95075.8	2.0				ug/L	61029	Standard
	Ti	47	12076.5	3.4	**30.6847**	0.840	2.7	ug/L	35	Standard
	V	51	487373.4	0.7	**62.1823**	0.880	1.4	ug/L	1435	Standard
	Cr	52	506749.0	0.5	**65.0704**	0.602	0.9	ug/L	7635	Standard
	Cr	53	63546.3	1.7	**66.1298**	1.201	1.8	ug/L	363	Standard
	Mn	55	53730576.4	0.3	**7459.5309**	74.503	1.0	ug/L	747	Standard
	Co	59	1866113.9	0.2	**273.1251**	3.396	1.2	ug/L	234	Standard
	Ni	60	1009610.1	0.8	**521.0961**	4.502	0.9	ug/L	215	Standard
	Cu	65	102190.2	1.2	**52.9646**	0.037	0.1	ug/L	104	Standard
	Zn	66	1265218.7	0.3	**1119.1475**	11.121	1.0	ug/L	363	Standard
>	**Ge**	72	512284.2	1.2				ug/L	495142	Standard
	As	75	65072.9	0.3	**56.2148**	0.511	0.9	ug/L	-50	Standard
	Se	82	7179.2	1.0	**63.0878**	0.484	0.8	ug/L	14	Standard
	Se-1	77	4836.8	0.7	**63.3901**	0.749	1.2	ug/L	42	Standard
>	**Ga**	71	3398.7	7.2				mg/L	42	Standard
	Rb	85	158551.9	0.5				ug/L	17	Standard
	Y	89	3079691.2	1.3				ug/L	417098	Standard
>	**Rh**	103	243.3	6.3				ug/L	13	Standard
	Mo	98	610.5	4.6	**0.2160**	0.008	3.7	ug/L	11	Standard
	Ag	107	329069.5	0.6	**48.8691**	0.577	1.2	ug/L	68	Standard
	Cd	111	109320.3	0.2	**50.6101**	0.459	0.9	mg/L	2	Standard
	Cd	114	265491.9	0.4	**50.1152**	0.608	1.2	ug/L	12	Standard
>	**In**	115	606831.5	1.0				ug/L	587441	Standard
	Sn	118	1098.4	5.9	**0.0874**	0.012	14.0	ug/L	497	Standard
	Sb	123	240923.7	1.8	**49.9558**	1.171	2.3	ug/L	78	Standard
	Ba	135	113288.6	0.8	**53.5705**	0.782	1.5	ug/L	24	Standard
	Ce	140	2588807.2	1.1				ug/L	25	Standard
>	**Tb**	159	1203377.0	1.6				ug/L	939701	Standard
	Ho	165	210409.6	1.8				ug/L	10	Standard
	Tl	203	437720.2	1.4	**52.3305**	0.744	1.4	ug/L	4	Standard
	Tl	205	404409.4	0.6	**55.7069**	0.222	0.4	ug/L	2	Standard
	Pb	206	295264.9	0.3	**54.4023**	0.212	0.4	ug/L	240	Standard
	Pb	207	250626.5	0.1	**51.9726**	0.335	0.6	ug/L	198	Standard
	Pb	208	1033784.3	0.4	**54.2614**	0.547	1.0	ug/L	883	Standard
	U	238	423217.8	0.6	**60.5919**	0.666	1.1	ug/L	3	Standard
>	**Bi**	209	531687.2	0.6				ug/L	523984	Standard

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Na	23	31.7	32.9	**235.3667**	80.946	34.4	mg/L	0	Standard
Mg	24	88559.7	0.9	**73.3333**	1.498	2.0	mg/L	37	Standard
K	39	1311.7	6.5	**1.7460**	0.092	5.3	mg/L	38	Standard
Ca	43	3437.1	1.4	**136.8797**	3.742	2.7	mg/L	10	Standard
Fe	54	183063.9	0.7	**99.5077**	1.370	1.4	mg/L	179	Standard
Fe	57	49900.4	2.7	**107.8438**	4.358	4.0	mg/L	335	Standard
> **Sc-1**	45	95075.8	2.0				mg/L	61029	Standard
Cl	35	63889.8	1.2				ug/L	20195	Standard
Kr	83	1.7	34.6				ug/L	4	Standard
Br	81	26186.0	7.9				ug/L	1547	Standard
P	31	52633.0	2.3				ug/L	15286	Standard
S	34	1903.5	2.7				ug/L	1572	Standard
Sr	88	1258.4	8.1				ug/L	73	Standard
C	12	153.3	16.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	3	Standard
Dy	164	329580.7	1.9				mg/L	6	Standard
Ho-1	165	210409.6	1.8				mg/L	10	Standard
Er	166	182077.6	1.3				mg/L	13	Standard
I	127	87547.6	5.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		222.720	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.462	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.301
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.470
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Co 59 Upper, S, EEE	Co	59
Ni 60 Upper, S, EEE	Ni	60
Zn 66 Upper, S, EEE	Zn	66

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Method 6020 - Summary Report

Sample ID: L1606124701SDL WG574688-02
Sample Date/Time: Wednesday, June 29, 2016 16:17:36
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	115043.6	2.7				ug/L	74699	Standard
	Be	9	2510.2	6.0	**1.8579**	0.064	3.4	ug/L	8	Standard
	Al	27	26603666.2	1.3	**117.5773**	3.118	2.7	ug/L	1493	Standard
	Sc	45	70520.4	2.0				ug/L	61029	Standard
	Ti	47	2655.2	2.4	**6.2496**	0.159	2.5	ug/L	35	Standard
	V	51	13651.6	1.3	**1.4451**	0.028	2.0	ug/L	1435	Standard
	Cr	52	32029.5	0.6	**2.9000**	0.113	3.9	ug/L	7635	Standard
	Cr	53	4062.2	6.0	**3.6565**	0.147	4.0	ug/L	363	Standard
	Mn	55	11326454.5	1.3	**1476.9710**	52.700	3.6	ug/L	747	Standard
	Co	59	315829.2	0.8	**43.3845**	1.293	3.0	ug/L	234	Standard
	Ni	60	206220.6	0.5	**99.8677**	2.554	2.6	ug/L	215	Standard
	Cu	65	3227.7	3.3	**1.4714**	0.087	5.9	ug/L	104	Standard
	Zn	66	276031.8	0.8	**228.9686**	6.765	3.0	ug/L	363	Standard
>	**Ge**	72	545622.5	2.3				ug/L	495142	Standard
	As	75	529.0	5.1	**0.4886**	0.031	6.3	ug/L	-50	Standard
	Se	82	109.8	7.8	**0.7692**	0.061	7.9	ug/L	14	Standard
	Se-1	77	127.7	10.6	**0.9669**	0.203	21.0	ug/L	42	Standard
>	**Ga**	71	896.7	4.3				mg/L	42	Standard
	Rb	85	33246.4	0.8				ug/L	17	Standard
	Y	89	1035711.2	2.7				ug/L	417098	Standard
>	**Rh**	103	68.3	33.0				ug/L	13	Standard
	Mo	98	137.2	4.4	**0.0416**	0.001	3.0	ug/L	11	Standard
	Ag	107	193.7	13.0	**0.0144**	0.003	20.5	ug/L	68	Standard
	Cd	111	922.1	1.5	**0.3978**	0.011	2.7	mg/L	2	Standard
	Cd	114	2202.4	8.0	**0.3929**	0.032	8.2	ug/L	12	Standard
>	**In**	115	638835.9	2.4				ug/L	587441	Standard
	Sn	118	601.7	4.7	**-0.0000**	0.004	76937.0	ug/L	497	Standard
	Sb	123	1960.6	22.3	**0.3834**	0.095	24.7	ug/L	78	Standard
	Ba	135	3410.7	1.0	**1.5171**	0.049	3.2	ug/L	24	Standard
	Ce	140	553030.9	1.0				ug/L	25	Standard
>	**Tb**	159	1064988.1	1.7				ug/L	939701	Standard
	Ho	165	44299.7	1.5				ug/L	10	Standard
	Tl	203	596.3	8.1	**0.0662**	0.006	8.4	ug/L	4	Standard
	Tl	205	613.3	10.1	**0.0808**	0.008	10.1	ug/L	2	Standard
	Pb	206	1759.1	0.5	**0.2383**	0.002	0.8	ug/L	240	Standard
	Pb	207	1407.7	5.3	**0.2088**	0.015	7.2	ug/L	198	Standard
	Pb	208	5898.4	2.6	**0.2216**	0.008	3.7	ug/L	883	Standard
	U	238	5357.3	1.2	**0.7271**	0.010	1.3	ug/L	3	Standard
>	**Bi**	209	557502.4	0.2				ug/L	523984	Standard

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Na	23	11.7	89.2	**117.5100**	105.501	89.8	mg/L	0	Standard
Mg	24	18105.8	1.6	**20.1624**	0.144	0.7	mg/L	37	Standard
K	39	321.7	3.6	**0.5016**	0.035	6.9	mg/L	38	Standard
Ca	43	733.4	8.9	**37.5359**	2.964	7.9	mg/L	10	Standard
Fe	54	38163.2	2.6	**27.8607**	0.186	0.7	mg/L	179	Standard
Fe	57	10221.8	1.3	**28.9959**	0.316	1.1	mg/L	335	Standard
> **Sc-1**	45	70520.4	2.0				mg/L	61029	Standard
Cl	35	31180.1	1.1				ug/L	20195	Standard
Kr	83	2.3	89.2				ug/L	4	Standard
Br	81	7325.1	3.6				ug/L	1547	Standard
P	31	24873.7	0.5				ug/L	15286	Standard
S	34	1646.8	8.5				ug/L	1572	Standard
Sr	88	296.7	11.0				ug/L	73	Standard
C	12	96.7	53.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	69181.7	2.0				mg/L	6	Standard
Ho-1	165	44299.7	1.5				mg/L	10	Standard
Er	166	39063.6	1.3				mg/L	13	Standard
I	127	21375.1	3.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		154.010	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.195	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.749
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.397
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Zn 66 Upper, S, EEE	Zn	66

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 16:20:49
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	104492.8	3.9				ug/L	74699	Standard
	Be	9	63869.3	1.0	**51.9084**	1.516	2.9	ug/L	8	Standard
	Al	27	9148865.9	2.6	**44.5067**	0.724	1.6	ug/L	1493	Standard
	Sc	45	68447.7	3.2				ug/L	61029	Standard
	Ti	47	43923.6	1.6	**106.2047**	1.334	1.3	ug/L	35	Standard
	V	51	454775.2	0.5	**55.0469**	0.468	0.8	ug/L	1435	Standard
	Cr	52	431898.3	0.6	**52.4410**	0.316	0.6	ug/L	7635	Standard
	Cr	53	53343.8	2.8	**52.6203**	1.459	2.8	ug/L	363	Standard
	Mn	55	427711.0	4.2	**56.2006**	1.985	3.5	ug/L	747	Standard
	Co	59	425402.4	1.1	**59.0619**	0.614	1.0	ug/L	234	Standard
	Ni	60	106741.4	0.9	**52.1773**	0.185	0.4	ug/L	215	Standard
	Cu	65	106457.4	0.4	**52.3703**	0.176	0.3	ug/L	104	Standard
	Zn	66	63607.9	0.7	**52.9682**	0.530	1.0	ug/L	363	Standard
>	Ge	72	539725.1	0.7				ug/L	495142	Standard
	As	75	63945.9	1.5	**52.4378**	1.123	2.1	ug/L	-50	Standard
	Se	82	6584.0	0.6	**54.8988**	0.684	1.2	ug/L	14	Standard
	Se-1	77	4386.3	1.4	**54.4772**	1.111	2.0	ug/L	42	Standard
>	Ga	71	80.0	16.5				mg/L	42	Standard
	Rb	85	970.0	8.8				ug/L	17	Standard
	Y	89	494238.2	2.5				ug/L	417098	Standard
>	Rh	103	45.0	11.1				ug/L	13	Standard
	Mo	98	317512.9	0.8	**102.4795**	1.834	1.8	ug/L	11	Standard
	Ag	107	378789.7	0.9	**49.9860**	0.591	1.2	ug/L	68	Standard
	Cd	111	119686.6	0.4	**49.2403**	0.865	1.8	mg/L	2	Standard
	Cd	114	291890.5	1.4	**48.9669**	1.322	2.7	ug/L	12	Standard
>	In	115	682927.0	1.5				ug/L	587441	Standard
	Sn	118	338721.1	0.8	**49.7884**	0.723	1.5	ug/L	497	Standard
	Sb	123	263759.6	1.2	**48.5931**	0.331	0.7	ug/L	78	Standard
	Ba	135	111614.3	0.7	**46.9010**	0.972	2.1	ug/L	24	Standard
	Ce	140	1265.1	98.5				ug/L	25	Standard
>	Tb	159	1064058.1	1.0				ug/L	939701	Standard
	Ho	165	88.3	85.2				ug/L	10	Standard
	Tl	203	475263.7	0.7	**51.4258**	1.211	2.4	ug/L	4	Standard
	Tl	205	438160.3	0.4	**54.6297**	1.400	2.6	ug/L	2	Standard
	Pb	206	306629.0	0.6	**51.1326**	1.396	2.7	ug/L	240	Standard
	Pb	207	272793.9	0.3	**51.2040**	1.495	2.9	ug/L	198	Standard
	Pb	208	1100211.2	0.6	**52.2716**	1.709	3.3	ug/L	883	Standard
	U	238	414469.5	0.5	**53.7134**	1.693	3.2	ug/L	3	Standard
>	Bi	209	587705.0	2.9				ug/L	523984	Standard

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Na	23	3.3	173.2	**35.5299**	61.531	173.2	mg/L	0	Standard
Mg	24	4809.1	8.0	**5.4678**	0.353	6.5	mg/L	37	Standard
K	39	2090.1	1.6	**4.0082**	0.167	4.2	mg/L	38	Standard
Ca	43	111.7	10.3	**3.7837**	0.862	22.8	mg/L	10	Standard
Fe	54	7082.4	2.6	**5.2191**	0.217	4.1	mg/L	179	Standard
Fe	57	2040.1	4.3	**5.1108**	0.267	5.2	mg/L	335	Standard
> **Sc-1**	45	68447.7	3.2				mg/L	61029	Standard
Cl	35	25830.7	1.4				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	2190.2	6.5				ug/L	1547	Standard
P	31	18406.2	0.9				ug/L	15286	Standard
S	34	1965.1	6.7				ug/L	1572	Standard
Sr	88	71.7	21.3				ug/L	73	Standard
C	12	103.3	29.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	152.5	102.6				mg/L	6	Standard
Ho-1	165	88.3	85.2				mg/L	10	Standard
Er	166	86.7	74.2				mg/L	13	Standard
I	127	2766.9	21.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	103.817		
Al	27	89.013		
Sc	45			
Ti	47	106.205		
V	51	110.094		
Cr	52	104.882		
Cr	53			
Mn	55	112.401		
Co	59	118.124		
Ni	60	104.355		
Cu	65	104.741		
Zn	66	105.936		
> Ge	72		109.004	
As	75	104.876		
Se	82	109.798		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	102.479		
Ag	107	99.972		
Cd	111	98.481		
Cd	114			
In	115		116.255	
Sn	118	99.577		
Sb	123	97.186		
Ba	135	93.802		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.852		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.543		
U	238	107.427		
Bi	209		112.161	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	
QC Std 6	V	51	
QC Std 6	Mn	55	

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QC Std 6	Co	59

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 16:24:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	100067.7	1.3				ug/L	74699	Standard
	Be	9	36.7	7.9	**0.0387**	0.002	5.2	ug/L	8	Standard
	Al	27	10153.6	30.4	**0.0381**	0.015	39.5	ug/L	1493	Standard
	Sc	45	67434.8	2.7				ug/L	61029	Standard
	Ti	47	38.3	21.7	**-0.0212**	0.020	92.7	ug/L	35	Standard
	V	51	1502.7	1.2	**-0.0231**	0.006	25.9	ug/L	1435	Standard
	Cr	52	7451.2	2.4	**-0.1523**	0.012	7.6	ug/L	7635	Standard
	Cr	53	503.3	11.6	**0.1429**	0.063	44.4	ug/L	363	Standard
	Mn	55	3693.5	26.8	**0.3137**	0.134	42.8	ug/L	747	Standard
	Co	59	358.3	10.7	**0.0099**	0.006	62.4	ug/L	234	Standard
	Ni	60	209.7	4.9	**-0.0268**	0.006	22.7	ug/L	215	Standard
	Cu	65	198.7	7.2	**-0.0110**	0.009	80.7	ug/L	104	Standard
	Zn	66	532.3	5.7	**-0.0316**	0.034	106.3	ug/L	363	Standard
>	**Ge**	72	571298.3	2.3				ug/L	495142	Standard
	As	75	-12.4	42.9	**0.0499**	0.004	8.8	ug/L	-50	Standard
	Se	82	23.5	9.9	**0.0476**	0.021	43.8	ug/L	14	Standard
	Se-1	77	58.7	7.7	**0.0749**	0.069	91.8	ug/L	42	Standard
>	**Ga**	71	75.0	26.7				mg/L	42	Standard
	Rb	85	36.7	55.1				ug/L	17	Standard
	Y	89	500557.3	2.5				ug/L	417098	Standard
>	**Rh**	103	30.0	44.1				ug/L	13	Standard
	Mo	98	301.0	26.9	**0.0924**	0.026	27.9	ug/L	11	Standard
	Ag	107	165.0	21.0	**0.0091**	0.004	49.2	ug/L	68	Standard
	Cd	111	19.8	28.3	**0.0003**	0.002	699.6	mg/L	2	Standard
	Cd	114	46.5	85.8	**0.0058**	0.007	116.4	ug/L	12	Standard
>	**In**	115	675355.4	0.8				ug/L	587441	Standard
	Sn	118	876.7	18.6	**0.0359**	0.025	69.7	ug/L	497	Standard
	Sb	123	599.5	22.8	**0.1076**	0.026	24.3	ug/L	78	Standard
	Ba	135	42.7	23.9	**0.0021**	0.004	201.6	ug/L	24	Standard
	Ce	140	140.0	34.4				ug/L	25	Standard
>	**Tb**	159	1044716.9	1.2				ug/L	939701	Standard
	Ho	165	20.0	50.0				ug/L	10	Standard
	Tl	203	103.0	21.9	**0.0094**	0.003	27.0	ug/L	4	Standard
	Tl	205	70.0	58.5	**0.0089**	0.005	57.1	ug/L	2	Standard
	Pb	206	338.7	4.4	**-0.0148**	0.002	16.0	ug/L	240	Standard
	Pb	207	277.7	9.1	**-0.0179**	0.005	28.1	ug/L	198	Standard
	Pb	208	1213.0	9.6	**-0.0165**	0.006	36.1	ug/L	883	Standard
	U	238	62.0	33.9	**0.0036**	0.003	76.1	ug/L	3	Standard
>	**Bi**	209	588682.5	1.2				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.0278**	29.484	173.2	mg/L	0	Standard
Mg	24	56.7	20.4	**0.0014**	0.015	1120.4	mg/L	37	Standard
K	39	36.7	28.4	**-0.0407**	0.021	51.2	mg/L	38	Standard
Ca	43	26.7	28.6	**-1.0029**	0.415	41.4	mg/L	10	Standard
Fe	54	187.4	12.0	**0.0055**	0.017	304.1	mg/L	179	Standard
Fe	57	261.7	6.1	**-0.2681**	0.071	26.5	mg/L	335	Standard
Sc-1	45	67434.8	2.7				mg/L	61029	Standard
Cl	35	26219.3	0.7				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	2243.5	3.0				ug/L	1547	Standard
P	31	19277.3	3.9				ug/L	15286	Standard
S	34	2016.8	11.3				ug/L	1572	Standard
Sr	88	70.0	35.7				ug/L	73	Standard
C	12	120.0	25.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	49.4	87.7				mg/L	6	Standard
Ho-1	165	20.0	50.0				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	2125.2	22.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		115.381	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.966
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		112.347
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606124701SDL WG574688-02
Sample Date/Time: Wednesday, June 29, 2016 16:27:13
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	105717.5	0.5				ug/L	74699	Standard
	Be	9	553.3	1.4	**0.4517**	0.004	0.8	ug/L	8	Standard
	Al	27	5662006.5	2.5	**27.2120**	0.787	2.9	ug/L	1493	Standard
	Sc	45	72131.5	3.8				ug/L	61029	Standard
	Ti	47	604.0	7.1	**1.2783**	0.109	8.5	ug/L	35	Standard
	V	51	3941.0	1.4	**0.2585**	0.002	0.9	ug/L	1435	Standard
	Cr	52	12715.3	2.3	**0.4691**	0.023	4.9	ug/L	7635	Standard
	Cr	53	1340.1	9.1	**0.9313**	0.103	11.1	ug/L	363	Standard
	Mn	55	2452895.1	0.8	**306.4368**	3.099	1.0	ug/L	747	Standard
	Co	59	67057.1	0.2	**8.7998**	0.112	1.3	ug/L	234	Standard
	Ni	60	46732.3	0.4	**21.5970**	0.233	1.1	ug/L	215	Standard
	Cu	65	904.0	6.3	**0.3188**	0.021	6.7	ug/L	104	Standard
	Zn	66	62660.6	1.1	**49.4618**	0.122	0.2	ug/L	363	Standard
>	**Ge**	72	569030.6	1.4				ug/L	495142	Standard
	As	75	59.1	19.2	**0.1055**	0.009	8.4	ug/L	-50	Standard
	Se	82	34.4	3.8	**0.1350**	0.014	10.1	ug/L	14	Standard
	Se-1	77	82.7	11.5	**0.3621**	0.106	29.4	ug/L	42	Standard
>	**Ga**	71	288.3	19.2				mg/L	42	Standard
	Rb	85	7325.1	4.9				ug/L	17	Standard
	Y	89	616528.9	0.8				ug/L	417098	Standard
>	**Rh**	103	13.3	78.1				ug/L	13	Standard
	Mo	98	112.4	8.7	**0.0298**	0.003	9.5	ug/L	11	Standard
	Ag	107	122.3	20.4	**0.0029**	0.003	108.6	ug/L	68	Standard
	Cd	111	198.8	14.6	**0.0723**	0.012	16.2	mg/L	2	Standard
	Cd	114	516.3	5.9	**0.0829**	0.006	6.9	ug/L	12	Standard
>	**In**	115	696026.2	0.9				ug/L	587441	Standard
	Sn	118	760.0	4.7	**0.0151**	0.006	37.2	ug/L	497	Standard
	Sb	123	350.2	21.1	**0.0592**	0.014	23.4	ug/L	78	Standard
	Ba	135	775.0	6.3	**0.3035**	0.019	6.3	ug/L	24	Standard
	Ce	140	119180.2	0.3				ug/L	25	Standard
>	**Tb**	159	1103880.2	1.1				ug/L	939701	Standard
	Ho	165	9261.2	2.5				ug/L	10	Standard
	Tl	203	155.7	9.5	**0.0145**	0.001	9.9	ug/L	4	Standard
	Tl	205	156.7	24.4	**0.0191**	0.005	23.7	ug/L	2	Standard
	Pb	206	668.3	5.9	**0.0368**	0.005	14.8	ug/L	240	Standard
	Pb	207	530.0	3.8	**0.0264**	0.004	13.6	ug/L	198	Standard
	Pb	208	2281.7	2.6	**0.0309**	0.002	6.9	ug/L	883	Standard
	U	238	1160.7	2.8	**0.1411**	0.004	2.6	ug/L	3	Standard
>	**Bi**	209	607087.1	0.9				ug/L	523984	Standard

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Na	23	1.7	173.2	**16.5008**	28.572	173.2	mg/L	0	Standard
Mg	24	3728.8	3.6	**4.0090**	0.135	3.4	mg/L	37	Standard
K	39	85.0	42.4	**0.0464**	0.073	156.7	mg/L	38	Standard
Ca	43	183.3	11.4	**7.2814**	1.162	16.0	mg/L	10	Standard
Fe	54	8713.3	2.8	**6.1146**	0.148	2.4	mg/L	179	Standard
Fe	57	2506.9	1.7	**6.1424**	0.321	5.2	mg/L	335	Standard
> **Sc-1**	45	72131.5	3.8				mg/L	61029	Standard
Cl	35	26208.6	1.1				ug/L	20195	Standard
Kr	83	2.7	21.7				ug/L	4	Standard
Br	81	3227.0	4.8				ug/L	1547	Standard
P	31	20363.7	0.5				ug/L	15286	Standard
S	34	1863.4	4.5				ug/L	1572	Standard
Sr	88	105.0	21.8				ug/L	73	Standard
C	12	56.7	36.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	14855.4	4.1				mg/L	6	Standard
Ho-1	165	9261.2	2.5				mg/L	10	Standard
Er	166	8048.8	4.7				mg/L	13	Standard
I	127	5796.1	1.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		141.525	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.923	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		118.484
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		115.860
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606126504
Sample Date/Time: Wednesday, June 29, 2016 16:30:25
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	101552.6	1.9				ug/L	74699	Standard
	Be	9	25.0	72.1	**0.0287**	0.016	54.3	ug/L	8	Standard
	Al	27	16250197.0	1.8	**81.3578**	2.887	3.5	ug/L	1493	Standard
	Sc	45	67044.7	1.9				ug/L	61029	Standard
	Ti	47	394.3	10.9	**0.8437**	0.094	11.2	ug/L	35	Standard
	V	51	39093.2	1.3	**4.5488**	0.169	3.7	ug/L	1435	Standard
	Cr	52	19068.3	2.3	**1.3348**	0.101	7.6	ug/L	7635	Standard
	Cr	53	5326.0	20.8	**4.9620**	1.165	23.5	ug/L	363	Standard
	Mn	55	6239.0	2.5	**0.6731**	0.027	4.0	ug/L	747	Standard
	Co	59	851.0	2.5	**0.0808**	0.004	4.5	ug/L	234	Standard
	Ni	60	1951.8	2.1	**0.8314**	0.029	3.5	ug/L	215	Standard
	Cu	65	1321.1	4.3	**0.5464**	0.014	2.5	ug/L	104	Standard
	Zn	66	5985.8	0.6	**4.5673**	0.118	2.6	ug/L	363	Standard
>	**Ge**	72	540512.2	2.5				ug/L	495142	Standard
	As	75	1446.2	5.5	**1.2419**	0.041	3.3	ug/L	-50	Standard
	Se	82	841.6	2.6	**6.8893**	0.246	3.6	ug/L	14	Standard
	Se-1	77	609.0	15.5	**7.0254**	1.243	17.7	ug/L	42	Standard
>	**Ga**	71	105.0	12.6				mg/L	42	Standard
	Rb	85	1541.7	7.2				ug/L	17	Standard
	Y	89	489017.5	2.4				ug/L	417098	Standard
>	**Rh**	103	70.0	18.9				ug/L	13	Standard
	Mo	98	501.8	4.3	**0.1636**	0.005	2.9	ug/L	11	Standard
	Ag	107	97.0	7.4	**0.0005**	0.001	200.8	ug/L	68	Standard
	Cd	111	26.4	23.0	**0.0035**	0.003	79.3	mg/L	2	Standard
	Cd	114	74.1	18.4	**0.0109**	0.002	21.9	ug/L	12	Standard
>	**In**	115	652860.7	1.6				ug/L	587441	Standard
	Sn	118	840.0	9.7	**0.0347**	0.012	35.4	ug/L	497	Standard
	Sb	123	289.8	10.9	**0.0517**	0.007	12.7	ug/L	78	Standard
	Ba	135	17710.3	0.6	**7.7715**	0.161	2.1	ug/L	24	Standard
	Ce	140	1525.1	0.6				ug/L	25	Standard
>	**Tb**	159	1031518.0	1.9				ug/L	939701	Standard
	Ho	165	43.3	24.0				ug/L	10	Standard
	Tl	203	163.3	10.6	**0.0174**	0.002	9.6	ug/L	4	Standard
	Tl	205	133.3	16.9	**0.0182**	0.003	18.7	ug/L	2	Standard
	Pb	206	441.3	2.3	**0.0087**	0.001	8.9	ug/L	240	Standard
	Pb	207	362.0	4.8	**0.0037**	0.003	70.2	ug/L	198	Standard
	Pb	208	1549.4	2.6	**0.0058**	0.001	11.8	ug/L	883	Standard
	U	238	23538.3	0.9	**3.3015**	0.086	2.6	ug/L	3	Standard
>	**Bi**	209	542188.4	2.1				ug/L	523984	Standard

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Na	23	3.3	173.2	**35.7447**	61.903	173.2	mg/L	0	Standard
Mg	24	119069.4	0.9	**139.8814**	3.117	2.2	mg/L	37	Standard
K	39	143.3	11.2	**0.1739**	0.028	15.9	mg/L	38	Standard
Ca	43	463.3	1.6	**24.1242**	0.657	2.7	mg/L	10	Standard
Fe	54	197.6	4.4	**0.0142**	0.006	45.1	mg/L	179	Standard
Fe	57	435.0	13.1	**0.2738**	0.196	71.7	mg/L	335	Standard
> **Sc-1**	45	67044.7	1.9				mg/L	61029	Standard
Cl	35	31470.7	2.7				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	73323.9	4.5				ug/L	1547	Standard
P	31	23608.4	2.5				ug/L	15286	Standard
S	34	1800.1	6.6				ug/L	1572	Standard
Sr	88	293.3	6.9				ug/L	73	Standard
C	12	193.3	41.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	86.5	19.9				mg/L	6	Standard
Ho-1	165	43.3	24.0				mg/L	10	Standard
Er	166	73.3	34.3				mg/L	13	Standard
I	127	54762.3	5.8				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		135.949	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		109.163	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	111.136
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.474
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606126505
Sample Date/Time: Wednesday, June 29, 2016 16:33:36
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	99450.4	1.4				ug/L	74699	Standard
	Be	9	58.3	30.1	**0.0575**	0.016	27.1	ug/L	8	Standard
	Al	27	32118811.5	1.4	**164.1461**	0.108	0.1	ug/L	1493	Standard
	Sc	45	70749.8	1.3				ug/L	61029	Standard
	Ti	47	642.0	2.2	**1.4252**	0.030	2.1	ug/L	35	Standard
	V	51	8228.7	11.8	**0.7915**	0.119	15.1	ug/L	1435	Standard
	Cr	52	11308.2	2.8	**0.3584**	0.044	12.4	ug/L	7635	Standard
	Cr	53	3712.1	10.4	**3.3091**	0.391	11.8	ug/L	363	Standard
	Mn	55	3368829.0	1.1	**438.1329**	6.772	1.5	ug/L	747	Standard
	Co	59	3400.7	28.1	**0.4294**	0.132	30.8	ug/L	234	Standard
	Ni	60	4538.7	3.1	**2.0720**	0.077	3.7	ug/L	215	Standard
	Cu	65	1589.1	4.3	**0.6697**	0.036	5.3	ug/L	104	Standard
	Zn	66	6182.6	5.7	**4.6729**	0.311	6.7	ug/L	363	Standard
>	**Ge**	72	546665.5	0.5				ug/L	495142	Standard
	As	75	6156.5	0.5	**5.0379**	0.006	0.1	ug/L	-50	Standard
	Se	82	164.0	1.8	**1.2151**	0.026	2.2	ug/L	14	Standard
	Se-1	77	258.7	9.7	**2.5862**	0.322	12.5	ug/L	42	Standard
>	**Ga**	71	188.3	13.1				mg/L	42	Standard
	Rb	85	1378.4	10.6				ug/L	17	Standard
	Y	89	484009.6	2.1				ug/L	417098	Standard
>	**Rh**	103	118.3	6.5				ug/L	13	Standard
	Mo	98	286.3	31.1	**0.0925**	0.030	32.6	ug/L	11	Standard
	Ag	107	183.3	43.5	**0.0128**	0.011	86.7	ug/L	68	Standard
	Cd	111	248.2	17.8	**0.1006**	0.018	18.1	mg/L	2	Standard
	Cd	114	590.9	17.2	**0.1032**	0.017	16.3	ug/L	12	Standard
>	**In**	115	642069.8	1.9				ug/L	587441	Standard
	Sn	118	836.7	5.6	**0.0365**	0.010	26.8	ug/L	497	Standard
	Sb	123	288.3	29.8	**0.0524**	0.017	32.5	ug/L	78	Standard
	Ba	135	131296.8	1.0	**58.6819**	0.595	1.0	ug/L	24	Standard
	Ce	140	6513.1	10.5				ug/L	25	Standard
>	**Tb**	159	1012113.9	1.4				ug/L	939701	Standard
	Ho	165	216.7	7.1				ug/L	10	Standard
	Tl	203	185.3	61.4	**0.0202**	0.013	66.8	ug/L	4	Standard
	Tl	205	276.7	88.2	**0.0379**	0.033	87.8	ug/L	2	Standard
	Pb	206	891.4	31.8	**0.0916**	0.052	56.6	ug/L	240	Standard
	Pb	207	748.7	30.8	**0.0839**	0.048	56.6	ug/L	198	Standard
	Pb	208	3050.1	30.7	**0.0846**	0.049	57.6	ug/L	883	Standard
	U	238	21997.6	2.6	**3.1135**	0.091	2.9	ug/L	3	Standard
>	**Bi**	209	537104.2	0.4				ug/L	523984	Standard

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Na	23	13.3	57.3	**132.8617**	77.017	58.0	mg/L	0	Standard
Mg	24	104917.1	1.8	**116.7540**	0.597	0.5	mg/L	37	Standard
K	39	116.7	8.9	**0.1082**	0.018	16.4	mg/L	38	Standard
Ca	43	916.7	6.0	**47.4532**	3.610	7.6	mg/L	10	Standard
Fe	54	3013.9	2.4	**2.0666**	0.083	4.0	mg/L	179	Standard
Fe	57	1381.7	4.1	**2.9770**	0.162	5.4	mg/L	335	Standard
> **Sc-1**	45	70749.8	1.3				mg/L	61029	Standard
Cl	35	30215.4	1.0				ug/L	20195	Standard
Kr	83	1.3	114.6				ug/L	4	Standard
Br	81	35768.9	2.6				ug/L	1547	Standard
P	31	25429.7	2.5				ug/L	15286	Standard
S	34	2313.5	0.3				ug/L	1572	Standard
Sr	88	551.7	8.2				ug/L	73	Standard
C	12	433.3	25.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	3	Standard
Dy	164	279.9	12.3				mg/L	6	Standard
Ho-1	165	216.7	7.1				mg/L	10	Standard
Er	166	280.0	18.9				mg/L	13	Standard
I	127	794211.5	6.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		133.135	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.406	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.299
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.504
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606126506
Sample Date/Time: Wednesday, June 29, 2016 16:36:48
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	100252.3	1.1				ug/L	74699	Standard
	Be	9	26.7	39.0	**0.0303**	0.009	29.8	ug/L	8	Standard
	Al	27	69444.0	4.9	**0.3387**	0.017	5.1	ug/L	1493	Standard
	Sc	45	71205.3	1.8				ug/L	61029	Standard
	Ti	47	113.0	20.9	**0.1414**	0.055	38.5	ug/L	35	Standard
	V	51	2901.2	2.9	**0.1267**	0.013	10.0	ug/L	1435	Standard
	Cr	52	23756.9	1.1	**1.6651**	0.003	0.2	ug/L	7635	Standard
	Cr	53	2710.2	4.1	**2.1308**	0.127	5.9	ug/L	363	Standard
	Mn	55	7460.8	10.3	**0.7511**	0.098	13.0	ug/L	747	Standard
	Co	59	456.0	8.6	**0.0207**	0.006	26.8	ug/L	234	Standard
	Ni	60	2497.2	2.2	**0.9949**	0.023	2.3	ug/L	215	Standard
	Cu	65	984.0	1.2	**0.3398**	0.007	2.0	ug/L	104	Standard
	Zn	66	8303.3	0.9	**5.9218**	0.058	1.0	ug/L	363	Standard
>	**Ge**	72	590298.4	1.1				ug/L	495142	Standard
	As	75	7.9	237.8	**0.0655**	0.014	21.6	ug/L	-50	Standard
	Se	82	27.7	14.2	**0.0742**	0.032	43.2	ug/L	14	Standard
	Se-1	77	72.3	15.2	**0.2091**	0.134	63.9	ug/L	42	Standard
>	**Ga**	71	91.7	20.7				mg/L	42	Standard
	Rb	85	308.3	4.1				ug/L	17	Standard
	Y	89	498995.2	1.7				ug/L	417098	Standard
>	**Rh**	103	21.7	48.0				ug/L	13	Standard
	Mo	98	716.7	9.5	**0.2259**	0.023	10.1	ug/L	11	Standard
	Ag	107	155.3	16.4	**0.0076**	0.003	44.6	ug/L	68	Standard
	Cd	111	44.4	12.9	**0.0104**	0.002	21.8	mg/L	2	Standard
	Cd	114	117.5	18.7	**0.0177**	0.004	21.5	ug/L	12	Standard
>	**In**	115	682064.0	0.6				ug/L	587441	Standard
	Sn	118	4689.1	2.4	**0.5966**	0.013	2.3	ug/L	497	Standard
	Sb	123	228.7	11.3	**0.0380**	0.005	12.5	ug/L	78	Standard
	Ba	135	1034.0	4.7	**0.4191**	0.020	4.8	ug/L	24	Standard
	Ce	140	486.7	14.8				ug/L	25	Standard
>	**Tb**	159	1056147.0	0.9				ug/L	939701	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	43.7	26.0	**0.0029**	0.001	43.8	ug/L	4	Standard
	Tl	205	50.0	26.5	**0.0063**	0.002	26.5	ug/L	2	Standard
	Pb	206	665.7	3.1	**0.0376**	0.003	7.4	ug/L	240	Standard
	Pb	207	542.7	5.2	**0.0299**	0.006	20.6	ug/L	198	Standard
	Pb	208	2227.4	4.5	**0.0297**	0.006	20.4	ug/L	883	Standard
	U	238	38.7	20.9	**0.0005**	0.001	221.1	ug/L	3	Standard
>	**Bi**	209	599996.8	1.5				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	216.7	5.8	**0.1745**	0.010	5.5	mg/L	37	Standard
K	39	46.7	49.5	**-0.0257**	0.044	170.8	mg/L	38	Standard
Ca	43	30.0	16.7	**-0.8971**	0.290	32.3	mg/L	10	Standard
Fe	54	200.7	16.8	**0.0076**	0.025	326.7	mg/L	179	Standard
Fe	57	248.3	11.1	**-0.3516**	0.067	19.2	mg/L	335	Standard
> **Sc-1**	45	71205.3	1.8				mg/L	61029	Standard
Cl	35	31458.6	1.1				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	3110.3	10.8				ug/L	1547	Standard
P	31	21037.9	1.6				ug/L	15286	Standard
S	34	2263.5	3.0				ug/L	1572	Standard
Sr	88	58.3	27.6				ug/L	73	Standard
C	12	113.3	13.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	38.9	27.0				mg/L	6	Standard
Ho-1	165	8.3	69.3				mg/L	10	Standard
Er	166	23.3	65.5				mg/L	13	Standard
I	127	20210.2	61.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		134.209	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		119.218	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	116.108
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	114.507
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606126601
Sample Date/Time: Wednesday, June 29, 2016 16:39:59
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	101321.2	3.1				ug/L	74699	Standard
	Be	9	18.3	56.8	**0.0228**	0.008	36.0	ug/L	8	Standard
	Al	27	44431569.1	0.7	**222.9926**	5.415	2.4	ug/L	1493	Standard
	Sc	45	71310.8	2.2				ug/L	61029	Standard
	Ti	47	275.3	6.3	**0.5272**	0.047	8.9	ug/L	35	Standard
	V	51	27907.2	1.9	**3.0387**	0.030	1.0	ug/L	1435	Standard
	Cr	52	13580.1	0.8	**0.5803**	0.015	2.6	ug/L	7635	Standard
	Cr	53	2821.9	2.8	**2.3430**	0.081	3.4	ug/L	363	Standard
	Mn	55	153037.1	1.2	**19.0926**	0.078	0.4	ug/L	747	Standard
	Co	59	1012.0	1.5	**0.0969**	0.001	1.5	ug/L	234	Standard
	Ni	60	4370.3	2.4	**1.9194**	0.048	2.5	ug/L	215	Standard
	Cu	65	751.7	5.3	**0.2499**	0.020	8.0	ug/L	104	Standard
	Zn	66	3518.1	1.4	**2.3650**	0.050	2.1	ug/L	363	Standard
>	Ge	72	565652.8	1.1				ug/L	495142	Standard
	As	75	1269.0	4.3	**1.0512**	0.035	3.4	ug/L	-50	Standard
	Se	82	382.5	3.3	**2.9130**	0.125	4.3	ug/L	14	Standard
	Se-1	77	193.3	14.8	**1.6975**	0.369	21.7	ug/L	42	Standard
>	Ga	71	66.7	18.9				mg/L	42	Standard
	Rb	85	2323.5	7.7				ug/L	17	Standard
	Y	89	480038.2	1.2				ug/L	417098	Standard
>	Rh	103	150.0	3.3				ug/L	13	Standard
	Mo	98	638.7	4.4	**0.2084**	0.010	5.0	ug/L	11	Standard
	Ag	107	92.0	14.1	**-0.0003**	0.002	569.4	ug/L	68	Standard
	Cd	111	195.2	3.6	**0.0755**	0.003	3.5	mg/L	2	Standard
	Cd	114	469.8	19.5	**0.0797**	0.016	19.7	ug/L	12	Standard
>	In	115	657497.5	0.6				ug/L	587441	Standard
	Sn	118	753.4	8.5	**0.0205**	0.010	48.9	ug/L	497	Standard
	Sb	123	222.8	13.6	**0.0384**	0.006	15.3	ug/L	78	Standard
	Ba	135	100054.6	0.7	**43.6617**	0.503	1.2	ug/L	24	Standard
	Ce	140	173.3	6.0				ug/L	25	Standard
>	Tb	159	1045560.4	1.5				ug/L	939701	Standard
	Ho	165	40.0	25.0				ug/L	10	Standard
	Tl	203	129.3	1.6	**0.0127**	0.000	3.7	ug/L	4	Standard
	Tl	205	133.3	20.7	**0.0174**	0.003	20.0	ug/L	2	Standard
	Pb	206	412.3	3.7	**0.0001**	0.002	2456.7	ug/L	240	Standard
	Pb	207	343.7	8.9	**-0.0032**	0.005	165.7	ug/L	198	Standard
	Pb	208	1432.7	1.3	**-0.0035**	0.002	56.3	ug/L	883	Standard
	U	238	43636.7	0.7	**5.8505**	0.120	2.1	ug/L	3	Standard
>	Bi	209	567479.2	1.8				ug/L	523984	Standard

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Na	23	5.0	100.0	**48.6438**	48.507	99.7	mg/L	0	Standard
Mg	24	35550.0	1.9	**39.2140**	0.699	1.8	mg/L	37	Standard
K	39	165.0	24.1	**0.1975**	0.071	36.0	mg/L	38	Standard
Ca	43	596.7	5.4	**29.7553**	2.186	7.3	mg/L	10	Standard
Fe	54	190.1	10.6	**-0.0004**	0.014	3403.7	mg/L	179	Standard
Fe	57	555.0	7.7	**0.5391**	0.093	17.2	mg/L	335	Standard
> **Sc-1**	45	71310.8	2.2				mg/L	61029	Standard
Cl	35	33374.1	0.9				ug/L	20195	Standard
Kr	83	2.0	132.3				ug/L	4	Standard
Br	81	77209.6	1.2				ug/L	1547	Standard
P	31	24828.7	1.5				ug/L	15286	Standard
S	34	2263.5	4.7				ug/L	1572	Standard
Sr	88	591.7	14.4				ug/L	73	Standard
C	12	253.3	22.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	25.0				mg/L	3	Standard
Dy	164	40.1	59.8				mg/L	6	Standard
Ho-1	165	40.0	25.0				mg/L	10	Standard
Er	166	66.7	37.7				mg/L	13	Standard
I	127	2058609.0	7.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		135.640	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.240	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.926
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.301
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606126601
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Method 6020 - Summary Report

Sample ID: L1606126901
Sample Date/Time: Wednesday, June 29, 2016 16:43:10
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	97179.0	1.2				ug/L	74699	Standard
	Be	9	23.3	44.6	**0.0281**	0.009	33.4	ug/L	8	Standard
	Al	27	25054309.4	1.7	**131.0332**	1.604	1.2	ug/L	1493	Standard
	Sc	45	69363.5	2.7				ug/L	61029	Standard
	Ti	47	323.3	2.8	**0.6992**	0.021	2.9	ug/L	35	Standard
	V	51	12024.0	2.6	**1.3128**	0.037	2.9	ug/L	1435	Standard
	Cr	52	11840.6	1.6	**0.4900**	0.025	5.0	ug/L	7635	Standard
	Cr	53	2901.9	3.9	**2.6451**	0.119	4.5	ug/L	363	Standard
	Mn	55	490032.6	0.8	**66.5395**	0.816	1.2	ug/L	747	Standard
	Co	59	931.7	2.1	**0.0964**	0.003	3.3	ug/L	234	Standard
	Ni	60	2217.5	3.2	**0.9981**	0.030	3.0	ug/L	215	Standard
	Cu	65	599.0	3.0	**0.2013**	0.011	5.4	ug/L	104	Standard
	Zn	66	4806.1	1.2	**3.7141**	0.039	1.0	ug/L	363	Standard
>	**Ge**	72	522601.4	0.6				ug/L	495142	Standard
	As	75	2361.3	3.3	**2.0571**	0.073	3.5	ug/L	-50	Standard
	Se	82	593.9	4.2	**4.9896**	0.230	4.6	ug/L	14	Standard
	Se-1	77	179.7	2.8	**1.7086**	0.076	4.5	ug/L	42	Standard
>	**Ga**	71	105.0	9.5				mg/L	42	Standard
	Rb	85	2805.3	2.5				ug/L	17	Standard
	Y	89	474068.5	3.1				ug/L	417098	Standard
>	**Rh**	103	81.7	12.7				ug/L	13	Standard
	Mo	98	305.2	1.9	**0.0985**	0.004	4.4	ug/L	11	Standard
	Ag	107	99.7	12.7	**0.0010**	0.002	153.4	ug/L	68	Standard
	Cd	111	19.2	16.0	**0.0004**	0.001	278.0	mg/L	2	Standard
	Cd	114	49.5	42.7	**0.0067**	0.004	59.0	ug/L	12	Standard
>	**In**	115	645532.6	2.3				ug/L	587441	Standard
	Sn	118	888.4	9.9	**0.0435**	0.010	24.0	ug/L	497	Standard
	Sb	123	240.8	4.4	**0.0427**	0.002	4.3	ug/L	78	Standard
	Ba	135	155622.1	0.5	**69.2020**	1.756	2.5	ug/L	24	Standard
	Ce	140	928.4	7.9				ug/L	25	Standard
>	**Tb**	159	1004174.2	1.0				ug/L	939701	Standard
	Ho	165	23.3	32.7				ug/L	10	Standard
	Tl	203	115.7	10.5	**0.0121**	0.001	11.5	ug/L	4	Standard
	Tl	205	128.3	22.2	**0.0179**	0.004	22.0	ug/L	2	Standard
	Pb	206	395.0	0.9	**0.0016**	0.001	57.1	ug/L	240	Standard
	Pb	207	323.3	6.0	**-0.0029**	0.004	138.0	ug/L	198	Standard
	Pb	208	1415.7	2.0	**0.0002**	0.001	432.7	ug/L	883	Standard
	U	238	7265.7	2.0	**1.0348**	0.023	2.2	ug/L	3	Standard
>	**Bi**	209	532226.3	0.6				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.4177**	30.160	173.2	mg/L	0	Standard
Mg	24	119202.1	1.4	**135.3768**	3.695	2.7	mg/L	37	Standard
K	39	220.0	8.2	**0.3143**	0.042	13.4	mg/L	38	Standard
Ca	43	398.3	4.4	**19.6130**	0.698	3.6	mg/L	10	Standard
Fe	54	252.1	18.1	**0.0493**	0.029	59.6	mg/L	179	Standard
Fe	57	418.3	9.7	**0.1785**	0.138	77.4	mg/L	335	Standard
Sc-1	45	69363.5	2.7				mg/L	61029	Standard
Cl	35	32454.7	1.8				ug/L	20195	Standard
Kr	83	1.0	173.2				ug/L	4	Standard
Br	81	137582.4	3.7				ug/L	1547	Standard
P	31	24828.7	1.5				ug/L	15286	Standard
S	34	2306.8	3.7				ug/L	1572	Standard
Sr	88	291.7	6.0				ug/L	73	Standard
C	12	323.3	19.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	15.2	73.1				mg/L	6	Standard
Ho-1	165	23.3	32.7				mg/L	10	Standard
Er	166	30.0	33.3				mg/L	13	Standard
I	127	310633.7	2.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		130.094	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		105.546	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.889
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.573
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606127201
Sample Date/Time: Wednesday, June 29, 2016 16:46:22
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	94337.9	2.3				ug/L	74699	Standard
	Be	9	23.3	53.9	**0.0288**	0.012	40.8	ug/L	8	Standard
	Al	27	2978340.1	2.2	**16.0395**	0.522	3.3	ug/L	1493	Standard
	Sc	45	67137.0	4.7				ug/L	61029	Standard
	Ti	47	236.7	18.3	**0.4520**	0.099	21.9	ug/L	35	Standard
	V	51	33734.3	0.8	**3.8201**	0.030	0.8	ug/L	1435	Standard
	Cr	52	13200.4	3.0	**0.5779**	0.062	10.7	ug/L	7635	Standard
	Cr	53	1396.7	5.5	**1.0289**	0.077	7.5	ug/L	363	Standard
	Mn	55	5810.0	55.0	**0.6034**	0.416	68.9	ug/L	747	Standard
	Co	59	597.0	23.2	**0.0441**	0.019	43.4	ug/L	234	Standard
	Ni	60	839.7	12.2	**0.2798**	0.055	19.7	ug/L	215	Standard
	Cu	65	499.7	4.1	**0.1378**	0.013	9.3	ug/L	104	Standard
	Zn	66	1881.8	10.3	**1.0958**	0.181	16.5	ug/L	363	Standard
>	**Ge**	72	550779.1	1.5				ug/L	495142	Standard
	As	75	823.5	3.7	**0.7205**	0.021	2.9	ug/L	-50	Standard
	Se	82	534.3	3.8	**4.2403**	0.211	5.0	ug/L	14	Standard
	Se-1	77	394.7	5.2	**4.2338**	0.183	4.3	ug/L	42	Standard
>	**Ga**	71	76.7	13.6				mg/L	42	Standard
	Rb	85	1120.0	6.4				ug/L	17	Standard
	Y	89	478775.5	2.0				ug/L	417098	Standard
>	**Rh**	103	33.3	52.7				ug/L	13	Standard
	Mo	98	1510.8	4.0	**0.5152**	0.028	5.4	ug/L	11	Standard
	Ag	107	155.0	42.6	**0.0091**	0.010	106.9	ug/L	68	Standard
	Cd	111	66.6	64.6	**0.0216**	0.019	89.7	mg/L	2	Standard
	Cd	114	188.5	50.4	**0.0319**	0.018	55.0	ug/L	12	Standard
>	**In**	115	639482.4	2.0				ug/L	587441	Standard
	Sn	118	738.4	13.9	**0.0215**	0.017	79.5	ug/L	497	Standard
	Sb	123	301.8	22.4	**0.0554**	0.014	26.0	ug/L	78	Standard
	Ba	135	10964.6	1.7	**4.9054**	0.035	0.7	ug/L	24	Standard
	Ce	140	728.4	65.5				ug/L	25	Standard
>	**Tb**	159	995838.4	2.1				ug/L	939701	Standard
	Ho	165	55.0	78.7				ug/L	10	Standard
	Tl	203	165.3	64.1	**0.0175**	0.012	69.7	ug/L	4	Standard
	Tl	205	88.3	34.1	**0.0121**	0.004	34.3	ug/L	2	Standard
	Pb	206	371.3	17.5	**-0.0043**	0.012	275.3	ug/L	240	Standard
	Pb	207	297.3	13.9	**-0.0098**	0.008	82.9	ug/L	198	Standard
	Pb	208	1253.7	10.6	**-0.0098**	0.007	68.1	ug/L	883	Standard
	U	238	7715.3	1.4	**1.0741**	0.027	2.5	ug/L	3	Standard
>	**Bi**	209	544657.1	1.1				ug/L	523984	Standard

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Na	23	8.3	34.6	**87.3928**	30.523	34.9	mg/L	0	Standard
Mg	24	56818.0	2.0	**66.6625**	1.829	2.7	mg/L	37	Standard
K	39	118.3	28.8	**0.1220**	0.059	48.6	mg/L	38	Standard
Ca	43	173.3	14.2	**7.4463**	1.537	20.6	mg/L	10	Standard
Fe	54	200.1	8.9	**0.0164**	0.019	116.3	mg/L	179	Standard
Fe	57	341.7	12.8	**-0.0156**	0.156	997.8	mg/L	335	Standard
> **Sc-1**	45	67137.0	4.7				mg/L	61029	Standard
Cl	35	31870.8	2.6				ug/L	20195	Standard
Kr	83	0.7	173.2				ug/L	4	Standard
Br	81	13232.4	3.4				ug/L	1547	Standard
P	31	22137.8	2.1				ug/L	15286	Standard
S	34	2160.2	8.0				ug/L	1572	Standard
Sr	88	146.7	24.2				ug/L	73	Standard
C	12	170.0	10.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	64.3	100.4				mg/L	6	Standard
Ho-1	165	55.0	78.7				mg/L	10	Standard
Er	166	50.0	60.0				mg/L	13	Standard
I	127	62898.8	4.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		126.291	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.237	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.859
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.945
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606127202
Sample Date/Time: Wednesday, June 29, 2016 16:49:33
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	98788.0	4.1				ug/L	74699	Standard
	Be	9	13.3	57.3	**0.0192**	0.007	36.1	ug/L	8	Standard
	Al	27	43121483.9	2.2	**221.9923**	5.444	2.5	ug/L	1493	Standard
	Sc	45	66930.9	3.1				ug/L	61029	Standard
	Ti	47	1039.7	26.4	**2.4141**	0.661	27.4	ug/L	35	Standard
	V	51	49957.2	0.9	**5.8910**	0.067	1.1	ug/L	1435	Standard
	Cr	52	18344.1	1.8	**1.2538**	0.038	3.0	ug/L	7635	Standard
	Cr	53	24960.6	4.5	**24.5202**	1.080	4.4	ug/L	363	Standard
	Mn	55	17873.9	4.1	**2.2143**	0.103	4.7	ug/L	747	Standard
	Co	59	1405.4	6.7	**0.1586**	0.013	8.4	ug/L	234	Standard
	Ni	60	3876.2	1.9	**1.7810**	0.032	1.8	ug/L	215	Standard
	Cu	65	1407.4	2.7	**0.5921**	0.020	3.4	ug/L	104	Standard
	Zn	66	4623.4	0.6	**3.4401**	0.014	0.4	ug/L	363	Standard
>	**Ge**	72	538103.3	0.3				ug/L	495142	Standard
	As	75	2665.5	0.4	**2.2493**	0.008	0.3	ug/L	-50	Standard
	Se	82	859.9	5.4	**7.0717**	0.401	5.7	ug/L	14	Standard
	Se-1	77	1900.1	5.6	**23.3152**	1.302	5.6	ug/L	42	Standard
>	**Ga**	71	205.0	14.8				mg/L	42	Standard
	Rb	85	12111.5	1.9				ug/L	17	Standard
	Y	89	447538.5	3.5				ug/L	417098	Standard
>	**Rh**	103	186.7	5.6				ug/L	13	Standard
	Mo	98	4087.3	1.0	**1.4942**	0.026	1.7	ug/L	11	Standard
	Ag	107	258.7	10.6	**0.0259**	0.004	14.5	ug/L	68	Standard
	Cd	111	70.2	15.3	**0.0250**	0.005	21.6	mg/L	2	Standard
	Cd	114	224.5	9.2	**0.0407**	0.004	8.7	ug/L	12	Standard
>	**In**	115	600654.0	1.1				ug/L	587441	Standard
	Sn	118	765.0	14.6	**0.0335**	0.020	60.1	ug/L	497	Standard
	Sb	123	166.1	4.9	**0.0306**	0.002	5.1	ug/L	78	Standard
	Ba	135	52090.1	1.0	**24.8744**	0.038	0.2	ug/L	24	Standard
	Ce	140	4474.0	3.6				ug/L	25	Standard
>	**Tb**	159	974974.5	0.9				ug/L	939701	Standard
	Ho	165	80.0	27.2				ug/L	10	Standard
	Tl	203	82.0	10.0	**0.0082**	0.001	13.1	ug/L	4	Standard
	Tl	205	63.3	43.5	**0.0090**	0.004	42.2	ug/L	2	Standard
	Pb	206	1123.7	3.1	**0.1383**	0.006	4.7	ug/L	240	Standard
	Pb	207	914.0	2.3	**0.1218**	0.004	3.1	ug/L	198	Standard
	Pb	208	3779.9	2.5	**0.1267**	0.006	5.0	ug/L	883	Standard
	U	238	23648.8	1.1	**3.4170**	0.057	1.7	ug/L	3	Standard
>	**Bi**	209	526202.0	0.7				ug/L	523984	Standard

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Na	23	5.0	100.0	**53.6294**	53.947	100.6	mg/L	0	Standard
Mg	24	113104.0	1.5	**133.1465**	4.642	3.5	mg/L	37	Standard
K	39	478.3	11.2	**0.8485**	0.082	9.7	mg/L	38	Standard
Ca	43	695.0	6.9	**37.5535**	3.460	9.2	mg/L	10	Standard
Fe	54	250.5	4.6	**0.0553**	0.004	6.4	mg/L	179	Standard
Fe	57	631.7	3.6	**0.8833**	0.015	1.7	mg/L	335	Standard
> **Sc-1**	45	66930.9	3.1				mg/L	61029	Standard
Cl	35	32927.1	2.7				ug/L	20195	Standard
Kr	83	2.7	57.3				ug/L	4	Standard
Br	81	41968.1	3.2				ug/L	1547	Standard
P	31	23413.1	2.8				ug/L	15286	Standard
S	34	2041.8	4.5				ug/L	1572	Standard
Sr	88	750.0	13.9				ug/L	73	Standard
C	12	126.7	19.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	103.6	24.2				mg/L	6	Standard
Ho-1	165	80.0	27.2				mg/L	10	Standard
Er	166	63.3	32.9				mg/L	13	Standard
I	127	36619.2	2.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.248	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.676	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.249
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.423
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606127901
Sample Date/Time: Wednesday, June 29, 2016 16:52:45
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	94669.8	0.8				ug/L	74699	Standard
	Be	9	153.3	14.7	**0.1451**	0.021	14.4	ug/L	8	Standard
	Al	27	36828943.8	1.6	**197.7220**	2.539	1.3	ug/L	1493	Standard
	Sc	45	72494.8	2.9				ug/L	61029	Standard
	Ti	47	9823.2	1.5	**22.6070**	0.583	2.6	ug/L	35	Standard
	V	51	40160.9	1.2	**4.4642**	0.016	0.4	ug/L	1435	Standard
	Cr	52	82051.3	1.3	**8.6794**	0.190	2.2	ug/L	7635	Standard
	Cr	53	10588.7	4.0	**9.7108**	0.425	4.4	ug/L	363	Standard
	Mn	55	3156665.4	1.9	**397.2480**	11.605	2.9	ug/L	747	Standard
	Co	59	13202.1	1.7	**1.7150**	0.048	2.8	ug/L	234	Standard
	Ni	60	14584.3	1.0	**6.7029**	0.116	1.7	ug/L	215	Standard
	Cu	65	6796.9	2.1	**3.0972**	0.099	3.2	ug/L	104	Standard
	Zn	66	29601.9	0.7	**23.2962**	0.407	1.7	ug/L	363	Standard
>	**Ge**	72	565029.1	1.1				ug/L	495142	Standard
	As	75	1169.4	2.0	**0.9746**	0.024	2.5	ug/L	-50	Standard
	Se	82	54.4	2.8	**0.2964**	0.014	4.6	ug/L	14	Standard
	Se-1	77	95.3	8.8	**0.5209**	0.088	16.8	ug/L	42	Standard
>	**Ga**	71	2745.3	10.7				mg/L	42	Standard
	Rb	85	40779.8	2.2				ug/L	17	Standard
	Y	89	501434.2	0.6				ug/L	417098	Standard
>	**Rh**	103	116.7	40.7				ug/L	13	Standard
	Mo	98	6510.4	0.7	**2.1843**	0.030	1.4	ug/L	11	Standard
	Ag	107	146.0	1.2	**0.0072**	0.000	3.6	ug/L	68	Standard
	Cd	111	54.1	19.4	**0.0153**	0.004	28.2	mg/L	2	Standard
	Cd	114	169.8	20.2	**0.0276**	0.006	22.4	ug/L	12	Standard
>	**In**	115	655252.5	1.2				ug/L	587441	Standard
	Sn	118	1435.1	4.4	**0.1255**	0.007	5.6	ug/L	497	Standard
	Sb	123	419.8	7.1	**0.0764**	0.005	6.8	ug/L	78	Standard
	Ba	135	167537.6	1.4	**73.3690**	0.619	0.8	ug/L	24	Standard
	Ce	140	144147.5	0.8				ug/L	25	Standard
>	**Tb**	159	1041877.9	1.3				ug/L	939701	Standard
	Ho	165	2731.9	2.9				ug/L	10	Standard
	Tl	203	237.3	5.5	**0.0244**	0.001	5.3	ug/L	4	Standard
	Tl	205	228.3	8.3	**0.0292**	0.002	8.4	ug/L	2	Standard
	Pb	206	7357.1	0.9	**1.1818**	0.018	1.5	ug/L	240	Standard
	Pb	207	5920.5	2.7	**1.0648**	0.026	2.5	ug/L	198	Standard
	Pb	208	25273.6	1.1	**1.1521**	0.016	1.4	ug/L	883	Standard
	U	238	16614.4	0.8	**2.1915**	0.022	1.0	ug/L	3	Standard
>	**Bi**	209	575969.2	0.6				ug/L	523984	Standard

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Na	23	3.3	86.6	**32.3968**	28.087	86.7	mg/L	0	Standard
Mg	24	3568.8	4.7	**3.8119**	0.091	2.4	mg/L	37	Standard
K	39	285.0	24.6	**0.4167**	0.132	31.6	mg/L	38	Standard
Ca	43	908.4	6.1	**45.7783**	2.516	5.5	mg/L	10	Standard
Fe	54	3605.6	1.3	**2.4364**	0.072	2.9	mg/L	179	Standard
Fe	57	1446.7	0.5	**3.0674**	0.109	3.5	mg/L	335	Standard
Sc-1	45	72494.8	2.9				mg/L	61029	Standard
Cl	35	31293.6	1.2				ug/L	20195	Standard
Kr	83	2.3	49.5				ug/L	4	Standard
Br	81	8015.5	4.3				ug/L	1547	Standard
P	31	26808.7	3.1				ug/L	15286	Standard
S	34	2353.5	0.9				ug/L	1572	Standard
Sr	88	506.7	5.4				ug/L	73	Standard
C	12	183.3	20.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	3	Standard
Dy	164	4522.3	4.2				mg/L	6	Standard
Ho-1	165	2731.9	2.9				mg/L	10	Standard
Er	166	2333.5	8.8				mg/L	13	Standard
I	127	38263.4	7.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		126.735	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		114.114	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	111.544
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	109.921
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606127901
Sample Date/Time: Wednesday, June 29, 2016 16:55:56
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	94757.1	0.6				ug/L	74699	Standard
	Be	9	16.7	34.6	**0.0226**	0.005	23.2	ug/L	8	Standard
	Al	27	809583.1	0.4	**4.3294**	0.010	0.2	ug/L	1493	Standard
	Sc	45	70063.3	2.2				ug/L	61029	Standard
	Ti	47	239.7	2.8	**0.4418**	0.016	3.7	ug/L	35	Standard
	V	51	2635.2	3.3	**0.1083**	0.010	9.6	ug/L	1435	Standard
	Cr	52	10594.0	0.1	**0.2214**	0.004	1.7	ug/L	7635	Standard
	Cr	53	1061.7	10.6	**0.6708**	0.107	16.0	ug/L	363	Standard
	Mn	55	69843.0	1.9	**8.5894**	0.152	1.8	ug/L	747	Standard
	Co	59	472.7	1.3	**0.0251**	0.001	3.3	ug/L	234	Standard
	Ni	60	497.3	0.6	**0.1075**	0.002	1.4	ug/L	215	Standard
	Cu	65	314.7	2.4	**0.0436**	0.003	7.6	ug/L	104	Standard
	Zn	66	3346.7	3.2	**2.2142**	0.089	4.0	ug/L	363	Standard
>	**Ge**	72	568460.2	0.3				ug/L	495142	Standard
	As	75	-20.7	45.1	**0.0435**	0.007	16.6	ug/L	-50	Standard
	Se	82	18.3	17.6	**0.0072**	0.025	350.3	ug/L	14	Standard
	Se-1	77	58.0	6.2	**0.0694**	0.043	62.2	ug/L	42	Standard
>	**Ga**	71	123.3	16.9				mg/L	42	Standard
	Rb	85	875.0	6.6				ug/L	17	Standard
	Y	89	490331.7	1.2				ug/L	417098	Standard
>	**Rh**	103	16.7	45.8				ug/L	13	Standard
	Mo	98	175.2	3.1	**0.0513**	0.001	2.5	ug/L	11	Standard
	Ag	107	187.0	5.8	**0.0120**	0.001	10.3	ug/L	68	Standard
	Cd	111	8.4	36.2	**-0.0044**	0.001	27.6	mg/L	2	Standard
	Cd	114	20.0	63.9	**0.0013**	0.002	167.4	ug/L	12	Standard
>	**In**	115	676596.2	0.9				ug/L	587441	Standard
	Sn	118	621.7	13.0	**-0.0023**	0.012	549.8	ug/L	497	Standard
	Sb	123	148.0	17.5	**0.0233**	0.005	19.5	ug/L	78	Standard
	Ba	135	3597.4	2.3	**1.5099**	0.025	1.6	ug/L	24	Standard
	Ce	140	3133.7	5.7				ug/L	25	Standard
>	**Tb**	159	1053037.0	0.7				ug/L	939701	Standard
	Ho	165	73.3	37.6				ug/L	10	Standard
	Tl	203	38.7	9.8	**0.0024**	0.000	14.0	ug/L	4	Standard
	Tl	205	30.0	57.7	**0.0039**	0.002	55.8	ug/L	2	Standard
	Pb	206	500.3	0.4	**0.0113**	0.001	11.7	ug/L	240	Standard
	Pb	207	394.7	10.5	**0.0033**	0.008	256.3	ug/L	198	Standard
	Pb	208	1728.4	3.9	**0.0071**	0.003	37.0	ug/L	883	Standard
	U	238	362.3	7.5	**0.0420**	0.004	8.9	ug/L	3	Standard
>	**Bi**	209	594905.3	1.7				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.1214**	29.647	173.2	mg/L	0	Standard
Mg	24	156.7	18.1	**0.1107**	0.028	25.7	mg/L	37	Standard
K	39	30.0	60.1	**-0.0567**	0.034	59.1	mg/L	38	Standard
Ca	43	53.3	5.4	**0.4139**	0.213	51.5	mg/L	10	Standard
Fe	54	254.1	20.9	**0.0493**	0.038	78.1	mg/L	179	Standard
Fe	57	286.7	7.0	**-0.2249**	0.071	31.4	mg/L	335	Standard
> **Sc-1**	45	70063.3	2.2				mg/L	61029	Standard
Cl	35	33357.3	0.7				ug/L	20195	Standard
Kr	83	2.3	89.2				ug/L	4	Standard
Br	81	2703.6	11.1				ug/L	1547	Standard
P	31	21573.7	6.4				ug/L	15286	Standard
S	34	2518.5	1.8				ug/L	1572	Standard
Sr	88	90.0	20.0				ug/L	73	Standard
C	12	76.7	7.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	3	Standard
Dy	164	206.2	21.0				mg/L	6	Standard
Ho-1	165	73.3	37.6				mg/L	10	Standard
Er	166	80.0	12.5				mg/L	13	Standard
I	127	6318.0	20.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		126.852	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.807	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	115.177
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	113.535
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 16:59:09
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92097.4	0.2				ug/L	74699	Standard
	Be	9	59332.7	2.3	**54.6708**	1.340	2.5	ug/L	8	Standard
	Al	27	8920018.4	1.0	**49.2175**	0.589	1.2	ug/L	1493	Standard
	Sc	45	68374.0	2.7				ug/L	61029	Standard
	Ti	47	44746.6	0.7	**103.2626**	1.432	1.4	ug/L	35	Standard
	V	51	467593.6	0.9	**54.0107**	0.396	0.7	ug/L	1435	Standard
	Cr	52	444978.1	1.4	**51.5506**	1.111	2.2	ug/L	7635	Standard
	Cr	53	54491.2	2.0	**51.2973**	1.411	2.7	ug/L	363	Standard
	Mn	55	420710.6	2.8	**52.7641**	1.799	3.4	ug/L	747	Standard
	Co	59	425350.8	2.7	**56.3649**	1.831	3.2	ug/L	234	Standard
	Ni	60	109363.3	1.2	**51.0215**	0.971	1.9	ug/L	215	Standard
	Cu	65	108714.3	1.3	**51.0413**	1.018	2.0	ug/L	104	Standard
	Zn	66	63872.0	1.2	**50.7455**	1.020	2.0	ug/L	363	Standard
>	**Ge**	72	565538.7	0.9				ug/L	495142	Standard
	As	75	65590.6	1.0	**51.3298**	0.623	1.2	ug/L	-50	Standard
	Se	82	6676.5	1.4	**53.1245**	0.865	1.6	ug/L	14	Standard
	Se-1	77	4570.7	2.8	**54.1793**	1.989	3.7	ug/L	42	Standard
>	**Ga**	71	90.0	25.5				mg/L	42	Standard
	Rb	85	980.0	1.8				ug/L	17	Standard
	Y	89	481101.3	1.3				ug/L	417098	Standard
>	**Rh**	103	36.7	20.8				ug/L	13	Standard
	Mo	98	317636.1	2.3	**106.0178**	2.920	2.8	ug/L	11	Standard
	Ag	107	377887.3	1.0	**51.5689**	0.593	1.2	ug/L	68	Standard
	Cd	111	119799.3	1.9	**50.9674**	1.189	2.3	mg/L	2	Standard
	Cd	114	291345.5	1.8	**50.5384**	1.150	2.3	ug/L	12	Standard
>	**In**	115	660345.6	0.5				ug/L	587441	Standard
	Sn	118	333887.3	1.0	**50.7546**	0.756	1.5	ug/L	497	Standard
	Sb	123	263770.3	1.5	**50.2579**	0.987	2.0	ug/L	78	Standard
	Ba	135	110751.0	1.4	**48.1238**	0.926	1.9	ug/L	24	Standard
	Ce	140	100.0	13.2				ug/L	25	Standard
>	**Tb**	159	1027328.3	1.0				ug/L	939701	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	469667.3	0.3	**51.2282**	0.784	1.5	ug/L	4	Standard
	Tl	205	432915.4	1.7	**54.4135**	1.621	3.0	ug/L	2	Standard
	Pb	206	304012.7	1.3	**51.1045**	1.311	2.6	ug/L	240	Standard
	Pb	207	269196.3	1.3	**50.9328**	1.301	2.6	ug/L	198	Standard
	Pb	208	1105976.1	1.5	**52.9652**	1.506	2.8	ug/L	883	Standard
	U	238	408284.4	0.8	**53.3305**	1.093	2.0	ug/L	3	Standard
>	**Bi**	209	582837.4	1.3				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4664.1	3.2	**5.3139**	0.299	5.6	mg/L	37	Standard
K	39	2066.8	2.7	**3.9658**	0.176	4.4	mg/L	38	Standard
Ca	43	83.3	3.5	**2.1752**	0.111	5.1	mg/L	10	Standard
Fe	54	7259.4	3.7	**5.3547**	0.102	1.9	mg/L	179	Standard
Fe	57	2016.8	2.5	**5.0496**	0.304	6.0	mg/L	335	Standard
Sc-1	45	68374.0	2.7				mg/L	61029	Standard
Cl	35	31290.3	2.5				ug/L	20195	Standard
Kr	83	2.3	65.5				ug/L	4	Standard
Br	81	2203.5	6.4				ug/L	1547	Standard
P	31	22518.4	0.7				ug/L	15286	Standard
S	34	2795.3	6.4				ug/L	1572	Standard
Sr	88	58.3	13.1				ug/L	73	Standard
C	12	70.0	37.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	25.1	45.0				mg/L	6	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	33.3	34.6				mg/L	13	Standard
I	127	4404.0	17.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	109.342		
Al	27	98.435		
Sc	45			
Ti	47	103.263		
V	51	108.021		
Cr	52	103.101		
Cr	53			
Mn	55	105.528		
Co	59	112.730		
Ni	60	102.043		
Cu	65	102.083		
Zn	66	101.491		
Ge	72		114.217	
As	75	102.660		
Se	82	106.249		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	106.018		
Ag	107	103.138		
Cd	111	101.935		
Cd	114			
In	115		112.411	
Sn	118	101.509		
Sb	123	100.516		
Ba	135	96.248		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.456		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.930		
U	238	106.661		
Bi	209		111.232	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Co	59	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 17:02:20
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92622.3	1.7				ug/L	74699	Standard
	Be	9	38.3	64.3	**0.0426**	0.023	52.8	ug/L	8	Standard
	Al	27	23370.4	151.2	**0.1159**	0.196	168.9	ug/L	1493	Standard
	Sc	45	68951.6	1.3				ug/L	61029	Standard
	Ti	47	40.3	21.1	**-0.0139**	0.019	138.6	ug/L	35	Standard
	V	51	1665.7	22.9	**0.0015**	0.044	2840.4	ug/L	1435	Standard
	Cr	52	7712.6	2.1	**-0.0923**	0.036	39.5	ug/L	7635	Standard
	Cr	53	583.3	10.9	**0.2339**	0.049	21.0	ug/L	363	Standard
	Mn	55	4624.3	138.3	**0.4433**	0.816	184.2	ug/L	747	Standard
	Co	59	398.3	65.9	**0.0165**	0.035	212.9	ug/L	234	Standard
	Ni	60	246.3	49.7	**-0.0062**	0.058	932.9	ug/L	215	Standard
	Cu	65	154.7	27.9	**-0.0294**	0.020	68.5	ug/L	104	Standard
	Zn	66	470.3	19.7	**-0.0693**	0.075	107.9	ug/L	363	Standard
>	**Ge**	72	553538.3	2.4				ug/L	495142	Standard
	As	75	-38.0	63.4	**0.0295**	0.019	62.8	ug/L	-50	Standard
	Se	82	20.6	12.7	**0.0307**	0.026	83.7	ug/L	14	Standard
	Se-1	77	63.0	12.0	**0.1490**	0.085	57.3	ug/L	42	Standard
>	**Ga**	71	71.7	14.5				mg/L	42	Standard
	Rb	85	25.0	0.0				ug/L	17	Standard
	Y	89	484828.2	0.4				ug/L	417098	Standard
>	**Rh**	103	11.7	65.5				ug/L	13	Standard
	Mo	98	326.7	26.1	**0.0989**	0.027	26.9	ug/L	11	Standard
	Ag	107	215.0	76.0	**0.0152**	0.021	139.6	ug/L	68	Standard
	Cd	111	16.1	49.4	**-0.0013**	0.003	242.1	mg/L	2	Standard
	Cd	114	45.0	78.6	**0.0054**	0.006	109.2	ug/L	12	Standard
>	**In**	115	687277.7	0.8				ug/L	587441	Standard
	Sn	118	931.7	18.6	**0.0418**	0.027	63.5	ug/L	497	Standard
	Sb	123	489.1	40.1	**0.0853**	0.036	41.8	ug/L	78	Standard
	Ba	135	52.0	47.0	**0.0057**	0.010	177.6	ug/L	24	Standard
	Ce	140	81.7	78.0				ug/L	25	Standard
>	**Tb**	159	1059717.9	1.6				ug/L	939701	Standard
	Ho	165	6.7	86.6				ug/L	10	Standard
	Tl	203	97.3	80.9	**0.0086**	0.008	97.3	ug/L	4	Standard
	Tl	205	126.7	77.5	**0.0158**	0.012	76.4	ug/L	2	Standard
	Pb	206	434.7	47.9	**0.0006**	0.034	5998.1	ug/L	240	Standard
	Pb	207	327.7	41.4	**-0.0091**	0.025	275.6	ug/L	198	Standard
	Pb	208	1259.4	26.8	**-0.0148**	0.016	107.4	ug/L	883	Standard
	U	238	94.7	104.8	**0.0077**	0.013	165.1	ug/L	3	Standard
>	**Bi**	209	593862.7	2.1				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	88.3	93.4	**0.0352**	0.093	262.9	mg/L	37	Standard
K	39	41.7	30.2	**-0.0325**	0.025	77.1	mg/L	38	Standard
Ca	43	21.7	58.1	**-1.3088**	0.708	54.1	mg/L	10	Standard
Fe	54	169.3	10.4	**-0.0113**	0.012	105.6	mg/L	179	Standard
Fe	57	255.0	7.1	**-0.3067**	0.061	20.0	mg/L	335	Standard
> **Sc-1**	45	68951.6	1.3				mg/L	61029	Standard
Cl	35	30862.1	1.0				ug/L	20195	Standard
Kr	83	3.7	31.5				ug/L	4	Standard
Br	81	2130.2	6.5				ug/L	1547	Standard
P	31	22533.4	1.3				ug/L	15286	Standard
S	34	2576.9	2.2				ug/L	1572	Standard
Sr	88	61.7	20.4				ug/L	73	Standard
C	12	70.0	62.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	15.1	95.9				mg/L	6	Standard
Ho-1	165	6.7	86.6				mg/L	10	Standard
Er	166	33.3	69.3				mg/L	13	Standard
I	127	3348.7	10.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.794	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		116.995
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		113.336
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606127902 WG574001-03
Sample Date/Time: Wednesday, June 29, 2016 17:05:33
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	97844.9	1.2				ug/L	74699	Standard
	Be	9	628.3	5.4	**0.5525**	0.030	5.3	ug/L	8	Standard
	Al	27	67592650.7	0.8	**351.1766**	6.777	1.9	ug/L	1493	Standard
	Sc	45	76196.2	3.2				ug/L	61029	Standard
	Ti	47	35031.5	1.8	**85.4603**	1.454	1.7	ug/L	35	Standard
	V	51	127107.8	0.4	**15.3856**	0.087	0.6	ug/L	1435	Standard
	Cr	52	144594.0	0.9	**17.0395**	0.185	1.1	ug/L	7635	Standard
	Cr	53	17708.7	3.4	**17.4084**	0.576	3.3	ug/L	363	Standard
	Mn	55	9638149.6	0.5	**1281.4698**	6.113	0.5	ug/L	747	Standard
	Co	59	44221.4	1.1	**6.1626**	0.079	1.3	ug/L	234	Standard
	Ni	60	29440.2	0.7	**14.4336**	0.102	0.7	ug/L	215	Standard
	Cu	65	18715.2	1.1	**9.2058**	0.118	1.3	ug/L	104	Standard
	Zn	66	49911.7	1.0	**41.8483**	0.443	1.1	ug/L	363	Standard
>	**Ge**	72	534821.8	0.2				ug/L	495142	Standard
	As	75	5363.3	0.7	**4.4926**	0.039	0.9	ug/L	-50	Standard
	Se	82	81.7	4.2	**0.5509**	0.030	5.5	ug/L	14	Standard
	Se-1	77	90.0	5.1	**0.5184**	0.056	10.8	ug/L	42	Standard
>	**Ga**	71	10246.8	1.6				mg/L	42	Standard
	Rb	85	128176.6	1.2				ug/L	17	Standard
	Y	89	611826.2	1.2				ug/L	417098	Standard
>	**Rh**	103	203.3	5.1				ug/L	13	Standard
	Mo	98	8459.2	1.1	**2.8837**	0.063	2.2	ug/L	11	Standard
	Ag	107	335.7	32.7	**0.0339**	0.015	43.7	ug/L	68	Standard
	Cd	111	167.4	13.2	**0.0649**	0.009	13.6	mg/L	2	Standard
	Cd	114	471.4	29.4	**0.0814**	0.024	29.1	ug/L	12	Standard
>	**In**	115	645352.1	1.1				ug/L	587441	Standard
	Sn	118	2433.5	1.0	**0.2845**	0.006	2.0	ug/L	497	Standard
	Sb	123	747.2	5.1	**0.1415**	0.006	4.4	ug/L	78	Standard
	Ba	135	186708.8	1.1	**83.0208**	0.490	0.6	ug/L	24	Standard
	Ce	140	555105.9	0.4				ug/L	25	Standard
>	**Tb**	159	1017797.9	1.6				ug/L	939701	Standard
	Ho	165	10682.1	1.8				ug/L	10	Standard
	Tl	203	801.4	12.7	**0.0906**	0.011	12.4	ug/L	4	Standard
	Tl	205	726.7	5.1	**0.0967**	0.005	5.6	ug/L	2	Standard
	Pb	206	28687.5	0.5	**5.0315**	0.023	0.5	ug/L	240	Standard
	Pb	207	23046.8	1.0	**4.5438**	0.005	0.1	ug/L	198	Standard
	Pb	208	100519.8	0.6	**5.0199**	0.074	1.5	ug/L	883	Standard
	U	238	32058.9	0.6	**4.4211**	0.050	1.1	ug/L	3	Standard
>	**Bi**	209	551473.5	0.9				ug/L	523984	Standard

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Na	23	16.7	17.3	**153.4719**	22.118	14.4	mg/L	0	Standard
Mg	24	8050.5	4.4	**8.2571**	0.176	2.1	mg/L	37	Standard
K	39	990.0	1.3	**1.6393**	0.041	2.5	mg/L	38	Standard
Ca	43	1383.4	8.1	**67.3924**	3.470	5.1	mg/L	10	Standard
Fe	54	12019.5	0.9	**8.0301**	0.303	3.8	mg/L	179	Standard
Fe	57	3888.8	1.5	**9.5221**	0.470	4.9	mg/L	335	Standard
> **Sc-1**	45	76196.2	3.2				mg/L	61029	Standard
Cl	35	38282.3	2.8				ug/L	20195	Standard
Kr	83	1.7	124.9				ug/L	4	Standard
Br	81	9239.5	4.1				ug/L	1547	Standard
P	31	33428.5	3.8				ug/L	15286	Standard
S	34	2046.8	10.4				ug/L	1572	Standard
Sr	88	885.0	8.4				ug/L	73	Standard
C	12	223.3	22.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	3	Standard
Dy	164	18454.9	2.8				mg/L	6	Standard
Ho-1	165	10682.1	1.8				mg/L	10	Standard
Er	166	9956.6	4.7				mg/L	13	Standard
I	127	65381.5	9.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		130.986	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.014	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.858
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.246
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606127902 WG574001-03
Sample Date/Time: Wednesday, June 29, 2016 17:08:45
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	97333.3	1.1				ug/L	74699	Standard
	Be	9	23.3	32.7	**0.0279**	0.007	23.3	ug/L	8	Standard
	Al	27	1471688.9	2.0	**7.6717**	0.099	1.3	ug/L	1493	Standard
	Sc	45	68584.9	0.8				ug/L	61029	Standard
	Ti	47	736.0	3.1	**1.5714**	0.076	4.9	ug/L	35	Standard
	V	51	4360.2	2.0	**0.3040**	0.018	5.9	ug/L	1435	Standard
	Cr	52	10891.2	1.4	**0.2475**	0.011	4.5	ug/L	7635	Standard
	Cr	53	901.7	3.1	**0.5139**	0.018	3.4	ug/L	363	Standard
	Mn	55	209342.7	1.0	**25.8667**	0.657	2.5	ug/L	747	Standard
	Co	59	1184.0	8.5	**0.1180**	0.016	13.3	ug/L	234	Standard
	Ni	60	823.4	2.4	**0.2566**	0.015	5.7	ug/L	215	Standard
	Cu	65	604.0	5.8	**0.1771**	0.017	9.7	ug/L	104	Standard
	Zn	66	3536.4	2.1	**2.3459**	0.038	1.6	ug/L	363	Standard
>	**Ge**	72	572433.6	1.6				ug/L	495142	Standard
	As	75	56.5	19.8	**0.1032**	0.008	8.2	ug/L	-50	Standard
	Se	82	22.7	8.9	**0.0409**	0.015	36.5	ug/L	14	Standard
	Se-1	77	56.3	3.7	**0.0451**	0.032	71.6	ug/L	42	Standard
>	**Ga**	71	286.7	20.8				mg/L	42	Standard
	Rb	85	2816.9	8.1				ug/L	17	Standard
	Y	89	483993.7	0.1				ug/L	417098	Standard
>	**Rh**	103	11.7	65.5				ug/L	13	Standard
	Mo	98	255.8	9.6	**0.0784**	0.008	10.6	ug/L	11	Standard
	Ag	107	215.7	39.7	**0.0161**	0.012	72.2	ug/L	68	Standard
	Cd	111	33.2	125.7	**0.0061**	0.018	290.4	mg/L	2	Standard
	Cd	114	83.8	140.0	**0.0123**	0.020	164.2	ug/L	12	Standard
>	**In**	115	670122.5	0.4				ug/L	587441	Standard
	Sn	118	730.0	9.6	**0.0149**	0.011	73.4	ug/L	497	Standard
	Sb	123	198.5	22.7	**0.0331**	0.009	26.1	ug/L	78	Standard
	Ba	135	4104.6	4.5	**1.7422**	0.086	5.0	ug/L	24	Standard
	Ce	140	11919.7	3.4				ug/L	25	Standard
>	**Tb**	159	1040073.5	0.3				ug/L	939701	Standard
	Ho	165	248.3	25.2				ug/L	10	Standard
	Tl	203	119.3	122.5	**0.0111**	0.016	142.6	ug/L	4	Standard
	Tl	205	45.0	44.4	**0.0058**	0.003	43.8	ug/L	2	Standard
	Pb	206	1027.4	11.1	**0.0985**	0.020	20.7	ug/L	240	Standard
	Pb	207	828.0	1.8	**0.0839**	0.004	4.9	ug/L	198	Standard
	Pb	208	3389.1	2.4	**0.0853**	0.005	6.3	ug/L	883	Standard
	U	238	690.0	3.8	**0.0840**	0.004	4.3	ug/L	3	Standard
>	**Bi**	209	594228.5	1.0				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	215.0	6.2	**0.1819**	0.016	8.8	mg/L	37	Standard
K	39	53.3	14.3	**-0.0093**	0.014	153.2	mg/L	38	Standard
Ca	43	48.3	15.8	**0.1914**	0.411	214.9	mg/L	10	Standard
Fe	54	443.5	15.8	**0.1966**	0.055	28.1	mg/L	179	Standard
Fe	57	323.3	11.7	**-0.0960**	0.118	122.9	mg/L	335	Standard
Sc-1	45	68584.9	0.8				mg/L	61029	Standard
Cl	35	29711.8	0.5				ug/L	20195	Standard
Kr	83	0.7	173.2				ug/L	4	Standard
Br	81	2166.8	7.4				ug/L	1547	Standard
P	31	19419.1	3.8				ug/L	15286	Standard
S	34	2206.8	3.0				ug/L	1572	Standard
Sr	88	96.7	19.6				ug/L	73	Standard
C	12	46.7	49.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	390.3	4.3				mg/L	6	Standard
Ho-1	165	248.3	25.2				mg/L	10	Standard
Er	166	203.3	36.3				mg/L	13	Standard
I	127	5617.8	25.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		130.301	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		115.610	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.075
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		113.406
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606127903S WG574001-09
Sample Date/Time: Wednesday, June 29, 2016 17:11:56
Number of Replicates: 3
Autosampler Position: 227
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	103734.0	1.8				ug/L	74699	Standard
	Be	9	62659.4	2.5	**51.2580**	0.858	1.7	ug/L	8	Standard
	Al	27	65559814.6	2.9	**321.3254**	12.360	3.8	ug/L	1493	Standard
	Sc	45	78765.9	1.8				ug/L	61029	Standard
	Ti	47	33652.0	1.4	**81.0287**	2.211	2.7	ug/L	35	Standard
	V	51	549023.7	0.9	**66.2300**	1.368	2.1	ug/L	1435	Standard
	Cr	52	510507.6	0.8	**61.9303**	1.817	2.9	ug/L	7635	Standard
	Cr	53	62490.3	1.3	**61.4602**	1.770	2.9	ug/L	363	Standard
	Mn	55	9311676.0	0.4	**1221.9970**	25.998	2.1	ug/L	747	Standard
	Co	59	420012.9	0.8	**58.0870**	1.492	2.6	ug/L	234	Standard
	Ni	60	121605.8	1.9	**59.2404**	2.250	3.8	ug/L	215	Standard
	Cu	65	110409.9	1.5	**54.1128**	1.822	3.4	ug/L	104	Standard
	Zn	66	101498.2	0.9	**84.4641**	2.491	2.9	ug/L	363	Standard
>	**Ge**	72	542031.1	2.4				ug/L	495142	Standard
	As	75	66455.1	1.4	**54.2648**	0.548	1.0	ug/L	-50	Standard
	Se	82	6239.8	1.8	**51.8120**	1.305	2.5	ug/L	14	Standard
	Se-1	77	4136.2	2.8	**51.1231**	1.591	3.1	ug/L	42	Standard
>	**Ga**	71	10863.9	0.3				mg/L	42	Standard
	Rb	85	119392.1	2.4				ug/L	17	Standard
	Y	89	586391.1	1.2				ug/L	417098	Standard
>	**Rh**	103	175.0	15.1				ug/L	13	Standard
	Mo	98	5740.7	2.3	**1.9719**	0.058	3.0	ug/L	11	Standard
	Ag	107	333249.6	2.0	**46.9378**	1.203	2.6	ug/L	68	Standard
	Cd	111	109090.4	0.8	**47.8987**	0.737	1.5	mg/L	2	Standard
	Cd	114	263561.8	0.5	**47.1881**	0.999	2.1	ug/L	12	Standard
>	**In**	115	639905.2	1.9				ug/L	587441	Standard
	Sn	118	1925.1	5.8	**0.2078**	0.017	8.3	ug/L	497	Standard
	Sb	123	124661.9	1.5	**24.5159**	0.713	2.9	ug/L	78	Standard
	Ba	135	268706.4	1.4	**120.5245**	2.161	1.8	ug/L	24	Standard
	Ce	140	538323.1	0.7				ug/L	25	Standard
>	**Tb**	159	1045169.0	2.0				ug/L	939701	Standard
	Ho	165	11317.6	5.4				ug/L	10	Standard
	Tl	203	438870.4	1.4	**49.1992**	0.166	0.3	ug/L	4	Standard
	Tl	205	398898.5	1.5	**51.5243**	0.281	0.5	ug/L	2	Standard
	Pb	206	314887.1	0.5	**54.4073**	0.494	0.9	ug/L	240	Standard
	Pb	207	267442.5	0.8	**52.0088**	0.664	1.3	ug/L	198	Standard
	Pb	208	1101699.4	1.8	**54.2208**	0.536	1.0	ug/L	883	Standard
	U	238	415059.0	1.7	**55.7208**	0.743	1.3	ug/L	3	Standard
>	**Bi**	209	566992.1	1.1				ug/L	523984	Standard

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Na	23	8.3	69.3	**74.8950**	52.957	70.7	mg/L	0	Standard
Mg	24	7490.2	5.9	**7.4319**	0.549	7.4	mg/L	37	Standard
K	39	995.0	6.5	**1.5912**	0.134	8.4	mg/L	38	Standard
Ca	43	1293.4	1.8	**60.7979**	1.957	3.2	mg/L	10	Standard
Fe	54	10550.1	1.1	**6.7940**	0.164	2.4	mg/L	179	Standard
Fe	57	3448.7	1.2	**8.0106**	0.227	2.8	mg/L	335	Standard
> **Sc-1**	45	78765.9	1.8				mg/L	61029	Standard
Cl	35	36168.5	1.3				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	7995.5	8.9				ug/L	1547	Standard
P	31	34405.7	2.4				ug/L	15286	Standard
S	34	1880.1	7.8				ug/L	1572	Standard
Sr	88	881.7	7.6				ug/L	73	Standard
C	12	140.0	46.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	3	Standard
Dy	164	18849.9	4.6				mg/L	6	Standard
Ho-1	165	11317.6	5.4				mg/L	10	Standard
Er	166	9863.2	2.6				mg/L	13	Standard
I	127	61177.5	10.8				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		138.870	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		109.470	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	108.931
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	108.208
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606127903S WG574001-09
Sample Date/Time: Wednesday, June 29, 2016 17:15:08
Number of Replicates: 3
Autosampler Position: 228
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	100014.2	2.8				ug/L	74699	Standard
	Be	9	1316.7	11.4	**1.1231**	0.100	8.9	ug/L	8	Standard
	Al	27	1420391.6	2.6	**7.2057**	0.041	0.6	ug/L	1493	Standard
	Sc	45	65355.8	3.5				ug/L	61029	Standard
	Ti	47	751.7	2.2	**1.7435**	0.043	2.4	ug/L	35	Standard
	V	51	12553.2	2.5	**1.3568**	0.030	2.2	ug/L	1435	Standard
	Cr	52	18458.6	1.1	**1.3028**	0.035	2.7	ug/L	7635	Standard
	Cr	53	1771.8	3.3	**1.4619**	0.098	6.7	ug/L	363	Standard
	Mn	55	203580.1	1.5	**27.1635**	0.320	1.2	ug/L	747	Standard
	Co	59	9135.1	1.0	**1.2550**	0.021	1.7	ug/L	234	Standard
	Ni	60	2779.3	1.4	**1.2628**	0.031	2.5	ug/L	215	Standard
	Cu	65	2563.2	1.7	**1.1828**	0.027	2.3	ug/L	104	Standard
	Zn	66	4447.0	0.1	**3.3488**	0.082	2.5	ug/L	363	Standard
>	**Ge**	72	530183.0	2.3				ug/L	495142	Standard
	As	75	1256.2	4.8	**1.1077**	0.065	5.9	ug/L	-50	Standard
	Se	82	144.5	11.0	**1.0936**	0.160	14.6	ug/L	14	Standard
	Se-1	77	149.3	5.6	**1.2873**	0.101	7.8	ug/L	42	Standard
>	**Ga**	71	291.7	12.0				mg/L	42	Standard
	Rb	85	2473.5	8.7				ug/L	17	Standard
	Y	89	480063.9	1.1				ug/L	417098	Standard
>	**Rh**	103	18.3	15.7				ug/L	13	Standard
	Mo	98	168.4	5.0	**0.0496**	0.003	5.9	ug/L	11	Standard
	Ag	107	7406.8	1.4	**0.9815**	0.012	1.2	ug/L	68	Standard
	Cd	111	2324.9	2.0	**0.9649**	0.013	1.3	mg/L	2	Standard
	Cd	114	5499.5	2.5	**0.9362**	0.028	2.9	ug/L	12	Standard
>	**In**	115	671407.0	1.0				ug/L	587441	Standard
	Sn	118	800.0	6.0	**0.0251**	0.007	29.1	ug/L	497	Standard
	Sb	123	3310.0	4.5	**0.6160**	0.025	4.0	ug/L	78	Standard
	Ba	135	5738.4	0.8	**2.4371**	0.009	0.4	ug/L	24	Standard
	Ce	140	11352.6	1.4				ug/L	25	Standard
>	**Tb**	159	1030086.3	0.3				ug/L	939701	Standard
	Ho	165	295.0	7.8				ug/L	10	Standard
	Tl	203	9225.5	0.2	**0.9995**	0.013	1.3	ug/L	4	Standard
	Tl	205	8459.0	5.0	**1.0575**	0.041	3.9	ug/L	2	Standard
	Pb	206	6958.9	0.8	**1.0943**	0.025	2.3	ug/L	240	Standard
	Pb	207	5899.8	0.2	**1.0421**	0.014	1.4	ug/L	198	Standard
	Pb	208	25022.5	1.7	**1.1197**	0.025	2.3	ug/L	883	Standard
	U	238	8748.9	2.2	**1.1326**	0.025	2.2	ug/L	3	Standard
>	**Bi**	209	585775.3	1.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	185.0	5.4	**0.1579**	0.009	5.9	mg/L	37	Standard
K	39	46.7	32.7	**-0.0170**	0.035	202.9	mg/L	38	Standard
Ca	43	53.3	5.4	**0.6286**	0.271	43.1	mg/L	10	Standard
Fe	54	400.2	11.9	**0.1796**	0.048	26.7	mg/L	179	Standard
Fe	57	335.0	9.8	**-0.0119**	0.080	674.7	mg/L	335	Standard
Sc-1	45	65355.8	3.5				mg/L	61029	Standard
Cl	35	29320.3	1.0				ug/L	20195	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	2030.1	9.5				ug/L	1547	Standard
P	31	19806.3	2.6				ug/L	15286	Standard
S	34	2145.2	0.2				ug/L	1572	Standard
Sr	88	86.7	23.3				ug/L	73	Standard
C	12	80.0	66.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	379.6	21.3				mg/L	6	Standard
Ho-1	165	295.0	7.8				mg/L	10	Standard
Er	166	216.7	11.6				mg/L	13	Standard
I	127	5157.6	28.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		133.890	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		107.077	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	114.294
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	111.792
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606127904SD WG574001-10
Sample Date/Time: Wednesday, June 29, 2016 17:18:19
Number of Replicates: 3
Autosampler Position: 229
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	100168.4	0.8				ug/L	74699	Standard
	Be	9	61913.0	2.3	**52.4502**	1.133	2.2	ug/L	8	Standard
	Al	27	66193036.9	1.4	**335.9039**	6.576	2.0	ug/L	1493	Standard
	Sc	45	75343.6	2.4				ug/L	61029	Standard
	Ti	47	40945.9	1.4	**103.9053**	1.926	1.9	ug/L	35	Standard
	V	51	552663.1	1.5	**70.2550**	1.056	1.5	ug/L	1435	Standard
	Cr	52	495290.7	1.7	**63.3235**	1.419	2.2	ug/L	7635	Standard
	Cr	53	60987.5	1.0	**63.2038**	0.948	1.5	ug/L	363	Standard
	Mn	55	9453870.8	1.1	**1307.2105**	20.907	1.6	ug/L	747	Standard
	Co	59	421300.3	0.1	**61.3867**	0.363	0.6	ug/L	234	Standard
	Ni	60	119269.8	2.5	**61.2106**	1.745	2.9	ug/L	215	Standard
	Cu	65	106997.2	1.7	**55.2474**	1.210	2.2	ug/L	104	Standard
	Zn	66	101243.5	1.4	**88.7847**	1.659	1.9	ug/L	363	Standard
>	**Ge**	72	514295.3	0.5				ug/L	495142	Standard
	As	75	64887.3	0.7	**55.8337**	0.652	1.2	ug/L	-50	Standard
	Se	82	6128.3	0.4	**53.6210**	0.432	0.8	ug/L	14	Standard
	Se-1	77	4025.2	1.7	**52.4403**	1.142	2.2	ug/L	42	Standard
>	**Ga**	71	13474.3	0.3				mg/L	42	Standard
	Rb	85	148814.4	3.2				ug/L	17	Standard
	Y	89	590511.6	1.2				ug/L	417098	Standard
>	**Rh**	103	170.0	19.3				ug/L	13	Standard
	Mo	98	5249.8	1.8	**1.8847**	0.047	2.5	ug/L	11	Standard
	Ag	107	319729.4	0.9	**47.0680**	0.306	0.7	ug/L	68	Standard
	Cd	111	105379.0	1.4	**48.3587**	0.323	0.7	mg/L	2	Standard
	Cd	114	254720.6	1.7	**47.6605**	0.543	1.1	ug/L	12	Standard
>	**In**	115	612131.8	1.0				ug/L	587441	Standard
	Sn	118	2201.8	4.9	**0.2670**	0.017	6.2	ug/L	497	Standard
	Sb	123	135513.9	0.7	**27.8528**	0.396	1.4	ug/L	78	Standard
	Ba	135	276700.5	0.9	**129.7213**	0.066	0.1	ug/L	24	Standard
	Ce	140	594096.9	1.6				ug/L	25	Standard
>	**Tb**	159	982831.9	0.9				ug/L	939701	Standard
	Ho	165	12233.3	1.6				ug/L	10	Standard
	Tl	203	424338.5	0.5	**50.3728**	0.553	1.1	ug/L	4	Standard
	Tl	205	393687.9	2.5	**53.8449**	1.302	2.4	ug/L	2	Standard
	Pb	206	310823.5	0.5	**56.8661**	0.171	0.3	ug/L	240	Standard
	Pb	207	265328.4	0.5	**54.6347**	0.327	0.6	ug/L	198	Standard
	Pb	208	1090751.7	0.6	**56.8486**	0.519	0.9	ug/L	883	Standard
	U	238	409441.4	1.4	**58.2033**	0.887	1.5	ug/L	3	Standard
>	**Bi**	209	535481.7	0.7				ug/L	523984	Standard

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Na	23	6.7	86.6	**61.5240**	53.288	86.6	mg/L	0	Standard
Mg	24	7358.5	1.6	**7.6312**	0.188	2.5	mg/L	37	Standard
K	39	1028.4	3.5	**1.7267**	0.031	1.8	mg/L	38	Standard
Ca	43	1340.1	2.9	**66.0398**	1.115	1.7	mg/L	10	Standard
Fe	54	11628.0	2.4	**7.8474**	0.058	0.7	mg/L	179	Standard
Fe	57	3898.8	5.2	**9.6559**	0.353	3.7	mg/L	335	Standard
Sc-1	45	75343.6	2.4				mg/L	61029	Standard
Cl	35	34624.2	2.4				ug/L	20195	Standard
Kr	83	1.7	34.6				ug/L	4	Standard
Br	81	10260.1	1.8				ug/L	1547	Standard
P	31	37270.8	0.5				ug/L	15286	Standard
S	34	1845.1	3.3				ug/L	1572	Standard
Sr	88	923.4	9.7				ug/L	73	Standard
C	12	203.3	29.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	3	Standard
Dy	164	20358.1	1.7				mg/L	6	Standard
Ho-1	165	12233.3	1.6				mg/L	10	Standard
Er	166	11334.2	2.0				mg/L	13	Standard
I	127	62766.8	7.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		134.096	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.868	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.203
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.194
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ti 47 Upper, S, EEE	Ti	47	

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Mn 55 Upper, S, EEE	Mn	55
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606127904SD WG574001-10
Sample Date/Time: Wednesday, June 29, 2016 17:21:31
Number of Replicates: 3
Autosampler Position: 230
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	96610.6	3.3				ug/L	74699	Standard
	Be	9	1288.4	4.7	**1.1394**	0.049	4.3	ug/L	8	Standard
	Al	27	1461113.0	0.9	**7.6780**	0.187	2.4	ug/L	1493	Standard
	Sc	45	62711.5	6.5				ug/L	61029	Standard
	Ti	47	920.7	1.4	**2.1467**	0.013	0.6	ug/L	35	Standard
	V	51	13378.9	3.6	**1.4502**	0.085	5.9	ug/L	1435	Standard
	Cr	52	18691.9	1.7	**1.3185**	0.044	3.3	ug/L	7635	Standard
	Cr	53	1716.8	3.7	**1.3959**	0.091	6.5	ug/L	363	Standard
	Mn	55	207917.4	1.7	**27.5865**	0.619	2.2	ug/L	747	Standard
	Co	59	9044.0	2.3	**1.2346**	0.031	2.5	ug/L	234	Standard
	Ni	60	2824.3	2.7	**1.2771**	0.044	3.5	ug/L	215	Standard
	Cu	65	2601.9	3.8	**1.1945**	0.050	4.2	ug/L	104	Standard
	Zn	66	4831.1	2.2	**3.6537**	0.142	3.9	ug/L	363	Standard
>	**Ge**	72	533228.6	1.6				ug/L	495142	Standard
	As	75	1337.8	3.9	**1.1692**	0.061	5.2	ug/L	-50	Standard
	Se	82	140.1	2.8	**1.0475**	0.027	2.6	ug/L	14	Standard
	Se-1	77	133.7	3.0	**1.0773**	0.056	5.2	ug/L	42	Standard
>	**Ga**	71	393.3	11.4				mg/L	42	Standard
	Rb	85	3227.0	1.4				ug/L	17	Standard
	Y	89	450037.4	1.9				ug/L	417098	Standard
>	**Rh**	103	18.3	87.7				ug/L	13	Standard
	Mo	98	147.9	13.7	**0.0463**	0.009	18.8	ug/L	11	Standard
	Ag	107	7379.1	1.6	**1.0451**	0.031	3.0	ug/L	68	Standard
	Cd	111	2296.2	2.5	**1.0190**	0.058	5.7	mg/L	2	Standard
	Cd	114	5492.1	3.4	**0.9981**	0.024	2.4	ug/L	12	Standard
>	**In**	115	629018.5	3.2				ug/L	587441	Standard
	Sn	118	580.0	12.2	**-0.0020**	0.010	499.8	ug/L	497	Standard
	Sb	123	3693.7	7.1	**0.7349**	0.053	7.2	ug/L	78	Standard
	Ba	135	5980.2	1.6	**2.7136**	0.046	1.7	ug/L	24	Standard
	Ce	140	12665.3	1.3				ug/L	25	Standard
>	**Tb**	159	1007879.7	3.3				ug/L	939701	Standard
	Ho	165	265.0	7.5				ug/L	10	Standard
	Tl	203	9323.2	2.1	**1.0256**	0.019	1.8	ug/L	4	Standard
	Tl	205	8567.4	1.0	**1.0883**	0.033	3.0	ug/L	2	Standard
	Pb	206	7313.4	2.1	**1.1727**	0.042	3.6	ug/L	240	Standard
	Pb	207	6050.9	2.1	**1.0885**	0.043	4.0	ug/L	198	Standard
	Pb	208	24824.3	2.0	**1.1284**	0.015	1.4	ug/L	883	Standard
	U	238	8436.0	2.0	**1.1088**	0.013	1.2	ug/L	3	Standard
>	**Bi**	209	577014.5	3.2				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	200.0	10.9	**0.1869**	0.033	17.5	mg/L	37	Standard
K	39	61.7	46.1	**0.0210**	0.066	315.1	mg/L	38	Standard
Ca	43	46.7	12.4	**0.3502**	0.375	107.1	mg/L	10	Standard
Fe	54	378.5	13.7	**0.1751**	0.049	28.1	mg/L	179	Standard
Fe	57	365.0	16.4	**0.1419**	0.250	175.9	mg/L	335	Standard
> **Sc-1**	45	62711.5	6.5				mg/L	61029	Standard
Cl	35	27760.1	3.1				ug/L	20195	Standard
Kr	83	3.3	45.8				ug/L	4	Standard
Br	81	2080.1	7.5				ug/L	1547	Standard
P	31	18322.7	2.7				ug/L	15286	Standard
S	34	1913.5	2.4				ug/L	1572	Standard
Sr	88	98.3	10.6				ug/L	73	Standard
C	12	103.3	31.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	615.8	1.7				mg/L	6	Standard
Ho-1	165	265.0	7.5				mg/L	10	Standard
Er	166	296.7	10.3				mg/L	13	Standard
I	127	5109.3	32.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.334	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.692	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.078
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.121
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606127905
Sample Date/Time: Wednesday, June 29, 2016 17:24:42
Number of Replicates: 3
Autosampler Position: 231
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	98923.6	1.9				ug/L	74699	Standard
	Be	9	425.0	5.1	**0.3722**	0.020	5.4	ug/L	8	Standard
	Al	27	40729181.9	0.9	**209.2967**	3.040	1.5	ug/L	1493	Standard
	Sc	45	74965.2	4.5				ug/L	61029	Standard
	Ti	47	31002.7	2.7	**78.7018**	1.731	2.2	ug/L	35	Standard
	V	51	100570.7	0.4	**12.6354**	0.094	0.7	ug/L	1435	Standard
	Cr	52	71317.5	0.6	**8.2486**	0.021	0.3	ug/L	7635	Standard
	Cr	53	8882.6	3.6	**8.9299**	0.295	3.3	ug/L	363	Standard
	Mn	55	1183907.3	1.1	**163.7014**	1.986	1.2	ug/L	747	Standard
	Co	59	16826.7	0.9	**2.4180**	0.026	1.1	ug/L	234	Standard
	Ni	60	14706.8	1.9	**7.4444**	0.110	1.5	ug/L	215	Standard
	Cu	65	7822.7	1.1	**3.9461**	0.031	0.8	ug/L	104	Standard
	Zn	66	28811.4	1.3	**24.9594**	0.201	0.8	ug/L	363	Standard
>	**Ge**	72	513872.0	0.5				ug/L	495142	Standard
	As	75	2302.8	2.2	**2.0406**	0.054	2.6	ug/L	-50	Standard
	Se	82	647.6	3.3	**5.5477**	0.199	3.6	ug/L	14	Standard
	Se-1	77	492.7	1.9	**5.8772**	0.106	1.8	ug/L	42	Standard
>	**Ga**	71	9201.1	2.2				mg/L	42	Standard
	Rb	85	118130.4	0.8				ug/L	17	Standard
	Y	89	544220.1	0.8				ug/L	417098	Standard
>	**Rh**	103	83.3	19.3				ug/L	13	Standard
	Mo	98	4972.1	0.8	**1.6995**	0.011	0.6	ug/L	11	Standard
	Ag	107	221.0	6.7	**0.0181**	0.002	11.5	ug/L	68	Standard
	Cd	111	99.4	11.4	**0.0355**	0.005	13.9	mg/L	2	Standard
	Cd	114	258.8	15.4	**0.0440**	0.007	16.4	ug/L	12	Standard
>	**In**	115	642627.7	0.7				ug/L	587441	Standard
	Sn	118	4954.1	4.3	**0.6806**	0.035	5.1	ug/L	497	Standard
	Sb	123	697.4	10.3	**0.1324**	0.015	11.0	ug/L	78	Standard
	Ba	135	175907.0	0.9	**78.5481**	0.493	0.6	ug/L	24	Standard
	Ce	140	308696.3	0.2				ug/L	25	Standard
>	**Tb**	159	1018138.8	1.9				ug/L	939701	Standard
	Ho	165	5902.8	0.8				ug/L	10	Standard
	Tl	203	694.0	1.8	**0.0782**	0.000	0.4	ug/L	4	Standard
	Tl	205	615.0	15.7	**0.0817**	0.011	14.1	ug/L	2	Standard
	Pb	206	15714.8	1.1	**2.7233**	0.017	0.6	ug/L	240	Standard
	Pb	207	12858.1	1.8	**2.5034**	0.026	1.0	ug/L	198	Standard
	Pb	208	54664.4	0.6	**2.6954**	0.031	1.2	ug/L	883	Standard
	U	238	8998.7	0.4	**1.2376**	0.021	1.7	ug/L	3	Standard
>	**Bi**	209	551643.9	1.7				ug/L	523984	Standard

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Na	23	5.0	100.0	**46.3980**	45.060	97.1	mg/L	0	Standard
Mg	24	7338.4	2.5	**7.6542**	0.303	4.0	mg/L	37	Standard
K	39	668.3	6.0	**1.0889**	0.064	5.9	mg/L	38	Standard
Ca	43	676.7	13.4	**32.4506**	6.121	18.9	mg/L	10	Standard
Fe	54	6512.7	2.4	**4.3601**	0.118	2.7	mg/L	179	Standard
Fe	57	2150.2	3.4	**4.8854**	0.383	7.8	mg/L	335	Standard
Sc-1	45	74965.2	4.5				mg/L	61029	Standard
Cl	35	28544.2	1.7				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	11494.4	5.7				ug/L	1547	Standard
P	31	34679.6	1.6				ug/L	15286	Standard
S	34	2073.5	2.2				ug/L	1572	Standard
Sr	88	356.7	8.9				ug/L	73	Standard
C	12	163.3	55.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	3	Standard
Dy	164	9835.4	4.4				mg/L	6	Standard
Ho-1	165	5902.8	0.8				mg/L	10	Standard
Er	166	5037.5	9.2				mg/L	13	Standard
I	127	62917.2	4.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		132.430	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.783	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	109.394
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	105.279
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606127905
Sample Date/Time: Wednesday, June 29, 2016 17:27:54
Number of Replicates: 3
Autosampler Position: 232
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	95902.7	2.3				ug/L	74699	Standard
	Be	9	26.7	54.1	**0.0312**	0.013	41.0	ug/L	8	Standard
	Al	27	866639.8	0.6	**4.5819**	0.130	2.8	ug/L	1493	Standard
	Sc	45	64717.9	1.3				ug/L	61029	Standard
	Ti	47	665.3	5.2	**1.4927**	0.099	6.6	ug/L	35	Standard
	V	51	3898.6	6.9	**0.2752**	0.030	11.1	ug/L	1435	Standard
	Cr	52	9682.4	1.6	**0.1679**	0.023	13.9	ug/L	7635	Standard
	Cr	53	670.0	10.3	**0.3316**	0.072	21.7	ug/L	363	Standard
	Mn	55	29584.3	8.9	**3.7268**	0.331	8.9	ug/L	747	Standard
	Co	59	652.3	12.4	**0.0528**	0.011	20.6	ug/L	234	Standard
	Ni	60	547.0	3.7	**0.1426**	0.010	7.1	ug/L	215	Standard
	Cu	65	341.3	5.6	**0.0636**	0.011	17.0	ug/L	104	Standard
	Zn	66	2764.3	3.0	**1.8532**	0.047	2.5	ug/L	363	Standard
>	**Ge**	72	542890.6	1.0				ug/L	495142	Standard
	As	75	11.1	320.4	**0.0688**	0.029	42.5	ug/L	-50	Standard
	Se	82	31.5	11.6	**0.1237**	0.032	26.0	ug/L	14	Standard
	Se-1	77	57.7	24.7	**0.0971**	0.173	178.1	ug/L	42	Standard
>	**Ga**	71	253.3	16.8				mg/L	42	Standard
	Rb	85	2388.5	2.4				ug/L	17	Standard
	Y	89	480185.0	1.7				ug/L	417098	Standard
>	**Rh**	103	16.7	34.6				ug/L	13	Standard
	Mo	98	144.5	13.4	**0.0432**	0.007	17.2	ug/L	11	Standard
	Ag	107	273.0	44.6	**0.0250**	0.018	70.2	ug/L	68	Standard
	Cd	111	17.1	70.4	**-0.0005**	0.005	1058.7	mg/L	2	Standard
	Cd	114	57.8	101.1	**0.0081**	0.010	129.1	ug/L	12	Standard
>	**In**	115	652419.9	1.9				ug/L	587441	Standard
	Sn	118	705.0	11.1	**0.0141**	0.014	98.8	ug/L	497	Standard
	Sb	123	247.5	32.3	**0.0437**	0.016	37.3	ug/L	78	Standard
	Ba	135	3842.5	3.8	**1.6750**	0.079	4.7	ug/L	24	Standard
	Ce	140	6778.2	3.5				ug/L	25	Standard
>	**Tb**	159	1017174.6	0.9				ug/L	939701	Standard
	Ho	165	125.0	20.8				ug/L	10	Standard
	Tl	203	149.7	88.3	**0.0148**	0.015	98.5	ug/L	4	Standard
	Tl	205	133.3	80.1	**0.0172**	0.014	79.0	ug/L	2	Standard
	Pb	206	748.0	16.8	**0.0568**	0.021	37.3	ug/L	240	Standard
	Pb	207	613.7	10.2	**0.0482**	0.012	24.5	ug/L	198	Standard
	Pb	208	2588.8	11.0	**0.0521**	0.014	26.1	ug/L	883	Standard
	U	238	255.3	28.9	**0.0295**	0.010	33.0	ug/L	3	Standard
>	**Bi**	209	573070.1	0.3				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.8927**	30.982	173.2	mg/L	0	Standard
Mg	24	208.3	5.5	**0.1886**	0.017	8.9	mg/L	37	Standard
K	39	35.0	14.3	**-0.0411**	0.011	27.7	mg/L	38	Standard
Ca	43	31.7	18.2	**-0.6344**	0.363	57.2	mg/L	10	Standard
Fe	54	281.0	17.0	**0.0865**	0.040	45.9	mg/L	179	Standard
Fe	57	258.3	4.5	**-0.2461**	0.039	15.8	mg/L	335	Standard
> **Sc-1**	45	64717.9	1.3				mg/L	61029	Standard
Cl	35	29516.1	1.1				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	2206.8	1.5				ug/L	1547	Standard
P	31	18893.4	3.4				ug/L	15286	Standard
S	34	2140.2	7.5				ug/L	1572	Standard
Sr	88	85.0	23.5				ug/L	73	Standard
C	12	63.3	39.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	226.9	17.7				mg/L	6	Standard
Ho-1	165	125.0	20.8				mg/L	10	Standard
Er	166	133.3	38.5				mg/L	13	Standard
I	127	4113.9	27.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.386	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.643	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.061
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.368
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606128101
Sample Date/Time: Wednesday, June 29, 2016 17:31:05
Number of Replicates: 3
Autosampler Position: 233
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	95248.6	2.8				ug/L	74699	Standard
	Be	9	20.0	25.0	**0.0254**	0.004	15.8	ug/L	8	Standard
	Al	27	13040665.4	1.7	**69.5953**	1.139	1.6	ug/L	1493	Standard
	Sc	45	60164.2	2.0				ug/L	61029	Standard
	Ti	47	192.7	16.8	**0.4120**	0.087	21.1	ug/L	35	Standard
	V	51	8357.2	4.3	**0.9387**	0.048	5.1	ug/L	1435	Standard
	Cr	52	21860.8	2.2	**2.0003**	0.082	4.1	ug/L	7635	Standard
	Cr	53	28106.1	2.4	**30.8448**	0.828	2.7	ug/L	363	Standard
	Mn	55	35106.1	13.3	**5.0193**	0.674	13.4	ug/L	747	Standard
	Co	59	6553.8	6.0	**0.9799**	0.056	5.7	ug/L	234	Standard
	Ni	60	21271.9	1.7	**11.5228**	0.221	1.9	ug/L	215	Standard
	Cu	65	394730.4	1.5	**217.3087**	4.048	1.9	ug/L	104	Standard
	Zn	66	2800.3	3.3	**2.1735**	0.095	4.3	ug/L	363	Standard
>	**Ge**	72	483031.9	0.6				ug/L	495142	Standard
	As	75	2746.8	5.9	**2.5735**	0.152	5.9	ug/L	-50	Standard
	Se	82	892.7	0.7	**8.1998**	0.096	1.2	ug/L	14	Standard
	Se-1	77	2323.2	2.5	**31.9871**	0.998	3.1	ug/L	42	Standard
>	**Ga**	71	476.7	6.4				mg/L	42	Standard
	Rb	85	346107.5	1.7				ug/L	17	Standard
	Y	89	415017.7	1.3				ug/L	417098	Standard
>	**Rh**	103	195.0	26.0				ug/L	13	Standard
	Mo	98	2991.9	3.1	**1.1870**	0.038	3.2	ug/L	11	Standard
	Ag	107	283.3	10.3	**0.0333**	0.004	13.4	ug/L	68	Standard
	Cd	111	47.5	106.4	**0.0162**	0.025	157.7	mg/L	2	Standard
	Cd	114	106.7	47.6	**0.0200**	0.010	52.0	ug/L	12	Standard
>	**In**	115	552878.2	0.7				ug/L	587441	Standard
	Sn	118	3292.0	3.2	**0.5041**	0.021	4.2	ug/L	497	Standard
	Sb	123	2817.9	0.9	**0.6371**	0.010	1.5	ug/L	78	Standard
	Ba	135	115236.2	0.6	**59.8088**	0.708	1.2	ug/L	24	Standard
	Ce	140	265.0	80.7				ug/L	25	Standard
>	**Tb**	159	913633.5	1.5				ug/L	939701	Standard
	Ho	165	16.7	45.8				ug/L	10	Standard
	Tl	203	132.0	58.6	**0.0163**	0.011	65.5	ug/L	4	Standard
	Tl	205	136.7	39.5	**0.0217**	0.009	39.6	ug/L	2	Standard
	Pb	206	460.3	26.2	**0.0258**	0.026	100.0	ug/L	240	Standard
	Pb	207	366.3	38.5	**0.0169**	0.034	199.7	ug/L	198	Standard
	Pb	208	1427.4	18.1	**0.0116**	0.016	136.8	ug/L	883	Standard
	U	238	88.7	86.2	**0.0101**	0.013	124.4	ug/L	3	Standard
>	**Bi**	209	465790.3	0.8				ug/L	523984	Standard

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Na	23	8.3	69.3	**97.9562**	69.038	70.5	mg/L	0	Standard
Mg	24	359246.1	3.7	**470.2454**	9.358	2.0	mg/L	37	Standard
K	39	24917.1	2.4	**55.7677**	1.861	3.3	mg/L	38	Standard
Ca	43	1330.1	6.9	**82.7516**	6.716	8.1	mg/L	10	Standard
Fe	54	200.7	20.7	**0.0339**	0.032	94.4	mg/L	179	Standard
Fe	57	1015.0	10.0	**2.4309**	0.415	17.1	mg/L	335	Standard
Sc-1	45	60164.2	2.0				mg/L	61029	Standard
Cl	35	38169.4	0.5				ug/L	20195	Standard
Kr	83	1.0	0.0				ug/L	4	Standard
Br	81	223802.3	3.7				ug/L	1547	Standard
P	31	18462.9	1.8				ug/L	15286	Standard
S	34	2156.8	3.7				ug/L	1572	Standard
Sr	88	483.3	16.2				ug/L	73	Standard
C	12	163.3	15.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	24.7				mg/L	3	Standard
Dy	164	32.2	122.0				mg/L	6	Standard
Ho-1	165	16.7	45.8				mg/L	10	Standard
Er	166	23.3	99.0				mg/L	13	Standard
I	127	949274.2	9.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		127.510	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.554	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.116
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		88.894
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 17:34:19
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89879.3	3.0				ug/L	74699	Standard
	Be	9	54419.2	2.1	**51.4171**	2.152	4.2	ug/L	8	Standard
	Al	27	8256861.3	1.5	**46.7135**	1.756	3.8	ug/L	1493	Standard
	Sc	45	65086.2	2.0				ug/L	61029	Standard
	Ti	47	41554.9	1.2	**98.5544**	1.167	1.2	ug/L	35	Standard
	V	51	424002.3	1.3	**50.3253**	0.743	1.5	ug/L	1435	Standard
	Cr	52	412948.6	1.6	**49.1234**	1.130	2.3	ug/L	7635	Standard
	Cr	53	52872.1	1.4	**51.1473**	0.096	0.2	ug/L	363	Standard
	Mn	55	374015.3	1.0	**48.1957**	0.700	1.5	ug/L	747	Standard
	Co	59	377049.8	1.0	**51.3472**	0.802	1.6	ug/L	234	Standard
	Ni	60	101943.5	0.6	**48.8763**	0.675	1.4	ug/L	215	Standard
	Cu	65	101706.9	0.4	**49.0730**	0.490	1.0	ug/L	104	Standard
	Zn	66	60100.6	1.2	**49.0556**	0.165	0.3	ug/L	363	Standard
>	**Ge**	72	550256.1	1.3				ug/L	495142	Standard
	As	75	60702.3	2.0	**48.8234**	0.606	1.2	ug/L	-50	Standard
	Se	82	6059.9	1.5	**49.5453**	0.269	0.5	ug/L	14	Standard
	Se-1	77	4264.3	0.7	**51.9185**	0.539	1.0	ug/L	42	Standard
>	**Ga**	71	80.0	16.5				mg/L	42	Standard
	Rb	85	943.4	9.9				ug/L	17	Standard
	Y	89	456697.4	1.9				ug/L	417098	Standard
>	**Rh**	103	31.7	32.9				ug/L	13	Standard
	Mo	98	286840.3	1.0	**98.7855**	2.014	2.0	ug/L	11	Standard
	Ag	107	350242.5	1.1	**49.3132**	0.224	0.5	ug/L	68	Standard
	Cd	111	110565.3	0.7	**48.5306**	0.244	0.5	mg/L	2	Standard
	Cd	114	270182.5	3.7	**48.3546**	1.830	3.8	ug/L	12	Standard
>	**In**	115	640022.5	1.2				ug/L	587441	Standard
	Sn	118	309740.9	1.1	**48.5773**	0.779	1.6	ug/L	497	Standard
	Sb	123	247251.7	1.0	**48.6061**	0.525	1.1	ug/L	78	Standard
	Ba	135	103942.0	1.5	**46.5980**	0.695	1.5	ug/L	24	Standard
	Ce	140	81.7	18.7				ug/L	25	Standard
>	**Tb**	159	1011086.0	0.8				ug/L	939701	Standard
	Ho	165	13.3	94.4				ug/L	10	Standard
	Tl	203	438780.7	1.5	**49.1134**	0.474	1.0	ug/L	4	Standard
	Tl	205	398617.2	2.3	**51.4045**	0.522	1.0	ug/L	2	Standard
	Pb	206	284136.3	1.1	**49.0127**	0.824	1.7	ug/L	240	Standard
	Pb	207	252190.2	0.9	**48.9661**	0.976	2.0	ug/L	198	Standard
	Pb	208	1023481.0	1.1	**50.2926**	0.682	1.4	ug/L	883	Standard
	U	238	380510.7	2.1	**50.9985**	0.305	0.6	ug/L	3	Standard
>	**Bi**	209	567945.0	2.2				ug/L	523984	Standard

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Na	23	1.7	173.2	**18.3524**	31.779	173.2	mg/L	0	Standard
Mg	24	4450.7	2.4	**5.3249**	0.232	4.3	mg/L	37	Standard
K	39	2040.1	4.0	**4.1161**	0.223	5.4	mg/L	38	Standard
Ca	43	101.7	19.9	**3.5019**	1.219	34.8	mg/L	10	Standard
Fe	54	6522.9	1.9	**5.0481**	0.108	2.1	mg/L	179	Standard
Fe	57	1916.8	5.3	**5.0325**	0.229	4.6	mg/L	335	Standard
Sc-1	45	65086.2	2.0				mg/L	61029	Standard
Cl	35	28870.1	1.5				ug/L	20195	Standard
Kr	83	2.7	43.3				ug/L	4	Standard
Br	81	3490.4	22.1				ug/L	1547	Standard
P	31	20260.2	3.0				ug/L	15286	Standard
S	34	2420.2	2.6				ug/L	1572	Standard
Sr	88	90.0	19.2				ug/L	73	Standard
C	12	86.7	6.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	9.5	5.0				mg/L	6	Standard
Ho-1	165	13.3	94.4				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	23970.8	64.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.834		
Al	27	93.427		
Sc	45			
Ti	47	98.554		
V	51	100.651		
Cr	52	98.247		
Cr	53			
Mn	55	96.391		
Co	59	102.694		
Ni	60	97.753		
Cu	65	98.146		
Zn	66	98.111		
Ge	72		111.131	
As	75	97.647		
Se	82	99.091		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.786		
Ag	107	98.626		
Cd	111	97.061		
Cd	114			
> In	115			108.951
Sn	118	97.155		
Sb	123	97.212		
Ba	135	93.196		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.227		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.585		
U	238	101.997		
> Bi	209			108.390
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 17:37:30
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90192.8	3.2				ug/L	74699	Standard
	Be	9	55.0	102.4	**0.0584**	0.051	86.9	ug/L	8	Standard
	Al	27	41697.2	123.7	**0.2160**	0.280	129.5	ug/L	1493	Standard
	Sc	45	66865.6	0.3				ug/L	61029	Standard
	Ti	47	70.3	63.0	**0.0618**	0.107	173.0	ug/L	35	Standard
	V	51	1545.5	1.7	**-0.0068**	0.004	62.6	ug/L	1435	Standard
	Cr	52	7551.9	5.0	**-0.0837**	0.044	52.6	ug/L	7635	Standard
	Cr	53	1056.7	15.9	**0.7243**	0.162	22.4	ug/L	363	Standard
	Mn	55	2100.5	33.7	**0.1299**	0.092	71.2	ug/L	747	Standard
	Co	59	307.3	14.8	**0.0056**	0.006	108.6	ug/L	234	Standard
	Ni	60	288.7	41.6	**0.0182**	0.059	321.7	ug/L	215	Standard
	Cu	65	326.7	64.3	**0.0580**	0.103	178.3	ug/L	104	Standard
	Zn	66	465.0	14.2	**-0.0620**	0.054	86.6	ug/L	363	Standard
>	**Ge**	72	536712.4	0.6				ug/L	495142	Standard
	As	75	-14.2	293.5	**0.0478**	0.034	71.9	ug/L	-50	Standard
	Se	82	26.6	3.7	**0.0859**	0.008	9.9	ug/L	14	Standard
	Se-1	77	71.3	25.4	**0.2781**	0.225	81.0	ug/L	42	Standard
>	**Ga**	71	51.7	22.3				mg/L	42	Standard
	Rb	85	111.7	73.6				ug/L	17	Standard
	Y	89	476031.3	1.1				ug/L	417098	Standard
>	**Rh**	103	26.7	47.2				ug/L	13	Standard
	Mo	98	310.3	31.4	**0.0963**	0.033	33.9	ug/L	11	Standard
	Ag	107	196.3	41.5	**0.0135**	0.011	82.4	ug/L	68	Standard
	Cd	111	44.4	76.9	**0.0108**	0.014	134.5	mg/L	2	Standard
	Cd	114	106.2	73.2	**0.0161**	0.013	83.2	ug/L	12	Standard
>	**In**	115	671001.8	0.7				ug/L	587441	Standard
	Sn	118	950.0	11.1	**0.0476**	0.015	31.2	ug/L	497	Standard
	Sb	123	463.6	17.0	**0.0827**	0.014	17.2	ug/L	78	Standard
	Ba	135	113.3	53.3	**0.0326**	0.026	80.4	ug/L	24	Standard
	Ce	140	100.0	52.9				ug/L	25	Standard
>	**Tb**	159	1042844.6	0.4				ug/L	939701	Standard
	Ho	165	21.7	53.3				ug/L	10	Standard
	Tl	203	169.7	59.1	**0.0166**	0.011	64.7	ug/L	4	Standard
	Tl	205	136.7	25.7	**0.0173**	0.004	24.8	ug/L	2	Standard
	Pb	206	350.0	21.1	**-0.0125**	0.012	95.5	ug/L	240	Standard
	Pb	207	292.7	21.7	**-0.0148**	0.012	78.6	ug/L	198	Standard
	Pb	208	1272.0	10.4	**-0.0133**	0.006	44.8	ug/L	883	Standard
	U	238	124.3	70.3	**0.0117**	0.011	96.0	ug/L	3	Standard
>	**Bi**	209	584508.5	0.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	165.0	89.4	**0.1290**	0.173	134.2	mg/L	37	Standard
K	39	35.0	14.3	**-0.0435**	0.010	22.9	mg/L	38	Standard
Ca	43	33.3	22.9	**-0.6014**	0.442	73.5	mg/L	10	Standard
Fe	54	222.3	16.4	**0.0337**	0.028	82.1	mg/L	179	Standard
Fe	57	293.3	1.0	**-0.1642**	0.011	6.9	mg/L	335	Standard
> **Sc-1**	45	66865.6	0.3				mg/L	61029	Standard
Cl	35	28993.0	1.1				ug/L	20195	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	2536.9	15.9				ug/L	1547	Standard
P	31	21593.7	3.8				ug/L	15286	Standard
S	34	2441.9	4.5				ug/L	1572	Standard
Sr	88	71.7	39.7				ug/L	73	Standard
C	12	43.3	53.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	2.2	286.4				mg/L	6	Standard
Ho-1	165	21.7	53.3				mg/L	10	Standard
Er	166	23.3	65.5				mg/L	13	Standard
I	127	6326.4	22.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.396	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.225
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		111.551
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129403
Sample Date/Time: Wednesday, June 29, 2016 17:40:43
Number of Replicates: 3
Autosampler Position: 234
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	91138.4	2.1				ug/L	74699	Standard
	Be	9	18.3	31.5	**0.0246**	0.005	20.1	ug/L	8	Standard
	Al	27	19782.9	2.5	**0.0970**	0.003	3.0	ug/L	1493	Standard
	Sc	45	69032.0	3.0				ug/L	61029	Standard
	Ti	47	54.0	3.2	**0.0194**	0.002	12.6	ug/L	35	Standard
	V	51	1966.3	6.5	**0.0390**	0.011	28.1	ug/L	1435	Standard
	Cr	52	10805.9	1.1	**0.2915**	0.043	14.7	ug/L	7635	Standard
	Cr	53	2143.5	1.8	**1.7623**	0.077	4.4	ug/L	363	Standard
	Mn	55	3844.5	2.2	**0.3500**	0.018	5.0	ug/L	747	Standard
	Co	59	327.3	8.7	**0.0074**	0.003	41.0	ug/L	234	Standard
	Ni	60	356.0	5.4	**0.0475**	0.008	16.5	ug/L	215	Standard
	Cu	65	696.0	2.6	**0.2337**	0.014	6.0	ug/L	104	Standard
	Zn	66	2205.8	3.0	**1.3661**	0.024	1.8	ug/L	363	Standard
>	**Ge**	72	549152.6	2.2				ug/L	495142	Standard
	As	75	-29.6	63.4	**0.0356**	0.015	42.9	ug/L	-50	Standard
	Se	82	23.9	20.2	**0.0586**	0.040	68.9	ug/L	14	Standard
	Se-1	77	94.7	7.0	**0.5478**	0.105	19.2	ug/L	42	Standard
>	**Ga**	71	51.7	14.8				mg/L	42	Standard
	Rb	85	138.3	25.6				ug/L	17	Standard
	Y	89	465979.4	3.6				ug/L	417098	Standard
>	**Rh**	103	13.3	21.7				ug/L	13	Standard
	Mo	98	5139.1	1.4	**1.7220**	0.056	3.3	ug/L	11	Standard
	Ag	107	110.0	6.9	**0.0022**	0.001	48.4	ug/L	68	Standard
	Cd	111	15.0	26.6	**-0.0015**	0.002	117.9	mg/L	2	Standard
	Cd	114	55.2	20.3	**0.0075**	0.002	25.2	ug/L	12	Standard
>	**In**	115	655841.8	1.8				ug/L	587441	Standard
	Sn	118	1048.4	10.6	**0.0659**	0.015	22.6	ug/L	497	Standard
	Sb	123	219.8	14.7	**0.0379**	0.005	14.5	ug/L	78	Standard
	Ba	135	307.7	5.8	**0.1187**	0.008	7.0	ug/L	24	Standard
	Ce	140	120.0	27.3				ug/L	25	Standard
>	**Tb**	159	1025647.2	2.3				ug/L	939701	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	102.7	26.3	**0.0095**	0.003	29.3	ug/L	4	Standard
	Tl	205	93.3	17.2	**0.0120**	0.002	17.6	ug/L	2	Standard
	Pb	206	348.0	5.5	**-0.0123**	0.003	25.6	ug/L	240	Standard
	Pb	207	291.0	7.0	**-0.0146**	0.003	21.1	ug/L	198	Standard
	Pb	208	1220.0	1.5	**-0.0152**	0.002	10.4	ug/L	883	Standard
	U	238	43.7	3.5	**0.0013**	0.000	20.2	ug/L	3	Standard
>	**Bi**	209	579311.4	1.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	70.0	14.3	**0.0151**	0.014	91.8	mg/L	37	Standard
K	39	41.7	36.7	**-0.0323**	0.032	98.5	mg/L	38	Standard
Ca	43	23.3	24.7	**-1.2220**	0.307	25.1	mg/L	10	Standard
Fe	54	180.7	18.1	**-0.0033**	0.021	642.1	mg/L	179	Standard
Fe	57	228.3	18.9	**-0.3899**	0.112	28.8	mg/L	335	Standard
Sc-1	45	69032.0	3.0				mg/L	61029	Standard
Cl	35	29393.1	0.1				ug/L	20195	Standard
Kr	83	3.7	41.7				ug/L	4	Standard
Br	81	2280.2	16.1				ug/L	1547	Standard
P	31	20889.4	5.8				ug/L	15286	Standard
S	34	2440.2	2.2				ug/L	1572	Standard
Sr	88	78.3	9.8				ug/L	73	Standard
C	12	90.0	19.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	5.2	126.6				mg/L	6	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	30.0	66.7				mg/L	13	Standard
I	127	4447.3	11.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		122.008	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		110.908	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.644
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.559
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606129403
Sample Date/Time: Wednesday, June 29, 2016 17:43:55
Number of Replicates: 3
Autosampler Position: 235
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89753.4	1.3				ug/L	74699	Standard
	Be	9	13.3	43.3	**0.0203**	0.006	27.7	ug/L	8	Standard
	Al	27	7761551.3	2.6	**43.9444**	1.176	2.7	ug/L	1493	Standard
	Sc	45	64855.2	1.4				ug/L	61029	Standard
	Ti	47	206.0	13.1	**0.3915**	0.063	16.1	ug/L	35	Standard
	V	51	6651.8	1.7	**0.6159**	0.016	2.5	ug/L	1435	Standard
	Cr	52	10534.3	3.3	**0.2860**	0.045	15.8	ug/L	7635	Standard
	Cr	53	2358.5	8.3	**2.0219**	0.206	10.2	ug/L	363	Standard
	Mn	55	48108.9	1.2	**6.2182**	0.039	0.6	ug/L	747	Standard
	Co	59	779.0	1.7	**0.0714**	0.002	2.2	ug/L	234	Standard
	Ni	60	2066.1	2.9	**0.8928**	0.027	3.0	ug/L	215	Standard
	Cu	65	1897.5	0.8	**0.8356**	0.011	1.4	ug/L	104	Standard
	Zn	66	4161.9	4.0	**3.0555**	0.122	4.0	ug/L	363	Standard
>	**Ge**	72	537411.3	0.6				ug/L	495142	Standard
	As	75	1930.1	2.9	**1.6472**	0.048	2.9	ug/L	-50	Standard
	Se	82	65.9	12.2	**0.4151**	0.071	17.1	ug/L	14	Standard
	Se-1	77	143.0	7.4	**1.1820**	0.141	12.0	ug/L	42	Standard
>	**Ga**	71	281.7	11.8				mg/L	42	Standard
	Rb	85	9322.9	0.6				ug/L	17	Standard
	Y	89	483828.6	0.3				ug/L	417098	Standard
>	**Rh**	103	65.0	35.3				ug/L	13	Standard
	Mo	98	2420.2	2.2	**0.8025**	0.008	1.0	ug/L	11	Standard
	Ag	107	86.7	9.0	**-0.0011**	0.001	98.3	ug/L	68	Standard
	Cd	111	21.1	19.4	**0.0011**	0.002	172.0	mg/L	2	Standard
	Cd	114	57.2	8.0	**0.0078**	0.001	8.8	ug/L	12	Standard
>	**In**	115	659947.0	1.4				ug/L	587441	Standard
	Sn	118	1036.7	2.5	**0.0632**	0.002	2.8	ug/L	497	Standard
	Sb	123	514.2	4.3	**0.0939**	0.005	5.0	ug/L	78	Standard
	Ba	135	42292.6	1.8	**18.3786**	0.354	1.9	ug/L	24	Standard
	Ce	140	906.7	5.0				ug/L	25	Standard
>	**Tb**	159	1004743.5	1.0				ug/L	939701	Standard
	Ho	165	30.0	33.3				ug/L	10	Standard
	Tl	203	321.7	3.2	**0.0348**	0.001	3.5	ug/L	4	Standard
	Tl	205	263.3	19.0	**0.0346**	0.006	17.3	ug/L	2	Standard
	Pb	206	528.0	6.8	**0.0212**	0.005	24.5	ug/L	240	Standard
	Pb	207	478.3	8.2	**0.0244**	0.009	35.8	ug/L	198	Standard
	Pb	208	1973.7	3.1	**0.0244**	0.005	18.6	ug/L	883	Standard
	U	238	903.7	2.1	**0.1184**	0.002	1.8	ug/L	3	Standard
>	**Bi**	209	560080.8	1.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	9985.0	3.9	**12.0618**	0.357	3.0	mg/L	37	Standard
K	39	420.0	7.4	**0.7593**	0.061	8.1	mg/L	38	Standard
Ca	43	263.3	2.9	**13.1350**	0.654	5.0	mg/L	10	Standard
Fe	54	210.7	11.6	**0.0297**	0.017	57.3	mg/L	179	Standard
Fe	57	393.3	9.5	**0.1838**	0.119	64.8	mg/L	335	Standard
> **Sc-1**	45	64855.2	1.4				mg/L	61029	Standard
Cl	35	32877.0	2.8				ug/L	20195	Standard
Kr	83	0.7	86.6				ug/L	4	Standard
Br	81	8902.6	4.1				ug/L	1547	Standard
P	31	19829.6	4.1				ug/L	15286	Standard
S	34	2240.2	4.2				ug/L	1572	Standard
Sr	88	221.7	14.7				ug/L	73	Standard
C	12	126.7	4.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	64.1	36.5				mg/L	6	Standard
Ho-1	165	30.0	33.3				mg/L	10	Standard
Er	166	53.3	21.7				mg/L	13	Standard
I	127	24610.0	6.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		120.154	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.537	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.343
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.889
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606129601
Sample Date/Time: Wednesday, June 29, 2016 17:47:06
Number of Replicates: 3
Autosampler Position: 236
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89414.7	0.8				ug/L	74699	Standard
	Be	9	18.3	41.7	**0.0250**	0.007	28.7	ug/L	8	Standard
	Al	27	159581.9	4.0	**0.8936**	0.029	3.3	ug/L	1493	Standard
	Sc	45	67088.2	1.1				ug/L	61029	Standard
	Ti	47	35.7	1.6	**-0.0268**	0.002	7.8	ug/L	35	Standard
	V	51	2172.9	6.2	**0.0559**	0.017	29.8	ug/L	1435	Standard
	Cr	52	9358.6	1.2	**0.0800**	0.026	32.1	ug/L	7635	Standard
	Cr	53	761.7	7.6	**0.3908**	0.063	16.2	ug/L	363	Standard
	Mn	55	2132.8	0.4	**0.1197**	0.005	4.4	ug/L	747	Standard
	Co	59	232.7	3.6	**-0.0065**	0.001	22.5	ug/L	234	Standard
	Ni	60	263.3	7.3	**-0.0009**	0.011	1213.2	ug/L	215	Standard
	Cu	65	215.7	8.8	**-0.0024**	0.009	395.1	ug/L	104	Standard
	Zn	66	2535.5	4.0	**1.5735**	0.060	3.8	ug/L	363	Standard
>	**Ge**	72	566628.0	1.5				ug/L	495142	Standard
	As	75	0.7	2838.5	**0.0602**	0.015	24.5	ug/L	-50	Standard
	Se	82	16.5	13.6	**-0.0062**	0.020	325.1	ug/L	14	Standard
	Se-1	77	57.7	30.4	**0.0671**	0.205	305.9	ug/L	42	Standard
>	**Ga**	71	65.0	35.3				mg/L	42	Standard
	Rb	85	218.3	8.7				ug/L	17	Standard
	Y	89	474347.0	1.6				ug/L	417098	Standard
>	**Rh**	103	16.7	45.8				ug/L	13	Standard
	Mo	98	108.8	9.6	**0.0309**	0.003	10.7	ug/L	11	Standard
	Ag	107	170.0	11.0	**0.0105**	0.003	26.1	ug/L	68	Standard
	Cd	111	6.5	32.0	**-0.0051**	0.001	17.0	mg/L	2	Standard
	Cd	114	10.6	76.1	**-0.0002**	0.001	576.3	ug/L	12	Standard
>	**In**	115	655393.1	1.0				ug/L	587441	Standard
	Sn	118	536.7	6.3	**-0.0123**	0.006	49.5	ug/L	497	Standard
	Sb	123	179.2	10.0	**0.0302**	0.004	12.2	ug/L	78	Standard
	Ba	135	901.0	1.9	**0.3786**	0.012	3.1	ug/L	24	Standard
	Ce	140	38.3	52.7				ug/L	25	Standard
>	**Tb**	159	1019773.4	1.2				ug/L	939701	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	34.7	13.6	**0.0021**	0.001	27.9	ug/L	4	Standard
	Tl	205	33.3	52.7	**0.0044**	0.002	51.3	ug/L	2	Standard
	Pb	206	333.0	5.0	**-0.0144**	0.003	23.5	ug/L	240	Standard
	Pb	207	282.3	6.2	**-0.0157**	0.004	25.6	ug/L	198	Standard
	Pb	208	1187.0	2.0	**-0.0164**	0.002	10.6	ug/L	883	Standard
	U	238	27.0	25.9	**-0.0009**	0.001	108.4	ug/L	3	Standard
>	**Bi**	209	574894.3	1.4				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.3542**	30.050	173.2	mg/L	0	Standard
Mg	24	255.0	18.0	**0.2345**	0.054	23.2	mg/L	37	Standard
K	39	41.7	36.7	**-0.0306**	0.030	98.0	mg/L	38	Standard
Ca	43	31.7	18.2	**-0.7022**	0.343	48.8	mg/L	10	Standard
Fe	54	182.6	4.3	**0.0025**	0.004	177.8	mg/L	179	Standard
Fe	57	238.3	19.9	**-0.3363**	0.155	46.0	mg/L	335	Standard
> **Sc-1**	45	67088.2	1.1				mg/L	61029	Standard
Cl	35	32679.2	0.8				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	2083.5	4.4				ug/L	1547	Standard
P	31	19699.5	2.2				ug/L	15286	Standard
S	34	2248.5	3.2				ug/L	1572	Standard
Sr	88	70.0	56.7				ug/L	73	Standard
C	12	60.0	76.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	42.4	37.5				mg/L	6	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	20.0	86.6				mg/L	13	Standard
I	127	3452.1	27.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.700	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.437	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.567
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.716
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Wednesday, June 29, 2016 17:50:19
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88962.1	0.9				ug/L	74699	Standard
	Be	9	13.3	43.3	**0.0204**	0.006	27.5	ug/L	8	Standard
	Al	27	8687475.6	2.0	**49.6312**	1.401	2.8	ug/L	1493	Standard
	Sc	45	67439.8	1.2				ug/L	61029	Standard
	Ti	47	49495.1	1.8	**118.6714**	2.776	2.3	ug/L	35	Standard
	V	51	2497.1	11.5	**0.1050**	0.033	31.3	ug/L	1435	Standard
	Cr	52	8893.6	0.7	**0.0677**	0.012	17.4	ug/L	7635	Standard
	Cr	53	8300.6	3.8	**7.8359**	0.175	2.2	ug/L	363	Standard
	Mn	55	1506.4	1.9	**0.0487**	0.003	6.1	ug/L	747	Standard
	Co	59	411.3	2.2	**0.0194**	0.002	11.4	ug/L	234	Standard
	Ni	60	986.0	7.4	**0.3548**	0.029	8.2	ug/L	215	Standard
	Cu	65	754.7	3.5	**0.2650**	0.009	3.4	ug/L	104	Standard
	Zn	66	1997.5	3.6	**1.2085**	0.053	4.4	ug/L	363	Standard
>	**Ge**	72	544457.7	1.7				ug/L	495142	Standard
	As	75	-43.8	164.6	**0.0238**	0.058	245.3	ug/L	-50	Standard
	Se	82	18.8	19.8	**0.0181**	0.034	186.0	ug/L	14	Standard
	Se-1	77	455.0	4.4	**5.0437**	0.245	4.9	ug/L	42	Standard
>	**Ga**	71	186.7	17.4				mg/L	42	Standard
	Rb	85	1130.0	9.7				ug/L	17	Standard
	Y	89	464215.3	1.7				ug/L	417098	Standard
>	**Rh**	103	10.0	100.0				ug/L	13	Standard
	Mo	98	300673.2	0.9	**102.5347**	1.457	1.4	ug/L	11	Standard
	Ag	107	252.3	6.3	**0.0223**	0.003	12.6	ug/L	68	Standard
	Cd	111	-194.8	14.0	**-0.0926**	0.012	12.9	mg/L	2	Standard
	Cd	114	577.1	3.2	**0.1002**	0.004	4.2	ug/L	12	Standard
>	**In**	115	646355.5	1.8				ug/L	587441	Standard
	Sn	118	791.7	5.4	**0.0285**	0.006	21.5	ug/L	497	Standard
	Sb	123	195.6	12.5	**0.0338**	0.004	11.9	ug/L	78	Standard
	Ba	135	712.0	4.0	**0.3001**	0.008	2.7	ug/L	24	Standard
	Ce	140	246.7	7.1				ug/L	25	Standard
>	**Tb**	159	1024202.6	1.1				ug/L	939701	Standard
	Ho	165	23.3	61.9				ug/L	10	Standard
	Tl	203	122.3	9.8	**0.0119**	0.001	11.8	ug/L	4	Standard
	Tl	205	90.0	11.1	**0.0118**	0.001	10.5	ug/L	2	Standard
	Pb	206	533.7	2.0	**0.0208**	0.002	10.5	ug/L	240	Standard
	Pb	207	414.7	3.2	**0.0105**	0.002	21.4	ug/L	198	Standard
	Pb	208	1800.4	3.2	**0.0144**	0.003	21.4	ug/L	883	Standard
	U	238	18.7	20.3	**-0.0019**	0.001	26.8	ug/L	3	Standard
>	**Bi**	209	568876.5	0.5				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	11507.7	5.3	**13.3841**	0.868	6.5	mg/L	37	Standard
K	39	2163.5	5.0	**4.2129**	0.203	4.8	mg/L	38	Standard
Ca	43	273.3	20.1	**13.1286**	3.349	25.5	mg/L	10	Standard
Fe	54	17120.6	2.5	**12.9991**	0.385	3.0	mg/L	179	Standard
Fe	57	4470.7	3.8	**12.6745**	0.387	3.1	mg/L	335	Standard
> **Sc-1**	45	67439.8	1.2				mg/L	61029	Standard
Cl	35	28777.3	2.0				ug/L	20195	Standard
Kr	83	1.7	91.7				ug/L	4	Standard
Br	81	2086.8	10.9				ug/L	1547	Standard
P	31	20233.5	1.2				ug/L	15286	Standard
S	34	2398.5	7.6				ug/L	1572	Standard
Sr	88	63.3	35.6				ug/L	73	Standard
C	12	173.3	8.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	80.0	69.6				mg/L	3	Standard
Dy	164	11.6	52.9				mg/L	6	Standard
Ho-1	165	23.3	61.9				mg/L	10	Standard
Er	166	36.7	56.8				mg/L	13	Standard
I	127	2830.3	21.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27	0.993		
Sc	45			
Ti	47	118.671		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.960	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	102.535		
Ag	107			
Cd	111			
Cd	114			
> In	115			110.029
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209			108.567
Na	23	0.040		
Mg	24	267.683		
K	39	84.259		
Ca	43	87.524		
Fe	54	103.992		
Fe	57	101.396		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	

Sample ID: QC Std 4
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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Wednesday, June 29, 2016 17:53:31
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88668.7	1.6				ug/L	74699	Standard
	Be	9	115505.6	3.3	**110.5278**	2.817	2.5	ug/L	8	Standard
	Al	27	8938177.8	2.5	**51.2202**	0.471	0.9	ug/L	1493	Standard
	Sc	45	65087.9	3.1				ug/L	61029	Standard
	Ti	47	50197.4	1.2	**122.5394**	1.491	1.2	ug/L	35	Standard
	V	51	859522.7	1.3	**105.1949**	1.380	1.3	ug/L	1435	Standard
	Cr	52	831098.2	2.0	**102.8267**	1.943	1.9	ug/L	7635	Standard
	Cr	53	106911.0	2.3	**106.7884**	2.096	2.0	ug/L	363	Standard
	Mn	55	780341.4	1.6	**103.6433**	1.453	1.4	ug/L	747	Standard
	Co	59	785536.0	0.5	**110.1234**	0.547	0.5	ug/L	234	Standard
	Ni	60	203753.2	2.0	**100.6522**	1.808	1.8	ug/L	215	Standard
	Cu	65	201732.1	0.8	**100.2703**	0.833	0.8	ug/L	104	Standard
	Zn	66	122540.9	0.7	**103.4323**	0.376	0.4	ug/L	363	Standard
>	**Ge**	72	534677.6	0.4				ug/L	495142	Standard
	As	75	124456.8	0.2	**102.9556**	0.389	0.4	ug/L	-50	Standard
	Se	82	12596.7	0.4	**106.1488**	0.433	0.4	ug/L	14	Standard
	Se-1	77	8794.6	0.8	**110.8893**	1.382	1.2	ug/L	42	Standard
>	**Ga**	71	163.3	10.8				mg/L	42	Standard
	Rb	85	966.7	4.8				ug/L	17	Standard
	Y	89	476525.6	1.7				ug/L	417098	Standard
>	**Rh**	103	56.7	53.9				ug/L	13	Standard
	Mo	98	309227.9	0.6	**104.8818**	1.132	1.1	ug/L	11	Standard
	Ag	107	592523.9	2.1	**82.1821**	1.932	2.4	ug/L	68	Standard
	Cd	111	228625.7	1.0	**98.8467**	0.904	0.9	mg/L	2	Standard
	Cd	114	551600.1	1.5	**97.2335**	1.523	1.6	ug/L	12	Standard
>	**In**	115	649797.8	0.6				ug/L	587441	Standard
	Sn	118	1576.7	4.2	**0.1493**	0.011	7.5	ug/L	497	Standard
	Sb	123	495027.3	1.9	**95.8585**	2.358	2.5	ug/L	78	Standard
	Ba	135	210763.3	1.3	**93.0830**	1.687	1.8	ug/L	24	Standard
	Ce	140	70.0	24.7				ug/L	25	Standard
>	**Tb**	159	1005734.4	0.5				ug/L	939701	Standard
	Ho	165	11.7	49.5				ug/L	10	Standard
	Tl	203	893894.1	1.2	**101.2389**	0.317	0.3	ug/L	4	Standard
	Tl	205	815034.2	0.6	**106.3608**	0.654	0.6	ug/L	2	Standard
	Pb	206	583528.7	0.9	**101.9143**	0.243	0.2	ug/L	240	Standard
	Pb	207	499626.1	1.2	**98.2110**	0.372	0.4	ug/L	198	Standard
	Pb	208	2105185.2	0.8	**104.7451**	0.431	0.4	ug/L	883	Standard
	U	238	779429.7	1.7	**105.7078**	0.634	0.6	ug/L	3	Standard
>	**Bi**	209	561247.5	1.2				ug/L	523984	Standard

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Na	23	1.7	173.2	**18.1880**	31.494	173.2	mg/L	0	Standard
Mg	24	12009.8	3.1	**14.4710**	0.020	0.1	mg/L	37	Standard
K	39	2150.2	4.2	**4.3456**	0.256	5.9	mg/L	38	Standard
Ca	43	251.7	12.1	**12.4083**	2.087	16.8	mg/L	10	Standard
Fe	54	17836.2	2.6	**14.0504**	0.592	4.2	mg/L	179	Standard
Fe	57	4537.3	4.4	**13.3981**	0.845	6.3	mg/L	335	Standard
> **Sc-1**	45	65087.9	3.1				mg/L	61029	Standard
Cl	35	27559.7	2.9				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	1986.8	4.8				ug/L	1547	Standard
P	31	19052.0	2.9				ug/L	15286	Standard
S	34	2286.8	6.3				ug/L	1572	Standard
Sr	88	50.0	10.0				ug/L	73	Standard
C	12	120.0	54.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	3	Standard
Dy	164	6.0	200.7				mg/L	6	Standard
Ho-1	165	11.7	49.5				mg/L	10	Standard
Er	166	13.3	86.6				mg/L	13	Standard
I	127	2065.1	25.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	110.528		
Al	27	1.024		
Sc	45			
Ti	47	122.539		
V	51	105.195		
Cr	52	102.827		
Cr	53			
Mn	55	103.643		
Co	59	110.123		
Ni	60	100.652		
Cu	65	100.270		
Zn	66	103.432		
> Ge	72		107.985	
As	75	102.956		
Se	82	106.149		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	104.882		
Ag	107	82.182		
Cd	111	98.847		
Cd	114			
In	115		110.615	
Sn	118			
Sb	123	95.858		
Ba	135	93.083		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.239		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.745		
U	238	105.708		
Bi	209		107.111	
Na	23	145.504		
Mg	24	289.419		
K	39	86.911		
Ca	43	82.722		
Fe	54	112.403		
Fe	57	107.185		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Ti	47	
QC Std 5	Na	23	

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QC Std 5	Mg	24

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 17:56:44
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	88001.7	3.8				ug/L	74699	Standard
	Be	9	58491.1	3.4	**56.4121**	0.807	1.4	ug/L	8	Standard
	Al	27	8741223.1	1.9	**50.5126**	1.685	3.3	ug/L	1493	Standard
	Sc	45	66566.0	2.9				ug/L	61029	Standard
	Ti	47	44065.3	0.6	**105.8464**	2.393	2.3	ug/L	35	Standard
	V	51	439728.9	0.9	**52.8674**	1.388	2.6	ug/L	1435	Standard
	Cr	52	434693.1	0.1	**52.4281**	0.919	1.8	ug/L	7635	Standard
	Cr	53	53735.1	1.4	**52.6541**	1.206	2.3	ug/L	363	Standard
	Mn	55	394255.2	1.0	**51.4522**	0.719	1.4	ug/L	747	Standard
	Co	59	403494.7	0.9	**55.6456**	1.136	2.0	ug/L	234	Standard
	Ni	60	106493.3	0.2	**51.7076**	0.770	1.5	ug/L	215	Standard
	Cu	65	105229.8	0.3	**51.4208**	1.011	2.0	ug/L	104	Standard
	Zn	66	61955.4	1.5	**51.2322**	1.156	2.3	ug/L	363	Standard
>	Ge	72	543443.2	1.7				ug/L	495142	Standard
	As	75	62757.8	1.3	**51.1208**	1.290	2.5	ug/L	-50	Standard
	Se	82	6411.0	0.6	**53.0945**	1.065	2.0	ug/L	14	Standard
	Se-1	77	4401.6	1.7	**54.2995**	1.443	2.7	ug/L	42	Standard
>	Ga	71	61.7	12.4				mg/L	42	Standard
	Rb	85	943.4	4.4				ug/L	17	Standard
	Y	89	472814.1	2.0				ug/L	417098	Standard
>	Rh	103	31.7	36.5				ug/L	13	Standard
	Mo	98	301859.8	0.5	**101.5547**	1.508	1.5	ug/L	11	Standard
	Ag	107	366041.5	1.2	**50.3642**	1.561	3.1	ug/L	68	Standard
	Cd	111	117544.4	1.3	**50.4048**	0.748	1.5	mg/L	2	Standard
	Cd	114	286950.2	2.0	**50.1688**	0.955	1.9	ug/L	12	Standard
>	In	115	655193.6	1.9				ug/L	587441	Standard
	Sn	118	333959.0	1.2	**51.1818**	1.510	3.0	ug/L	497	Standard
	Sb	123	261510.0	1.1	**50.2357**	1.515	3.0	ug/L	78	Standard
	Ba	135	110572.3	0.3	**48.4318**	0.852	1.8	ug/L	24	Standard
	Ce	140	81.7	46.0				ug/L	25	Standard
>	Tb	159	1009652.9	1.9				ug/L	939701	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	466012.5	0.6	**52.5145**	1.216	2.3	ug/L	4	Standard
	Tl	205	428260.1	0.9	**55.6109**	1.642	3.0	ug/L	2	Standard
	Pb	206	294247.5	0.8	**51.0977**	1.194	2.3	ug/L	240	Standard
	Pb	207	260542.8	0.7	**50.9223**	1.007	2.0	ug/L	198	Standard
	Pb	208	1081629.9	0.8	**53.5152**	1.532	2.9	ug/L	883	Standard
	U	238	403586.7	0.9	**54.4635**	1.402	2.6	ug/L	3	Standard
>	Bi	209	564239.9	2.1				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4549.0	2.0	**5.3196**	0.066	1.2	mg/L	37	Standard
K	39	2091.8	2.6	**4.1250**	0.021	0.5	mg/L	38	Standard
Ca	43	106.7	9.8	**3.6589**	0.645	17.6	mg/L	10	Standard
Fe	54	6853.2	4.1	**5.1952**	0.357	6.9	mg/L	179	Standard
Fe	57	1901.8	4.2	**4.8507**	0.081	1.7	mg/L	335	Standard
> **Sc-1**	45	66566.0	2.9				mg/L	61029	Standard
Cl	35	28481.4	2.6				ug/L	20195	Standard
Kr	83	3.3	75.5				ug/L	4	Standard
Br	81	1840.1	18.3				ug/L	1547	Standard
P	31	20427.1	5.4				ug/L	15286	Standard
S	34	2438.5	6.3				ug/L	1572	Standard
Sr	88	80.0	32.5				ug/L	73	Standard
C	12	76.7	7.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	3	Standard
Dy	164	6.5	86.7				mg/L	6	Standard
Ho-1	165	8.3	34.6				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	2150.2	26.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	112.824		
Al	27	101.025		
Sc	45			
Ti	47	105.846		
V	51	105.735		
Cr	52	104.856		
Cr	53			
Mn	55	102.904		
Co	59	111.291		
Ni	60	103.415		
Cu	65	102.842		
Zn	66	102.464		
> Ge	72		109.755	
As	75	102.242		
Se	82	106.189		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.555		
Ag	107	100.728		
Cd	111	100.810		
Cd	114			
In	115		111.533	
Sn	118	102.364		
Sb	123	100.471		
Ba	135	96.864		
Ce	140			
Tb	159			
Ho	165			
Tl	203	105.029		
Tl	205			
Pb	206			
Pb	207			
Pb	208	107.030		
U	238	108.927		
Bi	209		107.683	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Co	59	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 17:59:55
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86353.7	1.4				ug/L	74699	Standard
	Be	9	83.3	67.4	**0.0891**	0.054	60.5	ug/L	8	Standard
	Al	27	42873.5	92.7	**0.2376**	0.231	97.1	ug/L	1493	Standard
	Sc	45	65305.4	1.2				ug/L	61029	Standard
	Ti	47	79.7	51.6	**0.0788**	0.097	123.4	ug/L	35	Standard
	V	51	1461.2	4.4	**-0.0225**	0.008	34.9	ug/L	1435	Standard
	Cr	52	7626.9	6.9	**-0.1029**	0.066	64.1	ug/L	7635	Standard
	Cr	53	760.0	14.8	**0.4057**	0.109	26.8	ug/L	363	Standard
	Mn	55	4546.9	137.2	**0.4388**	0.807	183.9	ug/L	747	Standard
	Co	59	626.0	93.3	**0.0478**	0.080	167.0	ug/L	234	Standard
	Ni	60	409.0	51.9	**0.0715**	0.102	142.7	ug/L	215	Standard
	Cu	65	272.7	44.7	**0.0274**	0.059	215.3	ug/L	104	Standard
	Zn	66	514.0	23.7	**-0.0335**	0.100	300.2	ug/L	363	Standard
>	**Ge**	72	553485.6	1.3				ug/L	495142	Standard
	As	75	-6.7	474.8	**0.0545**	0.025	45.9	ug/L	-50	Standard
	Se	82	20.4	10.3	**0.0278**	0.015	55.0	ug/L	14	Standard
	Se-1	77	66.3	4.4	**0.1906**	0.046	24.0	ug/L	42	Standard
>	**Ga**	71	50.0	10.0				mg/L	42	Standard
	Rb	85	45.0	48.4				ug/L	17	Standard
	Y	89	474090.9	1.7				ug/L	417098	Standard
>	**Rh**	103	18.3	41.7				ug/L	13	Standard
	Mo	98	533.3	54.8	**0.1739**	0.097	56.0	ug/L	11	Standard
	Ag	107	205.7	25.6	**0.0154**	0.007	45.9	ug/L	68	Standard
	Cd	111	43.3	79.3	**0.0106**	0.015	137.7	mg/L	2	Standard
	Cd	114	160.8	66.0	**0.0260**	0.018	70.8	ug/L	12	Standard
>	**In**	115	653140.9	0.6				ug/L	587441	Standard
	Sn	118	840.0	19.7	**0.0347**	0.026	74.7	ug/L	497	Standard
	Sb	123	1054.2	24.1	**0.1991**	0.050	25.2	ug/L	78	Standard
	Ba	135	82.0	54.8	**0.0199**	0.020	97.9	ug/L	24	Standard
	Ce	140	78.3	62.0				ug/L	25	Standard
>	**Tb**	159	1021325.7	0.5				ug/L	939701	Standard
	Ho	165	20.0	66.1				ug/L	10	Standard
	Tl	203	163.0	50.8	**0.0163**	0.009	56.1	ug/L	4	Standard
	Tl	205	543.4	156.5	**0.0696**	0.109	156.0	ug/L	2	Standard
	Pb	206	336.7	16.7	**-0.0136**	0.010	70.5	ug/L	240	Standard
	Pb	207	309.7	12.8	**-0.0104**	0.008	73.2	ug/L	198	Standard
	Pb	208	2162.1	83.2	**0.0313**	0.088	280.1	ug/L	883	Standard
	U	238	524.4	153.4	**0.0652**	0.107	163.8	ug/L	3	Standard
>	**Bi**	209	573163.8	0.1				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.8448**	30.899	173.2	mg/L	0	Standard
Mg	24	123.3	127.6	**0.0829**	0.188	227.1	mg/L	37	Standard
K	39	30.0	66.7	**-0.0524**	0.041	77.8	mg/L	38	Standard
Ca	43	21.7	35.3	**-1.2409**	0.467	37.7	mg/L	10	Standard
Fe	54	185.6	27.6	**0.0086**	0.039	460.9	mg/L	179	Standard
Fe	57	268.3	10.3	**-0.2224**	0.079	35.7	mg/L	335	Standard
> **Sc-1**	45	65305.4	1.2				mg/L	61029	Standard
Cl	35	28806.0	1.7				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	1900.1	3.3				ug/L	1547	Standard
P	31	20240.2	2.7				ug/L	15286	Standard
S	34	2435.2	7.1				ug/L	1572	Standard
Sr	88	65.0	20.4				ug/L	73	Standard
C	12	60.0					mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	25.5	84.0				mg/L	6	Standard
Ho-1	165	20.0	66.1				mg/L	10	Standard
Er	166	23.3	65.5				mg/L	13	Standard
I	127	1926.8	28.8				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		111.783	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	111.184
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	109.386
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Wednesday, June 29, 2016 18:03:08
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84590.6	2.3				ug/L	74699	Standard
	Be	9	260.0	12.0	**0.2687**	0.034	12.7	ug/L	8	Standard
	Al	27	3603.8	43.5	**0.0082**	0.009	110.1	ug/L	1493	Standard
	Sc	45	65034.3	0.9				ug/L	61029	Standard
	Ti	47	43.7	32.9	**-0.0008**	0.035	4199.9	ug/L	35	Standard
	V	51	4694.6	2.2	**0.3894**	0.008	2.0	ug/L	1435	Standard
	Cr	52	14076.2	0.6	**0.7639**	0.008	1.0	ug/L	7635	Standard
	Cr	53	1435.1	6.7	**1.1315**	0.098	8.6	ug/L	363	Standard
	Mn	55	4379.0	3.5	**0.4438**	0.017	3.9	ug/L	747	Standard
	Co	59	3208.0	4.2	**0.4198**	0.015	3.5	ug/L	234	Standard
	Ni	60	3464.1	1.9	**1.6175**	0.036	2.2	ug/L	215	Standard
	Cu	65	1802.1	7.0	**0.8073**	0.055	6.8	ug/L	104	Standard
	Zn	66	8137.9	1.9	**6.5566**	0.074	1.1	ug/L	363	Standard
>	**Ge**	72	526101.8	0.9				ug/L	495142	Standard
	As	75	520.8	10.5	**0.4970**	0.042	8.4	ug/L	-50	Standard
	Se	82	68.5	3.0	**0.4490**	0.013	3.0	ug/L	14	Standard
	Se-1	77	97.0	14.4	**0.6266**	0.169	26.9	ug/L	42	Standard
>	**Ga**	71	35.0	42.9				mg/L	42	Standard
	Rb	85	53.3	5.4				ug/L	17	Standard
	Y	89	462050.3	3.1				ug/L	417098	Standard
>	**Rh**	103	11.7	24.7				ug/L	13	Standard
	Mo	98	178.6	39.2	**0.0548**	0.024	44.0	ug/L	11	Standard
	Ag	107	2989.6	2.3	**0.4006**	0.011	2.7	ug/L	68	Standard
	Cd	111	543.3	9.6	**0.2264**	0.024	10.6	mg/L	2	Standard
	Cd	114	1493.6	11.4	**0.2605**	0.031	12.1	ug/L	12	Standard
>	**In**	115	651766.1	0.6				ug/L	587441	Standard
	Sn	118	551.7	10.5	**-0.0096**	0.009	97.6	ug/L	497	Standard
	Sb	123	2328.3	1.4	**0.4453**	0.009	1.9	ug/L	78	Standard
	Ba	135	1600.4	3.6	**0.6889**	0.030	4.3	ug/L	24	Standard
	Ce	140	6.7	86.6				ug/L	25	Standard
>	**Tb**	159	1010895.5	0.8				ug/L	939701	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	860.7	17.5	**0.0936**	0.016	16.7	ug/L	4	Standard
	Tl	205	718.4	10.6	**0.0918**	0.008	8.5	ug/L	2	Standard
	Pb	206	1533.1	9.5	**0.1909**	0.020	10.6	ug/L	240	Standard
	Pb	207	1247.1	5.1	**0.1700**	0.007	4.3	ug/L	198	Standard
	Pb	208	5357.0	3.3	**0.1870**	0.005	2.6	ug/L	883	Standard
	U	238	3040.0	2.0	**0.3994**	0.014	3.4	ug/L	3	Standard
>	**Bi**	209	573346.3	2.5				ug/L	523984	Standard

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Na	23	1.7	173.2	**18.2178**	31.546	173.2	mg/L	0	Standard
Mg	24	50.0	50.0	**-0.0044**	0.031	706.6	mg/L	37	Standard
K	39	35.0	24.7	**-0.0415**	0.018	44.0	mg/L	38	Standard
Ca	43	26.7	43.3	**-0.9446**	0.676	71.5	mg/L	10	Standard
Fe	54	105.0	32.5	**-0.0546**	0.028	51.3	mg/L	179	Standard
Fe	57	230.0	24.7	**-0.3395**	0.189	55.5	mg/L	335	Standard
Sc-1	45	65034.3	0.9				mg/L	61029	Standard
Cl	35	27747.4	0.7				ug/L	20195	Standard
Kr	83	1.0	0.0				ug/L	4	Standard
Br	81	1776.8	9.7				ug/L	1547	Standard
P	31	14345.1	1.0				ug/L	15286	Standard
S	34	2316.8	2.0				ug/L	1572	Standard
Sr	88	78.3	41.5				ug/L	73	Standard
C	12	70.0	28.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	6.0	100.4				mg/L	6	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	1788.4	30.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	134.333		
Al	27			
Sc	45			
Ti	47			
V	51	97.347		
Cr	52	95.485		
Cr	53			
Mn	55	88.762		
Co	59	104.961		
Ni	60	101.093		
Cu	65	100.908		
Zn	66	104.906		
Ge	72		106.253	
As	75	124.241		
Se	82	112.254		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	100.142		
Cd	111	94.325		
Cd	114			
> In	115			110.950
Sn	118			
Sb	123	111.327		
Ba	135	91.848		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	116.967		
Tl	205			
Pb	206			
Pb	207			
Pb	208	93.500		
U	238	99.844		
> Bi	209			109.420
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 8	Be	9	

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Method 6020 - Summary Report

Sample ID: PBS M9 WG574192-02
Sample Date/Time: Wednesday, June 29, 2016 18:06:21
Number of Replicates: 3
Autosampler Position: 237
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84464.8	1.8				ug/L	74699	Standard
	Be	9	13.3	94.4	**0.0212**	0.013	60.4	ug/L	8	Standard
	Al	27	11484.4	1.6	**0.0557**	0.001	1.2	ug/L	1493	Standard
	Sc	45	65588.4	2.6				ug/L	61029	Standard
	Ti	47	51.3	20.8	**0.0150**	0.026	174.5	ug/L	35	Standard
	V	51	1499.5	1.3	**-0.0137**	0.003	18.5	ug/L	1435	Standard
	Cr	52	8909.3	1.2	**0.0773**	0.005	6.6	ug/L	7635	Standard
	Cr	53	853.4	5.0	**0.5155**	0.034	6.6	ug/L	363	Standard
	Mn	55	1324.4	4.8	**0.0262**	0.011	41.6	ug/L	747	Standard
	Co	59	237.0	9.4	**-0.0044**	0.004	80.7	ug/L	234	Standard
	Ni	60	317.3	8.0	**0.0315**	0.014	46.0	ug/L	215	Standard
	Cu	65	277.0	2.0	**0.0327**	0.005	14.4	ug/L	104	Standard
	Zn	66	2117.5	3.0	**1.3211**	0.055	4.2	ug/L	363	Standard
>	**Ge**	72	540634.9	1.6				ug/L	495142	Standard
	As	75	-19.3	191.5	**0.0441**	0.030	68.3	ug/L	-50	Standard
	Se	82	22.9	30.4	**0.0532**	0.060	113.4	ug/L	14	Standard
	Se-1	77	66.3	3.1	**0.2096**	0.028	13.1	ug/L	42	Standard
>	**Ga**	71	40.0	45.1				mg/L	42	Standard
	Rb	85	45.0	40.1				ug/L	17	Standard
	Y	89	495113.6	1.2				ug/L	417098	Standard
>	**Rh**	103	20.0	50.0				ug/L	13	Standard
	Mo	98	103.4	4.5	**0.0285**	0.002	7.3	ug/L	11	Standard
	Ag	107	105.3	22.1	**0.0013**	0.003	227.8	ug/L	68	Standard
	Cd	111	14.8	35.7	**-0.0017**	0.002	127.2	mg/L	2	Standard
	Cd	114	30.3	51.7	**0.0031**	0.003	86.4	ug/L	12	Standard
>	**In**	115	666604.9	1.7				ug/L	587441	Standard
	Sn	118	860.0	2.1	**0.0351**	0.004	11.7	ug/L	497	Standard
	Sb	123	400.3	27.4	**0.0716**	0.022	30.7	ug/L	78	Standard
	Ba	135	277.0	2.3	**0.1032**	0.001	0.8	ug/L	24	Standard
	Ce	140	75.0	20.0				ug/L	25	Standard
>	**Tb**	159	1002064.8	2.5				ug/L	939701	Standard
	Ho	165	13.3	21.7				ug/L	10	Standard
	Tl	203	23.7	14.8	**0.0009**	0.000	40.1	ug/L	4	Standard
	Tl	205	18.3	56.8	**0.0026**	0.001	51.0	ug/L	2	Standard
	Pb	206	383.3	7.2	**-0.0041**	0.004	93.5	ug/L	240	Standard
	Pb	207	304.7	4.5	**-0.0100**	0.002	23.2	ug/L	198	Standard
	Pb	208	1385.4	1.0	**-0.0050**	0.001	21.8	ug/L	883	Standard
	U	238	16.0	18.8	**-0.0023**	0.000	16.8	ug/L	3	Standard
>	**Bi**	209	560531.0	1.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	51.7	11.2	**-0.0029**	0.008	286.8	mg/L	37	Standard
K	39	28.3	27.0	**-0.0560**	0.015	26.7	mg/L	38	Standard
Ca	43	25.0	34.6	**-1.0611**	0.483	45.5	mg/L	10	Standard
Fe	54	209.4	8.6	**0.0268**	0.012	44.3	mg/L	179	Standard
Fe	57	206.7	9.2	**-0.4211**	0.048	11.4	mg/L	335	Standard
> **Sc-1**	45	65588.4	2.6				mg/L	61029	Standard
Cl	35	29295.6	1.0				ug/L	20195	Standard
Kr	83	1.7	91.7				ug/L	4	Standard
Br	81	3250.3	3.7				ug/L	1547	Standard
P	31	19926.4	1.7				ug/L	15286	Standard
S	34	2431.9	7.4				ug/L	1572	Standard
Sr	88	63.3	32.9				ug/L	73	Standard
C	12	60.0	16.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	23.2	64.8				mg/L	6	Standard
Ho-1	165	13.3	21.7				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	1665.1	25.5				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		113.074	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		109.188	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.476
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.975
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: LCSS M9 WG574192-03
Sample Date/Time: Wednesday, June 29, 2016 18:09:32
Number of Replicates: 3
Autosampler Position: 238
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83350.4	2.2				ug/L	74699	Standard
	Be	9	28323.1	1.8	**28.8492**	0.865	3.0	ug/L	8	Standard
	Al	27	10196.8	1.6	**0.0488**	0.002	4.6	ug/L	1493	Standard
	Sc	45	65183.2	0.6				ug/L	61029	Standard
	Ti	47	95.7	13.6	**0.1113**	0.027	24.3	ug/L	35	Standard
	V	51	224256.1	0.6	**25.7588**	0.522	2.0	ug/L	1435	Standard
	Cr	52	224696.6	1.0	**25.4792**	0.636	2.5	ug/L	7635	Standard
	Cr	53	27321.3	1.7	**25.5112**	0.743	2.9	ug/L	363	Standard
	Mn	55	202745.7	1.5	**25.3082**	0.750	3.0	ug/L	747	Standard
	Co	59	203564.8	2.3	**26.9126**	1.011	3.8	ug/L	234	Standard
	Ni	60	54379.7	0.7	**25.2634**	0.489	1.9	ug/L	215	Standard
	Cu	65	53975.6	1.0	**25.2465**	0.617	2.4	ug/L	104	Standard
	Zn	66	33582.8	1.1	**26.4199**	0.666	2.5	ug/L	363	Standard
>	**Ge**	72	566570.7	1.5				ug/L	495142	Standard
	As	75	31915.6	1.0	**24.9643**	0.450	1.8	ug/L	-50	Standard
	Se	82	3210.1	2.6	**25.4315**	0.960	3.8	ug/L	14	Standard
	Se-1	77	2232.8	4.1	**26.1060**	1.397	5.4	ug/L	42	Standard
>	**Ga**	71	91.7	13.7				mg/L	42	Standard
	Rb	85	96.7	31.2				ug/L	17	Standard
	Y	89	463441.3	2.1				ug/L	417098	Standard
>	**Rh**	103	25.0	40.0				ug/L	13	Standard
	Mo	98	76.3	5.4	**0.0207**	0.001	6.1	ug/L	11	Standard
	Ag	107	186996.6	1.0	**26.4732**	0.339	1.3	ug/L	68	Standard
	Cd	111	58916.9	1.6	**26.0048**	0.541	2.1	mg/L	2	Standard
	Cd	114	141808.0	1.8	**25.5238**	0.616	2.4	ug/L	12	Standard
>	**In**	115	636399.6	0.6				ug/L	587441	Standard
	Sn	118	665.0	9.8	**0.0103**	0.010	94.1	ug/L	497	Standard
	Sb	123	127977.1	1.2	**25.3000**	0.453	1.8	ug/L	78	Standard
	Ba	135	55490.8	0.9	**25.0111**	0.350	1.4	ug/L	24	Standard
	Ce	140	61.7	36.6				ug/L	25	Standard
>	**Tb**	159	977939.2	1.1				ug/L	939701	Standard
	Ho	165	5.0	100.0				ug/L	10	Standard
	Tl	203	232757.9	0.8	**26.2994**	0.658	2.5	ug/L	4	Standard
	Tl	205	213539.2	0.1	**27.8001**	0.582	2.1	ug/L	2	Standard
	Pb	206	150898.4	0.7	**26.2407**	0.649	2.5	ug/L	240	Standard
	Pb	207	129115.2	1.2	**25.2720**	0.800	3.2	ug/L	198	Standard
	Pb	208	547777.7	0.6	**27.1359**	0.615	2.3	ug/L	883	Standard
	U	238	197609.3	0.3	**26.7341**	0.481	1.8	ug/L	3	Standard
>	**Bi**	209	562718.9	2.0				ug/L	523984	Standard

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Na	23	3.3	86.6	**35.9815**	31.158	86.6	mg/L	0	Standard
Mg	24	53.3	23.6	**-0.0007**	0.015	2138.9	mg/L	37	Standard
K	39	36.7	90.8	**-0.0380**	0.070	183.0	mg/L	38	Standard
Ca	43	26.7	28.6	**-0.9444**	0.462	48.9	mg/L	10	Standard
Fe	54	149.2	16.7	**-0.0198**	0.020	102.0	mg/L	179	Standard
Fe	57	258.3	10.7	**-0.2518**	0.092	36.6	mg/L	335	Standard
> **Sc-1**	45	65183.2	0.6				mg/L	61029	Standard
Cl	35	28068.6	2.1				ug/L	20195	Standard
Kr	83	2.0	0.0				ug/L	4	Standard
Br	81	1853.4	3.5				ug/L	1547	Standard
P	31	20221.8	1.7				ug/L	15286	Standard
S	34	2256.8	4.8				ug/L	1572	Standard
Sr	88	75.0	24.0				ug/L	73	Standard
C	12	113.3	53.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	2.9	203.0				mg/L	6	Standard
Ho-1	165	5.0	100.0				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	1621.8	26.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.582	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.426	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.334
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.392
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606120601 WG574192-01
Sample Date/Time: Wednesday, June 29, 2016 18:12:44
Number of Replicates: 3
Autosampler Position: 239
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89463.4	1.2				ug/L	74699	Standard
	Be	9	386.7	13.6	**0.3740**	0.046	12.2	ug/L	8	Standard
	Al	27	7605562.2	1.6	**43.1976**	0.340	0.8	ug/L	1493	Standard
	Sc	45	72243.5	1.6				ug/L	61029	Standard
	Ti	47	9362.6	0.8	**21.8169**	0.679	3.1	ug/L	35	Standard
	V	51	123334.5	1.4	**14.2946**	0.165	1.2	ug/L	1435	Standard
	Cr	52	107034.1	1.6	**11.7966**	0.478	4.1	ug/L	7635	Standard
	Cr	53	12683.6	2.9	**11.8556**	0.642	5.4	ug/L	363	Standard
	Mn	55	2726083.5	2.1	**347.2409**	2.026	0.6	ug/L	747	Standard
	Co	59	29531.4	3.0	**3.9299**	0.043	1.1	ug/L	234	Standard
	Ni	60	23196.4	0.4	**10.8725**	0.312	2.9	ug/L	215	Standard
	Cu	65	77156.3	0.7	**36.6848**	0.692	1.9	ug/L	104	Standard
	Zn	66	748003.6	1.6	**607.1548**	7.539	1.2	ug/L	363	Standard
>	**Ge**	72	558122.4	2.5				ug/L	495142	Standard
	As	75	3312.8	2.4	**2.6835**	0.016	0.6	ug/L	-50	Standard
	Se	82	112.5	6.7	**0.7726**	0.083	10.8	ug/L	14	Standard
	Se-1	77	130.7	4.7	**0.9656**	0.087	9.0	ug/L	42	Standard
>	**Ga**	71	7793.7	3.0				mg/L	42	Standard
	Rb	85	97459.1	1.1				ug/L	17	Standard
	Y	89	585281.5	2.1				ug/L	417098	Standard
>	**Rh**	103	56.7	13.5				ug/L	13	Standard
	Mo	98	1826.8	4.5	**0.5887**	0.034	5.8	ug/L	11	Standard
	Ag	107	1189.0	7.2	**0.1453**	0.012	8.4	ug/L	68	Standard
	Cd	111	5739.0	1.3	**2.3714**	0.004	0.2	mg/L	2	Standard
	Cd	114	13674.5	3.2	**2.3090**	0.056	2.4	ug/L	12	Standard
>	**In**	115	677670.9	1.2				ug/L	587441	Standard
	Sn	118	2238.5	6.9	**0.2377**	0.027	11.3	ug/L	497	Standard
	Sb	123	1060.8	22.9	**0.1924**	0.043	22.3	ug/L	78	Standard
	Ba	135	275486.3	0.7	**116.6679**	1.279	1.1	ug/L	24	Standard
	Ce	140	521396.3	0.5				ug/L	25	Standard
>	**Tb**	159	1067665.8	1.0				ug/L	939701	Standard
	Ho	165	8012.1	4.7				ug/L	10	Standard
	Tl	203	658.7	5.9	**0.0698**	0.004	5.8	ug/L	4	Standard
	Tl	205	588.3	7.1	**0.0738**	0.005	7.2	ug/L	2	Standard
	Pb	206	280687.1	0.1	**46.9821**	0.294	0.6	ug/L	240	Standard
	Pb	207	217657.6	0.6	**40.9978**	0.453	1.1	ug/L	198	Standard
	Pb	208	937818.9	1.0	**44.7144**	0.652	1.5	ug/L	883	Standard
	U	238	5450.3	0.5	**0.7046**	0.003	0.4	ug/L	3	Standard
>	**Bi**	209	585148.7	0.6				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	733.4	5.7	**0.7343**	0.035	4.8	mg/L	37	Standard
K	39	401.7	1.9	**0.6360**	0.019	3.0	mg/L	38	Standard
Ca	43	643.3	17.5	**31.7962**	5.845	18.4	mg/L	10	Standard
Fe	54	8818.1	2.4	**6.1777**	0.130	2.1	mg/L	179	Standard
Fe	57	2673.6	4.7	**6.5999**	0.243	3.7	mg/L	335	Standard
Sc-1	45	72243.5	1.6				mg/L	61029	Standard
Cl	35	29798.6	1.4				ug/L	20195	Standard
Kr	83	0.7	86.6				ug/L	4	Standard
Br	81	3707.1	5.8				ug/L	1547	Standard
P	31	20168.4	2.0				ug/L	15286	Standard
S	34	2373.5	6.9				ug/L	1572	Standard
Sr	88	256.7	13.8				ug/L	73	Standard
C	12	350.0	7.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	130.0	53.3				mg/L	3	Standard
Dy	164	13278.3	0.5				mg/L	6	Standard
Ho-1	165	8012.1	4.7				mg/L	10	Standard
Er	166	7608.6	3.8				mg/L	13	Standard
I	127	89948.0	2.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		119.765	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		112.720	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	115.360
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	111.673
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606120602
Sample Date/Time: Wednesday, June 29, 2016 18:15:55
Number of Replicates: 3
Autosampler Position: 240
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88784.4	1.1				ug/L	74699	Standard
	Be	9	281.7	5.7	**0.2767**	0.013	4.7	ug/L	8	Standard
	Al	27	7005404.7	2.4	**40.0898**	0.625	1.6	ug/L	1493	Standard
	Sc	45	70594.2	3.3				ug/L	61029	Standard
	Ti	47	10155.7	1.6	**24.3492**	0.468	1.9	ug/L	35	Standard
	V	51	153110.0	0.2	**18.3086**	0.101	0.6	ug/L	1435	Standard
	Cr	52	102957.6	0.7	**11.6568**	0.092	0.8	ug/L	7635	Standard
	Cr	53	11732.9	3.0	**11.2567**	0.305	2.7	ug/L	363	Standard
	Mn	55	2052735.8	1.1	**268.9604**	2.146	0.8	ug/L	747	Standard
	Co	59	33492.3	1.4	**4.5921**	0.057	1.2	ug/L	234	Standard
	Ni	60	26642.1	0.7	**12.8642**	0.053	0.4	ug/L	215	Standard
	Cu	65	40463.3	0.7	**19.7403**	0.183	0.9	ug/L	104	Standard
	Zn	66	608360.3	0.1	**507.8962**	1.599	0.3	ug/L	363	Standard
>	**Ge**	72	542468.6	0.4				ug/L	495142	Standard
	As	75	4231.0	2.7	**3.5076**	0.102	2.9	ug/L	-50	Standard
	Se	82	256.2	4.5	**1.9932**	0.099	5.0	ug/L	14	Standard
	Se-1	77	208.7	7.7	**1.9860**	0.210	10.6	ug/L	42	Standard
>	**Ga**	71	5872.8	1.9				mg/L	42	Standard
	Rb	85	68412.5	1.5				ug/L	17	Standard
	Y	89	570393.2	0.3				ug/L	417098	Standard
>	**Rh**	103	206.7	25.4				ug/L	13	Standard
	Mo	98	11374.8	0.4	**3.8637**	0.075	1.9	ug/L	11	Standard
	Ag	107	1353.7	2.3	**0.1754**	0.001	0.8	ug/L	68	Standard
	Cd	111	5491.2	1.2	**2.3732**	0.046	1.9	mg/L	2	Standard
	Cd	114	13400.9	1.9	**2.3668**	0.045	1.9	ug/L	12	Standard
>	**In**	115	648040.3	1.6				ug/L	587441	Standard
	Sn	118	1990.1	9.0	**0.2145**	0.033	15.4	ug/L	497	Standard
	Sb	123	589.0	13.2	**0.1100**	0.013	12.1	ug/L	78	Standard
	Ba	135	226861.9	1.0	**100.4795**	2.067	2.1	ug/L	24	Standard
	Ce	140	495305.9	0.7				ug/L	25	Standard
>	**Tb**	159	1028084.3	0.7				ug/L	939701	Standard
	Ho	165	7586.9	1.7				ug/L	10	Standard
	Tl	203	574.7	1.8	**0.0640**	0.002	2.9	ug/L	4	Standard
	Tl	205	501.7	7.3	**0.0663**	0.004	6.1	ug/L	2	Standard
	Pb	206	2490204.6	1.0	**439.6443**	9.561	2.2	ug/L	240	Standard
	Pb	207	1941338.7	1.0	**385.7578**	8.533	2.2	ug/L	198	Standard
	Pb	208	8788859.7	0.3	**442.0013**	4.418	1.0	ug/L	883	Standard
	U	238	27264.2	0.8	**3.7315**	0.055	1.5	ug/L	3	Standard
>	**Bi**	209	555601.8	1.3				ug/L	523984	Standard

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Na	23	15.0	66.7	**151.5495**	103.438	68.3	mg/L	0	Standard
Mg	24	875.0	7.4	**0.9112**	0.062	6.8	mg/L	37	Standard
K	39	308.3	17.3	**0.4774**	0.118	24.7	mg/L	38	Standard
Ca	43	2528.5	1.9	**135.7080**	7.063	5.2	mg/L	10	Standard
Fe	54	8423.7	4.4	**6.0457**	0.457	7.6	mg/L	179	Standard
Fe	57	3312.0	6.3	**8.6682**	0.763	8.8	mg/L	335	Standard
> **Sc-1**	45	70594.2	3.3				mg/L	61029	Standard
Cl	35	33743.5	0.4				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	4283.9	2.2				ug/L	1547	Standard
P	31	21890.8	1.3				ug/L	15286	Standard
S	34	2663.6	6.3				ug/L	1572	Standard
Sr	88	533.3	8.7				ug/L	73	Standard
C	12	600.0	5.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	100.0	26.5				mg/L	3	Standard
Dy	164	11590.5	1.3				mg/L	6	Standard
Ho-1	165	7586.9	1.7				mg/L	10	Standard
Er	166	6698.1	4.4				mg/L	13	Standard
I	127	108507.7	4.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.857	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.558	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.316
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.034
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1606120603S WG574192-04
Sample Date/Time: Wednesday, June 29, 2016 18:19:07
Number of Replicates: 3
Autosampler Position: 241
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86561.6	0.8				ug/L	74699	Standard
	Be	9	28455.1	4.4	**27.8947**	1.031	3.7	ug/L	8	Standard
	Al	27	11326081.2	0.4	**66.4980**	0.812	1.2	ug/L	1493	Standard
	Sc	45	74033.8	1.5				ug/L	61029	Standard
	Ti	47	13830.6	1.3	**31.7218**	0.771	2.4	ug/L	35	Standard
	V	51	404083.1	0.7	**46.4723**	0.823	1.8	ug/L	1435	Standard
	Cr	52	396378.6	0.5	**45.6257**	0.448	1.0	ug/L	7635	Standard
	Cr	53	48917.2	0.9	**45.8335**	0.539	1.2	ug/L	363	Standard
	Mn	55	3610519.8	1.3	**452.1326**	4.314	1.0	ug/L	747	Standard
	Co	59	243070.7	1.0	**32.0670**	0.356	1.1	ug/L	234	Standard
	Ni	60	87954.6	1.3	**40.8489**	0.598	1.5	ug/L	215	Standard
	Cu	65	138890.7	1.2	**64.9805**	0.614	0.9	ug/L	104	Standard
	Zn	66	982893.1	0.9	**784.3980**	13.633	1.7	ug/L	363	Standard
>	**Ge**	72	567734.3	1.2				ug/L	495142	Standard
	As	75	35264.6	1.3	**27.5210**	0.578	2.1	ug/L	-50	Standard
	Se	82	3103.1	1.8	**24.5237**	0.601	2.4	ug/L	14	Standard
	Se-1	77	2151.2	2.8	**25.0663**	0.745	3.0	ug/L	42	Standard
>	**Ga**	71	14508.6	3.6				mg/L	42	Standard
	Rb	85	180073.9	1.5				ug/L	17	Standard
	Y	89	616764.0	1.9				ug/L	417098	Standard
>	**Rh**	103	85.0	11.8				ug/L	13	Standard
	Mo	98	3441.4	2.1	**1.1615**	0.033	2.8	ug/L	11	Standard
	Ag	107	170180.4	0.7	**23.5897**	0.078	0.3	ug/L	68	Standard
	Cd	111	63817.8	1.8	**27.5852**	0.736	2.7	mg/L	2	Standard
	Cd	114	155790.6	2.3	**27.4604**	0.877	3.2	ug/L	12	Standard
>	**In**	115	649912.7	0.9				ug/L	587441	Standard
	Sn	118	2755.3	3.8	**0.3317**	0.018	5.5	ug/L	497	Standard
	Sb	123	11515.0	1.7	**2.2251**	0.028	1.3	ug/L	78	Standard
	Ba	135	420339.6	0.5	**185.6246**	2.179	1.2	ug/L	24	Standard
	Ce	140	771001.7	1.2				ug/L	25	Standard
>	**Tb**	159	1033151.8	0.5				ug/L	939701	Standard
	Ho	165	11344.2	1.5				ug/L	10	Standard
	Tl	203	220759.0	0.5	**24.6088**	0.113	0.5	ug/L	4	Standard
	Tl	205	203485.6	0.4	**26.1371**	0.140	0.5	ug/L	2	Standard
	Pb	206	518067.3	0.6	**89.0511**	0.447	0.5	ug/L	240	Standard
	Pb	207	415032.4	0.7	**80.2896**	0.537	0.7	ug/L	198	Standard
	Pb	208	1813547.0	1.2	**88.8061**	1.200	1.4	ug/L	883	Standard
	U	238	196913.8	1.4	**26.2850**	0.405	1.5	ug/L	3	Standard
>	**Bi**	209	570191.4	0.2				ug/L	523984	Standard

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Na	23	6.7	43.3	**63.0881**	26.284	41.7	mg/L	0	Standard
Mg	24	761.7	8.6	**0.7448**	0.057	7.6	mg/L	37	Standard
K	39	698.3	9.3	**1.1574**	0.103	8.9	mg/L	38	Standard
Ca	43	761.7	2.5	**37.1357**	0.619	1.7	mg/L	10	Standard
Fe	54	13661.1	2.3	**9.4129**	0.352	3.7	mg/L	179	Standard
Fe	57	3945.5	4.9	**9.9839**	0.617	6.2	mg/L	335	Standard
> **Sc-1**	45	74033.8	1.5				mg/L	61029	Standard
Cl	35	29672.4	3.3				ug/L	20195	Standard
Kr	83	0.7	86.6				ug/L	4	Standard
Br	81	5120.9	2.8				ug/L	1547	Standard
P	31	21184.8	2.3				ug/L	15286	Standard
S	34	2585.2	3.6				ug/L	1572	Standard
Sr	88	278.3	7.3				ug/L	73	Standard
C	12	453.3	23.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	180.0	28.9				mg/L	3	Standard
Dy	164	18295.9	3.4				mg/L	6	Standard
Ho-1	165	11344.2	1.5				mg/L	10	Standard
Er	166	10350.2	2.2				mg/L	13	Standard
I	127	155575.8	4.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.881	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.661	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	110.635
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	108.818
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606120604SD WG574192-05
Sample Date/Time: Wednesday, June 29, 2016 18:22:18
Number of Replicates: 3
Autosampler Position: 242
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88318.4	2.5				ug/L	74699	Standard
	Be	9	28910.9	0.8	**27.7911**	0.552	2.0	ug/L	8	Standard
	Al	27	11678142.6	0.8	**67.2186**	1.350	2.0	ug/L	1493	Standard
	Sc	45	75929.8	1.2				ug/L	61029	Standard
	Ti	47	15202.6	0.9	**34.3685**	0.367	1.1	ug/L	35	Standard
	V	51	408247.6	0.9	**46.2682**	0.632	1.4	ug/L	1435	Standard
	Cr	52	411599.1	1.0	**46.7151**	0.586	1.3	ug/L	7635	Standard
	Cr	53	50226.5	2.4	**46.3783**	0.843	1.8	ug/L	363	Standard
	Mn	55	4064951.2	0.1	**501.7134**	5.151	1.0	ug/L	747	Standard
	Co	59	242783.8	0.7	**31.5662**	0.473	1.5	ug/L	234	Standard
	Ni	60	92537.7	0.8	**42.3583**	0.203	0.5	ug/L	215	Standard
	Cu	65	135365.1	1.4	**62.4070**	0.241	0.4	ug/L	104	Standard
	Zn	66	1025151.4	1.0	**806.2133**	6.015	0.7	ug/L	363	Standard
>	**Ge**	72	576071.4	1.0				ug/L	495142	Standard
	As	75	35892.9	0.1	**27.6040**	0.298	1.1	ug/L	-50	Standard
	Se	82	2975.5	0.8	**23.1647**	0.155	0.7	ug/L	14	Standard
	Se-1	77	2118.1	0.7	**24.3051**	0.149	0.6	ug/L	42	Standard
>	**Ga**	71	16053.5	1.5				mg/L	42	Standard
	Rb	85	192660.5	0.7				ug/L	17	Standard
	Y	89	633758.5	0.9				ug/L	417098	Standard
>	**Rh**	103	91.7	22.7				ug/L	13	Standard
	Mo	98	2104.9	2.7	**0.6926**	0.023	3.3	ug/L	11	Standard
	Ag	107	176068.8	0.4	**23.8725**	0.248	1.0	ug/L	68	Standard
	Cd	111	64701.8	0.7	**27.3512**	0.177	0.6	mg/L	2	Standard
	Cd	114	157399.0	1.1	**27.1310**	0.176	0.6	ug/L	12	Standard
>	**In**	115	664480.0	1.2				ug/L	587441	Standard
	Sn	118	2676.9	2.8	**0.3105**	0.015	4.8	ug/L	497	Standard
	Sb	123	10363.1	2.2	**1.9584**	0.055	2.8	ug/L	78	Standard
	Ba	135	439420.6	0.3	**189.8023**	2.264	1.2	ug/L	24	Standard
	Ce	140	842883.5	1.0				ug/L	25	Standard
>	**Tb**	159	1049787.1	1.3				ug/L	939701	Standard
	Ho	165	12211.6	1.7				ug/L	10	Standard
	Tl	203	222058.4	0.3	**24.4396**	0.316	1.3	ug/L	4	Standard
	Tl	205	202828.8	1.6	**25.7185**	0.095	0.4	ug/L	2	Standard
	Pb	206	574235.7	0.3	**97.4667**	1.839	1.9	ug/L	240	Standard
	Pb	207	457211.7	0.6	**87.3408**	1.861	2.1	ug/L	198	Standard
	Pb	208	1979847.3	0.4	**95.7233**	1.171	1.2	ug/L	883	Standard
	U	238	197274.4	0.9	**26.0018**	0.641	2.5	ug/L	3	Standard
>	**Bi**	209	577596.9	1.6				ug/L	523984	Standard

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Na	23	5.0	0.0	**46.3267**	0.533	1.2	mg/L	0	Standard
Mg	24	961.7	5.5	**0.9325**	0.047	5.0	mg/L	37	Standard
K	39	738.4	15.4	**1.1991**	0.216	18.0	mg/L	38	Standard
Ca	43	858.4	11.4	**41.0973**	5.443	13.2	mg/L	10	Standard
Fe	54	16143.5	2.3	**10.8618**	0.122	1.1	mg/L	179	Standard
Fe	57	4519.0	2.4	**11.2744**	0.427	3.8	mg/L	335	Standard
> **Sc-1**	45	75929.8	1.2				mg/L	61029	Standard
Cl	35	29136.0	1.4				ug/L	20195	Standard
Kr	83	1.0	0.0				ug/L	4	Standard
Br	81	5384.3	8.1				ug/L	1547	Standard
P	31	20994.5	3.6				ug/L	15286	Standard
S	34	2526.9	1.1				ug/L	1572	Standard
Sr	88	265.0	8.2				ug/L	73	Standard
C	12	466.7	15.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	193.3	16.6				mg/L	3	Standard
Dy	164	19678.1	2.3				mg/L	6	Standard
Ho-1	165	12211.6	1.7				mg/L	10	Standard
Er	166	11454.3	2.8				mg/L	13	Standard
I	127	133210.9	5.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.233	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		116.345	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	113.114
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	110.232
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606120605
Sample Date/Time: Wednesday, June 29, 2016 18:25:30
Number of Replicates: 3
Autosampler Position: 243
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90694.1	2.2				ug/L	74699	Standard
	Be	9	526.7	6.5	**0.5004**	0.031	6.1	ug/L	8	Standard
	Al	27	8237088.6	1.8	**46.1607**	0.953	2.1	ug/L	1493	Standard
	Sc	45	76241.4	2.3				ug/L	61029	Standard
	Ti	47	9939.3	1.0	**23.0163**	0.554	2.4	ug/L	35	Standard
	V	51	146708.3	2.5	**16.9369**	0.672	4.0	ug/L	1435	Standard
	Cr	52	214286.2	1.5	**24.4749**	0.700	2.9	ug/L	7635	Standard
	Cr	53	25651.7	1.8	**24.1415**	0.427	1.8	ug/L	363	Standard
	Mn	55	2369893.5	2.4	**300.0787**	12.076	4.0	ug/L	747	Standard
	Co	59	42091.1	2.2	**5.5844**	0.210	3.8	ug/L	234	Standard
	Ni	60	29674.7	1.4	**13.8532**	0.382	2.8	ug/L	215	Standard
	Cu	65	80108.6	1.5	**37.8555**	1.188	3.1	ug/L	104	Standard
	Zn	66	402296.4	1.3	**324.3434**	9.485	2.9	ug/L	363	Standard
>	**Ge**	72	561626.1	1.7				ug/L	495142	Standard
	As	75	4613.8	0.6	**3.6915**	0.048	1.3	ug/L	-50	Standard
	Se	82	73.3	11.4	**0.4501**	0.057	12.7	ug/L	14	Standard
	Se-1	77	107.3	9.4	**0.6736**	0.125	18.5	ug/L	42	Standard
>	**Ga**	71	10595.4	4.5				mg/L	42	Standard
	Rb	85	117987.7	1.5				ug/L	17	Standard
	Y	89	650208.5	0.3				ug/L	417098	Standard
>	**Rh**	103	85.0	38.6				ug/L	13	Standard
	Mo	98	1074.4	2.1	**0.3404**	0.008	2.3	ug/L	11	Standard
	Ag	107	1521.7	2.8	**0.1876**	0.005	2.8	ug/L	68	Standard
	Cd	111	14943.9	2.9	**6.1278**	0.124	2.0	mg/L	2	Standard
	Cd	114	36335.4	1.3	**6.0807**	0.042	0.7	ug/L	12	Standard
>	**In**	115	684218.1	1.0				ug/L	587441	Standard
	Sn	118	4600.7	0.6	**0.5815**	0.007	1.3	ug/L	497	Standard
	Sb	123	346.8	6.2	**0.0596**	0.003	5.7	ug/L	78	Standard
	Ba	135	305952.3	0.8	**128.3272**	1.108	0.9	ug/L	24	Standard
	Ce	140	926252.0	0.8				ug/L	25	Standard
>	**Tb**	159	1067500.9	0.3				ug/L	939701	Standard
	Ho	165	12695.3	1.4				ug/L	10	Standard
	Tl	203	780.0	9.1	**0.0850**	0.009	10.5	ug/L	4	Standard
	Tl	205	700.0	0.7	**0.0898**	0.001	1.1	ug/L	2	Standard
	Pb	206	317389.9	0.7	**54.3657**	1.082	2.0	ug/L	240	Standard
	Pb	207	249270.6	1.1	**48.0507**	1.100	2.3	ug/L	198	Standard
	Pb	208	1104553.9	2.1	**53.8955**	1.488	2.8	ug/L	883	Standard
	U	238	5524.0	2.1	**0.7309**	0.022	3.0	ug/L	3	Standard
>	**Bi**	209	572007.3	1.4				ug/L	523984	Standard

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Na	23	8.3	34.6	**77.0658**	27.245	35.4	mg/L	0	Standard
Mg	24	545.0	4.9	**0.4986**	0.038	7.7	mg/L	37	Standard
K	39	528.3	15.8	**0.8195**	0.134	16.4	mg/L	38	Standard
Ca	43	966.7	6.0	**46.3930**	3.592	7.7	mg/L	10	Standard
Fe	54	12851.8	4.3	**8.5861**	0.399	4.6	mg/L	179	Standard
Fe	57	3822.2	7.3	**9.3402**	1.007	10.8	mg/L	335	Standard
Sc-1	45	76241.4	2.3				mg/L	61029	Standard
Cl	35	29717.8	2.2				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	3207.0	9.1				ug/L	1547	Standard
P	31	20467.1	0.8				ug/L	15286	Standard
S	34	2505.2	3.0				ug/L	1572	Standard
Sr	88	263.3	8.6				ug/L	73	Standard
C	12	196.7	5.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	123.3	46.8				mg/L	3	Standard
Dy	164	19864.2	0.8				mg/L	6	Standard
Ho-1	165	12695.3	1.4				mg/L	10	Standard
Er	166	11821.3	4.6				mg/L	13	Standard
I	127	41200.9	0.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		121.413	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		113.427	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		116.474
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.165
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606120605PS WG574690-01
Sample Date/Time: Wednesday, June 29, 2016 18:28:41
Number of Replicates: 3
Autosampler Position: 244
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85371.5	1.3				ug/L	74699	Standard
	Be	9	57838.5	0.7	**57.4989**	0.995	1.7	ug/L	8	Standard
	Al	27	8190235.3	0.9	**48.7593**	1.052	2.2	ug/L	1493	Standard
	Sc	45	74174.5	1.1				ug/L	61029	Standard
	Ti	47	9905.9	1.1	**22.7993**	0.140	0.6	ug/L	35	Standard
	V	51	615589.0	1.1	**71.2575**	1.604	2.3	ug/L	1435	Standard
	Cr	52	662720.1	2.0	**77.3523**	0.990	1.3	ug/L	7635	Standard
	Cr	53	81212.1	1.6	**76.6855**	0.228	0.3	ug/L	363	Standard
	Mn	55	2850355.8	1.2	**358.7372**	7.553	2.1	ug/L	747	Standard
	Co	59	453959.9	1.8	**60.2304**	1.747	2.9	ug/L	234	Standard
	Ni	60	139316.4	1.9	**65.0924**	0.607	0.9	ug/L	215	Standard
	Cu	65	189057.7	1.5	**88.9267**	0.405	0.5	ug/L	104	Standard
	Zn	66	476114.4	1.0	**381.6097**	5.307	1.4	ug/L	363	Standard
>	**Ge**	72	564919.1	1.3				ug/L	495142	Standard
	As	75	71672.0	0.5	**56.1469**	0.522	0.9	ug/L	-50	Standard
	Se	82	6681.0	0.4	**53.2203**	0.482	0.9	ug/L	14	Standard
	Se-1	77	4575.0	1.8	**54.2855**	1.161	2.1	ug/L	42	Standard
>	**Ga**	71	10925.6	2.3				mg/L	42	Standard
	Rb	85	119128.2	1.4				ug/L	17	Standard
	Y	89	658944.3	2.5				ug/L	417098	Standard
>	**Rh**	103	98.3	24.0				ug/L	13	Standard
	Mo	98	1073.3	2.3	**0.3534**	0.015	4.1	ug/L	11	Standard
	Ag	107	364831.9	0.7	**49.9049**	1.416	2.8	ug/L	68	Standard
	Cd	111	132655.1	1.4	**56.5569**	1.029	1.8	mg/L	2	Standard
	Cd	114	321468.3	0.7	**55.8946**	1.680	3.0	ug/L	12	Standard
>	**In**	115	659074.5	2.5				ug/L	587441	Standard
	Sn	118	1318.4	1.7	**0.1066**	0.008	7.5	ug/L	497	Standard
	Sb	123	258576.1	0.4	**49.3799**	1.200	2.4	ug/L	78	Standard
	Ba	135	409891.1	0.5	**178.5483**	4.068	2.3	ug/L	24	Standard
	Ce	140	929186.0	0.4				ug/L	25	Standard
>	**Tb**	159	1023915.1	1.8				ug/L	939701	Standard
	Ho	165	12935.5	3.1				ug/L	10	Standard
	Tl	203	455240.8	0.8	**52.4471**	0.837	1.6	ug/L	4	Standard
	Tl	205	420642.4	0.2	**55.8346**	0.392	0.7	ug/L	2	Standard
	Pb	206	614831.5	0.9	**109.2366**	1.843	1.7	ug/L	240	Standard
	Pb	207	503849.3	0.9	**100.7500**	1.617	1.6	ug/L	198	Standard
	Pb	208	2170185.0	1.2	**109.8441**	2.227	2.0	ug/L	883	Standard
	U	238	393858.5	1.0	**54.3381**	1.023	1.9	ug/L	3	Standard
>	**Bi**	209	551780.7	0.8				ug/L	523984	Standard

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Na	23	10.0	86.6	**95.2332**	83.153	87.3	mg/L	0	Standard
Mg	24	453.3	5.6	**0.4164**	0.027	6.4	mg/L	37	Standard
K	39	480.0	7.5	**0.7589**	0.067	8.8	mg/L	38	Standard
Ca	43	940.0	10.6	**46.3668**	5.650	12.2	mg/L	10	Standard
Fe	54	12349.5	1.2	**8.4763**	0.023	0.3	mg/L	179	Standard
Fe	57	3702.1	2.7	**9.2777**	0.167	1.8	mg/L	335	Standard
Sc-1	45	74174.5	1.1				mg/L	61029	Standard
Cl	35	30087.8	0.9				ug/L	20195	Standard
Kr	83	2.7	43.3				ug/L	4	Standard
Br	81	3260.4	2.1				ug/L	1547	Standard
P	31	20787.6	1.7				ug/L	15286	Standard
S	34	2500.2	2.8				ug/L	1572	Standard
Sr	88	245.0	12.4				ug/L	73	Standard
C	12	160.0	54.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	103.3	22.3				mg/L	3	Standard
Dy	164	20338.3	3.5				mg/L	6	Standard
Ho-1	165	12935.5	3.1				mg/L	10	Standard
Er	166	11817.9	3.9				mg/L	13	Standard
I	127	39775.5	3.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		114.288	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		114.092	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	112.194
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	105.305
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1606120605SDL WG574690-02
Sample Date/Time: Wednesday, June 29, 2016 18:31:53
Number of Replicates: 3
Autosampler Position: 245
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84476.5	1.1				ug/L	74699	Standard
	Be	9	178.3	18.7	**0.1869**	0.035	18.6	ug/L	8	Standard
	Al	27	1736036.7	3.1	**10.4319**	0.283	2.7	ug/L	1493	Standard
	Sc	45	72059.3	1.7				ug/L	61029	Standard
	Ti	47	2123.5	6.6	**4.6249**	0.308	6.7	ug/L	35	Standard
	V	51	32734.7	3.8	**3.4666**	0.135	3.9	ug/L	1435	Standard
	Cr	52	51911.1	1.7	**4.8949**	0.101	2.1	ug/L	7635	Standard
	Cr	53	5774.4	3.1	**4.9492**	0.156	3.2	ug/L	363	Standard
	Mn	55	492914.2	2.0	**59.6732**	1.219	2.0	ug/L	747	Standard
	Co	59	9193.8	6.0	**1.1391**	0.070	6.1	ug/L	234	Standard
	Ni	60	6665.5	3.0	**2.8840**	0.083	2.9	ug/L	215	Standard
	Cu	65	17774.1	0.7	**7.9654**	0.025	0.3	ug/L	104	Standard
	Zn	66	87339.7	0.8	**67.1049**	0.286	0.4	ug/L	363	Standard
>	**Ge**	72	585998.9	0.5				ug/L	495142	Standard
	As	75	970.2	5.1	**0.7914**	0.035	4.4	ug/L	-50	Standard
	Se	82	25.1	35.6	**0.0547**	0.068	124.2	ug/L	14	Standard
	Se-1	77	82.0	5.6	**0.3262**	0.050	15.4	ug/L	42	Standard
>	**Ga**	71	2373.5	5.4				mg/L	42	Standard
	Rb	85	23598.4	1.4				ug/L	17	Standard
	Y	89	515408.4	0.8				ug/L	417098	Standard
>	**Rh**	103	21.7	35.3				ug/L	13	Standard
	Mo	98	369.9	37.1	**0.1174**	0.046	39.0	ug/L	11	Standard
	Ag	107	699.0	38.5	**0.0822**	0.037	44.7	ug/L	68	Standard
	Cd	111	3080.1	3.0	**1.2985**	0.040	3.1	mg/L	2	Standard
	Cd	114	7389.1	5.7	**1.2756**	0.072	5.6	ug/L	12	Standard
>	**In**	115	662403.8	0.2				ug/L	587441	Standard
	Sn	118	660.0	13.5	**0.0055**	0.013	245.5	ug/L	497	Standard
	Sb	123	2141.2	12.8	**0.4025**	0.052	13.0	ug/L	78	Standard
	Ba	135	63716.0	0.4	**27.5914**	0.127	0.5	ug/L	24	Standard
	Ce	140	193219.3	1.3				ug/L	25	Standard
>	**Tb**	159	1027182.9	1.4				ug/L	939701	Standard
	Ho	165	2611.9	6.2				ug/L	10	Standard
	Tl	203	353.7	43.7	**0.0374**	0.017	46.4	ug/L	4	Standard
	Tl	205	421.7	67.1	**0.0541**	0.036	67.5	ug/L	2	Standard
	Pb	206	67035.7	2.8	**11.3788**	0.381	3.4	ug/L	240	Standard
	Pb	207	53097.6	2.6	**10.1377**	0.324	3.2	ug/L	198	Standard
	Pb	208	229986.8	1.7	**11.1165**	0.256	2.3	ug/L	883	Standard
	U	238	1351.4	18.8	**0.1748**	0.035	19.9	ug/L	3	Standard
>	**Bi**	209	574350.4	0.6				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	130.0	13.3	**0.0772**	0.020	26.0	mg/L	37	Standard
K	39	128.3	6.0	**0.1263**	0.018	14.2	mg/L	38	Standard
Ca	43	216.7	23.7	**9.0911**	2.889	31.8	mg/L	10	Standard
Fe	54	2661.6	0.9	**1.7733**	0.039	2.2	mg/L	179	Standard
Fe	57	965.0	5.3	**1.7027**	0.101	5.9	mg/L	335	Standard
> **Sc-1**	45	72059.3	1.7				mg/L	61029	Standard
Cl	35	30260.9	1.5				ug/L	20195	Standard
Kr	83	0.3	173.2				ug/L	4	Standard
Br	81	2210.2	10.2				ug/L	1547	Standard
P	31	20780.9	2.4				ug/L	15286	Standard
S	34	2430.2	2.3				ug/L	1572	Standard
Sr	88	83.3	13.9				ug/L	73	Standard
C	12	56.7	40.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	17.3				mg/L	3	Standard
Dy	164	4484.9	5.6				mg/L	6	Standard
Ho-1	165	2611.9	6.2				mg/L	10	Standard
Er	166	2556.9	13.6				mg/L	13	Standard
I	127	10483.6	6.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.090	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		118.350	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.761
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.612
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606120605SDL WG574690-02
Sample Date/Time: Wednesday, June 29, 2016 18:35:04
Number of Replicates: 3
Autosampler Position: 246
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83239.9	3.6				ug/L	74699	Standard
	Be	9	38.3	32.8	**0.0467**	0.013	27.9	ug/L	8	Standard
	Al	27	353337.7	1.0	**2.1460**	0.078	3.6	ug/L	1493	Standard
	Sc	45	70061.7	2.7				ug/L	61029	Standard
	Ti	47	444.3	5.4	**0.9019**	0.065	7.2	ug/L	35	Standard
	V	51	7638.3	1.2	**0.6761**	0.009	1.3	ug/L	1435	Standard
	Cr	52	17382.6	1.1	**0.9981**	0.034	3.5	ug/L	7635	Standard
	Cr	53	1533.4	2.6	**1.0999**	0.009	0.8	ug/L	363	Standard
	Mn	55	100723.4	1.5	**12.3208**	0.101	0.8	ug/L	747	Standard
	Co	59	1988.5	0.8	**0.2223**	0.008	3.5	ug/L	234	Standard
	Ni	60	1493.7	0.8	**0.5638**	0.012	2.1	ug/L	215	Standard
	Cu	65	3674.4	3.3	**1.5981**	0.060	3.8	ug/L	104	Standard
	Zn	66	19238.9	1.8	**14.7255**	0.173	1.2	ug/L	363	Standard
>	**Ge**	72	574541.2	2.2				ug/L	495142	Standard
	As	75	156.2	2.1	**0.1799**	0.005	2.7	ug/L	-50	Standard
	Se	82	23.9	29.5	**0.0491**	0.053	108.8	ug/L	14	Standard
	Se-1	77	58.0	21.2	**0.0603**	0.130	215.1	ug/L	42	Standard
>	**Ga**	71	518.3	4.3				mg/L	42	Standard
	Rb	85	4807.4	2.9				ug/L	17	Standard
	Y	89	501442.7	1.9				ug/L	417098	Standard
>	**Rh**	103	25.0	20.0				ug/L	13	Standard
	Mo	98	84.6	15.3	**0.0217**	0.004	18.8	ug/L	11	Standard
	Ag	107	254.3	9.6	**0.0208**	0.003	15.4	ug/L	68	Standard
	Cd	111	620.8	2.0	**0.2487**	0.004	1.5	mg/L	2	Standard
	Cd	114	1552.7	9.2	**0.2596**	0.025	9.8	ug/L	12	Standard
>	**In**	115	679737.8	0.5				ug/L	587441	Standard
	Sn	118	525.0	13.7	**-0.0171**	0.010	60.3	ug/L	497	Standard
	Sb	123	593.1	26.9	**0.1056**	0.030	28.3	ug/L	78	Standard
	Ba	135	12802.7	1.3	**5.3901**	0.099	1.8	ug/L	24	Standard
	Ce	140	39412.9	3.5				ug/L	25	Standard
>	**Tb**	159	1032176.9	1.0				ug/L	939701	Standard
	Ho	165	550.0	19.7				ug/L	10	Standard
	Tl	203	66.7	15.4	**0.0056**	0.001	20.8	ug/L	4	Standard
	Tl	205	78.3	41.0	**0.0102**	0.004	40.5	ug/L	2	Standard
	Pb	206	13522.4	0.6	**2.2309**	0.023	1.0	ug/L	240	Standard
	Pb	207	10801.2	2.0	**1.9994**	0.022	1.1	ug/L	198	Standard
	Pb	208	47468.1	0.8	**2.2283**	0.042	1.9	ug/L	883	Standard
	U	238	258.3	8.4	**0.0297**	0.002	8.2	ug/L	3	Standard
>	**Bi**	209	576211.7	1.3				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	46.7	16.4	**-0.0125**	0.009	74.1	mg/L	37	Standard
K	39	58.3	35.7	**-0.0022**	0.039	1787.9	mg/L	38	Standard
Ca	43	95.0	32.0	**2.7333**	1.777	65.0	mg/L	10	Standard
Fe	54	697.3	2.7	**0.3769**	0.020	5.3	mg/L	179	Standard
Fe	57	380.0	7.9	**0.0519**	0.104	201.0	mg/L	335	Standard
> **Sc-1**	45	70061.7	2.7				mg/L	61029	Standard
Cl	35	30787.9	1.4				ug/L	20195	Standard
Kr	83	2.3	107.9				ug/L	4	Standard
Br	81	2130.1	1.6				ug/L	1547	Standard
P	31	20966.2	4.2				ug/L	15286	Standard
S	34	2485.2	3.8				ug/L	1572	Standard
Sr	88	90.0	33.3				ug/L	73	Standard
C	12	40.0	66.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	3	Standard
Dy	164	970.4	12.1				mg/L	6	Standard
Ho-1	165	550.0	19.7				mg/L	10	Standard
Er	166	480.0	14.6				mg/L	13	Standard
I	127	3620.4	13.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.434	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		116.036	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		115.712
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.967
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 18:38:18
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	82768.9	2.2				ug/L	74699	Standard
	Be	9	55586.8	2.9	**56.9851**	0.437	0.8	ug/L	8	Standard
	Al	27	8619622.5	1.7	**52.9268**	0.666	1.3	ug/L	1493	Standard
	Sc	45	69535.9	1.6				ug/L	61029	Standard
	Ti	47	45959.0	2.5	**108.3957**	2.700	2.5	ug/L	35	Standard
	V	51	452339.2	1.9	**53.3985**	1.095	2.1	ug/L	1435	Standard
	Cr	52	452917.5	1.6	**53.6621**	0.813	1.5	ug/L	7635	Standard
	Cr	53	54972.9	2.4	**52.8966**	1.385	2.6	ug/L	363	Standard
	Mn	55	414134.0	1.2	**53.0785**	0.725	1.4	ug/L	747	Standard
	Co	59	411024.9	0.5	**55.6590**	0.257	0.5	ug/L	234	Standard
	Ni	60	111206.0	1.9	**53.0242**	0.984	1.9	ug/L	215	Standard
	Cu	65	110023.1	1.1	**52.7940**	0.716	1.4	ug/L	104	Standard
	Zn	66	64745.4	0.8	**52.5833**	0.259	0.5	ug/L	363	Standard
>	Ge	72	553341.4	0.3				ug/L	495142	Standard
	As	75	65551.1	0.4	**52.4265**	0.227	0.4	ug/L	-50	Standard
	Se	82	6664.4	1.0	**54.1963**	0.405	0.7	ug/L	14	Standard
	Se-1	77	4501.0	1.7	**54.5222**	0.959	1.8	ug/L	42	Standard
>	Ga	71	63.3	38.9				mg/L	42	Standard
	Rb	85	948.4	4.5				ug/L	17	Standard
	Y	89	490323.1	1.2				ug/L	417098	Standard
>	Rh	103	18.3	41.7				ug/L	13	Standard
	Mo	98	304786.5	0.3	**99.6729**	0.315	0.3	ug/L	11	Standard
	Ag	107	371315.6	1.3	**49.6520**	0.733	1.5	ug/L	68	Standard
	Cd	111	119443.2	1.0	**49.7891**	0.404	0.8	mg/L	2	Standard
	Cd	114	290803.0	0.5	**49.4253**	0.213	0.4	ug/L	12	Standard
>	In	115	673907.8	0.2				ug/L	587441	Standard
	Sn	118	339134.4	2.1	**50.5123**	1.079	2.1	ug/L	497	Standard
	Sb	123	262026.6	0.8	**48.9184**	0.455	0.9	ug/L	78	Standard
	Ba	135	111822.5	0.7	**47.6088**	0.434	0.9	ug/L	24	Standard
	Ce	140	206.7	14.6				ug/L	25	Standard
>	Tb	159	1024624.4	0.5				ug/L	939701	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	457896.5	0.3	**51.5737**	0.953	1.8	ug/L	4	Standard
	Tl	205	420019.2	1.0	**54.5041**	0.795	1.5	ug/L	2	Standard
	Pb	206	290158.6	1.2	**50.3552**	0.541	1.1	ug/L	240	Standard
	Pb	207	256755.7	1.2	**50.1530**	0.630	1.3	ug/L	198	Standard
	Pb	208	1071548.3	0.3	**52.9883**	1.261	2.4	ug/L	883	Standard
	U	238	389229.1	0.1	**52.5000**	1.135	2.2	ug/L	3	Standard
>	Bi	209	564495.9	2.1				ug/L	523984	Standard

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Na	23	1.7	173.2	**16.7614**	29.023	173.2	mg/L	0	Standard
Mg	24	4642.4	0.2	**5.1955**	0.100	1.9	mg/L	37	Standard
K	39	2168.5	2.0	**4.0939**	0.144	3.5	mg/L	38	Standard
Ca	43	86.7	35.3	**2.2659**	1.624	71.7	mg/L	10	Standard
Fe	54	7113.4	2.2	**5.1545**	0.030	0.6	mg/L	179	Standard
Fe	57	2041.8	2.3	**5.0193**	0.241	4.8	mg/L	335	Standard
> **Sc-1**	45	69535.9	1.6				mg/L	61029	Standard
Cl	35	30041.8	1.0				ug/L	20195	Standard
Kr	83	1.3	86.6				ug/L	4	Standard
Br	81	1843.4	4.1				ug/L	1547	Standard
P	31	21683.8	2.5				ug/L	15286	Standard
S	34	2823.6	5.0				ug/L	1572	Standard
Sr	88	53.3	39.0				ug/L	73	Standard
C	12	53.3	78.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	12.9	179.7				mg/L	6	Standard
Ho-1	165	8.3	34.6				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	2093.5	24.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	113.970		
Al	27	105.854		
Sc	45			
Ti	47	108.396		
V	51	106.797		
Cr	52	107.324		
Cr	53			
Mn	55	106.157		
Co	59	111.318		
Ni	60	106.048		
Cu	65	105.588		
Zn	66	105.167		
> Ge	72		111.754	
As	75	104.853		
Se	82	108.393		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	99.673		
Ag	107	99.304		
Cd	111	99.578		
Cd	114			
In	115		114.719	
Sn	118	101.025		
Sb	123	97.837		
Ba	135	95.218		
Ce	140			
Tb	159			
Ho	165			
Tl	203	103.147		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.977		
U	238	105.000		
Bi	209		107.731	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Co	59	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 18:41:29
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83048.8	2.8				ug/L	74699	Standard
	Be	9	23.3	68.9	**0.0313**	0.016	52.2	ug/L	8	Standard
	Al	27	3078.7	25.1	**0.0054**	0.004	78.6	ug/L	1493	Standard
	Sc	45	71367.7	1.6				ug/L	61029	Standard
	Ti	47	35.3	33.5	**-0.0277**	0.025	91.3	ug/L	35	Standard
	V	51	1419.9	5.2	**-0.0309**	0.006	18.5	ug/L	1435	Standard
	Cr	52	7844.0	0.2	**-0.0958**	0.021	21.7	ug/L	7635	Standard
	Cr	53	443.3	5.7	**0.0910**	0.034	37.3	ug/L	363	Standard
	Mn	55	990.7	12.0	**-0.0236**	0.012	50.6	ug/L	747	Standard
	Co	59	281.0	9.0	**-0.0000**	0.003	39793.0	ug/L	234	Standard
	Ni	60	196.7	7.3	**-0.0319**	0.005	14.4	ug/L	215	Standard
	Cu	65	145.3	12.4	**-0.0353**	0.007	21.2	ug/L	104	Standard
	Zn	66	464.0	9.4	**-0.0826**	0.026	32.0	ug/L	363	Standard
>	**Ge**	72	564975.6	2.4				ug/L	495142	Standard
	As	75	-39.3	63.0	**0.0286**	0.020	68.3	ug/L	-50	Standard
	Se	82	26.6	20.4	**0.0737**	0.038	51.8	ug/L	14	Standard
	Se-1	77	58.7	15.8	**0.0805**	0.100	124.7	ug/L	42	Standard
>	**Ga**	71	41.7	25.0				mg/L	42	Standard
	Rb	85	35.0	75.6				ug/L	17	Standard
	Y	89	486175.7	0.9				ug/L	417098	Standard
>	**Rh**	103	21.7	58.1				ug/L	13	Standard
	Mo	98	275.2	23.2	**0.0821**	0.020	24.6	ug/L	11	Standard
	Ag	107	144.3	16.7	**0.0059**	0.003	51.4	ug/L	68	Standard
	Cd	111	18.2	29.8	**-0.0005**	0.002	416.8	mg/L	2	Standard
	Cd	114	40.0	61.5	**0.0045**	0.004	89.7	ug/L	12	Standard
>	**In**	115	690622.1	0.6				ug/L	587441	Standard
	Sn	118	806.7	10.4	**0.0228**	0.013	56.6	ug/L	497	Standard
	Sb	123	553.4	29.9	**0.0967**	0.030	31.3	ug/L	78	Standard
	Ba	135	70.0	42.9	**0.0130**	0.012	94.6	ug/L	24	Standard
	Ce	140	61.7	54.0				ug/L	25	Standard
>	**Tb**	159	1047202.6	1.6				ug/L	939701	Standard
	Ho	165	16.7	34.6				ug/L	10	Standard
	Tl	203	75.3	48.5	**0.0063**	0.004	58.9	ug/L	4	Standard
	Tl	205	73.3	27.6	**0.0093**	0.002	26.3	ug/L	2	Standard
	Pb	206	333.0	14.3	**-0.0156**	0.007	42.7	ug/L	240	Standard
	Pb	207	293.0	14.2	**-0.0150**	0.006	43.1	ug/L	198	Standard
	Pb	208	1234.7	14.5	**-0.0154**	0.007	47.2	ug/L	883	Standard
	U	238	61.3	33.0	**0.0035**	0.002	69.2	ug/L	3	Standard
>	**Bi**	209	587080.9	2.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	38.3	15.1	**-0.0227**	0.007	30.4	mg/L	37	Standard
K	39	33.3	22.9	**-0.0512**	0.014	27.0	mg/L	38	Standard
Ca	43	28.3	50.9	**-0.9868**	0.802	81.3	mg/L	10	Standard
Fe	54	132.7	11.9	**-0.0421**	0.011	25.9	mg/L	179	Standard
Fe	57	280.0	10.7	**-0.2593**	0.100	38.4	mg/L	335	Standard
Sc-1	45	71367.7	1.6				mg/L	61029	Standard
Cl	35	29768.6	1.4				ug/L	20195	Standard
Kr	83	1.3	173.2				ug/L	4	Standard
Br	81	2106.8	7.7				ug/L	1547	Standard
P	31	21775.6	2.2				ug/L	15286	Standard
S	34	2523.5	3.0				ug/L	1572	Standard
Sr	88	70.0	49.5				ug/L	73	Standard
C	12	66.7	48.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	19.2	48.3				mg/L	6	Standard
Ho-1	165	16.7	34.6				mg/L	10	Standard
Er	166	16.7	91.7				mg/L	13	Standard
I	127	1905.1	33.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		114.104	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		117.564
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		112.042
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606120701
Sample Date/Time: Wednesday, June 29, 2016 18:44:42
Number of Replicates: 3
Autosampler Position: 247
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82529.2	0.7				ug/L	74699	Standard
	Be	9	748.4	11.5	**0.7773**	0.092	11.9	ug/L	8	Standard
	Al	27	5186124.5	1.1	**31.9282**	0.368	1.2	ug/L	1493	Standard
	Sc	45	73214.8	0.3				ug/L	61029	Standard
	Ti	47	12465.8	1.5	**28.7779**	0.271	0.9	ug/L	35	Standard
	V	51	254152.3	1.7	**29.3595**	0.344	1.2	ug/L	1435	Standard
	Cr	52	145419.2	1.0	**16.2106**	0.127	0.8	ug/L	7635	Standard
	Cr	53	17483.4	2.8	**16.2818**	0.208	1.3	ug/L	363	Standard
	Mn	55	3993207.5	1.0	**503.6001**	3.344	0.7	ug/L	747	Standard
	Co	59	68748.0	1.0	**9.1067**	0.083	0.9	ug/L	234	Standard
	Ni	60	27938.1	3.3	**12.9787**	0.214	1.6	ug/L	215	Standard
	Cu	65	24664.7	1.5	**11.5352**	0.050	0.4	ug/L	104	Standard
	Zn	66	148101.8	1.7	**118.6204**	0.288	0.2	ug/L	363	Standard
>	**Ge**	72	563786.2	1.7				ug/L	495142	Standard
	As	75	6453.5	1.8	**5.1196**	0.031	0.6	ug/L	-50	Standard
	Se	82	62.5	2.1	**0.3624**	0.012	3.2	ug/L	14	Standard
	Se-1	77	114.0	16.7	**0.7504**	0.247	32.9	ug/L	42	Standard
>	**Ga**	71	11409.3	2.4				mg/L	42	Standard
	Rb	85	132848.2	0.6				ug/L	17	Standard
	Y	89	719521.7	0.4				ug/L	417098	Standard
>	**Rh**	103	43.3	43.7				ug/L	13	Standard
	Mo	98	809.7	3.4	**0.2640**	0.011	4.2	ug/L	11	Standard
	Ag	107	5298.9	1.5	**0.7088**	0.004	0.5	ug/L	68	Standard
	Cd	111	3980.4	2.6	**1.6822**	0.055	3.3	mg/L	2	Standard
	Cd	114	9713.7	1.4	**1.6793**	0.030	1.8	ug/L	12	Standard
>	**In**	115	661793.4	1.1				ug/L	587441	Standard
	Sn	118	911.7	2.8	**0.0439**	0.005	10.9	ug/L	497	Standard
	Sb	123	350.1	17.1	**0.0624**	0.012	19.0	ug/L	78	Standard
	Ba	135	341983.5	0.6	**148.3035**	0.748	0.5	ug/L	24	Standard
	Ce	140	2710163.1	0.4				ug/L	25	Standard
>	**Tb**	159	1034801.7	0.1				ug/L	939701	Standard
	Ho	165	19319.0	1.7				ug/L	10	Standard
	Tl	203	872.7	2.5	**0.0967**	0.002	2.5	ug/L	4	Standard
	Tl	205	843.4	5.5	**0.1098**	0.006	5.6	ug/L	2	Standard
	Pb	206	283131.4	1.0	**49.2257**	0.472	1.0	ug/L	240	Standard
	Pb	207	230315.5	1.3	**45.0642**	0.519	1.2	ug/L	198	Standard
	Pb	208	999318.0	0.9	**49.4947**	0.507	1.0	ug/L	883	Standard
	U	238	4899.8	1.7	**0.6576**	0.010	1.6	ug/L	3	Standard
>	**Bi**	209	563366.5	0.2				ug/L	523984	Standard

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Na	23	5.0	0.0	**48.0405**	0.159	0.3	mg/L	0	Standard
Mg	24	875.0	7.7	**0.8766**	0.075	8.6	mg/L	37	Standard
K	39	536.7	5.1	**0.8747**	0.054	6.2	mg/L	38	Standard
Ca	43	571.7	16.7	**27.5670**	4.925	17.9	mg/L	10	Standard
Fe	54	14788.8	1.9	**10.3138**	0.228	2.2	mg/L	179	Standard
Fe	57	4073.9	8.9	**10.4697**	1.059	10.1	mg/L	335	Standard
> **Sc-1**	45	73214.8	0.3				mg/L	61029	Standard
Cl	35	28264.3	0.5				ug/L	20195	Standard
Kr	83	2.0	0.0				ug/L	4	Standard
Br	81	3023.6	7.8				ug/L	1547	Standard
P	31	20599.0	2.2				ug/L	15286	Standard
S	34	2595.2	1.7				ug/L	1572	Standard
Sr	88	203.3	16.4				ug/L	73	Standard
C	12	130.0	40.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	150.0	43.7				mg/L	3	Standard
Dy	164	31532.4	1.2				mg/L	6	Standard
Ho-1	165	19319.0	1.7				mg/L	10	Standard
Er	166	17720.4	2.1				mg/L	13	Standard
I	127	25842.0	0.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.483	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		113.863	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	112.657
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	107.516
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606120702
Sample Date/Time: Wednesday, June 29, 2016 18:47:54
Number of Replicates: 3
Autosampler Position: 248
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85381.8	3.5				ug/L	74699	Standard
	Be	9	623.3	3.3	**0.6272**	0.018	2.8	ug/L	8	Standard
	Al	27	4620203.8	1.9	**27.5041**	0.647	2.4	ug/L	1493	Standard
	Sc	45	75576.5	3.2				ug/L	61029	Standard
	Ti	47	6206.6	0.5	**14.3105**	0.192	1.3	ug/L	35	Standard
	V	51	134133.3	1.8	**15.4410**	0.153	1.0	ug/L	1435	Standard
	Cr	52	96500.3	0.7	**10.4416**	0.108	1.0	ug/L	7635	Standard
	Cr	53	11224.2	2.7	**10.3669**	0.448	4.3	ug/L	363	Standard
	Mn	55	3577332.4	1.7	**452.2740**	8.609	1.9	ug/L	747	Standard
	Co	59	47345.9	1.4	**6.2757**	0.086	1.4	ug/L	234	Standard
	Ni	60	24689.4	1.0	**11.4869**	0.101	0.9	ug/L	215	Standard
	Cu	65	29948.9	2.1	**14.0640**	0.244	1.7	ug/L	104	Standard
	Zn	66	164514.2	1.7	**132.1464**	1.033	0.8	ug/L	363	Standard
>	**Ge**	72	562390.3	1.6				ug/L	495142	Standard
	As	75	2776.0	3.7	**2.2412**	0.056	2.5	ug/L	-50	Standard
	Se	82	106.3	15.9	**0.7139**	0.124	17.3	ug/L	14	Standard
	Se-1	77	132.3	11.0	**0.9743**	0.190	19.5	ug/L	42	Standard
>	**Ga**	71	12940.5	1.1				mg/L	42	Standard
	Rb	85	250383.8	1.2				ug/L	17	Standard
	Y	89	695657.2	0.8				ug/L	417098	Standard
>	**Rh**	103	35.0	62.3				ug/L	13	Standard
	Mo	98	1645.8	3.3	**0.5188**	0.023	4.4	ug/L	11	Standard
	Ag	107	671.7	7.7	**0.0746**	0.007	9.4	ug/L	68	Standard
	Cd	111	2017.5	2.8	**0.8116**	0.028	3.5	mg/L	2	Standard
	Cd	114	4822.6	1.0	**0.7964**	0.005	0.7	ug/L	12	Standard
>	**In**	115	691832.3	1.1				ug/L	587441	Standard
	Sn	118	616.7	6.1	**-0.0050**	0.006	126.3	ug/L	497	Standard
	Sb	123	493.2	8.1	**0.0855**	0.008	9.1	ug/L	78	Standard
	Ba	135	281871.8	0.7	**116.9321**	1.732	1.5	ug/L	24	Standard
	Ce	140	1017603.0	1.2				ug/L	25	Standard
>	**Tb**	159	1062512.9	1.9				ug/L	939701	Standard
	Ho	165	14416.9	1.8				ug/L	10	Standard
	Tl	203	1059.0	3.0	**0.1166**	0.005	4.1	ug/L	4	Standard
	Tl	205	896.7	14.9	**0.1158**	0.019	16.8	ug/L	2	Standard
	Pb	206	100858.6	1.2	**17.3191**	0.532	3.1	ug/L	240	Standard
	Pb	207	81475.8	1.0	**15.7413**	0.458	2.9	ug/L	198	Standard
	Pb	208	356757.6	0.9	**17.4487**	0.446	2.6	ug/L	883	Standard
	U	238	6683.8	3.5	**0.8902**	0.048	5.4	ug/L	3	Standard
>	**Bi**	209	569106.4	1.9				ug/L	523984	Standard

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Na	23	3.3	86.6	**31.5301**	27.313	86.6	mg/L	0	Standard
Mg	24	745.0	7.0	**0.7121**	0.061	8.5	mg/L	37	Standard
K	39	773.4	6.0	**1.2683**	0.120	9.5	mg/L	38	Standard
Ca	43	171.7	3.4	**6.2441**	0.546	8.7	mg/L	10	Standard
Fe	54	10724.1	1.5	**7.2104**	0.318	4.4	mg/L	179	Standard
Fe	57	2831.9	1.0	**6.7023**	0.187	2.8	mg/L	335	Standard
> **Sc-1**	45	75576.5	3.2				mg/L	61029	Standard
Cl	35	27596.4	1.5				ug/L	20195	Standard
Kr	83	4.0	66.1				ug/L	4	Standard
Br	81	8432.3	2.7				ug/L	1547	Standard
P	31	20674.1	3.5				ug/L	15286	Standard
S	34	2360.2	7.8				ug/L	1572	Standard
Sr	88	120.0	18.2				ug/L	73	Standard
C	12	350.0	15.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	106.7	43.3				mg/L	3	Standard
Dy	164	23142.4	1.5				mg/L	6	Standard
Ho-1	165	14416.9	1.8				mg/L	10	Standard
Er	166	13422.6	4.3				mg/L	13	Standard
I	127	174464.7	3.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.301	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		113.582	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		117.770
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.611
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606120801
Sample Date/Time: Wednesday, June 29, 2016 18:51:05
Number of Replicates: 3
Autosampler Position: 249
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83030.4	3.3				ug/L	74699	Standard
	Be	9	1115.0	11.0	**1.1453**	0.091	8.0	ug/L	8	Standard
	Al	27	17314833.4	0.9	**106.0421**	2.666	2.5	ug/L	1493	Standard
	Sc	45	77183.1	5.1				ug/L	61029	Standard
	Ti	47	40548.2	1.5	**95.7436**	2.793	2.9	ug/L	35	Standard
	V	51	251782.0	1.4	**29.6946**	1.634	5.5	ug/L	1435	Standard
	Cr	52	243737.7	2.0	**28.4388**	0.710	2.5	ug/L	7635	Standard
	Cr	53	29872.8	2.3	**28.6239**	0.690	2.4	ug/L	363	Standard
	Mn	55	3685844.9	1.5	**474.5740**	27.736	5.8	ug/L	747	Standard
	Co	59	66271.6	1.6	**8.9620**	0.528	5.9	ug/L	234	Standard
	Ni	60	46026.2	2.6	**21.8948**	0.433	2.0	ug/L	215	Standard
	Cu	65	42002.8	1.5	**20.1164**	0.608	3.0	ug/L	104	Standard
	Zn	66	111824.0	2.6	**91.2379**	1.710	1.9	ug/L	363	Standard
>	**Ge**	72	553103.7	4.4				ug/L	495142	Standard
	As	75	5557.5	3.1	**4.5033**	0.093	2.1	ug/L	-50	Standard
	Se	82	102.2	5.1	**0.6977**	0.072	10.3	ug/L	14	Standard
	Se-1	77	134.3	12.1	**1.0314**	0.270	26.2	ug/L	42	Standard
>	**Ga**	71	24266.1	1.0				mg/L	42	Standard
	Rb	85	181545.0	2.7				ug/L	17	Standard
	Y	89	698995.8	3.0				ug/L	417098	Standard
>	**Rh**	103	88.3	6.5				ug/L	13	Standard
	Mo	98	2397.1	2.7	**0.8492**	0.049	5.8	ug/L	11	Standard
	Ag	107	1012.7	3.0	**0.1348**	0.009	6.5	ug/L	68	Standard
	Cd	111	911.2	3.1	**0.4060**	0.012	2.9	mg/L	2	Standard
	Cd	114	2080.2	4.3	**0.3830**	0.011	2.9	ug/L	12	Standard
>	**In**	115	618664.5	3.1				ug/L	587441	Standard
	Sn	118	1240.1	3.1	**0.1071**	0.013	12.0	ug/L	497	Standard
	Sb	123	1640.7	2.7	**0.3299**	0.019	5.8	ug/L	78	Standard
	Ba	135	534847.9	1.0	**248.3132**	9.882	4.0	ug/L	24	Standard
	Ce	140	1227932.9	1.4				ug/L	25	Standard
>	**Tb**	159	991058.9	3.3				ug/L	939701	Standard
	Ho	165	19152.1	0.5				ug/L	10	Standard
	Tl	203	1084.7	2.8	**0.1294**	0.004	2.8	ug/L	4	Standard
	Tl	205	976.7	6.4	**0.1361**	0.004	2.8	ug/L	2	Standard
	Pb	206	122644.8	1.6	**22.8364**	1.340	5.9	ug/L	240	Standard
	Pb	207	98294.5	1.0	**20.5914**	1.111	5.4	ug/L	198	Standard
	Pb	208	423360.3	0.4	**22.4444**	1.000	4.5	ug/L	883	Standard
	U	238	7556.2	1.8	**1.0902**	0.045	4.1	ug/L	3	Standard
>	**Bi**	209	526041.8	4.3				ug/L	523984	Standard

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Na	23	10.0	50.0	**92.8331**	50.540	54.4	mg/L	0	Standard
Mg	24	373.3	13.0	**0.3164**	0.050	15.9	mg/L	37	Standard
K	39	846.7	3.0	**1.3673**	0.064	4.7	mg/L	38	Standard
Ca	43	1881.8	8.7	**91.3781**	4.657	5.1	mg/L	10	Standard
Fe	54	16605.4	3.8	**11.0236**	0.942	8.5	mg/L	179	Standard
Fe	57	5247.6	6.9	**13.0290**	0.645	4.9	mg/L	335	Standard
> **Sc-1**	45	77183.1	5.1				mg/L	61029	Standard
Cl	35	28165.5	0.9				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	3540.4	14.7				ug/L	1547	Standard
P	31	23239.5	5.6				ug/L	15286	Standard
S	34	2426.9	3.5				ug/L	1572	Standard
Sr	88	415.0	11.5				ug/L	73	Standard
C	12	173.3	6.7				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	66.7	60.6				mg/L	3	Standard
Dy	164	30988.1	3.0				mg/L	6	Standard
Ho-1	165	19152.1	0.5				mg/L	10	Standard
Er	166	17717.0	2.5				mg/L	13	Standard
I	127	27493.3	1.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.154	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.706	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.315
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.393
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606120802
Sample Date/Time: Wednesday, June 29, 2016 18:54:17
Number of Replicates: 3
Autosampler Position: 250
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88923.6	2.8				ug/L	74699	Standard
	Be	9	661.7	11.4	**0.6387**	0.067	10.5	ug/L	8	Standard
	Al	27	15492795.6	1.0	**88.5762**	1.812	2.0	ug/L	1493	Standard
	Sc	45	80386.0	1.0				ug/L	61029	Standard
	Ti	47	20524.2	1.6	**45.7756**	1.470	3.2	ug/L	35	Standard
	V	51	220306.5	1.3	**24.5176**	0.534	2.2	ug/L	1435	Standard
	Cr	52	643370.5	1.6	**72.5457**	2.733	3.8	ug/L	7635	Standard
	Cr	53	78035.6	3.0	**71.2237**	3.200	4.5	ug/L	363	Standard
	Mn	55	3332205.3	1.0	**405.3306**	7.931	2.0	ug/L	747	Standard
	Co	59	49008.5	0.3	**6.2510**	0.159	2.5	ug/L	234	Standard
	Ni	60	36936.6	2.2	**16.5952**	0.689	4.2	ug/L	215	Standard
	Cu	65	48506.2	1.8	**21.9786**	0.680	3.1	ug/L	104	Standard
	Zn	66	431997.7	0.4	**334.6356**	8.273	2.5	ug/L	363	Standard
>	**Ge**	72	584593.6	2.3				ug/L	495142	Standard
	As	75	4706.8	0.7	**3.6196**	0.063	1.8	ug/L	-50	Standard
	Se	82	170.0	3.4	**1.1737**	0.017	1.5	ug/L	14	Standard
	Se-1	77	180.7	11.7	**1.4743**	0.259	17.6	ug/L	42	Standard
>	**Ga**	71	19881.4	1.3				mg/L	42	Standard
	Rb	85	200103.0	1.8				ug/L	17	Standard
	Y	89	657665.4	0.6				ug/L	417098	Standard
>	**Rh**	103	171.7	7.3				ug/L	13	Standard
	Mo	98	1216.9	1.5	**0.3934**	0.011	2.8	ug/L	11	Standard
	Ag	107	1006.0	3.7	**0.1221**	0.007	5.4	ug/L	68	Standard
	Cd	111	4519.9	2.1	**1.8818**	0.049	2.6	mg/L	2	Standard
	Cd	114	11256.2	1.6	**1.9163**	0.030	1.6	ug/L	12	Standard
>	**In**	115	672127.4	1.5				ug/L	587441	Standard
	Sn	118	1105.0	15.3	**0.0707**	0.026	36.7	ug/L	497	Standard
	Sb	123	229.1	10.3	**0.0387**	0.005	12.5	ug/L	78	Standard
	Ba	135	361495.2	1.1	**154.3886**	3.928	2.5	ug/L	24	Standard
	Ce	140	936346.8	0.9				ug/L	25	Standard
>	**Tb**	159	1070983.4	3.2				ug/L	939701	Standard
	Ho	165	13711.2	2.1				ug/L	10	Standard
	Tl	203	1023.7	3.8	**0.1103**	0.006	5.8	ug/L	4	Standard
	Tl	205	995.0	4.8	**0.1256**	0.007	5.2	ug/L	2	Standard
	Pb	206	1451242.4	0.5	**244.9779**	5.608	2.3	ug/L	240	Standard
	Pb	207	1189055.7	0.7	**225.9168**	5.756	2.5	ug/L	198	Standard
	Pb	208	5216722.9	1.2	**250.8847**	7.037	2.8	ug/L	883	Standard
	U	238	9013.7	1.2	**1.1768**	0.034	2.9	ug/L	3	Standard
>	**Bi**	209	581076.6	1.9				ug/L	523984	Standard

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Na	23	6.7	173.2	**57.8631**	100.213	173.2	mg/L	0	Standard
Mg	24	553.3	14.7	**0.4776**	0.083	17.4	mg/L	37	Standard
K	39	1005.0	9.9	**1.5724**	0.167	10.6	mg/L	38	Standard
Ca	43	1240.1	6.3	**56.9237**	3.160	5.6	mg/L	10	Standard
Fe	54	17498.7	0.5	**11.1262**	0.159	1.4	mg/L	179	Standard
Fe	57	5124.2	2.5	**12.1481**	0.285	2.3	mg/L	335	Standard
Sc-1	45	80386.0	1.0				mg/L	61029	Standard
Cl	35	28790.7	0.3				ug/L	20195	Standard
Kr	83	3.0	33.3				ug/L	4	Standard
Br	81	8875.9	6.3				ug/L	1547	Standard
P	31	20292.0	8.4				ug/L	15286	Standard
S	34	2478.5	4.1				ug/L	1572	Standard
Sr	88	438.3	2.4				ug/L	73	Standard
C	12	323.3	22.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	136.7	34.6				mg/L	3	Standard
Dy	164	22618.6	1.5				mg/L	6	Standard
Ho-1	165	13711.2	2.1				mg/L	10	Standard
Er	166	12578.6	1.5				mg/L	13	Standard
I	127	73652.8	8.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.043	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		118.066	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	114.416
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	110.896
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1606129101
Sample Date/Time: Wednesday, June 29, 2016 18:57:28
Number of Replicates: 3
Autosampler Position: 251
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89580.8	1.7				ug/L	74699	Standard
	Be	9	360.0	14.7	**0.3489**	0.053	15.3	ug/L	8	Standard
	Al	27	3187676.8	1.0	**18.0772**	0.341	1.9	ug/L	1493	Standard
	Sc	45	73445.9	1.6				ug/L	61029	Standard
	Ti	47	23807.7	6.7	**54.3513**	2.712	5.0	ug/L	35	Standard
	V	51	62405.7	2.9	**6.9715**	0.072	1.0	ug/L	1435	Standard
	Cr	52	100378.5	1.9	**10.7261**	0.052	0.5	ug/L	7635	Standard
	Cr	53	11571.1	3.7	**10.5314**	0.357	3.4	ug/L	363	Standard
	Mn	55	3995310.3	0.7	**497.7426**	6.886	1.4	ug/L	747	Standard
	Co	59	12689.3	1.5	**1.6298**	0.018	1.1	ug/L	234	Standard
	Ni	60	15702.5	1.8	**7.1516**	0.026	0.4	ug/L	215	Standard
	Cu	65	1030601.6	2.5	**480.2115**	2.610	0.5	ug/L	104	Standard
	Zn	66	647092.9	2.6	**513.3926**	3.363	0.7	ug/L	363	Standard
>	**Ge**	72	570780.0	2.0				ug/L	495142	Standard
	As	75	23305.2	1.3	**18.1104**	0.138	0.8	ug/L	-50	Standard
	Se	82	481.4	2.5	**3.6678**	0.121	3.3	ug/L	14	Standard
	Se-1	77	377.3	9.1	**3.8600**	0.402	10.4	ug/L	42	Standard
>	**Ga**	71	43582.7	4.5				mg/L	42	Standard
	Rb	85	26201.0	3.0				ug/L	17	Standard
	Y	89	551000.5	1.0				ug/L	417098	Standard
>	**Rh**	103	178.3	18.7				ug/L	13	Standard
	Mo	98	21134.4	1.3	**6.6476**	0.191	2.9	ug/L	11	Standard
	Ag	107	15204.6	2.3	**1.9441**	0.032	1.6	ug/L	68	Standard
	Cd	111	1466.1	5.3	**0.5801**	0.025	4.4	mg/L	2	Standard
	Cd	114	3712.7	3.5	**0.6050**	0.007	1.1	ug/L	12	Standard
>	**In**	115	700391.9	2.5				ug/L	587441	Standard
	Sn	118	18187.6	2.5	**2.5189**	0.131	5.2	ug/L	497	Standard
	Sb	123	7709.0	2.8	**1.3807**	0.022	1.6	ug/L	78	Standard
	Ba	135	971846.2	1.7	**398.2918**	4.112	1.0	ug/L	24	Standard
	Ce	140	138638.2	1.7				ug/L	25	Standard
>	**Tb**	159	1070571.9	3.6				ug/L	939701	Standard
	Ho	165	2720.2	8.8				ug/L	10	Standard
	Tl	203	657.3	30.6	**0.0422**	0.014	32.0	ug/L	4	Standard
	Tl	205	563.3	26.0	**0.0436**	0.011	26.1	ug/L	2	Standard
	Pb	206	89328.6	2.2	**9.1434**	0.147	1.6	ug/L	240	Standard
	Pb	207	72922.4	1.4	**8.3969**	0.107	1.3	ug/L	198	Standard
	Pb	208	316979.9	0.6	**9.2432**	0.217	2.4	ug/L	883	Standard
	U	238	78871.8	1.7	**6.3120**	0.222	3.5	ug/L	3	Standard
>	**Bi**	209	950965.0	2.0				ug/L	523984	Standard

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Na	23	5.0	173.2	**48.7719**	84.467	173.2	mg/L	0	Standard
Mg	24	613.3	9.8	**0.5934**	0.073	12.3	mg/L	37	Standard
K	39	323.3	7.3	**0.4798**	0.044	9.2	mg/L	38	Standard
Ca	43	198.3	14.8	**7.8949**	1.614	20.4	mg/L	10	Standard
Fe	54	8830.8	5.5	**6.0856**	0.392	6.4	mg/L	179	Standard
Fe	57	2530.2	2.9	**6.0730**	0.228	3.8	mg/L	335	Standard
Sc-1	45	73445.9	1.6				mg/L	61029	Standard
Cl	35	25952.9	0.3				ug/L	20195	Standard
Kr	83	2.0	100.0				ug/L	4	Standard
Br	81	8005.5	5.5				ug/L	1547	Standard
P	31	19060.3	1.8				ug/L	15286	Standard
S	34	1756.8	1.0				ug/L	1572	Standard
Sr	88	518.3	2.8				ug/L	73	Standard
C	12	1226.7	9.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1270.1	11.0				mg/L	3	Standard
Dy	164	4157.3	8.4				mg/L	6	Standard
Ho-1	165	2720.2	8.8				mg/L	10	Standard
Er	166	2643.6	8.4				mg/L	13	Standard
I	127	191520.8	4.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		119.923	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		115.276	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	119.228
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	181.487
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Cu 65 Upper, S, EEE	Cu	65	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135	
Bi 209 Int Std for sample	Bi	209	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606138101
Sample Date/Time: Wednesday, June 29, 2016 19:00:40
Number of Replicates: 3
Autosampler Position: 252
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	96098.8	1.2				ug/L	74699	Standard
	Be	9	1650.1	8.9	**1.4642**	0.124	8.5	ug/L	8	Standard
	Al	27	23502208.7	0.7	**124.3024**	1.056	0.8	ug/L	1493	Standard
	Sc	45	81510.4	1.4				ug/L	61029	Standard
	Ti	47	9357.2	0.5	**21.1737**	0.376	1.8	ug/L	35	Standard
	V	51	257600.4	1.3	**29.2098**	0.781	2.7	ug/L	1435	Standard
	Cr	52	224787.2	0.6	**25.1231**	0.400	1.6	ug/L	7635	Standard
	Cr	53	27600.1	3.0	**25.4059**	0.410	1.6	ug/L	363	Standard
	Mn	55	5543699.6	0.4	**686.2289**	8.924	1.3	ug/L	747	Standard
	Co	59	117640.6	0.9	**15.3216**	0.399	2.6	ug/L	234	Standard
	Ni	60	64249.3	0.8	**29.4562**	0.340	1.2	ug/L	215	Standard
	Cu	65	57365.7	1.4	**26.4629**	0.232	0.9	ug/L	104	Standard
	Zn	66	103406.0	1.2	**81.1457**	1.055	1.3	ug/L	363	Standard
>	**Ge**	72	574477.7	1.7				ug/L	495142	Standard
	As	75	12246.4	0.5	**9.4841**	0.110	1.2	ug/L	-50	Standard
	Se	82	125.1	3.5	**0.8446**	0.024	2.8	ug/L	14	Standard
	Se-1	77	164.3	2.5	**1.3176**	0.070	5.3	ug/L	42	Standard
>	**Ga**	71	29587.2	2.2				mg/L	42	Standard
	Rb	85	313937.1	2.6				ug/L	17	Standard
	Y	89	822636.0	0.8				ug/L	417098	Standard
>	**Rh**	103	38.3	49.4				ug/L	13	Standard
	Mo	98	757.2	4.8	**0.2454**	0.010	4.2	ug/L	11	Standard
	Ag	107	953.4	1.4	**0.1164**	0.003	2.3	ug/L	68	Standard
	Cd	111	1588.5	0.6	**0.6638**	0.009	1.4	mg/L	2	Standard
	Cd	114	3783.2	0.8	**0.6501**	0.009	1.4	ug/L	12	Standard
>	**In**	115	664448.0	1.0				ug/L	587441	Standard
	Sn	118	643.3	5.2	**0.0026**	0.004	152.2	ug/L	497	Standard
	Sb	123	269.8	13.5	**0.0469**	0.007	15.6	ug/L	78	Standard
	Ba	135	662128.9	0.5	**286.0118**	2.987	1.0	ug/L	24	Standard
	Ce	140	1687892.1	1.1				ug/L	25	Standard
>	**Tb**	159	1062435.8	0.8				ug/L	939701	Standard
	Ho	165	27182.7	2.2				ug/L	10	Standard
	Tl	203	1364.1	4.3	**0.1521**	0.007	4.3	ug/L	4	Standard
	Tl	205	1335.1	6.0	**0.1737**	0.010	5.7	ug/L	2	Standard
	Pb	206	284182.0	0.3	**49.3998**	0.214	0.4	ug/L	240	Standard
	Pb	207	234533.7	1.0	**45.8828**	0.448	1.0	ug/L	198	Standard
	Pb	208	1023299.4	0.1	**50.6751**	0.295	0.6	ug/L	883	Standard
	U	238	6312.3	2.1	**0.8483**	0.014	1.7	ug/L	3	Standard
>	**Bi**	209	563477.4	0.7				ug/L	523984	Standard

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Na	23	3.3	86.6	**28.8214**	24.963	86.6	mg/L	0	Standard
Mg	24	151.7	18.2	**0.0816**	0.027	33.5	mg/L	37	Standard
K	39	1206.7	9.1	**1.8839**	0.198	10.5	mg/L	38	Standard
Ca	43	230.0	38.1	**8.3188**	4.002	48.1	mg/L	10	Standard
Fe	54	27991.0	1.6	**17.6350**	0.523	3.0	mg/L	179	Standard
Fe	57	7366.8	1.7	**17.6771**	0.511	2.9	mg/L	335	Standard
Sc-1	45	81510.4	1.4				mg/L	61029	Standard
Cl	35	28359.2	2.3				ug/L	20195	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	4510.7	3.7				ug/L	1547	Standard
P	31	20567.3	1.1				ug/L	15286	Standard
S	34	2398.5	2.1				ug/L	1572	Standard
Sr	88	138.3	12.7				ug/L	73	Standard
C	12	220.0	4.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	113.3	35.7				mg/L	3	Standard
Dy	164	44981.5	2.0				mg/L	6	Standard
Ho-1	165	27182.7	2.2				mg/L	10	Standard
Er	166	24606.7	4.9				mg/L	13	Standard
I	127	24668.4	3.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		128.648	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		116.023	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.109
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.537
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606138101
Sample Date/Time: Wednesday, June 29, 2016 19:03:51
Number of Replicates: 3
Autosampler Position: 253
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89738.3	1.4				ug/L	74699	Standard
	Be	9	41.7	6.9	**0.0470**	0.003	6.5	ug/L	8	Standard
	Al	27	505536.2	3.8	**2.8498**	0.087	3.1	ug/L	1493	Standard
	Sc	45	72476.3	1.0				ug/L	61029	Standard
	Ti	47	238.7	3.3	**0.4178**	0.015	3.5	ug/L	35	Standard
	V	51	6994.4	2.1	**0.5793**	0.021	3.7	ug/L	1435	Standard
	Cr	52	13067.6	0.8	**0.4515**	0.011	2.5	ug/L	7635	Standard
	Cr	53	1060.0	5.3	**0.6298**	0.052	8.3	ug/L	363	Standard
	Mn	55	117506.1	2.5	**13.9721**	0.301	2.2	ug/L	747	Standard
	Co	59	2633.2	1.9	**0.2964**	0.006	2.1	ug/L	234	Standard
	Ni	60	1579.1	3.6	**0.5819**	0.030	5.1	ug/L	215	Standard
	Cu	65	1415.4	1.9	**0.5327**	0.017	3.2	ug/L	104	Standard
	Zn	66	4415.0	0.5	**2.9272**	0.025	0.9	ug/L	363	Standard
>	**Ge**	72	591804.3	0.7				ug/L	495142	Standard
	As	75	188.6	12.3	**0.2004**	0.017	8.4	ug/L	-50	Standard
	Se	82	17.7	38.3	**-0.0030**	0.051	1669.1	ug/L	14	Standard
	Se-1	77	53.3	24.5	**-0.0120**	0.145	1206.4	ug/L	42	Standard
>	**Ga**	71	651.7	3.8				mg/L	42	Standard
	Rb	85	6646.5	2.9				ug/L	17	Standard
	Y	89	496582.4	1.4				ug/L	417098	Standard
>	**Rh**	103	10.0	86.6				ug/L	13	Standard
	Mo	98	63.7	13.0	**0.0149**	0.003	17.4	ug/L	11	Standard
	Ag	107	138.0	7.0	**0.0054**	0.001	21.7	ug/L	68	Standard
	Cd	111	41.6	25.2	**0.0093**	0.004	47.8	mg/L	2	Standard
	Cd	114	78.4	6.5	**0.0111**	0.001	8.0	ug/L	12	Standard
>	**In**	115	680653.4	0.9				ug/L	587441	Standard
	Sn	118	558.3	7.0	**-0.0122**	0.005	43.2	ug/L	497	Standard
	Sb	123	143.1	16.8	**0.0222**	0.004	19.8	ug/L	78	Standard
	Ba	135	14129.9	0.6	**5.9423**	0.035	0.6	ug/L	24	Standard
	Ce	140	36747.8	1.4				ug/L	25	Standard
>	**Tb**	159	1046560.0	0.5				ug/L	939701	Standard
	Ho	165	620.0	6.6				ug/L	10	Standard
	Tl	203	40.7	9.9	**0.0027**	0.000	16.9	ug/L	4	Standard
	Tl	205	38.3	19.9	**0.0050**	0.001	18.8	ug/L	2	Standard
	Pb	206	6390.7	0.3	**1.0069**	0.002	0.2	ug/L	240	Standard
	Pb	207	5305.6	1.7	**0.9374**	0.017	1.8	ug/L	198	Standard
	Pb	208	22358.8	1.4	**1.0005**	0.020	2.0	ug/L	883	Standard
	U	238	147.3	10.0	**0.0149**	0.002	12.5	ug/L	3	Standard
>	**Bi**	209	581458.5	0.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	36.7	41.7	**-0.0251**	0.017	67.5	mg/L	37	Standard
K	39	73.3	27.6	**0.0225**	0.038	170.4	mg/L	38	Standard
Ca	43	25.0	40.0	**-1.1927**	0.538	45.1	mg/L	10	Standard
Fe	54	777.1	4.9	**0.4166**	0.030	7.2	mg/L	179	Standard
Fe	57	423.3	1.8	**0.1373**	0.012	9.1	mg/L	335	Standard
Sc-1	45	72476.3	1.0				mg/L	61029	Standard
Cl	35	26907.2	2.4				ug/L	20195	Standard
Kr	83	1.7	124.9				ug/L	4	Standard
Br	81	2140.2	2.1				ug/L	1547	Standard
P	31	19854.7	4.5				ug/L	15286	Standard
S	34	2031.8	8.8				ug/L	1572	Standard
Sr	88	61.7	24.8				ug/L	73	Standard
C	12	66.7	82.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	1031.0	18.9				mg/L	6	Standard
Ho-1	165	620.0	6.6				mg/L	10	Standard
Er	166	536.7	12.4				mg/L	13	Standard
I	127	3175.3	27.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		120.134	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		119.522	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		115.868
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.969
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606138102
Sample Date/Time: Wednesday, June 29, 2016 19:07:03
Number of Replicates: 3
Autosampler Position: 254
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	93009.7	1.6				ug/L	74699	Standard
	Be	9	1248.4	3.0	**1.1470**	0.051	4.5	ug/L	8	Standard
	Al	27	40124336.3	0.4	**219.2936**	2.793	1.3	ug/L	1493	Standard
	Sc	45	83437.5	1.7				ug/L	61029	Standard
	Ti	47	9733.8	0.5	**22.4436**	0.290	1.3	ug/L	35	Standard
	V	51	219254.4	2.3	**25.2954**	0.490	1.9	ug/L	1435	Standard
	Cr	52	167385.2	0.7	**18.8093**	0.105	0.6	ug/L	7635	Standard
	Cr	53	20240.2	3.5	**18.8976**	0.529	2.8	ug/L	363	Standard
	Mn	55	6543259.4	1.4	**825.1579**	15.855	1.9	ug/L	747	Standard
	Co	59	86492.3	2.3	**11.4640**	0.252	2.2	ug/L	234	Standard
	Ni	60	58233.4	1.3	**27.1864**	0.121	0.4	ug/L	215	Standard
	Cu	65	35144.1	1.8	**16.4764**	0.210	1.3	ug/L	104	Standard
	Zn	66	61921.6	1.7	**49.3206**	0.509	1.0	ug/L	363	Standard
>	**Ge**	72	563884.1	0.9				ug/L	495142	Standard
	As	75	5876.5	0.9	**4.6669**	0.080	1.7	ug/L	-50	Standard
	Se	82	62.7	20.2	**0.3638**	0.101	27.7	ug/L	14	Standard
	Se-1	77	116.3	8.0	**0.7757**	0.099	12.7	ug/L	42	Standard
>	**Ga**	71	24224.4	1.6				mg/L	42	Standard
	Rb	85	231886.4	1.9				ug/L	17	Standard
	Y	89	788603.8	0.2				ug/L	417098	Standard
>	**Rh**	103	76.7	50.7				ug/L	13	Standard
	Mo	98	590.2	6.7	**0.1909**	0.011	6.0	ug/L	11	Standard
	Ag	107	590.3	14.1	**0.0675**	0.010	15.2	ug/L	68	Standard
	Cd	111	402.0	10.7	**0.1627**	0.016	9.9	mg/L	2	Standard
	Cd	114	896.6	5.0	**0.1531**	0.007	4.5	ug/L	12	Standard
>	**In**	115	661468.7	1.5				ug/L	587441	Standard
	Sn	118	563.3	17.0	**-0.0090**	0.016	173.2	ug/L	497	Standard
	Sb	123	168.4	11.6	**0.0279**	0.004	15.0	ug/L	78	Standard
	Ba	135	766980.0	0.9	**332.7995**	3.011	0.9	ug/L	24	Standard
	Ce	140	1513996.2	0.9				ug/L	25	Standard
>	**Tb**	159	1057537.7	1.8				ug/L	939701	Standard
	Ho	165	25513.1	1.6				ug/L	10	Standard
	Tl	203	1321.7	3.8	**0.1489**	0.005	3.2	ug/L	4	Standard
	Tl	205	1201.7	6.5	**0.1579**	0.009	5.7	ug/L	2	Standard
	Pb	206	69846.7	2.1	**12.2126**	0.140	1.1	ug/L	240	Standard
	Pb	207	56032.1	2.8	**11.0205**	0.188	1.7	ug/L	198	Standard
	Pb	208	243026.5	0.6	**12.1032**	0.059	0.5	ug/L	883	Standard
	U	238	7981.8	0.7	**1.0851**	0.004	0.3	ug/L	3	Standard
>	**Bi**	209	557709.9	1.1				ug/L	523984	Standard

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Na	23	6.7	86.6	**56.4197**	48.874	86.6	mg/L	0	Standard
Mg	24	238.3	32.7	**0.1607**	0.077	48.1	mg/L	37	Standard
K	39	688.3	8.8	**0.9980**	0.083	8.3	mg/L	38	Standard
Ca	43	911.7	12.3	**39.6249**	5.390	13.6	mg/L	10	Standard
Fe	54	20800.6	0.9	**12.7625**	0.173	1.4	mg/L	179	Standard
Fe	57	6012.9	2.1	**13.8749**	0.248	1.8	mg/L	335	Standard
Sc-1	45	83437.5	1.7				mg/L	61029	Standard
Cl	35	29332.4	1.9				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	2603.6	11.5				ug/L	1547	Standard
P	31	21632.1	2.1				ug/L	15286	Standard
S	34	2746.9	3.7				ug/L	1572	Standard
Sr	88	253.3	10.9				ug/L	73	Standard
C	12	116.7	27.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	45.8				mg/L	3	Standard
Dy	164	42471.8	1.0				mg/L	6	Standard
Ho-1	165	25513.1	1.6				mg/L	10	Standard
Er	166	22212.9	0.4				mg/L	13	Standard
I	127	23259.5	0.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		124.513	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		113.883	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.602
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.436
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606138102
Sample Date/Time: Wednesday, June 29, 2016 19:10:14
Number of Replicates: 3
Autosampler Position: 255
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85837.5	1.0				ug/L	74699	Standard
	Be	9	38.3	19.9	**0.0455**	0.007	16.1	ug/L	8	Standard
	Al	27	829500.0	3.1	**4.8979**	0.105	2.1	ug/L	1493	Standard
	Sc	45	72806.2	1.9				ug/L	61029	Standard
	Ti	47	228.0	6.2	**0.3999**	0.033	8.1	ug/L	35	Standard
	V	51	5937.2	2.5	**0.4694**	0.017	3.6	ug/L	1435	Standard
	Cr	52	11356.6	1.4	**0.2725**	0.020	7.2	ug/L	7635	Standard
	Cr	53	790.0	13.9	**0.3928**	0.096	24.5	ug/L	363	Standard
	Mn	55	140399.5	1.1	**16.9108**	0.252	1.5	ug/L	747	Standard
	Co	59	1986.1	4.2	**0.2171**	0.011	4.8	ug/L	234	Standard
	Ni	60	1398.7	1.4	**0.5081**	0.009	1.8	ug/L	215	Standard
	Cu	65	887.4	6.1	**0.2997**	0.027	8.9	ug/L	104	Standard
	Zn	66	3530.4	0.8	**2.2796**	0.035	1.5	ug/L	363	Standard
>	**Ge**	72	585343.3	0.6				ug/L	495142	Standard
	As	75	60.2	40.7	**0.1052**	0.019	17.9	ug/L	-50	Standard
	Se	82	19.5	23.7	**0.0127**	0.037	290.2	ug/L	14	Standard
	Se-1	77	54.0	19.3	**0.0032**	0.122	3775.1	ug/L	42	Standard
>	**Ga**	71	611.7	10.2				mg/L	42	Standard
	Rb	85	4939.1	4.6				ug/L	17	Standard
	Y	89	509652.0	1.0				ug/L	417098	Standard
>	**Rh**	103	5.0	100.0				ug/L	13	Standard
	Mo	98	44.1	7.7	**0.0084**	0.001	14.8	ug/L	11	Standard
	Ag	107	136.0	8.3	**0.0049**	0.002	33.6	ug/L	68	Standard
	Cd	111	13.6	15.2	**-0.0024**	0.001	32.7	mg/L	2	Standard
	Cd	114	34.6	39.9	**0.0036**	0.002	62.3	ug/L	12	Standard
>	**In**	115	689569.5	1.2				ug/L	587441	Standard
	Sn	118	635.0	8.5	**-0.0021**	0.008	369.1	ug/L	497	Standard
	Sb	123	120.9	7.4	**0.0179**	0.002	10.7	ug/L	78	Standard
	Ba	135	16312.1	1.7	**6.7731**	0.043	0.6	ug/L	24	Standard
	Ce	140	31461.0	1.2				ug/L	25	Standard
>	**Tb**	159	1048084.0	0.7				ug/L	939701	Standard
	Ho	165	503.3	20.9				ug/L	10	Standard
	Tl	203	28.0	9.4	**0.0013**	0.000	21.0	ug/L	4	Standard
	Tl	205	13.3	21.7	**0.0019**	0.000	19.6	ug/L	2	Standard
	Pb	206	1789.4	1.9	**0.2333**	0.006	2.6	ug/L	240	Standard
	Pb	207	1416.1	2.7	**0.2012**	0.009	4.3	ug/L	198	Standard
	Pb	208	6428.2	1.8	**0.2375**	0.004	1.7	ug/L	883	Standard
	U	238	157.3	5.4	**0.0164**	0.001	7.5	ug/L	3	Standard
>	**Bi**	209	576421.5	0.5				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	65.0	13.3	**0.0052**	0.008	161.5	mg/L	37	Standard
K	39	56.7	10.2	**-0.0092**	0.009	98.8	mg/L	38	Standard
Ca	43	46.7	16.4	**-0.0469**	0.452	963.7	mg/L	10	Standard
Fe	54	615.5	5.2	**0.2993**	0.025	8.2	mg/L	179	Standard
Fe	57	410.0	10.0	**0.0928**	0.096	103.4	mg/L	335	Standard
Sc-1	45	72806.2	1.9				mg/L	61029	Standard
Cl	35	29355.1	3.4				ug/L	20195	Standard
Kr	83	2.3	24.7				ug/L	4	Standard
Br	81	1910.1	15.3				ug/L	1547	Standard
P	31	20493.9	2.3				ug/L	15286	Standard
S	34	2463.5	6.9				ug/L	1572	Standard
Sr	88	83.3	42.1				ug/L	73	Standard
C	12	50.0	34.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	991.0	1.5				mg/L	6	Standard
Ho-1	165	503.3	20.9				mg/L	10	Standard
Er	166	466.7	4.5				mg/L	13	Standard
I	127	2401.9	23.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		114.911	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		118.217	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		117.385
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.007
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 19:13:27
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83999.1	3.6				ug/L	74699	Standard
	Be	9	57157.7	3.6	**57.7443**	0.451	0.8	ug/L	8	Standard
	Al	27	8858742.4	2.0	**53.6133**	0.921	1.7	ug/L	1493	Standard
	Sc	45	70122.0	3.5				ug/L	61029	Standard
	Ti	47	47445.5	0.9	**109.3528**	3.353	3.1	ug/L	35	Standard
	V	51	471838.1	3.0	**54.4025**	0.466	0.9	ug/L	1435	Standard
	Cr	52	466548.5	1.7	**54.0130**	1.261	2.3	ug/L	7635	Standard
	Cr	53	57204.5	1.8	**53.7881**	1.637	3.0	ug/L	363	Standard
	Mn	55	422873.4	1.8	**52.9497**	1.131	2.1	ug/L	747	Standard
	Co	59	420575.5	1.8	**55.6399**	1.134	2.0	ug/L	234	Standard
	Ni	60	114954.2	1.8	**53.5507**	1.121	2.1	ug/L	215	Standard
	Cu	65	113826.7	2.0	**53.3592**	1.065	2.0	ug/L	104	Standard
	Zn	66	66150.5	1.8	**52.4882**	1.217	2.3	ug/L	363	Standard
>	**Ge**	72	566689.7	3.9				ug/L	495142	Standard
	As	75	66474.1	0.9	**51.9549**	1.668	3.2	ug/L	-50	Standard
	Se	82	6669.2	0.5	**53.0020**	1.808	3.4	ug/L	14	Standard
	Se-1	77	4569.4	1.3	**54.0883**	1.963	3.6	ug/L	42	Standard
>	**Ga**	71	60.0	25.0				mg/L	42	Standard
	Rb	85	973.4	4.9				ug/L	17	Standard
	Y	89	482055.4	0.8				ug/L	417098	Standard
>	**Rh**	103	21.7	35.3				ug/L	13	Standard
	Mo	98	311127.6	1.9	**101.8685**	1.475	1.4	ug/L	11	Standard
	Ag	107	381455.1	1.8	**51.0679**	0.625	1.2	ug/L	68	Standard
	Cd	111	122240.5	1.1	**51.0178**	0.254	0.5	mg/L	2	Standard
	Cd	114	297421.0	1.0	**50.6157**	0.803	1.6	ug/L	12	Standard
>	**In**	115	673075.7	0.6				ug/L	587441	Standard
	Sn	118	341770.5	1.5	**50.9666**	0.480	0.9	ug/L	497	Standard
	Sb	123	266115.5	1.9	**49.7407**	0.724	1.5	ug/L	78	Standard
	Ba	135	114468.8	0.7	**48.7952**	0.078	0.2	ug/L	24	Standard
	Ce	140	298.3	40.9				ug/L	25	Standard
>	**Tb**	159	1044481.4	1.5				ug/L	939701	Standard
	Ho	165	18.3	83.3				ug/L	10	Standard
	Tl	203	467319.7	1.5	**52.0663**	0.128	0.2	ug/L	4	Standard
	Tl	205	421316.6	1.5	**54.0865**	0.384	0.7	ug/L	2	Standard
	Pb	206	294059.2	2.1	**50.4836**	0.259	0.5	ug/L	240	Standard
	Pb	207	260305.8	2.4	**50.2976**	0.406	0.8	ug/L	198	Standard
	Pb	208	1086866.5	0.8	**53.1659**	0.550	1.0	ug/L	883	Standard
	U	238	395799.2	0.7	**52.8135**	0.760	1.4	ug/L	3	Standard
>	**Bi**	209	570529.8	1.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4777.4	3.9	**5.3091**	0.347	6.5	mg/L	37	Standard
K	39	2250.2	3.7	**4.2173**	0.198	4.7	mg/L	38	Standard
Ca	43	128.3	12.5	**4.5532**	1.080	23.7	mg/L	10	Standard
Fe	54	7377.7	1.8	**5.3086**	0.144	2.7	mg/L	179	Standard
Fe	57	2055.1	1.5	**5.0082**	0.127	2.5	mg/L	335	Standard
> **Sc-1**	45	70122.0	3.5				mg/L	61029	Standard
Cl	35	30001.0	0.9				ug/L	20195	Standard
Kr	83	1.7	91.7				ug/L	4	Standard
Br	81	2183.5	6.8				ug/L	1547	Standard
P	31	22995.8	1.5				ug/L	15286	Standard
S	34	2830.3	2.9				ug/L	1572	Standard
Sr	88	66.7	24.1				ug/L	73	Standard
C	12	80.0	50.0				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	9.0	108.0				mg/L	6	Standard
Ho-1	165	18.3	83.3				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	1968.5	24.7				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	115.489		
	Al	27	107.227		
	Sc	45			
	Ti	47	109.353		
	V	51	108.805		
	Cr	52	108.026		
	Cr	53			
	Mn	55	105.899		
	Co	59	111.280		
	Ni	60	107.101		
	Cu	65	106.718		
	Zn	66	104.976		
>	Ge	72		114.450	
	As	75	103.910		
	Se	82	106.004		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.868		
Ag	107	102.136		
Cd	111	102.036		
Cd	114			
In	115		114.578	
Sn	118	101.933		
Sb	123	99.481		
Ba	135	97.590		
Ce	140			
Tb	159			
Ho	165			
Tl	203	104.133		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.332		
U	238	105.627		
Bi	209		108.883	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Co	59	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 19:16:39
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83692.3	2.8				ug/L	74699	Standard
	Be	9	18.3	15.7	**0.0263**	0.003	12.9	ug/L	8	Standard
	Al	27	3213.7	25.4	**0.0061**	0.004	71.9	ug/L	1493	Standard
	Sc	45	70726.5	3.0				ug/L	61029	Standard
	Ti	47	41.0	12.2	**-0.0158**	0.012	73.1	ug/L	35	Standard
	V	51	1525.1	1.9	**-0.0214**	0.005	22.4	ug/L	1435	Standard
	Cr	52	7659.9	0.9	**-0.1324**	0.015	11.0	ug/L	7635	Standard
	Cr	53	410.0	16.0	**0.0526**	0.061	116.5	ug/L	363	Standard
	Mn	55	997.7	7.3	**-0.0244**	0.010	41.0	ug/L	747	Standard
	Co	59	260.3	1.6	**-0.0033**	0.000	10.0	ug/L	234	Standard
	Ni	60	195.0	3.6	**-0.0341**	0.004	11.2	ug/L	215	Standard
	Cu	65	140.7	10.7	**-0.0385**	0.007	19.0	ug/L	104	Standard
	Zn	66	386.7	3.7	**-0.1493**	0.008	5.7	ug/L	363	Standard
>	**Ge**	72	574185.4	0.9				ug/L	495142	Standard
	As	75	-49.3	11.6	**0.0216**	0.004	19.9	ug/L	-50	Standard
	Se	82	18.5	26.4	**0.0072**	0.039	544.3	ug/L	14	Standard
	Se-1	77	51.3	18.1	**-0.0155**	0.115	739.5	ug/L	42	Standard
>	**Ga**	71	41.7	30.2				mg/L	42	Standard
	Rb	85	33.3	22.9				ug/L	17	Standard
	Y	89	508899.9	2.4				ug/L	417098	Standard
>	**Rh**	103	10.0	50.0				ug/L	13	Standard
	Mo	98	287.2	24.5	**0.0857**	0.020	22.8	ug/L	11	Standard
	Ag	107	140.0	24.8	**0.0054**	0.004	76.0	ug/L	68	Standard
	Cd	111	18.8	30.5	**-0.0003**	0.002	828.9	mg/L	2	Standard
	Cd	114	42.6	5.3	**0.0050**	0.000	2.5	ug/L	12	Standard
>	**In**	115	688571.2	3.6				ug/L	587441	Standard
	Sn	118	896.7	13.9	**0.0365**	0.020	55.6	ug/L	497	Standard
	Sb	123	419.7	28.4	**0.0731**	0.025	33.8	ug/L	78	Standard
	Ba	135	58.0	33.3	**0.0081**	0.008	93.7	ug/L	24	Standard
	Ce	140	43.3	17.6				ug/L	25	Standard
>	**Tb**	159	1032903.3	2.1				ug/L	939701	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	69.3	37.1	**0.0059**	0.003	47.0	ug/L	4	Standard
	Tl	205	78.3	57.2	**0.0101**	0.006	55.2	ug/L	2	Standard
	Pb	206	303.3	6.2	**-0.0195**	0.003	14.1	ug/L	240	Standard
	Pb	207	260.7	8.9	**-0.0200**	0.005	24.1	ug/L	198	Standard
	Pb	208	1157.4	6.9	**-0.0179**	0.003	17.6	ug/L	883	Standard
	U	238	52.0	46.8	**0.0024**	0.003	129.1	ug/L	3	Standard
>	**Bi**	209	575232.2	1.3				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	36.7	28.4	**-0.0241**	0.012	50.4	mg/L	37	Standard
K	39	50.0	26.5	**-0.0190**	0.023	121.8	mg/L	38	Standard
Ca	43	26.7	39.0	**-1.0625**	0.584	55.0	mg/L	10	Standard
Fe	54	147.5	7.0	**-0.0305**	0.005	15.7	mg/L	179	Standard
Fe	57	216.7	8.1	**-0.4394**	0.033	7.6	mg/L	335	Standard
Sc-1	45	70726.5	3.0				mg/L	61029	Standard
Cl	35	29273.6	1.2				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	2073.5	10.2				ug/L	1547	Standard
P	31	23289.7	10.5				ug/L	15286	Standard
S	34	2535.2	3.8				ug/L	1572	Standard
Sr	88	68.3	37.5				ug/L	73	Standard
C	12	66.7	22.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	16.3	126.2				mg/L	6	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	1766.8	31.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		115.964	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		117.215
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.780
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606138103
Sample Date/Time: Wednesday, June 29, 2016 19:19:52
Number of Replicates: 3
Autosampler Position: 256
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88921.9	2.3				ug/L	74699	Standard
	Be	9	1191.7	0.9	**1.1451**	0.025	2.2	ug/L	8	Standard
	Al	27	19716870.1	2.2	**112.7701**	5.073	4.5	ug/L	1493	Standard
	Sc	45	82006.5	3.2				ug/L	61029	Standard
	Ti	47	8807.2	1.6	**20.0178**	0.269	1.3	ug/L	35	Standard
	V	51	208539.0	1.3	**23.7197**	0.153	0.6	ug/L	1435	Standard
	Cr	52	166877.0	1.1	**18.4795**	0.081	0.4	ug/L	7635	Standard
	Cr	53	19956.5	0.7	**18.3731**	0.126	0.7	ug/L	363	Standard
	Mn	55	4948296.7	1.6	**615.4227**	6.037	1.0	ug/L	747	Standard
	Co	59	82754.8	2.1	**10.8165**	0.154	1.4	ug/L	234	Standard
	Ni	60	51698.7	0.5	**23.7942**	0.298	1.3	ug/L	215	Standard
	Cu	65	48855.0	1.6	**22.6321**	0.340	1.5	ug/L	104	Standard
	Zn	66	105467.2	1.2	**83.1726**	0.384	0.5	ug/L	363	Standard
>	**Ge**	72	571655.8	0.7				ug/L	495142	Standard
	As	75	9636.9	0.9	**7.5116**	0.042	0.6	ug/L	-50	Standard
	Se	82	70.5	8.3	**0.4184**	0.042	10.1	ug/L	14	Standard
	Se-1	77	129.0	9.9	**0.9077**	0.153	16.9	ug/L	42	Standard
>	**Ga**	71	22341.5	2.4				mg/L	42	Standard
	Rb	85	210691.8	1.9				ug/L	17	Standard
	Y	89	776017.6	0.9				ug/L	417098	Standard
>	**Rh**	103	61.7	24.8				ug/L	13	Standard
	Mo	98	1324.4	9.6	**0.4208**	0.045	10.6	ug/L	11	Standard
	Ag	107	918.4	2.4	**0.1080**	0.004	3.7	ug/L	68	Standard
	Cd	111	891.1	4.2	**0.3578**	0.020	5.5	mg/L	2	Standard
	Cd	114	2180.6	6.0	**0.3625**	0.017	4.8	ug/L	12	Standard
>	**In**	115	684819.6	1.2				ug/L	587441	Standard
	Sn	118	1785.1	3.5	**0.1674**	0.006	3.8	ug/L	497	Standard
	Sb	123	354.4	3.1	**0.0609**	0.003	4.6	ug/L	78	Standard
	Ba	135	461342.5	1.4	**193.3434**	2.631	1.4	ug/L	24	Standard
	Ce	140	1368480.3	1.7				ug/L	25	Standard
>	**Tb**	159	1075718.6	2.2				ug/L	939701	Standard
	Ho	165	22026.0	1.7				ug/L	10	Standard
	Tl	203	1135.0	2.0	**0.1247**	0.001	0.6	ug/L	4	Standard
	Tl	205	1093.4	11.6	**0.1404**	0.014	10.2	ug/L	2	Standard
	Pb	206	147882.6	1.3	**25.3549**	0.415	1.6	ug/L	240	Standard
	Pb	207	119862.3	0.6	**23.1268**	0.424	1.8	ug/L	198	Standard
	Pb	208	520445.5	2.0	**25.4242**	0.898	3.5	ug/L	883	Standard
	U	238	4663.1	0.9	**0.6178**	0.006	0.9	ug/L	3	Standard
>	**Bi**	209	570570.9	1.5				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	126.7	27.7	**0.0563**	0.032	56.3	mg/L	37	Standard
K	39	878.4	3.1	**1.3326**	0.091	6.9	mg/L	38	Standard
Ca	43	426.7	4.7	**17.5293**	0.460	2.6	mg/L	10	Standard
Fe	54	21094.2	3.4	**13.1896**	0.865	6.6	mg/L	179	Standard
Fe	57	5826.1	1.4	**13.6721**	0.491	3.6	mg/L	335	Standard
> **Sc-1**	45	82006.5	3.2				mg/L	61029	Standard
Cl	35	28772.6	2.0				ug/L	20195	Standard
Kr	83	3.0	66.7				ug/L	4	Standard
Br	81	3580.4	3.6				ug/L	1547	Standard
P	31	21750.6	1.3				ug/L	15286	Standard
S	34	2703.6	0.6				ug/L	1572	Standard
Sr	88	178.3	13.8				ug/L	73	Standard
C	12	233.3	9.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	96.7	36.3				mg/L	3	Standard
Dy	164	37298.5	1.0				mg/L	6	Standard
Ho-1	165	22026.0	1.7				mg/L	10	Standard
Er	166	20383.7	1.3				mg/L	13	Standard
I	127	19701.1	3.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.041	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		115.453	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		116.577
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.891
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606138103
Sample Date/Time: Wednesday, June 29, 2016 19:23:03
Number of Replicates: 3
Autosampler Position: 257
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82351.7	3.3				ug/L	74699	Standard
	Be	9	43.3	24.0	**0.0523**	0.011	20.3	ug/L	8	Standard
	Al	27	430174.7	3.0	**2.6419**	0.016	0.6	ug/L	1493	Standard
	Sc	45	73040.6	1.2				ug/L	61029	Standard
	Ti	47	215.7	6.2	**0.3839**	0.033	8.6	ug/L	35	Standard
	V	51	5937.3	2.7	**0.4853**	0.017	3.5	ug/L	1435	Standard
	Cr	52	11052.0	1.3	**0.2679**	0.017	6.2	ug/L	7635	Standard
	Cr	53	723.4	5.6	**0.3480**	0.038	11.0	ug/L	363	Standard
	Mn	55	109527.8	0.6	**13.4774**	0.102	0.8	ug/L	747	Standard
	Co	59	1998.1	1.8	**0.2248**	0.006	2.5	ug/L	234	Standard
	Ni	60	1283.7	2.7	**0.4700**	0.016	3.4	ug/L	215	Standard
	Cu	65	1177.7	1.9	**0.4444**	0.009	2.1	ug/L	104	Standard
	Zn	66	4258.3	1.3	**2.9218**	0.029	1.0	ug/L	363	Standard
>	**Ge**	72	571680.5	0.6				ug/L	495142	Standard
	As	75	130.4	5.6	**0.1604**	0.006	3.7	ug/L	-50	Standard
	Se	82	14.1	16.1	**-0.0268**	0.018	65.5	ug/L	14	Standard
	Se-1	77	58.0	6.9	**0.0653**	0.044	66.8	ug/L	42	Standard
>	**Ga**	71	521.7	4.0				mg/L	42	Standard
	Rb	85	4554.0	2.0				ug/L	17	Standard
	Y	89	512515.9	2.6				ug/L	417098	Standard
>	**Rh**	103	11.7	24.7				ug/L	13	Standard
	Mo	98	90.4	4.4	**0.0229**	0.001	6.5	ug/L	11	Standard
	Ag	107	144.3	4.6	**0.0058**	0.001	16.1	ug/L	68	Standard
	Cd	111	21.8	34.6	**0.0009**	0.003	335.6	mg/L	2	Standard
	Cd	114	67.8	46.0	**0.0090**	0.005	55.6	ug/L	12	Standard
>	**In**	115	696556.9	1.5				ug/L	587441	Standard
	Sn	118	640.0	3.6	**-0.0023**	0.005	204.9	ug/L	497	Standard
	Sb	123	182.0	15.1	**0.0287**	0.006	19.2	ug/L	78	Standard
	Ba	135	9992.3	2.7	**4.1009**	0.069	1.7	ug/L	24	Standard
	Ce	140	29587.2	2.0				ug/L	25	Standard
>	**Tb**	159	1058949.6	2.5				ug/L	939701	Standard
	Ho	165	493.3	6.5				ug/L	10	Standard
	Tl	203	41.7	21.8	**0.0028**	0.001	37.1	ug/L	4	Standard
	Tl	205	43.3	54.5	**0.0057**	0.003	52.4	ug/L	2	Standard
	Pb	206	3583.8	1.2	**0.5358**	0.012	2.2	ug/L	240	Standard
	Pb	207	2855.9	1.4	**0.4744**	0.011	2.4	ug/L	198	Standard
	Pb	208	12510.0	0.4	**0.5295**	0.006	1.1	ug/L	883	Standard
	U	238	110.3	6.2	**0.0101**	0.001	8.0	ug/L	3	Standard
>	**Bi**	209	579224.4	1.1				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	51.7	29.6	**-0.0092**	0.017	184.4	mg/L	37	Standard
K	39	41.7	61.6	**-0.0375**	0.047	124.3	mg/L	38	Standard
Ca	43	26.7	10.8	**-1.1162**	0.146	13.1	mg/L	10	Standard
Fe	54	584.0	15.6	**0.2752**	0.062	22.7	mg/L	179	Standard
Fe	57	388.3	5.2	**0.0289**	0.063	219.5	mg/L	335	Standard
> **Sc-1**	45	73040.6	1.2				mg/L	61029	Standard
Cl	35	28933.6	1.8				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	2263.5	5.9				ug/L	1547	Standard
P	31	20116.7	3.4				ug/L	15286	Standard
S	34	2530.2	7.0				ug/L	1572	Standard
Sr	88	75.0	23.1				ug/L	73	Standard
C	12	66.7	56.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	963.7	4.1				mg/L	6	Standard
Ho-1	165	493.3	6.5				mg/L	10	Standard
Er	166	410.0	6.5				mg/L	13	Standard
I	127	2373.5	31.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.245	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		115.458	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		118.575
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.542
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606138104
Sample Date/Time: Wednesday, June 29, 2016 19:26:15
Number of Replicates: 3
Autosampler Position: 258
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85261.0	2.3				ug/L	74699	Standard
	Be	9	1065.0	16.2	**1.0661**	0.158	14.8	ug/L	8	Standard
	Al	27	15142099.3	1.2	**90.2750**	1.228	1.4	ug/L	1493	Standard
	Sc	45	77933.3	2.2				ug/L	61029	Standard
	Ti	47	7118.0	1.5	**16.2707**	0.118	0.7	ug/L	35	Standard
	V	51	161044.2	0.8	**18.4034**	0.196	1.1	ug/L	1435	Standard
	Cr	52	146045.2	0.2	**16.1669**	0.325	2.0	ug/L	7635	Standard
	Cr	53	17793.8	1.2	**16.4664**	0.462	2.8	ug/L	363	Standard
	Mn	55	4299510.8	1.0	**538.5113**	8.104	1.5	ug/L	747	Standard
	Co	59	67815.8	1.0	**8.9211**	0.182	2.0	ug/L	234	Standard
	Ni	60	46536.4	1.1	**21.5551**	0.152	0.7	ug/L	215	Standard
	Cu	65	28919.6	1.2	**13.4506**	0.294	2.2	ug/L	104	Standard
	Zn	66	52781.1	1.6	**41.6917**	0.739	1.8	ug/L	363	Standard
>	**Ge**	72	567729.5	1.7				ug/L	495142	Standard
	As	75	4550.5	2.3	**3.6043**	0.141	3.9	ug/L	-50	Standard
	Se	82	43.5	41.5	**0.2091**	0.148	70.8	ug/L	14	Standard
	Se-1	77	118.3	4.0	**0.7906**	0.045	5.7	ug/L	42	Standard
>	**Ga**	71	21335.0	2.6				mg/L	42	Standard
	Rb	85	199689.0	1.1				ug/L	17	Standard
	Y	89	717025.3	1.7				ug/L	417098	Standard
>	**Rh**	103	53.3	39.0				ug/L	13	Standard
	Mo	98	750.2	3.3	**0.2455**	0.003	1.3	ug/L	11	Standard
	Ag	107	572.7	8.1	**0.0655**	0.005	7.5	ug/L	68	Standard
	Cd	111	313.3	5.6	**0.1259**	0.007	5.6	mg/L	2	Standard
	Cd	114	729.6	4.4	**0.1250**	0.007	5.3	ug/L	12	Standard
>	**In**	115	657920.1	2.1				ug/L	587441	Standard
	Sn	118	513.3	6.6	**-0.0162**	0.005	32.2	ug/L	497	Standard
	Sb	123	156.7	10.3	**0.0258**	0.004	14.3	ug/L	78	Standard
	Ba	135	278778.0	0.4	**121.6374**	2.867	2.4	ug/L	24	Standard
	Ce	140	1205012.6	0.9				ug/L	25	Standard
>	**Tb**	159	1028655.6	1.0				ug/L	939701	Standard
	Ho	165	19245.5	0.5				ug/L	10	Standard
	Tl	203	1022.7	4.2	**0.1168**	0.004	3.6	ug/L	4	Standard
	Tl	205	930.0	6.2	**0.1244**	0.008	6.1	ug/L	2	Standard
	Pb	206	75172.7	1.1	**13.3810**	0.239	1.8	ug/L	240	Standard
	Pb	207	60753.2	0.6	**12.1662**	0.152	1.3	ug/L	198	Standard
	Pb	208	268421.8	0.9	**13.6089**	0.053	0.4	ug/L	883	Standard
	U	238	4956.8	1.6	**0.6840**	0.014	2.1	ug/L	3	Standard
>	**Bi**	209	548179.9	0.7				ug/L	523984	Standard

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Na	23	3.3	173.2	**29.7760**	51.565	173.2	mg/L	0	Standard
Mg	24	116.7	8.9	**0.0527**	0.008	15.2	mg/L	37	Standard
K	39	606.7	4.1	**0.9368**	0.065	7.0	mg/L	38	Standard
Ca	43	223.3	26.5	**8.5548**	3.074	35.9	mg/L	10	Standard
Fe	54	18758.0	3.4	**12.3136**	0.167	1.4	mg/L	179	Standard
Fe	57	5059.2	5.4	**12.3881**	0.534	4.3	mg/L	335	Standard
Sc-1	45	77933.3	2.2				mg/L	61029	Standard
Cl	35	27511.6	2.5				ug/L	20195	Standard
Kr	83	4.0	50.0				ug/L	4	Standard
Br	81	2450.2	6.4				ug/L	1547	Standard
P	31	19838.0	2.4				ug/L	15286	Standard
S	34	2438.5	4.0				ug/L	1572	Standard
Sr	88	130.0	10.2				ug/L	73	Standard
C	12	76.7	41.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	124.9				mg/L	3	Standard
Dy	164	31319.3	1.6				mg/L	6	Standard
Ho-1	165	19245.5	0.5				mg/L	10	Standard
Er	166	17009.5	2.0				mg/L	13	Standard
I	127	14255.0	0.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		114.140	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		114.660	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	111.998
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	104.618
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606138104
Sample Date/Time: Wednesday, June 29, 2016 19:29:26
Number of Replicates: 3
Autosampler Position: 259
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81019.4	0.7				ug/L	74699	Standard
	Be	9	41.7	18.3	**0.0512**	0.008	15.3	ug/L	8	Standard
	Al	27	329954.8	1.9	**2.0568**	0.044	2.2	ug/L	1493	Standard
	Sc	45	70853.8	4.4				ug/L	61029	Standard
	Ti	47	170.0	4.8	**0.2650**	0.022	8.2	ug/L	35	Standard
	V	51	4919.9	1.5	**0.3475**	0.009	2.6	ug/L	1435	Standard
	Cr	52	11144.8	0.5	**0.2299**	0.010	4.3	ug/L	7635	Standard
	Cr	53	798.4	9.1	**0.3907**	0.073	18.6	ug/L	363	Standard
	Mn	55	93006.7	2.2	**10.9903**	0.351	3.2	ug/L	747	Standard
	Co	59	1669.1	4.9	**0.1734**	0.010	5.5	ug/L	234	Standard
	Ni	60	1239.4	3.4	**0.4280**	0.019	4.5	ug/L	215	Standard
	Cu	65	783.4	0.7	**0.2472**	0.006	2.3	ug/L	104	Standard
	Zn	66	3223.7	4.0	**2.0065**	0.120	6.0	ug/L	363	Standard
>	**Ge**	72	593953.7	1.0				ug/L	495142	Standard
	As	75	25.6	116.2	**0.0786**	0.022	28.0	ug/L	-50	Standard
	Se	82	15.5	11.3	**-0.0201**	0.014	71.9	ug/L	14	Standard
	Se-1	77	55.7	3.7	**0.0130**	0.019	145.3	ug/L	42	Standard
>	**Ga**	71	496.7	9.6				mg/L	42	Standard
	Rb	85	4318.9	1.6				ug/L	17	Standard
	Y	89	493099.4	1.2				ug/L	417098	Standard
>	**Rh**	103	8.3	91.7				ug/L	13	Standard
	Mo	98	63.8	10.3	**0.0154**	0.002	13.8	ug/L	11	Standard
	Ag	107	130.3	15.7	**0.0047**	0.003	56.8	ug/L	68	Standard
	Cd	111	7.2	21.0	**-0.0049**	0.001	12.8	mg/L	2	Standard
	Cd	114	27.0	44.7	**0.0025**	0.002	80.8	ug/L	12	Standard
>	**In**	115	665068.2	0.5				ug/L	587441	Standard
	Sn	118	545.0	15.7	**-0.0123**	0.013	107.4	ug/L	497	Standard
	Sb	123	150.6	9.1	**0.0243**	0.003	11.0	ug/L	78	Standard
	Ba	135	6015.5	0.5	**2.5800**	0.016	0.6	ug/L	24	Standard
	Ce	140	25678.4	3.6				ug/L	25	Standard
>	**Tb**	159	1023204.1	0.9				ug/L	939701	Standard
	Ho	165	420.0	5.5				ug/L	10	Standard
	Tl	203	37.3	22.8	**0.0024**	0.001	40.1	ug/L	4	Standard
	Tl	205	30.0	50.0	**0.0040**	0.002	46.9	ug/L	2	Standard
	Pb	206	1995.8	4.0	**0.2734**	0.016	6.0	ug/L	240	Standard
	Pb	207	1576.4	5.4	**0.2364**	0.019	8.0	ug/L	198	Standard
	Pb	208	6805.9	1.7	**0.2606**	0.003	1.1	ug/L	883	Standard
	U	238	99.3	2.5	**0.0089**	0.000	2.4	ug/L	3	Standard
>	**Bi**	209	568219.3	0.9				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	30.0	66.7	**-0.0312**	0.023	74.2	mg/L	37	Standard
K	39	65.0	30.8	**0.0108**	0.043	395.4	mg/L	38	Standard
Ca	43	20.0	0.0	**-1.4338**	0.047	3.3	mg/L	10	Standard
Fe	54	499.3	4.0	**0.2265**	0.010	4.2	mg/L	179	Standard
Fe	57	346.7	6.8	**-0.0592**	0.056	94.8	mg/L	335	Standard
> **Sc-1**	45	70853.8	4.4				mg/L	61029	Standard
Cl	35	26917.9	3.4				ug/L	20195	Standard
Kr	83	2.0	0.0				ug/L	4	Standard
Br	81	1996.8	2.8				ug/L	1547	Standard
P	31	19530.9	2.5				ug/L	15286	Standard
S	34	2235.2	2.4				ug/L	1572	Standard
Sr	88	70.0	18.9				ug/L	73	Standard
C	12	83.3	38.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	818.0	9.1				mg/L	6	Standard
Ho-1	165	420.0	5.5				mg/L	10	Standard
Er	166	390.0	11.8				mg/L	13	Standard
I	127	1930.1	32.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.461	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		119.956	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.214
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.442
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606138105
Sample Date/Time: Wednesday, June 29, 2016 19:32:37
Number of Replicates: 3
Autosampler Position: 260
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86630.3	1.6				ug/L	74699	Standard
	Be	9	1345.1	15.8	**1.3230**	0.188	14.2	ug/L	8	Standard
	Al	27	25518871.0	0.5	**149.7364**	2.025	1.4	ug/L	1493	Standard
	Sc	45	82793.9	1.1				ug/L	61029	Standard
	Ti	47	9047.0	1.1	**21.0343**	0.216	1.0	ug/L	35	Standard
	V	51	241144.8	2.1	**28.0828**	0.136	0.5	ug/L	1435	Standard
	Cr	52	185820.6	3.2	**21.1812**	0.417	2.0	ug/L	7635	Standard
	Cr	53	22667.0	3.7	**21.3886**	0.515	2.4	ug/L	363	Standard
	Mn	55	5666490.2	1.7	**720.7034**	2.244	0.3	ug/L	747	Standard
	Co	59	89984.1	1.6	**12.0322**	0.097	0.8	ug/L	234	Standard
	Ni	60	57928.9	2.2	**27.2782**	0.178	0.7	ug/L	215	Standard
	Cu	65	41127.1	3.0	**19.4650**	0.281	1.4	ug/L	104	Standard
	Zn	66	70831.6	3.1	**56.9699**	0.880	1.5	ug/L	363	Standard
>	**Ge**	72	559032.2	1.6				ug/L	495142	Standard
	As	75	9088.7	3.2	**7.2452**	0.123	1.7	ug/L	-50	Standard
	Se	82	66.3	23.6	**0.3960**	0.117	29.7	ug/L	14	Standard
	Se-1	77	130.0	4.3	**0.9538**	0.045	4.7	ug/L	42	Standard
>	**Ga**	71	25715.1	2.4				mg/L	42	Standard
	Rb	85	243499.9	2.1				ug/L	17	Standard
	Y	89	766854.2	0.5				ug/L	417098	Standard
>	**Rh**	103	51.7	5.6				ug/L	13	Standard
	Mo	98	760.8	5.6	**0.2496**	0.019	7.7	ug/L	11	Standard
	Ag	107	727.0	8.3	**0.0869**	0.010	11.3	ug/L	68	Standard
	Cd	111	420.9	5.2	**0.1721**	0.013	7.6	mg/L	2	Standard
	Cd	114	1021.1	15.6	**0.1761**	0.030	17.3	ug/L	12	Standard
>	**In**	115	657583.1	2.2				ug/L	587441	Standard
	Sn	118	706.7	9.4	**0.0135**	0.012	91.4	ug/L	497	Standard
	Sb	123	160.0	3.9	**0.0265**	0.002	7.0	ug/L	78	Standard
	Ba	135	489546.4	1.0	**213.7510**	6.703	3.1	ug/L	24	Standard
	Ce	140	1473172.3	0.9				ug/L	25	Standard
>	**Tb**	159	1043758.3	1.4				ug/L	939701	Standard
	Ho	165	23187.7	0.9				ug/L	10	Standard
	Tl	203	1287.4	7.3	**0.1458**	0.012	8.5	ug/L	4	Standard
	Tl	205	1168.4	5.5	**0.1545**	0.010	6.8	ug/L	2	Standard
	Pb	206	110607.4	2.3	**19.4839**	0.695	3.6	ug/L	240	Standard
	Pb	207	89635.8	2.2	**17.7667**	0.631	3.6	ug/L	198	Standard
	Pb	208	392577.0	0.9	**19.6965**	0.434	2.2	ug/L	883	Standard
	U	238	8119.8	0.8	**1.1095**	0.020	1.8	ug/L	3	Standard
>	**Bi**	209	554986.0	1.4				ug/L	523984	Standard

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Na	23	5.0	100.0	**42.5482**	42.299	99.4	mg/L	0	Standard
Mg	24	165.0	16.0	**0.0921**	0.027	29.3	mg/L	37	Standard
K	39	870.0	2.5	**1.3032**	0.021	1.6	mg/L	38	Standard
Ca	43	623.3	6.5	**26.5121**	2.122	8.0	mg/L	10	Standard
Fe	54	24836.5	3.4	**15.3836**	0.500	3.3	mg/L	179	Standard
Fe	57	6766.5	3.6	**15.8771**	0.513	3.2	mg/L	335	Standard
Sc-1	45	82793.9	1.1				mg/L	61029	Standard
Cl	35	27591.1	0.8				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	2510.2	7.0				ug/L	1547	Standard
P	31	20592.3	2.0				ug/L	15286	Standard
S	34	2640.2	1.7				ug/L	1572	Standard
Sr	88	220.0	6.0				ug/L	73	Standard
C	12	86.7	24.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	44.6				mg/L	3	Standard
Dy	164	40115.6	1.1				mg/L	6	Standard
Ho-1	165	23187.7	0.9				mg/L	10	Standard
Er	166	21645.5	1.0				mg/L	13	Standard
I	127	13629.5	5.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		115.973	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		112.903	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	111.940
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	105.916
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606138105
Sample Date/Time: Wednesday, June 29, 2016 19:35:50
Number of Replicates: 3
Autosampler Position: 401
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81775.3	3.6				ug/L	74699	Standard
	Be	9	45.0	11.1	**0.0544**	0.006	11.5	ug/L	8	Standard
	Al	27	547945.2	2.8	**3.3933**	0.048	1.4	ug/L	1493	Standard
	Sc	45	73444.3	1.5				ug/L	61029	Standard
	Ti	47	212.7	8.9	**0.3795**	0.037	9.9	ug/L	35	Standard
	V	51	6482.3	2.1	**0.5523**	0.015	2.6	ug/L	1435	Standard
	Cr	52	11556.7	2.9	**0.3347**	0.014	4.0	ug/L	7635	Standard
	Cr	53	865.0	10.6	**0.4848**	0.072	14.9	ug/L	363	Standard
	Mn	55	123099.8	1.9	**15.2575**	0.218	1.4	ug/L	747	Standard
	Co	59	2101.5	1.5	**0.2401**	0.008	3.5	ug/L	234	Standard
	Ni	60	1463.7	4.5	**0.5572**	0.024	4.3	ug/L	215	Standard
	Cu	65	1004.0	2.5	**0.3664**	0.012	3.3	ug/L	104	Standard
	Zn	66	6132.9	2.2	**4.4370**	0.037	0.8	ug/L	363	Standard
>	**Ge**	72	568314.4	1.9				ug/L	495142	Standard
	As	75	135.4	21.1	**0.1651**	0.024	14.5	ug/L	-50	Standard
	Se	82	20.1	25.4	**0.0217**	0.043	197.6	ug/L	14	Standard
	Se-1	77	47.3	2.4	**-0.0575**	0.019	32.3	ug/L	42	Standard
>	**Ga**	71	615.0	5.6				mg/L	42	Standard
	Rb	85	5134.2	2.0				ug/L	17	Standard
	Y	89	506159.2	1.9				ug/L	417098	Standard
>	**Rh**	103	11.7	107.9				ug/L	13	Standard
	Mo	98	50.7	18.0	**0.0105**	0.003	28.3	ug/L	11	Standard
	Ag	107	125.7	10.6	**0.0035**	0.002	48.0	ug/L	68	Standard
	Cd	111	10.9	48.5	**-0.0035**	0.002	62.7	mg/L	2	Standard
	Cd	114	42.4	34.4	**0.0049**	0.002	48.6	ug/L	12	Standard
>	**In**	115	689821.8	0.4				ug/L	587441	Standard
	Sn	118	595.0	5.8	**-0.0080**	0.005	59.8	ug/L	497	Standard
	Sb	123	118.9	14.7	**0.0175**	0.003	18.8	ug/L	78	Standard
	Ba	135	10423.6	1.2	**4.3208**	0.035	0.8	ug/L	24	Standard
	Ce	140	31651.4	0.9				ug/L	25	Standard
>	**Tb**	159	1043112.5	1.4				ug/L	939701	Standard
	Ho	165	500.0	7.2				ug/L	10	Standard
	Tl	203	34.0	12.8	**0.0020**	0.000	23.2	ug/L	4	Standard
	Tl	205	20.0	66.1	**0.0027**	0.002	61.7	ug/L	2	Standard
	Pb	206	2645.2	1.4	**0.3784**	0.005	1.3	ug/L	240	Standard
	Pb	207	2160.5	2.6	**0.3433**	0.011	3.1	ug/L	198	Standard
	Pb	208	9496.8	0.4	**0.3858**	0.004	1.1	ug/L	883	Standard
	U	238	183.7	2.7	**0.0198**	0.001	4.5	ug/L	3	Standard
>	**Bi**	209	577076.9	1.0				ug/L	523984	Standard

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Na	23	1.7	173.2	**15.9398**	27.600	173.2	mg/L	0	Standard
Mg	24	31.7	39.7	**-0.0310**	0.014	45.0	mg/L	37	Standard
K	39	75.0	17.6	**0.0236**	0.024	101.0	mg/L	38	Standard
Ca	43	45.0	44.4	**-0.1502**	1.087	724.0	mg/L	10	Standard
Fe	54	679.1	0.8	**0.3402**	0.010	2.9	mg/L	179	Standard
Fe	57	390.0	9.7	**0.0271**	0.102	376.6	mg/L	335	Standard
Sc-1	45	73444.3	1.5				mg/L	61029	Standard
Cl	35	27695.3	0.4				ug/L	20195	Standard
Kr	83	1.3	114.6				ug/L	4	Standard
Br	81	2046.8	15.0				ug/L	1547	Standard
P	31	20195.1	3.7				ug/L	15286	Standard
S	34	2511.9	7.3				ug/L	1572	Standard
Sr	88	68.3	42.9				ug/L	73	Standard
C	12	50.0	40.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	3	Standard
Dy	164	1042.0	9.5				mg/L	6	Standard
Ho-1	165	500.0	7.2				mg/L	10	Standard
Er	166	446.7	15.2				mg/L	13	Standard
I	127	1841.8	32.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		109.473	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		114.778	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		117.428
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.132
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606138107
Sample Date/Time: Wednesday, June 29, 2016 19:39:01
Number of Replicates: 3
Autosampler Position: 402
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84183.2	0.7				ug/L	74699	Standard
	Be	9	1125.0	5.6	**1.1418**	0.071	6.2	ug/L	8	Standard
	Al	27	16362118.1	1.0	**98.7783**	0.357	0.4	ug/L	1493	Standard
	Sc	45	80079.5	2.6				ug/L	61029	Standard
	Ti	47	5684.7	1.2	**13.0248**	0.178	1.4	ug/L	35	Standard
	V	51	193164.5	0.6	**22.2022**	0.395	1.8	ug/L	1435	Standard
	Cr	52	144926.2	1.3	**16.0993**	0.107	0.7	ug/L	7635	Standard
	Cr	53	17089.6	2.1	**15.8598**	0.165	1.0	ug/L	363	Standard
	Mn	55	4945150.4	1.2	**621.8545**	12.591	2.0	ug/L	747	Standard
	Co	59	79442.1	0.4	**10.4972**	0.101	1.0	ug/L	234	Standard
	Ni	60	48759.0	0.6	**22.6802**	0.156	0.7	ug/L	215	Standard
	Cu	65	44548.4	1.0	**20.8546**	0.085	0.4	ug/L	104	Standard
	Zn	66	116987.3	1.0	**93.3289**	1.249	1.3	ug/L	363	Standard
>	**Ge**	72	565487.8	1.3				ug/L	495142	Standard
	As	75	12786.6	1.5	**10.0557**	0.155	1.5	ug/L	-50	Standard
	Se	82	93.9	6.5	**0.6112**	0.058	9.6	ug/L	14	Standard
	Se-1	77	134.7	12.3	**0.9941**	0.220	22.1	ug/L	42	Standard
>	**Ga**	71	20750.9	1.1				mg/L	42	Standard
	Rb	85	229576.4	1.2				ug/L	17	Standard
	Y	89	760564.3	0.9				ug/L	417098	Standard
>	**Rh**	103	26.7	39.0				ug/L	13	Standard
	Mo	98	714.7	6.9	**0.2279**	0.017	7.3	ug/L	11	Standard
	Ag	107	706.7	2.8	**0.0816**	0.003	4.3	ug/L	68	Standard
	Cd	111	991.8	3.3	**0.4053**	0.015	3.7	mg/L	2	Standard
	Cd	114	2256.1	2.3	**0.3810**	0.005	1.2	ug/L	12	Standard
>	**In**	115	674434.0	1.0				ug/L	587441	Standard
	Sn	118	836.7	10.4	**0.0300**	0.012	41.1	ug/L	497	Standard
	Sb	123	542.0	6.0	**0.0969**	0.005	5.6	ug/L	78	Standard
	Ba	135	363437.5	1.5	**154.6607**	2.916	1.9	ug/L	24	Standard
	Ce	140	1323769.8	0.4				ug/L	25	Standard
>	**Tb**	159	1046974.9	0.8				ug/L	939701	Standard
	Ho	165	21420.1	0.8				ug/L	10	Standard
	Tl	203	1015.7	4.2	**0.1138**	0.005	4.5	ug/L	4	Standard
	Tl	205	906.7	2.2	**0.1191**	0.002	2.0	ug/L	2	Standard
	Pb	206	225485.9	0.9	**39.5300**	0.272	0.7	ug/L	240	Standard
	Pb	207	184080.5	0.2	**36.3178**	0.069	0.2	ug/L	198	Standard
	Pb	208	811320.1	0.8	**40.5199**	0.434	1.1	ug/L	883	Standard
	U	238	5280.9	2.0	**0.7154**	0.017	2.3	ug/L	3	Standard
>	**Bi**	209	558508.9	0.3				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	105.0	49.7	**0.0390**	0.054	139.2	mg/L	37	Standard
K	39	875.0	3.0	**1.3597**	0.017	1.3	mg/L	38	Standard
Ca	43	123.3	10.2	**3.4107**	0.543	15.9	mg/L	10	Standard
Fe	54	18540.3	2.4	**11.8486**	0.489	4.1	mg/L	179	Standard
Fe	57	5050.8	2.1	**12.0198**	0.614	5.1	mg/L	335	Standard
> **Sc-1**	45	80079.5	2.6				mg/L	61029	Standard
Cl	35	26211.3	2.3				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	4010.5	1.9				ug/L	1547	Standard
P	31	18821.7	2.8				ug/L	15286	Standard
S	34	2180.2	5.1				ug/L	1572	Standard
Sr	88	100.0	25.0				ug/L	73	Standard
C	12	166.7	30.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	70.0	28.6				mg/L	3	Standard
Dy	164	35314.8	2.4				mg/L	6	Standard
Ho-1	165	21420.1	0.8				mg/L	10	Standard
Er	166	18965.2	4.5				mg/L	13	Standard
I	127	21211.5	3.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.697	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.207	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	114.809
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	106.589
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606138107
Sample Date/Time: Wednesday, June 29, 2016 19:42:13
Number of Replicates: 3
Autosampler Position: 403
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79962.1	1.1				ug/L	74699	Standard
	Be	9	35.0	37.8	**0.0449**	0.015	32.4	ug/L	8	Standard
	Al	27	348986.4	2.3	**2.2050**	0.043	1.9	ug/L	1493	Standard
	Sc	45	69050.4	2.1				ug/L	61029	Standard
	Ti	47	147.7	4.0	**0.2190**	0.009	4.2	ug/L	35	Standard
	V	51	5537.0	5.1	**0.4222**	0.040	9.5	ug/L	1435	Standard
	Cr	52	11219.2	0.9	**0.2513**	0.015	5.8	ug/L	7635	Standard
	Cr	53	801.7	3.8	**0.4006**	0.025	6.2	ug/L	363	Standard
	Mn	55	101661.8	3.0	**12.1540**	0.524	4.3	ug/L	747	Standard
	Co	59	1813.1	5.5	**0.1941**	0.015	7.9	ug/L	234	Standard
	Ni	60	1251.7	0.2	**0.4392**	0.009	2.1	ug/L	215	Standard
	Cu	65	1098.7	4.3	**0.3937**	0.026	6.7	ug/L	104	Standard
	Zn	66	4663.4	1.9	**3.1415**	0.081	2.6	ug/L	363	Standard
>	**Ge**	72	587910.1	1.4				ug/L	495142	Standard
	As	75	208.3	5.8	**0.2162**	0.008	3.9	ug/L	-50	Standard
	Se	82	14.6	52.1	**-0.0264**	0.056	213.9	ug/L	14	Standard
	Se-1	77	58.3	15.6	**0.0509**	0.111	217.0	ug/L	42	Standard
>	**Ga**	71	483.3	11.4				mg/L	42	Standard
	Rb	85	4672.4	3.2				ug/L	17	Standard
	Y	89	494582.5	2.5				ug/L	417098	Standard
>	**Rh**	103	10.0	50.0				ug/L	13	Standard
	Mo	98	50.9	2.1	**0.0113**	0.001	5.2	ug/L	11	Standard
	Ag	107	137.0	5.3	**0.0059**	0.001	14.4	ug/L	68	Standard
	Cd	111	22.2	22.2	**0.0016**	0.002	123.1	mg/L	2	Standard
	Cd	114	55.9	25.6	**0.0077**	0.003	34.0	ug/L	12	Standard
>	**In**	115	657881.3	1.7				ug/L	587441	Standard
	Sn	118	586.7	15.6	**-0.0052**	0.012	239.2	ug/L	497	Standard
	Sb	123	130.5	4.0	**0.0208**	0.001	5.8	ug/L	78	Standard
	Ba	135	7584.6	1.4	**3.2933**	0.054	1.6	ug/L	24	Standard
	Ce	140	27601.8	1.0				ug/L	25	Standard
>	**Tb**	159	1004279.0	0.4				ug/L	939701	Standard
	Ho	165	470.0	12.8				ug/L	10	Standard
	Tl	203	31.3	21.7	**0.0018**	0.001	42.5	ug/L	4	Standard
	Tl	205	38.3	39.8	**0.0052**	0.002	37.2	ug/L	2	Standard
	Pb	206	5039.5	2.9	**0.8074**	0.036	4.5	ug/L	240	Standard
	Pb	207	4082.6	3.5	**0.7312**	0.039	5.3	ug/L	198	Standard
	Pb	208	17367.6	1.6	**0.7884**	0.025	3.2	ug/L	883	Standard
	U	238	118.3	14.2	**0.0116**	0.002	21.2	ug/L	3	Standard
>	**Bi**	209	562827.5	1.3				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	41.7	6.9	**-0.0175**	0.004	24.7	mg/L	37	Standard
K	39	65.0	46.8	**0.0126**	0.058	464.1	mg/L	38	Standard
Ca	43	20.0	66.1	**-1.4118**	0.719	50.9	mg/L	10	Standard
Fe	54	548.6	17.9	**0.2728**	0.072	26.3	mg/L	179	Standard
Fe	57	318.3	8.7	**-0.1165**	0.103	88.6	mg/L	335	Standard
> **Sc-1**	45	69050.4	2.1				mg/L	61029	Standard
Cl	35	24683.4	2.1				ug/L	20195	Standard
Kr	83	3.0	33.3				ug/L	4	Standard
Br	81	2036.8	6.4				ug/L	1547	Standard
P	31	17868.9	0.9				ug/L	15286	Standard
S	34	1880.1	5.1				ug/L	1572	Standard
Sr	88	70.0	32.7				ug/L	73	Standard
C	12	63.3	32.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	851.3	21.1				mg/L	6	Standard
Ho-1	165	470.0	12.8				mg/L	10	Standard
Er	166	460.0	19.0				mg/L	13	Standard
I	127	2083.5	32.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.046	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		118.736	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.991
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.413
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606138402
Sample Date/Time: Wednesday, June 29, 2016 19:45:24
Number of Replicates: 3
Autosampler Position: 404
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78829.6	2.0				ug/L	74699	Standard
	Be	9	476.7	4.8	**0.5211**	0.034	6.6	ug/L	8	Standard
	Al	27	790696.4	0.9	**5.0858**	0.055	1.1	ug/L	1493	Standard
	Sc	45	79546.6	1.7				ug/L	61029	Standard
	Ti	47	5657.7	0.8	**12.8152**	0.349	2.7	ug/L	35	Standard
	V	51	106854.5	1.6	**12.0511**	0.193	1.6	ug/L	1435	Standard
	Cr	52	263051.4	1.4	**29.7045**	0.729	2.5	ug/L	7635	Standard
	Cr	53	32229.3	4.0	**29.8443**	0.696	2.3	ug/L	363	Standard
	Mn	55	1259215.6	0.6	**156.4341**	3.728	2.4	ug/L	747	Standard
	Co	59	45647.0	0.6	**5.9475**	0.157	2.6	ug/L	234	Standard
	Ni	60	134444.3	1.6	**62.0317**	0.857	1.4	ug/L	215	Standard
	Cu	65	50137.5	0.5	**23.2180**	0.523	2.3	ug/L	104	Standard
	Zn	66	191528.7	0.9	**151.3328**	2.746	1.8	ug/L	363	Standard
>	**Ge**	72	572152.6	2.7				ug/L	495142	Standard
	As	75	5700.3	1.6	**4.4645**	0.048	1.1	ug/L	-50	Standard
	Se	82	330.0	4.2	**2.4632**	0.049	2.0	ug/L	14	Standard
	Se-1	77	314.7	3.0	**3.1071**	0.115	3.7	ug/L	42	Standard
>	**Ga**	71	3685.4	1.6				mg/L	42	Standard
	Rb	85	41053.9	1.7				ug/L	17	Standard
	Y	89	1388727.0	1.6				ug/L	417098	Standard
>	**Rh**	103	25.0	0.0				ug/L	13	Standard
	Mo	98	3897.2	2.0	**1.2782**	0.019	1.5	ug/L	11	Standard
	Ag	107	551.3	5.8	**0.0614**	0.003	5.7	ug/L	68	Standard
	Cd	111	1240.5	0.7	**0.5131**	0.007	1.4	mg/L	2	Standard
	Cd	114	2915.5	4.4	**0.4970**	0.020	4.1	ug/L	12	Standard
>	**In**	115	669008.5	1.2				ug/L	587441	Standard
	Sn	118	676.7	8.2	**0.0070**	0.008	114.7	ug/L	497	Standard
	Sb	123	186.6	3.8	**0.0309**	0.001	3.8	ug/L	78	Standard
	Ba	135	221251.7	0.3	**94.9139**	1.345	1.4	ug/L	24	Standard
	Ce	140	471655.7	0.9				ug/L	25	Standard
>	**Tb**	159	1067869.0	0.9				ug/L	939701	Standard
	Ho	165	47698.3	1.5				ug/L	10	Standard
	Tl	203	1397.7	2.5	**0.1543**	0.005	3.4	ug/L	4	Standard
	Tl	205	1176.7	6.0	**0.1515**	0.008	5.0	ug/L	2	Standard
	Pb	206	21429.5	1.2	**3.6210**	0.069	1.9	ug/L	240	Standard
	Pb	207	15728.2	0.6	**2.9798**	0.021	0.7	ug/L	198	Standard
	Pb	208	70387.8	1.2	**3.3811**	0.084	2.5	ug/L	883	Standard
	U	238	18087.1	1.2	**2.4141**	0.054	2.2	ug/L	3	Standard
>	**Bi**	209	569388.1	1.3				ug/L	523984	Standard

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Na	23	5.0	173.2	**43.9188**	76.061	173.2	mg/L	0	Standard
Mg	24	210.0	6.3	**0.1429**	0.013	9.0	mg/L	37	Standard
K	39	275.0	8.3	**0.3521**	0.037	10.4	mg/L	38	Standard
Ca	43	148.3	19.8	**4.6742**	1.471	31.5	mg/L	10	Standard
Fe	54	12478.7	2.5	**7.9817**	0.313	3.9	mg/L	179	Standard
Fe	57	3430.4	4.1	**7.8688**	0.221	2.8	mg/L	335	Standard
> **Sc-1**	45	79546.6	1.7				mg/L	61029	Standard
Cl	35	26111.8	0.7				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	2043.5	3.5				ug/L	1547	Standard
P	31	19195.5	2.0				ug/L	15286	Standard
S	34	2368.5	5.4				ug/L	1572	Standard
Sr	88	153.3	13.2				ug/L	73	Standard
C	12	70.0	14.3				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	140.0	18.9				mg/L	3	Standard
Dy	164	65719.4	1.8				mg/L	6	Standard
Ho-1	165	47698.3	1.5				mg/L	10	Standard
Er	166	45979.7	1.2				mg/L	13	Standard
I	127	5242.6	1.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.530	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		115.553	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	113.885
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	108.665
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1606138404
Sample Date/Time: Wednesday, June 29, 2016 19:48:35
Number of Replicates: 3
Autosampler Position: 405
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80955.8	1.9				ug/L	74699	Standard
	Be	9	880.0	13.6	**0.9302**	0.126	13.6	ug/L	8	Standard
	Al	27	4591606.5	1.6	**28.8172**	0.235	0.8	ug/L	1493	Standard
	Sc	45	81773.4	1.2				ug/L	61029	Standard
	Ti	47	8450.7	1.8	**19.2499**	0.245	1.3	ug/L	35	Standard
	V	51	185955.1	1.6	**21.1827**	0.308	1.5	ug/L	1435	Standard
	Cr	52	431888.4	0.7	**49.5778**	0.407	0.8	ug/L	7635	Standard
	Cr	53	54036.2	1.9	**50.4433**	1.377	2.7	ug/L	363	Standard
	Mn	55	1979621.7	0.4	**246.7487**	3.142	1.3	ug/L	747	Standard
	Co	59	89211.3	2.3	**11.6929**	0.262	2.2	ug/L	234	Standard
	Ni	60	241828.7	1.1	**112.0223**	0.265	0.2	ug/L	215	Standard
	Cu	65	79842.9	1.5	**37.1424**	0.248	0.7	ug/L	104	Standard
	Zn	66	363879.1	1.7	**288.7674**	1.874	0.6	ug/L	363	Standard
>	**Ge**	72	570278.1	1.3				ug/L	495142	Standard
	As	75	11266.0	1.4	**8.7923**	0.037	0.4	ug/L	-50	Standard
	Se	82	562.8	1.7	**4.3149**	0.122	2.8	ug/L	14	Standard
	Se-1	77	468.7	10.3	**4.9506**	0.587	11.9	ug/L	42	Standard
>	**Ga**	71	6996.6	2.8				mg/L	42	Standard
	Rb	85	75201.3	3.4				ug/L	17	Standard
	Y	89	1637404.7	1.2				ug/L	417098	Standard
>	**Rh**	103	40.0	12.5				ug/L	13	Standard
	Mo	98	6065.7	2.4	**2.0076**	0.060	3.0	ug/L	11	Standard
	Ag	107	921.4	1.6	**0.1122**	0.003	2.7	ug/L	68	Standard
	Cd	111	1933.3	0.9	**0.8101**	0.015	1.9	mg/L	2	Standard
	Cd	114	4671.7	0.8	**0.8037**	0.006	0.7	ug/L	12	Standard
>	**In**	115	664089.4	1.0				ug/L	587441	Standard
	Sn	118	708.3	7.1	**0.0125**	0.007	53.2	ug/L	497	Standard
	Sb	123	171.2	9.0	**0.0282**	0.003	10.1	ug/L	78	Standard
	Ba	135	217409.8	1.0	**93.9488**	0.914	1.0	ug/L	24	Standard
	Ce	140	744689.2	0.9				ug/L	25	Standard
>	**Tb**	159	1077211.2	1.7				ug/L	939701	Standard
	Ho	165	62662.7	1.1				ug/L	10	Standard
	Tl	203	2865.3	1.3	**0.3204**	0.004	1.2	ug/L	4	Standard
	Tl	205	2535.2	5.2	**0.3286**	0.016	4.9	ug/L	2	Standard
	Pb	206	40598.7	0.9	**6.9743**	0.127	1.8	ug/L	240	Standard
	Pb	207	29975.3	2.2	**5.7854**	0.186	3.2	ug/L	198	Standard
	Pb	208	132785.8	0.6	**6.4904**	0.091	1.4	ug/L	883	Standard
	U	238	27584.4	0.2	**3.7106**	0.059	1.6	ug/L	3	Standard
>	**Bi**	209	565317.9	1.5				ug/L	523984	Standard

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Na	23	1.7	173.2	**14.1527**	24.505	173.1	mg/L	0	Standard
Mg	24	243.3	11.7	**0.1691**	0.025	14.5	mg/L	37	Standard
K	39	461.7	5.5	**0.6478**	0.049	7.5	mg/L	38	Standard
Ca	43	205.0	4.9	**7.1444**	0.559	7.8	mg/L	10	Standard
Fe	54	23854.6	1.3	**14.9557**	0.059	0.4	mg/L	179	Standard
Fe	57	6316.3	1.9	**14.9472**	0.123	0.8	mg/L	335	Standard
> **Sc-1**	45	81773.4	1.2				mg/L	61029	Standard
Cl	35	26395.0	1.0				ug/L	20195	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	8435.7	8.5				ug/L	1547	Standard
P	31	20819.3	1.9				ug/L	15286	Standard
S	34	2495.2	1.6				ug/L	1572	Standard
Sr	88	186.7	12.1				ug/L	73	Standard
C	12	26.7	21.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	520.0	8.4				mg/L	3	Standard
Dy	164	85733.4	1.4				mg/L	6	Standard
Ho-1	165	62662.7	1.1				mg/L	10	Standard
Er	166	61347.3	2.7				mg/L	13	Standard
I	127	12962.2	2.6				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		108.376	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		115.175	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	113.048
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	107.888
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 19:51:49
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79632.1	2.5				ug/L	74699	Standard
	Be	9	53037.7	1.9	**56.5448**	1.909	3.4	ug/L	8	Standard
	Al	27	8288547.2	1.5	**52.9043**	0.899	1.7	ug/L	1493	Standard
	Sc	45	68251.7	0.4				ug/L	61029	Standard
	Ti	47	44871.7	1.2	**102.9405**	2.024	2.0	ug/L	35	Standard
	V	51	450952.2	1.7	**51.7787**	1.350	2.6	ug/L	1435	Standard
	Cr	52	441674.6	0.8	**50.8503**	0.824	1.6	ug/L	7635	Standard
	Cr	53	54163.4	3.4	**50.6767**	1.716	3.4	ug/L	363	Standard
	Mn	55	408648.7	3.2	**50.9466**	2.025	4.0	ug/L	747	Standard
	Co	59	404996.9	2.1	**53.3495**	1.595	3.0	ug/L	234	Standard
	Ni	60	109209.9	1.2	**50.6487**	1.081	2.1	ug/L	215	Standard
	Cu	65	108068.7	1.0	**50.4372**	0.990	2.0	ug/L	104	Standard
	Zn	66	63914.2	1.2	**50.4711**	0.538	1.1	ug/L	363	Standard
>	Ge	72	568913.3	1.0				ug/L	495142	Standard
	As	75	64596.5	1.7	**50.2573**	1.198	2.4	ug/L	-50	Standard
	Se	82	6434.6	2.8	**50.8949**	1.678	3.3	ug/L	14	Standard
	Se-1	77	4404.6	0.9	**51.8699**	0.916	1.8	ug/L	42	Standard
>	Ga	71	81.7	19.7				mg/L	42	Standard
	Rb	85	868.4	8.5				ug/L	17	Standard
	Y	89	484608.1	0.7				ug/L	417098	Standard
>	Rh	103	25.0	40.0				ug/L	13	Standard
	Mo	98	300990.3	2.1	**101.3882**	1.976	1.9	ug/L	11	Standard
	Ag	107	359716.1	0.6	**49.5455**	0.289	0.6	ug/L	68	Standard
	Cd	111	115140.5	0.5	**49.4382**	0.205	0.4	mg/L	2	Standard
	Cd	114	277323.3	2.2	**48.5511**	1.074	2.2	ug/L	12	Standard
>	In	115	654244.8	0.1				ug/L	587441	Standard
	Sn	118	326410.3	0.9	**50.0768**	0.438	0.9	ug/L	497	Standard
	Sb	123	257734.5	0.6	**49.5626**	0.244	0.5	ug/L	78	Standard
	Ba	135	107937.1	0.2	**47.3350**	0.075	0.2	ug/L	24	Standard
	Ce	140	156.7	33.8				ug/L	25	Standard
>	Tb	159	993573.1	1.0				ug/L	939701	Standard
	Ho	165	18.3	41.7				ug/L	10	Standard
	Tl	203	442343.3	0.6	**51.3703**	0.497	1.0	ug/L	4	Standard
	Tl	205	397679.6	3.2	**53.2177**	1.929	3.6	ug/L	2	Standard
	Pb	206	282572.7	0.8	**50.5712**	0.781	1.5	ug/L	240	Standard
	Pb	207	252130.0	1.0	**50.7898**	0.969	1.9	ug/L	198	Standard
	Pb	208	1034503.8	1.3	**52.7468**	1.180	2.2	ug/L	883	Standard
	U	238	372072.1	1.5	**51.7486**	1.271	2.5	ug/L	3	Standard
>	Bi	209	547364.2	0.9				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.1101**	29.627	173.2	mg/L	0	Standard
Mg	24	4437.3	1.9	**5.0568**	0.105	2.1	mg/L	37	Standard
K	39	2166.8	4.9	**4.1677**	0.193	4.6	mg/L	38	Standard
Ca	43	105.0	40.7	**3.4097**	2.426	71.2	mg/L	10	Standard
Fe	54	6964.2	0.4	**5.1415**	0.037	0.7	mg/L	179	Standard
Fe	57	2053.5	5.5	**5.1659**	0.318	6.1	mg/L	335	Standard
> **Sc-1**	45	68251.7	0.4				mg/L	61029	Standard
Cl	35	27215.8	2.7				ug/L	20195	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	1920.1	6.9				ug/L	1547	Standard
P	31	20039.9	1.0				ug/L	15286	Standard
S	34	2546.9	7.4				ug/L	1572	Standard
Sr	88	71.7	29.0				ug/L	73	Standard
C	12	70.0	24.7				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	11.7	100.8				mg/L	6	Standard
Ho-1	165	18.3	41.7				mg/L	10	Standard
Er	166	33.3	34.6				mg/L	13	Standard
I	127	1696.8	22.2				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	113.090		
	Al	27	105.809		
	Sc	45			
	Ti	47	102.941		
	V	51	103.557		
	Cr	52	101.701		
	Cr	53			
	Mn	55	101.893		
	Co	59	106.699		
	Ni	60	101.297		
	Cu	65	100.874		
	Zn	66	100.942		
>	Ge	72		114.899	
	As	75	100.515		
	Se	82	101.790		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.388		
Ag	107	99.091		
Cd	111	98.876		
Cd	114			
In	115		111.372	
Sn	118	100.154		
Sb	123	99.125		
Ba	135	94.670		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.741		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.494		
U	238	103.497		
Bi	209		104.462	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 19:55:00
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78377.2	0.9				ug/L	74699	Standard
	Be	9	16.7	17.3	**0.0256**	0.003	11.6	ug/L	8	Standard
	Al	27	3955.5	8.5	**0.0123**	0.002	16.7	ug/L	1493	Standard
	Sc	45	70123.6	2.1				ug/L	61029	Standard
	Ti	47	44.3	19.2	**-0.0067**	0.022	331.3	ug/L	35	Standard
	V	51	1494.9	5.1	**-0.0231**	0.005	19.5	ug/L	1435	Standard
	Cr	52	7869.7	1.7	**-0.0976**	0.038	39.0	ug/L	7635	Standard
	Cr	53	438.3	4.0	**0.0839**	0.027	31.8	ug/L	363	Standard
	Mn	55	1323.4	11.3	**0.0175**	0.017	96.4	ug/L	747	Standard
	Co	59	292.0	15.1	**0.0012**	0.005	416.2	ug/L	234	Standard
	Ni	60	231.7	5.0	**-0.0160**	0.006	40.4	ug/L	215	Standard
	Cu	65	142.7	7.1	**-0.0369**	0.003	9.0	ug/L	104	Standard
	Zn	66	477.7	7.4	**-0.0736**	0.020	26.8	ug/L	363	Standard
>	**Ge**	72	568079.4	2.5				ug/L	495142	Standard
	As	75	-36.3	34.6	**0.0313**	0.010	31.8	ug/L	-50	Standard
	Se	82	17.1	26.2	**-0.0026**	0.033	1282.0	ug/L	14	Standard
	Se-1	77	54.3	9.3	**0.0268**	0.068	253.5	ug/L	42	Standard
>	**Ga**	71	40.0	12.5				mg/L	42	Standard
	Rb	85	38.3	19.9				ug/L	17	Standard
	Y	89	483139.1	0.9				ug/L	417098	Standard
>	**Rh**	103	11.7	99.0				ug/L	13	Standard
	Mo	98	291.7	36.0	**0.0908**	0.037	40.3	ug/L	11	Standard
	Ag	107	161.3	21.3	**0.0089**	0.005	57.1	ug/L	68	Standard
	Cd	111	21.8	28.2	**0.0012**	0.002	201.3	mg/L	2	Standard
	Cd	114	48.0	10.4	**0.0061**	0.001	15.7	ug/L	12	Standard
>	**In**	115	669206.2	1.8				ug/L	587441	Standard
	Sn	118	881.7	18.2	**0.0375**	0.022	58.1	ug/L	497	Standard
	Sb	123	447.3	19.7	**0.0797**	0.015	18.9	ug/L	78	Standard
	Ba	135	111.0	14.0	**0.0316**	0.007	21.6	ug/L	24	Standard
	Ce	140	185.0	42.5				ug/L	25	Standard
>	**Tb**	159	1027080.2	0.9				ug/L	939701	Standard
	Ho	165	28.3	10.2				ug/L	10	Standard
	Tl	203	102.0	27.3	**0.0095**	0.003	32.1	ug/L	4	Standard
	Tl	205	76.7	13.6	**0.0100**	0.001	13.1	ug/L	2	Standard
	Pb	206	326.3	10.0	**-0.0155**	0.005	35.3	ug/L	240	Standard
	Pb	207	292.3	4.6	**-0.0139**	0.002	17.4	ug/L	198	Standard
	Pb	208	1226.7	4.7	**-0.0145**	0.003	18.0	ug/L	883	Standard
	U	238	78.7	31.6	**0.0060**	0.003	54.4	ug/L	3	Standard
>	**Bi**	209	574845.6	0.5				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	46.7	34.4	**-0.0124**	0.019	155.4	mg/L	37	Standard
K	39	46.7	44.6	**-0.0238**	0.042	178.2	mg/L	38	Standard
Ca	43	26.7	57.3	**-1.0457**	0.868	83.0	mg/L	10	Standard
Fe	54	161.1	25.9	**-0.0190**	0.033	173.6	mg/L	179	Standard
Fe	57	251.7	19.3	**-0.3314**	0.129	38.8	mg/L	335	Standard
Sc-1	45	70123.6	2.1				mg/L	61029	Standard
Cl	35	27868.9	0.6				ug/L	20195	Standard
Kr	83	0.7	86.6				ug/L	4	Standard
Br	81	2040.1	1.8				ug/L	1547	Standard
P	31	20417.1	4.9				ug/L	15286	Standard
S	34	2425.2	3.5				ug/L	1572	Standard
Sr	88	45.0	40.1				ug/L	73	Standard
C	12	50.0	52.9				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	11.9	129.9				mg/L	6	Standard
Ho-1	165	28.3	10.2				mg/L	10	Standard
Er	166	30.0	57.7				mg/L	13	Standard
I	127	1460.1	42.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		114.731	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.919
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.707
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606138406
Sample Date/Time: Wednesday, June 29, 2016 19:58:13
Number of Replicates: 3
Autosampler Position: 406
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77039.0	4.7				ug/L	74699	Standard
	Be	9	588.3	14.0	**0.6548**	0.074	11.3	ug/L	8	Standard
	Al	27	832772.7	0.7	**5.4883**	0.227	4.1	ug/L	1493	Standard
	Sc	45	75047.3	4.1				ug/L	61029	Standard
	Ti	47	6368.7	0.7	**14.6522**	0.311	2.1	ug/L	35	Standard
	V	51	122665.5	0.9	**14.0720**	0.287	2.0	ug/L	1435	Standard
	Cr	52	293324.5	0.5	**33.7422**	0.348	1.0	ug/L	7635	Standard
	Cr	53	35827.3	1.9	**33.7165**	0.271	0.8	ug/L	363	Standard
	Mn	55	1790039.2	2.5	**225.6481**	2.955	1.3	ug/L	747	Standard
	Co	59	59513.4	2.6	**7.8774**	0.097	1.2	ug/L	234	Standard
	Ni	60	162230.6	1.1	**75.9835**	0.734	1.0	ug/L	215	Standard
	Cu	65	58756.0	0.7	**27.6257**	0.286	1.0	ug/L	104	Standard
	Zn	66	213240.6	1.5	**171.0057**	1.221	0.7	ug/L	363	Standard
>	**Ge**	72	563753.3	1.5				ug/L	495142	Standard
	As	75	6354.9	1.3	**5.0439**	0.138	2.7	ug/L	-50	Standard
	Se	82	268.5	3.3	**2.0114**	0.102	5.1	ug/L	14	Standard
	Se-1	77	256.0	4.1	**2.4577**	0.168	6.8	ug/L	42	Standard
>	**Ga**	71	4010.5	2.8				mg/L	42	Standard
	Rb	85	39651.9	3.3				ug/L	17	Standard
	Y	89	1622063.0	2.1				ug/L	417098	Standard
>	**Rh**	103	33.3	8.7				ug/L	13	Standard
	Mo	98	4372.5	0.7	**1.4952**	0.034	2.3	ug/L	11	Standard
	Ag	107	608.3	2.2	**0.0725**	0.003	3.7	ug/L	68	Standard
	Cd	111	1369.4	3.4	**0.5916**	0.033	5.6	mg/L	2	Standard
	Cd	114	3220.4	7.1	**0.5731**	0.054	9.4	ug/L	12	Standard
>	**In**	115	642314.3	2.8				ug/L	587441	Standard
	Sn	118	866.7	3.3	**0.0411**	0.007	16.9	ug/L	497	Standard
	Sb	123	475.1	9.4	**0.0890**	0.010	11.7	ug/L	78	Standard
	Ba	135	210364.7	1.0	**94.0146**	1.722	1.8	ug/L	24	Standard
	Ce	140	620778.1	1.3				ug/L	25	Standard
>	**Tb**	159	1035282.0	2.1				ug/L	939701	Standard
	Ho	165	58499.4	0.8				ug/L	10	Standard
	Tl	203	1670.8	3.4	**0.1930**	0.007	3.5	ug/L	4	Standard
	Tl	205	1583.4	5.7	**0.2129**	0.013	6.3	ug/L	2	Standard
	Pb	206	23886.1	1.1	**4.2252**	0.039	0.9	ug/L	240	Standard
	Pb	207	17508.1	0.9	**3.4746**	0.041	1.2	ug/L	198	Standard
	Pb	208	79776.0	1.1	**4.0140**	0.064	1.6	ug/L	883	Standard
	U	238	22400.5	0.6	**3.1225**	0.026	0.8	ug/L	3	Standard
>	**Bi**	209	545342.1	0.8				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	190.0	5.3	**0.1344**	0.009	6.3	mg/L	37	Standard
K	39	241.7	12.5	**0.3203**	0.051	16.0	mg/L	38	Standard
Ca	43	168.3	3.4	**6.1267**	0.214	3.5	mg/L	10	Standard
Fe	54	12517.1	3.0	**8.4992**	0.364	4.3	mg/L	179	Standard
Fe	57	3428.7	4.4	**8.4118**	0.531	6.3	mg/L	335	Standard
> **Sc-1**	45	75047.3	4.1				mg/L	61029	Standard
Cl	35	26434.4	2.8				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	2270.2	3.9				ug/L	1547	Standard
P	31	19440.8	0.5				ug/L	15286	Standard
S	34	2256.8	6.7				ug/L	1572	Standard
Sr	88	170.0	33.4				ug/L	73	Standard
C	12	76.7	54.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	300.0	18.6				mg/L	3	Standard
Dy	164	81135.2	0.1				mg/L	6	Standard
Ho-1	165	58499.4	0.8				mg/L	10	Standard
Er	166	56983.6	0.5				mg/L	13	Standard
I	127	5462.7	4.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.133	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		113.857	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	109.341
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	104.076
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1606138408
Sample Date/Time: Wednesday, June 29, 2016 20:01:24
Number of Replicates: 3
Autosampler Position: 407
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79667.3	1.9				ug/L	74699	Standard
	Be	9	540.0	10.4	**0.5836**	0.070	11.9	ug/L	8	Standard
	Al	27	892686.6	1.0	**5.6842**	0.164	2.9	ug/L	1493	Standard
	Sc	45	78111.0	3.7				ug/L	61029	Standard
	Ti	47	6171.3	0.9	**13.8487**	0.141	1.0	ug/L	35	Standard
	V	51	131186.8	0.8	**14.6946**	0.149	1.0	ug/L	1435	Standard
	Cr	52	291322.4	2.4	**32.6724**	0.743	2.3	ug/L	7635	Standard
	Cr	53	35120.7	4.3	**32.2467**	1.471	4.6	ug/L	363	Standard
	Mn	55	2233691.8	2.2	**274.8758**	6.127	2.2	ug/L	747	Standard
	Co	59	65245.2	1.7	**8.4325**	0.147	1.7	ug/L	234	Standard
	Ni	60	190260.1	2.2	**86.9887**	2.023	2.3	ug/L	215	Standard
	Cu	65	66483.6	1.3	**30.5171**	0.399	1.3	ug/L	104	Standard
	Zn	66	187493.0	1.2	**146.6893**	2.307	1.6	ug/L	363	Standard
>	**Ge**	72	577612.7	0.6				ug/L	495142	Standard
	As	75	6445.8	1.9	**4.9929**	0.116	2.3	ug/L	-50	Standard
	Se	82	222.3	2.5	**1.5982**	0.037	2.3	ug/L	14	Standard
	Se-1	77	243.0	1.1	**2.2298**	0.039	1.8	ug/L	42	Standard
>	**Ga**	71	4360.6	1.0				mg/L	42	Standard
	Rb	85	41170.9	1.0				ug/L	17	Standard
	Y	89	1636669.5	0.9				ug/L	417098	Standard
>	**Rh**	103	33.3	22.9				ug/L	13	Standard
	Mo	98	4750.5	1.5	**1.5922**	0.009	0.6	ug/L	11	Standard
	Ag	107	651.7	5.1	**0.0767**	0.003	4.5	ug/L	68	Standard
	Cd	111	1476.5	1.8	**0.6252**	0.009	1.4	mg/L	2	Standard
	Cd	114	3537.9	6.1	**0.6161**	0.029	4.7	ug/L	12	Standard
>	**In**	115	655238.7	1.5				ug/L	587441	Standard
	Sn	118	965.0	3.4	**0.0534**	0.004	7.7	ug/L	497	Standard
	Sb	123	268.7	11.3	**0.0474**	0.005	10.8	ug/L	78	Standard
	Ba	135	196413.8	1.6	**86.0176**	0.137	0.2	ug/L	24	Standard
	Ce	140	596487.3	1.9				ug/L	25	Standard
>	**Tb**	159	1073225.5	1.0				ug/L	939701	Standard
	Ho	165	61178.3	1.7				ug/L	10	Standard
	Tl	203	2456.5	1.8	**0.2718**	0.001	0.3	ug/L	4	Standard
	Tl	205	2150.2	4.8	**0.2763**	0.017	6.1	ug/L	2	Standard
	Pb	206	24200.3	1.9	**4.0880**	0.010	0.3	ug/L	240	Standard
	Pb	207	17656.3	0.7	**3.3464**	0.078	2.3	ug/L	198	Standard
	Pb	208	79187.0	3.1	**3.8025**	0.046	1.2	ug/L	883	Standard
	U	238	22940.4	1.4	**3.0557**	0.038	1.2	ug/L	3	Standard
>	**Bi**	209	570736.3	2.0				ug/L	523984	Standard

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Na	23	3.3	173.2	**28.7877**	49.853	173.2	mg/L	0	Standard
Mg	24	161.7	15.3	**0.0975**	0.019	19.1	mg/L	37	Standard
K	39	273.3	12.8	**0.3583**	0.064	17.7	mg/L	38	Standard
Ca	43	191.7	9.9	**6.9329**	0.825	11.9	mg/L	10	Standard
Fe	54	12889.7	4.6	**8.4015**	0.298	3.5	mg/L	179	Standard
Fe	57	3420.4	5.7	**8.0292**	0.829	10.3	mg/L	335	Standard
Sc-1	45	78111.0	3.7				mg/L	61029	Standard
Cl	35	25108.8	1.1				ug/L	20195	Standard
Kr	83	1.0	173.2				ug/L	4	Standard
Br	81	1990.1	4.1				ug/L	1547	Standard
P	31	18960.2	2.1				ug/L	15286	Standard
S	34	2216.8	7.1				ug/L	1572	Standard
Sr	88	153.3	28.5				ug/L	73	Standard
C	12	110.0	9.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	313.3	12.9				mg/L	3	Standard
Dy	164	83986.8	2.5				mg/L	6	Standard
Ho-1	165	61178.3	1.7				mg/L	10	Standard
Er	166	57776.6	0.9				mg/L	13	Standard
I	127	4875.8	1.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.651	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		116.656	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	111.541
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	108.922
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1606138408
Report Date/Time: Wednesday, June 29, 2016 20:03:41
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Method 6020 - Summary Report

Sample ID: L1606138410
Sample Date/Time: Wednesday, June 29, 2016 20:04:36
Number of Replicates: 3
Autosampler Position: 408
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82222.6	2.1				ug/L	74699	Standard
	Be	9	466.7	0.6	**0.4893**	0.010	2.0	ug/L	8	Standard
	Al	27	798979.6	1.9	**4.9264**	0.080	1.6	ug/L	1493	Standard
	Sc	45	79640.5	1.7				ug/L	61029	Standard
	Ti	47	5792.4	2.5	**13.1770**	0.593	4.5	ug/L	35	Standard
	V	51	95139.7	1.4	**10.7518**	0.246	2.3	ug/L	1435	Standard
	Cr	52	279542.5	2.0	**31.7533**	0.664	2.1	ug/L	7635	Standard
	Cr	53	34038.2	1.3	**31.6794**	0.880	2.8	ug/L	363	Standard
	Mn	55	1053790.0	0.3	**131.3975**	3.080	2.3	ug/L	747	Standard
	Co	59	35027.1	0.6	**4.5723**	0.080	1.8	ug/L	234	Standard
	Ni	60	156240.8	1.2	**72.3985**	1.638	2.3	ug/L	215	Standard
	Cu	65	48550.0	0.3	**22.5657**	0.405	1.8	ug/L	104	Standard
	Zn	66	257712.2	0.3	**204.5897**	4.503	2.2	ug/L	363	Standard
>	**Ge**	72	569889.2	2.0				ug/L	495142	Standard
	As	75	6132.6	2.6	**4.8186**	0.190	4.0	ug/L	-50	Standard
	Se	82	361.1	9.2	**2.7244**	0.314	11.5	ug/L	14	Standard
	Se-1	77	331.7	7.4	**3.3212**	0.233	7.0	ug/L	42	Standard
>	**Ga**	71	4152.2	2.1				mg/L	42	Standard
	Rb	85	52623.0	3.5				ug/L	17	Standard
	Y	89	1425089.1	0.3				ug/L	417098	Standard
>	**Rh**	103	33.3	8.7				ug/L	13	Standard
	Mo	98	3927.9	0.3	**1.2648**	0.018	1.4	ug/L	11	Standard
	Ag	107	467.0	2.9	**0.0489**	0.003	5.2	ug/L	68	Standard
	Cd	111	1169.0	3.4	**0.4740**	0.011	2.3	mg/L	2	Standard
	Cd	114	2891.7	1.0	**0.4840**	0.007	1.5	ug/L	12	Standard
>	**In**	115	681463.1	1.2				ug/L	587441	Standard
	Sn	118	755.0	5.0	**0.0168**	0.007	41.1	ug/L	497	Standard
	Sb	123	219.3	13.0	**0.0363**	0.005	13.2	ug/L	78	Standard
	Ba	135	73803.3	1.7	**31.0670**	0.270	0.9	ug/L	24	Standard
	Ce	140	554709.1	1.1				ug/L	25	Standard
>	**Tb**	159	1094015.2	1.4				ug/L	939701	Standard
	Ho	165	50373.6	1.6				ug/L	10	Standard
	Tl	203	1120.7	1.3	**0.1214**	0.002	2.0	ug/L	4	Standard
	Tl	205	941.7	7.2	**0.1194**	0.008	6.7	ug/L	2	Standard
	Pb	206	24028.0	1.2	**4.0020**	0.045	1.1	ug/L	240	Standard
	Pb	207	17504.4	0.3	**3.2701**	0.054	1.6	ug/L	198	Standard
	Pb	208	78967.6	0.8	**3.7402**	0.091	2.4	ug/L	883	Standard
	U	238	25248.7	0.7	**3.3178**	0.077	2.3	ug/L	3	Standard
>	**Bi**	209	578682.9	1.6				ug/L	523984	Standard

Sample ID: L1606138410
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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	188.3	33.0	**0.1211**	0.061	50.1	mg/L	37	Standard
K	39	248.3	3.1	**0.3067**	0.020	6.4	mg/L	38	Standard
Ca	43	173.3	7.3	**5.8747**	0.743	12.6	mg/L	10	Standard
Fe	54	14056.9	1.9	**8.9942**	0.034	0.4	mg/L	179	Standard
Fe	57	3822.2	6.9	**8.8892**	0.835	9.4	mg/L	335	Standard
> **Sc-1**	45	79640.5	1.7				mg/L	61029	Standard
Cl	35	25424.6	1.4				ug/L	20195	Standard
Kr	83	1.3	114.6				ug/L	4	Standard
Br	81	2053.5	6.1				ug/L	1547	Standard
P	31	20016.5	1.3				ug/L	15286	Standard
S	34	2301.8	5.1				ug/L	1572	Standard
Sr	88	141.7	32.0				ug/L	73	Standard
C	12	56.7	36.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	133.3	11.5				mg/L	3	Standard
Dy	164	72545.2	2.7				mg/L	6	Standard
Ho-1	165	50373.6	1.6				mg/L	10	Standard
Er	166	47160.0	0.9				mg/L	13	Standard
I	127	6799.9	2.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.072	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		115.096	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	116.005
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	110.439
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1606138412
Sample Date/Time: Wednesday, June 29, 2016 20:07:47
Number of Replicates: 3
Autosampler Position: 409
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81391.5	3.4				ug/L	74699	Standard
	Be	9	565.0	6.9	**0.5962**	0.020	3.4	ug/L	8	Standard
	Al	27	802320.4	2.6	**4.9984**	0.082	1.6	ug/L	1493	Standard
	Sc	45	77871.4	3.1				ug/L	61029	Standard
	Ti	47	8431.3	2.1	**19.3525**	0.252	1.3	ug/L	35	Standard
	V	51	136034.9	0.6	**15.5641**	0.178	1.1	ug/L	1435	Standard
	Cr	52	292890.6	0.7	**33.5584**	0.660	2.0	ug/L	7635	Standard
	Cr	53	35682.0	1.9	**33.4491**	0.599	1.8	ug/L	363	Standard
	Mn	55	2260782.0	0.5	**283.9966**	5.862	2.1	ug/L	747	Standard
	Co	59	82153.8	0.1	**10.8487**	0.184	1.7	ug/L	234	Standard
	Ni	60	172794.1	1.0	**80.6313**	1.536	1.9	ug/L	215	Standard
	Cu	65	63565.7	0.4	**29.7801**	0.432	1.5	ug/L	104	Standard
	Zn	66	251019.4	0.8	**200.6145**	2.591	1.3	ug/L	363	Standard
>	**Ge**	72	565970.9	1.7				ug/L	495142	Standard
	As	75	7636.9	2.3	**6.0250**	0.142	2.4	ug/L	-50	Standard
	Se	82	426.3	0.8	**3.2611**	0.084	2.6	ug/L	14	Standard
	Se-1	77	381.7	1.3	**3.9506**	0.115	2.9	ug/L	42	Standard
>	**Ga**	71	4992.5	2.6				mg/L	42	Standard
	Rb	85	46121.8	0.5				ug/L	17	Standard
	Y	89	1754842.6	1.7				ug/L	417098	Standard
>	**Rh**	103	43.3	35.3				ug/L	13	Standard
	Mo	98	5382.6	1.1	**1.7465**	0.044	2.5	ug/L	11	Standard
	Ag	107	637.3	4.9	**0.0719**	0.004	5.2	ug/L	68	Standard
	Cd	111	1430.5	6.2	**0.5853**	0.028	4.9	mg/L	2	Standard
	Cd	114	3407.8	7.3	**0.5746**	0.047	8.2	ug/L	12	Standard
>	**In**	115	677210.7	1.5				ug/L	587441	Standard
	Sn	118	780.0	4.5	**0.0212**	0.006	30.1	ug/L	497	Standard
	Sb	123	243.4	9.9	**0.0411**	0.005	12.6	ug/L	78	Standard
	Ba	135	199262.8	0.6	**84.4450**	1.189	1.4	ug/L	24	Standard
	Ce	140	678125.1	0.7				ug/L	25	Standard
>	**Tb**	159	1071624.9	1.1				ug/L	939701	Standard
	Ho	165	67051.4	0.5				ug/L	10	Standard
	Tl	203	1859.8	4.4	**0.2096**	0.007	3.5	ug/L	4	Standard
	Tl	205	1828.4	5.2	**0.2396**	0.011	4.7	ug/L	2	Standard
	Pb	206	33182.6	0.6	**5.7494**	0.057	1.0	ug/L	240	Standard
	Pb	207	24419.7	0.3	**4.7511**	0.035	0.7	ug/L	198	Standard
	Pb	208	111320.6	0.3	**5.4889**	0.050	0.9	ug/L	883	Standard
	U	238	25349.9	1.3	**3.4462**	0.014	0.4	ug/L	3	Standard
>	**Bi**	209	559224.1	1.0				ug/L	523984	Standard

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Na	23	3.3	86.6	**30.2574**	26.235	86.7	mg/L	0	Standard
Mg	24	168.3	9.1	**0.1052**	0.014	12.9	mg/L	37	Standard
K	39	280.0	6.4	**0.3709**	0.027	7.3	mg/L	38	Standard
Ca	43	176.7	27.2	**6.2736**	2.632	42.0	mg/L	10	Standard
Fe	54	15625.1	2.7	**10.2448**	0.046	0.4	mg/L	179	Standard
Fe	57	4357.3	3.7	**10.5343**	0.341	3.2	mg/L	335	Standard
> **Sc-1**	45	77871.4	3.1				mg/L	61029	Standard
Cl	35	26050.4	2.2				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	2310.2	5.7				ug/L	1547	Standard
P	31	19966.5	2.1				ug/L	15286	Standard
S	34	2301.8	1.2				ug/L	1572	Standard
Sr	88	181.7	8.4				ug/L	73	Standard
C	12	60.0	66.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	466.7	15.8				mg/L	3	Standard
Dy	164	94635.2	0.7				mg/L	6	Standard
Ho-1	165	67051.4	0.5				mg/L	10	Standard
Er	166	62943.8	1.5				mg/L	13	Standard
I	127	6689.8	6.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.960	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.305	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	115.281
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	106.725
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 20:11:01
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78720.7	2.9				ug/L	74699	Standard
	Be	9	53925.8	1.9	**58.1477**	1.206	2.1	ug/L	8	Standard
	Al	27	8443805.5	1.2	**54.5410**	1.847	3.4	ug/L	1493	Standard
	Sc	45	68074.4	3.5				ug/L	61029	Standard
	Ti	47	45146.2	1.1	**105.2966**	1.372	1.3	ug/L	35	Standard
	V	51	452407.6	0.9	**52.8112**	0.533	1.0	ug/L	1435	Standard
	Cr	52	439865.6	0.2	**51.4989**	0.494	1.0	ug/L	7635	Standard
	Cr	53	55131.8	1.5	**52.4610**	1.191	2.3	ug/L	363	Standard
	Mn	55	411766.6	1.7	**52.1886**	1.083	2.1	ug/L	747	Standard
	Co	59	411137.6	1.8	**55.0576**	1.090	2.0	ug/L	234	Standard
	Ni	60	108563.6	1.0	**51.1869**	0.633	1.2	ug/L	215	Standard
	Cu	65	108514.2	0.8	**51.4879**	0.273	0.5	ug/L	104	Standard
	Zn	66	63813.1	1.5	**51.2390**	0.656	1.3	ug/L	363	Standard
>	**Ge**	72	559563.9	0.9				ug/L	495142	Standard
	As	75	65025.3	0.7	**51.4299**	0.351	0.7	ug/L	-50	Standard
	Se	82	6607.2	0.8	**53.1327**	0.267	0.5	ug/L	14	Standard
	Se-1	77	4509.3	0.5	**54.0117**	0.383	0.7	ug/L	42	Standard
>	**Ga**	71	68.3	11.2				mg/L	42	Standard
	Rb	85	971.7	11.9				ug/L	17	Standard
	Y	89	484276.8	2.3				ug/L	417098	Standard
>	**Rh**	103	33.3	52.7				ug/L	13	Standard
	Mo	98	305352.5	1.7	**102.8803**	2.601	2.5	ug/L	11	Standard
	Ag	107	366186.0	1.2	**50.4411**	0.533	1.1	ug/L	68	Standard
	Cd	111	118185.8	1.5	**50.7502**	0.681	1.3	mg/L	2	Standard
	Cd	114	288421.2	1.0	**50.5001**	0.711	1.4	ug/L	12	Standard
>	**In**	115	654225.0	1.4				ug/L	587441	Standard
	Sn	118	325668.1	1.2	**49.9654**	0.174	0.3	ug/L	497	Standard
	Sb	123	260726.4	2.1	**50.1401**	0.797	1.6	ug/L	78	Standard
	Ba	135	109583.9	1.3	**48.0616**	0.591	1.2	ug/L	24	Standard
	Ce	140	191.7	20.9				ug/L	25	Standard
>	**Tb**	159	983539.2	1.4				ug/L	939701	Standard
	Ho	165	21.7	13.3				ug/L	10	Standard
	Tl	203	449254.6	0.7	**52.6820**	0.493	0.9	ug/L	4	Standard
	Tl	205	410287.0	1.8	**55.4353**	1.032	1.9	ug/L	2	Standard
	Pb	206	287176.7	1.5	**51.8952**	0.724	1.4	ug/L	240	Standard
	Pb	207	254226.6	1.1	**51.7082**	0.492	1.0	ug/L	198	Standard
	Pb	208	1062593.6	0.7	**54.7051**	0.438	0.8	ug/L	883	Standard
	U	238	383746.1	0.8	**53.8863**	0.314	0.6	ug/L	3	Standard
>	**Bi**	209	542059.3	0.3				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.9421**	31.068	173.2	mg/L	0	Standard
Mg	24	4572.4	3.8	**5.2291**	0.219	4.2	mg/L	37	Standard
K	39	2235.2	5.1	**4.3138**	0.121	2.8	mg/L	38	Standard
Ca	43	108.3	35.8	**3.6601**	2.380	65.0	mg/L	10	Standard
Fe	54	7126.2	2.9	**5.2851**	0.313	5.9	mg/L	179	Standard
Fe	57	2081.8	4.0	**5.2741**	0.321	6.1	mg/L	335	Standard
> **Sc-1**	45	68074.4	3.5				mg/L	61029	Standard
Cl	35	27726.7	0.9				ug/L	20195	Standard
Kr	83	0.7	86.6				ug/L	4	Standard
Br	81	1910.1	6.0				ug/L	1547	Standard
P	31	20502.2	2.0				ug/L	15286	Standard
S	34	2426.9	4.0				ug/L	1572	Standard
Sr	88	50.0	26.5				ug/L	73	Standard
C	12	73.3	20.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	15.9	37.3				mg/L	6	Standard
Ho-1	165	21.7	13.3				mg/L	10	Standard
Er	166	16.7	34.6				mg/L	13	Standard
I	127	1525.1	31.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	116.295		
Al	27	109.082		
Sc	45			
Ti	47	105.297		
V	51	105.622		
Cr	52	102.998		
Cr	53			
Mn	55	104.377		
Co	59	110.115		
Ni	60	102.374		
Cu	65	102.976		
Zn	66	102.478		
> Ge	72		113.011	
As	75	102.860		
Se	82	106.265		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	102.880		
Ag	107	100.882		
Cd	111	101.500		
Cd	114			
In	115		111.369	
Sn	118	99.931		
Sb	123	100.280		
Ba	135	96.123		
Ce	140			
Tb	159			
Ho	165			
Tl	203	105.364		
Tl	205			
Pb	206			
Pb	207			
Pb	208	109.410		
U	238	107.773		
Bi	209		103.450	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Co	59	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 20:14:12
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79194.8	0.3				ug/L	74699	Standard
	Be	9	31.7	9.1	**0.0415**	0.003	7.4	ug/L	8	Standard
	Al	27	5331.0	39.7	**0.0208**	0.013	64.7	ug/L	1493	Standard
	Sc	45	70443.5	2.7				ug/L	61029	Standard
	Ti	47	45.0	15.6	**-0.0077**	0.016	206.1	ug/L	35	Standard
	V	51	1613.4	5.4	**-0.0133**	0.013	95.3	ug/L	1435	Standard
	Cr	52	7981.4	3.6	**-0.1047**	0.047	45.2	ug/L	7635	Standard
	Cr	53	418.3	25.3	**0.0570**	0.103	180.4	ug/L	363	Standard
	Mn	55	1741.1	30.3	**0.0658**	0.068	103.0	ug/L	747	Standard
	Co	59	378.7	17.0	**0.0117**	0.009	74.2	ug/L	234	Standard
	Ni	60	306.7	29.3	**0.0162**	0.043	265.9	ug/L	215	Standard
	Cu	65	193.0	22.7	**-0.0150**	0.021	143.0	ug/L	104	Standard
	Zn	66	576.0	19.1	**-0.0039**	0.093	2387.7	ug/L	363	Standard
>	**Ge**	72	580508.2	1.5				ug/L	495142	Standard
	As	75	-17.3	276.0	**0.0468**	0.036	77.6	ug/L	-50	Standard
	Se	82	19.7	47.6	**0.0162**	0.076	468.0	ug/L	14	Standard
	Se-1	77	62.3	8.8	**0.1062**	0.073	68.4	ug/L	42	Standard
>	**Ga**	71	43.3	24.0				mg/L	42	Standard
	Rb	85	53.3	27.1				ug/L	17	Standard
	Y	89	466004.6	0.7				ug/L	417098	Standard
>	**Rh**	103	18.3	41.7				ug/L	13	Standard
	Mo	98	326.5	17.1	**0.1045**	0.019	18.6	ug/L	11	Standard
	Ag	107	195.7	20.5	**0.0141**	0.005	38.2	ug/L	68	Standard
	Cd	111	49.8	49.3	**0.0134**	0.010	76.8	mg/L	2	Standard
	Cd	114	97.6	30.0	**0.0150**	0.005	33.6	ug/L	12	Standard
>	**In**	115	653349.0	0.9				ug/L	587441	Standard
	Sn	118	958.4	16.5	**0.0527**	0.023	43.7	ug/L	497	Standard
	Sb	123	468.2	24.3	**0.0858**	0.021	24.7	ug/L	78	Standard
	Ba	135	169.0	53.9	**0.0580**	0.039	67.5	ug/L	24	Standard
	Ce	140	383.3	72.7				ug/L	25	Standard
>	**Tb**	159	1008003.3	2.5				ug/L	939701	Standard
	Ho	165	33.3	56.8				ug/L	10	Standard
	Tl	203	138.0	27.1	**0.0136**	0.004	29.9	ug/L	4	Standard
	Tl	205	128.3	47.6	**0.0167**	0.008	47.6	ug/L	2	Standard
	Pb	206	364.7	12.5	**-0.0084**	0.008	93.5	ug/L	240	Standard
	Pb	207	321.7	11.0	**-0.0076**	0.006	84.7	ug/L	198	Standard
	Pb	208	1298.7	10.5	**-0.0103**	0.007	67.0	ug/L	883	Standard
	U	238	121.3	35.3	**0.0118**	0.006	48.9	ug/L	3	Standard
>	**Bi**	209	569222.6	0.7				ug/L	523984	Standard

Sample ID: QC Std 7
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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	31.7	50.8	**-0.0295**	0.019	63.3	mg/L	37	Standard
K	39	58.3	13.1	**-0.0021**	0.017	817.3	mg/L	38	Standard
Ca	43	26.7	28.6	**-1.0586**	0.442	41.7	mg/L	10	Standard
Fe	54	154.2	11.8	**-0.0252**	0.011	43.9	mg/L	179	Standard
Fe	57	258.3	4.9	**-0.3125**	0.056	18.0	mg/L	335	Standard
Sc-1	45	70443.5	2.7				mg/L	61029	Standard
Cl	35	27476.9	1.3				ug/L	20195	Standard
Kr	83	1.3	86.6				ug/L	4	Standard
Br	81	1946.8	3.9				ug/L	1547	Standard
P	31	20592.3	4.9				ug/L	15286	Standard
S	34	2348.5	2.8				ug/L	1572	Standard
Sr	88	75.0	46.7				ug/L	73	Standard
C	12	43.3	13.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	74.1	39.2				mg/L	6	Standard
Ho-1	165	33.3	56.8				mg/L	10	Standard
Er	166	53.3	71.0				mg/L	13	Standard
I	127	1293.4	30.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		117.241	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.219
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.633
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW 43 WG573291-03
Sample Date/Time: Wednesday, June 29, 2016 20:17:26
Number of Replicates: 3
Autosampler Position: 410
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78266.6	1.0				ug/L	74699	Standard
	Be	9	21.7	58.1	**0.0312**	0.014	44.4	ug/L	8	Standard
	Al	27	32901.2	14.4	**0.2003**	0.031	15.3	ug/L	1493	Standard
	Sc	45	68990.1	1.1				ug/L	61029	Standard
	Ti	47	59.7	25.6	**0.0271**	0.036	131.8	ug/L	35	Standard
	V	51	1740.6	13.9	**0.0036**	0.029	816.2	ug/L	1435	Standard
	Cr	52	10743.1	2.3	**0.2282**	0.033	14.5	ug/L	7635	Standard
	Cr	53	856.7	10.0	**0.4710**	0.086	18.2	ug/L	363	Standard
	Mn	55	4965.9	44.9	**0.4694**	0.280	59.7	ug/L	747	Standard
	Co	59	438.7	27.8	**0.0202**	0.016	81.0	ug/L	234	Standard
	Ni	60	464.7	17.9	**0.0906**	0.040	44.1	ug/L	215	Standard
	Cu	65	288.0	10.4	**0.0300**	0.015	49.7	ug/L	104	Standard
	Zn	66	2615.6	1.4	**1.6135**	0.041	2.5	ug/L	363	Standard
>	**Ge**	72	573366.1	0.8				ug/L	495142	Standard
	As	75	-37.9	81.3	**0.0303**	0.024	78.8	ug/L	-50	Standard
	Se	82	11.3	32.8	**-0.0488**	0.029	60.5	ug/L	14	Standard
	Se-1	77	61.0	9.1	**0.0990**	0.067	67.3	ug/L	42	Standard
>	**Ga**	71	31.7	9.1				mg/L	42	Standard
	Rb	85	100.0	26.5				ug/L	17	Standard
	Y	89	479627.1	2.2				ug/L	417098	Standard
>	**Rh**	103	1.7	173.2				ug/L	13	Standard
	Mo	98	155.9	47.8	**0.0477**	0.025	52.9	ug/L	11	Standard
	Ag	107	191.7	76.1	**0.0140**	0.020	145.7	ug/L	68	Standard
	Cd	111	21.5	58.8	**0.0014**	0.005	377.2	mg/L	2	Standard
	Cd	114	53.4	80.4	**0.0074**	0.008	102.3	ug/L	12	Standard
>	**In**	115	641242.2	1.6				ug/L	587441	Standard
	Sn	118	930.0	4.7	**0.0512**	0.008	15.1	ug/L	497	Standard
	Sb	123	286.5	19.6	**0.0520**	0.011	21.3	ug/L	78	Standard
	Ba	135	402.7	93.5	**0.1636**	0.167	102.4	ug/L	24	Standard
	Ce	140	951.7	120.0				ug/L	25	Standard
>	**Tb**	159	992014.1	1.0				ug/L	939701	Standard
	Ho	165	68.3	105.1				ug/L	10	Standard
	Tl	203	138.0	108.8	**0.0140**	0.017	122.9	ug/L	4	Standard
	Tl	205	136.7	67.7	**0.0182**	0.012	67.1	ug/L	2	Standard
	Pb	206	481.7	43.4	**0.0137**	0.037	272.5	ug/L	240	Standard
	Pb	207	395.0	43.8	**0.0084**	0.035	416.2	ug/L	198	Standard
	Pb	208	1692.0	26.2	**0.0108**	0.023	209.9	ug/L	883	Standard
	U	238	120.3	76.5	**0.0121**	0.013	104.7	ug/L	3	Standard
>	**Bi**	209	557465.1	0.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	46.7	43.3	**-0.0120**	0.023	188.7	mg/L	37	Standard
K	39	41.7	73.3	**-0.0331**	0.059	178.0	mg/L	38	Standard
Ca	43	16.7	45.8	**-1.5897**	0.437	27.5	mg/L	10	Standard
Fe	54	190.8	15.9	**0.0047**	0.022	466.7	mg/L	179	Standard
Fe	57	281.7	18.5	**-0.2277**	0.154	67.5	mg/L	335	Standard
Sc-1	45	68990.1	1.1				mg/L	61029	Standard
Cl	35	27241.8	2.0				ug/L	20195	Standard
Kr	83	3.3	34.6				ug/L	4	Standard
Br	81	1960.1	2.7				ug/L	1547	Standard
P	31	19042.0	2.0				ug/L	15286	Standard
S	34	2271.8	2.5				ug/L	1572	Standard
Sr	88	70.0	14.3				ug/L	73	Standard
C	12	93.3	12.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	57.4	72.5				mg/L	6	Standard
Ho-1	165	68.3	105.1				mg/L	10	Standard
Er	166	53.3	75.8				mg/L	13	Standard
I	127	1241.7	37.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.776	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		115.798	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.159
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.390
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 43 WG573291-04
Sample Date/Time: Wednesday, June 29, 2016 20:20:37
Number of Replicates: 3
Autosampler Position: 411
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79286.9	1.2				ug/L	74699	Standard
	Be	9	55518.2	1.7	**59.4178**	0.565	1.0	ug/L	8	Standard
	Al	27	18234.3	3.1	**0.1035**	0.005	4.4	ug/L	1493	Standard
	Sc	45	71925.5	3.7				ug/L	61029	Standard
	Ti	47	66.7	12.9	**0.0416**	0.023	54.2	ug/L	35	Standard
	V	51	464385.2	1.4	**52.3659**	1.151	2.2	ug/L	1435	Standard
	Cr	52	468709.1	0.6	**53.0500**	1.578	3.0	ug/L	7635	Standard
	Cr	53	57400.2	0.6	**52.7689**	1.471	2.8	ug/L	363	Standard
	Mn	55	425738.4	0.7	**52.1249**	1.035	2.0	ug/L	747	Standard
	Co	59	411335.9	1.2	**53.2163**	1.483	2.8	ug/L	234	Standard
	Ni	60	114540.7	1.0	**52.1842**	1.705	3.3	ug/L	215	Standard
	Cu	65	115424.0	0.4	**52.9151**	1.312	2.5	ug/L	104	Standard
	Zn	66	68318.0	0.2	**53.0163**	1.377	2.6	ug/L	363	Standard
>	**Ge**	72	579422.8	2.7				ug/L	495142	Standard
	As	75	63888.1	1.5	**48.8227**	1.412	2.9	ug/L	-50	Standard
	Se	82	6548.4	1.5	**50.8872**	2.152	4.2	ug/L	14	Standard
	Se-1	77	4570.0	2.1	**52.8570**	0.847	1.6	ug/L	42	Standard
>	**Ga**	71	68.3	27.7				mg/L	42	Standard
	Rb	85	96.7	7.9				ug/L	17	Standard
	Y	89	471340.1	1.5				ug/L	417098	Standard
>	**Rh**	103	33.3	52.7				ug/L	13	Standard
	Mo	98	1844.9	1.6	**0.6204**	0.021	3.4	ug/L	11	Standard
	Ag	107	386699.9	0.4	**53.6468**	1.108	2.1	ug/L	68	Standard
	Cd	111	120754.4	0.7	**52.2256**	1.320	2.5	mg/L	2	Standard
	Cd	114	290744.9	1.2	**51.2713**	1.454	2.8	ug/L	12	Standard
>	**In**	115	649724.4	1.8				ug/L	587441	Standard
	Sn	118	890.0	5.4	**0.0430**	0.007	15.1	ug/L	497	Standard
	Sb	123	259622.2	1.1	**50.2896**	1.419	2.8	ug/L	78	Standard
	Ba	135	113320.2	1.2	**50.0586**	1.415	2.8	ug/L	24	Standard
	Ce	140	216.7	24.0				ug/L	25	Standard
>	**Tb**	159	1024515.0	4.0				ug/L	939701	Standard
	Ho	165	13.3	57.3				ug/L	10	Standard
	Tl	203	467714.3	0.2	**50.8953**	1.428	2.8	ug/L	4	Standard
	Tl	205	419104.4	1.0	**52.5470**	1.541	2.9	ug/L	2	Standard
	Pb	206	302725.5	0.9	**50.7682**	1.716	3.4	ug/L	240	Standard
	Pb	207	257785.2	0.8	**48.6571**	1.672	3.4	ug/L	198	Standard
	Pb	208	1092150.5	0.9	**52.1642**	0.990	1.9	ug/L	883	Standard
	U	238	389261.3	0.3	**50.7252**	1.507	3.0	ug/L	3	Standard
>	**Bi**	209	584427.6	2.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	56.7	20.4	**-0.0027**	0.015	535.8	mg/L	37	Standard
K	39	35.0	42.9	**-0.0491**	0.026	52.4	mg/L	38	Standard
Ca	43	18.3	15.7	**-1.5405**	0.154	10.0	mg/L	10	Standard
Fe	54	173.6	39.1	**-0.0145**	0.044	301.9	mg/L	179	Standard
Fe	57	231.7	7.6	**-0.4064**	0.037	9.2	mg/L	335	Standard
Sc-1	45	71925.5	3.7				mg/L	61029	Standard
Cl	35	25598.9	2.5				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	1866.8	9.1				ug/L	1547	Standard
P	31	19263.9	1.4				ug/L	15286	Standard
S	34	2041.8	5.6				ug/L	1572	Standard
Sr	88	55.0	27.3				ug/L	73	Standard
C	12	76.7	37.7				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	3	Standard
Dy	164	19.2	93.9				mg/L	6	Standard
Ho-1	165	13.3	57.3				mg/L	10	Standard
Er	166	16.7	124.9				mg/L	13	Standard
I	127	1405.1	22.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.142	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		117.021	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.602
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		111.535
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 43 WG573291-04
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Method 6020 - Summary Report

Sample ID: L1606097401 WG573291-01
Sample Date/Time: Wednesday, June 29, 2016 20:23:48
Number of Replicates: 3
Autosampler Position: 412
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81548.9	1.6				ug/L	74699	Standard
	Be	9	36.7	15.7	**0.0457**	0.006	12.1	ug/L	8	Standard
	Al	27	11596363.1	1.3	**72.2698**	0.564	0.8	ug/L	1493	Standard
	Sc	45	73884.7	1.3				ug/L	61029	Standard
	Ti	47	344.7	7.0	**0.7127**	0.059	8.2	ug/L	35	Standard
	V	51	2330.4	3.5	**0.0834**	0.015	17.8	ug/L	1435	Standard
	Cr	52	13306.8	2.8	**0.5995**	0.076	12.7	ug/L	7635	Standard
	Cr	53	1323.4	7.3	**0.9647**	0.110	11.4	ug/L	363	Standard
	Mn	55	1766896.9	0.7	**229.1909**	3.866	1.7	ug/L	747	Standard
	Co	59	11800.3	0.6	**1.5775**	0.021	1.4	ug/L	234	Standard
	Ni	60	3337.7	1.4	**1.4870**	0.026	1.7	ug/L	215	Standard
	Cu	65	729.0	2.5	**0.2502**	0.002	1.0	ug/L	104	Standard
	Zn	66	5843.1	1.1	**4.3791**	0.046	1.0	ug/L	363	Standard
>	**Ge**	72	548022.2	2.0				ug/L	495142	Standard
	As	75	368.2	8.1	**0.3569**	0.029	8.2	ug/L	-50	Standard
	Se	82	62.0	10.3	**0.3726**	0.060	16.1	ug/L	14	Standard
	Se-1	77	77.3	2.7	**0.3344**	0.023	6.7	ug/L	42	Standard
>	**Ga**	71	126.7	17.8				mg/L	42	Standard
	Rb	85	31524.4	1.4				ug/L	17	Standard
	Y	89	492847.4	3.2				ug/L	417098	Standard
>	**Rh**	103	60.0	14.4				ug/L	13	Standard
	Mo	98	169.7	8.5	**0.0488**	0.006	11.4	ug/L	11	Standard
	Ag	107	132.7	27.4	**0.0046**	0.005	112.7	ug/L	68	Standard
	Cd	111	39.0	30.5	**0.0081**	0.005	64.3	mg/L	2	Standard
	Cd	114	83.8	14.7	**0.0119**	0.002	19.5	ug/L	12	Standard
>	**In**	115	686408.4	2.0				ug/L	587441	Standard
	Sn	118	1350.1	6.2	**0.1033**	0.015	14.9	ug/L	497	Standard
	Sb	123	1853.5	25.3	**0.3348**	0.082	24.4	ug/L	78	Standard
	Ba	135	131659.9	0.9	**55.0560**	1.555	2.8	ug/L	24	Standard
	Ce	140	2260.2	0.8				ug/L	25	Standard
>	**Tb**	159	1046624.7	1.4				ug/L	939701	Standard
	Ho	165	75.0	29.1				ug/L	10	Standard
	Tl	203	216.3	9.4	**0.0226**	0.002	8.3	ug/L	4	Standard
	Tl	205	203.3	8.6	**0.0265**	0.002	7.2	ug/L	2	Standard
	Pb	206	535.3	4.4	**0.0217**	0.002	11.2	ug/L	240	Standard
	Pb	207	421.7	4.6	**0.0124**	0.003	25.0	ug/L	198	Standard
	Pb	208	1891.4	2.2	**0.0194**	0.001	4.1	ug/L	883	Standard
	U	238	92.7	15.8	**0.0080**	0.002	21.9	ug/L	3	Standard
>	**Bi**	209	565094.9	1.8				ug/L	523984	Standard

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Na	23	1.7	173.2	**16.0814**	27.845	173.2	mg/L	0	Standard
Mg	24	5874.5	4.9	**6.2016**	0.379	6.1	mg/L	37	Standard
K	39	696.7	5.3	**1.1574**	0.052	4.5	mg/L	38	Standard
Ca	43	108.3	19.2	**3.1206**	1.021	32.7	mg/L	10	Standard
Fe	54	752.2	10.4	**0.3885**	0.054	13.9	mg/L	179	Standard
Fe	57	410.0	11.6	**0.0774**	0.139	179.8	mg/L	335	Standard
Sc-1	45	73884.7	1.3				mg/L	61029	Standard
Cl	35	27603.8	2.8				ug/L	20195	Standard
Kr	83	3.0	66.7				ug/L	4	Standard
Br	81	11711.2	8.2				ug/L	1547	Standard
P	31	22032.7	3.4				ug/L	15286	Standard
S	34	2200.2	1.4				ug/L	1572	Standard
Sr	88	218.3	6.6				ug/L	73	Standard
C	12	103.3	43.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	96.2	10.7				mg/L	6	Standard
Ho-1	165	75.0	29.1				mg/L	10	Standard
Er	166	80.0	33.1				mg/L	13	Standard
I	127	173019.2	10.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		109.170	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		110.680	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	116.847
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	107.846
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606097409S WG573291-05
Sample Date/Time: Wednesday, June 29, 2016 20:27:00
Number of Replicates: 3
Autosampler Position: 413
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77620.1	3.1				ug/L	74699	Standard
	Be	9	53947.6	2.9	**58.9852**	0.884	1.5	ug/L	8	Standard
	Al	27	10156417.9	2.3	**66.5068**	0.592	0.9	ug/L	1493	Standard
	Sc	45	69663.2	3.3				ug/L	61029	Standard
	Ti	47	217.3	7.1	**0.4124**	0.032	7.7	ug/L	35	Standard
	V	51	458159.6	2.1	**55.0030**	1.779	3.2	ug/L	1435	Standard
	Cr	52	452840.8	0.8	**54.5717**	1.179	2.2	ug/L	7635	Standard
	Cr	53	56488.5	2.6	**55.2901**	2.221	4.0	ug/L	363	Standard
	Mn	55	2082250.4	1.8	**271.9842**	8.205	3.0	ug/L	747	Standard
	Co	59	416796.8	1.5	**57.3937**	1.632	2.8	ug/L	234	Standard
	Ni	60	112326.5	0.8	**54.4621**	1.176	2.2	ug/L	215	Standard
	Cu	65	110417.6	0.6	**53.8701**	0.759	1.4	ug/L	104	Standard
	Zn	66	70959.5	1.2	**58.6468**	1.068	1.8	ug/L	363	Standard
>	**Ge**	72	544304.5	1.4				ug/L	495142	Standard
	As	75	66583.4	2.1	**54.1492**	1.789	3.3	ug/L	-50	Standard
	Se	82	6605.0	1.3	**54.6200**	1.423	2.6	ug/L	14	Standard
	Se-1	77	4636.4	0.8	**57.1316**	0.988	1.7	ug/L	42	Standard
>	**Ga**	71	90.0	19.2				mg/L	42	Standard
	Rb	85	30654.3	2.7				ug/L	17	Standard
	Y	89	497057.5	2.9				ug/L	417098	Standard
>	**Rh**	103	38.3	52.7				ug/L	13	Standard
	Mo	98	163.0	7.4	**0.0487**	0.002	4.2	ug/L	11	Standard
	Ag	107	371099.4	2.0	**50.7567**	1.341	2.6	ug/L	68	Standard
	Cd	111	118377.9	2.8	**50.4636**	1.124	2.2	mg/L	2	Standard
	Cd	114	281427.9	1.4	**48.9324**	1.490	3.0	ug/L	12	Standard
>	**In**	115	659308.0	4.2				ug/L	587441	Standard
	Sn	118	1090.0	7.1	**0.0721**	0.019	25.7	ug/L	497	Standard
	Sb	123	259620.0	1.8	**49.5761**	1.212	2.4	ug/L	78	Standard
	Ba	135	232712.5	1.7	**101.3728**	3.182	3.1	ug/L	24	Standard
	Ce	140	941.7	8.0				ug/L	25	Standard
>	**Tb**	159	982549.7	3.5				ug/L	939701	Standard
	Ho	165	31.7	24.1				ug/L	10	Standard
	Tl	203	453507.3	1.5	**53.4353**	0.634	1.2	ug/L	4	Standard
	Tl	205	415041.8	2.5	**56.3402**	0.862	1.5	ug/L	2	Standard
	Pb	206	296774.5	1.1	**53.8916**	0.589	1.1	ug/L	240	Standard
	Pb	207	252251.9	1.7	**51.5506**	0.378	0.7	ug/L	198	Standard
	Pb	208	1071354.8	2.3	**55.4200**	1.065	1.9	ug/L	883	Standard
	U	238	381907.7	2.6	**53.8787**	0.717	1.3	ug/L	3	Standard
>	**Bi**	209	539522.1	2.0				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.4920**	30.288	173.2	mg/L	0	Standard
Mg	24	5339.3	3.4	**5.9734**	0.106	1.8	mg/L	37	Standard
K	39	681.7	10.6	**1.2038**	0.100	8.3	mg/L	38	Standard
Ca	43	128.3	25.3	**4.6217**	2.038	44.1	mg/L	10	Standard
Fe	54	542.4	5.6	**0.2649**	0.028	10.4	mg/L	179	Standard
Fe	57	371.7	15.7	**0.0334**	0.176	526.0	mg/L	335	Standard
> **Sc-1**	45	69663.2	3.3				mg/L	61029	Standard
Cl	35	28661.1	2.0				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	10680.4	5.1				ug/L	1547	Standard
P	31	21703.9	3.0				ug/L	15286	Standard
S	34	2123.5	4.7				ug/L	1572	Standard
Sr	88	153.3	22.2				ug/L	73	Standard
C	12	123.3	28.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	57.6	48.4				mg/L	6	Standard
Ho-1	165	31.7	24.1				mg/L	10	Standard
Er	166	50.0	91.7				mg/L	13	Standard
I	127	154285.8	7.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.911	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.929	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	112.234
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.965
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606097411SD WG573291-06
Sample Date/Time: Wednesday, June 29, 2016 20:30:11
Number of Replicates: 3
Autosampler Position: 414
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77405.6	1.5				ug/L	74699	Standard
	Be	9	55655.4	2.7	**61.0164**	1.576	2.6	ug/L	8	Standard
	Al	27	12086433.4	1.6	**79.3694**	1.985	2.5	ug/L	1493	Standard
	Sc	45	69212.8	2.6				ug/L	61029	Standard
	Ti	47	325.0	3.5	**0.6412**	0.031	4.8	ug/L	35	Standard
	V	51	466207.8	0.7	**53.8111**	1.021	1.9	ug/L	1435	Standard
	Cr	52	460631.7	1.4	**53.3535**	1.026	1.9	ug/L	7635	Standard
	Cr	53	56936.8	2.6	**53.5625**	1.349	2.5	ug/L	363	Standard
	Mn	55	2273187.5	1.8	**285.5286**	8.405	2.9	ug/L	747	Standard
	Co	59	417957.8	1.5	**55.3411**	1.481	2.7	ug/L	234	Standard
	Ni	60	114539.0	0.3	**53.3968**	0.715	1.3	ug/L	215	Standard
	Cu	65	111050.1	0.5	**52.0971**	0.842	1.6	ug/L	104	Standard
	Zn	66	69817.2	1.2	**55.4674**	1.299	2.3	ug/L	363	Standard
>	**Ge**	72	566018.8	1.2				ug/L	495142	Standard
	As	75	67402.1	1.8	**52.7097**	1.486	2.8	ug/L	-50	Standard
	Se	82	6620.3	2.0	**52.6418**	1.659	3.2	ug/L	14	Standard
	Se-1	77	4557.0	3.8	**53.9777**	2.700	5.0	ug/L	42	Standard
>	**Ga**	71	128.3	43.8				mg/L	42	Standard
	Rb	85	32409.6	0.5				ug/L	17	Standard
	Y	89	470382.0	1.0				ug/L	417098	Standard
>	**Rh**	103	61.7	24.8				ug/L	13	Standard
	Mo	98	196.1	5.9	**0.0618**	0.004	5.9	ug/L	11	Standard
	Ag	107	374581.1	0.3	**52.7275**	0.291	0.6	ug/L	68	Standard
	Cd	111	118658.6	1.5	**52.0656**	0.397	0.8	mg/L	2	Standard
	Cd	114	286274.0	2.6	**51.2138**	0.959	1.9	ug/L	12	Standard
>	**In**	115	640194.5	0.7				ug/L	587441	Standard
	Sn	118	1251.7	9.2	**0.1018**	0.017	16.3	ug/L	497	Standard
	Sb	123	263336.7	0.4	**51.7531**	0.327	0.6	ug/L	78	Standard
	Ba	135	250997.3	0.8	**112.5129**	0.934	0.8	ug/L	24	Standard
	Ce	140	2000.1	6.5				ug/L	25	Standard
>	**Tb**	159	984120.1	1.6				ug/L	939701	Standard
	Ho	165	48.3	11.9				ug/L	10	Standard
	Tl	203	459854.1	0.1	**53.6772**	0.823	1.5	ug/L	4	Standard
	Tl	205	414544.5	0.5	**55.7557**	1.089	2.0	ug/L	2	Standard
	Pb	206	298100.5	1.1	**53.6266**	1.109	2.1	ug/L	240	Standard
	Pb	207	253941.0	0.3	**51.4145**	0.875	1.7	ug/L	198	Standard
	Pb	208	1061848.2	0.5	**54.4146**	0.782	1.4	ug/L	883	Standard
	U	238	385197.1	0.6	**53.8449**	1.070	2.0	ug/L	3	Standard
>	**Bi**	209	544631.3	1.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	5929.5	2.1	**6.6847**	0.075	1.1	mg/L	37	Standard
K	39	801.7	4.2	**1.4479**	0.027	1.8	mg/L	38	Standard
Ca	43	125.0	31.2	**4.4423**	2.177	49.0	mg/L	10	Standard
Fe	54	841.7	6.4	**0.4916**	0.050	10.2	mg/L	179	Standard
Fe	57	441.7	5.4	**0.2489**	0.040	15.9	mg/L	335	Standard
> **Sc-1**	45	69212.8	2.6				mg/L	61029	Standard
Cl	35	28869.5	0.9				ug/L	20195	Standard
Kr	83	3.7	56.8				ug/L	4	Standard
Br	81	12511.8	0.5				ug/L	1547	Standard
P	31	22511.8	6.4				ug/L	15286	Standard
S	34	2320.2	4.3				ug/L	1572	Standard
Sr	88	170.0	8.8				ug/L	73	Standard
C	12	80.0	25.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	3	Standard
Dy	164	93.8	22.7				mg/L	6	Standard
Ho-1	165	48.3	11.9				mg/L	10	Standard
Er	166	60.0	57.7				mg/L	13	Standard
I	127	186712.7	7.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.624	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.314	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	108.980
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.940
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606097401PS WG573790-03
Sample Date/Time: Wednesday, June 29, 2016 20:33:23
Number of Replicates: 3
Autosampler Position: 415
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77767.4	1.4				ug/L	74699	Standard
	Be	9	54620.0	3.0	**59.5914**	1.002	1.7	ug/L	8	Standard
	Al	27	11452990.5	1.0	**74.8575**	1.594	2.1	ug/L	1493	Standard
	Sc	45	70666.1	1.7				ug/L	61029	Standard
	Ti	47	337.7	3.5	**0.6996**	0.031	4.4	ug/L	35	Standard
	V	51	448357.3	1.6	**53.6764**	0.056	0.1	ug/L	1435	Standard
	Cr	52	455460.2	1.4	**54.7521**	0.846	1.5	ug/L	7635	Standard
	Cr	53	57375.1	1.7	**56.0052**	0.200	0.4	ug/L	363	Standard
	Mn	55	2154709.7	0.5	**280.7294**	3.122	1.1	ug/L	747	Standard
	Co	59	404569.2	0.4	**55.5661**	0.653	1.2	ug/L	234	Standard
	Ni	60	112633.8	1.0	**54.4757**	0.921	1.7	ug/L	215	Standard
	Cu	65	109355.9	1.1	**53.2239**	1.011	1.9	ug/L	104	Standard
	Zn	66	70498.3	1.6	**58.1166**	0.789	1.4	ug/L	363	Standard
>	**Ge**	72	545627.2	1.6				ug/L	495142	Standard
	As	75	64850.8	0.9	**52.6029**	0.345	0.7	ug/L	-50	Standard
	Se	82	6485.5	1.8	**53.4847**	0.149	0.3	ug/L	14	Standard
	Se-1	77	4411.0	1.9	**54.1848**	0.787	1.5	ug/L	42	Standard
>	**Ga**	71	161.7	1.8				mg/L	42	Standard
	Rb	85	30524.1	1.7				ug/L	17	Standard
	Y	89	474875.4	0.7				ug/L	417098	Standard
>	**Rh**	103	60.0	16.7				ug/L	13	Standard
	Mo	98	163.5	8.5	**0.0491**	0.004	8.3	ug/L	11	Standard
	Ag	107	365805.1	1.5	**50.1795**	1.312	2.6	ug/L	68	Standard
	Cd	111	117534.8	0.9	**50.2525**	0.249	0.5	mg/L	2	Standard
	Cd	114	285376.1	1.5	**49.7475**	0.497	1.0	ug/L	12	Standard
>	**In**	115	657058.7	1.4				ug/L	587441	Standard
	Sn	118	1523.4	8.4	**0.1383**	0.017	12.1	ug/L	497	Standard
	Sb	123	259036.8	1.0	**49.6101**	1.139	2.3	ug/L	78	Standard
	Ba	135	239792.4	1.1	**104.7386**	1.629	1.6	ug/L	24	Standard
	Ce	140	2208.5	2.2				ug/L	25	Standard
>	**Tb**	159	1019758.9	1.4				ug/L	939701	Standard
	Ho	165	71.7	21.3				ug/L	10	Standard
	Tl	203	456925.9	1.0	**51.8248**	0.434	0.8	ug/L	4	Standard
	Tl	205	410087.8	1.3	**53.5969**	1.082	2.0	ug/L	2	Standard
	Pb	206	289464.5	1.3	**50.5998**	1.170	2.3	ug/L	240	Standard
	Pb	207	248071.4	0.9	**48.8073**	1.130	2.3	ug/L	198	Standard
	Pb	208	1050860.8	0.8	**52.3325**	1.144	2.2	ug/L	883	Standard
	U	238	380364.0	0.7	**51.6678**	1.019	2.0	ug/L	3	Standard
>	**Bi**	209	560465.1	1.6				ug/L	523984	Standard

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Na	23	1.7	173.2	**16.2901**	28.207	173.2	mg/L	0	Standard
Mg	24	5812.8	3.2	**6.4153**	0.191	3.0	mg/L	37	Standard
K	39	706.7	5.8	**1.2347**	0.072	5.8	mg/L	38	Standard
Ca	43	108.3	32.4	**3.3848**	1.922	56.8	mg/L	10	Standard
Fe	54	723.0	16.6	**0.3920**	0.096	24.5	mg/L	179	Standard
Fe	57	435.0	5.7	**0.2027**	0.073	35.8	mg/L	335	Standard
Sc-1	45	70666.1	1.7				mg/L	61029	Standard
Cl	35	28625.7	0.6				ug/L	20195	Standard
Kr	83	1.7	34.6				ug/L	4	Standard
Br	81	11964.7	4.0				ug/L	1547	Standard
P	31	22167.9	1.3				ug/L	15286	Standard
S	34	2268.5	2.8				ug/L	1572	Standard
Sr	88	201.7	11.5				ug/L	73	Standard
C	12	93.3	34.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	3	Standard
Dy	164	120.1	22.8				mg/L	6	Standard
Ho-1	165	71.7	21.3				mg/L	10	Standard
Er	166	66.7	60.6				mg/L	13	Standard
I	127	179600.9	7.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.108	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.196	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.851
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.962
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606097401SDL WG573790-04
Sample Date/Time: Wednesday, June 29, 2016 20:36:34
Number of Replicates: 3
Autosampler Position: 416
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77070.7	3.6				ug/L	74699	Standard
	Be	9	45.0	33.3	**0.0568**	0.015	26.1	ug/L	8	Standard
	Al	27	2260304.8	1.2	**14.9037**	0.448	3.0	ug/L	1493	Standard
	Sc	45	68278.6	3.1				ug/L	61029	Standard
	Ti	47	83.0	9.9	**0.0892**	0.019	21.8	ug/L	35	Standard
	V	51	2192.5	3.4	**0.0673**	0.008	12.3	ug/L	1435	Standard
	Cr	52	10144.1	1.9	**0.2156**	0.020	9.5	ug/L	7635	Standard
	Cr	53	686.7	4.8	**0.3429**	0.034	10.1	ug/L	363	Standard
	Mn	55	355711.8	1.3	**46.1130**	0.456	1.0	ug/L	747	Standard
	Co	59	2492.2	1.8	**0.3045**	0.007	2.2	ug/L	234	Standard
	Ni	60	828.7	2.9	**0.2769**	0.011	3.8	ug/L	215	Standard
	Cu	65	280.0	0.7	**0.0325**	0.001	2.6	ug/L	104	Standard
	Zn	66	2517.5	2.7	**1.6325**	0.059	3.6	ug/L	363	Standard
>	**Ge**	72	546825.8	0.3				ug/L	495142	Standard
	As	75	65.5	45.7	**0.1126**	0.024	21.6	ug/L	-50	Standard
	Se	82	28.6	15.9	**0.0977**	0.038	38.5	ug/L	14	Standard
	Se-1	77	61.3	12.0	**0.1380**	0.090	65.2	ug/L	42	Standard
>	**Ga**	71	98.3	5.9				mg/L	42	Standard
	Rb	85	6301.3	2.8				ug/L	17	Standard
	Y	89	489576.3	2.2				ug/L	417098	Standard
>	**Rh**	103	21.7	48.0				ug/L	13	Standard
	Mo	98	47.0	21.8	**0.0100**	0.004	35.1	ug/L	11	Standard
	Ag	107	179.0	15.1	**0.0115**	0.004	30.5	ug/L	68	Standard
	Cd	111	35.6	11.4	**0.0072**	0.002	22.2	mg/L	2	Standard
	Cd	114	102.0	28.8	**0.0155**	0.005	31.8	ug/L	12	Standard
>	**In**	115	661161.0	0.8				ug/L	587441	Standard
	Sn	118	795.0	15.7	**0.0261**	0.018	68.8	ug/L	497	Standard
	Sb	123	2322.3	23.7	**0.4382**	0.107	24.4	ug/L	78	Standard
	Ba	135	26230.7	1.3	**11.3705**	0.051	0.4	ug/L	24	Standard
	Ce	140	480.0	13.3				ug/L	25	Standard
>	**Tb**	159	1000122.3	1.4				ug/L	939701	Standard
	Ho	165	26.7	10.8				ug/L	10	Standard
	Tl	203	156.0	22.9	**0.0163**	0.004	24.4	ug/L	4	Standard
	Tl	205	150.0	15.3	**0.0202**	0.003	14.3	ug/L	2	Standard
	Pb	206	403.0	8.6	**0.0007**	0.006	871.4	ug/L	240	Standard
	Pb	207	342.3	5.9	**-0.0013**	0.004	288.2	ug/L	198	Standard
	Pb	208	1497.0	5.1	**0.0020**	0.004	181.5	ug/L	883	Standard
	U	238	114.0	13.2	**0.0113**	0.002	17.4	ug/L	3	Standard
>	**Bi**	209	549941.1	1.0				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	1213.4	3.4	**1.3365**	0.084	6.3	mg/L	37	Standard
K	39	180.0	11.1	**0.2425**	0.050	20.5	mg/L	38	Standard
Ca	43	46.7	22.3	**0.1064**	0.547	514.2	mg/L	10	Standard
Fe	54	286.0	10.0	**0.0782**	0.017	21.6	mg/L	179	Standard
Fe	57	306.7	10.9	**-0.1437**	0.079	55.0	mg/L	335	Standard
> **Sc-1**	45	68278.6	3.1				mg/L	61029	Standard
Cl	35	28506.1	0.3				ug/L	20195	Standard
Kr	83	1.7	34.6				ug/L	4	Standard
Br	81	3947.2	6.9				ug/L	1547	Standard
P	31	19479.2	3.3				ug/L	15286	Standard
S	34	2088.5	5.3				ug/L	1572	Standard
Sr	88	101.7	24.8				ug/L	73	Standard
C	12	60.0	60.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	52.5	9.9				mg/L	6	Standard
Ho-1	165	26.7	10.8				mg/L	10	Standard
Er	166	16.7	69.3				mg/L	13	Standard
I	127	39316.0	2.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.175	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.438	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.549
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.954
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606097401SDL WG573790-04
Sample Date/Time: Wednesday, June 29, 2016 20:39:46
Number of Replicates: 3
Autosampler Position: 417
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76547.9	2.1				ug/L	74699	Standard
	Be	9	28.3	27.0	**0.0389**	0.008	20.5	ug/L	8	Standard
	Al	27	465099.1	0.7	**3.0756**	0.044	1.4	ug/L	1493	Standard
	Sc	45	68169.7	0.9				ug/L	61029	Standard
	Ti	47	36.7	6.9	**-0.0243**	0.006	24.2	ug/L	35	Standard
	V	51	2063.3	3.2	**0.0438**	0.007	16.8	ug/L	1435	Standard
	Cr	52	9662.1	0.8	**0.1188**	0.007	6.3	ug/L	7635	Standard
	Cr	53	523.3	10.2	**0.1664**	0.051	30.7	ug/L	363	Standard
	Mn	55	72938.2	2.1	**9.0325**	0.175	1.9	ug/L	747	Standard
	Co	59	731.7	15.3	**0.0598**	0.015	24.7	ug/L	234	Standard
	Ni	60	309.0	4.2	**0.0207**	0.006	30.5	ug/L	215	Standard
	Cu	65	310.7	4.3	**0.0426**	0.006	14.7	ug/L	104	Standard
	Zn	66	2601.2	2.1	**1.6324**	0.044	2.7	ug/L	363	Standard
>	**Ge**	72	565002.4	0.2				ug/L	495142	Standard
	As	75	-33.8	92.8	**0.0331**	0.025	74.3	ug/L	-50	Standard
	Se	82	20.9	22.0	**0.0285**	0.036	128.0	ug/L	14	Standard
	Se-1	77	57.7	17.5	**0.0697**	0.122	174.5	ug/L	42	Standard
>	**Ga**	71	58.3	9.9				mg/L	42	Standard
	Rb	85	1335.1	7.2				ug/L	17	Standard
	Y	89	490772.8	1.5				ug/L	417098	Standard
>	**Rh**	103	15.0	57.7				ug/L	13	Standard
	Mo	98	24.2	10.4	**0.0025**	0.001	32.4	ug/L	11	Standard
	Ag	107	143.3	39.3	**0.0071**	0.008	112.3	ug/L	68	Standard
	Cd	111	11.6	65.7	**-0.0029**	0.003	116.5	mg/L	2	Standard
	Cd	114	25.4	61.7	**0.0024**	0.003	115.9	ug/L	12	Standard
>	**In**	115	647709.2	0.5				ug/L	587441	Standard
	Sn	118	543.3	5.3	**-0.0103**	0.004	42.8	ug/L	497	Standard
	Sb	123	784.5	24.6	**0.1481**	0.037	24.8	ug/L	78	Standard
	Ba	135	5327.9	0.7	**2.3449**	0.015	0.6	ug/L	24	Standard
	Ce	140	110.0	7.9				ug/L	25	Standard
>	**Tb**	159	986009.2	0.5				ug/L	939701	Standard
	Ho	165	10.0	100.0				ug/L	10	Standard
	Tl	203	50.7	34.9	**0.0041**	0.002	51.6	ug/L	4	Standard
	Tl	205	46.7	71.3	**0.0064**	0.005	70.3	ug/L	2	Standard
	Pb	206	376.3	19.7	**-0.0043**	0.014	323.1	ug/L	240	Standard
	Pb	207	290.7	20.1	**-0.0119**	0.012	103.4	ug/L	198	Standard
	Pb	208	1284.0	11.0	**-0.0091**	0.008	86.4	ug/L	883	Standard
	U	238	44.0	79.9	**0.0017**	0.005	294.8	ug/L	3	Standard
>	**Bi**	209	552760.9	1.2				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	246.7	9.1	**0.2201**	0.028	12.6	mg/L	37	Standard
K	39	50.0	40.0	**-0.0154**	0.039	250.4	mg/L	38	Standard
Ca	43	20.0	43.3	**-1.3952**	0.477	34.2	mg/L	10	Standard
Fe	54	182.5	25.5	**0.0004**	0.036	9653.1	mg/L	179	Standard
Fe	57	256.7	8.8	**-0.2933**	0.068	23.1	mg/L	335	Standard
Sc-1	45	68169.7	0.9				mg/L	61029	Standard
Cl	35	28987.0	1.4				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	2360.2	9.1				ug/L	1547	Standard
P	31	19090.4	2.0				ug/L	15286	Standard
S	34	2190.2	0.6				ug/L	1572	Standard
Sr	88	73.3	27.6				ug/L	73	Standard
C	12	46.7	44.6				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	22.7	102.4				mg/L	6	Standard
Ho-1	165	10.0	100.0				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	10453.6	7.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.475	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.109	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.259
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.492
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 20:42:59
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73968.6	3.7				ug/L	74699	Standard
	Be	9	51786.8	4.7	**59.3953**	0.618	1.0	ug/L	8	Standard
	Al	27	8138418.2	2.1	**55.9353**	1.016	1.8	ug/L	1493	Standard
	Sc	45	66422.0	2.7				ug/L	61029	Standard
	Ti	47	44367.5	1.4	**105.9251**	2.261	2.1	ug/L	35	Standard
	V	51	448161.7	0.9	**53.5504**	0.563	1.1	ug/L	1435	Standard
	Cr	52	438098.2	0.5	**52.5206**	0.674	1.3	ug/L	7635	Standard
	Cr	53	53648.2	1.8	**52.2574**	1.658	3.2	ug/L	363	Standard
	Mn	55	415062.2	0.8	**53.8560**	1.244	2.3	ug/L	747	Standard
	Co	59	407202.7	0.3	**55.8201**	1.033	1.9	ug/L	234	Standard
	Ni	60	107214.7	0.8	**51.7442**	0.748	1.4	ug/L	215	Standard
	Cu	65	106835.8	1.9	**51.8884**	1.090	2.1	ug/L	104	Standard
	Zn	66	63121.9	0.7	**51.8882**	0.831	1.6	ug/L	363	Standard
>	Ge	72	546729.2	1.7				ug/L	495142	Standard
	As	75	63950.8	1.3	**51.7792**	1.311	2.5	ug/L	-50	Standard
	Se	82	6522.2	2.4	**53.7001**	1.978	3.7	ug/L	14	Standard
	Se-1	77	4462.7	1.0	**54.7224**	0.944	1.7	ug/L	42	Standard
>	Ga	71	48.3	11.9				mg/L	42	Standard
	Rb	85	921.7	10.0				ug/L	17	Standard
	Y	89	469877.0	1.2				ug/L	417098	Standard
>	Rh	103	31.7	45.6				ug/L	13	Standard
	Mo	98	306064.1	0.6	**105.7488**	1.650	1.6	ug/L	11	Standard
	Ag	107	358011.4	0.7	**50.5757**	0.461	0.9	ug/L	68	Standard
	Cd	111	116953.2	1.0	**51.5035**	0.389	0.8	mg/L	2	Standard
	Cd	114	288128.0	0.1	**51.7395**	0.785	1.5	ug/L	12	Standard
>	In	115	637946.0	1.6				ug/L	587441	Standard
	Sn	118	327214.8	2.0	**51.4831**	0.238	0.5	ug/L	497	Standard
	Sb	123	254525.5	0.5	**50.2034**	0.722	1.4	ug/L	78	Standard
	Ba	135	108828.5	1.0	**48.9489**	0.332	0.7	ug/L	24	Standard
	Ce	140	90.0	29.4				ug/L	25	Standard
>	Tb	159	958314.6	1.8				ug/L	939701	Standard
	Ho	165	11.7	49.5				ug/L	10	Standard
	Tl	203	447416.0	0.6	**53.4811**	1.019	1.9	ug/L	4	Standard
	Tl	205	409322.9	1.6	**56.3810**	1.712	3.0	ug/L	2	Standard
	Pb	206	283417.6	0.7	**52.2045**	0.689	1.3	ug/L	240	Standard
	Pb	207	252263.1	0.7	**52.2984**	0.513	1.0	ug/L	198	Standard
	Pb	208	1062273.6	1.1	**55.7538**	1.546	2.8	ug/L	883	Standard
	U	238	385444.7	0.9	**55.1725**	1.082	2.0	ug/L	3	Standard
>	Bi	209	531871.1	1.6				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4377.3	2.2	**5.1285**	0.149	2.9	mg/L	37	Standard
K	39	2180.2	1.8	**4.3148**	0.109	2.5	mg/L	38	Standard
Ca	43	118.3	10.6	**4.3366**	0.588	13.6	mg/L	10	Standard
Fe	54	6990.5	4.3	**5.3088**	0.233	4.4	mg/L	179	Standard
Fe	57	2083.5	2.8	**5.4386**	0.352	6.5	mg/L	335	Standard
> **Sc-1**	45	66422.0	2.7				mg/L	61029	Standard
Cl	35	29309.7	0.2				ug/L	20195	Standard
Kr	83	2.3	24.7				ug/L	4	Standard
Br	81	2156.8	3.9				ug/L	1547	Standard
P	31	21223.2	2.6				ug/L	15286	Standard
S	34	2665.2	2.0				ug/L	1572	Standard
Sr	88	71.7	8.1				ug/L	73	Standard
C	12	56.7	40.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	19.8	1.4				mg/L	6	Standard
Ho-1	165	11.7	49.5				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	2623.6	23.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	118.791		
Al	27	111.871		
Sc	45			
Ti	47	105.925		
V	51	107.101		
Cr	52	105.041		
Cr	53			
Mn	55	107.712		
Co	59	111.640		
Ni	60	103.488		
Cu	65	103.777		
Zn	66	103.776		
> Ge	72		110.419	
As	75	103.558		
Se	82	107.400		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	105.749		
Ag	107	101.151		
Cd	111	103.007		
Cd	114			
In	115		108.597	
Sn	118	102.966		
Sb	123	100.407		
Ba	135	97.898		
Ce	140			
Tb	159			
Ho	165			
Tl	203	106.962		
Tl	205			
Pb	206			
Pb	207			
Pb	208	111.508		
U	238	110.345		
Bi	209		101.505	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	
QC Std 6	Co	59	

Sample ID: QC Std 6
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QC Std 6	Pb	208
QC Std 6	U	238

Sample ID: QC Std 6
Report Date/Time: Wednesday, June 29, 2016 20:45:16
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 20:46:11
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75383.8	1.3				ug/L	74699	Standard
	Be	9	28.3	20.4	**0.0395**	0.006	15.9	ug/L	8	Standard
	Al	27	2638.6	20.0	**0.0044**	0.003	78.6	ug/L	1493	Standard
	Sc	45	68713.9	3.5				ug/L	61029	Standard
	Ti	47	37.7	13.4	**-0.0232**	0.011	49.4	ug/L	35	Standard
	V	51	1533.2	3.6	**-0.0202**	0.008	41.3	ug/L	1435	Standard
	Cr	52	7879.4	2.2	**-0.1054**	0.029	27.9	ug/L	7635	Standard
	Cr	53	448.3	16.3	**0.0885**	0.063	71.1	ug/L	363	Standard
	Mn	55	901.4	5.8	**-0.0363**	0.007	18.9	ug/L	747	Standard
	Co	59	283.3	10.0	**-0.0002**	0.004	1542.3	ug/L	234	Standard
	Ni	60	186.3	2.6	**-0.0379**	0.003	8.3	ug/L	215	Standard
	Cu	65	132.7	3.4	**-0.0421**	0.001	3.4	ug/L	104	Standard
	Zn	66	415.3	5.4	**-0.1263**	0.014	10.9	ug/L	363	Standard
>	**Ge**	72	573402.3	1.2				ug/L	495142	Standard
	As	75	-34.2	13.3	**0.0332**	0.003	10.5	ug/L	-50	Standard
	Se	82	17.2	23.7	**-0.0025**	0.031	1279.2	ug/L	14	Standard
	Se-1	77	54.3	12.3	**0.0204**	0.082	402.5	ug/L	42	Standard
>	**Ga**	71	35.0	37.8				mg/L	42	Standard
	Rb	85	30.0	28.9				ug/L	17	Standard
	Y	89	465691.4	1.8				ug/L	417098	Standard
>	**Rh**	103	6.7	43.3				ug/L	13	Standard
	Mo	98	268.8	25.2	**0.0874**	0.025	29.0	ug/L	11	Standard
	Ag	107	132.7	5.0	**0.0058**	0.001	22.7	ug/L	68	Standard
	Cd	111	15.2	35.4	**-0.0012**	0.003	209.6	mg/L	2	Standard
	Cd	114	58.4	20.0	**0.0084**	0.002	23.7	ug/L	12	Standard
>	**In**	115	638175.3	2.2				ug/L	587441	Standard
	Sn	118	866.7	15.8	**0.0416**	0.019	45.6	ug/L	497	Standard
	Sb	123	616.5	30.1	**0.1169**	0.034	29.1	ug/L	78	Standard
	Ba	135	50.7	18.3	**0.0068**	0.005	67.0	ug/L	24	Standard
	Ce	140	28.3	27.0				ug/L	25	Standard
>	**Tb**	159	990005.2	3.0				ug/L	939701	Standard
	Ho	165	6.7	86.6				ug/L	10	Standard
	Tl	203	92.0	24.5	**0.0086**	0.003	32.5	ug/L	4	Standard
	Tl	205	76.7	43.4	**0.0102**	0.005	44.4	ug/L	2	Standard
	Pb	206	305.7	10.6	**-0.0179**	0.007	38.8	ug/L	240	Standard
	Pb	207	274.7	5.9	**-0.0162**	0.004	23.3	ug/L	198	Standard
	Pb	208	1058.7	7.3	**-0.0216**	0.005	23.5	ug/L	883	Standard
	U	238	60.3	25.7	**0.0037**	0.002	61.2	ug/L	3	Standard
>	**Bi**	209	564302.2	2.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	35.0	37.8	**-0.0253**	0.014	54.1	mg/L	37	Standard
K	39	45.0	19.2	**-0.0261**	0.014	54.4	mg/L	38	Standard
Ca	43	26.7	39.0	**-1.0220**	0.608	59.5	mg/L	10	Standard
Fe	54	162.5	17.8	**-0.0163**	0.018	110.8	mg/L	179	Standard
Fe	57	258.3	8.1	**-0.2948**	0.047	15.9	mg/L	335	Standard
Sc-1	45	68713.9	3.5				mg/L	61029	Standard
Cl	35	28935.6	0.2				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	1740.1	12.2				ug/L	1547	Standard
P	31	21446.8	2.8				ug/L	15286	Standard
S	34	2463.5	5.1				ug/L	1572	Standard
Sr	88	71.7	17.6				ug/L	73	Standard
C	12	43.3	13.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	12.9	115.2				mg/L	6	Standard
Ho-1	165	6.7	86.6				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	2023.5	28.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		115.806	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Wednesday, June 29, 2016 20:48:28
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.636
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.694
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Wednesday, June 29, 2016 20:48:28
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2.3.3 Metals CVAA Data (Mercury)

2.3.3.1 Summary Data

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-02	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18WW03F-061416	**Prep Method:**	7470A	**Prep Date:**	06/16/2016 07:27
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/26/2016 12:23
Workgroup #:	WG573236	**Analyst:**	AMA	**Run Date:**	06/26/2016 13:14
Collect Date:	06/14/2016 07:40	**Dilution:**	1	**File ID:**	M7.062616.131428
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-03	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18CPTMW04SW-061416	**Prep Method:**	7470A	**Prep Date:**	06/16/2016 07:27
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/26/2016 12:23
Workgroup #:	WG573236	**Analyst:**	AMA	**Run Date:**	06/26/2016 13:16
Collect Date:	06/14/2016 09:00	**Dilution:**	1	**File ID:**	M7.062616.131659
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.3.2 QC Summary

Example Cold Vapor Mercury Calculations
Hydra AA Mercury Analyzer / CETAC M-7600 Quick Trace Mercury Analyzer

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and five standards.

2.0 Calculating the concentration (C) of an element in water using data from run log and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to Volume (mL)	40
Vi = Aliquot Volume (mL)	40
D = Manual dilution factor, if required (10X = 10)	1
Cx = Concentration of element in ppb (ug/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Ws} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to volume (mL)	40
Ws = Aliquot weight (g)	0.6
D = Manual dilution factor	1
Cx = Concentration of element in ug/kg	6.67

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

1 Cx = Concentration calculated as received (wet basis)	6.67
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	8.33

8.33 ug/kg = 0.00833 mg/kg

Microbac Laboratories Inc.
Metals Digest Log

Workgroup: WG572915
Analyst: REK
Spike Analyst: REK
Method: 7470A
Run Date: 06/16/2016 07:27
Hotblock Start Temp: 95.2 @ 07:15
Hotblock End Temp: 95 @ 09:15
Instrument: HB7

SOP: ME404 Revison 17
Spike Solution: STD76639
Spike Witness: VC
H2SO4 Lot #: COA18359
40 & 50 ML. DIGESTION TU COA18772
HNO3 Lot #: COA18905
K2S2O8 1:1 Lot #: RGT37046
KMnO4 1:1 Lot #: RGT37082
Mercury Water ICV Lot #: STD76641
HG H2O STDS 10PPM Lot #: STD76647

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Spike Amount	Due Date
1	WG572915-02	BLANK	1	40 mL	40 mL		
2	WG572915-03	LCS	1	40 mL	40 mL	4 mL	
3	L16060764-01	SAMP	1	40 mL	40 mL		06/28/16
4	L16060764-02	SAMP	1	40 mL	40 mL		06/28/16
5	L16060764-03	SAMP	1	40 mL	40 mL		06/28/16
6	WG572915-01	REF	1	40 mL	40 mL		
7	L16060764-04	RS01	1	40 mL	40 mL		06/28/16
8	WG572915-04	MS	1	36 mL	40 mL	4 mL	
9	L16060764-05	MS01	1	36 mL	40 mL	4 mL	06/28/16
10	WG572915-05	MSD	1	36 mL	40 mL	4 mL	
11	L16060764-06	SD01	1	36 mL	40 mL	4 mL	06/28/16
12	L16060794-01	SAMP	1	40 mL	40 mL		06/24/16
13	L16060794-02	SAMP	1	40 mL	40 mL		06/24/16
14	L16060794-03	SAMP	1	40 mL	40 mL		06/24/16
15	L16060794-04	SAMP	1	40 mL	40 mL		06/24/16
16	L16060822-02	SAMP	1	40 mL	40 mL		06/24/16
17	L16060822-03	SAMP	1	40 mL	40 mL		06/24/16
18	L16060823-02	SAMP	1	40 mL	40 mL		06/24/16
19	L16060823-03	SAMP	1	40 mL	40 mL		06/24/16
20	L16060823-04	SAMP	1	40 mL	40 mL		06/24/16
21	L16060840-01	SAMP	1	40 mL	40 mL		06/29/16
22	L16060840-02	SAMP	1	40 mL	40 mL		06/29/16
23	L16060840-03	SAMP	1	40 mL	40 mL		06/29/16
24	L16060840-04	SAMP	1	40 mL	40 mL		06/29/16
25	L16060840-05	SAMP	1	40 mL	40 mL		06/29/16
26	L16060840-06	SAMP	1	40 mL	40 mL		06/29/16

Analyst: [signature]

Reviewer: [signature]

* All calibration and check standards are prepared and digested with sample batch following the procedures in section 7.0 of SOP ME404/ME405.

HB_DIG - Modified 07/26/2012
PDF ID: 4809802
Report generated: 06/16/2016 12:16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 062616A.CSV
Analyst1: AMA Analyst2: N/A
Method: 7470A/245.1 SOP: ME404 Rev: 17
Maintenance Log ID:

Calibration Std: STD76647 ICV Std: STD76641 Post Spike: STD76647
ICSA: N/A ICSAB: N/A Int. Std:
CCV: LLCCV: Tuning Sol :
Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 573236

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	M7.062616.121106	WG574322-01	Calibration Point		1		06/26/16 12:11
2	M7.062616.121337	WG574322-02	Calibration Point		1		06/26/16 12:13
3	M7.062616.121609	WG574322-03	Calibration Point		1		06/26/16 12:16
4	M7.062616.121841	WG574322-04	Calibration Point		1		06/26/16 12:18
5	M7.062616.122114	WG574322-05	Calibration Point		1		06/26/16 12:21
6	M7.062616.122348	WG574322-06	Calibration Point		1		06/26/16 12:23
7	M7.062616.122622	WG574322-07	Initial Calibration Verification		1		06/26/16 12:26
8	M7.062616.122853	WG574322-08	Initial Calib Blank		1		06/26/16 12:28
9	M7.062616.123125	WG574322-09	CCV		1		06/26/16 12:31
10	M7.062616.123356	WG574322-10	CCB		1		06/26/16 12:33
11	M7.062616.123627	WG572915-02	Method/Prep Blank	40/40	1		06/26/16 12:36
12	M7.062616.123858	WG572915-03	Laboratory Control S	40/40	1		06/26/16 12:38
13	M7.062616.124129	L16060764-01	MW-23-004	40/40	1		06/26/16 12:41
14	M7.062616.124401	WG573236-01	Post Digestion Spike		1	L16060764-01	06/26/16 12:44
15	M7.062616.124633	L16060764-02	MW-23-002		1		06/26/16 12:46
16	M7.062616.124905	L16060764-03	FD-061316		1		06/26/16 12:49
17	M7.062616.125137	WG572915-05	Matrix Spike Duplica	36/40	1	L16060764-04	06/26/16 12:51
18	M7.062616.125410	L16060764-04	MW-23-005		1	WG572915-01	06/26/16 12:54
19	M7.062616.125643	WG572915-04	Matrix Spike	36/40	1	L16060764-04	06/26/16 12:56
20	M7.062616.125916	L16060794-01	A08-MW06-Y1S2	40/40	1		06/26/16 12:59
21	M7.062616.130149	WG574322-11	CCV		1		06/26/16 13:01
22	M7.062616.130420	WG574322-12	CCB		1		06/26/16 13:04
23	M7.062616.130654	L16060794-02	A08-MW09-Y1S2	40/40	1		06/26/16 13:06
24	M7.062616.130927	L16060794-03	A09-MW02-Y1S2	40/40	1		06/26/16 13:09
25	M7.062616.131158	L16060794-04	A09-MW07-Y1S2	40/40	1		06/26/16 13:11
26	M7.062616.131428	L16060822-02	18WW03F-061416	40/40	1		06/26/16 13:14
27	M7.062616.131659	L16060822-03	18CPTMW04SW-061416	40/40	1		06/26/16 13:16
28	M7.062616.131930	L16060823-02	126F-061416	40/40	1		06/26/16 13:19
29	M7.062616.132202	L16060823-03	C08-061416	40/40	1		06/26/16 13:22
30	M7.062616.132434	L16060823-04	C03-061416	40/40	1		06/26/16 13:24
31	M7.062616.132706	L16060840-01	MW-24-004R	40/40	1		06/26/16 13:27
32	M7.062616.132938	L16060840-02	MW-24-003R	40/40	1		06/26/16 13:29
33	M7.062616.133211	WG574322-13	CCV		1		06/26/16 13:32
34	M7.062616.133441	WG574322-14	CCB		1		06/26/16 13:34

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 062616A.CSV

Analyst1: AMA Analyst2: N/A

Method: 7470A/245.1 SOP: ME404 Rev: 17

Maintenance Log ID:

Calibration Std: STD76647 ICV Std: STD76641 Post Spike: STD76647

ICSA: N/A ICSAB: N/A Int. Std:

CCV: LLCCV: Tuning Sol :

Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 573236

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	M7.062616.133714	L16060840-03	FR-061416-24	40/40	1		06/26/16 13:37
36	M7.062616.133947	L16060840-04	MW-24-002R	40/40	1		06/26/16 13:39
37	M7.062616.134220	L16060840-05	MW-24-005	40/40	1		06/26/16 13:42
38	M7.062616.134454	L16060840-06	EB-LOW FLOW TUBING	40/40	1		06/26/16 13:44
39	M7.062616.134726	WG574322-15	CCV		1		06/26/16 13:47
40	M7.062616.134957	WG574322-16	CCB		1		06/26/16 13:49

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Microbac Laboratories Inc.

Data Checklist

Date: 26-JUN-2016
Analyst: AMA
Analyst: NA
Method: 7470A/245.1
Instrument: CVAA1
Curve Workgroup: 574322
Runlog ID: 75946
Analytical Workgroups: 573236

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	0794, 0822, 0823, 0840
Client Forms	X
Level X	
Level 3	0840
Level 4	0794, 0822, 0823
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	AMA
Secondary Reviewer	BKT
Comments	

Primary Reviewer:
28-JUN-2016
Alexandra M. Alfred

Secondary Reviewer:
29-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-29-2016 12:56:19

Microbac Laboratories Inc.

00672835

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 7470A

AAB#: WG573236

Login Number: L16060822

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW03F-061416	02	06/14/16					06/16/2016	2	28		06/26/16	12.2	28	
18CPTMW04SW-061416	03	06/14/16					06/16/2016	1.9	28		06/26/16	12.2	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4828268
Report generated 06/28/2016 10:47

METHOD BLANK SUMMARY

Login Number: L16060822
Blank File ID: M7.062616.123627
Prep Date: 06/16/16 07:27
Analyzed Date: 06/26/16 12:36
Analyst: AMA

Work Group: WG573236
Blank Sample ID: WG572915-02
Instrument ID: CVAA1
Method: 7470A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572915-03	M7.062616.123858	06/26/16 12:38	01
18WW03F-061416	L16060822-02	M7.062616.131428	06/26/16 13:14	01
18CPTMW04SW-061416	L16060822-03	M7.062616.131659	06/26/16 13:16	01

Report Name: BLANK_SUMMARY
PDF File ID: 4828269
Report generated 06/28/2016 10:47

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060822 Prep Date: 06/16/16 07:27 Sample ID: WG572915-02
Instrument ID: CVAA1 Run Date: 06/26/16 12:36 Prep Method: 7470A
File ID: M7.062616.123627 Analyst: AMA Method: 7470A
Workgroup (AAB#): WG573236 Matrix: Water Units: mg/L
Contract #: Cal ID: CVAA1-26-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Mercury	0.000100	0.000400	0.000100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4828270
28-JUN-2016 10:48

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060822 Run Date: 06/26/2016 Sample ID: WG572915-03
Instrument ID: CVAA1 Run Time: 12:38 Prep Method: 7470A
File ID: M7.062616.123858 Analyst: AMA Method: 7470A
Workgroup (AAB#): WG573236 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76639 Cal ID: CVAA1-26-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Mercury	0.00400	0.00421	105	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4828271
Report generated: 06/28/2016 10:48

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060822 Cal ID: CVAA1 - Worknum: WG573236
Instrument ID: CVAA1 Contract #: Method: 7470A
Parent ID: WG572915-01 File ID: M7.062616.125410 Dil: 1 Matrix: WATER
Sample ID: WG572915-04 MS File ID: M7.062616.125643 Dil: 1 Units: mg/L
Sample ID: WG572915-05 MSD File ID: M7.062616.125137 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Mercury	ND	0.00444	0.00479	108	0.00444	0.00480	108	0.0463	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4828272
Report generated 06/28/2016 10:48

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060822 **Worknum:** WG573236
Instrument ID: CVAA1 **Method:** 7470A
Post Spike ID: WG573236-01 **File ID:** M7.062616.124401 **Dil:** 1 **Units:** ug/L
Sample ID: L16060764-01 **File ID:** M7.062616.124129 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MERCURY	1.07		0	U	1	107.1	85 - 115	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4828267
Report generated: 06/28/2016 10:47

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060822
Analytical Method: 7470A
ICAL Worknum: WG574322

Workgroup (AAB#): WG573236
Instrument ID: CVAA1
Initial Calibration Date: 06/26/2016 12:23

Analyte	WG574322-01		WG574322-02		WG574322-03		WG574322-04		WG574322-05		WG574322-06	
	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT
Mercury	0	57.64	0.200	2673	1.00	13280	2.00	26640	5.00	66160	10.0	128600

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4828273
Report generated 06/28/2016 10:48

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060822
Analytical Method: 7470A
ICAL Worknum: WG574322

Workgroup (AAB#): WG573236
Instrument ID: CVAA1
Initial Calibration Date: 06/26/2016 12:23

Analyte	R	Q
Mercury	1.000	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4828273
Report generated 06/28/2016 10:48

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060822
Instrument ID: CVAA1
File ID: M7.062616.122853
Workgroup (AAB#): WG573236
Matrix: WATER

Run Date: 06/26/2016
Run Time: 12:28
Analyst: AMA
Cal ID: CVAA1 - 26-JUN-16

Sample ID: WG574322-08
Method: 7470A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
MERCURY	.1	.4	.1	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4828275
Report generated 06/28/2016 10:48

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/26/2016
Sample ID: WG574322-10
Instrument ID: CVAA1
Run Time: 12:33
Method: 7470A
File ID: M7.062616.123356
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG573236
Cal ID: CVAA1 - 26-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4828277
Report generated 06/28/2016 10:48

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/26/2016
Sample ID: WG574322-12
Instrument ID: CVAA1
Run Time: 13:04
Method: 7470A
File ID: M7.062616.130420
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG573236
Cal ID: CVAA1 - 26-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4828277
Report generated 06/28/2016 10:48

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/26/2016
Sample ID: WG574322-14
Instrument ID: CVAA1
Run Time: 13:34
Method: 7470A
File ID: M7.062616.133441
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG573236
Cal ID: CVAA1 - 26-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4828277
Report generated 06/28/2016 10:48

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060822 Run Date: 06/26/2016 Sample ID: WG574322-07
Instrument ID: CVAA1 Run Time: 12:26 Method: 7470A
File ID: M7.062616.122622 Analyst: AMA Units: ug/L
Workgroup (AAB#): WG573236 Cal ID: CVAA1 - 26-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Mercury		2	2.12	106	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4828274
Report generated 06/28/2016 10:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822
Run Date: 06/26/2016
Sample ID: WG574322-09
Instrument ID: CVAA1
Run Time: 12:31
Method: 7470A
File ID: M7.062616.123125
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG573236
Cal ID: CVAA1 - 26-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00210	mg/L	105	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4828276
Report generated 06/28/2016 10:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822
Run Date: 06/26/2016
Sample ID: WG574322-11
Instrument ID: CVAA1
Run Time: 13:01
Method: 7470A
File ID: M7.062616.130149
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG573236
Cal ID: CVAA1 - 26-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00219	mg/L	109	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4828276
Report generated 06/28/2016 10:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822
Run Date: 06/26/2016
Sample ID: WG574322-13
Instrument ID: CVAA1
Run Time: 13:32
Method: 7470A
File ID: M7.062616.133211
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG573236
Cal ID: CVAA1 - 26-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00223	mg/L	112	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4828276
Report generated 06/28/2016 10:48

2.3.3.3 Raw Data

PDM CVAA1 245.1/7470/7471

Report Generated By CETAC QuickTrace
Analyst: VOA
Worksheet file: C:\Program Files (x86)\QuickTrace\Worksheets\062616A.wsz
Date Started: 6/26/2016 11:26:47 AM
Comment:

Results

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
Standard #0					STD	06/26/16 12:11:06 pm	0.0000	58	36.36		1.00
Replicates	72.2	26.9	61.9	69.6							
Standard #1 (0.2 ug/L)					STD	06/26/16 12:13:37 pm	0.2000	2673	0.35		1.00
Replicates	2686.9	2668.0	2667.5	2669.0							
Standard #2 (1.0 ug/L)					STD	06/26/16 12:16:09 pm	1.0000	13283	0.12		1.00
Replicates	13271.5	13294.2	13266.7	13300.2							
Standard #3 (2.0 ug/L)					STD	06/26/16 12:18:41 pm	2.0000	26641	0.01		1.00
Replicates	26642.8	26641.1	26641.1	26638.4							
Standard #4 (5.0 ug/L)					STD	06/26/16 12:21:14 pm	5.0000	66159	0.11		1.00
Replicates	66221.6	66218.8	66109.5	66085.3							
Standard #5 (10.0 ug/L)					STD	06/26/16 12:23:48 pm	10.0000	128636	0.07		1.00
Replicates	128716.2	128712.3	128583.1	128533.8							

Calibration

Equation: A = 499.952 + 12881.860C
R2: 0.99980
SEE: 796.4388
Flags:

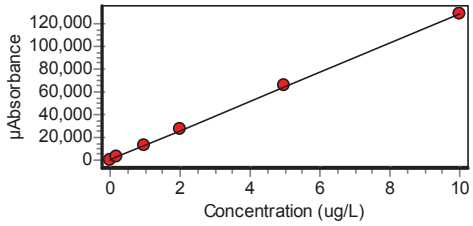

ICV					ICV	06/26/16 12:26:22 pm	2.1170	27772	0.16		1.00
Replicates	27815.3	27806.0	27744.4	27723.2							
% Recovery	105.86										

Approved: June 28, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
ICB					ICB	06/26/16 12:28:53 pm	-0.0379	11	291.32		1.00
Replicates	4.1	-22.5	57.6	6.8							
CCV					CCV	06/26/16 12:31:25 pm	2.0950	27485	0.16		1.00
Replicates	27434.8	27461.4	27527.1	27517.9							
% Recovery	104.74										
CCB					CCB	06/26/16 12:33:56 pm	-0.0387	1	964.00		1.00
Replicates	9.0	5.0	-0.8	-9.8							
WG572915-02					UNK	06/26/16 12:36:27 pm	-0.0350	50	39.52		1.00
Replicates	72.8	57.2	40.4	27.9							
WG572915-03					UNK	06/26/16 12:38:58 pm	4.2070	54690	0.15		1.00
Replicates	54575.2	54727.8	54702.1	54755.0							
L1606076401					UNK	06/26/16 12:41:29 pm	-0.0379	11	72.00		1.00
Replicates	8.4	14.3	21.3	1.9							
WG573236-01					SPK	06/26/16 12:44:01 pm	1.0710	14290	0.11		1.00
Replicates	14266.8	14293.4	14303.5	14296.9							
% Recovery	110.84										
L1606076402					UNK	06/26/16 12:46:33 pm	-0.0345	56	29.18		1.00
Replicates	46.7	78.1	41.1	58.6							
L1606076403					UNK	06/26/16 12:49:05 pm	-0.0307	104	20.90		1.00
Replicates	76.8	97.6	116.7	125.9							
WG572915-01					UNK	06/26/16 12:51:37 pm	4.3160	56092	0.13		1.00
Replicates	56018.1	56175.3	56135.9	56040.3							
L1606076405					MSK	06/26/16 12:54:10 pm	-0.0402	-17	79.85	N	1.00
Replicates	-11.0	-38.2	-11.2	-9.2							
% Recovery	-108.89										
L1606076406					MSDUP	06/26/16 12:56:43 pm	4.3140	56069	0.23	D	1.00
Replicates	55903.2	56042.6	56133.8	56194.6							
% Recovery	-0.05	RPD 203.76									

Approved: June 28, 2016

Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1606079401					UNK	06/26/16 12:59:16 pm	-0.0393	-7	153.33		1.00
Replicates	-17.5	2.6	1.3	-12.4							
CCV					CCV	06/26/16 01:01:49 pm	2.1870	28674	0.28		1.00
Replicates	28565.4	28662.0	28726.3	28743.6							
% Recovery	109.36										
CCB					CCB	06/26/16 01:04:20 pm	-0.0400	-15	71.00		1.00
Replicates	-20.6	-24.4	-16.6	0.3							
L1606079402					UNK	06/26/16 01:06:54 pm	-0.0360	36	40.24		1.00
Replicates	40.1	23.8	25.1	54.5							
L1606079403					UNK	06/26/16 01:09:27 pm	0.0214	775	1.64		1.00
Replicates	766.0	779.2	763.7	791.0							
L1606079404					UNK	06/26/16 01:11:58 pm	-0.0321	87	18.96		1.00
Replicates	68.6	84.0	86.7	108.7							
L1606082202					UNK	06/26/16 01:14:28 pm	-0.0340	62	33.50		1.00
Replicates	78.3	50.1	79.4	38.2							
L1606082203					UNK	06/26/16 01:16:59 pm	-0.0350	49	26.85		1.00
Replicates	46.5	64.4	52.2	32.7							
L1606082302					UNK	06/26/16 01:19:30 pm	-0.0247	181	8.96		1.00
Replicates	178.7	199.1	187.1	160.4							
L1606082303					UNK	06/26/16 01:22:02 pm	-0.0283	135	14.85		1.00
Replicates	148.4	150.3	135.4	106.8							
L1606082304					UNK	06/26/16 01:24:34 pm	-0.0349	51	26.20		1.00
Replicates	38.5	67.5	41.8	55.0							
L1606084001					UNK	06/26/16 01:27:06 pm	-0.0336	67	31.06		1.00
Replicates	78.3	84.6	37.9	65.6							

Approved: June 28, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1606084002					UNK	06/26/16 01:29:38 pm	-0.0355	42	37.05		1.00
Replicates	37.5	51.9	22.2	56.9							
CCV					CCV	06/26/16 01:32:11 pm	2.2310	29245	0.47		1.00
Replicates	29065.4	29210.7	29333.0	29372.9							
% Recovery	111.57										
CCB					CCB	06/26/16 01:34:41 pm	-0.0387	1	222.94		1.00
Replicates	7.9	10.6	18.4	-34.1							
L1606084003					UNK	06/26/16 01:37:14 pm	-0.0343	58	10.23		1.00
Replicates	58.3	56.5	65.5	51.2							
L1606084004					UNK	06/26/16 01:39:47 pm	-0.0311	99	14.17		1.00
Replicates	85.9	113.0	88.0	109.0							
L1606084005					UNK	06/26/16 01:42:20 pm	-0.0347	53	38.40		1.00
Replicates	51.7	58.0	26.5	75.7							
L1606084006					UNK	06/26/16 01:44:54 pm	-0.0362	34	52.68		1.00
Replicates	39.2	7.6	40.3	47.5							
CCV					CCV	06/26/16 01:47:26 pm	2.2480	29454	0.57		1.00
Replicates	29236.8	29421.4	29529.4	29626.5							
% Recovery	112.38										
CCB					CCB	06/26/16 01:49:57 pm	-0.0385	4	182.59		1.00
Replicates	14.9	-3.5	0.5	5.6							

Approved: June 28, 2016

Alexandra M. Alfred

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
July 7, 2016

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BNB - Brandi N. Bentley
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJQ - Cameron J. Quick
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
CV - Carl Volkman
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
EMW - ERIC M. WILKEN
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LJH - Lacey J. Hendershot
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
NPH - Natalie P. Hart
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
July 07, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
July 07, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Debra Richmann	Mail to:	Linda Raabe
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000		112 East Pecan STE. 400
	Marietta, OH 45750	Sampler (print):	Scott Beesinger		San Antonio, TX 78205
Phone:	1-800-373-4071				210-296-2000
Client:	AECOM	Signature:	Scott Beesinger	Fed Ex Airbill No:	
Address:	112 East Pecan Ste. 400				
	San Antonio, TX 78205	pH:		Program:	
Turn Around Time:	STANDARD				
Project Name/Location:	Longhorn				
Project Number:	60274185.0013BH 1824 MR10				

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Total Metals	1,4 - DIOXANE					SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 18/24	18WW03-061416			6/14/16	0740		✓	W	6	✓	✓		✓									
	18WW03F-061416			6/14/16	0740		✓	W	1			✓										
	18CPTMW04SW-061416			6/14/16	0900		✓	W	7	✓	✓	✓	✓									
	18CPTMW04-061416			6/14/16	1000		✓	W	6	✓	✓		✓									
	18CPTMW04FD-061416			6/14/16	1000		✓	W	6	✓	✓		✓									
	TRIP BLANK			6/14/16			✓	W	2	✓												

Comments: **STANDARD TAT**

Relinquished by: (Signature) Scott Beesinger	Date 6/14/16	Time 1530	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Rec (Sig			Time	Remarks:

Microbac OVD
Received: 06/15/2016 09:54
By: BRENDA GREGORY 221000087198

Brenda Gregory

*Homogenize all composite samples prior to analysis

...nager, Pink QA/QC Manager

00672861

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060822
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 24-JUN-2016

Samplenum	Container ID	Products
L16060822-01	760842	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	ORG4	15-JUN-2016 14:47	BRG		
2	STORE	ORG4	A1	29-JUN-2016 12:15	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	15-JUN-2016 14:47	BRG		
2	ANALYZ	V1	ORG4	16-JUN-2016 08:16	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:15	CLS	JST	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	15-JUN-2016 14:47	BRG		
2	ANALYZ	V1	ORG4	16-JUN-2016 08:16	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:15	CLS	JST	

Samplenum	Container ID	Products
L16060822-01	760843	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:47	BRG		
2	PREP	W1	EXT	15-JUN-2016 17:32	CPD	AZH	
3	DISP	EXT	DISP	16-JUN-2016 15:22	BJO	BJO	
4	ANALYZ*	EXT	SEMI	20-JUN-2016 09:18	NPH	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:47	BRG		
2	STORE	W1	A1	24-JUN-2016 10:00	BRG	BRG	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060822-01	760844	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:47	BRG		
2	ANALYZ	W1	SEM	22-JUN-2016 14:47	JWR	CLS	
3	STORE	SEM	A1	24-JUN-2016 12:04	BRG	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060822
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 24-JUN-2016

Samplenum	Container ID	Products
L16060822-02	760845	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:47	BRG		
2	PREP	W1	DIG	15-JUN-2016 14:59	AC	CLS	
3	ANALYZ*	DIG	METALS	17-JUN-2016 14:30	CJQ	AC	
4	STORE	DIG	A1	17-JUN-2016 14:50	CLS	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060822-03	760846	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	15-JUN-2016 14:47	BRG		
2	ANALYZ	V1	ORG4	16-JUN-2016 08:16	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:15	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	15-JUN-2016 14:47	BRG		
2	ANALYZ	V1	ORG4	16-JUN-2016 08:16	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:14	CLS	JST	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	15-JUN-2016 14:47	BRG		
2	ANALYZ	V1	ORG4	16-JUN-2016 08:16	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:14	CLS	JST	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060822
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 24-JUN-2016

Samplenum	Container ID	Products
L16060822-03	760847	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:47	BRG		
2	PREP	W1	EXT	15-JUN-2016 17:32	CPD	AZH	
3	DISP	EXT	DISP	16-JUN-2016 15:23	BJO	BJO	
4	ANALYZ*	EXT	SEMI	20-JUN-2016 09:18	NPH	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:47	BRG		
2	STORE	W1	A1	24-JUN-2016 08:22	BRG	BRG	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060822-03	760848	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:47	BRG		
2	ANALYZ	W1	SEM	22-JUN-2016 14:47	JWR	CLS	
3	STORE	SEM	A1	24-JUN-2016 12:04	BRG	JWR	

Samplenum	Container ID	Products
L16060822-03	760849	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:47	BRG		
2	PREP	W1	DIG	15-JUN-2016 14:59	AC	CLS	
3	ANALYZ*	DIG	METALS	17-JUN-2016 14:30	CJQ	AC	
4	STORE	DIG	A1	17-JUN-2016 14:50	CLS	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060822
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 24-JUN-2016

Samplenum	Container ID	Products
L16060822-04	760850	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	15-JUN-2016 14:47	BRG		
2	ANALYZ	V1	ORG4	16-JUN-2016 08:16	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:15	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	15-JUN-2016 14:47	BRG		
2	ANALYZ	V1	ORG4	16-JUN-2016 08:16	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:15	CLS	JST	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	15-JUN-2016 14:47	BRG		
2	ANALYZ	V1	ORG4	16-JUN-2016 08:16	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:15	CLS	JST	

Samplenum	Container ID	Products
L16060822-04	760851	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:47	BRG		
2	PREP	W1	EXT	15-JUN-2016 17:32	CPD	AZH	
3	DISP	EXT	DISP	16-JUN-2016 15:22	BJO	BJO	
4	ANALYZ*	EXT	SEMI	20-JUN-2016 09:18	NPH	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:47	BRG		
2	STORE	W1	A1	24-JUN-2016 08:23	BRG	BRG	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060822
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 24-JUN-2016

Samplenum	Container ID	Products
L16060822-04	760852	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:47	BRG		
2	ANALYZ	W1	SEM	22-JUN-2016 14:47	JWR	CLS	
3	STORE	SEM	A1	24-JUN-2016 12:04	BRG	JWR	

Samplenum	Container ID	Products
L16060822-05	760853	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	15-JUN-2016 14:47	BRG		
2	ANALYZ	V1	ORG4	16-JUN-2016 08:16	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:15	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	15-JUN-2016 14:47	BRG		
2	ANALYZ	V1	ORG4	16-JUN-2016 08:16	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:15	CLS	JST	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	15-JUN-2016 14:47	BRG		
2	ANALYZ	V1	ORG4	16-JUN-2016 08:16	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:15	CLS	JST	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060822
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 24-JUN-2016

Samplenum	Container ID	Products
L16060822-05	760854	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:47	BRG		
2	PREP	W1	EXT	15-JUN-2016 17:32	CPD	AZH	
3	DISP	EXT	DISP	16-JUN-2016 15:22	BJO	BJO	
4	ANALYZ*	EXT	SEMI	20-JUN-2016 09:18	NPH	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:47	BRG		
2	STORE	W1	A1	24-JUN-2016 08:23	BRG	BRG	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060822-05	760855	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:47	BRG		
2	ANALYZ	W1	SEM	22-JUN-2016 14:47	JWR	CLS	
3	STORE	SEM	A1	24-JUN-2016 12:04	BRG	JWR	

Samplenum	Container ID	Products
L16060822-06	760856	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	15-JUN-2016 14:47	BRG		
2	ANALYZ	V1	ORG4	16-JUN-2016 08:16	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:15	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	15-JUN-2016 14:47	BRG		
2	ANALYZ	V1	ORG4	16-JUN-2016 08:16	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:15	CLS	JST	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16060823

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Michelle Taylor – Client Services Specialist
(740) 373-4071
Michelle.Taylor@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on July 08 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
0018103	H	3.0		J2317165009	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
126-061416	L16060823-01	06/14/2016 11:10	06/15/2016 09:56
126F-061416	L16060823-02	06/14/2016 11:10	06/15/2016 09:56
C08-061416	L16060823-03	06/14/2016 13:10	06/15/2016 09:56
C03-061416	L16060823-04	06/14/2016 14:15	06/15/2016 09:56
TRIP BLANK	L16060823-05	06/14/2016 00:01	06/15/2016 09:56

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Microbac REPORT L16060823
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.1 Narratives

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060823
Project Name:		**Method:**	8260
Prep Batch Number(s):	573038	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-07-07 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden		Analyst I	2016-07-07 20:45:33

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060823
Project Name:		**Method:**	8260
Prep Batch Number(s):	573038	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-07-07 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?		X			1
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				
Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060823
Project Name:		**Method:**	8260
Prep Batch Number(s):	573038	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-07-07 00:00:00		

Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				
Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060823
Project Name:		**Method:**	8260
Prep Batch Number(s):	573038	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-07-07 00:00:00		

Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			2
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					
Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				

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Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060823
Project Name:		**Method:**	8260
Prep Batch Number(s):	573038	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-07-07 00:00:00		

Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) 1,2-Dichloroethane-d4 marginally exceeded the UCL in samples 01 and 04, target compounds were not detected above the reporting limit. Reanalysis not required.

2) Bromomethane was below the LCL and 2,2-Dichloropropane exceeded the UCL in CCV WG573037-02.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060823
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572806	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-23 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-06-23 18:23:03

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060823
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572806	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-23 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060823
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572806	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-23 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060823
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572806	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-23 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060823
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572806	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-23 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060823
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572806	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-23 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060823
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574101	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Wade DeLong	Wade DeLong	Chemist I	2016-06-28 17:39:56

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060823
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574101	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060823
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574101	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060823
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574101	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060823
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574101	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060823
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574101	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	126-061416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573038	**Analyst:**	FJB	**Run Date:**	06/16/2016 20:50
Collect Date:	06/14/2016 11:10	**Dilution:**	1	**File ID:**	8M413045
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	Q	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	Q	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	Q	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	Q	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	Q	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	Q	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	Q	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	Q	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	Q	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	Q	2.00	1.00	0.500
Chloroform	67-66-3	0.250	Q	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	Q	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	Q	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	Q	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	Q	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	Q	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	Q	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	Q	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	Q	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	Q	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	Q	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	Q	1.00	0.500	0.250

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	Q	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	Q	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	Q	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	Q	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	Q	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	Q	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	Q	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	1.28	J	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	Q	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	Q	1.00	0.250	0.125
Styrene	100-42-5	0.250	Q	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	Q	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	Q	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	Q	1.00	0.500	0.250
Toluene	108-88-3	0.500	Q	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	Q	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	Q	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	Q	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	Q	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	Q	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	Q	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	Q	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	Q	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	Q	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	Q	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	114	85	115	
1,2-Dichloroethane-d4	121	70	120	*
Toluene-d8	101	85	120	
4-Bromofluorobenzene	99.5	75	120	

J	The reported result is an estimated value.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	126-061416	**Prep Method:**	3520C	**Prep Date:**	06/15/2016 18:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573365	**Analyst:**	MES	**Run Date:**	06/21/2016 18:40
Collect Date:	06/14/2016 11:10	**Dilution:**	1	**File ID:**	15M18480
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	73.6	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	126-061416	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/24/2016 21:44
Collect Date:	06/14/2016 11:10	**Dilution:**	1	**File ID:**	1LM.LM35468
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.140	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	126F-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 16:45
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/23/2016 20:33
Collect Date:	06/14/2016 11:10	**Dilution:**	1	**File ID:**	T3.062316.203318
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.100	U	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	5.93		0.200	0.100	0.0500
Potassium, Total	7440-09-7	4.36		2.00	1.00	0.500

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	126F-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/25/2016 12:36
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/25/2016 14:03
Collect Date:	06/14/2016 11:10	**Dilution:**	1	**File ID:**	T3.062516.140359
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	126F-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 16:45
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/23/2016 21:32
Collect Date:	06/14/2016 11:10	**Dilution:**	20	**File ID:**	T3.062316.213215
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	296		10.0	5.00	2.50
Magnesium, Total	7439-95-4	235		20.0	10.0	5.00
Sodium, Total	7440-23-5	829		20.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	126F-061416	**Prep Method:**	3015	**Prep Date:**	06/27/2016 08:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/28/2016 13:15
Workgroup #:	WG574570	**Analyst:**	BKT	**Run Date:**	06/28/2016 20:48
Collect Date:	06/14/2016 11:10	**Dilution:**	1	**File ID:**	NI.062816.204859
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.0147		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00231	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.0656		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00314	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0313		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.000584	J	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0168	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	126F-061416	**Prep Method:**	3015	**Prep Date:**	06/27/2016 08:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/29/2016 11:35
Workgroup #:	WG574570	**Analyst:**	BKT	**Run Date:**	06/29/2016 12:28
Collect Date:	06/14/2016 11:10	**Dilution:**	50	**File ID:**	NI.062916.122812
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	9.33		0.300	0.150	0.0750
Manganese, Total	7439-96-5	1.07		0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-02	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	126F-061416	**Prep Method:**	7470A	**Prep Date:**	06/16/2016 07:27
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/26/2016 12:23
Workgroup #:	WG573236	**Analyst:**	AMA	**Run Date:**	06/26/2016 13:19
Collect Date:	06/14/2016 11:10	**Dilution:**	1	**File ID:**	M7.062616.131930
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	C08-061416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573038	**Analyst:**	FJB	**Run Date:**	06/16/2016 21:19
Collect Date:	06/14/2016 13:10	**Dilution:**	1	**File ID:**	8M413046
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	5.61		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	119	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	100	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	C08-061416	**Prep Method:**	3520C	**Prep Date:**	06/15/2016 18:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573365	**Analyst:**	MES	**Run Date:**	06/21/2016 19:02
Collect Date:	06/14/2016 13:10	**Dilution:**	1	**File ID:**	15M18481
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	44.3	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	C08-061416	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/24/2016 22:03
Collect Date:	06/14/2016 13:10	**Dilution:**	1	**File ID:**	1LM.LM35469
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	C08-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/25/2016 12:36
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/25/2016 14:07
Collect Date:	06/14/2016 13:10	**Dilution:**	1	**File ID:**	T3.062516.140759
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	C08-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 16:45
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/23/2016 20:37
Collect Date:	06/14/2016 13:10	**Dilution:**	1	**File ID:**	T3.062316.203719
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.114	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	0.627		0.200	0.100	0.0500
Potassium, Total	7440-09-7	2.18		2.00	1.00	0.500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	C08-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 16:45
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/23/2016 21:43
Collect Date:	06/14/2016 13:10	**Dilution:**	20	**File ID:**	T3.062316.214348
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	239		10.0	5.00	2.50
Magnesium, Total	7439-95-4	143		20.0	10.0	5.00
Sodium, Total	7440-23-5	761		20.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	C08-061416	**Prep Method:**	3015	**Prep Date:**	06/27/2016 08:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/28/2016 13:15
Workgroup #:	WG574570	**Analyst:**	BKT	**Run Date:**	06/28/2016 20:52
Collect Date:	06/14/2016 13:10	**Dilution:**	1	**File ID:**	NI.062816.205210
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00829		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000385	J	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00247	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00683		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00295	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0138		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00101	J	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	C08-061416	**Prep Method:**	3015	**Prep Date:**	06/27/2016 08:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/29/2016 11:35
Workgroup #:	WG574570	**Analyst:**	BKT	**Run Date:**	06/29/2016 12:31
Collect Date:	06/14/2016 13:10	**Dilution:**	50	**File ID:**	NI.062916.123124
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	5.12		0.300	0.150	0.0750
Manganese, Total	7439-96-5	3.15		0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-03	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	C08-061416	**Prep Method:**	7470A	**Prep Date:**	06/16/2016 07:27
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/26/2016 12:23
Workgroup #:	WG573236	**Analyst:**	AMA	**Run Date:**	06/26/2016 13:22
Collect Date:	06/14/2016 13:10	**Dilution:**	1	**File ID:**	M7.062616.132202
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	C03-061416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573038	**Analyst:**	FJB	**Run Date:**	06/16/2016 21:48
Collect Date:	06/14/2016 14:15	**Dilution:**	1	**File ID:**	8M413047
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	Q	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	Q	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	Q	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	Q	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	Q	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	Q	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	Q	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	Q	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	Q	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	Q	2.00	1.00	0.500
Chloroform	67-66-3	0.250	Q	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	Q	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	Q	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	Q	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	Q	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	Q	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	Q	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	Q	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	Q	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	Q	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	Q	1.00	0.500	0.250

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	Q	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	Q	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	Q	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	Q	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	Q	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	Q	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	Q	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	Q	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	Q	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	Q	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	Q	1.00	0.250	0.125
Styrene	100-42-5	0.250	Q	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	Q	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	Q	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	Q	1.00	0.500	0.250
Toluene	108-88-3	0.500	Q	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	Q	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	Q	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	Q	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	Q	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	Q	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	Q	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	Q	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	Q	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	Q	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	Q	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	121	70	120	*
Toluene-d8	104	85	120	
4-Bromofluorobenzene	100	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	C03-061416	**Prep Method:**	3520C	**Prep Date:**	06/15/2016 18:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573365	**Analyst:**	MES	**Run Date:**	06/21/2016 19:25
Collect Date:	06/14/2016 14:15	**Dilution:**	1	**File ID:**	15M18482
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	43.2	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	C03-061416	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/24/2016 22:22
Collect Date:	06/14/2016 14:15	**Dilution:**	10	**File ID:**	1LM.LM35470
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	5.48		4.00	2.00	1.00

Certificate of Analysis

Sample #:	L16060823-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	C03-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/25/2016 12:36
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/25/2016 14:12
Collect Date:	06/14/2016 14:15	**Dilution:**	1	**File ID:**	T3.062516.141200
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	C03-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 16:45
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/23/2016 20:41
Collect Date:	06/14/2016 14:15	**Dilution:**	1	**File ID:**	T3.062316.204123
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.100	U	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Potassium, Total	7440-09-7	4.01		2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	C03-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 16:45
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/23/2016 21:47
Collect Date:	06/14/2016 14:15	**Dilution:**	20	**File ID:**	T3.062316.214744
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	55.4		10.0	5.00	2.50
Iron, Total	7439-89-6	101		4.00	2.00	1.00
Magnesium, Total	7439-95-4	35.8		20.0	10.0	5.00
Sodium, Total	7440-23-5	169		20.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	C03-061416	**Prep Method:**	3015	**Prep Date:**	06/27/2016 08:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/28/2016 13:15
Workgroup #:	WG574570	**Analyst:**	BKT	**Run Date:**	06/28/2016 20:55
Collect Date:	06/14/2016 14:15	**Dilution:**	1	**File ID:**	NI.062816.205522
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00684		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00200	U	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.000578	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00200	U	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.00400	U	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0153	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	C03-061416	**Prep Method:**	3015	**Prep Date:**	06/27/2016 08:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/29/2016 11:35
Workgroup #:	WG574570	**Analyst:**	BKT	**Run Date:**	06/29/2016 12:34
Collect Date:	06/14/2016 14:15	**Dilution:**	50	**File ID:**	NI.062916.123435
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	1.56		0.300	0.150	0.0750
Manganese, Total	7439-96-5	1.85		0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-04	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	C03-061416	**Prep Method:**	7470A	**Prep Date:**	06/16/2016 07:27
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/26/2016 12:23
Workgroup #:	WG573236	**Analyst:**	AMA	**Run Date:**	06/26/2016 13:24
Collect Date:	06/14/2016 14:15	**Dilution:**	1	**File ID:**	M7.062616.132434
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573038	**Analyst:**	FJB	**Run Date:**	06/16/2016 19:23
Collect Date:	06/14/2016 00:01	**Dilution:**	1	**File ID:**	8M413042
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	114	70	120	
Toluene-d8	106	85	120	
4-Bromofluorobenzene	102	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	126-061416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573038	**Analyst:**	FJB	**Run Date:**	06/16/2016 20:50
Collect Date:	06/14/2016 11:10	**Dilution:**	1	**File ID:**	8M413045
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	Q	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	Q	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	Q	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	Q	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	Q	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	Q	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	Q	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	Q	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	Q	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	Q	2.00	1.00	0.500
Chloroform	67-66-3	0.250	Q	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	Q	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	Q	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	Q	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	Q	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	Q	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	Q	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	Q	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	Q	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	Q	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	Q	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	Q	1.00	0.500	0.250

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	Q	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	Q	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	Q	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	Q	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	Q	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	Q	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	Q	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	1.28	J	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	Q	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	Q	1.00	0.250	0.125
Styrene	100-42-5	0.250	Q	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	Q	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	Q	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	Q	1.00	0.500	0.250
Toluene	108-88-3	0.500	Q	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	Q	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	Q	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	Q	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	Q	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	Q	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	Q	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	Q	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	Q	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	Q	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	Q	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	114	85	115	
1,2-Dichloroethane-d4	121	70	120	*
Toluene-d8	101	85	120	
4-Bromofluorobenzene	99.5	75	120	

J	The reported result is an estimated value.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	C08-061416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573038	**Analyst:**	FJB	**Run Date:**	06/16/2016 21:19
Collect Date:	06/14/2016 13:10	**Dilution:**	1	**File ID:**	8M413046
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

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Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	5.61		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	119	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	100	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	C03-061416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573038	**Analyst:**	FJB	**Run Date:**	06/16/2016 21:48
Collect Date:	06/14/2016 14:15	**Dilution:**	1	**File ID:**	8M413047
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	Q	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	Q	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	Q	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	Q	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	Q	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	Q	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	Q	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	Q	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	Q	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	Q	2.00	1.00	0.500
Chloroform	67-66-3	0.250	Q	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	Q	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	Q	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	Q	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	Q	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	Q	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	Q	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	Q	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	Q	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	Q	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	Q	1.00	0.500	0.250

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	Q	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	Q	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	Q	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	Q	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	Q	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	Q	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	Q	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	Q	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	Q	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	Q	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	Q	1.00	0.250	0.125
Styrene	100-42-5	0.250	Q	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	Q	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	Q	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	Q	1.00	0.500	0.250
Toluene	108-88-3	0.500	Q	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	Q	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	Q	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	Q	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	Q	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	Q	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	Q	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	Q	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	Q	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	Q	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	Q	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	121	70	120	*
Toluene-d8	104	85	120	
4-Bromofluorobenzene	100	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573038	**Analyst:**	FJB	**Run Date:**	06/16/2016 19:23
Collect Date:	06/14/2016 00:01	**Dilution:**	1	**File ID:**	8M413042
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	114	70	120	
Toluene-d8	106	85	120	
4-Bromofluorobenzene	102	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051316
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53752

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG568561

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412209	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 08:38
8M412210	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 08:57
8M412211	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 09:29
8M412212	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 09:56
8M412213	WG568561-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/13/16 10:19
8M412214	WG568561-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/13/16 10:51
8M412215	WG568565-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76072	05/13/16 11:36
8M412216	BFB CHECK	NA	1	1	STD76034	05/13/16 12:04
8M412217	BFB CHECK	NA	1	1	STD76034	05/13/16 12:18
8M412218	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 12:36
8M412219	RINSE	NA	1	1		05/13/16 13:00
8M412220	WG568561-02 0.3ug/L STD 8260	NA	1	1	STD76127	05/13/16 13:29
8M412221	WG568561-03 0.4ug/L STD 8260	NA	1	1	STD76127	05/13/16 13:58
8M412222	WG568561-04 1ug/L STD 8260	NA	1	1	STD76127	05/13/16 14:27
8M412223	WG568561-05 2ug/L STD 8260	NA	1	1	STD76127	05/13/16 14:56
8M412224	WG568561-06 5ug/L STD 8260	NA	1	1	STD76127	05/13/16 15:25
8M412225	WG568561-07 20ug/L STD 8260	NA	1	1	STD76127	05/13/16 15:54
8M412226	WG568561-08 50ug/L STD 8260	NA	1	1	STD76127	05/13/16 16:23
8M412227	WG568561-09 100ug/L STD 8260	NA	1	1	STD76127	05/13/16 16:52
8M412228	WG568561-10 200ug/L STD 8260	NA	1	1	STD76127	05/13/16 17:21
8M412229	WG568561-11 300ug/L STD 8260	NA	1	1	STD76127	05/13/16 17:50
8M412230	RINSE	NA	1	1		05/13/16 18:19
8M412231	RINSE	NA	1	1		05/13/16 18:49
8M412232	WG568561-12 50ug/L ALT SRC STD 8260	NA	1	1	STD76109	05/13/16 19:17
8M412233	RINSE	NA	1	1		05/13/16 19:46

Comments

Seq.	Rerun	Dil.	Reason	Analytes
5	X			
File ID: 8M412213				
	Several compounds were low, DNR.			
6				
File ID: 8M412214				

Approved: May 20, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS8	Dataset:	051316		
Analyst1:	TMB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	23
Method:	624	SOP:	MSV10	Rev:	14
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:	53752				

Internal Standard: STD75899 Surrogate Standard: STD75899

CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG568561

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			Two C compounds failed. DNR. Run a curve.	
7 File ID: 8M412215				
			DNR.	

Approved: May 20, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051716
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76072; STD76127 LCS: STD76109; STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG569079; WG569083

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412319	WG569084-01 50ng BFB STD 8260	NA	1	1	STD76034	05/17/16 08:53
8M412320	WG569084-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/17/16 09:18
8M412321	WG569079-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76072	05/17/16 09:47
8M412322	WG569079-03 50ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 10:16
8M412323	WG569079-04 20ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 10:44
8M412324	WG569079-05 5ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 11:13
8M412325	WG569079-06 200ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 11:42
8M412326	WG569079-07 300ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 12:40
8M412327	WG569079-08 400ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 13:10
8M412328	WG569079-09 500ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 13:39
8M412329	RINSE	NA	1	1		05/17/16 14:08
8M412330	RINSE	NA	1	1		05/17/16 14:37
8M412331	WG569079-10 100ug/L ALT SRC STD 826	NA	1	1	STD75801	05/17/16 15:06
8M412332	WG569259-01 BFB 50ng 8260	NA	1	1	STD76034	05/17/16 18:27
8M412333	WG569259-02 50ug/L CCV 8260	NA	1	1	STD76034	05/17/16 18:53
8M412334	WG569260-01 100ug/L CCV A9	NA	1	1	STD76072	05/17/16 19:22
8M412335	WG569083-01 VBLK0517 BLANK 8260	NA	1	1		05/17/16 19:51
8M412336	WG569083-02 20ug/L LCS 8260	NA	1	1	STD76109	05/17/16 20:20
8M412337	WG569083-03 20ug/L LCS2 8260	NA	1	1	STD76109	05/17/16 20:49
8M412338	WG569083-04 100ug/L LCS A9	NA	1	1	STD75801	05/17/16 21:18
8M412339	WG569083-05 100ug/L LCS2 A9	NA	1	1	STD75801	05/17/16 21:46
8M412340	L16050844-01 TB A 826-A9-SPE	5	1	1		05/17/16 22:16
8M412341	L16050844-07 EB A 826-A9-SPE	5	1	1		05/17/16 22:45
8M412342	L16050844-11 AB A 826-A9-SPE	5	1	1		05/17/16 23:14
8M412343	L16050844-02 A 826-A9-SPE	6	1	1		05/17/16 23:43
8M412344	L16050844-05 A 826-A9-SPE	6	1	1		05/18/16 00:12
8M412345	L16050844-06 A 826-A9-SPE	6	1	1		05/18/16 00:41
8M412346	L16050844-12 A 826-A9-SPE	6	1	1		05/18/16 01:10
8M412347	L16050840-01 A 826-A9-SPE	7	1	1		05/18/16 01:38
8M412348	L16050844-08 A 826-A9-SPE	7	1	1		05/18/16 02:07
8M412349	L16050844-13 A 826-A9-SPE	7	1	1		05/18/16 02:36
8M412350	L16050844-15 A 826-A9-SPE	7	1	1		05/18/16 03:05
8M412351	L16050839-01 A 826-A9-SPE	7	1	1		05/18/16 03:33
8M412352	L16050844-03 2.5X A 826-A9-SPE	7	1	2.5		05/18/16 04:02

Approved: May 20, 2016

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Instrument Run Log

Instrument: HPMS8 Dataset: 051716
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76072; STD76127 LCS: STD76109; STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG569079; WG569083

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412353	L16050844-04 5X A 826-A9-SPE	7	1	5		05/18/16 04:31
8M412354	L16050844-09 5X A 826-A9-SPE	7	1	5		05/18/16 05:01
8M412355	L16050844-10 5X A 826-A9-SPE	7	1	5		05/18/16 05:30
8M412356	L16050844-14 50X A 826-A9-SPE	7	1	50		05/18/16 05:59
8M412357	RINSE	NA	1	1		05/18/16 06:28

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
File ID: 8M412320				
	DNR. Running an a9/foo curve.			
32	X	10	Over Calibration Range	CIS12-DCE
File ID: 8M412350				
40	X	2.5	Analyzed too dilute	
File ID: 8M412353				
	DNR.			
37	X	25	Over Calibration Range	TCE
File ID: 8M412355				
38	X	20	Analyzed too dilute	
File ID: 8M412356				
	DNR.			

Approved: May 20, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 061616
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75370 Surrogate Standard: STD76370
CCV: STD76578 LCS: STD76597 MS/MSD: STD76597

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG573038

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M413031	WG573037-01 BFB 50ng 8260	NA	1	1	STD76496	06/16/16 14:02
8M413032	WG573037-02 50ug/L CCV 8260	NA	1	1	STD76578	06/16/16 14:25
8M413033	WG573XXX-01 100ug/L CCV A9	NA	1	1	STD7XXXX	06/16/16 14:54
8M413034	WG573038-01 BLANK 6/16 8260	NA	1	1		06/16/16 15:23
8M413035	WG573038-02 20ug/L LCS 8260	NA	1	1	STD76597	06/16/16 15:52
8M413036	WG573038-03 20ug/L LCS2 8260	NA	1	1	STD76597	06/16/16 16:21
8M413037	L16060637-04 TB A 826-SPE	<2	1	1		06/16/16 16:58
8M413038	L16060756-05 TB A 826-SPE	<2	1	1		06/16/16 17:27
8M413039	L16060765-01 TB A 826-SPE	<2	1	1		06/16/16 17:56
8M413040	L16060730-04 TB A 826-LOW	<2	1	1		06/16/16 18:25
8M413041	L16060732-03 TB A 826-LOW	<2	1	1		06/16/16 18:54
8M413042	L16060823-05 TB A 826-LOW	<2	1	1		06/16/16 19:23
8M413043	L16060616-01 B 826-LOW	<2	1	1		06/16/16 19:52
8M413044	L16060732-01 A 826-LOW	<2	1	1		06/16/16 20:21
8M413045	L16060823-01 A 826-LOW	<2	1	1		06/16/16 20:50
8M413046	L16060823-03 A 826-LOW	<2	1	1		06/16/16 21:19
8M413047	L16060823-04 A 826-LOW	<2	1	1		06/16/16 21:48
8M413048	L16060730-03 A 826-LOW	<2	1	1		06/16/16 22:17
8M413049	L16060765-02 A 826-SPE	<2	1	1		06/16/16 22:46
8M413050	L16060765-03 A 826-SPE	<2	1	1		06/16/16 23:15
8M413051	L16060765-04 A 826-SPE	<2	1	1		06/16/16 23:43
8M413052	L16060730-01 A 826-SPE	<2	1	1		06/17/16 00:12
8M413053	L16060730-02 A 826-SPE	<2	1	1		06/17/16 00:41
8M413054	L16060637-03 A 826-SPE	<2	1	1		06/17/16 01:10
8M413055	L16060756-04 A 826-SPE	<2	1	1		06/17/16 01:38
8M413056	RINSE	NA	1	1		06/17/16 02:07
8M413057	RINSE	NA	1	1		06/17/16 02:37
8M413058	RINSE	NA	1	1		06/17/16 03:05

Comments

Seq.	Rerun	Dil.	Reason	Analytes
14	X		Carry-over contamination	
File ID: 8M413044				

Approved: June 23, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 061616
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75370 Surrogate Standard: STD76370
CCV: STD76578 LCS: STD76597 MS/MSD: STD76597

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG573038

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
	L16060732-01			
15 File ID: 8M413045				
	L16060823-01 high surrogate but sample is ND.			
17 File ID: 8M413047	X		Surrogate standard failure	
	L16060823-04			
18 File ID: 8M413048	X		Surrogate standard failure	
	L16060730-03			
24 File ID: 8M413054	X	20	Over Calibration Range	CFORM, CTET, TCE
	L16060637-03			
25 File ID: 8M413055	X	20	Over Calibration Range	CB
	L16060756-04			

Approved: June 23, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Data Checklist

Date: 13-MAY-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75126
Analytical Workgroups: WG568561

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	TMB
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
17-MAY-2016
Tiffany Bailey

Secondary Reviewer:
20-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2016 11:18:36

Microbac Laboratories Inc.

Data Checklist

Date: 17-MAY-2016
Analyst: TMB
Analyst: FJB
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75174
Analytical Workgroups: WG569079; WG569083

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
19-MAY-2016
Tiffany Bailey

Secondary Reviewer:
20-MAY-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2016 11:05:37

Microbac Laboratories Inc.

Data Checklist

Date: 16-JUN-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75860
Analytical Workgroups: WG573038

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
22-JUN-2016

Secondary Reviewer:
23-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-23-2016 13:34:00

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG573038

Login Number: L16060823

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
126-061416	01	06/14/16					06/16/2016	2.4	14		06/16/16	2.4	14	
C08-061416	03	06/14/16					06/16/2016	2.3	14		06/16/16	2.3	14	
C03-061416	04	06/14/16					06/16/2016	2.3	14		06/16/16	2.3	14	
TRIP BLANK	05	06/14/16					06/16/2016	2.8	14		06/16/16	2.8	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4819682
Report generated 07/07/2016 16:44

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060823
Instrument Id: HPMS8
Workgroup (AAB#): WG573038

Method: 8260
CAL ID: HPMS8-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16060823-01	1.00	01	121	114	99.5	101
L16060823-03	1.00	01	119	112	100	104
L16060823-04	1.00	01	121	113	100	104
L16060823-05	1.00	01	114	110	102	106
WG573038-01	1.00	01	114	109	102	106
WG573038-02	1.00	01	118	110	99.2	104
WG573038-03	1.00	01	114	108	98.9	104

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4819690
Report generated: 07/07/2016 16:44

METHOD BLANK SUMMARY

Login Number: L16060823
Blank File ID: 8M413034
Prep Date: 06/16/16 15:23
Analyzed Date: 06/16/16 15:23
Analyst: FJB

Work Group: WG573038
Blank Sample ID: WG573038-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573038-02	8M413035	06/16/16 15:52	01
LCS2	WG573038-03	8M413036	06/16/16 16:21	01
TRIP BLANK	L16060823-05	8M413042	06/16/16 19:23	01
126-061416	L16060823-01	8M413045	06/16/16 20:50	01
C08-061416	L16060823-03	8M413046	06/16/16 21:19	01
C03-061416	L16060823-04	8M413047	06/16/16 21:48	01

Report Name: BLANK_SUMMARY
PDF File ID: 4819683
Report generated 07/07/2016 16:44

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16060823 Prep Date: 06/16/16 15:23 Sample ID: WG573038-01
Instrument ID: HPMS8 Run Date: 06/16/16 15:23 Prep Method: 5030B/5030C/503
File ID: 8M413034 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573038 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4819684
07-JUL-2016 16:44

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16060823 Prep Date: 06/16/16 15:23 Sample ID: WG573038-01
Instrument ID: HPMS8 Run Date: 06/16/16 15:23 Prep Method: 5030B/5030C/503
File ID: 8M413034 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573038 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	109	85 - 115	PASS
1,2-Dichloroethane-d4	114	70 - 120	PASS
Toluene-d8	106	85 - 120	PASS
4-Bromofluorobenzene	102	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4819684
07-JUL-2016 16:44

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060823 Analyst: FJB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG573038 Units: ug/L
QC Key: DOD4 Lot #: STD76597

Sample ID: WG573038-02 LCS File ID: 8M413035 Run Date: 06/16/2016 15:52
Sample ID: WG573038-03 LCS2 File ID: 8M413036 Run Date: 06/16/2016 16:21

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	20.8	104	20.0	20.9	105	0.576	80 - 130	30	
1,1,1-Trichloroethane	20.0	22.5	112	20.0	23.2	116	3.45	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	17.7	88.5	20.0	18.1	90.5	2.29	65 - 130	30	
1,1,2-Trichloroethane	20.0	19.6	97.9	20.0	19.6	98.1	0.148	75 - 125	30	
1,1-Dichloroethane	20.0	19.5	97.5	20.0	19.9	99.5	2.06	70 - 135	30	
1,1-Dichloroethene	20.0	18.9	94.6	20.0	19.6	98.2	3.75	70 - 130	30	
1,1-Dichloropropene	20.0	20.6	103	20.0	21.0	105	2.03	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	19.0	94.8	20.0	19.4	96.8	2.05	55 - 140	30	
1,2,3-Trichloropropane	20.0	19.8	99.1	20.0	19.6	97.8	1.36	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	19.4	96.9	20.0	20.1	100	3.60	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	19.9	99.5	20.0	20.3	102	2.19	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	19.7	98.7	20.0	21.4	107	7.93	50 - 130	30	
1,2-Dibromoethane	20.0	20.1	100	20.0	19.9	99.3	1.19	80 - 120	30	
1,2-Dichlorobenzene	20.0	19.7	98.6	20.0	20.3	102	3.14	70 - 120	30	
1,2-Dichloroethane	20.0	23.3	117	20.0	23.5	118	0.816	70 - 130	30	
1,2-Dichloropropane	20.0	20.4	102	20.0	21.0	105	3.16	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	20.3	102	20.0	20.9	105	3.05	75 - 130	30	
1,3-Dichlorobenzene	20.0	20.0	99.9	20.0	20.6	103	3.29	75 - 125	30	
1,3-Dichloropropane	20.0	20.7	103	20.0	21.0	105	1.29	75 - 125	30	
1,4-Dichlorobenzene	20.0	19.7	98.6	20.0	20.4	102	3.14	75 - 125	30	
2,2-Dichloropropane	20.0	23.0	115	20.0	23.5	118	2.50	70 - 135	30	
2-Butanone	20.0	20.2	101	20.0	20.8	104	3.17	30 - 150	30	
2-Chlorotoluene	20.0	20.3	102	20.0	20.6	103	1.51	75 - 125	30	
2-Hexanone	20.0	18.6	93.0	20.0	17.8	89.1	4.24	55 - 130	30	
4-Chlorotoluene	20.0	19.7	98.5	20.0	20.0	100	1.77	75 - 130	30	
4-Methyl-2-pentanone	20.0	19.8	98.8	20.0	20.7	103	4.57	60 - 135	30	
Acetone	20.0	21.8	109	20.0	24.1	121	10.2	40 - 140	30	
Benzene	20.0	20.4	102	20.0	21.1	105	3.43	80 - 120	30	
Bromobenzene	20.0	19.2	95.9	20.0	19.7	98.4	2.64	75 - 125	30	
Bromochloromethane	20.0	20.7	103	20.0	20.6	103	0.508	65 - 130	30	
Bromodichloromethane	20.0	21.6	108	20.0	22.5	112	4.14	75 - 120	30	
Bromoform	20.0	20.0	99.8	20.0	20.0	99.9	0.134	70 - 130	30	
Bromomethane	20.0	14.0	70.2	20.0	15.7	78.3	11.0	30 - 145	30	
Carbon disulfide	20.0	18.1	90.6	20.0	18.6	92.9	2.55	35 - 160	30	
Carbon tetrachloride	20.0	22.5	112	20.0	23.1	115	2.71	65 - 140	30	
Chlorobenzene	20.0	20.4	102	20.0	20.7	104	1.62	80 - 120	30	
Chloroethane	20.0	20.4	102	20.0	21.7	109	6.06	60 - 135	30	
Chloroform	20.0	21.2	106	20.0	21.7	108	2.28	65 - 135	30	
Chloromethane	20.0	18.9	94.7	20.0	20.2	101	6.46	40 - 125	30	
cis-1,2-Dichloroethene	20.0	20.5	102	20.0	21.2	106	3.58	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4819685
Report generated: 07/07/2016 16:44

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060823 Analyst: FJB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG573038 Units: ug/L
QC Key: DOD4 Lot #: STD76597

Sample ID: WG573038-02 LCS File ID: 8M413035 Run Date: 06/16/2016 15:52
Sample ID: WG573038-03 LCS2 File ID: 8M413036 Run Date: 06/16/2016 16:21

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	23.1	115	20.0	23.5	117	1.55	70 - 130	30	
Chlorodibromomethane	20.0	20.5	102	20.0	20.8	104	1.79	60 - 135	30	
Dibromomethane	20.0	19.9	99.3	20.0	19.9	99.6	0.358	75 - 125	30	
Dichlorodifluoromethane	20.0	20.8	104	20.0	21.8	109	4.81	30 - 155	30	
Ethylbenzene	20.0	19.9	99.3	20.0	19.9	99.5	0.215	75 - 125	30	
Hexachlorobutadiene	20.0	21.3	106	20.0	21.7	108	1.84	50 - 140	30	
Isopropylbenzene	20.0	21.6	108	20.0	22.0	110	1.89	75 - 125	30	
m-,p-Xylene	40.0	40.9	102	40.0	41.7	104	2.14	75 - 130	30	
Methylene chloride	20.0	19.3	96.4	20.0	19.9	99.5	3.13	55 - 140	30	
n-Butylbenzene	20.0	19.4	97.2	20.0	19.8	99.2	2.07	70 - 135	30	
n-Propylbenzene	20.0	20.4	102	20.0	21.0	105	2.87	70 - 130	30	
Naphthalene	20.0	17.4	87.0	20.0	18.1	90.5	3.97	55 - 140	30	
o-Xylene	20.0	21.1	106	20.0	21.4	107	1.39	80 - 120	30	
p-Isopropyltoluene	20.0	20.0	100	20.0	20.9	104	4.05	75 - 130	30	
sec-Butylbenzene	20.0	20.2	101	20.0	20.7	104	2.34	70 - 125	30	
Styrene	20.0	20.7	103	20.0	21.1	106	2.22	65 - 135	30	
tert-Butylbenzene	20.0	19.7	98.5	20.0	20.4	102	3.70	70 - 130	30	
Tetrachloroethene	20.0	20.1	101	20.0	20.5	102	1.70	45 - 150	30	
Toluene	20.0	19.7	98.6	20.0	20.1	101	1.94	75 - 120	30	
trans-1,2-Dichloroethene	20.0	20.1	100	20.0	20.4	102	1.57	60 - 140	30	
trans-1,3-Dichloropropene	20.0	20.9	104	20.0	21.1	105	0.925	55 - 140	30	
Trichloroethene	20.0	21.8	109	20.0	22.5	112	3.24	70 - 125	30	
Trichlorofluoromethane	20.0	22.3	111	20.0	22.8	114	2.49	60 - 145	30	
Vinyl chloride	20.0	23.0	115	20.0	24.1	121	4.97	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	118	114	70 - 120	PASS
Dibromofluoromethane	110	108	85 - 115	PASS
4-Bromofluorobenzene	99.2	98.9	75 - 120	PASS
Toluene-d8	104	104	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4819685
Report generated: 07/07/2016 16:44

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060823
Instrument: HPMS8
Analyst: TMB
Workgroup: WG568561

Tune ID: WG568561-01
Run Date: 05/13/2016
Run Time: 12:36
File ID: 8M412218
Cal ID: HPMS8 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	16.7	6575	PASS
75.0	95.0	30.0	60.0	51.3	20171	PASS
95.0	95.0	100	100	100	39312	PASS
96.0	95.0	5.00	9.00	6.74	2649	PASS
173	174	0	2.00	0.363	122	PASS
174	95.0	50.0	100	85.5	33616	PASS
175	174	5.00	9.00	8.17	2746	PASS
176	174	95.0	101	99.2	33360	PASS
177	176	5.00	9.00	6.80	2267	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG568561-02	STD	01	05/13/2016 13:29	
WG568561-03	STD	01	05/13/2016 13:58	
WG568561-04	STD	01	05/13/2016 14:27	
WG568561-05	STD	01	05/13/2016 14:56	
WG568561-06	STD	01	05/13/2016 15:25	
WG568561-07	STD	01	05/13/2016 15:54	
WG568561-08	STD-CCV	01	05/13/2016 16:23	
WG568561-09	STD	01	05/13/2016 16:52	
WG568561-10	STD	01	05/13/2016 17:21	
WG568561-11	STD	01	05/13/2016 17:50	
WG568561-12	SSCV	01	05/13/2016 19:17	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4819687
Report generated 07/07/2016 16:44

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060823
Instrument: HPMS8
Analyst: TMB
Workgroup: WG569084

Tune ID: WG569084-01
Run Date: 05/17/2016
Run Time: 08:53
File ID: 8M412319
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.1	6316	PASS
75.0	95.0	30.0	60.0	54.7	18130	PASS
95.0	95.0	100	100	100	33138	PASS
96.0	95.0	5.00	9.00	6.76	2241	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	72.2	23934	PASS
175	174	5.00	9.00	7.88	1886	PASS
176	174	95.0	101	96.8	23159	PASS
177	176	5.00	9.00	7.15	1655	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG569079-01	STD-CCV	01	05/17/2016 09:47	
WG569079-03	STD	01	05/17/2016 10:16	
WG569079-04	STD	01	05/17/2016 10:44	
WG569079-05	STD	01	05/17/2016 11:13	
WG569079-06	STD	01	05/17/2016 11:42	
WG569079-07	STD	01	05/17/2016 12:40	
WG569079-08	STD	01	05/17/2016 13:10	
WG569079-09	STD	01	05/17/2016 13:39	
WG569079-10	SSCV	01	05/17/2016 15:06	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4819687
Report generated 07/07/2016 16:44

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060823
Instrument: HPMS8
Analyst: FJB
Workgroup: WG573037

Tune ID: WG573037-01
Run Date: 06/16/2016
Run Time: 14:02
File ID: 8M413031
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.9	6352	PASS
75.0	95.0	30.0	60.0	57.2	18249	PASS
95.0	95.0	100	100	100	31890	PASS
96.0	95.0	5.00	9.00	7.42	2366	PASS
173	174	0	2.00	1.50	352	PASS
174	95.0	50.0	100	73.7	23499	PASS
175	174	5.00	9.00	7.96	1870	PASS
176	174	95.0	101	97.3	22869	PASS
177	176	5.00	9.00	6.73	1538	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573037-02	CCV	01	06/16/2016 14:25	
WG573038-01	BLANK	01	06/16/2016 15:23	
WG573038-02	LCS	01	06/16/2016 15:52	
WG573038-03	LCS2	01	06/16/2016 16:21	
L16060823-05	TRIP BLANK	01	06/16/2016 19:23	
L16060823-01	126-061416	01	06/16/2016 20:50	
L16060823-03	C08-061416	01	06/16/2016 21:19	
L16060823-04	C03-061416	01	06/16/2016 21:48	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4819687
Report generated 07/07/2016 16:44

Calibration Table Report
Method: 8260WT.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Calibration: Sat May 14 18:08:06 2016
Curve: WG568561
Calibration Files

	Compound	0.3 8M412220.D	0.4 8M412221.D	1 8M412222.D	2 8M412223.D	5 8M412224.D	20 8M412225.D	50 8M412226.D	100 8M412227.D	200 8M412228.D	300 8M412229.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane		0.427	0.390	0.397	0.364	0.468	0.439	0.452	0.427	0.408	0.419	7.751		
P	Chloromethane			0.264	0.257	0.223	0.253	0.240	0.240	0.239	0.241	0.245	5.336		
C	Vinyl Chloride		0.274	0.296	0.297	0.277	0.299	0.292	0.299	0.292	0.288	0.290	3.191		
T	1,3-Butadiene				0.218	0.208	0.242	0.251	0.277	0.254	0.254	0.243	9.644		
T	Bromomethane			0.129	0.133	0.127	0.162	0.167	0.187	0.205	0.212	0.165	20.449		1.000
T	Chloroethane		0.173	0.157	0.153	0.143	0.164	0.157	0.163	0.164	0.164	0.160	5.354		
T	Trichlorofluoromethane		0.544	0.538	0.559	0.506	0.570	0.538	0.551	0.531	0.525	0.540	3.520		
T	Diethyl ether			0.130	0.138	0.123	0.132	0.125	0.128		0.127	0.129	3.866		
T	Isoprene		0.335	0.351	0.334	0.293	0.334	0.320	0.334	0.322	0.329	0.328	4.867		
T	Acrolein				0.012	0.010	0.010	0.011	0.012		0.014	0.012	12.987		
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.256	0.269	0.240	0.260	0.249	0.257	0.251	0.250	0.254	3.397		
T	Acetone					0.023	0.030	0.029	0.030	0.028	0.028	0.028	9.132		
C	1,1-Dichloroethene		0.424	0.407	0.406	0.387	0.416	0.398	0.409	0.400	0.393	0.404	2.830		
T	Tert-Butyl Alcohol				0.010	0.009	0.009	0.009	0.009		0.009	0.009	2.872		
T	Dimethyl Sulfide		0.133	0.142	0.152	0.137	0.145	0.142	0.151	0.147	0.151	0.145	4.534		
T	Iodomethane				0.019	0.024	0.066	0.101	0.129	0.135	0.131	0.087	58.244		0.998
T	Methyl acetate					0.075	0.076	0.074	0.078	0.076	0.078	0.076	2.221		
T	Methylene Chloride			0.274	0.265	0.244	0.263	0.250	0.255	0.254	0.252	0.257	3.686		
T	Carbon Disulfide			0.888	0.922	0.801	0.873	0.816	0.854	0.813	0.802	0.846	5.346		
T	Acrylonitrile			0.027	0.035	0.033	0.038	0.038	0.039		0.044	0.036	14.671		
T	Methyl Tert Butyl Ether			0.534	0.543	0.521	0.586	0.579	0.585	0.560	0.546	0.557	4.455		
T	trans-1,2-Dichloroethene		0.389	0.395	0.364	0.352	0.381	0.367	0.372	0.364	0.358	0.371	3.858		
T	n-Hexane					0.265	0.280	0.270	0.286	0.275	0.279	0.276	2.732		
T	Diisopropyl ether			0.600	0.607	0.548	0.588	0.572	0.571		0.567	0.579	3.559		
T	Vinyl Acetate				0.256	0.243	0.270	0.275	0.266	0.271	0.275	0.265	4.509		
P	1,1-Dichloroethane		0.441	0.463	0.486	0.434	0.488	0.464	0.470	0.459	0.447	0.461	4.012		
T	Ethyl-Tert-Butyl ether			0.616	0.645	0.590	0.641	0.628	0.619		0.603	0.620	3.188		
T	2-Butanone					0.035	0.042	0.043	0.045	0.041	0.043	0.041	8.268		
T	Propionitrile			0.010	0.012	0.012	0.013	0.012	0.013		0.013	0.012	8.354		
T	2,2-Dichloropropane		0.471	0.462	0.520	0.476	0.503	0.494	0.497	0.483	0.470	0.486	3.839		
T	cis-1,2-Dichloroethene		0.299	0.298	0.291	0.267	0.295	0.282	0.289	0.283	0.277	0.287	3.685		
C	Chloroform	0.563	0.567	0.581	0.536	0.509	0.566	0.543	0.546	0.529	0.506	0.545	4.619		
T	1-Bromopropane			0.034	0.040	0.040	0.043	0.041	0.043	0.043	0.044	0.041	7.649		
T	Bromochloromethane		0.131	0.164	0.147	0.137	0.154	0.148	0.151	0.148	0.145	0.147	6.598		
T	Tetrahydrofuran			0.034	0.028	0.025	0.026	0.026	0.026		0.026	0.027	11.724		
S	Dibromofluoromethane			0.249	0.261	0.257	0.280	0.271	0.284	0.271	0.275	0.269	4.465		
T	1,1,1-Trichloroethane		0.492	0.537	0.515	0.496	0.545	0.525	0.533	0.515	0.499	0.517	3.660		
T	Cyclohexane			0.373	0.369	0.335	0.359	0.344	0.366	0.356	0.364	0.358	3.619		
T	1,1-Dichloropropene			0.414	0.399	0.369	0.403	0.395	0.399	0.392	0.382	0.394	3.488		
T	Tert-Amyl-Methyl ether			0.567	0.587	0.534	0.576	0.568	0.561		0.549	0.563	3.077		
T	Carbon Tetrachloride		0.444	0.456	0.462	0.441	0.481	0.465	0.474	0.462	0.448	0.4594	2.92173		
S	1,2-Dichloroethane-d4			0.241	0.309	0.276	0.312	0.295	0.301	0.284	0.286	0.288	7.93644		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.347	0.335	0.354	0.336	0.371	0.36	0.364	0.349	0.338	0.3505	3.65503		
T	Benzene		1.128	1.084	1.071	0.977	1.085	1.033	1.019	0.963	0.883	1.0269	7.39343		
T	Trichloroethene		0.285	0.275	0.276	0.251	0.283	0.273	0.279	0.273	0.27	0.2739	3.66126		
T	Methylcyclohexane					0.396	0.426	0.408	0.429	0.416	0.422	0.4161	2.94153		
C	1,2-Dichloropropane		0.239	0.222	0.233	0.207	0.238	0.226	0.233	0.231	0.229	0.2286	4.30096		
T	Bromodichloromethane		0.369	0.382	0.412	0.385	0.426	0.421	0.417	0.41	0.395	0.4018	4.93305		
T	1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.0011	14.5817		
T	Dibromomethane		0.141	0.13	0.137	0.128	0.141	0.134	0.137	0.136	0.133	0.1353	3.26799		
T	2-Chloroethyl Vinyl Ether				0.1	0.084	0.103	0.104	0.103	0.095	0.098	0.0983	7.09792		
T	4-Methyl-2-Pentanone					0.033	0.042	0.042	0.043	0.04	0.041	0.0401	8.66859		
T	cis-1,3-Dichloropropene		0.391	0.393	0.386	0.398	0.431	0.428	0.428	0.42	0.405	0.409	4.41527		

T	Dimethyl Disulfide					0.182	0.218	0.221	0.23	0.229	0.23	0.2183	8.49419	
I	Chlorobenzene-d5	ISTD												
S	Toluene-d8			1.282	1.295	1.228	1.385	1.333	1.378	1.289	1.278	1.3084	4.07746	
C	Toluene		1.653	1.696	1.678	1.507	1.647	1.554	1.545	1.418	1.27	1.552	8.98325	
T	Ethyl Methacrylate			0.251	0.293	0.268	0.314	0.314	0.327	0.309	0.31	0.2981	8.76897	
T	Paraldehyde											0	0	
T	trans-1,3-Dichloropropene			0.472	0.51	0.466	0.561	0.552	0.553	0.533	0.515	0.5201	7.01006	
T	1,1,2-Trichloroethane		0.261	0.241	0.242	0.222	0.254	0.249	0.252	0.243	0.241	0.2449	4.54209	
T	2-Hexanone					0.042	0.053	0.053	0.056	0.051	0.053	0.0515	9.50479	
T	1,3-Dichloropropane		0.355	0.442	0.465	0.42	0.468	0.454	0.457	0.437	0.428	0.436	7.93348	
T	Tetrachloroethene		0.355	0.337	0.336	0.306	0.333	0.325	0.337	0.334	0.33	0.3325	3.83886	
T	Dibromochloromethane		0.349	0.336	0.338	0.328	0.373	0.372	0.383	0.373	0.367	0.3576	5.60043	
T	1,2-Dibromoethane		0.233	0.234	0.234	0.227	0.259	0.254	0.258	0.251	0.247	0.2441	5.04151	
T	1-Chlorohexane		0.532	0.584	0.505	0.502	0.54	0.52	0.547	0.521	0.516	0.5298	4.7826	
P	Chlorobenzene		1.029	1.173	1.09	1.007	1.099	1.037	1.043	1.002	0.939	1.0466	6.41465	
T	1,1,1,2-Tetrachloroethane		0.392	0.399	0.403	0.357	0.431	0.414	0.424	0.417	0.413	0.4055	5.39495	
C	Ethylbenzene		0.6	0.594	0.59	0.532	0.586	0.559	0.57	0.564	0.558	0.5726	3.7769	
T	m-,p-Xylene		0.744	0.696	0.691	0.643	0.713	0.67	0.673	0.634	0.581	0.6716	7.12586	
T	o-Xylene			0.691	0.651	0.614	0.692	0.658	0.667	0.65	0.63	0.6567	4.11758	
T	Styrene		1.05	1.06	1.096	1.043	1.159	1.124	1.12	1.061	0.98	1.077	4.96781	
P	Bromoform			0.177	0.21	0.181	0.226	0.221	0.232	0.227	0.223	0.2121	10.0546	
T	Isopropylbenzene		1.853	1.891	1.871	1.708	1.897	1.781	1.75	1.573	1.377	1.7444	9.92447	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.426	0.492	0.503	0.486	0.543	0.51	0.527	0.513	0.514	0.5018	6.60291	
S	p-Bromofluorobenzene				1.054	0.976	1.071	1.016	1.053	1.031	1.046	1.0352	3.05136	
T	1,2,3-Trichloropropane			0.119	0.158	0.161	0.162	0.155	0.162	0.16	0.158	0.1545	9.40789	
T	trans-1,4-Dichloro-2-Butene			0.085	0.118	0.12	0.149	0.151	0.16	0.159	0.161	0.1376	19.9543	1.000
T	n-Propylbenzene		4.139	4.239	4.243	4.051	4.241	3.953	3.882	3.419	2.935	3.9003	11.4439	
T	Bromobenzene	0.796	0.708	0.843	0.837	0.778	0.84	0.798	0.817	0.803	0.803	0.8022	4.93253	
T	1,3,5-Trimethylbenzene		2.941	2.93	2.941	2.839	3.053	2.882	2.871	2.689	2.423	2.8411	6.50391	
T	2-Chlorotoluene		2.917	2.935	2.929	2.712	2.861	2.795	2.682	2.533	2.145	2.7231	9.37022	
T	4-Chlorotoluene		2.681	2.596	2.581	2.474	2.625	2.326	2.447	2.286	2.121	2.4597	7.49558	
T	a-Methylstyrene					1.257	1.406	1.34	1.384	1.35	1.351	1.3479	3.77654	
T	tert-Butylbenzene			0.587	0.555	0.53	0.571	0.533	0.552	0.561	0.558	0.5558	3.34508	
T	1,2,4-Trimethylbenzene		2.955	3.168	3.127	2.936	3.12	2.914	2.937	2.709	2.427	2.9214	7.97314	
T	sec-Butylbenzene			3.701	3.536	3.487	3.607	3.34	3.332	3.045	2.69	3.3424	9.93324	
T	p-Isopropyltoluene			3.112	3.062	2.903	2.988	2.813	2.809	2.634	2.382	2.8379	8.45265	
T	1,3-Dichlorobenzene		1.484	1.617	1.627	1.53	1.605	1.531	1.549	1.51	1.45	1.5448	3.95774	
T	1,4-Dichlorobenzene	1.713	1.524	1.672	1.594	1.503	1.6	1.511	1.535	1.49	1.431	1.5574	5.56562	
T	n-Butylbenzene			3.143	2.96	2.895	3.002	2.791	2.792	2.571	2.292	2.8056	9.55812	
T	1,2-Dichlorobenzene	1.59	1.307	1.415	1.41	1.322	1.404	1.333	1.356	1.315	1.286	1.3739	6.4618	
T	1,2-Dibromo-3-Chloropropane				0.085	0.103	0.102	0.103	0.106	0.104	0.103	0.1007	6.86771	
T	1,2,4-Trichlorobenzene		1.074	1.01	1.028	0.982	1.069	1.013	1.036	1.029	1.002	1.0269	2.90829	
T	Hexachlorobutadiene		0.516	0.476	0.483	0.447	0.487	0.459	0.48	0.485	0.485	0.4798	4.00465	
T	Naphthalene		1.594	1.457	1.574	1.455	1.63	1.552	1.564	1.485	1.422	1.5258	4.75891	
T	1,2,3-Trichlorobenzene	0.913	0.934	0.905	0.862	0.805	0.877	0.824	0.862	0.846	0.835	0.8664	4.7474	

Tue May 17 11:49:41 2016

Calibration Table Report
Method: A9FOOWT.M
Title: A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Calibration: Thu May 19 08:54:31 2016
Curve: WG569079
Calibration Files

	Compound	5 8M412324.D	20 8M412323.D	50 8M412322.D	100 8M412321.D	200 8M412325.D	300 8M412326.D	400 8M412327.D	500 8M412328.D	Avg	%RSD
I	Fluorobenzene	ISTD									
T	Acetonitrile		0.009	0.010	0.010	0.010	0.010	0.010	0.010	0.010	2.076
T	3-Chloro-1-propene	0.306	0.330	0.335	0.331	0.324	0.307	0.304	0.304	0.318	4.307
T	2-Chloro-1,3-butadiene	0.368	0.420	0.420	0.419	0.419	0.392	0.389	0.387	0.402	5.022
T	Ethyl Acetate	0.080	0.096	0.097	0.100	0.099	0.098	0.100	0.095	0.096	6.751
T	Methacrylonitrile	0.041	0.054	0.055	0.055	0.055	0.054	0.055	0.052	0.053	9.227
T	Isobutyl Alcohol			0.003	0.003	0.003	0.003	0.003	0.003	0.003	3.599
T	1-Butanol									0.000	0.000
T	Methyl methacrylate	0.089	0.106	0.106	0.105	0.106	0.105	0.107	0.102	0.103	5.868
T	2-Nitropropane		0.041	0.042	0.043	0.046	0.047	0.048	0.046	0.045	5.992
I	Chlorobenzene-d5	ISTD									
I	1,4-Dichlorobenzene-d4	ISTD									
T	Cyclohexanone		0.011	0.010	0.010	0.009	0.010	0.011	0.010	0.010	4.971

Thu May 19 09:04:52 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060823 Run Date: 05/13/2016 Sample ID: WG568561-12
Instrument ID: HPMS8 Run Time: 19:17 Method: 8260B
File ID: 8M412232 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG568561 Cal ID: HPMS8 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.1	ug/L	0.513	5.70	20	
1,1-Dichloroethene	CCC	50.0	46.0	ug/L	0.372	8.10	20	
1,2-Dichloropropane	CCC	50.0	51.0	ug/L	0.233	1.90	20	
Ethylbenzene	CCC	50.0	48.2	ug/L	0.552	3.60	20	
Toluene	CCC	50.0	49.1	ug/L	1.52	1.80	20	
Vinyl Chloride	CCC	50.0	52.4	ug/L	0.304	4.80	20	
Bromoform	SPCC	50.0	48.2	ug/L	0.205	3.60	20	
Chlorobenzene	SPCC	50.0	50.2	ug/L	1.05	0.400	20	
Chloromethane	SPCC	50.0	50.7	ug/L	0.248	1.40	20	
1,1-Dichloroethane	SPCC	50.0	46.7	ug/L	0.431	6.60	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.6	ug/L	0.498	0.800	20	
Acetone		50.0	57.5	ug/L	0.0324	15.1	20	
Benzene		50.0	48.5	ug/L	0.997	3.00	20	
Bromobenzene		50.0	49.5	ug/L	0.794	1.10	20	
Bromochloromethane		50.0	47.5	ug/L	0.140	4.90	20	
Bromodichloromethane		50.0	48.3	ug/L	0.388	3.40	20	
Bromomethane		50.0	46.4	ug/L	0.162	7.20	20	
2-Butanone		50.0	53.0	ug/L	0.0438	6.00	20	
n-Butylbenzene		50.0	49.7	ug/L	2.79	0.700	20	
sec-Butylbenzene		50.0	51.3	ug/L	3.43	2.70	20	
tert-Butylbenzene		50.0	50.9	ug/L	0.566	1.90	20	
Carbon Disulfide		50.0	42.3	ug/L	0.716	15.4	20	
Carbon Tetrachloride		50.0	46.2	ug/L	0.425	7.50	20	
Dibromochloromethane		50.0	49.7	ug/L	0.355	0.700	20	
Chloroethane		50.0	53.3	ug/L	0.170	6.70	20	
2-Chlorotoluene		50.0	51.6	ug/L	2.81	3.10	20	
4-Chlorotoluene		50.0	48.3	ug/L	2.37	3.50	20	
1,2-Dibromo-3-Chloropropane		50.0	48.5	ug/L	0.0977	3.00	20	
1,2-Dibromoethane		50.0	51.1	ug/L	0.250	2.20	20	
Dibromomethane		50.0	45.8	ug/L	0.124	8.40	20	
1,2-Dichlorobenzene		50.0	50.5	ug/L	1.39	1.00	20	
1,3-Dichlorobenzene		50.0	50.9	ug/L	1.57	1.80	20	
1,4-Dichlorobenzene		50.0	50.5	ug/L	1.57	0.900	20	
Dichlorodifluoromethane		50.0	54.2	ug/L	0.455	8.40	20	
1,2-Dichloroethane		50.0	49.0	ug/L	0.344	2.00	20	
cis-1,2-Dichloroethene		50.0	48.9	ug/L	0.281	2.20	20	
trans-1,2-Dichloroethene		50.0	48.1	ug/L	0.357	3.90	20	
1,3-Dichloropropane		50.0	53.7	ug/L	0.468	7.30	20	
2,2-Dichloropropane		50.0	47.9	ug/L	0.466	4.20	20	
cis-1,3-Dichloropropene		50.0	53.9	ug/L	0.441	7.80	20	
trans-1,3-Dichloropropene		50.0	50.7	ug/L	0.527	1.30	20	
1,1-Dichloropropene		50.0	47.5	ug/L	0.374	5.10	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4819686
Report generated 07/07/2016 16:44

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060823 Run Date: 05/13/2016 Sample ID: WG568561-12
Instrument ID: HPMS8 Run Time: 19:17 Method: 8260B
File ID: 8M412232 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG568561 Cal ID: HPMS8 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	53.6	ug/L	0.0552	7.20	20	
Hexachlorobutadiene		50.0	52.1	ug/L	0.500	4.20	20	
Isopropylbenzene		50.0	51.1	ug/L	1.78	2.20	20	
p-Isopropyltoluene		50.0	50.1	ug/L	2.85	0.300	20	
4-Methyl-2-Pentanone		50.0	51.9	ug/L	0.0416	3.70	20	
Methylene Chloride		50.0	48.4	ug/L	0.249	3.10	20	
Naphthalene		50.0	45.8	ug/L	1.40	8.40	20	
n-Propylbenzene		50.0	51.9	ug/L	4.05	3.80	20	
Styrene		50.0	51.5	ug/L	1.11	3.00	20	
1,1,1,2-Tetrachloroethane		50.0	49.4	ug/L	0.400	1.20	20	
Tetrachloroethene		50.0	47.8	ug/L	0.318	4.40	20	
1,2,3-Trichlorobenzene		50.0	47.7	ug/L	0.827	4.50	20	
1,2,4-Trichlorobenzene		50.0	50.1	ug/L	1.03	0.200	20	
1,1,1-Trichloroethane		50.0	47.6	ug/L	0.492	4.80	20	
1,1,2-Trichloroethane		50.0	49.0	ug/L	0.240	1.90	20	
Trichloroethene		50.0	51.1	ug/L	0.280	2.10	20	
Trichlorofluoromethane		50.0	46.9	ug/L	0.507	6.10	20	
1,2,3-Trichloropropane		50.0	50.1	ug/L	0.155	0.200	20	
1,2,4-Trimethylbenzene		50.0	49.7	ug/L	2.90	0.700	20	
1,3,5-Trimethylbenzene		50.0	51.6	ug/L	2.93	3.30	20	
o-Xylene		50.0	50.6	ug/L	0.664	1.10	20	
m-,p-Xylene		100	101	ug/L	0.679	1.10	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4819686
Report generated 07/07/2016 16:44

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823 Run Date: 06/16/2016 Sample ID: WG573037-02
Instrument ID: HPMS8 Run Time: 14:25 Method: 8260B
File ID: 8M413032 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG573038 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	54.8	ug/L	0.597	9.65	20	
1,1-Dichloroethene	CCC	50.0	54.7	ug/L	0.442	9.30	20	
1,2-Dichloropropane	CCC	50.0	48.6	ug/L	0.222	2.70	20	
Ethylbenzene	CCC	50.0	50.5	ug/L	0.578	0.905	20	
Toluene	CCC	50.0	50.3	ug/L	1.56	0.600	20	
Vinyl Chloride	CCC	50.0	55.1	ug/L	0.320	10.2	20	
Bromoform	SPCC	50.0	50.9	ug/L	0.216	1.72	20	
Chlorobenzene	SPCC	50.0	49.8	ug/L	1.04	0.474	20	
Chloromethane	SPCC	50.0	46.6	ug/L	0.228	6.88	20	
1,1-Dichloroethane	SPCC	50.0	52.3	ug/L	0.483	4.61	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	41.5	ug/L	0.416	17.0	20	
Xylenes		150	154	ug/L	0.683	2.90	20	
Acetone		50.0	52.2	ug/L	0.0293	4.31	20	
Benzene		50.0	52.0	ug/L	1.07	3.99	20	
Bromobenzene		50.0	48.0	ug/L	0.770	4.08	20	
Bromochloromethane		50.0	51.3	ug/L	0.151	2.54	20	
Bromodichloromethane		50.0	55.4	ug/L	0.445	10.8	20	
Bromomethane		50.0	37.0	ug/L	0.128	26.0	20	*
2-Butanone		50.0	45.9	ug/L	0.0380	8.13	20	
n-Butylbenzene		50.0	50.5	ug/L	2.83	1.00	20	
sec-Butylbenzene		50.0	50.3	ug/L	3.37	0.699	20	
tert-Butylbenzene		50.0	48.9	ug/L	0.544	2.12	20	
Carbon Disulfide		50.0	53.0	ug/L	0.897	6.05	20	
Carbon Tetrachloride		50.0	60.0	ug/L	0.551	20.0	20	
Dibromochloromethane		50.0	50.5	ug/L	0.361	0.983	20	
Chloroethane		50.0	48.9	ug/L	0.156	2.14	20	
2-Chlorotoluene		50.0	47.7	ug/L	2.60	4.50	20	
4-Chlorotoluene		50.0	49.7	ug/L	2.44	0.615	20	
1,2-Dibromo-3-Chloropropane		50.0	44.0	ug/L	0.0886	12.0	20	
1,2-Dibromoethane		50.0	47.2	ug/L	0.230	5.67	20	
Dibromomethane		50.0	49.7	ug/L	0.135	0.584	20	
1,2-Dichlorobenzene		50.0	46.6	ug/L	1.28	6.76	20	
1,3-Dichlorobenzene		50.0	49.6	ug/L	1.53	0.820	20	
1,4-Dichlorobenzene		50.0	47.6	ug/L	1.48	4.82	20	
Dichlorodifluoromethane		50.0	57.6	ug/L	0.483	15.3	20	
1,2-Dichloroethane		50.0	56.7	ug/L	0.397	13.3	20	
cis-1,2-Dichloroethene		50.0	50.9	ug/L	0.292	1.90	20	
trans-1,2-Dichloroethene		50.0	52.1	ug/L	0.387	4.10	20	
1,3-Dichloropropane		50.0	47.0	ug/L	0.410	5.96	20	
2,2-Dichloropropane		50.0	61.8	ug/L	0.601	23.6	20	*
cis-1,3-Dichloropropene		50.0	53.3	ug/L	0.436	6.58	20	
trans-1,3-Dichloropropene		50.0	51.1	ug/L	0.532	2.30	20	

CCV - Modified 03/05/2008
PDF File ID: 4819688
Report generated 07/07/2016 16:44

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823 Run Date: 06/16/2016 Sample ID: WG573037-02
Instrument ID: HPMS8 Run Time: 14:25 Method: 8260B
File ID: 8M413032 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG573038 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	54.6	ug/L	0.430	9.13	20	
2-Hexanone		50.0	44.4	ug/L	0.0457	11.3	20	
Hexachlorobutadiene		50.0	54.7	ug/L	0.525	9.43	20	
Isopropylbenzene		50.0	54.0	ug/L	1.88	7.91	20	
p-Isopropyltoluene		50.0	50.6	ug/L	2.87	1.20	20	
4-Methyl-2-Pentanone		50.0	45.5	ug/L	0.0366	8.93	20	
Methylene Chloride		50.0	48.8	ug/L	0.251	2.36	20	
Naphthalene		50.0	43.5	ug/L	1.33	13.0	20	
n-Propylbenzene		50.0	49.8	ug/L	3.88	0.484	20	
Styrene		50.0	52.0	ug/L	1.12	4.02	20	
1,1,1,2-Tetrachloroethane		50.0	52.3	ug/L	0.424	4.56	20	
Tetrachloroethene		50.0	53.6	ug/L	0.356	7.11	20	
1,2,3-Trichlorobenzene		50.0	45.4	ug/L	0.786	9.28	20	
1,2,4-Trichlorobenzene		50.0	48.6	ug/L	0.997	2.89	20	
1,1,1-Trichloroethane		50.0	59.6	ug/L	0.616	19.1	20	
1,1,2-Trichloroethane		50.0	46.3	ug/L	0.227	7.39	20	
Trichloroethene		50.0	54.0	ug/L	0.296	7.92	20	
Trichlorofluoromethane		50.0	59.7	ug/L	0.645	19.5	20	
1,2,3-Trichloropropane		50.0	45.0	ug/L	0.139	10.0	20	
1,2,4-Trimethylbenzene		50.0	50.1	ug/L	2.93	0.254	20	
1,3,5-Trimethylbenzene		50.0	50.2	ug/L	2.85	0.347	20	
o-Xylene		50.0	51.2	ug/L	0.673	2.46	20	
m-,p-Xylene		100	103	ug/L	0.693	3.11	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4819688
Report generated 07/07/2016 16:44

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060823
Instrument ID: HPMS8
Workgroup (AAB#): WG573038

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	288225	539116	778260
Upper Limit	NA	NA	576450	1078232	1556520
Lower Limit	NA	NA	144113	269558	389130
L16060823-01	1.00	01	295882	526044	672547
L16060823-03	1.00	01	289710	517845	676219
L16060823-04	1.00	01	287793	517811	671491
L16060823-05	1.00	01	289040	525559	704722
WG573038-01	1.00	01	292043	533754	717429
WG573038-02	1.00	01	307888	540053	724153
WG573038-03	1.00	01	312159	553122	735322

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4819689
Report generated 07/07/2016 16:44

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060823
Instrument ID: HPMS8
Workgroup (AAB#): WG573038

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	17.6	14.58	10.71
Upper Limit	NA	NA	18.1	15.08	11.21
Lower Limit	NA	NA	17.1	14.08	10.21
L16060823-01	1.00	01	17.6	14.57	10.71
L16060823-03	1.00	01	17.6	14.58	10.71
L16060823-04	1.00	01	17.6	14.57	10.71
L16060823-05	1.00	01	17.6	14.58	10.71
WG573038-01	1.00	01	17.6	14.57	10.71
WG573038-02	1.00	01	17.6	14.57	10.71
WG573038-03	1.00	01	17.6	14.57	10.71

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4819691
Report generated: 07/07/2016 16:44

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413045.D Vial: 15
Acq On : 16 Jun 2016 20:50 Operator: FJB
Sample : L16060823-01 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:18:24 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	672547	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	526044	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	295882	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	205604	28.4536 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 113.80%		
43) 1,2-Dichloroethane-d4	10.30	65	234064	30.2095 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 120.84%#		
58) Toluene-d8	12.68	98	698178	25.3600 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.44%		
80) p-Bromofluorobenzene	16.08	95	304815	24.8796 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.52%		

Target Compounds

					Qvalue
3) Chloromethane	3.60	50	937	0.1424 ug/L	80
47) Trichloroethene	11.21	130	1071	0.1454 ug/L #	72
92) p-Isopropyltoluene	17.32	119	42966	1.2792 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M413045.D 8260WT.M Mon Jun 20 09:20:05 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413045.D Vial: 15
Acq On : 16 Jun 2016 20:50 Operator: FJB
Sample : L16060823-01 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 8:18 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

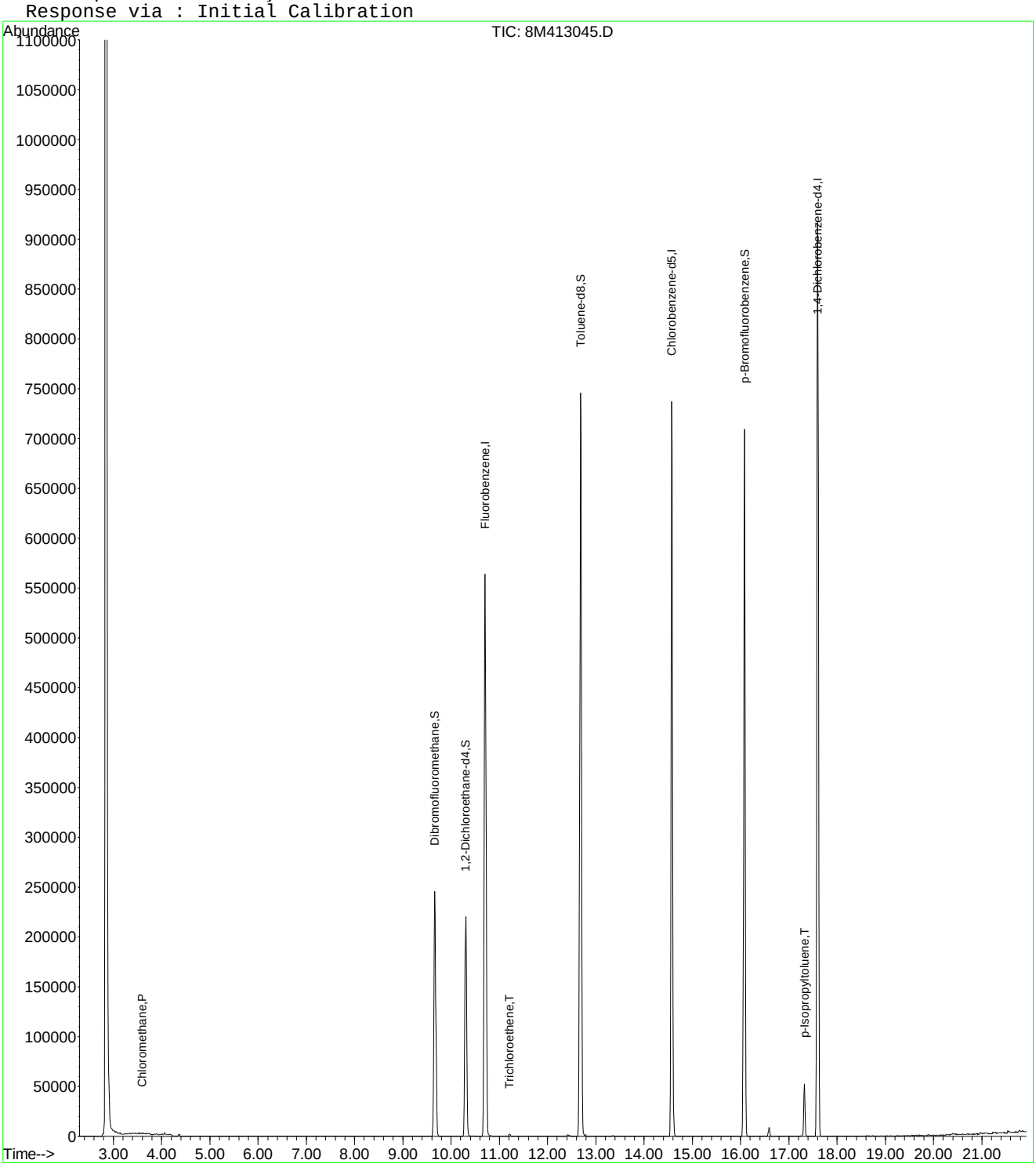

8M413045.D 8260WT.M Mon Jun 20 09:20:06 2016 Page 2

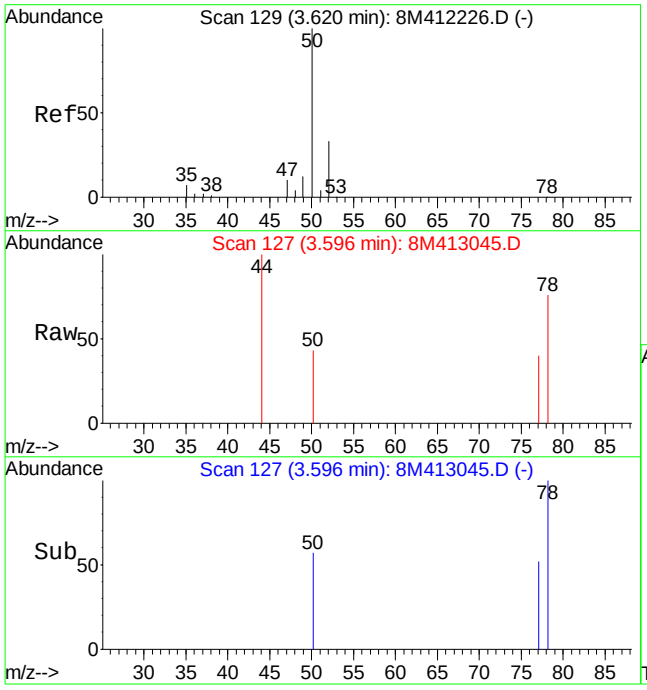

#3
Chloromethane
Concen: 0.14 ug/L
RT: 3.60 min Scan# 127
Delta R.T. -0.02 min
Lab File: 8M413045.D
Acq: 16 Jun 2016 20:50

Tgt Ion: 50 Resp: 937

Ion	Ratio	Lower	Upper
50	100		
52	21.7	19.9	46.3

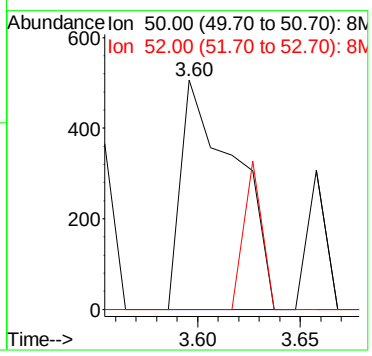

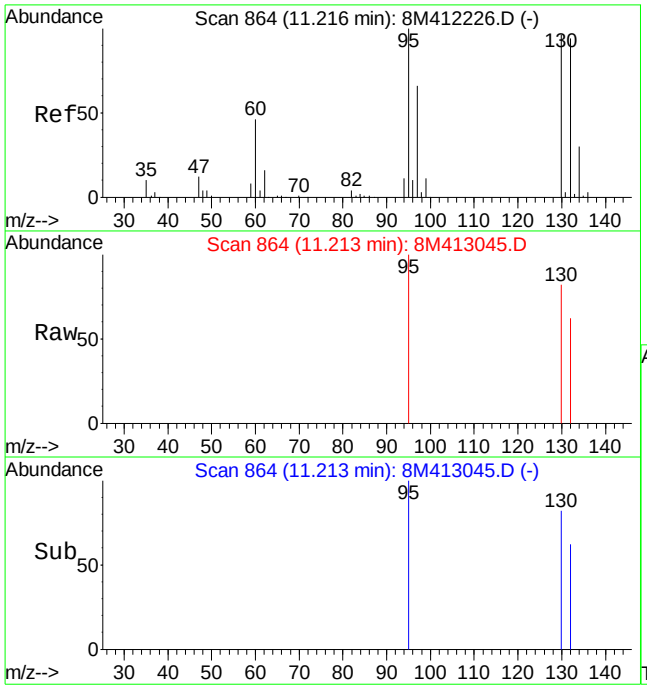

#47
Trichloroethene
Concen: 0.15 ug/L
RT: 11.21 min Scan# 864
Delta R.T. -0.00 min
Lab File: 8M413045.D
Acq: 16 Jun 2016 20:50

Tgt Ion:130 Resp: 1071

Ion	Ratio	Lower	Upper
130	100		
132	48.3	58.0	135.2#
95	117.9	64.9	151.5

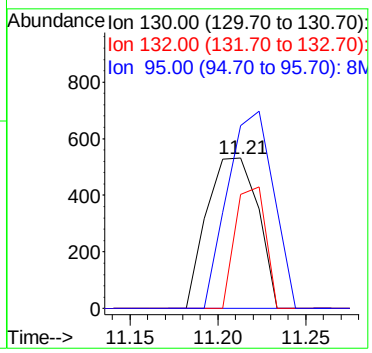

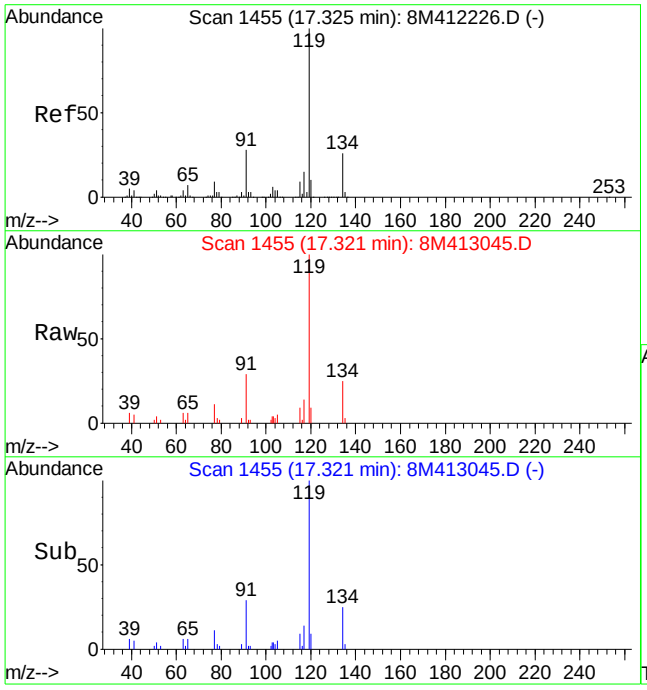

#92
p-Isopropyltoluene
Concen: 1.28 ug/L
RT: 17.32 min Scan# 1455
Delta R.T. -0.00 min
Lab File: 8M413045.D
Acq: 16 Jun 2016 20:50

Tgt Ion:119 Resp: 42966

Ion	Ratio	Lower	Upper
119	100		
134	23.9	15.2	35.6

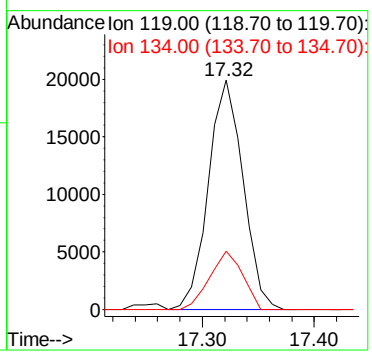

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413046.D Vial: 16
Acq On : 16 Jun 2016 21:19 Operator: FJB
Sample : L16060823-03 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:18:25 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	676219	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	517845	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	289710	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	203536	28.0144 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 112.04%		
43) 1,2-Dichloroethane-d4	10.30	65	232456	29.8391 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 119.36%		
58) Toluene-d8	12.68	98	703041	25.9409 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.76%		
80) p-Bromofluorobenzene	16.08	95	300473	25.0476 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.20%		

Target Compounds

					Qvalue
3) Chloromethane	3.62	50	1964	0.2968 ug/L #	42
32) cis-1,2-Dichloroethene	9.17	96	1645	0.2119 ug/L	72
47) Trichloroethene	11.21	130	41569	5.6110 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413046.D 8260WT.M Mon Jun 20 09:20:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413046.D Vial: 16
Acq On : 16 Jun 2016 21:19 Operator: FJB
Sample : L16060823-03 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 8:18 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

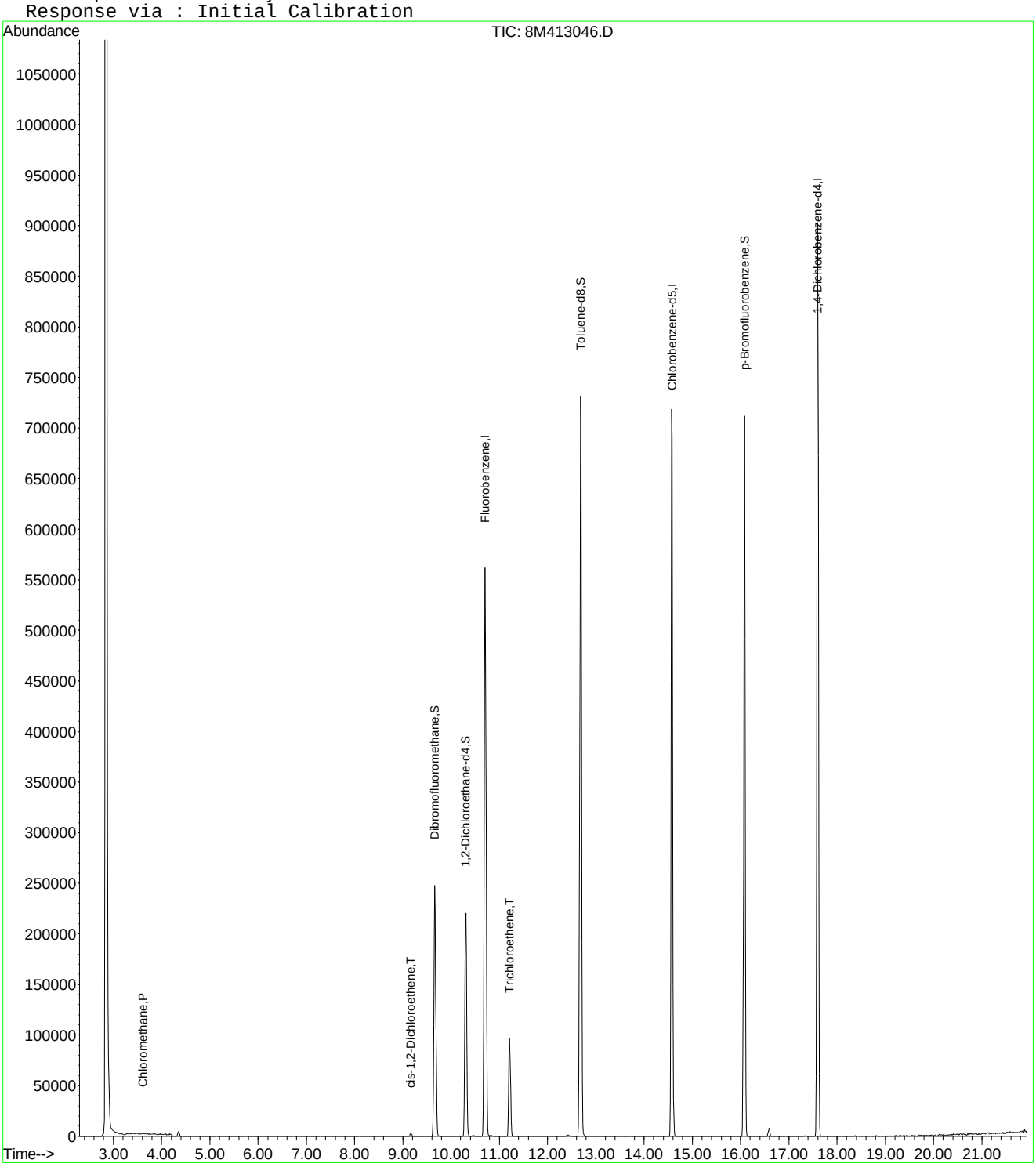

8M413046.D 8260WT.M Mon Jun 20 09:20:10 2016 Page 2

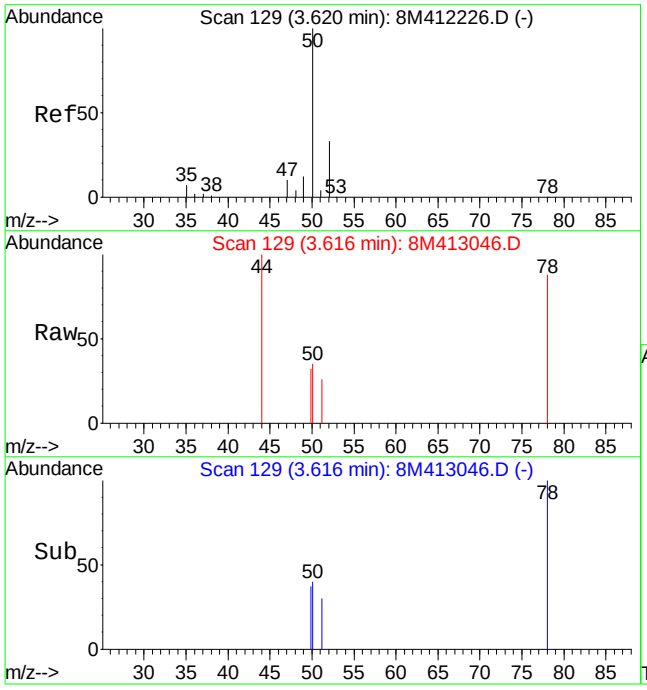

#3
Chloromethane
Concen: 0.30 ug/L
RT: 3.62 min Scan# 129
Delta R.T. -0.00 min
Lab File: 8M413046.D
Acq: 16 Jun 2016 21:19

Tgt Ion: 50 Resp: 1964

Ion	Ratio	Lower	Upper
50	100		
52	0.0	19.9	46.3#

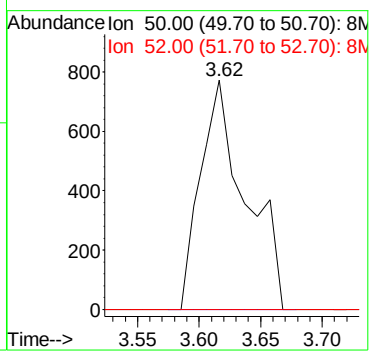

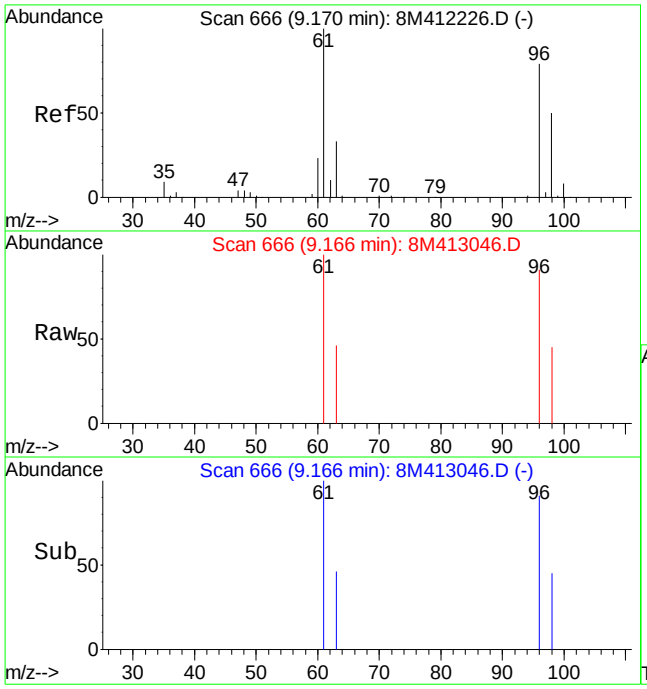

#32
cis-1,2-Dichloroethene
Concen: 0.21 ug/L
RT: 9.17 min Scan# 666
Delta R.T. -0.00 min
Lab File: 8M413046.D
Acq: 16 Jun 2016 21:19

Tgt Ion: 96 Resp: 1645

Ion	Ratio	Lower	Upper
96	100		
61	116.5	91.5	213.5

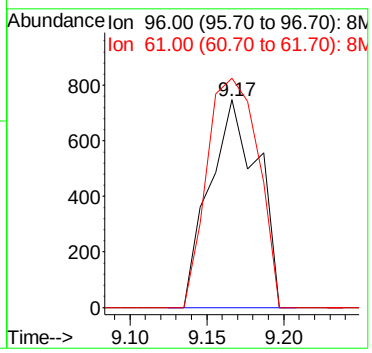

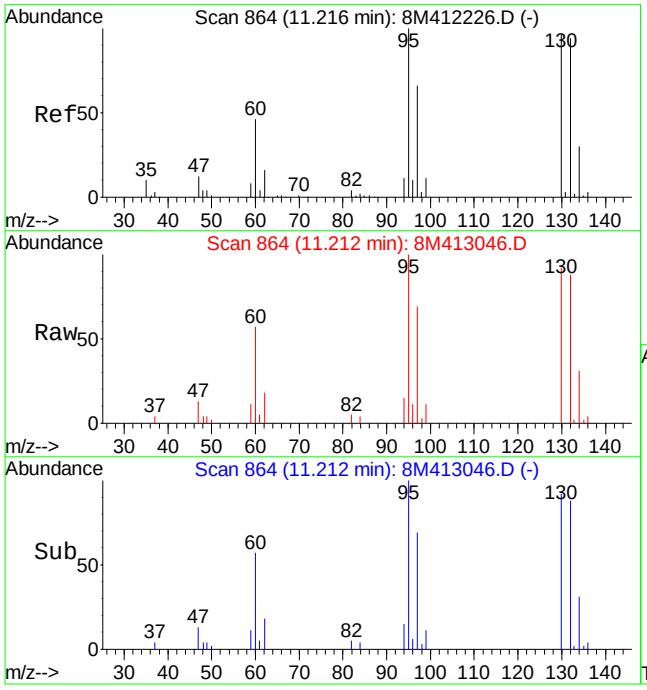

#47
Trichloroethene
Concen: 5.61 ug/L
RT: 11.21 min Scan# 864
Delta R.T. -0.00 min
Lab File: 8M413046.D
Acq: 16 Jun 2016 21:19

Tgt Ion:130 Resp: 41569

Ion	Ratio	Lower	Upper
130	100		
132	96.8	58.0	135.2
95	106.6	64.9	151.5

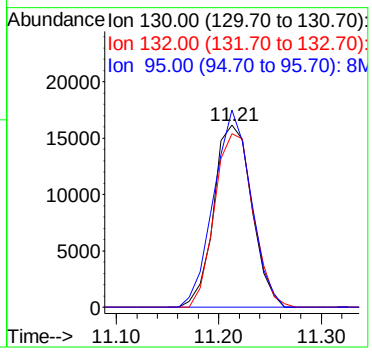

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413047.D Vial: 17
Acq On : 16 Jun 2016 21:48 Operator: FJB
Sample : L16060823-04 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:18:25 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	671491	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	517811	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	287793	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	203988	28.2743 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 113.08%		
43) 1,2-Dichloroethane-d4	10.30	65	233925	30.2391 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 120.96%#		
58) Toluene-d8	12.68	98	705263	26.0246 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.08%		
80) p-Bromofluorobenzene	16.08	95	298621	25.0591 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.24%		

Target Compounds					Qvalue
3) Chloromethane	3.63	50	1302	0.1981 ug/L #	42

(#) = qualifier out of range (m) = manual integration
8M413047.D 8260WT.M Mon Jun 20 09:20:14 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413047.D Vial: 17
Acq On : 16 Jun 2016 21:48 Operator: FJB
Sample : L16060823-04 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 8:18 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

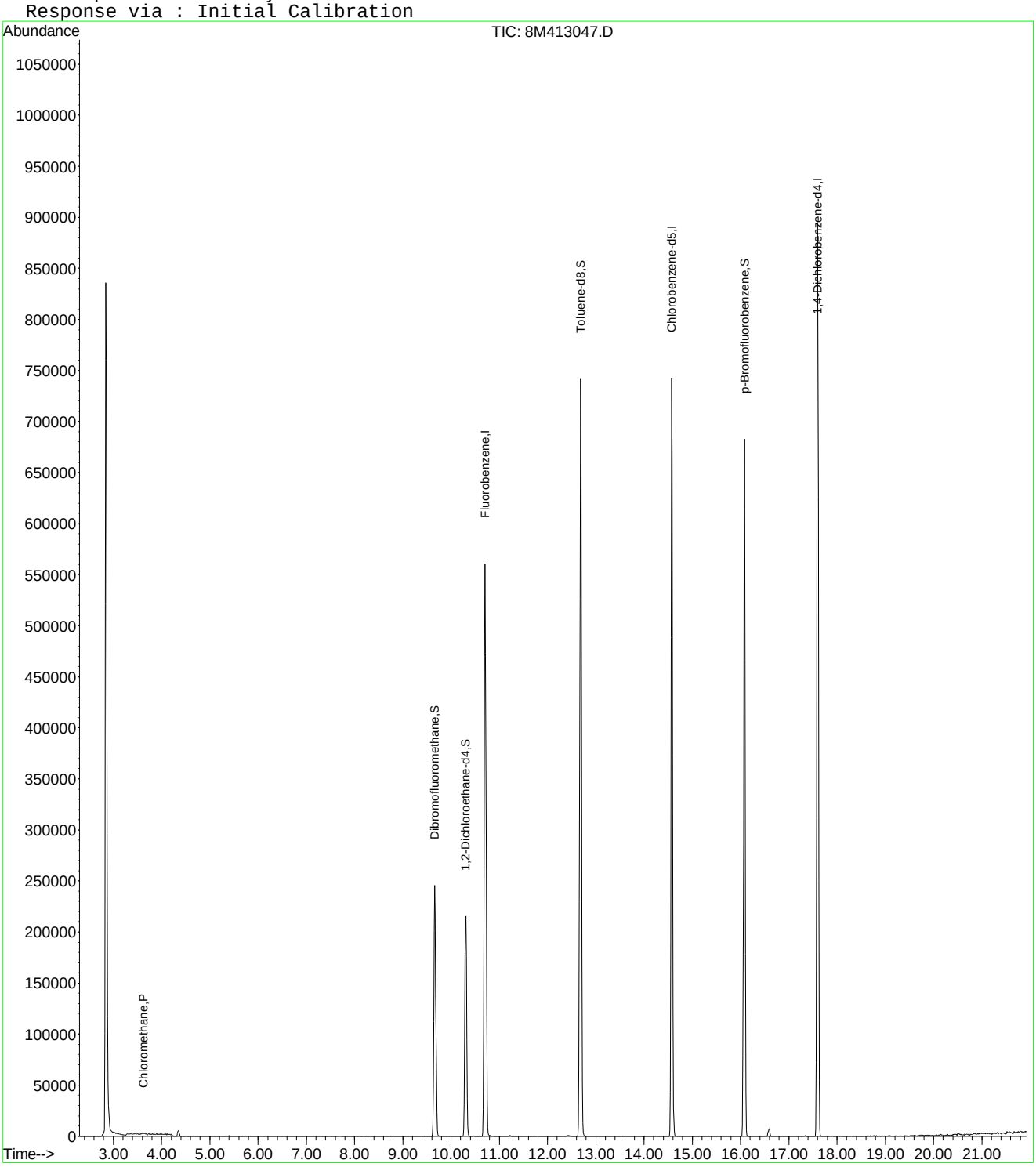

8M413047.D 8260WT.M Mon Jun 20 09:20:14 2016 Page 2

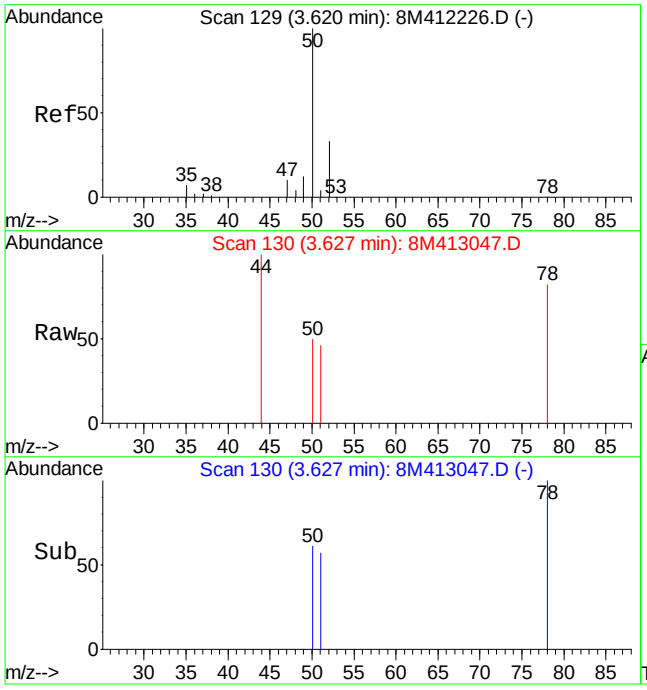

#3
Chloromethane
Concen: 0.20 ug/L
RT: 3.63 min Scan# 130
Delta R.T. 0.01 min
Lab File: 8M413047.D
Acq: 16 Jun 2016 21:48

Tgt Ion: 50 Resp: 1302

Ion	Ratio	Lower	Upper
50	100		
52	0.0	19.9	46.3#

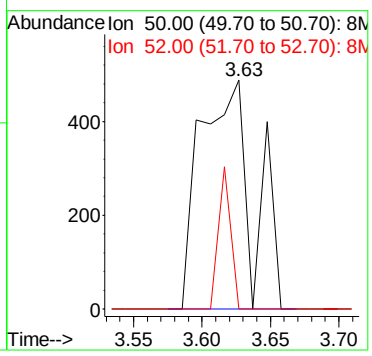

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413042.D Vial: 12
Acq On : 16 Jun 2016 19:23 Operator: FJB
Sample : L16060823-05 TB A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:18:24 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	704722	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	525559	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	289040	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	208489	27.5355 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.16%		
43) 1,2-Dichloroethane-d4	10.30	65	231607	28.5277 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 114.12%		
58) Toluene-d8	12.68	98	729703	26.5295 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 106.12%		
80) p-Bromofluorobenzene	16.08	95	306574	25.6155 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.48%		
Target Compounds					Qvalue
36) Tetrahydrofuran	9.65	42	1074	1.3998 ug/L #	56

(#) = qualifier out of range (m) = manual integration
8M413042.D 8260WT.M Mon Jun 20 09:19:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413042.D Vial: 12
Acq On : 16 Jun 2016 19:23 Operator: FJB
Sample : L16060823-05 TB A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 8:18 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

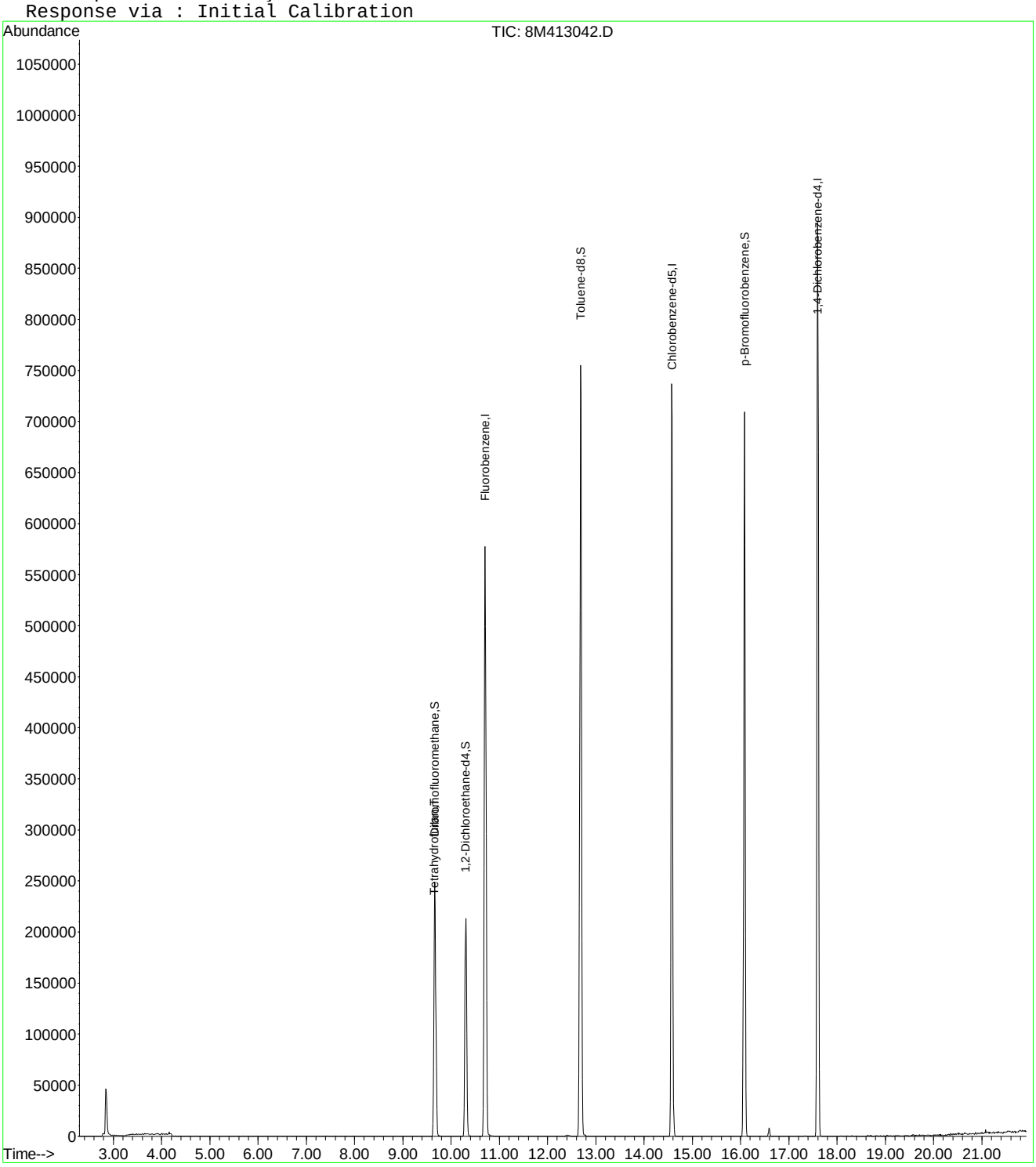

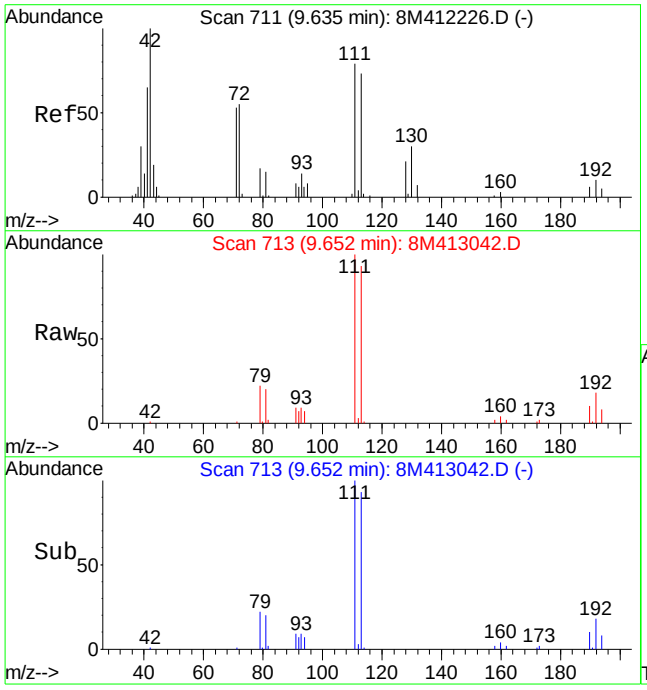

#36
Tetrahydrofuran
Concen: 1.40 ug/L
RT: 9.65 min Scan# 713
Delta R.T. 0.02 min
Lab File: 8M413042.D
Acq: 16 Jun 2016 19:23

Tgt Ion: 42 Resp: 1074

Ion	Ratio	Lower	Upper
42	100		
72	27.6	33.8	78.8#
71	18.9	32.0	74.8#

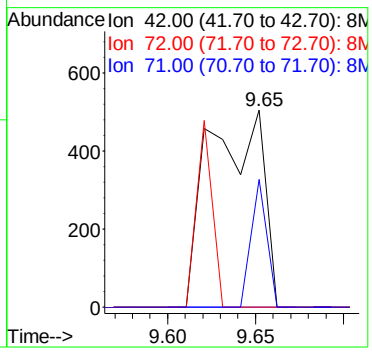

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:40:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	823748	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	571926	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	299321	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	12.68	98	567	0.0189 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.08%#	
80) p-Bromofluorobenzene	16.08	95	313	0.0253 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	3836	0.2778 ug/L	91
3) Chloromethane	3.62	50	3658	0.4537 ug/L	95
4) Vinyl Chloride	3.85	62	2516	0.2630 ug/L #	58
5) 1,3-Butadiene	3.91	54	2079	0.2592 ug/L	71
6) Bromomethane	4.73	94	1152	0.6530 ug/L #	55
7) Chloroethane	4.90	64	1112	0.2113 ug/L #	72
8) Trichlorofluoromethane	5.35	101	2706	0.1520 ug/L #	53
10) Isoprene	5.93	67	2147	0.1987 ug/L	85
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1746	0.2087 ug/L	97
14) 1,1-Dichloroethene	6.48	61	3332	0.2501 ug/L	75
16) Dimethyl Sulfide	6.73	62	1099	0.2308 ug/L	95
19) Methylene Chloride	7.26	84	3414	0.4028 ug/L	88
20) Carbon Disulfide	7.30	76	10739	0.3853 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	4927	0.2686 ug/L #	60
23) trans-1,2-Dichloroethene	7.70	61	3879	0.3170 ug/L	98
24) n-Hexane	7.78	57	2794	0.3075 ug/L	85
26) Vinyl Acetate	8.30	43	1973	0.2259 ug/L #	70
27) 1,1-Dichloroethane	8.33	63	4881	0.3212 ug/L #	88
31) 2,2-Dichloropropane	9.11	77	4966	0.3101 ug/L	89
32) cis-1,2-Dichloroethene	9.17	96	2958	0.3128 ug/L	87
33) Chloroform	9.37	83	5564	0.3101 ug/L	95
34) 1-Bromopropane	9.52	122	210	0.1551 ug/L #	1
35) Bromochloromethane	9.60	130	1386	0.2858 ug/L	76
36) Tetrahydrofuran	9.62	42	1849	2.0617 ug/L #	60
38) 1,1,1-Trichloroethane	9.91	97	4978	0.2921 ug/L	95
39) Cyclohexane	9.93	56	3120	0.2644 ug/L #	85
40) 1,1-Dichloropropene	10.11	75	3779	0.2909 ug/L	97
42) Carbon Tetrachloride	10.24	117	4835	0.3194 ug/L #	74
45) 1,2-Dichloroethane	10.43	62	3295	0.2853 ug/L #	81
46) Benzene	10.46	78	11279	0.3333 ug/L	93
47) Trichloroethene	11.20	130	2410	0.2670 ug/L	97
48) Methylcyclohexane	11.31	83	3936	0.2871 ug/L	84
49) 1,2-Dichloropropane	11.42	63	2136	0.2836 ug/L	88
50) Bromodichloromethane	11.73	83	3767	0.2845 ug/L #	91
52) Dibromomethane	11.82	93	700	0.1570 ug/L #	59
53) 2-Chloroethyl Vinyl Ether	12.02	63	847	0.2616 ug/L #	47
55) cis-1,3-Dichloropropene	12.36	75	4763	0.3535 ug/L	84
56) Dimethyl Disulfide	12.63	79	1647	0.2290 ug/L	82
59) Toluene	12.78	91	11513	0.3243 ug/L	92
60) Ethyl Methacrylate	12.89	69	1631	0.2392 ug/L #	64

(#) = qualifier out of range (m) = manual integration
8M412220.D 8260WT.M Tue May 17 11:40:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:40:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
62)	trans-1,3-Dichloropropene	12.96	75	3626	0.3047 ug/L		82
63)	1,1,2-Trichloroethane	13.18	97	1409	0.2515 ug/L		98
65)	1,3-Dichloropropane	13.49	76	2584	0.2590 ug/L		93
66)	Tetrachloroethene	13.61	164	2678	0.3520 ug/L	#	75
67)	Dibromochloromethane	13.87	129	2126	0.2599 ug/L		79
68)	1,2-Dibromoethane	14.12	107	1895	0.3394 ug/L		91
69)	1-Chlorohexane	14.21	91	3835	0.3164 ug/L		99
70)	Chlorobenzene	14.62	112	7968	0.3328 ug/L		88
71)	1,1,1,2-Tetrachloroethane	14.67	131	2872	0.3096 ug/L		87
72)	Ethylbenzene	14.64	106	3844	0.2934 ug/L		81
73)	m-,p-Xylene	14.75	106	10447	0.6799 ug/L		96
74)	o-Xylene	15.31	106	4577	0.3047 ug/L		97
75)	Styrene	15.35	104	7545	0.3062 ug/L		95
76)	Bromoform	15.84	173	1301	0.2681 ug/L	#	51
77)	Isopropylbenzene	15.74	105	13119	0.3287 ug/L		90
79)	1,1,2,2-Tetrachloroethane	15.96	83	1714	0.2853 ug/L	#	85
83)	n-Propylbenzene	16.24	91	15676	0.3357 ug/L		92
84)	Bromobenzene	16.38	156	2859	0.2977 ug/L		90
85)	1,3,5-Trimethylbenzene	16.43	105	10873	0.3196 ug/L		99
86)	2-Chlorotoluene	16.52	91	11133	0.3415 ug/L		96
87)	4-Chlorotoluene	16.56	91	10305	0.3499 ug/L		97
88)	a-Methylstyrene	16.83	118	4090	0.2534 ug/L		86
89)	tert-Butylbenzene	16.90	134	1734	0.2606 ug/L		72
90)	1,2,4-Trimethylbenzene	16.95	105	10734	0.3069 ug/L		89
91)	sec-Butylbenzene	17.16	105	13749	0.3436 ug/L		97
92)	p-Isopropyltoluene	17.32	119	10847	0.3192 ug/L		95
93)	1,3-Dichlorobenzene	17.52	146	6023	0.3257 ug/L		99
94)	1,4-Dichlorobenzene	17.65	146	6152	0.3299 ug/L	#	60
95)	n-Butylbenzene	17.85	91	11161	0.3323 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	5711	0.3472 ug/L		92
98)	1,2,4-Trichlorobenzene	20.29	180	4203	0.3418 ug/L		91
99)	Hexachlorobutadiene	20.43	225	1894	0.3297 ug/L		84
100)	Naphthalene	20.65	128	6039	0.3306 ug/L		91
101)	1,2,3-Trichlorobenzene	20.96	180	3279	0.3161 ug/L		86

(#) = qualifier out of range (m) = manual integration
8M412220.D 8260WT.M Tue May 17 11:40:55 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2778	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.4537	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.2630	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	0.2592	0.0	100	0.03
6	T	Bromomethane	-1.0000	0.9911	0.0	100	0.00
7	T	Chloroethane	-1.0000	0.2113	0.0	100	0.00
8	T	Trichlorofluoromethane	-1.0000	0.1520	0.0	100	-0.02
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.90#
10	T	Isoprene	-1.0000	0.1987	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.13#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2087	0.0	100	0.00
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	-1.0000	0.2501	0.0	100	0.02
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.58#
16	T	Dimethyl Sulfide	-1.0000	0.2308	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.0000	0.0	0	-7.00#
19	T	Methylene Chloride	-1.0000	0.4028	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.3853	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.43#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2686	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	-1.0000	0.3170	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.3075	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.2259	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.3212	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.98#
31	T	2,2-Dichloropropane	-1.0000	0.3101	0.0	100	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.3128	0.0	100	0.00
33	C	Chloroform	0.3000	0.3101	-3.4	100	0.00
34		1-Bromopropane	-1.0000	0.1551	0.0	100	0.00
35	T	Bromochloromethane	-1.0000	0.2858	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	2.0617	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	-1.0000	0.2921	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.2644	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.2909	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	-1.0000	0.3194	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	-1.0000	0.2853	0.0	100	0.00
46	T	Benzene	-1.0000	0.3333	0.0	100	0.00
47	T	Trichloroethene	-1.0000	0.2670	0.0	100	-0.01
48	T	Methylcyclohexane	-1.0000	0.2871	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2836	0.0	100	0.00
50	T	Bromodichloromethane	-1.0000	0.2845	0.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	-1.0000	0.1570	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2616	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.05#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.3535	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2290	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0189	0.0	100	0.00
59	C	Toluene	-1.0000	0.3243	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2392	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3047	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.2515	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	-1.0000	0.2590	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.3520	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.2599	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.3394	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.3164	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.3328	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.3096	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.2934	0.0	100	-0.01
73	T	m-,p-Xylene	-1.0000	0.6799	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.3047	0.0	100	0.00
75	T	Styrene	-1.0000	0.3062	0.0	100	0.00
76	P	Bromoform	-1.0000	0.2681	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.3287	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2853	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0253	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.1103	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	-1.0000	0.3357	0.0	100	0.00
84	T	Bromobenzene	0.3000	0.2977	0.8	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.3196	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.3415	0.0	100	0.00
87	T	4-Chlorotoluene	-1.0000	0.3499	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2534	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.2606	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.3069	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3436	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.3192	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.3257	0.0	100	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.3299	-10.0	100	0.00
95	T	n-Butylbenzene	-1.0000	0.3323	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.3472	-15.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.3418	0.0	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.3297	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.3306	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.3161	-5.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412220.D 8260WT.M Sat May 14 18:03:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	801173	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	557498	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	293108	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
80) p-Bromofluorobenzene	16.08	95	343	0.0286 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	5478	0.3262 ug/L	79
3) Chloromethane	3.63	50	3930	0.2484 ug/L	85
4) Vinyl Chloride	3.84	62	3512	0.3288 ug/L	97
5) 1,3-Butadiene	3.90	54	2479	0.2375 ug/L #	75
6) Bromomethane	4.73	94	1343	0.9497 ug/L	85
7) Chloroethane	4.90	64	2219	0.3174 ug/L #	43
8) Trichlorofluoromethane	5.36	101	6974	0.3289 ug/L #	93
10) Isoprene	5.94	67	4288	0.3952 ug/L #	62
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	3168	0.3263 ug/L #	40
14) 1,1-Dichloroethene	6.47	61	5431	0.2882 ug/L	92
16) Dimethyl Sulfide	6.74	62	1708	0.2453 ug/L	64
19) Methylene Chloride	7.24	84	3785	0.4239 ug/L #	43
20) Carbon Disulfide	7.29	76	12437	0.4565 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	6580	0.3336 ug/L #	76
23) trans-1,2-Dichloroethene	7.71	61	4990	0.2928 ug/L	96
24) n-Hexane	7.79	57	3110	0.2011 ug/L	99
26) Vinyl Acetate	8.31	43	2753	0.1566 ug/L	100
27) 1,1-Dichloroethane	8.32	63	5655	0.2774 ug/L #	92
31) 2,2-Dichloropropane	9.10	77	6035	0.3360 ug/L	82
32) cis-1,2-Dichloroethene	9.16	96	3837	0.3762 ug/L	74
33) Chloroform	9.37	83	7267	0.3842 ug/L	100
34) 1-Bromopropane	9.50	122	234	0.1456 ug/L #	1
35) Bromochloromethane	9.60	130	1674	0.3137 ug/L	62
36) Tetrahydrofuran	9.62	42	447	0.2146 ug/L #	41
38) 1,1,1-Trichloroethane	9.91	97	6304	0.3305 ug/L	90
39) Cyclohexane	9.94	56	4658	0.2238 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	5172	0.3768 ug/L	80
42) Carbon Tetrachloride	10.25	117	5692	0.3172 ug/L	95
45) 1,2-Dichloroethane	10.43	62	4443	0.2796 ug/L #	63
46) Benzene	10.46	78	14456	0.4134 ug/L #	77
47) Trichloroethene	11.21	130	3659	0.3626 ug/L	98
48) Methylcyclohexane	11.29	83	5025	0.3562 ug/L	84
49) 1,2-Dichloropropane	11.42	63	3060	0.3007 ug/L	98
50) Bromodichloromethane	11.73	83	4734	0.3343 ug/L #	93
52) Dibromomethane	11.82	93	1805	0.3767 ug/L	84
55) cis-1,3-Dichloropropene	12.36	75	5008	0.3514 ug/L	90
56) Dimethyl Disulfide	12.63	79	1921	0.2573 ug/L	85
59) Toluene	12.78	91	14742	0.4416 ug/L	98
60) Ethyl Methacrylate	12.90	69	2062	0.3292 ug/L	66
62) trans-1,3-Dichloropropene	12.96	75	3693	0.3171 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
63)	1,1,2-Trichloroethane	13.18	97	2326	0.4391 ug/L		70
65)	1,3-Dichloropropane	13.49	76	3163	0.3219 ug/L		88
66)	Tetrachloroethene	13.61	164	3164	0.4185 ug/L		93
67)	Dibromochloromethane	13.87	129	3113	0.3727 ug/L		86
68)	1,2-Dibromoethane	14.12	107	2076	0.3760 ug/L		90
69)	1-Chlorohexane	14.21	91	4746	0.4174 ug/L		80
70)	Chlorobenzene	14.62	112	9180	0.3960 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.66	131	3501	0.3876 ug/L		95
72)	Ethylbenzene	14.65	106	5348	0.4066 ug/L		84
73)	m-,p-Xylene	14.75	106	13269	0.8757 ug/L		89
74)	o-Xylene	15.31	106	6019	0.3943 ug/L		97
75)	Styrene	15.35	104	9370	0.3849 ug/L		95
76)	Bromoform	15.83	173	1198	0.2500 ug/L	#	76
77)	Isopropylbenzene	15.73	105	16528	0.4270 ug/L		92
79)	1,1,2,2-Tetrachloroethane	15.96	83	1999	0.3419 ug/L	#	83
83)	n-Propylbenzene	16.25	91	19410	0.4297 ug/L		95
84)	Bromobenzene	16.37	156	3319	0.3524 ug/L		75
85)	1,3,5-Trimethylbenzene	16.42	105	13794	0.4127 ug/L		95
86)	2-Chlorotoluene	16.51	91	13678	0.4729 ug/L		90
87)	4-Chlorotoluene	16.56	91	12572	0.4219 ug/L		98
88)	a-Methylstyrene	16.84	118	5739	0.3485 ug/L		96
89)	tert-Butylbenzene	16.90	134	2254	0.3403 ug/L		55
90)	1,2,4-Trimethylbenzene	16.95	105	13859	0.4051 ug/L		90
91)	sec-Butylbenzene	17.17	105	17612	0.4382 ug/L		90
92)	p-Isopropyltoluene	17.32	119	13616	0.3968 ug/L		90
93)	1,3-Dichlorobenzene	17.52	146	6961	0.3724 ug/L		86
94)	1,4-Dichlorobenzene	17.64	146	7149	0.3832 ug/L	#	1
95)	n-Butylbenzene	17.85	91	15223	0.4664 ug/L		91
96)	1,2-Dichlorobenzene	18.14	146	6129	0.3742 ug/L		92
98)	1,2,4-Trichlorobenzene	20.28	180	5035	0.3969 ug/L		97
99)	Hexachlorobutadiene	20.44	225	2420	0.4122 ug/L		83
100)	Naphthalene	20.65	128	7474	0.3874 ug/L	#	84
101)	1,2,3-Trichlorobenzene	20.96	180	4378	0.4056 ug/L	#	78

(#) = qualifier out of range (m) = manual integration
8M412221.D 8260WT.M Fri May 13 14:20:39 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

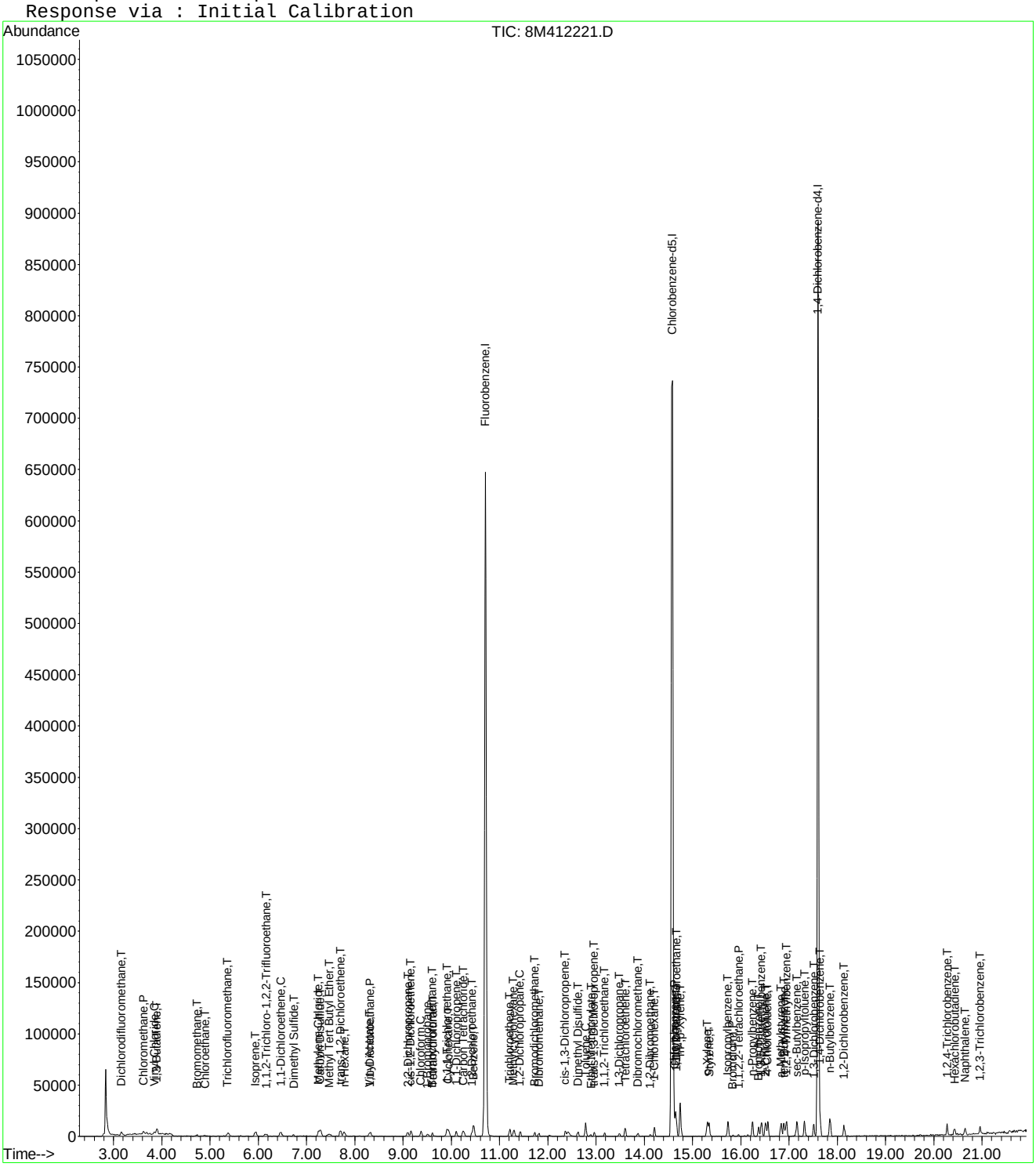

8M412221.D 8260WT.M Fri May 13 14:20:40 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	0.4000	0.4078	-2.0	100	0.00
3	P	Chloromethane	-1.0000	0.5012	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.3775	5.6	100	0.00
5	T	1,3-Butadiene	-1.0000	0.3178	0.0	100	0.02
6	T	Bromomethane	-1.0000	1.0253	0.0	100	0.00
7	T	Chloroethane	0.4000	0.4335	-8.4	100	0.00
8	T	Trichlorofluoromethane	0.4000	0.4029	-0.7	100	-0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.90#
10	T	Isoprene	0.4000	0.4079	-2.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.13#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3894	0.0	100	0.02
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	0.4000	0.4192	-4.8	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.58#
16	T	Dimethyl Sulfide	0.4000	0.3687	7.8	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.2179	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4591	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4587	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.43#
22	T	Methyl Tert Butyl Ether	-1.0000	0.3688	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.4193	-4.8	100	0.00
24	T	n-Hexane	-1.0000	0.3519	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.3241	0.0	100	0.02
27	P	1,1-Dichloroethane	0.4000	0.3826	4.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.98#
31	T	2,2-Dichloropropane	0.4000	0.3874	3.1	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.4172	-4.3	100	-0.01
33	C	Chloroform	0.4000	0.4164	-4.1	100	0.00
34		1-Bromopropane	-1.0000	0.1776	0.0	100	-0.01
35	T	Bromochloromethane	0.4000	0.3550	11.3	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.5125	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	0.4000	0.3803	4.9	100	0.00
39	T	Cyclohexane	-1.0000	0.4058	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4093	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	0.4000	0.3867	3.3	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	0.4000	0.3955	1.1	100	0.00
46	T	Benzene	0.4000	0.4393	-9.8	100	0.00
47	T	Trichloroethene	0.4000	0.4169	-4.2	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3768	0.0	100	-0.01
49	C	1,2-Dichloropropane	0.4000	0.4177	-4.4	100	0.00
50	T	Bromodichloromethane	0.4000	0.3676	8.1	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	0.4000	0.4162	-4.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1401	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.05#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3821	4.5	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2746	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0000	0.0	0	-12.68#
59	C	Toluene	0.4000	0.4259	-6.5	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3102	0.0	100	0.02
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3184	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.4259	-6.5	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	0.4000	0.3253	18.7	100	0.00
66	T	Tetrachloroethene	0.4000	0.4267	-6.7	100	0.00
67	T	Dibromochloromethane	0.4000	0.3904	2.4	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.3814	4.6	100	0.00
69	T	1-Chlorohexane	0.4000	0.4017	-0.4	100	0.00
70	P	Chlorobenzene	0.4000	0.3933	1.7	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3872	3.2	100	0.00
72	C	Ethylbenzene	0.4000	0.4188	-4.7	100	0.00
73	T	m-,p-Xylene	0.8000	0.8859	-10.7	100	0.00
74	T	o-Xylene	-1.0000	0.4110	0.0	100	0.00
75	T	Styrene	0.4000	0.3901	2.5	100	0.00
76	P	Bromoform	-1.0000	0.2533	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.4249	-6.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.3398	15.1	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0283	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.14#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	0.4000	0.4245	-6.1	100	0.00
84	T	Bromobenzene	0.4000	0.3529	11.8	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.4141	-3.5	100	0.00
86	T	2-Chlorotoluene	0.4000	0.4284	-7.1	100	0.00
87	T	4-Chlorotoluene	0.4000	0.4359	-9.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.3631	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3459	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	0.4000	0.4046	-1.2	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.4494	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4092	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.3844	3.9	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.3915	2.1	100	0.00
95	T	n-Butylbenzene	-1.0000	0.4628	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.3805	4.9	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	0.4000	0.4182	-4.5	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.4302	-7.5	100	0.00
100	T	Naphthalene	0.4000	0.4178	-4.5	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.4310	-7.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412221.D 8260WT.M Sat May 14 18:03:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	795577	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	547129	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	284579	25.00 ug/L	0.01
System Monitoring Compounds					
37) Dibromofluoromethane	9.65	111	3962	0.3966 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery	= 1.60%#	
43) 1,2-Dichloroethane-d4	10.31	65	3835	0.3356 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery	= 1.36%#	
58) Toluene-d8	12.68	98	14023	0.4957 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 2.00%#	
80) p-Bromofluorobenzene	16.08	95	6483	0.5565 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery	= 2.24%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	12402	0.7438 ug/L	97
3) Chloromethane	3.62	50	8415	0.5357 ug/L #	75
4) Vinyl Chloride	3.84	62	9412	0.8873 ug/L	89
5) 1,3-Butadiene	3.90	54	6974	0.6729 ug/L	81
6) Bromomethane	4.73	94	4114	1.3123 ug/L	92
7) Chloroethane	4.90	64	4983	0.7178 ug/L #	80
8) Trichlorofluoromethane	5.38	101	17133	0.8136 ug/L #	96
9) Diethyl ether	5.90	59	20707	3.2140 ug/L	84
10) Isoprene	5.94	67	11176	1.0373 ug/L	76
11) Acrolein	6.14	56	246	0.4300 ug/L #	15
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	8135	0.8438 ug/L	96
13) Acetone	6.24	43	413	0.2115 ug/L #	48
14) 1,1-Dichloroethene	6.46	61	12947	0.6919 ug/L	91
15) Tert-Butyl Alcohol	6.59	59	3316	7.3747 ug/L #	55
16) Dimethyl Sulfide	6.72	62	4505	0.6515 ug/L	79
18) Methyl acetate	7.00	43	2119	0.3630 ug/L #	66
19) Methylene Chloride	7.24	84	8723	0.9837 ug/L #	43
20) Carbon Disulfide	7.29	76	28246	1.0441 ug/L	100
21) Acrylonitrile	7.43	53	2164	0.8620 ug/L	76
22) Methyl Tert Butyl Ether	7.47	73	16998	0.8678 ug/L	84
23) trans-1,2-Dichloroethene	7.70	61	12571	0.7427 ug/L	100
24) n-Hexane	7.78	57	9382	0.6109 ug/L	82
25) Diisopropyl ether	8.12	45	95400	2.1939 ug/L #	91
26) Vinyl Acetate	8.30	43	6750	0.3867 ug/L #	89
27) 1,1-Dichloroethane	8.32	63	14721	0.7271 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	97972	3.2102 ug/L	88
29) 2-Butanone	8.88	43	380	0.1215 ug/L #	57
30) Propionitrile	8.99	54	1593	2.0138 ug/L #	56
31) 2,2-Dichloropropane	9.09	77	14691	0.8236 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	9482	0.9362 ug/L	72
33) Chloroform	9.37	83	18494	0.9845 ug/L	94
34) 1-Bromopropane	9.50	122	1092	0.6844 ug/L	80
35) Bromochloromethane	9.61	130	5234	0.9877 ug/L #	55
36) Tetrahydrofuran	9.63	42	5415	2.6185 ug/L #	68
38) 1,1,1-Trichloroethane	9.91	97	17074	0.9016 ug/L	92
39) Cyclohexane	9.94	56	11865	0.5740 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	13172	0.9663 ug/L	87
41) Tert-Amyl-Methyl ether	10.21	73	90255	4.6173 ug/L #	88
42) Carbon Tetrachloride	10.25	117	14515	0.8146 ug/L	95
45) 1,2-Dichloroethane	10.42	62	10675	0.6766 ug/L	85

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	10.47	78	34504	0.9938 ug/L		84
47)	Trichloroethene	11.21	130	8752	0.8735 ug/L		93
48)	Methylcyclohexane	11.30	83	13513	0.9646 ug/L		79
49)	1,2-Dichloropropane	11.43	63	7057	0.6982 ug/L	#	67
50)	Bromodichloromethane	11.73	83	12147	0.8638 ug/L		96
52)	Dibromomethane	11.81	93	4130	0.8681 ug/L		95
53)	2-Chloroethyl Vinyl Ether	12.03	63	2694	0.6366 ug/L		86
54)	4-Methyl-2-Pentanone	12.06	58	848	0.3671 ug/L	#	41
55)	cis-1,3-Dichloropropene	12.36	75	12521	0.8847 ug/L		97
56)	Dimethyl Disulfide	12.63	79	5799	0.7821 ug/L		96
59)	Toluene	12.79	91	37114	1.1328 ug/L		95
60)	Ethyl Methacrylate	12.88	69	5490	0.8930 ug/L		69
62)	trans-1,3-Dichloropropene	12.96	75	10328	0.9035 ug/L		92
63)	1,1,2-Trichloroethane	13.18	97	5274	1.0144 ug/L		93
64)	2-Hexanone	13.10	58	397	0.2127 ug/L	#	1
65)	1,3-Dichloropropane	13.49	76	9673	1.0032 ug/L		73
66)	Tetrachloroethene	13.61	164	7373	0.9937 ug/L		95
67)	Dibromochloromethane	13.87	129	7358	0.8977 ug/L		95
68)	1,2-Dibromoethane	14.13	107	5123	0.9454 ug/L		95
69)	1-Chlorohexane	14.21	91	12790	1.1461 ug/L		79
70)	Chlorobenzene	14.62	112	25662	1.1281 ug/L		89
71)	1,1,1,2-Tetrachloroethane	14.66	131	8722	0.9838 ug/L		94
72)	Ethylbenzene	14.65	106	13009	1.0078 ug/L		87
73)	m-,p-Xylene	14.75	106	30465	2.0486 ug/L		84
74)	o-Xylene	15.31	106	15133	1.0101 ug/L		84
75)	Styrene	15.35	104	23191	0.9707 ug/L		91
76)	Bromoform	15.84	173	3875	0.8240 ug/L		96
77)	Isopropylbenzene	15.74	105	41382	1.0895 ug/L		95
79)	1,1,2,2-Tetrachloroethane	15.95	83	5604	0.9873 ug/L	#	93
81)	1,2,3-Trichloropropane	16.15	110	1355	0.7428 ug/L	#	1
82)	trans-1,4-Dichloro-2-Buten	16.19	53	962	0.3479 ug/L	#	1
83)	n-Propylbenzene	16.25	91	48249	1.1002 ug/L		99
84)	Bromobenzene	16.37	156	9598	1.0497 ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	33355	1.0278 ug/L		96
86)	2-Chlorotoluene	16.51	91	33408	1.1895 ug/L		94
87)	4-Chlorotoluene	16.56	91	29548	1.0213 ug/L		95
88)	a-Methylstyrene	16.84	118	14414	0.9014 ug/L		91
89)	tert-Butylbenzene	16.89	134	6686	1.0398 ug/L		86
90)	1,2,4-Trimethylbenzene	16.95	105	36066	1.0857 ug/L		96
91)	sec-Butylbenzene	17.16	105	42128	1.0796 ug/L		96
92)	p-Isopropyltoluene	17.32	119	35424	1.0633 ug/L		94
93)	1,3-Dichlorobenzene	17.52	146	18409	1.0144 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	19031	1.0506 ug/L	#	62
95)	n-Butylbenzene	17.85	91	35772	1.1288 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	16104	1.0126 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.14	75	1262	1.0152 ug/L	#	53
98)	1,2,4-Trichlorobenzene	20.28	180	11494	0.9331 ug/L		98
99)	Hexachlorobutadiene	20.43	225	5421	0.9510 ug/L		98
100)	Naphthalene	20.65	128	16581	0.8853 ug/L		100
101)	1,2,3-Trichlorobenzene	20.96	180	10306	0.9835 ug/L		94

(#) = qualifier out of range (m) = manual integration
8M412222.D 8260WT.M Fri May 13 14:49:48 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

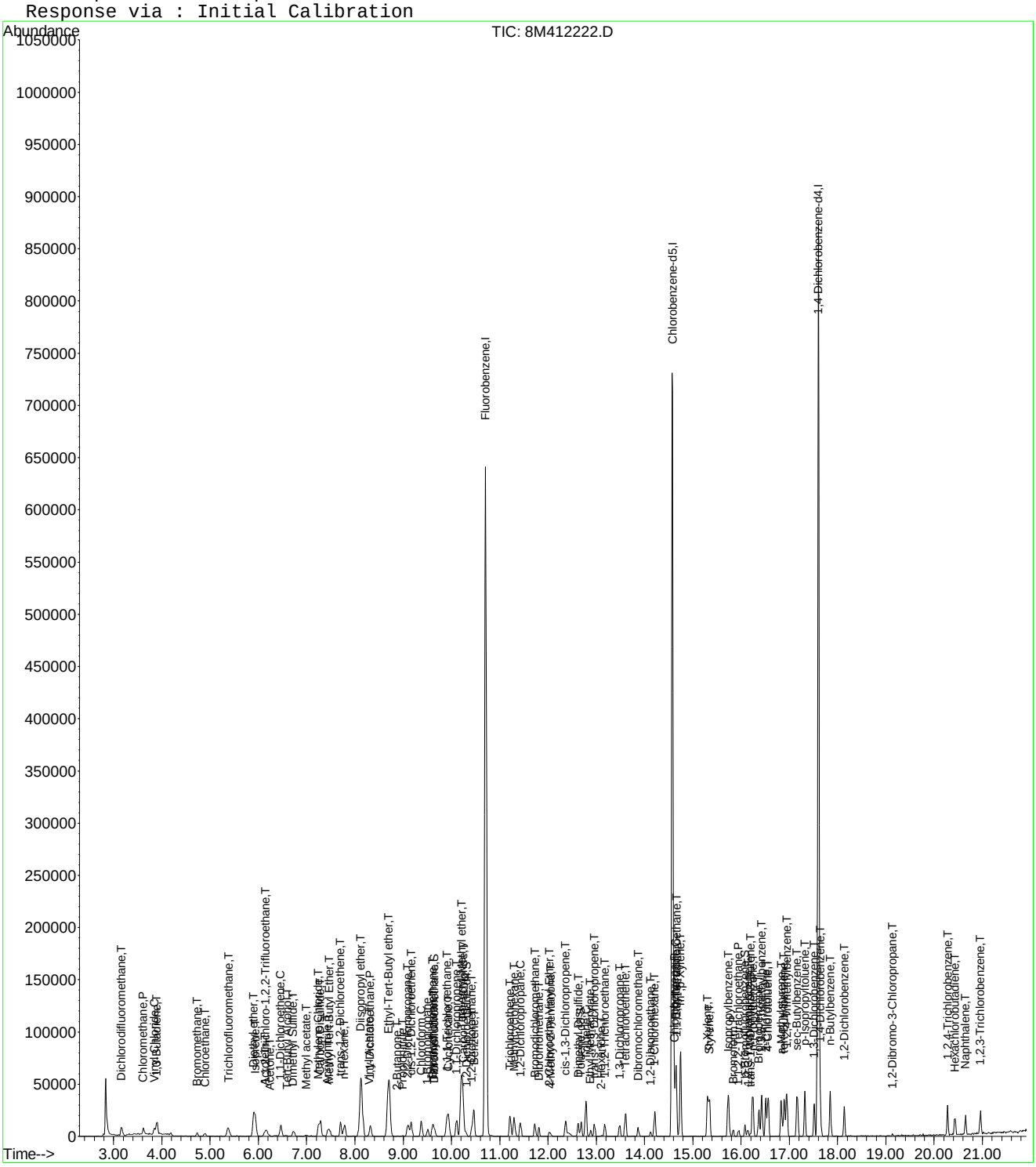

8M412222.D 8260WT.M Fri May 13 14:49:48 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:05:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9298	7.0	100	0.00
3	P	Chloromethane	1.0000	1.0808	-8.1	100	0.00
4	C	Vinyl Chloride	1.0000	1.0189	-1.9	100	0.00
5	T	1,3-Butadiene	-1.0000	0.9002	0.0	100	0.02
6	T	Bromomethane	1.0000	1.2082	-20.8	100	0.00
7	T	Chloroethane	1.0000	0.9803	2.0	100	0.00
8	T	Trichlorofluoromethane	1.0000	0.9968	0.3	100	0.00
9	T	Diethyl ether	5.0000	5.0462	-0.9	100	0.00
10	T	Isoprene	1.0000	1.0707	-7.1	100	0.00
11	T	Acrolein	-1.0000	0.6696	0.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0069	-0.7	100	0.00
13	T	Acetone	-1.0000	0.4614	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	1.0064	-0.6	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	11.5604	0.0	0	0.02
16	T	Dimethyl Sulfide	1.0000	0.9794	2.1	100	-0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.8758	0.0	100	0.00
19	T	Methylene Chloride	1.0000	1.0655	-6.5	100	0.00
20	T	Carbon Disulfide	1.0000	1.0492	-4.9	100	0.00
21	T	Acrylonitrile	2.5000	1.8633	25.5#	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9593	4.1	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	1.0636	-6.4	100	0.00
24	T	n-Hexane	-1.0000	1.0690	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	5.1784	-3.6	100	0.00
26	T	Vinyl Acetate	-1.0000	0.8002	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0029	-0.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.9635	0.7	100	0.00
29	T	2-Butanone	-1.0000	0.2889	0.0	100	0.00
30	T	Propionitrile	5.0000	4.1566	16.9	100	0.00
31	T	2,2-Dichloropropane	1.0000	0.9498	5.0	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	1.0383	-3.8	100	0.00
33	C	Chloroform	1.0000	1.0671	-6.7	100	0.00
34		1-Bromopropane	1.0000	0.8348	16.5	100	-0.01
35	T	Bromochloromethane	1.0000	1.1177	-11.8	100	0.00
36	T	Tetrahydrofuran	5.0000	6.2516	-25.0#	100	0.00
37	S	Dibromofluoromethane	0.5000	0.4635	7.3	100	-0.01
38	T	1,1,1-Trichloroethane	1.0000	1.0372	-3.7	100	0.00
39	T	Cyclohexane	1.0000	1.0411	-4.1	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0498	-5.0	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	5.0344	-0.7	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.9930	0.7	100	0.00
43	S	1,2-Dichloroethane-d4	0.5000	0.4184	16.3	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	1.0000	0.9570	4.3	100	0.00
46	T	Benzene	1.0000	1.0558	-5.6	100	0.00
47	T	Trichloroethene	1.0000	1.0041	-0.4	100	0.00
48	T	Methylcyclohexane	-1.0000	1.0205	0.0	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.9700	3.0	100	0.00
50	T	Bromodichloromethane	1.0000	0.9500	5.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	1.0000	0.9590	4.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.8616	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.6639	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:05:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9621	3.8	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.8348	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	0.5000	0.4897	2.1	100	0.00
59	C	Toluene	1.0000	1.0927	-9.3	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.8416	15.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	1.0000	0.9073	9.3	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.9840	1.6	100	0.00
64	T	2-Hexanone	-1.0000	0.3525	0.0	100	-0.01
65	T	1,3-Dichloropropane	1.0000	1.0137	-1.4	100	0.00
66	T	Tetrachloroethene	1.0000	1.0132	-1.3	100	0.00
67	T	Dibromochloromethane	1.0000	0.9402	6.0	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.9590	4.1	100	0.00
69	T	1-Chlorohexane	1.0000	1.1031	-10.3	100	0.00
70	P	Chlorobenzene	1.0000	1.1204	-12.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.9829	1.7	100	0.00
72	C	Ethylbenzene	1.0000	1.0381	-3.8	100	0.00
73	T	m-,p-Xylene	2.0000	2.0726	-3.6	100	0.00
74	T	o-Xylene	1.0000	1.0530	-5.3	100	0.00
75	T	Styrene	1.0000	0.9839	1.6	100	0.00
76	P	Bromoform	1.0000	0.8348	16.5	100	0.00
77	T	Isopropylbenzene	1.0000	1.0840	-8.4	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	0.9810	1.9	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5502	0.0	100	0.00
81	T	1,2,3-Trichloropropane	1.0000	0.7703	23.0	100	0.02
82	T	trans-1,4-Dichloro-2-Butene	1.0000	1.1443	-14.4	100	0.00
83	T	n-Propylbenzene	1.0000	1.0868	-8.7	100	0.00
84	T	Bromobenzene	1.0000	1.0510	-5.1	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	1.0314	-3.1	100	0.00
86	T	2-Chlorotoluene	1.0000	1.0778	-7.8	100	0.00
87	T	4-Chlorotoluene	1.0000	1.0553	-5.5	100	0.00
88	T	a-Methylstyrene	-1.0000	0.9394	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	1.0567	-5.7	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	1.0845	-8.5	100	0.00
91	T	sec-Butylbenzene	1.0000	1.1073	-10.7	100	0.00
92	T	p-Isopropyltoluene	1.0000	1.0966	-9.7	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0469	-4.7	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	1.0735	-7.3	100	0.00
95	T	n-Butylbenzene	1.0000	1.1201	-12.0	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0297	-3.0	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.1006	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	1.0000	0.9832	1.7	100	0.00
99	T	Hexachlorobutadiene	1.0000	0.9925	0.7	100	0.00
100	T	Naphthalene	1.0000	0.9547	4.5	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	1.0450	-4.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412222.D 8260WT.M Sat May 14 18:05:50 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	782460	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.57	117	543252	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	286450	25.00	ug/L	0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	8161	0.8307	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery	=	3.32%#	
43) 1,2-Dichloroethane-d4	10.30	65	9681	0.8613	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery	=	3.44%#	
58) Toluene-d8	12.68	98	28135	1.0016	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	=	4.00%#	
80) p-Bromofluorobenzene	16.08	95	12079	1.0302	ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery	=	4.12%#	

Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.16	85	24870	1.5166	ug/L	98
3) Chloromethane	3.62	50	16106	1.0425	ug/L	93
4) Vinyl Chloride	3.85	62	18562	1.7792	ug/L	94
5) 1,3-Butadiene	3.90	54	13617	1.3360	ug/L	92
6) Bromomethane	4.73	94	8329	1.8804	ug/L	94
7) Chloroethane	4.90	64	9562	1.4006	ug/L	86
8) Trichlorofluoromethane	5.39	101	34970	1.6885	ug/L	97
9) Diethyl ether	5.90	59	107986	17.0420	ug/L	79
10) Isoprene	5.93	67	20936	1.9757	ug/L	73
11) Acrolein	6.14	56	4864	8.6444	ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	16832	1.7751	ug/L	99
13) Acetone	6.23	43	1519	0.7908	ug/L #	48
14) 1,1-Dichloroethene	6.47	61	25394	1.3798	ug/L	89
15) Tert-Butyl Alcohol	6.58	59	14891	33.6725	ug/L	85
16) Dimethyl Sulfide	6.73	62	9489	1.3953	ug/L	79
17) Iodomethane	6.98	142	1211	1.3472	ug/L #	60
18) Methyl acetate	7.01	43	5064	0.8821	ug/L #	79
19) Methylene Chloride	7.25	84	16579	1.9010	ug/L	52
20) Carbon Disulfide	7.29	76	57693	2.1683	ug/L	98
21) Acrylonitrile	7.43	53	13848	5.6089	ug/L	93
22) Methyl Tert Butyl Ether	7.47	73	33991	1.7644	ug/L	84
23) trans-1,2-Dichloroethene	7.70	61	22786	1.3688	ug/L	88
24) n-Hexane	7.79	57	18282	1.2105	ug/L	84
25) Diisopropyl ether	8.12	45	475271	11.1128	ug/L #	92
26) Vinyl Acetate	8.29	43	15998	0.9318	ug/L	93
27) 1,1-Dichloroethane	8.32	63	30419	1.5277	ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	505010	16.8250	ug/L	89
29) 2-Butanone	8.90	43	2250	0.7313	ug/L #	57
30) Propionitrile	8.99	54	9373	12.0479	ug/L	86
31) 2,2-Dichloropropane	9.10	77	32521	1.8538	ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	18238	1.8309	ug/L	91
33) Chloroform	9.37	83	33543	1.8156	ug/L	99
34) 1-Bromopropane	9.52	122	2513	1.6014	ug/L	88
35) Bromochloromethane	9.60	130	9189	1.7632	ug/L	67
36) Tetrahydrofuran	9.63	42	22074	10.8529	ug/L #	66
38) 1,1,1-Trichloroethane	9.90	97	32268	1.7324	ug/L	96
39) Cyclohexane	9.93	56	23097	1.1362	ug/L #	65
40) 1,1-Dichloropropene	10.10	75	24988	1.8639	ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	459535	23.9029	ug/L	87
42) Carbon Tetrachloride	10.24	117	28935	1.6512	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412223.D 8260WT.M Fri May 13 15:18:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.42	62	22142	1.4270 ug/L #	83
46)	Benzene	10.46	78	67028	1.9629 ug/L	83
47)	Trichloroethene	11.21	130	17287	1.7543 ug/L	96
48)	Methylcyclohexane	11.30	83	26050	1.8907 ug/L	84
49)	1,2-Dichloropropane	11.42	63	14582	1.4670 ug/L	77
50)	Bromodichloromethane	11.73	83	25794	1.8651 ug/L	93
51)	1,4-Dioxane	11.73	88	1282	32.3515 ug/L	74
52)	Dibromomethane	11.81	93	8575	1.8325 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.02	63	6234	1.4979 ug/L	100
54)	4-Methyl-2-Pentanone	12.06	58	2139	0.9416 ug/L	84
55)	cis-1,3-Dichloropropene	12.37	75	24153	1.7353 ug/L	98
56)	Dimethyl Disulfide	12.62	79	12288	1.6851 ug/L	99
59)	Toluene	12.79	91	72944	2.2423 ug/L	95
60)	Ethyl Methacrylate	12.88	69	12716	2.0832 ug/L	71
62)	trans-1,3-Dichloropropene	12.96	75	22163	1.9527 ug/L	100
63)	1,1,2-Trichloroethane	13.18	97	10537	2.0412 ug/L	99
64)	2-Hexanone	13.13	58	2200	1.1873 ug/L #	65
65)	1,3-Dichloropropane	13.49	76	20212	2.1112 ug/L	72
66)	Tetrachloroethene	13.60	164	14595	1.9811 ug/L	90
67)	Dibromochloromethane	13.87	129	14698	1.8061 ug/L	98
68)	1,2-Dibromoethane	14.12	107	10152	1.8869 ug/L	95
69)	1-Chlorohexane	14.21	91	21960	1.9818 ug/L	89
70)	Chlorobenzene	14.62	112	47376	2.0974 ug/L	81
71)	1,1,1,2-Tetrachloroethane	14.66	131	17526	1.9910 ug/L	97
72)	Ethylbenzene	14.66	106	25628	1.9996 ug/L	92
73)	m-,p-Xylene	14.74	106	60087	4.0693 ug/L	84
74)	o-Xylene	15.31	106	28289	1.9017 ug/L	79
75)	Styrene	15.35	104	47644	2.0086 ug/L	92
76)	Bromoform	15.84	173	9145	1.9585 ug/L	95
77)	Isopropylbenzene	15.73	105	81301	2.1557 ug/L	97
79)	1,1,2,2-Tetrachloroethane	15.95	83	11538	2.0194 ug/L	95
81)	1,2,3-Trichloropropane	16.13	110	3630	1.9770 ug/L	94
82)	trans-1,4-Dichloro-2-Buten	16.19	53	2699	0.9698 ug/L #	36
83)	n-Propylbenzene	16.24	91	97233	2.2026 ug/L	96
84)	Bromobenzene	16.37	156	19174	2.0834 ug/L	92
85)	1,3,5-Trimethylbenzene	16.42	105	67395	2.0631 ug/L	97
86)	2-Chlorotoluene	16.51	91	67110	2.3739 ug/L	94
87)	4-Chlorotoluene	16.56	91	59154	2.0313 ug/L	92
88)	a-Methylstyrene	16.84	118	29415	1.8275 ug/L	86
89)	tert-Butylbenzene	16.89	134	12716	1.9647 ug/L	67
90)	1,2,4-Trimethylbenzene	16.95	105	71669	2.1435 ug/L	94
91)	sec-Butylbenzene	17.17	105	81038	2.0632 ug/L	98
92)	p-Isopropyltoluene	17.32	119	70170	2.0924 ug/L	92
93)	1,3-Dichlorobenzene	17.52	146	37289	2.0413 ug/L	93
94)	1,4-Dichlorobenzene	17.64	146	36528	2.0034 ug/L #	73
95)	n-Butylbenzene	17.85	91	67823	2.1262 ug/L	96
96)	1,2-Dichlorobenzene	18.14	146	32322	2.0190 ug/L	92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	1955	1.5624 ug/L	94
98)	1,2,4-Trichlorobenzene	20.28	180	23558	1.9000 ug/L	98
99)	Hexachlorobutadiene	20.43	225	11066	1.9286 ug/L	99
100)	Naphthalene	20.65	128	36066	1.9130 ug/L	99
101)	1,2,3-Trichlorobenzene	20.96	180	19765	1.8738 ug/L	95

(#) = qualifier out of range (m) = manual integration
8M412223.D 8260WT.M Fri May 13 15:18:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

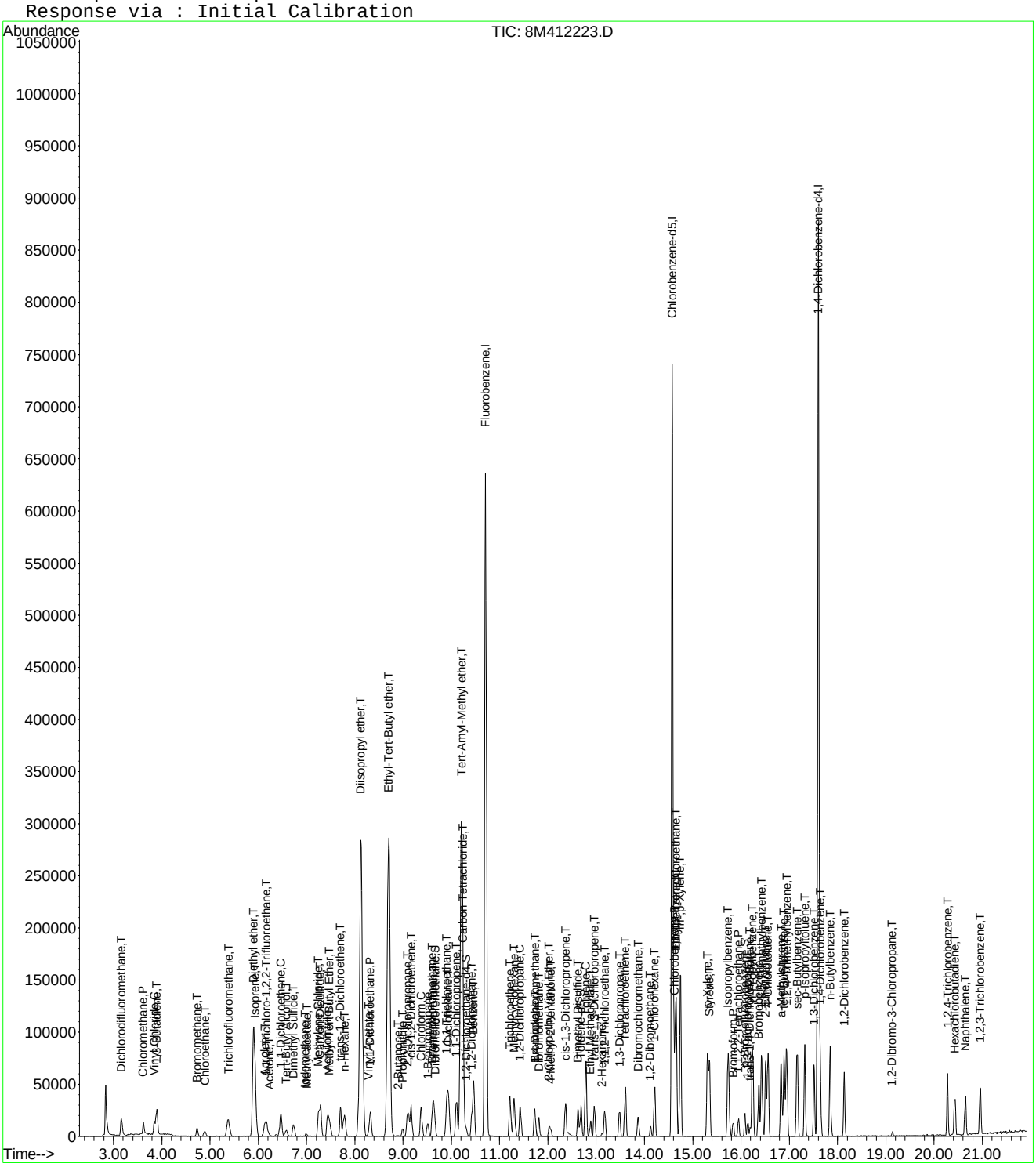

8M412223.D 8260WT.M Fri May 13 15:18:37 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.8958	5.2	100	0.00
3	P	Chloromethane	2.0000	2.1033	-5.2	100	0.00
4	C	Vinyl Chloride	2.0000	2.0431	-2.2	100	0.00
5	T	1,3-Butadiene	2.0000	1.7872	10.6	100	0.02
6	T	Bromomethane	2.0000	2.0126	-0.6	100	0.00
7	T	Chloroethane	2.0000	1.9127	4.4	100	0.00
8	T	Trichlorofluoromethane	2.0000	2.0686	-3.4	100	0.00
9	T	Diethyl ether	25.0000	26.7567	-7.0	100	0.00
10	T	Isoprene	2.0000	2.0394	-2.0	100	0.00
11	T	Acrolein	12.5000	13.4606	-7.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	2.1182	-5.9	100	0.02
13	T	Acetone	-1.0000	1.7255	0.0	100	-0.01
14	C	1,1-Dichloroethene	2.0000	2.0070	-0.4	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	52.7840	-5.6	100	0.00
16	T	Dimethyl Sulfide	2.0000	2.0975	-4.9	100	0.00
17	T	Iodomethane	2.0000	3.0680	-53.4#	100	0.00
18	T	Methyl acetate	-1.0000	2.1281	0.0	100	0.00
19	T	Methylene Chloride	2.0000	2.0590	-3.0	100	0.00
20	T	Carbon Disulfide	2.0000	2.1789	-8.9	100	0.00
21	T	Acrylonitrile	12.5000	12.1237	3.0	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.9505	2.5	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.9603	2.0	100	0.00
24	T	n-Hexane	-1.0000	2.1181	0.0	100	0.00
25	T	Diisopropyl ether	25.0000	26.2305	-4.9	100	0.00
26	T	Vinyl Acetate	2.0000	1.9284	3.6	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.1072	-5.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	26.0139	-4.1	100	0.00
29	T	2-Butanone	-1.0000	1.7396	0.0	100	0.02
30	T	Propionitrile	25.0000	24.8668	0.5	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1378	-6.9	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0306	-1.5	100	0.00
33	C	Chloroform	2.0000	1.9679	1.6	100	0.00
34		1-Bromopropane	2.0000	1.9533	2.3	100	0.00
35	T	Bromochloromethane	2.0000	1.9951	0.2	100	0.00
36	T	Tetrahydrofuran	25.0000	25.9117	-3.6	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9708	2.9	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.9930	0.3	100	0.00
39	T	Cyclohexane	2.0000	2.0605	-3.0	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0248	-1.2	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	26.0627	-4.3	100	0.00
42	T	Carbon Tetrachloride	2.0000	2.0126	-0.6	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0740	-7.4	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	2.0000	2.0183	-0.9	100	0.00
46	T	Benzene	2.0000	2.0854	-4.3	100	0.00
47	T	Trichloroethene	2.0000	2.0166	-0.8	100	0.00
48	T	Methylcyclohexane	-1.0000	2.0003	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0380	-1.9	100	0.00
50	T	Bromodichloromethane	2.0000	2.0511	-2.6	100	0.00
51	T	1,4-Dioxane	-1.0000	35.6688	0.0	100	0.02
52	T	Dibromomethane	2.0000	2.0246	-1.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	2.0271	-1.4	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.7027	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.8869	5.7	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.7986	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	0.9896	1.0	100	0.00
59	C	Toluene	2.0000	2.1628	-8.1	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.9633	1.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	2.0000	1.9609	2.0	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.9800	1.0	100	0.00
64	T	2-Hexanone	-1.0000	1.9672	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.1332	-6.7	100	0.00
66	T	Tetrachloroethene	2.0000	2.0198	-1.0	100	0.00
67	T	Dibromochloromethane	2.0000	1.8915	5.4	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.9141	4.3	100	0.00
69	T	1-Chlorohexane	2.0000	1.9075	4.6	100	0.00
70	P	Chlorobenzene	2.0000	2.0831	-4.2	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.9892	0.5	100	0.00
72	C	Ethylbenzene	2.0000	2.0596	-3.0	100	0.00
73	T	m-,p-Xylene	4.0000	4.1170	-2.9	100	0.00
74	T	o-Xylene	2.0000	1.9825	0.9	100	0.00
75	T	Styrene	2.0000	2.0358	-1.8	100	0.00
76	P	Bromoform	2.0000	1.9841	0.8	100	0.00
77	T	Isopropylbenzene	2.0000	2.1448	-7.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	2.0066	-0.3	100	0.00
80	S	p-Bromofluorobenzene	1.0000	1.0184	-1.8	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	2.0501	-2.5	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	2.0915	-4.6	100	0.00
83	T	n-Propylbenzene	2.0000	2.1757	-8.8	100	0.00
84	T	Bromobenzene	2.0000	2.0859	-4.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.0703	-3.5	100	0.00
86	T	2-Chlorotoluene	2.0000	2.1509	-7.5	100	0.00
87	T	4-Chlorotoluene	2.0000	2.0989	-4.9	100	0.00
88	T	a-Methylstyrene	-1.0000	1.9045	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	1.9967	0.2	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.1411	-7.1	100	0.00
91	T	sec-Butylbenzene	2.0000	2.1161	-5.8	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.1579	-7.9	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.1067	-5.3	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.0470	-2.4	100	0.00
95	T	n-Butylbenzene	2.0000	2.1098	-5.5	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0532	-2.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.6938	15.3	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	2.0021	-0.1	100	0.00
99	T	Hexachlorobutadiene	2.0000	2.0128	-0.6	100	0.00
100	T	Naphthalene	2.0000	2.0630	-3.2	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9910	0.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412223.D 8260WT.M Sat May 14 18:08:14 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	768397	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.58	117	534372	25.00	ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	274234	25.00	ug/L	0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	19775	2.0496	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	8.20%#		
43) 1,2-Dichloroethane-d4	10.30	65	21200	1.9207	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	7.68%#		
58) Toluene-d8	12.68	98	65647	2.3758	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	9.52%#		
80) p-Bromofluorobenzene	16.08	95	26759	2.3838	ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	9.52%#		

Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.16	85	55961	3.4750	ug/L	99
3) Chloromethane	3.62	50	34194	2.2538	ug/L	100
4) Vinyl Chloride	3.84	62	42506	4.1488	ug/L	99
5) 1,3-Butadiene	3.89	54	32006	3.1976	ug/L	93
6) Bromomethane	4.72	94	19582	3.4204	ug/L	94
7) Chloroethane	4.90	64	22000	3.2814	ug/L	84
8) Trichlorofluoromethane	5.37	101	77715	3.8212	ug/L	96
9) Diethyl ether	5.90	59	188516	30.2955	ug/L	79
10) Isoprene	5.94	67	44975	4.3218	ug/L	78
11) Acrolein	6.15	56	7712	13.9568	ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	36867	3.9591	ug/L	99
13) Acetone	6.24	43	3578	1.8967	ug/L	85
14) 1,1-Dichloroethene	6.47	61	59405	3.2870	ug/L	95
15) Tert-Butyl Alcohol	6.58	59	27833	64.0897	ug/L #	82
16) Dimethyl Sulfide	6.73	62	21102	3.1597	ug/L	77
17) Iodomethane	6.99	142	3667	1.8964	ug/L	95
18) Methyl acetate	7.00	43	11500	2.0398	ug/L #	86
19) Methylene Chloride	7.24	84	37533	4.3823	ug/L	52
20) Carbon Disulfide	7.29	76	123060	4.7097	ug/L	100
21) Acrylonitrile	7.43	53	25653	10.5804	ug/L	99
22) Methyl Tert Butyl Ether	7.47	73	80005	4.2289	ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	54124	3.3108	ug/L	94
24) n-Hexane	7.78	57	40758	2.7480	ug/L	82
25) Diisopropyl ether	8.12	45	841400	20.0337	ug/L #	91
26) Vinyl Acetate	8.30	43	37284	2.2113	ug/L #	90
27) 1,1-Dichloroethane	8.32	63	66711	3.4116	ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	907423	30.7852	ug/L	89
29) 2-Butanone	8.89	43	5359	1.7738	ug/L #	82
30) Propionitrile	8.99	54	17933	23.4726	ug/L	100
31) 2,2-Dichloropropane	9.10	77	73150	4.2462	ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	41036	4.1950	ug/L	89
33) Chloroform	9.37	83	78227	4.3116	ug/L	99
34) 1-Bromopropane	9.52	122	6162	3.9986	ug/L	99
35) Bromochloromethane	9.60	130	20988	4.1009	ug/L #	62
36) Tetrahydrofuran	9.62	42	38098	19.0742	ug/L #	62
38) 1,1,1-Trichloroethane	9.91	97	76152	4.1633	ug/L	97
39) Cyclohexane	9.94	56	51439	2.5767	ug/L #	66
40) 1,1-Dichloropropene	10.11	75	56645	4.3027	ug/L	93
41) Tert-Amyl-Methyl ether	10.21	73	821180	43.4958	ug/L	87
42) Carbon Tetrachloride	10.25	117	67831	3.9416	ug/L	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	51708	3.3934 ug/L		85
46)	Benzene	10.46	78	150204	4.4792 ug/L		86
47)	Trichloroethene	11.21	130	38500	3.9784 ug/L		94
48)	Methylcyclohexane	11.30	83	60897	4.5008 ug/L		81
49)	1,2-Dichloropropane	11.43	63	31773	3.2549 ug/L		77
50)	Bromodichloromethane	11.73	83	59127	4.3535 ug/L		94
51)	1,4-Dioxane	11.71	88	2719	69.8702 ug/L	#	62
52)	Dibromomethane	11.81	93	19711	4.2894 ug/L		96
53)	2-Chloroethyl Vinyl Ether	12.03	63	12946	3.1676 ug/L		98
54)	4-Methyl-2-Pentanone	12.05	58	5129	2.2991 ug/L	#	78
55)	cis-1,3-Dichloropropene	12.36	75	61169	4.4752 ug/L		94
56)	Dimethyl Disulfide	12.62	79	27966	3.9053 ug/L		98
59)	Toluene	12.78	91	161007	5.0316 ug/L		97
60)	Ethyl Methacrylate	12.88	69	28595	4.7624 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	49791	4.4599 ug/L		97
63)	1,1,2-Trichloroethane	13.18	97	23678	4.6631 ug/L		99
64)	2-Hexanone	13.11	58	4499	2.4685 ug/L	#	97
65)	1,3-Dichloropropane	13.49	76	44838	4.7614 ug/L		73
66)	Tetrachloroethene	13.60	164	32715	4.5144 ug/L		97
67)	Dibromochloromethane	13.87	129	35009	4.3734 ug/L		98
68)	1,2-Dibromoethane	14.13	107	24247	4.5815 ug/L		99
69)	1-Chlorohexane	14.21	91	53599	4.9176 ug/L		84
70)	Chlorobenzene	14.62	112	107618	4.8437 ug/L		95
71)	1,1,1,2-Tetrachloroethane	14.65	131	38120	4.4025 ug/L		96
72)	Ethylbenzene	14.65	106	56905	4.5138 ug/L		91
73)	m-,p-Xylene	14.75	106	137390	9.4592 ug/L		86
74)	o-Xylene	15.31	106	65650	4.4866 ug/L		85
75)	Styrene	15.35	104	111433	4.7758 ug/L		91
76)	Bromoform	15.84	173	19346	4.2121 ug/L		97
77)	Isopropylbenzene	15.73	105	182523	4.9200 ug/L		96
79)	1,1,2,2-Tetrachloroethane	15.95	83	26655	4.8730 ug/L		99
81)	1,2,3-Trichloropropane	16.13	110	8840	5.0289 ug/L		81
82)	trans-1,4-Dichloro-2-Buten	16.19	53	6584	2.4712 ug/L	#	51
83)	n-Propylbenzene	16.24	91	222196	5.2576 ug/L		96
84)	Bromobenzene	16.37	156	42665	4.8423 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	155714	4.9790 ug/L		93
86)	2-Chlorotoluene	16.52	91	148764	5.4968 ug/L		94
87)	4-Chlorotoluene	16.56	91	135679	4.8666 ug/L		94
88)	a-Methylstyrene	16.84	118	68945	4.4743 ug/L		91
89)	tert-Butylbenzene	16.89	134	29069	4.6914 ug/L		77
90)	1,2,4-Trimethylbenzene	16.95	105	161016	5.0301 ug/L		94
91)	sec-Butylbenzene	17.17	105	191273	5.0866 ug/L		94
92)	p-Isopropyltoluene	17.32	119	159232	4.9597 ug/L		93
93)	1,3-Dichlorobenzene	17.52	146	83896	4.7972 ug/L		95
94)	1,4-Dichlorobenzene	17.64	146	82462	4.7242 ug/L		86
95)	n-Butylbenzene	17.85	91	158787	5.1996 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	72524	4.7321 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	5629	4.6990 ug/L		76
98)	1,2,4-Trichlorobenzene	20.28	180	53855	4.5369 ug/L		98
99)	Hexachlorobutadiene	20.43	225	24504	4.4608 ug/L		93
100)	Naphthalene	20.65	128	79806	4.4217 ug/L		98
101)	1,2,3-Trichlorobenzene	20.96	180	44150	4.3720 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412224.D 8260WT.M Fri May 13 15:47:44 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

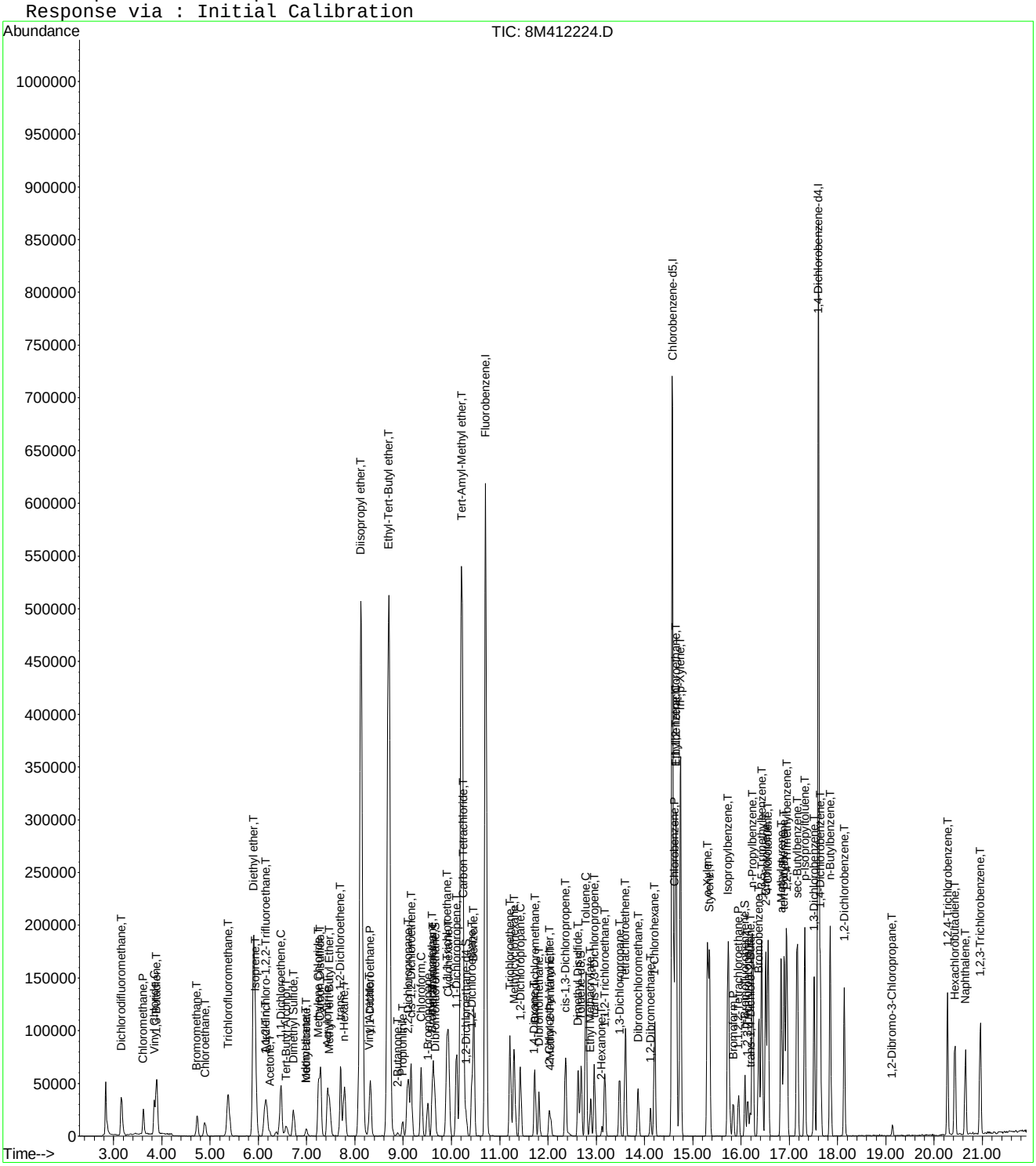

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.3438	13.1	100	0.00
3	P	Chloromethane	5.0000	4.5471	9.1	100	0.00
4	C	Vinyl Chloride	5.0000	4.7641	4.7	100	0.00
5	T	1,3-Butadiene	5.0000	4.2777	14.4	100	0.00
6	T	Bromomethane	5.0000	4.1880	16.2	100	-0.01
7	T	Chloroethane	5.0000	4.4813	10.4	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.6812	6.4	100	0.00
9	T	Diethyl ether	50.0000	47.5652	4.9	100	0.00
10	T	Isoprene	5.0000	4.4611	10.8	100	0.00
11	T	Acrolein	25.0000	21.7328	13.1	100	0.02
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.7244	5.5	100	0.00
13	T	Acetone	5.0000	4.1387	17.2	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.7810	4.4	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	100.4650	-0.5	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.7499	5.0	100	0.00
17	T	Iodomethane	5.0000	3.7634	24.7	100	0.00
18	T	Methyl acetate	5.0000	4.9211	1.6	100	0.00
19	T	Methylene Chloride	5.0000	4.7467	5.1	100	0.00
20	T	Carbon Disulfide	5.0000	4.7328	5.3	100	0.00
21	T	Acrylonitrile	25.0000	22.8698	8.5	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.6750	6.5	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.7415	5.2	100	0.00
24	T	n-Hexane	5.0000	4.8084	3.8	100	0.00
25	T	Diisopropyl ether	50.0000	47.2872	5.4	100	0.00
26	T	Vinyl Acetate	5.0000	4.5766	8.5	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.7058	5.9	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	47.5984	4.8	100	0.00
29	T	2-Butanone	5.0000	4.2191	15.6	100	0.00
30	T	Propionitrile	50.0000	48.4475	3.1	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.8965	2.1	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.6525	7.0	100	0.00
33	C	Chloroform	5.0000	4.6735	6.5	100	0.00
34		1-Bromopropane	5.0000	4.8774	2.5	100	0.00
35	T	Bromochloromethane	5.0000	4.6403	7.2	100	0.00
36	T	Tetrahydrofuran	50.0000	45.5400	8.9	100	-0.01
37	S	Dibromofluoromethane	2.5000	2.3953	4.2	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.7896	4.2	100	0.00
39	T	Cyclohexane	5.0000	4.6730	6.5	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.6741	6.5	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	47.6211	4.8	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.8044	3.9	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.3949	4.2	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	5.0000	4.7996	4.0	100	0.00
46	T	Benzene	5.0000	4.7588	4.8	100	0.00
47	T	Trichloroethene	5.0000	4.5733	8.5	100	0.00
48	T	Methylcyclohexane	5.0000	4.7616	4.8	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.5219	9.6	100	0.00
50	T	Bromodichloromethane	5.0000	4.7878	4.2	100	0.00
51	T	1,4-Dioxane	100.0000	77.0346	23.0	100	0.00
52	T	Dibromomethane	5.0000	4.7390	5.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.2867	14.3	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.1576	16.8	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.8662	2.7	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.1683	16.6	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.3473	6.1	100	0.00
59	C	Toluene	5.0000	4.8533	2.9	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.4883	10.2	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	5.0000	4.4786	10.4	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.5231	9.5	100	0.00
64	T	2-Hexanone	5.0000	4.0898	18.2	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.8109	3.8	100	0.00
66	T	Tetrachloroethene	5.0000	4.6028	7.9	100	0.00
67	T	Dibromochloromethane	5.0000	4.5802	8.4	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.6475	7.1	100	0.00
69	T	1-Chlorohexane	5.0000	4.7331	5.3	100	0.00
70	P	Chlorobenzene	5.0000	4.8107	3.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.3984	12.0	100	0.00
72	C	Ethylbenzene	5.0000	4.6492	7.0	100	0.00
73	T	m-,p-Xylene	10.0000	9.5700	4.3	100	0.00
74	T	o-Xylene	5.0000	4.6773	6.5	100	0.00
75	T	Styrene	5.0000	4.8405	3.2	100	0.00
76	P	Bromoform	5.0000	4.2672	14.7	100	0.00
77	T	Isopropylbenzene	5.0000	4.8951	2.1	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	4.8422	3.2	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.3565	5.7	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.2150	-4.3	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.3781	12.4	100	0.00
83	T	n-Propylbenzene	5.0000	5.1935	-3.9	100	0.00
84	T	Bromobenzene	5.0000	4.8483	3.0	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	4.9964	0.1	100	0.00
86	T	2-Chlorotoluene	5.0000	4.9803	0.4	100	0.00
87	T	4-Chlorotoluene	5.0000	5.0286	-0.6	100	0.00
88	T	a-Methylstyrene	5.0000	4.6629	6.7	100	0.00
89	T	tert-Butylbenzene	5.0000	4.7677	4.6	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.0245	-0.5	100	0.00
91	T	sec-Butylbenzene	5.0000	5.2170	-4.3	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.1150	-2.3	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	4.9511	1.0	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	4.8270	3.5	100	0.00
95	T	n-Butylbenzene	5.0000	5.1595	-3.2	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	4.8122	3.8	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	5.0942	-1.9	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.7808	4.4	100	0.00
99	T	Hexachlorobutadiene	5.0000	4.6555	6.9	100	0.00
100	T	Naphthalene	5.0000	4.7684	4.6	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.6455	7.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412224.D 8260WT.M Sat May 14 18:08:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	770027	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	531490	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	283594	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	86295	10.9569 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 43.84%#		
43) 1,2-Dichloroethane-d4	10.30	65	96239	11.3450 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 45.36%#		
58) Toluene-d8	12.68	98	294491	10.9223 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 43.68%#		
80) p-Bromofluorobenzene	16.08	95	121459	10.5490 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 42.20%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	288235	23.7135 ug/L	99
3) Chloromethane	3.62	50	155712	20.3784 ug/L	98
4) Vinyl Chloride	3.84	62	184250	20.9368 ug/L	95
5) 1,3-Butadiene	3.89	54	149348	22.7750 ug/L	96
6) Bromomethane	4.73	94	100098	25.0143 ug/L	99
7) Chloroethane	4.89	64	100876	20.9404 ug/L	91
8) Trichlorofluoromethane	5.37	101	351299	21.2512 ug/L	98
9) Diethyl ether	5.90	59	324317	80.8265 ug/L	78
10) Isoprene	5.94	67	205842	20.3622 ug/L	77
11) Acrolein	6.14	56	12049	34.8201 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	159996	20.3859 ug/L	97
13) Acetone	6.25	43	18459	25.7405 ug/L	98
14) 1,1-Dichloroethene	6.47	61	256241	20.5065 ug/L	92
15) Tert-Butyl Alcohol	6.57	59	43922	153.5712 ug/L	93
16) Dimethyl Sulfide	6.73	62	89456	20.6087 ug/L	83
17) Iodomethane	6.99	142	40622	61.0474 ug/L	93
18) Methyl acetate	7.00	43	46598	20.2171 ug/L #	85
19) Methylene Chloride	7.25	84	161897	20.1338 ug/L	52
20) Carbon Disulfide	7.30	76	538090	20.0802 ug/L	98
21) Acrylonitrile	7.43	53	46305	46.9889 ug/L	100
22) Methyl Tert Butyl Ether	7.47	73	361116	22.0137 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	234754	20.3175 ug/L	90
24) n-Hexane	7.78	57	172498	21.1165 ug/L	84
25) Diisopropyl ether	8.12	45	1447822	80.3755 ug/L #	91
26) Vinyl Acetate	8.30	43	166501	21.7017 ug/L #	88
27) 1,1-Dichloroethane	8.33	63	300321	21.3849 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	1579265	83.0733 ug/L	89
29) 2-Butanone	8.88	43	25681	23.9099 ug/L	87
30) Propionitrile	8.98	54	30953	89.5673 ug/L	94
31) 2,2-Dichloropropane	9.10	77	309575	20.8527 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	181973	20.4488 ug/L	89
33) Chloroform	9.37	83	348925	20.5535 ug/L	96
34) 1-Bromopropane	9.52	122	26723	22.7206 ug/L	96
35) Bromochloromethane	9.61	130	94952	21.3181 ug/L	65
36) Tetrahydrofuran	9.63	42	63066	70.5772 ug/L #	57
38) 1,1,1-Trichloroethane	9.91	97	335486	21.3640 ug/L	99
39) Cyclohexane	9.94	56	221040	19.9984 ug/L #	64
40) 1,1-Dichloropropene	10.11	75	248373	20.4717 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1418183	81.7883 ug/L	88
42) Carbon Tetrachloride	10.25	117	296471	21.3449 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412225.D 8260WT.M Fri May 13 16:16:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	228665	21.6403	ug/L		85
46)	Benzene	10.46	78	668449	20.3769	ug/L		86
47)	Trichloroethene	11.21	130	174107	20.7980	ug/L		96
48)	Methylcyclohexane	11.29	83	262275	21.4887	ug/L		82
49)	1,2-Dichloropropane	11.43	63	146868	21.1883	ug/L	#	72
50)	Bromodichloromethane	11.73	83	262192	21.9986	ug/L		98
51)	1,4-Dioxane	11.71	88	5351	196.3837	ug/L		76
52)	Dibromomethane	11.81	93	86951	21.0734	ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	63586	22.4600	ug/L		91
54)	4-Methyl-2-Pentanone	12.05	58	25754	25.0531	ug/L	#	73
55)	cis-1,3-Dichloropropene	12.36	75	265439	21.9841	ug/L		99
56)	Dimethyl Disulfide	12.63	79	134192	23.9412	ug/L		100
59)	Toluene	12.78	91	700473	20.1722	ug/L		99
60)	Ethyl Methacrylate	12.88	69	133361	23.2046	ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	238585	23.2548	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	107901	21.0216	ug/L		99
64)	2-Hexanone	13.11	58	22561	25.2093	ug/L	#	85
65)	1,3-Dichloropropane	13.49	76	198804	22.2491	ug/L		74
66)	Tetrachloroethene	13.60	164	141791	20.0055	ug/L		94
67)	Dibromochloromethane	13.87	129	158465	22.0695	ug/L		99
68)	1,2-Dibromoethane	14.13	107	110085	22.3366	ug/L		100
69)	1-Chlorohexane	14.21	91	229753	20.3591	ug/L		83
70)	Chlorobenzene	14.62	112	467492	20.4613	ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.65	131	183079	22.2095	ug/L		96
72)	Ethylbenzene	14.65	106	249016	20.2289	ug/L		90
73)	m-,p-Xylene	14.75	106	606381	41.1308	ug/L		88
74)	o-Xylene	15.30	106	294106	21.2106	ug/L		90
75)	Styrene	15.35	104	492781	21.8207	ug/L		89
76)	Bromoform	15.83	173	95911	23.8070	ug/L		99
77)	Isopropylbenzene	15.73	105	806678	20.7280	ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	123253	22.7779	ug/L		95
81)	1,2,3-Trichloropropane	16.14	110	36712	22.1354	ug/L		94
82)	trans-1,4-Dichloro-2-Buten	16.18	53	33702	27.6513	ug/L	#	56
83)	n-Propylbenzene	16.24	91	962196	20.3511	ug/L		97
84)	Bromobenzene	16.37	156	190566	21.2033	ug/L		94
85)	1,3,5-Trimethylbenzene	16.43	105	692633	20.9615	ug/L		94
86)	2-Chlorotoluene	16.51	91	649077	19.9155	ug/L		96
87)	4-Chlorotoluene	16.56	91	595446	20.3225	ug/L		95
88)	a-Methylstyrene	16.83	118	318960	22.3680	ug/L		92
89)	tert-Butylbenzene	16.90	134	129440	20.4705	ug/L		83
90)	1,2,4-Trimethylbenzene	16.95	105	707749	20.4783	ug/L		94
91)	sec-Butylbenzene	17.17	105	818359	20.1802	ug/L		97
92)	p-Isopropyltoluene	17.32	119	677859	19.7492	ug/L		96
93)	1,3-Dichlorobenzene	17.52	146	364065	20.5126	ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	363066	19.9874	ug/L		92
95)	n-Butylbenzene	17.85	91	681055	20.0187	ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	318612	19.9358	ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	23070	21.6419	ug/L		93
98)	1,2,4-Trichlorobenzene	20.28	180	242455	20.8863	ug/L		98
99)	Hexachlorobutadiene	20.43	225	110384	20.2523	ug/L		96
100)	Naphthalene	20.65	128	369849	21.4526	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	198876	19.8356	ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration

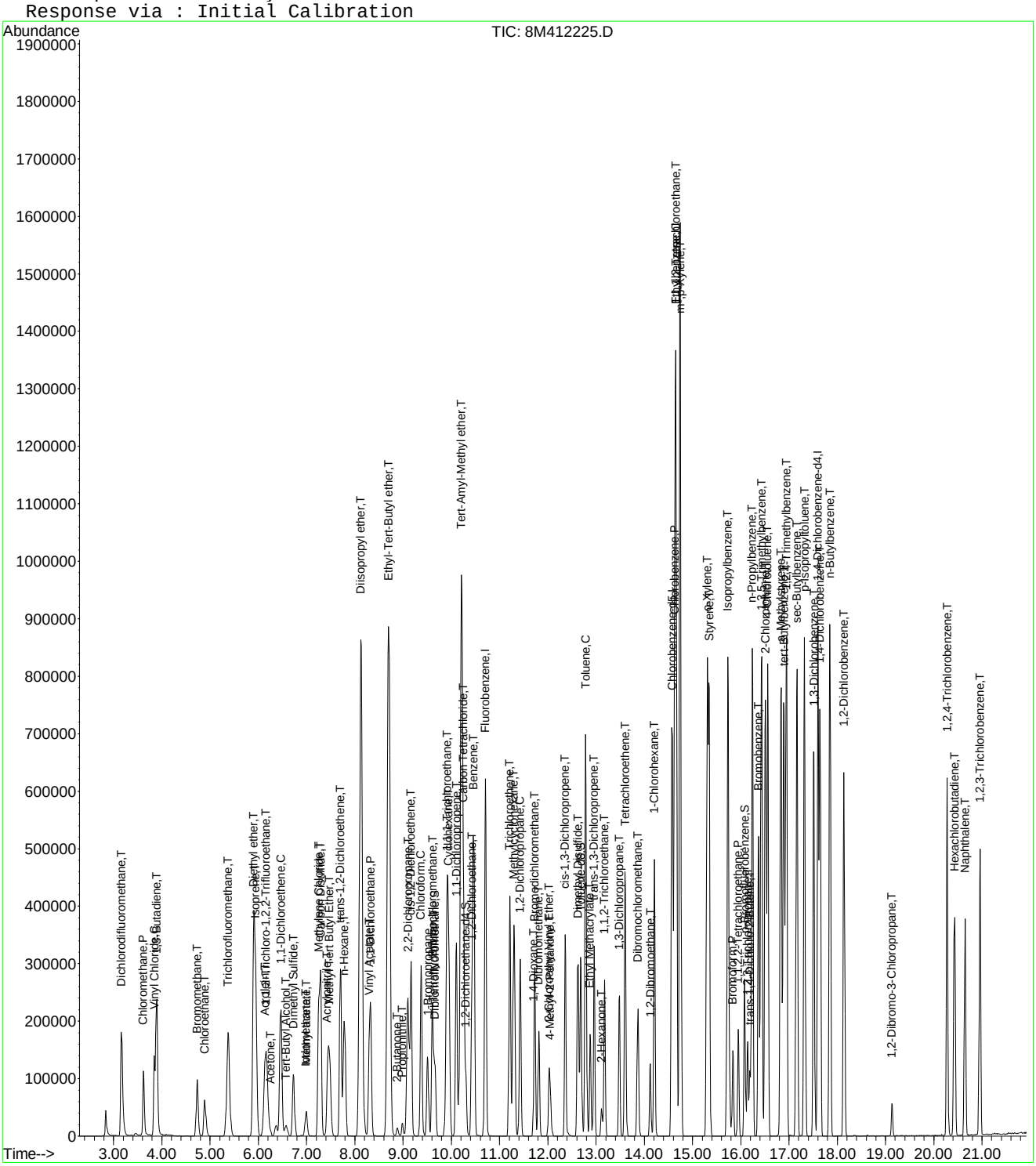

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45:30 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	778260	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	539116	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	288225	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	211053	26.5139 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.04%		
43) 1,2-Dichloroethane-d4	10.31	65	229348	26.7504 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.00%		
58) Toluene-d8	12.68	98	718491	26.2709 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.08%		
80) p-Bromofluorobenzene	16.07	95	292755	25.0180 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.08%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	682745	55.5761 ug/L	100
3) Chloromethane	3.62	50	372858	48.2806 ug/L	98
4) Vinyl Chloride	3.85	62	453905	51.0328 ug/L	96
5) 1,3-Butadiene	3.88	54	390501	58.9199 ug/L	99
6) Bromomethane	4.74	94	260493	64.4080 ug/L	97
7) Chloroethane	4.89	64	244336	50.1840 ug/L	91
8) Trichlorofluoromethane	5.38	101	837676	50.1376 ug/L	99
9) Diethyl ether	5.90	59	389327	96.0019 ug/L	79
10) Isoprene	5.94	67	498060	48.7477 ug/L	76
11) Acrolein	6.13	56	17644	50.4496 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	387643	48.8691 ug/L	97
13) Acetone	6.25	43	45901	63.3305 ug/L	97
14) 1,1-Dichloroethene	6.46	61	619744	49.0724 ug/L	94
15) Tert-Butyl Alcohol	6.58	59	53656	185.6211 ug/L	91
16) Dimethyl Sulfide	6.73	62	221107	50.3993 ug/L	82
17) Iodomethane	6.98	142	157872	234.7428 ug/L	94
18) Methyl acetate	7.00	43	114759	49.2629 ug/L #	81
19) Methylene Chloride	7.25	84	389653	47.9453 ug/L	52
20) Carbon Disulfide	7.29	76	1269941	46.8897 ug/L	99
21) Acrylonitrile	7.43	53	59882	60.1236 ug/L	97
22) Methyl Tert Butyl Ether	7.46	73	901668	54.3843 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	571507	48.9396 ug/L	93
24) n-Hexane	7.79	57	419656	50.8290 ug/L	83
25) Diisopropyl ether	8.13	45	1781012	97.8265 ug/L #	90
26) Vinyl Acetate	8.29	43	428708	55.2866 ug/L #	89
27) 1,1-Dichloroethane	8.32	63	722574	50.9078 ug/L	96
28) Ethyl-Tert-Butyl ether	8.71	59	1955100	101.7552 ug/L	89
29) 2-Butanone	8.88	43	66579	61.3316 ug/L #	82
30) Propionitrile	8.98	54	38235	109.4684 ug/L	95
31) 2,2-Dichloropropane	9.10	77	768496	51.2175 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	439590	48.8754 ug/L	91
33) Chloroform	9.38	83	844564	49.2230 ug/L	97
34) 1-Bromopropane	9.51	122	63442	53.3693 ug/L	99
35) Bromochloromethane	9.60	130	230119	51.1185 ug/L	66
36) Tetrahydrofuran	9.64	42	79437	87.9575 ug/L #	62
38) 1,1,1-Trichloroethane	9.90	97	817606	51.5150 ug/L	99
39) Cyclohexane	9.93	56	535882	47.9707 ug/L #	65
40) 1,1-Dichloropropene	10.10	75	615439	50.1899 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1769381	100.9628 ug/L	88
42) Carbon Tetrachloride	10.24	117	724058	51.5782 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412226.D 8260WT.M Fri May 13 16:45:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45:30 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	561107	52.5401 ug/L		85
46)	Benzene	10.46	78	1607407	48.4816 ug/L		86
47)	Trichloroethene	11.22	130	424998	50.2312 ug/L		96
48)	Methylcyclohexane	11.30	83	635339	51.5040 ug/L		83
49)	1,2-Dichloropropane	11.42	63	351908	50.2320 ug/L	#	71
50)	Bromodichloromethane	11.72	83	654943	54.3701 ug/L		97
51)	1,4-Dioxane	11.71	88	7573	274.9918 ug/L		73
52)	Dibromomethane	11.82	93	209167	50.1574 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	162319	56.7281 ug/L		93
54)	4-Methyl-2-Pentanone	12.05	58	64928	62.4928 ug/L		80
55)	cis-1,3-Dichloropropene	12.36	75	666861	54.6463 ug/L		98
56)	Dimethyl Disulfide	12.62	79	343446	60.6260 ug/L		96
59)	Toluene	12.79	91	1676069	47.5846 ug/L		100
60)	Ethyl Methacrylate	12.88	69	338996	58.1503 ug/L		69
62)	trans-1,3-Dichloropropene	12.96	75	594749	57.1499 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	268432	51.5570 ug/L		98
64)	2-Hexanone	13.12	58	56859	62.6347 ug/L	#	83
65)	1,3-Dichloropropane	13.48	76	489226	53.9770 ug/L		75
66)	Tetrachloroethene	13.60	164	350332	48.7296 ug/L		95
67)	Dibromochloromethane	13.86	129	401149	55.0780 ug/L		100
68)	1,2-Dibromoethane	14.12	107	273580	54.7252 ug/L		99
69)	1-Chlorohexane	14.21	91	560883	48.9984 ug/L		82
70)	Chlorobenzene	14.63	112	1117812	48.2326 ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	446892	53.4462 ug/L		99
72)	Ethylbenzene	14.66	106	603074	48.2980 ug/L		91
73)	m-,p-Xylene	14.74	106	1443780	96.5463 ug/L		90
74)	o-Xylene	15.31	106	709244	50.4265 ug/L		90
75)	Styrene	15.34	104	1212099	52.9133 ug/L		91
76)	Bromoform	15.84	173	238354	58.3272 ug/L		100
77)	Isopropylbenzene	15.73	105	1919993	48.6372 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	294266	53.5083 ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	89279	52.9656 ug/L		93
82)	trans-1,4-Dichloro-2-Buten	16.19	53	86829	70.0956 ug/L	#	53
83)	n-Propylbenzene	16.24	91	2278994	47.4277 ug/L		98
84)	Bromobenzene	16.37	156	459959	50.3549 ug/L		93
85)	1,3,5-Trimethylbenzene	16.43	105	1661486	49.4745 ug/L		95
86)	2-Chlorotoluene	16.51	91	1611031	48.6367 ug/L		97
87)	4-Chlorotoluene	16.56	91	1341051	45.0344 ug/L		95
88)	a-Methylstyrene	16.83	118	772611	53.3111 ug/L		90
89)	tert-Butylbenzene	16.89	134	307503	47.8493 ug/L		81
90)	1,2,4-Trimethylbenzene	16.94	105	1679809	47.8234 ug/L		95
91)	sec-Butylbenzene	17.16	105	1925411	46.7166 ug/L		97
92)	p-Isopropyltoluene	17.32	119	1621383	46.4795 ug/L		95
93)	1,3-Dichlorobenzene	17.51	146	882656	48.9327 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	871210	47.1909 ug/L		92
95)	n-Butylbenzene	17.85	91	1608832	46.5296 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	768548	47.3159 ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	59586	54.9992 ug/L		86
98)	1,2,4-Trichlorobenzene	20.28	180	583880	49.4902 ug/L		100
99)	Hexachlorobutadiene	20.44	225	264699	47.7844 ug/L		98
100)	Naphthalene	20.65	128	894629	51.0579 ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	475246	46.6387 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412226.D 8260WT.M Fri May 13 16:45:33 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration

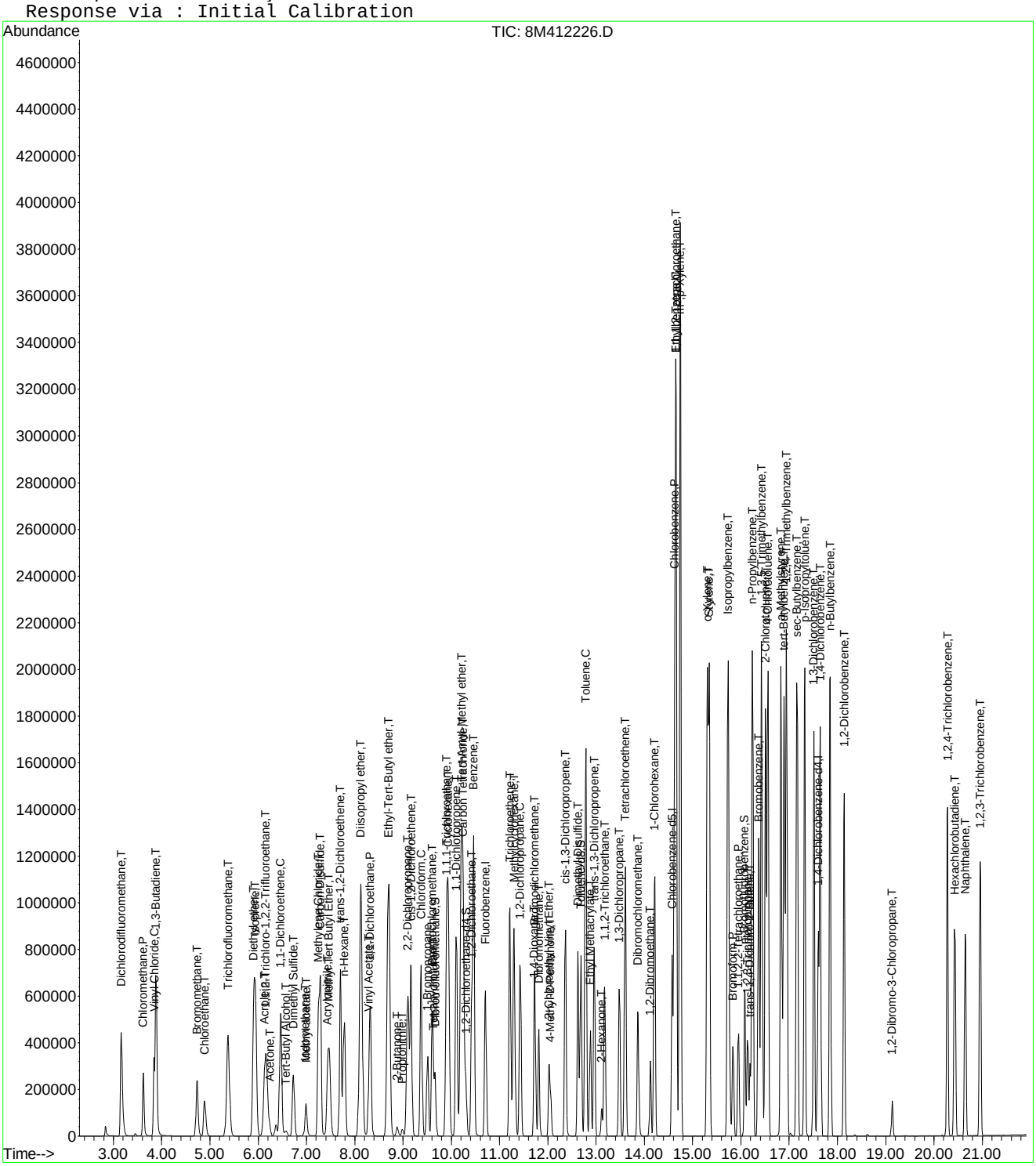

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	809533	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	559075	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	296193	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	460283	53.9056 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 215.64%#		
43) 1,2-Dichloroethane-d4	10.30	65	488116	52.5821 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 210.32%#		
58) Toluene-d8	12.68	98	1540572	52.8075 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 211.24%#		
80) p-Bromofluorobenzene	16.08	95	623735	51.1573 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 204.64%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	1463283	109.1068 ug/L	100
3) Chloromethane	3.62	50	778702	97.2380 ug/L	98
4) Vinyl Chloride	3.84	62	968312	103.4979 ug/L	95
5) 1,3-Butadiene	3.88	54	896569	120.4972 ug/L	95
6) Bromomethane	4.73	94	605228	129.8677 ug/L	99
7) Chloroethane	4.89	64	528153	103.4126 ug/L	90
8) Trichlorofluoromethane	5.37	101	1782726	101.4754 ug/L	99
9) Diethyl ether	5.90	59	828091	197.4770 ug/L	79
10) Isoprene	5.94	67	1080684	101.8037 ug/L	78
11) Acrolein	6.14	56	38655	109.5572 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	833546	101.0906 ug/L	97
13) Acetone	6.24	43	97515	109.1944 ug/L	100
14) 1,1-Dichloroethene	6.46	61	1323999	100.6729 ug/L	93
15) Tert-Butyl Alcohol	6.57	59	114220	387.5328 ug/L	91
16) Dimethyl Sulfide	6.73	62	489571	106.5996 ug/L	82
17) Iodomethane	6.99	142	416890	244.5557 ug/L	97
18) Methyl acetate	7.00	43	252444	104.3161 ug/L #	81
19) Methylene Chloride	7.24	84	827241	98.5346 ug/L	53
20) Carbon Disulfide	7.29	76	2766110	99.3432 ug/L	100
21) Acrylonitrile	7.43	53	126153	113.2272 ug/L	98
22) Methyl Tert Butyl Ether	7.46	73	1894494	105.8643 ug/L	87
23) trans-1,2-Dichloroethene	7.70	61	1203701	99.1822 ug/L	93
24) n-Hexane	7.78	57	926226	105.3097 ug/L	84
25) Diisopropyl ether	8.12	45	3699807	196.0386 ug/L #	90
26) Vinyl Acetate	8.29	43	860820	101.8643 ug/L #	88
27) 1,1-Dichloroethane	8.32	63	1521237	101.5567 ug/L	96
28) Ethyl-Tert-Butyl ether	8.70	59	4005676	198.2271 ug/L	89
29) 2-Butanone	8.88	43	145126	112.6698 ug/L #	81
30) Propionitrile	8.98	54	83038	219.1648 ug/L	97
31) 2,2-Dichloropropane	9.11	77	1610615	102.0557 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	935490	99.9944 ug/L	89
33) Chloroform	9.37	83	1766988	98.8341 ug/L	98
34) 1-Bromopropane	9.51	122	139657	108.5299 ug/L	100
35) Bromochloromethane	9.61	130	488678	102.8480 ug/L	66
36) Tetrahydrofuran	9.63	42	167812	187.5699 ug/L #	61
38) 1,1,1-Trichloroethane	9.91	97	1724504	102.7713 ug/L	100
39) Cyclohexane	9.94	56	1185537	102.8628 ug/L #	66
40) 1,1-Dichloropropene	10.11	75	1293224	100.8377 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	3634806	198.1264 ug/L	88
42) Carbon Tetrachloride	10.25	117	1534696	103.3979 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412227.D 8260WT.M Fri May 13 17:14:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	1177876	103.7352	ug/L		85
46)	Benzene	10.46	78	3298928	95.8405	ug/L		87
47)	Trichloroethene	11.21	130	903490	101.9036	ug/L		97
48)	Methylcyclohexane	11.30	83	1389528	104.6454	ug/L		83
49)	1,2-Dichloropropane	11.43	63	755128	102.5297	ug/L		73
50)	Bromodichloromethane	11.73	83	1351612	104.6036	ug/L		99
51)	1,4-Dioxane	11.72	88	16303	473.9624	ug/L		68
52)	Dibromomethane	11.81	93	445130	101.6543	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.02	63	333977	105.4228	ug/L		92
54)	4-Methyl-2-Pentanone	12.05	58	138980	110.1494	ug/L	#	77
55)	cis-1,3-Dichloropropene	12.36	75	1387475	105.9136	ug/L		100
56)	Dimethyl Disulfide	12.62	79	745504	111.3169	ug/L		97
59)	Toluene	12.78	91	3455614	95.2346	ug/L		99
60)	Ethyl Methacrylate	12.88	69	731009	113.5760	ug/L		70
62)	trans-1,3-Dichloropropene	12.96	75	1236182	107.9445	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	564076	103.0604	ug/L		99
64)	2-Hexanone	13.12	58	126268	114.5366	ug/L	#	79
65)	1,3-Dichloropropane	13.48	76	1021082	105.2672	ug/L		74
66)	Tetrachloroethene	13.60	164	752835	101.4023	ug/L		95
67)	Dibromochloromethane	13.87	129	856499	109.6525	ug/L		100
68)	1,2-Dibromoethane	14.12	107	577701	107.6426	ug/L		98
69)	1-Chlorohexane	14.21	91	1222720	103.0385	ug/L		82
70)	Chlorobenzene	14.62	112	2332247	97.2408	ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	947925	106.1463	ug/L		99
72)	Ethylbenzene	14.66	106	1275519	98.8771	ug/L		97
73)	m-,p-Xylene	14.75	106	3009424	194.2602	ug/L		98
74)	o-Xylene	15.31	106	1490638	100.8068	ug/L		93
75)	Styrene	15.35	104	2503721	102.8373	ug/L		88
76)	Bromoform	15.83	173	517827	114.0520	ug/L		100
77)	Isopropylbenzene	15.73	105	3913141	95.4433	ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	624965	106.8610	ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	192087	107.3268	ug/L		97
82)	trans-1,4-Dichloro-2-Buten	16.18	53	189214	128.4818	ug/L	#	59
83)	n-Propylbenzene	16.24	91	4599057	93.6644	ug/L		100
84)	Bromobenzene	16.37	156	968011	102.1426	ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	3401719	97.9556	ug/L		97
86)	2-Chlorotoluene	16.52	91	3177047	93.8267	ug/L		98
87)	4-Chlorotoluene	16.56	91	2899171	96.0712	ug/L		96
88)	a-Methylstyrene	16.84	118	1639166	103.6811	ug/L		90
89)	tert-Butylbenzene	16.90	134	654025	99.4199	ug/L		85
90)	1,2,4-Trimethylbenzene	16.95	105	3479295	96.7054	ug/L		97
91)	sec-Butylbenzene	17.17	105	3947832	94.2785	ug/L		98
92)	p-Isopropyltoluene	17.32	119	3328450	94.4148	ug/L		97
93)	1,3-Dichlorobenzene	17.52	146	1834740	98.9074	ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	1818309	96.6271	ug/L		92
95)	n-Butylbenzene	17.85	91	3308330	94.4002	ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	1606254	97.0179	ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	125368	107.7020	ug/L		87
98)	1,2,4-Trichlorobenzene	20.28	180	1227926	100.7076	ug/L		99
99)	Hexachlorobutadiene	20.43	225	569213	100.5231	ug/L		97
100)	Naphthalene	20.65	128	1852486	101.2968	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	1021163	98.5794	ug/L		100

(#) = qualifier out of range (m) = manual integration
8M412227.D 8260WT.M Fri May 13 17:14:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration

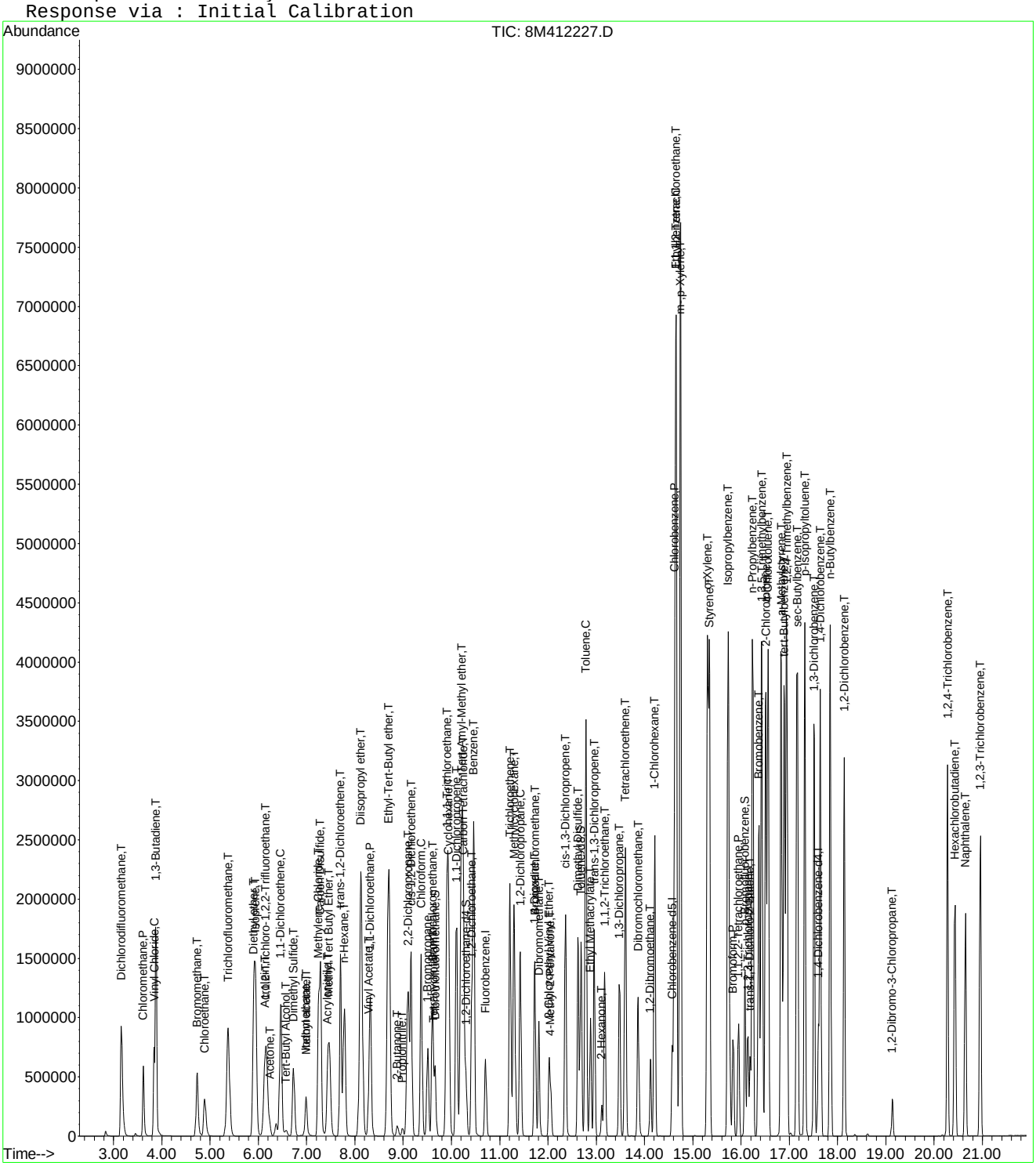

8M412227.D 8260WT.M Fri May 13 17:14:35 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	828540	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	578848	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	301401	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	898145	101.4517 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 405.80%#		
43) 1,2-Dichloroethane-d4	10.30	65	939848	98.0779 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 392.32%#		
58) Toluene-d8	12.68	98	2984162	97.8805 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 391.52%#		
80) p-Bromofluorobenzene	16.08	95	1242720	99.7023 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 398.80%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	2830517	203.5621 ug/L	98
3) Chloromethane	3.62	50	1586058	194.4056 ug/L	97
4) Vinyl Chloride	3.83	62	1935009	201.0738 ug/L	94
5) 1,3-Butadiene	3.88	54	1684964	212.5477 ug/L	94
6) Bromomethane	4.72	94	1358068	271.2231 ug/L	99
7) Chloroethane	4.89	64	1084803	206.5255 ug/L	90
8) Trichlorofluoromethane	5.37	101	3516760	195.1756 ug/L	99
10) Isoprene	5.94	67	2136665	196.1573 ug/L	78
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1662142	196.5993 ug/L	95
13) Acetone	6.24	43	187748	200.7963 ug/L	97
14) 1,1-Dichloroethene	6.46	61	2649821	196.6732 ug/L	92
15) Tert-Butyl Alcohol	6.58	59	6024	20.0950 ug/L #	87
16) Dimethyl Sulfide	6.73	62	976862	205.8822 ug/L	82
17) Iodomethane	6.99	142	896947	398.7987 ug/L	100
18) Methyl acetate	7.00	43	504293	201.4324 ug/L #	81
19) Methylene Chloride	7.25	84	1684780	196.5546 ug/L	52
20) Carbon Disulfide	7.29	76	5386210	189.2120 ug/L	99
21) Acrylonitrile	7.45	53	30354	26.0447 ug/L #	32
22) Methyl Tert Butyl Ether	7.46	73	3711011	200.6529 ug/L	87
23) trans-1,2-Dichloroethene	7.70	61	2410498	194.2902 ug/L	92
24) n-Hexane	7.78	57	1821777	199.7288 ug/L	84
26) Vinyl Acetate	8.29	43	1796217	206.9060 ug/L #	88
27) 1,1-Dichloroethane	8.32	63	3042055	197.9863 ug/L	95
29) 2-Butanone	8.88	43	271767	199.8193 ug/L #	77
30) Propionitrile	8.90	54	208	0.5280 ug/L #	1
31) 2,2-Dichloropropane	9.11	77	3202633	197.6970 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	1875631	195.8883 ug/L	89
33) Chloroform	9.37	83	3506648	191.9199 ug/L	99
34) 1-Bromopropane	9.51	122	286158	214.2313 ug/L	99
35) Bromochloromethane	9.60	130	980373	200.7807 ug/L	66
36) Tetrahydrofuran	9.62	42	2381	2.6275 ug/L	87
38) 1,1,1-Trichloroethane	9.91	97	3410306	197.7909 ug/L	99
39) Cyclohexane	9.94	56	2357393	198.8974 ug/L #	66
40) 1,1-Dichloropropene	10.10	75	2601175	197.8946 ug/L	96
42) Carbon Tetrachloride	10.25	117	3062767	200.6417 ug/L	99
45) 1,2-Dichloroethane	10.42	62	2313662	198.0324 ug/L	85
46) Benzene	10.46	78	6379817	182.1771 ug/L	89
47) Trichloroethene	11.21	130	1810459	198.9741 ug/L	97
48) Methylcyclohexane	11.30	83	2755373	200.4193 ug/L	83
49) 1,2-Dichloropropane	11.43	63	1528407	202.0331 ug/L	74

(#) = qualifier out of range (m) = manual integration
8M412228.D 8260WT.M Fri May 13 17:43:34 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
50)	Bromodichloromethane	11.73	83	2716764	204.0895 ug/L		99
51)	1,4-Dioxane	11.73	88	3865	104.9352 ug/L	#	18
52)	Dibromomethane	11.81	93	898971	200.1154 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.02	63	631656	192.7236 ug/L		90
54)	4-Methyl-2-Pentanone	12.05	58	262702	198.3957 ug/L	#	75
55)	cis-1,3-Dichloropropene	12.36	75	2784162	205.9153 ug/L		99
56)	Dimethyl Disulfide	12.62	79	1518705	215.4711 ug/L		95
59)	Toluene	12.78	91	6564353	175.9274 ug/L		96
60)	Ethyl Methacrylate	12.88	69	1429837	209.8161 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	2468609	205.4771 ug/L		98
63)	1,1,2-Trichloroethane	13.18	97	1124672	197.6019 ug/L		100
64)	2-Hexanone	13.12	58	237678	200.9290 ug/L	#	81
65)	1,3-Dichloropropane	13.48	76	2023247	199.9545 ug/L		76
66)	Tetrachloroethene	13.60	164	1546618	200.8018 ug/L		97
67)	Dibromochloromethane	13.87	129	1726523	210.5823 ug/L		100
68)	1,2-Dibromoethane	14.12	107	1163160	207.0667 ug/L		99
69)	1-Chlorohexane	14.21	91	2414147	195.6413 ug/L		83
70)	Chlorobenzene	14.62	112	4641169	187.6386 ug/L		94
71)	1,1,1,2-Tetrachloroethane	14.66	131	1929251	206.8372 ug/L		99
72)	Ethylbenzene	14.66	106	2611321	195.8267 ug/L		88
73)	m-,p-Xylene	14.75	106	5876234	367.8657 ug/L		83
74)	o-Xylene	15.31	106	3012318	196.4899 ug/L		98
75)	Styrene	15.35	104	4913204	194.1235 ug/L		86
76)	Bromoform	15.83	173	1052629	218.7989 ug/L		100
77)	Isopropylbenzene	15.73	105	7284624	172.7305 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	1237171	205.8673 ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	386738	209.7906 ug/L	#	54
82)	trans-1,4-Dichloro-2-Buten	16.19	53	382467	243.6526 ug/L		76
83)	n-Propylbenzene	16.24	91	8244387	166.5110 ug/L		93
84)	Bromobenzene	16.37	156	1935166	200.1305 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	6482975	183.9948 ug/L		98
86)	2-Chlorotoluene	16.52	91	6108308	178.8549 ug/L		99
87)	4-Chlorotoluene	16.56	91	5513221	180.5508 ug/L		99
88)	a-Methylstyrene	16.84	118	3255254	200.4995 ug/L		89
89)	tert-Butylbenzene	16.90	134	1351569	202.1005 ug/L		92
90)	1,2,4-Trimethylbenzene	16.95	105	6531416	179.2445 ug/L		97
91)	sec-Butylbenzene	17.17	105	7342730	173.9814 ug/L		97
92)	p-Isopropyltoluene	17.32	119	6352010	178.7315 ug/L		99
93)	1,3-Dichlorobenzene	17.52	146	3640547	193.1654 ug/L		90
94)	1,4-Dichlorobenzene	17.64	146	3593548	188.4603 ug/L		91
95)	n-Butylbenzene	17.85	91	6198060	175.4375 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	3171699	188.9651 ug/L		89
97)	1,2-Dibromo-3-Chloropropan	19.13	75	249646	207.5645 ug/L		88
98)	1,2,4-Trichlorobenzene	20.28	180	2480626	199.7296 ug/L		99
99)	Hexachlorobutadiene	20.43	225	1169411	202.7981 ug/L		98
100)	Naphthalene	20.65	128	3580198	192.0323 ug/L		97
101)	1,2,3-Trichlorobenzene	20.96	180	2040570	193.9298 ug/L		100

(#) = qualifier out of range (m) = manual integration
8M412228.D 8260WT.M Fri May 13 17:43:35 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration

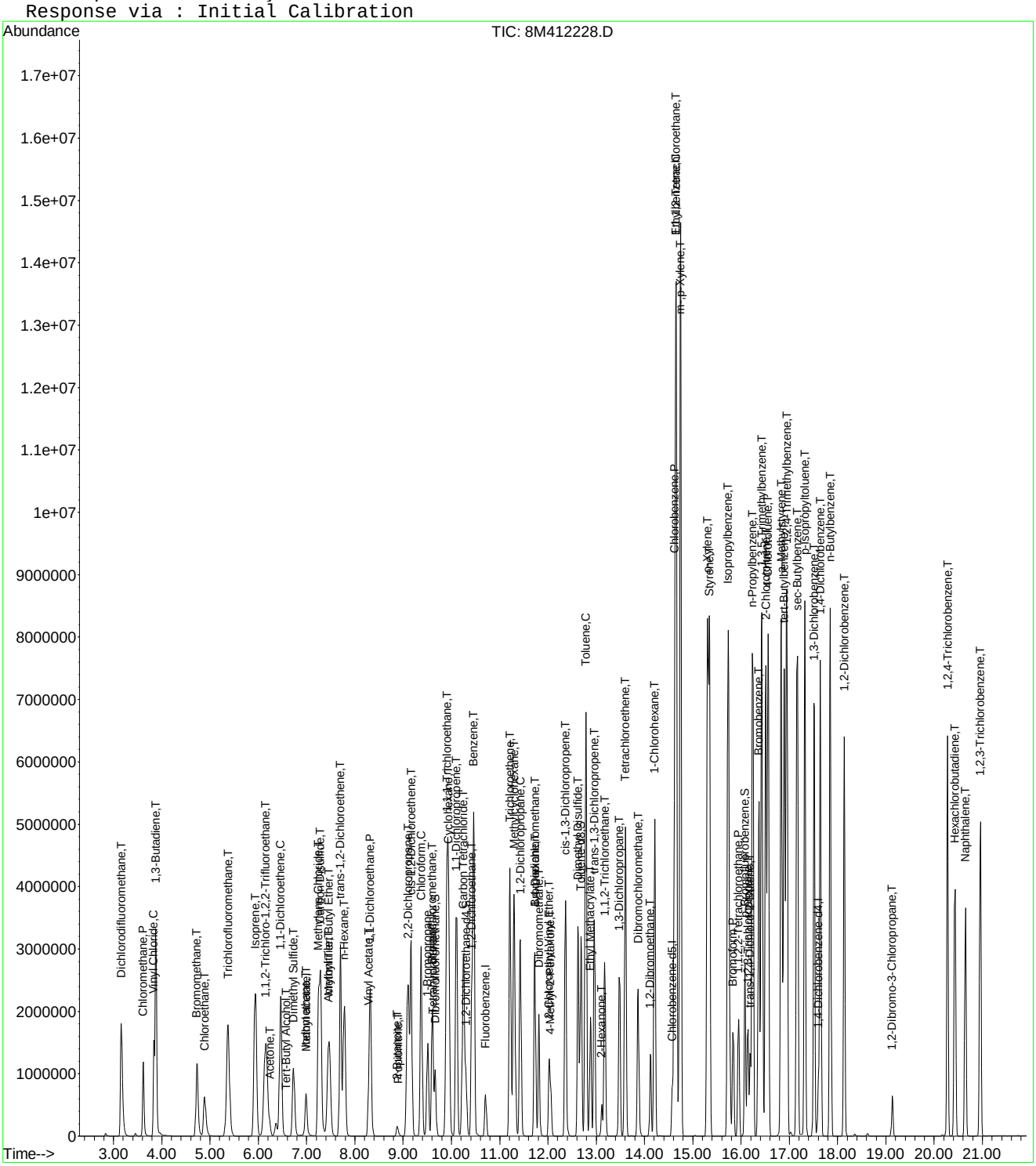

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	855409	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	599314	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	305726	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	1411837	154.4674 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 617.88%#		
43) 1,2-Dichloroethane-d4	10.30	65	1466019	148.1811 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 592.72%#		
58) Toluene-d8	12.69	98	4594713	145.5601 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 582.24%#		
80) p-Bromofluorobenzene	16.08	95	1918996	151.7813 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 607.12%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	4191932	292.0014 ug/L	97
3) Chloromethane	3.62	50	2474035	293.7212 ug/L	97
4) Vinyl Chloride	3.83	62	2956347	297.5552 ug/L	94
5) 1,3-Butadiene	3.87	54	2605506	318.3447 ug/L	94
6) Bromomethane	4.72	94	2177550	421.2239 ug/L	98
7) Chloroethane	4.89	64	1688005	311.2693 ug/L	90
8) Trichlorofluoromethane	5.37	101	5387662	289.6161 ug/L	99
9) Diethyl ether	5.90	59	1306432	295.4610 ug/L	80
10) Isoprene	5.93	67	3377164	300.3032 ug/L	78
11) Acrolein	6.14	56	70572	185.7401 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	2563878	293.7317 ug/L	94
13) Acetone	6.24	43	283185	293.3529 ug/L	90
14) 1,1-Dichloroethene	6.46	61	4031745	289.8421 ug/L	91
15) Tert-Butyl Alcohol	6.58	59	181796	587.3907 ug/L	90
16) Dimethyl Sulfide	6.73	62	1553493	317.1280 ug/L	81
17) Iodomethane	6.99	142	1347307	580.2206 ug/L	98
18) Methyl acetate	7.00	43	800046	309.5287 ug/L #	80
19) Methylene Chloride	7.24	84	2587731	292.4144 ug/L	52
20) Carbon Disulfide	7.29	76	8228181	279.9683 ug/L	98
21) Acrylonitrile	7.43	53	228227	189.6753 ug/L	94
22) Methyl Tert Butyl Ether	7.46	73	5605924	293.5892 ug/L	88
23) trans-1,2-Dichloroethene	7.70	61	3678699	287.1957 ug/L	92
24) n-Hexane	7.78	57	2863434	304.0691 ug/L	86
25) Diisopropyl ether	8.12	45	5819647	292.7898 ug/L #	89
26) Vinyl Acetate	8.30	43	2819503	314.5767 ug/L #	87
27) 1,1-Dichloroethane	8.32	63	4586531	289.1293 ug/L	94
28) Ethyl-Tert-Butyl ether	8.70	59	6190206	290.3321 ug/L	89
29) 2-Butanone	8.88	43	439359	312.8959 ug/L #	76
30) Propionitrile	8.99	54	133197	327.4673 ug/L	95
31) 2,2-Dichloropropane	9.10	77	4821388	288.2735 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	2847005	287.9976 ug/L	89
33) Chloroform	9.37	83	5197860	275.5447 ug/L	100
34) 1-Bromopropane	9.51	122	450012	326.3179 ug/L	100
35) Bromochloromethane	9.61	130	1490221	295.6112 ug/L	66
36) Tetrahydrofuran	9.63	42	271736	290.4491 ug/L #	62
38) 1,1,1-Trichloroethane	9.91	97	5126354	287.9792 ug/L	98
39) Cyclohexane	9.94	56	3733392	305.0987 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	3923871	289.1471 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	5639573	291.3713 ug/L	88
42) Carbon Tetrachloride	10.25	117	4598150	291.7629 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412229.D 8260WT.M Fri May 13 18:12:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	3468738	287.5726 ug/L		86
46)	Benzene	10.46	78	9065861	250.7462 ug/L		93
47)	Trichloroethene	11.21	130	2772282	295.1106 ug/L		97
48)	Methylcyclohexane	11.30	83	4327357	304.8748 ug/L		84
49)	1,2-Dichloropropane	11.43	63	2350729	300.9718 ug/L		74
50)	Bromodichloromethane	11.73	83	4051493	294.7973 ug/L		99
51)	1,4-Dioxane	11.72	88	26614	699.8767 ug/L		67
52)	Dibromomethane	11.81	93	1369945	295.3776 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.03	63	1006317	297.3917 ug/L		90
54)	4-Methyl-2-Pentanone	12.06	58	424684	310.6522 ug/L	#	76
55)	cis-1,3-Dichloropropene	12.36	75	4156310	297.7431 ug/L		97
56)	Dimethyl Disulfide	12.63	79	2359825	324.2911 ug/L		94
59)	Toluene	12.78	91	9135213	236.4669 ug/L		90
60)	Ethyl Methacrylate	12.88	69	2228037	315.7801 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	3700845	297.5240 ug/L		96
63)	1,1,2-Trichloroethane	13.18	97	1730199	293.6104 ug/L		100
64)	2-Hexanone	13.11	58	381967	311.8816 ug/L	#	78
65)	1,3-Dichloropropane	13.49	76	3080177	294.0141 ug/L		76
66)	Tetrachloroethene	13.60	164	2374435	297.7522 ug/L		96
67)	Dibromochloromethane	13.87	129	2638145	310.7838 ug/L		100
68)	1,2-Dibromoethane	14.13	107	1778561	305.8085 ug/L		99
69)	1-Chlorohexane	14.21	91	3712592	290.5924 ug/L		84
70)	Chlorobenzene	14.63	112	6754240	263.7433 ug/L		90
71)	1,1,1,2-Tetrachloroethane	14.65	131	2967650	307.3001 ug/L		100
72)	Ethylbenzene	14.65	106	4014412	290.7661 ug/L		70
73)	m-,p-Xylene	14.75	106	8357822	505.3514 ug/L		70
74)	o-Xylene	15.31	106	4530840	285.4488 ug/L		88
75)	Styrene	15.35	104	7050702	269.0641 ug/L		82
76)	Bromoform	15.84	173	1602587	321.7373 ug/L		99
77)	Isopropylbenzene	15.73	105	9900817	226.7477 ug/L		90
79)	1,1,2,2-Tetrachloroethane	15.95	83	1885953	309.3861 ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	581198	310.8176 ug/L		61
82)	trans-1,4-Dichloro-2-Buten	16.18	53	589705	370.3601 ug/L		82
83)	n-Propylbenzene	16.25	91	10768378	214.4110 ug/L		86
84)	Bromobenzene	16.37	156	2947671	300.5290 ug/L		99
85)	1,3,5-Trimethylbenzene	16.43	105	8890651	248.7580 ug/L		92
86)	2-Chlorotoluene	16.51	91	7868844	227.1449 ug/L		92
87)	4-Chlorotoluene	16.57	91	7782731	251.2687 ug/L		93
88)	a-Methylstyrene	16.84	118	4955768	300.9205 ug/L		86
89)	tert-Butylbenzene	16.90	134	2046401	301.6701 ug/L		95
90)	1,2,4-Trimethylbenzene	16.95	105	8903769	240.8932 ug/L		89
91)	sec-Butylbenzene	17.17	105	9867862	230.5051 ug/L		91
92)	p-Isopropyltoluene	17.32	119	8738927	242.4155 ug/L		94
93)	1,3-Dichlorobenzene	17.52	146	5319954	278.2806 ug/L		87
94)	1,4-Dichlorobenzene	17.64	146	5248511	271.3593 ug/L		88
95)	n-Butylbenzene	17.85	91	8408157	234.6279 ug/L		92
96)	1,2-Dichlorobenzene	18.14	146	4717385	277.0787 ug/L		87
97)	1,2-Dibromo-3-Chloropropan	19.13	75	377070	309.0741 ug/L		91
98)	1,2,4-Trichlorobenzene	20.28	180	3677657	291.9206 ug/L		98
99)	Hexachlorobutadiene	20.43	225	1780695	304.4378 ug/L		96
100)	Naphthalene	20.65	128	5216751	275.8542 ug/L		95
101)	1,2,3-Trichlorobenzene	20.96	180	3064908	287.1593 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412229.D 8260WT.M Fri May 13 18:12:36 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration

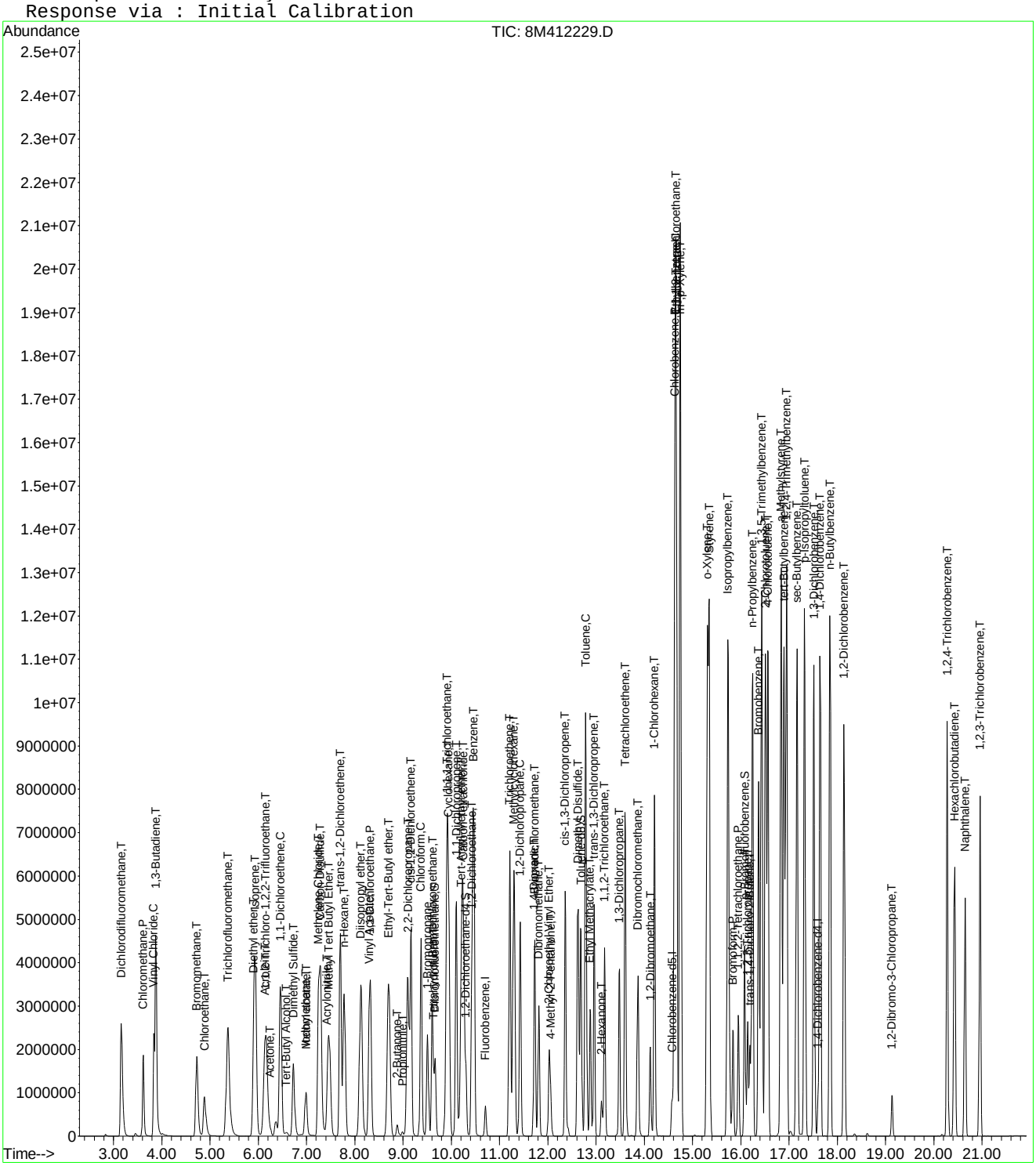

8M412229.D 8260WT.M Fri May 13 18:12:36 2016 Page 3

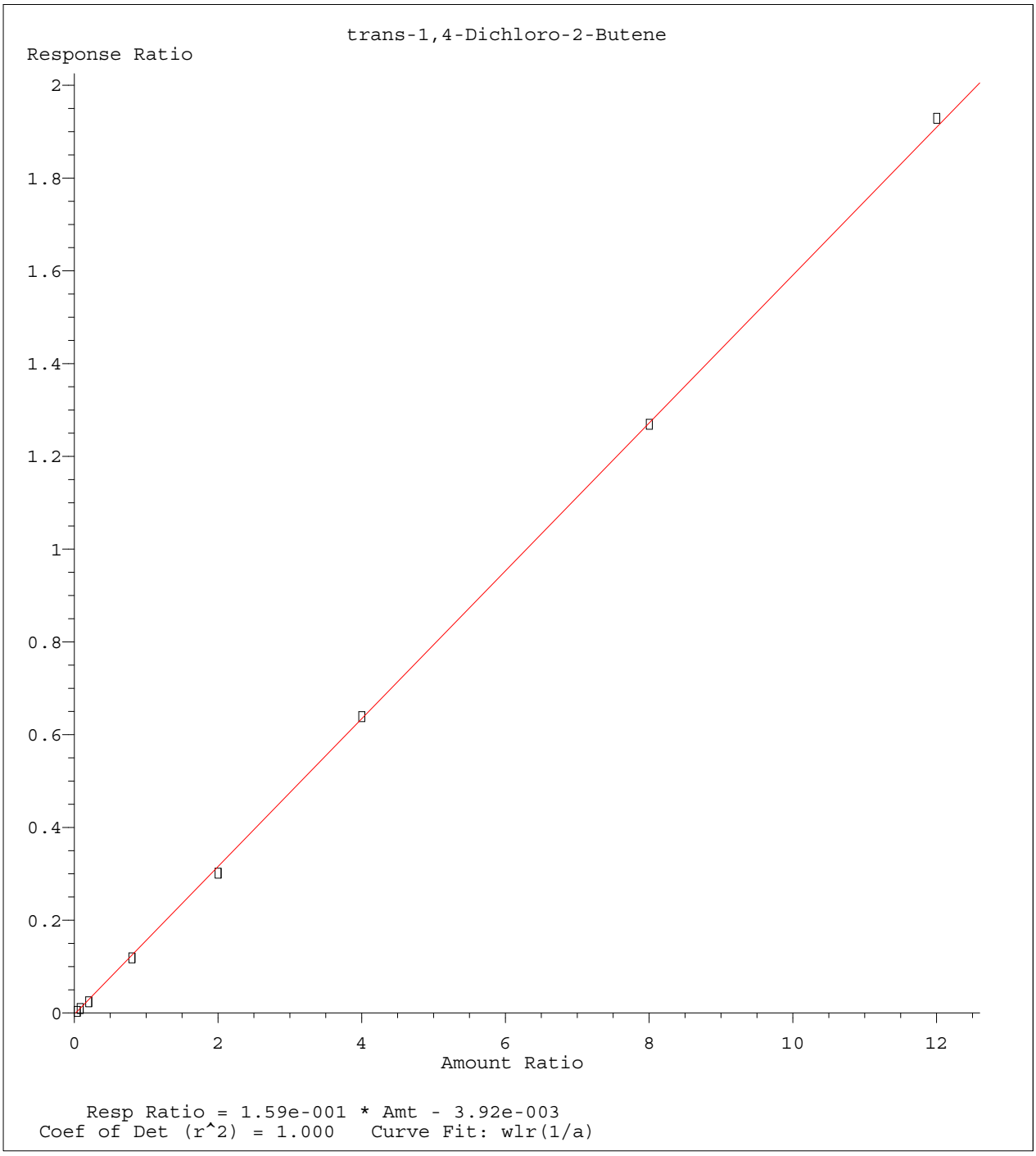

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

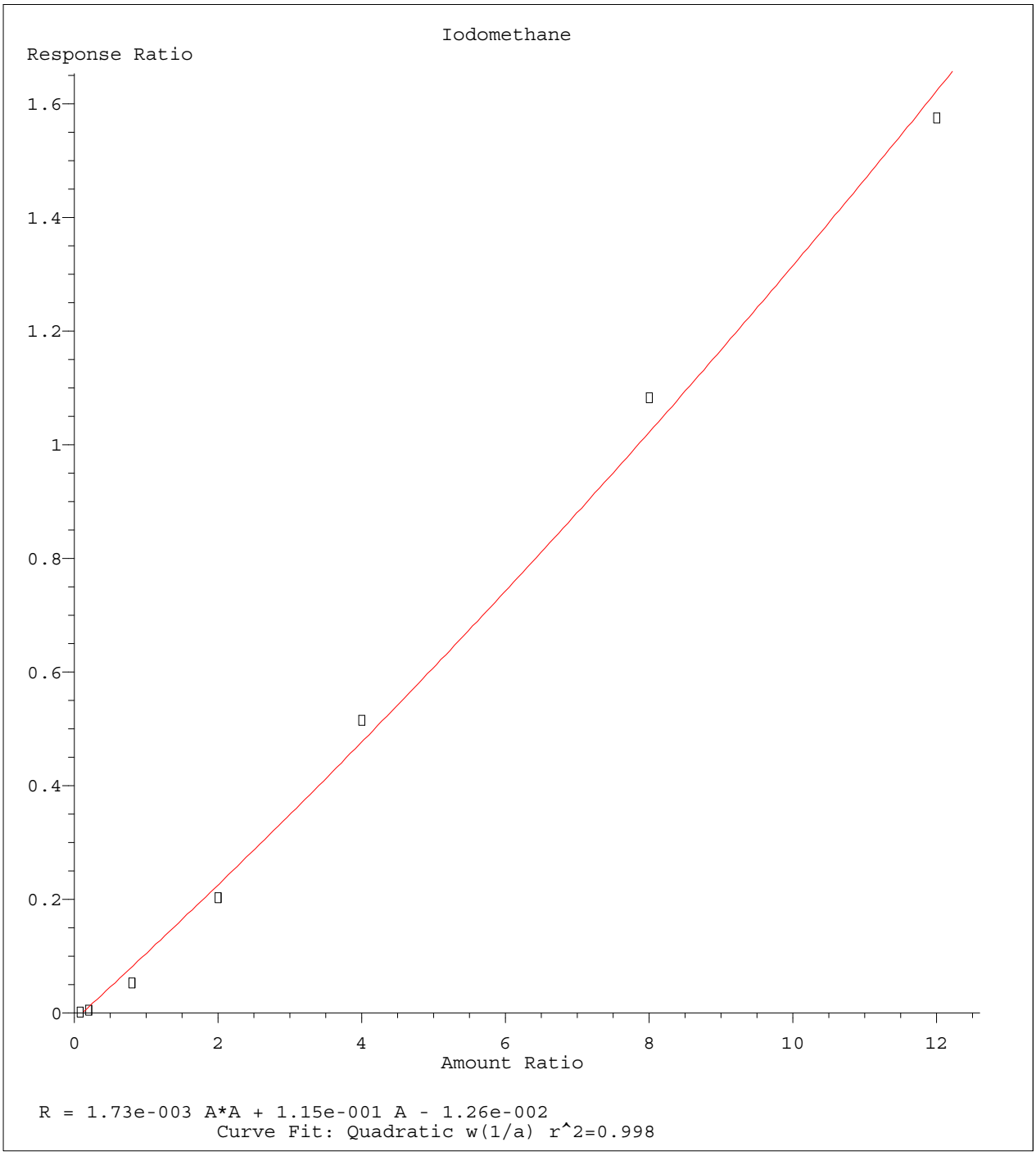

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

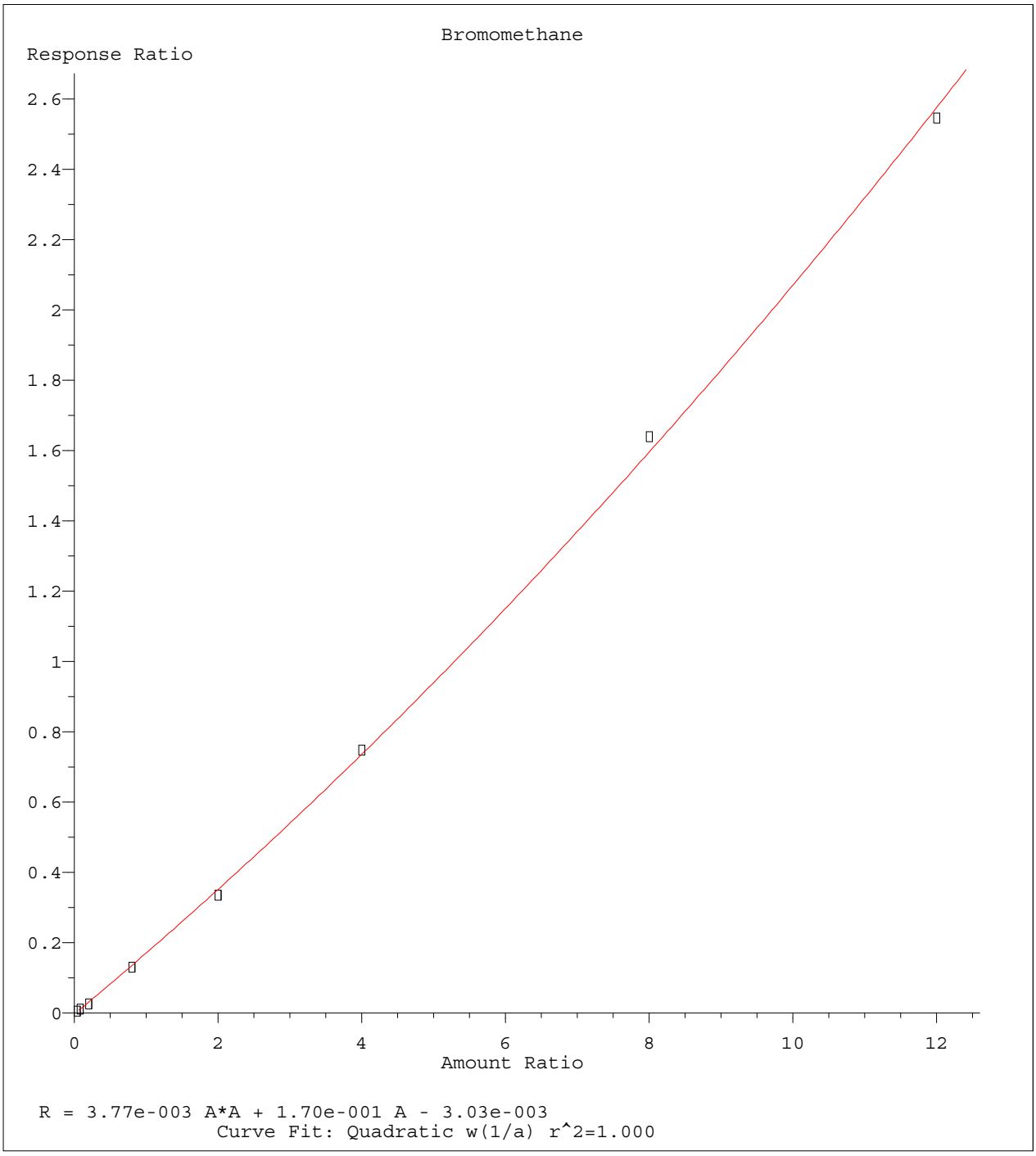

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:44:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Tue May 17 11:43:20 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	837879	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	574720	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	304324	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	229742	25.5204 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.08%		
43) 1,2-Dichloroethane-d4	10.31	65	238672	24.7259 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.92%		
58) Toluene-d8	12.68	98	776362	25.8115 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.24%		
80) p-Bromofluorobenzene	16.07	95	315683	25.0519 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.20%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	761591	54.2141 ug/L	99
3) Chloromethane	3.62	50	415589	50.6814 ug/L	100
4) Vinyl Chloride	3.84	62	509607	52.3810 ug/L	100
5) 1,3-Butadiene	3.88	54	347562	42.6002 ug/L	97
6) Bromomethane	4.73	94	272060	46.3924 ug/L	99
7) Chloroethane	4.88	64	285509	53.3336 ug/L	98
8) Trichlorofluoromethane	5.37	101	849580	46.9313 ug/L	100
9) Diethyl ether	5.90	59	451307	104.4282 ug/L	99
10) Isoprene	5.93	67	582863	53.0208 ug/L	99
11) Acrolein	6.13	56	38877	100.4722 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	419584	49.3091 ug/L	97
13) Acetone	6.23	43	54234	57.5310 ug/L	94
14) 1,1-Dichloroethene	6.46	61	622831	45.9700 ug/L	99
15) Tert-Butyl Alcohol	6.59	59	59797	197.9422 ug/L	97
16) Dimethyl Sulfide	6.73	62	351814	72.6234 ug/L	98
17) Iodomethane	6.99	142	92716	26.2832 ug/L	99
18) Methyl acetate	7.00	43	127540	50.0514 ug/L	98
19) Methylene Chloride	7.25	84	417642	48.4385 ug/L	99
20) Carbon Disulfide	7.29	76	1199899	42.3200 ug/L	100
21) Acrylonitrile	7.43	53	65324	53.4074 ug/L	93
22) Methyl Tert Butyl Ether	7.46	73	949572	50.8859 ug/L	97
23) trans-1,2-Dichloroethene	7.70	61	598296	48.0666 ug/L	99
24) n-Hexane	7.77	57	425106	45.9930 ug/L	99
25) Diisopropyl ether	8.13	45	2040382	105.1615 ug/L	98
26) Vinyl Acetate	8.29	43	415568	46.7802 ug/L	99
27) 1,1-Dichloroethane	8.32	63	721661	46.6846 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	2040020	98.1343 ug/L	99
29) 2-Butanone	8.88	43	73394	52.9905 ug/L	99
30) Propionitrile	8.98	54	42290	104.7756 ug/L	100
31) 2,2-Dichloropropane	9.10	77	780073	47.8861 ug/L	99
32) cis-1,2-Dichloroethene	9.16	96	470465	48.9162 ug/L	98
33) Chloroform	9.38	83	860252	47.1317 ug/L	100
34) 1-Bromopropane	9.51	122	98585	71.5615 ug/L	98
35) Bromochloromethane	9.60	130	234493	47.5456 ug/L	99
36) Tetrahydrofuran	9.62	42	86049	94.3281 ug/L	99
38) 1,1,1-Trichloroethane	9.90	97	825167	47.5949 ug/L	100
39) Cyclohexane	9.93	56	586721	48.8808 ug/L	97
40) 1,1-Dichloropropene	10.10	75	627217	47.4632 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1962875	103.9618 ug/L	99
42) Carbon Tetrachloride	10.24	117	711823	46.2363 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M412232.D 8260WT.M Tue May 17 11:44:38 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	108	0.00
2	T	Dichlorodifluoromethane	50.0000	54.2141	-8.4	112	0.00
3	P	Chloromethane	50.0000	50.6814	-1.4	111	0.00
4	C	Vinyl Chloride	50.0000	52.3811	-4.8	112	-0.01
5	T	1,3-Butadiene	50.0000	42.6002	14.8	89	0.00
6	T	Bromomethane	50.0000	46.3924	7.2	104	-0.01
7	T	Chloroethane	50.0000	53.3336	-6.7	117	-0.01
8	T	Trichlorofluoromethane	50.0000	46.9313	6.1	101	-0.01
9	T	Diethyl ether	100.0000	104.4282	-4.4	116	0.00
10	T	Isoprene	50.0000	53.0208	-6.0	117	0.00
11	T	Acrolein	50.0000	100.4722	-100.9#	220	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	49.3091	1.4	108	0.00
13	T	Acetone	50.0000	57.5310	-15.1	118	-0.01
14	C	1,1-Dichloroethene	50.0000	45.9700	8.1	100	0.00
15	T	Tert-Butyl Alcohol	200.0000	197.9423	1.0	108	0.01
16	T	Dimethyl Sulfide	50.0000	72.6234	-45.2#	159	0.00
17	T	Iodomethane	50.0000	26.2832	47.4#	59	0.01
18	T	Methyl acetate	50.0000	50.0514	-0.1	111	0.00
19	T	Methylene Chloride	50.0000	48.4385	3.1	107	0.00
20	T	Carbon Disulfide	50.0000	42.3200	15.4	94	0.00
21	T	Acrylonitrile	50.0000	53.4074	-6.8	109	0.00
22	T	Methyl Tert Butyl Ether	50.0000	50.8859	-1.8	105	0.00
23	T	trans-1,2-Dichloroethene	50.0000	48.0666	3.9	105	0.00
24	T	n-Hexane	50.0000	45.9930	8.0	101	-0.01
25	T	Diisopropyl ether	100.0000	105.1615	-5.2	115	0.00
26	T	Vinyl Acetate	50.0000	46.7802	6.4	97	0.00
27	P	1,1-Dichloroethane	50.0000	46.6846	6.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.1343	1.9	104	0.00
29	T	2-Butanone	50.0000	52.9905	-6.0	110	0.00
30	T	Propionitrile	100.0000	104.7756	-4.8	111	0.00
31	T	2,2-Dichloropropane	50.0000	47.8861	4.2	102	0.00
32	T	cis-1,2-Dichloroethene	50.0000	48.9162	2.2	107	-0.01
33	C	Chloroform	50.0000	47.1317	5.7	102	0.00
34		1-Bromopropane	50.0000	71.5615	-43.1#	155	0.00
35	T	Bromochloromethane	50.0000	47.5456	4.9	102	0.00
36	T	Tetrahydrofuran	100.0000	94.3281	5.7	108	-0.01
37	S	Dibromofluoromethane	25.0000	25.5204	-2.1	109	0.00
38	T	1,1,1-Trichloroethane	50.0000	47.5949	4.8	101	0.00
39	T	Cyclohexane	50.0000	48.8808	2.2	109	0.00
40	T	1,1-Dichloropropene	50.0000	47.4632	5.1	102	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	103.9618	-4.0	111	0.00
42	T	Carbon Tetrachloride	50.0000	46.2363	7.5	98	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.7259	1.1	104	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	49.0148	2.0	103	0.00
46	T	Benzene	50.0000	48.5232	3.0	104	0.00
47	T	Trichloroethene	50.0000	51.0658	-2.1	110	0.00
48	T	Methylcyclohexane	50.0000	49.8573	0.3	109	0.00
49	C	1,2-Dichloropropane	50.0000	50.9747	-1.9	111	0.00
50	T	Bromodichloromethane	50.0000	48.3053	3.4	99	0.00
51	T	1,4-Dioxane	200.0000	216.9538	-8.5	110	0.01
52	T	Dibromomethane	50.0000	45.8126	8.4	99	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	51.2623	-2.5	104	0.00
54	T	4-Methyl-2-Pentanone	50.0000	51.8715	-3.7	107	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.8979	-7.8	111	0.00
56	T	Dimethyl Disulfide	50.0000	52.2714	-4.5	111	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	107	0.00
58	S	Toluene-d8	25.0000	25.8115	-3.2	108	0.00
59	C	Toluene	50.0000	49.0912	1.8	105	0.00
60	T	Ethyl Methacrylate	50.0000	55.9509	-11.9	113	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	50.6740	-1.3	102	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.0377	1.9	103	0.00
64	T	2-Hexanone	50.0000	53.6057	-7.2	112	0.00
65	T	1,3-Dichloropropane	50.0000	53.6720	-7.3	110	0.00
66	T	Tetrachloroethene	50.0000	47.8053	4.4	104	0.00
67	T	Dibromochloromethane	50.0000	49.6585	0.7	102	0.00
68	T	1,2-Dibromoethane	50.0000	51.1121	-2.2	105	0.00
69	T	1-Chlorohexane	50.0000	51.0611	-2.1	111	0.00
70	P	Chlorobenzene	50.0000	50.1844	-0.4	108	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	49.3793	1.2	103	0.00
72	C	Ethylbenzene	50.0000	48.2013	3.6	105	0.00
73	T	m-,p-Xylene	100.0000	101.1341	-1.1	108	0.00
74	T	o-Xylene	50.0000	50.5675	-1.1	108	0.00
75	T	Styrene	50.0000	51.5086	-3.0	105	0.00
76	P	Bromoform	50.0000	48.2227	3.6	99	0.00
77	T	Isopropylbenzene	50.0000	51.1140	-2.2	107	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	106	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	49.6172	0.8	103	0.00
80	S	p-Bromofluorobenzene	25.0000	25.0519	-0.2	108	0.00
81	T	1,2,3-Trichloropropane	50.0000	50.0849	-0.2	106	0.01
82	T	trans-1,4-Dichloro-2-Butene	50.0000	39.2043	21.6	86	0.00
83	T	n-Propylbenzene	50.0000	51.9237	-3.8	108	0.00
84	T	Bromobenzene	50.0000	49.4648	1.1	105	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	51.6344	-3.3	107	0.00
86	T	2-Chlorotoluene	50.0000	51.5639	-3.1	106	0.00
87	T	4-Chlorotoluene	50.0000	48.2650	3.5	108	0.00
88	T	a-Methylstyrene	50.0000	56.4132	-12.8	120	0.00
89	T	tert-Butylbenzene	50.0000	50.9494	-1.9	112	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	49.6617	0.7	105	0.00
91	T	sec-Butylbenzene	50.0000	51.3386	-2.7	108	0.00
92	T	p-Isopropyltoluene	50.0000	50.1261	-0.3	107	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.8943	-1.8	108	0.00
94	T	1,4-Dichlorobenzene	50.0000	50.4742	-0.9	110	0.00
95	T	n-Butylbenzene	50.0000	49.6520	0.7	105	0.00
96	T	1,2-Dichlorobenzene	50.0000	50.4907	-1.0	110	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	48.4851	3.0	100	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	50.1129	-0.2	107	0.00
99	T	Hexachlorobutadiene	50.0000	52.0919	-4.2	115	0.00
100	T	Naphthalene	50.0000	45.8047	8.4	95	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	47.7353	4.5	106	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412232.D 8260WT.M Sat May 14 18:09:03 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:21 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	709364	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	505399	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	272922	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	27428	100.2132 ug/L	99
3) 3-Chloro-1-propene	7.07	41	940418	104.3259 ug/L	82
4) 2-Chloro-1,3-butadiene	8.45	53	1188994	104.3183 ug/L	86
5) Ethyl Acetate	9.10	43	283167	104.3264 ug/L	95
6) Methacrylonitrile	9.25	67	155775	104.5365 ug/L #	63
7) Isobutyl Alcohol	9.25	43	17893	197.3629 ug/L #	96
9) Methyl methacrylate	11.42	41	298802	102.0346 ug/L	70
10) 2-Nitropropane	11.75	43	121321	95.8263 ug/L	97
13) Cyclohexanone	15.84	55	11401	102.1363 ug/L #	70

(#) = qualifier out of range (m) = manual integration
8M412321.D A9FOOWT.M Thu May 19 09:01:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

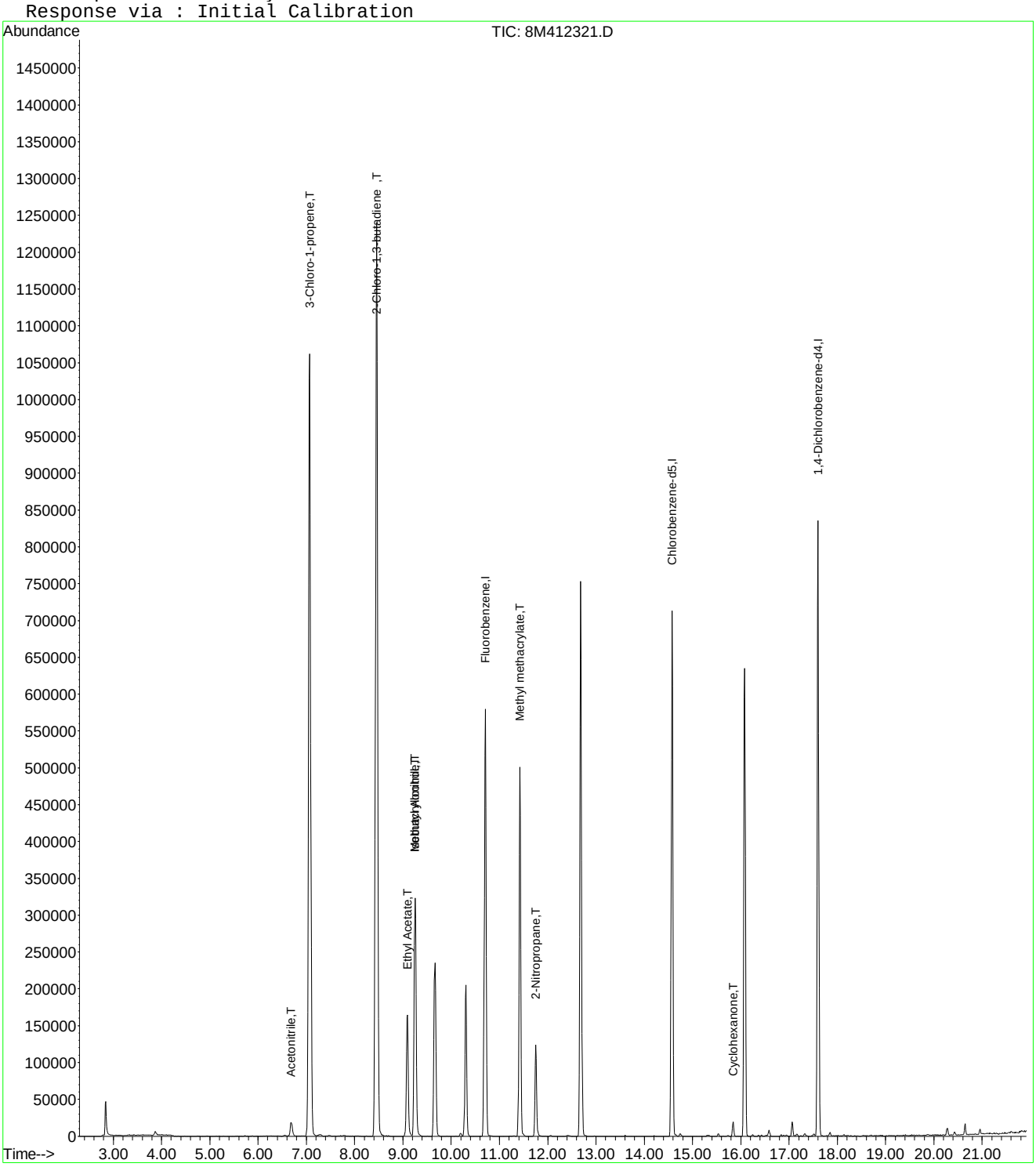

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	100.2132	-0.2	100	0.00
3	T	3-Chloro-1-propene	100.0000	104.3259	-4.3	100	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	104.3183	-4.3	100	0.00
5	T	Ethyl Acetate	100.0000	104.3264	-4.3	100	0.00
6	T	Methacrylonitrile	100.0000	104.5365	-4.5	100	0.00
7	T	Isobutyl Alcohol	200.0000	197.3629	1.3	100	-0.01
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.02
9	T	Methyl methacrylate	100.0000	102.0346	-2.0	100	0.00
10	T	2-Nitropropane	100.0000	95.8263	4.2	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	100.0000	102.1363	-2.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412321.D A9FOOWT.M Thu May 19 09:02:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:20:35 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	677339	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	488377	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	260939	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	13323	50.9795 ug/L	98
3) 3-Chloro-1-propene	7.07	41	453655	52.7060 ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	568765	52.2609 ug/L	87
5) Ethyl Acetate	9.09	43	131636	50.7913 ug/L	97
6) Methacrylonitrile	9.25	67	74064	52.0523 ug/L #	62
7) Isobutyl Alcohol	9.26	43	8483	97.9930 ug/L	95
9) Methyl methacrylate	11.42	41	143892	51.4593 ug/L	70
10) 2-Nitropropane	11.75	43	56559	46.7858 ug/L	95
13) Cyclohexanone	15.84	55	5225	48.9579 ug/L	83

(#) = qualifier out of range (m) = manual integration
8M412322.D A9FOOWT.M Thu May 19 09:20:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:19 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

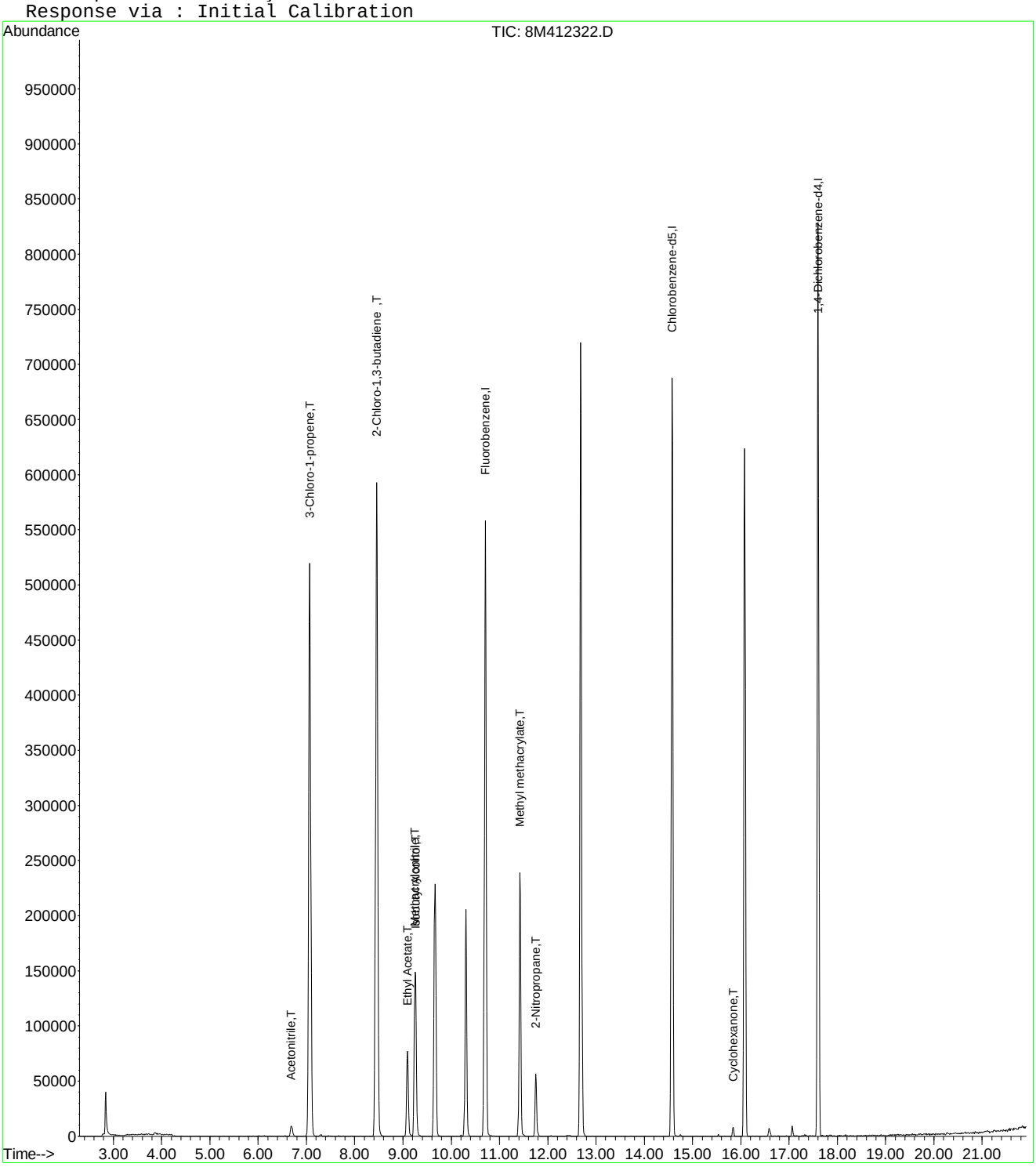

8M412322.D A9FOOWT.M Thu May 19 09:20:36 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	50.9795	-2.0	100	0.00
3	T	3-Chloro-1-propene	50.0000	52.7060	-5.4	100	0.00
4	T	2-Chloro-1,3-butadiene	50.0000	52.2609	-4.5	100	0.00
5	T	Ethyl Acetate	50.0000	50.7913	-1.6	100	0.00
6	T	Methacrylonitrile	50.0000	52.0523	-4.1	100	0.00
7	T	Isobutyl Alcohol	100.0000	97.9929	2.0	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.02
9	T	Methyl methacrylate	50.0000	51.4592	-2.9	100	0.00
10	T	2-Nitropropane	50.0000	46.7858	6.4	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	50.0000	48.9579	2.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412322.D A9FOOWT.M Thu May 19 09:02:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:22:33 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	652985	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	476539	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	256082	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	4873	19.3416 ug/L	80
3) 3-Chloro-1-propene	7.07	41	172467	20.7847 ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	219296	20.9015 ug/L	87
5) Ethyl Acetate	9.09	43	50385	20.1659 ug/L	100
6) Methacrylonitrile	9.26	67	28119	20.4992 ug/L #	63
7) Isobutyl Alcohol	9.27	43	2774	33.2395 ug/L #	8
9) Methyl methacrylate	11.42	41	55309	20.5176 ug/L	73
10) 2-Nitropropane	11.75	43	21584	18.5202 ug/L	99
13) Cyclohexanone	15.84	55	2230	21.2913 ug/L	87

(#) = qualifier out of range (m) = manual integration
8M412323.D A9FOOWT.M Thu May 19 09:22:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:21 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

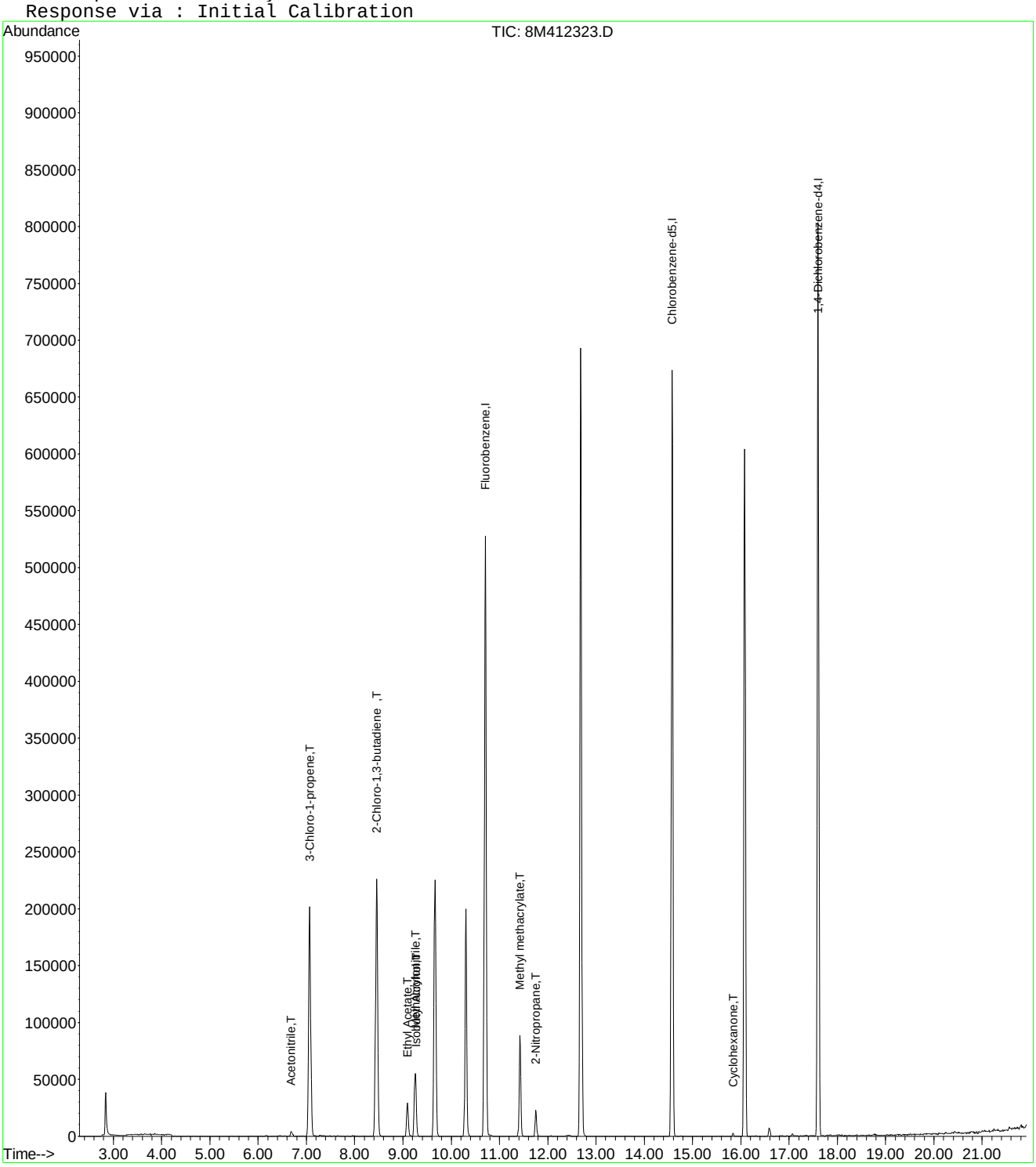

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	19.3416	3.3	100	0.00
3	T	3-Chloro-1-propene	20.0000	20.7847	-3.9	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	20.9015	-4.5	100	0.00
5	T	Ethyl Acetate	20.0000	20.1659	-0.8	100	0.00
6	T	Methacrylonitrile	20.0000	20.4992	-2.5	100	0.00
7	T	Isobutyl Alcohol	-1.0000	33.2395	0.0	0	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.18#
9	T	Methyl methacrylate	20.0000	20.5176	-2.6	100	0.00
10	T	2-Nitropropane	20.0000	18.5203	7.4	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	20.0000	21.2913	-6.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412323.D A9FOOWT.M Thu May 19 09:02:17 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:22:43 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	665645	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	483812	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	257678	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	405	1.5769 ug/L #	23
3) 3-Chloro-1-propene	7.07	41	40699	4.8115 ug/L	84
4) 2-Chloro-1,3-butadiene	8.45	53	48973	4.5789 ug/L	81
5) Ethyl Acetate	9.09	43	10675	4.1913 ug/L	95
6) Methacrylonitrile	9.26	67	5417	3.8740 ug/L #	72
7) Isobutyl Alcohol	9.27	43	441	5.1838 ug/L #	8
9) Methyl methacrylate	11.43	41	11811	4.2981 ug/L	65
10) 2-Nitropropane	11.76	43	4170	3.5100 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412324.D A9FOOWT.M Thu May 19 09:22:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:21 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

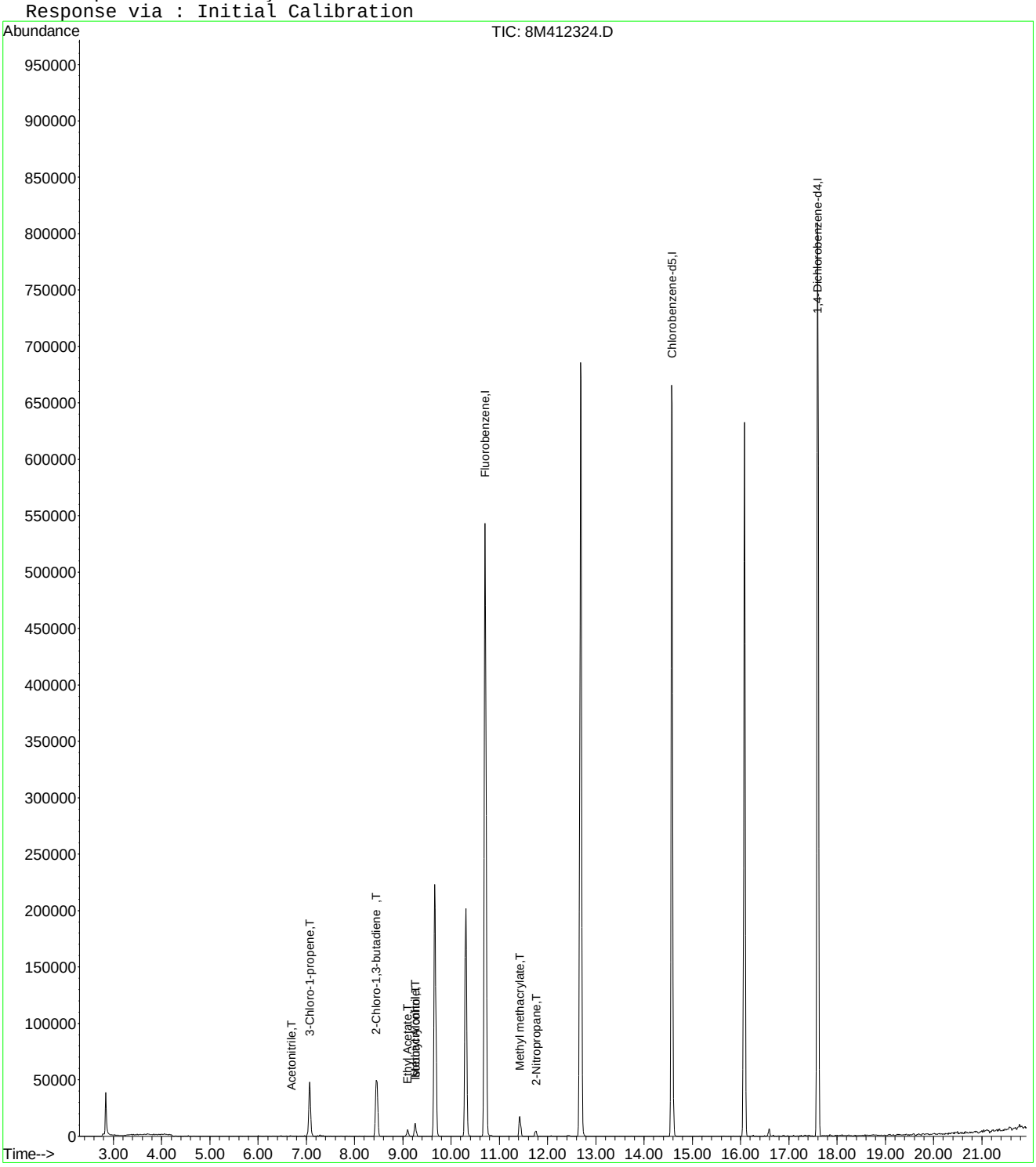

8M412324.D A9FOOWT.M Thu May 19 09:22:43 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	-1.0000	1.5769	0.0	0	0.00
3	T	3-Chloro-1-propene	5.0000	4.8115	3.8	100	0.00
4	T	2-Chloro-1,3-butadiene	5.0000	4.5789	8.4	100	0.00
5	T	Ethyl Acetate	5.0000	4.1913	16.2	100	0.00
6	T	Methacrylonitrile	5.0000	3.8740	22.5	100	0.00
7	T	Isobutyl Alcohol	-1.0000	5.1838	0.0	0	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.18#
9	T	Methyl methacrylate	5.0000	4.2981	14.0	100	0.00
10	T	2-Nitropropane	-1.0000	3.5100	0.0	0	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	0.0000	0.0	0	-15.84#

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412324.D A9FOOWT.M Thu May 19 09:02:03 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412325.D Vial: 7
Acq On : 17 May 2016 11:42 Operator: TMB
Sample : WG569079-06 200ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:27 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	682012	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	491515	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	261877	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.68	41	52022	197.6946 ug/L	97
3) 3-Chloro-1-propene	7.06	41	1768403	204.0468 ug/L	83
4) 2-Chloro-1,3-butadiene	8.46	53	2283706	208.4003 ug/L	87
5) Ethyl Acetate	9.09	43	537585	206.0040 ug/L	94
6) Methacrylonitrile	9.25	67	297408	207.5869 ug/L #	63
7) Isobutyl Alcohol	9.26	43	34441	395.1256 ug/L	95
9) Methyl methacrylate	11.42	41	577612	205.1526 ug/L	72
10) 2-Nitropropane	11.75	43	248395	204.0652 ug/L	95
13) Cyclohexanone	15.85	55	19752	184.4122 ug/L #	59

(#) = qualifier out of range (m) = manual integration
8M412325.D A9FOOWT.M Thu May 19 09:01:28 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412325.D Vial: 7
Acq On : 17 May 2016 11:42 Operator: TMB
Sample : WG569079-06 200ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

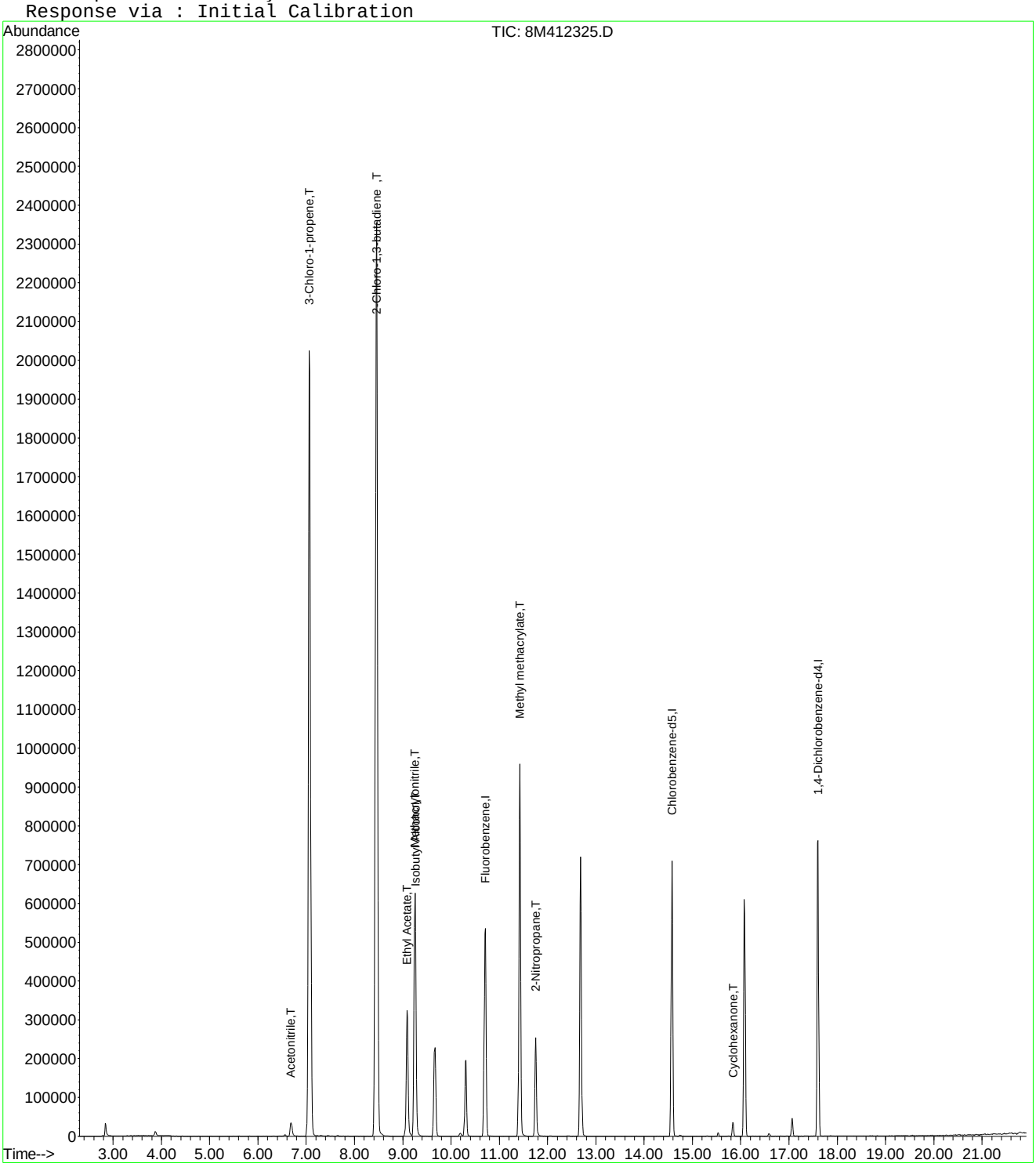

8M412325.D A9FOOWT.M Thu May 19 09:01:28 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412326.D Vial: 8
Acq On : 17 May 2016 12:40 Operator: TMB
Sample : WG569079-07 300ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:29 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	694903	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	496643	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	267309	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.69	41	81471	303.8636	ug/L	98
3) 3-Chloro-1-propene	7.06	41	2563559	290.3084	ug/L	83
4) 2-Chloro-1,3-butadiene	8.46	53	3270971	292.9562	ug/L	86
5) Ethyl Acetate	9.09	43	821184	308.8424	ug/L	95
6) Methacrylonitrile	9.25	67	451708	309.4374	ug/L #	62
7) Isobutyl Alcohol	9.26	43	55071	620.0836	ug/L	94
9) Methyl methacrylate	11.42	41	874430	304.8132	ug/L	70
10) 2-Nitropropane	11.75	43	392965	316.8456	ug/L	94
13) Cyclohexanone	15.84	55	33523	306.6233	ug/L #	61

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412326.D Vial: 8
Acq On : 17 May 2016 12:40 Operator: TMB
Sample : WG569079-07 300ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

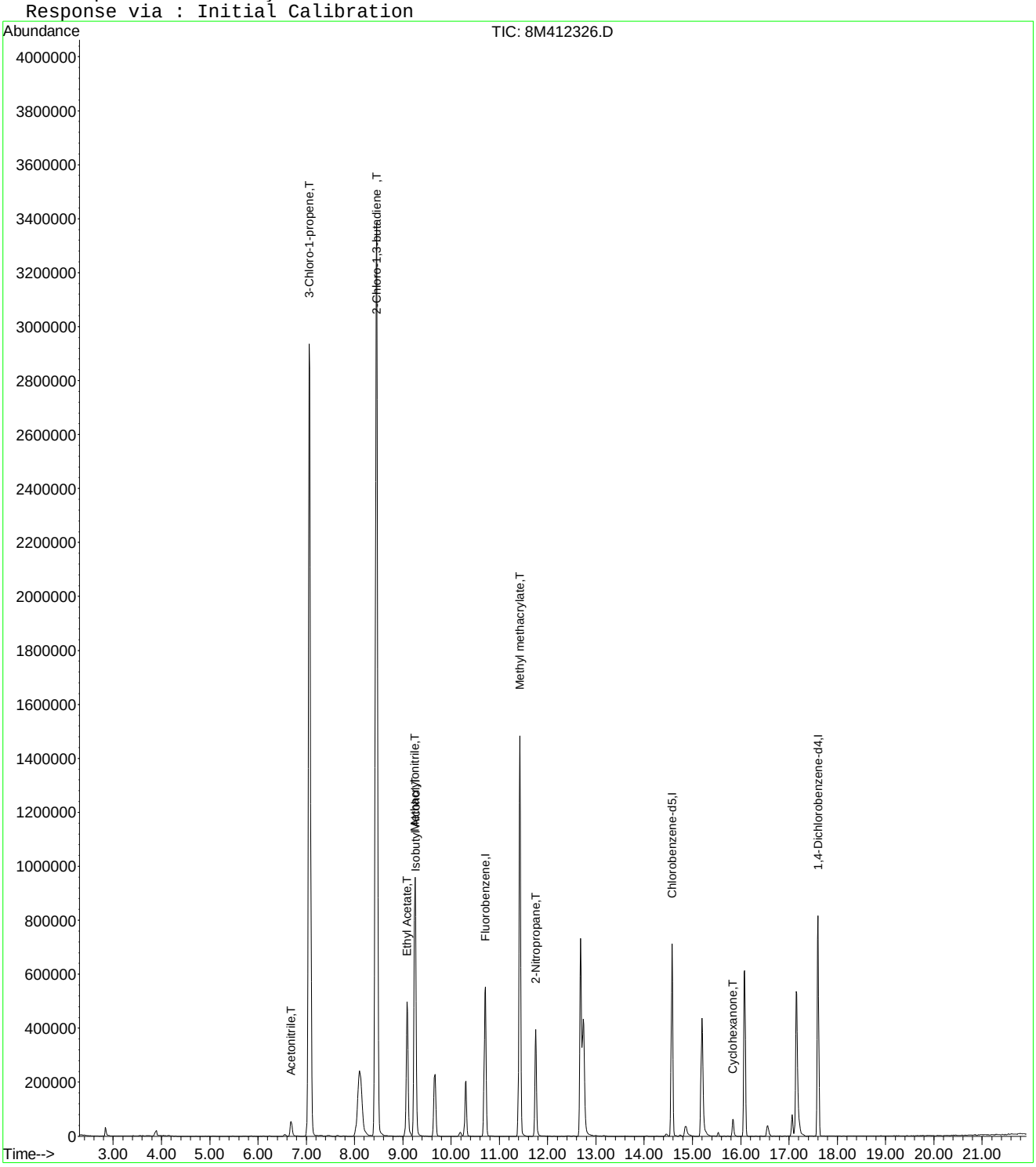

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412327.D Vial: 9
Acq On : 17 May 2016 13:10 Operator: TMB
Sample : WG569079-08 400ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:30 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	700514	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	502552	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	270883	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	110761	409.7980 ug/L	97
3) 3-Chloro-1-propene	7.07	41	3406131	382.6353 ug/L	82
4) 2-Chloro-1,3-butadiene	8.45	53	4356691	387.0705 ug/L	85
5) Ethyl Acetate	9.09	43	1116818	416.6642 ug/L	94
6) Methacrylonitrile	9.25	67	615482	418.2517 ug/L #	62
7) Isobutyl Alcohol	9.26	43	75472	842.9862 ug/L	97
9) Methyl methacrylate	11.42	41	1199317	414.7153 ug/L	71
10) 2-Nitropropane	11.75	43	538580	430.7760 ug/L	94
13) Cyclohexanone	15.84	55	45874	414.0575 ug/L #	55

(#) = qualifier out of range (m) = manual integration
8M412327.D A9FOOWT.M Thu May 19 09:01:31 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412327.D Vial: 9
Acq On : 17 May 2016 13:10 Operator: TMB
Sample : WG569079-08 400ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

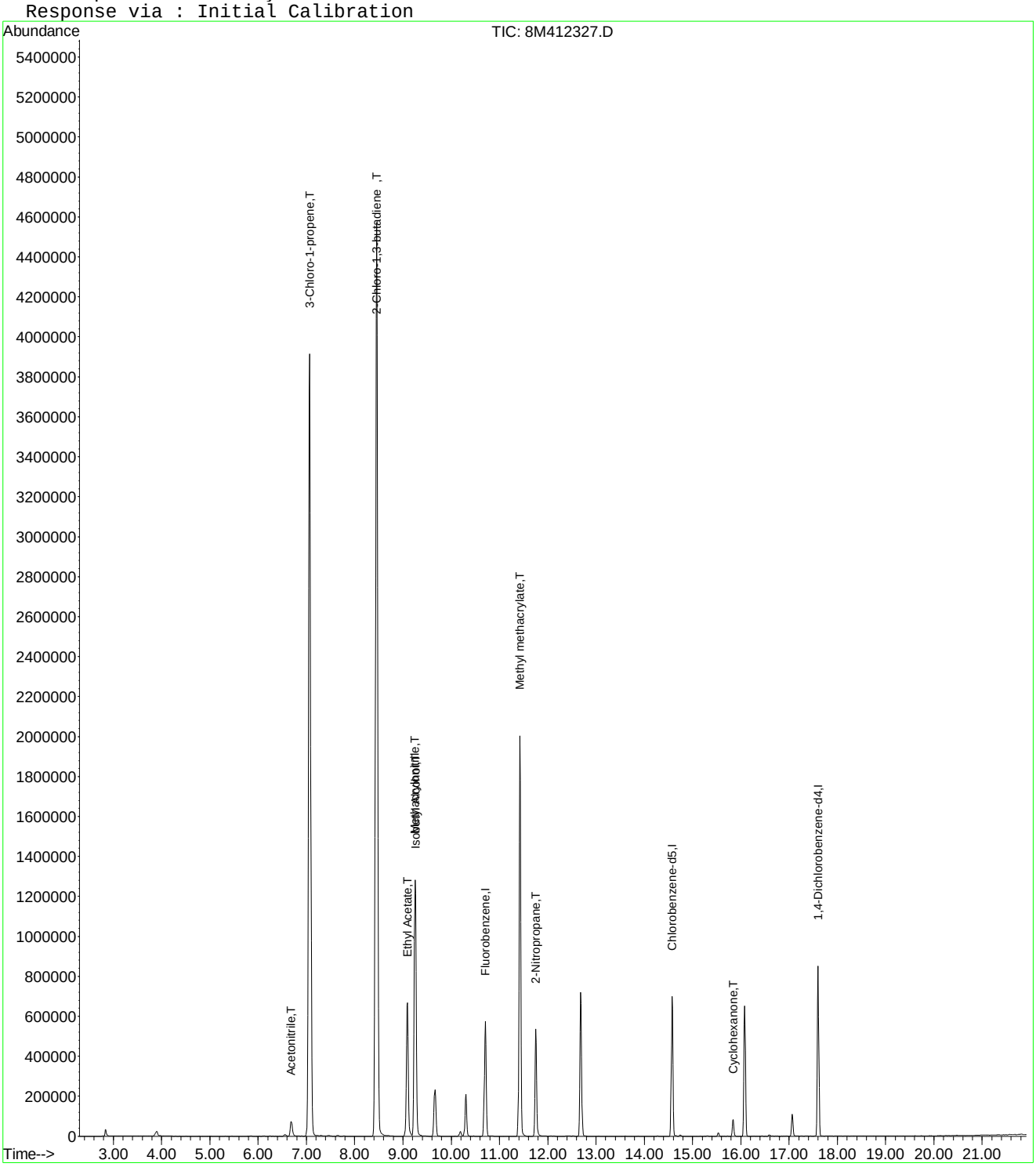

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412328.D Vial: 10
Acq On : 17 May 2016 13:39 Operator: TMB
Sample : WG569079-09 500ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:31 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	695694	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	495257	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	266442	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	132245	492.6753 ug/L	99
3) 3-Chloro-1-propene	7.06	41	4228273	478.2834 ug/L	82
4) 2-Chloro-1,3-butadiene	8.46	53	5390856	482.2693 ug/L	85
5) Ethyl Acetate	9.09	43	1321922	496.6017 ug/L	95
6) Methacrylonitrile	9.25	67	729852	499.4083 ug/L #	61
7) Isobutyl Alcohol	9.26	43	85200	958.2367 ug/L	96
9) Methyl methacrylate	11.42	41	1416438	493.1877 ug/L	72
10) 2-Nitropropane	11.75	43	637335	513.2956 ug/L	93
13) Cyclohexanone	15.84	55	52070	477.8160 ug/L #	61

(#) = qualifier out of range (m) = manual integration
8M412328.D A9FOOWT.M Thu May 19 09:01:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412328.D Vial: 10
Acq On : 17 May 2016 13:39 Operator: TMB
Sample : WG569079-09 500ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

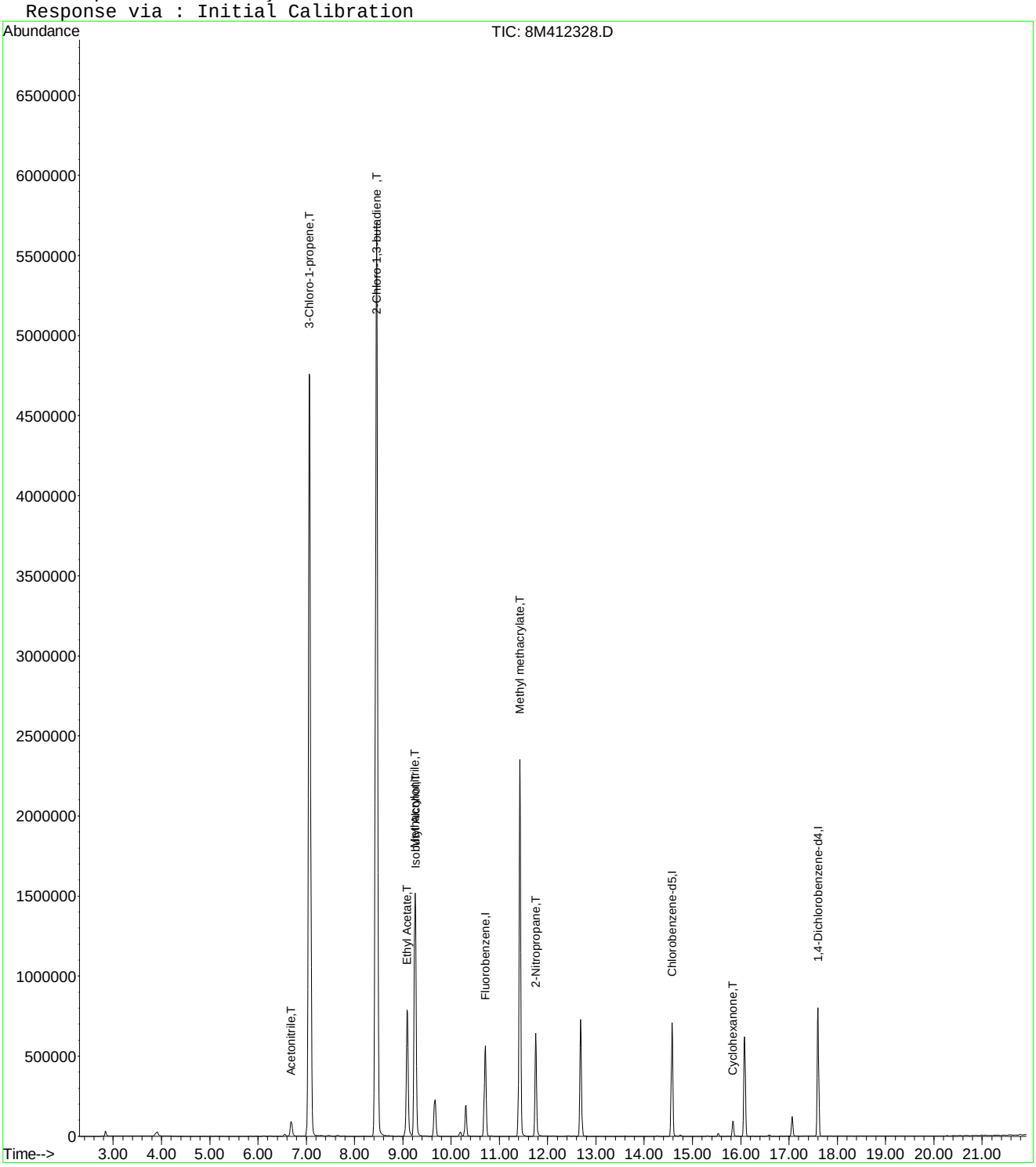

8M412328.D A9FOOWT.M Thu May 19 09:01:32 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:32 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	676765	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	486447	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	263036	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.69	41	29876	114.4154	ug/L	97
3) 3-Chloro-1-propene	7.07	41	858035	99.7718	ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	1224194	112.5803	ug/L	87
5) Ethyl Acetate	9.09	43	295545	114.1317	ug/L	96
6) Methacrylonitrile	9.25	67	161574	113.6509	ug/L #	63
7) Isobutyl Alcohol	9.26	43	19948	230.6285	ug/L	94
9) Methyl methacrylate	11.42	41	326465	116.8508	ug/L	72
10) 2-Nitropropane	11.75	43	131261	108.6716	ug/L	94
13) Cyclohexanone	15.83	55	10459	97.2189	ug/L #	74

(#) = qualifier out of range (m) = manual integration
8M412331.D A9FOOWT.M Thu May 19 09:01:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

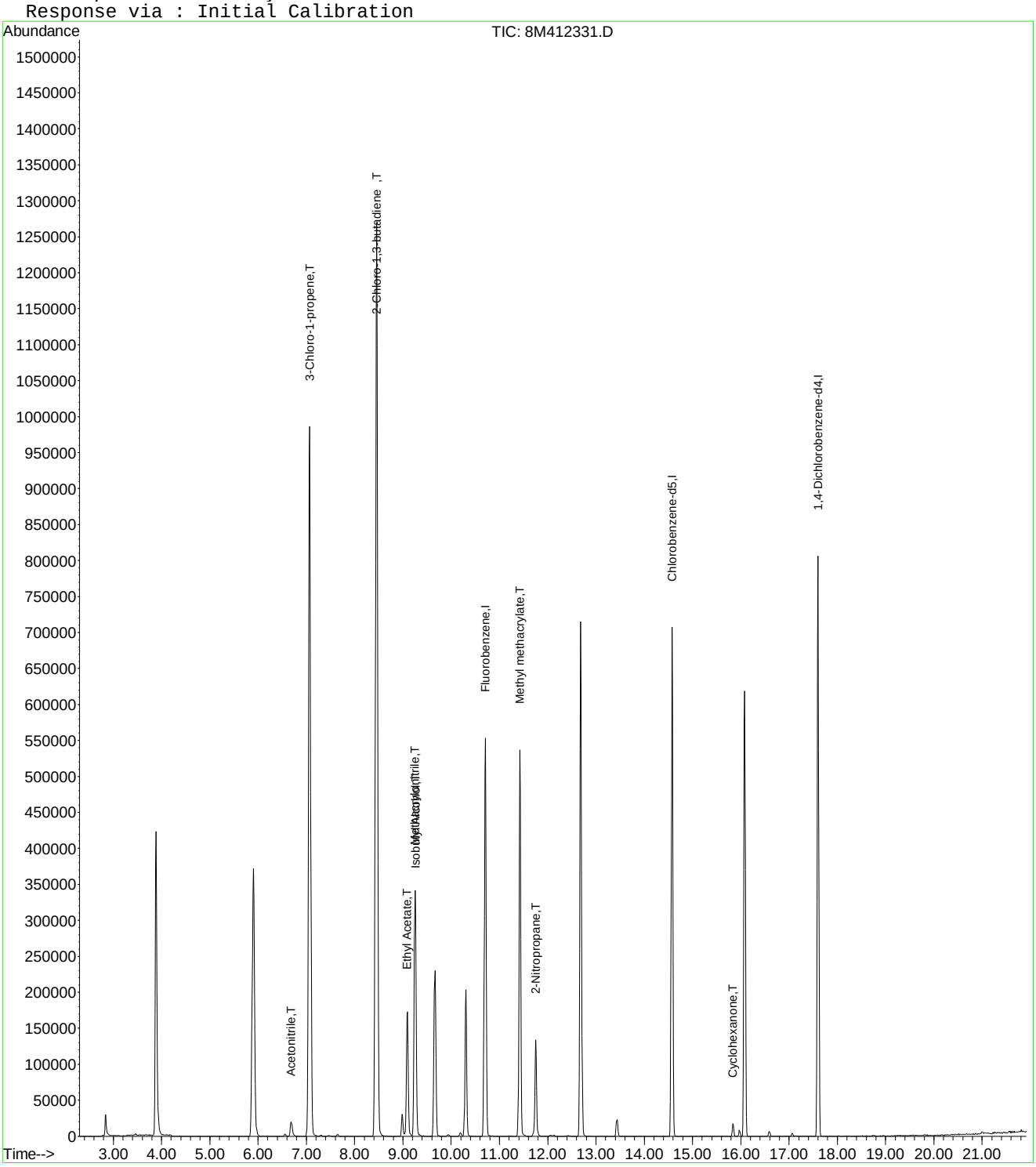

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	95	0.00
2	T	Acetonitrile	100.0000	114.4154	-14.4	109	0.00
3	T	3-Chloro-1-propene	100.0000	99.7718	0.2	91	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	112.5803	-12.6	103	0.00
5	T	Ethyl Acetate	100.0000	114.1317	-14.1	104	0.00
6	T	Methacrylonitrile	100.0000	113.6509	-13.7	104	0.00
7	T	Isobutyl Alcohol	200.0000	230.6285	-15.3	111	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.01
9	T	Methyl methacrylate	100.0000	116.8508	-16.9	109	0.00
10	T	2-Nitropropane	100.0000	108.6716	-8.7	108	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	96	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	96	0.00
13	T	Cyclohexanone	100.0000	97.2189	2.8	92	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412331.D A9FOOWT.M Thu May 19 09:03:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413032.D Vial: 2
Acq On : 16 Jun 2016 14:25 Operator: FJB
Sample : WG573037-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 20 09:11:28 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	733857	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	538326	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	307491	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	215897	27.3819 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.52%		
43) 1,2-Dichloroethane-d4	10.30	65	234596	27.7486 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.00%		
58) Toluene-d8	12.68	98	742553	26.3564 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.44%		
80) p-Bromofluorobenzene	16.08	95	315298	24.7636 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.04%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	709296	57.6485 ug/L	100
3) Chloromethane	3.62	50	334378	46.5578 ug/L	99
4) Vinyl Chloride	3.84	62	469712	55.1239 ug/L	99
5) 1,3-Butadiene	3.89	54	449731	62.9364 ug/L	97
6) Bromomethane	4.73	94	187928	36.9767 ug/L	99
7) Chloroethane	4.89	64	229428	48.9325 ug/L	97
8) Trichlorofluoromethane	5.37	101	947245	59.7435 ug/L	99
9) Diethyl ether	5.91	59	359174	94.8900 ug/L	97
10) Isoprene	5.94	67	490773	50.9718 ug/L	97
11) Acrolein	6.14	56	15092	44.5317 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	413268	55.4511 ug/L	96
13) Acetone	6.24	43	43062	52.1548 ug/L	100
14) 1,1-Dichloroethene	6.47	61	648526	54.6514 ug/L	98
15) Tert-Butyl Alcohol	6.57	59	62702	236.9793 ug/L	98
16) Dimethyl Sulfide	6.73	62	205530	48.4405 ug/L	98
17) Iodomethane	6.99	142	88941	28.4929 ug/L	92
18) Methyl acetate	7.00	43	95456	42.7704 ug/L	98
19) Methylene Chloride	7.26	84	368680	48.8209 ug/L	100
20) Carbon Disulfide	7.29	76	1316779	53.0253 ug/L	100
21) Acrylonitrile	7.43	53	50980	47.5881 ug/L	94
22) Methyl Tert Butyl Ether	7.46	73	815898	49.9201 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	567448	52.0503 ug/L	100
24) n-Hexane	7.78	57	440578	54.4236 ug/L	99
25) Diisopropyl ether	8.12	45	1629728	95.9026 ug/L	96
26) Vinyl Acetate	8.30	43	383450	49.2832 ug/L	99
27) 1,1-Dichloroethane	8.33	63	708177	52.3061 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1837543	100.9239 ug/L	98
29) 2-Butanone	8.88	43	55723	45.9348 ug/L	98
30) Propionitrile	8.99	54	34053	96.3269 ug/L	98
31) 2,2-Dichloropropane	9.11	77	881786	61.8026 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	429176	50.9485 ug/L	97
33) Chloroform	9.37	83	876461	54.8264 ug/L	100
34) 1-Bromopropane	9.51	122	69827	57.8711 ug/L	99
35) Bromochloromethane	9.61	130	221472	51.2707 ug/L	96
36) Tetrahydrofuran	9.63	42	65588	82.0898 ug/L	92
38) 1,1,1-Trichloroethane	9.91	97	904390	59.5586 ug/L	99
39) Cyclohexane	9.94	56	543065	51.6569 ug/L	96
40) 1,1-Dichloropropene	10.11	75	631550	54.5654 ug/L	100
41) Tert-Amyl-Methyl ether	10.21	73	1667474	100.8347 ug/L	100
42) Carbon Tetrachloride	10.25	117	809209	60.0125 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413032.D Vial: 2
Acq On : 16 Jun 2016 14:25 Operator: FJB
Sample : WG573037-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 20 09:11:28 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	583022	56.6636	ug/L		98
46)	Benzene	10.46	78	1567451	51.9972	ug/L		99
47)	Trichloroethene	11.21	130	433837	53.9600	ug/L		99
48)	Methylcyclohexane	11.30	83	676953	55.4235	ug/L		100
49)	1,2-Dichloropropane	11.43	63	326457	48.6480	ug/L		86
50)	Bromodichloromethane	11.73	83	653209	55.3826	ug/L		100
51)	1,4-Dioxane	11.72	88	7428	220.3548	ug/L		98
52)	Dibromomethane	11.81	93	197458	49.7082	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.03	63	129844	45.0178	ug/L		95
54)	4-Methyl-2-Pentanone	12.06	58	53646	45.5327	ug/L		94
55)	cis-1,3-Dichloropropene	12.36	75	639780	53.2922	ug/L		100
56)	Dimethyl Disulfide	12.63	79	328801	51.3144	ug/L		99
59)	Toluene	12.78	91	1681041	50.3002	ug/L		100
60)	Ethyl Methacrylate	12.88	69	300733	46.8562	ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	572847	51.1483	ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	244197	46.3057	ug/L		99
64)	2-Hexanone	13.12	58	49168	44.3674	ug/L	#	100
65)	1,3-Dichloropropane	13.48	76	441493	47.0219	ug/L		97
66)	Tetrachloroethene	13.60	164	383463	53.5544	ug/L		98
67)	Dibromochloromethane	13.87	129	388793	50.4917	ug/L		99
68)	1,2-Dibromoethane	14.13	107	247883	47.1634	ug/L		98
69)	1-Chlorohexane	14.21	91	594465	52.1092	ug/L		98
70)	Chlorobenzene	14.62	112	1121470	49.7630	ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.66	131	456454	52.2807	ug/L		100
72)	Ethylbenzene	14.66	106	622088	50.4524	ug/L		99
73)	m-,p-Xylene	14.75	106	1491287	103.1131	ug/L		100
74)	o-Xylene	15.31	106	724388	51.2307	ug/L		99
75)	Styrene	15.35	104	1206191	52.0104	ug/L		96
76)	Bromoform	15.84	173	232298	50.8617	ug/L		99
77)	Isopropylbenzene	15.73	105	2026613	53.9527	ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	256105	41.4928	ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	85494	44.9807	ug/L		72
82)	trans-1,4-Dichloro-2-Buten	16.18	53	84374	43.6303	ug/L	#	51
83)	n-Propylbenzene	16.24	91	2386990	49.7580	ug/L		99
84)	Bromobenzene	16.37	156	473221	47.9586	ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	1753288	50.1733	ug/L		100
86)	2-Chlorotoluene	16.52	91	1599256	47.7491	ug/L		100
87)	4-Chlorotoluene	16.56	91	1503375	49.6923	ug/L		100
88)	a-Methylstyrene	16.84	118	786649	47.4481	ug/L		98
89)	tert-Butylbenzene	16.90	134	334560	48.9377	ug/L		99
90)	1,2,4-Trimethylbenzene	16.95	105	1801178	50.1269	ug/L		100
91)	sec-Butylbenzene	17.17	105	2069862	50.3494	ug/L		99
92)	p-Isopropyltoluene	17.32	119	1766300	50.6022	ug/L		99
93)	1,3-Dichlorobenzene	17.52	146	942205	49.5900	ug/L		98
94)	1,4-Dichlorobenzene	17.64	146	911590	47.5896	ug/L		99
95)	n-Butylbenzene	17.85	91	1742674	50.5007	ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	787813	46.6205	ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	54489	43.9791	ug/L		98
98)	1,2,4-Trichlorobenzene	20.28	180	613274	48.5529	ug/L		100
99)	Hexachlorobutadiene	20.43	225	322898	54.7126	ug/L		99
100)	Naphthalene	20.65	128	816338	43.5006	ug/L		100
101)	1,2,3-Trichlorobenzene	20.96	180	483344	45.3576	ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413032.D Vial: 2
Acq On : 16 Jun 2016 14:25 Operator: FJB
Sample : WG573037-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 20 9:11 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

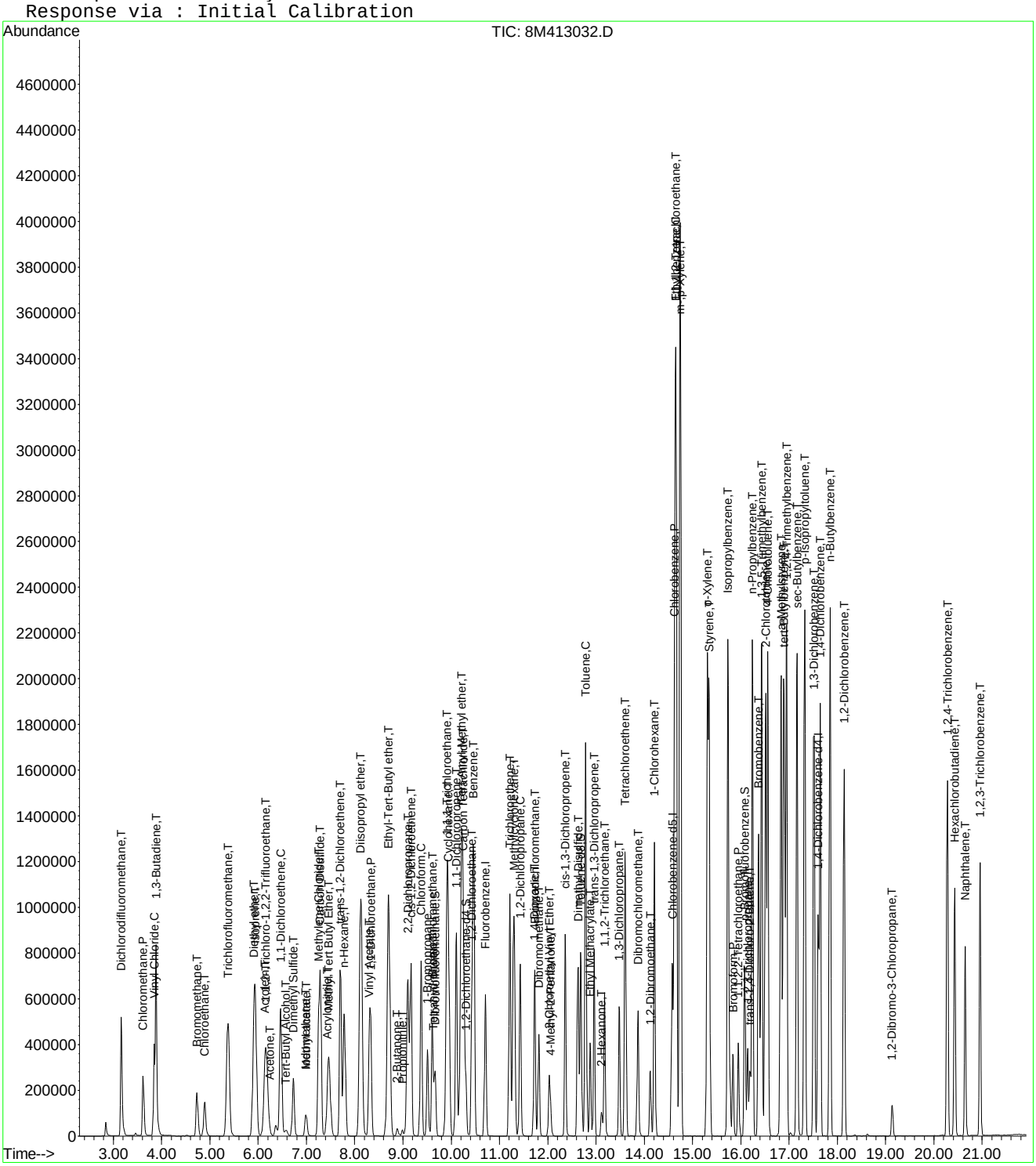

8M413032.D 8260WT.M Mon Jun 20 09:11:30 2016 Page 3

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413032.D Vial: 2
Acq On : 16 Jun 2016 14:25 Operator: FJB
Sample : WG573037-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	94	0.00
2	T	Dichlorodifluoromethane	0.4192	0.4833	-15.3	104	0.00
3	P	Chloromethane	0.2447	0.2278	6.9	90	0.00
4	C	Vinyl Chloride	0.2903	0.3200	-10.2	103	0.00
5	T	1,3-Butadiene	0.2434	0.3064	-25.9#	115	0.00
6	T	Bromomethane	0.1654	0.1280	22.6	72	0.00
7	T	Chloroethane	0.1597	0.1563	2.1	94	0.00
8	T	Trichlorofluoromethane	0.5401	0.6454	-19.5	113	0.00
9	T	Diethyl ether	0.1290	0.1224	5.1	92	0.00
10	T	Isoprene	0.3280	0.3344	-1.9	99	0.00
11	T	Acrolein	0.0116	0.0103	11.0	86	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2539	0.2816	-10.9	107	0.00
13	T	Acetone	0.0281	0.0293	-4.3	94	0.00
14	C	1,1-Dichloroethene	0.4043	0.4419	-9.3	105	0.00
15	T	Tert-Butyl Alcohol	0.0090	0.0107	-18.5	113	0.00
16	T	Dimethyl Sulfide	0.1445	0.1400	3.1	93	0.00
17	T	Iodomethane	0.0866	0.0606	30.0#	56	0.00
18	T	Methyl acetate	0.0760	0.0650	14.5	83	0.00
19	T	Methylene Chloride	0.2573	0.2512	2.4	95	0.00
20	T	Carbon Disulfide	0.8460	0.8972	-6.0	104	0.00
21	T	Acrylonitrile	0.0365	0.0347	4.8	85	0.00
22	T	Methyl Tert Butyl Ether	0.5568	0.5559	0.2	90	0.00
23	T	trans-1,2-Dichloroethene	0.3714	0.3866	-4.1	99	0.00
24	T	n-Hexane	0.2758	0.3002	-8.8	105	0.00
25	T	Diisopropyl ether	0.5789	0.5552	4.1	92	0.00
26	T	Vinyl Acetate	0.2651	0.2613	1.4	89	0.00
27	P	1,1-Dichloroethane	0.4612	0.4825	-4.6	98	0.00
28	T	Ethyl-Tert-Butyl ether	0.6203	0.6260	-0.9	94	0.00
29	T	2-Butanone	0.0413	0.0380	8.1	84	0.00
30	T	Propionitrile	0.0120	0.0116	3.7	89	0.00
31	T	2,2-Dichloropropane	0.4860	0.6008	-23.6	115	0.00
32	T	cis-1,2-Dichloroethene	0.2870	0.2924	-1.9	98	0.00
33	C	Chloroform	0.5446	0.5972	-9.7	104	0.00
34		1-Bromopropane	0.0411	0.0476	-15.8	110	0.00
35	T	Bromochloromethane	0.1472	0.1509	-2.5	96	0.00
36	T	Tetrahydrofuran	0.0272	0.0223	17.9	83	0.00
37	S	Dibromofluoromethane	0.2686	0.2942	-9.5	102	0.00
38	T	1,1,1-Trichloroethane	0.5173	0.6162	-19.1	111	0.00
39	T	Cyclohexane	0.3581	0.3700	-3.3	101	0.00
40	T	1,1-Dichloropropene	0.3943	0.4303	-9.1	103	0.00
41	T	Tert-Amyl-Methyl ether	0.5634	0.5681	-0.8	94	0.00
42	T	Carbon Tetrachloride	0.4593	0.5513	-20.0	112	0.00
43	S	1,2-Dichloroethane-d4	0.2880	0.3197	-11.0	102	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.3505	0.3972	-13.3	104	0.00
46	T	Benzene	1.0269	1.0680	-4.0	98	0.00
47	T	Trichloroethene	0.2739	0.2956	-7.9	102	0.00
48	T	Methylcyclohexane	0.4161	0.4612	-10.8	107	0.00
49	C	1,2-Dichloropropane	0.2286	0.2224	2.7	93	0.00
50	T	Bromodichloromethane	0.4018	0.4451	-10.8	100	0.00
51	T	1,4-Dioxane	0.0012	0.0013	-10.4	98	0.00
52	T	Dibromomethane	0.1353	0.1345	0.6	94	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0983	0.0885	10.0	80	0.00
54	T	4-Methyl-2-Pentanone	0.0401	0.0365	8.9	83	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413032.D Vial: 2
Acq On : 16 Jun 2016 14:25 Operator: FJB
Sample : WG573037-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4090	0.4359	-6.6	96	0.00
56	T	Dimethyl Disulfide	0.2183	0.2240	-2.6	96	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	100	0.00
58	S	Toluene-d8	1.3084	1.3794	-5.4	103	0.00
59	C	Toluene	1.5520	1.5614	-0.6	100	0.00
60	T	Ethyl Methacrylate	0.2981	0.2793	6.3	89	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.5201	0.5321	-2.3	96	0.00
63	T	1,1,2-Trichloroethane	0.2449	0.2268	7.4	91	0.00
64	T	2-Hexanone	0.0515	0.0457	11.3	86	0.00
65	T	1,3-Dichloropropane	0.4360	0.4101	6.0	90	0.00
66	T	Tetrachloroethene	0.3325	0.3562	-7.1	109	0.00
67	T	Dibromochloromethane	0.3576	0.3611	-1.0	97	0.00
68	T	1,2-Dibromoethane	0.2441	0.2302	5.7	91	0.00
69	T	1-Chlorohexane	0.5298	0.5521	-4.2	106	0.00
70	P	Chlorobenzene	1.0466	1.0416	0.5	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4055	0.4240	-4.6	102	0.00
72	C	Ethylbenzene	0.5726	0.5778	-0.9	103	0.00
73	T	m-,p-Xylene	0.6716	0.6926	-3.1	103	0.00
74	T	o-Xylene	0.6566	0.6728	-2.5	102	0.00
75	T	Styrene	1.0770	1.1203	-4.0	100	0.00
76	P	Bromoform	0.2121	0.2158	-1.7	97	0.00
77	T	Isopropylbenzene	1.7444	1.8823	-7.9	106	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	107	0.00
79	P	1,1,2,2-Tetrachloroethane	0.5018	0.4164	17.0	87	0.00
80	S	p-Bromofluorobenzene	1.0352	1.0254	0.9	108	0.00
81	T	1,2,3-Trichloropropane	0.1545	0.1390	10.0	96	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1376	0.1372	0.3	97	0.00
83	T	n-Propylbenzene	3.9003	3.8814	0.5	105	0.00
84	T	Bromobenzene	0.8022	0.7695	4.1	103	0.00
85	T	1,3,5-Trimethylbenzene	2.8411	2.8510	-0.3	106	0.00
86	T	2-Chlorotoluene	2.7231	2.6005	4.5	99	0.00
87	T	4-Chlorotoluene	2.4597	2.4446	0.6	112	0.00
88	T	a-Methylstyrene	1.3479	1.2791	5.1	102	0.00
89	T	tert-Butylbenzene	0.5558	0.5440	2.1	109	0.00
90	T	1,2,4-Trimethylbenzene	2.9214	2.9288	-0.3	107	0.00
91	T	sec-Butylbenzene	3.3424	3.3657	-0.7	108	0.00
92	T	p-Isopropyltoluene	2.8379	2.8721	-1.2	109	0.00
93	T	1,3-Dichlorobenzene	1.5448	1.5321	0.8	107	0.00
94	T	1,4-Dichlorobenzene	1.5574	1.4823	4.8	105	0.00
95	T	n-Butylbenzene	2.8056	2.8337	-1.0	108	0.00
96	T	1,2-Dichlorobenzene	1.3739	1.2810	6.8	103	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1007	0.0886	12.0	91	0.00
98	T	1,2,4-Trichlorobenzene	1.0269	0.9972	2.9	105	0.00
99	T	Hexachlorobutadiene	0.4798	0.5251	-9.4	122	0.00
100	T	Naphthalene	1.5257	1.3274	13.0	91	0.00
101	T	1,2,3-Trichlorobenzene	0.8664	0.7860	9.3	102	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413032.D 8260WT.M Mon Jun 20 09:11:49 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413032.D Vial: 2
Acq On : 16 Jun 2016 14:25 Operator: FJB
Sample : WG573037-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	94	0.00
2	T	Dichlorodifluoromethane	50.0000	57.6485	-15.3	104	0.00
3	P	Chloromethane	50.0000	46.5578	6.9	90	0.00
4	C	Vinyl Chloride	50.0000	55.1240	-10.2	103	0.00
5	T	1,3-Butadiene	50.0000	62.9364	-25.9#	115	0.00
6	T	Bromomethane	50.0000	36.9767	26.0#	72	0.00
7	T	Chloroethane	50.0000	48.9325	2.1	94	0.00
8	T	Trichlorofluoromethane	50.0000	59.7435	-19.5	113	0.00
9	T	Diethyl ether	100.0000	94.8900	5.1	92	0.00
10	T	Isoprene	50.0000	50.9718	-1.9	99	0.00
11	T	Acrolein	50.0000	44.5317	10.9	86	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	55.4511	-10.9	107	0.00
13	T	Acetone	50.0000	52.1548	-4.3	94	0.00
14	C	1,1-Dichloroethene	50.0000	54.6514	-9.3	105	0.00
15	T	Tert-Butyl Alcohol	200.0000	236.9793	-18.5	113	0.00
16	T	Dimethyl Sulfide	50.0000	48.4405	3.1	93	0.00
17	T	Iodomethane	50.0000	28.4930	43.0#	56	0.00
18	T	Methyl acetate	50.0000	42.7704	14.5	83	0.00
19	T	Methylene Chloride	50.0000	48.8209	2.4	95	0.00
20	T	Carbon Disulfide	50.0000	53.0253	-6.1	104	0.00
21	T	Acrylonitrile	50.0000	47.5881	4.8	85	0.00
22	T	Methyl Tert Butyl Ether	50.0000	49.9201	0.2	90	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.0503	-4.1	99	0.00
24	T	n-Hexane	50.0000	54.4236	-8.8	105	0.00
25	T	Diisopropyl ether	100.0000	95.9026	4.1	92	0.00
26	T	Vinyl Acetate	50.0000	49.2832	1.4	89	0.00
27	P	1,1-Dichloroethane	50.0000	52.3061	-4.6	98	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	100.9239	-0.9	94	0.00
29	T	2-Butanone	50.0000	45.9348	8.1	84	0.00
30	T	Propionitrile	100.0000	96.3269	3.7	89	0.00
31	T	2,2-Dichloropropane	50.0000	61.8026	-23.6	115	0.00
32	T	cis-1,2-Dichloroethene	50.0000	50.9485	-1.9	98	0.00
33	C	Chloroform	50.0000	54.8264	-9.7	104	0.00
34		1-Bromopropane	50.0000	57.8711	-15.7	110	0.00
35	T	Bromochloromethane	50.0000	51.2707	-2.5	96	0.00
36	T	Tetrahydrofuran	100.0000	82.0898	17.9	83	0.00
37	S	Dibromofluoromethane	25.0000	27.3819	-9.5	102	0.00
38	T	1,1,1-Trichloroethane	50.0000	59.5586	-19.1	111	0.00
39	T	Cyclohexane	50.0000	51.6569	-3.3	101	0.00
40	T	1,1-Dichloropropene	50.0000	54.5654	-9.1	103	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	100.8347	-0.8	94	0.00
42	T	Carbon Tetrachloride	50.0000	60.0125	-20.0	112	0.00
43	S	1,2-Dichloroethane-d4	25.0000	27.7486	-11.0	102	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	56.6636	-13.3	104	0.00
46	T	Benzene	50.0000	51.9972	-4.0	98	0.00
47	T	Trichloroethene	50.0000	53.9600	-7.9	102	0.00
48	T	Methylcyclohexane	50.0000	55.4235	-10.8	107	0.00
49	C	1,2-Dichloropropane	50.0000	48.6480	2.7	93	0.00
50	T	Bromodichloromethane	50.0000	55.3826	-10.8	100	0.00
51	T	1,4-Dioxane	200.0000	220.3548	-10.2	98	0.00
52	T	Dibromomethane	50.0000	49.7082	0.6	94	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	45.0178	10.0	80	0.00
54	T	4-Methyl-2-Pentanone	50.0000	45.5327	8.9	83	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413032.D Vial: 2
Acq On : 16 Jun 2016 14:25 Operator: FJB
Sample : WG573037-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.2922	-6.6	96	0.00
56	T	Dimethyl Disulfide	50.0000	51.3144	-2.6	96	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	25.0000	26.3564	-5.4	103	0.00
59	C	Toluene	50.0000	50.3002	-0.6	100	0.00
60	T	Ethyl Methacrylate	50.0000	46.8562	6.3	89	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	51.1483	-2.3	96	0.00
63	T	1,1,2-Trichloroethane	50.0000	46.3057	7.4	91	0.00
64	T	2-Hexanone	50.0000	44.3674	11.3	86	0.00
65	T	1,3-Dichloropropane	50.0000	47.0219	6.0	90	0.00
66	T	Tetrachloroethene	50.0000	53.5544	-7.1	109	0.00
67	T	Dibromochloromethane	50.0000	50.4917	-1.0	97	0.00
68	T	1,2-Dibromoethane	50.0000	47.1634	5.7	91	0.00
69	T	1-Chlorohexane	50.0000	52.1093	-4.2	106	0.00
70	P	Chlorobenzene	50.0000	49.7630	0.5	100	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	52.2807	-4.6	102	0.00
72	C	Ethylbenzene	50.0000	50.4524	-0.9	103	0.00
73	T	m-,p-Xylene	100.0000	103.1131	-3.1	103	0.00
74	T	o-Xylene	50.0000	51.2307	-2.5	102	0.00
75	T	Styrene	50.0000	52.0104	-4.0	100	0.00
76	P	Bromoform	50.0000	50.8617	-1.7	97	0.00
77	T	Isopropylbenzene	50.0000	53.9527	-7.9	106	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	107	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	41.4928	17.0	87	0.00
80	S	p-Bromofluorobenzene	25.0000	24.7636	0.9	108	0.00
81	T	1,2,3-Trichloropropane	50.0000	44.9807	10.0	96	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	43.6303	12.7	97	0.00
83	T	n-Propylbenzene	50.0000	49.7580	0.5	105	0.00
84	T	Bromobenzene	50.0000	47.9586	4.1	103	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	50.1733	-0.3	106	0.00
86	T	2-Chlorotoluene	50.0000	47.7491	4.5	99	0.00
87	T	4-Chlorotoluene	50.0000	49.6923	0.6	112	0.00
88	T	a-Methylstyrene	50.0000	47.4481	5.1	102	0.00
89	T	tert-Butylbenzene	50.0000	48.9378	2.1	109	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	50.1269	-0.3	107	0.00
91	T	sec-Butylbenzene	50.0000	50.3494	-0.7	108	0.00
92	T	p-Isopropyltoluene	50.0000	50.6022	-1.2	109	0.00
93	T	1,3-Dichlorobenzene	50.0000	49.5900	0.8	107	0.00
94	T	1,4-Dichlorobenzene	50.0000	47.5896	4.8	105	0.00
95	T	n-Butylbenzene	50.0000	50.5007	-1.0	108	0.00
96	T	1,2-Dichlorobenzene	50.0000	46.6205	6.8	103	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	43.9791	12.0	91	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	48.5529	2.9	105	0.00
99	T	Hexachlorobutadiene	50.0000	54.7126	-9.4	122	0.00
100	T	Naphthalene	50.0000	43.5006	13.0	91	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	45.3576	9.3	102	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413032.D 8260WT.M Mon Jun 20 09:11:52 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\2\DATA\051316\8M412218.D          Vial: 3
Acq On    : 13 May 2016  12:36                       Operator: TMB
Sample    : WG568561-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD76034                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
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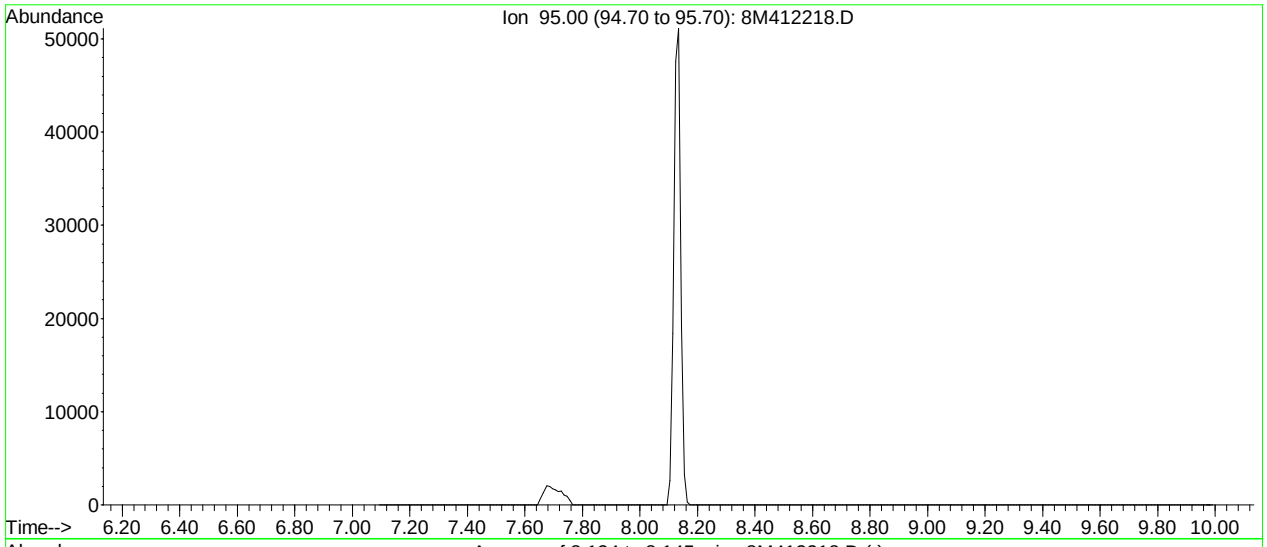

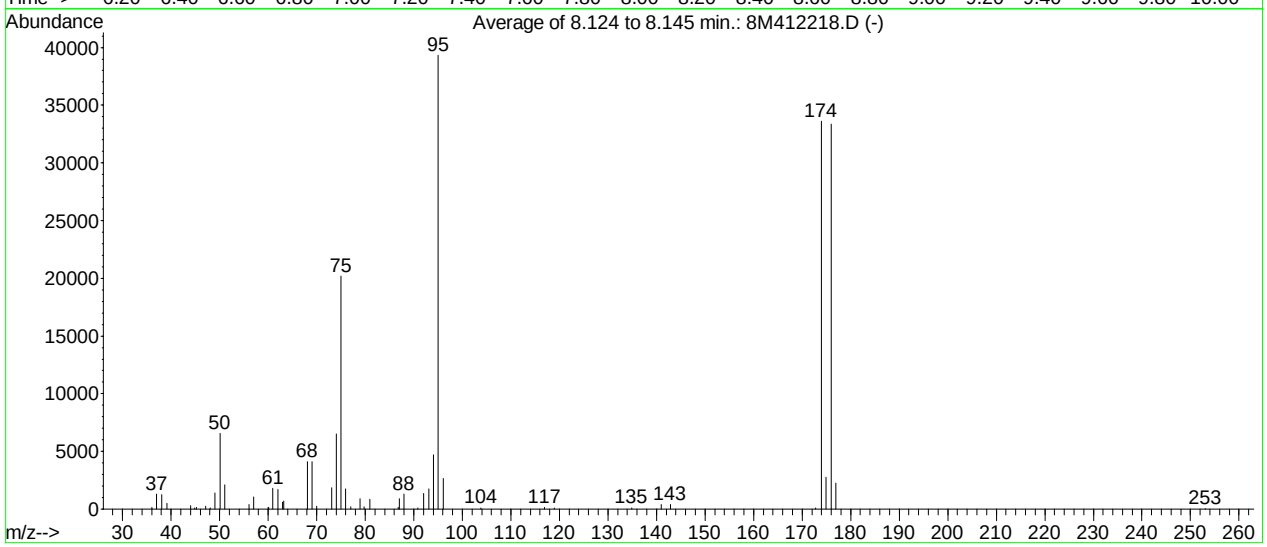

AutoFind: Scans 102, 103, 104; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.7	6575	PASS
75	95	30	60	51.3	20171	PASS
95	95	100	100	100.0	39312	PASS
96	95	5	9	6.7	2649	PASS
173	174	0.00	2	0.4	122	PASS
174	95	50	100	85.5	33616	PASS
175	174	5	9	8.2	2746	PASS
176	174	95	101	99.2	33360	PASS
177	176	5	9	6.8	2267	PASS

8M412218.D BFB.M Fri May 13 12:47:24 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413031.D Vial: 1
Acq On    : 16 Jun 2016  14:02                        Operator: FJB
Sample    : WG573037-01 BFB 50ng 8260                 Inst    : HPMS8
Misc      : 1,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title     : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
```

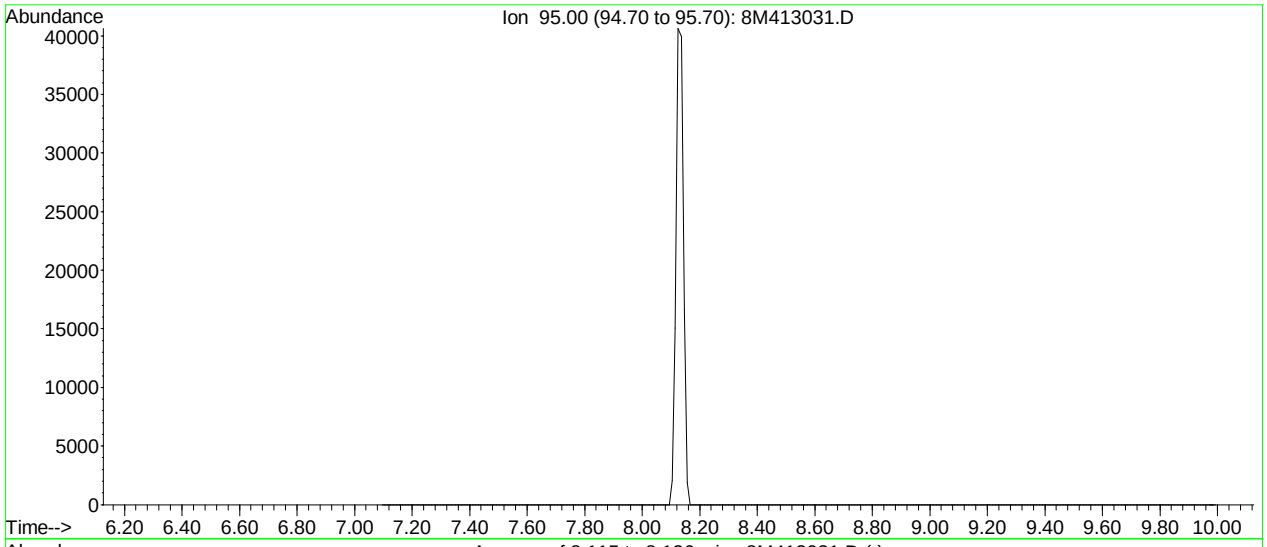

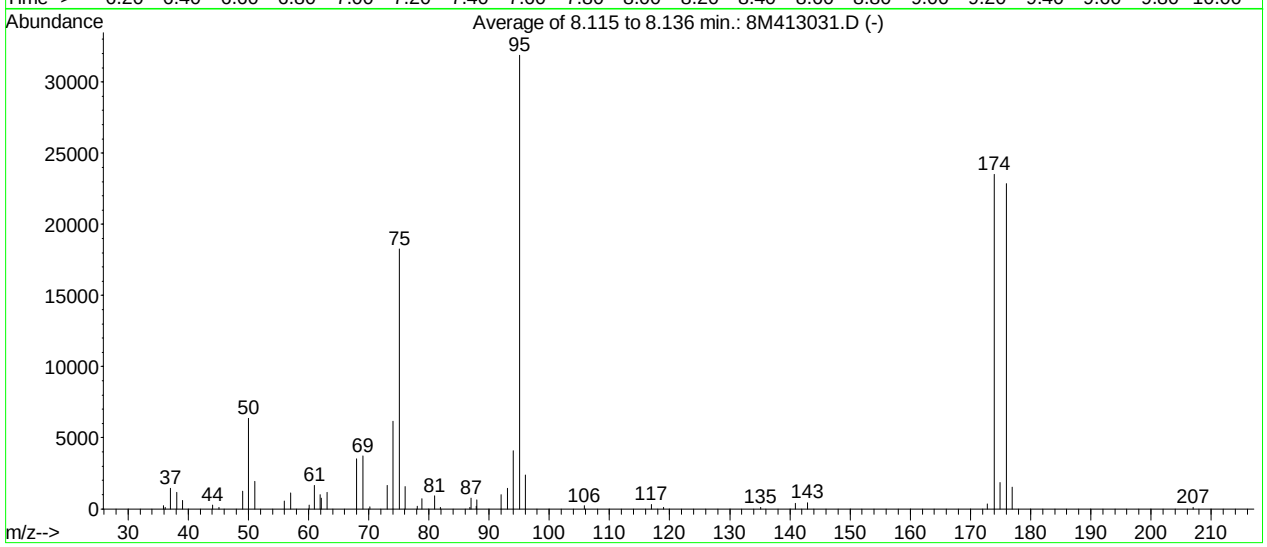

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.9	6352	PASS
75	95	30	60	57.2	18249	PASS
95	95	100	100	100.0	31890	PASS
96	95	5	9	7.4	2366	PASS
173	174	0.00	2	1.5	352	PASS
174	95	50	100	73.7	23499	PASS
175	174	5	9	8.0	1870	PASS
176	174	95	101	97.3	22869	PASS
177	176	5	9	6.7	1538	PASS

8M413031.D 8260WT.M Mon Jun 20 09:08:01 2016

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413034.D Vial: 4
Acq On : 16 Jun 2016 15:23 Operator: FJB
Sample : WG573038-01 BLANK 6/16 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:18:21 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	717429	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	533754	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	292043	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	209977	27.2409 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 108.96%		
43) 1,2-Dichloroethane-d4	10.30	65	235474	28.4902 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 113.96%		
58) Toluene-d8	12.68	98	740524	26.5096 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 106.04%		
80) p-Bromofluorobenzene	16.08	95	307463	25.4256 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.72%		
Target Compounds					Qvalue
36) Tetrahydrofuran	9.64	42	956	1.2239 ug/L	79

(#) = qualifier out of range (m) = manual integration
8M413034.D 8260WT.M Mon Jun 20 09:19:27 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413034.D Vial: 4
Acq On : 16 Jun 2016 15:23 Operator: FJB
Sample : WG573038-01 BLANK 6/16 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 8:18 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

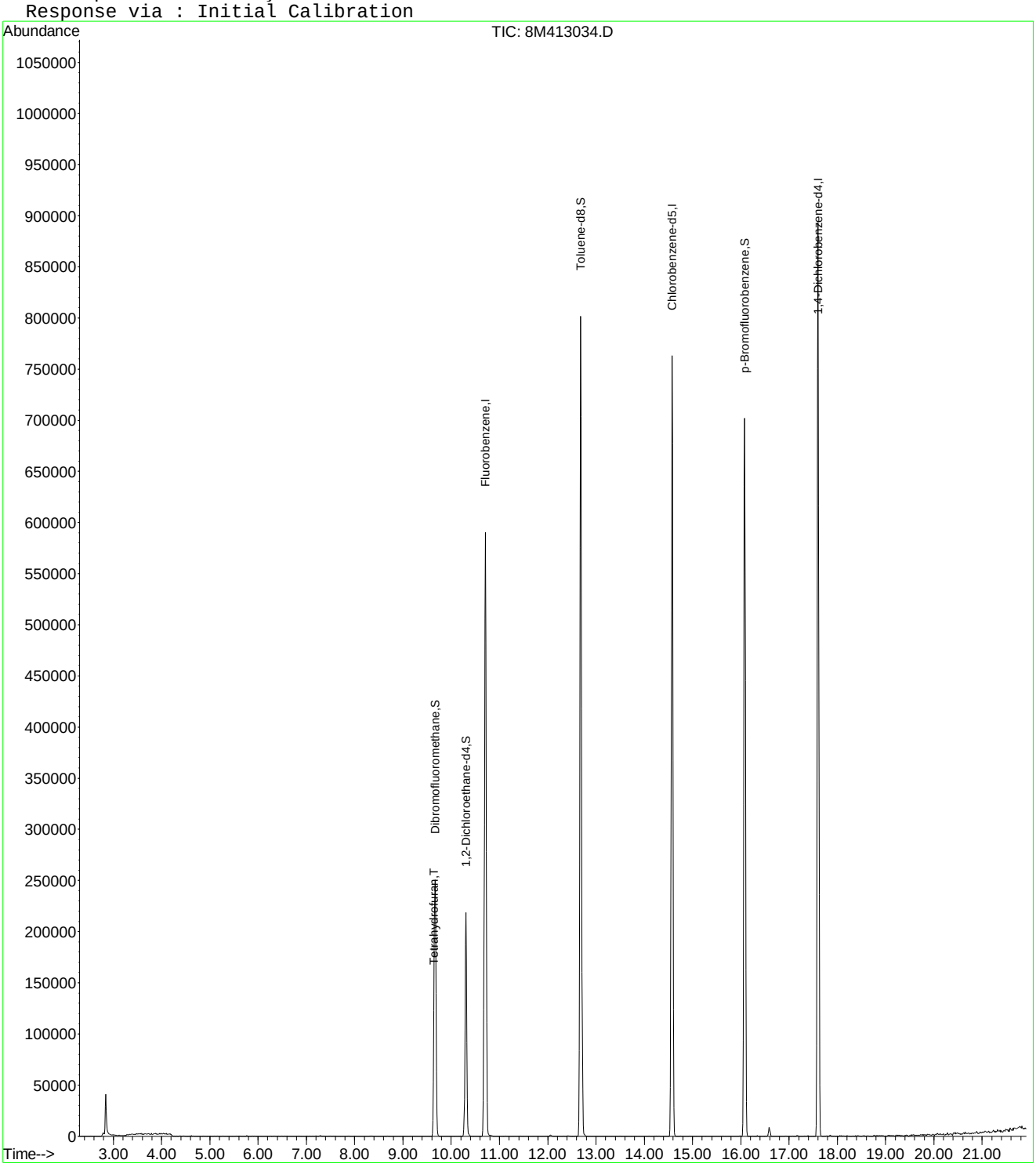

8M413034.D 8260WT.M Mon Jun 20 09:19:28 2016 Page 2

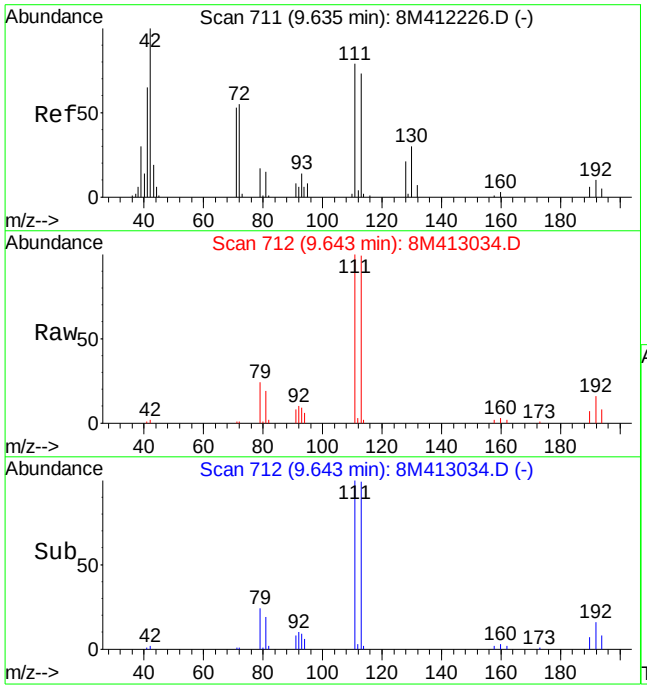

#36
Tetrahydrofuran
Concen: 1.22 ug/L
RT: 9.64 min Scan# 712
Delta R.T. 0.01 min
Lab File: 8M413034.D
Acq: 16 Jun 2016 15:23

Tgt Ion: 42 Resp: 956

Ion	Ratio	Lower	Upper
42	100		
72	74.6	33.8	78.8
71	41.9	32.0	74.8

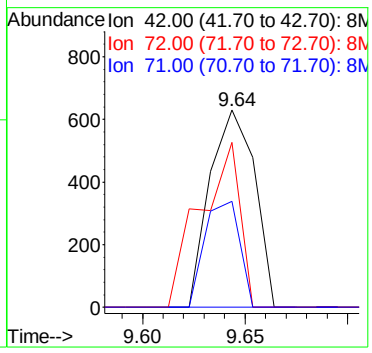

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413035.D Vial: 5
Acq On : 16 Jun 2016 15:52 Operator: FJB
Sample : WG573038-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:18:21 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	724153	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	540053	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	307888	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	213643	27.4591 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.84%		
43) 1,2-Dichloroethane-d4	10.31	65	245621	29.4420 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 117.76%		
58) Toluene-d8	12.68	98	736706	26.0653 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.28%		
80) p-Bromofluorobenzene	16.08	95	316242	24.8057 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.24%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	252315	20.7819 ug/L	99
3) Chloromethane	3.62	50	134208	18.9371 ug/L	99
4) Vinyl Chloride	3.85	62	192999	22.9533 ug/L	100
5) 1,3-Butadiene	3.88	54	21596	3.0627 ug/L	93
6) Bromomethane	4.72	94	67601	14.0319 ug/L	96
7) Chloroethane	4.89	64	94578	20.4419 ug/L	99
8) Trichlorofluoromethane	5.38	101	348634	22.2833 ug/L	99
9) Diethyl ether	5.90	59	376158	100.7087 ug/L	98
10) Isoprene	5.93	67	202345	21.2972 ug/L	96
11) Acrolein	6.13	56	30585	91.4560 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	157632	21.4340 ug/L	96
13) Acetone	6.23	43	17743	21.7775 ug/L	94
14) 1,1-Dichloroethene	6.46	61	221517	18.9174 ug/L	99
15) Tert-Butyl Alcohol	6.58	59	54296	207.9591 ug/L	97
16) Dimethyl Sulfide	6.73	62	149005	35.5890 ug/L	99
17) Iodomethane	6.99	142	33488	12.6554 ug/L	96
18) Methyl acetate	7.00	43	45239	20.5416 ug/L	98
19) Methylene Chloride	7.26	84	143716	19.2860 ug/L	97
20) Carbon Disulfide	7.29	76	443914	18.1155 ug/L	99
21) Acrylonitrile	7.44	53	20303	19.2061 ug/L	97
22) Methyl Tert Butyl Ether	7.46	73	362621	22.4840 ug/L	97
23) trans-1,2-Dichloroethene	7.70	61	216143	20.0918 ug/L	99
24) n-Hexane	7.78	57	148742	18.6200 ug/L	98
25) Diisopropyl ether	8.12	45	1674940	99.8839 ug/L	96
26) Vinyl Acetate	8.30	43	113665	14.8046 ug/L	99
27) 1,1-Dichloroethane	8.32	63	260446	19.4944 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	1819224	101.2567 ug/L	98
29) 2-Butanone	8.88	43	24177	20.1972 ug/L	96
30) Propionitrile	8.99	54	32822	94.0889 ug/L	98
31) 2,2-Dichloropropane	9.11	77	323361	22.9674 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	170309	20.4887 ug/L	97
33) Chloroform	9.37	83	334264	21.1899 ug/L	100
34) 1-Bromopropane	9.51	122	36217	30.4181 ug/L	100
35) Bromochloromethane	9.60	130	88133	20.6762 ug/L	92
36) Tetrahydrofuran	9.62	42	66083	83.8177 ug/L	91
38) 1,1,1-Trichloroethane	9.91	97	336501	22.4572 ug/L	100
39) Cyclohexane	9.94	56	203672	19.6331 ug/L	95
40) 1,1-Dichloropropene	10.10	75	235033	20.5788 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	1758569	107.7684 ug/L	100
42) Carbon Tetrachloride	10.25	117	299046	22.4750 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M413035.D 8260WT.M Mon Jun 20 09:08:47 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413035.D Vial: 5
Acq On : 16 Jun 2016 15:52 Operator: FJB
Sample : WG573038-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:18:21 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	236926	23.3353 ug/L		98
46)	Benzene	10.46	78	605690	20.3618 ug/L		99
47)	Trichloroethene	11.21	130	172682	21.7657 ug/L		99
48)	Methylcyclohexane	11.30	83	251284	20.8488 ug/L		98
49)	1,2-Dichloropropane	11.42	63	134844	20.3635 ug/L		90
50)	Bromodichloromethane	11.73	83	251163	21.5803 ug/L		98
51)	1,4-Dioxane	11.72	88	5908	177.6120 ug/L		98
52)	Dibromomethane	11.81	93	77825	19.8542 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.03	63	55535	19.5124 ug/L		91
54)	4-Methyl-2-Pentanone	12.05	58	22978	19.7642 ug/L		93
55)	cis-1,3-Dichloropropene	12.36	75	273539	23.0905 ug/L		100
56)	Dimethyl Disulfide	12.62	79	137758	21.7873 ug/L		95
59)	Toluene	12.79	91	661287	19.7238 ug/L		99
60)	Ethyl Methacrylate	12.88	69	133238	20.6930 ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	234780	20.8960 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	103597	19.5817 ug/L		97
64)	2-Hexanone	13.12	58	20672	18.5940 ug/L	#	95
65)	1,3-Dichloropropane	13.48	76	194941	20.6961 ug/L		95
66)	Tetrachloroethene	13.60	164	144676	20.1408 ug/L		99
67)	Dibromochloromethane	13.87	129	158132	20.4706 ug/L		100
68)	1,2-Dibromoethane	14.12	107	105951	20.0943 ug/L		99
69)	1-Chlorohexane	14.21	91	223061	19.4904 ug/L		97
70)	Chlorobenzene	14.63	112	460997	20.3904 ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.66	131	182348	20.8187 ug/L		99
72)	Ethylbenzene	14.66	106	245573	19.8527 ug/L		100
73)	m-,p-Xylene	14.75	106	592898	40.8641 ug/L		95
74)	o-Xylene	15.31	106	299422	21.1082 ug/L		99
75)	Styrene	15.35	104	480813	20.6661 ug/L		96
76)	Bromoform	15.83	173	91438	19.9564 ug/L		99
77)	Isopropylbenzene	15.73	105	813144	21.5784 ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	109337	17.6914 ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	37733	19.8268 ug/L		73
82)	trans-1,4-Dichloro-2-Buten	16.19	53	28275	15.0111 ug/L		99
83)	n-Propylbenzene	16.24	91	981466	20.4328 ug/L		100
84)	Bromobenzene	16.37	156	189420	19.1720 ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	710541	20.3071 ug/L		100
86)	2-Chlorotoluene	16.51	91	681730	20.3282 ug/L		98
87)	4-Chlorotoluene	16.56	91	596710	19.6981 ug/L		99
88)	a-Methylstyrene	16.83	118	344648	20.7612 ug/L		100
89)	tert-Butylbenzene	16.90	134	134805	19.6932 ug/L		98
90)	1,2,4-Trimethylbenzene	16.94	105	716254	19.9077 ug/L		99
91)	sec-Butylbenzene	17.16	105	833548	20.2499 ug/L		99
92)	p-Isopropyltoluene	17.32	119	700643	20.0466 ug/L		100
93)	1,3-Dichlorobenzene	17.51	146	379985	19.9735 ug/L		100
94)	1,4-Dichlorobenzene	17.64	146	378307	19.7240 ug/L		99
95)	n-Butylbenzene	17.85	91	671796	19.4428 ug/L		100
96)	1,2-Dichlorobenzene	18.14	146	333637	19.7182 ug/L		97
97)	1,2-Dibromo-3-Chloropropan	19.13	75	24498	19.7473 ug/L		99
98)	1,2,4-Trichlorobenzene	20.28	180	244999	19.3716 ug/L		99
99)	Hexachlorobutadiene	20.43	225	125683	21.2686 ug/L		98
100)	Naphthalene	20.65	128	326897	17.3970 ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	202292	18.9589 ug/L		97

(#) = qualifier out of range (m) = manual integration
8M413035.D 8260WT.M Mon Jun 20 09:08:47 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413035.D Vial: 5
Acq On : 16 Jun 2016 15:52 Operator: FJB
Sample : WG573038-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 8:18 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

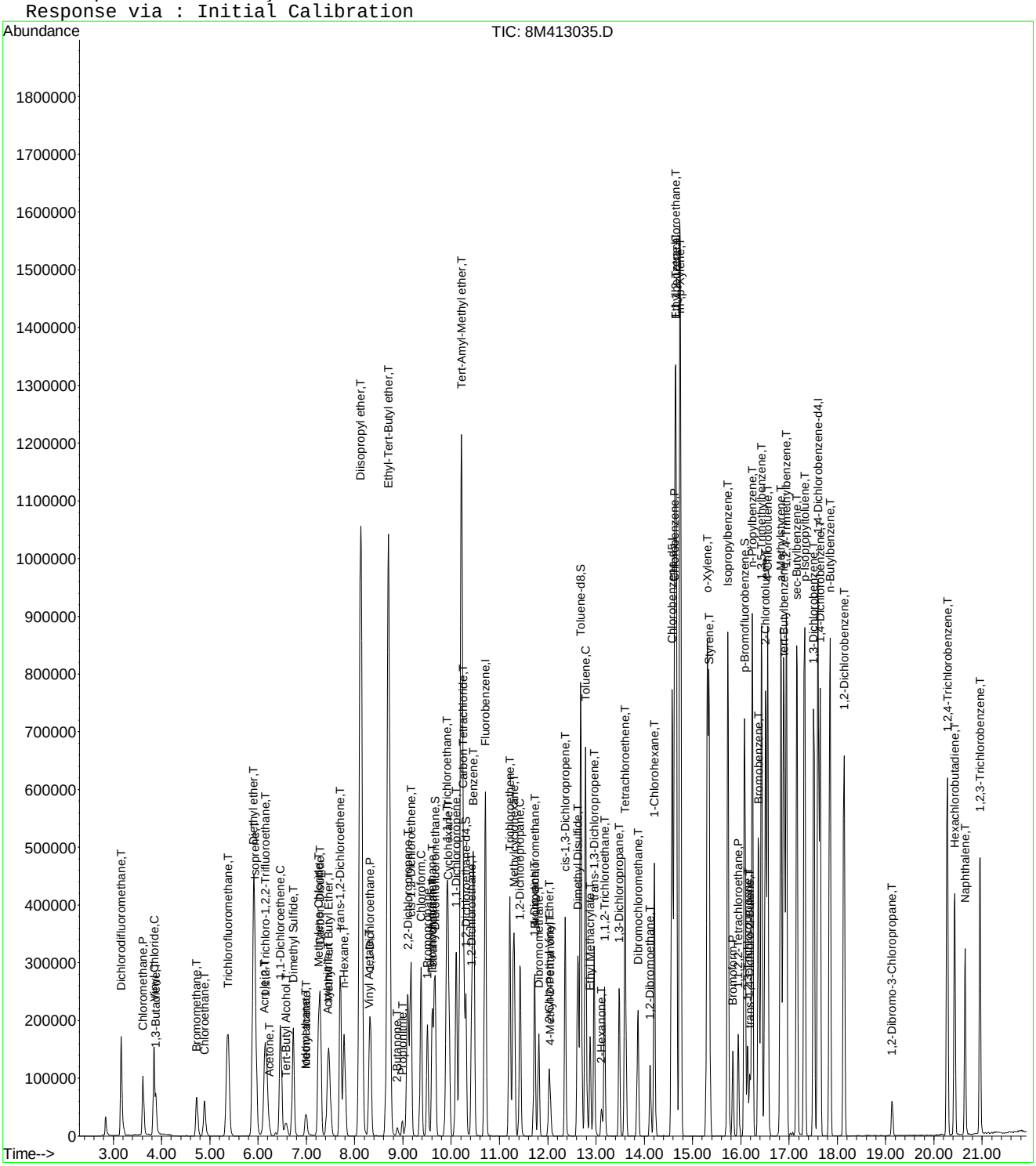

8M413035.D 8260WT.M Mon Jun 20 09:08:48 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413036.D Vial: 6
Acq On : 16 Jun 2016 16:21 Operator: FJB
Sample : WG573038-03 20ug/L LCS2 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:18:22 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	735322	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	553122	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	312159	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	213768	27.0578 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 108.24%		
43) 1,2-Dichloroethane-d4	10.30	65	240558	28.3971 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 113.60%		
58) Toluene-d8	12.68	98	752327	25.9891 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.96%		
80) p-Bromofluorobenzene	16.08	95	319552	24.7224 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.88%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	268839	21.8065 ug/L	99
3) Chloromethane	3.62	50	145372	20.2008 ug/L	99
4) Vinyl Chloride	3.85	62	205956	24.1222 ug/L	100
5) 1,3-Butadiene	3.88	54	22591	3.1551 ug/L	94
6) Bromomethane	4.72	94	76970	15.6580 ug/L	99
7) Chloroethane	4.89	64	102039	21.7196 ug/L	98
8) Trichlorofluoromethane	5.38	101	362939	22.8452 ug/L	98
9) Diethyl ether	5.90	59	397097	104.6998 ug/L	97
10) Isoprene	5.94	67	218692	22.6682 ug/L	99
11) Acrolein	6.14	56	33320	98.1209 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	161414	21.6149 ug/L	94
13) Acetone	6.23	43	19963	24.1301 ug/L	97
14) 1,1-Dichloroethene	6.46	61	233526	19.6401 ug/L	99
15) Tert-Butyl Alcohol	6.57	59	65029	245.2844 ug/L	97
16) Dimethyl Sulfide	6.73	62	155773	36.6403 ug/L	99
17) Iodomethane	6.99	142	48971	16.9853 ug/L	95
18) Methyl acetate	7.00	43	45727	20.4478 ug/L	97
19) Methylene Chloride	7.25	84	150567	19.8985 ug/L	100
20) Carbon Disulfide	7.29	76	462391	18.5829 ug/L	100
21) Acrylonitrile	7.43	53	21986	20.4823 ug/L	92
22) Methyl Tert Butyl Ether	7.47	73	371382	22.6774 ug/L	98
23) trans-1,2-Dichloroethene	7.70	61	222944	20.4092 ug/L	100
24) n-Hexane	7.78	57	159355	19.6456 ug/L	98
25) Diisopropyl ether	8.12	45	1757628	103.2229 ug/L	96
26) Vinyl Acetate	8.30	43	118636	15.2174 ug/L	100
27) 1,1-Dichloroethane	8.32	63	269975	19.9007 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1896750	103.9682 ug/L	98
29) 2-Butanone	8.88	43	25340	20.8472 ug/L	94
30) Propionitrile	8.99	54	36109	101.9393 ug/L	100
31) 2,2-Dichloropropane	9.10	77	336668	23.5494 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	179241	21.2357 ug/L	98
33) Chloroform	9.37	83	347237	21.6779 ug/L	100
34) 1-Bromopropane	9.51	122	37842	31.3001 ug/L	100
35) Bromochloromethane	9.61	130	89039	20.5714 ug/L	96
36) Tetrahydrofuran	9.63	42	72974	91.1522 ug/L	97
38) 1,1,1-Trichloroethane	9.91	97	353698	23.2464 ug/L	100
39) Cyclohexane	9.93	56	214088	20.3237 ug/L	97
40) 1,1-Dichloropropene	10.11	75	243549	21.0005 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1837419	110.8902 ug/L	99
42) Carbon Tetrachloride	10.25	117	311990	23.0917 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413036.D 8260WT.M Mon Jun 20 09:08:50 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413036.D Vial: 6
Acq On : 16 Jun 2016 16:21 Operator: FJB
Sample : WG573038-03 20ug/L LCS2 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:18:22 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	242552	23.5265 ug/L		98
46)	Benzene	10.46	78	636475	21.0718 ug/L		100
47)	Trichloroethene	11.21	130	181127	22.4834 ug/L		99
48)	Methylcyclohexane	11.30	83	268536	21.9418 ug/L		99
49)	1,2-Dichloropropane	11.42	63	141319	21.0171 ug/L		89
50)	Bromodichloromethane	11.73	83	265829	22.4935 ug/L		99
51)	1,4-Dioxane	11.72	88	6780	200.7309 ug/L		99
52)	Dibromomethane	11.81	93	79309	19.9255 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.02	63	56761	19.6402 ug/L		94
54)	4-Methyl-2-Pentanone	12.06	58	24424	20.6889 ug/L		92
55)	cis-1,3-Dichloropropene	12.36	75	282091	23.4507 ug/L		99
56)	Dimethyl Disulfide	12.62	79	140775	21.9263 ug/L		94
59)	Toluene	12.79	91	690537	20.1096 ug/L		99
60)	Ethyl Methacrylate	12.88	69	134927	20.4602 ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	242695	21.0901 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	106261	19.6107 ug/L		98
64)	2-Hexanone	13.12	58	20293	17.8218 ug/L	#	97
65)	1,3-Dichloropropane	13.48	76	202255	20.9653 ug/L		97
66)	Tetrachloroethene	13.60	164	150723	20.4869 ug/L		99
67)	Dibromochloromethane	13.87	129	164885	20.8405 ug/L		100
68)	1,2-Dibromoethane	14.12	107	107229	19.8562 ug/L		100
69)	1-Chlorohexane	14.21	91	238806	20.3731 ug/L		97
70)	Chlorobenzene	14.63	112	479877	20.7240 ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.66	131	187840	20.9390 ug/L		99
72)	Ethylbenzene	14.66	106	252056	19.8954 ug/L		96
73)	m-,p-Xylene	14.75	106	620374	41.7475 ug/L		96
74)	o-Xylene	15.31	106	310957	21.4035 ug/L		98
75)	Styrene	15.35	104	503519	21.1307 ug/L		97
76)	Bromoform	15.83	173	93776	19.9830 ug/L		98
77)	Isopropylbenzene	15.73	105	848704	21.9899 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	113419	18.1008 ug/L		100
81)	1,2,3-Trichloropropane	16.14	110	37740	19.5591 ug/L		73
82)	trans-1,4-Dichloro-2-Buten	16.19	53	34462	17.9212 ug/L		82
83)	n-Propylbenzene	16.24	91	1024017	21.0269 ug/L		99
84)	Bromobenzene	16.37	156	197176	19.6840 ug/L		97
85)	1,3,5-Trimethylbenzene	16.42	105	742680	20.9352 ug/L		99
86)	2-Chlorotoluene	16.51	91	701689	20.6371 ug/L		98
87)	4-Chlorotoluene	16.56	91	615763	20.0490 ug/L		99
88)	a-Methylstyrene	16.83	118	365485	21.7152 ug/L		99
89)	tert-Butylbenzene	16.89	134	141823	20.4349 ug/L		98
90)	1,2,4-Trimethylbenzene	16.94	105	742233	20.3475 ug/L		100
91)	sec-Butylbenzene	17.16	105	865092	20.7287 ug/L		100
92)	p-Isopropyltoluene	17.32	119	739719	20.8751 ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	398135	20.6412 ug/L		100
94)	1,4-Dichlorobenzene	17.64	146	395783	20.3529 ug/L		99
95)	n-Butylbenzene	17.85	91	695375	19.8498 ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	349070	20.3481 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	26890	21.3789 ug/L		96
98)	1,2,4-Trichlorobenzene	20.28	180	257503	20.0816 ug/L		99
99)	Hexachlorobutadiene	20.43	225	129798	21.6644 ug/L		98
100)	Naphthalene	20.65	128	344850	18.1014 ug/L		100
101)	1,2,3-Trichlorobenzene	20.96	180	209338	19.3508 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M413036.D 8260WT.M Mon Jun 20 09:08:51 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413036.D Vial: 6
Acq On : 16 Jun 2016 16:21 Operator: FJB
Sample : WG573038-03 20ug/L LCS2 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 8:18 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

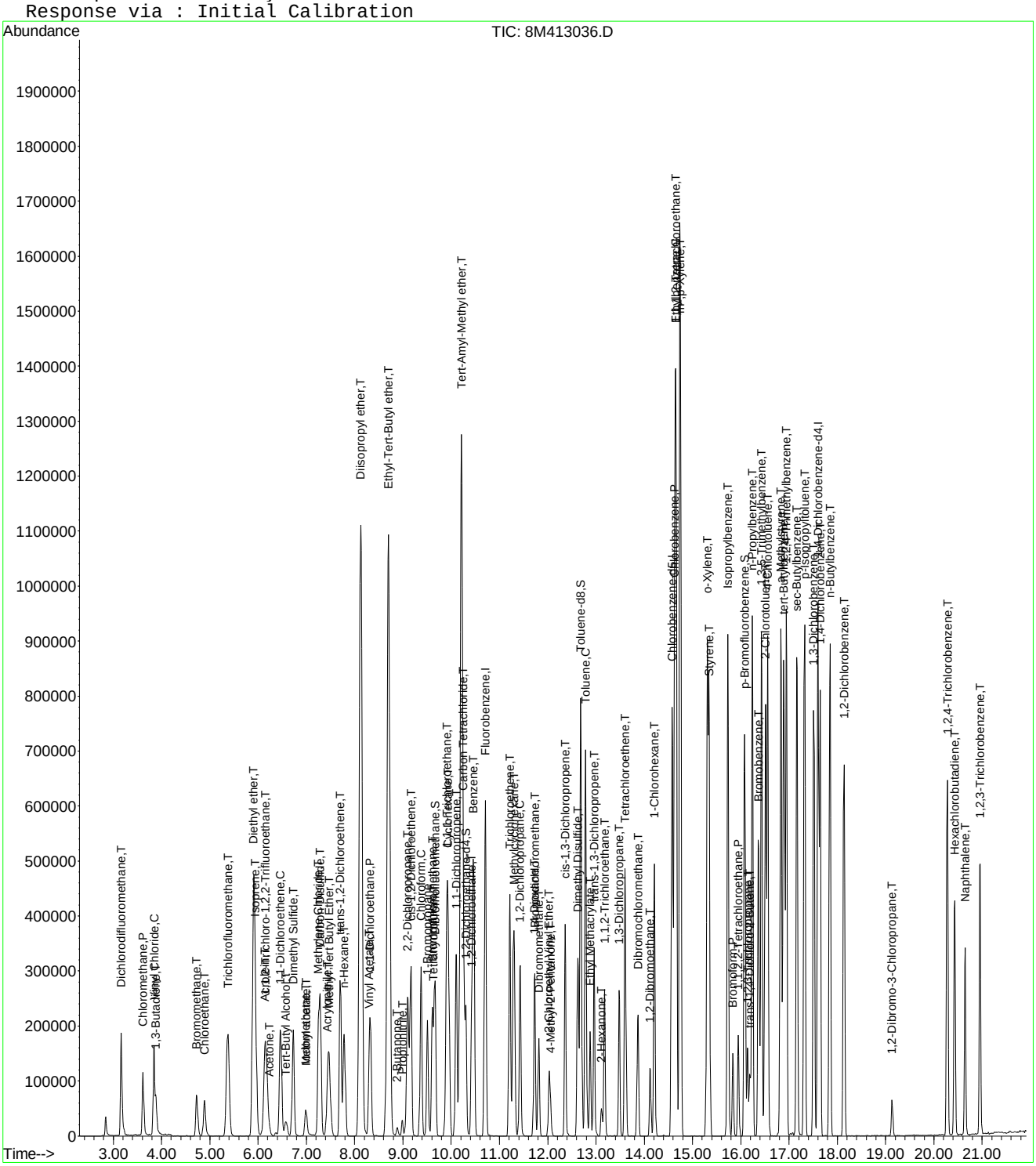

8M413036.D 8260WT.M Mon Jun 20 09:08:52 2016 Page 3

2.2 Semivolatiles Data

2.2.1 Semivolatiles GC/MS Data (Dioxane)

2.2.1.1 Summary Data

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	126-061416	**Prep Method:**	3520C	**Prep Date:**	06/15/2016 18:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573365	**Analyst:**	MES	**Run Date:**	06/21/2016 18:40
Collect Date:	06/14/2016 11:10	**Dilution:**	1	**File ID:**	15M18480
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	73.6	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	C08-061416	**Prep Method:**	3520C	**Prep Date:**	06/15/2016 18:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573365	**Analyst:**	MES	**Run Date:**	06/21/2016 19:02
Collect Date:	06/14/2016 13:10	**Dilution:**	1	**File ID:**	15M18481
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	44.3	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	C03-061416	**Prep Method:**	3520C	**Prep Date:**	06/15/2016 18:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573365	**Analyst:**	MES	**Run Date:**	06/21/2016 19:25
Collect Date:	06/14/2016 14:15	**Dilution:**	1	**File ID:**	15M18482
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	43.2	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.2.1.2 QC Summary Data

Example 8270 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:

	Example
Ax = Area of the characteristic ion for the compound being measured:	1261197
Cis = Concentration of the specific internal standard (ug/mL)	40
Ais = Area of the characteristic ion of the specific internal standard	608044
Cx = Concentration of the compound in the standard being measured (ug/mL)	50
RF = Calculated Response Factor	**1.65935**

2.0 Calculating the concentration (C) of a compound in water using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Vi)]

where:

	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Vi = Initial volume of sample extracted from prep log (mL)	1021
Cx = Concentration of the compound in the sample being measured (ug/mL)	0.016947
Cx = Concentration of the compound in the sample being measured (ug/L)	**16.947**

3.0 Calculating the concentration (C) of a compound in soil using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Wi)]

where:

	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Wi = Initial weight of sample extracted (g) from prep log	30
Cx = Concentration of the compound in the sample being measured (ug/g)	0.576763
Cx = Concentration of the compound in the sample being measured (ug/kg)	**576.7627**

Dry weight correction:

Percent solids (PCT_S)	50
Cd = (Cx) (100)/PCT_S	**1153.525** ug/kg

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve plot

b = intercept from curve plot

Step 2: Calculate y from Quantitation Report

y = 16790/784838 = 0.02139

Step 3: Solve for x

x = (y - b)/m = [(0.02139 -(- 0.0435)]/ 0.0783 = 0.829

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.829) = 20.72 ug/L

Example Spreadsheet Calculation:

Slope from curve, m:	0.0783	
Intercept from curve, b:	-0.0435	
Area of analyte, Ax:	16790	
Area of Internal Standard , Ais:	784484	
Concentration of IS, Cis	25.00	ug/L
Response Ratio (y) :	0.021403	
Amount Ratio:	0.828897	
Concentration (Cx):	20.72241	ug/L

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**0.0259**	
Value of B from plot:	**0.0596**	
Value of C from plot:	**-0.0165**	
Area of analyte from quantitation report:	**203233**	
Area of IS from quantiation report:	**1425653**	
Response ratio, y:	**0.142554**	
C - y:	**-0.15905**	
Root 1 - Computed amount ratio , X1:	**-3.88278**	
Root 2 - Computed amount ratio , X2:	**1.581623**	use this solution
Concentration of IS, Cis:	**40.00**	
Concentration of analyte, Cx:	**63.26**	ug/L

Microbac Laboratories Inc.
Continuous Sample Extract Log

Workgroup: WG572806
Analyst: CPD
Spike Analyst: CPD
Method: 3520C
Run Date: 06/15/2016 18:01
SOP: EXB01 Revison 20
Spike Witness: JDH
Surr Solution: STD74051

TIME ON: 19:15 OFF: 13:30 ON: 17:50 OFF: 12:00

CH2CL2 Lot #: COA18982
sodium sulfate Lot #: COA18814
10N NaOH Lot #: RGT37076
1:1 H2SO4 Lot #: RGT36755

	SAMPLE #	Type	Reference	Prod	pH	Init Amnt	Surr Amnt	Spike Amnt	Spike Sol	Final Vol	Color
1	L16060730-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Colored
2	L16060730-02	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Colored
3	L16060730-03	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
4	L16060756-04	SAMP		827-DIOX	<2>12	1000 mL	.05 mL			1 mL	Colored
5	L16060809-03	SAMP		827-DIOX	<2>12	1000 mL	.05 mL			1 mL	Colored
6	L16060822-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Colored
7	L16060822-03	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
8	L16060822-04	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
9	L16060822-05	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
10	L16060823-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
11	L16060823-03	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Colored
12	L16060823-04	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
13	L16060854-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Colored
14	WG572806-01	BLANK		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
15	WG572806-02	LCS		827-DIOXANE	<2>12	1000 mL	.05 mL	.05 mL	STD75256	1 mL	Transparent
16	WG572806-03	LCS2		827-DIOXANE	<2>12	1000 mL	.05 mL	.05 mL	STD75256	1 mL	Transparent

Due to insufficient sample volume, this preparation batch failed to include the method prescribed MS and MSD.

LCS TV3 Cell 6
LCS DUP TV3 Cell 1

Analyst: Chelsie Davis

Reviewer: Chris Hill

EXTRACT - Modified 01/23/2009
PDF ID: 4813908
Report generated: 06/20/2016 08:50

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062116
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Workgroups: Column 1 ID: RXI-5MS Column 2 ID: NA
WG573365
Internal STD: STD76627 Surrogate STD: NA Calibration STD
CCV STD: STD74784 LCS STD: STD74214 MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18455	BAKEOUT	1	1		06/21/16 08:46
2	15M18456	WG573501-01 5PPM DFTPP STD	1	1	STD75016	06/21/16 09:05
3	15M18457	WG573501-01 5PPM DFTPP STD	1	1	STD75016	06/21/16 09:34
4	15M18458	WG573501-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 09:52
5	15M18459	WG573501-03 10 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 10:27
6	15M18460	WG573501-04 7.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 10:49
7	15M18461	WG573501-05 2.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:12
8	15M18462	WG573501-06 1 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:34
9	15M18463	WG573501-07 0.4 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:57
10	15M18464	WG573501-08 5PPM 1,4-DIOXANE ALT SRC	1	1	STD74214	06/21/16 12:20
11	15M18465	WG572806-01 BLANK 6/15	1	1		06/21/16 12:54
12	15M18466	WG572806-02 LCS 6/15	1	1		06/21/16 13:17
13	15M18467	WG572806-03 LCSDUP 6/15	1	1		06/21/16 13:40
14	15M18468	WG573008-01 BLANK 6/17	7	1	SOIL	06/21/16 14:03
15	15M18469	WG573008-02 LCS 6/17	7	1	SOIL	06/21/16 14:26
16	15M18470	WG573008-03 LCSDUP 6/17	7	1	SOIL	06/21/16 14:48
17	15M18471	L16060730-01	1	1		06/21/16 15:11
18	15M18472	L16060730-02	1	1		06/21/16 15:34
19	15M18473	L16060854-01	1	1		06/21/16 15:57
20	15M18474	L16060730-03	1	1		06/21/16 16:19
21	15M18475	L16060756-04 827-DIOX	1	1		06/21/16 16:46
22	15M18476	L16060822-01	1	1		06/21/16 17:08
23	15M18477	L16060822-03	1	1		06/21/16 17:31
24	15M18478	L16060822-04	1	1		06/21/16 17:54
25	15M18479	L16060822-05	1	1		06/21/16 18:17
26	15M18480	L16060823-01	1	1		06/21/16 18:40
27	15M18481	L16060823-03	1	1		06/21/16 19:02
28	15M18482	L16060823-04	1	1		06/21/16 19:25
29	15M18483	L16060809-03 827-DIOX	1	1		06/21/16 19:48
30	15M18484	L16060854-01 2X	1	2		06/21/16 20:10
31	15M18485	BAKEOUT	1	1		06/21/16 20:33
32	15M18486	BAKEOUT	1	1		06/21/16 20:55
33	15M18487	BAKEOUT	1	1		06/21/16 21:18

Page: 1 Approved: 22-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062116

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573365

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD: STD74214

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
	WG573501-01 5PPM DFTPP STD rerun DFTPP, pentachlorophenol tailing >2.			
14				
	WG573008-01 BLANK 6/17 DNR-not needed.			
15				
	WG573008-02 LCS DNR-not needed.			
16				
	WG573008-03 LCSDUP DNR-not needed.			
19	X	2	Over Calibration Range	
	L16060854-01			

Page: 2 Approved: 22-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 21-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75850
Analytical Workgroups: L16060730, 060756, 060809, 060822, 060823, 060854

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer:
22-JUN-2016

Secondary Reviewer:
22-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-22-2016 16:00:51

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8270D

AAB#: WG573365

Login Number: L16060823

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
126-061416	01	06/14/16					06/15/2016	1.3	7		06/21/16	6	40	
C08-061416	03	06/14/16					06/15/2016	1.2	7		06/21/16	6	40	
C03-061416	04	06/14/16					06/15/2016	1.2	7		06/21/16	6.1	40	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4819086
Report generated 06/23/2016 13:28

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060823
Instrument Id: HPMS15
Workgroup (AAB#): WG573365

Method: 827-DIOXANE
CAL ID: HPMS15-21-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1
L16060823-01	1.00	01	73.6
L16060823-03	1.00	01	44.3
L16060823-04	1.00	01	43.2
WG572806-01	1.00	02	61.7
WG572806-02	1.00	02	62.5
WG572806-03	1.00	02	46.5

Surrogates	Surrogate Limits		
1 - 1,4-Dioxane-d8	20	-	129

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4819093
Report generated: 06/23/2016 13:28

METHOD BLANK SUMMARY

Login Number: L16060823
Blank File ID: 15M18465
Prep Date: 06/15/16 18:01
Analyzed Date: 06/21/16 12:54
Analyst: MES

Work Group: WG573365
Blank Sample ID: WG572806-01
Instrument ID: HPMS15
Method: 8270D

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572806-02	15M18466	06/21/16 13:17	02
LCS2	WG572806-03	15M18467	06/21/16 13:40	02
126-061416	L16060823-01	15M18480	06/21/16 18:40	01
C08-061416	L16060823-03	15M18481	06/21/16 19:02	01
C03-061416	L16060823-04	15M18482	06/21/16 19:25	01

Report Name: BLANK_SUMMARY
PDF File ID: 4821148
Report generated 06/23/2016 13:28

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060823 Prep Date: 06/15/16 18:01 Sample ID: WG572806-01
Instrument ID: HPMS15 Run Date: 06/21/16 12:54 Prep Method: 3520C
File ID: 15M18465 Analyst: MES Method: 8270D
Workgroup (AAB#): WG573365 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS15 - 21-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
1,4-Dioxane	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	61.7	20 - 129	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4819087
23-JUN-2016 13:28

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060823 Analyst: MES Prep Method: 3520C
Instrument ID: HPMS15 Matrix: Water Method: 8270D
Workgroup (AAB#): WG573365 Units: ug/L
QC Key: DOD4 Lot #: STD75256

Sample ID: WG572806-02 LCS File ID: 15M18466 Run Date: 06/21/2016 13:17
Sample ID: WG572806-03 LCS2 File ID: 15M18467 Run Date: 06/21/2016 13:40

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,4-Dioxane	5.00	3.03	60.6	5.00	2.27	45.5	28.6	30 - 104	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,4-Dioxane-d8	62.5	46.5	20 - 129	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4819088
Report generated: 06/23/2016 13:28

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16060823
Instrument: HPMS15
Analyst: MES
Workgroup: WG573501

Tune ID: WG573501-01
Run Date: 06/21/2016
Run Time: 09:34
File ID: 15M18457
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	38.8	34488	PASS
68.0	69.0	0	2.00	1.36	500	PASS
69.0	198	0	100	41.4	36833	PASS
70.0	69.0	0	2.00	0.467	172	PASS
127	198	40.0	60.0	51.9	46131	PASS
197	198	0	1.00	0	0	PASS
198	198	100	100	100	88880	PASS
199	198	5.00	9.00	6.66	5918	PASS
275	198	10.0	30.0	24.9	22090	PASS
365	198	1.00	100	2.65	2358	PASS
441	443	0.0100	100	75.7	9586	PASS
442	198	40.0	100	73.4	65261	PASS
443	442	17.0	23.0	19.4	12659	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573501-02	STD-CCV	01	06/21/2016 09:52	
WG573501-03	STD	01	06/21/2016 10:27	
WG573501-04	STD	01	06/21/2016 10:49	
WG573501-05	STD	01	06/21/2016 11:12	
WG573501-06	STD	01	06/21/2016 11:34	
WG573501-07	STD	01	06/21/2016 11:57	
WG573501-08	SSCV	01	06/21/2016 12:20	
WG572806-01	BLANK	02	06/21/2016 12:54	
WG572806-02	LCS	02	06/21/2016 13:17	
WG572806-03	LCS2	02	06/21/2016 13:40	
L16060823-01	126-061416	01	06/21/2016 18:40	
L16060823-03	C08-061416	01	06/21/2016 19:02	
L16060823-04	C03-061416	01	06/21/2016 19:25	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4819091
Report generated 06/23/2016 13:28

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060823
Analytical Method: 8270D
ICAL Workgroup: WG573501

Instrument ID: HPMS15
Initial Calibration Date: 21-JUN-16 11:57
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
1,4-Dioxane		0.3060	2.56		

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4819089
Report generated 06/23/2016 13:28

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060823

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 21-JUN-16 11:57

Column ID: F

Analyte	WG573501-02			WG573501-03			WG573501-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	5.00	60883.0000	0.3073	10.0	138820.000	0.3164	7.50	103182.000	0.3106

INT_CAL - Modified 03/06/2008
PDF File ID: 4819089
Report generated 06/23/2016 13:28

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060823

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 21-JUN-16 11:57

Column ID: F

Analyte	WG573501-05			WG573501-06			WG573501-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	2.50	26333.0000	0.2969	1.00	13250.0000	0.2966	0.400	5650.00000	0.3081

INT_CAL - Modified 03/06/2008
PDF File ID: 4819089
Report generated 06/23/2016 13:28

Calibration Table Report
Method: DIOXANE_D8.M
Title: OVD MSS01 SIM 1,4-dioxane ICAL 062116
Last Calibration: Tue Jun 21 12:51:17 2016
Curve:WG573501
Calibration Files

Compound	10 15M18459.D	7.5 15M18460.D	5 15M18458.D	2.5 15M18461.D	1 15M18462.D	0.4 15M18463.D	Avg	%RSD
1,4-Dichlorobenzene-d4	ISTD							
1,4-Dioxane	0.316	0.311	0.307	0.297	0.297	0.308	0.306	2.558
1,4-Dioxane-d8	0.426	0.418	0.417	0.402	0.395		0.411	3.044
Nitrobenzene-d5	1.202	1.173	1.128	1.002	0.927	0.906	1.056	12.163
2-Fluorobiphenyl	2.735	2.736	2.691	2.621	2.563	2.651	2.666	2.548
p-Terphenyl-d14	2.793	2.774	2.622	2.460	2.367	2.405	2.570	7.266

Wed Jun 22 12:17:33 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060823 Run Date: 06/21/2016 Sample ID: WG573501-08
Instrument ID: HPMS15 Run Time: 12:20 Method: 8270D
File ID: 15M18464 Analyst: MES QC Key: DOD4
ICal Workgroup: WG573501 Cal ID: HPMS15 - 21-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
1,4-Dioxane		5000	5050	ug/L	0.309	0.900	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4819090
Report generated 06/23/2016 13:28

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060823
Instrument ID: HPMS15
Workgroup (AAB#): WG573365

ICAL CCV Number: WG573501-02
CAL ID: HPMS15 - 21-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG573501-02	NA	NA	39637
Upper Limit	NA	NA	79274
Lower Limit	NA	NA	19819
L16060823-01	1.00	01	32097
L16060823-03	1.00	01	24731
L16060823-04	1.00	01	24008
WG572806-01	1.00	02	38899
WG572806-02	1.00	02	27126
WG572806-03	1.00	02	34071

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4819092
Report generated 06/23/2016 13:28

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060823
Instrument ID: HPMS15
Workgroup (AAB#): WG573365

ICAL CCV Number: WG573501-02
CAL ID: HPMS15 - 21-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG573501-02	NA	NA	6.93
Upper Limit	NA	NA	7.43
Lower Limit	NA	NA	6.43
L16060823-01	1.00	01	6.936
L16060823-03	1.00	01	6.936
L16060823-04	1.00	01	6.936
WG572806-01	1.00	02	6.936
WG572806-02	1.00	02	6.933
WG572806-03	1.00	02	6.933

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4821149
Report generated: 06/23/2016 13:28

2.2.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18480.D
Acq On : 21 Jun 2016 18:40
Operator : MES
Sample : L16060823-01
Misc : 1,1
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Jun 22 12:26:34 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.936	152	32097	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	48618	3.6811	ug/L	0.00
Spiked Amount 5.000			Recovery	=	73.60%	
4) Nitrobenzene-d5	7.436	82	6000	0.1770	ug/L	0.00
Spiked Amount 5.000			Recovery	=	3.60%	
5) 2-Fluorobiphenyl	8.926	172	1168	0.0136	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.20%	
6) p-Terphenyl-d14	12.203	244	1355	0.0164	ug/L	0.02
Spiked Amount 5.000			Recovery	=	0.40%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18480.D
Acq On : 21 Jun 2016 18:40
Operator : MES
Sample : L16060823-01
Misc : 1,1
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Jun 22 12:26:34 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

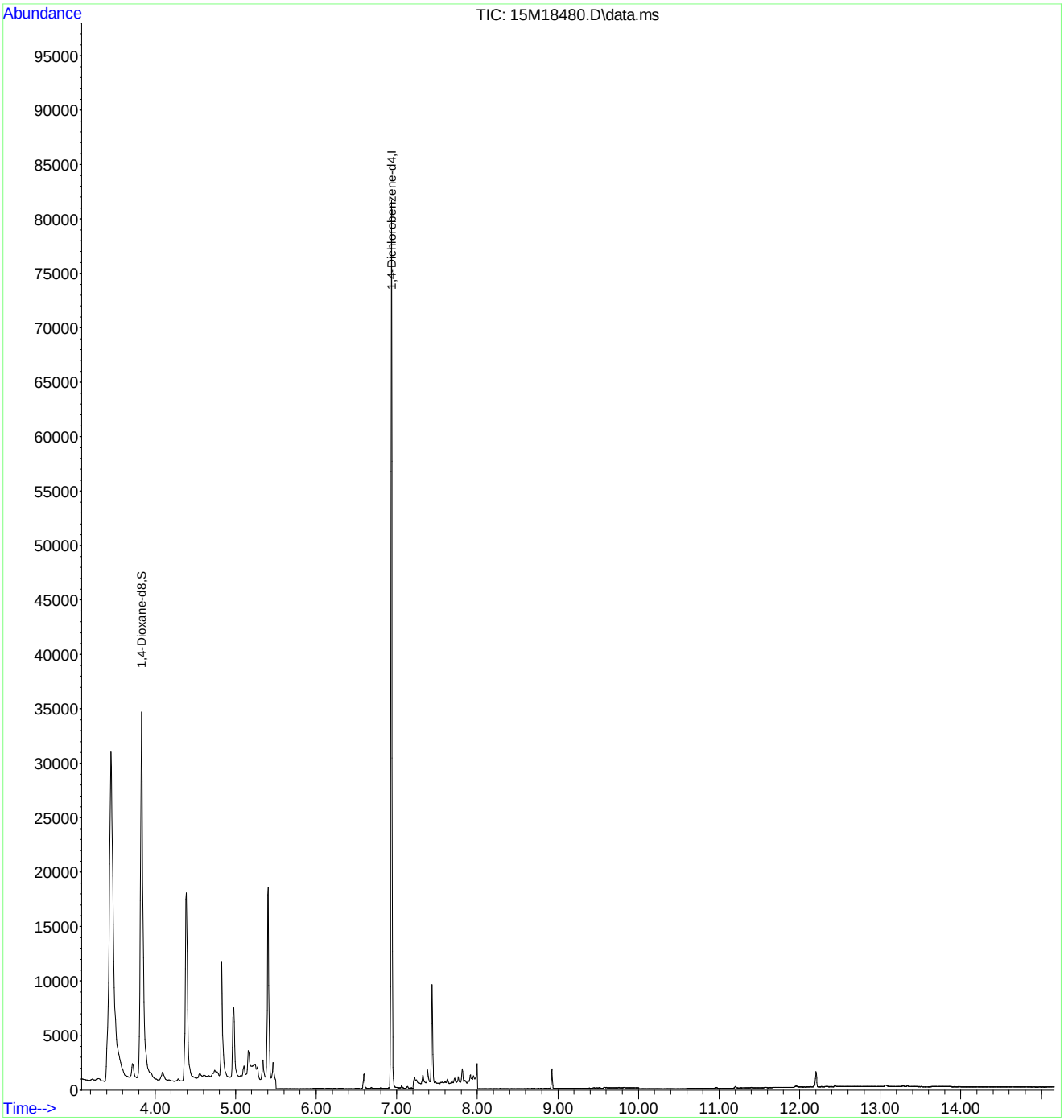

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18481.D
Acq On : 21 Jun 2016 19:02
Operator : MES
Sample : L16060823-03
Misc : 1,1
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Jun 22 08:03:40 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.936	152	24731	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.820	96	22524	2.2134	ug/L	0.00
Spiked Amount 5.000			Recovery	=	44.20%	
4) Nitrobenzene-d5	7.436	82	2394	0.0916	ug/L	0.00
Spiked Amount 5.000			Recovery	=	1.80%	
5) 2-Fluorobiphenyl	8.926	172	86	0.0013	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.203	244	909	0.0143	ug/L	0.02
Spiked Amount 5.000			Recovery	=	0.20%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18481.D
Acq On : 21 Jun 2016 19:02
Operator : MES
Sample : L16060823-03
Misc : 1,1
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Jun 22 08:03:40 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

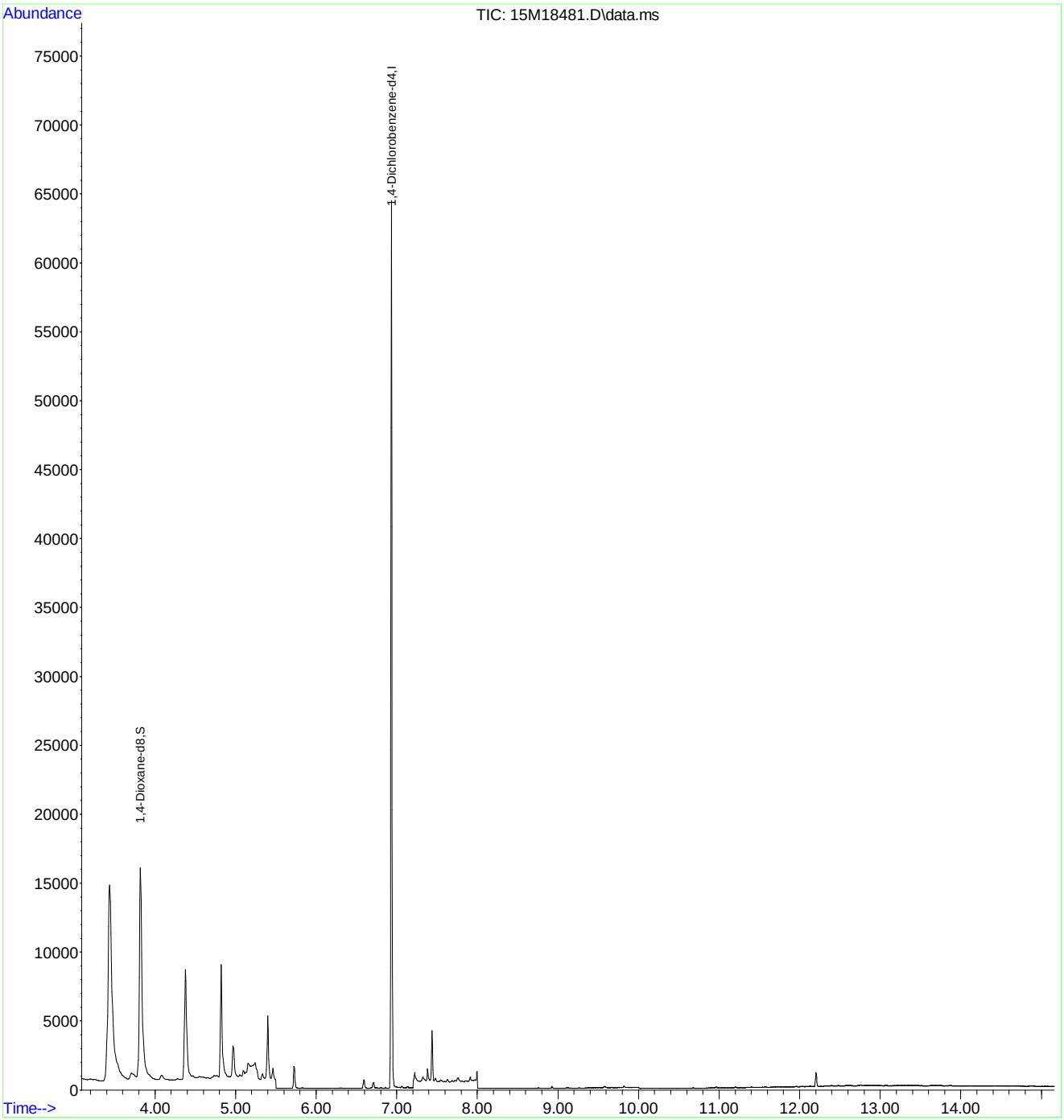

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18482.D
Acq On : 21 Jun 2016 19:25
Operator : MES
Sample : L16060823-04
Misc : 1,1
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Jun 22 08:03:43 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.936	152	24008	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.820	96	21324	2.1585	ug/L	0.00
Spiked Amount 5.000			Recovery	=	43.20%	
4) Nitrobenzene-d5	7.436	82	1135	0.0448	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.80%	
5) 2-Fluorobiphenyl	8.926	172	139	0.0022	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.188	244	796	0.0129	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.20%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18482.D
Acq On : 21 Jun 2016 19:25
Operator : MES
Sample : L16060823-04
Misc : 1,1
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Jun 22 08:03:43 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

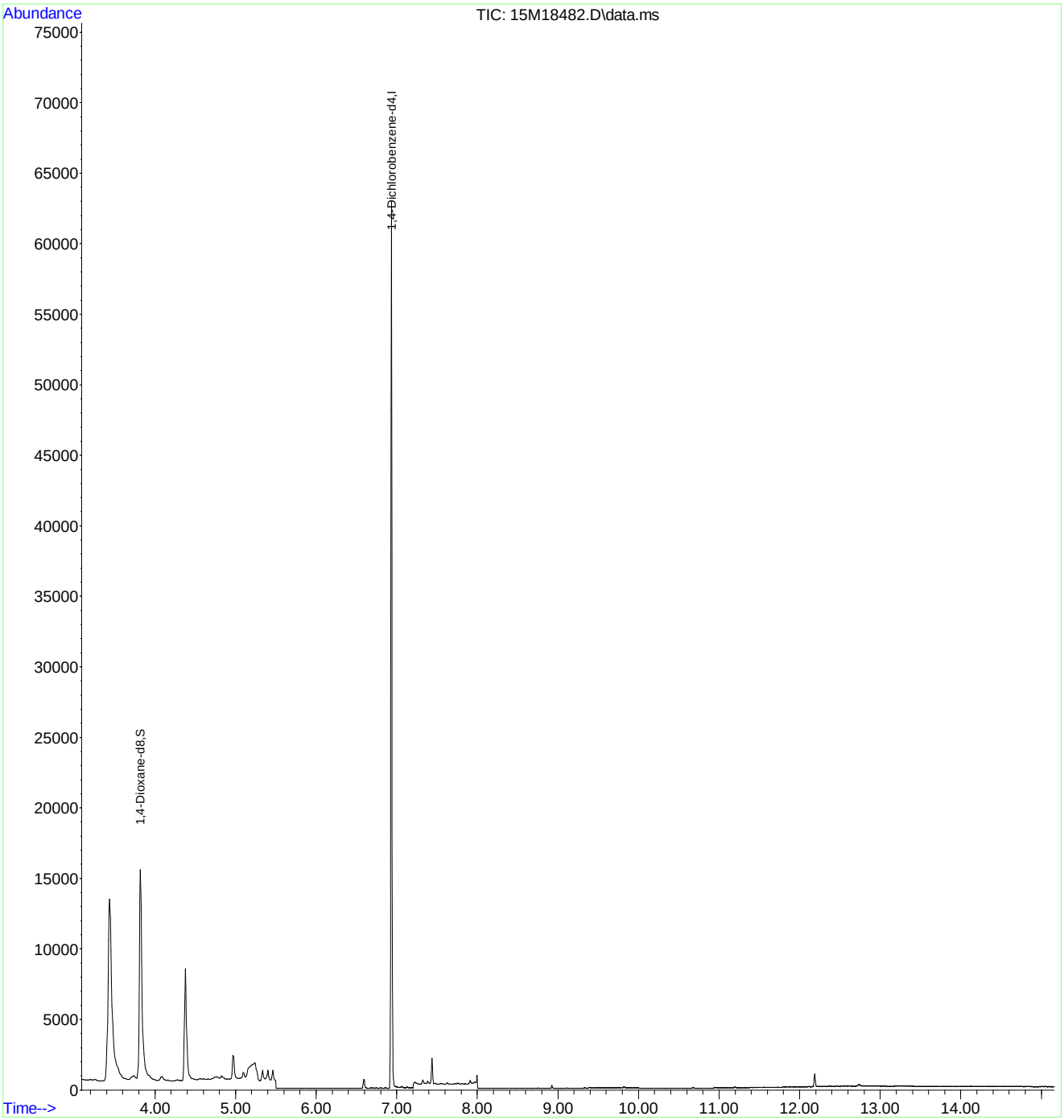

2.2.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 22 08:04:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	39637	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.827	96	82573	5.0627 ug/L	0.00
Spiked Amount 5.000			Recovery	= 101.20%	
4) Nitrobenzene-d5	7.431	82	223381	5.3353 ug/L	0.00
Spiked Amount 5.000			Recovery	= 106.80%	
5) 2-Fluorobiphenyl	8.922	172	533101	5.0444 ug/L	0.00
Spiked Amount 5.000			Recovery	= 100.80%	
6) p-Terphenyl-d14	12.184	244	519544	5.1003 ug/L	0.00
Spiked Amount 5.000			Recovery	= 102.00%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.862	58	60883	5.0202 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 22 08:04:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

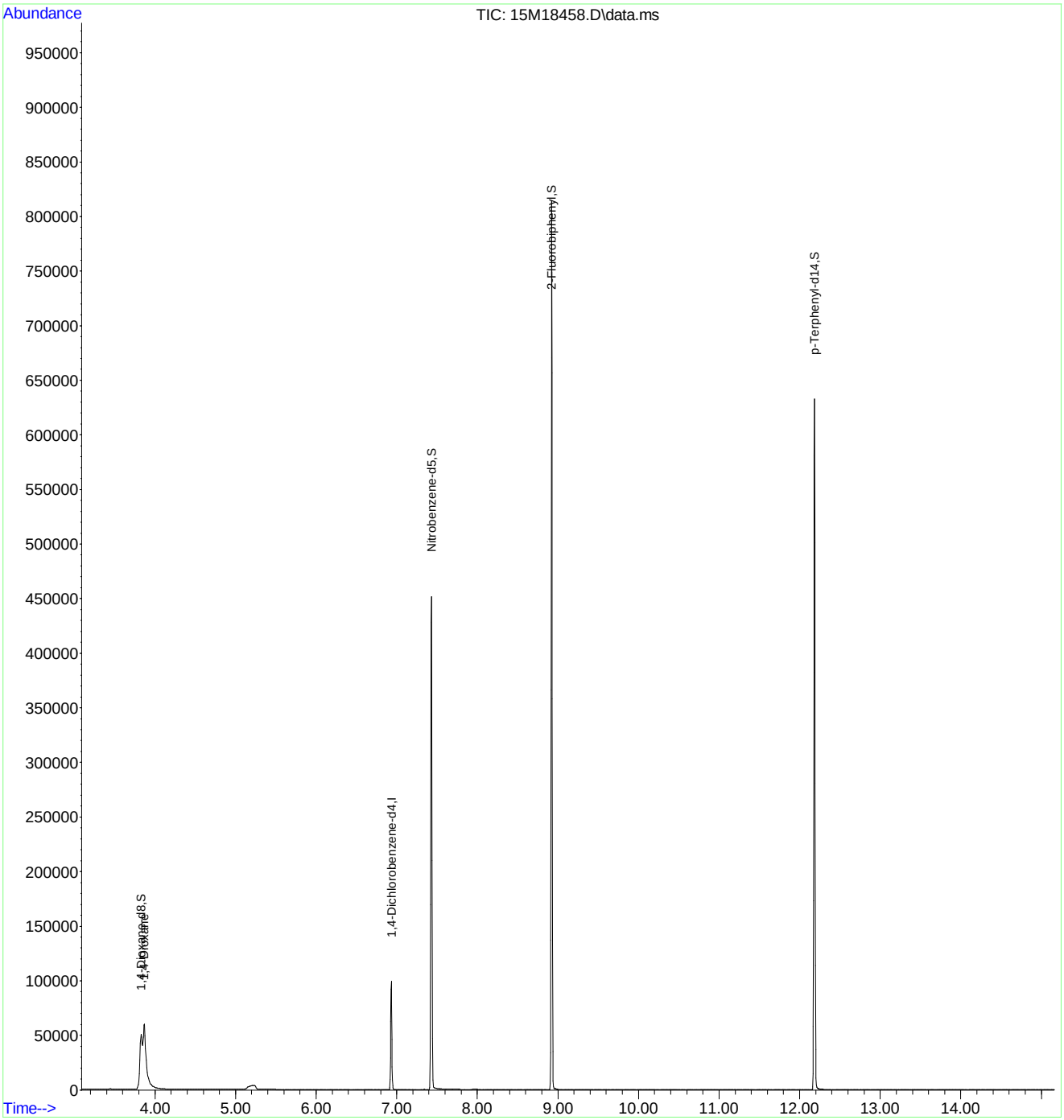

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18459.D
Acq On : 21 Jun 2016 10:27
Operator : MES
Sample : WG573501-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 22 08:04:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	43874	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	186767	10.3452	ug/L	0.00
Spiked Amount 5.000			Recovery = 207.00%			
4) Nitrobenzene-d5	7.431	82	527549	11.3834	ug/L	0.00
Spiked Amount 5.000			Recovery = 227.60%			
5) 2-Fluorobiphenyl	8.926	172	1199799	10.2565	ug/L	0.00
Spiked Amount 5.000			Recovery = 205.20%			
6) p-Terphenyl-d14	12.240	244	1225328	10.8672	ug/L	0.06
Spiked Amount 5.000			Recovery = 217.40%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	138820	10.3412	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18459.D
Acq On : 21 Jun 2016 10:27
Operator : MES
Sample : WG573501-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 22 08:04:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

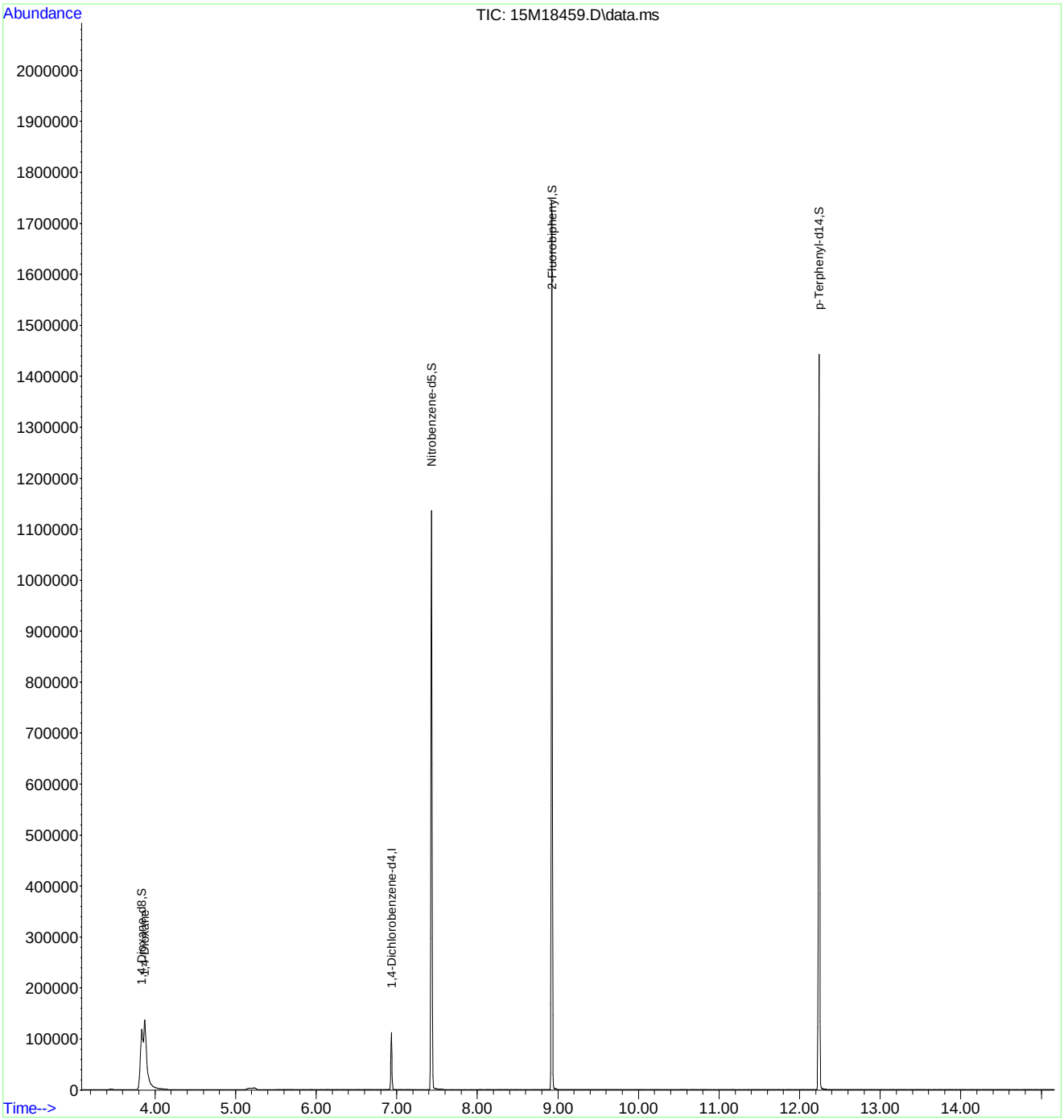

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18460.D
Acq On : 21 Jun 2016 10:49
Operator : MES
Sample : WG573501-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 22 08:04:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	44299	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	138833	7.6163	ug/L	0.00
Spiked Amount 5.000			Recovery	= 152.40%		
4) Nitrobenzene-d5	7.431	82	389810	8.3306	ug/L	0.00
Spiked Amount 5.000			Recovery	= 166.60%		
5) 2-Fluorobiphenyl	8.923	172	909050	7.6965	ug/L	0.00
Spiked Amount 5.000			Recovery	= 154.00%		
6) p-Terphenyl-d14	12.203	244	921380	8.0931	ug/L	0.02
Spiked Amount 5.000			Recovery	= 161.80%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.876	58	103182	7.6127	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18460.D
Acq On : 21 Jun 2016 10:49
Operator : MES
Sample : WG573501-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 22 08:04:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

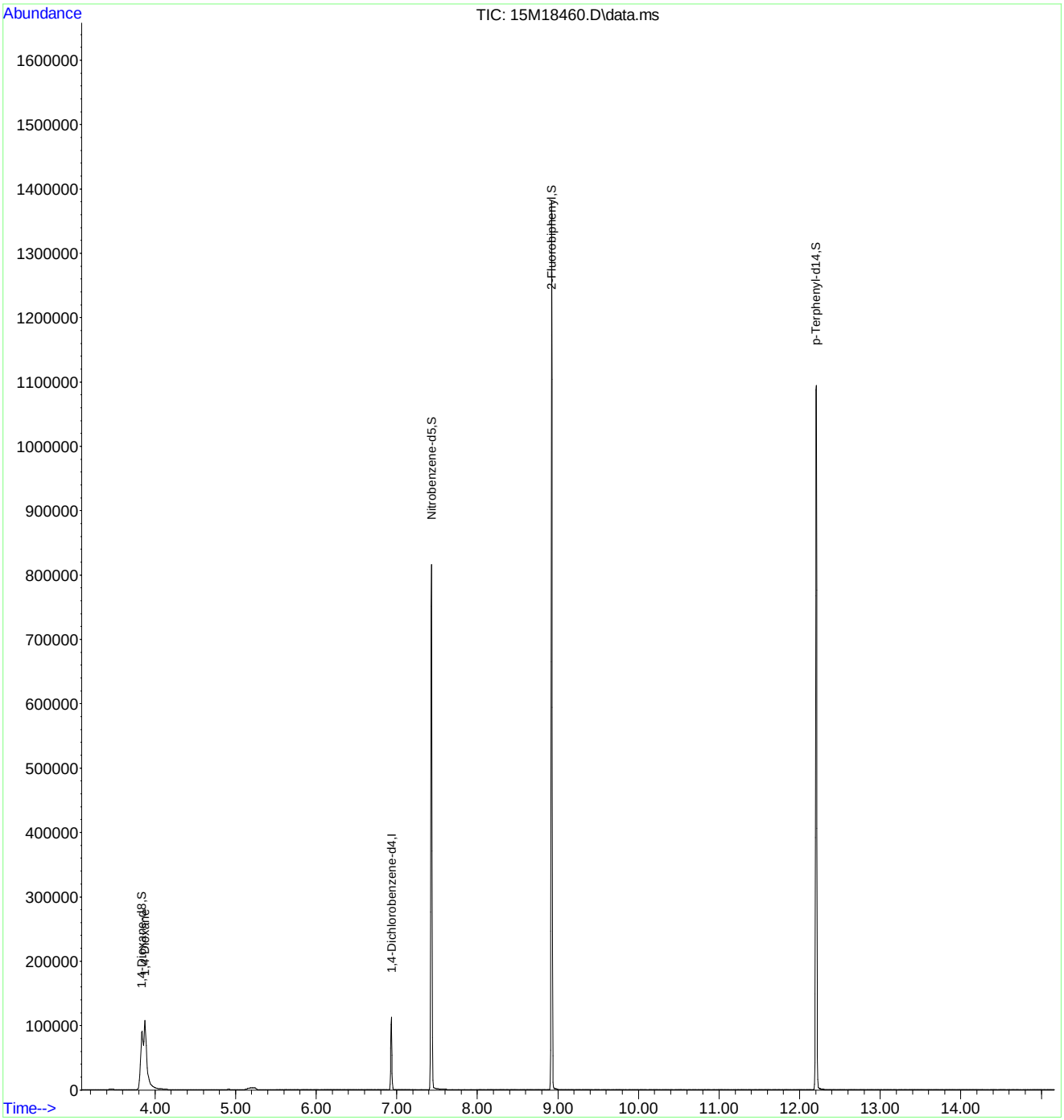

DIOXANE_D8.M Wed Jun 22 08:04:45 2016 Page: 2

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18461.D
Acq On : 21 Jun 2016 11:12
Operator : MES
Sample : WG573501-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 22 08:04:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	35478	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.827	96	35630	2.4406	ug/L	0.00
Spiked Amount 5.000			Recovery = 48.80%			
4) Nitrobenzene-d5	7.431	82	88869	2.3714	ug/L	0.00
Spiked Amount 5.000			Recovery = 47.40%			
5) 2-Fluorobiphenyl	8.923	172	232500	2.4579	ug/L	0.00
Spiked Amount 5.000			Recovery = 49.20%			
6) p-Terphenyl-d14	12.199	244	218191	2.3930	ug/L	0.02
Spiked Amount 5.000			Recovery = 47.80%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.862	58	26333	2.4259	ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18461.D
Acq On : 21 Jun 2016 11:12
Operator : MES
Sample : WG573501-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 22 08:04:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

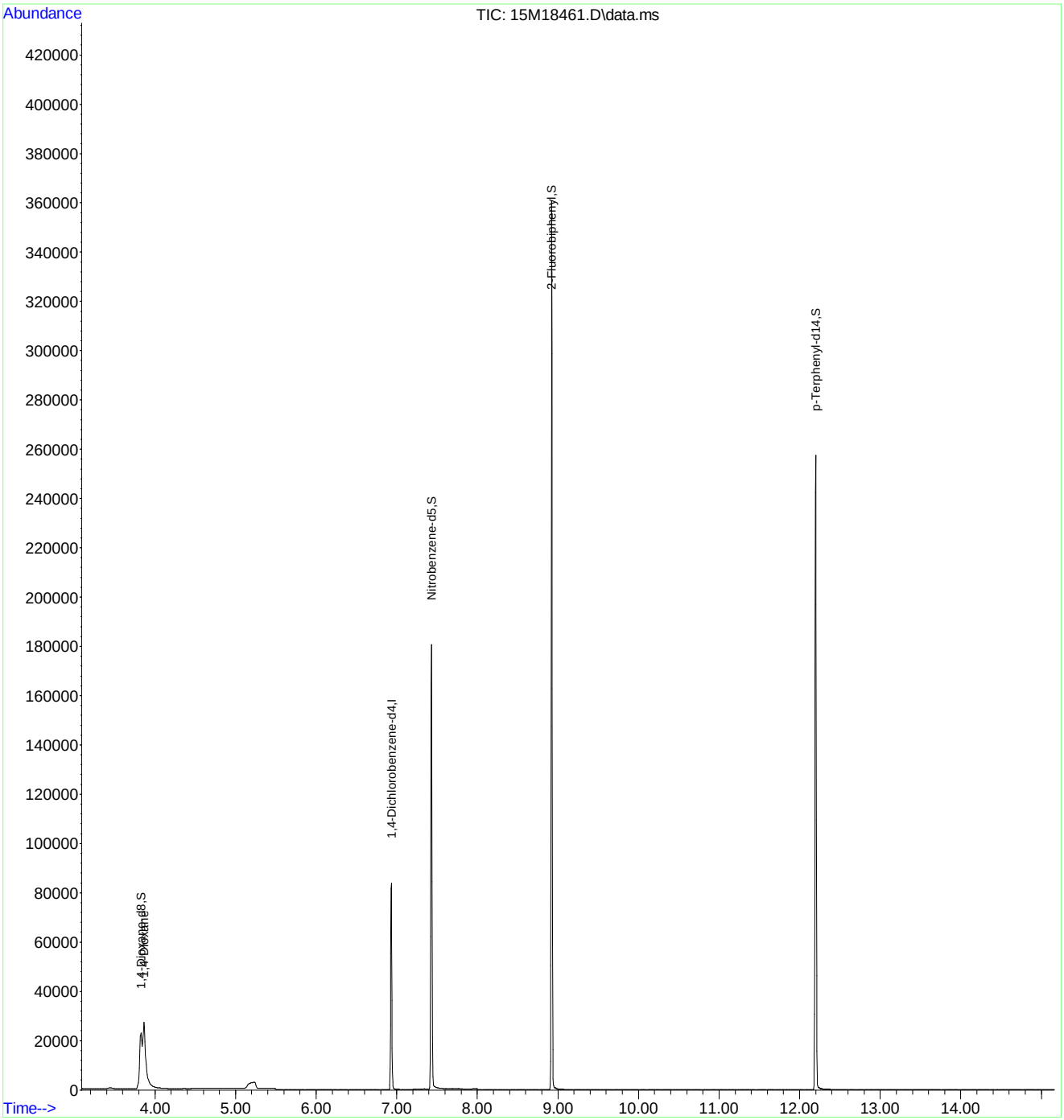

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18462.D
Acq On : 21 Jun 2016 11:34
Operator : MES
Sample : WG573501-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 22 08:04:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	44672	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.841	96	17660	0.9607 ug/L	0.01
Spiked Amount 5.000			Recovery	= 19.20%	
4) Nitrobenzene-d5	7.431	82	41409	0.8776 ug/L	0.00
Spiked Amount 5.000			Recovery	= 17.60%	
5) 2-Fluorobiphenyl	8.922	172	114491	0.9612 ug/L	0.00
Spiked Amount 5.000			Recovery	= 19.20%	
6) p-Terphenyl-d14	12.203	244	105713	0.9208 ug/L	0.02
Spiked Amount 5.000			Recovery	= 18.40%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.876	58	13250	0.9694 ug/L	82

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18462.D
Acq On : 21 Jun 2016 11:34
Operator : MES
Sample : WG573501-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 22 08:04:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

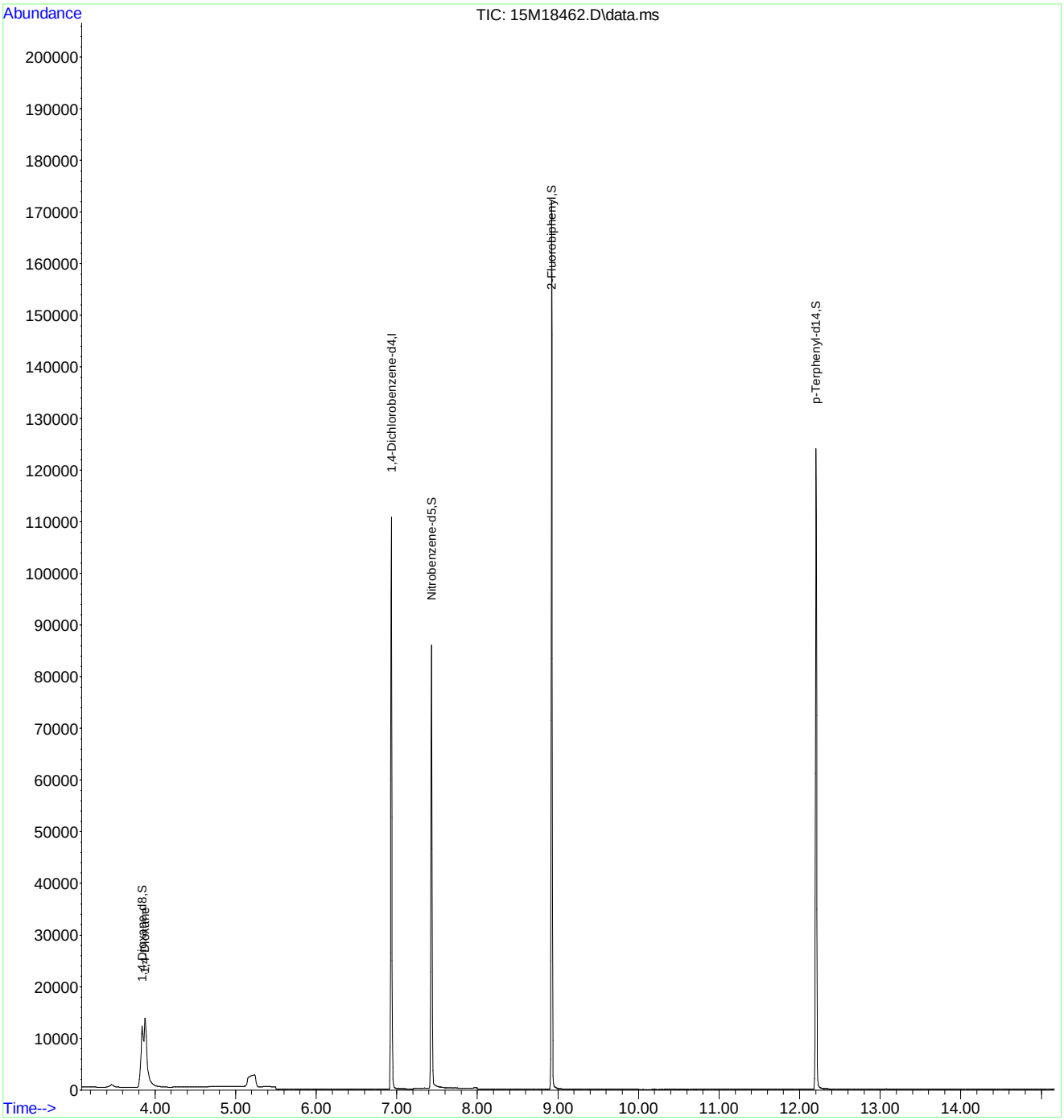

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18463.D
Acq On : 21 Jun 2016 11:57
Operator : MES
Sample : WG573501-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 22 08:04:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	45840	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.841	96	7629	0.4045	ug/L	0.01
Spiked Amount 5.000			Recovery	=	8.00%	
4) Nitrobenzene-d5	7.431	82	16604	0.3429	ug/L	0.00
Spiked Amount 5.000			Recovery	=	6.80%	
5) 2-Fluorobiphenyl	8.923	172	48617	0.3978	ug/L	0.00
Spiked Amount 5.000			Recovery	=	8.00%	
6) p-Terphenyl-d14	12.210	244	44097	0.3743	ug/L	0.03
Spiked Amount 5.000			Recovery	=	7.40%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.876	58	5650	0.4028	ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18463.D
Acq On : 21 Jun 2016 11:57
Operator : MES
Sample : WG573501-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 22 08:04:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

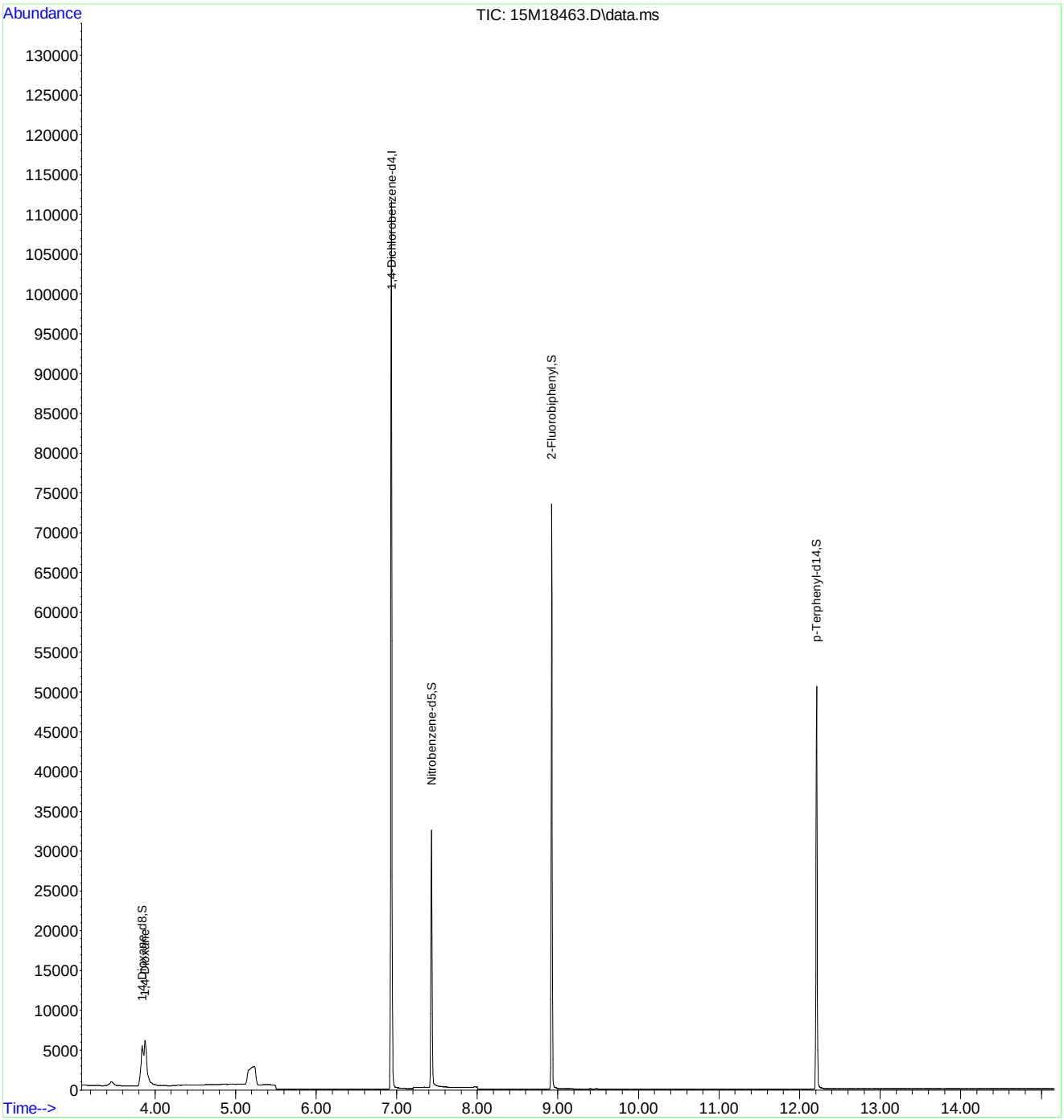

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	41944	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.792	96	22	0.0013	ug/L	-0.04
Spiked Amount 5.000			Recovery	=	0.00%	
4) Nitrobenzene-d5	7.436	82	56	0.0013	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
5) 2-Fluorobiphenyl	8.926	172	23	0.0002	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.214	244	128	0.0012	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	64750	5.0454	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

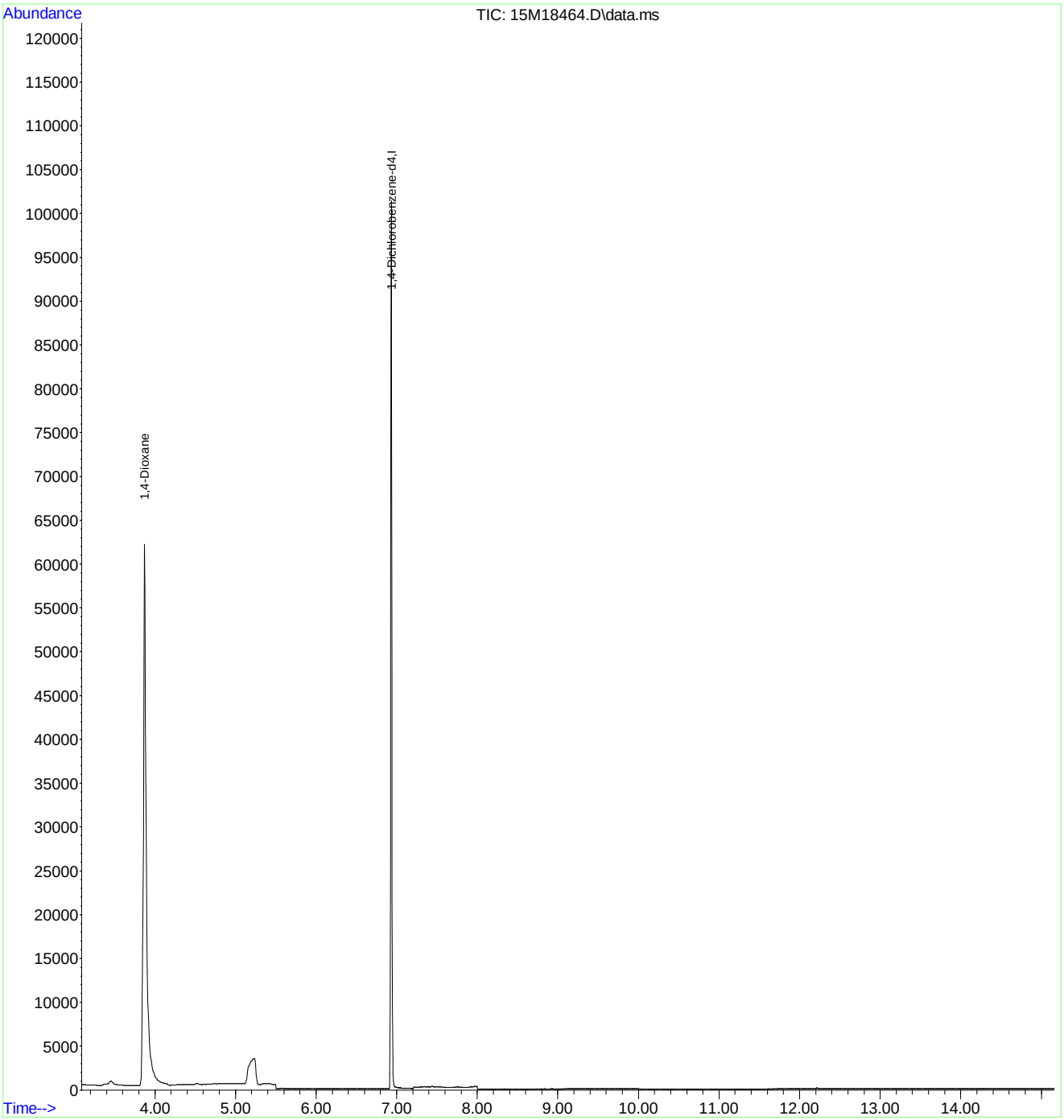

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	106	0.00
2		1,4-Dioxane	5.000	5.045	-0.9	106	0.00
3	S	1,4-Dioxane-d8	5.000	0.001	100.0#	0	-0.04
4	S	Nitrobenzene-d5	5.000	0.001	100.0#	0	0.00
5	S	2-Fluorobiphenyl	5.000	0.000	100.0#	0	0.00
6	S	p-Terphenyl-d14	5.000	0.001	100.0#	0	0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

2.2.1.5 Raw QC Data

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

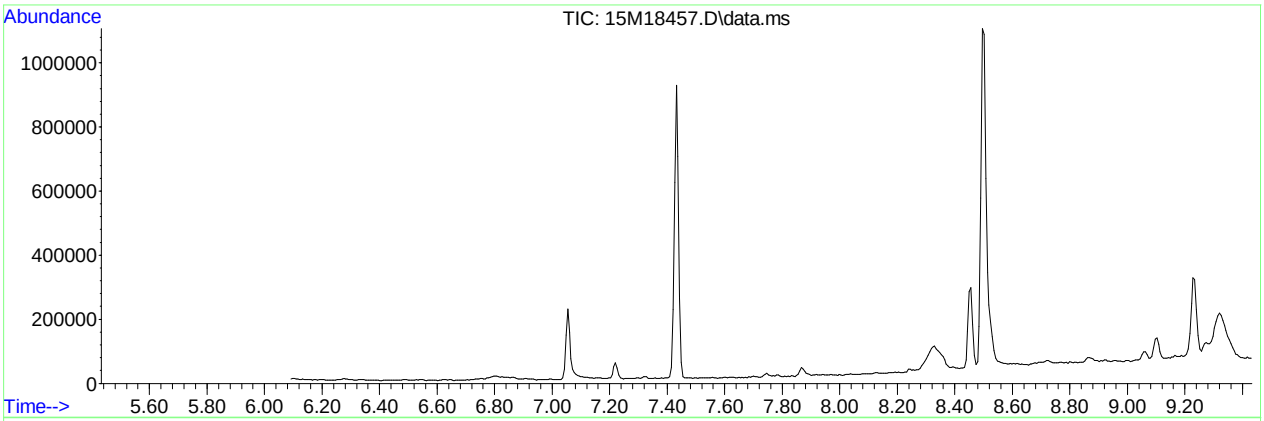

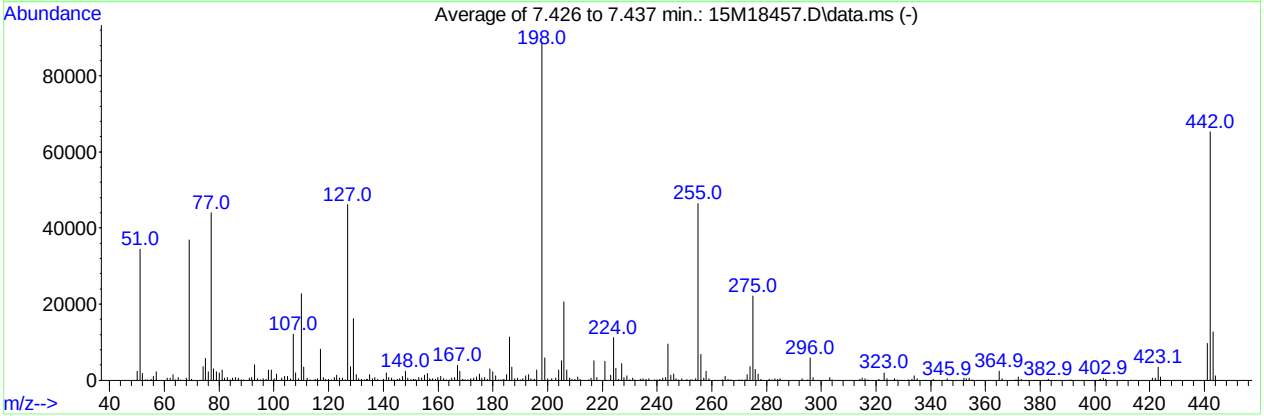

AutoFind: Scans 234, 235, 236; Background Corrected with Scan 228

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	38.8	34488	PASS
68	69	0.00	2	1.4	500	PASS
69	198	0.00	100	41.4	36833	PASS
70	69	0.00	2	0.5	172	PASS
127	198	40	60	51.9	46131	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	88880	PASS
199	198	5	9	6.7	5918	PASS
275	198	10	30	24.9	22090	PASS
365	198	1	100	2.7	2358	PASS
441	443	0.01	100	75.7	9586	PASS
442	198	40	100	73.4	65261	PASS
443	442	17	23	19.4	12659	PASS

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

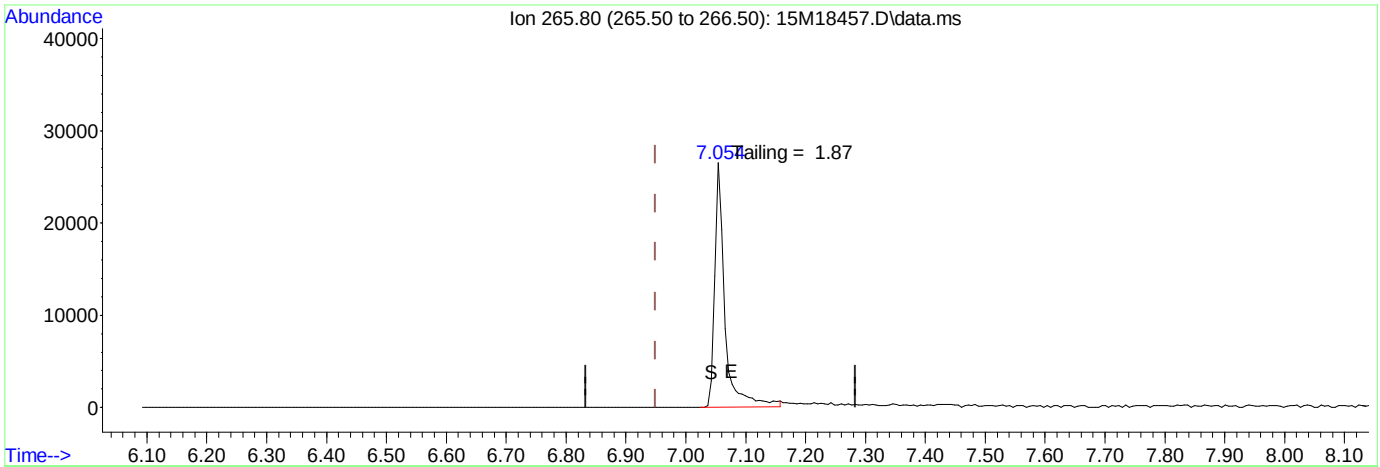

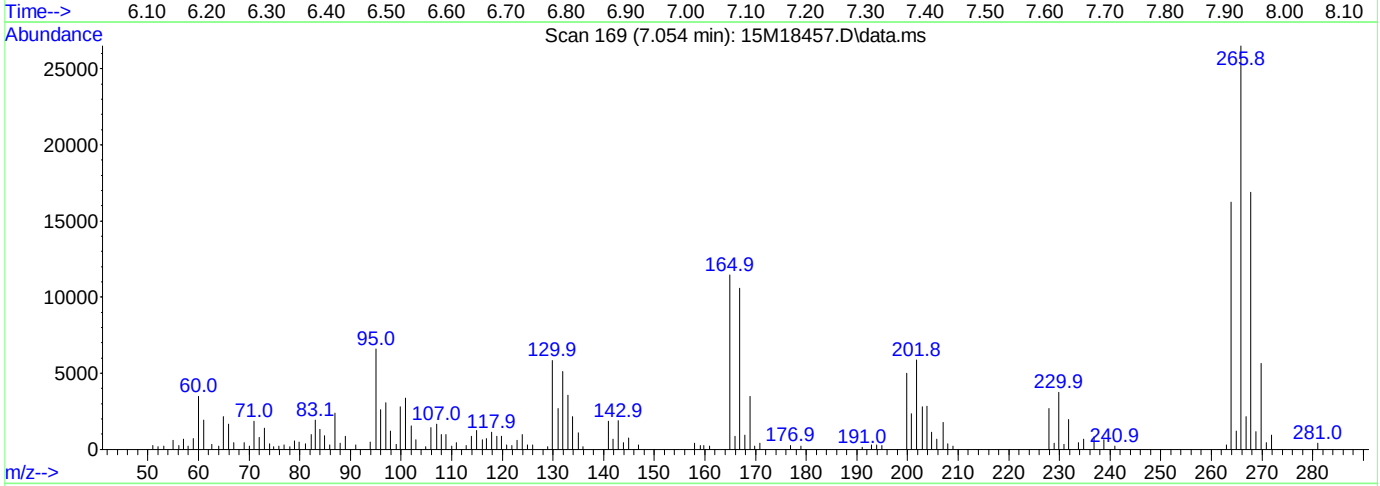

TIC: 15M18457.D\data.ms

(1) Pentachlorophenol

7.054min (+ 0.105) 0.00 ug/ml

response 30738

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

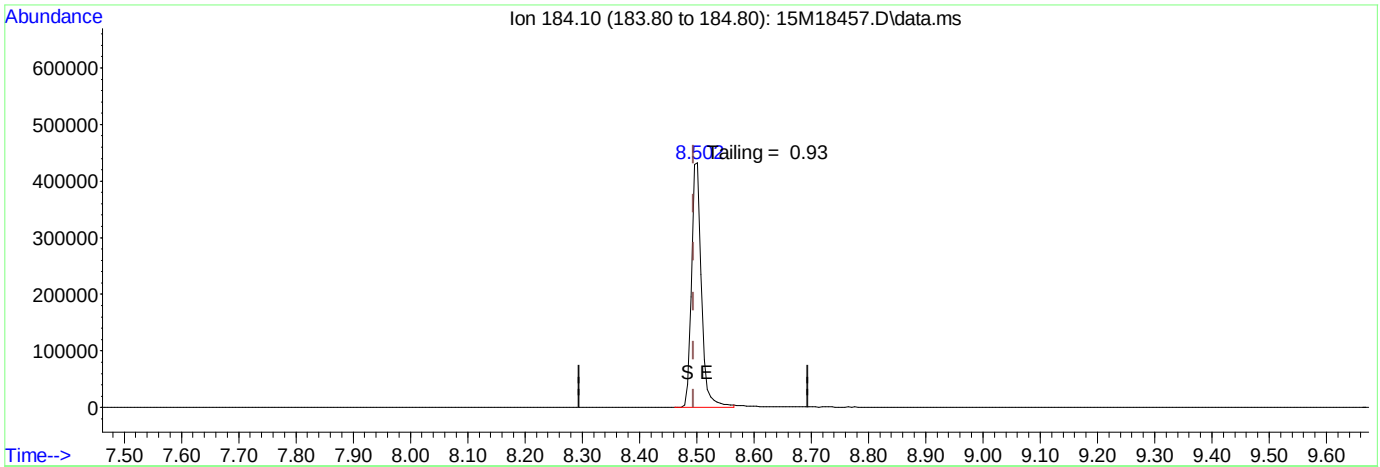

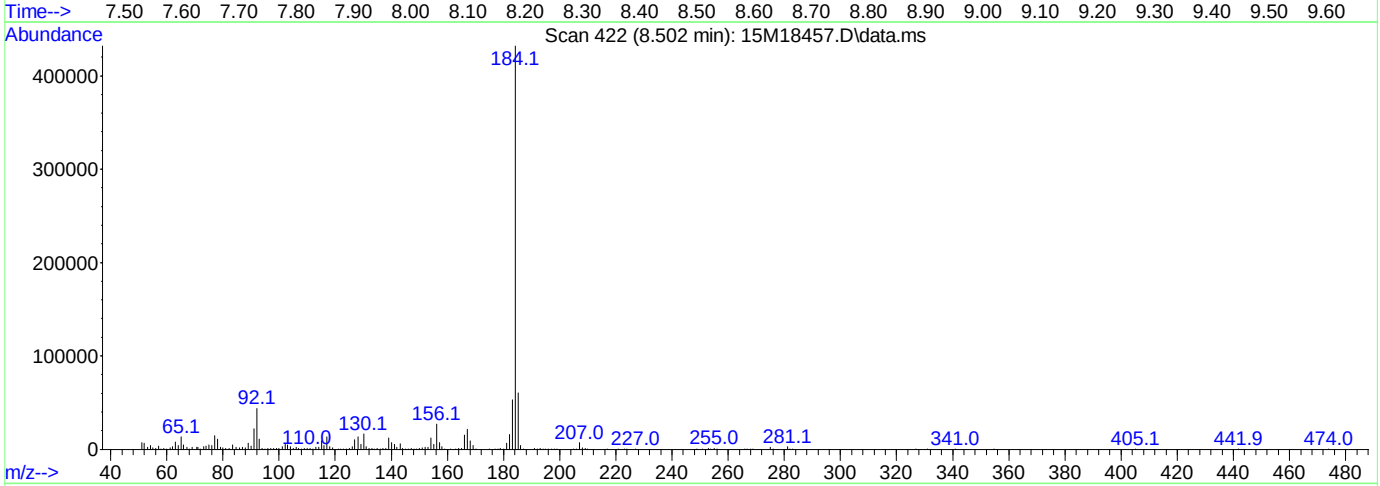

TIC: 15M18457.D\data.ms

(2) Benzidine

8.502min (+ 0.008) 0.00 ug/ml

response 532770

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

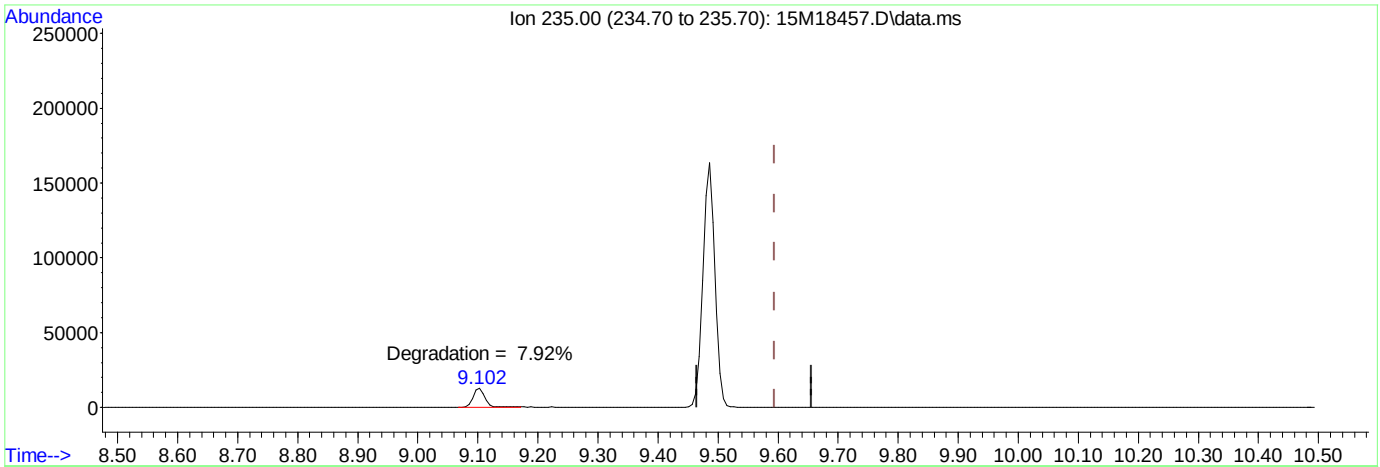

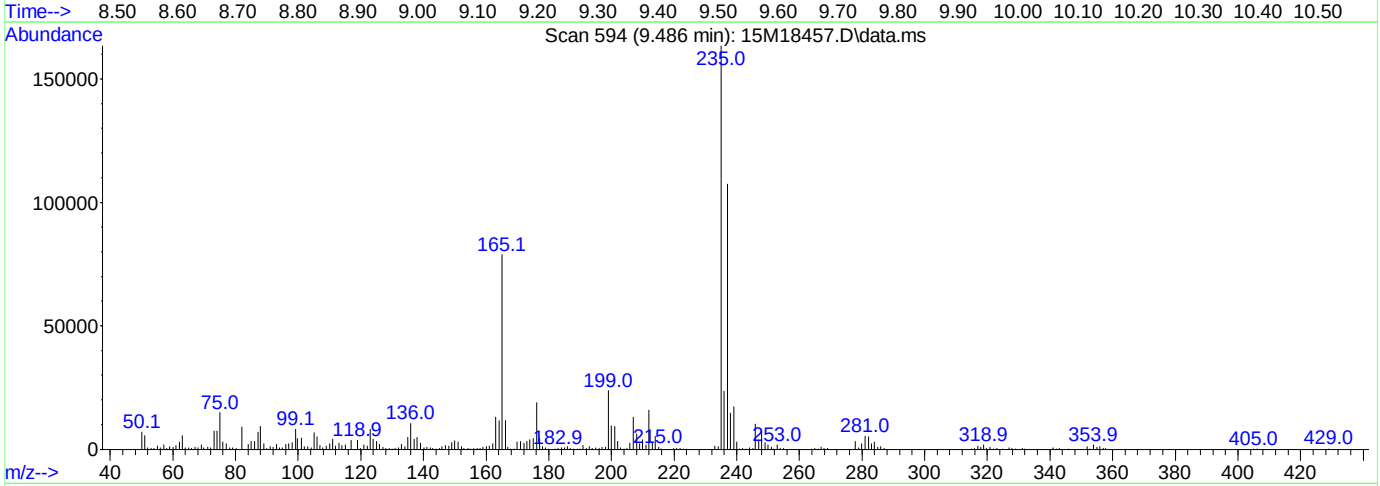

TIC: 15M18457.D\data.ms

(3) DDT

9.486min (-0.108) 0.00 ug/ml

response 180187

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18465.D
Acq On : 21 Jun 2016 12:54
Operator : MES
Sample : WG572806-01 BLANK 6/15
Misc : 1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 21 16:33:15 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.936	152	38899	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	49398	3.0862	ug/L	0.00
Spiked Amount 5.000			Recovery = 61.80%			
4) Nitrobenzene-d5	7.431	82	1663307	40.4808	ug/L	0.00
Spiked Amount 5.000			Recovery = 809.60%			
5) 2-Fluorobiphenyl	8.926	172	3076633	29.6644	ug/L	0.00
Spiked Amount 5.000			Recovery = 593.20%			
6) p-Terphenyl-d14	12.258	244	4064361	40.6562	ug/L	0.07
Spiked Amount 5.000			Recovery = 813.20%			

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18465.D
Acq On : 21 Jun 2016 12:54
Operator : MES
Sample : WG572806-01 BLANK 6/15
Misc : 1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 21 16:33:15 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

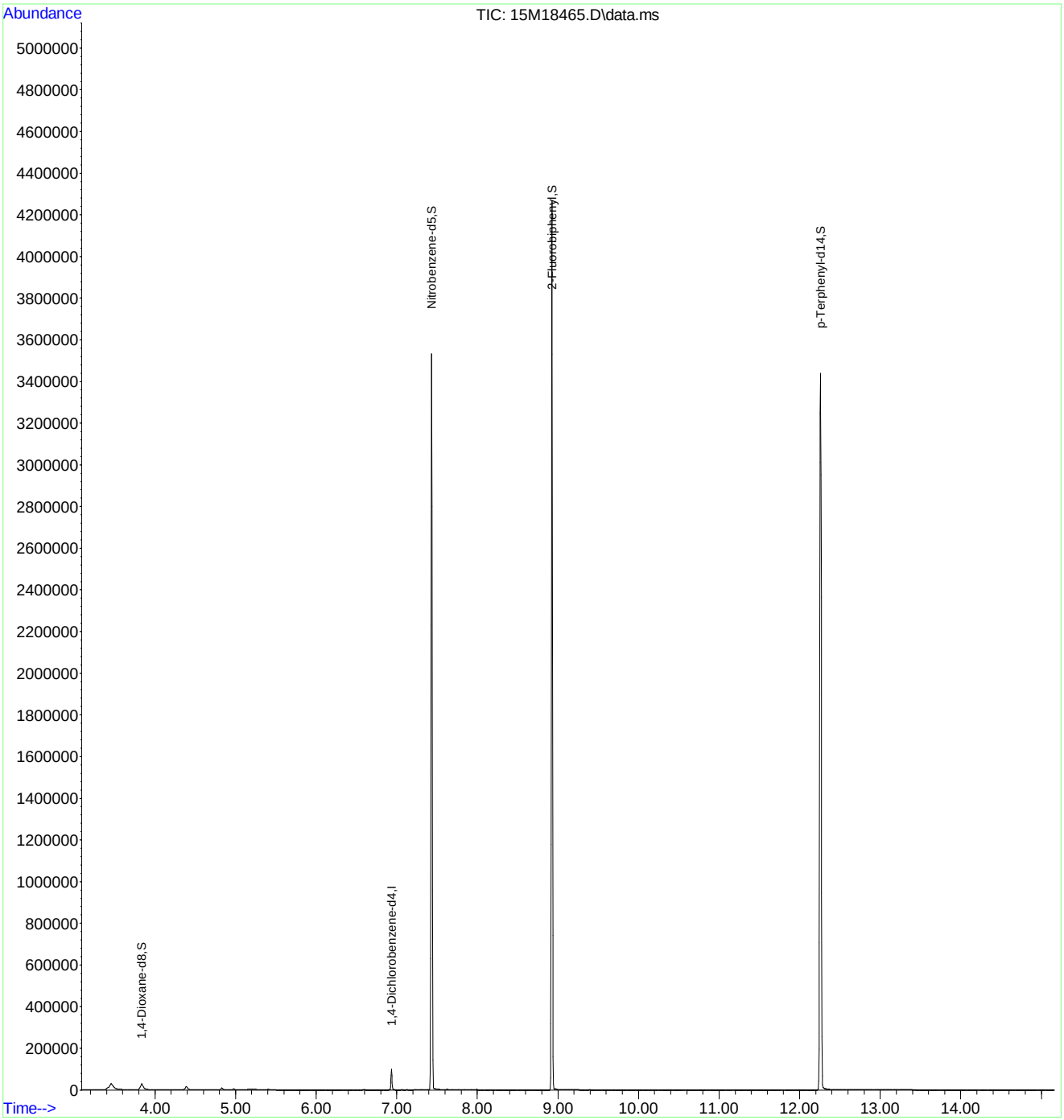

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18466.D
Acq On : 21 Jun 2016 13:17
Operator : MES
Sample : WG572806-02 LCS 6/15
Misc : 1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 22 08:05:00 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	27126	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.820	96	34886	3.1254	ug/L	0.00
Spiked Amount 5.000			Recovery	=	62.60%	
4) Nitrobenzene-d5	7.436	82	2047	0.0714	ug/L	0.00
Spiked Amount 5.000			Recovery	=	1.40%	
5) 2-Fluorobiphenyl	8.923	172	526	0.0073	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.20%	
6) p-Terphenyl-d14	12.229	244	1164	0.0167	ug/L	0.04
Spiked Amount 5.000			Recovery	=	0.40%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.855	58	25161	3.0316	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18466.D
Acq On : 21 Jun 2016 13:17
Operator : MES
Sample : WG572806-02 LCS 6/15
Misc : 1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 22 08:05:00 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

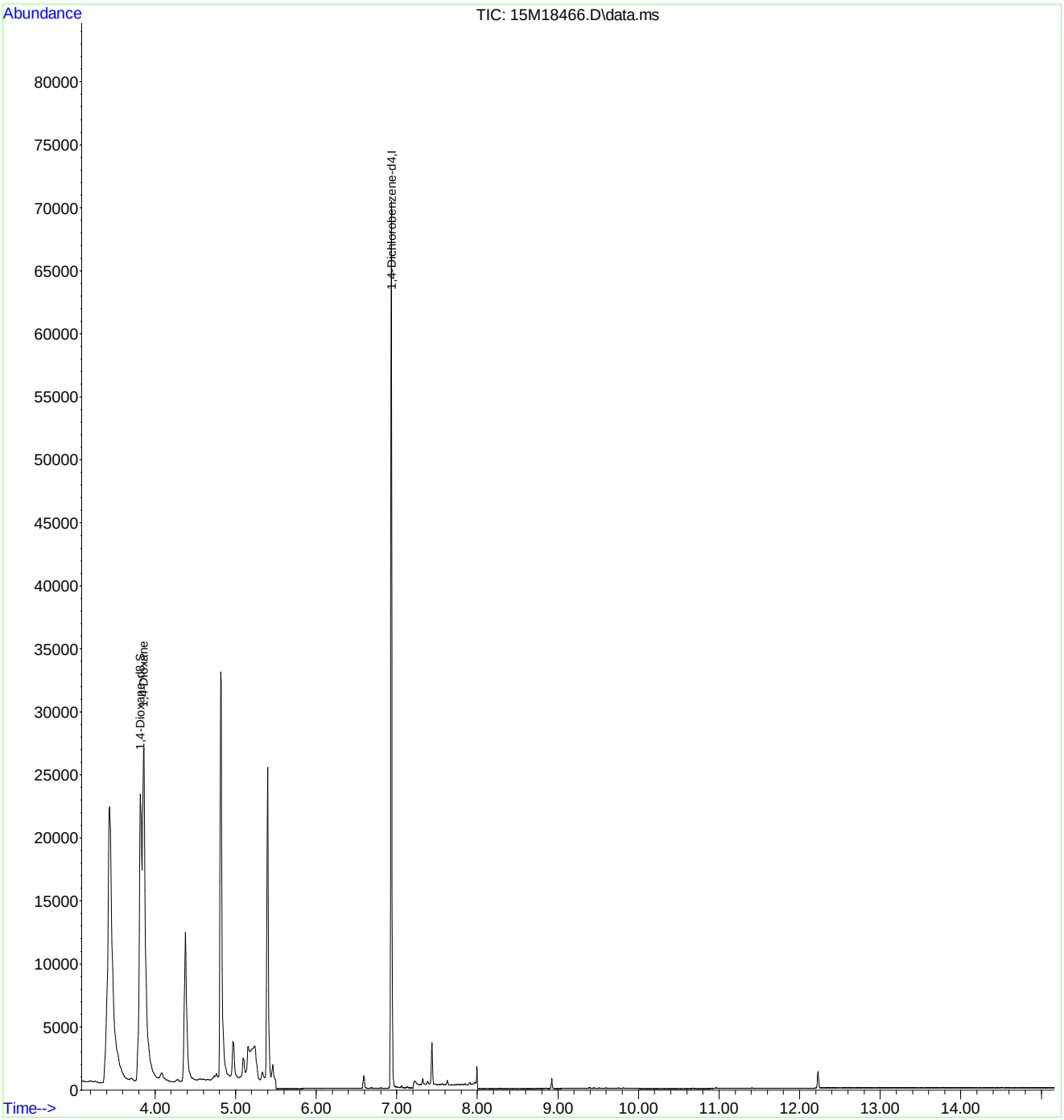

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18467.D
Acq On : 21 Jun 2016 13:40
Operator : MES
Sample : WG572806-03 LCSDUP 6/15
Misc : 1,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jun 22 08:05:03 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	34071	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	32606	2.3257	ug/L	0.00
Spiked Amount 5.000			Recovery	=	46.60%	
4) Nitrobenzene-d5	7.238	82	1167	0.0324	ug/L	-0.19
Spiked Amount 5.000			Recovery	=	0.60%	
5) 2-Fluorobiphenyl	8.923	172	1594	0.0175	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.40%	
6) p-Terphenyl-d14	12.207	244	949	0.0108	ug/L	0.02
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	23691	2.2726	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18467.D
Acq On : 21 Jun 2016 13:40
Operator : MES
Sample : WG572806-03 LCSDUP 6/15
Misc : 1,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jun 22 08:05:03 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

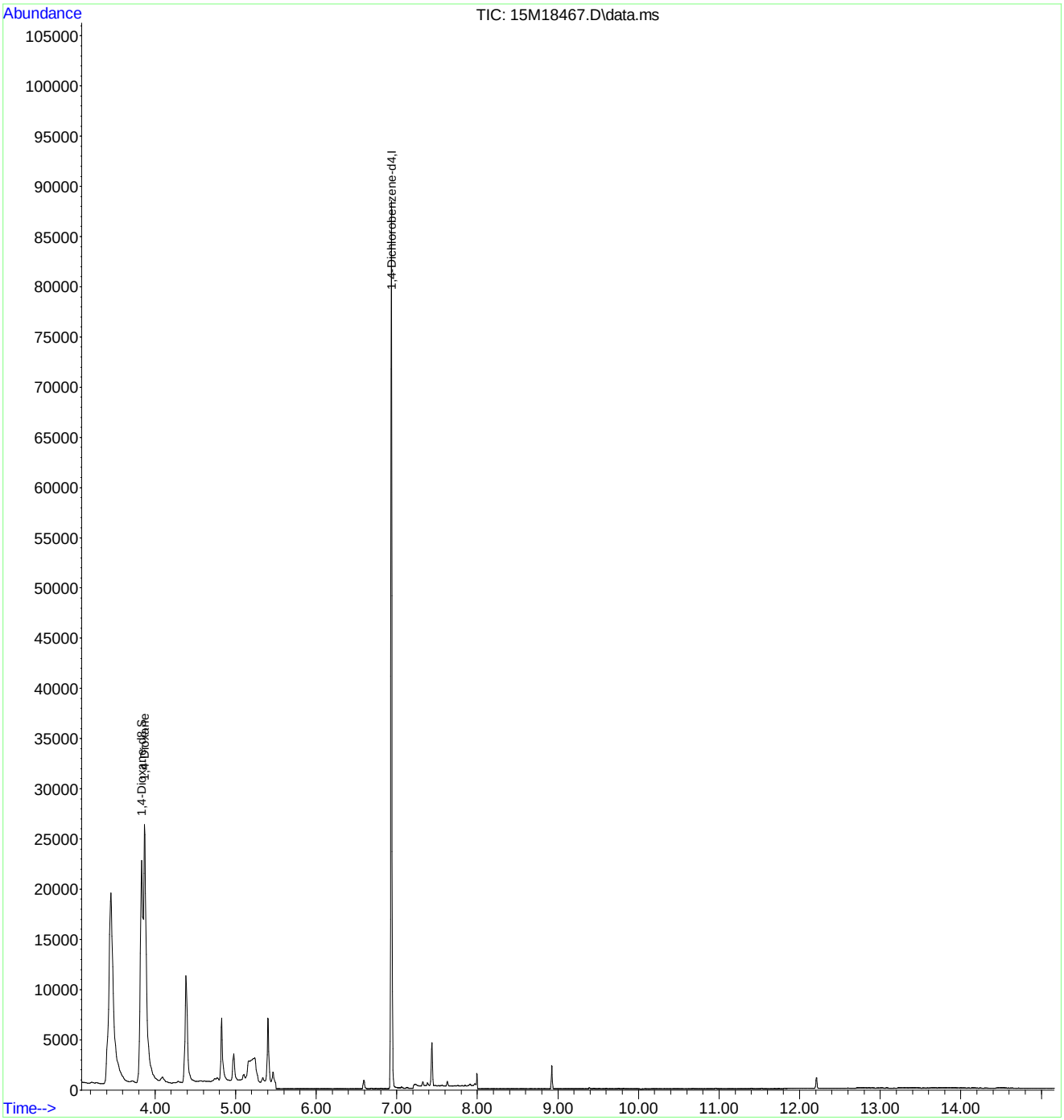

2.2 General Chromatography Data

2.2.2 6850 LC/MS Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	126-061416	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/24/2016 21:44
Collect Date:	06/14/2016 11:10	**Dilution:**	1	**File ID:**	1LM.LM35468
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.140	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	C08-061416	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/24/2016 22:03
Collect Date:	06/14/2016 13:10	**Dilution:**	1	**File ID:**	1LM.LM35469
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	C03-061416	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/24/2016 22:22
Collect Date:	06/14/2016 14:15	**Dilution:**	10	**File ID:**	1LM.LM35470
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	5.48		4.00	2.00	1.00

2.2.2.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1380 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG574101-01 MCT	9,990.	
-02 Blank	0.33	
-03 LCS	0.48	
-04 LCS2	0.51	
L16060823-01	9,120.	
-03	7,440.	
-04	1,943.	
L16060927-01	750.	
-02	652.	
-03	446.	
-04	162.7	
L16061026-01	6,910.	
-03	238.	
-04	965.	
-05	1,526.	
-07	220.	
L16061142-01	165.3	
-02	81.1	
-04	83.1	
-06	728.	
-07	74.2	
L16061144-01	118.6	
-02	118.7	
-03	110.1	

Analyst: John Richards

Date/Time: 06/27/16 / 20:00

DCN#119317

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

Page: 1 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

Page: 2 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 062416_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG574101 (waters)

Internal STD: STD18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments: Samples initially analyzed at dilutions were done so based on their historical results. Samples tagged with (NR) did not conform to their historical results. These samples were reanalyzed on the end of the sequence as neat or at dilutions based on the results of their initial analysis.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35462	WG574102-01 CCB	1	1		06/24/16 19:50
2	1LM.LM35463	WG574102-02 CCV (1.0ug/L)	1	1	STD75510	06/24/16 20:09
3	1LM.LM35464	WG574101-05 MRL (0.2ug/L)	1	1	STD75510	06/24/16 20:28
4	1LM.LM35465	WG574101-01 MCT (0.2ug/L)	1	1	STD75512	06/24/16 20:47
5	1LM.LM35466	WG574101-02 BLANK	1	1		06/24/16 21:06
6	1LM.LM35467	WG574101-03 LCS (0.2ug/L)	1	1	STD75512	06/24/16 21:25
7	1LM.LM35468	L16060823-01	1	1		06/24/16 21:44
8	1LM.LM35469	L16060823-03	1	1		06/24/16 22:03
9	1LM.LM35470	L16060823-04 (10x)	1	10		06/24/16 22:22
10	1LM.LM35471	L16060927-01 (100x) (NR)	1	100		06/24/16 22:41
11	1LM.LM35472	L16060927-02 (100x) (NR)	1	100		06/24/16 23:00
12	1LM.LM35473	L16060927-03	1	1		06/24/16 23:18
13	1LM.LM35474	L16060927-04	1	1		06/24/16 23:37
14	1LM.LM35475	WG574102-03 CCV (1.0ug/L)	1	1	STD75510	06/24/16 23:56
15	1LM.LM35476	WG574101-06 MRL (0.2ug/L)	1	1	STD75510	06/25/16 00:15
16	1LM.LM35477	WG574102-04 CCB	1	1		06/25/16 00:34
17	1LM.LM35478	L16061026-01 (100x) (NR)	1	100		06/25/16 00:53
18	1LM.LM35479	L16061026-03 (100x)	1	100		06/25/16 01:12
19	1LM.LM35480	L16061026-04 (10,000x)	1	10000		06/25/16 01:31
20	1LM.LM35481	L16061026-05 (100,000x) (NR)	1	100000		06/25/16 01:50
21	1LM.LM35482	L16061026-07 (10x) (NR)	1	10		06/25/16 02:09
22	1LM.LM35483	L16061142-01	1	1		06/25/16 02:28
23	1LM.LM35484	L16061142-02	1	1		06/25/16 02:47
24	1LM.LM35485	L16061142-04	1	1		06/25/16 03:06
25	1LM.LM35486	L16061142-06 (10x) (NR)	1	10		06/25/16 03:25
26	1LM.LM35487	L16061142-07	1	1		06/25/16 03:44
27	1LM.LM35488	WG574102-05 CCV (1.0ug/L)	1	1	STD75510	06/25/16 04:03
28	1LM.LM35489	WG574101-07 MRL (0.2ug/L)	1	1	STD75510	06/25/16 04:22
29	1LM.LM35490	WG574102-06 CCB	1	1		06/25/16 04:40
30	1LM.LM35491	WG574101-04 LCS2 (0.2ug/L)	1	1	STD75512	06/25/16 04:59
31	1LM.LM35492	L16061144-01	1	1		06/25/16 05:18
32	1LM.LM35493	L16061144-02	1	1		06/25/16 05:37
33	1LM.LM35494	L16061144-03 (10x) (NR)	1	10		06/25/16 05:56

Page: 1 Approved: 28-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 062416_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG574101 (waters)

Internal STD: STD18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 NA

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM35495	WG574102-07 CCV (1.0ug/L)	1	1	STD75510	06/25/16 06:15
35	1LM.LM35496	WG574101-08 MRL (0.2ug/L)	1	1	STD75510	06/25/16 06:34
36	1LM.LM35497	WG574102-08 CCB	1	1		06/25/16 06:53
37	1LM.LM35498	WG574102-09 CCV (1.0ug/L)	1	1	STD75510	06/25/16 18:06
38	1LM.LM35499	WG574101-09 MRL (0.2ug/L)	1	1	STD75510	06/25/16 18:25
39	1LM.LM35500	WG574102-10 CCB	1	1		06/25/16 18:44
40	1LM.LM35501	L16060927-01 (RR Neat)	1	1		06/25/16 19:02
41	1LM.LM35502	L16060927-02 (RR 1000x)	1	1000		06/25/16 19:21
42	1LM.LM35503	L16061026-01 (RR Neat)	1	1		06/25/16 19:40
43	1LM.LM35504	L16061026-05 (RR 10,000x)	1	10000		06/25/16 19:59
44	1LM.LM35505	L16061026-07 (RR 50x)	1	50		06/25/16 20:18
45	1LM.LM35506	L16061142-06 (RR Neat)	1	1		06/25/16 20:37
46	1LM.LM35507	L16061144-03 (RR Neat)	1	1		06/25/16 20:56
47	1LM.LM35508	WG574102-11 CCV (1.0ug/L)	1	1	STD75510	06/25/16 21:15
48	1LM.LM35509	WG574101-10 MRL (0.2ug/L)	1	1	STD75510	06/25/16 21:34
49	1LM.LM35510	WG574102-12 CCB	1	1		06/25/16 21:53

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 2 Approved: 28-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 04-MAY-2016 John Richards

Secondary Reviewer: 05-MAY-2016 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 24-JUN-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 75960
Analytical Workgroups: L16060823, 0927, 1026, 1142, 1144

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 27-JUN-2016 John Richards

Secondary Reviewer: 28-JUN-2016 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-28-2016 14:00:55

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG574101

Login Number: L16060823

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
126-061416	01	06/14/16					06/24/2016	10.3	28		06/24/16	.1	28	
C08-061416	03	06/14/16					06/24/2016	10.2	28		06/24/16	.1	28	
C03-061416	04	06/14/16					06/24/2016	10.2	28		06/24/16	.1	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4827762
Report generated 06/28/2016 14:14

METHOD BLANK SUMMARY

Login Number: L16060823
Blank File ID: 1LM.LM35466
Prep Date: 06/24/16 19:00
Analyzed Date: 06/24/16 21:06
Analyst: JWR

Work Group: WG574101
Blank Sample ID: WG574101-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG574101-05	1LM.LM35464	06/24/16 20:28	01
MCT	WG574101-01	1LM.LM35465	06/24/16 20:47	01
LCS	WG574101-03	1LM.LM35467	06/24/16 21:25	01
126-061416	L16060823-01	1LM.LM35468	06/24/16 21:44	01
C08-061416	L16060823-03	1LM.LM35469	06/24/16 22:03	01
C03-061416	L16060823-04	1LM.LM35470	06/24/16 22:22	DL01
QCMRL	WG574101-06	1LM.LM35476	06/25/16 00:15	01
QCMRL	WG574101-07	1LM.LM35489	06/25/16 04:22	01
LCS2	WG574101-04	1LM.LM35491	06/25/16 04:59	01
QCMRL	WG574101-08	1LM.LM35496	06/25/16 06:34	01
QCMRL	WG574101-09	1LM.LM35499	06/25/16 18:25	01
QCMRL	WG574101-10	1LM.LM35509	06/25/16 21:34	01

Report Name: BLANK_SUMMARY
PDF File ID: 4827763
Report generated 06/28/2016 14:14

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060823 Prep Date: 06/24/16 19:00 Sample ID: WG574101-02
Instrument ID: LCMS1 Run Date: 06/24/16 21:06 Prep Method: 6850
File ID: 1LM.LM35466 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4827764
28-JUN-2016 14:14

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060823 Analyst: JWR Prep Method: 6850
Instrument ID: LCMS1 Matrix: Water Method: 6850
Workgroup (AAB#): WG574101 Units: ug/L
QC Key: DOD4 Lot #: STD75512

Sample ID: WG574101-03 LCS File ID: 1LM.LM35467 Run Date: 06/24/2016 21:25
Sample ID: WG574101-04 LCS2 File ID: 1LM.LM35491 Run Date: 06/25/2016 04:59

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Perchlorate	0.200	0.208	104	0.200	0.213	107	2.38	80 - 120	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4827765
Report generated: 06/28/2016 14:14

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060823
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4828694
Report generated 06/28/2016 14:14

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060823

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4828694
Report generated 06/28/2016 14:14

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060823

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4828694
Report generated 06/28/2016 14:14

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060823

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008

PDF File ID: 4828694

Report generated 06/28/2016 14:14

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060823 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4828695
Report generated 06/28/2016 14:15

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/24/2016
Sample ID: WG574102-01
Instrument ID: LCMS1
Run Time: 19:50
Method: 6850
File ID: 1LM.LM35462
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827768
Report generated 06/28/2016 14:15

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/25/2016
Sample ID: WG574102-04
Instrument ID: LCMS1
Run Time: 00:34
Method: 6850
File ID: 1LM.LM35477
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827768
Report generated 06/28/2016 14:15

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/25/2016
Sample ID: WG574102-06
Instrument ID: LCMS1
Run Time: 04:40
Method: 6850
File ID: 1LM.LM35490
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827768
Report generated 06/28/2016 14:15

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/25/2016
Sample ID: WG574102-08
Instrument ID: LCMS1
Run Time: 06:53
Method: 6850
File ID: 1LM.LM35497
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827768
Report generated 06/28/2016 14:15

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/25/2016
Sample ID: WG574102-10
Instrument ID: LCMS1
Run Time: 18:44
Method: 6850
File ID: 1LM.LM35500
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827768
Report generated 06/28/2016 14:15

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/25/2016
Sample ID: WG574102-12
Instrument ID: LCMS1
Run Time: 21:53
Method: 6850
File ID: 1LM.LM35510
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827768
Report generated 06/28/2016 14:15

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823 Run Date: 06/24/2016 Sample ID: WG574102-02
Instrument ID: LCMS1 Run Time: 20:09 Method: 6850
File ID: 1LM.LM35463 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG574101 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.70	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827767
Report generated 06/28/2016 14:15

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823 Run Date: 06/24/2016 Sample ID: WG574102-03
Instrument ID: LCMS1 Run Time: 23:56 Method: 6850
File ID: 1LM.LM35475 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG574101 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.70	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827767
Report generated 06/28/2016 14:15

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/25/2016
Sample ID: WG574102-05
Instrument ID: LCMS1
Run Time: 04:03
Method: 6850
File ID: 1LM.LM35488
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.75	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827767
Report generated 06/28/2016 14:15

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/25/2016
Sample ID: WG574102-07
Instrument ID: LCMS1
Run Time: 06:15
Method: 6850
File ID: 1LM.LM35495
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.72	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827767
Report generated 06/28/2016 14:15

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/25/2016
Sample ID: WG574102-09
Instrument ID: LCMS1
Run Time: 18:06
Method: 6850
File ID: 1LM.LM35498
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.76	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827767
Report generated 06/28/2016 14:15

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823 Run Date: 06/25/2016 Sample ID: WG574102-11
Instrument ID: LCMS1 Run Time: 21:15 Method: 6850
File ID: 1LM.LM35508 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG574101 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.73	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827767
Report generated 06/28/2016 14:15

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060823 Run Date: 06/24/2016 Sample ID: WG574101-05
Instrument ID: LCMS1 Run Time: 20:28 Prep Method: 6850
File ID: 1LM.LM35464 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827766
Report generated 06/28/2016 14:14

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060823 Run Date: 06/25/2016 Sample ID: WG574101-06
Instrument ID: LCMS1 Run Time: 00:15 Prep Method: 6850
File ID: 1LM.LM35476 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.198	99.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827766
Report generated 06/28/2016 14:14

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060823 Run Date: 06/25/2016 Sample ID: WG574101-07
Instrument ID: LCMS1 Run Time: 04:22 Prep Method: 6850
File ID: 1LM.LM35489 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.211	106	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827766
Report generated 06/28/2016 14:14

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060823 Run Date: 06/25/2016 Sample ID: WG574101-08
Instrument ID: LCMS1 Run Time: 06:34 Prep Method: 6850
File ID: 1LM.LM35496 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.201	101	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827766
Report generated 06/28/2016 14:14

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060823 Run Date: 06/25/2016 Sample ID: WG574101-09

Instrument ID: LCMS1 Run Time: 18:25 Prep Method: 6850

File ID: 1LM.LM35499 Analyst: JWR Method: 6850

Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L

Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.207	104	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827766
Report generated 06/28/2016 14:14

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060823 Run Date: 06/25/2016 Sample ID: WG574101-10

Instrument ID: LCMS1 Run Time: 21:34 Prep Method: 6850

File ID: 1LM.LM35509 Analyst: JWR Method: 6850

Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L

Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827766
Report generated 06/28/2016 14:14

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16060823
Instrument ID: LCMS1
Workgroup (AAB#): WG574101

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16060823-01	1.00	01	350000
L16060823-03	1.00	01	343000
L16060823-04	10.0	DL01	405000
WG574101-02	1.00	01	443000
WG574101-03	1.00	01	444000
WG574101-04	1.00	01	526000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4827769
Report generated 06/28/2016 14:15

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**	6850	**Samplenum:**	L16060823-01
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35468
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 21:44	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	16900	6640	2.55	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**	6850	**Samplenum:**	L16060823-03
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35469
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 22:03	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	6790	3320	2.05	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**	6850	**Samplenum:**	L16060823-04
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35470
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 22:22	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	75100	26200	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**	6850	**Samplenum:**	WG574101-01
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35465
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 20:47	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	28100	10000	2.81	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**	6850	**Samplenum:**	WG574101-02
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35466
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 21:06	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**	6850	**Samplenum:**	WG574101-03
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35467
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 21:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	31600	11800	2.68	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**	6850	**Samplenum:**	WG574101-04
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35491
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 04:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38300	14000	2.74	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**	6850	**Samplenum:**	WG574101-05
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35464
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 20:28	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	31600	12100	2.61	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**	6850	**Samplenum:**	WG574101-06
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35476
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 00:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35000	13100	2.67	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**	6850	**Samplenum:**	WG574101-07
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35489
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 04:22	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38900	13400	2.90	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**	6850	**Samplenum:**	WG574101-08
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35496
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 06:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38000	14100	2.70	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**	6850	**Samplenum:**	WG574101-09
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35499
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 18:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32900	11500	2.86	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**	6850	**Samplenum:**	WG574101-10
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35509
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 21:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37900	14000	2.71	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**		**Samplenum:**	WG574102-01
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:50	**File ID:**	1LM.LM35462
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 19:50	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**		**Samplenum:**	WG574102-02
Instrument:	LCMS1	**Prep Date:**	06/24/2016 20:09	**File ID:**	1LM.LM35463
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 20:09	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	152000	55500	2.74	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**		**Samplenum:**	WG574102-03
Instrument:	LCMS1	**Prep Date:**	06/24/2016 23:56	**File ID:**	1LM.LM35475
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 23:56	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	170000	57500	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**		**Samplenum:**	WG574102-04
Instrument:	LCMS1	**Prep Date:**	06/25/2016 00:34	**File ID:**	1LM.LM35477
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 00:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	824	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**		**Samplenum:**	WG574102-05
Instrument:	LCMS1	**Prep Date:**	06/25/2016 04:03	**File ID:**	1LM.LM35488
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 04:03	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	179000	60200	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**		**Samplenum:**	WG574102-06
Instrument:	LCMS1	**Prep Date:**	06/25/2016 04:40	**File ID:**	1LM.LM35490
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 04:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**		**Samplenum:**	WG574102-07
Instrument:	LCMS1	**Prep Date:**	06/25/2016 06:15	**File ID:**	1LM.LM35495
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 06:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	189000	63400	2.98	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**		**Samplenum:**	WG574102-08
Instrument:	LCMS1	**Prep Date:**	06/25/2016 06:53	**File ID:**	1LM.LM35497
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 06:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	518	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**		**Samplenum:**	WG574102-09
Instrument:	LCMS1	**Prep Date:**	06/25/2016 18:06	**File ID:**	1LM.LM35498
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 18:06	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	161000	56700	2.84	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**		**Samplenum:**	WG574102-10
Instrument:	LCMS1	**Prep Date:**	06/25/2016 18:44	**File ID:**	1LM.LM35500
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 18:44	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**		**Samplenum:**	WG574102-11
Instrument:	LCMS1	**Prep Date:**	06/25/2016 21:15	**File ID:**	1LM.LM35508
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 21:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	176000	59300	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**		**Samplenum:**	WG574102-12
Instrument:	LCMS1	**Prep Date:**	06/25/2016 21:53	**File ID:**	1LM.LM35510
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 21:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

2.2.2.3 Sample Data

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Data File	LM35468.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 9:44:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060823-01	**Injection Vial**	8.00
Data File	LM35468.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 9:44:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	L16060823-01	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.500e+05	9.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+04	9.10	N/A	0.14
Perchlorate conf	6.640e+03	9.11	N/A	0.149

O18LP (Internal Standard)

RT (Exp. RT): 9.10(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

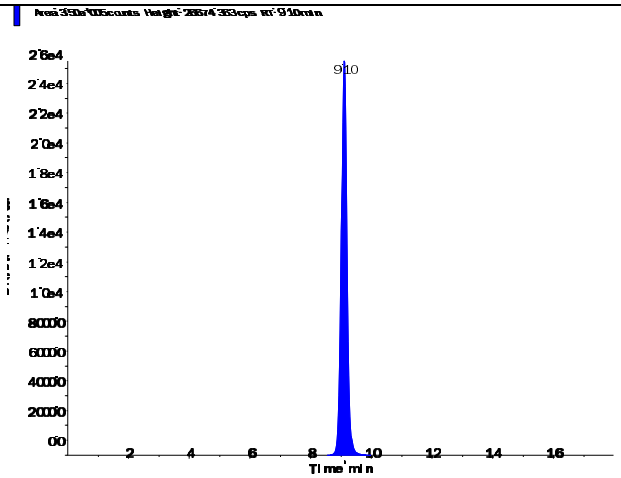

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.10 (9.84) min
Calculated conc:	0.14 ng/ml
Area Ratio:	0.048
Sample Type:	(Unknown)

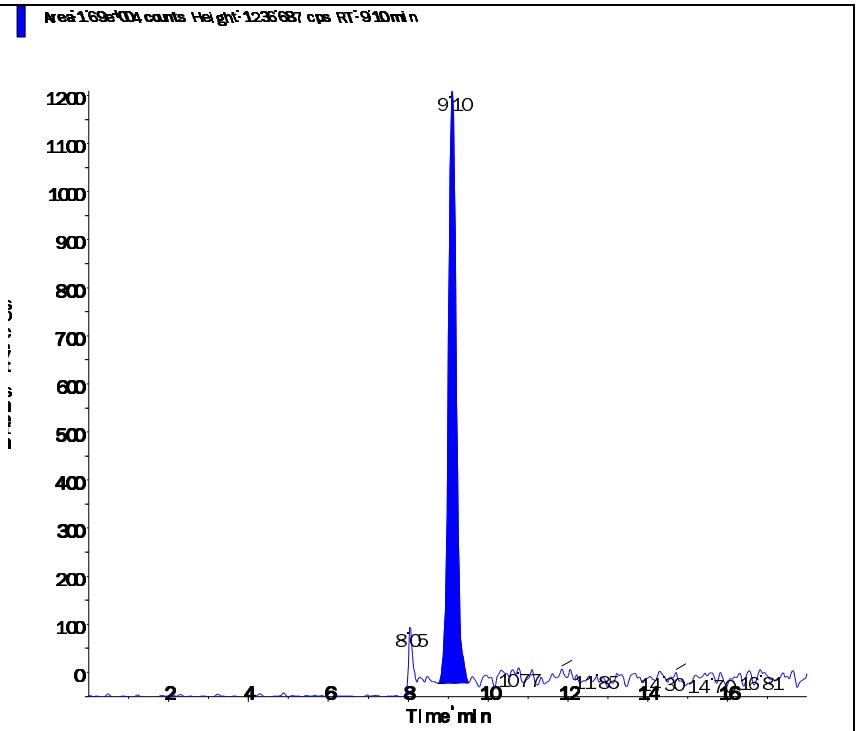

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.11 (9.84) min
Calculated conc:	0.149 ng/ml
Area Ratio:	0.019
Sample Type:	(Unknown)

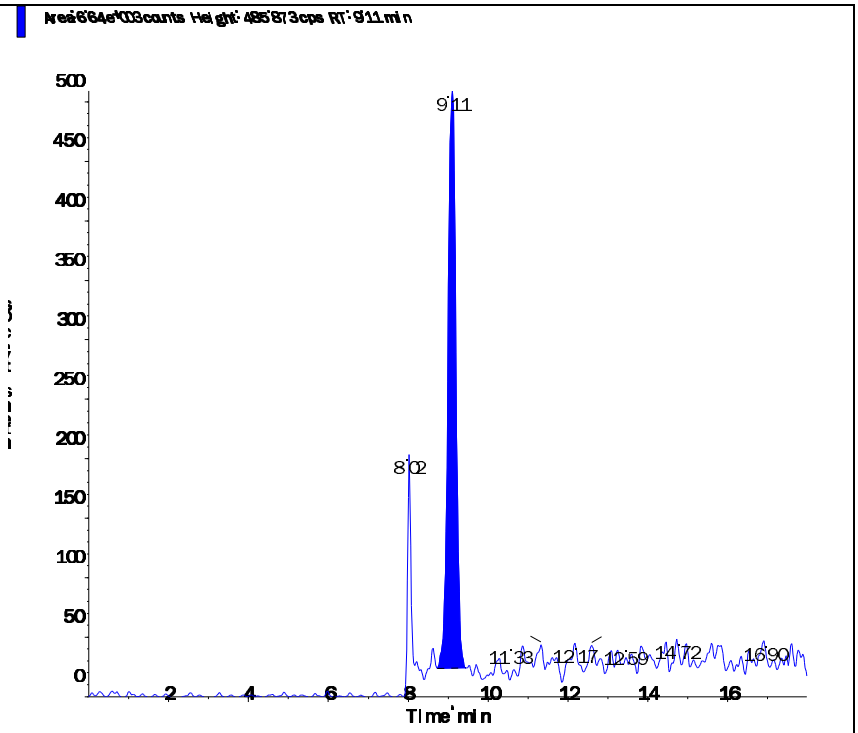

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Data File	LM35469.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 10:03:12 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060823-03	**Injection Vial**	9.00
Data File	LM35469.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 10:03:12 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	L16060823-03	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.430e+05	9.09	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	6.790e+03	9.12	N/A	0.055
Perchlorate conf	3.320e+03	9.10	N/A	0.0661

O18LP (Internal Standard)

RT (Exp. RT): 9.09(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

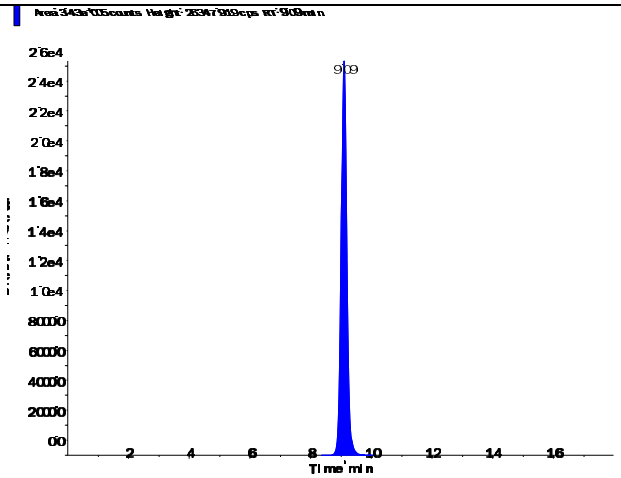

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.12 (9.84) min
Calculated conc:	0.055 ng/ml
Area Ratio:	0.02
Sample Type:	(Unknown)

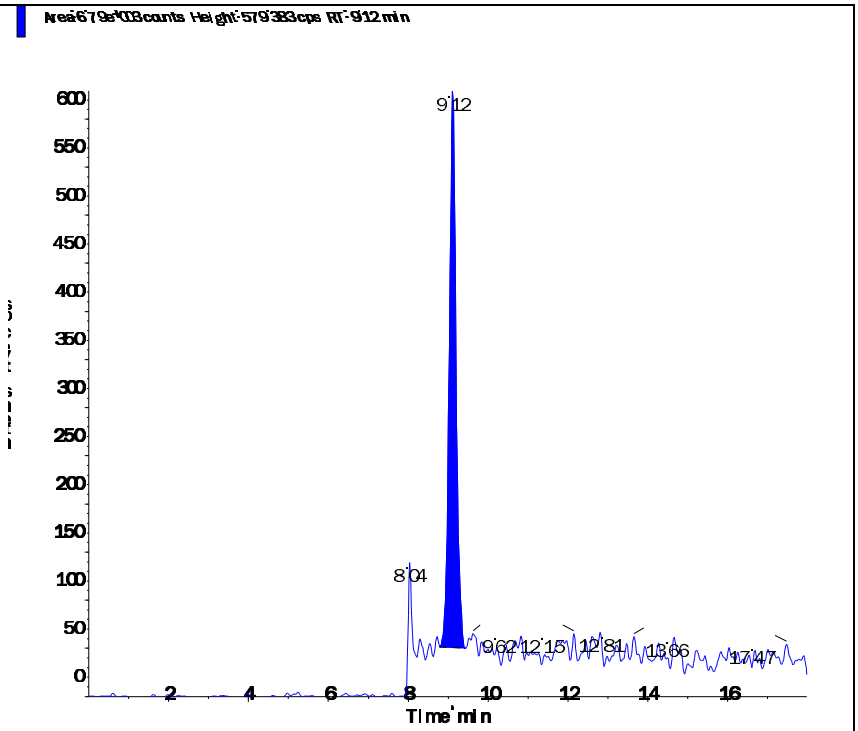

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.10 (9.84) min
Calculated conc:	0.0661 ng/ml
Area Ratio:	0.01
Sample Type:	(Unknown)

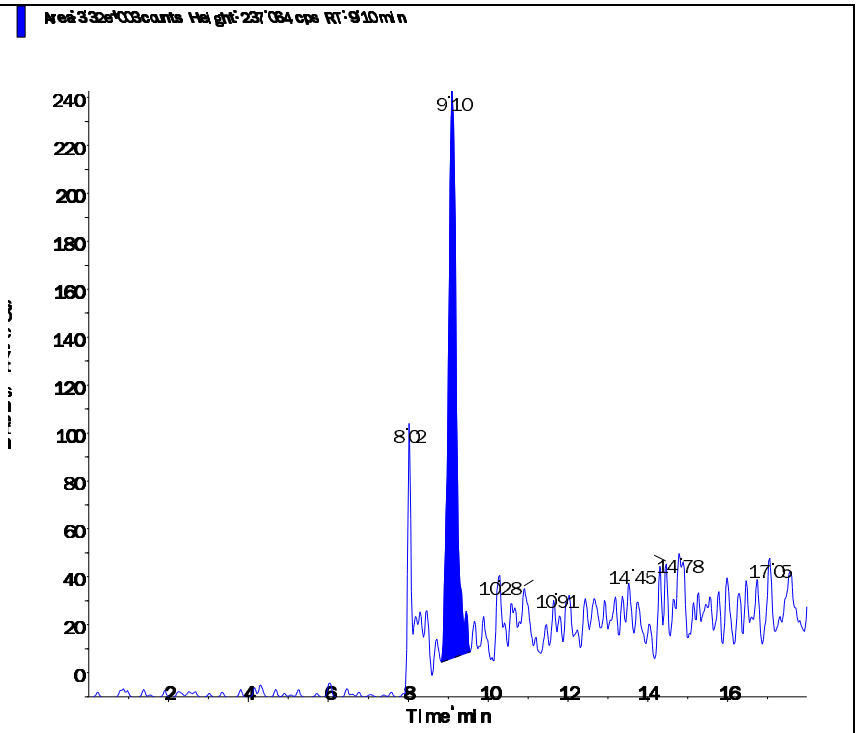

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Data File	LM35470.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 10:22:07 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060823-04 (10x)	**Injection Vial**	10.00
Data File	LM35470.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 10:22:07 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	L16060823-04	**Dilution Factor**	1.00
Sample Comment	1,10 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.050e+05	9.49	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.510e+04	9.51	N/A	0.548
Perchlorate conf	2.620e+04	9.50	N/A	0.56

O18LP (Internal Standard)

RT (Exp. RT): 9.49(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

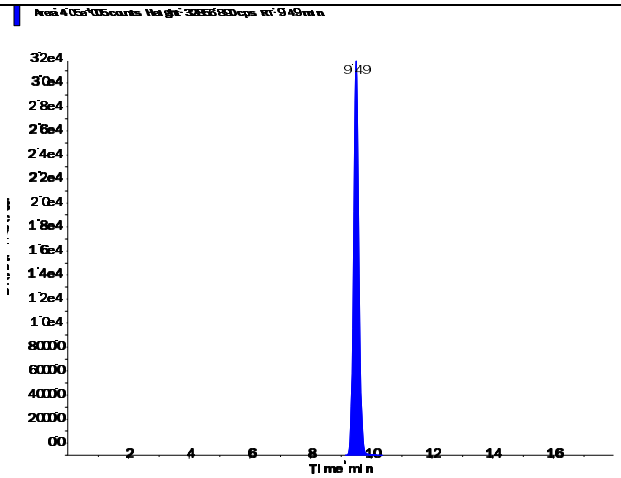

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.51 (9.84) min
Calculated conc:	0.548 ng/ml
Area Ratio:	0.185
Sample Type:	(Unknown)

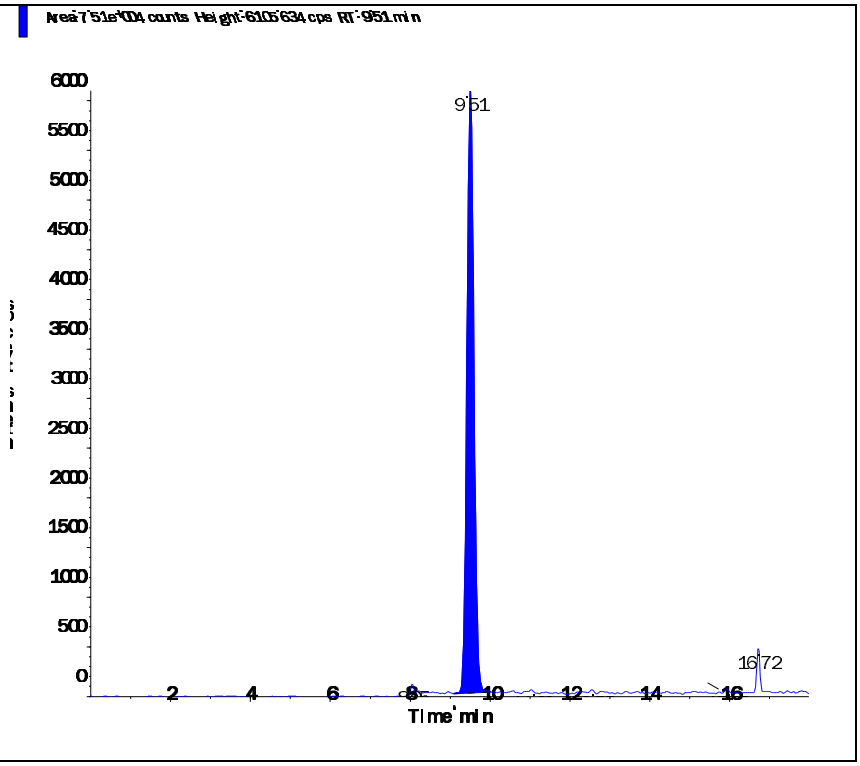

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.50 (9.84) min
Calculated conc:	0.56 ng/ml
Area Ratio:	0.065
Sample Type:	(Unknown)

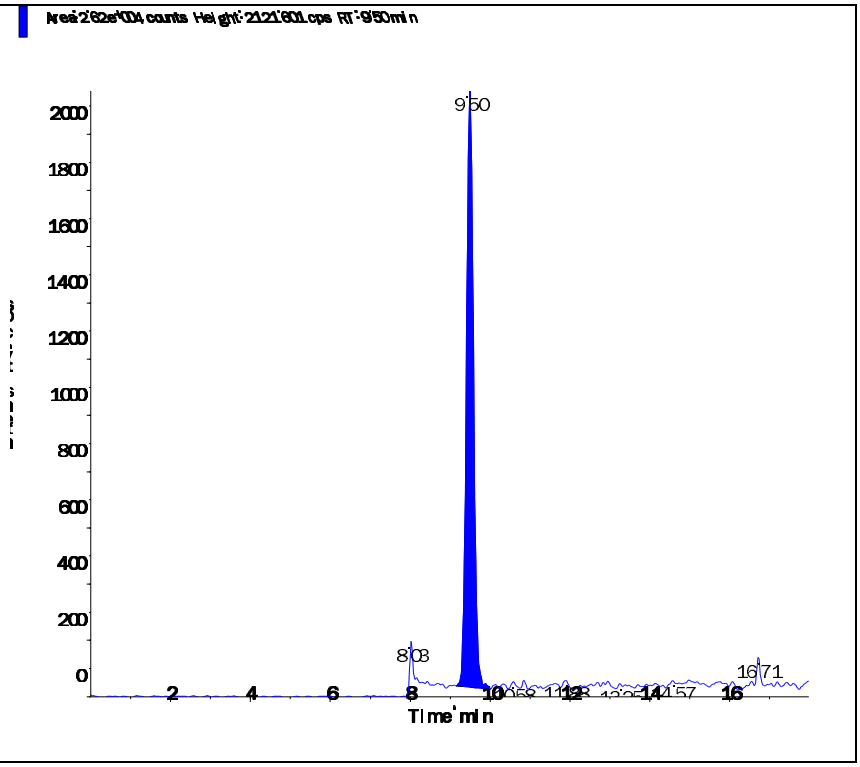

2.2.2.4 Standards Data

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Data File	LM34686.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

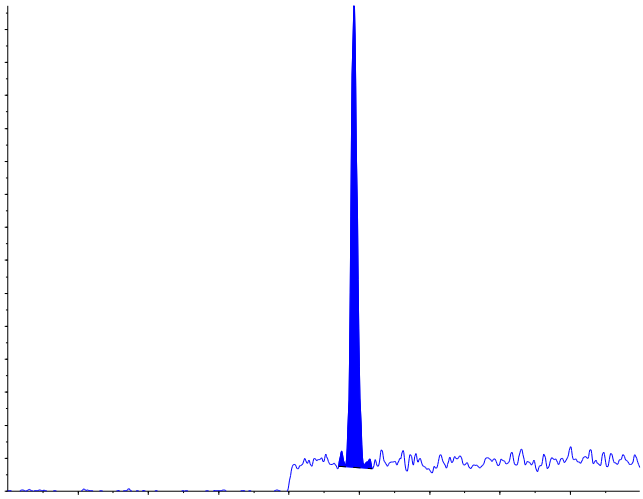

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	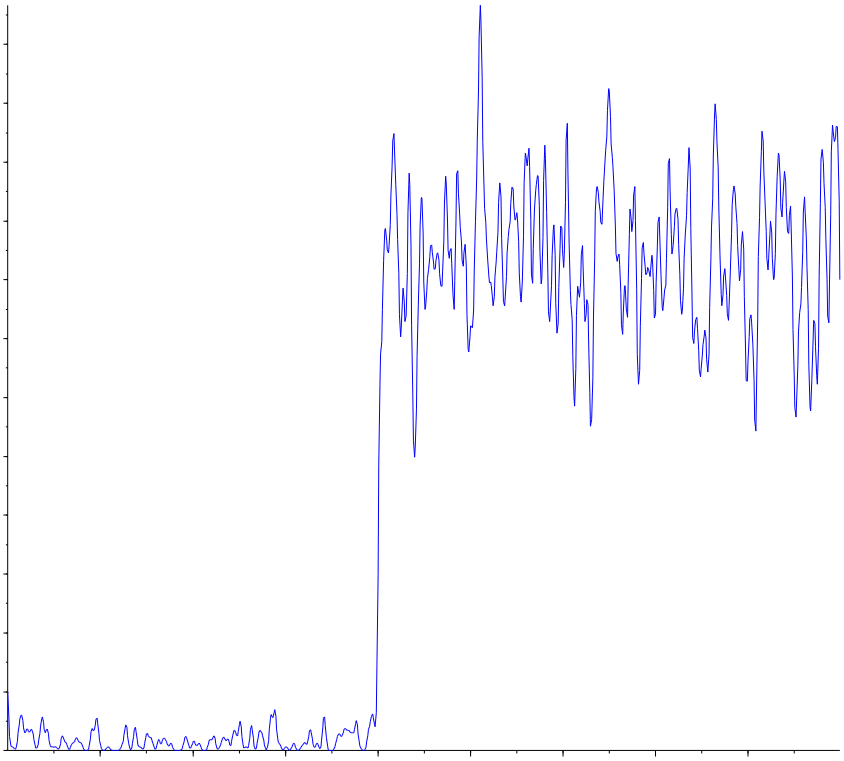
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	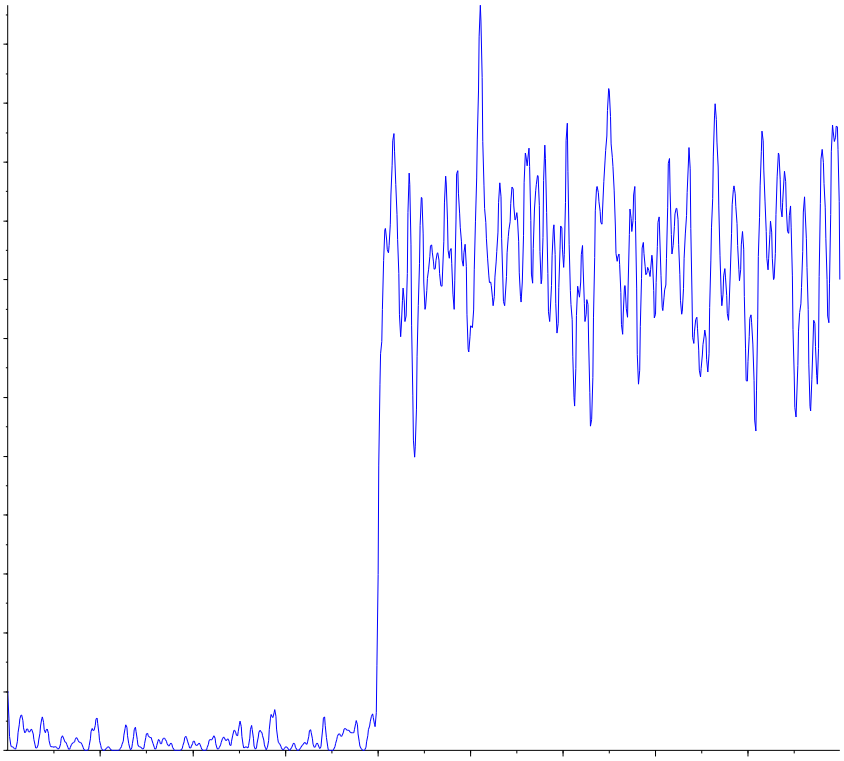

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Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

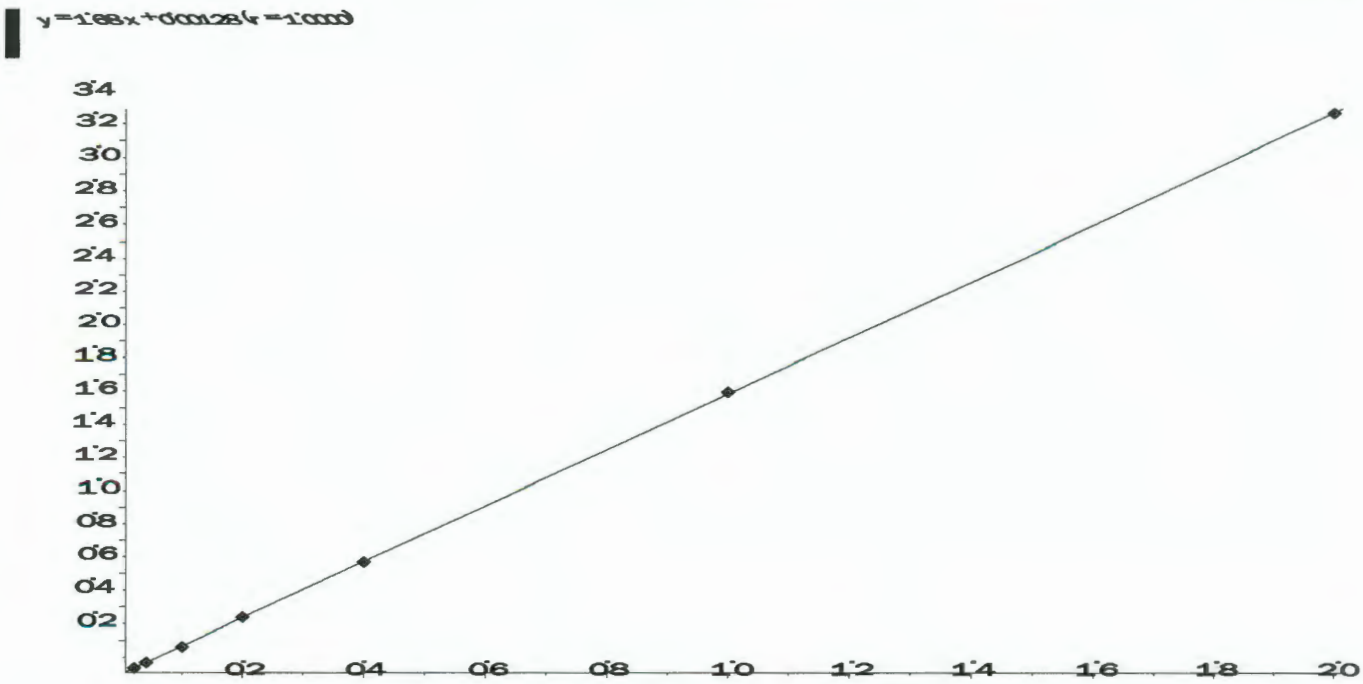

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Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

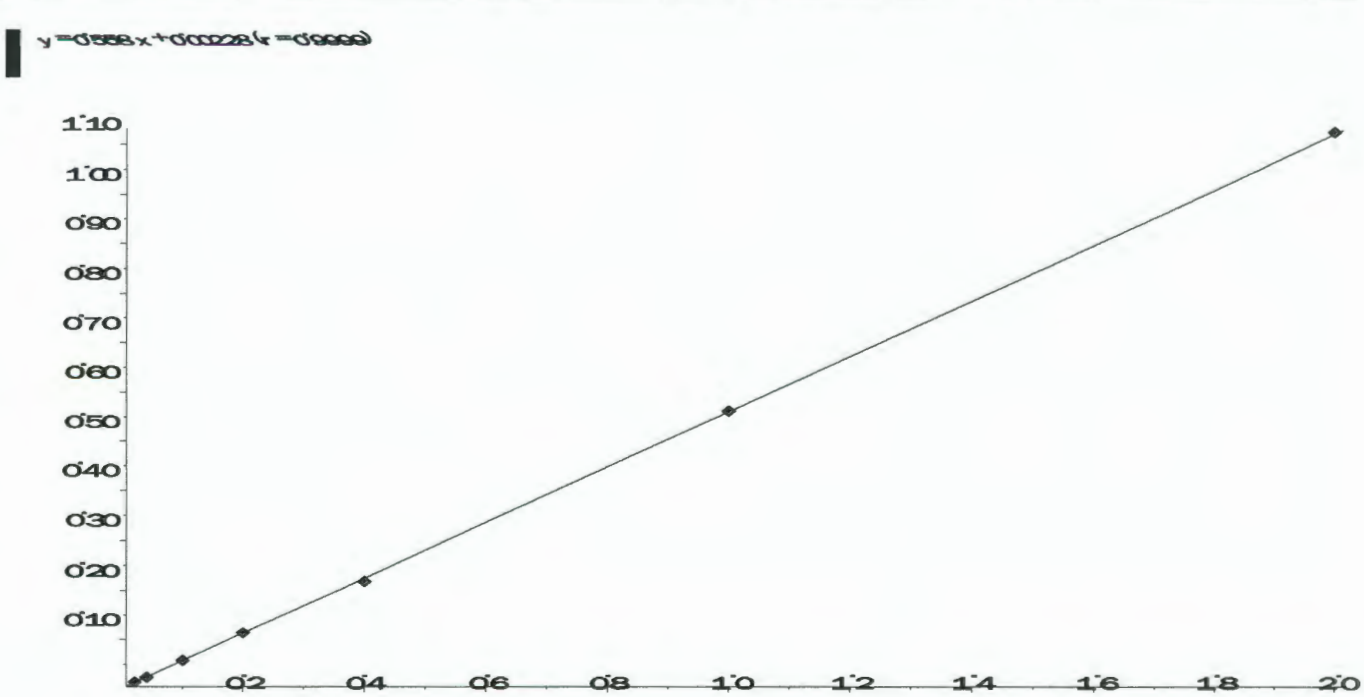

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Data File	LM34687.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

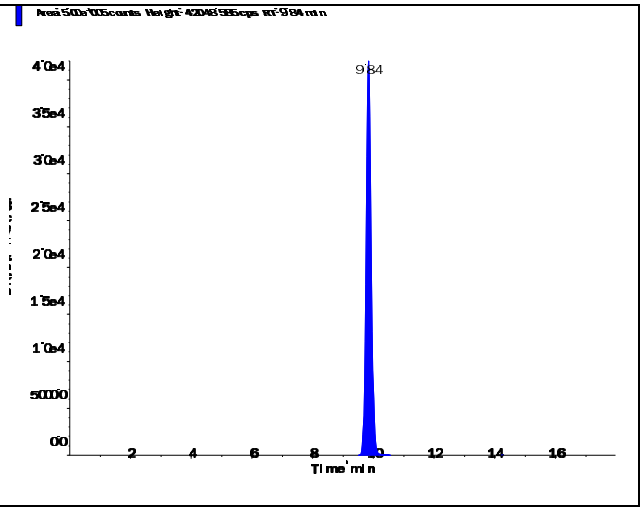

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 0.103 ng/ml Area Ratio: 0.036 Sample Type: (Standard)	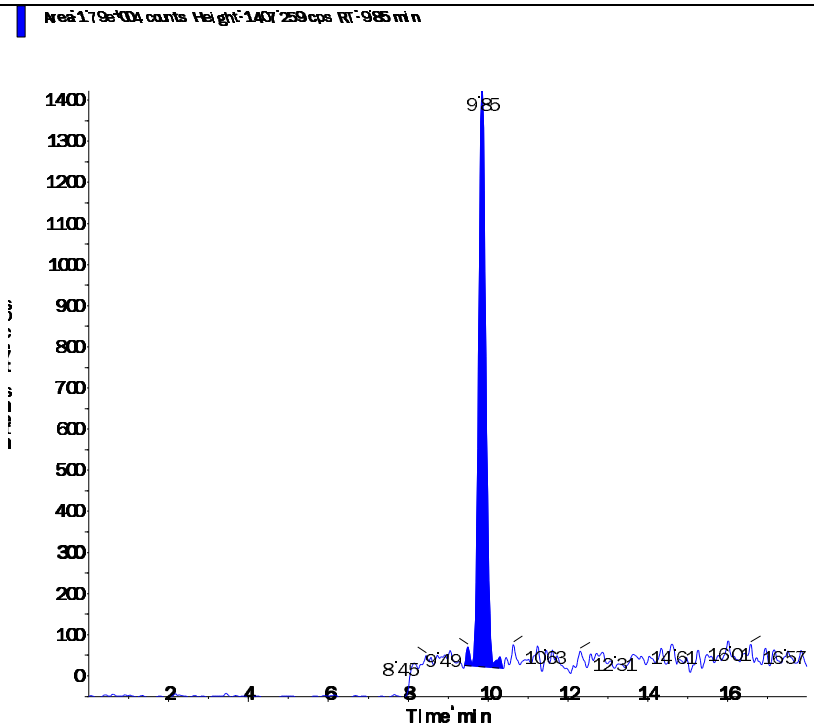
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 0.104 ng/ml Area Ratio: 0.014 Sample Type: (Standard)	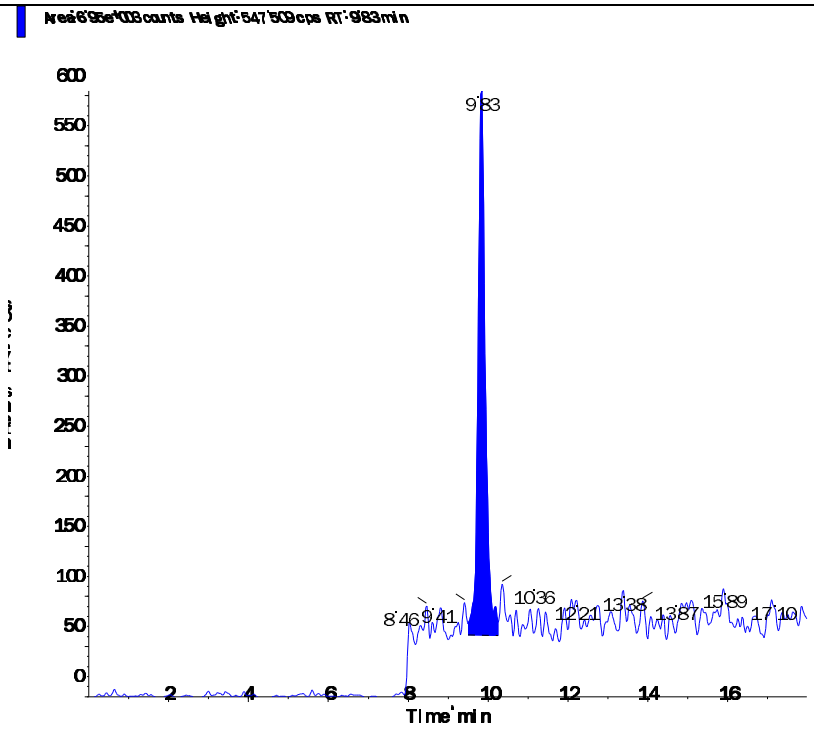

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Data File	LM34688.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

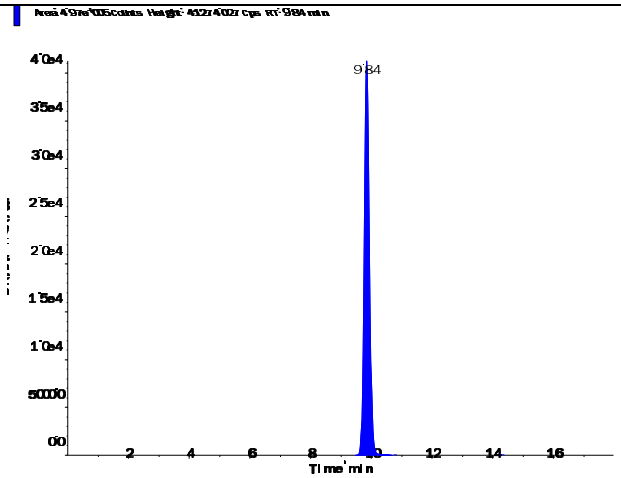

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

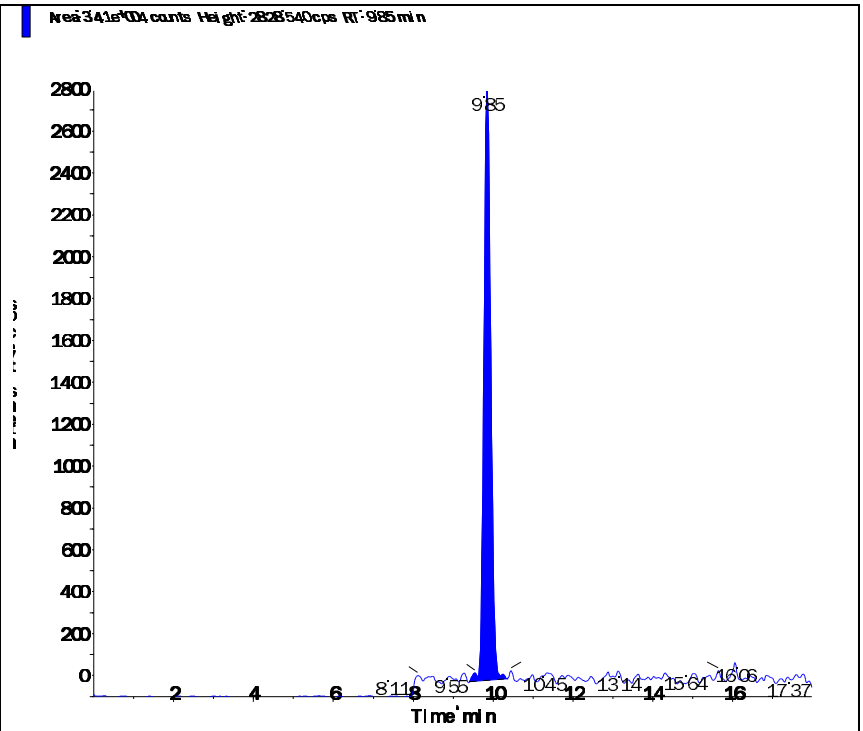

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

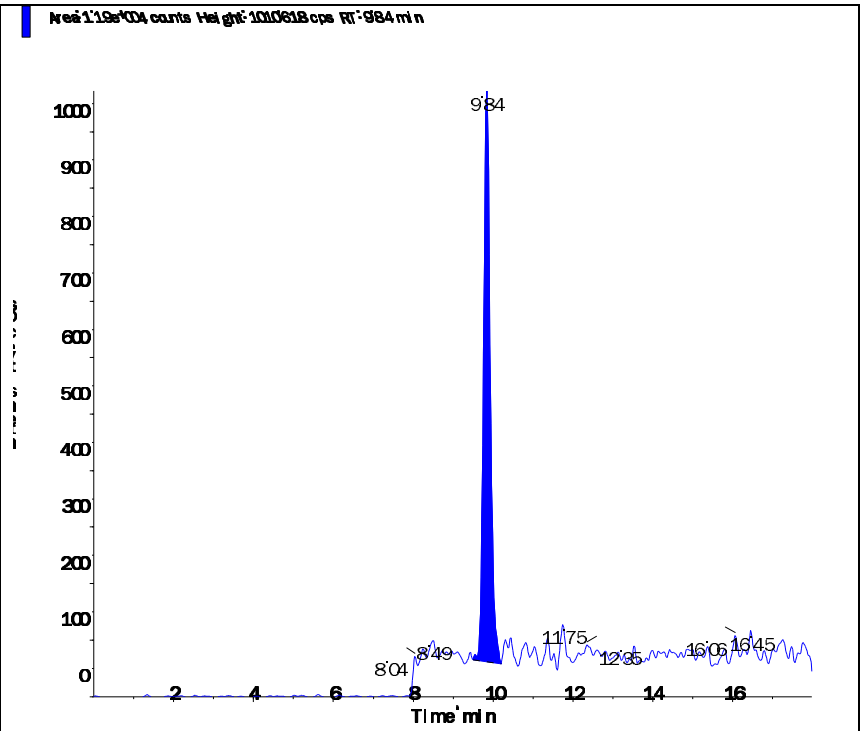

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Data File	LM34689.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

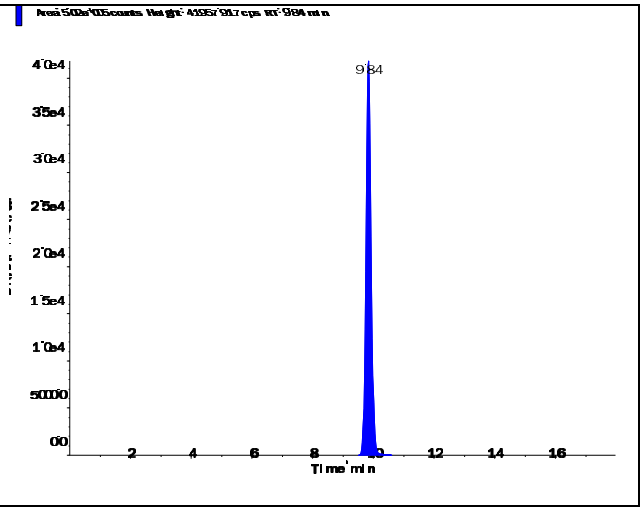

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.483 ng/ml
Area Ratio:	0.164
Sample Type:	(Standard)

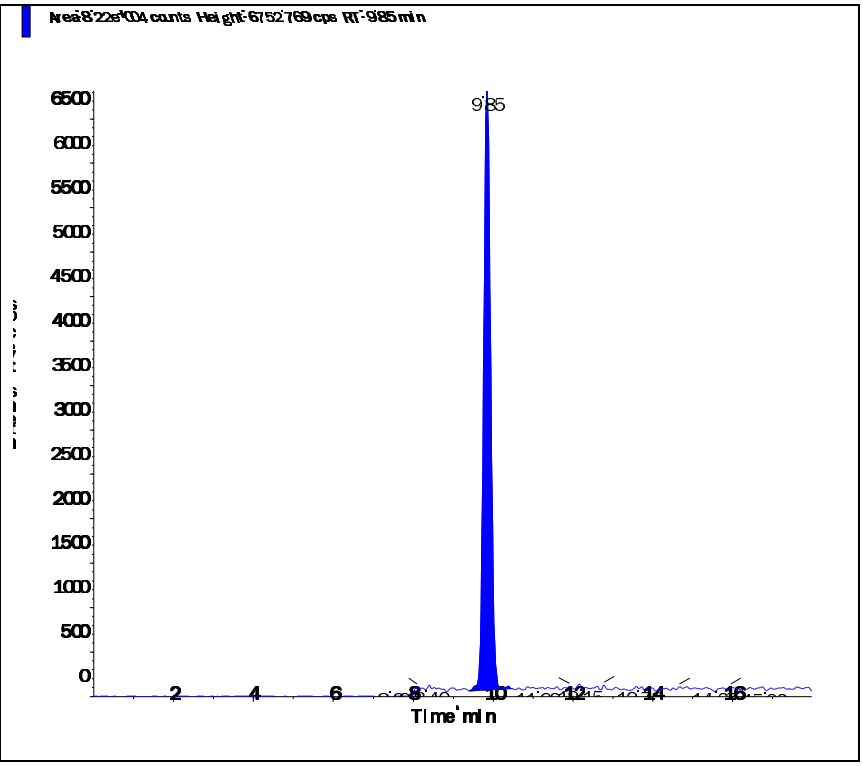

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.503 ng/ml
Area Ratio:	0.058
Sample Type:	(Standard)

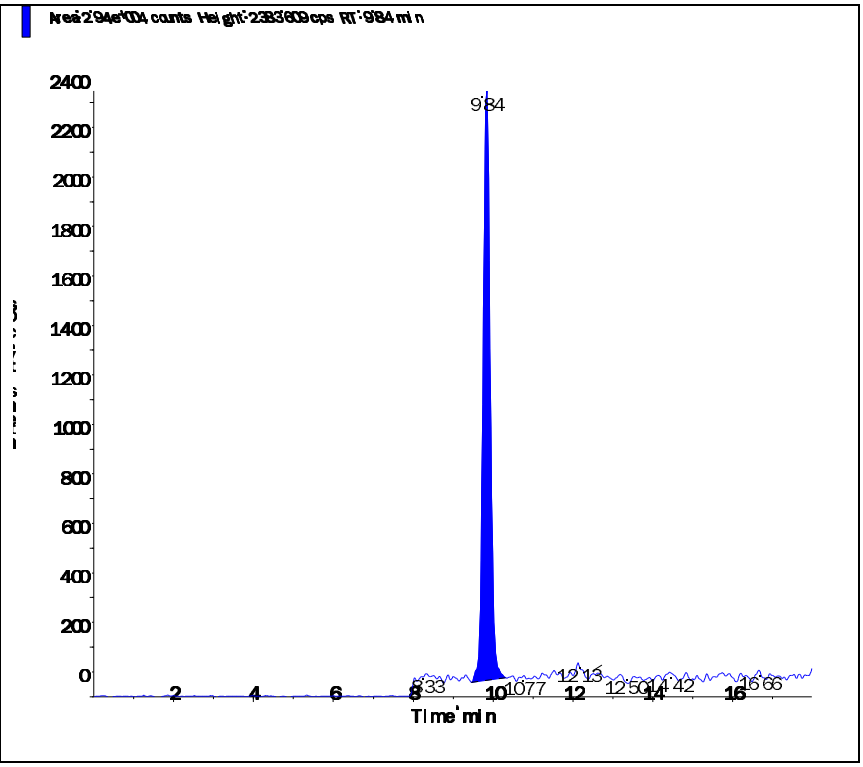

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Data File	LM34690.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

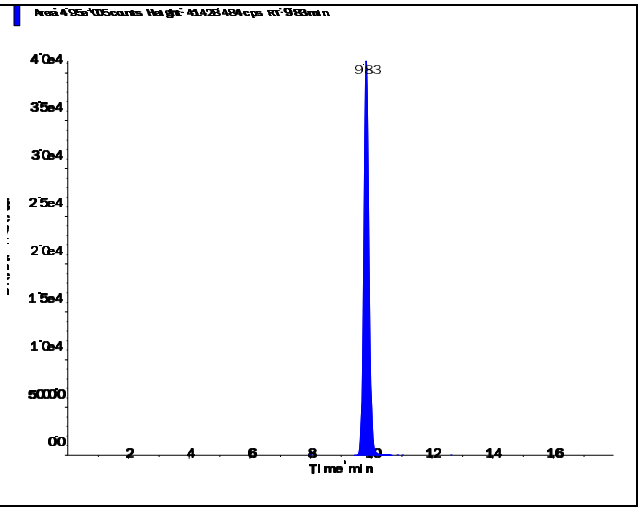

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

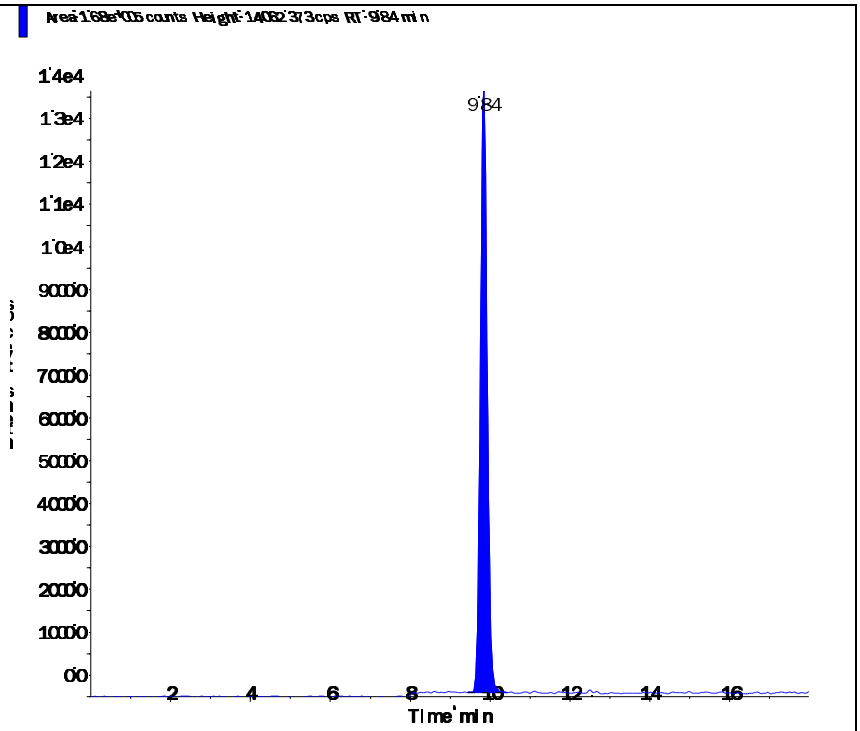

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

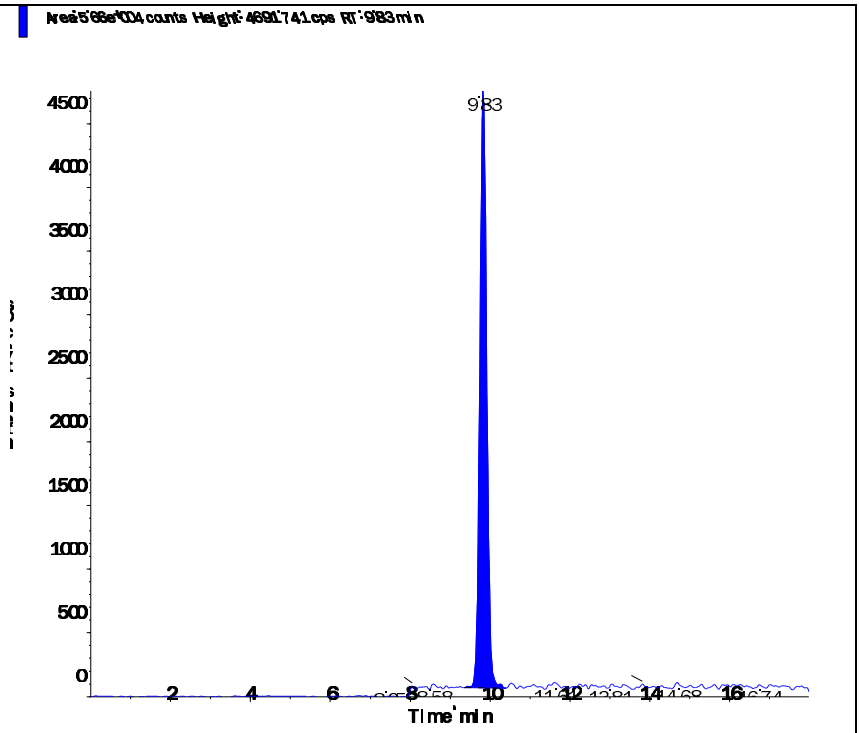

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Data File	LM34691.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

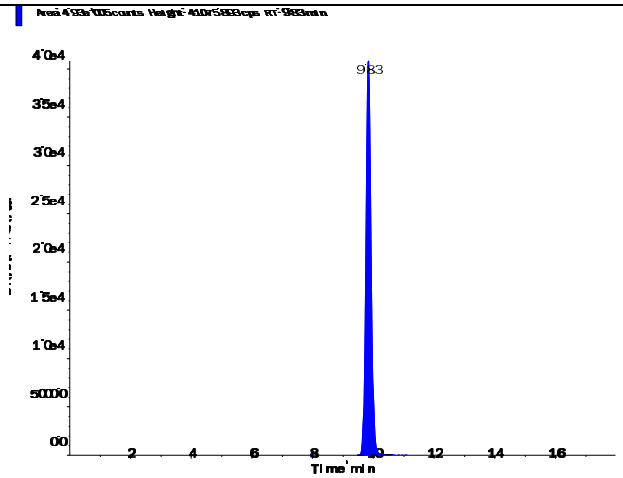

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.99 ng/ml
Area Ratio:	0.669
Sample Type:	(Standard)

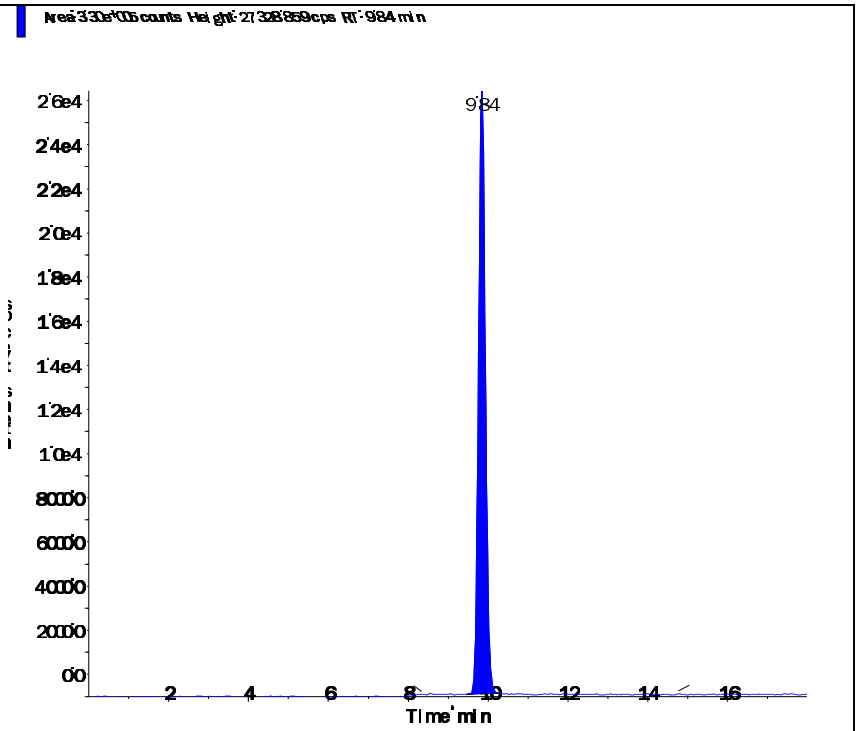

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.94 ng/ml
Area Ratio:	0.219
Sample Type:	(Standard)

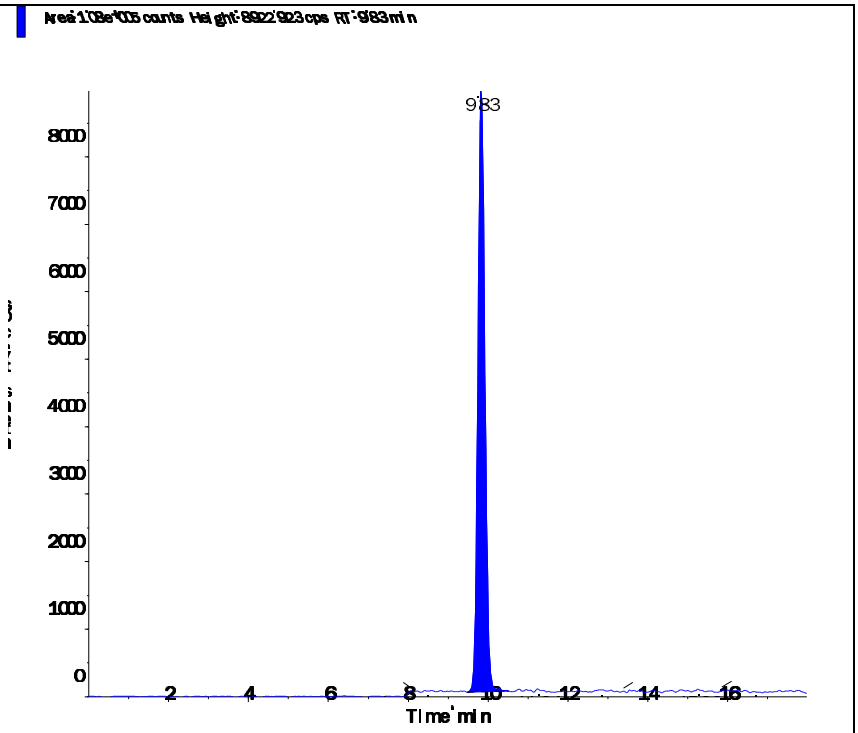

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Data File	LM34692.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

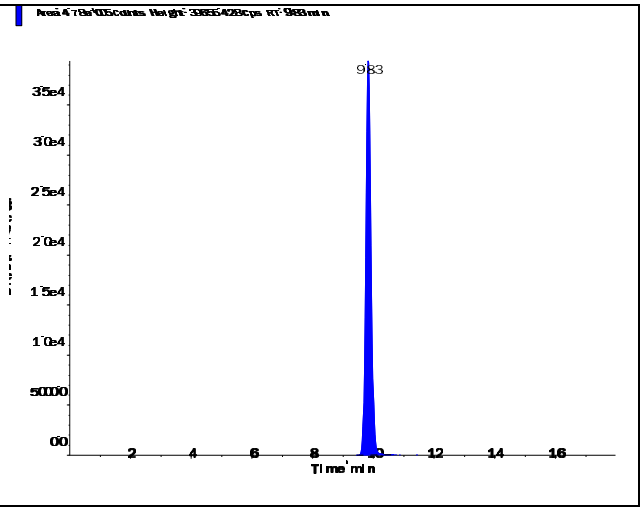

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

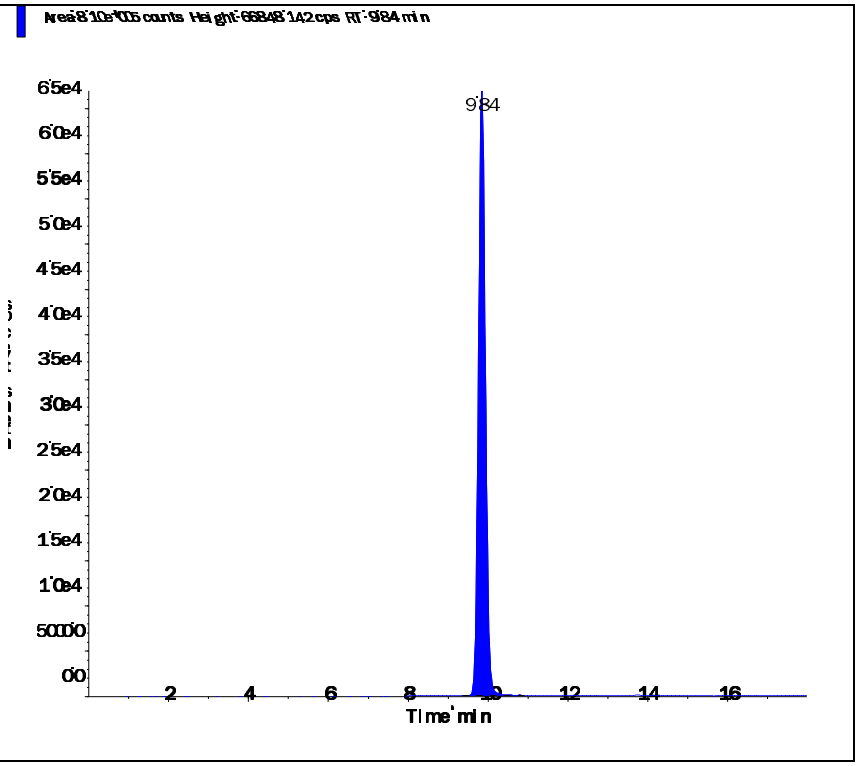

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

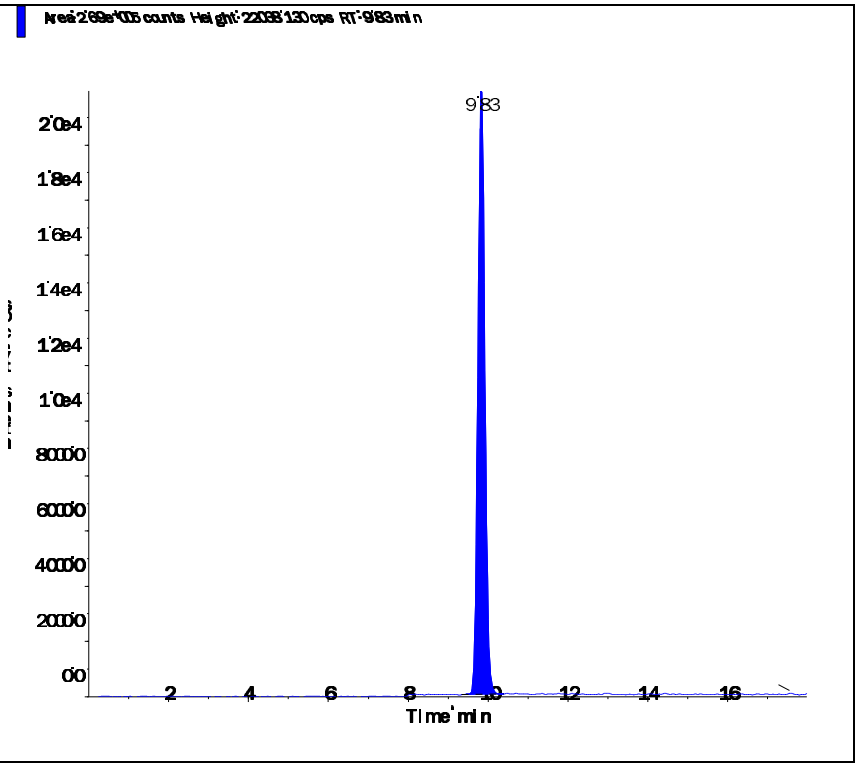

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Data File	LM34693.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

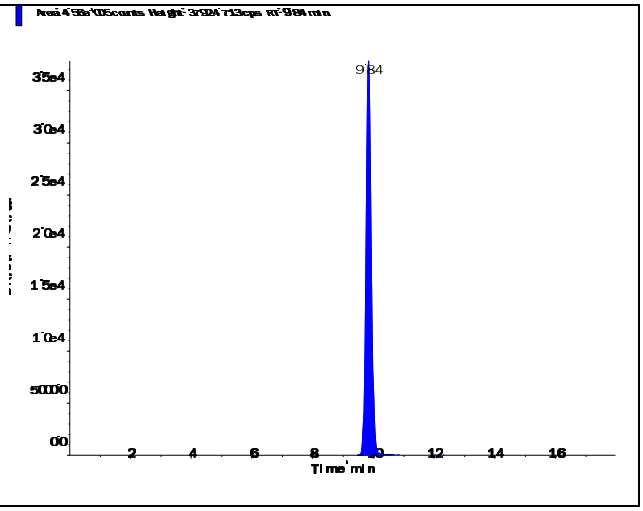

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	9.99 ng/ml
Area Ratio:	3.36
Sample Type:	(Standard)

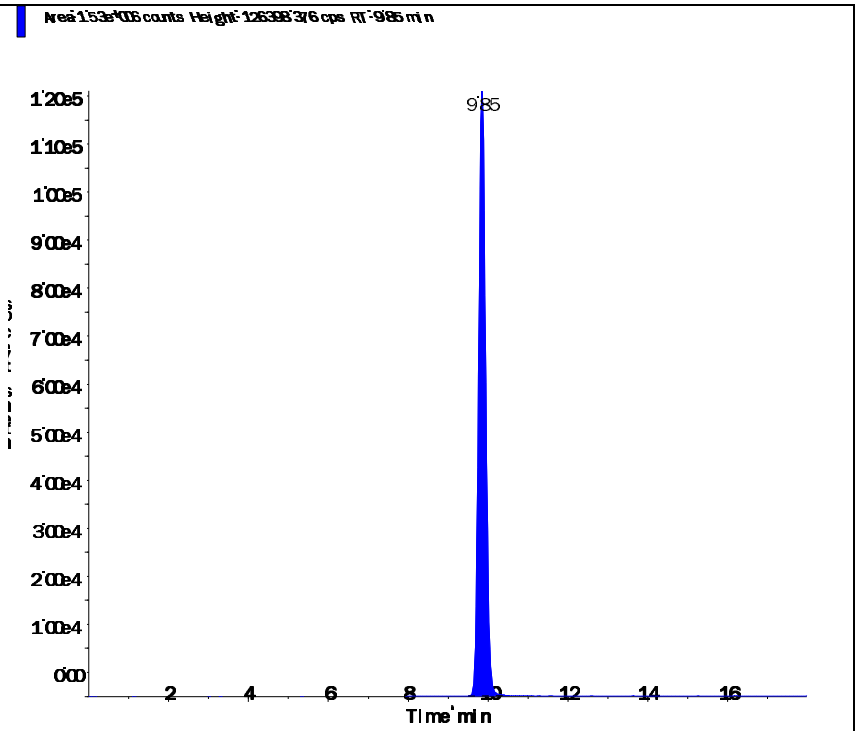

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	10.00 ng/ml
Area Ratio:	1.122
Sample Type:	(Standard)

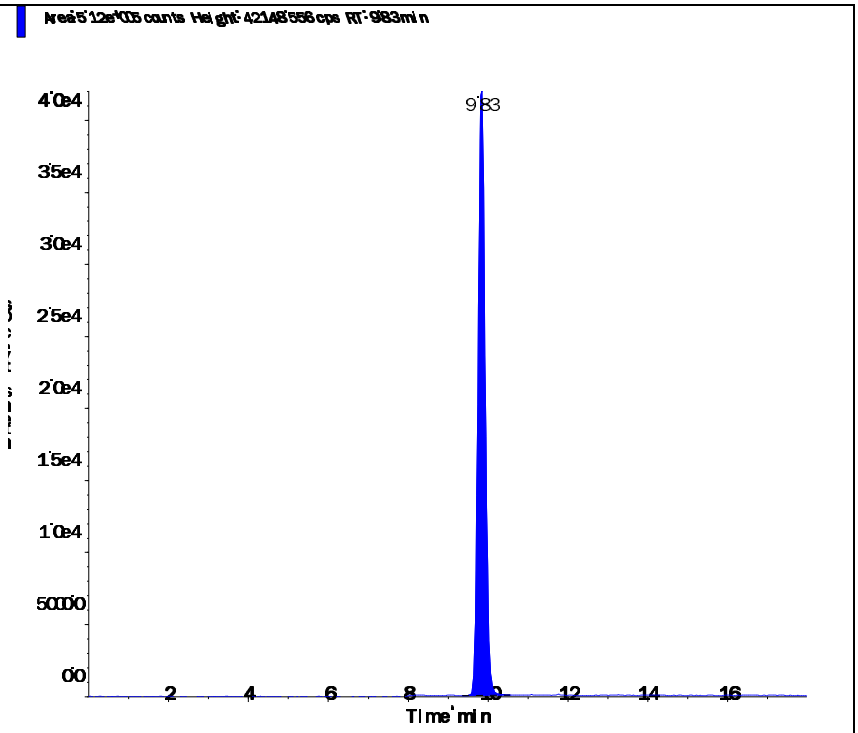

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Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

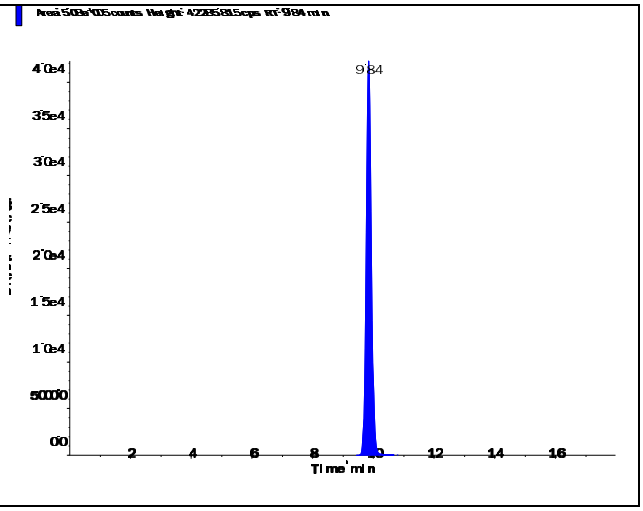

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.332
Sample Type:	(Quality Control)

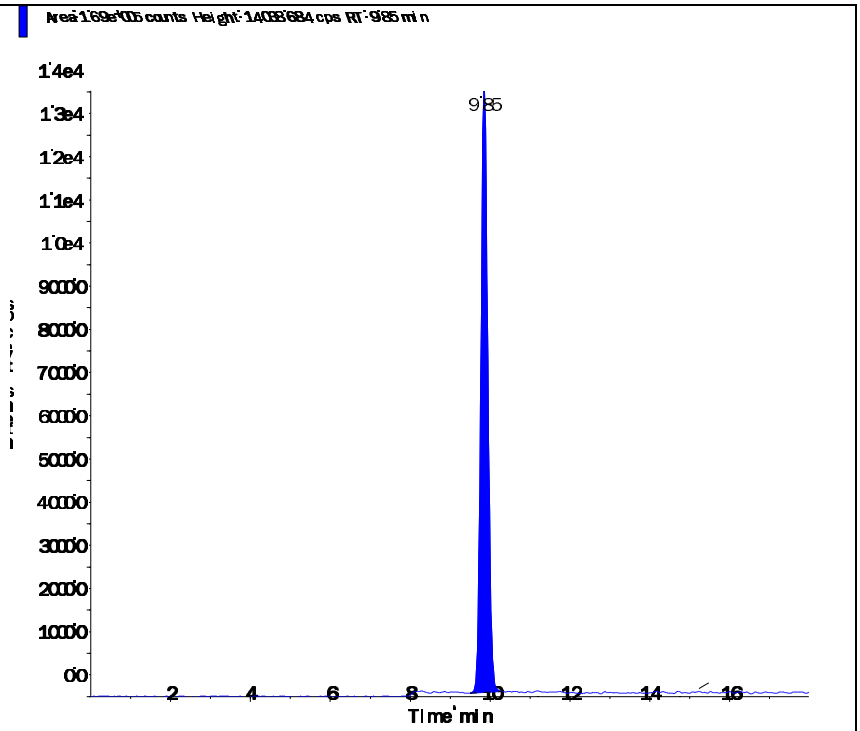

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

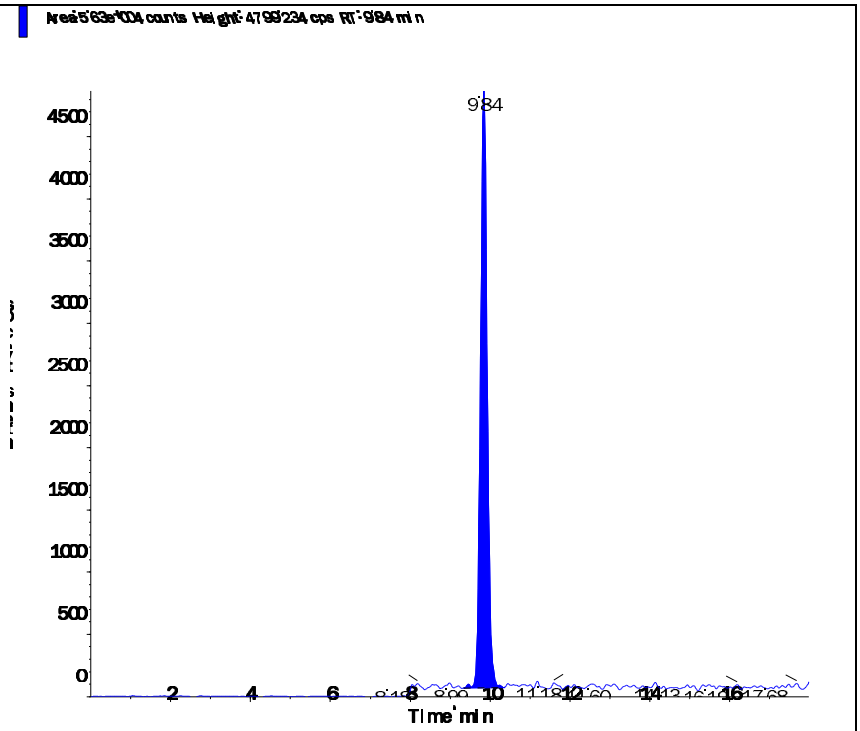

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Data File	LM35463.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 8:09:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35463.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 8:09:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.450e+05	9.34	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.520e+05	9.35	1.00	1.01
Perchlorate conf	5.550e+04	9.33	1.00	1.10

O18LP (Internal Standard)

RT (Exp. RT): 9.34(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

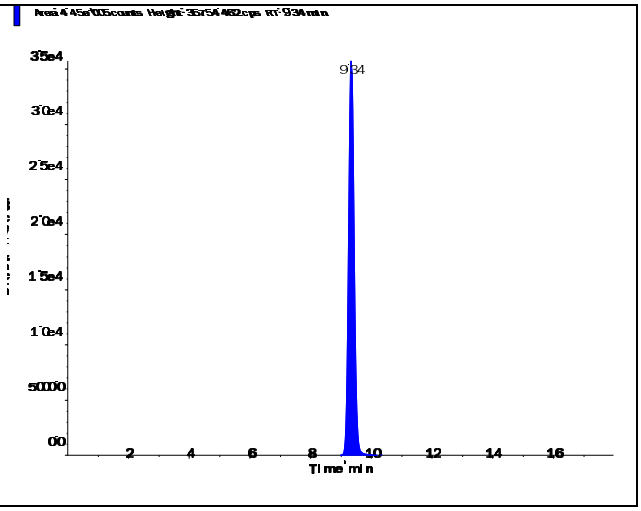

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.341
Sample Type:	(Quality Control)

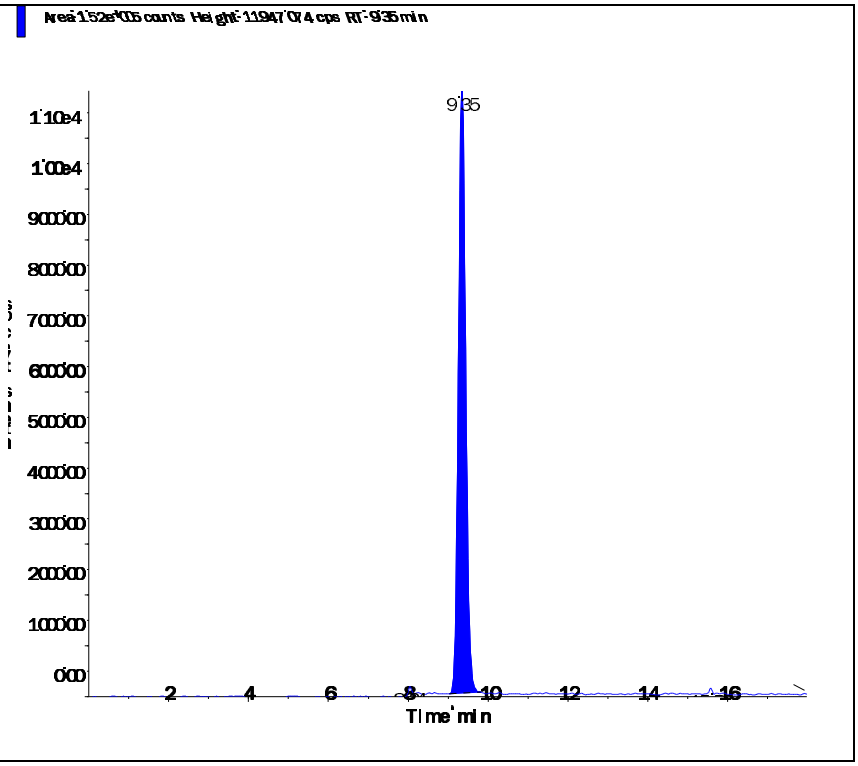

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.33 (9.84) min
Calculated conc:	1.10 ng/ml
Area Ratio:	0.125
Sample Type:	(Quality Control)

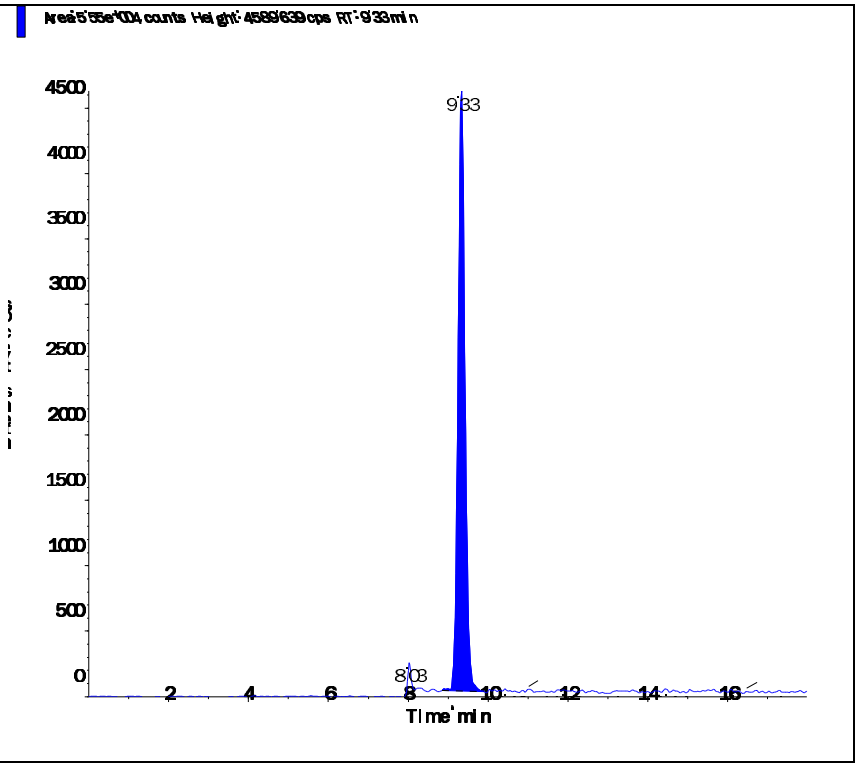

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Data File	LM35475.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 11:56:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35475.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 11:56:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.980e+05	9.32	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.700e+05	9.33	1.00	1.01
Perchlorate conf	5.750e+04	9.32	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.32(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

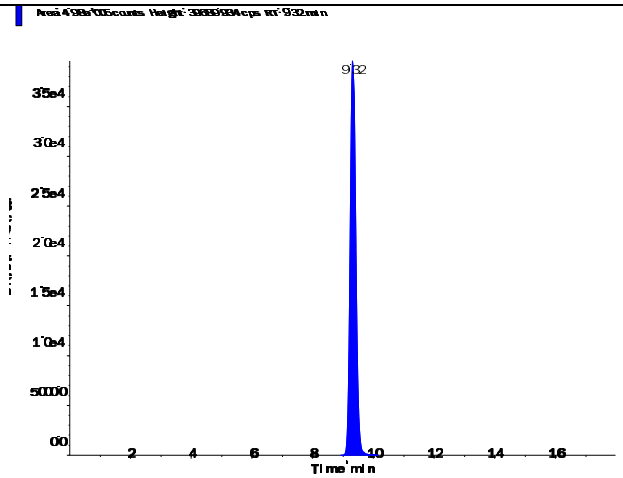

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.33 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.34
Sample Type:	(Quality Control)

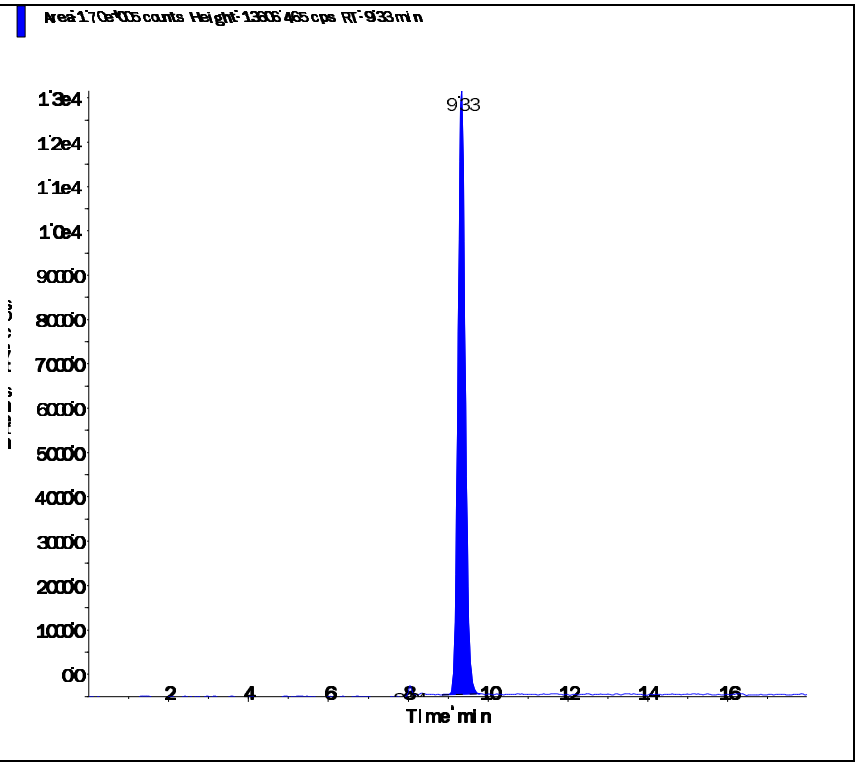

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.32 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.115
Sample Type:	(Quality Control)

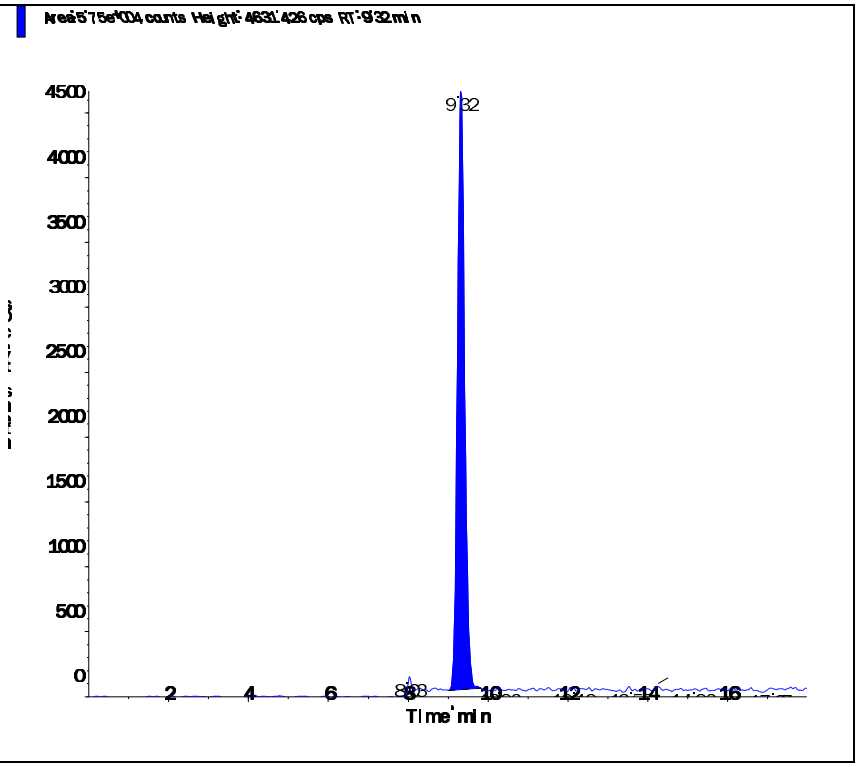

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Printed: 6/27/2016 7:47 PM

Data File	LM35488.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 4:03:05 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35488.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 4:03:05 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.33	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+05	9.34	1.00	1.04
Perchlorate conf	6.020e+04	9.32	1.00	1.03

O18LP (Internal Standard)

RT (Exp. RT): 9.33(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

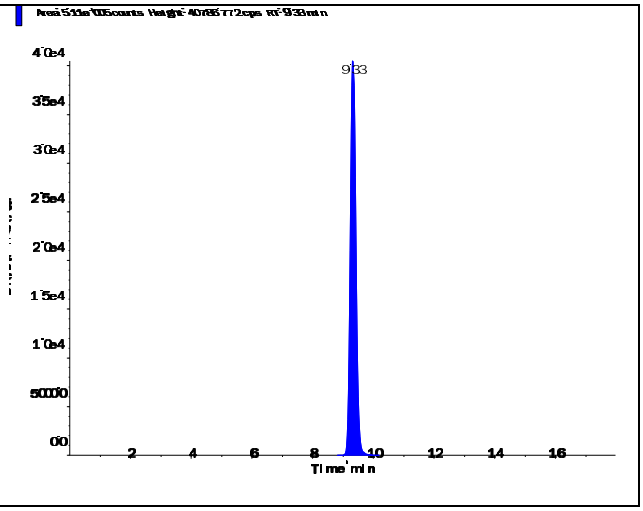

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.34 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.35
Sample Type:	(Quality Control)

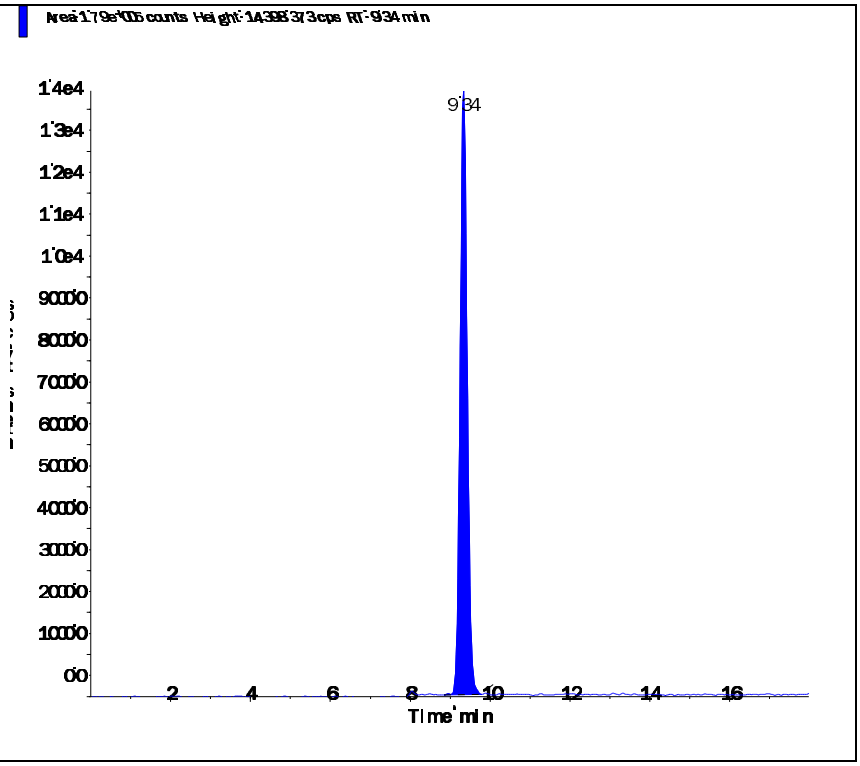

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.32 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.118
Sample Type:	(Quality Control)

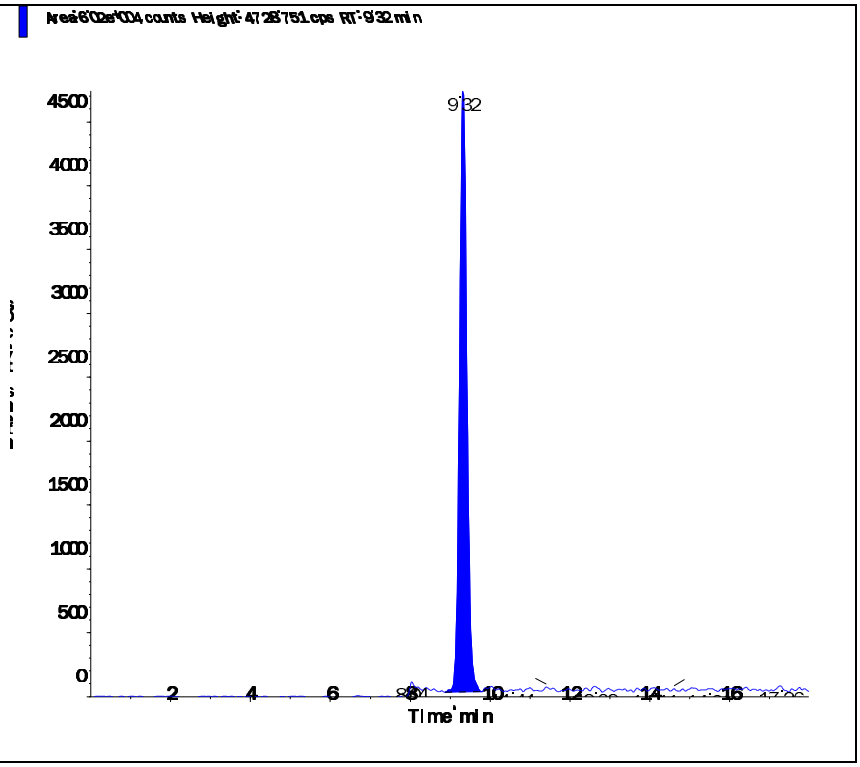

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Data File	LM35495.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:15:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35495.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:15:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.500e+05	9.33	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.890e+05	9.35	1.00	1.02
Perchlorate conf	6.340e+04	9.33	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.33(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

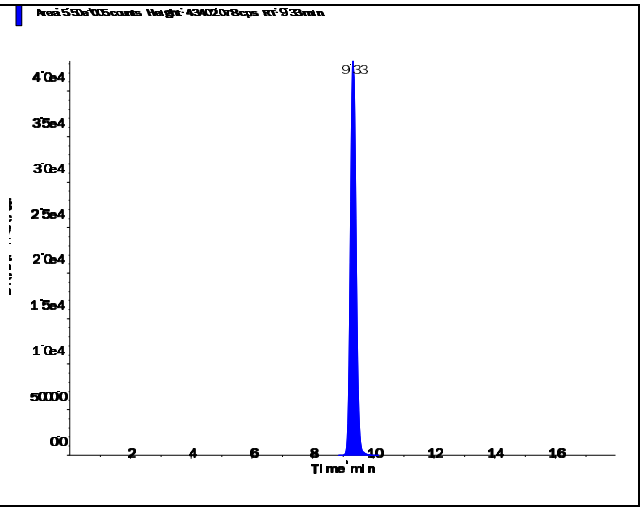

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.345
Sample Type:	(Quality Control)

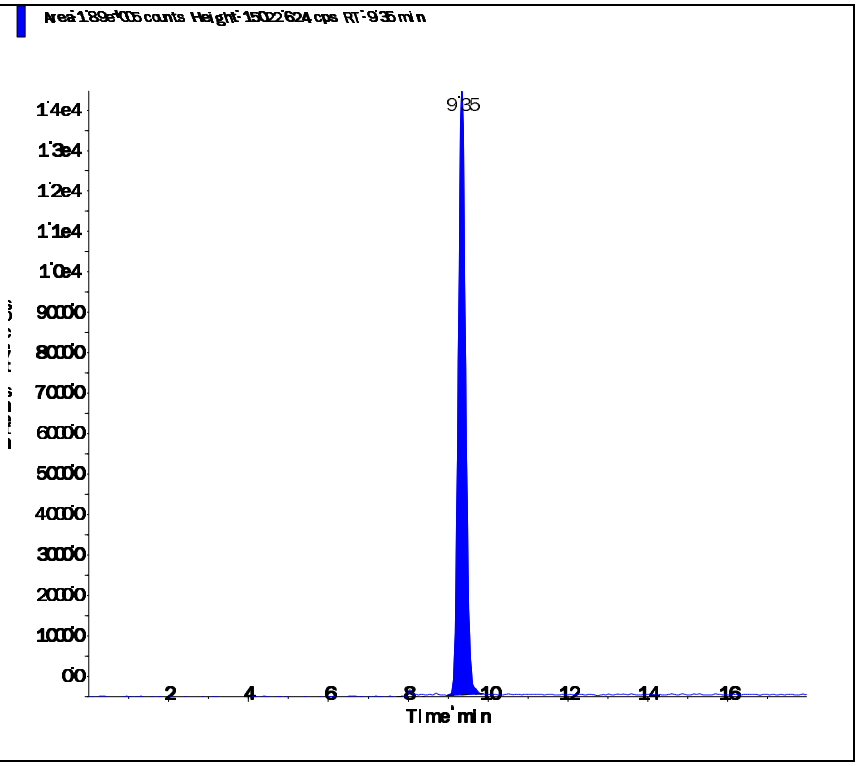

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.33 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.115
Sample Type:	(Quality Control)

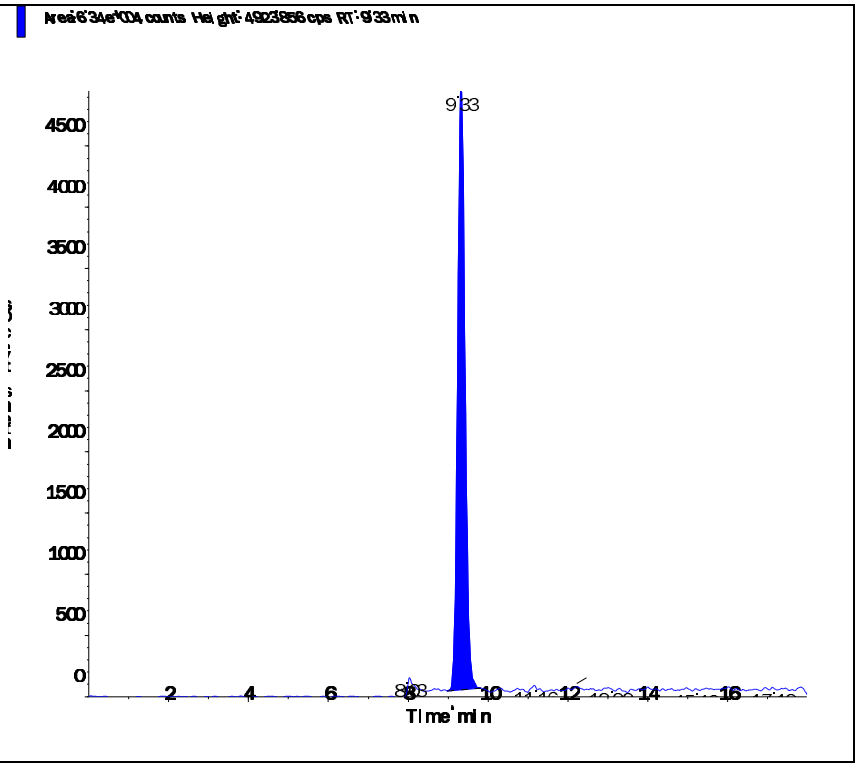

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Data File	LM35498.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:06:10 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35498.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:06:10 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.580e+05	9.34	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.610e+05	9.35	1.00	1.04
Perchlorate conf	5.670e+04	9.34	1.00	1.09

O18LP (Internal Standard)

RT (Exp. RT): 9.34(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

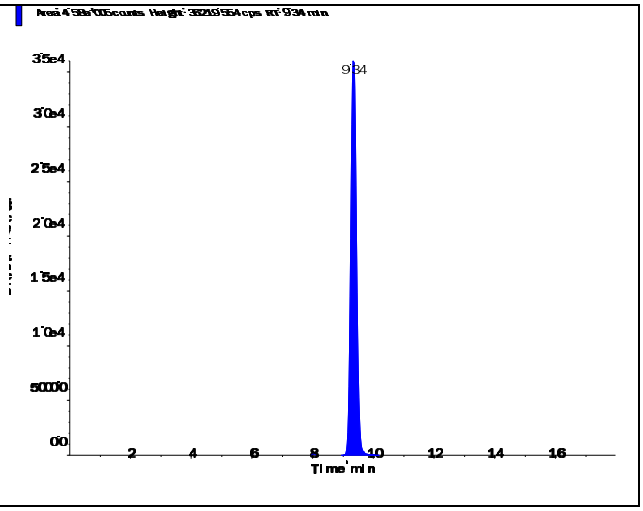

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.353
Sample Type:	(Quality Control)

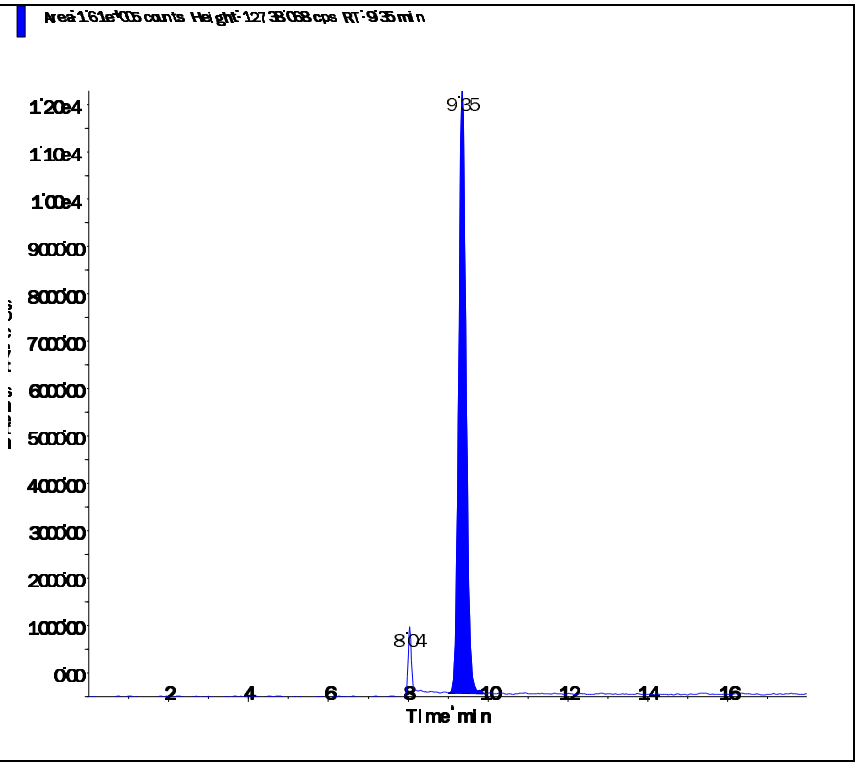

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.34 (9.84) min
Calculated conc:	1.09 ng/ml
Area Ratio:	0.124
Sample Type:	(Quality Control)

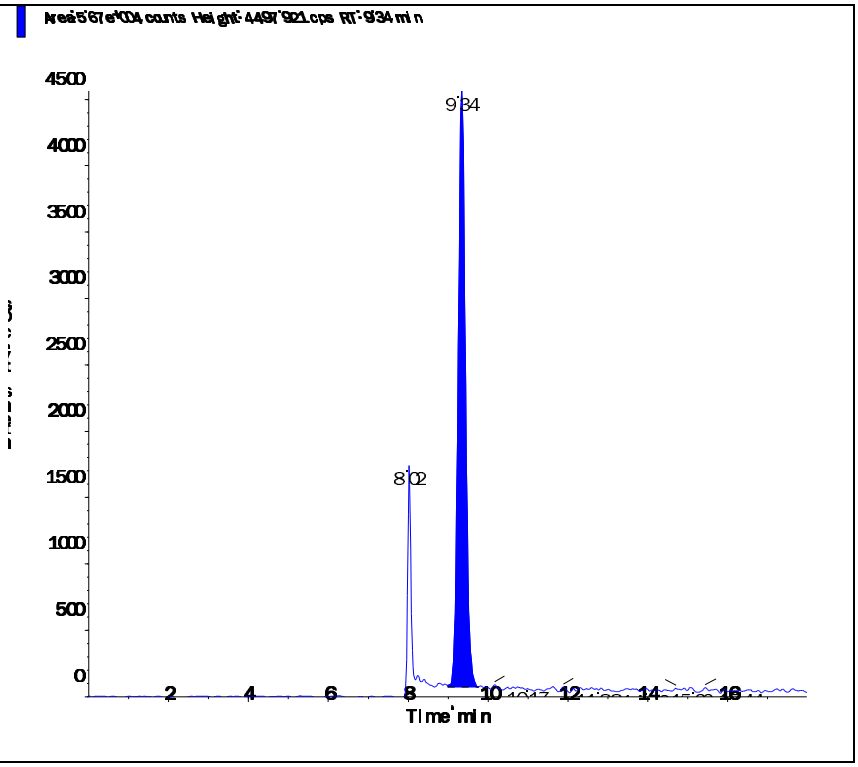

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Data File	LM35508.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 9:15:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-11 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35508.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 9:15:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.090e+05	9.35	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.760e+05	9.36	1.00	1.02
Perchlorate conf	5.930e+04	9.35	1.00	1.02

O18LP (Internal Standard)

RT (Exp. RT): 9.35(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

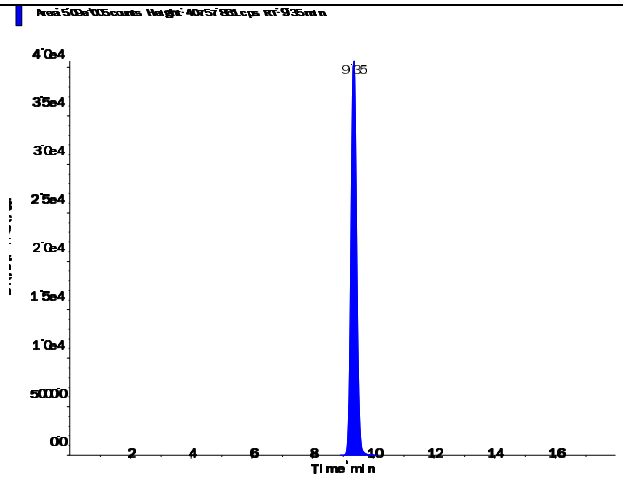

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.36 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.345
Sample Type:	(Quality Control)

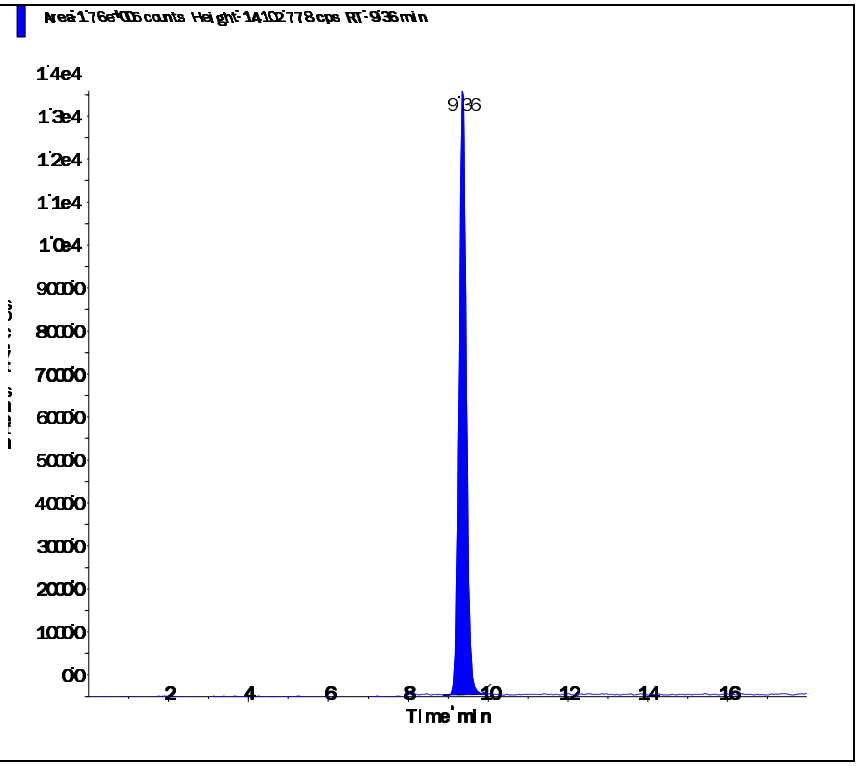

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.117
Sample Type:	(Quality Control)

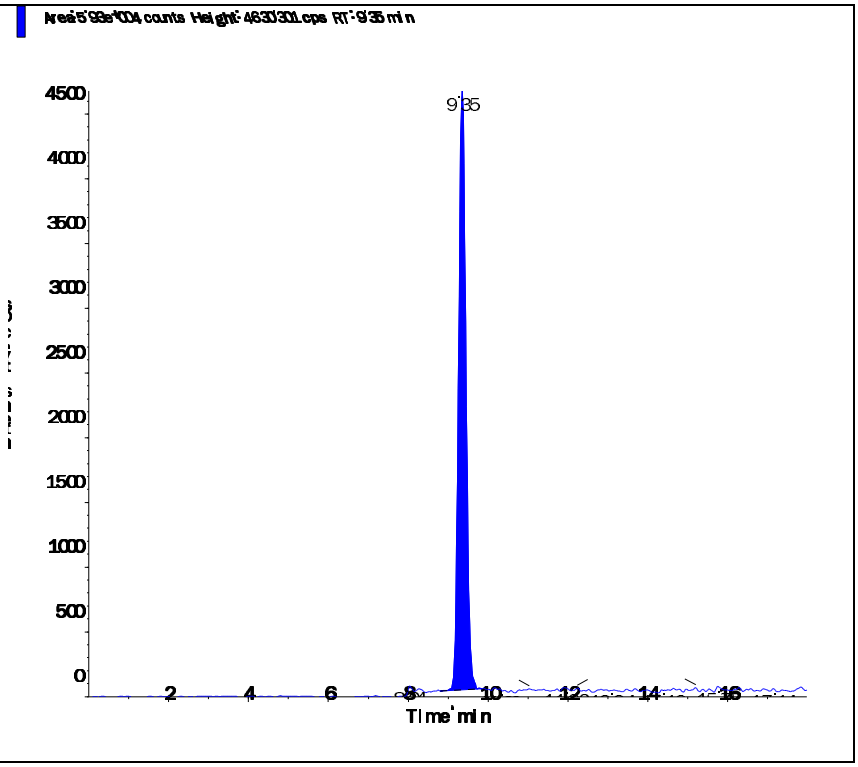

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Data File	LM35464.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 8:28:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-05 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35464.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 8:28:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.490e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.160e+04	9.40	N/A	0.206
Perchlorate conf	1.210e+04	9.37	N/A	0.222

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

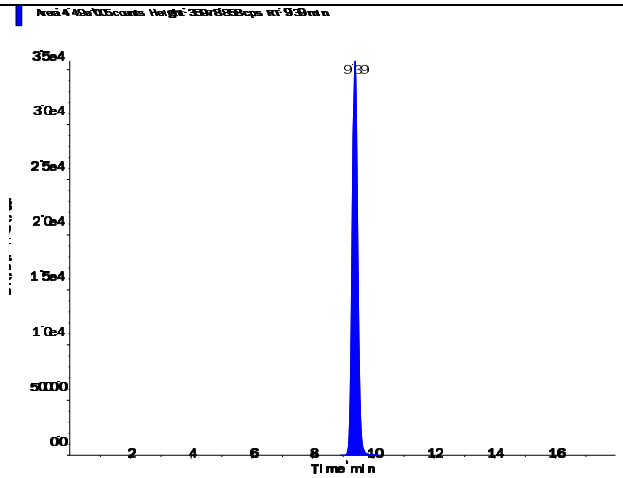

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

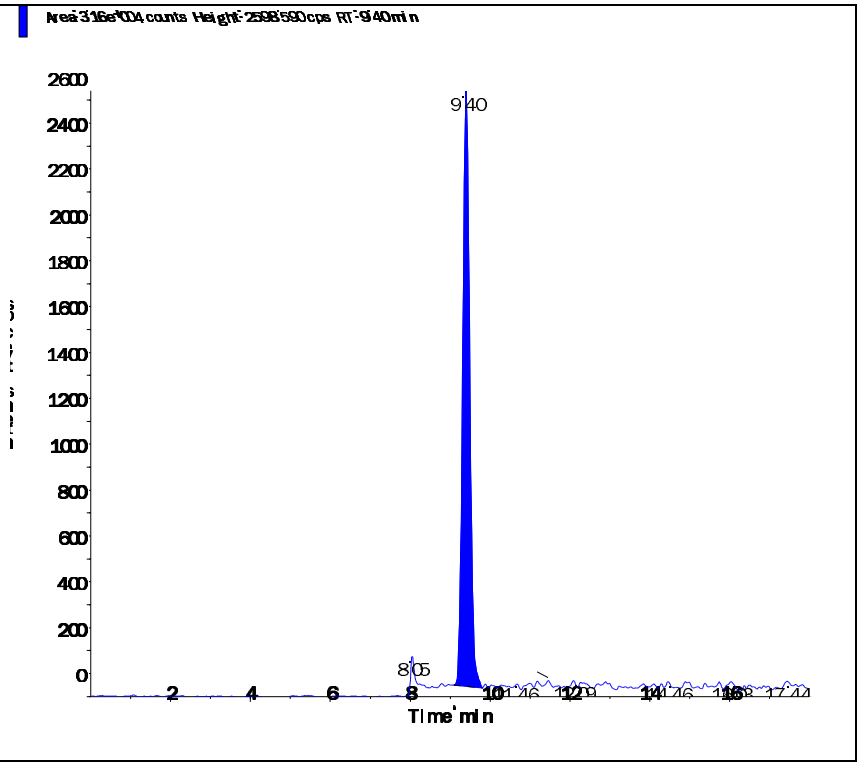

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.37 (9.84) min
Calculated conc:	0.222 ng/ml
Area Ratio:	0.027
Sample Type:	(Unknown)

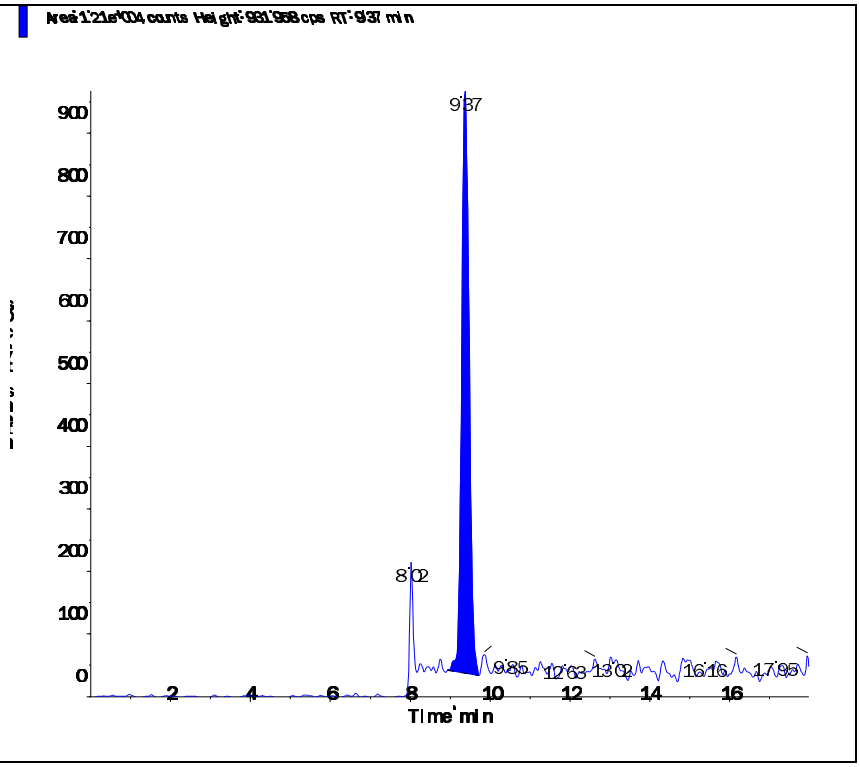

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Data File	LM35476.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 12:15:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-06 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35476.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 12:15:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.160e+05	9.36	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.500e+04	9.37	N/A	0.198
Perchlorate conf	1.310e+04	9.35	N/A	0.207

O18LP (Internal Standard)

RT (Exp. RT): 9.36(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

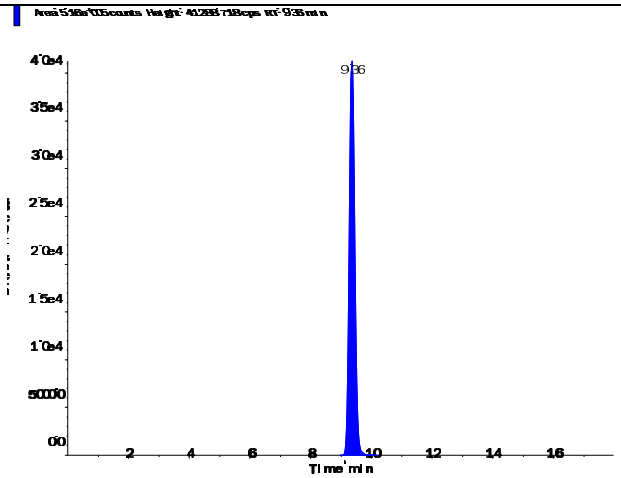

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.37 (9.84) min
Calculated conc:	0.198 ng/ml
Area Ratio:	0.068
Sample Type:	(Unknown)

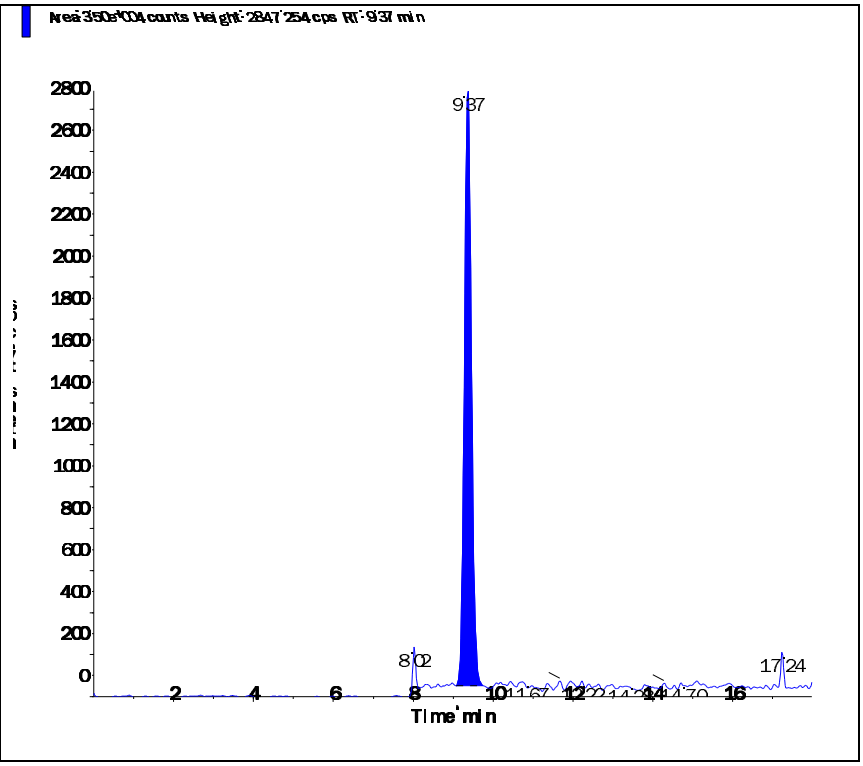

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

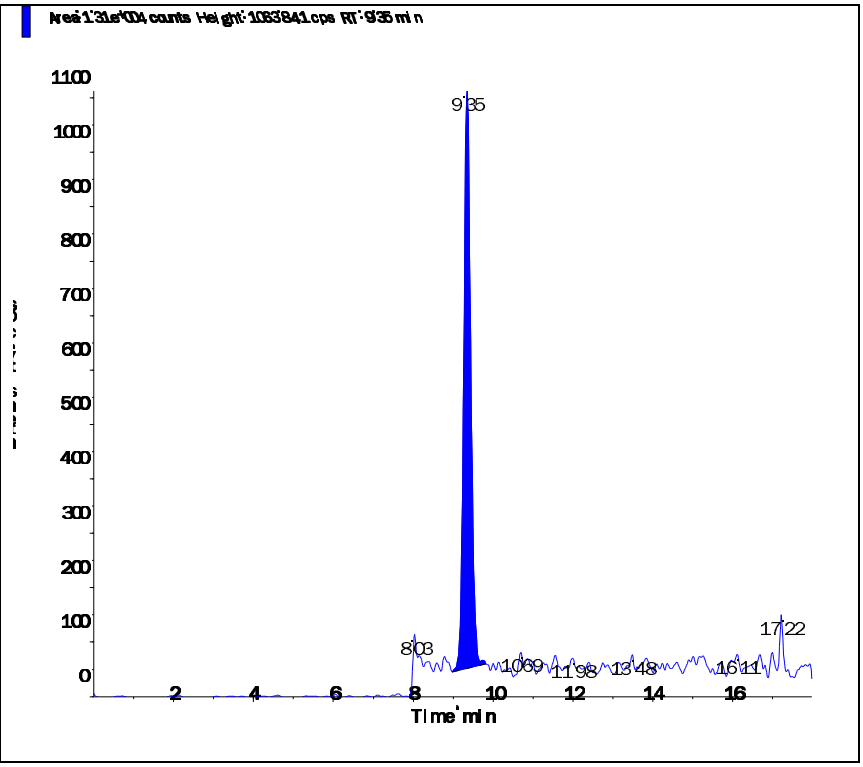

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Data File	LM35489.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 4:22:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35489.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 4:22:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.380e+05	9.37	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.890e+04	9.39	N/A	0.211
Perchlorate conf	1.340e+04	9.38	N/A	0.202

O18LP (Internal Standard)

RT (Exp. RT): 9.37(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

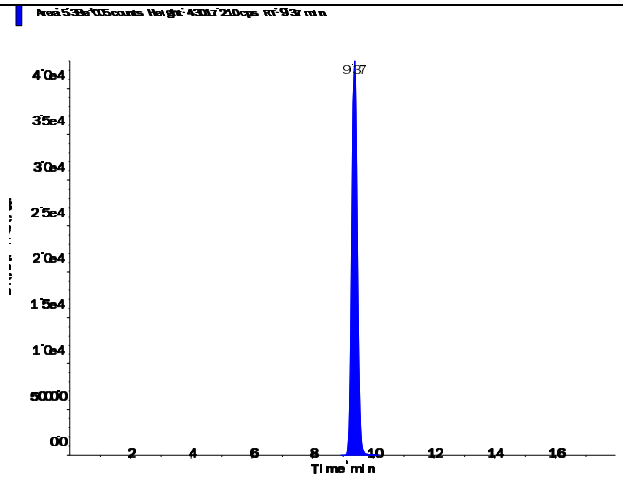

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	0.211 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

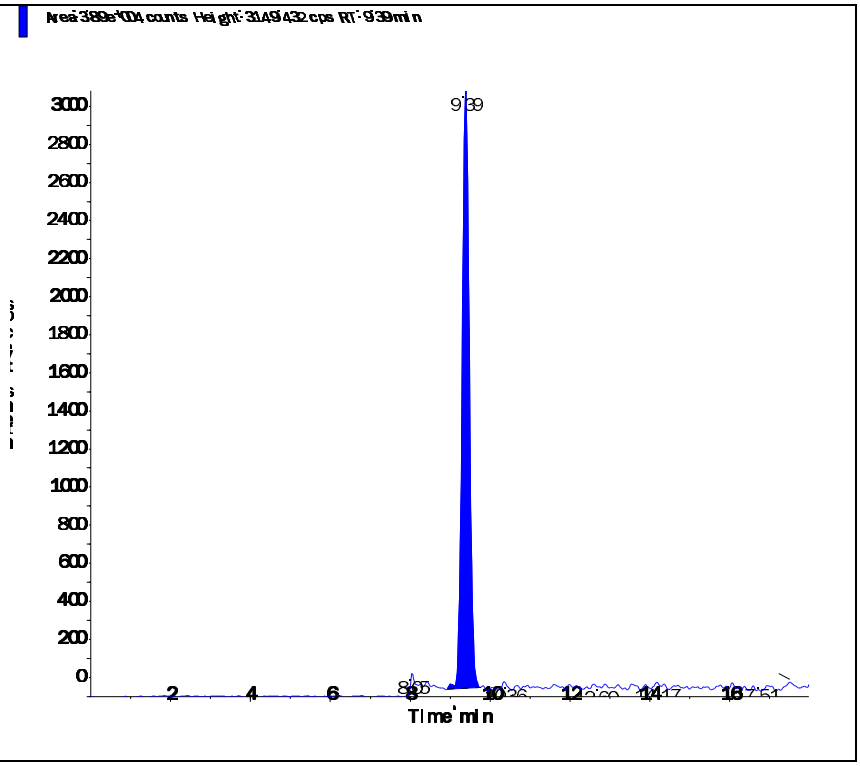

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	0.202 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

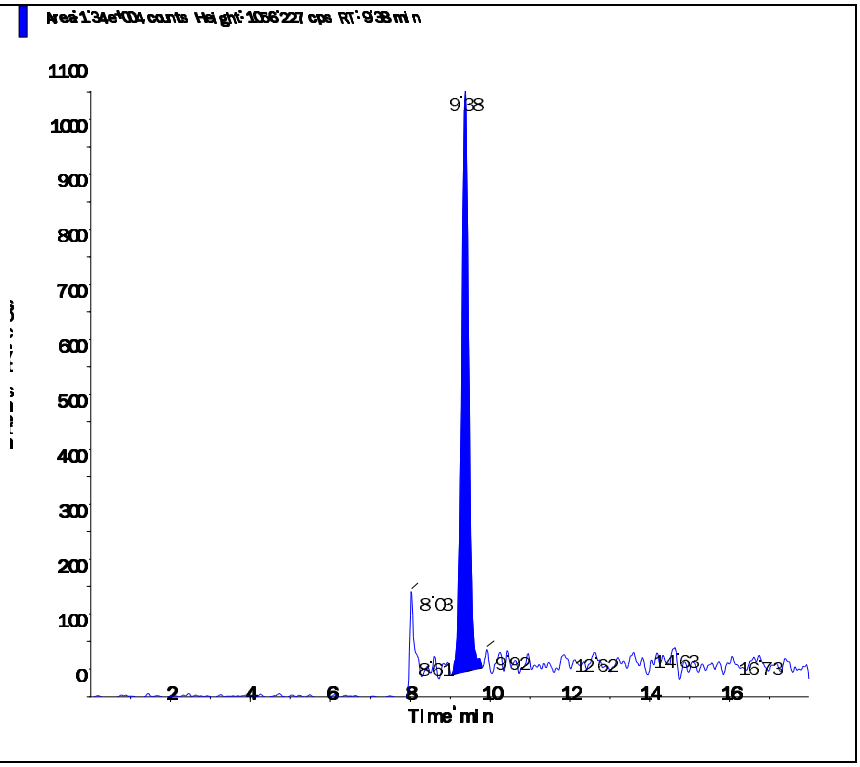

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Data File	LM35496.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:34:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-08 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35496.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:34:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.520e+05	9.38	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.800e+04	9.39	N/A	0.201
Perchlorate conf	1.410e+04	9.38	N/A	0.208

O18LP (Internal Standard)

RT (Exp. RT): 9.38(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

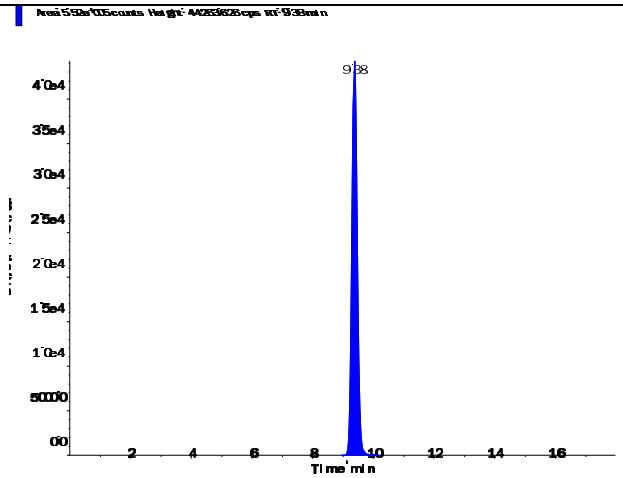

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

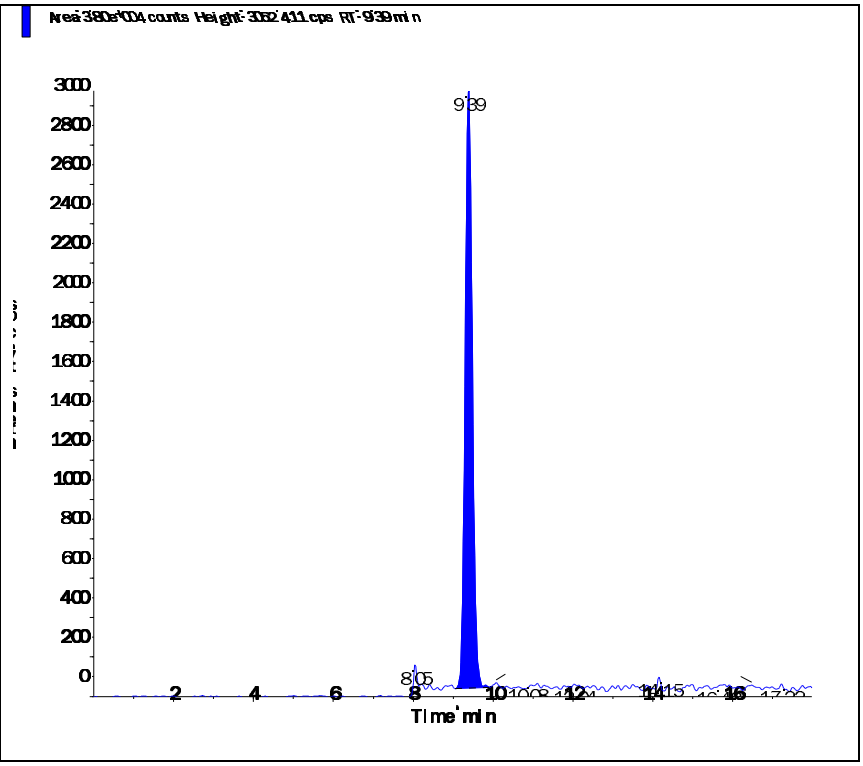

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	0.208 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

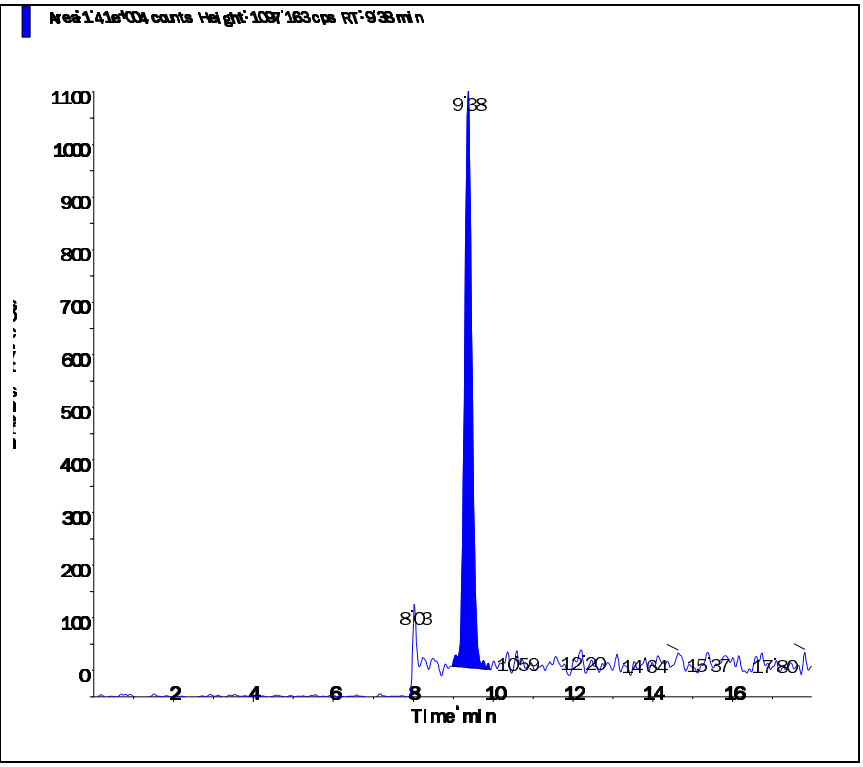

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Data File	LM35499.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:25:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-09 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35499.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:25:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.640e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.290e+04	9.40	N/A	0.207
Perchlorate conf	1.150e+04	9.38	N/A	0.201

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

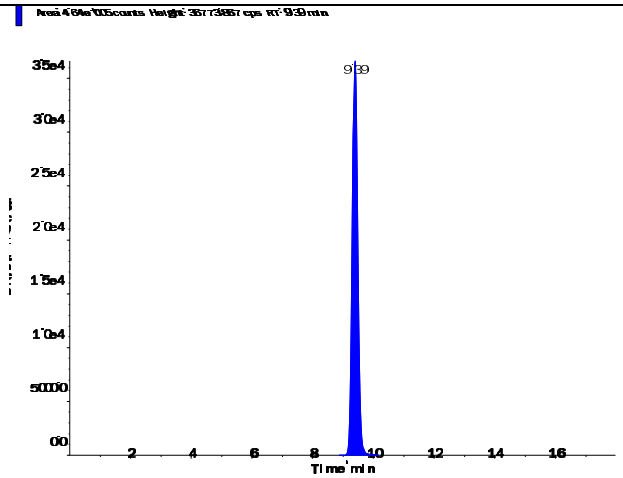

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

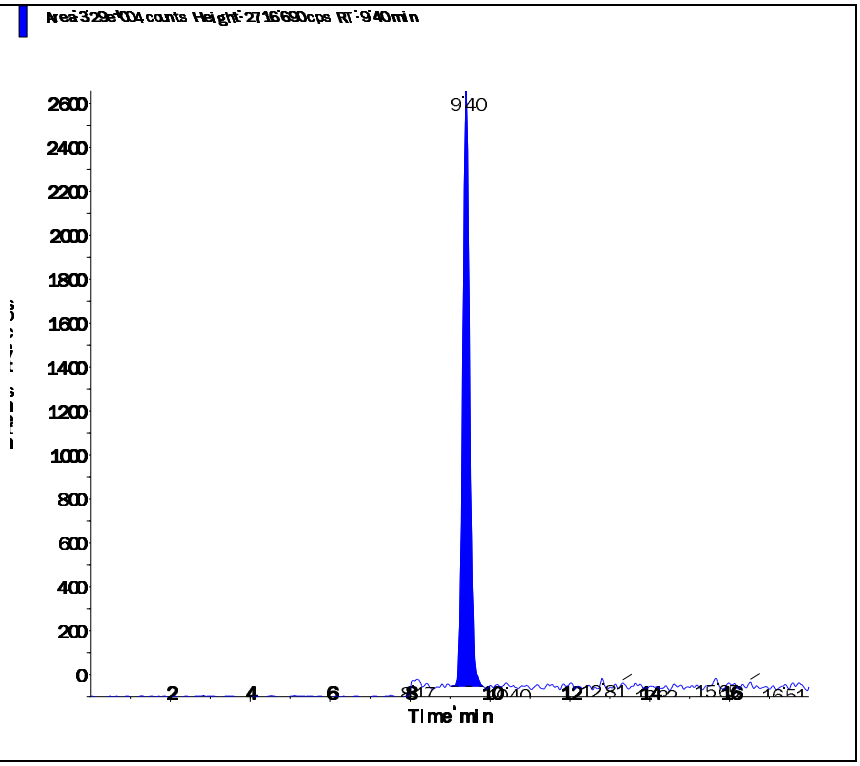

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

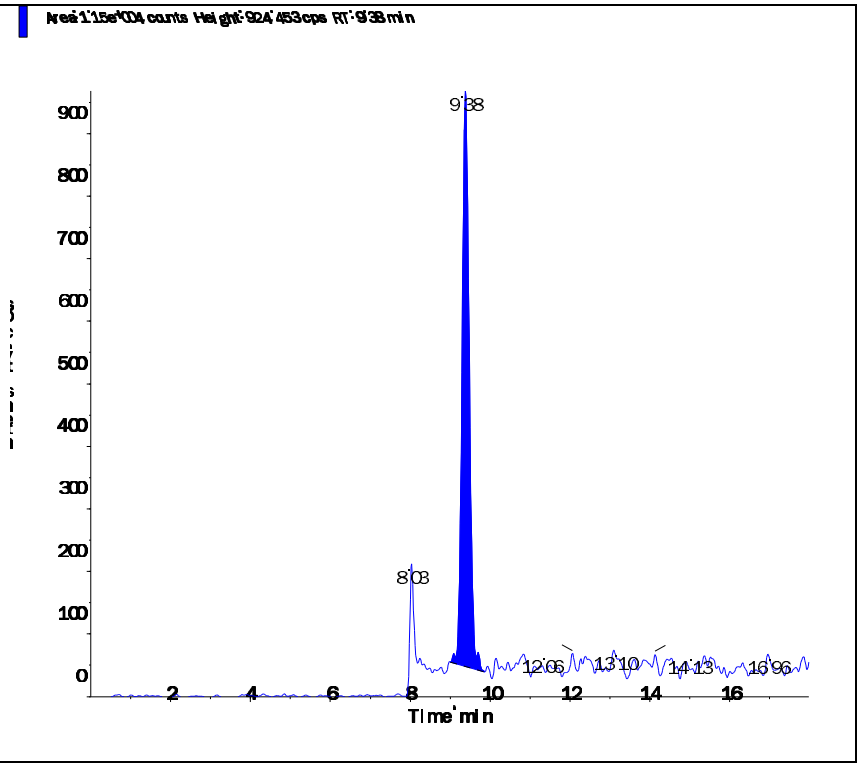

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Data File	LM35509.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 9:34:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-10 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35509.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 9:34:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-10	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.370e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.790e+04	9.40	N/A	0.206
Perchlorate conf	1.400e+04	9.39	N/A	0.214

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

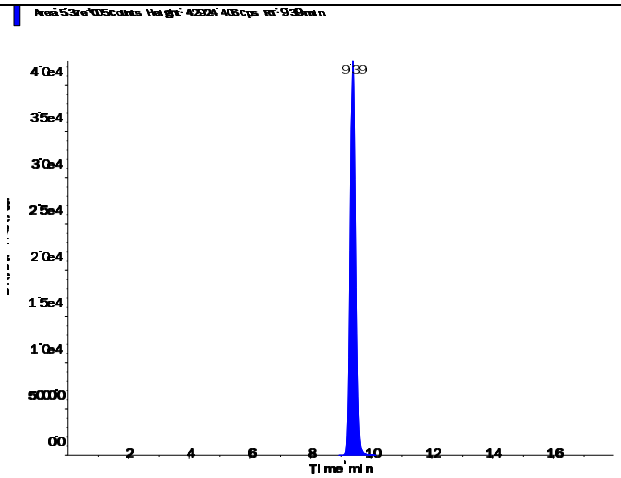

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

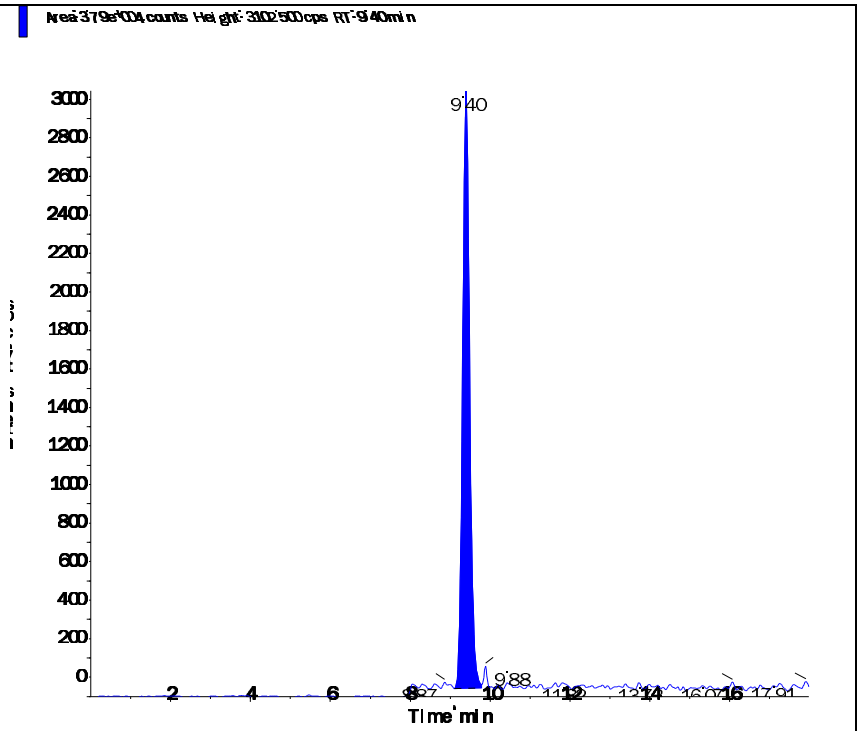

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	0.214 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

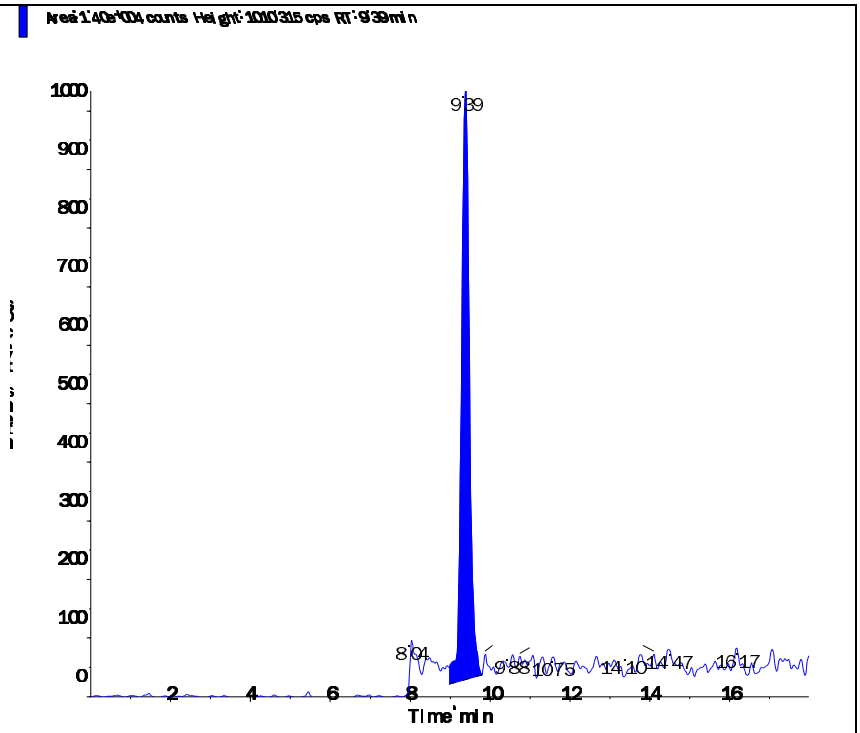

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Data File	LM35462.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 7:50:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-01 CCB	**Injection Vial**	1.00
Data File	LM35462.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 7:50:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.420e+05	9.58	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.58(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

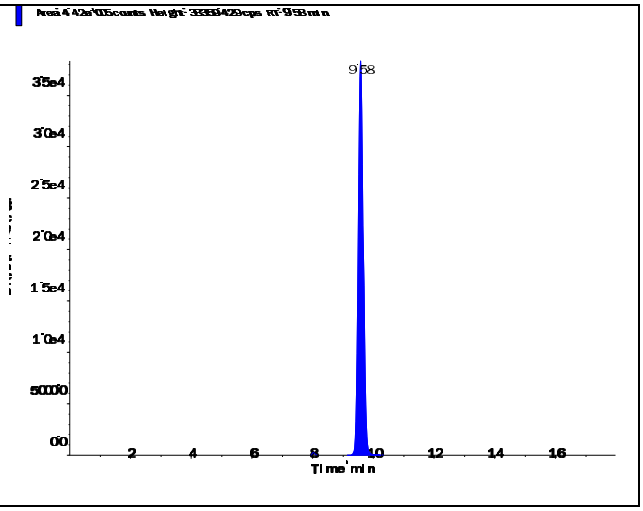

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	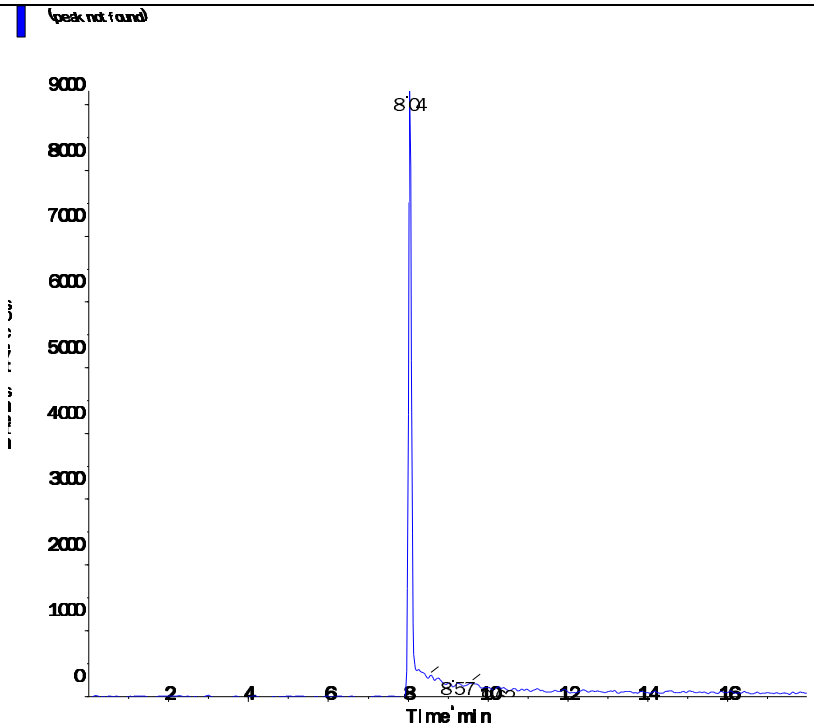
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	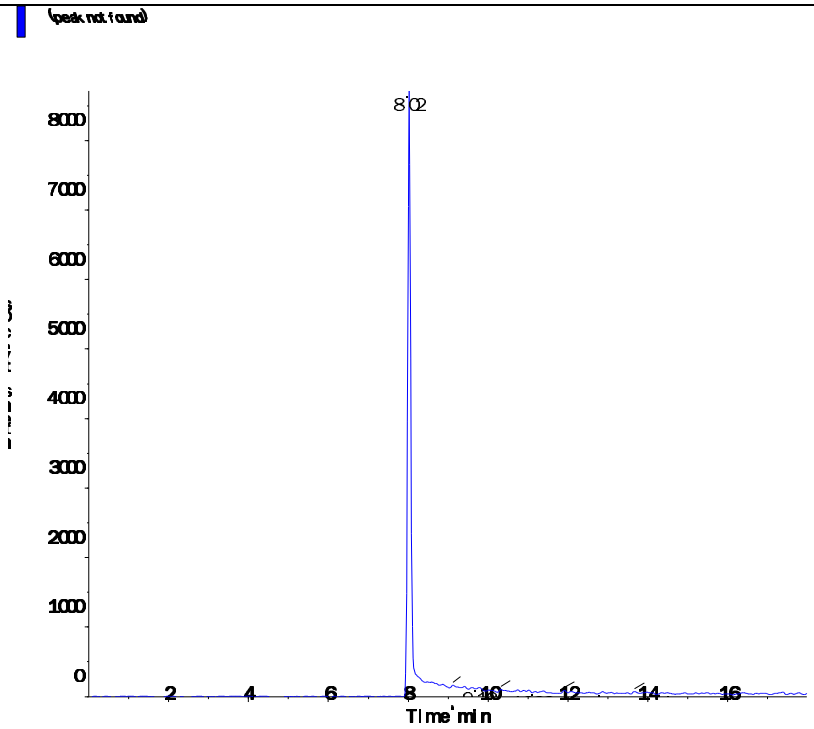

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Data File	LM35477.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 12:34:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-04 CCB	**Injection Vial**	1.00
Data File	LM35477.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 12:34:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.240e+05	9.57	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	8.240e+02	9.53	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.57(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

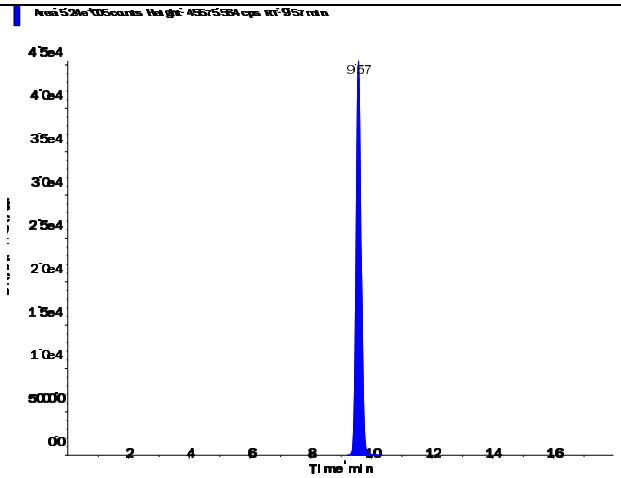

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

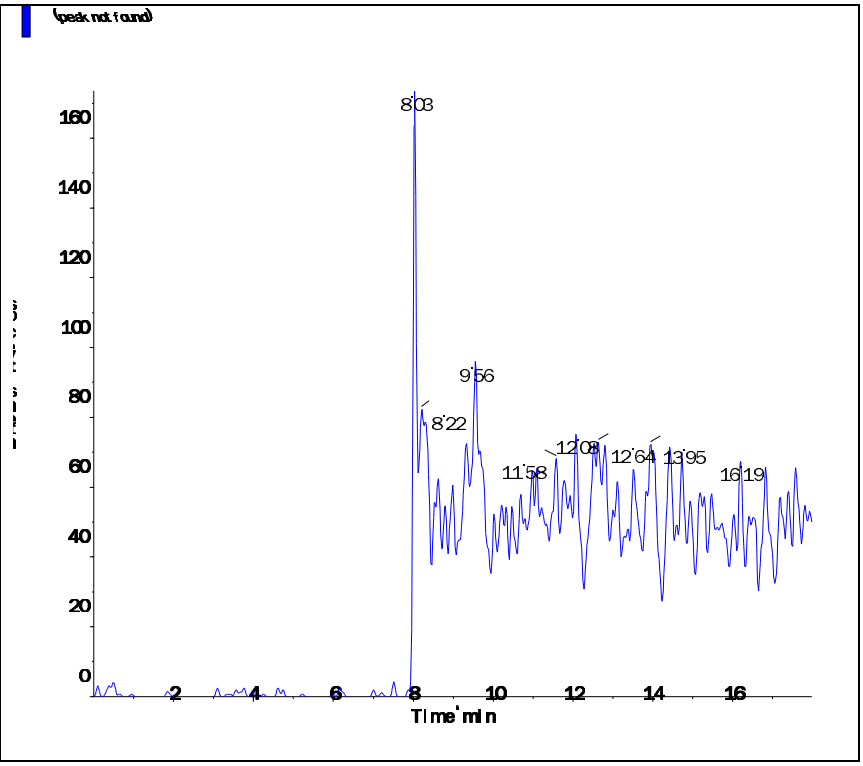

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.53 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

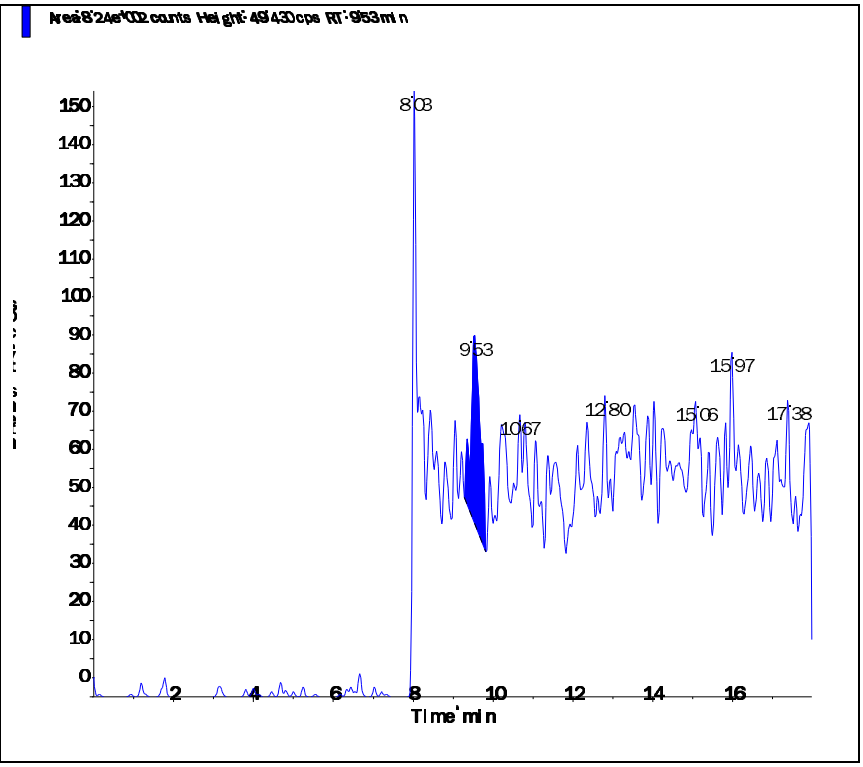

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Data File	LM35490.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 4:40:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-06 CCB	**Injection Vial**	1.00
Data File	LM35490.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 4:40:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.420e+05	9.59	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.59(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

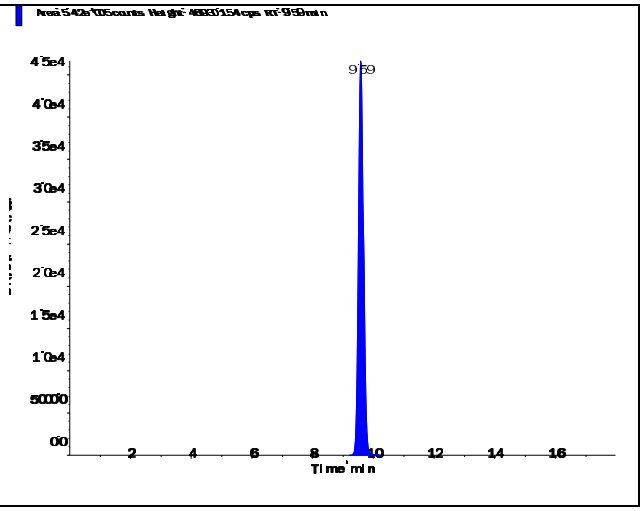

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

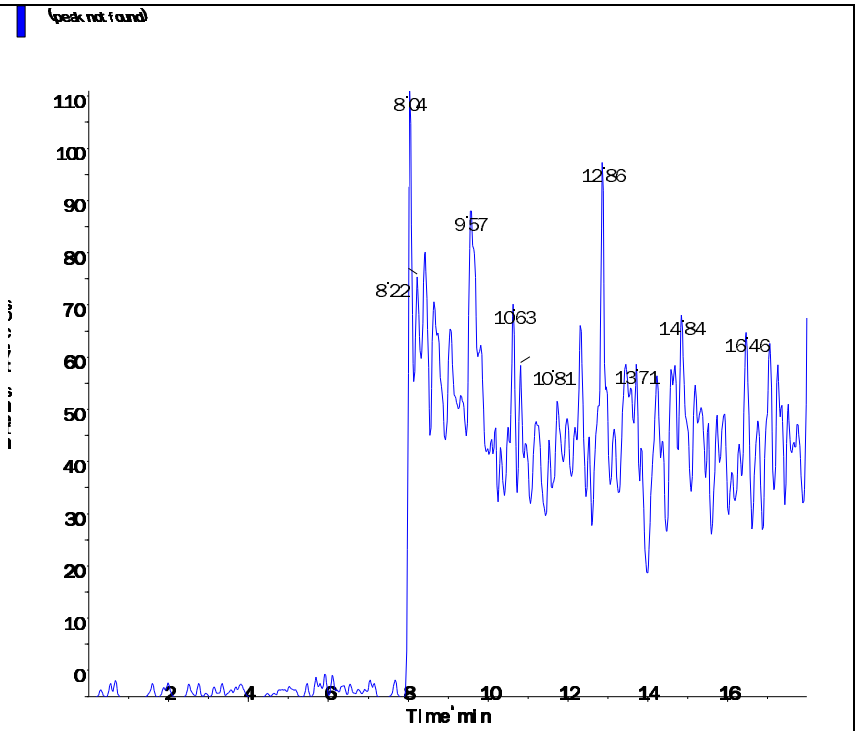

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

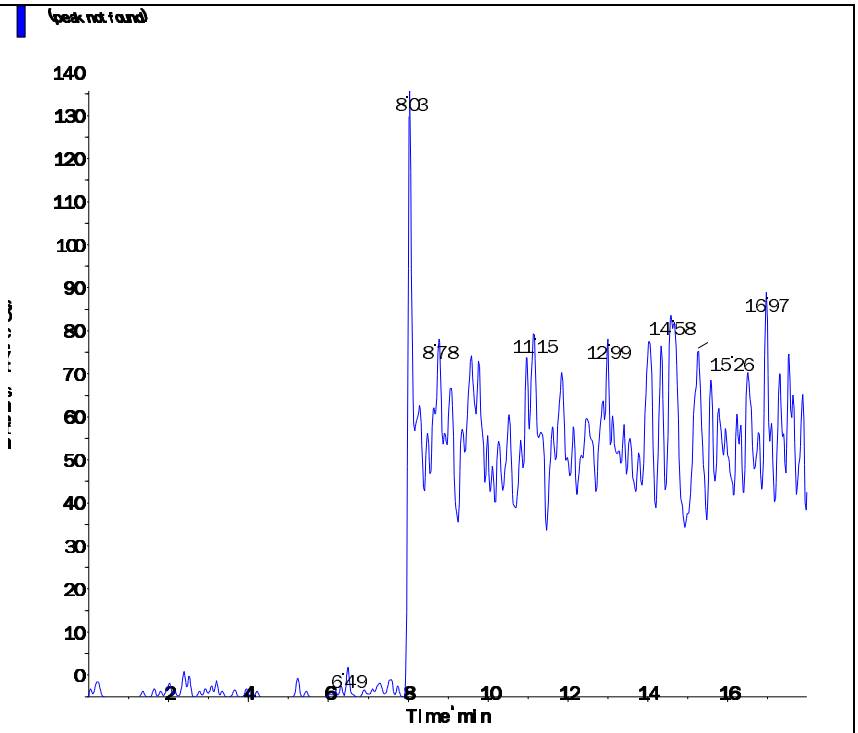

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Data File	LM35497.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:53:28 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-08 CCB	**Injection Vial**	1.00
Data File	LM35497.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:53:28 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.550e+05	9.59	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	5.180e+02	9.63	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.59(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

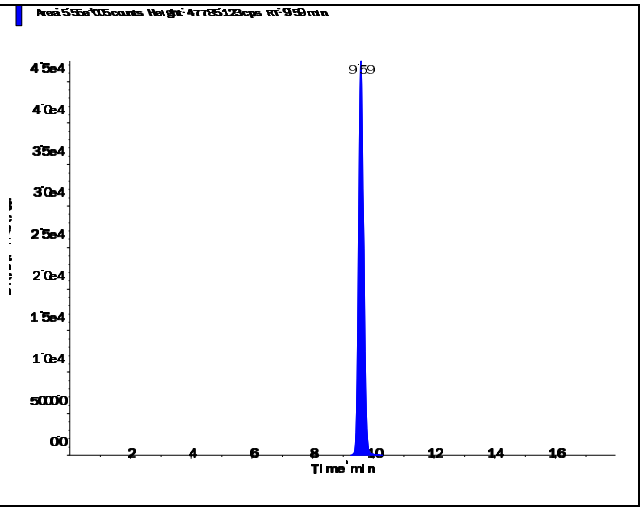

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

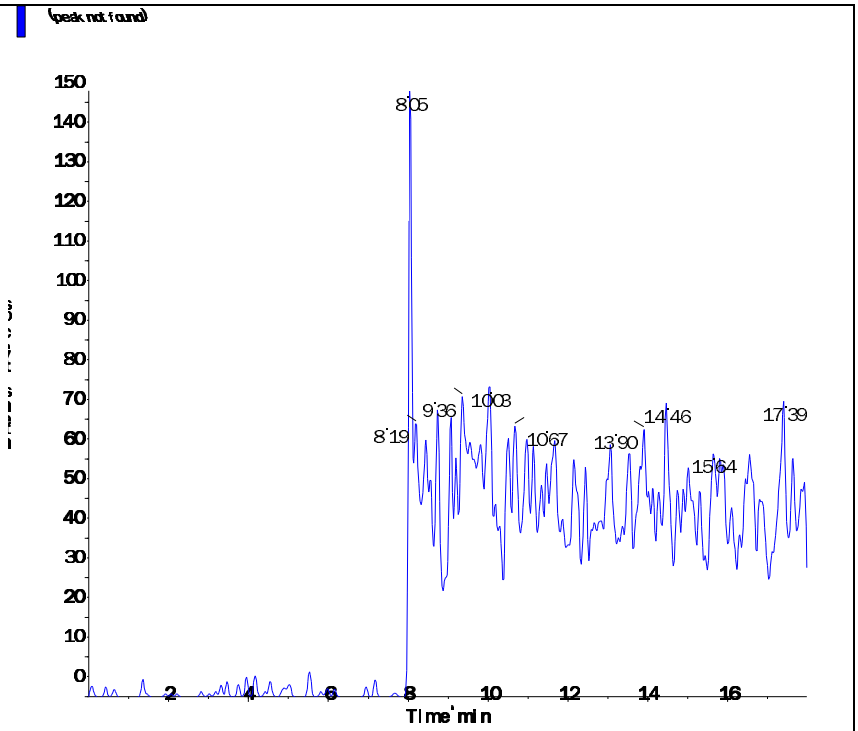

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

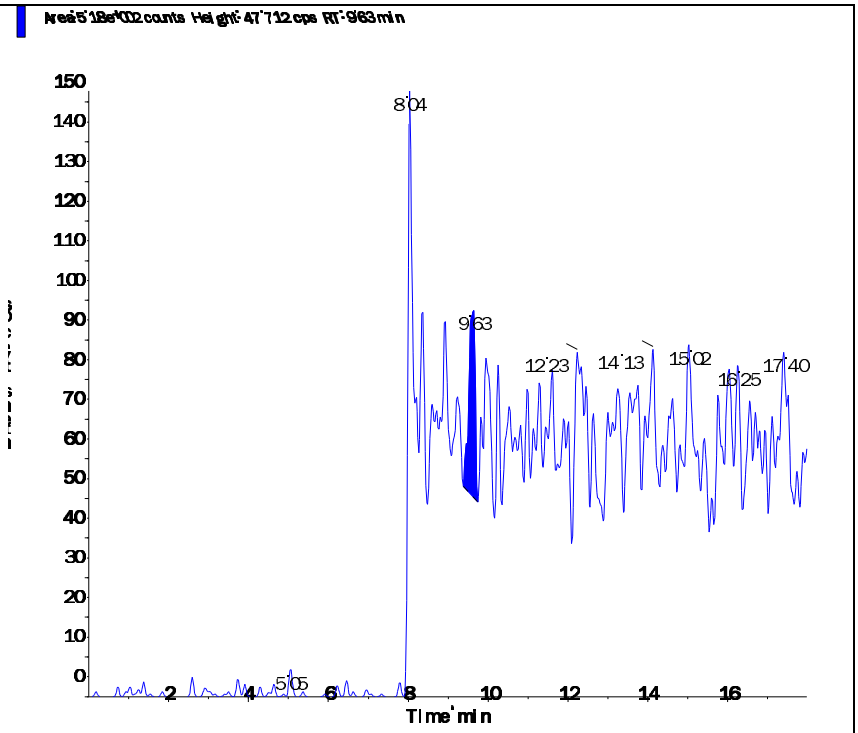

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:52 PM

Data File	LM35500.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:44:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-10 CCB	**Injection Vial**	1.00
Data File	LM35500.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:44:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.840e+05	9.61	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.61(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

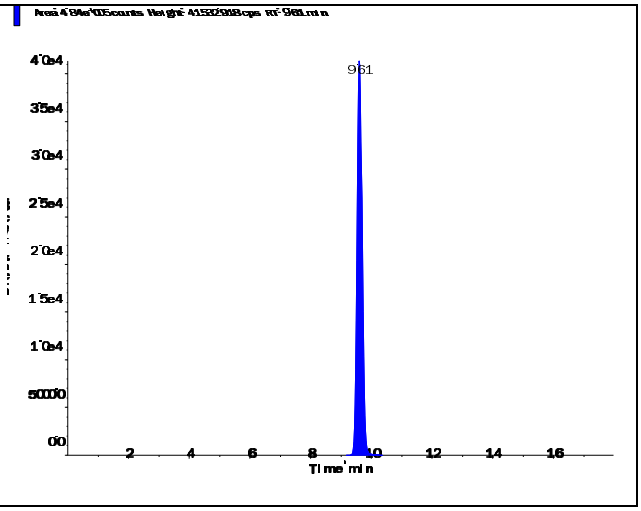

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Applied Biosystems | MDS SCIEX

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Printed: 6/27/2016 7:52 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	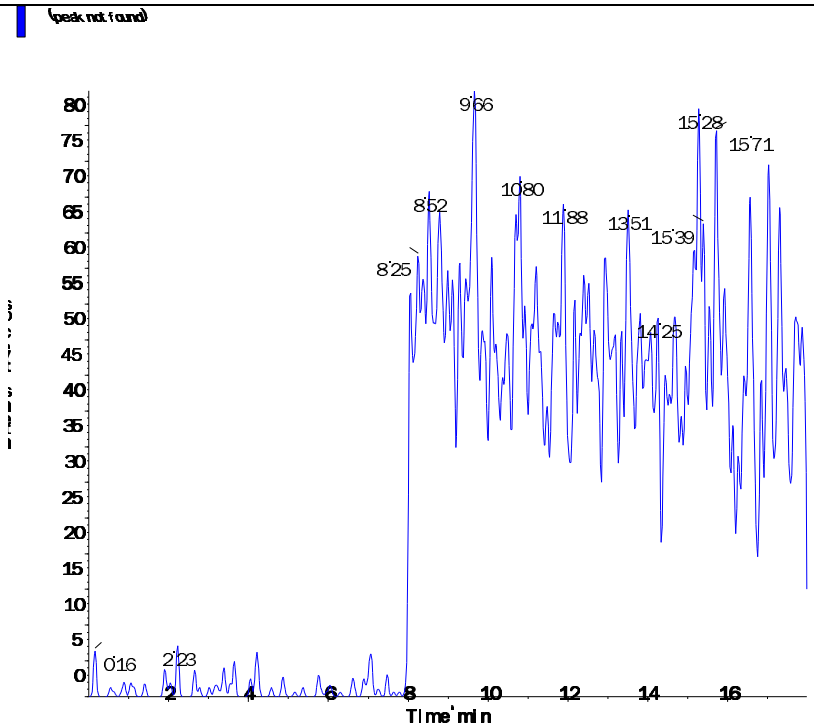
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	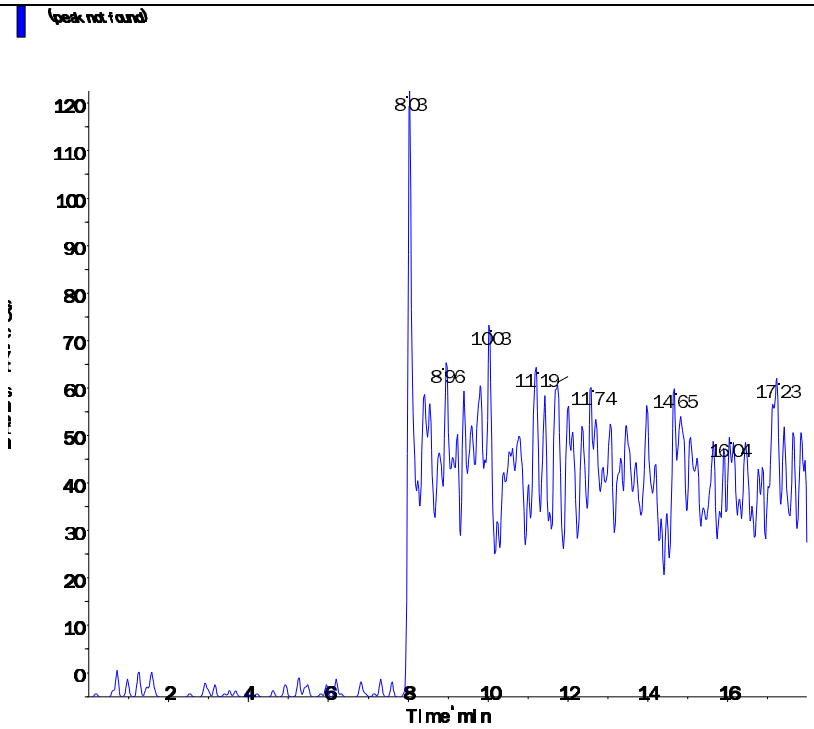

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Created with Analyst Reporter
Printed: 6/27/2016 7:56 PM

Data File	LM35510.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 9:53:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-12 CCB	**Injection Vial**	1.00
Data File	LM35510.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 9:53:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-12	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.380e+05	9.61	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.61(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

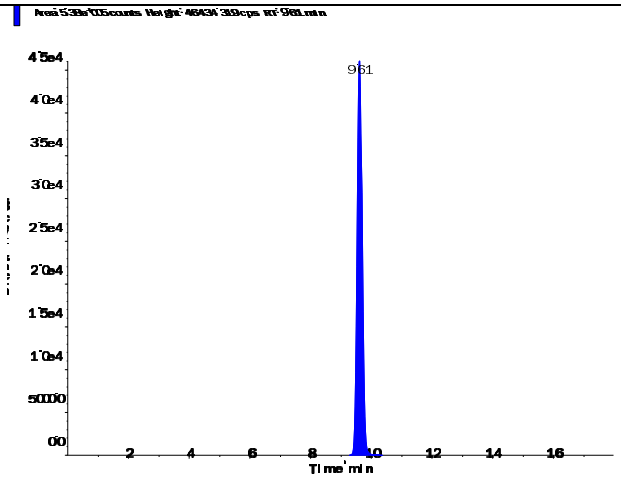

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Created with Analyst Reporter
Printed: 6/27/2016 7:56 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

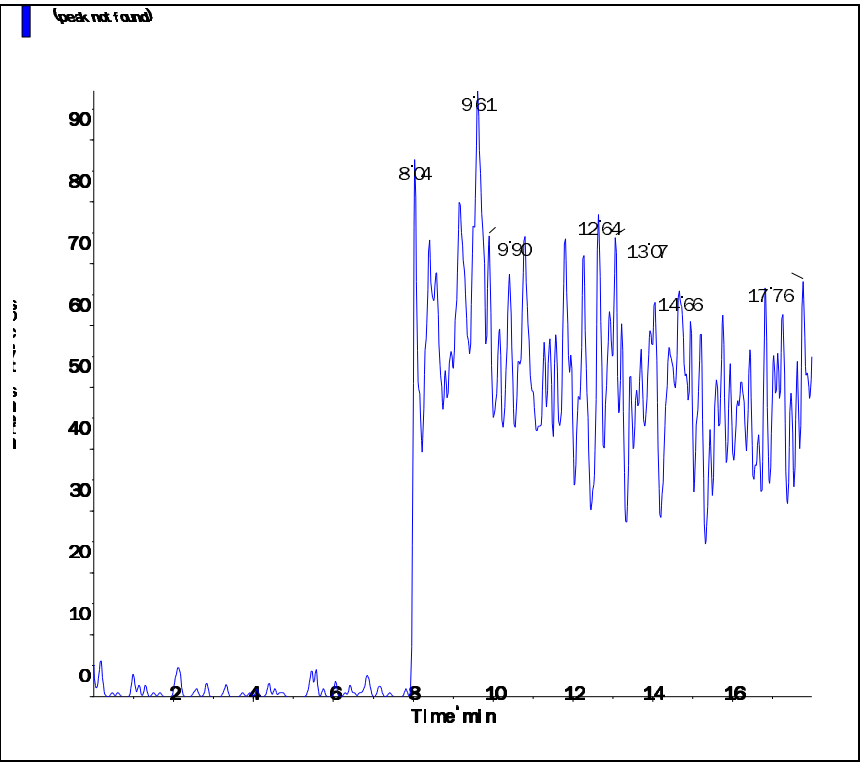

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

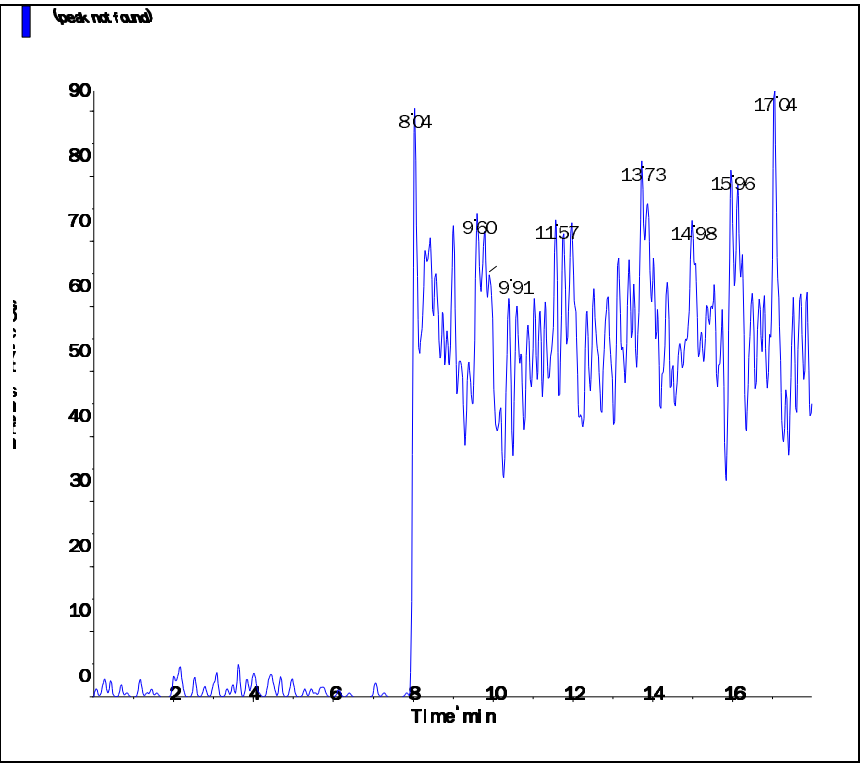

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:39 PM

Data File	LM35465.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 8:47:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM35465.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 8:47:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.320e+05	8.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.810e+04	8.97	N/A	0.19
Perchlorate conf	1.000e+04	8.95	N/A	0.188

O18LP (Internal Standard)

RT (Exp. RT): 8.95(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

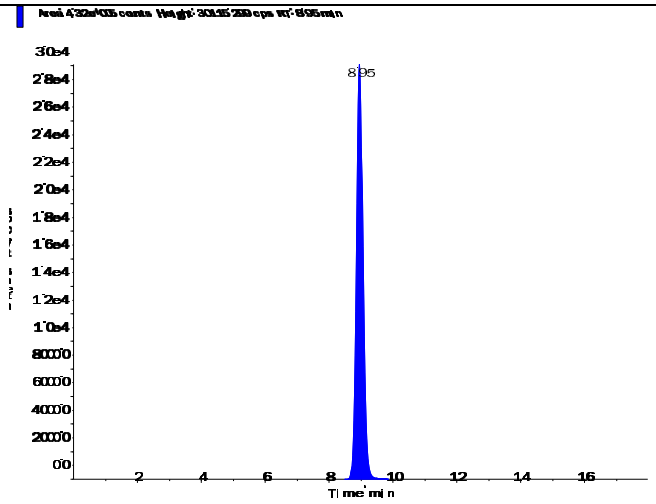

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:39 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	8.97 (9.84) min
Calculated conc:	0.19 ng/ml
Area Ratio:	0.065
Sample Type:	(Unknown)

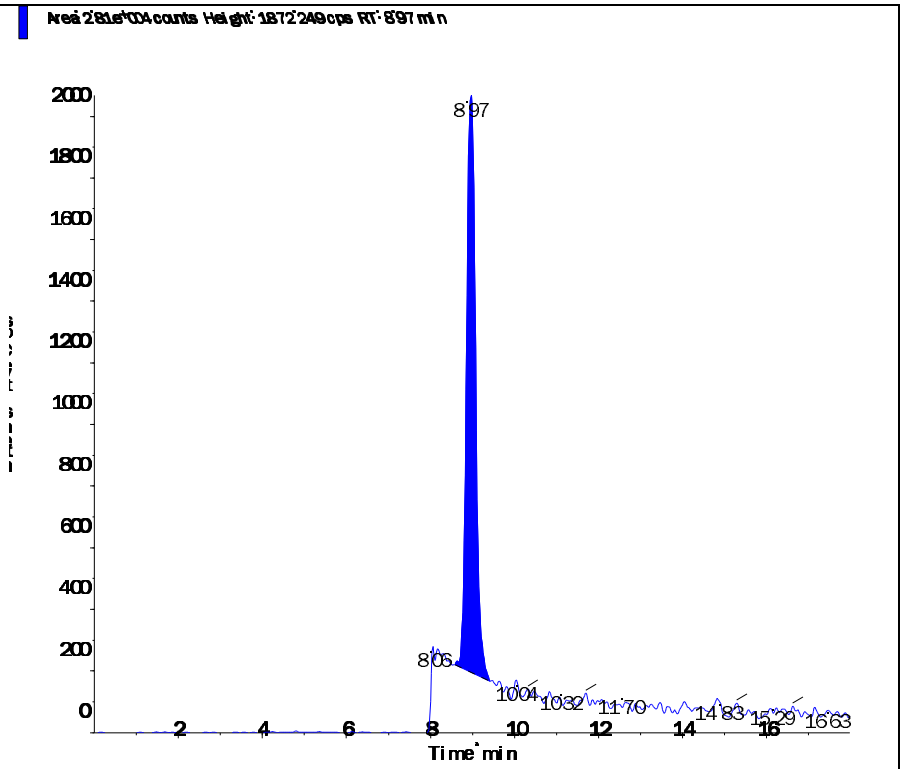

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	8.95 (9.84) min
Calculated conc:	0.188 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

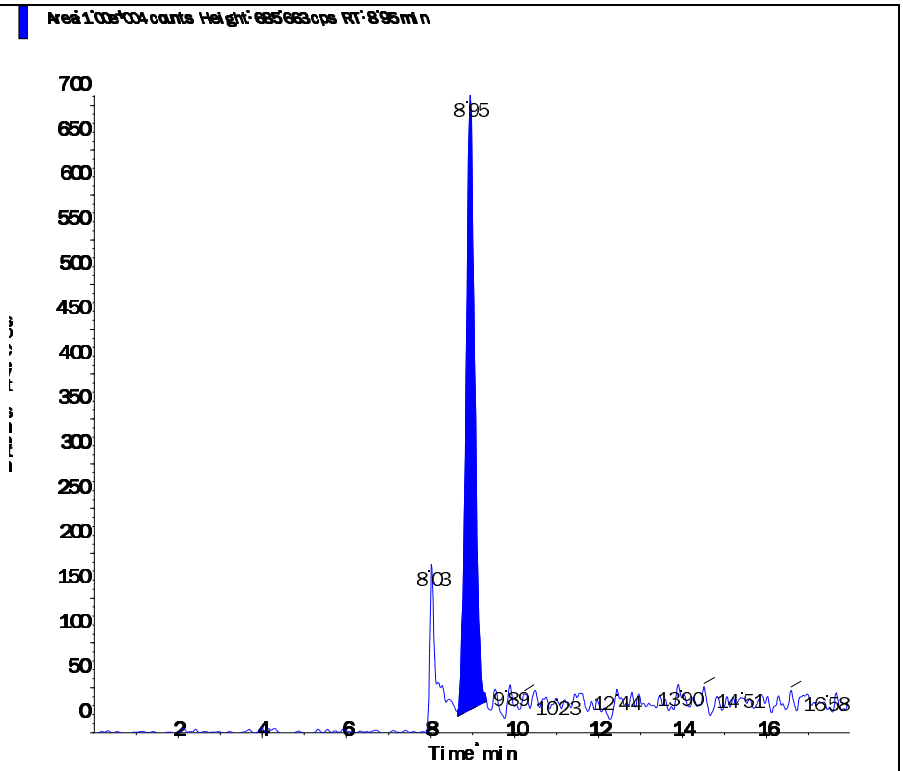

Printing Time: 4:34:28 PM
Printing Date: Saturday, June 25, 2016

Sample Name: "WG574101-01 MCT (0.2ug/L)" Sample ID: "WG574101-01" File: "LM35465.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.219 ug/L
Acq. Date:	6/24/2016
Acq. Time:	8:47:28 PM
Modified:	No
Proc. Algorithm:	Analyst Classic
Bunching Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Exp. Width:	0.20
Sep. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Valley
Retention Time:	8.97 min
Area:	3.23e+004 counts
Height:	1951.523 cps
Start Time:	8.526 min
End Time:	9.417 min

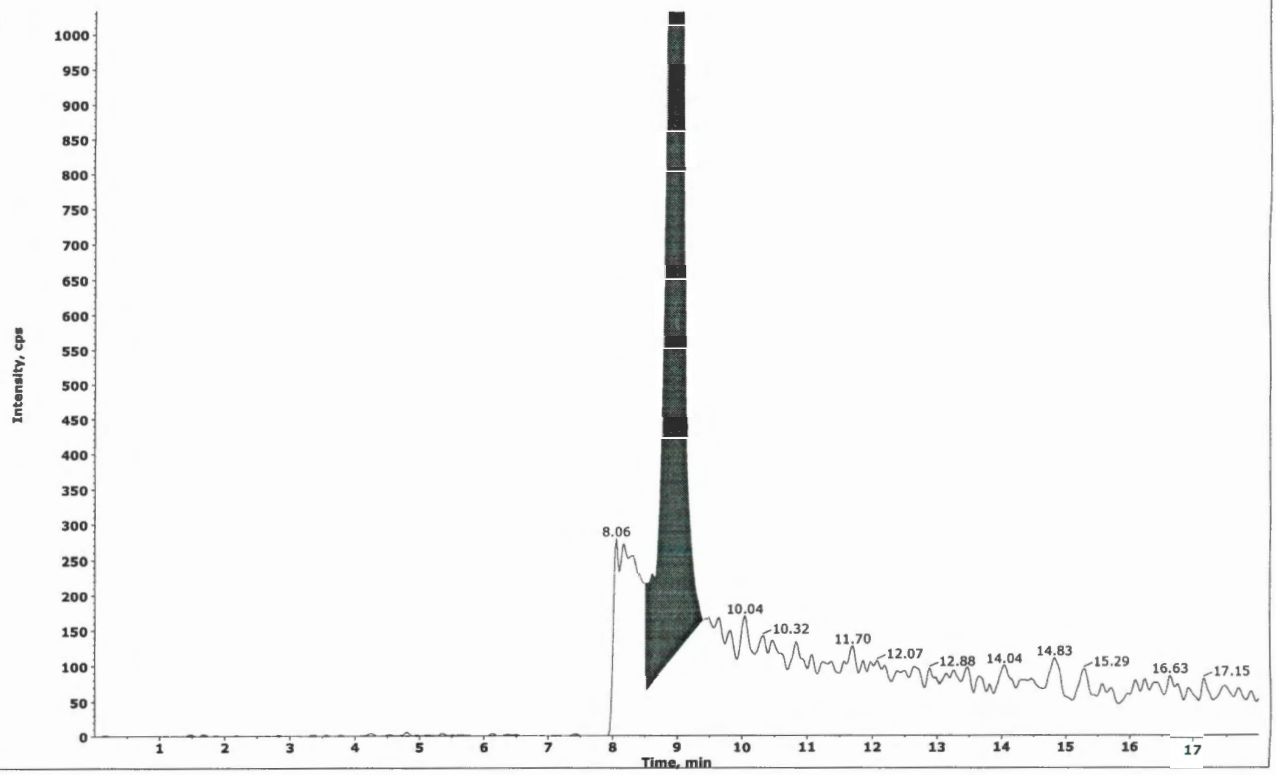

Collected by: N/A
Electronic Signature: no
Operator: lcmsl

Printing Time: 4:36:56 PM
Printing Date: Saturday, June 25, 2016

Sample Name: "WG574101-01 MCT (0.2ug/L)" Sample ID: "WG574101-01" File: "LM35465.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.190 ug/L
Acq. Date:	6/24/2016
Acq. Time:	8:47:28 PM
Modified:	Yes
Proc. Algorithm:	Analyst Classic
Smoothing Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Sep. Width:	0.20
Sep. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Manual
Retention Time:	8.97 min
Area:	2.81e+004 counts
Height:	1872.249 cps
Start Time:	8.587 min
End Time:	9.417 min

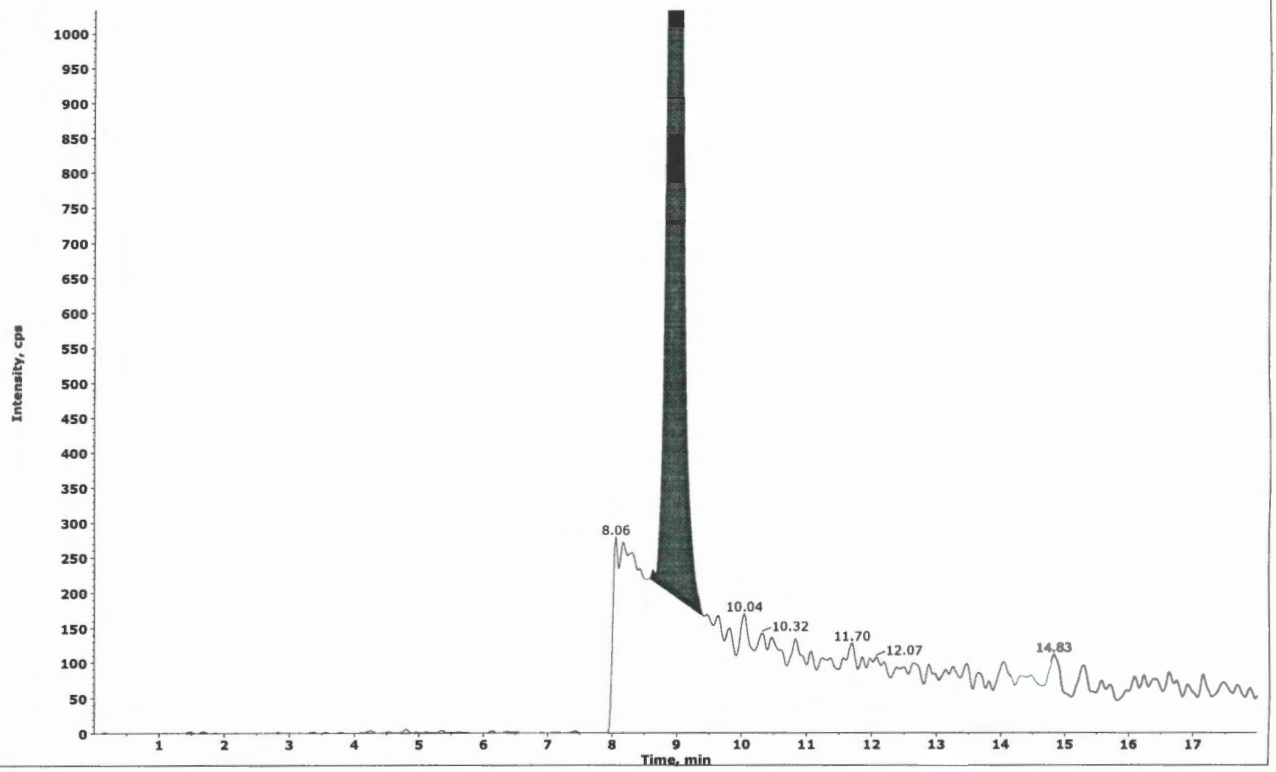

#4
JWR 06/25/16

✓ WTD
06-28-16

Collected by: N/A
Electronic Signature: no
Operator: lcms1

2.2.2.5 Raw QC Data

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Created with Analyst Reporter
Printed: 6/27/2016 7:40 PM

Data File	LM35466.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 9:06:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-02 BLANK	**Injection Vial**	5.00
Data File	LM35466.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 9:06:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.430e+05	9.50	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.50(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

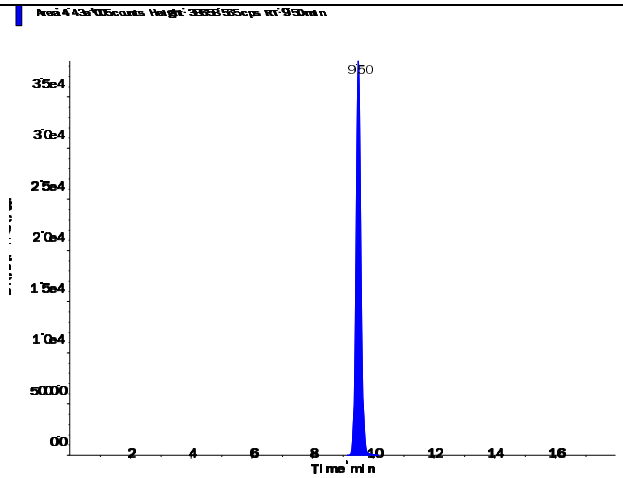

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:40 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

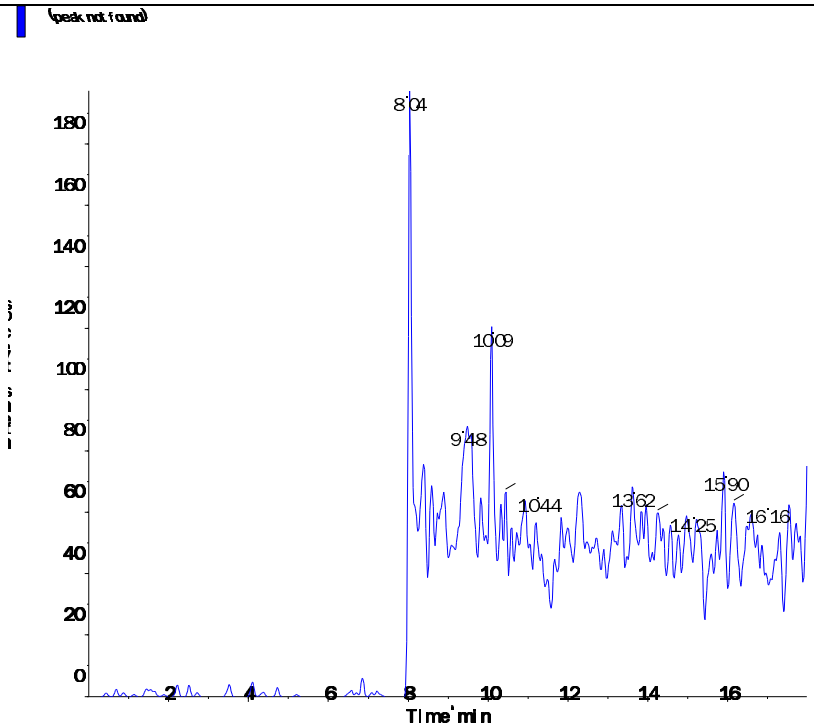

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

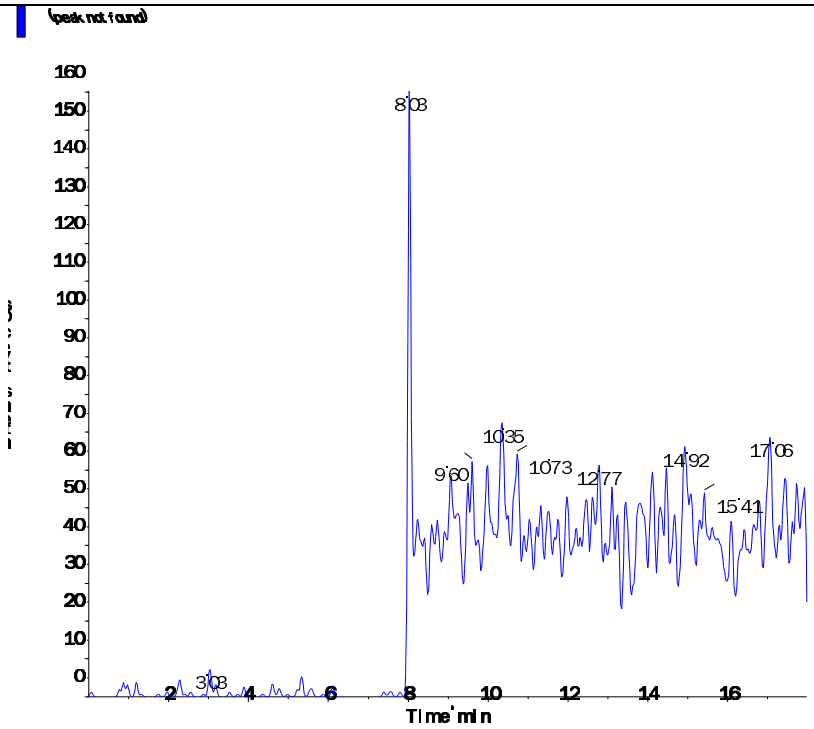

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:40 PM

Data File	LM35467.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 9:25:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM35467.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 9:25:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.440e+05	9.53	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.160e+04	9.54	N/A	0.208
Perchlorate conf	1.180e+04	9.53	N/A	0.217

O18LP (Internal Standard)

RT (Exp. RT): 9.53(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

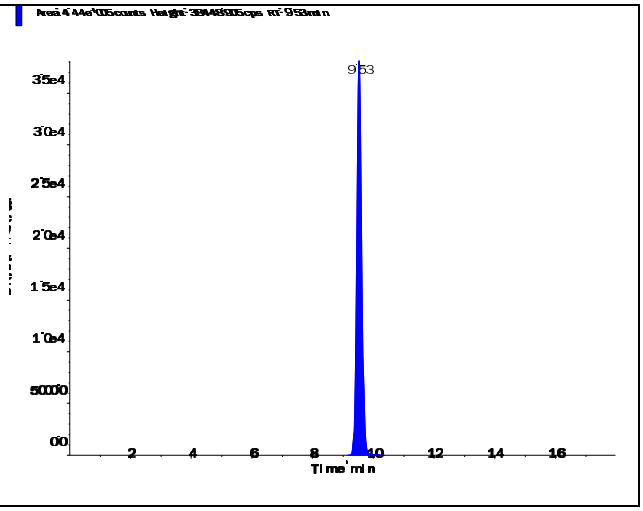

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:40 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.54 (9.84) min Calculated conc: 0.208 ng/ml Area Ratio: 0.071 Sample Type: (Unknown)	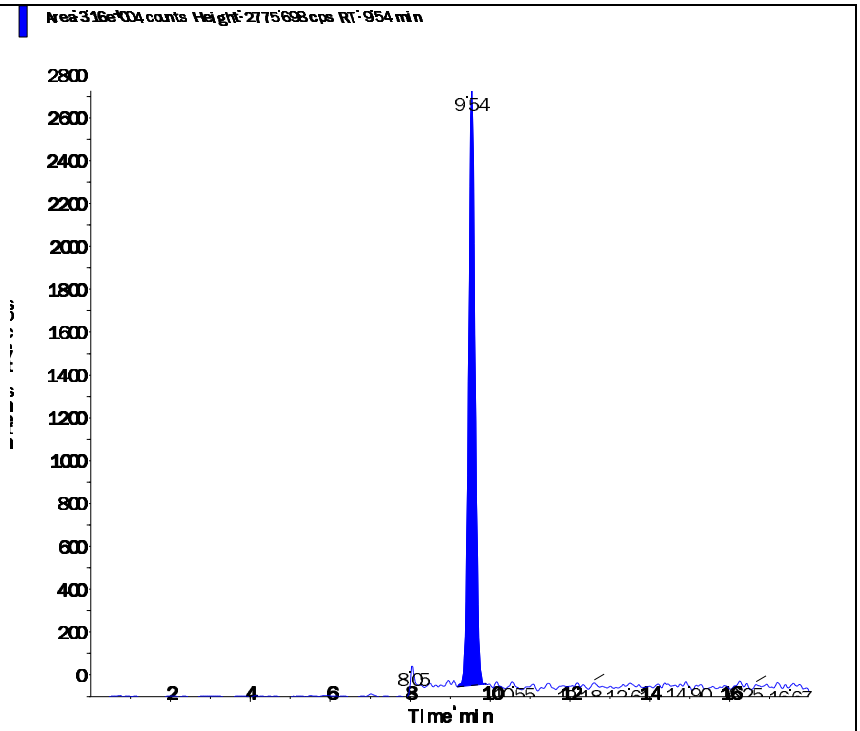
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.53 (9.84) min Calculated conc: 0.217 ng/ml Area Ratio: 0.027 Sample Type: (Unknown)	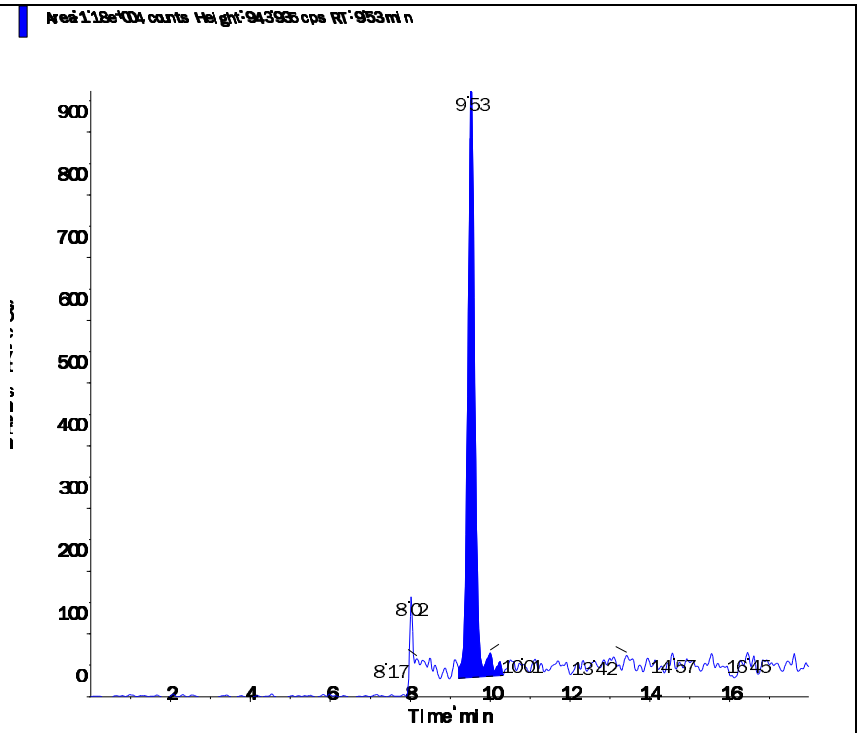

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Created with Analyst Reporter
Printed: 6/27/2016 7:48 PM

Data File	LM35491.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 4:59:54 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-04 LCS2 (0.2ug/L)	**Injection Vial**	7.00
Data File	LM35491.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 4:59:54 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.260e+05	9.57	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.830e+04	9.59	N/A	0.213
Perchlorate conf	1.400e+04	9.57	N/A	0.218

O18LP (Internal Standard)

RT (Exp. RT): 9.57(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

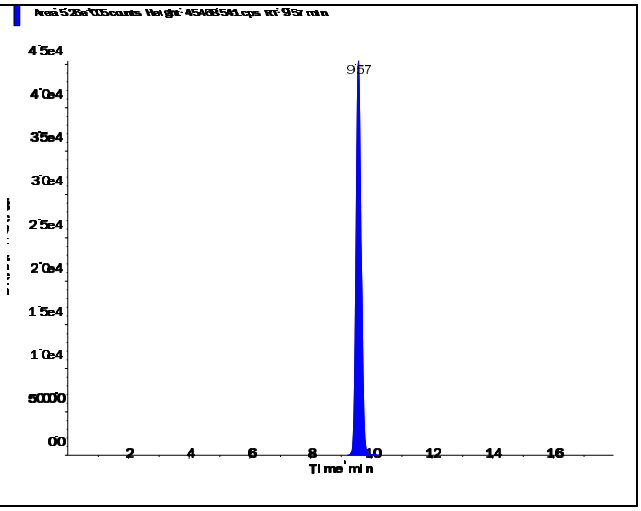

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.59 (9.84) min
Calculated conc:	0.213 ng/ml
Area Ratio:	0.073
Sample Type:	(Unknown)

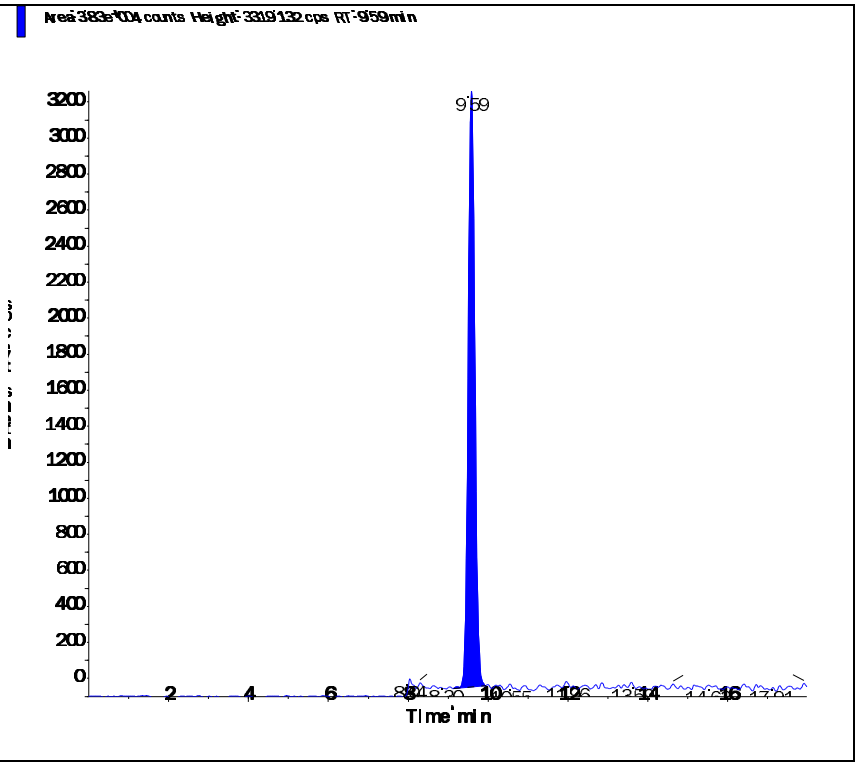

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.57 (9.84) min
Calculated conc:	0.218 ng/ml
Area Ratio:	0.027
Sample Type:	(Unknown)

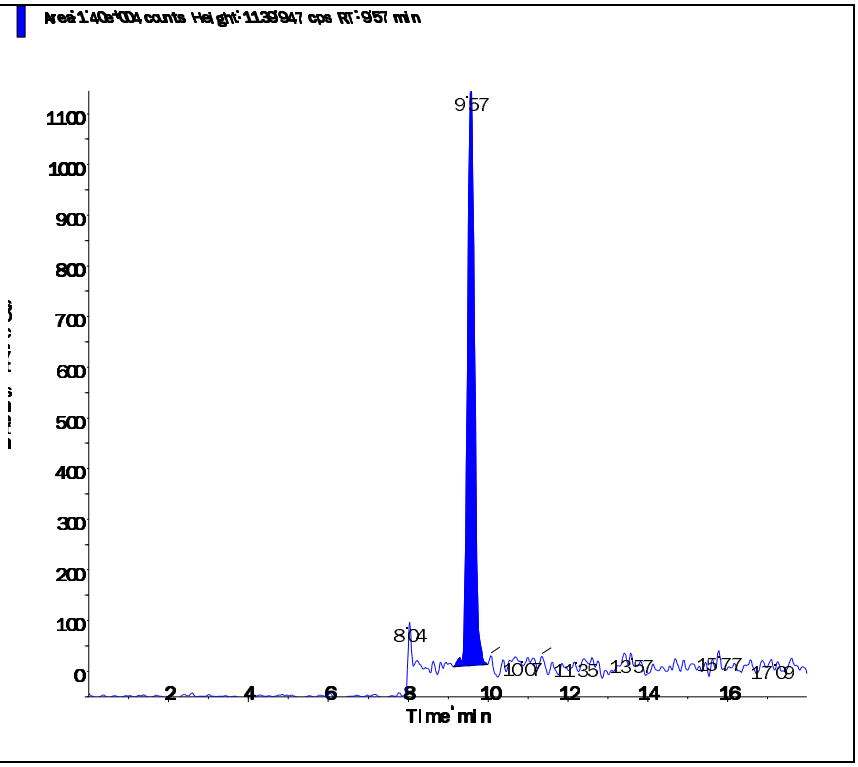

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2.3 Metals Data

2.3.1 Metals I C P Data

2.3.1.1 Summary Data

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	126F-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 16:45
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/23/2016 20:33
Collect Date:	06/14/2016 11:10	**Dilution:**	1	**File ID:**	T3.062316.203318
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.100	U	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	5.93		0.200	0.100	0.0500
Potassium, Total	7440-09-7	4.36		2.00	1.00	0.500

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	126F-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/25/2016 12:36
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/25/2016 14:03
Collect Date:	06/14/2016 11:10	**Dilution:**	1	**File ID:**	T3.062516.140359
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	126F-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 16:45
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/23/2016 21:32
Collect Date:	06/14/2016 11:10	**Dilution:**	20	**File ID:**	T3.062316.213215
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	296		10.0	5.00	2.50
Magnesium, Total	7439-95-4	235		20.0	10.0	5.00
Sodium, Total	7440-23-5	829		20.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	C08-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/25/2016 12:36
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/25/2016 14:07
Collect Date:	06/14/2016 13:10	**Dilution:**	1	**File ID:**	T3.062516.140759
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	C08-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 16:45
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/23/2016 20:37
Collect Date:	06/14/2016 13:10	**Dilution:**	1	**File ID:**	T3.062316.203719
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.114	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	0.627		0.200	0.100	0.0500
Potassium, Total	7440-09-7	2.18		2.00	1.00	0.500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	C08-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 16:45
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/23/2016 21:43
Collect Date:	06/14/2016 13:10	**Dilution:**	20	**File ID:**	T3.062316.214348
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	239		10.0	5.00	2.50
Magnesium, Total	7439-95-4	143		20.0	10.0	5.00
Sodium, Total	7440-23-5	761		20.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	C03-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 16:45
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/23/2016 20:41
Collect Date:	06/14/2016 14:15	**Dilution:**	1	**File ID:**	T3.062316.204123
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.100	U	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Potassium, Total	7440-09-7	4.01		2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	C03-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/25/2016 12:36
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/25/2016 14:12
Collect Date:	06/14/2016 14:15	**Dilution:**	1	**File ID:**	T3.062516.141200
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	C03-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 16:45
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/23/2016 21:47
Collect Date:	06/14/2016 14:15	**Dilution:**	20	**File ID:**	T3.062316.214744
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	55.4		10.0	5.00	2.50
Iron, Total	7439-89-6	101		4.00	2.00	1.00
Magnesium, Total	7439-95-4	35.8		20.0	10.0	5.00
Sodium, Total	7440-23-5	169		20.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.3.1.2 QC Summary Data

Example 6010 Calculations
Thermo Scientific iCAP

1.0 Initial Calibration (ICAL) Parameters
For a multi-point calibration, the system performs linear regression from data consisting of a blank and four standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG573190
Analyst: REK
Spike Analyst: REK
Run Date: 06/17/2016 12:25
Method: 3015
Balance: BAL019
Instrument: MW-4
Instrument Start: 06/17/2016 12:36

SOP: ME407 Revison 19
Spike Solution: STD76576
Spike Witness: VC
HCL Lot #: COA18769
HNO3 Lot #: COA18905
40 & 50 ML. DIGESTION TU COA18987
ICP Filters- fisher-Lot# RGT35619

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG573190-03	BLANK	1	40 mL	50 mL	206.067 g	206.054 g		
2	WG573025-01	FBLK1	17	5 mL	50 mL	204.348 g	204.338 g		
3	WG573190-04	LCS	1	40 mL	50 mL	210.758 g	210.752 g	5 mL	
4	WG573190-01	REF	17	5 mL	50 mL	203.898 g	203.882 g		
5	L16060779-02	RS02	17	5 mL	50 mL	203.898 g	203.882 g		06/24/16
6	WG573190-05	MS	17	5 mL	50 mL	207.438 g	207.431 g	5 mL	
7	L16060779-05	MS02	17	5 mL	50 mL	207.438 g	207.431 g	5 mL	06/24/16
8	WG573190-06	MSD	17	5 mL	50 mL	208.146 g	208.126 g	5 mL	
9	L16060779-08	SD02	17	5 mL	50 mL	208.146 g	208.126 g	5 mL	06/24/16
10	L16060779-11	SAMP	17	5 mL	50 mL	203.893 g	203.879 g		06/24/16
11	L16060779-14	SAMP	17	5 mL	50 mL	205.834 g	205.819 g		06/24/16
12	WG573190-02	REF	1	40 mL	50 mL	205.508 g	205.498 g		
13	L16060808-01	RS01	1	40 mL	50 mL	205.508 g	205.498 g		06/24/16
14	WG573190-07	MS	1	40 mL	50 mL	210.145 g	210.129 g	5 mL	
15	L16060808-03	MS01	1	40 mL	50 mL	210.145 g	210.129 g	5 mL	06/24/16
16	WG573190-08	MSD	1	40 mL	50 mL	210.94 g	210.914 g	5 mL	
17	L16060808-04	SD01	1	40 mL	50 mL	210.94 g	210.914 g	5 mL	06/24/16
18	L16060822-02	SAMP	1	40 mL	50 mL	206.366 g	206.337 g		06/24/16
19	L16060822-03	SAMP	1	40 mL	50 mL	204.086 g	204.053 g		06/24/16
20	L16060823-02	SAMP	1	40 mL	50 mL	205.702 g	205.68 g		06/24/16
21	L16060823-03	SAMP	1	40 mL	50 mL	203.815 g	203.795 g		06/24/16
22	L16060823-04	SAMP	1	40 mL	50 mL	205.586 g	205.557 g		06/24/16
23	L16060883-02	SAMP	1	40 mL	50 mL	204.528 g	204.491 g		06/24/16
24	L16060884-01	SAMP	17	5 mL	50 mL	204.107 g	204.076 g		06/22/16
25	L16060896-01	SAMP	1	40 mL	50 mL	205.437 g	205.412 g		06/27/16
26	L16060896-02	SAMP	1	40 mL	50 mL	207.438 g	207.413 g		06/27/16
27	L16060896-03	SAMP	1	40 mL	50 mL	205.762 g	205.735 g		06/27/16
28	L16060896-04	SAMP	1	40 mL	50 mL	205.858 g	205.827 g		06/27/16
29	L16060896-05	SAMP	1	40 mL	50 mL	205.819 g	205.802 g		06/27/16
30	L16060896-07	SAMP	1	40 mL	50 mL	207.197 g	207.165 g		06/27/16

L16060883-02	FILTERED DIGESTATE

Analyst: [signature]

Reviewer: Erin Potter

MW_DIG - Modified 09/30/2009
PDF ID: 4812648
Report generated: 06/17/2016 13:11

Microbac

TCLP Non-Volatile

Analyst(s): CPD
Date: 6/16/16
Filter Lot #: 9486030
Microbac SOP: TCLP01 Rev #: 12

Analyst / Date		Analyst / Date	
CPD / AMA	6/16/16	CPD	6/17/16
Time On	Temp On °C	Time Off	Temp Off °C
1522	24.6	0814	22.1

Agitator Speed 30 ± 2 rpm ☑

Jug #	Sample #	Tests	Method	Fluid #	Matrix *	% Solid	Pretest pH Initial	Pretest pH Final	Int. Wt. (g)	Fluid Vol. (mL)	Final extract pH
D	06-0779-11	ME	1311	F1-181	S	100	7.01	1.82	25.50	510	4.92
	-02						7.20	1.96	25.35	507	5.01
	-05						7.10	1.78	25.40	508	4.97
	-08						7.13	1.76	25.36	507	4.96
	-14						7.04	1.75	25.35	507	4.98
G-29	06-0829-02	SV		F2-379			12.67	12.62	25.74	514	12.47
D	06-0888-01	300	1312	SPLPF1 -62	S	100	NA	NA	25.12	502	9.47
	-02								25.88	517	9.73
	-03								25.44	508	9.64
	-04								25.43	508	9.75
	-05								25.33	506	9.21
	-06								25.87	517	9.65
	-07								25.52	510	9.60
	-08								25.32	506	9.06
	-09								25.45	509	9.68
	-10								25.27	505	9.97
	-11								25.32	506	9.62
	-12								25.69	513	9.53
	06-0886-01								25.89	517	9.67
	-02								25.16	503	9.55
	-03								25.39	507	9.26
	-04								25.37	507	9.58
	06-0884-01	ME	1311	F1-181	S	100	8.33	3.63	25.22	504	5.61
NA	FBIK1	ME	1311	F1-181	NA	NA	NA	NA	100	100	4.88
	FBIK2	SV		F2-379							2.84
	SPLPF1	300	1312	SPLP F1-62							4.15

CPD 6/16/16

*Matrix Code: (S = solid, sand, soil or sludge) (P = paint) (O = organic) (W = water or aqueous waste)
D = Disposable plastic jug
TCLP Pretest weight will be 5.0 g (± 0.1) unless otherwise noted.
Temperature shall be maintained at 23° ± 2 for 18 ± 2 hours unless otherwise noted.

Comments: N/A

Peer Review By: Allie Alfred 06/17/16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062316T3.2

Analyst1: JYH Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 573973,573749,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.062316.162939	WG574093-01	Calibration Point		1		06/23/16 16:29
2	T3.062316.163338	WG574093-02	Calibration Point		1		06/23/16 16:33
3	T3.062316.163737	WG574093-03	Calibration Point		1		06/23/16 16:37
4	T3.062316.164136	WG574093-04	Calibration Point		1		06/23/16 16:41
5	T3.062316.164514	WG574093-05	Calibration Point		1		06/23/16 16:45
6	T3.062316.164851	WG574093-06	Initial Calibration Verification		1		06/23/16 16:48
7	T3.062316.165229	WG574093-07	Initial Calib Blank		1		06/23/16 16:52
8	T3.062316.165617	WG574093-08	Low Level Initial Calibration V		1		06/23/16 16:56
9	T3.062316.170014	WG574093-09	Low Level Initial Calibration V		1		06/23/16 17:00
10	T3.062316.170408	WG574093-10	Interference Check		1		06/23/16 17:04
11	T3.062316.170801	WG574093-11	Interference Check		1		06/23/16 17:08
12	T3.062316.171145	WG574093-12	CCV		1		06/23/16 17:11
13	T3.062316.171523	WG574093-13	CCB		1		06/23/16 17:15
14	T3.062316.171922	WG573484-02	Method/Prep Blank	40/50	1		06/23/16 17:19
15	T3.062316.172321	WG573484-03	Laboratory Control S	40/50	1		06/23/16 17:23
16	T3.062316.172701	WG573484-01	Reference Sample		1	L16060764-04	06/23/16 17:27
17	T3.062316.173057	WG573484-04	Matrix Spike	40/50	1	L16060764-04	06/23/16 17:30
18	T3.062316.173436	WG573484-05	Matrix Spike Duplica	40/50	1	L16060764-04	06/23/16 17:34
19	T3.062316.173816	L16061098-01	5004-G06-WQ-W0266	40/50	1		06/23/16 17:38
20	T3.062316.174215	L16061098-02	5240-G02-WQ-W0087	40/50	1		06/23/16 17:42
21	T3.062316.174614	WG573952-01	Post Digestion Spike		1	L16061098-02	06/23/16 17:46
22	T3.062316.174955	WG573952-02	Serial Dilution		5	L16061098-02	06/23/16 17:49
23	T3.062316.175355	WG573952-02	Serial Dilution		25	L16061098-02	06/23/16 17:53
24	T3.062316.175755	WG574093-14	CCV		1		06/23/16 17:57
25	T3.062316.180133	WG574093-15	CCB		1		06/23/16 18:01
26	T3.062316.180532	L16061098-03	5320-G02-WQ-W0183	40/50	1		06/23/16 18:05
27	T3.062316.180930	L16061098-04	5506-G02-WQ-W0164	40/50	1		06/23/16 18:09
28	T3.062316.181329	L16060764-01	MW-23-004	40/50	1		06/23/16 18:13
29	T3.062316.181726	L16060764-02	MW-23-002	40/50	1		06/23/16 18:17
30	T3.062316.182122	L16060764-03	FD-061316	40/50	1		06/23/16 18:21
31	T3.062316.182520	L16060957-01	15-12-13 S7	40/50	1		06/23/16 18:25
32	T3.062316.182915	L16060957-02	15-12-13 S7	40/50	1		06/23/16 18:29
33	T3.062316.183311	WG574093-16	CCV		1		06/23/16 18:33
34	T3.062316.183649	WG574093-17	CCB		1		06/23/16 18:36

Page: 1 Approved: June 26, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062316T3.2
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,573749,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.062316.184048	L16060957-03	15-12-13 S8	40/50	1		06/23/16 18:40
36	T3.062316.184442	L16060957-04	15-12-13 S8	40/50	1		06/23/16 18:44
37	T3.062316.184837	L16060957-05	15-12-13 S5	40/50	1		06/23/16 18:48
38	T3.062316.185233	L16060961-01	GH58HS_MELZER_03-03-0	40/50	1		06/23/16 18:52
39	T3.062316.185630	L16060961-02	GH58HS_MELZER_03-03-0	40/50	1		06/23/16 18:56
40	T3.062316.190026	L16060991-02	MW31-061616		1		06/23/16 19:00
41	T3.062316.190423	L16060995-01	UNTREATED	40/50	1		06/23/16 19:04
42	T3.062316.190829	L16060995-02	AFTER	40/50	1		06/23/16 19:08
43	T3.062316.191235	L16061064-01	59-8-6.02 W1	40/50	1		06/23/16 19:12
44	T3.062316.191630	WG574093-18	CCV		1		06/23/16 19:16
45	T3.062316.192008	WG574093-19	CCB		1		06/23/16 19:20
46	T3.062316.192408	WG573190-03	Method/Prep Blank	40/50	1		06/23/16 19:24
47	T3.062316.192807	WG573190-04	Laboratory Control S	40/50	1		06/23/16 19:28
48	T3.062316.193148	WG573025-01	Fluid Blank 1		1		06/23/16 19:31
49	T3.062316.193546	WG573190-01	Reference Sample		1	L16060779-02	06/23/16 19:35
50	T3.062316.193944	WG573190-05	Matrix Spike	5/50	1	L16060779-02	06/23/16 19:39
51	T3.062316.194323	WG573190-06	Matrix Spike Duplica	5/50	1	L16060779-02	06/23/16 19:43
52	T3.062316.194701	L16060779-11	477-TS02-C0002	5/50	1		06/23/16 19:47
53	T3.062316.195059	WG573973-01	Post Digestion Spike		1	L16060779-11	06/23/16 19:50
54	T3.062316.195438	WG573973-02	Serial Dilution		5	L16060779-11	06/23/16 19:54
55	T3.062316.195838	WG573973-02	Serial Dilution		25	L16060779-11	06/23/16 19:58
56	T3.062316.200238	WG574093-20	CCV		1		06/23/16 20:02
57	T3.062316.200616	WG574093-21	CCB		1		06/23/16 20:06
58	T3.062316.201014	L16060779-14	477-TS01-C0003	5/50	1		06/23/16 20:10
59	T3.062316.201412	WG573190-02	Reference Sample		1	L16060808-01	06/23/16 20:14
60	T3.062316.201808	WG573190-07	Matrix Spike	40/50	1	L16060808-01	06/23/16 20:18
61	T3.062316.202147	WG573190-08	Matrix Spike Duplica	40/50	1	L16060808-01	06/23/16 20:21
62	T3.062316.202527	L16060822-02	18WW03F-061416	40/50	1		06/23/16 20:25
63	T3.062316.202923	L16060822-03	18CPTMW04SW-061416	40/50	1		06/23/16 20:29
64	T3.062316.203318	L16060823-02	126F-061416	40/50	1		06/23/16 20:33
65	T3.062316.203719	L16060823-03	C08-061416	40/50	1		06/23/16 20:37
66	T3.062316.204123	L16060823-04	C03-061416	40/50	1		06/23/16 20:41
67	T3.062316.204516	L16060883-02	WC02	40/50	1		06/23/16 20:45
68	T3.062316.204910	WG574093-22	CCV		1		06/23/16 20:49

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Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062316T3.2
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,573749,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.062316.205247	WG574093-23	CCB		1		06/23/16 20:52
70	T3.062316.205645	L16060884-01	NI CAKE	5/50	1		06/23/16 20:56
71	T3.062316.210040	L16060896-01	A08-MW02-Y1S2	40/50	1		06/23/16 21:00
72	T3.062316.210433	L16060896-02	A08-MW03-Y1S2	40/50	1		06/23/16 21:04
73	T3.062316.210831	L16060896-03	A08-MW10-Y1S2	40/50	1		06/23/16 21:08
74	T3.062316.211228	L16060896-04	FD-01	40/50	1		06/23/16 21:12
75	T3.062316.211622	L16060896-05	FD-03	40/50	1		06/23/16 21:16
76	T3.062316.212019	L16060896-07	RB01-06-15-16	40/50	1		06/23/16 21:20
77	T3.062316.212418	L16060822-02	18WW03F-061416		20		06/23/16 21:24
78	T3.062316.212816	L16060822-03	18CPTMW04SW-061416	40/50	20		06/23/16 21:28
79	T3.062316.213215	L16060823-02	126F-061416	40/50	20		06/23/16 21:32
80	T3.062316.213611	WG574093-24	CCV		1		06/23/16 21:36
81	T3.062316.213949	WG574093-25	CCB		1		06/23/16 21:39
82	T3.062316.214348	L16060823-03	C08-061416	40/50	20		06/23/16 21:43
83	T3.062316.214744	L16060823-04	C03-061416	40/50	20		06/23/16 21:47
84	T3.062316.215141	L16060883-02	WC02	40/50	20		06/23/16 21:51
85	T3.062316.215540	L16060896-01	A08-MW02-Y1S2	40/50	20		06/23/16 21:55
86	T3.062316.215938	L16060896-02	A08-MW03-Y1S2	40/50	20		06/23/16 21:59
87	T3.062316.220337	L16060896-03	A08-MW10-Y1S2	40/50	20		06/23/16 22:03
88	T3.062316.220736	L16060896-04	FD-01	40/50	20		06/23/16 22:07
89	T3.062316.221134	L16060896-05	FD-03	40/50	20		06/23/16 22:11
90	T3.062316.221533	L16060896-07	RB01-06-15-16	40/50	20		06/23/16 22:15
91	T3.062316.221931	WG574093-26	CCV		1		06/23/16 22:19
92	T3.062316.222310	WG574093-27	CCB		1		06/23/16 22:23
93	T3.062316.222708	WG574093-28	Low Level Continuing Calibra		1		06/23/16 22:27
94	T3.062316.223105	WG574093-29	Low Level Continuing Calibra		1		06/23/16 22:31
95	T3.062316.223500	WG573562-02	Method/Prep Blank	40/50	1		06/23/16 22:35
96	T3.062316.223859	WG573562-03	Laboratory Control S	40/50	1		06/23/16 22:38
97	T3.062316.224239	WG573353-01	Fluid Blank 1		1		06/23/16 22:42
98	T3.062316.224638	WG573353-02	Fluid Blank 2		1		06/23/16 22:46
99	T3.062316.225037	WG573562-01	Reference Sample		1	L16060974-01	06/23/16 22:50
100	T3.062316.225432	WG573562-04	Matrix Spike	40/50	1	L16060974-01	06/23/16 22:54
101	T3.062316.225812	WG573562-05	Matrix Spike Duplica	40/50	1	L16060974-01	06/23/16 22:58
102	T3.062316.230151	L16060903-01	LF30/31-EWTS-EFFLUENT-1	40/50	1		06/23/16 23:01

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Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062316T3.2

Analyst1: JYH Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 573973,573749,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T3.062316.230549	WG573749-03	Post Digestion Spike		1	L16060903-01	06/23/16 23:05
104	T3.062316.230928	WG573749-04	Serial Dilution		5	L16060903-01	06/23/16 23:09
105	T3.062316.231327	WG574093-30	CCV		1		06/23/16 23:13
106	T3.062316.231705	WG574093-31	CCB		1		06/23/16 23:17
107	T3.062316.232104	L16060903-02	LF30/31-EWTS-MH3-15JUNI	40/50	1		06/23/16 23:21
108	T3.062316.232500	L16060903-03	LF30/31-EWTS-MH2-15JUNI	40/50	1		06/23/16 23:25
109	T3.062316.232857	L16060903-04	LF30/31-EWTS-MH1-15JUNI	40/50	1		06/23/16 23:28
110	T3.062316.233254	L16060903-05	LF30/31-EWTS-INFLUENT-1	40/50	1		06/23/16 23:32
111	T3.062316.233650	L16060924-01	K6F0495-01	5/50	1		06/23/16 23:36
112	T3.062316.234055	DI7	DI7		20		06/23/16 23:40
113	T3.062316.234454	DI8	DI8		20		06/23/16 23:44
114	T3.062316.234853	DI9	DI9		20		06/23/16 23:48
115	T3.062316.235252	WG574093-32	CCV		1		06/23/16 23:52
116	T3.062316.235630	WG574093-33	CCB		1		06/23/16 23:56
117	T3.062416.000030	WG574093-34	ICSA		1		06/24/16 00:00
118	T3.062416.000429	WG574093-35	ICSAB		1		06/24/16 00:04
119	T3.062416.000822	WG574093-36	CCV		1		06/24/16 00:08
120	T3.062416.001200	WG574093-37	CCB		1		06/24/16 00:12
121	T3.062416.001600	WG574093-38	Low Level Continuing Calibra		1		06/24/16 00:16
122	T3.062416.001957	WG574093-39	Low Level Continuing Calibra		1		06/24/16 00:19

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Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062516T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,574055,574076,574216,574215,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.062516.122104	WG574249-01	Calibration Point		1		06/25/16 12:21
2	T3.062516.122502	WG574249-02	Calibration Point		1		06/25/16 12:25
3	T3.062516.122900	WG574249-03	Calibration Point		1		06/25/16 12:29
4	T3.062516.123256	WG574249-04	Calibration Point		1		06/25/16 12:32
5	T3.062516.123634	WG574249-05	Calibration Point		1		06/25/16 12:36
6	T3.062516.124009	WG574249-06	Initial Calibration Verification		1		06/25/16 12:40
7	T3.062516.124348	WG574249-07	Initial Calib Blank		1		06/25/16 12:43
8	T3.062516.124745	WG574249-08	Low Level Initial Calibration V		1		06/25/16 12:47
9	T3.062516.125139	WG574249-09	Low Level Initial Calibration V		1		06/25/16 12:51
10	T3.062516.125529	WG574249-10	Interference Check		1		06/25/16 12:55
11	T3.062516.125921	WG574249-11	Interference Check		1		06/25/16 12:59
12	T3.062516.130304	WG574249-12	CCV		1		06/25/16 13:03
13	T3.062516.130641	WG574249-13	CCB		1		06/25/16 13:06
14	T3.062516.131816	WG573190-03	Method/Prep Blank	40/50	1		06/25/16 13:18
15	T3.062516.132214	WG573190-04	Laboratory Control S	40/50	1		06/25/16 13:22
16	T3.062516.132554	WG573190-02	Reference Sample		1	L16060808-01	06/25/16 13:25
17	T3.062516.132950	WG573190-07	Matrix Spike	40/50	1	L16060808-01	06/25/16 13:29
18	T3.062516.133327	WG573190-08	Matrix Spike Duplica	40/50	1	L16060808-01	06/25/16 13:33
19	T3.062516.133704	L16060822-03	18CPTMW04SW-061416	40/50	1		06/25/16 13:37
20	T3.062516.134058	L16060822-02	18WW03F-061416	40/50	1		06/25/16 13:40
21	T3.062516.134452	WG573973-03	Post Digestion Spike		1	L16060822-02	06/25/16 13:44
22	T3.062516.134830	WG573973-04	Serial Dilution		5	L16060822-02	06/25/16 13:48
23	T3.062516.135227	WG573973-04	Serial Dilution		25	L16060822-02	06/25/16 13:52
24	T3.062516.135622	WG574249-14	CCV		1		06/25/16 13:56
25	T3.062516.140001	WG574249-15	CCB		1		06/25/16 14:00
26	T3.062516.140359	L16060823-02	126F-061416	40/50	1		06/25/16 14:03
27	T3.062516.140759	L16060823-03	C08-061416	40/50	1		06/25/16 14:07
28	T3.062516.141200	L16060823-04	C03-061416	40/50	1		06/25/16 14:12
29	T3.062516.141551	L16061148-01	DP005SW0513-007	40/50	1		06/25/16 14:15
30	T3.062516.141945	L16061148-02	DP005SW0514-007	40/50	1		06/25/16 14:19
31	T3.062516.142340	L16061150-01	SS007SW0709-007	40/50	1		06/25/16 14:23
32	T3.062516.142732	L16061150-02	SS007SW0710-007	40/50	1		06/25/16 14:27
33	T3.062516.143125	L16061151-02	LF003SW0311-007 DUP	40/50	1		06/25/16 14:31
34	T3.062516.143519	L16061151-05	LF003SW0312-007	40/50	1		06/25/16 14:35

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Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062516T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,574055,574076,574216,574215,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.062516.143913	WG573707-02	Reference Sample		1	L16061154-01	06/25/16 14:39
36	T3.062516.144313	WG574249-16	CCV		1		06/25/16 14:43
37	T3.062516.144639	WG574249-17	CCB		1		06/25/16 14:46
38	T3.062516.145037	WG573707-07	Matrix Spike	40/50	1	L16061154-01	06/25/16 14:50
39	T3.062516.145424	WG573707-08	Matrix Spike Duplica	40/50	1	L16061154-01	06/25/16 14:54
40	T3.062516.145809	L16061154-04	FQC-RB06201601-CB	40/50	1		06/25/16 14:58
41	T3.062516.150207	L16061155-01	ST008MW0812-007	40/50	1		06/25/16 15:02
42	T3.062516.150559	L16061155-02	ST008MW0809-007	40/50	1		06/25/16 15:05
43	T3.062516.150954	L16061155-03	ST008MW0816-007	40/50	1		06/25/16 15:09
44	T3.062516.151348	L16061178-01	2016PRE-7217NEWENGLAN	40/50	1		06/25/16 15:13
45	T3.062516.151743	L16061227-01	18WW22-062116	40/50	20		06/25/16 15:17
46	T3.062516.152125	L16061227-06	18CPTMW18-062116	40/50	20		06/25/16 15:21
47	T3.062516.152518	WG573994-01	Reference Sample		20	L16061279-02	06/25/16 15:25
48	T3.062516.152911	WG574249-18	CCV		1		06/25/16 15:29
49	T3.062516.153248	WG574249-19	CCB		1		06/25/16 15:32
50	T3.062516.153646	WG573994-04	Matrix Spike	40/50	20	L16061279-02	06/25/16 15:36
51	T3.062516.154039	WG573994-05	Matrix Spike Duplica	40/50	20	L16061279-02	06/25/16 15:40
52	T3.062516.154432	L16061289-01	MW21-062216	40/50	20		06/25/16 15:44
53	T3.062516.154826	L16061129-01	MW-22-002		20		06/25/16 15:48
54	T3.062516.155222	L16061129-02	MW-22-010		20		06/25/16 15:52
55	T3.062516.155620	L16061129-03	MW-22-007		20		06/25/16 15:56
56	T3.062516.160018	L16061129-04	FD061716		20		06/25/16 16:00
57	T3.062516.160415	L16061272-01	SS007MW0B18-007		20		06/25/16 16:04
58	T3.062516.160812	L16061272-02	SS007MWN752-007		20		06/25/16 16:08
59	T3.062516.161208	L16061279-01	XU936TW007A	40/50	20		06/25/16 16:12
60	T3.062516.161603	WG574249-20	CCV		1		06/25/16 16:16
61	T3.062516.161940	WG574249-21	CCB		1		06/25/16 16:19
62	T3.062516.162338	L16061279-05	XU936TW019A	40/50	20		06/25/16 16:23
63	T3.062516.162733	L16061148-01	DP005SW0513-007		20		06/25/16 16:27
64	T3.062516.163130	L16061148-02	DP005SW0514-007		20		06/25/16 16:31
65	T3.062516.163527	L16061150-01	SS007SW0709-007		20		06/25/16 16:35
66	T3.062516.163912	L16061151-02	LF003SW0311-007 DUP		20		06/25/16 16:39
67	T3.062516.164310	L16061151-05	LF003SW0312-007		20		06/25/16 16:43
68	T3.062516.164706	WG573707-02	Reference Sample		20	L16061154-01	06/25/16 16:47

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062516T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,574055,574076,574216,574215,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.062516.165101	WG573707-07	Matrix Spike	40/50	20	L16061154-01	06/25/16 16:51
70	T3.062516.165454	L16061279-08	XU936TW011MSD	40/50	20	WG573707-08	06/25/16 16:54
71	T3.062516.165848	WG574249-22	CCV		1		06/25/16 16:58
72	T3.062516.170225	WG574249-23	CCB		1		06/25/16 17:02
73	T3.062516.170624	L16061155-01	ST008MW0812-007		20		06/25/16 17:06
74	T3.062516.171010	L16061155-02	ST008MW0809-007		20		06/25/16 17:10
75	T3.062516.171407	L16061155-03	ST008MW0816-007		20		06/25/16 17:14
76	T3.062516.171804	WG574249-24	CCV		1		06/25/16 17:18
77	T3.062516.172142	WG574249-25	CCB		1		06/25/16 17:21
78	T3.062516.172540	WG574249-26	Low Level Continuing Calibra		1		06/25/16 17:25
79	T3.062516.172933	WG573530-03	Method/Prep Blank	40/50	1		06/25/16 17:29
80	T3.062516.173331	WG573530-04	Laboratory Control S	40/50	1		06/25/16 17:33
81	T3.062516.173711	WG573530-05	Filter Blank		1		06/25/16 17:37
82	T3.062516.174110	L16060986-02	MW-07-04	40/50	1		06/25/16 17:41
83	T3.062516.174505	L16060986-04	MW-01-10	40/50	1		06/25/16 17:45
84	T3.062516.174856	L16060986-06	MW-03-12	40/50	1		06/25/16 17:48
85	T3.062516.175251	L16060986-08	MW-01-07	40/50	1		06/25/16 17:52
86	T3.062516.175646	WG574216-01	Post Digestion Spike		1	L16060986-08	06/25/16 17:56
87	T3.062516.180025	WG574216-02	Serial Dilution		5	L16060986-08	06/25/16 18:00
88	T3.062516.180418	WG574216-02	Serial Dilution		25	L16060986-08	06/25/16 18:04
89	T3.062516.180815	WG574249-27	CCV		1		06/25/16 18:08
90	T3.062516.181152	WG574249-28	CCB		1		06/25/16 18:11
91	T3.062516.181548	L16060986-10	MW-03-11		1		06/25/16 18:15
92	T3.062516.181942	L16060986-12	MW-01-01		1		06/25/16 18:19
93	T3.062516.182332	L16060986-14	MW-03-09		1		06/25/16 18:23
94	T3.062516.182724	L16060986-16	MW-01-08		1		06/25/16 18:27
95	T3.062516.183114	L16060986-18	MW-03-06		1		06/25/16 18:31
96	T3.062516.183511	L16060986-20	MW-03-05		1		06/25/16 18:35
97	T3.062516.183905	WG573530-01	Reference Sample		1	L16060986-22	06/25/16 18:39
98	T3.062516.184258	WG573530-02	Reference Sample		1	L16060986-24	06/25/16 18:42
99	T3.062516.184649	L16060986-26	MW-01-02		1		06/25/16 18:46
100	T3.062516.185044	L16060986-28	DUP 1		1		06/25/16 18:50
101	T3.062516.185437	WG574249-29	CCV		1		06/25/16 18:54
102	T3.062516.185815	WG574249-30	CCB		1		06/25/16 18:58

Page: 3 Approved: June 27, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062516T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,574055,574076,574216,574215,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T3.062516.190211	L16060986-30	DUP 2		1		06/25/16 19:02
104	T3.062516.190604	WG573530-06	Matrix Spike		1	L16060986-22	06/25/16 19:06
105	T3.062516.190942	WG573530-07	Matrix Spike Duplica		1	L16060986-22	06/25/16 19:09
106	T3.062516.191321	WG573530-08	Matrix Spike		1	L16060986-24	06/25/16 19:13
107	T3.062516.191658	WG573530-09	Matrix Spike Duplica		1	L16060986-24	06/25/16 19:16
108	T3.062516.192035	L16060986-40	EQUIP BLANK 1		1		06/25/16 19:20
109	T3.062516.192431	L16060986-42	EQUIP BLANK 2		1		06/25/16 19:24
110	T3.062516.192827	WG574249-31	CCV		1		06/25/16 19:28
111	T3.062516.193205	WG574249-32	CCB		1		06/25/16 19:32
112	T3.062516.193603	WG573544-03	Method/Prep Blank	40/50	1		06/25/16 19:36
113	T3.062516.193959	WG573544-04	Laboratory Control S	40/50	1		06/25/16 19:39
114	T3.062516.194338	L16060907-23	MW36-061516	40/50	1		06/25/16 19:43
115	T3.062516.194731	L16060986-01	MW-07-04	40/50	1		06/25/16 19:47
116	T3.062516.195124	L16060986-03	MW-01-10	40/50	1		06/25/16 19:51
117	T3.062516.195515	L16060986-05	MW-03-12	40/50	1		06/25/16 19:55
118	T3.062516.195905	L16060986-07	MW-01-07	40/50	1		06/25/16 19:59
119	T3.062516.200300	WG574215-01	Post Digestion Spike		1	L16060986-07	06/25/16 20:03
120	T3.062516.200637	WG574215-02	Serial Dilution		5	L16060986-07	06/25/16 20:06
121	T3.062516.201030	WG574215-02	Serial Dilution		25	L16060986-07	06/25/16 20:10
122	T3.062516.201426	WG574249-33	CCV		1		06/25/16 20:14
123	T3.062516.201803	WG574249-34	CCB		1		06/25/16 20:18
124	T3.062516.202200	L16060986-09	MW-03-11	40/50	1		06/25/16 20:22
125	T3.062516.202553	L16060986-11	MW-01-01	40/50	1		06/25/16 20:25
126	T3.062516.202942	L16060986-13	MW-03-09	40/50	1		06/25/16 20:29
127	T3.062516.203332	L16060986-15	MW-01-08	40/50	1		06/25/16 20:33
128	T3.062516.203723	L16060986-17	MW-03-06	40/50	1		06/25/16 20:37
129	T3.062516.204116	L16060986-19	MW-03-05	40/50	1		06/25/16 20:41
130	T3.062516.204510	WG573544-01	Reference Sample		1	L16060986-21	06/25/16 20:45
131	T3.062516.204903	WG573544-02	Reference Sample		1	L16060986-23	06/25/16 20:49
132	T3.062516.205255	L16060986-25	MW-01-02	40/50	1		06/25/16 20:52
133	T3.062516.205646	L16060986-27	DUP 1	40/50	1		06/25/16 20:56
134	T3.062516.210036	WG574249-35	CCV		1		06/25/16 21:00
135	T3.062516.210414	WG574249-36	CCB		1		06/25/16 21:04
136	T3.062516.210812	L16060986-29	DUP 2	40/50	1		06/25/16 21:08

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Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062516T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,574055,574076,574216,574215,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	T3.062516.211202	WG573544-05	Matrix Spike	40/50	1	L16060986-21	06/25/16 21:12
138	T3.062516.211541	WG573544-06	Matrix Spike Duplica	40/50	1	L16060986-21	06/25/16 21:15
139	T3.062516.211919	WG573544-07	Matrix Spike	40/50	1	L16060986-23	06/25/16 21:19
140	T3.062516.212256	WG573544-08	Matrix Spike Duplica	40/50	1	L16060986-23	06/25/16 21:22
141	T3.062516.212633	L16060986-39	EQUIP BLANK 1	40/50	1		06/25/16 21:26
142	T3.062516.213031	L16060986-41	EQUIP BLANK 2	40/50	1		06/25/16 21:30
143	T3.062516.213430	WG574249-37	CCV		1		06/25/16 21:34
144	T3.062516.213807	WG574249-38	CCB		1		06/25/16 21:38
145	T3.062516.214203	WG573102-02	Method/Prep Blank	40/50	1		06/25/16 21:42
146	T3.062516.214559	WG573102-03	Laboratory Control S	40/50	1		06/25/16 21:45
147	T3.062516.214937	WG573102-04	Filter Blank		1		06/25/16 21:49
148	T3.062516.215335	WG573102-01	Reference Sample		1	L16060787-09	06/25/16 21:53
149	T3.062516.215728	WG573102-05	Matrix Spike	40/50	1	L16060787-09	06/25/16 21:57
150	T3.062516.220106	WG573102-06	Matrix Spike Duplica	40/50	1	L16060787-09	06/25/16 22:01
151	T3.062516.220444	L16060787-01	EB04	40/50	1		06/25/16 22:04
152	T3.062516.220842	WG573561-03	Post Digestion Spike		1	L16060787-01	06/25/16 22:08
153	T3.062516.221220	WG573561-04	Serial Dilution		5	L16060787-01	06/25/16 22:12
154	T3.062516.221616	WG573561-04	Serial Dilution		25	L16060787-01	06/25/16 22:16
155	T3.062516.222012	WG574249-39	CCV		1		06/25/16 22:20
156	T3.062516.222349	WG574249-40	CCB		1		06/25/16 22:23
157	T3.062516.222746	L16060787-10	U517TW006C	40/50	1		06/25/16 22:27
158	T3.062516.223140	L16060787-18	U517TW008A	40/50	1		06/25/16 22:31
159	T3.062516.223534	L16060787-19	EB05	40/50	1		06/25/16 22:35
160	T3.062516.223931	WG573102-01	Reference Sample		20	L16060787-09	06/25/16 22:39
161	T3.062516.224326	WG573102-05	Matrix Spike	40/50	20	L16060787-09	06/25/16 22:43
162	T3.062516.224719	WG573102-06	Matrix Spike Duplica	40/50	20	L16060787-09	06/25/16 22:47
163	T3.062516.225113	WG574249-41	CCV		1		06/25/16 22:51
164	T3.062516.225451	WG574249-42	CCB		1		06/25/16 22:54
165	T3.062516.225848	WG573484-02	Method/Prep Blank	40/50	1		06/25/16 22:58
166	T3.062516.230246	WG573484-03	Laboratory Control S	40/50	1		06/25/16 23:02
167	T3.062516.230624	WG573484-01	Reference Sample		1	L16060764-04	06/25/16 23:06
168	T3.062516.231017	WG573484-04	Matrix Spike	40/50	1	L16060764-04	06/25/16 23:10
169	T3.062516.231356	WG573484-05	Matrix Spike Duplica	40/50	1	L16060764-04	06/25/16 23:13
170	T3.062516.231733	L16060991-02	MW31-061616	40/50	10		06/25/16 23:17

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062516T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,574055,574076,574216,574215,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
171	T3.062516.232126	WG573952-03	Post Digestion Spike		10	L16060991-02	06/25/16 23:21
172	T3.062516.232503	WG573952-04	Serial Dilution		50	L16060991-02	06/25/16 23:25
173	T3.062516.232900	L16060995-01	UNTREATED	40/50	1000		06/25/16 23:29
174	T3.062516.233253	L16060995-02	AFTER	40/50	1000		06/25/16 23:32
175	T3.062516.233647	WG574249-43	CCV		1		06/25/16 23:36
176	T3.062516.234025	WG574249-44	CCB		1		06/25/16 23:40
177	T3.062516.234420	WG574249-45	Interference Check		1		06/25/16 23:44
178	T3.062516.234809	WG574249-46	Interference Check		1		06/25/16 23:48
179	T3.062516.235152	WG574249-47	CCV		1		06/25/16 23:51
180	T3.062516.235530	WG574249-48	CCB		1		06/25/16 23:55
181	T3.062516.235927	WG574249-49	Low Level Continuing Calibra		1		06/25/16 23:59

Comments

Seq.	Rerun	Dil.	Reason	Analytes
69				
Seq. 69-70: wrong WG numbers JYH				

Page: 6 Approved: June 27, 2016

Kim H. Rhoden

Microbac Laboratories Inc.

Data Checklist

Date: 23-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 574093
Runlog ID: 75909
Analytical Workgroups: 573973,573749,573952

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	764,808
Level 4	1098,779,822,823,883,896,903,924
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer:

Secondary Reviewer:
26-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-26-2016 07:48:33

Microbac Laboratories Inc.

Data Checklist

Date: 25-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 574249
Runlog ID: 75923
Analytical Workgroups: 573973,574055,574076,574216,574215,573952

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1178
Level 4	822,823,1148,1150,1151,1154,1155
	1227,1279,1289,986,787,991,995
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer: Secondary Reviewer: 27-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-27-2016 14:55:21

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010C

AAB#: WG573973

Login Number: L16060823

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
126F-061416	02	06/14/16					06/17/2016	3.1	180		06/23/16	9.4	180	
126F-061416	02	06/14/16					06/17/2016	3.1	180		06/23/16	9.4	180	
126F-061416	02	06/14/16					06/17/2016	3.1	180		06/25/16	11.1	180	
C08-061416	03	06/14/16					06/17/2016	3	180		06/25/16	11	180	
C08-061416	03	06/14/16					06/17/2016	3	180		06/23/16	9.3	180	
C08-061416	03	06/14/16					06/17/2016	3	180		06/23/16	9.4	180	
C03-061416	04	06/14/16					06/17/2016	2.9	180		06/25/16	11	180	
C03-061416	04	06/14/16					06/17/2016	2.9	180		06/23/16	9.3	180	
C03-061416	04	06/14/16					06/17/2016	2.9	180		06/23/16	9.3	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4823910
Report generated 06/27/2016 10:56

METHOD BLANK SUMMARY

Login Number: L16060823
Blank File ID: T3.062316.192408
Prep Date: 06/17/16 12:25
Analyzed Date: 06/23/16 19:24
Analyst: JYH

Work Group: WG573973
Blank Sample ID: WG573190-03
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573190-04	T3.062316.192807	06/23/16 19:28	01
126F-061416	L16060823-02	T3.062316.203318	06/23/16 20:33	01
C08-061416	L16060823-03	T3.062316.203719	06/23/16 20:37	01
C03-061416	L16060823-04	T3.062316.204123	06/23/16 20:41	01
126F-061416	L16060823-02	T3.062316.213215	06/23/16 21:32	DL01
C08-061416	L16060823-03	T3.062316.214348	06/23/16 21:43	DL01
C03-061416	L16060823-04	T3.062316.214744	06/23/16 21:47	DL01
LCS	WG573190-04	T3.062516.132214	06/25/16 13:22	02
126F-061416	L16060823-02	T3.062516.140359	06/25/16 14:03	02
C08-061416	L16060823-03	T3.062516.140759	06/25/16 14:07	02
C03-061416	L16060823-04	T3.062516.141200	06/25/16 14:12	02

Report Name: BLANK_SUMMARY
PDF File ID: 4823911
Report generated 06/27/2016 10:56

METHOD BLANK SUMMARY

Login Number: L16060823
Blank File ID: T3.062516.131816
Prep Date: 06/17/16 12:25
Analyzed Date: 06/25/16 13:18
Analyst: JYH

Work Group: WG573973
Blank Sample ID: WG573190-03
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573190-04	T3.062316.192807	06/23/16 19:28	01
126F-061416	L16060823-02	T3.062316.203318	06/23/16 20:33	01
C08-061416	L16060823-03	T3.062316.203719	06/23/16 20:37	01
C03-061416	L16060823-04	T3.062316.204123	06/23/16 20:41	01
126F-061416	L16060823-02	T3.062316.213215	06/23/16 21:32	DL01
C08-061416	L16060823-03	T3.062316.214348	06/23/16 21:43	DL01
C03-061416	L16060823-04	T3.062316.214744	06/23/16 21:47	DL01
LCS	WG573190-04	T3.062516.132214	06/25/16 13:22	02
126F-061416	L16060823-02	T3.062516.140359	06/25/16 14:03	02
C08-061416	L16060823-03	T3.062516.140759	06/25/16 14:07	02
C03-061416	L16060823-04	T3.062516.141200	06/25/16 14:12	02

Report Name: BLANK_SUMMARY
PDF File ID: 4823911
Report generated 06/27/2016 10:56

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060823 Prep Date: 06/17/16 12:25 Sample ID: WG573190-03
Instrument ID: ICP-THERMO3 Run Date: 06/23/16 19:24 Prep Method: 3015
File ID: T3.062316.192408 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG573973 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-23-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Aluminum, Total	0.0500	0.200	0.0500	1	U
Beryllium, Total	0.00500	0.0200	0.00500	1	U
Calcium, Total	0.125	0.500	0.125	1	U
Iron, Total	0.0500	0.200	0.0500	1	U
Magnesium, Total	0.250	1.00	0.250	1	U
Potassium, Total	0.500	2.00	0.500	1	U
Sodium, Total	0.250	1.00	0.412	1	J

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4823912
07-JUL-2016 17:47

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060823 Prep Date: 06/17/16 12:25 Sample ID: WG573190-03
Instrument ID: ICP-THERMO3 Run Date: 06/25/16 13:18 Prep Method: 3015
File ID: T3.062516.131816 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG573973 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-25-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Selenium, Total	0.00500	0.0200	0.00784	1	J

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4823912
07-JUL-2016 17:47

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060823 Run Date: 06/23/2016 Sample ID: WG573190-04
Instrument ID: ICP-THERMO3 Run Time: 19:28 Prep Method: 3015
File ID: T3.062316.192807 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG573973 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76576 Cal ID: ICP-TH-23-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Aluminum, Total	6.25	6.24	99.9	80 - 120	
Beryllium, Total	0.0313	0.0311	99.6	80 - 120	
Calcium, Total	6.25	6.64	106	80 - 120	
Iron, Total	2.50	2.60	104	80 - 120	
Magnesium, Total	6.25	6.49	104	80 - 120	
Potassium, Total	31.3	32.2	103	80 - 120	
Sodium, Total	31.3	32.4	104	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4823913
Report generated: 07/07/2016 17:47

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060823 Run Date: 06/25/2016 Sample ID: WG573190-04
Instrument ID: ICP-THERMO3 Run Time: 13:22 Prep Method: 3015
File ID: T3.062516.132214 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG573973 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76576 Cal ID: ICP-TH-25-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Selenium, Total	0.250	0.233	93.3	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4823913
Report generated: 07/07/2016 17:47

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060823 Cal ID: ICP-THERMO3 - Worknum: WG573973
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG573190-02 File ID: T3.062316.201412 Dil: 1 Matrix: WATER
Sample ID: WG573190-07 MS File ID: T3.062316.201808 Dil: 1 Units: mg/L
Sample ID: WG573190-08 MSD File ID: T3.062316.202147 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Aluminum	ND	6.25	6.24	99.9	6.25	6.28	101	0.589	80 - 120	20	
Beryllium	ND	0.0313	0.0310	99.3	0.0313	0.0314	100	1.16	80 - 120	20	
Calcium	66.5	6.25	71.3	76.5	6.25	73.1	106	2.53	80 - 120	20	*
Iron	0.336	2.50	2.91	103	2.50	2.93	104	0.788	80 - 120	20	
Magnesium	18.8	6.25	25.0	99.9	6.25	25.4	106	1.47	80 - 120	20	
Potassium	1.76	31.3	33.3	101	31.3	33.9	103	1.61	80 - 120	20	
Sodium	19.9	31.3	51.5	101	31.3	52.3	104	1.67	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4823914
Report generated 07/07/2016 17:47

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060823 Cal ID: ICP-THERMO3 - Worknum: WG573973
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG573190-02 File ID: T3.062516.132554 Dil: 1 Matrix: WATER
Sample ID: WG573190-07 MS File ID: T3.062516.132950 Dil: 1 Units: mg/L
Sample ID: WG573190-08 MSD File ID: T3.062516.133327 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Selenium	ND	0.250	0.241	96.4	0.250	0.240	96.0	0.437	80 - 120	20	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4823914
Report generated 07/07/2016 17:47

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16060823 **Worknum:** WG573973
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG573973-04 **File ID:** T3.062516.134830 **Dil:** 5 **Units:** ug/L
Sample: L16060822-02 **File ID:** T3.062516.134058 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	7.00		ND	U		
Beryllium	0.100		0.600		500.00	E
Calcium	6220		5990		3.69	
Iron	2080		2120		1.93	
Magnesium	4400		4250		3.40	
Potassium	1500		1580		5.21	
Selenium	4.52		ND	U		
Sodium	83200		84000		0.89	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4823908
06/27/2016 15:01

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16060823 **Worknum:** WG573973
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG573973-02 **File ID:** T3.062316.195438 **Dil:** 5 **Units:** ug/L
Sample: L16060779-11 **File ID:** T3.062316.194701 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	173		160		7.72	
Beryllium	0.0300	X	0.100	X	233.00	
Calcium	4280		3960		7.51	
Iron	98.8		139		40.50	E
Magnesium	726		289		60.30	E
Potassium	444		612		37.80	E
Selenium	ND	U	ND	U		
Sodium	142000		130000		8.61	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4823908
06/27/2016 15:01

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060823 **Worknum:** WG573973
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG573973-01 **File ID:** T3.062316.195059 **Dil:** 1 **Units:** ug/L
Sample ID: L16060779-11 **File ID:** T3.062316.194701 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	5140		173		5000	99.6	75 - 125	
BERYLLIUM	25.0		0	U	25	99.8	75 - 125	
CALCIUM	8980		4280		5000	102.5	75 - 125	
IRON	2120		98.8	F	2000	101.7	75 - 125	
MAGNESIUM	5660		726	F	5000	100.1	75 - 125	
POTASSIUM	25600		444	F	25000	100.7	75 - 125	
SELENIUM	192		0	U	200	96.2	75 - 125	
SODIUM	153000		142000		25000	101.9	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4823909
Report generated: 06/27/2016 15:01

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060823 **Worknum:** WG573973
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG573973-03 **File ID:** T3.062516.134452 **Dil:** 1 **Units:** ug/L
Sample ID: L16060822-02 **File ID:** T3.062516.134058 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	4880		0	U	5000	97.5	75 - 125	
BERYLLIUM	24.3		0	U	25	97.1	75 - 125	
CALCIUM	10600		6220		5000	101.0	75 - 125	
IRON	3850		2080		2000	99.0	75 - 125	
MAGNESIUM	8760		4400		5000	96.0	75 - 125	
POTASSIUM	25800		1500	F	25000	97.9	75 - 125	
SELENIUM	192		4.52	F	200	94.2	75 - 125	
SODIUM	100000		83200		25000	100.3	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4823909
Report generated: 06/27/2016 15:01

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16060823	Workgroup (AAB#):	WG573973
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG574093	Initial Calibration Date:	23-JUN-2016 16:45

	WG574093-01		WG574093-02		WG574093-03		WG574093-04		WG574093-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.00129	.1	0.00207	.2	0.00279	10	0.0950	20	0.188	.999993	
BERYLLIUM	0	0.000930	.0005	0.00138	.001	0.00179	.05	0.0552	.1	0.108	.99998	
CALCIUM	0	0.000280	.1	0.00433	.2	0.00735	10	0.497	20	0.993	.999968	
IRON	0	-0.000490	.04	0.000710	.08	0.000970	4	0.0998	8	0.200	.999657	
MAGNESIUM	0	-0.000700	NA	NA	.2	0.000790	10	0.0960	20	0.193	.999996	
POTASSIUM	0	-0.0106	.5	0.0183	1	0.0487	50	3.45	100	6.93	.999984	
SELENIUM	0	-0.000250	NA	NA	.008	-0.000140	.4	0.00687	.8	0.0139	.999993	
SODIUM	0	-0.0645	.5	0.0202	1	0.0962	50	9.63	100	19.4	.999985	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4823917
Report generated: 27-JUN-2016 15:01

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16060823	Workgroup (AAB#):	WG573973
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG574249	Initial Calibration Date:	25-JUN-2016 12:36

	WG574249-01		WG574249-02		WG574249-03		WG574249-04		WG574249-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000800	.1	0.00148	.2	0.00220	10	0.0828	20	0.162	.99995	
BERYLLIUM	0	0.000480	.0005	0.000970	.001	0.00139	.05	0.0482	.1	0.0948	.999766	
CALCIUM	0	0.00288	.1	0.00582	.2	0.00931	10	0.466	20	0.917	.99989	
IRON	0	-0.000710	.04	0.000330	.08	0.00148	4	0.0965	8	0.191	.99933	
MAGNESIUM	0	-0.000260	NA	NA	.2	0.00109	10	0.0796	20	0.159	.99999	
POTASSIUM	0	-0.00661	.5	0.0195	1	0.0419	50	3.07	100	6.10	.999988	
SELENIUM	0	-0.000510	NA	NA	.008	-0.000340	.4	0.00649	.8	0.0134	.999238	
SODIUM	0	-0.0478	.5	0.0267	1	0.108	50	9.20	100	18.4	.99999	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4823917
Report generated: 27-JUN-2016 15:01

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060823
Run Date: 06/23/2016
Sample ID: WG574093-07
Instrument ID: ICP-THERMO3
Run Time: 16:52
Method: 6010C
File ID: T3.062316.165229
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-THERI - 23-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	-.00449	F
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4823919
Report generated 06/27/2016 15:02

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060823
Run Date: 06/25/2016
Sample ID: WG574249-07
Instrument ID: ICP-THERMO3
Run Time: 12:43
Method: 6010C
File ID: T3.062516.124348
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-THERI - 25-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	.0087	*
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4823919
Report generated 06/27/2016 15:02

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/23/2016
Sample ID: WG574093-13
Instrument ID: ICP-THERMO3
Run Time: 17:15
Method: 6010C
File ID: T3.062316.171523
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4823922
Report generated 06/27/2016 15:03

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/23/2016
Sample ID: WG574093-19
Instrument ID: ICP-THERMO3
Run Time: 19:20
Method: 6010C
File ID: T3.062316.192008
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.423	F

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4823922
Report generated 06/27/2016 15:03

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/23/2016
Sample ID: WG574093-21
Instrument ID: ICP-THERMO3
Run Time: 20:06
Method: 6010C
File ID: T3.062316.200616
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4823922
Report generated 06/27/2016 15:03

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/23/2016
Sample ID: WG574093-23
Instrument ID: ICP-THERMO3
Run Time: 20:52
Method: 6010C
File ID: T3.062316.205247
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	-0.00415	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4823922
Report generated 06/27/2016 15:03

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/23/2016
Sample ID: WG574093-25
Instrument ID: ICP-THERMO3
Run Time: 21:39
Method: 6010C
File ID: T3.062316.213949
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4823922
Report generated 06/27/2016 15:03

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/23/2016
Sample ID: WG574093-27
Instrument ID: ICP-THERMO3
Run Time: 22:23
Method: 6010C
File ID: T3.062316.222310
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	-0.00859	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4823922
Report generated 06/27/2016 15:03

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/25/2016
Sample ID: WG574249-13
Instrument ID: ICP-THERMO3
Run Time: 13:06
Method: 6010C
File ID: T3.062516.130641
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00482	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4823922
Report generated 06/27/2016 15:03

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/25/2016
Sample ID: WG574249-15
Instrument ID: ICP-THERMO3
Run Time: 14:00
Method: 6010C
File ID: T3.062516.140001
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/25/2016
Sample ID: WG574249-17
Instrument ID: ICP-THERMO3
Run Time: 14:46
Method: 6010C
File ID: T3.062516.144639
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00512	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/25/2016
Sample ID: WG574249-44
Instrument ID: ICP-THERMO3
Run Time: 23:40
Method: 6010C
File ID: T3.062516.234025
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/25/2016
Sample ID: WG574249-48
Instrument ID: ICP-THERMO3
Run Time: 23:55
Method: 6010C
File ID: T3.062516.235530
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060823
Run Date: 06/23/2016
Sample ID: WG574093-06
Instrument ID: ICP-THERMO3
Run Time: 16:48
Method: 6010C
File ID: T3.062316.164851
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	10.0	100	90 - 110	
Beryllium		.05	0.0505	101	90 - 110	
Calcium		10	10.0	100	90 - 110	
Iron		4	4.01	100	90 - 110	
Magnesium		10	10.1	101	90 - 110	
Potassium		50	50.2	100	90 - 110	
Selenium		.4	0.399	99.8	90 - 110	
Sodium		50	50.1	100	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4823918
Report generated 06/27/2016 15:01

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060823 Run Date: 06/25/2016 Sample ID: WG574249-06
Instrument ID: ICP-THERMO3 Run Time: 12:40 Method: 6010C
File ID: T3.062516.124009 Analyst: JYH Units: mg/L
Workgroup (AAB#): WG573973 Cal ID: ICP-TH - 25-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	10.1	101	90 - 110	
Beryllium		.05	0.0504	101	90 - 110	
Calcium		10	10.1	101	90 - 110	
Iron		4	4.05	101	90 - 110	
Magnesium		10	10.1	101	90 - 110	
Potassium		50	50.3	101	90 - 110	
Selenium		.4	0.400	100	90 - 110	
Sodium		50	50.1	100	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4823918
Report generated 06/27/2016 15:01

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/23/2016
Sample ID: WG574093-12
Instrument ID: ICP-THERMO3
Run Time: 17:11
Method: 6010C
File ID: T3.062316.171145
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.1	mg/L	101	90 - 110		
Beryllium		0.0500	0.0502	mg/L	100	90 - 110		
Calcium		10.0	10.1	mg/L	101	90 - 110		
Iron		4.00	4.06	mg/L	102	90 - 110		
Magnesium		10.0	10.2	mg/L	102	90 - 110		
Potassium		50.0	50.0	mg/L	100	90 - 110		
Selenium		0.400	0.397	mg/L	99.3	90 - 110		
Sodium		50.0	49.9	mg/L	99.8	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4823921
Report generated 06/27/2016 15:03

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/23/2016
Sample ID: WG574093-18
Instrument ID: ICP-THERMO3
Run Time: 19:16
Method: 6010C
File ID: T3.062316.191630
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.45	mg/L	94.5	90 - 110		
Beryllium		0.0500	0.0476	mg/L	95.2	90 - 110		
Calcium		10.0	9.56	mg/L	95.6	90 - 110		
Iron		4.00	3.80	mg/L	95.0	90 - 110		
Magnesium		10.0	9.52	mg/L	95.2	90 - 110		
Potassium		50.0	47.8	mg/L	95.7	90 - 110		
Selenium		0.400	0.378	mg/L	94.5	90 - 110		
Sodium		50.0	48.1	mg/L	96.3	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/23/2016
Sample ID: WG574093-20
Instrument ID: ICP-THERMO3
Run Time: 20:02
Method: 6010C
File ID: T3.062316.200238
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.57	mg/L	95.7	90 - 110		
Beryllium		0.0500	0.0483	mg/L	96.5	90 - 110		
Calcium		10.0	9.59	mg/L	95.9	90 - 110		
Iron		4.00	3.86	mg/L	96.5	90 - 110		
Magnesium		10.0	9.65	mg/L	96.5	90 - 110		
Potassium		50.0	48.3	mg/L	96.5	90 - 110		
Selenium		0.400	0.384	mg/L	95.9	90 - 110		
Sodium		50.0	47.9	mg/L	95.9	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/23/2016
Sample ID: WG574093-22
Instrument ID: ICP-THERMO3
Run Time: 20:49
Method: 6010C
File ID: T3.062316.204910
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.91	mg/L	99.1	90 - 110		
Beryllium		0.0500	0.0500	mg/L	99.9	90 - 110		
Calcium		10.0	9.85	mg/L	98.5	90 - 110		
Iron		4.00	3.92	mg/L	98.0	90 - 110		
Magnesium		10.0	9.86	mg/L	98.6	90 - 110		
Potassium		50.0	49.3	mg/L	98.6	90 - 110		
Selenium		0.400	0.405	mg/L	101	90 - 110		
Sodium		50.0	49.2	mg/L	98.4	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/23/2016
Sample ID: WG574093-24
Instrument ID: ICP-THERMO3
Run Time: 21:36
Method: 6010C
File ID: T3.062316.213611
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.40	mg/L	94.0	90 - 110		
Beryllium		0.0500	0.0475	mg/L	95.0	90 - 110		
Calcium		10.0	9.50	mg/L	95.0	90 - 110		
Iron		4.00	3.81	mg/L	95.4	90 - 110		
Magnesium		10.0	9.53	mg/L	95.3	90 - 110		
Potassium		50.0	47.4	mg/L	94.9	90 - 110		
Selenium		0.400	0.380	mg/L	95.0	90 - 110		
Sodium		50.0	47.3	mg/L	94.6	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/23/2016
Sample ID: WG574093-26
Instrument ID: ICP-THERMO3
Run Time: 22:19
Method: 6010C
File ID: T3.062316.221931
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.29	mg/L	92.9	90 - 110		
Beryllium		0.0500	0.0467	mg/L	93.4	90 - 110		
Calcium		10.0	9.32	mg/L	93.2	90 - 110		
Iron		4.00	3.74	mg/L	93.4	90 - 110		
Magnesium		10.0	9.28	mg/L	92.8	90 - 110		
Potassium		50.0	46.9	mg/L	93.8	90 - 110		
Selenium		0.400	0.374	mg/L	93.5	90 - 110		
Sodium		50.0	46.6	mg/L	93.1	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/25/2016
Sample ID: WG574249-12
Instrument ID: ICP-THERMO3
Run Time: 13:03
Method: 6010C
File ID: T3.062516.130304
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.0	mg/L	100	90 - 110		
Beryllium		0.0500	0.0498	mg/L	99.6	90 - 110		
Calcium		10.0	9.94	mg/L	99.4	90 - 110		
Iron		4.00	4.00	mg/L	99.9	90 - 110		
Magnesium		10.0	9.92	mg/L	99.2	90 - 110		
Potassium		50.0	49.2	mg/L	98.4	90 - 110		
Selenium		0.400	0.405	mg/L	101	90 - 110		
Sodium		50.0	49.3	mg/L	98.6	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/25/2016
Sample ID: WG574249-14
Instrument ID: ICP-THERMO3
Run Time: 13:56
Method: 6010C
File ID: T3.062516.135622
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.88	mg/L	98.8	90 - 110		
Beryllium		0.0500	0.0488	mg/L	97.5	90 - 110		
Calcium		10.0	9.94	mg/L	99.4	90 - 110		
Iron		4.00	3.96	mg/L	98.9	90 - 110		
Magnesium		10.0	9.70	mg/L	97.0	90 - 110		
Potassium		50.0	49.1	mg/L	98.2	90 - 110		
Selenium		0.400	0.395	mg/L	98.8	90 - 110		
Sodium		50.0	49.4	mg/L	98.8	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/25/2016
Sample ID: WG574249-16
Instrument ID: ICP-THERMO3
Run Time: 14:43
Method: 6010C
File ID: T3.062516.144313
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.5	mg/L	105	90 - 110		
Beryllium		0.0500	0.0519	mg/L	104	90 - 110		
Calcium		10.0	10.5	mg/L	105	90 - 110		
Iron		4.00	4.13	mg/L	103	90 - 110		
Magnesium		10.0	10.2	mg/L	102	90 - 110		
Potassium		50.0	50.7	mg/L	101	90 - 110		
Selenium		0.400	0.413	mg/L	103	90 - 110		
Sodium		50.0	51.4	mg/L	103	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/25/2016
Sample ID: WG574249-43
Instrument ID: ICP-THERMO3
Run Time: 23:36
Method: 6010C
File ID: T3.062516.233647
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.2	mg/L	102	90 - 110		
Beryllium		0.0500	0.0497	mg/L	99.5	90 - 110		
Calcium		10.0	10.4	mg/L	104	90 - 110		
Iron		4.00	4.06	mg/L	102	90 - 110		
Magnesium		10.0	9.72	mg/L	97.2	90 - 110		
Potassium		50.0	51.1	mg/L	102	90 - 110		
Selenium		0.400	0.405	mg/L	101	90 - 110		
Sodium		50.0	52.1	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4823921
Report generated 06/27/2016 15:03

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/25/2016
Sample ID: WG574249-47
Instrument ID: ICP-THERMO3
Run Time: 23:51
Method: 6010C
File ID: T3.062516.235152
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.3	mg/L	103	90 - 110		
Beryllium		0.0500	0.0502	mg/L	100	90 - 110		
Calcium		10.0	10.5	mg/L	105	90 - 110		
Iron		4.00	4.08	mg/L	102	90 - 110		
Magnesium		10.0	9.81	mg/L	98.1	90 - 110		
Potassium		50.0	51.1	mg/L	102	90 - 110		
Selenium		0.400	0.412	mg/L	103	90 - 110		
Sodium		50.0	51.8	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4823921
Report generated 06/27/2016 15:03

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060823
Run Date: 06/23/2016
Sample ID: WG574093-08
Instrument ID: ICP-THERMO3
Run Time: 16:56
Method: 6010C
File ID: T3.062316.165617
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.162	mg/L	101	70 - 130		
Beryllium		0.00160	0.00155	mg/L	96.9	70 - 130		
Calcium		0.400	0.451	mg/L	113	70 - 130		
Iron		0.0800	0.0758	mg/L	94.7	70 - 130		
Magnesium		0.400	0.430	mg/L	108	70 - 130		
Potassium		0.800	0.815	mg/L	102	70 - 130		
Sodium		0.400	0.447	mg/L	112	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4823923
Report generated 06/27/2016 15:04

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060823
Run Date: 06/23/2016
Sample ID: WG574093-28
Instrument ID: ICP-THERMO3
Run Time: 22:27
Method: 6010C
File ID: T3.062316.222708
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.137	mg/L	85.5	70 - 130		
Beryllium		0.00160	0.00136	mg/L	85.0	70 - 130		
Calcium		0.400	0.387	mg/L	96.8	70 - 130		
Iron		0.0800	0.0604	mg/L	75.5	70 - 130		
Magnesium		0.400	0.355	mg/L	88.8	70 - 130		
Potassium		0.800	0.745	mg/L	93.1	70 - 130		
Sodium		0.400	0.436	mg/L	109	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4823923
Report generated 06/27/2016 15:04

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060823
Run Date: 06/25/2016
Sample ID: WG574249-08
Instrument ID: ICP-THERMO3
Run Time: 12:47
Method: 6010C
File ID: T3.062516.124745
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.165	mg/L	103	70 - 130		
Beryllium		0.00160	0.00166	mg/L	104	70 - 130		
Calcium		0.400	0.414	mg/L	103	70 - 130		
Iron		0.0800	0.0939	mg/L	117	70 - 130		
Magnesium		0.400	0.441	mg/L	110	70 - 130		
Potassium		0.800	0.887	mg/L	111	70 - 130		
Selenium		0.0160	0.0204	mg/L	127	70 - 130		
Sodium		0.400	0.442	mg/L	110	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4823923
Report generated 06/27/2016 15:04

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060823
Run Date: 06/25/2016
Sample ID: WG574249-26
Instrument ID: ICP-THERMO3
Run Time: 17:25
Method: 6010C
File ID: T3.062516.172540
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.163	mg/L	102	70 - 130		
Beryllium		0.00160	0.00172	mg/L	108	70 - 130		
Calcium		0.400	0.375	mg/L	93.8	70 - 130		
Iron		0.0800	0.0950	mg/L	119	70 - 130		
Potassium		0.800	0.714	mg/L	89.2	70 - 130		
Selenium		0.0160	0.0209	mg/L	131	70 - 130		*
Sodium		0.400	0.408	mg/L	102	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4823923
Report generated 06/27/2016 15:04

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060823
Instrument ID: ICP-THERMO3
Sol. A : WG574093-10 **File ID:** T3.062316.170408
Sol. AB : WG574093-11 **File ID:** T3.062316.170801

Workgroup (AAB#): WG573973
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	266	106	250	265	106	
Beryllium	NS	0	NS	0.250	0.248	99.2	
Calcium	250	253	101	250	252	101	
Iron	100	99.7	99.7	100	97.4	97.4	
Magnesium	250	253	101	250	248	99.2	
Potassium	NS	0.163	NS	5.00	5.24	105	
Selenium	NS	-0.00219	NS	0.250	0.242	96.8	
Sodium	NS	0.0453	NS	5.00	5.37	107	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4823920
Report generated 06/27/2016 15:02

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060823
Instrument ID: ICP-THERMO3
Sol. A : WG574249-10 **File ID:** T3.062516.125529
Sol. AB : WG574249-11 **File ID:** T3.062516.125921

Workgroup (AAB#): WG573973
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	266	106	250	268	107	
Beryllium	NS	0.000110	NS	0.250	0.245	98.0	
Calcium	250	244	97.6	250	247	98.8	
Iron	100	96.8	96.8	100	96.5	96.5	
Magnesium	250	249	99.6	250	249	99.6	
Potassium	NS	0.0533	NS	5.00	5.19	104	
Selenium	NS	-0.00224	NS	0.250	0.249	99.6	
Sodium	NS	0.0404	NS	5.00	5.32	106	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4823920
Report generated 06/27/2016 15:02

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060823
Instrument ID: ICP-THERMO3
Sol. A : WG574249-45 **File ID:** T3.062516.234420
Sol. AB : WG574249-46 **File ID:** T3.062516.234809

Workgroup (AAB#): WG573973
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	263	105	250	271	108	
Beryllium	NS	0.000140	NS	0.250	0.244	97.6	
Calcium	250	248	99.2	250	254	102	
Iron	100	95.6	95.6	100	96.1	96.1	
Magnesium	250	236	94.4	250	239	95.6	
Potassium	NS	-0.0460	NS	5.00	5.21	104	
Selenium	NS	-0.00782	NS	0.250	0.238	95.2	
Sodium	NS	0.0818	NS	5.00	5.50	110	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4823920
Report generated 06/27/2016 15:02

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060823 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	AG	AL	AS	B	BA
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000410	0	0	0
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0.0115	0	-0.0000800
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0.000260	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	-0.000289	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	-0.0000490	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.0000120	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0.0000300	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4823916
Report generated: 06/27/2016 10:56

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060823 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	BE	CA	CD	CO	CR
ALUMINUM	308.20	0	0	0	-0.000820	0
ANTIMONY	206.80	0	0	0	0	0.0200
ARSENIC	189.00	0	0	0	0	-0.00190
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0.00343	0
CADMIUM	228.80	0	0	0	-0.00390	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	-0.000200
COPPER	224.70	0	0	0	0.0000770	-0.00100
IRON	261.10	0	0	0	0	-0.00100
LEAD	220.30	0	0	0	-0.0000130	-0.000132
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.0000500
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	-0.000860	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0.00000500	0	0	0
THALLIUM	190.80	0	0	0	0.00240	0.000276
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	-0.00480
ZINC	206.20	0	0	0	0	-0.00180
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4823916
Report generated: 06/27/2016 10:56

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060823 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	CU	FE	K	LI	MG
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000560	0	0	0
ARSENIC	189.00	0	-0.0000500	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0.000300	0	0	0
CADMIUM	228.80	0	-0.0000190	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000500	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0.00160	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0.000609	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.00000300
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0.0000420	0	0	0
PHOSPHORUS	214.90	-0.323	0.000900	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000270	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000400	0	0	0
VANADIUM	292.40	0	0.00000700	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	-0.0000300	0	0	0

CORR_FACTORS - Modified 03/05/2008
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Report generated: 06/27/2016 10:56

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060823 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	MN	MO	NA	NI	P
ALUMINUM	308.20	0	0.0163	0	0	0
ANTIMONY	206.80	0	-0.00310	0	-0.00350	0
ARSENIC	189.00	0	0.00120	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	-0.00190	0	0	0
CADMIUM	228.80	0	0.0000320	0	-0.000770	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0.000360	0	0	0	0
COBALT	228.60	0	-0.00200	0	0.000100	0
COPPER	224.70	0	0.00160	0	-0.0123	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	-0.00210	0	0.000110	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	-0.00290	-0.0230	0	0	0
MANGANESE	257.60	0	0.0000300	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0.00710	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0.000600	0.000580	0	0	0
SILICON	212.40	0	0.0187	0	0	0
SILVER	328.00	0	-0.0000430	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0.00100	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000153	0	0	0
VANADIUM	292.40	-0.000200	-0.00830	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060823 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	PB	SB	SE	SI	SN
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0	0	0	-0.0220
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0.00440	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060823 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	SR	TI	TL	V	ZN
ALUMINUM	308.20	0	0	0	0.0950	0
ANTIMONY	206.80	0	0.00110	0	-0.00360	0
ARSENIC	189.00	0	0	0	0.000107	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	-0.00000700	0	0.000990	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0.000102	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000550	0	0	0
COBALT	228.60	0	0.00210	0	0.0000200	0
COPPER	224.70	0	0.000269	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	-0.000126	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	-0.00290	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	-0.000110	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	-0.00100	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000720	0	-0.000260	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.000800	0	-0.00490	0
TIN	189.90	0	-0.00190	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0.000820	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4823916
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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060823 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	ZR
ALUMINUM	308.20	0
ANTIMONY	206.80	0
ARSENIC	189.00	0
BARIUM	455.40	0
BERYLLIUM	313.10	0
BORON	249.60	0
CADMIUM	228.80	0
CALCIUM	422.60	0
CHROMIUM	267.70	0
COBALT	228.60	0
COPPER	224.70	0
IRON	261.10	0
LEAD	220.30	0
LITHIUM	670.70	0
MAGNESIUM	279.00	0
MANGANESE	257.60	0
MOLYBDENUM	202.00	0
NICKEL	231.60	0
PHOSPHORUS	214.90	0
POTASSIUM	766.40	0
SELENIUM	196.00	0
SILICON	212.40	0
SILVER	328.00	0
SODIUM	589.50	0
STRONTIUM	407.70	0
THALLIUM	190.80	0
TIN	189.90	0
TITANIUM	337.20	0
VANADIUM	292.40	0
ZINC	206.20	0
ZIRCONIUM	339.10	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4823916
Report generated: 06/27/2016 10:56

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16060823 **Date:** 04/29/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	900.0
Antimony	20.00	45.0
Arsenic	10.00	45.0
Barium	10.00	45.0
Beryllium	10.00	1.8
Boron	20.00	45.0
Cadmium	20.00	4.5
Calcium	5.00	270.0
Chromium	20.00	36.0
Cobalt	20.00	45.0
Copper	20.00	180.0
Iron	5.00	720.0
Lead	20.00	225.0
Lithium	5.00	36.0
Magnesium	5.00	900.0
Manganese	10.00	36.0
Molybdenum	20.00	27.0
Nickel	20.00	90.0
Phosphorus	20.00	180.0
Potassium	5.00	450.0
Selenium	20.00	90.0
Silicon	20.00	36.0
Silver	10.00	9.0
Sodium	5.00	270.0
Strontium	5.00	9.0
Thallium	20.00	18.0
Tin	20.00	45.0
Titanium	5.00	36.0
Vanadium	20.00	27.0
Zinc	20.00	45.0
Zirconium	10.00	45.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4823915
Report generated: 06/27/2016 10:56

2.3.1.3 Raw Data

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000292	0.057216	0.000000	1.000000
Al 308.215 {109}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.001288	0.009253	0.000000	1.000000
As 189.042 {478}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000077	0.027152	0.000000	1.000000
B 249.678 {135}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.000040	0.025100	0.000000	1.000000
Ba 455.403 { 74}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.031526	2.349165	0.000000	1.000000
Be 313.107 {108}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.000934	1.055405	0.000000	1.000000
Ca 422.673 { 80}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.000283	0.049609	0.000000	1.000000
Cd 228.802 {447}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000142	0.651471	0.000000	1.000000
Co 228.616 {447}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000247	0.409702	0.000000	1.000000
Cr 267.716 {126}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.000367	0.066578	0.000000	1.000000
Cu 224.700 {450}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000343	0.142601	0.000000	1.000000
Fe 261.187 {129}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000490	0.025122	0.000000	1.000000
K 766.490 { 44}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.010609	0.069349	0.000000	1.000000
Li 670.784 { 50}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.011827	1.674850	0.000000	1.000000
Mg 279.079 {121}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000702	0.009699	0.000000	1.000000
Mn 257.610 {131}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000277	0.317266	0.000000	1.000000
Mo 202.030 {467}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.000054	0.203043	0.000000	1.000000
Na 589.592 { 57}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.064533	0.194326	0.000000	1.000000
Ni 231.604 {446}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000942	0.155561	0.000000	1.000000
P 214.914 {457}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000263	0.015029	0.000000	1.000000
Pb 220.353 {453}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000678	0.070221	0.000000	1.000000
Sb 206.833 {463}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.000010	0.034653	0.000000	1.000000
Se 196.090 {472}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000253	0.017694	0.000000	1.000000
Si 212.412 {459}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.002512	0.043862	0.000000	1.000000
Sn 189.989 {477}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.000061	0.078522	0.000000	1.000000
Sr 407.771 { 83}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.002450	3.941080	0.000000	1.000000
Ti 337.280 {100}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.003027	0.134433	0.000000	1.000000
Tl 190.856 {477}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000414	0.032326	0.000000	1.000000
V 292.402 {115}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.000001	0.079042	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.000166	0.468267	0.000000	1.000000
Zr 339.198 { 99}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.019987	0.006947	0.000000	1.000000

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999400	0.000005	0.002814	0.009379	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999993	0.000002	0.011897	0.039658	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999595	0.000003	0.004016	0.013387	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999985	0.000001	0.003782	0.012607	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999987	0.000075	0.001344	0.004481	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999980	0.000002	0.000124	0.000413	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999968	0.000025	0.053022	0.176739	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999778	0.000005	0.000338	0.001128	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999932	0.000006	0.000516	0.001721	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999922	0.000003	0.001537	0.005123	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999931	0.000005	0.001747	0.005824	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999657	0.000017	0.028560	0.095199	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999984	0.000125	0.120772	0.402574	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999884	0.000250	0.004948	0.016494	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999996	0.000003	0.098587	0.328625	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999409	0.000035	0.003174	0.010580	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999985	0.000007	0.000553	0.001844	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999985	0.000335	0.039834	0.132780	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999721	0.000012	0.001443	0.004811	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999997	0.000002	0.009293	0.030977	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999947	0.000002	0.004623	0.015411	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999906	0.000004	0.005569	0.018563	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999993	0.000000	0.008923	0.029743	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999495	0.000044	0.003006	0.010020	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999929	0.000006	0.001139	0.003797	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999996	0.000074	0.000554	0.001846	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999177	0.000035	0.008833	0.029443	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999963	0.000001	0.003985	0.013284	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999980	0.000003	0.001255	0.004184	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999976	0.000021	0.000258	0.000861	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.347379	0.000119	0.361260	1.204198	OK.	1.000000	0.000000	1	0

Sample Name: S0 Acquired: 6/23/2016 16:29:39 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00029**	**.00129**	**-.00008**	**.00004**	**.03153**	**.00093**	**.00028**
Stddev	.00015	.00002	.00014	.00006	.00240	.00003	.00198
%RSD	52.623	1.3157	185.14	142.12	7.6014	3.6422	698.55
#1	-.00011	.00130	.00005	.00006	.03428	.00091	-.00196
#2	-.00038	.00127	-.00005	.00008	.03039	.00092	.00105
#3	-.00038	.00130	-.00023	-.00002	.02991	.00097	.00176

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00014**	**-.00025**	**.00037**	**-.00034**	**-.00049**	**-.01061**	**-.01182**
Stddev	.00021	.00007	.00007	.00028	.00069	.00571	.01080
%RSD	147.13	28.247	17.769	80.896	139.88	53.794	91.363
#1	-.00024	-.00033	.00043	-.00059	.00004	-.01711	-.01999
#2	.00010	-.00020	.00030	-.00004	-.00127	-.00832	.00042
#3	-.00029	-.00021	.00036	-.00039	-.00024	-.00641	-.01590

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00070**	**-.00028**	**.00005**	**-.06454**	**-.00094**	**-.00026**	**-.00068**
Stddev	.00069	.00044	.00010	.00127	.00021	.00003	.00023
%RSD	98.775	157.73	191.66	1.9745	22.162	11.455	33.344
#1	-.00130	.00016	-.00002	-.06443	-.00114	-.00027	-.00091
#2	-.00086	-.00028	.00017	-.06587	-.00072	-.00029	-.00046
#3	.00006	-.00072	.00001	-.06333	-.00096	-.00023	-.00067

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00001**	**-.00025**	**.00251**	**.00006**	**.00245**	**-.00303**	**-.00041**
Stddev	.00016	.00016	.00016	.00001	.00241	.00117	.00012
%RSD	1654.9	64.234	6.3986	13.348	98.630	38.681	28.019
#1	-.00002	-.00035	.00248	.00005	.00157	-.00260	-.00029
#2	-.00014	-.00034	.00237	.00007	.00059	-.00213	-.00042
#3	.00019	-.00007	.00269	.00006	.00518	-.00435	-.00053

Sample Name: S0 Acquired: 6/23/2016 16:29:39 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00000	.00017	-.01999
Stddev	.00010	.00005	.00203
%RSD	13188.	28.598	10.137
#1	.00004	.00021	-.01773
#2	-.00011	.00012	-.02164
#3	.00008	.00017	-.02061

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6699.4	41370.	2127.3
Stddev	40.4	297.	43.0
%RSD	.60365	.71762	2.0194
#1	6718.4	41699.	2078.6
#2	6726.8	41290.	2159.8
#3	6653.0	41122.	2143.5

Sample Name: S1 Acquired: 6/23/2016 16:33:38 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00002**	**.00207**	**.04860**	**.00138**	**.00433**	**.00022**	**.00042**
Stddev	.00014	.00009	.00373	.00005	.00188	.00012	.00011
%RSD	835.38	4.5773	7.6793	3.9714	43.525	57.028	26.394
#1	-.00012	.00203	.04518	.00133	.00557	.00008	.00054
#2	-.00007	.00218	.05258	.00138	.00216	.00025	.00040
#3	.00015	.00200	.04803	.00144	.00525	.00032	.00032

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00058**	**.00026**	**.00071**	**.01834**	**.00157**	**.00165**	**.02022**
Stddev	.00008	.00010	.00029	.00177	.00050	.00017	.00883
%RSD	13.891	39.383	40.273	9.6501	31.586	10.184	43.651
#1	.00049	.00020	.00042	.02032	.00204	.00159	.01736
#2	.00061	.00038	.00072	.01689	.00105	.00184	.01318
#3	.00064	.00021	.00099	.01782	.00163	.00152	.03013

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00007**	**.00087**	**-.00042**	**.00040**	**.00339**	**.00056**	**.03432**
Stddev	.00012	.00001	.00016	.00029	.00012	.00009	.00173
%RSD	168.70	1.1803	37.487	70.628	3.5276	16.358	5.0547
#1	-.00003	.00088	-.00031	.00019	.00333	.00066	.03349
#2	-.00020	.00086	-.00060	.00073	.00330	.00055	.03631
#3	.00002	.00087	-.00035	.00029	.00352	.00048	.03315

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00279**	**.00063**	**.00386**	**-.01703**
Stddev	.00101	.00006	.00004	.00240
%RSD	36.246	8.7705	.91033	14.105
#1	-.00167	.00068	.00390	-.01827
#2	-.00364	.00064	.00384	-.01856
#3	-.00305	.00057	.00384	-.01426

Sample Name: S1 Acquired: 6/23/2016 16:33:38 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6745.7**	**41805.**	**2129.8**
Stddev	22.3	250.	32.4
%RSD	.33088	.59789	1.5201
#1	6735.5	41617.	2128.0
#2	6730.4	42089.	2098.4
#3	6771.4	41710.	2163.1

Sample Name: S2 Acquired: 6/23/2016 16:37:37 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00004**	**.00279**	**.00016**	**.00026**	**.06973**	**.00179**	**.00735**
Stddev	.00008	.00007	.00007	.00002	.00127	.00005	.00035
%RSD	185.58	2.6503	44.732	8.8024	1.8178	2.7546	4.6908
#1	-.00013	.00287	.00008	.00023	.06878	.00184	.00697
#2	-.00000	.00273	.00022	.00027	.07117	.00174	.00747
#3	.00001	.00276	.00018	.00027	.06924	.00179	.00763

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00048**	**.00123**	**.00088**	**.00073**	**.00097**	**.04869**	**.00987**
Stddev	.00017	.00004	.00007	.00007	.00080	.01177	.00041
%RSD	36.245	2.8717	7.5775	10.086	82.497	24.183	4.1595
#1	.00028	.00126	.00081	.00081	.00163	.05564	.00947
#2	.00060	.00124	.00089	.00066	.00008	.03509	.01029
#3	.00056	.00119	.00095	.00072	.00119	.05534	.00985

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00079**	**.00313**	**.00327**	**.09617**	**.00018**	**.00208**	**-.00005**
Stddev	.00042	.00021	.00008	.00423	.00014	.00007	.00012
%RSD	53.033	6.7962	2.3656	4.4010	80.620	3.1401	235.98
#1	.00120	.00337	.00326	.09640	.00034	.00201	.00009
#2	.00080	.00296	.00319	.09182	.00013	.00215	-.00010
#3	.00036	.00306	.00335	.10028	.00006	.00208	-.00013

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00074**	**-.00014**	**.00523**	**.00123**	**.06780**	**-.00103**	**-.00017**
Stddev	.00018	.00007	.00014	.00004	.00229	.00100	.00009
%RSD	24.515	47.215	2.6523	3.3445	3.3781	97.203	54.232
#1	.00091	-.00021	.00538	.00120	.06958	-.00212	-.00021
#2	.00075	-.00013	.00511	.00121	.06861	-.00081	-.00007
#3	.00055	-.00008	.00519	.00127	.06522	-.00015	-.00025

Sample Name: S2 Acquired: 6/23/2016 16:37:37 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**.00124**	**.00773**	**-.01963**
Stddev	.00006	.00011	.00107
%RSD	4.9778	1.3726	5.4480
#1	.00125	.00769	-.01940
#2	.00117	.00765	-.01869
#3	.00129	.00785	-.02079
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6707.0**	**42016.**	**2132.5**
Stddev	31.7	150.	7.6
%RSD	.47214	.35787	.35792
#1	6673.0	41936.	2136.2
#2	6712.3	41922.	2137.6
#3	6735.6	42189.	2123.7

Sample Name: S3 Acquired: 6/23/2016 16:41:36 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.02256**	**.09496**	**.01071**	**.01256**	**2.3852**	**.05519**	**.49691**
Stddev	.00004	.00014	.00002	.00013	.0192	.00031	.00535
%RSD	.17307	.15212	.16075	1.0212	.80533	.56599	1.0768
#1	.02258	.09479	.01070	.01253	2.3633	.05545	.49075
#2	.02251	.09505	.01073	.01245	2.3992	.05484	.50038
#3	.02258	.09504	.01070	.01270	2.3931	.05527	.49960

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.03562**	**.08233**	**.03402**	**.07207**	**.09984**	**3.4482**	**1.6795**
Stddev	.00009	.00032	.00019	.00009	.00122	.0308	.0141
%RSD	.25272	.38620	.54823	.12427	1.2238	.89404	.83921
#1	.03572	.08197	.03404	.07201	.09875	3.4126	1.6633
#2	.03558	.08257	.03383	.07204	.09961	3.4653	1.6862
#3	.03556	.08245	.03420	.07218	.10116	3.4666	1.6890

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.09604**	**.15811**	**.20462**	**9.6297**	**.07778**	**.14758**	**.03484**
Stddev	.00184	.00180	.00109	.0816	.00017	.00014	.00035
%RSD	1.9192	1.1373	.53383	.84731	.21367	.09481	1.0023
#1	.09394	.15608	.20545	9.5375	.07784	.14750	.03445
#2	.09678	.15875	.20503	9.6927	.07791	.14775	.03512
#3	.09739	.15949	.20338	9.6588	.07759	.14751	.03495

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.04088**	**.00687**	**.22552**	**.07884**	**3.9495**	**.13075**	**.01457**
Stddev	.00018	.00008	.00024	.00017	.0426	.00233	.00002
%RSD	.43951	1.1502	.10703	.21290	1.0795	1.7820	.16844
#1	.04086	.00680	.22528	.07865	3.9016	.12806	.01460
#2	.04106	.00686	.22576	.07898	3.9835	.13221	.01455
#3	.04070	.00696	.22552	.07889	3.9633	.13197	.01456

Sample Name: S3 Acquired: 6/23/2016 16:41:36 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**.07955**	**.47276**	**-.01302**
Stddev	.00051	.00054	.00096
%RSD	.63790	.11390	7.4014
#1	.07969	.47336	-.01283
#2	.07898	.47259	-.01406
#3	.07996	.47232	-.01217
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6638.5**	**41219.**	**2121.0**
Stddev	46.3	234.	20.8
%RSD	.69679	.56802	.98295
#1	6589.4	41153.	2142.8
#2	6644.8	41479.	2101.2
#3	6681.3	41025.	2119.2

Sample Name: S4 Acquired: 6/23/2016 16:45:14 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.04536**	**.18763**	**.02145**	**.02504**	**4.7264**	**.10809**	**.99272**
Stddev	.00018	.00035	.00006	.00014	.0350	.00038	.00548
%RSD	.40723	.18482	.29786	.54138	.74034	.35140	.55236
#1	.04517	.18737	.02151	.02493	4.6879	.10794	.98645
#2	.04537	.18748	.02147	.02519	4.7563	.10781	.99661
#3	.04554	.18802	.02139	.02499	4.7351	.10852	.99512

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.07067**	**.16242**	**.06673**	**.14133**	**.20036**	**6.9280**	**3.3265**
Stddev	.00015	.00038	.00017	.00047	.00154	.0408	.0160
%RSD	.20929	.23179	.25203	.33195	.76659	.58859	.48243
#1	.07077	.16232	.06654	.14092	.19934	6.8881	3.3089
#2	.07075	.16283	.06687	.14184	.20213	6.9696	3.3403
#3	.07050	.16210	.06677	.14122	.19962	6.9263	3.3303

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.19280**	**.31594**	**.40461**	**19.378**	**.15355**	**.29587**	**.06972**
Stddev	.00166	.00297	.00142	.119	.00024	.00033	.00055
%RSD	.85870	.94051	.34987	.61191	.15345	.11299	.78837
#1	.19091	.31269	.40561	19.253	.15352	.29579	.06923
#2	.19352	.31659	.40524	19.489	.15380	.29623	.07032
#3	.19397	.31853	.40299	19.392	.15333	.29558	.06962

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.08150**	**.01388**	**.44160**	**.15662**	**7.8766**	**.26694**	**.02902**
Stddev	.00043	.00013	.00090	.00039	.0522	.00276	.00015
%RSD	.53112	.92390	.20356	.24938	.66265	1.0329	.50476
#1	.08128	.01397	.44144	.15669	7.8213	.26376	.02890
#2	.08200	.01394	.44257	.15697	7.9249	.26844	.02918
#3	.08123	.01374	.44079	.15620	7.8835	.26861	.02897

Sample Name: S4 Acquired: 6/23/2016 16:45:14 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**.15703**	**.93159**	**-.00927**
Stddev	.00036	.00158	.00064
%RSD	.22618	.16981	6.9563
#1	.15712	.93104	-.00858
#2	.15664	.93337	-.00938
#3	.15734	.93035	-.00985
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6531.9**	**40084.**	**2097.6**
Stddev	16.2	231.	6.3
%RSD	.24773	.57740	.30149
#1	6549.4	40239.	2103.9
#2	6517.6	40195.	2091.2
#3	6528.6	39818.	2097.7

Sample Name: ICV Acquired: 6/23/2016 16:48:51 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39953**	**10.024**	**.40138**	**.50599**	**1.0070**	**.05053**	**10.036**
Stddev	.00339	.040	.00410	.00222	.0059	.00022	.101
%RSD	.84874	.40015	1.0204	.43801	.58442	.43218	1.0067
#1	.40015	10.065	.39887	.50853	1.0016	.05072	9.9340
#2	.39587	9.9844	.39916	.50451	1.0063	.05029	10.037
#3	.40256	10.022	.40610	.50491	1.0133	.05057	10.136
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05000**	**.20142**	**.50405**	**.50578**	**4.0103**	**50.167**	**1.0145**
Stddev	.00018	.00074	.00219	.00236	.0323	.251	.0072
%RSD	.36119	.36866	.43440	.46709	.80429	.50069	.71348
#1	.04994	.20142	.50464	.50308	4.0274	49.888	1.0064
#2	.05021	.20217	.50162	.50746	3.9731	50.374	1.0203
#3	.04986	.20068	.50588	.50680	4.0305	50.241	1.0167
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.075**	**.50106**	**1.0146**	**50.102**	**.50246**	**9.9799**	**.50553**
Stddev	.156	.00520	.0033	.232	.00089	.0190	.00257
%RSD	1.5448	1.0383	.32210	.46381	.17782	.18993	.50874
#1	9.9213	.49528	1.0136	49.851	.50217	9.9887	.50315
#2	10.071	.50252	1.0182	50.148	.50346	9.9928	.50825
#3	10.233	.50537	1.0119	50.309	.50174	9.9581	.50518
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: ICV Acquired: 6/23/2016 16:48:51 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2034**	**.39904**	**5.0662**	**1.0017**	**1.0068**	**.99368**	**.50263**
Stddev	.0053	.01223	.0118	.0027	.0059	.01682	.00169
%RSD	.44447	3.0652	.23394	.26994	.59001	1.6930	.33671
#1	1.2003	.41278	5.0644	1.0010	1.0005	.98203	.50067
#2	1.2095	.38936	5.0789	1.0047	1.0076	.98605	.50350
#3	1.2003	.39496	5.0554	.99945	1.0123	1.0130	.50370
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0106**	**1.0101**	F **.08377**
Stddev	.0013	.0017	.57243
%RSD	.13014	.17012	683.32
#1	1.0108	1.0096	.41336
#2	1.0092	1.0121	.41517
#3	1.0118	1.0088	-.57721
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-5.0000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6582.9**	**40798.**	**2104.4**
Stddev	57.1	288.	9.3
%RSD	.86719	.70695	.43973
#1	6642.0	40517.	2109.9
#2	6528.1	41093.	2109.6
#3	6578.7	40785.	2093.7

Sample Name: ICB Acquired: 6/23/2016 16:52:29 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00205	.00812	.00204	.00053	.00042	.00004	.08043	.00000
Stddev	.00123	.00380	.00409	.00171	.00048	.00007	.04843	.00019
%RSD	60.002	46.772	200.40	325.30	114.02	191.36	60.215	12542.
#1	.00117	.01182	.00568	-.00071	.00071	-.00005	.13570	.00020
#2	.00153	.00832	-.00239	.00248	.00068	.00009	.04544	-.00018
#3	.00346	.00423	.00283	-.00019	-.00013	.00007	.06015	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	-.00032	.00256	.01917	.26687	-.00090	-.01824	.00334
Stddev	.00068	.00118	.00062	.01550	.00597	.00344	.19098	.00120
%RSD	152.08	365.07	24.256	80.873	2.2373	382.34	1047.0	35.896
#1	.00109	.00091	.00301	.01950	.26758	.00158	-.16456	.00207
#2	-.00027	-.00043	.00283	.00350	.26057	.00055	-.08796	.00445
#3	.00052	-.00145	.00185	.03450	.27245	-.00483	.19780	.00349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00543	.02836	-.00115	.00608	-.00046	.00498	-.00449	-.00458
Stddev	.00101	.00804	.00072	.01165	.00093	.00238	.00576	.00313
%RSD	18.519	28.338	62.364	191.75	202.82	47.775	128.25	68.440
#1	.00443	.02219	-.00190	-.00553	.00045	.00510	-.01053	-.00111
#2	.00542	.03745	-.00110	.00598	-.00041	.00730	-.00387	-.00541
#3	.00644	.02544	-.00046	.01778	-.00141	.00254	.00094	-.00721
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: ICB Acquired: 6/23/2016 16:52:29 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.00059	-.00321	-.00285	-.00021	.00049	-.01967
Stddev	.00049	.00058	.00271	.00281	.00126	.00023	.30758
%RSD	1987.7	98.883	84.402	98.601	601.40	48.028	1563.4
#1	.00048	.00125	-.00307	-.00514	.00122	.00050	-.07765
#2	-.00050	.00018	-.00600	.00028	-.00069	.00072	.31277
#3	.00010	.00032	-.00058	-.00369	-.00116	.00025	-.29414
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6667.4	41423.	2115.8
Stddev	41.6	269.	6.3
%RSD	.62409	.64899	.29744
#1	6626.3	41592.	2109.7
#2	6666.3	41563.	2115.3
#3	6709.5	41113.	2122.3

Sample Name: LLICV Acquired: 6/23/2016 16:56:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00827	.16210	.00867	.07876	.00792	.00155	.45064	.00085
Stddev	.00069	.00016	.00152	.00325	.00022	.00012	.03526	.00030
%RSD	8.3443	.10048	17.555	4.1248	2.8338	7.9064	7.8234	35.681
#1	.00876	.16217	.00804	.07520	.00817	.00167	.42049	.00097
#2	.00858	.16223	.00757	.07953	.00782	.00155	.48940	.00050
#3	.00748	.16192	.01041	.08156	.00775	.00143	.44202	.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00411	.00286	.00483	.07579	.81519	.07605	.43031	.01159
Stddev	.00051	.00122	.00183	.02010	.08172	.00054	.07836	.00240
%RSD	12.383	42.665	37.852	26.521	10.025	.70809	18.211	20.716
#1	.00446	.00209	.00311	.08314	.72240	.07546	.51973	.01210
#2	.00353	.00427	.00463	.05305	.87645	.07652	.37359	.01370
#3	.00433	.00223	.00676	.09119	.84672	.07616	.39761	.00898
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00886	.44734	.01615	.77513	.00676	.08645	.01136	.83408
Stddev	.00038	.03636	.00114	.01025	.00094	.00237	.00475	.00045
%RSD	4.3027	8.1283	7.0552	1.3217	13.970	2.7462	41.818	.05401
#1	.00863	.41320	.01707	.76914	.00779	.08743	.00922	.83393
#2	.00866	.44325	.01488	.78696	.00652	.08374	.01680	.83373
#3	.00930	.48558	.01652	.76928	.00595	.08818	.00805	.83459
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: LLICV Acquired: 6/23/2016 16:56:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39937**	**.04063**	**.02339**	**.14972**	**.00726**	**.01640**	**20.158**
Stddev	.00149	.00022	.00849	.00368	.00013	.00008	.057
%RSD	.37294	.54009	36.301	2.4588	1.7938	.47839	.28459
#1	.40039	.04052	.01395	.15061	.00733	.01635	20.157
#2	.40005	.04089	.02583	.15288	.00711	.01649	20.101
#3	.39766	.04050	.03040	.14568	.00735	.01636	20.216
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6699.9**	**41507.**	**2122.8**
Stddev	10.7	321.	33.0
%RSD	.15908	.77425	1.5534
#1	6695.4	41349.	2085.0
#2	6692.2	41295.	2145.6
#3	6712.1	41877.	2137.8

Sample Name: LLICV Acquired: 6/23/2016 17:00:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01949	.39961	.01957	.19216	.01939	.00378	1.0069
Stddev	.00131	.00492	.00179	.00362	.00127	.00002	.0595
%RSD	6.7128	1.2306	9.1680	1.8843	6.5460	.43946	5.9133
#1	.02095	.40406	.02038	.19600	.02017	.00376	.96045
#2	.01841	.40043	.01752	.18881	.01792	.00378	.98624
#3	.01913	.39433	.02082	.19166	.02007	.00379	1.0740
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00195	.01011	.00920	.01111	.21788	2.0711	.19482
Stddev	.00022	.00045	.00124	.00158	.02611	.1150	.00581
%RSD	11.156	4.4276	13.477	14.191	11.985	5.5533	2.9817
#1	.00196	.01037	.01057	.01272	.21124	2.1436	.18839
#2	.00173	.01037	.00885	.00957	.19573	2.1311	.19636
#3	.00216	.00960	.00817	.01104	.24667	1.9385	.19970
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0302	.01992	.01953	.99004	.04110	1.9033	.01787
Stddev	.1225	.00176	.00044	.02149	.00123	.0089	.00330
%RSD	11.893	8.8312	2.2495	2.1708	2.9826	.46494	18.472
#1	.89819	.01975	.02003	.96810	.03968	1.8971	.02156
#2	1.0522	.01825	.01927	1.0110	.04177	1.9135	.01518
#3	1.1403	.02176	.01928	.99098	.04184	1.8995	.01689
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: LLICV Acquired: 6/23/2016 17:00:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20779	.03211	2.0518	.97692	.09846	.05795	.36369
Stddev	.00270	.00309	.0013	.00240	.00149	.00439	.00103
%RSD	1.2971	9.6240	.06110	.24594	1.5132	7.5738	.28252
#1	.21089	.03387	2.0505	.97555	.09739	.05293	.36373
#2	.20647	.02854	2.0530	.97969	.09783	.06107	.36264
#3	.20602	.03392	2.0519	.97551	.10016	.05984	.36469
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.01983	.04054	F 52.666
Stddev	.00096	.00030	.271
%RSD	4.8538	.74967	.51545
#1	.01995	.04039	52.957
#2	.01882	.04089	52.622
#3	.02073	.04034	52.420
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6722.9	41992.	2132.9
Stddev	4.6	356.	26.2
%RSD	.06888	.84767	1.2278
#1	6727.0	42116.	2114.2
#2	6723.9	42269.	2162.8
#3	6717.8	41590.	2121.7

Sample Name: ICSA Acquired: 6/23/2016 17:04:08 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00149**	**266.38**	**-.00372**	**.01062**	**.00153**	**.00000**	**253.32**
Stddev	.00133	.59	.00223	.00385	.00251	.00008	1.14
%RSD	89.471	.22308	59.913	36.253	163.63	4300.4	.45010
#1	-.00003	267.06	-.00307	.00628	.00113	-.00004	252.01
#2	.00202	266.01	-.00189	.01196	-.00075	-.00004	253.84
#3	.00246	266.05	-.00620	.01362	.00422	.00009	254.10
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00047**	**-.00114**	**-.00174**	**.00303**	**99.707**	**.16334**	**.00688**
Stddev	.00038	.00002	.00038	.00035	.605	.10414	.00241
%RSD	79.353	1.7935	21.793	11.497	.60634	63.757	34.985
#1	.00088	-.00115	-.00217	.00298	99.093	.28269	.00955
#2	.00015	-.00116	-.00144	.00340	99.728	.09096	.00486
#3	.00039	-.00112	-.00162	.00271	100.30	.11636	.00625
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**252.57**	**.00029**	**.00006**	**.04525**	**-.00141**	**.04327**	**-.00195**
Stddev	.76	.00143	.00058	.00703	.00150	.00827	.00429
%RSD	.29957	489.02	1021.2	15.529	106.39	19.108	220.24
#1	251.84	.00193	-.00061	.05054	-.00123	.05059	-.00454
#2	252.51	-.00031	.00047	.04793	-.00001	.04493	.00300
#3	253.35	-.00074	.00031	.03728	-.00299	.03430	-.00431
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: ICSA Acquired: 6/23/2016 17:04:08 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00596**	**-.00219**	**-.00062**	**.00088**	**.00057**	**-.00643**	**.00061**
Stddev	.00409	.01112	.00241	.00133	.00012	.00454	.00641
%RSD	68.491	508.56	387.55	152.27	20.327	70.638	1044.9
#1	-.01030	-.01132	.00215	.00215	.00049	-.00321	.00778
#2	-.00542	-.00543	-.00218	-.00050	.00052	-.00446	-.00133
#3	-.00218	.01019	-.00184	.00098	.00071	-.01163	-.00460
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00692**	**-.00188**	F **-.35802**
Stddev	.00157	.00029	.22129
%RSD	22.711	15.411	61.810
#1	-.00512	-.00157	-.10687
#2	-.00763	-.00196	-.44284
#3	-.00802	-.00213	-.52437
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02000
Low Limit			-.02000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6250.1**	**37849.**	**2031.8**
Stddev	54.8	56.	7.8
%RSD	.87682	.14906	.38488
#1	6190.3	37786.	2027.2
#2	6297.9	37868.	2027.4
#3	6262.0	37894.	2040.9

Sample Name: ICSAB Acquired: 6/23/2016 17:08:01 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52882	265.17	.25293	.00992	.25484	.24777	252.21
Stddev	.00098	.76	.00285	.00453	.00061	.00074	1.18
%RSD	.18558	.28502	1.1258	45.657	.23964	.29732	.46623
#1	.52981	264.89	.25009	.01062	.25418	.24751	252.99
#2	.52881	266.03	.25579	.00508	.25539	.24861	250.86
#3	.52785	264.59	.25291	.01406	.25495	.24721	252.79
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50186	.24161	.25459	.25471	97.424	5.2402	.00666
Stddev	.00151	.00122	.00264	.00209	.509	.0634	.00798
%RSD	.30055	.50701	1.0371	.81915	.52250	1.2106	119.82
#1	.50037	.24023	.25660	.25353	97.770	5.2868	.00639
#2	.50338	.24256	.25160	.25711	96.840	5.1680	.01477
#3	.50184	.24204	.25558	.25347	97.663	5.2658	-.00118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	247.66	.24890	-.00112	5.3746	.48553	.04636	.50217
Stddev	1.37	.00098	.00019	.0121	.00314	.00695	.00280
%RSD	.55427	.39569	17.374	.22614	.64678	14.982	.55722
#1	248.16	.24818	-.00127	5.3707	.48197	.04411	.50327
#2	246.11	.25002	-.00118	5.3648	.48669	.04082	.50425
#3	248.71	.24850	-.00090	5.3882	.48792	.05415	.49899
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: ICSAB Acquired: 6/23/2016 17:08:01 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50735**	**.24194**	**-.00758**	**-.00008**	**.00043**	**-.00758**	**.46915**
Stddev	.00346	.00285	.00236	.00064	.00025	.00399	.00306
%RSD	.68179	1.1790	31.189	795.11	59.086	52.651	.65264
#1	.51111	.24253	-.00918	-.00025	.00026	-.00923	.46976
#2	.50431	.23884	-.00486	.00062	.00031	-.00303	.46582
#3	.50662	.24445	-.00869	-.00061	.00072	-.01049	.47185
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.25055**	**.48484**	F **-.54156**
Stddev	.00015	.00117	.36388
%RSD	.05947	.24090	67.191
#1	.25062	.48352	-.86893
#2	.25038	.48574	-.14978
#3	.25065	.48526	-.60595
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02500
Low Limit			-.02500

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6244.9**	**38520.**	**2058.8**
Stddev	46.1	338.	32.6
%RSD	.73809	.87856	1.5823
#1	6288.3	38547.	2028.4
#2	6196.5	38169.	2093.1
#3	6249.8	38844.	2054.9

Sample Name: CCV Acquired: 6/23/2016 17:11:45 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39852	10.052	.40263	.49843	1.0023	.05021	10.092
Stddev	.00333	.028	.00314	.00166	.0006	.00016	.057
%RSD	.83575	.27814	.78076	.33361	.06012	.31593	.56540
#1	.39689	10.041	.39901	.49807	1.0017	.05007	10.131
#2	.40235	10.030	.40421	.49698	1.0029	.05018	10.027
#3	.39632	10.083	.40467	.50024	1.0023	.05038	10.118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04999	.20043	.50163	.50411	4.0601	50.005	1.0189
Stddev	.00015	.00042	.00302	.00115	.0027	.046	.0052
%RSD	.29315	.20823	.60186	.22714	.06779	.09107	.50520
#1	.05012	.20084	.49900	.50511	4.0627	50.032	1.0215
#2	.04983	.20000	.50096	.50286	4.0604	49.953	1.0130
#3	.05001	.20044	.50492	.50436	4.0572	50.031	1.0222
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.212	.49892	1.0009	49.902	.50256	9.9305	.50524
Stddev	.091	.00599	.0036	.189	.00114	.0123	.00430
%RSD	.88794	1.1999	.36370	.37915	.22664	.12410	.85170
#1	10.107	.49738	1.0047	49.717	.50312	9.9163	.50068
#2	10.266	.49386	1.0004	50.095	.50125	9.9365	.50580
#3	10.263	.50553	.99747	49.894	.50331	9.9386	.50923
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: CCV Acquired: 6/23/2016 17:11:45 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1976**	**.39739**	**5.0461**	**.99886**	**.99946**	**1.0004**	**.50205**
Stddev	.0044	.00576	.0095	.00286	.00488	.0097	.00380
%RSD	.36569	1.4500	.18873	.28629	.48793	.96796	.75754
#1	1.2025	.39818	5.0436	1.0005	.99383	.99232	.49767
#2	1.1964	.39127	5.0380	1.0005	1.0021	.99772	.50399
#3	1.1940	.40272	5.0566	.99556	1.0025	1.0111	.50449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0051**	**1.0042**	F **.84890**
Stddev	.0013	.0014	.43937
%RSD	.13211	.13734	51.758
#1	1.0042	1.0051	.99034
#2	1.0045	1.0026	.35623
#3	1.0066	1.0048	1.2001
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6596.3**	**41288.**	**2118.4**
Stddev	44.5	204.	20.3
%RSD	.67419	.49375	.95799
#1	6545.1	41449.	2095.9
#2	6618.2	41357.	2123.7
#3	6625.5	41059.	2135.5

Sample Name: CCB Acquired: 6/23/2016 17:15:23 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00313**	**.01723**	**.00317**	**.00223**	**-.00086**	**.00005**	**.05209**
Stddev	.00122	.00350	.00117	.00121	.00076	.00008	.06012
%RSD	38.963	20.296	36.752	54.255	88.561	155.39	115.43
#1	.00430	.02036	.00417	.00084	-.00098	.00005	.05688
#2	.00322	.01787	.00345	.00279	-.00004	.00013	.10967
#3	.00186	.01346	.00189	.00306	-.00155	-.00003	-.01029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**.00041**	**.00080**	**.00088**	**.00933**	**.12101**	**-.00019**
Stddev	.00009	.00032	.00113	.00031	.02938	.20550	.00178
%RSD	112.14	77.747	141.29	34.787	314.94	169.82	929.52
#1	-.00002	.00017	.00160	.00098	.03104	-.04316	-.00153
#2	.00015	.00030	.00129	.00054	-.02411	.35147	-.00087
#3	.00013	.00078	-.00049	.00114	.02106	.05472	.00183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.08095**	**.00318**	**.00354**	**.07516**	**-.00052**	**.00211**	**-.00169**
Stddev	.03617	.00076	.00074	.03642	.00171	.00399	.00228
%RSD	44.681	24.034	20.829	48.460	332.21	188.88	134.38
#1	.11808	.00257	.00275	.11180	-.00209	.00394	.00084
#2	.04583	.00292	.00421	.07473	-.00077	-.00247	-.00235
#3	.07893	.00403	.00365	.03896	.00131	.00486	-.00357
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: CCB Acquired: 6/23/2016 17:15:23 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00292**	**.00064**	**-.00112**	**.00037**	**.00055**	**.00009**	**-.00222**
Stddev	.00495	.00211	.00181	.00085	.00039	.00846	.00125
%RSD	169.66	329.79	161.50	228.24	71.494	9095.7	56.323
#1	.00726	.00025	-.00053	.00012	.00049	.00531	-.00357
#2	.00396	.00292	-.00315	.00131	.00097	-.00967	-.00109
#3	-.00247	-.00125	.00032	-.00032	.00019	.00464	-.00201
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00045**	**.00017**	F **-.31880**
Stddev	.00139	.00012	.06794
%RSD	311.50	72.605	21.311
#1	-.00109	.00003	-.30839
#2	.00115	.00026	-.39134
#3	-.00140	.00021	-.25666
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6671.9**	**41329.**	**2107.9**
Stddev	60.0	164.	15.1
%RSD	.89934	.39564	.71641
#1	6603.0	41427.	2098.9
#2	6712.5	41420.	2099.5
#3	6700.3	41140.	2125.4

Sample Name: PBW LJ Acquired: 6/23/2016 17:19:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00080**	**.01261**	**.00190**	**.00491**	**-.00092**	**-.00002**	**.05100**	**.00023**
Stddev	.00084	.00763	.00125	.00212	.00119	.00006	.03078	.00026
%RSD	103.96	60.561	65.725	43.302	129.08	259.98	60.367	110.85
#1	.00134	.02138	.00270	.00692	-.00108	-.00003	.01560	.00021
#2	-.00016	.00898	.00254	.00512	.00034	.00004	.07152	-.00001
#3	.00123	.00746	.00046	.00268	-.00203	-.00008	.06587	.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00037**	**-.00004**	**.00109**	**.01291**	**.08713**	**-.00094**	**.00517**	**.00144**
Stddev	.00024	.00123	.00204	.01662	.13771	.00409	.05412	.00202
%RSD	65.746	3083.5	187.27	128.71	158.06	434.61	1047.5	139.96
#1	.00019	-.00005	-.00097	-.00552	-.06256	.00328	.06512	-.00079
#2	.00064	-.00127	.00113	.02675	.20845	-.00488	-.00956	.00312
#3	.00026	.00119	.00311	.01750	.11550	-.00122	-.04006	.00199
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00095**	**.04152**	**-.00019**	**-.00390**	**-.00371**	**.00030**	**.00094**	**-.01516**
Stddev	.00059	.04832	.00205	.00634	.00397	.00313	.00086	.00318
%RSD	62.354	116.37	1063.0	162.76	106.95	1035.6	91.391	20.967
#1	.00033	.01830	-.00241	-.00387	-.00717	.00089	.00151	-.01165
#2	.00102	.00919	.00019	.00243	.00062	.00310	.00135	-.01599
#3	.00151	.09706	.00164	-.01025	-.00458	-.00308	-.00005	-.01784
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: PBW LJ Acquired: 6/23/2016 17:19:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00033**	**.00039**	**-.00004**	**-.00270**	**-.00095**	**.00140**	**.41056**
Stddev	.00027	.00036	.00305	.00089	.00074	.00017	.24431
%RSD	82.432	92.835	6840.9	33.104	77.766	12.399	59.505
#1	-.00063	.00081	-.00312	-.00373	-.00092	.00123	.69212
#2	-.00012	.00013	.00297	-.00211	-.00022	.00158	.28489
#3	-.00024	.00024	.00002	-.00226	-.00170	.00139	.25468
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6640.4**	**41625.**	**2128.5**
Stddev	17.6	211.	40.6
%RSD	.26566	.50582	1.9066
#1	6652.6	41596.	2081.7
#2	6648.4	41848.	2149.1
#3	6620.1	41430.	2154.5

Sample Name: LCSW LJ Acquired: 6/23/2016 17:23:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20319	5.0131	.20150	.99773	.51668	.02479	5.2442	.02487
Stddev	.00169	.0087	.00325	.00753	.00370	.00010	.0451	.00015
%RSD	.82977	.17310	1.6126	.75506	.71666	.41148	.86061	.60213
#1	.20357	5.0214	.19782	.99002	.52094	.02487	5.2832	.02481
#2	.20466	5.0041	.20272	1.0051	.51488	.02467	5.2546	.02476
#3	.20135	5.0138	.20397	.99808	.51422	.02483	5.1948	.02504
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10159	.25137	.25763	2.1220	25.452	.52645	5.1614	.25904
Stddev	.00032	.00052	.00140	.0264	.157	.00783	.0562	.00289
%RSD	.31802	.20500	.54330	1.2440	.61733	1.4875	1.0892	1.1168
#1	.10195	.25197	.25859	2.1525	25.633	.53504	5.1502	.26071
#2	.10149	.25109	.25602	2.1081	25.375	.52462	5.1116	.26070
#3	.10132	.25106	.25826	2.1055	25.349	.51970	5.2224	.25570
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51626	25.724	.25483	4.8485	.25110	.61184	.19096	2.6019
Stddev	.00266	.216	.00018	.0108	.00443	.00393	.01056	.0098
%RSD	.51446	.83901	.07257	.22239	1.7625	.64191	5.5294	.37803
#1	.51860	25.969	.25482	4.8553	.24906	.61631	.19143	2.6112
#2	.51337	25.641	.25502	4.8360	.24806	.60893	.18017	2.5916
#3	.51679	25.562	.25465	4.8540	.25618	.61029	.20127	2.6028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: LCSW LJ Acquired: 6/23/2016 17:23:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50721	.52436	.50961	.25007	.50364	.50657	.76573
Stddev	.00162	.00527	.01502	.00251	.00102	.00126	.62483
%RSD	.31955	1.0056	2.9465	1.0024	.20335	.24816	81.599
#1	.50743	.53024	.51039	.24815	.50410	.50766	1.3558
#2	.50550	.52279	.52423	.25290	.50247	.50519	.11116
#3	.50872	.52005	.49423	.24914	.50436	.50685	.83021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6575.8	41413.	2125.8
Stddev	38.0	254.	15.3
%RSD	.57733	.61440	.72050
#1	6590.8	41169.	2116.8
#2	6532.6	41394.	2117.1
#3	6603.9	41677.	2143.4

Sample Name: L1606076404 Acquired: 6/23/2016 17:27:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00032**	**.03451**	**.00124**	**.00949**	**.00772**	**.00001**	**37.580**	**.00027**
Stddev	.00100	.00434	.00233	.00396	.00016	.00008	.209	.00010
%RSD	315.71	12.583	187.37	41.736	2.0214	559.86	.55655	38.752
#1	-.00025	.02981	-.00143	.01269	.00789	-.00008	37.790	.00037
#2	.00065	.03535	.00232	.00506	.00758	.00004	37.371	.00027
#3	-.00135	.03837	.00283	.01072	.00769	.00008	37.578	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00036**	**.01239**	**.00232**	**.45824**	**5.1190**	**.00322**	**14.570**	**.10315**
Stddev	.00021	.00017	.00134	.02324	.0359	.00604	.145	.00332
%RSD	57.485	1.3945	57.779	5.0714	.70061	187.38	.99354	3.2187
#1	.00054	.01232	.00335	.43843	5.0785	.00539	14.664	.10664
#2	.00040	.01226	.00280	.48382	5.1320	-.00360	14.403	.10004
#3	.00014	.01258	.00080	.45248	5.1466	.00788	14.643	.10276
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00112**	**35.286**	**.00502**	**.02785**	**.00193**	**.00400**	**.00017**	**4.2205**
Stddev	.00017	.168	.00085	.00292	.00187	.00379	.00613	.0101
%RSD	15.273	.47690	16.934	10.483	97.237	94.733	3643.4	.24042
#1	.00102	35.461	.00444	.02992	.00018	.00832	-.00425	4.2311
#2	.00102	35.126	.00463	.02451	.00170	.00241	-.00240	4.2196
#3	.00131	35.269	.00600	.02912	.00390	.00126	.00716	4.2109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606076404 Acquired: 6/23/2016 17:27:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**.19838**	**-.00352**	**-.00316**	**-.00056**	**.00304**	**.05702**
Stddev	.00048	.00082	.00439	.00352	.00018	.00003	.32731
%RSD	532.68	.41544	124.63	111.42	32.096	1.0103	574.06
#1	-.00061	.19924	-.00146	-.00663	-.00039	.00305	.43214
#2	-.00001	.19830	-.00054	.00041	-.00055	.00306	-.17051
#3	.00035	.19760	-.00855	-.00325	-.00075	.00300	-.09057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6659.9**	**41441.**	**2148.1**
Stddev	17.8	39.	34.6
%RSD	.26678	.09458	1.6087
#1	6640.6	41401.	2109.0
#2	6663.2	41442.	2174.8
#3	6675.7	41479.	2160.4

Sample Name: L1606076405S Acquired: 6/23/2016 17:30:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20092	5.0385	.20312	.99798	.52837	.02495	44.005	.02497
Stddev	.00159	.0071	.00090	.00399	.00863	.00018	.536	.00030
%RSD	.78894	.14165	.44224	.39989	1.6338	.73761	1.2192	1.2169
#1	.20053	5.0320	.20215	1.0021	.53714	.02516	44.468	.02467
#2	.20266	5.0374	.20392	.99408	.52809	.02480	44.130	.02527
#3	.19957	5.0461	.20329	.99779	.51988	.02489	43.417	.02498
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10016	.26480	.25157	2.5877	30.715	.52688	20.416	.36208
Stddev	.00067	.00097	.00149	.0124	.632	.01078	.244	.00320
%RSD	.66866	.36563	.59363	.47820	2.0592	2.0459	1.1951	.88399
#1	.09940	.26587	.24988	2.6017	31.379	.53733	20.633	.36533
#2	.10067	.26457	.25208	2.5782	30.645	.52751	20.464	.36196
#3	.10042	.26397	.25273	2.5832	30.120	.51580	20.152	.35894
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52071	62.572	.25549	5.0021	.25301	.61345	.19142	7.0690
Stddev	.00097	.840	.00144	.0110	.00528	.00259	.00718	.0143
%RSD	.18659	1.3422	.56532	.21968	2.0876	.42179	3.7518	.20212
#1	.52096	63.421	.25626	4.9894	.25249	.61450	.18326	7.0650
#2	.52153	62.553	.25639	5.0088	.25853	.61534	.19422	7.0849
#3	.51964	61.741	.25383	5.0081	.24801	.61050	.19677	7.0571
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606076405S Acquired: 6/23/2016 17:30:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50671**	**.73344**	**.51400**	**.25052**	**.50766**	**.50196**	**.71683**
Stddev	.00049	.00764	.00562	.00109	.00170	.00107	.08607
%RSD	.09604	1.0422	1.0940	.43503	.33403	.21255	12.007
#1	.50635	.74103	.51985	.25089	.50822	.50082	.65957
#2	.50651	.73352	.50864	.24929	.50576	.50294	.81581
#3	.50726	.72575	.51349	.25138	.50901	.50210	.67512
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6617.0**	**40888.**	**2108.3**
Stddev	36.3	229.	43.4
%RSD	.54907	.56042	2.0607
#1	6597.9	40710.	2065.4
#2	6594.1	40808.	2107.2
#3	6658.9	41146.	2152.3

Sample Name: L1606076406SD Acquired: 6/23/2016 17:34:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20158	5.0081	.20119	.99289	.52520	.02487	44.269	.02478
Stddev	.00322	.0181	.00119	.00601	.00285	.00008	.382	.00037
%RSD	1.5962	.36106	.59360	.60498	.54186	.31907	.86303	1.4919
#1	.20051	5.0088	.20213	.99898	.52769	.02491	44.667	.02436
#2	.19904	5.0258	.20161	.99270	.52581	.02493	44.234	.02503
#3	.20520	4.9897	.19985	.98697	.52210	.02478	43.905	.02496
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09994	.26339	.24953	2.5877	30.662	.52181	20.366	.36158
Stddev	.00059	.00143	.00256	.0611	.222	.00474	.372	.00451
%RSD	.59271	.54249	1.0252	2.3607	.72504	.90810	1.8250	1.2464
#1	.09927	.26187	.24744	2.6536	30.906	.52560	20.793	.36652
#2	.10013	.26359	.24876	2.5330	30.471	.52334	20.120	.35770
#3	.10041	.26470	.25238	2.5764	30.609	.51650	20.184	.36051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51522	62.707	.25233	4.9723	.25332	.61176	.19301	7.0733
Stddev	.00118	.507	.00147	.0132	.00160	.00273	.00266	.0075
%RSD	.22851	.80791	.58315	.26561	.63178	.44609	1.3764	.10575
#1	.51652	63.283	.25117	4.9632	.25248	.61207	.19130	7.0646
#2	.51490	62.510	.25184	4.9664	.25231	.61431	.19166	7.0774
#3	.51423	62.328	.25399	4.9875	.25516	.60888	.19607	7.0778
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606076406SD Acquired: 6/23/2016 17:34:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50236	.73208	.50989	.24941	.50289	.49718	.41726
Stddev	.00239	.00589	.01162	.00247	.00231	.00067	.67397
%RSD	.47662	.80444	2.2794	.99175	.45970	.13482	161.52
#1	.49978	.73852	.52268	.24842	.50555	.49665	-.07543
#2	.50451	.73075	.49998	.25223	.50134	.49794	.14190
#3	.50280	.72697	.50700	.24759	.50179	.49697	1.1853
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6608.7	41166.	2120.3
Stddev	11.1	137.	19.6
%RSD	.16723	.33193	.92378
#1	6603.0	41323.	2097.8
#2	6621.5	41090.	2129.6
#3	6601.7	41083.	2133.5

Sample Name: L1606109801 Acquired: 6/23/2016 17:38:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00129**	**.01287**	**-.00287**	**.00614**	**-.00048**	**-.00003**	**.08304**	**.00009**
Stddev	.00159	.00811	.00192	.00213	.00074	.00007	.01337	.00013
%RSD	122.92	63.032	67.055	34.715	154.39	222.73	16.095	139.40
#1	.00212	.02216	-.00081	.00626	-.00008	-.00010	.09008	.00010
#2	.00231	.00925	-.00462	.00395	-.00134	.00003	.09142	-.00004
#3	-.00054	.00720	-.00317	.00821	-.00003	-.00001	.06763	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.00114**	**.00130**	**.02096**	**.10896**	**-.00006**	**-.03305**	**.00197**
Stddev	.00044	.00113	.00181	.01243	.08516	.00372	.07886	.00311
%RSD	453.08	99.110	139.52	59.304	78.156	6481.1	238.62	158.05
#1	-.00053	.00170	.00306	.02326	.19673	-.00420	-.07467	-.00106
#2	.00034	-.00016	-.00055	.03207	.02667	.00104	-.08238	.00515
#3	-.00009	.00187	.00138	.00754	.10349	.00299	.05790	.00182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00066**	**.45527**	**.00049**	**-.00366**	**.00153**	**.00122**	**.00971**	**-.00748**
Stddev	.00030	.03584	.00013	.00895	.00348	.00363	.01502	.00042
%RSD	45.839	7.8733	25.556	244.66	227.48	297.89	154.66	5.5803
#1	.00053	.41497	.00054	-.01374	.00021	.00522	.02568	-.00782
#2	.00044	.46723	.00035	-.00059	-.00110	-.00186	-.00414	-.00701
#3	.00100	.48360	.00058	.00335	.00548	.00030	.00761	-.00761
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606109801 Acquired: 6/23/2016 17:38:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.00480**	**-.00167**	**-.00415**	**-.00006**	**.00240**	**.05406**
Stddev	.00008	.00020	.00916	.00353	.00083	.00017	.09676
%RSD	178.62	4.1888	547.73	84.853	1386.4	7.2187	179.01
#1	-.00014	.00474	.00699	-.00318	.00001	.00255	.07032
#2	-.00003	.00462	-.01126	-.00807	-.00092	.00221	-.04981
#3	.00002	.00502	-.00075	-.00122	.00073	.00245	.14165
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6705.4**	**41704.**	**2110.9**
Stddev	33.1	203.	3.8
%RSD	.49393	.48693	.18234
#1	6717.5	41536.	2115.0
#2	6668.0	41646.	2110.1
#3	6730.8	41930.	2107.4

Sample Name: L1606109802 Acquired: 6/23/2016 17:42:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00131**	**.04120**	**.00085**	**.00475**	**.00003**	**.00006**	**.12679**	**.00004**
Stddev	.00226	.00310	.00173	.00253	.00122	.00003	.01985	.00014
%RSD	172.44	7.5124	203.60	53.268	4293.6	44.669	15.655	354.39
#1	-.00391	.03975	.00123	.00360	.00116	.00006	.11393	-.00006
#2	-.00005	.04475	-.00104	.00766	.00019	.00008	.11680	.00020
#3	.00004	.03909	.00235	.00301	-.00126	.00003	.14965	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00021**	**.00349**	**.00237**	**.18011**	**.09946**	**-.00236**	**.07943**	**.00699**
Stddev	.00033	.00204	.00114	.02015	.07387	.00179	.02978	.00080
%RSD	156.99	58.571	48.052	11.185	74.275	75.957	37.492	11.493
#1	.00015	.00129	.00134	.19792	.08997	-.00029	.05468	.00760
#2	-.00027	.00385	.00359	.18417	.17761	-.00335	.11249	.00608
#3	-.00051	.00533	.00218	.15825	.03079	-.00344	.07113	.00730
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00657**	**.08383**	**.00108**	**-.00632**	**.00042**	**.00155**	**-.00209**	**-.00610**
Stddev	.00027	.01857	.00084	.00291	.00245	.00366	.00646	.00130
%RSD	4.0493	22.151	77.513	46.079	588.34	235.09	308.97	21.310
#1	.00687	.08551	.00034	-.00968	.00101	-.00057	-.00876	-.00625
#2	.00646	.10150	.00091	-.00476	.00251	.00578	.00414	-.00474
#3	.00637	.06448	.00199	-.00452	-.00227	-.00054	-.00165	-.00733
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606109802 Acquired: 6/23/2016 17:42:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00054**	**.00097**	**.00153**	**-.00310**	**-.00091**	**.00301**	**.27773**
Stddev	.00104	.00057	.00430	.00238	.00037	.00011	.05024
%RSD	194.32	58.620	280.21	76.638	40.878	3.7408	18.089
#1	-.00046	.00112	.00644	-.00519	-.00093	.00307	.33422
#2	.00046	.00144	-.00158	-.00051	-.00052	.00288	.23804
#3	-.00161	.00034	-.00025	-.00360	-.00127	.00309	.26094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6708.6**	**41920.**	**2143.4**
Stddev	42.4	304.	28.2
%RSD	.63177	.72485	1.3166
#1	6687.7	42255.	2139.9
#2	6680.7	41839.	2117.2
#3	6757.4	41664.	2173.3

Sample Name: L1606109802PS Acquired: 6/23/2016 17:46:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573952-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20295	4.9978	.19604	.97111	.51605	.02475	5.3316	.02478
Stddev	.00344	.0037	.00197	.00223	.00051	.00014	.0490	.00015
%RSD	1.6972	.07436	1.0027	.22973	.09917	.56068	.91841	.59158
#1	.19936	4.9935	.19463	.96974	.51663	.02489	5.2786	.02492
#2	.20326	5.0002	.19520	.96990	.51565	.02462	5.3752	.02463
#3	.20622	4.9996	.19828	.97368	.51588	.02474	5.3410	.02480
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10156	.25473	.25812	2.2174	25.577	.52251	5.2379	.25866
Stddev	.00037	.00076	.00168	.0428	.016	.00141	.1063	.00557
%RSD	.36206	.29734	.65016	1.9294	.06131	.27078	2.0291	2.1526
#1	.10143	.25529	.25897	2.1982	25.585	.52373	5.2689	.26416
#2	.10128	.25504	.25619	2.2664	25.559	.52096	5.3253	.25303
#3	.10198	.25387	.25920	2.1875	25.587	.52284	5.1196	.25880
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51904	25.731	.25472	4.8394	.25146	.60443	.18808	2.5389
Stddev	.00078	.051	.00178	.0161	.00652	.00703	.00446	.0097
%RSD	.15079	.19825	.69859	.33289	2.5939	1.1635	2.3736	.38131
#1	.51985	25.790	.25678	4.8266	.24420	.60484	.18767	2.5333
#2	.51829	25.701	.25365	4.8340	.25681	.59720	.18383	2.5332
#3	.51899	25.702	.25373	4.8575	.25338	.61125	.19273	2.5500
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606109802PS Acquired: 6/23/2016 17:46:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573952-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50319	.52125	.51263	.24941	.49856	.50658	.41681
Stddev	.00067	.00121	.00461	.00337	.00102	.00107	.18065
%RSD	.13272	.23307	.89973	1.3499	.20406	.21178	43.340
#1	.50331	.52232	.50810	.25329	.49739	.50643	.22345
#2	.50379	.52148	.51246	.24723	.49912	.50559	.44572
#3	.50247	.51993	.51732	.24772	.49918	.50772	.58125
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6634.2	41367.	2120.2
Stddev	45.5	136.	31.3
%RSD	.68551	.32832	1.4752
#1	6675.0	41309.	2085.8
#2	6642.5	41522.	2147.0
#3	6585.2	41269.	2127.8

Sample Name: L1606109802SDL Acquired: 6/23/2016 17:49:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573952-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00136**	**.01502**	**.00308**	**.00439**	**-.00102**	**.00008**	**.05957**	**.00033**
Stddev	.00139	.00670	.00298	.00095	.00092	.00003	.03476	.00004
%RSD	102.34	44.577	96.746	21.522	90.289	33.805	58.357	13.382
#1	.00126	.01153	.00023	.00498	-.00197	.00010	.02372	.00038
#2	.00281	.01080	.00283	.00489	-.00093	.00009	.06187	.00030
#3	.00002	.02274	.00619	.00330	-.00015	.00005	.09313	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**-.00017**	**.00113**	**.04078**	**.05810**	**.00210**	**.06165**	**.00226**
Stddev	.00020	.00084	.00062	.00773	.11892	.00364	.08929	.00317
%RSD	251.06	498.56	54.543	18.955	204.67	172.87	144.83	140.01
#1	-.00031	.00011	.00044	.04552	-.07722	.00243	-.01365	-.00138
#2	.00002	.00049	.00161	.03186	.14597	-.00169	.03832	.00380
#3	.00006	-.00111	.00136	.04496	.10555	.00557	.16029	.00437
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00155**	**.03886**	**.00061**	**.00728**	**.00025**	**-.00084**	**-.00741**	**-.00785**
Stddev	.00019	.02607	.00103	.00300	.00248	.00463	.00531	.00300
%RSD	12.485	67.084	170.41	41.143	1006.5	550.34	71.645	38.154
#1	.00155	.03807	-.00057	.00580	-.00067	-.00286	-.00354	-.01115
#2	.00174	.01319	.00103	.00532	.00306	.00445	-.01346	-.00530
#3	.00136	.06531	.00136	.01073	-.00164	-.00411	-.00522	-.00710
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606109802SDL Acquired: 6/23/2016 17:49:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573952-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00088**	**.00057**	**.00094**	**-.00409**	**.00019**	**.00149**	**.45954**
Stddev	.00075	.00043	.01378	.00250	.00054	.00013	.21882
%RSD	85.215	74.163	1462.5	61.137	279.61	9.0143	47.616
#1	-.00150	.00022	-.00662	-.00460	.00077	.00151	.33705
#2	-.00005	.00045	.01685	-.00138	-.00029	.00135	.71218
#3	-.00110	.00105	-.00740	-.00631	.00009	.00162	.32941
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6959.1**	**43239.**	**2203.0**
Stddev	42.9	568.	21.3
%RSD	.61702	1.3134	.96538
#1	6931.5	42983.	2192.4
#2	7008.6	43890.	2227.5
#3	6937.3	42844.	2189.1

Sample Name: L1606109802SDL Acquired: 6/23/2016 17:53:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573952-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00025**	**-.00848**	**.00213**	**-.00007**	**-.00079**	**-.00002**	**.00503**
Stddev	.00182	.00079	.00051	.00320	.00067	.00006	.00717
%RSD	715.84	9.3659	23.973	4723.2	84.264	337.91	142.65
#1	.00063	-.00798	.00169	-.00266	-.00014	-.00004	.01305
#2	.00185	-.00807	.00200	-.00107	-.00147	-.00006	.00280
#3	-.00172	-.00940	.00269	.00352	-.00077	.00005	-.00077
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	**.00018**	**.00059**	**-.00006**	**-.00347**	**.12523**	**.00146**
Stddev	.00022	.00029	.00107	.00164	.02019	.11611	.00742
%RSD	115.68	162.83	180.16	2901.7	582.00	92.721	507.00
#1	-.00042	.00014	.00077	.00098	.00022	-.00797	-.00642
#2	-.00018	.00048	-.00055	.00080	-.02525	.20510	.00830
#3	.00002	-.00009	.00157	-.00195	.01463	.17855	.00251
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04612**	**.00275**	**-.00011**	**.02502**	**-.00021**	**.01583**	**.00003**
Stddev	.09471	.00202	.00043	.02748	.00019	.00290	.00282
%RSD	205.33	73.453	401.99	109.83	87.851	18.294	10124.
#1	.13667	.00063	.00029	.00253	-.00023	.01917	-.00119
#2	-.05226	.00465	-.00004	.01688	-.00002	.01426	.00325
#3	.05396	.00298	-.00056	.05566	-.00039	.01406	-.00198
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: L1606109802SDL Acquired: 6/23/2016 17:53:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573952-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00091**	F **-.01196**	**-.01108**	**-.00050**	**.00003**	**-.00725**	**-.00124**
Stddev	.00148	.00527	.00232	.00100	.00102	.00296	.00502
%RSD	162.61	44.027	20.977	201.11	3086.6	40.796	405.85
#1	-.00253	-.00590	-.01377	-.00126	-.00114	-.00905	-.00509
#2	.00038	-.01454	-.00977	-.00086	.00061	-.00384	-.00306
#3	-.00058	-.01544	-.00971	.00063	.00062	-.00886	.00444
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		90.000					
Low Limit		-.01000					

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00077**	**.00084**	**.22312**
Stddev	.00068	.00020	.30532
%RSD	88.979	23.810	136.84
#1	-.00155	.00083	.52434
#2	-.00032	.00104	-.08613
#3	-.00043	.00064	.23116
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6981.3**	**43420.**	**2189.5**
Stddev	46.4	74.	50.4
%RSD	.66474	.17141	2.3033
#1	6946.3	43470.	2150.2
#2	7033.9	43456.	2171.9
#3	6963.6	43335.	2246.4

Sample Name: CCV Acquired: 6/23/2016 17:57:55 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39465	9.8592	.39426	.49051	.99575	.04951	9.9296
Stddev	.00130	.0543	.00077	.00725	.01287	.00025	.0980
%RSD	.33011	.55085	.19471	1.4789	1.2926	.50940	.98742
#1	.39334	9.8260	.39515	.49135	.98121	.04933	9.8278
#2	.39467	9.9219	.39384	.49731	1.0057	.04980	9.9378
#3	.39594	9.8298	.39380	.48287	1.0003	.04940	10.023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04931	.19809	.49689	.49699	3.9877	49.594	1.0016
Stddev	.00035	.00039	.00097	.00140	.0463	.339	.0098
%RSD	.69996	.19569	.19580	.28221	1.1620	.68359	.97475
#1	.04892	.19768	.49580	.49756	3.9856	49.220	.99073
#2	.04957	.19845	.49718	.49801	3.9424	49.882	1.0096
#3	.04943	.19814	.49768	.49539	4.0350	49.679	1.0045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.8713	.49596	.98783	49.518	.49712	9.8043	.49873
Stddev	.0582	.00613	.00477	.522	.00109	.0177	.00163
%RSD	.58979	1.2355	.48297	1.0550	.21900	.18012	.32630
#1	9.8044	.48970	.99184	48.919	.49799	9.7884	.49800
#2	9.9106	.50194	.98911	49.882	.49748	9.8233	.49759
#3	9.8989	.49623	.98255	49.751	.49590	9.8012	.50059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: CCV Acquired: 6/23/2016 17:57:55 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1826**	**.39764**	**4.9717**	**.98502**	**.99375**	**.98233**	**.49603**
Stddev	.0050	.01088	.0089	.00253	.01310	.00868	.00327
%RSD	.42000	2.7362	.17868	.25689	1.3184	.88336	.65997
#1	1.1879	.39017	4.9692	.98339	.97877	.98140	.49964
#2	1.1780	.41013	4.9816	.98794	1.0031	.99143	.49324
#3	1.1820	.39263	4.9643	.98374	.99940	.97415	.49523
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.99379**	**.99204**	F **.18789**
Stddev	.00563	.00149	.09910
%RSD	.56658	.15028	52.747
#1	.98993	.99220	.30141
#2	1.0003	.99344	.11863
#3	.99118	.99047	.14362
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6631.8**	**40728.**	**2099.0**
Stddev	45.9	503.	16.5
%RSD	.69181	1.2341	.78530
#1	6611.3	41075.	2107.2
#2	6599.8	40151.	2080.0
#3	6684.4	40956.	2109.8

Sample Name: CCB Acquired: 6/23/2016 18:01:33 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.01129	.00078	.00451	-.00045	.00008	-.00465
Stddev	.00148	.00039	.00155	.00327	.00048	.00013	.02449
%RSD	411.84	3.4907	199.15	72.530	105.95	171.62	526.45
#1	-.00053	.01164	.00012	.00090	.00005	.00000	-.02544
#2	.00207	.01087	.00255	.00727	-.00049	-.00000	.02235
#3	-.00046	.01137	-.00034	.00537	-.00091	.00022	-.01087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00018	.00054	.00011	-.01088	.09874	.00114
Stddev	.00029	.00030	.00119	.00044	.03748	.07317	.00332
%RSD	246.95	168.18	220.68	381.54	344.38	74.101	290.12
#1	.00045	.00022	-.00081	.00062	.01794	.03451	-.00267
#2	.00000	.00046	.00100	-.00013	-.05325	.08332	.00343
#3	-.00010	-.00014	.00143	-.00015	.00266	.17839	.00267
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00689	.00204	.00366	.02542	-.00029	.00140	-.00069
Stddev	.06132	.00361	.00131	.02117	.00182	.00788	.00343
%RSD	889.59	177.04	35.712	83.279	629.54	563.60	498.72
#1	.06069	-.00150	.00240	.01760	.00160	.00084	.00259
#2	-.02239	.00571	.00357	.00928	-.00043	.00955	-.00039
#3	-.05898	.00190	.00501	.04939	-.00204	-.00619	-.00426
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: CCB Acquired: 6/23/2016 18:01:33 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00612**	**-.00027**	**.00319**	**.00025**	**.00023**	**-.00325**	**-.00471**
Stddev	.00153	.00342	.00271	.00103	.00038	.00279	.00086
%RSD	25.064	1269.5	84.974	412.62	169.30	85.836	18.269
#1	.00449	-.00355	.00269	-.00074	-.00018	-.00174	-.00566
#2	.00753	-.00053	.00612	.00132	.00028	-.00154	-.00398
#3	.00634	.00327	.00077	.00017	.00058	-.00647	-.00449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00008**	**.00027**	F **.24105**
Stddev	.00092	.00012	.41150
%RSD	1209.9	46.847	170.71
#1	-.00098	.00021	.54842
#2	.00054	.00018	.40117
#3	.00067	.00041	-.22644
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6672.3**	**41768.**	**2119.7**
Stddev	57.6	262.	32.6
%RSD	.86323	.62780	1.5373
#1	6705.6	42016.	2128.0
#2	6705.5	41794.	2083.8
#3	6605.8	41493.	2147.4

Sample Name: L1606109803 Acquired: 6/23/2016 18:05:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00032**	**.03085**	**-.00127**	**.00183**	**-.00146**	**.00004**	**.19954**	**.00007**
Stddev	.00236	.01045	.00348	.00087	.00085	.00007	.02976	.00016
%RSD	746.66	33.859	274.17	47.779	57.997	158.69	14.912	230.00
#1	.00241	.03757	-.00520	.00147	-.00081	.00010	.20422	-.00011
#2	-.00171	.03617	.00140	.00283	-.00242	.00007	.22668	.00018
#3	-.00165	.01882	-.00001	.00120	-.00116	-.00003	.16772	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.00568**	**.00388**	**.39187**	**.10478**	**.00034**	**.12477**	**.01117**
Stddev	.00033	.00040	.00075	.05326	.14846	.00690	.09992	.00202
%RSD	1223.9	7.0496	19.420	13.590	141.68	2058.5	80.089	18.078
#1	-.00037	.00598	.00367	.36606	.20874	.00375	.01013	.01079
#2	.00028	.00523	.00472	.45311	.17085	.00486	.17078	.00937
#3	.00001	.00584	.00326	.35643	-.06524	-.00761	.19339	.01336
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01433**	**.14788**	**.00239**	**-.00401**	**-.00121**	**-.00112**	**-.00779**	**.00373**
Stddev	.00040	.04259	.00040	.00288	.00159	.00565	.00213	.00124
%RSD	2.7886	28.802	16.639	71.900	130.64	504.39	27.319	33.311
#1	.01390	.18295	.00247	-.00583	-.00301	.00539	-.01003	.00233
#2	.01440	.16021	.00274	-.00069	-.00001	-.00484	-.00757	.00419
#3	.01469	.10048	.00196	-.00551	-.00062	-.00391	-.00579	.00468
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606109803 Acquired: 6/23/2016 18:05:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.00160	.00432	-.00693	-.00031	.00470	.05902
Stddev	.00059	.00022	.00543	.00465	.00124	.00007	.04433
%RSD	337.40	13.821	125.73	67.076	399.03	1.4400	75.109
#1	.00054	.00138	-.00146	-.01029	-.00033	.00477	.10269
#2	-.00050	.00182	.00932	-.00163	.00094	.00464	.06031
#3	.00048	.00160	.00510	-.00886	-.00154	.00469	.01406
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6701.9	41737.	2133.3
Stddev	17.7	223.	23.6
%RSD	.26482	.53370	1.1066
#1	6684.0	41936.	2107.7
#2	6702.4	41778.	2138.2
#3	6719.4	41496.	2154.1

Sample Name: L1606109804 Acquired: 6/23/2016 18:09:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**.00550**	**.00148**	**.00398**	**.00014**	**-.00000**	**.05639**	**.00011**
Stddev	.00219	.00612	.00302	.00090	.00066	.00014	.02441	.00010
%RSD	8054.2	111.32	204.56	22.756	478.27	12248.	43.295	91.576
#1	.00205	-.00072	.00110	.00492	.00048	.00000	.08169	.00011
#2	.00034	.00570	.00467	.00389	-.00062	-.00014	.05452	.00020
#3	-.00231	.01151	-.00134	.00312	.00056	.00014	.03297	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**-.00048**	**.00039**	**.00509**	**.07226**	**-.00432**	**.08860**	**-.00098**
Stddev	.00047	.00177	.00047	.00413	.11460	.00188	.02282	.00192
%RSD	981.46	369.62	120.47	81.176	158.60	43.602	25.750	195.61
#1	.00046	-.00226	.00002	.00662	.11487	-.00448	.08077	-.00230
#2	.00015	.00128	.00093	.00041	-.05755	-.00612	.11430	.00122
#3	-.00046	-.00045	.00024	.00823	.15944	-.00236	.07074	-.00186
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00038**	**.28447**	**-.00051**	**-.01137**	**-.00379**	**.00134**	**-.00025**	**-.01961**
Stddev	.00030	.03222	.00045	.00801	.00241	.00677	.00472	.00119
%RSD	78.960	11.326	89.242	70.503	63.646	504.08	1916.6	6.0610
#1	.00007	.28282	-.00042	-.00434	-.00635	.00646	.00471	-.01950
#2	.00041	.31748	-.00099	-.02009	-.00156	-.00633	-.00469	-.01848
#3	.00066	.25310	-.00010	-.00967	-.00346	.00390	-.00076	-.02085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606109804 Acquired: 6/23/2016 18:09:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	.00727	-.00271	-.00425	.00021	.00148	-.01678
Stddev	.00012	.00034	.00158	.00185	.00078	.00021	.29091
%RSD	149.43	4.6162	58.348	43.577	374.98	14.359	1733.8
#1	.00006	.00757	-.00433	-.00448	.00104	.00139	.18184
#2	-.00016	.00734	-.00263	-.00229	.00011	.00173	.11852
#3	-.00014	.00691	-.00117	-.00598	-.00052	.00134	-.35070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6688.2	41655.	2109.0
Stddev	56.4	133.	18.7
%RSD	.84272	.31956	.88651
#1	6659.9	41774.	2087.4
#2	6753.1	41679.	2119.9
#3	6651.7	41511.	2119.7

Sample Name: L1606076401 Acquired: 6/23/2016 18:13:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00245	.67019	.00010	.00833	.01433	.00003	37.313	.00009
Stddev	.00064	.00585	.00478	.00400	.00127	.00014	.132	.00011
%RSD	26.141	.87236	4915.8	47.991	8.8257	429.53	.35301	115.20
#1	.00243	.67675	-.00530	.00372	.01377	.00008	37.462	.00013
#2	.00182	.66553	.00380	.01082	.01578	.00015	37.267	-.00003
#3	.00310	.66828	.00179	.01046	.01345	-.00013	37.211	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00177	.13494	.00493	2.1093	3.5116	.00538	12.516	.47690
Stddev	.00027	.00081	.00173	.0368	.1337	.00492	.251	.00425
%RSD	15.254	.60366	35.121	1.7452	3.8081	91.565	2.0071	.89198
#1	.00146	.13588	.00619	2.1427	3.6345	.01007	12.781	.48122
#2	.00191	.13437	.00564	2.0698	3.5309	.00580	12.487	.47677
#3	.00195	.13459	.00296	2.1153	3.3692	.00026	12.281	.47272
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00239	7.1134	.06661	.12519	.00353	.00172	.00189	5.8796
Stddev	.00028	.0421	.00053	.00389	.00278	.00471	.00179	.0247
%RSD	11.781	.59130	.79827	3.1089	78.703	273.59	94.695	.41985
#1	.00270	7.1321	.06712	.12451	.00584	-.00218	-.00008	5.8957
#2	.00230	7.0652	.06666	.12938	.00431	.00694	.00342	5.8512
#3	.00216	7.1429	.06605	.12168	.00045	.00040	.00234	5.8918
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606076401 Acquired: 6/23/2016 18:13:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.21848	.02711	-.00526	.00152	.01133	.29378
Stddev	.00053	.00139	.00262	.00115	.00075	.00027	.28967
%RSD	4257.4	.63577	9.6647	21.837	49.639	2.3502	98.600
#1	.00059	.22007	.03006	-.00608	.00213	.01140	.10070
#2	-.00044	.21748	.02623	-.00576	.00176	.01103	.15379
#3	-.00012	.21789	.02504	-.00395	.00068	.01155	.62685
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6666.0	41778.	2147.7
Stddev	21.7	229.	44.3
%RSD	.32537	.54913	2.0641
#1	6658.2	41696.	2121.5
#2	6690.5	41600.	2122.8
#3	6649.4	42037.	2198.9

Sample Name: L1606076402 Acquired: 6/23/2016 18:17:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00113	.17691	.00122	.01438	.01126	-.00007	47.643	.00046
Stddev	.00008	.00451	.00550	.00105	.00043	.00007	.152	.00035
%RSD	6.6984	2.5493	451.48	7.3081	3.8067	88.547	.31914	77.689
#1	-.00121	.17594	.00265	.01351	.01094	-.00002	47.529	.00010
#2	-.00113	.18183	-.00485	.01554	.01110	-.00005	47.816	.00045
#3	-.00106	.17297	.00586	.01408	.01175	-.00015	47.585	.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	.00770	.00173	.25827	3.3547	.00082	13.331	.01953
Stddev	.00066	.00082	.00180	.01292	.0490	.00546	.106	.00183
%RSD	140.89	10.586	103.87	5.0018	1.4609	664.19	.79675	9.3761
#1	-.00028	.00820	-.00034	.25716	3.3133	.00131	13.289	.02164
#2	.00073	.00815	.00288	.24595	3.4088	.00602	13.252	.01835
#3	.00096	.00676	.00265	.27171	3.3420	-.00487	13.451	.01861
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	85.841	.00393	.01987	.00031	.00407	-.00554	4.9290
Stddev	.00036	.284	.00086	.00461	.00230	.00232	.00977	.0097
%RSD	74.124	.33036	21.834	23.192	751.95	56.913	176.51	.19731
#1	.00064	85.671	.00313	.02519	-.00217	.00145	-.01667	4.9400
#2	.00074	85.684	.00381	.01712	.00238	.00583	.00165	4.9218
#3	.00007	86.169	.00484	.01729	.00072	.00495	-.00160	4.9251
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606076402 Acquired: 6/23/2016 18:17:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00172	.17262	-.00265	-.00410	-.00007	.00471	.40901
Stddev	.00082	.00082	.00405	.00250	.00091	.00010	.33393
%RSD	47.322	.47585	153.10	60.989	1359.2	2.0262	81.643
#1	.00252	.17344	-.00309	-.00186	-.00069	.00470	.53676
#2	.00089	.17264	.00161	-.00680	.00097	.00462	.03007
#3	.00176	.17180	-.00646	-.00364	-.00048	.00481	.66021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6546.5	40659.	2108.5
Stddev	28.1	201.	15.3
%RSD	.42958	.49347	.72557
#1	6561.7	40449.	2124.6
#2	6514.1	40849.	2106.9
#3	6563.7	40679.	2094.1

Sample Name: L1606076403 Acquired: 6/23/2016 18:21:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00137	.15342	.00118	.01561	.01121	.00003	46.708	.00034
Stddev	.00144	.01220	.00354	.00156	.00114	.00007	.333	.00016
%RSD	104.86	7.9497	299.98	10.017	10.172	207.11	.71252	47.105
#1	.00276	.15228	.00523	.01638	.01119	.00004	47.070	.00019
#2	.00148	.16615	-.00041	.01663	.01236	.00010	46.637	.00033
#3	-.00012	.14184	-.00128	.01381	.01008	-.00004	46.416	.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	.00847	.00160	.25037	3.2322	-.00343	13.109	.01732
Stddev	.00048	.00215	.00051	.01608	.1197	.00219	.140	.00025
%RSD	105.62	25.328	31.641	6.4231	3.7025	63.908	1.0676	1.4475
#1	.00099	.01061	.00135	.24721	3.1397	-.00591	13.252	.01732
#2	.00010	.00848	.00126	.26779	3.1895	-.00259	13.105	.01706
#3	.00026	.00632	.00218	.23609	3.3674	-.00178	12.972	.01756
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	83.906	.00432	.01477	.00450	.00054	-.00630	4.8394
Stddev	.00021	.704	.00062	.00496	.00594	.00823	.00533	.0108
%RSD	145.51	.83873	14.339	33.621	132.00	1523.4	84.657	.22390
#1	.00024	84.668	.00370	.00922	.00040	-.00564	-.00982	4.8447
#2	.00028	83.772	.00494	.01629	.01131	.00989	-.00890	4.8466
#3	-.00010	83.280	.00432	.01879	.00179	-.00263	-.00016	4.8270
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606076403 Acquired: 6/23/2016 18:21:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00189	.16928	-.00280	-.00350	-.00037	.00427	.33488
Stddev	.00087	.00110	.00261	.00165	.00108	.00027	.28811
%RSD	46.182	.64857	93.235	47.233	289.03	6.2712	86.033
#1	.00253	.17053	-.00577	-.00531	-.00161	.00439	.48732
#2	.00090	.16886	-.00085	-.00207	.00037	.00397	.00258
#3	.00224	.16845	-.00178	-.00311	.00012	.00447	.51476
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6581.0	40913.	2128.6
Stddev	5.4	301.	32.8
%RSD	.08278	.73656	1.5394
#1	6574.8	40952.	2106.9
#2	6584.5	40594.	2112.5
#3	6583.9	41193.	2166.3

Sample Name: L1606095701 Acquired: 6/23/2016 18:25:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.46956	.00251	.02030	.04833	.00003	49.298	.00021
Stddev	.00116	.00247	.00083	.00483	.00100	.00005	.380	.00019
%RSD	283.11	.52507	32.898	23.794	2.0760	143.19	.77063	90.357
#1	.00160	.46729	.00340	.01479	.04946	-.00001	49.398	.00006
#2	-.00072	.47218	.00235	.02380	.04755	.00003	49.618	.00041
#3	.00036	.46920	.00178	.02230	.04798	.00008	48.878	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.00117	.00294	.90286	1.5234	.00299	12.797	.07921
Stddev	.00016	.00017	.00150	.02505	.1258	.00416	.204	.00280
%RSD	34.195	14.848	50.801	2.7744	8.2581	138.79	1.5973	3.5404
#1	.00039	.00098	.00204	.92120	1.4450	-.00175	12.561	.07627
#2	.00038	.00131	.00212	.91306	1.4566	.00596	12.905	.08186
#3	.00067	.00123	.00467	.87432	1.6685	.00477	12.925	.07952
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	3.8733	.00033	.04837	.00336	-.00283	.00062	4.1822
Stddev	.00048	.0248	.00057	.00397	.00588	.00529	.00509	.0038
%RSD	106.40	.63975	174.89	8.1973	175.22	186.90	821.76	.09190
#1	.00063	3.9009	.00047	.05197	.00822	.00326	-.00493	4.1833
#2	-.00009	3.8529	.00082	.04903	-.00318	-.00552	.00170	4.1779
#3	.00081	3.8662	-.00030	.04412	.00504	-.00623	.00508	4.1853
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606095701 Acquired: 6/23/2016 18:25:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.26575	-.00460	-.00190	.00016	.00477	.18671
Stddev	.00076	.00141	.00397	.00470	.00026	.00014	.25228
%RSD	1127.9	.53205	86.124	248.06	165.00	2.9160	135.12
#1	.00070	.26627	-.00436	-.00420	.00020	.00486	-.03830
#2	-.00009	.26684	-.00077	.00352	.00040	.00485	.13898
#3	-.00081	.26416	-.00869	-.00501	-.00012	.00461	.45944
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6633.8	41376.	2099.5
Stddev	37.1	291.	7.1
%RSD	.55940	.70297	.33861
#1	6661.1	41062.	2100.6
#2	6648.8	41636.	2091.9
#3	6591.5	41431.	2106.0

Sample Name: L1606095702 Acquired: 6/23/2016 18:29:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.02149	-.00029	.01798	.04394	-.00005	48.548	.00016
Stddev	.00120	.00717	.00363	.00283	.00013	.00009	.113	.00020
%RSD	338.55	33.343	1265.1	15.710	.28482	186.99	.23191	128.29
#1	.00155	.02937	-.00024	.01478	.04391	-.00003	48.543	-.00006
#2	.00038	.01536	-.00394	.01905	.04383	.00003	48.664	.00019
#3	-.00086	.01975	.00332	.02012	.04408	-.00015	48.439	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	.00018	.00270	.01333	1.4334	.00181	12.360	.04977
Stddev	.00029	.00074	.00104	.00520	.0107	.00516	.188	.00147
%RSD	124.55	409.37	38.421	39.005	.74428	284.70	1.5241	2.9581
#1	.00010	-.00042	.00376	.01807	1.4222	-.00050	12.567	.04817
#2	-.00039	.00100	.00266	.00777	1.4347	.00772	12.199	.05008
#3	-.00041	-.00004	.00169	.01416	1.4434	-.00179	12.314	.05107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	3.8295	.00047	.00890	-.00152	.00413	-.00556	3.5646
Stddev	.00041	.0622	.00056	.00959	.00091	.00142	.00430	.0105
%RSD	89.215	1.6239	120.78	107.82	59.749	34.322	77.442	.29519
#1	.00025	3.8845	.00007	.00556	-.00178	.00386	-.00914	3.5766
#2	.00020	3.7620	.00111	.00142	-.00226	.00566	-.00674	3.5599
#3	.00094	3.8419	.00022	.01971	-.00051	.00286	-.00079	3.5572
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606095702 Acquired: 6/23/2016 18:29:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.25718	-.01617	-.00292	-.00158	.00276	.25728
Stddev	.00011	.00214	.00935	.00156	.00059	.00016	.40159
%RSD	34.052	.83289	57.848	53.296	37.039	5.8090	156.09
#1	.00022	.25955	-.02691	-.00442	-.00103	.00282	-.15534
#2	.00044	.25539	-.00976	-.00131	-.00219	.00288	.64684
#3	.00029	.25660	-.01185	-.00303	-.00152	.00258	.28035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6634.1	41520.	2136.4
Stddev	35.2	131.	44.7
%RSD	.53089	.31504	2.0909
#1	6598.3	41376.	2086.8
#2	6635.3	41551.	2148.8
#3	6668.7	41632.	2173.6

Sample Name: CCV Acquired: 6/23/2016 18:33:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.37892	9.4387	.37738	.47256	.94946	.04758	9.5075
Stddev	.00148	.0146	.00259	.00305	.00322	.00017	.0685
%RSD	.39011	.15488	.68700	.64544	.33864	.35065	.72027
#1	.38009	9.4240	.38032	.47530	.94608	.04771	9.4676
#2	.37942	9.4533	.37541	.46928	.94982	.04765	9.4684
#3	.37726	9.4389	.37641	.47312	.95247	.04739	9.5866
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04694	.19097	.47642	.48024	3.7454	47.589	.96391
Stddev	.00038	.00060	.00177	.00172	.0267	.209	.00531
%RSD	.81436	.31192	.37218	.35728	.71307	.43924	.55081
#1	.04714	.19166	.47496	.48079	3.7624	47.380	.95931
#2	.04717	.19062	.47589	.48161	3.7146	47.589	.96972
#3	.04649	.19064	.47839	.47831	3.7591	47.798	.96271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.5330	.47716	.95180	47.369	.47779	9.4288	.47264
Stddev	.1380	.00452	.00445	.136	.00101	.0198	.00044
%RSD	1.4480	.94690	.46703	.28759	.21184	.20944	.09281
#1	9.3868	.47739	.95630	47.213	.47768	9.4450	.47285
#2	9.6611	.47253	.95168	47.430	.47683	9.4068	.47292
#3	9.5511	.48156	.94742	47.463	.47885	9.4347	.47213
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: CCV Acquired: 6/23/2016 18:33:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1353**	**.38157**	**4.7878**	**.94812**	**.94630**	**.94801**	**.48121**
Stddev	.0015	.00111	.0073	.00312	.00312	.01023	.00217
%RSD	.12990	.29010	.15352	.32951	.33000	1.0787	.45189
#1	1.1366	.38222	4.7963	.95070	.94271	.93631	.48083
#2	1.1337	.38220	4.7828	.94465	.94841	.95529	.47925
#3	1.1356	.38030	4.7843	.94900	.94778	.95241	.48355
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.95198**	**.95325**	F **.09466**
Stddev	.00202	.00225	.27239
%RSD	.21241	.23553	287.76
#1	.95399	.95580	.19384
#2	.95199	.95239	-.21343
#3	.94995	.95157	.30356
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6829.4**	**42429.**	**2191.9**
Stddev	12.0	491.	25.5
%RSD	.17610	1.1575	1.1649
#1	6837.9	42290.	2175.1
#2	6834.7	42022.	2221.3
#3	6815.6	42975.	2179.4

Sample Name: CCB Acquired: 6/23/2016 18:36:49 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00322**	**.00107**	**-.00054**	**.00322**	**.00006**	**.00009**	**.02193**
Stddev	.00043	.00584	.00138	.00071	.00147	.00001	.03302
%RSD	13.435	544.37	257.70	22.014	2255.3	10.149	150.58
#1	.00309	.00723	.00106	.00367	-.00132	.00008	.01644
#2	.00371	.00039	-.00144	.00240	.00160	.00009	-.00800
#3	.00287	-.00440	-.00123	.00358	-.00009	.00010	.05735
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**.00018**	**-.00042**	**.00126**	**.02179**	**.11279**	**-.00067**
Stddev	.00014	.00038	.00167	.00134	.02326	.08636	.00587
%RSD	182.22	210.03	399.06	106.42	106.75	76.563	872.21
#1	.00024	.00056	-.00036	.00176	.03802	.20919	-.00743
#2	.00004	-.00020	.00122	-.00026	-.00486	.08667	.00222
#3	-.00004	.00019	-.00212	.00226	.03219	.04251	.00319
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02601**	**.00041**	**.00309**	**.08611**	**-.00017**	**.00201**	**-.00231**
Stddev	.00787	.00462	.00037	.06126	.00074	.00369	.00149
%RSD	30.276	1132.0	12.029	71.145	441.11	183.39	64.604
#1	.02246	-.00052	.00267	.06682	.00059	-.00054	-.00062
#2	.02053	.00542	.00337	.03682	-.00020	.00033	-.00285
#3	.03503	-.00368	.00324	.15470	-.00090	.00625	-.00346
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: CCB Acquired: 6/23/2016 18:36:49 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00178**	**.00235**	**.00300**	**.00030**	**.00073**	**-.00027**	**-.00344**
Stddev	.00352	.00736	.00017	.00075	.00010	.00192	.00271
%RSD	198.25	313.53	5.6604	253.34	13.143	700.32	78.666
#1	-.00221	.00539	.00284	.00092	.00062	-.00182	-.00634
#2	.00305	-.00605	.00318	-.00054	.00077	.00188	-.00302
#3	.00448	.00771	.00299	.00050	.00080	-.00088	-.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00023**	**.00017**	F **.30996**
Stddev	.00082	.00026	.44738
%RSD	353.90	152.67	144.34
#1	-.00013	.00031	.51733
#2	.00118	-.00013	-.20349
#3	-.00035	.00032	.61602
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6847.7**	**42764.**	**2190.8**
Stddev	18.6	212.	5.5
%RSD	.27202	.49617	.24955
#1	6838.4	42826.	2184.7
#2	6869.1	42938.	2192.8
#3	6835.5	42527.	2195.1

Sample Name: L1606095703 Acquired: 6/23/2016 18:40:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00157	.59442	.00345	.01544	.05978	.00002	36.179	.00021
Stddev	.00140	.00140	.00372	.00226	.00166	.00008	.233	.00017
%RSD	89.489	.23471	107.82	14.612	2.7840	315.39	.64331	79.288
#1	.00259	.59283	.00035	.01648	.06092	.00011	36.405	.00023
#2	.00214	.59501	.00758	.01285	.06056	-.00003	36.192	.00038
#3	-.00003	.59543	.00243	.01699	.05787	-.00000	35.940	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	.00171	.00235	.99066	1.0189	.00306	4.2466	.34135
Stddev	.00029	.00065	.00116	.00191	.1477	.00520	.1543	.00578
%RSD	57.273	38.095	49.421	.19284	14.493	170.05	3.6338	1.6936
#1	.00018	.00100	.00118	.99000	.97647	.00895	4.1429	.34787
#2	.00074	.00184	.00237	.98917	1.1832	.00113	4.4240	.33684
#3	.00059	.00229	.00350	.99281	.89714	-.00090	4.1730	.33935
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00158	9.9139	.00125	.06880	.00203	.00079	-.00517	4.4030
Stddev	.00038	.0706	.00076	.00768	.00168	.00577	.00107	.0083
%RSD	24.292	.71237	60.961	11.168	82.575	735.03	20.696	.18913
#1	.00191	9.9842	.00113	.06853	.00010	.00362	-.00400	4.4025
#2	.00167	9.8430	.00208	.07661	.00292	.00459	-.00539	4.3950
#3	.00116	9.9146	.00056	.06125	.00308	-.00586	-.00611	4.4116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606095703 Acquired: 6/23/2016 18:40:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.13708	.00451	-.00202	.00078	.00490	.22494
Stddev	.00088	.00079	.01428	.00267	.00035	.00024	.11125
%RSD	513.50	.57511	316.39	132.43	44.919	4.8544	49.458
#1	.00022	.13772	-.01170	-.00500	.00067	.00502	.12100
#2	.00102	.13733	.01523	-.00120	.00118	.00506	.21152
#3	-.00073	.13620	.01000	.00015	.00050	.00463	.34229
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6641.1	41542.	2110.2
Stddev	47.0	387.	42.7
%RSD	.70732	.93262	2.0250
#1	6610.2	41137.	2074.7
#2	6618.0	41909.	2098.4
#3	6695.1	41580.	2157.7

Sample Name: L1606095704 Acquired: 6/23/2016 18:44:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00171	.01427	-.00254	.01401	.04366	.00001	35.183	.00015
Stddev	.00187	.00827	.00245	.00145	.00176	.00007	.524	.00017
%RSD	109.40	57.926	96.490	10.332	4.0281	938.95	1.4883	116.97
#1	.00375	.01991	-.00531	.01561	.04341	-.00008	35.381	.00027
#2	.00007	.00478	-.00065	.01361	.04552	.00004	35.579	-.00005
#3	.00132	.01813	-.00167	.01280	.04203	.00006	34.589	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	.00023	.00314	.00854	.90554	-.00053	4.1738	.13131
Stddev	.00017	.00027	.00209	.01235	.04311	.00195	.0469	.00168
%RSD	61.984	120.89	66.548	144.50	4.7611	368.87	1.1239	1.2783
#1	-.00041	.00004	.00554	-.00223	.92277	.00023	4.1196	.13296
#2	-.00032	.00054	.00170	.02202	.93737	.00093	4.2002	.13137
#3	-.00008	.00010	.00219	.00585	.85648	-.00275	4.2015	.12960
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00146	9.9224	.00122	.02546	.00187	.00274	-.00609	3.6801
Stddev	.00034	.2004	.00114	.01084	.00327	.00376	.00550	.0062
%RSD	23.395	2.0192	93.082	42.580	174.85	137.20	90.310	.16848
#1	.00107	10.130	.00251	.01415	.00529	.00275	-.00747	3.6873
#2	.00171	9.9074	.00082	.02646	.00154	-.00102	-.01077	3.6761
#3	.00161	9.7299	.00034	.03577	-.00122	.00649	-.00003	3.6770
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606095704 Acquired: 6/23/2016 18:44:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00044**	**.13398**	**-.00259**	**-.00487**	**-.00042**	**.00404**	**.39599**
Stddev	.00030	.00097	.00767	.00290	.00014	.00020	.04470
%RSD	68.069	.72204	296.19	59.450	32.889	5.0229	11.288
#1	-.00031	.13510	.00380	-.00161	-.00033	.00423	.39112
#2	-.00079	.13343	-.00047	-.00585	-.00058	.00406	.35393
#3	-.00024	.13342	-.01109	-.00716	-.00035	.00383	.44293
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6691.6**	**41683.**	**2130.5**
Stddev	16.3	188.	44.8
%RSD	.24349	.45009	2.1019
#1	6674.7	41874.	2106.4
#2	6707.2	41499.	2102.9
#3	6692.9	41675.	2182.2

Sample Name: L1606095705 Acquired: 6/23/2016 18:48:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	.18137	.00132	.01393	.05227	.00000	47.576	-.00017
Stddev	.00022	.00236	.00336	.00262	.00068	.00006	.406	.00016
%RSD	27.412	1.3014	254.59	18.802	1.2936	1545.4	.85245	98.177
#1	.00055	.17984	-.00165	.01122	.05295	.00007	47.676	-.00014
#2	.00093	.18018	.00064	.01413	.05226	-.00001	47.129	-.00002
#3	.00093	.18409	.00497	.01644	.05160	-.00005	47.922	-.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.00081	.00165	.24818	.66421	-.00237	5.8917	.04016
Stddev	.00049	.00111	.00028	.02329	.15036	.00580	.1105	.00146
%RSD	327.66	136.79	16.738	9.3859	22.638	244.94	1.8758	3.6247
#1	.00050	.00005	.00195	.26948	.57304	-.00408	6.0110	.04145
#2	.00036	.00030	.00162	.22331	.58183	.00409	5.7928	.04046
#3	-.00041	.00208	.00140	.25176	.83776	-.00711	5.8714	.03858
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	4.2444	.00044	.02145	-.00147	.00210	-.00161	3.9144
Stddev	.00037	.0382	.00138	.00960	.00364	.00064	.00655	.0080
%RSD	69.362	.90092	314.47	44.765	248.05	30.375	406.75	.20417
#1	.00089	4.2867	-.00079	.03237	-.00565	.00257	-.00833	3.9237
#2	.00058	4.2341	.00193	.01434	.00101	.00137	-.00126	3.9100
#3	.00015	4.2123	.00017	.01764	.00024	.00235	.00476	3.9097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606095705 Acquired: 6/23/2016 18:48:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00124**	**.16651**	**-.01359**	**-.00521**	**.00084**	**.00210**	**.15995**
Stddev	.00099	.00174	.00564	.00062	.00055	.00006	.33370
%RSD	79.444	1.0457	41.504	11.980	65.519	2.7028	208.63
#1	-.00013	.16843	-.01365	-.00569	.00109	.00214	.50631
#2	-.00159	.16606	-.00792	-.00450	.00021	.00203	.13299
#3	-.00201	.16504	-.01920	-.00543	.00123	.00212	-.15945
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6676.1**	**41561.**	**2103.6**
Stddev	12.6	161.	24.0
%RSD	.18881	.38711	1.1405
#1	6690.1	41742.	2107.2
#2	6672.8	41433.	2125.6
#3	6665.6	41508.	2078.0

Sample Name: L1606096101 Acquired: 6/23/2016 18:52:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00082	.01430	.00369	.01759	.00065	-.00004	.04649	-.00016
Stddev	.00101	.00586	.00264	.00153	.00060	.00005	.04475	.00011
%RSD	122.72	40.990	71.487	8.6840	91.837	113.85	96.246	67.330
#1	-.00034	.00813	.00410	.01814	.00134	-.00010	.05237	-.00005
#2	.00136	.01498	.00087	.01587	.00033	.00000	.08801	-.00016
#3	.00144	.01979	.00609	.01877	.00028	-.00003	-.00090	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.00024	.01766	.09903	.10656	.00252	-.01866	.00398
Stddev	.00056	.00013	.00069	.02628	.09276	.00342	.06339	.00246
%RSD	164.44	55.453	3.9062	26.535	87.051	136.01	339.78	61.709
#1	.00024	.00020	.01732	.09611	.01800	.00645	-.08612	.00647
#2	-.00016	.00038	.01845	.12665	.09866	.00026	.03967	.00155
#3	.00095	.00013	.01720	.07434	.20302	.00083	-.00952	.00393
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	107.16	-.00002	.03665	.00304	.00296	-.00309	5.9627
Stddev	.00055	1.21	.00170	.00369	.00053	.00129	.00524	.0081
%RSD	1743.4	1.1249	7247.6	10.064	17.513	43.498	169.55	.13655
#1	.00064	108.50	.00194	.03929	.00277	.00155	-.00074	5.9648
#2	-.00012	106.16	-.00110	.03243	.00269	.00407	.00057	5.9537
#3	-.00042	106.82	-.00091	.03823	.00365	.00327	-.00910	5.9696
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606096101 Acquired: 6/23/2016 18:52:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00123**	**.00009**	**-.00012**	**-.00673**	**-.00085**	**.00397**	**.21821**
Stddev	.00042	.00025	.00564	.00413	.00089	.00018	.04757
%RSD	34.134	265.03	4817.0	61.413	103.95	4.5901	21.800
#1	.00144	-.00013	-.00483	-.00336	-.00072	.00394	.16868
#2	.00075	.00004	.00613	-.01134	-.00180	.00381	.26354
#3	.00150	.00037	-.00165	-.00548	-.00004	.00417	.22241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6592.8**	**41252.**	**2103.4**
Stddev	17.0	291.	47.5
%RSD	.25725	.70443	2.2575
#1	6595.4	40916.	2058.8
#2	6574.6	41415.	2153.3
#3	6608.2	41424.	2098.1

Sample Name: L1606096102 Acquired: 6/23/2016 18:56:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00079	.03478	.00589	.01533	.02658	-.00009	27.946	-.00005
Stddev	.00186	.00579	.00137	.00335	.00018	.00004	.659	.00022
%RSD	235.75	16.640	23.210	21.834	.65976	40.468	2.3584	471.56
#1	.00069	.02830	.00447	.01574	.02649	-.00010	28.691	-.00000
#2	-.00287	.03661	.00719	.01180	.02646	-.00005	27.440	-.00029
#3	-.00019	.03942	.00601	.01846	.02678	-.00013	27.706	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.00057	.00211	.07517	.95068	-.00017	4.4154	.12814
Stddev	.00012	.00116	.00118	.01917	.12455	.00106	.0966	.00422
%RSD	122.50	204.26	55.846	25.503	13.101	623.39	2.1883	3.2924
#1	.00017	.00092	.00222	.09509	.80692	-.00137	4.5065	.13251
#2	.00017	.00152	.00323	.05686	1.0194	.00064	4.3140	.12782
#3	-.00004	-.00073	.00088	.07355	1.0258	.00022	4.4257	.12409
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	2.8960	.00155	.00675	-.00147	-.00079	-.00450	1.9147
Stddev	.00018	.0986	.00062	.00402	.00109	.00203	.00538	.0058
%RSD	22.925	3.4051	39.619	59.594	74.555	256.57	119.66	.30207
#1	.00069	2.9809	.00179	.00220	-.00127	.00048	-.01064	1.9214
#2	.00097	2.7878	.00202	.00820	-.00048	-.00314	-.00059	1.9118
#3	.00065	2.9192	.00086	.00985	-.00264	.00028	-.00227	1.9110
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606096102 Acquired: 6/23/2016 18:56:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00047**	**.09203**	**-.00699**	**-.00581**	**.00001**	**.00122**	**.19167**
Stddev	.00152	.00238	.00325	.00218	.00060	.00015	.39664
%RSD	319.98	2.5851	46.457	37.509	4349.6	12.672	206.94
#1	.00001	.09410	-.00457	-.00773	.00065	.00107	.60420
#2	-.00217	.08943	-.01068	-.00344	-.00006	.00121	.15771
#3	.00074	.09257	-.00572	-.00625	-.00055	.00138	-.18689
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6690.9**	**41659.**	**2159.3**
Stddev	15.4	166.	23.9
%RSD	.22972	.39942	1.1048
#1	6679.1	41827.	2132.7
#2	6708.3	41655.	2166.7
#3	6685.3	41494.	2178.6

Sample Name: L1606099102 Acquired: 6/23/2016 19:00:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.18278	.01279	.07089	.02678	.00003	1.1753
Stddev	.00017	.00874	.00230	.00310	.00094	.00004	.0130
%RSD	197.98	4.7790	18.004	4.3721	3.5015	169.52	1.1019
#1	.00028	.18746	.01165	.06786	.02601	.00006	1.1606
#2	.00005	.18819	.01543	.07075	.02651	-.00002	1.1806
#3	-.00007	.17271	.01127	.07405	.02782	.00005	1.1848
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00374	.00173	.10547	.01142	.70686	2.4306	.00285
Stddev	.00031	.00017	.00069	.00091	.00672	.2276	.00410
%RSD	8.3801	9.8737	.65029	7.9351	.95134	9.3634	143.93
#1	.00362	.00160	.10540	.01211	.70453	2.2038	.00005
#2	.00409	.00192	.10482	.01039	.71445	2.4290	.00095
#3	.00349	.00167	.10619	.01174	.70162	2.6590	.00756
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.81483	.00610	.00617	F 411.44	.00858	.68987	.01663
Stddev	.08854	.00159	.00023	1.75	.00104	.00877	.00140
%RSD	10.866	26.091	3.7232	.42582	12.171	1.2720	8.4229
#1	.87256	.00435	.00592	410.10	.00774	.68564	.01502
#2	.71289	.00651	.00637	410.79	.00975	.69996	.01728
#3	.85904	.00745	.00621	413.42	.00825	.68401	.01758
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Sample Name: L1606099102 Acquired: 6/23/2016 19:00:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00429**	**-.00276**	**2.6532**	**.01212**	**.18283**	**.14118**	**-.00012**
Stddev	.00146	.00633	.0058	.00057	.00067	.01057	.00163
%RSD	33.919	229.47	.21752	4.7117	.36652	7.4900	1330.7
#1	.00526	-.00115	2.6467	.01254	.18210	.13107	.00136
#2	.00500	.00261	2.6548	.01147	.18294	.14030	-.00187
#3	.00262	-.00973	2.6579	.01236	.18343	.15217	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.02620**	**.14570**	**6.4213**
Stddev	.00048	.00024	.3214
%RSD	1.8484	.16660	5.0053
#1	.02567	.14542	6.6480
#2	.02632	.14589	6.0535
#3	.02662	.14577	6.5624
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6798.1**	**41761.**	**2199.9**
Stddev	24.0	167.	13.3
%RSD	.35371	.40060	.60321
#1	6803.8	41578.	2190.0
#2	6771.7	41906.	2194.6
#3	6818.8	41798.	2214.9

Sample Name: L1606099501 Acquired: 6/23/2016 19:04:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	.03319	.00198	4.2612	22.007	.00013	F 2231.4
Stddev	.00073	.00812	.00497	.0108	.140	.00007	10.9
%RSD	111.66	24.468	250.83	.25328	.63583	52.114	.49013
#1	.00010	.02381	.00383	4.2649	22.169	.00005	2238.3
#2	.00039	.03790	-.00365	4.2491	21.924	.00018	2218.8
#3	.00149	.03786	.00577	4.2697	21.929	.00017	2237.2
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00230	.00542	.00437	.00761	16.049	77.831	15.290
Stddev	.00066	.00043	.00087	.00268	.109	.457	.102
%RSD	28.682	8.0139	19.948	35.207	.68074	.58771	.66563
#1	.00204	.00521	.00375	.01070	16.175	78.291	15.407
#2	.00305	.00592	.00537	.00603	15.989	77.376	15.216
#3	.00181	.00514	.00400	.00609	15.983	77.827	15.248
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	289.46	2.5248	-.00161	F 5161.1	-.00605	-.04671	-.00084
Stddev	1.34	.0130	.00040	91.9	.00062	.01060	.00404
%RSD	.46449	.51604	24.821	1.7808	10.259	22.695	480.02
#1	290.80	2.5348	-.00118	5246.4	-.00638	-.03903	-.00094
#2	288.11	2.5101	-.00167	5063.8	-.00533	-.05880	.00324
#3	289.46	2.5296	-.00197	5173.3	-.00644	-.04229	-.00483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Sample Name: L1606099501 Acquired: 6/23/2016 19:04:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**.00060**	**1.7140**	**-.00270**	F **293.43**	F **-.23021**	**-.00582**
Stddev	.00390	.00430	.0091	.00145	3.55	.00343	.00281
%RSD	37587.	722.43	.53043	53.583	1.2096	1.4919	48.318
#1	.00450	-.00436	1.7206	-.00436	292.37	-.23049	-.00302
#2	-.00251	.00275	1.7036	-.00173	297.39	-.22665	-.00864
#3	-.00196	.00340	1.7177	-.00201	290.53	-.23350	-.00579
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Pass
High Limit					9.0000	36.000	
Low Limit					-.01000	-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00391**	**.46449**	F **-.84964**
Stddev	.00112	.00152	.26917
%RSD	28.498	.32684	31.680
#1	-.00485	.46570	-1.1604
#2	-.00421	.46278	-.69319
#3	-.00268	.46498	-.69528
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**5043.9**	**30664.**	**1834.7**
Stddev	16.9	150.	7.6
%RSD	.33492	.48802	.41407
#1	5024.6	30608.	1826.5
#2	5056.0	30834.	1836.3
#3	5051.1	30550.	1841.4

Sample Name: L1606099502 Acquired: 6/23/2016 19:08:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00345**	**.02306**	**-.00311**	**4.2770**	**21.493**	**.00016**	F **2199.4**
Stddev	.00099	.01662	.00473	.0112	.107	.00010	10.2
%RSD	28.739	72.096	152.37	.26279	.49855	65.563	.46331
#1	-.00260	.03568	.00094	4.2665	21.584	.00005	2207.7
#2	-.00454	.00422	-.00194	4.2758	21.375	.00025	2202.6
#3	-.00321	.02928	-.00831	4.2888	21.521	.00017	2188.0
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00258**	**.00505**	**.00245**	**.01034**	**14.967**	**76.431**	**15.054**
Stddev	.00018	.00018	.00130	.00137	.073	.482	.075
%RSD	6.8313	3.5760	52.982	13.296	.48454	.63040	.50059
#1	.00238	.00511	.00191	.00878	14.985	76.519	15.096
#2	.00271	.00519	.00151	.01138	14.888	75.911	14.967
#3	.00265	.00485	.00393	.01085	15.029	76.862	15.100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**285.71**	**2.4897**	**-.00104**	F **4892.3**	**-.00500**	**-.05393**	**.00746**
Stddev	1.59	.0149	.00055	124.5	.00081	.00583	.00104
%RSD	.55735	.59915	52.735	2.5451	16.181	10.801	13.884
#1	287.47	2.5069	-.00064	4942.1	-.00421	-.06066	.00665
#2	284.37	2.4802	-.00081	4984.2	-.00495	-.05038	.00710
#3	285.29	2.4820	-.00167	4750.6	-.00582	-.05076	.00863
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Sample Name: L1606099502 Acquired: 6/23/2016 19:08:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00124**	**.00073**	**1.5901**	**-.00205**	F **282.05**	F **-.22951**	**-.00301**
Stddev	.00214	.00258	.0105	.00077	1.08	.01217	.00231
%RSD	172.21	351.60	.66137	37.499	.38242	5.3030	76.703
#1	.00091	.00117	1.5782	-.00289	282.22	-.24190	-.00355
#2	-.00128	.00306	1.5942	-.00138	283.02	-.21757	-.00499
#3	-.00337	-.00204	1.5980	-.00189	280.89	-.22904	-.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Pass
High Limit					9.0000	36.000	
Low Limit					-.01000	-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00411**	**.45318**	F **-.64740**
Stddev	.00129	.00131	.07796
%RSD	31.297	.28971	12.042
#1	-.00333	.45167	-.58664
#2	-.00340	.45405	-.73530
#3	-.00559	.45381	-.62026
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**5048.8**	**30332.**	**1858.4**
Stddev	3.9	253.	17.7
%RSD	.07715	.83404	.95240
#1	5053.2	30378.	1844.8
#2	5046.9	30059.	1852.1
#3	5046.2	30558.	1878.4

Sample Name: L1606106401 Acquired: 6/23/2016 19:12:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00137	.93109	.00053	.03729	.05113	.00000	28.407	.00020
Stddev	.00252	.00902	.00338	.00153	.00202	.00011	.262	.00043
%RSD	183.56	.96930	639.15	4.0949	3.9481	2244.2	.92307	214.59
#1	-.00121	.93101	.00099	.03594	.05319	.00011	28.651	.00015
#2	.00151	.94015	.00365	.03894	.05104	.00001	28.439	-.00020
#3	.00382	.92210	-.00306	.03698	.04915	-.00011	28.129	.00066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00058	.00021	.00488	1.1389	1.0564	-.00108	2.9741	.01385
Stddev	.00032	.00086	.00142	.0345	.0930	.00288	.1109	.00248
%RSD	56.184	402.03	29.165	3.0303	8.7985	268.17	3.7294	17.924
#1	.00057	.00116	.00392	1.1770	1.0142	.00149	3.1007	.01663
#2	.00025	-.00002	.00421	1.1096	.99211	-.00052	2.9273	.01185
#3	.00090	-.00050	.00652	1.1303	1.1630	-.00420	2.8942	.01308
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00103	3.1622	.00158	.08777	.00276	.00045	-.00572	4.3193
Stddev	.00012	.1302	.00086	.00354	.00085	.00135	.01212	.0046
%RSD	11.727	4.1165	54.479	4.0300	30.606	297.83	212.07	.10550
#1	.00117	3.2928	.00230	.08694	.00254	-.00043	.00769	4.3152
#2	.00097	3.1615	.00063	.08472	.00205	.00201	-.01591	4.3242
#3	.00095	3.0324	.00181	.09165	.00370	-.00022	-.00892	4.3184
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606106401 Acquired: 6/23/2016 19:12:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	.09591	.01130	-.00267	.00099	.00793	.56831
Stddev	.00047	.00237	.00917	.00175	.00090	.00003	.52710
%RSD	78.603	2.4713	81.158	65.518	91.033	.34720	92.749
#1	.00074	.09837	.00228	-.00301	.00008	.00796	.23401
#2	.00098	.09572	.01099	-.00422	.00188	.00791	.29499
#3	.00007	.09364	.02061	-.00077	.00100	.00793	1.1759
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6738.4	41869.	2132.0
Stddev	11.1	208.	5.4
%RSD	.16498	.49610	.25526
#1	6728.6	41753.	2129.0
#2	6736.2	41746.	2138.3
#3	6750.5	42109.	2128.7

Sample Name: CCV Acquired: 6/23/2016 19:16:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.37919	9.4539	.37838	.47741	.95410	.04762	9.5636
Stddev	.00221	.0169	.00039	.00245	.00513	.00013	.0372
%RSD	.58374	.17847	.10355	.51410	.53813	.27668	.38859
#1	.38055	9.4678	.37878	.47468	.94817	.04774	9.5214
#2	.38039	9.4588	.37835	.47943	.95695	.04748	9.5914
#3	.37664	9.4351	.37800	.47812	.95718	.04762	9.5780
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04743	.19073	.47732	.47745	3.7981	47.840	.97103
Stddev	.00050	.00017	.00127	.00151	.0352	.199	.00699
%RSD	1.0527	.08963	.26621	.31598	.92728	.41493	.71955
#1	.04779	.19083	.47845	.47601	3.7576	47.614	.96329
#2	.04763	.19053	.47595	.47902	3.8152	47.921	.97687
#3	.04686	.19083	.47757	.47730	3.8215	47.986	.97295
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.5182	.47503	.95370	48.127	.47728	9.3799	.47857
Stddev	.1107	.00550	.00396	.203	.00099	.0039	.00307
%RSD	1.1627	1.1583	.41501	.42134	.20780	.04109	.64155
#1	9.6428	.46909	.95745	47.914	.47781	9.3770	.47874
#2	9.4313	.47605	.95408	48.150	.47790	9.3843	.48155
#3	9.4805	.47995	.94956	48.317	.47614	9.3784	.47541
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: CCV Acquired: 6/23/2016 19:16:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1355**	**.37785**	**4.7735**	**.94584**	**.95950**	**.94974**	**.48314**
Stddev	.0014	.00604	.0057	.00205	.00431	.00481	.00202
%RSD	.12258	1.5984	.11925	.21676	.44891	.50688	.41802
#1	1.1369	.38109	4.7670	.94374	.95466	.94648	.48517
#2	1.1341	.38158	4.7762	.94595	.96094	.95527	.48113
#3	1.1355	.37088	4.7773	.94784	.96291	.94747	.48313
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.95446**	**.95114**	F **.47272**
Stddev	.00286	.00014	.27938
%RSD	.29988	.01520	59.100
#1	.95768	.95118	.66932
#2	.95222	.95127	.15292
#3	.95348	.95099	.59591
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6901.5**	**42860.**	**2195.1**
Stddev	41.4	316.	16.1
%RSD	.60057	.73673	.73557
#1	6924.3	42538.	2183.7
#2	6853.6	42875.	2188.1
#3	6926.5	43169.	2213.6

Sample Name: CCB Acquired: 6/23/2016 19:20:08 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00238**	**-.01466**	**.00143**	**.00483**	**-.00003**	**.00001**	**.07786**
Stddev	.00049	.00200	.00149	.00453	.00214	.00009	.06354
%RSD	20.427	13.611	104.06	93.858	6527.4	940.84	81.613
#1	.00284	-.01261	.00199	.00972	.00118	.00006	.15097
#2	.00187	-.01659	-.00026	.00400	.00122	.00006	.03598
#3	.00244	-.01478	.00255	.00077	-.00250	-.00009	.04662
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**-.00031**	**.00022**	**.00039**	**.00442**	**.00595**	**.00280**
Stddev	.00007	.00052	.00124	.00132	.02693	.06585	.00064
%RSD	37.292	170.19	563.67	338.25	609.56	1107.4	22.926
#1	.00023	-.00057	.00004	-.00106	.01159	.04036	.00265
#2	.00011	-.00065	-.00092	.00069	-.02537	-.06998	.00350
#3	.00023	.00030	.00154	.00154	.02703	.04745	.00224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03600**	**.00167**	**.00345**	**.42320**	**-.00024**	**.00139**	F **-.00578**
Stddev	.09635	.00312	.00061	.03957	.00049	.00443	.00184
%RSD	267.61	187.01	17.568	9.3512	202.30	317.35	31.895
#1	.01890	-.00154	.00285	.45813	-.00079	.00606	-.00650
#2	.13975	.00185	.00406	.43125	.00015	.00087	-.00715
#3	-.05065	.00469	.00345	.38022	-.00009	-.00274	-.00368
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							.00500
Low Limit							-.00500

Sample Name: CCB Acquired: 6/23/2016 19:20:08 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00539**	**-.00364**	**.00090**	**-.00057**	**.00373**	**-.00314**	**.00032**
Stddev	.00515	.00131	.00038	.00067	.00020	.00469	.00190
%RSD	95.593	36.045	42.719	116.62	5.2758	149.60	585.89
#1	.01074	-.00478	.00116	-.00075	.00392	.00167	.00249
#2	.00495	-.00221	.00108	.00016	.00352	-.00771	-.00042
#3	.00047	-.00394	.00046	-.00113	.00373	-.00337	-.00110
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00043**	**.00005**	F **.04542**
Stddev	.00072	.00012	.34069
%RSD	169.53	237.68	750.04
#1	-.00008	-.00001	.43855
#2	-.00125	.00019	-.16363
#3	.00006	-.00003	-.13865
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6967.5**	**43395.**	**2190.0**
Stddev	41.4	704.	41.3
%RSD	.59409	1.6225	1.8846
#1	6953.3	43361.	2223.7
#2	6935.1	44115.	2144.0
#3	7014.1	42708.	2202.3

Sample Name: PBW MC Acquired: 6/23/2016 19:24:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	.01182	-.00092	.00493	-.00012	-.00010	.03899	.00002
Stddev	.00163	.00860	.00408	.00276	.00157	.00005	.01101	.00042
%RSD	702.25	72.769	445.47	56.096	1293.5	54.721	28.229	1843.4
#1	.00065	.00253	-.00537	.00388	.00151	-.00014	.04722	.00048
#2	.00161	.01951	.00264	.00806	-.00023	-.00011	.02649	-.00036
#3	-.00157	.01343	-.00001	.00284	-.00164	-.00004	.04326	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.00049	.00204	.00432	.17133	-.00238	.06048	.00264
Stddev	.00029	.00050	.00040	.03628	.08746	.00474	.03409	.00131
%RSD	168.82	101.29	19.724	840.04	51.052	199.46	56.354	49.484
#1	-.00010	.00067	.00239	-.02516	.27127	.00176	.03814	.00248
#2	-.00049	.00088	.00214	-.00672	.10876	-.00754	.09972	.00142
#3	.00007	-.00007	.00160	.04484	.13394	-.00135	.04360	.00402
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00096	.32980	.00109	-.00655	-.00048	.00411	-.00330	-.02137
Stddev	.00036	.05000	.00076	.00347	.00344	.00130	.00992	.00312
%RSD	37.319	15.161	69.359	52.886	720.16	31.721	300.60	14.588
#1	.00079	.36140	.00194	-.01016	-.00415	.00417	-.01302	-.02373
#2	.00072	.35584	.00049	-.00325	.00266	.00538	.00681	-.02254
#3	.00137	.27215	.00084	-.00625	.00005	.00278	-.00369	-.01784
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: PBW MC Acquired: 6/23/2016 19:24:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00040**	**.00085**	**-.00321**	**-.00159**	**.00013**	**.00182**	**-.03501**
Stddev	.00061	.00058	.00748	.00275	.00086	.00009	.26030
%RSD	153.26	68.513	233.36	172.78	656.72	4.7398	743.52
#1	.00056	.00034	.00354	.00057	-.00054	.00177	-.32167
#2	.00090	.00149	-.01126	-.00468	-.00016	.00177	.03005
#3	-.00028	.00073	-.00190	-.00066	.00110	.00192	.18659
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6713.5**	**41826.**	**2105.1**
Stddev	54.0	279.	25.0
%RSD	.80485	.66739	1.1867
#1	6727.2	41946.	2094.7
#2	6654.0	42025.	2087.1
#3	6759.4	41507.	2133.7

Sample Name: LCSW MC Acquired: 6/23/2016 19:28:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20350	4.9935	.19725	.98212	.51929	.02489	5.3105	.02494
Stddev	.00278	.0008	.00175	.00061	.00709	.00006	.0323	.00007
%RSD	1.3668	.01694	.88835	.06228	1.3650	.26082	.60923	.28776
#1	.20050	4.9929	.19553	.98183	.52566	.02483	5.3424	.02500
#2	.20403	4.9931	.19903	.98282	.52055	.02488	5.3113	.02486
#3	.20598	4.9945	.19719	.98170	.51165	.02496	5.2777	.02497
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10152	.25256	.25516	2.0797	25.740	.52639	5.1902	.25850
Stddev	.00055	.00072	.00042	.0675	.264	.00403	.0928	.00472
%RSD	.53818	.28671	.16566	3.2456	1.0251	.76543	1.7881	1.8242
#1	.10140	.25339	.25549	2.1412	25.923	.53020	5.2421	.26354
#2	.10211	.25215	.25468	2.0904	25.858	.52680	5.2454	.25420
#3	.10104	.25212	.25531	2.0075	25.437	.52218	5.0831	.25775
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51567	25.901	.25435	4.8264	.25513	.60348	.19064	2.5576
Stddev	.00163	.329	.00155	.0089	.00174	.00417	.00132	.0042
%RSD	.31684	1.2719	.61000	.18425	.68292	.69074	.69080	.16255
#1	.51692	26.132	.25556	4.8337	.25335	.60561	.19063	2.5545
#2	.51627	26.047	.25489	4.8291	.25683	.60615	.18933	2.5560
#3	.51382	25.523	.25260	4.8165	.25520	.59868	.19196	2.5623
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: LCSW MC Acquired: 6/23/2016 19:28:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50423	.52568	.51791	.25225	.50435	.50645	.50871
Stddev	.00241	.00482	.00534	.00263	.00086	.00034	.12302
%RSD	.47730	.91755	1.0320	1.0435	.16959	.06729	24.183
#1	.50649	.52965	.52307	.24922	.50405	.50684	.42537
#2	.50170	.52708	.51825	.25391	.50532	.50620	.65001
#3	.50450	.52032	.51240	.25363	.50369	.50631	.45076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6675.8	41467.	2105.7
Stddev	24.4	77.	45.0
%RSD	.36501	.18473	2.1351
#1	6674.7	41472.	2065.5
#2	6652.0	41541.	2097.5
#3	6700.7	41388.	2154.3

Sample Name: F BLANK Acquired: 6/23/2016 19:31:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573025-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00035**	**.01697**	**.00017**	**.00823**	**.00030**	**-.00002**	**.01424**	**.00010**
Stddev	.00143	.00343	.00368	.00159	.00073	.00006	.02636	.00016
%RSD	406.65	20.219	2149.5	19.295	245.04	366.35	185.13	161.49
#1	-.00146	.01939	.00373	.00699	-.00054	.00002	.03225	-.00007
#2	-.00084	.01848	.00040	.00767	.00069	.00002	.02649	.00012
#3	.00126	.01304	-.00362	.01002	.00075	-.00008	-.01602	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**.00071**	**.00022**	**-.00250**	**.21680**	**-.00037**	**.04710**	**.00203**
Stddev	.00058	.00084	.00113	.01048	.06228	.00321	.02108	.00203
%RSD	395.96	117.23	505.81	419.76	28.728	858.57	44.755	100.05
#1	-.00038	.00061	.00120	.00643	.26535	.00293	.05892	.00057
#2	.00005	-.00007	.00049	.00011	.14658	-.00348	.02276	.00117
#3	.00076	.00160	-.00102	-.01403	.23847	-.00057	.05962	.00435
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00063**	**146.49**	**.00027**	**.00148**	**-.00007**	**-.00070**	**-.00157**	**-.01682**
Stddev	.00016	.16	.00052	.00584	.00253	.00452	.00481	.00103
%RSD	25.353	.10971	193.88	395.20	3668.9	645.60	306.24	6.1510
#1	.00048	146.42	-.00030	-.00517	.00173	.00230	.00206	-.01801
#2	.00061	146.38	.00070	.00384	-.00296	.00151	-.00702	-.01610
#3	.00079	146.68	.00040	.00577	.00102	-.00590	.00025	-.01635
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: F BLANK Acquired: 6/23/2016 19:31:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573025-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00050**	**.00113**	**.00420**	**-.00413**	**.00010**	**.00416**	**.06618**
Stddev	.00105	.00030	.00358	.00325	.00062	.00033	.30902
%RSD	208.81	26.175	85.339	78.560	609.38	7.9682	466.95
#1	.00054	.00092	.00586	-.00501	.00082	.00444	.36201
#2	.00153	.00147	.00009	-.00685	-.00027	.00424	.09104
#3	-.00056	.00099	.00664	-.00054	-.00025	.00379	-.25452
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6739.3**	**41425.**	**2117.9**
Stddev	34.7	212.	17.6
%RSD	.51557	.51131	.83142
#1	6776.6	41379.	2104.1
#2	6733.4	41656.	2137.7
#3	6707.8	41240.	2111.8

Sample Name: L1606077902 Acquired: 6/23/2016 19:35:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00041	.10466	.00285	.06045	.05584	-.00002	6.2174	.00046
Stddev	.00116	.00710	.00203	.00084	.00161	.00004	.0446	.00027
%RSD	281.92	6.7835	71.407	1.3870	2.8912	266.76	.71767	58.204
#1	-.00169	.09707	.00256	.05995	.05497	-.00004	6.2605	.00076
#2	-.00009	.10577	.00097	.05998	.05770	-.00005	6.2202	.00025
#3	.00055	.11114	.00501	.06142	.05485	.00003	6.1714	.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	.00071	.00269	.06613	.83231	.00096	1.9162	.03669
Stddev	.00019	.00047	.00085	.02858	.05178	.00081	.1367	.00368
%RSD	41.445	66.440	31.592	43.213	6.2217	84.544	7.1320	10.038
#1	.00040	.00124	.00202	.09508	.77901	.00190	2.0666	.03505
#2	.00066	.00054	.00241	.03794	.88243	.00048	1.8822	.04090
#3	.00030	.00035	.00365	.06539	.83549	.00050	1.7997	.03410
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	146.89	.00039	.00511	.00718	-.00047	-.00261	.31279
Stddev	.00029	.83	.00077	.00679	.00094	.00278	.00523	.00191
%RSD	125.89	.56640	197.90	132.70	13.092	597.43	200.57	.60978
#1	.00003	147.12	.00125	.00567	.00825	-.00357	.00205	.31442
#2	.00057	147.59	-.00024	-.00193	.00647	.00180	-.00827	.31325
#3	.00010	145.97	.00016	.01160	.00682	.00038	-.00160	.31069
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606077902 Acquired: 6/23/2016 19:35:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00094**	**.03050**	**.00108**	**-.00165**	**-.00052**	**.01606**	**.48222**
Stddev	.00106	.00016	.00532	.00346	.00115	.00010	.08551
%RSD	113.09	.52207	493.59	209.68	220.39	.59709	17.733
#1	.00063	.03034	.00420	.00102	-.00167	.01612	.45722
#2	.00006	.03050	-.00506	-.00556	.00063	.01595	.57745
#3	.00212	.03066	.00410	-.00041	-.00053	.01610	.41199
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6708.2**	**41665.**	**2172.2**
Stddev	31.1	139.	27.0
%RSD	.46322	.33365	1.2422
#1	6681.0	41585.	2158.5
#2	6701.6	41584.	2154.7
#3	6742.1	41825.	2203.2

Sample Name: L1606077905S Acquired: 6/23/2016 19:39:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20228	5.2112	.20044	1.0337	.55827	.02485	9.6912	.02500
Stddev	.00166	.0132	.00213	.0032	.00578	.00010	.1284	.00041
%RSD	.82305	.25409	1.0603	.31079	1.0349	.40858	1.3248	1.6502
#1	.20387	5.2188	.19844	1.0331	.56463	.02478	9.8330	.02530
#2	.20055	5.1959	.20020	1.0371	.55682	.02480	9.6578	.02517
#3	.20241	5.2189	.20267	1.0308	.55335	.02497	9.5828	.02453
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09974	.24950	.25228	2.2679	26.280	.52442	6.0599	.27187
Stddev	.00013	.00041	.00146	.0210	.482	.00917	.1252	.00132
%RSD	.12865	.16628	.57688	.92528	1.8346	1.7485	2.0662	.48482
#1	.09988	.24904	.25061	2.2895	26.785	.53322	5.9629	.27277
#2	.09972	.24962	.25292	2.2477	26.232	.52510	6.2012	.27249
#3	.09962	.24984	.25330	2.2665	25.824	.51492	6.0156	.27036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51461	175.16	.24930	4.8996	.25282	.59906	.19939	3.1901
Stddev	.00031	1.57	.00247	.0075	.00056	.00386	.00642	.0017
%RSD	.06092	.89896	.99271	.15227	.22003	.64505	3.2200	.05219
#1	.51467	176.79	.25185	4.8930	.25302	.59517	.19207	3.1907
#2	.51427	175.03	.24915	4.9077	.25325	.60289	.20408	3.1882
#3	.51489	173.65	.24691	4.8982	.25219	.59912	.20203	3.1913
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606077905S Acquired: 6/23/2016 19:39:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50008	.54325	.51187	.24743	.50223	.51373	.44679
Stddev	.00071	.00377	.00743	.00180	.00201	.00029	.30975
%RSD	.14141	.69391	1.4524	.72816	.40098	.05697	69.327
#1	.49932	.54729	.51807	.24579	.50124	.51369	.24650
#2	.50021	.54262	.51392	.24714	.50091	.51403	.29031
#3	.50072	.53983	.50363	.24936	.50455	.51345	.80356
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6683.1	41005.	2151.4
Stddev	6.8	305.	41.0
%RSD	.10241	.74481	1.9080
#1	6678.0	40809.	2104.3
#2	6690.9	41357.	2179.3
#3	6680.4	40849.	2170.6

Sample Name: L1606077908SD Acquired: 6/23/2016 19:43:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20288	5.1811	.19942	1.0150	.55237	.02488	9.4634	.02476
Stddev	.00176	.0005	.00235	.0035	.00196	.00014	.0234	.00044
%RSD	.86650	.00922	1.1808	.34043	.35412	.56384	.24707	1.7705
#1	.20137	5.1816	.19728	1.0163	.55459	.02505	9.4654	.02526
#2	.20245	5.1810	.20195	1.0110	.55090	.02479	9.4391	.02451
#3	.20481	5.1807	.19904	1.0175	.55161	.02482	9.4857	.02450
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10026	.24869	.25215	2.1544	26.013	.51658	6.1704	.26979
Stddev	.00032	.00041	.00151	.0430	.062	.00117	.0894	.00386
%RSD	.31797	.16528	.59908	1.9976	.23856	.22630	1.4482	1.4295
#1	.10042	.24885	.25049	2.2010	26.026	.51657	6.2344	.26873
#2	.10048	.24900	.25345	2.1162	25.946	.51776	6.2085	.27407
#3	.09990	.24822	.25251	2.1458	26.068	.51542	6.0683	.26657
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51646	167.22	.25037	4.9060	.24566	.60333	.19310	3.1314
Stddev	.00260	.31	.00182	.0167	.00482	.00537	.00965	.0091
%RSD	.50438	.18479	.72893	.34087	1.9619	.89072	4.9996	.29092
#1	.51697	167.57	.24950	4.9167	.24626	.60535	.20424	3.1326
#2	.51877	167.00	.25246	4.9146	.25015	.60741	.18713	3.1398
#3	.51363	167.09	.24914	4.8868	.24056	.59724	.18793	3.1217
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606077908SD Acquired: 6/23/2016 19:43:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49955	.54302	.51966	.24675	.50221	.51185	.71645
Stddev	.00029	.00244	.00212	.00186	.00227	.00193	.20134
%RSD	.05847	.45013	.40726	.75321	.45223	.37767	28.103
#1	.49934	.54570	.52008	.24714	.50300	.51112	.72584
#2	.49989	.54245	.52153	.24839	.49965	.51404	.51058
#3	.49944	.54091	.51736	.24473	.50398	.51039	.91294
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6680.0	41465.	2146.4
Stddev	27.3	183.	22.0
%RSD	.40866	.44237	1.0253
#1	6690.0	41465.	2121.9
#2	6649.1	41648.	2153.0
#3	6700.8	41281.	2164.4

Sample Name: L1606077911 Acquired: 6/23/2016 19:47:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00061**	**.17290**	**.00164**	**.05825**	**.04624**	**.00003**	**4.2798**
Stddev	.00118	.00586	.00116	.00187	.00146	.00004	.0673
%RSD	194.32	3.3883	71.027	3.2055	3.1581	127.98	1.5735
#1	-.00071	.17964	.00069	.05609	.04622	.00002	4.3575
#2	.00096	.16999	.00128	.05931	.04771	.00007	4.2378
#3	.00156	.16906	.00294	.05934	.04479	-.00001	4.2442
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00024**	**.00029**	**-.00045**	**.00174**	**.09875**	**.44424**	**.00053**
Stddev	.00014	.00027	.00192	.00071	.01625	.12676	.00083
%RSD	58.518	92.659	422.78	40.567	16.451	28.534	157.87
#1	.00014	.00059	.00168	.00219	.10612	.58035	.00098
#2	.00017	.00020	-.00202	.00093	.11000	.42278	-.00043
#3	.00040	.00008	-.00103	.00212	.08013	.32958	.00104
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.72600**	**.00518**	**.00043**	**142.06**	**.00228**	**.00480**	**-.00087**
Stddev	.03723	.00162	.00026	.88	.00064	.00070	.00109
%RSD	5.1278	31.190	61.921	.61608	28.046	14.500	124.44
#1	.71844	.00688	.00028	143.07	.00166	.00434	.00015
#2	.76644	.00366	.00073	141.60	.00293	.00560	-.00076
#3	.69314	.00502	.00026	141.51	.00224	.00446	-.00201
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: L1606077911 Acquired: 6/23/2016 19:47:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00404**	**-.00935**	**.37687**	**.00027**	**.01793**	**.00337**	**-.00570**
Stddev	.00215	.00588	.00275	.00092	.00024	.00451	.00216
%RSD	53.318	62.841	.73023	343.85	1.3281	134.02	37.974
#1	.00159	-.01397	.37384	-.00077	.01800	-.00085	-.00756
#2	.00487	-.00274	.37757	.00097	.01812	.00283	-.00332
#3	.00566	-.01135	.37921	.00060	.01766	.00813	-.00622
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00079**	**.00664**	F **-.09970**
Stddev	.00084	.00026	.16681
%RSD	107.32	3.9795	167.31
#1	-.00163	.00690	-.09910
#2	.00005	.00665	.06681
#3	-.00078	.00638	-.26680
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6697.8**	**41398.**	**2131.1**
Stddev	24.2	144.	21.0
%RSD	.36115	.34894	.98383
#1	6693.3	41435.	2107.1
#2	6723.9	41521.	2140.2
#3	6676.1	41239.	2145.9

Sample Name: L1606077911PS Acquired: 6/23/2016 19:50:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573973-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20166	5.1361	.19947	1.0226	.54909	.02495	8.9751	.02473
Stddev	.00114	.0195	.00083	.0025	.00185	.00016	.0498	.00035
%RSD	.56716	.37888	.41683	.24775	.33639	.63847	.55502	1.4285
#1	.20230	5.1582	.20042	1.0247	.55108	.02513	8.9915	.02440
#2	.20234	5.1215	.19889	1.0198	.54877	.02481	9.0146	.02510
#3	.20034	5.1285	.19910	1.0233	.54742	.02492	8.9192	.02469
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10039	.24897	.25158	2.1225	25.565	.51154	5.6600	.25879
Stddev	.00018	.00163	.00180	.0342	.089	.00200	.0479	.00217
%RSD	.17967	.65380	.71732	1.6127	.34620	.39088	.84555	.83680
#1	.10051	.24824	.25076	2.1608	25.630	.51077	5.6851	.25647
#2	.10018	.24783	.25365	2.0948	25.465	.51005	5.6902	.26076
#3	.10047	.25083	.25032	2.1119	25.602	.51382	5.6048	.25913
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51470	153.34	.25033	4.8965	.24793	.59559	.19243	2.8850
Stddev	.00123	.64	.00055	.0032	.00147	.00310	.01290	.0015
%RSD	.23864	.41616	.22124	.06430	.59145	.52110	6.7059	.05201
#1	.51611	153.87	.25059	4.8983	.24682	.59605	.19308	2.8838
#2	.51410	153.52	.25070	4.8929	.24959	.59844	.17922	2.8846
#3	.51388	152.63	.24969	4.8984	.24737	.59228	.20500	2.8867
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606077911PS Acquired: 6/23/2016 19:50:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573973-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50192	.53133	.51057	.24460	.50225	.50838	.44531
Stddev	.00111	.00315	.01429	.00114	.00111	.00054	.18642
%RSD	.22110	.59328	2.7983	.46703	.22030	.10637	41.862
#1	.50147	.53348	.52543	.24579	.50343	.50865	.55546
#2	.50112	.53279	.49693	.24352	.50209	.50873	.55041
#3	.50319	.52771	.50934	.24448	.50123	.50775	.23008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6651.9	41058.	2146.9
Stddev	34.9	202.	7.0
%RSD	.52428	.49305	.32439
#1	6618.2	41118.	2148.4
#2	6649.8	40833.	2139.3
#3	6687.9	41224.	2153.0

Sample Name: L1606077911SDL Acquired: 6/23/2016 19:54:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573973-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00006**	**.03191**	**.00319**	**.01017**	**.00812**	**.00002**	**.79168**
Stddev	.00337	.01356	.00266	.00277	.00094	.00006	.04789
%RSD	5775.7	42.477	83.503	27.198	11.538	281.43	6.0487
#1	.00377	.04752	.00625	.01189	.00906	.00005	.74079
#2	-.00077	.02310	.00144	.01163	.00718	-.00005	.83586
#3	-.00282	.02511	.00188	.00698	.00812	.00006	.79839
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**.00020**	**-.00102**	**.00161**	**.02774**	**.12243**	**.00086**
Stddev	.00008	.00022	.00131	.00175	.00237	.07914	.00524
%RSD	112.15	111.56	128.35	108.58	8.5304	64.641	611.10
#1	.00015	-.00005	-.00253	-.00029	.02829	.21145	-.00473
#2	-.00001	.00027	-.00015	.00315	.02514	.09584	.00164
#3	.00009	.00038	-.00039	.00199	.02978	.06001	.00566
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05770**	**.00304**	**.00047**	**25.965**	**-.00008**	**.01273**	**.00119**
Stddev	.09190	.00232	.00015	.345	.00131	.01585	.00647
%RSD	159.28	76.323	31.599	1.3295	1579.4	124.52	542.72
#1	.15485	.00380	.00035	25.792	-.00140	.01160	.00004
#2	.04609	.00044	.00064	25.741	-.00007	.02911	-.00462
#3	-.02785	.00489	.00043	26.363	.00122	-.00253	.00817
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: L1606077911SDL Acquired: 6/23/2016 19:54:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573973-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00030**	**-.00465**	**.06796**	**.00020**	**.00397**	**-.00466**	**-.00173**
Stddev	.00330	.00198	.00111	.00072	.00038	.00590	.00388
%RSD	1090.6	42.606	1.6393	364.61	9.6242	126.80	224.33
#1	.00173	-.00263	.06819	.00039	.00374	-.01146	-.00420
#2	.00148	-.00660	.06894	-.00060	.00441	-.00094	-.00374
#3	-.00411	-.00472	.06675	.00080	.00377	-.00157	.00274
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00000**	**.00179**	F **-.14942**
Stddev	.00024	.00022	.27065
%RSD	17591.	12.069	181.14
#1	-.00010	.00175	-.05629
#2	-.00017	.00203	-.45434
#3	.00028	.00160	.06237
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6956.7**	**42908.**	**2182.4**
Stddev	24.4	138.	8.1
%RSD	.35082	.32162	.37002
#1	6945.3	43022.	2184.2
#2	6984.7	42948.	2173.6
#3	6940.1	42755.	2189.5

Sample Name: L1606077911SDL Acquired: 6/23/2016 19:58:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573973-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00091**	**.00551**	**-.00163**	**.00298**	**.00016**	**-.00004**	**.14622**	**-.00004**
Stddev	.00035	.00230	.00441	.00295	.00019	.00009	.00718	.00022
%RSD	37.880	41.654	270.73	98.999	121.74	255.43	4.9086	633.58
#1	-.00082	.00812	-.00328	.00338	.00020	.00005	.14190	-.00029
#2	-.00130	.00463	.00337	-.00015	.00033	-.00003	.14227	.00014
#3	-.00062	.00379	-.00498	.00571	-.00005	-.00013	.15451	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**-.00012**	**.00129**	**.01297**	**.07882**	**-.00139**	**.02445**	**.00297**
Stddev	.00029	.00066	.00139	.04085	.05847	.00356	.09577	.00349
%RSD	220.77	550.63	108.07	315.10	74.183	257.22	391.63	117.45
#1	-.00041	-.00064	.00208	-.02649	.01827	-.00070	-.02314	-.00101
#2	.00018	-.00034	.00210	.01030	.08323	.00179	-.03820	.00442
#3	-.00016	.00062	-.00032	.05509	.13495	-.00524	.13470	.00550
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**4.6601**	**.00016**	**.01099**	**-.00374**	**-.00006**	**-.00666**	**-.00121**
Stddev	.00064	.0487	.00101	.00932	.00214	.00271	.00377	.00406
%RSD	1145.3	1.0448	617.86	84.814	57.083	4166.1	56.580	334.61
#1	-.00077	4.6317	.00117	.02130	-.00354	.00054	-.01063	.00307
#2	.00017	4.7163	-.00086	.00316	-.00172	-.00302	-.00622	-.00502
#3	.00043	4.6322	.00019	.00850	-.00597	.00229	-.00313	-.00169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606077911SDL Acquired: 6/23/2016 19:58:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573973-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**.00016**	**.00324**	**-.00190**	**.00015**	**.00102**	**.45592**
Stddev	.00090	.00024	.00774	.00281	.00036	.00011	.15548
%RSD	242.24	152.87	238.78	147.46	242.78	10.924	34.103
#1	-.00010	-.00008	-.00569	-.00173	-.00002	.00104	.63162
#2	.00036	.00041	.00759	.00081	.00057	.00089	.33613
#3	-.00138	.00014	.00782	-.00479	-.00009	.00111	.40000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7002.1**	**43421.**	**2180.6**
Stddev	12.5	150.	18.1
%RSD	.17813	.34564	.82992
#1	7007.5	43338.	2178.3
#2	6987.9	43594.	2163.7
#3	7011.0	43331.	2199.7

Sample Name: CCV Acquired: 6/23/2016 20:02:38 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.38352	9.5676	.38149	.48360	.95868	.04827	9.5943
Stddev	.00322	.0401	.00429	.00105	.00492	.00022	.0294
%RSD	.83982	.41946	1.1243	.21691	.51367	.46090	.30624
#1	.38657	9.6123	.37703	.48417	.95340	.04832	9.5754
#2	.38382	9.5347	.38559	.48239	.95948	.04803	9.6282
#3	.38015	9.5558	.38184	.48424	.96315	.04846	9.5794
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04762	.19248	.48389	.48328	3.8584	48.266	.97868
Stddev	.00015	.00028	.00059	.00212	.0428	.089	.00720
%RSD	.31413	.14541	.12117	.43944	1.1080	.18417	.73546
#1	.04779	.19230	.48370	.48346	3.8177	48.266	.97363
#2	.04758	.19280	.48342	.48107	3.8546	48.177	.97549
#3	.04750	.19234	.48455	.48530	3.9029	48.355	.98692
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.6513	.48380	.96301	47.927	.48135	9.5102	.48331
Stddev	.2636	.00656	.00332	.072	.00114	.0199	.00231
%RSD	2.7313	1.3558	.34426	.15061	.23638	.20964	.47887
#1	9.3550	.47806	.96658	47.845	.48232	9.5216	.48282
#2	9.8597	.48238	.96243	47.981	.48165	9.4872	.48129
#3	9.7393	.49095	.96003	47.956	.48010	9.5218	.48584
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: CCV Acquired: 6/23/2016 20:02:38 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1479**	**.38358**	**4.8260**	**.95697**	**.96108**	**.96615**	**.48705**
Stddev	.0066	.01108	.0032	.00258	.00341	.00961	.00179
%RSD	.57598	2.8894	.06586	.26977	.35526	.99472	.36795
#1	1.1549	.37665	4.8269	.95791	.95718	.95798	.48502
#2	1.1417	.39636	4.8286	.95405	.96254	.96374	.48839
#3	1.1472	.37773	4.8224	.95895	.96352	.97674	.48775
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.96626**	**.96309**	F **.37739**
Stddev	.00265	.00068	.17080
%RSD	.27390	.07033	45.257
#1	.96486	.96244	.28567
#2	.96461	.96302	.27206
#3	.96931	.96379	.57445
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6922.0**	**42512.**	**2201.6**
Stddev	21.1	353.	11.3
%RSD	.30486	.83050	.51529
#1	6934.6	42346.	2213.8
#2	6933.8	42273.	2199.8
#3	6897.7	42918.	2191.3

Sample Name: CCB Acquired: 6/23/2016 20:06:16 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	-.00041	.00090	.00065	-.00017	-.00009	.03364	-.00010
Stddev	.00250	.00080	.00202	.00197	.00087	.00003	.02458	.00030
%RSD	1325.3	193.76	223.31	305.36	513.01	38.963	73.061	282.77
#1	-.00159	-.00083	-.00002	.00192	-.00117	-.00006	.00559	-.00032
#2	.00304	.00051	-.00049	.00164	.00038	-.00008	.04390	.00023
#3	-.00089	-.00092	.00322	-.00163	.00029	-.00012	.05142	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	.00089	.00107	.02622	.14403	.00140	.16533	.00084
Stddev	.00031	.00098	.00055	.02571	.09143	.00408	.10839	.00123
%RSD	276.41	109.41	51.427	98.056	63.481	291.75	65.560	147.25
#1	.00047	.00000	.00094	-.00236	.13572	.00290	.28604	.00006
#2	-.00006	.00194	.00060	.03356	.05704	.00451	.07632	.00226
#3	-.00008	.00074	.00168	.04747	.23934	-.00322	.13363	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00296	.11509	-.00013	.00085	.00094	.00629	-.00145	.00187
Stddev	.00021	.03731	.00042	.00219	.00279	.00604	.00094	.00124
%RSD	7.1713	32.413	339.72	257.22	298.65	96.053	64.718	66.434
#1	.00285	.13809	-.00049	.00212	.00095	.00557	-.00045	.00293
#2	.00321	.07205	.00034	.00212	.00372	.01265	-.00231	.00218
#3	.00283	.13514	-.00022	-.00168	-.00186	.00064	-.00160	.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB Acquired: 6/23/2016 20:06:16 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**-.00022**	**-.00145**	**-.00171**	**-.00068**	**.00008**	**.01839**
Stddev	.00140	.00022	.01047	.00376	.00047	.00019	.18176
%RSD	1871.4	101.49	723.55	219.98	69.299	243.52	988.14
#1	-.00163	-.00007	.01060	.00231	-.00016	.00013	.02617
#2	.00109	-.00047	-.00838	-.00514	-.00082	.00023	.19614
#3	.00032	-.00011	-.00656	-.00229	-.00108	-.00013	-.16713
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6970.0**	**43262.**	**2192.2**
Stddev	74.7	174.	9.5
%RSD	1.0710	.40250	.43124
#1	7003.8	43124.	2200.3
#2	7021.8	43458.	2194.3
#3	6884.5	43203.	2181.8

Sample Name: L1606077914 Acquired: 6/23/2016 20:10:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00149	.10628	.00096	.02840	.05288	-.00005	7.4368	.00027
Stddev	.00097	.00356	.00214	.00184	.00085	.00008	.1298	.00005
%RSD	64.971	3.3536	223.67	6.4703	1.6095	158.12	1.7453	17.347
#1	.00054	.10724	-.00146	.02628	.05351	-.00006	7.5825	.00032
#2	.00248	.10234	.00174	.02939	.05191	-.00012	7.3941	.00025
#3	.00145	.10927	.00259	.02952	.05322	.00003	7.3337	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00039	.00052	.00185	.08486	.70361	-.00341	1.3249	.01531
Stddev	.00024	.00198	.00037	.02791	.04945	.00257	.0384	.00314
%RSD	62.961	378.91	20.059	32.893	7.0277	75.397	2.8943	20.533
#1	.00050	.00276	.00177	.06380	.69565	-.00073	1.3540	.01542
#2	.00055	-.00104	.00226	.11652	.75656	-.00364	1.3392	.01211
#3	.00011	-.00015	.00153	.07425	.65863	-.00587	1.2814	.01840
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	136.97	.00087	.00420	.00004	.00045	-.00208	.33477
Stddev	.00023	.63	.00055	.00550	.00261	.00047	.00600	.00123
%RSD	39.437	.45874	63.261	131.00	7265.2	105.14	288.25	.36659
#1	.00032	137.68	.00147	.00987	-.00284	.00003	.00096	.33486
#2	.00071	136.77	.00073	.00385	.00070	.00095	.00179	.33594
#3	.00074	136.47	.00040	-.00112	.00225	.00036	-.00900	.33350
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606077914 Acquired: 6/23/2016 20:10:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00035**	**.03351**	**-.00005**	**-.00700**	**-.00055**	**.00972**	**.13105**
Stddev	.00062	.00057	.01222	.00229	.00057	.00011	.18984
%RSD	177.30	1.6905	24453.	32.742	102.06	1.1714	144.86
#1	-.00033	.03393	.00766	-.00548	.00007	.00981	.20911
#2	.00048	.03373	-.01414	-.00589	-.00071	.00959	.26943
#3	.00090	.03286	.00633	-.00964	-.00102	.00975	-.08538
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6756.2**	**41698.**	**2168.9**
Stddev	15.0	223.	10.5
%RSD	.22178	.53392	.48265
#1	6768.0	41441.	2173.7
#2	6739.3	41816.	2176.1
#3	6761.2	41837.	2156.9

Sample Name: L1606080801 Acquired: 6/23/2016 20:14:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.00981	.00166	.02700	.00536	-.00004	53.221	.00023
Stddev	.00132	.00387	.00350	.00355	.00074	.00005	.458	.00031
%RSD	223.52	39.428	210.37	13.162	13.862	133.64	.86119	137.26
#1	-.00079	.01246	.00412	.02618	.00458	.00002	53.750	-.00010
#2	.00184	.00537	-.00234	.03090	.00606	-.00008	52.944	.00025
#3	.00072	.01160	.00322	.02393	.00543	-.00006	52.968	.00052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	-.00019	.00217	.26849	1.4108	-.00252	15.011	.12291
Stddev	.00031	.00023	.00068	.03341	.0586	.00219	.184	.00135
%RSD	424.72	122.66	31.151	12.444	4.1556	86.964	1.2259	1.0966
#1	-.00007	-.00003	.00235	.24539	1.3436	-.00503	15.179	.12150
#2	-.00038	-.00008	.00142	.25327	1.4510	-.00152	15.040	.12419
#3	.00023	-.00045	.00273	.30679	1.4380	-.00101	14.814	.12302
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	15.947	.00061	.00603	.00298	.00330	-.00384	5.1133
Stddev	.00030	.171	.00079	.00285	.00319	.00406	.01618	.0046
%RSD	57.821	1.0703	128.91	47.356	107.05	123.06	420.92	.09015
#1	.00017	16.102	-.00004	.00833	.00524	-.00067	-.02178	5.1184
#2	.00071	15.975	.00148	.00284	.00438	.00312	.00059	5.1096
#3	.00066	15.764	.00039	.00691	-.00067	.00744	.00965	5.1119
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606080801 Acquired: 6/23/2016 20:14:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00027**	**.17284**	**-.01553**	**-.00411**	**-.00044**	**.00368**	**.21621**
Stddev	.00054	.00134	.00554	.00196	.00032	.00035	.15335
%RSD	203.08	.77573	35.693	47.631	72.739	9.4159	70.926
#1	-.00035	.17423	-.01858	-.00259	-.00007	.00340	.36753
#2	.00031	.17155	-.00913	-.00632	-.00067	.00406	.22018
#3	-.00077	.17274	-.01887	-.00342	-.00059	.00356	.06091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6663.3**	**41709.**	**2149.6**
Stddev	10.8	204.	16.5
%RSD	.16157	.48945	.76736
#1	6671.1	41908.	2131.3
#2	6667.7	41719.	2154.5
#3	6651.0	41500.	2163.2

Sample Name: L1606080803S Acquired: 6/23/2016 20:18:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20531	4.9958	.20276	1.0092	.51435	.02483	57.046	.02496
Stddev	.00292	.0043	.00269	.0024	.00665	.00006	.768	.00030
%RSD	1.4202	.08567	1.3273	.24307	1.2934	.23022	1.3467	1.1942
#1	.20859	4.9909	.20264	1.0074	.52180	.02478	57.925	.02528
#2	.20436	4.9977	.20014	1.0120	.50900	.02489	56.503	.02470
#3	.20300	4.9987	.20552	1.0083	.51225	.02482	56.709	.02490
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09967	.25096	.25022	2.3265	26.678	.52152	20.005	.37815
Stddev	.00055	.00036	.00033	.0587	.264	.00877	.198	.00476
%RSD	.55302	.14274	.13074	2.5243	.98845	1.6818	.98772	1.2593
#1	.10016	.25128	.25042	2.3809	26.980	.53116	20.035	.38218
#2	.09976	.25104	.24984	2.2643	26.497	.51402	19.794	.37290
#3	.09907	.25057	.25040	2.3343	26.556	.51939	20.186	.37938
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52098	41.169	.25038	4.9597	.24975	.60811	.19088	7.6345
Stddev	.00121	.394	.00120	.0047	.00531	.00285	.00510	.0102
%RSD	.23295	.95680	.47973	.09548	2.1271	.46887	2.6703	.13352
#1	.52204	41.621	.25177	4.9644	.24365	.60722	.18517	7.6439
#2	.51965	40.900	.24967	4.9597	.25336	.61129	.19249	7.6237
#3	.52125	40.985	.24970	4.9549	.25223	.60580	.19497	7.6359
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606080803S Acquired: 6/23/2016 20:18:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50663	.69353	.50821	.24979	.50502	.50112	.56844
Stddev	.00206	.00495	.00984	.00132	.00161	.00059	.24983
%RSD	.40682	.71328	1.9372	.52651	.31873	.11783	43.949
#1	.50895	.69918	.50790	.24829	.50330	.50110	.76022
#2	.50591	.69001	.49852	.25075	.50528	.50054	.28593
#3	.50502	.69139	.51821	.25034	.50649	.50172	.65917
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6625.1	41184.	2141.2
Stddev	43.1	220.	34.4
%RSD	.65093	.53421	1.6047
#1	6575.6	40948.	2101.5
#2	6654.8	41222.	2162.6
#3	6644.9	41383.	2159.3

Sample Name: L1606080804SD Acquired: 6/23/2016 20:21:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20417	5.0253	.20216	1.0213	.52389	.02512	58.507	.02515
Stddev	.00061	.0013	.00476	.0019	.00456	.00016	.379	.00007
%RSD	.29699	.02608	2.3559	.18158	.87021	.62066	.64724	.26301
#1	.20348	5.0268	.19939	1.0192	.52806	.02496	58.865	.02518
#2	.20461	5.0245	.20766	1.0224	.52461	.02527	58.546	.02507
#3	.20443	5.0246	.19943	1.0224	.51902	.02514	58.111	.02519
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10013	.25277	.25192	2.3449	27.111	.52740	20.302	.37943
Stddev	.00006	.00076	.00111	.0178	.231	.00552	.216	.00380
%RSD	.06407	.29922	.44124	.75833	.85294	1.0468	1.0620	1.0007
#1	.10006	.25267	.25295	2.3582	27.342	.53203	20.543	.38169
#2	.10018	.25357	.25074	2.3247	27.111	.52888	20.233	.38156
#3	.10015	.25207	.25208	2.3517	26.880	.52129	20.129	.37505
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52376	41.862	.25037	4.9891	.25282	.61284	.19379	7.7402
Stddev	.00119	.339	.00131	.0038	.00458	.00414	.01024	.0102
%RSD	.22762	.81017	.52333	.07550	1.8112	.67508	5.2847	.13142
#1	.52513	42.192	.25099	4.9856	.25772	.61266	.19670	7.7511
#2	.52310	41.879	.25125	4.9931	.24866	.60879	.20226	7.7310
#3	.52304	41.514	.24886	4.9887	.25208	.61705	.18241	7.7384
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606080804SD Acquired: 6/23/2016 20:21:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50881	.70095	.50511	.25346	.50822	.50328	.36568
Stddev	.00118	.00336	.00758	.00055	.00107	.00052	.09051
%RSD	.23262	.47943	1.5010	.21780	.21111	.10273	24.750
#1	.50993	.70351	.51202	.25388	.50727	.50277	.45775
#2	.50891	.70221	.50631	.25366	.50938	.50380	.36245
#3	.50757	.69715	.49700	.25283	.50801	.50326	.27683
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6648.3	41256.	2167.1
Stddev	37.5	212.	35.6
%RSD	.56386	.51441	1.6437
#1	6687.1	41426.	2128.5
#2	6645.3	41018.	2174.1
#3	6612.3	41324.	2198.7

Sample Name: L1606082202 Acquired: 6/23/2016 20:25:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00152	.02026	-.00003	.10248	.15200	.00003	6.5973	.00005
Stddev	.00174	.00884	.00264	.00097	.00250	.00003	.1001	.00016
%RSD	114.35	43.656	8042.8	.94662	1.6469	112.93	1.5178	320.68
#1	-.00041	.02197	.00037	.10136	.15374	.00007	6.6625	.00019
#2	.00200	.02813	-.00285	.10296	.15311	.00001	6.6474	.00008
#3	.00298	.01069	.00238	.10312	.14913	.00001	6.4820	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	-.00052	.00142	2.2172	1.7251	.02347	4.6721	.08008
Stddev	.00019	.00160	.00145	.0203	.1370	.00447	.1537	.00373
%RSD	39.028	307.12	102.30	.91315	7.9439	19.041	3.2904	4.6534
#1	.00065	-.00214	.00215	2.1938	1.8809	.02224	4.7545	.08412
#2	.00052	.00105	-.00025	2.2287	1.6712	.01975	4.7670	.07933
#3	.00028	-.00047	.00236	2.2290	1.6232	.02843	4.4947	.07679
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00084	87.069	.00079	.09610	.00066	.00367	-.00338	12.803
Stddev	.00076	.850	.00109	.00417	.00060	.00400	.00476	.010
%RSD	90.058	.97655	138.31	4.3415	91.329	109.21	141.00	.07526
#1	-.00000	87.844	-.00046	.09129	-.00003	.00288	-.00767	12.795
#2	.00146	87.204	.00156	.09839	.00108	.00011	.00175	12.801
#3	.00107	86.159	.00126	.09864	.00092	.00800	-.00421	12.814
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606082202 Acquired: 6/23/2016 20:25:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00121**	**.22077**	**-.00522**	**-.00363**	**.00085**	**.00236**	**.22639**
Stddev	.00050	.00200	.00719	.00112	.00069	.00021	.20548
%RSD	41.542	.90585	137.85	30.833	80.735	8.9617	90.766
#1	-.00156	.22257	-.00824	-.00440	.00009	.00222	.33820
#2	-.00063	.22113	-.01041	-.00235	.00143	.00261	.35171
#3	-.00143	.21862	.00299	-.00415	.00104	.00226	-.01076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6664.8**	**41248.**	**2126.9**
Stddev	26.9	323.	26.2
%RSD	.40377	.78403	1.2328
#1	6695.8	40876.	2101.3
#2	6647.4	41460.	2125.7
#3	6651.2	41408.	2153.7

Sample Name: L1606082203 Acquired: 6/23/2016 20:29:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00153	.05110	.00192	.03595	.79888	.00004	32.443	.00019
Stddev	.00257	.00394	.00088	.00096	.00490	.00006	.223	.00012
%RSD	168.19	7.7097	45.736	2.6764	.61347	156.15	.68852	63.266
#1	.00450	.04867	.00097	.03585	.80394	.00006	32.700	.00006
#2	.00008	.05565	.00210	.03696	.79416	-.00003	32.293	.00030
#3	.00001	.04899	.00269	.03505	.79852	.00008	32.336	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00307	.00707	.00126	5.3792	51.825	.10776	15.276	.18167
Stddev	.00032	.00094	.00080	.0419	.270	.00194	.142	.00297
%RSD	10.345	13.245	64.108	.77858	.52117	1.8035	.92803	1.6345
#1	.00299	.00617	.00218	5.4159	52.078	.10909	15.426	.17840
#2	.00280	.00804	.00087	5.3881	51.541	.10866	15.144	.18240
#3	.00342	.00701	.00071	5.3336	51.857	.10553	15.259	.18420
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	93.634	.00315	-.00252	.00643	.00340	-.00637	11.872
Stddev	.00025	.401	.00140	.00666	.00138	.00643	.00382	.014
%RSD	298.72	.42875	44.327	264.34	21.428	189.23	59.894	.11647
#1	-.00020	94.085	.00392	-.00701	.00774	.00248	-.00439	11.857
#2	.00021	93.316	.00154	.00513	.00656	.01023	-.00396	11.885
#3	.00024	93.502	.00400	-.00568	.00499	-.00252	-.01077	11.874
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606082203 Acquired: 6/23/2016 20:29:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.82666**	**-.00447**	**-.00598**	**-.00056**	**.00596**	**.27009**
Stddev	.00125	.01637	.00340	.00085	.00033	.00013	.03306
%RSD	751.65	1.9807	76.005	14.225	59.976	2.2544	12.242
#1	.00127	.84555	-.00552	-.00599	-.00043	.00586	.28137
#2	-.00101	.81782	-.00722	-.00682	-.00030	.00611	.29603
#3	-.00076	.81660	-.00067	-.00512	-.00093	.00591	.23286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6576.7**	**40904.**	**2132.1**
Stddev	24.6	214.	16.8
%RSD	.37432	.52260	.78563
#1	6552.2	40790.	2112.8
#2	6576.5	40771.	2141.0
#3	6601.4	41150.	2142.6

Sample Name: L1606082302 Acquired: 6/23/2016 20:33:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00184	.02080	.00098	.02231	7.8783	.00017	255.75
Stddev	.00203	.01187	.00435	.00335	.0432	.00007	1.49
%RSD	110.13	57.087	445.14	15.024	.54831	41.236	.58087
#1	-.00150	.00710	.00584	.02555	7.9220	.00012	256.99
#2	-.00401	.02815	-.00256	.01885	7.8356	.00014	254.11
#3	-.00000	.02715	-.00034	.02253	7.8772	.00025	256.16
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.05342	.00242	.00486	4.7469	3.4904	.13833
Stddev	.00052	.00070	.00059	.00069	.0046	.0030	.00615
%RSD	55.632	1.3175	24.430	14.175	.09644	.08679	4.4491
#1	.00040	.05380	.00272	.00415	4.7522	3.4870	.14015
#2	.00098	.05261	.00174	.00553	4.7443	3.4928	.13147
#3	.00144	.05385	.00281	.00490	4.7442	3.4915	.14336
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	198.54	.84118	-.00019	F 709.80	.01731	.04470	.00329
Stddev	1.62	.00623	.00016	4.09	.00125	.01000	.00583
%RSD	.81609	.74094	85.381	.57589	7.2164	22.367	177.43
#1	200.41	.84837	-.00014	712.90	.01830	.03650	.00825
#2	197.48	.83796	-.00006	705.16	.01772	.04176	.00474
#3	197.74	.83722	-.00036	711.32	.01590	.05584	-.00313
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Sample Name: L1606082302 Acquired: 6/23/2016 20:33:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00699**	**-.00211**	**18.432**	**-.00053**	**5.9869**	F **-.04100**	**-.00343**
Stddev	.00326	.00362	.021	.00131	.0347	.00868	.00076
%RSD	46.731	171.57	.11640	247.46	.57940	21.163	22.234
#1	.00892	.00180	18.414	-.00131	6.0214	-.04734	-.00288
#2	.00882	-.00536	18.426	-.00125	5.9520	-.03111	-.00311
#3	.00322	-.00277	18.456	.00098	5.9872	-.04457	-.00430
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00262**	**.00921**	F **-.07344**
Stddev	.00140	.00009	.18020
%RSD	53.460	.99471	245.36
#1	-.00401	.00912	.10768
#2	-.00261	.00930	-.07530
#3	-.00122	.00920	-.25270
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6211.9**	**37943.**	**2065.9**
Stddev	10.7	171.	36.3
%RSD	.17281	.45038	1.7553
#1	6203.2	38131.	2024.8
#2	6223.9	37902.	2079.8
#3	6208.6	37796.	2093.2

Sample Name: L1606082303 Acquired: 6/23/2016 20:37:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	.09100	.00296	.01304	4.1939	-.00007	203.18
Stddev	.00140	.00531	.00327	.00376	.0297	.00006	1.67
%RSD	388.51	5.8358	110.60	28.801	.70801	88.134	.82056
#1	-.00165	.09683	.00075	.00892	4.2189	-.00004	204.69
#2	.00112	.08975	.00671	.01627	4.1611	-.00014	201.39
#3	-.00055	.08643	.00141	.01393	4.2018	-.00002	203.46
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00062	.00605	.00148	.00325	.50161	1.7415	.06042
Stddev	.00049	.00063	.00113	.00080	.03478	.1908	.00296
%RSD	79.462	10.371	76.602	24.650	6.9332	10.958	4.9058
#1	.00115	.00647	.00038	.00343	.46408	1.6330	.05783
#2	.00054	.00533	.00142	.00237	.53275	1.6297	.06365
#3	.00017	.00634	.00265	.00394	.50800	1.9619	.05979
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	118.15	2.3989	.00023	F 640.12	.00507	.01016	.00289
Stddev	.81	.0242	.00018	10.00	.00123	.00431	.00149
%RSD	.68254	1.0089	76.880	1.5615	24.328	42.407	51.612
#1	118.94	2.4148	.00038	650.69	.00487	.00561	.00152
#2	117.33	2.3711	.00027	630.82	.00639	.01069	.00267
#3	118.17	2.4110	.00003	638.86	.00395	.01418	.00448
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Sample Name: L1606082303 Acquired: 6/23/2016 20:37:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00012**	**-.00944**	**13.225**	**-.00084**	**3.8421**	F **-.03122**	**-.00075**
Stddev	.00335	.00541	.023	.00156	.0312	.00884	.00263
%RSD	2724.2	57.378	.17522	185.97	.81266	28.325	351.62
#1	.00362	-.00548	13.247	.00011	3.8716	-.02289	.00226
#2	-.00306	-.00723	13.225	-.00264	3.8094	-.04050	-.00263
#3	-.00019	-.01560	13.201	.00001	3.8453	-.03028	-.00187
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00215**	**.00570**	**.39111**
Stddev	.00161	.00012	.18787
%RSD	74.559	2.0758	48.034
#1	-.00169	.00568	.30759
#2	-.00394	.00583	.60626
#3	-.00083	.00559	.25948
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6278.4**	**38565.**	**2078.5**
Stddev	22.0	175.	41.0
%RSD	.35101	.45432	1.9726
#1	6265.3	38533.	2033.9
#2	6266.0	38754.	2114.5
#3	6303.8	38408.	2087.2

Sample Name: L1606082304 Acquired: 6/23/2016 20:41:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**.00982**	**.00065**	**.03078**	**1.3316**	**-.00001**	**46.431**
Stddev	.00324	.01473	.00404	.00488	.0087	.00012	.330
%RSD	781.99	150.01	619.18	15.855	.65651	2204.3	.71076
#1	.00226	.02597	.00499	.03065	1.3415	-.00014	46.804
#2	.00231	.00636	-.00301	.03572	1.3252	.00009	46.176
#3	-.00333	-.00287	-.00002	.02596	1.3280	.00003	46.315
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00066**	**-.00016**	F **-.00347**	**.00119**	**84.345**	**3.2107**	**.04191**
Stddev	.00021	.00040	.00039	.00149	.339	.1063	.00251
%RSD	31.873	248.01	11.380	125.50	.40248	3.3107	5.9779
#1	.00060	-.00031	-.00306	.00290	84.661	3.3331	.04445
#2	.00048	-.00046	-.00385	.00044	84.387	3.1411	.03944
#3	.00089	.00029	-.00349	.00022	83.986	3.1580	.04185
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-.00300				

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**29.094**	**1.4706**	**-.00067**	**141.52**	**.00104**	**.07644**	**.00312**
Stddev	.106	.0113	.00040	1.02	.00036	.00458	.00219
%RSD	.36352	.76758	59.671	.72353	34.222	5.9922	69.972
#1	29.216	1.4831	-.00079	142.69	.00136	.08096	.00145
#2	29.030	1.4675	-.00100	141.08	.00110	.07654	.00233
#3	29.037	1.4612	-.00023	140.78	.00066	.07180	.00560
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: L1606082304 Acquired: 6/23/2016 20:41:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**-.00444**	**16.946**	**-.00016**	**1.0594**	**.01618**	**-.00009**
Stddev	.00138	.00283	.014	.00045	.0066	.00613	.00273
%RSD	1084.7	63.725	.08315	282.51	.62739	37.902	3068.2
#1	-.00159	-.00414	16.934	.00035	1.0669	.01325	.00044
#2	.00005	-.00741	16.943	-.00032	1.0545	.02323	.00234
#3	.00116	-.00177	16.961	-.00051	1.0567	.01207	-.00305
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00431**	**.01323**	F **-.28757**
Stddev	.00070	.00016	.06453
%RSD	16.230	1.2047	22.439
#1	-.00354	.01326	-.33446
#2	-.00489	.01337	-.31427
#3	-.00452	.01306	-.21398
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6548.1**	**40764.**	**2104.8**
Stddev	18.7	118.	30.0
%RSD	.28493	.28837	1.4234
#1	6562.8	40898.	2079.6
#2	6554.4	40678.	2096.8
#3	6527.1	40717.	2137.9

Sample Name: L1606088302 Acquired: 6/23/2016 20:45:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00335	.84495	.01492	.13705	.35776	-.00016	61.342	.00073
Stddev	.00192	.00536	.00123	.00168	.00649	.00001	.914	.00037
%RSD	57.476	.63420	8.2502	1.2235	1.8144	6.0991	1.4894	50.484
#1	.00126	.85090	.01399	.13791	.36483	-.00016	62.379	.00100
#2	.00372	.84051	.01632	.13512	.35638	-.00017	60.987	.00089
#3	.00506	.84344	.01445	.13813	.35207	-.00015	60.658	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00790	.00132	.00561	5.6286	11.735	.00962	26.311	2.7437
Stddev	.00012	.00055	.00131	.0909	.087	.00112	.394	.0396
%RSD	1.4821	41.328	23.360	1.6145	.74143	11.624	1.4976	1.4443
#1	.00790	.00105	.00615	5.6698	11.835	.00907	26.689	2.7892
#2	.00779	.00096	.00657	5.6916	11.681	.00887	26.343	2.7252
#3	.00802	.00195	.00412	5.5244	11.688	.01090	25.902	2.7167
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01337	55.014	.02594	.07391	.01768	.00363	-.00148	7.7740
Stddev	.00021	.737	.00058	.00987	.00156	.00456	.00201	.0095
%RSD	1.5352	1.3397	2.2195	13.356	8.8413	125.65	135.81	.12214
#1	.01329	55.834	.02652	.06415	.01943	.00884	.00061	7.7638
#2	.01322	54.801	.02594	.08389	.01641	.00164	-.00340	7.7755
#3	.01361	54.406	.02537	.07370	.01720	.00040	-.00164	7.7826
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606088302 Acquired: 6/23/2016 20:45:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00090	.36986	.01540	-.00118	.00118	.12530	1.4316
Stddev	.00025	.00460	.01415	.00177	.00035	.00030	.3050
%RSD	27.990	1.2450	91.875	150.26	29.961	.24276	21.302
#1	.00061	.37482	.00658	-.00313	.00110	.12559	1.0819
#2	.00104	.36904	.00789	.00033	.00156	.12533	1.6421
#3	.00105	.36572	.03171	-.00073	.00087	.12498	1.5707
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7921.9	49318.	2693.6
Stddev	12.3	123.	25.0
%RSD	.15529	.24979	.92714
#1	7908.5	49427.	2667.6
#2	7924.8	49342.	2717.4
#3	7932.6	49184.	2695.7

Sample Name: CCV Acquired: 6/23/2016 20:49:10 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39590	9.9110	.39526	.48909	.98565	.04996	9.8451
Stddev	.00120	.0339	.00042	.00457	.02803	.00042	.3357
%RSD	.30353	.34216	.10738	.93432	2.8436	.84013	3.4103
#1	.39483	9.8747	.39503	.48786	.95368	.04993	9.4641
#2	.39720	9.9418	.39501	.48526	.99729	.04955	9.9733
#3	.39566	9.9167	.39575	.49415	1.0060	.05039	10.098
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05017	.20113	.49806	.50390	3.9193	49.281	.99930
Stddev	.00013	.00026	.00295	.00102	.1281	1.426	.02793
%RSD	.24979	.12923	.59274	.20262	3.2691	2.8935	2.7947
#1	.05003	.20121	.49990	.50316	3.7715	47.645	.96745
#2	.05025	.20083	.49465	.50347	3.9883	49.937	1.0109
#3	.05024	.20133	.49963	.50506	3.9981	50.261	1.0196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.8643	.49902	1.0085	49.184	.49977	9.8773	.49959
Stddev	.3185	.01772	.0043	1.350	.00010	.0178	.00372
%RSD	3.2291	3.5503	.42423	2.7456	.01960	.18066	.74560
#1	9.4975	.47954	1.0116	47.634	.49976	9.8611	.50047
#2	10.025	.50333	1.0103	49.812	.49987	9.8744	.49550
#3	10.071	.51418	1.0036	50.106	.49968	9.8964	.50280
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: CCV Acquired: 6/23/2016 20:49:10 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2048**	**.40490**	**5.0297**	**1.0004**	**.98725**	**.99313**	**.50297**
Stddev	.0042	.00796	.0039	.0034	.02832	.03209	.00363
%RSD	.34965	1.9650	.07741	.34428	2.8681	3.2307	.72121
#1	1.2087	.41298	5.0259	.99890	.95492	.95803	.50669
#2	1.2003	.40465	5.0296	.99795	.99923	1.0004	.49944
#3	1.2055	.39708	5.0337	1.0043	1.0076	1.0209	.50278
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.99558**	**1.0009**	F **.02289**
Stddev	.00580	.0022	.25371
%RSD	.58246	.21707	1108.2
#1	.99450	.99842	.14548
#2	.99040	1.0017	-.26883
#3	1.0018	1.0025	.19203
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6660.9**	**41801.**	**2169.0**
Stddev	32.3	28.	115.6
%RSD	.48534	.06597	5.3274
#1	6698.0	41774.	2302.5
#2	6639.4	41798.	2102.0
#3	6645.2	41829.	2102.6

Sample Name: CCB Acquired: 6/23/2016 20:52:47 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00186	-.00093	.00316	.00230	.00074	.00006	.02069
Stddev	.00123	.00851	.00342	.00122	.00124	.00008	.05541
%RSD	66.210	911.24	108.19	52.892	166.55	142.19	267.79
#1	.00059	-.01042	.00649	.00167	.00054	-.00003	-.00744
#2	.00195	.00160	.00333	.00153	-.00038	.00006	-.01500
#3	.00305	.00602	-.00034	.00370	.00206	.00014	.08452
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.00039	.00115	.00076	-.01535	.06062	-.00386
Stddev	.00025	.00015	.00083	.00156	.01904	.09913	.00805
%RSD	1273.3	38.748	71.888	205.02	124.01	163.52	208.55
#1	.00015	.00037	.00104	.00077	-.03627	-.05039	.00540
#2	-.00027	.00056	.00039	.00232	.00098	.09196	-.00780
#3	.00017	.00026	.00203	-.00080	-.01077	.14030	-.00918
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01451	-.00216	.00311	.14026	-.00019	.00962	.00081
Stddev	.08285	.00307	.00109	.02230	.00100	.00497	.00347
%RSD	570.85	141.96	34.905	15.899	521.75	51.686	430.66
#1	-.05222	-.00061	.00206	.16585	-.00076	.01507	.00163
#2	.10725	-.00570	.00305	.12497	-.00078	.00533	-.00300
#3	-.01149	-.00018	.00423	.12997	.00096	.00846	.00380
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: CCB Acquired: 6/23/2016 20:52:47 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00098**	**-.00415**	**.00357**	**.00020**	**.00045**	**-.00310**	**-.00314**
Stddev	.00119	.00276	.00144	.00034	.00013	.00169	.00399
%RSD	121.00	66.464	40.393	168.69	30.219	54.451	127.02
#1	-.00049	-.00098	.00477	.00034	.00060	-.00134	-.00058
#2	-.00234	-.00542	.00396	-.00019	.00034	-.00325	-.00773
#3	-.00012	-.00603	.00197	.00045	.00040	-.00471	-.00111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00114**	**.00020**	F **.30264**
Stddev	.00114	.00013	.32767
%RSD	99.237	64.632	108.27
#1	-.00245	.00019	.39170
#2	-.00061	.00033	-.06036
#3	-.00037	.00008	.57657
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6711.0**	**41762.**	**2107.6**
Stddev	39.0	171.	14.5
%RSD	.58138	.41024	.68723
#1	6710.2	41729.	2123.6
#2	6672.4	41947.	2095.3
#3	6750.5	41609.	2103.9

Sample Name: L1606088401 Acquired: 6/23/2016 20:56:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00138**	**.01701**	**.00493**	**.04852**	**.00618**	**-.00007**	**12.628**	**.00247**
Stddev	.00005	.00414	.00116	.00188	.00077	.00012	.147	.00032
%RSD	3.9151	24.333	23.511	3.8697	12.414	161.67	1.1647	12.874
#1	-.00141	.01981	.00570	.04698	.00662	.00006	12.792	.00280
#2	-.00141	.01895	.00549	.04798	.00529	-.00016	12.508	.00217
#3	-.00131	.01225	.00360	.05061	.00662	-.00013	12.584	.00245
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.33204**	**-.00005**	**.12713**	**.00004**	**.29521**	**1.5328**	**3.2466**	**.01448**
Stddev	.00034	.00102	.00048	.01339	.06956	.0143	.1805	.00109
%RSD	.10335	2250.3	.37814	32463.	23.564	.93016	5.5601	7.5480
#1	.33185	.00032	.12750	.00310	.34102	1.5490	3.4388	.01457
#2	.33183	.00074	.12659	-.01461	.32944	1.5271	3.0806	.01335
#3	.33243	-.00120	.12731	.01164	.21517	1.5222	3.2204	.01553
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00093**	**152.98**	**10.187**	**.09320**	**-.00036**	**-.00902**	**-.00316**	**.51224**
Stddev	.00032	1.78	.001	.01280	.00229	.00381	.00857	.00180
%RSD	34.564	1.1612	.01164	13.735	636.44	42.238	271.43	.35176
#1	.00071	155.02	10.189	.07854	-.00010	-.00788	-.00504	.51429
#2	.00079	151.86	10.188	.09884	-.00276	-.00591	.00620	.51148
#3	.00130	152.04	10.186	.10221	.00179	-.01327	-.01063	.51094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606088401 Acquired: 6/23/2016 20:56:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00055**	**.06978**	**-.00044**	**-.00366**	**-.00050**	**.00520**	**.35447**
Stddev	.00021	.00053	.00665	.00240	.00048	.00018	.13127
%RSD	37.225	.76020	1503.3	65.540	95.032	3.3899	37.033
#1	.00077	.07037	-.00450	-.00503	-.00086	.00501	.20475
#2	.00053	.06936	-.00405	-.00089	-.00069	.00524	.40886
#3	.00036	.06960	.00723	-.00506	.00004	.00536	.44980
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6642.8**	**41062.**	**2131.9**
Stddev	24.2	57.	30.4
%RSD	.36471	.13951	1.4260
#1	6639.2	41009.	2097.0
#2	6620.6	41122.	2152.2
#3	6668.6	41053.	2146.6

Sample Name: L1606089601 Acquired: 6/23/2016 21:00:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00276	.06592	.00541	.02208	.05123	-.00005	4.5311	.00038
Stddev	.00137	.00695	.00371	.00073	.00110	.00012	.0222	.00020
%RSD	49.858	10.542	68.509	3.3035	2.1551	257.77	.49075	51.621
#1	.00357	.06862	.00418	.02271	.05250	.00006	4.5567	.00056
#2	.00353	.05803	.00958	.02226	.05063	-.00017	4.5198	.00017
#3	.00117	.07112	.00247	.02128	.05055	-.00003	4.5168	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.06787	-.00161	.00146	42.996	.90153	-.00084	5.1151	6.0536
Stddev	.00044	.00070	.00153	.463	.08378	.00102	.1337	.0524
%RSD	.64651	43.319	104.57	1.0779	9.2930	121.94	2.6141	.86472
#1	.06763	-.00220	.00017	43.521	.97406	.00034	5.2374	6.1132
#2	.06761	-.00084	.00314	42.825	.80982	-.00134	4.9723	6.0323
#3	.06838	-.00179	.00107	42.642	.92069	-.00151	5.1355	6.0152
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	19.350	.00357	-.00356	.00111	.00096	-.00499	4.5346
Stddev	.00020	.125	.00141	.00838	.00156	.00212	.00300	.0153
%RSD	55.732	.64532	39.385	235.57	139.61	221.63	60.052	.33782
#1	-.00054	19.492	.00220	-.01302	-.00064	.00306	-.00344	4.5188
#2	-.00040	19.300	.00350	.00291	.00231	-.00118	-.00845	4.5355
#3	-.00014	19.259	.00500	-.00056	.00168	.00099	-.00309	4.5494
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606089601 Acquired: 6/23/2016 21:00:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00060**	**.03780**	**.00811**	**-.00381**	**-.00115**	**.00560**	**.10083**
Stddev	.00066	.00049	.00739	.00382	.00028	.00007	.23956
%RSD	110.76	1.2963	91.111	100.26	24.644	1.2642	237.60
#1	.00016	.03802	.00291	-.00026	-.00147	.00553	-.17268
#2	-.00087	.03815	.00485	-.00331	-.00104	.00559	.20174
#3	-.00109	.03724	.01658	-.00784	-.00094	.00567	.27342
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6699.7**	**41605.**	**2147.2**
Stddev	6.0	395.	20.8
%RSD	.08901	.94822	.96897
#1	6705.8	41196.	2129.6
#2	6699.3	41634.	2141.8
#3	6693.9	41984.	2170.2

Sample Name: L1606089602 Acquired: 6/23/2016 21:04:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00115	.04083	.00060	.00715	.00811	-.00006	.41120	.00010
Stddev	.00092	.00909	.00372	.00237	.00130	.00006	.07420	.00010
%RSD	79.895	22.273	617.42	33.111	16.069	103.37	18.045	95.174
#1	.00172	.03036	-.00348	.00464	.00961	-.00013	.44439	.00004
#2	.00163	.04672	.00380	.00935	.00726	-.00004	.46300	.00021
#3	.00009	.04541	.00149	.00745	.00746	-.00001	.32619	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	.00085	.00131	.07554	1.8076	-.00047	.25019	.00154
Stddev	.00047	.00183	.00071	.02271	.0472	.00199	.07424	.00073
%RSD	2125.6	214.06	54.320	30.062	2.6112	424.18	29.673	47.627
#1	-.00052	.00002	.00060	.10056	1.7705	.00136	.32911	.00152
#2	.00004	.00295	.00130	.05624	1.7915	-.00018	.18174	.00229
#3	.00042	-.00040	.00202	.06981	1.8607	-.00259	.23972	.00082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	8.3070	.00081	-.00279	.00077	-.00363	-.00191	9.3341
Stddev	.00042	.0355	.00152	.00730	.00368	.00212	.00752	.0120
%RSD	4219.9	.42734	186.83	261.51	478.27	58.376	393.78	.12811
#1	-.00026	8.3438	.00114	-.00340	.00064	-.00604	.00678	9.3471
#2	.00047	8.2730	-.00084	.00479	-.00284	-.00208	-.00623	9.3318
#3	-.00024	8.3042	.00214	-.00976	.00451	-.00276	-.00628	9.3235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606089602 Acquired: 6/23/2016 21:04:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00104**	**.00271**	**.00141**	**-.00441**	**.00055**	**.00294**	**.09481**
Stddev	.00076	.00065	.00707	.00096	.00059	.00032	.12117
%RSD	73.387	23.817	499.85	21.749	106.89	10.896	127.81
#1	-.00017	.00268	.00405	-.00333	.00004	.00305	.13413
#2	-.00159	.00337	.00678	-.00473	.00120	.00257	-.04114
#3	-.00135	.00208	-.00659	-.00517	.00043	.00318	.19143
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6686.8**	**41808.**	**2134.5**
Stddev	18.1	213.	20.0
%RSD	.27005	.50969	.93843
#1	6699.2	41631.	2111.6
#2	6666.1	41748.	2148.9
#3	6695.1	42044.	2142.9

Sample Name: L1606089603 Acquired: 6/23/2016 21:08:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00102	.11801	.00474	.00963	.06515	.00009	2.8598	-.00002
Stddev	.00304	.00302	.00162	.00102	.00099	.00007	.0117	.00049
%RSD	298.48	2.5577	34.279	10.645	1.5207	83.968	.40938	2310.2
#1	.00427	.12112	.00606	.01075	.06530	.00010	2.8502	-.00015
#2	.00053	.11781	.00292	.00939	.06607	.00015	2.8729	-.00043
#3	-.00175	.11509	.00524	.00874	.06410	.00001	2.8564	.00052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00155	-.00024	.00127	2.7358	3.5730	.00040	1.7276	.02916
Stddev	.00022	.00132	.00125	.0173	.1870	.00308	.0541	.00143
%RSD	13.914	551.57	98.352	.63220	5.2335	762.16	3.1323	4.9029
#1	.00170	-.00168	.00263	2.7557	3.7847	.00309	1.6947	.02869
#2	.00164	.00005	.00099	2.7247	3.4302	-.00295	1.7900	.03077
#3	.00130	.00091	.00018	2.7268	3.5042	.00107	1.6980	.02803
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00031	7.6284	.00235	.00047	-.00082	.00245	-.00905	5.4943
Stddev	.00032	.0301	.00079	.01031	.00433	.00306	.00148	.0133
%RSD	102.08	.39457	33.547	2191.2	526.63	125.12	16.371	.24152
#1	-.00063	7.6521	.00324	.00549	-.00579	.00459	-.00977	5.4890
#2	-.00033	7.6386	.00175	-.01139	.00215	-.00106	-.01004	5.4845
#3	.00001	7.5946	.00205	.00731	.00118	.00382	-.00735	5.5094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606089603 Acquired: 6/23/2016 21:08:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.02218	.00164	-.00426	-.00004	.00835	.14767
Stddev	.00040	.00013	.00288	.00161	.00009	.00018	.44819
%RSD	344.86	.60531	175.60	37.721	191.36	2.1138	303.52
#1	.00047	.02205	-.00008	-.00574	-.00012	.00836	-.32337
#2	-.00031	.02232	.00496	-.00255	.00005	.00853	.19752
#3	.00019	.02218	.00004	-.00448	-.00006	.00817	.56885
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6682.9	41728.	2128.8
Stddev	17.5	288.	26.5
%RSD	.26233	.68938	1.2452
#1	6675.1	41447.	2098.3
#2	6670.6	42022.	2146.0
#3	6703.0	41715.	2142.2

Sample Name: L1606089604 Acquired: 6/23/2016 21:12:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00189**	**.07787**	**.00274**	**.02534**	**.04671**	**-.00007**	**4.6127**
Stddev	.00185	.01361	.00115	.00174	.00203	.00009	.0084
%RSD	97.576	17.475	41.979	6.8483	4.3441	132.30	.18280
#1	.00394	.07337	.00237	.02334	.04637	.00002	4.6224
#2	.00037	.09315	.00403	.02650	.04487	-.00016	4.6067
#3	.00136	.06707	.00182	.02616	.04888	-.00006	4.6091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00046**	**.07375**	**-.00139**	**.00045**	**44.265**	**.94195**	**-.00388**
Stddev	.00010	.00022	.00095	.00149	.255	.04262	.00409
%RSD	21.656	.29660	68.674	332.55	.57666	4.5243	105.62
#1	.00034	.07398	-.00166	-.00009	44.524	.94561	-.00857
#2	.00051	.07354	-.00218	-.00070	44.257	.89762	-.00204
#3	.00052	.07372	-.00033	.00214	44.014	.98262	-.00102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**6.3790**	**6.1215**	**-.00097**	**19.253**	**.00495**	**-.00232**	**.00060**
Stddev	.0237	.0305	.00040	.056	.00026	.00993	.00262
%RSD	.37160	.49866	40.991	.29188	5.2685	429.04	440.43
#1	6.3989	6.1509	-.00053	19.318	.00524	-.00316	-.00241
#2	6.3528	6.1237	-.00131	19.216	.00473	-.01180	.00179
#3	6.3853	6.0899	-.00108	19.227	.00489	.00801	.00241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: L1606089604 Acquired: 6/23/2016 21:12:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00465**	**-.00637**	**4.5161**	**-.00039**	**.04033**	**.00878**	**-.00291**
Stddev	.00319	.00325	.0073	.00021	.00012	.01173	.00069
%RSD	68.469	51.078	.16173	52.620	.29003	133.62	23.851
#1	.00106	-.00941	4.5223	-.00056	.04037	.01678	-.00220
#2	.00578	-.00675	4.5081	-.00016	.04019	.01426	-.00359
#3	.00712	-.00294	4.5179	-.00046	.04041	-.00469	-.00294
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00260**	**.00552**	F **-.09796**
Stddev	.00057	.00025	.21094
%RSD	21.873	4.5503	215.32
#1	-.00325	.00580	.14398
#2	-.00238	.00531	-.24325
#3	-.00218	.00544	-.19462
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6689.8**	**41666.**	**2101.2**
Stddev	9.9	402.	24.3
%RSD	.14842	.96487	1.1576
#1	6695.2	41372.	2073.4
#2	6678.4	42124.	2111.3
#3	6695.9	41503.	2118.8

Sample Name: L1606089605 Acquired: 6/23/2016 21:16:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.04830	-.00145	.00590	.06272	.00007	2.6789	.00041
Stddev	.00176	.01001	.00427	.00202	.00179	.00010	.0329	.00039
%RSD	2993.4	20.730	295.15	34.254	2.8603	144.40	1.2294	96.299
#1	-.00190	.05947	.00328	.00605	.06424	-.00005	2.7135	.00011
#2	.00153	.04527	-.00502	.00784	.06318	.00013	2.6479	.00085
#3	.00055	.04014	-.00260	.00381	.06074	.00012	2.6754	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00157	-.00035	.00184	.89250	3.4230	-.00452	1.6804	.01911
Stddev	.00028	.00023	.00080	.02843	.0162	.00117	.0608	.00353
%RSD	17.515	67.269	43.308	3.1854	.47175	25.991	3.6163	18.451
#1	.00131	-.00060	.00162	.86545	3.4125	-.00336	1.6187	.02198
#2	.00155	-.00014	.00273	.92213	3.4148	-.00448	1.7402	.01517
#3	.00186	-.00031	.00117	.88990	3.4416	-.00571	1.6824	.02016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00024	7.0650	.00185	-.00101	-.00247	.00326	-.00672	5.2164
Stddev	.00018	.0411	.00050	.00181	.00243	.00063	.00650	.0100
%RSD	75.478	.58180	27.196	179.64	98.576	19.406	96.645	.19223
#1	-.00033	7.1107	.00239	-.00299	-.00232	.00293	.00077	5.2089
#2	-.00037	7.0530	.00139	.00057	-.00497	.00286	-.01006	5.2125
#3	-.00003	7.0312	.00176	-.00061	-.00011	.00399	-.01087	5.2278
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606089605 Acquired: 6/23/2016 21:16:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00041	.02070	-.00116	-.00495	-.00050	.00647	.22434
Stddev	.00061	.00025	.00062	.00270	.00039	.00006	.14133
%RSD	147.06	1.2106	53.841	54.602	79.342	1.0037	62.996
#1	-.00061	.02054	-.00094	-.00697	-.00093	.00640	.33918
#2	.00027	.02099	-.00186	-.00188	-.00039	.00649	.26733
#3	-.00089	.02057	-.00067	-.00601	-.00017	.00652	.06651
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6679.9	41653.	2126.5
Stddev	8.5	193.	24.2
%RSD	.12769	.46319	1.1397
#1	6686.1	41709.	2098.6
#2	6670.2	41811.	2142.5
#3	6683.5	41438.	2138.4

Sample Name: L1606089607 Acquired: 6/23/2016 21:20:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**.00633**	**.00159**	**.00141**	**-.00044**	**-.00001**	**.07933**
Stddev	.00195	.00666	.00483	.00232	.00080	.00015	.08022
%RSD	1049.3	105.18	304.39	163.83	179.45	1810.1	101.12
#1	-.00175	.01203	-.00042	.00047	-.00070	-.00018	.13178
#2	.00017	.00795	.00710	-.00028	-.00108	.00005	-.01301
#3	.00214	-.00099	-.00192	.00405	.00045	.00010	.11922
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00011**	**.00023**	**.00018**	**.00261**	**-.00047**	**.03391**	**-.00323**
Stddev	.00029	.00036	.00083	.00135	.02031	.06552	.00128
%RSD	269.77	155.32	469.03	51.632	4346.1	193.24	39.606
#1	-.00002	.00060	-.00019	.00137	-.00573	.10021	-.00211
#2	-.00010	-.00011	.00113	.00242	.02196	-.03081	-.00295
#3	.00044	.00020	-.00041	.00405	-.01763	.03232	-.00462
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.02721**	**.00109**	**-.00056**	**.23253**	**.00049**	**-.00816**	**-.00015**
Stddev	.04069	.00341	.00026	.02524	.00107	.00624	.00442
%RSD	149.52	313.70	46.647	10.856	219.38	76.495	2897.5
#1	.01942	-.00058	-.00035	.24925	-.00074	-.01380	.00125
#2	-.05550	-.00117	-.00047	.20349	.00124	-.00145	-.00510
#3	-.04556	.00501	-.00085	.24484	.00096	-.00923	.00339
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: L1606089607 Acquired: 6/23/2016 21:20:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00194**	F **-.01015**	**.08416**	**.00022**	**-.00011**	**-.00212**	**-.00416**
Stddev	.00173	.00222	.00063	.00064	.00006	.01168	.00343
%RSD	89.180	21.886	.74271	295.50	49.832	550.35	82.554
#1	-.00101	-.00764	.08452	-.00003	-.00011	-.01340	-.00177
#2	-.00087	-.01186	.08451	-.00027	-.00006	.00993	-.00262
#3	-.00393	-.01095	.08344	.00095	-.00017	-.00289	-.00809
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		90.000					
Low Limit		-.01000					

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00083**	**.00158**	**.28593**
Stddev	.00029	.00007	.07024
%RSD	34.545	4.6737	24.566
#1	-.00055	.00150	.21816
#2	-.00081	.00165	.28123
#3	-.00112	.00159	.35840
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6700.8**	**41736.**	**2133.1**
Stddev	34.6	206.	28.2
%RSD	.51651	.49285	1.3235
#1	6660.9	41521.	2103.9
#2	6723.0	41931.	2160.2
#3	6718.5	41757.	2135.2

Sample Name: L1606082202 Acquired: 6/23/2016 21:24:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00194**	**-.00446**	**.00305**	**.00265**	**.00700**	**.00002**	**.35406**
Stddev	.00134	.00435	.00421	.00519	.00205	.00001	.05184
%RSD	68.787	97.453	137.81	196.12	29.341	37.190	14.641
#1	.00075	-.00690	-.00162	.00667	.00636	.00002	.30481
#2	.00338	.00056	.00423	-.00321	.00930	.00002	.40815
#3	.00169	-.00704	.00655	.00448	.00534	.00003	.34922
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**.00043**	**-.00077**	**.00285**	**.14848**	**-.04278**	**.00212**
Stddev	.00027	.00044	.00098	.00102	.00792	.02901	.00038
%RSD	394.25	102.19	127.46	35.949	5.3356	67.810	17.947
#1	-.00009	.00000	-.00184	.00239	.15626	-.06821	.00218
#2	.00038	.00041	.00008	.00403	.14874	-.04895	.00171
#3	-.00008	.00089	-.00054	.00214	.14043	-.01118	.00246
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.28223**	**.00480**	**-.00038**	**4.3287**	**-.00014**	**.01612**	**.00046**
Stddev	.10559	.00363	.00060	.1420	.00015	.00579	.00219
%RSD	37.411	75.632	157.86	3.2805	107.54	35.905	474.81
#1	.24611	.00764	-.00099	4.3698	-.00016	.01856	-.00192
#2	.19945	.00071	.00020	4.4456	-.00027	.02028	.00239
#3	.40114	.00605	-.00035	4.1706	.00002	.00951	.00092
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: L1606082202 Acquired: 6/23/2016 21:24:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**-.00096**	**.60016**	**-.00066**	**.01034**	**-.00345**	**-.00121**
Stddev	.00119	.00324	.00463	.00053	.00056	.00260	.00164
%RSD	9663.9	335.88	.77167	79.904	5.4479	75.303	135.44
#1	-.00094	.00170	.59620	-.00020	.00979	-.00115	-.00170
#2	.00134	-.00002	.59904	-.00124	.01092	-.00293	.00062
#3	-.00037	-.00457	.60525	-.00055	.01031	-.00627	-.00255
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00034**	**.00082**	F **-.14423**
Stddev	.00011	.00006	.30331
%RSD	33.594	7.1986	210.30
#1	.00036	.00078	-.38581
#2	.00045	.00089	-.24305
#3	.00022	.00079	.19617
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6775.7**	**42604.**	**2060.5**
Stddev	51.6	45.	84.1
%RSD	.76190	.10471	4.0814
#1	6799.5	42589.	2047.0
#2	6811.2	42654.	1984.0
#3	6716.5	42568.	2150.6

Sample Name: L1606082203 Acquired: 6/23/2016 21:28:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00145	.00184	.00074	-.00019	.03852	.00003	1.5262	.00007
Stddev	.00122	.00469	.00175	.00116	.00077	.00012	.0464	.00017
%RSD	84.264	255.24	237.52	615.42	2.0040	388.98	3.0406	258.31
#1	.00264	-.00346	.00229	-.00083	.03875	.00010	1.5782	-.00003
#2	.00020	.00352	.00109	-.00089	.03915	.00011	1.4889	-.00004
#3	.00151	.00546	-.00116	.00115	.03766	-.00011	1.5116	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.00018	.00108	.25045	2.4536	.00344	.67766	.01002
Stddev	.00037	.00129	.00050	.01436	.0243	.00221	.03143	.00186
%RSD	100.70	701.59	46.418	5.7329	.98953	64.075	4.6384	18.607
#1	.00035	.00006	.00058	.23440	2.4813	.00332	.65654	.01217
#2	.00075	.00153	.00159	.26208	2.4433	.00571	.71379	.00880
#3	.00001	-.00104	.00108	.25488	2.4361	.00130	.66266	.00909
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00035	4.5035	-.00023	.01290	-.00147	.00479	-.00584	.55304
Stddev	.00012	.0716	.00036	.00146	.00189	.00145	.00099	.00147
%RSD	35.728	1.5904	157.06	11.351	128.61	30.358	16.944	.26494
#1	-.00047	4.5590	.00019	.01295	-.00040	.00482	-.00623	.55146
#2	-.00035	4.5290	-.00045	.01141	-.00366	.00623	-.00472	.55435
#3	-.00023	4.4227	-.00042	.01433	-.00036	.00332	-.00658	.55332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606082203 Acquired: 6/23/2016 21:28:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.03922	-.00354	-.00320	-.00104	.00103	-.02734
Stddev	.00093	.00042	.00540	.00176	.00049	.00021	.22820
%RSD	4945.8	1.0630	152.76	54.899	47.016	20.853	834.62
#1	.00001	.03970	-.00944	-.00516	-.00118	.00102	.23169
#2	.00095	.03900	.00116	-.00265	-.00144	.00082	-.19873
#3	-.00091	.03895	-.00233	-.00178	-.00049	.00125	-.11499
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6687.3	41441.	2081.5
Stddev	25.3	113.	22.3
%RSD	.37870	.27264	1.0699
#1	6658.6	41368.	2073.0
#2	6706.4	41384.	2064.8
#3	6696.9	41571.	2106.8

Sample Name: L1606082302 Acquired: 6/23/2016 21:32:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	.00297	.00273	.00225	.36313	-.00000	11.836
Stddev	.00174	.00449	.00180	.00282	.00235	.00016	.075
%RSD	415.32	151.16	65.994	125.04	.64751	6744.5	.63384
#1	-.00148	.00121	.00168	.00506	.36408	.00008	11.919
#2	.00080	.00807	.00170	.00226	.36486	-.00018	11.773
#3	.00194	-.00038	.00482	-.00057	.36045	.00010	11.815
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	.00291	.00028	.00150	.22899	.13342	.00323
Stddev	.00018	.00030	.00095	.00047	.02084	.11756	.00252
%RSD	113.97	10.305	343.96	31.522	9.1002	88.111	78.086
#1	-.00018	.00302	-.00007	.00192	.21561	.24582	.00054
#2	.00003	.00257	-.00045	.00158	.21836	.01130	.00554
#3	-.00032	.00314	.00135	.00099	.25300	.14315	.00359
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.3954	.04077	-.00002	33.177	.00094	.00875	-.00140
Stddev	.0055	.00391	.00017	.158	.00081	.00388	.00293
%RSD	.05884	9.5814	818.90	.47682	86.099	44.289	209.14
#1	9.3987	.04528	.00014	33.360	.00025	.00895	-.00476
#2	9.3986	.03829	-.00000	33.085	.00074	.00478	.00055
#3	9.3891	.03876	-.00020	33.087	.00184	.01252	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: L1606082302 Acquired: 6/23/2016 21:32:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00211	F -.01027	.87158	-.00061	.28366	-.00294	-.00367
Stddev	.00335	.00460	.01165	.00033	.00032	.00246	.00356
%RSD	158.22	44.796	1.3368	53.749	.11189	83.646	96.934
#1	.00240	-.01556	.85944	-.00095	.28358	-.00225	-.00028
#2	.00531	-.00804	.87263	-.00029	.28401	-.00568	-.00738
#3	-.00136	-.00721	.88268	-.00060	.28339	-.00091	-.00335
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		90.000					
Low Limit		-.01000					

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00036	.00115	.04430
Stddev	.00028	.00013	.31486
%RSD	77.980	11.657	710.78
#1	-.00058	.00122	.37480
#2	-.00005	.00100	.01024
#3	-.00044	.00124	-.25215
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6666.9	40963.	2080.0
Stddev	54.9	248.	35.1
%RSD	.82321	.60425	1.6856
#1	6605.2	41025.	2039.5
#2	6685.2	40690.	2100.5
#3	6710.3	41173.	2100.0

Sample Name: CCV Acquired: 6/23/2016 21:36:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.37886	9.4008	.36977	.46580	.94543	.04748	9.4956
Stddev	.00192	.0240	.00492	.00165	.00279	.00009	.0298
%RSD	.50559	.25544	1.3304	.35366	.29493	.18359	.31411
#1	.37848	9.4279	.37519	.46422	.94745	.04749	9.4832
#2	.38093	9.3822	.36851	.46567	.94658	.04756	9.4739
#3	.37716	9.3923	.36560	.46751	.94225	.04739	9.5296
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04722	.18900	.47404	.47679	3.8147	47.440	.96725
Stddev	.00010	.00048	.00128	.00128	.0064	.112	.00455
%RSD	.21398	.25239	.26979	.26927	.16823	.23504	.47080
#1	.04722	.18886	.47544	.47536	3.8073	47.493	.96637
#2	.04711	.18861	.47292	.47785	3.8188	47.516	.97218
#3	.04731	.18953	.47377	.47715	3.8179	47.312	.96320
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.5275	.47798	.95150	47.323	.47305	9.3519	.47463
Stddev	.0772	.00629	.00356	.158	.00089	.0108	.00368
%RSD	.81075	1.3163	.37366	.33377	.18727	.11544	.77586
#1	9.5741	.48274	.95557	47.363	.47379	9.3402	.47038
#2	9.4383	.47085	.94902	47.457	.47331	9.3538	.47650
#3	9.5701	.48036	.94991	47.149	.47207	9.3616	.47699
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: CCV Acquired: 6/23/2016 21:36:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1248**	**.37983**	**4.7469**	**.94195**	**.94936**	**.95013**	**.47646**
Stddev	.0071	.00577	.0107	.00244	.00345	.00861	.00052
%RSD	.63160	1.5193	.22491	.25903	.36313	.90637	.10952
#1	1.1176	.38628	4.7372	.93943	.94930	.94189	.47702
#2	1.1251	.37515	4.7451	.94210	.95284	.94943	.47599
#3	1.1318	.37806	4.7583	.94431	.94595	.95907	.47637
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.94937**	**.94698**	F **.53390**
Stddev	.00172	.00064	.57416
%RSD	.18154	.06770	107.54
#1	.95103	.94624	-.12311
#2	.94951	.94740	.93934
#3	.94759	.94730	.78547
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6847.6**	**42330.**	**2179.9**
Stddev	26.3	36.	23.0
%RSD	.38348	.08457	1.0562
#1	6817.2	42321.	2206.4
#2	6862.7	42299.	2165.2
#3	6862.8	42369.	2168.0

Sample Name: CCB Acquired: 6/23/2016 21:39:49 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00034**	**-.00840**	**.00142**	**.00310**	**-.00097**	**-.00004**	**.04289**
Stddev	.00215	.00740	.00154	.00403	.00114	.00009	.02517
%RSD	634.22	88.117	107.88	130.11	117.13	211.10	58.687
#1	.00114	-.00019	.00313	.00134	-.00178	-.00003	.05755
#2	.00065	-.01045	.00097	.00025	-.00148	.00004	.01383
#3	-.00280	-.01457	.00016	.00772	.00033	-.00014	.05730
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**.00024**	**-.00021**	**.00099**	**.00681**	**.02724**	**.00474**
Stddev	.00017	.00030	.00131	.00197	.01403	.13786	.00231
%RSD	120.69	124.53	625.16	199.14	206.17	506.05	48.675
#1	-.00003	.00049	-.00143	.00036	-.00450	-.09799	.00738
#2	.00014	.00033	-.00037	.00320	.02251	.00476	.00369
#3	.00030	-.00009	.00117	-.00059	.00241	.17496	.00314
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.01627**	**.00349**	**.00316**	**.05656**	**.00129**	**.00259**	**.00220**
Stddev	.06560	.00061	.00054	.03460	.00090	.00126	.00512
%RSD	403.12	17.500	17.006	61.166	69.213	48.482	232.87
#1	.04308	.00418	.00337	.06648	.00145	.00133	.00302
#2	-.00519	.00302	.00356	.01809	.00033	.00384	-.00328
#3	-.08670	.00326	.00255	.08512	.00210	.00261	.00686
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: CCB Acquired: 6/23/2016 21:39:49 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00210**	**.00060**	**-.00131**	**-.00025**	**.00045**	**.00101**	**-.00537**
Stddev	.00282	.00202	.00149	.00144	.00024	.00715	.00270
%RSD	134.10	334.37	113.55	585.99	53.933	705.65	50.282
#1	.00467	-.00103	-.00073	-.00138	.00029	-.00721	-.00765
#2	-.00091	.00286	-.00300	-.00074	.00033	.00583	-.00608
#3	.00255	-.00002	-.00020	.00138	.00073	.00442	-.00239
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00036**	**.00019**	F **.41711**
Stddev	.00059	.00027	.26410
%RSD	164.24	139.43	63.317
#1	-.00011	-.00011	.71541
#2	.00007	.00039	.21306
#3	-.00103	.00030	.32286
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6996.3**	**43082.**	**2193.8**
Stddev	20.8	164.	36.3
%RSD	.29721	.37998	1.6551
#1	6972.3	42895.	2225.5
#2	7007.7	43194.	2201.8
#3	7008.9	43159.	2154.2

Sample Name: L1606082303 Acquired: 6/23/2016 21:43:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.00528	-.00158	.00205	.19615	.00000	9.5412	-.00005
Stddev	.00172	.00389	.00374	.00056	.00167	.00004	.0635	.00015
%RSD	531.26	73.680	236.25	27.382	.84980	2856.4	.66503	295.12
#1	.00039	.00192	-.00320	.00177	.19699	.00004	9.6087	.00011
#2	.00201	.00955	-.00424	.00168	.19423	-.00003	9.4828	-.00019
#3	-.00143	.00438	.00269	.00269	.19724	-.00001	9.5322	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	-.00003	.00137	.01816	.07360	-.00201	5.7035	.11460
Stddev	.00028	.00217	.00077	.02760	.04149	.00162	.1926	.00292
%RSD	57.802	7719.6	56.083	151.98	56.373	80.472	3.3772	2.5499
#1	.00048	-.00239	.00048	.04879	.11308	-.00147	5.9188	.11188
#2	.00020	.00186	.00178	-.00477	.07737	-.00383	5.5474	.11423
#3	.00076	.00045	.00184	.01046	.03036	-.00073	5.6443	.11769
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	30.457	.00028	.01105	.00022	.00112	-.00912	.60825
Stddev	.00054	.348	.00034	.00162	.00227	.00456	.00372	.00164
%RSD	210.59	1.1437	122.90	14.679	1048.7	408.61	40.764	.26908
#1	-.00033	30.637	-.00010	.01036	-.00046	-.00379	-.00828	.60645
#2	.00038	30.056	.00057	.01291	.00274	.00192	-.00590	.60965
#3	.00071	30.679	.00036	.00990	-.00164	.00522	-.01319	.60865
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606082303 Acquired: 6/23/2016 21:43:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00070**	**.18364**	**-.00297**	**-.00161**	**.00010**	**.00105**	**.18385**
Stddev	.00086	.00144	.00537	.00137	.00034	.00025	.28076
%RSD	122.13	.78353	180.76	84.915	342.41	23.814	152.71
#1	-.00168	.18402	-.00642	-.00247	-.00015	.00082	-.00761
#2	-.00010	.18205	.00322	-.00003	-.00005	.00103	.50616
#3	-.00032	.18485	-.00570	-.00232	.00050	.00132	.05301
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6737.6**	**41321.**	**2154.5**
Stddev	10.1	398.	10.5
%RSD	.15056	.96263	.48515
#1	6747.5	41745.	2162.1
#2	6727.2	41262.	2142.5
#3	6738.0	40956.	2158.7

Sample Name: L1606082304 Acquired: 6/23/2016 21:47:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00107	.00763	.00205	.00128	.06210	-.00005	2.2162	-.00002
Stddev	.00070	.00357	.00361	.00281	.00225	.00003	.0545	.00005
%RSD	65.790	46.743	175.75	220.17	3.6308	56.826	2.4590	342.73
#1	.00064	.01174	.00606	-.00197	.06015	-.00004	2.1625	-.00007
#2	.00188	.00577	-.00095	.00288	.06159	-.00009	2.2715	.00004
#3	.00068	.00537	.00106	.00292	.06457	-.00003	2.2145	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	-.00139	.00241	4.0573	.28730	.00089	1.4304	.07372
Stddev	.00015	.00065	.00132	.0516	.13779	.00299	.0553	.00403
%RSD	30.727	46.428	54.848	1.2708	47.960	334.26	3.8623	5.4701
#1	.00066	-.00136	.00091	4.0586	.13895	.00365	1.4701	.07443
#2	.00040	-.00206	.00293	4.0051	.41127	.00130	1.4537	.07736
#3	.00040	-.00076	.00340	4.1081	.31169	-.00228	1.3673	.06938
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	6.7673	.00003	.01064	-.00183	.00117	-.00224	.82027
Stddev	.00026	.0658	.00066	.00541	.00174	.00605	.00594	.00641
%RSD	1414.1	.97251	2005.0	50.852	95.153	515.39	265.01	.78184
#1	-.00017	6.7130	.00068	.01686	-.00367	.00122	-.00440	.81299
#2	-.00008	6.7484	.00006	.00808	-.00161	-.00490	-.00681	.82274
#3	.00031	6.8405	-.00064	.00698	-.00021	.00720	.00448	.82508
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606082304 Acquired: 6/23/2016 21:47:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00062**	**.05041**	**.00372**	**-.00162**	**-.00102**	**.00139**	**.02709**
Stddev	.00054	.00053	.00900	.00223	.00128	.00033	.20037
%RSD	86.087	1.0604	241.81	137.59	125.65	23.588	739.53
#1	-.00016	.04984	-.00362	-.00387	-.00076	.00168	-.08640
#2	-.00121	.05049	.01377	-.00158	-.00240	.00104	.25845
#3	-.00050	.05090	.00102	.00059	.00011	.00145	-.09076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6801.0**	**42034.**	**2119.8**
Stddev	49.8	142.	31.5
%RSD	.73210	.33806	1.4863
#1	6763.5	42178.	2123.4
#2	6782.1	42032.	2149.4
#3	6857.5	41894.	2086.7

Sample Name: L1606088302 Acquired: 6/23/2016 21:51:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.03900	.00448	.00430	.01505	-.00001	2.8996	-.00001
Stddev	.00124	.00075	.00243	.00233	.00060	.00004	.0350	.00023
%RSD	153.65	1.9305	54.189	54.088	3.9770	332.40	1.2074	2343.8
#1	-.00027	.03833	.00184	.00580	.01560	.00003	2.9325	.00014
#2	.00216	.03982	.00662	.00548	.01441	-.00003	2.8628	.00010
#3	.00053	.03886	.00496	.00162	.01514	-.00004	2.9035	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	-.00093	.00225	.26018	.53798	-.00133	1.2540	.13015
Stddev	.00005	.00064	.00096	.01052	.04447	.00237	.1006	.00182
%RSD	10.629	68.468	42.462	4.0434	8.2670	177.47	8.0229	1.3964
#1	.00052	-.00155	.00287	.26853	.50853	-.00040	1.3655	.12853
#2	.00056	-.00028	.00273	.26365	.51627	-.00403	1.2265	.12979
#3	.00045	-.00096	.00115	.24836	.58914	.00042	1.1700	.13212
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	2.6639	.00090	.01608	.00052	.00237	-.00249	.36519
Stddev	.00017	.0233	.00047	.00836	.00171	.00049	.00862	.00186
%RSD	72.830	.87410	52.415	51.991	330.96	20.707	346.32	.51020
#1	.00029	2.6639	.00099	.02573	.00209	.00189	.00736	.36326
#2	.00036	2.6406	.00039	.01116	.00078	.00287	-.00614	.36532
#3	.00004	2.6871	.00132	.01135	-.00131	.00234	-.00868	.36698
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606088302 Acquired: 6/23/2016 21:51:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.01730**	**.00326**	**-.00074**	**-.00020**	**.00699**	**.35536**
Stddev	.00047	.00025	.00678	.00023	.00043	.00024	.51910
%RSD	826.36	1.4568	208.35	30.989	219.10	3.4850	146.08
#1	.00036	.01713	.00871	-.00090	-.00020	.00693	-.23473
#2	-.00056	.01718	-.00434	-.00084	-.00062	.00678	.74156
#3	.00004	.01759	.00541	-.00048	.00024	.00726	.55925
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7019.0**	**43469.**	**2272.3**
Stddev	25.4	199.	24.4
%RSD	.36132	.45762	1.0740
#1	7020.2	43542.	2267.1
#2	6993.1	43621.	2298.9
#3	7043.7	43244.	2250.9

Sample Name: L1606089601 Acquired: 6/23/2016 21:55:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00420**	**.00523**	**.00334**	**.00237**	**.00219**	**.00008**	**.19980**
Stddev	.00278	.00696	.00261	.00237	.00063	.00004	.02591
%RSD	66.297	133.09	78.109	99.957	28.753	51.900	12.967
#1	.00741	.00603	.00348	.00033	.00147	.00009	.18026
#2	.00260	.01174	.00066	.00182	.00265	.00012	.22918
#3	.00258	-.00210	.00587	.00496	.00244	.00003	.18994
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.00302**	**.00023**	**.00052**	**2.0027**	**-.01208**	**-.00040**
Stddev	.00012	.00024	.00052	.00149	.0311	.05532	.00593
%RSD	79.007	7.8027	222.58	284.84	1.5506	458.05	1480.9
#1	-.00011	.00287	.00040	.00177	1.9805	.05152	-.00717
#2	-.00005	.00329	-.00035	-.00112	1.9893	-.03870	.00382
#3	-.00028	.00290	.00064	.00091	2.0382	-.04905	.00215
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.24211**	**.28328**	**-.00023**	**.95184**	**.00021**	**.00495**	**-.00083**
Stddev	.13780	.01030	.00015	.04331	.00103	.00358	.00274
%RSD	56.917	3.6352	65.757	4.5498	490.79	72.184	329.16
#1	.26334	.27250	-.00010	.90187	.00062	.00759	.00169
#2	.09492	.28431	-.00019	.97855	.00097	.00088	-.00043
#3	.36806	.29302	-.00040	.97509	-.00096	.00638	-.00376
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: L1606089601 Acquired: 6/23/2016 21:55:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00174**	**-.00552**	**.20894**	**-.00089**	**.00183**	**.00041**	**-.00355**
Stddev	.00455	.00357	.00152	.00075	.00028	.00397	.00196
%RSD	261.01	64.670	.72600	84.586	15.398	961.73	55.133
#1	-.00696	-.00337	.20831	-.00159	.00215	.00126	-.00263
#2	.00141	-.00964	.20784	-.00009	.00174	.00389	-.00222
#3	.00032	-.00355	.21067	-.00099	.00161	-.00391	-.00580
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00023**	**.00107**	F **-.16350**
Stddev	.00118	.00009	.38488
%RSD	512.00	8.7488	235.40
#1	-.00072	.00105	.00228
#2	-.00109	.00099	.11071
#3	.00111	.00117	-.60348
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6828.9**	**41943.**	**2135.6**
Stddev	63.3	286.	20.3
%RSD	.92751	.68281	.94968
#1	6763.6	42271.	2138.9
#2	6833.1	41741.	2154.0
#3	6890.1	41817.	2113.9

Sample Name: L1606089602 Acquired: 6/23/2016 21:59:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00116**	**.00173**	**.00317**	**.00184**	**-.00011**	**.00003**	**.00624**	**-.00003**
Stddev	.00285	.00778	.00249	.00329	.00125	.00006	.05063	.00023
%RSD	245.09	449.18	78.692	179.21	1183.1	208.66	811.35	713.72
#1	-.00055	.01019	.00053	.00389	-.00026	-.00003	-.04528	.00022
#2	.00445	-.00512	.00349	.00357	-.00127	.00009	.05593	-.00023
#3	-.00041	.00012	.00549	-.00196	.00122	.00003	.00807	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00024**	**.00046**	**.00165**	**-.00531**	**.07219**	**-.00031**	**.05667**	**.00209**
Stddev	.00028	.00102	.00160	.03109	.09458	.00388	.05878	.00182
%RSD	116.13	222.95	97.271	585.63	131.01	1232.5	103.73	87.087
#1	.00001	.00001	.00226	.02472	.15298	-.00298	.09347	.00378
#2	.00016	-.00027	-.00017	-.00328	.09542	.00413	.08765	.00016
#3	.00055	.00163	.00285	-.03736	-.03184	-.00209	-.01113	.00234
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00056**	**.39833**	**-.00077**	**.00469**	**.00112**	**.00031**	**-.00922**	**.46168**
Stddev	.00006	.02012	.00058	.00167	.00277	.00100	.00659	.00725
%RSD	11.375	5.0505	75.062	35.563	245.83	319.68	71.432	1.5707
#1	-.00061	.37822	-.00128	.00414	.00250	-.00075	-.01634	.45603
#2	-.00049	.39832	-.00088	.00656	-.00206	.00124	-.00799	.45917
#3	-.00057	.41846	-.00014	.00336	.00293	.00045	-.00334	.46986
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606089602 Acquired: 6/23/2016 21:59:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00058**	**.00007**	**-.00373**	**-.00407**	**-.00032**	**.00100**	**-.02035**
Stddev	.00028	.00019	.00957	.00088	.00078	.00036	.45457
%RSD	48.712	259.28	256.71	21.746	243.98	36.577	2234.1
#1	-.00053	.00018	.00727	-.00462	.00006	.00142	-.06540
#2	-.00033	.00018	-.00832	-.00454	.00020	.00080	.45507
#3	-.00089	-.00014	-.01012	-.00305	-.00121	.00077	-.45071
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6764.1**	**42193.**	**2152.3**
Stddev	51.5	150.	58.2
%RSD	.76176	.35597	2.7055
#1	6724.7	42019.	2097.0
#2	6745.2	42282.	2213.0
#3	6822.4	42277.	2146.9

Sample Name: L1606089603 Acquired: 6/23/2016 22:03:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00264**	**.00052**	**.00129**	**.00105**	**.00283**	**.00007**	**.13087**	**-.00015**
Stddev	.00174	.01588	.00262	.00317	.00277	.00004	.02295	.00021
%RSD	65.852	3062.5	203.49	301.32	97.964	60.620	17.533	135.33
#1	.00093	.01257	-.00138	.00463	.00302	.00005	.14125	.00004
#2	.00440	.00646	.00387	-.00005	.00549	.00004	.10457	-.00037
#3	.00259	-.01748	.00137	-.00142	-.00004	.00011	.14679	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00048**	**.00024**	**.00128**	**.12772**	**.20105**	**-.00470**	**.12553**	**.00043**
Stddev	.00031	.00150	.00216	.02497	.11408	.00639	.06203	.00287
%RSD	63.789	616.72	168.54	19.548	56.742	136.10	49.418	664.80
#1	.00045	.00194	-.00101	.11916	.09190	.00173	.17340	-.00027
#2	.00019	-.00030	.00156	.10815	.19176	-.00476	.14774	-.00202
#3	.00080	-.00091	.00330	.15584	.31949	-.01106	.05545	.00359
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.39363**	**-.00055**	**.01390**	**-.00151**	**.00183**	**-.00632**	**.24727**
Stddev	.00045	.04518	.00102	.00707	.00255	.00239	.00219	.00127
%RSD	1327.8	11.477	186.18	50.889	169.36	131.03	34.571	.51246
#1	-.00019	.43317	-.00107	.01491	-.00330	.00328	-.00397	.24716
#2	.00047	.34439	.00063	.02042	.00142	-.00094	-.00828	.24858
#3	-.00038	.40334	-.00121	.00638	-.00264	.00314	-.00672	.24606
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606089603 Acquired: 6/23/2016 22:03:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00047**	**.00125**	**-.01273**	**-.00400**	**-.00003**	**.00095**	**.10691**
Stddev	.00077	.00042	.00925	.00266	.00030	.00011	.21605
%RSD	161.90	33.664	72.615	66.501	1119.1	11.082	202.08
#1	-.00019	.00148	-.00295	-.00574	-.00008	.00101	-.14101
#2	-.00134	.00076	-.01391	-.00094	.00030	.00102	.20680
#3	.00011	.00150	-.02133	-.00533	-.00030	.00083	.25493
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6778.0**	**41534.**	**2155.4**
Stddev	33.3	392.	34.0
%RSD	.49153	.94350	1.5766
#1	6804.2	41394.	2116.9
#2	6740.5	41232.	2181.3
#3	6789.2	41977.	2167.8

Sample Name: L1606089604 Acquired: 6/23/2016 22:07:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00159	.01026	.00044	.00222	.00123	.00002	.21290	.00018
Stddev	.00043	.01032	.00191	.00166	.00091	.00006	.03422	.00024
%RSD	27.269	100.60	437.55	74.707	74.454	271.36	16.075	135.58
#1	.00148	.01567	.00246	.00277	.00044	.00008	.21883	-.00010
#2	.00207	.01676	-.00133	.00035	.00223	.00002	.24377	.00035
#3	.00122	-.00164	.00018	.00353	.00102	-.00004	.17610	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00372	-.00098	.00204	1.9871	.04803	-.00029	.27775	.28079
Stddev	.00019	.00146	.00258	.0500	.09028	.00333	.05841	.00512
%RSD	4.9815	148.68	126.42	2.5186	187.98	1134.6	21.028	1.8227
#1	.00391	-.00254	-.00094	1.9637	-.03733	-.00218	.34159	.28507
#2	.00373	.00037	.00345	1.9529	.03888	.00355	.22701	.27512
#3	.00354	-.00079	.00362	2.0445	.14254	-.00224	.26465	.28217
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	.88820	.00047	.00405	-.00241	-.00066	-.00911	.20760
Stddev	.00009	.05397	.00049	.00324	.00083	.00328	.00427	.00263
%RSD	33.170	6.0764	104.78	80.127	34.563	498.25	46.914	1.2688
#1	-.00017	.85983	.00038	.00127	-.00145	.00099	-.00982	.20605
#2	-.00027	.85432	.00100	.00326	-.00287	.00147	-.00453	.20610
#3	-.00035	.95043	.00003	.00761	-.00292	-.00443	-.01299	.21064
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606089604 Acquired: 6/23/2016 22:07:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.00180**	**.00146**	**-.00008**	**.00002**	**.00083**	**.01606**
Stddev	.00033	.00028	.00448	.00273	.00107	.00008	.15859
%RSD	645.35	15.485	305.81	3306.5	5321.6	9.5646	987.51
#1	-.00043	.00167	.00571	-.00323	-.00007	.00090	-.04948
#2	.00011	.00212	.00190	.00129	-.00100	.00085	-.09926
#3	.00017	.00161	-.00322	.00169	.00113	.00074	.19692
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6852.5**	**41879.**	**2133.3**
Stddev	55.4	422.	31.4
%RSD	.80848	1.0073	1.4729
#1	6793.1	41503.	2112.7
#2	6861.8	42335.	2169.5
#3	6902.7	41799.	2117.7

Sample Name: L1606089605 Acquired: 6/23/2016 22:11:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00325**	**-.00813**	**.00321**	**.00103**	**.00232**	**.00007**	**.13232**
Stddev	.00086	.00834	.00166	.00270	.00015	.00005	.04505
%RSD	26.517	102.62	51.687	262.17	6.5199	65.910	34.048
#1	.00357	-.00015	.00448	.00315	.00234	.00011	.13419
#2	.00227	-.00744	.00133	-.00201	.00246	.00002	.08636
#3	.00390	-.01679	.00380	.00194	.00216	.00008	.17641
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**.00019**	**-.00021**	**-.00051**	**.02399**	**.13993**	**-.00272**
Stddev	.00013	.00048	.00060	.00074	.02883	.04909	.00167
%RSD	59.092	248.65	278.22	144.43	120.17	35.082	61.414
#1	-.00034	.00000	-.00032	-.00045	-.00884	.19045	-.00464
#2	-.00023	.00074	.00043	-.00128	.04519	.13693	-.00190
#3	-.00008	-.00016	-.00075	.00019	.03563	.09241	-.00161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.13116**	**-.00087**	**-.00017**	**.35584**	**.00083**	**.00721**	**.00009**
Stddev	.12028	.00028	.00012	.03175	.00083	.00389	.00231
%RSD	91.707	32.079	72.680	8.9233	100.69	53.875	2586.3
#1	.15231	-.00055	-.00032	.37833	.00083	.00320	-.00213
#2	.23946	-.00098	-.00010	.31952	-.00001	.01096	.00248
#3	.00170	-.00108	-.00010	.36967	.00166	.00747	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: L1606089605 Acquired: 6/23/2016 22:11:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00575**	**.00189**	**.24045**	**-.00028**	**.00101**	**-.00455**	**-.00361**
Stddev	.00192	.00588	.00568	.00092	.00006	.01057	.00467
%RSD	33.402	311.30	2.3620	328.38	6.1198	232.48	129.52
#1	.00788	.00697	.23736	-.00119	.00106	-.01626	-.00722
#2	.00521	.00325	.23698	.00066	.00103	-.00167	-.00528
#3	.00416	-.00455	.24700	-.00032	.00094	.00429	.00167
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00106**	**.00104**	F **-.05759**
Stddev	.00074	.00009	.21862
%RSD	69.542	8.5436	379.61
#1	-.00181	.00101	.17219
#2	-.00033	.00097	-.26300
#3	-.00105	.00114	-.08197
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6837.2**	**42004.**	**2152.4**
Stddev	16.0	173.	9.0
%RSD	.23440	.41281	.41704
#1	6853.2	42014.	2142.1
#2	6821.1	41826.	2156.7
#3	6837.2	42172.	2158.4

Sample Name: L1606089607 Acquired: 6/23/2016 22:15:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00124**	**-.00686**	**.00409**	**.00130**	**-.00066**	**-.00005**	**.03206**	**-.00002**
Stddev	.00132	.01058	.00305	.00213	.00072	.00007	.01681	.00018
%RSD	105.94	154.08	74.558	163.59	109.05	125.85	52.443	856.76
#1	-.00264	-.01401	.00622	.00259	-.00111	-.00005	.04548	-.00001
#2	-.00105	-.01187	.00546	.00246	-.00105	.00001	.01320	.00015
#3	-.00003	.00529	.00060	-.00115	.00017	-.00012	.03751	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00031**	**.00074**	**.00061**	**-.00910**	**-.00529**	**-.00407**	**.02444**	**.00176**
Stddev	.00024	.00180	.00036	.03159	.06755	.00591	.05716	.00378
%RSD	78.629	244.31	60.097	347.19	1277.4	145.34	233.90	215.59
#1	.00037	.00281	.00094	.01641	.06833	-.00447	-.04095	.00014
#2	.00051	-.00035	.00022	-.04443	-.01978	-.00977	.04932	-.00095
#3	.00004	-.00025	.00066	.00073	-.06441	.00203	.06494	.00608
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00073**	**.00595**	**.00025**	**.00693**	**-.00226**	**-.00313**	**-.00892**	**-.00746**
Stddev	.00042	.03243	.00102	.00571	.00047	.00121	.00509	.00076
%RSD	57.397	545.12	410.30	82.361	20.886	38.630	57.024	10.142
#1	-.00072	.04302	.00024	.00636	-.00177	-.00362	-.00954	-.00789
#2	-.00116	-.01720	-.00077	.01291	-.00271	-.00175	-.01368	-.00792
#3	-.00032	-.00797	.00128	.00153	-.00229	-.00401	-.00356	-.00659
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606089607 Acquired: 6/23/2016 22:15:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00050**	**.00006**	**-.00267**	**-.00165**	**-.00070**	**.00059**	**.18991**
Stddev	.00084	.00062	.00845	.00365	.00135	.00010	.03400
%RSD	167.93	1027.2	316.03	221.52	192.73	16.308	17.901
#1	-.00037	-.00011	.00072	-.00580	.00084	.00058	.15066
#2	-.00140	.00075	-.01229	-.00022	-.00169	.00050	.20942
#3	.00027	-.00046	.00355	.00107	-.00126	.00069	.20967
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6854.9**	**42369.**	**2139.0**
Stddev	37.2	282.	6.9
%RSD	.54331	.66600	.32457
#1	6813.1	42056.	2146.4
#2	6867.1	42446.	2132.6
#3	6884.6	42604.	2138.0

Sample Name: CCV Acquired: 6/23/2016 22:19:31 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.37294	9.2890	.37002	.46325	.93343	.04671	9.3219
Stddev	.00058	.0248	.00029	.00298	.00858	.00002	.0885
%RSD	.15646	.26680	.07810	.64298	.91954	.04347	.94918
#1	.37306	9.3173	.36998	.46028	.92385	.04673	9.2510
#2	.37230	9.2715	.36976	.46623	.94043	.04670	9.2937
#3	.37345	9.2781	.37033	.46323	.93599	.04670	9.4210
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04629	.18580	.46699	.46774	3.7375	46.911	.95278
Stddev	.00023	.00060	.00144	.00134	.0018	.467	.00684
%RSD	.48818	.32069	.30929	.28620	.04690	.99443	.71816
#1	.04654	.18545	.46662	.46619	3.7368	46.377	.94493
#2	.04624	.18649	.46859	.46843	3.7395	47.239	.95591
#3	.04609	.18546	.46577	.46859	3.7362	47.116	.95750
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.2808	.46805	.93442	46.553	.46467	9.1850	.46445
Stddev	.1781	.00201	.00336	.432	.00229	.0141	.00099
%RSD	1.9192	.42908	.36011	.92728	.49257	.15361	.21367
#1	9.0878	.46660	.93610	46.055	.46543	9.1763	.46458
#2	9.4388	.47034	.93661	46.821	.46649	9.2013	.46537
#3	9.3158	.46721	.93054	46.783	.46210	9.1774	.46340
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: CCV Acquired: 6/23/2016 22:19:31 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1058**	**.37399**	**4.6590**	**.92793**	**.93602**	**.93884**	**.47136**
Stddev	.0068	.00623	.0143	.00333	.00809	.01829	.00375
%RSD	.61331	1.6668	.30694	.35899	.86439	1.9481	.79529
#1	1.1040	.37143	4.6586	.92611	.92682	.91846	.46721
#2	1.1133	.38110	4.6734	.93177	.94202	.94427	.47237
#3	1.1001	.36945	4.6448	.92590	.93921	.95381	.47450
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.93328**	**.93064**	F **.30272**
Stddev	.00145	.00126	.34844
%RSD	.15486	.13568	115.11
#1	.93249	.92922	.70352
#2	.93240	.93165	.07184
#3	.93495	.93106	.13279
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6994.5**	**42945.**	**2201.9**
Stddev	26.0	472.	17.5
%RSD	.37198	1.0980	.79423
#1	7017.9	42835.	2192.4
#2	6966.5	42539.	2222.1
#3	6999.0	43462.	2191.2

Sample Name: CCB Acquired: 6/23/2016 22:23:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00075**	**-.01234**	**.00307**	**.00387**	**-.00152**	**.00003**	**.02196**
Stddev	.00074	.00351	.00195	.00329	.00037	.00010	.03751
%RSD	98.761	28.475	63.502	85.024	24.368	329.31	170.81
#1	.00146	-.01497	.00353	.00757	-.00195	-.00000	.04383
#2	.00082	-.00835	.00475	.00124	-.00126	.00014	.04339
#3	-.00002	-.01370	.00093	.00281	-.00136	-.00005	-.02135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.00029**	**-.00074**	**.00053**	**-.01044**	**.06034**	**-.00158**
Stddev	.00023	.00031	.00153	.00009	.01838	.08449	.00205
%RSD	314.24	106.88	205.57	16.843	176.11	140.03	130.11
#1	-.00010	-.00004	-.00241	.00043	-.01522	.02142	-.00392
#2	-.00029	.00057	-.00042	.00060	.00986	.15728	-.00009
#3	.00017	.00033	.00060	.00054	-.02595	.00232	-.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.02604**	**-.00075**	**.00305**	**.06420**	**.00000**	**.00651**	**-.00362**
Stddev	.05654	.00328	.00069	.00709	.00080	.00504	.00339
%RSD	217.15	436.24	22.462	11.042	53218.	77.432	93.854
#1	.03584	-.00047	.00226	.06569	.00068	.00969	-.00632
#2	-.07502	.00238	.00342	.07043	-.00088	.00913	-.00473
#3	-.03894	-.00416	.00347	.05649	.00021	.00070	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: CCB Acquired: 6/23/2016 22:23:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00325**	**-.00859**	**-.00081**	**-.00049**	**.00016**	**.00095**	**-.00269**
Stddev	.00288	.00100	.00106	.00098	.00044	.00395	.00131
%RSD	88.832	11.667	130.17	199.49	265.70	416.04	48.575
#1	.00425	-.00769	-.00116	-.00120	.00053	-.00220	-.00394
#2	-.00001	-.00968	.00037	.00062	.00028	-.00034	-.00133
#3	.00549	-.00841	-.00166	-.00089	-.00032	.00538	-.00281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00046**	**.00011**	F **.20521**
Stddev	.00084	.00022	.40407
%RSD	184.00	201.71	196.91
#1	.00051	-.00006	.57360
#2	-.00094	.00036	-.22696
#3	-.00095	.00003	.26899
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6996.7**	**43446.**	**2222.8**
Stddev	42.9	110.	21.9
%RSD	.61271	.25379	.98413
#1	6948.6	43485.	2197.6
#2	7030.8	43322.	2237.5
#3	7010.7	43532.	2233.2

Sample Name: LLCCV Acquired: 6/23/2016 22:27:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00907	.13685	.00722	.07327	.00636	.00136	.38737	.00083
Stddev	.00127	.00548	.00269	.00354	.00121	.00002	.02958	.00013
%RSD	14.057	4.0063	37.324	4.8356	18.957	1.6251	7.6350	15.322
#1	.00768	.13064	.00454	.06952	.00698	.00135	.41482	.00073
#2	.01019	.13890	.00718	.07656	.00497	.00135	.39124	.00078
#3	.00934	.14102	.00993	.07374	.00713	.00139	.35605	.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00356	.00351	.00643	.06036	.74512	.07304	.35518	.00670
Stddev	.00034	.00083	.00051	.03616	.18336	.00520	.11515	.00028
%RSD	9.6921	23.706	7.9731	59.906	24.608	7.1243	32.420	4.2320
#1	.00383	.00446	.00589	.02265	.76354	.06708	.45336	.00638
#2	.00367	.00316	.00691	.06369	.91857	.07668	.38374	.00683
#3	.00317	.00291	.00648	.09475	.55324	.07536	.22844	.00690
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00743	.43578	.01531	.74167	.00827	.07927	.00569	.77935
Stddev	.00037	.04956	.00080	.00526	.00366	.00493	.00102	.00095
%RSD	5.0056	11.373	5.2515	.70948	44.188	6.2194	17.916	.12251
#1	.00704	.38130	.01503	.74257	.01154	.08395	.00451	.78008
#2	.00779	.47820	.01469	.73602	.00432	.07413	.00628	.77827
#3	.00745	.44783	.01622	.74642	.00896	.07973	.00628	.77970
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: LLCCV Acquired: 6/23/2016 22:27:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.37348	.03865	.02465	.14094	.00676	.01578	19.333
Stddev	.00058	.00060	.00437	.00098	.00113	.00019	.577
%RSD	.15634	1.5628	17.713	.69785	16.700	1.2102	2.9862
#1	.37294	.03795	.02415	.14073	.00773	.01557	19.532
#2	.37410	.03901	.02924	.14008	.00552	.01583	19.783
#3	.37339	.03899	.02055	.14202	.00705	.01594	18.682
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6996.1	43552.	2208.7
Stddev	29.5	407.	29.7
%RSD	.42198	.93392	1.3436
#1	6976.9	43985.	2211.3
#2	7030.1	43494.	2236.9
#3	6981.2	43178.	2177.8

Sample Name: LLCCV Acquired: 6/23/2016 22:31:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02091	.36245	.02162	.18354	.01867	.00356	.98086
Stddev	.00237	.00484	.00558	.00414	.00095	.00018	.04469
%RSD	11.351	1.3361	25.792	2.2543	5.0969	5.1755	4.5561
#1	.01879	.36503	.01522	.18805	.01837	.00338	.94866
#2	.02045	.35687	.02541	.17992	.01791	.00356	.96204
#3	.02347	.36547	.02424	.18267	.01974	.00374	1.0319
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00183	.00959	.00895	.01155	.18702	1.8760	.19064
Stddev	.00040	.00066	.00025	.00083	.02563	.0398	.00709
%RSD	21.803	6.8545	2.7509	7.2203	13.702	2.1189	3.7192
#1	.00229	.01035	.00908	.01200	.20673	1.9212	.19761
#2	.00159	.00922	.00866	.01059	.15805	1.8607	.18344
#3	.00161	.00920	.00910	.01205	.19628	1.8463	.19086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.90135	.02189	.01808	1.0102	.03771	1.7925	.01852
Stddev	.03529	.00047	.00019	.0359	.00135	.0154	.00112
%RSD	3.9156	2.1507	1.0770	3.5580	3.5742	.86119	6.0288
#1	.87617	.02240	.01801	.97340	.03783	1.7983	.01932
#2	.88620	.02181	.01830	1.0119	.03900	1.8043	.01725
#3	.94169	.02146	.01794	1.0452	.03631	1.7750	.01900
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: LLCCV Acquired: 6/23/2016 22:31:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19437**	**.03462**	**1.8270**	**.92649**	**.09469**	**.05843**	**.34726**
Stddev	.00460	.00283	.0121	.00858	.00060	.00582	.00417
%RSD	2.3690	8.1675	.66332	.92568	.63058	9.9521	1.1997
#1	.19959	.03615	1.8304	.92739	.09439	.06509	.34780
#2	.19266	.03636	1.8370	.93459	.09431	.05586	.35113
#3	.19087	.03136	1.8135	.91750	.09538	.05435	.34285
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.01800**	**.03876**	F **49.426**
Stddev	.00023	.00022	.593
%RSD	1.2842	.57319	1.2005
#1	.01823	.03881	50.072
#2	.01777	.03895	48.906
#3	.01800	.03851	49.300
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7011.3**	**43477.**	**2210.1**
Stddev	20.4	40.	14.4
%RSD	.29146	.09218	.65240
#1	7004.2	43507.	2200.5
#2	6995.4	43491.	2226.7
#3	7034.3	43431.	2203.1

Sample Name: PBW 11 Acquired: 6/23/2016 22:35:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573562-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00032**	**.00826**	**.00073**	**.00097**	**-.00161**	**.00009**	**.02504**
Stddev	.00435	.00626	.00116	.00380	.00132	.00015	.01704
%RSD	1361.2	75.725	158.33	393.95	82.078	159.17	68.056
#1	-.00441	.01091	-.00035	.00280	-.00305	.00000	.03508
#2	.00122	.01276	.00059	.00350	-.00132	.00026	.03466
#3	.00414	.00112	.00196	-.00341	-.00045	.00001	.00536
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**-.00009**	**.00011**	**.00179**	**-.00443**	**.01747**	**-.00078**
Stddev	.00037	.00030	.00107	.00110	.02744	.11206	.00643
%RSD	372.56	345.12	981.79	61.211	619.83	641.53	826.74
#1	.00053	-.00038	.00079	.00288	.01410	-.01578	-.00199
#2	-.00009	.00021	-.00112	.00069	-.03595	.14238	.00617
#3	-.00014	-.00009	.00066	.00181	.00857	-.07420	-.00651
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.12116**	**.00145**	**-.00010**	**-.00638**	**-.00006**	**-.00844**	**-.00156**
Stddev	.07020	.00190	.00047	.05241	.00004	.00883	.00308
%RSD	57.940	131.08	475.47	821.85	65.273	104.67	197.22
#1	.10625	-.00074	-.00051	-.02102	-.00009	.00126	.00107
#2	.19761	.00240	-.00019	.05180	-.00002	-.01056	-.00495
#3	.05961	.00268	.00041	-.04991	-.00007	-.01601	-.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: PBW 11 Acquired: 6/23/2016 22:35:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573562-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00235**	F **-.01321**	**-.01211**	**.00005**	**.00012**	**-.01090**	**-.00481**
Stddev	.00434	.00615	.00423	.00130	.00022	.00717	.00224
%RSD	184.96	46.568	34.938	2403.9	182.36	65.767	46.622
#1	-.00650	-.00846	-.00872	-.00069	-.00007	-.00262	-.00253
#2	.00215	-.02016	-.01076	-.00070	.00007	-.01519	-.00488
#3	-.00268	-.01101	-.01685	.00155	.00036	-.01489	-.00701
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		90.000					
Low Limit		-.01000					

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00056**	**.00115**	F **-.06214**
Stddev	.00033	.00011	.40590
%RSD	58.758	9.4676	653.23
#1	-.00093	.00115	.04499
#2	-.00040	.00127	.27945
#3	-.00033	.00105	-.51085
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6526.0**	**40939.**	**2061.7**
Stddev	35.4	294.	34.1
%RSD	.54178	.71898	1.6547
#1	6541.9	40985.	2026.5
#2	6550.5	40624.	2063.9
#3	6485.4	41207.	2094.6

Sample Name: LCSW 11 Acquired: 6/23/2016 22:38:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573562-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20572	5.1016	.20434	.99099	.52273	.02551	5.4134	.02557
Stddev	.00209	.0119	.00205	.00539	.00783	.00018	.0860	.00030
%RSD	1.0158	.23413	1.0041	.54353	1.4983	.70326	1.5893	1.1859
#1	.20812	5.1093	.20580	.99664	.52935	.02536	5.5127	.02591
#2	.20432	5.1075	.20521	.99043	.52477	.02571	5.3662	.02536
#3	.20472	5.0878	.20199	.98591	.51409	.02545	5.3613	.02542
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10385	.25890	.26189	2.1195	25.823	.53451	5.3645	.26403
Stddev	.00010	.00080	.00098	.0266	.322	.00518	.0615	.00364
%RSD	.09428	.30942	.37489	1.2540	1.2452	.96918	1.1457	1.3773
#1	.10374	.25918	.26254	2.1199	26.125	.53986	5.3994	.26710
#2	.10385	.25953	.26237	2.1460	25.858	.53416	5.2935	.26002
#3	.10394	.25800	.26076	2.0928	25.485	.52952	5.4005	.26498
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53004	25.957	.26029	4.9232	.25825	.61920	.19466	2.6294
Stddev	.00026	.317	.00111	.0037	.00566	.00409	.00541	.0065
%RSD	.04851	1.2227	.42516	.07504	2.1932	.66079	2.7789	.24514
#1	.53022	26.268	.26156	4.9218	.25403	.62385	.18855	2.6314
#2	.53016	25.970	.25951	4.9204	.25605	.61617	.19656	2.6346
#3	.52975	25.634	.25981	4.9274	.26469	.61757	.19886	2.6222
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: LCSW 11 Acquired: 6/23/2016 22:38:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573562-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51706**	**.53317**	**.52168**	**.25600**	**.51571**	**.51503**	**1.3110**
Stddev	.00229	.00553	.01335	.00456	.00094	.00046	.2154
%RSD	.44200	1.0369	2.5594	1.7813	.18322	.08969	16.426
#1	.51564	.53801	.52874	.25386	.51673	.51503	1.4161
#2	.51585	.53436	.53002	.26124	.51555	.51550	1.4536
#3	.51970	.52714	.50628	.25291	.51486	.51457	1.0633
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6527.2**	**40455.**	**2087.1**
Stddev	31.3	163.	12.5
%RSD	.47880	.40351	.59802
#1	6563.2	40283.	2074.8
#2	6508.4	40474.	2086.8
#3	6509.8	40608.	2099.8

Sample Name: F BLANK Acquired: 6/23/2016 22:42:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573353-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00101	.01349	.00278	.00644	-.00048	.00013	.02829	-.00023
Stddev	.00147	.00646	.00238	.00275	.00027	.00015	.01012	.00024
%RSD	145.82	47.931	85.631	42.748	55.833	119.23	35.758	102.61
#1	-.00010	.00837	.00376	.00945	-.00079	.00030	.03838	-.00026
#2	.00267	.02075	.00451	.00583	-.00040	.00003	.02835	-.00045
#3	.00045	.01134	.00007	.00405	-.00027	.00005	.01815	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	-.00021	.00115	.01618	-.02636	.00022	-.03112	.00301
Stddev	.00025	.00041	.00050	.01401	.02024	.00227	.10093	.00056
%RSD	146.69	193.40	43.311	86.581	76.800	1041.8	324.28	18.733
#1	.00022	.00012	.00058	.01388	-.01342	.00194	.07257	.00362
#2	.00039	-.00067	.00140	.00346	-.01597	.00107	-.03691	.00250
#3	-.00010	-.00008	.00148	.03119	-.04969	-.00236	-.12903	.00293
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	131.96	-.00024	-.00817	-.00215	.00148	-.00969	-.00282
Stddev	.00010	.85	.00144	.01034	.00162	.00392	.00917	.00327
%RSD	22.241	.64765	607.00	126.51	75.376	266.02	94.572	115.83
#1	.00044	132.92	.00143	.00262	-.00398	.00318	-.01589	.00093
#2	.00053	131.28	-.00110	-.01799	-.00092	.00426	.00084	-.00431
#3	.00034	131.69	-.00104	-.00915	-.00154	-.00301	-.01402	-.00509
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: F BLANK Acquired: 6/23/2016 22:42:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573353-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.00010	-.00200	-.00314	.00056	.00410	.11736
Stddev	.00046	.00052	.00261	.00021	.00036	.00009	.48090
%RSD	288.96	535.97	130.24	6.7340	64.659	2.2677	409.76
#1	-.00023	.00063	-.00290	-.00292	.00037	.00404	.00662
#2	.00004	.00007	-.00404	-.00316	.00033	.00421	-.29851
#3	.00067	-.00041	.00094	-.00334	.00097	.00406	.64398
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6547.2	40321.	2096.8
Stddev	27.3	101.	33.4
%RSD	.41693	.25042	1.5916
#1	6550.7	40326.	2062.9
#2	6572.6	40217.	2129.6
#3	6518.3	40419.	2098.0

Sample Name: F BLANK Acquired: 6/23/2016 22:46:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573353-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00205**	**.01458**	**.00104**	**.00093**	**-.00012**	**-.00011**	**.03413**	**.00007**
Stddev	.00257	.00695	.00149	.00158	.00097	.00015	.06625	.00024
%RSD	125.57	47.660	142.55	168.73	807.82	139.24	194.10	358.50
#1	.00306	.01748	.00276	.00220	-.00059	.00003	.00736	.00006
#2	.00395	.00665	.00032	-.00083	-.00077	-.00008	-.01455	-.00017
#3	-.00087	.01960	.00006	.00144	.00099	-.00027	.10958	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**-.00025**	**.00229**	**.01454**	**.10361**	**-.00161**	**-.00074**	**.00159**
Stddev	.00020	.00099	.00086	.02039	.12854	.00327	.04972	.00150
%RSD	270.27	392.29	37.466	140.25	124.05	203.19	6704.2	94.513
#1	-.00016	-.00139	.00199	-.00883	.15515	.00182	-.05789	.00331
#2	.00020	.00021	.00326	.02371	.19839	-.00196	.02308	.00082
#3	.00019	.00042	.00163	.02874	-.04269	-.00469	.03259	.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.08993**	**.00021**	**-.00044**	**.00171**	**.00115**	**-.00478**	**-.01618**
Stddev	.00021	.02749	.00122	.00310	.00251	.00690	.00614	.00197
%RSD	158.62	30.569	571.20	708.88	146.77	601.02	128.46	12.198
#1	.00007	.10546	-.00067	.00234	-.00022	.00773	-.00669	-.01496
#2	.00036	.10614	-.00029	.00012	.00081	.00175	.00209	-.01845
#3	-.00004	.05819	.00160	-.00377	.00454	-.00604	-.00974	-.01512
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: F BLANK Acquired: 6/23/2016 22:46:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573353-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.00000	-.00849	-.00355	.00002	.00375	.18786
Stddev	.00024	.00006	.00318	.00112	.00121	.00009	.14076
%RSD	171.57	4326.9	37.397	31.641	7603.4	2.4757	74.927
#1	.00012	.00006	-.01213	-.00271	-.00043	.00385	.34927
#2	.00039	-.00000	-.00626	-.00312	-.00090	.00367	.12376
#3	-.00009	-.00006	-.00708	-.00483	.00138	.00373	.09057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6645.1	41415.	2118.1
Stddev	51.0	148.	9.8
%RSD	.76790	.35755	.46386
#1	6671.8	41525.	2108.0
#2	6677.3	41246.	2127.6
#3	6586.3	41473.	2118.7

Sample Name: L1606097401 Acquired: 6/23/2016 22:50:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573562-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00187	.11141	.00185	.13976	.13124	.00006	11.923	.00025
Stddev	.00099	.00961	.00433	.00304	.00120	.00013	.085	.00026
%RSD	52.908	8.6272	234.23	2.1718	.91402	206.81	.71186	103.09
#1	-.00300	.11755	.00322	.14250	.13178	.00021	12.021	.00001
#2	-.00137	.11635	-.00300	.14028	.13207	-.00003	11.884	.00021
#3	-.00123	.10033	.00533	.13649	.12986	.00001	11.865	.00052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00325	.00082	.00243	1.0194	3.4016	.00412	14.829	.47953
Stddev	.00065	.00120	.00106	.0300	.0185	.00138	.053	.00284
%RSD	19.954	146.37	43.821	2.9431	.54459	33.491	.35710	.59200
#1	.00322	-.00007	.00334	.98836	3.3804	.00531	14.788	.47741
#2	.00262	.00219	.00268	1.0217	3.4096	.00444	14.889	.48276
#3	.00391	.00035	.00126	1.0482	3.4148	.00261	14.810	.47842
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	14.029	.00345	-.00115	.00096	.00344	.00640	6.1973
Stddev	.00012	.046	.00111	.00836	.00159	.00074	.00619	.0079
%RSD	73.635	.32793	32.058	726.14	165.09	21.404	96.675	.12766
#1	-.00003	14.048	.00367	-.00743	.00071	.00392	.01206	6.2055
#2	-.00020	14.062	.00443	-.00436	-.00049	.00379	-.00020	6.1968
#3	-.00025	13.976	.00225	.00834	.00266	.00259	.00734	6.1897
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606097401 Acquired: 6/23/2016 22:50:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573562-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.15663	-.00490	-.00350	-.00004	.00381	.27764
Stddev	.00040	.00118	.00403	.00013	.00036	.00005	.25173
%RSD	389.62	.75413	82.244	3.6390	976.32	1.2951	90.667
#1	-.00036	.15760	-.00950	-.00338	-.00044	.00385	.40246
#2	.00031	.15698	-.00318	-.00349	.00013	.00382	.44257
#3	.00036	.15532	-.00201	-.00363	.00021	.00375	-.01211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6619.1	40945.	2109.7
Stddev	10.2	451.	19.0
%RSD	.15337	1.1019	.89902
#1	6615.2	40453.	2097.8
#2	6611.5	41044.	2131.5
#3	6630.6	41339.	2099.6

Sample Name: L1606097409S Acquired: 6/23/2016 22:54:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573562-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20627	5.0015	.19707	1.0840	.63830	.02511	15.216	.02489
Stddev	.00439	.0470	.00646	.0138	.00496	.00023	.159	.00037
%RSD	2.1297	.93911	3.2784	1.2764	.77719	.91601	1.0457	1.4914
#1	.20993	5.0515	.18974	1.0963	.64340	.02535	15.397	.02529
#2	.20140	4.9583	.19954	1.0690	.63801	.02510	15.151	.02456
#3	.20748	4.9946	.20193	1.0866	.63349	.02489	15.099	.02483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10388	.25321	.25314	2.5849	28.688	.52179	17.865	.68847
Stddev	.00035	.00232	.00112	.0115	.394	.00543	.201	.00731
%RSD	.33918	.91513	.44229	.44279	1.3724	1.0405	1.1266	1.0613
#1	.10359	.25588	.25333	2.5862	29.131	.52794	18.088	.69576
#2	.10427	.25175	.25416	2.5957	28.557	.51978	17.697	.68851
#3	.10377	.25199	.25194	2.5729	28.377	.51766	17.810	.68114
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51876	38.405	.25390	4.8710	.24934	.59995	.18589	8.2835
Stddev	.00146	.259	.00011	.0108	.00345	.00191	.00207	.0089
%RSD	.28048	.67387	.04392	.22193	1.3854	.31868	1.1116	.10799
#1	.51718	38.681	.25401	4.8591	.24740	.60185	.18570	8.2732
#2	.51906	38.367	.25379	4.8738	.25333	.59803	.18393	8.2891
#3	.52005	38.168	.25392	4.8802	.24730	.59997	.18804	8.2882
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606097409S Acquired: 6/23/2016 22:54:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573562-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50349	.65950	.51762	.24758	.50743	.50246	.81618
Stddev	.00174	.00452	.01522	.00062	.00357	.00056	.23521
%RSD	.34477	.68510	2.9397	.25174	.70344	.11237	28.818
#1	.50344	.66471	.52198	.24830	.51109	.50181	.58167
#2	.50178	.65703	.53018	.24729	.50396	.50287	.81481
#3	.50525	.65675	.50070	.24716	.50723	.50268	1.0521
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6571.1	40649.	2099.3
Stddev	19.5	291.	11.1
%RSD	.29604	.71659	.53063
#1	6548.6	40317.	2086.9
#2	6582.6	40767.	2102.9
#3	6582.0	40862.	2108.3

Sample Name: L1606097411SD Acquired: 6/23/2016 22:58:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573562-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20301	5.0935	.20254	1.1135	.64720	.02513	17.005	.02529
Stddev	.00131	.0093	.00255	.0073	.00193	.00014	.125	.00014
%RSD	.64434	.18208	1.2591	.65223	.29801	.54856	.73583	.55871
#1	.20180	5.0830	.20062	1.1056	.64841	.02524	16.944	.02527
#2	.20284	5.0968	.20544	1.1153	.64821	.02498	17.149	.02543
#3	.20440	5.1006	.20156	1.1198	.64498	.02518	16.923	.02515
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10473	.25680	.25656	3.0216	28.787	.52889	19.740	.73225
Stddev	.00029	.00169	.00156	.0240	.291	.00510	.166	.00214
%RSD	.27243	.65998	.60790	.79299	1.0111	.96496	.83971	.29254
#1	.10453	.25746	.25836	3.0492	28.796	.52755	19.834	.73428
#2	.10462	.25806	.25556	3.0077	29.074	.53453	19.837	.73246
#3	.10506	.25487	.25576	3.0078	28.492	.52458	19.548	.73001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52618	39.581	.25576	4.8994	.25448	.60988	.19462	8.7250
Stddev	.00060	.184	.00118	.0146	.00431	.00152	.00488	.0127
%RSD	.11470	.46575	.46133	.29829	1.6939	.24983	2.5089	.14588
#1	.52623	39.585	.25707	4.8974	.25909	.60949	.19392	8.7122
#2	.52676	39.763	.25543	4.9148	.25381	.60859	.19982	8.7250
#3	.52555	39.395	.25478	4.8858	.25055	.61156	.19013	8.7376
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606097411SD Acquired: 6/23/2016 22:58:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573562-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50655	.68066	.51426	.25122	.50847	.50678	.50917
Stddev	.00036	.00376	.00731	.00121	.00054	.00037	.18705
%RSD	.07012	.55173	1.4206	.48320	.10539	.07293	36.736
#1	.50668	.67977	.51313	.25144	.50835	.50698	.47043
#2	.50615	.68478	.52206	.25231	.50800	.50700	.34452
#3	.50682	.67742	.50758	.24991	.50905	.50635	.71255
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6599.6	40879.	2125.2
Stddev	36.5	163.	36.7
%RSD	.55319	.39917	1.7271
#1	6558.7	40764.	2124.1
#2	6628.9	40808.	2089.1
#3	6611.1	41066.	2162.5

Sample Name: L1606090301 Acquired: 6/23/2016 23:01:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00171	.01564	.00294	.01850	.00898	-.00004	46.441	.00022
Stddev	.00082	.01258	.00166	.00390	.00087	.00003	.145	.00037
%RSD	47.964	80.448	56.393	21.081	9.6500	63.411	.31216	167.83
#1	.00264	.02660	.00383	.02298	.00987	-.00008	46.595	-.00020
#2	.00144	.01843	.00103	.01664	.00813	-.00002	46.423	.00039
#3	.00106	.00190	.00395	.01587	.00895	-.00004	46.307	.00049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	.00043	.00251	.04392	.36940	-.00187	6.4848	.00401
Stddev	.00055	.00082	.00124	.02745	.02893	.00702	.0718	.00293
%RSD	143.61	190.56	49.243	62.491	7.8320	374.64	1.1071	73.244
#1	.00082	-.00015	.00183	.02878	.35514	-.00147	6.5673	.00719
#2	.00055	.00137	.00394	.07561	.35036	.00493	6.4364	.00342
#3	-.00023	.00007	.00177	.02738	.40269	-.00908	6.4507	.00141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00124	2.3912	.00015	-.00111	.00175	-.00069	-.00611	2.4464
Stddev	.00019	.0146	.00065	.00585	.00193	.00258	.00753	.0043
%RSD	15.055	.61183	443.31	524.60	110.31	375.66	123.28	.17481
#1	.00123	2.3744	.00089	-.00577	.00397	.00193	-.00911	2.4476
#2	.00106	2.4012	-.00016	.00545	.00055	-.00077	.00246	2.4417
#3	.00143	2.3980	-.00029	-.00303	.00072	-.00322	-.01167	2.4500
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606090301 Acquired: 6/23/2016 23:01:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.05094	-.00942	-.00137	.00033	.00855	.12749
Stddev	.00120	.00036	.00450	.00125	.00064	.00008	.22777
%RSD	359.04	.70893	47.793	91.344	191.76	.98957	178.66
#1	-.00095	.05113	-.01374	-.00053	.00015	.00845	.36891
#2	.00142	.05116	-.00475	-.00281	-.00019	.00858	.09713
#3	.00053	.05052	-.00978	-.00077	.00105	.00861	-.08358
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6624.9	41305.	2113.7
Stddev	28.0	611.	12.8
%RSD	.42196	1.4799	.60649
#1	6599.0	41779.	2107.8
#2	6654.5	40615.	2128.4
#3	6621.1	41521.	2104.9

Sample Name: L1606090301PS Acquired: 6/23/2016 23:05:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573749-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20315	5.0351	.19933	.98509	.51723	.02533	46.108	.02517
Stddev	.00237	.0141	.00064	.00471	.00225	.00014	.292	.00010
%RSD	1.1667	.28092	.32345	.47796	.43513	.56006	.63289	.38937
#1	.20113	5.0207	.19918	.98035	.51851	.02535	46.344	.02507
#2	.20576	5.0490	.19878	.98516	.51463	.02547	45.781	.02527
#3	.20255	5.0357	.20004	.98977	.51856	.02518	46.198	.02516
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10028	.25408	.25247	2.0837	25.422	.52185	10.797	.26020
Stddev	.00048	.00013	.00281	.0115	.145	.00302	.049	.00165
%RSD	.47862	.05151	1.1142	.55075	.56995	.57813	.44947	.63512
#1	.10024	.25422	.24943	2.0968	25.589	.52416	10.827	.25832
#2	.10077	.25406	.25499	2.0788	25.328	.51844	10.822	.26141
#3	.09982	.25396	.25300	2.0754	25.349	.52296	10.741	.26088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52036	27.383	.25017	4.9546	.25694	.60707	.19089	4.8076
Stddev	.00073	.158	.00061	.0081	.00347	.00719	.00485	.0007
%RSD	.13971	.57670	.24497	.16395	1.3493	1.1850	2.5386	.01435
#1	.52119	27.447	.24958	4.9632	.25410	.61287	.18545	4.8079
#2	.51984	27.204	.25012	4.9471	.25592	.60931	.19246	4.8068
#3	.52004	27.500	.25080	4.9535	.26081	.59902	.19476	4.8080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606090301PS Acquired: 6/23/2016 23:05:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573749-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50644	.56158	.50038	.25206	.50977	.50584	.50366
Stddev	.00169	.00120	.00839	.00343	.00237	.00060	.30226
%RSD	.33432	.21309	1.6764	1.3594	.46441	.11817	60.013
#1	.50760	.56240	.50354	.25552	.50926	.50626	.73300
#2	.50722	.56020	.49087	.24866	.51235	.50516	.61683
#3	.50450	.56212	.50672	.25200	.50770	.50611	.16114
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6634.2	40772.	2114.5
Stddev	22.4	92.	10.2
%RSD	.33771	.22603	.48307
#1	6611.3	40856.	2104.9
#2	6656.0	40786.	2113.4
#3	6635.2	40673.	2125.2

Sample Name: L1606090301SDL Acquired: 6/23/2016 23:09:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573749-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00125**	**-.00211**	**.00104**	**.00614**	**.00089**	**-.00005**	**8.6724**	**-.00005**
Stddev	.00276	.00609	.00315	.00512	.00101	.00009	.0375	.00023
%RSD	221.14	289.17	302.21	83.373	113.85	164.72	.43247	430.30
#1	.00165	-.00654	-.00255	.00543	.00189	-.00005	8.6376	.00022
#2	.00379	.00484	.00330	.01158	.00093	-.00014	8.6675	-.00019
#3	-.00169	-.00462	.00238	.00141	-.00014	.00003	8.7121	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**-.00015**	**.00151**	**.01774**	**.05719**	**-.00032**	**1.2928**	**.00199**
Stddev	.00032	.00036	.00174	.01658	.07315	.00592	.1368	.00072
%RSD	433.89	237.55	115.25	93.432	127.89	1849.8	10.583	36.311
#1	-.00025	-.00023	.00291	.03261	.10693	.00122	1.1631	.00203
#2	.00038	-.00046	-.00044	-.00013	-.02679	.00468	1.4358	.00125
#3	.00008	.00024	.00207	.02075	.09145	-.00685	1.2797	.00269
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00062**	**.50288**	**.00020**	**.00422**	**-.00347**	**-.00009**	**-.00488**	**.45851**
Stddev	.00015	.01796	.00107	.00310	.00056	.00216	.00737	.00307
%RSD	24.656	3.5717	530.84	73.548	16.155	2299.3	151.12	.67016
#1	.00074	.48937	-.00102	.00065	-.00411	-.00250	-.01008	.45511
#2	.00045	.49600	.00097	.00624	-.00312	.00057	.00356	.46107
#3	.00067	.52326	.00066	.00577	-.00317	.00165	-.00811	.45936
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606090301SDL Acquired: 6/23/2016 23:09:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573749-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00043**	**.00975**	**-.00339**	**.00072**	**-.00071**	**.00182**	**.28982**
Stddev	.00076	.00047	.00412	.00137	.00059	.00016	.40983
%RSD	176.59	4.8404	121.60	190.63	83.639	8.7152	141.41
#1	.00038	.00960	.00073	.00044	-.00028	.00190	.42557
#2	-.00111	.01028	-.00752	.00221	-.00047	.00164	.61455
#3	-.00055	.00937	-.00339	-.00049	-.00139	.00193	-.17066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6811.4**	**42010.**	**2145.9**
Stddev	35.6	211.	19.5
%RSD	.52290	.50301	.90902
#1	6804.9	42193.	2150.1
#2	6779.4	42057.	2163.0
#3	6849.8	41779.	2124.7

Sample Name: CCV Acquired: 6/23/2016 23:13:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41326**	**10.290**	**.40933**	**.51318**	**1.0406**	**.05196**	**10.449**
Stddev	.00367	.031	.00303	.00454	.0017	.00056	.073
%RSD	.88729	.29649	.74071	.88463	.16560	1.0752	.70056
#1	.41222	10.266	.40583	.51598	1.0426	.05202	10.433
#2	.41023	10.281	.41097	.50794	1.0395	.05138	10.384
#3	.41734	10.325	.41118	.51561	1.0396	.05249	10.528
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05188**	**.20751**	**.51860**	**.52298**	**4.1404**	**51.810**	**1.0557**
Stddev	.00032	.00026	.00373	.00169	.0293	.081	.0044
%RSD	.62111	.12412	.72010	.32358	.70759	.15585	.41608
#1	.05162	.20739	.51967	.52267	4.1341	51.858	1.0535
#2	.05178	.20781	.51444	.52146	4.1148	51.717	1.0529
#3	.05224	.20734	.52168	.52480	4.1724	51.855	1.0608
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.434**	**.52450**	**1.0396**	**51.672**	**.51702**	**10.257**	**.51943**
Stddev	.147	.00403	.0017	.210	.00153	.061	.00236
%RSD	1.4125	.76876	.16574	.40642	.29546	.59705	.45451
#1	10.599	.52887	1.0415	51.851	.51530	10.207	.52009
#2	10.315	.52369	1.0381	51.441	.51819	10.240	.51680
#3	10.387	.52093	1.0392	51.724	.51759	10.325	.52138
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: CCV Acquired: 6/23/2016 23:13:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2432**	**.40702**	**5.1978**	**1.0337**	**1.0394**	**1.0354**	**.52041**
Stddev	.0039	.00046	.0143	.0031	.0042	.0035	.00214
%RSD	.31258	.11246	.27417	.30049	.40463	.33586	.41209
#1	1.2391	.40753	5.1883	1.0302	1.0436	1.0350	.52283
#2	1.2437	.40689	5.1909	1.0348	1.0352	1.0322	.51875
#3	1.2468	.40665	5.2142	1.0361	1.0396	1.0391	.51965
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0351**	**1.0403**	F **.25266**
Stddev	.0070	.0016	.10822
%RSD	.68141	.15403	42.834
#1	1.0383	1.0386	.34911
#2	1.0270	1.0404	.13562
#3	1.0400	1.0418	.27323
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6474.0**	**39804.**	**2056.5**
Stddev	41.9	151.	9.5
%RSD	.64647	.37833	.46144
#1	6447.9	39827.	2053.8
#2	6522.3	39942.	2048.6
#3	6451.9	39644.	2067.0

Sample Name: CCB Acquired: 6/23/2016 23:17:05 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00053**	**.01688**	**.00315**	**.00457**	**-.00011**	**.00013**	**.01891**	**.00020**
Stddev	.00350	.01032	.00748	.00212	.00110	.00006	.06314	.00005
%RSD	664.12	61.108	237.21	46.535	973.24	44.359	333.92	24.066
#1	-.00268	.02858	-.00372	.00470	.00043	.00018	.03807	.00024
#2	-.00001	.00908	.00206	.00662	.00061	.00007	-.05159	.00021
#3	.00427	.01299	.01112	.00238	-.00138	.00016	.07025	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**.00073**	**.00146**	**.01871**	**.09919**	**.00074**	**.03193**	**.00172**
Stddev	.00032	.00177	.00126	.01232	.12450	.00566	.07256	.00242
%RSD	651.38	241.69	86.427	65.838	125.51	769.76	227.22	140.80
#1	.00042	-.00122	.00034	.00498	-.03300	-.00467	.10382	.00139
#2	-.00019	.00221	.00282	.02879	.11637	.00026	-.04127	-.00052
#3	-.00008	.00121	.00121	.02235	.21421	.00662	.03325	.00429
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00396**	**.05479**	**-.00105**	**.00648**	**-.00101**	**.00564**	**-.00498**	**.00630**
Stddev	.00092	.03837	.00180	.00453	.00307	.00402	.00631	.00043
%RSD	23.350	70.024	171.44	69.981	304.27	71.194	126.78	6.8811
#1	.00290	.07487	.00083	.01030	.00189	.00526	-.01221	.00676
#2	.00456	.01055	-.00276	.00766	-.00422	.00984	-.00057	.00622
#3	.00443	.07894	-.00122	.00147	-.00069	.00183	-.00216	.00591
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB Acquired: 6/23/2016 23:17:05 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00055**	**-.00002**	**.00408**	**-.00193**	**.00037**	**.00005**	**.02228**
Stddev	.00023	.00019	.00879	.00186	.00041	.00007	.40623
%RSD	41.382	1063.2	215.26	96.532	110.70	135.03	1823.1
#1	.00069	-.00023	-.00341	-.00071	-.00006	-.00002	-.40274
#2	.00029	.00004	.01375	-.00101	.00043	.00013	.06292
#3	.00066	.00013	.00190	-.00407	.00076	.00005	.40667
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6464.5**	**39816.**	**2046.0**
Stddev	26.9	481.	41.8
%RSD	.41677	1.2077	2.0425
#1	6458.5	39261.	2010.7
#2	6441.1	40106.	2035.2
#3	6493.9	40080.	2092.2

Sample Name: L1606090302 Acquired: 6/23/2016 23:21:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00800	.00182	.01230	.01036	-.00005	47.673	.00026
Stddev	.00085	.00343	.00363	.00358	.00124	.00007	.280	.00015
%RSD	272.61	42.881	200.18	29.113	11.960	128.20	.58740	57.099
#1	.00031	.00879	-.00237	.00886	.01157	-.00001	47.890	.00037
#2	-.00053	.01096	.00415	.01601	.00909	-.00001	47.772	.00032
#3	.00116	.00424	.00367	.01205	.01042	-.00013	47.357	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	.00015	.00261	.09179	.46952	-.00272	6.7874	.01530
Stddev	.00029	.00088	.00094	.00788	.11796	.00383	.0475	.00163
%RSD	527.39	592.21	36.175	8.5807	25.123	140.65	.69987	10.685
#1	-.00038	.00116	.00159	.08468	.47413	-.00254	6.7436	.01564
#2	.00012	-.00040	.00278	.09044	.34932	.00101	6.7806	.01352
#3	.00010	-.00032	.00345	.10026	.58509	-.00664	6.8379	.01673
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00092	2.5218	-.00025	.00306	.00002	-.00071	-.00373	2.5222
Stddev	.00063	.0302	.00136	.00470	.00238	.00277	.00475	.0109
%RSD	68.779	1.1957	538.26	153.23	11843.	388.81	127.31	.43311
#1	.00032	2.5566	.00100	-.00086	.00039	.00133	.00175	2.5345
#2	.00086	2.5031	-.00169	.00178	.00219	.00040	-.00620	2.5136
#3	.00157	2.5056	-.00007	.00827	-.00252	-.00386	-.00675	2.5186
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606090302 Acquired: 6/23/2016 23:21:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**.05280**	**-.00935**	**-.00377**	**-.00005**	**.00235**	**.11164**
Stddev	.00108	.00027	.00453	.00048	.00146	.00015	.26019
%RSD	392.25	.51917	48.460	12.830	2892.9	6.5370	233.05
#1	-.00049	.05310	-.00574	-.00424	.00086	.00248	.33955
#2	.00090	.05256	-.01444	-.00328	.00072	.00218	-.17184
#3	-.00123	.05274	-.00787	-.00379	-.00173	.00238	.16722
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6545.6**	**41303.**	**2131.1**
Stddev	23.7	132.	13.6
%RSD	.36137	.32048	.63580
#1	6530.1	41250.	2117.0
#2	6572.8	41206.	2132.3
#3	6534.0	41454.	2144.0

Sample Name: L1606090303 Acquired: 6/23/2016 23:25:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00263	.00774	.00563	.00796	.00854	-.00002	45.954	.00013
Stddev	.00328	.00668	.00265	.00318	.00150	.00012	.228	.00034
%RSD	124.84	86.299	47.034	39.934	17.503	682.86	.49687	267.94
#1	.00506	.01059	.00367	.00860	.00804	-.00005	45.886	.00049
#2	-.00111	.01253	.00457	.01077	.01022	.00012	46.208	.00008
#3	.00394	.00011	.00864	.00451	.00737	-.00012	45.767	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	-.00004	.00264	.21996	.44485	.00448	6.7971	.02189
Stddev	.00017	.00063	.00127	.02132	.06435	.00051	.0747	.00331
%RSD	77.701	1729.3	48.231	9.6943	14.465	11.277	1.0984	15.131
#1	.00007	.00062	.00404	.23944	.50211	.00394	6.7547	.01807
#2	.00019	-.00009	.00157	.19718	.45723	.00494	6.8833	.02378
#3	.00041	-.00064	.00230	.22325	.37521	.00457	6.7534	.02384
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00090	2.4891	-.00031	.00226	-.00318	.00121	-.00101	2.4462
Stddev	.00023	.0385	.00053	.00868	.00252	.00105	.00896	.0110
%RSD	25.268	1.5452	169.73	384.84	79.079	87.283	885.01	.44916
#1	.00089	2.4503	-.00059	-.00015	-.00309	-.00001	-.00785	2.4500
#2	.00067	2.4900	.00030	.01188	-.00575	.00184	-.00433	2.4549
#3	.00113	2.5272	-.00064	-.00497	-.00072	.00180	.00914	2.4339
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606090303 Acquired: 6/23/2016 23:25:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.05042	-.00867	-.00405	-.00058	.00293	.21469
Stddev	.00068	.00039	.00321	.00395	.00086	.00012	.24147
%RSD	116.53	.76868	37.044	97.556	147.98	4.1433	112.48
#1	.00096	.05045	-.00617	-.00495	-.00048	.00287	.22391
#2	.00100	.05080	-.01229	-.00746	-.00148	.00307	.45141
#3	-.00020	.05002	-.00756	.00027	.00022	.00286	-.03127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6557.1	40614.	2090.8
Stddev	3.1	286.	4.7
%RSD	.04661	.70434	.22607
#1	6559.9	40616.	2093.3
#2	6553.9	40327.	2085.3
#3	6557.7	40899.	2093.7

Sample Name: L1606090304 Acquired: 6/23/2016 23:28:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00249	.01012	.00464	.01066	.00806	-.00002	46.697	.00023
Stddev	.00091	.01191	.00138	.00192	.00037	.00002	.216	.00013
%RSD	36.530	117.71	29.729	17.988	4.5683	108.87	.46335	55.814
#1	.00283	-.00243	.00466	.01137	.00780	-.00002	46.940	.00033
#2	.00319	.01152	.00601	.00849	.00791	.00000	46.527	.00026
#3	.00146	.02127	.00325	.01212	.00849	-.00003	46.623	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00033	.00062	.00100	.51001	.64738	.00217	6.6353	.05303
Stddev	.00037	.00064	.00122	.03061	.09484	.00222	.1713	.00028
%RSD	109.48	103.02	122.22	6.0022	14.650	102.21	2.5823	.52039
#1	-.00001	.00028	.00000	.50309	.73158	.00219	6.5308	.05285
#2	-.00026	.00023	.00063	.48345	.66592	.00439	6.8331	.05291
#3	-.00073	.00136	.00236	.54349	.54463	-.00006	6.5421	.05335
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	2.5222	.00010	.00174	.00050	.00128	-.00532	2.7225
Stddev	.00078	.0513	.00045	.01103	.00453	.00439	.00901	.0008
%RSD	156.95	2.0349	434.03	634.47	913.70	343.72	169.31	.03118
#1	-.00033	2.5754	.00043	-.00461	.00243	-.00315	-.01182	2.7217
#2	.00121	2.4730	-.00041	.01448	.00374	.00135	-.00910	2.7234
#3	.00061	2.5183	.00029	-.00465	-.00468	.00562	.00496	2.7225
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606090304 Acquired: 6/23/2016 23:28:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00081**	**.04960**	**-.00329**	**-.00196**	**-.00058**	**.00257**	**.19345**
Stddev	.00125	.00047	.00925	.00100	.00022	.00015	.14173
%RSD	153.83	.94383	281.36	50.890	37.305	5.7376	73.263
#1	-.00194	.04918	-.00253	-.00307	-.00034	.00241	.33632
#2	.00053	.04951	.00556	-.00167	-.00074	.00270	.19114
#3	-.00102	.05011	-.01289	-.00114	-.00067	.00259	.05289
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6594.2**	**40470.**	**2074.5**
Stddev	30.7	142.	46.3
%RSD	.46503	.35187	2.2319
#1	6626.4	40634.	2027.0
#2	6565.3	40392.	2077.0
#3	6590.8	40384.	2119.5

Sample Name: L1606090305 Acquired: 6/23/2016 23:32:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00213	.01717	-.00084	.01089	.00981	.00002	48.923	.00033
Stddev	.00269	.00400	.00320	.00082	.00051	.00009	.164	.00010
%RSD	126.20	23.278	380.73	7.5221	5.1474	403.64	.33444	29.068
#1	-.00080	.01450	.00248	.01170	.01029	.00012	49.107	.00031
#2	.00271	.02176	-.00390	.01090	.00928	.00001	48.795	.00044
#3	.00448	.01524	-.00110	.01007	.00986	-.00006	48.866	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	-.00068	.00177	1.5788	.44150	.00018	6.7726	.08864
Stddev	.00038	.00111	.00108	.0172	.06024	.00100	.1054	.00177
%RSD	191.06	162.17	60.718	1.0921	13.644	545.86	1.5565	1.9982
#1	-.00014	-.00131	.00085	1.5835	.49954	.00095	6.8808	.08930
#2	.00013	.00060	.00296	1.5597	.37928	.00054	6.7668	.08663
#3	.00060	-.00134	.00152	1.5932	.44569	-.00095	6.6702	.08998
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	2.4907	.00039	.00113	.00257	.00234	-.00366	3.0530
Stddev	.00062	.0095	.00077	.00213	.00167	.00385	.01135	.0045
%RSD	175.61	.38135	200.05	188.45	64.988	164.32	310.04	.14641
#1	-.00035	2.4923	-.00007	.00130	.00338	.00574	-.00469	3.0528
#2	.00078	2.4993	.00128	-.00108	.00370	-.00184	-.01446	3.0486
#3	.00062	2.4805	-.00005	.00317	.00065	.00313	.00817	3.0576
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606090305 Acquired: 6/23/2016 23:32:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00063**	**.05089**	**-.00933**	**-.00366**	**-.00080**	**.01192**	**.09534**
Stddev	.00059	.00042	.00867	.00169	.00053	.00018	.35498
%RSD	93.514	.82669	92.914	46.068	66.583	1.5108	372.34
#1	-.00036	.05120	-.01547	-.00172	-.00063	.01174	-.06523
#2	-.00022	.05105	.00059	-.00451	-.00139	.01210	.50224
#3	-.00130	.05041	-.01311	-.00475	-.00037	.01192	-.15099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6602.9**	**40942.**	**2135.9**
Stddev	6.9	324.	25.7
%RSD	.10425	.79054	1.2024
#1	6597.6	40623.	2114.4
#2	6610.7	41270.	2164.3
#3	6600.5	40933.	2129.0

Sample Name: L1606092401 Acquired: 6/23/2016 23:36:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00265	.03744	.60307	2.0253	.01194	.00006	59.280
Stddev	.00277	.00788	.00343	.0045	.00047	.00007	.270
%RSD	104.56	21.060	.56883	.22109	3.9165	122.30	.45465
#1	.00477	.04143	.60414	2.0202	.01227	.00013	59.521
#2	-.00048	.02835	.59924	2.0278	.01216	-.00002	58.989
#3	.00365	.04252	.60585	2.0280	.01141	.00007	59.330
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.00169	.04543	.00223	.02086	20.304	.12271
Stddev	.00012	.00069	.00181	.00172	.03477	.327	.00387
%RSD	33.446	40.936	3.9734	76.929	166.67	1.6108	3.1576
#1	.00045	.00112	.04573	.00336	.05783	20.550	.12442
#2	.00044	.00245	.04349	.00026	.01592	20.429	.12545
#3	.00023	.00148	.04706	.00308	-.01117	19.933	.11828
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.44128	.00138	.09389	F 925.96	-.00083	.00321	-.00198
Stddev	.02883	.00107	.00073	20.38	.00037	.00049	.00073
%RSD	6.5329	77.799	.77502	2.2006	45.088	15.416	37.027
#1	.47443	.00015	.09321	948.64	-.00126	.00268	-.00137
#2	.42732	.00186	.09382	909.19	-.00057	.00328	-.00178
#3	.42208	.00212	.09466	920.06	-.00066	.00367	-.00280
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Sample Name: L1606092401 Acquired: 6/23/2016 23:36:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02428**	**.03016**	**5.4351**	**-.00127**	**.13763**	**-.01760**	**-.00342**
Stddev	.00750	.01129	.0055	.00172	.00098	.00201	.00308
%RSD	30.891	37.425	.10042	135.11	.71182	11.421	90.086
#1	.02439	.02726	5.4392	.00004	.13847	-.01734	-.00405
#2	.03173	.04262	5.4371	-.00064	.13656	-.01973	-.00008
#3	.01673	.02061	5.4289	-.00322	.13787	-.01573	-.00615
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00453**	**.02225**	F **-.12201**
Stddev	.00050	.00015	.18874
%RSD	11.054	.67831	154.69
#1	.00443	.02208	-.21896
#2	.00408	.02238	-.24258
#3	.00507	.02228	.09550
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6296.4**	**38355.**	**2086.6**
Stddev	9.5	124.	22.4
%RSD	.15057	.32201	1.0746
#1	6287.1	38290.	2062.1
#2	6296.1	38498.	2106.2
#3	6306.0	38278.	2091.5

Sample Name: DI7 Acquired: 6/23/2016 23:40:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00122	-.00305	.00325	.01342	.00511	-.00003	.63457	.00006
Stddev	.00070	.00725	.00183	.00147	.00092	.00006	.03174	.00026
%RSD	57.204	237.69	56.132	10.964	18.001	169.74	5.0023	454.53
#1	.00129	-.01124	.00390	.01220	.00527	-.00006	.66854	.00019
#2	.00049	.00254	.00119	.01301	.00412	-.00007	.60566	-.00024
#3	.00189	-.00045	.00467	.01505	.00594	.00003	.62951	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	-.00105	.00137	.04887	.17552	-.00411	.67989	.02289
Stddev	.00029	.00066	.00135	.03758	.14542	.00295	.10949	.00017
%RSD	86.943	62.496	98.260	76.910	82.851	71.791	16.104	.73432
#1	.00007	-.00034	.00163	.08822	.25845	-.00273	.72653	.02297
#2	.00065	-.00118	.00257	.01334	.00761	-.00210	.75834	.02270
#3	.00029	-.00164	-.00009	.04504	.26051	-.00749	.55480	.02300
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00034	.88120	.00036	.00359	-.00382	-.00015	.00024	.27765
Stddev	.00027	.03865	.00120	.00516	.00377	.00137	.00372	.00507
%RSD	80.796	4.3866	328.28	143.80	98.655	910.66	1547.5	1.8265
#1	-.00036	.92576	.00056	.00038	-.00770	-.00061	-.00359	.27282
#2	-.00006	.85668	-.00092	.00954	-.00358	.00139	.00047	.27719
#3	-.00060	.86116	.00145	.00084	-.00017	-.00123	.00384	.28294
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: DI7 Acquired: 6/23/2016 23:40:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.00711**	**-.00708**	**-.00329**	**-.00065**	**.00225**	**.10588**
Stddev	.00142	.00039	.01416	.00145	.00012	.00019	.39638
%RSD	991.52	5.5260	199.93	44.028	18.378	8.2791	374.37
#1	-.00086	.00703	-.01555	-.00371	-.00072	.00228	.22011
#2	.00150	.00677	.00926	-.00449	-.00071	.00242	-.33508
#3	-.00107	.00754	-.01496	-.00168	-.00051	.00205	.43261
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6937.5**	**42404.**	**2145.0**
Stddev	31.4	540.	24.8
%RSD	.45241	1.2743	1.1557
#1	6923.1	42362.	2162.5
#2	6915.9	42964.	2155.8
#3	6973.5	41886.	2116.6

Sample Name: DI8 Acquired: 6/23/2016 23:44:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01092	.24637	.01430	.05175	.02804	.00125	.70558	.00137
Stddev	.00255	.00988	.00240	.00085	.00181	.00008	.05906	.00031
%RSD	23.343	4.0097	16.798	1.6422	6.4611	6.1453	8.3704	22.665
#1	.01275	.23892	.01336	.05090	.02859	.00117	.73476	.00163
#2	.01199	.25758	.01250	.05173	.02602	.00133	.63761	.00146
#3	.00801	.24262	.01702	.05260	.02952	.00124	.74437	.00102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00507	.01122	.01287	.11447	1.4023	.02306	.83494	.03245
Stddev	.00024	.00067	.00189	.02802	.1110	.00136	.03948	.00268
%RSD	4.7987	6.0062	14.707	24.480	7.9171	5.8811	4.7291	8.2701
#1	.00493	.01046	.01351	.14674	1.4178	.02155	.80587	.03520
#2	.00493	.01147	.01074	.10042	1.2843	.02345	.81905	.03233
#3	.00535	.01173	.01436	.09625	1.5047	.02418	.87989	.02983
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02127	1.8562	.01215	.23280	.01067	.03011	.00922	.37328
Stddev	.00053	.0342	.00120	.00909	.00269	.00363	.00276	.00458
%RSD	2.4934	1.8408	9.8651	3.9061	25.214	12.073	29.987	1.2271
#1	.02172	1.8278	.01327	.24205	.00898	.03426	.00781	.37038
#2	.02141	1.8468	.01231	.22387	.01377	.02752	.01240	.37091
#3	.02069	1.8941	.01088	.23248	.00925	.02853	.00745	.37856
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: DI8 Acquired: 6/23/2016 23:44:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02095	.02967	.01993	.00726	.02346	.02475	.30772
Stddev	.00032	.00011	.00361	.00564	.00093	.00004	.15766
%RSD	1.5278	.37363	18.102	77.691	3.9489	.16512	51.234
#1	.02080	.02956	.01706	.01372	.02253	.02472	.37227
#2	.02072	.02978	.02398	.00329	.02439	.02479	.42286
#3	.02131	.02968	.01875	.00477	.02345	.02473	.12803
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6883.6	42542.	2132.1
Stddev	35.9	81.	32.8
%RSD	.52157	.19075	1.5391
#1	6873.8	42453.	2096.2
#2	6923.4	42611.	2160.5
#3	6853.7	42564.	2139.6

Sample Name: DI9 Acquired: 6/23/2016 23:48:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01172**	**.24362**	**.00993**	**.05401**	**.02815**	**.00127**	**.79730**
Stddev	.00152	.00569	.00166	.00158	.00083	.00011	.02246
%RSD	12.924	2.3335	16.753	2.9338	2.9467	8.5602	2.8175
#1	.01069	.24626	.01067	.05290	.02910	.00116	.79850
#2	.01102	.23710	.01110	.05583	.02755	.00137	.81914
#3	.01346	.24751	.00803	.05330	.02780	.00127	.77426
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00129**	**.00488**	**.01079**	**.01208**	**.12723**	**1.2786**	**.02511**
Stddev	.00009	.00006	.00031	.00168	.01475	.0943	.00185
%RSD	6.9948	1.2164	2.8343	13.930	11.594	7.3784	7.3599
#1	.00122	.00481	.01066	.01339	.14076	1.1744	.02529
#2	.00139	.00493	.01057	.01268	.11150	1.3582	.02686
#3	.00125	.00489	.01114	.01018	.12944	1.3031	.02318
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.89576**	**.03366**	**.02131**	**1.9045**	**.01104**	**.23277**	**.01075**
Stddev	.05721	.00137	.00010	.0400	.00057	.00507	.00231
%RSD	6.3863	4.0674	.47440	2.0992	5.1553	2.1800	21.454
#1	.95963	.03212	.02142	1.8638	.01067	.23321	.01329
#2	.84922	.03409	.02122	1.9059	.01170	.22750	.00878
#3	.87844	.03476	.02130	1.9437	.01076	.23762	.01018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: DI9 Acquired: 6/23/2016 23:48:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03181**	**.00568**	**.38831**	**.02056**	**.03131**	**.02182**	**.01037**
Stddev	.00137	.01144	.00136	.00010	.00017	.00825	.00275
%RSD	4.3124	201.38	.34995	.48690	.53387	37.784	26.554
#1	.03338	.01685	.38970	.02064	.03120	.02474	.00719
#2	.03087	-.00602	.38824	.02045	.03123	.02822	.01188
#3	.03117	.00622	.38698	.02060	.03150	.01252	.01204
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.02300**	**.02452**	F **-.17091**
Stddev	.00069	.00018	.04679
%RSD	2.9886	.74679	27.377
#1	.02312	.02467	-.13285
#2	.02363	.02457	-.15673
#3	.02227	.02431	-.22315
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6863.0**	**42455.**	**2140.2**
Stddev	39.9	478.	31.6
%RSD	.58151	1.1260	1.4765
#1	6898.2	41962.	2103.8
#2	6819.6	42485.	2156.2
#3	6871.2	42917.	2160.6

Sample Name: CCV Acquired: 6/23/2016 23:52:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41335	10.421	.41508	.51836	1.0496	.05256	10.492
Stddev	.00039	.045	.00377	.00553	.0024	.00034	.011
%RSD	.09500	.43207	.90936	1.0674	.22730	.64627	.10764
#1	.41368	10.369	.41539	.51316	1.0470	.05217	10.480
#2	.41292	10.443	.41116	.51776	1.0502	.05276	10.503
#3	.41347	10.451	.41869	.52417	1.0517	.05276	10.494
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05201	.20974	.52865	.52594	4.2034	52.520	1.0760
Stddev	.00016	.00127	.00164	.00103	.0566	.261	.0077
%RSD	.30575	.60470	.30961	.19638	1.3473	.49635	.71934
#1	.05219	.20874	.52729	.52653	4.2121	52.227	1.0702
#2	.05189	.20932	.52820	.52475	4.1429	52.726	1.0848
#3	.05194	.21117	.53047	.52654	4.2552	52.606	1.0729
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.516	.52754	1.0503	52.353	.52349	10.349	.52208
Stddev	.065	.00345	.0031	.035	.00255	.035	.00042
%RSD	.61612	.65474	.29626	.06645	.48722	.33829	.08130
#1	10.587	.52445	1.0535	52.313	.52122	10.327	.52177
#2	10.461	.53127	1.0472	52.379	.52299	10.332	.52191
#3	10.500	.52692	1.0503	52.366	.52625	10.390	.52256
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: CCV Acquired: 6/23/2016 23:52:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2512**	**.41632**	**5.2448**	**1.0458**	**1.0501**	**1.0483**	**.52498**
Stddev	.0079	.00080	.0298	.0049	.0030	.0126	.00266
%RSD	.62850	.19294	.56895	.46593	.28810	1.2026	.50623
#1	1.2568	.41583	5.2243	1.0406	1.0479	1.0390	.52296
#2	1.2422	.41589	5.2311	1.0465	1.0488	1.0433	.52399
#3	1.2546	.41725	5.2791	1.0503	1.0535	1.0626	.52799
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0496**	**1.0495**	F **.09970**
Stddev	.0053	.0039	.10577
%RSD	.50966	.36953	106.08
#1	1.0434	1.0481	.19784
#2	1.0529	1.0466	.11360
#3	1.0524	1.0539	-.01233
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6372.6**	**39443.**	**2025.2**
Stddev	36.3	113.	32.7
%RSD	.56912	.28682	1.6135
#1	6379.4	39570.	1991.0
#2	6404.9	39404.	2028.4
#3	6333.4	39354.	2056.1

Sample Name: CCB Acquired: 6/23/2016 23:56:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00038**	**.01156**	**.00056**	**.00234**	**.00056**	**.00010**	**.03716**
Stddev	.00349	.01000	.00359	.00308	.00040	.00012	.04368
%RSD	913.43	86.498	638.46	132.02	72.010	128.40	117.56
#1	.00278	.00590	.00379	.00161	.00011	-.00003	.06293
#2	.00200	.02311	.00120	.00572	.00089	.00010	-.01328
#3	-.00362	.00567	-.00330	-.00032	.00068	.00022	.06182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00024**	**.00016**	**.00067**	**.00127**	**.01578**	**.03402**	**-.00346**
Stddev	.00007	.00014	.00147	.00047	.02063	.10839	.00477
%RSD	29.479	83.436	221.45	36.697	130.75	318.63	137.81
#1	.00027	.00008	-.00033	.00181	.00506	.08712	-.00283
#2	.00029	.00009	-.00003	.00096	.00272	-.09068	-.00851
#3	.00016	.00032	.00236	.00106	.03957	.10561	.00096
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00827**	**.00236**	**.00382**	**.04976**	**.00076**	**.00558**	**-.00126**
Stddev	.03186	.00300	.00012	.02808	.00054	.00951	.00325
%RSD	385.40	127.33	3.0647	56.434	70.960	170.62	257.97
#1	-.01385	.00576	.00377	.02300	.00097	.01389	-.00238
#2	-.00614	.00008	.00395	.07899	.00015	-.00480	.00240
#3	.04479	.00123	.00373	.04728	.00116	.00763	-.00379
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: CCB Acquired: 6/23/2016 23:56:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00469**	**-.00110**	**.00540**	**-.00045**	**.00020**	**-.00579**	**-.00171**
Stddev	.00519	.00566	.00080	.00082	.00023	.00790	.00277
%RSD	110.60	514.68	14.743	182.74	110.97	136.58	162.08
#1	.00345	.00405	.00520	.00050	.00023	-.00735	-.00373
#2	.01039	-.00018	.00628	-.00094	.00042	-.01279	.00145
#3	.00024	-.00717	.00473	-.00090	-.00003	.00278	-.00284
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00035**	**.00012**	F **-.30075**
Stddev	.00143	.00011	.38164
%RSD	413.19	92.936	126.90
#1	.00023	.00022	-.11902
#2	.00071	-.00000	-.73929
#3	-.00198	.00015	-.04394
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6443.5**	**39921.**	**2022.5**
Stddev	30.3	559.	26.8
%RSD	.46979	1.3996	1.3238
#1	6467.0	40295.	2021.5
#2	6409.3	40190.	1996.3
#3	6454.1	39279.	2049.8

Sample Name: ICSA Acquired: 6/24/2016 0:00:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	s -.00181	^F *****	k .00039	s .01077	F -16.124	s .00066
Stddev	.00405	-----	.00084	.01107	27.933	.00100
%RSD	224.07	-----	217.80	102.72	173.24	151.08
#1	s .00084	s .38723	k .00033	s .00228	-48.378	s -.00024
#2	s .00021	s 13.731	k .00125	s .00675	.0154	s .00048
#3	s -.00648	^ -----	k -.00043	s .02329	-.0093	s .00173
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit		300.00			.00400	
Low Limit		200.00			-.00400	

Elem	Ca4226	Cd2288	Co2286	Cr2677	Cu2247	Fe2611
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -17.795	kF -.00145	k .00006	s .00397	kF .00900	kF 13.080
Stddev	30.964	.00234	.00025	.00687	.00196	22.623
%RSD	174.00	161.85	431.98	173.11	21.777	172.95
#1	-53.549	k -.00415	k .00030	s -.00220	k .00711	k 39.203
#2	.1724	k .00000	k .00007	s .00273	k .00885	k .00481
#3	-.0087	k -.00020	k -.00020	s .01137	k .01102	k .03331
Check ?	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Fail
High Limit	300.00	.00080			.00400	120.00
Low Limit	200.00	-.00080			-.00400	80.000

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 303.15	F 17.009	kF 144.99	kF -2.2313	k .00055	F 349.42
Stddev	524.72	29.469	251.19	3.8674	.00057	605.42
%RSD	173.09	173.26	173.25	173.32	104.51	173.26
#1	909.05	51.038	k 435.03	k -6.6970	k -.00009	1048.5
#2	.2954	-.01212	k -.0973	k .00125	k .00102	-.464
#3	.1091	.00231	k .0233	k .00181	k .00071	.231
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Fail
High Limit	.40000	.08000	300.00	.00400		.25000
Low Limit	-.40000	-.08000	200.00	-.00400		-.25000

Sample Name: ICSA Acquired: 6/24/2016 0:00:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k **.00287**	k **.00325**	kF **.01305**	k **.00093**	k **-.00095**	k **-.02524**
Stddev	.00051	.00655	.00114	.00346	.00637	.00077
%RSD	17.929	201.56	8.7344	372.00	672.86	3.0546
#1	k .00291	k .00302	k .01321	k .00198	k -.00342	k -.02442
#2	k .00336	k .00992	k .01183	k .00374	k .00629	k -.02594
#3	k .00234	k -.00319	k .01409	k -.00293	k -.00571	k -.02536
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit			.00400			
Low Limit			-.00400			

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k **-.00038**	F **-.53580**	kF **27.418**	k **.00263**	s **-.00151**	k **.00080**
Stddev	.00064	.93031	47.540	.00108	.00198	.00005
%RSD	165.52	173.63	173.39	41.177	131.41	6.5158
#1	k -.00073	-1.6100	k 82.313	k .00161	s .00053	k .00074
#2	k -.00077	.00282	k -.07422	k .00377	s -.00163	k .00084
#3	k .00035	-.00020	k .01560	k .00250	s -.00343	k .00082
Check ?	Chk Pass	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit		.00800	.02400			
Low Limit		-.00800	-.02400			

Elem	Zr3391
Units	ppm
Avg	kF **2038.2**
Stddev	3532.4
%RSD	173.31
#1	k 6117.0
#2	k -4.501
#3	k 2.059
Check ?	Chk Fail
High Limit	.02000
Low Limit	-.02000

Sample Name: ICSA Acquired: 6/24/2016 0:00:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9727.2**	^ *****	**2367.9**
Stddev	176.1	-----	3403.9
%RSD	1.8108	-----	143.75
#1	9699.2	^ -----	-.533
#2	9915.7	^ -----	835.60
#3	9566.8	^ -----	6268.6

Sample Name: ICSAB Acquired: 6/24/2016 0:04:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	sF .03510	^F *****	kF .02243	s -.00104	F -17.624	sF .01622
Stddev	.03890	-----	.00215	.00199	39.067	.01920
%RSD	110.83	-----	9.5662	190.62	221.67	118.34
#1	s .00126	s -.05314	k .01995	s -.00051	-62.399	s -.00008
#2	s .02644	^ -----	k .02376	s .00063	9.5264	s .01137
#3	s .07761	s 36.789	k .02358	s -.00324	-.0004	s .03738
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Fail	Chk Fail
High Limit	.60000	300.00	.30000		.30000	.30000
Low Limit	.40000	200.00	.20000		.20000	.20000

Elem	Ca4226	Cd2288	Co2286	Cr2677	Cu2247	Fe2611
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -41.394	kF .04368	kF .02300	sF .01591	kF .03181	kF -23.435
Stddev	80.483	.00655	.00163	.02148	.00204	29.861
%RSD	194.43	14.997	7.0968	135.04	6.3986	127.42
#1	-134.15	k .03613	k .02112	s -.00134	k .02989	k -57.047
#2	9.956	k .04777	k .02379	s .00909	k .03394	k -13.288
#3	.012	k .04715	k .02408	s .03996	k .03158	k .0307
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
High Limit	300.00	.60000	.30000	.30000	.30000	120.00
Low Limit	200.00	.40000	.20000	.20000	.20000	80.000

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 64.851	F 12.009	kF -20.121	kF 2.2589	k .00017	F 379.32
Stddev	297.64	30.686	17.446	6.5094	.00008	850.62
%RSD	458.96	255.52	86.705	288.17	49.010	224.25
#1	389.61	46.885	k -30.037	k 9.5964	k .00008	1353.6
#2	-194.93	-10.851	k -30.348	k -2.8212	k .00024	-215.77
#3	-.126	-.0058	k .0229	k .00136	k .00019	.137
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Fail
High Limit	6.0000	.10000	300.00	.30000		6.0000
Low Limit	4.0000	-.10000	200.00	.20000		4.0000

Sample Name: ICSAB Acquired: 6/24/2016 0:04:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	kF **.04829**	k **-.00766**	kF **.05850**	kF **.04638**	kF **.02738**	k **-.02638**
Stddev	.00365	.00766	.00306	.00425	.00303	.00499
%RSD	7.5565	99.904	5.2255	9.1610	11.057	18.931
#1	k .04412	k -.00318	k .05693	k .04159	k .03052	k -.02995
#2	k .05085	k -.00330	k .05656	k .04971	k .02448	k -.02852
#3	k .04991	k -.01650	k .06203	k .04783	k .02714	k -.02067
Check ?	Chk Fail	Chk Pass	Chk Fail	Chk Fail	Chk Fail	Chk Pass
High Limit	.60000		.60000	.60000	.30000	
Low Limit	.40000		.40000	.40000	.20000	

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k **-.00052**	F **.44241**	kF **29.066**	kF **.04366**	sF **.01717**	kF **.04537**
Stddev	.00035	.38366	66.439	.00317	.02029	.00340
%RSD	66.984	86.721	228.58	7.2485	118.19	7.4898
#1	k -.00035	.66466	k 105.09	k .04023	s -.00018	k .04144
#2	k -.00091	.66318	k -17.882	k .04647	s .01220	k .04733
#3	k -.00029	-.00061	k -.0063	k .04429	s .03948	k .04732
Check ?	Chk Pass	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
High Limit		.01000	.03000	.60000	.30000	.60000
Low Limit		-.01000	-.03000	.40000	.20000	.40000

Elem	Zr3391
Units	ppm
Avg	kF **4441.9**
Stddev	9705.7
%RSD	218.50
#1	k 15574.
#2	k -2248.1
#3	k .15
Check ?	Chk Fail
High Limit	.02500
Low Limit	-.02500

Sample Name: ICSAB Acquired: 6/24/2016 0:04:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9862.8	^ *****	713.41
Stddev	938.9	-----	1233.6
%RSD	9.5192	-----	172.91
#1	10665.	^ -----	-.471
#2	10093.	^ -----	2.867
#3	8830.2	^ -----	2137.8

Sample Name: CCV Acquired: 6/24/2016 0:08:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40571**	**10.252**	**.40176**	**.50352**	**1.0259**	**.05216**	**10.249**
Stddev	.00299	.036	.00436	.00116	.0046	.00015	.046
%RSD	.73722	.35335	1.0850	.22983	.44349	.28067	.44972
#1	.40902	10.294	.39676	.50219	1.0215	.05229	10.217
#2	.40321	10.228	.40475	.50401	1.0306	.05200	10.229
#3	.40489	10.234	.40377	.50434	1.0255	.05219	10.302
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05061**	**.20363**	**.51898**	**.51228**	**4.1370**	**50.997**	**1.0462**
Stddev	.00046	.00031	.00258	.00236	.0140	.262	.0028
%RSD	.90962	.15400	.49724	.46108	.33750	.51330	.27175
#1	.05077	.20360	.52152	.50960	4.1210	50.850	1.0429
#2	.05096	.20396	.51636	.51314	4.1438	51.299	1.0477
#3	.05008	.20334	.51907	.51408	4.1463	50.841	1.0479
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.348**	**.51498**	**1.0223**	**50.946**	**.51068**	**10.026**	**.51362**
Stddev	.113	.00344	.0028	.211	.00210	.018	.00135
%RSD	1.0914	.66705	.27479	.41321	.41141	.17759	.26270
#1	10.350	.51110	1.0252	50.805	.51092	10.041	.51220
#2	10.460	.51621	1.0220	51.188	.50847	10.031	.51488
#3	10.234	.51763	1.0196	50.845	.51265	10.006	.51378
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: CCV Acquired: 6/24/2016 0:08:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2074**	**.40666**	**5.0928**	**1.0152**	**1.0270**	**1.0159**	**.51326**
Stddev	.0053	.00225	.0089	.0020	.0057	.0060	.00130
%RSD	.43925	.55339	.17475	.20078	.55230	.59351	.25324
#1	1.2134	.40912	5.0829	1.0130	1.0205	1.0208	.51297
#2	1.2053	.40614	5.1001	1.0158	1.0309	1.0178	.51469
#3	1.2034	.40471	5.0956	1.0169	1.0297	1.0092	.51214
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0354**	**1.0194**	F **.15885**
Stddev	.0015	.0011	.28455
%RSD	.14387	.10553	179.12
#1	1.0371	1.0182	.48730
#2	1.0345	1.0199	-.01296
#3	1.0347	1.0202	.00222
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6365.1**	**39110.**	**2005.2**
Stddev	24.8	486.	19.1
%RSD	.39033	1.2423	.95151
#1	6367.8	38552.	2019.3
#2	6388.5	39438.	1983.5
#3	6339.0	39340.	2012.9

Sample Name: CCB Acquired: 6/24/2016 0:12:00 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00050**	**.01206**	**.00160**	**.00292**	**-.00076**	**.00002**	**.02662**	**.00027**
Stddev	.00084	.00666	.00259	.00138	.00101	.00006	.04195	.00026
%RSD	168.40	55.161	162.13	47.221	133.70	271.30	157.60	96.736
#1	-.00086	.01566	-.00084	.00208	-.00074	.00001	-.00269	.00055
#2	-.00111	.01615	.00432	.00217	.00024	.00009	.07467	.00003
#3	.00046	.00439	.00131	.00451	-.00178	-.00003	.00787	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00031**	**-.00012**	**.00191**	**.00930**	**-.00712**	**-.00214**	**.08690**	**.00263**
Stddev	.00007	.00094	.00113	.01540	.09612	.00388	.02902	.00322
%RSD	21.273	789.62	59.288	165.71	1349.4	181.57	33.396	122.26
#1	.00025	.00095	.00248	.00841	-.09353	-.00318	.11978	.00265
#2	.00039	-.00048	.00263	-.00565	-.02424	.00216	.06485	.00584
#3	.00031	-.00083	.00060	.02512	.09640	-.00539	.07607	-.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00355**	**.02859**	**-.00197**	**.00635**	**-.00184**	**.00648**	**-.00780**	**.00562**
Stddev	.00019	.02702	.00094	.00761	.00466	.00302	.00403	.00110
%RSD	5.3403	94.506	47.726	119.74	253.74	46.674	51.730	19.667
#1	.00349	.02662	-.00294	-.00235	-.00211	.00986	-.01231	.00668
#2	.00339	.00261	-.00192	.01175	-.00636	.00555	-.00455	.00447
#3	.00376	.05655	-.00106	.00967	.00296	.00403	-.00652	.00571
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB Acquired: 6/24/2016 0:12:00 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00037	-.00205	-.00398	-.00052	.00005	-.03486
Stddev	.00199	.00049	.00712	.00235	.00010	.00013	.29949
%RSD	737.85	134.70	347.62	58.933	18.924	280.33	859.07
#1	.00244	-.00019	-.00912	-.00572	-.00063	.00006	.11572
#2	-.00149	.00054	.00512	-.00493	-.00049	-.00009	.15945
#3	-.00013	.00074	-.00215	-.00131	-.00044	.00017	-.37976
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6385.3	39685.	2013.6
Stddev	13.4	625.	15.5
%RSD	.20981	1.5744	.76988
#1	6370.9	40406.	2004.4
#2	6397.5	39350.	2031.5
#3	6387.5	39298.	2004.9

Sample Name: LLCCV Acquired: 6/24/2016 0:16:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00692	.17280	.00777	.08023	.00816	.00159	.47649	.00097
Stddev	.00020	.00275	.00190	.00358	.00068	.00009	.02580	.00026
%RSD	2.8583	1.5889	24.477	4.4629	8.3509	5.9617	5.4139	26.520
#1	.00710	.16995	.00825	.08038	.00802	.00170	.44675	.00126
#2	.00671	.17543	.00940	.08374	.00756	.00154	.48987	.00076
#3	.00694	.17303	.00568	.07658	.00890	.00153	.49285	.00090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00419	.00395	.00595	.08433	.74272	.08170	.43560	.00898
Stddev	.00055	.00077	.00059	.03278	.15549	.00079	.02792	.00231
%RSD	13.081	19.592	9.9605	38.876	20.936	.96348	6.4091	25.784
#1	.00481	.00337	.00657	.12211	.85231	.08123	.41810	.00714
#2	.00397	.00365	.00539	.06743	.81110	.08127	.46780	.01158
#3	.00379	.00483	.00590	.06344	.56476	.08261	.42090	.00822
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00841	.43808	.01603	.80173	.00604	.08746	.00868	.86554
Stddev	.00048	.03267	.00038	.00808	.00286	.00565	.00374	.00329
%RSD	5.6889	7.4567	2.3907	1.0073	47.406	6.4564	43.147	.37989
#1	.00807	.47434	.01600	.80832	.00935	.08147	.01238	.86709
#2	.00820	.41094	.01567	.80416	.00429	.08820	.00489	.86176
#3	.00895	.42897	.01643	.79272	.00448	.09269	.00877	.86777
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: LLCCV Acquired: 6/24/2016 0:16:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41147**	**.04220**	**.01937**	**.15204**	**.00784**	**.01708**	**20.869**
Stddev	.00081	.00045	.00562	.00340	.00117	.00020	.318
%RSD	.19753	1.0715	29.021	2.2390	14.946	1.1523	1.5231
#1	.41153	.04213	.02561	.15455	.00880	.01720	21.227
#2	.41224	.04269	.01469	.15340	.00817	.01718	20.618
#3	.41062	.04179	.01783	.14816	.00653	.01685	20.762
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6476.0**	**40121.**	**2010.8**
Stddev	41.9	341.	10.1
%RSD	.64677	.85050	.50105
#1	6439.6	40107.	2010.7
#2	6521.8	39788.	2020.9
#3	6466.6	40470.	2000.7

Sample Name: LLCCV Acquired: 6/24/2016 0:19:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02136	.41629	.02112	.19510	.02080	.00407	1.0587
Stddev	.00041	.00284	.00410	.00052	.00091	.00010	.0154
%RSD	1.9202	.68293	19.397	.26774	4.3671	2.4437	1.4499
#1	.02183	.41875	.01725	.19543	.02070	.00418	1.0490
#2	.02111	.41695	.02541	.19450	.02176	.00402	1.0764
#3	.02114	.41318	.02071	.19539	.01995	.00401	1.0506
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00191	.01019	.00970	.01209	.22512	2.0312	.20560
Stddev	.00008	.00029	.00094	.00032	.02751	.1478	.00292
%RSD	3.9464	2.8921	9.6498	2.6079	12.219	7.2758	1.4184
#1	.00189	.00987	.00862	.01175	.23193	1.9599	.20462
#2	.00184	.01046	.01027	.01237	.19484	2.2011	.20331
#3	.00199	.01022	.01020	.01214	.24858	1.9325	.20889
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0419	.02143	.01974	1.0634	.04092	1.9580	.02354
Stddev	.1407	.00617	.00054	.0338	.00119	.0082	.00145
%RSD	13.508	28.783	2.7554	3.1802	2.8968	.41842	6.1627
#1	1.1704	.01821	.01917	1.0842	.04126	1.9586	.02462
#2	1.0638	.01754	.01982	1.0815	.03960	1.9658	.02189
#3	.89149	.02854	.02024	1.0243	.04189	1.9495	.02411
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: LLCCV Acquired: 6/24/2016 0:19:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21053**	**.03539**	**2.1191**	**1.0135**	**.10298**	**.05480**	**.37888**
Stddev	.00225	.00798	.0028	.0011	.00044	.01048	.00446
%RSD	1.0680	22.551	.13372	.10864	.43012	19.119	1.1784
#1	.21009	.02618	2.1179	1.0144	.10249	.04402	.38327
#2	.21296	.04014	2.1223	1.0138	.10312	.05543	.37434
#3	.20853	.03987	2.1170	1.0123	.10334	.06494	.37903
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.01937**	**.04203**	F **55.206**
Stddev	.00081	.00024	.600
%RSD	4.1646	.56559	1.0870
#1	.02030	.04231	55.899
#2	.01893	.04187	54.851
#3	.01888	.04193	54.868
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6500.2**	**40568.**	**2033.1**
Stddev	36.1	206.	33.6
%RSD	.55595	.50832	1.6527
#1	6459.1	40580.	1998.8
#2	6514.4	40767.	2065.9
#3	6527.1	40355.	2034.6

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000236	0.051213	0.000000	1.000000
Al 308.215 {109}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000796	0.008044	0.000000	1.000000
As 189.042 {478}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000007	0.025071	0.000000	1.000000
B 249.678 {135}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000040	0.023963	0.000000	1.000000
Ba 455.403 { 74}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.044484	2.168568	0.000000	1.000000
Be 313.107 {108}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000479	0.930119	0.000000	1.000000
Ca 422.673 { 80}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.002874	0.045862	0.000000	1.000000
Cd 228.802 {447}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000038	0.570455	0.000000	1.000000
Co 228.616 {447}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000129	0.339574	0.000000	1.000000
Cr 267.716 {126}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000254	0.058743	0.000000	1.000000
Cu 224.700 {450}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000063	0.129645	0.000000	1.000000
Fe 261.187 {129}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000714	0.024119	0.000000	1.000000
K 766.490 { 44}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.006604	0.061274	0.000000	1.000000
Li 670.784 { 50}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.009415	1.520559	0.000000	1.000000
Mg 279.079 {121}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000260	0.008000	0.000000	1.000000
Mn 257.610 {131}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000470	0.289814	0.000000	1.000000
Mo 202.030 {467}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000054	0.182736	0.000000	1.000000
Na 589.592 { 57}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.047777	0.184477	0.000000	1.000000
Ni 231.604 {446}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000734	0.138990	0.000000	1.000000
P 214.914 {457}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000172	0.014319	0.000000	1.000000
Pb 220.353 {453}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.001186	0.065283	0.000000	1.000000
Sb 206.833 {463}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000368	0.031084	0.000000	1.000000
Se 196.090 {472}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000508	0.017412	0.000000	1.000000
Si 212.412 {459}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.001467	0.039573	0.000000	1.000000
Sn 189.989 {477}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000022	0.066307	0.000000	1.000000
Sr 407.771 { 83}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.001060	3.591964	0.000000	1.000000
Ti 337.280 {100}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.002630	0.122957	0.000000	1.000000
Tl 190.856 {477}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000329	0.028655	0.000000	1.000000
V 292.402 {115}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000071	0.067328	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000142	0.437417	0.000000	1.000000
Zr 339.198 { 99}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.007106	1.219765	0.000000	1.000000

Approved: June 27, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999680	0.000003	0.002344	0.007814	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999950	0.000005	0.010188	0.033959	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999909	0.000001	0.003189	0.010630	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999961	0.000001	0.002963	0.009878	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999951	0.000136	0.001119	0.003729	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999766	0.000007	0.000105	0.000348	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999890	0.000043	0.043792	0.145974	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999970	0.000002	0.000282	0.000940	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999977	0.000003	0.000454	0.001514	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999978	0.000001	0.001307	0.004355	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999889	0.000006	0.001405	0.004682	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999330	0.000022	0.023003	0.076675	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999988	0.000096	0.104199	0.347330	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999977	0.000100	0.004201	0.014002	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999990	0.000003	0.092396	0.307987	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999236	0.000036	0.002652	0.008839	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999956	0.000011	0.000450	0.001500	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999990	0.000264	0.032289	0.107629	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999932	0.000005	0.001180	0.003935	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999990	0.000004	0.007138	0.023792	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999383	0.000007	0.003667	0.012223	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999854	0.000004	0.004516	0.015054	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999238	0.000003	0.006704	0.022346	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999594	0.000036	0.002443	0.008145	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999980	0.000003	0.000986	0.003287	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999952	0.000224	0.000467	0.001557	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999579	0.000023	0.007453	0.024845	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999831	0.000002	0.003284	0.010945	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999969	0.000003	0.001095	0.003650	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999941	0.000030	0.000202	0.000675	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.596446	0.010414	0.001594	0.005312	OK.	1.000000	0.000000	1	0

Approved: June 27, 2016

Sample Name: S0 Acquired: 6/25/2016 12:21:04 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00024**	**.00080**	**-.00001**	**.00004**	**.04448**	**.00048**	**.00288**
Stddev	.00008	.00004	.00007	.00002	.00170	.00005	.00169
%RSD	35.712	4.5527	977.99	54.959	3.8148	10.198	58.629
#1	-.00024	.00076	-.00006	.00003	.04635	.00042	.00096
#2	-.00015	.00081	.00007	.00006	.04405	.00050	.00353
#3	-.00032	.00083	-.00004	.00003	.04304	.00052	.00414

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00004**	**-.00013**	**.00025**	**-.00006**	**-.00071**	**-.00661**	**-.00941**
Stddev	.00006	.00005	.00003	.00023	.00026	.00355	.00965
%RSD	153.97	36.064	10.924	367.85	35.978	53.724	102.48
#1	-.00002	-.00016	.00028	-.00022	-.00093	-.00948	-.01508
#2	-.00010	-.00015	.00025	.00020	-.00043	-.00769	.00173
#3	.00001	-.00008	.00023	-.00018	-.00078	-.00264	-.01488

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00026**	**.00047**	**.00005**	**-.04778**	**-.00073**	**-.00017**	**-.00119**
Stddev	.00066	.00061	.00004	.00421	.00008	.00002	.00008
%RSD	255.00	128.77	78.942	8.8105	11.011	13.180	6.4052
#1	.00045	-.00015	.00007	-.05263	-.00065	-.00015	-.00110
#2	-.00086	.00049	.00001	-.04509	-.00082	-.00019	-.00123
#3	-.00037	.00107	.00009	-.04563	-.00073	-.00017	-.00123

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00037**	**-.00051**	**.00147**	**.00002**	**.00106**	**-.00263**	**-.00033**
Stddev	.00001	.00007	.00009	.00003	.00137	.00025	.00002
%RSD	3.7153	13.815	6.2921	126.34	130.24	9.4020	7.1687
#1	.00035	-.00043	.00157	.00002	.00203	-.00235	-.00030
#2	.00038	-.00057	.00145	-.00000	.00165	-.00283	-.00033
#3	.00037	-.00052	.00138	.00005	-.00052	-.00270	-.00035

Approved: June 27, 2016

Sample Name: S0 Acquired: 6/25/2016 12:21:04 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**-.00007**	**.00014**	**-.00710**
Stddev	.00004	.00005	.00324
%RSD	58.279	35.146	45.700
#1	-.00004	.00009	-.00457
#2	-.00005	.00016	-.01076
#3	-.00012	.00018	-.00597
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9736.8**	**58329.**	**2962.8**
Stddev	24.6	275.	12.4
%RSD	.25315	.47180	.41783
#1	9719.4	58177.	2949.0
#2	9725.9	58162.	2966.1
#3	9765.0	58646.	2973.1

Approved: June 27, 2016

Sample Name: S1 Acquired: 6/25/2016 12:25:02 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00000**	**.00148**	**.06336**	**.00097**	**.00582**	**.00018**	**.00038**
Stddev	.00004	.00005	.00419	.00009	.00234	.00011	.00006
%RSD	838.91	3.6655	6.6080	8.8478	40.284	60.110	16.615
#1	.00001	.00145	.05987	.00105	.00569	.00026	.00043
#2	-.00004	.00145	.06800	.00097	.00822	.00006	.00031
#3	.00004	.00155	.06221	.00088	.00354	.00023	.00041

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00050**	**.00053**	**.00033**	**.01950**	**.00077**	**.00143**	**.02669**
Stddev	.00003	.00011	.00021	.00355	.00009	.00011	.00332
%RSD	5.5692	20.305	62.737	18.223	11.862	7.4791	12.449
#1	.00049	.00060	.00053	.01550	.00083	.00145	.02356
#2	.00048	.00041	.00012	.02070	.00066	.00152	.03018
#3	.00053	.00058	.00034	.02230	.00081	.00131	.02634

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00018**	**.00100**	**-.00086**	**.00059**	**.00297**	**.00055**	**.03302**
Stddev	.00009	.00012	.00030	.00014	.00005	.00006	.00089
%RSD	52.159	12.366	34.406	23.539	1.7045	10.953	2.6942
#1	-.00010	.00113	-.00102	.00051	.00294	.00050	.03225
#2	-.00028	.00098	-.00052	.00075	.00302	.00062	.03399
#3	-.00016	.00088	-.00105	.00050	.00293	.00055	.03280

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00218**	**.00050**	**.00363**	**-.00591**
Stddev	.00071	.00003	.00003	.00134
%RSD	32.781	5.1557	.77751	22.659
#1	-.00139	.00050	.00365	-.00576
#2	-.00277	.00048	.00360	-.00465
#3	-.00237	.00053	.00364	-.00732

Approved: June 27, 2016

Sample Name: S1 Acquired: 6/25/2016 12:25:02 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9839.2**	**59021.**	**2974.6**
Stddev	35.8	140.	1.9
%RSD	.36397	.23691	.06440
#1	9811.4	58880.	2976.5
#2	9826.5	59023.	2972.7
#3	9879.6	59160.	2974.8

Approved: June 27, 2016

Sample Name: S2 Acquired: 6/25/2016 12:29:00 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00011**	**.00220**	**.00018**	**.00025**	**.08112**	**.00139**	**.00931**
Stddev	.00003	.00006	.00005	.00002	.00125	.00003	.00047
%RSD	29.658	2.5782	25.201	8.0082	1.5417	1.8740	5.0396
#1	.00012	.00221	.00013	.00026	.08191	.00140	.00905
#2	.00012	.00214	.00022	.00027	.08177	.00136	.00985
#3	.00007	.00225	.00019	.00023	.07968	.00140	.00903

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00041**	**.00102**	**.00072**	**.00104**	**.00148**	**.04190**	**.01415**
Stddev	.00007	.00003	.00001	.00014	.00030	.00236	.00012
%RSD	16.350	3.0292	1.5873	13.319	20.240	5.6312	.86545
#1	.00045	.00101	.00072	.00109	.00137	.04369	.01405
#2	.00033	.00099	.00073	.00088	.00125	.03923	.01429
#3	.00045	.00105	.00071	.00115	.00182	.04279	.01411

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00109**	**.00274**	**.00298**	**.10797**	**.00048**	**.00211**	**-.00045**
Stddev	.00041	.00057	.00005	.00406	.00013	.00008	.00017
%RSD	37.607	20.931	1.7509	3.7561	26.749	3.7519	39.075
#1	.00144	.00213	.00304	.11260	.00057	.00211	-.00064
#2	.00064	.00283	.00295	.10501	.00033	.00203	-.00031
#3	.00120	.00327	.00295	.10631	.00054	.00219	-.00039

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00105**	**-.00034**	**.00448**	**.00108**	**.06082**	**-.00047**	**-.00014**
Stddev	.00006	.00004	.00009	.00004	.00131	.00089	.00005
%RSD	6.0784	12.562	2.0565	3.6593	2.1502	187.41	36.276
#1	.00109	-.00029	.00447	.00110	.05950	-.00104	-.00016
#2	.00107	-.00037	.00458	.00110	.06212	-.00093	-.00008
#3	.00097	-.00035	.00440	.00103	.06083	.00055	-.00017

Approved: June 27, 2016

Sample Name: S2 Acquired: 6/25/2016 12:29:00 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00105	.00728	-.00437
Stddev	.00006	.00006	.00132
%RSD	5.7588	.85058	30.251
#1	.00102	.00735	-.00588
#2	.00112	.00727	-.00376
#3	.00101	.00722	-.00345
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9827.0	59373.	3004.6
Stddev	11.4	114.	4.0
%RSD	.11574	.19273	.13472
#1	9814.0	59255.	3000.6
#2	9832.7	59484.	3008.7
#3	9834.5	59381.	3004.6

Approved: June 27, 2016

Sample Name: S3 Acquired: 6/25/2016 12:32:56 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.02035**	**.08278**	**.00992**	**.01198**	**2.2359**	**.04820**	**.46599**	**.03126**
Stddev	.00007	.00029	.00007	.00002	.0069	.00016	.00236	.00006
%RSD	.36344	.34990	.73624	.13878	.30693	.33862	.50730	.19965
#1	.02029	.08301	.00987	.01198	2.2433	.04825	.46861	.03126
#2	.02044	.08286	.01000	.01199	2.2346	.04833	.46401	.03132
#3	.02033	.08245	.00988	.01196	2.2297	.04802	.46536	.03119

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.06810**	**.02991**	**.06581**	**.09648**	**3.0722**	**1.5250**	**.07962**	**.14725**
Stddev	.00012	.00021	.00002	.00063	.0027	.0048	.00098	.00051
%RSD	.17879	.70022	.03611	.65013	.08880	.31624	1.2353	.34909
#1	.06804	.03009	.06584	.09719	3.0745	1.5268	.07965	.14783
#2	.06801	.02997	.06579	.09600	3.0692	1.5288	.07861	.14685
#3	.06824	.02968	.06581	.09626	3.0730	1.5196	.08058	.14706

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.18510**	**9.1987**	**.06966**	**.14157**	**.03222**	**.03693**	**.00649**	**.20808**
Stddev	.00068	.0276	.00008	.00029	.00023	.00011	.00003	.00004
%RSD	.36712	.29975	.11504	.20555	.70478	.30304	.43769	.01830
#1	.18567	9.2297	.06963	.14170	.03236	.03694	.00648	.20811
#2	.18529	9.1894	.06975	.14177	.03196	.03703	.00652	.20808
#3	.18435	9.1769	.06959	.14123	.03234	.03681	.00647	.20804

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.06680**	**3.6291**	**.12115**	**.01313**	**.06767**	**.44396**	**3.5474**
Stddev	.00012	.0161	.00039	.00012	.00004	.00054	.0233
%RSD	.17282	.44347	.32200	.91385	.05243	.12075	.65596
#1	.06677	3.6476	.12157	.01325	.06770	.44451	3.5656
#2	.06671	3.6220	.12107	.01301	.06768	.44393	3.5554
#3	.06693	3.6179	.12080	.01311	.06763	.44344	3.5212

Approved: June 27, 2016

Sample Name: S3 Acquired: 6/25/2016 12:32:56 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9929.1	59890.	3083.9
Stddev	18.0	90.	16.7
%RSD	.18173	.14986	.54188
#1	9944.3	59787.	3069.2
#2	9933.7	59947.	3080.5
#3	9909.1	59936.	3102.1

Approved: June 27, 2016

Sample Name: S4 Acquired: 6/25/2016 12:36:34 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.04037	.16212	.01994	.02391	4.3553	.09476	.91725	.06225
Stddev	.00010	.00009	.00010	.00008	.0282	.00010	.00714	.00008
%RSD	.26004	.05310	.51424	.32854	.64632	.10278	.77855	.12431
#1	.04040	.16220	.02005	.02399	4.3445	.09472	.91430	.06220
#2	.04046	.16203	.01991	.02383	4.3342	.09469	.91205	.06220
#3	.04026	.16211	.01985	.02390	4.3873	.09487	.92539	.06233

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13502	.05877	.12834	.19056	6.1046	3.0186	.15914	.28946
Stddev	.00023	.00007	.00015	.00161	.0456	.0309	.00223	.00202
%RSD	.17276	.12518	.11394	.84544	.74756	1.0253	1.3995	.69732
#1	.13475	.05870	.12846	.19050	6.0869	3.0140	.15736	.28818
#2	.13515	.05878	.12838	.18897	6.0705	2.9902	.15842	.28841
#3	.13517	.05884	.12818	.19219	6.1564	3.0516	.16164	.29179

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.36324	18.368	.13725	.28094	.06365	.07367	.01336	.39092
Stddev	.00176	.146	.00020	.00054	.00019	.00012	.00006	.00048
%RSD	.48547	.79728	.14492	.19364	.30628	.15884	.42128	.12331
#1	.36486	18.303	.13728	.28153	.06355	.07380	.01339	.39147
#2	.36349	18.266	.13744	.28083	.06388	.07365	.01329	.39059
#3	.36136	18.536	.13705	.28046	.06354	.07357	.01339	.39071

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13179	7.1439	.24230	.02560	.13357	.86773	.12255
Stddev	.00029	.0568	.00280	.00005	.00025	.00172	.00222
%RSD	.21785	.79476	1.1551	.20145	.18401	.19856	1.8114
#1	.13210	7.1181	.24103	.02555	.13357	.86947	.12020
#2	.13172	7.1045	.24036	.02563	.13332	.86769	.12285
#3	.13154	7.2090	.24551	.02564	.13382	.86603	.12461

Approved: June 27, 2016

Sample Name: S4 Acquired: 6/25/2016 12:36:34 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9795.6**	**59125.**	**3064.9**
Stddev	6.6	26.	19.7
%RSD	.06757	.04412	.64222
#1	9799.1	59120.	3071.1
#2	9799.7	59153.	3080.8
#3	9787.9	59102.	3042.9

Approved: June 27, 2016

Sample Name: ICV Acquired: 6/25/2016 12:40:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40482**	**10.096**	**.40189**	**.50535**	**1.0085**	**.05038**	**10.096**
Stddev	.00169	.009	.00320	.00259	.0096	.00007	.103
%RSD	.41792	.09100	.79651	.51179	.95284	.13225	1.0175
#1	.40318	10.095	.40558	.50259	.99972	.05037	10.065
#2	.40656	10.106	.40020	.50771	1.0070	.05032	10.013
#3	.40473	10.088	.39988	.50575	1.0188	.05045	10.211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05022**	**.20172**	**.50610**	**.50772**	**4.0459**	**50.287**	**1.0069**
Stddev	.00031	.00057	.00078	.00110	.0398	.526	.0059
%RSD	.61395	.28458	.15454	.21701	.98466	1.0464	.58082
#1	.05048	.20224	.50644	.50864	4.0020	49.775	1.0012
#2	.05030	.20181	.50521	.50650	4.0559	50.260	1.0067
#3	.04988	.20110	.50666	.50803	4.0798	50.827	1.0128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.117**	**.50795**	**1.0200**	**50.068**	**.50832**	**10.053**	**.50460**
Stddev	.152	.00312	.0050	.377	.00054	.029	.00016
%RSD	1.5029	.61369	.49437	.75311	.10596	.28628	.03077
#1	9.9425	.50440	1.0241	49.665	.50829	10.073	.50452
#2	10.219	.50922	1.0214	50.126	.50888	10.066	.50449
#3	10.191	.51024	1.0144	50.412	.50780	10.020	.50477
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: ICV Acquired: 6/25/2016 12:40:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2132**	**.39981**	**5.2115**	**1.0100**	**1.0094**	**1.0076**	**.50967**
Stddev	.0090	.00367	.0220	.0047	.0093	.0117	.00340
%RSD	.74499	.91900	.42193	.46646	.92212	1.1612	.66719
#1	1.2228	.39652	5.1880	1.0139	.99976	.99418	.50608
#2	1.2117	.40378	5.2316	1.0112	1.0100	1.0128	.51284
#3	1.2049	.39915	5.2149	1.0048	1.0183	1.0157	.51010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0117**	**1.0154**	F **2.9010**
Stddev	.0015	.0015	.0057
%RSD	.14666	.14385	.19619
#1	1.0111	1.0164	2.9026
#2	1.0134	1.0160	2.8946
#3	1.0106	1.0137	2.9057
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			5.0000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9887.2**	**59604.**	**3090.1**
Stddev	2.6	87.	8.3
%RSD	.02633	.14631	.26858
#1	9888.5	59705.	3098.3
#2	9884.2	59557.	3090.3
#3	9888.9	59551.	3081.7

Approved: June 27, 2016

Sample Name: ICB Acquired: 6/25/2016 12:43:48 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00131**	**-.00019**	**.00035**	**.00523**	**.00097**	**.00005**	**-.00769**	**-.00024**
Stddev	.00204	.00299	.00150	.00175	.00089	.00006	.00734	.00011
%RSD	155.46	1561.3	426.44	33.377	91.849	115.36	95.505	46.996
#1	.00317	-.00362	.00181	.00349	.00060	.00012	-.01556	-.00036
#2	-.00088	.00114	-.00118	.00522	.00198	.00002	-.00104	-.00017
#3	.00165	.00191	.00042	.00699	.00032	.00001	-.00646	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00000**	**.00019**	**.00069**	**.02190**	**.04427**	**.00252**	**.00787**	**.00050**
Stddev	.00033	.00096	.00130	.00895	.02254	.00192	.08048	.00146
%RSD	40694.	494.95	189.51	40.889	50.920	76.061	1022.8	292.29
#1	-.00026	-.00067	-.00034	.02348	.04464	.00424	-.08504	-.00108
#2	-.00012	.00002	.00215	.01226	.06662	.00045	.05249	.00079
#3	.00038	.00123	.00025	.02996	.02154	.00288	.05615	.00179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00437**	**.07087**	**.00070**	**.00285**	**.00118**	**.00678**	**.00870**	**.00121**
Stddev	.00041	.01151	.00054	.00868	.00197	.00381	.00450	.00189
%RSD	9.2912	16.248	77.044	304.78	167.53	56.206	51.723	156.22
#1	.00395	.08310	.00020	-.00283	.00108	.00337	.00854	.00310
#2	.00476	.06927	.00064	-.00147	.00320	.00608	.00428	.00120
#3	.00442	.06023	.00127	.01284	-.00074	.01090	.01328	-.00068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: ICB Acquired: 6/25/2016 12:43:48 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00063**	**.00059**	**.00116**	**.00143**	**.00111**	**.00117**	**.00345**
Stddev	.00049	.00006	.00559	.00387	.00033	.00016	.00039
%RSD	77.601	9.5579	481.47	269.75	29.521	13.916	11.209
#1	.00050	.00059	.00521	.00260	.00135	.00105	.00361
#2	.00117	.00064	.00349	-.00288	.00074	.00111	.00300
#3	.00022	.00053	-.00522	.00459	.00124	.00135	.00372
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9709.0**	**58834.**	**2997.3**
Stddev	13.6	105.	11.0
%RSD	.13963	.17854	.36570
#1	9693.7	58895.	2985.3
#2	9713.8	58895.	3006.9
#3	9719.5	58713.	2999.6

Approved: June 27, 2016

Sample Name: LLICV Acquired: 6/25/2016 12:47:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00947**	**.16517**	**.00750**	**.08209**	**.00794**	**.00166**	**.41368**	**.00078**
Stddev	.00234	.00914	.00427	.00134	.00096	.00002	.01542	.00015
%RSD	24.742	5.5361	56.913	1.6344	12.112	1.4530	3.7271	18.963
#1	.01038	.17315	.00639	.08214	.00810	.00169	.40911	.00061
#2	.01123	.15519	.01222	.08341	.00690	.00166	.40107	.00083
#3	.00681	.16717	.00390	.08073	.00880	.00164	.43087	.00089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00435**	**.00476**	**.00462**	**.09393**	**.88733**	**.08419**	**.44121**	**.00701**
Stddev	.00017	.00091	.00136	.00523	.14622	.00363	.12107	.00237
%RSD	3.8803	19.165	29.360	5.5689	16.479	4.3143	27.441	33.765
#1	.00455	.00411	.00608	.08852	.75945	.08105	.39471	.00889
#2	.00425	.00438	.00436	.09433	.85580	.08335	.57864	.00779
#3	.00425	.00581	.00341	.09896	1.0467	.08816	.35028	.00435
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00866**	**.44156**	**.01715**	**.79893**	**.00705**	**.08442**	**.02038**	**.79310**
Stddev	.00052	.01049	.00062	.00929	.00266	.00215	.00191	.00106
%RSD	5.9984	2.3750	3.6174	1.1626	37.766	2.5524	9.3696	.13338
#1	.00809	.45038	.01661	.80194	.00796	.08678	.01818	.79326
#2	.00879	.42997	.01783	.80634	.00405	.08394	.02136	.79407
#3	.00910	.44434	.01701	.78851	.00913	.08255	.02160	.79197
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LLICV Acquired: 6/25/2016 12:47:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41130**	**.04174**	**.02562**	**.15269**	**.00881**	**.01717**	**.13277**
Stddev	.00223	.00064	.00303	.00060	.00064	.00024	.00310
%RSD	.54293	1.5249	11.843	.39147	7.2679	1.3907	2.3338
#1	.41347	.04173	.02710	.15201	.00926	.01741	.13005
#2	.41142	.04111	.02213	.15292	.00808	.01715	.13211
#3	.40901	.04238	.02764	.15314	.00909	.01694	.13614
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9760.6**	**59445.**	**3032.4**
Stddev	2.7	49.	16.0
%RSD	.02790	.08308	.52659
#1	9758.1	59502.	3050.3
#2	9763.5	59418.	3027.2
#3	9760.2	59415.	3019.7

Approved: June 27, 2016

Sample Name: LLICV Acquired: 6/25/2016 12:51:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02232**	**.40482**	**.02105**	**.19795**	**.01981**	**.00414**	**.94713**	**.00209**
Stddev	.00322	.01572	.00276	.00137	.00013	.00016	.01328	.00025
%RSD	14.431	3.8838	13.088	.69255	.67950	3.8114	1.4024	12.129
#1	.02018	.38785	.01788	.19912	.01996	.00396	.94307	.00218
#2	.02076	.40770	.02252	.19644	.01971	.00427	.93634	.00229
#3	.02603	.41890	.02277	.19828	.01975	.00419	.96196	.00181
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00992**	**.00950**	**.01082**	**.20111**	**1.9275**	**.20201**	**.97307**	**.01841**
Stddev	.00043	.00028	.00021	.02025	.1498	.00564	.04542	.00186
%RSD	4.3042	2.9103	1.9731	10.069	7.7699	2.7925	4.6682	10.079
#1	.01005	.00935	.01089	.20826	1.8000	.20412	1.0187	.02052
#2	.00945	.00934	.01100	.21682	1.8900	.19562	.97274	.01702
#3	.01028	.00982	.01059	.17825	2.0924	.20630	.92781	.01771
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01972**	**1.0340**	**.04153**	**1.9482**	**.02271**	**.20123**	**.04411**	**1.9392**
Stddev	.00048	.0096	.00031	.0042	.00204	.00295	.00361	.0022
%RSD	2.4591	.93077	.75288	.21380	8.9612	1.4657	8.1900	.11326
#1	.01969	1.0240	.04132	1.9520	.02496	.20436	.04094	1.9404
#2	.01925	1.0432	.04139	1.9437	.02217	.20085	.04804	1.9406
#3	.02022	1.0348	.04189	1.9488	.02100	.19850	.04333	1.9367
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LLICV Acquired: 6/25/2016 12:51:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0099**	**.10045**	**.06134**	**.37714**	**.02003**	**.04134**	**.29456**
Stddev	.0057	.00069	.00459	.00090	.00046	.00030	.00329
%RSD	.56948	.68667	7.4856	.23976	2.2900	.72946	1.1169
#1	1.0145	.09991	.06229	.37809	.02052	.04128	.29317
#2	1.0117	.10021	.05634	.37629	.01997	.04166	.29219
#3	1.0035	.10123	.06538	.37705	.01961	.04107	.29832
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9725.0**	**59145.**	**3053.0**
Stddev	6.0	91.	15.9
%RSD	.06216	.15348	.52133
#1	9731.9	59116.	3042.4
#2	9721.3	59247.	3071.3
#3	9721.7	59072.	3045.2

Approved: June 27, 2016

Sample Name: ICSA Acquired: 6/25/2016 12:55:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00027**	**265.97**	**.00161**	**-.00823**	**.00056**	**.00011**	**243.96**	**-.00018**
Stddev	.00121	.27	.00172	.00296	.00012	.00009	1.89	.00042
%RSD	450.36	.10204	106.61	35.970	21.237	81.140	.77435	230.52
#1	-.00046	265.69	.00220	-.01033	.00047	.00017	241.81	-.00048
#2	.00103	265.97	-.00032	-.00484	.00069	.00014	245.35	.00030
#3	-.00137	266.24	.00295	-.00951	.00051	.00001	244.72	-.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00099**	**-.00100**	**-.00098**	**96.848**	**.05329**	**.01035**	**248.71**	**-.00176**
Stddev	.00039	.00071	.00330	.692	.06120	.00255	1.99	.00096
%RSD	39.651	70.751	335.23	.71414	114.86	24.670	.80129	54.809
#1	-.00142	-.00119	.00263	96.056	.12150	.01230	246.41	-.00274
#2	-.00085	-.00160	-.00175	97.332	.03517	.00746	249.90	-.00082
#3	-.00068	-.00022	-.00383	97.155	.00318	.01129	249.83	-.00171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00066**	**.04038**	**-.00089**	**.02257**	**.00214**	**-.00550**	**-.00224**	**.00879**
Stddev	.00023	.00410	.00050	.00580	.00444	.00318	.00753	.00258
%RSD	34.448	10.162	56.288	25.707	206.94	57.856	337.10	29.379
#1	-.00088	.04493	-.00121	.01613	.00721	-.00186	.00631	.00581
#2	-.00043	.03696	-.00115	.02418	.00024	-.00776	-.00511	.01037
#3	-.00066	.03925	-.00031	.02740	-.00103	-.00688	-.00791	.01019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: ICSA Acquired: 6/25/2016 12:55:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00053**	**.00100**	**-.00403**	**-.00373**	**-.00305**	**-.00596**	**-.01388**
Stddev	.00149	.00018	.00805	.00252	.00022	.00010	.00081
%RSD	284.28	18.415	199.81	67.478	7.0947	1.6059	5.8325
#1	.00144	.00117	.00514	-.00549	-.00300	-.00603	-.01379
#2	.00134	.00081	-.00728	-.00085	-.00329	-.00601	-.01311
#3	-.00120	.00101	-.00995	-.00485	-.00287	-.00585	-.01473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9184.9**	**55126.**	**2960.9**
Stddev	19.5	129.	17.9
%RSD	.21199	.23455	.60311
#1	9165.3	55274.	2981.6
#2	9185.3	55069.	2950.7
#3	9204.2	55035.	2950.6

Approved: June 27, 2016

Sample Name: ICSAB Acquired: 6/25/2016 12:59:21 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51819**	**267.93**	**.25992**	**-.00749**	**.25012**	**.24499**	**247.43**	**.48653**
Stddev	.00274	.82	.00577	.00323	.00127	.00111	.96	.00069
%RSD	.52949	.30727	2.2185	43.201	.50926	.45301	.38893	.14255
#1	.51744	268.20	.26633	-.00904	.25065	.24547	247.63	.48716
#2	.52123	268.59	.25826	-.00965	.24866	.24578	246.38	.48579
#3	.51590	267.01	.25516	-.00377	.25104	.24372	248.28	.48665
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.24114**	**.25272**	**.25219**	**96.482**	**5.1931**	**.01181**	**249.25**	**.24440**
Stddev	.00029	.00219	.00111	.527	.0571	.00427	1.99	.00318
%RSD	.11831	.86807	.44033	.54597	1.0995	36.192	.80021	1.3017
#1	.24081	.25379	.25307	96.524	5.1297	.01134	249.32	.24432
#2	.24135	.25418	.25256	95.936	5.2405	.00779	247.22	.24763
#3	.24125	.25020	.25095	96.987	5.2091	.01630	251.20	.24127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00056**	**5.3241**	**.48364**	**.08508**	**.49426**	**.50665**	**.24857**	**.00554**
Stddev	.00038	.0216	.00155	.00195	.00579	.00649	.00790	.00251
%RSD	68.178	.40548	.32037	2.2888	1.1716	1.2807	3.1773	45.410
#1	-.00097	5.3151	.48290	.08463	.49996	.50736	.25719	.00434
#2	-.00022	5.3084	.48260	.08721	.48838	.49984	.24167	.00842
#3	-.00048	5.3487	.48542	.08340	.49443	.51276	.24687	.00384
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: ICSAB Acquired: 6/25/2016 12:59:21 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00018**	**.00065**	**-.00404**	**.46188**	**.25332**	**.48100**	**-.01374**
Stddev	.00129	.00010	.00503	.00318	.00107	.00194	.00218
%RSD	732.71	15.906	124.53	.68769	.42266	.40303	15.888
#1	.00146	.00072	-.00979	.45913	.25376	.48104	-.01122
#2	-.00112	.00053	-.00192	.46116	.25410	.48293	-.01498
#3	.00019	.00071	-.00042	.46536	.25210	.47905	-.01502
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9278.3**	**55833.**	**2985.5**
Stddev	15.8	186.	18.9
%RSD	.17001	.33320	.63177
#1	9263.8	55869.	2984.2
#2	9295.1	55632.	3004.9
#3	9275.9	55999.	2967.3

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 13:03:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39792	10.019	.39868	.49351	.99429	.04982	9.9377
Stddev	.00072	.017	.00144	.00412	.00753	.00017	.0996
%RSD	.18044	.17228	.36151	.83518	.75700	.33966	1.0022
#1	.39861	10.034	.39833	.49827	.98705	.04987	9.8876
#2	.39796	10.022	.40027	.49123	1.0021	.04997	10.052
#3	.39718	10.000	.39745	.49104	.99375	.04964	9.8731
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04945	.20002	.50114	.50617	3.9950	49.191	.99914
Stddev	.00013	.00034	.00115	.00138	.0385	.327	.00262
%RSD	.25449	.17079	.22943	.27257	.96478	.66521	.26204
#1	.04957	.20034	.49991	.50465	3.9625	48.889	.99615
#2	.04946	.20007	.50219	.50735	4.0376	49.538	1.0010
#3	.04932	.19966	.50132	.50650	3.9848	49.146	1.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.9162	.49766	1.0071	49.316	.50460	9.9534	.50217
Stddev	.1345	.00161	.0027	.281	.00141	.0056	.00090
%RSD	1.3564	.32258	.27182	.56936	.27993	.05661	.17861
#1	9.8004	.49634	1.0102	49.069	.50585	9.9507	.50282
#2	10.064	.49945	1.0061	49.622	.50307	9.9496	.50115
#3	9.8846	.49718	1.0051	49.257	.50488	9.9599	.50255
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 13:03:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1997**	**.40476**	**5.1642**	**1.0026**	**.99432**	**.99050**	**.50900**
Stddev	.0011	.00080	.0031	.0008	.00541	.00261	.00166
%RSD	.09538	.19644	.06047	.08057	.54374	.26324	.32573
#1	1.2008	.40408	5.1631	1.0035	.99081	.99348	.51044
#2	1.1985	.40563	5.1678	1.0020	1.0005	.98942	.50718
#3	1.1997	.40457	5.1618	1.0022	.99161	.98862	.50937
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0019**	**1.0053**	F **2.8691**
Stddev	.0036	.0009	.0111
%RSD	.35558	.09150	.38634
#1	.99784	1.0055	2.8628
#2	1.0045	1.0043	2.8819
#3	1.0033	1.0060	2.8625
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9877.8**	**59691.**	**3097.9**
Stddev	6.1	104.	11.8
%RSD	.06196	.17495	.38081
#1	9880.1	59766.	3105.5
#2	9870.8	59572.	3084.3
#3	9882.4	59736.	3103.8

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 13:06:41 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00082	.00013	.00057	.00151	.00063	.00002	-.01871	-.00022
Stddev	.00151	.00746	.00362	.00174	.00068	.00003	.02739	.00016
%RSD	185.23	5748.5	636.07	114.92	108.39	116.80	146.42	72.359
#1	.00201	.00304	-.00315	-.00049	.00141	.00001	-.04795	-.00036
#2	-.00088	-.00835	.00078	.00262	.00031	.00006	.00637	-.00027
#3	.00132	.00570	.00408	.00241	.00017	.00001	-.01455	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	.00054	.00076	.03608	.09214	-.00181	-.01859	-.00071
Stddev	.00025	.00025	.00080	.01975	.18930	.00302	.07756	.00052
%RSD	1039.3	46.422	105.73	54.731	205.46	166.60	417.27	72.248
#1	.00013	.00063	.00047	.01630	-.12492	-.00468	-.09449	-.00012
#2	.00011	.00026	.00167	.05580	.17827	.00135	-.02180	-.00101
#3	-.00032	.00073	.00014	.03615	.22306	-.00212	.06053	-.00101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00274	.04401	-.00040	.00332	.00144	-.00005	.00482	-.00649
Stddev	.00039	.03341	.00024	.00918	.00111	.00350	.00394	.00014
%RSD	14.320	75.897	59.933	276.22	77.091	6590.6	81.757	2.1187
#1	.00273	.08068	-.00054	-.00157	.00018	-.00177	.00919	-.00633
#2	.00236	.03606	-.00012	.01392	.00189	-.00236	.00153	-.00657
#3	.00314	.01530	-.00055	-.00237	.00225	.00397	.00375	-.00656
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 13:06:41 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00049**	**.00039**	**.00186**	**-.00089**	**-.00002**	**.00003**	**.00447**
Stddev	.00029	.00029	.00050	.00195	.00109	.00004	.00129
%RSD	58.864	74.770	26.876	218.22	5660.3	163.33	28.933
#1	.00018	.00056	.00153	-.00246	.00118	.00003	.00395
#2	.00076	.00054	.00162	-.00151	-.00095	.00007	.00352
#3	.00054	.00005	.00244	.00129	-.00029	-.00002	.00594
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9714.8**	**59220.**	**3006.6**
Stddev	20.8	167.	18.8
%RSD	.21426	.28151	.62581
#1	9691.7	59319.	2985.4
#2	9732.2	59028.	3021.3
#3	9720.4	59314.	3013.1

Approved: June 27, 2016

Sample Name: PBW MC Acquired: 6/25/2016 13:18:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.00511**	**.00086**	**-.00212**	**.00115**	**.00002**	**-.06747**	**.00005**
Stddev	.00209	.01093	.00117	.00067	.00097	.00011	.03960	.00035
%RSD	552.93	213.69	135.59	31.434	84.150	461.31	58.695	692.60
#1	-.00263	-.00536	-.00048	-.00211	.00011	.00001	-.09775	.00040
#2	.00149	.00426	.00140	-.00146	.00202	-.00008	-.02265	-.00029
#3	.00000	.01644	.00166	-.00279	.00133	.00014	-.08201	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**-.00006**	**.00212**	**.02866**	**-.06431**	**.00509**	**.02259**	**-.00086**
Stddev	.00040	.00091	.00173	.01678	.07316	.00381	.05174	.00149
%RSD	400.23	1393.8	81.515	58.547	113.75	74.903	229.03	173.59
#1	.00052	-.00104	.00296	.02246	-.13473	.00394	-.01043	-.00102
#2	.00004	.00075	.00325	.01586	-.06951	.00199	-.00402	.00071
#3	-.00026	.00010	.00013	.04766	.01130	.00934	.08222	-.00227
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00087**	**-.00687**	**.00001**	**-.00017**	**.00005**	**-.00551**	**.00627**	**.00390**
Stddev	.00030	.03350	.00031	.00833	.00114	.00506	.00234	.00374
%RSD	34.257	487.68	3374.4	4899.3	2181.8	91.834	37.291	95.869
#1	.00091	.01218	.00037	.00506	.00058	-.00133	.00544	.00713
#2	.00056	-.04555	-.00014	-.00978	.00083	-.01113	.00446	-.00020
#3	.00115	.01276	-.00019	.00420	-.00126	-.00406	.00891	.00477
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: PBW MC Acquired: 6/25/2016 13:18:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00012**	**-.00022**	**-.00094**	**-.00120**	**.00059**	**.00019**	**.00136**
Stddev	.00090	.00014	.01001	.00401	.00016	.00009	.00212
%RSD	728.27	61.668	1066.1	333.15	27.157	48.058	155.52
#1	-.00022	-.00007	.00771	-.00405	.00041	.00016	-.00108
#2	.00115	-.00034	-.01190	.00338	.00070	.00012	.00241
#3	-.00056	-.00026	.00137	-.00294	.00066	.00029	.00275
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9802.9**	**59937.**	**3028.8**
Stddev	9.7	136.	16.1
%RSD	.09849	.22735	.53011
#1	9794.7	59785.	3046.3
#2	9813.5	59979.	3014.8
#3	9800.5	60047.	3025.3

Approved: June 27, 2016

Sample Name: LCSW MC Acquired: 6/25/2016 13:22:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19140**	**4.8040**	**.19266**	**.92897**	**.49049**	**.02396**	**4.9270**	**.02412**
Stddev	.00110	.0096	.00124	.00283	.00119	.00006	.0588	.00019
%RSD	.57611	.19942	.64179	.30493	.24273	.25817	1.1941	.78757
#1	.19253	4.7978	.19184	.92575	.49050	.02398	4.9121	.02430
#2	.19133	4.7992	.19408	.93105	.49168	.02402	4.8771	.02392
#3	.19033	4.8151	.19206	.93012	.48929	.02390	4.9919	.02415
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09725**	**.24390**	**.24732**	**1.9838**	**23.909**	**.49943**	**4.9211**	**.24209**
Stddev	.00025	.00056	.00120	.0346	.055	.00048	.0513	.00093
%RSD	.26181	.22973	.48504	1.7424	.23189	.09613	1.0429	.38463
#1	.09749	.24389	.24597	1.9470	23.904	.49915	4.9459	.24237
#2	.09699	.24447	.24774	1.9888	23.968	.49916	4.8621	.24284
#3	.09727	.24335	.24825	2.0156	23.857	.49999	4.9553	.24105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49737**	**24.381**	**.24620**	**4.6982**	**.24508**	**.58185**	**.18662**	**2.4109**
Stddev	.00101	.058	.00194	.0026	.00506	.00206	.00438	.0033
%RSD	.20378	.23960	.78649	.05522	2.0646	.35379	2.3449	.13777
#1	.49803	24.349	.24767	4.6983	.25078	.58403	.18417	2.4135
#2	.49787	24.449	.24692	4.7007	.24112	.57994	.18402	2.4071
#3	.49620	24.346	.24401	4.6956	.24334	.58158	.19167	2.4120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LCSW MC Acquired: 6/25/2016 13:22:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48537**	**.49494**	**.49102**	**.24360**	**.48594**	**.48236**	**.01763**
Stddev	.00248	.00157	.00916	.00175	.00116	.00127	.00304
%RSD	.51037	.31733	1.8663	.71814	.23927	.26228	17.214
#1	.48605	.49357	.49562	.24211	.48702	.48137	.01600
#2	.48744	.49666	.49698	.24315	.48610	.48194	.01576
#3	.48263	.49460	.48047	.24553	.48471	.48379	.02113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9802.2**	**59979.**	**3063.3**
Stddev	16.1	75.	6.7
%RSD	.16429	.12520	.21884
#1	9786.8	59978.	3070.3
#2	9800.7	59904.	3056.9
#3	9818.9	60054.	3062.8

Approved: June 27, 2016

Sample Name: L1606080801 Acquired: 6/25/2016 13:25:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00120	-.00080	-.00163	.02599	.00717	.00000	50.564	.00016
Stddev	.00152	.00397	.00290	.00206	.00115	.00005	.112	.00037
%RSD	125.91	493.45	178.32	7.9153	16.060	1214.4	.22137	235.03
#1	.00226	.00203	-.00429	.02577	.00588	.00002	50.480	.00003
#2	-.00053	.00090	.00147	.02405	.00757	.00004	50.521	-.00014
#3	.00188	-.00534	-.00207	.02815	.00807	-.00005	50.691	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.00083	.00107	.26409	1.2826	.00250	14.201	.11783
Stddev	.00018	.00044	.00061	.01139	.1290	.00132	.067	.00387
%RSD	127.01	53.307	57.172	4.3115	10.056	52.928	.47527	3.2872
#1	.00035	.00131	.00089	.27352	1.4315	.00167	14.162	.12070
#2	.00008	.00073	.00057	.25144	1.2130	.00180	14.162	.11343
#3	.00000	.00044	.00175	.26731	1.2035	.00402	14.279	.11937
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	15.281	.00045	.01127	-.00029	-.00250	-.00036	4.8502
Stddev	.00031	.048	.00109	.00496	.00257	.00086	.00870	.0263
%RSD	48.719	.31261	245.14	44.009	886.73	34.260	2404.6	.54311
#1	.00028	15.230	.00169	.00618	-.00269	-.00223	.00526	4.8717
#2	.00080	15.325	-.00034	.01609	.00243	-.00181	.00404	4.8581
#3	.00082	15.288	-.00001	.01154	-.00061	-.00346	-.01039	4.8208
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606080801 Acquired: 6/25/2016 13:25:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.16531	-.00520	-.00297	.00071	.00304	.00248
Stddev	.00021	.00042	.00147	.00169	.00080	.00019	.00016
%RSD	26.039	.25638	28.334	56.894	114.04	6.1375	6.5372
#1	.00100	.16514	-.00627	-.00112	.00132	.00299	.00242
#2	.00058	.16499	-.00352	-.00336	-.00020	.00288	.00235
#3	.00084	.16579	-.00581	-.00443	.00100	.00324	.00266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9767.4	60311.	3068.7
Stddev	25.3	182.	4.5
%RSD	.25865	.30239	.14809
#1	9787.8	60238.	3069.0
#2	9775.3	60177.	3064.1
#3	9739.2	60519.	3073.1

Approved: June 27, 2016

Sample Name: L1606080803S Acquired: 6/25/2016 13:29:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19425**	**4.8313**	**.19559**	**.97188**	**.49949**	**.02391**	**55.138**	**.02433**
Stddev	.00175	.0086	.00291	.00386	.00064	.00006	.286	.00001
%RSD	.89899	.17760	1.4870	.39759	.12859	.26078	.51899	.03982
#1	.19471	4.8260	.19892	.97122	.49908	.02384	54.823	.02434
#2	.19571	4.8412	.19357	.96839	.49916	.02394	55.383	.02434
#3	.19231	4.8266	.19428	.97603	.50023	.02395	55.206	.02432
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09623**	**.24025**	**.24291**	**2.2142**	**25.706**	**.49995**	**18.850**	**.36055**
Stddev	.00052	.00032	.00081	.0203	.056	.00310	.060	.00310
%RSD	.54129	.13263	.33315	.91450	.21668	.61973	.31584	.86069
#1	.09635	.23989	.24328	2.2335	25.718	.49651	18.866	.35746
#2	.09668	.24035	.24198	2.2161	25.755	.50082	18.784	.36367
#3	.09566	.24050	.24346	2.1931	25.645	.50252	18.899	.36052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50273**	**39.946**	**.24148**	**4.8211**	**.24377**	**.58841**	**.19283**	**7.2475**
Stddev	.00069	.089	.00226	.0078	.00185	.00329	.00168	.0253
%RSD	.13674	.22372	.93733	.16218	.76094	.55837	.87085	.34834
#1	.50346	39.846	.24394	4.8298	.24591	.59218	.19095	7.2767
#2	.50266	40.018	.24099	4.8187	.24276	.58614	.19336	7.2326
#3	.50209	39.974	.23950	4.8148	.24264	.58690	.19419	7.2333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606080803S Acquired: 6/25/2016 13:29:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48600**	**.66572**	**.49120**	**.24058**	**.48625**	**.48121**	**.00549**
Stddev	.00062	.00113	.00488	.00183	.00111	.00310	.00062
%RSD	.12721	.16988	.99375	.75886	.22783	.64511	11.331
#1	.48664	.66443	.49684	.23968	.48515	.48355	.00538
#2	.48596	.66654	.48839	.24268	.48622	.48240	.00493
#3	.48540	.66619	.48838	.23938	.48737	.47769	.00616
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9640.1**	**59155.**	**3051.9**
Stddev	28.9	91.	4.4
%RSD	.29949	.15374	.14285
#1	9607.9	59063.	3056.9
#2	9648.6	59158.	3049.0
#3	9663.8	59244.	3049.8

Approved: June 27, 2016

Sample Name: L1606080804SD Acquired: 6/25/2016 13:33:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19367**	**4.8696**	**.19395**	**.97468**	**.50079**	**.02428**	**55.592**	**.02458**
Stddev	.00103	.0189	.00351	.00126	.00119	.00004	.087	.00002
%RSD	.53221	.38806	1.8082	.12977	.23838	.15828	.15705	.06402
#1	.19313	4.8871	.19259	.97422	.49995	.02427	55.687	.02459
#2	.19486	4.8723	.19133	.97371	.50216	.02425	55.574	.02456
#3	.19302	4.8496	.19794	.97611	.50027	.02433	55.515	.02458
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09687**	**.24382**	**.24330**	**2.1942**	**25.602**	**.50391**	**18.927**	**.35670**
Stddev	.00034	.00139	.00044	.0216	.187	.00317	.145	.00440
%RSD	.35450	.56820	.18086	.98630	.73073	.62836	.76565	1.2346
#1	.09649	.24542	.24364	2.2182	25.415	.50090	18.778	.36166
#2	.09698	.24295	.24347	2.1881	25.600	.50721	19.067	.35519
#3	.09715	.24309	.24280	2.1762	25.789	.50361	18.935	.35325
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50687**	**40.011**	**.24239**	**4.8324**	**.24609**	**.59184**	**.19199**	**7.3269**
Stddev	.00174	.019	.00180	.0039	.00113	.00410	.00494	.0108
%RSD	.34421	.04769	.74422	.07995	.45954	.69206	2.5730	.14791
#1	.50863	40.009	.24329	4.8354	.24728	.59240	.18629	7.3276
#2	.50684	40.031	.24358	4.8338	.24503	.59563	.19457	7.3373
#3	.50514	39.993	.24032	4.8281	.24594	.58749	.19509	7.3157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606080804SD Acquired: 6/25/2016 13:33:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48884	.66564	.48806	.24641	.49385	.48167	.00481
Stddev	.00243	.00060	.00210	.00100	.00262	.00319	.00105
%RSD	.49731	.09007	.43005	.40687	.53028	.66320	21.781
#1	.48902	.66631	.48604	.24752	.49576	.48059	.00363
#2	.49118	.66515	.49023	.24612	.49493	.48526	.00518
#3	.48633	.66545	.48792	.24558	.49086	.47916	.00563
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9643.8	58961.	3032.4
Stddev	19.6	179.	14.4
%RSD	.20367	.30279	.47352
#1	9664.0	58941.	3022.3
#2	9624.8	58793.	3026.2
#3	9642.5	59149.	3048.8

Approved: June 27, 2016

Sample Name: L1606082203 Acquired: 6/25/2016 13:37:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	.03250	.00108	.03413	.76881	.00001	31.323	.00009
Stddev	.00326	.00113	.00298	.00231	.00291	.00007	.069	.00003
%RSD	461.08	3.4738	274.98	6.7818	.37861	986.76	.21967	35.456
#1	-.00056	.03174	-.00033	.03677	.76753	-.00000	31.323	.00006
#2	.00440	.03379	-.00093	.03317	.76676	.00008	31.255	.00011
#3	-.00173	.03195	.00451	.03246	.77215	-.00006	31.393	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00298	.00799	.00175	5.1531	49.440	.10315	14.307	.17132
Stddev	.00036	.00030	.00156	.0220	.158	.00201	.082	.00563
%RSD	12.200	3.7657	89.202	.42624	.31871	1.9519	.57045	3.2873
#1	.00316	.00823	.00355	5.1330	49.302	.10173	14.214	.17528
#2	.00323	.00810	.00078	5.1498	49.405	.10227	14.338	.17381
#3	.00256	.00765	.00092	5.1766	49.612	.10546	14.368	.16487
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	90.168	.00369	.00788	-.00122	.00230	.00147	11.287
Stddev	.00023	.210	.00039	.00442	.00289	.00119	.00467	.027
%RSD	50.114	.23246	10.480	56.105	237.50	51.496	317.01	.23968
#1	.00031	90.009	.00403	.01267	.00108	.00337	.00397	11.318
#2	.00033	90.090	.00327	.00394	-.00447	.00102	-.00391	11.275
#3	.00071	90.405	.00377	.00704	-.00027	.00252	.00436	11.268
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606082203 Acquired: 6/25/2016 13:37:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.79119**	**.00045**	**-.00075**	**.00043**	**.00534**	**-.00006**
Stddev	.00030	.00071	.00315	.00229	.00033	.00006	.00108
%RSD	437.99	.09029	691.72	303.10	75.619	1.1956	1667.5
#1	-.00035	.79036	-.00147	.00135	.00018	.00529	-.00108
#2	-.00009	.79165	-.00125	-.00319	.00032	.00542	.00108
#3	.00024	.79155	.00408	-.00042	.00080	.00532	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9649.6**	**58766.**	**3005.5**
Stddev	29.5	106.	1.2
%RSD	.30621	.18076	.04053
#1	9617.1	58644.	3006.7
#2	9657.0	58831.	3005.5
#3	9674.8	58825.	3004.3

Approved: June 27, 2016

Sample Name: L1606082202 Acquired: 6/25/2016 13:40:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573973-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00163**	**.00700**	**-.00255**	**.09063**	**.14584**	**.00010**	**6.2202**	**-.00011**
Stddev	.00068	.00493	.00215	.00172	.00146	.00002	.0817	.00004
%RSD	41.927	70.458	84.324	1.8967	.99792	21.043	1.3126	39.110
#1	.00225	.01016	-.00441	.09032	.14618	.00008	6.1515	-.00007
#2	.00090	.00132	-.00302	.08908	.14425	.00013	6.1986	-.00016
#3	.00175	.00952	-.00020	.09248	.14710	.00010	6.3104	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.00096**	**.00077**	**2.0756**	**1.5049**	**.02492**	**4.3992**	**.07622**
Stddev	.00041	.00002	.00085	.0056	.1629	.00329	.1257	.00201
%RSD	1133.0	2.0322	110.52	.26897	10.822	13.197	2.8567	2.6344
#1	-.00024	.00097	.00165	2.0692	1.6925	.02131	4.4123	.07724
#2	.00043	.00097	.00070	2.0781	1.3995	.02572	4.2675	.07752
#3	-.00030	.00094	-.00004	2.0795	1.4227	.02774	4.5178	.07391
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**83.246**	**.00061**	**.10079**	**.00421**	**-.00520**	**.00452**	**12.135**
Stddev	.00009	.263	.00086	.00636	.00131	.00271	.00174	.029
%RSD	36.387	.31568	140.09	6.3065	31.208	52.125	38.464	.24257
#1	-.00033	83.275	.00060	.10060	.00298	-.00301	.00254	12.154
#2	-.00015	82.970	.00147	.10724	.00559	-.00823	.00579	12.151
#3	-.00025	83.493	-.00024	.09454	.00404	-.00437	.00523	12.101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606082202 Acquired: 6/25/2016 13:40:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573973-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	.21054	.00087	-.00133	-.00012	.00182	.00052
Stddev	.00041	.00091	.00263	.00076	.00048	.00007	.00152
%RSD	145.47	.43126	300.38	57.105	397.63	3.7016	294.24
#1	.00007	.21002	.00237	-.00045	.00028	.00184	-.00094
#2	.00003	.21002	.00241	-.00174	.00001	.00175	.00210
#3	.00076	.21159	-.00216	-.00179	-.00065	.00188	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9729.1	59376.	3030.4
Stddev	8.6	260.	19.9
%RSD	.08835	.43738	.65516
#1	9720.3	59079.	3018.5
#2	9729.3	59490.	3053.3
#3	9737.5	59559.	3019.5

Approved: June 27, 2016

Sample Name: L1606082202PS Acquired: 6/25/2016 13:44:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573973-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19375**	**4.8752**	**.19613**	**1.0291**	**.62833**	**.02428**	**10.648**	**.02477**
Stddev	.00051	.0099	.00160	.0019	.00588	.00006	.170	.00011
%RSD	.26273	.20232	.81334	.18131	.93614	.24036	1.5959	.45206
#1	.19417	4.8642	.19702	1.0298	.63084	.02431	10.660	.02468
#2	.19391	4.8782	.19429	1.0305	.63254	.02431	10.812	.02489
#3	.19319	4.8832	.19709	1.0270	.62161	.02421	10.473	.02473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09829**	**.24324**	**.24855**	**3.8486**	**25.821**	**.52335**	**8.7582**	**.31225**
Stddev	.00082	.00053	.00056	.0314	.285	.00671	.0434	.00355
%RSD	.83225	.21842	.22566	.81716	1.1038	1.2812	.49530	1.1380
#1	.09742	.24374	.24849	3.8714	25.861	.52361	8.7634	.31338
#2	.09905	.24330	.24914	3.8618	26.083	.52993	8.7125	.31510
#3	.09841	.24268	.24802	3.8128	25.517	.51653	8.7988	.30827
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50486**	**99.997**	**.24562**	**4.8721**	**.24648**	**.59017**	**.19243**	**13.471**
Stddev	.00060	.660	.00153	.0054	.00424	.00393	.00054	.013
%RSD	.11858	.66045	.62190	.11137	1.7208	.66559	.28037	.09301
#1	.50422	100.35	.24553	4.8783	.24168	.58648	.19181	13.458
#2	.50541	100.41	.24414	4.8682	.24971	.59430	.19267	13.471
#3	.50494	99.235	.24719	4.8698	.24807	.58975	.19281	13.483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606082202PS Acquired: 6/25/2016 13:44:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573973-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48807**	**.68216**	**.50019**	**.24323**	**.49372**	**.48957**	**.00258**
Stddev	.00205	.00533	.01089	.00117	.00097	.00018	.00106
%RSD	.41999	.78112	2.1777	.48173	.19621	.03662	41.003
#1	.49029	.68537	.51266	.24188	.49454	.48951	.00281
#2	.48770	.68509	.49539	.24396	.49265	.48978	.00349
#3	.48624	.67601	.49252	.24385	.49397	.48943	.00142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9652.9**	**58738.**	**3022.5**
Stddev	16.4	44.	32.4
%RSD	.17031	.07498	1.0716
#1	9668.7	58757.	3005.1
#2	9654.1	58688.	3002.5
#3	9635.9	58769.	3059.8

Approved: June 27, 2016

Sample Name: L1606082202SDL Acquired: 6/25/2016 13:48:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573973-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00041	-.00874	.00232	.01966	.02846	.00012	1.1981	-.00020
Stddev	.00102	.00520	.00129	.00166	.00164	.00003	.0364	.00029
%RSD	249.96	59.552	55.713	8.4558	5.7787	28.080	3.0406	145.60
#1	-.00049	-.00387	.00244	.02114	.03034	.00013	1.2234	-.00054
#2	.00065	-.00812	.00098	.01996	.02778	.00008	1.1564	-.00008
#3	-.00139	-.01423	.00356	.01786	.02727	.00014	1.2146	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	.00097	.00049	.42314	.31666	.00414	.84994	.01478
Stddev	.00036	.00092	.00031	.02269	.03395	.00078	.10125	.00159
%RSD	202.36	94.832	64.039	5.3615	10.720	18.849	11.912	10.770
#1	-.00059	-.00007	.00031	.40193	.27970	.00483	.89447	.01388
#2	-.00002	.00128	.00031	.42043	.32384	.00429	.92129	.01385
#3	.00008	.00169	.00086	.44706	.34645	.00330	.73406	.01662
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	16.797	-.00010	.02573	.00379	-.00654	-.00062	2.4606
Stddev	.00016	.116	.00075	.00347	.00211	.00206	.00121	.0014
%RSD	105.18	.68795	766.63	13.470	55.760	31.494	195.90	.05654
#1	-.00025	16.870	-.00048	.02714	.00159	-.00786	-.00167	2.4590
#2	-.00024	16.856	-.00058	.02827	.00580	-.00417	-.00090	2.4616
#3	.00003	16.663	.00077	.02178	.00399	-.00761	.00071	2.4611
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606082202SDL Acquired: 6/25/2016 13:48:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573973-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00034**	**.04233**	**.00225**	**-.00298**	**.00005**	**.00069**	**.00014**
Stddev	.00035	.00076	.00380	.00312	.00068	.00008	.00023
%RSD	102.54	1.7878	169.10	104.78	1298.3	11.967	160.88
#1	-.00033	.04309	.00306	.00056	-.00034	.00074	-.00011
#2	.00000	.04232	.00558	-.00534	-.00035	.00059	.00032
#3	-.00071	.04157	-.00189	-.00415	.00084	.00073	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10112.**	**61959.**	**3102.5**
Stddev	25.	335.	21.2
%RSD	.24804	.54051	.68302
#1	10140.	62322.	3081.9
#2	10091.	61890.	3101.4
#3	10107.	61663.	3124.2

Approved: June 27, 2016

Sample Name: L1606082202SDL Acquired: 6/25/2016 13:52:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573973-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**-.00201**	**.00162**	**.00506**	**.00674**	**.00009**	**.22194**	**.00006**
Stddev	.00098	.00612	.00099	.00223	.00036	.00007	.03121	.00010
%RSD	701.06	303.84	61.332	44.136	5.3564	71.933	14.062	159.17
#1	-.00091	-.00825	.00149	.00575	.00715	.00008	.25227	.00003
#2	-.00048	-.00177	.00268	.00256	.00663	.00004	.22363	-.00001
#3	.00097	.00398	.00070	.00686	.00645	.00017	.18992	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.00003**	**.00093**	**.10294**	**.07211**	**-.00053**	**.11677**	**.00303**
Stddev	.00044	.00176	.00026	.00844	.06933	.00190	.04489	.00266
%RSD	660.12	5191.6	27.598	8.2017	96.144	360.65	38.441	87.562
#1	-.00052	.00076	.00092	.11264	.12436	-.00025	.12873	.00344
#2	.00037	-.00197	.00068	.09726	-.00654	-.00255	.06712	.00020
#3	-.00005	.00131	.00120	.09891	.09851	.00122	.15447	.00546
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00046**	**3.4626**	**-.00095**	**.01102**	**.00309**	**-.00448**	**.00254**	**.52285**
Stddev	.00009	.0579	.00053	.00740	.00233	.00663	.00646	.00911
%RSD	18.881	1.6714	55.686	67.190	75.440	147.88	254.92	1.7427
#1	-.00041	3.4180	-.00056	.01783	.00042	-.00172	-.00323	.51493
#2	-.00042	3.4418	-.00074	.01207	.00473	-.01205	.00952	.52082
#3	-.00056	3.5280	-.00155	.00314	.00412	.00032	.00131	.53281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606082202SDL Acquired: 6/25/2016 13:52:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573973-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00039**	**.00876**	**-.00160**	**-.00170**	**.00064**	**.00048**	**.00025**
Stddev	.00024	.00020	.00243	.00072	.00151	.00001	.00052
%RSD	61.212	2.3382	151.62	42.632	234.58	1.6034	205.72
#1	-.00036	.00876	-.00015	-.00219	-.00097	.00048	.00032
#2	-.00064	.00897	-.00025	-.00087	.00088	.00049	-.00030
#3	-.00017	.00856	-.00441	-.00204	.00202	.00048	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10010.**	**61091.**	**3050.7**
Stddev	14.	94.	16.7
%RSD	.14368	.15455	.54708
#1	9999.9	61099.	3067.0
#2	10027.	60993.	3033.7
#3	10004.	61182.	3051.5

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 13:56:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39703	9.8823	.39208	.48360	.99649	.04877	9.9442
Stddev	.00097	.0185	.00108	.00155	.00485	.00012	.0391
%RSD	.24464	.18766	.27635	.32015	.48698	.23806	.39293
#1	.39651	9.9033	.39094	.48432	.99107	.04885	9.8991
#2	.39815	9.8682	.39222	.48182	1.0004	.04883	9.9670
#3	.39642	9.8754	.39309	.48466	.99796	.04864	9.9665
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04952	.19590	.48861	.49872	3.9553	49.086	.99832
Stddev	.00026	.00028	.00039	.00131	.0110	.181	.00236
%RSD	.52554	.14170	.07934	.26171	.27922	.36920	.23624
#1	.04970	.19602	.48888	.50017	3.9554	48.878	.99571
#2	.04922	.19610	.48816	.49764	3.9662	49.210	1.0003
#3	.04964	.19559	.48877	.49836	3.9441	49.170	.99895
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.6989	.49966	.99513	49.378	.49577	9.7713	.49937
Stddev	.0286	.00128	.00487	.189	.00112	.0077	.00125
%RSD	.29470	.25687	.48908	.38358	.22653	.07875	.25024
#1	9.6936	.49933	.99926	49.226	.49626	9.7672	.49899
#2	9.6733	.50107	.99636	49.590	.49656	9.7802	.50076
#3	9.7297	.49857	.98976	49.317	.49448	9.7665	.49835
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 13:56:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.1744	.39516	5.0749	.97934	.99997	.99747	.49995
Stddev	.0050	.00337	.0045	.00061	.00261	.00842	.00315
%RSD	.42778	.85272	.08873	.06267	.26098	.84451	.63052
#1	1.1693	.39868	5.0732	.98005	.99777	.99280	.50104
#2	1.1793	.39197	5.0800	.97900	1.0028	1.0072	.49639
#3	1.1748	.39484	5.0715	.97897	.99928	.99242	.50240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.98727	.98962	F 2.8790
Stddev	.00224	.00122	.0125
%RSD	.22699	.12332	.43408
#1	.98696	.98924	2.8649
#2	.98519	.99098	2.8888
#3	.98965	.98864	2.8834
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9881.8	60025.	3051.6
Stddev	7.5	117.	13.0
%RSD	.07613	.19437	.42745
#1	9874.3	60038.	3066.6
#2	9889.3	60134.	3043.0
#3	9881.9	59902.	3045.3

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 14:00:01 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**.00384**	**.00171**	**.00288**	**.00164**	**.00016**	**-.02160**	**-.00002**
Stddev	.00056	.00607	.00179	.00157	.00101	.00008	.03268	.00008
%RSD	153.00	158.06	104.81	54.496	61.686	49.488	151.32	357.31
#1	-.00082	.00133	.00363	.00341	.00099	.00008	-.05876	.00002
#2	-.00054	.01077	.00142	.00412	.00280	.00016	-.00868	-.00011
#3	.00026	-.00057	.00008	.00112	.00111	.00023	.00265	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**.00089**	**.00145**	**.02539**	**.05830**	**-.00178**	**-.00516**	**-.00289**
Stddev	.00025	.00059	.00085	.02878	.16368	.00331	.04118	.00267
%RSD	184.36	65.782	58.421	113.33	280.73	185.62	797.74	92.366
#1	-.00007	.00150	.00078	.04856	-.06991	-.00470	-.03370	-.00034
#2	.00042	.00086	.00240	.03444	.24267	-.00246	.04205	-.00265
#3	.00006	.00033	.00117	-.00682	.00216	.00181	-.02383	-.00566
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00312**	**.01750**	**-.00036**	**.00463**	**.00110**	**.00408**	**.00171**	**-.00349**
Stddev	.00035	.01788	.00074	.00054	.00119	.00430	.00409	.00216
%RSD	11.208	102.15	207.33	11.581	107.78	105.36	238.51	61.802
#1	.00276	.00856	.00044	.00497	-.00027	-.00057	.00622	-.00129
#2	.00346	.03809	-.00047	.00401	.00175	.00791	-.00177	-.00560
#3	.00314	.00586	-.00104	.00491	.00181	.00489	.00070	-.00357
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 14:00:01 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.00055	-.00034	-.00341	.00088	.00013	.00321
Stddev	.00088	.00013	.00661	.00148	.00029	.00021	.00123
%RSD	577.33	24.369	1964.7	43.438	32.521	159.30	38.279
#1	-.00076	.00044	.00453	-.00437	.00106	-.00009	.00194
#2	.00100	.00070	.00232	-.00416	.00055	.00032	.00329
#3	.00022	.00052	-.00786	-.00171	.00104	.00016	.00439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9674.1	59179.	2989.6
Stddev	10.8	80.	18.0
%RSD	.11204	.13474	.60268
#1	9680.4	59116.	2972.7
#2	9661.6	59269.	3008.6
#3	9680.2	59153.	2987.4

Approved: June 27, 2016

Sample Name: L1606082302 Acquired: 6/25/2016 14:03:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.01235**	**.00398**	**.02065**	**7.6114**	**.00014**	**242.99**
Stddev	.00016	.00738	.00092	.00248	.0086	.00009	.50
%RSD	156.01	59.723	23.024	12.009	.11234	64.318	.20416
#1	-.00023	.01740	.00411	.01789	7.6202	.00016	242.85
#2	-.00014	.01576	.00483	.02137	7.6109	.00023	243.54
#3	.00007	.00389	.00301	.02270	7.6032	.00004	242.58
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00045**	**.05380**	**.00122**	**.00261**	**4.4999**	**3.4068**	**.13022**
Stddev	.00043	.00087	.00035	.00011	.0119	.0234	.00431
%RSD	95.240	1.6084	28.402	4.2649	.26410	.68699	3.3105
#1	-.00003	.05465	.00142	.00253	4.4869	3.3837	.13493
#2	.00060	.05384	.00143	.00274	4.5026	3.4062	.12925
#3	.00078	.05292	.00082	.00256	4.5101	3.4305	.12648
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**186.55**	**.80417**	**.00043**	F **676.67**	**.01798**	**.04840**	**.00356**
Stddev	.43	.00344	.00029	5.78	.00081	.00767	.00232
%RSD	.22901	.42830	67.402	.85481	4.4962	15.839	65.024
#1	186.94	.80321	.00050	676.18	.01876	.05723	.00107
#2	186.09	.80800	.00067	682.68	.01714	.04349	.00566
#3	186.63	.80131	.00011	671.15	.01803	.04447	.00396
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 27, 2016

Sample Name: L1606082302 Acquired: 6/25/2016 14:03:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00329**	**-.00499**	**17.541**	**.00002**	**5.8024**	F **-.03279**	**-.00373**
Stddev	.00417	.00266	.115	.00016	.0077	.00249	.00217
%RSD	126.77	53.331	.65409	771.83	.13255	7.6037	58.233
#1	-.00765	-.00207	17.622	-.00016	5.8086	-.03219	-.00297
#2	-.00289	-.00563	17.591	.00008	5.8048	-.03065	-.00619
#3	.00066	-.00727	17.409	.00014	5.7938	-.03553	-.00205
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00105**	**.00822**	**.00588**
Stddev	.00081	.00012	.00100
%RSD	77.437	1.5051	16.931
#1	-.00020	.00826	.00695
#2	-.00112	.00832	.00498
#3	-.00182	.00808	.00571
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9001.2**	**54623.**	**2943.0**
Stddev	12.7	293.	11.3
%RSD	.14121	.53595	.38250
#1	8986.8	54359.	2937.9
#2	9010.8	54574.	2935.3
#3	9006.1	54938.	2955.9

Approved: June 27, 2016

Sample Name: L1606082303 Acquired: 6/25/2016 14:07:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00097**	**.07689**	**.00082**	**.01317**	**4.0611**	**.00008**	**194.35**
Stddev	.00087	.00794	.00214	.00140	.0013	.00002	.19
%RSD	89.857	10.324	259.83	10.655	.03277	29.564	.09947
#1	.00177	.08422	.00140	.01160	4.0625	.00007	194.28
#2	.00005	.07798	.00261	.01363	4.0599	.00006	194.19
#3	.00109	.06846	-.00155	.01429	4.0610	.00010	194.56
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**.00720**	**.00128**	**.00172**	**.48254**	**1.5553**	**.05921**
Stddev	.00016	.00037	.00008	.00037	.03011	.0518	.00214
%RSD	37.982	5.1555	6.4501	21.255	6.2390	3.3303	3.6194
#1	.00025	.00709	.00125	.00159	.48289	1.5549	.05878
#2	.00056	.00690	.00137	.00144	.45226	1.5037	.05732
#3	.00044	.00762	.00121	.00214	.51247	1.6073	.06154
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**110.52**	**2.3053**	**-.00008**	F **614.40**	**.00312**	**.00621**	**.00333**
Stddev	.38	.0070	.00038	4.80	.00050	.00738	.00101
%RSD	.34277	.30352	457.85	.78181	15.943	118.75	30.264
#1	110.96	2.3090	-.00052	609.47	.00307	-.00184	.00218
#2	110.30	2.2972	.00010	614.65	.00363	.01264	.00406
#3	110.30	2.3096	.00018	619.07	.00264	.00783	.00375
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 27, 2016

Sample Name: L1606082303 Acquired: 6/25/2016 14:07:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00131	-.00398	12.572	-.00061	3.7282	-.02186	-.00195
Stddev	.00101	.00138	.069	.00058	.0049	.00737	.00114
%RSD	77.475	34.690	.54565	95.484	.12996	33.713	58.500
#1	-.00178	-.00242	12.599	.00005	3.7247	-.01374	-.00282
#2	-.00014	-.00503	12.623	-.00084	3.7262	-.02372	-.00066
#3	-.00200	-.00451	12.494	-.00105	3.7337	-.02812	-.00237
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00017	.00519	.00587
Stddev	.00034	.00017	.00146
%RSD	196.61	3.3392	24.813
#1	.00020	.00538	.00454
#2	-.00026	.00515	.00565
#3	-.00046	.00504	.00743
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9113.2	55170.	2962.5
Stddev	17.2	284.	10.8
%RSD	.18895	.51491	.36572
#1	9120.9	54953.	2952.0
#2	9093.5	55065.	2973.6
#3	9125.3	55492.	2961.9

Approved: June 27, 2016

Sample Name: L1606082304 Acquired: 6/25/2016 14:12:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00108	.00282	.00375	.01195	1.2873	.00004	44.812	-.00032
Stddev	.00081	.00175	.00233	.00191	.0068	.00003	.140	.00033
%RSD	75.442	62.066	62.147	15.958	.52861	68.482	.31190	102.13
#1	-.00032	.00374	.00333	.01352	1.2889	.00004	44.884	-.00060
#2	-.00194	.00392	.00166	.00983	1.2799	.00001	44.651	.00004
#3	-.00098	.00080	.00626	.01250	1.2932	.00007	44.900	-.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00062	-.00235	.00403	80.696	3.0351	.04425	27.190	1.4212
Stddev	.00024	.00090	.00186	.288	.0674	.00194	.251	.0124
%RSD	38.213	38.227	46.192	.35704	2.2197	4.3802	.92249	.86964
#1	.00059	-.00132	.00534	80.883	2.9579	.04406	26.967	1.4224
#2	.00088	-.00276	.00485	80.364	3.0650	.04628	27.141	1.4083
#3	.00040	-.00297	.00190	80.840	3.0823	.04242	27.462	1.4329
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00083	136.40	.00117	.05473	.00702	-.00148	-.00406	16.093
Stddev	.00029	.62	.00056	.00919	.00288	.00326	.00473	.052
%RSD	35.125	.45656	47.701	16.792	41.072	220.80	116.61	.32014
#1	-.00064	136.42	.00054	.06475	.00887	-.00465	-.00925	16.145
#2	-.00116	135.77	.00135	.05277	.00848	.00187	.00003	16.091
#3	-.00068	137.01	.00161	.04668	.00370	-.00165	-.00296	16.042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606082304 Acquired: 6/25/2016 14:12:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00141**	**1.0265**	**.02088**	**-.00129**	**-.00025**	**.01157**	**-.01042**
Stddev	.00052	.0054	.00601	.00283	.00173	.00020	.00036
%RSD	36.987	.52659	28.762	219.55	704.92	1.7611	3.4676
#1	.00201	1.0281	.02616	-.00374	-.00225	.01176	-.01080
#2	.00117	1.0205	.01435	.00181	.00074	.01159	-.01039
#3	.00105	1.0309	.02213	-.00193	.00077	.01136	-.01008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9584.5**	**58328.**	**2992.4**
Stddev	11.8	87.	5.0
%RSD	.12317	.14881	.16820
#1	9573.1	58228.	2986.6
#2	9583.6	58387.	2995.2
#3	9596.7	58368.	2995.4

Approved: June 27, 2016

Sample Name: L1606114801 Acquired: 6/25/2016 14:15:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00263	.73135	.00385	.12210	.08262	.00020	27.646	.00018
Stddev	.00073	.00428	.00128	.00118	.00156	.00004	.096	.00015
%RSD	27.764	.58467	33.324	.96789	1.8866	19.880	.34678	80.450
#1	.00220	.73627	.00263	.12346	.08403	.00016	27.689	.00009
#2	.00223	.72927	.00372	.12147	.08287	.00024	27.713	.00035
#3	.00348	.72851	.00519	.12136	.08095	.00020	27.536	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	.00138	.00319	.50952	4.5430	.00820	13.834	.02681
Stddev	.00058	.00089	.00080	.00314	.0592	.00406	.158	.00190
%RSD	107.78	64.361	25.113	.61565	1.3042	49.473	1.1398	7.0691
#1	-.00010	.00066	.00412	.50590	4.4785	.00685	13.879	.02807
#2	.00067	.00110	.00265	.51133	4.5951	.01276	13.964	.02463
#3	.00103	.00237	.00282	.51133	4.5554	.00499	13.658	.02774
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00124	65.018	.00157	.05465	.00287	-.00148	.00632	4.3760
Stddev	.00020	.232	.00022	.00221	.00233	.00288	.00218	.0207
%RSD	16.215	.35629	13.957	4.0445	81.267	194.34	34.507	.47244
#1	.00141	65.009	.00133	.05367	.00373	-.00288	.00878	4.3946
#2	.00130	65.254	.00176	.05719	.00465	-.00339	.00555	4.3795
#3	.00102	64.791	.00160	.05310	.00023	.00183	.00463	4.3537
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606114801 Acquired: 6/25/2016 14:15:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	.26681	.01202	-.00269	.00480	.00516	.00567
Stddev	.00125	.00125	.00081	.00070	.00038	.00011	.00071
%RSD	227.21	.46986	6.7372	25.927	7.9446	2.0641	12.451
#1	-.00072	.26656	.01275	-.00259	.00452	.00521	.00488
#2	.00178	.26818	.01115	-.00205	.00524	.00504	.00622
#3	.00058	.26571	.01216	-.00344	.00465	.00524	.00592
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9685.5	59237.	3013.9
Stddev	15.3	70.	21.8
%RSD	.15804	.11840	.72168
#1	9667.9	59212.	3004.6
#2	9692.8	59182.	2998.3
#3	9695.8	59316.	3038.7

Approved: June 27, 2016

Sample Name: L1606114802 Acquired: 6/25/2016 14:19:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00086	.02576	.00392	.13054	.14235	.00004	53.032	.00013
Stddev	.00161	.00264	.00128	.00304	.00093	.00006	.088	.00011
%RSD	186.85	10.249	32.777	2.3320	.65273	165.85	.16643	81.772
#1	-.00048	.02479	.00505	.13055	.14272	-.00002	52.942	.00017
#2	.00053	.02374	.00418	.13357	.14130	.00011	53.037	.00022
#3	-.00263	.02875	.00252	.12748	.14305	.00003	53.119	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.00416	.00255	.05069	2.7172	.00979	45.232	.00619
Stddev	.00057	.00090	.00135	.00895	.0969	.00331	.213	.00128
%RSD	70.201	21.666	53.148	17.648	3.5679	33.803	.47142	20.757
#1	.00109	.00488	.00157	.05068	2.6091	.01132	44.992	.00715
#2	.00016	.00315	.00198	.05964	2.7964	.01206	45.307	.00668
#3	.00119	.00444	.00409	.04175	2.7463	.00599	45.398	.00473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	113.30	.00198	.03363	.00397	-.00032	.00108	5.7426
Stddev	.00005	.15	.00097	.00220	.00496	.00242	.00246	.0270
%RSD	9.2544	.13423	48.767	6.5321	124.89	765.53	227.39	.46957
#1	.00062	113.13	.00098	.03204	.00115	-.00095	-.00128	5.7131
#2	.00062	113.39	.00206	.03614	.00107	.00236	.00363	5.7660
#3	.00052	113.39	.00290	.03272	.00971	-.00236	.00090	5.7486
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606114802 Acquired: 6/25/2016 14:19:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**.36906**	**-.00370**	**-.00072**	**.00779**	**.00692**	**.00331**
Stddev	.00028	.00064	.00411	.00265	.00075	.00021	.00138
%RSD	191.03	.17400	110.98	366.07	9.6620	3.0569	41.716
#1	-.00017	.36882	.00101	-.00049	.00853	.00671	.00489
#2	.00034	.36857	-.00557	.00180	.00703	.00713	.00270
#3	.00027	.36978	-.00654	-.00348	.00781	.00694	.00235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9627.8**	**58951.**	**3062.4**
Stddev	26.1	26.	1.9
%RSD	.27151	.04447	.06237
#1	9657.6	58927.	3060.7
#2	9617.0	58947.	3062.0
#3	9608.7	58979.	3064.5

Approved: June 27, 2016

Sample Name: L1606115001 Acquired: 6/25/2016 14:23:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00134	.94860	.00623	.13672	.10593	.00014	35.066	.00002
Stddev	.00163	.01243	.00298	.00233	.00120	.00009	.208	.00013
%RSD	122.05	1.3105	47.819	1.7071	1.1370	65.235	.59262	741.62
#1	-.00020	.96246	.00332	.13853	.10456	.00018	34.826	.00011
#2	.00116	.93843	.00928	.13754	.10682	.00004	35.168	-.00013
#3	.00306	.94490	.00609	.13408	.10640	.00021	35.202	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00095	.00115	.00402	.75423	2.6231	.00517	21.361	.05361
Stddev	.00038	.00077	.00076	.00983	.0329	.00134	.091	.00159
%RSD	39.586	67.102	19.015	1.3028	1.2541	25.927	.42723	2.9705
#1	.00055	.00114	.00333	.74497	2.6490	.00636	21.310	.05382
#2	.00102	.00192	.00389	.75319	2.6342	.00372	21.307	.05192
#3	.00129	.00038	.00484	.76454	2.5861	.00543	21.467	.05508
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00320	114.16	.00202	.11444	.00566	-.00032	.00352	5.0408
Stddev	.00062	.45	.00043	.00615	.00453	.00176	.00035	.0084
%RSD	19.542	.39163	21.028	5.3725	80.076	549.83	10.037	.16741
#1	.00290	113.69	.00211	.12072	.00935	.00043	.00314	5.0497
#2	.00278	114.20	.00240	.11417	.00060	.00094	.00356	5.0330
#3	.00392	114.58	.00156	.10843	.00702	-.00233	.00385	5.0397
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115001 Acquired: 6/25/2016 14:23:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**.24066**	**.01417**	**-.00245**	**.00766**	**.00892**	**.00404**
Stddev	.00021	.00154	.00348	.00225	.00065	.00011	.00127
%RSD	805.05	.63820	24.568	91.853	8.5297	1.1926	31.485
#1	.00024	.23889	.01059	-.00116	.00840	.00901	.00275
#2	.00001	.24171	.01754	-.00114	.00737	.00895	.00530
#3	-.00018	.24137	.01438	-.00504	.00719	.00880	.00407
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9688.5**	**58932.**	**3057.0**
Stddev	25.8	93.	13.7
%RSD	.26652	.15746	.44955
#1	9698.0	58835.	3047.2
#2	9708.3	59020.	3072.7
#3	9659.3	58940.	3051.0

Approved: June 27, 2016

Sample Name: L1606115002 Acquired: 6/25/2016 14:27:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00203	.48878	.00167	.06520	.04585	.00006	17.152	.00001
Stddev	.00268	.01554	.00141	.00090	.00204	.00009	.173	.00009
%RSD	131.70	3.1791	84.852	1.3869	4.4598	167.56	1.0064	934.85
#1	.00187	.50660	.00286	.06544	.04801	.00015	17.256	-.00009
#2	-.00056	.47801	.00204	.06596	.04394	-.00004	16.953	.00007
#3	.00479	.48175	.00010	.06420	.04559	.00005	17.247	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00168	.00243	.39846	4.7446	.00319	5.4375	.01729
Stddev	.00031	.00066	.00184	.00667	.1185	.00289	.0385	.00153
%RSD	100.89	39.152	75.822	1.6749	2.4966	90.823	.70870	8.8325
#1	.00065	.00096	.00122	.39954	4.7392	.00001	5.4553	.01884
#2	.00006	.00183	.00151	.39131	4.6289	.00567	5.3932	.01727
#3	.00020	.00224	.00454	.40452	4.8657	.00387	5.4638	.01578
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	38.880	.00010	.07228	.00433	-.00020	.00027	1.5503
Stddev	.00033	.402	.00056	.00820	.00375	.00324	.00590	.0251
%RSD	119.49	1.0347	568.40	11.341	86.648	1601.4	2189.5	1.6195
#1	-.00010	39.210	-.00001	.06867	.00198	.00127	.00262	1.5658
#2	.00053	38.432	.00070	.06650	.00235	-.00392	-.00644	1.5637
#3	.00040	38.999	-.00040	.08166	.00865	.00205	.00464	1.5213
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115002 Acquired: 6/25/2016 14:27:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.09712	.00701	-.00122	.00599	.00508	.00239
Stddev	.00062	.00057	.00249	.00352	.00080	.00018	.00169
%RSD	1544.5	.58817	35.547	288.53	13.353	3.5369	70.760
#1	.00058	.09776	.00445	-.00524	.00624	.00503	.00322
#2	-.00064	.09666	.00715	.00026	.00510	.00528	.00044
#3	.00018	.09693	.00942	.00132	.00664	.00493	.00349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9845.3	59884.	3057.5
Stddev	61.7	141.	28.2
%RSD	.62651	.23463	.92251
#1	9792.5	59732.	3034.3
#2	9830.2	60008.	3088.9
#3	9913.1	59914.	3049.2

Approved: June 27, 2016

Sample Name: L1606115102 Acquired: 6/25/2016 14:31:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00159	.14924	.00211	.10945	.07344	.00012	35.265	.00011
Stddev	.00084	.00304	.00150	.00214	.00141	.00005	.199	.00019
%RSD	53.011	2.0340	71.147	1.9507	1.9218	40.963	.56552	183.34
#1	.00069	.14626	.00205	.10856	.07211	.00007	35.174	.00027
#2	.00171	.15233	.00364	.10790	.07329	.00017	35.493	-.00011
#3	.00236	.14912	.00064	.11188	.07492	.00013	35.127	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.00053	.00363	.24070	2.2004	.00754	18.847	.05800
Stddev	.00037	.00064	.00076	.00439	.0134	.00192	.227	.00368
%RSD	71.691	119.20	20.837	1.8247	.61086	25.451	1.2033	6.3535
#1	.00009	-.00001	.00323	.23564	2.1949	.00870	18.615	.05962
#2	.00071	.00038	.00450	.24286	2.2158	.00532	19.068	.05378
#3	.00075	.00124	.00316	.24359	2.1907	.00860	18.858	.06059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00267	93.416	.00066	.05411	.00356	-.00299	.00235	4.9794
Stddev	.00025	.232	.00043	.00846	.00271	.00266	.00452	.0235
%RSD	9.2843	.24821	65.257	15.640	76.210	88.939	192.50	.47215
#1	.00239	93.189	.00082	.06384	.00043	-.00008	-.00245	4.9968
#2	.00274	93.652	.00099	.04849	.00522	-.00529	.00653	4.9888
#3	.00288	93.408	.00017	.05000	.00501	-.00360	.00296	4.9527
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115102 Acquired: 6/25/2016 14:31:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.22720	-.00049	-.00434	.00477	.01199	.00282
Stddev	.00094	.00191	.00341	.00316	.00052	.00018	.00083
%RSD	624.90	.83946	689.70	72.807	10.840	1.4772	29.345
#1	.00091	.22526	.00103	-.00351	.00496	.01201	.00271
#2	-.00090	.22907	-.00440	-.00783	.00516	.01216	.00370
#3	.00043	.22727	.00189	-.00168	.00418	.01181	.00206
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9596.9	58682.	3041.4
Stddev	35.1	192.	10.5
%RSD	.36599	.32727	.34598
#1	9558.5	58834.	3032.3
#2	9605.0	58747.	3039.1
#3	9627.4	58466.	3052.9

Approved: June 27, 2016

Sample Name: L1606115105 Acquired: 6/25/2016 14:35:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	.08611	.00385	.13923	.09101	.00009	44.089	.00002
Stddev	.00149	.00500	.00146	.00310	.00028	.00009	.047	.00004
%RSD	320.61	5.8036	37.928	2.2254	.30236	102.05	.10587	146.93
#1	-.00016	.08678	.00262	.14146	.09069	.00015	44.139	.00006
#2	-.00061	.09074	.00347	.13569	.09114	.00014	44.082	.00002
#3	.00216	.08081	.00547	.14055	.09119	-.00002	44.046	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.00077	.00300	.22257	1.9197	.00784	24.665	.07651
Stddev	.00017	.00044	.00144	.01624	.0794	.00414	.178	.00017
%RSD	34.605	57.594	48.079	7.2986	4.1341	52.815	.72144	.22200
#1	.00066	.00116	.00292	.22095	1.8333	.01224	24.592	.07669
#2	.00046	.00029	.00448	.23956	1.9894	.00402	24.534	.07635
#3	.00033	.00086	.00160	.20719	1.9365	.00726	24.867	.07649
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00251	121.52	.00039	.04724	.00176	-.00202	.00114	5.9103
Stddev	.00040	.42	.00024	.00471	.00159	.00145	.00478	.0521
%RSD	16.119	.34732	62.165	9.9710	90.693	71.551	420.31	.88218
#1	.00228	121.85	.00064	.05267	.00005	-.00053	.00361	5.8778
#2	.00297	121.67	.00016	.04481	.00202	-.00342	.00418	5.9704
#3	.00227	121.04	.00037	.04425	.00320	-.00211	-.00437	5.8826
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115105 Acquired: 6/25/2016 14:35:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00058	.28912	-.00001	-.00113	.00539	.00821	.00159
Stddev	.00104	.00030	.00390	.00110	.00033	.00010	.00078
%RSD	180.18	.10436	27479.	97.280	6.0662	1.2671	48.813
#1	.00169	.28878	.00322	.00014	.00577	.00817	.00171
#2	.00041	.28919	.00108	-.00182	.00517	.00833	.00230
#3	-.00037	.28937	-.00434	-.00172	.00524	.00813	.00076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9591.1	58078.	3001.7
Stddev	50.0	111.	7.0
%RSD	.52084	.19101	.23475
#1	9648.1	57963.	2993.9
#2	9554.9	58185.	3007.6
#3	9570.3	58085.	3003.7

Approved: June 27, 2016

Sample Name: L1606115401 Acquired: 6/25/2016 14:39:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**.06369**	**.00211**	**1.6713**	**.01926**	**.00010**	F **452.03**
Stddev	.00322	.00656	.00351	.0005	.00118	.00010	.89
%RSD	1157.9	10.295	166.24	.02810	6.1016	104.76	.19751
#1	.00114	.06870	-.00193	1.6717	.01795	.00008	451.94
#2	.00198	.05626	.00441	1.6715	.02023	.00000	452.97
#3	-.00396	.06610	.00386	1.6708	.01959	.00021	451.19
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**.00175**	**.00336**	**.00358**	**.08657**	**4.0470**	**.10636**
Stddev	.00024	.00006	.00098	.00171	.01546	.0608	.00217
%RSD	56.333	3.4162	29.186	47.723	17.854	1.5017	2.0382
#1	.00015	.00180	.00230	.00410	.09591	4.0001	.10764
#2	.00053	.00168	.00424	.00167	.09508	4.1156	.10386
#3	.00059	.00177	.00354	.00498	.06873	4.0251	.10759
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**104.45**	**.25861**	**.02316**	F **889.97**	**.00046**	**.03619**	**.00320**
Stddev	.32	.00175	.00063	8.94	.00094	.00407	.00206
%RSD	.30573	.67823	2.7369	1.0045	203.65	11.246	64.428
#1	104.40	.26014	.02389	897.40	-.00019	.03795	.00082
#2	104.79	.25898	.02276	892.47	.00155	.03153	.00442
#3	104.16	.25670	.02283	880.05	.00003	.03907	.00435
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 27, 2016

Sample Name: L1606115401 Acquired: 6/25/2016 14:39:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.04556**	**5.0652**	**-.00092**	**8.3910**	F **-.05563**	**-.00220**
Stddev	.00340	.00461	.0400	.00030	.0291	.00259	.00257
%RSD	2618.0	10.119	.78890	32.506	.34723	4.6498	116.61
#1	-.00398	.04208	5.1054	-.00114	8.4061	-.05807	-.00507
#2	.00246	.05079	5.0645	-.00058	8.4095	-.05590	-.00010
#3	.00113	.04380	5.0255	-.00104	8.3574	-.05292	-.00145
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.01649**	**.00488**	**.00303**
Stddev	.00056	.00014	.00088
%RSD	3.4018	2.9544	29.046
#1	.01604	.00505	.00374
#2	.01712	.00480	.00205
#3	.01632	.00480	.00329
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8680.3**	**53198.**	**2985.6**
Stddev	180.6	1315.	22.8
%RSD	2.0805	2.4712	.76305
#1	8472.3	54211.	3004.6
#2	8770.9	53671.	2960.4
#3	8797.6	51712.	2991.9

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 14:43:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41555	10.459	.41251	.50877	1.0374	.05191	10.456
Stddev	.00198	.038	.00049	.00412	.0216	.00011	.214
%RSD	.47730	.36575	.11809	.80911	2.0778	.21811	2.0454
#1	.41688	10.435	.41304	.50472	1.0594	.05178	10.677
#2	.41327	10.438	.41238	.51295	1.0163	.05199	10.250
#3	.41650	10.503	.41210	.50863	1.0364	.05195	10.439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05257	.20726	.51590	.53004	4.1313	50.651	1.0395
Stddev	.00009	.00077	.00185	.00200	.0874	1.016	.0162
%RSD	.16567	.37212	.35803	.37798	2.1147	2.0061	1.5578
#1	.05256	.20724	.51397	.52980	4.1823	51.735	1.0578
#2	.05249	.20650	.51606	.52817	4.0304	49.720	1.0270
#3	.05266	.20804	.51766	.53216	4.1811	50.499	1.0337
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.150	.52278	1.0570	51.369	.52494	10.305	.52104
Stddev	.208	.00621	.0043	.990	.00089	.023	.00138
%RSD	2.0459	1.1888	.41022	1.9281	.16882	.22613	.26480
#1	10.382	.52905	1.0620	52.419	.52481	10.311	.51949
#2	10.083	.51662	1.0546	50.452	.52412	10.279	.52151
#3	9.9835	.52267	1.0544	51.234	.52588	10.325	.52213
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 14:43:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2435**	**.41340**	**5.3297**	**1.0365**	**1.0404**	**1.0490**	**.52867**
Stddev	.0031	.00239	.0078	.0027	.0194	.0184	.00366
%RSD	.25127	.57838	.14640	.26182	1.8676	1.7498	.69286
#1	1.2461	.41607	5.3340	1.0379	1.0597	1.0678	.52786
#2	1.2400	.41146	5.3207	1.0334	1.0208	1.0311	.53267
#3	1.2443	.41266	5.3345	1.0383	1.0408	1.0483	.52548
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0507**	**1.0444**	F **3.0477**
Stddev	.0007	.0005	.0535
%RSD	.06848	.05207	1.7552
#1	1.0503	1.0446	3.1080
#2	1.0502	1.0438	3.0059
#3	1.0515	1.0449	3.0292
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9539.3**	**57751.**	**2940.1**
Stddev	31.6	140.	48.7
%RSD	.33120	.24295	1.6549
#1	9524.0	57816.	2886.9
#2	9575.6	57847.	2982.3
#3	9518.3	57590.	2951.2

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 14:46:39 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00165**	**.00284**	**.00176**	**.00388**	**.00113**	**.00012**	**-.05362**	**.00014**
Stddev	.00125	.01178	.00236	.00154	.00084	.00005	.04538	.00017
%RSD	75.692	415.29	134.23	39.663	74.227	41.354	84.617	118.22
#1	.00309	-.01077	.00340	.00450	.00053	.00007	-.00140	.00006
#2	.00089	.00942	.00281	.00212	.00078	.00011	-.07612	.00034
#3	.00097	.00986	-.00094	.00500	.00209	.00017	-.08336	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00024**	**.00081**	**-.00057**	**.03333**	**.05011**	**.00030**	**.06903**	**-.00046**
Stddev	.00028	.00137	.00241	.00857	.04565	.00118	.08939	.00080
%RSD	113.95	168.04	420.16	25.719	91.103	392.02	129.50	172.20
#1	.00053	-.00076	.00045	.02973	.09790	.00058	.12386	.00033
#2	.00023	.00164	-.00333	.02715	.04546	-.00100	-.03412	-.00045
#3	-.00003	.00157	.00116	.04312	.00696	.00132	.11734	-.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00329**	**.09636**	**-.00015**	**.00820**	**-.00027**	**.00540**	**.00512**	**-.00542**
Stddev	.00036	.02670	.00052	.00425	.00262	.00178	.00316	.00074
%RSD	10.874	27.706	348.06	51.818	968.89	32.864	61.650	13.619
#1	.00316	.11195	.00032	.01302	.00232	.00377	.00634	-.00562
#2	.00301	.11159	-.00071	.00662	-.00021	.00729	.00749	-.00604
#3	.00369	.06553	-.00007	.00498	-.00292	.00514	.00154	-.00460
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 14:46:39 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.00084	-.00314	-.00152	.00124	-.00002	.00422
Stddev	.00043	.00035	.00315	.00163	.00162	.00008	.00071
%RSD	142.14	41.948	100.51	107.27	131.28	387.02	16.743
#1	.00054	.00124	-.00369	-.00248	.00007	.00002	.00481
#2	.00057	.00059	.00026	.00036	.00055	-.00012	.00343
#3	-.00019	.00069	-.00597	-.00244	.00309	.00004	.00441
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9509.0	57769.	2936.8
Stddev	19.9	100.	17.6
%RSD	.20940	.17266	.59912
#1	9496.2	57883.	2947.5
#2	9532.0	57728.	2946.4
#3	9498.9	57697.	2916.5

Approved: June 27, 2016

Sample Name: L1606115402S Acquired: 6/25/2016 14:50:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20060**	**4.9650**	**.19517**	**2.5768**	**.50183**	**.02406**	F **444.38**
Stddev	.00064	.0130	.00068	.0061	.00191	.00013	.71
%RSD	.32075	.26173	.35003	.23805	.38088	.54060	.15891
#1	.20131	4.9565	.19473	2.5781	.50380	.02409	444.63
#2	.20005	4.9586	.19596	2.5701	.50170	.02392	443.58
#3	.20045	4.9800	.19484	2.5821	.49998	.02418	444.92
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02442**	**.09295**	**.23551**	**.23263**	**1.9191**	**28.985**	**.61166**
Stddev	.00012	.00006	.00093	.00115	.0123	.093	.00400
%RSD	.49172	.06109	.39479	.49604	.64319	.32038	.65326
#1	.02431	.09291	.23631	.23296	1.9231	29.086	.60738
#2	.02455	.09302	.23573	.23359	1.9290	28.966	.61529
#3	.02440	.09293	.23449	.23135	1.9053	28.904	.61230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**105.95**	**.47454**	**.51043**	F **884.75**	**.22811**	**4.9353**	**.22750**
Stddev	.25	.00567	.00309	9.80	.00122	.0272	.00524
%RSD	.23467	1.1953	.60519	1.1073	.53281	.55168	2.3044
#1	105.68	.47627	.51271	882.43	.22677	4.9309	.23221
#2	106.17	.47914	.51168	876.32	.22915	4.9645	.22843
#3	105.99	.46820	.50692	895.49	.22841	4.9105	.22185
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 27, 2016

Sample Name: L1606115402S Acquired: 6/25/2016 14:50:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-07

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.58292**	**.23516**	**7.5230**	**.45764**	**8.4638**	**.43138**	**.22024**
Stddev	.00661	.00590	.0386	.00329	.0240	.00658	.00196
%RSD	1.1347	2.5090	.51250	.71986	.28403	1.5254	.88967
#1	.58964	.23313	7.5444	.46024	8.4871	.43835	.22044
#2	.58270	.23054	7.5461	.45874	8.4651	.43053	.22209
#3	.57642	.24181	7.4785	.45394	8.4391	.42527	.21819
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.50974**	**.45745**	**.02017**
Stddev	.00182	.00152	.00279
%RSD	.35750	.33182	13.807
#1	.50798	.45815	.01724
#2	.50964	.45849	.02049
#3	.51162	.45571	.02279
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8784.0**	**53813.**	**2939.5**
Stddev	58.9	564.	26.0
%RSD	.67031	1.0483	.88591
#1	8819.5	54202.	2951.8
#2	8816.5	54070.	2957.2
#3	8716.1	53166.	2909.6

Approved: June 27, 2016

Sample Name: L1606115403SD Acquired: 6/25/2016 14:54:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19884**	**5.0097**	**.20311**	**2.5960**	**.50146**	**.02443**	F **447.43**
Stddev	.00024	.0049	.00234	.0007	.00093	.00023	1.15
%RSD	.12160	.09827	1.1515	.02603	.18621	.94697	.25628
#1	.19893	5.0097	.20547	2.5958	.50254	.02464	447.39
#2	.19857	5.0047	.20308	2.5967	.50101	.02419	446.31
#3	.19903	5.0146	.20079	2.5954	.50084	.02448	448.60
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02483**	**.09451**	**.23821**	**.23915**	**1.9535**	**28.902**	**.60873**
Stddev	.00032	.00036	.00123	.00189	.0137	.108	.00282
%RSD	1.3026	.38369	.51502	.78901	.69899	.37351	.46252
#1	.02509	.09492	.23941	.23914	1.9479	29.020	.60854
#2	.02447	.09421	.23696	.23726	1.9691	28.808	.61163
#3	.02493	.09441	.23826	.24103	1.9435	28.877	.60601
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**106.60**	**.48110**	**.52231**	F **881.76**	**.23168**	**5.0586**	**.22685**
Stddev	.66	.00483	.00325	3.70	.00136	.0426	.00410
%RSD	.61507	1.0048	.62269	.41950	.58652	.84170	1.8079
#1	107.35	.47570	.52433	877.70	.23164	5.0964	.23130
#2	106.14	.48502	.51856	884.94	.23034	5.0125	.22604
#3	106.32	.48257	.52404	882.64	.23305	5.0670	.22322
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 27, 2016

Sample Name: L1606115403SD Acquired: 6/25/2016 14:54:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-08

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.59871**	**.24615**	**7.5687**	**.46699**	**8.5686**	**.42893**	**.22250**
Stddev	.00609	.00268	.0516	.00318	.0150	.00524	.00079
%RSD	1.0180	1.0870	.68153	.68125	.17550	1.2224	.35602
#1	.60575	.24920	7.6059	.46994	8.5810	.42717	.22334
#2	.59510	.24505	7.5098	.46362	8.5519	.42478	.22177
#3	.59529	.24419	7.5903	.46740	8.5730	.43482	.22237
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.51554**	**.46791**	**.00590**
Stddev	.00333	.00294	.00185
%RSD	.64552	.62860	31.408
#1	.51938	.47002	.00382
#2	.51356	.46455	.00651
#3	.51367	.46915	.00737
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8900.3**	**52138.**	**2849.7**
Stddev	61.9	226.	11.1
%RSD	.69538	.43440	.38823
#1	8858.0	51879.	2838.3
#2	8971.3	52295.	2860.4
#3	8871.6	52242.	2850.4

Approved: June 27, 2016

Sample Name: L1606115404 Acquired: 6/25/2016 14:58:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.00639	-.00036	.01270	.00241	.00013	.28017	.00009
Stddev	.00146	.00656	.00244	.00114	.00043	.00008	.03044	.00010
%RSD	248.07	102.69	686.61	9.0101	18.005	61.828	10.864	104.11
#1	.00089	-.00046	-.00313	.01156	.00227	.00022	.24651	.00012
#2	.00188	.01261	.00061	.01385	.00206	.00012	.28824	-.00001
#3	-.00100	.00700	.00146	.01270	.00289	.00005	.30576	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.01305	.00240	.07792	.04064	-.00228	.12469	.00253
Stddev	.00039	.00070	.00120	.00694	.09353	.00295	.18212	.00145
%RSD	747.32	5.3526	50.113	8.9064	230.14	129.38	146.06	57.512
#1	.00045	.01376	.00301	.08066	.00523	-.00157	.14106	.00090
#2	-.00033	.01305	.00317	.08306	.14671	-.00552	.29807	.00300
#3	.00004	.01236	.00101	.07002	-.03002	.00025	-.06507	.00369
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00228	.75291	.00807	.00690	.00300	-.00255	.00146	.13135
Stddev	.00024	.01638	.00065	.00315	.00148	.00424	.00328	.00151
%RSD	10.641	2.1753	8.1061	45.563	49.471	166.69	225.01	1.1485
#1	.00245	.73694	.00868	.00525	.00160	-.00242	-.00127	.13296
#2	.00238	.75210	.00738	.01053	.00455	-.00685	.00055	.13112
#3	.00200	.76967	.00814	.00493	.00285	.00163	.00509	.12997
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115404 Acquired: 6/25/2016 14:58:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00160	.00282	.00431	-.00324	.00105	.00371	.00033
Stddev	.00036	.00041	.00156	.00193	.00089	.00012	.00066
%RSD	22.302	14.434	36.136	59.618	84.281	3.3596	201.18
#1	.00136	.00295	.00420	-.00210	.00202	.00385	-.00028
#2	.00201	.00236	.00592	-.00547	.00085	.00361	.00023
#3	.00143	.00314	.00281	-.00214	.00028	.00369	.00104
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9713.7	59908.	3002.7
Stddev	32.6	164.	34.0
%RSD	.33561	.27353	1.1337
#1	9740.1	60011.	2965.4
#2	9677.2	59995.	3032.2
#3	9723.7	59719.	3010.3

Approved: June 27, 2016

Sample Name: L1606115501 Acquired: 6/25/2016 15:02:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00226	.00780	.00401	.26646	.17918	.00000	45.474	-.00004
Stddev	.00287	.00301	.00103	.00133	.00076	.00004	.222	.00008
%RSD	126.68	38.602	25.778	.50014	.42327	919.30	.48843	228.57
#1	.00509	.01128	.00462	.26750	.17974	.00002	45.718	.00006
#2	.00233	.00600	.00459	.26694	.17949	-.00004	45.422	-.00008
#3	-.00064	.00613	.00281	.26496	.17832	.00004	45.283	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.00088	.00134	.05774	1.5654	.00884	27.038	1.6699
Stddev	.00027	.00028	.00194	.01943	.1007	.00205	.083	.0027
%RSD	44.880	31.682	144.85	33.650	6.4312	23.214	.30796	.16065
#1	.00083	.00056	-.00088	.03531	1.4495	.00687	26.967	1.6730
#2	.00063	.00109	.00219	.06938	1.6158	.01096	27.130	1.6684
#3	.00031	.00099	.00272	.06852	1.6309	.00869	27.018	1.6684
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00414	74.521	.00232	.02280	.00145	-.00333	.00418	6.9589
Stddev	.00012	.362	.00063	.00622	.00648	.00099	.00335	.0172
%RSD	2.8693	.48589	27.089	27.292	447.38	29.598	80.140	.24675
#1	.00419	74.939	.00163	.02521	-.00229	-.00322	.00046	6.9755
#2	.00400	74.314	.00245	.02746	-.00229	-.00437	.00510	6.9601
#3	.00421	74.311	.00286	.01573	.00893	-.00240	.00696	6.9412
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115501 Acquired: 6/25/2016 15:02:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.31080**	**-.00408**	**-.00246**	**.00074**	**.00517**	**.00097**
Stddev	.00101	.00127	.01220	.00176	.00032	.00009	.00026
%RSD	589.50	.40720	299.39	71.557	43.195	1.7947	26.599
#1	.00067	.31223	.00838	-.00158	.00040	.00528	.00122
#2	-.00129	.30982	-.01601	-.00449	.00079	.00510	.00071
#3	.00011	.31036	-.00459	-.00131	.00103	.00514	.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9554.2**	**58064.**	**2987.7**
Stddev	24.6	152.	17.9
%RSD	.25722	.26211	.59940
#1	9527.5	57892.	2971.4
#2	9576.0	58182.	2984.9
#3	9559.0	58118.	3006.9

Approved: June 27, 2016

Sample Name: L1606115502 Acquired: 6/25/2016 15:05:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00077	.00104	.00250	.19417	.33327	.00001	49.969	.00011
Stddev	.00225	.00260	.00021	.00180	.00208	.00007	.144	.00004
%RSD	293.51	250.20	8.2634	.92950	.62356	535.11	.28842	36.458
#1	.00053	-.00100	.00271	.19484	.33088	.00006	50.109	.00015
#2	-.00336	.00396	.00251	.19555	.33470	.00004	49.821	.00012
#3	.00053	.00015	.00229	.19213	.33422	-.00007	49.978	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	.00039	.00161	4.4932	.30074	.00699	33.094	.46968
Stddev	.00024	.00046	.00055	.0210	.07361	.00374	.139	.00201
%RSD	82.593	118.92	34.456	.46819	24.475	53.562	.42105	.42764
#1	.00002	-.00012	.00218	4.4716	.35097	.00318	33.254	.46985
#2	.00046	.00051	.00108	4.5136	.21625	.00712	33.021	.47160
#3	.00039	.00078	.00156	4.4944	.33501	.01067	33.006	.46759
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00134	56.528	.00048	.02851	.00540	-.00461	.00421	7.9465
Stddev	.00013	.068	.00114	.00462	.00195	.00412	.00583	.0128
%RSD	9.8009	.11946	234.80	16.220	36.120	89.402	138.37	.16106
#1	.00123	56.559	.00179	.03249	.00375	-.00852	-.00246	7.9518
#2	.00130	56.451	-.00006	.02962	.00489	-.00500	.00681	7.9559
#3	.00149	56.575	-.00027	.02344	.00755	-.00031	.00829	7.9320
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115502 Acquired: 6/25/2016 15:05:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.41936**	**-.00337**	**-.00247**	**.00035**	**.00337**	**.00091**
Stddev	.00022	.00050	.00295	.00045	.00041	.00006	.00160
%RSD	168.21	.11997	87.675	18.352	119.11	1.8649	175.07
#1	.00016	.41971	-.00131	-.00286	-.00012	.00341	-.00093
#2	.00033	.41958	-.00675	-.00259	.00050	.00330	.00173
#3	-.00010	.41878	-.00204	-.00197	.00066	.00341	.00194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9627.3**	**58565.**	**2988.6**
Stddev	17.2	39.	5.1
%RSD	.17881	.06667	.17070
#1	9625.0	58521.	2993.1
#2	9645.6	58579.	2989.5
#3	9611.4	58596.	2983.0

Approved: June 27, 2016

Sample Name: L1606115503 Acquired: 6/25/2016 15:09:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00133	.01981	.00070	.15980	.12508	.00001	47.416	.00012
Stddev	.00149	.00690	.00351	.00313	.00043	.00010	.201	.00026
%RSD	112.43	34.815	504.28	1.9589	.34619	838.85	.42403	214.19
#1	.00108	.02777	-.00104	.15681	.12534	.00005	47.373	.00032
#2	-.00003	.01583	-.00161	.16306	.12532	.00009	47.635	.00022
#3	.00292	.01581	.00474	.15953	.12458	-.00010	47.240	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	.00032	.00351	1.3413	.87483	.00900	17.381	.47700
Stddev	.00046	.00045	.00082	.0140	.08308	.00172	.089	.00081
%RSD	429.81	139.46	23.247	1.0398	9.4971	19.124	.51021	.16934
#1	.00045	.00052	.00286	1.3297	.89461	.00799	17.319	.47725
#2	-.00041	.00065	.00443	1.3568	.78364	.01099	17.483	.47609
#3	.00028	-.00019	.00325	1.3373	.94624	.00803	17.342	.47764
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	48.369	.00082	.10919	.00167	-.00062	.00179	5.8799
Stddev	.00025	.203	.00140	.00660	.00170	.00395	.00827	.0280
%RSD	97.415	.41932	171.45	6.0459	101.94	641.48	462.74	.47549
#1	-.00003	48.343	.00233	.10833	.00101	-.00514	.00952	5.8933
#2	-.00053	48.584	.00055	.10306	.00039	.00119	.00277	5.8478
#3	-.00022	48.181	-.00043	.11618	.00360	.00211	-.00693	5.8986
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115503 Acquired: 6/25/2016 15:09:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**.26600**	**-.00537**	**-.00338**	**.00017**	**.00914**	**.00020**
Stddev	.00067	.00095	.00241	.00310	.00116	.00022	.00114
%RSD	345.33	.35889	44.987	91.459	671.24	2.4286	566.35
#1	-.00057	.26556	-.00315	-.00551	-.00106	.00889	.00099
#2	.00050	.26710	-.00794	.00017	.00033	.00931	-.00111
#3	.00065	.26535	-.00501	-.00481	.00125	.00922	.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9587.2**	**58263.**	**2972.1**
Stddev	19.6	279.	4.9
%RSD	.20409	.47925	.16604
#1	9598.2	58004.	2969.9
#2	9598.7	58226.	2968.6
#3	9564.6	58559.	2977.8

Approved: June 27, 2016

Sample Name: L1606117801 Acquired: 6/25/2016 15:13:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00123	.01562	.00788	.04060	.02600	.00012	2.4592	.00007
Stddev	.00244	.00616	.00118	.00330	.00129	.00005	.0606	.00006
%RSD	197.99	39.461	15.044	8.1358	4.9545	44.901	2.4620	79.703
#1	.00387	.02096	.00725	.04075	.02646	.00010	2.5149	.00002
#2	-.00097	.00887	.00713	.04382	.02700	.00008	2.4680	.00013
#3	.00081	.01703	.00924	.03722	.02455	.00018	2.3948	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.00074	.00609	.02685	.43656	.00432	.57708	-.00111
Stddev	.00033	.00144	.00018	.01358	.05030	.00166	.05180	.00137
%RSD	1012.2	194.14	2.9070	50.575	11.522	38.411	8.9754	123.48
#1	-.00025	.00070	.00629	.04250	.40355	.00528	.52291	-.00216
#2	.00039	.00219	.00602	.01809	.49445	.00241	.62611	-.00159
#3	-.00004	-.00068	.00595	.01997	.41167	.00528	.58223	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00299	95.163	-.00070	.01050	.00222	-.00635	.00641	3.4783
Stddev	.00029	.186	.00058	.00517	.00074	.00345	.00307	.0048
%RSD	9.6245	.19542	82.717	49.206	33.276	54.334	47.947	.13892
#1	.00325	95.230	-.00082	.01297	.00142	-.01032	.00356	3.4792
#2	.00268	95.306	-.00121	.00456	.00236	-.00408	.00600	3.4827
#3	.00303	94.953	-.00007	.01396	.00287	-.00464	.00966	3.4731
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606117801 Acquired: 6/25/2016 15:13:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.11699	.00044	-.00188	.00105	.00210	.00054
Stddev	.00103	.00010	.00531	.00109	.00009	.00007	.00166
%RSD	275.08	.08958	1212.8	57.943	8.6567	3.2366	310.87
#1	.00154	.11703	-.00019	-.00063	.00114	.00212	-.00081
#2	-.00042	.11707	-.00453	-.00235	.00105	.00215	.00002
#3	-.00000	.11687	.00604	-.00264	.00096	.00202	.00240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9648.4	58829.	2994.3
Stddev	5.2	37.	6.7
%RSD	.05359	.06360	.22320
#1	9653.7	58809.	2992.7
#2	9643.3	58806.	2988.6
#3	9648.3	58873.	3001.7

Approved: June 27, 2016

Sample Name: L1606122701 Acquired: 6/25/2016 15:17:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00116	.09783	-.00055	.00242	.01519	.00006	7.7326	-.00002
Stddev	.00092	.00377	.00239	.00147	.00198	.00002	.1171	.00010
%RSD	79.355	3.8537	437.80	60.740	13.003	38.615	1.5138	459.39
#1	-.00047	.10163	-.00294	.00351	.01401	.00007	7.7569	.00006
#2	-.00220	.09409	.00184	.00075	.01747	.00007	7.8356	-.00013
#3	-.00081	.09776	-.00054	.00300	.01410	.00003	7.6053	.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00227	.00167	.03463	.33602	-.00038	-.01109	-.00127
Stddev	.00016	.00059	.00051	.00142	.06178	.00154	.10836	.00134
%RSD	58.524	25.933	30.520	4.0976	18.384	404.83	977.09	105.32
#1	.00014	.00159	.00133	.03617	.30512	-.00005	-.09610	-.00256
#2	.00023	.00261	.00225	.03337	.29580	-.00206	.11092	-.00136
#3	.00045	.00260	.00142	.03436	.40715	.00097	-.04809	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	2.3350	.00044	.00731	.00430	-.00426	.00383	1.1328
Stddev	.00020	.0307	.00076	.00233	.00100	.00159	.00576	.0032
%RSD	132.69	1.3153	170.74	31.908	23.273	37.398	150.44	.27905
#1	.00005	2.3000	.00116	.00516	.00531	-.00538	.00306	1.1309
#2	-.00036	2.3574	.00052	.00700	.00430	-.00496	-.00151	1.1310
#3	-.00016	2.3476	-.00035	.00979	.00330	-.00244	.00992	1.1364
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606122701 Acquired: 6/25/2016 15:17:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.25125	.00414	.00180	.00364	.00056	.00136
Stddev	.00018	.00103	.01324	.00145	.00074	.00007	.00130
%RSD	364.81	.41002	320.05	80.159	20.271	13.218	96.223
#1	.00011	.25131	-.01092	.00207	.00450	.00061	.00115
#2	.00019	.25224	.00936	.00024	.00328	.00047	.00016
#3	-.00016	.25018	.01397	.00310	.00316	.00058	.00275
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9969.0	60494.	3048.9
Stddev	15.1	129.	13.3
%RSD	.15159	.21283	.43564
#1	9969.3	60641.	3055.8
#2	9983.9	60438.	3033.6
#3	9953.7	60402.	3057.3

Approved: June 27, 2016

Sample Name: L1606122706 Acquired: 6/25/2016 15:21:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00063**	**.00567**	**.00083**	**.00123**	**.02806**	**.00015**	**13.472**	**-.00038**
Stddev	.00250	.00554	.00101	.00202	.00007	.00007	.038	.00019
%RSD	395.00	97.673	121.57	163.43	.25882	47.682	.28032	49.732
#1	.00247	-.00071	.00042	-.00047	.02810	.00007	13.487	-.00023
#2	.00165	.00924	.00199	.00346	.02810	.00021	13.429	-.00032
#3	-.00222	.00849	.00010	.00072	.02797	.00018	13.501	-.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00101**	**.00061**	**.00157**	**.10367**	**.20316**	**.00472**	**8.1185**	**.10636**
Stddev	.00008	.00062	.00064	.01594	.00836	.00156	.1274	.00158
%RSD	8.0012	102.28	40.873	15.374	4.1155	32.981	1.5689	1.4897
#1	.00092	-.00009	.00190	.11049	.21157	.00610	7.9808	.10550
#2	.00107	.00111	.00198	.11507	.19485	.00503	8.2322	.10539
#3	.00104	.00079	.00083	.08546	.20306	.00303	8.1425	.10819
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00044**	**33.974**	**.00004**	**.00429**	**-.00079**	**-.00333**	**.00187**	**.74797**
Stddev	.00043	.239	.00011	.00671	.00165	.00196	.00470	.01610
%RSD	97.916	.70374	251.40	156.52	208.37	58.883	251.58	2.1527
#1	-.00064	33.727	-.00007	.01191	-.00018	-.00196	-.00208	.73053
#2	-.00073	33.993	.00015	-.00074	.00047	-.00558	.00061	.75112
#3	.00005	34.204	.00006	.00169	-.00266	-.00246	.00707	.76226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606122706 Acquired: 6/25/2016 15:21:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.30857**	**.00233**	**-.00259**	**.00019**	**.00158**	**.00089**
Stddev	.00012	.00270	.00311	.00390	.00060	.00013	.00062
%RSD	87.894	.87470	133.51	150.50	319.58	8.2216	69.559
#1	-.00001	.30602	.00364	-.00319	-.00046	.00143	.00122
#2	-.00015	.30828	-.00122	.00157	.00073	.00163	.00127
#3	-.00026	.31139	.00457	-.00615	.00030	.00167	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9924.8**	**59991.**	**2995.5**
Stddev	18.6	172.	10.6
%RSD	.18782	.28732	.35313
#1	9924.0	59808.	2993.5
#2	9943.8	60150.	3007.0
#3	9906.6	60016.	2986.1

Approved: June 27, 2016

Sample Name: L1606127902 Acquired: 6/25/2016 15:25:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573994-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00298**	**.77289**	**.00033**	**.00803**	**.01053**	**.00016**	**9.3649**	**-.00023**
Stddev	.00188	.01227	.00104	.00267	.00091	.00007	.0910	.00007
%RSD	63.015	1.5872	311.80	33.213	8.6722	42.111	.97197	32.230
#1	.00105	.75975	.00114	.01109	.01057	.00009	9.3786	-.00026
#2	.00309	.78404	.00069	.00619	.01142	.00023	9.4483	-.00028
#3	.00480	.77489	-.00084	.00682	.00960	.00016	9.2678	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00067**	**.00209**	**.00225**	**1.1046**	**.20587**	**.00183**	**3.8329**	**.12468**
Stddev	.00025	.00124	.00151	.0075	.05413	.00323	.0374	.00185
%RSD	36.537	59.143	66.907	.67811	26.294	176.78	.97568	1.4875
#1	.00057	.00084	.00284	1.1048	.18555	.00515	3.8178	.12286
#2	.00096	.00331	.00337	1.1121	.26722	.00166	3.8755	.12657
#3	.00050	.00212	.00054	1.0971	.16483	-.00131	3.8054	.12461
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**.91553**	**.00104**	**.04284**	**.00087**	**-.00434**	**.00416**	**1.4218**
Stddev	.00049	.02558	.00097	.00374	.00128	.00145	.00383	.0304
%RSD	448.71	2.7944	92.896	8.7405	147.22	33.355	92.023	2.1368
#1	.00043	.88763	.00204	.04714	.00040	-.00289	.00799	1.3901
#2	-.00054	.92105	.00011	.04033	-.00011	-.00435	.00416	1.4246
#3	-.00022	.93790	.00097	.04105	.00232	-.00579	.00033	1.4507
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127902 Acquired: 6/25/2016 15:25:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573994-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**.04596**	**.00940**	**.00124**	**.00257**	**.00907**	**.00122**
Stddev	.00038	.00038	.00559	.00152	.00046	.00027	.00089
%RSD	147.88	.81748	59.487	122.54	17.946	3.0009	73.195
#1	.00017	.04588	.00305	-.00019	.00219	.00893	.00224
#2	-.00038	.04637	.01155	.00284	.00243	.00890	.00056
#3	-.00056	.04564	.01360	.00108	.00308	.00938	.00087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10039.**	**61079.**	**3063.3**
Stddev	16.	87.	16.8
%RSD	.15707	.14311	.54820
#1	10022.	60979.	3046.2
#2	10041.	61122.	3064.0
#3	10054.	61137.	3079.8

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 15:29:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41474**	**10.480**	**.41122**	**.51129**	**1.0445**	**.05223**	**10.384**
Stddev	.00157	.008	.00187	.00319	.0019	.00016	.024
%RSD	.37799	.07401	.45408	.62455	.18188	.31144	.22798
#1	.41325	10.484	.41182	.51035	1.0465	.05219	10.387
#2	.41461	10.484	.41272	.50866	1.0441	.05241	10.359
#3	.41637	10.471	.40913	.51484	1.0428	.05209	10.407
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05244**	**.20643**	**.51777**	**.52807**	**4.1528**	**50.626**	**1.0452**
Stddev	.00019	.00026	.00163	.00025	.0357	.257	.0080
%RSD	.36313	.12673	.31564	.04665	.85968	.50669	.76446
#1	.05244	.20669	.51592	.52825	4.1190	50.704	1.0431
#2	.05226	.20644	.51838	.52817	4.1901	50.835	1.0540
#3	.05264	.20617	.51902	.52779	4.1492	50.340	1.0385
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.9629**	**.52245**	**1.0531**	**51.247**	**.52506**	**10.312**	**.52216**
Stddev	.0274	.00433	.0047	.134	.00127	.013	.00461
%RSD	.27495	.82847	.44799	.26095	.24264	.12919	.88203
#1	9.9944	.51946	1.0578	51.179	.52653	10.320	.51773
#2	9.9492	.52742	1.0532	51.401	.52432	10.296	.52692
#3	9.9451	.52049	1.0484	51.161	.52433	10.319	.52182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 15:29:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2356**	**.41239**	**5.3381**	**1.0346**	**1.0460**	**1.0497**	**.53160**
Stddev	.0017	.00642	.0057	.0013	.0038	.0052	.00142
%RSD	.13528	1.5556	.10675	.12483	.36598	.49394	.26637
#1	1.2362	.41861	5.3408	1.0357	1.0443	1.0445	.53322
#2	1.2337	.40580	5.3420	1.0349	1.0504	1.0497	.53096
#3	1.2369	.41277	5.3316	1.0332	1.0433	1.0549	.53062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0558**	**1.0420**	F **3.0350**
Stddev	.0013	.0007	.0090
%RSD	.12612	.06683	.29605
#1	1.0548	1.0423	3.0277
#2	1.0553	1.0412	3.0451
#3	1.0573	1.0426	3.0323
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9586.8**	**58077.**	**2975.5**
Stddev	6.0	176.	6.3
%RSD	.06238	.30386	.21060
#1	9587.3	57874.	2969.1
#2	9592.5	58193.	2975.6
#3	9580.6	58165.	2981.7

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 15:32:48 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00000**	**.00002**	**-.00010**	**.00491**	**.00210**	**.00011**	**.00565**	**-.00003**
Stddev	.00087	.00719	.00078	.00229	.00030	.00005	.00049	.00029
%RSD	26249.	33697.	808.92	46.626	14.233	46.346	8.5911	909.94
#1	.00025	.00801	-.00086	.00753	.00176	.00017	.00542	-.00000
#2	.00073	-.00593	.00069	.00390	.00223	.00007	.00533	-.00034
#3	-.00097	-.00201	-.00012	.00330	.00231	.00010	.00621	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00020**	**.00011**	**.00064**	**.03500**	**.03424**	**-.00179**	**.02594**	**-.00052**
Stddev	.00009	.00046	.00051	.01471	.03973	.00240	.07741	.00156
%RSD	43.655	413.87	80.028	42.019	116.03	134.20	298.41	302.41
#1	.00012	-.00018	.00036	.01804	-.01111	-.00218	.05944	-.00155
#2	.00020	.00064	.00123	.04417	.05092	-.00397	.08095	.00128
#3	.00029	-.00013	.00033	.04280	.06290	.00078	-.06257	-.00128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00316**	**.04507**	**.00037**	**.00106**	**.00080**	**.00374**	**.00412**	**.00990**
Stddev	.00041	.02068	.00057	.00881	.00149	.00197	.00171	.00085
%RSD	13.022	45.885	154.95	828.64	185.93	52.502	41.416	8.5529
#1	.00281	.06772	-.00005	.00994	-.00040	.00294	.00217	.01067
#2	.00361	.02718	.00102	.00092	.00033	.00230	.00488	.01002
#3	.00306	.04031	.00014	-.00767	.00246	.00598	.00532	.00899
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 15:32:48 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00048**	**.00057**	**.00333**	**-.00225**	**.00169**	**-.00006**	**.00439**
Stddev	.00073	.00051	.00753	.00264	.00040	.00020	.00135
%RSD	152.10	89.662	226.48	117.22	23.766	306.69	30.851
#1	.00129	.00079	-.00329	-.00367	.00165	-.00017	.00283
#2	-.00014	-.00001	.01153	-.00387	.00130	-.00018	.00508
#3	.00029	.00092	.00174	.00079	.00210	.00016	.00526
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9759.3**	**59359.**	**3013.9**
Stddev	2.3	121.	1.6
%RSD	.02366	.20394	.05186
#1	9761.6	59292.	3015.4
#2	9759.3	59287.	3013.9
#3	9756.9	59499.	3012.3

Approved: June 27, 2016

Sample Name: L1606127903S Acquired: 6/25/2016 15:36:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573994-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01197	1.1036	.01087	.05712	.03304	.00134	9.9729	.00124
Stddev	.00119	.0059	.00187	.00108	.00116	.00008	.0996	.00005
%RSD	9.9297	.53710	17.218	1.8903	3.5218	6.1377	.99838	3.7414
#1	.01115	1.1017	.01246	.05619	.03414	.00126	10.019	.00125
#2	.01142	1.1103	.00881	.05688	.03182	.00135	9.8587	.00119
#3	.01333	1.0989	.01134	.05830	.03317	.00142	10.041	.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00560	.01397	.01462	1.0767	1.4208	.02780	4.2261	.14457
Stddev	.00014	.00108	.00214	.0241	.1192	.00407	.0440	.00290
%RSD	2.4102	7.7598	14.602	2.2369	8.3867	14.648	1.0401	2.0070
#1	.00574	.01498	.01254	1.0620	1.3125	.02932	4.2372	.14280
#2	.00559	.01283	.01680	1.0635	1.4014	.02319	4.1777	.14299
#3	.00547	.01411	.01453	1.1045	1.5484	.03090	4.2635	.14792
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02152	2.1329	.01322	.29583	.01584	.02588	.00942	1.7458
Stddev	.00098	.0418	.00158	.00727	.00355	.00244	.00136	.0125
%RSD	4.5315	1.9579	11.965	2.4574	22.390	9.4200	14.478	.71438
#1	.02231	2.1343	.01139	.30417	.01767	.02397	.01094	1.7523
#2	.02182	2.0905	.01413	.29245	.01809	.02862	.00829	1.7537
#3	.02043	2.1740	.01413	.29086	.01175	.02503	.00905	1.7314
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127903S Acquired: 6/25/2016 15:36:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573994-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02137**	**.07160**	**.03468**	**.01383**	**.02654**	**.02985**	**.00242**
Stddev	.00036	.00081	.00438	.00291	.00046	.00010	.00158
%RSD	1.6937	1.1317	12.615	21.070	1.7354	.32151	65.388
#1	.02178	.07099	.02963	.01549	.02613	.02986	.00141
#2	.02110	.07130	.03735	.01047	.02704	.02975	.00424
#3	.02123	.07252	.03706	.01554	.02644	.02994	.00160
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9975.1**	**60274.**	**3041.7**
Stddev	49.0	118.	22.7
%RSD	.49139	.19506	.74582
#1	9940.1	60350.	3061.9
#2	9954.2	60332.	3046.1
#3	10031.	60138.	3017.2

Approved: June 27, 2016

Sample Name: L1606127904SD Acquired: 6/25/2016 15:40:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573994-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01103**	**1.1028**	**.01203**	**.05464**	**.03364**	**.00143**	**9.8642**	**.00121**
Stddev	.00186	.0090	.00180	.00231	.00086	.00004	.1305	.00006
%RSD	16.883	.81742	14.963	4.2286	2.5577	2.6326	1.3231	5.3301
#1	.00912	1.0960	.01267	.05217	.03303	.00146	9.7151	.00122
#2	.01113	1.1130	.00999	.05675	.03463	.00143	9.9198	.00114
#3	.01284	1.0994	.01342	.05499	.03327	.00139	9.9577	.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00590**	**.01420**	**.01484**	**1.0576**	**1.4598**	**.02493**	**4.2188**	**.14616**
Stddev	.00020	.00048	.00068	.0082	.1286	.00072	.1177	.00241
%RSD	3.3297	3.4140	4.5711	.77893	8.8104	2.9051	2.7895	1.6455
#1	.00602	.01364	.01562	1.0663	1.6059	.02466	4.0843	.14411
#2	.00567	.01444	.01454	1.0499	1.4099	.02439	4.2697	.14557
#3	.00601	.01451	.01437	1.0566	1.3636	.02576	4.3025	.14881
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02217**	**2.1040**	**.01418**	**.30006**	**.01556**	**.02408**	**.01453**	**1.7577**
Stddev	.00072	.0376	.00057	.00408	.00448	.00503	.00712	.0151
%RSD	3.2386	1.7891	4.0074	1.3597	28.796	20.896	49.023	.85907
#1	.02294	2.0606	.01353	.29698	.01280	.02854	.02252	1.7414
#2	.02203	2.1275	.01453	.30469	.02073	.02509	.00885	1.7604
#3	.02153	2.1239	.01449	.29851	.01315	.01862	.01221	1.7712
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127904SD Acquired: 6/25/2016 15:40:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573994-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02276**	**.07116**	**.03577**	**.01268**	**.02759**	**.03003**	**.00230**
Stddev	.00014	.00090	.00737	.00234	.00032	.00029	.00174
%RSD	.61715	1.2587	20.620	18.483	1.1623	.96154	75.576
#1	.02272	.07054	.03703	.01291	.02794	.02969	.00432
#2	.02292	.07076	.02784	.01490	.02752	.03021	.00132
#3	.02264	.07219	.04242	.01023	.02731	.03018	.00128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10006.**	**60810.**	**3063.3**
Stddev	5.	192.	18.4
%RSD	.04992	.31626	.60150
#1	10009.	61010.	3082.6
#2	10009.	60627.	3061.4
#3	10000.	60793.	3045.9

Approved: June 27, 2016

Sample Name: L1606128901 Acquired: 6/25/2016 15:44:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00215	.00687	.00324	.00036	.25940	.00003	8.5369	.00005
Stddev	.00051	.01020	.00141	.00225	.00475	.00006	.1296	.00011
%RSD	23.677	148.57	43.630	628.60	1.8323	170.08	1.5176	227.30
#1	.00216	.01614	.00358	-.00039	.25471	.00001	8.3890	.00017
#2	.00265	.00852	.00169	.00289	.26421	.00010	8.6303	-.00003
#3	.00163	-.00406	.00445	-.00143	.25928	-.00000	8.5913	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00259	.00588	.00175	.08631	.04218	.00151	6.5072	.07542
Stddev	.00040	.00134	.00073	.02244	.04887	.00193	.2142	.00074
%RSD	15.316	22.711	41.571	26.002	115.87	127.81	3.2912	.97595
#1	.00214	.00436	.00096	.06469	.09555	-.00070	6.2873	.07459
#2	.00279	.00683	.00239	.10949	-.00039	.00286	6.5191	.07570
#3	.00285	.00647	.00190	.08474	.03137	.00237	6.7151	.07598
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	23.216	.03092	.00614	.00300	-.00111	.00640	.97050
Stddev	.00039	.461	.00078	.00363	.00087	.00404	.00265	.00247
%RSD	280.63	1.9852	2.5231	59.153	29.021	362.80	41.403	.25451
#1	-.00028	22.689	.03110	.00526	.00208	-.00358	.00616	.97332
#2	.00048	23.539	.03160	.01013	.00311	-.00330	.00916	.96949
#3	.00022	23.422	.03007	.00303	.00381	.00355	.00387	.96870
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606128901 Acquired: 6/25/2016 15:44:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00051**	**.16522**	**-.00360**	**-.00090**	**.00125**	**.00115**	**.00088**
Stddev	.00057	.00251	.00574	.00300	.00085	.00009	.00100
%RSD	111.15	1.5196	159.60	334.58	68.243	8.1341	114.01
#1	-.00005	.16233	-.01006	-.00433	.00031	.00125	.00060
#2	.00108	.16651	.00089	.00117	.00197	.00107	.00199
#3	.00050	.16682	-.00162	.00047	.00148	.00112	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9940.0**	**60088.**	**3038.6**
Stddev	4.2	150.	44.1
%RSD	.04218	.24912	1.4500
#1	9935.3	60256.	3084.8
#2	9941.7	60040.	2997.0
#3	9943.1	59969.	3034.2

Approved: June 27, 2016

Sample Name: L1606112901 Acquired: 6/25/2016 15:48:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00126	-.00046	-.00005	-.00065	.00318	.00006	4.1415	-.00016
Stddev	.00197	.00573	.00201	.00160	.00151	.00005	.0124	.00023
%RSD	156.91	1238.2	4274.9	245.00	47.612	81.871	.30015	142.20
#1	.00341	-.00015	-.00215	-.00141	.00362	.00006	4.1534	-.00032
#2	-.00045	.00511	.00185	.00118	.00150	.00012	4.1425	.00010
#3	.00081	-.00635	.00016	-.00173	.00443	.00001	4.1286	-.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.00058	.00066	.05376	.10451	-.00223	.92501	.00486
Stddev	.00022	.00057	.00151	.01103	.06065	.00348	.08081	.00144
%RSD	3258.5	98.481	227.65	20.514	58.030	156.17	8.7365	29.653
#1	-.00025	.00121	.00094	.05934	.12513	.00172	.91232	.00510
#2	.00010	.00039	-.00097	.04105	.03624	-.00357	1.0114	.00331
#3	.00016	.00012	.00201	.06088	.15216	-.00484	.85130	.00616
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	3.0376	-.00008	.00578	.00044	-.00230	.00144	.21434
Stddev	.00025	.0744	.00053	.00529	.00227	.00178	.00420	.00577
%RSD	93.741	2.4506	639.89	91.432	509.94	77.275	291.44	2.6916
#1	-.00011	2.9794	.00051	.00238	.00289	-.00166	.00573	.20865
#2	-.00014	3.0119	-.00050	.00310	-.00159	-.00431	-.00267	.21418
#3	-.00056	3.1215	-.00026	.01187	.00003	-.00093	.00126	.22019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606112901 Acquired: 6/25/2016 15:48:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.01265**	**.00270**	**.00064**	**.00099**	**.00067**	**.00092**
Stddev	.00055	.00035	.00371	.00238	.00052	.00018	.00051
%RSD	272.21	2.7272	137.50	373.62	52.293	26.328	55.163
#1	-.00083	.01259	.00376	-.00183	.00159	.00059	.00050
#2	.00008	.01234	-.00143	.00082	.00070	.00087	.00077
#3	.00015	.01303	.00576	.00292	.00069	.00054	.00148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9969.3**	**60775.**	**3044.6**
Stddev	21.9	129.	15.2
%RSD	.22015	.21273	.49841
#1	9984.3	60920.	3056.8
#2	9944.1	60732.	3049.4
#3	9979.5	60672.	3027.6

Approved: June 27, 2016

Sample Name: L1606112902 Acquired: 6/25/2016 15:52:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	.00804	.00035	-.00128	.00288	.00010	2.9594	-.00006
Stddev	.00058	.00641	.00226	.00137	.00187	.00003	.0055	.00010
%RSD	221.07	79.747	653.27	107.46	64.882	33.893	.18419	164.92
#1	.00004	.00818	.00185	.00031	.00398	.00007	2.9654	.00000
#2	.00011	.00156	.00144	-.00200	.00072	.00009	2.9582	-.00001
#3	-.00094	.01439	-.00226	-.00213	.00394	.00014	2.9547	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.00045	.00076	.08667	.10793	.00221	.95476	.02200
Stddev	.00021	.00074	.00096	.00189	.05164	.00058	.08086	.00168
%RSD	3252.3	165.35	125.16	2.1842	47.845	26.260	8.4687	7.6363
#1	.00009	.00055	.00166	.08573	.06794	.00282	.86999	.02017
#2	-.00024	-.00034	.00088	.08885	.16623	.00215	.96327	.02346
#3	.00016	.00114	-.00024	.08543	.08961	.00166	1.0310	.02238
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	1.4239	.00014	.00542	.00025	-.00059	.00178	.20161
Stddev	.00013	.0489	.00086	.00331	.00120	.00643	.00247	.00182
%RSD	52.086	3.4352	596.95	60.989	470.84	1086.5	138.88	.90303
#1	-.00010	1.4077	-.00013	.00438	-.00113	.00173	.00080	.20089
#2	-.00031	1.4789	-.00055	.00913	.00091	-.00786	-.00005	.20368
#3	-.00033	1.3852	.00110	.00276	.00098	.00435	.00459	.20026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606112902 Acquired: 6/25/2016 15:52:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00083	.01066	.00349	-.00281	.00049	.00074	-.00046
Stddev	.00025	.00027	.00348	.00166	.00046	.00011	.00023
%RSD	30.685	2.4916	99.744	59.148	94.747	14.382	50.877
#1	.00087	.01070	.00643	-.00461	.00075	.00069	-.00046
#2	.00056	.01090	.00439	-.00132	-.00005	.00087	-.00023
#3	.00106	.01038	-.00035	-.00252	.00076	.00067	-.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9989.3	60825.	3066.0
Stddev	18.4	89.	4.0
%RSD	.18402	.14693	.13203
#1	10008.	60870.	3065.9
#2	9971.8	60722.	3062.0
#3	9987.6	60883.	3070.1

Approved: June 27, 2016

Sample Name: L1606112903 Acquired: 6/25/2016 15:56:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00034**	**-.00746**	**.00009**	**.00007**	**.00214**	**.00016**	**4.2282**	**-.00031**
Stddev	.00178	.00543	.00185	.00098	.00088	.00001	.1021	.00011
%RSD	518.14	72.757	1962.2	1427.6	41.098	3.6332	2.4147	36.326
#1	-.00212	-.00132	-.00121	.00003	.00116	.00017	4.2310	-.00019
#2	.00143	-.00942	.00221	-.00089	.00287	.00016	4.3288	-.00035
#3	-.00034	-.01164	-.00072	.00107	.00238	.00015	4.1247	-.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00027**	**-.00057**	**-.00029**	**.07902**	**-.03881**	**.00121**	**1.0358**	**.00397**
Stddev	.00063	.00094	.00019	.01076	.01948	.00237	.1206	.00030
%RSD	236.86	166.12	66.025	13.622	50.186	195.96	11.648	7.4974
#1	-.00020	-.00113	-.00052	.06755	-.06059	-.00026	.93657	.00379
#2	.00099	.00052	-.00021	.08890	-.02305	-.00005	1.1701	.00431
#3	.00002	-.00109	-.00016	.08063	-.03281	.00395	1.0007	.00380
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00055**	**2.1503**	**-.00065**	**.00144**	**.00315**	**-.00171**	**-.00059**	**.27406**
Stddev	.00026	.0349	.00083	.00721	.00266	.00193	.00290	.00085
%RSD	47.062	1.6229	127.58	500.84	84.421	112.70	495.02	.31027
#1	-.00082	2.1700	-.00132	-.00288	.00271	.00020	-.00182	.27322
#2	-.00053	2.1710	.00028	-.00257	.00074	-.00366	.00273	.27492
#3	-.00030	2.1101	-.00091	.00976	.00599	-.00168	-.00267	.27403
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606112903 Acquired: 6/25/2016 15:56:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.01267	.00761	-.00035	.00044	.00047	.00034
Stddev	.00036	.00010	.00488	.00192	.00076	.00017	.00099
%RSD	75.051	.78508	64.089	556.65	172.53	36.380	290.00
#1	.00045	.01256	.01172	-.00046	-.00009	.00039	-.00046
#2	.00086	.01267	.00891	.00163	.00010	.00066	.00145
#3	.00013	.01276	.00222	-.00221	.00131	.00034	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9986.0	60665.	3026.9
Stddev	20.7	145.	17.8
%RSD	.20708	.23844	.58822
#1	10007.	60770.	3014.6
#2	9984.8	60726.	3018.9
#3	9966.0	60500.	3047.3

Approved: June 27, 2016

Sample Name: L1606112904 Acquired: 6/25/2016 16:00:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00143**	**.00782**	**.00014**	**-.00105**	**.00318**	**.00018**	**2.9065**	**-.00009**
Stddev	.00049	.00478	.00214	.00233	.00102	.00003	.0438	.00019
%RSD	34.335	61.153	1520.7	221.14	32.071	15.659	1.5085	207.21
#1	.00199	.01026	-.00194	.00103	.00202	.00019	2.8571	-.00015
#2	.00122	.00231	.00002	-.00063	.00358	.00019	2.9407	.00012
#3	.00108	.01088	.00233	-.00357	.00394	.00014	2.9218	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00050**	**.00045**	**.00112**	**.05226**	**.04902**	**.00077**	**.91311**	**.02436**
Stddev	.00068	.00160	.00112	.00414	.07439	.00531	.01971	.00311
%RSD	135.32	357.44	99.972	7.9272	151.77	691.64	2.1590	12.769
#1	.00007	.00219	.00019	.05089	.09310	-.00511	.93142	.02095
#2	.00129	.00012	.00080	.04898	.09083	.00221	.91566	.02510
#3	.00015	-.00096	.00236	.05692	-.03687	.00521	.89224	.02704
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**1.3676**	**-.00081**	**.00778**	**.00502**	**-.00289**	**.00478**	**.20680**
Stddev	.00041	.0202	.00063	.00381	.00153	.00221	.00206	.00531
%RSD	176.12	1.4731	77.366	49.002	30.478	76.529	43.075	2.5661
#1	-.00056	1.3492	-.00140	.01136	.00503	-.00266	.00633	.20082
#2	-.00037	1.3644	-.00015	.00819	.00655	-.00520	.00556	.20859
#3	.00023	1.3891	-.00088	.00377	.00348	-.00080	.00244	.21097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606112904 Acquired: 6/25/2016 16:00:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.01047	.00111	-.00019	.00078	.00080	-.00006
Stddev	.00022	.00018	.00665	.00270	.00041	.00022	.00073
%RSD	116.67	1.7478	597.28	1390.3	52.913	27.125	1123.9
#1	.00044	.01026	.00785	.00028	.00121	.00056	.00012
#2	.00008	.01056	.00093	.00224	.00075	.00085	.00055
#3	.00005	.01059	-.00544	-.00310	.00038	.00099	-.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9957.7	60557.	3030.1
Stddev	15.8	177.	8.6
%RSD	.15901	.29213	.28426
#1	9975.9	60586.	3020.4
#2	9949.3	60718.	3033.0
#3	9947.7	60368.	3036.9

Approved: June 27, 2016

Sample Name: L1606127201 Acquired: 6/25/2016 16:04:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	-.00887	-.00183	.00197	.00056	.00010	.95406	-.00003
Stddev	.00091	.01117	.00052	.00188	.00043	.00011	.05017	.00010
%RSD	325.46	125.87	28.528	95.488	77.565	107.58	5.2586	289.02
#1	.00022	-.02176	-.00218	.00027	.00085	.00010	.90480	.00002
#2	.00122	-.00213	-.00123	.00398	.00076	-.00001	.95228	.00003
#3	-.00060	-.00272	-.00207	.00165	.00006	.00021	1.0051	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	-.00128	.00046	.02799	-.07233	.00197	.21481	.00019
Stddev	.00061	.00045	.00022	.01180	.06961	.00022	.12156	.00200
%RSD	1838.2	35.569	48.564	42.171	96.239	11.394	56.590	1042.3
#1	-.00013	-.00080	.00028	.03989	-.13804	.00212	.34118	.00130
#2	-.00048	-.00170	.00071	.01628	.00061	.00171	.09871	-.00212
#3	.00071	-.00133	.00040	.02780	-.07955	.00208	.20454	.00139
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00067	6.5927	-.00041	.00599	.00226	-.00187	.00139	.23314
Stddev	.00039	.0563	.00074	.00538	.00192	.00575	.00169	.00199
%RSD	58.032	.85407	180.55	89.733	84.902	308.02	122.23	.85400
#1	-.00069	6.5318	-.00010	.00974	.00276	.00008	.00216	.23308
#2	-.00105	6.6428	-.00125	-.00017	.00014	-.00834	-.00056	.23517
#3	-.00027	6.6034	.00012	.00842	.00389	.00266	.00255	.23118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127201 Acquired: 6/25/2016 16:04:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**.00331**	**.00248**	**.00096**	**.00107**	**.00085**	**.00133**
Stddev	.00044	.00056	.00254	.00297	.00078	.00012	.00063
%RSD	192.52	16.945	102.26	309.29	73.373	14.693	47.329
#1	.00017	.00395	.00360	.00246	.00196	.00094	.00062
#2	-.00070	.00291	.00428	.00288	.00074	.00089	.00180
#3	-.00016	.00306	-.00042	-.00246	.00050	.00071	.00159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9972.6**	**60217.**	**3037.7**
Stddev	14.0	83.	14.1
%RSD	.14049	.13799	.46569
#1	9988.5	60309.	3026.4
#2	9967.3	60146.	3033.1
#3	9962.1	60196.	3053.5

Approved: June 27, 2016

Sample Name: L1606127202 Acquired: 6/25/2016 16:08:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**.01060**	**.00084**	**.01591**	**.00482**	**.00013**	**4.8874**	**.00012**
Stddev	.00147	.00116	.00295	.00196	.00045	.00002	.0512	.00031
%RSD	570.05	10.898	350.53	12.303	9.3008	12.581	1.0477	272.03
#1	-.00187	.01061	.00261	.01812	.00447	.00014	4.8299	.00013
#2	.00100	.00945	-.00256	.01523	.00533	.00015	4.9279	.00042
#3	.00009	.01176	.00248	.01439	.00467	.00011	4.9046	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**-.00046**	**.00025**	**.03059**	**.03395**	**.00208**	**2.7028**	**-.00061**
Stddev	.00015	.00087	.00083	.01638	.06594	.00230	.1335	.00149
%RSD	81.112	189.49	337.36	53.558	194.25	110.69	4.9393	243.32
#1	.00003	-.00146	.00109	.04846	-.00968	-.00038	2.8372	-.00173
#2	.00034	.00002	-.00057	.01628	.00172	.00418	2.5702	.00108
#3	.00021	.00006	.00022	.02703	.10981	.00243	2.7010	-.00120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**13.742**	**-.00085**	**.00227**	**.00279**	**-.00269**	**-.00193**	**.47645**
Stddev	.00056	.155	.00030	.00745	.00217	.00177	.00170	.00665
%RSD	217.74	1.1297	35.156	328.49	77.588	65.958	88.159	1.3954
#1	-.00002	13.587	-.00065	-.00435	.00526	-.00088	-.00382	.46927
#2	-.00089	13.898	-.00120	.00082	.00118	-.00276	-.00050	.47768
#3	.00014	13.742	-.00071	.01033	.00194	-.00443	-.00148	.48240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127202 Acquired: 6/25/2016 16:08:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00018**	**.05092**	**.00177**	**.00024**	**.00137**	**.00071**	**.00162**
Stddev	.00083	.00100	.00998	.00193	.00052	.00009	.00084
%RSD	474.40	1.9658	565.04	789.52	37.663	12.612	51.686
#1	-.00049	.05003	.00781	-.00019	.00196	.00074	.00252
#2	-.00081	.05200	-.00975	.00235	.00120	.00078	.00148
#3	.00077	.05072	.00724	-.00143	.00097	.00061	.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9920.3**	**59957.**	**3053.1**
Stddev	9.3	97.	28.1
%RSD	.09367	.16197	.92019
#1	9910.9	59874.	3056.5
#2	9929.5	60064.	3023.5
#3	9920.6	59932.	3079.4

Approved: June 27, 2016

Sample Name: L1606127901 Acquired: 6/25/2016 16:12:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00079**	**.23343**	**-.00035**	**.00697**	**.01048**	**.00010**	**5.5956**	**-.00004**
Stddev	.00151	.00808	.00093	.00046	.00038	.00003	.0897	.00007
%RSD	191.07	3.4604	268.33	6.6127	3.6255	27.106	1.6038	155.88
#1	-.00012	.24183	.00073	.00738	.01041	.00014	5.5127	-.00007
#2	.00027	.23274	-.00087	.00647	.01090	.00009	5.5834	-.00010
#3	-.00251	.22572	-.00090	.00704	.01015	.00009	5.6909	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00030**	**.00040**	**.00104**	**.37949**	**.02999**	**.00120**	**2.2214**	**.04375**
Stddev	.00022	.00063	.00117	.02000	.03448	.00297	.1047	.00042
%RSD	72.888	155.32	112.12	5.2704	114.98	248.44	4.7142	.95613
#1	.00020	.00102	-.00030	.35646	.01685	.00172	2.1668	.04335
#2	.00015	-.00023	.00181	.39248	.06911	.00387	2.1552	.04372
#3	.00056	.00042	.00162	.38953	.00401	-.00200	2.3421	.04419
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.40372**	**.00002**	**.01800**	**.00182**	**-.00229**	**.00534**	**.76285**
Stddev	.00016	.02832	.00029	.00724	.00294	.00133	.00501	.02556
%RSD	124.97	7.0152	1295.9	40.230	161.43	58.036	93.812	3.3508
#1	-.00031	.38955	.00035	.01067	.00373	-.00090	.01054	.73582
#2	-.00001	.38528	-.00008	.01820	-.00157	-.00355	.00492	.76609
#3	-.00007	.43633	-.00020	.02515	.00330	-.00243	.00055	.78664
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127901 Acquired: 6/25/2016 16:12:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00000**	**.02802**	**.00639**	**-.00424**	**.00104**	**.00686**	**-.00053**
Stddev	.00059	.00084	.00088	.00033	.00039	.00027	.00162
%RSD	12664.	3.0023	13.821	7.8780	37.381	4.0081	307.76
#1	.00044	.02706	.00703	-.00390	.00138	.00661	.00100
#2	.00022	.02835	.00538	-.00425	.00062	.00681	-.00222
#3	-.00068	.02864	.00675	-.00456	.00114	.00715	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9995.1**	**60569.**	**3072.5**
Stddev	18.8	83.	17.9
%RSD	.18798	.13702	.58354
#1	10017.	60498.	3093.1
#2	9983.0	60660.	3060.2
#3	9985.6	60548.	3064.2

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 16:16:03 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41279**	**10.433**	**.40298**	**.50323**	**1.0184**	**.05236**	**10.146**
Stddev	.00062	.023	.00491	.00242	.0037	.00006	.030
%RSD	.14995	.22399	1.2186	.48043	.36729	.12018	.29415
#1	.41231	10.415	.40384	.50055	1.0220	.05229	10.131
#2	.41349	10.459	.39769	.50390	1.0146	.05241	10.126
#3	.41257	10.425	.40740	.50524	1.0186	.05238	10.180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05206**	**.20294**	**.51645**	**.52099**	**4.0952**	**49.051**	**1.0295**
Stddev	.00043	.00065	.00457	.00121	.0025	.142	.0088
%RSD	.83054	.31937	.88415	.23159	.06120	.28862	.85476
#1	.05248	.20360	.51186	.52157	4.0943	49.074	1.0305
#2	.05210	.20291	.52099	.52180	4.0933	48.900	1.0203
#3	.05161	.20230	.51649	.51960	4.0980	49.180	1.0378
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.7277**	**.51414**	**1.0402**	**49.935**	**.51586**	**10.134**	**.51189**
Stddev	.0462	.00321	.0047	.095	.00165	.031	.00166
%RSD	.47447	.62359	.45388	.19063	.31918	.30495	.32486
#1	9.7465	.51782	1.0451	50.021	.51766	10.168	.51381
#2	9.6751	.51192	1.0398	49.833	.51549	10.123	.51086
#3	9.7615	.51270	1.0357	49.951	.51442	10.109	.51101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 16:16:03 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2153	.40661	5.2188	1.0211	1.0187	1.0271	.52415
Stddev	.0058	.00386	.0120	.0013	.0031	.0069	.00046
%RSD	.47598	.95000	.22957	.12690	.30817	.67428	.08834
#1	1.2162	.40345	5.2255	1.0218	1.0207	1.0286	.52363
#2	1.2206	.41091	5.2258	1.0219	1.0150	1.0195	.52433
#3	1.2091	.40546	5.2049	1.0196	1.0203	1.0331	.52450
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0611	1.0269	F 2.9985
Stddev	.0021	.0010	.0124
%RSD	.19830	.09638	.41405
#1	1.0631	1.0270	3.0047
#2	1.0614	1.0279	2.9842
#3	1.0589	1.0259	3.0065
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9559.6	57599.	2986.8
Stddev	4.9	130.	10.5
%RSD	.05148	.22635	.35191
#1	9564.0	57612.	2977.9
#2	9560.6	57462.	2998.4
#3	9554.3	57722.	2984.0

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 16:19:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00185	.00626	-.00023	.00044	.00278	.00005	-.04464	.00001
Stddev	.00025	.00998	.00075	.00197	.00045	.00006	.01589	.00008
%RSD	13.751	159.28	328.05	451.88	16.156	122.09	35.589	834.92
#1	.00158	.01229	-.00019	.00230	.00236	.00010	-.04122	-.00004
#2	.00190	-.00525	.00050	.00063	.00326	-.00002	-.03074	-.00004
#3	.00208	.01176	-.00099	-.00162	.00274	.00006	-.06195	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	.00030	.00108	.01891	-.08883	.00028	.04170	-.00007
Stddev	.00014	.00149	.00123	.02463	.04133	.00158	.04172	.00069
%RSD	37.231	490.44	114.38	130.22	46.533	569.52	100.03	937.33
#1	-.00023	.00135	.00225	.04102	-.10527	-.00061	.02819	.00053
#2	-.00043	.00096	-.00021	.02335	-.11941	.00210	.00842	.00008
#3	-.00050	-.00140	.00119	-.00763	-.04180	-.00066	.08850	-.00082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00343	.00251	-.00012	.00363	.00401	.00489	.00879	-.00487
Stddev	.00038	.01645	.00050	.00608	.00167	.00193	.00298	.00028
%RSD	11.063	654.49	431.61	167.28	41.713	39.486	33.953	5.7618
#1	.00299	.00408	-.00004	.00277	.00588	.00378	.00970	-.00459
#2	.00370	-.01467	-.00065	-.00196	.00352	.00712	.01122	-.00515
#3	.00359	.01813	.00034	.01010	.00264	.00378	.00546	-.00487
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 16:19:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**.00057**	**.00214**	**-.00157**	**.00060**	**-.00006**	**.00421**
Stddev	.00055	.00026	.00424	.00416	.00034	.00004	.00038
%RSD	193.42	45.468	198.11	264.68	55.851	78.634	9.1291
#1	-.00056	.00032	.00612	.00235	.00061	-.00008	.00456
#2	-.00063	.00083	-.00232	-.00593	.00093	-.00001	.00426
#3	.00035	.00056	.00262	-.00114	.00026	-.00008	.00380
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9751.1**	**59011.**	**2998.0**
Stddev	16.0	92.	16.9
%RSD	.16409	.15669	.56327
#1	9735.8	59057.	2997.7
#2	9767.8	59072.	2981.2
#3	9749.7	58905.	3015.0

Approved: June 27, 2016

Sample Name: L1606127905 Acquired: 6/25/2016 16:23:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00112**	**.42892**	**.00254**	**.00885**	**.00931**	**.00014**	**4.1101**	**-.00014**
Stddev	.00085	.00960	.00110	.00026	.00054	.00008	.0226	.00009
%RSD	76.091	2.2373	43.205	2.9736	5.7541	61.416	.54879	60.631
#1	.00187	.41894	.00336	.00888	.00991	.00015	4.0848	-.00017
#2	.00019	.43809	.00129	.00858	.00890	.00022	4.1178	-.00005
#3	.00131	.42973	.00298	.00910	.00911	.00005	4.1279	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00064**	**.00072**	**.00093**	**.46806**	**-.04215**	**.00375**	**2.3175**	**.01534**
Stddev	.00025	.00122	.00082	.01630	.03381	.00237	.0180	.00171
%RSD	38.393	169.05	88.133	3.4825	80.210	63.236	.77530	11.156
#1	.00092	.00051	.00011	.45372	-.08111	.00533	2.3322	.01684
#2	.00057	-.00038	.00092	.46467	-.02046	.00102	2.2974	.01572
#3	.00044	.00203	.00175	.48579	-.02489	.00491	2.3228	.01348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**.79830**	**.00036**	**.03423**	**.00164**	**-.00327**	**.00568**	**1.0453**
Stddev	.00055	.00874	.00054	.00334	.00066	.00436	.00399	.0205
%RSD	130.46	1.0949	148.73	9.7489	39.962	133.66	70.190	1.9601
#1	-.00012	.80324	-.00001	.03061	.00234	-.00815	.00802	1.0252
#2	.00040	.78821	.00099	.03719	.00155	-.00191	.00794	1.0445
#3	.00099	.80344	.00012	.03489	.00104	.00026	.00108	1.0662
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127905 Acquired: 6/25/2016 16:23:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.01799	.00482	-.00230	.00189	.01109	.00007
Stddev	.00065	.00037	.00226	.00232	.00074	.00029	.00211
%RSD	715.49	2.0334	47.005	100.92	39.126	2.6113	3180.6
#1	-.00003	.01830	.00310	.00003	.00148	.01082	.00082
#2	.00080	.01809	.00396	-.00232	.00274	.01107	-.00231
#3	-.00049	.01759	.00738	-.00462	.00144	.01140	.00169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9972.5	60381.	3064.6
Stddev	33.3	69.	2.8
%RSD	.33435	.11363	.09242
#1	10010.	60351.	3061.5
#2	9961.5	60333.	3067.1
#3	9946.1	60460.	3065.2

Approved: June 27, 2016

Sample Name: L1606114801 Acquired: 6/25/2016 16:27:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.03462	.00065	.00821	.00587	.00014	1.4096	-.00013
Stddev	.00034	.00628	.00229	.00098	.00178	.00003	.0346	.00033
%RSD	57.407	18.141	351.58	11.960	30.235	19.203	2.4561	248.47
#1	.00054	.03990	-.00071	.00924	.00790	.00011	1.3926	.00011
#2	.00095	.02767	-.00063	.00729	.00463	.00014	1.4495	-.00000
#3	.00028	.03630	.00329	.00809	.00508	.00016	1.3868	-.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00001	.00030	.04215	.21418	.00024	.69121	.00161
Stddev	.00012	.00038	.00134	.02269	.07335	.00510	.07378	.00189
%RSD	127.75	2953.4	439.05	53.849	34.250	2116.0	10.674	117.34
#1	.00006	.00044	.00117	.03668	.16871	.00256	.67687	-.00053
#2	-.00001	-.00026	.00097	.06707	.29880	.00377	.77111	.00305
#3	.00022	-.00014	-.00123	.02268	.17502	-.00561	.62565	.00230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00000	3.4091	-.00039	.01019	-.00019	-.00195	.00226	.25600
Stddev	.00027	.0299	.00017	.00142	.00263	.00116	.00241	.00788
%RSD	8569.8	.87827	42.602	13.923	1405.5	59.228	106.91	3.0774
#1	.00029	3.3757	-.00048	.01168	-.00018	-.00094	.00166	.24819
#2	-.00005	3.4183	-.00020	.01005	.00244	-.00171	.00492	.25587
#3	-.00025	3.4335	-.00049	.00885	-.00282	-.00321	.00020	.26394
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606114801 Acquired: 6/25/2016 16:27:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00043**	**.01395**	**.00070**	**-.00087**	**.00132**	**.00137**	**.00142**
Stddev	.00051	.00044	.00486	.00154	.00026	.00005	.00170
%RSD	118.61	3.1779	695.33	177.20	19.933	3.3203	119.70
#1	-.00063	.01431	.00581	-.00155	.00155	.00135	.00002
#2	.00015	.01345	.00013	-.00194	.00103	.00135	.00093
#3	-.00082	.01408	-.00385	.00089	.00136	.00143	.00331
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9913.2**	**60132.**	**3023.4**
Stddev	14.6	83.	23.3
%RSD	.14679	.13818	.77035
#1	9929.6	60151.	3030.8
#2	9901.6	60041.	2997.3
#3	9908.5	60204.	3042.1

Approved: June 27, 2016

Sample Name: L1606114802 Acquired: 6/25/2016 16:31:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00158	-.00408	.00026	.00633	.00904	.00015	2.7703	-.00011
Stddev	.00108	.00521	.00166	.00204	.00121	.00009	.0227	.00014
%RSD	68.438	127.59	628.67	32.297	13.379	59.313	.82092	123.10
#1	.00072	-.00923	-.00155	.00429	.00969	.00008	2.7476	-.00002
#2	.00123	.00119	.00169	.00631	.00978	.00025	2.7930	-.00027
#3	.00279	-.00421	.00065	.00838	.00764	.00012	2.7703	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.00002	.00060	.02383	.06717	.00040	2.3757	.00083
Stddev	.00028	.00081	.00057	.01240	.09428	.00275	.0633	.00197
%RSD	81.635	5221.9	93.832	52.028	140.36	693.38	2.6650	237.49
#1	.00044	-.00078	.00046	.02298	.16159	-.00259	2.3743	.00224
#2	.00003	-.00000	.00012	.01188	-.02697	.00095	2.4397	.00167
#3	.00055	.00084	.00122	.03663	.06688	.00283	2.3131	-.00142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	6.0259	-.00040	.00438	.00227	-.00140	.00185	.32995
Stddev	.00024	.0927	.00045	.00883	.00074	.00370	.00550	.00769
%RSD	208.31	1.5391	111.52	201.54	32.728	264.56	298.09	2.3316
#1	.00039	5.9438	-.00070	.01456	.00143	-.00567	.00483	.32126
#2	-.00003	6.1265	.00011	-.00011	.00282	.00058	.00521	.33270
#3	-.00002	6.0074	-.00061	-.00130	.00258	.00089	-.00450	.33589
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606114802 Acquired: 6/25/2016 16:31:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.01996	.00356	-.00001	.00116	.00095	-.00024
Stddev	.00040	.00029	.00718	.00102	.00055	.00026	.00029
%RSD	136.64	1.4402	201.93	7537.5	47.304	27.165	121.82
#1	-.00006	.02008	.00861	-.00117	.00177	.00075	-.00049
#2	.00022	.02016	-.00466	.00037	.00099	.00086	-.00028
#3	.00074	.01963	.00672	.00076	.00071	.00124	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9925.6	60099.	3031.8
Stddev	7.7	64.	18.1
%RSD	.07799	.10696	.59652
#1	9922.2	60109.	3022.9
#2	9920.2	60157.	3019.9
#3	9934.5	60030.	3052.6

Approved: June 27, 2016

Sample Name: L1606115001 Acquired: 6/25/2016 16:35:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00166	.05641	.00050	.00663	.00676	.00016	1.7818	.00015
Stddev	.00049	.00787	.00304	.00311	.00055	.00011	.0479	.00031
%RSD	29.631	13.947	601.42	46.927	8.1582	71.613	2.6886	203.48
#1	.00200	.06510	-.00294	.00991	.00739	.00005	1.7526	.00038
#2	.00109	.05435	.00166	.00372	.00635	.00014	1.8371	-.00020
#3	.00188	.04978	.00279	.00626	.00655	.00027	1.7557	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.00048	.00100	.04970	.00137	.00112	1.1341	.00143
Stddev	.00049	.00051	.00115	.01548	.09645	.00218	.0897	.00096
%RSD	745.24	106.17	114.47	31.142	7038.5	195.00	7.9106	67.253
#1	-.00002	.00105	.00223	.06756	-.03266	.00315	1.0361	.00043
#2	-.00057	.00034	.00081	.04145	.11022	-.00118	1.2123	.00235
#3	.00040	.00005	-.00004	.04010	-.07346	.00137	1.1537	.00152
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	5.9717	-.00015	.00950	-.00176	-.00302	.00622	.28058
Stddev	.00014	.0718	.00043	.00093	.00081	.00221	.00277	.00537
%RSD	53.804	1.2031	276.46	9.7789	45.909	73.167	44.558	1.9140
#1	-.00010	5.9074	-.00014	.01003	-.00249	-.00320	.00355	.27441
#2	-.00036	6.0493	-.00058	.01005	-.00089	-.00072	.00603	.28316
#3	-.00034	5.9584	.00027	.00843	-.00189	-.00513	.00908	.28418
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115001 Acquired: 6/25/2016 16:35:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.01287	.00136	-.00194	.00110	.00114	.00062
Stddev	.00058	.00017	.00295	.00426	.00072	.00013	.00087
%RSD	762.02	1.3177	217.51	219.83	65.867	11.722	140.33
#1	.00015	.01301	.00162	-.00450	.00182	.00119	.00034
#2	-.00054	.01292	.00417	-.00429	.00110	.00099	-.00008
#3	.00061	.01268	-.00172	.00298	.00038	.00124	.00159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9919.3	60059.	3016.8
Stddev	34.5	56.	13.7
%RSD	.34767	.09285	.45386
#1	9942.2	60062.	3013.8
#2	9936.0	60114.	3004.8
#3	9879.6	60002.	3031.7

Approved: June 27, 2016

Sample Name: L1606115102 Acquired: 6/25/2016 16:39:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00105	.00214	.00018	.00362	.00526	.00013	1.7820	.00006
Stddev	.00166	.00346	.00084	.00176	.00021	.00005	.0144	.00011
%RSD	158.53	161.68	476.67	48.690	4.0116	41.814	.80931	182.53
#1	.00213	.00451	-.00003	.00223	.00549	.00009	1.7780	.00003
#2	-.00086	-.00183	-.00054	.00560	.00521	.00010	1.7700	-.00003
#3	.00188	.00375	.00110	.00302	.00507	.00019	1.7980	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.00030	.00081	.02568	-.04054	.00233	1.0068	.00278
Stddev	.00009	.00056	.00053	.02210	.04687	.00374	.0618	.00296
%RSD	39.196	184.13	65.165	86.089	115.61	160.62	6.1428	106.56
#1	.00032	.00005	.00046	.05079	-.00224	.00526	1.0696	.00587
#2	.00013	-.00008	.00055	.00916	-.02657	.00361	.94591	-.00003
#3	.00026	.00094	.00141	.01708	-.09281	-.00188	1.0048	.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00000	4.8272	.00042	.00764	.00031	-.00602	.00252	.26699
Stddev	.00027	.0498	.00058	.00427	.00107	.00140	.00418	.00420
%RSD	7088.8	1.0326	136.65	55.913	346.71	23.202	166.24	1.5735
#1	-.00018	4.7713	.00031	.01044	.00076	-.00742	-.00226	.26233
#2	-.00015	4.8672	-.00009	.00272	.00108	-.00462	.00551	.26815
#3	.00031	4.8430	.00105	.00974	-.00091	-.00602	.00431	.27049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115102 Acquired: 6/25/2016 16:39:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	.01171	-.00105	-.00167	.00048	.00111	-.00010
Stddev	.00036	.00032	.00211	.00218	.00034	.00004	.00053
%RSD	98.761	2.7498	200.92	130.51	71.305	3.3481	503.34
#1	-.00064	.01138	-.00295	-.00411	.00028	.00107	-.00046
#2	-.00048	.01174	.00122	-.00099	.00029	.00113	.00050
#3	.00004	.01202	-.00143	.00009	.00088	.00113	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9924.7	60209.	3035.9
Stddev	21.0	164.	13.4
%RSD	.21110	.27319	.44278
#1	9945.2	60212.	3050.8
#2	9925.5	60043.	3024.7
#3	9903.3	60372.	3032.1

Approved: June 27, 2016

Sample Name: L1606115105 Acquired: 6/25/2016 16:43:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00211	.00219	.00055	.00586	.00711	.00018	2.2105	.00001
Stddev	.00101	.00795	.00092	.00071	.00025	.00010	.0174	.00025
%RSD	47.839	363.29	167.06	12.119	3.4464	53.942	.78551	4197.7
#1	.00096	-.00697	.00162	.00634	.00685	.00013	2.1935	-.00020
#2	.00251	.00621	-.00001	.00619	.00715	.00012	2.2282	.00029
#3	.00286	.00732	.00005	.00504	.00733	.00030	2.2098	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	-.00001	.00002	.02737	.01189	.00109	1.3118	.00125
Stddev	.00029	.00051	.00146	.02301	.05921	.00366	.0639	.00239
%RSD	827.06	7244.7	6104.0	84.080	497.84	335.35	4.8727	191.19
#1	.00035	.00040	.00134	.00788	.02968	-.00236	1.3142	.00227
#2	-.00003	.00015	.00027	.02147	.06017	.00070	1.3745	.00297
#3	-.00022	-.00058	-.00154	.05276	-.05417	.00493	1.2467	-.00148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	6.1621	.00034	.00603	.00215	-.00121	.00114	.31741
Stddev	.00059	.0852	.00146	.00590	.00148	.00098	.00444	.00674
%RSD	252.32	1.3824	433.95	97.933	68.608	80.696	390.40	2.1227
#1	-.00086	6.0786	-.00133	.00455	.00384	-.00161	.00564	.31056
#2	-.00015	6.2489	.00098	.00101	.00153	-.00010	.00100	.31765
#3	.00031	6.1588	.00136	.01253	.00108	-.00192	-.00323	.32403
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115105 Acquired: 6/25/2016 16:43:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.01487**	**-.00053**	**-.00166**	**.00081**	**.00090**	**.00078**
Stddev	.00083	.00056	.00515	.00250	.00073	.00004	.00134
%RSD	533.32	3.7472	973.66	150.50	89.693	4.1812	172.14
#1	-.00110	.01433	.00470	-.00448	.00103	.00087	.00219
#2	.00015	.01545	-.00069	-.00074	.00000	.00094	.00064
#3	.00048	.01482	-.00560	.00025	.00141	.00089	-.00049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9886.5**	**59788.**	**3007.6**
Stddev	13.0	185.	33.5
%RSD	.13157	.30931	1.1137
#1	9901.4	60001.	3037.0
#2	9880.8	59677.	2971.1
#3	9877.4	59685.	3014.8

Approved: June 27, 2016

Sample Name: L1606115401 Acquired: 6/25/2016 16:47:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573707-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	.00056	-.00040	.08474	.00202	.00013	25.077	-.00002
Stddev	.00048	.01146	.00100	.00137	.00093	.00006	.183	.00004
%RSD	125.93	2038.5	249.32	1.6179	46.237	47.434	.73077	179.25
#1	-.00014	.00766	-.00156	.08632	.00308	.00006	25.288	-.00005
#2	.00079	.00669	.00017	.08409	.00131	.00017	24.966	-.00003
#3	.00048	-.01266	.00019	.08382	.00167	.00016	24.976	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	-.00049	.00090	.03824	.13932	.00586	5.7156	.01284
Stddev	.00012	.00049	.00033	.01141	.04539	.00340	.0899	.00260
%RSD	49.754	99.993	36.739	29.841	32.583	57.965	1.5726	20.218
#1	.00011	-.00085	.00123	.04902	.09367	.00206	5.7030	.01056
#2	.00028	-.00069	.00089	.02629	.18446	.00861	5.6327	.01230
#3	.00036	.00007	.00057	.03940	.13984	.00691	5.8112	.01567
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	48.626	-.00075	.01117	.00114	-.00491	.00349	.27480
Stddev	.00026	.111	.00066	.00745	.00133	.00248	.00272	.00312
%RSD	52.573	.22800	87.964	66.704	116.26	50.491	77.811	1.5358
#1	.00024	48.499	-.00062	.01513	.00176	-.00250	.00652	.27222
#2	.00075	48.707	-.00147	.01582	.00206	-.00745	.00269	.27392
#3	.00048	48.670	-.00016	.00258	-.00038	-.00478	.00127	.27827
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115401 Acquired: 6/25/2016 16:47:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573707-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.45176	-.00366	.00143	.00149	.00078	.00089
Stddev	.00028	.00268	.00362	.00047	.00058	.00004	.00106
%RSD	304.19	.59263	98.732	33.094	39.124	5.2122	119.26
#1	.00040	.44867	-.00000	.00088	.00209	.00083	-.00013
#2	-.00012	.45326	-.00375	.00168	.00093	.00076	.00081
#3	-.00001	.45335	-.00723	.00172	.00145	.00075	.00200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9797.1	59243.	3012.9
Stddev	17.5	107.	17.7
%RSD	.17826	.18036	.58631
#1	9776.9	59361.	2997.1
#2	9806.9	59214.	3009.7
#3	9807.4	59153.	3032.0

Approved: June 27, 2016

Sample Name: L1606115402S Acquired: 6/25/2016 16:51:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: ~~WG573994-~~04 WG573707-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01309**	**.25824**	**.01110**	**.13590**	**.02825**	**.00141**	**24.615**	**.00126**
Stddev	.00068	.00760	.00152	.00169	.00035	.00008	.204	.00013
%RSD	5.1924	2.9441	13.682	1.2425	1.2428	5.6800	.82995	10.655
#1	.01329	.24951	.01277	.13422	.02816	.00148	24.549	.00132
#2	.01365	.26341	.01072	.13589	.02864	.00133	24.844	.00111
#3	.01234	.26179	.00981	.13760	.02795	.00143	24.452	.00136
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00516**	**.01347**	**.01556**	**.12663**	**1.3534**	**.03179**	**5.7750**	**.02544**
Stddev	.00029	.00054	.00043	.02761	.0228	.00410	.0699	.00285
%RSD	5.6307	4.0382	2.7758	21.808	1.6862	12.889	1.2101	11.189
#1	.00539	.01407	.01514	.12414	1.3303	.03536	5.8428	.02774
#2	.00525	.01301	.01552	.15541	1.3541	.02732	5.7789	.02226
#3	.00483	.01334	.01600	.10034	1.3759	.03267	5.7032	.02633
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02479**	**48.072**	**.01332**	**.27819**	**.01575**	**.03066**	**.01661**	**.41681**
Stddev	.00011	.553	.00070	.01153	.00513	.00307	.00921	.00803
%RSD	.43243	1.1513	5.2238	4.1456	32.553	10.027	55.466	1.9271
#1	.02491	47.545	.01404	.27355	.01630	.02789	.02173	.40846
#2	.02475	48.649	.01266	.26969	.02058	.03397	.02212	.41747
#3	.02470	48.023	.01326	.29132	.01037	.03013	.00597	.42449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115402S Acquired: 6/25/2016 16:51:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: ~~WG573994-04~~ WG573707-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02366**	**.45706**	**.02085**	**.01353**	**.02750**	**.02826**	**.00274**
Stddev	.00062	.00423	.00301	.00109	.00044	.00035	.00077
%RSD	2.6070	.92537	14.446	8.0746	1.5967	1.2498	28.151
#1	.02338	.45248	.01904	.01478	.02755	.02786	.00198
#2	.02436	.46082	.01917	.01306	.02704	.02846	.00352
#3	.02323	.45789	.02432	.01275	.02792	.02848	.00271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9814.2**	**59172.**	**3008.6**
Stddev	14.0	133.	22.5
%RSD	.14277	.22528	.74717
#1	9829.8	59323.	3030.6
#2	9810.3	59073.	2985.6
#3	9802.6	59119.	3009.6

Approved: June 27, 2016

Sample Name: L1606115403SD Acquired: 6/25/2016 16:54:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: ~~WG573994-05~~ WG573707-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01239	.28748	.01145	.14150	.02764	.00148	24.958	.00130
Stddev	.00114	.00888	.00065	.00093	.00147	.00009	.077	.00038
%RSD	9.2124	3.0872	5.6507	.65421	5.3298	6.1781	.30772	29.306
#1	.01125	.28330	.01179	.14053	.02888	.00144	25.006	.00087
#2	.01353	.28146	.01070	.14159	.02802	.00141	24.999	.00161
#3	.01238	.29767	.01185	.14238	.02601	.00158	24.870	.00142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00611	.01431	.01527	.13086	1.3857	.03280	5.7817	.02287
Stddev	.00054	.00136	.00145	.01260	.0370	.00239	.0561	.00299
%RSD	8.8509	9.4861	9.4751	9.6283	2.6697	7.2716	.97114	13.075
#1	.00671	.01585	.01436	.14435	1.3780	.03556	5.7473	.02433
#2	.00566	.01329	.01452	.11939	1.4259	.03138	5.8465	.01943
#3	.00597	.01379	.01694	.12885	1.3532	.03147	5.7513	.02484
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02737	48.881	.01504	.29126	.01658	.02795	.01955	.43672
Stddev	.00021	.600	.00152	.00741	.00249	.00243	.00943	.00693
%RSD	.75532	1.2279	10.076	2.5426	15.013	8.6768	48.242	1.5861
#1	.02720	48.195	.01331	.29382	.01763	.03060	.01049	.42891
#2	.02732	49.311	.01567	.29705	.01373	.02742	.02931	.43914
#3	.02760	49.136	.01613	.28292	.01836	.02584	.01885	.44211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115403SD Acquired: 6/25/2016 16:54:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: ~~WG573994-05~~ WG573707-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02590**	**.47018**	**.02569**	**.01379**	**.02893**	**.02996**	**.00113**
Stddev	.00080	.00475	.00439	.00029	.00110	.00076	.00027
%RSD	3.0868	1.0106	17.097	2.0910	3.8168	2.5433	23.745
#1	.02499	.46471	.02819	.01349	.02776	.02918	.00138
#2	.02647	.47252	.02061	.01406	.02908	.03000	.00115
#3	.02625	.47331	.02825	.01382	.02996	.03071	.00085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9727.4**	**58906.**	**3022.7**
Stddev	40.6	23.	25.7
%RSD	.41767	.03969	.84864
#1	9765.9	58911.	3039.9
#2	9731.2	58926.	2993.2
#3	9685.0	58880.	3035.0

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 16:58:48 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41361	10.445	.40516	.50612	1.0259	.05224	10.203
Stddev	.00260	.021	.00144	.00287	.0033	.00020	.046
%RSD	.62922	.20256	.35469	.56757	.31739	.38953	.44884
#1	.41655	10.462	.40524	.50908	1.0271	.05242	10.224
#2	.41159	10.421	.40656	.50592	1.0284	.05202	10.235
#3	.41269	10.451	.40369	.50335	1.0222	.05229	10.150
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05215	.20471	.51698	.52477	4.0648	49.423	1.0320
Stddev	.00013	.00021	.00148	.00103	.0369	.189	.0006
%RSD	.23994	.10391	.28587	.19687	.90838	.38306	.06170
#1	.05201	.20470	.51640	.52461	4.1007	49.428	1.0316
#2	.05218	.20450	.51865	.52588	4.0269	49.610	1.0327
#3	.05226	.20492	.51587	.52383	4.0668	49.231	1.0316
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.8590	.51551	1.0404	50.331	.51945	10.229	.51430
Stddev	.0965	.00144	.0039	.173	.00106	.010	.00570
%RSD	.97927	.27876	.37864	.34422	.20472	.09385	1.1081
#1	9.9705	.51433	1.0396	50.428	.51822	10.232	.51032
#2	9.8060	.51711	1.0369	50.435	.52013	10.218	.51175
#3	9.8006	.51508	1.0447	50.131	.51999	10.236	.52083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 16:58:48 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2288	.41352	5.2624	1.0315	1.0269	1.0279	.53017
Stddev	.0104	.00168	.0015	.0026	.0016	.0023	.00514
%RSD	.84208	.40618	.02811	.25583	.15527	.22255	.96993
#1	1.2288	.41198	5.2628	1.0285	1.0283	1.0298	.53564
#2	1.2391	.41326	5.2608	1.0336	1.0273	1.0286	.52543
#3	1.2184	.41531	5.2637	1.0323	1.0252	1.0254	.52943
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0564	1.0308	F 3.0180
Stddev	.0015	.0001	.0119
%RSD	.14240	.01349	.39369
#1	1.0580	1.0307	3.0121
#2	1.0561	1.0310	3.0317
#3	1.0550	1.0308	3.0102
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9528.1	57486.	2960.8
Stddev	9.3	201.	17.3
%RSD	.09776	.34979	.58425
#1	9517.6	57273.	2962.9
#2	9535.3	57514.	2942.6
#3	9531.5	57672.	2977.0

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 17:02:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00045**	**.00226**	**.00067**	**.00055**	**.00185**	**.00013**	**-.07167**	**-.00014**
Stddev	.00085	.00279	.00119	.00264	.00042	.00005	.02175	.00033
%RSD	189.88	123.24	177.00	483.17	22.573	35.869	30.346	234.73
#1	.00019	-.00053	.00152	-.00019	.00233	.00018	-.09322	-.00050
#2	-.00141	.00505	-.00069	-.00165	.00153	.00012	-.04973	.00014
#3	-.00012	.00226	.00119	.00348	.00171	.00009	-.07206	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.00057**	**.00076**	**.03056**	**-.09613**	**.00228**	**-.13259**	**.00051**
Stddev	.00039	.00056	.00130	.01338	.02053	.00471	.02062	.00136
%RSD	1720.9	98.019	170.60	43.800	21.361	206.77	15.553	268.18
#1	.00020	.00017	-.00074	.01806	-.09726	-.00131	-.14855	-.00092
#2	.00020	.00121	.00148	.02892	-.07505	.00054	-.10931	.00179
#3	-.00047	.00034	.00155	.04468	-.11607	.00761	-.13993	.00066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00325**	**.04047**	**-.00081**	**.00150**	**.00148**	**.00530**	**.00256**	**-.00673**
Stddev	.00022	.01175	.00096	.00183	.00289	.00260	.00237	.00167
%RSD	6.7467	29.033	119.00	121.89	195.62	48.929	92.639	24.783
#1	.00325	.05342	-.00016	.00278	.00470	.00570	.00309	-.00596
#2	.00303	.03049	-.00036	.00231	.00063	.00768	-.00003	-.00558
#3	.00347	.03751	-.00192	-.00059	-.00090	.00253	.00461	-.00864
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 17:02:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**.00044**	**.00426**	**-.00209**	**.00094**	**.00001**	**.00353**
Stddev	.00052	.00045	.00463	.00321	.00096	.00021	.00070
%RSD	128.76	102.93	108.80	153.83	102.68	1611.6	19.702
#1	.00048	.00069	.00959	-.00418	.00024	-.00012	.00320
#2	.00089	.00071	.00120	.00161	.00204	-.00009	.00306
#3	-.00015	-.00008	.00198	-.00369	.00053	.00025	.00433
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9729.2**	**58924.**	**2982.2**
Stddev	14.1	124.	20.8
%RSD	.14444	.21107	.69802
#1	9725.0	58912.	2962.2
#2	9744.9	58806.	3003.8
#3	9717.8	59054.	2980.7

Approved: June 27, 2016

Sample Name: L1606115501 Acquired: 6/25/2016 17:06:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00033**	**.00180**	**.00125**	**.01161**	**.01032**	**.00011**	**2.3136**	**-.00007**
Stddev	.00230	.00043	.00160	.00137	.00099	.00007	.0269	.00019
%RSD	694.54	23.757	128.16	11.776	9.5715	61.393	1.1630	281.96
#1	.00225	.00218	.00194	.01272	.00925	.00003	2.3397	.00009
#2	-.00214	.00134	.00239	.01008	.01120	.00016	2.2860	-.00001
#3	-.00111	.00188	-.00058	.01203	.01051	.00015	2.3151	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.00014**	**-.00018**	**.02935**	**.09569**	**-.00047**	**1.4383**	**.08572**
Stddev	.00040	.00048	.00052	.00252	.08702	.00314	.0635	.00277
%RSD	831.42	341.03	289.17	8.5796	90.931	664.03	4.4136	3.2299
#1	.00005	.00069	-.00054	.02667	.18563	.00276	1.4626	.08626
#2	.00029	-.00017	.00042	.03166	.01192	-.00066	1.4861	.08273
#3	-.00048	-.00010	-.00042	.02972	.08953	-.00352	1.3663	.08818
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00023**	**3.8750**	**.00064**	**.00454**	**.00264**	**-.00168**	**.00429**	**.37174**
Stddev	.00028	.0249	.00026	.00324	.00293	.00204	.00272	.00091
%RSD	124.52	.64140	39.830	71.430	111.04	121.37	63.452	.24386
#1	-.00008	3.8959	.00063	.00081	.00037	-.00400	.00736	.37278
#2	.00028	3.8475	.00040	.00665	.00594	-.00087	.00338	.37129
#3	.00048	3.8816	.00091	.00616	.00160	-.00017	.00214	.37115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115501 Acquired: 6/25/2016 17:06:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.01613**	**.00436**	**.00049**	**-.00004**	**.00087**	**.00142**
Stddev	.00092	.00051	.00120	.00199	.00066	.00012	.00191
%RSD	2230.2	3.1791	27.456	410.68	1766.6	13.339	134.89
#1	.00087	.01607	.00571	.00178	-.00027	.00083	.00247
#2	-.00002	.01565	.00341	-.00181	.00071	.00100	-.00079
#3	-.00097	.01667	.00397	.00149	-.00055	.00078	.00257
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9938.9**	**60110.**	**3041.6**
Stddev	14.3	99.	8.4
%RSD	.14384	.16440	.27454
#1	9922.4	60057.	3050.1
#2	9946.9	60224.	3033.5
#3	9947.4	60049.	3041.2

Approved: June 27, 2016

Sample Name: L1606115502 Acquired: 6/25/2016 17:10:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	-.00453	-.00033	.00989	.01794	.00013	2.4889	.00011
Stddev	.00144	.01600	.00099	.00264	.00078	.00009	.0280	.00014
%RSD	216.56	353.18	295.78	26.673	4.3403	71.235	1.1261	129.84
#1	.00231	.00655	-.00001	.00702	.01871	.00024	2.4937	.00027
#2	.00001	-.02287	-.00144	.01220	.01715	.00010	2.5143	-.00000
#3	-.00033	.00273	.00045	.01047	.01798	.00006	2.4588	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	-.00044	.00104	.24605	-.07520	-.00217	1.6643	.02363
Stddev	.00022	.00012	.00019	.01179	.12175	.00286	.0624	.00224
%RSD	272.66	27.286	18.718	4.7938	161.89	131.42	3.7522	9.4751
#1	.00027	-.00041	.00090	.23638	.00559	-.00035	1.5996	.02553
#2	.00015	-.00033	.00126	.24256	-.01597	-.00070	1.6689	.02116
#3	-.00017	-.00057	.00095	.25919	-.21524	-.00546	1.7243	.02420
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00021	2.8989	.00016	.00365	.00260	-.00217	.00870	.42450
Stddev	.00065	.0101	.00120	.00396	.00147	.00150	.00507	.00601
%RSD	314.77	.35003	759.93	108.45	56.477	68.876	58.304	1.4160
#1	-.00082	2.8946	-.00099	.00772	.00422	-.00382	.01102	.41775
#2	-.00027	2.9105	.00140	-.00019	.00221	-.00091	.01219	.42650
#3	.00047	2.8917	.00006	.00342	.00137	-.00178	.00288	.42926
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115502 Acquired: 6/25/2016 17:10:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00038**	**.02139**	**.00454**	**-.00050**	**.00021**	**.00050**	**.00118**
Stddev	.00016	.00022	.00843	.00114	.00027	.00017	.00137
%RSD	41.986	1.0329	185.67	229.51	129.67	34.277	116.06
#1	.00030	.02116	.00016	.00076	.00041	.00055	-.00040
#2	.00027	.02139	.01426	-.00146	.00031	.00031	.00208
#3	.00056	.02161	-.00080	-.00078	-.00010	.00064	.00187
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9945.8**	**60248.**	**3055.3**
Stddev	9.2	94.	11.4
%RSD	.09217	.15541	.37444
#1	9945.9	60314.	3061.2
#2	9954.9	60289.	3042.1
#3	9936.5	60141.	3062.6

Approved: June 27, 2016

Sample Name: L1606115503 Acquired: 6/25/2016 17:14:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00200	-.00135	-.00104	.00757	.00737	.00014	2.3997	-.00010
Stddev	.00192	.00661	.00046	.00116	.00061	.00003	.0309	.00022
%RSD	96.141	489.89	44.488	15.290	8.2167	21.217	1.2897	218.06
#1	.00406	-.00575	-.00051	.00624	.00716	.00012	2.3659	-.00020
#2	.00025	-.00456	-.00131	.00835	.00689	.00017	2.4268	-.00025
#3	.00170	.00625	-.00131	.00813	.00805	.00012	2.4063	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	-.00044	-.00019	.10432	-.04481	.00004	.91519	.02191
Stddev	.00035	.00082	.00101	.01415	.09851	.00279	.09371	.00121
%RSD	3296.1	188.98	541.26	13.565	219.83	6329.0	10.240	5.5295
#1	-.00033	.00027	.00027	.10406	-.13456	.00163	.99135	.02326
#2	-.00007	-.00023	-.00134	.09030	-.06048	.00168	.94369	.02093
#3	.00037	-.00134	.00052	.11860	.06059	-.00317	.81054	.02153
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	2.4900	.00017	.00956	.00115	-.00111	.00305	.32330
Stddev	.00005	.0408	.00057	.00296	.00162	.00041	.00349	.00479
%RSD	56.574	1.6398	345.24	30.912	140.85	37.279	114.64	1.4819
#1	-.00011	2.4429	.00078	.00752	.00187	-.00066	-.00055	.31801
#2	-.00013	2.5161	.00008	.00822	-.00070	-.00119	.00642	.32454
#3	-.00003	2.5109	-.00036	.01295	.00229	-.00148	.00327	.32735
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115503 Acquired: 6/25/2016 17:14:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**.01387**	**.00305**	**-.00065**	**.00052**	**.00084**	**.00071**
Stddev	.00081	.00016	.00789	.00174	.00073	.00004	.00140
%RSD	953.07	1.1448	258.94	265.86	139.13	5.0666	198.28
#1	-.00013	.01403	.00198	-.00023	.00032	.00082	.00133
#2	-.00088	.01386	-.00426	.00083	-.00008	.00082	.00169
#3	.00075	.01371	.01142	-.00257	.00133	.00089	-.00090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9910.7**	**60184.**	**3019.4**
Stddev	10.3	175.	9.0
%RSD	.10381	.29035	.29953
#1	9910.7	60334.	3026.1
#2	9921.0	60225.	3023.1
#3	9900.4	59992.	3009.1

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 17:18:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41531**	**10.447**	**.40916**	**.50533**	**1.0238**	**.05217**	**10.225**
Stddev	.00091	.032	.00132	.00054	.0034	.00011	.030
%RSD	.21998	.31066	.32348	.10618	.32870	.20293	.29201
#1	.41613	10.474	.41061	.50566	1.0229	.05229	10.191
#2	.41432	10.411	.40886	.50561	1.0276	.05213	10.247
#3	.41546	10.455	.40801	.50471	1.0211	.05209	10.235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05225**	**.20370**	**.51712**	**.52549**	**4.0444**	**49.392**	**1.0301**
Stddev	.00031	.00034	.00175	.00197	.0184	.117	.0048
%RSD	.59442	.16603	.33927	.37570	.45604	.23752	.46659
#1	.05229	.20396	.51906	.52418	4.0394	49.465	1.0330
#2	.05254	.20382	.51666	.52776	4.0648	49.455	1.0327
#3	.05192	.20332	.51564	.52452	4.0290	49.257	1.0245
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.7951**	**.51327**	**1.0423**	**50.236**	**.51912**	**10.208**	**.51997**
Stddev	.0472	.00504	.0084	.169	.00170	.017	.00372
%RSD	.48165	.98200	.80990	.33677	.32826	.16636	.71476
#1	9.7523	.51223	1.0511	50.262	.52046	10.219	.52035
#2	9.7875	.51875	1.0343	50.391	.51968	10.189	.51607
#3	9.8457	.50883	1.0415	50.056	.51720	10.217	.52348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 17:18:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2238**	**.40709**	**5.2468**	**1.0260**	**1.0230**	**1.0304**	**.52875**
Stddev	.0084	.00511	.0098	.0012	.0023	.0127	.00327
%RSD	.68659	1.2545	.18586	.11540	.22459	1.2311	.61859
#1	1.2260	.40344	5.2580	1.0271	1.0231	1.0165	.53252
#2	1.2308	.40491	5.2428	1.0262	1.0252	1.0415	.52673
#3	1.2145	.41292	5.2398	1.0248	1.0206	1.0331	.52699
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0570**	**1.0310**	F **3.0075**
Stddev	.0056	.0001	.0207
%RSD	.53103	.00939	.68856
#1	1.0633	1.0311	3.0004
#2	1.0553	1.0309	3.0308
#3	1.0525	1.0310	2.9913
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9557.2**	**57623.**	**2979.5**
Stddev	9.7	193.	16.3
%RSD	.10109	.33465	.54600
#1	9546.7	57405.	2979.8
#2	9565.7	57771.	2963.0
#3	9559.4	57693.	2995.6

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 17:21:42 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**-.00563**	**.00200**	**-.00100**	**.00189**	**.00009**	**-.01127**	**-.00004**
Stddev	.00104	.00334	.00233	.00184	.00120	.00004	.03123	.00010
%RSD	1246.5	59.297	116.54	184.11	63.245	40.940	277.20	226.69
#1	-.00074	-.00335	.00466	-.00138	.00302	.00011	-.03377	.00004
#2	-.00027	-.00407	.00108	-.00263	.00202	.00005	.02439	-.00015
#3	.00126	-.00946	.00027	.00100	.00064	.00010	-.02442	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**.00048**	**.00089**	**.00955**	**-.03243**	**.00071**	**-.01124**	**-.00013**
Stddev	.00017	.00075	.00043	.01226	.03763	.00268	.07316	.00129
%RSD	103.61	157.05	48.720	128.38	116.03	378.57	650.98	975.30
#1	.00002	.00095	.00059	-.00410	-.06003	-.00175	-.02665	-.00039
#2	.00035	.00087	.00069	.01962	.01043	.00031	-.07547	-.00128
#3	.00012	-.00039	.00138	.01314	-.04771	.00356	.06840	.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00323**	**.02898**	**-.00046**	**.00432**	**.00328**	**.00454**	**.00410**	**-.00425**
Stddev	.00029	.02008	.00095	.00359	.00221	.00123	.00133	.00064
%RSD	9.1168	69.292	208.78	82.910	67.490	26.995	32.528	15.135
#1	.00298	.02490	-.00038	.00845	.00352	.00323	.00275	-.00470
#2	.00356	.01126	-.00144	.00261	.00095	.00566	.00541	-.00351
#3	.00316	.05079	.00046	.00192	.00536	.00474	.00413	-.00454
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 17:21:42 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	.00021	.00375	-.00110	.00108	-.00009	.00393
Stddev	.00059	.00011	.00446	.00333	.00027	.00003	.00087
%RSD	86.694	51.296	119.05	302.86	25.045	36.058	22.188
#1	.00135	.00012	.00567	.00135	.00136	-.00006	.00491
#2	.00024	.00018	-.00135	.00024	.00107	-.00012	.00363
#3	.00044	.00033	.00692	-.00489	.00082	-.00008	.00324
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9706.7	59138.	3007.6
Stddev	9.6	122.	14.5
%RSD	.09901	.20648	.48341
#1	9697.1	58997.	2992.2
#2	9716.3	59217.	3009.4
#3	9706.6	59200.	3021.1

Approved: June 27, 2016

Sample Name: LLCCV Acquired: 6/25/2016 17:25:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00682	.16326	.00787	.08110	.01015	.00172	.37504	.00080
Stddev	.00230	.01176	.00393	.00058	.00060	.00002	.03274	.00014
%RSD	33.789	7.2031	49.909	.72089	5.8834	1.2548	8.7301	17.457
#1	.00456	.16635	.01239	.08173	.01084	.00173	.33805	.00070
#2	.00916	.17317	.00587	.08058	.00985	.00173	.40031	.00075
#3	.00674	.15026	.00534	.08099	.00976	.00169	.38675	.00096
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00446	.00390	.00484	.09497	.71355	.08241	.33888	.00741
Stddev	.00036	.00087	.00066	.01610	.00812	.00379	.00870	.00176
%RSD	8.1660	22.291	13.622	16.951	1.1379	4.5949	2.5673	23.707
#1	.00488	.00490	.00494	.08463	.70937	.08497	.33660	.00920
#2	.00426	.00332	.00413	.08675	.70838	.08419	.34850	.00734
#3	.00424	.00348	.00544	.11352	.72291	.07806	.33155	.00569
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00855	.40833	.01678	.78916	.01199	.08269	.02089	.77549
Stddev	.00007	.02661	.00076	.00972	.00016	.00111	.00270	.00482
%RSD	.82014	6.5175	4.5074	1.2317	1.3733	1.3390	12.938	.62171
#1	.00856	.42291	.01686	.80033	.01215	.08397	.01985	.78057
#2	.00847	.42447	.01749	.78261	.01182	.08216	.01886	.77494
#3	.00861	.37762	.01598	.78454	.01200	.08195	.02396	.77097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LLCCV Acquired: 6/25/2016 17:25:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40481	.04214	.02257	.15413	.00994	.01699	.13476
Stddev	.00262	.00003	.00404	.00144	.00108	.00007	.00396
%RSD	.64734	.07891	17.895	.93373	10.832	.40613	2.9378
#1	.40763	.04217	.02259	.15502	.01117	.01705	.13268
#2	.40435	.04210	.02661	.15491	.00942	.01692	.13226
#3	.40245	.04214	.01853	.15247	.00922	.01700	.13932
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9757.6	59331.	3007.6
Stddev	3.7	156.	34.2
%RSD	.03744	.26375	1.1357
#1	9754.3	59400.	3008.1
#2	9757.0	59152.	3041.5
#3	9761.5	59441.	2973.2

Approved: June 27, 2016

Sample Name: PBW Y5 Acquired: 6/25/2016 17:29:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00185**	**.00116**	**-.00112**	**-.00084**	**.00120**	**.00011**	**-.01961**	**-.00006**
Stddev	.00045	.01041	.00198	.00240	.00080	.00010	.05200	.00016
%RSD	24.231	897.41	176.31	284.10	67.234	89.198	265.17	288.76
#1	.00153	-.00604	-.00020	.00070	.00046	.00020	.01383	-.00024
#2	.00236	-.00358	.00023	-.00360	.00107	.00014	-.07952	.00007
#3	.00166	.01310	-.00339	.00037	.00206	.00000	.00686	.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**-.00018**	**.00105**	**.03412**	**-.07407**	**.00236**	**.02694**	**.00162**
Stddev	.00024	.00064	.00070	.02542	.08098	.00211	.02742	.00224
%RSD	248.33	362.92	67.168	74.514	109.32	89.477	101.81	137.94
#1	.00030	-.00083	.00024	.00498	-.16192	.00417	.01237	.00092
#2	.00016	-.00014	.00146	.05181	-.05788	.00285	.00987	.00413
#3	-.00017	.00044	.00145	.04557	-.00242	.00004	.05857	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.01025**	**-.00077**	**.00507**	**.00386**	**-.00192**	**-.00109**	**.00437**
Stddev	.00004	.01479	.00185	.00580	.00053	.00084	.00245	.00068
%RSD	28.058	144.27	239.74	114.27	13.817	43.798	224.68	15.497
#1	-.00010	.02026	-.00256	.00797	.00348	-.00273	.00112	.00408
#2	-.00015	-.00674	.00113	.00885	.00447	-.00198	-.00067	.00389
#3	-.00017	.01724	-.00088	-.00160	.00363	-.00105	-.00372	.00515
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: PBW Y5 Acquired: 6/25/2016 17:29:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	.00044	.00538	-.00184	.00071	.00062	.00198
Stddev	.00057	.00040	.00350	.00250	.00039	.00016	.00115
%RSD	73.146	89.773	65.128	135.94	54.397	26.345	58.223
#1	.00143	.00035	.00942	-.00427	.00062	.00079	.00279
#2	.00040	.00088	.00331	.00073	.00114	.00048	.00066
#3	.00049	.00010	.00340	-.00198	.00038	.00058	.00249
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9880.3	60109.	3027.1
Stddev	31.5	73.	6.6
%RSD	.31885	.12179	.21761
#1	9847.3	60149.	3030.6
#2	9910.1	60154.	3019.5
#3	9883.5	60025.	3031.2

Approved: June 27, 2016

Sample Name: LCSW Y5 Acquired: 6/25/2016 17:33:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18967**	**4.7620**	**.18828**	**.90013**	**.47555**	**.02395**	**4.7950**	**.02373**
Stddev	.00250	.0081	.00104	.00471	.00273	.00006	.0213	.00018
%RSD	1.3192	.17078	.55148	.52284	.57347	.24848	.44480	.74408
#1	.18907	4.7578	.18718	.89893	.47827	.02388	4.7819	.02392
#2	.19242	4.7714	.18841	.90532	.47282	.02399	4.8196	.02370
#3	.18753	4.7569	.18924	.89614	.47557	.02397	4.7835	.02357
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09489**	**.23803**	**.24292**	**1.9123**	**22.817**	**.48875**	**4.5669**	**.24181**
Stddev	.00039	.00120	.00156	.0298	.036	.00284	.0465	.00007
%RSD	.41346	.50457	.64104	1.5597	.15629	.58110	1.0173	.02751
#1	.09520	.23794	.24291	1.9317	22.780	.48603	4.5750	.24188
#2	.09501	.23927	.24447	1.8779	22.852	.49170	4.5170	.24174
#3	.09445	.23687	.24136	1.9272	22.818	.48851	4.6088	.24180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49027**	**23.490**	**.24091**	**4.5553**	**.24063**	**.56646**	**.18382**	**2.3525**
Stddev	.00145	.113	.00040	.0084	.00352	.00190	.00239	.0014
%RSD	.29550	.48187	.16805	.18553	1.4632	.33509	1.2995	.06062
#1	.48963	23.608	.24065	4.5528	.24014	.56531	.18109	2.3541
#2	.49193	23.382	.24137	4.5647	.24437	.56542	.18555	2.3519
#3	.48925	23.480	.24069	4.5484	.23738	.56865	.18482	2.3515
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LCSW Y5 Acquired: 6/25/2016 17:33:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47085**	**.48454**	**.47923**	**.24546**	**.48968**	**.47202**	**.01198**
Stddev	.00082	.00070	.00116	.00117	.00078	.00042	.00247
%RSD	.17390	.14504	.24256	.47677	.15993	.08855	20.639
#1	.47170	.48509	.47789	.24652	.48877	.47178	.00945
#2	.47079	.48375	.47984	.24421	.49011	.47251	.01208
#3	.47006	.48479	.47995	.24566	.49015	.47178	.01439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9888.6**	**60001.**	**3090.1**
Stddev	19.1	149.	26.5
%RSD	.19299	.24892	.85667
#1	9894.9	60052.	3063.1
#2	9867.1	59834.	3091.3
#3	9903.7	60119.	3116.0

Approved: June 27, 2016

Sample Name: F BLANK Acquired: 6/25/2016 17:37:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00166	-.00148	.00090	.00227	.00163	.00011	-.00468	.00008
Stddev	.00130	.00490	.00188	.00068	.00037	.00003	.02546	.00022
%RSD	78.305	330.55	208.29	29.974	22.968	25.204	544.18	269.24
#1	.00033	-.00239	.00275	.00286	.00197	.00009	-.03398	.00015
#2	.00173	.00381	-.00100	.00243	.00123	.00014	.01206	.00026
#3	.00293	-.00586	.00096	.00153	.00167	.00010	.00788	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.00058	.00129	.04476	.01060	-.00161	-.05710	.00063
Stddev	.00029	.00122	.00029	.02153	.02075	.00622	.06303	.00318
%RSD	276.09	211.55	22.793	48.099	195.81	387.03	110.39	502.59
#1	-.00039	.00184	.00121	.03412	-.00619	.00062	-.09553	.00029
#2	.00018	-.00059	.00161	.06953	.03381	.00319	-.09140	.00397
#3	-.00010	.00048	.00104	.03061	.00418	-.00863	.01564	-.00236
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.05677	-.00011	.00316	.00576	-.00381	.00560	-.00010
Stddev	.00040	.03222	.00050	.00162	.00079	.00329	.00231	.00141
%RSD	72.047	56.761	453.37	51.247	13.705	86.399	41.256	1388.8
#1	.00085	.07680	-.00069	.00292	.00611	-.00013	.00434	-.00092
#2	.00073	.01960	.00014	.00168	.00631	-.00483	.00420	-.00091
#3	.00010	.07391	.00021	.00489	.00485	-.00647	.00827	.00153
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: F BLANK Acquired: 6/25/2016 17:37:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.00021	-.00396	-.00081	.00112	.00164	.00166
Stddev	.00084	.00011	.00377	.00288	.00053	.00013	.00011
%RSD	1212.1	52.839	95.183	357.63	47.087	8.1028	6.9152
#1	-.00082	.00025	-.00813	-.00413	.00144	.00151	.00159
#2	.00085	.00029	-.00300	.00065	.00141	.00165	.00179
#3	.00018	.00008	-.00077	.00106	.00051	.00177	.00159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10015.	61314.	3090.8
Stddev	16.	177.	23.0
%RSD	.15522	.28891	.74279
#1	10012.	61143.	3064.6
#2	10032.	61303.	3107.1
#3	10001.	61497.	3100.8

Approved: June 27, 2016

Sample Name: L1606098602 Acquired: 6/25/2016 17:41:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	-.00042	-.00040	.09099	.02315	.00010	31.081	-.00006
Stddev	.00141	.00402	.00168	.00026	.00060	.00002	.292	.00002
%RSD	160.55	951.46	416.45	.28845	2.5949	20.817	.93935	37.551
#1	.00197	.00339	-.00222	.09093	.02306	.00008	31.173	-.00006
#2	-.00072	-.00463	.00109	.09127	.02259	.00012	30.754	-.00004
#3	.00139	-.00003	-.00008	.09076	.02379	.00010	31.315	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.00059	.00094	.04555	.98402	.01199	5.7014	.03480
Stddev	.00048	.00016	.00041	.01573	.08850	.00357	.0718	.00212
%RSD	197.55	26.299	43.232	34.544	8.9935	29.756	1.2595	6.0810
#1	.00072	.00042	.00054	.02747	.88485	.01459	5.6202	.03718
#2	-.00024	.00064	.00135	.05303	1.0122	.01345	5.7566	.03314
#3	.00026	.00072	.00092	.05614	1.0550	.00792	5.7274	.03406
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00142	119.95	.00080	.00488	.00205	-.00278	-.00166	3.2347
Stddev	.00007	.78	.00132	.00386	.00179	.00227	.00673	.0109
%RSD	4.5853	.65032	165.26	79.044	87.096	81.844	406.14	.33815
#1	.00137	120.20	.00201	.00062	.00137	-.00037	-.00009	3.2461
#2	.00149	119.07	.00100	.00813	.00409	-.00489	.00415	3.2336
#3	.00140	120.57	-.00061	.00590	.00071	-.00307	-.00903	3.2243
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098602 Acquired: 6/25/2016 17:41:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00169	.54147	-.00161	-.00445	.00062	.00187	.00166
Stddev	.00060	.00457	.00418	.00188	.00027	.00011	.00091
%RSD	35.360	.84355	259.35	42.200	43.191	5.8148	54.635
#1	.00106	.54395	-.00040	-.00269	.00035	.00198	.00205
#2	.00225	.53620	.00182	-.00642	.00063	.00186	.00062
#3	.00175	.54425	-.00626	-.00422	.00089	.00176	.00230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9793.0	59457.	3063.6
Stddev	12.2	310.	25.9
%RSD	.12488	.52191	.84399
#1	9783.4	59142.	3057.4
#2	9788.8	59467.	3092.0
#3	9806.7	59762.	3041.4

Approved: June 27, 2016

Sample Name: L1606098604 Acquired: 6/25/2016 17:45:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00188**	**.00192**	**.00240**	**.01933**	**.01606**	**.00017**	**258.27**
Stddev	.00168	.00663	.00025	.00142	.00064	.00002	.74
%RSD	89.608	344.23	10.527	7.3208	4.0034	12.550	.28551
#1	.00265	-.00052	.00267	.01828	.01569	.00019	258.08
#2	.00303	-.00313	.00217	.01877	.01568	.00016	257.65
#3	-.00005	.00943	.00237	.02094	.01680	.00015	259.09
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00045**	**.00038**	**.00085**	**.01097**	**.02808**	**1.7243**	**.01739**
Stddev	.00023	.00042	.00027	.00107	.01426	.0758	.00077
%RSD	50.915	110.30	31.401	9.7605	50.795	4.3949	4.4280
#1	.00057	.00083	.00065	.01199	.02723	1.7078	.01656
#2	.00019	.00033	.00115	.00986	.01426	1.6581	.01808
#3	.00061	-.00001	.00075	.01107	.04275	1.8069	.01753
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**67.436**	**1.3917**	**.00099**	**14.380**	**.00387**	**.00116**	**.00177**
Stddev	.211	.0043	.00004	.031	.00051	.00485	.00143
%RSD	.31235	.30797	4.3492	.21337	13.178	419.65	80.619
#1	67.195	1.3899	.00099	14.411	.00414	.00253	.00287
#2	67.533	1.3886	.00103	14.350	.00328	-.00423	.00229
#3	67.581	1.3966	.00095	14.377	.00419	.00517	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 27, 2016

Sample Name: L1606098604 Acquired: 6/25/2016 17:45:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00130**	**.00146**	**3.7576**	**.00044**	**1.2471**	F **-.03982**	**-.00203**
Stddev	.00495	.00434	.0110	.00062	.0034	.00406	.00082
%RSD	381.66	297.39	.29276	142.20	.26857	10.186	40.503
#1	-.00325	.00313	3.7635	.00113	1.2483	-.04298	-.00122
#2	.00433	.00472	3.7644	.00025	1.2433	-.03524	-.00200
#3	-.00498	-.00347	3.7449	-.00007	1.2496	-.04122	-.00286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00050**	**.03051**	**.00151**
Stddev	.00029	.00016	.00074
%RSD	57.554	.53953	48.929
#1	-.00084	.03044	.00164
#2	-.00033	.03070	.00216
#3	-.00034	.03040	.00071
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9610.5**	**58897.**	**3044.6**
Stddev	3.8	97.	5.6
%RSD	.03917	.16551	.18408
#1	9614.6	58944.	3043.4
#2	9607.2	58961.	3050.7
#3	9609.7	58785.	3039.7

Approved: June 27, 2016

Sample Name: L1606098606 Acquired: 6/25/2016 17:48:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00223	.00972	-.00038	.01373	.06613	.00026	77.440	.00018
Stddev	.00105	.00309	.00132	.00205	.00021	.00009	.075	.00021
%RSD	47.129	31.833	346.72	14.955	.32162	33.087	.09643	116.74
#1	.00235	.00691	-.00086	.01602	.06623	.00027	77.417	.00042
#2	.00112	.00920	-.00139	.01205	.06589	.00034	77.379	.00001
#3	.00321	.01303	.00111	.01311	.06628	.00017	77.523	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00039	.00108	.01311	.03469	1.0666	.00528	22.814	.00226
Stddev	.00015	.00032	.00053	.01962	.0266	.00092	.288	.00095
%RSD	37.987	29.419	4.0055	56.546	2.4929	17.478	1.2638	41.753
#1	.00056	.00082	.01330	.03776	1.0701	.00541	22.650	.00309
#2	.00027	.00143	.01252	.05259	1.0384	.00430	22.645	.00123
#3	.00036	.00097	.01352	.01372	1.0912	.00613	23.147	.00247
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	16.230	.00086	.01073	.00099	-.00405	.00160	2.3863
Stddev	.00023	.056	.00046	.00069	.00181	.00317	.00143	.0169
%RSD	59.834	.34372	53.276	6.4188	182.38	78.406	89.367	.70593
#1	.00032	16.197	.00073	.01029	.00246	-.00129	-.00004	2.4028
#2	.00063	16.198	.00137	.01153	-.00103	-.00752	.00258	2.3871
#3	.00019	16.294	.00048	.01038	.00155	-.00333	.00227	2.3691
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098606 Acquired: 6/25/2016 17:48:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.39726	-.00928	-.00135	-.00044	.03812	.00202
Stddev	.00081	.00077	.00327	.00251	.00044	.00033	.00118
%RSD	1967.6	.19375	35.277	185.96	101.24	.85896	58.324
#1	.00088	.39645	-.00551	-.00111	-.00048	.03844	.00108
#2	-.00002	.39799	-.01103	.00103	.00002	.03814	.00334
#3	-.00074	.39735	-.01131	-.00397	-.00086	.03779	.00164
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9875.4	60112.	3085.9
Stddev	17.7	60.	4.4
%RSD	.17969	.09972	.14239
#1	9863.6	60084.	3084.9
#2	9866.7	60181.	3090.7
#3	9895.8	60072.	3082.1

Approved: June 27, 2016

Sample Name: L1606098608 Acquired: 6/25/2016 17:52:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.00115	.00027	.01585	.03262	.00011	84.217	.00013
Stddev	.00235	.00513	.00111	.00136	.00141	.00004	.314	.00017
%RSD	2475.5	446.86	409.02	8.5842	4.3250	37.715	.37277	125.68
#1	-.00262	.00404	-.00099	.01740	.03376	.00010	84.484	.00019
#2	.00142	-.00477	.00110	.01531	.03104	.00016	84.297	.00026
#3	.00149	.00417	.00071	.01485	.03305	.00008	83.871	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	.00177	.00567	.03434	1.2401	.01415	23.228	.02727
Stddev	.00046	.00068	.00058	.01787	.0425	.00095	.227	.00106
%RSD	299.90	38.444	10.195	52.028	3.4256	6.6956	.97712	3.8827
#1	-.00049	.00241	.00506	.05413	1.2665	.01352	23.122	.02850
#2	.00037	.00184	.00573	.01939	1.1911	.01369	23.489	.02663
#3	-.00034	.00105	.00621	.02950	1.2628	.01524	23.073	.02669
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	12.660	.00033	.00413	.00179	-.00334	-.00002	3.4869
Stddev	.00017	.055	.00044	.00392	.00093	.00378	.00639	.0225
%RSD	23.632	.43231	134.67	94.801	51.837	113.14	36088.	.64396
#1	.00093	12.716	.00084	.00852	.00134	-.00400	-.00400	3.4968
#2	.00069	12.657	.00002	.00099	.00117	-.00675	-.00341	3.5027
#3	.00059	12.607	.00013	.00288	.00285	.00073	.00736	3.4612
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098608 Acquired: 6/25/2016 17:52:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	**.83876**	**-.00998**	**-.00331**	**.00001**	**.01681**	**.00058**
Stddev	.00022	.00442	.00442	.00242	.00077	.00018	.00259
%RSD	112.09	.52651	44.282	73.168	6824.2	1.0650	446.63
#1	-.00039	.84240	-.01091	-.00183	-.00011	.01673	-.00103
#2	-.00022	.84004	-.00517	-.00610	-.00069	.01701	.00357
#3	.00004	.83385	-.01387	-.00199	.00083	.01668	-.00080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9863.7**	**59966.**	**3069.4**
Stddev	33.8	107.	16.4
%RSD	.34299	.17793	.53396
#1	9879.3	59844.	3052.8
#2	9824.9	60042.	3069.7
#3	9886.9	60012.	3085.6

Approved: June 27, 2016

Sample Name: L1606098608PS Acquired: 6/25/2016 17:56:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574216-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19012	4.7962	.18985	.92761	.50579	.02416	80.589	.02376
Stddev	.00115	.0181	.00324	.00188	.00153	.00010	.509	.00031
%RSD	.60416	.37710	1.7085	.20237	.30247	.42369	.63122	1.3080
#1	.18881	4.7997	.18690	.92863	.50534	.02415	80.494	.02389
#2	.19096	4.8123	.19332	.92876	.50750	.02427	81.138	.02341
#3	.19058	4.7766	.18933	.92544	.50454	.02406	80.134	.02399
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09205	.23624	.24131	1.9065	24.291	.50517	25.434	.26103
Stddev	.00018	.00146	.00130	.0143	.039	.00496	.150	.00626
%RSD	.19260	.61641	.53797	.74911	.16017	.98165	.59175	2.3977
#1	.09210	.23659	.24071	1.9177	24.287	.49968	25.563	.26590
#2	.09186	.23464	.24280	1.9113	24.254	.50647	25.268	.26320
#3	.09221	.23749	.24041	1.8904	24.332	.50934	25.470	.25397
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49345	34.822	.23345	4.6884	.23609	.56850	.18268	5.5114
Stddev	.00019	.169	.00142	.0142	.00258	.00539	.00604	.0369
%RSD	.03860	.48533	.60979	.30359	1.0940	.94754	3.3047	.66920
#1	.49323	34.790	.23475	4.6782	.23789	.57472	.18356	5.4689
#2	.49357	35.005	.23367	4.6823	.23725	.56528	.18824	5.5341
#3	.49354	34.671	.23193	4.7047	.23313	.56551	.17626	5.5313
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098608PS Acquired: 6/25/2016 17:56:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574216-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.47094	1.2232	.47334	.23988	.49331	.47631	.00522
Stddev	.00189	.0075	.00962	.00117	.00125	.00347	.00156
%RSD	.40190	.61543	2.0323	.48785	.25347	.72879	29.825
#1	.47068	1.2227	.46319	.24082	.49476	.47230	.00351
#2	.47295	1.2310	.48233	.23857	.49254	.47818	.00558
#3	.46920	1.2160	.47451	.24025	.49265	.47845	.00657
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9831.9	59526.	3075.8
Stddev	15.2	194.	19.0
%RSD	.15421	.32611	.61679
#1	9829.8	59604.	3066.0
#2	9817.9	59305.	3063.8
#3	9848.0	59669.	3097.7

Approved: June 27, 2016

Sample Name: L1606098608SDL Acquired: 6/25/2016 18:00:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574216-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00260**	**-.00514**	**.00187**	**.00508**	**.00868**	**.00012**	**17.605**	**-.00015**
Stddev	.00156	.01146	.00424	.00200	.00063	.00008	.142	.00010
%RSD	60.035	222.87	226.36	39.430	7.2120	66.284	.80739	66.159
#1	.00437	.00780	.00118	.00739	.00923	.00013	17.451	-.00025
#2	.00143	-.00924	.00642	.00396	.00881	.00020	17.731	-.00007
#3	.00199	-.01399	-.00198	.00389	.00800	.00004	17.633	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00018**	**.00006**	**.00193**	**.02399**	**.21059**	**-.00038**	**4.9921**	**.00509**
Stddev	.00017	.00044	.00078	.00583	.02318	.00216	.0797	.00111
%RSD	97.856	772.57	40.443	24.318	11.008	572.98	1.5970	21.792
#1	-.00004	-.00041	.00282	.01859	.23319	.00193	5.0036	.00623
#2	-.00037	.00046	.00138	.03017	.18686	-.00072	4.9072	.00402
#3	-.00011	.00012	.00158	.02319	.21171	-.00234	5.0654	.00500
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00034**	**2.6677**	**-.00071**	**.00513**	**.00009**	**-.00286**	**-.00058**	**.72991**
Stddev	.00017	.0114	.00035	.00552	.00151	.00279	.00302	.00273
%RSD	51.097	.42653	49.400	107.62	1685.9	97.489	522.92	.37384
#1	.00017	2.6710	-.00044	.00122	.00180	.00001	.00149	.72939
#2	.00033	2.6550	-.00058	.01144	-.00102	-.00304	-.00405	.73285
#3	.00051	2.6770	-.00110	.00273	-.00051	-.00555	.00083	.72747
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098608SDL Acquired: 6/25/2016 18:00:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574216-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.17684**	**.00226**	**.00019**	**.00052**	**.00413**	**.00011**
Stddev	.00027	.00102	.00232	.00368	.00057	.00014	.00068
%RSD	464.39	.57572	102.44	1951.0	110.67	3.3962	623.50
#1	-.00013	.17748	.00403	.00128	.00008	.00397	.00059
#2	.00024	.17567	-.00036	.00320	.00031	.00420	.00041
#3	-.00028	.17737	.00312	-.00392	.00117	.00423	-.00067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9896.0**	**60261.**	**3042.3**
Stddev	25.0	81.	28.3
%RSD	.25242	.13391	.92921
#1	9907.7	60289.	3040.8
#2	9913.0	60324.	3071.3
#3	9867.3	60170.	3014.9

Approved: June 27, 2016

Sample Name: L1606098608SDL Acquired: 6/25/2016 18:04:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574216-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00175**	**-.00807**	**-.00063**	**-.00078**	**.00182**	**.00014**	**3.3399**	**-.00019**
Stddev	.00147	.00382	.00127	.00273	.00016	.00003	.0946	.00023
%RSD	83.969	47.279	200.74	348.35	8.5330	23.588	2.8330	121.57
#1	.00097	-.00874	.00010	.00038	.00196	.00018	3.2721	-.00045
#2	.00084	-.00396	.00010	.00117	.00166	.00011	3.4480	-.00012
#3	.00344	-.01151	-.00210	-.00390	.00185	.00014	3.2995	-.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**-.00037**	**.00107**	**.01769**	**-.08284**	**.00119**	**.94569**	**.00052**
Stddev	.00047	.00133	.00130	.01702	.09737	.00358	.05932	.00055
%RSD	1445.4	360.33	120.72	96.212	117.53	302.26	6.2728	105.20
#1	.00035	-.00086	.00167	-.00174	-.18470	.00532	.88043	.00057
#2	-.00050	-.00138	-.00041	.02995	-.07314	-.00085	.96028	.00105
#3	.00025	.00113	.00196	.02486	.00931	-.00092	.99635	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00012**	**.49987**	**-.00021**	**.00755**	**.00303**	**-.00541**	**.00850**	**.13812**
Stddev	.00032	.04592	.00020	.00386	.00188	.00314	.00116	.00966
%RSD	265.16	9.1856	96.762	51.054	62.049	58.070	13.660	6.9939
#1	.00001	.44687	-.00020	.01173	.00086	-.00531	.00838	.12921
#2	-.00049	.52761	-.00041	.00680	.00410	-.00232	.00740	.13676
#3	.00011	.52513	-.00001	.00413	.00413	-.00859	.00972	.14839
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098608SDL Acquired: 6/25/2016 18:04:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574216-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00039	.03350	.00349	.00073	.00046	.00106	.00161
Stddev	.00032	.00105	.00672	.00069	.00093	.00001	.00112
%RSD	80.289	3.1425	192.33	93.894	202.19	.93440	69.701
#1	.00063	.03282	.00553	-.00006	-.00031	.00105	.00058
#2	.00051	.03471	.00896	.00114	.00020	.00107	.00146
#3	.00004	.03296	-.00401	.00113	.00149	.00107	.00281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10400.	61068.	3085.8
Stddev	302.	416.	38.3
%RSD	2.9005	.68044	1.2414
#1	10744.	61402.	3085.7
#2	10277.	61200.	3047.5
#3	10180.	60603.	3124.1

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 18:08:15 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40600	10.196	.39897	.49353	1.0097	.05111	10.072
Stddev	.00134	.005	.00384	.00145	.0055	.00016	.108
%RSD	.32964	.04609	.96241	.29468	.54041	.30777	1.0683
#1	.40454	10.197	.40224	.49289	1.0058	.05115	10.014
#2	.40717	10.200	.39474	.49519	1.0073	.05125	10.006
#3	.40630	10.191	.39992	.49250	1.0159	.05094	10.196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05085	.19930	.50343	.51248	4.0210	48.769	1.0170
Stddev	.00016	.00069	.00173	.00042	.0444	.141	.0095
%RSD	.31221	.34558	.34304	.08145	1.1049	.29004	.93218
#1	.05072	.20005	.50491	.51259	3.9923	48.842	1.0084
#2	.05079	.19915	.50386	.51282	3.9985	48.605	1.0154
#3	.05103	.19869	.50153	.51201	4.0722	48.858	1.0271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.6470	.50568	1.0217	49.589	.50657	9.9463	.50897
Stddev	.0505	.00379	.0050	.266	.00174	.0145	.00224
%RSD	.52402	.74931	.49273	.53683	.34444	.14541	.44016
#1	9.7040	.50521	1.0275	49.574	.50855	9.9602	.50639
#2	9.6294	.50215	1.0196	49.330	.50589	9.9313	.51042
#3	9.6076	.50969	1.0181	49.862	.50527	9.9474	.51010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 18:08:15 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1949**	**.39405**	**5.1402**	**1.0022**	**1.0107**	**.99866**	**.51518**
Stddev	.0031	.00179	.0100	.0005	.0053	.01659	.00058
%RSD	.25554	.45308	.19427	.05270	.52786	1.6608	.11222
#1	1.1981	.39492	5.1482	1.0028	1.0100	1.0024	.51475
#2	1.1944	.39525	5.1290	1.0020	1.0058	.98052	.51584
#3	1.1920	.39200	5.1434	1.0018	1.0164	1.0131	.51497
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0309**	**1.0070**	F **2.9451**
Stddev	.0008	.0014	.0223
%RSD	.08066	.13880	.75803
#1	1.0316	1.0084	2.9555
#2	1.0300	1.0069	2.9195
#3	1.0311	1.0056	2.9603
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9649.2**	**58096.**	**2982.6**
Stddev	5.7	114.	17.5
%RSD	.05915	.19560	.58802
#1	9648.4	58223.	2978.9
#2	9644.0	58003.	3001.7
#3	9655.3	58062.	2967.2

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 18:11:52 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00062**	**.00113**	**.00060**	**-.00134**	**.00269**	**.00016**	**-.00509**	**-.00011**
Stddev	.00447	.01287	.00139	.00141	.00058	.00006	.00999	.00008
%RSD	723.56	1142.0	234.30	105.23	21.456	39.000	196.19	75.399
#1	-.00262	.00580	.00212	.00028	.00233	.00022	-.01646	-.00020
#2	.00450	-.01343	-.00061	-.00230	.00238	.00017	.00228	-.00009
#3	-.00373	.01101	.00028	-.00199	.00335	.00009	-.00109	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.00031**	**.00131**	**.01880**	**-.14052**	**-.00173**	**.03086**	**-.00243**
Stddev	.00043	.00144	.00103	.01556	.08453	.00290	.07623	.00189
%RSD	438.61	470.86	78.889	82.745	60.152	168.14	247.00	77.536
#1	.00038	.00014	.00051	.03667	-.04368	.00153	-.05463	-.00186
#2	-.00045	-.00104	.00248	.01148	-.17839	-.00266	.09175	-.00090
#3	-.00022	.00182	.00094	.00826	-.19949	-.00404	.05546	-.00454
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00375**	**-.00702**	**.00000**	**.00544**	**-.00002**	**.00180**	**.00158**	**.03715**
Stddev	.00019	.01848	.00030	.00537	.00129	.00320	.00255	.00232
%RSD	5.0585	263.40	8008.1	98.759	6600.5	177.29	161.59	6.2433
#1	.00382	-.02711	-.00030	.01149	.00142	.00145	-.00134	.03895
#2	.00354	-.00319	.00002	.00357	-.00108	.00516	.00266	.03453
#3	.00390	.00925	.00029	.00125	-.00040	-.00120	.00341	.03795
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 18:11:52 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	.00036	-.00017	-.00186	.00075	.00012	.00425
Stddev	.00040	.00044	.01020	.00315	.00028	.00007	.00095
%RSD	153.60	122.95	5879.7	169.59	36.989	59.021	22.345
#1	.00000	.00086	.00219	-.00527	.00044	.00006	.00508
#2	.00073	.00017	.00864	-.00126	.00081	.00010	.00321
#3	.00006	.00004	-.01135	.00095	.00098	.00019	.00446
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9372.1	56632.	2874.9
Stddev	24.8	50.	14.1
%RSD	.26420	.08878	.48885
#1	9350.8	56589.	2886.0
#2	9366.2	56619.	2859.1
#3	9399.3	56687.	2879.7

Approved: June 27, 2016

Sample Name: L1606098610 Acquired: 6/25/2016 18:15:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00168	.00613	.00026	.00622	.01341	.00005	115.37	.00029
Stddev	.00132	.00327	.00219	.00120	.00108	.00003	.56	.00010
%RSD	78.702	53.342	840.89	19.355	8.0675	55.551	.48696	35.866
#1	.00017	.00551	-.00222	.00662	.01310	.00009	115.81	.00019
#2	.00222	.00322	.00107	.00487	.01252	.00003	114.73	.00040
#3	.00265	.00967	.00193	.00717	.01462	.00004	115.55	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	.00098	.00166	.06083	.38326	.00831	27.726	.01242
Stddev	.00045	.00011	.00061	.01132	.08932	.00154	.200	.00158
%RSD	1035.7	11.515	36.634	18.614	23.306	18.467	.72137	12.708
#1	-.00034	.00088	.00210	.06356	.35599	.00912	27.699	.01068
#2	-.00027	.00110	.00191	.04839	.48304	.00927	27.542	.01377
#3	.00048	.00096	.00096	.07054	.31076	.00654	27.939	.01280
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	14.397	.00169	.00670	.00176	-.00418	.00480	3.9389
Stddev	.00003	.096	.00045	.00675	.00408	.00345	.00343	.0208
%RSD	3.3704	.66673	26.485	100.67	231.83	82.446	71.530	.52736
#1	.00075	14.373	.00205	.00909	-.00024	-.00395	.00094	3.9592
#2	.00074	14.315	.00119	.01193	.00646	-.00774	.00595	3.9398
#3	.00079	14.503	.00185	-.00091	-.00093	-.00086	.00752	3.9176
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098610 Acquired: 6/25/2016 18:15:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00034**	**.52737**	**-.01662**	**-.00476**	**.00053**	**.01128**	**.00653**
Stddev	.00061	.00238	.00515	.00157	.00069	.00008	.00193
%RSD	181.06	.45087	31.015	32.913	130.43	.73884	29.481
#1	-.00078	.52702	-.01240	-.00297	.00012	.01121	.00451
#2	.00036	.52519	-.01509	-.00547	.00132	.01137	.00674
#3	-.00059	.52991	-.02236	-.00585	.00014	.01126	.00835
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9795.7**	**59337.**	**3075.9**
Stddev	21.1	178.	25.1
%RSD	.21493	.29915	.81568
#1	9771.4	59262.	3048.2
#2	9807.4	59210.	3082.7
#3	9808.3	59540.	3097.0

Approved: June 27, 2016

Sample Name: L1606098612 Acquired: 6/25/2016 18:19:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00237	.00267	-.00060	.08716	.06662	.00041	142.66	.00007
Stddev	.00073	.00275	.00337	.00141	.00149	.00002	1.19	.00021
%RSD	30.688	102.87	562.71	1.6192	2.2393	3.9782	.83233	319.26
#1	.00315	.00518	-.00334	.08576	.06575	.00041	141.33	.00027
#2	.00225	-.00027	-.00161	.08858	.06577	.00039	143.01	.00007
#3	.00171	.00310	.00316	.08713	.06835	.00042	143.63	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.00135	.04528	.02649	1.6602	.01963	40.720	.03253
Stddev	.00034	.00053	.00134	.03733	.1018	.00353	.262	.00324
%RSD	339.50	39.036	2.9680	140.93	6.1325	17.994	.64244	9.9559
#1	.00034	.00170	.04668	.04343	1.6128	.02218	40.440	.02879
#2	-.00029	.00162	.04400	-.01631	1.5907	.02112	40.763	.03448
#3	.00024	.00075	.04516	.05234	1.7770	.01560	40.958	.03432
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00115	26.540	.00106	.02312	.00172	-.00084	.00204	2.4275
Stddev	.00029	.172	.00094	.00593	.00284	.00147	.00269	.0046
%RSD	25.080	.64693	88.979	25.661	164.80	174.96	131.78	.18880
#1	.00089	26.345	.00153	.02349	.00164	-.00125	.00490	2.4289
#2	.00110	26.607	.00167	.01701	.00461	-.00205	-.00043	2.4311
#3	.00146	26.668	-.00003	.02886	-.00107	.00079	.00165	2.4223
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098612 Acquired: 6/25/2016 18:19:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**1.7410**	**-.01626**	**-.00241**	**.00038**	**.05602**	**.00415**
Stddev	.00061	.0138	.00313	.00137	.00051	.00009	.00053
%RSD	273.86	.79166	19.237	56.738	134.14	.16489	12.835
#1	-.00019	1.7255	-.01265	-.00306	.00050	.05591	.00443
#2	.00092	1.7457	-.01795	-.00084	.00081	.05608	.00354
#3	-.00006	1.7519	-.01818	-.00334	-.00018	.05607	.00449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9747.5**	**58989.**	**3047.5**
Stddev	4.1	78.	13.8
%RSD	.04198	.13200	.45213
#1	9749.1	58936.	3063.4
#2	9750.6	59079.	3039.1
#3	9742.9	58952.	3040.0

Approved: June 27, 2016

Sample Name: L1606098614 Acquired: 6/25/2016 18:23:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00279	.01008	-.00066	.03390	.03124	.00010	196.20	.00021
Stddev	.00112	.00383	.00147	.00206	.00013	.00007	.85	.00008
%RSD	40.043	38.038	221.13	6.0906	.42986	73.782	.43251	39.178
#1	.00183	.00766	.00090	.03506	.03108	.00016	195.71	.00030
#2	.00402	.00807	-.00201	.03513	.03132	.00002	195.70	.00014
#3	.00253	.01449	-.00089	.03152	.03131	.00013	197.18	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.00088	.00840	.02428	2.9211	.02334	75.647	.04008
Stddev	.00023	.00045	.00064	.00605	.0291	.00193	.677	.00318
%RSD	446.71	50.770	7.6701	24.929	.99693	8.2676	.89445	7.9254
#1	-.00007	.00063	.00780	.03006	2.8958	.02251	74.950	.04023
#2	.00031	.00062	.00908	.02477	2.9529	.02197	75.691	.03683
#3	-.00009	.00140	.00832	.01799	2.9145	.02555	76.301	.04318
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	22.556	.00040	.01184	.00385	-.00016	.00418	3.4833
Stddev	.00033	.097	.00156	.00464	.00193	.00051	.00681	.0215
%RSD	46.348	.43032	390.32	39.236	50.052	315.18	162.82	.61768
#1	.00068	22.526	-.00110	.00655	.00167	-.00006	.01171	3.5066
#2	.00040	22.478	.00029	.01372	.00533	-.00072	-.00154	3.4792
#3	.00106	22.665	.00201	.01524	.00455	.00029	.00237	3.4641
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098614 Acquired: 6/25/2016 18:23:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**2.3670**	**-.02425**	**-.00232**	**-.00024**	**.02160**	**.00232**
Stddev	.00092	.0076	.00398	.00117	.00100	.00003	.00161
%RSD	715.81	.32195	16.401	50.456	415.47	.12320	69.325
#1	.00091	2.3659	-.02580	-.00236	.00091	.02157	.00413
#2	-.00082	2.3599	-.02722	-.00113	-.00075	.02159	.00107
#3	-.00048	2.3751	-.01973	-.00348	-.00089	.02163	.00175
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9640.5**	**58425.**	**3058.6**
Stddev	20.6	100.	4.7
%RSD	.21337	.17110	.15390
#1	9631.4	58473.	3059.7
#2	9664.1	58492.	3062.6
#3	9626.1	58310.	3053.4

Approved: June 27, 2016

Sample Name: L1606098616 Acquired: 6/25/2016 18:27:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00115	.03265	.00256	.11861	.01251	.00029	229.75	.00020
Stddev	.00195	.00899	.00533	.00161	.00061	.00014	.36	.00016
%RSD	169.27	27.532	208.27	1.3580	4.8819	47.504	.15530	78.536
#1	.00069	.04218	-.00197	.11885	.01280	.00014	229.65	.00038
#2	-.00053	.02433	.00844	.12008	.01292	.00030	229.45	.00006
#3	.00329	.03143	.00122	.11689	.01181	.00042	230.15	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00062	.00178	.06744	.03108	3.2126	.03682	84.360	.29574
Stddev	.00023	.00069	.00047	.01537	.1307	.00386	.426	.00133
%RSD	37.410	38.666	.69994	49.454	4.0677	10.480	.50488	.44809
#1	.00042	.00192	.06781	.02007	3.0741	.03526	83.896	.29633
#2	.00087	.00239	.06691	.04863	3.2299	.03400	84.450	.29422
#3	.00056	.00104	.06760	.02452	3.3338	.04122	84.734	.29667
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00072	71.143	.00123	.03078	.00375	-.00200	.00018	5.1619
Stddev	.00027	.049	.00055	.00199	.00114	.00238	.00481	.0107
%RSD	37.642	.06818	44.575	6.4658	30.424	119.08	2715.0	.20775
#1	.00061	71.192	.00158	.03108	.00244	-.00009	.00517	5.1511
#2	.00102	71.095	.00060	.02865	.00425	-.00467	-.00442	5.1621
#3	.00051	71.141	.00151	.03260	.00456	-.00125	-.00023	5.1725
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098616 Acquired: 6/25/2016 18:27:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	6.5212	-.02963	-.00177	-.00109	.08946	.00332
Stddev	.00060	.0079	.00654	.00230	.00079	.00019	.00190
%RSD	161.30	.12151	22.085	130.49	72.258	.21177	57.202
#1	.00105	6.5204	-.02657	.00051	-.00123	.08936	.00540
#2	.00018	6.5138	-.02518	-.00171	-.00179	.08968	.00287
#3	-.00011	6.5296	-.03715	-.00409	-.00024	.08933	.00168
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9566.8	58078.	3050.1
Stddev	16.9	52.	19.7
%RSD	.17631	.08955	.64584
#1	9563.8	58018.	3068.4
#2	9585.0	58111.	3029.2
#3	9551.7	58106.	3052.7

Approved: June 27, 2016

Sample Name: L1606098618 Acquired: 6/25/2016 18:31:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00155	-.00096	.00289	.04251	.02915	.00005	62.293	-.00011
Stddev	.00038	.00238	.00029	.00109	.00082	.00008	.092	.00019
%RSD	24.410	246.77	9.9664	2.5737	2.7985	149.80	.14819	166.73
#1	.00113	.00168	.00257	.04189	.03009	-.00003	62.335	-.00017
#2	.00185	-.00164	.00314	.04186	.02874	.00005	62.357	.00010
#3	.00168	-.00294	.00296	.04377	.02862	.00013	62.187	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00031	.00347	.01624	1.9071	.02198	20.259	.01093
Stddev	.00021	.00046	.00016	.00938	.1214	.00171	.067	.00376
%RSD	243.30	146.24	4.6588	57.772	6.3644	7.7782	.33311	34.347
#1	.00028	.00083	.00329	.00573	1.8306	.02394	20.336	.01303
#2	.00011	.00015	.00350	.01922	2.0470	.02118	20.230	.00660
#3	-.00013	-.00004	.00361	.02377	1.8435	.02082	20.211	.01318
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00102	25.999	-.00042	.00444	.00244	-.00359	.00392	3.1846
Stddev	.00023	.100	.00069	.00545	.00095	.00188	.00301	.0187
%RSD	22.864	.38558	161.73	122.87	39.121	52.433	76.809	.58628
#1	.00106	26.085	-.00101	-.00067	.00273	-.00311	.00526	3.2018
#2	.00123	26.024	.00033	.00381	.00321	-.00199	.00047	3.1874
#3	.00077	25.889	-.00059	.01018	.00137	-.00566	.00602	3.1647
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098618 Acquired: 6/25/2016 18:31:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	1.4545	-.00154	-.00233	.00037	.00832	.00208
Stddev	.00132	.0032	.00357	.00066	.00141	.00007	.00021
%RSD	228.95	.22347	232.21	28.221	386.86	.88012	10.206
#1	.00206	1.4546	-.00325	-.00241	-.00025	.00825	.00199
#2	-.00043	1.4577	-.00393	-.00294	-.00063	.00831	.00233
#3	.00009	1.4512	.00257	-.00163	.00198	.00839	.00193
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9841.2	59299.	3061.4
Stddev	105.5	272.	4.9
%RSD	1.0718	.45797	.16152
#1	9746.5	58986.	3061.4
#2	9822.2	59458.	3056.4
#3	9954.9	59454.	3066.3

Approved: June 27, 2016

Sample Name: L1606098620 Acquired: 6/25/2016 18:35:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.03312	.00066	.07608	.03474	.00017	4.5650	.00010
Stddev	.00141	.00304	.00168	.00356	.00133	.00010	.0156	.00016
%RSD	3777.7	9.1736	255.45	4.6823	3.8419	59.446	.34129	166.50
#1	-.00004	.03663	-.00075	.08018	.03521	.00029	4.5712	.00011
#2	.00149	.03142	.00252	.07372	.03577	.00014	4.5766	.00025
#3	-.00133	.03132	.00020	.07433	.03323	.00009	4.5473	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00112	.00060	.00299	.05475	.56414	.00988	1.7714	.01450
Stddev	.00021	.00082	.00143	.01752	.07965	.00243	.0462	.00322
%RSD	18.384	137.46	47.864	31.992	14.119	24.596	2.6071	22.223
#1	.00132	.00110	.00244	.06300	.59505	.00894	1.8247	.01687
#2	.00115	.00105	.00462	.03463	.62370	.00806	1.7436	.01579
#3	.00091	-.00035	.00192	.06662	.47367	.01264	1.7459	.01083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00137	251.01	-.00057	.03777	.00214	-.00589	.00108	2.0603
Stddev	.00029	.75	.00178	.00427	.00057	.00380	.00694	.0083
%RSD	21.156	.29997	313.28	11.296	26.364	64.542	640.75	.40056
#1	.00125	251.39	-.00025	.04217	.00279	-.00381	-.00651	2.0621
#2	.00170	251.50	-.00248	.03365	.00178	-.01028	.00710	2.0676
#3	.00115	250.15	.00103	.03749	.00186	-.00358	.00266	2.0514
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098620 Acquired: 6/25/2016 18:35:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00101**	**.14703**	**.00470**	**-.00231**	**.00100**	**.00923**	**.00423**
Stddev	.00046	.00057	.00299	.00179	.00041	.00019	.00094
%RSD	44.993	.38637	63.686	77.674	41.001	2.0938	22.219
#1	.00049	.14737	.00735	-.00044	.00130	.00917	.00391
#2	.00129	.14734	.00531	-.00246	.00116	.00906	.00349
#3	.00126	.14637	.00145	-.00402	.00053	.00944	.00529
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9725.3**	**58367.**	**3028.8**
Stddev	17.5	120.	15.3
%RSD	.18040	.20576	.50451
#1	9742.7	58420.	3020.7
#2	9707.6	58451.	3019.2
#3	9725.6	58230.	3046.4

Approved: June 27, 2016

Sample Name: L1606098622 Acquired: 6/25/2016 18:39:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	-.00596	.00037	.05747	.02764	.00023	127.72	.00011
Stddev	.00093	.00925	.00122	.00204	.00088	.00005	1.04	.00012
%RSD	79.226	155.22	327.64	3.5486	3.1759	23.660	.81279	108.09
#1	.00125	-.01464	.00026	.05716	.02813	.00022	127.35	.00021
#2	.00205	-.00701	-.00078	.05560	.02662	.00018	126.92	.00013
#3	.00020	.00377	.00164	.05965	.02815	.00028	128.89	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00090	.01009	.02031	2.5853	.01995	32.558	.04793
Stddev	.00056	.00109	.00042	.00894	.0945	.00518	.278	.00190
%RSD	208.67	121.92	4.1494	44.026	3.6562	25.950	.85453	3.9665
#1	.00085	.00146	.01042	.02811	2.6682	.02326	32.522	.05007
#2	.00021	-.00036	.01022	.02229	2.4824	.01399	32.299	.04730
#3	-.00026	.00160	.00962	.01055	2.6053	.02261	32.852	.04643
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	46.975	.00038	.00992	.00378	-.00381	.00198	3.5382
Stddev	.00001	.389	.00033	.00514	.00270	.00385	.00283	.0119
%RSD	1.5146	.82774	87.053	51.791	71.542	100.88	142.89	.33659
#1	.00038	46.842	.00000	.00464	.00569	-.00293	.00001	3.5245
#2	.00039	46.670	.00061	.01491	.00068	-.00048	.00522	3.5450
#3	.00039	47.413	.00052	.01022	.00497	-.00802	.00070	3.5451
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098622 Acquired: 6/25/2016 18:39:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	1.7827	-.01653	-.00317	-.00057	.00858	.00262
Stddev	.00056	.0144	.00634	.00502	.00088	.00017	.00024
%RSD	326.45	.80805	38.350	158.35	154.19	1.9458	9.0067
#1	-.00048	1.7747	-.02093	-.00538	-.00155	.00859	.00236
#2	.00051	1.7740	-.00927	.00258	.00014	.00841	.00281
#3	.00049	1.7993	-.01940	-.00671	-.00029	.00875	.00270
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9602.2	57749.	2959.9
Stddev	40.4	252.	26.3
%RSD	.42032	.43708	.88902
#1	9555.9	57561.	2977.4
#2	9630.3	57650.	2972.6
#3	9620.3	58036.	2929.6

Approved: June 27, 2016

Sample Name: L1606098624 Acquired: 6/25/2016 18:42:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00037**	**.00561**	**.00154**	**.40348**	**.02348**	**.00039**	**237.24**
Stddev	.00142	.00394	.00506	.00070	.00039	.00006	.43
%RSD	386.92	70.246	327.66	.17357	1.6661	16.452	.18001
#1	.00014	.00128	.00004	.40369	.02381	.00037	237.56
#2	-.00093	.00658	-.00259	.40270	.02305	.00046	237.41
#3	.00189	.00898	.00718	.40405	.02358	.00034	236.75
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**-.00007**	**.00152**	**.02649**	**.02448**	**5.9223**	**.01174**
Stddev	.00017	.00052	.00056	.00200	.00699	.0587	.00396
%RSD	362.68	725.31	36.507	7.5377	28.540	.99123	33.722
#1	-.00014	.00052	.00185	.02553	.03123	5.8563	.01398
#2	-.00015	-.00040	.00183	.02879	.02493	5.9416	.00717
#3	.00015	-.00034	.00088	.02516	.01728	5.9689	.01408
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**66.698**	**.32515**	**.00019**	**63.762**	**.00021**	**.01502**	**.00144**
Stddev	.426	.00095	.00039	.087	.00030	.00323	.00065
%RSD	.63897	.29073	207.41	.13653	145.82	21.500	44.732
#1	66.222	.32513	-.00023	63.794	-.00012	.01765	.00108
#2	67.045	.32421	.00055	63.829	.00049	.01601	.00219
#3	66.826	.32610	.00024	63.663	.00025	.01142	.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 27, 2016

Sample Name: L1606098624 Acquired: 6/25/2016 18:42:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00149**	**.00522**	**3.3709**	**-.00072**	**1.6690**	F **-.03355**	**-.00155**
Stddev	.00099	.00177	.0249	.00122	.0015	.00264	.00229
%RSD	66.177	33.876	.73770	169.83	.08806	7.8818	147.53
#1	-.00080	.00419	3.3514	-.00109	1.6686	-.03207	.00107
#2	-.00262	.00726	3.3989	-.00171	1.6706	-.03199	-.00316
#3	-.00106	.00421	3.3624	.00064	1.6678	-.03661	-.00256
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00040**	**.00877**	**.00210**
Stddev	.00049	.00015	.00054
%RSD	123.14	1.7509	25.986
#1	-.00082	.00894	.00208
#2	.00014	.00865	.00156
#3	-.00050	.00870	.00265
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9491.7**	**57630.**	**3009.2**
Stddev	78.4	156.	15.6
%RSD	.82592	.27138	.51996
#1	9550.0	57451.	2991.3
#2	9402.6	57694.	3015.7
#3	9522.6	57743.	3020.5

Approved: June 27, 2016

Sample Name: L1606098626 Acquired: 6/25/2016 18:46:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00327	.00679	.00038	.03972	.02631	.00014	117.32	.00023
Stddev	.00072	.00538	.00107	.00258	.00068	.00005	.34	.00019
%RSD	22.022	79.326	284.61	6.5079	2.6006	35.377	.28683	83.944
#1	.00409	.00166	-.00067	.03695	.02674	.00014	117.70	.00003
#2	.00295	.01240	.00033	.04014	.02552	.00019	117.19	.00023
#3	.00276	.00630	.00147	.04206	.02666	.00009	117.07	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.00126	.00604	.03025	1.5600	.01598	35.418	-.00162
Stddev	.00014	.00104	.00157	.00896	.0430	.00117	.155	.00177
%RSD	71.567	82.474	25.938	29.612	2.7589	7.3145	.43775	108.92
#1	.00004	.00238	.00775	.03493	1.5696	.01501	35.426	-.00126
#2	.00029	.00033	.00573	.01992	1.5974	.01567	35.569	-.00006
#3	.00026	.00107	.00466	.03588	1.5130	.01728	35.259	-.00354
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	17.994	-.00024	.00950	.00273	-.00253	.00429	2.8578
Stddev	.00029	.066	.00113	.00146	.00267	.00313	.00183	.0046
%RSD	65.363	.36928	461.23	15.318	98.010	123.57	42.598	.16060
#1	.00011	18.060	.00031	.00854	.00072	.00062	.00280	2.8530
#2	.00057	17.927	.00050	.00879	.00170	-.00564	.00374	2.8621
#3	.00066	17.996	-.00154	.01118	.00576	-.00258	.00633	2.8583
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098626 Acquired: 6/25/2016 18:46:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00012**	**.95352**	**-.01676**	**-.00181**	**.00025**	**.00656**	**.00282**
Stddev	.00004	.00361	.00400	.00055	.00086	.00005	.00124
%RSD	36.480	.37812	23.874	30.252	341.08	.79230	44.156
#1	.00017	.95765	-.01632	-.00120	.00116	.00654	.00348
#2	.00013	.95102	-.02097	-.00198	-.00055	.00661	.00138
#3	.00008	.95189	-.01300	-.00225	.00014	.00651	.00358
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9709.6**	**59301.**	**3058.5**
Stddev	45.7	137.	18.4
%RSD	.47038	.23115	.60138
#1	9758.2	59149.	3039.9
#2	9703.1	59336.	3058.7
#3	9667.6	59417.	3076.7

Approved: June 27, 2016

Sample Name: L1606098628 Acquired: 6/25/2016 18:50:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00127**	**.00062**	**.00226**	**.03408**	**.02631**	**.00011**	**202.60**
Stddev	.00142	.00505	.00320	.00146	.00145	.00006	1.09
%RSD	111.97	810.26	141.74	4.2925	5.4989	52.470	.53642
#1	.00192	-.00172	.00570	.03364	.02795	.00015	202.20
#2	.00225	-.00283	-.00063	.03289	.02521	.00012	201.76
#3	-.00036	.00642	.00171	.03571	.02576	.00005	203.83
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**-.00018**	**.00230**	**.00706**	**.02884**	**3.1108**	**.02231**
Stddev	.00015	.00008	.00109	.00066	.02764	.1253	.00468
%RSD	173.92	43.590	47.288	9.3696	95.862	4.0286	20.962
#1	.00015	-.00019	.00355	.00741	.06027	3.2199	.01700
#2	-.00008	-.00010	.00186	.00630	.00830	2.9739	.02412
#3	.00019	-.00026	.00151	.00747	.01794	3.1385	.02581
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**77.982**	**.03186**	**.00054**	**22.893**	**.00124**	**.00646**	**.00417**
Stddev	.421	.00093	.00029	.135	.00089	.00201	.00077
%RSD	.53979	2.9039	53.423	.59091	71.804	31.048	18.563
#1	77.763	.03137	.00064	22.869	.00109	.00439	.00500
#2	77.715	.03128	.00078	22.771	.00220	.00660	.00405
#3	78.467	.03292	.00022	23.039	.00044	.00839	.00347
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 27, 2016

Sample Name: L1606098628 Acquired: 6/25/2016 18:50:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00202**	**.00107**	**3.6233**	**.00060**	**2.4441**	F **-.03051**	**-.00323**
Stddev	.00386	.00287	.0015	.00175	.0120	.00406	.00089
%RSD	190.96	268.98	.04080	291.82	.49257	13.319	27.545
#1	.00200	.00365	3.6232	-.00046	2.4407	-.03513	-.00322
#2	-.00236	-.00203	3.6248	-.00036	2.4341	-.02890	-.00413
#3	-.00571	.00158	3.6218	.00262	2.4575	-.02750	-.00235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00057**	**.01373**	**.00279**
Stddev	.00055	.00005	.00121
%RSD	96.088	.39414	43.503
#1	-.00086	.01376	.00139
#2	-.00092	.01376	.00355
#3	.00006	.01367	.00343
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9549.4**	**58061.**	**2994.7**
Stddev	10.8	342.	16.3
%RSD	.11322	.58988	.54589
#1	9556.3	57786.	2984.2
#2	9554.9	57953.	3013.5
#3	9536.9	58445.	2986.3

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 18:54:37 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.36142	9.0966	F .35164	F .43504	F .88841	.04556	F 8.8985
Stddev	.00063	.0241	.00214	.00359	.00668	.00015	.0636
%RSD	.17458	.26527	.60772	.82605	.75211	.32062	.71530
#1	.36081	9.1069	.35253	.43880	.88074	.04567	8.8250
#2	.36138	9.0691	.35318	.43467	.89150	.04539	8.9365
#3	.36207	9.1139	.34920	.43164	.89299	.04562	8.9341
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Fail
Value			.40000	.50000	1.0000		10.000
Range			-10.000%	-10.000%	-10.000%		-10.000%

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04504	F .17683	F .44843	.45584	F 3.5682	F 43.223	.90012
Stddev	.00036	.00059	.00210	.00028	.0180	.402	.00642
%RSD	.79578	.33417	.46848	.06078	.50416	.93081	.71346
#1	.04493	.17615	.45006	.45571	3.5475	42.758	.89283
#2	.04475	.17711	.44916	.45565	3.5796	43.446	.90262
#3	.04544	.17723	.44606	.45616	3.5775	43.464	.90492
Check ?	Chk Pass	Chk Fail	Chk Fail	Chk Pass	Chk Fail	Chk Fail	Chk Pass
Value		.20000	.50000		4.0000	50.000	
Range		-10.000%	-10.000%		-10.000%	-10.000%	

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 8.4568	F .44683	.90610	F 43.837	.45006	F 8.8106	F .44997
Stddev	.1941	.00153	.00307	.290	.00031	.0184	.00285
%RSD	2.2957	.34349	.33891	.66256	.06941	.20845	.63417
#1	8.2816	.44509	.90942	43.504	.44975	8.7897	.44790
#2	8.6655	.44738	.90552	43.973	.45037	8.8181	.44879
#3	8.4231	.44801	.90336	44.035	.45007	8.8241	.45322
Check ?	Chk Fail	Chk Fail	Chk Pass	Chk Fail	Chk Pass	Chk Fail	Chk Fail
Value	10.000	.50000		50.000		10.000	.50000
Range	-10.000%	-10.000%		-10.000%		-10.000%	-10.000%

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 18:54:37 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 1.0511	F .35868	4.5430	F .88663	F .88982	F .89732	.46317
Stddev	.0038	.00393	.0064	.00114	.00700	.00126	.00115
%RSD	.35733	1.0963	.14052	.12909	.78679	.14039	.24883
#1	1.0514	.35522	4.5358	.88537	.88186	.89705	.46442
#2	1.0547	.35787	4.5453	.88691	.89256	.89622	.46295
#3	1.0472	.36295	4.5480	.88760	.89503	.89870	.46215
Check ?	Chk Fail	Chk Fail	Chk Pass	Chk Fail	Chk Fail	Chk Fail	Chk Pass
Value	1.2000	.40000		1.0000	1.0000	1.0000	
Range	-10.000%	-10.000%		-10.000%	-10.000%	-10.000%	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.92451	F .89326	F 2.6142
Stddev	.00239	.00079	.0303
%RSD	.25806	.08826	1.1591
#1	.92697	.89416	2.5794
#2	.92435	.89291	2.6285
#3	.92221	.89270	2.6347
Check ?	Chk Pass	Chk Fail	Chk Fail
Value		1.0000	1.0000
Range		-10.000%	10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10436.	62603.	3229.6
Stddev	7.	58.	39.3
%RSD	.06851	.09259	1.2179
#1	10435.	62597.	3274.8
#2	10443.	62548.	3203.4
#3	10429.	62663.	3210.5

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 18:58:15 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00102	-.00634	.00315	-.00143	.00123	.00009	-.03120	-.00001
Stddev	.00036	.00615	.00146	.00223	.00014	.00007	.03757	.00022
%RSD	35.623	96.910	46.271	156.16	11.328	79.889	120.40	3000.5
#1	.00142	-.00623	.00470	-.00112	.00129	.00016	.01024	.00017
#2	.00091	-.01255	.00293	-.00379	.00133	.00004	-.06303	-.00025
#3	.00072	-.00026	.00181	.00063	.00107	.00005	-.04081	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	-.00012	.00040	.00652	.00729	-.00094	.01960	-.00009
Stddev	.00003	.00070	.00057	.00448	.10732	.00258	.12813	.00039
%RSD	340.66	581.54	142.03	68.614	1471.3	275.05	653.72	408.22
#1	-.00000	.00019	-.00025	.00247	.06763	-.00204	-.01079	.00011
#2	.00004	-.00093	.00068	.01133	.07087	.00201	.16019	-.00054
#3	-.00001	.00037	.00077	.00577	-.11662	-.00279	-.09060	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00312	.01765	-.00021	.00497	.00440	.00279	.00542	.03094
Stddev	.00023	.01443	.00123	.00520	.00590	.00458	.00181	.00198
%RSD	7.4573	81.775	586.87	104.64	134.12	164.15	33.357	6.4039
#1	.00298	.03423	-.00101	.00374	.00273	.00293	.00481	.03016
#2	.00339	.00793	-.00083	.01067	.01095	-.00186	.00399	.03319
#3	.00300	.01078	.00121	.00049	-.00049	.00730	.00745	.02947
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 18:58:15 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	.00057	.00328	-.00363	.00052	.00010	.00222
Stddev	.00020	.00050	.00575	.00205	.00106	.00011	.00064
%RSD	66.832	88.088	175.09	56.396	206.25	116.18	28.891
#1	.00017	.00114	-.00137	-.00544	-.00047	.00019	.00164
#2	.00052	.00028	.00971	-.00141	.00038	-.00003	.00291
#3	.00019	.00027	.00151	-.00405	.00164	.00012	.00210
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10029.	60890.	3064.8
Stddev	14.	97.	13.9
%RSD	.13680	.15850	.45397
#1	10045.	60780.	3055.3
#2	10022.	60930.	3080.8
#3	10020.	60960.	3058.3

Approved: June 27, 2016

Sample Name: L1606098630 Acquired: 6/25/2016 19:02:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00160**	**.04734**	**-.00156**	**.13569**	**.01871**	**.00015**	**238.04**
Stddev	.00181	.00348	.00404	.00135	.00123	.00008	.85
%RSD	113.48	7.3553	258.52	.99665	6.5967	52.824	.35679
#1	.00017	.04905	-.00155	.13421	.01822	.00022	239.01
#2	.00364	.04964	.00247	.13685	.01779	.00007	237.71
#3	.00098	.04333	-.00561	.13603	.02011	.00014	237.41
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00026**	**.00032**	**.00251**	**.01182**	**.03060**	**3.4183**	**.04090**
Stddev	.00010	.00018	.00081	.00072	.01332	.0462	.00200
%RSD	39.577	56.009	32.204	6.0677	43.540	1.3506	4.8796
#1	.00014	.00047	.00287	.01260	.01963	3.3856	.03874
#2	.00034	.00036	.00308	.01119	.04543	3.4711	.04128
#3	.00028	.00012	.00159	.01167	.02674	3.3981	.04268
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**90.439**	**.21655**	**.00156**	**78.879**	**.00140**	**.01756**	**.00033**
Stddev	.173	.00121	.00013	.416	.00068	.00677	.00046
%RSD	.19086	.55720	8.0204	.52709	48.349	38.536	138.30
#1	90.626	.21726	.00143	79.353	.00191	.01647	.00076
#2	90.405	.21515	.00168	78.710	.00063	.02480	-.00016
#3	90.286	.21722	.00157	78.574	.00166	.01140	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 27, 2016

Sample Name: L1606098630 Acquired: 6/25/2016 19:02:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00294**	**-.00177**	**5.6111**	**-.00017**	**7.0275**	F **-.03316**	**-.00254**
Stddev	.00229	.00087	.0076	.00038	.0379	.00293	.00099
%RSD	77.743	49.294	.13521	227.38	.53946	8.8247	38.798
#1	-.00354	-.00250	5.6121	-.00026	7.0707	-.03043	-.00171
#2	-.00042	-.00199	5.6030	-.00050	7.0124	-.03625	-.00363
#3	-.00488	-.00081	5.6181	.00025	6.9995	-.03280	-.00229
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00065**	**.02003**	**.00667**
Stddev	.00064	.00007	.00116
%RSD	98.374	.34297	17.407
#1	-.00116	.01996	.00557
#2	-.00088	.02003	.00654
#3	.00007	.02010	.00788
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9361.9**	**56594.**	**2990.6**
Stddev	23.4	147.	20.1
%RSD	.24995	.25968	.67365
#1	9379.7	56762.	2967.6
#2	9370.7	56528.	3005.2
#3	9335.4	56491.	2998.9

Approved: June 27, 2016

Sample Name: L1606098632S Acquired: 6/25/2016 19:06:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18902**	**4.8212**	**.19116**	**.97374**	**.50077**	**.02402**	**134.52**	**.02388**
Stddev	.00088	.0081	.00239	.00462	.00118	.00003	.34	.00017
%RSD	.46488	.16867	1.2481	.47438	.23617	.14314	.25228	.70472
#1	.18980	4.8271	.19377	.97198	.50123	.02406	134.68	.02373
#2	.18919	4.8246	.18910	.97898	.49943	.02400	134.13	.02406
#3	.18807	4.8119	.19060	.97026	.50165	.02400	134.75	.02386
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09189**	**.23665**	**.24218**	**1.8859**	**25.617**	**.51395**	**37.596**	**.28166**
Stddev	.00021	.00120	.00028	.0089	.037	.00043	.192	.00203
%RSD	.23170	.50673	.11712	.47202	.14467	.08375	.50984	.71945
#1	.09190	.23534	.24190	1.8828	25.580	.51444	37.585	.28070
#2	.09167	.23691	.24247	1.8960	25.619	.51376	37.792	.28399
#3	.09210	.23769	.24219	1.8790	25.654	.51365	37.409	.28029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49448**	**71.230**	**.23175**	**4.7310**	**.23416**	**.56777**	**.18400**	**6.1097**
Stddev	.00088	.164	.00128	.0060	.00191	.00602	.00319	.0038
%RSD	.17884	.22978	.55101	.12688	.81554	1.0604	1.7354	.06148
#1	.49529	71.252	.23067	4.7327	.23616	.57278	.18033	6.1129
#2	.49354	71.056	.23316	4.7244	.23394	.56944	.18613	6.1108
#3	.49461	71.382	.23142	4.7360	.23236	.56109	.18555	6.1056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098632S Acquired: 6/25/2016 19:06:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.46869	2.2839	.45630	.23531	.49366	.46774	.01477
Stddev	.00224	.0055	.00571	.00163	.00079	.00046	.00310
%RSD	.47718	.23955	1.2515	.69229	.16011	.09871	21.022
#1	.47047	2.2847	.45118	.23550	.49390	.46819	.01151
#2	.46942	2.2781	.45528	.23360	.49431	.46777	.01510
#3	.46618	2.2889	.46246	.23684	.49278	.46726	.01769
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9505.1	57443.	2995.1
Stddev	12.6	181.	7.9
%RSD	.13263	.31567	.26290
#1	9490.9	57238.	2989.7
#2	9509.8	57583.	3004.2
#3	9514.8	57507.	2991.6

Approved: June 27, 2016

Sample Name: L1606098634S Acquired: 6/25/2016 19:09:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19165**	**4.8639**	**.19259**	**.98224**	**.50433**	**.02434**	**136.41**	**.02397**
Stddev	.00283	.0058	.00215	.00673	.00181	.00002	.41	.00039
%RSD	1.4742	.11932	1.1143	.68564	.35885	.08391	.29851	1.6453
#1	.19474	4.8576	.19410	.97512	.50399	.02434	136.06	.02438
#2	.19099	4.8690	.19014	.98851	.50272	.02431	136.30	.02394
#3	.18921	4.8651	.19354	.98310	.50629	.02435	136.86	.02359
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09370**	**.23944**	**.24457**	**1.9014**	**25.851**	**.51838**	**38.336**	**.27292**
Stddev	.00027	.00087	.00143	.0128	.044	.00156	.167	.00356
%RSD	.28910	.36336	.58497	.67456	.17178	.30011	.43499	1.3028
#1	.09395	.23880	.24603	1.9045	25.902	.51991	38.172	.27676
#2	.09341	.23909	.24449	1.9124	25.822	.51842	38.330	.27226
#3	.09373	.24043	.24318	1.8873	25.829	.51680	38.505	.26974
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49947**	**74.848**	**.23412**	**4.7760**	**.23373**	**.57493**	**.18272**	**6.1711**
Stddev	.00101	.224	.00114	.0149	.00097	.00427	.00635	.0140
%RSD	.20163	.29965	.48754	.31111	.41349	.74220	3.4752	.22725
#1	.50053	74.661	.23450	4.7820	.23289	.57819	.18571	6.1610
#2	.49852	74.786	.23283	4.7591	.23352	.57010	.18702	6.1652
#3	.49936	75.096	.23502	4.7869	.23478	.57650	.17542	6.1871
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098634S Acquired: 6/25/2016 19:09:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47482**	**2.3307**	**.45927**	**.23900**	**.49848**	**.47191**	**.00533**
Stddev	.00086	.0091	.01368	.00122	.00164	.00108	.00076
%RSD	.18068	.39132	2.9792	.51192	.32871	.22881	14.237
#1	.47581	2.3242	.47279	.23871	.49842	.47284	.00492
#2	.47440	2.3268	.44543	.23794	.50015	.47073	.00620
#3	.47425	2.3411	.45961	.24034	.49687	.47217	.00485
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9464.2**	**57182.**	**2975.2**
Stddev	11.1	55.	14.2
%RSD	.11755	.09672	.47580
#1	9463.1	57128.	2991.6
#2	9475.9	57180.	2967.1
#3	9453.7	57239.	2967.1

Approved: June 27, 2016

Sample Name: L1606098636SD Acquired: 6/25/2016 19:13:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19162**	**4.8756**	**.19532**	**1.3252**	**.50705**	**.02431**	**243.19**	**.02436**
Stddev	.00178	.0135	.00259	.0039	.00540	.00016	2.22	.00014
%RSD	.92905	.27765	1.3247	.29569	1.0646	.65896	.91281	.56637
#1	.19240	4.8805	.19500	1.3207	.51326	.02435	245.71	.02449
#2	.18958	4.8859	.19805	1.3282	.50441	.02444	242.33	.02421
#3	.19287	4.8603	.19291	1.3265	.50349	.02413	241.52	.02439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09290**	**.23671**	**.29685**	**1.9145**	**29.596**	**.51587**	**71.839**	**.60737**
Stddev	.00022	.00172	.00059	.0369	.191	.00194	.252	.00417
%RSD	.23161	.72762	.19867	1.9280	.64372	.37694	.35080	.68663
#1	.09280	.23499	.29694	1.9564	29.779	.51781	72.039	.61218
#2	.09315	.23843	.29739	1.9005	29.610	.51588	71.921	.60495
#3	.09276	.23672	.29622	1.8867	29.399	.51393	71.556	.60497
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49958**	**89.482**	**.23320**	**4.8335**	**.23655**	**.57885**	**.18210**	**6.3388**
Stddev	.00153	.784	.00050	.0076	.00169	.00511	.00473	.0094
%RSD	.30585	.87569	.21296	.15803	.71424	.88252	2.5997	.14817
#1	.49951	90.366	.23335	4.8331	.23580	.57825	.18575	6.3355
#2	.50114	89.209	.23361	4.8414	.23849	.57407	.18379	6.3494
#3	.49809	88.872	.23265	4.8261	.23537	.58424	.17675	6.3314
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098636SD Acquired: 6/25/2016 19:13:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47318**	**2.1504**	**.45196**	**.23380**	**.49243**	**.47726**	**.00396**
Stddev	.00235	.0203	.01296	.00229	.00254	.00239	.00140
%RSD	.49768	.94209	2.8683	.97909	.51630	.50171	35.414
#1	.47220	2.1736	.45301	.23117	.49302	.48002	.00408
#2	.47587	2.1417	.46436	.23534	.49462	.47583	.00530
#3	.47148	2.1359	.43850	.23489	.48964	.47592	.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9466.5**	**57687.**	**3000.7**
Stddev	28.5	42.	21.4
%RSD	.30105	.07212	.71153
#1	9499.3	57706.	2976.5
#2	9448.1	57639.	3017.0
#3	9452.0	57716.	3008.4

Approved: June 27, 2016

Sample Name: L1606098638SD Acquired: 6/25/2016 19:16:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-09

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19635**	**5.0111**	**.19662**	**1.3658**	**.50590**	**.02455**	**238.74**	**.02470**
Stddev	.00189	.0495	.00202	.0129	.00507	.00013	2.44	.00046
%RSD	.96164	.98714	1.0288	.94297	1.0027	.51871	1.0237	1.8632
#1	.19421	4.9540	.19875	1.3513	.50004	.02440	236.05	.02465
#2	.19777	5.0396	.19638	1.3761	.50894	.02464	240.82	.02518
#3	.19706	5.0398	.19472	1.3699	.50872	.02461	239.35	.02426
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09456**	**.24315**	**.24888**	**1.9280**	**29.506**	**.51676**	**69.466**	**.60260**
Stddev	.00054	.00286	.00145	.0328	.362	.00473	.757	.00806
%RSD	.56749	1.1744	.58163	1.6990	1.2271	.91552	1.0898	1.3377
#1	.09518	.24020	.24797	1.8914	29.119	.51186	68.628	.59529
#2	.09432	.24590	.25055	1.9547	29.837	.52131	70.101	.61124
#3	.09419	.24336	.24812	1.9378	29.562	.51712	69.668	.60126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50828**	**86.839**	**.23731**	**4.9079**	**.23796**	**.58722**	**.18727**	**6.3571**
Stddev	.00153	.812	.00040	.0105	.00122	.00763	.00717	.0147
%RSD	.30188	.93521	.16702	.21476	.51147	1.2987	3.8265	.23138
#1	.50998	85.938	.23758	4.9185	.23889	.59365	.18466	6.3682
#2	.50784	87.516	.23685	4.9076	.23841	.58922	.19537	6.3627
#3	.50701	87.061	.23748	4.8975	.23659	.57879	.18177	6.3405
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098638SD Acquired: 6/25/2016 19:16:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-09

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48230**	**2.1413**	**.45206**	**.24148**	**.50819**	**.47197**	**.00465**
Stddev	.00016	.0221	.00841	.00203	.00480	.00162	.00175
%RSD	.03337	1.0323	1.8614	.84256	.94539	.34380	37.692
#1	.48228	2.1164	.44367	.23931	.50264	.47335	.00633
#2	.48215	2.1586	.45201	.24177	.51108	.47237	.00283
#3	.48247	2.1488	.46050	.24334	.51084	.47018	.00481
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9367.1**	**56617.**	**3005.4**
Stddev	24.2	279.	8.9
%RSD	.25886	.49353	.29743
#1	9345.0	56900.	3015.6
#2	9363.2	56609.	2998.7
#3	9393.0	56341.	3002.0

Approved: June 27, 2016

Sample Name: L1606098640 Acquired: 6/25/2016 19:20:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00070	.00014	.00047	.01204	.00394	.00013	2.2418	.00009
Stddev	.00052	.00246	.00354	.00206	.00041	.00015	.0448	.00026
%RSD	75.327	1722.8	753.06	17.114	10.437	111.96	1.9977	298.05
#1	-.00120	.00298	.00434	.01328	.00360	.00001	2.2906	-.00017
#2	-.00073	-.00107	-.00032	.00966	.00384	.00009	2.2025	.00008
#3	-.00016	-.00148	-.00261	.01318	.00440	.00029	2.2324	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	-.00023	.00162	.03197	.19488	-.00199	.70657	-.00157
Stddev	.00020	.00043	.00063	.03003	.05117	.00159	.10487	.00034
%RSD	172.28	188.43	38.822	93.912	26.255	79.698	14.843	21.723
#1	-.00014	.00024	.00129	.06510	.20250	-.00219	.77648	-.00118
#2	.00010	-.00061	.00122	.00654	.14033	-.00346	.58598	-.00170
#3	-.00030	-.00032	.00234	.02429	.24180	-.00031	.75725	-.00182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	1.3245	-.00000	-.00132	.00155	-.00034	.00103	1.8661
Stddev	.00043	.0047	.00128	.00539	.00283	.00334	.00522	.0030
%RSD	69.622	.35334	42382.	408.47	183.18	979.63	508.03	.16155
#1	.00110	1.3264	-.00135	.00378	-.00057	-.00417	-.00062	1.8696
#2	.00029	1.3279	.00121	-.00695	.00477	.00193	.00687	1.8648
#3	.00045	1.3192	.00013	-.00078	.00045	.00122	-.00317	1.8641
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098640 Acquired: 6/25/2016 19:20:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	.02890	-.00018	-.00245	.00125	.00316	.00092
Stddev	.00104	.00022	.00313	.00122	.00036	.00008	.00187
%RSD	172.87	.75581	1755.3	49.848	28.928	2.5446	202.44
#1	-.00053	.02865	.00335	-.00105	.00165	.00322	-.00102
#2	.00152	.02900	-.00128	-.00328	.00095	.00320	.00271
#3	.00082	.02905	-.00260	-.00302	.00115	.00307	.00108
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9902.6	60698.	3047.4
Stddev	11.3	88.	21.1
%RSD	.11376	.14441	.69149
#1	9915.6	60659.	3066.8
#2	9895.9	60798.	3025.0
#3	9896.3	60636.	3050.3

Approved: June 27, 2016

Sample Name: L1606098642 Acquired: 6/25/2016 19:24:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00084	-.00125	.00012	.00714	.00291	.00014	2.2957	-.00008
Stddev	.00151	.00416	.00315	.00149	.00136	.00010	.0287	.00011
%RSD	179.62	331.72	2535.0	20.853	46.790	76.580	1.2503	140.66
#1	.00086	.00295	-.00350	.00543	.00443	.00023	2.2645	-.00020
#2	-.00134	-.00134	.00221	.00806	.00180	.00015	2.3210	.00001
#3	-.00204	-.00537	.00167	.00794	.00250	.00002	2.3016	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00054	.00126	.01879	.13459	.00101	.70251	-.00031
Stddev	.00021	.00073	.00033	.01779	.06299	.00139	.04015	.00188
%RSD	76.216	135.58	26.342	94.669	46.805	137.70	5.7150	613.21
#1	.00043	.00109	.00162	.03687	.13442	.00244	.65916	.00151
#2	.00035	-.00029	.00096	.01820	.19766	.00092	.73842	-.00224
#3	.00004	.00081	.00121	.00130	.07167	-.00034	.70994	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	1.3914	-.00012	.00599	-.00050	-.00197	.00192	1.9147
Stddev	.00031	.0274	.00128	.00446	.00248	.00478	.00405	.0013
%RSD	265.01	1.9704	1039.6	74.477	491.66	243.04	211.10	.06740
#1	-.00017	1.4067	.00078	.00869	.00158	.00334	.00542	1.9141
#2	.00008	1.4078	.00044	.00843	.00015	-.00331	-.00251	1.9137
#3	.00044	1.3598	-.00159	.00084	-.00325	-.00593	.00284	1.9161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098642 Acquired: 6/25/2016 19:24:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.02978**	**.00659**	**-.00224**	**.00021**	**.00288**	**.00046**
Stddev	.00041	.00031	.00898	.00218	.00024	.00011	.00203
%RSD	319.77	1.0309	136.22	97.103	115.48	3.6974	442.65
#1	.00034	.02969	.01094	-.00308	.00030	.00286	-.00018
#2	-.00043	.03012	.01258	.00023	.00040	.00300	.00273
#3	-.00030	.02953	-.00373	-.00388	-.00006	.00279	-.00117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9910.0**	**60405.**	**3027.1**
Stddev	8.6	109.	25.1
%RSD	.08719	.18086	.83024
#1	9909.0	60400.	3001.0
#2	9919.1	60298.	3029.3
#3	9901.9	60516.	3051.1

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 19:28:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.38218	9.6308	.37557	.46431	.95962	.04828	9.5695
Stddev	.00218	.0178	.00127	.00116	.00217	.00012	.0717
%RSD	.57165	.18471	.33835	.24921	.22635	.23895	.74942
#1	.37992	9.6388	.37606	.46299	.96032	.04841	9.5557
#2	.38232	9.6104	.37652	.46516	.96137	.04820	9.6471
#3	.38429	9.6432	.37413	.46479	.95719	.04823	9.5057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04801	.18801	.47395	.48473	3.7689	46.355	.97311
Stddev	.00014	.00020	.00045	.00153	.0264	.220	.00378
%RSD	.29427	.10445	.09483	.31643	.70136	.47512	.38849
#1	.04785	.18823	.47438	.48634	3.7952	46.500	.97746
#2	.04812	.18785	.47399	.48328	3.7693	46.464	.97068
#3	.04806	.18795	.47348	.48458	3.7423	46.102	.97118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.0717	.47590	.96524	47.107	.47852	9.3733	.47882
Stddev	.0608	.00396	.00399	.173	.00072	.0111	.00296
%RSD	.67059	.83199	.41378	.36832	.15104	.11884	.61810
#1	9.0038	.47335	.96959	47.188	.47773	9.3765	.47551
#2	9.1213	.48046	.96440	47.226	.47916	9.3609	.48123
#3	9.0900	.47388	.96173	46.908	.47866	9.3825	.47971
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 19:28:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1223**	**.37795**	**4.8400**	**.94463**	**.95969**	**.96684**	**.48966**
Stddev	.0016	.00541	.0100	.00151	.00470	.01176	.00307
%RSD	.14404	1.4313	.20631	.15941	.49016	1.2167	.62598
#1	1.1238	.37410	4.8492	.94636	.96229	.96908	.48613
#2	1.1206	.37562	4.8414	.94360	.96253	.97732	.49169
#3	1.1224	.38414	4.8294	.94394	.95426	.95412	.49116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.97958**	**.95235**	F **2.8246**
Stddev	.00154	.00042	.0035
%RSD	.15724	.04377	.12384
#1	.97882	.95263	2.8278
#2	.97857	.95254	2.8252
#3	.98136	.95187	2.8208
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10132.**	**61264.**	**3100.4**
Stddev	.	134.	6.9
%RSD	.00202	.21941	.22117
#1	10132.	61202.	3092.6
#2	10132.	61418.	3103.3
#3	10132.	61171.	3105.3

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 19:32:05 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00027**	**-.00034**	**.00165**	**-.00065**	**.00143**	**.00014**	**-.04509**	**-.00015**
Stddev	.00053	.00835	.00116	.00135	.00075	.00012	.04632	.00018
%RSD	198.69	2437.1	70.395	208.11	52.425	84.191	102.74	120.05
#1	.00081	.00499	.00229	-.00108	.00058	.00001	-.09453	-.00022
#2	.00023	-.00997	.00235	-.00174	.00173	.00020	-.03804	.00005
#3	-.00025	.00395	.00031	.00087	.00199	.00023	-.00270	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**-.00017**	**.00065**	**.02423**	**-.06433**	**-.00295**	**-.01903**	**-.00066**
Stddev	.00013	.00077	.00059	.01555	.07126	.00237	.08401	.00260
%RSD	162.10	456.13	90.441	64.178	110.77	80.373	441.41	395.33
#1	-.00022	-.00087	-.00002	.03897	.01654	-.00026	-.10302	.00036
#2	-.00006	.00066	.00091	.02575	-.09166	-.00387	.06499	-.00361
#3	.00004	-.00030	.00106	.00798	-.11789	-.00472	-.01907	.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00313**	**.02145**	**.00120**	**.00197**	**.00164**	**.00212**	**.00101**	**.04112**
Stddev	.00013	.00743	.00050	.00366	.00312	.00166	.00069	.00272
%RSD	4.1237	34.660	41.579	185.66	190.04	78.472	68.223	6.6255
#1	.00318	.03002	.00170	.00620	.00310	.00128	.00172	.03946
#2	.00323	.01754	.00070	-.00004	.00377	.00104	.00035	.04426
#3	.00298	.01678	.00121	-.00024	-.00194	.00404	.00097	.03964
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 19:32:05 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00072**	**.00051**	**-.00006**	**-.00149**	**-.00026**	**.00006**	**.00316**
Stddev	.00004	.00041	.00466	.00123	.00016	.00032	.00144
%RSD	4.9365	80.523	8195.1	82.501	61.089	521.42	45.405
#1	.00073	.00010	.00498	-.00182	-.00044	-.00016	.00318
#2	.00068	.00091	-.00094	-.00252	-.00020	.00042	.00172
#3	.00075	.00050	-.00421	-.00013	-.00014	-.00008	.00459
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9625.9**	**58446.**	**2947.7**
Stddev	17.4	102.	8.2
%RSD	.18036	.17465	.27941
#1	9605.9	58491.	2954.6
#2	9635.9	58518.	2950.0
#3	9636.0	58329.	2938.6

Approved: June 27, 2016

Sample Name: PBW LH Acquired: 6/25/2016 19:36:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	-.00480	.00297	-.00088	.00071	.00016	-.03609	-.00030
Stddev	.00096	.00538	.00061	.00047	.00081	.00006	.00576	.00022
%RSD	436.54	112.05	20.402	53.250	112.94	41.040	15.975	74.291
#1	-.00063	-.00271	.00258	-.00071	.00057	.00010	-.04014	-.00038
#2	.00002	-.00078	.00267	-.00141	-.00001	.00022	-.03863	-.00005
#3	.00126	-.01092	.00367	-.00052	.00158	.00014	-.02949	-.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.00027	.00021	.03551	.02057	.00058	-.03422	.00199
Stddev	.00019	.00046	.00040	.00062	.11033	.00127	.05831	.00213
%RSD	211.66	173.58	192.44	1.7348	536.36	218.26	170.39	107.33
#1	.00009	.00043	-.00014	.03559	.14793	.00205	.01703	.00051
#2	-.00029	.00063	.00065	.03485	-.04548	-.00019	-.09766	.00101
#3	-.00007	-.00025	.00012	.03607	-.04075	-.00011	-.02203	.00443
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	.01920	-.00013	.00015	.00308	-.00169	.00218	.00530
Stddev	.00020	.01381	.00043	.00436	.00410	.00157	.00344	.00135
%RSD	72.649	71.919	323.98	2952.6	133.25	92.573	157.59	25.417
#1	-.00050	.00540	-.00047	-.00185	.00268	-.00008	.00514	.00605
#2	-.00014	.01919	.00035	-.00286	.00737	-.00321	.00301	.00374
#3	-.00017	.03301	-.00027	.00515	-.00081	-.00179	-.00160	.00610
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: PBW LH Acquired: 6/25/2016 19:36:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.00001**	**.00007**	**-.00205**	**.00056**	**-.00012**	**.00138**
Stddev	.00105	.00006	.00526	.00274	.00041	.00008	.00122
%RSD	278.35	503.89	7708.4	133.89	73.183	68.172	88.458
#1	.00057	-.00005	.00045	-.00401	.00011	-.00018	.00093
#2	-.00020	.00002	-.00537	-.00321	.00065	-.00003	.00045
#3	-.00151	.00007	.00513	.00108	.00091	-.00016	.00276
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10355.**	**62690.**	**3143.1**
Stddev	14.	21.	40.1
%RSD	.13810	.03356	1.2743
#1	10371.	62711.	3176.8
#2	10343.	62669.	3098.8
#3	10351.	62689.	3153.6

Approved: June 27, 2016

Sample Name: LCSW LH Acquired: 6/25/2016 19:39:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19366**	**4.9137**	**.19220**	**.93203**	**.49068**	**.02467**	**4.9632**	**.02443**
Stddev	.00070	.0138	.00341	.00396	.00423	.00007	.0538	.00016
%RSD	.36335	.28142	1.7740	.42472	.86189	.28277	1.0835	.64799
#1	.19288	4.8983	.19002	.92766	.48616	.02461	4.9413	.02459
#2	.19385	4.9180	.19044	.93305	.49453	.02465	5.0244	.02441
#3	.19425	4.9249	.19613	.93537	.49136	.02474	4.9238	.02428
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09715**	**.24544**	**.24999**	**1.9443**	**23.472**	**.50293**	**4.6813**	**.24132**
Stddev	.00066	.00263	.00041	.0106	.182	.00291	.0938	.00318
%RSD	.68088	1.0726	.16565	.54556	.77586	.57762	2.0038	1.3188
#1	.09680	.24301	.25039	1.9373	23.301	.50365	4.6704	.23802
#2	.09792	.24824	.24956	1.9391	23.664	.50540	4.7800	.24157
#3	.09674	.24506	.25002	1.9565	23.450	.49973	4.5934	.24437
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50304**	**24.148**	**.24571**	**4.6828**	**.24554**	**.57884**	**.18202**	**2.4064**
Stddev	.00049	.122	.00061	.0125	.00123	.00461	.00367	.0046
%RSD	.09743	.50324	.24625	.26789	.50266	.79649	2.0171	.19316
#1	.50339	24.028	.24640	4.6758	.24587	.57352	.17868	2.4078
#2	.50325	24.271	.24545	4.6973	.24658	.58167	.18595	2.4102
#3	.50248	24.145	.24528	4.6753	.24418	.58132	.18143	2.4012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LCSW LH Acquired: 6/25/2016 19:39:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48493**	**.49684**	**.48674**	**.24907**	**.50464**	**.48284**	**.01676**
Stddev	.00108	.00397	.00310	.00041	.00236	.00325	.00211
%RSD	.22287	.79928	.63744	.16637	.46686	.67256	12.564
#1	.48462	.49378	.48665	.24947	.50200	.48055	.01435
#2	.48613	.50133	.48369	.24909	.50538	.48656	.01775
#3	.48404	.49542	.48989	.24864	.50653	.48141	.01820
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9761.3**	**59171.**	**3026.9**
Stddev	5.3	58.	23.7
%RSD	.05400	.09751	.78195
#1	9766.4	59236.	3050.7
#2	9755.9	59148.	3003.3
#3	9761.7	59127.	3026.7

Approved: June 27, 2016

Sample Name: L1606090723 Acquired: 6/25/2016 19:43:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	.01800	.14333	.20159	.04322	.00011	82.135	.00062
Stddev	.00074	.00440	.00262	.00108	.00176	.00009	.153	.00002
%RSD	81.113	24.457	1.8284	.53531	4.0750	85.790	.18660	3.6806
#1	.00039	.02274	.14560	.20094	.04396	.00020	82.043	.00061
#2	.00058	.01723	.14046	.20283	.04121	.00011	82.051	.00064
#3	.00176	.01403	.14393	.20099	.04450	.00001	82.312	.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00085	.00186	.00181	3.0759	4.3146	.03826	51.383	.03252
Stddev	.00009	.00076	.00070	.0448	.0921	.00398	.083	.00353
%RSD	10.346	41.113	38.683	1.4576	2.1337	10.401	.16137	10.870
#1	.00081	.00098	.00242	3.0253	4.2316	.04144	51.475	.03488
#2	.00094	.00223	.00197	3.0916	4.4136	.03380	51.362	.02845
#3	.00078	.00237	.00105	3.1108	4.2984	.03956	51.313	.03422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00258	133.73	-.00015	.01191	.00179	-.00228	.00665	8.0891
Stddev	.00008	.12	.00113	.00694	.00129	.00283	.00532	.0280
%RSD	3.2153	.09189	747.26	58.268	71.933	124.12	79.994	.34670
#1	.00264	133.81	-.00126	.01916	.00318	-.00553	.01195	8.1130
#2	.00249	133.59	.00099	.00533	.00159	-.00033	.00671	8.0582
#3	.00262	133.80	-.00018	.01123	.00062	-.00099	.00131	8.0960
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606090723 Acquired: 6/25/2016 19:43:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**2.6416**	**-.00732**	**-.00182**	**-.00046**	**.00542**	**.00128**
Stddev	.00038	.0023	.00771	.00082	.00062	.00021	.00019
%RSD	7616.2	.08543	105.44	45.025	136.48	3.8805	14.578
#1	.00020	2.6400	-.01112	-.00260	-.00073	.00544	.00120
#2	.00025	2.6406	.00156	-.00189	.00026	.00563	.00115
#3	-.00044	2.6441	-.01239	-.00097	-.00089	.00521	.00149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9566.3**	**57706.**	**3016.3**
Stddev	21.2	40.	8.6
%RSD	.22170	.06981	.28561
#1	9583.7	57737.	3006.9
#2	9572.5	57660.	3023.9
#3	9542.7	57721.	3018.2

Approved: June 27, 2016

Sample Name: L1606098601 Acquired: 6/25/2016 19:47:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	.63226	.00101	.09520	.04126	.00012	31.325	.00014
Stddev	.00183	.00734	.00119	.00196	.00050	.00007	.135	.00021
%RSD	298.65	1.1612	118.08	2.0630	1.2197	57.984	.43030	153.25
#1	.00185	.62395	-.00028	.09744	.04176	.00005	31.451	-.00001
#2	-.00149	.63786	.00207	.09436	.04076	.00018	31.183	.00005
#3	.00148	.63498	.00124	.09379	.04125	.00013	31.342	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	.00251	.00378	1.4621	1.2075	.01677	5.9028	.04892
Stddev	.00024	.00020	.00199	.0362	.0294	.00358	.0605	.00066
%RSD	20.175	7.8011	52.767	2.4785	2.4351	21.330	1.0243	1.3538
#1	.00129	.00246	.00338	1.4981	1.1821	.01735	5.9016	.04861
#2	.00090	.00272	.00594	1.4256	1.2008	.02003	5.8430	.04848
#3	.00133	.00234	.00201	1.4624	1.2397	.01294	5.9639	.04969
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00119	122.45	.00122	.03952	.00058	-.00189	.00677	4.0503
Stddev	.00024	.35	.00124	.00581	.00157	.00112	.00463	.0371
%RSD	19.925	.28250	101.52	14.694	270.52	59.209	68.294	.91471
#1	.00135	122.68	.00181	.04077	.00200	-.00256	.00933	4.0789
#2	.00131	122.05	-.00020	.04460	-.00110	-.00252	.00956	4.0634
#3	.00092	122.62	.00206	.03319	.00084	-.00060	.00143	4.0084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098601 Acquired: 6/25/2016 19:47:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.54428**	**.01566**	**-.00252**	**.00147**	**.03503**	**.00138**
Stddev	.00052	.00100	.00262	.00158	.00115	.00040	.00180
%RSD	330.58	.18426	16.757	62.766	78.497	1.1335	130.15
#1	-.00032	.54517	.01814	-.00107	.00112	.03533	.00331
#2	-.00057	.54319	.01592	-.00228	.00275	.03517	-.00024
#3	.00042	.54448	.01291	-.00422	.00053	.03458	.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9674.1**	**58435.**	**3018.4**
Stddev	45.2	129.	18.2
%RSD	.46720	.22152	.60258
#1	9673.0	58340.	2997.4
#2	9719.9	58382.	3028.7
#3	9629.5	58582.	3029.1

Approved: June 27, 2016

Sample Name: L1606098603 Acquired: 6/25/2016 19:51:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00113**	**.08091**	**.00257**	**.02612**	**.02343**	**.00026**	**258.72**
Stddev	.00364	.00403	.00338	.00065	.00023	.00010	.22
%RSD	322.73	4.9793	131.60	2.5002	.99712	37.911	.08495
#1	-.00201	.07953	.00151	.02617	.02317	.00019	258.95
#2	.00512	.08545	-.00015	.02675	.02363	.00037	258.52
#3	.00028	.07776	.00635	.02545	.02348	.00021	258.68
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00056**	**.00486**	**.00101**	**.01760**	**1.6277**	**1.7887**	**.01926**
Stddev	.00018	.00049	.00101	.00048	.0214	.0748	.00269
%RSD	32.935	10.099	100.65	2.7241	1.3157	4.1799	13.963
#1	.00053	.00446	.00070	.01814	1.6519	1.7719	.02232
#2	.00040	.00472	.00018	.01725	1.6198	1.8705	.01729
#3	.00076	.00541	.00214	.01740	1.6113	1.7238	.01816
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**67.571**	**3.7591**	**.00091**	**16.176**	**.00450**	**.03792**	**.00200**
Stddev	.265	.0091	.00013	.042	.00050	.00459	.00102
%RSD	.39176	.24313	14.640	.25963	11.081	12.099	51.049
#1	67.875	3.7689	.00083	16.148	.00428	.03292	.00317
#2	67.391	3.7508	.00083	16.224	.00415	.03891	.00158
#3	67.448	3.7575	.00106	16.157	.00507	.04193	.00126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 27, 2016

Sample Name: L1606098603 Acquired: 6/25/2016 19:51:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00201**	**-.00717**	**3.9929**	**.00071**	**1.4034**	F **-.03512**	**-.00302**
Stddev	.00033	.00269	.0187	.00006	.0013	.00376	.00159
%RSD	16.650	37.521	.46951	8.6416	.08919	10.706	52.853
#1	-.00201	-.00583	3.9724	.00069	1.4035	-.03701	-.00329
#2	-.00234	-.01026	3.9969	.00078	1.4046	-.03756	-.00130
#3	-.00167	-.00541	4.0093	.00066	1.4021	-.03079	-.00446
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00011**	**.03959**	**.00096**
Stddev	.00028	.00012	.00361
%RSD	248.38	.29182	376.14
#1	.00034	.03947	.00158
#2	-.00020	.03969	.00421
#3	.00020	.03962	-.00292
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9451.5**	**57637.**	**3009.6**
Stddev	22.8	186.	22.0
%RSD	.24088	.32311	.72999
#1	9477.8	57852.	2986.4
#2	9439.3	57520.	3012.4
#3	9437.5	57540.	3030.0

Approved: June 27, 2016

Sample Name: L1606098605 Acquired: 6/25/2016 19:55:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00137	.11904	-.00057	.01716	.07339	.00069	79.533	.00007
Stddev	.00111	.00237	.00183	.00141	.00107	.00010	.468	.00014
%RSD	81.063	1.9908	322.69	8.2448	1.4582	14.460	.58849	215.58
#1	-.00160	.12158	.00130	.01581	.07215	.00080	78.994	-.00002
#2	-.00016	.11865	-.00237	.01703	.07401	.00066	79.770	-.00001
#3	-.00235	.11689	-.00063	.01863	.07401	.00061	79.836	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00197	.03453	.22031	1.0996	.00600	23.636	.02412
Stddev	.00010	.00062	.00164	.01719	.0321	.00378	.124	.00114
%RSD	58.539	31.534	4.7611	7.8016	2.9198	62.984	.52590	4.7055
#1	.00028	.00148	.03642	.22738	1.1284	.00174	23.677	.02484
#2	.00008	.00176	.03343	.23283	1.0650	.00731	23.734	.02281
#3	.00016	.00266	.03374	.20072	1.1054	.00895	23.496	.02471
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	16.543	.00139	.02145	.00230	-.00291	.00287	2.5906
Stddev	.00010	.077	.00029	.00514	.00167	.00113	.00378	.0043
%RSD	11.067	.46265	20.622	23.950	72.689	38.933	132.03	.16499
#1	.00094	16.521	.00147	.02583	.00422	-.00367	.00465	2.5950
#2	.00093	16.628	.00163	.02271	.00152	-.00161	-.00148	2.5865
#3	.00076	16.480	.00107	.01580	.00116	-.00345	.00543	2.5902
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098605 Acquired: 6/25/2016 19:55:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.41216	-.00457	-.00401	.00095	.08292	.00137
Stddev	.00045	.00253	.00113	.00092	.00095	.00025	.00112
%RSD	198.91	.61368	24.692	22.922	99.932	.30169	82.337
#1	.00020	.40988	-.00328	-.00486	-.00009	.08312	.00008
#2	.00068	.41488	-.00504	-.00303	.00116	.08301	.00218
#3	-.00021	.41173	-.00539	-.00414	.00177	.08264	.00183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9691.4	59019.	3013.1
Stddev	15.7	113.	12.9
%RSD	.16185	.19156	.42939
#1	9673.9	58889.	3028.0
#2	9704.2	59073.	3004.1
#3	9696.2	59095.	3007.4

Approved: June 27, 2016

Sample Name: L1606098607 Acquired: 6/25/2016 19:59:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00078	.03854	.00139	.01595	.03639	.00021	86.351	.00013
Stddev	.00196	.00438	.00171	.00299	.00069	.00005	.183	.00018
%RSD	252.38	11.356	122.54	18.743	1.8946	25.559	.21179	130.52
#1	-.00064	.04027	.00252	.01429	.03564	.00026	86.561	.00033
#2	-.00004	.03356	-.00057	.01941	.03654	.00022	86.226	.00007
#3	.00302	.04179	.00223	.01417	.03700	.00015	86.267	-.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	.00096	.00901	.09595	1.3588	.01896	23.947	.13765
Stddev	.00012	.00155	.00054	.00336	.0905	.00285	.152	.00156
%RSD	14.271	161.05	6.0176	3.5057	6.6619	15.032	.63449	1.1314
#1	.00074	.00257	.00840	.09606	1.2544	.01772	23.782	.13585
#2	.00084	-.00052	.00942	.09926	1.4148	.02223	24.081	.13859
#3	.00099	.00083	.00922	.09254	1.4072	.01695	23.978	.13851
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	12.868	.00006	.00776	.00294	-.00141	.00160	3.6487
Stddev	.00036	.033	.00069	.00647	.00245	.00292	.00413	.0140
%RSD	74.294	.25857	1239.7	83.320	83.569	207.44	258.10	.38292
#1	.00008	12.905	-.00031	.01172	.00013	.00158	.00626	3.6621
#2	.00078	12.859	.00085	.01126	.00466	-.00154	-.00162	3.6496
#3	.00059	12.840	-.00038	.00030	.00403	-.00426	.00017	3.6342
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098607 Acquired: 6/25/2016 19:59:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.85925**	**-.01297**	**-.00261**	**.00027**	**.01872**	**-.00023**
Stddev	.00058	.00368	.00482	.00118	.00049	.00005	.00100
%RSD	1135.5	.42821	37.150	45.319	182.28	.27976	440.95
#1	.00028	.86236	-.00802	-.00398	-.00019	.01878	.00007
#2	-.00072	.86019	-.01323	-.00183	.00021	.01871	.00059
#3	.00028	.85519	-.01765	-.00203	.00079	.01868	-.00134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9667.2**	**58651.**	**3007.8**
Stddev	38.0	90.	17.4
%RSD	.39269	.15372	.57760
#1	9636.2	58610.	2989.6
#2	9655.8	58589.	3009.4
#3	9709.5	58755.	3024.3

Approved: June 27, 2016

Sample Name: L1606098607PS Acquired: 6/25/2016 20:03:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574215-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19549**	**4.9683**	**.19699**	**.95431**	**.52192**	**.02489**	**83.384**	**.02448**
Stddev	.00145	.0012	.00037	.00069	.00335	.00004	.351	.00015
%RSD	.74419	.02324	.18968	.07193	.64144	.17436	.42141	.59448
#1	.19431	4.9671	.19669	.95367	.51889	.02485	83.062	.02455
#2	.19712	4.9693	.19740	.95504	.52551	.02494	83.759	.02458
#3	.19505	4.9687	.19686	.95422	.52137	.02490	83.330	.02431
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09612**	**.24445**	**.24901**	**2.0095**	**25.021**	**.52274**	**26.551**	**.36466**
Stddev	.00060	.00204	.00132	.0079	.209	.00262	.211	.00375
%RSD	.62715	.83504	.52860	.39401	.83514	.50106	.79467	1.0287
#1	.09620	.24322	.24870	2.0100	24.845	.52124	26.458	.36188
#2	.09668	.24681	.25046	2.0172	25.252	.52577	26.792	.36317
#3	.09548	.24332	.24788	2.0014	24.965	.52123	26.403	.36893
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50539**	**35.868**	**.24056**	**4.8300**	**.24330**	**.58213**	**.19141**	**5.6770**
Stddev	.00256	.121	.00174	.0165	.00225	.00117	.00102	.0113
%RSD	.50685	.33731	.72421	.34266	.92572	.20086	.53487	.19978
#1	.50625	35.730	.24173	4.8368	.24292	.58281	.19254	5.6837
#2	.50742	35.956	.24138	4.8421	.24572	.58078	.19056	5.6833
#3	.50251	35.919	.23856	4.8112	.24127	.58280	.19112	5.6639
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098607PS Acquired: 6/25/2016 20:03:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574215-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48483**	**1.2623**	**.48068**	**.24615**	**.50488**	**.48944**	**.00427**
Stddev	.00147	.0060	.00508	.00275	.00238	.00115	.00064
%RSD	.30392	.47569	1.0573	1.1154	.47121	.23489	15.068
#1	.48451	1.2555	.47807	.24920	.50216	.48999	.00389
#2	.48644	1.2668	.48654	.24388	.50587	.49021	.00501
#3	.48354	1.2646	.47744	.24537	.50660	.48812	.00390
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9610.5**	**58019.**	**3004.1**
Stddev	20.4	180.	8.2
%RSD	.21278	.31055	.27313
#1	9607.7	58202.	3005.9
#2	9591.6	58012.	2995.2
#3	9632.2	57842.	3011.3

Approved: June 27, 2016

Sample Name: L1606098607SDL Acquired: 6/25/2016 20:06:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574215-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	.00334	.00170	.00445	.00847	.00009	17.139	.00008
Stddev	.00049	.00730	.00411	.00207	.00008	.00007	.249	.00023
%RSD	88.649	218.69	241.70	46.624	.94243	75.660	1.4519	290.72
#1	.00089	.00593	.00612	.00219	.00843	.00006	17.426	.00034
#2	-.00001	.00899	-.00200	.00488	.00843	.00004	17.001	-.00003
#3	.00078	-.00490	.00098	.00627	.00857	.00017	16.989	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.00037	.00191	.01894	.32539	.00400	4.9234	.02615
Stddev	.00005	.00023	.00083	.00475	.10069	.00194	.1236	.00303
%RSD	9.1063	60.795	43.755	25.087	30.943	48.604	2.5107	11.568
#1	.00062	.00059	.00284	.02402	.21108	.00176	4.9976	.02622
#2	.00053	.00038	.00165	.01821	.40094	.00496	4.9918	.02914
#3	.00053	.00014	.00123	.01460	.36416	.00527	4.7807	.02309
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	2.5977	.00028	.00852	.00297	.00160	.00156	.72149
Stddev	.00021	.0380	.00123	.00414	.00293	.00068	.00366	.00246
%RSD	66.333	1.4636	438.92	48.637	98.645	42.261	235.25	.34147
#1	.00008	2.6376	-.00081	.01268	-.00028	.00113	-.00104	.72244
#2	.00048	2.5938	.00004	.00439	.00377	.00130	.00574	.71869
#3	.00037	2.5619	.00161	.00849	.00542	.00238	-.00003	.72333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098607SDL Acquired: 6/25/2016 20:06:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574215-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.17255**	**.00033**	**-.00095**	**.00100**	**.00419**	**.00060**
Stddev	.00072	.00063	.00618	.00123	.00055	.00013	.00060
%RSD	1344.6	.36773	1857.8	129.31	55.083	2.9985	99.890
#1	-.00060	.17322	-.00395	-.00224	.00116	.00417	-.00009
#2	.00076	.17246	-.00247	-.00083	.00039	.00432	.00094
#3	-.00032	.17196	.00742	.00021	.00145	.00407	.00094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10100.**	**61152.**	**3087.7**
Stddev	17.	221.	3.3
%RSD	.16887	.36180	.10673
#1	10112.	61407.	3088.4
#2	10080.	61005.	3090.6
#3	10107.	61046.	3084.1

Approved: June 27, 2016

Sample Name: L1606098607SDL Acquired: 6/25/2016 20:10:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574215-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**-.00220**	**-.00032**	**-.00063**	**.00197**	**.00015**	**3.3784**	**-.00009**
Stddev	.00281	.00599	.00141	.00122	.00070	.00004	.0403	.00029
%RSD	1738.4	271.64	438.98	193.96	35.714	23.124	1.1918	310.09
#1	.00289	-.00340	.00101	-.00187	.00220	.00018	3.3321	-.00013
#2	-.00273	.00429	-.00181	-.00058	.00253	.00017	3.3977	-.00037
#3	.00033	-.00751	-.00017	.00056	.00118	.00011	3.4054	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**-.00057**	**.00039**	**.03496**	**.02799**	**.00189**	**.96584**	**.00502**
Stddev	.00041	.00109	.00122	.02559	.02173	.00316	.06365	.00248
%RSD	5673.0	191.57	314.78	73.189	77.636	167.39	6.5899	49.517
#1	.00017	-.00161	.00178	.00957	.03029	.00425	1.0133	.00340
#2	.00028	-.00067	-.00011	.06074	.04847	.00313	.99069	.00377
#3	-.00047	.00057	-.00050	.03458	.00520	-.00171	.89352	.00788
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**.48659**	**-.00001**	**.00389**	**.00194**	**-.00589**	**.00123**	**.14706**
Stddev	.00019	.02107	.00027	.00257	.00032	.00198	.00158	.00411
%RSD	50.403	4.3293	3257.2	66.021	16.675	33.653	128.28	2.7928
#1	-.00035	.50181	-.00003	.00472	.00177	-.00726	-.00048	.14268
#2	-.00056	.46255	.00027	.00101	.00173	-.00680	.00263	.15082
#3	-.00019	.49542	-.00027	.00595	.00231	-.00362	.00154	.14770
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098607SDL Acquired: 6/25/2016 20:10:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574215-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**.03404**	**-.00096**	**.00109**	**.00053**	**.00095**	**-.00050**
Stddev	.00021	.00026	.00497	.00270	.00028	.00007	.00147
%RSD	93.819	.76060	519.10	248.53	53.226	6.9237	292.99
#1	-.00042	.03414	.00415	-.00145	.00059	.00088	.00090
#2	-.00001	.03374	-.00578	.00079	.00078	.00097	-.00204
#3	-.00022	.03423	-.00124	.00392	.00022	.00101	-.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10132.**	**61150.**	**3069.8**
Stddev	20.	142.	13.8
%RSD	.19324	.23287	.44985
#1	10144.	61269.	3085.6
#2	10109.	61188.	3063.7
#3	10143.	60992.	3060.0

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 20:14:26 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39742**	**10.037**	**.39212**	**.48448**	**.99926**	**.05007**	**9.9665**
Stddev	.00078	.015	.00234	.00170	.00686	.00012	.0639
%RSD	.19741	.14886	.59686	.35046	.68696	.24571	.64080
#1	.39794	10.020	.39189	.48304	1.0007	.05009	10.032
#2	.39780	10.040	.39457	.48635	.99181	.05018	9.9043
#3	.39651	10.049	.38991	.48406	1.0053	.04994	9.9633
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04995**	**.19662**	**.49719**	**.50408**	**3.9345**	**48.425**	**1.0056**
Stddev	.00017	.00028	.00293	.00085	.0512	.336	.0066
%RSD	.33202	.14096	.58868	.16772	1.3013	.69474	.65876
#1	.05012	.19642	.49505	.50367	3.9195	48.601	1.0066
#2	.04993	.19694	.50053	.50505	3.8924	48.037	.99858
#3	.04979	.19651	.49600	.50351	3.9915	48.637	1.0117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.6539**	**.49874**	**1.0057**	**49.161**	**.50061**	**9.8144**	**.49889**
Stddev	.1152	.00402	.0014	.263	.00048	.0158	.00214
%RSD	1.1928	.80691	.13850	.53437	.09607	.16108	.42961
#1	9.7007	.49641	1.0053	49.311	.50117	9.7964	.49662
#2	9.5228	.49643	1.0072	48.858	.50038	9.8207	.49919
#3	9.7383	.50339	1.0045	49.316	.50029	9.8261	.50087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 20:14:26 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1787**	**.38972**	**5.0552**	**.98705**	**.99934**	**.99527**	**.50770**
Stddev	.0014	.00525	.0102	.00133	.00573	.00628	.00313
%RSD	.12146	1.3477	.20130	.13498	.57306	.63102	.61635
#1	1.1790	.38370	5.0434	.98688	1.0013	.99951	.50582
#2	1.1772	.39212	5.0610	.98581	.99288	.98805	.50598
#3	1.1800	.39334	5.0611	.98846	1.0038	.99824	.51132
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0147**	**.99253**	F **2.9496**
Stddev	.0017	.00087	.0127
%RSD	.16286	.08813	.43029
#1	1.0131	.99259	2.9390
#2	1.0147	.99336	2.9462
#3	1.0164	.99162	2.9637
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9868.5**	**58806.**	**2964.6**
Stddev	19.7	151.	1.8
%RSD	.19965	.25680	.06126
#1	9885.2	58672.	2966.0
#2	9873.5	58776.	2965.4
#3	9846.8	58969.	2962.6

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 20:18:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00132	-.00340	-.00049	.00031	.00192	.00008	-.02002	-.00008
Stddev	.00216	.00700	.00114	.00069	.00099	.00015	.01568	.00025
%RSD	163.88	205.77	232.07	221.43	51.768	179.89	78.343	317.94
#1	.00112	.00138	-.00179	.00077	.00240	-.00004	-.03265	.00011
#2	.00357	-.00014	-.00002	.00066	.00258	.00004	-.00247	-.00036
#3	-.00074	-.01144	.00034	-.00049	.00078	.00025	-.02493	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	.00038	.00063	.02332	-.07555	-.00123	.02786	-.00147
Stddev	.00036	.00095	.00188	.02448	.09270	.00682	.09570	.00329
%RSD	47.976	247.76	298.28	104.94	122.70	553.52	343.47	223.66
#1	.00080	.00146	-.00061	.04476	-.06611	.00634	-.06528	.00195
#2	.00036	.00002	.00279	-.00335	-.17262	-.00687	.02294	-.00462
#3	.00107	-.00033	-.00029	.02856	.01207	-.00317	.12594	-.00174
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00377	.03770	.00015	.00241	-.00006	.00325	.00675	.03903
Stddev	.00019	.01915	.00084	.00431	.00100	.00269	.00806	.00132
%RSD	5.0202	50.799	576.30	178.78	1573.6	82.788	119.45	3.3700
#1	.00388	.01718	.00046	.00371	.00063	.00040	.01512	.04015
#2	.00389	.04082	.00078	-.00240	-.00121	.00574	.00608	.03936
#3	.00355	.05510	-.00080	.00592	.00039	.00360	-.00096	.03758
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 20:18:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.00027**	**.00088**	**-.00106**	**.00004**	**-.00003**	**.00449**
Stddev	.00046	.00064	.00516	.00225	.00089	.00028	.00124
%RSD	6827.2	239.61	583.41	212.27	2439.5	892.40	27.555
#1	.00053	-.00043	-.00417	-.00308	-.00098	.00021	.00367
#2	-.00031	.00040	.00068	.00137	.00041	.00004	.00389
#3	-.00023	.00082	.00615	-.00147	.00068	-.00034	.00592
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9631.9**	**58363.**	**2969.7**
Stddev	4.5	93.	16.5
%RSD	.04685	.16010	.55454
#1	9627.4	58461.	2965.8
#2	9636.4	58275.	2987.8
#3	9631.8	58353.	2955.6

Approved: June 27, 2016

Sample Name: L1606098609 Acquired: 6/25/2016 20:22:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.68625	.00096	.00637	.02063	.00019	116.68	.00011
Stddev	.00130	.00243	.00203	.00124	.00115	.00006	.34	.00020
%RSD	161.33	.35410	210.74	19.489	5.5807	30.863	.28955	179.93
#1	.00013	.68352	.00323	.00768	.02147	.00021	116.54	.00014
#2	.00231	.68708	-.00070	.00521	.01932	.00023	116.43	-.00010
#3	-.00002	.68816	.00037	.00620	.02109	.00012	117.06	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.00251	.00589	.80058	.71511	.00736	28.613	.02306
Stddev	.00014	.00088	.00100	.02799	.18771	.00368	.079	.00071
%RSD	23.262	34.910	17.057	3.4966	26.250	49.956	.27754	3.0949
#1	.00051	.00150	.00680	.80914	.91494	.01159	28.526	.02382
#2	.00075	.00293	.00481	.76931	.68792	.00556	28.632	.02293
#3	.00052	.00310	.00605	.82330	.54247	.00492	28.681	.02241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	14.713	.00303	.03333	.00106	-.00272	.00365	4.8889
Stddev	.00024	.075	.00054	.00378	.00114	.00271	.00111	.0101
%RSD	32.746	.50774	17.920	11.335	108.20	99.808	30.510	.20564
#1	.00047	14.684	.00299	.03128	.00107	-.00577	.00444	4.8999
#2	.00095	14.656	.00359	.03769	-.00009	-.00056	.00238	4.8868
#3	.00081	14.797	.00251	.03102	.00220	-.00183	.00413	4.8801
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098609 Acquired: 6/25/2016 20:22:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**.51888**	**.00260**	**-.00246**	**.00196**	**.03426**	**.00729**
Stddev	.00032	.00275	.00453	.00099	.00037	.00011	.00028
%RSD	1222.6	.53076	174.15	40.180	18.856	.31556	3.8509
#1	.00009	.51844	-.00256	-.00245	.00220	.03417	.00723
#2	-.00032	.51637	.00591	-.00346	.00153	.03438	.00705
#3	.00031	.52183	.00446	-.00148	.00215	.03423	.00760
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9797.7**	**59515.**	**3093.6**
Stddev	11.0	17.	11.2
%RSD	.11267	.02773	.36079
#1	9791.0	59496.	3083.8
#2	9810.4	59520.	3105.7
#3	9791.6	59528.	3091.1

Approved: June 27, 2016

Sample Name: L1606098611 Acquired: 6/25/2016 20:25:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	.67808	-.00318	.08715	.06918	.00114	148.14	.00017
Stddev	.00037	.00569	.00382	.00198	.00070	.00012	.69	.00021
%RSD	151.84	.83972	120.10	2.2728	1.0151	10.946	.46623	125.05
#1	-.00014	.67215	-.00172	.08491	.06933	.00099	148.49	.00006
#2	.00061	.68350	-.00031	.08867	.06980	.00119	147.34	.00003
#3	.00027	.67861	-.00751	.08788	.06842	.00123	148.59	.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00363	.00334	.07531	1.1555	1.9378	.02263	43.443	.16489
Stddev	.00025	.00064	.00057	.0192	.0114	.00045	.331	.00288
%RSD	6.9167	19.099	.75123	1.6613	.58882	1.9873	.76282	1.7487
#1	.00388	.00297	.07511	1.1584	1.9507	.02262	43.610	.16408
#2	.00338	.00297	.07595	1.1731	1.9292	.02219	43.061	.16250
#3	.00362	.00407	.07487	1.1351	1.9335	.02309	43.657	.16809
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00248	25.675	.00454	.04285	.00455	-.00035	-.00286	3.7826
Stddev	.00024	.125	.00067	.00695	.00113	.00106	.00555	.0053
%RSD	9.7863	.48812	14.843	16.217	24.766	306.62	194.07	.13999
#1	.00260	25.775	.00423	.04366	.00585	.00053	-.00927	3.7791
#2	.00220	25.535	.00409	.03554	.00387	-.00004	.00020	3.7887
#3	.00264	25.716	.00532	.04936	.00394	-.00153	.00049	3.7799
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098611 Acquired: 6/25/2016 20:25:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	2.0876	-.00638	-.00280	.00142	.06566	.00394
Stddev	.00055	.0096	.00925	.00066	.00022	.00017	.00141
%RSD	713.59	.45905	144.86	23.607	15.199	.25178	35.771
#1	-.00017	2.0923	-.00754	-.00222	.00163	.06585	.00254
#2	-.00031	2.0765	-.01500	-.00266	.00143	.06556	.00536
#3	.00071	2.0939	.00339	-.00351	.00120	.06556	.00393
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9695.5	58902.	3054.3
Stddev	10.1	156.	10.7
%RSD	.10398	.26470	.35100
#1	9691.1	59006.	3048.2
#2	9688.3	58978.	3066.6
#3	9707.0	58723.	3048.0

Approved: June 27, 2016

Sample Name: L1606098613 Acquired: 6/25/2016 20:29:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00174	5.5730	.00432	.03801	.11035	.00130	203.09	-.00001
Stddev	.00149	.0359	.00264	.00141	.00031	.00003	.17	.00016
%RSD	85.559	.64338	61.135	3.7127	.27868	2.0129	.08522	1090.1
#1	.00010	5.6007	.00735	.03819	.11034	.00128	203.27	.00012
#2	.00211	5.5858	.00310	.03932	.11006	.00133	203.05	.00003
#3	.00302	5.5325	.00251	.03651	.11067	.00131	202.93	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00373	.00967	.08024	7.4517	4.1196	.03087	79.593	.34313
Stddev	.00008	.00046	.00072	.0194	.0319	.00148	.239	.00219
%RSD	2.0959	4.7129	.90070	.26051	.77317	4.7986	.30050	.63957
#1	.00364	.00917	.07941	7.4293	4.0890	.03222	79.370	.34059
#2	.00377	.01007	.08072	7.4635	4.1171	.03112	79.565	.34436
#3	.00379	.00978	.08059	7.4624	4.1526	.02929	79.846	.34443
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00182	24.658	.00975	.17618	.00825	.00008	.00248	10.141
Stddev	.00040	.019	.00024	.00598	.00295	.00311	.00271	.073
%RSD	21.744	.07518	2.5015	3.3961	35.754	3886.1	109.35	.72041
#1	.00146	24.670	.00990	.17816	.00502	.00353	.00373	10.058
#2	.00175	24.669	.00947	.16946	.00891	-.00250	.00433	10.169
#3	.00224	24.637	.00989	.18093	.01080	-.00079	-.00063	10.196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098613 Acquired: 6/25/2016 20:29:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	2.4743	.05397	-.00080	.01073	.41856	.00624
Stddev	.00027	.0052	.00665	.00236	.00131	.00229	.00115
%RSD	39.960	.21077	12.313	294.11	12.169	.54671	18.419
#1	.00089	2.4751	.05254	-.00353	.01217	.41596	.00756
#2	.00073	2.4791	.04816	.00063	.00962	.42027	.00548
#3	.00037	2.4687	.06122	.00049	.01040	.41945	.00567
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9619.4	58503.	3058.9
Stddev	38.3	135.	15.7
%RSD	.39844	.23102	.51315
#1	9576.0	58658.	3041.4
#2	9633.7	58414.	3071.7
#3	9648.5	58435.	3063.7

Approved: June 27, 2016

Sample Name: L1606098615 Acquired: 6/25/2016 20:33:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00201	.53689	.00109	.12769	.02932	.00091	261.33	.00014
Stddev	.00048	.01300	.00276	.00142	.00104	.00011	1.37	.00008
%RSD	23.740	2.4215	252.93	1.1120	3.5600	12.063	.52322	55.108
#1	.00148	.54532	.00299	.12707	.02978	.00081	261.04	.00021
#2	.00215	.54344	.00237	.12931	.03005	.00088	262.83	.00006
#3	.00240	.52192	-.00208	.12669	.02812	.00103	260.14	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	.00167	.04808	1.7755	3.9837	.04482	96.121	.35461
Stddev	.00009	.00172	.00105	.0329	.0639	.00305	.330	.00305
%RSD	12.352	103.13	2.1885	1.8532	1.6044	6.8091	.34352	.86008
#1	.00068	.00125	.04714	1.8121	3.9806	.04242	96.172	.35269
#2	.00071	.00356	.04922	1.7483	4.0491	.04379	96.422	.35813
#3	.00085	.00020	.04788	1.7662	3.9214	.04825	95.768	.35302
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	71.586	.00152	.06528	.00543	-.00023	-.00042	6.3830
Stddev	.00049	.359	.00083	.00282	.00224	.00292	.00309	.0073
%RSD	60.493	.50193	55.060	4.3183	41.272	1275.7	729.65	.11354
#1	.00036	71.588	.00097	.06827	.00795	-.00316	.00167	6.3913
#2	.00132	71.945	.00248	.06488	.00468	-.00019	.00103	6.3782
#3	.00072	71.227	.00110	.06267	.00366	.00267	-.00398	6.3795
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098615 Acquired: 6/25/2016 20:33:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	6.9477	-.01868	-.00208	-.00036	.07416	.00363
Stddev	.00094	.0407	.00365	.00070	.00044	.00028	.00062
%RSD	142.12	.58617	19.553	33.577	122.09	.37861	17.066
#1	.00171	6.9428	-.02024	-.00215	-.00034	.07441	.00412
#2	.00039	6.9907	-.01451	-.00134	-.00081	.07386	.00293
#3	-.00011	6.9097	-.02130	-.00273	.00007	.07420	.00382
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9482.1	57521.	3041.1
Stddev	15.4	119.	13.0
%RSD	.16231	.20772	.42869
#1	9472.3	57649.	3053.5
#2	9499.8	57500.	3027.5
#3	9474.1	57412.	3042.2

Approved: June 27, 2016

Sample Name: L1606098617 Acquired: 6/25/2016 20:37:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00154	.20547	.00214	.04863	.05628	.00015	62.798	.00005
Stddev	.00260	.00707	.00399	.00222	.00076	.00003	.506	.00026
%RSD	168.84	3.4433	186.39	4.5608	1.3548	21.842	.80652	579.39
#1	.00162	.19836	-.00117	.04752	.05710	.00015	63.380	-.00016
#2	.00410	.20553	.00657	.05118	.05613	.00018	62.459	.00034
#3	-.00110	.21251	.00102	.04718	.05560	.00012	62.555	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.00139	.00754	.49751	2.0420	.02056	20.601	.01571
Stddev	.00024	.00096	.00096	.02565	.1117	.00244	.034	.00089
%RSD	70.093	68.878	12.744	5.1552	5.4689	11.879	.16418	5.6341
#1	.00059	.00246	.00739	.47113	2.0254	.02185	20.628	.01672
#2	.00012	.00112	.00857	.52236	1.9395	.01774	20.613	.01507
#3	.00031	.00060	.00666	.49904	2.1610	.02209	20.563	.01535
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00090	26.598	.00080	.00703	.00246	-.00325	.00131	3.4906
Stddev	.00064	.178	.00058	.00500	.00246	.00605	.00554	.0173
%RSD	70.655	.66988	72.589	71.163	99.983	186.20	421.53	.49585
#1	.00155	26.804	.00039	.00280	.00327	-.00237	-.00267	3.5042
#2	.00088	26.495	.00146	.00574	-.00030	-.00969	.00764	3.4966
#3	.00027	26.495	.00054	.01256	.00441	.00231	-.00103	3.4711
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098617 Acquired: 6/25/2016 20:37:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	1.5150	-.00311	-.00236	-.00015	.01447	.00341
Stddev	.00072	.0088	.00641	.00068	.00005	.00011	.00060
%RSD	226.25	.58268	206.23	28.717	34.447	.73139	17.615
#1	.00066	1.5251	-.00263	-.00291	-.00009	.01435	.00287
#2	.00080	1.5088	.00305	-.00160	-.00015	.01454	.00406
#3	-.00051	1.5111	-.00975	-.00256	-.00020	.01452	.00331
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9830.7	59822.	3082.9
Stddev	15.5	147.	23.6
%RSD	.15717	.24641	.76693
#1	9813.6	59963.	3057.5
#2	9843.5	59835.	3104.4
#3	9835.1	59669.	3086.7

Approved: June 27, 2016

Sample Name: L1606098619 Acquired: 6/25/2016 20:41:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00113	.27749	.00069	.06930	.05323	.00039	10.214	.00034
Stddev	.00263	.00318	.00178	.00081	.00134	.00007	.065	.00038
%RSD	232.09	1.1459	258.13	1.1649	2.5186	17.965	.63738	111.28
#1	.00355	.27762	.00105	.06852	.05477	.00042	10.240	.00066
#2	-.00167	.28061	.00227	.06924	.05251	.00044	10.140	.00044
#3	.00153	.27425	-.00125	.07014	.05240	.00031	10.262	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00108	.00071	.02585	.24748	1.2811	.01465	4.6162	.00999
Stddev	.00051	.00114	.00067	.00474	.0573	.00378	.0318	.00359
%RSD	46.988	159.40	2.5887	1.9167	4.4759	25.817	.68816	35.904
#1	.00062	.00202	.02645	.25048	1.2371	.01153	4.5886	.01278
#2	.00162	-.00003	.02513	.24201	1.3460	.01356	4.6509	.01123
#3	.00099	.00015	.02599	.24994	1.2604	.01885	4.6090	.00594
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00123	228.52	.00044	.07963	.00371	-.00207	.00619	2.5103
Stddev	.00028	1.82	.00063	.00808	.00266	.00077	.00393	.0173
%RSD	22.669	.79720	141.35	10.151	71.562	37.379	63.490	.68709
#1	.00153	229.52	.00003	.07034	.00201	-.00126	.00175	2.5018
#2	.00118	226.42	.00013	.08504	.00235	-.00280	.00758	2.4989
#3	.00097	229.62	.00117	.08351	.00677	-.00216	.00924	2.5301
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098619 Acquired: 6/25/2016 20:41:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.22967	.00683	-.00264	.00219	.02256	.00408
Stddev	.00091	.00074	.00628	.00047	.00030	.00021	.00266
%RSD	1371.8	.32350	91.943	17.727	13.766	.92425	65.101
#1	-.00024	.23041	.00516	-.00255	.00222	.02259	.00112
#2	-.00065	.22892	.00155	-.00314	.00188	.02235	.00625
#3	.00109	.22967	.01377	-.00222	.00248	.02276	.00487
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9702.8	58480.	3067.3
Stddev	45.7	28.	15.6
%RSD	.47062	.04775	.50880
#1	9725.9	58510.	3053.5
#2	9732.4	58474.	3084.2
#3	9650.3	58455.	3064.3

Approved: June 27, 2016

Sample Name: L1606098621 Acquired: 6/25/2016 20:45:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	.00121	.00179	.05746	.02986	.00029	128.59	-.00000
Stddev	.00056	.00275	.00384	.00358	.00132	.00008	.53	.00025
%RSD	97.573	226.34	214.60	6.2318	4.4201	27.216	.41011	6271.6
#1	.00040	-.00100	.00602	.06157	.03100	.00034	129.12	-.00029
#2	.00120	.00036	-.00148	.05576	.03017	.00020	128.07	.00019
#3	.00012	.00429	.00083	.05504	.02841	.00032	128.57	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.00173	.01434	.05981	2.5098	.02550	33.269	.15420
Stddev	.00017	.00097	.00185	.00891	.0950	.00146	.060	.00170
%RSD	92.832	55.806	12.905	14.892	3.7837	5.7272	.18077	1.1012
#1	.00010	.00269	.01260	.05052	2.5555	.02390	33.334	.15465
#2	.00007	.00177	.01629	.06064	2.4007	.02586	33.216	.15563
#3	.00038	.00075	.01412	.06828	2.5733	.02675	33.257	.15232
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	47.893	-.00000	.01004	.00162	-.00276	-.00417	3.5790
Stddev	.00060	.257	.00189	.00801	.00056	.00235	.00172	.0047
%RSD	106.13	.53712	269880.	79.763	34.469	85.173	41.117	.13102
#1	.00071	48.149	.00182	.00080	.00218	-.00406	-.00514	3.5827
#2	-.00009	47.634	.00013	.01426	.00163	-.00417	-.00519	3.5737
#3	.00107	47.897	-.00195	.01505	.00106	-.00005	-.00219	3.5806
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098621 Acquired: 6/25/2016 20:45:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**1.8050**	**-.02231**	**-.00291**	**.00001**	**.01004**	**.00207**
Stddev	.00095	.0120	.00564	.00294	.00125	.00002	.00101
%RSD	393.73	.66689	25.288	100.88	21161.	.16952	48.549
#1	.00057	1.8173	-.02371	-.00622	-.00119	.01005	.00218
#2	-.00128	1.7932	-.02711	-.00189	.00130	.01004	.00102
#3	-.00001	1.8046	-.01610	-.00062	-.00009	.01002	.00302
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9662.5**	**58180.**	**3042.4**
Stddev	14.0	47.	7.3
%RSD	.14521	.08141	.24078
#1	9658.0	58146.	3035.1
#2	9678.2	58161.	3042.4
#3	9651.2	58234.	3049.8

Approved: June 27, 2016

Sample Name: L1606098623 Acquired: 6/25/2016 20:49:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00139	.10705	.00198	.41392	.02623	.00027	243.17	.00017
Stddev	.00218	.00541	.00096	.00428	.00052	.00003	1.41	.00011
%RSD	157.63	5.0515	48.506	1.0332	1.9773	12.148	.58072	65.505
#1	.00177	.11044	.00295	.41225	.02682	.00026	243.56	.00005
#2	.00336	.10081	.00102	.41878	.02603	.00030	244.34	.00020
#3	-.00096	.10989	.00198	.41074	.02584	.00024	241.60	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.00125	.02256	.13395	6.1008	.01177	68.965	.45308
Stddev	.00021	.00090	.00053	.00942	.0335	.00473	.254	.00553
%RSD	267.67	72.031	2.3661	7.0298	.54942	40.196	.36871	1.2196
#1	-.00012	.00056	.02318	.12309	6.1028	.01598	68.820	.44996
#2	.00031	.00093	.02221	.13890	6.0663	.00665	69.259	.45946
#3	.00005	.00227	.02231	.13986	6.1333	.01267	68.816	.44983
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00044	66.667	.00075	.01360	.00015	-.00234	.00238	3.6345
Stddev	.00039	.343	.00118	.00476	.00283	.00395	.00376	.0082
%RSD	88.357	.51401	157.96	35.012	1938.3	168.93	158.02	.22548
#1	.00001	66.765	.00108	.01427	-.00296	-.00415	.00669	3.6345
#2	.00056	66.950	-.00056	.00853	.00082	.00219	.00057	3.6426
#3	.00076	66.286	.00172	.01798	.00259	-.00506	-.00014	3.6263
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098623 Acquired: 6/25/2016 20:49:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	1.6999	-.02956	-.00156	.00030	.00857	.00329
Stddev	.00028	.0081	.00507	.00230	.00048	.00011	.00135
%RSD	598.12	.47536	17.163	147.79	160.42	1.3327	41.067
#1	.00005	1.7017	-.03255	.00072	-.00015	.00844	.00173
#2	.00033	1.7069	-.02370	-.00388	.00023	.00859	.00400
#3	-.00023	1.6911	-.03242	-.00151	.00081	.00866	.00415
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9416.4	57429.	3035.8
Stddev	48.0	130.	25.1
%RSD	.51009	.22575	.82551
#1	9467.2	57482.	3016.2
#2	9410.3	57282.	3027.1
#3	9371.8	57525.	3064.1

Approved: June 27, 2016

Sample Name: L1606098625 Acquired: 6/25/2016 20:52:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00225	2.3612	.00034	.04147	.11975	.00023	121.59	.00037
Stddev	.00036	.0069	.00441	.00209	.00117	.00012	.33	.00010
%RSD	15.843	.29306	1297.6	5.0487	.97876	50.808	.26806	27.630
#1	.00211	2.3674	.00539	.03961	.11950	.00036	121.76	.00028
#2	.00199	2.3537	-.00273	.04106	.11872	.00014	121.21	.00033
#3	.00266	2.3625	-.00164	.04374	.12102	.00019	121.79	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00161	.00414	.00666	2.3953	2.5999	.01491	37.526	1.0679
Stddev	.00025	.00072	.00102	.0202	.0477	.00333	.332	.0124
%RSD	15.696	17.478	15.382	.84513	1.8346	22.308	.88561	1.1598
#1	.00188	.00385	.00549	2.3789	2.6109	.01808	37.493	1.0637
#2	.00138	.00496	.00714	2.4179	2.5476	.01145	37.212	1.0581
#3	.00156	.00361	.00736	2.3890	2.6411	.01519	37.874	1.0818
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	18.226	.00269	.05391	.00651	-.00190	.00505	5.9129
Stddev	.00020	.052	.00077	.00146	.00208	.00291	.00127	.0400
%RSD	30.881	.28797	28.786	2.7065	31.918	152.94	25.077	.67624
#1	.00067	18.245	.00228	.05412	.00658	-.00209	.00366	5.9121
#2	.00082	18.167	.00221	.05526	.00440	.00110	.00533	5.9533
#3	.00043	18.267	.00358	.05236	.00855	-.00472	.00614	5.8733
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098625 Acquired: 6/25/2016 20:52:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00035**	**.99462**	**.03044**	**-.00185**	**.00457**	**.15726**	**.00437**
Stddev	.00053	.00442	.00913	.00019	.00047	.00042	.00072
%RSD	150.91	.44485	29.990	10.187	10.282	.27017	16.565
#1	.00010	.99601	.03923	-.00207	.00503	.15763	.00393
#2	-.00093	.98967	.02100	-.00171	.00410	.15735	.00520
#3	-.00022	.99819	.03111	-.00178	.00457	.15680	.00397
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9574.3**	**58285.**	**3022.7**
Stddev	18.0	80.	21.3
%RSD	.18820	.13801	.70548
#1	9553.8	58363.	3008.3
#2	9581.8	58202.	3047.2
#3	9587.4	58291.	3012.6

Approved: June 27, 2016

Sample Name: L1606098627 Acquired: 6/25/2016 20:56:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00254	4.6384	.00407	.03588	.08487	.00132	200.73	.00005
Stddev	.00192	.0173	.00097	.00149	.00032	.00011	.32	.00023
%RSD	75.499	.37394	23.741	4.1641	.37451	8.4866	.15998	422.09
#1	.00186	4.6215	.00464	.03631	.08521	.00120	200.37	.00006
#2	.00106	4.6377	.00461	.03711	.08483	.00141	200.85	-.00018
#3	.00471	4.6561	.00295	.03422	.08457	.00136	200.98	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00295	.00847	.07661	6.3761	4.0467	.02688	78.393	.28594
Stddev	.00029	.00096	.00098	.0153	.0946	.00177	.290	.00214
%RSD	9.9470	11.337	1.2842	.24023	2.3374	6.5906	.37011	.74836
#1	.00263	.00958	.07761	6.3586	3.9534	.02860	78.140	.28832
#2	.00299	.00791	.07658	6.3825	4.0443	.02506	78.709	.28419
#3	.00322	.00791	.07564	6.3872	4.1425	.02698	78.329	.28530
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00106	25.068	.00713	.15173	.00678	-.00194	.00054	8.9965
Stddev	.00058	.104	.00038	.00131	.00344	.00137	.00531	.0286
%RSD	55.068	.41293	5.2660	.86550	50.818	70.752	976.81	.31838
#1	.00130	24.949	.00680	.15078	.01021	-.00340	-.00348	9.0111
#2	.00040	25.140	.00754	.15323	.00679	-.00068	-.00144	9.0150
#3	.00149	25.114	.00704	.15117	.00333	-.00174	.00656	8.9635
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098627 Acquired: 6/25/2016 20:56:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	2.4772	.04490	-.00127	.00901	.16031	.00422
Stddev	.00154	.0067	.00796	.00182	.00061	.00117	.00055
%RSD	173.10	.26965	17.717	142.95	6.7328	.72957	12.944
#1	.00142	2.4695	.04447	-.00241	.00911	.16067	.00359
#2	.00210	2.4809	.03717	.00082	.00836	.16126	.00459
#3	-.00085	2.4812	.05306	-.00223	.00956	.15900	.00448
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9465.6	57841.	2995.1
Stddev	68.7	160.	17.6
%RSD	.72586	.27642	.58883
#1	9445.1	57701.	3013.7
#2	9409.5	58015.	2978.6
#3	9542.2	57807.	2993.1

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 21:00:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40235**	**10.185**	**.39842**	**.49195**	**1.0203**	**.05034**	**10.153**
Stddev	.00325	.028	.00193	.00194	.0055	.00031	.030
%RSD	.80675	.27855	.48505	.39452	.53912	.62290	.29151
#1	.39985	10.214	.39899	.49235	1.0140	.05068	10.126
#2	.40602	10.183	.40000	.49365	1.0227	.05026	10.185
#3	.40118	10.157	.39627	.48984	1.0242	.05007	10.150
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05123**	**.19988**	**.50288**	**.51330**	**4.0070**	**49.596**	**1.0284**
Stddev	.00026	.00047	.00335	.00193	.0033	.230	.0041
%RSD	.51360	.23712	.66679	.37527	.08271	.46359	.40302
#1	.05102	.20030	.50672	.51551	4.0072	49.649	1.0258
#2	.05153	.19997	.50051	.51234	4.0102	49.344	1.0261
#3	.05115	.19937	.50141	.51204	4.0036	49.795	1.0332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.5669**	**.50781**	**1.0249**	**50.362**	**.50842**	**9.9814**	**.50557**
Stddev	.0485	.00742	.0065	.234	.00100	.0181	.00207
%RSD	.50657	1.4609	.62973	.46520	.19680	.18135	.40980
#1	9.6226	.50131	1.0311	50.266	.50877	9.9736	.50596
#2	9.5340	.50622	1.0255	50.191	.50920	10.002	.50742
#3	9.5442	.51589	1.0183	50.629	.50729	9.9685	.50333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 21:00:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2045**	**.39202**	**5.1444**	**1.0010**	**1.0190**	**1.0190**	**.51206**
Stddev	.0033	.00153	.0072	.0031	.0045	.0084	.00251
%RSD	.27464	.38961	.14055	.30711	.44063	.82168	.49020
#1	1.2010	.39059	5.1361	1.0039	1.0167	1.0152	.51490
#2	1.2047	.39363	5.1492	1.0015	1.0162	1.0132	.51015
#3	1.2076	.39184	5.1479	.99778	1.0242	1.0286	.51112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0223**	**1.0141**	F **2.9929**
Stddev	.0031	.0001	.0241
%RSD	.30006	.01208	.80650
#1	1.0229	1.0141	3.0133
#2	1.0190	1.0142	2.9663
#3	1.0251	1.0139	2.9992
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9649.2**	**58649.**	**2955.6**
Stddev	2.7	54.	16.9
%RSD	.02842	.09258	.57071
#1	9646.1	58667.	2944.4
#2	9650.3	58588.	2975.0
#3	9651.2	58692.	2947.5

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 21:04:14 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00098**	**-.00081**	**.00091**	**.00315**	**.00292**	**.00009**	**-.03474**	**.00002**
Stddev	.00124	.00864	.00092	.00201	.00133	.00005	.02919	.00008
%RSD	125.96	1064.0	100.48	64.019	45.548	52.705	84.022	417.72
#1	.00043	-.00670	.00067	.00330	.00336	.00005	-.02620	.00002
#2	-.00151	.00910	.00014	.00508	.00142	.00009	-.01077	-.00006
#3	-.00188	-.00483	.00193	.00106	.00397	.00014	-.06724	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.00125**	**.00083**	**.02088**	**-.14334**	**.00212**	**-.02955**	**.00114**
Stddev	.00066	.00051	.00122	.01391	.04593	.00105	.09306	.00075
%RSD	1530.9	41.168	147.43	66.595	32.046	49.608	314.87	66.235
#1	.00067	.00069	.00144	.03293	-.09030	.00098	-.05631	.00047
#2	-.00016	.00170	-.00058	.02406	-.17011	.00232	-.10630	.00196
#3	-.00064	.00135	.00162	.00566	-.16960	.00305	.07395	.00100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00323**	**.05080**	**-.00020**	**.00483**	**.00058**	**.00191**	**.00111**	**.03921**
Stddev	.00021	.02575	.00089	.00353	.00235	.00387	.00242	.00153
%RSD	6.4882	50.676	441.28	73.104	406.34	202.21	216.78	3.9059
#1	.00300	.07783	.00045	.00259	-.00201	.00626	-.00135	.03746
#2	.00339	.02657	-.00122	.00300	.00257	.00062	.00121	.03991
#3	.00331	.04802	.00016	.00889	.00117	-.00114	.00348	.04027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 21:04:14 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.00029	-.00007	-.00513	.00041	-.00001	.00470
Stddev	.00027	.00000	.00626	.00369	.00015	.00012	.00055
%RSD	55.343	1.4693	8856.4	71.949	37.134	916.05	11.589
#1	.00081	.00028	.00338	-.00666	.00031	.00010	.00427
#2	.00033	.00029	-.00730	-.00092	.00059	.00000	.00453
#3	.00034	.00028	.00370	-.00780	.00035	-.00014	.00531
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9506.6	58497.	2929.7
Stddev	22.3	113.	12.0
%RSD	.23433	.19372	.40841
#1	9532.3	58628.	2919.5
#2	9494.8	58435.	2926.6
#3	9492.6	58429.	2942.8

Approved: June 27, 2016

Sample Name: L1606098629 Acquired: 6/25/2016 21:08:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00070	1.3154	-.00179	.12516	.05800	.00081	247.18	.00018
Stddev	.00097	.0064	.00105	.00195	.00108	.00003	.31	.00008
%RSD	137.44	.48564	58.530	1.5550	1.8687	3.6829	.12350	43.911
#1	.00160	1.3100	-.00292	.12302	.05810	.00083	246.92	.00018
#2	.00082	1.3224	-.00085	.12682	.05904	.00078	247.52	.00010
#3	-.00032	1.3138	-.00160	.12563	.05687	.00083	247.09	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00119	.00401	.04528	2.4364	3.9714	.04409	89.669	.34274
Stddev	.00048	.00063	.00072	.0178	.1152	.00255	.458	.00095
%RSD	40.012	15.569	1.5917	.73079	2.9014	5.7752	.51098	.27642
#1	.00152	.00449	.04490	2.4275	3.9851	.04702	90.007	.34368
#2	.00141	.00424	.04612	2.4569	4.0792	.04281	89.852	.34276
#3	.00065	.00331	.04484	2.4248	3.8500	.04243	89.147	.34178
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00084	72.159	.00306	.12842	.00472	-.00245	-.00232	7.1068
Stddev	.00019	.103	.00116	.00307	.00202	.00283	.00582	.0122
%RSD	22.591	.14315	38.091	2.3898	42.715	115.64	250.20	.17182
#1	.00062	72.124	.00297	.12975	.00386	-.00541	-.00257	7.1178
#2	.00090	72.275	.00194	.13059	.00327	-.00216	-.00801	7.1089
#3	.00099	72.077	.00426	.12491	.00702	.00023	.00361	7.0937
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098629 Acquired: 6/25/2016 21:08:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	6.8039	.00261	-.00311	.00203	.14656	.00713
Stddev	.00109	.0140	.00201	.00153	.00039	.00030	.00139
%RSD	174.70	.20570	77.238	49.135	18.962	.20399	19.505
#1	.00026	6.7979	.00196	-.00298	.00228	.14634	.00715
#2	-.00024	6.8199	.00487	-.00165	.00159	.14690	.00573
#3	.00185	6.7939	.00100	-.00469	.00223	.14643	.00851
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9470.9	57988.	3007.5
Stddev	19.0	71.	5.1
%RSD	.20079	.12320	.16890
#1	9472.3	57910.	3001.8
#2	9451.2	58005.	3011.5
#3	9489.2	58049.	3009.1

Approved: June 27, 2016

Sample Name: L1606098631S Acquired: 6/25/2016 21:12:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18827**	**4.8059**	**.19457**	**.97775**	**.51082**	**.02368**	**136.28**	**.02401**
Stddev	.00146	.0060	.00214	.00486	.00158	.00008	.55	.00011
%RSD	.77669	.12402	1.0980	.49690	.30853	.31910	.40245	.44044
#1	.18949	4.8104	.19700	.98276	.50954	.02372	135.66	.02402
#2	.18665	4.7991	.19298	.97305	.51258	.02359	136.67	.02389
#3	.18867	4.8083	.19374	.97744	.51033	.02373	136.53	.02410
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09298**	**.23341**	**.25035**	**1.9823**	**26.282**	**.52091**	**38.371**	**.48555**
Stddev	.00063	.00083	.00168	.0210	.198	.00132	.105	.00060
%RSD	.67753	.35580	.67127	1.0601	.75241	.25420	.27268	.12393
#1	.09358	.23411	.25193	1.9586	26.065	.52066	38.253	.48489
#2	.09232	.23249	.25054	1.9895	26.453	.52234	38.408	.48570
#3	.09303	.23364	.24858	1.9987	26.329	.51972	38.452	.48607
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49539**	**77.049**	**.23394**	**4.7766**	**.23491**	**.57914**	**.18644**	**6.1257**
Stddev	.00233	.345	.00087	.0076	.00312	.00333	.00623	.0072
%RSD	.47123	.44745	.37273	.15954	1.3288	.57493	3.3395	.11822
#1	.49753	76.664	.23461	4.7848	.23800	.57665	.18760	6.1339
#2	.49574	77.327	.23426	4.7754	.23176	.57786	.17971	6.1201
#3	.49290	77.158	.23296	4.7697	.23495	.58292	.19200	6.1230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098631S Acquired: 6/25/2016 21:12:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47308**	**2.3488**	**.46537**	**.23713**	**.48550**	**.47406**	**.01603**
Stddev	.00180	.0057	.00826	.00130	.00209	.00072	.00324
%RSD	.38025	.24432	1.7741	.54866	.42967	.15151	20.234
#1	.47478	2.3426	.46034	.23744	.48500	.47482	.01233
#2	.47325	2.3539	.46086	.23825	.48371	.47397	.01737
#3	.47120	2.3498	.47490	.23571	.48779	.47340	.01839
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9509.0**	**58216.**	**3011.6**
Stddev	7.0	203.	15.7
%RSD	.07407	.34863	.52135
#1	9501.0	58067.	3028.6
#2	9511.6	58447.	2997.6
#3	9514.3	58134.	3008.7

Approved: June 27, 2016

Sample Name: L1606098633SD Acquired: 6/25/2016 21:15:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19322	4.9340	.19821	1.0094	.52302	.02438	139.13	.02459
Stddev	.00378	.0145	.00351	.0014	.00226	.00009	.67	.00034
%RSD	1.9571	.29336	1.7708	.13572	.43296	.36107	.48341	1.3705
#1	.18918	4.9313	.20201	1.0102	.52283	.02442	139.33	.02427
#2	.19667	4.9211	.19752	1.0078	.52537	.02443	139.68	.02494
#3	.19382	4.9497	.19509	1.0102	.52086	.02428	138.38	.02455
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09514	.23910	.25336	2.0284	26.984	.53592	39.198	.43704
Stddev	.00042	.00077	.00150	.0114	.096	.00060	.184	.00451
%RSD	.44105	.32091	.59054	.56072	.35526	.11184	.46916	1.0308
#1	.09541	.23859	.25475	2.0343	27.015	.53581	38.996	.43232
#2	.09535	.23873	.25356	2.0357	27.059	.53539	39.242	.44129
#3	.09465	.23999	.25178	2.0153	26.876	.53657	39.356	.43751
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50931	78.441	.23759	4.8949	.24046	.58794	.19015	6.2655
Stddev	.00186	.336	.00142	.0178	.00324	.00596	.00110	.0092
%RSD	.36520	.42898	.59954	.36432	1.3470	1.0133	.57938	.14668
#1	.51115	78.549	.23885	4.9125	.24157	.58732	.19136	6.2719
#2	.50933	78.710	.23604	4.8953	.23682	.59419	.18990	6.2695
#3	.50743	78.063	.23787	4.8768	.24301	.58232	.18920	6.2549
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098633SD Acquired: 6/25/2016 21:15:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48269**	**2.3976**	**.47749**	**.23961**	**.50144**	**.48370**	**.00655**
Stddev	.00278	.0083	.00742	.00256	.00242	.00154	.00139
%RSD	.57608	.34786	1.5549	1.0679	.48318	.31822	21.270
#1	.48505	2.3997	.47422	.24207	.50191	.48531	.00572
#2	.48340	2.4047	.47226	.23981	.49882	.48355	.00816
#3	.47963	2.3884	.48599	.23696	.50360	.48224	.00577
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9541.3**	**57975.**	**3017.9**
Stddev	6.7	58.	25.7
%RSD	.06977	.09979	.85022
#1	9537.4	57946.	3002.1
#2	9549.0	58042.	3004.1
#3	9537.6	57938.	3047.5

Approved: June 27, 2016

Sample Name: L1606098635S Acquired: 6/25/2016 21:19:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19277**	**4.9885**	**.19579**	**1.3512**	**.50932**	**.02402**	**246.59**	**.02462**
Stddev	.00213	.0073	.00137	.0073	.00284	.00001	1.33	.00040
%RSD	1.1047	.14711	.70076	.54069	.55753	.03190	.53842	1.6295
#1	.19260	4.9802	.19687	1.3428	.50650	.02402	245.12	.02488
#2	.19498	4.9915	.19425	1.3565	.50929	.02401	246.97	.02416
#3	.19074	4.9939	.19626	1.3542	.51218	.02403	247.69	.02483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09311**	**.23510**	**.26651**	**1.9710**	**30.025**	**.51865**	**72.396**	**.67936**
Stddev	.00111	.00066	.00283	.0124	.152	.00282	.624	.00361
%RSD	1.1973	.28134	1.0623	.63080	.50639	.54413	.86161	.53080
#1	.09375	.23474	.26754	1.9611	29.892	.51908	71.843	.67568
#2	.09182	.23470	.26331	1.9669	29.993	.51564	72.272	.67951
#3	.09375	.23586	.26869	1.9849	30.191	.52123	73.072	.68289
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49951**	**91.017**	**.23206**	**4.8553**	**.23760**	**.58301**	**.18517**	**6.5213**
Stddev	.00475	.491	.00241	.0437	.00246	.00711	.00329	.0728
%RSD	.95179	.53976	1.0367	.89938	1.0354	1.2190	1.7758	1.1160
#1	.50253	90.509	.23402	4.8765	.23815	.58650	.18639	6.5577
#2	.49403	91.051	.22938	4.8051	.23491	.57483	.18144	6.4375
#3	.50197	91.490	.23278	4.8843	.23974	.58769	.18767	6.5687
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098635S Acquired: 6/25/2016 21:19:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47340**	**2.1822**	**.45682**	**.23569**	**.48957**	**.47212**	**.00440**
Stddev	.00586	.0116	.00441	.00472	.00317	.00386	.00078
%RSD	1.2388	.53009	.96525	2.0030	.64754	.81664	17.679
#1	.47626	2.1692	.45177	.23827	.48595	.47646	.00457
#2	.46666	2.1856	.45986	.23024	.49090	.46909	.00508
#3	.47729	2.1916	.45885	.23856	.49186	.47080	.00355
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9474.0**	**57681.**	**2990.6**
Stddev	86.2	193.	10.0
%RSD	.90991	.33483	.33371
#1	9421.7	57902.	3000.6
#2	9573.5	57545.	2990.5
#3	9426.8	57595.	2980.6

Approved: June 27, 2016

Sample Name: L1606098637SD Acquired: 6/25/2016 21:22:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18854**	**4.9112**	**.19745**	**1.3462**	**.50578**	**.02318**	**246.84**	**.02457**
Stddev	.00237	.0122	.00114	.0020	.00229	.00008	1.01	.00037
%RSD	1.2581	.24857	.57516	.14562	.45291	.33396	.40736	1.5133
#1	.18824	4.9085	.19618	1.3456	.50836	.02311	247.86	.02498
#2	.18633	4.9245	.19780	1.3447	.50496	.02326	245.85	.02445
#3	.19105	4.9006	.19837	1.3484	.50401	.02315	246.80	.02427
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09368**	**.23124**	**.24645**	**1.9652**	**29.866**	**.51243**	**71.961**	**.67062**
Stddev	.00032	.00174	.00162	.0103	.162	.00260	.245	.00120
%RSD	.34157	.75435	.65887	.52496	.54204	.50740	.33982	.17871
#1	.09405	.23044	.24793	1.9540	30.010	.51110	72.114	.67080
#2	.09349	.23325	.24471	1.9744	29.691	.51543	71.679	.66935
#3	.09350	.23005	.24671	1.9671	29.897	.51077	72.089	.67172
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50362**	**90.574**	**.23429**	**4.8998**	**.23803**	**.58838**	**.19013**	**6.6122**
Stddev	.00184	.311	.00137	.0310	.00392	.00166	.00571	.0196
%RSD	.36548	.34377	.58644	.63360	1.6481	.28131	3.0018	.29638
#1	.50535	90.891	.23522	4.9314	.24008	.58995	.18521	6.6237
#2	.50169	90.269	.23272	4.8693	.24051	.58666	.19639	6.5896
#3	.50382	90.562	.23494	4.8987	.23351	.58854	.18878	6.6233
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098637SD Acquired: 6/25/2016 21:22:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47518**	**2.1930**	**.45556**	**.23535**	**.47970**	**.47047**	**.00421**
Stddev	.00224	.0050	.00619	.00164	.00083	.00231	.00126
%RSD	.47229	.22774	1.3595	.69822	.17220	.49043	29.868
#1	.47661	2.1987	.46015	.23423	.48048	.47206	.00301
#2	.47259	2.1891	.45801	.23458	.47883	.46782	.00552
#3	.47634	2.1914	.44851	.23723	.47980	.47152	.00409
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9517.7**	**58425.**	**3034.0**
Stddev	30.6	371.	4.3
%RSD	.32191	.63434	.14141
#1	9523.8	58332.	3029.9
#2	9544.8	58110.	3038.5
#3	9484.5	58834.	3033.6

Approved: June 27, 2016

Sample Name: L1606098639 Acquired: 6/25/2016 21:26:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.00422**	**.00040**	**.00975**	**.00108**	**.00009**	**.14419**	**-.00005**
Stddev	.00042	.00758	.00073	.00126	.00087	.00008	.01744	.00009
%RSD	1118.0	179.89	181.74	12.897	80.476	90.859	12.096	178.96
#1	.00028	.01060	-.00028	.01106	.00209	.00013	.16280	-.00014
#2	.00012	-.00417	.00116	.00964	.00057	-.00000	.14155	-.00004
#3	-.00051	.00622	.00032	.00856	.00059	.00013	.12822	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00044**	**.00035**	**.00305**	**.04079**	**-.00706**	**.00203**	**-.02733**	**-.00024**
Stddev	.00042	.00030	.00090	.02484	.04162	.00092	.03833	.00264
%RSD	93.882	85.053	29.494	60.907	589.18	45.533	140.24	1117.6
#1	.00013	.00037	.00205	.05000	-.05467	.00295	-.00835	-.00277
#2	.00091	.00004	.00332	.05971	.01106	.00204	-.00220	-.00044
#3	.00028	.00063	.00378	.01266	.02242	.00110	-.07145	.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00046**	**.23384**	**.00002**	**.00301**	**.00223**	**-.00336**	**.00424**	**.10834**
Stddev	.00025	.02078	.00057	.00488	.00185	.00118	.00213	.00216
%RSD	54.203	8.8874	3135.0	161.94	83.035	35.176	50.129	1.9925
#1	.00023	.25768	.00001	-.00120	.00258	-.00441	.00208	.11078
#2	.00073	.22428	.00059	.00188	.00389	-.00208	.00633	.10755
#3	.00043	.21955	-.00055	.00835	.00023	-.00360	.00432	.10668
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098639 Acquired: 6/25/2016 21:26:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.00188	.00201	-.00117	.00072	.00941	.00130
Stddev	.00073	.00051	.00315	.00081	.00019	.00001	.00060
%RSD	203.49	27.359	156.60	69.426	26.854	.12705	46.035
#1	.00061	.00146	.00564	-.00068	.00081	.00940	.00116
#2	.00093	.00173	.00038	-.00211	.00085	.00941	.00078
#3	-.00047	.00245	.00001	-.00072	.00050	.00942	.00196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9979.7	61621.	3102.9
Stddev	10.2	118.	6.8
%RSD	.10173	.19116	.21926
#1	9983.1	61738.	3101.0
#2	9987.7	61621.	3110.5
#3	9968.3	61503.	3097.3

Approved: June 27, 2016

Sample Name: L1606098641 Acquired: 6/25/2016 21:30:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00155	.00228	-.00074	.00681	.00240	.00007	2.3285	.00015
Stddev	.00195	.00437	.00132	.00259	.00010	.00002	.0225	.00014
%RSD	125.93	191.41	178.17	38.016	4.0011	29.007	.96410	94.650
#1	.00016	.00624	-.00146	.00963	.00251	.00005	2.3542	.00003
#2	.00071	.00302	-.00156	.00453	.00235	.00009	2.3184	.00011
#3	.00378	-.00241	.00078	.00628	.00234	.00008	2.3128	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00014	.00163	.03413	.24665	.00092	.81266	-.00079
Stddev	.00068	.00062	.00075	.01156	.02854	.00423	.01745	.00318
%RSD	1106.1	456.64	45.829	33.860	11.573	458.16	2.1475	404.35
#1	-.00033	.00085	.00092	.03095	.24915	.00580	.81529	.00231
#2	.00085	-.00023	.00241	.02450	.27386	-.00166	.79404	-.00404
#3	-.00034	-.00022	.00156	.04694	.21693	-.00138	.82864	-.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	1.5234	-.00034	.00759	.00193	-.00110	-.00056	1.9225
Stddev	.00028	.0181	.00053	.00504	.00328	.00190	.00524	.0055
%RSD	316.47	1.1895	155.07	66.429	170.02	173.25	938.70	.28386
#1	-.00021	1.5412	-.00096	.00263	.00004	-.00329	-.00638	1.9218
#2	.00035	1.5240	.00002	.00743	.00571	-.00014	.00092	1.9283
#3	.00013	1.5050	-.00009	.01271	.00003	.00014	.00379	1.9175
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098641 Acquired: 6/25/2016 21:30:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.02979**	**.00925**	**-.00425**	**.00079**	**.00575**	**.00161**
Stddev	.00070	.00033	.00260	.00161	.00118	.00006	.00128
%RSD	2613.1	1.1094	28.082	37.920	148.25	1.0430	79.495
#1	-.00014	.02957	.00917	-.00541	.00147	.00579	.00219
#2	.00072	.03017	.01188	-.00492	.00148	.00578	.00014
#3	-.00067	.02963	.00669	-.00241	-.00057	.00568	.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9984.0**	**61505.**	**3103.5**
Stddev	25.4	97.	8.6
%RSD	.25425	.15693	.27670
#1	10013.	61422.	3093.7
#2	9966.4	61611.	3106.9
#3	9972.6	61483.	3109.8

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 21:34:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40382	10.228	.39903	.49252	1.0184	.05057	10.132
Stddev	.00317	.045	.00339	.00303	.0029	.00010	.084
%RSD	.78510	.44126	.84879	.61522	.28786	.20129	.82686
#1	.40329	10.193	.40176	.48985	1.0165	.05045	10.103
#2	.40723	10.279	.39524	.49189	1.0170	.05064	10.066
#3	.40095	10.211	.40009	.49581	1.0218	.05061	10.226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05109	.20032	.50425	.51389	3.9993	49.456	1.0271
Stddev	.00034	.00030	.00243	.00134	.0288	.230	.0087
%RSD	.66912	.15054	.48104	.26170	.72080	.46581	.84751
#1	.05096	.20027	.50150	.51248	3.9697	49.237	1.0193
#2	.05148	.20064	.50519	.51515	4.0273	49.435	1.0365
#3	.05084	.20004	.50607	.51404	4.0011	49.697	1.0255
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.5965	.50354	1.0171	50.205	.50852	9.9839	.50630
Stddev	.0605	.00125	.0104	.188	.00105	.0190	.00443
%RSD	.63000	.24843	1.0188	.37433	.20655	.18977	.87552
#1	9.5498	.50228	1.0149	50.026	.50872	9.9714	.50177
#2	9.5748	.50478	1.0283	50.189	.50945	10.006	.51063
#3	9.6648	.50354	1.0080	50.400	.50738	9.9747	.50650
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 21:34:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2057**	**.39535**	**5.1622**	**1.0068**	**1.0152**	**1.0163**	**.51868**
Stddev	.0009	.00724	.0066	.0035	.0056	.0047	.00189
%RSD	.07645	1.8317	.12822	.34938	.55282	.46463	.36343
#1	1.2067	.40045	5.1563	1.0056	1.0088	1.0109	.51803
#2	1.2055	.39854	5.1610	1.0107	1.0174	1.0194	.51721
#3	1.2048	.38706	5.1694	1.0040	1.0193	1.0187	.52081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0297**	**1.0108**	F **2.9654**
Stddev	.0010	.0013	.0124
%RSD	.09618	.12981	.41944
#1	1.0297	1.0109	2.9530
#2	1.0307	1.0120	2.9654
#3	1.0287	1.0094	2.9779
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9765.3**	**59222.**	**3028.4**
Stddev	12.6	103.	19.9
%RSD	.12950	.17379	.65564
#1	9777.2	59331.	3048.9
#2	9752.0	59127.	3027.1
#3	9766.5	59207.	3009.2

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 21:38:07 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00048**	**-.00056**	**.00159**	**.00238**	**.00173**	**.00014**	**-.05704**	**-.00011**
Stddev	.00089	.00372	.00374	.00230	.00036	.00002	.05178	.00017
%RSD	185.89	660.56	234.30	96.559	20.708	14.400	90.783	156.11
#1	-.00133	.00080	.00118	.00024	.00195	.00012	-.11682	-.00027
#2	-.00055	-.00477	-.00192	.00481	.00132	.00016	-.02846	-.00014
#3	.00045	.00228	.00552	.00209	.00192	.00015	-.02584	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00017**	**.00048**	**.00001**	**.01554**	**-.08094**	**.00031**	**-.00960**	**.00059**
Stddev	.00009	.00037	.00173	.01679	.11260	.00565	.05873	.00171
%RSD	56.610	77.335	20230.	108.07	139.11	1853.2	611.58	288.38
#1	.00024	.00066	.00194	-.00104	.01136	.00158	-.02063	.00007
#2	.00020	.00072	-.00054	.03254	-.20639	-.00588	.05386	.00251
#3	.00006	.00005	-.00138	.01511	-.04780	.00521	-.06203	-.00080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00336**	**.02885**	**-.00050**	**.00712**	**.00213**	**.00602**	**-.00054**	**.04214**
Stddev	.00024	.02974	.00074	.00312	.00180	.00158	.00069	.00013
%RSD	7.0582	103.10	148.29	43.907	84.214	26.247	127.12	.29697
#1	.00323	-.00548	.00008	.00759	.00359	.00782	.00008	.04201
#2	.00321	.04496	-.00024	.00998	.00013	.00485	-.00042	.04226
#3	.00363	.04705	-.00133	.00378	.00268	.00540	-.00129	.04215
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 21:38:07 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00047**	**.00065**	**-.00177**	**-.00021**	**.00113**	**.00005**	**.00375**
Stddev	.00100	.00044	.00221	.00418	.00029	.00020	.00087
%RSD	212.41	68.047	125.42	1958.4	25.944	435.57	23.135
#1	.00160	.00080	.00075	-.00080	.00139	-.00005	.00437
#2	-.00031	.00015	-.00341	-.00407	.00081	.00028	.00276
#3	.00012	.00100	-.00264	.00422	.00119	-.00009	.00413
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9540.4**	**58573.**	**2934.4**
Stddev	6.2	75.	17.1
%RSD	.06498	.12729	.58178
#1	9533.2	58646.	2919.8
#2	9543.3	58575.	2953.2
#3	9544.6	58497.	2930.3

Approved: June 27, 2016

Sample Name: PBW 9A Acquired: 6/25/2016 21:42:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.00614**	**.00175**	**.00056**	**.00231**	**.00012**	**-.04646**	**-.00007**
Stddev	.00171	.00204	.00393	.00252	.00071	.00020	.04124	.00026
%RSD	1283.4	33.141	224.26	449.74	30.683	160.24	88.765	365.50
#1	.00182	.00611	.00626	-.00197	.00237	.00018	-.00258	-.00036
#2	-.00137	.00820	-.00088	.00057	.00157	.00029	-.08442	.00014
#3	-.00085	.00413	-.00013	.00307	.00298	-.00010	-.05240	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**.00010**	**.00080**	**.02407**	**-.12665**	**.00141**	**-.00997**	**-.00231**
Stddev	.00033	.00034	.00081	.01192	.12266	.00378	.02213	.00072
%RSD	90.436	329.64	101.91	49.545	96.850	267.21	222.01	31.042
#1	-.00000	-.00017	-.00014	.03113	-.25310	.00322	.01487	-.00193
#2	-.00045	.00048	.00118	.03078	-.11869	.00395	-.02759	-.00185
#3	-.00065	-.00000	.00135	.01030	-.00816	-.00293	-.01718	-.00313
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00037**	**.03613**	**.00006**	**.00672**	**.00326**	**-.00431**	**-.00184**	**.00566**
Stddev	.00007	.03275	.00077	.00152	.00253	.00485	.00591	.00059
%RSD	18.235	90.627	1212.2	22.673	77.664	112.59	322.28	10.478
#1	.00035	.07347	.00060	.00612	.00546	-.00044	-.00125	.00618
#2	.00032	.02263	-.00082	.00846	.00049	-.00975	.00376	.00501
#3	.00045	.01230	.00041	.00559	.00385	-.00274	-.00802	.00578
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: PBW 9A Acquired: 6/25/2016 21:42:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	.00033	-.00143	-.00317	.00125	.00161	.00218
Stddev	.00053	.00015	.00130	.00329	.00039	.00011	.00081
%RSD	84.270	46.594	90.758	103.97	30.982	7.0758	37.192
#1	.00094	.00050	-.00075	-.00532	.00080	.00148	.00195
#2	.00002	.00020	-.00062	-.00481	.00145	.00171	.00150
#3	.00092	.00028	-.00293	.00062	.00150	.00162	.00308
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9585.8	59115.	2963.7
Stddev	26.3	98.	6.0
%RSD	.27487	.16506	.20388
#1	9574.9	59148.	2962.9
#2	9615.8	59005.	2958.2
#3	9566.6	59192.	2970.2

Approved: June 27, 2016

Sample Name: LCSW 9A Acquired: 6/25/2016 21:45:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19278**	**4.8645**	**.19357**	**.92620**	**.49567**	**.02388**	**4.9744**	**.02438**
Stddev	.00059	.0150	.00172	.00296	.00123	.00001	.0131	.00027
%RSD	.30529	.30879	.88618	.31973	.24905	.05168	.26315	1.0959
#1	.19266	4.8773	.19194	.92961	.49521	.02387	4.9745	.02469
#2	.19342	4.8480	.19536	.92439	.49707	.02389	4.9613	.02424
#3	.19226	4.8682	.19339	.92458	.49473	.02389	4.9875	.02421
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09756**	**.24011**	**.24908**	**1.9287**	**23.845**	**.50347**	**4.7458**	**.24452**
Stddev	.00018	.00063	.00057	.0379	.076	.00304	.1100	.00304
%RSD	.18802	.26044	.22811	1.9678	.32025	.60437	2.3184	1.2446
#1	.09771	.24070	.24970	1.9204	23.902	.50653	4.7834	.24200
#2	.09761	.23946	.24858	1.9701	23.875	.50343	4.6218	.24790
#3	.09735	.24018	.24895	1.8956	23.758	.50044	4.8320	.24367
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50361**	**24.550**	**.24652**	**4.6792**	**.24585**	**.57643**	**.18945**	**2.4007**
Stddev	.00079	.045	.00091	.0152	.00374	.00321	.00289	.0038
%RSD	.15600	.18503	.37091	.32489	1.5220	.55613	1.5253	.15739
#1	.50355	24.561	.24748	4.6824	.24789	.57981	.19277	2.4049
#2	.50442	24.588	.24565	4.6926	.24153	.57604	.18748	2.3993
#3	.50285	24.500	.24642	4.6627	.24812	.57343	.18811	2.3978
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LCSW 9A Acquired: 6/25/2016 21:45:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48346**	**.50078**	**.49876**	**.24644**	**.49280**	**.48316**	**.01652**
Stddev	.00157	.00182	.00430	.00290	.00093	.00040	.00416
%RSD	.32431	.36335	.86149	1.1750	.18883	.08190	25.157
#1	.48465	.50112	.49719	.24479	.49339	.48270	.01275
#2	.48404	.50241	.49547	.24978	.49173	.48334	.01583
#3	.48168	.49882	.50362	.24474	.49328	.48342	.02097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9876.1**	**60275.**	**3070.8**
Stddev	6.3	180.	12.0
%RSD	.06355	.29822	.39033
#1	9874.5	60221.	3071.7
#2	9883.0	60476.	3058.4
#3	9870.8	60129.	3082.3

Approved: June 27, 2016

Sample Name: F BLANK Acquired: 6/25/2016 21:49:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	-.00126	-.00015	.00486	.00128	.00012	-.00459	.00000
Stddev	.00056	.00100	.00110	.00023	.00095	.00001	.02969	.00020
%RSD	100.53	79.131	736.67	4.6731	74.371	6.7718	646.26	7554.0
#1	.00064	-.00237	-.00130	.00509	.00028	.00012	.02032	.00019
#2	.00106	-.00043	-.00004	.00484	.00217	.00011	-.03745	-.00020
#3	-.00004	-.00099	.00090	.00463	.00139	.00012	.00335	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.00026	.00088	.03134	-.11502	-.00026	.03535	-.00044
Stddev	.00018	.00121	.00068	.00659	.05233	.00265	.10514	.00096
%RSD	49.613	468.36	76.871	21.019	45.492	1017.6	297.45	218.87
#1	.00058	.00075	.00159	.02374	-.13830	.00130	-.07629	.00060
#2	.00024	.00114	.00082	.03485	-.15168	.00124	.13249	-.00129
#3	.00028	-.00112	.00024	.03543	-.05510	-.00331	.04985	-.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.07370	.00132	.00313	.00117	-.00091	.00077	-.00309
Stddev	.00026	.00588	.00035	.00217	.00118	.00090	.00482	.00173
%RSD	45.817	7.9801	26.636	69.209	100.20	98.397	629.48	56.034
#1	.00085	.06695	.00170	.00515	.00095	-.00029	-.00041	-.00378
#2	.00042	.07645	.00125	.00084	.00245	-.00194	-.00336	-.00438
#3	.00040	.07770	.00101	.00340	.00013	-.00050	.00606	-.00112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: F BLANK Acquired: 6/25/2016 21:49:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00033**	**.00302**	**-.00048**	**-.00333**	**.00002**	**.00245**	**.00132**
Stddev	.00077	.00023	.00928	.00236	.00016	.00009	.00057
%RSD	230.12	7.5634	1914.7	70.982	654.43	3.7966	42.974
#1	.00023	.00325	-.01051	-.00146	-.00016	.00251	.00071
#2	.00115	.00279	.00127	-.00253	.00008	.00234	.00183
#3	-.00038	.00303	.00779	-.00598	.00016	.00250	.00143
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9948.0**	**61128.**	**3082.2**
Stddev	8.3	35.	19.2
%RSD	.08376	.05747	.62310
#1	9943.7	61136.	3060.8
#2	9942.7	61089.	3097.9
#3	9957.6	61158.	3087.8

Approved: June 27, 2016

Sample Name: L1606078709 Acquired: 6/25/2016 21:53:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00106	.32067	.00199	.03822	.08666	.00012	52.298	.00025
Stddev	.00033	.00225	.00178	.00083	.00065	.00013	.384	.00005
%RSD	31.425	.70249	89.821	2.1841	.74667	104.78	.73398	21.021
#1	.00100	.32316	.00023	.03790	.08700	-.00002	52.414	.00024
#2	.00077	.32010	.00380	.03760	.08707	.00018	51.870	.00021
#3	.00143	.31876	.00193	.03917	.08592	.00021	52.611	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.00232	.00233	.31407	.84091	.00625	16.422	.01281
Stddev	.00025	.00123	.00162	.01381	.09733	.00295	.087	.00086
%RSD	177.99	52.851	69.798	4.3981	11.574	47.203	.53048	6.7172
#1	-.00001	.00331	.00164	.32378	.73706	.00531	16.422	.01228
#2	.00000	.00271	.00116	.32018	.93004	.00389	16.510	.01236
#3	.00043	.00095	.00418	.29826	.85562	.00956	16.336	.01381
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	3.5331	.00030	.18004	.00409	-.00180	.00164	8.5479
Stddev	.00032	.0286	.00045	.00328	.00158	.00258	.00446	.0078
%RSD	137.02	.80985	147.61	1.8192	38.579	143.43	271.62	.09172
#1	-.00011	3.5554	-.00012	.17874	.00498	-.00359	.00673	8.5558
#2	.00052	3.5008	.00077	.17762	.00503	-.00297	-.00020	8.5477
#3	.00028	3.5432	.00026	.18377	.00227	.00116	-.00161	8.5401
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078709 Acquired: 6/25/2016 21:53:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.13816	-.00281	-.00107	.00371	.00875	.00154
Stddev	.00042	.00078	.00681	.00141	.00081	.00007	.00044
%RSD	132.89	.56285	242.62	131.61	21.926	.80395	28.630
#1	-.00012	.13842	.00500	-.00130	.00416	.00881	.00162
#2	.00035	.13728	-.00586	-.00235	.00277	.00878	.00193
#3	.00072	.13877	-.00757	.00044	.00421	.00867	.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9876.5	60888.	3069.7
Stddev	11.3	192.	3.6
%RSD	.11437	.31559	.11816
#1	9889.0	60702.	3066.7
#2	9866.9	60874.	3073.8
#3	9873.6	61086.	3068.7

Approved: June 27, 2016

Sample Name: L1606078711S Acquired: 6/25/2016 21:57:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19226**	**5.2769**	**.19700**	**.97637**	**.57407**	**.02377**	**55.412**	**.02464**
Stddev	.00232	.0172	.00210	.00695	.00123	.00006	.275	.00018
%RSD	1.2075	.32678	1.0663	.71175	.21357	.23547	.49636	.71677
#1	.19492	5.2928	.19484	.98432	.57271	.02383	55.376	.02446
#2	.19066	5.2586	.19711	.97142	.57439	.02373	55.156	.02465
#3	.19119	5.2792	.19903	.97337	.57510	.02375	55.703	.02481
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09590**	**.23900**	**.24525**	**2.2503**	**24.873**	**.51320**	**20.375**	**.25171**
Stddev	.00047	.00136	.00161	.0156	.173	.01009	.023	.00267
%RSD	.48644	.56990	.65491	.69491	.69517	1.9665	.11329	1.0594
#1	.09633	.24013	.24639	2.2591	25.016	.52369	20.389	.25241
#2	.09595	.23749	.24595	2.2322	24.681	.50356	20.349	.25396
#3	.09541	.23938	.24342	2.2595	24.921	.51234	20.388	.24877
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50427**	**27.841**	**.24087**	**4.9542**	**.24449**	**.58622**	**.18341**	**11.076**
Stddev	.00227	.102	.00131	.0062	.00416	.00262	.00666	.019
%RSD	.45102	.36806	.54487	.12407	1.6996	.44696	3.6299	.17466
#1	.50494	27.874	.24041	4.9608	.24621	.58442	.18291	11.063
#2	.50614	27.726	.24235	4.9486	.23975	.58502	.19031	11.099
#3	.50174	27.923	.23985	4.9531	.24750	.58923	.17702	11.068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078711S Acquired: 6/25/2016 21:57:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48537**	**.63044**	**.49547**	**.24660**	**.49048**	**.48728**	**.00709**
Stddev	.00041	.00808	.00649	.00259	.00192	.00292	.00024
%RSD	.08494	1.2823	1.3100	1.0500	.39154	.59943	3.4352
#1	.48528	.63362	.48907	.24492	.49247	.49009	.00732
#2	.48501	.63645	.50205	.24958	.48864	.48426	.00711
#3	.48582	.62125	.49531	.24529	.49034	.48750	.00684
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9767.2**	**59939.**	**3081.9**
Stddev	8.4	151.	2.2
%RSD	.08617	.25130	.07156
#1	9776.8	59826.	3083.9
#2	9761.1	60110.	3082.2
#3	9763.8	59880.	3079.5

Approved: June 27, 2016

Sample Name: L1606078712SD Acquired: 6/25/2016 22:01:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19422**	**6.5547**	**.19616**	**.97909**	**.58447**	**.02412**	**57.272**	**.02449**
Stddev	.00043	.0174	.00206	.00320	.00356	.00008	.255	.00025
%RSD	.22056	.26500	1.0502	.32643	.60985	.31860	.44461	1.0216
#1	.19468	6.5722	.19401	.98024	.58211	.02413	57.018	.02471
#2	.19383	6.5546	.19811	.97548	.58857	.02404	57.527	.02422
#3	.19415	6.5375	.19636	.98156	.58273	.02419	57.272	.02454
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09680**	**.24221**	**.24688**	**3.2519**	**25.085**	**.51256**	**21.272**	**.29044**
Stddev	.00024	.00084	.00160	.0305	.123	.00182	.123	.00255
%RSD	.25204	.34673	.64632	.93681	.48984	.35468	.57596	.87927
#1	.09682	.24178	.24538	3.2175	24.965	.51125	21.131	.28769
#2	.09704	.24318	.24856	3.2756	25.081	.51179	21.342	.29274
#3	.09655	.24168	.24672	3.2624	25.210	.51464	21.344	.29089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50646**	**28.018**	**.24386**	**4.9818**	**.24358**	**.58240**	**.18769**	**13.764**
Stddev	.00076	.167	.00147	.0053	.00228	.00382	.00425	.008
%RSD	.15029	.59670	.60238	.10534	.93711	.65545	2.2629	.06131
#1	.50691	27.825	.24251	4.9763	.24111	.57903	.18298	13.756
#2	.50690	28.112	.24543	4.9823	.24561	.58163	.18886	13.772
#3	.50558	28.117	.24364	4.9868	.24402	.58655	.19123	13.765
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078712SD Acquired: 6/25/2016 22:01:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48752**	**.63979**	**.50344**	**.24632**	**.49636**	**.48329**	**.00682**
Stddev	.00123	.00383	.00416	.00077	.00180	.00044	.00097
%RSD	.25232	.59818	.82653	.31336	.36344	.09176	14.263
#1	.48785	.63646	.50591	.24591	.49538	.48373	.00713
#2	.48616	.64397	.49864	.24584	.49525	.48329	.00761
#3	.48856	.63895	.50578	.24721	.49844	.48284	.00573
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9745.6**	**59867.**	**3081.8**
Stddev	9.9	91.	26.0
%RSD	.10194	.15198	.84468
#1	9734.5	59851.	3110.8
#2	9753.6	59965.	3060.5
#3	9748.6	59785.	3074.0

Approved: June 27, 2016

Sample Name: L1606078701 Acquired: 6/25/2016 22:04:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00206**	**-.00089**	**-.00017**	**.00563**	**.00151**	**.00011**	**.08615**	**.00015**
Stddev	.00234	.00167	.00131	.00160	.00060	.00001	.02054	.00021
%RSD	113.42	187.14	751.31	28.470	39.897	9.3705	23.846	140.35
#1	.00316	-.00269	.00118	.00529	.00196	.00012	.07852	-.00008
#2	-.00062	-.00061	-.00144	.00737	.00083	.00010	.07052	.00033
#3	.00364	.00062	-.00027	.00422	.00173	.00012	.10942	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.00093**	**.00322**	**.06115**	**.01246**	**.00241**	**.02800**	**.00003**
Stddev	.00003	.00076	.00095	.00519	.08806	.00216	.01589	.00083
%RSD	20.822	82.163	29.586	8.4819	706.92	89.891	56.731	2625.4
#1	.00011	.00029	.00408	.06573	-.03307	.00026	.04634	-.00085
#2	.00017	.00177	.00219	.05552	.11396	.00458	.01831	.00015
#3	.00013	.00071	.00338	.06220	-.04352	.00238	.01936	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00040**	**.44862**	**.00009**	**.00157**	**.00319**	**-.00012**	**.00644**	**.10535**
Stddev	.00015	.01169	.00041	.00200	.00252	.00436	.00247	.00160
%RSD	36.378	2.6064	429.23	127.80	78.785	3632.8	38.299	1.5199
#1	.00041	.45408	.00056	-.00069	.00238	-.00321	.00918	.10450
#2	.00025	.45659	-.00021	.00226	.00118	.00487	.00438	.10720
#3	.00054	.43520	-.00006	.00313	.00602	-.00202	.00577	.10436
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078701 Acquired: 6/25/2016 22:04:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00114	.00134	.00464	-.00236	.00126	.00852	.00204
Stddev	.00023	.00031	.01117	.00170	.00022	.00013	.00133
%RSD	19.939	23.344	240.52	72.025	17.171	1.4749	64.993
#1	.00100	.00168	-.00728	-.00407	.00147	.00841	.00183
#2	.00140	.00106	.01487	-.00232	.00127	.00866	.00083
#3	.00102	.00128	.00634	-.00068	.00104	.00851	.00346
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9978.6	61725.	3108.7
Stddev	25.8	52.	12.8
%RSD	.25894	.08436	.41157
#1	9949.5	61751.	3109.2
#2	9998.7	61759.	3121.3
#3	9987.8	61665.	3095.7

Approved: June 27, 2016

Sample Name: L1606078701PS Acquired: 6/25/2016 22:08:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573561-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19562**	**4.8670**	**.19417**	**.93274**	**.49617**	**.02396**	**5.0466**	**.02449**
Stddev	.00101	.0014	.00206	.00077	.00126	.00015	.0443	.00024
%RSD	.51610	.02767	1.0615	.08264	.25431	.60837	.87718	.96002
#1	.19561	4.8655	.19531	.93216	.49577	.02379	5.0119	.02471
#2	.19461	4.8672	.19179	.93245	.49515	.02407	5.0964	.02451
#3	.19663	4.8682	.19541	.93362	.49758	.02401	5.0313	.02424
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09815**	**.24178**	**.25186**	**1.9475**	**23.902**	**.50912**	**4.6690**	**.24615**
Stddev	.00038	.00032	.00085	.0476	.079	.00280	.1745	.00176
%RSD	.38848	.13325	.33570	2.4417	.33116	.54926	3.7379	.71493
#1	.09847	.24215	.25095	2.0020	23.984	.51180	4.5199	.24606
#2	.09825	.24158	.25263	1.9144	23.825	.50622	4.6262	.24443
#3	.09773	.24160	.25200	1.9261	23.897	.50934	4.8609	.24795
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50547**	**24.979**	**.24871**	**4.7191**	**.25003**	**.58513**	**.18331**	**2.5397**
Stddev	.00148	.047	.00145	.0045	.00153	.00133	.00963	.0085
%RSD	.29370	.18695	.58415	.09482	.61173	.22744	5.2541	.33396
#1	.50679	24.962	.24995	4.7237	.24937	.58423	.17385	2.5470
#2	.50576	24.943	.24906	4.7186	.24895	.58665	.18298	2.5417
#3	.50387	25.032	.24711	4.7148	.25178	.58449	.19310	2.5304
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078701PS Acquired: 6/25/2016 22:08:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573561-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48806	.50437	.49939	.24983	.48939	.48880	.00250
Stddev	.00273	.00349	.00591	.00248	.00296	.00032	.00045
%RSD	.55970	.69122	1.1836	.99157	.60527	.06447	18.096
#1	.48918	.50154	.50066	.25202	.49256	.48872	.00242
#2	.49005	.50331	.49295	.25032	.48893	.48914	.00298
#3	.48494	.50827	.50457	.24714	.48669	.48853	.00209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9876.1	60662.	3087.6
Stddev	12.0	38.	4.3
%RSD	.12163	.06253	.13975
#1	9869.1	60619.	3083.6
#2	9869.3	60677.	3092.2
#3	9890.0	60690.	3087.1

Approved: June 27, 2016

Sample Name: L1606078701SDL Acquired: 6/25/2016 22:12:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573561-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00226**	**-.00962**	**.00257**	**.00372**	**.00008**	**.00010**	**-.05467**	**-.00005**
Stddev	.00390	.01062	.00091	.00131	.00131	.00006	.03854	.00004
%RSD	172.35	110.37	35.549	35.155	1747.1	57.750	70.491	84.699
#1	.00675	-.01272	.00350	.00225	-.00089	.00014	-.04307	-.00000
#2	.00027	-.01835	.00254	.00475	.00157	.00012	-.09767	-.00007
#3	-.00023	.00220	.00167	.00417	-.00046	.00003	-.02326	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.00076**	**.00146**	**.02792**	**-.10756**	**-.00176**	**-.01577**	**.00085**
Stddev	.00022	.00111	.00071	.01781	.06853	.00352	.01010	.00145
%RSD	144.06	146.16	48.411	63.806	63.714	199.76	64.076	169.31
#1	.00010	.00182	.00216	.04804	-.06727	-.00153	-.01532	-.00005
#2	-.00026	-.00038	.00146	.01416	-.18668	.00163	-.02609	.00009
#3	-.00029	.00083	.00075	.02156	-.06871	-.00539	-.00589	.00252
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00035**	**.12025**	**-.00037**	**.00742**	**.00388**	**-.00036**	**.00693**	**.02501**
Stddev	.00028	.02622	.00009	.00699	.00334	.00491	.00079	.00132
%RSD	80.313	21.803	23.237	94.157	86.143	1346.9	11.341	5.2920
#1	.00057	.14797	-.00041	.00450	.00651	.00107	.00746	.02626
#2	.00045	.09585	-.00027	.01539	.00501	-.00584	.00603	.02362
#3	.00003	.11693	-.00042	.00237	.00012	.00367	.00731	.02515
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078701SDL Acquired: 6/25/2016 22:12:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573561-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.00027	.00391	-.00239	.00091	.00198	.00117
Stddev	.00062	.00058	.00259	.00083	.00057	.00021	.00105
%RSD	170.80	217.03	66.210	34.804	62.977	10.839	89.133
#1	.00032	-.00015	.00203	-.00335	.00041	.00217	.00108
#2	-.00024	.00003	.00686	-.00188	.00153	.00175	.00018
#3	.00100	.00093	.00284	-.00194	.00079	.00202	.00227
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10481.	64804.	3221.0
Stddev	25.	98.	4.2
%RSD	.23393	.15113	.13029
#1	10501.	64916.	3225.8
#2	10489.	64737.	3219.2
#3	10454.	64758.	3217.9

Approved: June 27, 2016

Sample Name: L1606078701SDL Acquired: 6/25/2016 22:16:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573561-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00050**	**-.01671**	**.00066**	**.00174**	**.00117**	**.00007**	**-.03873**	**-.00006**
Stddev	.00055	.00595	.00077	.00373	.00047	.00003	.02526	.00023
%RSD	110.50	35.627	115.52	214.66	39.929	36.665	65.224	418.10
#1	.00087	-.01063	-.00016	.00037	.00065	.00010	-.06018	.00018
#2	-.00014	-.02253	.00136	-.00111	.00156	.00005	-.01089	-.00029
#3	.00077	-.01699	.00080	.00596	.00129	.00006	-.04513	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00020**	**-.00027**	**.00015**	**.01537**	**-.08473**	**-.00313**	**-.04452**	**.00037**
Stddev	.00041	.00031	.00072	.00667	.12317	.00148	.02793	.00217
%RSD	208.97	115.52	489.41	43.427	145.37	47.326	62.733	580.66
#1	.00051	-.00025	-.00010	.01465	-.11440	-.00155	-.01300	-.00212
#2	-.00027	-.00059	-.00042	.02238	.05057	-.00335	-.06618	.00176
#3	.00035	.00003	.00096	.00908	-.19035	-.00448	-.05440	.00148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00052**	**.04068**	**-.00002**	**.00630**	**.00223**	**-.00439**	**.00789**	**.00775**
Stddev	.00014	.01560	.00098	.00605	.00105	.00119	.00333	.00034
%RSD	26.596	38.347	4828.5	96.010	47.199	27.128	42.126	4.3419
#1	-.00068	.05533	-.00110	-.00065	.00121	-.00319	.01093	.00736
#2	-.00042	.02428	.00080	.00920	.00218	-.00557	.00434	.00794
#3	-.00046	.04243	.00023	.01036	.00331	-.00443	.00841	.00794
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078701SDL Acquired: 6/25/2016 22:16:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573561-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00078**	**.00049**	**.00611**	**-.00169**	**-.00019**	**.00076**	**.00104**
Stddev	.00047	.00028	.00364	.00121	.00086	.00008	.00084
%RSD	59.598	55.989	59.553	71.357	443.84	10.636	80.846
#1	-.00025	.00020	.00285	-.00078	-.00105	.00067	.00138
#2	-.00100	.00075	.00545	-.00306	-.00021	.00078	.00165
#3	-.00110	.00052	.01004	-.00123	.00067	.00082	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10473.**	**64343.**	**3185.8**
Stddev	11.	88.	33.4
%RSD	.10369	.13736	1.0486
#1	10479.	64432.	3210.0
#2	10479.	64255.	3199.9
#3	10461.	64342.	3147.7

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 22:20:12 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39676**	**10.011**	**.39200**	**.48774**	**1.0072**	**.04931**	**9.9627**
Stddev	.00166	.042	.00060	.00247	.0020	.00016	.0336
%RSD	.41961	.41526	.15324	.50705	.19487	.32345	.33737
#1	.39852	10.036	.39268	.48499	1.0052	.04934	9.9285
#2	.39656	10.035	.39180	.48843	1.0074	.04945	9.9639
#3	.39521	9.9633	.39153	.48979	1.0091	.04914	9.9956
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05046**	**.19748**	**.49159**	**.50549**	**3.9250**	**48.860**	**1.0117**
Stddev	.00033	.00063	.00167	.00263	.0491	.051	.0023
%RSD	.66275	.32062	.34000	.52017	1.2522	.10387	.22425
#1	.05068	.19812	.49231	.50540	3.8948	48.907	1.0140
#2	.05064	.19745	.49279	.50817	3.9817	48.806	1.0118
#3	.05008	.19686	.48968	.50291	3.8986	48.867	1.0095
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.4449**	**.49486**	**1.0080**	**49.891**	**.50156**	**9.8436**	**.50078**
Stddev	.0163	.00095	.0079	.070	.00172	.0350	.00128
%RSD	.17297	.19183	.78730	.13958	.34250	.35531	.25500
#1	9.4275	.49541	1.0170	49.848	.50286	9.8791	.50070
#2	9.4600	.49376	1.0019	49.971	.50221	9.8426	.49954
#3	9.4471	.49540	1.0052	49.853	.49961	9.8092	.50209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 22:20:12 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1892**	**.38968**	**5.0794**	**.99180**	**1.0052**	**1.0145**	**.50829**
Stddev	.0070	.00637	.0139	.00335	.0009	.0065	.00390
%RSD	.58775	1.6349	.27365	.33789	.09319	.64413	.76634
#1	1.1970	.39094	5.0928	.99452	1.0044	1.0072	.50887
#2	1.1869	.38277	5.0804	.99283	1.0062	1.0197	.51187
#3	1.1836	.39532	5.0651	.98805	1.0048	1.0166	.50414
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0022**	**.99700**	F **2.9158**
Stddev	.0042	.00301	.0038
%RSD	.42153	.30191	.13010
#1	1.0066	.99806	2.9128
#2	1.0017	.99934	2.9201
#3	.99824	.99361	2.9145
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9930.6**	**60612.**	**3086.3**
Stddev	10.1	73.	9.8
%RSD	.10207	.12111	.31687
#1	9941.9	60647.	3097.4
#2	9922.1	60528.	3082.4
#3	9927.9	60661.	3079.1

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 22:23:49 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00100**	**-.00695**	**.00023**	**.00246**	**.00203**	**.00014**	**-.01220**	**.00014**
Stddev	.00181	.00287	.00117	.00195	.00133	.00002	.03027	.00029
%RSD	181.13	41.303	500.29	79.096	65.555	16.180	248.16	212.80
#1	-.00109	-.00504	-.00098	.00360	.00305	.00017	-.03745	.00025
#2	.00205	-.00555	.00136	.00021	.00053	.00014	.02136	-.00019
#3	.00203	-.01025	.00032	.00357	.00251	.00013	-.02050	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**-.00000**	**.00097**	**.02954**	**-.02965**	**-.00129**	**.00088**	**.00163**
Stddev	.00011	.00082	.00136	.00883	.01713	.00234	.03199	.00271
%RSD	74.595	562770.	140.78	29.900	57.784	181.57	3634.1	165.69
#1	.00008	.00083	.00213	.03726	-.04191	-.00397	.03754	.00233
#2	.00008	-.00001	.00130	.01991	-.03697	-.00018	-.01355	.00393
#3	.00027	-.00081	-.00053	.03145	-.01007	.00029	-.02135	-.00135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00354**	**.01474**	**-.00023**	**.00359**	**.00237**	**.00219**	**.00418**	**.03627**
Stddev	.00058	.04847	.00031	.00245	.00060	.00526	.00484	.00058
%RSD	16.314	328.86	136.11	68.357	25.126	240.59	115.86	1.6055
#1	.00288	-.00030	-.00040	.00322	.00284	.00365	.00822	.03616
#2	.00384	.06894	.00013	.00134	.00170	.00656	.00551	.03575
#3	.00391	-.02443	-.00042	.00620	.00257	-.00365	-.00119	.03690
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 22:23:49 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**.00039**	**.00181**	**-.00370**	**.00020**	**.00004**	**.00435**
Stddev	.00110	.00025	.00867	.00085	.00051	.00012	.00191
%RSD	689.85	64.301	479.78	22.978	253.56	271.57	43.946
#1	-.00106	.00012	.00915	-.00439	-.00031	.00014	.00375
#2	.00108	.00042	.00404	-.00397	.00020	.00008	.00281
#3	.00046	.00061	-.00776	-.00275	.00071	-.00009	.00649
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9799.0**	**60424.**	**3020.0**
Stddev	11.5	135.	11.0
%RSD	.11760	.22419	.36496
#1	9789.9	60445.	3025.5
#2	9795.1	60547.	3027.2
#3	9812.0	60279.	3007.3

Approved: June 27, 2016

Sample Name: L1606078710 Acquired: 6/25/2016 22:27:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.22720	.00214	.03806	.08552	.00012	52.208	.00022
Stddev	.00078	.00436	.00063	.00014	.00079	.00005	.232	.00016
%RSD	450.39	1.9170	29.562	.37345	.92041	43.173	.44436	71.173
#1	.00025	.22486	.00206	.03796	.08534	.00008	52.380	.00034
#2	.00030	.22452	.00280	.03822	.08638	.00018	52.301	.00028
#3	-.00108	.23223	.00155	.03799	.08484	.00010	51.944	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.00186	.00266	.23670	.85794	.00848	16.196	.00759
Stddev	.00014	.00018	.00107	.03451	.05555	.00209	.053	.00200
%RSD	849.17	9.9559	40.055	14.580	6.4743	24.705	.32764	26.366
#1	-.00011	.00187	.00273	.22408	.80379	.01054	16.251	.00990
#2	.00017	.00167	.00156	.27574	.91479	.00636	16.192	.00643
#3	-.00001	.00204	.00369	.21027	.85526	.00853	16.145	.00644
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00109	3.4758	.00069	.17816	.00790	-.00197	-.00080	8.3609
Stddev	.00043	.0348	.00145	.00114	.00265	.00100	.00335	.0283
%RSD	39.553	1.0002	208.84	.63768	33.519	50.807	416.39	.33868
#1	.00115	3.5101	.00211	.17685	.00777	-.00150	.00187	8.3874
#2	.00149	3.4766	.00076	.17877	.00531	-.00312	.00028	8.3643
#3	.00063	3.4406	-.00079	.17886	.01060	-.00129	-.00456	8.3311
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078710 Acquired: 6/25/2016 22:27:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00106	.13692	-.00198	-.00343	.00351	.00457	.00538
Stddev	.00037	.00076	.00399	.00152	.00135	.00005	.00158
%RSD	34.945	.55142	201.79	44.378	38.390	1.0573	29.298
#1	.00117	.13773	-.00276	-.00427	.00288	.00452	.00538
#2	.00136	.13624	.00235	-.00167	.00505	.00462	.00381
#3	.00065	.13680	-.00552	-.00433	.00259	.00458	.00696
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9837.0	60854.	3075.5
Stddev	21.0	87.	13.2
%RSD	.21328	.14286	.42972
#1	9813.4	60881.	3070.1
#2	9853.7	60757.	3065.8
#3	9843.8	60924.	3090.5

Approved: June 27, 2016

Sample Name: L1606078718 Acquired: 6/25/2016 22:31:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	1.2702	.00086	.07193	.15344	.00016	53.535	.00010
Stddev	.00088	.0133	.00129	.00289	.00068	.00006	.315	.00014
%RSD	504.87	1.0437	151.37	4.0242	.44552	39.145	.58814	143.56
#1	.00078	1.2717	-.00017	.07191	.15299	.00023	53.705	-.00002
#2	-.00096	1.2563	.00043	.07484	.15310	.00014	53.172	.00025
#3	-.00034	1.2827	.00231	.06905	.15423	.00011	53.729	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00093	.00320	.00404	1.3343	1.2661	.00990	20.655	.10718
Stddev	.00038	.00017	.00073	.0192	.0597	.00249	.173	.00269
%RSD	40.455	5.3029	17.991	1.4379	4.7192	25.172	.83716	2.5057
#1	.00050	.00331	.00423	1.3126	1.1986	.01278	20.828	.10559
#2	.00122	.00328	.00465	1.3416	1.2875	.00842	20.482	.11029
#3	.00107	.00300	.00324	1.3489	1.3123	.00851	20.655	.10568
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00197	9.5571	.00271	.15727	.00713	-.00001	-.00213	9.2004
Stddev	.00025	.0745	.00060	.00312	.00099	.00396	.00180	.0136
%RSD	12.754	.77965	22.028	1.9854	13.840	44119.	84.428	.14793
#1	.00222	9.6099	.00232	.16018	.00745	-.00238	-.00366	9.2098
#2	.00198	9.4719	.00242	.15397	.00602	-.00222	-.00015	9.2066
#3	.00172	9.5895	.00340	.15765	.00792	.00457	-.00260	9.1848
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078718 Acquired: 6/25/2016 22:31:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.21832	.00935	-.00138	.00550	.00807	.00587
Stddev	.00077	.00070	.00368	.00189	.00037	.00008	.00139
%RSD	1050.3	.31961	39.319	137.43	6.8010	.96236	23.773
#1	.00067	.21839	.00655	-.00216	.00508	.00811	.00494
#2	-.00003	.21758	.00798	.00078	.00561	.00812	.00519
#3	-.00086	.21897	.01351	-.00275	.00580	.00798	.00747
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9846.3	60728.	3091.9
Stddev	3.6	208.	32.5
%RSD	.03671	.34247	1.0518
#1	9850.4	60702.	3069.6
#2	9844.9	60535.	3129.2
#3	9843.6	60948.	3076.8

Approved: June 27, 2016

Sample Name: L1606078719 Acquired: 6/25/2016 22:35:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**-.00125**	**.00081**	**-.00052**	**.00163**	**.00015**	**.05700**	**.00032**
Stddev	.00275	.01314	.00222	.00254	.00035	.00003	.05177	.00012
%RSD	1222.4	1048.7	273.08	489.15	21.203	21.890	90.827	38.965
#1	-.00200	-.00415	-.00134	.00209	.00158	.00017	.05365	.00040
#2	.00294	.01310	.00068	-.00066	.00200	.00012	.00698	.00018
#3	-.00162	-.01271	.00310	-.00298	.00131	.00018	.11035	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00006**	**.00052**	**.00450**	**.02391**	**-.05991**	**-.00020**	**.04697**	**-.00036**
Stddev	.00016	.00162	.00035	.01615	.07304	.00309	.12538	.00213
%RSD	276.80	313.97	7.6965	67.537	121.91	1526.0	266.94	591.72
#1	.00015	.00207	.00475	.04225	-.11673	.00336	-.03849	-.00282
#2	-.00012	.00065	.00464	.01187	-.08546	-.00225	-.01151	.00086
#3	.00015	-.00117	.00410	.01759	.02247	-.00171	.19090	.00088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00030**	**.25593**	**-.00012**	**.00090**	**.00315**	**-.00362**	**.00327**	**.05573**
Stddev	.00023	.02584	.00048	.00460	.00186	.00138	.00112	.00365
%RSD	74.483	10.098	393.31	510.33	59.051	38.233	34.210	6.5471
#1	.00052	.27908	.00017	.00590	.00100	-.00516	.00452	.05848
#2	.00007	.22805	.00014	-.00005	.00421	-.00248	.00234	.05711
#3	.00032	.26066	-.00068	-.00315	.00425	-.00323	.00296	.05159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078719 Acquired: 6/25/2016 22:35:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00098	.00207	-.00026	-.00547	.00052	.00525	.00241
Stddev	.00027	.00008	.00293	.00052	.00032	.00008	.00097
%RSD	27.115	4.0421	1136.5	9.5358	61.869	1.5786	40.264
#1	.00096	.00217	-.00025	-.00546	.00057	.00519	.00232
#2	.00073	.00203	-.00319	-.00495	.00081	.00521	.00342
#3	.00126	.00203	.00267	-.00599	.00017	.00534	.00149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9914.0	61492.	3065.3
Stddev	9.7	119.	10.3
%RSD	.09735	.19352	.33672
#1	9905.1	61523.	3061.5
#2	9924.3	61360.	3057.3
#3	9912.7	61592.	3076.9

Approved: June 27, 2016

Sample Name: L1606078709 Acquired: 6/25/2016 22:39:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573102-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	.01725	.00020	.00148	.00412	.00007	2.5193	.00009
Stddev	.00160	.00300	.00146	.00122	.00055	.00007	.0273	.00025
%RSD	256.33	17.406	733.70	82.744	13.249	105.70	1.0828	269.34
#1	-.00115	.01430	.00189	.00205	.00368	.00003	2.5430	-.00015
#2	.00106	.02030	-.00065	.00007	.00396	.00002	2.4895	.00008
#3	.00197	.01716	-.00064	.00231	.00474	.00015	2.5253	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.00087	.00073	.04349	.03288	.00266	.76988	-.00075
Stddev	.00037	.00063	.00114	.01165	.16835	.00415	.07900	.00106
%RSD	107.35	72.316	156.53	26.779	512.03	155.84	10.261	141.15
#1	.00070	.00029	.00142	.03927	-.06801	.00606	.83027	.00043
#2	-.00004	.00153	.00135	.03454	-.06058	.00390	.79891	-.00163
#3	.00039	.00078	-.00059	.05665	.22723	-.00196	.68048	-.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	.20336	.00039	.01881	.00195	-.00218	-.00099	.41497
Stddev	.00052	.02965	.00044	.00286	.00086	.00256	.00440	.00248
%RSD	323.08	14.579	115.44	15.203	44.305	117.44	445.87	.59653
#1	-.00058	.19785	-.00012	.01994	.00207	-.00390	.00409	.41320
#2	.00043	.23538	.00054	.02093	.00103	-.00339	-.00379	.41391
#3	-.00033	.17686	.00073	.01556	.00275	.00076	-.00326	.41779
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078709 Acquired: 6/25/2016 22:39:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573102-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**.00684**	**.01005**	**.00002**	**.00088**	**.00094**	**.00070**
Stddev	.00032	.00012	.00959	.00200	.00079	.00012	.00147
%RSD	375.67	1.7762	95.434	11093.	88.946	12.687	210.40
#1	.00028	.00687	.01212	-.00222	.00129	.00101	.00212
#2	.00025	.00693	-.00041	.00064	.00138	.00101	.00079
#3	-.00028	.00670	.01844	.00163	-.00002	.00080	-.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10438.**	**64428.**	**3210.2**
Stddev	16.	116.	22.5
%RSD	.15594	.18047	.70191
#1	10456.	64522.	3184.5
#2	10433.	64464.	3226.3
#3	10424.	64298.	3219.8

Approved: June 27, 2016

Sample Name: L1606078711S Acquired: 6/25/2016 22:43:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573102-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00901	.25091	.00908	.04716	.02857	.00129	2.7206	.00112
Stddev	.00226	.00893	.00272	.00090	.00098	.00003	.0190	.00018
%RSD	25.135	3.5576	29.953	1.9149	3.4212	2.0076	.69811	15.952
#1	.00654	.24156	.01090	.04731	.02948	.00128	2.7394	.00096
#2	.00949	.25183	.00595	.04798	.02754	.00132	2.7210	.00131
#3	.01099	.25934	.01039	.04620	.02870	.00128	2.7014	.00109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00484	.01138	.01241	.12881	1.1056	.02562	.95895	.01155
Stddev	.00047	.00095	.00054	.02178	.0733	.00325	.08330	.00186
%RSD	9.6843	8.3365	4.3248	16.912	6.6280	12.671	8.6861	16.074
#1	.00430	.01246	.01288	.12748	1.1086	.02193	.86824	.01328
#2	.00510	.01069	.01253	.10772	1.1774	.02802	1.0320	.00959
#3	.00513	.01099	.01183	.15123	1.0309	.02692	.97661	.01179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02077	1.4247	.01204	.24038	.01720	.02493	.01091	.53474
Stddev	.00067	.0371	.00126	.00484	.00256	.00194	.00301	.00121
%RSD	3.2317	2.6069	10.481	2.0127	14.893	7.7710	27.534	.22565
#1	.02144	1.3934	.01127	.24412	.01465	.02673	.00768	.53472
#2	.02075	1.4149	.01350	.23492	.01719	.02518	.01362	.53595
#3	.02010	1.4657	.01136	.24211	.01977	.02288	.01143	.53354
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078711S Acquired: 6/25/2016 22:43:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573102-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02007**	**.03079**	**.02489**	**.01057**	**.02372**	**.02477**	**.00180**
Stddev	.00062	.00022	.00917	.00037	.00088	.00015	.00112
%RSD	3.0692	.70951	36.838	3.4629	3.6971	.59147	62.402
#1	.02076	.03087	.02809	.01029	.02425	.02492	.00062
#2	.01959	.03097	.01455	.01045	.02271	.02462	.00193
#3	.01984	.03055	.03204	.01098	.02420	.02478	.00285
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10426.**	**64070.**	**3185.9**
Stddev	11.	72.	10.0
%RSD	.10672	.11272	.31382
#1	10417.	64076.	3184.7
#2	10423.	64138.	3176.5
#3	10439.	63994.	3196.4

Approved: June 27, 2016

Sample Name: L1606078712SD Acquired: 6/25/2016 22:47:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573102-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00985	.31033	.01141	.04692	.02793	.00122	2.7514	.00123
Stddev	.00217	.01120	.00035	.00183	.00030	.00009	.0322	.00017
%RSD	21.999	3.6078	3.0998	3.8902	1.0783	7.5455	1.1711	13.538
#1	.00744	.30133	.01139	.04489	.02771	.00131	2.7147	.00104
#2	.01165	.32286	.01106	.04746	.02780	.00124	2.7644	.00130
#3	.01046	.30678	.01177	.04842	.02827	.00112	2.7751	.00135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00442	.01187	.01326	.16770	1.1233	.02635	1.0271	.01377
Stddev	.00036	.00059	.00082	.01226	.1089	.00034	.0701	.00235
%RSD	8.1823	4.9929	6.1530	7.3088	9.6965	1.2889	6.8269	17.054
#1	.00413	.01121	.01277	.16233	1.0153	.02615	1.0429	.01385
#2	.00482	.01235	.01421	.15905	1.2332	.02617	1.0881	.01607
#3	.00430	.01207	.01281	.18173	1.1215	.02675	.95049	.01138
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02146	1.3700	.01235	.24640	.01637	.02615	.01276	.67342
Stddev	.00028	.0367	.00082	.00464	.00030	.00374	.00186	.00470
%RSD	1.2904	2.6782	6.6457	1.8816	1.8039	14.304	14.555	.69838
#1	.02172	1.3476	.01220	.24696	.01603	.02416	.01223	.67004
#2	.02148	1.3500	.01162	.25073	.01656	.02383	.01483	.67143
#3	.02117	1.4123	.01324	.24151	.01651	.03046	.01123	.67879
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078712SD Acquired: 6/25/2016 22:47:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573102-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02141**	**.03084**	**.02074**	**.01089**	**.02357**	**.02510**	**.00112**
Stddev	.00030	.00031	.00329	.00303	.00061	.00018	.00144
%RSD	1.3990	1.0105	15.854	27.843	2.5684	.72342	128.59
#1	.02165	.03055	.02352	.00739	.02416	.02497	-.00034
#2	.02107	.03117	.01711	.01260	.02359	.02501	.00117
#3	.02151	.03078	.02157	.01268	.02295	.02530	.00254
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10421.**	**63887.**	**3174.5**
Stddev	13.	153.	11.8
%RSD	.12017	.23969	.37110
#1	10421.	64063.	3186.8
#2	10434.	63786.	3163.4
#3	10409.	63811.	3173.3

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 22:51:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39829	10.014	.39328	.48763	1.0098	.04913	9.9981
Stddev	.00170	.014	.00352	.00156	.0114	.00024	.0222
%RSD	.42599	.13477	.89524	.31896	1.1283	.49183	.22224
#1	.39634	10.025	.39615	.48872	1.0228	.04926	10.024
#2	.39905	9.9992	.38935	.48585	1.0049	.04885	9.9823
#3	.39946	10.019	.39433	.48833	1.0016	.04927	9.9886
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05040	.19854	.49076	.50671	3.9457	49.325	1.0128
Stddev	.00023	.00052	.00245	.00059	.0608	.368	.0109
%RSD	.45580	.25959	.49941	.11597	1.5404	.74655	1.0755
#1	.05026	.19800	.48916	.50736	4.0058	49.743	1.0249
#2	.05027	.19858	.48954	.50622	3.9470	49.185	1.0101
#3	.05066	.19903	.49358	.50654	3.8842	49.047	1.0036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.4894	.49712	1.0151	50.056	.50217	9.8694	.50095
Stddev	.2168	.00232	.0035	.479	.00145	.0113	.00387
%RSD	2.2847	.46695	.34803	.95643	.28811	.11418	.77216
#1	9.7395	.49968	1.0186	50.588	.50383	9.8565	.50471
#2	9.3739	.49655	1.0152	49.919	.50140	9.8745	.49698
#3	9.3548	.49515	1.0115	49.660	.50126	9.8772	.50116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 22:51:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1957**	**.39554**	**5.0959**	**.99417**	**1.0077**	**1.0177**	**.50994**
Stddev	.0055	.00372	.0051	.00169	.0107	.0101	.00264
%RSD	.46066	.94108	.09932	.17029	1.0641	.98980	.51770
#1	1.1919	.39655	5.0908	.99223	1.0196	1.0259	.51299
#2	1.2020	.39866	5.0958	.99500	1.0048	1.0064	.50861
#3	1.1932	.39142	5.1010	.99530	.99871	1.0207	.50824
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.99906**	**1.0000**	F **2.9202**
Stddev	.00128	.0004	.0305
%RSD	.12818	.03891	1.0450
#1	1.0005	1.0005	2.9552
#2	.99795	.99972	2.9065
#3	.99877	.99993	2.8990
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9918.3**	**60256.**	**3072.6**
Stddev	6.2	156.	34.9
%RSD	.06223	.25822	1.1374
#1	9919.7	60085.	3032.6
#2	9923.7	60388.	3088.2
#3	9911.6	60295.	3097.1

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 22:54:51 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.00017**	**.00165**	**.00199**	**.00201**	**.00011**	**-.05290**	**-.00006**
Stddev	.00211	.00653	.00321	.00079	.00009	.00008	.03288	.00016
%RSD	1282.1	3936.0	193.87	39.670	4.4194	70.107	62.164	240.48
#1	-.00117	.00347	.00046	.00135	.00191	.00015	-.05612	-.00004
#2	.00226	-.00735	.00528	.00288	.00202	.00015	-.08405	.00008
#3	-.00158	.00438	-.00078	.00176	.00209	.00002	-.01852	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.00100**	**.00120**	**.03069**	**-.03948**	**.00003**	**-.00536**	**.00015**
Stddev	.00013	.00044	.00061	.00550	.07927	.00292	.09167	.00308
%RSD	995.60	43.627	50.884	17.919	200.80	8764.3	1709.0	2010.9
#1	-.00014	.00145	.00060	.03538	.05200	-.00061	-.10767	.00091
#2	.00000	.00096	.00116	.03205	-.08238	-.00251	.06932	.00278
#3	.00011	.00058	.00182	.02464	-.08805	.00322	.02226	-.00324
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00351**	**.02455**	**-.00057**	**.00388**	**.00014**	**.00562**	**.00087**	**.03540**
Stddev	.00076	.01905	.00055	.00530	.00438	.00343	.00632	.00172
%RSD	21.717	77.584	95.045	136.67	3025.0	61.032	726.47	4.8534
#1	.00266	.03539	-.00120	-.00182	.00487	.00872	.00338	.03589
#2	.00374	.03571	-.00017	.00867	-.00067	.00193	.00554	.03683
#3	.00413	.00256	-.00036	.00480	-.00377	.00622	-.00632	.03349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 22:54:51 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00099**	**.00045**	**.00606**	**-.00120**	**.00030**	**-.00008**	**.00363**
Stddev	.00065	.00027	.00156	.00179	.00040	.00006	.00038
%RSD	65.956	60.056	25.746	148.69	132.31	80.432	10.554
#1	.00115	.00019	.00786	-.00316	.00076	-.00006	.00364
#2	.00155	.00073	.00529	-.00079	.00014	-.00015	.00325
#3	.00027	.00044	.00504	.00034	.00001	-.00003	.00401
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9678.8**	**59649.**	**2985.7**
Stddev	6.9	105.	9.5
%RSD	.07084	.17603	.31957
#1	9671.2	59575.	2994.0
#2	9681.0	59769.	2975.3
#3	9684.3	59604.	2987.7

Approved: June 27, 2016

Sample Name: PBW LJ Acquired: 6/25/2016 22:58:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00058**	**-.00592**	**.00193**	**-.00086**	**.00070**	**.00018**	**-.07344**	**-.00023**
Stddev	.00178	.00410	.00330	.00167	.00093	.00007	.04096	.00010
%RSD	307.62	69.294	170.45	194.42	133.02	36.643	55.774	43.143
#1	-.00092	-.00625	.00300	-.00003	-.00002	.00015	-.02635	-.00025
#2	-.00217	-.00166	.00456	.00023	.00174	.00026	-.10082	-.00033
#3	.00135	-.00985	-.00176	-.00279	.00036	.00013	-.09313	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.00069**	**.00074**	**.03692**	**-.07694**	**.00146**	**.06376**	**.00092**
Stddev	.00002	.00038	.00020	.01230	.06836	.00025	.04368	.00067
%RSD	10.723	54.599	26.935	33.312	88.851	16.877	68.506	72.982
#1	-.00017	.00098	.00051	.02894	-.09438	.00132	.11194	.00086
#2	-.00017	.00026	.00082	.03073	-.13489	.00174	.05264	.00161
#3	-.00014	.00084	.00088	.05108	-.00155	.00131	.02672	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**.03492**	**.00034**	**.00729**	**.00159**	**-.00194**	**.00113**	**.00052**
Stddev	.00031	.01196	.00046	.00336	.00147	.00263	.00402	.00268
%RSD	159.07	34.258	134.06	46.125	92.547	135.75	357.58	520.37
#1	.00038	.02883	.00039	.00624	.00208	.00024	-.00125	.00071
#2	.00036	.04870	-.00014	.00458	.00275	-.00120	-.00114	.00309
#3	-.00016	.02722	.00078	.01105	-.00006	-.00487	.00577	-.00226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: PBW LJ Acquired: 6/25/2016 22:58:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**-.00008**	**.00508**	**-.00273**	**.00114**	**.00044**	**.00066**
Stddev	.00164	.00051	.01008	.00394	.00109	.00015	.00112
%RSD	14590.	648.58	198.46	144.23	96.326	34.462	168.97
#1	.00174	.00051	.01609	.00176	.00157	.00053	.00180
#2	-.00150	-.00033	-.00371	-.00561	-.00011	.00026	-.00044
#3	-.00028	-.00041	.00287	-.00433	.00195	.00052	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10135.**	**62589.**	**3095.8**
Stddev	24.	186.	5.7
%RSD	.23247	.29671	.18319
#1	10143.	62746.	3101.4
#2	10152.	62637.	3095.9
#3	10108.	62384.	3090.1

Approved: June 27, 2016

Sample Name: LCSW LJ Acquired: 6/25/2016 23:02:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19432**	**4.8961**	**.19607**	**.95390**	**.50477**	**.02378**	**5.0869**	**.02467**
Stddev	.00176	.0169	.00036	.00515	.00157	.00015	.0469	.00006
%RSD	.90778	.34589	.18422	.54033	.31152	.61673	.92299	.23915
#1	.19242	4.8827	.19640	.95171	.50641	.02365	5.1361	.02462
#2	.19591	4.9152	.19569	.95978	.50463	.02394	5.0425	.02466
#3	.19461	4.8905	.19612	.95020	.50328	.02375	5.0822	.02474
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09889**	**.24063**	**.25385**	**1.9878**	**24.436**	**.51652**	**4.7044**	**.24710**
Stddev	.00023	.00063	.00116	.0095	.067	.00203	.0278	.00275
%RSD	.23212	.26116	.45751	.47691	.27355	.39333	.59179	1.1124
#1	.09867	.24099	.25369	1.9863	24.386	.51588	4.7289	.24429
#2	.09913	.24100	.25509	1.9791	24.512	.51880	4.6741	.24978
#3	.09888	.23991	.25278	1.9979	24.411	.51489	4.7100	.24724
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51030**	**25.148**	**.24989**	**4.7689**	**.24945**	**.59139**	**.18766**	**2.4779**
Stddev	.00067	.056	.00070	.0091	.00347	.00400	.01211	.0014
%RSD	.13092	.22440	.27941	.19073	1.3920	.67662	6.4536	.05441
#1	.50970	25.212	.24981	4.7624	.25341	.58680	.17389	2.4770
#2	.51102	25.108	.25063	4.7793	.24803	.59411	.19668	2.4795
#3	.51019	25.124	.24924	4.7649	.24691	.59326	.19239	2.4773
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LCSW LJ Acquired: 6/25/2016 23:02:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49047**	**.51082**	**.50961**	**.24925**	**.49196**	**.48864**	**.01928**
Stddev	.00103	.00205	.00391	.00102	.00174	.00019	.00329
%RSD	.20978	.40119	.76774	.40835	.35306	.03834	17.088
#1	.49156	.51042	.51051	.24964	.49257	.48859	.01592
#2	.49032	.50900	.50533	.25000	.49331	.48848	.01940
#3	.48952	.51304	.51300	.24809	.49000	.48885	.02251
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9771.5**	**60209.**	**3050.2**
Stddev	3.0	103.	25.9
%RSD	.03108	.17103	.84982
#1	9769.0	60280.	3044.5
#2	9774.9	60091.	3027.6
#3	9770.6	60258.	3078.5

Approved: June 27, 2016

Sample Name: L1606076404 Acquired: 6/25/2016 23:06:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00050**	**.02745**	**.00034**	**.00861**	**.00996**	**.00009**	**36.605**	**.00012**
Stddev	.00060	.00628	.00209	.00113	.00041	.00005	.105	.00023
%RSD	119.14	22.865	609.72	13.086	4.1637	53.570	.28645	187.24
#1	.00015	.03394	.00014	.00762	.01044	.00014	36.606	.00007
#2	.00016	.02699	-.00164	.00984	.00971	.00010	36.500	.00038
#3	.00120	.02142	.00253	.00837	.00974	.00004	36.710	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**.01147**	**.00175**	**.46715**	**4.7234**	**.00625**	**13.388**	**.09951**
Stddev	.00015	.00054	.00191	.01948	.0341	.00248	.058	.00203
%RSD	171.91	4.6728	109.26	4.1703	.72246	39.751	.43505	2.0444
#1	.00001	.01158	-.00043	.45694	4.6849	.00912	13.373	.10058
#2	-.00027	.01194	.00254	.48961	4.7498	.00477	13.339	.09716
#3	-.00001	.01088	.00314	.45489	4.7356	.00486	13.453	.10078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00119**	**34.643**	**.00396**	**.03562**	**.00752**	**.00339**	**.00429**	**4.0453**
Stddev	.00028	.078	.00076	.00870	.00150	.00394	.00341	.0166
%RSD	23.933	.22458	19.114	24.436	19.891	116.11	79.423	.40956
#1	.00087	34.732	.00311	.02910	.00894	.00791	.00692	4.0642
#2	.00131	34.587	.00454	.03225	.00766	.00162	.00551	4.0386
#3	.00140	34.610	.00424	.04550	.00596	.00065	.00044	4.0331
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606076404 Acquired: 6/25/2016 23:06:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	.19364	.00117	-.00333	.00101	.00286	.00160
Stddev	.00025	.00044	.00456	.00363	.00019	.00020	.00097
%RSD	28.325	.22814	391.45	108.96	18.806	7.1675	60.613
#1	.00083	.19387	-.00007	-.00660	.00107	.00306	.00048
#2	.00116	.19313	.00622	-.00396	.00116	.00265	.00224
#3	.00066	.19392	-.00265	.00057	.00080	.00286	.00207
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9727.8	59976.	3053.1
Stddev	23.9	148.	4.4
%RSD	.24547	.24636	.14325
#1	9700.3	60146.	3049.4
#2	9741.5	59877.	3057.9
#3	9741.8	59905.	3052.0

Approved: June 27, 2016

Sample Name: L1606076405S Acquired: 6/25/2016 23:10:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19582**	**4.9527**	**.19879**	**.95673**	**.51438**	**.02432**	**42.805**	**.02505**
Stddev	.00335	.0137	.00128	.00425	.00065	.00003	.112	.00030
%RSD	1.7110	.27715	.64557	.44412	.12542	.14170	.26049	1.1988
#1	.19856	4.9529	.19764	.95186	.51480	.02435	42.707	.02530
#2	.19683	4.9664	.19856	.95967	.51471	.02433	42.926	.02513
#3	.19208	4.9389	.20017	.95866	.51364	.02429	42.781	.02472
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09757**	**.25598**	**.24917**	**2.4354**	**29.536**	**.52338**	**18.805**	**.34995**
Stddev	.00078	.00042	.00127	.0181	.040	.00393	.025	.00506
%RSD	.79936	.16278	.51136	.74393	.13605	.74997	.13071	1.4469
#1	.09813	.25630	.25060	2.4222	29.582	.51885	18.805	.34467
#2	.09790	.25551	.24817	2.4278	29.516	.52547	18.830	.35476
#3	.09668	.25612	.24874	2.4560	29.509	.52582	18.780	.35044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51541**	**61.224**	**.25128**	**4.8968**	**.24942**	**.59855**	**.19087**	**6.6449**
Stddev	.00129	.228	.00073	.0088	.00234	.00299	.00293	.0075
%RSD	.25084	.37164	.28907	.17909	.93699	.50010	1.5365	.11257
#1	.51663	61.311	.25055	4.9006	.24863	.59583	.18976	6.6461
#2	.51554	61.394	.25129	4.9031	.24758	.60176	.19420	6.6517
#3	.51406	60.965	.25200	4.8868	.25205	.59805	.18866	6.6369
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606076405S Acquired: 6/25/2016 23:10:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49233**	**.70070**	**.50542**	**.24860**	**.50000**	**.48511**	**.00505**
Stddev	.00086	.00402	.00572	.00107	.00163	.00066	.00072
%RSD	.17371	.57387	1.1319	.43103	.32683	.13619	14.263
#1	.49184	.70101	.51171	.24742	.49924	.48572	.00441
#2	.49332	.70456	.50403	.24884	.49889	.48521	.00491
#3	.49184	.69653	.50053	.24953	.50188	.48441	.00583
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9652.6**	**59187.**	**3022.5**
Stddev	17.6	118.	14.2
%RSD	.18215	.19875	.46825
#1	9645.4	59224.	3018.6
#2	9639.7	59281.	3010.7
#3	9672.6	59055.	3038.2

Approved: June 27, 2016

Sample Name: L1606076406SD Acquired: 6/25/2016 23:13:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19161**	**4.9186**	**.19913**	**.95429**	**.51211**	**.02396**	**42.977**	**.02467**
Stddev	.00161	.0125	.00343	.00448	.00436	.00009	.276	.00017
%RSD	.83957	.25322	1.7203	.46971	.85098	.36242	.64279	.68812
#1	.19148	4.9258	.19753	.95898	.51664	.02396	43.237	.02475
#2	.19328	4.9042	.19680	.95004	.51174	.02387	43.008	.02479
#3	.19007	4.9258	.20306	.95385	.50794	.02404	42.687	.02448
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09706**	**.25178**	**.24789**	**2.4233**	**29.585**	**.51807**	**18.712**	**.35011**
Stddev	.00057	.00068	.00034	.0356	.112	.00327	.182	.00396
%RSD	.58951	.26961	.13796	1.4688	.37990	.63166	.97051	1.1325
#1	.09772	.25103	.24806	2.4608	29.711	.51534	18.898	.35283
#2	.09684	.25235	.24811	2.4189	29.497	.52170	18.704	.34556
#3	.09664	.25196	.24749	2.3900	29.545	.51719	18.535	.35193
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51262**	**61.425**	**.24874**	**4.8787**	**.24757**	**.59558**	**.18865**	**6.6917**
Stddev	.00159	.310	.00133	.0141	.00184	.00348	.00465	.0131
%RSD	.30991	.50524	.53301	.28958	.74220	.58390	2.4654	.19574
#1	.51304	61.773	.24994	4.8746	.24617	.59720	.19309	6.6816
#2	.51396	61.322	.24897	4.8944	.24965	.59795	.18905	6.7065
#3	.51087	61.178	.24732	4.8670	.24689	.59159	.18381	6.6870
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606076406SD Acquired: 6/25/2016 23:13:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48585	.69992	.50428	.08491	.49039	.49499	.00464
Stddev	.00076	.00443	.00835	.00108	.00225	.00372	.00157
%RSD	.15628	.63319	1.6562	1.2751	.45854	.75207	33.818
#1	.48649	.70500	.51389	.08368	.49168	.49197	.00317
#2	.48606	.69789	.49873	.08571	.48779	.49386	.00446
#3	.48501	.69687	.50023	.08535	.49169	.49915	.00630
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9674.4	59675.	3057.4
Stddev	5.6	128.	11.6
%RSD	.05826	.21445	.38044
#1	9670.2	59575.	3048.3
#2	9680.8	59819.	3053.4
#3	9672.1	59630.	3070.5

Approved: June 27, 2016

Sample Name: L1606099102 Acquired: 6/25/2016 23:17:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00035	.08527	.00559	.04109	.01538	.00019	.57467	.00159
Stddev	.00233	.00869	.00189	.00114	.00133	.00004	.01094	.00013
%RSD	663.84	10.192	33.720	2.7694	8.6207	22.830	1.9043	7.9131
#1	.00210	.09496	.00628	.04240	.01605	.00016	.56261	.00167
#2	-.00061	.08272	.00346	.04040	.01386	.00017	.57746	.00145
#3	-.00255	.07815	.00704	.04046	.01624	.00024	.58395	.00167
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00096	.05412	.00582	.38755	1.2527	.00289	.47003	.00071
Stddev	.00015	.00024	.00026	.01093	.0635	.00116	.03189	.00162
%RSD	15.476	.43524	4.4250	2.8204	5.0656	40.155	6.7852	226.02
#1	.00113	.05437	.00590	.40001	1.1922	.00164	.49884	-.00098
#2	.00091	.05406	.00602	.38303	1.3188	.00308	.43576	.00089
#3	.00085	.05391	.00553	.37960	1.2473	.00394	.47550	.00224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00360	218.01	.00389	.36041	.01046	-.00372	.00482	1.3728
Stddev	.00017	.12	.00068	.00488	.00162	.00083	.00193	.0038
%RSD	4.7149	.05666	17.447	1.3551	15.457	22.416	40.114	.27490
#1	.00375	218.03	.00311	.35572	.01225	-.00460	.00284	1.3685
#2	.00365	218.13	.00423	.36547	.01003	-.00293	.00492	1.3754
#3	.00341	217.88	.00434	.36004	.00911	-.00364	.00670	1.3745
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606099102 Acquired: 6/25/2016 23:17:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00632**	**.09765**	**.07700**	**-.00067**	**.01524**	**.07845**	**.01879**
Stddev	.00056	.00044	.00219	.00203	.00068	.00014	.00089
%RSD	8.9139	.45291	2.8381	300.30	4.4598	.18118	4.7496
#1	.00609	.09718	.07562	.00166	.01602	.07833	.01918
#2	.00590	.09770	.07952	-.00172	.01485	.07841	.01777
#3	.00696	.09806	.07586	-.00197	.01484	.07861	.01943
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10241.**	**62264.**	**3185.5**
Stddev	15.	196.	4.7
%RSD	.14516	.31405	.14616
#1	10253.	62395.	3189.9
#2	10245.	62357.	3185.8
#3	10224.	62039.	3180.6

Approved: June 27, 2016

Sample Name: L1606099102PS Acquired: 6/25/2016 23:21:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG573952-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20426**	**5.2585**	**.21569**	**1.0545**	**.53374**	**.02552**	**5.8510**	**.02789**
Stddev	.00128	.0258	.00476	.0057	.01070	.00022	.0799	.00005
%RSD	.62816	.49053	2.2048	.54061	2.0041	.85107	1.3656	.17945
#1	.20288	5.2399	.21984	1.0489	.54587	.02533	5.9343	.02786
#2	.20446	5.2478	.21673	1.0543	.52973	.02547	5.7750	.02786
#3	.20543	5.2880	.21050	1.0603	.52563	.02576	5.8438	.02795
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10258**	**.30280**	**.26705**	**2.4069**	**27.035**	**.52853**	**5.3059**	**.25725**
Stddev	.00041	.00101	.00181	.0614	.546	.00889	.1709	.00709
%RSD	.40425	.33448	.67841	2.5526	2.0183	1.6821	3.2205	2.7577
#1	.10253	.30184	.26742	2.4708	27.658	.53822	5.4655	.26479
#2	.10301	.30272	.26864	2.4018	26.642	.52076	5.1256	.25071
#3	.10219	.30386	.26508	2.3482	26.805	.52661	5.3266	.25626
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52291**	**252.79**	**.26034**	**5.5827**	**.26863**	**.62508**	**.20920**	**4.0596**
Stddev	.00363	5.13	.00069	.0240	.00232	.00165	.00657	.0117
%RSD	.69330	2.0298	.26564	.43012	.86233	.26363	3.1385	.28905
#1	.52662	258.69	.26066	5.6009	.26650	.62318	.21182	4.0655
#2	.52272	250.27	.26082	5.5917	.26829	.62599	.21406	4.0673
#3	.51938	249.40	.25955	5.5555	.27109	.62608	.20173	4.0461
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606099102PS Acquired: 6/25/2016 23:21:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG573952-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51599**	**.62613**	**.61043**	**.25381**	**.52664**	**.60277**	**.02286**
Stddev	.00198	.01306	.01573	.00527	.00286	.00158	.00057
%RSD	.38295	2.0851	2.5770	2.0756	.54391	.26285	2.4777
#1	.51752	.64119	.62824	.25887	.52456	.60412	.02234
#2	.51668	.61903	.59844	.25420	.52545	.60318	.02277
#3	.51376	.61815	.60462	.24835	.52991	.60103	.02347
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9624.7**	**58159.**	**2980.0**
Stddev	48.4	89.	45.7
%RSD	.50312	.15320	1.5350
#1	9582.5	58170.	2928.1
#2	9614.0	58242.	2997.3
#3	9677.6	58064.	3014.5

Approved: June 27, 2016

Sample Name: L1606099102SDL Acquired: 6/25/2016 23:25:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 50 Custom ID2: Custom ID3:
Comment: WG573952-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	.01283	.00236	.01119	.00550	.00018	.08026	.00026
Stddev	.00047	.00301	.00204	.00193	.00071	.00008	.03574	.00006
%RSD	40.405	23.474	86.372	17.221	12.910	46.045	44.534	24.105
#1	.00083	.01247	.00021	.01333	.00520	.00027	.04235	.00026
#2	.00098	.01601	.00261	.01064	.00630	.00011	.11335	.00020
#3	.00172	.01002	.00427	.00960	.00498	.00015	.08510	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.01258	.00098	.10105	.18990	-.00151	.06238	.00028
Stddev	.00006	.00091	.00048	.00767	.08103	.00626	.02555	.00271
%RSD	25.732	7.2135	49.236	7.5891	42.670	413.92	40.953	970.07
#1	.00026	.01275	.00118	.09700	.21903	.00544	.04558	.00279
#2	.00015	.01339	.00043	.10990	.09833	-.00328	.04979	.00064
#3	.00024	.01160	.00132	.09626	.25235	-.00669	.09179	-.00259
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00205	47.703	.00017	.08239	.00525	-.00365	.00219	.31315
Stddev	.00019	.192	.00051	.00485	.00385	.00400	.00870	.00335
%RSD	9.3003	.40144	294.11	5.8889	73.348	109.43	397.40	1.0688
#1	.00183	47.834	.00076	.07694	.00083	-.00754	.00399	.31041
#2	.00217	47.483	-.00009	.08400	.00786	-.00387	-.00727	.31216
#3	.00215	47.792	-.00015	.08624	.00708	.00045	.00985	.31688
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606099102SDL Acquired: 6/25/2016 23:25:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 50 Custom ID2: Custom ID3:
Comment: WG573952-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00128**	**.02176**	**.02063**	**.00132**	**.00408**	**.01800**	**.00415**
Stddev	.00053	.00039	.00638	.00109	.00052	.00037	.00045
%RSD	41.627	1.7773	30.936	82.221	12.786	2.0724	10.786
#1	.00158	.02176	.02171	.00142	.00446	.01762	.00425
#2	.00067	.02138	.02640	.00236	.00348	.01802	.00454
#3	.00160	.02215	.01377	.00019	.00429	.01836	.00366
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9804.5**	**59680.**	**2983.6**
Stddev	22.5	103.	15.3
%RSD	.22901	.17203	.51306
#1	9824.1	59682.	2991.0
#2	9809.6	59782.	2993.9
#3	9780.0	59577.	2966.0

Approved: June 27, 2016

Sample Name: L1606099501 Acquired: 6/25/2016 23:29:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	.00231	.00190	.02254	.12371	.00015	15.528	-.00008
Stddev	.00014	.00712	.00142	.00137	.00163	.00003	.200	.00022
%RSD	16.093	308.09	74.696	6.0976	1.3212	21.126	1.2862	282.14
#1	.00100	.01032	.00271	.02232	.12196	.00014	15.307	.00002
#2	.00072	-.00013	.00272	.02129	.12520	.00012	15.695	.00008
#3	.00085	-.00326	.00026	.02401	.12396	.00018	15.583	-.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00027	.00136	.08102	.36083	.08036	1.7207	.01281
Stddev	.00017	.00026	.00081	.01723	.08162	.00488	.0426	.00381
%RSD	55.449	94.239	59.356	21.269	22.620	6.0696	2.4776	29.711
#1	.00018	.00004	.00043	.07010	.45158	.07724	1.7124	.01021
#2	.00026	.00024	.00186	.07209	.29342	.07785	1.6828	.01718
#3	.00051	.00055	.00179	.10089	.33750	.08598	1.7669	.01103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	40.169	.00020	.00739	.00147	-.00261	.00048	.01475
Stddev	.00007	.358	.00037	.00186	.00129	.00197	.00359	.00082
%RSD	116.52	.89035	187.93	25.143	87.719	75.441	741.63	5.5637
#1	.00010	39.803	.00022	.00902	.00206	-.00263	-.00044	.01382
#2	.00008	40.518	.00056	.00537	.00236	-.00063	-.00256	.01539
#3	-.00002	40.186	-.00019	.00779	-.00001	-.00456	.00445	.01503
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606099501 Acquired: 6/25/2016 23:29:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00059**	**2.0444**	**.00152**	**-.00059**	**-.00017**	**.00315**	**.00110**
Stddev	.00034	.0207	.00598	.00278	.00059	.00019	.00107
%RSD	58.480	1.0109	393.49	469.74	343.26	6.1207	97.322
#1	.00020	2.0228	.00742	-.00167	.00024	.00305	.00162
#2	.00070	2.0639	.00167	-.00267	-.00085	.00303	-.00013
#3	.00086	2.0465	-.00453	.00256	.00009	.00337	.00180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9773.4**	**59741.**	**3000.7**
Stddev	10.5	113.	31.9
%RSD	.10719	.18996	1.0628
#1	9785.4	59856.	3037.0
#2	9766.5	59737.	2977.2
#3	9768.1	59629.	2987.9

Approved: June 27, 2016

Sample Name: L1606099502 Acquired: 6/25/2016 23:32:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	-.00479	-.00049	.02240	.12357	.00014	15.278	-.00007
Stddev	.00142	.00423	.00253	.00505	.00148	.00006	.144	.00014
%RSD	22192.	88.307	518.91	22.533	1.1984	44.965	.94397	206.25
#1	.00014	-.00965	-.00218	.02478	.12272	.00011	15.115	-.00014
#2	.00133	-.00281	-.00170	.02581	.12271	.00021	15.329	.00010
#3	-.00149	-.00191	.00242	.01660	.12528	.00010	15.390	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.00065	.00042	.06837	.37746	.07803	1.6184	.01419
Stddev	.00041	.00112	.00027	.00656	.03147	.00401	.0513	.00310
%RSD	83.614	171.25	62.991	9.6001	8.3371	5.1380	3.1674	21.849
#1	.00050	-.00064	.00063	.07323	.35510	.08210	1.6690	.01383
#2	.00090	.00123	.00012	.06091	.36384	.07791	1.6197	.01745
#3	.00007	.00137	.00052	.07098	.41345	.07408	1.5665	.01128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	39.920	-.00037	.00510	.00199	-.00064	.00335	.01167
Stddev	.00036	.366	.00054	.01025	.00130	.00317	.00244	.00126
%RSD	102.18	.91613	144.37	200.85	65.670	494.36	72.931	10.832
#1	-.00077	39.520	-.00039	.00961	.00071	-.00417	.00384	.01302
#2	-.00018	40.239	-.00090	.01233	.00193	.00029	.00550	.01150
#3	-.00011	40.000	.00017	-.00663	.00331	.00196	.00070	.01051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606099502 Acquired: 6/25/2016 23:32:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00055**	**2.0217**	**-.00337**	**-.00055**	**.00074**	**.00315**	**.00087**
Stddev	.00116	.0191	.00559	.00170	.00084	.00020	.00103
%RSD	210.74	.94683	165.64	307.06	114.28	6.4714	118.16
#1	-.00142	2.0010	.00194	-.00241	.00129	.00330	.00185
#2	.00077	2.0388	-.00920	-.00018	-.00023	.00292	.00097
#3	-.00100	2.0253	-.00287	.00093	.00117	.00324	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9730.5**	**59619.**	**2989.3**
Stddev	18.2	229.	29.6
%RSD	.18733	.38360	.99126
#1	9750.6	59882.	3021.9
#2	9715.1	59468.	2964.1
#3	9725.8	59506.	2981.9

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 23:36:47 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40930**	**10.238**	**.40819**	**.50228**	**1.0459**	**.04973**	**10.404**
Stddev	.00043	.021	.00043	.00341	.0044	.00005	.020
%RSD	.10460	.20815	.10461	.67892	.41689	.09834	.19571
#1	.40883	10.251	.40851	.50622	1.0496	.04974	10.381
#2	.40944	10.250	.40771	.50027	1.0411	.04968	10.418
#3	.40965	10.214	.40835	.50036	1.0470	.04978	10.414
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05210**	**.20379**	**.49816**	**.52303**	**4.0622**	**51.067**	**1.0469**
Stddev	.00019	.00042	.00279	.00142	.0372	.160	.0078
%RSD	.35747	.20724	.56062	.27079	.91500	.31299	.74725
#1	.05231	.20342	.50024	.52229	4.1047	51.143	1.0555
#2	.05194	.20371	.49926	.52467	4.0462	50.883	1.0402
#3	.05207	.20425	.49499	.52215	4.0357	51.175	1.0449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.7214**	**.51746**	**1.0407**	**52.052**	**.51652**	**10.202**	**.51928**
Stddev	.0660	.00152	.0096	.278	.00085	.015	.00145
%RSD	.67863	.29343	.92144	.53407	.16386	.14443	.27838
#1	9.7320	.51900	1.0479	52.343	.51582	10.200	.51894
#2	9.7814	.51597	1.0444	51.789	.51627	10.218	.52086
#3	9.6508	.51742	1.0298	52.022	.51746	10.189	.51803
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 23:36:47 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2277**	**.40544**	**5.2555**	**1.0220**	**1.0464**	**1.0514**	**.52265**
Stddev	.0051	.00303	.0032	.0024	.0054	.0078	.00372
%RSD	.41461	.74796	.06070	.23053	.51974	.73901	.71099
#1	1.2332	.40616	5.2590	1.0221	1.0521	1.0443	.52536
#2	1.2232	.40805	5.2526	1.0196	1.0413	1.0597	.52418
#3	1.2265	.40211	5.2550	1.0243	1.0458	1.0502	.51841
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0117**	**1.0320**	F **2.9933**
Stddev	.0025	.0009	.0109
%RSD	.24458	.08681	.36389
#1	1.0144	1.0330	3.0053
#2	1.0111	1.0312	2.9841
#3	1.0096	1.0318	2.9905
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9691.0**	**59432.**	**3012.0**
Stddev	5.1	44.	12.8
%RSD	.05245	.07397	.42554
#1	9696.2	59404.	2998.2
#2	9686.1	59410.	3023.6
#3	9690.7	59483.	3014.1

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 23:40:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00145**	**-.00660**	**-.00143**	**.00292**	**.00177**	**.00016**	**-.01784**	**.00008**
Stddev	.00180	.00657	.00282	.00130	.00082	.00003	.03649	.00007
%RSD	124.44	99.487	197.72	44.383	46.493	20.281	204.59	79.919
#1	.00061	-.01208	-.00468	.00217	.00185	.00015	-.05680	.00016
#2	-.00276	-.00840	.00028	.00442	.00255	.00019	-.01224	.00005
#3	-.00219	.00068	.00012	.00218	.00091	.00013	.01553	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.00038**	**.00052**	**.02154**	**-.09198**	**-.00110**	**-.01322**	**.00018**
Stddev	.00024	.00088	.00138	.01483	.10535	.00141	.06861	.00246
%RSD	523.34	234.01	265.29	68.833	114.54	127.62	519.13	1371.8
#1	-.00015	.00090	-.00012	.01936	.02327	-.00076	.06137	-.00117
#2	-.00022	-.00064	-.00042	.03733	-.18333	-.00265	-.02738	.00302
#3	.00023	.00086	.00210	.00792	-.11589	.00010	-.07365	-.00132
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00348**	**.04821**	**.00016**	**.00585**	**.00443**	**.00314**	**.00156**	**.03553**
Stddev	.00065	.02773	.00095	.00367	.00371	.00275	.00114	.00188
%RSD	18.560	57.517	582.95	62.725	83.852	87.739	73.200	5.2906
#1	.00289	.07448	.00125	.00268	.00440	.00563	.00189	.03713
#2	.00338	.05093	-.00027	.00499	.00073	.00018	.00029	.03346
#3	.00417	.01922	-.00050	.00987	.00816	.00360	.00249	.03599
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 23:40:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00025**	**.00051**	**.00604**	**-.00528**	**.00062**	**.00012**	**.00482**
Stddev	.00070	.00006	.00458	.00163	.00029	.00008	.00094
%RSD	280.85	11.978	75.793	30.927	46.562	68.537	19.510
#1	.00047	.00050	.00150	-.00357	.00036	.00006	.00376
#2	.00081	.00057	.01066	-.00682	.00057	.00008	.00556
#3	-.00053	.00045	.00597	-.00546	.00093	.00021	.00513
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9759.5**	**60265.**	**3013.5**
Stddev	10.8	85.	17.4
%RSD	.11040	.14047	.57599
#1	9754.6	60307.	3032.0
#2	9771.9	60320.	2997.5
#3	9752.1	60167.	3011.1

Approved: June 27, 2016

Sample Name: ICSA Acquired: 6/25/2016 23:44:20 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -.00562	263.10	.00178	-.00976	.00140	.00014	248.10
Stddev	.00117	.16	.00383	.00309	.00113	.00004	.61
%RSD	20.823	.06041	215.50	31.614	80.449	26.067	.24782
#1	-.00542	263.25	-.00154	-.01064	.00266	.00012	248.67
#2	-.00456	262.94	.00597	-.00633	.00047	.00013	247.45
#3	-.00688	263.13	.00090	-.01231	.00109	.00019	248.17
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.00400						
Low Limit	-.00400						

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	-.00060	-.00056	F .01039	95.630	-.04599	.01242
Stddev	.00016	.00022	.00039	.00101	.248	.03226	.00307
%RSD	92.869	36.608	70.420	9.7281	.25928	70.136	24.681
#1	-.00031	-.00080	-.00098	.00928	95.904	-.06101	.01295
#2	-.00020	-.00063	-.00021	.01127	95.420	-.06800	.01519
#3	.00000	-.00037	-.00048	.01062	95.566	-.00896	.00913
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				.00400			
Low Limit				-.00400			

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	236.10	.00050	-.00055	.08182	-.00122	.03425	.00395
Stddev	.41	.00175	.00028	.01035	.00129	.00383	.00558
%RSD	.17524	347.68	51.671	12.652	105.94	11.172	141.13
#1	236.13	.00226	-.00079	.09323	-.00097	.03151	-.00194
#2	235.67	.00051	-.00062	.07920	-.00262	.03262	.00465
#3	236.50	-.00125	-.00024	.07303	-.00007	.03862	.00916
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 27, 2016

Sample Name: ICSA Acquired: 6/25/2016 23:44:20 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00072	-.00782	.00827	.00013	.00094	-.00929	-.00404
Stddev	.00319	.00204	.00198	.00005	.00018	.00784	.00342
%RSD	442.40	26.134	23.931	35.338	18.766	84.463	84.650
#1	.00212	-.01015	.01018	.00009	.00088	-.00188	-.00347
#2	-.00417	-.00696	.00842	.00012	.00080	-.01750	-.00771
#3	-.00012	-.00634	.00622	.00018	.00114	-.00848	-.00094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00163	-.00560	-.01351
Stddev	.00058	.00018	.00078
%RSD	35.475	3.3032	5.7782
#1	-.00221	-.00565	-.01421
#2	-.00162	-.00574	-.01366
#3	-.00105	-.00539	-.01267
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9256.6	56705.	2976.7
Stddev	13.6	91.	12.8
%RSD	.14727	.16098	.43054
#1	9241.1	56650.	2963.0
#2	9266.9	56811.	2988.4
#3	9261.8	56655.	2978.7

Approved: June 27, 2016

Sample Name: ICSAB Acquired: 6/25/2016 23:48:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52011	271.09	.26014	-.01193	.26131	.24391	254.06	.49893
Stddev	.00309	.31	.00108	.00072	.00207	.00022	1.57	.00035
%RSD	.59470	.11617	.41599	6.0451	.79127	.08930	.61634	.06930
#1	.51910	271.29	.26138	-.01172	.26259	.24374	255.54	.49856
#2	.51765	270.73	.25938	-.01274	.26241	.24383	254.23	.49898
#3	.52358	271.26	.25965	-.01134	.25892	.24415	252.42	.49925
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.24094	.25041	.26416	96.077	5.2095	.01124	238.55	.24627
Stddev	.00056	.00142	.00058	.420	.1352	.00179	1.07	.00329
%RSD	.23299	.56520	.21819	.43687	2.5957	15.928	.44935	1.3378
#1	.24046	.25065	.26387	96.381	5.3478	.01132	239.59	.24346
#2	.24081	.24889	.26378	96.252	5.2032	.00941	238.63	.24545
#3	.24156	.25169	.26482	95.598	5.0776	.01299	237.45	.24990
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00041	5.4959	.48742	.09841	.49766	.51195	.23776	.00256
Stddev	.00052	.0364	.00161	.00635	.00144	.00162	.00501	.00193
%RSD	128.92	.66237	.33105	6.4479	.28893	.31661	2.1076	75.415
#1	-.00068	5.5313	.48557	.09364	.49656	.51344	.24335	.00339
#2	-.00073	5.4979	.48847	.09597	.49929	.51023	.23366	.00393
#3	.00020	5.4586	.48823	.10561	.49712	.51219	.23626	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: ICSAB Acquired: 6/25/2016 23:48:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00140**	**.00103**	**-.00323**	**.47273**	**.25455**	**.48271**	**-.01305**
Stddev	.00059	.00027	.00250	.00229	.00097	.00045	.00046
%RSD	41.750	26.302	77.431	.48347	.38190	.09250	3.5206
#1	.00144	.00120	-.00356	.47420	.25352	.48220	-.01343
#2	.00197	.00072	-.00058	.47010	.25467	.48293	-.01317
#3	.00080	.00116	-.00555	.47390	.25546	.48302	-.01254
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9240.5**	**56174.**	**2955.7**
Stddev	9.6	118.	17.7
%RSD	.10383	.20921	.59797
#1	9251.6	56039.	2946.0
#2	9234.1	56253.	2944.9
#3	9235.9	56229.	2976.1

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 23:51:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41108**	**10.316**	**.40843**	**.50327**	**1.0436**	**.05024**	**10.459**
Stddev	.00161	.013	.00298	.00077	.0011	.00011	.030
%RSD	.39215	.12124	.73007	.15382	.10203	.22382	.28694
#1	.41119	10.324	.40804	.50264	1.0446	.05015	10.464
#2	.41263	10.302	.40566	.50304	1.0438	.05037	10.487
#3	.40941	10.323	.41158	.50413	1.0425	.05022	10.428
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05234**	**.20485**	**.50201**	**.52446**	**4.0759**	**51.088**	**1.0484**
Stddev	.00020	.00025	.00165	.00123	.0669	.060	.0059
%RSD	.38699	.12298	.32889	.23505	1.6409	.11683	.55819
#1	.05251	.20498	.50023	.52357	4.1126	51.031	1.0491
#2	.05240	.20456	.50349	.52586	3.9987	51.083	1.0423
#3	.05212	.20501	.50230	.52393	4.1164	51.150	1.0539
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.8126**	**.50786**	**1.0468**	**51.847**	**.51713**	**10.210**	**.51778**
Stddev	.0274	.00264	.0020	.030	.00045	.013	.00098
%RSD	.27960	.52030	.19073	.05848	.08757	.13121	.18906
#1	9.8005	.51090	1.0485	51.876	.51722	10.201	.51858
#2	9.7933	.50648	1.0474	51.816	.51663	10.204	.51807
#3	9.8440	.50619	1.0446	51.848	.51752	10.226	.51669
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 23:51:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2406**	**.41201**	**5.2627**	**1.0255**	**1.0428**	**1.0401**	**.52263**
Stddev	.0022	.00564	.0065	.0018	.0016	.0094	.00276
%RSD	.17501	1.3693	.12412	.17227	.15774	.90409	.52737
#1	1.2431	.41191	5.2553	1.0271	1.0421	1.0459	.52461
#2	1.2392	.40642	5.2651	1.0236	1.0417	1.0292	.52380
#3	1.2396	.41770	5.2677	1.0258	1.0447	1.0451	.51948
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0216**	**1.0330**	F **3.0271**
Stddev	.0027	.0013	.0163
%RSD	.26838	.12831	.53748
#1	1.0227	1.0315	3.0446
#2	1.0236	1.0335	3.0125
#3	1.0185	1.0340	3.0242
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9680.4**	**59250.**	**3000.1**
Stddev	28.5	27.	16.9
%RSD	.29390	.04497	.56388
#1	9711.9	59280.	2982.6
#2	9672.8	59242.	3016.3
#3	9656.6	59229.	3001.5

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 23:55:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00125	.00182	.00085	.00036	.00255	.00017	-.02838	-.00012
Stddev	.00082	.00761	.00304	.00225	.00150	.00005	.02296	.00019
%RSD	65.454	418.99	358.52	623.67	58.837	28.075	80.890	157.58
#1	.00189	-.00688	.00358	-.00006	.00362	.00012	-.00325	-.00021
#2	.00153	.00513	.00139	-.00165	.00321	.00020	-.04827	-.00024
#3	.00033	.00720	-.00242	.00279	.00083	.00021	-.03363	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00075	.00113	.02762	-.02056	.00086	-.01380	-.00101
Stddev	.00025	.00070	.00060	.00527	.01321	.00185	.01535	.00114
%RSD	279.31	93.710	52.614	19.071	64.270	216.68	111.21	112.81
#1	-.00016	.00013	.00054	.02156	-.02746	-.00001	-.01846	.00029
#2	.00010	.00151	.00112	.03019	-.02889	-.00040	-.02627	-.00181
#3	.00033	.00061	.00173	.03110	-.00532	.00298	.00334	-.00151
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00326	.05197	-.00006	.00537	-.00040	.00432	.00298	.03440
Stddev	.00030	.03661	.00066	.00611	.00131	.00120	.00482	.00043
%RSD	9.1019	70.433	1169.2	113.80	328.70	27.704	161.98	1.2407
#1	.00299	.03235	.00066	.00591	.00062	.00425	-.00005	.03422
#2	.00322	.09421	-.00018	.01119	-.00187	.00556	.00044	.03489
#3	.00358	.02936	-.00065	-.00099	.00005	.00317	.00854	.03409
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 23:55:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**.00044**	**.00562**	**-.00278**	**.00100**	**.00010**	**.00427**
Stddev	.00044	.00041	.00677	.00064	.00081	.00020	.00057
%RSD	558.27	93.814	120.49	22.928	80.799	205.25	13.474
#1	.00052	-.00002	.00467	-.00264	.00112	.00024	.00360
#2	.00007	.00078	.01282	-.00348	.00014	-.00013	.00461
#3	-.00036	.00055	-.00063	-.00223	.00174	.00017	.00459
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9746.4**	**60216.**	**3006.7**
Stddev	3.8	76.	7.9
%RSD	.03876	.12554	.26429
#1	9742.9	60301.	3002.9
#2	9746.0	60157.	3001.3
#3	9750.4	60189.	3015.8

Approved: June 27, 2016

Sample Name: LLCCV Acquired: 6/25/2016 23:59:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00916	.16469	.00814	.08024	.01010	.00165	.38196	.00067
Stddev	.00085	.00884	.00209	.00058	.00103	.00003	.03578	.00008
%RSD	9.3027	5.3671	25.632	.71975	10.222	1.6058	9.3673	12.378
#1	.00982	.16059	.01037	.08090	.01024	.00166	.39925	.00061
#2	.00944	.15864	.00624	.07981	.01105	.00162	.40581	.00076
#3	.00820	.17483	.00780	.08002	.00900	.00168	.34082	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00411	.00454	.00520	.10552	.68660	.08825	.42307	.00800
Stddev	.00033	.00070	.00174	.01827	.09614	.00099	.09575	.00252
%RSD	7.9024	15.364	33.422	17.313	14.002	1.1218	22.633	31.490
#1	.00383	.00377	.00720	.10444	.59286	.08799	.31358	.00534
#2	.00447	.00514	.00437	.12431	.68197	.08934	.49110	.01035
#3	.00404	.00471	.00403	.08782	.78497	.08741	.46454	.00831
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00870	.45736	.01598	.79373	.00972	.08303	.01581	.78238
Stddev	.00060	.01151	.00062	.00779	.00188	.00162	.00507	.00288
%RSD	6.8723	2.5158	3.9084	.98133	19.382	1.9461	32.090	.36823
#1	.00805	.45897	.01600	.80272	.00902	.08401	.02162	.78192
#2	.00924	.44514	.01534	.78909	.01186	.08117	.01226	.78546
#3	.00881	.46798	.01659	.78938	.00829	.08392	.01355	.77975
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LLCCV Acquired: 6/25/2016 23:59:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40813**	**.04261**	**.02883**	**.15405**	**.00896**	**.01738**	**.13453**
Stddev	.00156	.00009	.00723	.00166	.00036	.00005	.00136
%RSD	.38342	.20072	25.085	1.0771	4.0551	.28767	1.0139
#1	.40866	.04260	.02755	.15254	.00855	.01741	.13450
#2	.40935	.04253	.02233	.15583	.00907	.01742	.13318
#3	.40636	.04270	.03662	.15377	.00925	.01733	.13591
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9793.5**	**60446.**	**3011.5**
Stddev	14.7	195.	8.9
%RSD	.15029	.32191	.29401
#1	9810.3	60377.	3006.1
#2	9783.4	60295.	3006.7
#3	9786.6	60666.	3021.7

Approved: June 27, 2016

2.3.2 Metals ICP-MS Data

2.3.2.1 Summary Data

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	126F-061416	**Prep Method:**	3015	**Prep Date:**	06/27/2016 08:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/28/2016 13:15
Workgroup #:	WG574570	**Analyst:**	BKT	**Run Date:**	06/28/2016 20:48
Collect Date:	06/14/2016 11:10	**Dilution:**	1	**File ID:**	NI.062816.204859
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.0147		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00231	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.0656		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00314	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0313		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.000584	J	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0168	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	126F-061416	**Prep Method:**	3015	**Prep Date:**	06/27/2016 08:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/29/2016 11:35
Workgroup #:	WG574570	**Analyst:**	BKT	**Run Date:**	06/29/2016 12:28
Collect Date:	06/14/2016 11:10	**Dilution:**	50	**File ID:**	NI.062916.122812
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	9.33		0.300	0.150	0.0750
Manganese, Total	7439-96-5	1.07		0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	C08-061416	**Prep Method:**	3015	**Prep Date:**	06/27/2016 08:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/28/2016 13:15
Workgroup #:	WG574570	**Analyst:**	BKT	**Run Date:**	06/28/2016 20:52
Collect Date:	06/14/2016 13:10	**Dilution:**	1	**File ID:**	NI.062816.205210
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00829		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000385	J	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00247	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00683		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00295	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0138		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00101	J	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	C08-061416	**Prep Method:**	3015	**Prep Date:**	06/27/2016 08:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/29/2016 11:35
Workgroup #:	WG574570	**Analyst:**	BKT	**Run Date:**	06/29/2016 12:31
Collect Date:	06/14/2016 13:10	**Dilution:**	50	**File ID:**	NI.062916.123124
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	5.12		0.300	0.150	0.0750
Manganese, Total	7439-96-5	3.15		0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	C03-061416	**Prep Method:**	3015	**Prep Date:**	06/27/2016 08:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/28/2016 13:15
Workgroup #:	WG574570	**Analyst:**	BKT	**Run Date:**	06/28/2016 20:55
Collect Date:	06/14/2016 14:15	**Dilution:**	1	**File ID:**	NI.062816.205522
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00684		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00200	U	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.000578	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00200	U	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.00400	U	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0153	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	C03-061416	**Prep Method:**	3015	**Prep Date:**	06/27/2016 08:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/29/2016 11:35
Workgroup #:	WG574570	**Analyst:**	BKT	**Run Date:**	06/29/2016 12:34
Collect Date:	06/14/2016 14:15	**Dilution:**	50	**File ID:**	NI.062916.123435
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	1.56		0.300	0.150	0.0750
Manganese, Total	7439-96-5	1.85		0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer NexION 300X

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	100
Vi = Initial volume	40
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/L)	0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	200
Vi = Initial volume	0.5
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/kg)	40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	40
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	50

50 ug/kg = 0.050 mg/kg

Perkin Elmer NexION ICP/MS

STANDARDS KEY

QC Std 1 - ICV
QC Std 2 - ICB
QC Std 3 - LLICV
QC Std 4 - ICSA
QC Std 5 - ICSAB
QC Std 6 - CCV
QC Std 7 - CCB
QC Std 8 - LLCCV

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.00005	0.05	0.1
Sb	10	0	0.00005	0.05	0.1
As	10	0	0.00005	0.05	0.1
Ba	10	0	0.00005	0.05	0.1
Be	10	0	0.00005	0.05	0.1
Ca	1000	0	0.005	5	10
Cd	10	0	0.0005	0.05	0.1
Cr	10	0	0.0005	0.05	0.1
Co	10	0	0.0005	0.05	0.1
Cu	10	0	0.0005	0.05	0.1
Fe	1000	0	0.005	5	10
Pb	10	0	0.00005	0.05	0.1
Mg	1000	0	0.005	5	10
Mn	10	0	0.00005	0.05	0.1
Ni	10	0	0.00005	0.05	0.1
K	1000	0	0.005	5	10
Se	10	0	0.00005	0.05	0.1
Ag	10	0	0.00005	0.05	0.1
Na	1000	0	0.005	5	10
Tl	10	0	0.00005	0.05	0.1
V	10	0	0.00005	0.05	0.1
U	1000	0	0.00005	0.05	0.1
Zn	10	0	0.00005	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG574242
Analyst: VC
Spike Analyst: VC
Run Date: 06/27/2016 08:30
Method: 3015
Balance: BAL016
Instrument: MW-3
Instrument Start: 06/27/2016 08:39

SOP: ME407 Revison 19
Spike Solution: STD75998
Spike Witness: ERP
HNO3 Lot #: COA18905
40 & 50 ML. DIGESTION TU COA18987
MS Filters- fisher-Lot#R RGT35621

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG574242-02	BLANK	1	20 mL	50 mL	182.814 g	182.793 g		
2	WG574242-03	LCS	1	20 mL	50 mL	183.56 g	183.549 g	.25 mL	
3	L16060794-01	SAMP	1	20 mL	50 mL	184.361 g	184.346 g		06/24/16
4	L16060794-02	SAMP	1	20 mL	50 mL	183.398 g	183.379 g		06/24/16
5	L16060794-03	SAMP	1	20 mL	50 mL	184.044 g	184.009 g		06/24/16
6	L16060794-04	SAMP	1	20 mL	50 mL	182.433 g	182.424 g		06/24/16
7	L16060822-02	SAMP	1	20 mL	50 mL	182.575 g	182.563 g		06/24/16
8	L16060822-03	SAMP	1	20 mL	50 mL	182.733 g	182.696 g		06/24/16
9	L16060823-02	SAMP	1	20 mL	50 mL	184.331 g	184.334 g		06/24/16
10	L16060823-03	SAMP	1	20 mL	50 mL	181.954 g	181.917 g		06/24/16
11	L16060823-04	SAMP	1	20 mL	50 mL	184.816 g	184.809 g		06/24/16
12	WG574242-01	REF	2	20 mL	50 mL	183.706 g	183.7 g		
13	L16060839-01	SAMP	2	20 mL	50 mL	183.706 g	183.7 g		06/22/16
14	L16060843-01	SAMP	2	20 mL	50 mL	179.215 g	179.196 g		06/22/16
15	L16060843-02	SAMP	2	20 mL	50 mL	181.896 g	181.872 g		06/22/16
16	L16061410-01	SAMP	1	20 mL	50 mL	181.139 g	181.127 g		07/01/16
17	L16061412-01	SAMP	1	20 mL	50 mL	181.093 g	181.089 g		07/01/16
18	L16061412-02	SAMP	1	20 mL	50 mL	184.474 g	184.466 g		07/01/16
19	L16061413-01	SAMP	1	20 mL	50 mL	181.294 g	181.262 g		07/01/16
20	L16061416-01	SAMP	1	20 mL	50 mL	183.477 g	183.459 g		07/01/16
21	L16061416-02	SAMP	1	20 mL	50 mL	179.518 g	178.772 g		07/01/16
22	L16061421-01	SAMP	1	20 mL	50 mL	183.973 g	183.93 g		07/01/16
23	WG574242-04	DUP	1	20 mL	50 mL	183.873 g	183.86 g		
24	WG574242-05	MS	1	20 mL	50 mL	181.12 g	181.111 g	.25 mL	
25	WG574242-06	MSD	1	20 mL	50 mL	183.984 g	183.969 g	.25 mL	

Analyst: Vicki Collins

Reviewer: Erin Potter

MW_DIG - Modified 09/30/2009
PDF ID: 4825465
Report generated: 06/27/2016 09:45

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062816A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 572184,573475,574522,574570,574571,574573

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.062816.130257	Blank	Blank		1		06/28/16 13:02
2	NI.062816.130609	WG574537-01	Calibration Point		1		06/28/16 13:06
3	NI.062816.130921	WG574537-02	Calibration Point		1		06/28/16 13:09
4	NI.062816.131232	WG574537-03	Calibration Point		1		06/28/16 13:12
5	NI.062816.131544	WG574537-04	Calibration Point		1		06/28/16 13:15
6	NI.062816.131857	WG574537-05	Initial Calibration Verification		1		06/28/16 13:18
7	NI.062816.132210	WG574537-06	Initial Calib Blank		1		06/28/16 13:22
8	NI.062816.132523	WG574537-07	Low Level Initial Calibration V		1		06/28/16 13:25
9	NI.062816.132834	WG574537-08	Interference Check		1		06/28/16 13:28
10	NI.062816.133145	WG574537-09	Interference Check		1		06/28/16 13:31
11	NI.062816.133459	WG574537-10	CCV		1		06/28/16 13:34
12	NI.062816.133810	WG574537-11	CCB		1		06/28/16 13:38
13	NI.062816.134122	L16060362-03	6060227-03		10		06/28/16 13:41
14	NI.062816.134434	L16060362-04	6060227-04		1		06/28/16 13:44
15	NI.062816.134903	L16060362-03	6060227-03	20/50	10		06/28/16 13:49
16	NI.062816.135218	L16060362-04	6060227-04	20/50	1		06/28/16 13:52
17	NI.062816.135925	L16060362-05	6060227-05	20/50	1		06/28/16 13:59
18	NI.062816.140236	L16060362-06	6060227-06	20/50	1		06/28/16 14:02
19	NI.062816.140602	L16060362-07	6060227-07	20/50	1		06/28/16 14:06
20	NI.062816.140914	L16060362-08	6060227-08	20/50	1		06/28/16 14:09
21	NI.062816.141225	L16060362-09	6060227-09	20/50	1		06/28/16 14:12
22	NI.062816.141537	L16060362-10	6060227-10	20/50	1		06/28/16 14:15
23	NI.062816.141850	WG574537-12	CCV		1		06/28/16 14:18
24	NI.062816.142201	WG574537-13	CCB		1		06/28/16 14:22
25	NI.062816.142514	L16060362-11	6060227-11	20/50	1		06/28/16 14:25
26	NI.062816.142825	L16060362-12	6060227-12	20/50	1		06/28/16 14:28
27	NI.062816.143138	WG574537-14	CCV		1		06/28/16 14:31
28	NI.062816.143450	WG574537-15	CCB		1		06/28/16 14:34
29	NI.062816.143803	WG573333-03	Method/Prep Blank	.25/100	1		06/28/16 14:38
30	NI.062816.144114	WG573333-04	Laboratory Control S	.25/100	1		06/28/16 14:41
31	NI.062816.144426	WG573333-02	Reference Sample		1	L16061053-01	06/28/16 14:44
32	NI.062816.144737	WG573333-07	Matrix Spike	.253/100	1	L16061053-01	06/28/16 14:47
33	NI.062816.145049	WG573333-08	Matrix Spike Duplica	.252/100	1	L16061053-01	06/28/16 14:50
34	NI.062816.145400	L16061048-01	TR0062	.252/100	5		06/28/16 14:54

Page: 1 Approved: June 29, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062816A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 572184,573475,574522,574570,574571,574573

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.062816.145711	WG573475-03	Post Digestion Spike		5	L16061048-01	06/28/16 14:57
36	NI.062816.150023	WG573475-04	Serial Dilution		25	L16061048-01	06/28/16 15:00
37	NI.062816.150336	WG574537-16	Interference Check		1		06/28/16 15:03
38	NI.062816.150647	WG574537-17	Interference Check		1		06/28/16 15:06
39	NI.062816.151001	WG574537-18	CCV		1		06/28/16 15:10
40	NI.062816.151312	WG574537-19	CCB		1		06/28/16 15:13
41	NI.062816.151629	WG574537-20	Low Level Continuing Calibra		1		06/28/16 15:16
42	NI.062816.152424	WG573333-01	Reference Sample		10	L16060787-03	06/28/16 15:24
43	NI.062816.152735	WG573333-05	Matrix Spike	.256/100	10	L16060787-03	06/28/16 15:27
44	NI.062816.153046	WG573333-06	Matrix Spike Duplica	.253/100	10	L16060787-03	06/28/16 15:30
45	NI.062816.153358	L16060787-06	U517SS00512A	.256/100	10		06/28/16 15:33
46	NI.062816.153709	L16060787-08	U517SS00612A	.254/100	10		06/28/16 15:37
47	NI.062816.154021	L16060787-13	U517SS00708A	.252/100	10		06/28/16 15:40
48	NI.062816.154332	L16060787-15	U517SS00808A	.257/100	10		06/28/16 15:43
49	NI.062816.154644	L16060787-16	U517SS00808C	.255/100	10		06/28/16 15:46
50	NI.062816.154955	L16060787-17	U517SS00810A	.259/100	10		06/28/16 15:49
51	NI.062816.155308	WG574537-21	CCV		1		06/28/16 15:53
52	NI.062816.155620	WG574537-22	CCB		1		06/28/16 15:56
53	NI.062816.155933	WG573751-04	Method/Prep Blank	20/50	1		06/28/16 15:59
54	NI.062816.160244	WG573751-05	Laboratory Control S	20/50	1		06/28/16 16:02
55	NI.062816.160556	WG573751-02	Reference Sample		1	L16061151-01	06/28/16 16:05
56	NI.062816.160907	WG573751-07	Matrix Spike	20/50	1	L16061151-01	06/28/16 16:09
57	NI.062816.161219	WG573751-08	Matrix Spike Duplica	20/50	1	L16061151-01	06/28/16 16:12
58	NI.062816.161530	WG573751-01	Reference Sample		1	L16060916-02	06/28/16 16:15
59	NI.062816.161841	WG573751-06	Duplicate	20/50	1	L16060916-02	06/28/16 16:18
60	NI.062816.162153	L16060916-01	PHL 1 FRESHWATER IMPO	20/50	1		06/28/16 16:21
61	NI.062816.162504	WG574522-01	Post Digestion Spike		1	L16060916-01	06/28/16 16:25
62	NI.062816.162816	WG574522-02	Serial Dilution		5	L16060916-01	06/28/16 16:28
63	NI.062816.163129	WG574537-23	CCV		1		06/28/16 16:31
64	NI.062816.163441	WG574537-24	CCB		1		06/28/16 16:34
65	NI.062816.163754	WG574522-02	Serial Dilution		25	L16060916-01	06/28/16 16:37
66	NI.062816.164105	L16061142-01	18WW20-062016	20/50	1		06/28/16 16:41
67	NI.062816.164417	L16061142-03	18WW19F-062016	20/50	1		06/28/16 16:44
68	NI.062816.164728	L16061142-05	18WW19FFD-062016	20/50	1		06/28/16 16:47

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Instrument Run Log

Instrument: ICP-MS2 Dataset: 062816A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 572184,573475,574522,574570,574571,574573

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.062816.165039	L16061151-02	LF003SW0311-007 DUP	20/50	1		06/28/16 16:50
70	NI.062816.165351	L16061151-05	LF003SW0312-007	20/50	1		06/28/16 16:53
71	NI.062816.165702	WG573751-03	Reference Sample		1	L16061154-01	06/28/16 16:57
72	NI.062816.170014	WG573751-09	Matrix Spike	20/50	1	L16061154-01	06/28/16 17:00
73	NI.062816.170325	WG573751-10	Matrix Spike Duplica	20/50	1	L16061154-01	06/28/16 17:03
74	NI.062816.170637	L16061154-04	FQC-RB06201601-CB	20/50	1		06/28/16 17:06
75	NI.062816.170950	WG574537-25	CCV		1		06/28/16 17:09
76	NI.062816.171301	WG574537-26	CCB		1		06/28/16 17:13
77	NI.062816.171614	L16061155-01	ST008MW0812-007	20/50	1		06/28/16 17:16
78	NI.062816.171926	L16061155-02	ST008MW0809-007	20/50	1		06/28/16 17:19
79	NI.062816.172237	L16061155-03	ST008MW0816-007	20/50	1		06/28/16 17:22
80	NI.062816.172550	WG574537-27	CCV		1		06/28/16 17:25
81	NI.062816.172902	WG574537-28	CCB		1		06/28/16 17:29
82	NI.062816.184632	L16061142-01	18WW20-062016	20/50	10		06/28/16 18:46
83	NI.062816.184946	WG574537-29	CCV		1		06/28/16 18:49
84	NI.062816.185257	WG574537-30	CCB		1		06/28/16 18:52
85	NI.062816.185610	WG574537-31	Low Level Continuing Calibra		1		06/28/16 18:56
86	NI.062816.195129	WG574242-02	Method/Prep Blank	20/50	1		06/28/16 19:51
87	NI.062816.195440	WG574242-03	Laboratory Control S	20/50	1		06/28/16 19:54
88	NI.062816.195752	WG574242-01	Reference Sample		1	L16060839-01	06/28/16 19:57
89	NI.062816.200103	WG574242-04	Duplicate	20/50	1	L16060839-01	06/28/16 20:01
90	NI.062816.200414	WG574242-05	Matrix Spike	20/50	1	L16060839-01	06/28/16 20:04
91	NI.062816.200726	WG574242-06	Matrix Spike Duplica	20/50	1	L16060839-01	06/28/16 20:07
92	NI.062816.201037	L16060843-01	6060966-01	20/50	1		06/28/16 20:10
93	NI.062816.201349	WG574570-01	Post Digestion Spike		1	L16060843-01	06/28/16 20:13
94	NI.062816.201700	WG574570-02	Serial Dilution		5	L16060843-01	06/28/16 20:17
95	NI.062816.202012	WG574570-02	Serial Dilution		25	L16060843-01	06/28/16 20:20
96	NI.062816.202325	WG574537-32	CCV		1		06/28/16 20:23
97	NI.062816.202637	WG574537-33	CCB		1		06/28/16 20:26
98	NI.062816.202950	L16060794-01	A08-MW06-Y1S2	20/50	1		06/28/16 20:29
99	NI.062816.203301	L16060794-02	A08-MW09-Y1S2	20/50	1		06/28/16 20:33
100	NI.062816.203613	L16060794-03	A09-MW02-Y1S2	20/50	1		06/28/16 20:36
101	NI.062816.203924	L16060794-04	A09-MW07-Y1S2	20/50	1		06/28/16 20:39
102	NI.062816.204236	L16060822-02	18WW03F-061416	20/50	1		06/28/16 20:42

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Instrument Run Log

Instrument: ICP-MS2 Dataset: 062816A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 572184,573475,574522,574570,574571,574573

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.062816.204547	L16060822-03	18CPTMW04SW-061416	20/50	1		06/28/16 20:45
104	NI.062816.204859	L16060823-02	126F-061416	20/50	1		06/28/16 20:48
105	NI.062816.205210	L16060823-03	C08-061416	20/50	1		06/28/16 20:52
106	NI.062816.205522	L16060823-04	C03-061416	20/50	1		06/28/16 20:55
107	NI.062816.205833	L16060843-02	6060966-02	20/50	1		06/28/16 20:58
108	NI.062816.210146	WG574537-34	CCV		1		06/28/16 21:01
109	NI.062816.210457	WG574537-35	CCB		1		06/28/16 21:04
110	NI.062816.210810	L16061410-01	SS007MW0704-007	20/50	1		06/28/16 21:08
111	NI.062816.211122	L16061412-01	SS007MW0B05-007	20/50	1		06/28/16 21:11
112	NI.062816.211433	L16061412-02	SS007MW0B02-007	20/50	1		06/28/16 21:14
113	NI.062816.211745	L16061413-01	DP005MW0504-007	20/50	1		06/28/16 21:17
114	NI.062816.212056	L16061416-01	DP005MW0509-007	20/50	1		06/28/16 21:20
115	NI.062816.212408	L16061416-02	DP005MW0518-007	20/50	1		06/28/16 21:24
116	NI.062816.212719	L16061421-01	LF003MW03	20/50	1		06/28/16 21:27
117	NI.062816.213032	WG574537-36	CCV		1		06/28/16 21:30
118	NI.062816.213343	WG574537-37	CCB		1		06/28/16 21:33
119	NI.062816.213655	WG574205-02	Method/Prep Blank	20/50	1		06/28/16 21:36
120	NI.062816.214007	WG574205-03	Laboratory Control S	20/50	1		06/28/16 21:40
121	NI.062816.214318	WG574205-01	Reference Sample		1	L16061343-01	06/28/16 21:43
122	NI.062816.214630	WG574205-04	Duplicate	20/50	1	L16061343-01	06/28/16 21:46
123	NI.062816.214941	WG574205-05	Matrix Spike	20/50	1	L16061343-01	06/28/16 21:49
124	NI.062816.215253	WG574205-06	Matrix Spike Duplica	20/50	1	L16061343-01	06/28/16 21:52
125	NI.062816.215604	L16060732-01	LH18/24-SP650-6371-GRAB	20/50	1		06/28/16 21:56
126	NI.062816.215915	WG574571-01	Post Digestion Spike		1	L16060732-01	06/28/16 21:59
127	NI.062816.220227	WG574571-02	Serial Dilution		5	L16060732-01	06/28/16 22:02
128	NI.062816.220538	WG574571-02	Serial Dilution		25	L16060732-01	06/28/16 22:05
129	NI.062816.220851	WG574537-38	CCV		1		06/28/16 22:08
130	NI.062816.221202	WG574537-39	CCB		1		06/28/16 22:12
131	NI.062816.221514	L16060732-02	LH18/24-SP650-6371-COMP	20/50	1		06/28/16 22:15
132	NI.062816.221825	L16060762-01	MW-24-001	20/50	1		06/28/16 22:18
133	NI.062816.222137	L16061380-01	XU936TW003A	20/50	1		06/28/16 22:21
134	NI.062816.222448	L16061380-02	XU936TW003C	20/50	1		06/28/16 22:24
135	NI.062816.222800	L16061381-06	EB02	20/50	1		06/28/16 22:28
136	NI.062816.223111	L16061393-01	S6F0627-01	20/50	1		06/28/16 22:31

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062816A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 572184,573475,574522,574570,574571,574573

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	NI.062816.223423	L16061393-02	S6F0627-02	20/50	1		06/28/16 22:34
138	NI.062816.223734	L16061393-03	S6F0627-03	20/50	1		06/28/16 22:37
139	NI.062816.224046	L16061393-04	S6F0627-04	20/50	1		06/28/16 22:40
140	NI.062816.224357	L16061393-05	S6F0627-05	20/50	1		06/28/16 22:43
141	NI.062816.224710	WG574537-40	CCV		1		06/28/16 22:47
142	NI.062816.225022	WG574537-41	CCB		1		06/28/16 22:50
143	NI.062816.225335	L16061393-06	S6F0627-06	20/50	1		06/28/16 22:53
144	NI.062816.225646	L16061393-07	S6F0627-07	20/50	1		06/28/16 22:56
145	NI.062816.225958	L16061401-01	DP005MW0501-007	20/50	1		06/28/16 22:59
146	NI.062816.230309	L16061402-01	SS007MW0715-007	20/50	1		06/28/16 23:03
147	NI.062816.230621	L16061404-01	DP005MW0503-007	20/50	1		06/28/16 23:06
148	NI.062816.230932	L16061408-01	DP005MW0508-007	20/50	1		06/28/16 23:09
149	NI.062816.231244	L16061409-01	ST008MW0818-007	20/50	1		06/28/16 23:12
150	NI.062816.231556	WG574537-42	CCV		1		06/28/16 23:15
151	NI.062816.231908	WG574537-43	CCB		1		06/28/16 23:19
152	NI.062816.232221	WG574537-44	Low Level Continuing Calibra		1		06/28/16 23:22
153	NI.062816.232534	WG574306-02	Method/Prep Blank	.25/100	1		06/28/16 23:25
154	NI.062816.232845	WG574306-03	Laboratory Control S	.25/100	1		06/28/16 23:28
155	NI.062816.233157	L16061297-07	XU936DS01700A		1	WG574306-01	06/28/16 23:31
156	NI.062816.233508	L16061297-08	XU936DS01700MS	.253/100	1	WG574306-04	06/28/16 23:35
157	NI.062816.233819	L16061297-09	XU936DS01700MSD	.255/100	1	WG574306-05	06/28/16 23:38
158	NI.062816.234131	L16061443-01	GS042QACF035SB062416-E	.256/100	1		06/28/16 23:41
159	NI.062816.234442	L16061443-02	GS042QACF035SB062416-E	.256/100	1		06/28/16 23:44
160	NI.062816.234754	WG574573-01	Post Digestion Spike		1	L16061443-02	06/28/16 23:47
161	NI.062816.235105	WG574573-02	Serial Dilution		5	L16061443-02	06/28/16 23:51
162	NI.062816.235417	WG574573-02	Serial Dilution		25	L16061443-02	06/28/16 23:54
163	NI.062816.235730	WG574537-45	CCV		1		06/28/16 23:57
164	NI.062916.000041	WG574537-46	CCB		1		06/29/16 00:00

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Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062916A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573722,574570,574572,573717,574688,574690,573790

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.062916.112234	Blank	Blank		1		06/29/16 11:22
2	NI.062916.112545	WG574676-01	Calibration Point		1		06/29/16 11:25
3	NI.062916.112857	WG574676-02	Calibration Point		1		06/29/16 11:28
4	NI.062916.113208	WG574676-03	Calibration Point		1		06/29/16 11:32
5	NI.062916.113520	WG574676-04	Calibration Point		1		06/29/16 11:35
6	NI.062916.113833	WG574676-05	Initial Calibration Verification		1		06/29/16 11:38
7	NI.062916.114146	WG574676-06	Initial Calib Blank		1		06/29/16 11:41
8	NI.062916.114653	WG574676-07	Low Level Initial Calibration V		1		06/29/16 11:46
9	NI.062916.115053	WG574676-08	Interference Check		1		06/29/16 11:50
10	NI.062916.115447	WG574676-09	Interference Check		1		06/29/16 11:54
11	NI.062916.120010	WG574676-10	CCV		1		06/29/16 12:00
12	NI.062916.120734	WG574676-11	CCB		1		06/29/16 12:07
13	NI.062916.121215	L16060661-06	US23SS02502A	.253/100	1		06/29/16 12:12
14	NI.062916.121526	L16060661-07	US23SS02505A	.257/100	1		06/29/16 12:15
15	NI.062916.121838	L16060661-08	US23SS02602A	.257/100	1		06/29/16 12:18
16	NI.062916.122149	L16060661-09	US23SS02605A	.25/100	1		06/29/16 12:21
17	NI.062916.122501	L16060822-03	18CPTMW04SW-061416	20/50	10		06/29/16 12:25
18	NI.062916.122812	L16060823-02	126F-061416	20/50	50		06/29/16 12:28
19	NI.062916.123124	L16060823-03	C08-061416	20/50	50		06/29/16 12:31
20	NI.062916.123435	L16060823-04	C03-061416	20/50	50		06/29/16 12:34
21	NI.062916.123748	WG574676-12	CCV		1		06/29/16 12:37
22	NI.062916.124059	WG574676-13	CCB		1		06/29/16 12:40
23	NI.062916.124412	WG574676-14	Low Level Continuing Calibra		1		06/29/16 12:44
24	NI.062916.125354	WG573548-02	Method/Prep Blank	20/50	1		06/29/16 12:53
25	NI.062916.125705	WG573548-03	Laboratory Control S	20/50	1		06/29/16 12:57
26	NI.062916.130017	WG573548-01	Reference Sample		1	L16060986-23	06/29/16 13:00
27	NI.062916.130328	WG573548-04	Matrix Spike	20/50	1	L16060986-23	06/29/16 13:03
28	NI.062916.130639	WG573548-05	Matrix Spike Duplica	20/50	1	L16060986-23	06/29/16 13:06
29	NI.062916.130951	L16060986-01	MW-07-04	20/50	1		06/29/16 13:09
30	NI.062916.131302	L16060986-03	MW-01-10	20/50	1		06/29/16 13:13
31	NI.062916.131614	WG574572-01	Post Digestion Spike		1	L16060986-03	06/29/16 13:16
32	NI.062916.131925	WG574572-02	Serial Dilution		5	L16060986-03	06/29/16 13:19
33	NI.062916.132237	WG574572-02	Serial Dilution		25	L16060986-03	06/29/16 13:22
34	NI.062916.132550	WG574676-15	CCV		1		06/29/16 13:25

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062916A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573722,574570,574572,573717,574688,574690,573790

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.062916.132901	WG574676-16	CCB		1		06/29/16 13:29
36	NI.062916.133214	L16060986-05	MW-03-12	20/50	1		06/29/16 13:32
37	NI.062916.133526	L16060986-07	MW-01-07	20/50	1		06/29/16 13:35
38	NI.062916.133837	L16060986-09	MW-03-11	20/50	1		06/29/16 13:38
39	NI.062916.134150	L16060986-11	MW-01-01	20/50	1		06/29/16 13:41
40	NI.062916.134502	L16060986-13	MW-03-09	20/50	1		06/29/16 13:45
41	NI.062916.134813	L16060986-15	MW-01-08	20/50	1		06/29/16 13:48
42	NI.062916.135125	L16060986-17	MW-03-06	20/50	1		06/29/16 13:51
43	NI.062916.135436	L16060986-19	MW-03-05	20/50	1		06/29/16 13:54
44	NI.062916.135748	L16060986-25	MW-01-02	20/50	1		06/29/16 13:57
45	NI.062916.140059	L16060986-27	DUP 1	20/50	1		06/29/16 14:00
46	NI.062916.140412	WG574676-17	CCV		1		06/29/16 14:04
47	NI.062916.140723	WG574676-18	CCB		1		06/29/16 14:07
48	NI.062916.141036	L16060986-29	DUP 2	20/50	1		06/29/16 14:10
49	NI.062916.141347	L16060986-39	EQUIP BLANK 1	20/50	1		06/29/16 14:13
50	NI.062916.141659	L16060986-41	EQUIP BLANK 2	20/50	1		06/29/16 14:16
51	NI.062916.145120	L16061026-02	18WW16F-061616	20/50	1		06/29/16 14:51
52	NI.062916.145431	L16061026-04	129-061616	20/50	1		06/29/16 14:54
53	NI.062916.145742	L16061026-06	120F-061616	20/50	1		06/29/16 14:57
54	NI.062916.150054	L16061026-07	123-061616	20/50	1		06/29/16 15:00
55	NI.062916.150407	WG574676-19	CCV		1		06/29/16 15:04
56	NI.062916.150718	WG574676-20	CCB		1		06/29/16 15:07
57	NI.062916.151032	WG573099-02	Method/Prep Blank	.25/100	1		06/29/16 15:10
58	NI.062916.151343	WG573099-03	Laboratory Control S	.25/100	1		06/29/16 15:13
59	NI.062916.151655	WG573099-01	Reference Sample		10	L16060888-03	06/29/16 15:16
60	NI.062916.152006	WG573099-04	Matrix Spike	.255/100	10	L16060888-03	06/29/16 15:20
61	NI.062916.152318	WG573099-05	Matrix Spike Duplica	.254/100	10	L16060888-03	06/29/16 15:23
62	NI.062916.152629	L16060883-01	WC01	.252/100	1		06/29/16 15:26
63	NI.062916.152941	L16060912-01	WH8011	.25/100	1		06/29/16 15:29
64	NI.062916.153252	WG573717-03	Post Digestion Spike		1	L16060912-01	06/29/16 15:32
65	NI.062916.153604	WG573717-04	Serial Dilution		5	L16060912-01	06/29/16 15:36
66	NI.062916.153915	WG573717-04	Serial Dilution		25	L16060912-01	06/29/16 15:39
67	NI.062916.154228	WG574676-21	CCV		1		06/29/16 15:42
68	NI.062916.154540	WG574676-22	CCB		1		06/29/16 15:45

Page: 2 Approved: July 05, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062916A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573722,574570,574572,573717,574688,574690,573790

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.062916.154853	WG574001-04	Method/Prep Blank	20/50	1		06/29/16 15:48
70	NI.062916.155204	WG574001-05	Laboratory Control S	20/50	1		06/29/16 15:52
71	NI.062916.155516	WG574001-01	Reference Sample		1	L16061247-02	06/29/16 15:55
72	NI.062916.155827	WG574001-06	Duplicate	20/50	1	L16061247-02	06/29/16 15:58
73	NI.062916.160139	WG574001-02	Reference Sample		1	L16061265-01	06/29/16 16:01
74	NI.062916.160450	WG574001-07	Matrix Spike	20/50	1	L16061265-01	06/29/16 16:04
75	NI.062916.160802	WG574001-08	Matrix Spike Duplica	20/50	1	L16061265-01	06/29/16 16:08
76	NI.062916.161113	L16061247-01	WMB09	20/50	1		06/29/16 16:11
77	NI.062916.161425	WG574688-01	Post Digestion Spike		1	L16061247-01	06/29/16 16:14
78	NI.062916.161736	WG574688-02	Serial Dilution		5	L16061247-01	06/29/16 16:17
79	NI.062916.162049	WG574676-23	CCV		1		06/29/16 16:20
80	NI.062916.162401	WG574676-24	CCB		1		06/29/16 16:24
81	NI.062916.162713	WG574688-02	Serial Dilution		25	L16061247-01	06/29/16 16:27
82	NI.062916.163025	L16061265-04	SS007MWOB16-007	20/50	1		06/29/16 16:30
83	NI.062916.163336	L16061265-05	SS007MWOB21-007	20/50	1		06/29/16 16:33
84	NI.062916.163648	L16061265-06	FQC-RB06211601-CC	20/50	1		06/29/16 16:36
85	NI.062916.163959	L16061266-01	ST008MW0805-007	20/50	1		06/29/16 16:39
86	NI.062916.164310	L16061269-01	FT002MW0204-007	20/50	1		06/29/16 16:43
87	NI.062916.164622	L16061272-01	SS007MW0B18-007	20/50	1		06/29/16 16:46
88	NI.062916.164933	L16061272-02	SS007MWN752-007	20/50	1		06/29/16 16:49
89	NI.062916.165245	L16061279-01	XU936TW007A	20/50	1		06/29/16 16:52
90	NI.062916.165556	L16061279-01	XU936TW007A	20/50	50		06/29/16 16:55
91	NI.062916.165909	WG574676-25	CCV		1		06/29/16 16:59
92	NI.062916.170220	WG574676-26	CCB		1		06/29/16 17:02
93	NI.062916.170533	WG574001-03	Reference Sample		1	L16061279-02	06/29/16 17:05
94	NI.062916.170845	WG574001-03	Reference Sample		50	L16061279-02	06/29/16 17:08
95	NI.062916.171156	WG574001-09	Matrix Spike	20/50	1	L16061279-02	06/29/16 17:11
96	NI.062916.171508	WG574001-09	Matrix Spike	20/50	50	L16061279-02	06/29/16 17:15
97	NI.062916.171819	WG574001-10	Matrix Spike Duplica	20/50	1	L16061279-02	06/29/16 17:18
98	NI.062916.172131	WG574001-10	Matrix Spike Duplica	20/50	50	L16061279-02	06/29/16 17:21
99	NI.062916.172442	L16061279-05	XU936TW019A	20/50	1		06/29/16 17:24
100	NI.062916.172754	L16061279-05	XU936TW019A	20/50	50		06/29/16 17:27
101	NI.062916.173105	L16061281-01	J6F0803-01	20/50	1		06/29/16 17:31
102	NI.062916.173419	WG574676-27	CCV		1		06/29/16 17:34

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062916A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573722,574570,574572,573717,574688,574690,573790

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.062916.173730	WG574676-28	CCB		1		06/29/16 17:37
104	NI.062916.174043	L16061294-03	EB01	20/50	1		06/29/16 17:40
105	NI.062916.174355	L16061294-03	EB01	20/50	50		06/29/16 17:43
106	NI.062916.174706	L16061296-01	OUTFALL 002/COMP	20/50	1		06/29/16 17:47
107	NI.062916.175019	WG574676-29	Interference Check		1		06/29/16 17:50
108	NI.062916.175331	WG574676-30	Interference Check		1		06/29/16 17:53
109	NI.062916.175644	WG574676-31	CCV		1		06/29/16 17:56
110	NI.062916.175955	WG574676-32	CCB		1		06/29/16 17:59
111	NI.062916.180308	WG574676-33	Low Level Continuing Calibra		1		06/29/16 18:03
112	NI.062916.180621	WG574192-02	Method/Prep Blank	.25/100	1		06/29/16 18:06
113	NI.062916.180932	WG574192-03	Laboratory Control S	.25/100	1		06/29/16 18:09
114	NI.062916.181244	WG574192-01	Reference Sample		1	L16061206-01	06/29/16 18:12
115	NI.062916.181555	L16061206-02	LF003SD0311-007 DUP	.251/100	1		06/29/16 18:15
116	NI.062916.181907	WG574192-04	Matrix Spike	.25/100	1	L16061206-01	06/29/16 18:19
117	NI.062916.182218	WG574192-05	Matrix Spike Duplica	.253/100	1	L16061206-01	06/29/16 18:22
118	NI.062916.182530	L16061206-05	LF003SD0312-007	.25/100	1		06/29/16 18:25
119	NI.062916.182841	WG574690-01	Post Digestion Spike		1	L16061206-05	06/29/16 18:28
120	NI.062916.183153	WG574690-02	Serial Dilution		5	L16061206-05	06/29/16 18:31
121	NI.062916.183504	WG574690-02	Serial Dilution		25	L16061206-05	06/29/16 18:35
122	NI.062916.183818	WG574676-34	CCV		1		06/29/16 18:38
123	NI.062916.184129	WG574676-35	CCB		1		06/29/16 18:41
124	NI.062916.184442	L16061207-01	SS007SD0709-007	.251/100	1		06/29/16 18:44
125	NI.062916.184754	L16061207-02	SS007SD0710-007	.25/100	1		06/29/16 18:47
126	NI.062916.185105	L16061208-01	DP005SD0513-007	.252/100	1		06/29/16 18:51
127	NI.062916.185417	L16061208-02	DP005SD0514-007	.251/100	1		06/29/16 18:54
128	NI.062916.185728	L16061291-01	V6F0270-01	.253/100	1		06/29/16 18:57
129	NI.062916.190040	L16061381-01	XU936DS00500A	.254/100	1		06/29/16 19:00
130	NI.062916.190351	L16061381-01	XU936DS00500A	.254/100	50		06/29/16 19:03
131	NI.062916.190703	L16061381-02	XU936DS00505A	.258/100	1		06/29/16 19:07
132	NI.062916.191014	L16061381-02	XU936DS00505A	.258/100	50		06/29/16 19:10
133	NI.062916.191327	WG574676-36	CCV		1		06/29/16 19:13
134	NI.062916.191639	WG574676-37	CCB		1		06/29/16 19:16
135	NI.062916.191952	L16061381-03	XU936DS00300A	.252/100	1		06/29/16 19:19
136	NI.062916.192303	L16061381-03	XU936DS00300A	.252/100	50		06/29/16 19:23

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062916A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573722,574570,574572,573717,574688,574690,573790

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	NI.062916.192615	L16061381-04	XU936DS00305A	.25/100	1		06/29/16 19:26
138	NI.062916.192926	L16061381-04	XU936DS00305A	.25/100	50		06/29/16 19:29
139	NI.062916.193237	L16061381-05	XU936DS00305C	.253/100	1		06/29/16 19:32
140	NI.062916.193550	L16061381-05	XU936DS00305C	.253/100	50		06/29/16 19:35
141	NI.062916.193901	L16061381-07	XU936DS00400A	.252/100	1		06/29/16 19:39
142	NI.062916.194213	L16061381-07	XU936DS00400A	.252/100	50		06/29/16 19:42
143	NI.062916.194524	L16061384-02	BFB-16-019	.253/100	1		06/29/16 19:45
144	NI.062916.194835	L16061384-04	BFB-16-020	.253/100	1		06/29/16 19:48
145	NI.062916.195149	WG574676-38	CCV		1		06/29/16 19:51
146	NI.062916.195500	WG574676-39	CCB		1		06/29/16 19:55
147	NI.062916.195813	L16061384-06	BFB-16-021	.253/100	1		06/29/16 19:58
148	NI.062916.200124	L16061384-08	BFB-16-022	.251/100	1		06/29/16 20:01
149	NI.062916.200436	L16061384-10	BFB-16-023	.254/100	1		06/29/16 20:04
150	NI.062916.200747	L16061384-12	BFB-16-024	.254/100	1		06/29/16 20:07
151	NI.062916.201101	WG574676-40	CCV		1		06/29/16 20:11
152	NI.062916.201412	WG574676-41	CCB		1		06/29/16 20:14
153	NI.062916.201726	WG573291-03	Method/Prep Blank	20/50	1		06/29/16 20:17
154	NI.062916.202037	WG573291-04	Laboratory Control S	20/50	1		06/29/16 20:20
155	NI.062916.202348	WG573291-01	Reference Sample		1	L16060974-01	06/29/16 20:23
156	NI.062916.202700	WG573291-05	Matrix Spike	20/50	1	L16060974-01	06/29/16 20:27
157	NI.062916.203011	WG573291-06	Matrix Spike Duplica	20/50	1	L16060974-01	06/29/16 20:30
158	NI.062916.203323	WG573790-03	Post Digestion Spike		1	L16060974-01	06/29/16 20:33
159	NI.062916.203634	WG573790-04	Serial Dilution		5	L16060974-01	06/29/16 20:36
160	NI.062916.203946	WG573790-04	Serial Dilution		25	L16060974-01	06/29/16 20:39
161	NI.062916.204259	WG574676-42	CCV		1		06/29/16 20:42
162	NI.062916.204611	WG574676-43	CCB		1		06/29/16 20:46

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Microbac Laboratories Inc.

Data Checklist

Date: 28-JUN-2016
Analyst: BKT
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 574537
Runlog ID: 75986
Analytical Workgroups: 572184,573475,574522,574570,574571,574573

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	762,1380,1381
Level 4	732,787,822,823,1048,1142,1151,1154
Level 4	1155,1401,1402,1404,1408,1409,1410
Level 4	1412,1413,1416,1421,1443
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BKT
Secondary Reviewer	KHR
Comments	

Primary Reviewer:
29-JUN-2016

Secondary Reviewer:
29-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-29-2016 15:32:08

Microbac Laboratories Inc.

Data Checklist

Date: 29-JUN-2016
Analyst: BKT
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 574676
Runlog ID: 76013
Analytical Workgroups: 573722,574570,574572,573717,574688,574690,573790

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1279,1294,1381,1384
Level 4	661,822,823,883,912,974,986,1026
Level 4	1206,1207,1208,1265,1266,1269,1272
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BKT
Secondary Reviewer	JYH
Comments	

Primary Reviewer:
04-JUL-2016

Secondary Reviewer:
05-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-05-2016 12:36:33

Microbac Laboratories Inc.

00674015

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG574570

Login Number: L16060823

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
126F-061416	02	06/14/16					06/27/2016	12.9	180		06/29/16	15.1	180	
126F-061416	02	06/14/16					06/27/2016	12.9	180		06/28/16	14.4	180	
C08-061416	03	06/14/16					06/27/2016	12.8	180		06/28/16	14.3	180	
C08-061416	03	06/14/16					06/27/2016	12.8	180		06/29/16	15	180	
C03-061416	04	06/14/16					06/27/2016	12.8	180		06/28/16	14.3	180	
C03-061416	04	06/14/16					06/27/2016	12.8	180		06/29/16	14.9	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4829709
Report generated 06/30/2016 09:23

METHOD BLANK SUMMARY

Login Number: L16060823
Blank File ID: NI.062816.195129
Prep Date: 06/27/16 08:30
Analyzed Date: 06/28/16 19:51
Analyst: BKT

Work Group: WG574570
Blank Sample ID: WG574242-02
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG574242-03	NI.062816.195440	06/28/16 19:54	01
DUP	WG574242-04	NI.062816.200103	06/28/16 20:01	01
126F-061416	L16060823-02	NI.062816.204859	06/28/16 20:48	02
C08-061416	L16060823-03	NI.062816.205210	06/28/16 20:52	02
C03-061416	L16060823-04	NI.062816.205522	06/28/16 20:55	02
126F-061416	L16060823-02	NI.062916.122812	06/29/16 12:28	DL01
C08-061416	L16060823-03	NI.062916.123124	06/29/16 12:31	DL01
C03-061416	L16060823-04	NI.062916.123435	06/29/16 12:34	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4829710
Report generated 06/30/2016 09:24

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060823 Prep Date: 06/27/16 08:30 Sample ID: WG574242-02
Instrument ID: ICP-MS2 Run Date: 06/28/16 19:51 Prep Method: 3015
File ID: NI.062816.195129 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG574570 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-28-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Antimony, Total	0.000500	0.00200	0.000500	1	U
Arsenic, Total	0.000500	0.00200	0.000500	1	U
Barium, Total	0.00150	0.00600	0.00150	1	U
Cadmium, Total	0.000300	0.00120	0.000300	1	U
Chromium, Total	0.00100	0.00400	0.00100	1	U
Cobalt, Total	0.000500	0.00200	0.000500	1	U
Copper, Total	0.00100	0.00400	0.00100	1	U
Lead, Total	0.000500	0.00200	0.000500	1	U
Manganese, Total	0.00100	0.00400	0.00100	1	U
Nickel, Total	0.00200	0.00800	0.00200	1	U
Silver, Total	0.000500	0.00200	0.000500	1	U
Thallium, Total	0.000100	0.000400	0.000100	1	U
Vanadium, Total	0.000500	0.00200	0.000500	1	U
Zinc, Total	0.0125	0.0500	0.0125	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4829711
29-JUN-2016 08:34

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060823 Run Date: 06/28/2016 Sample ID: WG574242-03
Instrument ID: ICP-MS2 Run Time: 19:54 Prep Method: 3015
File ID: NI.062816.195440 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG574570 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD75998 Cal ID: ICP-MS-28-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Antimony, Total	0.125	0.120	96.4	80 - 120	
Arsenic, Total	0.125	0.124	99.0	80 - 120	
Barium, Total	0.125	0.121	96.5	80 - 120	
Cadmium, Total	0.125	0.120	95.7	80 - 120	
Chromium, Total	0.125	0.125	100	80 - 120	
Cobalt, Total	0.125	0.122	97.6	80 - 120	
Copper, Total	0.125	0.127	102	80 - 120	
Lead, Total	0.125	0.125	99.8	80 - 120	
Manganese, Total	0.125	0.128	103	80 - 120	
Nickel, Total	0.125	0.126	100	80 - 120	
Silver, Total	0.125	0.123	98.2	80 - 120	
Thallium, Total	0.125	0.122	97.3	80 - 120	
Vanadium, Total	0.125	0.123	98.1	80 - 120	
Zinc, Total	0.125	0.129	103	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4829712
Report generated: 06/29/2016 08:34

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060823 Cal ID: ICP-MS2- Worknum: WG574570
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG574242-01 File ID: NI.062816.195752 Dil: 1 Matrix: WATER
Sample ID: WG574242-05 MS File ID: NI.062816.200414 Dil: 1 Units: mg/L
Sample ID: WG574242-06 MSD File ID: NI.062816.200726 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Antimony	0.000998	0.125	0.123	97.9	0.125	0.120	95.5	2.49	80 - 120	20	
Arsenic	0.00141	0.125	0.127	101	0.125	0.126	99.9	0.561	80 - 120	20	
Barium	0.0414	0.125	0.160	95.3	0.125	0.156	92.0	2.54	80 - 120	20	
Cadmium	ND	0.125	0.121	97.2	0.125	0.118	94.0	3.31	80 - 120	20	
Chromium	ND	0.125	0.121	96.6	0.125	0.124	99.2	2.65	80 - 120	20	
Cobalt	ND	0.125	0.121	97.2	0.125	0.120	96.3	0.931	80 - 120	20	
Copper	0.00439	0.125	0.124	95.7	0.125	0.125	96.4	0.655	80 - 120	20	
Lead	0.00115	0.125	0.126	100	0.125	0.124	98.6	1.64	80 - 120	20	
Manganese	0.00611	0.125	0.129	98.4	0.125	0.129	98.3	0.106	80 - 120	20	
Nickel	0.00410	0.125	0.123	95.0	0.125	0.125	96.9	1.96	80 - 120	20	
Silver	ND	0.125	0.122	97.6	0.125	0.118	94.3	3.46	80 - 120	20	
Thallium	ND	0.125	0.123	98.5	0.125	0.121	97.0	1.54	80 - 120	20	
Vanadium	0.00107	0.125	0.124	98.5	0.125	0.123	97.8	0.621	80 - 120	20	
Zinc	0.0337	0.125	0.154	96.2	0.125	0.156	97.7	1.20	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4829713
Report generated 06/29/2016 08:34

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16060823 **Worknum:** WG574570
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG574570-02 **File ID:** NI.062816.201700 **Dil:** 5 **Units:** ug/L
Sample: L16060843-01 **File ID:** NI.062816.201037 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	0.382	F	2.24	F	486.00	
Arsenic	ND	U	ND	U		
Barium	29.9	X	30.7	X	2.82	
Cadmium	0.151	F	ND	U		
Chromium	ND	U	ND	U		
Cobalt	7.40	X	7.21	X	2.48	
Copper	0.509	F	ND	U		
Lead	ND	U	ND	U		
Manganese	716		689		3.69	
Nickel	17.5	X	17.0	X	2.69	
Silver	ND	U	ND	U		
Thallium	ND	U	ND	U		
Vanadium	ND	U	ND	U		
Zinc	55.5	X	55.3	F	0.51	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4829707
06/29/2016 08:34

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060823 **Worknum:** WG574570
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG574570-01 **File ID:** NI.062816.201349 **Dil:** 1 **Units:** ug/L
Sample ID: L16060843-01 **File ID:** NI.062816.201037 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	49.7		0.382	F	50	98.7	75 - 125	
ARSENIC	51.2		0	U	50	102.5	75 - 125	
BARIUM	78.1		29.9		50	96.4	75 - 125	
CADMIUM	49.2		0.151	F	50	98.1	75 - 125	
CHROMIUM	50.1		0	U	50	100.1	75 - 125	
COBALT	59.3		7.40		50	103.7	75 - 125	
COPPER	50.9		0.509	F	50	100.8	75 - 125	
LEAD	52.4		0	U	50	104.7	75 - 125	
MANGANESE	748		716		50	63.6	75 - 125	N
NICKEL	66.6		17.5		50	98.2	75 - 125	
SILVER	48.6		0	U	50	97.3	75 - 125	
THALLIUM	50.9		0	U	50	101.8	75 - 125	
VANADIUM	50.8		0	U	50	101.7	75 - 125	
ZINC	115		55.5		50	119.5	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4829708
Report generated: 06/29/2016 08:34

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16060823	Workgroup (AAB#):	WG574570
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG574537	Initial Calibration Date:	28-JUN-2016 13:15

	WG574537-01		WG574537-02		WG574537-03		WG574537-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	47.7	.4	303	50	245000	100	482000	.999953	
ARSENIC	0	-33.8	.4	11.1	50	59300	100	117000	.999972	
BARIUM	0	33.7	.4	159	50	107000	100	212000	.999991	
CADMIUM	0	3.30	.4	116	50	110000	100	219000	.999985	
CHROMIUM	0	7410	.4	8070	50	376000	100	727000	.999989	
COBALT	0	227	.4	599	50	370000	100	731000	.999947	
COPPER	0	135	.4	280	50	102000	100	195000	.999984	
LEAD	0	933	.4	2130	50	978000	100	1950000	.999942	
MANGANESE	0	835	.4	1350	50	340000	100	679000	.99986	
NICKEL	0	183	.4	306	50	100000	100	194000	1	
SILVER	0	79.0	.4	455	50	352000	100	679000	.999803	
THALLIUM	0	5.30	.4	473	50	438000	100	866000	.999971	
VANADIUM	0	1490	.4	1870	50	370000	100	719000	.999996	
ZINC	0	520	.4	1010	50	59300	100	114000	.999999	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4829716
Report generated: 30-JUN-2016 09:24

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16060823	Workgroup (AAB#):	WG574570
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG574676	Initial Calibration Date:	29-JUN-2016 11:35

	WG574676-01		WG574676-02		WG574676-03		WG574676-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	28.2	.4	255	50	227000	100	448000	.999981	
ARSENIC	0	-40.0	.4	-10.4	50	57000	100	110000	.999904	
BARIUM	0	25.3	.4	136	50	99600	100	196000	.999974	
CADMIUM	0	1.30	.4	122	50	102000	100	200000	.999946	
CHROMIUM	0	7540	.4	7930	50	379000	100	748000	.999997	
COBALT	0	239	.4	575	50	337000	100	648000	.99988	
COPPER	0	103	.4	285	50	94300	100	184000	.999979	
LEAD	0	873	.4	2280	50	926000	100	1830000	.999949	
MANGANESE	0	784	.4	1380	50	355000	100	686000	.999925	
NICKEL	0	221	.4	324	50	94600	100	186000	.999991	
SILVER	0	86.3	.4	412	50	318000	100	624000	.999961	
THALLIUM	0	1.70	.4	417	50	406000	100	804000	.999963	
VANADIUM	0	1430	.4	1850	50	385000	100	745000	.999935	
ZINC	0	365	.4	549	50	56000	100	108000	.999932	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4829716
Report generated: 30-JUN-2016 09:24

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060823
Run Date: 06/28/2016
Sample ID: WG574537-06
Instrument ID: ICP-MS2
Run Time: 13:22
Method: 6020A
File ID: NI.062816.132210
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574570
Cal ID: ICP-MS2 - 28-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
COPPER	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.405	*
THALLIUM	.04	.16	.04	U
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4829718
Report generated 06/30/2016 09:24

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060823
Instrument ID: ICP-MS2
File ID: NI.062916.114146
Workgroup (AAB#): WG574570
Matrix: WATER

Run Date: 06/29/2016
Run Time: 11:41
Analyst: BKT
Cal ID: ICP-MS2 - 29-JUN-16

Sample ID: WG574676-06
Method: 6020A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
COPPER	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.335	F
THALLIUM	.04	.16	.04	U
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4829718
Report generated 06/30/2016 09:24

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/28/2016
Sample ID: WG574537-11
Instrument ID: ICP-MS2
Run Time: 13:38
Method: 6020A
File ID: NI.062816.133810
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.259	F
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4829721
Report generated 06/30/2016 09:24

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/28/2016
Sample ID: WG574537-15
Instrument ID: ICP-MS2
Run Time: 14:34
Method: 6020A
File ID: NI.062816.143450
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4829721
Report generated 06/30/2016 09:24

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/28/2016
Sample ID: WG574537-19
Instrument ID: ICP-MS2
Run Time: 15:13
Method: 6020A
File ID: NI.062816.151312
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.263	F
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4829721
Report generated 06/30/2016 09:24

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/28/2016
Sample ID: WG574537-30
Instrument ID: ICP-MS2
Run Time: 18:52
Method: 6020A
File ID: NI.062816.185257
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4829721
Report generated 06/30/2016 09:24

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/28/2016
Sample ID: WG574537-33
Instrument ID: ICP-MS2
Run Time: 20:26
Method: 6020A
File ID: NI.062816.202637
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4829721
Report generated 06/30/2016 09:24

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/28/2016
Sample ID: WG574537-35
Instrument ID: ICP-MS2
Run Time: 21:04
Method: 6020A
File ID: NI.062816.210457
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4829721
Report generated 06/30/2016 09:24

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/29/2016
Sample ID: WG574676-11
Instrument ID: ICP-MS2
Run Time: 12:07
Method: 6020A
File ID: NI.062916.120734
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4829721
Report generated 06/30/2016 09:24

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/29/2016
Sample ID: WG574676-13
Instrument ID: ICP-MS2
Run Time: 12:40
Method: 6020A
File ID: NI.062916.124059
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4829721
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Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060823 Run Date: 06/29/2016 Sample ID: WG574676-05
Instrument ID: ICP-MS2 Run Time: 11:38 Method: 6020A
File ID: NI.062916.113833 Analyst: BKT Units: ug/L
Workgroup (AAB#): WG574570 Cal ID: ICP-MS - 29-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	49.8	99.7	90 - 110	
Arsenic		50	50.9	102	90 - 110	
Barium		50	49.9	99.9	90 - 110	
Cadmium		50	50.3	101	90 - 110	
Chromium		50	50.0	100	90 - 110	
Cobalt		50	50.4	101	90 - 110	
Copper		50	50.8	102	90 - 110	
Lead		50	51.0	102	90 - 110	
Manganese		50	51.9	104	90 - 110	
Nickel		50	50.6	101	90 - 110	
Silver		50	50.9	102	90 - 110	
Thallium		50	50.7	101	90 - 110	
Vanadium		50	51.2	102	90 - 110	
Zinc		50	52.1	104	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4829717
Report generated 06/30/2016 09:24

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060823 Run Date: 06/28/2016 Sample ID: WG574537-05
Instrument ID: ICP-MS2 Run Time: 13:18 Method: 6020A
File ID: NI.062816.131857 Analyst: BKT Units: ug/L
Workgroup (AAB#): WG574570 Cal ID: ICP-MS - 28-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	48.3	96.6	90 - 110	
Arsenic		50	50.3	101	90 - 110	
Barium		50	48.2	96.4	90 - 110	
Cadmium		50	49.0	98.0	90 - 110	
Chromium		50	50.0	100	90 - 110	
Cobalt		50	50.2	100	90 - 110	
Copper		50	50.1	100	90 - 110	
Lead		50	48.9	97.7	90 - 110	
Manganese		50	50.2	100	90 - 110	
Nickel		50	49.7	99.4	90 - 110	
Silver		50	49.3	98.6	90 - 110	
Thallium		50	49.1	98.2	90 - 110	
Vanadium		50	49.7	99.5	90 - 110	
Zinc		50	50.7	101	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/28/2016
Sample ID: WG574537-10
Instrument ID: ICP-MS2
Run Time: 13:34
Method: 6020A
File ID: NI.062816.133459
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0492	mg/L	98.4	90 - 110		
Arsenic		0.0500	0.0495	mg/L	99.0	90 - 110		
Barium		0.0500	0.0487	mg/L	97.5	90 - 110		
Cadmium		0.0500	0.0487	mg/L	97.4	90 - 110		
Chromium		0.0500	0.0494	mg/L	98.8	90 - 110		
Cobalt		0.0500	0.0512	mg/L	102	90 - 110		
Copper		0.0500	0.0496	mg/L	99.2	90 - 110		
Lead		0.0500	0.0496	mg/L	99.3	90 - 110		
Manganese		0.0500	0.0497	mg/L	99.5	90 - 110		
Nickel		0.0500	0.0495	mg/L	98.9	90 - 110		
Silver		0.0500	0.0487	mg/L	97.3	90 - 110		
Thallium		0.0500	0.0489	mg/L	97.7	90 - 110		
Vanadium		0.0500	0.0499	mg/L	99.8	90 - 110		
Zinc		0.0500	0.0495	mg/L	99.0	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4829720
Report generated 06/30/2016 09:24

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/28/2016
Sample ID: WG574537-14
Instrument ID: ICP-MS2
Run Time: 14:31
Method: 6020A
File ID: NI.062816.143138
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0480	mg/L	96.1	90 - 110		
Arsenic		0.0500	0.0501	mg/L	100	90 - 110		
Barium		0.0500	0.0474	mg/L	94.9	90 - 110		
Cadmium		0.0500	0.0480	mg/L	96.1	90 - 110		
Chromium		0.0500	0.0496	mg/L	99.1	90 - 110		
Cobalt		0.0500	0.0531	mg/L	106	90 - 110		
Copper		0.0500	0.0499	mg/L	99.7	90 - 110		
Lead		0.0500	0.0506	mg/L	101	90 - 110		
Manganese		0.0500	0.0492	mg/L	98.5	90 - 110		
Nickel		0.0500	0.0495	mg/L	99.0	90 - 110		
Silver		0.0500	0.0484	mg/L	96.8	90 - 110		
Thallium		0.0500	0.0490	mg/L	98.1	90 - 110		
Vanadium		0.0500	0.0508	mg/L	102	90 - 110		
Zinc		0.0500	0.0501	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/28/2016
Sample ID: WG574537-18
Instrument ID: ICP-MS2
Run Time: 15:10
Method: 6020A
File ID: NI.062816.151001
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0504	mg/L	101	90 - 110		
Arsenic		0.0500	0.0499	mg/L	99.7	90 - 110		
Barium		0.0500	0.0485	mg/L	96.9	90 - 110		
Cadmium		0.0500	0.0487	mg/L	97.5	90 - 110		
Chromium		0.0500	0.0489	mg/L	97.9	90 - 110		
Cobalt		0.0500	0.0517	mg/L	103	90 - 110		
Copper		0.0500	0.0490	mg/L	97.9	90 - 110		
Lead		0.0500	0.0514	mg/L	103	90 - 110		
Manganese		0.0500	0.0487	mg/L	97.5	90 - 110		
Nickel		0.0500	0.0484	mg/L	96.8	90 - 110		
Silver		0.0500	0.0495	mg/L	98.9	90 - 110		
Thallium		0.0500	0.0506	mg/L	101	90 - 110		
Vanadium		0.0500	0.0498	mg/L	99.6	90 - 110		
Zinc		0.0500	0.0494	mg/L	98.9	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/28/2016
Sample ID: WG574537-29
Instrument ID: ICP-MS2
Run Time: 18:49
Method: 6020A
File ID: NI.062816.184946
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0481	mg/L	96.2	90 - 110		
Arsenic		0.0500	0.0471	mg/L	94.1	90 - 110		
Barium		0.0500	0.0464	mg/L	92.9	90 - 110		
Cadmium		0.0500	0.0463	mg/L	92.7	90 - 110		
Chromium		0.0500	0.0469	mg/L	93.8	90 - 110		
Cobalt		0.0500	0.0469	mg/L	93.8	90 - 110		
Copper		0.0500	0.0475	mg/L	94.9	90 - 110		
Lead		0.0500	0.0484	mg/L	96.7	90 - 110		
Manganese		0.0500	0.0473	mg/L	94.6	90 - 110		
Nickel		0.0500	0.0476	mg/L	95.1	90 - 110		
Silver		0.0500	0.0474	mg/L	94.8	90 - 110		
Thallium		0.0500	0.0474	mg/L	94.8	90 - 110		
Vanadium		0.0500	0.0472	mg/L	94.5	90 - 110		
Zinc		0.0500	0.0472	mg/L	94.5	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/28/2016
Sample ID: WG574537-32
Instrument ID: ICP-MS2
Run Time: 20:23
Method: 6020A
File ID: NI.062816.202325
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0502	mg/L	100	90 - 110		
Arsenic		0.0500	0.0499	mg/L	99.8	90 - 110		
Barium		0.0500	0.0488	mg/L	97.7	90 - 110		
Cadmium		0.0500	0.0494	mg/L	98.8	90 - 110		
Chromium		0.0500	0.0508	mg/L	102	90 - 110		
Cobalt		0.0500	0.0517	mg/L	103	90 - 110		
Copper		0.0500	0.0507	mg/L	101	90 - 110		
Lead		0.0500	0.0515	mg/L	103	90 - 110		
Manganese		0.0500	0.0509	mg/L	102	90 - 110		
Nickel		0.0500	0.0501	mg/L	100	90 - 110		
Silver		0.0500	0.0500	mg/L	99.9	90 - 110		
Thallium		0.0500	0.0504	mg/L	101	90 - 110		
Vanadium		0.0500	0.0505	mg/L	101	90 - 110		
Zinc		0.0500	0.0506	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/28/2016
Sample ID: WG574537-34
Instrument ID: ICP-MS2
Run Time: 21:01
Method: 6020A
File ID: NI.062816.210146
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0494	mg/L	98.8	90 - 110		
Arsenic		0.0500	0.0505	mg/L	101	90 - 110		
Barium		0.0500	0.0490	mg/L	98.1	90 - 110		
Cadmium		0.0500	0.0492	mg/L	98.4	90 - 110		
Chromium		0.0500	0.0506	mg/L	101	90 - 110		
Cobalt		0.0500	0.0511	mg/L	102	90 - 110		
Copper		0.0500	0.0509	mg/L	102	90 - 110		
Lead		0.0500	0.0534	mg/L	107	90 - 110		
Manganese		0.0500	0.0526	mg/L	105	90 - 110		
Nickel		0.0500	0.0509	mg/L	102	90 - 110		
Silver		0.0500	0.0485	mg/L	96.9	90 - 110		
Thallium		0.0500	0.0506	mg/L	101	90 - 110		
Vanadium		0.0500	0.0505	mg/L	101	90 - 110		
Zinc		0.0500	0.0506	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/29/2016
Sample ID: WG574676-10
Instrument ID: ICP-MS2
Run Time: 12:00
Method: 6020A
File ID: NI.062916.120010
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0508	mg/L	102	90 - 110		
Arsenic		0.0500	0.0514	mg/L	103	90 - 110		
Barium		0.0500	0.0505	mg/L	101	90 - 110		
Cadmium		0.0500	0.0516	mg/L	103	90 - 110		
Chromium		0.0500	0.0504	mg/L	101	90 - 110		
Cobalt		0.0500	0.0538	mg/L	108	90 - 110		
Copper		0.0500	0.0507	mg/L	101	90 - 110		
Lead		0.0500	0.0529	mg/L	106	90 - 110		
Manganese		0.0500	0.0534	mg/L	107	90 - 110		
Nickel		0.0500	0.0502	mg/L	100	90 - 110		
Silver		0.0500	0.0508	mg/L	102	90 - 110		
Thallium		0.0500	0.0519	mg/L	104	90 - 110		
Vanadium		0.0500	0.0516	mg/L	103	90 - 110		
Zinc		0.0500	0.0510	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/29/2016
Sample ID: WG574676-12
Instrument ID: ICP-MS2
Run Time: 12:37
Method: 6020A
File ID: NI.062916.123748
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0505	mg/L	101	90 - 110		
Arsenic		0.0500	0.0498	mg/L	99.6	90 - 110		
Barium		0.0500	0.0499	mg/L	99.8	90 - 110		
Cadmium		0.0500	0.0506	mg/L	101	90 - 110		
Chromium		0.0500	0.0489	mg/L	97.8	90 - 110		
Cobalt		0.0500	0.0506	mg/L	101	90 - 110		
Copper		0.0500	0.0500	mg/L	99.9	90 - 110		
Lead		0.0500	0.0499	mg/L	99.7	90 - 110		
Manganese		0.0500	0.0500	mg/L	99.9	90 - 110		
Nickel		0.0500	0.0491	mg/L	98.2	90 - 110		
Silver		0.0500	0.0505	mg/L	101	90 - 110		
Thallium		0.0500	0.0497	mg/L	99.4	90 - 110		
Vanadium		0.0500	0.0503	mg/L	101	90 - 110		
Zinc		0.0500	0.0498	mg/L	99.7	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060823
Run Date: 06/28/2016
Sample ID: WG574537-07
Instrument ID: ICP-MS2
Run Time: 13:25
Method: 6020A
File ID: NI.062816.132523
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.414	ug/L	104	70 - 130		
Arsenic		0.400	0.419	ug/L	105	70 - 130		
Barium		0.750	0.681	ug/L	90.8	70 - 130		
Cadmium		0.240	0.234	ug/L	97.7	70 - 130		
Chromium		0.800	0.628	ug/L	78.5	70 - 130		
Cobalt		0.400	0.384	ug/L	96.1	70 - 130		
Copper		0.800	0.759	ug/L	94.9	70 - 130		
Lead		0.200	0.183	ug/L	91.6	70 - 130		
Manganese		0.500	0.437	ug/L	87.4	70 - 130		
Nickel		1.60	1.53	ug/L	95.5	70 - 130		
Silver		0.400	0.372	ug/L	92.9	70 - 130		
Thallium		0.0800	0.0768	ug/L	96.0	70 - 130		
Vanadium		0.400	0.332	ug/L	83.0	70 - 130		
Zinc		6.25	6.14	ug/L	98.3	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4829722
Report generated 06/30/2016 09:24

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060823
Run Date: 06/28/2016
Sample ID: WG574537-20
Instrument ID: ICP-MS2
Run Time: 15:16
Method: 6020A
File ID: NI.062816.151629
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.429	ug/L	107	70 - 130		
Arsenic		0.400	0.377	ug/L	94.2	70 - 130		
Barium		0.750	0.677	ug/L	90.2	70 - 130		
Cadmium		0.240	0.235	ug/L	98.1	70 - 130		
Chromium		0.800	0.595	ug/L	74.4	70 - 130		
Cobalt		0.400	0.388	ug/L	97.1	70 - 130		
Copper		0.800	0.739	ug/L	92.4	70 - 130		
Lead		0.200	0.192	ug/L	96.0	70 - 130		
Manganese		0.500	0.408	ug/L	81.6	70 - 130		
Nickel		1.60	1.48	ug/L	92.6	70 - 130		
Silver		0.400	0.384	ug/L	96.0	70 - 130		
Thallium		0.0800	0.0804	ug/L	101	70 - 130		
Vanadium		0.400	0.327	ug/L	81.9	70 - 130		
Zinc		6.25	6.24	ug/L	99.9	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4829722
Report generated 06/30/2016 09:24

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060823
Run Date: 06/28/2016
Sample ID: WG574537-31
Instrument ID: ICP-MS2
Run Time: 18:56
Method: 6020A
File ID: NI.062816.185610
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.386	ug/L	96.6	70 - 130		
Arsenic		0.400	0.381	ug/L	95.2	70 - 130		
Barium		0.750	0.671	ug/L	89.5	70 - 130		
Cadmium		0.240	0.217	ug/L	90.2	70 - 130		
Chromium		0.800	0.581	ug/L	72.7	70 - 130		
Cobalt		0.400	0.365	ug/L	91.2	70 - 130		
Copper		0.800	0.726	ug/L	90.7	70 - 130		
Lead		0.200	0.188	ug/L	93.9	70 - 130		
Manganese		0.500	0.396	ug/L	79.2	70 - 130		
Nickel		1.60	1.44	ug/L	89.7	70 - 130		
Silver		0.400	0.365	ug/L	91.2	70 - 130		
Thallium		0.0800	0.0752	ug/L	94.0	70 - 130		
Vanadium		0.400	0.309	ug/L	77.3	70 - 130		
Zinc		6.25	5.67	ug/L	90.8	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4829722
Report generated 06/30/2016 09:24

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060823
Run Date: 06/28/2016
Sample ID: WG574537-44
Instrument ID: ICP-MS2
Run Time: 23:22
Method: 6020A
File ID: NI.062816.232221
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.384	ug/L	96.1	70 - 130		
Arsenic		0.400	0.418	ug/L	105	70 - 130		
Barium		0.750	0.696	ug/L	92.8	70 - 130		
Cadmium		0.240	0.223	ug/L	92.9	70 - 130		
Chromium		0.800	0.654	ug/L	81.8	70 - 130		
Cobalt		0.400	0.379	ug/L	94.6	70 - 130		
Copper		0.800	0.746	ug/L	93.2	70 - 130		
Lead		0.200	0.200	ug/L	100	70 - 130		
Manganese		0.500	0.444	ug/L	88.8	70 - 130		
Nickel		1.60	1.53	ug/L	95.6	70 - 130		
Silver		0.400	0.372	ug/L	93.0	70 - 130		
Thallium		0.0800	0.0774	ug/L	96.8	70 - 130		
Vanadium		0.400	0.335	ug/L	83.8	70 - 130		
Zinc		6.25	5.99	ug/L	95.8	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4829722
Report generated 06/30/2016 09:24

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060823
Run Date: 06/29/2016
Sample ID: WG574676-07
Instrument ID: ICP-MS2
Run Time: 11:46
Method: 6020A
File ID: NI.062916.114653
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.456	ug/L	114	70 - 130		
Arsenic		0.400	0.429	ug/L	107	70 - 130		
Barium		0.750	0.733	ug/L	97.8	70 - 130		
Cadmium		0.240	0.237	ug/L	98.5	70 - 130		
Chromium		0.800	0.739	ug/L	92.4	70 - 130		
Cobalt		0.400	0.414	ug/L	103	70 - 130		
Copper		0.800	0.768	ug/L	96.0	70 - 130		
Lead		0.200	0.181	ug/L	90.3	70 - 130		
Manganese		0.500	0.468	ug/L	93.6	70 - 130		
Nickel		1.60	1.56	ug/L	97.7	70 - 130		
Silver		0.400	0.390	ug/L	97.5	70 - 130		
Thallium		0.0800	0.0871	ug/L	109	70 - 130		
Vanadium		0.400	0.382	ug/L	95.5	70 - 130		
Zinc		6.25	6.64	ug/L	106	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4829722
Report generated 06/30/2016 09:24

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060823
Run Date: 06/29/2016
Sample ID: WG574676-14
Instrument ID: ICP-MS2
Run Time: 12:44
Method: 6020A
File ID: NI.062916.124412
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.401	ug/L	100	70 - 130		
Arsenic		0.400	0.394	ug/L	98.6	70 - 130		
Barium		0.750	0.718	ug/L	95.7	70 - 130		
Cadmium		0.240	0.227	ug/L	94.7	70 - 130		
Chromium		0.800	0.768	ug/L	96.0	70 - 130		
Cobalt		0.400	0.405	ug/L	101	70 - 130		
Copper		0.800	0.751	ug/L	93.9	70 - 130		
Lead		0.200	0.179	ug/L	89.4	70 - 130		
Manganese		0.500	0.469	ug/L	93.8	70 - 130		
Nickel		1.60	1.53	ug/L	95.6	70 - 130		
Silver		0.400	0.383	ug/L	95.7	70 - 130		
Thallium		0.0800	0.0809	ug/L	101	70 - 130		
Vanadium		0.400	0.370	ug/L	92.4	70 - 130		
Zinc		6.25	6.89	ug/L	110	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4829722
Report generated 06/30/2016 09:24

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060823
Instrument ID: ICP-MS2
Sol. A : WG574537-08 **File ID:** NI.062816.132834
Sol. AB : WG574537-09 **File ID:** NI.062816.133145

Workgroup (AAB#): WG574570
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.0836	NS	100	94.7	94.7	
Arsenic	NS	-0.0118	NS	100	98.9	98.9	
Barium	NS	0.266	NS	100	94.5	94.5	
Cadmium	NS	-0.106	NS	100	95.6	95.6	
Chromium	NS	-0.0468	NS	100	96.5	96.5	
Cobalt	NS	0.0276	NS	100	97.7	97.7	
Copper	NS	0.231	NS	100	96.5	96.5	
Lead	NS	0.0352	NS	100	98.2	98.2	
Manganese	NS	0.0680	NS	100	97.7	97.7	
Nickel	NS	0.332	NS	100	96.0	96.0	
Silver	NS	0.0254	NS	100	89.5	89.5	
Thallium	NS	0.0257	NS	100	96.4	96.4	
Vanadium	NS	-0.0466	NS	100	96.5	96.5	
Zinc	NS	0.903	NS	100	101	101	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
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Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060823
Instrument ID: ICP-MS2
Sol. A : WG574537-16 **File ID:** NI.062816.150336
Sol. AB : WG574537-17 **File ID:** NI.062816.150647

Workgroup (AAB#): WG574570
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.126	NS	100	101	101	
Arsenic	NS	-0.0170	NS	100	102	102	
Barium	NS	0.271	NS	100	98.3	98.3	
Cadmium	NS	-0.0956	NS	100	99.8	99.8	
Chromium	NS	-0.00590	NS	100	97.3	97.3	
Cobalt	NS	0.0242	NS	100	102	102	
Copper	NS	0.234	NS	100	97.4	97.4	
Lead	NS	0.0422	NS	100	102	102	
Manganese	NS	0.0683	NS	100	97.7	97.7	
Nickel	NS	0.343	NS	100	95.9	95.9	
Silver	NS	0.0228	NS	100	91.0	91.0	
Thallium	NS	0.0182	NS	100	99.2	99.2	
Vanadium	NS	-0.0922	NS	100	100	100	
Zinc	NS	0.968	NS	100	103	103	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
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Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060823
Instrument ID: ICP-MS2
Sol. A : WG574676-08 **File ID:** NI.062916.115053
Sol. AB : WG574676-09 **File ID:** NI.062916.115447

Workgroup (AAB#): WG574570
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.0658	NS	100	100	100	
Arsenic	NS	0.0161	NS	100	105	105	
Barium	NS	0.303	NS	100	98.4	98.4	
Cadmium	NS	-0.103	NS	100	101	101	
Chromium	NS	0.0680	NS	100	101	101	
Cobalt	NS	0.0292	NS	100	105	105	
Copper	NS	0.245	NS	100	100	100	
Lead	NS	0.0174	NS	100	102	102	
Manganese	NS	0.0629	NS	100	105	105	
Nickel	NS	0.331	NS	100	100	100	
Silver	NS	0.0271	NS	100	95.3	95.3	
Thallium	NS	0.0271	NS	100	100	100	
Vanadium	NS	0.0706	NS	100	103	103	
Zinc	NS	1.14	NS	100	104	104	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

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Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060823 **Analytical Method:** 6020
Analytical Workgroup: WG574570 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 28-JUN-2016 13:06

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060823-02	SAMP	28-JUN-2016 20:48	92.896	101.808	97.319
L16060823-03	SAMP	28-JUN-2016 20:52	93.551	101.87	99.333
L16060823-04	SAMP	28-JUN-2016 20:55	93.637	99.094	97.786
WG574242-02	BLANK	28-JUN-2016 19:51	99.476	99.537	97.857
WG574242-03	LCS	28-JUN-2016 19:54	99.956	99.501	98.669
WG574537-05	ICV	28-JUN-2016 13:18	106.21	104.263	104.758
WG574537-06	ICB	28-JUN-2016 13:22	103.902	104.951	103.59
WG574537-07	LLICV	28-JUN-2016 13:25	104.131	100.167	102.925
WG574537-08	ICS	28-JUN-2016 13:28	105.453	105.812	102.55
WG574537-09	ICS	28-JUN-2016 13:31	104.707	103.975	104.833
WG574537-10	CCV	28-JUN-2016 13:34	105.977	103.288	105.534
WG574537-11	CCB	28-JUN-2016 13:38	102.403	102.67	102.767
WG574537-14	CCV	28-JUN-2016 14:31	103.407	95.988	101.793
WG574537-15	CCB	28-JUN-2016 14:34	104.225	98.805	100.724
WG574537-16	ICS	28-JUN-2016 15:03	99.952	99.435	100.043
WG574537-17	ICS	28-JUN-2016 15:06	101.575	99.874	97.332
WG574537-18	CCV	28-JUN-2016 15:10	100.244	98.973	99.201
WG574537-19	CCB	28-JUN-2016 15:13	103.776	99.505	101.81
WG574537-20	LLCCV	28-JUN-2016 15:16	99.051	96.111	96.093
WG574537-29	CCV	28-JUN-2016 18:49	100.019	101.137	98.931
WG574537-30	CCB	28-JUN-2016 18:52	100.148	99.202	100.624
WG574537-31	LLCCV	28-JUN-2016 18:56	95.839	97.87	93.931
WG574537-32	CCV	28-JUN-2016 20:23	102.351	100.903	101.064
WG574537-33	CCB	28-JUN-2016 20:26	99.219	96.376	100.773
WG574537-34	CCV	28-JUN-2016 21:01	96.559	99.919	99.677
WG574537-35	CCB	28-JUN-2016 21:04	100.258	102.056	98.569
WG574537-44	LLCCV	28-JUN-2016 23:22	91.439	93.342	91.269
WG574570-01	PSPK	28-JUN-2016 20:13	100.708	100.256	100.218
WG574570-02	SERIAL	28-JUN-2016 20:17	103.535	103.697	101.2

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
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Report generated: 06/30/2016 09:24

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060823 **Analytical Method:** 6020
Analytical Workgroup: WG574570 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 29-JUN-2016 11:25

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060823-02	SAMP	29-JUN-2016 12:28	99.08	100.775	98.792
L16060823-03	SAMP	29-JUN-2016 12:31	99.415	102.35	99.462
L16060823-04	SAMP	29-JUN-2016 12:34	102.162	101.008	100.275
WG574676-05	ICV	29-JUN-2016 11:38	98.257	100.661	96.465
WG574676-06	ICB	29-JUN-2016 11:41	98.914	99.091	98.14
WG574676-07	LLICV	29-JUN-2016 11:46	95.79	95.394	93.877
WG574676-08	ICS	29-JUN-2016 11:50	98.596	98.274	96.165
WG574676-09	ICS	29-JUN-2016 11:54	97.891	98.362	95.991
WG574676-10	CCV	29-JUN-2016 12:00	96.559	97.448	96.281
WG574676-11	CCB	29-JUN-2016 12:07	98.969	97.431	96.855
WG574676-12	CCV	29-JUN-2016 12:37	99.303	102.045	96.376
WG574676-13	CCB	29-JUN-2016 12:40	100.991	102.01	98.548
WG574676-14	LLCCV	29-JUN-2016 12:44	96.535	95.69	95.451

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
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Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060823 **Analytical Method:** 6020
Analytical Workgroup: WG574570 **Matrix:** 2
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 28-JUN-2016 13:06

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060843-01	SAMP	28-JUN-2016 20:10	97.785	95.068	99.061

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4829715
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Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16060823 **Date:** 04/19/2016
Insturment ID: ICP-MS2 **Method:** 6020A

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Uranium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4829714
Report generated: 06/29/2016 08:34

2.3.2.3 Raw Data

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Tuesday, June 28, 2016 12:45:36

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1331	2024	0.706	
Mg	23.985	24.025	4508	2020	0.701	
Co	58.933	58.925	11686	2022	0.701	
In	114.904	114.875	22861	2028	0.696	
U	238.050	238.025	47455	2043	0.688	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	5.573
5.575	2.596
5.625	3.076
5.675	2.368
5.725	2.568
5.775	3.011
5.825	2.517
5.875	2.694
5.925	1.595
5.975	3.373
6.025	3.068
6.075	2.439
6.125	2.845
6.175	3.293
6.225	6.959
6.275	54.149
6.325	79.756
6.375	69.722
6.425	99.103
6.475	35.972
6.525	19.569
6.575	4.348
6.625	4.647
6.675	4.116
6.725	2.239
6.775	2.849
6.825	1.600

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6.875	3.248
6.925	2.794
6.975	1.665
7.025	2.844
7.075	2.994
7.125	3.503
7.175	2.980
7.225	3.713
7.275	5.087
7.325	35.264
7.375	93.541
7.425	136.931
7.475	82.402
7.525	71.261
7.575	39.123
7.625	180.662
7.675	64.358
7.725	47.507
7.775	71.261
7.825	70.711
7.875	52.705
7.925	46.481
7.975	63.888
8.025	74.689
8.075	64.359
8.125	63.888
8.175	34.401
8.225	46.481
8.275	49.793
8.325	81.441
8.375	60.858
8.425	67.420
8.475	108.653
22.525	223.607
22.575	90.014
22.625	44.605
22.675	65.617
22.725	58.975
22.775	40.945
22.825	35.460
22.875	18.054
22.925	42.061
22.975	53.715
23.025	19.357
23.075	24.491
23.125	8.438
23.175	12.837

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23.225	30.858
23.275	24.845
23.325	45.141
23.375	26.438
23.425	14.816
23.475	14.263
23.525	12.137
23.575	3.832
23.625	2.363
23.675	1.595
23.725	2.170
23.775	2.317
23.825	1.497
23.875	1.501
23.925	1.731
23.975	0.863
24.025	2.634
24.075	2.734
24.125	2.053
24.175	2.398
24.225	2.993
24.275	2.883
24.325	7.686
24.375	28.384
24.425	36.617
24.475	12.141
24.525	3.189
24.575	0.926
24.625	1.585
24.675	1.547
24.725	2.051
24.775	1.408
24.825	2.678
24.875	1.711
24.925	1.949
24.975	2.595
25.025	3.005
25.075	2.962
25.125	2.366
25.175	2.463
25.225	2.722
25.275	9.971
25.325	31.599
25.375	47.140
25.425	64.885
25.475	6.734
57.525	8.866

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57.575	5.291
57.625	3.440
57.675	3.697
57.725	3.076
57.775	2.567
57.825	2.416
57.875	1.794
57.925	2.766
57.975	2.199
58.025	1.926
58.075	2.254
58.125	1.436
58.175	1.390
58.225	3.504
58.275	5.534
58.325	34.267
58.375	33.055
58.425	20.772
58.475	14.356
58.525	5.854
58.575	3.115
58.625	4.057
58.675	2.315
58.725	2.604
58.775	2.171
58.825	1.290
58.875	1.298
58.925	2.935
58.975	1.929
59.025	1.078
59.075	1.921
59.125	2.163
59.175	2.388
59.225	3.289
59.275	8.929
59.325	38.030
59.375	58.736
59.425	28.284
59.475	17.563
59.525	12.128
59.575	6.526
59.625	2.279
59.675	2.377
59.725	6.247
59.775	4.326
59.825	2.635
59.875	3.246

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59.925	1.954
59.975	3.753
60.025	5.882
60.075	3.380
60.125	2.788
60.175	3.075
60.225	4.430
60.275	18.947
60.325	43.241
60.375	22.017
60.425	79.756
60.475	50.461
113.525	7.111
113.575	1.614
113.625	3.295
113.675	3.378
113.725	2.143
113.775	2.366
113.825	3.191
113.875	4.581
113.925	1.498
113.975	2.463
114.025	3.675
114.075	2.767
114.125	4.064
114.175	2.276
114.225	6.994
114.275	28.008
114.325	41.691
114.375	17.526
114.425	9.127
114.475	6.547
114.525	3.985
114.575	2.757
114.625	3.785
114.675	2.945
114.725	3.014
114.775	2.252
114.825	1.319
114.875	1.984
114.925	1.415
114.975	0.577
115.025	0.422
115.075	1.851
115.125	0.695
115.175	3.426
115.225	3.732

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115.275	9.818
115.325	57.810
115.375	52.705
115.425	23.458
115.475	18.657
115.525	4.767
115.575	6.521
115.625	4.984
115.675	3.649
115.725	7.463
115.775	7.302
115.825	2.294
115.875	3.587
115.925	2.925
115.975	3.587
116.025	4.548
116.075	6.187
116.125	2.246
116.175	11.560
116.225	3.389
116.275	17.538
116.325	51.618
116.375	52.705
116.425	42.127
116.475	34.312
236.525	
236.575	28.853
236.625	56.165
236.675	51.701
236.725	11.620
236.775	50.775
236.825	27.217
236.875	33.431
236.925	29.881
236.975	45.955
237.025	46.771
237.075	7.402
237.125	30.162
237.175	24.686
237.225	34.297
237.275	16.110
237.325	20.328
237.375	28.770
237.425	26.702
237.475	18.887
237.525	24.816
237.575	6.725

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237.625	8.740
237.675	3.668
237.725	2.023
237.775	1.587
237.825	3.110
237.875	1.530
237.925	2.794
237.975	3.068
238.025	2.967
238.075	2.352
238.125	2.652
238.175	2.474
238.225	2.129
238.275	1.500
238.325	2.197
238.375	3.421
238.425	3.111
238.475	6.669
238.525	16.077
238.575	17.557
238.625	21.969
238.675	32.775
238.725	22.232
238.775	26.146
238.825	21.694
238.875	19.088
238.925	8.384
238.975	17.180
239.025	59.843
239.075	31.485
239.125	33.497
239.175	31.181
239.225	27.834
239.275	28.743
239.325	26.503
239.375	17.174
239.425	9.195
239.475	35.446

Approved: June 29, 2016

SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 6/28/2016 12:50:43 PM
End Time: 6/28/2016 12:52:55 PM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 5221.30
        Obtained Intensity (Mg 23.985): 136183.87
        Obtained Intensity (In 114.904): 66441.11
        Obtained Intensity (U 238.05): 147068.09
        Obtained Intensity (Bkgd 220): 0.20
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.018 (=3731.53 / 205818.69)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.004 (=890.23 / 205818.69)
```

Report Date/Time: Tuesday, June 28, 2016 12:52:56
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SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 6/28/2016 12:50:43 PM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 5221.30
                Obtained Intensity (Mg 23.985): 136183.87
                Obtained Intensity (In 114.904): 66441.11
                Obtained Intensity (U 238.05): 147068.09
                Obtained Intensity (Bkgd 220): 0.20
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.018 (=3731.53 / 205818.69)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.004 (=890.23 / 205818.69)
[Passed]  Optimum value(s): N/A

End Time: 6/28/2016 12:52:55 PM
```


Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Tuesday, June 28, 2016 13:02:57
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81760.1	2.0				ug/L		Standard
	Be	9	16.7	75.5				ug/L		Standard
	Al	27	1410.1	2.3				ug/L		Standard
	Sc	45	39543.2	2.7				ug/L		Standard
	Ti	47	39.0	9.2				ug/L		Standard
	V	51	1415.2	6.8				ug/L		Standard
	Cr	52	6946.3	1.7				ug/L		Standard
	Cr	53	328.3	14.1				ug/L		Standard
	Mn	55	823.0	8.8				ug/L		Standard
	Co	59	251.7	9.6				ug/L		Standard
	Ni	60	192.0	8.0				ug/L		Standard
	Cu	65	140.7	5.3				ug/L		Standard
	Zn	66	490.7	3.4				ug/L		Standard
>	Ge	72	515086.9	1.2				ug/L		Standard
	As	75	19.8	169.9				ug/L		Standard
	Se	82	15.3	19.8				ug/L		Standard
	Se-1	77	48.0	15.7				ug/L		Standard
>	Ga	71	90.0	5.6				mg/L		Standard
	Rb	85	23.3	68.9				ug/L		Standard
	Y	89	448509.9	0.5				ug/L		Standard
>	Rh	103	15.0	66.7				ug/L		Standard
	Mo	98	10.9	19.2				ug/L		Standard
	Ag	107	134.0	44.7				ug/L		Standard
	Cd	111	6.6	57.0				mg/L		Standard
	Cd	114	16.1	68.4				ug/L		Standard
>	In	115	611116.5	1.9				ug/L		Standard
	Sn	118	518.3	7.2				ug/L		Standard
	Sb	123	126.7	13.8				ug/L		Standard
	Ba	135	45.3	39.8				ug/L		Standard
	Ce	140	298.3	72.3				ug/L		Standard
>	Tb	159	977942.3	1.0				ug/L		Standard
	Ho	165	11.7	24.7				ug/L		Standard
	Tl	203	30.7	114.0				ug/L		Standard
	Tl	205	20.0	152.1				ug/L		Standard
	Pb	206	285.7	7.2				ug/L		Standard
	Pb	207	257.0	5.7				ug/L		Standard
	Pb	208	955.7	3.9				ug/L		Standard
	U	238	17.0	67.8				ug/L		Standard
>	Bi	209	557080.4	0.4				ug/L		Standard

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	Na	23	0.0		mg/L	Standard
	Mg	24	31.7	36.5	mg/L	Standard
	K	39	30.0	57.7	mg/L	Standard
	Ca	43	48.3	43.1	mg/L	Standard
	Fe	54	159.3	19.3	mg/L	Standard
	Fe	57	195.0	11.2	mg/L	Standard
>	**Sc-1**	45	39543.2	2.7	mg/L	Standard
	Cl	35	27641.9	2.8	ug/L	Standard
	Kr	83	2.0	50.0	ug/L	Standard
	Br	81	1646.8	11.1	ug/L	Standard
	P	31	15231.0	1.6	ug/L	Standard
	S	34	1845.1	7.5	ug/L	Standard
	Sr	88	70.0	12.4	ug/L	Standard
	C	12	113.3	28.4	mg/L	Standard
	N	14	0.0		mg/L	Standard
	Hg	202	0.0		mg/L	Standard
	Dy	164	12.4	122.2	mg/L	Standard
	Ho-1	165	11.7	24.7	mg/L	Standard
	Er	166	20.0	50.0	mg/L	Standard
	I	127	1161.7	12.0	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Blank
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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Tuesday, June 28, 2016 13:06:09
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83638.6	0.9				ug/L	81760	Standard
	Be	9	11.7	49.5				ug/L	17	Standard
	Al	27	1445.1	4.5				ug/L	1410	Standard
	Sc	45	40184.9	2.0				ug/L	39543	Standard
	Ti	47	38.3	12.0				ug/L	39	Standard
	V	51	1492.6	2.6				ug/L	1415	Standard
	Cr	52	7409.5	2.1				ug/L	6946	Standard
	Cr	53	321.7	15.3				ug/L	328	Standard
	Mn	55	835.0	1.8				ug/L	823	Standard
	Co	59	226.7	11.0				ug/L	252	Standard
	Ni	60	182.7	5.1				ug/L	192	Standard
	Cu	65	134.7	15.9				ug/L	141	Standard
	Zn	66	519.7	4.6				ug/L	491	Standard
>	**Ge**	72	517782.5	2.4				ug/L	515087	Standard
	As	75	-33.8	72.0				ug/L	20	Standard
	Se	82	16.9	27.2				ug/L	15	Standard
	Se-1	77	48.7	14.9				ug/L	48	Standard
>	**Ga**	71	95.0	19.0				mg/L	90	Standard
	Rb	85	33.3	82.6				ug/L	23	Standard
	Y	89	456301.2	1.1				ug/L	448510	Standard
>	**Rh**	103	21.7	58.1				ug/L	15	Standard
	Mo	98	8.3	58.9				ug/L	11	Standard
	Ag	107	79.0	9.1				ug/L	134	Standard
	Cd	111	3.3	17.5				mg/L	7	Standard
	Cd	114	6.2	12.1				ug/L	16	Standard
>	**In**	115	624714.7	2.4				ug/L	611117	Standard
	Sn	118	515.0	5.4				ug/L	518	Standard
	Sb	123	47.7	15.0				ug/L	127	Standard
	Ba	135	33.7	27.6				ug/L	45	Standard
	Ce	140	86.7	24.0				ug/L	298	Standard
>	**Tb**	159	1001347.1	1.8				ug/L	977942	Standard
	Ho	165	6.7	43.3				ug/L	12	Standard
	Tl	203	5.3	60.3				ug/L	31	Standard
	Tl	205	3.3	86.6				ug/L	20	Standard
	Pb	206	276.7	3.7				ug/L	286	Standard
	Pb	207	213.3	7.3				ug/L	257	Standard
	Pb	208	933.0	3.4				ug/L	956	Standard
	U	238	4.7	12.4				ug/L	17	Standard
>	**Bi**	209	562888.8	0.9				ug/L	557080	Standard

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	Na	23	0.0		mg/L	0	Standard
	Mg	24	36.7	7.9	mg/L	32	Standard
	K	39	28.3	44.4	mg/L	30	Standard
	Ca	43	36.7	28.4	mg/L	48	Standard
	Fe	54	172.5	32.0	mg/L	159	Standard
	Fe	57	211.7	34.4	mg/L	195	Standard
>	**Sc-1**	45	40184.9	2.0	mg/L	39543	Standard
	Cl	35	29114.6	1.1	ug/L	27642	Standard
	Kr	83	3.3	96.4	ug/L	2	Standard
	Br	81	1676.8	6.8	ug/L	1647	Standard
	P	31	15918.4	1.2	ug/L	15231	Standard
	S	34	1885.1	11.3	ug/L	1845	Standard
	Sr	88	58.3	21.6	ug/L	70	Standard
	C	12	116.7	24.7	mg/L	113	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	0.0		mg/L	0	Standard
	Dy	164	16.2	93.4	mg/L	12	Standard
	Ho-1	165	6.7	43.3	mg/L	12	Standard
	Er	166	10.0	100.0	mg/L	20	Standard
	I	127	1170.0	16.3	mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⎣	Rb	85
⎡	Y	89
⎣>	Rh	103
⎡	Mo	98
⎢	Ag	107
⎢	Cd	111
⎢	Cd	114
⎢>	In	115
⎢	Sn	118
⎢	Sb	123
⎣	Ba	135
⎡	Ce	140
⎣>	Tb	159
⎡	Ho	165
⎢	Tl	203
⎢	Tl	205
⎢	Pb	206
⎢	Pb	207
⎢	Pb	208
⎢	U	238
⎣>	Bi	209
⎡	Na	23
⎢	Mg	24
⎢	K	39
⎢	Ca	43
⎢	Fe	54
⎢	Fe	57
⎣>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 1
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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Tuesday, June 28, 2016 13:09:21
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82626.5	2.9				ug/L	81760	Standard
	Be	9	60.0	14.4				ug/L	17	Standard
	Al	27	10023.3	4.0				ug/L	1410	Standard
	Sc	45	41007.1	1.4				ug/L	39543	Standard
	Ti	47	69.0	5.8				ug/L	39	Standard
	V	51	1868.4	2.4				ug/L	1415	Standard
	Cr	52	8071.5	1.1				ug/L	6946	Standard
	Cr	53	360.0	4.2				ug/L	328	Standard
	Mn	55	1347.7	1.9				ug/L	823	Standard
	Co	59	599.0	5.9				ug/L	252	Standard
	Ni	60	305.7	5.8				ug/L	192	Standard
	Cu	65	280.3	2.3				ug/L	141	Standard
	Zn	66	1008.0	4.7				ug/L	491	Standard
>	**Ge**	72	539572.1	1.8				ug/L	515087	Standard
	As	75	11.1	230.1				ug/L	20	Standard
	Se	82	20.4	17.1				ug/L	15	Standard
	Se-1	77	60.7	1.9				ug/L	48	Standard
>	**Ga**	71	83.3	19.3				mg/L	90	Standard
	Rb	85	31.7	48.2				ug/L	23	Standard
	Y	89	463986.2	1.2				ug/L	448510	Standard
>	**Rh**	103	13.3	57.3				ug/L	15	Standard
	Mo	98	329.5	2.8				ug/L	11	Standard
	Ag	107	455.0	1.5				ug/L	134	Standard
	Cd	111	115.7	6.5				mg/L	7	Standard
	Cd	114	292.0	6.0				ug/L	16	Standard
>	**In**	115	625608.8	0.7				ug/L	611117	Standard
	Sn	118	920.0	9.2				ug/L	518	Standard
	Sb	123	303.4	7.6				ug/L	127	Standard
	Ba	135	158.7	8.0				ug/L	45	Standard
	Ce	140	88.3	42.5				ug/L	298	Standard
>	**Tb**	159	1002874.0	1.4				ug/L	977942	Standard
	Ho	165	11.7	24.7				ug/L	12	Standard
	Tl	203	472.7	2.0				ug/L	31	Standard
	Tl	205	391.7	11.0				ug/L	20	Standard
	Pb	206	628.7	5.7				ug/L	286	Standard
	Pb	207	539.3	6.7				ug/L	257	Standard
	Pb	208	2133.7	2.7				ug/L	956	Standard
	U	238	388.7	5.1				ug/L	17	Standard
>	**Bi**	209	570508.1	0.4				ug/L	557080	Standard

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	Na	23	0.0		mg/L	0	Standard
	Mg	24	48.3	26.0	mg/L	32	Standard
	K	39	45.0	19.2	mg/L	30	Standard
	Ca	43	36.7	43.8	mg/L	48	Standard
	Fe	54	162.5	17.6	mg/L	159	Standard
	Fe	57	193.3	3.0	mg/L	195	Standard
>	**Sc-1**	45	41007.1	1.4	mg/L	39543	Standard
	Cl	35	29715.1	0.6	ug/L	27642	Standard
	Kr	83	3.0	33.3	ug/L	2	Standard
	Br	81	1836.8	4.6	ug/L	1647	Standard
	P	31	16030.1	3.1	ug/L	15231	Standard
	S	34	1895.1	1.4	ug/L	1845	Standard
	Sr	88	61.7	9.4	ug/L	70	Standard
	C	12	143.3	21.3	mg/L	113	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	0.0		mg/L	0	Standard
	Dy	164	19.5	50.0	mg/L	12	Standard
	Ho-1	165	11.7	24.7	mg/L	12	Standard
	Er	166	10.0	100.0	mg/L	20	Standard
	I	127	1208.4	23.1	mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 2
Report Date/Time: Tuesday, June 28, 2016 13:11:38
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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Tuesday, June 28, 2016 13:12:32
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83151.0	2.6				ug/L	81760	Standard
	Be	9	50594.4	3.3	**50.0000**	0.655	1.3	ug/L	17	Standard
	Al	27	7832644.8	2.3	**50.0000**	1.818	3.6	ug/L	1410	Standard
	Sc	45	42972.5	0.7				ug/L	39543	Standard
	Ti	47	26044.7	0.2	**100.0000**	1.044	1.0	ug/L	39	Standard
	V	51	369925.9	1.5	**50.0000**	0.431	0.9	ug/L	1415	Standard
	Cr	52	376035.2	0.6	**50.0000**	0.381	0.8	ug/L	6946	Standard
	Cr	53	47201.8	2.5	**50.0000**	1.648	3.3	ug/L	328	Standard
	Mn	55	339840.1	0.9	**50.0000**	0.028	0.1	ug/L	823	Standard
	Co	59	369835.8	1.4	**50.0000**	0.329	0.7	ug/L	252	Standard
	Ni	60	100390.8	0.3	**50.0000**	0.410	0.8	ug/L	192	Standard
	Cu	65	101743.1	0.9	**50.0000**	0.203	0.4	ug/L	141	Standard
	Zn	66	59304.5	0.9	**50.0000**	0.371	0.7	ug/L	491	Standard
>	**Ge**	72	547553.1	0.8				ug/L	515087	Standard
	As	75	59263.2	0.8	**50.0000**	0.205	0.4	ug/L	20	Standard
	Se	82	6019.0	1.0	**50.0000**	0.596	1.2	ug/L	15	Standard
	Se-1	77	4068.9	1.3	**50.0000**	0.434	0.9	ug/L	48	Standard
>	**Ga**	71	120.0	22.0				mg/L	90	Standard
	Rb	85	803.4	2.6				ug/L	23	Standard
	Y	89	462085.4	0.0				ug/L	448510	Standard
>	**Rh**	103	33.3	52.7				ug/L	15	Standard
	Mo	98	278482.4	0.5	**100.0000**	0.941	0.9	ug/L	11	Standard
	Ag	107	351728.0	0.3	**50.0000**	0.642	1.3	ug/L	134	Standard
	Cd	111	110396.3	1.4	**50.0000**	0.556	1.1	mg/L	7	Standard
	Cd	114	267604.2	1.4	**50.0000**	0.663	1.3	ug/L	16	Standard
>	**In**	115	627830.2	1.2				ug/L	611117	Standard
	Sn	118	304675.0	1.7	**50.0000**	0.618	1.2	ug/L	518	Standard
	Sb	123	244739.5	0.4	**50.0000**	0.675	1.4	ug/L	127	Standard
	Ba	135	106555.1	1.0	**50.0000**	0.097	0.2	ug/L	45	Standard
	Ce	140	116.7	9.9				ug/L	298	Standard
>	**Tb**	159	1018565.7	2.1				ug/L	977942	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	438004.0	1.2	**50.0000**	0.427	0.9	ug/L	31	Standard
	Tl	205	379940.6	1.7	**50.0000**	0.597	1.2	ug/L	20	Standard
	Pb	206	284208.1	0.3	**50.0000**	0.335	0.7	ug/L	286	Standard
	Pb	207	256392.2	0.5	**50.0000**	0.374	0.7	ug/L	257	Standard
	Pb	208	978425.0	1.4	**50.0000**	0.588	1.2	ug/L	956	Standard
	U	238	371095.6	0.5	**50.0000**	0.490	1.0	ug/L	17	Standard
>	**Bi**	209	583572.7	0.6				ug/L	557080	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	4002.2	2.2	**5.0000**	0.144	2.9	mg/L	32	Standard
K	39	1640.1	4.4	**5.0000**	0.220	4.4	mg/L	30	Standard
Ca	43	73.3	27.6	**5.0000**	2.832	56.6	mg/L	48	Standard
Fe	54	6006.1	1.4	**5.0000**	0.034	0.7	mg/L	159	Standard
Fe	57	1818.4	10.7	**5.0000**	0.606	12.1	mg/L	195	Standard
> **Sc-1**	45	42972.5	0.7				mg/L	39543	Standard
Cl	35	31584.9	0.4				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1736.8	12.0				ug/L	1647	Standard
P	31	18696.5	1.2				ug/L	15231	Standard
S	34	2423.5	4.1				ug/L	1845	Standard
Sr	88	71.7	21.3				ug/L	70	Standard
C	12	110.0	39.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	18.6	110.3				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	30.0	33.3				mg/L	20	Standard
I	127	1405.1	8.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Tuesday, June 28, 2016 13:15:44
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81919.2	1.8				ug/L	81760	Standard
	Be	9	99366.8	4.2	**99.8402**	3.215	3.2	ug/L	17	Standard
	Al	27	15456145.8	2.8	**100.0514**	1.254	1.3	ug/L	1410	Standard
	Sc	45	41889.5	2.4				ug/L	39543	Standard
	Ti	47	52065.7	3.9	**203.2707**	7.861	3.9	ug/L	39	Standard
	V	51	718696.0	1.3	**100.2818**	2.594	2.6	ug/L	1415	Standard
	Cr	52	727396.2	2.7	**100.4747**	2.418	2.4	ug/L	6946	Standard
	Cr	53	90202.9	3.4	**99.4979**	3.023	3.0	ug/L	328	Standard
	Mn	55	679268.3	1.6	**101.6708**	2.363	2.3	ug/L	823	Standard
	Co	59	730686.9	1.6	**101.0312**	2.535	2.5	ug/L	252	Standard
	Ni	60	193870.4	2.0	**99.9159**	1.756	1.8	ug/L	192	Standard
	Cu	65	194619.8	1.4	**99.4389**	1.906	1.9	ug/L	141	Standard
	Zn	66	113576.2	1.7	**99.8564**	1.521	1.5	ug/L	491	Standard
>	**Ge**	72	530148.8	1.5				ug/L	515087	Standard
	As	75	116520.9	0.8	**100.7477**	1.604	1.6	ug/L	20	Standard
	Se	82	12083.5	1.4	**101.8724**	2.244	2.2	ug/L	15	Standard
	Se-1	77	7795.3	2.5	**99.8242**	2.540	2.5	ug/L	48	Standard
>	**Ga**	71	125.0	22.3				mg/L	90	Standard
	Rb	85	1618.4	10.1				ug/L	23	Standard
	Y	89	461192.2	0.4				ug/L	448510	Standard
>	**Rh**	103	56.7	20.4				ug/L	15	Standard
	Mo	98	556218.8	1.0	**199.4538**	3.118	1.6	ug/L	11	Standard
	Ag	107	678834.5	1.8	**98.0160**	2.327	2.4	ug/L	134	Standard
	Cd	111	219330.5	1.3	**99.4613**	1.808	1.8	mg/L	7	Standard
	Cd	114	534582.7	2.1	**99.7362**	2.615	2.6	ug/L	16	Standard
>	**In**	115	630478.6	0.6				ug/L	611117	Standard
	Sn	118	609964.7	1.0	**99.8933**	1.520	1.5	ug/L	518	Standard
	Sb	123	482106.0	1.2	**99.0353**	1.710	1.7	ug/L	127	Standard
	Ba	135	212119.9	0.9	**99.5711**	1.444	1.4	ug/L	45	Standard
	Ce	140	165.0	42.7				ug/L	298	Standard
>	**Tb**	159	1009801.9	0.4				ug/L	977942	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	865813.4	1.1	**100.7605**	1.348	1.3	ug/L	31	Standard
	Tl	205	752692.6	1.1	**100.8681**	0.657	0.7	ug/L	20	Standard
	Pb	206	549987.8	0.2	**99.7256**	0.843	0.8	ug/L	286	Standard
	Pb	207	495989.2	0.5	**99.7047**	0.496	0.5	ug/L	257	Standard
	Pb	208	1945321.0	0.5	**101.0779**	0.484	0.5	ug/L	956	Standard
	U	238	738847.3	0.4	**101.1182**	1.306	1.3	ug/L	17	Standard
>	**Bi**	209	568134.9	1.0				ug/L	557080	Standard

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Na	23	3.3	86.6	**19.9850**	17.308	86.6	mg/L	0	Standard
Mg	24	8245.6	0.3	**10.3081**	0.247	2.4	mg/L	32	Standard
K	39	3202.0	9.6	**10.0847**	1.159	11.5	mg/L	30	Standard
Ca	43	108.3	26.2	**10.2160**	4.199	41.1	mg/L	48	Standard
Fe	54	12180.7	3.3	**10.2708**	0.331	3.2	mg/L	159	Standard
Fe	57	3313.7	6.4	**9.9500**	0.928	9.3	mg/L	195	Standard
Sc-1	45	41889.5	2.4				mg/L	39543	Standard
Cl	35	30969.0	3.8				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1773.4	7.0				ug/L	1647	Standard
P	31	19072.0	2.1				ug/L	15231	Standard
S	34	2495.2	5.2				ug/L	1845	Standard
Sr	88	56.7	5.1				ug/L	70	Standard
C	12	143.3	29.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	13.0	113.4				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	6.7	173.2				mg/L	20	Standard
I	127	1551.7	12.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Tuesday, June 28, 2016 13:18:57
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81910.8	1.2				ug/L	81760	Standard
	Be	9	50188.0	2.5	**50.4285**	0.671	1.3	ug/L	17	Standard
	Al	27	7919939.7	1.3	**51.2716**	0.184	0.4	ug/L	1410	Standard
	Sc	45	42151.9	1.0				ug/L	39543	Standard
	Ti	47	26799.3	0.9	**103.2216**	1.931	1.9	ug/L	39	Standard
	V	51	362002.1	2.3	**49.7477**	0.555	1.1	ug/L	1415	Standard
	Cr	52	370323.8	0.7	**49.9789**	0.741	1.5	ug/L	6946	Standard
	Cr	53	45478.3	5.4	**49.3268**	1.623	3.3	ug/L	328	Standard
	Mn	55	340081.6	0.1	**50.1792**	1.001	2.0	ug/L	823	Standard
	Co	59	367567.5	0.6	**50.1558**	0.780	1.6	ug/L	252	Standard
	Ni	60	97767.5	1.8	**49.6873**	0.150	0.3	ug/L	192	Standard
	Cu	65	99441.7	2.0	**50.1064**	0.391	0.8	ug/L	141	Standard
	Zn	66	58882.6	2.1	**50.6983**	0.019	0.0	ug/L	491	Standard
>	**Ge**	72	537043.0	2.1				ug/L	515087	Standard
	As	75	58926.0	1.4	**50.3136**	0.381	0.8	ug/L	20	Standard
	Se	82	6003.9	1.4	**49.9034**	0.396	0.8	ug/L	15	Standard
	Se-1	77	4037.5	1.3	**50.7056**	1.619	3.2	ug/L	48	Standard
>	**Ga**	71	113.3	22.2				mg/L	90	Standard
	Rb	85	626.7	7.4				ug/L	23	Standard
	Y	89	465817.4	0.7				ug/L	448510	Standard
>	**Rh**	103	43.3	24.0				ug/L	15	Standard
	Mo	98	284447.8	1.6	**100.4857**	3.626	3.6	ug/L	11	Standard
	Ag	107	346501.9	1.0	**49.2778**	1.406	2.9	ug/L	134	Standard
	Cd	111	109630.9	1.1	**48.9766**	1.535	3.1	mg/L	7	Standard
	Cd	114	266600.1	1.2	**48.9905**	1.146	2.3	ug/L	16	Standard
>	**In**	115	640190.8	2.0				ug/L	611117	Standard
	Sn	118	332613.3	1.3	**53.6148**	1.570	2.9	ug/L	518	Standard
	Sb	123	238639.0	2.2	**48.2943**	2.007	4.2	ug/L	127	Standard
	Ba	135	104330.0	1.0	**48.2232**	0.702	1.5	ug/L	45	Standard
	Ce	140	120.0	15.0				ug/L	298	Standard
>	**Tb**	159	1038346.1	1.3				ug/L	977942	Standard
	Ho	165	16.7	34.6				ug/L	12	Standard
	Tl	203	439433.3	1.3	**49.1017**	0.655	1.3	ug/L	31	Standard
	Tl	205	379171.3	1.2	**48.7970**	1.107	2.3	ug/L	20	Standard
	Pb	206	282861.9	1.4	**49.2211**	1.133	2.3	ug/L	286	Standard
	Pb	207	247275.0	1.2	**47.7052**	1.056	2.2	ug/L	257	Standard
	Pb	208	979823.4	0.2	**48.8569**	0.617	1.3	ug/L	956	Standard
	U	238	361651.7	0.7	**47.5263**	0.839	1.8	ug/L	17	Standard
>	**Bi**	209	591677.6	1.0				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.0435**	17.387	173.1	mg/L	0	Standard
Mg	24	4277.3	3.5	**5.2835**	0.147	2.8	mg/L	32	Standard
K	39	1651.8	3.6	**5.0931**	0.136	2.7	mg/L	30	Standard
Ca	43	81.7	30.2	**6.2885**	3.508	55.8	mg/L	48	Standard
Fe	54	5996.6	1.6	**4.9548**	0.129	2.6	mg/L	159	Standard
Fe	57	1723.4	6.4	**4.8356**	0.391	8.1	mg/L	195	Standard
Sc-1	45	42151.9	1.0				mg/L	39543	Standard
Cl	35	29861.4	1.9				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1713.4	14.2				ug/L	1647	Standard
P	31	18880.1	1.3				ug/L	15231	Standard
S	34	2316.8	4.8				ug/L	1845	Standard
Sr	88	70.0	35.7				ug/L	70	Standard
C	12	156.7	32.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	46.2	33.1				mg/L	12	Standard
Ho-1	165	16.7	34.6				mg/L	12	Standard
Er	166	10.0					mg/L	20	Standard
I	127	1246.7	11.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	100.857		
Al	27	102.543		
Sc	45			
Ti	47	103.222		
V	51	99.495		
Cr	52	99.958		
Cr	53			
Mn	55	100.358		
Co	59	100.312		
Ni	60	99.375		
Cu	65	100.213		
Zn	66	101.397		
Ge	72		104.263	
As	75	100.627		
Se	82	99.807		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	100.486		
Ag	107	98.556		
Cd	111	97.953		
Cd	114			
> In	115		104.758	
Sn	118	107.230		
Sb	123	96.589		
Ba	135	96.446		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.203		
Tl	205			
Pb	206	98.442		
Pb	207	95.410		
Pb	208	97.714		
U	238	95.053		
> Bi	209		106.210	
Na	23	200.869		
Mg	24	105.670		
K	39	101.861		
Ca	43	125.771		
Fe	54	99.097		
Fe	57	96.711		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	

Sample ID: QC Std 1
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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Tuesday, June 28, 2016 13:22:10
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81098.1	0.9				ug/L	81760	Standard
	Be	9	35.0	14.3	**0.0258**	0.005	18.6	ug/L	17	Standard
	Al	27	2568.6	16.6	**0.0024**	0.003	117.4	ug/L	1410	Standard
	Sc	45	40706.3	0.9				ug/L	39543	Standard
	Ti	47	40.7	7.5	**-0.0093**	0.010	110.5	ug/L	39	Standard
	V	51	1184.2	4.7	**-0.0443**	0.005	11.8	ug/L	1415	Standard
	Cr	52	6261.3	1.2	**-0.1999**	0.018	9.1	ug/L	6946	Standard
	Cr	53	338.3	3.7	**0.0258**	0.014	55.9	ug/L	328	Standard
	Mn	55	842.4	4.2	**-0.0247**	0.005	18.3	ug/L	823	Standard
	Co	59	286.0	9.3	**0.0074**	0.003	40.3	ug/L	252	Standard
	Ni	60	199.7	6.5	**-0.0040**	0.005	124.9	ug/L	192	Standard
	Cu	65	142.3	4.7	**-0.0195**	0.003	13.5	ug/L	141	Standard
	Zn	66	529.7	2.7	**-0.3672**	0.009	2.6	ug/L	491	Standard
>	**Ge**	72	540586.6	1.6				ug/L	515087	Standard
	As	75	16.4	99.5	**0.0543**	0.014	25.8	ug/L	20	Standard
	Se	82	18.7	7.6	**0.0353**	0.014	40.6	ug/L	15	Standard
	Se-1	77	50.3	10.9	**-0.0819**	0.075	91.1	ug/L	48	Standard
>	**Ga**	71	86.7	18.5				mg/L	90	Standard
	Rb	85	13.3	78.1				ug/L	23	Standard
	Y	89	464568.8	2.3				ug/L	448510	Standard
>	**Rh**	103	18.3	15.7				ug/L	15	Standard
	Mo	98	439.4	21.7	**0.1377**	0.033	23.9	ug/L	11	Standard
	Ag	107	149.7	25.4	**0.0053**	0.005	102.3	ug/L	134	Standard
	Cd	111	15.2	39.6	**0.0040**	0.003	67.9	mg/L	7	Standard
	Cd	114	45.8	32.1	**0.0036**	0.003	74.9	ug/L	16	Standard
>	**In**	115	633054.7	0.7				ug/L	611117	Standard
	Sn	118	1025.0	34.7	**0.0655**	0.058	89.1	ug/L	518	Standard
	Sb	123	2042.3	25.6	**0.4053**	0.108	26.7	ug/L	127	Standard
	Ba	135	49.7	4.2	**-0.0019**	0.001	60.7	ug/L	45	Standard
	Ce	140	36.7	20.8				ug/L	298	Standard
>	**Tb**	159	1001668.5	0.7				ug/L	977942	Standard
	Ho	165	10.0					ug/L	12	Standard
	Tl	203	78.0	41.6	**0.0041**	0.004	88.8	ug/L	31	Standard
	Tl	205	58.3	47.2	**0.0054**	0.004	66.7	ug/L	20	Standard
	Pb	206	315.3	11.1	**-0.0075**	0.006	81.9	ug/L	286	Standard
	Pb	207	291.3	4.8	**-0.0005**	0.003	477.4	ug/L	257	Standard
	Pb	208	1079.0	5.9	**-0.0054**	0.003	55.4	ug/L	956	Standard
	U	238	63.3	42.9	**0.0055**	0.004	65.2	ug/L	17	Standard
>	**Bi**	209	578819.3	0.5				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	25.0	40.0	**-0.0249**	0.013	50.9	mg/L	32	Standard
K	39	31.7	9.1	**-0.0375**	0.009	24.5	mg/L	30	Standard
Ca	43	41.7	36.7	**0.7901**	2.216	280.5	mg/L	48	Standard
Fe	54	146.0	8.6	**-0.0087**	0.010	113.7	mg/L	159	Standard
Fe	57	195.0	25.3	**0.0139**	0.156	1122.4	mg/L	195	Standard
Sc-1	45	40706.3	0.9				mg/L	39543	Standard
Cl	35	29554.8	2.8				ug/L	27642	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	1693.4	6.8				ug/L	1647	Standard
P	31	17536.8	2.2				ug/L	15231	Standard
S	34	2233.5	3.0				ug/L	1845	Standard
Sr	88	66.7	15.6				ug/L	70	Standard
C	12	96.7	33.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.7	49.8				mg/L	12	Standard
Ho-1	165	10.0					mg/L	12	Standard
Er	166	13.3	86.6				mg/L	20	Standard
I	127	1260.1	15.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		104.951	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.590
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.902
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Tuesday, June 28, 2016 13:25:23
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79486.3	1.5				ug/L	81760	Standard
	Be	9	236.7	23.6	**0.2350**	0.054	23.1	ug/L	17	Standard
	Al	27	1635.1	14.9	**-0.0035**	0.001	42.0	ug/L	1410	Standard
	Sc	45	39860.7	2.7				ug/L	39543	Standard
	Ti	47	39.7	2.9	**-0.0059**	0.005	91.5	ug/L	39	Standard
	V	51	3750.6	3.6	**0.3321**	0.019	5.7	ug/L	1415	Standard
	Cr	52	11750.6	2.2	**0.6283**	0.044	7.0	ug/L	6946	Standard
	Cr	53	1020.0	3.7	**0.8185**	0.038	4.7	ug/L	328	Standard
	Mn	55	3800.5	0.2	**0.4368**	0.004	0.8	ug/L	823	Standard
	Co	59	2925.3	4.6	**0.3843**	0.020	5.3	ug/L	252	Standard
	Ni	60	3080.3	1.6	**1.5280**	0.033	2.2	ug/L	192	Standard
	Cu	65	1617.4	2.7	**0.7591**	0.027	3.5	ug/L	141	Standard
	Zn	66	7652.9	2.4	**6.1434**	0.191	3.1	ug/L	491	Standard
>	**Ge**	72	515947.7	0.4				ug/L	515087	Standard
	As	75	426.1	10.9	**0.4186**	0.040	9.6	ug/L	20	Standard
	Se	82	65.5	20.2	**0.4487**	0.114	25.5	ug/L	15	Standard
	Se-1	77	77.0	13.5	**0.3017**	0.140	46.4	ug/L	48	Standard
>	**Ga**	71	75.0	29.1				mg/L	90	Standard
	Rb	85	11.7	49.5				ug/L	23	Standard
	Y	89	454544.4	2.9				ug/L	448510	Standard
>	**Rh**	103	11.7	65.5				ug/L	15	Standard
	Mo	98	144.3	6.8	**0.0328**	0.004	11.5	ug/L	11	Standard
	Ag	107	2677.9	4.8	**0.3715**	0.022	5.8	ug/L	134	Standard
	Cd	111	522.1	8.6	**0.2344**	0.020	8.5	mg/L	7	Standard
	Cd	114	1313.6	1.7	**0.2408**	0.006	2.4	ug/L	16	Standard
>	**In**	115	628989.1	0.7				ug/L	611117	Standard
	Sn	118	611.7	1.9	**-0.0014**	0.001	96.1	ug/L	518	Standard
	Sb	123	2074.6	8.0	**0.4143**	0.033	7.9	ug/L	127	Standard
	Ba	135	1500.7	4.3	**0.6813**	0.036	5.2	ug/L	45	Standard
	Ce	140	23.3	24.7				ug/L	298	Standard
>	**Tb**	159	1002704.6	1.0				ug/L	977942	Standard
	Ho	165	21.7	35.3				ug/L	12	Standard
	Tl	203	715.4	2.1	**0.0768**	0.002	2.1	ug/L	31	Standard
	Tl	205	653.3	9.4	**0.0835**	0.008	10.1	ug/L	20	Standard
	Pb	206	1358.4	2.4	**0.1778**	0.007	3.8	ug/L	286	Standard
	Pb	207	1172.0	3.3	**0.1729**	0.010	5.8	ug/L	257	Standard
	Pb	208	4784.3	0.9	**0.1832**	0.004	2.4	ug/L	956	Standard
	U	238	2840.3	2.6	**0.3778**	0.014	3.6	ug/L	17	Standard
>	**Bi**	209	580093.5	1.0				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	33.3	22.9	**-0.0129**	0.011	85.9	mg/L	32	Standard
K	39	38.3	45.8	**-0.0130**	0.059	454.3	mg/L	30	Standard
Ca	43	38.3	41.9	**0.4748**	2.540	535.0	mg/L	48	Standard
Fe	54	103.9	16.3	**-0.0436**	0.016	37.7	mg/L	159	Standard
Fe	57	210.0	19.5	**0.0806**	0.150	185.6	mg/L	195	Standard
> **Sc-1**	45	39860.7	2.7				mg/L	39543	Standard
Cl	35	28271.0	1.2				ug/L	27642	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	1630.1	3.7				ug/L	1647	Standard
P	31	12470.1	4.9				ug/L	15231	Standard
S	34	2090.1	6.4				ug/L	1845	Standard
Sr	88	61.7	72.7				ug/L	70	Standard
C	12	146.7	7.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	26.0	116.4				mg/L	12	Standard
Ho-1	165	21.7	35.3				mg/L	12	Standard
Er	166	13.3	43.3				mg/L	20	Standard
I	127	1031.7	25.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	117.475		
Al	27	-0.351		
Sc	45			
Ti	47			
V	51	83.021		
Cr	52	78.533		
Cr	53			
Mn	55	87.355		
Co	59	96.082		
Ni	60	95.499		
Cu	65	94.881		
Zn	66	98.294		
> Ge	72		100.167	
As	75	104.644		
Se	82	112.180		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	92.871		
Cd	111	97.662		
Cd	114			
> In	115			102.925
Sn	118			
Sb	123	103.570		
Ba	135	90.845		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	95.941		
Tl	205			
Pb	206			
Pb	207			
Pb	208	91.584		
U	238	94.451		
> Bi	209			104.131
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Tuesday, June 28, 2016 13:28:34
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	85379.9	0.7				ug/L	81760	Standard
	Be	9	28.3	44.4	**0.0176**	0.012	68.3	ug/L	17	Standard
	Al	27	7582301.1	0.5	**47.0918**	0.449	1.0	ug/L	1410	Standard
	Sc	45	42481.1	0.8				ug/L	39543	Standard
	Ti	47	26924.2	1.2	**102.1971**	2.644	2.6	ug/L	39	Standard
	V	51	1177.2	11.7	**-0.0466**	0.017	37.5	ug/L	1415	Standard
	Cr	52	7440.5	1.6	**-0.0468**	0.011	24.4	ug/L	6946	Standard
	Cr	53	2938.6	8.1	**2.8263**	0.310	11.0	ug/L	328	Standard
	Mn	55	1484.1	0.5	**0.0680**	0.007	9.9	ug/L	823	Standard
	Co	59	438.3	7.6	**0.0276**	0.004	13.4	ug/L	252	Standard
	Ni	60	870.4	2.5	**0.3318**	0.004	1.2	ug/L	192	Standard
	Cu	65	647.0	5.3	**0.2309**	0.010	4.5	ug/L	141	Standard
	Zn	66	2006.5	1.8	**0.9027**	0.019	2.1	ug/L	491	Standard
>	Ge	72	545025.5	2.5				ug/L	515087	Standard
	As	75	-62.2	34.4	**-0.0118**	0.017	144.3	ug/L	20	Standard
	Se	82	23.6	6.2	**0.0746**	0.009	12.7	ug/L	15	Standard
	Se-1	77	231.7	5.9	**2.1902**	0.222	10.1	ug/L	48	Standard
>	Ga	71	171.7	17.1				mg/L	90	Standard
	Rb	85	1090.0	4.4				ug/L	23	Standard
	Y	89	452797.1	1.4				ug/L	448510	Standard
>	Rh	103	10.0	100.0				ug/L	15	Standard
	Mo	98	263118.9	1.1	**94.9055**	0.578	0.6	ug/L	11	Standard
	Ag	107	286.7	3.7	**0.0254**	0.002	6.6	ug/L	134	Standard
	Cd	111	-226.3	7.3	**-0.1062**	0.009	8.1	mg/L	7	Standard
	Cd	114	466.4	13.0	**0.0826**	0.011	12.8	ug/L	16	Standard
>	In	115	626700.1	1.0				ug/L	611117	Standard
	Sn	118	941.7	5.7	**0.0533**	0.007	13.8	ug/L	518	Standard
	Sb	123	466.3	29.2	**0.0836**	0.028	33.8	ug/L	127	Standard
	Ba	135	616.7	6.0	**0.2662**	0.017	6.2	ug/L	45	Standard
	Ce	140	233.3	17.2				ug/L	298	Standard
>	Tb	159	1019781.5	0.4				ug/L	977942	Standard
	Ho	165	28.3	27.0				ug/L	12	Standard
	Tl	203	270.7	14.6	**0.0257**	0.004	17.2	ug/L	31	Standard
	Tl	205	205.0	17.1	**0.0243**	0.005	18.8	ug/L	20	Standard
	Pb	206	568.7	4.5	**0.0362**	0.004	12.0	ug/L	286	Standard
	Pb	207	508.0	2.4	**0.0408**	0.002	5.7	ug/L	257	Standard
	Pb	208	1902.0	8.6	**0.0352**	0.008	23.2	ug/L	956	Standard
	U	238	71.7	54.2	**0.0065**	0.005	78.6	ug/L	17	Standard
>	Bi	209	587460.1	0.4				ug/L	557080	Standard

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Na	23	5.0	100.0	**29.8288**	29.665	99.5	mg/L	0	Standard
Mg	24	10050.0	1.2	**12.3961**	0.163	1.3	mg/L	32	Standard
K	39	1535.1	9.7	**4.6887**	0.503	10.7	mg/L	30	Standard
Ca	43	211.7	14.4	**24.5987**	4.529	18.4	mg/L	48	Standard
Fe	54	14184.2	1.5	**11.8132**	0.271	2.3	mg/L	159	Standard
Fe	57	3883.8	1.7	**11.5795**	0.109	0.9	mg/L	195	Standard
Sc-1	45	42481.1	0.8				mg/L	39543	Standard
Cl	35	27442.8	1.7				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1816.8	6.7				ug/L	1647	Standard
P	31	16744.2	0.2				ug/L	15231	Standard
S	34	1956.8	7.4				ug/L	1845	Standard
Sr	88	48.3	53.1				ug/L	70	Standard
C	12	220.0	25.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	27.0				mg/L	0	Standard
Dy	164	24.9	47.6				mg/L	12	Standard
Ho-1	165	28.3	27.0				mg/L	12	Standard
Er	166	36.7	56.8				mg/L	20	Standard
I	127	1896.8	6.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27	0.942		
Sc	45			
Ti	47	102.197		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		105.812	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	94.905		
Ag	107			
Cd	111			
Cd	114			
In	115			102.550
Sn	118			
Sb	123			
Ba	135			
Ce	140			
Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
Bi	209			105.453
Na	23	238.631		
Mg	24	247.921		
K	39	93.774		
Ca	43	163.991		
Fe	54	94.506		
Fe	57	92.636		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	

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QC Std 4	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Tuesday, June 28, 2016 13:31:45
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	87031.0	2.2				ug/L	81760	Standard
	Be	9	104600.0	3.1	**98.9445**	2.636	2.7	ug/L	17	Standard
	Al	27	8235764.9	2.8	**50.1881**	1.494	3.0	ug/L	1410	Standard
	Sc	45	40814.9	1.3				ug/L	39543	Standard
	Ti	47	28557.9	2.6	**110.3128**	3.806	3.5	ug/L	39	Standard
	V	51	698774.9	0.6	**96.5097**	2.203	2.3	ug/L	1415	Standard
	Cr	52	706026.0	2.3	**96.5109**	2.799	2.9	ug/L	6946	Standard
	Cr	53	91691.9	3.7	**100.1429**	4.249	4.2	ug/L	328	Standard
	Mn	55	659133.1	0.8	**97.6603**	2.181	2.2	ug/L	823	Standard
	Co	59	714164.5	1.5	**97.7493**	2.387	2.4	ug/L	252	Standard
	Ni	60	188241.9	2.2	**96.0473**	2.835	3.0	ug/L	192	Standard
	Cu	65	190773.3	1.3	**96.4911**	2.052	2.1	ug/L	141	Standard
	Zn	66	115799.2	0.5	**100.8065**	2.067	2.1	ug/L	491	Standard
>	**Ge**	72	535562.3	1.7				ug/L	515087	Standard
	As	75	115513.0	0.8	**98.8727**	1.879	1.9	ug/L	20	Standard
	Se	82	11807.8	0.8	**98.5471**	2.365	2.4	ug/L	15	Standard
	Se-1	77	7973.8	0.6	**101.0979**	1.926	1.9	ug/L	48	Standard
>	**Ga**	71	195.0	2.6				mg/L	90	Standard
	Rb	85	900.0	5.1				ug/L	23	Standard
	Y	89	467512.1	1.1				ug/L	448510	Standard
>	**Rh**	103	41.7	61.6				ug/L	15	Standard
	Mo	98	278616.6	1.0	**98.3192**	1.671	1.7	ug/L	11	Standard
	Ag	107	629653.8	2.5	**89.4581**	1.609	1.8	ug/L	134	Standard
	Cd	111	214179.9	0.7	**95.5849**	1.082	1.1	mg/L	7	Standard
	Cd	114	513207.5	0.9	**94.2229**	0.578	0.6	ug/L	16	Standard
>	**In**	115	640649.3	1.3				ug/L	611117	Standard
	Sn	118	1085.0	2.4	**0.0732**	0.006	8.8	ug/L	518	Standard
	Sb	123	468645.5	2.2	**94.7292**	1.132	1.2	ug/L	127	Standard
	Ba	135	204538.3	1.7	**94.4814**	1.088	1.2	ug/L	45	Standard
	Ce	140	98.3	7.8				ug/L	298	Standard
>	**Tb**	159	1030592.0	2.2				ug/L	977942	Standard
	Ho	165	16.7	45.8				ug/L	12	Standard
	Tl	203	850272.7	1.9	**96.3847**	2.377	2.5	ug/L	31	Standard
	Tl	205	753805.3	1.5	**98.4067**	2.429	2.5	ug/L	20	Standard
	Pb	206	560444.8	0.3	**98.9799**	0.961	1.0	ug/L	286	Standard
	Pb	207	485626.8	0.4	**95.0861**	1.259	1.3	ug/L	257	Standard
	Pb	208	1940003.2	1.2	**98.1909**	2.155	2.2	ug/L	956	Standard
	U	238	731621.6	1.7	**97.5330**	2.488	2.6	ug/L	17	Standard
>	**Bi**	209	583301.0	1.0				ug/L	557080	Standard

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Na	23	5.0	100.0	**30.9951**	30.718	99.1	mg/L	0	Standard
Mg	24	10642.1	4.7	**13.6704**	0.697	5.1	mg/L	32	Standard
K	39	1555.1	3.7	**4.9498**	0.207	4.2	mg/L	30	Standard
Ca	43	191.7	19.9	**22.8900**	5.801	25.3	mg/L	48	Standard
Fe	54	15478.2	1.2	**13.4350**	0.150	1.1	mg/L	159	Standard
Fe	57	4137.2	0.8	**12.9082**	0.151	1.2	mg/L	195	Standard
Sc-1	45	40814.9	1.3				mg/L	39543	Standard
Cl	35	27689.3	2.5				ug/L	27642	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	1876.8	10.9				ug/L	1647	Standard
P	31	15799.9	3.3				ug/L	15231	Standard
S	34	1943.5	5.2				ug/L	1845	Standard
Sr	88	65.0	27.7				ug/L	70	Standard
C	12	256.7	13.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	15.9	127.8				mg/L	12	Standard
Ho-1	165	16.7	45.8				mg/L	12	Standard
Er	166	16.7	69.3				mg/L	20	Standard
I	127	1231.7	9.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	98.944		
Al	27	1.004		
Sc	45			
Ti	47	110.313		
V	51	96.510		
Cr	52	96.511		
Cr	53			
Mn	55	97.660		
Co	59	97.749		
Ni	60	96.047		
Cu	65	96.491		
Zn	66	100.807		
Ge	72		103.975	
As	75	98.873		
Se	82	98.547		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	98.319		
Ag	107	89.458		
Cd	111	95.585		
Cd	114			
In	115		104.833	
Sn	118			
Sb	123	94.729		
Ba	135	94.481		
Ce	140			
Tb	159			
Ho	165			
Tl	203	96.385		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.191		
U	238	97.533		
Bi	209		104.707	
Na	23	247.961		
Mg	24	273.408		
K	39	98.997		
Ca	43	152.600		
Fe	54	107.480		
Fe	57	103.265		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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QC Std 5	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 13:34:59
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85572.8	3.1				ug/L	81760	Standard
	Be	9	51348.6	3.0	**49.4131**	1.801	3.6	ug/L	17	Standard
	Al	27	7869928.8	0.7	**48.7904**	1.162	2.4	ug/L	1410	Standard
	Sc	45	41500.1	1.3				ug/L	39543	Standard
	Ti	47	25257.0	1.4	**98.1904**	2.232	2.3	ug/L	39	Standard
	V	51	359717.6	0.9	**49.9155**	1.252	2.5	ug/L	1415	Standard
	Cr	52	362752.3	1.0	**49.4079**	0.954	1.9	ug/L	6946	Standard
	Cr	53	45483.2	1.3	**49.8439**	1.589	3.2	ug/L	328	Standard
	Mn	55	333977.4	0.1	**49.7416**	1.012	2.0	ug/L	823	Standard
	Co	59	371364.3	0.2	**51.1559**	1.087	2.1	ug/L	252	Standard
	Ni	60	96391.0	0.8	**49.4567**	0.760	1.5	ug/L	192	Standard
	Cu	65	97494.7	0.8	**49.5943**	0.620	1.2	ug/L	141	Standard
	Zn	66	56948.5	0.8	**49.4853**	0.762	1.5	ug/L	491	Standard
>	**Ge**	72	532023.1	2.0				ug/L	515087	Standard
	As	75	57437.4	0.6	**49.5161**	1.180	2.4	ug/L	20	Standard
	Se	82	5946.0	0.9	**49.9013**	1.415	2.8	ug/L	15	Standard
	Se-1	77	4004.5	1.6	**50.7471**	0.199	0.4	ug/L	48	Standard
>	**Ga**	71	93.3	16.4				mg/L	90	Standard
	Rb	85	881.7	8.3				ug/L	23	Standard
	Y	89	456900.1	0.4				ug/L	448510	Standard
>	**Rh**	103	26.7	60.3				ug/L	15	Standard
	Mo	98	274645.7	0.6	**96.2670**	1.141	1.2	ug/L	11	Standard
	Ag	107	344865.6	0.2	**48.6675**	0.302	0.6	ug/L	134	Standard
	Cd	111	109918.0	0.6	**48.7237**	0.167	0.3	mg/L	7	Standard
	Cd	114	266820.9	0.9	**48.6598**	0.652	1.3	ug/L	16	Standard
>	**In**	115	644937.8	0.8				ug/L	611117	Standard
	Sn	118	304766.5	1.2	**48.7367**	0.172	0.4	ug/L	518	Standard
	Sb	123	245072.6	0.1	**49.2072**	0.383	0.8	ug/L	127	Standard
	Ba	135	106223.8	1.1	**48.7299**	0.483	1.0	ug/L	45	Standard
	Ce	140	76.7	21.0				ug/L	298	Standard
>	**Tb**	159	1040424.8	0.9				ug/L	977942	Standard
	Ho	165	11.7	89.2				ug/L	12	Standard
	Tl	203	436254.3	0.9	**48.8621**	1.048	2.1	ug/L	31	Standard
	Tl	205	382952.9	1.1	**49.3898**	0.698	1.4	ug/L	20	Standard
	Pb	206	278752.3	0.9	**48.6168**	1.163	2.4	ug/L	286	Standard
	Pb	207	252906.4	1.0	**48.9055**	1.215	2.5	ug/L	257	Standard
	Pb	208	993060.2	1.0	**49.6339**	1.159	2.3	ug/L	956	Standard
	U	238	369537.8	0.4	**48.6731**	0.911	1.9	ug/L	17	Standard
>	**Bi**	209	590375.8	1.5				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4017.2	5.2	**5.0405**	0.318	6.3	mg/L	32	Standard
K	39	1600.1	5.0	**5.0128**	0.329	6.6	mg/L	30	Standard
Ca	43	98.3	19.3	**8.9105**	2.944	33.0	mg/L	48	Standard
Fe	54	5965.0	1.0	**5.0068**	0.016	0.3	mg/L	159	Standard
Fe	57	1785.1	5.1	**5.1208**	0.370	7.2	mg/L	195	Standard
> **Sc-1**	45	41500.1	1.3				mg/L	39543	Standard
Cl	35	29160.0	1.9				ug/L	27642	Standard
Kr	83	3.3	45.8				ug/L	2	Standard
Br	81	1670.1	8.2				ug/L	1647	Standard
P	31	17116.3	2.7				ug/L	15231	Standard
S	34	2186.8	7.3				ug/L	1845	Standard
Sr	88	41.7	34.6				ug/L	70	Standard
C	12	130.0	42.8				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	23.3	24.7				mg/L	12	Standard
Ho-1	165	11.7	89.2				mg/L	12	Standard
Er	166	0.0					mg/L	20	Standard
I	127	1351.7	14.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	98.826		
Al	27	97.581		
Sc	45			
Ti	47	98.190		
V	51	99.831		
Cr	52	98.816		
Cr	53			
Mn	55	99.483		
Co	59	102.312		
Ni	60	98.913		
Cu	65	99.189		
Zn	66	98.971		
> Ge	72		103.288	
As	75	99.032		
Se	82	99.803		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	96.267		
Ag	107	97.335		
Cd	111	97.447		
Cd	114			
> In	115			105.534
Sn	118	97.473		
Sb	123	98.414		
Ba	135	97.460		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	97.724		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.268		
U	238	97.346		
> Bi	209			105.977
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 13:38:10
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82763.8	0.7				ug/L	81760	Standard
	Be	9	40.0	57.3	**0.0300**	0.023	75.9	ug/L	17	Standard
	Al	27	4257.4	63.2	**0.0129**	0.017	134.4	ug/L	1410	Standard
	Sc	45	40355.3	1.7				ug/L	39543	Standard
	Ti	47	44.3	23.5	**0.0085**	0.041	476.8	ug/L	39	Standard
	V	51	1283.7	14.1	**-0.0268**	0.025	92.2	ug/L	1415	Standard
	Cr	52	6366.3	1.6	**-0.1663**	0.013	7.9	ug/L	6946	Standard
	Cr	53	461.7	3.5	**0.1707**	0.014	8.3	ug/L	328	Standard
	Mn	55	939.4	15.6	**-0.0074**	0.022	294.6	ug/L	823	Standard
	Co	59	428.3	39.2	**0.0280**	0.023	82.9	ug/L	252	Standard
	Ni	60	218.7	25.5	**0.0081**	0.029	354.3	ug/L	192	Standard
	Cu	65	184.3	18.2	**0.0036**	0.017	469.2	ug/L	141	Standard
	Zn	66	515.3	2.3	**-0.3696**	0.014	3.7	ug/L	491	Standard
>	**Ge**	72	528838.2	0.8				ug/L	515087	Standard
	As	75	8.3	324.4	**0.0475**	0.023	49.1	ug/L	20	Standard
	Se	82	19.9	12.2	**0.0491**	0.021	43.7	ug/L	15	Standard
	Se-1	77	55.0	4.8	**-0.0079**	0.029	369.8	ug/L	48	Standard
>	**Ga**	71	56.7	39.8				mg/L	90	Standard
	Rb	85	10.0					ug/L	23	Standard
	Y	89	469796.8	1.6				ug/L	448510	Standard
>	**Rh**	103	20.0	25.0				ug/L	15	Standard
	Mo	98	452.3	25.3	**0.1439**	0.042	29.5	ug/L	11	Standard
	Ag	107	307.7	67.7	**0.0286**	0.031	108.2	ug/L	134	Standard
	Cd	111	45.2	95.8	**0.0178**	0.020	112.8	mg/L	7	Standard
	Cd	114	114.8	113.1	**0.0168**	0.025	147.3	ug/L	16	Standard
>	**In**	115	628024.0	1.4				ug/L	611117	Standard
	Sn	118	940.0	23.7	**0.0531**	0.039	73.1	ug/L	518	Standard
	Sb	123	1312.1	39.0	**0.2588**	0.110	42.3	ug/L	127	Standard
	Ba	135	79.3	75.1	**0.0125**	0.029	229.7	ug/L	45	Standard
	Ce	140	28.3	36.7				ug/L	298	Standard
>	**Tb**	159	1003248.8	1.6				ug/L	977942	Standard
	Ho	165	15.0	88.2				ug/L	12	Standard
	Tl	203	265.0	107.1	**0.0261**	0.033	127.7	ug/L	31	Standard
	Tl	205	163.3	84.5	**0.0196**	0.019	95.5	ug/L	20	Standard
	Pb	206	421.0	42.3	**0.0127**	0.033	261.4	ug/L	286	Standard
	Pb	207	362.0	44.3	**0.0147**	0.033	224.6	ug/L	257	Standard
	Pb	208	1358.7	30.8	**0.0100**	0.022	223.6	ug/L	956	Standard
	U	238	139.0	84.9	**0.0161**	0.016	101.8	ug/L	17	Standard
>	**Bi**	209	570467.7	1.7				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.3221**	17.870	173.1	mg/L	0	Standard
Mg	24	30.0	28.9	**-0.0179**	0.012	67.0	mg/L	32	Standard
K	39	31.7	24.1	**-0.0367**	0.024	65.4	mg/L	30	Standard
Ca	43	38.3	15.1	**0.3686**	0.952	258.2	mg/L	48	Standard
Fe	54	115.7	16.2	**-0.0344**	0.017	49.5	mg/L	159	Standard
Fe	57	198.3	8.1	**0.0320**	0.061	191.3	mg/L	195	Standard
> **Sc-1**	45	40355.3	1.7				mg/L	39543	Standard
Cl	35	29509.4	2.2				ug/L	27642	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	1783.4	4.3				ug/L	1647	Standard
P	31	17421.7	1.2				ug/L	15231	Standard
S	34	2170.2	3.8				ug/L	1845	Standard
Sr	88	55.0	15.7				ug/L	70	Standard
C	12	93.3	40.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	8.9	120.7				mg/L	12	Standard
Ho-1	165	15.0	88.2				mg/L	12	Standard
Er	166	23.3	65.5				mg/L	20	Standard
I	127	1233.4	14.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.670	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.767
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.403
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606036203
Sample Date/Time: Tuesday, June 28, 2016 13:41:22
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83400.5	10.2				ug/L	81760	Standard
	Be	9	11.7	65.5	**0.0015**	0.006	425.0	ug/L	17	Standard
	Al	27	3017.0	39.5	**0.0053**	0.009	165.2	ug/L	1410	Standard
	Sc	45	40218.8	12.0				ug/L	39543	Standard
	Ti	47	37.0	23.6	**-0.0163**	0.022	135.1	ug/L	39	Standard
	V	51	613.8	4.6	**-0.1167**	0.012	10.1	ug/L	1415	Standard
	Cr	52	3481.1	12.6	**-0.5531**	0.019	3.4	ug/L	6946	Standard
	Cr	53	250.0	27.5	**-0.0570**	0.057	99.8	ug/L	328	Standard
	Mn	55	1041.4	26.2	**0.0117**	0.027	231.5	ug/L	823	Standard
	Co	59	254.7	5.9	**0.0055**	0.004	71.3	ug/L	252	Standard
	Ni	60	206.3	13.3	**0.0056**	0.009	153.1	ug/L	192	Standard
	Cu	65	131.7	19.5	**-0.0206**	0.013	65.4	ug/L	141	Standard
	Zn	66	531.7	22.4	**-0.3419**	0.069	20.1	ug/L	491	Standard
>	**Ge**	72	510441.4	10.5				ug/L	515087	Standard
	As	75	44.6	25.0	**0.0799**	0.006	7.8	ug/L	20	Standard
	Se	82	38.3	36.8	**0.2107**	0.093	44.1	ug/L	15	Standard
	Se-1	77	32.0	11.3	**-0.2872**	0.062	21.6	ug/L	48	Standard
>	**Ga**	71	61.7	4.7				mg/L	90	Standard
	Rb	85	33.3	37.7				ug/L	23	Standard
	Y	89	399549.3	20.8				ug/L	448510	Standard
>	**Rh**	103	11.7	65.5				ug/L	15	Standard
	Mo	98	155.9	22.2	**0.0482**	0.023	47.8	ug/L	11	Standard
	Ag	107	121.0	24.4	**0.0044**	0.005	118.2	ug/L	134	Standard
	Cd	111	13.4	45.5	**0.0046**	0.004	96.5	mg/L	7	Standard
	Cd	114	43.9	10.7	**0.0047**	0.001	14.6	ug/L	16	Standard
>	**In**	115	541793.5	15.9				ug/L	611117	Standard
	Sn	118	351.7	31.7	**-0.0361**	0.012	32.5	ug/L	518	Standard
	Sb	123	283.1	30.2	**0.0538**	0.012	21.7	ug/L	127	Standard
	Ba	135	37.0	32.8	**-0.0052**	0.004	82.4	ug/L	45	Standard
	Ce	140	30.0	28.9				ug/L	298	Standard
>	**Tb**	159	879683.0	16.9				ug/L	977942	Standard
	Ho	165	8.3	34.6				ug/L	12	Standard
	Tl	203	99.7	75.1	**0.0097**	0.013	137.9	ug/L	31	Standard
	Tl	205	85.0	86.7	**0.0121**	0.015	120.6	ug/L	20	Standard
	Pb	206	313.0	1.9	**0.0011**	0.012	1036.8	ug/L	286	Standard
	Pb	207	266.0	5.5	**0.0034**	0.015	442.4	ug/L	257	Standard
	Pb	208	1233.7	12.3	**0.0133**	0.020	150.4	ug/L	956	Standard
	U	238	39.3	36.7	**0.0031**	0.002	60.3	ug/L	17	Standard
>	**Bi**	209	508733.8	16.9				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	21.7	13.3	**-0.0282**	0.008	27.2	mg/L	32	Standard
K	39	25.0	34.6	**-0.0591**	0.022	36.5	mg/L	30	Standard
Ca	43	40.0	12.5	**0.7483**	1.524	203.6	mg/L	48	Standard
Fe	54	113.2	25.1	**-0.0334**	0.039	117.8	mg/L	159	Standard
Fe	57	238.3	14.7	**0.1717**	0.127	73.7	mg/L	195	Standard
> **Sc-1**	45	40218.8	12.0				mg/L	39543	Standard
Cl	35	13831.7	10.0				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	810.0	8.9				ug/L	1647	Standard
P	31	10527.1	24.9				ug/L	15231	Standard
S	34	970.0	6.2				ug/L	1845	Standard
Sr	88	66.7	11.5				ug/L	70	Standard
C	12	110.0	9.1				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.4	124.8				mg/L	12	Standard
Ho-1	165	8.3	34.6				mg/L	12	Standard
Er	166	20.0	50.0				mg/L	20	Standard
I	127	523.3	19.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.006	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.098	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		88.656
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.321
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 52 Lower	Cr	52	

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Method 6020 - Summary Report

Sample ID: L1606036204
Sample Date/Time: Tuesday, June 28, 2016 13:44:34
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83225.5	7.5				ug/L	81760	Standard
	Be	9	31228.6	61.6	**31.9371**	21.971	68.8	ug/L	17	Standard
	Al	27	8471.1	48.6	**0.0411**	0.031	75.9	ug/L	1410	Standard
	Sc	45	40830.0	2.2				ug/L	39543	Standard
	Ti	47	34.3	11.8	**-0.0297**	0.018	59.1	ug/L	39	Standard
	V	51	224078.9	58.8	**31.3360**	18.302	58.4	ug/L	1415	Standard
	Cr	52	238015.8	57.7	**32.3999**	19.040	58.8	ug/L	6946	Standard
	Cr	53	29690.7	58.7	**32.7502**	19.168	58.5	ug/L	328	Standard
	Mn	55	213724.7	56.8	**32.1044**	18.055	56.2	ug/L	823	Standard
	Co	59	222487.2	58.7	**30.9454**	17.938	58.0	ug/L	252	Standard
	Ni	60	62090.3	57.3	**32.1492**	18.240	56.7	ug/L	192	Standard
	Cu	65	63757.0	57.0	**32.7355**	18.436	56.3	ug/L	141	Standard
	Zn	66	38227.9	57.9	**33.2873**	19.476	58.5	ug/L	491	Standard
>	**Ge**	72	525473.2	1.2				ug/L	515087	Standard
	As	75	36453.5	56.6	**31.7527**	17.695	55.7	ug/L	20	Standard
	Se	82	3780.3	55.0	**31.9968**	17.401	54.4	ug/L	15	Standard
	Se-1	77	2538.3	56.6	**32.2335**	18.366	57.0	ug/L	48	Standard
>	**Ga**	71	76.7	26.4				mg/L	90	Standard
	Rb	85	43.3	17.6				ug/L	23	Standard
	Y	89	474726.4	7.6				ug/L	448510	Standard
>	**Rh**	103	26.7	21.7				ug/L	15	Standard
	Mo	98	564.0	40.4	**0.1823**	0.089	49.0	ug/L	11	Standard
	Ag	107	212096.4	59.4	**30.6350**	19.274	62.9	ug/L	134	Standard
	Cd	111	68030.3	54.2	**30.8198**	17.865	58.0	mg/L	7	Standard
	Cd	114	165078.2	56.3	**30.7839**	18.487	60.1	ug/L	16	Standard
>	**In**	115	641067.2	4.2				ug/L	611117	Standard
	Sn	118	550.0	28.6	**-0.0125**	0.029	234.3	ug/L	518	Standard
	Sb	123	143570.7	60.9	**29.5172**	18.974	64.3	ug/L	127	Standard
	Ba	135	66133.4	54.2	**31.0035**	17.964	57.9	ug/L	45	Standard
	Ce	140	83.3	81.7				ug/L	298	Standard
>	**Tb**	159	1026938.7	4.8				ug/L	977942	Standard
	Ho	165	11.7	65.5				ug/L	12	Standard
	Tl	203	274073.1	56.4	**30.7538**	17.663	57.4	ug/L	31	Standard
	Tl	205	243234.0	54.4	**31.4411**	17.425	55.4	ug/L	20	Standard
	Pb	206	180330.9	55.5	**31.4753**	17.798	56.5	ug/L	286	Standard
	Pb	207	158009.7	55.1	**30.5868**	17.206	56.3	ug/L	257	Standard
	Pb	208	646417.5	54.5	**32.3514**	17.977	55.6	ug/L	956	Standard
	U	238	234720.5	55.2	**30.9733**	17.414	56.2	ug/L	17	Standard
>	**Bi**	209	588853.8	4.4				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.1717**	17.609	173.1	mg/L	0	Standard
Mg	24	26.7	10.8	**-0.0228**	0.004	16.0	mg/L	32	Standard
K	39	36.7	43.8	**-0.0214**	0.052	244.2	mg/L	30	Standard
Ca	43	30.0	66.7	**-0.9172**	2.942	320.7	mg/L	48	Standard
Fe	54	107.6	36.8	**-0.0427**	0.035	81.3	mg/L	159	Standard
Fe	57	220.0	9.9	**0.0952**	0.078	81.4	mg/L	195	Standard
> **Sc-1**	45	40830.0	2.2				mg/L	39543	Standard
Cl	35	20640.2	29.5				ug/L	27642	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	1230.1	37.8				ug/L	1647	Standard
P	31	11926.4	10.7				ug/L	15231	Standard
S	34	1536.7	28.4				ug/L	1845	Standard
Sr	88	66.7	11.5				ug/L	70	Standard
C	12	146.7	27.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	5.9	100.8				mg/L	12	Standard
Ho-1	165	11.7	65.5				mg/L	12	Standard
Er	166	16.7	34.6				mg/L	20	Standard
I	127	785.0	24.2				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		101.792	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		102.016	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.901
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.704
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606036203
Sample Date/Time: Tuesday, June 28, 2016 13:49:03
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90942.6	5.2				ug/L	81760	Standard
	Be	9	53.3	85.1	**0.0399**	0.045	111.9	ug/L	17	Standard
	Al	27	693137.8	2.1	**4.0335**	0.159	3.9	ug/L	1410	Standard
	Sc	45	39909.2	1.1				ug/L	39543	Standard
	Ti	47	362.3	4.5	**1.2955**	0.068	5.3	ug/L	39	Standard
	V	51	2278.9	9.8	**0.1220**	0.031	25.8	ug/L	1415	Standard
	Cr	52	6909.6	1.4	**-0.0622**	0.012	19.7	ug/L	6946	Standard
	Cr	53	1090.0	12.5	**0.9032**	0.155	17.1	ug/L	328	Standard
	Mn	55	5526773.3	1.7	**854.3657**	14.322	1.7	ug/L	823	Standard
	Co	59	9370.2	5.6	**1.3053**	0.073	5.6	ug/L	252	Standard
	Ni	60	2122.5	1.2	**1.0247**	0.015	1.4	ug/L	192	Standard
	Cu	65	2498.9	0.1	**1.2274**	0.002	0.2	ug/L	141	Standard
	Zn	66	6516.4	0.8	**5.1316**	0.039	0.8	ug/L	491	Standard
>	**Ge**	72	513880.5	0.2				ug/L	515087	Standard
	As	75	3228.7	3.4	**2.9189**	0.105	3.6	ug/L	20	Standard
	Se	82	922.2	2.2	**7.9103**	0.196	2.5	ug/L	15	Standard
	Se-1	77	155.0	10.7	**1.3431**	0.217	16.2	ug/L	48	Standard
>	**Ga**	71	388.3	17.5				mg/L	90	Standard
	Rb	85	68372.4	3.2				ug/L	23	Standard
	Y	89	447009.0	1.5				ug/L	448510	Standard
>	**Rh**	103	111.7	20.2				ug/L	15	Standard
	Mo	98	1200247.1	0.8	**451.3790**	8.919	2.0	ug/L	11	Standard
	Ag	107	153.3	18.9	**0.0070**	0.004	61.8	ug/L	134	Standard
	Cd	111	-1054.6	0.6	**-0.5044**	0.004	0.7	mg/L	7	Standard
	Cd	114	1800.6	2.5	**0.3474**	0.013	3.8	ug/L	16	Standard
>	**In**	115	601262.2	1.3				ug/L	611117	Standard
	Sn	118	788.4	4.6	**0.0336**	0.006	17.8	ug/L	518	Standard
	Sb	123	1882.7	34.8	**0.3916**	0.136	34.8	ug/L	127	Standard
	Ba	135	4520.7	1.0	**2.2009**	0.051	2.3	ug/L	45	Standard
	Ce	140	6458.0	2.1				ug/L	298	Standard
>	**Tb**	159	1000527.6	0.4				ug/L	977942	Standard
	Ho	165	130.0	21.4				ug/L	12	Standard
	Tl	203	285.7	2.5	**0.0299**	0.000	1.6	ug/L	31	Standard
	Tl	205	403.3	76.1	**0.0543**	0.043	79.9	ug/L	20	Standard
	Pb	206	899.7	2.3	**0.1068**	0.005	4.7	ug/L	286	Standard
	Pb	207	732.0	4.6	**0.0957**	0.009	9.0	ug/L	257	Standard
	Pb	208	3524.8	26.8	**0.1310**	0.052	40.0	ug/L	956	Standard
	U	238	352.3	76.1	**0.0475**	0.039	81.4	ug/L	17	Standard
>	**Bi**	209	544253.0	1.1				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.4757**	18.136	173.1	mg/L	0	Standard
Mg	24	122834.3	0.9	**161.9583**	0.885	0.5	mg/L	32	Standard
K	39	4865.8	5.3	**16.1536**	1.001	6.2	mg/L	30	Standard
Ca	43	186.7	17.4	**22.7843**	5.205	22.8	mg/L	48	Standard
Fe	54	927.7	8.4	**0.6952**	0.076	10.9	mg/L	159	Standard
Fe	57	461.7	8.7	**0.9208**	0.151	16.4	mg/L	195	Standard
> **Sc-1**	45	39909.2	1.1				mg/L	39543	Standard
Cl	35	47371.9	1.0				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	196320.5	1.2				ug/L	1647	Standard
P	31	16525.7	2.7				ug/L	15231	Standard
S	34	2001.8	3.8				ug/L	1845	Standard
Sr	88	358.3	4.3				ug/L	70	Standard
C	12	246.7	19.2				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	211.1	26.7				mg/L	12	Standard
Ho-1	165	130.0	21.4				mg/L	12	Standard
Er	166	116.7	51.7				mg/L	20	Standard
I	127	1244078.5	12.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.231	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.766	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.387
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.697
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

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Method 6020 - Summary Report

Sample ID: L1606036204
Sample Date/Time: Tuesday, June 28, 2016 13:52:18
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	103725.5	0.9				ug/L	81760	Standard
	Be	9	18.3	41.7	**0.0048**	0.006	125.1	ug/L	17	Standard
	Al	27	23803073.4	2.1	**121.7007**	1.863	1.5	ug/L	1410	Standard
	Sc	45	41989.8	2.5				ug/L	39543	Standard
	Ti	47	198.3	8.2	**0.6152**	0.056	9.1	ug/L	39	Standard
	V	51	2022.8	10.2	**0.0784**	0.030	38.8	ug/L	1415	Standard
	Cr	52	8025.5	3.2	**0.0718**	0.049	68.1	ug/L	6946	Standard
	Cr	53	1725.1	14.9	**1.5845**	0.307	19.4	ug/L	328	Standard
	Mn	55	8347.3	4.1	**1.1117**	0.038	3.4	ug/L	823	Standard
	Co	59	1991.1	1.1	**0.2461**	0.003	1.1	ug/L	252	Standard
	Ni	60	2784.9	2.6	**1.3428**	0.049	3.7	ug/L	192	Standard
	Cu	65	1676.4	9.2	**0.7724**	0.072	9.4	ug/L	141	Standard
	Zn	66	3951.5	5.5	**2.7003**	0.153	5.7	ug/L	491	Standard
>	**Ge**	72	526193.8	1.1				ug/L	515087	Standard
	As	75	658.8	2.1	**0.6140**	0.018	3.0	ug/L	20	Standard
	Se	82	229.7	4.0	**1.8340**	0.092	5.0	ug/L	15	Standard
	Se-1	77	153.0	9.2	**1.2707**	0.204	16.0	ug/L	48	Standard
>	**Ga**	71	148.3	16.6				mg/L	90	Standard
	Rb	85	683.3	4.9				ug/L	23	Standard
	Y	89	453248.0	2.1				ug/L	448510	Standard
>	**Rh**	103	91.7	27.5				ug/L	15	Standard
	Mo	98	5026.0	6.3	**1.8280**	0.098	5.4	ug/L	11	Standard
	Ag	107	95.3	7.7	**-0.0021**	0.001	57.5	ug/L	134	Standard
	Cd	111	8.0	39.8	**0.0008**	0.001	178.0	mg/L	7	Standard
	Cd	114	50.5	30.0	**0.0047**	0.003	60.8	ug/L	16	Standard
>	**In**	115	615030.5	1.6				ug/L	611117	Standard
	Sn	118	1100.0	6.8	**0.0830**	0.014	16.4	ug/L	518	Standard
	Sb	123	686.5	31.6	**0.1319**	0.046	34.9	ug/L	127	Standard
	Ba	135	22769.8	0.9	**10.9347**	0.080	0.7	ug/L	45	Standard
	Ce	140	320.0	14.9				ug/L	298	Standard
>	**Tb**	159	1016190.3	1.0				ug/L	977942	Standard
	Ho	165	48.3	15.8				ug/L	12	Standard
	Tl	203	156.0	5.7	**0.0132**	0.001	7.6	ug/L	31	Standard
	Tl	205	153.3	14.7	**0.0181**	0.003	17.2	ug/L	20	Standard
	Pb	206	466.3	6.0	**0.0202**	0.005	24.4	ug/L	286	Standard
	Pb	207	405.3	5.2	**0.0227**	0.004	15.6	ug/L	257	Standard
	Pb	208	1478.0	2.2	**0.0157**	0.002	13.7	ug/L	956	Standard
	U	238	1957.8	2.0	**0.2625**	0.004	1.4	ug/L	17	Standard
>	**Bi**	209	573383.4	0.9				ug/L	557080	Standard

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Na	23	8.3	34.6	**50.1179**	16.456	32.8	mg/L	0	Standard
Mg	24	58420.8	1.2	**73.2244**	2.756	3.8	mg/L	32	Standard
K	39	723.4	8.7	**2.1601**	0.187	8.7	mg/L	30	Standard
Ca	43	463.3	11.9	**60.9213**	7.520	12.3	mg/L	48	Standard
Fe	54	191.2	7.7	**0.0260**	0.014	55.5	mg/L	159	Standard
Fe	57	531.7	2.7	**1.0656**	0.010	0.9	mg/L	195	Standard
> **Sc-1**	45	41989.8	2.5				mg/L	39543	Standard
Cl	35	37603.3	1.8				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	30841.4	4.4				ug/L	1647	Standard
P	31	21757.3	1.3				ug/L	15231	Standard
S	34	1778.4	1.5				ug/L	1845	Standard
Sr	88	246.7	9.1				ug/L	70	Standard
C	12	216.7	7.1				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	60.8	24.7				mg/L	12	Standard
Ho-1	165	48.3	15.8				mg/L	12	Standard
Er	166	53.3	10.8				mg/L	20	Standard
I	127	78536.8	23.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		126.866	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.156	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.640
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.927
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606036205
Sample Date/Time: Tuesday, June 28, 2016 13:59:25
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	103215.4	0.9				ug/L	81760	Standard
	Be	9	20.0	50.0	**0.0063**	0.008	129.0	ug/L	17	Standard
	Al	27	14439258.9	3.3	**74.2049**	3.024	4.1	ug/L	1410	Standard
	Sc	45	39693.6	2.3				ug/L	39543	Standard
	Ti	47	140.0	4.0	**0.4180**	0.020	4.8	ug/L	39	Standard
	V	51	3604.7	5.2	**0.3305**	0.025	7.7	ug/L	1415	Standard
	Cr	52	7555.2	2.8	**0.0671**	0.025	36.8	ug/L	6946	Standard
	Cr	53	1441.7	2.8	**1.3602**	0.060	4.4	ug/L	328	Standard
	Mn	55	692335.2	1.4	**110.4896**	2.247	2.0	ug/L	823	Standard
	Co	59	1760.4	3.6	**0.2283**	0.011	4.9	ug/L	252	Standard
	Ni	60	2996.0	4.5	**1.5433**	0.085	5.5	ug/L	192	Standard
	Cu	65	1684.1	4.6	**0.8273**	0.040	4.8	ug/L	141	Standard
	Zn	66	2371.2	1.2	**1.4134**	0.020	1.4	ug/L	491	Standard
>	**Ge**	72	497232.9	0.8				ug/L	515087	Standard
	As	75	475.6	6.3	**0.4785**	0.029	6.0	ug/L	20	Standard
	Se	82	111.0	8.1	**0.8794**	0.084	9.6	ug/L	15	Standard
	Se-1	77	118.0	5.1	**0.9042**	0.095	10.5	ug/L	48	Standard
>	**Ga**	71	108.3	35.3				mg/L	90	Standard
	Rb	85	57350.0	0.9				ug/L	23	Standard
	Y	89	457066.8	2.1				ug/L	448510	Standard
>	**Rh**	103	28.3	44.4				ug/L	15	Standard
	Mo	98	255967.1	1.2	**93.6404**	2.667	2.8	ug/L	11	Standard
	Ag	107	89.3	9.3	**-0.0031**	0.001	44.5	ug/L	134	Standard
	Cd	111	-197.3	3.0	**-0.0942**	0.001	1.4	mg/L	7	Standard
	Cd	114	425.0	6.1	**0.0760**	0.006	8.0	ug/L	16	Standard
>	**In**	115	618093.1	1.7				ug/L	611117	Standard
	Sn	118	871.7	7.6	**0.0437**	0.009	20.3	ug/L	518	Standard
	Sb	123	474.5	27.0	**0.0866**	0.026	30.6	ug/L	127	Standard
	Ba	135	13314.9	2.5	**6.3544**	0.263	4.1	ug/L	45	Standard
	Ce	140	228.3	6.3				ug/L	298	Standard
>	**Tb**	159	1010942.5	1.3				ug/L	977942	Standard
	Ho	165	25.0	72.1				ug/L	12	Standard
	Tl	203	239.7	6.5	**0.0241**	0.002	9.5	ug/L	31	Standard
	Tl	205	181.7	22.1	**0.0230**	0.006	26.1	ug/L	20	Standard
	Pb	206	319.7	6.3	**-0.0035**	0.004	108.4	ug/L	286	Standard
	Pb	207	282.7	2.0	**0.0009**	0.002	252.3	ug/L	257	Standard
	Pb	208	1120.3	3.0	**-0.0001**	0.003	3300.1	ug/L	956	Standard
	U	238	733.7	3.0	**0.1011**	0.005	4.9	ug/L	17	Standard
>	**Bi**	209	548318.3	1.8				ug/L	557080	Standard

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Na	23	3.3	173.2	**21.6860**	37.553	173.2	mg/L	0	Standard
Mg	24	97569.9	1.9	**129.3694**	3.560	2.8	mg/L	32	Standard
K	39	4389.0	6.2	**14.6373**	1.001	6.8	mg/L	30	Standard
Ca	43	378.3	2.8	**51.9377**	2.720	5.2	mg/L	48	Standard
Fe	54	155.8	7.4	**0.0035**	0.012	336.9	mg/L	159	Standard
Fe	57	446.7	11.3	**0.8756**	0.135	15.4	mg/L	195	Standard
> **Sc-1**	45	39693.6	2.3				mg/L	39543	Standard
Cl	35	45044.9	1.9				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	18554.7	4.8				ug/L	1647	Standard
P	31	20283.6	3.2				ug/L	15231	Standard
S	34	1950.1	2.9				ug/L	1845	Standard
Sr	88	140.0	14.3				ug/L	70	Standard
C	12	253.3	26.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	47.4	35.9				mg/L	12	Standard
Ho-1	165	25.0	72.1				mg/L	12	Standard
Er	166	53.3	21.7				mg/L	20	Standard
I	127	81681.7	5.6				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		126.242	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.534	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.142	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.427	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606036206
Sample Date/Time: Tuesday, June 28, 2016 14:02:36
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	108188.3	1.9				ug/L	81760	Standard
	Be	9	25.0	69.3	**0.0094**	0.014	144.0	ug/L	17	Standard
	Al	27	23235387.8	1.2	**113.9176**	1.672	1.5	ug/L	1410	Standard
	Sc	45	42060.0	3.5				ug/L	39543	Standard
	Ti	47	152.7	7.7	**0.4364**	0.055	12.6	ug/L	39	Standard
	V	51	2674.6	4.0	**0.1700**	0.012	6.8	ug/L	1415	Standard
	Cr	52	8527.1	1.1	**0.1424**	0.031	21.5	ug/L	6946	Standard
	Cr	53	1513.4	3.0	**1.3470**	0.073	5.5	ug/L	328	Standard
	Mn	55	17845.5	5.4	**2.5461**	0.135	5.3	ug/L	823	Standard
	Co	59	1119.4	15.5	**0.1245**	0.023	18.8	ug/L	252	Standard
	Ni	60	2702.9	1.5	**1.3004**	0.041	3.1	ug/L	192	Standard
	Cu	65	753.4	4.7	**0.2972**	0.013	4.4	ug/L	141	Standard
	Zn	66	1481.1	2.0	**0.4954**	0.035	7.0	ug/L	491	Standard
>	**Ge**	72	526170.8	1.4				ug/L	515087	Standard
	As	75	291.6	5.2	**0.2943**	0.014	4.7	ug/L	20	Standard
	Se	82	87.6	19.6	**0.6269**	0.155	24.7	ug/L	15	Standard
	Se-1	77	124.0	13.8	**0.8941**	0.239	26.7	ug/L	48	Standard
>	**Ga**	71	93.3	13.5				mg/L	90	Standard
	Rb	85	1890.1	1.5				ug/L	23	Standard
	Y	89	457488.4	1.5				ug/L	448510	Standard
>	**Rh**	103	41.7	45.4				ug/L	15	Standard
	Mo	98	1289.7	27.8	**0.4294**	0.125	29.1	ug/L	11	Standard
	Ag	107	132.0	62.6	**0.0022**	0.011	517.7	ug/L	134	Standard
	Cd	111	14.8	9.0	**0.0036**	0.001	18.2	mg/L	7	Standard
	Cd	114	35.3	64.8	**0.0015**	0.004	279.2	ug/L	16	Standard
>	**In**	115	650440.2	1.2				ug/L	611117	Standard
	Sn	118	795.0	5.8	**0.0244**	0.006	26.1	ug/L	518	Standard
	Sb	123	299.9	40.5	**0.0467**	0.023	50.3	ug/L	127	Standard
	Ba	135	16583.1	1.2	**7.5223**	0.109	1.5	ug/L	45	Standard
	Ce	140	573.3	12.7				ug/L	298	Standard
>	**Tb**	159	1070413.0	0.5				ug/L	977942	Standard
	Ho	165	35.0	14.3				ug/L	12	Standard
	Tl	203	143.0	68.4	**0.0109**	0.011	100.1	ug/L	31	Standard
	Tl	205	173.3	55.8	**0.0194**	0.012	61.7	ug/L	20	Standard
	Pb	206	407.0	5.8	**0.0055**	0.005	85.2	ug/L	286	Standard
	Pb	207	361.0	20.9	**0.0099**	0.014	143.4	ug/L	257	Standard
	Pb	208	1551.4	24.3	**0.0150**	0.018	119.8	ug/L	956	Standard
	U	238	2137.8	4.4	**0.2708**	0.011	4.2	ug/L	17	Standard
>	**Bi**	209	607194.4	1.0				ug/L	557080	Standard

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Na	23	15.0	57.7	**91.7381**	54.279	59.2	mg/L	0	Standard
Mg	24	7570.2	0.6	**9.4255**	0.372	3.9	mg/L	32	Standard
K	39	228.3	12.1	**0.5833**	0.074	12.7	mg/L	30	Standard
Ca	43	403.3	9.3	**52.3767**	6.757	12.9	mg/L	48	Standard
Fe	54	189.4	6.8	**0.0240**	0.007	29.2	mg/L	159	Standard
Fe	57	486.7	15.4	**0.9208**	0.241	26.2	mg/L	195	Standard
> **Sc-1**	45	42060.0	3.5				mg/L	39543	Standard
Cl	35	35390.6	1.2				ug/L	27642	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	8392.3	5.9				ug/L	1647	Standard
P	31	21440.2	3.3				ug/L	15231	Standard
S	34	2026.8	8.3				ug/L	1845	Standard
Sr	88	143.3	29.0				ug/L	70	Standard
C	12	223.3	9.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	47.9	21.4				mg/L	12	Standard
Ho-1	165	35.0	14.3				mg/L	12	Standard
Er	166	43.3	35.3				mg/L	20	Standard
I	127	10155.1	10.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.324	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.152	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	106.435
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	108.996
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606036207
Sample Date/Time: Tuesday, June 28, 2016 14:06:02
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	107639.4	1.9				ug/L	81760	Standard
	Be	9	20.0	0.0	**0.0056**	0.000	5.4	ug/L	17	Standard
	Al	27	3476504.2	1.7	**17.1173**	0.043	0.3	ug/L	1410	Standard
	Sc	45	39367.8	2.7				ug/L	39543	Standard
	Ti	47	100.3	3.5	**0.2518**	0.007	3.0	ug/L	39	Standard
	V	51	5441.1	3.8	**0.6024**	0.020	3.4	ug/L	1415	Standard
	Cr	52	7747.6	3.6	**0.0931**	0.026	27.8	ug/L	6946	Standard
	Cr	53	1961.8	9.7	**1.9650**	0.153	7.8	ug/L	328	Standard
	Mn	55	12138.9	1.5	**1.7871**	0.034	1.9	ug/L	823	Standard
	Co	59	2054.5	1.6	**0.2711**	0.013	4.9	ug/L	252	Standard
	Ni	60	1564.4	4.1	**0.7535**	0.028	3.7	ug/L	192	Standard
	Cu	65	3547.1	3.0	**1.8404**	0.110	6.0	ug/L	141	Standard
	Zn	66	3174.7	2.0	**2.1684**	0.146	6.7	ug/L	491	Standard
>	**Ge**	72	498440.9	3.0				ug/L	515087	Standard
	As	75	2063.4	4.9	**1.9397**	0.147	7.6	ug/L	20	Standard
	Se	82	279.9	8.8	**2.3986**	0.288	12.0	ug/L	15	Standard
	Se-1	77	196.7	12.4	**1.9867**	0.408	20.5	ug/L	48	Standard
>	**Ga**	71	203.3	22.3				mg/L	90	Standard
	Rb	85	4590.7	1.6				ug/L	23	Standard
	Y	89	429873.2	1.1				ug/L	448510	Standard
>	**Rh**	103	36.7	15.7				ug/L	15	Standard
	Mo	98	411573.4	1.6	**157.7590**	2.905	1.8	ug/L	11	Standard
	Ag	107	97.0	12.7	**-0.0013**	0.002	144.7	ug/L	134	Standard
	Cd	111	-313.3	8.5	**-0.1547**	0.012	7.7	mg/L	7	Standard
	Cd	114	654.0	5.6	**0.1255**	0.007	5.6	ug/L	16	Standard
>	**In**	115	589803.8	0.9				ug/L	611117	Standard
	Sn	118	783.4	15.3	**0.0353**	0.020	57.5	ug/L	518	Standard
	Sb	123	727.4	9.3	**0.1468**	0.014	9.3	ug/L	127	Standard
	Ba	135	15565.3	1.0	**7.7872**	0.095	1.2	ug/L	45	Standard
	Ce	140	646.7	2.7				ug/L	298	Standard
>	**Tb**	159	991896.0	2.4				ug/L	977942	Standard
	Ho	165	86.7	18.5				ug/L	12	Standard
	Tl	203	276.7	3.3	**0.0282**	0.002	5.4	ug/L	31	Standard
	Tl	205	283.3	3.7	**0.0365**	0.002	4.5	ug/L	20	Standard
	Pb	206	399.0	5.4	**0.0104**	0.005	44.3	ug/L	286	Standard
	Pb	207	325.3	5.9	**0.0089**	0.004	45.8	ug/L	257	Standard
	Pb	208	1296.0	0.3	**0.0084**	0.001	12.8	ug/L	956	Standard
	U	238	1382.7	4.5	**0.1905**	0.008	4.1	ug/L	17	Standard
>	**Bi**	209	555677.7	1.4				ug/L	557080	Standard

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Na	23	3.3	86.6	**21.6985**	18.802	86.6	mg/L	0	Standard
Mg	24	201508.1	2.0	**269.4503**	5.984	2.2	mg/L	32	Standard
K	39	1843.4	2.4	**6.1200**	0.302	4.9	mg/L	30	Standard
Ca	43	86.7	16.7	**7.9004**	2.376	30.1	mg/L	48	Standard
Fe	54	134.1	6.8	**-0.0152**	0.007	45.6	mg/L	159	Standard
Fe	57	218.3	31.3	**0.1119**	0.215	192.0	mg/L	195	Standard
> **Sc-1**	45	39367.8	2.7				mg/L	39543	Standard
Cl	35	57177.0	0.5				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	35885.9	6.7				ug/L	1647	Standard
P	31	17845.5	1.4				ug/L	15231	Standard
S	34	1995.1	3.9				ug/L	1845	Standard
Sr	88	96.7	26.5				ug/L	70	Standard
C	12	250.0	28.0				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	68.0	19.9				mg/L	12	Standard
Ho-1	165	86.7	18.5				mg/L	12	Standard
Er	166	180.0	33.3				mg/L	20	Standard
I	127	352295.0	10.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		131.653	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.768	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.512
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.748
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

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Method 6020 - Summary Report

Sample ID: L1606036208
Sample Date/Time: Tuesday, June 28, 2016 14:09:14
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	113878.0	0.7				ug/L	81760	Standard
	Be	9	15.0	33.3	**0.0011**	0.004	325.9	ug/L	17	Standard
	Al	27	36051659.4	1.3	**167.9026**	1.365	0.8	ug/L	1410	Standard
	Sc	45	40123.1	2.7				ug/L	39543	Standard
	Ti	47	157.7	1.6	**0.4795**	0.006	1.3	ug/L	39	Standard
	V	51	2374.4	7.5	**0.1409**	0.028	20.1	ug/L	1415	Standard
	Cr	52	8200.6	0.9	**0.1408**	0.017	11.9	ug/L	6946	Standard
	Cr	53	1531.7	7.2	**1.4329**	0.130	9.1	ug/L	328	Standard
	Mn	55	2760.9	2.4	**0.2845**	0.009	3.3	ug/L	823	Standard
	Co	59	1114.0	4.4	**0.1299**	0.007	5.8	ug/L	252	Standard
	Ni	60	3861.2	1.0	**1.9798**	0.033	1.7	ug/L	192	Standard
	Cu	65	1286.1	5.6	**0.5974**	0.039	6.5	ug/L	141	Standard
	Zn	66	2133.2	3.4	**1.1513**	0.069	6.0	ug/L	491	Standard
>	**Ge**	72	506573.0	0.6				ug/L	515087	Standard
	As	75	124.6	44.5	**0.1528**	0.050	32.6	ug/L	20	Standard
	Se	82	87.7	7.6	**0.6552**	0.055	8.5	ug/L	15	Standard
	Se-1	77	126.7	6.6	**0.9909**	0.116	11.7	ug/L	48	Standard
>	**Ga**	71	56.7	45.3				mg/L	90	Standard
	Rb	85	275.0	18.5				ug/L	23	Standard
	Y	89	450902.0	1.5				ug/L	448510	Standard
>	**Rh**	103	46.7	32.7				ug/L	15	Standard
	Mo	98	3181.2	4.8	**1.1379**	0.054	4.7	ug/L	11	Standard
	Ag	107	86.0	6.5	**-0.0036**	0.001	24.6	ug/L	134	Standard
	Cd	111	11.8	23.2	**0.0025**	0.001	50.9	mg/L	7	Standard
	Cd	114	54.8	27.0	**0.0054**	0.003	50.7	ug/L	16	Standard
>	**In**	115	621612.8	0.6				ug/L	611117	Standard
	Sn	118	878.4	13.7	**0.0442**	0.021	46.4	ug/L	518	Standard
	Sb	123	218.7	21.6	**0.0327**	0.010	30.0	ug/L	127	Standard
	Ba	135	24511.5	2.2	**11.6480**	0.297	2.5	ug/L	45	Standard
	Ce	140	126.7	17.8				ug/L	298	Standard
>	**Tb**	159	1020349.4	1.6				ug/L	977942	Standard
	Ho	165	38.3	41.9				ug/L	12	Standard
	Tl	203	70.7	5.4	**0.0034**	0.000	14.1	ug/L	31	Standard
	Tl	205	50.0	36.1	**0.0044**	0.002	54.4	ug/L	20	Standard
	Pb	206	339.3	6.0	**-0.0025**	0.003	133.5	ug/L	286	Standard
	Pb	207	287.3	3.0	**-0.0007**	0.002	279.9	ug/L	257	Standard
	Pb	208	1133.4	0.9	**-0.0020**	0.001	40.2	ug/L	956	Standard
	U	238	2248.5	2.1	**0.3023**	0.005	1.6	ug/L	17	Standard
>	**Bi**	209	572724.5	0.5				ug/L	557080	Standard

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Na	23	11.7	65.5	**74.1428**	49.752	67.1	mg/L	0	Standard
Mg	24	18449.6	1.2	**24.1624**	0.882	3.7	mg/L	32	Standard
K	39	318.3	12.8	**0.9203**	0.151	16.4	mg/L	30	Standard
Ca	43	671.7	8.0	**95.1609**	6.901	7.3	mg/L	48	Standard
Fe	54	172.3	21.8	**0.0165**	0.033	197.4	mg/L	159	Standard
Fe	57	548.3	9.0	**1.2014**	0.184	15.3	mg/L	195	Standard
> **Sc-1**	45	40123.1	2.7				mg/L	39543	Standard
Cl	35	45031.5	1.7				ug/L	27642	Standard
Kr	83	2.3	89.2				ug/L	2	Standard
Br	81	9216.1	3.8				ug/L	1647	Standard
P	31	22331.4	1.4				ug/L	15231	Standard
S	34	2088.5	6.2				ug/L	1845	Standard
Sr	88	246.7	15.5				ug/L	70	Standard
C	12	346.7	6.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	37.4	4.1				mg/L	12	Standard
Ho-1	165	38.3	41.9				mg/L	12	Standard
Er	166	53.3	60.3				mg/L	20	Standard
I	127	16496.5	38.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		139.283	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.347	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.718
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.808
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606036209
Sample Date/Time: Tuesday, June 28, 2016 14:12:25
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	107575.7	2.1				ug/L	81760	Standard
	Be	9	15.0	33.3	**0.0018**	0.004	223.3	ug/L	17	Standard
	Al	27	24368759.8	1.3	**120.1696**	2.653	2.2	ug/L	1410	Standard
	Sc	45	40144.8	3.7				ug/L	39543	Standard
	Ti	47	175.7	9.7	**0.5394**	0.064	11.9	ug/L	39	Standard
	V	51	1717.1	6.1	**0.0398**	0.013	33.2	ug/L	1415	Standard
	Cr	52	8804.6	0.4	**0.2048**	0.007	3.4	ug/L	6946	Standard
	Cr	53	1576.7	7.9	**1.4512**	0.154	10.6	ug/L	328	Standard
	Mn	55	1083613.1	0.9	**166.6059**	0.333	0.2	ug/L	823	Standard
	Co	59	2591.6	2.6	**0.3366**	0.007	2.1	ug/L	252	Standard
	Ni	60	4161.2	1.9	**2.0993**	0.030	1.4	ug/L	192	Standard
	Cu	65	1088.7	1.4	**0.4808**	0.011	2.3	ug/L	141	Standard
	Zn	66	3226.7	2.3	**2.1094**	0.068	3.2	ug/L	491	Standard
>	**Ge**	72	516304.1	0.8				ug/L	515087	Standard
	As	75	854.1	2.3	**0.7983**	0.019	2.4	ug/L	20	Standard
	Se	82	52.5	11.5	**0.3355**	0.056	16.6	ug/L	15	Standard
	Se-1	77	105.7	6.3	**0.6809**	0.097	14.3	ug/L	48	Standard
>	**Ga**	71	153.3	30.3				mg/L	90	Standard
	Rb	85	15286.0	2.4				ug/L	23	Standard
	Y	89	449805.6	1.9				ug/L	448510	Standard
>	**Rh**	103	36.7	43.8				ug/L	15	Standard
	Mo	98	1903.1	2.7	**0.6696**	0.018	2.6	ug/L	11	Standard
	Ag	107	88.0	6.3	**-0.0034**	0.001	30.6	ug/L	134	Standard
	Cd	111	24.4	20.6	**0.0083**	0.002	29.8	mg/L	7	Standard
	Cd	114	75.3	47.3	**0.0092**	0.007	71.3	ug/L	16	Standard
>	**In**	115	624865.1	1.8				ug/L	611117	Standard
	Sn	118	858.4	10.9	**0.0403**	0.018	44.8	ug/L	518	Standard
	Sb	123	598.6	8.7	**0.1114**	0.013	11.4	ug/L	127	Standard
	Ba	135	79235.0	1.1	**37.5150**	0.511	1.4	ug/L	45	Standard
	Ce	140	1043.4	5.0				ug/L	298	Standard
>	**Tb**	159	1006271.6	1.0				ug/L	977942	Standard
	Ho	165	31.7	55.5				ug/L	12	Standard
	Tl	203	94.7	10.4	**0.0060**	0.001	17.2	ug/L	31	Standard
	Tl	205	103.3	26.6	**0.0113**	0.003	31.1	ug/L	20	Standard
	Pb	206	1317.1	2.4	**0.1704**	0.008	4.5	ug/L	286	Standard
	Pb	207	1098.7	2.3	**0.1583**	0.006	3.8	ug/L	257	Standard
	Pb	208	4505.3	1.8	**0.1689**	0.006	3.3	ug/L	956	Standard
	U	238	1688.4	2.2	**0.2232**	0.003	1.5	ug/L	17	Standard
>	**Bi**	209	580367.6	0.9				ug/L	557080	Standard

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Na	23	5.0	100.0	**32.4402**	32.912	101.5	mg/L	0	Standard
Mg	24	8242.2	2.3	**10.7549**	0.236	2.2	mg/L	32	Standard
K	39	375.0	23.7	**1.1102**	0.318	28.6	mg/L	30	Standard
Ca	43	428.3	18.6	**58.5393**	9.751	16.7	mg/L	48	Standard
Fe	54	1288.6	9.8	**1.0145**	0.141	13.9	mg/L	159	Standard
Fe	57	713.4	8.9	**1.7461**	0.160	9.2	mg/L	195	Standard
> **Sc-1**	45	40144.8	3.7				mg/L	39543	Standard
Cl	35	37853.9	1.3				ug/L	27642	Standard
Kr	83	2.3	173.2				ug/L	2	Standard
Br	81	8949.3	3.3				ug/L	1647	Standard
P	31	22830.5	2.4				ug/L	15231	Standard
S	34	2348.5	6.0				ug/L	1845	Standard
Sr	88	131.7	18.7				ug/L	70	Standard
C	12	320.0	23.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	57.1	19.2				mg/L	12	Standard
Ho-1	165	31.7	55.5				mg/L	12	Standard
Er	166	60.0	44.1				mg/L	20	Standard
I	127	12798.7	0.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		131.575	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.236	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	102.250
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	104.180
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606036210
Sample Date/Time: Tuesday, June 28, 2016 14:15:37
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	112279.5	1.4				ug/L	81760	Standard
	Be	9	23.3	32.7	**0.0074**	0.006	75.4	ug/L	17	Standard
	Al	27	11519588.8	0.5	**54.4098**	0.542	1.0	ug/L	1410	Standard
	Sc	45	38345.1	1.2				ug/L	39543	Standard
	Ti	47	94.7	7.9	**0.2480**	0.026	10.6	ug/L	39	Standard
	V	51	2217.7	3.9	**0.1400**	0.014	10.3	ug/L	1415	Standard
	Cr	52	7580.6	0.1	**0.1258**	0.020	16.0	ug/L	6946	Standard
	Cr	53	2436.9	5.1	**2.6754**	0.201	7.5	ug/L	328	Standard
	Mn	55	75388.8	2.2	**12.4826**	0.333	2.7	ug/L	823	Standard
	Co	59	4144.2	3.9	**0.6094**	0.028	4.6	ug/L	252	Standard
	Ni	60	4832.4	1.6	**2.6820**	0.049	1.8	ug/L	192	Standard
	Cu	65	4625.4	2.6	**2.5532**	0.075	2.9	ug/L	141	Standard
	Zn	66	4203.9	2.1	**3.3383**	0.098	2.9	ug/L	491	Standard
>	**Ge**	72	474293.4	1.6				ug/L	515087	Standard
	As	75	1073.0	2.0	**1.0772**	0.038	3.5	ug/L	20	Standard
	Se	82	351.4	3.1	**3.1960**	0.130	4.1	ug/L	15	Standard
	Se-1	77	210.7	7.1	**2.3175**	0.198	8.5	ug/L	48	Standard
>	**Ga**	71	73.3	33.6				mg/L	90	Standard
	Rb	85	56526.9	1.1				ug/L	23	Standard
	Y	89	421082.0	1.6				ug/L	448510	Standard
>	**Rh**	103	96.7	14.9				ug/L	15	Standard
	Mo	98	257904.5	1.0	**100.5156**	1.205	1.2	ug/L	11	Standard
	Ag	107	79.7	12.8	**-0.0037**	0.002	45.1	ug/L	134	Standard
	Cd	111	-189.4	16.3	**-0.0962**	0.015	15.7	mg/L	7	Standard
	Cd	114	358.5	16.9	**0.0677**	0.012	17.5	ug/L	16	Standard
>	**In**	115	580013.8	0.6				ug/L	611117	Standard
	Sn	118	865.0	5.3	**0.0522**	0.009	16.9	ug/L	518	Standard
	Sb	123	234.3	5.5	**0.0395**	0.003	7.3	ug/L	127	Standard
	Ba	135	12298.0	0.4	**6.2513**	0.035	0.6	ug/L	45	Standard
	Ce	140	386.7	8.8				ug/L	298	Standard
>	**Tb**	159	979000.4	0.2				ug/L	977942	Standard
	Ho	165	86.7	26.6				ug/L	12	Standard
	Tl	203	556.3	8.3	**0.0635**	0.006	10.1	ug/L	31	Standard
	Tl	205	491.7	8.6	**0.0672**	0.007	10.1	ug/L	20	Standard
	Pb	206	339.7	4.4	**0.0013**	0.002	176.0	ug/L	286	Standard
	Pb	207	303.3	2.7	**0.0062**	0.001	17.9	ug/L	257	Standard
	Pb	208	1090.3	1.9	**-0.0007**	0.002	299.6	ug/L	956	Standard
	U	238	117.3	12.8	**0.0140**	0.002	17.0	ug/L	17	Standard
>	**Bi**	209	539461.3	1.8				ug/L	557080	Standard

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Na	23	8.3	34.6	**55.0323**	18.599	33.8	mg/L	0	Standard
Mg	24	255159.1	1.2	**350.2417**	6.027	1.7	mg/L	32	Standard
K	39	5237.6	3.5	**18.1047**	0.448	2.5	mg/L	30	Standard
Ca	43	815.0	11.2	**122.4307**	15.864	13.0	mg/L	48	Standard
Fe	54	150.7	21.1	**0.0038**	0.031	813.1	mg/L	159	Standard
Fe	57	818.4	11.3	**2.2227**	0.299	13.5	mg/L	195	Standard
> **Sc-1**	45	38345.1	1.2				mg/L	39543	Standard
Cl	35	84049.9	1.6				ug/L	27642	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	57144.3	3.2				ug/L	1647	Standard
P	31	18494.6	4.2				ug/L	15231	Standard
S	34	1918.5	8.3				ug/L	1845	Standard
Sr	88	445.0	8.9				ug/L	70	Standard
C	12	253.3	16.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	64.7	80.3				mg/L	12	Standard
Ho-1	165	86.7	26.6				mg/L	12	Standard
Er	166	110.0	9.1				mg/L	20	Standard
I	127	999438.0	9.5				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		137.328	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		92.080	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.911
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.837
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 14:18:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	108145.2	5.1				ug/L	81760	Standard
	Be	9	64242.8	4.5	**48.9113**	0.992	2.0	ug/L	17	Standard
	Al	27	8304059.2	3.3	**40.7429**	1.039	2.5	ug/L	1410	Standard
	Sc	45	37765.4	4.0				ug/L	39543	Standard
	Ti	47	23471.8	2.0	**97.1021**	1.269	1.3	ug/L	39	Standard
	V	51	349107.5	0.6	**51.5604**	0.772	1.5	ug/L	1415	Standard
	Cr	52	335198.9	1.2	**48.5745**	0.974	2.0	ug/L	6946	Standard
	Cr	53	41869.4	1.3	**48.8267**	1.454	3.0	ug/L	328	Standard
	Mn	55	314993.6	1.3	**49.9295**	0.954	1.9	ug/L	823	Standard
	Co	59	375345.6	0.1	**55.0339**	1.228	2.2	ug/L	252	Standard
	Ni	60	88766.6	0.5	**48.4746**	0.838	1.7	ug/L	192	Standard
	Cu	65	90675.9	1.2	**49.0916**	0.682	1.4	ug/L	141	Standard
	Zn	66	53067.8	0.6	**49.0759**	0.955	1.9	ug/L	491	Standard
>	**Ge**	72	499870.2	2.1				ug/L	515087	Standard
	As	75	55072.1	0.8	**50.5344**	1.449	2.9	ug/L	20	Standard
	Se	82	6022.1	1.2	**53.7900**	0.803	1.5	ug/L	15	Standard
	Se-1	77	3835.5	2.7	**51.7480**	1.296	2.5	ug/L	48	Standard
>	**Ga**	71	68.3	34.6				mg/L	90	Standard
	Rb	85	878.4	4.0				ug/L	23	Standard
	Y	89	444195.9	1.0				ug/L	448510	Standard
>	**Rh**	103	36.7	7.9				ug/L	15	Standard
	Mo	98	271765.3	0.4	**101.0586**	1.139	1.1	ug/L	11	Standard
	Ag	107	335937.1	0.8	**50.2935**	0.228	0.5	ug/L	134	Standard
	Cd	111	104881.4	1.9	**49.3201**	0.733	1.5	mg/L	7	Standard
	Cd	114	258223.7	2.1	**49.9610**	1.276	2.6	ug/L	16	Standard
>	**In**	115	607920.9	0.8				ug/L	611117	Standard
	Sn	118	297159.7	1.8	**50.4160**	0.583	1.2	ug/L	518	Standard
	Sb	123	233566.6	0.5	**49.7525**	0.427	0.9	ug/L	127	Standard
	Ba	135	100029.2	1.5	**48.6806**	0.509	1.0	ug/L	45	Standard
	Ce	140	56.7	27.0				ug/L	298	Standard
>	**Tb**	159	990459.3	1.9				ug/L	977942	Standard
	Ho	165	13.3	21.7				ug/L	12	Standard
	Tl	203	438180.8	0.9	**49.9571**	0.368	0.7	ug/L	31	Standard
	Tl	205	400912.4	1.6	**52.6337**	0.214	0.4	ug/L	20	Standard
	Pb	206	285968.6	0.8	**50.7733**	0.808	1.6	ug/L	286	Standard
	Pb	207	258378.5	0.4	**50.8616**	0.645	1.3	ug/L	257	Standard
	Pb	208	1010283.1	0.5	**51.4021**	0.498	1.0	ug/L	956	Standard
	U	238	389330.8	1.6	**52.1963**	0.349	0.7	ug/L	17	Standard
>	**Bi**	209	579902.5	1.4				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4220.6	3.3	**5.8326**	0.328	5.6	mg/L	32	Standard
K	39	1343.4	3.1	**4.6154**	0.216	4.7	mg/L	30	Standard
Ca	43	66.7	37.7	**5.1699**	3.623	70.1	mg/L	48	Standard
Fe	54	5699.2	5.0	**5.2644**	0.205	3.9	mg/L	159	Standard
Fe	57	1620.1	3.2	**5.1052**	0.186	3.6	mg/L	195	Standard
> **Sc-1**	45	37765.4	4.0				mg/L	39543	Standard
Cl	35	31900.9	3.3				ug/L	27642	Standard
Kr	83	2.3	89.2				ug/L	2	Standard
Br	81	2500.2	16.5				ug/L	1647	Standard
P	31	18272.7	3.1				ug/L	15231	Standard
S	34	2018.5	1.5				ug/L	1845	Standard
Sr	88	43.3	24.0				ug/L	70	Standard
C	12	196.7	21.2				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.4	50.3				mg/L	12	Standard
Ho-1	165	13.3	21.7				mg/L	12	Standard
Er	166	20.0	86.6				mg/L	20	Standard
I	127	32500.9	63.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	97.823		
Al	27	81.486		
Sc	45			
Ti	47	97.102		
V	51	103.121		
Cr	52	97.149		
Cr	53			
Mn	55	99.859		
Co	59	110.068		
Ni	60	96.949		
Cu	65	98.183		
Zn	66	98.152		
> Ge	72		97.046	
As	75	101.069		
Se	82	107.580		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.059		
Ag	107	100.587		
Cd	111	98.640		
Cd	114			
In	115		99.477	
Sn	118	100.832		
Sb	123	99.505		
Ba	135	97.361		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.914		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.804		
U	238	104.393		
Bi	209		104.097	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	
QC Std 6	Co	59	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 14:22:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	101364.8	2.9				ug/L	81760	Standard
	Be	9	38.3	49.4	**0.0216**	0.016	74.7	ug/L	17	Standard
	Al	27	15489.3	94.8	**0.0675**	0.079	117.4	ug/L	1410	Standard
	Sc	45	38064.4	0.9				ug/L	39543	Standard
	Ti	47	37.3	29.4	**-0.0111**	0.045	403.8	ug/L	39	Standard
	V	51	1161.3	1.6	**-0.0351**	0.002	6.4	ug/L	1415	Standard
	Cr	52	5982.8	2.5	**-0.1747**	0.020	11.4	ug/L	6946	Standard
	Cr	53	318.3	7.1	**0.0308**	0.025	81.8	ug/L	328	Standard
	Mn	55	894.7	9.5	**-0.0068**	0.013	197.2	ug/L	823	Standard
	Co	59	241.0	14.9	**0.0039**	0.005	138.8	ug/L	252	Standard
	Ni	60	266.0	10.4	**0.0400**	0.015	37.4	ug/L	192	Standard
	Cu	65	200.0	8.9	**0.0172**	0.009	54.5	ug/L	141	Standard
	Zn	66	430.0	7.9	**-0.4249**	0.030	7.1	ug/L	491	Standard
>	**Ge**	72	501700.0	0.4				ug/L	515087	Standard
	As	75	1.5	1379.3	**0.0417**	0.019	44.5	ug/L	20	Standard
	Se	82	27.3	19.7	**0.1242**	0.049	39.3	ug/L	15	Standard
	Se-1	77	54.3	18.4	**0.0219**	0.139	635.7	ug/L	48	Standard
>	**Ga**	71	63.3	9.1				mg/L	90	Standard
	Rb	85	26.7	28.6				ug/L	23	Standard
	Y	89	434979.7	1.5				ug/L	448510	Standard
>	**Rh**	103	11.7	89.2				ug/L	15	Standard
	Mo	98	412.1	20.1	**0.1325**	0.026	19.5	ug/L	11	Standard
	Ag	107	133.7	24.7	**0.0036**	0.005	131.9	ug/L	134	Standard
	Cd	111	17.6	36.9	**0.0053**	0.003	55.6	mg/L	7	Standard
	Cd	114	37.0	22.5	**0.0022**	0.002	81.0	ug/L	16	Standard
>	**In**	115	612643.0	3.0				ug/L	611117	Standard
	Sn	118	796.7	19.5	**0.0328**	0.028	85.4	ug/L	518	Standard
	Sb	123	465.9	23.7	**0.0860**	0.025	29.2	ug/L	127	Standard
	Ba	135	55.7	25.4	**0.0018**	0.007	380.6	ug/L	45	Standard
	Ce	140	23.3	53.9				ug/L	298	Standard
>	**Tb**	159	991657.2	2.1				ug/L	977942	Standard
	Ho	165	6.7	114.6				ug/L	12	Standard
	Tl	203	81.3	30.4	**0.0043**	0.003	63.5	ug/L	31	Standard
	Tl	205	65.0	13.3	**0.0061**	0.001	17.5	ug/L	20	Standard
	Pb	206	313.0	2.4	**-0.0091**	0.002	17.1	ug/L	286	Standard
	Pb	207	268.3	2.3	**-0.0063**	0.001	16.7	ug/L	257	Standard
	Pb	208	1057.3	6.3	**-0.0078**	0.003	38.5	ug/L	956	Standard
	U	238	61.3	40.7	**0.0051**	0.003	63.9	ug/L	17	Standard
>	**Bi**	209	592397.8	0.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	95.0	63.8	**0.0743**	0.084	112.6	mg/L	32	Standard
K	39	16.7	17.3	**-0.0829**	0.011	12.9	mg/L	30	Standard
Ca	43	31.7	36.5	**-0.3389**	1.874	552.9	mg/L	48	Standard
Fe	54	110.8	32.6	**-0.0331**	0.033	100.8	mg/L	159	Standard
Fe	57	168.3	28.5	**-0.0341**	0.169	494.5	mg/L	195	Standard
> **Sc-1**	45	38064.4	0.9				mg/L	39543	Standard
Cl	35	31593.6	0.5				ug/L	27642	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	1856.8	9.2				ug/L	1647	Standard
P	31	17672.0	1.1				ug/L	15231	Standard
S	34	2055.1	6.3				ug/L	1845	Standard
Sr	88	56.7	18.4				ug/L	70	Standard
C	12	170.0	20.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.3	173.2				mg/L	12	Standard
Ho-1	165	6.7	114.6				mg/L	12	Standard
Er	166	6.7	173.2				mg/L	20	Standard
I	127	7793.7	20.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.401	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.250
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.340
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606036211
Sample Date/Time: Tuesday, June 28, 2016 14:25:14
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	100807.6	1.2				ug/L	81760	Standard
	Be	9	76.7	13.6	**0.0528**	0.008	15.0	ug/L	17	Standard
	Al	27	23829161.3	1.5	**125.3655**	0.841	0.7	ug/L	1410	Standard
	Sc	45	39760.5	3.7				ug/L	39543	Standard
	Ti	47	180.7	0.8	**0.5860**	0.014	2.4	ug/L	39	Standard
	V	51	2583.8	5.2	**0.1775**	0.016	9.1	ug/L	1415	Standard
	Cr	52	8684.5	0.7	**0.2325**	0.005	2.3	ug/L	6946	Standard
	Cr	53	1498.4	3.7	**1.4227**	0.048	3.4	ug/L	328	Standard
	Mn	55	44479.2	1.1	**6.9441**	0.116	1.7	ug/L	823	Standard
	Co	59	1598.1	1.9	**0.2038**	0.006	2.9	ug/L	252	Standard
	Ni	60	3161.3	2.5	**1.6303**	0.047	2.9	ug/L	192	Standard
	Cu	65	697.7	3.7	**0.2888**	0.018	6.1	ug/L	141	Standard
	Zn	66	2205.8	4.6	**1.2527**	0.096	7.7	ug/L	491	Standard
>	**Ge**	72	498311.0	1.0				ug/L	515087	Standard
	As	75	175.3	10.2	**0.2014**	0.015	7.3	ug/L	20	Standard
	Se	82	90.2	6.0	**0.6901**	0.041	6.0	ug/L	15	Standard
	Se-1	77	104.3	15.6	**0.7141**	0.236	33.0	ug/L	48	Standard
>	**Ga**	71	91.7	19.2				mg/L	90	Standard
	Rb	85	3617.1	1.0				ug/L	23	Standard
	Y	89	438807.3	1.1				ug/L	448510	Standard
>	**Rh**	103	23.3	24.7				ug/L	15	Standard
	Mo	98	5340.3	1.5	**1.9620**	0.035	1.8	ug/L	11	Standard
	Ag	107	313.7	8.5	**0.0307**	0.004	14.3	ug/L	134	Standard
	Cd	111	102.5	10.0	**0.0451**	0.004	9.9	mg/L	7	Standard
	Cd	114	269.5	9.6	**0.0471**	0.005	11.0	ug/L	16	Standard
>	**In**	115	609490.3	1.0				ug/L	611117	Standard
	Sn	118	888.4	6.3	**0.0488**	0.011	22.0	ug/L	518	Standard
	Sb	123	739.4	5.4	**0.1443**	0.009	6.4	ug/L	127	Standard
	Ba	135	23651.8	1.3	**11.4620**	0.117	1.0	ug/L	45	Standard
	Ce	140	2515.2	8.7				ug/L	298	Standard
>	**Tb**	159	994391.3	1.1				ug/L	977942	Standard
	Ho	165	61.7	16.9				ug/L	12	Standard
	Tl	203	495.7	2.3	**0.0524**	0.001	2.2	ug/L	31	Standard
	Tl	205	451.7	6.1	**0.0577**	0.003	5.9	ug/L	20	Standard
	Pb	206	782.0	4.2	**0.0770**	0.005	7.0	ug/L	286	Standard
	Pb	207	638.7	5.2	**0.0693**	0.006	8.1	ug/L	257	Standard
	Pb	208	2612.4	2.6	**0.0742**	0.003	3.5	ug/L	956	Standard
	U	238	3078.0	1.8	**0.4146**	0.006	1.5	ug/L	17	Standard
>	**Bi**	209	573149.3	0.8				ug/L	557080	Standard

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Na	23	10.0	50.0	**63.1287**	29.742	47.1	mg/L	0	Standard
Mg	24	8182.2	4.0	**10.7839**	0.556	5.2	mg/L	32	Standard
K	39	235.0	11.8	**0.6477**	0.082	12.7	mg/L	30	Standard
Ca	43	488.3	8.8	**68.4110**	5.631	8.2	mg/L	48	Standard
Fe	54	190.4	22.3	**0.0341**	0.036	104.7	mg/L	159	Standard
Fe	57	451.7	3.2	**0.8921**	0.019	2.1	mg/L	195	Standard
> **Sc-1**	45	39760.5	3.7				mg/L	39543	Standard
Cl	35	36572.1	2.1				ug/L	27642	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	15501.3	5.9				ug/L	1647	Standard
P	31	22299.7	2.1				ug/L	15231	Standard
S	34	2183.5	4.1				ug/L	1845	Standard
Sr	88	141.7	11.3				ug/L	70	Standard
C	12	286.7	23.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	128.1	22.2				mg/L	12	Standard
Ho-1	165	61.7	16.9				mg/L	12	Standard
Er	166	110.0	63.6				mg/L	20	Standard
I	127	9539.7	2.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.297	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.743	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.734
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.884
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606036212
Sample Date/Time: Tuesday, June 28, 2016 14:28:25
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	101556.0	2.3				ug/L	81760	Standard
	Be	9	16.7	34.6	**0.0037**	0.005	121.7	ug/L	17	Standard
	Al	27	17765744.4	2.3	**92.8094**	3.109	3.3	ug/L	1410	Standard
	Sc	45	39087.0	2.2				ug/L	39543	Standard
	Ti	47	247.0	6.3	**0.8686**	0.057	6.6	ug/L	39	Standard
	V	51	2382.1	6.3	**0.1501**	0.021	13.9	ug/L	1415	Standard
	Cr	52	8300.6	1.1	**0.1842**	0.008	4.2	ug/L	6946	Standard
	Cr	53	1501.7	3.0	**1.4394**	0.046	3.2	ug/L	328	Standard
	Mn	55	1258376.0	0.7	**201.9190**	0.817	0.4	ug/L	823	Standard
	Co	59	3356.7	1.5	**0.4660**	0.012	2.5	ug/L	252	Standard
	Ni	60	3550.4	0.9	**1.8576**	0.023	1.3	ug/L	192	Standard
	Cu	65	1089.7	4.5	**0.5061**	0.022	4.4	ug/L	141	Standard
	Zn	66	2532.2	4.9	**1.5769**	0.099	6.3	ug/L	491	Standard
>	**Ge**	72	494799.1	0.8				ug/L	515087	Standard
	As	75	371.2	4.5	**0.3840**	0.014	3.7	ug/L	20	Standard
	Se	82	96.6	14.9	**0.7542**	0.127	16.9	ug/L	15	Standard
	Se-1	77	117.3	12.8	**0.9020**	0.200	22.2	ug/L	48	Standard
>	**Ga**	71	161.7	20.6				mg/L	90	Standard
	Rb	85	5996.2	5.2				ug/L	23	Standard
	Y	89	446186.9	1.4				ug/L	448510	Standard
>	**Rh**	103	35.0	37.8				ug/L	15	Standard
	Mo	98	1982.4	1.7	**0.7175**	0.021	3.0	ug/L	11	Standard
	Ag	107	87.7	6.7	**-0.0031**	0.001	30.7	ug/L	134	Standard
	Cd	111	81.3	17.6	**0.0353**	0.007	20.5	mg/L	7	Standard
	Cd	114	230.7	12.0	**0.0397**	0.006	14.9	ug/L	16	Standard
>	**In**	115	608659.5	1.3				ug/L	611117	Standard
	Sn	118	906.7	3.5	**0.0521**	0.007	12.9	ug/L	518	Standard
	Sb	123	394.5	7.6	**0.0711**	0.006	8.6	ug/L	127	Standard
	Ba	135	51224.8	1.3	**24.8890**	0.366	1.5	ug/L	45	Standard
	Ce	140	3013.6	4.4				ug/L	298	Standard
>	**Tb**	159	974496.5	1.8				ug/L	977942	Standard
	Ho	165	80.0	16.5				ug/L	12	Standard
	Tl	203	128.3	8.3	**0.0104**	0.001	10.4	ug/L	31	Standard
	Tl	205	91.7	22.0	**0.0102**	0.003	28.0	ug/L	20	Standard
	Pb	206	755.4	5.1	**0.0757**	0.008	10.8	ug/L	286	Standard
	Pb	207	644.0	3.0	**0.0736**	0.005	7.3	ug/L	257	Standard
	Pb	208	2468.4	2.8	**0.0700**	0.005	7.5	ug/L	956	Standard
	U	238	1502.1	3.5	**0.2059**	0.006	2.8	ug/L	17	Standard
>	**Bi**	209	559159.1	1.2				ug/L	557080	Standard

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Na	23	5.0	0.0	**32.4897**	0.713	2.2	mg/L	0	Standard
Mg	24	34367.3	2.9	**46.2225**	0.714	1.5	mg/L	32	Standard
K	39	518.3	10.6	**1.6321**	0.206	12.7	mg/L	30	Standard
Ca	43	333.3	3.5	**45.8704**	1.237	2.7	mg/L	48	Standard
Fe	54	313.8	12.6	**0.1508**	0.042	28.0	mg/L	159	Standard
Fe	57	493.3	3.3	**1.0616**	0.089	8.4	mg/L	195	Standard
> **Sc-1**	45	39087.0	2.2				mg/L	39543	Standard
Cl	35	40128.4	3.1				ug/L	27642	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	13105.7	7.2				ug/L	1647	Standard
P	31	21068.0	1.2				ug/L	15231	Standard
S	34	2031.8	3.8				ug/L	1845	Standard
Sr	88	195.0	14.3				ug/L	70	Standard
C	12	220.0	19.8				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	113.5	27.0				mg/L	12	Standard
Ho-1	165	80.0	16.5				mg/L	12	Standard
Er	166	66.7	48.2				mg/L	20	Standard
I	127	14735.5	4.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.212	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.061	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.598
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.373
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 14:31:38
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	96993.2	4.5				ug/L	81760	Standard
	Be	9	59018.4	6.5	**50.0965**	2.769	5.5	ug/L	17	Standard
	Al	27	7977258.4	4.2	**43.6214**	1.029	2.4	ug/L	1410	Standard
	Sc	45	38238.2	1.6				ug/L	39543	Standard
	Ti	47	23612.4	4.0	**98.7594**	3.955	4.0	ug/L	39	Standard
	V	51	340072.0	1.7	**50.7725**	1.247	2.5	ug/L	1415	Standard
	Cr	52	338200.8	3.5	**49.5590**	1.660	3.3	ug/L	6946	Standard
	Cr	53	42016.5	3.2	**49.5286**	1.703	3.4	ug/L	328	Standard
	Mn	55	307360.3	1.5	**49.2454**	0.735	1.5	ug/L	823	Standard
	Co	59	358545.3	2.7	**53.1356**	1.497	2.8	ug/L	252	Standard
	Ni	60	89705.8	2.1	**49.5206**	1.132	2.3	ug/L	192	Standard
	Cu	65	91128.3	2.1	**49.8745**	1.003	2.0	ug/L	141	Standard
	Zn	66	53559.8	1.4	**50.0843**	0.931	1.9	ug/L	491	Standard
>	Ge	72	494423.7	1.0				ug/L	515087	Standard
	As	75	53994.0	0.9	**50.0733**	0.496	1.0	ug/L	20	Standard
	Se	82	5715.9	0.2	**51.6065**	0.476	0.9	ug/L	15	Standard
	Se-1	77	3736.8	1.4	**50.9602**	0.952	1.9	ug/L	48	Standard
>	Ga	71	70.0	28.6				mg/L	90	Standard
	Rb	85	770.0	3.6				ug/L	23	Standard
	Y	89	445528.9	0.6				ug/L	448510	Standard
>	Rh	103	23.3	44.6				ug/L	15	Standard
	Mo	98	264652.3	1.1	**96.1672**	0.791	0.8	ug/L	11	Standard
	Ag	107	331013.3	2.8	**48.4244**	1.155	2.4	ug/L	134	Standard
	Cd	111	104542.0	2.3	**48.0434**	1.120	2.3	mg/L	7	Standard
	Cd	114	255433.5	4.1	**48.2912**	1.921	4.0	ug/L	16	Standard
>	In	115	622075.2	0.5				ug/L	611117	Standard
	Sn	118	295472.2	1.9	**48.9864**	0.743	1.5	ug/L	518	Standard
	Sb	123	230757.9	1.7	**48.0319**	0.618	1.3	ug/L	127	Standard
	Ba	135	99769.8	2.2	**47.4498**	0.988	2.1	ug/L	45	Standard
	Ce	140	73.3	7.9				ug/L	298	Standard
>	Tb	159	1000112.3	1.5				ug/L	977942	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	427237.6	2.4	**49.0359**	1.247	2.5	ug/L	31	Standard
	Tl	205	388094.9	2.7	**51.3011**	1.717	3.3	ug/L	20	Standard
	Pb	206	274003.7	2.0	**48.9721**	1.261	2.6	ug/L	286	Standard
	Pb	207	249924.4	1.5	**49.5263**	1.133	2.3	ug/L	257	Standard
	Pb	208	988217.1	0.7	**50.6156**	0.799	1.6	ug/L	956	Standard
	U	238	380024.3	2.2	**51.3005**	1.621	3.2	ug/L	17	Standard
>	Bi	209	576058.0	1.3				ug/L	557080	Standard

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Na	23	5.0	100.0	**33.2699**	32.995	99.2	mg/L	0	Standard
Mg	24	4203.9	5.4	**5.7315**	0.340	5.9	mg/L	32	Standard
K	39	1220.0	6.7	**4.1203**	0.250	6.1	mg/L	30	Standard
Ca	43	103.3	14.8	**10.9126**	2.675	24.5	mg/L	48	Standard
Fe	54	5915.4	3.1	**5.3996**	0.173	3.2	mg/L	159	Standard
Fe	57	1661.8	2.4	**5.1766**	0.085	1.6	mg/L	195	Standard
> **Sc-1**	45	38238.2	1.6				mg/L	39543	Standard
Cl	35	33728.9	2.6				ug/L	27642	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	1893.5	8.5				ug/L	1647	Standard
P	31	18936.8	1.0				ug/L	15231	Standard
S	34	2451.9	4.7				ug/L	1845	Standard
Sr	88	73.3	14.2				ug/L	70	Standard
C	12	160.0	43.3				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.2	6.0				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	16.7	69.3				mg/L	20	Standard
I	127	3007.0	16.4				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	100.193		
	Al	27	87.243		
	Sc	45			
	Ti	47	98.759		
	V	51	101.545		
	Cr	52	99.118		
	Cr	53			
	Mn	55	98.491		
	Co	59	106.271		
	Ni	60	99.041		
	Cu	65	99.749		
	Zn	66	100.169		
>	Ge	72		95.988	
	As	75	100.147		
	Se	82	103.213		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	96.167		
Ag	107	96.849		
Cd	111	96.087		
Cd	114			
In	115			101.793
Sn	118	97.973		
Sb	123	96.064		
Ba	135	94.900		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.072		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.231		
U	238	102.601		
Bi	209			103.407
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 14:34:50
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92870.5	2.0				ug/L	81760	Standard
	Be	9	15.0	66.7	**0.0036**	0.009	245.7	ug/L	17	Standard
	Al	27	2743.6	21.7	**0.0013**	0.004	284.3	ug/L	1410	Standard
	Sc	45	38460.4	1.3				ug/L	39543	Standard
	Ti	47	30.7	8.2	**-0.0403**	0.010	23.8	ug/L	39	Standard
	V	51	1134.9	2.6	**-0.0414**	0.005	11.0	ug/L	1415	Standard
	Cr	52	5878.1	2.2	**-0.2023**	0.026	12.8	ug/L	6946	Standard
	Cr	53	310.0	1.6	**0.0160**	0.005	29.1	ug/L	328	Standard
	Mn	55	709.4	9.1	**-0.0377**	0.010	26.9	ug/L	823	Standard
	Co	59	233.7	1.1	**0.0023**	0.001	24.5	ug/L	252	Standard
	Ni	60	211.0	9.6	**0.0084**	0.011	126.5	ug/L	192	Standard
	Cu	65	155.3	8.6	**-0.0081**	0.008	96.4	ug/L	141	Standard
	Zn	66	394.0	4.1	**-0.4638**	0.014	3.1	ug/L	491	Standard
>	**Ge**	72	508932.6	0.9				ug/L	515087	Standard
	As	75	-34.1	13.4	**0.0096**	0.004	45.1	ug/L	20	Standard
	Se	82	19.4	20.9	**0.0515**	0.036	69.8	ug/L	15	Standard
	Se-1	77	46.7	12.2	**-0.0918**	0.077	84.0	ug/L	48	Standard
>	**Ga**	71	66.7	8.7				mg/L	90	Standard
	Rb	85	15.0	33.3				ug/L	23	Standard
	Y	89	445570.9	1.5				ug/L	448510	Standard
>	**Rh**	103	15.0	88.2				ug/L	15	Standard
	Mo	98	287.3	16.9	**0.0864**	0.017	20.0	ug/L	11	Standard
	Ag	107	124.0	22.6	**0.0021**	0.004	200.7	ug/L	134	Standard
	Cd	111	14.8	9.5	**0.0040**	0.001	16.6	mg/L	7	Standard
	Cd	114	48.0	37.7	**0.0043**	0.004	82.8	ug/L	16	Standard
>	**In**	115	615541.5	0.9				ug/L	611117	Standard
	Sn	118	883.4	22.9	**0.0465**	0.035	74.9	ug/L	518	Standard
	Sb	123	479.5	25.7	**0.0882**	0.027	30.1	ug/L	127	Standard
	Ba	135	35.7	10.6	**-0.0080**	0.002	22.2	ug/L	45	Standard
	Ce	140	21.7	48.0				ug/L	298	Standard
>	**Tb**	159	980265.4	0.4				ug/L	977942	Standard
	Ho	165	16.7	45.8				ug/L	12	Standard
	Tl	203	63.0	23.1	**0.0024**	0.002	67.2	ug/L	31	Standard
	Tl	205	63.3	31.9	**0.0060**	0.003	42.7	ug/L	20	Standard
	Pb	206	313.3	5.4	**-0.0080**	0.003	36.6	ug/L	286	Standard
	Pb	207	273.0	6.7	**-0.0043**	0.004	87.0	ug/L	257	Standard
	Pb	208	1087.7	7.3	**-0.0051**	0.004	85.3	ug/L	956	Standard
	U	238	49.0	30.5	**0.0036**	0.002	56.1	ug/L	17	Standard
>	**Bi**	209	580619.2	1.2				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	35.0	28.6	**-0.0091**	0.014	156.5	mg/L	32	Standard
K	39	36.7	28.4	**-0.0142**	0.035	248.1	mg/L	30	Standard
Ca	43	26.7	57.3	**-1.1996**	2.339	195.0	mg/L	48	Standard
Fe	54	140.8	15.9	**-0.0061**	0.021	341.9	mg/L	159	Standard
Fe	57	151.7	6.9	**-0.0978**	0.042	43.3	mg/L	195	Standard
> **Sc-1**	45	38460.4	1.3				mg/L	39543	Standard
Cl	35	32500.2	3.2				ug/L	27642	Standard
Kr	83	3.0	0.0				ug/L	2	Standard
Br	81	1736.8	3.3				ug/L	1647	Standard
P	31	17698.7	3.2				ug/L	15231	Standard
S	34	2320.2	10.5				ug/L	1845	Standard
Sr	88	73.3	21.9				ug/L	70	Standard
C	12	133.3	15.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.0	113.3				mg/L	12	Standard
Ho-1	165	16.7	45.8				mg/L	12	Standard
Er	166	20.0	50.0				mg/L	20	Standard
I	127	2206.8	20.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.805	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.724
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.225
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBS M7 WG573333-03
Sample Date/Time: Tuesday, June 28, 2016 14:38:03
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	95050.7	3.1				ug/L	81760	Standard
	Be	9	18.3	87.7	**0.0062**	0.014	223.6	ug/L	17	Standard
	Al	27	17488.4	2.4	**0.0832**	0.003	3.2	ug/L	1410	Standard
	Sc	45	39132.2	2.7				ug/L	39543	Standard
	Ti	47	49.7	51.3	**0.0353**	0.101	286.1	ug/L	39	Standard
	V	51	1251.1	3.7	**-0.0255**	0.008	31.0	ug/L	1415	Standard
	Cr	52	8706.2	0.9	**0.2013**	0.013	6.2	ug/L	6946	Standard
	Cr	53	700.0	11.0	**0.4613**	0.093	20.2	ug/L	328	Standard
	Mn	55	1542.7	1.5	**0.0910**	0.006	6.6	ug/L	823	Standard
	Co	59	278.7	9.1	**0.0085**	0.003	38.3	ug/L	252	Standard
	Ni	60	602.0	5.9	**0.2166**	0.018	8.1	ug/L	192	Standard
	Cu	65	210.7	10.6	**0.0207**	0.012	58.0	ug/L	141	Standard
	Zn	66	1817.8	2.7	**0.8408**	0.028	3.4	ug/L	491	Standard
>	**Ge**	72	511962.6	1.0				ug/L	515087	Standard
	As	75	-35.9	60.1	**0.0082**	0.019	234.7	ug/L	20	Standard
	Se	82	20.1	18.9	**0.0563**	0.034	59.9	ug/L	15	Standard
	Se-1	77	44.7	10.1	**-0.1225**	0.058	47.0	ug/L	48	Standard
>	**Ga**	71	48.3	15.8				mg/L	90	Standard
	Rb	85	66.7	31.2				ug/L	23	Standard
	Y	89	442200.8	1.3				ug/L	448510	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	193.0	16.8	**0.0509**	0.011	21.8	ug/L	11	Standard
	Ag	107	97.0	17.0	**-0.0021**	0.002	110.1	ug/L	134	Standard
	Cd	111	7.4	64.2	**0.0005**	0.002	466.2	mg/L	7	Standard
	Cd	114	31.4	28.6	**0.0010**	0.002	163.8	ug/L	16	Standard
>	**In**	115	622890.2	1.7				ug/L	611117	Standard
	Sn	118	691.7	5.6	**0.0128**	0.005	38.1	ug/L	518	Standard
	Sb	123	212.1	15.5	**0.0312**	0.006	20.3	ug/L	127	Standard
	Ba	135	298.3	2.4	**0.1167**	0.001	1.2	ug/L	45	Standard
	Ce	140	113.3	24.3				ug/L	298	Standard
>	**Tb**	159	998579.7	1.5				ug/L	977942	Standard
	Ho	165	16.7	17.3				ug/L	12	Standard
	Tl	203	39.0	48.9	**-0.0004**	0.002	526.4	ug/L	31	Standard
	Tl	205	20.0	50.0	**0.0003**	0.001	421.9	ug/L	20	Standard
	Pb	206	313.7	9.3	**-0.0086**	0.005	56.5	ug/L	286	Standard
	Pb	207	273.0	2.4	**-0.0050**	0.001	28.4	ug/L	257	Standard
	Pb	208	1093.3	1.9	**-0.0055**	0.001	16.3	ug/L	956	Standard
	U	238	24.3	55.2	**0.0002**	0.002	711.6	ug/L	17	Standard
>	**Bi**	209	587793.8	0.5				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	36.7	7.9	**-0.0078**	0.003	35.7	mg/L	32	Standard
K	39	35.0	51.5	**-0.0208**	0.064	309.0	mg/L	30	Standard
Ca	43	25.0	34.6	**-1.5082**	1.327	88.0	mg/L	48	Standard
Fe	54	165.5	15.5	**0.0140**	0.019	138.8	mg/L	159	Standard
Fe	57	203.3	9.9	**0.0704**	0.084	119.9	mg/L	195	Standard
> **Sc-1**	45	39132.2	2.7				mg/L	39543	Standard
Cl	35	33734.8	0.7				ug/L	27642	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	1786.8	3.4				ug/L	1647	Standard
P	31	17722.0	1.9				ug/L	15231	Standard
S	34	2341.8	1.1				ug/L	1845	Standard
Sr	88	65.0	27.7				ug/L	70	Standard
C	12	180.0	47.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	18.7	93.3				mg/L	12	Standard
Ho-1	165	16.7	17.3				mg/L	12	Standard
Er	166	26.7	21.7				mg/L	20	Standard
I	127	1696.8	8.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.256	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.393	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.927
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.513
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSS M7 WG573333-04
Sample Date/Time: Tuesday, June 28, 2016 14:41:14
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92927.6	3.1				ug/L	81760	Standard
	Be	9	30111.6	3.7	**26.7031**	1.769	6.6	ug/L	17	Standard
	Al	27	18035.9	13.5	**0.0888**	0.016	18.2	ug/L	1410	Standard
	Sc	45	39361.1	1.9				ug/L	39543	Standard
	Ti	47	37.0	28.2	**-0.0130**	0.042	322.2	ug/L	39	Standard
	V	51	182372.3	3.8	**26.6531**	1.518	5.7	ug/L	1415	Standard
	Cr	52	189442.3	3.6	**26.8012**	1.501	5.6	ug/L	6946	Standard
	Cr	53	22922.3	1.8	**26.3866**	1.122	4.3	ug/L	328	Standard
	Mn	55	169435.1	3.2	**26.6017**	1.285	4.8	ug/L	823	Standard
	Co	59	193981.0	3.8	**28.2331**	1.651	5.8	ug/L	252	Standard
	Ni	60	48862.7	3.3	**26.4525**	1.352	5.1	ug/L	192	Standard
	Cu	65	49743.6	2.7	**26.7036**	1.173	4.4	ug/L	141	Standard
	Zn	66	30362.1	3.5	**27.5261**	1.455	5.3	ug/L	491	Standard
>	**Ge**	72	503563.1	2.3				ug/L	515087	Standard
	As	75	29155.1	3.3	**26.5827**	1.325	5.0	ug/L	20	Standard
	Se	82	3055.7	1.7	**27.0468**	1.107	4.1	ug/L	15	Standard
	Se-1	77	2068.5	3.5	**27.3757**	1.137	4.2	ug/L	48	Standard
>	**Ga**	71	53.3	14.3				mg/L	90	Standard
	Rb	85	78.3	16.1				ug/L	23	Standard
	Y	89	444634.7	2.0				ug/L	448510	Standard
>	**Rh**	103	18.3	41.7				ug/L	15	Standard
	Mo	98	104.5	23.9	**0.0190**	0.010	51.3	ug/L	11	Standard
	Ag	107	179344.1	3.7	**26.2092**	1.706	6.5	ug/L	134	Standard
	Cd	111	55845.5	2.3	**25.6355**	1.334	5.2	mg/L	7	Standard
	Cd	114	136877.4	2.6	**25.8483**	1.371	5.3	ug/L	16	Standard
>	**In**	115	623373.0	3.0				ug/L	611117	Standard
	Sn	118	755.0	11.3	**0.0235**	0.016	68.2	ug/L	518	Standard
	Sb	123	124890.1	3.5	**25.9676**	1.618	6.2	ug/L	127	Standard
	Ba	135	53944.6	3.3	**25.6212**	1.575	6.1	ug/L	45	Standard
	Ce	140	106.7	9.8				ug/L	298	Standard
>	**Tb**	159	976375.9	3.3				ug/L	977942	Standard
	Ho	165	15.0	57.7				ug/L	12	Standard
	Tl	203	229696.9	2.8	**26.5184**	1.549	5.8	ug/L	31	Standard
	Tl	205	205993.8	3.8	**27.3937**	1.852	6.8	ug/L	20	Standard
	Pb	206	150555.8	3.2	**27.0395**	1.637	6.1	ug/L	286	Standard
	Pb	207	130667.9	3.7	**26.0217**	1.699	6.5	ug/L	257	Standard
	Pb	208	532429.0	3.5	**27.4071**	1.756	6.4	ug/L	956	Standard
	U	238	197217.2	3.4	**26.7798**	1.720	6.4	ug/L	17	Standard
>	**Bi**	209	573273.6	3.1				ug/L	557080	Standard

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Na	23	3.3	86.6	**21.2655**	18.412	86.6	mg/L	0	Standard
Mg	24	50.0	43.6	**0.0096**	0.028	296.2	mg/L	32	Standard
K	39	30.0	100.0	**-0.0395**	0.101	254.9	mg/L	30	Standard
Ca	43	25.0	40.0	**-1.5307**	1.509	98.6	mg/L	48	Standard
Fe	54	141.7	2.7	**-0.0082**	0.003	33.7	mg/L	159	Standard
Fe	57	226.7	9.9	**0.1435**	0.065	45.0	mg/L	195	Standard
Sc-1	45	39361.1	1.9				mg/L	39543	Standard
Cl	35	35061.2	2.7				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1886.8	4.9				ug/L	1647	Standard
P	31	18956.9	6.3				ug/L	15231	Standard
S	34	2375.2	1.6				ug/L	1845	Standard
Sr	88	65.0	30.8				ug/L	70	Standard
C	12	170.0	38.6				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	12.7	49.8				mg/L	12	Standard
Ho-1	165	15.0	57.7				mg/L	12	Standard
Er	166	13.3	86.6				mg/L	20	Standard
I	127	1553.4	15.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		113.659	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.763	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.006
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.907
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606105301 WG573333-02
Sample Date/Time: Tuesday, June 28, 2016 14:44:26
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92504.9	1.8				ug/L	81760	Standard
	Be	9	211.7	3.6	**0.1787**	0.009	5.2	ug/L	17	Standard
	Al	27	476632.7	0.6	**2.7192**	0.058	2.1	ug/L	1410	Standard
	Sc	45	39899.1	1.7				ug/L	39543	Standard
	Ti	47	7508.9	2.4	**29.9625**	0.867	2.9	ug/L	39	Standard
	V	51	54226.8	0.3	**7.5775**	0.105	1.4	ug/L	1415	Standard
	Cr	52	35510.9	0.6	**4.0327**	0.059	1.5	ug/L	6946	Standard
	Cr	53	3988.9	7.5	**4.1910**	0.323	7.7	ug/L	328	Standard
	Mn	55	226862.1	2.5	**34.7724**	1.274	3.7	ug/L	823	Standard
	Co	59	8803.9	0.2	**1.2188**	0.017	1.4	ug/L	252	Standard
	Ni	60	5989.2	1.6	**3.0677**	0.039	1.3	ug/L	192	Standard
	Cu	65	4442.7	0.7	**2.2418**	0.014	0.6	ug/L	141	Standard
	Zn	66	19698.8	1.0	**17.1048**	0.367	2.1	ug/L	491	Standard
>	**Ge**	72	516312.9	1.2				ug/L	515087	Standard
	As	75	2960.6	0.8	**2.6677**	0.048	1.8	ug/L	20	Standard
	Se	82	53.9	7.9	**0.3477**	0.042	12.1	ug/L	15	Standard
	Se-1	77	82.0	6.8	**0.3676**	0.085	23.1	ug/L	48	Standard
>	**Ga**	71	5075.9	3.2				mg/L	90	Standard
	Rb	85	19981.5	3.8				ug/L	23	Standard
	Y	89	472017.4	2.4				ug/L	448510	Standard
>	**Rh**	103	21.7	26.6				ug/L	15	Standard
	Mo	98	6655.2	1.4	**2.4116**	0.043	1.8	ug/L	11	Standard
	Ag	107	178.7	11.3	**0.0101**	0.003	29.0	ug/L	134	Standard
	Cd	111	244.9	9.1	**0.1102**	0.010	9.1	mg/L	7	Standard
	Cd	114	621.2	5.8	**0.1131**	0.007	6.2	ug/L	16	Standard
>	**In**	115	619055.2	0.3				ug/L	611117	Standard
	Sn	118	640.0	5.5	**0.0049**	0.006	124.7	ug/L	518	Standard
	Sb	123	463.5	5.3	**0.0841**	0.005	6.4	ug/L	127	Standard
	Ba	135	41539.5	1.0	**19.8378**	0.203	1.0	ug/L	45	Standard
	Ce	140	324520.8	1.6				ug/L	298	Standard
>	**Tb**	159	988287.6	1.4				ug/L	977942	Standard
	Ho	165	2263.5	6.3				ug/L	12	Standard
	Tl	203	550.3	1.1	**0.0581**	0.001	1.2	ug/L	31	Standard
	Tl	205	506.7	1.1	**0.0644**	0.001	1.1	ug/L	20	Standard
	Pb	206	143402.5	0.9	**25.4978**	0.319	1.3	ug/L	286	Standard
	Pb	207	120708.6	0.6	**23.7943**	0.166	0.7	ug/L	257	Standard
	Pb	208	491539.2	1.4	**25.0461**	0.389	1.6	ug/L	956	Standard
	U	238	1919.1	2.3	**0.2551**	0.006	2.5	ug/L	17	Standard
>	**Bi**	209	578289.7	0.5				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.6918**	18.510	173.1	mg/L	0	Standard
Mg	24	41.7	30.2	**-0.0023**	0.016	678.2	mg/L	32	Standard
K	39	48.3	15.8	**0.0204**	0.026	126.1	mg/L	30	Standard
Ca	43	38.3	27.2	**0.4078**	1.458	357.4	mg/L	48	Standard
Fe	54	3682.2	3.4	**3.1665**	0.134	4.2	mg/L	159	Standard
Fe	57	1100.0	9.6	**3.0601**	0.408	13.3	mg/L	195	Standard
> **Sc-1**	45	39899.1	1.7				mg/L	39543	Standard
Cl	35	32895.7	2.7				ug/L	27642	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	2153.5	9.2				ug/L	1647	Standard
P	31	17883.9	3.0				ug/L	15231	Standard
S	34	2195.2	9.1				ug/L	1845	Standard
Sr	88	71.7	4.0				ug/L	70	Standard
C	12	220.0	19.8				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	40.0	25.0				mg/L	0	Standard
Dy	164	4107.1	8.5				mg/L	12	Standard
Ho-1	165	2263.5	6.3				mg/L	12	Standard
Er	166	2160.2	2.1				mg/L	20	Standard
I	127	7528.5	2.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.142	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.238	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.299
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.807
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606105302S WG573333-07
Sample Date/Time: Tuesday, June 28, 2016 14:47:37
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	91483.8	2.5				ug/L	81760	Standard
	Be	9	28575.3	3.7	**25.7021**	0.502	2.0	ug/L	17	Standard
	Al	27	472647.5	0.9	**2.7267**	0.044	1.6	ug/L	1410	Standard
	Sc	45	40355.4	2.6				ug/L	39543	Standard
	Ti	47	8788.9	2.8	**34.8074**	0.551	1.6	ug/L	39	Standard
	V	51	216754.8	1.8	**30.6603**	0.748	2.4	ug/L	1415	Standard
	Cr	52	202224.9	0.6	**27.6955**	0.221	0.8	ug/L	6946	Standard
	Cr	53	25461.4	2.5	**28.3619**	0.467	1.6	ug/L	328	Standard
	Mn	55	374661.4	3.0	**57.0462**	1.611	2.8	ug/L	823	Standard
	Co	59	185021.8	2.1	**26.0317**	0.592	2.3	ug/L	252	Standard
	Ni	60	51684.0	1.6	**27.0535**	0.107	0.4	ug/L	192	Standard
	Cu	65	52133.2	1.4	**27.0623**	0.171	0.6	ug/L	141	Standard
	Zn	66	46187.6	0.8	**40.8778**	0.267	0.7	ug/L	491	Standard
>	**Ge**	72	520472.6	1.2				ug/L	515087	Standard
	As	75	27327.3	2.3	**24.0946**	0.465	1.9	ug/L	20	Standard
	Se	82	2628.8	2.4	**22.4788**	0.502	2.2	ug/L	15	Standard
	Se-1	77	1784.1	1.0	**22.7201**	0.347	1.5	ug/L	48	Standard
>	**Ga**	71	5215.9	5.7				mg/L	90	Standard
	Rb	85	16937.8	2.3				ug/L	23	Standard
	Y	89	458647.4	1.3				ug/L	448510	Standard
>	**Rh**	103	30.0	44.1				ug/L	15	Standard
	Mo	98	18905.8	1.4	**6.8731**	0.106	1.5	ug/L	11	Standard
	Ag	107	155307.6	0.6	**22.7819**	0.123	0.5	ug/L	134	Standard
	Cd	111	52492.7	0.7	**24.1959**	0.317	1.3	mg/L	7	Standard
	Cd	114	128079.2	0.4	**24.2856**	0.076	0.3	ug/L	16	Standard
>	**In**	115	620204.7	0.6				ug/L	611117	Standard
	Sn	118	685.0	20.9	**0.0121**	0.023	191.0	ug/L	518	Standard
	Sb	123	65087.0	0.8	**13.5800**	0.099	0.7	ug/L	127	Standard
	Ba	135	93846.7	0.6	**44.7672**	0.375	0.8	ug/L	45	Standard
	Ce	140	331961.2	1.7				ug/L	298	Standard
>	**Tb**	159	981697.8	0.7				ug/L	977942	Standard
	Ho	165	1903.5	2.0				ug/L	12	Standard
	Tl	203	213525.6	1.3	**24.5875**	0.365	1.5	ug/L	31	Standard
	Tl	205	191177.1	1.7	**25.3529**	0.481	1.9	ug/L	20	Standard
	Pb	206	446032.3	1.2	**80.0233**	1.190	1.5	ug/L	286	Standard
	Pb	207	376762.1	1.5	**74.9381**	1.277	1.7	ug/L	257	Standard
	Pb	208	1506170.9	0.7	**77.4336**	0.690	0.9	ug/L	956	Standard
	U	238	183525.9	0.8	**24.8532**	0.261	1.1	ug/L	17	Standard
>	**Bi**	209	574082.0	0.2				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	51.7	22.3	**0.0106**	0.017	161.8	mg/L	32	Standard
K	39	33.3	8.7	**-0.0312**	0.007	21.8	mg/L	30	Standard
Ca	43	38.3	15.1	**0.3768**	1.024	271.7	mg/L	48	Standard
Fe	54	2984.3	5.7	**2.5132**	0.224	8.9	mg/L	159	Standard
Fe	57	1001.7	4.5	**2.6914**	0.198	7.3	mg/L	195	Standard
> **Sc-1**	45	40355.4	2.6				mg/L	39543	Standard
Cl	35	31360.4	1.4				ug/L	27642	Standard
Kr	83	1.0	173.2				ug/L	2	Standard
Br	81	2753.6	4.6				ug/L	1647	Standard
P	31	16745.9	1.5				ug/L	15231	Standard
S	34	2118.5	5.5				ug/L	1845	Standard
Sr	88	78.3	9.8				ug/L	70	Standard
C	12	286.7	29.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	100.3				mg/L	0	Standard
Dy	164	3434.6	3.8				mg/L	12	Standard
Ho-1	165	1903.5	2.0				mg/L	12	Standard
Er	166	1860.1	3.3				mg/L	20	Standard
I	127	5512.7	1.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.893	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.046	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.487
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.052
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606105303SD WG573333-08
Sample Date/Time: Tuesday, June 28, 2016 14:50:49
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90707.5	2.1				ug/L	81760	Standard
	Be	9	28490.1	1.5	**25.8507**	0.239	0.9	ug/L	17	Standard
	Al	27	517242.7	0.8	**3.0108**	0.045	1.5	ug/L	1410	Standard
	Sc	45	41104.0	1.1				ug/L	39543	Standard
	Ti	47	9706.8	1.9	**39.3684**	1.018	2.6	ug/L	39	Standard
	V	51	220560.4	0.1	**31.9323**	0.545	1.7	ug/L	1415	Standard
	Cr	52	204805.0	1.1	**28.7389**	0.342	1.2	ug/L	6946	Standard
	Cr	53	25147.5	3.9	**28.6674**	1.000	3.5	ug/L	328	Standard
	Mn	55	371807.0	1.2	**57.9433**	1.578	2.7	ug/L	823	Standard
	Co	59	187737.3	0.6	**27.0316**	0.558	2.1	ug/L	252	Standard
	Ni	60	52302.5	0.6	**28.0202**	0.336	1.2	ug/L	192	Standard
	Cu	65	51530.8	0.8	**27.3738**	0.234	0.9	ug/L	141	Standard
	Zn	66	58955.2	1.6	**53.6399**	0.321	0.6	ug/L	491	Standard
>	**Ge**	72	508670.0	1.6				ug/L	515087	Standard
	As	75	26613.2	0.3	**24.0128**	0.310	1.3	ug/L	20	Standard
	Se	82	2643.5	1.0	**23.1344**	0.377	1.6	ug/L	15	Standard
	Se-1	77	1782.1	1.4	**23.2396**	0.549	2.4	ug/L	48	Standard
>	**Ga**	71	5607.7	2.4				mg/L	90	Standard
	Rb	85	19120.4	0.8				ug/L	23	Standard
	Y	89	464944.5	0.8				ug/L	448510	Standard
>	**Rh**	103	20.0	66.1				ug/L	15	Standard
	Mo	98	6589.1	2.9	**2.3569**	0.065	2.7	ug/L	11	Standard
	Ag	107	161248.5	0.9	**23.3982**	0.239	1.0	ug/L	134	Standard
	Cd	111	52808.4	0.9	**24.0772**	0.233	1.0	mg/L	7	Standard
	Cd	114	128062.2	0.6	**24.0198**	0.192	0.8	ug/L	16	Standard
>	**In**	115	626980.9	0.2				ug/L	611117	Standard
	Sn	118	691.7	6.1	**0.0121**	0.007	57.7	ug/L	518	Standard
	Sb	123	64415.1	1.9	**13.2945**	0.276	2.1	ug/L	127	Standard
	Ba	135	100181.1	0.9	**47.2728**	0.453	1.0	ug/L	45	Standard
	Ce	140	306983.9	0.9				ug/L	298	Standard
>	**Tb**	159	992773.6	1.4				ug/L	977942	Standard
	Ho	165	1925.1	2.4				ug/L	12	Standard
	Tl	203	213931.4	0.2	**24.2345**	0.027	0.1	ug/L	31	Standard
	Tl	205	188875.1	1.2	**24.6411**	0.299	1.2	ug/L	20	Standard
	Pb	206	399455.5	0.3	**70.4964**	0.248	0.4	ug/L	286	Standard
	Pb	207	335397.3	0.3	**65.6206**	0.221	0.3	ug/L	257	Standard
	Pb	208	1377394.4	0.8	**69.6587**	0.536	0.8	ug/L	956	Standard
	U	238	183479.9	0.5	**24.4438**	0.133	0.5	ug/L	17	Standard
>	**Bi**	209	583538.4	0.1				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	45.0	11.1	**0.0005**	0.006	1275.5	mg/L	32	Standard
K	39	46.7	12.4	**0.0102**	0.018	179.3	mg/L	30	Standard
Ca	43	46.7	40.6	**1.4697**	2.764	188.0	mg/L	48	Standard
Fe	54	3552.4	2.1	**2.9565**	0.098	3.3	mg/L	159	Standard
Fe	57	1123.4	10.8	**3.0231**	0.384	12.7	mg/L	195	Standard
> **Sc-1**	45	41104.0	1.1				mg/L	39543	Standard
Cl	35	31493.4	1.6				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	2126.8	11.6				ug/L	1647	Standard
P	31	16392.2	2.4				ug/L	15231	Standard
S	34	1988.5	3.7				ug/L	1845	Standard
Sr	88	56.7	20.4				ug/L	70	Standard
C	12	256.7	29.2				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	34.3				mg/L	0	Standard
Dy	164	3598.5	4.6				mg/L	12	Standard
Ho-1	165	1925.1	2.4				mg/L	12	Standard
Er	166	1710.1	5.6				mg/L	20	Standard
I	127	5772.8	6.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.943	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.754	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.596
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.749
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606104801
Sample Date/Time: Tuesday, June 28, 2016 14:54:00
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	87619.5	3.9				ug/L	81760	Standard
	Be	9	323.3	11.2	**0.2951**	0.044	15.0	ug/L	17	Standard
	Al	27	1546436.6	2.8	**9.3502**	0.142	1.5	ug/L	1410	Standard
	Sc	45	40666.2	2.1				ug/L	39543	Standard
	Ti	47	348.0	4.5	**1.2425**	0.055	4.4	ug/L	39	Standard
	V	51	27678.8	0.4	**3.7995**	0.033	0.9	ug/L	1415	Standard
	Cr	52	26992.7	1.5	**2.8437**	0.051	1.8	ug/L	6946	Standard
	Cr	53	2932.0	5.7	**3.0177**	0.170	5.6	ug/L	328	Standard
	Mn	55	139361.0	0.9	**21.4761**	0.101	0.5	ug/L	823	Standard
	Co	59	8883.9	1.8	**1.2405**	0.015	1.2	ug/L	252	Standard
	Ni	60	10083.0	1.9	**5.2809**	0.102	1.9	ug/L	192	Standard
	Cu	65	17655.3	1.5	**9.2565**	0.148	1.6	ug/L	141	Standard
	Zn	66	24172.6	2.4	**21.3574**	0.493	2.3	ug/L	491	Standard
>	Ge	72	512038.2	0.7				ug/L	515087	Standard
	As	75	255.5	6.8	**0.2688**	0.014	5.3	ug/L	20	Standard
	Se	82	53.2	11.2	**0.3458**	0.053	15.2	ug/L	15	Standard
	Se-1	77	80.3	12.8	**0.3545**	0.144	40.6	ug/L	48	Standard
>	Ga	71	3018.6	3.1				mg/L	90	Standard
	Rb	85	16969.5	1.9				ug/L	23	Standard
	Y	89	529226.2	0.9				ug/L	448510	Standard
>	Rh	103	10.0					ug/L	15	Standard
	Mo	98	313.0	4.7	**0.0960**	0.005	5.5	ug/L	11	Standard
	Ag	107	442.0	1.6	**0.0492**	0.001	1.7	ug/L	134	Standard
	Cd	111	534.5	3.9	**0.2456**	0.011	4.4	mg/L	7	Standard
	Cd	114	1438.1	5.6	**0.2703**	0.019	7.1	ug/L	16	Standard
>	In	115	614980.8	1.4				ug/L	611117	Standard
	Sn	118	1005.0	9.0	**0.0670**	0.016	23.2	ug/L	518	Standard
	Sb	123	831.9	19.2	**0.1627**	0.036	21.9	ug/L	127	Standard
	Ba	135	51902.4	2.2	**24.9562**	0.305	1.2	ug/L	45	Standard
	Ce	140	320029.2	2.5				ug/L	298	Standard
>	Tb	159	977861.1	0.7				ug/L	977942	Standard
	Ho	165	6373.0	4.5				ug/L	12	Standard
	Tl	203	276.7	7.5	**0.0277**	0.002	8.0	ug/L	31	Standard
	Tl	205	265.0	17.0	**0.0335**	0.006	17.4	ug/L	20	Standard
	Pb	206	33506.0	0.9	**6.0646**	0.072	1.2	ug/L	286	Standard
	Pb	207	27548.0	1.0	**5.5276**	0.068	1.2	ug/L	257	Standard
	Pb	208	115638.2	1.3	**6.0000**	0.078	1.3	ug/L	956	Standard
	U	238	6967.9	1.8	**0.9584**	0.022	2.3	ug/L	17	Standard
>	Bi	209	563593.3	0.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	48.3	36.3	**0.0057**	0.024	420.3	mg/L	32	Standard
K	39	71.7	21.3	**0.0944**	0.052	54.8	mg/L	30	Standard
Ca	43	58.3	17.8	**3.2603**	1.450	44.5	mg/L	48	Standard
Fe	54	2389.6	6.6	**1.9680**	0.178	9.0	mg/L	159	Standard
Fe	57	746.7	5.6	**1.8289**	0.182	10.0	mg/L	195	Standard
Sc-1	45	40666.2	2.1				mg/L	39543	Standard
Cl	35	32405.3	1.2				ug/L	27642	Standard
Kr	83	4.0	43.3				ug/L	2	Standard
Br	81	2003.5	7.8				ug/L	1647	Standard
P	31	17084.6	3.9				ug/L	15231	Standard
S	34	2108.5	4.8				ug/L	1845	Standard
Sr	88	73.3	30.7				ug/L	70	Standard
C	12	240.0	38.2				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	20.0				mg/L	0	Standard
Dy	164	9760.8	1.5				mg/L	12	Standard
Ho-1	165	6373.0	4.5				mg/L	12	Standard
Er	166	5897.8	8.3				mg/L	20	Standard
I	127	2141.8	10.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		107.167	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.408	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.632
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.169
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606104801PS WG573475-03
Sample Date/Time: Tuesday, June 28, 2016 14:57:11
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90811.3	0.7				ug/L	81760	Standard
	Be	9	56498.5	1.8	**51.2132**	1.080	2.1	ug/L	17	Standard
	Al	27	1545775.3	0.6	**9.0143**	0.017	0.2	ug/L	1410	Standard
	Sc	45	41961.4	1.6				ug/L	39543	Standard
	Ti	47	342.0	11.2	**1.1864**	0.157	13.2	ug/L	39	Standard
	V	51	392129.2	0.5	**55.2170**	0.488	0.9	ug/L	1415	Standard
	Cr	52	384433.3	0.4	**53.1980**	0.445	0.8	ug/L	6946	Standard
	Cr	53	48853.7	2.8	**54.3367**	1.767	3.3	ug/L	328	Standard
	Mn	55	478138.1	0.8	**72.3045**	0.492	0.7	ug/L	823	Standard
	Co	59	389747.9	0.3	**54.4630**	0.290	0.5	ug/L	252	Standard
	Ni	60	106262.0	0.3	**55.3242**	0.400	0.7	ug/L	192	Standard
	Cu	65	114943.7	0.4	**59.3369**	0.368	0.6	ug/L	141	Standard
	Zn	66	80976.1	0.1	**71.7501**	0.396	0.6	ug/L	491	Standard
>	**Ge**	72	524333.4	0.5				ug/L	515087	Standard
	As	75	59243.0	1.9	**51.8077**	1.242	2.4	ug/L	20	Standard
	Se	82	6211.1	2.1	**52.8798**	1.213	2.3	ug/L	15	Standard
	Se-1	77	4085.6	1.2	**52.5558**	0.559	1.1	ug/L	48	Standard
>	**Ga**	71	3287.0	1.8				mg/L	90	Standard
	Rb	85	16744.3	3.7				ug/L	23	Standard
	Y	89	522998.5	1.8				ug/L	448510	Standard
>	**Rh**	103	28.3	36.7				ug/L	15	Standard
	Mo	98	332.0	9.1	**0.1017**	0.011	11.1	ug/L	11	Standard
	Ag	107	350941.4	1.0	**51.3750**	0.335	0.7	ug/L	134	Standard
	Cd	111	110107.7	1.0	**50.6313**	0.348	0.7	mg/L	7	Standard
	Cd	114	268982.1	1.5	**50.8849**	0.677	1.3	ug/L	16	Standard
>	**In**	115	621693.0	0.4				ug/L	611117	Standard
	Sn	118	1258.4	5.6	**0.1073**	0.012	10.9	ug/L	518	Standard
	Sb	123	241746.4	1.3	**50.3512**	0.498	1.0	ug/L	127	Standard
	Ba	135	155747.4	0.9	**74.1325**	0.655	0.9	ug/L	45	Standard
	Ce	140	312396.1	0.8				ug/L	298	Standard
>	**Tb**	159	997317.5	1.6				ug/L	977942	Standard
	Ho	165	6548.1	1.9				ug/L	12	Standard
	Tl	203	447292.7	0.3	**50.4657**	0.615	1.2	ug/L	31	Standard
	Tl	205	398193.6	1.5	**51.7351**	0.805	1.6	ug/L	20	Standard
	Pb	206	325033.3	0.1	**57.1116**	0.488	0.9	ug/L	286	Standard
	Pb	207	282464.7	0.8	**55.0228**	0.100	0.2	ug/L	257	Standard
	Pb	208	1144735.7	1.0	**57.6431**	0.938	1.6	ug/L	956	Standard
	U	238	386201.4	1.1	**51.2415**	0.797	1.6	ug/L	17	Standard
>	**Bi**	209	586004.9	0.9				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	48.3	41.8	**0.0038**	0.026	698.9	mg/L	32	Standard
K	39	65.0	20.4	**0.0660**	0.045	68.1	mg/L	30	Standard
Ca	43	46.7	27.0	**1.3158**	1.694	128.8	mg/L	48	Standard
Fe	54	2337.7	11.4	**1.8584**	0.246	13.3	mg/L	159	Standard
Fe	57	760.0	13.2	**1.7916**	0.300	16.7	mg/L	195	Standard
> **Sc-1**	45	41961.4	1.6				mg/L	39543	Standard
Cl	35	32737.3	1.7				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	2180.2	6.6				ug/L	1647	Standard
P	31	17061.3	3.2				ug/L	15231	Standard
S	34	2245.2	3.3				ug/L	1845	Standard
Sr	88	81.7	12.7				ug/L	70	Standard
C	12	226.7	6.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	32.7				mg/L	0	Standard
Dy	164	10105.0	3.1				mg/L	12	Standard
Ho-1	165	6548.1	1.9				mg/L	12	Standard
Er	166	5884.5	3.8				mg/L	20	Standard
I	127	2158.5	15.1				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		111.071	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.795	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606104801PS WG573475-03
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.731
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.192
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606104801SDL WG573475-04
Sample Date/Time: Tuesday, June 28, 2016 15:00:23
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89188.5	2.4				ug/L	81760	Standard
	Be	9	71.7	4.0	**0.0564**	0.001	2.3	ug/L	17	Standard
	Al	27	302683.6	0.7	**1.7866**	0.056	3.1	ug/L	1410	Standard
	Sc	45	41125.8	3.4				ug/L	39543	Standard
	Ti	47	82.7	6.2	**0.1644**	0.030	18.2	ug/L	39	Standard
	V	51	6527.8	1.5	**0.7233**	0.030	4.1	ug/L	1415	Standard
	Cr	52	10512.6	0.6	**0.4384**	0.054	12.4	ug/L	6946	Standard
	Cr	53	805.0	22.0	**0.5666**	0.199	35.2	ug/L	328	Standard
	Mn	55	27749.4	1.2	**4.0892**	0.112	2.7	ug/L	823	Standard
	Co	59	1936.1	6.5	**0.2412**	0.012	4.8	ug/L	252	Standard
	Ni	60	2147.2	1.2	**1.0241**	0.047	4.6	ug/L	192	Standard
	Cu	65	3398.4	1.3	**1.6803**	0.070	4.1	ug/L	141	Standard
	Zn	66	7011.6	1.2	**5.5054**	0.150	2.7	ug/L	491	Standard
>	**Ge**	72	520536.2	3.0				ug/L	515087	Standard
	As	75	60.9	66.9	**0.0932**	0.035	37.4	ug/L	20	Standard
	Se	82	24.2	49.2	**0.0869**	0.099	113.8	ug/L	15	Standard
	Se-1	77	55.3	11.8	**0.0096**	0.103	1081.5	ug/L	48	Standard
>	**Ga**	71	663.3	7.6				mg/L	90	Standard
	Rb	85	3270.4	5.2				ug/L	23	Standard
	Y	89	464717.5	1.9				ug/L	448510	Standard
>	**Rh**	103	16.7	121.2				ug/L	15	Standard
	Mo	98	80.8	3.1	**0.0096**	0.001	7.0	ug/L	11	Standard
	Ag	107	180.0	20.5	**0.0094**	0.005	54.7	ug/L	134	Standard
	Cd	111	113.9	5.5	**0.0481**	0.003	5.7	mg/L	7	Standard
	Cd	114	303.5	12.8	**0.0510**	0.007	13.8	ug/L	16	Standard
>	**In**	115	638226.3	1.3				ug/L	611117	Standard
	Sn	118	801.7	13.2	**0.0279**	0.017	59.8	ug/L	518	Standard
	Sb	123	2112.7	26.2	**0.4158**	0.111	26.6	ug/L	127	Standard
	Ba	135	10186.4	1.4	**4.7001**	0.102	2.2	ug/L	45	Standard
	Ce	140	62112.1	0.6				ug/L	298	Standard
>	**Tb**	159	1019737.0	1.0				ug/L	977942	Standard
	Ho	165	1263.4	4.0				ug/L	12	Standard
	Tl	203	113.0	16.9	**0.0078**	0.002	24.0	ug/L	31	Standard
	Tl	205	118.3	30.6	**0.0128**	0.004	33.6	ug/L	20	Standard
	Pb	206	6901.2	1.0	**1.1348**	0.029	2.6	ug/L	286	Standard
	Pb	207	5663.1	0.8	**1.0321**	0.019	1.9	ug/L	257	Standard
	Pb	208	22745.7	0.6	**1.0713**	0.025	2.3	ug/L	956	Standard
	U	238	1347.1	2.4	**0.1734**	0.003	1.5	ug/L	17	Standard
>	**Bi**	209	593755.8	1.9				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	45.0	40.1	**0.0009**	0.025	2626.8	mg/L	32	Standard
K	39	30.0	28.9	**-0.0443**	0.026	58.3	mg/L	30	Standard
Ca	43	28.3	20.4	**-1.2169**	0.752	61.8	mg/L	48	Standard
Fe	54	584.0	13.3	**0.3714**	0.068	18.2	mg/L	159	Standard
Fe	57	295.0	14.5	**0.3314**	0.118	35.5	mg/L	195	Standard
> **Sc-1**	45	41125.8	3.4				mg/L	39543	Standard
Cl	35	31826.1	1.1				ug/L	27642	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	1903.5	3.4				ug/L	1647	Standard
P	31	16692.5	3.1				ug/L	15231	Standard
S	34	2128.5	4.6				ug/L	1845	Standard
Sr	88	68.3	36.1				ug/L	70	Standard
C	12	176.7	42.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	1953.3	7.3				mg/L	12	Standard
Ho-1	165	1263.4	4.0				mg/L	12	Standard
Er	166	1116.7	6.8				mg/L	20	Standard
I	127	1450.1	11.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.086	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.058	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.436
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.584
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Tuesday, June 28, 2016 15:03:36
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	89282.3	1.4				ug/L	81760	Standard
	Be	9	15.0	33.3	**0.0041**	0.005	114.8	ug/L	17	Standard
	Al	27	7897505.8	1.4	**46.9037**	0.018	0.0	ug/L	1410	Standard
	Sc	45	39757.1	3.6				ug/L	39543	Standard
	Ti	47	27232.5	2.5	**109.9775**	3.234	2.9	ug/L	39	Standard
	V	51	789.3	35.9	**-0.0922**	0.042	45.6	ug/L	1415	Standard
	Cr	52	7275.7	2.2	**-0.0059**	0.028	478.1	ug/L	6946	Standard
	Cr	53	6823.2	10.4	**7.4758**	0.819	11.0	ug/L	328	Standard
	Mn	55	1397.7	2.4	**0.0683**	0.004	5.9	ug/L	823	Standard
	Co	59	388.0	3.6	**0.0242**	0.002	7.5	ug/L	252	Standard
	Ni	60	839.0	6.3	**0.3431**	0.028	8.3	ug/L	192	Standard
	Cu	65	614.0	0.9	**0.2341**	0.001	0.3	ug/L	141	Standard
	Zn	66	1957.1	1.8	**0.9682**	0.037	3.8	ug/L	491	Standard
>	Ge	72	512179.1	1.0				ug/L	515087	Standard
	As	75	-64.0	70.1	**-0.0170**	0.040	237.0	ug/L	20	Standard
	Se	82	21.9	13.2	**0.0720**	0.027	37.3	ug/L	15	Standard
	Se-1	77	397.7	7.2	**4.5923**	0.428	9.3	ug/L	48	Standard
>	Ga	71	168.3	7.5				mg/L	90	Standard
	Rb	85	1135.0	8.9				ug/L	23	Standard
	Y	89	442720.4	1.1				ug/L	448510	Standard
>	Rh	103	10.0	50.0				ug/L	15	Standard
	Mo	98	272741.3	0.7	**100.8481**	1.185	1.2	ug/L	11	Standard
	Ag	107	262.0	2.0	**0.0228**	0.001	4.1	ug/L	134	Standard
	Cd	111	-198.2	9.3	**-0.0956**	0.008	8.7	mg/L	7	Standard
	Cd	114	465.1	17.4	**0.0845**	0.015	17.7	ug/L	16	Standard
>	In	115	611378.2	0.9				ug/L	611117	Standard
	Sn	118	743.4	13.4	**0.0238**	0.017	73.3	ug/L	518	Standard
	Sb	123	656.7	25.2	**0.1264**	0.036	28.5	ug/L	127	Standard
	Ba	135	610.7	6.5	**0.2705**	0.017	6.2	ug/L	45	Standard
	Ce	140	266.7	9.2				ug/L	298	Standard
>	Tb	159	977869.4	2.5				ug/L	977942	Standard
	Ho	165	16.7	17.3				ug/L	12	Standard
	Tl	203	193.3	8.8	**0.0182**	0.002	10.2	ug/L	31	Standard
	Tl	205	168.3	10.4	**0.0207**	0.002	10.8	ug/L	20	Standard
	Pb	206	552.7	5.7	**0.0387**	0.005	12.2	ug/L	286	Standard
	Pb	207	474.0	2.6	**0.0392**	0.001	3.3	ug/L	257	Standard
	Pb	208	1934.7	0.9	**0.0422**	0.002	5.1	ug/L	956	Standard
	U	238	35.3	29.7	**0.0020**	0.001	71.8	ug/L	17	Standard
>	Bi	209	556811.8	1.3				ug/L	557080	Standard

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Na	23	3.3	173.2	**20.5038**	35.505	173.2	mg/L	0	Standard
Mg	24	10406.9	1.4	**13.7318**	0.472	3.4	mg/L	32	Standard
K	39	1353.4	4.9	**4.4093**	0.243	5.5	mg/L	30	Standard
Ca	43	183.3	3.1	**22.3899**	1.779	7.9	mg/L	48	Standard
Fe	54	14710.0	1.7	**13.1205**	0.693	5.3	mg/L	159	Standard
Fe	57	4182.2	3.4	**13.4196**	0.181	1.3	mg/L	195	Standard
Sc-1	45	39757.1	3.6				mg/L	39543	Standard
Cl	35	33087.4	2.4				ug/L	27642	Standard
Kr	83	1.3	173.2				ug/L	2	Standard
Br	81	1766.8	6.4				ug/L	1647	Standard
P	31	17728.7	3.7				ug/L	15231	Standard
S	34	2340.2	3.3				ug/L	1845	Standard
Sr	88	45.0	0.0				ug/L	70	Standard
C	12	306.7	6.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	93.3	12.4				mg/L	0	Standard
Dy	164	15.1	45.8				mg/L	12	Standard
Ho-1	165	16.7	17.3				mg/L	12	Standard
Er	166	33.3	75.5				mg/L	20	Standard
I	127	1891.8	6.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27	0.938		
Sc	45			
Ti	47	109.978		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.435	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 4
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Rb	85			
Y	89			
> Rh	103			
Mo	98	100.848		
Ag	107			
Cd	111			
Cd	114			
> In	115		100.043	
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209		99.952	
Na	23	164.030		
Mg	24	274.635		
K	39	88.187		
Ca	43	149.266		
Fe	54	104.964		
Fe	57	107.357		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	

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QC Std 4	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Tuesday, June 28, 2016 15:06:47
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	87968.0	1.5				ug/L	81760	Standard
	Be	9	111223.4	1.1	**104.1090**	2.678	2.6	ug/L	17	Standard
	Al	27	8303576.6	1.0	**50.0632**	1.083	2.2	ug/L	1410	Standard
	Sc	45	38970.1	2.5				ug/L	39543	Standard
	Ti	47	28030.6	1.5	**112.6949**	1.093	1.0	ug/L	39	Standard
	V	51	696349.8	1.4	**100.1131**	1.784	1.8	ug/L	1415	Standard
	Cr	52	683707.3	0.8	**97.2904**	0.687	0.7	ug/L	6946	Standard
	Cr	53	91713.5	1.8	**104.2725**	1.761	1.7	ug/L	328	Standard
	Mn	55	633248.9	0.6	**97.6578**	0.701	0.7	ug/L	823	Standard
	Co	59	716430.9	0.3	**102.0719**	1.125	1.1	ug/L	252	Standard
	Ni	60	180604.4	0.8	**95.9232**	1.625	1.7	ug/L	192	Standard
	Cu	65	185052.2	0.7	**97.4326**	1.562	1.6	ug/L	141	Standard
	Zn	66	113502.2	0.3	**102.8618**	0.650	0.6	ug/L	491	Standard
>	**Ge**	72	514438.0	0.9				ug/L	515087	Standard
	As	75	114188.1	0.3	**101.7361**	0.865	0.8	ug/L	20	Standard
	Se	82	11752.5	0.4	**102.0988**	1.402	1.4	ug/L	15	Standard
	Se-1	77	8079.2	0.7	**106.6610**	0.727	0.7	ug/L	48	Standard
>	**Ga**	71	190.0	7.0				mg/L	90	Standard
	Rb	85	893.4	6.0				ug/L	23	Standard
	Y	89	434662.6	1.6				ug/L	448510	Standard
>	**Rh**	103	38.3	52.7				ug/L	15	Standard
	Mo	98	282406.5	1.5	**107.3339**	1.537	1.4	ug/L	11	Standard
	Ag	107	594345.7	0.8	**90.9666**	1.393	1.5	ug/L	134	Standard
	Cd	111	207638.0	0.2	**99.8149**	1.587	1.6	mg/L	7	Standard
	Cd	114	499764.2	0.7	**98.8323**	1.071	1.1	ug/L	16	Standard
>	**In**	115	594810.8	1.6				ug/L	611117	Standard
	Sn	118	1138.4	7.8	**0.0959**	0.015	15.6	ug/L	518	Standard
	Sb	123	463528.1	1.1	**100.9493**	2.612	2.6	ug/L	127	Standard
	Ba	135	197524.5	0.1	**98.2892**	1.431	1.5	ug/L	45	Standard
	Ce	140	85.0	21.2				ug/L	298	Standard
>	**Tb**	159	967938.8	1.8				ug/L	977942	Standard
	Ho	165	8.3	69.3				ug/L	12	Standard
	Tl	203	848553.4	0.8	**99.1555**	1.255	1.3	ug/L	31	Standard
	Tl	205	762572.5	0.3	**102.6175**	1.400	1.4	ug/L	20	Standard
	Pb	206	559247.5	0.6	**101.8213**	1.258	1.2	ug/L	286	Standard
	Pb	207	488004.9	0.6	**98.5027**	1.226	1.2	ug/L	257	Standard
	Pb	208	1955600.4	0.4	**102.0354**	1.641	1.6	ug/L	956	Standard
	U	238	737824.6	0.7	**101.3974**	2.083	2.1	ug/L	17	Standard
>	**Bi**	209	565855.3	1.5				ug/L	557080	Standard

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Na	23	3.3	86.6	**21.8863**	18.964	86.6	mg/L	0	Standard
Mg	24	10742.1	1.4	**14.4601**	0.490	3.4	mg/L	32	Standard
K	39	1261.7	7.3	**4.1815**	0.232	5.5	mg/L	30	Standard
Ca	43	183.3	29.9	**22.9918**	8.781	38.2	mg/L	48	Standard
Fe	54	15164.6	1.1	**13.7950**	0.409	3.0	mg/L	159	Standard
Fe	57	4003.9	4.1	**13.0952**	0.606	4.6	mg/L	195	Standard
Sc-1	45	38970.1	2.5				mg/L	39543	Standard
Cl	35	31476.7	2.0				ug/L	27642	Standard
Kr	83	3.3	75.5				ug/L	2	Standard
Br	81	1726.8	7.1				ug/L	1647	Standard
P	31	16804.3	1.0				ug/L	15231	Standard
S	34	2221.8	2.4				ug/L	1845	Standard
Sr	88	46.7	22.3				ug/L	70	Standard
C	12	280.0	21.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	25.2	45.9				mg/L	12	Standard
Ho-1	165	8.3	69.3				mg/L	12	Standard
Er	166	30.0	66.7				mg/L	20	Standard
I	127	1238.4	19.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	104.109		
Al	27	1.001		
Sc	45			
Ti	47	112.695		
V	51	100.113		
Cr	52	97.290		
Cr	53			
Mn	55	97.658		
Co	59	102.072		
Ni	60	95.923		
Cu	65	97.433		
Zn	66	102.862		
Ge	72		99.874	
As	75	101.736		
Se	82	102.099		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	107.334		
Ag	107	90.967		
Cd	111	99.815		
Cd	114			
In	115		97.332	
Sn	118			
Sb	123	100.949		
Ba	135	98.289		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.155		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.035		
U	238	101.397		
Bi	209		101.575	
Na	23	175.090		
Mg	24	289.203		
K	39	83.630		
Ca	43	153.278		
Fe	54	110.360		
Fe	57	104.761		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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QC Std 5	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 15:10:01
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85172.2	3.3				ug/L	81760	Standard
	Be	9	53236.8	4.1	**51.4767**	2.435	4.7	ug/L	17	Standard
	Al	27	7628795.8	0.6	**47.5256**	1.416	3.0	ug/L	1410	Standard
	Sc	45	37696.8	2.0				ug/L	39543	Standard
	Ti	47	24164.9	0.9	**98.0401**	2.312	2.4	ug/L	39	Standard
	V	51	343835.2	0.1	**49.7831**	0.751	1.5	ug/L	1415	Standard
	Cr	52	344282.1	1.0	**48.9253**	1.054	2.2	ug/L	6946	Standard
	Cr	53	43472.3	1.9	**49.7131**	1.693	3.4	ug/L	328	Standard
	Mn	55	313567.9	1.4	**48.7360**	1.405	2.9	ug/L	823	Standard
	Co	59	359786.6	1.1	**51.7171**	1.082	2.1	ug/L	252	Standard
	Ni	60	90351.3	0.3	**48.3759**	0.827	1.7	ug/L	192	Standard
	Cu	65	92251.0	0.7	**48.9699**	0.708	1.4	ug/L	141	Standard
	Zn	66	54515.2	1.1	**49.4372**	1.191	2.4	ug/L	491	Standard
>	**Ge**	72	509796.1	1.5				ug/L	515087	Standard
	As	75	55417.4	0.8	**49.8530**	1.118	2.2	ug/L	20	Standard
	Se	82	5885.8	2.0	**51.5527**	1.791	3.5	ug/L	15	Standard
	Se-1	77	3913.8	2.3	**51.7920**	1.979	3.8	ug/L	48	Standard
>	**Ga**	71	60.0	14.4				mg/L	90	Standard
	Rb	85	760.0	3.9				ug/L	23	Standard
	Y	89	437496.8	1.0				ug/L	448510	Standard
>	**Rh**	103	35.0	28.6				ug/L	15	Standard
	Mo	98	271668.8	0.6	**101.2993**	0.747	0.7	ug/L	11	Standard
	Ag	107	329448.9	0.2	**49.4598**	0.339	0.7	ug/L	134	Standard
	Cd	111	103364.2	1.7	**48.7409**	0.531	1.1	mg/L	7	Standard
	Cd	114	251263.5	1.7	**48.7432**	0.553	1.1	ug/L	16	Standard
>	**In**	115	606236.0	0.6				ug/L	611117	Standard
	Sn	118	288784.4	0.3	**49.1320**	0.341	0.7	ug/L	518	Standard
	Sb	123	235993.4	0.4	**50.4089**	0.456	0.9	ug/L	127	Standard
	Ba	135	99324.5	0.4	**48.4735**	0.237	0.5	ug/L	45	Standard
	Ce	140	126.7	35.6				ug/L	298	Standard
>	**Tb**	159	959991.8	0.1				ug/L	977942	Standard
	Ho	165	8.3	34.6				ug/L	12	Standard
	Tl	203	427212.2	0.6	**50.5774**	0.492	1.0	ug/L	31	Standard
	Tl	205	380951.0	2.1	**51.9422**	1.422	2.7	ug/L	20	Standard
	Pb	206	273119.7	0.4	**50.3511**	0.572	1.1	ug/L	286	Standard
	Pb	207	248886.2	0.4	**50.8720**	0.472	0.9	ug/L	257	Standard
	Pb	208	972505.1	1.3	**51.3811**	0.993	1.9	ug/L	956	Standard
	U	238	367751.0	1.4	**51.2030**	1.055	2.1	ug/L	17	Standard
>	**Bi**	209	558440.3	0.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4133.9	5.5	**5.7164**	0.326	5.7	mg/L	32	Standard
K	39	1253.4	8.2	**4.3011**	0.352	8.2	mg/L	30	Standard
Ca	43	70.0	37.8	**5.7557**	4.052	70.4	mg/L	48	Standard
Fe	54	5742.0	2.6	**5.3173**	0.253	4.8	mg/L	159	Standard
Fe	57	1578.4	3.1	**4.9652**	0.143	2.9	mg/L	195	Standard
> **Sc-1**	45	37696.8	2.0				mg/L	39543	Standard
Cl	35	31580.2	0.9				ug/L	27642	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	1660.1	9.6				ug/L	1647	Standard
P	31	16826.0	2.3				ug/L	15231	Standard
S	34	2313.5	5.0				ug/L	1845	Standard
Sr	88	61.7	26.1				ug/L	70	Standard
C	12	133.3	18.9				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	13.3	114.6				mg/L	12	Standard
Ho-1	165	8.3	34.6				mg/L	12	Standard
Er	166	0.0					mg/L	20	Standard
I	127	1290.1	24.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	102.953		
Al	27	95.051		
Sc	45			
Ti	47	98.040		
V	51	99.566		
Cr	52	97.851		
Cr	53			
Mn	55	97.472		
Co	59	103.434		
Ni	60	96.752		
Cu	65	97.940		
Zn	66	98.874		
> Ge	72		98.973	
As	75	99.706		
Se	82	103.105		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	101.299		
Ag	107	98.920		
Cd	111	97.482		
Cd	114			
> In	115			99.201
Sn	118	98.264		
Sb	123	100.818		
Ba	135	96.947		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.155		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.762		
U	238	102.406		
> Bi	209			100.244
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 15:13:12
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88670.5	2.8				ug/L	81760	Standard
	Be	9	51.7	24.4	**0.0381**	0.010	27.4	ug/L	17	Standard
	Al	27	5021.0	57.4	**0.0153**	0.016	105.4	ug/L	1410	Standard
	Sc	45	39924.2	3.2				ug/L	39543	Standard
	Ti	47	36.7	33.9	**-0.0173**	0.048	276.4	ug/L	39	Standard
	V	51	1293.4	14.6	**-0.0198**	0.025	126.5	ug/L	1415	Standard
	Cr	52	6153.2	0.9	**-0.1686**	0.020	12.1	ug/L	6946	Standard
	Cr	53	480.0	7.9	**0.2078**	0.038	18.2	ug/L	328	Standard
	Mn	55	818.0	20.7	**-0.0219**	0.025	112.7	ug/L	823	Standard
	Co	59	362.0	35.7	**0.0203**	0.018	87.2	ug/L	252	Standard
	Ni	60	216.7	22.5	**0.0105**	0.024	233.6	ug/L	192	Standard
	Cu	65	206.0	48.8	**0.0177**	0.051	290.8	ug/L	141	Standard
	Zn	66	512.3	23.8	**-0.3586**	0.106	29.6	ug/L	491	Standard
>	**Ge**	72	512537.5	1.6				ug/L	515087	Standard
	As	75	16.6	529.1	**0.0544**	0.078	142.5	ug/L	20	Standard
	Se	82	20.8	66.0	**0.0610**	0.117	191.3	ug/L	15	Standard
	Se-1	77	56.0	20.1	**0.0270**	0.140	518.0	ug/L	48	Standard
>	**Ga**	71	48.3	15.8				mg/L	90	Standard
	Rb	85	23.3	32.7				ug/L	23	Standard
	Y	89	442158.0	1.4				ug/L	448510	Standard
>	**Rh**	103	8.3	69.3				ug/L	15	Standard
	Mo	98	390.5	34.5	**0.1230**	0.050	40.8	ug/L	11	Standard
	Ag	107	293.7	71.4	**0.0269**	0.031	115.5	ug/L	134	Standard
	Cd	111	93.5	118.9	**0.0403**	0.052	128.0	mg/L	7	Standard
	Cd	114	191.9	127.3	**0.0316**	0.047	147.6	ug/L	16	Standard
>	**In**	115	622178.9	0.7				ug/L	611117	Standard
	Sn	118	798.4	19.1	**0.0306**	0.025	81.3	ug/L	518	Standard
	Sb	123	1327.2	22.5	**0.2633**	0.061	23.3	ug/L	127	Standard
	Ba	135	121.3	95.4	**0.0329**	0.056	169.3	ug/L	45	Standard
	Ce	140	156.7	109.9				ug/L	298	Standard
>	**Tb**	159	979098.8	1.1				ug/L	977942	Standard
	Ho	165	8.3	124.9				ug/L	12	Standard
	Tl	203	319.0	100.9	**0.0316**	0.036	115.5	ug/L	31	Standard
	Tl	205	186.7	86.1	**0.0222**	0.021	94.2	ug/L	20	Standard
	Pb	206	461.3	35.4	**0.0186**	0.029	153.9	ug/L	286	Standard
	Pb	207	392.3	40.1	**0.0194**	0.031	157.4	ug/L	257	Standard
	Pb	208	1505.0	29.2	**0.0164**	0.022	134.2	ug/L	956	Standard
	U	238	157.3	69.9	**0.0181**	0.015	80.5	ug/L	17	Standard
>	**Bi**	209	578116.8	1.4				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	31.7	18.2	**-0.0152**	0.009	57.6	mg/L	32	Standard
K	39	23.3	49.5	**-0.0625**	0.040	64.6	mg/L	30	Standard
Ca	43	25.0	40.0	**-1.6032**	1.411	88.0	mg/L	48	Standard
Fe	54	127.6	20.0	**-0.0223**	0.025	111.2	mg/L	159	Standard
Fe	57	173.3	7.3	**-0.0450**	0.038	85.1	mg/L	195	Standard
Sc-1	45	39924.2	3.2				mg/L	39543	Standard
Cl	35	32496.1	0.6				ug/L	27642	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	1573.4	6.5				ug/L	1647	Standard
P	31	17568.5	2.8				ug/L	15231	Standard
S	34	2373.5	3.0				ug/L	1845	Standard
Sr	88	50.0	26.5				ug/L	70	Standard
C	12	106.7	19.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.5	38.4				mg/L	12	Standard
Ho-1	165	8.3	124.9				mg/L	12	Standard
Er	166	16.7	124.9				mg/L	20	Standard
I	127	1251.7	20.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.505	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.810
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.776
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Tuesday, June 28, 2016 15:16:29
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81011.1	2.2				ug/L	81760	Standard
	Be	9	195.0	20.5	**0.1880**	0.037	19.7	ug/L	17	Standard
	Al	27	1493.4	21.7	**-0.0047**	0.002	41.0	ug/L	1410	Standard
	Sc	45	36542.4	1.6				ug/L	39543	Standard
	Ti	47	30.7	9.4	**-0.0369**	0.011	30.3	ug/L	39	Standard
	V	51	3567.1	2.8	**0.3274**	0.017	5.3	ug/L	1415	Standard
	Cr	52	11052.7	0.9	**0.5951**	0.027	4.6	ug/L	6946	Standard
	Cr	53	1095.0	4.8	**0.9563**	0.056	5.9	ug/L	328	Standard
	Mn	55	3466.7	0.6	**0.4079**	0.007	1.6	ug/L	823	Standard
	Co	59	2834.6	2.1	**0.3884**	0.006	1.6	ug/L	252	Standard
	Ni	60	2871.9	0.5	**1.4818**	0.019	1.3	ug/L	192	Standard
	Cu	65	1515.4	2.2	**0.7391**	0.023	3.1	ug/L	141	Standard
	Zn	66	7448.8	1.9	**6.2435**	0.137	2.2	ug/L	491	Standard
>	**Ge**	72	495055.6	0.7				ug/L	515087	Standard
	As	75	363.8	8.2	**0.3769**	0.025	6.6	ug/L	20	Standard
	Se	82	58.7	3.6	**0.4109**	0.015	3.7	ug/L	15	Standard
	Se-1	77	71.3	17.1	**0.2665**	0.171	64.2	ug/L	48	Standard
>	**Ga**	71	38.3	19.9				mg/L	90	Standard
	Rb	85	26.7	28.6				ug/L	23	Standard
	Y	89	415588.9	2.9				ug/L	448510	Standard
>	**Rh**	103	6.7	43.3				ug/L	15	Standard
	Mo	98	101.2	14.2	**0.0199**	0.005	26.4	ug/L	11	Standard
	Ag	107	2581.2	2.0	**0.3840**	0.010	2.6	ug/L	134	Standard
	Cd	111	489.5	5.9	**0.2354**	0.013	5.3	mg/L	7	Standard
	Cd	114	1118.1	7.7	**0.2189**	0.015	6.9	ug/L	16	Standard
>	**In**	115	587241.6	1.2				ug/L	611117	Standard
	Sn	118	508.3	8.2	**-0.0124**	0.008	65.2	ug/L	518	Standard
	Sb	123	2001.1	5.7	**0.4288**	0.031	7.2	ug/L	127	Standard
	Ba	135	1392.4	6.1	**0.6767**	0.039	5.8	ug/L	45	Standard
	Ce	140	30.0	44.1				ug/L	298	Standard
>	**Tb**	159	929212.6	0.4				ug/L	977942	Standard
	Ho	165	13.3	57.3				ug/L	12	Standard
	Tl	203	711.0	4.8	**0.0804**	0.004	5.1	ug/L	31	Standard
	Tl	205	656.7	5.8	**0.0883**	0.005	5.1	ug/L	20	Standard
	Pb	206	1347.1	1.6	**0.1880**	0.004	2.0	ug/L	286	Standard
	Pb	207	1117.4	2.9	**0.1733**	0.005	3.1	ug/L	257	Standard
	Pb	208	4713.3	2.2	**0.1919**	0.007	3.7	ug/L	956	Standard
	U	238	2843.3	0.8	**0.3977**	0.005	1.3	ug/L	17	Standard
>	**Bi**	209	551791.7	0.8				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	26.7	39.0	**-0.0189**	0.015	77.3	mg/L	32	Standard
K	39	20.0	25.0	**-0.0684**	0.018	25.7	mg/L	30	Standard
Ca	43	25.0	40.0	**-1.2235**	1.703	139.2	mg/L	48	Standard
Fe	54	112.3	6.9	**-0.0270**	0.008	31.0	mg/L	159	Standard
Fe	57	200.0	28.8	**0.1050**	0.205	195.5	mg/L	195	Standard
Sc-1	45	36542.4	1.6				mg/L	39543	Standard
Cl	35	31755.9	1.1				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1523.4	8.9				ug/L	1647	Standard
P	31	12263.3	0.6				ug/L	15231	Standard
S	34	2283.5	2.6				ug/L	1845	Standard
Sr	88	63.3	25.4				ug/L	70	Standard
C	12	146.7	38.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	15.9	37.5				mg/L	12	Standard
Ho-1	165	13.3	57.3				mg/L	12	Standard
Er	166	16.7	91.7				mg/L	20	Standard
I	127	1103.4	23.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	94.012		
Al	27			
Sc	45			
Ti	47			
V	51	81.855		
Cr	52	74.385		
Cr	53			
Mn	55	81.586		
Co	59	97.096		
Ni	60	92.611		
Cu	65	92.383		
Zn	66	99.896		
Ge	72		96.111	
As	75	94.213		
Se	82	102.730		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	96.001		
Cd	111	98.068		
Cd	114			
> In	115			96.093
Sn	118			
Sb	123	107.193		
Ba	135	90.223		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.519		
Tl	205			
Pb	206			
Pb	207			
Pb	208	95.932		
U	238	99.422		
> Bi	209			99.051
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
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Method 6020 - Summary Report

Sample ID: L1606078703 WG573333-01
Sample Date/Time: Tuesday, June 28, 2016 15:24:24
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77973.6	3.5				ug/L	81760	Standard
	Be	9	93.3	32.7	**0.0882**	0.029	33.1	ug/L	17	Standard
	Al	27	522182.4	1.6	**3.5410**	0.149	4.2	ug/L	1410	Standard
	Sc	45	36268.4	3.8				ug/L	39543	Standard
	Ti	47	171.7	14.8	**0.5849**	0.118	20.2	ug/L	39	Standard
	V	51	8345.2	3.6	**1.0965**	0.041	3.8	ug/L	1415	Standard
	Cr	52	9135.4	1.3	**0.3675**	0.032	8.6	ug/L	6946	Standard
	Cr	53	715.0	6.0	**0.5424**	0.045	8.2	ug/L	328	Standard
	Mn	55	230272.3	2.4	**38.4029**	0.677	1.8	ug/L	823	Standard
	Co	59	4116.2	4.4	**0.6044**	0.024	3.9	ug/L	252	Standard
	Ni	60	2251.2	4.1	**1.1925**	0.054	4.6	ug/L	192	Standard
	Cu	65	1784.1	4.6	**0.9285**	0.051	5.5	ug/L	141	Standard
	Zn	66	3508.4	21.7	**2.6509**	0.786	29.6	ug/L	491	Standard
>	**Ge**	72	474556.6	0.9				ug/L	515087	Standard
	As	75	172.3	13.5	**0.2068**	0.024	11.5	ug/L	20	Standard
	Se	82	19.4	8.6	**0.0638**	0.017	27.3	ug/L	15	Standard
	Se-1	77	47.7	3.2	**-0.0320**	0.028	88.4	ug/L	48	Standard
>	**Ga**	71	883.4	11.6				mg/L	90	Standard
	Rb	85	7710.3	5.5				ug/L	23	Standard
	Y	89	442484.5	1.8				ug/L	448510	Standard
>	**Rh**	103	20.0	25.0				ug/L	15	Standard
	Mo	98	50.0	20.9	**0.0005**	0.004	864.7	ug/L	11	Standard
	Ag	107	103.7	35.8	**0.0001**	0.006	5294.7	ug/L	134	Standard
	Cd	111	33.9	43.4	**0.0139**	0.007	52.6	mg/L	7	Standard
	Cd	114	75.2	57.1	**0.0104**	0.009	84.2	ug/L	16	Standard
>	**In**	115	577946.8	0.2				ug/L	611117	Standard
	Sn	118	366.7	11.4	**-0.0364**	0.008	20.8	ug/L	518	Standard
	Sb	123	219.5	27.2	**0.0364**	0.013	37.0	ug/L	127	Standard
	Ba	135	15089.5	2.8	**7.7036**	0.230	3.0	ug/L	45	Standard
	Ce	140	101663.3	0.5				ug/L	298	Standard
>	**Tb**	159	912358.4	0.5				ug/L	977942	Standard
	Ho	165	1823.4	12.2				ug/L	12	Standard
	Tl	203	96.3	39.3	**0.0070**	0.005	65.1	ug/L	31	Standard
	Tl	205	60.0	22.0	**0.0062**	0.002	29.8	ug/L	20	Standard
	Pb	206	5271.9	0.9	**0.9471**	0.013	1.4	ug/L	286	Standard
	Pb	207	4329.0	2.2	**0.8620**	0.023	2.7	ug/L	257	Standard
	Pb	208	18126.6	1.5	**0.9354**	0.019	2.1	ug/L	956	Standard
	U	238	313.3	4.9	**0.0423**	0.002	4.7	ug/L	17	Standard
>	**Bi**	209	537668.4	0.5				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	30.0	60.1	**-0.0138**	0.025	183.5	mg/L	32	Standard
K	39	53.3	37.9	**0.0534**	0.067	124.6	mg/L	30	Standard
Ca	43	48.3	6.0	**2.6636**	0.532	20.0	mg/L	48	Standard
Fe	54	632.5	2.4	**0.4873**	0.016	3.2	mg/L	159	Standard
Fe	57	343.3	3.0	**0.6393**	0.010	1.6	mg/L	195	Standard
Sc-1	45	36268.4	3.8				mg/L	39543	Standard
Cl	35	30788.6	1.3				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1480.1	1.8				ug/L	1647	Standard
P	31	7060.0	1.2				ug/L	15231	Standard
S	34	2285.2	6.0				ug/L	1845	Standard
Sr	88	48.3	21.5				ug/L	70	Standard
C	12	146.7	76.6				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	3101.1	5.7				mg/L	12	Standard
Ho-1	165	1823.4	12.2				mg/L	12	Standard
Er	166	1723.4	3.7				mg/L	20	Standard
I	127	1973.5	19.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		95.369	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		92.131	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.572
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.515
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606078704S WG573333-05
Sample Date/Time: Tuesday, June 28, 2016 15:27:35
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77117.5	2.8				ug/L	81760	Standard
	Be	9	2866.9	4.2	**3.0501**	0.044	1.4	ug/L	17	Standard
	Al	27	530634.0	2.5	**3.6356**	0.032	0.9	ug/L	1410	Standard
	Sc	45	36769.6	1.1				ug/L	39543	Standard
	Ti	47	373.0	7.6	**1.4053**	0.111	7.9	ug/L	39	Standard
	V	51	27357.6	1.0	**3.9153**	0.028	0.7	ug/L	1415	Standard
	Cr	52	27754.1	2.5	**3.1178**	0.072	2.3	ug/L	6946	Standard
	Cr	53	3205.3	2.9	**3.4822**	0.093	2.7	ug/L	328	Standard
	Mn	55	199454.4	1.6	**32.0700**	0.433	1.4	ug/L	823	Standard
	Co	59	21527.3	1.4	**3.1772**	0.038	1.2	ug/L	252	Standard
	Ni	60	6879.6	1.3	**3.7203**	0.017	0.5	ug/L	192	Standard
	Cu	65	6482.7	2.3	**3.4817**	0.050	1.4	ug/L	141	Standard
	Zn	66	6297.6	0.7	**5.1896**	0.074	1.4	ug/L	491	Standard
>	**Ge**	72	491870.4	0.9				ug/L	515087	Standard
	As	75	2731.5	2.2	**2.5846**	0.063	2.4	ug/L	20	Standard
	Se	82	265.3	2.1	**2.2945**	0.068	3.0	ug/L	15	Standard
	Se-1	77	206.7	1.5	**2.1542**	0.060	2.8	ug/L	48	Standard
>	**Ga**	71	993.4	9.7				mg/L	90	Standard
	Rb	85	7418.5	3.4				ug/L	23	Standard
	Y	89	432036.7	0.9				ug/L	448510	Standard
>	**Rh**	103	6.7	86.6				ug/L	15	Standard
	Mo	98	97.6	12.4	**0.0190**	0.004	23.4	ug/L	11	Standard
	Ag	107	16692.5	1.2	**2.6046**	0.053	2.0	ug/L	134	Standard
	Cd	111	5558.2	2.0	**2.7376**	0.075	2.7	mg/L	7	Standard
	Cd	114	13660.0	0.7	**2.7659**	0.042	1.5	ug/L	16	Standard
>	**In**	115	579914.2	0.8				ug/L	611117	Standard
	Sn	118	355.0	9.2	**-0.0387**	0.005	13.8	ug/L	518	Standard
	Sb	123	2408.5	2.5	**0.5252**	0.017	3.2	ug/L	127	Standard
	Ba	135	18788.0	0.3	**9.5654**	0.079	0.8	ug/L	45	Standard
	Ce	140	97333.3	0.8				ug/L	298	Standard
>	**Tb**	159	916801.1	0.1				ug/L	977942	Standard
	Ho	165	2003.5	4.3				ug/L	12	Standard
	Tl	203	21211.2	1.5	**2.5655**	0.023	0.9	ug/L	31	Standard
	Tl	205	18352.8	1.2	**2.5587**	0.022	0.9	ug/L	20	Standard
	Pb	206	18796.3	1.3	**3.4874**	0.034	1.0	ug/L	286	Standard
	Pb	207	16054.8	0.9	**3.3044**	0.015	0.5	ug/L	257	Standard
	Pb	208	66020.8	0.7	**3.5136**	0.008	0.2	ug/L	956	Standard
	U	238	18577.7	1.3	**2.6444**	0.019	0.7	ug/L	17	Standard
>	**Bi**	209	545605.1	0.6				ug/L	557080	Standard

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Na	23	3.3	86.6	**23.0608**	19.970	86.6	mg/L	0	Standard
Mg	24	33.3	17.3	**-0.0095**	0.008	83.3	mg/L	32	Standard
K	39	50.0	30.0	**0.0407**	0.057	139.0	mg/L	30	Standard
Ca	43	23.3	86.6	**-1.5565**	3.262	209.6	mg/L	48	Standard
Fe	54	789.3	5.9	**0.6315**	0.054	8.6	mg/L	159	Standard
Fe	57	388.3	19.5	**0.7873**	0.291	37.0	mg/L	195	Standard
Sc-1	45	36769.6	1.1				mg/L	39543	Standard
Cl	35	31616.3	0.3				ug/L	27642	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	1516.7	10.3				ug/L	1647	Standard
P	31	7133.3	2.5				ug/L	15231	Standard
S	34	2288.5	0.7				ug/L	1845	Standard
Sr	88	63.3	12.1				ug/L	70	Standard
C	12	90.0	50.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	3099.8	4.3				mg/L	12	Standard
Ho-1	165	2003.5	4.3				mg/L	12	Standard
Er	166	1750.1	2.1				mg/L	20	Standard
I	127	2031.8	18.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		94.322	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.493	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606078704S WG573333-05
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.894
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.940
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606078705SD WG573333-06
Sample Date/Time: Tuesday, June 28, 2016 15:30:46
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74501.2	2.9				ug/L	81760	Standard
	Be	9	2816.9	5.3	**3.1033**	0.143	4.6	ug/L	17	Standard
	Al	27	652490.2	1.4	**4.6325**	0.073	1.6	ug/L	1410	Standard
	Sc	45	35373.0	4.0				ug/L	39543	Standard
	Ti	47	288.0	4.5	**1.0503**	0.068	6.5	ug/L	39	Standard
	V	51	27556.1	4.5	**3.9507**	0.115	2.9	ug/L	1415	Standard
	Cr	52	29741.5	2.7	**3.4242**	0.036	1.1	ug/L	6946	Standard
	Cr	53	3408.7	4.0	**3.7308**	0.095	2.5	ug/L	328	Standard
	Mn	55	239390.4	1.7	**38.5872**	0.363	0.9	ug/L	823	Standard
	Co	59	21175.8	2.9	**3.1300**	0.064	2.1	ug/L	252	Standard
	Ni	60	7152.0	2.5	**3.8782**	0.013	0.3	ug/L	192	Standard
	Cu	65	6817.5	3.4	**3.6719**	0.046	1.3	ug/L	141	Standard
	Zn	66	6491.4	2.6	**5.3843**	0.067	1.2	ug/L	491	Standard
>	**Ge**	72	491074.4	2.2				ug/L	515087	Standard
	As	75	2669.0	1.7	**2.5305**	0.018	0.7	ug/L	20	Standard
	Se	82	259.6	0.9	**2.2467**	0.073	3.2	ug/L	15	Standard
	Se-1	77	214.7	9.1	**2.2690**	0.247	10.9	ug/L	48	Standard
>	**Ga**	71	1028.4	8.9				mg/L	90	Standard
	Rb	85	7220.1	2.0				ug/L	23	Standard
	Y	89	434100.4	1.8				ug/L	448510	Standard
>	**Rh**	103	11.7	24.7				ug/L	15	Standard
	Mo	98	220.7	3.6	**0.0685**	0.004	5.3	ug/L	11	Standard
	Ag	107	16241.0	2.2	**2.5784**	0.042	1.6	ug/L	134	Standard
	Cd	111	5563.7	4.0	**2.7880**	0.091	3.3	mg/L	7	Standard
	Cd	114	13468.2	1.0	**2.7750**	0.021	0.8	ug/L	16	Standard
>	**In**	115	569849.5	0.7				ug/L	611117	Standard
	Sn	118	353.3	16.1	**-0.0379**	0.010	26.3	ug/L	518	Standard
	Sb	123	2719.7	5.6	**0.6052**	0.030	5.0	ug/L	127	Standard
	Ba	135	20622.4	3.5	**10.6862**	0.314	2.9	ug/L	45	Standard
	Ce	140	98046.3	2.6				ug/L	298	Standard
>	**Tb**	159	907491.8	2.5				ug/L	977942	Standard
	Ho	165	2030.1	2.1				ug/L	12	Standard
	Tl	203	20792.6	2.1	**2.5412**	0.024	1.0	ug/L	31	Standard
	Tl	205	18564.7	0.9	**2.6157**	0.018	0.7	ug/L	20	Standard
	Pb	206	19134.8	4.2	**3.5891**	0.137	3.8	ug/L	286	Standard
	Pb	207	16318.5	3.9	**3.3949**	0.097	2.9	ug/L	257	Standard
	Pb	208	68373.0	0.9	**3.6800**	0.027	0.7	ug/L	956	Standard
	U	238	18425.5	1.4	**2.6505**	0.039	1.5	ug/L	17	Standard
>	**Bi**	209	539937.0	1.4				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	30.0	44.1	**-0.0120**	0.022	182.1	mg/L	32	Standard
K	39	43.3	29.0	**0.0214**	0.044	203.2	mg/L	30	Standard
Ca	43	31.7	50.8	**-0.0240**	2.524	10500.7	mg/L	48	Standard
Fe	54	837.2	3.3	**0.7115**	0.061	8.6	mg/L	159	Standard
Fe	57	390.0	5.9	**0.8507**	0.142	16.6	mg/L	195	Standard
Sc-1	45	35373.0	4.0				mg/L	39543	Standard
Cl	35	30539.4	1.3				ug/L	27642	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	1456.7	10.3				ug/L	1647	Standard
P	31	7050.0	3.7				ug/L	15231	Standard
S	34	2141.8	2.3				ug/L	1845	Standard
Sr	88	61.7	12.4				ug/L	70	Standard
C	12	110.0	32.8				mg/L	113	Standard
N	14	6.7	86.6				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	3163.0	6.4				mg/L	12	Standard
Ho-1	165	2030.1	2.1				mg/L	12	Standard
Er	166	1753.4	8.6				mg/L	20	Standard
I	127	1965.1	14.8				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.122	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.338	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.247
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.923
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606078706
Sample Date/Time: Tuesday, June 28, 2016 15:33:58
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76028.8	3.5				ug/L	81760	Standard
	Be	9	38.3	19.9	**0.0318**	0.009	27.2	ug/L	17	Standard
	Al	27	238262.4	1.5	**1.6489**	0.050	3.0	ug/L	1410	Standard
	Sc	45	37198.9	1.1				ug/L	39543	Standard
	Ti	47	135.7	11.8	**0.3914**	0.065	16.6	ug/L	39	Standard
	V	51	5276.5	1.4	**0.5679**	0.012	2.1	ug/L	1415	Standard
	Cr	52	6498.4	1.5	**-0.1047**	0.015	14.1	ug/L	6946	Standard
	Cr	53	391.7	9.7	**0.1138**	0.045	39.3	ug/L	328	Standard
	Mn	55	119285.7	3.0	**18.6233**	0.543	2.9	ug/L	823	Standard
	Co	59	1493.7	2.3	**0.1855**	0.005	2.9	ug/L	252	Standard
	Ni	60	894.4	1.7	**0.3795**	0.008	2.0	ug/L	192	Standard
	Cu	65	697.3	2.0	**0.2836**	0.007	2.5	ug/L	141	Standard
	Zn	66	2625.6	1.0	**1.6163**	0.028	1.8	ug/L	491	Standard
>	**Ge**	72	504872.7	0.1				ug/L	515087	Standard
	As	75	131.9	5.5	**0.1599**	0.007	4.3	ug/L	20	Standard
	Se	82	16.6	26.9	**0.0277**	0.040	143.8	ug/L	15	Standard
	Se-1	77	42.3	11.2	**-0.1455**	0.065	44.4	ug/L	48	Standard
>	**Ga**	71	331.7	11.3				mg/L	90	Standard
	Rb	85	2800.3	5.6				ug/L	23	Standard
	Y	89	425969.9	0.3				ug/L	448510	Standard
>	**Rh**	103	21.7	96.1				ug/L	15	Standard
	Mo	98	33.2	18.6	**-0.0062**	0.003	40.5	ug/L	11	Standard
	Ag	107	87.7	13.4	**-0.0025**	0.002	77.6	ug/L	134	Standard
	Cd	111	11.3	20.5	**0.0026**	0.001	43.1	mg/L	7	Standard
	Cd	114	30.9	19.2	**0.0013**	0.001	87.3	ug/L	16	Standard
>	**In**	115	583702.0	1.1				ug/L	611117	Standard
	Sn	118	278.3	22.7	**-0.0527**	0.011	20.3	ug/L	518	Standard
	Sb	123	103.7	16.2	**0.0102**	0.004	35.3	ug/L	127	Standard
	Ba	135	9187.1	1.4	**4.6338**	0.016	0.3	ug/L	45	Standard
	Ce	140	45456.4	1.3				ug/L	298	Standard
>	**Tb**	159	930779.6	1.7				ug/L	977942	Standard
	Ho	165	850.0	2.4				ug/L	12	Standard
	Tl	203	23.3	23.6	**-0.0020**	0.001	31.7	ug/L	31	Standard
	Tl	205	35.0	37.8	**0.0025**	0.002	71.7	ug/L	20	Standard
	Pb	206	2536.5	1.2	**0.4062**	0.009	2.2	ug/L	286	Standard
	Pb	207	2050.5	1.7	**0.3630**	0.010	2.7	ug/L	257	Standard
	Pb	208	8421.9	1.7	**0.3865**	0.010	2.6	ug/L	956	Standard
	U	238	103.3	13.1	**0.0115**	0.002	17.1	ug/L	17	Standard
>	**Bi**	209	556617.5	0.8				ug/L	557080	Standard

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Na	23	1.7	173.2	**11.3116**	19.584	173.1	mg/L	0	Standard
Mg	24	31.7	9.1	**-0.0123**	0.005	37.6	mg/L	32	Standard
K	39	50.0	10.0	**0.0383**	0.020	51.6	mg/L	30	Standard
Ca	43	18.3	103.3	**-2.3989**	3.033	126.4	mg/L	48	Standard
Fe	54	317.8	14.7	**0.1684**	0.043	25.3	mg/L	159	Standard
Fe	57	280.0	19.3	**0.3807**	0.196	51.6	mg/L	195	Standard
> **Sc-1**	45	37198.9	1.1				mg/L	39543	Standard
Cl	35	30150.0	0.9				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1330.1	6.0				ug/L	1647	Standard
P	31	7115.0	3.6				ug/L	15231	Standard
S	34	2203.5	6.4				ug/L	1845	Standard
Sr	88	73.3	23.9				ug/L	70	Standard
C	12	136.7	33.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	1461.3	2.6				mg/L	12	Standard
Ho-1	165	850.0	2.4				mg/L	12	Standard
Er	166	740.0	2.3				mg/L	20	Standard
I	127	1331.7	15.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.990	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.017	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.514
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.917
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606078708
Sample Date/Time: Tuesday, June 28, 2016 15:37:09
Number of Replicates: 3
Autosampler Position: 227
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75812.6	2.8				ug/L	81760	Standard
	Be	9	48.3	21.5	**0.0428**	0.011	26.6	ug/L	17	Standard
	Al	27	1071474.1	1.0	**7.4874**	0.284	3.8	ug/L	1410	Standard
	Sc	45	37513.1	2.1				ug/L	39543	Standard
	Ti	47	158.0	12.8	**0.5014**	0.093	18.5	ug/L	39	Standard
	V	51	6689.1	0.4	**0.8020**	0.010	1.2	ug/L	1415	Standard
	Cr	52	7515.2	0.4	**0.0743**	0.008	10.8	ug/L	6946	Standard
	Cr	53	588.3	8.1	**0.3608**	0.056	15.4	ug/L	328	Standard
	Mn	55	205213.7	2.8	**33.0324**	1.280	3.9	ug/L	823	Standard
	Co	59	2212.5	3.2	**0.2987**	0.013	4.3	ug/L	252	Standard
	Ni	60	1404.4	3.4	**0.6767**	0.035	5.1	ug/L	192	Standard
	Cu	65	1102.0	3.5	**0.5169**	0.018	3.4	ug/L	141	Standard
	Zn	66	2607.9	0.9	**1.6660**	0.041	2.5	ug/L	491	Standard
>	**Ge**	72	491532.3	1.1				ug/L	515087	Standard
	As	75	127.5	11.1	**0.1592**	0.014	8.7	ug/L	20	Standard
	Se	82	17.3	29.3	**0.0385**	0.047	123.2	ug/L	15	Standard
	Se-1	77	43.3	11.6	**-0.1157**	0.075	64.9	ug/L	48	Standard
>	**Ga**	71	450.0	13.5				mg/L	90	Standard
	Rb	85	3788.8	1.3				ug/L	23	Standard
	Y	89	433725.3	2.1				ug/L	448510	Standard
>	**Rh**	103	18.3	31.5				ug/L	15	Standard
	Mo	98	38.5	4.2	**-0.0045**	0.000	10.9	ug/L	11	Standard
	Ag	107	93.3	12.0	**-0.0020**	0.002	78.2	ug/L	134	Standard
	Cd	111	23.9	23.2	**0.0085**	0.003	31.3	mg/L	7	Standard
	Cd	114	45.7	16.0	**0.0041**	0.001	34.3	ug/L	16	Standard
>	**In**	115	598611.3	0.9				ug/L	611117	Standard
	Sn	118	346.7	46.9	**-0.0421**	0.028	66.0	ug/L	518	Standard
	Sb	123	86.1	26.8	**0.0058**	0.005	89.2	ug/L	127	Standard
	Ba	135	10124.4	4.3	**4.9826**	0.248	5.0	ug/L	45	Standard
	Ce	140	56269.4	3.6				ug/L	298	Standard
>	**Tb**	159	935742.2	1.5				ug/L	977942	Standard
	Ho	165	1033.4	8.1				ug/L	12	Standard
	Tl	203	29.7	5.1	**-0.0013**	0.000	18.3	ug/L	31	Standard
	Tl	205	31.7	18.2	**0.0020**	0.001	35.8	ug/L	20	Standard
	Pb	206	3055.6	2.0	**0.5003**	0.022	4.4	ug/L	286	Standard
	Pb	207	2503.2	3.8	**0.4542**	0.030	6.6	ug/L	257	Standard
	Pb	208	10181.4	1.0	**0.4779**	0.016	3.3	ug/L	956	Standard
	U	238	166.3	6.9	**0.0202**	0.002	9.9	ug/L	17	Standard
>	**Bi**	209	558847.5	2.0				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	26.7	28.6	**-0.0198**	0.010	52.5	mg/L	32	Standard
K	39	46.7	22.3	**0.0253**	0.040	158.3	mg/L	30	Standard
Ca	43	46.7	43.3	**2.1703**	3.421	157.6	mg/L	48	Standard
Fe	54	430.9	12.9	**0.2746**	0.059	21.6	mg/L	159	Standard
Fe	57	336.7	7.3	**0.5728**	0.068	12.0	mg/L	195	Standard
> **Sc-1**	45	37513.1	2.1				mg/L	39543	Standard
Cl	35	31262.2	0.8				ug/L	27642	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	1390.1	8.3				ug/L	1647	Standard
P	31	7195.0	0.6				ug/L	15231	Standard
S	34	2350.2	4.3				ug/L	1845	Standard
Sr	88	86.7	13.3				ug/L	70	Standard
C	12	130.0	15.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	1824.8	9.6				mg/L	12	Standard
Ho-1	165	1033.4	8.1				mg/L	12	Standard
Er	166	946.7	6.2				mg/L	20	Standard
I	127	1363.4	17.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.726	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.427	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.954
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.317
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606078713
Sample Date/Time: Tuesday, June 28, 2016 15:40:21
Number of Replicates: 3
Autosampler Position: 228
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75663.5	2.7				ug/L	81760	Standard
	Be	9	81.7	30.2	**0.0793**	0.028	34.9	ug/L	17	Standard
	Al	27	416574.6	1.3	**2.9066**	0.048	1.7	ug/L	1410	Standard
	Sc	45	36378.7	3.4				ug/L	39543	Standard
	Ti	47	126.3	10.5	**0.3773**	0.057	15.2	ug/L	39	Standard
	V	51	8315.3	0.5	**1.0708**	0.007	0.7	ug/L	1415	Standard
	Cr	52	8765.5	1.6	**0.2875**	0.022	7.8	ug/L	6946	Standard
	Cr	53	728.4	7.9	**0.5445**	0.070	12.8	ug/L	328	Standard
	Mn	55	93455.4	1.8	**15.2441**	0.287	1.9	ug/L	823	Standard
	Co	59	3649.1	3.3	**0.5232**	0.019	3.5	ug/L	252	Standard
	Ni	60	1651.1	5.4	**0.8312**	0.052	6.2	ug/L	192	Standard
	Cu	65	1200.0	2.8	**0.5835**	0.019	3.3	ug/L	141	Standard
	Zn	66	2593.9	1.4	**1.6993**	0.037	2.2	ug/L	491	Standard
>	**Ge**	72	482399.4	0.1				ug/L	515087	Standard
	As	75	167.0	21.6	**0.1989**	0.034	17.3	ug/L	20	Standard
	Se	82	15.9	30.3	**0.0282**	0.045	158.8	ug/L	15	Standard
	Se-1	77	52.3	6.7	**0.0228**	0.050	216.8	ug/L	48	Standard
>	**Ga**	71	573.3	13.4				mg/L	90	Standard
	Rb	85	5119.2	1.4				ug/L	23	Standard
	Y	89	439888.1	1.2				ug/L	448510	Standard
>	**Rh**	103	13.3	78.1				ug/L	15	Standard
	Mo	98	43.4	10.8	**-0.0024**	0.002	79.1	ug/L	11	Standard
	Ag	107	106.7	10.0	**0.0002**	0.002	826.8	ug/L	134	Standard
	Cd	111	22.9	46.1	**0.0082**	0.005	63.6	mg/L	7	Standard
	Cd	114	51.2	44.0	**0.0052**	0.004	84.1	ug/L	16	Standard
>	**In**	115	591171.7	0.9				ug/L	611117	Standard
	Sn	118	328.3	8.7	**-0.0445**	0.005	12.1	ug/L	518	Standard
	Sb	123	88.5	32.5	**0.0066**	0.006	98.7	ug/L	127	Standard
	Ba	135	15979.8	0.8	**7.9763**	0.029	0.4	ug/L	45	Standard
	Ce	140	70630.9	0.7				ug/L	298	Standard
>	**Tb**	159	919155.3	2.1				ug/L	977942	Standard
	Ho	165	1308.4	8.9				ug/L	12	Standard
	Tl	203	43.3	33.8	**0.0005**	0.002	355.9	ug/L	31	Standard
	Tl	205	45.0	58.8	**0.0041**	0.004	93.0	ug/L	20	Standard
	Pb	206	4127.6	1.0	**0.7213**	0.011	1.5	ug/L	286	Standard
	Pb	207	3419.4	2.4	**0.6628**	0.016	2.5	ug/L	257	Standard
	Pb	208	14423.4	1.0	**0.7255**	0.013	1.8	ug/L	956	Standard
	U	238	157.3	5.4	**0.0196**	0.001	6.2	ug/L	17	Standard
>	**Bi**	209	542054.4	0.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	38.3	7.5	**-0.0016**	0.005	296.7	mg/L	32	Standard
K	39	31.7	55.5	**-0.0245**	0.065	264.7	mg/L	30	Standard
Ca	43	18.3	56.8	**-2.3425**	1.620	69.1	mg/L	48	Standard
Fe	54	638.8	9.9	**0.4927**	0.076	15.4	mg/L	159	Standard
Fe	57	368.3	10.9	**0.7248**	0.101	14.0	mg/L	195	Standard
> **Sc-1**	45	36378.7	3.4				mg/L	39543	Standard
Cl	35	31640.3	1.2				ug/L	27642	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	1476.7	9.6				ug/L	1647	Standard
P	31	7046.6	3.0				ug/L	15231	Standard
S	34	2278.5	11.1				ug/L	1845	Standard
Sr	88	80.0	28.6				ug/L	70	Standard
C	12	116.7	26.2				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2168.9	5.7				mg/L	12	Standard
Ho-1	165	1308.4	8.9				mg/L	12	Standard
Er	166	1140.0	7.8				mg/L	20	Standard
I	127	1385.1	16.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.543	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.654	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.736
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.303
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606078715
Sample Date/Time: Tuesday, June 28, 2016 15:43:32
Number of Replicates: 3
Autosampler Position: 229
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72672.4	3.8				ug/L	81760	Standard
	Be	9	136.7	16.5	**0.1453**	0.027	18.6	ug/L	17	Standard
	Al	27	1143496.8	3.3	**8.3341**	0.197	2.4	ug/L	1410	Standard
	Sc	45	36597.5	3.0				ug/L	39543	Standard
	Ti	47	230.0	1.3	**0.8041**	0.017	2.1	ug/L	39	Standard
	V	51	11413.9	1.0	**1.5144**	0.038	2.5	ug/L	1415	Standard
	Cr	52	15036.8	0.3	**1.2067**	0.029	2.4	ug/L	6946	Standard
	Cr	53	1373.4	5.7	**1.2975**	0.078	6.0	ug/L	328	Standard
	Mn	55	293360.4	0.3	**47.2738**	0.683	1.4	ug/L	823	Standard
	Co	59	6852.2	0.9	**0.9907**	0.018	1.8	ug/L	252	Standard
	Ni	60	4182.9	0.4	**2.2225**	0.021	0.9	ug/L	192	Standard
	Cu	65	2749.2	1.6	**1.4253**	0.010	0.7	ug/L	141	Standard
	Zn	66	5934.8	0.5	**4.8465**	0.046	1.0	ug/L	491	Standard
>	**Ge**	72	491565.9	1.3				ug/L	515087	Standard
	As	75	281.2	9.9	**0.3023**	0.024	7.9	ug/L	20	Standard
	Se	82	16.6	41.5	**0.0313**	0.062	197.6	ug/L	15	Standard
	Se-1	77	52.7	11.4	**0.0136**	0.082	602.5	ug/L	48	Standard
>	**Ga**	71	1726.8	3.8				mg/L	90	Standard
	Rb	85	17453.4	2.4				ug/L	23	Standard
	Y	89	433246.4	2.7				ug/L	448510	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	40.4	18.8	**-0.0027**	0.003	116.5	ug/L	11	Standard
	Ag	107	118.3	7.6	**0.0030**	0.002	54.7	ug/L	134	Standard
	Cd	111	36.9	12.4	**0.0159**	0.002	13.6	mg/L	7	Standard
	Cd	114	100.1	28.9	**0.0161**	0.006	36.4	ug/L	16	Standard
>	**In**	115	559969.6	1.0				ug/L	611117	Standard
	Sn	118	245.0	14.3	**-0.0567**	0.006	11.1	ug/L	518	Standard
	Sb	123	73.5	14.6	**0.0042**	0.003	63.0	ug/L	127	Standard
	Ba	135	26697.5	0.7	**14.0890**	0.209	1.5	ug/L	45	Standard
	Ce	140	126090.9	1.2				ug/L	298	Standard
>	**Tb**	159	888471.0	0.2				ug/L	977942	Standard
	Ho	165	2013.5	3.3				ug/L	12	Standard
	Tl	203	105.3	16.7	**0.0083**	0.002	26.4	ug/L	31	Standard
	Tl	205	98.3	26.1	**0.0118**	0.004	31.7	ug/L	20	Standard
	Pb	206	7239.7	1.0	**1.3394**	0.022	1.6	ug/L	286	Standard
	Pb	207	5907.2	0.7	**1.2110**	0.009	0.7	ug/L	257	Standard
	Pb	208	24779.9	1.0	**1.3155**	0.008	0.6	ug/L	956	Standard
	U	238	285.0	3.3	**0.0387**	0.001	3.3	ug/L	17	Standard
>	**Bi**	209	531928.0	0.6				ug/L	557080	Standard

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Na	23	1.7	173.2	**11.1992**	19.389	173.1	mg/L	0	Standard
Mg	24	35.0	0.0	**-0.0068**	0.002	22.3	mg/L	32	Standard
K	39	70.0	24.7	**0.1145**	0.065	56.7	mg/L	30	Standard
Ca	43	41.7	48.5	**1.5107**	3.417	226.2	mg/L	48	Standard
Fe	54	1498.6	2.3	**1.3298**	0.075	5.6	mg/L	159	Standard
Fe	57	515.0	3.5	**1.2558**	0.109	8.7	mg/L	195	Standard
> **Sc-1**	45	36597.5	3.0				mg/L	39543	Standard
Cl	35	30785.2	1.5				ug/L	27642	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	1506.7	9.5				ug/L	1647	Standard
P	31	6974.9	2.8				ug/L	15231	Standard
S	34	2301.8	4.8				ug/L	1845	Standard
Sr	88	70.0	28.6				ug/L	70	Standard
C	12	113.3	31.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	3365.6	4.6				mg/L	12	Standard
Ho-1	165	2013.5	3.3				mg/L	12	Standard
Er	166	1770.1	9.2				mg/L	20	Standard
I	127	1690.1	9.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.885	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.434	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.631
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.485
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078716
Sample Date/Time: Tuesday, June 28, 2016 15:46:44
Number of Replicates: 3
Autosampler Position: 230
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72657.2	3.0				ug/L	81760	Standard
	Be	9	110.0	13.6	**0.1151**	0.019	16.6	ug/L	17	Standard
	Al	27	964168.3	0.2	**7.0283**	0.202	2.9	ug/L	1410	Standard
	Sc	45	36550.7	1.7				ug/L	39543	Standard
	Ti	47	122.3	2.9	**0.3511**	0.018	5.2	ug/L	39	Standard
	V	51	5582.1	3.3	**0.6361**	0.029	4.5	ug/L	1415	Standard
	Cr	52	12113.5	1.9	**0.7686**	0.019	2.4	ug/L	6946	Standard
	Cr	53	1075.0	5.2	**0.9442**	0.085	9.0	ug/L	328	Standard
	Mn	55	296391.3	0.6	**47.8289**	1.096	2.3	ug/L	823	Standard
	Co	59	5108.9	2.5	**0.7319**	0.032	4.3	ug/L	252	Standard
	Ni	60	3102.7	1.4	**1.6241**	0.056	3.4	ug/L	192	Standard
	Cu	65	3067.6	0.7	**1.6034**	0.043	2.7	ug/L	141	Standard
	Zn	66	5597.7	1.7	**4.5323**	0.178	3.9	ug/L	491	Standard
>	**Ge**	72	490975.8	1.9				ug/L	515087	Standard
	As	75	34.9	42.7	**0.0731**	0.015	20.1	ug/L	20	Standard
	Se	82	17.1	13.6	**0.0368**	0.020	54.2	ug/L	15	Standard
	Se-1	77	53.7	6.0	**0.0281**	0.032	114.8	ug/L	48	Standard
>	**Ga**	71	1235.1	6.5				mg/L	90	Standard
	Rb	85	7633.6	0.9				ug/L	23	Standard
	Y	89	431776.8	2.6				ug/L	448510	Standard
>	**Rh**	103	15.0	66.7				ug/L	15	Standard
	Mo	98	19.3	30.7	**-0.0115**	0.002	20.4	ug/L	11	Standard
	Ag	107	114.7	7.5	**0.0018**	0.001	48.3	ug/L	134	Standard
	Cd	111	65.3	10.2	**0.0294**	0.003	8.8	mg/L	7	Standard
	Cd	114	154.6	13.1	**0.0266**	0.003	12.9	ug/L	16	Standard
>	**In**	115	577281.8	2.6				ug/L	611117	Standard
	Sn	118	261.7	10.5	**-0.0551**	0.004	6.8	ug/L	518	Standard
	Sb	123	70.5	12.0	**0.0029**	0.001	50.3	ug/L	127	Standard
	Ba	135	31515.4	1.1	**16.1422**	0.456	2.8	ug/L	45	Standard
	Ce	140	108483.7	1.5				ug/L	298	Standard
>	**Tb**	159	919053.3	0.1				ug/L	977942	Standard
	Ho	165	2146.8	3.5				ug/L	12	Standard
	Tl	203	55.7	15.3	**0.0020**	0.001	51.1	ug/L	31	Standard
	Tl	205	56.7	10.2	**0.0057**	0.001	13.8	ug/L	20	Standard
	Pb	206	8383.7	0.8	**1.5358**	0.026	1.7	ug/L	286	Standard
	Pb	207	6950.9	2.1	**1.4122**	0.046	3.3	ug/L	257	Standard
	Pb	208	28623.6	0.6	**1.5044**	0.028	1.9	ug/L	956	Standard
	U	238	278.7	6.7	**0.0371**	0.002	6.0	ug/L	17	Standard
>	**Bi**	209	540360.9	1.3				ug/L	557080	Standard

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Na	23	3.3	86.6	**23.0232**	19.940	86.6	mg/L	0	Standard
Mg	24	31.7	36.5	**-0.0117**	0.016	134.2	mg/L	32	Standard
K	39	40.0	57.3	**0.0042**	0.082	1950.6	mg/L	30	Standard
Ca	43	45.0	19.2	**2.0338**	1.285	63.2	mg/L	48	Standard
Fe	54	558.7	3.5	**0.4103**	0.028	6.8	mg/L	159	Standard
Fe	57	366.7	19.3	**0.7123**	0.240	33.7	mg/L	195	Standard
Sc-1	45	36550.7	1.7				mg/L	39543	Standard
Cl	35	30424.5	0.4				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	1540.1	8.3				ug/L	1647	Standard
P	31	6878.2	1.3				ug/L	15231	Standard
S	34	2278.5	4.6				ug/L	1845	Standard
Sr	88	71.7	29.0				ug/L	70	Standard
C	12	150.0	33.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	0	Standard
Dy	164	3587.7	5.2				mg/L	12	Standard
Ho-1	165	2146.8	3.5				mg/L	12	Standard
Er	166	1936.8	10.5				mg/L	20	Standard
I	127	1943.5	8.8				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		88.866	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.319	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.463
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.999
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606078717
Sample Date/Time: Tuesday, June 28, 2016 15:49:55
Number of Replicates: 3
Autosampler Position: 231
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72923.4	1.2				ug/L	81760	Standard
	Be	9	50.0	43.6	**0.0466**	0.024	52.0	ug/L	17	Standard
	Al	27	245816.4	0.3	**1.7738**	0.027	1.5	ug/L	1410	Standard
	Sc	45	37411.1	1.3				ug/L	39543	Standard
	Ti	47	150.7	7.6	**0.4619**	0.045	9.8	ug/L	39	Standard
	V	51	5992.6	2.2	**0.6857**	0.015	2.1	ug/L	1415	Standard
	Cr	52	7687.3	1.9	**0.0860**	0.027	31.9	ug/L	6946	Standard
	Cr	53	518.3	10.1	**0.2697**	0.061	22.7	ug/L	328	Standard
	Mn	55	119301.5	0.3	**18.8992**	0.085	0.4	ug/L	823	Standard
	Co	59	2188.2	2.9	**0.2910**	0.008	2.8	ug/L	252	Standard
	Ni	60	1191.7	0.5	**0.5500**	0.007	1.2	ug/L	192	Standard
	Cu	65	843.0	2.1	**0.3684**	0.010	2.8	ug/L	141	Standard
	Zn	66	2526.9	1.6	**1.5588**	0.051	3.2	ug/L	491	Standard
>	**Ge**	72	497647.3	0.6				ug/L	515087	Standard
	As	75	96.2	13.8	**0.1289**	0.013	9.7	ug/L	20	Standard
	Se	82	10.6	36.2	**-0.0241**	0.035	144.8	ug/L	15	Standard
	Se-1	77	46.0	14.3	**-0.0871**	0.088	100.8	ug/L	48	Standard
>	**Ga**	71	388.3	9.7				mg/L	90	Standard
	Rb	85	3552.1	4.5				ug/L	23	Standard
	Y	89	408184.3	3.4				ug/L	448510	Standard
>	**Rh**	103	16.7	17.3				ug/L	15	Standard
	Mo	98	62.0	6.5	**0.0053**	0.001	22.5	ug/L	11	Standard
	Ag	107	95.7	11.7	**-0.0010**	0.002	195.1	ug/L	134	Standard
	Cd	111	10.9	9.2	**0.0025**	0.001	23.6	mg/L	7	Standard
	Cd	114	23.2	24.4	**-0.0002**	0.001	811.4	ug/L	16	Standard
>	**In**	115	574185.6	1.8				ug/L	611117	Standard
	Sn	118	255.0	18.7	**-0.0561**	0.008	14.6	ug/L	518	Standard
	Sb	123	68.2	5.6	**0.0025**	0.001	35.8	ug/L	127	Standard
	Ba	135	10138.1	0.2	**5.2024**	0.085	1.6	ug/L	45	Standard
	Ce	140	49457.3	0.9				ug/L	298	Standard
>	**Tb**	159	906877.5	2.2				ug/L	977942	Standard
	Ho	165	853.4	7.8				ug/L	12	Standard
	Tl	203	26.0	16.8	**-0.0016**	0.001	32.4	ug/L	31	Standard
	Tl	205	21.7	26.6	**0.0008**	0.001	106.7	ug/L	20	Standard
	Pb	206	2799.3	1.6	**0.4682**	0.011	2.3	ug/L	286	Standard
	Pb	207	2286.8	2.0	**0.4236**	0.011	2.7	ug/L	257	Standard
	Pb	208	9380.8	1.4	**0.4502**	0.009	2.0	ug/L	956	Standard
	U	238	106.7	2.9	**0.0123**	0.000	3.6	ug/L	17	Standard
>	**Bi**	209	542636.2	0.5				ug/L	557080	Standard

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Na	23	3.3	86.6	**22.4620**	19.449	86.6	mg/L	0	Standard
Mg	24	26.7	21.7	**-0.0196**	0.008	42.2	mg/L	32	Standard
K	39	36.7	7.9	**-0.0105**	0.010	94.8	mg/L	30	Standard
Ca	43	36.7	56.8	**0.5265**	3.309	628.5	mg/L	48	Standard
Fe	54	389.3	2.1	**0.2354**	0.013	5.4	mg/L	159	Standard
Fe	57	280.0	3.1	**0.3744**	0.024	6.3	mg/L	195	Standard
> **Sc-1**	45	37411.1	1.3				mg/L	39543	Standard
Cl	35	30529.4	0.4				ug/L	27642	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1530.1	5.4				ug/L	1647	Standard
P	31	7263.4	2.6				ug/L	15231	Standard
S	34	2140.2	5.9				ug/L	1845	Standard
Sr	88	53.3	23.6				ug/L	70	Standard
C	12	100.0	75.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	1448.1	5.9				mg/L	12	Standard
Ho-1	165	853.4	7.8				mg/L	12	Standard
Er	166	736.7	15.9				mg/L	20	Standard
I	127	6059.5	4.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.192	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.614	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.957
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.407
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 15:53:08
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80037.6	2.2				ug/L	81760	Standard
	Be	9	50415.4	0.4	**51.8632**	1.062	2.0	ug/L	17	Standard
	Al	27	7611642.9	1.2	**50.4371**	0.677	1.3	ug/L	1410	Standard
	Sc	45	41097.3	0.2				ug/L	39543	Standard
	Ti	47	25369.9	1.7	**101.8781**	2.068	2.0	ug/L	39	Standard
	V	51	351293.9	2.1	**50.3394**	0.543	1.1	ug/L	1415	Standard
	Cr	52	361193.1	2.4	**50.8341**	0.636	1.3	ug/L	6946	Standard
	Cr	53	45189.0	2.1	**51.1421**	0.625	1.2	ug/L	328	Standard
	Mn	55	322540.4	1.4	**49.6098**	0.122	0.2	ug/L	823	Standard
	Co	59	356756.8	0.9	**50.7536**	0.285	0.6	ug/L	252	Standard
	Ni	60	97064.3	2.1	**51.4369**	0.357	0.7	ug/L	192	Standard
	Cu	65	97360.2	2.2	**51.1525**	0.591	1.2	ug/L	141	Standard
	Zn	66	56918.1	2.1	**51.1056**	0.446	0.9	ug/L	491	Standard
>	Ge	72	515026.5	1.4				ug/L	515087	Standard
	As	75	56903.6	1.1	**50.6598**	0.179	0.4	ug/L	20	Standard
	Se	82	5856.2	1.8	**50.7515**	0.222	0.4	ug/L	15	Standard
	Se-1	77	3927.8	0.7	**51.4293**	0.511	1.0	ug/L	48	Standard
>	Ga	71	66.7	30.3				mg/L	90	Standard
	Rb	85	760.0	4.6				ug/L	23	Standard
	Y	89	447852.9	1.0				ug/L	448510	Standard
>	Rh	103	25.0	34.6				ug/L	15	Standard
	Mo	98	271272.3	0.9	**98.6404**	1.710	1.7	ug/L	11	Standard
	Ag	107	339950.6	2.5	**49.7752**	1.742	3.5	ug/L	134	Standard
	Cd	111	107240.7	1.0	**49.3177**	0.985	2.0	mg/L	7	Standard
	Cd	114	262943.6	0.6	**49.7461**	0.816	1.6	ug/L	16	Standard
>	In	115	621725.8	1.1				ug/L	611117	Standard
	Sn	118	299388.1	2.0	**49.6643**	0.590	1.2	ug/L	518	Standard
	Sb	123	239448.5	1.8	**49.8807**	1.390	2.8	ug/L	127	Standard
	Ba	135	102748.9	0.7	**48.8974**	0.441	0.9	ug/L	45	Standard
	Ce	140	90.0	5.6				ug/L	298	Standard
>	Tb	159	985013.6	1.3				ug/L	977942	Standard
	Ho	165	16.7	45.8				ug/L	12	Standard
	Tl	203	430595.1	1.2	**49.9408**	0.227	0.5	ug/L	31	Standard
	Tl	205	380549.9	0.8	**50.8302**	0.446	0.9	ug/L	20	Standard
	Pb	206	272066.9	1.5	**49.1343**	0.429	0.9	ug/L	286	Standard
	Pb	207	246215.9	1.8	**49.3013**	0.781	1.6	ug/L	257	Standard
	Pb	208	985827.4	0.9	**51.0241**	0.323	0.6	ug/L	956	Standard
	U	238	363383.0	0.6	**49.5660**	0.508	1.0	ug/L	17	Standard
>	Bi	209	570034.9	1.5				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.2894**	17.813	173.1	mg/L	0	Standard
Mg	24	3815.5	2.6	**4.8299**	0.134	2.8	mg/L	32	Standard
K	39	1281.7	1.9	**4.0254**	0.078	1.9	mg/L	30	Standard
Ca	43	63.3	19.9	**3.9099**	1.840	47.1	mg/L	48	Standard
Fe	54	5945.2	1.8	**5.0400**	0.102	2.0	mg/L	159	Standard
Fe	57	1733.4	4.2	**5.0061**	0.238	4.8	mg/L	195	Standard
> **Sc-1**	45	41097.3	0.2				mg/L	39543	Standard
Cl	35	35020.4	1.1				ug/L	27642	Standard
Kr	83	3.0	57.7				ug/L	2	Standard
Br	81	1666.8	6.4				ug/L	1647	Standard
P	31	18748.3	2.5				ug/L	15231	Standard
S	34	2583.6	5.3				ug/L	1845	Standard
Sr	88	53.3	28.6				ug/L	70	Standard
C	12	110.0	24.1				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.4	101.7				mg/L	12	Standard
Ho-1	165	16.7	45.8				mg/L	12	Standard
Er	166	13.3	86.6				mg/L	20	Standard
I	127	1388.4	22.1				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	103.726		
	Al	27	100.874		
	Sc	45			
	Ti	47	101.878		
	V	51	100.679		
	Cr	52	101.668		
	Cr	53			
	Mn	55	99.220		
	Co	59	101.507		
	Ni	60	102.874		
	Cu	65	102.305		
	Zn	66	102.211		
>	Ge	72		99.988	
	As	75	101.320		
	Se	82	101.503		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	98.640		
Ag	107	99.550		
Cd	111	98.635		
Cd	114			
In	115			101.736
Sn	118	99.329		
Sb	123	99.761		
Ba	135	97.795		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.882		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.048		
U	238	99.132		
Bi	209			102.325
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 15:56:20
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79843.2	1.6				ug/L	81760	Standard
	Be	9	23.3	75.3	**0.0144**	0.018	125.7	ug/L	17	Standard
	Al	27	2505.2	18.4	**0.0022**	0.003	136.7	ug/L	1410	Standard
	Sc	45	39966.0	1.7				ug/L	39543	Standard
	Ti	47	35.3	11.4	**-0.0209**	0.017	83.6	ug/L	39	Standard
	V	51	1133.0	9.8	**-0.0412**	0.016	39.7	ug/L	1415	Standard
	Cr	52	6206.9	2.0	**-0.1524**	0.017	11.1	ug/L	6946	Standard
	Cr	53	315.0	2.7	**0.0227**	0.013	56.9	ug/L	328	Standard
	Mn	55	686.0	7.5	**-0.0412**	0.007	17.6	ug/L	823	Standard
	Co	59	254.3	2.2	**0.0054**	0.001	12.6	ug/L	252	Standard
	Ni	60	171.3	1.2	**-0.0127**	0.001	8.3	ug/L	192	Standard
	Cu	65	123.3	12.6	**-0.0250**	0.008	31.0	ug/L	141	Standard
	Zn	66	449.3	3.1	**-0.4117**	0.013	3.2	ug/L	491	Standard
>	**Ge**	72	507665.8	0.8				ug/L	515087	Standard
	As	75	-25.2	101.2	**0.0174**	0.023	132.3	ug/L	20	Standard
	Se	82	17.2	13.7	**0.0322**	0.020	60.6	ug/L	15	Standard
	Se-1	77	51.3	10.7	**-0.0277**	0.072	260.3	ug/L	48	Standard
>	**Ga**	71	48.3	15.8				mg/L	90	Standard
	Rb	85	30.0	44.1				ug/L	23	Standard
	Y	89	444982.9	1.9				ug/L	448510	Standard
>	**Rh**	103	16.7	34.6				ug/L	15	Standard
	Mo	98	252.7	24.3	**0.0725**	0.022	30.7	ug/L	11	Standard
	Ag	107	129.7	3.6	**0.0027**	0.001	26.2	ug/L	134	Standard
	Cd	111	17.2	9.0	**0.0050**	0.001	14.0	mg/L	7	Standard
	Cd	114	47.7	10.5	**0.0041**	0.001	23.1	ug/L	16	Standard
>	**In**	115	623883.8	0.1				ug/L	611117	Standard
	Sn	118	770.0	14.1	**0.0256**	0.018	70.0	ug/L	518	Standard
	Sb	123	507.4	30.1	**0.0925**	0.032	34.2	ug/L	127	Standard
	Ba	135	38.7	5.4	**-0.0068**	0.001	14.6	ug/L	45	Standard
	Ce	140	40.0	21.7				ug/L	298	Standard
>	**Tb**	159	974680.3	0.5				ug/L	977942	Standard
	Ho	165	13.3	78.1				ug/L	12	Standard
	Tl	203	68.0	6.7	**0.0032**	0.001	15.5	ug/L	31	Standard
	Tl	205	66.7	11.5	**0.0068**	0.001	14.7	ug/L	20	Standard
	Pb	206	289.3	1.4	**-0.0104**	0.001	6.9	ug/L	286	Standard
	Pb	207	250.7	7.8	**-0.0070**	0.004	55.4	ug/L	257	Standard
	Pb	208	1099.7	2.8	**-0.0025**	0.002	60.9	ug/L	956	Standard
	U	238	62.3	42.5	**0.0057**	0.004	64.1	ug/L	17	Standard
>	**Bi**	209	560756.1	0.5				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	33.3	45.8	**-0.0130**	0.021	161.7	mg/L	32	Standard
K	39	33.3	17.3	**-0.0301**	0.018	60.0	mg/L	30	Standard
Ca	43	38.3	27.2	**0.4086**	1.513	370.3	mg/L	48	Standard
Fe	54	141.0	17.0	**-0.0107**	0.022	208.8	mg/L	159	Standard
Fe	57	213.3	13.7	**0.0887**	0.105	118.5	mg/L	195	Standard
Sc-1	45	39966.0	1.7				mg/L	39543	Standard
Cl	35	34581.4	2.4				ug/L	27642	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	1706.8	4.2				ug/L	1647	Standard
P	31	18139.2	2.9				ug/L	15231	Standard
S	34	2418.5	8.0				ug/L	1845	Standard
Sr	88	68.3	11.2				ug/L	70	Standard
C	12	130.0	53.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.8	101.7				mg/L	12	Standard
Ho-1	165	13.3	78.1				mg/L	12	Standard
Er	166	3.3	173.2				mg/L	20	Standard
I	127	1121.7	18.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.559	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.089
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.660
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 28, 2016 15:58:37
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Method 6020 - Summary Report

Sample ID: PBW 45 WG573751-04
Sample Date/Time: Tuesday, June 28, 2016 15:59:33
Number of Replicates: 3
Autosampler Position: 232
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80427.9	0.7				ug/L	81760	Standard
	Be	9	20.0	43.3	**0.0107**	0.009	82.0	ug/L	17	Standard
	Al	27	16896.1	3.6	**0.0970**	0.004	4.0	ug/L	1410	Standard
	Sc	45	39630.1	2.3				ug/L	39543	Standard
	Ti	47	34.3	28.0	**-0.0290**	0.037	127.4	ug/L	39	Standard
	V	51	1241.7	7.6	**-0.0303**	0.012	39.4	ug/L	1415	Standard
	Cr	52	8808.2	2.5	**0.1923**	0.015	7.8	ug/L	6946	Standard
	Cr	53	705.0	11.9	**0.4526**	0.107	23.5	ug/L	328	Standard
	Mn	55	5471.7	0.3	**0.6851**	0.014	2.1	ug/L	823	Standard
	Co	59	272.7	7.3	**0.0070**	0.003	48.0	ug/L	252	Standard
	Ni	60	321.0	11.4	**0.0633**	0.019	30.2	ug/L	192	Standard
	Cu	65	232.7	11.6	**0.0301**	0.014	46.8	ug/L	141	Standard
	Zn	66	2018.1	1.4	**0.9905**	0.004	0.4	ug/L	491	Standard
>	**Ge**	72	521638.1	1.4				ug/L	515087	Standard
	As	75	-54.9	36.7	**-0.0079**	0.017	218.9	ug/L	20	Standard
	Se	82	10.0	20.3	**-0.0338**	0.018	54.1	ug/L	15	Standard
	Se-1	77	48.0	14.4	**-0.0888**	0.100	112.7	ug/L	48	Standard
>	**Ga**	71	53.3	28.6				mg/L	90	Standard
	Rb	85	156.7	21.7				ug/L	23	Standard
	Y	89	436462.5	0.8				ug/L	448510	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	82.2	21.1	**0.0108**	0.006	59.5	ug/L	11	Standard
	Ag	107	93.7	16.2	**-0.0025**	0.002	87.2	ug/L	134	Standard
	Cd	111	11.9	25.2	**0.0025**	0.001	54.5	mg/L	7	Standard
	Cd	114	46.6	47.9	**0.0039**	0.004	108.7	ug/L	16	Standard
>	**In**	115	622987.2	0.5				ug/L	611117	Standard
	Sn	118	873.4	7.7	**0.0429**	0.010	24.2	ug/L	518	Standard
	Sb	123	225.0	36.0	**0.0339**	0.017	49.6	ug/L	127	Standard
	Ba	135	668.7	0.9	**0.2926**	0.004	1.5	ug/L	45	Standard
	Ce	140	103.3	7.4				ug/L	298	Standard
>	**Tb**	159	980754.1	0.6				ug/L	977942	Standard
	Ho	165	13.3	78.1				ug/L	12	Standard
	Tl	203	31.7	30.7	**-0.0012**	0.001	94.5	ug/L	31	Standard
	Tl	205	30.0	86.6	**0.0017**	0.003	203.8	ug/L	20	Standard
	Pb	206	380.3	5.4	**0.0044**	0.003	72.4	ug/L	286	Standard
	Pb	207	331.3	8.5	**0.0076**	0.005	67.3	ug/L	257	Standard
	Pb	208	1302.7	2.5	**0.0063**	0.001	19.3	ug/L	956	Standard
	U	238	25.3	53.6	**0.0004**	0.002	408.2	ug/L	17	Standard
>	**Bi**	209	576453.2	0.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	33.3	8.7	**-0.0129**	0.003	22.5	mg/L	32	Standard
K	39	48.3	15.8	**0.0218**	0.028	129.2	mg/L	30	Standard
Ca	43	18.3	78.7	**-2.5918**	2.118	81.7	mg/L	48	Standard
Fe	54	122.7	28.9	**-0.0266**	0.030	114.3	mg/L	159	Standard
Fe	57	223.3	24.1	**0.1269**	0.176	138.7	mg/L	195	Standard
Sc-1	45	39630.1	2.3				mg/L	39543	Standard
Cl	35	33807.0	1.7				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1633.4	2.0				ug/L	1647	Standard
P	31	17535.1	2.2				ug/L	15231	Standard
S	34	2338.5	7.5				ug/L	1845	Standard
Sr	88	75.0	30.6				ug/L	70	Standard
C	12	106.7	19.5				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.4	3.0				mg/L	12	Standard
Ho-1	165	13.3	78.1				mg/L	12	Standard
Er	166	13.3	43.3				mg/L	20	Standard
I	127	955.0	19.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		98.371	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.272	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.942
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.478
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: LCSW 45 WG573451-05
Sample Date/Time: Tuesday, June 28, 2016 16:02:44
Number of Replicates: 3
Autosampler Position: 233
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81285.8	1.4				ug/L	81760	Standard
	Be	9	49444.0	4.0	**50.0648**	1.744	3.5	ug/L	17	Standard
	Al	27	14440.2	1.6	**0.0798**	0.002	2.1	ug/L	1410	Standard
	Sc	45	40522.5	4.2				ug/L	39543	Standard
	Ti	47	35.7	14.1	**-0.0217**	0.021	96.5	ug/L	39	Standard
	V	51	343445.8	1.5	**49.2175**	1.714	3.5	ug/L	1415	Standard
	Cr	52	355835.3	1.6	**50.0593**	1.026	2.0	ug/L	6946	Standard
	Cr	53	43403.8	4.1	**49.0831**	1.336	2.7	ug/L	328	Standard
	Mn	55	327263.1	1.9	**50.3439**	1.847	3.7	ug/L	823	Standard
	Co	59	357909.9	1.9	**50.9146**	1.589	3.1	ug/L	252	Standard
	Ni	60	94484.4	2.0	**50.0595**	0.992	2.0	ug/L	192	Standard
	Cu	65	95887.5	1.7	**50.3702**	0.997	2.0	ug/L	141	Standard
	Zn	66	56697.9	0.9	**50.8990**	0.801	1.6	ug/L	491	Standard
>	**Ge**	72	515232.3	2.4				ug/L	515087	Standard
	As	75	56137.8	1.3	**49.9742**	1.270	2.5	ug/L	20	Standard
	Se	82	5754.2	0.4	**49.8676**	1.316	2.6	ug/L	15	Standard
	Se-1	77	3847.2	2.4	**50.3547**	1.829	3.6	ug/L	48	Standard
>	**Ga**	71	80.0	38.0				mg/L	90	Standard
	Rb	85	45.0	58.8				ug/L	23	Standard
	Y	89	449389.0	2.2				ug/L	448510	Standard
>	**Rh**	103	28.3	66.8				ug/L	15	Standard
	Mo	98	72.0	12.6	**0.0070**	0.003	48.7	ug/L	11	Standard
	Ag	107	332360.6	2.0	**48.5009**	1.256	2.6	ug/L	134	Standard
	Cd	111	105950.1	2.1	**48.5677**	1.420	2.9	mg/L	7	Standard
	Cd	114	259244.9	2.6	**48.8950**	1.818	3.7	ug/L	16	Standard
>	**In**	115	623755.7	1.2				ug/L	611117	Standard
	Sn	118	950.0	6.3	**0.0554**	0.008	14.9	ug/L	518	Standard
	Sb	123	235787.4	1.4	**48.9583**	1.261	2.6	ug/L	127	Standard
	Ba	135	101234.2	2.5	**48.0272**	1.604	3.3	ug/L	45	Standard
	Ce	140	53.3	5.4				ug/L	298	Standard
>	**Tb**	159	962831.7	2.3				ug/L	977942	Standard
	Ho	165	6.7	114.6				ug/L	12	Standard
	Tl	203	424492.3	2.2	**49.7361**	1.545	3.1	ug/L	31	Standard
	Tl	205	378457.4	1.6	**51.0672**	1.520	3.0	ug/L	20	Standard
	Pb	206	276584.3	1.3	**50.4636**	1.380	2.7	ug/L	286	Standard
	Pb	207	241372.6	1.3	**48.8258**	1.366	2.8	ug/L	257	Standard
	Pb	208	990155.6	1.9	**51.7752**	1.712	3.3	ug/L	956	Standard
	U	238	358184.2	2.6	**49.3578**	1.903	3.9	ug/L	17	Standard
>	**Bi**	209	564381.2	1.4				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.8762**	18.829	173.1	mg/L	0	Standard
Mg	24	28.3	71.3	**-0.0199**	0.028	139.9	mg/L	32	Standard
K	39	45.0	40.1	**0.0061**	0.057	941.7	mg/L	30	Standard
Ca	43	25.0	60.0	**-1.6629**	2.211	133.0	mg/L	48	Standard
Fe	54	141.6	12.0	**-0.0123**	0.010	79.8	mg/L	159	Standard
Fe	57	180.0	5.6	**-0.0319**	0.009	26.7	mg/L	195	Standard
Sc-1	45	40522.5	4.2				mg/L	39543	Standard
Cl	35	33285.9	3.1				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	5364.3	7.6				ug/L	1647	Standard
P	31	17471.7	4.0				ug/L	15231	Standard
S	34	2361.9	6.4				ug/L	1845	Standard
Sr	88	63.3	24.1				ug/L	70	Standard
C	12	126.7	43.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	15.9	34.8				mg/L	12	Standard
Ho-1	165	6.7	114.6				mg/L	12	Standard
Er	166	16.7	69.3				mg/L	20	Standard
I	127	856.7	31.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.420	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.028	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.068
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.311
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606115101 WG573751-02
Sample Date/Time: Tuesday, June 28, 2016 16:05:56
Number of Replicates: 3
Autosampler Position: 234
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77671.9	1.4				ug/L	81760	Standard
	Be	9	26.7	39.0	**0.0185**	0.011	58.4	ug/L	17	Standard
	Al	27	13955917.4	1.2	**95.3134**	2.493	2.6	ug/L	1410	Standard
	Sc	45	39321.0	0.9				ug/L	39543	Standard
	Ti	47	301.7	10.7	**1.0707**	0.148	13.8	ug/L	39	Standard
	V	51	16198.5	2.2	**2.1650**	0.025	1.2	ug/L	1415	Standard
	Cr	52	10911.9	4.6	**0.5376**	0.044	8.1	ug/L	6946	Standard
	Cr	53	3267.0	16.4	**3.4384**	0.551	16.0	ug/L	328	Standard
	Mn	55	181411.8	1.7	**28.3397**	0.987	3.5	ug/L	823	Standard
	Co	59	976.7	3.3	**0.1102**	0.006	5.4	ug/L	252	Standard
	Ni	60	1471.7	0.7	**0.6905**	0.022	3.2	ug/L	192	Standard
	Cu	65	1872.1	2.6	**0.9119**	0.023	2.5	ug/L	141	Standard
	Zn	66	6550.4	2.0	**5.2541**	0.063	1.2	ug/L	491	Standard
>	**Ge**	72	506178.8	2.0				ug/L	515087	Standard
	As	75	931.2	4.4	**0.8837**	0.051	5.8	ug/L	20	Standard
	Se	82	231.2	4.1	**1.9256**	0.108	5.6	ug/L	15	Standard
	Se-1	77	230.7	3.7	**2.3974**	0.119	5.0	ug/L	48	Standard
>	**Ga**	71	195.0	5.1				mg/L	90	Standard
	Rb	85	19537.6	1.2				ug/L	23	Standard
	Y	89	432314.6	1.1				ug/L	448510	Standard
>	**Rh**	103	61.7	12.4				ug/L	15	Standard
	Mo	98	3291.8	1.3	**1.2330**	0.013	1.0	ug/L	11	Standard
	Ag	107	150.7	8.2	**0.0069**	0.002	29.9	ug/L	134	Standard
	Cd	111	62.2	4.0	**0.0270**	0.001	5.4	mg/L	7	Standard
	Cd	114	153.0	45.9	**0.0254**	0.014	55.2	ug/L	16	Standard
>	**In**	115	594394.0	1.1				ug/L	611117	Standard
	Sn	118	883.4	9.5	**0.0516**	0.013	25.0	ug/L	518	Standard
	Sb	123	639.6	8.2	**0.1265**	0.011	8.6	ug/L	127	Standard
	Ba	135	68518.2	0.3	**34.1005**	0.460	1.3	ug/L	45	Standard
	Ce	140	2645.2	17.9				ug/L	298	Standard
>	**Tb**	159	950271.0	0.7				ug/L	977942	Standard
	Ho	165	53.3	10.8				ug/L	12	Standard
	Tl	203	411.7	14.6	**0.0459**	0.008	17.1	ug/L	31	Standard
	Tl	205	376.7	19.3	**0.0511**	0.011	20.8	ug/L	20	Standard
	Pb	206	1679.8	1.4	**0.2582**	0.003	1.3	ug/L	286	Standard
	Pb	207	1366.4	3.8	**0.2322**	0.009	3.7	ug/L	257	Standard
	Pb	208	5841.1	1.9	**0.2602**	0.004	1.4	ug/L	956	Standard
	U	238	9731.1	2.1	**1.4034**	0.022	1.5	ug/L	17	Standard
>	**Bi**	209	537950.1	0.8				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	34736.4	1.4	**46.4420**	0.278	0.6	mg/L	32	Standard
K	39	261.7	6.7	**0.7474**	0.052	7.0	mg/L	30	Standard
Ca	43	178.3	24.5	**21.8549**	6.453	29.5	mg/L	48	Standard
Fe	54	262.3	8.0	**0.1018**	0.020	19.8	mg/L	159	Standard
Fe	57	341.7	2.2	**0.5353**	0.023	4.3	mg/L	195	Standard
Sc-1	45	39321.0	0.9				mg/L	39543	Standard
Cl	35	35275.1	3.8				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	35124.1	4.7				ug/L	1647	Standard
P	31	18164.2	1.2				ug/L	15231	Standard
S	34	2260.2	2.8				ug/L	1845	Standard
Sr	88	231.7	13.9				ug/L	70	Standard
C	12	256.7	41.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	63.6	33.9				mg/L	12	Standard
Ho-1	165	53.3	10.8				mg/L	12	Standard
Er	166	63.3	36.5				mg/L	20	Standard
I	127	311901.7	7.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.000	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.271	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.264
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.566
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606115103S WG573751-07
Sample Date/Time: Tuesday, June 28, 2016 16:09:07
Number of Replicates: 3
Autosampler Position: 235
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82738.6	0.2				ug/L	81760	Standard
	Be	9	50932.1	1.3	**50.6700**	0.765	1.5	ug/L	17	Standard
	Al	27	14256616.7	2.2	**91.3792**	1.822	2.0	ug/L	1410	Standard
	Sc	45	41140.8	1.3				ug/L	39543	Standard
	Ti	47	371.0	4.6	**1.3119**	0.075	5.7	ug/L	39	Standard
	V	51	355266.5	2.0	**50.3881**	1.016	2.0	ug/L	1415	Standard
	Cr	52	348734.5	0.9	**48.5348**	0.604	1.2	ug/L	6946	Standard
	Cr	53	45906.1	1.2	**51.4332**	1.330	2.6	ug/L	328	Standard
	Mn	55	484874.0	0.4	**73.8916**	1.228	1.7	ug/L	823	Standard
	Co	59	330526.6	1.2	**46.5427**	1.213	2.6	ug/L	252	Standard
	Ni	60	91208.4	1.4	**47.8307**	0.262	0.5	ug/L	192	Standard
	Cu	65	93139.1	0.3	**48.4331**	0.711	1.5	ug/L	141	Standard
	Zn	66	61775.3	0.7	**54.9696**	1.209	2.2	ug/L	491	Standard
>	**Ge**	72	520412.6	1.6				ug/L	515087	Standard
	As	75	57188.6	0.5	**50.3925**	0.724	1.4	ug/L	20	Standard
	Se	82	5643.2	0.1	**48.4036**	0.791	1.6	ug/L	15	Standard
	Se-1	77	3992.2	4.4	**51.7398**	2.452	4.7	ug/L	48	Standard
>	**Ga**	71	230.0	28.3				mg/L	90	Standard
	Rb	85	19777.9	1.1				ug/L	23	Standard
	Y	89	433897.5	1.4				ug/L	448510	Standard
>	**Rh**	103	81.7	39.4				ug/L	15	Standard
	Mo	98	3301.1	2.4	**1.2202**	0.040	3.3	ug/L	11	Standard
	Ag	107	315385.8	0.9	**47.6558**	0.862	1.8	ug/L	134	Standard
	Cd	111	99498.3	0.6	**47.2265**	0.833	1.8	mg/L	7	Standard
	Cd	114	242671.7	0.4	**47.3834**	0.530	1.1	ug/L	16	Standard
>	**In**	115	602380.0	1.2				ug/L	611117	Standard
	Sn	118	866.7	11.7	**0.0467**	0.016	33.5	ug/L	518	Standard
	Sb	123	233832.7	0.4	**50.2714**	0.769	1.5	ug/L	127	Standard
	Ba	135	168472.5	0.5	**82.7716**	1.205	1.5	ug/L	45	Standard
	Ce	140	3190.3	1.8				ug/L	298	Standard
>	**Tb**	159	975538.4	0.7				ug/L	977942	Standard
	Ho	165	55.0	50.6				ug/L	12	Standard
	Tl	203	405391.8	0.6	**48.6809**	0.381	0.8	ug/L	31	Standard
	Tl	205	349844.8	1.2	**48.3796**	0.623	1.3	ug/L	20	Standard
	Pb	206	268733.3	0.7	**50.2550**	0.909	1.8	ug/L	286	Standard
	Pb	207	232854.8	1.2	**48.2799**	1.141	2.4	ug/L	257	Standard
	Pb	208	923192.2	0.6	**49.4693**	0.366	0.7	ug/L	956	Standard
	U	238	355626.8	0.4	**50.2227**	0.621	1.2	ug/L	17	Standard
>	**Bi**	209	550570.6	1.2				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	35867.4	1.9	**45.8327**	0.548	1.2	mg/L	32	Standard
K	39	318.3	2.4	**0.8927**	0.038	4.2	mg/L	30	Standard
Ca	43	141.7	5.4	**15.3452**	1.333	8.7	mg/L	48	Standard
Fe	54	233.9	13.6	**0.0666**	0.029	43.8	mg/L	159	Standard
Fe	57	373.3	5.1	**0.5873**	0.073	12.3	mg/L	195	Standard
> **Sc-1**	45	41140.8	1.3				mg/L	39543	Standard
Cl	35	36665.0	1.2				ug/L	27642	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	38074.5	2.7				ug/L	1647	Standard
P	31	19512.6	0.4				ug/L	15231	Standard
S	34	2426.9	4.9				ug/L	1845	Standard
Sr	88	241.7	11.4				ug/L	70	Standard
C	12	183.3	31.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	66.3	40.2				mg/L	12	Standard
Ho-1	165	55.0	50.6				mg/L	12	Standard
Er	166	76.7	15.1				mg/L	20	Standard
I	127	311628.4	3.8				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.197	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.034	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.570
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.831
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606115304SD WG573751-08
Sample Date/Time: Tuesday, June 28, 2016 16:12:19
Number of Replicates: 3
Autosampler Position: 236
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82914.6	1.7				ug/L	81760	Standard
	Be	9	51258.3	2.2	**50.8925**	1.250	2.5	ug/L	17	Standard
	Al	27	15399778.5	0.9	**98.5192**	1.923	2.0	ug/L	1410	Standard
	Sc	45	40084.7	2.9				ug/L	39543	Standard
	Ti	47	640.0	9.7	**2.4715**	0.230	9.3	ug/L	39	Standard
	V	51	358753.7	1.2	**52.7008**	0.680	1.3	ug/L	1415	Standard
	Cr	52	354784.4	1.1	**51.1849**	0.073	0.1	ug/L	6946	Standard
	Cr	53	47661.6	3.5	**55.3029**	1.433	2.6	ug/L	328	Standard
	Mn	55	529314.6	1.5	**83.5469**	1.579	1.9	ug/L	823	Standard
	Co	59	345503.9	1.1	**50.3773**	0.891	1.8	ug/L	252	Standard
	Ni	60	92308.7	1.0	**50.1355**	0.426	0.9	ug/L	192	Standard
	Cu	65	93613.0	1.4	**50.4100**	0.723	1.4	ug/L	141	Standard
	Zn	66	64567.0	0.6	**59.5553**	0.411	0.7	ug/L	491	Standard
>	**Ge**	72	502524.4	1.0				ug/L	515087	Standard
	As	75	56933.1	0.7	**51.9453**	0.162	0.3	ug/L	20	Standard
	Se	82	5947.1	1.7	**52.8275**	0.666	1.3	ug/L	15	Standard
	Se-1	77	3965.5	2.7	**53.2435**	1.801	3.4	ug/L	48	Standard
>	**Ga**	71	291.7	11.2				mg/L	90	Standard
	Rb	85	22576.8	1.0				ug/L	23	Standard
	Y	89	439067.8	2.2				ug/L	448510	Standard
>	**Rh**	103	73.3	7.9				ug/L	15	Standard
	Mo	98	3536.7	2.2	**1.2876**	0.021	1.6	ug/L	11	Standard
	Ag	107	318639.0	0.2	**47.3947**	0.683	1.4	ug/L	134	Standard
	Cd	111	102545.7	0.7	**47.9082**	0.269	0.6	mg/L	7	Standard
	Cd	114	249882.8	0.5	**48.0284**	0.370	0.8	ug/L	16	Standard
>	**In**	115	611940.4	1.2				ug/L	611117	Standard
	Sn	118	1045.0	4.1	**0.0745**	0.005	6.8	ug/L	518	Standard
	Sb	123	235512.7	0.7	**49.8406**	0.693	1.4	ug/L	127	Standard
	Ba	135	174610.3	1.9	**84.4342**	0.545	0.6	ug/L	45	Standard
	Ce	140	5954.5	2.4				ug/L	298	Standard
>	**Tb**	159	973344.6	0.2				ug/L	977942	Standard
	Ho	165	121.7	6.3				ug/L	12	Standard
	Tl	203	413217.7	0.6	**49.7797**	0.456	0.9	ug/L	31	Standard
	Tl	205	363310.0	1.7	**50.4036**	0.986	2.0	ug/L	20	Standard
	Pb	206	270026.6	0.5	**50.6539**	0.212	0.4	ug/L	286	Standard
	Pb	207	235774.0	0.4	**49.0358**	0.293	0.6	ug/L	257	Standard
	Pb	208	947837.4	0.9	**50.9548**	0.634	1.2	ug/L	956	Standard
	U	238	363550.4	1.8	**51.5051**	1.028	2.0	ug/L	17	Standard
>	**Bi**	209	548791.6	0.3				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.4900**	18.160	173.1	mg/L	0	Standard
Mg	24	38714.4	0.7	**50.8180**	1.880	3.7	mg/L	32	Standard
K	39	343.3	15.2	**1.0066**	0.203	20.2	mg/L	30	Standard
Ca	43	156.7	1.8	**18.1495**	1.124	6.2	mg/L	48	Standard
Fe	54	374.0	6.7	**0.1967**	0.015	7.7	mg/L	159	Standard
Fe	57	400.0	0.0	**0.7083**	0.040	5.6	mg/L	195	Standard
> **Sc-1**	45	40084.7	2.9				mg/L	39543	Standard
Cl	35	38416.6	0.8				ug/L	27642	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	40474.1	6.0				ug/L	1647	Standard
P	31	20383.7	1.9				ug/L	15231	Standard
S	34	2388.5	6.8				ug/L	1845	Standard
Sr	88	235.0	8.5				ug/L	70	Standard
C	12	253.3	25.1				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	175.2	19.1				mg/L	12	Standard
Ho-1	165	121.7	6.3				mg/L	12	Standard
Er	166	100.0	26.5				mg/L	20	Standard
I	127	354555.7	8.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.412	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.561	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.135
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.512
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606091602 WG573751-01
Sample Date/Time: Tuesday, June 28, 2016 16:15:30
Number of Replicates: 3
Autosampler Position: 237
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83752.6	2.6				ug/L	81760	Standard
	Be	9	50.0	26.5	**0.0395**	0.014	34.7	ug/L	17	Standard
	Al	27	2701508.7	2.5	**17.0954**	0.130	0.8	ug/L	1410	Standard
	Sc	45	39755.5	3.1				ug/L	39543	Standard
	Ti	47	56.0	11.2	**0.0633**	0.027	42.8	ug/L	39	Standard
	V	51	1924.8	3.9	**0.0741**	0.009	12.6	ug/L	1415	Standard
	Cr	52	10285.8	1.8	**0.4408**	0.012	2.7	ug/L	6946	Standard
	Cr	53	1156.7	1.7	**0.9947**	0.041	4.2	ug/L	328	Standard
	Mn	55	253930.8	1.4	**39.5649**	0.851	2.1	ug/L	823	Standard
	Co	59	1951.8	2.9	**0.2502**	0.004	1.8	ug/L	252	Standard
	Ni	60	1859.1	3.7	**0.8956**	0.027	3.0	ug/L	192	Standard
	Cu	65	1000.0	2.6	**0.4428**	0.017	3.9	ug/L	141	Standard
	Zn	66	2280.8	1.9	**1.2819**	0.026	2.1	ug/L	491	Standard
>	**Ge**	72	508105.2	1.4				ug/L	515087	Standard
	As	75	151.5	17.1	**0.1768**	0.022	12.7	ug/L	20	Standard
	Se	82	39.2	12.0	**0.2256**	0.041	18.4	ug/L	15	Standard
	Se-1	77	70.3	2.2	**0.2277**	0.025	11.1	ug/L	48	Standard
>	**Ga**	71	73.3	3.9				mg/L	90	Standard
	Rb	85	9319.5	3.0				ug/L	23	Standard
	Y	89	446629.7	1.4				ug/L	448510	Standard
>	**Rh**	103	35.0	37.8				ug/L	15	Standard
	Mo	98	255.3	4.6	**0.0742**	0.003	4.3	ug/L	11	Standard
	Ag	107	140.0	17.3	**0.0044**	0.004	86.0	ug/L	134	Standard
	Cd	111	34.5	15.3	**0.0130**	0.002	17.2	mg/L	7	Standard
	Cd	114	78.1	40.8	**0.0099**	0.006	59.3	ug/L	16	Standard
>	**In**	115	618896.7	1.2				ug/L	611117	Standard
	Sn	118	878.4	9.4	**0.0447**	0.013	28.2	ug/L	518	Standard
	Sb	123	309.3	20.5	**0.0520**	0.014	26.9	ug/L	127	Standard
	Ba	135	35857.7	1.5	**17.1253**	0.158	0.9	ug/L	45	Standard
	Ce	140	1368.4	3.3				ug/L	298	Standard
>	**Tb**	159	968292.7	1.7				ug/L	977942	Standard
	Ho	165	100.0	15.0				ug/L	12	Standard
	Tl	203	175.7	13.5	**0.0159**	0.003	15.9	ug/L	31	Standard
	Tl	205	158.3	30.0	**0.0192**	0.006	31.5	ug/L	20	Standard
	Pb	206	469.3	2.7	**0.0227**	0.001	2.5	ug/L	286	Standard
	Pb	207	387.3	8.4	**0.0210**	0.006	30.5	ug/L	257	Standard
	Pb	208	1635.4	0.6	**0.0258**	0.001	5.1	ug/L	956	Standard
	U	238	220.3	6.6	**0.0276**	0.001	5.0	ug/L	17	Standard
>	**Bi**	209	560335.5	2.1				ug/L	557080	Standard

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Na	23	3.3	173.2	**20.5537**	35.591	173.2	mg/L	0	Standard
Mg	24	3380.4	0.3	**4.4213**	0.131	3.0	mg/L	32	Standard
K	39	168.3	9.1	**0.4237**	0.034	8.1	mg/L	30	Standard
Ca	43	108.3	14.8	**11.0098**	2.304	20.9	mg/L	48	Standard
Fe	54	282.4	10.4	**0.1178**	0.034	28.5	mg/L	159	Standard
Fe	57	291.7	21.2	**0.3561**	0.217	61.0	mg/L	195	Standard
> **Sc-1**	45	39755.5	3.1				mg/L	39543	Standard
Cl	35	40081.0	2.5				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	4644.1	13.8				ug/L	1647	Standard
P	31	18102.5	2.7				ug/L	15231	Standard
S	34	2331.8	2.8				ug/L	1845	Standard
Sr	88	118.3	8.8				ug/L	70	Standard
C	12	123.3	9.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	117.9	56.1				mg/L	12	Standard
Ho-1	165	100.0	15.0				mg/L	12	Standard
Er	166	43.3	48.0				mg/L	20	Standard
I	127	21574.4	25.8				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.437	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.645	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.273
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.584
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606091602DP WG573751-06
Sample Date/Time: Tuesday, June 28, 2016 16:18:41
Number of Replicates: 3
Autosampler Position: 238
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81912.6	2.5				ug/L	81760	Standard
	Be	9	38.3	32.8	**0.0286**	0.012	41.1	ug/L	17	Standard
	Al	27	2661315.3	2.5	**17.2245**	0.558	3.2	ug/L	1410	Standard
	Sc	45	39553.2	2.2				ug/L	39543	Standard
	Ti	47	60.3	10.8	**0.0810**	0.030	36.5	ug/L	39	Standard
	V	51	1771.3	1.7	**0.0516**	0.003	5.3	ug/L	1415	Standard
	Cr	52	10216.4	1.4	**0.4303**	0.018	4.2	ug/L	6946	Standard
	Cr	53	1328.4	4.4	**1.1923**	0.072	6.1	ug/L	328	Standard
	Mn	55	248102.9	0.7	**38.6399**	0.746	1.9	ug/L	823	Standard
	Co	59	1844.8	1.4	**0.2347**	0.001	0.3	ug/L	252	Standard
	Ni	60	1828.1	4.4	**0.8792**	0.056	6.4	ug/L	192	Standard
	Cu	65	995.0	2.4	**0.4399**	0.012	2.7	ug/L	141	Standard
	Zn	66	2165.5	0.6	**1.1746**	0.022	1.8	ug/L	491	Standard
>	**Ge**	72	508291.1	1.3				ug/L	515087	Standard
	As	75	90.4	12.4	**0.1217**	0.009	7.5	ug/L	20	Standard
	Se	82	34.1	11.8	**0.1803**	0.032	17.6	ug/L	15	Standard
	Se-1	77	74.3	14.5	**0.2819**	0.154	54.5	ug/L	48	Standard
>	**Ga**	71	68.3	30.5				mg/L	90	Standard
	Rb	85	9142.8	6.3				ug/L	23	Standard
	Y	89	450226.3	2.8				ug/L	448510	Standard
>	**Rh**	103	21.7	58.1				ug/L	15	Standard
	Mo	98	245.2	4.8	**0.0704**	0.005	7.4	ug/L	11	Standard
	Ag	107	87.7	6.3	**-0.0033**	0.001	21.6	ug/L	134	Standard
	Cd	111	23.2	17.5	**0.0078**	0.002	23.8	mg/L	7	Standard
	Cd	114	58.3	13.8	**0.0061**	0.001	23.6	ug/L	16	Standard
>	**In**	115	619551.5	1.3				ug/L	611117	Standard
	Sn	118	933.4	2.4	**0.0538**	0.006	10.7	ug/L	518	Standard
	Sb	123	201.2	19.7	**0.0293**	0.009	30.0	ug/L	127	Standard
	Ba	135	34661.9	0.9	**16.5369**	0.177	1.1	ug/L	45	Standard
	Ce	140	1260.1	4.6				ug/L	298	Standard
>	**Tb**	159	963340.8	1.2				ug/L	977942	Standard
	Ho	165	88.3	18.2				ug/L	12	Standard
	Tl	203	85.3	6.5	**0.0054**	0.001	13.0	ug/L	31	Standard
	Tl	205	83.3	17.3	**0.0091**	0.002	21.1	ug/L	20	Standard
	Pb	206	415.0	2.1	**0.0134**	0.001	8.9	ug/L	286	Standard
	Pb	207	359.0	2.4	**0.0158**	0.001	8.8	ug/L	257	Standard
	Pb	208	1485.0	2.9	**0.0185**	0.003	14.1	ug/L	956	Standard
	U	238	164.0	3.4	**0.0200**	0.001	3.7	ug/L	17	Standard
>	**Bi**	209	555403.6	0.6				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	3443.7	5.9	**4.5314**	0.377	8.3	mg/L	32	Standard
K	39	158.3	7.9	**0.3934**	0.041	10.4	mg/L	30	Standard
Ca	43	93.3	12.4	**8.8061**	1.479	16.8	mg/L	48	Standard
Fe	54	304.0	6.5	**0.1380**	0.017	12.0	mg/L	159	Standard
Fe	57	313.3	6.4	**0.4340**	0.087	20.1	mg/L	195	Standard
> **Sc-1**	45	39553.2	2.2				mg/L	39543	Standard
Cl	35	40893.8	1.8				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	3857.2	4.5				ug/L	1647	Standard
P	31	18868.4	1.0				ug/L	15231	Standard
S	34	2383.5	7.0				ug/L	1845	Standard
Sr	88	95.0	13.9				ug/L	70	Standard
C	12	200.0	17.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	96.2	30.5				mg/L	12	Standard
Ho-1	165	88.3	18.2				mg/L	12	Standard
Er	166	80.0	37.5				mg/L	20	Standard
I	127	15653.1	0.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.187	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.681	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.380
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.699
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606091601
Sample Date/Time: Tuesday, June 28, 2016 16:21:53
Number of Replicates: 3
Autosampler Position: 239
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81664.5	1.8				ug/L	81760	Standard
	Be	9	26.7	28.6	**0.0172**	0.008	47.1	ug/L	17	Standard
	Al	27	4275643.4	2.5	**27.7561**	0.463	1.7	ug/L	1410	Standard
	Sc	45	38087.8	3.0				ug/L	39543	Standard
	Ti	47	54.7	26.0	**0.0548**	0.059	108.3	ug/L	39	Standard
	V	51	1697.6	8.1	**0.0374**	0.021	56.8	ug/L	1415	Standard
	Cr	52	10296.2	0.8	**0.4201**	0.020	4.7	ug/L	6946	Standard
	Cr	53	1460.1	7.5	**1.3201**	0.135	10.2	ug/L	328	Standard
	Mn	55	64493.4	3.0	**9.7887**	0.389	4.0	ug/L	823	Standard
	Co	59	427.0	5.1	**0.0294**	0.004	12.3	ug/L	252	Standard
	Ni	60	847.0	2.5	**0.3443**	0.016	4.7	ug/L	192	Standard
	Cu	65	826.7	6.2	**0.3435**	0.022	6.5	ug/L	141	Standard
	Zn	66	9487.6	0.7	**7.8171**	0.052	0.7	ug/L	491	Standard
>	**Ge**	72	515789.8	1.2				ug/L	515087	Standard
	As	75	95.2	47.1	**0.1249**	0.040	32.1	ug/L	20	Standard
	Se	82	32.5	28.2	**0.1620**	0.079	48.7	ug/L	15	Standard
	Se-1	77	78.3	8.3	**0.3202**	0.098	30.6	ug/L	48	Standard
>	**Ga**	71	58.3	50.2				mg/L	90	Standard
	Rb	85	8367.3	1.9				ug/L	23	Standard
	Y	89	424791.4	2.4				ug/L	448510	Standard
>	**Rh**	103	81.7	19.7				ug/L	15	Standard
	Mo	98	367.2	2.9	**0.1192**	0.004	3.5	ug/L	11	Standard
	Ag	107	119.3	48.0	**0.0019**	0.009	460.3	ug/L	134	Standard
	Cd	111	50.7	68.6	**0.0212**	0.017	78.0	mg/L	7	Standard
	Cd	114	102.4	71.8	**0.0151**	0.014	95.2	ug/L	16	Standard
>	**In**	115	600349.6	1.0				ug/L	611117	Standard
	Sn	118	1276.7	2.5	**0.1178**	0.004	3.0	ug/L	518	Standard
	Sb	123	200.9	15.6	**0.0306**	0.007	23.5	ug/L	127	Standard
	Ba	135	168683.5	0.8	**83.1505**	0.843	1.0	ug/L	45	Standard
	Ce	140	160.0	17.4				ug/L	298	Standard
>	**Tb**	159	943339.1	0.8				ug/L	977942	Standard
	Ho	165	5.0	100.0				ug/L	12	Standard
	Tl	203	103.7	83.0	**0.0076**	0.010	135.3	ug/L	31	Standard
	Tl	205	65.0	38.5	**0.0066**	0.003	51.6	ug/L	20	Standard
	Pb	206	449.7	4.5	**0.0200**	0.004	18.4	ug/L	286	Standard
	Pb	207	373.7	5.2	**0.0190**	0.004	20.9	ug/L	257	Standard
	Pb	208	1469.0	1.7	**0.0178**	0.001	8.0	ug/L	956	Standard
	U	238	195.0	9.9	**0.0244**	0.003	11.1	ug/L	17	Standard
>	**Bi**	209	554105.5	0.2				ug/L	557080	Standard

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Na	23	1.7	173.2	**11.2769**	19.523	173.1	mg/L	0	Standard
Mg	24	4872.5	3.1	**6.6831**	0.365	5.5	mg/L	32	Standard
K	39	180.0	11.1	**0.4891**	0.054	11.0	mg/L	30	Standard
Ca	43	71.7	49.5	**5.8566**	5.217	89.1	mg/L	48	Standard
Fe	54	187.0	32.7	**0.0391**	0.060	153.5	mg/L	159	Standard
Fe	57	275.0	13.7	**0.3422**	0.158	46.1	mg/L	195	Standard
> **Sc-1**	45	38087.8	3.0				mg/L	39543	Standard
Cl	35	39985.4	2.3				ug/L	27642	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	5007.5	9.4				ug/L	1647	Standard
P	31	18170.9	2.8				ug/L	15231	Standard
S	34	2413.5	5.6				ug/L	1845	Standard
Sr	88	318.3	14.3				ug/L	70	Standard
C	12	223.3	5.2				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	59.7	16.8				mg/L	12	Standard
Ho-1	165	5.0	100.0				mg/L	12	Standard
Er	166	6.7	86.6				mg/L	20	Standard
I	127	27700.4	6.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.883	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.136	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.238
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.466
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606091601PS WG574522-01
Sample Date/Time: Tuesday, June 28, 2016 16:25:04
Number of Replicates: 3
Autosampler Position: 240
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84128.0	1.7				ug/L	81760	Standard
	Be	9	52619.6	0.9	**51.4982**	1.298	2.5	ug/L	17	Standard
	Al	27	4326633.2	0.4	**27.2707**	0.550	2.0	ug/L	1410	Standard
	Sc	45	39650.1	0.7				ug/L	39543	Standard
	Ti	47	62.3	14.0	**0.0872**	0.038	43.9	ug/L	39	Standard
	V	51	353435.0	1.4	**50.9243**	0.391	0.8	ug/L	1415	Standard
	Cr	52	362779.9	0.9	**51.3507**	0.534	1.0	ug/L	6946	Standard
	Cr	53	45635.3	3.2	**51.9244**	0.938	1.8	ug/L	328	Standard
	Mn	55	384138.6	0.3	**59.4407**	0.957	1.6	ug/L	823	Standard
	Co	59	352427.3	0.4	**50.4121**	0.778	1.5	ug/L	252	Standard
	Ni	60	95802.0	1.3	**51.0471**	0.630	1.2	ug/L	192	Standard
	Cu	65	98413.6	0.9	**51.9931**	0.640	1.2	ug/L	141	Standard
	Zn	66	63162.1	1.4	**57.1168**	0.348	0.6	ug/L	491	Standard
>	**Ge**	72	512293.3	1.9				ug/L	515087	Standard
	As	75	56566.0	1.5	**50.6330**	0.812	1.6	ug/L	20	Standard
	Se	82	5805.6	1.0	**50.5901**	0.677	1.3	ug/L	15	Standard
	Se-1	77	3921.2	1.4	**51.6223**	0.909	1.8	ug/L	48	Standard
>	**Ga**	71	60.0	50.7				mg/L	90	Standard
	Rb	85	8215.6	0.6				ug/L	23	Standard
	Y	89	438501.2	1.8				ug/L	448510	Standard
>	**Rh**	103	71.7	28.2				ug/L	15	Standard
	Mo	98	368.8	5.9	**0.1169**	0.008	6.7	ug/L	11	Standard
	Ag	107	334626.2	0.5	**49.6506**	0.360	0.7	ug/L	134	Standard
	Cd	111	105047.6	0.7	**48.9601**	0.529	1.1	mg/L	7	Standard
	Cd	114	254060.7	2.8	**48.7162**	1.522	3.1	ug/L	16	Standard
>	**In**	115	613389.4	0.3				ug/L	611117	Standard
	Sn	118	1936.8	37.5	**0.2241**	0.121	54.0	ug/L	518	Standard
	Sb	123	237358.9	1.9	**50.1080**	0.980	2.0	ug/L	127	Standard
	Ba	135	267735.0	1.3	**129.1838**	2.081	1.6	ug/L	45	Standard
	Ce	140	231.7	21.3				ug/L	298	Standard
>	**Tb**	159	964479.2	1.1				ug/L	977942	Standard
	Ho	165	18.3	56.8				ug/L	12	Standard
	Tl	203	432424.0	0.5	**50.0145**	0.262	0.5	ug/L	31	Standard
	Tl	205	382714.9	0.3	**50.9759**	0.183	0.4	ug/L	20	Standard
	Pb	206	282966.8	1.1	**50.9646**	0.635	1.2	ug/L	286	Standard
	Pb	207	246387.7	1.3	**49.1992**	0.690	1.4	ug/L	257	Standard
	Pb	208	985942.4	0.8	**50.8876**	0.399	0.8	ug/L	956	Standard
	U	238	365334.3	1.0	**49.6910**	0.475	1.0	ug/L	17	Standard
>	**Bi**	209	571593.5	0.1				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4890.8	3.1	**6.4355**	0.187	2.9	mg/L	32	Standard
K	39	161.7	23.2	**0.4031**	0.125	30.9	mg/L	30	Standard
Ca	43	113.3	24.3	**11.8087**	4.086	34.6	mg/L	48	Standard
Fe	54	177.2	7.7	**0.0228**	0.011	49.5	mg/L	159	Standard
Fe	57	255.0	15.6	**0.2338**	0.132	56.3	mg/L	195	Standard
> **Sc-1**	45	39650.1	0.7				mg/L	39543	Standard
Cl	35	40732.7	2.1				ug/L	27642	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	4914.1	11.2				ug/L	1647	Standard
P	31	18529.7	1.8				ug/L	15231	Standard
S	34	2476.9	6.8				ug/L	1845	Standard
Sr	88	310.0	4.8				ug/L	70	Standard
C	12	160.0	18.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	12.7	117.1				mg/L	12	Standard
Ho-1	165	18.3	56.8				mg/L	12	Standard
Er	166	13.3	86.6				mg/L	20	Standard
I	127	27421.5	4.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.896	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.458	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.372
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.605
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606091601SDL WG574522-02
Sample Date/Time: Tuesday, June 28, 2016 16:28:16
Number of Replicates: 3
Autosampler Position: 241
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82723.6	2.3				ug/L	81760	Standard
	Be	9	23.3	12.4	**0.0135**	0.003	18.7	ug/L	17	Standard
	Al	27	900313.9	2.1	**5.7596**	0.136	2.4	ug/L	1410	Standard
	Sc	45	39763.8	0.8				ug/L	39543	Standard
	Ti	47	29.7	9.7	**-0.0430**	0.012	28.1	ug/L	39	Standard
	V	51	1735.9	7.6	**0.0491**	0.020	40.6	ug/L	1415	Standard
	Cr	52	8352.3	2.2	**0.1715**	0.035	20.7	ug/L	6946	Standard
	Cr	53	645.0	2.8	**0.4109**	0.024	5.9	ug/L	328	Standard
	Mn	55	14377.5	0.8	**2.1221**	0.018	0.8	ug/L	823	Standard
	Co	59	301.0	11.3	**0.0125**	0.005	41.5	ug/L	252	Standard
	Ni	60	410.7	1.2	**0.1183**	0.004	3.1	ug/L	192	Standard
	Cu	65	611.3	5.6	**0.2385**	0.017	7.2	ug/L	141	Standard
	Zn	66	7975.8	0.8	**6.6226**	0.085	1.3	ug/L	491	Standard
>	**Ge**	72	503109.1	0.7				ug/L	515087	Standard
	As	75	19.7	109.3	**0.0582**	0.020	33.7	ug/L	20	Standard
	Se	82	17.8	58.3	**0.0388**	0.092	237.9	ug/L	15	Standard
	Se-1	77	57.7	14.7	**0.0653**	0.120	183.5	ug/L	48	Standard
>	**Ga**	71	58.3	44.0				mg/L	90	Standard
	Rb	85	1753.4	3.2				ug/L	23	Standard
	Y	89	444634.9	0.6				ug/L	448510	Standard
>	**Rh**	103	21.7	48.0				ug/L	15	Standard
	Mo	98	88.5	3.1	**0.0131**	0.001	5.4	ug/L	11	Standard
	Ag	107	142.0	4.2	**0.0046**	0.001	16.3	ug/L	134	Standard
	Cd	111	23.2	23.8	**0.0077**	0.002	31.6	mg/L	7	Standard
	Cd	114	28.0	34.6	**0.0004**	0.002	477.3	ug/L	16	Standard
>	**In**	115	620921.1	1.0				ug/L	611117	Standard
	Sn	118	821.7	5.2	**0.0348**	0.006	16.8	ug/L	518	Standard
	Sb	123	2051.2	21.4	**0.4156**	0.096	23.0	ug/L	127	Standard
	Ba	135	34796.2	0.2	**16.5640**	0.119	0.7	ug/L	45	Standard
	Ce	140	63.3	12.1				ug/L	298	Standard
>	**Tb**	159	973024.2	1.8				ug/L	977942	Standard
	Ho	165	8.3	124.9				ug/L	12	Standard
	Tl	203	97.0	5.7	**0.0066**	0.000	6.5	ug/L	31	Standard
	Tl	205	68.3	44.1	**0.0070**	0.004	57.1	ug/L	20	Standard
	Pb	206	360.7	11.0	**0.0024**	0.006	236.3	ug/L	286	Standard
	Pb	207	322.3	9.7	**0.0075**	0.006	86.2	ug/L	257	Standard
	Pb	208	1339.4	1.1	**0.0099**	0.001	10.7	ug/L	956	Standard
	U	238	86.3	6.6	**0.0090**	0.001	5.9	ug/L	17	Standard
>	**Bi**	209	562189.7	2.5				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	991.7	7.3	**1.2554**	0.092	7.3	mg/L	32	Standard
K	39	51.7	11.2	**0.0323**	0.021	64.1	mg/L	30	Standard
Ca	43	40.0	45.1	**0.6884**	2.694	391.4	mg/L	48	Standard
Fe	54	140.9	19.7	**-0.0104**	0.024	229.0	mg/L	159	Standard
Fe	57	241.7	4.8	**0.1865**	0.032	17.2	mg/L	195	Standard
> **Sc-1**	45	39763.8	0.8				mg/L	39543	Standard
Cl	35	40635.1	0.7				ug/L	27642	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	2310.2	7.5				ug/L	1647	Standard
P	31	19332.3	4.6				ug/L	15231	Standard
S	34	2451.9	6.9				ug/L	1845	Standard
Sr	88	125.0	21.2				ug/L	70	Standard
C	12	163.3	25.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.5	88.8				mg/L	12	Standard
Ho-1	165	8.3	124.9				mg/L	12	Standard
Er	166	10.0	100.0				mg/L	20	Standard
I	127	7598.6	6.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.179	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.675	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.604
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.917
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 16:31:29
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79881.8	2.3				ug/L	81760	Standard
	Be	9	50840.2	1.3	**52.4015**	1.145	2.2	ug/L	17	Standard
	Al	27	7585830.9	1.9	**50.3677**	1.194	2.4	ug/L	1410	Standard
	Sc	45	39128.8	0.6				ug/L	39543	Standard
	Ti	47	24998.6	0.9	**102.1788**	1.762	1.7	ug/L	39	Standard
	V	51	348429.9	1.4	**50.8229**	0.271	0.5	ug/L	1415	Standard
	Cr	52	355416.3	0.4	**50.9232**	0.579	1.1	ug/L	6946	Standard
	Cr	53	44443.4	1.1	**51.2031**	0.906	1.8	ug/L	328	Standard
	Mn	55	315927.2	0.8	**49.4624**	0.575	1.2	ug/L	823	Standard
	Co	59	353189.3	0.9	**51.1457**	0.854	1.7	ug/L	252	Standard
	Ni	60	94600.8	0.9	**51.0293**	0.136	0.3	ug/L	192	Standard
	Cu	65	95833.5	0.4	**51.2541**	0.406	0.8	ug/L	141	Standard
	Zn	66	56109.7	0.5	**51.2906**	0.852	1.7	ug/L	491	Standard
>	Ge	72	505999.1	1.2				ug/L	515087	Standard
	As	75	55945.5	0.4	**50.6968**	0.402	0.8	ug/L	20	Standard
	Se	82	5756.3	0.8	**50.7852**	1.001	2.0	ug/L	15	Standard
	Se-1	77	3889.8	1.1	**51.8484**	1.021	2.0	ug/L	48	Standard
>	Ga	71	51.7	20.1				mg/L	90	Standard
	Rb	85	811.7	9.0				ug/L	23	Standard
	Y	89	426423.1	2.5				ug/L	448510	Standard
>	Rh	103	31.7	24.1				ug/L	15	Standard
	Mo	98	265386.1	0.2	**99.3199**	0.619	0.6	ug/L	11	Standard
	Ag	107	333927.0	1.2	**50.3137**	0.313	0.6	ug/L	134	Standard
	Cd	111	105484.6	1.1	**49.9277**	0.764	1.5	mg/L	7	Standard
	Cd	114	258596.4	2.6	**50.3494**	1.108	2.2	ug/L	16	Standard
>	In	115	604027.1	0.8				ug/L	611117	Standard
	Sn	118	295796.4	1.2	**50.5150**	0.923	1.8	ug/L	518	Standard
	Sb	123	237014.9	1.1	**50.8107**	0.333	0.7	ug/L	127	Standard
	Ba	135	100914.0	1.4	**49.4318**	0.852	1.7	ug/L	45	Standard
	Ce	140	80.0	0.0				ug/L	298	Standard
>	Tb	159	968181.4	1.1				ug/L	977942	Standard
	Ho	165	8.3	69.3				ug/L	12	Standard
	Tl	203	430250.2	1.2	**50.7804**	1.115	2.2	ug/L	31	Standard
	Tl	205	381434.8	2.3	**51.8414**	1.366	2.6	ug/L	20	Standard
	Pb	206	273103.8	0.8	**50.1867**	0.395	0.8	ug/L	286	Standard
	Pb	207	246704.6	0.5	**50.2667**	0.621	1.2	ug/L	257	Standard
	Pb	208	974193.4	0.6	**51.3084**	0.901	1.8	ug/L	956	Standard
	U	238	366221.1	0.4	**50.8280**	0.746	1.5	ug/L	17	Standard
>	Bi	209	560252.8	1.6				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	3943.8	5.4	**5.2490**	0.301	5.7	mg/L	32	Standard
K	39	1356.7	5.3	**4.4904**	0.223	5.0	mg/L	30	Standard
Ca	43	83.3	18.3	**7.4389**	2.295	30.8	mg/L	48	Standard
Fe	54	5957.3	2.0	**5.3112**	0.093	1.8	mg/L	159	Standard
Fe	57	1600.1	10.0	**4.8365**	0.580	12.0	mg/L	195	Standard
> **Sc-1**	45	39128.8	0.6				mg/L	39543	Standard
Cl	35	37049.3	3.3				ug/L	27642	Standard
Kr	83	2.0	132.3				ug/L	2	Standard
Br	81	1520.1	14.1				ug/L	1647	Standard
P	31	19898.1	2.1				ug/L	15231	Standard
S	34	2718.6	2.9				ug/L	1845	Standard
Sr	88	73.3	20.8				ug/L	70	Standard
C	12	120.0	43.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.0	113.3				mg/L	12	Standard
Ho-1	165	8.3	69.3				mg/L	12	Standard
Er	166	20.0	50.0				mg/L	20	Standard
I	127	2098.5	16.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	104.803		
Al	27	100.735		
Sc	45			
Ti	47	102.179		
V	51	101.646		
Cr	52	101.846		
Cr	53			
Mn	55	98.925		
Co	59	102.291		
Ni	60	102.059		
Cu	65	102.508		
Zn	66	102.581		
> Ge	72		98.236	
As	75	101.394		
Se	82	101.570		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	99.320		
Ag	107	100.627		
Cd	111	99.855		
Cd	114			
In	115			98.840
Sn	118	101.030		
Sb	123	101.621		
Ba	135	98.864		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.561		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.617		
U	238	101.656		
Bi	209			100.569
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 16:34:41
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77653.6	3.2				ug/L	81760	Standard
	Be	9	28.3	27.0	**0.0205**	0.009	43.8	ug/L	17	Standard
	Al	27	2033.5	6.8	**-0.0005**	0.001	113.9	ug/L	1410	Standard
	Sc	45	38149.6	0.7				ug/L	39543	Standard
	Ti	47	33.0	16.0	**-0.0290**	0.023	78.1	ug/L	39	Standard
	V	51	1124.7	5.5	**-0.0407**	0.010	23.8	ug/L	1415	Standard
	Cr	52	6085.9	0.6	**-0.1604**	0.016	10.1	ug/L	6946	Standard
	Cr	53	345.0	11.5	**0.0612**	0.041	67.1	ug/L	328	Standard
	Mn	55	652.0	2.2	**-0.0453**	0.002	5.1	ug/L	823	Standard
	Co	59	236.0	7.4	**0.0031**	0.003	92.5	ug/L	252	Standard
	Ni	60	163.3	9.5	**-0.0160**	0.008	51.9	ug/L	192	Standard
	Cu	65	132.3	11.7	**-0.0193**	0.009	47.2	ug/L	141	Standard
	Zn	66	446.3	5.3	**-0.4102**	0.017	4.3	ug/L	491	Standard
>	**Ge**	72	502289.8	1.3				ug/L	515087	Standard
	As	75	-42.3	118.5	**0.0014**	0.046	3304.8	ug/L	20	Standard
	Se	82	15.3	48.7	**0.0168**	0.064	382.8	ug/L	15	Standard
	Se-1	77	51.0	21.6	**-0.0257**	0.142	551.0	ug/L	48	Standard
>	**Ga**	71	38.3	27.2				mg/L	90	Standard
	Rb	85	10.0	86.6				ug/L	23	Standard
	Y	89	438316.4	0.6				ug/L	448510	Standard
>	**Rh**	103	15.0	0.0				ug/L	15	Standard
	Mo	98	228.3	18.4	**0.0667**	0.015	22.0	ug/L	11	Standard
	Ag	107	123.7	9.2	**0.0025**	0.002	72.5	ug/L	134	Standard
	Cd	111	11.3	56.7	**0.0024**	0.003	123.9	mg/L	7	Standard
	Cd	114	32.3	39.0	**0.0014**	0.003	178.7	ug/L	16	Standard
>	**In**	115	601315.6	1.3				ug/L	611117	Standard
	Sn	118	783.4	33.2	**0.0331**	0.047	140.5	ug/L	518	Standard
	Sb	123	646.2	31.1	**0.1267**	0.045	35.7	ug/L	127	Standard
	Ba	135	40.3	7.6	**-0.0052**	0.002	33.4	ug/L	45	Standard
	Ce	140	38.3	19.9				ug/L	298	Standard
>	**Tb**	159	937082.2	1.4				ug/L	977942	Standard
	Ho	165	5.0	100.0				ug/L	12	Standard
	Tl	203	49.7	12.9	**0.0012**	0.001	66.7	ug/L	31	Standard
	Tl	205	40.0	57.3	**0.0033**	0.003	97.6	ug/L	20	Standard
	Pb	206	275.3	5.0	**-0.0116**	0.003	25.8	ug/L	286	Standard
	Pb	207	258.0	7.0	**-0.0041**	0.003	84.6	ug/L	257	Standard
	Pb	208	1051.3	3.4	**-0.0036**	0.002	41.9	ug/L	956	Standard
	U	238	50.3	16.2	**0.0042**	0.001	28.1	ug/L	17	Standard
>	**Bi**	209	546028.7	0.7				ug/L	557080	Standard

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Na	23	3.3	86.6	**22.1550**	19.184	86.6	mg/L	0	Standard
Mg	24	31.7	50.8	**-0.0134**	0.022	167.6	mg/L	32	Standard
K	39	30.0	28.9	**-0.0362**	0.031	85.5	mg/L	30	Standard
Ca	43	30.0	66.7	**-0.6084**	3.177	522.1	mg/L	48	Standard
Fe	54	168.0	24.0	**0.0206**	0.039	187.8	mg/L	159	Standard
Fe	57	143.3	24.5	**-0.1229**	0.124	101.2	mg/L	195	Standard
Sc-1	45	38149.6	0.7				mg/L	39543	Standard
Cl	35	36673.0	2.0				ug/L	27642	Standard
Kr	83	1.0	173.2				ug/L	2	Standard
Br	81	1570.1	7.0				ug/L	1647	Standard
P	31	19050.3	3.5				ug/L	15231	Standard
S	34	2736.9	0.8				ug/L	1845	Standard
Sr	88	48.3	15.8				ug/L	70	Standard
C	12	133.3	4.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	5.7	217.0				mg/L	12	Standard
Ho-1	165	5.0	100.0				mg/L	12	Standard
Er	166	20.0	100.0				mg/L	20	Standard
I	127	1683.4	18.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.516	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.396
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.016
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 28, 2016 16:36:58
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Method 6020 - Summary Report

Sample ID: L1606091601SDL WG574522-02
Sample Date/Time: Tuesday, June 28, 2016 16:37:54
Number of Replicates: 3
Autosampler Position: 242
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80481.5	1.5				ug/L	81760	Standard
	Be	9	31.7	9.1	**0.0226**	0.003	11.9	ug/L	17	Standard
	Al	27	181010.0	1.7	**1.1789**	0.039	3.3	ug/L	1410	Standard
	Sc	45	40285.2	2.7				ug/L	39543	Standard
	Ti	47	30.3	10.1	**-0.0420**	0.014	34.3	ug/L	39	Standard
	V	51	1262.3	9.3	**-0.0236**	0.014	61.0	ug/L	1415	Standard
	Cr	52	6637.8	2.8	**-0.0958**	0.014	14.1	ug/L	6946	Standard
	Cr	53	403.3	17.4	**0.1211**	0.074	61.5	ug/L	328	Standard
	Mn	55	3292.4	3.2	**0.3636**	0.014	3.8	ug/L	823	Standard
	Co	59	275.7	13.5	**0.0082**	0.005	64.5	ug/L	252	Standard
	Ni	60	218.7	22.1	**0.0120**	0.025	207.8	ug/L	192	Standard
	Cu	65	189.7	2.7	**0.0098**	0.003	33.4	ug/L	141	Standard
	Zn	66	2022.1	5.3	**1.0328**	0.100	9.7	ug/L	491	Standard
>	**Ge**	72	510876.9	1.9				ug/L	515087	Standard
	As	75	-16.1	411.9	**0.0255**	0.059	233.0	ug/L	20	Standard
	Se	82	17.9	79.1	**0.0373**	0.123	328.7	ug/L	15	Standard
	Se-1	77	53.0	5.0	**-0.0093**	0.040	429.4	ug/L	48	Standard
>	**Ga**	71	26.7	10.8				mg/L	90	Standard
	Rb	85	385.0	11.5				ug/L	23	Standard
	Y	89	434970.9	1.3				ug/L	448510	Standard
>	**Rh**	103	13.3	57.3				ug/L	15	Standard
	Mo	98	105.1	23.0	**0.0193**	0.009	45.6	ug/L	11	Standard
	Ag	107	160.3	33.6	**0.0074**	0.008	107.2	ug/L	134	Standard
	Cd	111	27.8	77.7	**0.0099**	0.010	100.3	mg/L	7	Standard
	Cd	114	89.4	76.6	**0.0121**	0.013	107.6	ug/L	16	Standard
>	**In**	115	618555.8	0.1				ug/L	611117	Standard
	Sn	118	705.0	14.2	**0.0159**	0.017	105.2	ug/L	518	Standard
	Sb	123	323.1	28.2	**0.0548**	0.019	34.7	ug/L	127	Standard
	Ba	135	6967.6	1.3	**3.3092**	0.040	1.2	ug/L	45	Standard
	Ce	140	23.3	65.5				ug/L	298	Standard
>	**Tb**	159	976647.8	1.4				ug/L	977942	Standard
	Ho	165	15.0	57.7				ug/L	12	Standard
	Tl	203	112.7	67.1	**0.0081**	0.009	105.4	ug/L	31	Standard
	Tl	205	90.0	29.4	**0.0096**	0.003	35.2	ug/L	20	Standard
	Pb	206	345.7	14.3	**-0.0019**	0.008	437.8	ug/L	286	Standard
	Pb	207	297.3	11.3	**0.0008**	0.006	736.1	ug/L	257	Standard
	Pb	208	1206.4	8.6	**0.0013**	0.005	370.6	ug/L	956	Standard
	U	238	79.3	55.4	**0.0077**	0.006	75.6	ug/L	17	Standard
>	**Bi**	209	576852.7	1.1				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	251.7	21.2	**0.2729**	0.077	28.4	mg/L	32	Standard
K	39	35.0	75.6	**-0.0238**	0.089	375.8	mg/L	30	Standard
Ca	43	41.7	66.1	**0.8623**	4.157	482.1	mg/L	48	Standard
Fe	54	139.7	6.2	**-0.0128**	0.010	79.6	mg/L	159	Standard
Fe	57	215.0	8.1	**0.0878**	0.054	61.5	mg/L	195	Standard
> **Sc-1**	45	40285.2	2.7				mg/L	39543	Standard
Cl	35	36209.9	2.0				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1783.4	3.4				ug/L	1647	Standard
P	31	18659.8	1.9				ug/L	15231	Standard
S	34	2565.2	1.9				ug/L	1845	Standard
Sr	88	76.7	26.4				ug/L	70	Standard
C	12	126.7	24.1				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	19.2	52.1				mg/L	12	Standard
Ho-1	165	15.0	57.7				mg/L	12	Standard
Er	166	16.7	34.6				mg/L	20	Standard
I	127	2670.2	2.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.436	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.183	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.217
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.549
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606114201
Sample Date/Time: Tuesday, June 28, 2016 16:41:05
Number of Replicates: 3
Autosampler Position: 243
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80520.1	1.9				ug/L	81760	Standard
	Be	9	30.0	16.7	**0.0209**	0.005	21.7	ug/L	17	Standard
	Al	27	1224587.7	1.8	**8.0560**	0.286	3.6	ug/L	1410	Standard
	Sc	45	42140.2	1.9				ug/L	39543	Standard
	Ti	47	397.3	21.3	**1.4906**	0.359	24.1	ug/L	39	Standard
	V	51	2122.9	0.3	**0.1097**	0.002	1.5	ug/L	1415	Standard
	Cr	52	14472.9	1.3	**1.0963**	0.024	2.2	ug/L	6946	Standard
	Cr	53	2878.6	1.5	**3.0550**	0.050	1.6	ug/L	328	Standard
	Mn	55	698464.2	0.4	**111.4396**	0.282	0.3	ug/L	823	Standard
	Co	59	22132.5	0.4	**3.2312**	0.012	0.4	ug/L	252	Standard
	Ni	60	7435.8	1.3	**3.9843**	0.043	1.1	ug/L	192	Standard
	Cu	65	724.4	2.6	**0.3040**	0.008	2.7	ug/L	141	Standard
	Zn	66	6121.2	1.0	**4.9565**	0.034	0.7	ug/L	491	Standard
>	**Ge**	72	497323.9	0.5				ug/L	515087	Standard
	As	75	171.3	19.9	**0.1980**	0.031	15.4	ug/L	20	Standard
	Se	82	64.0	10.3	**0.4560**	0.056	12.4	ug/L	15	Standard
	Se-1	77	106.7	7.0	**0.7479**	0.110	14.7	ug/L	48	Standard
>	**Ga**	71	88.3	6.5				mg/L	90	Standard
	Rb	85	4614.0	1.5				ug/L	23	Standard
	Y	89	442742.2	2.0				ug/L	448510	Standard
>	**Rh**	103	21.7	35.3				ug/L	15	Standard
	Mo	98	335.3	5.4	**0.1033**	0.008	7.8	ug/L	11	Standard
	Ag	107	92.0	14.2	**-0.0027**	0.002	71.5	ug/L	134	Standard
	Cd	111	86.4	7.6	**0.0370**	0.004	9.6	mg/L	7	Standard
	Cd	114	204.2	9.6	**0.0339**	0.004	12.0	ug/L	16	Standard
>	**In**	115	619678.1	1.4				ug/L	611117	Standard
	Sn	118	898.4	6.0	**0.0480**	0.011	22.7	ug/L	518	Standard
	Sb	123	324.0	26.0	**0.0551**	0.019	33.6	ug/L	127	Standard
	Ba	135	76873.5	0.9	**36.7017**	0.677	1.8	ug/L	45	Standard
	Ce	140	3832.2	0.5				ug/L	298	Standard
>	**Tb**	159	963958.5	1.3				ug/L	977942	Standard
	Ho	165	96.7	23.3				ug/L	12	Standard
	Tl	203	122.3	9.5	**0.0098**	0.001	14.0	ug/L	31	Standard
	Tl	205	126.7	13.9	**0.0151**	0.002	14.9	ug/L	20	Standard
	Pb	206	564.7	2.8	**0.0417**	0.003	6.6	ug/L	286	Standard
	Pb	207	477.0	3.5	**0.0406**	0.003	8.6	ug/L	257	Standard
	Pb	208	2018.4	2.1	**0.0474**	0.002	3.2	ug/L	956	Standard
	U	238	92.7	4.5	**0.0101**	0.001	6.9	ug/L	17	Standard
>	**Bi**	209	552929.6	1.0				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.1351**	17.546	173.1	mg/L	0	Standard
Mg	24	7430.2	1.6	**9.2261**	0.222	2.4	mg/L	32	Standard
K	39	131.7	22.3	**0.2750**	0.084	30.6	mg/L	30	Standard
Ca	43	50.0	10.0	**1.7747**	0.605	34.1	mg/L	48	Standard
Fe	54	2749.1	1.6	**2.1977**	0.008	0.4	mg/L	159	Standard
Fe	57	918.4	0.8	**2.2851**	0.038	1.7	mg/L	195	Standard
> **Sc-1**	45	42140.2	1.9				mg/L	39543	Standard
Cl	35	36101.6	0.8				ug/L	27642	Standard
Kr	83	3.3	75.5				ug/L	2	Standard
Br	81	12138.2	7.4				ug/L	1647	Standard
P	31	25736.8	1.2				ug/L	15231	Standard
S	34	2443.5	6.8				ug/L	1845	Standard
Sr	88	88.3	31.2				ug/L	70	Standard
C	12	360.0	10.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	87.0	21.3				mg/L	12	Standard
Ho-1	165	96.7	23.3				mg/L	12	Standard
Er	166	63.3	48.2				mg/L	20	Standard
I	127	223077.6	8.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.483	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.551	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.401	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.255	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606114203
Sample Date/Time: Tuesday, June 28, 2016 16:44:17
Number of Replicates: 3
Autosampler Position: 244
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81992.9	1.1				ug/L	81760	Standard
	Be	9	28.3	27.0	**0.0187**	0.008	41.6	ug/L	17	Standard
	Al	27	794059.8	1.7	**5.1234**	0.139	2.7	ug/L	1410	Standard
	Sc	45	39785.5	1.2				ug/L	39543	Standard
	Ti	47	377.0	7.0	**1.3367**	0.105	7.9	ug/L	39	Standard
	V	51	6234.1	1.0	**0.6819**	0.005	0.8	ug/L	1415	Standard
	Cr	52	12611.2	0.3	**0.7377**	0.006	0.8	ug/L	6946	Standard
	Cr	53	1423.4	7.9	**1.2652**	0.132	10.4	ug/L	328	Standard
	Mn	55	579693.3	1.0	**88.4369**	1.228	1.4	ug/L	823	Standard
	Co	59	3503.7	1.5	**0.4627**	0.007	1.6	ug/L	252	Standard
	Ni	60	3465.4	2.9	**1.7179**	0.054	3.1	ug/L	192	Standard
	Cu	65	1070.0	1.6	**0.4670**	0.008	1.6	ug/L	141	Standard
	Zn	66	3004.0	2.3	**1.8876**	0.071	3.8	ug/L	491	Standard
>	**Ge**	72	519952.2	0.4				ug/L	515087	Standard
	As	75	346.7	9.3	**0.3458**	0.028	8.2	ug/L	20	Standard
	Se	82	27.6	23.7	**0.1179**	0.056	47.6	ug/L	15	Standard
	Se-1	77	61.3	6.2	**0.0875**	0.047	53.2	ug/L	48	Standard
>	**Ga**	71	168.3	22.5				mg/L	90	Standard
	Rb	85	8202.2	4.2				ug/L	23	Standard
	Y	89	450084.2	2.9				ug/L	448510	Standard
>	**Rh**	103	20.0	50.0				ug/L	15	Standard
	Mo	98	804.4	3.7	**0.2777**	0.016	5.8	ug/L	11	Standard
	Ag	107	104.7	4.0	**-0.0007**	0.001	91.7	ug/L	134	Standard
	Cd	111	177.3	6.3	**0.0797**	0.005	6.4	mg/L	7	Standard
	Cd	114	412.5	12.7	**0.0743**	0.011	14.2	ug/L	16	Standard
>	**In**	115	613204.5	2.4				ug/L	611117	Standard
	Sn	118	838.4	3.1	**0.0394**	0.004	11.4	ug/L	518	Standard
	Sb	123	255.2	2.7	**0.0411**	0.003	6.6	ug/L	127	Standard
	Ba	135	46232.8	2.2	**22.2974**	0.510	2.3	ug/L	45	Standard
	Ce	140	10413.6	4.0				ug/L	298	Standard
>	**Tb**	159	959024.8	2.1				ug/L	977942	Standard
	Ho	165	235.0	14.0				ug/L	12	Standard
	Tl	203	65.0	35.5	**0.0028**	0.003	94.5	ug/L	31	Standard
	Tl	205	33.3	45.8	**0.0022**	0.002	93.6	ug/L	20	Standard
	Pb	206	995.4	6.0	**0.1186**	0.010	8.6	ug/L	286	Standard
	Pb	207	825.7	1.1	**0.1096**	0.003	2.3	ug/L	257	Standard
	Pb	208	3331.5	0.8	**0.1144**	0.002	1.9	ug/L	956	Standard
	U	238	237.0	6.0	**0.0298**	0.002	6.6	ug/L	17	Standard
>	**Bi**	209	562917.3	0.4				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	1456.7	5.2	**1.8709**	0.119	6.4	mg/L	32	Standard
K	39	195.0	2.6	**0.5136**	0.022	4.3	mg/L	30	Standard
Ca	43	66.7	37.7	**4.7333**	3.876	81.9	mg/L	48	Standard
Fe	54	1995.7	3.8	**1.6587**	0.089	5.4	mg/L	159	Standard
Fe	57	716.7	4.0	**1.7796**	0.068	3.8	mg/L	195	Standard
> **Sc-1**	45	39785.5	1.2				mg/L	39543	Standard
Cl	35	34494.6	2.9				ug/L	27642	Standard
Kr	83	1.3	173.2				ug/L	2	Standard
Br	81	3500.4	9.9				ug/L	1647	Standard
P	31	20160.1	3.5				ug/L	15231	Standard
S	34	2286.8	4.4				ug/L	1845	Standard
Sr	88	110.0	28.4				ug/L	70	Standard
C	12	216.7	25.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	341.7	16.9				mg/L	12	Standard
Ho-1	165	235.0	14.0				mg/L	12	Standard
Er	166	243.3	11.9				mg/L	20	Standard
I	127	25506.6	11.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.285	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.945	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.342
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.048
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606114205
Sample Date/Time: Tuesday, June 28, 2016 16:47:28
Number of Replicates: 3
Autosampler Position: 245
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82787.3	1.4				ug/L	81760	Standard
	Be	9	48.3	23.9	**0.0383**	0.011	29.1	ug/L	17	Standard
	Al	27	819185.4	1.5	**5.2350**	0.125	2.4	ug/L	1410	Standard
	Sc	45	40940.2	1.5				ug/L	39543	Standard
	Ti	47	480.0	5.9	**1.6939**	0.112	6.6	ug/L	39	Standard
	V	51	6800.6	1.0	**0.7356**	0.007	0.9	ug/L	1415	Standard
	Cr	52	13980.4	1.6	**0.8771**	0.035	4.0	ug/L	6946	Standard
	Cr	53	1753.4	3.0	**1.5823**	0.062	3.9	ug/L	328	Standard
	Mn	55	596277.6	1.3	**88.4306**	1.209	1.4	ug/L	823	Standard
	Co	59	3687.4	0.3	**0.4741**	0.004	0.7	ug/L	252	Standard
	Ni	60	3717.1	1.3	**1.7958**	0.025	1.4	ug/L	192	Standard
	Cu	65	1213.0	2.2	**0.5240**	0.015	2.9	ug/L	141	Standard
	Zn	66	2977.6	2.2	**1.7886**	0.052	2.9	ug/L	491	Standard
>	**Ge**	72	534849.8	0.4				ug/L	515087	Standard
	As	75	377.9	7.0	**0.3640**	0.023	6.2	ug/L	20	Standard
	Se	82	30.4	15.6	**0.1347**	0.040	29.6	ug/L	15	Standard
	Se-1	77	66.7	7.4	**0.1333**	0.063	47.3	ug/L	48	Standard
>	**Ga**	71	223.3	16.2				mg/L	90	Standard
	Rb	85	9057.7	1.9				ug/L	23	Standard
	Y	89	448330.1	1.0				ug/L	448510	Standard
>	**Rh**	103	13.3	21.7				ug/L	15	Standard
	Mo	98	830.0	4.5	**0.2872**	0.016	5.5	ug/L	11	Standard
	Ag	107	122.7	18.8	**0.0020**	0.004	175.3	ug/L	134	Standard
	Cd	111	156.2	7.4	**0.0700**	0.006	8.4	mg/L	7	Standard
	Cd	114	373.1	12.2	**0.0667**	0.009	13.8	ug/L	16	Standard
>	**In**	115	612810.6	0.7				ug/L	611117	Standard
	Sn	118	755.0	9.6	**0.0254**	0.012	48.6	ug/L	518	Standard
	Sb	123	285.8	9.7	**0.0476**	0.006	12.8	ug/L	127	Standard
	Ba	135	48731.6	0.5	**23.5144**	0.057	0.2	ug/L	45	Standard
	Ce	140	12518.5	3.0				ug/L	298	Standard
>	**Tb**	159	979236.7	1.3				ug/L	977942	Standard
	Ho	165	273.3	12.2				ug/L	12	Standard
	Tl	203	95.3	25.1	**0.0062**	0.003	47.7	ug/L	31	Standard
	Tl	205	61.7	4.7	**0.0059**	0.000	5.9	ug/L	20	Standard
	Pb	206	1176.7	3.8	**0.1481**	0.011	7.4	ug/L	286	Standard
	Pb	207	985.7	2.0	**0.1385**	0.005	4.0	ug/L	257	Standard
	Pb	208	4033.5	3.6	**0.1475**	0.011	7.5	ug/L	956	Standard
	U	238	279.0	8.7	**0.0349**	0.004	10.9	ug/L	17	Standard
>	**Bi**	209	573358.0	1.7				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.1692**	17.605	173.1	mg/L	0	Standard
Mg	24	1471.7	7.4	**1.8343**	0.119	6.5	mg/L	32	Standard
K	39	181.7	21.4	**0.4516**	0.129	28.5	mg/L	30	Standard
Ca	43	60.0	36.3	**3.4344**	3.118	90.8	mg/L	48	Standard
Fe	54	2300.2	8.7	**1.8724**	0.148	7.9	mg/L	159	Standard
Fe	57	716.7	8.3	**1.7108**	0.158	9.3	mg/L	195	Standard
> **Sc-1**	45	40940.2	1.5				mg/L	39543	Standard
Cl	35	34657.6	1.8				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	3160.3	4.1				ug/L	1647	Standard
P	31	20585.6	2.1				ug/L	15231	Standard
S	34	2273.5	1.5				ug/L	1845	Standard
Sr	88	120.0	11.0				ug/L	70	Standard
C	12	246.7	23.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	334.1	26.2				mg/L	12	Standard
Ho-1	165	273.3	12.2				mg/L	12	Standard
Er	166	263.3	24.4				mg/L	20	Standard
I	127	21154.8	6.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.256	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.837	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.277
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.922
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606115102
Sample Date/Time: Tuesday, June 28, 2016 16:50:39
Number of Replicates: 3
Autosampler Position: 246
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83962.1	2.2				ug/L	81760	Standard
	Be	9	23.3	32.7	**0.0132**	0.008	57.7	ug/L	17	Standard
	Al	27	14475219.3	2.2	**91.4576**	2.716	3.0	ug/L	1410	Standard
	Sc	45	40821.6	0.4				ug/L	39543	Standard
	Ti	47	413.3	6.2	**1.5180**	0.138	9.1	ug/L	39	Standard
	V	51	16629.8	2.6	**2.2151**	0.113	5.1	ug/L	1415	Standard
	Cr	52	10947.0	2.1	**0.5345**	0.067	12.6	ug/L	6946	Standard
	Cr	53	3965.5	4.7	**4.2265**	0.126	3.0	ug/L	328	Standard
	Mn	55	185468.7	3.9	**28.8128**	1.697	5.9	ug/L	823	Standard
	Co	59	997.7	2.0	**0.1124**	0.006	4.9	ug/L	252	Standard
	Ni	60	1478.4	4.6	**0.6898**	0.053	7.7	ug/L	192	Standard
	Cu	65	1958.8	1.9	**0.9525**	0.040	4.2	ug/L	141	Standard
	Zn	66	8106.5	2.8	**6.6572**	0.319	4.8	ug/L	491	Standard
>	**Ge**	72	509236.4	2.2				ug/L	515087	Standard
	As	75	962.9	2.3	**0.9070**	0.035	3.9	ug/L	20	Standard
	Se	82	228.1	4.7	**1.8861**	0.120	6.4	ug/L	15	Standard
	Se-1	77	223.7	5.0	**2.2872**	0.212	9.3	ug/L	48	Standard
>	**Ga**	71	265.0	37.9				mg/L	90	Standard
	Rb	85	21039.6	2.1				ug/L	23	Standard
	Y	89	444144.2	0.6				ug/L	448510	Standard
>	**Rh**	103	50.0	20.0				ug/L	15	Standard
	Mo	98	3394.4	4.1	**1.2339**	0.051	4.2	ug/L	11	Standard
	Ag	107	107.3	13.1	**-0.0003**	0.002	751.8	ug/L	134	Standard
	Cd	111	62.6	4.9	**0.0263**	0.001	5.7	mg/L	7	Standard
	Cd	114	195.9	21.1	**0.0327**	0.008	24.5	ug/L	16	Standard
>	**In**	115	612517.0	0.3				ug/L	611117	Standard
	Sn	118	836.7	5.7	**0.0392**	0.008	20.1	ug/L	518	Standard
	Sb	123	547.1	4.7	**0.1028**	0.005	5.0	ug/L	127	Standard
	Ba	135	71666.8	2.3	**34.6081**	0.699	2.0	ug/L	45	Standard
	Ce	140	3362.0	2.6				ug/L	298	Standard
>	**Tb**	159	988372.6	0.5				ug/L	977942	Standard
	Ho	165	63.3	75.9				ug/L	12	Standard
	Tl	203	105.7	10.4	**0.0078**	0.001	16.0	ug/L	31	Standard
	Tl	205	108.3	39.8	**0.0125**	0.006	45.9	ug/L	20	Standard
	Pb	206	1800.1	2.5	**0.2697**	0.008	3.1	ug/L	286	Standard
	Pb	207	1518.4	2.6	**0.2536**	0.007	2.9	ug/L	257	Standard
	Pb	208	6212.5	1.8	**0.2692**	0.011	4.0	ug/L	956	Standard
	U	238	10075.0	2.3	**1.4043**	0.047	3.4	ug/L	17	Standard
>	**Bi**	209	556782.3	1.6				ug/L	557080	Standard

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Na	23	3.3	86.6	**20.7586**	17.973	86.6	mg/L	0	Standard
Mg	24	36599.2	3.6	**47.1388**	1.781	3.8	mg/L	32	Standard
K	39	311.7	20.3	**0.8782**	0.204	23.2	mg/L	30	Standard
Ca	43	200.0	10.0	**24.0730**	2.845	11.8	mg/L	48	Standard
Fe	54	272.4	27.9	**0.1018**	0.067	65.8	mg/L	159	Standard
Fe	57	400.0	17.2	**0.6830**	0.221	32.3	mg/L	195	Standard
> **Sc-1**	45	40821.6	0.4				mg/L	39543	Standard
Cl	35	37764.4	4.8				ug/L	27642	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	41179.3	5.9				ug/L	1647	Standard
P	31	20392.0	1.6				ug/L	15231	Standard
S	34	2350.2	4.9				ug/L	1845	Standard
Sr	88	246.7	3.1				ug/L	70	Standard
C	12	240.0	16.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	93.2	27.3				mg/L	12	Standard
Ho-1	165	63.3	75.9				mg/L	12	Standard
Er	166	73.3	7.9				mg/L	20	Standard
I	127	267945.4	8.8				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		102.693	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.864	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.229
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.946
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606115105
Sample Date/Time: Tuesday, June 28, 2016 16:53:51
Number of Replicates: 3
Autosampler Position: 247
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81681.4	3.1				ug/L	81760	Standard
	Be	9	16.7	45.8	**0.0069**	0.007	104.2	ug/L	17	Standard
	Al	27	18070414.8	1.1	**117.3803**	2.444	2.1	ug/L	1410	Standard
	Sc	45	40721.3	2.6				ug/L	39543	Standard
	Ti	47	244.7	8.0	**0.8457**	0.069	8.1	ug/L	39	Standard
	V	51	17618.4	3.0	**2.3985**	0.046	1.9	ug/L	1415	Standard
	Cr	52	10888.2	1.3	**0.5506**	0.002	0.4	ug/L	6946	Standard
	Cr	53	4290.6	7.0	**4.6855**	0.402	8.6	ug/L	328	Standard
	Mn	55	234137.7	1.0	**36.9743**	0.056	0.2	ug/L	823	Standard
	Co	59	907.0	1.1	**0.1013**	0.001	0.9	ug/L	252	Standard
	Ni	60	1595.4	2.1	**0.7658**	0.017	2.3	ug/L	192	Standard
	Cu	65	1678.8	2.6	**0.8172**	0.017	2.1	ug/L	141	Standard
	Zn	66	5525.3	1.2	**4.3540**	0.048	1.1	ug/L	491	Standard
>	**Ge**	72	501124.8	1.2				ug/L	515087	Standard
	As	75	1072.7	4.1	**1.0212**	0.046	4.5	ug/L	20	Standard
	Se	82	264.0	5.9	**2.2378**	0.139	6.2	ug/L	15	Standard
	Se-1	77	284.0	16.7	**3.1586**	0.667	21.1	ug/L	48	Standard
>	**Ga**	71	116.7	13.8				mg/L	90	Standard
	Rb	85	15923.4	4.0				ug/L	23	Standard
	Y	89	444308.5	1.8				ug/L	448510	Standard
>	**Rh**	103	68.3	40.3				ug/L	15	Standard
	Mo	98	3823.6	1.7	**1.4182**	0.006	0.4	ug/L	11	Standard
	Ag	107	76.3	4.0	**-0.0047**	0.001	10.8	ug/L	134	Standard
	Cd	111	40.8	13.4	**0.0165**	0.003	15.5	mg/L	7	Standard
	Cd	114	111.3	16.3	**0.0169**	0.004	22.4	ug/L	16	Standard
>	**In**	115	601437.2	1.6				ug/L	611117	Standard
	Sn	118	1256.7	47.3	**0.1130**	0.098	86.7	ug/L	518	Standard
	Sb	123	502.0	6.8	**0.0953**	0.009	9.3	ug/L	127	Standard
	Ba	135	85456.0	1.5	**42.0358**	0.440	1.0	ug/L	45	Standard
	Ce	140	1221.7	20.4				ug/L	298	Standard
>	**Tb**	159	951914.7	0.8				ug/L	977942	Standard
	Ho	165	38.3	39.8				ug/L	12	Standard
	Tl	203	109.0	4.0	**0.0087**	0.001	7.8	ug/L	31	Standard
	Tl	205	100.0	13.2	**0.0120**	0.002	15.9	ug/L	20	Standard
	Pb	206	942.7	3.4	**0.1187**	0.004	3.7	ug/L	286	Standard
	Pb	207	751.4	3.5	**0.1031**	0.007	7.3	ug/L	257	Standard
	Pb	208	3320.1	1.9	**0.1235**	0.005	4.4	ug/L	956	Standard
	U	238	12716.0	1.7	**1.8521**	0.048	2.6	ug/L	17	Standard
>	**Bi**	209	533061.4	1.1				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.4978**	18.174	173.1	mg/L	0	Standard
Mg	24	45127.2	3.7	**58.2718**	1.297	2.2	mg/L	32	Standard
K	39	268.3	17.6	**0.7391**	0.156	21.1	mg/L	30	Standard
Ca	43	230.0	5.8	**28.6229**	2.753	9.6	mg/L	48	Standard
Fe	54	227.2	16.5	**0.0631**	0.037	58.2	mg/L	159	Standard
Fe	57	321.7	8.6	**0.4294**	0.079	18.3	mg/L	195	Standard
> **Sc-1**	45	40721.3	2.6				mg/L	39543	Standard
Cl	35	40535.5	2.1				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	42472.8	3.2				ug/L	1647	Standard
P	31	21144.7	2.2				ug/L	15231	Standard
S	34	2520.2	4.3				ug/L	1845	Standard
Sr	88	268.3	23.3				ug/L	70	Standard
C	12	270.0	30.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	48.6	21.1				mg/L	12	Standard
Ho-1	165	38.3	39.8				mg/L	12	Standard
Er	166	30.0	33.3				mg/L	20	Standard
I	127	357293.3	4.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.904	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.289	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.416
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.688
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606115105
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Method 6020 - Summary Report

Sample ID: L1606115401 WG573751-03
Sample Date/Time: Tuesday, June 28, 2016 16:57:02
Number of Replicates: 3
Autosampler Position: 248
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	100430.3	2.8				ug/L	81760	Standard
	Be	9	28.3	56.7	**0.0134**	0.013	96.3	ug/L	17	Standard
	Al	27	81335563.7	1.7	**429.6767**	8.046	1.9	ug/L	1410	Standard
	Sc	45	36054.5	1.3				ug/L	39543	Standard
	Ti	47	276.7	4.4	**1.0861**	0.041	3.8	ug/L	39	Standard
	V	51	56034.7	2.7	**8.8625**	0.243	2.7	ug/L	1415	Standard
	Cr	52	12377.7	0.7	**0.9433**	0.019	2.0	ug/L	6946	Standard
	Cr	53	23940.6	3.3	**30.3443**	1.215	4.0	ug/L	328	Standard
	Mn	55	741944.6	0.9	**128.6152**	2.806	2.2	ug/L	823	Standard
	Co	59	3502.1	2.3	**0.5295**	0.021	4.0	ug/L	252	Standard
	Ni	60	10135.4	1.6	**5.9492**	0.102	1.7	ug/L	192	Standard
	Cu	65	4993.5	1.7	**2.8661**	0.085	3.0	ug/L	141	Standard
	Zn	66	5821.5	1.7	**5.1486**	0.184	3.6	ug/L	491	Standard
>	**Ge**	72	457910.9	1.5				ug/L	515087	Standard
	As	75	1957.2	6.1	**1.9997**	0.145	7.2	ug/L	20	Standard
	Se	82	3071.1	3.5	**29.9014**	1.486	5.0	ug/L	15	Standard
	Se-1	77	4244.3	1.8	**62.6742**	2.070	3.3	ug/L	48	Standard
>	**Ga**	71	138.3	10.4				mg/L	90	Standard
	Rb	85	9993.3	0.6				ug/L	23	Standard
	Y	89	397349.5	0.4				ug/L	448510	Standard
>	**Rh**	103	1400.1	6.9				ug/L	15	Standard
	Mo	98	28731.5	0.6	**12.2349**	0.110	0.9	ug/L	11	Standard
	Ag	107	395.7	2.6	**0.0517**	0.002	4.3	ug/L	134	Standard
	Cd	111	92.0	15.6	**0.0467**	0.008	17.2	mg/L	7	Standard
	Cd	114	319.4	5.6	**0.0659**	0.004	5.6	ug/L	16	Standard
>	**In**	115	530125.1	0.7				ug/L	611117	Standard
	Sn	118	1140.0	5.3	**0.1203**	0.011	8.8	ug/L	518	Standard
	Sb	123	532.5	6.0	**0.1172**	0.007	5.9	ug/L	127	Standard
	Ba	135	16736.6	1.8	**9.3206**	0.182	2.0	ug/L	45	Standard
	Ce	140	1620.1	9.0				ug/L	298	Standard
>	**Tb**	159	890828.2	2.0				ug/L	977942	Standard
	Ho	165	38.3	27.2				ug/L	12	Standard
	Tl	203	267.7	7.7	**0.0327**	0.003	10.1	ug/L	31	Standard
	Tl	205	231.7	6.6	**0.0350**	0.002	6.9	ug/L	20	Standard
	Pb	206	883.7	4.8	**0.1290**	0.007	5.4	ug/L	286	Standard
	Pb	207	738.7	4.5	**0.1206**	0.010	8.0	ug/L	257	Standard
	Pb	208	2811.4	0.6	**0.1152**	0.004	3.5	ug/L	956	Standard
	U	238	63722.1	1.7	**10.4767**	0.095	0.9	ug/L	17	Standard
>	**Bi**	209	472777.8	1.7				ug/L	557080	Standard

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Na	23	15.0	33.3	**105.9031**	36.283	34.3	mg/L	0	Standard
Mg	24	356514.1	0.8	**520.5310**	10.800	2.1	mg/L	32	Standard
K	39	430.0	2.3	**1.4525**	0.056	3.9	mg/L	30	Standard
Ca	43	1840.1	5.6	**301.0738**	13.488	4.5	mg/L	48	Standard
Fe	54	188.6	12.1	**0.0500**	0.021	41.8	mg/L	159	Standard
Fe	57	1585.1	2.5	**5.2457**	0.200	3.8	mg/L	195	Standard
> **Sc-1**	45	36054.5	1.3				mg/L	39543	Standard
Cl	35	90598.1	1.3				ug/L	27642	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	42312.4	3.9				ug/L	1647	Standard
P	31	19347.4	2.8				ug/L	15231	Standard
S	34	2421.9	2.4				ug/L	1845	Standard
Sr	88	6231.3	0.9				ug/L	70	Standard
C	12	243.3	12.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	37.9	25.6				mg/L	12	Standard
Ho-1	165	38.3	27.2				mg/L	12	Standard
Er	166	43.3	96.1				mg/L	20	Standard
I	127	118064.4	6.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		122.835	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		88.900	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606115401 WG573751-03
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		86.747
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		84.867
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606115402S WG573751-09
Sample Date/Time: Tuesday, June 28, 2016 17:00:14
Number of Replicates: 3
Autosampler Position: 249
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	111794.4	2.2				ug/L	81760	Standard
	Be	9	61074.6	3.8	**44.9573**	0.853	1.9	ug/L	17	Standard
	Al	27	84589452.8	4.6	**401.1886**	9.792	2.4	ug/L	1410	Standard
	Sc	45	39148.9	4.1				ug/L	39543	Standard
	Ti	47	272.0	24.8	**0.9934**	0.318	32.0	ug/L	39	Standard
	V	51	406216.4	3.4	**61.4172**	0.609	1.0	ug/L	1415	Standard
	Cr	52	347340.1	3.9	**51.5532**	0.830	1.6	ug/L	6946	Standard
	Cr	53	63548.0	2.3	**76.0057**	0.198	0.3	ug/L	328	Standard
	Mn	55	986761.6	2.9	**160.3601**	1.162	0.7	ug/L	823	Standard
	Co	59	344414.5	2.6	**51.6648**	0.567	1.1	ug/L	252	Standard
	Ni	60	96461.7	3.6	**53.9005**	0.670	1.2	ug/L	192	Standard
	Cu	65	88941.7	2.7	**49.2712**	0.171	0.3	ug/L	141	Standard
	Zn	66	55366.0	3.1	**52.4384**	0.443	0.8	ug/L	491	Standard
>	**Ge**	72	488431.6	2.5				ug/L	515087	Standard
	As	75	59145.7	4.0	**55.5035**	0.877	1.6	ug/L	20	Standard
	Se	82	9257.9	4.7	**84.6512**	1.891	2.2	ug/L	15	Standard
	Se-1	77	8241.9	2.0	**114.6628**	0.599	0.5	ug/L	48	Standard
>	**Ga**	71	135.0	3.7				mg/L	90	Standard
	Rb	85	11232.5	8.2				ug/L	23	Standard
	Y	89	424780.5	4.2				ug/L	448510	Standard
>	**Rh**	103	1410.1	5.3				ug/L	15	Standard
	Mo	98	28554.4	4.0	**11.2353**	0.049	0.4	ug/L	11	Standard
	Ag	107	298500.0	4.4	**47.3531**	0.325	0.7	ug/L	134	Standard
	Cd	111	96838.7	4.3	**48.2572**	0.264	0.5	mg/L	7	Standard
	Cd	114	236461.6	3.9	**48.4818**	0.307	0.6	ug/L	16	Standard
>	**In**	115	573601.2	3.7				ug/L	611117	Standard
	Sn	118	926.7	16.3	**0.0649**	0.025	39.2	ug/L	518	Standard
	Sb	123	232072.7	4.2	**52.3852**	0.509	1.0	ug/L	127	Standard
	Ba	135	113861.5	4.7	**58.7202**	0.562	1.0	ug/L	45	Standard
	Ce	140	1120.0	4.0				ug/L	298	Standard
>	**Tb**	159	960238.4	4.5				ug/L	977942	Standard
	Ho	165	33.3	75.5				ug/L	12	Standard
	Tl	203	395828.3	3.1	**51.4711**	0.762	1.5	ug/L	31	Standard
	Tl	205	346560.1	3.5	**51.8878**	0.159	0.3	ug/L	20	Standard
	Pb	206	263890.3	2.7	**53.4438**	0.979	1.8	ug/L	286	Standard
	Pb	207	230261.5	2.5	**51.7030**	0.928	1.8	ug/L	257	Standard
	Pb	208	887552.6	2.9	**51.5030**	0.554	1.1	ug/L	956	Standard
	U	238	419873.0	2.9	**64.2072**	0.642	1.0	ug/L	17	Standard
>	**Bi**	209	508536.8	3.8				ug/L	557080	Standard

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Na	23	21.7	35.3	**139.6053**	45.304	32.5	mg/L	0	Standard
Mg	24	357824.7	2.8	**481.2852**	10.577	2.2	mg/L	32	Standard
K	39	491.7	6.5	**1.5399**	0.155	10.1	mg/L	30	Standard
Ca	43	1775.1	1.7	**267.3999**	15.688	5.9	mg/L	48	Standard
Fe	54	171.9	15.3	**0.0199**	0.020	102.8	mg/L	159	Standard
Fe	57	1550.1	0.6	**4.6666**	0.208	4.5	mg/L	195	Standard
Sc-1	45	39148.9	4.1				mg/L	39543	Standard
Cl	35	91435.3	3.5				ug/L	27642	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	45418.1	6.1				ug/L	1647	Standard
P	31	20330.3	5.5				ug/L	15231	Standard
S	34	2288.5	3.3				ug/L	1845	Standard
Sr	88	6416.4	6.4				ug/L	70	Standard
C	12	206.7	37.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	21.9	50.9				mg/L	12	Standard
Ho-1	165	33.3	75.5				mg/L	12	Standard
Er	166	30.0	57.7				mg/L	20	Standard
I	127	49499.1	2.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		136.735	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.825	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	93.861
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	91.286
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Se-1 77 Upper, S, EEE	Se-1	77	

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Method 6020 - Summary Report

Sample ID: L1606115403SD WG573751-10
Sample Date/Time: Tuesday, June 28, 2016 17:03:25
Number of Replicates: 3
Autosampler Position: 250
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	118994.0	2.6				ug/L	81760	Standard
	Be	9	64654.3	0.9	**44.7357**	0.820	1.8	ug/L	17	Standard
	Al	27	87741403.7	3.4	**391.0655**	6.582	1.7	ug/L	1410	Standard
	Sc	45	41172.5	1.6				ug/L	39543	Standard
	Ti	47	259.3	3.7	**0.9238**	0.057	6.2	ug/L	39	Standard
	V	51	425385.5	3.2	**63.6566**	1.295	2.0	ug/L	1415	Standard
	Cr	52	362069.3	1.9	**53.2267**	0.604	1.1	ug/L	6946	Standard
	Cr	53	64441.8	2.0	**76.2717**	0.872	1.1	ug/L	328	Standard
	Mn	55	1073606.3	3.1	**172.6721**	4.096	2.4	ug/L	823	Standard
	Co	59	369825.3	3.2	**54.8942**	1.128	2.1	ug/L	252	Standard
	Ni	60	100548.2	1.5	**55.6131**	0.149	0.3	ug/L	192	Standard
	Cu	65	92359.0	1.3	**50.6385**	0.319	0.6	ug/L	141	Standard
	Zn	66	57865.3	2.6	**54.2651**	0.864	1.6	ug/L	491	Standard
>	**Ge**	72	493572.0	1.8				ug/L	515087	Standard
	As	75	61885.0	3.3	**57.4777**	1.381	2.4	ug/L	20	Standard
	Se	82	9664.4	3.7	**87.4717**	2.250	2.6	ug/L	15	Standard
	Se-1	77	8366.3	3.5	**115.1653**	2.897	2.5	ug/L	48	Standard
>	**Ga**	71	118.3	21.7				mg/L	90	Standard
	Rb	85	11170.8	6.4				ug/L	23	Standard
	Y	89	447220.0	3.1				ug/L	448510	Standard
>	**Rh**	103	1640.1	8.8				ug/L	15	Standard
	Mo	98	29726.0	4.1	**11.0857**	0.160	1.4	ug/L	11	Standard
	Ag	107	312572.9	2.2	**47.0220**	0.762	1.6	ug/L	134	Standard
	Cd	111	102356.1	3.3	**48.3584**	0.794	1.6	mg/L	7	Standard
	Cd	114	246212.9	4.6	**47.8408**	0.884	1.8	ug/L	16	Standard
>	**In**	115	605206.5	3.7				ug/L	611117	Standard
	Sn	118	1233.4	10.6	**0.1085**	0.018	16.3	ug/L	518	Standard
	Sb	123	240651.4	1.9	**51.5127**	0.935	1.8	ug/L	127	Standard
	Ba	135	117995.0	3.4	**57.6913**	0.169	0.3	ug/L	45	Standard
	Ce	140	1415.1	2.3				ug/L	298	Standard
>	**Tb**	159	994298.0	3.0				ug/L	977942	Standard
	Ho	165	46.7	12.4				ug/L	12	Standard
	Tl	203	412661.0	1.3	**51.8933**	0.197	0.4	ug/L	31	Standard
	Tl	205	366877.2	3.6	**53.1179**	1.107	2.1	ug/L	20	Standard
	Pb	206	275320.1	2.3	**53.9118**	0.413	0.8	ug/L	286	Standard
	Pb	207	238830.1	2.6	**51.8469**	0.552	1.1	ug/L	257	Standard
	Pb	208	936516.1	2.9	**52.5472**	0.756	1.4	ug/L	956	Standard
	U	238	442147.9	3.9	**65.3698**	1.598	2.4	ug/L	17	Standard
>	**Bi**	209	525736.2	1.5				ug/L	557080	Standard

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Na	23	31.7	48.2	**194.7966**	93.559	48.0	mg/L	0	Standard
Mg	24	381865.2	2.0	**488.2175**	12.226	2.5	mg/L	32	Standard
K	39	475.0	11.9	**1.3985**	0.159	11.4	mg/L	30	Standard
Ca	43	1828.4	7.5	**261.2707**	17.620	6.7	mg/L	48	Standard
Fe	54	210.4	5.2	**0.0459**	0.012	26.9	mg/L	159	Standard
Fe	57	1693.4	5.0	**4.8640**	0.189	3.9	mg/L	195	Standard
> **Sc-1**	45	41172.5	1.6				mg/L	39543	Standard
Cl	35	96785.1	3.5				ug/L	27642	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	48665.0	7.0				ug/L	1647	Standard
P	31	21074.7	3.4				ug/L	15231	Standard
S	34	2411.9	0.6				ug/L	1845	Standard
Sr	88	7001.6	9.4				ug/L	70	Standard
C	12	253.3	28.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	54.1	45.2				mg/L	12	Standard
Ho-1	165	46.7	12.4				mg/L	12	Standard
Er	166	53.3	28.6				mg/L	20	Standard
I	127	96813.1	12.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		145.540	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.823	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.033
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.373
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Se-1 77 Upper, S, EEE	Se-1	77	

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Method 6020 - Summary Report

Sample ID: L1606115404
Sample Date/Time: Tuesday, June 28, 2016 17:06:37
Number of Replicates: 3
Autosampler Position: 251
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	100804.3	1.4				ug/L	81760	Standard
	Be	9	43.3	6.7	**0.0257**	0.002	9.1	ug/L	17	Standard
	Al	27	95134.9	5.2	**0.4862**	0.026	5.4	ug/L	1410	Standard
	Sc	45	38767.9	2.5				ug/L	39543	Standard
	Ti	47	56.0	17.6	**0.0568**	0.042	74.0	ug/L	39	Standard
	V	51	2653.2	7.2	**0.1688**	0.023	13.6	ug/L	1415	Standard
	Cr	52	16846.0	0.3	**1.3242**	0.040	3.0	ug/L	6946	Standard
	Cr	53	2448.5	10.3	**2.4055**	0.318	13.2	ug/L	328	Standard
	Mn	55	6416.4	0.3	**0.8254**	0.012	1.5	ug/L	823	Standard
	Co	59	385.0	5.1	**0.0226**	0.003	13.2	ug/L	252	Standard
	Ni	60	1595.4	9.2	**0.7282**	0.071	9.8	ug/L	192	Standard
	Cu	65	1383.7	5.1	**0.6260**	0.046	7.3	ug/L	141	Standard
	Zn	66	3329.0	1.8	**2.1614**	0.092	4.3	ug/L	491	Standard
>	**Ge**	72	523540.2	1.3				ug/L	515087	Standard
	As	75	21.6	288.4	**0.0594**	0.054	91.4	ug/L	20	Standard
	Se	82	48.4	30.2	**0.2956**	0.131	44.3	ug/L	15	Standard
	Se-1	77	118.7	6.2	**0.8319**	0.117	14.0	ug/L	48	Standard
>	**Ga**	71	35.0	51.5				mg/L	90	Standard
	Rb	85	285.0	10.7				ug/L	23	Standard
	Y	89	449294.4	0.5				ug/L	448510	Standard
>	**Rh**	103	35.0	14.3				ug/L	15	Standard
	Mo	98	461.6	2.9	**0.1485**	0.005	3.0	ug/L	11	Standard
	Ag	107	143.3	7.2	**0.0047**	0.002	32.8	ug/L	134	Standard
	Cd	111	43.9	7.3	**0.0172**	0.002	8.8	mg/L	7	Standard
	Cd	114	151.5	5.9	**0.0237**	0.002	7.4	ug/L	16	Standard
>	**In**	115	622732.4	0.3				ug/L	611117	Standard
	Sn	118	3920.5	2.1	**0.5488**	0.015	2.8	ug/L	518	Standard
	Sb	123	270.3	27.2	**0.0434**	0.015	35.5	ug/L	127	Standard
	Ba	135	1327.1	1.7	**0.6057**	0.011	1.9	ug/L	45	Standard
	Ce	140	168.3	16.4				ug/L	298	Standard
>	**Tb**	159	980536.6	0.9				ug/L	977942	Standard
	Ho	165	21.7	13.3				ug/L	12	Standard
	Tl	203	266.3	8.1	**0.0259**	0.003	10.5	ug/L	31	Standard
	Tl	205	201.7	5.7	**0.0244**	0.001	5.0	ug/L	20	Standard
	Pb	206	459.0	5.5	**0.0188**	0.005	29.2	ug/L	286	Standard
	Pb	207	389.7	6.3	**0.0195**	0.006	29.5	ug/L	257	Standard
	Pb	208	1625.7	6.2	**0.0231**	0.006	26.8	ug/L	956	Standard
	U	238	121.7	7.4	**0.0135**	0.001	9.9	ug/L	17	Standard
>	**Bi**	209	574701.5	1.2				ug/L	557080	Standard

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Na	23	5.0	100.0	**32.7163**	32.227	98.5	mg/L	0	Standard
Mg	24	330.0	22.9	**0.3898**	0.094	24.2	mg/L	32	Standard
K	39	33.3	43.3	**-0.0268**	0.048	179.7	mg/L	30	Standard
Ca	43	33.3	43.3	**-0.2011**	2.146	1067.4	mg/L	48	Standard
Fe	54	141.8	17.1	**-0.0059**	0.025	416.6	mg/L	159	Standard
Fe	57	216.7	23.3	**0.1207**	0.166	137.9	mg/L	195	Standard
> **Sc-1**	45	38767.9	2.5				mg/L	39543	Standard
Cl	35	43132.0	0.5				ug/L	27642	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	3107.0	8.7				ug/L	1647	Standard
P	31	17094.6	3.8				ug/L	15231	Standard
S	34	2171.8	4.7				ug/L	1845	Standard
Sr	88	71.7	31.5				ug/L	70	Standard
C	12	180.0	44.1				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.3	86.6				mg/L	12	Standard
Ho-1	165	21.7	13.3				mg/L	12	Standard
Er	166	6.7	86.6				mg/L	20	Standard
I	127	6683.3	38.1				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		123.293	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.641	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	101.901
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.163
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 17:09:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	98106.9	3.9				ug/L	81760	Standard
	Be	9	60781.9	5.8	**50.9762**	1.224	2.4	ug/L	17	Standard
	Al	27	8271215.1	2.8	**44.7180**	0.568	1.3	ug/L	1410	Standard
	Sc	45	39052.0	5.6				ug/L	39543	Standard
	Ti	47	24646.4	4.4	**101.4481**	2.619	2.6	ug/L	39	Standard
	V	51	347970.7	1.4	**51.1411**	0.534	1.0	ug/L	1415	Standard
	Cr	52	354198.6	3.4	**51.1178**	0.779	1.5	ug/L	6946	Standard
	Cr	53	44595.6	4.3	**51.7475**	1.396	2.7	ug/L	328	Standard
	Mn	55	315347.9	1.9	**49.7410**	0.694	1.4	ug/L	823	Standard
	Co	59	365725.5	2.3	**53.3530**	0.828	1.6	ug/L	252	Standard
	Ni	60	93315.9	2.3	**50.7083**	0.301	0.6	ug/L	192	Standard
	Cu	65	94072.6	2.8	**50.6778**	0.428	0.8	ug/L	141	Standard
	Zn	66	55586.5	1.6	**51.1865**	0.432	0.8	ug/L	491	Standard
>	**Ge**	72	502280.1	2.3				ug/L	515087	Standard
	As	75	55868.4	1.2	**51.0087**	0.746	1.5	ug/L	20	Standard
	Se	82	5921.1	2.6	**52.6309**	1.371	2.6	ug/L	15	Standard
	Se-1	77	3936.2	0.2	**52.8821**	1.332	2.5	ug/L	48	Standard
>	**Ga**	71	43.3	6.7				mg/L	90	Standard
	Rb	85	853.4	12.0				ug/L	23	Standard
	Y	89	445806.9	0.5				ug/L	448510	Standard
>	**Rh**	103	45.0	61.9				ug/L	15	Standard
	Mo	98	273081.8	2.1	**98.9265**	1.774	1.8	ug/L	11	Standard
	Ag	107	339843.9	2.2	**49.5651**	0.762	1.5	ug/L	134	Standard
	Cd	111	106758.1	1.3	**48.9107**	0.367	0.7	mg/L	7	Standard
	Cd	114	258025.9	1.5	**48.6321**	0.403	0.8	ug/L	16	Standard
>	**In**	115	623979.7	0.7				ug/L	611117	Standard
	Sn	118	298451.0	1.1	**49.3312**	0.224	0.5	ug/L	518	Standard
	Sb	123	238781.4	2.0	**49.5506**	0.796	1.6	ug/L	127	Standard
	Ba	135	101752.9	1.4	**48.2444**	0.388	0.8	ug/L	45	Standard
	Ce	140	83.3	6.9				ug/L	298	Standard
>	**Tb**	159	999812.3	3.7				ug/L	977942	Standard
	Ho	165	18.3	56.8				ug/L	12	Standard
	Tl	203	438487.8	2.0	**50.5214**	0.372	0.7	ug/L	31	Standard
	Tl	205	396911.7	0.7	**52.6785**	1.200	2.3	ug/L	20	Standard
	Pb	206	278860.8	1.5	**50.0350**	0.542	1.1	ug/L	286	Standard
	Pb	207	252734.9	2.4	**50.2714**	0.461	0.9	ug/L	257	Standard
	Pb	208	1008405.1	1.0	**51.8566**	0.775	1.5	ug/L	956	Standard
	U	238	385967.4	0.9	**52.3060**	0.849	1.6	ug/L	17	Standard
>	**Bi**	209	573840.1	2.4				ug/L	557080	Standard

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Na	23	6.7	43.3	**42.7715**	15.957	37.3	mg/L	0	Standard
Mg	24	4330.6	4.7	**5.7850**	0.241	4.2	mg/L	32	Standard
K	39	1310.1	5.5	**4.3410**	0.087	2.0	mg/L	30	Standard
Ca	43	75.0	17.6	**6.2533**	2.500	40.0	mg/L	48	Standard
Fe	54	6082.2	3.3	**5.4477**	0.350	6.4	mg/L	159	Standard
Fe	57	1690.1	5.8	**5.1531**	0.140	2.7	mg/L	195	Standard
Sc-1	45	39052.0	5.6				mg/L	39543	Standard
Cl	35	36312.2	3.9				ug/L	27642	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	2130.1	3.3				ug/L	1647	Standard
P	31	18776.6	1.2				ug/L	15231	Standard
S	34	2388.5	6.0				ug/L	1845	Standard
Sr	88	65.0	13.3				ug/L	70	Standard
C	12	133.3	33.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.7	43.5				mg/L	12	Standard
Ho-1	165	18.3	56.8				mg/L	12	Standard
Er	166	13.3	86.6				mg/L	20	Standard
I	127	2708.6	18.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	101.952		
Al	27	89.436		
Sc	45			
Ti	47	101.448		
V	51	102.282		
Cr	52	102.236		
Cr	53			
Mn	55	99.482		
Co	59	106.706		
Ni	60	101.417		
Cu	65	101.356		
Zn	66	102.373		
Ge	72		97.514	
As	75	102.017		
Se	82	105.262		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	98.926		
Ag	107	99.130		
Cd	111	97.821		
Cd	114			
In	115		102.105	
Sn	118	98.662		
Sb	123	99.101		
Ba	135	96.489		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.043		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.713		
U	238	104.612		
Bi	209		103.008	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 17:13:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92565.4	2.9				ug/L	81760	Standard
	Be	9	53.3	124.8	**0.0389**	0.062	158.6	ug/L	17	Standard
	Al	27	40870.6	146.9	**0.2266**	0.357	157.4	ug/L	1410	Standard
	Sc	45	37247.5	4.3				ug/L	39543	Standard
	Ti	47	28.7	28.0	**-0.0471**	0.033	70.8	ug/L	39	Standard
	V	51	1306.5	27.0	**-0.0143**	0.053	368.2	ug/L	1415	Standard
	Cr	52	6317.0	3.9	**-0.1289**	0.039	29.9	ug/L	6946	Standard
	Cr	53	723.4	11.4	**0.5015**	0.098	19.5	ug/L	328	Standard
	Mn	55	1084.7	54.0	**0.0228**	0.093	407.7	ug/L	823	Standard
	Co	59	338.3	37.8	**0.0179**	0.019	104.7	ug/L	252	Standard
	Ni	60	322.7	24.3	**0.0703**	0.043	61.2	ug/L	192	Standard
	Cu	65	237.7	21.2	**0.0371**	0.027	74.0	ug/L	141	Standard
	Zn	66	487.7	9.0	**-0.3725**	0.041	11.1	ug/L	491	Standard
>	**Ge**	72	503592.6	0.3				ug/L	515087	Standard
	As	75	-19.3	188.6	**0.0227**	0.033	146.0	ug/L	20	Standard
	Se	82	22.8	34.7	**0.0835**	0.070	83.8	ug/L	15	Standard
	Se-1	77	71.3	3.2	**0.2496**	0.032	12.8	ug/L	48	Standard
>	**Ga**	71	43.3	46.6				mg/L	90	Standard
	Rb	85	33.3	37.7				ug/L	23	Standard
	Y	89	434857.2	0.6				ug/L	448510	Standard
>	**Rh**	103	13.3	43.3				ug/L	15	Standard
	Mo	98	288.2	19.1	**0.0890**	0.021	23.1	ug/L	11	Standard
	Ag	107	295.0	92.5	**0.0287**	0.042	146.5	ug/L	134	Standard
	Cd	111	58.8	115.8	**0.0253**	0.033	130.1	mg/L	7	Standard
	Cd	114	179.7	150.5	**0.0306**	0.054	175.0	ug/L	16	Standard
>	**In**	115	602649.0	1.7				ug/L	611117	Standard
	Sn	118	880.0	23.1	**0.0494**	0.037	75.1	ug/L	518	Standard
	Sb	123	564.4	53.6	**0.1091**	0.067	61.4	ug/L	127	Standard
	Ba	135	113.7	104.6	**0.0312**	0.059	190.7	ug/L	45	Standard
	Ce	140	26.7	21.7				ug/L	298	Standard
>	**Tb**	159	956287.2	0.6				ug/L	977942	Standard
	Ho	165	6.7	173.2				ug/L	12	Standard
	Tl	203	302.3	107.0	**0.0307**	0.038	123.1	ug/L	31	Standard
	Tl	205	353.3	119.4	**0.0454**	0.057	124.8	ug/L	20	Standard
	Pb	206	425.3	47.1	**0.0143**	0.036	251.9	ug/L	286	Standard
	Pb	207	353.0	32.9	**0.0137**	0.023	168.1	ug/L	257	Standard
	Pb	208	1674.0	55.6	**0.0274**	0.048	175.9	ug/L	956	Standard
	U	238	298.0	132.6	**0.0381**	0.054	142.5	ug/L	17	Standard
>	**Bi**	209	561401.5	0.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	206.7	141.8	**0.2403**	0.424	176.4	mg/L	32	Standard
K	39	28.3	71.3	**-0.0379**	0.076	200.2	mg/L	30	Standard
Ca	43	35.0	24.7	**0.2817**	1.299	461.1	mg/L	48	Standard
Fe	54	147.7	17.2	**0.0057**	0.030	525.6	mg/L	159	Standard
Fe	57	195.0	14.3	**0.0744**	0.099	133.6	mg/L	195	Standard
Sc-1	45	37247.5	4.3				mg/L	39543	Standard
Cl	35	35032.5	2.2				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1893.5	11.2				ug/L	1647	Standard
P	31	18479.6	2.3				ug/L	15231	Standard
S	34	2273.5	3.9				ug/L	1845	Standard
Sr	88	81.7	3.5				ug/L	70	Standard
C	12	186.7	15.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.5	186.3				mg/L	12	Standard
Ho-1	165	6.7	173.2				mg/L	12	Standard
Er	166	10.0	100.0				mg/L	20	Standard
I	127	2043.5	19.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.768	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.614	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.776	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606115501
Sample Date/Time: Tuesday, June 28, 2016 17:16:14
Number of Replicates: 3
Autosampler Position: 252
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92590.4	1.6				ug/L	81760	Standard
	Be	9	26.7	47.2	**0.0141**	0.012	82.4	ug/L	17	Standard
	Al	27	22123057.0	1.6	**126.7281**	1.652	1.3	ug/L	1410	Standard
	Sc	45	39028.5	1.1				ug/L	39543	Standard
	Ti	47	160.7	8.5	**0.5119**	0.051	9.9	ug/L	39	Standard
	V	51	4388.8	2.7	**0.4554**	0.016	3.5	ug/L	1415	Standard
	Cr	52	10159.7	1.1	**0.4737**	0.053	11.2	ug/L	6946	Standard
	Cr	53	1711.8	8.9	**1.7064**	0.233	13.7	ug/L	328	Standard
	Mn	55	4816073.5	0.9	**779.0277**	27.654	3.5	ug/L	823	Standard
	Co	59	2714.6	0.9	**0.3738**	0.009	2.5	ug/L	252	Standard
	Ni	60	3772.1	1.1	**1.9951**	0.039	2.0	ug/L	192	Standard
	Cu	65	754.7	3.1	**0.3255**	0.008	2.4	ug/L	141	Standard
	Zn	66	4017.9	2.4	**3.0152**	0.057	1.9	ug/L	491	Standard
>	**Ge**	72	491414.0	2.7				ug/L	515087	Standard
	As	75	1051.2	2.3	**1.0210**	0.045	4.4	ug/L	20	Standard
	Se	82	143.6	4.5	**1.1879**	0.030	2.5	ug/L	15	Standard
	Se-1	77	105.7	15.2	**0.7547**	0.249	32.9	ug/L	48	Standard
>	**Ga**	71	188.3	17.7				mg/L	90	Standard
	Rb	85	950.0	0.9				ug/L	23	Standard
	Y	89	424439.8	0.9				ug/L	448510	Standard
>	**Rh**	103	96.7	7.9				ug/L	15	Standard
	Mo	98	5849.5	0.5	**2.2126**	0.029	1.3	ug/L	11	Standard
	Ag	107	89.7	21.1	**-0.0024**	0.003	128.8	ug/L	134	Standard
	Cd	111	11.8	58.9	**0.0028**	0.003	121.4	mg/L	7	Standard
	Cd	114	46.1	44.3	**0.0042**	0.004	96.2	ug/L	16	Standard
>	**In**	115	592706.9	1.7				ug/L	611117	Standard
	Sn	118	891.7	9.5	**0.0535**	0.013	23.6	ug/L	518	Standard
	Sb	123	236.5	14.9	**0.0388**	0.007	18.8	ug/L	127	Standard
	Ba	135	171509.6	0.5	**85.6510**	1.837	2.1	ug/L	45	Standard
	Ce	140	703.3	3.9				ug/L	298	Standard
>	**Tb**	159	954495.6	1.0				ug/L	977942	Standard
	Ho	165	26.7	60.3				ug/L	12	Standard
	Tl	203	128.7	6.5	**0.0108**	0.001	9.4	ug/L	31	Standard
	Tl	205	116.7	2.5	**0.0140**	0.000	2.9	ug/L	20	Standard
	Pb	206	518.0	5.9	**0.0341**	0.006	17.0	ug/L	286	Standard
	Pb	207	434.7	5.8	**0.0328**	0.005	16.1	ug/L	257	Standard
	Pb	208	1843.7	3.4	**0.0392**	0.003	8.9	ug/L	956	Standard
	U	238	11694.2	0.7	**1.6602**	0.012	0.7	ug/L	17	Standard
>	**Bi**	209	546693.4	0.1				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.9680**	18.988	173.1	mg/L	0	Standard
Mg	24	30276.9	1.0	**40.7793**	0.477	1.2	mg/L	32	Standard
K	39	240.0	12.5	**0.6798**	0.099	14.5	mg/L	30	Standard
Ca	43	255.0	15.3	**33.9356**	6.415	18.9	mg/L	48	Standard
Fe	54	184.3	20.5	**0.0318**	0.034	107.2	mg/L	159	Standard
Fe	57	341.7	3.0	**0.5441**	0.035	6.5	mg/L	195	Standard
> **Sc-1**	45	39028.5	1.1				mg/L	39543	Standard
Cl	35	37440.9	1.2				ug/L	27642	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	32190.8	1.7				ug/L	1647	Standard
P	31	22541.8	0.7				ug/L	15231	Standard
S	34	2386.9	3.2				ug/L	1845	Standard
Sr	88	303.3	20.6				ug/L	70	Standard
C	12	480.0	6.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	27.6	75.9				mg/L	12	Standard
Ho-1	165	26.7	60.3				mg/L	12	Standard
Er	166	50.0	40.0				mg/L	20	Standard
I	127	1264643.9	6.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.247	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.404	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.988
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.135
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606115502
Sample Date/Time: Tuesday, June 28, 2016 17:19:26
Number of Replicates: 3
Autosampler Position: 253
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	94157.1	4.7				ug/L	81760	Standard
	Be	9	20.0	50.0	**0.0078**	0.009	115.3	ug/L	17	Standard
	Al	27	28931934.4	4.0	**163.0048**	1.392	0.9	ug/L	1410	Standard
	Sc	45	40320.3	3.5				ug/L	39543	Standard
	Ti	47	168.3	17.1	**0.5232**	0.117	22.4	ug/L	39	Standard
	V	51	1551.4	10.5	**0.0205**	0.027	130.5	ug/L	1415	Standard
	Cr	52	10328.9	2.0	**0.4515**	0.024	5.3	ug/L	6946	Standard
	Cr	53	2665.2	7.9	**2.7435**	0.199	7.2	ug/L	328	Standard
	Mn	55	1534029.1	1.0	**240.4438**	3.129	1.3	ug/L	823	Standard
	Co	59	1102.0	2.8	**0.1281**	0.004	3.4	ug/L	252	Standard
	Ni	60	1786.8	2.8	**0.8597**	0.029	3.3	ug/L	192	Standard
	Cu	65	955.7	1.4	**0.4206**	0.012	3.0	ug/L	141	Standard
	Zn	66	3611.4	2.8	**2.5229**	0.115	4.5	ug/L	491	Standard
>	**Ge**	72	506659.2	1.8				ug/L	515087	Standard
	As	75	1883.3	1.6	**1.7433**	0.024	1.4	ug/L	20	Standard
	Se	82	155.4	0.8	**1.2536**	0.030	2.4	ug/L	15	Standard
	Se-1	77	168.7	6.6	**1.5590**	0.181	11.6	ug/L	48	Standard
>	**Ga**	71	140.0	15.6				mg/L	90	Standard
	Rb	85	1435.1	8.2				ug/L	23	Standard
	Y	89	449200.8	1.5				ug/L	448510	Standard
>	**Rh**	103	93.3	16.4				ug/L	15	Standard
	Mo	98	2699.1	0.6	**0.9667**	0.027	2.8	ug/L	11	Standard
	Ag	107	94.7	12.7	**-0.0023**	0.002	96.2	ug/L	134	Standard
	Cd	111	15.7	16.0	**0.0044**	0.001	31.4	mg/L	7	Standard
	Cd	114	28.9	55.3	**0.0006**	0.003	513.8	ug/L	16	Standard
>	**In**	115	619397.8	3.1				ug/L	611117	Standard
	Sn	118	1035.0	8.9	**0.0707**	0.012	17.4	ug/L	518	Standard
	Sb	123	177.5	18.8	**0.0244**	0.008	32.9	ug/L	127	Standard
	Ba	135	342505.9	1.5	**163.7121**	2.675	1.6	ug/L	45	Standard
	Ce	140	470.0	1.8				ug/L	298	Standard
>	**Tb**	159	978535.3	2.3				ug/L	977942	Standard
	Ho	165	33.3	17.3				ug/L	12	Standard
	Tl	203	95.7	2.4	**0.0067**	0.000	2.7	ug/L	31	Standard
	Tl	205	98.3	7.8	**0.0112**	0.001	8.1	ug/L	20	Standard
	Pb	206	616.7	3.3	**0.0513**	0.003	5.5	ug/L	286	Standard
	Pb	207	520.0	3.8	**0.0494**	0.003	5.9	ug/L	257	Standard
	Pb	208	2224.4	1.1	**0.0583**	0.001	1.4	ug/L	956	Standard
	U	238	39.7	29.5	**0.0026**	0.002	61.0	ug/L	17	Standard
>	**Bi**	209	553220.4	1.1				ug/L	557080	Standard

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Na	23	5.0	0.0	**31.5109**	1.087	3.4	mg/L	0	Standard
Mg	24	25140.9	3.4	**32.7721**	0.865	2.6	mg/L	32	Standard
K	39	73.3	23.9	**0.1023**	0.063	61.8	mg/L	30	Standard
Ca	43	243.3	6.6	**30.9203**	2.535	8.2	mg/L	48	Standard
Fe	54	2629.1	2.7	**2.1972**	0.059	2.7	mg/L	159	Standard
Fe	57	1076.7	7.2	**2.9489**	0.380	12.9	mg/L	195	Standard
> **Sc-1**	45	40320.3	3.5				mg/L	39543	Standard
Cl	35	39998.8	2.6				ug/L	27642	Standard
Kr	83	2.7	43.3				ug/L	2	Standard
Br	81	32989.2	3.3				ug/L	1647	Standard
P	31	24089.1	1.8				ug/L	15231	Standard
S	34	2583.6	5.0				ug/L	1845	Standard
Sr	88	433.3	4.7				ug/L	70	Standard
C	12	350.0	5.7				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	25.7	20.9				mg/L	12	Standard
Ho-1	165	33.3	17.3				mg/L	12	Standard
Er	166	20.0	50.0				mg/L	20	Standard
I	127	377170.1	0.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.163	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.364	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	101.355
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.307
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606115503
Sample Date/Time: Tuesday, June 28, 2016 17:22:37
Number of Replicates: 3
Autosampler Position: 254
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	93460.7	0.5				ug/L	81760	Standard
	Be	9	35.0	14.3	**0.0211**	0.004	21.2	ug/L	17	Standard
	Al	27	14187081.3	1.7	**80.5012**	1.275	1.6	ug/L	1410	Standard
	Sc	45	39556.6	4.7				ug/L	39543	Standard
	Ti	47	229.0	18.7	**0.7435**	0.168	22.5	ug/L	39	Standard
	V	51	2172.0	8.1	**0.1016**	0.022	21.3	ug/L	1415	Standard
	Cr	52	10167.4	1.5	**0.3846**	0.034	8.8	ug/L	6946	Standard
	Cr	53	1090.0	15.2	**0.8840**	0.185	20.9	ug/L	328	Standard
	Mn	55	1432250.3	1.3	**217.9180**	5.450	2.5	ug/L	823	Standard
	Co	59	795.7	6.2	**0.0804**	0.008	9.7	ug/L	252	Standard
	Ni	60	1574.1	4.4	**0.7198**	0.033	4.6	ug/L	192	Standard
	Cu	65	1999.1	3.4	**0.9475**	0.036	3.8	ug/L	141	Standard
	Zn	66	5797.8	1.6	**4.3927**	0.080	1.8	ug/L	491	Standard
>	**Ge**	72	521945.3	1.2				ug/L	515087	Standard
	As	75	168.7	6.2	**0.1883**	0.009	4.6	ug/L	20	Standard
	Se	82	81.0	7.2	**0.5749**	0.055	9.6	ug/L	15	Standard
	Se-1	77	72.3	14.9	**0.2276**	0.131	57.6	ug/L	48	Standard
>	**Ga**	71	155.0	23.3				mg/L	90	Standard
	Rb	85	10031.7	2.6				ug/L	23	Standard
	Y	89	435099.7	2.5				ug/L	448510	Standard
>	**Rh**	103	70.0	28.6				ug/L	15	Standard
	Mo	98	145.2	5.2	**0.0354**	0.003	8.7	ug/L	11	Standard
	Ag	107	85.3	8.5	**-0.0033**	0.001	30.7	ug/L	134	Standard
	Cd	111	76.7	2.3	**0.0335**	0.001	2.5	mg/L	7	Standard
	Cd	114	203.1	19.3	**0.0347**	0.008	22.4	ug/L	16	Standard
>	**In**	115	602973.5	0.6				ug/L	611117	Standard
	Sn	118	941.7	4.9	**0.0595**	0.009	14.6	ug/L	518	Standard
	Sb	123	323.8	6.4	**0.0567**	0.004	7.5	ug/L	127	Standard
	Ba	135	119338.2	0.9	**58.5639**	0.899	1.5	ug/L	45	Standard
	Ce	140	855.0	10.9				ug/L	298	Standard
>	**Tb**	159	952983.8	1.5				ug/L	977942	Standard
	Ho	165	36.7	41.7				ug/L	12	Standard
	Tl	203	88.7	6.9	**0.0057**	0.001	14.0	ug/L	31	Standard
	Tl	205	55.0	27.3	**0.0052**	0.002	38.2	ug/L	20	Standard
	Pb	206	861.0	5.9	**0.0956**	0.010	10.1	ug/L	286	Standard
	Pb	207	708.7	5.0	**0.0873**	0.008	9.7	ug/L	257	Standard
	Pb	208	2964.1	2.3	**0.0967**	0.005	5.3	ug/L	956	Standard
	U	238	696.7	2.0	**0.0942**	0.003	2.9	ug/L	17	Standard
>	**Bi**	209	557355.1	1.0				ug/L	557080	Standard

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Na	23	6.7	43.3	**42.2849**	16.098	38.1	mg/L	0	Standard
Mg	24	19544.3	4.8	**25.9961**	1.909	7.3	mg/L	32	Standard
K	39	113.3	15.5	**0.2405**	0.047	19.5	mg/L	30	Standard
Ca	43	286.7	25.9	**38.5627**	12.897	33.4	mg/L	48	Standard
Fe	54	997.4	5.8	**0.7664**	0.064	8.4	mg/L	159	Standard
Fe	57	530.0	13.9	**1.1674**	0.275	23.5	mg/L	195	Standard
> **Sc-1**	45	39556.6	4.7				mg/L	39543	Standard
Cl	35	38409.3	3.3				ug/L	27642	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	17249.8	6.1				ug/L	1647	Standard
P	31	22414.9	3.0				ug/L	15231	Standard
S	34	2625.2	3.4				ug/L	1845	Standard
Sr	88	228.3	6.7				ug/L	70	Standard
C	12	260.0	15.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	21.4	67.1				mg/L	12	Standard
Ho-1	165	36.7	41.7				mg/L	12	Standard
Er	166	40.0	75.0				mg/L	20	Standard
I	127	663837.8	8.8				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.311	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.332	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.668
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.049
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606115503
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 17:25:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	91554.4	4.0				ug/L	81760	Standard
	Be	9	59302.5	0.5	**53.3655**	1.843	3.5	ug/L	17	Standard
	Al	27	8323459.6	1.6	**48.2773**	2.634	5.5	ug/L	1410	Standard
	Sc	45	40460.6	1.5				ug/L	39543	Standard
	Ti	47	25609.3	2.1	**100.1533**	1.793	1.8	ug/L	39	Standard
	V	51	364470.3	1.4	**50.8781**	0.853	1.7	ug/L	1415	Standard
	Cr	52	366105.1	1.7	**50.1771**	0.675	1.3	ug/L	6946	Standard
	Cr	53	45260.8	0.4	**49.8893**	0.509	1.0	ug/L	328	Standard
	Mn	55	332731.4	2.3	**49.8507**	1.205	2.4	ug/L	823	Standard
	Co	59	382266.4	2.9	**52.9683**	1.437	2.7	ug/L	252	Standard
	Ni	60	97387.3	1.2	**50.2694**	0.545	1.1	ug/L	192	Standard
	Cu	65	98831.3	1.3	**50.5786**	0.557	1.1	ug/L	141	Standard
	Zn	66	57834.9	1.6	**50.5762**	0.877	1.7	ug/L	491	Standard
>	Ge	72	528768.9	1.2				ug/L	515087	Standard
	As	75	58724.5	1.2	**50.9203**	0.224	0.4	ug/L	20	Standard
	Se	82	6151.0	1.0	**51.9261**	0.245	0.5	ug/L	15	Standard
	Se-1	77	4089.2	2.2	**52.1522**	0.563	1.1	ug/L	48	Standard
>	Ga	71	85.0	21.2				mg/L	90	Standard
	Rb	85	851.7	6.5				ug/L	23	Standard
	Y	89	456324.8	0.4				ug/L	448510	Standard
>	Rh	103	36.7	39.4				ug/L	15	Standard
	Mo	98	284202.4	1.9	**102.0947**	3.648	3.6	ug/L	11	Standard
	Ag	107	351396.4	1.1	**50.8197**	1.435	2.8	ug/L	134	Standard
	Cd	111	110732.8	1.5	**50.3025**	1.470	2.9	mg/L	7	Standard
	Cd	114	271688.9	2.3	**50.7793**	1.915	3.8	ug/L	16	Standard
>	In	115	629514.4	1.7				ug/L	611117	Standard
	Sn	118	310739.2	0.7	**50.9245**	0.924	1.8	ug/L	518	Standard
	Sb	123	246166.6	1.6	**50.6553**	1.659	3.3	ug/L	127	Standard
	Ba	135	104825.0	0.9	**49.2805**	1.265	2.6	ug/L	45	Standard
	Ce	140	70.0	55.8				ug/L	298	Standard
>	Tb	159	987475.2	1.7				ug/L	977942	Standard
	Ho	165	5.0	100.0				ug/L	12	Standard
	Tl	203	444397.7	1.4	**50.9180**	1.232	2.4	ug/L	31	Standard
	Tl	205	396866.3	1.6	**52.3722**	1.695	3.2	ug/L	20	Standard
	Pb	206	284750.7	1.1	**50.8069**	1.281	2.5	ug/L	286	Standard
	Pb	207	259280.5	1.3	**51.2940**	1.414	2.8	ug/L	257	Standard
	Pb	208	1040337.0	1.7	**53.1998**	1.656	3.1	ug/L	956	Standard
	U	238	390662.1	1.3	**52.6405**	1.349	2.6	ug/L	17	Standard
>	Bi	209	577126.2	1.6				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4445.7	6.0	**5.7289**	0.397	6.9	mg/L	32	Standard
K	39	1320.1	5.5	**4.2194**	0.276	6.5	mg/L	30	Standard
Ca	43	81.7	24.7	**6.7579**	2.904	43.0	mg/L	48	Standard
Fe	54	5927.1	5.8	**5.1036**	0.243	4.8	mg/L	159	Standard
Fe	57	1661.8	3.7	**4.8569**	0.121	2.5	mg/L	195	Standard
> **Sc-1**	45	40460.6	1.5				mg/L	39543	Standard
Cl	35	38764.2	1.7				ug/L	27642	Standard
Kr	83	2.3	107.9				ug/L	2	Standard
Br	81	2123.5	9.4				ug/L	1647	Standard
P	31	21915.8	3.2				ug/L	15231	Standard
S	34	2866.9	6.9				ug/L	1845	Standard
Sr	88	56.7	10.2				ug/L	70	Standard
C	12	170.0	44.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	173.2				mg/L	0	Standard
Dy	164	9.7	103.3				mg/L	12	Standard
Ho-1	165	5.0	100.0				mg/L	12	Standard
Er	166	6.7	86.6				mg/L	20	Standard
I	127	21360.9	50.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	106.731		
Al	27	96.555		
Sc	45			
Ti	47	100.153		
V	51	101.756		
Cr	52	100.354		
Cr	53			
Mn	55	99.701		
Co	59	105.937		
Ni	60	100.539		
Cu	65	101.157		
Zn	66	101.152		
> Ge	72		102.656	
As	75	101.841		
Se	82	103.852		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	102.095		
Ag	107	101.639		
Cd	111	100.605		
Cd	114			
> In	115			103.011
Sn	118	101.849		
Sb	123	101.311		
Ba	135	98.561		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.836		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.400		
U	238	105.281		
> Bi	209			103.598
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 17:29:02
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89289.0	1.1				ug/L	81760	Standard
	Be	9	35.0	51.5	**0.0225**	0.017	74.1	ug/L	17	Standard
	Al	27	14272.5	142.7	**0.0706**	0.122	172.0	ug/L	1410	Standard
	Sc	45	39427.9	1.8				ug/L	39543	Standard
	Ti	47	28.0	28.3	**-0.0534**	0.032	59.3	ug/L	39	Standard
	V	51	1205.0	11.4	**-0.0346**	0.020	56.4	ug/L	1415	Standard
	Cr	52	6173.6	1.1	**-0.1773**	0.009	5.0	ug/L	6946	Standard
	Cr	53	500.0	6.0	**0.2236**	0.034	15.3	ug/L	328	Standard
	Mn	55	1435.1	83.0	**0.0711**	0.182	256.2	ug/L	823	Standard
	Co	59	252.7	26.0	**0.0043**	0.009	214.7	ug/L	252	Standard
	Ni	60	265.7	8.4	**0.0350**	0.012	33.5	ug/L	192	Standard
	Cu	65	144.0	13.3	**-0.0157**	0.010	63.6	ug/L	141	Standard
	Zn	66	428.7	4.3	**-0.4396**	0.017	3.8	ug/L	491	Standard
>	**Ge**	72	519199.6	0.1				ug/L	515087	Standard
	As	75	-13.2	109.3	**0.0287**	0.013	44.2	ug/L	20	Standard
	Se	82	24.7	35.1	**0.0933**	0.075	79.8	ug/L	15	Standard
	Se-1	77	53.0	16.4	**-0.0209**	0.115	551.4	ug/L	48	Standard
>	**Ga**	71	56.7	41.7				mg/L	90	Standard
	Rb	85	13.3	78.1				ug/L	23	Standard
	Y	89	435848.4	0.6				ug/L	448510	Standard
>	**Rh**	103	16.7	45.8				ug/L	15	Standard
	Mo	98	252.5	21.9	**0.0755**	0.022	29.1	ug/L	11	Standard
	Ag	107	123.0	3.3	**0.0023**	0.000	14.7	ug/L	134	Standard
	Cd	111	11.8	114.0	**0.0027**	0.006	236.7	mg/L	7	Standard
	Cd	114	47.6	83.9	**0.0044**	0.008	178.8	ug/L	16	Standard
>	**In**	115	604937.7	1.9				ug/L	611117	Standard
	Sn	118	835.0	26.8	**0.0403**	0.035	87.6	ug/L	518	Standard
	Sb	123	438.3	28.1	**0.0807**	0.025	30.6	ug/L	127	Standard
	Ba	135	40.7	30.0	**-0.0052**	0.006	117.6	ug/L	45	Standard
	Ce	140	35.0	37.8				ug/L	298	Standard
>	**Tb**	159	968167.7	1.8				ug/L	977942	Standard
	Ho	165	8.3	124.9				ug/L	12	Standard
	Tl	203	65.7	40.9	**0.0028**	0.003	111.1	ug/L	31	Standard
	Tl	205	198.3	119.2	**0.0243**	0.032	131.1	ug/L	20	Standard
	Pb	206	312.0	4.9	**-0.0071**	0.003	48.0	ug/L	286	Standard
	Pb	207	265.7	2.9	**-0.0047**	0.002	47.8	ug/L	257	Standard
	Pb	208	1274.7	38.3	**0.0057**	0.026	450.9	ug/L	956	Standard
	U	238	172.3	130.6	**0.0207**	0.031	149.9	ug/L	17	Standard
>	**Bi**	209	569803.2	1.6				ug/L	557080	Standard

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Na	23	3.3	86.6	**21.6890**	18.779	86.6	mg/L	0	Standard
Mg	24	61.7	47.5	**0.0256**	0.040	158.0	mg/L	32	Standard
K	39	26.7	10.8	**-0.0510**	0.010	20.5	mg/L	30	Standard
Ca	43	21.7	48.0	**-2.0553**	1.552	75.5	mg/L	48	Standard
Fe	54	129.4	21.4	**-0.0198**	0.024	119.8	mg/L	159	Standard
Fe	57	196.7	34.5	**0.0395**	0.221	559.0	mg/L	195	Standard
Sc-1	45	39427.9	1.8				mg/L	39543	Standard
Cl	35	37196.3	1.0				ug/L	27642	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	1853.4	7.9				ug/L	1647	Standard
P	31	20680.8	2.7				ug/L	15231	Standard
S	34	2700.2	3.5				ug/L	1845	Standard
Sr	88	68.3	23.5				ug/L	70	Standard
C	12	133.3	38.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.5	107.6				mg/L	12	Standard
Ho-1	165	8.3	124.9				mg/L	12	Standard
Er	166	10.0	100.0				mg/L	20	Standard
I	127	7115.0	15.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.798	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.989	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	102.284	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606114201
Sample Date/Time: Tuesday, June 28, 2016 18:46:32
Number of Replicates: 3
Autosampler Position: 255
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78164.5	2.4				ug/L	81760	Standard
	Be	9	18.3	41.7	**0.0097**	0.008	86.8	ug/L	17	Standard
	Al	27	121659.9	1.7	**0.8116**	0.028	3.5	ug/L	1410	Standard
	Sc	45	40555.9	2.8				ug/L	39543	Standard
	Ti	47	55.7	15.0	**0.0583**	0.036	61.2	ug/L	39	Standard
	V	51	1460.1	6.7	**0.0028**	0.012	438.4	ug/L	1415	Standard
	Cr	52	7975.8	0.8	**0.0855**	0.018	21.3	ug/L	6946	Standard
	Cr	53	690.0	12.1	**0.4421**	0.091	20.5	ug/L	328	Standard
	Mn	55	73452.6	0.4	**11.1499**	0.088	0.8	ug/L	823	Standard
	Co	59	2365.9	3.2	**0.3044**	0.010	3.2	ug/L	252	Standard
	Ni	60	956.0	2.8	**0.4012**	0.010	2.4	ug/L	192	Standard
	Cu	65	203.7	5.3	**0.0160**	0.005	33.1	ug/L	141	Standard
	Zn	66	1994.1	0.1	**0.9866**	0.018	1.8	ug/L	491	Standard
>	**Ge**	72	516559.4	1.0				ug/L	515087	Standard
	As	75	-28.9	32.9	**0.0147**	0.008	56.4	ug/L	20	Standard
	Se	82	19.3	15.0	**0.0479**	0.026	53.5	ug/L	15	Standard
	Se-1	77	59.0	13.2	**0.0614**	0.097	157.2	ug/L	48	Standard
>	**Ga**	71	36.7	51.6				mg/L	90	Standard
	Rb	85	463.3	2.5				ug/L	23	Standard
	Y	89	448462.9	2.6				ug/L	448510	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	65.9	7.4	**0.0053**	0.002	42.6	ug/L	11	Standard
	Ag	107	82.7	4.2	**-0.0039**	0.001	16.6	ug/L	134	Standard
	Cd	111	8.9	29.8	**0.0012**	0.001	94.7	mg/L	7	Standard
	Cd	114	20.4	73.3	**-0.0010**	0.003	278.6	ug/L	16	Standard
>	**In**	115	611220.6	1.9				ug/L	611117	Standard
	Sn	118	670.0	14.0	**0.0115**	0.017	148.1	ug/L	518	Standard
	Sb	123	214.2	30.6	**0.0326**	0.014	43.4	ug/L	127	Standard
	Ba	135	7677.9	3.5	**3.6947**	0.165	4.5	ug/L	45	Standard
	Ce	140	396.7	10.7				ug/L	298	Standard
>	**Tb**	159	963569.5	0.7				ug/L	977942	Standard
	Ho	165	16.7	45.8				ug/L	12	Standard
	Tl	203	21.7	17.5	**-0.0022**	0.000	19.5	ug/L	31	Standard
	Tl	205	13.3	21.7	**-0.0005**	0.000	79.8	ug/L	20	Standard
	Pb	206	368.7	4.6	**0.0040**	0.003	86.3	ug/L	286	Standard
	Pb	207	283.0	4.1	**-0.0005**	0.002	459.4	ug/L	257	Standard
	Pb	208	1139.7	3.0	**-0.0006**	0.002	246.5	ug/L	956	Standard
	U	238	10.3	39.1	**-0.0015**	0.001	36.3	ug/L	17	Standard
>	**Bi**	209	562456.7	0.5				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	763.4	13.7	**0.9351**	0.146	15.6	mg/L	32	Standard
K	39	31.7	39.7	**-0.0363**	0.045	123.6	mg/L	30	Standard
Ca	43	18.3	31.5	**-2.6404**	0.796	30.1	mg/L	48	Standard
Fe	54	359.1	17.1	**0.1792**	0.047	26.3	mg/L	159	Standard
Fe	57	273.3	13.7	**0.2778**	0.149	53.6	mg/L	195	Standard
> **Sc-1**	45	40555.9	2.8				mg/L	39543	Standard
Cl	35	37427.5	0.7				ug/L	27642	Standard
Kr	83	0.0					ug/L	2	Standard
Br	81	2536.9	6.5				ug/L	1647	Standard
P	31	19003.6	0.9				ug/L	15231	Standard
S	34	2375.2	4.8				ug/L	1845	Standard
Sr	88	91.7	13.7				ug/L	70	Standard
C	12	86.7	29.0				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	29.2	34.3				mg/L	12	Standard
Ho-1	165	16.7	45.8				mg/L	12	Standard
Er	166	16.7	34.6				mg/L	20	Standard
I	127	22815.7	12.2				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		95.602	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.286	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.017
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.965
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 18:49:46
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77476.0	3.1				ug/L	81760	Standard
	Be	9	45015.2	3.8	**47.8878**	3.193	6.7	ug/L	17	Standard
	Al	27	6953697.9	2.2	**47.6359**	2.288	4.8	ug/L	1410	Standard
	Sc	45	38896.5	2.1				ug/L	39543	Standard
	Ti	47	23530.3	2.9	**93.4171**	3.639	3.9	ug/L	39	Standard
	V	51	333406.5	0.5	**47.2267**	0.631	1.3	ug/L	1415	Standard
	Cr	52	337441.2	2.6	**46.8861**	1.719	3.7	ug/L	6946	Standard
	Cr	53	42128.5	3.1	**47.1231**	1.874	4.0	ug/L	328	Standard
	Mn	55	311025.1	1.6	**47.2965**	1.233	2.6	ug/L	823	Standard
	Co	59	333541.6	0.3	**46.9106**	0.523	1.1	ug/L	252	Standard
	Ni	60	90766.5	2.7	**47.5598**	1.737	3.7	ug/L	192	Standard
	Cu	65	91363.1	2.5	**47.4629**	1.646	3.5	ug/L	141	Standard
	Zn	66	53283.5	1.9	**47.2487**	1.367	2.9	ug/L	491	Standard
>	Ge	72	520941.4	1.0				ug/L	515087	Standard
	As	75	53453.8	0.5	**47.0530**	0.571	1.2	ug/L	20	Standard
	Se	82	5409.0	0.9	**46.3406**	0.883	1.9	ug/L	15	Standard
	Se-1	77	3695.1	1.5	**47.7773**	0.360	0.8	ug/L	48	Standard
>	Ga	71	58.3	27.6				mg/L	90	Standard
	Rb	85	731.7	6.2				ug/L	23	Standard
	Y	89	433135.5	0.5				ug/L	448510	Standard
>	Rh	103	21.7	13.3				ug/L	15	Standard
	Mo	98	251705.5	0.6	**94.1208**	1.331	1.4	ug/L	11	Standard
	Ag	107	314845.2	1.8	**47.3955**	0.605	1.3	ug/L	134	Standard
	Cd	111	98007.4	2.2	**46.3425**	0.750	1.6	mg/L	7	Standard
	Cd	114	239351.7	3.2	**46.5659**	1.544	3.3	ug/L	16	Standard
>	In	115	604583.1	1.4				ug/L	611117	Standard
	Sn	118	276455.2	2.3	**47.1543**	0.498	1.1	ug/L	518	Standard
	Sb	123	224560.9	2.5	**48.0923**	0.641	1.3	ug/L	127	Standard
	Ba	135	94923.9	3.0	**46.4488**	1.094	2.4	ug/L	45	Standard
	Ce	140	80.0	22.5				ug/L	298	Standard
>	Tb	159	958457.8	2.2				ug/L	977942	Standard
	Ho	165	13.3	21.7				ug/L	12	Standard
	Tl	203	399564.4	2.5	**47.4112**	1.332	2.8	ug/L	31	Standard
	Tl	205	347775.3	2.0	**47.5216**	1.083	2.3	ug/L	20	Standard
	Pb	206	259967.8	1.3	**48.0301**	0.722	1.5	ug/L	286	Standard
	Pb	207	236539.5	0.9	**48.4530**	0.488	1.0	ug/L	257	Standard
	Pb	208	913309.7	2.1	**48.3569**	1.176	2.4	ug/L	956	Standard
	U	238	337839.3	1.6	**47.1413**	0.910	1.9	ug/L	17	Standard
>	Bi	209	557186.5	0.3				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	3633.8	7.1	**4.8666**	0.455	9.3	mg/L	32	Standard
K	39	1313.4	12.2	**4.3752**	0.599	13.7	mg/L	30	Standard
Ca	43	51.7	20.1	**2.6371**	1.625	61.6	mg/L	48	Standard
Fe	54	5289.1	7.8	**4.7357**	0.483	10.2	mg/L	159	Standard
Fe	57	1531.7	10.1	**4.6389**	0.613	13.2	mg/L	195	Standard
> **Sc-1**	45	38896.5	2.1				mg/L	39543	Standard
Cl	35	35022.4	1.4				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	1490.1	8.7				ug/L	1647	Standard
P	31	19075.3	3.9				ug/L	15231	Standard
S	34	2581.9	1.6				ug/L	1845	Standard
Sr	88	70.0	18.9				ug/L	70	Standard
C	12	143.3	33.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	6.0	193.9				mg/L	12	Standard
Ho-1	165	13.3	21.7				mg/L	12	Standard
Er	166	13.3	43.3				mg/L	20	Standard
I	127	2193.5	28.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	95.776		
Al	27	95.272		
Sc	45			
Ti	47	93.417		
V	51	94.453		
Cr	52	93.772		
Cr	53			
Mn	55	94.593		
Co	59	93.821		
Ni	60	95.120		
Cu	65	94.926		
Zn	66	94.497		
> Ge	72		101.137	
As	75	94.106		
Se	82	92.681		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
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Rb	85			
Y	89			
> Rh	103			
Mo	98	94.121		
Ag	107	94.791		
Cd	111	92.685		
Cd	114			
> In	115			98.931
Sn	118	94.309		
Sb	123	96.185		
Ba	135	92.898		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	94.822		
Tl	205			
Pb	206			
Pb	207			
Pb	208	96.714		
U	238	94.283		
> Bi	209			100.019
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 18:52:03
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Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 18:52:57
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75264.9	3.1				ug/L	81760	Standard
	Be	9	28.3	44.4	**0.0211**	0.013	62.2	ug/L	17	Standard
	Al	27	1848.4	7.3	**-0.0014**	0.001	57.2	ug/L	1410	Standard
	Sc	45	39733.8	3.9				ug/L	39543	Standard
	Ti	47	30.7	21.2	**-0.0408**	0.026	64.0	ug/L	39	Standard
	V	51	1157.9	3.5	**-0.0386**	0.007	18.1	ug/L	1415	Standard
	Cr	52	6209.6	2.0	**-0.1578**	0.015	9.7	ug/L	6946	Standard
	Cr	53	373.3	6.7	**0.0873**	0.028	32.1	ug/L	328	Standard
	Mn	55	647.3	1.5	**-0.0478**	0.002	4.7	ug/L	823	Standard
	Co	59	232.0	9.1	**0.0019**	0.003	163.0	ug/L	252	Standard
	Ni	60	166.3	9.0	**-0.0160**	0.007	44.1	ug/L	192	Standard
	Cu	65	124.7	14.0	**-0.0248**	0.008	34.1	ug/L	141	Standard
	Zn	66	405.0	8.1	**-0.4552**	0.029	6.3	ug/L	491	Standard
>	Ge	72	510975.0	1.4				ug/L	515087	Standard
	As	75	-43.1	41.4	**0.0017**	0.016	900.9	ug/L	20	Standard
	Se	82	19.6	25.0	**0.0525**	0.045	86.4	ug/L	15	Standard
	Se-1	77	59.7	5.9	**0.0797**	0.050	62.7	ug/L	48	Standard
>	Ga	71	36.7	39.4				mg/L	90	Standard
	Rb	85	23.3	32.7				ug/L	23	Standard
	Y	89	435979.5	2.5				ug/L	448510	Standard
>	Rh	103	15.0	33.3				ug/L	15	Standard
	Mo	98	250.3	25.6	**0.0730**	0.024	32.3	ug/L	11	Standard
	Ag	107	100.0	11.8	**-0.0014**	0.002	125.8	ug/L	134	Standard
	Cd	111	11.9	34.0	**0.0026**	0.002	71.6	mg/L	7	Standard
	Cd	114	45.3	6.7	**0.0038**	0.000	13.0	ug/L	16	Standard
>	In	115	614932.8	1.3				ug/L	611117	Standard
	Sn	118	795.0	23.6	**0.0316**	0.031	97.7	ug/L	518	Standard
	Sb	123	431.0	25.7	**0.0779**	0.023	29.6	ug/L	127	Standard
	Ba	135	30.3	24.3	**-0.0105**	0.003	32.1	ug/L	45	Standard
	Ce	140	20.0	66.1				ug/L	298	Standard
>	Tb	159	946813.4	1.4				ug/L	977942	Standard
	Ho	165	11.7	89.2				ug/L	12	Standard
	Tl	203	48.3	29.0	**0.0009**	0.002	172.8	ug/L	31	Standard
	Tl	205	35.0	86.9	**0.0025**	0.004	165.9	ug/L	20	Standard
	Pb	206	284.0	5.8	**-0.0111**	0.003	26.2	ug/L	286	Standard
	Pb	207	257.7	11.7	**-0.0053**	0.006	110.9	ug/L	257	Standard
	Pb	208	990.3	3.8	**-0.0080**	0.002	20.6	ug/L	956	Standard
	U	238	43.0	24.2	**0.0030**	0.001	48.0	ug/L	17	Standard
>	Bi	209	557905.1	0.6				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	31.7	18.2	**-0.0149**	0.009	60.8	mg/L	32	Standard
K	39	20.0	50.0	**-0.0742**	0.034	46.2	mg/L	30	Standard
Ca	43	35.0	62.3	**-0.0114**	3.447	30330.8	mg/L	48	Standard
Fe	54	144.1	21.6	**-0.0065**	0.032	498.8	mg/L	159	Standard
Fe	57	238.3	3.2	**0.1775**	0.054	30.7	mg/L	195	Standard
Sc-1	45	39733.8	3.9				mg/L	39543	Standard
Cl	35	35783.5	1.7				ug/L	27642	Standard
Kr	83	3.3	45.8				ug/L	2	Standard
Br	81	1466.7	6.9				ug/L	1647	Standard
P	31	19612.7	1.4				ug/L	15231	Standard
S	34	2756.9	2.6				ug/L	1845	Standard
Sr	88	66.7	37.0				ug/L	70	Standard
C	12	86.7	6.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	32.7	47.4				mg/L	12	Standard
Ho-1	165	11.7	89.2				mg/L	12	Standard
Er	166	13.3	43.3				mg/L	20	Standard
I	127	1593.4	21.8				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.202	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.624
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.148
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Tuesday, June 28, 2016 18:56:10
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71096.5	2.9				ug/L	81760	Standard
	Be	9	180.0	15.5	**0.1982**	0.026	13.3	ug/L	17	Standard
	Al	27	1130.0	11.5	**-0.0060**	0.001	12.9	ug/L	1410	Standard
	Sc	45	37422.8	0.9				ug/L	39543	Standard
	Ti	47	25.0	10.6	**-0.0625**	0.010	16.0	ug/L	39	Standard
	V	51	3508.6	1.4	**0.3092**	0.005	1.6	ug/L	1415	Standard
	Cr	52	11162.1	1.4	**0.5814**	0.031	5.3	ug/L	6946	Standard
	Cr	53	975.0	4.9	**0.7938**	0.066	8.3	ug/L	328	Standard
	Mn	55	3454.1	1.9	**0.3960**	0.015	3.8	ug/L	823	Standard
	Co	59	2721.9	4.1	**0.3646**	0.019	5.1	ug/L	252	Standard
	Ni	60	2839.3	1.0	**1.4356**	0.026	1.8	ug/L	192	Standard
	Cu	65	1518.4	2.5	**0.7258**	0.025	3.5	ug/L	141	Standard
	Zn	66	6972.6	1.8	**5.6720**	0.065	1.1	ug/L	491	Standard
>	**Ge**	72	504116.3	0.9				ug/L	515087	Standard
	As	75	374.9	9.7	**0.3808**	0.031	8.0	ug/L	20	Standard
	Se	82	63.0	8.6	**0.4404**	0.052	11.9	ug/L	15	Standard
	Se-1	77	80.7	10.3	**0.3758**	0.122	32.5	ug/L	48	Standard
>	**Ga**	71	33.3	52.7				mg/L	90	Standard
	Rb	85	16.7	96.4				ug/L	23	Standard
	Y	89	427965.8	1.5				ug/L	448510	Standard
>	**Rh**	103	20.0	25.0				ug/L	15	Standard
	Mo	98	72.3	5.2	**0.0094**	0.001	12.5	ug/L	11	Standard
	Ag	107	2402.2	4.6	**0.3647**	0.015	4.1	ug/L	134	Standard
	Cd	111	440.5	3.4	**0.2165**	0.007	3.2	mg/L	7	Standard
	Cd	114	1158.4	0.8	**0.2324**	0.001	0.2	ug/L	16	Standard
>	**In**	115	574029.4	1.1				ug/L	611117	Standard
	Sn	118	496.7	16.4	**-0.0124**	0.016	125.3	ug/L	518	Standard
	Sb	123	1769.4	0.8	**0.3864**	0.003	0.7	ug/L	127	Standard
	Ba	135	1350.1	0.7	**0.6712**	0.012	1.8	ug/L	45	Standard
	Ce	140	15.0	0.0				ug/L	298	Standard
>	**Tb**	159	914394.0	1.1				ug/L	977942	Standard
	Ho	165	6.7	43.3				ug/L	12	Standard
	Tl	203	645.7	4.5	**0.0752**	0.004	4.8	ug/L	31	Standard
	Tl	205	546.7	2.9	**0.0757**	0.002	3.3	ug/L	20	Standard
	Pb	206	1234.7	1.4	**0.1748**	0.002	1.1	ug/L	286	Standard
	Pb	207	1077.0	1.2	**0.1725**	0.004	2.3	ug/L	257	Standard
	Pb	208	4484.6	3.2	**0.1877**	0.008	4.4	ug/L	956	Standard
	U	238	2602.6	1.7	**0.3761**	0.010	2.6	ug/L	17	Standard
>	**Bi**	209	533901.6	0.9				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	26.7	10.8	**-0.0196**	0.004	19.0	mg/L	32	Standard
K	39	28.3	10.2	**-0.0403**	0.010	24.0	mg/L	30	Standard
Ca	43	38.3	7.5	**0.8090**	0.513	63.4	mg/L	48	Standard
Fe	54	99.0	17.7	**-0.0423**	0.018	41.4	mg/L	159	Standard
Fe	57	198.3	16.4	**0.0831**	0.119	142.8	mg/L	195	Standard
Sc-1	45	37422.8	0.9				mg/L	39543	Standard
Cl	35	34311.5	2.9				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1263.4	4.0				ug/L	1647	Standard
P	31	12998.9	1.6				ug/L	15231	Standard
S	34	2533.5	5.7				ug/L	1845	Standard
Sr	88	71.7	29.0				ug/L	70	Standard
C	12	70.0	24.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	5.9	100.8				mg/L	12	Standard
Ho-1	165	6.7	43.3				mg/L	12	Standard
Er	166	16.7	34.6				mg/L	20	Standard
I	127	1311.7	25.8				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	99.121		
Al	27			
Sc	45			
Ti	47			
V	51	77.290		
Cr	52	72.680		
Cr	53			
Mn	55	79.198		
Co	59	91.138		
Ni	60	89.723		
Cu	65	90.724		
Zn	66	90.752		
Ge	72		97.870	
As	75	95.209		
Se	82	110.096		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	91.178		
Cd	111	90.212		
Cd	114			
> In	115			93.931
Sn	118			
Sb	123	96.601		
Ba	135	89.490		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	93.978		
Tl	205			
Pb	206			
Pb	207			
Pb	208	93.825		
U	238	94.023		
> Bi	209			95.839
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW A9 WG572242-02
Sample Date/Time: Tuesday, June 28, 2016 19:51:29
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73456.0	1.1				ug/L	81760	Standard
	Be	9	13.3	21.7	**0.0052**	0.003	59.5	ug/L	17	Standard
	Al	27	9322.9	1.9	**0.0529**	0.001	1.2	ug/L	1410	Standard
	Sc	45	38756.2	2.9				ug/L	39543	Standard
	Ti	47	33.7	15.2	**-0.0290**	0.022	74.1	ug/L	39	Standard
	V	51	1394.3	5.5	**-0.0051**	0.010	198.0	ug/L	1415	Standard
	Cr	52	7883.4	0.8	**0.0807**	0.013	16.5	ug/L	6946	Standard
	Cr	53	506.7	16.0	**0.2387**	0.095	39.9	ug/L	328	Standard
	Mn	55	1210.0	2.0	**0.0390**	0.005	11.7	ug/L	823	Standard
	Co	59	188.0	6.5	**-0.0045**	0.002	42.5	ug/L	252	Standard
	Ni	60	230.3	1.3	**0.0179**	0.002	10.0	ug/L	192	Standard
	Cu	65	157.0	8.9	**-0.0078**	0.008	102.0	ug/L	141	Standard
	Zn	66	1546.4	2.1	**0.5897**	0.023	3.8	ug/L	491	Standard
>	**Ge**	72	512703.5	0.7				ug/L	515087	Standard
	As	75	-32.6	48.2	**0.0111**	0.014	127.3	ug/L	20	Standard
	Se	82	19.2	20.1	**0.0486**	0.034	70.8	ug/L	15	Standard
	Se-1	77	50.0	10.6	**-0.0518**	0.075	145.3	ug/L	48	Standard
>	**Ga**	71	33.3	34.6				mg/L	90	Standard
	Rb	85	33.3	31.2				ug/L	23	Standard
	Y	89	438886.4	1.2				ug/L	448510	Standard
>	**Rh**	103	13.3	43.3				ug/L	15	Standard
	Mo	98	27.2	14.3	**-0.0088**	0.001	17.0	ug/L	11	Standard
	Ag	107	75.7	8.8	**-0.0047**	0.001	18.4	ug/L	134	Standard
	Cd	111	4.3	48.7	**-0.0009**	0.001	113.9	mg/L	7	Standard
	Cd	114	21.5	41.2	**-0.0007**	0.002	246.6	ug/L	16	Standard
>	**In**	115	598021.6	1.3				ug/L	611117	Standard
	Sn	118	688.3	6.3	**0.0170**	0.007	40.8	ug/L	518	Standard
	Sb	123	162.8	37.0	**0.0223**	0.013	56.3	ug/L	127	Standard
	Ba	135	50.0	12.0	**-0.0003**	0.003	1000.2	ug/L	45	Standard
	Ce	140	36.7	78.7				ug/L	298	Standard
>	**Tb**	159	940667.7	2.2				ug/L	977942	Standard
	Ho	165	18.3	56.8				ug/L	12	Standard
	Tl	203	9.0	22.2	**-0.0037**	0.000	6.2	ug/L	31	Standard
	Tl	205	5.0	0.0	**-0.0016**	0.000	0.7	ug/L	20	Standard
	Pb	206	302.0	8.3	**-0.0074**	0.006	75.2	ug/L	286	Standard
	Pb	207	237.7	5.4	**-0.0090**	0.003	32.3	ug/L	257	Standard
	Pb	208	966.3	1.0	**-0.0090**	0.001	6.5	ug/L	956	Standard
	U	238	4.3	48.0	**-0.0024**	0.000	12.3	ug/L	17	Standard
>	**Bi**	209	554162.6	1.6				ug/L	557080	Standard

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	Na	23	0.0		**0.0050**			mg/L	0	Standard
	Mg	24	41.7	18.3	**-0.0005**	0.010	2017.0	mg/L	32	Standard
	K	39	30.0	33.3	**-0.0385**	0.033	84.7	mg/L	30	Standard
	Ca	43	16.7	91.7	**-2.7218**	2.434	89.4	mg/L	48	Standard
	Fe	54	121.1	16.6	**-0.0249**	0.021	84.8	mg/L	159	Standard
	Fe	57	230.0	15.2	**0.1658**	0.100	60.0	mg/L	195	Standard
>	**Sc-1**	45	38756.2	2.9				mg/L	39543	Standard
	Cl	35	36900.9	1.9				ug/L	27642	Standard
	Kr	83	1.3	43.3				ug/L	2	Standard
	Br	81	1656.8	8.0				ug/L	1647	Standard
	P	31	17782.1	2.2				ug/L	15231	Standard
	S	34	2408.5	10.1				ug/L	1845	Standard
	Sr	88	75.0	29.1				ug/L	70	Standard
	C	12	50.0	52.9				mg/L	113	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	0	Standard
	Dy	164	9.5	105.0				mg/L	12	Standard
	Ho-1	165	18.3	56.8				mg/L	12	Standard
	Er	166	10.0					mg/L	20	Standard
	I	127	1248.4	23.8				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		89.843	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.537	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.857
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.476
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW A9 WG572242-03
Sample Date/Time: Tuesday, June 28, 2016 19:54:40
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74125.9	0.7				ug/L	81760	Standard
	Be	9	45613.6	2.5	**50.6567**	1.536	3.0	ug/L	17	Standard
	Al	27	52265.0	2.7	**0.3596**	0.008	2.3	ug/L	1410	Standard
	Sc	45	39738.7	2.1				ug/L	39543	Standard
	Ti	47	34.0	10.6	**-0.0277**	0.015	52.7	ug/L	39	Standard
	V	51	340531.5	1.6	**49.0319**	0.683	1.4	ug/L	1415	Standard
	Cr	52	354579.7	0.6	**50.1386**	0.494	1.0	ug/L	6946	Standard
	Cr	53	44436.8	3.3	**50.5389**	1.845	3.7	ug/L	328	Standard
	Mn	55	331885.6	0.6	**51.3034**	0.483	0.9	ug/L	823	Standard
	Co	59	341252.7	1.0	**48.7823**	0.497	1.0	ug/L	252	Standard
	Ni	60	94292.8	0.4	**50.2138**	0.089	0.2	ug/L	192	Standard
	Cu	65	96497.7	0.5	**50.9494**	0.130	0.3	ug/L	141	Standard
	Zn	66	57251.0	0.4	**51.6689**	0.417	0.8	ug/L	491	Standard
>	**Ge**	72	512516.5	0.4				ug/L	515087	Standard
	As	75	55356.1	0.6	**49.5225**	0.094	0.2	ug/L	20	Standard
	Se	82	5489.9	0.8	**47.8062**	0.574	1.2	ug/L	15	Standard
	Se-1	77	3699.5	2.3	**48.6318**	0.978	2.0	ug/L	48	Standard
>	**Ga**	71	51.7	29.6				mg/L	90	Standard
	Rb	85	58.3	27.6				ug/L	23	Standard
	Y	89	427399.3	0.3				ug/L	448510	Standard
>	**Rh**	103	20.0	66.1				ug/L	15	Standard
	Mo	98	50.9	5.4	**0.0000**	0.001	4406.4	ug/L	11	Standard
	Ag	107	325451.5	0.2	**49.1242**	0.412	0.8	ug/L	134	Standard
	Cd	111	100950.5	1.5	**47.8617**	0.611	1.3	mg/L	7	Standard
	Cd	114	243935.8	0.5	**47.5806**	0.389	0.8	ug/L	16	Standard
>	**In**	115	602979.8	0.8				ug/L	611117	Standard
	Sn	118	653.3	9.2	**0.0100**	0.010	97.1	ug/L	518	Standard
	Sb	123	224336.4	0.4	**48.1778**	0.461	1.0	ug/L	127	Standard
	Ba	135	98286.4	0.2	**48.2270**	0.385	0.8	ug/L	45	Standard
	Ce	140	205.0	19.4				ug/L	298	Standard
>	**Tb**	159	962904.7	0.9				ug/L	977942	Standard
	Ho	165	11.7	49.5				ug/L	12	Standard
	Tl	203	409811.5	0.9	**48.6592**	0.503	1.0	ug/L	31	Standard
	Tl	205	358097.5	0.9	**48.9662**	0.679	1.4	ug/L	20	Standard
	Pb	206	272798.6	0.1	**50.4414**	0.712	1.4	ug/L	286	Standard
	Pb	207	236678.2	0.4	**48.5210**	0.945	1.9	ug/L	257	Standard
	Pb	208	941837.1	1.1	**49.9011**	0.393	0.8	ug/L	956	Standard
	U	238	343975.4	0.3	**48.0328**	0.703	1.5	ug/L	17	Standard
>	**Bi**	209	556837.1	1.5				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.3983**	18.002	173.1	mg/L	0	Standard
Mg	24	58.3	27.6	**0.0205**	0.023	110.8	mg/L	32	Standard
K	39	16.7	45.8	**-0.0851**	0.027	31.2	mg/L	30	Standard
Ca	43	23.3	32.7	**-1.8206**	1.160	63.7	mg/L	48	Standard
Fe	54	118.7	10.7	**-0.0303**	0.010	31.4	mg/L	159	Standard
Fe	57	200.0	10.0	**0.0482**	0.079	163.5	mg/L	195	Standard
Sc-1	45	39738.7	2.1				mg/L	39543	Standard
Cl	35	36016.8	1.9				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	3627.1	7.0				ug/L	1647	Standard
P	31	18584.7	0.6				ug/L	15231	Standard
S	34	2266.8	5.1				ug/L	1845	Standard
Sr	88	53.3	23.6				ug/L	70	Standard
C	12	126.7	32.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	9.0	105.3				mg/L	12	Standard
Ho-1	165	11.7	49.5				mg/L	12	Standard
Er	166	20.0	50.0				mg/L	20	Standard
I	127	1253.4	17.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.663	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.501	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.669
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.956
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606083901 WG574242-01
Sample Date/Time: Tuesday, June 28, 2016 19:57:52
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73849.6	1.9				ug/L	81760	Standard
	Be	9	25.0	0.0	**0.0181**	0.001	2.9	ug/L	17	Standard
	Al	27	15521751.4	1.0	**111.4854**	1.467	1.3	ug/L	1410	Standard
	Sc	45	39103.8	3.8				ug/L	39543	Standard
	Ti	47	591.7	5.1	**2.3246**	0.153	6.6	ug/L	39	Standard
	V	51	4219.1	3.4	**0.4282**	0.015	3.5	ug/L	1415	Standard
	Cr	52	8895.6	2.0	**0.2798**	0.040	14.2	ug/L	6946	Standard
	Cr	53	3360.4	10.4	**3.6642**	0.437	11.9	ug/L	328	Standard
	Mn	55	16077.2	1.4	**2.4454**	0.007	0.3	ug/L	823	Standard
	Co	59	1032.0	3.9	**0.1223**	0.006	4.9	ug/L	252	Standard
	Ni	60	3143.3	2.0	**1.6407**	0.018	1.1	ug/L	192	Standard
	Cu	65	3355.0	2.0	**1.7559**	0.016	0.9	ug/L	141	Standard
	Zn	66	14991.7	0.7	**13.4797**	0.137	1.0	ug/L	491	Standard
>	**Ge**	72	492452.2	1.1				ug/L	515087	Standard
	As	75	562.8	15.9	**0.5640**	0.084	14.9	ug/L	20	Standard
	Se	82	67.0	15.0	**0.4895**	0.090	18.3	ug/L	15	Standard
	Se-1	77	207.3	11.8	**2.1604**	0.344	15.9	ug/L	48	Standard
>	**Ga**	71	103.3	23.9				mg/L	90	Standard
	Rb	85	20340.3	1.9				ug/L	23	Standard
	Y	89	439150.3	1.0				ug/L	448510	Standard
>	**Rh**	103	18.3	15.7				ug/L	15	Standard
	Mo	98	1185.2	3.1	**0.4267**	0.016	3.7	ug/L	11	Standard
	Ag	107	124.0	3.2	**0.0026**	0.001	26.5	ug/L	134	Standard
	Cd	111	35.9	29.2	**0.0141**	0.005	34.6	mg/L	7	Standard
	Cd	114	96.0	6.6	**0.0139**	0.001	9.0	ug/L	16	Standard
>	**In**	115	601194.2	0.6				ug/L	611117	Standard
	Sn	118	770.0	3.2	**0.0304**	0.004	13.3	ug/L	518	Standard
	Sb	123	1910.7	20.7	**0.3992**	0.088	22.0	ug/L	127	Standard
	Ba	135	33674.7	0.4	**16.5556**	0.054	0.3	ug/L	45	Standard
	Ce	140	1643.4	3.5				ug/L	298	Standard
>	**Tb**	159	946228.9	1.7				ug/L	977942	Standard
	Ho	165	41.7	36.7				ug/L	12	Standard
	Tl	203	211.3	8.6	**0.0215**	0.002	11.4	ug/L	31	Standard
	Tl	205	188.3	11.1	**0.0247**	0.003	12.3	ug/L	20	Standard
	Pb	206	2721.9	1.8	**0.4638**	0.014	3.1	ug/L	286	Standard
	Pb	207	2208.8	1.5	**0.4164**	0.010	2.4	ug/L	257	Standard
	Pb	208	9386.5	1.8	**0.4607**	0.014	3.1	ug/L	956	Standard
	U	238	2364.2	1.6	**0.3425**	0.008	2.2	ug/L	17	Standard
>	**Bi**	209	532104.5	1.0				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.9240**	18.912	173.1	mg/L	0	Standard
Mg	24	14932.4	1.8	**20.0717**	1.109	5.5	mg/L	32	Standard
K	39	851.7	12.5	**2.7753**	0.419	15.1	mg/L	30	Standard
Ca	43	323.3	7.9	**44.3168**	3.500	7.9	mg/L	48	Standard
Fe	54	180.7	15.7	**0.0282**	0.024	84.5	mg/L	159	Standard
Fe	57	355.0	6.1	**0.5869**	0.046	7.9	mg/L	195	Standard
> **Sc-1**	45	39103.8	3.8				mg/L	39543	Standard
Cl	35	38446.7	1.8				ug/L	27642	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	10497.0	5.2				ug/L	1647	Standard
P	31	21567.0	1.7				ug/L	15231	Standard
S	34	2493.5	2.8				ug/L	1845	Standard
Sr	88	151.7	7.6				ug/L	70	Standard
C	12	210.0	39.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	67.9	17.5				mg/L	12	Standard
Ho-1	165	41.7	36.7				mg/L	12	Standard
Er	166	43.3	93.3				mg/L	20	Standard
I	127	29340.1	3.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.325	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.606	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.376
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.517
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606083901DP WG574242-04
Sample Date/Time: Tuesday, June 28, 2016 20:01:03
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74496.0	1.1				ug/L	81760	Standard
	Be	9	20.0	25.0	**0.0124**	0.006	45.8	ug/L	17	Standard
	Al	27	15458448.5	1.4	**110.0484**	0.587	0.5	ug/L	1410	Standard
	Sc	45	38253.3	3.4				ug/L	39543	Standard
	Ti	47	558.7	5.4	**2.1548**	0.155	7.2	ug/L	39	Standard
	V	51	4067.8	2.6	**0.3973**	0.009	2.2	ug/L	1415	Standard
	Cr	52	9024.7	1.6	**0.2811**	0.031	11.1	ug/L	6946	Standard
	Cr	53	3592.1	3.4	**3.8809**	0.090	2.3	ug/L	328	Standard
	Mn	55	13517.4	2.1	**2.0039**	0.068	3.4	ug/L	823	Standard
	Co	59	1022.7	3.5	**0.1189**	0.006	5.0	ug/L	252	Standard
	Ni	60	3054.6	1.9	**1.5691**	0.041	2.6	ug/L	192	Standard
	Cu	65	3452.1	3.2	**1.7838**	0.034	1.9	ug/L	141	Standard
	Zn	66	14844.3	0.5	**13.1506**	0.169	1.3	ug/L	491	Standard
>	Ge	72	499109.4	1.4				ug/L	515087	Standard
	As	75	584.5	8.0	**0.5768**	0.041	7.2	ug/L	20	Standard
	Se	82	58.0	10.0	**0.3998**	0.046	11.4	ug/L	15	Standard
	Se-1	77	200.7	10.2	**2.0328**	0.318	15.6	ug/L	48	Standard
>	Ga	71	100.0	13.2				mg/L	90	Standard
	Rb	85	19739.5	1.7				ug/L	23	Standard
	Y	89	436250.9	1.8				ug/L	448510	Standard
>	Rh	103	38.3	7.5				ug/L	15	Standard
	Mo	98	1219.4	1.0	**0.4525**	0.003	0.7	ug/L	11	Standard
	Ag	107	99.7	5.7	**-0.0007**	0.001	125.7	ug/L	134	Standard
	Cd	111	32.6	12.4	**0.0130**	0.002	14.9	mg/L	7	Standard
	Cd	114	81.5	18.5	**0.0115**	0.003	24.6	ug/L	16	Standard
>	In	115	584572.0	1.4				ug/L	611117	Standard
	Sn	118	751.7	6.1	**0.0310**	0.009	27.5	ug/L	518	Standard
	Sb	123	786.1	12.1	**0.1616**	0.023	14.4	ug/L	127	Standard
	Ba	135	32184.1	0.9	**16.2729**	0.095	0.6	ug/L	45	Standard
	Ce	140	490.0	7.4				ug/L	298	Standard
>	Tb	159	929479.8	0.3				ug/L	977942	Standard
	Ho	165	31.7	24.1				ug/L	12	Standard
	Tl	203	152.7	10.6	**0.0145**	0.002	14.7	ug/L	31	Standard
	Tl	205	146.7	17.2	**0.0191**	0.004	18.8	ug/L	20	Standard
	Pb	206	2610.2	1.4	**0.4511**	0.005	1.2	ug/L	286	Standard
	Pb	207	2110.5	2.5	**0.4033**	0.013	3.2	ug/L	257	Standard
	Pb	208	8866.0	0.9	**0.4405**	0.006	1.4	ug/L	956	Standard
	U	238	2335.8	3.1	**0.3444**	0.010	2.9	ug/L	17	Standard
>	Bi	209	522741.7	0.4				ug/L	557080	Standard

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Na	23	1.7	173.2	**11.1196**	19.251	173.1	mg/L	0	Standard
Mg	24	14720.5	1.4	**20.2196**	0.936	4.6	mg/L	32	Standard
K	39	903.4	10.8	**3.0129**	0.317	10.5	mg/L	30	Standard
Ca	43	308.3	1.9	**43.1033**	1.939	4.5	mg/L	48	Standard
Fe	54	132.3	23.0	**-0.0139**	0.024	174.3	mg/L	159	Standard
Fe	57	371.7	11.8	**0.6755**	0.185	27.4	mg/L	195	Standard
> **Sc-1**	45	38253.3	3.4				mg/L	39543	Standard
Cl	35	39853.0	2.0				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	7995.4	3.8				ug/L	1647	Standard
P	31	20689.1	2.4				ug/L	15231	Standard
S	34	2350.2	5.7				ug/L	1845	Standard
Sr	88	115.0	7.5				ug/L	70	Standard
C	12	266.7	11.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	41.7	57.7				mg/L	12	Standard
Ho-1	165	31.7	24.1				mg/L	12	Standard
Er	166	33.3	75.5				mg/L	20	Standard
I	127	28308.1	3.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.115	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.898	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.656
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.836
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606083901S WG574242-05
Sample Date/Time: Tuesday, June 28, 2016 20:04:14
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77052.1	1.2				ug/L	81760	Standard
	Be	9	48365.4	1.4	**51.6767**	1.282	2.5	ug/L	17	Standard
	Al	27	15205678.0	0.8	**104.6750**	1.999	1.9	ug/L	1410	Standard
	Sc	45	39767.1	2.3				ug/L	39543	Standard
	Ti	47	566.0	2.6	**2.1182**	0.041	1.9	ug/L	39	Standard
	V	51	345428.5	0.5	**49.6572**	0.625	1.3	ug/L	1415	Standard
	Cr	52	342558.9	0.4	**48.3219**	0.886	1.8	ug/L	6946	Standard
	Cr	53	45610.2	2.6	**51.7999**	1.901	3.7	ug/L	328	Standard
	Mn	55	334844.2	1.7	**51.6671**	0.130	0.3	ug/L	823	Standard
	Co	59	340587.2	2.1	**48.5963**	0.256	0.5	ug/L	252	Standard
	Ni	60	92425.4	0.6	**49.1352**	0.675	1.4	ug/L	192	Standard
	Cu	65	94140.2	0.6	**49.6217**	0.865	1.7	ug/L	141	Standard
	Zn	66	68169.3	0.4	**61.5791**	1.173	1.9	ug/L	491	Standard
>	**Ge**	72	513441.7	1.6				ug/L	515087	Standard
	As	75	56899.2	0.6	**50.8164**	0.583	1.1	ug/L	20	Standard
	Se	82	5653.4	1.3	**49.1454**	0.462	0.9	ug/L	15	Standard
	Se-1	77	3932.8	1.5	**51.6632**	1.250	2.4	ug/L	48	Standard
>	**Ga**	71	93.3	35.7				mg/L	90	Standard
	Rb	85	19300.6	2.7				ug/L	23	Standard
	Y	89	425453.4	2.7				ug/L	448510	Standard
>	**Rh**	103	45.0	19.2				ug/L	15	Standard
	Mo	98	1218.6	0.9	**0.4503**	0.008	1.7	ug/L	11	Standard
	Ag	107	314898.7	0.6	**48.8175**	0.102	0.2	ug/L	134	Standard
	Cd	111	99777.7	0.5	**48.5906**	0.622	1.3	mg/L	7	Standard
	Cd	114	243059.8	0.9	**48.6969**	0.795	1.6	ug/L	16	Standard
>	**In**	115	587073.7	0.8				ug/L	611117	Standard
	Sn	118	733.4	7.3	**0.0272**	0.010	36.7	ug/L	518	Standard
	Sb	123	223776.0	1.4	**49.3561**	0.290	0.6	ug/L	127	Standard
	Ba	135	127336.9	0.7	**64.1810**	0.344	0.5	ug/L	45	Standard
	Ce	140	335.0	9.1				ug/L	298	Standard
>	**Tb**	159	937062.8	1.0				ug/L	977942	Standard
	Ho	165	41.7	79.9				ug/L	12	Standard
	Tl	203	401801.7	0.6	**49.2378**	0.579	1.2	ug/L	31	Standard
	Tl	205	351031.6	0.7	**49.5383**	0.691	1.4	ug/L	20	Standard
	Pb	206	267916.7	0.7	**51.1246**	0.591	1.2	ug/L	286	Standard
	Pb	207	234005.3	0.9	**49.5047**	0.372	0.8	ug/L	257	Standard
	Pb	208	924903.3	0.8	**50.5781**	0.765	1.5	ug/L	956	Standard
	U	238	349197.5	0.5	**50.3229**	0.614	1.2	ug/L	17	Standard
>	**Bi**	209	539520.7	0.7				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.8832**	18.842	173.1	mg/L	0	Standard
Mg	24	14542.0	3.3	**19.1893**	0.286	1.5	mg/L	32	Standard
K	39	753.4	10.6	**2.3925**	0.305	12.7	mg/L	30	Standard
Ca	43	295.0	12.2	**39.3051**	6.421	16.3	mg/L	48	Standard
Fe	54	140.6	16.7	**-0.0107**	0.020	183.5	mg/L	159	Standard
Fe	57	348.3	9.1	**0.5437**	0.082	15.1	mg/L	195	Standard
> **Sc-1**	45	39767.1	2.3				mg/L	39543	Standard
Cl	35	39860.4	1.2				ug/L	27642	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	7565.2	10.7				ug/L	1647	Standard
P	31	21044.6	3.8				ug/L	15231	Standard
S	34	2540.2	5.7				ug/L	1845	Standard
Sr	88	145.0	22.6				ug/L	70	Standard
C	12	196.7	11.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	48.4	54.7				mg/L	12	Standard
Ho-1	165	41.7	79.9				mg/L	12	Standard
Er	166	33.3	45.8				mg/L	20	Standard
I	127	26943.9	1.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.242	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.681	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.066
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.848
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606083901SD WG574242-06
Sample Date/Time: Tuesday, June 28, 2016 20:07:26
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77184.4	1.1				ug/L	81760	Standard
	Be	9	48315.3	1.2	**51.5258**	0.436	0.8	ug/L	17	Standard
	Al	27	15387465.4	1.3	**105.7299**	0.773	0.7	ug/L	1410	Standard
	Sc	45	40039.5	2.3				ug/L	39543	Standard
	Ti	47	554.0	4.1	**2.1409**	0.093	4.3	ug/L	39	Standard
	V	51	332776.2	1.5	**49.3498**	0.268	0.5	ug/L	1415	Standard
	Cr	52	340776.8	0.8	**49.6175**	0.095	0.2	ug/L	6946	Standard
	Cr	53	45466.5	0.7	**53.2763**	0.775	1.5	ug/L	328	Standard
	Mn	55	324192.4	1.4	**51.6123**	0.258	0.5	ug/L	823	Standard
	Co	59	327045.3	2.1	**48.1461**	0.569	1.2	ug/L	252	Standard
	Ni	60	91364.7	1.1	**50.1099**	0.072	0.1	ug/L	192	Standard
	Cu	65	91854.3	0.9	**49.9479**	0.081	0.2	ug/L	141	Standard
	Zn	66	66866.6	0.8	**62.3204**	0.118	0.2	ug/L	491	Standard
>	**Ge**	72	497622.9	1.0				ug/L	515087	Standard
	As	75	54845.8	1.7	**50.5323**	0.480	1.0	ug/L	20	Standard
	Se	82	5429.5	1.2	**48.6954**	0.265	0.5	ug/L	15	Standard
	Se-1	77	3850.8	1.9	**52.1872**	0.544	1.0	ug/L	48	Standard
>	**Ga**	71	85.0	11.8				mg/L	90	Standard
	Rb	85	19015.3	1.2				ug/L	23	Standard
	Y	89	421533.6	0.8				ug/L	448510	Standard
>	**Rh**	103	55.0	15.7				ug/L	15	Standard
	Mo	98	1205.1	2.4	**0.4408**	0.012	2.7	ug/L	11	Standard
	Ag	107	307002.5	0.8	**47.1551**	0.386	0.8	ug/L	134	Standard
	Cd	111	97425.8	0.9	**47.0062**	0.430	0.9	mg/L	7	Standard
	Cd	114	239795.9	0.5	**47.5975**	0.300	0.6	ug/L	16	Standard
>	**In**	115	592518.8	0.1				ug/L	611117	Standard
	Sn	118	761.7	9.1	**0.0309**	0.012	38.7	ug/L	518	Standard
	Sb	123	220298.1	1.2	**48.1440**	0.631	1.3	ug/L	127	Standard
	Ba	135	125301.0	0.6	**62.5732**	0.412	0.7	ug/L	45	Standard
	Ce	140	340.0	1.5				ug/L	298	Standard
>	**Tb**	159	948091.3	1.9				ug/L	977942	Standard
	Ho	165	23.3	65.5				ug/L	12	Standard
	Tl	203	394026.8	0.4	**48.4831**	0.151	0.3	ug/L	31	Standard
	Tl	205	348699.1	1.4	**49.4146**	1.048	2.1	ug/L	20	Standard
	Pb	206	261711.9	1.4	**50.1430**	0.483	1.0	ug/L	286	Standard
	Pb	207	228078.7	1.5	**48.4479**	0.479	1.0	ug/L	257	Standard
	Pb	208	906176.6	0.5	**49.7571**	0.517	1.0	ug/L	956	Standard
	U	238	340376.9	0.5	**49.2541**	0.514	1.0	ug/L	17	Standard
>	**Bi**	209	537295.6	0.7				ug/L	557080	Standard

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Na	23	3.3	86.6	**20.8666**	18.067	86.6	mg/L	0	Standard
Mg	24	14582.0	2.3	**19.1163**	0.419	2.2	mg/L	32	Standard
K	39	795.0	3.8	**2.5139**	0.164	6.5	mg/L	30	Standard
Ca	43	345.0	2.9	**46.4459**	2.697	5.8	mg/L	48	Standard
Fe	54	142.5	14.7	**-0.0097**	0.018	187.3	mg/L	159	Standard
Fe	57	408.3	2.5	**0.7378**	0.065	8.9	mg/L	195	Standard
> **Sc-1**	45	40039.5	2.3				mg/L	39543	Standard
Cl	35	39300.2	1.1				ug/L	27642	Standard
Kr	83	1.7	173.2				ug/L	2	Standard
Br	81	7651.9	3.5				ug/L	1647	Standard
P	31	20634.0	3.2				ug/L	15231	Standard
S	34	2398.5	2.0				ug/L	1845	Standard
Sr	88	180.0	15.5				ug/L	70	Standard
C	12	226.7	27.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	27.4	58.7				mg/L	12	Standard
Ho-1	165	23.3	65.5				mg/L	12	Standard
Er	166	53.3	108.3				mg/L	20	Standard
I	127	27065.8	3.6				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		94.404	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.610	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.957
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.448
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606084301
Sample Date/Time: Tuesday, June 28, 2016 20:10:37
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80372.6	1.6				ug/L	81760	Standard
	Be	9	41.7	45.4	**0.0330**	0.020	59.2	ug/L	17	Standard
	Al	27	7042054.5	1.4	**46.4726**	1.334	2.9	ug/L	1410	Standard
	Sc	45	38211.6	5.6				ug/L	39543	Standard
	Ti	47	149.3	19.8	**0.4676**	0.133	28.4	ug/L	39	Standard
	V	51	1769.8	3.9	**0.0612**	0.007	10.9	ug/L	1415	Standard
	Cr	52	8360.6	4.6	**0.2060**	0.044	21.1	ug/L	6946	Standard
	Cr	53	938.4	5.4	**0.7826**	0.048	6.1	ug/L	328	Standard
	Mn	55	4412856.2	0.9	**715.8990**	5.361	0.7	ug/L	823	Standard
	Co	59	49628.8	1.9	**7.3983**	0.034	0.5	ug/L	252	Standard
	Ni	60	31518.1	1.1	**17.4994**	0.073	0.4	ug/L	192	Standard
	Cu	65	1083.7	2.3	**0.5092**	0.018	3.5	ug/L	141	Standard
	Zn	66	58737.0	1.3	**55.5464**	0.787	1.4	ug/L	491	Standard
>	**Ge**	72	489683.3	1.5				ug/L	515087	Standard
	As	75	118.1	28.8	**0.1508**	0.032	21.2	ug/L	20	Standard
	Se	82	133.7	3.3	**1.1023**	0.049	4.4	ug/L	15	Standard
	Se-1	77	146.3	10.3	**1.3266**	0.239	18.0	ug/L	48	Standard
>	**Ga**	71	230.0	39.9				mg/L	90	Standard
	Rb	85	13262.5	1.5				ug/L	23	Standard
	Y	89	437622.3	1.3				ug/L	448510	Standard
>	**Rh**	103	40.0	43.3				ug/L	15	Standard
	Mo	98	84.3	2.5	**0.0124**	0.001	5.4	ug/L	11	Standard
	Ag	107	135.7	14.4	**0.0042**	0.003	69.6	ug/L	134	Standard
	Cd	111	325.5	6.3	**0.1508**	0.009	6.1	mg/L	7	Standard
	Cd	114	800.8	5.2	**0.1507**	0.008	5.1	ug/L	16	Standard
>	**In**	115	605376.8	0.3				ug/L	611117	Standard
	Sn	118	716.7	15.8	**0.0204**	0.019	93.4	ug/L	518	Standard
	Sb	123	1846.5	24.8	**0.3824**	0.099	25.9	ug/L	127	Standard
	Ba	135	61196.0	0.7	**29.8977**	0.107	0.4	ug/L	45	Standard
	Ce	140	4327.3	3.4				ug/L	298	Standard
>	**Tb**	159	946751.9	1.1				ug/L	977942	Standard
	Ho	165	113.3	17.8				ug/L	12	Standard
	Tl	203	274.7	6.5	**0.0286**	0.002	7.3	ug/L	31	Standard
	Tl	205	308.3	53.1	**0.0408**	0.023	55.8	ug/L	20	Standard
	Pb	206	584.3	5.1	**0.0470**	0.006	11.8	ug/L	286	Standard
	Pb	207	484.3	1.7	**0.0436**	0.002	3.9	ug/L	257	Standard
	Pb	208	2242.1	13.2	**0.0611**	0.016	25.8	ug/L	956	Standard
	U	238	167.0	68.8	**0.0208**	0.016	78.4	ug/L	17	Standard
>	**Bi**	209	544741.6	0.3				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	6142.9	1.9	**8.4190**	0.399	4.7	mg/L	32	Standard
K	39	320.0	19.2	**0.9720**	0.149	15.3	mg/L	30	Standard
Ca	43	193.3	18.7	**25.2140**	6.755	26.8	mg/L	48	Standard
Fe	54	272.9	8.2	**0.1197**	0.034	28.2	mg/L	159	Standard
Fe	57	298.3	20.0	**0.4171**	0.202	48.3	mg/L	195	Standard
> **Sc-1**	45	38211.6	5.6				mg/L	39543	Standard
Cl	35	43040.4	2.1				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	3493.7	8.6				ug/L	1647	Standard
P	31	19535.9	3.1				ug/L	15231	Standard
S	34	2298.5	3.2				ug/L	1845	Standard
Sr	88	191.7	4.0				ug/L	70	Standard
C	12	103.3	24.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	171.7	2.4				mg/L	12	Standard
Ho-1	165	113.3	17.8				mg/L	12	Standard
Er	166	103.3	43.6				mg/L	20	Standard
I	127	15184.3	1.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.303	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.068	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.061
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.785
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606084301PS WG574570-01
Sample Date/Time: Tuesday, June 28, 2016 20:13:49
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	84132.9	0.3				ug/L	81760	Standard
	Be	9	53800.4	2.5	**52.6389**	1.459	2.8	ug/L	17	Standard
	Al	27	7286262.3	0.5	**45.9217**	0.095	0.2	ug/L	1410	Standard
	Sc	45	39187.3	1.8				ug/L	39543	Standard
	Ti	47	167.0	8.4	**0.5053**	0.064	12.8	ug/L	39	Standard
	V	51	355576.0	1.4	**50.8299**	0.802	1.6	ug/L	1415	Standard
	Cr	52	356673.6	1.0	**50.0684**	1.233	2.5	ug/L	6946	Standard
	Cr	53	44503.6	1.2	**50.2498**	1.575	3.1	ug/L	328	Standard
	Mn	55	4859292.5	1.8	**747.6759**	17.580	2.4	ug/L	823	Standard
	Co	59	417615.7	1.3	**59.2660**	0.892	1.5	ug/L	252	Standard
	Ni	60	125871.4	1.4	**66.5870**	2.033	3.1	ug/L	192	Standard
	Cu	65	97106.5	1.0	**50.8947**	0.717	1.4	ug/L	141	Standard
	Zn	66	127581.2	0.7	**115.3025**	1.913	1.7	ug/L	491	Standard
>	Ge	72	516403.0	2.2				ug/L	515087	Standard
	As	75	57691.6	2.0	**51.2302**	0.986	1.9	ug/L	20	Standard
	Se	82	6053.8	2.8	**52.3316**	1.116	2.1	ug/L	15	Standard
	Se-1	77	3949.2	3.8	**51.5591**	1.119	2.2	ug/L	48	Standard
>	Ga	71	251.7	10.0				mg/L	90	Standard
	Rb	85	13841.3	3.1				ug/L	23	Standard
	Y	89	444794.9	3.0				ug/L	448510	Standard
>	Rh	103	78.3	24.2				ug/L	15	Standard
	Mo	98	86.4	4.3	**0.0128**	0.001	7.7	ug/L	11	Standard
	Ag	107	327259.4	2.3	**48.6313**	0.643	1.3	ug/L	134	Standard
	Cd	111	105349.6	1.3	**49.1793**	0.322	0.7	mg/L	7	Standard
	Cd	114	257271.1	1.0	**49.4173**	1.101	2.2	ug/L	16	Standard
>	In	115	612449.2	2.0				ug/L	611117	Standard
	Sn	118	941.7	3.9	**0.0570**	0.004	7.5	ug/L	518	Standard
	Sb	123	235069.6	1.3	**49.7050**	0.359	0.7	ug/L	127	Standard
	Ba	135	161643.1	1.4	**78.1070**	0.551	0.7	ug/L	45	Standard
	Ce	140	4429.0	1.8				ug/L	298	Standard
>	Tb	159	958659.2	2.3				ug/L	977942	Standard
	Ho	165	101.7	15.0				ug/L	12	Standard
	Tl	203	432017.4	2.0	**50.9163**	0.725	1.4	ug/L	31	Standard
	Tl	205	384793.0	2.1	**52.2411**	1.764	3.4	ug/L	20	Standard
	Pb	206	286141.9	1.8	**52.5195**	0.925	1.8	ug/L	286	Standard
	Pb	207	249240.4	1.8	**50.7143**	0.544	1.1	ug/L	257	Standard
	Pb	208	995726.4	2.1	**52.3723**	1.044	2.0	ug/L	956	Standard
	U	238	370701.4	1.5	**51.3906**	1.394	2.7	ug/L	17	Standard
>	Bi	209	561025.3	2.5				ug/L	557080	Standard

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Na	23	5.0	0.0	**32.4034**	0.594	1.8	mg/L	0	Standard
Mg	24	6414.7	1.1	**8.5623**	0.246	2.9	mg/L	32	Standard
K	39	321.7	9.1	**0.9561**	0.110	11.5	mg/L	30	Standard
Ca	43	185.0	8.1	**22.9936**	1.940	8.4	mg/L	48	Standard
Fe	54	250.2	14.1	**0.0912**	0.029	32.3	mg/L	159	Standard
Fe	57	306.7	15.8	**0.4183**	0.145	34.7	mg/L	195	Standard
> **Sc-1**	45	39187.3	1.8				mg/L	39543	Standard
Cl	35	43079.8	1.6				ug/L	27642	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	3410.4	11.2				ug/L	1647	Standard
P	31	19879.7	4.3				ug/L	15231	Standard
S	34	2313.5	2.6				ug/L	1845	Standard
Sr	88	201.7	5.2				ug/L	70	Standard
C	12	140.0	32.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	196.2	20.7				mg/L	12	Standard
Ho-1	165	101.7	15.0				mg/L	12	Standard
Er	166	80.0	76.0				mg/L	20	Standard
I	127	16267.1	4.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.902	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.256	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.218
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.708
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1606084301SDL WG574570-02
Sample Date/Time: Tuesday, June 28, 2016 20:17:00
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84610.6	1.2				ug/L	81760	Standard
	Be	9	31.7	24.1	**0.0210**	0.007	33.6	ug/L	17	Standard
	Al	27	1535529.0	0.5	**9.6123**	0.084	0.9	ug/L	1410	Standard
	Sc	45	40586.0	2.0				ug/L	39543	Standard
	Ti	47	54.0	14.5	**0.0442**	0.029	66.4	ug/L	39	Standard
	V	51	1510.6	4.6	**0.0030**	0.011	356.0	ug/L	1415	Standard
	Cr	52	7700.6	1.7	**0.0097**	0.022	221.3	ug/L	6946	Standard
	Cr	53	548.3	6.2	**0.2609**	0.037	14.0	ug/L	328	Standard
	Mn	55	927997.3	1.4	**137.8897**	1.374	1.0	ug/L	823	Standard
	Co	59	10741.5	3.1	**1.4429**	0.042	2.9	ug/L	252	Standard
	Ni	60	6856.2	1.9	**3.4057**	0.060	1.7	ug/L	192	Standard
	Cu	65	384.3	5.5	**0.1042**	0.011	10.3	ug/L	141	Standard
	Zn	66	13504.0	1.8	**11.0531**	0.162	1.5	ug/L	491	Standard
>	**Ge**	72	534132.0	0.6				ug/L	515087	Standard
	As	75	-8.2	426.8	**0.0333**	0.030	90.7	ug/L	20	Standard
	Se	82	34.3	14.2	**0.1678**	0.041	24.5	ug/L	15	Standard
	Se-1	77	77.7	7.3	**0.2756**	0.079	28.6	ug/L	48	Standard
>	**Ga**	71	133.3	12.1				mg/L	90	Standard
	Rb	85	2885.3	6.5				ug/L	23	Standard
	Y	89	438369.8	1.0				ug/L	448510	Standard
>	**Rh**	103	21.7	13.3				ug/L	15	Standard
	Mo	98	33.0	37.7	**-0.0070**	0.005	64.6	ug/L	11	Standard
	Ag	107	108.0	7.3	**-0.0003**	0.002	523.1	ug/L	134	Standard
	Cd	111	82.3	4.3	**0.0351**	0.001	2.2	mg/L	7	Standard
	Cd	114	247.3	23.3	**0.0421**	0.011	25.9	ug/L	16	Standard
>	**In**	115	618448.1	2.5				ug/L	611117	Standard
	Sn	118	536.7	11.9	**-0.0124**	0.008	66.9	ug/L	518	Standard
	Sb	123	2208.8	28.0	**0.4480**	0.119	26.5	ug/L	127	Standard
	Ba	135	12894.8	1.5	**6.1480**	0.082	1.3	ug/L	45	Standard
	Ce	140	871.7	9.1				ug/L	298	Standard
>	**Tb**	159	974992.3	2.7				ug/L	977942	Standard
	Ho	165	33.3	48.2				ug/L	12	Standard
	Tl	203	98.0	7.7	**0.0064**	0.001	11.0	ug/L	31	Standard
	Tl	205	90.0	24.2	**0.0096**	0.003	27.9	ug/L	20	Standard
	Pb	206	392.7	2.7	**0.0066**	0.003	42.8	ug/L	286	Standard
	Pb	207	318.0	2.7	**0.0050**	0.001	23.7	ug/L	257	Standard
	Pb	208	1352.7	4.0	**0.0088**	0.002	18.5	ug/L	956	Standard
	U	238	56.0	29.8	**0.0046**	0.002	47.0	ug/L	17	Standard
>	**Bi**	209	576774.8	1.6				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.6259**	18.396	173.1	mg/L	0	Standard
Mg	24	1335.1	0.6	**1.6748**	0.038	2.2	mg/L	32	Standard
K	39	83.3	27.1	**0.1320**	0.069	52.2	mg/L	30	Standard
Ca	43	66.7	4.3	**4.5227**	0.490	10.8	mg/L	48	Standard
Fe	54	158.9	15.8	**0.0030**	0.021	715.4	mg/L	159	Standard
Fe	57	226.7	20.8	**0.1225**	0.167	136.7	mg/L	195	Standard
> **Sc-1**	45	40586.0	2.0				mg/L	39543	Standard
Cl	35	41629.1	0.8				ug/L	27642	Standard
Kr	83	4.7	24.7				ug/L	2	Standard
Br	81	2016.8	5.8				ug/L	1647	Standard
P	31	19454.2	1.7				ug/L	15231	Standard
S	34	2286.8	4.6				ug/L	1845	Standard
Sr	88	108.3	9.6				ug/L	70	Standard
C	12	106.7	39.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	58.6	31.0				mg/L	12	Standard
Ho-1	165	33.3	48.2				mg/L	12	Standard
Er	166	30.0	57.7				mg/L	20	Standard
I	127	4460.7	6.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.486	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.697	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.200
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.535
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606084301SDL WG574570-02
Sample Date/Time: Tuesday, June 28, 2016 20:20:12
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84917.5	3.2				ug/L	81760	Standard
	Be	9	15.0	66.7	**0.0050**	0.010	200.3	ug/L	17	Standard
	Al	27	312447.8	1.9	**1.9378**	0.034	1.7	ug/L	1410	Standard
	Sc	45	41284.5	3.3				ug/L	39543	Standard
	Ti	47	45.7	48.8	**0.0117**	0.082	700.7	ug/L	39	Standard
	V	51	1463.2	5.6	**-0.0026**	0.007	263.9	ug/L	1415	Standard
	Cr	52	7659.3	1.8	**0.0098**	0.004	44.8	ug/L	6946	Standard
	Cr	53	423.3	16.3	**0.1274**	0.086	67.2	ug/L	328	Standard
	Mn	55	187375.9	0.8	**27.8813**	0.482	1.7	ug/L	823	Standard
	Co	59	2308.5	0.8	**0.2873**	0.008	2.8	ug/L	252	Standard
	Ni	60	1540.7	3.0	**0.6883**	0.022	3.2	ug/L	192	Standard
	Cu	65	216.7	7.3	**0.0197**	0.006	31.0	ug/L	141	Standard
	Zn	66	4319.6	1.9	**2.9936**	0.025	0.8	ug/L	491	Standard
>	**Ge**	72	531260.9	2.2				ug/L	515087	Standard
	As	75	-47.8	76.7	**-0.0014**	0.032	2343.8	ug/L	20	Standard
	Se	82	17.0	17.8	**0.0237**	0.023	96.9	ug/L	15	Standard
	Se-1	77	59.0	6.1	**0.0400**	0.030	74.0	ug/L	48	Standard
>	**Ga**	71	86.7	31.8				mg/L	90	Standard
	Rb	85	596.7	10.5				ug/L	23	Standard
	Y	89	453907.4	1.0				ug/L	448510	Standard
>	**Rh**	103	8.3	34.6				ug/L	15	Standard
	Mo	98	28.3	9.0	**-0.0090**	0.001	10.4	ug/L	11	Standard
	Ag	107	92.0	2.2	**-0.0030**	0.000	8.2	ug/L	134	Standard
	Cd	111	15.3	15.1	**0.0040**	0.001	27.2	mg/L	7	Standard
	Cd	114	38.2	13.4	**0.0022**	0.001	41.3	ug/L	16	Standard
>	**In**	115	632674.4	0.8				ug/L	611117	Standard
	Sn	118	625.0	9.7	**0.0002**	0.010	5977.1	ug/L	518	Standard
	Sb	123	614.9	31.7	**0.1128**	0.039	34.5	ug/L	127	Standard
	Ba	135	2594.2	0.9	**1.1887**	0.008	0.6	ug/L	45	Standard
	Ce	140	198.3	20.2				ug/L	298	Standard
>	**Tb**	159	988615.6	0.9				ug/L	977942	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	26.7	16.9	**-0.0018**	0.000	28.3	ug/L	31	Standard
	Tl	205	16.7	75.5	**-0.0001**	0.002	1448.6	ug/L	20	Standard
	Pb	206	345.0	3.1	**-0.0028**	0.002	58.3	ug/L	286	Standard
	Pb	207	303.3	7.6	**0.0012**	0.004	352.8	ug/L	257	Standard
	Pb	208	1152.7	2.7	**-0.0023**	0.002	71.0	ug/L	956	Standard
	U	238	16.0	21.7	**-0.0008**	0.000	54.8	ug/L	17	Standard
>	**Bi**	209	585233.9	0.6				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	291.7	12.4	**0.3140**	0.035	11.1	mg/L	32	Standard
K	39	48.3	6.0	**0.0153**	0.013	86.9	mg/L	30	Standard
Ca	43	35.0	28.6	**-0.2811**	1.306	464.6	mg/L	48	Standard
Fe	54	153.8	34.6	**-0.0038**	0.045	1180.2	mg/L	159	Standard
Fe	57	170.0	8.8	**-0.0754**	0.036	48.4	mg/L	195	Standard
Sc-1	45	41284.5	3.3				mg/L	39543	Standard
Cl	35	41099.7	0.8				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1820.1	5.7				ug/L	1647	Standard
P	31	19375.7	1.6				ug/L	15231	Standard
S	34	2545.2	4.1				ug/L	1845	Standard
Sr	88	58.3	27.6				ug/L	70	Standard
C	12	110.0	39.6				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	28.2	93.4				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	36.7	15.7				mg/L	20	Standard
I	127	1790.1	13.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.862	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.140	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.528
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.054
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 20:23:25
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82271.2	2.6				ug/L	81760	Standard
	Be	9	51878.7	2.6	**51.9060**	0.474	0.9	ug/L	17	Standard
	Al	27	7912369.8	3.4	**50.9914**	0.481	0.9	ug/L	1410	Standard
	Sc	45	40149.8	1.3				ug/L	39543	Standard
	Ti	47	25445.3	0.9	**101.2486**	0.646	0.6	ug/L	39	Standard
	V	51	355257.7	1.2	**50.4501**	0.253	0.5	ug/L	1415	Standard
	Cr	52	364176.4	2.0	**50.7897**	0.304	0.6	ug/L	6946	Standard
	Cr	53	45239.1	0.4	**50.7395**	0.592	1.2	ug/L	328	Standard
	Mn	55	333791.7	0.4	**50.8845**	0.584	1.1	ug/L	823	Standard
	Co	59	367088.8	1.7	**51.7480**	0.425	0.8	ug/L	252	Standard
	Ni	60	95399.1	1.8	**50.0959**	0.391	0.8	ug/L	192	Standard
	Cu	65	97309.2	2.1	**50.6606**	0.365	0.7	ug/L	141	Standard
	Zn	66	56912.4	2.6	**50.6269**	0.602	1.2	ug/L	491	Standard
>	**Ge**	72	519736.7	1.5				ug/L	515087	Standard
	As	75	56554.6	1.5	**49.8917**	0.034	0.1	ug/L	20	Standard
	Se	82	5843.7	2.8	**50.1784**	0.757	1.5	ug/L	15	Standard
	Se-1	77	3965.5	1.4	**51.4490**	0.315	0.6	ug/L	48	Standard
>	**Ga**	71	118.3	13.6				mg/L	90	Standard
	Rb	85	848.4	6.2				ug/L	23	Standard
	Y	89	451425.6	1.6				ug/L	448510	Standard
>	**Rh**	103	31.7	71.2				ug/L	15	Standard
	Mo	98	272060.7	0.6	**99.5752**	0.551	0.6	ug/L	11	Standard
	Ag	107	339081.9	1.7	**49.9711**	1.119	2.2	ug/L	134	Standard
	Cd	111	106686.1	0.8	**49.3843**	0.588	1.2	mg/L	7	Standard
	Cd	114	259655.5	1.7	**49.4494**	1.121	2.3	ug/L	16	Standard
>	**In**	115	617617.8	0.6				ug/L	611117	Standard
	Sn	118	302897.0	2.2	**50.5905**	1.415	2.8	ug/L	518	Standard
	Sb	123	239436.4	1.3	**50.2037**	0.916	1.8	ug/L	127	Standard
	Ba	135	101930.1	0.6	**48.8299**	0.530	1.1	ug/L	45	Standard
	Ce	140	63.3	9.1				ug/L	298	Standard
>	**Tb**	159	978625.5	0.9				ug/L	977942	Standard
	Ho	165	8.3	69.3				ug/L	12	Standard
	Tl	203	434700.2	0.8	**50.4033**	0.455	0.9	ug/L	31	Standard
	Tl	205	381183.1	1.9	**50.8972**	0.874	1.7	ug/L	20	Standard
	Pb	206	277544.1	1.7	**50.1113**	0.892	1.8	ug/L	286	Standard
	Pb	207	250965.9	2.0	**50.2393**	1.021	2.0	ug/L	257	Standard
	Pb	208	994830.3	0.3	**51.4752**	0.269	0.5	ug/L	956	Standard
	U	238	372750.7	1.1	**50.8268**	0.592	1.2	ug/L	17	Standard
>	**Bi**	209	570174.9	0.2				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4207.3	2.1	**5.4598**	0.160	2.9	mg/L	32	Standard
K	39	1353.4	1.9	**4.3620**	0.034	0.8	mg/L	30	Standard
Ca	43	68.3	23.5	**4.8558**	2.284	47.0	mg/L	48	Standard
Fe	54	6096.4	4.5	**5.2968**	0.235	4.4	mg/L	159	Standard
Fe	57	1726.8	6.1	**5.1204**	0.425	8.3	mg/L	195	Standard
Sc-1	45	40149.8	1.3				mg/L	39543	Standard
Cl	35	38223.5	2.9				ug/L	27642	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	1710.1	6.5				ug/L	1647	Standard
P	31	20984.5	3.6				ug/L	15231	Standard
S	34	2836.9	3.0				ug/L	1845	Standard
Sr	88	73.3	32.2				ug/L	70	Standard
C	12	176.7	8.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	26.3	80.0				mg/L	12	Standard
Ho-1	165	8.3	69.3				mg/L	12	Standard
Er	166	6.7	86.6				mg/L	20	Standard
I	127	1388.4	24.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	103.812		
Al	27	101.983		
Sc	45			
Ti	47	101.249		
V	51	100.900		
Cr	52	101.579		
Cr	53			
Mn	55	101.769		
Co	59	103.496		
Ni	60	100.192		
Cu	65	101.321		
Zn	66	101.254		
Ge	72		100.903	
As	75	99.783		
Se	82	100.357		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	99.575		
Ag	107	99.942		
Cd	111	98.769		
Cd	114			
In	115			101.064
Sn	118	101.181		
Sb	123	100.407		
Ba	135	97.660		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.807		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.950		
U	238	101.654		
Bi	209			102.351
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 20:26:37
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77291.7	2.7				ug/L	81760	Standard
	Be	9	25.0	40.0	**0.0170**	0.011	63.1	ug/L	17	Standard
	Al	27	2576.9	24.9	**0.0032**	0.004	126.1	ug/L	1410	Standard
	Sc	45	39050.3	1.7				ug/L	39543	Standard
	Ti	47	33.7	13.4	**-0.0246**	0.019	78.0	ug/L	39	Standard
	V	51	1167.6	8.0	**-0.0323**	0.013	41.5	ug/L	1415	Standard
	Cr	52	6011.5	1.2	**-0.1610**	0.012	7.3	ug/L	6946	Standard
	Cr	53	398.3	5.1	**0.1293**	0.022	17.0	ug/L	328	Standard
	Mn	55	883.7	9.4	**-0.0071**	0.013	183.2	ug/L	823	Standard
	Co	59	243.0	13.8	**0.0045**	0.005	107.7	ug/L	252	Standard
	Ni	60	165.0	10.4	**-0.0141**	0.009	65.1	ug/L	192	Standard
	Cu	65	129.3	4.3	**-0.0202**	0.003	14.1	ug/L	141	Standard
	Zn	66	451.0	1.9	**-0.4007**	0.009	2.3	ug/L	491	Standard
>	**Ge**	72	496420.0	0.5				ug/L	515087	Standard
	As	75	-52.8	22.7	**-0.0085**	0.011	133.2	ug/L	20	Standard
	Se	82	7.8	31.0	**-0.0491**	0.022	44.9	ug/L	15	Standard
	Se-1	77	52.0	3.8	**-0.0027**	0.026	948.5	ug/L	48	Standard
>	**Ga**	71	61.7	18.7				mg/L	90	Standard
	Rb	85	18.3	103.3				ug/L	23	Standard
	Y	89	442161.2	1.2				ug/L	448510	Standard
>	**Rh**	103	6.7	43.3				ug/L	15	Standard
	Mo	98	281.8	35.5	**0.0839**	0.034	41.1	ug/L	11	Standard
	Ag	107	122.3	22.2	**0.0018**	0.004	200.6	ug/L	134	Standard
	Cd	111	14.5	44.1	**0.0038**	0.003	74.5	mg/L	7	Standard
	Cd	114	43.1	30.3	**0.0033**	0.002	70.6	ug/L	16	Standard
>	**In**	115	615841.7	2.0				ug/L	611117	Standard
	Sn	118	753.4	17.4	**0.0248**	0.024	98.6	ug/L	518	Standard
	Sb	123	596.8	25.3	**0.1131**	0.034	30.2	ug/L	127	Standard
	Ba	135	38.0	16.0	**-0.0069**	0.003	39.0	ug/L	45	Standard
	Ce	140	8.3	91.7				ug/L	298	Standard
>	**Tb**	159	956084.4	3.2				ug/L	977942	Standard
	Ho	165	5.0	100.0				ug/L	12	Standard
	Tl	203	73.0	30.8	**0.0039**	0.003	64.7	ug/L	31	Standard
	Tl	205	60.0	44.1	**0.0059**	0.003	58.6	ug/L	20	Standard
	Pb	206	307.3	5.4	**-0.0063**	0.002	32.6	ug/L	286	Standard
	Pb	207	254.3	1.8	**-0.0055**	0.000	8.7	ug/L	257	Standard
	Pb	208	1093.3	8.1	**-0.0021**	0.004	180.6	ug/L	956	Standard
	U	238	62.0	42.0	**0.0057**	0.004	62.4	ug/L	17	Standard
>	**Bi**	209	552726.9	1.8				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.8094**	18.714	173.1	mg/L	0	Standard
Mg	24	20.0	100.0	**-0.0300**	0.027	91.7	mg/L	32	Standard
K	39	31.7	50.8	**-0.0336**	0.053	157.9	mg/L	30	Standard
Ca	43	16.7	17.3	**-2.7773**	0.490	17.6	mg/L	48	Standard
Fe	54	136.0	26.0	**-0.0122**	0.034	282.8	mg/L	159	Standard
Fe	57	233.3	19.3	**0.1724**	0.147	85.5	mg/L	195	Standard
> **Sc-1**	45	39050.3	1.7				mg/L	39543	Standard
Cl	35	37106.7	0.9				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	1596.8	5.3				ug/L	1647	Standard
P	31	19597.7	1.6				ug/L	15231	Standard
S	34	2643.6	3.6				ug/L	1845	Standard
Sr	88	53.3	61.0				ug/L	70	Standard
C	12	110.0	32.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	9.4	104.3				mg/L	12	Standard
Ho-1	165	5.0	100.0				mg/L	12	Standard
Er	166	13.3	43.3				mg/L	20	Standard
I	127	1173.4	25.6				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.376	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.773
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.219
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606079401
Sample Date/Time: Tuesday, June 28, 2016 20:29:50
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76244.9	4.1				ug/L	81760	Standard
	Be	9	31.7	63.8	**0.0239**	0.020	83.5	ug/L	17	Standard
	Al	27	4859544.3	1.6	**33.8379**	1.720	5.1	ug/L	1410	Standard
	Sc	45	41316.3	3.1				ug/L	39543	Standard
	Ti	47	1613.1	8.6	**6.3222**	0.521	8.2	ug/L	39	Standard
	V	51	5296.6	3.8	**0.5556**	0.022	4.0	ug/L	1415	Standard
	Cr	52	9948.6	1.0	**0.3727**	0.012	3.3	ug/L	6946	Standard
	Cr	53	1300.1	3.5	**1.1398**	0.032	2.8	ug/L	328	Standard
	Mn	55	10830112.5	0.4	**1671.2513**	23.447	1.4	ug/L	823	Standard
	Co	59	98900.4	0.9	**14.0508**	0.072	0.5	ug/L	252	Standard
	Ni	60	5918.2	0.8	**3.0389**	0.039	1.3	ug/L	192	Standard
	Cu	65	1492.7	4.1	**0.6949**	0.022	3.2	ug/L	141	Standard
	Zn	66	3606.1	2.5	**2.4634**	0.043	1.7	ug/L	491	Standard
>	**Ge**	72	514893.7	1.4				ug/L	515087	Standard
	As	75	2838.5	0.7	**2.5661**	0.029	1.1	ug/L	20	Standard
	Se	82	67.5	5.6	**0.4677**	0.041	8.7	ug/L	15	Standard
	Se-1	77	72.7	2.9	**0.2462**	0.031	12.7	ug/L	48	Standard
>	**Ga**	71	795.0	2.5				mg/L	90	Standard
	Rb	85	32504.8	2.3				ug/L	23	Standard
	Y	89	435925.3	2.8				ug/L	448510	Standard
>	**Rh**	103	93.3	3.1				ug/L	15	Standard
	Mo	98	343.6	1.5	**0.1114**	0.005	4.3	ug/L	11	Standard
	Ag	107	117.7	11.3	**0.0018**	0.002	118.8	ug/L	134	Standard
	Cd	111	40.7	19.8	**0.0166**	0.004	21.3	mg/L	7	Standard
	Cd	114	97.5	38.9	**0.0145**	0.008	54.8	ug/L	16	Standard
>	**In**	115	595657.1	2.2				ug/L	611117	Standard
	Sn	118	961.7	5.9	**0.0649**	0.008	12.2	ug/L	518	Standard
	Sb	123	345.9	22.0	**0.0622**	0.015	24.5	ug/L	127	Standard
	Ba	135	208994.2	0.7	**103.8626**	2.069	2.0	ug/L	45	Standard
	Ce	140	33943.0	0.8				ug/L	298	Standard
>	**Tb**	159	940708.8	1.0				ug/L	977942	Standard
	Ho	165	610.0	7.0				ug/L	12	Standard
	Tl	203	714.0	4.8	**0.0811**	0.003	4.2	ug/L	31	Standard
	Tl	205	651.7	8.6	**0.0881**	0.009	9.8	ug/L	20	Standard
	Pb	206	1354.7	2.2	**0.1905**	0.003	1.6	ug/L	286	Standard
	Pb	207	1119.4	1.4	**0.1747**	0.005	2.8	ug/L	257	Standard
	Pb	208	4748.3	2.1	**0.1947**	0.004	1.9	ug/L	956	Standard
	U	238	416.3	2.3	**0.0559**	0.002	3.0	ug/L	17	Standard
>	**Bi**	209	549596.9	1.2				ug/L	557080	Standard

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Na	23	6.7	114.6	**41.1239**	47.883	116.4	mg/L	0	Standard
Mg	24	3483.7	2.6	**4.3856**	0.231	5.3	mg/L	32	Standard
K	39	496.7	14.5	**1.4639**	0.222	15.1	mg/L	30	Standard
Ca	43	190.0	16.0	**22.2436**	4.083	18.4	mg/L	48	Standard
Fe	54	7377.0	1.5	**6.2559**	0.190	3.0	mg/L	159	Standard
Fe	57	2103.5	3.2	**6.1801**	0.414	6.7	mg/L	195	Standard
> **Sc-1**	45	41316.3	3.1				mg/L	39543	Standard
Cl	35	35106.6	2.5				ug/L	27642	Standard
Kr	83	2.3	107.9				ug/L	2	Standard
Br	81	13476.0	5.7				ug/L	1647	Standard
P	31	22598.5	5.8				ug/L	15231	Standard
S	34	2571.9	2.2				ug/L	1845	Standard
Sr	88	433.3	9.8				ug/L	70	Standard
C	12	150.0	35.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	882.4	15.5				mg/L	12	Standard
Ho-1	165	610.0	7.0				mg/L	12	Standard
Er	166	576.7	6.6				mg/L	20	Standard
I	127	50022.6	4.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.254	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.963	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.470
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.657
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606079402
Sample Date/Time: Tuesday, June 28, 2016 20:33:01
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75678.5	1.2				ug/L	81760	Standard
	Be	9	111.7	13.7	**0.1118**	0.017	15.0	ug/L	17	Standard
	Al	27	1429595.1	1.1	**10.0072**	0.228	2.3	ug/L	1410	Standard
	Sc	45	39138.8	1.6				ug/L	39543	Standard
	Ti	47	278.3	21.3	**0.9895**	0.212	21.4	ug/L	39	Standard
	V	51	1557.1	6.8	**0.0252**	0.009	34.9	ug/L	1415	Standard
	Cr	52	8352.6	6.5	**0.1848**	0.041	22.0	ug/L	6946	Standard
	Cr	53	1770.1	12.2	**1.7430**	0.191	11.0	ug/L	328	Standard
	Mn	55	34175.5	2.4	**5.3156**	0.224	4.2	ug/L	823	Standard
	Co	59	3266.0	5.1	**0.4499**	0.010	2.1	ug/L	252	Standard
	Ni	60	1953.8	3.9	**0.9695**	0.017	1.8	ug/L	192	Standard
	Cu	65	1358.7	2.9	**0.6499**	0.011	1.6	ug/L	141	Standard
	Zn	66	4870.4	2.4	**3.7758**	0.058	1.5	ug/L	491	Standard
>	**Ge**	72	497312.9	3.3				ug/L	515087	Standard
	As	75	54.7	94.2	**0.0915**	0.049	53.2	ug/L	20	Standard
	Se	82	40.7	27.3	**0.2488**	0.112	45.1	ug/L	15	Standard
	Se-1	77	77.0	9.4	**0.3389**	0.077	22.7	ug/L	48	Standard
>	**Ga**	71	155.0	28.1				mg/L	90	Standard
	Rb	85	30158.3	1.3				ug/L	23	Standard
	Y	89	432228.9	1.1				ug/L	448510	Standard
>	**Rh**	103	11.7	49.5				ug/L	15	Standard
	Mo	98	72.4	21.3	**0.0082**	0.006	70.5	ug/L	11	Standard
	Ag	107	118.3	24.0	**0.0017**	0.004	249.1	ug/L	134	Standard
	Cd	111	44.6	10.6	**0.0183**	0.002	12.1	mg/L	7	Standard
	Cd	114	123.7	31.0	**0.0193**	0.007	38.8	ug/L	16	Standard
>	**In**	115	600554.1	0.2				ug/L	611117	Standard
	Sn	118	733.4	8.7	**0.0243**	0.011	44.6	ug/L	518	Standard
	Sb	123	231.2	28.1	**0.0370**	0.014	37.8	ug/L	127	Standard
	Ba	135	65483.6	1.3	**32.2516**	0.425	1.3	ug/L	45	Standard
	Ce	140	2745.2	3.0				ug/L	298	Standard
>	**Tb**	159	936903.6	1.4				ug/L	977942	Standard
	Ho	165	75.0	17.6				ug/L	12	Standard
	Tl	203	221.3	13.5	**0.0222**	0.003	15.7	ug/L	31	Standard
	Tl	205	186.7	13.2	**0.0239**	0.003	14.3	ug/L	20	Standard
	Pb	206	523.0	7.4	**0.0358**	0.006	17.6	ug/L	286	Standard
	Pb	207	464.7	6.5	**0.0400**	0.008	19.0	ug/L	257	Standard
	Pb	208	1837.7	5.9	**0.0397**	0.005	13.6	ug/L	956	Standard
	U	238	125.7	23.1	**0.0151**	0.004	27.1	ug/L	17	Standard
>	**Bi**	209	541937.8	1.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	2726.9	0.4	**3.6111**	0.076	2.1	mg/L	32	Standard
K	39	506.7	5.1	**1.5885**	0.091	5.7	mg/L	30	Standard
Ca	43	36.7	15.7	**0.2847**	0.917	322.3	mg/L	48	Standard
Fe	54	182.6	18.3	**0.0302**	0.033	110.1	mg/L	159	Standard
Fe	57	203.3	25.6	**0.0706**	0.187	264.3	mg/L	195	Standard
Sc-1	45	39138.8	1.6				mg/L	39543	Standard
Cl	35	34567.4	3.2				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	6558.1	13.2				ug/L	1647	Standard
P	31	21156.4	3.6				ug/L	15231	Standard
S	34	2326.8	9.7				ug/L	1845	Standard
Sr	88	76.7	13.6				ug/L	70	Standard
C	12	236.7	44.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	150.6	9.6				mg/L	12	Standard
Ho-1	165	75.0	17.6				mg/L	12	Standard
Er	166	56.7	40.8				mg/L	20	Standard
I	127	9424.6	4.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		92.562	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.549	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.272
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.282
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606079403
Sample Date/Time: Tuesday, June 28, 2016 20:36:13
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76753.9	0.3				ug/L	81760	Standard
	Be	9	53.3	32.9	**0.0475**	0.019	39.7	ug/L	17	Standard
	Al	27	2019995.9	2.1	**13.9455**	0.321	2.3	ug/L	1410	Standard
	Sc	45	39648.5	2.7				ug/L	39543	Standard
	Ti	47	884.4	21.1	**3.3748**	0.755	22.4	ug/L	39	Standard
	V	51	4216.0	3.5	**0.3970**	0.022	5.5	ug/L	1415	Standard
	Cr	52	11350.6	1.0	**0.5656**	0.020	3.6	ug/L	6946	Standard
	Cr	53	3082.0	1.2	**3.1525**	0.043	1.4	ug/L	328	Standard
	Mn	55	1462715.3	1.2	**224.3814**	2.702	1.2	ug/L	823	Standard
	Co	59	3343.0	3.0	**0.4421**	0.013	2.9	ug/L	252	Standard
	Ni	60	3343.7	2.8	**1.6618**	0.047	2.8	ug/L	192	Standard
	Cu	65	1050.7	3.0	**0.4594**	0.015	3.2	ug/L	141	Standard
	Zn	66	4988.5	1.4	**3.7017**	0.077	2.1	ug/L	491	Standard
>	**Ge**	72	517603.4	0.3				ug/L	515087	Standard
	As	75	193.9	14.0	**0.2119**	0.024	11.1	ug/L	20	Standard
	Se	82	57.1	5.5	**0.3743**	0.026	6.9	ug/L	15	Standard
	Se-1	77	124.7	7.3	**0.9281**	0.125	13.4	ug/L	48	Standard
>	**Ga**	71	286.7	21.7				mg/L	90	Standard
	Rb	85	31280.6	0.6				ug/L	23	Standard
	Y	89	445698.9	0.7				ug/L	448510	Standard
>	**Rh**	103	16.7	45.8				ug/L	15	Standard
	Mo	98	229.5	3.6	**0.0662**	0.004	6.0	ug/L	11	Standard
	Ag	107	129.3	14.3	**0.0031**	0.003	91.8	ug/L	134	Standard
	Cd	111	79.6	15.3	**0.0346**	0.006	17.8	mg/L	7	Standard
	Cd	114	219.2	32.9	**0.0375**	0.014	38.3	ug/L	16	Standard
>	**In**	115	608521.7	1.3				ug/L	611117	Standard
	Sn	118	713.4	5.3	**0.0192**	0.007	34.1	ug/L	518	Standard
	Sb	123	215.5	21.1	**0.0330**	0.009	27.4	ug/L	127	Standard
	Ba	135	73971.5	1.1	**35.9586**	0.191	0.5	ug/L	45	Standard
	Ce	140	14728.8	3.9				ug/L	298	Standard
>	**Tb**	159	956871.9	1.4				ug/L	977942	Standard
	Ho	165	336.7	6.7				ug/L	12	Standard
	Tl	203	279.3	8.0	**0.0283**	0.003	10.3	ug/L	31	Standard
	Tl	205	295.0	11.9	**0.0379**	0.004	11.8	ug/L	20	Standard
	Pb	206	724.7	2.0	**0.0702**	0.002	2.4	ug/L	286	Standard
	Pb	207	605.7	5.7	**0.0660**	0.008	12.2	ug/L	257	Standard
	Pb	208	2584.1	3.2	**0.0763**	0.006	7.3	ug/L	956	Standard
	U	238	605.0	8.8	**0.0814**	0.008	10.1	ug/L	17	Standard
>	**Bi**	209	558048.4	1.1				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4734.1	2.7	**6.2297**	0.190	3.1	mg/L	32	Standard
K	39	378.3	13.8	**1.1326**	0.165	14.5	mg/L	30	Standard
Ca	43	55.0	18.2	**3.0097**	1.672	55.5	mg/L	48	Standard
Fe	54	512.5	3.2	**0.3260**	0.027	8.3	mg/L	159	Standard
Fe	57	288.3	19.9	**0.3473**	0.203	58.5	mg/L	195	Standard
> **Sc-1**	45	39648.5	2.7				mg/L	39543	Standard
Cl	35	35720.7	1.2				ug/L	27642	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	10650.4	4.7				ug/L	1647	Standard
P	31	21555.3	1.7				ug/L	15231	Standard
S	34	2313.5	4.4				ug/L	1845	Standard
Sr	88	90.0	14.7				ug/L	70	Standard
C	12	206.7	17.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	611.8	5.5				mg/L	12	Standard
Ho-1	165	336.7	6.7				mg/L	12	Standard
Er	166	310.0	11.6				mg/L	20	Standard
I	127	51010.9	6.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.877	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.489	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.575
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.174
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606079404
Sample Date/Time: Tuesday, June 28, 2016 20:39:24
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77373.8	1.6				ug/L	81760	Standard
	Be	9	33.3	45.8	**0.0257**	0.016	61.7	ug/L	17	Standard
	Al	27	6530294.9	1.7	**44.7685**	1.484	3.3	ug/L	1410	Standard
	Sc	45	40462.3	2.9				ug/L	39543	Standard
	Ti	47	1753.8	22.2	**6.9932**	1.564	22.4	ug/L	39	Standard
	V	51	4913.4	4.4	**0.5113**	0.026	5.2	ug/L	1415	Standard
	Cr	52	10044.0	5.5	**0.4080**	0.064	15.7	ug/L	6946	Standard
	Cr	53	2381.9	7.8	**2.4159**	0.236	9.8	ug/L	328	Standard
	Mn	55	8647420.3	0.2	**1354.8198**	14.536	1.1	ug/L	823	Standard
	Co	59	169235.6	0.5	**24.4356**	0.161	0.7	ug/L	252	Standard
	Ni	60	12361.0	0.9	**6.5619**	0.023	0.4	ug/L	192	Standard
	Cu	65	806.0	0.9	**0.3401**	0.009	2.5	ug/L	141	Standard
	Zn	66	7577.2	1.7	**6.1942**	0.082	1.3	ug/L	491	Standard
>	**Ge**	72	507111.0	1.2				ug/L	515087	Standard
	As	75	265.8	16.5	**0.2802**	0.037	13.2	ug/L	20	Standard
	Se	82	64.6	10.0	**0.4504**	0.053	11.9	ug/L	15	Standard
	Se-1	77	107.0	10.8	**0.7228**	0.140	19.4	ug/L	48	Standard
>	**Ga**	71	598.3	9.8				mg/L	90	Standard
	Rb	85	32554.9	1.8				ug/L	23	Standard
	Y	89	447221.5	3.0				ug/L	448510	Standard
>	**Rh**	103	20.0	50.0				ug/L	15	Standard
	Mo	98	99.0	16.4	**0.0174**	0.006	35.0	ug/L	11	Standard
	Ag	107	155.7	70.8	**0.0069**	0.016	237.9	ug/L	134	Standard
	Cd	111	107.8	50.7	**0.0474**	0.026	54.2	mg/L	7	Standard
	Cd	114	265.0	52.4	**0.0460**	0.027	58.4	ug/L	16	Standard
>	**In**	115	613219.8	0.3				ug/L	611117	Standard
	Sn	118	870.0	6.6	**0.0447**	0.010	22.4	ug/L	518	Standard
	Sb	123	214.6	24.5	**0.0325**	0.011	34.6	ug/L	127	Standard
	Ba	135	118463.0	0.8	**57.1584**	0.254	0.4	ug/L	45	Standard
	Ce	140	43559.2	3.6				ug/L	298	Standard
>	**Tb**	159	953430.3	1.1				ug/L	977942	Standard
	Ho	165	631.7	5.3				ug/L	12	Standard
	Tl	203	508.0	24.8	**0.0560**	0.015	27.1	ug/L	31	Standard
	Tl	205	431.7	17.4	**0.0571**	0.010	17.4	ug/L	20	Standard
	Pb	206	1022.0	12.5	**0.1271**	0.024	19.0	ug/L	286	Standard
	Pb	207	848.0	9.6	**0.1173**	0.017	14.2	ug/L	257	Standard
	Pb	208	3317.1	5.1	**0.1168**	0.009	7.7	ug/L	956	Standard
	U	238	210.3	17.6	**0.0266**	0.005	19.3	ug/L	17	Standard
>	**Bi**	209	552632.4	0.7				ug/L	557080	Standard

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Na	23	3.3	86.6	**20.7118**	17.947	86.6	mg/L	0	Standard
Mg	24	5764.4	1.5	**7.4467**	0.270	3.6	mg/L	32	Standard
K	39	563.3	10.2	**1.7170**	0.152	8.8	mg/L	30	Standard
Ca	43	75.0	17.6	**5.8105**	2.161	37.2	mg/L	48	Standard
Fe	54	999.2	5.7	**0.7481**	0.074	9.9	mg/L	159	Standard
Fe	57	490.0	3.5	**0.9936**	0.094	9.5	mg/L	195	Standard
Sc-1	45	40462.3	2.9				mg/L	39543	Standard
Cl	35	35374.6	1.6				ug/L	27642	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	12395.1	8.6				ug/L	1647	Standard
P	31	20597.3	1.4				ug/L	15231	Standard
S	34	2416.9	2.7				ug/L	1845	Standard
Sr	88	128.3	19.6				ug/L	70	Standard
C	12	236.7	2.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	1138.1	44.8				mg/L	12	Standard
Ho-1	165	631.7	5.3				mg/L	12	Standard
Er	166	596.7	6.3				mg/L	20	Standard
I	127	203787.2	10.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.635	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.452	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.344	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.202	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606079404
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Method 6020 - Summary Report

Sample ID: L1606082202
Sample Date/Time: Tuesday, June 28, 2016 20:42:36
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79831.5	1.5				ug/L	81760	Standard
	Be	9	18.3	63.0	**0.0091**	0.012	129.5	ug/L	17	Standard
	Al	27	3326140.8	2.2	**22.0876**	0.529	2.4	ug/L	1410	Standard
	Sc	45	40903.5	2.4				ug/L	39543	Standard
	Ti	47	258.3	7.7	**0.8950**	0.111	12.4	ug/L	39	Standard
	V	51	1427.8	26.8	**0.0038**	0.061	1620.7	ug/L	1415	Standard
	Cr	52	8606.8	1.2	**0.2025**	0.023	11.3	ug/L	6946	Standard
	Cr	53	7031.6	3.4	**7.8173**	0.215	2.7	ug/L	328	Standard
	Mn	55	245282.9	2.4	**38.3872**	0.371	1.0	ug/L	823	Standard
	Co	59	360.0	5.7	**0.0208**	0.001	6.7	ug/L	252	Standard
	Ni	60	675.7	7.1	**0.2607**	0.030	11.7	ug/L	192	Standard
	Cu	65	319.3	4.0	**0.0805**	0.011	13.1	ug/L	141	Standard
	Zn	66	1777.8	5.5	**0.8236**	0.060	7.3	ug/L	491	Standard
>	**Ge**	72	505790.0	3.0				ug/L	515087	Standard
	As	75	361.2	27.3	**0.3676**	0.091	24.7	ug/L	20	Standard
	Se	82	151.2	10.8	**1.2184**	0.141	11.6	ug/L	15	Standard
	Se-1	77	286.7	5.2	**3.1548**	0.107	3.4	ug/L	48	Standard
>	**Ga**	71	148.3	15.6				mg/L	90	Standard
	Rb	85	12600.2	4.8				ug/L	23	Standard
	Y	89	440998.1	2.4				ug/L	448510	Standard
>	**Rh**	103	48.3	6.0				ug/L	15	Standard
	Mo	98	329.5	7.2	**0.1031**	0.007	6.5	ug/L	11	Standard
	Ag	107	82.7	3.0	**-0.0039**	0.000	4.5	ug/L	134	Standard
	Cd	111	39.1	14.9	**0.0154**	0.002	16.0	mg/L	7	Standard
	Cd	114	93.5	42.9	**0.0131**	0.008	57.9	ug/L	16	Standard
>	**In**	115	609428.7	1.7				ug/L	611117	Standard
	Sn	118	616.7	6.1	**0.0027**	0.008	296.4	ug/L	518	Standard
	Sb	123	172.8	22.7	**0.0238**	0.008	32.2	ug/L	127	Standard
	Ba	135	142178.1	1.8	**69.0335**	0.137	0.2	ug/L	45	Standard
	Ce	140	378.3	16.5				ug/L	298	Standard
>	**Tb**	159	949587.4	3.3				ug/L	977942	Standard
	Ho	165	25.0	20.0				ug/L	12	Standard
	Tl	203	147.7	1.7	**0.0134**	0.001	4.1	ug/L	31	Standard
	Tl	205	166.7	29.1	**0.0214**	0.007	33.5	ug/L	20	Standard
	Pb	206	309.7	2.3	**-0.0043**	0.001	31.8	ug/L	286	Standard
	Pb	207	262.7	4.1	**-0.0022**	0.002	83.4	ug/L	257	Standard
	Pb	208	1080.7	3.0	**-0.0011**	0.001	98.3	ug/L	956	Standard
	U	238	30.0	28.9	**0.0014**	0.001	94.3	ug/L	17	Standard
>	**Bi**	209	537934.0	1.4				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.6139**	18.375	173.1	mg/L	0	Standard
Mg	24	32371.2	3.9	**41.6322**	2.388	5.7	mg/L	32	Standard
K	39	260.0	20.1	**0.7087**	0.176	24.8	mg/L	30	Standard
Ca	43	58.3	19.8	**3.1978**	1.533	48.0	mg/L	48	Standard
Fe	54	1294.3	5.1	**0.9965**	0.083	8.3	mg/L	159	Standard
Fe	57	445.0	8.5	**0.8270**	0.105	12.6	mg/L	195	Standard
> **Sc-1**	45	40903.5	2.4				mg/L	39543	Standard
Cl	35	36431.1	1.6				ug/L	27642	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	35805.7	4.9				ug/L	1647	Standard
P	31	25079.1	3.1				ug/L	15231	Standard
S	34	2408.5	3.8				ug/L	1845	Standard
Sr	88	206.7	19.6				ug/L	70	Standard
C	12	176.7	45.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	28.1	3.0				mg/L	12	Standard
Ho-1	165	25.0	20.0				mg/L	12	Standard
Er	166	40.0	43.3				mg/L	20	Standard
I	127	201681.5	7.3				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		97.641	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.195	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.724
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.563
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606082203
Sample Date/Time: Tuesday, June 28, 2016 20:45:47
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90191.0	1.0				ug/L	81760	Standard
	Be	9	23.3	68.9	**0.0116**	0.015	127.2	ug/L	17	Standard
	Al	27	11365406.0	0.9	**66.8332**	1.185	1.8	ug/L	1410	Standard
	Sc	45	43861.8	3.4				ug/L	39543	Standard
	Ti	47	293.7	8.7	**0.9575**	0.101	10.6	ug/L	39	Standard
	V	51	2061.8	11.0	**0.0753**	0.031	41.0	ug/L	1415	Standard
	Cr	52	35560.4	1.1	**3.7982**	0.065	1.7	ug/L	6946	Standard
	Cr	53	13979.8	6.4	**14.7966**	1.011	6.8	ug/L	328	Standard
	Mn	55	581441.7	2.8	**85.0974**	2.668	3.1	ug/L	823	Standard
	Co	59	11104.7	2.7	**1.4708**	0.043	3.0	ug/L	252	Standard
	Ni	60	4756.1	1.3	**2.2951**	0.027	1.2	ug/L	192	Standard
	Cu	65	585.0	3.7	**0.2018**	0.012	5.9	ug/L	141	Standard
	Zn	66	4219.9	2.2	**2.8317**	0.093	3.3	ug/L	491	Standard
>	**Ge**	72	541965.4	0.4				ug/L	515087	Standard
	As	75	1879.3	4.8	**1.6291**	0.081	5.0	ug/L	20	Standard
	Se	82	403.3	6.2	**3.2102**	0.210	6.5	ug/L	15	Standard
	Se-1	77	499.0	5.4	**5.5758**	0.322	5.8	ug/L	48	Standard
>	**Ga**	71	170.0	12.8				mg/L	90	Standard
	Rb	85	898318.0	1.7				ug/L	23	Standard
	Y	89	454033.5	1.6				ug/L	448510	Standard
>	**Rh**	103	158.3	15.6				ug/L	15	Standard
	Mo	98	390.2	3.3	**0.1238**	0.006	4.6	ug/L	11	Standard
	Ag	107	91.7	18.8	**-0.0027**	0.003	94.7	ug/L	134	Standard
	Cd	111	57.3	18.5	**0.0236**	0.005	19.9	mg/L	7	Standard
	Cd	114	162.3	23.5	**0.0261**	0.008	29.2	ug/L	16	Standard
>	**In**	115	617377.1	1.4				ug/L	611117	Standard
	Sn	118	971.7	10.6	**0.0609**	0.019	30.8	ug/L	518	Standard
	Sb	123	275.2	12.0	**0.0450**	0.008	16.8	ug/L	127	Standard
	Ba	135	754414.8	1.4	**361.7131**	4.988	1.4	ug/L	45	Standard
	Ce	140	4038.9	3.4				ug/L	298	Standard
>	**Tb**	159	972701.2	1.2				ug/L	977942	Standard
	Ho	165	60.0					ug/L	12	Standard
	Tl	203	156.0	13.2	**0.0138**	0.002	16.1	ug/L	31	Standard
	Tl	205	116.7	13.1	**0.0137**	0.002	15.9	ug/L	20	Standard
	Pb	206	526.0	2.4	**0.0341**	0.004	10.3	ug/L	286	Standard
	Pb	207	425.7	3.6	**0.0296**	0.004	13.9	ug/L	257	Standard
	Pb	208	1793.4	1.5	**0.0349**	0.002	5.6	ug/L	956	Standard
	U	238	113.7	2.7	**0.0130**	0.001	4.0	ug/L	17	Standard
>	**Bi**	209	555248.6	1.3				ug/L	557080	Standard

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Na	23	1.7	173.2	**9.3851**	16.247	173.1	mg/L	0	Standard
Mg	24	35620.2	1.5	**42.7261**	1.684	3.9	mg/L	32	Standard
K	39	6901.6	2.1	**20.9070**	1.156	5.5	mg/L	30	Standard
Ca	43	215.0	12.3	**24.1234**	3.813	15.8	mg/L	48	Standard
Fe	54	3077.7	3.9	**2.3743**	0.067	2.8	mg/L	159	Standard
Fe	57	1036.7	11.9	**2.5246**	0.275	10.9	mg/L	195	Standard
Sc-1	45	43861.8	3.4				mg/L	39543	Standard
Cl	35	37418.9	4.6				ug/L	27642	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	90214.6	3.4				ug/L	1647	Standard
P	31	25815.3	2.7				ug/L	15231	Standard
S	34	2615.2	3.8				ug/L	1845	Standard
Sr	88	703.3	5.7				ug/L	70	Standard
C	12	206.7	5.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	96.0	27.7				mg/L	12	Standard
Ho-1	165	60.0					mg/L	12	Standard
Er	166	83.3	6.9				mg/L	20	Standard
I	127	135411.8	5.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.312	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.218	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.024	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.671	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606082302
Sample Date/Time: Tuesday, June 28, 2016 20:48:59
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	108277.4	2.9				ug/L	81760	Standard
	Be	9	45.0	44.4	**0.0244**	0.015	61.4	ug/L	17	Standard
	Al	27	155300534.6	2.6	**761.2127**	30.613	4.0	ug/L	1410	Standard
	Sc	45	45277.6	3.5				ug/L	39543	Standard
	Ti	47	403.3	5.8	**1.4273**	0.064	4.5	ug/L	39	Standard
	V	51	3112.6	16.0	**0.2334**	0.070	30.2	ug/L	1415	Standard
	Cr	52	14043.2	7.2	**0.9232**	0.105	11.4	ug/L	6946	Standard
	Cr	53	48930.1	15.5	**54.3111**	7.500	13.8	ug/L	328	Standard
	Mn	55	2748271.5	3.9	**416.1426**	7.847	1.9	ug/L	823	Standard
	Co	59	187853.6	1.8	**26.2312**	0.060	0.2	ug/L	252	Standard
	Ni	60	24191.7	7.1	**12.5042**	0.665	5.3	ug/L	192	Standard
	Cu	65	2608.9	7.7	**1.2568**	0.078	6.2	ug/L	141	Standard
	Zn	66	8434.7	3.5	**6.7297**	0.123	1.8	ug/L	491	Standard
>	**Ge**	72	524401.5	2.0				ug/L	515087	Standard
	As	75	6667.1	7.6	**5.8608**	0.340	5.8	ug/L	20	Standard
	Se	82	2463.0	3.4	**20.8902**	0.307	1.5	ug/L	15	Standard
	Se-1	77	5803.1	9.1	**74.8730**	5.475	7.3	ug/L	48	Standard
>	**Ga**	71	283.3	11.5				mg/L	90	Standard
	Rb	85	14086.5	1.8				ug/L	23	Standard
	Y	89	450377.0	4.3				ug/L	448510	Standard
>	**Rh**	103	1153.4	2.0				ug/L	15	Standard
	Mo	98	228.3	2.1	**0.0678**	0.002	2.3	ug/L	11	Standard
	Ag	107	100.7	7.3	**-0.0008**	0.001	114.3	ug/L	134	Standard
	Cd	111	85.9	11.5	**0.0385**	0.005	14.0	mg/L	7	Standard
	Cd	114	207.5	20.1	**0.0360**	0.007	20.1	ug/L	16	Standard
>	**In**	115	594734.3	2.8				ug/L	611117	Standard
	Sn	118	838.4	7.1	**0.0436**	0.007	15.0	ug/L	518	Standard
	Sb	123	341.7	13.9	**0.0614**	0.008	13.7	ug/L	127	Standard
	Ba	135	7531184.6	2.9	**3748.3398**	4.365	0.1	ug/L	45	Standard
	Ce	140	2656.9	7.0				ug/L	298	Standard
>	**Tb**	159	994456.1	1.2				ug/L	977942	Standard
	Ho	165	153.3	5.0				ug/L	12	Standard
	Tl	203	149.0	11.0	**0.0143**	0.002	16.0	ug/L	31	Standard
	Tl	205	131.7	44.0	**0.0171**	0.008	49.5	ug/L	20	Standard
	Pb	206	558.3	2.7	**0.0476**	0.002	3.6	ug/L	286	Standard
	Pb	207	480.7	4.4	**0.0481**	0.004	8.4	ug/L	257	Standard
	Pb	208	1800.4	1.7	**0.0423**	0.001	2.5	ug/L	956	Standard
	U	238	2848.6	3.5	**0.4250**	0.011	2.7	ug/L	17	Standard
>	**Bi**	209	517504.0	1.7				ug/L	557080	Standard

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Na	23	15.0	33.3	**83.8040**	26.058	31.1	mg/L	0	Standard
Mg	24	304856.8	3.2	**354.4066**	5.599	1.6	mg/L	32	Standard
K	39	523.3	14.8	**1.3989**	0.174	12.4	mg/L	30	Standard
Ca	43	1175.0	5.2	**150.6324**	9.407	6.2	mg/L	48	Standard
Fe	54	2706.9	4.6	**2.0025**	0.071	3.5	mg/L	159	Standard
Fe	57	1593.4	6.7	**4.0698**	0.154	3.8	mg/L	195	Standard
> **Sc-1**	45	45277.6	3.5				mg/L	39543	Standard
Cl	35	40644.4	1.3				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	610984.3	3.4				ug/L	1647	Standard
P	31	30180.0	2.7				ug/L	15231	Standard
S	34	2781.9	5.2				ug/L	1845	Standard
Sr	88	4374.0	2.8				ug/L	70	Standard
C	12	443.3	22.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	166.1	26.6				mg/L	12	Standard
Ho-1	165	153.3	5.0				mg/L	12	Standard
Er	166	220.0	28.4				mg/L	20	Standard
I	127	589063.3	13.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.433	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.808	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.319
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	92.896
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606082303
Sample Date/Time: Tuesday, June 28, 2016 20:52:10
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	93244.4	1.1				ug/L	81760	Standard
	Be	9	28.3	10.2	**0.0153**	0.003	16.9	ug/L	17	Standard
	Al	27	94744933.1	0.6	**538.9798**	6.462	1.2	ug/L	1410	Standard
	Sc	45	47113.2	4.5				ug/L	39543	Standard
	Ti	47	553.7	11.7	**2.0175**	0.206	10.2	ug/L	39	Standard
	V	51	4328.2	13.5	**0.4057**	0.092	22.6	ug/L	1415	Standard
	Cr	52	14490.9	2.4	**0.9864**	0.018	1.8	ug/L	6946	Standard
	Cr	53	43709.7	3.6	**48.5418**	1.565	3.2	ug/L	328	Standard
	Mn	55	8319616.3	2.0	**1259.6840**	13.722	1.1	ug/L	823	Standard
	Co	59	19767.9	2.2	**2.7309**	0.056	2.1	ug/L	252	Standard
	Ni	60	10810.2	4.4	**5.5279**	0.127	2.3	ug/L	192	Standard
	Cu	65	2456.2	2.4	**1.1782**	0.021	1.8	ug/L	141	Standard
	Zn	66	5426.0	2.4	**4.0320**	0.062	1.5	ug/L	491	Standard
>	**Ge**	72	524719.7	2.2				ug/L	515087	Standard
	As	75	3752.6	7.8	**3.3171**	0.255	7.7	ug/L	20	Standard
	Se	82	1738.6	3.2	**14.7077**	0.502	3.4	ug/L	15	Standard
	Se-1	77	4761.1	4.1	**61.3297**	2.628	4.3	ug/L	48	Standard
>	**Ga**	71	408.3	8.7				mg/L	90	Standard
	Rb	85	9714.8	3.7				ug/L	23	Standard
	Y	89	460620.0	3.3				ug/L	448510	Standard
>	**Rh**	103	891.7	10.4				ug/L	15	Standard
	Mo	98	389.5	4.4	**0.1260**	0.003	2.4	ug/L	11	Standard
	Ag	107	110.7	7.4	**0.0004**	0.001	272.1	ug/L	134	Standard
	Cd	111	332.6	3.0	**0.1538**	0.007	4.3	mg/L	7	Standard
	Cd	114	853.2	3.8	**0.1605**	0.008	5.1	ug/L	16	Standard
>	**In**	115	607039.3	2.6				ug/L	611117	Standard
	Sn	118	751.7	13.7	**0.0260**	0.016	61.8	ug/L	518	Standard
	Sb	123	376.4	10.5	**0.0674**	0.007	10.4	ug/L	127	Standard
	Ba	135	4357695.0	1.8	**2125.2206**	17.296	0.8	ug/L	45	Standard
	Ce	140	11329.2	2.7				ug/L	298	Standard
>	**Tb**	159	992575.1	2.0				ug/L	977942	Standard
	Ho	165	278.3	9.0				ug/L	12	Standard
	Tl	203	135.0	5.8	**0.0123**	0.001	6.8	ug/L	31	Standard
	Tl	205	110.0	27.6	**0.0138**	0.004	31.4	ug/L	20	Standard
	Pb	206	907.4	3.0	**0.1159**	0.005	4.7	ug/L	286	Standard
	Pb	207	750.0	6.5	**0.1064**	0.009	8.4	ug/L	257	Standard
	Pb	208	3103.1	4.1	**0.1154**	0.005	4.4	ug/L	956	Standard
	U	238	44356.2	2.2	**6.6145**	0.107	1.6	ug/L	17	Standard
>	**Bi**	209	521151.7	1.4				ug/L	557080	Standard

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Na	23	10.0	86.6	**54.6526**	47.439	86.8	mg/L	0	Standard
Mg	24	287663.3	3.0	**321.5385**	8.440	2.6	mg/L	32	Standard
K	39	226.7	14.2	**0.5032**	0.104	20.6	mg/L	30	Standard
Ca	43	1070.0	2.9	**131.3674**	10.299	7.8	mg/L	48	Standard
Fe	54	476.6	5.9	**0.2261**	0.038	16.9	mg/L	159	Standard
Fe	57	1008.4	3.2	**2.2367**	0.165	7.4	mg/L	195	Standard
> **Sc-1**	45	47113.2	4.5				mg/L	39543	Standard
Cl	35	40790.8	0.7				ug/L	27642	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	436089.5	3.9				ug/L	1647	Standard
P	31	27271.2	4.0				ug/L	15231	Standard
S	34	2836.9	4.2				ug/L	1845	Standard
Sr	88	2816.9	2.8				ug/L	70	Standard
C	12	376.7	12.5				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	0	Standard
Dy	164	345.0	17.3				mg/L	12	Standard
Ho-1	165	278.3	9.0				mg/L	12	Standard
Er	166	243.3	18.5				mg/L	20	Standard
I	127	900084.0	10.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.046	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.870	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.333
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.551
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606082304
Sample Date/Time: Tuesday, June 28, 2016 20:55:22
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74476.1	3.3				ug/L	81760	Standard
	Be	9	15.0	115.5	**0.0072**	0.020	276.2	ug/L	17	Standard
	Al	27	20080706.8	2.9	**143.0136**	1.080	0.8	ug/L	1410	Standard
	Sc	45	42894.0	3.7				ug/L	39543	Standard
	Ti	47	325.7	10.6	**1.1562**	0.137	11.8	ug/L	39	Standard
	V	51	1429.9	29.9	**0.0011**	0.063	5474.1	ug/L	1415	Standard
	Cr	52	7720.6	1.3	**0.0621**	0.011	18.4	ug/L	6946	Standard
	Cr	53	9723.1	6.1	**10.8363**	0.676	6.2	ug/L	328	Standard
	Mn	55	4663144.1	0.8	**725.7255**	4.778	0.7	ug/L	823	Standard
	Co	59	1828.4	1.1	**0.2313**	0.003	1.3	ug/L	252	Standard
	Ni	60	1442.4	3.3	**0.6679**	0.026	3.9	ug/L	192	Standard
	Cu	65	719.0	5.1	**0.2910**	0.019	6.5	ug/L	141	Standard
	Zn	66	7525.5	1.3	**6.1013**	0.101	1.7	ug/L	491	Standard
>	**Ge**	72	510419.4	0.4				ug/L	515087	Standard
	As	75	3004.5	4.7	**2.7368**	0.118	4.3	ug/L	20	Standard
	Se	82	527.6	3.3	**4.5049**	0.149	3.3	ug/L	15	Standard
	Se-1	77	877.0	5.5	**11.0280**	0.616	5.6	ug/L	48	Standard
>	**Ga**	71	135.0	44.9				mg/L	90	Standard
	Rb	85	21460.2	1.4				ug/L	23	Standard
	Y	89	449502.6	1.2				ug/L	448510	Standard
>	**Rh**	103	240.0	18.2				ug/L	15	Standard
	Mo	98	71.6	8.8	**0.0080**	0.002	28.5	ug/L	11	Standard
	Ag	107	77.3	9.2	**-0.0044**	0.001	24.3	ug/L	134	Standard
	Cd	111	102.2	7.3	**0.0460**	0.004	8.2	mg/L	7	Standard
	Cd	114	276.1	15.2	**0.0494**	0.008	16.6	ug/L	16	Standard
>	**In**	115	597587.3	0.9				ug/L	611117	Standard
	Sn	118	641.7	5.5	**0.0090**	0.005	57.4	ug/L	518	Standard
	Sb	123	117.8	11.7	**0.0127**	0.003	24.6	ug/L	127	Standard
	Ba	135	1219381.1	1.8	**603.9591**	5.851	1.0	ug/L	45	Standard
	Ce	140	360.0	14.7				ug/L	298	Standard
>	**Tb**	159	948906.4	1.3				ug/L	977942	Standard
	Ho	165	16.7	17.3				ug/L	12	Standard
	Tl	203	82.3	3.1	**0.0057**	0.000	3.2	ug/L	31	Standard
	Tl	205	61.7	24.8	**0.0067**	0.002	33.3	ug/L	20	Standard
	Pb	206	418.0	3.1	**0.0190**	0.003	17.6	ug/L	286	Standard
	Pb	207	378.0	5.3	**0.0247**	0.003	13.2	ug/L	257	Standard
	Pb	208	1532.7	1.1	**0.0263**	0.002	6.1	ug/L	956	Standard
	U	238	34.3	24.8	**0.0022**	0.001	61.6	ug/L	17	Standard
>	**Bi**	209	521633.3	1.5				ug/L	557080	Standard

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Na	23	3.3	173.2	**19.9869**	34.610	173.2	mg/L	0	Standard
Mg	24	52154.6	2.1	**63.9697**	1.039	1.6	mg/L	32	Standard
K	39	548.3	16.2	**1.5625**	0.223	14.3	mg/L	30	Standard
Ca	43	246.7	5.1	**29.2175**	2.054	7.0	mg/L	48	Standard
Fe	54	45285.0	1.2	**37.6782**	1.468	3.9	mg/L	159	Standard
Fe	57	11722.9	3.7	**35.8594**	0.146	0.4	mg/L	195	Standard
> **Sc-1**	45	42894.0	3.7				mg/L	39543	Standard
Cl	35	35015.1	2.5				ug/L	27642	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	123689.6	1.5				ug/L	1647	Standard
P	31	28713.9	1.8				ug/L	15231	Standard
S	34	2633.6	10.4				ug/L	1845	Standard
Sr	88	703.3	3.4				ug/L	70	Standard
C	12	210.0	12.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	32.1	16.4				mg/L	12	Standard
Ho-1	165	16.7	17.3				mg/L	12	Standard
Er	166	26.7	57.3				mg/L	20	Standard
I	127	194264.8	2.9				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		91.091	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.094	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.786
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.637
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606084302
Sample Date/Time: Tuesday, June 28, 2016 20:58:33
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77271.6	2.1				ug/L	81760	Standard
	Be	9	30.0	44.1	**0.0221**	0.014	61.6	ug/L	17	Standard
	Al	27	13023291.9	1.0	**89.3957**	1.109	1.2	ug/L	1410	Standard
	Sc	45	41354.7	3.2				ug/L	39543	Standard
	Ti	47	172.3	20.3	**0.4975**	0.149	29.9	ug/L	39	Standard
	V	51	1869.8	10.2	**0.0496**	0.023	45.4	ug/L	1415	Standard
	Cr	52	9029.4	5.3	**0.1789**	0.049	27.5	ug/L	6946	Standard
	Cr	53	1933.5	16.3	**1.7631**	0.385	21.8	ug/L	328	Standard
	Mn	55	2010517.0	2.2	**295.6150**	12.044	4.1	ug/L	823	Standard
	Co	59	28381.9	0.9	**3.8204**	0.101	2.6	ug/L	252	Standard
	Ni	60	51973.3	1.5	**26.2049**	0.504	1.9	ug/L	192	Standard
	Cu	65	2375.5	2.3	**1.1012**	0.038	3.5	ug/L	141	Standard
	Zn	66	19572.0	0.3	**16.1981**	0.371	2.3	ug/L	491	Standard
>	**Ge**	72	540385.6	2.0				ug/L	515087	Standard
	As	75	349.5	8.0	**0.3364**	0.018	5.2	ug/L	20	Standard
	Se	82	126.5	4.8	**0.9278**	0.047	5.1	ug/L	15	Standard
	Se-1	77	166.7	13.3	**1.3933**	0.317	22.7	ug/L	48	Standard
>	**Ga**	71	106.7	22.2				mg/L	90	Standard
	Rb	85	40220.0	0.6				ug/L	23	Standard
	Y	89	449597.2	1.4				ug/L	448510	Standard
>	**Rh**	103	146.7	12.0				ug/L	15	Standard
	Mo	98	594.8	3.0	**0.2021**	0.008	3.8	ug/L	11	Standard
	Ag	107	92.7	31.3	**-0.0024**	0.004	183.9	ug/L	134	Standard
	Cd	111	161.3	7.4	**0.0729**	0.005	7.5	mg/L	7	Standard
	Cd	114	441.9	5.3	**0.0806**	0.004	5.2	ug/L	16	Standard
>	**In**	115	608035.7	0.5				ug/L	611117	Standard
	Sn	118	676.7	9.6	**0.0131**	0.012	88.5	ug/L	518	Standard
	Sb	123	188.3	22.2	**0.0273**	0.009	32.4	ug/L	127	Standard
	Ba	135	24154.9	0.6	**11.7345**	0.088	0.8	ug/L	45	Standard
	Ce	140	2120.1	7.8				ug/L	298	Standard
>	**Tb**	159	946861.5	2.0				ug/L	977942	Standard
	Ho	165	63.3	29.9				ug/L	12	Standard
	Tl	203	1826.8	0.7	**0.2203**	0.002	1.1	ug/L	31	Standard
	Tl	205	1685.1	3.3	**0.2367**	0.005	2.2	ug/L	20	Standard
	Pb	206	439.0	7.7	**0.0207**	0.006	26.8	ug/L	286	Standard
	Pb	207	381.0	5.7	**0.0231**	0.004	17.6	ug/L	257	Standard
	Pb	208	1509.0	1.3	**0.0226**	0.000	0.8	ug/L	956	Standard
	U	238	1189.4	4.4	**0.1693**	0.007	4.4	ug/L	17	Standard
>	**Bi**	209	536700.0	1.2				ug/L	557080	Standard

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Na	23	5.0	100.0	**30.9676**	31.632	102.1	mg/L	0	Standard
Mg	24	21311.6	1.7	**27.0900**	1.076	4.0	mg/L	32	Standard
K	39	978.4	4.6	**3.0186**	0.057	1.9	mg/L	30	Standard
Ca	43	386.7	7.5	**50.8608**	4.765	9.4	mg/L	48	Standard
Fe	54	204.3	23.4	**0.0400**	0.042	106.1	mg/L	159	Standard
Fe	57	446.7	11.3	**0.8216**	0.208	25.3	mg/L	195	Standard
> **Sc-1**	45	41354.7	3.2				mg/L	39543	Standard
Cl	35	48993.8	3.0				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	7075.0	5.6				ug/L	1647	Standard
P	31	18566.4	1.9				ug/L	15231	Standard
S	34	2263.5	0.1				ug/L	1845	Standard
Sr	88	423.3	3.6				ug/L	70	Standard
C	12	123.3	40.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	104.0	29.5				mg/L	12	Standard
Ho-1	165	63.3	29.9				mg/L	12	Standard
Er	166	56.7	27.0				mg/L	20	Standard
I	127	48509.5	7.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.510	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.912	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.496
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.342
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 21:01:46
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77410.6	1.1				ug/L	81760	Standard
	Be	9	48694.9	4.0	**51.7876**	2.330	4.5	ug/L	17	Standard
	Al	27	7498260.2	2.7	**51.3685**	1.536	3.0	ug/L	1410	Standard
	Sc	45	39994.4	1.6				ug/L	39543	Standard
	Ti	47	24919.8	1.5	**100.1235**	0.955	1.0	ug/L	39	Standard
	V	51	352037.7	1.5	**50.4818**	0.410	0.8	ug/L	1415	Standard
	Cr	52	359056.3	3.2	**50.5608**	1.258	2.5	ug/L	6946	Standard
	Cr	53	45264.2	3.2	**51.2590**	1.232	2.4	ug/L	328	Standard
	Mn	55	341978.2	1.6	**52.6439**	0.559	1.1	ug/L	823	Standard
	Co	59	358967.4	0.9	**51.1022**	0.460	0.9	ug/L	252	Standard
	Ni	60	95904.1	3.3	**50.8527**	1.284	2.5	ug/L	192	Standard
	Cu	65	96846.7	3.1	**50.9133**	1.132	2.2	ug/L	141	Standard
	Zn	66	56366.4	2.4	**50.6359**	0.804	1.6	ug/L	491	Standard
>	Ge	72	514670.0	0.9				ug/L	515087	Standard
	As	75	56653.0	2.7	**50.4646**	0.946	1.9	ug/L	20	Standard
	Se	82	5738.6	2.7	**49.7611**	0.957	1.9	ug/L	15	Standard
	Se-1	77	3922.2	4.5	**51.3791**	2.097	4.1	ug/L	48	Standard
>	Ga	71	78.3	3.7				mg/L	90	Standard
	Rb	85	913.4	7.9				ug/L	23	Standard
	Y	89	449629.1	4.0				ug/L	448510	Standard
>	Rh	103	26.7	60.3				ug/L	15	Standard
	Mo	98	269192.0	0.5	**99.9193**	1.745	1.7	ug/L	11	Standard
	Ag	107	324356.7	1.6	**48.4664**	0.560	1.2	ug/L	134	Standard
	Cd	111	104800.0	2.8	**49.1868**	1.080	2.2	mg/L	7	Standard
	Cd	114	253765.7	3.7	**48.9997**	1.658	3.4	ug/L	16	Standard
>	In	115	609141.6	2.1				ug/L	611117	Standard
	Sn	118	292076.9	3.3	**49.4485**	0.824	1.7	ug/L	518	Standard
	Sb	123	232366.9	1.6	**49.3998**	0.394	0.8	ug/L	127	Standard
	Ba	135	100964.1	2.8	**49.0412**	1.097	2.2	ug/L	45	Standard
	Ce	140	81.7	25.5				ug/L	298	Standard
>	Tb	159	939122.1	2.3				ug/L	977942	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	411985.1	1.5	**50.6376**	0.301	0.6	ug/L	31	Standard
	Tl	205	371737.4	2.9	**52.6085**	0.609	1.2	ug/L	20	Standard
	Pb	206	267607.7	0.9	**51.2233**	0.555	1.1	ug/L	286	Standard
	Pb	207	243032.3	0.6	**51.5800**	0.780	1.5	ug/L	257	Standard
	Pb	208	974203.2	1.1	**53.4395**	0.502	0.9	ug/L	956	Standard
	U	238	359093.2	2.3	**51.8989**	0.179	0.3	ug/L	17	Standard
>	Bi	209	537912.3	2.0				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	3960.5	5.8	**5.1535**	0.239	4.6	mg/L	32	Standard
K	39	1450.1	5.1	**4.7011**	0.180	3.8	mg/L	30	Standard
Ca	43	56.7	22.2	**3.1676**	1.896	59.9	mg/L	48	Standard
Fe	54	5602.2	1.3	**4.8773**	0.145	3.0	mg/L	159	Standard
Fe	57	1671.8	3.1	**4.9554**	0.149	3.0	mg/L	195	Standard
Sc-1	45	39994.4	1.6				mg/L	39543	Standard
Cl	35	34924.3	5.3				ug/L	27642	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	3010.3	3.5				ug/L	1647	Standard
P	31	18342.8	3.8				ug/L	15231	Standard
S	34	2438.5	4.7				ug/L	1845	Standard
Sr	88	55.0	47.2				ug/L	70	Standard
C	12	96.7	23.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	23.2	100.3				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	3.3	173.2				mg/L	20	Standard
I	127	10668.8	10.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	103.575		
Al	27	102.737		
Sc	45			
Ti	47	100.123		
V	51	100.964		
Cr	52	101.122		
Cr	53			
Mn	55	105.288		
Co	59	102.204		
Ni	60	101.705		
Cu	65	101.827		
Zn	66	101.272		
> Ge	72		99.919	
As	75	100.929		
Se	82	99.522		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	99.919		
Ag	107	96.933		
Cd	111	98.374		
Cd	114			
> In	115			99.677
Sn	118	98.897		
Sb	123	98.800		
Ba	135	98.082		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.275		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.879		
U	238	103.798		
> Bi	209			96.559
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 21:04:57
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76325.1	1.4				ug/L	81760	Standard
	Be	9	36.7	47.9	**0.0297**	0.018	61.9	ug/L	17	Standard
	Al	27	7433.8	52.1	**0.0370**	0.026	70.5	ug/L	1410	Standard
	Sc	45	39083.7	0.3				ug/L	39543	Standard
	Ti	47	29.0	21.5	**-0.0509**	0.024	47.8	ug/L	39	Standard
	V	51	1130.0	4.7	**-0.0473**	0.008	16.3	ug/L	1415	Standard
	Cr	52	6124.9	1.6	**-0.1950**	0.012	6.3	ug/L	6946	Standard
	Cr	53	786.7	2.0	**0.5367**	0.019	3.5	ug/L	328	Standard
	Mn	55	1151.0	22.6	**0.0255**	0.040	155.2	ug/L	823	Standard
	Co	59	234.7	8.8	**0.0014**	0.003	211.9	ug/L	252	Standard
	Ni	60	158.3	5.7	**-0.0226**	0.005	21.5	ug/L	192	Standard
	Cu	65	164.3	12.7	**-0.0061**	0.011	179.5	ug/L	141	Standard
	Zn	66	470.3	2.4	**-0.4072**	0.010	2.5	ug/L	491	Standard
>	**Ge**	72	525676.3	0.2				ug/L	515087	Standard
	As	75	-22.3	21.6	**0.0209**	0.004	19.9	ug/L	20	Standard
	Se	82	22.8	31.8	**0.0747**	0.062	82.4	ug/L	15	Standard
	Se-1	77	66.0	18.9	**0.1398**	0.164	117.4	ug/L	48	Standard
>	**Ga**	71	56.7	10.2				mg/L	90	Standard
	Rb	85	51.7	11.2				ug/L	23	Standard
	Y	89	445574.4	3.2				ug/L	448510	Standard
>	**Rh**	103	28.3	36.7				ug/L	15	Standard
	Mo	98	286.8	35.9	**0.0884**	0.038	42.5	ug/L	11	Standard
	Ag	107	119.3	19.2	**0.0018**	0.003	188.2	ug/L	134	Standard
	Cd	111	12.1	17.7	**0.0028**	0.001	35.0	mg/L	7	Standard
	Cd	114	42.6	30.2	**0.0034**	0.003	75.4	ug/L	16	Standard
>	**In**	115	602370.1	0.9				ug/L	611117	Standard
	Sn	118	773.4	17.1	**0.0309**	0.024	76.6	ug/L	518	Standard
	Sb	123	433.3	25.4	**0.0805**	0.024	30.2	ug/L	127	Standard
	Ba	135	290.7	43.2	**0.1174**	0.060	51.4	ug/L	45	Standard
	Ce	140	18.3	56.8				ug/L	298	Standard
>	**Tb**	159	950012.1	0.7				ug/L	977942	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	71.7	40.5	**0.0037**	0.004	95.1	ug/L	31	Standard
	Tl	205	85.0	56.1	**0.0094**	0.007	71.5	ug/L	20	Standard
	Pb	206	271.0	4.2	**-0.0136**	0.003	20.1	ug/L	286	Standard
	Pb	207	260.3	8.3	**-0.0047**	0.005	107.3	ug/L	257	Standard
	Pb	208	1029.7	7.7	**-0.0060**	0.005	82.3	ug/L	956	Standard
	U	238	47.7	42.8	**0.0037**	0.003	79.6	ug/L	17	Standard
>	**Bi**	209	558519.2	1.3				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	48.3	11.9	**0.0079**	0.008	95.2	mg/L	32	Standard
K	39	18.3	56.8	**-0.0788**	0.036	45.2	mg/L	30	Standard
Ca	43	31.7	24.1	**-0.4803**	1.172	244.0	mg/L	48	Standard
Fe	54	125.9	16.2	**-0.0218**	0.019	87.4	mg/L	159	Standard
Fe	57	238.3	12.6	**0.1894**	0.102	54.0	mg/L	195	Standard
> **Sc-1**	45	39083.7	0.3				mg/L	39543	Standard
Cl	35	33723.5	2.9				ug/L	27642	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	2386.9	5.5				ug/L	1647	Standard
P	31	18112.5	4.7				ug/L	15231	Standard
S	34	2391.9	4.0				ug/L	1845	Standard
Sr	88	68.3	29.6				ug/L	70	Standard
C	12	100.0	36.1				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	18.9	54.4				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	23.3	65.5				mg/L	20	Standard
I	127	7351.8	8.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.056	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.569	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.258	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606141001
Sample Date/Time: Tuesday, June 28, 2016 21:08:10
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79030.6	2.3				ug/L	81760	Standard
	Be	9	11.7	89.2	**0.0026**	0.011	425.8	ug/L	17	Standard
	Al	27	44776805.2	0.7	**300.5948**	6.187	2.1	ug/L	1410	Standard
	Sc	45	43343.6	2.1				ug/L	39543	Standard
	Ti	47	192.3	8.0	**0.6107**	0.056	9.2	ug/L	39	Standard
	V	51	4772.2	4.6	**0.4823**	0.029	6.1	ug/L	1415	Standard
	Cr	52	9840.2	0.5	**0.3614**	0.015	4.2	ug/L	6946	Standard
	Cr	53	1230.1	5.5	**1.0645**	0.072	6.7	ug/L	328	Standard
	Mn	55	4769620.0	0.5	**738.1503**	9.110	1.2	ug/L	823	Standard
	Co	59	9207.1	1.6	**1.2837**	0.028	2.2	ug/L	252	Standard
	Ni	60	5238.9	2.1	**2.6865**	0.062	2.3	ug/L	192	Standard
	Cu	65	718.7	4.1	**0.2886**	0.013	4.4	ug/L	141	Standard
	Zn	66	2924.3	0.9	**1.8496**	0.029	1.6	ug/L	491	Standard
>	**Ge**	72	513321.3	0.8				ug/L	515087	Standard
	As	75	4203.4	1.1	**3.7919**	0.050	1.3	ug/L	20	Standard
	Se	82	127.5	8.3	**0.9927**	0.098	9.9	ug/L	15	Standard
	Se-1	77	88.3	31.6	**0.4581**	0.375	81.9	ug/L	48	Standard
>	**Ga**	71	145.0	24.1				mg/L	90	Standard
	Rb	85	2930.3	3.3				ug/L	23	Standard
	Y	89	443412.2	1.4				ug/L	448510	Standard
>	**Rh**	103	140.0	15.6				ug/L	15	Standard
	Mo	98	1185.9	4.8	**0.4170**	0.022	5.4	ug/L	11	Standard
	Ag	107	98.0	15.7	**-0.0017**	0.002	128.2	ug/L	134	Standard
	Cd	111	19.9	13.4	**0.0063**	0.001	18.0	mg/L	7	Standard
	Cd	114	87.1	38.1	**0.0117**	0.006	53.6	ug/L	16	Standard
>	**In**	115	614969.4	1.2				ug/L	611117	Standard
	Sn	118	790.0	17.2	**0.0309**	0.023	75.8	ug/L	518	Standard
	Sb	123	280.0	20.4	**0.0462**	0.012	26.5	ug/L	127	Standard
	Ba	135	192282.6	1.4	**92.5375**	1.689	1.8	ug/L	45	Standard
	Ce	140	2006.8	4.1				ug/L	298	Standard
>	**Tb**	159	961897.3	2.5				ug/L	977942	Standard
	Ho	165	81.7	52.8				ug/L	12	Standard
	Tl	203	119.7	8.5	**0.0099**	0.002	15.4	ug/L	31	Standard
	Tl	205	98.3	15.5	**0.0116**	0.002	19.8	ug/L	20	Standard
	Pb	206	482.7	4.9	**0.0287**	0.002	8.4	ug/L	286	Standard
	Pb	207	424.0	4.8	**0.0319**	0.005	14.5	ug/L	257	Standard
	Pb	208	1694.0	1.8	**0.0325**	0.004	11.5	ug/L	956	Standard
	U	238	15563.7	1.1	**2.2446**	0.071	3.2	ug/L	17	Standard
>	**Bi**	209	538649.3	2.3				ug/L	557080	Standard

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Na	23	16.7	75.5	**98.5166**	75.230	76.4	mg/L	0	Standard
Mg	24	9014.3	3.2	**10.8981**	0.573	5.3	mg/L	32	Standard
K	39	116.7	19.3	**0.2184**	0.072	32.8	mg/L	30	Standard
Ca	43	525.0	6.7	**67.4527**	5.707	8.5	mg/L	48	Standard
Fe	54	1820.8	2.9	**1.3668**	0.058	4.2	mg/L	159	Standard
Fe	57	973.4	7.5	**2.3749**	0.248	10.4	mg/L	195	Standard
> **Sc-1**	45	43343.6	2.1				mg/L	39543	Standard
Cl	35	38331.8	2.6				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	27825.5	3.4				ug/L	1647	Standard
P	31	23363.0	0.7				ug/L	15231	Standard
S	34	2495.2	2.5				ug/L	1845	Standard
Sr	88	533.3	5.7				ug/L	70	Standard
C	12	353.3	5.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	83.6	23.1				mg/L	12	Standard
Ho-1	165	81.7	52.8				mg/L	12	Standard
Er	166	63.3	50.8				mg/L	20	Standard
I	127	532195.8	11.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		96.662	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.657	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.630
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.691
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606141001
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Method 6020 - Summary Report

Sample ID: L1606141201
Sample Date/Time: Tuesday, June 28, 2016 21:11:22
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79318.7	0.7				ug/L	81760	Standard
	Be	9	16.7	45.8	**0.0076**	0.008	106.2	ug/L	17	Standard
	Al	27	14913651.7	1.4	**99.7256**	2.143	2.1	ug/L	1410	Standard
	Sc	45	40395.5	2.6				ug/L	39543	Standard
	Ti	47	500.3	4.7	**1.8979**	0.055	2.9	ug/L	39	Standard
	V	51	36055.9	2.6	**5.1139**	0.040	0.8	ug/L	1415	Standard
	Cr	52	13456.3	2.4	**0.9269**	0.086	9.3	ug/L	6946	Standard
	Cr	53	9844.9	11.5	**11.1480**	1.101	9.9	ug/L	328	Standard
	Mn	55	27340.3	1.0	**4.1779**	0.048	1.1	ug/L	823	Standard
	Co	59	924.7	1.8	**0.1037**	0.005	4.9	ug/L	252	Standard
	Ni	60	2165.5	2.9	**1.0744**	0.025	2.4	ug/L	192	Standard
	Cu	65	1308.7	4.1	**0.6156**	0.023	3.7	ug/L	141	Standard
	Zn	66	7243.7	2.3	**5.9517**	0.120	2.0	ug/L	491	Standard
>	**Ge**	72	502171.0	2.0				ug/L	515087	Standard
	As	75	1256.7	3.1	**1.1867**	0.017	1.5	ug/L	20	Standard
	Se	82	736.7	2.2	**6.4443**	0.037	0.6	ug/L	15	Standard
	Se-1	77	926.0	3.3	**11.8887**	0.285	2.4	ug/L	48	Standard
>	**Ga**	71	176.7	6.5				mg/L	90	Standard
	Rb	85	2561.9	8.5				ug/L	23	Standard
	Y	89	439495.0	0.9				ug/L	448510	Standard
>	**Rh**	103	90.0	38.9				ug/L	15	Standard
	Mo	98	758.7	2.1	**0.2744**	0.005	1.7	ug/L	11	Standard
	Ag	107	112.7	8.8	**0.0013**	0.001	110.1	ug/L	134	Standard
	Cd	111	18.4	13.8	**0.0061**	0.001	20.0	mg/L	7	Standard
	Cd	114	55.1	29.0	**0.0062**	0.003	52.0	ug/L	16	Standard
>	**In**	115	584464.7	0.6				ug/L	611117	Standard
	Sn	118	741.7	7.5	**0.0292**	0.010	34.2	ug/L	518	Standard
	Sb	123	322.5	19.3	**0.0586**	0.014	23.6	ug/L	127	Standard
	Ba	135	23648.1	1.5	**11.9524**	0.216	1.8	ug/L	45	Standard
	Ce	140	4514.0	4.6				ug/L	298	Standard
>	**Tb**	159	922323.8	0.6				ug/L	977942	Standard
	Ho	165	91.7	12.6				ug/L	12	Standard
	Tl	203	130.7	10.2	**0.0124**	0.002	15.2	ug/L	31	Standard
	Tl	205	113.3	46.8	**0.0149**	0.008	53.9	ug/L	20	Standard
	Pb	206	585.3	3.6	**0.0562**	0.004	7.1	ug/L	286	Standard
	Pb	207	533.0	4.2	**0.0629**	0.005	7.8	ug/L	257	Standard
	Pb	208	2107.4	5.4	**0.0632**	0.008	12.1	ug/L	956	Standard
	U	238	32845.9	1.3	**5.0682**	0.050	1.0	ug/L	17	Standard
>	**Bi**	209	503585.9	0.8				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	118021.2	0.8	**153.7808**	2.811	1.8	mg/L	32	Standard
K	39	101.7	17.3	**0.1948**	0.058	29.7	mg/L	30	Standard
Ca	43	335.0	15.7	**44.3505**	6.519	14.7	mg/L	48	Standard
Fe	54	237.2	9.3	**0.0729**	0.016	22.5	mg/L	159	Standard
Fe	57	498.3	12.0	**1.0226**	0.198	19.4	mg/L	195	Standard
> **Sc-1**	45	40395.5	2.6				mg/L	39543	Standard
Cl	35	43781.2	1.0				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	58978.2	6.0				ug/L	1647	Standard
P	31	22017.7	1.7				ug/L	15231	Standard
S	34	2351.8	1.8				ug/L	1845	Standard
Sr	88	240.0	11.0				ug/L	70	Standard
C	12	356.7	26.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	169.3	7.0				mg/L	12	Standard
Ho-1	165	91.7	12.6				mg/L	12	Standard
Er	166	83.3	13.9				mg/L	20	Standard
I	127	31387.7	30.0				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		97.014	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.492	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.639
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.397
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606141202
Sample Date/Time: Tuesday, June 28, 2016 21:14:33
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83650.3	1.0				ug/L	81760	Standard
	Be	9	21.7	53.3	**0.0115**	0.011	97.0	ug/L	17	Standard
	Al	27	38632215.5	2.3	**244.9578**	5.868	2.4	ug/L	1410	Standard
	Sc	45	43420.5	1.6				ug/L	39543	Standard
	Ti	47	186.0	10.8	**0.5354**	0.077	14.4	ug/L	39	Standard
	V	51	26880.1	4.2	**3.4128**	0.061	1.8	ug/L	1415	Standard
	Cr	52	10918.6	2.1	**0.4115**	0.017	4.1	ug/L	6946	Standard
	Cr	53	7481.8	4.1	**7.6462**	0.526	6.9	ug/L	328	Standard
	Mn	55	33664.4	1.6	**4.7149**	0.144	3.1	ug/L	823	Standard
	Co	59	762.7	5.1	**0.0704**	0.007	10.1	ug/L	252	Standard
	Ni	60	2375.2	1.6	**1.0759**	0.011	1.0	ug/L	192	Standard
	Cu	65	711.7	7.3	**0.2600**	0.027	10.4	ug/L	141	Standard
	Zn	66	3134.0	1.7	**1.8510**	0.112	6.1	ug/L	491	Standard
>	**Ge**	72	550214.2	2.6				ug/L	515087	Standard
	As	75	794.1	8.2	**0.7027**	0.072	10.2	ug/L	20	Standard
	Se	82	234.2	3.9	**1.7863**	0.091	5.1	ug/L	15	Standard
	Se-1	77	482.0	4.4	**5.2700**	0.176	3.3	ug/L	48	Standard
>	**Ga**	71	80.0	16.5				mg/L	90	Standard
	Rb	85	1268.4	2.0				ug/L	23	Standard
	Y	89	467702.3	2.0				ug/L	448510	Standard
>	**Rh**	103	125.0	4.0				ug/L	15	Standard
	Mo	98	395.0	8.4	**0.1254**	0.010	8.1	ug/L	11	Standard
	Ag	107	91.7	6.0	**-0.0027**	0.001	31.4	ug/L	134	Standard
	Cd	111	17.7	18.1	**0.0053**	0.002	30.5	mg/L	7	Standard
	Cd	114	70.4	32.3	**0.0084**	0.004	47.5	ug/L	16	Standard
>	**In**	115	618005.7	2.3				ug/L	611117	Standard
	Sn	118	668.3	14.3	**0.0101**	0.018	180.4	ug/L	518	Standard
	Sb	123	172.5	13.4	**0.0233**	0.005	22.3	ug/L	127	Standard
	Ba	135	80657.5	2.0	**38.6136**	0.662	1.7	ug/L	45	Standard
	Ce	140	231.7	23.7				ug/L	298	Standard
>	**Tb**	159	976289.5	2.7				ug/L	977942	Standard
	Ho	165	20.0	50.0				ug/L	12	Standard
	Tl	203	130.7	0.4	**0.0112**	0.000	4.3	ug/L	31	Standard
	Tl	205	103.3	15.6	**0.0123**	0.003	20.6	ug/L	20	Standard
	Pb	206	343.3	3.7	**0.0019**	0.004	206.6	ug/L	286	Standard
	Pb	207	309.0	3.8	**0.0073**	0.004	55.0	ug/L	257	Standard
	Pb	208	1267.4	6.3	**0.0088**	0.006	66.3	ug/L	956	Standard
	U	238	23437.4	1.1	**3.3661**	0.068	2.0	ug/L	17	Standard
>	**Bi**	209	541066.6	2.7				ug/L	557080	Standard

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Na	23	10.0	100.0	**57.8886**	57.492	99.3	mg/L	0	Standard
Mg	24	42571.4	0.8	**51.5637**	1.207	2.3	mg/L	32	Standard
K	39	90.0	30.9	**0.1357**	0.087	64.2	mg/L	30	Standard
Ca	43	438.3	26.2	**55.1842**	15.190	27.5	mg/L	48	Standard
Fe	54	177.1	8.1	**0.0090**	0.012	139.0	mg/L	159	Standard
Fe	57	461.7	5.0	**0.7949**	0.071	8.9	mg/L	195	Standard
Sc-1	45	43420.5	1.6				mg/L	39543	Standard
Cl	35	42170.0	2.1				ug/L	27642	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	34382.4	5.6				ug/L	1647	Standard
P	31	23767.0	4.2				ug/L	15231	Standard
S	34	2608.6	3.1				ug/L	1845	Standard
Sr	88	431.7	5.4				ug/L	70	Standard
C	12	273.3	10.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	32.2	46.2				mg/L	12	Standard
Ho-1	165	20.0	50.0				mg/L	12	Standard
Er	166	23.3	89.2				mg/L	20	Standard
I	127	35633.6	4.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		102.312	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.820	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.127	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.125	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606141301
Sample Date/Time: Tuesday, June 28, 2016 21:17:45
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79916.9	1.5				ug/L	81760	Standard
	Be	9	28.3	27.0	**0.0194**	0.007	38.6	ug/L	17	Standard
	Al	27	38023288.5	2.1	**252.3385**	1.857	0.7	ug/L	1410	Standard
	Sc	45	42571.5	4.4				ug/L	39543	Standard
	Ti	47	396.7	7.8	**1.4239**	0.097	6.8	ug/L	39	Standard
	V	51	6119.0	6.6	**0.6719**	0.073	10.9	ug/L	1415	Standard
	Cr	52	11441.3	0.3	**0.5818**	0.031	5.4	ug/L	6946	Standard
	Cr	53	9654.8	11.4	**10.6403**	1.449	13.6	ug/L	328	Standard
	Mn	55	1634887.0	2.2	**251.2478**	2.194	0.9	ug/L	823	Standard
	Co	59	3215.3	1.8	**0.4249**	0.007	1.5	ug/L	252	Standard
	Ni	60	4170.9	0.8	**2.1033**	0.039	1.9	ug/L	192	Standard
	Cu	65	1200.4	3.8	**0.5391**	0.026	4.9	ug/L	141	Standard
	Zn	66	3234.7	1.4	**2.1147**	0.035	1.7	ug/L	491	Standard
>	**Ge**	72	516685.2	1.8				ug/L	515087	Standard
	As	75	16545.6	0.8	**14.7132**	0.205	1.4	ug/L	20	Standard
	Se	82	192.8	5.0	**1.5497**	0.062	4.0	ug/L	15	Standard
	Se-1	77	648.0	6.7	**7.8638**	0.716	9.1	ug/L	48	Standard
>	**Ga**	71	125.0	18.3				mg/L	90	Standard
	Rb	85	1723.4	7.4				ug/L	23	Standard
	Y	89	425819.3	3.1				ug/L	448510	Standard
>	**Rh**	103	118.3	17.1				ug/L	15	Standard
	Mo	98	4050.2	1.8	**1.5330**	0.030	2.0	ug/L	11	Standard
	Ag	107	94.7	12.2	**-0.0016**	0.002	127.1	ug/L	134	Standard
	Cd	111	117.7	9.5	**0.0542**	0.007	12.3	mg/L	7	Standard
	Cd	114	297.9	4.3	**0.0546**	0.005	8.5	ug/L	16	Standard
>	**In**	115	590223.7	3.4				ug/L	611117	Standard
	Sn	118	1010.0	10.9	**0.0746**	0.013	17.7	ug/L	518	Standard
	Sb	123	1963.6	1.5	**0.4183**	0.013	3.0	ug/L	127	Standard
	Ba	135	194231.1	1.1	**97.4394**	2.308	2.4	ug/L	45	Standard
	Ce	140	3857.2	6.5				ug/L	298	Standard
>	**Tb**	159	963155.2	4.7				ug/L	977942	Standard
	Ho	165	81.7	25.5				ug/L	12	Standard
	Tl	203	50.3	12.9	**0.0015**	0.001	66.6	ug/L	31	Standard
	Tl	205	46.7	32.7	**0.0044**	0.002	52.1	ug/L	20	Standard
	Pb	206	2455.5	1.0	**0.4110**	0.018	4.4	ug/L	286	Standard
	Pb	207	2061.1	1.1	**0.3836**	0.016	4.1	ug/L	257	Standard
	Pb	208	8494.6	1.5	**0.4098**	0.011	2.7	ug/L	956	Standard
	U	238	9671.1	1.3	**1.4065**	0.038	2.7	ug/L	17	Standard
>	**Bi**	209	533828.4	3.8				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	104970.9	3.0	**129.8006**	2.883	2.2	mg/L	32	Standard
K	39	241.7	3.2	**0.6187**	0.058	9.4	mg/L	30	Standard
Ca	43	386.7	15.6	**49.0389**	6.282	12.8	mg/L	48	Standard
Fe	54	7303.8	3.7	**6.0094**	0.321	5.3	mg/L	159	Standard
Fe	57	2221.8	6.0	**6.3400**	0.172	2.7	mg/L	195	Standard
> **Sc-1**	45	42571.5	4.4				mg/L	39543	Standard
Cl	35	37833.2	3.5				ug/L	27642	Standard
Kr	83	4.7	44.6				ug/L	2	Standard
Br	81	42533.0	4.1				ug/L	1647	Standard
P	31	23852.1	1.0				ug/L	15231	Standard
S	34	2610.2	4.2				ug/L	1845	Standard
Sr	88	403.3	5.0				ug/L	70	Standard
C	12	1170.0	10.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	0	Standard
Dy	164	115.7	9.7				mg/L	12	Standard
Ho-1	165	81.7	25.5				mg/L	12	Standard
Er	166	90.0	29.4				mg/L	20	Standard
I	127	137002.4	10.0				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		97.746	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.310	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.581
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.826
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606141601
Sample Date/Time: Tuesday, June 28, 2016 21:20:56
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92372.4	1.4				ug/L	81760	Standard
	Be	9	16.7	45.8	**0.0051**	0.007	132.4	ug/L	17	Standard
	Al	27	74980741.0	2.1	**430.5985**	11.194	2.6	ug/L	1410	Standard
	Sc	45	42273.9	1.4				ug/L	39543	Standard
	Ti	47	206.0	5.5	**0.6860**	0.049	7.2	ug/L	39	Standard
	V	51	76665.0	2.1	**11.1242**	0.138	1.2	ug/L	1415	Standard
	Cr	52	20589.0	2.5	**1.9813**	0.052	2.6	ug/L	6946	Standard
	Cr	53	16427.3	7.3	**18.8858**	1.445	7.7	ug/L	328	Standard
	Mn	55	4403.6	9.9	**0.5498**	0.075	13.7	ug/L	823	Standard
	Co	59	1375.4	0.7	**0.1698**	0.002	1.0	ug/L	252	Standard
	Ni	60	4849.1	3.4	**2.5400**	0.080	3.2	ug/L	192	Standard
	Cu	65	2467.2	2.0	**1.2432**	0.032	2.6	ug/L	141	Standard
	Zn	66	3268.7	3.6	**2.2359**	0.099	4.4	ug/L	491	Standard
>	**Ge**	72	501391.0	1.2				ug/L	515087	Standard
	As	75	1723.8	1.9	**1.6153**	0.015	1.0	ug/L	20	Standard
	Se	82	1818.6	2.0	**16.1069**	0.131	0.8	ug/L	15	Standard
	Se-1	77	2238.8	2.0	**29.8099**	0.421	1.4	ug/L	48	Standard
>	**Ga**	71	70.0	35.7				mg/L	90	Standard
	Rb	85	6024.5	1.3				ug/L	23	Standard
	Y	89	451516.3	2.4				ug/L	448510	Standard
>	**Rh**	103	580.0	3.0				ug/L	15	Standard
	Mo	98	4894.1	3.5	**1.7784**	0.027	1.5	ug/L	11	Standard
	Ag	107	107.3	12.0	**-0.0004**	0.002	428.3	ug/L	134	Standard
	Cd	111	61.6	14.8	**0.0258**	0.005	19.6	mg/L	7	Standard
	Cd	114	169.0	6.0	**0.0274**	0.002	5.8	ug/L	16	Standard
>	**In**	115	615602.8	3.1				ug/L	611117	Standard
	Sn	118	783.4	1.3	**0.0296**	0.003	11.3	ug/L	518	Standard
	Sb	123	203.3	3.5	**0.0299**	0.001	4.8	ug/L	127	Standard
	Ba	135	8199.6	0.5	**3.9202**	0.126	3.2	ug/L	45	Standard
	Ce	140	360.0	9.7				ug/L	298	Standard
>	**Tb**	159	979932.9	1.3				ug/L	977942	Standard
	Ho	165	28.3	20.4				ug/L	12	Standard
	Tl	203	89.3	17.1	**0.0065**	0.002	28.6	ug/L	31	Standard
	Tl	205	80.0	25.0	**0.0093**	0.003	29.8	ug/L	20	Standard
	Pb	206	345.7	2.0	**0.0043**	0.002	47.1	ug/L	286	Standard
	Pb	207	309.7	5.2	**0.0094**	0.004	39.7	ug/L	257	Standard
	Pb	208	1290.0	0.3	**0.0121**	0.001	10.3	ug/L	956	Standard
	U	238	27903.3	2.3	**4.1288**	0.057	1.4	ug/L	17	Standard
>	**Bi**	209	525055.5	1.5				ug/L	557080	Standard

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Na	23	21.7	48.0	**130.4724**	63.085	48.4	mg/L	0	Standard
Mg	24	101248.9	2.2	**126.0185**	2.508	2.0	mg/L	32	Standard
K	39	313.3	18.1	**0.8505**	0.192	22.6	mg/L	30	Standard
Ca	43	933.4	7.3	**127.1886**	7.858	6.2	mg/L	48	Standard
Fe	54	133.4	13.8	**-0.0242**	0.015	63.9	mg/L	159	Standard
Fe	57	858.4	5.3	**2.0873**	0.173	8.3	mg/L	195	Standard
> **Sc-1**	45	42273.9	1.4				mg/L	39543	Standard
Cl	35	65275.0	2.4				ug/L	27642	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	32608.5	7.2				ug/L	1647	Standard
P	31	23807.1	4.7				ug/L	15231	Standard
S	34	2403.5	5.0				ug/L	1845	Standard
Sr	88	2410.2	4.8				ug/L	70	Standard
C	12	193.3	34.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	21.1	69.3				mg/L	12	Standard
Ho-1	165	28.3	20.4				mg/L	12	Standard
Er	166	46.7	53.9				mg/L	20	Standard
I	127	42467.9	5.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.980	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.341	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.734
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.251
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606141602
Sample Date/Time: Tuesday, June 28, 2016 21:24:08
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88434.1	2.2				ug/L	81760	Standard
	Be	9	13.3	57.3	**0.0028**	0.007	262.6	ug/L	17	Standard
	Al	27	52144460.9	0.4	**312.8622**	8.112	2.6	ug/L	1410	Standard
	Sc	45	37740.3	1.5				ug/L	39543	Standard
	Ti	47	227.7	10.0	**0.8076**	0.101	12.5	ug/L	39	Standard
	V	51	38489.9	1.8	**5.6761**	0.140	2.5	ug/L	1415	Standard
	Cr	52	19640.1	1.0	**1.9398**	0.010	0.5	ug/L	6946	Standard
	Cr	53	17715.4	1.9	**21.0942**	0.301	1.4	ug/L	328	Standard
	Mn	55	4373.0	6.9	**0.5679**	0.048	8.4	ug/L	823	Standard
	Co	59	870.4	1.6	**0.1002**	0.001	1.2	ug/L	252	Standard
	Ni	60	2666.6	2.1	**1.3989**	0.023	1.6	ug/L	192	Standard
	Cu	65	1074.7	4.8	**0.5100**	0.030	5.9	ug/L	141	Standard
	Zn	66	2890.6	2.0	**1.9736**	0.048	2.4	ug/L	491	Standard
>	**Ge**	72	484924.7	0.7				ug/L	515087	Standard
	As	75	2458.8	5.8	**2.3632**	0.133	5.6	ug/L	20	Standard
	Se	82	892.7	6.7	**8.1181**	0.571	7.0	ug/L	15	Standard
	Se-1	77	1757.1	0.5	**24.0557**	0.109	0.5	ug/L	48	Standard
>	**Ga**	71	76.7	13.6				mg/L	90	Standard
	Rb	85	4900.8	2.1				ug/L	23	Standard
	Y	89	417881.5	5.4				ug/L	448510	Standard
>	**Rh**	103	255.0	18.7				ug/L	15	Standard
	Mo	98	772.2	2.1	**0.2950**	0.006	2.2	ug/L	11	Standard
	Ag	107	68.7	21.6	**-0.0049**	0.003	53.5	ug/L	134	Standard
	Cd	111	15.0	33.1	**0.0048**	0.003	56.9	mg/L	7	Standard
	Cd	114	24.6	131.5	**0.0004**	0.007	1725.2	ug/L	16	Standard
>	**In**	115	555990.7	3.0				ug/L	611117	Standard
	Sn	118	696.7	10.1	**0.0278**	0.015	54.6	ug/L	518	Standard
	Sb	123	106.5	16.8	**0.0120**	0.005	38.5	ug/L	127	Standard
	Ba	135	12524.8	3.0	**6.6489**	0.344	5.2	ug/L	45	Standard
	Ce	140	808.4	5.3				ug/L	298	Standard
>	**Tb**	159	897664.5	1.7				ug/L	977942	Standard
	Ho	165	23.3	68.9				ug/L	12	Standard
	Tl	203	89.0	17.6	**0.0071**	0.002	31.3	ug/L	31	Standard
	Tl	205	90.0	0.0	**0.0115**	0.000	1.5	ug/L	20	Standard
	Pb	206	365.7	4.1	**0.0124**	0.004	32.4	ug/L	286	Standard
	Pb	207	325.3	1.4	**0.0169**	0.000	0.6	ug/L	257	Standard
	Pb	208	1289.4	1.1	**0.0163**	0.000	2.7	ug/L	956	Standard
	U	238	25222.0	1.6	**3.9519**	0.013	0.3	ug/L	17	Standard
>	**Bi**	209	495840.1	1.2				ug/L	557080	Standard

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Na	23	3.3	86.6	**22.3577**	19.364	86.6	mg/L	0	Standard
Mg	24	65916.4	2.1	**91.8901**	2.205	2.4	mg/L	32	Standard
K	39	221.7	4.7	**0.6432**	0.031	4.9	mg/L	30	Standard
Ca	43	530.0	9.4	**79.0853**	9.116	11.5	mg/L	48	Standard
Fe	54	138.0	10.0	**-0.0062**	0.012	195.9	mg/L	159	Standard
Fe	57	510.0	5.1	**1.1793**	0.086	7.3	mg/L	195	Standard
> **Sc-1**	45	37740.3	1.5				mg/L	39543	Standard
Cl	35	44130.9	1.6				ug/L	27642	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	28483.4	4.0				ug/L	1647	Standard
P	31	20263.6	4.9				ug/L	15231	Standard
S	34	2148.5	1.6				ug/L	1845	Standard
Sr	88	1128.4	6.6				ug/L	70	Standard
C	12	163.3	25.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	36.0	33.6				mg/L	12	Standard
Ho-1	165	23.3	68.9				mg/L	12	Standard
Er	166	13.3	114.6				mg/L	20	Standard
I	127	19656.1	3.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.163	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.144	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.979
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		89.007
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606142101
Sample Date/Time: Tuesday, June 28, 2016 21:27:19
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86072.2	1.7				ug/L	81760	Standard
	Be	9	31.7	65.7	**0.0204**	0.019	95.2	ug/L	17	Standard
	Al	27	37149346.8	0.4	**228.9677**	4.521	2.0	ug/L	1410	Standard
	Sc	45	40693.0	3.6				ug/L	39543	Standard
	Ti	47	211.7	4.5	**0.7055**	0.031	4.4	ug/L	39	Standard
	V	51	19470.4	0.9	**2.6593**	0.027	1.0	ug/L	1415	Standard
	Cr	52	9577.4	0.5	**0.3506**	0.020	5.8	ug/L	6946	Standard
	Cr	53	13504.4	2.9	**15.3965**	0.370	2.4	ug/L	328	Standard
	Mn	55	2482687.2	1.9	**391.6677**	8.445	2.2	ug/L	823	Standard
	Co	59	1010.4	4.1	**0.1158**	0.006	5.6	ug/L	252	Standard
	Ni	60	2375.2	1.3	**1.1855**	0.029	2.4	ug/L	192	Standard
	Cu	65	1289.7	5.2	**0.6034**	0.030	5.0	ug/L	141	Standard
	Zn	66	3124.3	3.5	**2.0882**	0.083	4.0	ug/L	491	Standard
>	**Ge**	72	503476.5	0.9				ug/L	515087	Standard
	As	75	9860.1	0.9	**9.0129**	0.111	1.2	ug/L	20	Standard
	Se	82	502.3	2.2	**4.3447**	0.140	3.2	ug/L	15	Standard
	Se-1	77	853.4	2.0	**10.8689**	0.134	1.2	ug/L	48	Standard
>	**Ga**	71	115.0	32.8				mg/L	90	Standard
	Rb	85	655.0	2.3				ug/L	23	Standard
	Y	89	413248.4	1.0				ug/L	448510	Standard
>	**Rh**	103	123.3	18.3				ug/L	15	Standard
	Mo	98	77.7	17.1	**0.0125**	0.006	46.7	ug/L	11	Standard
	Ag	107	81.3	4.3	**-0.0029**	0.001	26.3	ug/L	134	Standard
	Cd	111	15.2	10.0	**0.0049**	0.001	14.6	mg/L	7	Standard
	Cd	114	38.3	10.8	**0.0032**	0.001	30.4	ug/L	16	Standard
>	**In**	115	557968.8	1.5				ug/L	611117	Standard
	Sn	118	745.0	12.3	**0.0359**	0.015	41.7	ug/L	518	Standard
	Sb	123	991.0	1.5	**0.2172**	0.002	1.1	ug/L	127	Standard
	Ba	135	220850.7	1.1	**117.1448**	0.521	0.4	ug/L	45	Standard
	Ce	140	1566.7	2.4				ug/L	298	Standard
>	**Tb**	159	920767.6	2.2				ug/L	977942	Standard
	Ho	165	58.3	38.7				ug/L	12	Standard
	Tl	203	55.7	23.2	**0.0023**	0.002	74.7	ug/L	31	Standard
	Tl	205	45.0	38.5	**0.0043**	0.003	60.7	ug/L	20	Standard
	Pb	206	169197.9	0.8	**33.4745**	0.521	1.6	ug/L	286	Standard
	Pb	207	142071.0	0.5	**31.1598**	0.218	0.7	ug/L	257	Standard
	Pb	208	579992.3	2.5	**32.8772**	0.549	1.7	ug/L	956	Standard
	U	238	648.7	2.7	**0.0940**	0.004	4.0	ug/L	17	Standard
>	**Bi**	209	520066.6	1.1				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.0185**	17.344	173.1	mg/L	0	Standard
Mg	24	83474.3	1.3	**108.0258**	4.532	4.2	mg/L	32	Standard
K	39	53.3	28.6	**0.0335**	0.050	147.9	mg/L	30	Standard
Ca	43	435.0	11.3	**58.7409**	4.908	8.4	mg/L	48	Standard
Fe	54	1115.5	8.0	**0.8464**	0.111	13.2	mg/L	159	Standard
Fe	57	721.7	4.0	**1.7451**	0.132	7.5	mg/L	195	Standard
Sc-1	45	40693.0	3.6				mg/L	39543	Standard
Cl	35	37196.3	1.1				ug/L	27642	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	117004.1	4.8				ug/L	1647	Standard
P	31	21849.1	2.8				ug/L	15231	Standard
S	34	2463.5	4.3				ug/L	1845	Standard
Sr	88	470.0	11.8				ug/L	70	Standard
C	12	400.0	4.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	47.0	20.8				mg/L	12	Standard
Ho-1	165	58.3	38.7				mg/L	12	Standard
Er	166	63.3	9.1				mg/L	20	Standard
I	127	290371.1	9.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.274	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.746	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.303
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.356
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 21:30:32
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80064.5	3.2				ug/L	81760	Standard
	Be	9	49945.6	4.7	**51.3339**	1.054	2.1	ug/L	17	Standard
	Al	27	7446953.3	1.3	**49.3416**	1.021	2.1	ug/L	1410	Standard
	Sc	45	39994.4	3.1				ug/L	39543	Standard
	Ti	47	24563.6	1.8	**103.4611**	0.538	0.5	ug/L	39	Standard
	V	51	332459.7	1.4	**49.9760**	0.258	0.5	ug/L	1415	Standard
	Cr	52	346732.4	1.5	**51.2013**	0.219	0.4	ug/L	6946	Standard
	Cr	53	44092.4	3.1	**52.3486**	0.902	1.7	ug/L	328	Standard
	Mn	55	316773.7	1.0	**51.1225**	0.963	1.9	ug/L	823	Standard
	Co	59	338255.6	0.9	**50.4803**	0.452	0.9	ug/L	252	Standard
	Ni	60	91110.2	2.0	**50.6466**	0.186	0.4	ug/L	192	Standard
	Cu	65	91902.3	2.1	**50.6488**	0.160	0.3	ug/L	141	Standard
	Zn	66	53757.9	1.1	**50.6325**	0.663	1.3	ug/L	491	Standard
>	Ge	72	490984.9	1.8				ug/L	515087	Standard
	As	75	53512.8	1.1	**49.9767**	0.363	0.7	ug/L	20	Standard
	Se	82	5576.6	0.4	**50.7061**	0.891	1.8	ug/L	15	Standard
	Se-1	77	3693.5	2.8	**50.7124**	1.021	2.0	ug/L	48	Standard
>	Ga	71	63.3	29.9				mg/L	90	Standard
	Rb	85	831.7	5.0				ug/L	23	Standard
	Y	89	421530.5	1.2				ug/L	448510	Standard
>	Rh	103	28.3	44.4				ug/L	15	Standard
	Mo	98	254944.7	0.2	**97.5527**	0.365	0.4	ug/L	11	Standard
	Ag	107	312741.7	1.2	**48.1812**	0.687	1.4	ug/L	134	Standard
	Cd	111	100992.4	1.1	**48.8720**	0.473	1.0	mg/L	7	Standard
	Cd	114	246539.5	0.8	**49.0819**	0.317	0.6	ug/L	16	Standard
>	In	115	590755.4	0.3				ug/L	611117	Standard
	Sn	118	285297.8	0.9	**49.8102**	0.309	0.6	ug/L	518	Standard
	Sb	123	223087.7	1.5	**48.8998**	0.798	1.6	ug/L	127	Standard
	Ba	135	97286.0	1.5	**48.7240**	0.868	1.8	ug/L	45	Standard
	Ce	140	78.3	36.9				ug/L	298	Standard
>	Tb	159	940662.6	1.7				ug/L	977942	Standard
	Ho	165	20.0	25.0				ug/L	12	Standard
	Tl	203	402817.7	0.9	**49.5894**	0.553	1.1	ug/L	31	Standard
	Tl	205	361515.5	0.7	**51.2534**	0.688	1.3	ug/L	20	Standard
	Pb	206	256836.7	1.0	**49.2334**	0.527	1.1	ug/L	286	Standard
	Pb	207	233772.2	1.4	**49.6819**	0.304	0.6	ug/L	257	Standard
	Pb	208	939106.3	0.8	**51.5898**	0.228	0.4	ug/L	956	Standard
	U	238	351652.3	0.3	**50.9098**	0.427	0.8	ug/L	17	Standard
>	Bi	209	537054.5	1.2				ug/L	557080	Standard

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Na	23	5.0	173.2	**32.8471**	56.884	173.2	mg/L	0	Standard
Mg	24	4075.5	3.9	**5.3128**	0.340	6.4	mg/L	32	Standard
K	39	1373.4	2.2	**4.4475**	0.053	1.2	mg/L	30	Standard
Ca	43	71.7	22.4	**5.4062**	2.324	43.0	mg/L	48	Standard
Fe	54	5589.4	3.1	**4.8672**	0.205	4.2	mg/L	159	Standard
Fe	57	1635.1	4.9	**4.8331**	0.203	4.2	mg/L	195	Standard
> **Sc-1**	45	39994.4	3.1				mg/L	39543	Standard
Cl	35	35754.8	4.0				ug/L	27642	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	3610.5	34.2				ug/L	1647	Standard
P	31	19324.0	4.2				ug/L	15231	Standard
S	34	2706.9	5.1				ug/L	1845	Standard
Sr	88	63.3	27.7				ug/L	70	Standard
C	12	143.3	42.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	5.9	100.8				mg/L	12	Standard
Ho-1	165	20.0	25.0				mg/L	12	Standard
Er	166	16.7	34.6				mg/L	20	Standard
I	127	9711.8	44.1				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	102.668		
	Al	27	98.683		
	Sc	45			
	Ti	47	103.461		
	V	51	99.952		
	Cr	52	102.403		
	Cr	53			
	Mn	55	102.245		
	Co	59	100.961		
	Ni	60	101.293		
	Cu	65	101.298		
	Zn	66	101.265		
>	Ge	72		95.321	
	As	75	99.953		
	Se	82	101.412		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	97.553		
Ag	107	96.362		
Cd	111	97.744		
Cd	114			
> In	115			96.668
Sn	118	99.620		
Sb	123	97.800		
Ba	135	97.448		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.179		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.180		
U	238	101.820		
> Bi	209			96.405
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 21:33:43
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77306.8	2.0				ug/L	81760	Standard
	Be	9	21.7	26.6	**0.0134**	0.006	48.3	ug/L	17	Standard
	Al	27	7303.5	27.4	**0.0355**	0.013	36.3	ug/L	1410	Standard
	Sc	45	38198.1	0.8				ug/L	39543	Standard
	Ti	47	25.7	25.3	**-0.0566**	0.027	47.6	ug/L	39	Standard
	V	51	1109.0	7.8	**-0.0386**	0.015	38.5	ug/L	1415	Standard
	Cr	52	6097.9	0.7	**-0.1350**	0.015	10.8	ug/L	6946	Standard
	Cr	53	763.4	6.1	**0.5733**	0.039	6.9	ug/L	328	Standard
	Mn	55	836.4	10.1	**-0.0128**	0.011	87.4	ug/L	823	Standard
	Co	59	230.3	21.5	**0.0031**	0.007	222.1	ug/L	252	Standard
	Ni	60	176.3	3.3	**-0.0064**	0.005	75.2	ug/L	192	Standard
	Cu	65	147.3	9.8	**-0.0093**	0.007	71.2	ug/L	141	Standard
	Zn	66	414.7	6.5	**-0.4297**	0.019	4.3	ug/L	491	Standard
>	**Ge**	72	489415.0	1.8				ug/L	515087	Standard
	As	75	-13.4	315.6	**0.0274**	0.040	146.9	ug/L	20	Standard
	Se	82	21.4	39.0	**0.0756**	0.076	100.0	ug/L	15	Standard
	Se-1	77	62.3	3.3	**0.1522**	0.035	23.1	ug/L	48	Standard
>	**Ga**	71	55.0	41.7				mg/L	90	Standard
	Rb	85	21.7	26.6				ug/L	23	Standard
	Y	89	425437.4	1.2				ug/L	448510	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	273.7	29.6	**0.0854**	0.031	36.3	ug/L	11	Standard
	Ag	107	107.7	30.0	**0.0003**	0.005	1550.1	ug/L	134	Standard
	Cd	111	12.2	52.2	**0.0030**	0.003	103.1	mg/L	7	Standard
	Cd	114	23.6	69.2	**-0.0002**	0.003	1385.1	ug/L	16	Standard
>	**In**	115	592746.5	0.3				ug/L	611117	Standard
	Sn	118	735.0	15.8	**0.0262**	0.020	76.7	ug/L	518	Standard
	Sb	123	418.9	32.2	**0.0787**	0.029	37.2	ug/L	127	Standard
	Ba	135	58.7	27.6	**0.0042**	0.008	193.4	ug/L	45	Standard
	Ce	140	16.7	34.6				ug/L	298	Standard
>	**Tb**	159	928666.7	1.6				ug/L	977942	Standard
	Ho	165	11.7	89.2				ug/L	12	Standard
	Tl	203	77.0	34.1	**0.0046**	0.003	68.4	ug/L	31	Standard
	Tl	205	76.7	35.9	**0.0085**	0.004	45.8	ug/L	20	Standard
	Pb	206	287.0	11.8	**-0.0088**	0.007	78.2	ug/L	286	Standard
	Pb	207	252.0	6.9	**-0.0047**	0.004	83.8	ug/L	257	Standard
	Pb	208	1038.7	6.8	**-0.0037**	0.004	102.1	ug/L	956	Standard
	U	238	52.3	19.6	**0.0046**	0.001	32.5	ug/L	17	Standard
>	**Bi**	209	540535.6	1.1				ug/L	557080	Standard

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Na	23	1.7	173.2	**11.1254**	19.261	173.1	mg/L	0	Standard
Mg	24	41.7	25.0	**0.0002**	0.014	5858.2	mg/L	32	Standard
K	39	25.0	20.0	**-0.0539**	0.018	33.4	mg/L	30	Standard
Ca	43	40.0	25.0	**0.9508**	1.613	169.6	mg/L	48	Standard
Fe	54	117.8	25.5	**-0.0268**	0.028	102.8	mg/L	159	Standard
Fe	57	235.0	7.7	**0.1964**	0.057	28.8	mg/L	195	Standard
Sc-1	45	38198.1	0.8				mg/L	39543	Standard
Cl	35	35245.6	1.5				ug/L	27642	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	2320.2	7.7				ug/L	1647	Standard
P	31	18950.2	2.2				ug/L	15231	Standard
S	34	2475.2	4.2				ug/L	1845	Standard
Sr	88	68.3	27.7				ug/L	70	Standard
C	12	103.3	5.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	0	Standard
Dy	164	8.9	118.0				mg/L	12	Standard
Ho-1	165	11.7	89.2				mg/L	12	Standard
Er	166	23.3	49.5				mg/L	20	Standard
I	127	4469.0	13.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.016	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.994
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.030
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW 82 WG574205-02
Sample Date/Time: Tuesday, June 28, 2016 21:36:55
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77750.7	1.6				ug/L	81760	Standard
	Be	9	23.3	24.7	**0.0149**	0.006	38.5	ug/L	17	Standard
	Al	27	11095.9	27.0	**0.0614**	0.021	33.8	ug/L	1410	Standard
	Sc	45	39309.3	3.2				ug/L	39543	Standard
	Ti	47	35.7	19.9	**-0.0160**	0.027	171.9	ug/L	39	Standard
	V	51	1269.4	3.8	**-0.0162**	0.012	71.1	ug/L	1415	Standard
	Cr	52	7452.2	2.1	**0.0582**	0.015	26.3	ug/L	6946	Standard
	Cr	53	805.0	4.3	**0.6140**	0.043	7.0	ug/L	328	Standard
	Mn	55	3268.0	4.0	**0.3772**	0.034	9.1	ug/L	823	Standard
	Co	59	296.7	4.7	**0.0126**	0.001	9.3	ug/L	252	Standard
	Ni	60	300.3	5.8	**0.0613**	0.013	21.5	ug/L	192	Standard
	Cu	65	252.7	4.2	**0.0478**	0.009	19.3	ug/L	141	Standard
	Zn	66	1868.1	1.9	**0.9480**	0.028	3.0	ug/L	491	Standard
>	**Ge**	72	494530.1	2.9				ug/L	515087	Standard
	As	75	-37.6	66.7	**0.0055**	0.023	429.2	ug/L	20	Standard
	Se	82	15.9	27.5	**0.0238**	0.038	158.5	ug/L	15	Standard
	Se-1	77	56.7	8.0	**0.0642**	0.051	79.2	ug/L	48	Standard
>	**Ga**	71	51.7	31.1				mg/L	90	Standard
	Rb	85	45.0	48.4				ug/L	23	Standard
	Y	89	413936.1	2.9				ug/L	448510	Standard
>	**Rh**	103	23.3	32.7				ug/L	15	Standard
	Mo	98	83.2	8.2	**0.0127**	0.003	23.0	ug/L	11	Standard
	Ag	107	95.3	10.0	**-0.0016**	0.002	102.9	ug/L	134	Standard
	Cd	111	39.5	14.4	**0.0162**	0.003	18.5	mg/L	7	Standard
	Cd	114	83.7	13.3	**0.0117**	0.002	21.2	ug/L	16	Standard
>	**In**	115	592344.0	1.8				ug/L	611117	Standard
	Sn	118	795.0	11.2	**0.0369**	0.017	47.0	ug/L	518	Standard
	Sb	123	176.9	20.5	**0.0258**	0.007	28.3	ug/L	127	Standard
	Ba	135	88.3	8.2	**0.0191**	0.004	22.5	ug/L	45	Standard
	Ce	140	48.3	15.8				ug/L	298	Standard
>	**Tb**	159	936174.2	1.5				ug/L	977942	Standard
	Ho	165	6.7	114.6				ug/L	12	Standard
	Tl	203	128.0	4.9	**0.0106**	0.001	7.1	ug/L	31	Standard
	Tl	205	116.7	44.6	**0.0139**	0.007	52.1	ug/L	20	Standard
	Pb	206	358.0	3.9	**0.0036**	0.003	73.1	ug/L	286	Standard
	Pb	207	341.0	6.5	**0.0129**	0.005	36.4	ug/L	257	Standard
	Pb	208	1292.4	1.6	**0.0090**	0.001	13.2	ug/L	956	Standard
	U	238	93.7	24.0	**0.0103**	0.003	31.1	ug/L	17	Standard
>	**Bi**	209	549438.7	0.1				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.5912**	18.336	173.1	mg/L	0	Standard
Mg	24	55.0	47.2	**0.0170**	0.036	211.2	mg/L	32	Standard
K	39	38.3	52.7	**-0.0104**	0.070	678.8	mg/L	30	Standard
Ca	43	46.7	16.4	**1.7858**	1.139	63.8	mg/L	48	Standard
Fe	54	125.7	11.9	**-0.0224**	0.015	66.3	mg/L	159	Standard
Fe	57	226.7	12.1	**0.1455**	0.093	63.6	mg/L	195	Standard
Sc-1	45	39309.3	3.2				mg/L	39543	Standard
Cl	35	34398.3	0.8				ug/L	27642	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	1940.1	5.9				ug/L	1647	Standard
P	31	18074.1	0.8				ug/L	15231	Standard
S	34	2498.5	3.0				ug/L	1845	Standard
Sr	88	61.7	46.1				ug/L	70	Standard
C	12	113.3	13.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	9.2	3.0				mg/L	12	Standard
Ho-1	165	6.7	114.6				mg/L	12	Standard
Er	166	16.7	34.6				mg/L	20	Standard
I	127	3242.0	12.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.096	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.009	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.928
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.628
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 82 WG574205-03
Sample Date/Time: Tuesday, June 28, 2016 21:40:07
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77370.5	2.5				ug/L	81760	Standard
	Be	9	47069.7	3.6	**50.0685**	0.762	1.5	ug/L	17	Standard
	Al	27	8339.0	0.8	**0.0428**	0.001	2.3	ug/L	1410	Standard
	Sc	45	38442.1	2.3				ug/L	39543	Standard
	Ti	47	32.3	15.3	**-0.0274**	0.023	83.9	ug/L	39	Standard
	V	51	328373.9	1.3	**49.7728**	1.098	2.2	ug/L	1415	Standard
	Cr	52	340284.0	1.1	**50.6522**	0.528	1.0	ug/L	6946	Standard
	Cr	53	43268.4	1.2	**51.8066**	1.337	2.6	ug/L	328	Standard
	Mn	55	314954.5	0.2	**51.2439**	0.720	1.4	ug/L	823	Standard
	Co	59	331722.8	0.6	**49.9116**	0.628	1.3	ug/L	252	Standard
	Ni	60	91188.9	0.7	**51.1120**	0.365	0.7	ug/L	192	Standard
	Cu	65	91760.4	1.1	**50.9900**	0.227	0.4	ug/L	141	Standard
	Zn	66	54150.6	1.3	**51.4287**	0.106	0.2	ug/L	491	Standard
>	**Ge**	72	486985.3	1.4				ug/L	515087	Standard
	As	75	52577.5	0.5	**49.5070**	0.430	0.9	ug/L	20	Standard
	Se	82	5439.8	1.4	**49.8572**	0.058	0.1	ug/L	15	Standard
	Se-1	77	3674.8	1.0	**50.8806**	0.838	1.6	ug/L	48	Standard
>	**Ga**	71	70.0	21.4				mg/L	90	Standard
	Rb	85	35.0	37.8				ug/L	23	Standard
	Y	89	431830.9	0.7				ug/L	448510	Standard
>	**Rh**	103	38.3	15.1				ug/L	15	Standard
	Mo	98	69.3	10.5	**0.0074**	0.003	42.1	ug/L	11	Standard
	Ag	107	312423.9	0.2	**48.0443**	1.285	2.7	ug/L	134	Standard
	Cd	111	99250.2	0.2	**47.9394**	1.102	2.3	mg/L	7	Standard
	Cd	114	241436.3	0.5	**47.9735**	0.947	2.0	ug/L	16	Standard
>	**In**	115	592091.2	2.5				ug/L	611117	Standard
	Sn	118	838.4	9.3	**0.0444**	0.014	30.4	ug/L	518	Standard
	Sb	123	213126.5	0.4	**46.6279**	1.103	2.4	ug/L	127	Standard
	Ba	135	94941.2	1.6	**47.4531**	1.010	2.1	ug/L	45	Standard
	Ce	140	68.3	22.4				ug/L	298	Standard
>	**Tb**	159	920874.0	1.0				ug/L	977942	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	395784.4	0.5	**49.2144**	0.506	1.0	ug/L	31	Standard
	Tl	205	352148.8	0.9	**50.4246**	0.261	0.5	ug/L	20	Standard
	Pb	206	261292.0	1.2	**50.5931**	0.633	1.3	ug/L	286	Standard
	Pb	207	229140.8	1.1	**49.1895**	0.516	1.0	ug/L	257	Standard
	Pb	208	939702.2	0.3	**52.1447**	0.484	0.9	ug/L	956	Standard
	U	238	338970.6	0.7	**49.5659**	0.166	0.3	ug/L	17	Standard
>	**Bi**	209	531689.3	0.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	35.0	0.0	**-0.0092**	0.001	12.0	mg/L	32	Standard
K	39	35.0	42.9	**-0.0195**	0.052	268.3	mg/L	30	Standard
Ca	43	38.3	32.8	**0.6220**	1.885	303.1	mg/L	48	Standard
Fe	54	132.7	8.8	**-0.0133**	0.014	103.8	mg/L	159	Standard
Fe	57	226.7	10.4	**0.1628**	0.084	51.6	mg/L	195	Standard
> **Sc-1**	45	38442.1	2.3				mg/L	39543	Standard
Cl	35	35188.8	3.0				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1823.4	6.0				ug/L	1647	Standard
P	31	17611.9	0.6				ug/L	15231	Standard
S	34	2310.2	2.3				ug/L	1845	Standard
Sr	88	75.0	17.6				ug/L	70	Standard
C	12	96.7	46.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	5.9	194.5				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	16.7	34.6				mg/L	20	Standard
I	127	2716.9	12.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.631	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.544	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.887
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.442
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 82 WG574205-03
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Method 6020 - Summary Report

Sample ID: L1606134301 WG574205-01
Sample Date/Time: Tuesday, June 28, 2016 21:43:18
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74323.5	0.8				ug/L	81760	Standard
	Be	9	31.7	36.5	**0.0253**	0.013	49.8	ug/L	17	Standard
	Al	27	2998278.2	0.6	**21.3833**	0.050	0.2	ug/L	1410	Standard
	Sc	45	38510.6	3.3				ug/L	39543	Standard
	Ti	47	232.7	4.1	**0.8126**	0.032	3.9	ug/L	39	Standard
	V	51	1652.5	23.4	**0.0414**	0.055	131.6	ug/L	1415	Standard
	Cr	52	135321.3	0.7	**19.2638**	0.330	1.7	ug/L	6946	Standard
	Cr	53	19187.1	1.5	**22.5044**	0.281	1.2	ug/L	328	Standard
	Mn	55	3959.9	4.4	**0.4904**	0.040	8.1	ug/L	823	Standard
	Co	59	833.7	4.3	**0.0927**	0.008	8.3	ug/L	252	Standard
	Ni	60	44655.7	0.7	**24.6837**	0.632	2.6	ug/L	192	Standard
	Cu	65	31746.9	0.7	**17.3740**	0.276	1.6	ug/L	141	Standard
	Zn	66	57137.2	0.4	**53.6669**	1.121	2.1	ug/L	491	Standard
>	**Ge**	72	492860.3	1.9				ug/L	515087	Standard
	As	75	122.8	20.0	**0.1545**	0.023	14.7	ug/L	20	Standard
	Se	82	36.2	8.8	**0.2097**	0.035	16.8	ug/L	15	Standard
	Se-1	77	205.3	7.5	**2.1323**	0.253	11.9	ug/L	48	Standard
>	**Ga**	71	501.7	15.2				mg/L	90	Standard
	Rb	85	10964.0	0.9				ug/L	23	Standard
	Y	89	418533.1	1.8				ug/L	448510	Standard
>	**Rh**	103	56.7	31.0				ug/L	15	Standard
	Mo	98	2829.4	1.2	**1.1053**	0.009	0.8	ug/L	11	Standard
	Ag	107	25274.7	1.2	**4.0283**	0.033	0.8	ug/L	134	Standard
	Cd	111	119.1	9.1	**0.0569**	0.005	9.6	mg/L	7	Standard
	Cd	114	490.9	6.4	**0.0966**	0.006	6.7	ug/L	16	Standard
>	**In**	115	568910.2	0.4				ug/L	611117	Standard
	Sn	118	49674.7	2.3	**8.9227**	0.228	2.6	ug/L	518	Standard
	Sb	123	2415.2	17.6	**0.5368**	0.095	17.6	ug/L	127	Standard
	Ba	135	20410.1	0.9	**10.5946**	0.091	0.9	ug/L	45	Standard
	Ce	140	566.7	11.5				ug/L	298	Standard
>	**Tb**	159	895351.1	0.7				ug/L	977942	Standard
	Ho	165	20.0	25.0				ug/L	12	Standard
	Tl	203	216.3	14.7	**0.0231**	0.004	18.6	ug/L	31	Standard
	Tl	205	211.7	17.7	**0.0291**	0.005	18.1	ug/L	20	Standard
	Pb	206	14582.7	1.0	**2.8682**	0.053	1.8	ug/L	286	Standard
	Pb	207	11703.2	0.8	**2.5502**	0.014	0.5	ug/L	257	Standard
	Pb	208	49274.0	0.6	**2.7782**	0.042	1.5	ug/L	956	Standard
	U	238	116.0	23.9	**0.0146**	0.004	29.7	ug/L	17	Standard
>	**Bi**	209	512746.8	0.9				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	23663.5	1.4	**32.3162**	1.385	4.3	mg/L	32	Standard
K	39	683.3	9.3	**2.2286**	0.197	8.8	mg/L	30	Standard
Ca	43	95.0	32.9	**9.3774**	4.330	46.2	mg/L	48	Standard
Fe	54	183.2	7.6	**0.0331**	0.009	27.1	mg/L	159	Standard
Fe	57	263.3	14.4	**0.2873**	0.119	41.4	mg/L	195	Standard
> **Sc-1**	45	38510.6	3.3				mg/L	39543	Standard
Cl	35	35170.8	1.9				ug/L	27642	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	3347.0	4.4				ug/L	1647	Standard
P	31	18034.1	2.9				ug/L	15231	Standard
S	34	2231.8	5.1				ug/L	1845	Standard
Sr	88	143.3	22.7				ug/L	70	Standard
C	12	123.3	47.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	12.4	90.1				mg/L	12	Standard
Ho-1	165	20.0	25.0				mg/L	12	Standard
Er	166	20.0	86.6				mg/L	20	Standard
I	127	33806.0	2.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.904	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.685	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.094
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.042
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606134301DP WG574205-04
Sample Date/Time: Tuesday, June 28, 2016 21:46:30
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75650.1	1.3				ug/L	81760	Standard
	Be	9	38.3	7.5	**0.0320**	0.004	11.5	ug/L	17	Standard
	Al	27	3034197.2	1.7	**21.2640**	0.568	2.7	ug/L	1410	Standard
	Sc	45	38358.5	1.6				ug/L	39543	Standard
	Ti	47	242.3	3.4	**0.8481**	0.030	3.6	ug/L	39	Standard
	V	51	2921.5	21.4	**0.2301**	0.091	39.7	ug/L	1415	Standard
	Cr	52	132102.7	0.7	**18.6755**	0.034	0.2	ug/L	6946	Standard
	Cr	53	19672.8	2.2	**22.9627**	0.596	2.6	ug/L	328	Standard
	Mn	55	13082.6	2.2	**1.9497**	0.036	1.8	ug/L	823	Standard
	Co	59	922.0	4.8	**0.1051**	0.006	5.6	ug/L	252	Standard
	Ni	60	44071.0	1.0	**24.2264**	0.187	0.8	ug/L	192	Standard
	Cu	65	31222.8	1.1	**16.9947**	0.096	0.6	ug/L	141	Standard
	Zn	66	55768.5	0.9	**52.0764**	0.197	0.4	ug/L	491	Standard
>	**Ge**	72	495382.5	0.5				ug/L	515087	Standard
	As	75	105.3	17.2	**0.1377**	0.017	12.5	ug/L	20	Standard
	Se	82	31.4	9.3	**0.1642**	0.025	15.2	ug/L	15	Standard
	Se-1	77	224.7	3.6	**2.3824**	0.126	5.3	ug/L	48	Standard
>	**Ga**	71	485.0	9.9				mg/L	90	Standard
	Rb	85	10640.4	0.2				ug/L	23	Standard
	Y	89	407749.6	1.6				ug/L	448510	Standard
>	**Rh**	103	56.7	27.0				ug/L	15	Standard
	Mo	98	2759.9	2.4	**1.0902**	0.013	1.1	ug/L	11	Standard
	Ag	107	24718.5	0.6	**3.9851**	0.067	1.7	ug/L	134	Standard
	Cd	111	119.1	7.2	**0.0577**	0.005	8.8	mg/L	7	Standard
	Cd	114	389.6	30.3	**0.0764**	0.024	30.9	ug/L	16	Standard
>	**In**	115	562489.2	1.2				ug/L	611117	Standard
	Sn	118	48104.7	5.2	**8.7400**	0.532	6.1	ug/L	518	Standard
	Sb	123	1085.9	11.8	**0.2370**	0.026	11.2	ug/L	127	Standard
	Ba	135	21279.9	0.9	**11.1745**	0.156	1.4	ug/L	45	Standard
	Ce	140	1446.7	1.7				ug/L	298	Standard
>	**Tb**	159	899809.7	0.9				ug/L	977942	Standard
	Ho	165	38.3	37.7				ug/L	12	Standard
	Tl	203	211.3	8.9	**0.0223**	0.003	11.4	ug/L	31	Standard
	Tl	205	171.7	14.4	**0.0230**	0.004	16.6	ug/L	20	Standard
	Pb	206	14329.4	1.7	**2.7934**	0.069	2.5	ug/L	286	Standard
	Pb	207	11471.7	1.5	**2.4775**	0.050	2.0	ug/L	257	Standard
	Pb	208	48196.5	1.3	**2.6929**	0.035	1.3	ug/L	956	Standard
	U	238	162.0	9.3	**0.0214**	0.002	11.2	ug/L	17	Standard
>	**Bi**	209	517046.0	0.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	23364.7	1.2	**32.0144**	0.886	2.8	mg/L	32	Standard
K	39	620.0	6.9	**2.0197**	0.176	8.7	mg/L	30	Standard
Ca	43	98.3	39.5	**10.0220**	6.022	60.1	mg/L	48	Standard
Fe	54	175.4	14.5	**0.0269**	0.026	96.7	mg/L	159	Standard
Fe	57	298.3	7.6	**0.4146**	0.094	22.7	mg/L	195	Standard
> **Sc-1**	45	38358.5	1.6				mg/L	39543	Standard
Cl	35	35843.0	1.2				ug/L	27642	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	4177.2	4.7				ug/L	1647	Standard
P	31	18070.8	1.2				ug/L	15231	Standard
S	34	2273.5	5.8				ug/L	1845	Standard
Sr	88	125.0	20.0				ug/L	70	Standard
C	12	143.3	21.3				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	0	Standard
Dy	164	45.4	50.3				mg/L	12	Standard
Ho-1	165	38.3	37.7				mg/L	12	Standard
Er	166	26.7	21.7				mg/L	20	Standard
I	127	32309.4	0.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.527	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.175	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		92.043
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.814
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606134301S WG574205-05
Sample Date/Time: Tuesday, June 28, 2016 21:49:41
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	76159.4	2.8				ug/L	81760	Standard
	Be	9	48450.7	1.7	**52.3785**	0.949	1.8	ug/L	17	Standard
	Al	27	2895043.9	1.0	**20.1618**	0.737	3.7	ug/L	1410	Standard
	Sc	45	38742.8	1.9				ug/L	39543	Standard
	Ti	47	240.0	7.2	**0.8720**	0.082	9.4	ug/L	39	Standard
	V	51	323841.2	0.8	**49.8512**	0.902	1.8	ug/L	1415	Standard
	Cr	52	453207.8	1.4	**68.8842**	0.591	0.9	ug/L	6946	Standard
	Cr	53	60472.1	1.8	**73.6607**	0.780	1.1	ug/L	328	Standard
	Mn	55	309167.0	1.2	**51.0846**	0.705	1.4	ug/L	823	Standard
	Co	59	322466.2	0.8	**49.2767**	0.754	1.5	ug/L	252	Standard
	Ni	60	129806.7	1.0	**73.9391**	0.553	0.7	ug/L	192	Standard
	Cu	65	118360.2	1.2	**66.8253**	0.317	0.5	ug/L	141	Standard
	Zn	66	105137.5	0.6	**102.2235**	1.030	1.0	ug/L	491	Standard
>	Ge	72	479488.8	1.1				ug/L	515087	Standard
	As	75	53941.4	1.7	**51.5891**	1.400	2.7	ug/L	20	Standard
	Se	82	5350.1	0.9	**49.8082**	0.982	2.0	ug/L	15	Standard
	Se-1	77	3727.1	2.1	**52.4361**	1.513	2.9	ug/L	48	Standard
>	Ga	71	476.7	2.2				mg/L	90	Standard
	Rb	85	10533.7	3.9				ug/L	23	Standard
	Y	89	417307.7	1.3				ug/L	448510	Standard
>	Rh	103	73.3	25.8				ug/L	15	Standard
	Mo	98	2762.6	0.6	**1.0591**	0.012	1.2	ug/L	11	Standard
	Ag	107	321242.3	0.9	**50.4672**	0.741	1.5	ug/L	134	Standard
	Cd	111	96845.5	0.4	**47.7898**	0.498	1.0	mg/L	7	Standard
	Cd	114	233334.7	1.1	**47.3688**	0.646	1.4	ug/L	16	Standard
>	In	115	579360.0	0.8				ug/L	611117	Standard
	Sn	118	55146.4	13.8	**9.7304**	1.292	13.3	ug/L	518	Standard
	Sb	123	221114.9	0.1	**49.4220**	0.385	0.8	ug/L	127	Standard
	Ba	135	112895.7	0.5	**57.6594**	0.626	1.1	ug/L	45	Standard
	Ce	140	313.3	11.5				ug/L	298	Standard
>	Tb	159	912553.5	0.8				ug/L	977942	Standard
	Ho	165	15.0	66.7				ug/L	12	Standard
	Tl	203	384933.8	0.5	**49.0255**	0.608	1.2	ug/L	31	Standard
	Tl	205	344367.9	0.4	**50.5097**	0.783	1.5	ug/L	20	Standard
	Pb	206	266968.5	0.3	**52.9500**	0.690	1.3	ug/L	286	Standard
	Pb	207	232893.3	0.6	**51.2096**	0.463	0.9	ug/L	257	Standard
	Pb	208	948808.9	1.4	**53.9303**	1.097	2.0	ug/L	956	Standard
	U	238	335133.4	0.9	**50.1950**	0.747	1.5	ug/L	17	Standard
>	Bi	209	519140.8	1.4				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	23122.6	1.5	**31.3670**	0.821	2.6	mg/L	32	Standard
K	39	550.0	13.4	**1.7528**	0.224	12.8	mg/L	30	Standard
Ca	43	93.3	3.1	**9.1209**	0.222	2.4	mg/L	48	Standard
Fe	54	147.8	38.5	**0.0002**	0.055	34709.4	mg/L	159	Standard
Fe	57	261.7	11.7	**0.2782**	0.120	43.1	mg/L	195	Standard
> **Sc-1**	45	38742.8	1.9				mg/L	39543	Standard
Cl	35	35887.1	0.6				ug/L	27642	Standard
Kr	83	2.3	89.2				ug/L	2	Standard
Br	81	3013.6	4.3				ug/L	1647	Standard
P	31	18511.3	3.1				ug/L	15231	Standard
S	34	2173.5	7.9				ug/L	1845	Standard
Sr	88	115.0	4.3				ug/L	70	Standard
C	12	143.3	35.1				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	12.7	50.0				mg/L	12	Standard
Ho-1	165	15.0	66.7				mg/L	12	Standard
Er	166	13.3	114.6				mg/L	20	Standard
I	127	29318.3	1.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.150	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.089	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606134301S WG574205-05
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.804
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.190
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1606134301S WG574205-05
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Method 6020 - Summary Report

Sample ID: L1606134301SD WG574205-06
Sample Date/Time: Tuesday, June 28, 2016 21:52:53
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74233.3	4.4				ug/L	81760	Standard
	Be	9	46944.3	0.7	**52.1161**	2.208	4.2	ug/L	17	Standard
	Al	27	2867977.1	1.8	**20.5130**	1.211	5.9	ug/L	1410	Standard
	Sc	45	37107.1	4.7				ug/L	39543	Standard
	Ti	47	208.3	2.4	**0.7439**	0.023	3.1	ug/L	39	Standard
	V	51	314357.5	0.7	**48.8632**	0.269	0.5	ug/L	1415	Standard
	Cr	52	443013.9	1.2	**67.9920**	0.699	1.0	ug/L	6946	Standard
	Cr	53	57726.4	1.5	**71.0049**	0.771	1.1	ug/L	328	Standard
	Mn	55	299003.6	1.5	**49.8899**	0.541	1.1	ug/L	823	Standard
	Co	59	310607.5	1.9	**47.9296**	0.658	1.4	ug/L	252	Standard
	Ni	60	125816.0	1.4	**72.3742**	0.740	1.0	ug/L	192	Standard
	Cu	65	116930.9	2.0	**66.6728**	1.005	1.5	ug/L	141	Standard
	Zn	66	105389.9	0.9	**103.4925**	0.359	0.3	ug/L	491	Standard
>	**Ge**	72	474757.8	0.5				ug/L	515087	Standard
	As	75	52320.0	1.0	**50.5276**	0.214	0.4	ug/L	20	Standard
	Se	82	5199.8	1.3	**48.8839**	0.776	1.6	ug/L	15	Standard
	Se-1	77	3645.4	2.7	**51.7794**	1.336	2.6	ug/L	48	Standard
>	**Ga**	71	471.7	1.2				mg/L	90	Standard
	Rb	85	10923.9	0.7				ug/L	23	Standard
	Y	89	414912.1	1.8				ug/L	448510	Standard
>	**Rh**	103	51.7	22.3				ug/L	15	Standard
	Mo	98	2810.6	3.1	**1.1098**	0.050	4.5	ug/L	11	Standard
	Ag	107	309794.3	1.1	**50.0964**	1.925	3.8	ug/L	134	Standard
	Cd	111	92939.1	0.1	**47.2004**	1.405	3.0	mg/L	7	Standard
	Cd	114	227712.2	0.8	**47.5835**	1.757	3.7	ug/L	16	Standard
>	**In**	115	563239.5	3.0				ug/L	611117	Standard
	Sn	118	48800.3	6.0	**8.8657**	0.749	8.5	ug/L	518	Standard
	Sb	123	213681.9	0.5	**49.1574**	1.598	3.3	ug/L	127	Standard
	Ba	135	108173.8	0.8	**56.8630**	1.899	3.3	ug/L	45	Standard
	Ce	140	258.3	11.8				ug/L	298	Standard
>	**Tb**	159	874543.1	3.3				ug/L	977942	Standard
	Ho	165	16.7	62.4				ug/L	12	Standard
	Tl	203	370949.6	0.9	**49.2226**	1.185	2.4	ug/L	31	Standard
	Tl	205	332170.0	0.6	**50.7579**	1.084	2.1	ug/L	20	Standard
	Pb	206	260124.0	0.8	**53.7518**	1.191	2.2	ug/L	286	Standard
	Pb	207	226333.8	1.1	**51.8538**	1.336	2.6	ug/L	257	Standard
	Pb	208	924176.8	1.2	**54.7310**	1.509	2.8	ug/L	956	Standard
	U	238	327055.2	1.2	**51.0349**	1.235	2.4	ug/L	17	Standard
>	**Bi**	209	498348.0	1.6				ug/L	557080	Standard

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Na	23	5.0	173.2	**33.3751**	57.799	173.2	mg/L	0	Standard
Mg	24	22616.9	1.7	**32.0867**	1.983	6.2	mg/L	32	Standard
K	39	585.0	8.2	**1.9630**	0.088	4.5	mg/L	30	Standard
Ca	43	106.7	21.1	**11.9418**	3.627	30.4	mg/L	48	Standard
Fe	54	143.6	9.6	**0.0016**	0.013	810.1	mg/L	159	Standard
Fe	57	260.0	25.0	**0.3188**	0.279	87.4	mg/L	195	Standard
> **Sc-1**	45	37107.1	4.7				mg/L	39543	Standard
Cl	35	35012.4	2.2				ug/L	27642	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	3463.7	1.0				ug/L	1647	Standard
P	31	17954.0	1.9				ug/L	15231	Standard
S	34	2235.2	3.1				ug/L	1845	Standard
Sr	88	115.0	27.2				ug/L	70	Standard
C	12	173.3	16.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	0	Standard
Dy	164	16.2	97.3				mg/L	12	Standard
Ho-1	165	16.7	62.4				mg/L	12	Standard
Er	166	10.0	100.0				mg/L	20	Standard
I	127	29468.6	2.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.794	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.170	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		92.166
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		89.457
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1606134301SD WG574205-06
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Method 6020 - Summary Report

Sample ID: L1606073201
Sample Date/Time: Tuesday, June 28, 2016 21:56:04
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79995.7	1.9				ug/L	81760	Standard
	Be	9	111.7	43.0	**0.1055**	0.050	47.4	ug/L	17	Standard
	Al	27	26418031.8	2.7	**175.1861**	5.381	3.1	ug/L	1410	Standard
	Sc	45	39758.8	3.3				ug/L	39543	Standard
	Ti	47	586.7	3.3	**2.3079**	0.104	4.5	ug/L	39	Standard
	V	51	2345.3	13.2	**0.1468**	0.044	29.9	ug/L	1415	Standard
	Cr	52	26092.8	3.1	**2.8709**	0.089	3.1	ug/L	6946	Standard
	Cr	53	22536.8	6.4	**26.5559**	1.479	5.6	ug/L	328	Standard
	Mn	55	128770.6	1.1	**20.6681**	0.068	0.3	ug/L	823	Standard
	Co	59	4370.6	1.2	**0.6206**	0.009	1.4	ug/L	252	Standard
	Ni	60	4217.9	1.8	**2.2421**	0.029	1.3	ug/L	192	Standard
	Cu	65	1551.7	2.2	**0.7650**	0.010	1.3	ug/L	141	Standard
	Zn	66	53557.8	1.5	**50.3807**	0.333	0.7	ug/L	491	Standard
>	**Ge**	72	491490.5	1.0				ug/L	515087	Standard
	As	75	918.5	14.0	**0.8957**	0.112	12.5	ug/L	20	Standard
	Se	82	316.6	5.4	**2.7619**	0.129	4.7	ug/L	15	Standard
	Se-1	77	1234.4	4.8	**16.4500**	0.704	4.3	ug/L	48	Standard
>	**Ga**	71	80.0	6.3				mg/L	90	Standard
	Rb	85	7720.3	1.4				ug/L	23	Standard
	Y	89	403861.7	0.4				ug/L	448510	Standard
>	**Rh**	103	80.0	50.0				ug/L	15	Standard
	Mo	98	355.0	5.6	**0.1283**	0.008	5.9	ug/L	11	Standard
	Ag	107	141.3	9.2	**0.0074**	0.002	31.2	ug/L	134	Standard
	Cd	111	202.7	10.3	**0.1036**	0.012	11.2	mg/L	7	Standard
	Cd	114	507.6	13.6	**0.1047**	0.015	13.9	ug/L	16	Standard
>	**In**	115	544497.8	0.6				ug/L	611117	Standard
	Sn	118	1023.4	24.9	**0.0925**	0.050	53.7	ug/L	518	Standard
	Sb	123	669.1	12.6	**0.1463**	0.019	13.2	ug/L	127	Standard
	Ba	135	206763.5	2.5	**112.3722**	2.187	1.9	ug/L	45	Standard
	Ce	140	411.7	6.1				ug/L	298	Standard
>	**Tb**	159	889575.8	1.3				ug/L	977942	Standard
	Ho	165	35.0	37.8				ug/L	12	Standard
	Tl	203	749.0	2.3	**0.0953**	0.003	3.6	ug/L	31	Standard
	Tl	205	685.0	13.9	**0.1029**	0.013	12.2	ug/L	20	Standard
	Pb	206	776.0	1.1	**0.0981**	0.006	5.8	ug/L	286	Standard
	Pb	207	670.3	1.0	**0.0968**	0.005	4.8	ug/L	257	Standard
	Pb	208	2692.4	0.9	**0.1003**	0.005	4.6	ug/L	956	Standard
	U	238	1446.7	3.3	**0.2244**	0.006	2.7	ug/L	17	Standard
>	**Bi**	209	494871.3	2.5				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.6945**	18.515	173.1	mg/L	0	Standard
Mg	24	122893.2	2.3	**162.6797**	1.668	1.0	mg/L	32	Standard
K	39	163.3	4.7	**0.4080**	0.035	8.6	mg/L	30	Standard
Ca	43	160.0	24.8	**18.8525**	6.186	32.8	mg/L	48	Standard
Fe	54	210.9	15.7	**0.0529**	0.031	58.0	mg/L	159	Standard
Fe	57	311.7	8.2	**0.4207**	0.052	12.3	mg/L	195	Standard
> **Sc-1**	45	39758.8	3.3				mg/L	39543	Standard
Cl	35	36983.1	0.7				ug/L	27642	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	75233.3	4.9				ug/L	1647	Standard
P	31	24466.4	2.9				ug/L	15231	Standard
S	34	2258.5	3.0				ug/L	1845	Standard
Sr	88	378.3	24.5				ug/L	70	Standard
C	12	350.0	10.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	120.9	45.9				mg/L	12	Standard
Ho-1	165	35.0	37.8				mg/L	12	Standard
Er	166	50.0	20.0				mg/L	20	Standard
I	127	539973.2	10.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.842	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.419	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.099
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		88.833
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606073201PS WG574571-01
Sample Date/Time: Tuesday, June 28, 2016 21:59:15
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83254.8	1.5				ug/L	81760	Standard
	Be	9	50562.6	1.1	**49.9976**	0.969	1.9	ug/L	17	Standard
	Al	27	27107676.6	2.1	**172.7073**	3.970	2.3	ug/L	1410	Standard
	Sc	45	41809.3	4.0				ug/L	39543	Standard
	Ti	47	632.7	1.1	**2.4753**	0.055	2.2	ug/L	39	Standard
	V	51	341856.0	1.3	**50.8320**	0.708	1.4	ug/L	1415	Standard
	Cr	52	363663.1	1.5	**53.1642**	1.402	2.6	ug/L	6946	Standard
	Cr	53	65238.5	1.6	**76.7756**	0.750	1.0	ug/L	328	Standard
	Mn	55	438903.0	0.5	**70.1258**	2.130	3.0	ug/L	823	Standard
	Co	59	331676.0	1.2	**48.9632**	1.267	2.6	ug/L	252	Standard
	Ni	60	91787.9	1.2	**50.4717**	0.832	1.6	ug/L	192	Standard
	Cu	65	90254.4	2.3	**49.1926**	0.475	1.0	ug/L	141	Standard
	Zn	66	107316.4	1.1	**100.7774**	1.488	1.5	ug/L	491	Standard
>	**Ge**	72	496483.6	2.5				ug/L	515087	Standard
	As	75	55410.9	1.5	**51.1805**	0.552	1.1	ug/L	20	Standard
	Se	82	5728.8	0.9	**51.5315**	1.616	3.1	ug/L	15	Standard
	Se-1	77	4873.5	1.7	**66.4041**	0.559	0.8	ug/L	48	Standard
>	**Ga**	71	86.7	34.8				mg/L	90	Standard
	Rb	85	8242.2	2.9				ug/L	23	Standard
	Y	89	419418.3	1.5				ug/L	448510	Standard
>	**Rh**	103	96.7	18.2				ug/L	15	Standard
	Mo	98	373.5	3.6	**0.1304**	0.006	4.5	ug/L	11	Standard
	Ag	107	276030.5	2.3	**44.4706**	1.418	3.2	ug/L	134	Standard
	Cd	111	97190.1	1.0	**49.1769**	0.174	0.4	mg/L	7	Standard
	Cd	114	234963.3	0.8	**48.9150**	0.797	1.6	ug/L	16	Standard
>	**In**	115	564991.8	0.9				ug/L	611117	Standard
	Sn	118	1183.4	5.3	**0.1145**	0.011	9.2	ug/L	518	Standard
	Sb	123	221298.1	1.9	**50.7268**	1.390	2.7	ug/L	127	Standard
	Ba	135	302634.3	0.9	**158.5372**	1.746	1.1	ug/L	45	Standard
	Ce	140	460.0	11.5				ug/L	298	Standard
>	**Tb**	159	913205.8	1.2				ug/L	977942	Standard
	Ho	165	30.0	16.7				ug/L	12	Standard
	Tl	203	392737.2	0.1	**50.5926**	0.297	0.6	ug/L	31	Standard
	Tl	205	346685.2	1.3	**51.4296**	0.576	1.1	ug/L	20	Standard
	Pb	206	257242.2	1.9	**51.6050**	1.169	2.3	ug/L	286	Standard
	Pb	207	223447.5	1.6	**49.6960**	0.910	1.8	ug/L	257	Standard
	Pb	208	904356.3	0.4	**51.9882**	0.250	0.5	ug/L	956	Standard
	U	238	346838.0	0.8	**52.5438**	0.601	1.1	ug/L	17	Standard
>	**Bi**	209	513215.0	0.6				ug/L	557080	Standard

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Na	23	1.7	173.2	**9.7143**	16.817	173.1	mg/L	0	Standard
Mg	24	126816.9	1.1	**159.8003**	7.491	4.7	mg/L	32	Standard
K	39	205.0	11.2	**0.5135**	0.066	12.9	mg/L	30	Standard
Ca	43	170.0	5.9	**19.0779**	1.160	6.1	mg/L	48	Standard
Fe	54	195.8	12.4	**0.0303**	0.016	52.3	mg/L	159	Standard
Fe	57	350.0	26.8	**0.4863**	0.252	51.8	mg/L	195	Standard
> **Sc-1**	45	41809.3	4.0				mg/L	39543	Standard
Cl	35	38499.5	1.5				ug/L	27642	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	75812.6	2.8				ug/L	1647	Standard
P	31	25067.4	2.7				ug/L	15231	Standard
S	34	2465.2	4.5				ug/L	1845	Standard
Sr	88	373.3	2.8				ug/L	70	Standard
C	12	380.0	17.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	29.2	88.7				mg/L	12	Standard
Ho-1	165	30.0	16.7				mg/L	12	Standard
Er	166	16.7	69.3				mg/L	20	Standard
I	127	574284.0	7.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.828	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.388	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	92.452
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	92.126
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606073201PS WG574571-01
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Method 6020 - Summary Report

Sample ID: L1606073202SDL WG574571-02
Sample Date/Time: Tuesday, June 28, 2016 22:02:27
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80721.2	1.7				ug/L	81760	Standard
	Be	9	38.3	19.9	**0.0293**	0.007	25.3	ug/L	17	Standard
	Al	27	5438081.5	1.8	**35.7222**	0.611	1.7	ug/L	1410	Standard
	Sc	45	40838.3	2.8				ug/L	39543	Standard
	Ti	47	147.3	1.4	**0.4611**	0.014	3.1	ug/L	39	Standard
	V	51	1818.8	6.0	**0.0702**	0.022	30.8	ug/L	1415	Standard
	Cr	52	11457.0	0.2	**0.6827**	0.037	5.5	ug/L	6946	Standard
	Cr	53	6112.9	0.7	**7.0202**	0.190	2.7	ug/L	328	Standard
	Mn	55	27400.4	0.7	**4.3193**	0.101	2.3	ug/L	823	Standard
	Co	59	1102.0	5.1	**0.1343**	0.005	3.9	ug/L	252	Standard
	Ni	60	1029.7	4.0	**0.4727**	0.014	2.9	ug/L	192	Standard
	Cu	65	552.3	3.6	**0.2164**	0.013	6.0	ug/L	141	Standard
	Zn	66	17277.2	1.2	**15.8333**	0.273	1.7	ug/L	491	Standard
>	**Ge**	72	487411.0	2.0				ug/L	515087	Standard
	As	75	241.2	19.0	**0.2666**	0.040	15.0	ug/L	20	Standard
	Se	82	96.0	8.9	**0.7616**	0.066	8.7	ug/L	15	Standard
	Se-1	77	318.7	3.3	**3.7527**	0.181	4.8	ug/L	48	Standard
>	**Ga**	71	61.7	24.8				mg/L	90	Standard
	Rb	85	1698.4	2.7				ug/L	23	Standard
	Y	89	428587.6	1.1				ug/L	448510	Standard
>	**Rh**	103	33.3	37.7				ug/L	15	Standard
	Mo	98	99.2	5.5	**0.0185**	0.002	11.0	ug/L	11	Standard
	Ag	107	280.0	31.3	**0.0265**	0.013	49.6	ug/L	134	Standard
	Cd	111	57.2	23.8	**0.0245**	0.006	26.0	mg/L	7	Standard
	Cd	114	159.7	10.5	**0.0266**	0.003	11.9	ug/L	16	Standard
>	**In**	115	596430.5	0.6				ug/L	611117	Standard
	Sn	118	631.7	19.2	**0.0076**	0.022	282.9	ug/L	518	Standard
	Sb	123	2037.7	21.9	**0.4301**	0.100	23.2	ug/L	127	Standard
	Ba	135	42595.5	1.1	**21.1150**	0.168	0.8	ug/L	45	Standard
	Ce	140	145.0	24.9				ug/L	298	Standard
>	**Tb**	159	930009.8	1.5				ug/L	977942	Standard
	Ho	165	10.0					ug/L	12	Standard
	Tl	203	287.0	3.9	**0.0311**	0.001	3.3	ug/L	31	Standard
	Tl	205	238.3	17.8	**0.0321**	0.006	20.0	ug/L	20	Standard
	Pb	206	467.7	4.1	**0.0276**	0.003	10.6	ug/L	286	Standard
	Pb	207	403.3	2.0	**0.0292**	0.001	2.3	ug/L	257	Standard
	Pb	208	1685.7	2.5	**0.0338**	0.002	5.7	ug/L	956	Standard
	U	238	344.0	11.7	**0.0476**	0.005	11.0	ug/L	17	Standard
>	**Bi**	209	528241.9	1.3				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	25095.8	1.4	**32.3042**	0.912	2.8	mg/L	32	Standard
K	39	53.3	28.6	**0.0336**	0.053	158.1	mg/L	30	Standard
Ca	43	51.7	14.8	**2.2359**	0.907	40.5	mg/L	48	Standard
Fe	54	140.6	10.4	**-0.0136**	0.016	114.2	mg/L	159	Standard
Fe	57	253.3	13.1	**0.2033**	0.104	51.3	mg/L	195	Standard
> **Sc-1**	45	40838.3	2.8				mg/L	39543	Standard
Cl	35	38490.2	0.9				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	17116.3	3.1				ug/L	1647	Standard
P	31	18993.6	2.2				ug/L	15231	Standard
S	34	2316.8	7.4				ug/L	1845	Standard
Sr	88	121.7	17.1				ug/L	70	Standard
C	12	150.0	13.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	5.2	126.3				mg/L	12	Standard
Ho-1	165	10.0					mg/L	12	Standard
Er	166	30.0	57.7				mg/L	20	Standard
I	127	133767.9	0.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.729	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.627	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.597
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.823
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606073202SDL WG574571-02
Sample Date/Time: Tuesday, June 28, 2016 22:05:38
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76053.8	2.7				ug/L	81760	Standard
	Be	9	25.0	34.6	**0.0174**	0.009	54.5	ug/L	17	Standard
	Al	27	1128796.7	0.4	**7.8615**	0.198	2.5	ug/L	1410	Standard
	Sc	45	38686.0	0.8				ug/L	39543	Standard
	Ti	47	55.3	34.5	**0.0617**	0.078	127.2	ug/L	39	Standard
	V	51	1638.9	5.5	**0.0337**	0.013	38.4	ug/L	1415	Standard
	Cr	52	8717.5	0.5	**0.2193**	0.011	4.9	ug/L	6946	Standard
	Cr	53	2070.1	6.6	**2.0621**	0.160	7.7	ug/L	328	Standard
	Mn	55	6629.8	1.0	**0.8938**	0.008	0.9	ug/L	823	Standard
	Co	59	385.0	3.7	**0.0245**	0.002	8.1	ug/L	252	Standard
	Ni	60	384.7	1.7	**0.1032**	0.003	2.7	ug/L	192	Standard
	Cu	65	339.7	2.9	**0.0913**	0.005	5.2	ug/L	141	Standard
	Zn	66	9883.2	1.3	**8.3627**	0.143	1.7	ug/L	491	Standard
>	**Ge**	72	505388.6	0.3				ug/L	515087	Standard
	As	75	-13.0	254.9	**0.0286**	0.030	104.7	ug/L	20	Standard
	Se	82	27.4	29.7	**0.1233**	0.072	58.7	ug/L	15	Standard
	Se-1	77	108.0	8.5	**0.7425**	0.129	17.3	ug/L	48	Standard
>	**Ga**	71	48.3	46.6				mg/L	90	Standard
	Rb	85	370.0	8.2				ug/L	23	Standard
	Y	89	428119.2	2.9				ug/L	448510	Standard
>	**Rh**	103	23.3	44.6				ug/L	15	Standard
	Mo	98	45.2	4.1	**-0.0015**	0.001	60.8	ug/L	11	Standard
	Ag	107	113.3	16.4	**0.0016**	0.003	172.3	ug/L	134	Standard
	Cd	111	14.3	24.6	**0.0041**	0.002	39.1	mg/L	7	Standard
	Cd	114	49.9	58.5	**0.0052**	0.006	113.8	ug/L	16	Standard
>	**In**	115	579695.7	1.7				ug/L	611117	Standard
	Sn	118	626.7	2.3	**0.0098**	0.004	44.1	ug/L	518	Standard
	Sb	123	500.2	33.4	**0.0994**	0.039	39.6	ug/L	127	Standard
	Ba	135	8786.5	0.8	**4.4621**	0.051	1.1	ug/L	45	Standard
	Ce	140	53.3	19.5				ug/L	298	Standard
>	**Tb**	159	899038.1	0.5				ug/L	977942	Standard
	Ho	165	3.3	86.6				ug/L	12	Standard
	Tl	203	124.3	3.7	**0.0110**	0.001	5.1	ug/L	31	Standard
	Tl	205	108.3	13.3	**0.0136**	0.002	15.1	ug/L	20	Standard
	Pb	206	338.3	5.2	**0.0034**	0.004	109.0	ug/L	286	Standard
	Pb	207	309.3	7.0	**0.0098**	0.005	45.9	ug/L	257	Standard
	Pb	208	1266.0	2.0	**0.0114**	0.001	11.9	ug/L	956	Standard
	U	238	68.0	9.6	**0.0072**	0.001	13.2	ug/L	17	Standard
>	**Bi**	209	520681.9	0.4				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	5104.2	1.7	**6.8887**	0.170	2.5	mg/L	32	Standard
K	39	40.0	37.5	**-0.0032**	0.052	1630.6	mg/L	30	Standard
Ca	43	30.0	57.7	**-0.6841**	2.704	395.3	mg/L	48	Standard
Fe	54	149.1	25.4	**0.0007**	0.034	4947.2	mg/L	159	Standard
Fe	57	220.0	14.9	**0.1340**	0.108	80.4	mg/L	195	Standard
Sc-1	45	38686.0	0.8				mg/L	39543	Standard
Cl	35	39148.5	1.2				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	4957.5	4.0				ug/L	1647	Standard
P	31	18357.8	2.1				ug/L	15231	Standard
S	34	2318.5	4.4				ug/L	1845	Standard
Sr	88	78.3	18.4				ug/L	70	Standard
C	12	130.0	27.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.2	116.5				mg/L	12	Standard
Ho-1	165	3.3	86.6				mg/L	12	Standard
Er	166	16.7	91.7				mg/L	20	Standard
I	127	32523.3	5.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.021	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.117	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.858
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.466
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 22:08:51
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74027.2	2.8				ug/L	81760	Standard
	Be	9	46885.8	2.2	**52.1458**	1.090	2.1	ug/L	17	Standard
	Al	27	7258519.9	1.3	**52.0333**	2.108	4.1	ug/L	1410	Standard
	Sc	45	37711.9	1.9				ug/L	39543	Standard
	Ti	47	24276.8	0.9	**101.7561**	0.915	0.9	ug/L	39	Standard
	V	51	338117.2	0.9	**50.5811**	0.467	0.9	ug/L	1415	Standard
	Cr	52	344759.2	1.1	**50.6515**	0.612	1.2	ug/L	6946	Standard
	Cr	53	43998.8	1.8	**51.9886**	0.950	1.8	ug/L	328	Standard
	Mn	55	319756.8	1.7	**51.3453**	0.844	1.6	ug/L	823	Standard
	Co	59	342187.7	2.1	**50.8146**	1.023	2.0	ug/L	252	Standard
	Ni	60	91463.9	0.8	**50.5986**	0.401	0.8	ug/L	192	Standard
	Cu	65	92539.7	0.2	**50.7558**	0.132	0.3	ug/L	141	Standard
	Zn	66	54475.1	1.3	**51.0616**	0.732	1.4	ug/L	491	Standard
>	**Ge**	72	493368.3	0.1				ug/L	515087	Standard
	As	75	54361.0	0.4	**50.5191**	0.195	0.4	ug/L	20	Standard
	Se	82	5570.4	0.7	**50.3948**	0.327	0.6	ug/L	15	Standard
	Se-1	77	3889.2	2.7	**53.1789**	1.513	2.8	ug/L	48	Standard
>	**Ga**	71	56.7	13.5				mg/L	90	Standard
	Rb	85	710.0	9.2				ug/L	23	Standard
	Y	89	427120.1	2.2				ug/L	448510	Standard
>	**Rh**	103	20.0	50.0				ug/L	15	Standard
	Mo	98	255476.4	1.0	**100.3761**	0.479	0.5	ug/L	11	Standard
	Ag	107	311158.3	0.6	**49.2259**	0.757	1.5	ug/L	134	Standard
	Cd	111	98620.7	1.2	**49.0052**	0.618	1.3	mg/L	7	Standard
	Cd	114	238558.2	0.5	**48.7672**	0.251	0.5	ug/L	16	Standard
>	**In**	115	575337.5	0.9				ug/L	611117	Standard
	Sn	118	277257.2	0.9	**49.7064**	0.586	1.2	ug/L	518	Standard
	Sb	123	223054.4	0.8	**50.2070**	0.812	1.6	ug/L	127	Standard
	Ba	135	94954.3	0.7	**48.8337**	0.782	1.6	ug/L	45	Standard
	Ce	140	61.7	16.9				ug/L	298	Standard
>	**Tb**	159	913449.5	0.5				ug/L	977942	Standard
	Ho	165	10.0	86.6				ug/L	12	Standard
	Tl	203	397249.4	0.6	**50.3639**	0.352	0.7	ug/L	31	Standard
	Tl	205	354959.8	0.3	**51.8245**	0.065	0.1	ug/L	20	Standard
	Pb	206	256290.8	0.6	**50.5971**	0.273	0.5	ug/L	286	Standard
	Pb	207	233188.9	1.2	**51.0418**	0.565	1.1	ug/L	257	Standard
	Pb	208	935979.9	1.1	**52.9561**	0.623	1.2	ug/L	956	Standard
	U	238	344850.7	0.5	**51.4151**	0.322	0.6	ug/L	17	Standard
>	**Bi**	209	521458.9	0.2				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	3802.1	3.0	**5.2525**	0.237	4.5	mg/L	32	Standard
K	39	1311.7	9.2	**4.5102**	0.493	10.9	mg/L	30	Standard
Ca	43	78.3	7.4	**7.1225**	0.723	10.1	mg/L	48	Standard
Fe	54	5407.8	4.5	**4.9980**	0.312	6.2	mg/L	159	Standard
Fe	57	1643.4	4.4	**5.1911**	0.156	3.0	mg/L	195	Standard
> **Sc-1**	45	37711.9	1.9				mg/L	39543	Standard
Cl	35	36184.5	2.9				ug/L	27642	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	1690.1	2.4				ug/L	1647	Standard
P	31	19537.6	2.2				ug/L	15231	Standard
S	34	2665.2	5.3				ug/L	1845	Standard
Sr	88	80.0	12.5				ug/L	70	Standard
C	12	116.7	9.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	9.4	109.4				mg/L	12	Standard
Ho-1	165	10.0	86.6				mg/L	12	Standard
Er	166	13.3	43.3				mg/L	20	Standard
I	127	5821.1	15.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	104.292		
Al	27	104.067		
Sc	45			
Ti	47	101.756		
V	51	101.162		
Cr	52	101.303		
Cr	53			
Mn	55	102.691		
Co	59	101.629		
Ni	60	101.197		
Cu	65	101.512		
Zn	66	102.123		
> Ge	72		95.784	
As	75	101.038		
Se	82	100.790		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
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Rb	85			
Y	89			
> Rh	103			
Mo	98	100.376		
Ag	107	98.452		
Cd	111	98.010		
Cd	114			
> In	115			94.145
Sn	118	99.413		
Sb	123	100.414		
Ba	135	97.667		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.728		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.912		
U	238	102.830		
> Bi	209			93.606
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 22:12:02
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72720.8	1.4				ug/L	81760	Standard
	Be	9	31.7	9.1	**0.0261**	0.003	13.4	ug/L	17	Standard
	Al	27	3567.1	29.0	**0.0117**	0.008	67.2	ug/L	1410	Standard
	Sc	45	39132.1	1.1				ug/L	39543	Standard
	Ti	47	37.0	21.5	**-0.0116**	0.034	290.1	ug/L	39	Standard
	V	51	1125.9	7.5	**-0.0395**	0.013	33.1	ug/L	1415	Standard
	Cr	52	6280.0	4.7	**-0.1269**	0.043	33.9	ug/L	6946	Standard
	Cr	53	665.0	3.8	**0.4397**	0.027	6.1	ug/L	328	Standard
	Mn	55	716.0	7.9	**-0.0346**	0.009	26.9	ug/L	823	Standard
	Co	59	261.7	5.4	**0.0070**	0.002	26.9	ug/L	252	Standard
	Ni	60	220.7	25.5	**0.0158**	0.031	194.2	ug/L	192	Standard
	Cu	65	175.7	31.3	**0.0045**	0.030	664.0	ug/L	141	Standard
	Zn	66	494.7	12.2	**-0.3623**	0.056	15.6	ug/L	491	Standard
>	**Ge**	72	499522.9	0.5				ug/L	515087	Standard
	As	75	-22.4	199.4	**0.0197**	0.041	208.7	ug/L	20	Standard
	Se	82	18.1	44.1	**0.0430**	0.071	165.8	ug/L	15	Standard
	Se-1	77	56.7	13.4	**0.0566**	0.102	180.9	ug/L	48	Standard
>	**Ga**	71	45.0	38.5				mg/L	90	Standard
	Rb	85	31.7	45.6				ug/L	23	Standard
	Y	89	417360.5	0.9				ug/L	448510	Standard
>	**Rh**	103	6.7	114.6				ug/L	15	Standard
	Mo	98	287.6	23.9	**0.0927**	0.026	27.9	ug/L	11	Standard
	Ag	107	190.3	4.8	**0.0136**	0.002	11.9	ug/L	134	Standard
	Cd	111	25.8	62.0	**0.0098**	0.008	81.4	mg/L	7	Standard
	Cd	114	75.5	64.7	**0.0104**	0.010	96.5	ug/L	16	Standard
>	**In**	115	581386.0	1.0				ug/L	611117	Standard
	Sn	118	788.4	29.5	**0.0382**	0.041	108.2	ug/L	518	Standard
	Sb	123	553.2	30.8	**0.1105**	0.038	34.6	ug/L	127	Standard
	Ba	135	104.3	62.1	**0.0282**	0.034	119.2	ug/L	45	Standard
	Ce	140	15.0	88.2				ug/L	298	Standard
>	**Tb**	159	916886.1	2.0				ug/L	977942	Standard
	Ho	165	6.7	43.3				ug/L	12	Standard
	Tl	203	96.0	40.0	**0.0072**	0.005	66.3	ug/L	31	Standard
	Tl	205	80.0	25.0	**0.0092**	0.003	29.7	ug/L	20	Standard
	Pb	206	283.3	0.7	**-0.0085**	0.001	14.2	ug/L	286	Standard
	Pb	207	242.3	7.5	**-0.0058**	0.004	64.9	ug/L	257	Standard
	Pb	208	1066.3	4.7	**-0.0011**	0.002	176.0	ug/L	956	Standard
	U	238	68.3	24.9	**0.0070**	0.002	33.1	ug/L	17	Standard
>	**Bi**	209	530213.7	1.5				ug/L	557080	Standard

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Na	23	5.0	100.0	**32.2313**	32.195	99.9	mg/L	0	Standard
Mg	24	43.3	46.6	**0.0012**	0.027	2331.0	mg/L	32	Standard
K	39	38.3	41.9	**-0.0103**	0.056	538.4	mg/L	30	Standard
Ca	43	25.0	20.0	**-1.5137**	0.732	48.3	mg/L	48	Standard
Fe	54	136.0	18.8	**-0.0125**	0.025	197.8	mg/L	159	Standard
Fe	57	235.0	17.0	**0.1764**	0.130	73.9	mg/L	195	Standard
Sc-1	45	39132.1	1.1				mg/L	39543	Standard
Cl	35	35003.7	1.3				ug/L	27642	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1530.1	14.2				ug/L	1647	Standard
P	31	18486.3	1.6				ug/L	15231	Standard
S	34	2496.9	3.2				ug/L	1845	Standard
Sr	88	51.7	31.1				ug/L	70	Standard
C	12	86.7	52.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.5	5.0				mg/L	12	Standard
Ho-1	165	6.7	43.3				mg/L	12	Standard
Er	166	10.0	100.0				mg/L	20	Standard
I	127	4170.6	14.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.978	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.135
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.177
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606073202
Sample Date/Time: Tuesday, June 28, 2016 22:15:14
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76318.4	2.0				ug/L	81760	Standard
	Be	9	40.0	69.6	**0.0330**	0.029	88.9	ug/L	17	Standard
	Al	27	23571551.0	1.4	**163.8296**	2.147	1.3	ug/L	1410	Standard
	Sc	45	39020.2	3.0				ug/L	39543	Standard
	Ti	47	595.0	5.6	**2.3771**	0.145	6.1	ug/L	39	Standard
	V	51	1578.4	25.4	**0.0346**	0.061	176.4	ug/L	1415	Standard
	Cr	52	21713.5	1.1	**2.2571**	0.032	1.4	ug/L	6946	Standard
	Cr	53	25227.7	4.6	**30.1930**	1.400	4.6	ug/L	328	Standard
	Mn	55	113835.4	1.3	**18.5078**	0.247	1.3	ug/L	823	Standard
	Co	59	3991.2	2.2	**0.5722**	0.015	2.6	ug/L	252	Standard
	Ni	60	3905.8	1.2	**2.0985**	0.020	1.0	ug/L	192	Standard
	Cu	65	1542.7	2.9	**0.7718**	0.023	3.0	ug/L	141	Standard
	Zn	66	25635.3	1.1	**24.0224**	0.322	1.3	ug/L	491	Standard
>	**Ge**	72	484802.3	0.3				ug/L	515087	Standard
	As	75	911.4	10.9	**0.9016**	0.094	10.4	ug/L	20	Standard
	Se	82	285.6	1.4	**2.5161**	0.032	1.3	ug/L	15	Standard
	Se-1	77	1182.4	4.2	**15.9563**	0.701	4.4	ug/L	48	Standard
>	**Ga**	71	88.3	32.7				mg/L	90	Standard
	Rb	85	8777.5	4.2				ug/L	23	Standard
	Y	89	401864.9	0.9				ug/L	448510	Standard
>	**Rh**	103	95.0	19.0				ug/L	15	Standard
	Mo	98	789.3	4.8	**0.3176**	0.018	5.8	ug/L	11	Standard
	Ag	107	101.3	14.3	**0.0012**	0.002	197.6	ug/L	134	Standard
	Cd	111	81.6	8.8	**0.0411**	0.003	8.4	mg/L	7	Standard
	Cd	114	236.0	13.0	**0.0475**	0.007	15.0	ug/L	16	Standard
>	**In**	115	530144.7	1.0				ug/L	611117	Standard
	Sn	118	770.0	10.1	**0.0481**	0.014	28.6	ug/L	518	Standard
	Sb	123	728.9	13.4	**0.1651**	0.022	13.6	ug/L	127	Standard
	Ba	135	185424.0	0.3	**103.5140**	0.966	0.9	ug/L	45	Standard
	Ce	140	496.7	18.3				ug/L	298	Standard
>	**Tb**	159	867434.9	1.9				ug/L	977942	Standard
	Ho	165	20.0	0.0				ug/L	12	Standard
	Tl	203	239.3	4.0	**0.0278**	0.001	4.3	ug/L	31	Standard
	Tl	205	225.0	20.4	**0.0330**	0.007	22.5	ug/L	20	Standard
	Pb	206	582.0	1.5	**0.0598**	0.001	1.4	ug/L	286	Standard
	Pb	207	480.3	3.9	**0.0549**	0.005	9.4	ug/L	257	Standard
	Pb	208	1935.7	1.6	**0.0572**	0.003	4.8	ug/L	956	Standard
	U	238	1057.0	6.3	**0.1661**	0.010	5.7	ug/L	17	Standard
>	**Bi**	209	486031.1	0.8				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	123145.1	1.2	**166.1283**	3.309	2.0	mg/L	32	Standard
K	39	193.3	27.9	**0.5225**	0.193	37.0	mg/L	30	Standard
Ca	43	155.0	19.6	**18.5842**	5.220	28.1	mg/L	48	Standard
Fe	54	201.4	15.9	**0.0482**	0.034	70.8	mg/L	159	Standard
Fe	57	301.7	7.8	**0.4095**	0.108	26.4	mg/L	195	Standard
Sc-1	45	39020.2	3.0				mg/L	39543	Standard
Cl	35	36882.8	1.2				ug/L	27642	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	66321.6	2.9				ug/L	1647	Standard
P	31	23950.6	0.8				ug/L	15231	Standard
S	34	2285.2	3.2				ug/L	1845	Standard
Sr	88	326.7	6.4				ug/L	70	Standard
C	12	383.3	11.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	24.1	87.6				mg/L	12	Standard
Ho-1	165	20.0	0.0				mg/L	12	Standard
Er	166	53.3	28.6				mg/L	20	Standard
I	127	490270.4	8.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		93.344	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		94.121	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		86.750
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.246
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606076201
Sample Date/Time: Tuesday, June 28, 2016 22:18:25
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74725.5	1.6				ug/L	81760	Standard
	Be	9	33.3	56.8	**0.0272**	0.022	79.2	ug/L	17	Standard
	Al	27	1272215.4	1.6	**9.0180**	0.230	2.5	ug/L	1410	Standard
	Sc	45	40079.6	0.9				ug/L	39543	Standard
	Ti	47	73.0	21.4	**0.1312**	0.065	49.6	ug/L	39	Standard
	V	51	1912.1	11.7	**0.0708**	0.033	46.3	ug/L	1415	Standard
	Cr	52	9243.8	1.7	**0.2820**	0.015	5.4	ug/L	6946	Standard
	Cr	53	1550.1	16.6	**1.4381**	0.284	19.7	ug/L	328	Standard
	Mn	55	4050.6	51.7	**0.4818**	0.327	67.8	ug/L	823	Standard
	Co	59	576.0	42.1	**0.0513**	0.035	68.0	ug/L	252	Standard
	Ni	60	659.3	6.6	**0.2481**	0.023	9.5	ug/L	192	Standard
	Cu	65	493.7	5.0	**0.1712**	0.013	7.5	ug/L	141	Standard
	Zn	66	2294.8	5.3	**1.2839**	0.114	8.9	ug/L	491	Standard
>	**Ge**	72	510757.4	0.7				ug/L	515087	Standard
	As	75	-15.4	127.0	**0.0265**	0.018	66.6	ug/L	20	Standard
	Se	82	23.9	38.0	**0.0895**	0.079	87.8	ug/L	15	Standard
	Se-1	77	93.7	16.1	**0.5342**	0.193	36.2	ug/L	48	Standard
>	**Ga**	71	58.3	17.8				mg/L	90	Standard
	Rb	85	1476.7	6.6				ug/L	23	Standard
	Y	89	432514.2	1.7				ug/L	448510	Standard
>	**Rh**	103	26.7	39.0				ug/L	15	Standard
	Mo	98	146.0	48.2	**0.0371**	0.027	72.5	ug/L	11	Standard
	Ag	107	112.7	13.4	**0.0013**	0.002	181.1	ug/L	134	Standard
	Cd	111	43.2	14.9	**0.0182**	0.003	18.1	mg/L	7	Standard
	Cd	114	109.3	34.7	**0.0170**	0.007	43.8	ug/L	16	Standard
>	**In**	115	586396.8	0.9				ug/L	611117	Standard
	Sn	118	771.7	15.6	**0.0341**	0.022	63.3	ug/L	518	Standard
	Sb	123	236.4	15.7	**0.0394**	0.008	21.0	ug/L	127	Standard
	Ba	135	3173.0	2.9	**1.5769**	0.056	3.5	ug/L	45	Standard
	Ce	140	2270.2	3.3				ug/L	298	Standard
>	**Tb**	159	916697.6	0.7				ug/L	977942	Standard
	Ho	165	490.0	12.4				ug/L	12	Standard
	Tl	203	130.7	10.3	**0.0114**	0.002	13.6	ug/L	31	Standard
	Tl	205	215.0	77.4	**0.0282**	0.023	82.9	ug/L	20	Standard
	Pb	206	395.3	3.6	**0.0126**	0.003	22.5	ug/L	286	Standard
	Pb	207	368.7	19.2	**0.0207**	0.015	70.3	ug/L	257	Standard
	Pb	208	1630.7	27.1	**0.0295**	0.024	80.4	ug/L	956	Standard
	U	238	158.7	69.5	**0.0200**	0.016	79.0	ug/L	17	Standard
>	**Bi**	209	534609.1	0.7				ug/L	557080	Standard

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Na	23	5.0	100.0	**31.5470**	31.355	99.4	mg/L	0	Standard
Mg	24	598.3	11.5	**0.7287**	0.091	12.5	mg/L	32	Standard
K	39	176.7	18.2	**0.4475**	0.107	24.0	mg/L	30	Standard
Ca	43	93.3	48.6	**8.6233**	6.782	78.6	mg/L	48	Standard
Fe	54	114.2	15.8	**-0.0351**	0.016	46.3	mg/L	159	Standard
Fe	57	271.7	7.4	**0.2806**	0.074	26.3	mg/L	195	Standard
> **Sc-1**	45	40079.6	0.9				mg/L	39543	Standard
Cl	35	37059.3	1.9				ug/L	27642	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	3193.7	9.3				ug/L	1647	Standard
P	31	19133.7	1.0				ug/L	15231	Standard
S	34	2435.2	3.0				ug/L	1845	Standard
Sr	88	116.7	19.8				ug/L	70	Standard
C	12	110.0	24.1				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	699.7	7.7				mg/L	12	Standard
Ho-1	165	490.0	12.4				mg/L	12	Standard
Er	166	563.3	4.5				mg/L	20	Standard
I	127	24296.3	37.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.396	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.159	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.955
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.966
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606138001
Sample Date/Time: Tuesday, June 28, 2016 22:21:37
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79317.1	2.1				ug/L	81760	Standard
	Be	9	923.4	3.6	**0.9491**	0.046	4.8	ug/L	17	Standard
	Al	27	22322355.7	1.2	**149.2842**	1.816	1.2	ug/L	1410	Standard
	Sc	45	50147.9	2.6				ug/L	39543	Standard
	Ti	47	26223.7	0.7	**107.9697**	0.846	0.8	ug/L	39	Standard
	V	51	127306.3	1.5	**18.5751**	0.291	1.6	ug/L	1415	Standard
	Cr	52	100654.9	1.1	**13.7705**	0.145	1.1	ug/L	6946	Standard
	Cr	53	12865.5	4.5	**14.6884**	0.707	4.8	ug/L	328	Standard
	Mn	55	4304305.9	0.4	**680.6871**	4.381	0.6	ug/L	823	Standard
	Co	59	49359.3	0.1	**7.1725**	0.024	0.3	ug/L	252	Standard
	Ni	60	30538.1	1.5	**16.5228**	0.280	1.7	ug/L	192	Standard
	Cu	65	24616.6	0.6	**13.1942**	0.101	0.8	ug/L	141	Standard
	Zn	66	126791.0	1.1	**117.7932**	1.321	1.1	ug/L	491	Standard
>	**Ge**	72	502314.8	0.3				ug/L	515087	Standard
	As	75	6358.7	2.6	**5.8397**	0.152	2.6	ug/L	20	Standard
	Se	82	52.0	15.4	**0.3436**	0.072	20.9	ug/L	15	Standard
	Se-1	77	111.0	6.5	**0.7919**	0.097	12.2	ug/L	48	Standard
>	**Ga**	71	15155.9	0.2				mg/L	90	Standard
	Rb	85	244761.5	1.6				ug/L	23	Standard
	Y	89	581808.2	2.1				ug/L	448510	Standard
>	**Rh**	103	81.7	28.3				ug/L	15	Standard
	Mo	98	7400.1	1.4	**2.8571**	0.099	3.5	ug/L	11	Standard
	Ag	107	359.7	8.1	**0.0401**	0.005	12.7	ug/L	134	Standard
	Cd	111	226.0	4.7	**0.1082**	0.006	6.0	mg/L	7	Standard
	Cd	114	572.5	10.7	**0.1110**	0.014	12.9	ug/L	16	Standard
>	**In**	115	581977.2	2.1				ug/L	611117	Standard
	Sn	118	1150.0	8.4	**0.1021**	0.013	12.6	ug/L	518	Standard
	Sb	123	1041.4	3.0	**0.2191**	0.011	5.1	ug/L	127	Standard
	Ba	135	264934.9	0.4	**134.7601**	2.267	1.7	ug/L	45	Standard
	Ce	140	872470.7	0.6				ug/L	298	Standard
>	**Tb**	159	944063.2	1.7				ug/L	977942	Standard
	Ho	165	13182.4	3.3				ug/L	12	Standard
	Tl	203	1500.7	3.5	**0.1808**	0.008	4.2	ug/L	31	Standard
	Tl	205	1268.4	3.4	**0.1783**	0.007	4.2	ug/L	20	Standard
	Pb	206	85066.5	1.3	**16.3322**	0.328	2.0	ug/L	286	Standard
	Pb	207	70090.8	1.2	**14.9184**	0.287	1.9	ug/L	257	Standard
	Pb	208	293052.1	0.7	**16.1237**	0.113	0.7	ug/L	956	Standard
	U	238	6791.5	1.5	**0.9844**	0.021	2.1	ug/L	17	Standard
>	**Bi**	209	534845.3	0.8				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	2491.9	2.3	**2.5590**	0.057	2.2	mg/L	32	Standard
K	39	860.0	5.6	**2.1528**	0.183	8.5	mg/L	30	Standard
Ca	43	481.7	3.2	**52.3892**	3.048	5.8	mg/L	48	Standard
Fe	54	14060.9	4.3	**9.8944**	0.202	2.0	mg/L	159	Standard
Fe	57	4057.2	4.0	**10.1835**	0.599	5.9	mg/L	195	Standard
> **Sc-1**	45	50147.9	2.6				mg/L	39543	Standard
Cl	35	34061.6	1.3				ug/L	27642	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	3443.7	4.1				ug/L	1647	Standard
P	31	33871.2	1.5				ug/L	15231	Standard
S	34	2461.9	2.1				ug/L	1845	Standard
Sr	88	305.0	8.2				ug/L	70	Standard
C	12	206.7	29.6				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	40.0	50.0				mg/L	0	Standard
Dy	164	22121.1	1.8				mg/L	12	Standard
Ho-1	165	13182.4	3.3				mg/L	12	Standard
Er	166	12021.4	0.9				mg/L	20	Standard
I	127	158658.4	11.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.012	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.520	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.232
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.009
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	

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Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606138002
Sample Date/Time: Tuesday, June 28, 2016 22:24:48
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80508.4	1.6				ug/L	81760	Standard
	Be	9	865.0	8.5	**0.8749**	0.075	8.6	ug/L	17	Standard
	Al	27	22868958.8	1.7	**150.6704**	2.885	1.9	ug/L	1410	Standard
	Sc	45	49400.4	2.8				ug/L	39543	Standard
	Ti	47	23164.7	1.4	**96.5938**	1.528	1.6	ug/L	39	Standard
	V	51	124883.8	1.8	**18.4559**	0.304	1.6	ug/L	1415	Standard
	Cr	52	103466.8	1.3	**14.3825**	0.239	1.7	ug/L	6946	Standard
	Cr	53	12758.7	1.5	**14.7559**	0.244	1.7	ug/L	328	Standard
	Mn	55	4407919.2	0.3	**706.0993**	3.755	0.5	ug/L	823	Standard
	Co	59	51228.1	1.3	**7.5421**	0.111	1.5	ug/L	252	Standard
	Ni	60	30969.0	1.2	**16.9756**	0.235	1.4	ug/L	192	Standard
	Cu	65	25034.7	0.7	**13.5947**	0.118	0.9	ug/L	141	Standard
	Zn	66	152662.0	1.2	**143.8470**	1.906	1.3	ug/L	491	Standard
>	**Ge**	72	495895.8	0.2				ug/L	515087	Standard
	As	75	6401.6	1.0	**5.9544**	0.051	0.9	ug/L	20	Standard
	Se	82	65.6	3.6	**0.4728**	0.020	4.3	ug/L	15	Standard
	Se-1	77	120.3	12.9	**0.9403**	0.215	22.9	ug/L	48	Standard
>	**Ga**	71	15282.7	1.5				mg/L	90	Standard
	Rb	85	248664.6	2.3				ug/L	23	Standard
	Y	89	598252.6	1.6				ug/L	448510	Standard
>	**Rh**	103	61.7	4.7				ug/L	15	Standard
	Mo	98	8173.4	1.7	**3.0442**	0.032	1.1	ug/L	11	Standard
	Ag	107	334.0	5.8	**0.0342**	0.003	8.9	ug/L	134	Standard
	Cd	111	175.2	4.5	**0.0802**	0.004	5.0	mg/L	7	Standard
	Cd	114	424.7	8.5	**0.0779**	0.007	8.4	ug/L	16	Standard
>	**In**	115	603234.5	0.7				ug/L	611117	Standard
	Sn	118	1006.7	2.2	**0.0706**	0.004	6.0	ug/L	518	Standard
	Sb	123	981.2	4.8	**0.1979**	0.011	5.8	ug/L	127	Standard
	Ba	135	265403.3	0.1	**130.2141**	0.915	0.7	ug/L	45	Standard
	Ce	140	904460.6	1.2				ug/L	298	Standard
>	**Tb**	159	953156.2	1.3				ug/L	977942	Standard
	Ho	165	13287.5	2.7				ug/L	12	Standard
	Tl	203	1338.1	1.2	**0.1623**	0.004	2.2	ug/L	31	Standard
	Tl	205	1380.1	21.0	**0.1966**	0.045	23.0	ug/L	20	Standard
	Pb	206	85143.9	1.2	**16.5139**	0.424	2.6	ug/L	286	Standard
	Pb	207	70337.2	0.8	**15.1235**	0.335	2.2	ug/L	257	Standard
	Pb	208	299122.5	0.5	**16.6275**	0.345	2.1	ug/L	956	Standard
	U	238	7037.6	3.1	**1.0308**	0.048	4.7	ug/L	17	Standard
>	**Bi**	209	529543.6	1.6				ug/L	557080	Standard

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Na	23	5.0	0.0	**25.7128**	0.720	2.8	mg/L	0	Standard
Mg	24	2751.9	1.6	**2.8760**	0.054	1.9	mg/L	32	Standard
K	39	820.0	12.4	**2.0772**	0.274	13.2	mg/L	30	Standard
Ca	43	460.0	15.1	**50.7618**	10.089	19.9	mg/L	48	Standard
Fe	54	14800.2	1.5	**10.5924**	0.445	4.2	mg/L	159	Standard
Fe	57	4213.9	2.7	**10.7740**	0.623	5.8	mg/L	195	Standard
Sc-1	45	49400.4	2.8				mg/L	39543	Standard
Cl	35	34900.8	0.4				ug/L	27642	Standard
Kr	83	3.0	0.0				ug/L	2	Standard
Br	81	3303.7	3.6				ug/L	1647	Standard
P	31	33101.1	2.4				ug/L	15231	Standard
S	34	2478.5	3.3				ug/L	1845	Standard
Sr	88	288.3	13.9				ug/L	70	Standard
C	12	206.7	17.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	53.3	65.8				mg/L	0	Standard
Dy	164	23538.0	3.9				mg/L	12	Standard
Ho-1	165	13287.5	2.7				mg/L	12	Standard
Er	166	12271.6	4.5				mg/L	20	Standard
I	127	174817.7	8.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.469	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.274	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.710
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.057
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606138106
Sample Date/Time: Tuesday, June 28, 2016 22:28:00
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75884.6	2.0				ug/L	81760	Standard
	Be	9	26.7	10.8	**0.0192**	0.003	17.5	ug/L	17	Standard
	Al	27	26057.5	7.4	**0.1676**	0.010	6.0	ug/L	1410	Standard
	Sc	45	39473.0	0.8				ug/L	39543	Standard
	Ti	47	39.3	21.6	**-0.0051**	0.035	681.9	ug/L	39	Standard
	V	51	1622.1	7.1	**0.0295**	0.017	56.8	ug/L	1415	Standard
	Cr	52	8616.4	0.2	**0.1952**	0.003	1.5	ug/L	6946	Standard
	Cr	53	775.0	5.7	**0.5518**	0.051	9.2	ug/L	328	Standard
	Mn	55	5073.2	5.2	**0.6432**	0.042	6.5	ug/L	823	Standard
	Co	59	305.3	2.9	**0.0126**	0.001	10.1	ug/L	252	Standard
	Ni	60	336.7	8.9	**0.0759**	0.016	21.2	ug/L	192	Standard
	Cu	65	1953.8	0.6	**0.9495**	0.006	0.6	ug/L	141	Standard
	Zn	66	2327.2	0.6	**1.3204**	0.013	1.0	ug/L	491	Standard
>	**Ge**	72	509122.8	0.0				ug/L	515087	Standard
	As	75	-29.7	15.9	**0.0136**	0.004	31.1	ug/L	20	Standard
	Se	82	19.1	15.2	**0.0489**	0.026	52.3	ug/L	15	Standard
	Se-1	77	54.3	12.9	**0.0108**	0.094	874.4	ug/L	48	Standard
>	**Ga**	71	61.7	23.4				mg/L	90	Standard
	Rb	85	193.3	9.8				ug/L	23	Standard
	Y	89	438080.9	2.7				ug/L	448510	Standard
>	**Rh**	103	13.3	94.4				ug/L	15	Standard
	Mo	98	1348.1	2.9	**0.4917**	0.018	3.6	ug/L	11	Standard
	Ag	107	96.0	6.3	**-0.0016**	0.001	59.2	ug/L	134	Standard
	Cd	111	29.0	10.6	**0.0110**	0.001	13.2	mg/L	7	Standard
	Cd	114	62.4	58.3	**0.0074**	0.007	97.2	ug/L	16	Standard
>	**In**	115	596825.6	0.5				ug/L	611117	Standard
	Sn	118	1153.4	11.3	**0.0978**	0.023	23.4	ug/L	518	Standard
	Sb	123	161.5	18.7	**0.0222**	0.007	29.7	ug/L	127	Standard
	Ba	135	505.0	6.7	**0.2253**	0.016	7.0	ug/L	45	Standard
	Ce	140	233.3	21.5				ug/L	298	Standard
>	**Tb**	159	918727.2	0.8				ug/L	977942	Standard
	Ho	165	6.7	43.3				ug/L	12	Standard
	Tl	203	77.0	15.3	**0.0048**	0.001	30.3	ug/L	31	Standard
	Tl	205	70.0	7.1	**0.0078**	0.001	10.7	ug/L	20	Standard
	Pb	206	353.0	8.2	**0.0052**	0.006	124.2	ug/L	286	Standard
	Pb	207	316.0	5.0	**0.0102**	0.004	41.5	ug/L	257	Standard
	Pb	208	1279.0	2.9	**0.0109**	0.002	20.1	ug/L	956	Standard
	U	238	66.0	9.1	**0.0067**	0.001	13.4	ug/L	17	Standard
>	**Bi**	209	529518.6	1.3				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.6931**	18.512	173.1	mg/L	0	Standard
Mg	24	105.0	31.2	**0.0830**	0.044	52.9	mg/L	32	Standard
K	39	31.7	9.1	**-0.0342**	0.011	31.1	mg/L	30	Standard
Ca	43	30.0	66.7	**-0.7662**	3.081	402.2	mg/L	48	Standard
Fe	54	132.0	13.9	**-0.0174**	0.016	93.3	mg/L	159	Standard
Fe	57	243.3	16.5	**0.1990**	0.142	71.4	mg/L	195	Standard
Sc-1	45	39473.0	0.8				mg/L	39543	Standard
Cl	35	35269.0	1.4				ug/L	27642	Standard
Kr	83	2.3	107.9				ug/L	2	Standard
Br	81	2306.8	8.4				ug/L	1647	Standard
P	31	16594.1	0.5				ug/L	15231	Standard
S	34	2131.8	6.4				ug/L	1845	Standard
Sr	88	88.3	36.8				ug/L	70	Standard
C	12	163.3	23.2				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	9.0	110.6				mg/L	12	Standard
Ho-1	165	6.7	43.3				mg/L	12	Standard
Er	166	20.0	0.0				mg/L	20	Standard
I	127	8462.7	47.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		92.814	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.842	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.661
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.052
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606139301
Sample Date/Time: Tuesday, June 28, 2016 22:31:11
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75653.4	0.9				ug/L	81760	Standard
	Be	9	36.7	15.7	**0.0301**	0.006	19.8	ug/L	17	Standard
	Al	27	730309.3	1.1	**5.1065**	0.100	1.9	ug/L	1410	Standard
	Sc	45	40455.6	1.8				ug/L	39543	Standard
	Ti	47	3049.6	0.8	**12.0214**	0.208	1.7	ug/L	39	Standard
	V	51	20044.5	0.4	**2.6590**	0.030	1.1	ug/L	1415	Standard
	Cr	52	14783.9	1.2	**1.0533**	0.031	2.9	ug/L	6946	Standard
	Cr	53	1555.1	3.4	**1.4185**	0.043	3.0	ug/L	328	Standard
	Mn	55	57374.1	1.8	**8.6446**	0.070	0.8	ug/L	823	Standard
	Co	59	1706.1	0.5	**0.2099**	0.002	1.1	ug/L	252	Standard
	Ni	60	1958.1	2.2	**0.9282**	0.028	3.1	ug/L	192	Standard
	Cu	65	11994.7	1.9	**6.1812**	0.063	1.0	ug/L	141	Standard
	Zn	66	20161.1	0.6	**17.4500**	0.168	1.0	ug/L	491	Standard
>	**Ge**	72	518413.1	1.4				ug/L	515087	Standard
	As	75	157.8	25.1	**0.1801**	0.037	20.6	ug/L	20	Standard
	Se	82	23.1	48.8	**0.0801**	0.098	121.9	ug/L	15	Standard
	Se-1	77	63.3	7.3	**0.1169**	0.069	59.2	ug/L	48	Standard
>	**Ga**	71	505.0	4.5				mg/L	90	Standard
	Rb	85	7842.0	2.0				ug/L	23	Standard
	Y	89	431479.5	0.9				ug/L	448510	Standard
>	**Rh**	103	15.0	100.0				ug/L	15	Standard
	Mo	98	468.3	2.4	**0.1592**	0.005	3.4	ug/L	11	Standard
	Ag	107	177.3	7.3	**0.0110**	0.002	18.6	ug/L	134	Standard
	Cd	111	203.8	5.3	**0.0952**	0.005	5.7	mg/L	7	Standard
	Cd	114	524.4	13.4	**0.0989**	0.013	13.5	ug/L	16	Standard
>	**In**	115	593880.8	0.6				ug/L	611117	Standard
	Sn	118	2320.2	4.6	**0.3018**	0.016	5.3	ug/L	518	Standard
	Sb	123	1520.6	3.7	**0.3188**	0.011	3.4	ug/L	127	Standard
	Ba	135	21231.5	1.4	**10.5571**	0.086	0.8	ug/L	45	Standard
	Ce	140	21453.5	1.1				ug/L	298	Standard
>	**Tb**	159	941666.6	1.6				ug/L	977942	Standard
	Ho	165	511.7	11.3				ug/L	12	Standard
	Tl	203	106.0	9.9	**0.0082**	0.001	16.0	ug/L	31	Standard
	Tl	205	85.0	31.1	**0.0097**	0.004	38.6	ug/L	20	Standard
	Pb	206	17358.9	1.4	**3.2466**	0.044	1.3	ug/L	286	Standard
	Pb	207	14395.2	1.0	**2.9852**	0.035	1.2	ug/L	257	Standard
	Pb	208	59327.6	0.5	**3.1814**	0.019	0.6	ug/L	956	Standard
	U	238	205.3	8.1	**0.0266**	0.002	9.0	ug/L	17	Standard
>	**Bi**	209	540531.5	0.2				ug/L	557080	Standard

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Na	23	3.3	173.2	**21.0062**	36.375	173.2	mg/L	0	Standard
Mg	24	250.0	13.1	**0.2677**	0.037	13.9	mg/L	32	Standard
K	39	110.0	28.4	**0.2220**	0.104	47.1	mg/L	30	Standard
Ca	43	51.7	20.1	**2.3448**	1.674	71.4	mg/L	48	Standard
Fe	54	595.3	12.6	**0.3888**	0.057	14.6	mg/L	159	Standard
Fe	57	388.3	11.5	**0.6585**	0.168	25.5	mg/L	195	Standard
> **Sc-1**	45	40455.6	1.8				mg/L	39543	Standard
Cl	35	34669.0	0.4				ug/L	27642	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	3693.8	7.2				ug/L	1647	Standard
P	31	17358.3	1.4				ug/L	15231	Standard
S	34	2180.2	7.0				ug/L	1845	Standard
Sr	88	80.0	38.0				ug/L	70	Standard
C	12	186.7	21.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	0	Standard
Dy	164	723.1	8.6				mg/L	12	Standard
Ho-1	165	511.7	11.3				mg/L	12	Standard
Er	166	493.3	12.2				mg/L	20	Standard
I	127	46309.3	8.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.531	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.646	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.180
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.029
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606139302
Sample Date/Time: Tuesday, June 28, 2016 22:34:23
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76487.6	0.6				ug/L	81760	Standard
	Be	9	26.7	57.3	**0.0190**	0.016	86.6	ug/L	17	Standard
	Al	27	422387.9	1.8	**2.9148**	0.060	2.0	ug/L	1410	Standard
	Sc	45	40846.7	1.8				ug/L	39543	Standard
	Ti	47	1809.8	2.0	**7.1474**	0.208	2.9	ug/L	39	Standard
	V	51	13250.7	0.8	**1.7088**	0.032	1.8	ug/L	1415	Standard
	Cr	52	14384.8	1.8	**1.0188**	0.008	0.8	ug/L	6946	Standard
	Cr	53	1510.1	5.3	**1.3859**	0.061	4.4	ug/L	328	Standard
	Mn	55	44577.2	1.1	**6.7600**	0.108	1.6	ug/L	823	Standard
	Co	59	1155.0	3.6	**0.1339**	0.008	5.8	ug/L	252	Standard
	Ni	60	2034.1	3.4	**0.9799**	0.027	2.8	ug/L	192	Standard
	Cu	65	13331.2	1.6	**6.9601**	0.242	3.5	ug/L	141	Standard
	Zn	66	18863.7	1.1	**16.4635**	0.229	1.4	ug/L	491	Standard
>	**Ge**	72	512762.7	2.0				ug/L	515087	Standard
	As	75	120.3	20.8	**0.1481**	0.025	16.6	ug/L	20	Standard
	Se	82	22.7	50.1	**0.0800**	0.103	128.5	ug/L	15	Standard
	Se-1	77	66.7	3.8	**0.1706**	0.046	27.2	ug/L	48	Standard
>	**Ga**	71	313.3	7.5				mg/L	90	Standard
	Rb	85	9062.7	6.6				ug/L	23	Standard
	Y	89	438095.5	1.1				ug/L	448510	Standard
>	**Rh**	103	11.7	65.5				ug/L	15	Standard
	Mo	98	749.7	5.2	**0.2622**	0.015	5.9	ug/L	11	Standard
	Ag	107	250.0	4.9	**0.0215**	0.002	9.3	ug/L	134	Standard
	Cd	111	268.7	5.4	**0.1246**	0.007	5.7	mg/L	7	Standard
	Cd	114	686.3	8.9	**0.1290**	0.012	9.4	ug/L	16	Standard
>	**In**	115	602735.5	0.4				ug/L	611117	Standard
	Sn	118	2001.8	9.6	**0.2412**	0.032	13.1	ug/L	518	Standard
	Sb	123	1551.7	1.3	**0.3206**	0.005	1.5	ug/L	127	Standard
	Ba	135	10171.4	0.7	**4.9702**	0.026	0.5	ug/L	45	Standard
	Ce	140	10203.4	3.4				ug/L	298	Standard
>	**Tb**	159	943711.5	1.3				ug/L	977942	Standard
	Ho	165	201.7	2.9				ug/L	12	Standard
	Tl	203	136.7	14.9	**0.0117**	0.003	21.7	ug/L	31	Standard
	Tl	205	126.7	4.6	**0.0153**	0.001	5.0	ug/L	20	Standard
	Pb	206	13666.8	0.5	**2.5119**	0.014	0.6	ug/L	286	Standard
	Pb	207	11351.3	1.7	**2.3133**	0.023	1.0	ug/L	257	Standard
	Pb	208	47777.6	0.4	**2.5197**	0.028	1.1	ug/L	956	Standard
	U	238	179.7	5.5	**0.0226**	0.001	5.2	ug/L	17	Standard
>	**Bi**	209	546981.3	0.8				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	296.7	10.2	**0.3250**	0.036	11.0	mg/L	32	Standard
K	39	131.7	25.3	**0.2905**	0.116	40.0	mg/L	30	Standard
Ca	43	28.3	44.4	**-1.1569**	1.919	165.9	mg/L	48	Standard
Fe	54	412.0	10.8	**0.2238**	0.038	16.8	mg/L	159	Standard
Fe	57	300.0	5.8	**0.3560**	0.058	16.2	mg/L	195	Standard
> **Sc-1**	45	40846.7	1.8				mg/L	39543	Standard
Cl	35	35351.2	2.0				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	2080.1	6.1				ug/L	1647	Standard
P	31	17501.8	0.9				ug/L	15231	Standard
S	34	2256.8	4.2				ug/L	1845	Standard
Sr	88	83.3	24.2				ug/L	70	Standard
C	12	216.7	41.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	66.7				mg/L	0	Standard
Dy	164	374.4	8.4				mg/L	12	Standard
Ho-1	165	201.7	2.9				mg/L	12	Standard
Er	166	186.7	17.2				mg/L	20	Standard
I	127	9588.0	8.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.551	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.549	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.629
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.187
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606139303
Sample Date/Time: Tuesday, June 28, 2016 22:37:34
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75224.7	2.8				ug/L	81760	Standard
	Be	9	26.7	47.2	**0.0195**	0.014	72.7	ug/L	17	Standard
	Al	27	335427.7	1.4	**2.3514**	0.039	1.7	ug/L	1410	Standard
	Sc	45	40873.4	3.2				ug/L	39543	Standard
	Ti	47	1306.7	3.3	**5.2014**	0.227	4.4	ug/L	39	Standard
	V	51	16739.3	1.3	**2.2527**	0.061	2.7	ug/L	1415	Standard
	Cr	52	12212.3	0.6	**0.7342**	0.019	2.6	ug/L	6946	Standard
	Cr	53	1208.4	9.2	**1.0637**	0.123	11.6	ug/L	328	Standard
	Mn	55	30356.4	1.8	**4.6331**	0.125	2.7	ug/L	823	Standard
	Co	59	971.0	0.7	**0.1098**	0.003	2.3	ug/L	252	Standard
	Ni	60	1423.4	2.9	**0.6666**	0.013	2.0	ug/L	192	Standard
	Cu	65	8494.4	2.1	**4.4744**	0.140	3.1	ug/L	141	Standard
	Zn	66	12099.5	0.6	**10.4446**	0.200	1.9	ug/L	491	Standard
>	**Ge**	72	504506.4	1.3				ug/L	515087	Standard
	As	75	95.4	18.1	**0.1269**	0.016	12.6	ug/L	20	Standard
	Se	82	22.1	16.3	**0.0773**	0.034	44.4	ug/L	15	Standard
	Se-1	77	59.3	9.3	**0.0847**	0.065	76.5	ug/L	48	Standard
>	**Ga**	71	286.7	13.3				mg/L	90	Standard
	Rb	85	4860.8	3.1				ug/L	23	Standard
	Y	89	447487.9	1.5				ug/L	448510	Standard
>	**Rh**	103	10.0	50.0				ug/L	15	Standard
	Mo	98	335.7	2.2	**0.1056**	0.003	3.1	ug/L	11	Standard
	Ag	107	149.3	7.8	**0.0061**	0.002	27.6	ug/L	134	Standard
	Cd	111	92.8	5.9	**0.0407**	0.003	6.7	mg/L	7	Standard
	Cd	114	275.4	18.0	**0.0483**	0.009	19.4	ug/L	16	Standard
>	**In**	115	608945.1	0.4				ug/L	611117	Standard
	Sn	118	2160.2	6.9	**0.2646**	0.024	9.0	ug/L	518	Standard
	Sb	123	1475.9	3.1	**0.3011**	0.011	3.5	ug/L	127	Standard
	Ba	135	7298.8	1.0	**3.5230**	0.049	1.4	ug/L	45	Standard
	Ce	140	7186.7	3.0				ug/L	298	Standard
>	**Tb**	159	941207.0	0.6				ug/L	977942	Standard
	Ho	165	175.0	29.8				ug/L	12	Standard
	Tl	203	127.3	10.7	**0.0108**	0.002	16.0	ug/L	31	Standard
	Tl	205	91.7	22.0	**0.0106**	0.003	26.7	ug/L	20	Standard
	Pb	206	10382.9	0.6	**1.9175**	0.012	0.6	ug/L	286	Standard
	Pb	207	8724.8	0.9	**1.7876**	0.028	1.6	ug/L	257	Standard
	Pb	208	36599.7	1.1	**1.9407**	0.035	1.8	ug/L	956	Standard
	U	238	138.7	9.6	**0.0170**	0.002	11.7	ug/L	17	Standard
>	**Bi**	209	540229.2	0.6				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	201.7	23.0	**0.2027**	0.061	30.0	mg/L	32	Standard
K	39	85.0	15.6	**0.1365**	0.043	31.8	mg/L	30	Standard
Ca	43	46.7	34.4	**1.4659**	2.107	143.8	mg/L	48	Standard
Fe	54	348.6	7.5	**0.1680**	0.018	11.0	mg/L	159	Standard
Fe	57	325.0	9.4	**0.4364**	0.086	19.7	mg/L	195	Standard
> **Sc-1**	45	40873.4	3.2				mg/L	39543	Standard
Cl	35	35045.8	0.8				ug/L	27642	Standard
Kr	83	2.3	107.9				ug/L	2	Standard
Br	81	1873.4	9.4				ug/L	1647	Standard
P	31	17319.9	1.5				ug/L	15231	Standard
S	34	2126.8	6.5				ug/L	1845	Standard
Sr	88	78.3	28.8				ug/L	70	Standard
C	12	160.0	25.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	78.1				mg/L	0	Standard
Dy	164	223.9	25.3				mg/L	12	Standard
Ho-1	165	175.0	29.8				mg/L	12	Standard
Er	166	126.7	25.4				mg/L	20	Standard
I	127	7363.5	5.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.007	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.946	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.645
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.975
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606139304
Sample Date/Time: Tuesday, June 28, 2016 22:40:46
Number of Replicates: 3
Autosampler Position: 346
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74628.4	2.8				ug/L	81760	Standard
	Be	9	20.0	25.0	**0.0122**	0.005	40.5	ug/L	17	Standard
	Al	27	327323.4	5.6	**2.3109**	0.073	3.1	ug/L	1410	Standard
	Sc	45	39232.4	1.5				ug/L	39543	Standard
	Ti	47	1081.7	2.8	**4.2827**	0.197	4.6	ug/L	39	Standard
	V	51	17364.8	3.6	**2.3462**	0.053	2.3	ug/L	1415	Standard
	Cr	52	11969.4	3.2	**0.6998**	0.018	2.6	ug/L	6946	Standard
	Cr	53	1151.7	1.8	**0.9999**	0.045	4.5	ug/L	328	Standard
	Mn	55	27710.7	5.0	**4.2196**	0.194	4.6	ug/L	823	Standard
	Co	59	805.7	4.4	**0.0858**	0.004	4.6	ug/L	252	Standard
	Ni	60	1156.4	2.7	**0.5226**	0.014	2.7	ug/L	192	Standard
	Cu	65	7318.8	3.6	**3.8448**	0.072	1.9	ug/L	141	Standard
	Zn	66	9717.1	4.5	**8.2301**	0.259	3.2	ug/L	491	Standard
>	**Ge**	72	504100.5	3.0				ug/L	515087	Standard
	As	75	86.2	19.2	**0.1185**	0.013	11.2	ug/L	20	Standard
	Se	82	21.0	26.2	**0.0675**	0.052	77.2	ug/L	15	Standard
	Se-1	77	57.7	9.6	**0.0648**	0.094	144.5	ug/L	48	Standard
>	**Ga**	71	233.3	13.9				mg/L	90	Standard
	Rb	85	3882.2	6.3				ug/L	23	Standard
	Y	89	430223.1	5.6				ug/L	448510	Standard
>	**Rh**	103	8.3	124.9				ug/L	15	Standard
	Mo	98	801.5	6.3	**0.2860**	0.012	4.3	ug/L	11	Standard
	Ag	107	120.7	5.8	**0.0023**	0.000	18.3	ug/L	134	Standard
	Cd	111	92.6	9.2	**0.0417**	0.004	9.3	mg/L	7	Standard
	Cd	114	241.3	24.7	**0.0431**	0.013	29.2	ug/L	16	Standard
>	**In**	115	593856.9	3.7				ug/L	611117	Standard
	Sn	118	1755.1	4.0	**0.2036**	0.011	5.3	ug/L	518	Standard
	Sb	123	1169.8	3.7	**0.2423**	0.004	1.7	ug/L	127	Standard
	Ba	135	5956.2	4.1	**2.9440**	0.065	2.2	ug/L	45	Standard
	Ce	140	5319.3	7.3				ug/L	298	Standard
>	**Tb**	159	910819.3	2.0				ug/L	977942	Standard
	Ho	165	128.3	12.5				ug/L	12	Standard
	Tl	203	88.0	5.7	**0.0062**	0.001	12.2	ug/L	31	Standard
	Tl	205	70.0	25.8	**0.0077**	0.003	33.5	ug/L	20	Standard
	Pb	206	8718.5	3.6	**1.6271**	0.072	4.4	ug/L	286	Standard
	Pb	207	7163.0	4.3	**1.4818**	0.072	4.9	ug/L	257	Standard
	Pb	208	29853.9	4.1	**1.5981**	0.065	4.1	ug/L	956	Standard
	U	238	115.3	2.6	**0.0139**	0.000	1.6	ug/L	17	Standard
>	**Bi**	209	531672.0	1.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	220.0	2.3	**0.2381**	0.006	2.4	mg/L	32	Standard
K	39	73.3	3.9	**0.1083**	0.007	6.4	mg/L	30	Standard
Ca	43	31.7	24.1	**-0.5049**	1.115	220.9	mg/L	48	Standard
Fe	54	263.9	12.4	**0.1035**	0.028	27.1	mg/L	159	Standard
Fe	57	248.3	16.1	**0.2213**	0.145	65.6	mg/L	195	Standard
> **Sc-1**	45	39232.4	1.5				mg/L	39543	Standard
Cl	35	34033.6	5.9				ug/L	27642	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	1946.8	12.8				ug/L	1647	Standard
P	31	16857.7	2.7				ug/L	15231	Standard
S	34	2100.1	4.5				ug/L	1845	Standard
Sr	88	66.7	28.4				ug/L	70	Standard
C	12	176.7	23.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	134.9	39.4				mg/L	12	Standard
Ho-1	165	128.3	12.5				mg/L	12	Standard
Er	166	106.7	10.8				mg/L	20	Standard
I	127	6791.5	2.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.277	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.867	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.176
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.439
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606139305
Sample Date/Time: Tuesday, June 28, 2016 22:43:57
Number of Replicates: 3
Autosampler Position: 347
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74899.7	0.9				ug/L	81760	Standard
	Be	9	18.3	15.7	**0.0104**	0.003	29.0	ug/L	17	Standard
	Al	27	328437.1	1.5	**2.3115**	0.035	1.5	ug/L	1410	Standard
	Sc	45	40647.8	2.1				ug/L	39543	Standard
	Ti	47	1117.7	1.6	**4.2600**	0.050	1.2	ug/L	39	Standard
	V	51	13332.6	0.8	**1.6821**	0.023	1.4	ug/L	1415	Standard
	Cr	52	11640.1	0.5	**0.5893**	0.015	2.6	ug/L	6946	Standard
	Cr	53	1158.4	10.6	**0.9575**	0.132	13.8	ug/L	328	Standard
	Mn	55	25508.1	0.7	**3.7255**	0.023	0.6	ug/L	823	Standard
	Co	59	795.0	2.3	**0.0800**	0.002	2.0	ug/L	252	Standard
	Ni	60	1111.4	4.5	**0.4759**	0.022	4.7	ug/L	192	Standard
	Cu	65	7781.0	2.0	**3.9419**	0.127	3.2	ug/L	141	Standard
	Zn	66	11686.8	2.5	**9.6690**	0.148	1.5	ug/L	491	Standard
>	**Ge**	72	523177.1	1.2				ug/L	515087	Standard
	As	75	150.7	20.5	**0.1724**	0.029	16.5	ug/L	20	Standard
	Se	82	42.9	7.7	**0.2478**	0.029	11.9	ug/L	15	Standard
	Se-1	77	60.7	2.5	**0.0739**	0.016	21.3	ug/L	48	Standard
>	**Ga**	71	226.7	1.3				mg/L	90	Standard
	Rb	85	5315.9	7.9				ug/L	23	Standard
	Y	89	431953.8	1.9				ug/L	448510	Standard
>	**Rh**	103	15.0	66.7				ug/L	15	Standard
	Mo	98	276.3	6.3	**0.0857**	0.006	6.9	ug/L	11	Standard
	Ag	107	169.0	7.2	**0.0096**	0.002	19.7	ug/L	134	Standard
	Cd	111	162.4	6.5	**0.0750**	0.005	6.0	mg/L	7	Standard
	Cd	114	335.5	8.9	**0.0613**	0.005	8.9	ug/L	16	Standard
>	**In**	115	595959.3	0.7				ug/L	611117	Standard
	Sn	118	1471.7	5.0	**0.1534**	0.014	9.4	ug/L	518	Standard
	Sb	123	1173.4	5.5	**0.2422**	0.014	5.7	ug/L	127	Standard
	Ba	135	5837.1	3.3	**2.8740**	0.084	2.9	ug/L	45	Standard
	Ce	140	5496.0	2.0				ug/L	298	Standard
>	**Tb**	159	937149.5	1.0				ug/L	977942	Standard
	Ho	165	138.3	7.5				ug/L	12	Standard
	Tl	203	94.3	16.1	**0.0066**	0.002	26.5	ug/L	31	Standard
	Tl	205	66.7	26.3	**0.0070**	0.002	32.8	ug/L	20	Standard
	Pb	206	8082.5	0.7	**1.4592**	0.036	2.4	ug/L	286	Standard
	Pb	207	6688.5	1.5	**1.3390**	0.041	3.1	ug/L	257	Standard
	Pb	208	27392.7	1.4	**1.4181**	0.004	0.2	ug/L	956	Standard
	U	238	108.7	8.4	**0.0125**	0.002	12.3	ug/L	17	Standard
>	**Bi**	209	547233.0	1.6				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.3347**	17.892	173.1	mg/L	0	Standard
Mg	24	221.7	15.4	**0.2295**	0.039	17.1	mg/L	32	Standard
K	39	100.0	17.3	**0.1871**	0.055	29.3	mg/L	30	Standard
Ca	43	26.7	60.3	**-1.4304**	2.300	160.8	mg/L	48	Standard
Fe	54	289.4	9.6	**0.1178**	0.025	21.2	mg/L	159	Standard
Fe	57	271.7	9.3	**0.2686**	0.097	36.1	mg/L	195	Standard
Sc-1	45	40647.8	2.1				mg/L	39543	Standard
Cl	35	33690.1	1.5				ug/L	27642	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	7261.7	1.9				ug/L	1647	Standard
P	31	16325.5	0.4				ug/L	15231	Standard
S	34	1950.1	10.4				ug/L	1845	Standard
Sr	88	81.7	9.4				ug/L	70	Standard
C	12	186.7	18.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	222.3	16.3				mg/L	12	Standard
Ho-1	165	138.3	7.5				mg/L	12	Standard
Er	166	160.0	6.3				mg/L	20	Standard
I	127	6493.1	4.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		91.609	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.571	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.520
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.232
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 22:47:10
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71793.2	3.7				ug/L	81760	Standard
	Be	9	44618.9	1.2	**51.1958**	1.696	3.3	ug/L	17	Standard
	Al	27	6865175.8	2.0	**50.7482**	1.963	3.9	ug/L	1410	Standard
	Sc	45	39468.0	3.1				ug/L	39543	Standard
	Ti	47	23906.5	1.3	**96.7870**	2.402	2.5	ug/L	39	Standard
	V	51	334011.6	0.6	**48.2557**	0.941	2.0	ug/L	1415	Standard
	Cr	52	340377.2	0.5	**48.2561**	1.001	2.1	ug/L	6946	Standard
	Cr	53	42902.3	1.0	**48.9484**	1.164	2.4	ug/L	328	Standard
	Mn	55	309303.1	1.2	**47.9606**	0.591	1.2	ug/L	823	Standard
	Co	59	332037.9	0.8	**47.6215**	0.384	0.8	ug/L	252	Standard
	Ni	60	90431.4	0.3	**48.3175**	0.794	1.6	ug/L	192	Standard
	Cu	65	91394.5	0.3	**48.4155**	0.851	1.8	ug/L	141	Standard
	Zn	66	53482.9	1.3	**48.3851**	1.341	2.8	ug/L	491	Standard
>	**Ge**	72	510859.4	1.5				ug/L	515087	Standard
	As	75	54007.5	0.9	**48.4846**	1.105	2.3	ug/L	20	Standard
	Se	82	5360.1	0.8	**46.8280**	0.601	1.3	ug/L	15	Standard
	Se-1	77	3686.4	1.7	**48.6230**	0.812	1.7	ug/L	48	Standard
>	**Ga**	71	56.7	18.4				mg/L	90	Standard
	Rb	85	810.0	4.5				ug/L	23	Standard
	Y	89	431931.2	2.6				ug/L	448510	Standard
>	**Rh**	103	26.7	43.3				ug/L	15	Standard
	Mo	98	251225.1	0.7	**96.8468**	1.378	1.4	ug/L	11	Standard
	Ag	107	304440.8	0.4	**47.2505**	0.474	1.0	ug/L	134	Standard
	Cd	111	96060.5	0.9	**46.8341**	0.834	1.8	mg/L	7	Standard
	Cd	114	238889.8	1.2	**47.9103**	0.301	0.6	ug/L	16	Standard
>	**In**	115	586435.3	1.3				ug/L	611117	Standard
	Sn	118	269259.0	2.4	**47.3660**	1.700	3.6	ug/L	518	Standard
	Sb	123	219432.6	0.9	**48.4541**	0.360	0.7	ug/L	127	Standard
	Ba	135	92563.9	0.7	**46.7027**	0.660	1.4	ug/L	45	Standard
	Ce	140	88.3	61.1				ug/L	298	Standard
>	**Tb**	159	918919.9	0.8				ug/L	977942	Standard
	Ho	165	13.3	21.7				ug/L	12	Standard
	Tl	203	386832.4	0.9	**48.5637**	0.777	1.6	ug/L	31	Standard
	Tl	205	343277.1	1.0	**49.6247**	0.132	0.3	ug/L	20	Standard
	Pb	206	249448.7	0.4	**48.7606**	0.291	0.6	ug/L	286	Standard
	Pb	207	228146.2	0.6	**49.4471**	0.531	1.1	ug/L	257	Standard
	Pb	208	902842.6	0.2	**50.5774**	0.397	0.8	ug/L	956	Standard
	U	238	333363.3	0.9	**49.2162**	0.753	1.5	ug/L	17	Standard
>	**Bi**	209	526646.5	0.9				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.4874**	18.156	173.1	mg/L	0	Standard
Mg	24	3567.1	3.5	**4.7067**	0.317	6.7	mg/L	32	Standard
K	39	1421.7	5.7	**4.6773**	0.373	8.0	mg/L	30	Standard
Ca	43	60.0	8.3	**3.7779**	0.573	15.2	mg/L	48	Standard
Fe	54	5303.1	4.9	**4.6695**	0.087	1.9	mg/L	159	Standard
Fe	57	1570.1	3.9	**4.6916**	0.328	7.0	mg/L	195	Standard
> **Sc-1**	45	39468.0	3.1				mg/L	39543	Standard
Cl	35	34178.5	1.9				ug/L	27642	Standard
Kr	83	1.7	124.9				ug/L	2	Standard
Br	81	1696.8	1.5				ug/L	1647	Standard
P	31	17313.2	2.3				ug/L	15231	Standard
S	34	2535.2	5.3				ug/L	1845	Standard
Sr	88	81.7	40.8				ug/L	70	Standard
C	12	120.0	14.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	8.9	11.2				mg/L	12	Standard
Ho-1	165	13.3	21.7				mg/L	12	Standard
Er	166	23.3	89.2				mg/L	20	Standard
I	127	2468.5	18.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	102.392		
Al	27	101.496		
Sc	45			
Ti	47	96.787		
V	51	96.511		
Cr	52	96.512		
Cr	53			
Mn	55	95.921		
Co	59	95.243		
Ni	60	96.635		
Cu	65	96.831		
Zn	66	96.770		
> Ge	72		99.179	
As	75	96.969		
Se	82	93.656		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	96.847		
Ag	107	94.501		
Cd	111	93.668		
Cd	114			
> In	115			95.961
Sn	118	94.732		
Sb	123	96.908		
Ba	135	93.405		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	97.127		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.155		
U	238	98.432		
> Bi	209			94.537
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 22:50:22
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72519.8	1.9				ug/L	81760	Standard
	Be	9	21.7	113.8	**0.0146**	0.027	188.1	ug/L	17	Standard
	Al	27	2256.8	25.0	**0.0021**	0.004	187.1	ug/L	1410	Standard
	Sc	45	39016.8	1.3				ug/L	39543	Standard
	Ti	47	28.7	19.2	**-0.0470**	0.020	43.5	ug/L	39	Standard
	V	51	1194.9	2.1	**-0.0301**	0.006	21.3	ug/L	1415	Standard
	Cr	52	6354.0	0.6	**-0.1199**	0.015	12.7	ug/L	6946	Standard
	Cr	53	495.0	4.6	**0.2373**	0.020	8.3	ug/L	328	Standard
	Mn	55	724.7	7.6	**-0.0338**	0.007	19.6	ug/L	823	Standard
	Co	59	253.7	9.1	**0.0057**	0.003	47.4	ug/L	252	Standard
	Ni	60	174.7	5.0	**-0.0098**	0.003	33.3	ug/L	192	Standard
	Cu	65	124.0	10.1	**-0.0239**	0.006	23.4	ug/L	141	Standard
	Zn	66	416.7	1.4	**-0.4373**	0.011	2.5	ug/L	491	Standard
>	**Ge**	72	501758.9	1.8				ug/L	515087	Standard
	As	75	-30.1	127.3	**0.0123**	0.035	285.9	ug/L	20	Standard
	Se	82	17.1	40.3	**0.0328**	0.058	178.2	ug/L	15	Standard
	Se-1	77	51.3	18.1	**-0.0207**	0.113	545.7	ug/L	48	Standard
>	**Ga**	71	38.3	27.2				mg/L	90	Standard
	Rb	85	28.3	36.7				ug/L	23	Standard
	Y	89	432168.4	0.3				ug/L	448510	Standard
>	**Rh**	103	15.0	66.7				ug/L	15	Standard
	Mo	98	274.3	30.4	**0.0862**	0.033	37.9	ug/L	11	Standard
	Ag	107	126.3	11.5	**0.0033**	0.002	71.2	ug/L	134	Standard
	Cd	111	15.5	45.6	**0.0046**	0.003	75.0	mg/L	7	Standard
	Cd	114	32.8	69.1	**0.0016**	0.005	280.8	ug/L	16	Standard
>	**In**	115	589750.3	1.0				ug/L	611117	Standard
	Sn	118	705.0	18.1	**0.0215**	0.021	98.3	ug/L	518	Standard
	Sb	123	430.7	24.1	**0.0816**	0.022	27.0	ug/L	127	Standard
	Ba	135	35.7	21.2	**-0.0072**	0.004	55.2	ug/L	45	Standard
	Ce	140	38.3	41.9				ug/L	298	Standard
>	**Tb**	159	920829.0	0.8				ug/L	977942	Standard
	Ho	165	5.0	100.0				ug/L	12	Standard
	Tl	203	59.7	35.8	**0.0027**	0.003	98.6	ug/L	31	Standard
	Tl	205	48.3	29.9	**0.0047**	0.002	43.8	ug/L	20	Standard
	Pb	206	270.0	6.9	**-0.0110**	0.004	33.8	ug/L	286	Standard
	Pb	207	257.3	3.4	**-0.0024**	0.002	65.9	ug/L	257	Standard
	Pb	208	1000.7	8.0	**-0.0046**	0.004	92.2	ug/L	956	Standard
	U	238	61.0	23.2	**0.0060**	0.002	34.0	ug/L	17	Standard
>	**Bi**	209	528739.4	0.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	23.3	86.6	**-0.0259**	0.027	103.6	mg/L	32	Standard
K	39	31.7	48.2	**-0.0333**	0.052	155.8	mg/L	30	Standard
Ca	43	30.0	72.6	**-0.7014**	3.391	483.5	mg/L	48	Standard
Fe	54	129.4	20.1	**-0.0182**	0.025	139.3	mg/L	159	Standard
Fe	57	250.0	16.4	**0.2316**	0.148	64.1	mg/L	195	Standard
Sc-1	45	39016.8	1.3				mg/L	39543	Standard
Cl	35	33625.3	1.5				ug/L	27642	Standard
Kr	83	3.3	124.9				ug/L	2	Standard
Br	81	1580.1	13.5				ug/L	1647	Standard
P	31	17735.4	1.8				ug/L	15231	Standard
S	34	2481.9	5.6				ug/L	1845	Standard
Sr	88	73.3	14.2				ug/L	70	Standard
C	12	113.3	41.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	9.4	5.9				mg/L	12	Standard
Ho-1	165	5.0	100.0				mg/L	12	Standard
Er	166	13.3	86.6				mg/L	20	Standard
I	127	1860.1	15.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.412	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.504
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.913
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606139306
Sample Date/Time: Tuesday, June 28, 2016 22:53:35
Number of Replicates: 3
Autosampler Position: 348
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70220.8	3.4				ug/L	81760	Standard
	Be	9	21.7	48.0	**0.0156**	0.012	75.7	ug/L	17	Standard
	Al	27	339019.6	1.3	**2.5478**	0.066	2.6	ug/L	1410	Standard
	Sc	45	39077.0	1.3				ug/L	39543	Standard
	Ti	47	1359.1	3.4	**5.3458**	0.211	3.9	ug/L	39	Standard
	V	51	13893.8	2.6	**1.8093**	0.072	4.0	ug/L	1415	Standard
	Cr	52	10697.1	2.4	**0.4928**	0.058	11.9	ug/L	6946	Standard
	Cr	53	1106.7	6.2	**0.9306**	0.098	10.5	ug/L	328	Standard
	Mn	55	27827.9	2.7	**4.1809**	0.179	4.3	ug/L	823	Standard
	Co	59	887.0	0.6	**0.0960**	0.003	2.8	ug/L	252	Standard
	Ni	60	1041.0	6.1	**0.4528**	0.043	9.5	ug/L	192	Standard
	Cu	65	6718.2	2.4	**3.4752**	0.137	3.9	ug/L	141	Standard
	Zn	66	10492.3	2.9	**8.8264**	0.376	4.3	ug/L	491	Standard
>	**Ge**	72	510902.9	1.6				ug/L	515087	Standard
	As	75	95.4	28.2	**0.1256**	0.023	18.4	ug/L	20	Standard
	Se	82	17.2	18.1	**0.0307**	0.025	82.4	ug/L	15	Standard
	Se-1	77	52.3	18.1	**-0.0171**	0.139	811.5	ug/L	48	Standard
>	**Ga**	71	256.7	6.0				mg/L	90	Standard
	Rb	85	4037.2	4.0				ug/L	23	Standard
	Y	89	441838.7	1.2				ug/L	448510	Standard
>	**Rh**	103	13.3	43.3				ug/L	15	Standard
	Mo	98	321.3	2.1	**0.1057**	0.004	4.2	ug/L	11	Standard
	Ag	107	134.7	13.7	**0.0048**	0.003	55.1	ug/L	134	Standard
	Cd	111	94.4	13.5	**0.0434**	0.006	14.4	mg/L	7	Standard
	Cd	114	184.5	30.3	**0.0322**	0.011	33.4	ug/L	16	Standard
>	**In**	115	582517.6	1.6				ug/L	611117	Standard
	Sn	118	1633.4	8.5	**0.1881**	0.027	14.5	ug/L	518	Standard
	Sb	123	1202.8	2.0	**0.2547**	0.009	3.5	ug/L	127	Standard
	Ba	135	5625.0	0.7	**2.8338**	0.047	1.7	ug/L	45	Standard
	Ce	140	7943.7	1.7				ug/L	298	Standard
>	**Tb**	159	895525.5	0.4				ug/L	977942	Standard
	Ho	165	181.7	15.7				ug/L	12	Standard
	Tl	203	104.3	12.5	**0.0084**	0.002	20.6	ug/L	31	Standard
	Tl	205	91.7	22.0	**0.0111**	0.003	27.4	ug/L	20	Standard
	Pb	206	6727.8	0.5	**1.2603**	0.018	1.4	ug/L	286	Standard
	Pb	207	5614.0	0.6	**1.1666**	0.017	1.4	ug/L	257	Standard
	Pb	208	23664.6	2.1	**1.2740**	0.038	3.0	ug/L	956	Standard
	U	238	141.7	17.4	**0.0181**	0.004	20.7	ug/L	17	Standard
>	**Bi**	209	523874.2	0.9				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	196.7	25.5	**0.2078**	0.067	32.2	mg/L	32	Standard
K	39	58.3	32.5	**0.0586**	0.068	115.6	mg/L	30	Standard
Ca	43	33.3	48.2	**-0.2427**	2.425	998.9	mg/L	48	Standard
Fe	54	342.2	5.9	**0.1765**	0.023	12.8	mg/L	159	Standard
Fe	57	293.3	7.1	**0.3778**	0.076	20.2	mg/L	195	Standard
Sc-1	45	39077.0	1.3				mg/L	39543	Standard
Cl	35	33443.5	2.1				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1690.1	11.7				ug/L	1647	Standard
P	31	17176.4	4.2				ug/L	15231	Standard
S	34	2306.8	4.6				ug/L	1845	Standard
Sr	88	88.3	31.2				ug/L	70	Standard
C	12	143.3	10.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	0	Standard
Dy	164	280.6	4.7				mg/L	12	Standard
Ho-1	165	181.7	15.7				mg/L	12	Standard
Er	166	196.7	36.8				mg/L	20	Standard
I	127	4592.4	1.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		85.886	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.188	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.320
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.039
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606139307
Sample Date/Time: Tuesday, June 28, 2016 22:56:46
Number of Replicates: 3
Autosampler Position: 349
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72494.7	0.8				ug/L	81760	Standard
	Be	9	18.3	15.7	**0.0111**	0.003	30.5	ug/L	17	Standard
	Al	27	342418.0	1.1	**2.4911**	0.036	1.4	ug/L	1410	Standard
	Sc	45	40101.3	1.0				ug/L	39543	Standard
	Ti	47	932.7	2.7	**3.5634**	0.149	4.2	ug/L	39	Standard
	V	51	14612.8	2.1	**1.8826**	0.024	1.3	ug/L	1415	Standard
	Cr	52	11386.6	1.0	**0.5692**	0.057	10.1	ug/L	6946	Standard
	Cr	53	1260.1	6.9	**1.0869**	0.132	12.1	ug/L	328	Standard
	Mn	55	23640.1	1.0	**3.4768**	0.122	3.5	ug/L	823	Standard
	Co	59	741.4	0.2	**0.0735**	0.003	3.5	ug/L	252	Standard
	Ni	60	1110.0	3.0	**0.4811**	0.030	6.3	ug/L	192	Standard
	Cu	65	7534.9	0.8	**3.8515**	0.130	3.4	ug/L	141	Standard
	Zn	66	11297.5	1.4	**9.4161**	0.135	1.4	ug/L	491	Standard
>	**Ge**	72	518404.2	2.6				ug/L	515087	Standard
	As	75	185.7	13.2	**0.2041**	0.018	8.6	ug/L	20	Standard
	Se	82	58.4	11.2	**0.3845**	0.051	13.1	ug/L	15	Standard
	Se-1	77	57.0	12.3	**0.0333**	0.095	284.1	ug/L	48	Standard
>	**Ga**	71	201.7	7.6				mg/L	90	Standard
	Rb	85	5255.9	2.3				ug/L	23	Standard
	Y	89	429044.9	0.4				ug/L	448510	Standard
>	**Rh**	103	18.3	68.6				ug/L	15	Standard
	Mo	98	299.7	1.8	**0.0961**	0.002	1.9	ug/L	11	Standard
	Ag	107	153.3	22.0	**0.0075**	0.005	67.1	ug/L	134	Standard
	Cd	111	143.0	17.2	**0.0665**	0.011	16.8	mg/L	7	Standard
	Cd	114	356.8	31.1	**0.0663**	0.022	32.5	ug/L	16	Standard
>	**In**	115	588246.1	1.2				ug/L	611117	Standard
	Sn	118	1550.1	10.3	**0.1702**	0.025	14.7	ug/L	518	Standard
	Sb	123	1125.9	6.3	**0.2350**	0.013	5.6	ug/L	127	Standard
	Ba	135	5627.4	4.0	**2.8066**	0.107	3.8	ug/L	45	Standard
	Ce	140	5279.3	1.4				ug/L	298	Standard
>	**Tb**	159	929768.7	1.5				ug/L	977942	Standard
	Ho	165	90.0	24.2				ug/L	12	Standard
	Tl	203	125.7	60.8	**0.0104**	0.009	86.4	ug/L	31	Standard
	Tl	205	76.7	65.3	**0.0084**	0.007	82.2	ug/L	20	Standard
	Pb	206	9321.2	0.6	**1.7003**	0.038	2.2	ug/L	286	Standard
	Pb	207	7700.6	1.2	**1.5576**	0.043	2.8	ug/L	257	Standard
	Pb	208	32126.4	0.5	**1.6815**	0.027	1.6	ug/L	956	Standard
	U	238	95.0	19.2	**0.0106**	0.002	23.3	ug/L	17	Standard
>	**Bi**	209	544815.4	1.6				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	241.7	8.4	**0.2600**	0.024	9.1	mg/L	32	Standard
K	39	93.3	13.5	**0.1697**	0.044	25.8	mg/L	30	Standard
Ca	43	48.3	11.9	**1.8938**	0.874	46.1	mg/L	48	Standard
Fe	54	296.6	3.5	**0.1277**	0.009	7.4	mg/L	159	Standard
Fe	57	275.0	13.7	**0.2917**	0.134	46.0	mg/L	195	Standard
> **Sc-1**	45	40101.3	1.0				mg/L	39543	Standard
Cl	35	33371.4	1.5				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	12191.6	6.9				ug/L	1647	Standard
P	31	16642.5	2.2				ug/L	15231	Standard
S	34	2221.8	1.3				ug/L	1845	Standard
Sr	88	81.7	3.5				ug/L	70	Standard
C	12	180.0	14.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	78.1				mg/L	0	Standard
Dy	164	179.2	25.7				mg/L	12	Standard
Ho-1	165	90.0	24.2				mg/L	12	Standard
Er	166	86.7	26.6				mg/L	20	Standard
I	127	5902.8	5.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.668	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.644	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.258
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.798
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606140101
Sample Date/Time: Tuesday, June 28, 2016 22:59:58
Number of Replicates: 3
Autosampler Position: 350
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81815.4	2.6				ug/L	81760	Standard
	Be	9	21.7	13.3	**0.0121**	0.003	22.9	ug/L	17	Standard
	Al	27	45785308.7	4.2	**296.7336**	5.244	1.8	ug/L	1410	Standard
	Sc	45	41065.6	3.8				ug/L	39543	Standard
	Ti	47	178.0	12.2	**0.5887**	0.089	15.1	ug/L	39	Standard
	V	51	35448.4	4.1	**5.1643**	0.153	3.0	ug/L	1415	Standard
	Cr	52	9787.8	5.7	**0.4235**	0.068	16.1	ug/L	6946	Standard
	Cr	53	17411.8	14.2	**20.5297**	2.734	13.3	ug/L	328	Standard
	Mn	55	165972.1	5.7	**26.8086**	1.220	4.6	ug/L	823	Standard
	Co	59	1056.4	5.8	**0.1270**	0.007	5.7	ug/L	252	Standard
	Ni	60	3143.3	7.3	**1.6522**	0.109	6.6	ug/L	192	Standard
	Cu	65	2057.8	4.7	**1.0496**	0.040	3.9	ug/L	141	Standard
	Zn	66	6024.5	5.7	**4.9599**	0.261	5.3	ug/L	491	Standard
>	**Ge**	72	489001.5	1.3				ug/L	515087	Standard
	As	75	1112.2	8.9	**1.0817**	0.080	7.4	ug/L	20	Standard
	Se	82	302.7	9.2	**2.6482**	0.222	8.4	ug/L	15	Standard
	Se-1	77	1245.1	18.8	**16.6637**	3.078	18.5	ug/L	48	Standard
>	**Ga**	71	58.3	55.1				mg/L	90	Standard
	Rb	85	2691.9	5.7				ug/L	23	Standard
	Y	89	432812.2	6.0				ug/L	448510	Standard
>	**Rh**	103	128.3	14.8				ug/L	15	Standard
	Mo	98	642.1	7.2	**0.2310**	0.011	4.8	ug/L	11	Standard
	Ag	107	89.7	20.6	**-0.0021**	0.003	162.7	ug/L	134	Standard
	Cd	111	183.2	13.1	**0.0876**	0.014	15.6	mg/L	7	Standard
	Cd	114	423.4	6.2	**0.0810**	0.006	6.9	ug/L	16	Standard
>	**In**	115	580206.4	3.0				ug/L	611117	Standard
	Sn	118	1115.0	4.7	**0.0968**	0.010	9.8	ug/L	518	Standard
	Sb	123	200.7	10.2	**0.0319**	0.003	10.9	ug/L	127	Standard
	Ba	135	44440.1	3.3	**22.6462**	0.082	0.4	ug/L	45	Standard
	Ce	140	446.7	12.1				ug/L	298	Standard
>	**Tb**	159	929235.2	2.2				ug/L	977942	Standard
	Ho	165	38.3	7.5				ug/L	12	Standard
	Tl	203	126.0	16.1	**0.0119**	0.003	21.7	ug/L	31	Standard
	Tl	205	103.3	17.0	**0.0135**	0.003	21.8	ug/L	20	Standard
	Pb	206	396.7	5.3	**0.0183**	0.002	11.9	ug/L	286	Standard
	Pb	207	341.7	4.5	**0.0202**	0.002	8.5	ug/L	257	Standard
	Pb	208	1505.0	2.0	**0.0286**	0.002	5.8	ug/L	956	Standard
	U	238	10687.1	4.8	**1.6615**	0.054	3.3	ug/L	17	Standard
>	**Bi**	209	499114.9	2.7				ug/L	557080	Standard

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Na	23	8.3	91.7	**52.4138**	47.655	90.9	mg/L	0	Standard
Mg	24	165387.3	4.5	**211.9511**	6.406	3.0	mg/L	32	Standard
K	39	600.0	13.6	**1.8174**	0.318	17.5	mg/L	30	Standard
Ca	43	581.7	9.4	**79.6243**	5.149	6.5	mg/L	48	Standard
Fe	54	126.1	20.1	**-0.0269**	0.024	89.8	mg/L	159	Standard
Fe	57	591.7	6.9	**1.2999**	0.139	10.7	mg/L	195	Standard
> **Sc-1**	45	41065.6	3.8				mg/L	39543	Standard
Cl	35	47499.7	3.6				ug/L	27642	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	60832.3	7.6				ug/L	1647	Standard
P	31	21663.8	6.1				ug/L	15231	Standard
S	34	2320.2	3.1				ug/L	1845	Standard
Sr	88	470.0	1.1				ug/L	70	Standard
C	12	286.7	5.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	31.1	36.4				mg/L	12	Standard
Ho-1	165	38.3	7.5				mg/L	12	Standard
Er	166	46.7	44.6				mg/L	20	Standard
I	127	79897.5	13.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.068	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.936	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.942
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		89.595
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606140201
Sample Date/Time: Tuesday, June 28, 2016 23:03:09
Number of Replicates: 3
Autosampler Position: 351
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76605.0	3.1				ug/L	81760	Standard
	Be	9	21.7	13.3	**0.0135**	0.003	20.6	ug/L	17	Standard
	Al	27	26105502.1	1.1	**180.8194**	3.801	2.1	ug/L	1410	Standard
	Sc	45	39097.0	0.2				ug/L	39543	Standard
	Ti	47	562.0	2.4	**2.2655**	0.057	2.5	ug/L	39	Standard
	V	51	4742.4	3.6	**0.5271**	0.022	4.2	ug/L	1415	Standard
	Cr	52	10082.4	1.2	**0.5007**	0.019	3.8	ug/L	6946	Standard
	Cr	53	12313.3	5.4	**14.7485**	0.907	6.2	ug/L	328	Standard
	Mn	55	1295871.4	1.2	**214.8489**	3.945	1.8	ug/L	823	Standard
	Co	59	1407.4	1.1	**0.1841**	0.002	1.1	ug/L	252	Standard
	Ni	60	4305.3	1.8	**2.3535**	0.034	1.4	ug/L	192	Standard
	Cu	65	1020.0	5.2	**0.4867**	0.034	6.9	ug/L	141	Standard
	Zn	66	18219.9	0.4	**17.0511**	0.173	1.0	ug/L	491	Standard
>	**Ge**	72	478933.9	0.7				ug/L	515087	Standard
	As	75	17040.6	2.0	**16.3399**	0.219	1.3	ug/L	20	Standard
	Se	82	892.6	3.4	**8.2180**	0.229	2.8	ug/L	15	Standard
	Se-1	77	753.4	7.3	**10.0390**	0.842	8.4	ug/L	48	Standard
>	**Ga**	71	218.3	6.6				mg/L	90	Standard
	Rb	85	3558.8	1.6				ug/L	23	Standard
	Y	89	416573.3	1.7				ug/L	448510	Standard
>	**Rh**	103	118.3	21.3				ug/L	15	Standard
	Mo	98	260.0	1.1	**0.0877**	0.004	4.4	ug/L	11	Standard
	Ag	107	80.3	26.9	**-0.0029**	0.004	134.9	ug/L	134	Standard
	Cd	111	40.9	26.1	**0.0184**	0.006	33.2	mg/L	7	Standard
	Cd	114	102.6	27.3	**0.0171**	0.006	37.8	ug/L	16	Standard
>	**In**	115	551143.5	2.5				ug/L	611117	Standard
	Sn	118	835.0	12.0	**0.0548**	0.020	37.1	ug/L	518	Standard
	Sb	123	829.1	3.5	**0.1820**	0.004	2.4	ug/L	127	Standard
	Ba	135	332622.5	0.7	**178.6804**	3.714	2.1	ug/L	45	Standard
	Ce	140	6094.6	2.7				ug/L	298	Standard
>	**Tb**	159	884304.9	2.4				ug/L	977942	Standard
	Ho	165	73.3	20.8				ug/L	12	Standard
	Tl	203	115.3	18.9	**0.0110**	0.003	28.4	ug/L	31	Standard
	Tl	205	95.0	13.9	**0.0127**	0.002	15.2	ug/L	20	Standard
	Pb	206	48021.0	1.3	**10.1649**	0.107	1.1	ug/L	286	Standard
	Pb	207	40222.3	0.8	**9.4401**	0.093	1.0	ug/L	257	Standard
	Pb	208	168471.0	1.1	**10.2223**	0.060	0.6	ug/L	956	Standard
	U	238	714.0	7.4	**0.1118**	0.009	8.4	ug/L	17	Standard
>	**Bi**	209	483931.7	1.1				ug/L	557080	Standard

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Na	23	8.3	34.6	**54.1394**	18.829	34.8	mg/L	0	Standard
Mg	24	106065.1	2.2	**142.7401**	3.063	2.1	mg/L	32	Standard
K	39	148.3	8.5	**0.3655**	0.044	12.0	mg/L	30	Standard
Ca	43	363.3	11.2	**50.4710**	6.294	12.5	mg/L	48	Standard
Fe	54	1618.9	1.4	**1.3448**	0.023	1.7	mg/L	159	Standard
Fe	57	835.0	5.7	**2.2263**	0.157	7.1	mg/L	195	Standard
Sc-1	45	39097.0	0.2				mg/L	39543	Standard
Cl	35	36261.3	1.4				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	214333.6	4.1				ug/L	1647	Standard
P	31	21892.5	1.8				ug/L	15231	Standard
S	34	2305.2	3.8				ug/L	1845	Standard
Sr	88	363.3	12.3				ug/L	70	Standard
C	12	390.0	0.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	133.0	23.5				mg/L	12	Standard
Ho-1	165	73.3	20.8				mg/L	12	Standard
Er	166	76.7	66.9				mg/L	20	Standard
I	127	398539.7	6.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.695	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.981	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.186
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		86.869
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606140401
Sample Date/Time: Tuesday, June 28, 2016 23:06:21
Number of Replicates: 3
Autosampler Position: 352
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74993.5	0.5				ug/L	81760	Standard
	Be	9	21.7	13.3	**0.0141**	0.003	22.5	ug/L	17	Standard
	Al	27	30278310.9	1.4	**214.1402**	2.917	1.4	ug/L	1410	Standard
	Sc	45	39486.4	2.9				ug/L	39543	Standard
	Ti	47	193.3	4.5	**0.6334**	0.048	7.5	ug/L	39	Standard
	V	51	22966.6	2.4	**3.1851**	0.035	1.1	ug/L	1415	Standard
	Cr	52	11319.6	0.7	**0.6125**	0.031	5.1	ug/L	6946	Standard
	Cr	53	1811.8	4.8	**1.7776**	0.107	6.0	ug/L	328	Standard
	Mn	55	8657.1	1.2	**1.2226**	0.034	2.8	ug/L	823	Standard
	Co	59	565.7	7.8	**0.0513**	0.007	13.0	ug/L	252	Standard
	Ni	60	1945.8	2.7	**0.9557**	0.026	2.7	ug/L	192	Standard
	Cu	65	60353.0	0.9	**32.5191**	0.515	1.6	ug/L	141	Standard
	Zn	66	48175.8	1.3	**44.3004**	1.008	2.3	ug/L	491	Standard
>	**Ge**	72	501772.7	1.4				ug/L	515087	Standard
	As	75	367.9	8.8	**0.3760**	0.025	6.7	ug/L	20	Standard
	Se	82	110.4	13.6	**0.8639**	0.120	13.9	ug/L	15	Standard
	Se-1	77	129.0	8.1	**1.0381**	0.123	11.8	ug/L	48	Standard
>	**Ga**	71	68.3	27.7				mg/L	90	Standard
	Rb	85	1198.4	2.3				ug/L	23	Standard
	Y	89	417957.0	1.4				ug/L	448510	Standard
>	**Rh**	103	78.3	35.2				ug/L	15	Standard
	Mo	98	388.3	6.2	**0.1355**	0.009	6.9	ug/L	11	Standard
	Ag	107	94.3	4.8	**-0.0011**	0.001	61.6	ug/L	134	Standard
	Cd	111	42.7	19.5	**0.0186**	0.004	22.3	mg/L	7	Standard
	Cd	114	106.8	24.4	**0.0172**	0.005	31.6	ug/L	16	Standard
>	**In**	115	568064.8	0.3				ug/L	611117	Standard
	Sn	118	741.7	8.4	**0.0330**	0.012	35.5	ug/L	518	Standard
	Sb	123	163.0	3.3	**0.0243**	0.001	4.6	ug/L	127	Standard
	Ba	135	87619.3	0.7	**45.6318**	0.199	0.4	ug/L	45	Standard
	Ce	140	530.0	5.7				ug/L	298	Standard
>	**Tb**	159	902463.1	0.6				ug/L	977942	Standard
	Ho	165	31.7	24.1				ug/L	12	Standard
	Tl	203	89.3	3.6	**0.0068**	0.000	7.0	ug/L	31	Standard
	Tl	205	80.0	18.8	**0.0096**	0.002	23.2	ug/L	20	Standard
	Pb	206	4637.4	0.5	**0.8697**	0.009	1.0	ug/L	286	Standard
	Pb	207	3892.8	1.5	**0.8106**	0.017	2.1	ug/L	257	Standard
	Pb	208	15697.9	1.6	**0.8448**	0.009	1.1	ug/L	956	Standard
	U	238	6211.6	0.5	**0.9400**	0.010	1.1	ug/L	17	Standard
>	**Bi**	209	512163.0	0.7				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.8762**	18.829	173.1	mg/L	0	Standard
Mg	24	25888.8	0.8	**34.4779**	1.238	3.6	mg/L	32	Standard
K	39	206.7	17.0	**0.5565**	0.104	18.6	mg/L	30	Standard
Ca	43	238.3	20.2	**30.9565**	7.726	25.0	mg/L	48	Standard
Fe	54	118.7	26.0	**-0.0297**	0.026	88.1	mg/L	159	Standard
Fe	57	376.7	12.0	**0.6523**	0.186	28.5	mg/L	195	Standard
> **Sc-1**	45	39486.4	2.9				mg/L	39543	Standard
Cl	35	38202.8	1.2				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	11808.0	7.7				ug/L	1647	Standard
P	31	21151.4	0.3				ug/L	15231	Standard
S	34	2466.9	2.1				ug/L	1845	Standard
Sr	88	291.7	10.5				ug/L	70	Standard
C	12	196.7	43.2				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	28.2	2.0				mg/L	12	Standard
Ho-1	165	31.7	24.1				mg/L	12	Standard
Er	166	36.7	31.5				mg/L	20	Standard
I	127	34317.5	11.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.724	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.415	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		92.955
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.937
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606140801
Sample Date/Time: Tuesday, June 28, 2016 23:09:32
Number of Replicates: 3
Autosampler Position: 353
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78174.6	2.2				ug/L	81760	Standard
	Be	9	35.0	24.7	**0.0270**	0.008	30.6	ug/L	17	Standard
	Al	27	18286645.8	1.2	**124.0948**	2.663	2.1	ug/L	1410	Standard
	Sc	45	40988.7	1.5				ug/L	39543	Standard
	Ti	47	225.3	13.4	**0.7985**	0.121	15.1	ug/L	39	Standard
	V	51	51258.6	3.2	**7.6390**	0.153	2.0	ug/L	1415	Standard
	Cr	52	11486.4	2.6	**0.6992**	0.069	9.9	ug/L	6946	Standard
	Cr	53	8145.5	5.8	**9.5287**	0.474	5.0	ug/L	328	Standard
	Mn	55	98520.0	1.7	**16.0208**	0.120	0.7	ug/L	823	Standard
	Co	59	769.4	2.9	**0.0851**	0.002	2.7	ug/L	252	Standard
	Ni	60	1615.4	2.4	**0.8080**	0.032	4.0	ug/L	192	Standard
	Cu	65	1131.0	3.0	**0.5425**	0.014	2.7	ug/L	141	Standard
	Zn	66	4403.0	3.4	**3.4460**	0.103	3.0	ug/L	491	Standard
>	**Ge**	72	484103.1	1.4				ug/L	515087	Standard
	As	75	1970.8	6.0	**1.9047**	0.087	4.5	ug/L	20	Standard
	Se	82	191.5	8.8	**1.6489**	0.132	8.0	ug/L	15	Standard
	Se-1	77	529.7	10.7	**6.7555**	0.697	10.3	ug/L	48	Standard
>	**Ga**	71	85.0	31.1				mg/L	90	Standard
	Rb	85	2531.9	3.1				ug/L	23	Standard
	Y	89	421592.5	4.0				ug/L	448510	Standard
>	**Rh**	103	66.7	30.3				ug/L	15	Standard
	Mo	98	353.3	5.0	**0.1209**	0.007	5.4	ug/L	11	Standard
	Ag	107	105.0	57.1	**0.0006**	0.010	1741.0	ug/L	134	Standard
	Cd	111	58.7	7.1	**0.0265**	0.001	5.4	mg/L	7	Standard
	Cd	114	139.6	12.3	**0.0238**	0.003	13.4	ug/L	16	Standard
>	**In**	115	570844.6	2.8				ug/L	611117	Standard
	Sn	118	760.0	5.7	**0.0358**	0.009	25.3	ug/L	518	Standard
	Sb	123	136.8	41.6	**0.0182**	0.013	71.7	ug/L	127	Standard
	Ba	135	27343.0	2.9	**14.1534**	0.097	0.7	ug/L	45	Standard
	Ce	140	1776.8	2.1				ug/L	298	Standard
>	**Tb**	159	907261.5	0.9				ug/L	977942	Standard
	Ho	165	38.3	32.8				ug/L	12	Standard
	Tl	203	160.7	51.8	**0.0162**	0.011	66.8	ug/L	31	Standard
	Tl	205	123.3	9.4	**0.0162**	0.002	11.0	ug/L	20	Standard
	Pb	206	469.0	16.1	**0.0318**	0.015	47.2	ug/L	286	Standard
	Pb	207	405.3	12.5	**0.0333**	0.011	33.4	ug/L	257	Standard
	Pb	208	1576.7	3.7	**0.0314**	0.003	10.7	ug/L	956	Standard
	U	238	14465.9	3.7	**2.2164**	0.080	3.6	ug/L	17	Standard
>	**Bi**	209	506765.8	0.4				ug/L	557080	Standard

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Na	23	3.3	86.6	**20.4816**	17.733	86.6	mg/L	0	Standard
Mg	24	76429.0	2.1	**98.0879**	0.872	0.9	mg/L	32	Standard
K	39	103.3	20.1	**0.1958**	0.071	36.2	mg/L	30	Standard
Ca	43	268.3	18.7	**34.0467**	7.923	23.3	mg/L	48	Standard
Fe	54	210.5	5.9	**0.0466**	0.009	18.4	mg/L	159	Standard
Fe	57	346.7	13.1	**0.5032**	0.132	26.3	mg/L	195	Standard
Sc-1	45	40988.7	1.5				mg/L	39543	Standard
Cl	35	41040.2	0.8				ug/L	27642	Standard
Kr	83	2.0	173.2				ug/L	2	Standard
Br	81	20580.7	5.3				ug/L	1647	Standard
P	31	21832.4	1.0				ug/L	15231	Standard
S	34	2461.9	6.1				ug/L	1845	Standard
Sr	88	228.3	13.2				ug/L	70	Standard
C	12	196.7	34.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	38.1	77.6				mg/L	12	Standard
Ho-1	165	38.3	32.8				mg/L	12	Standard
Er	166	40.0	90.1				mg/L	20	Standard
I	127	105209.9	5.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.615	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.985	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.410
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.968
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606140901
Sample Date/Time: Tuesday, June 28, 2016 23:12:44
Number of Replicates: 3
Autosampler Position: 354
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78595.1	3.1				ug/L	81760	Standard
	Be	9	26.7	57.3	**0.0179**	0.015	85.3	ug/L	17	Standard
	Al	27	20167615.6	1.1	**136.1889**	4.854	3.6	ug/L	1410	Standard
	Sc	45	39818.9	1.9				ug/L	39543	Standard
	Ti	47	311.7	10.4	**1.1846**	0.135	11.4	ug/L	39	Standard
	V	51	55787.4	0.6	**8.4391**	0.018	0.2	ug/L	1415	Standard
	Cr	52	16179.6	1.9	**1.4466**	0.047	3.2	ug/L	6946	Standard
	Cr	53	12833.8	2.8	**15.4070**	0.434	2.8	ug/L	328	Standard
	Mn	55	13187.4	1.1	**2.0427**	0.028	1.4	ug/L	823	Standard
	Co	59	670.0	4.7	**0.0714**	0.005	7.2	ug/L	252	Standard
	Ni	60	2540.2	2.3	**1.3479**	0.032	2.4	ug/L	192	Standard
	Cu	65	810.4	1.3	**0.3686**	0.005	1.5	ug/L	141	Standard
	Zn	66	2808.3	3.3	**1.9320**	0.083	4.3	ug/L	491	Standard
>	**Ge**	72	478186.0	0.4				ug/L	515087	Standard
	As	75	1572.1	0.9	**1.5465**	0.010	0.6	ug/L	20	Standard
	Se	82	338.5	3.3	**3.0475**	0.114	3.7	ug/L	15	Standard
	Se-1	77	792.0	6.7	**10.6055**	0.757	7.1	ug/L	48	Standard
>	**Ga**	71	71.7	10.7				mg/L	90	Standard
	Rb	85	3450.4	2.1				ug/L	23	Standard
	Y	89	421286.0	4.0				ug/L	448510	Standard
>	**Rh**	103	76.7	10.0				ug/L	15	Standard
	Mo	98	1179.3	2.2	**0.4594**	0.016	3.6	ug/L	11	Standard
	Ag	107	70.0	6.5	**-0.0048**	0.001	13.6	ug/L	134	Standard
	Cd	111	26.3	13.5	**0.0106**	0.002	18.0	mg/L	7	Standard
	Cd	114	71.5	14.0	**0.0102**	0.002	20.9	ug/L	16	Standard
>	**In**	115	557486.7	1.6				ug/L	611117	Standard
	Sn	118	753.4	2.1	**0.0377**	0.003	7.4	ug/L	518	Standard
	Sb	123	140.1	13.9	**0.0197**	0.005	23.1	ug/L	127	Standard
	Ba	135	30044.1	2.0	**15.9271**	0.116	0.7	ug/L	45	Standard
	Ce	140	1501.7	8.9				ug/L	298	Standard
>	**Tb**	159	887600.8	1.1				ug/L	977942	Standard
	Ho	165	38.3	27.2				ug/L	12	Standard
	Tl	203	136.3	15.5	**0.0135**	0.003	21.6	ug/L	31	Standard
	Tl	205	116.7	8.9	**0.0158**	0.002	10.2	ug/L	20	Standard
	Pb	206	477.7	6.1	**0.0364**	0.006	16.6	ug/L	286	Standard
	Pb	207	398.0	3.8	**0.0344**	0.003	8.7	ug/L	257	Standard
	Pb	208	1707.0	2.5	**0.0420**	0.002	4.6	ug/L	956	Standard
	U	238	23354.0	0.6	**3.6864**	0.026	0.7	ug/L	17	Standard
>	**Bi**	209	492176.6	0.6				ug/L	557080	Standard

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Na	23	8.3	124.9	**53.9308**	68.028	126.1	mg/L	0	Standard
Mg	24	78221.4	0.2	**103.3688**	1.796	1.7	mg/L	32	Standard
K	39	181.7	9.7	**0.4684**	0.061	12.9	mg/L	30	Standard
Ca	43	295.0	5.9	**39.1939**	3.495	8.9	mg/L	48	Standard
Fe	54	173.9	5.6	**0.0192**	0.007	35.0	mg/L	159	Standard
Fe	57	403.3	17.1	**0.7302**	0.251	34.4	mg/L	195	Standard
Sc-1	45	39818.9	1.9				mg/L	39543	Standard
Cl	35	38063.1	1.8				ug/L	27642	Standard
Kr	83	1.3	173.2				ug/L	2	Standard
Br	81	39401.2	2.9				ug/L	1647	Standard
P	31	23753.6	2.5				ug/L	15231	Standard
S	34	2233.5	3.9				ug/L	1845	Standard
Sr	88	295.0	6.1				ug/L	70	Standard
C	12	220.0	31.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	222.1	127.8				mg/L	12	Standard
Ho-1	165	38.3	27.2				mg/L	12	Standard
Er	166	26.7	78.1				mg/L	20	Standard
I	127	56189.0	1.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		96.129	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		92.836	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.224
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		88.349
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 23:15:56
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73471.1	1.2				ug/L	81760	Standard
	Be	9	47618.1	3.0	**53.3659**	2.229	4.2	ug/L	17	Standard
	Al	27	7287296.4	1.0	**52.5966**	0.249	0.5	ug/L	1410	Standard
	Sc	45	40183.2	3.0				ug/L	39543	Standard
	Ti	47	24656.7	0.7	**99.9368**	1.445	1.4	ug/L	39	Standard
	V	51	342959.6	1.5	**49.6067**	0.741	1.5	ug/L	1415	Standard
	Cr	52	350575.7	1.6	**49.7880**	0.923	1.9	ug/L	6946	Standard
	Cr	53	44859.7	1.2	**51.2482**	0.358	0.7	ug/L	328	Standard
	Mn	55	313688.7	1.9	**48.6980**	0.765	1.6	ug/L	823	Standard
	Co	59	336351.1	1.2	**48.2963**	0.507	1.1	ug/L	252	Standard
	Ni	60	92893.3	2.1	**49.6893**	0.993	2.0	ug/L	192	Standard
	Cu	65	92858.0	0.8	**49.2454**	0.445	0.9	ug/L	141	Standard
	Zn	66	54854.1	1.5	**49.6985**	0.961	1.9	ug/L	491	Standard
>	Ge	72	510232.1	0.7				ug/L	515087	Standard
	As	75	53972.2	1.6	**48.5043**	0.935	1.9	ug/L	20	Standard
	Se	82	5467.9	0.8	**47.8296**	0.724	1.5	ug/L	15	Standard
	Se-1	77	3829.5	1.2	**50.5966**	0.465	0.9	ug/L	48	Standard
>	Ga	71	55.0	32.8				mg/L	90	Standard
	Rb	85	740.0	22.2				ug/L	23	Standard
	Y	89	417471.8	0.9				ug/L	448510	Standard
>	Rh	103	28.3	40.8				ug/L	15	Standard
	Mo	98	255774.9	1.1	**100.4324**	1.068	1.1	ug/L	11	Standard
	Ag	107	314263.4	0.6	**49.6826**	0.310	0.6	ug/L	134	Standard
	Cd	111	99244.0	2.0	**49.2800**	0.642	1.3	mg/L	7	Standard
	Cd	114	244609.6	0.7	**49.9721**	0.117	0.2	ug/L	16	Standard
>	In	115	575695.1	0.7				ug/L	611117	Standard
	Sn	118	277518.7	1.2	**49.7196**	0.393	0.8	ug/L	518	Standard
	Sb	123	223405.3	1.0	**50.2498**	0.315	0.6	ug/L	127	Standard
	Ba	135	95362.2	0.9	**49.0082**	0.194	0.4	ug/L	45	Standard
	Ce	140	66.7	18.9				ug/L	298	Standard
>	Tb	159	900469.8	1.2				ug/L	977942	Standard
	Ho	165	0.0					ug/L	12	Standard
	Tl	203	399704.8	0.8	**50.1537**	0.324	0.6	ug/L	31	Standard
	Tl	205	354566.9	2.1	**51.2307**	0.689	1.3	ug/L	20	Standard
	Pb	206	258134.8	1.1	**50.4360**	0.346	0.7	ug/L	286	Standard
	Pb	207	234508.0	1.0	**50.8014**	0.140	0.3	ug/L	257	Standard
	Pb	208	934488.0	0.8	**52.3272**	0.390	0.7	ug/L	956	Standard
	U	238	348175.4	0.3	**51.3787**	0.514	1.0	ug/L	17	Standard
>	Bi	209	526902.0	1.3				ug/L	557080	Standard

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Na	23	5.0	100.0	**32.0442**	31.868	99.5	mg/L	0	Standard
Mg	24	3947.2	3.3	**5.1157**	0.206	4.0	mg/L	32	Standard
K	39	1291.7	6.0	**4.1569**	0.313	7.5	mg/L	30	Standard
Ca	43	78.3	13.3	**6.3383**	1.191	18.8	mg/L	48	Standard
Fe	54	5567.6	3.6	**4.8270**	0.308	6.4	mg/L	159	Standard
Fe	57	1653.4	2.1	**4.8734**	0.265	5.4	mg/L	195	Standard
Sc-1	45	40183.2	3.0				mg/L	39543	Standard
Cl	35	36099.6	2.2				ug/L	27642	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	2486.9	19.4				ug/L	1647	Standard
P	31	18199.3	2.9				ug/L	15231	Standard
S	34	2558.5	2.4				ug/L	1845	Standard
Sr	88	88.3	13.1				ug/L	70	Standard
C	12	123.3	18.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.5	205.9				mg/L	12	Standard
Ho-1	165	0.0					mg/L	12	Standard
Er	166	16.7	69.3				mg/L	20	Standard
I	127	3410.4	24.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	106.732		
Al	27	105.193		
Sc	45			
Ti	47	99.937		
V	51	99.213		
Cr	52	99.576		
Cr	53			
Mn	55	97.396		
Co	59	96.593		
Ni	60	99.379		
Cu	65	98.491		
Zn	66	99.397		
Ge	72		99.057	
As	75	97.009		
Se	82	95.659		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	100.432		
Ag	107	99.365		
Cd	111	98.560		
Cd	114			
> In	115		94.204	
Sn	118	99.439		
Sb	123	100.500		
Ba	135	98.016		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.307		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.654		
U	238	102.757		
> Bi	209		94.583	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 23:19:08
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74688.6	0.5				ug/L	81760	Standard
	Be	9	23.3	68.9	**0.0159**	0.018	110.7	ug/L	17	Standard
	Al	27	6963.5	51.4	**0.0350**	0.025	72.0	ug/L	1410	Standard
	Sc	45	39526.5	2.8				ug/L	39543	Standard
	Ti	47	29.3	2.0	**-0.0430**	0.003	6.9	ug/L	39	Standard
	V	51	1022.6	3.0	**-0.0543**	0.006	11.1	ug/L	1415	Standard
	Cr	52	6275.6	1.6	**-0.1243**	0.005	4.1	ug/L	6946	Standard
	Cr	53	655.0	2.0	**0.4308**	0.021	5.0	ug/L	328	Standard
	Mn	55	708.0	10.7	**-0.0355**	0.011	31.8	ug/L	823	Standard
	Co	59	254.0	9.4	**0.0060**	0.003	53.0	ug/L	252	Standard
	Ni	60	190.7	1.6	**-0.0002**	0.001	475.8	ug/L	192	Standard
	Cu	65	144.3	16.1	**-0.0123**	0.012	100.6	ug/L	141	Standard
	Zn	66	441.0	4.3	**-0.4114**	0.015	3.7	ug/L	491	Standard
>	**Ge**	72	497792.7	1.0				ug/L	515087	Standard
	As	75	-15.2	258.6	**0.0262**	0.036	138.8	ug/L	20	Standard
	Se	82	23.5	16.0	**0.0916**	0.033	35.7	ug/L	15	Standard
	Se-1	77	63.7	3.3	**0.1558**	0.037	23.6	ug/L	48	Standard
>	**Ga**	71	50.0	34.6				mg/L	90	Standard
	Rb	85	33.3	56.8				ug/L	23	Standard
	Y	89	425942.8	1.0				ug/L	448510	Standard
>	**Rh**	103	6.7	43.3				ug/L	15	Standard
	Mo	98	281.0	37.4	**0.0876**	0.040	45.9	ug/L	11	Standard
	Ag	107	137.7	21.7	**0.0048**	0.005	95.8	ug/L	134	Standard
	Cd	111	15.2	29.8	**0.0044**	0.002	50.1	mg/L	7	Standard
	Cd	114	43.1	89.6	**0.0036**	0.008	212.7	ug/L	16	Standard
>	**In**	115	595727.8	0.7				ug/L	611117	Standard
	Sn	118	753.4	17.4	**0.0287**	0.023	78.8	ug/L	518	Standard
	Sb	123	441.8	17.1	**0.0832**	0.016	19.8	ug/L	127	Standard
	Ba	135	56.0	54.4	**0.0027**	0.015	556.5	ug/L	45	Standard
	Ce	140	23.3	12.4				ug/L	298	Standard
>	**Tb**	159	931120.0	0.7				ug/L	977942	Standard
	Ho	165	10.0	86.6				ug/L	12	Standard
	Tl	203	88.3	51.6	**0.0060**	0.006	92.0	ug/L	31	Standard
	Tl	205	63.3	63.8	**0.0066**	0.006	85.2	ug/L	20	Standard
	Pb	206	308.0	15.6	**-0.0049**	0.009	177.6	ug/L	286	Standard
	Pb	207	259.7	11.6	**-0.0032**	0.006	187.4	ug/L	257	Standard
	Pb	208	1046.3	7.8	**-0.0033**	0.004	126.3	ug/L	956	Standard
	U	238	64.3	43.1	**0.0063**	0.004	62.8	ug/L	17	Standard
>	**Bi**	209	540861.2	0.7				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.5148**	18.203	173.1	mg/L	0	Standard
Mg	24	55.0	41.7	**0.0162**	0.030	187.5	mg/L	32	Standard
K	39	25.0	20.0	**-0.0566**	0.019	34.0	mg/L	30	Standard
Ca	43	33.3	34.6	**-0.2594**	1.827	704.2	mg/L	48	Standard
Fe	54	134.2	10.1	**-0.0157**	0.009	57.1	mg/L	159	Standard
Fe	57	241.7	9.3	**0.1932**	0.098	50.6	mg/L	195	Standard
Sc-1	45	39526.5	2.8				mg/L	39543	Standard
Cl	35	35813.0	1.8				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1830.1	10.1				ug/L	1647	Standard
P	31	18830.0	1.9				ug/L	15231	Standard
S	34	2625.2	3.0				ug/L	1845	Standard
Sr	88	65.0	33.5				ug/L	70	Standard
C	12	80.0	21.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	19.2	93.8				mg/L	12	Standard
Ho-1	165	10.0	86.6				mg/L	12	Standard
Er	166	16.7	91.7				mg/L	20	Standard
I	127	2391.9	12.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.642	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.482
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.089
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Tuesday, June 28, 2016 23:22:21
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70209.0	1.7				ug/L	81760	Standard
	Be	9	180.0	16.9	**0.2017**	0.039	19.3	ug/L	17	Standard
	Al	27	5133.2	109.4	**0.0240**	0.041	173.1	ug/L	1410	Standard
	Sc	45	36931.6	2.6				ug/L	39543	Standard
	Ti	47	20.7	36.3	**-0.0758**	0.033	44.0	ug/L	39	Standard
	V	51	3515.4	3.3	**0.3352**	0.014	4.2	ug/L	1415	Standard
	Cr	52	11116.7	0.6	**0.6541**	0.028	4.2	ug/L	6946	Standard
	Cr	53	1220.0	4.0	**1.1474**	0.049	4.3	ug/L	328	Standard
	Mn	55	3585.8	2.9	**0.4442**	0.023	5.1	ug/L	823	Standard
	Co	59	2687.2	1.7	**0.3785**	0.013	3.3	ug/L	252	Standard
	Ni	60	2873.6	1.1	**1.5299**	0.031	2.0	ug/L	192	Standard
	Cu	65	1483.4	2.9	**0.7455**	0.015	2.0	ug/L	141	Standard
	Zn	66	6969.9	1.2	**5.9869**	0.185	3.1	ug/L	491	Standard
>	**Ge**	72	480794.8	1.6				ug/L	515087	Standard
	As	75	396.5	4.3	**0.4183**	0.021	5.0	ug/L	20	Standard
	Se	82	61.9	5.1	**0.4561**	0.020	4.4	ug/L	15	Standard
	Se-1	77	78.3	14.0	**0.3969**	0.172	43.4	ug/L	48	Standard
>	**Ga**	71	46.7	32.7				mg/L	90	Standard
	Rb	85	21.7	13.3				ug/L	23	Standard
	Y	89	400775.4	1.5				ug/L	448510	Standard
>	**Rh**	103	13.3	21.7				ug/L	15	Standard
	Mo	98	70.5	1.1	**0.0095**	0.000	1.9	ug/L	11	Standard
	Ag	107	2377.2	2.1	**0.3719**	0.012	3.3	ug/L	134	Standard
	Cd	111	440.9	3.8	**0.2230**	0.005	2.1	mg/L	7	Standard
	Cd	114	1065.8	11.0	**0.2200**	0.026	11.9	ug/L	16	Standard
>	**In**	115	557761.4	1.6				ug/L	611117	Standard
	Sn	118	468.3	18.8	**-0.0150**	0.017	116.5	ug/L	518	Standard
	Sb	123	1709.9	1.5	**0.3843**	0.009	2.4	ug/L	127	Standard
	Ba	135	1358.4	3.9	**0.6957**	0.022	3.2	ug/L	45	Standard
	Ce	140	15.0	33.3				ug/L	298	Standard
>	**Tb**	159	873882.2	1.3				ug/L	977942	Standard
	Ho	165	8.3	124.9				ug/L	12	Standard
	Tl	203	633.3	2.0	**0.0774**	0.002	2.5	ug/L	31	Standard
	Tl	205	590.0	17.7	**0.0858**	0.015	17.2	ug/L	20	Standard
	Pb	206	1230.0	0.6	**0.1853**	0.002	0.8	ug/L	286	Standard
	Pb	207	1060.4	4.9	**0.1798**	0.012	6.4	ug/L	257	Standard
	Pb	208	4496.6	3.9	**0.2002**	0.009	4.3	ug/L	956	Standard
	U	238	2637.6	2.9	**0.3996**	0.008	2.0	ug/L	17	Standard
>	**Bi**	209	509391.4	0.9				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	38.3	30.1	**-0.0027**	0.016	586.9	mg/L	32	Standard
K	39	28.3	44.4	**-0.0396**	0.043	109.0	mg/L	30	Standard
Ca	43	26.7	43.3	**-1.0379**	1.747	168.3	mg/L	48	Standard
Fe	54	112.3	22.9	**-0.0284**	0.024	85.0	mg/L	159	Standard
Fe	57	253.3	17.2	**0.2902**	0.150	51.8	mg/L	195	Standard
> **Sc-1**	45	36931.6	2.6				mg/L	39543	Standard
Cl	35	34628.2	2.2				ug/L	27642	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1663.4	2.8				ug/L	1647	Standard
P	31	13167.4	6.3				ug/L	15231	Standard
S	34	2550.2	3.7				ug/L	1845	Standard
Sr	88	81.7	12.7				ug/L	70	Standard
C	12	96.7	15.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	22.7	104.3				mg/L	12	Standard
Ho-1	165	8.3	124.9				mg/L	12	Standard
Er	166	13.3	173.2				mg/L	20	Standard
I	127	1815.1	19.4				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	100.854		
	Al	27			
	Sc	45			
	Ti	47			
	V	51	83.798		
	Cr	52	81.760		
	Cr	53			
	Mn	55	88.848		
	Co	59	94.629		
	Ni	60	95.622		
	Cu	65	93.183		
	Zn	66	95.791		
>	Ge	72		93.342	
	As	75	104.574		
	Se	82	114.027		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	92.977		
Cd	111	92.929		
Cd	114			
> In	115			91.269
Sn	118			
Sb	123	96.075		
Ba	135	92.766		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	96.789		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.122		
U	238	99.892		
> Bi	209			91.439
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: PBS M4 WG574306-02
Sample Date/Time: Tuesday, June 28, 2016 23:25:34
Number of Replicates: 3
Autosampler Position: 401
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73219.9	2.0				ug/L	81760	Standard
	Be	9	21.7	13.3	**0.0146**	0.003	19.0	ug/L	17	Standard
	Al	27	8870.9	1.6	**0.0499**	0.001	2.1	ug/L	1410	Standard
	Sc	45	39242.4	3.0				ug/L	39543	Standard
	Ti	47	26.0	21.4	**-0.0565**	0.021	37.8	ug/L	39	Standard
	V	51	1183.1	4.4	**-0.0293**	0.008	27.7	ug/L	1415	Standard
	Cr	52	7819.4	0.5	**0.1132**	0.035	31.1	ug/L	6946	Standard
	Cr	53	706.7	5.7	**0.4968**	0.043	8.6	ug/L	328	Standard
	Mn	55	910.4	1.2	**-0.0022**	0.005	247.3	ug/L	823	Standard
	Co	59	210.7	7.4	**-0.0001**	0.003	2281.1	ug/L	252	Standard
	Ni	60	270.7	10.1	**0.0449**	0.018	40.4	ug/L	192	Standard
	Cu	65	197.3	7.2	**0.0174**	0.009	50.7	ug/L	141	Standard
	Zn	66	1637.4	3.9	**0.7282**	0.056	7.7	ug/L	491	Standard
>	**Ge**	72	494675.2	2.7				ug/L	515087	Standard
	As	75	-22.9	72.5	**0.0188**	0.016	85.6	ug/L	20	Standard
	Se	82	19.6	24.9	**0.0572**	0.041	70.8	ug/L	15	Standard
	Se-1	77	57.0	14.0	**0.0674**	0.090	134.0	ug/L	48	Standard
>	**Ga**	71	43.3	17.6				mg/L	90	Standard
	Rb	85	43.3	35.3				ug/L	23	Standard
	Y	89	424600.8	0.9				ug/L	448510	Standard
>	**Rh**	103	15.0	66.7				ug/L	15	Standard
	Mo	98	68.5	24.2	**0.0070**	0.006	90.8	ug/L	11	Standard
	Ag	107	79.3	10.7	**-0.0041**	0.001	32.3	ug/L	134	Standard
	Cd	111	8.5	44.3	**0.0012**	0.002	151.3	mg/L	7	Standard
	Cd	114	29.3	97.6	**0.0009**	0.006	647.6	ug/L	16	Standard
>	**In**	115	594639.0	0.2				ug/L	611117	Standard
	Sn	118	648.3	4.2	**0.0107**	0.005	42.7	ug/L	518	Standard
	Sb	123	146.0	12.4	**0.0190**	0.004	20.5	ug/L	127	Standard
	Ba	135	94.3	2.4	**0.0219**	0.001	5.5	ug/L	45	Standard
	Ce	140	41.7	27.7				ug/L	298	Standard
>	**Tb**	159	926166.4	1.8				ug/L	977942	Standard
	Ho	165	11.7	24.7				ug/L	12	Standard
	Tl	203	20.7	43.9	**-0.0022**	0.001	49.4	ug/L	31	Standard
	Tl	205	15.0	33.3	**-0.0001**	0.001	484.0	ug/L	20	Standard
	Pb	206	313.0	7.9	**-0.0032**	0.004	138.6	ug/L	286	Standard
	Pb	207	286.3	1.1	**0.0033**	0.001	36.5	ug/L	257	Standard
	Pb	208	1144.7	1.9	**0.0029**	0.001	51.3	ug/L	956	Standard
	U	238	10.7	32.9	**-0.0014**	0.001	35.7	ug/L	17	Standard
>	**Bi**	209	533593.4	0.9				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	31.7	39.7	**-0.0149**	0.016	104.8	mg/L	32	Standard
K	39	41.7	69.3	**0.0013**	0.101	7981.1	mg/L	30	Standard
Ca	43	18.3	15.7	**-2.5418**	0.422	16.6	mg/L	48	Standard
Fe	54	144.2	9.3	**-0.0052**	0.016	301.7	mg/L	159	Standard
Fe	57	226.7	13.5	**0.1451**	0.083	57.3	mg/L	195	Standard
Sc-1	45	39242.4	3.0				mg/L	39543	Standard
Cl	35	36295.4	2.3				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	2233.5	3.2				ug/L	1647	Standard
P	31	18441.2	3.0				ug/L	15231	Standard
S	34	2560.2	3.7				ug/L	1845	Standard
Sr	88	61.7	26.1				ug/L	70	Standard
C	12	130.0	20.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	22.9	112.2				mg/L	12	Standard
Ho-1	165	11.7	24.7				mg/L	12	Standard
Er	166	10.0	100.0				mg/L	20	Standard
I	127	1601.8	24.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.555	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.037	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.304
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.784
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBS M4 WG574306-02
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Method 6020 - Summary Report

Sample ID: LCSS M4 WG574306-03
Sample Date/Time: Tuesday, June 28, 2016 23:28:45
Number of Replicates: 3
Autosampler Position: 402
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72376.0	3.8				ug/L	81760	Standard
	Be	9	23423.1	1.4	**26.6532**	0.807	3.0	ug/L	17	Standard
	Al	27	9074.4	3.8	**0.0521**	0.003	4.9	ug/L	1410	Standard
	Sc	45	39197.3	2.4				ug/L	39543	Standard
	Ti	47	29.3	7.1	**-0.0442**	0.007	16.8	ug/L	39	Standard
	V	51	169885.7	0.8	**24.8594**	0.272	1.1	ug/L	1415	Standard
	Cr	52	181506.5	1.2	**25.6821**	0.081	0.3	ug/L	6946	Standard
	Cr	53	22394.9	2.0	**25.8190**	0.261	1.0	ug/L	328	Standard
	Mn	55	162938.5	1.1	**25.6253**	0.137	0.5	ug/L	823	Standard
	Co	59	171171.6	1.4	**24.9527**	0.363	1.5	ug/L	252	Standard
	Ni	60	47214.1	1.2	**25.6031**	0.067	0.3	ug/L	192	Standard
	Cu	65	47011.2	0.9	**25.2811**	0.042	0.2	ug/L	141	Standard
	Zn	66	28788.3	1.3	**26.1066**	0.165	0.6	ug/L	491	Standard
>	**Ge**	72	502290.9	1.0				ug/L	515087	Standard
	As	75	27387.3	0.6	**25.0208**	0.130	0.5	ug/L	20	Standard
	Se	82	2754.4	0.7	**24.4154**	0.147	0.6	ug/L	15	Standard
	Se-1	77	1916.1	0.9	**25.3637**	0.129	0.5	ug/L	48	Standard
>	**Ga**	71	55.0	18.2				mg/L	90	Standard
	Rb	85	31.7	18.2				ug/L	23	Standard
	Y	89	439399.0	0.9				ug/L	448510	Standard
>	**Rh**	103	31.7	24.1				ug/L	15	Standard
	Mo	98	98.7	7.7	**0.0186**	0.002	12.0	ug/L	11	Standard
	Ag	107	158446.9	0.8	**24.3265**	0.298	1.2	ug/L	134	Standard
	Cd	111	51639.0	0.8	**24.9106**	0.321	1.3	mg/L	7	Standard
	Cd	114	123238.5	0.9	**24.4562**	0.275	1.1	ug/L	16	Standard
>	**In**	115	592677.3	1.9				ug/L	611117	Standard
	Sn	118	653.3	6.2	**0.0119**	0.005	41.0	ug/L	518	Standard
	Sb	123	110361.6	0.7	**24.1094**	0.310	1.3	ug/L	127	Standard
	Ba	135	48745.3	0.9	**24.3246**	0.340	1.4	ug/L	45	Standard
	Ce	140	51.7	39.1				ug/L	298	Standard
>	**Tb**	159	905963.3	1.2				ug/L	977942	Standard
	Ho	165	11.7	65.5				ug/L	12	Standard
	Tl	203	202415.8	0.8	**25.4126**	0.129	0.5	ug/L	31	Standard
	Tl	205	180512.3	0.1	**26.1008**	0.236	0.9	ug/L	20	Standard
	Pb	206	132596.7	0.6	**25.8949**	0.268	1.0	ug/L	286	Standard
	Pb	207	115831.1	1.1	**25.0809**	0.349	1.4	ug/L	257	Standard
	Pb	208	485807.7	1.5	**27.1937**	0.548	2.0	ug/L	956	Standard
	U	238	174705.5	0.6	**25.7950**	0.133	0.5	ug/L	17	Standard
>	**Bi**	209	526543.8	0.9				ug/L	557080	Standard

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	Na	23	0.0		**0.0050**			mg/L	0	Standard
	Mg	24	28.3	53.9	**-0.0192**	0.020	104.0	mg/L	32	Standard
	K	39	18.3	78.7	**-0.0794**	0.048	60.3	mg/L	30	Standard
	Ca	43	26.7	21.7	**-1.2726**	0.799	62.8	mg/L	48	Standard
	Fe	54	143.6	13.2	**-0.0059**	0.017	289.5	mg/L	159	Standard
	Fe	57	241.7	12.5	**0.2002**	0.121	60.5	mg/L	195	Standard
>	**Sc-1**	45	39197.3	2.4				mg/L	39543	Standard
	Cl	35	35988.7	2.8				ug/L	27642	Standard
	Kr	83	3.3	17.3				ug/L	2	Standard
	Br	81	1690.1	11.1				ug/L	1647	Standard
	P	31	17910.6	1.0				ug/L	15231	Standard
	S	34	2548.5	6.5				ug/L	1845	Standard
	Sr	88	75.0	24.0				ug/L	70	Standard
	C	12	120.0	16.7				mg/L	113	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	0	Standard
	Dy	164	16.5	68.3				mg/L	12	Standard
	Ho-1	165	11.7	65.5				mg/L	12	Standard
	Er	166	3.3	173.2				mg/L	20	Standard
	I	127	1618.4	15.4				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		88.522	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.516	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.983
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.518
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129707 WG574306-01
Sample Date/Time: Tuesday, June 28, 2016 23:31:57
Number of Replicates: 3
Autosampler Position: 403
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73039.0	1.3				ug/L	81760	Standard
	Be	9	626.7	10.9	**0.6973**	0.086	12.3	ug/L	17	Standard
	Al	27	6016122.3	2.0	**43.6794**	0.992	2.3	ug/L	1410	Standard
	Sc	45	43592.6	1.8				ug/L	39543	Standard
	Ti	47	1645.1	1.5	**6.4955**	0.085	1.3	ug/L	39	Standard
	V	51	103833.7	2.4	**14.8338**	0.288	1.9	ug/L	1415	Standard
	Cr	52	59851.7	1.4	**7.6005**	0.153	2.0	ug/L	6946	Standard
	Cr	53	7268.4	3.1	**7.9966**	0.305	3.8	ug/L	328	Standard
	Mn	55	3268160.2	1.2	**507.4707**	9.760	1.9	ug/L	823	Standard
	Co	59	39533.2	0.9	**5.6343**	0.098	1.7	ug/L	252	Standard
	Ni	60	18874.4	2.7	**9.9863**	0.299	3.0	ug/L	192	Standard
	Cu	65	69246.2	1.1	**36.6021**	0.305	0.8	ug/L	141	Standard
	Zn	66	86637.7	0.8	**78.7605**	0.745	0.9	ug/L	491	Standard
>	**Ge**	72	511586.4	0.8				ug/L	515087	Standard
	As	75	4823.9	1.5	**4.3600**	0.029	0.7	ug/L	20	Standard
	Se	82	100.3	6.0	**0.7578**	0.047	6.2	ug/L	15	Standard
	Se-1	77	133.3	1.1	**1.0631**	0.006	0.6	ug/L	48	Standard
>	**Ga**	71	7216.7	0.8				mg/L	90	Standard
	Rb	85	77067.2	0.1				ug/L	23	Standard
	Y	89	607493.8	2.8				ug/L	448510	Standard
>	**Rh**	103	25.0	34.6				ug/L	15	Standard
	Mo	98	512.0	2.8	**0.1759**	0.005	2.9	ug/L	11	Standard
	Ag	107	750.4	6.7	**0.0988**	0.008	7.8	ug/L	134	Standard
	Cd	111	815.5	1.0	**0.3898**	0.005	1.3	mg/L	7	Standard
	Cd	114	2038.2	2.1	**0.3989**	0.010	2.4	ug/L	16	Standard
>	**In**	115	593721.9	0.4				ug/L	611117	Standard
	Sn	118	941.7	10.4	**0.0620**	0.016	26.6	ug/L	518	Standard
	Sb	123	1005.8	16.4	**0.2066**	0.037	17.7	ug/L	127	Standard
	Ba	135	393236.3	1.1	**196.0335**	2.433	1.2	ug/L	45	Standard
	Ce	140	857283.3	2.5				ug/L	298	Standard
>	**Tb**	159	944884.3	0.7				ug/L	977942	Standard
	Ho	165	15139.2	2.1				ug/L	12	Standard
	Tl	203	479.0	10.1	**0.0546**	0.006	10.6	ug/L	31	Standard
	Tl	205	396.7	12.4	**0.0544**	0.008	14.1	ug/L	20	Standard
	Pb	206	209606.6	0.8	**40.4302**	0.428	1.1	ug/L	286	Standard
	Pb	207	173972.5	0.8	**37.2011**	0.310	0.8	ug/L	257	Standard
	Pb	208	734775.6	0.6	**40.6204**	0.824	2.0	ug/L	956	Standard
	U	238	3055.0	2.6	**0.4423**	0.014	3.2	ug/L	17	Standard
>	**Bi**	209	533598.4	1.5				ug/L	557080	Standard

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Na	23	3.3	173.2	**19.2926**	33.407	173.2	mg/L	0	Standard
Mg	24	75.0	26.7	**0.0334**	0.024	70.8	mg/L	32	Standard
K	39	210.0	4.8	**0.5021**	0.023	4.7	mg/L	30	Standard
Ca	43	75.0	29.1	**4.9537**	2.848	57.5	mg/L	48	Standard
Fe	54	6552.0	2.8	**5.2441**	0.230	4.4	mg/L	159	Standard
Fe	57	1841.8	2.3	**5.0156**	0.091	1.8	mg/L	195	Standard
> **Sc-1**	45	43592.6	1.8				mg/L	39543	Standard
Cl	35	34528.0	1.5				ug/L	27642	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	3080.3	6.6				ug/L	1647	Standard
P	31	18262.7	4.8				ug/L	15231	Standard
S	34	2550.2	4.9				ug/L	1845	Standard
Sr	88	106.7	7.2				ug/L	70	Standard
C	12	370.0	20.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	40.0				mg/L	0	Standard
Dy	164	25551.2	3.2				mg/L	12	Standard
Ho-1	165	15139.2	2.1				mg/L	12	Standard
Er	166	14156.6	1.1				mg/L	20	Standard
I	127	14104.9	1.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.333	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.320	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.154
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.785
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129708S WG574306-04
Sample Date/Time: Tuesday, June 28, 2016 23:35:08
Number of Replicates: 3
Autosampler Position: 404
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77425.7	0.5				ug/L	81760	Standard
	Be	9	24978.9	2.1	**26.5514**	0.597	2.2	ug/L	17	Standard
	Al	27	20723622.4	0.1	**141.9584**	0.685	0.5	ug/L	1410	Standard
	Sc	45	47225.2	3.2				ug/L	39543	Standard
	Ti	47	4499.3	2.9	**18.2724**	0.558	3.1	ug/L	39	Standard
	V	51	344846.0	0.3	**50.3538**	0.699	1.4	ug/L	1415	Standard
	Cr	52	312957.5	0.8	**44.7646**	1.096	2.4	ug/L	6946	Standard
	Cr	53	39581.6	1.4	**45.6150**	1.229	2.7	ug/L	328	Standard
	Mn	55	5573425.5	1.4	**875.8629**	6.350	0.7	ug/L	823	Standard
	Co	59	254404.2	1.0	**36.8653**	0.333	0.9	ug/L	252	Standard
	Ni	60	98601.5	0.1	**53.2500**	0.840	1.6	ug/L	192	Standard
	Cu	65	83052.3	0.8	**44.4536**	0.827	1.9	ug/L	141	Standard
	Zn	66	91760.7	0.8	**84.4843**	0.972	1.2	ug/L	491	Standard
>	**Ge**	72	505521.9	1.6				ug/L	515087	Standard
	As	75	29384.3	0.4	**26.6737**	0.341	1.3	ug/L	20	Standard
	Se	82	1902.3	1.0	**16.7176**	0.177	1.1	ug/L	15	Standard
	Se-1	77	1368.1	4.0	**17.7813**	0.553	3.1	ug/L	48	Standard
>	**Ga**	71	22081.1	1.8				mg/L	90	Standard
	Rb	85	217862.7	3.0				ug/L	23	Standard
	Y	89	681158.2	0.5				ug/L	448510	Standard
>	**Rh**	103	41.7	13.9				ug/L	15	Standard
	Mo	98	502.0	0.9	**0.1763**	0.003	1.6	ug/L	11	Standard
	Ag	107	151390.6	0.2	**23.7106**	0.326	1.4	ug/L	134	Standard
	Cd	111	50168.4	0.1	**24.6878**	0.285	1.2	mg/L	7	Standard
	Cd	114	122073.8	0.4	**24.7133**	0.372	1.5	ug/L	16	Standard
>	**In**	115	580961.0	1.3				ug/L	611117	Standard
	Sn	118	790.0	7.7	**0.0385**	0.009	23.5	ug/L	518	Standard
	Sb	123	3165.4	5.9	**0.6928**	0.037	5.4	ug/L	127	Standard
	Ba	135	532338.7	0.4	**271.2464**	4.110	1.5	ug/L	45	Standard
	Ce	140	1309534.5	1.1				ug/L	298	Standard
>	**Tb**	159	945803.3	0.3				ug/L	977942	Standard
	Ho	165	21665.5	2.8				ug/L	12	Standard
	Tl	203	195988.5	0.7	**24.3661**	0.181	0.7	ug/L	31	Standard
	Tl	205	172319.6	2.0	**24.6721**	0.452	1.8	ug/L	20	Standard
	Pb	206	254741.0	0.7	**49.3204**	0.423	0.9	ug/L	286	Standard
	Pb	207	216152.1	1.4	**46.3962**	0.722	1.6	ug/L	257	Standard
	Pb	208	888930.7	0.3	**49.3200**	0.099	0.2	ug/L	956	Standard
	U	238	171966.4	0.9	**25.1430**	0.188	0.7	ug/L	17	Standard
>	**Bi**	209	531711.1	0.2				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	125.0	34.9	**0.0812**	0.045	55.3	mg/L	32	Standard
K	39	518.3	8.6	**1.3288**	0.177	13.3	mg/L	30	Standard
Ca	43	238.3	9.5	**24.9959**	3.131	12.5	mg/L	48	Standard
Fe	54	18930.5	0.8	**14.2167**	0.407	2.9	mg/L	159	Standard
Fe	57	5154.2	3.0	**13.9467**	0.213	1.5	mg/L	195	Standard
> **Sc-1**	45	47225.2	3.2				mg/L	39543	Standard
Cl	35	33388.1	1.2				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2326.8	4.2				ug/L	1647	Standard
P	31	19087.0	1.5				ug/L	15231	Standard
S	34	2648.6	1.1				ug/L	1845	Standard
Sr	88	121.7	17.1				ug/L	70	Standard
C	12	206.7	36.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	56.8				mg/L	0	Standard
Dy	164	35480.3	0.5				mg/L	12	Standard
Ho-1	165	21665.5	2.8				mg/L	12	Standard
Er	166	19556.0	2.5				mg/L	20	Standard
I	127	13694.5	2.7				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		94.699	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.143	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.065
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.446
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129709SD WG574306-05
Sample Date/Time: Tuesday, June 28, 2016 23:38:19
Number of Replicates: 3
Autosampler Position: 405
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74161.1	1.1				ug/L	81760	Standard
	Be	9	23705.2	3.8	**26.3039**	0.872	3.3	ug/L	17	Standard
	Al	27	6111125.0	1.3	**43.6951**	0.516	1.2	ug/L	1410	Standard
	Sc	45	44620.6	1.2				ug/L	39543	Standard
	Ti	47	2932.6	3.4	**11.8635**	0.492	4.1	ug/L	39	Standard
	V	51	246865.2	0.2	**36.0158**	0.450	1.2	ug/L	1415	Standard
	Cr	52	213059.8	1.6	**30.1549**	0.173	0.6	ug/L	6946	Standard
	Cr	53	26094.1	1.0	**29.9771**	0.650	2.2	ug/L	328	Standard
	Mn	55	1521366.7	1.6	**239.1613**	2.815	1.2	ug/L	823	Standard
	Co	59	194513.2	1.8	**28.2005**	0.410	1.5	ug/L	252	Standard
	Ni	60	61728.2	1.1	**33.3195**	0.163	0.5	ug/L	192	Standard
	Cu	65	74436.8	1.3	**39.8619**	0.705	1.8	ug/L	141	Standard
	Zn	66	58904.3	0.8	**53.9789**	0.545	1.0	ug/L	491	Standard
>	**Ge**	72	505111.3	1.2				ug/L	515087	Standard
	As	75	31837.0	1.5	**28.9187**	0.503	1.7	ug/L	20	Standard
	Se	82	2328.1	1.1	**20.5054**	0.470	2.3	ug/L	15	Standard
	Se-1	77	1619.4	1.4	**21.2042**	0.440	2.1	ug/L	48	Standard
>	**Ga**	71	6334.7	3.0				mg/L	90	Standard
	Rb	85	74980.1	1.6				ug/L	23	Standard
	Y	89	605551.0	0.9				ug/L	448510	Standard
>	**Rh**	103	31.7	39.7				ug/L	15	Standard
	Mo	98	404.4	5.7	**0.1335**	0.008	5.8	ug/L	11	Standard
	Ag	107	149725.6	1.6	**22.7377**	0.610	2.7	ug/L	134	Standard
	Cd	111	49979.3	1.2	**23.8462**	0.386	1.6	mg/L	7	Standard
	Cd	114	121386.1	1.5	**23.8269**	0.554	2.3	ug/L	16	Standard
>	**In**	115	599198.2	1.3				ug/L	611117	Standard
	Sn	118	811.7	7.5	**0.0382**	0.012	32.5	ug/L	518	Standard
	Sb	123	19138.7	1.5	**4.1252**	0.117	2.8	ug/L	127	Standard
	Ba	135	258930.8	0.8	**127.9040**	1.896	1.5	ug/L	45	Standard
	Ce	140	760518.7	0.8				ug/L	298	Standard
>	**Tb**	159	951283.8	0.9				ug/L	977942	Standard
	Ho	165	14106.6	0.1				ug/L	12	Standard
	Tl	203	188730.2	0.5	**23.1187**	0.087	0.4	ug/L	31	Standard
	Tl	205	170134.9	1.0	**24.0027**	0.337	1.4	ug/L	20	Standard
	Pb	206	208981.3	1.7	**39.8515**	0.361	0.9	ug/L	286	Standard
	Pb	207	178505.4	0.4	**37.7421**	0.330	0.9	ug/L	257	Standard
	Pb	208	755416.1	1.2	**41.2868**	0.479	1.2	ug/L	956	Standard
	U	238	170025.1	1.0	**24.4935**	0.095	0.4	ug/L	17	Standard
>	**Bi**	209	539649.3	0.9				ug/L	557080	Standard

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Na	23	3.3	86.6	**19.0051**	16.458	86.6	mg/L	0	Standard
Mg	24	83.3	27.7	**0.0410**	0.026	64.1	mg/L	32	Standard
K	39	181.7	7.9	**0.4027**	0.045	11.2	mg/L	30	Standard
Ca	43	75.0	26.7	**4.7351**	2.622	55.4	mg/L	48	Standard
Fe	54	5650.5	3.5	**4.3963**	0.211	4.8	mg/L	159	Standard
Fe	57	1623.4	7.9	**4.2316**	0.365	8.6	mg/L	195	Standard
> **Sc-1**	45	44620.6	1.2				mg/L	39543	Standard
Cl	35	32136.0	1.3				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1900.1	7.1				ug/L	1647	Standard
P	31	17840.5	2.2				ug/L	15231	Standard
S	34	2363.5	5.1				ug/L	1845	Standard
Sr	88	98.3	20.5				ug/L	70	Standard
C	12	150.0	37.1				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	20.0				mg/L	0	Standard
Dy	164	23948.7	0.5				mg/L	12	Standard
Ho-1	165	14106.6	0.1				mg/L	12	Standard
Er	166	12898.8	4.1				mg/L	20	Standard
I	127	5567.7	3.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.706	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.063	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.050
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.871
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144301
Sample Date/Time: Tuesday, June 28, 2016 23:41:31
Number of Replicates: 3
Autosampler Position: 406
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72988.8	2.0				ug/L	81760	Standard
	Be	9	916.7	4.9	**1.0251**	0.070	6.9	ug/L	17	Standard
	Al	27	29327581.2	1.7	**213.1994**	7.066	3.3	ug/L	1410	Standard
	Sc	45	42180.3	1.1				ug/L	39543	Standard
	Ti	47	15217.0	2.1	**62.4530**	1.008	1.6	ug/L	39	Standard
	V	51	58550.8	0.3	**8.4144**	0.093	1.1	ug/L	1415	Standard
	Cr	52	50375.3	2.1	**6.3484**	0.119	1.9	ug/L	6946	Standard
	Cr	53	5892.8	2.4	**6.5282**	0.148	2.3	ug/L	328	Standard
	Mn	55	1501608.8	1.0	**236.8837**	1.387	0.6	ug/L	823	Standard
	Co	59	11082.4	1.1	**1.5829**	0.023	1.4	ug/L	252	Standard
	Ni	60	9938.9	1.0	**5.2962**	0.105	2.0	ug/L	192	Standard
	Cu	65	12880.8	1.6	**6.8461**	0.032	0.5	ug/L	141	Standard
	Zn	66	52551.7	1.1	**48.2375**	0.337	0.7	ug/L	491	Standard
>	**Ge**	72	503346.2	1.1				ug/L	515087	Standard
	As	75	9638.5	1.8	**8.8128**	0.107	1.2	ug/L	20	Standard
	Se	82	89.1	11.5	**0.6728**	0.088	13.1	ug/L	15	Standard
	Se-1	77	112.0	20.6	**0.8047**	0.328	40.8	ug/L	48	Standard
>	**Ga**	71	5402.6	1.6				mg/L	90	Standard
	Rb	85	27092.5	2.9				ug/L	23	Standard
	Y	89	512619.4	0.7				ug/L	448510	Standard
>	**Rh**	103	40.0	45.1				ug/L	15	Standard
	Mo	98	2129.4	2.5	**0.7922**	0.032	4.0	ug/L	11	Standard
	Ag	107	397.3	28.5	**0.0446**	0.016	36.8	ug/L	134	Standard
	Cd	111	847.6	0.8	**0.4054**	0.009	2.1	mg/L	7	Standard
	Cd	114	2047.7	3.4	**0.4008**	0.011	2.7	ug/L	16	Standard
>	**In**	115	593663.8	1.5				ug/L	611117	Standard
	Sn	118	1955.1	5.4	**0.2386**	0.021	8.9	ug/L	518	Standard
	Sb	123	857.9	5.2	**0.1744**	0.012	7.0	ug/L	127	Standard
	Ba	135	91007.2	1.4	**45.3648**	1.263	2.8	ug/L	45	Standard
	Ce	140	427372.5	1.2				ug/L	298	Standard
>	**Tb**	159	914890.2	3.3				ug/L	977942	Standard
	Ho	165	5369.3	2.3				ug/L	12	Standard
	Tl	203	3260.4	2.3	**0.4133**	0.015	3.6	ug/L	31	Standard
	Tl	205	2856.9	4.2	**0.4193**	0.011	2.7	ug/L	20	Standard
	Pb	206	241551.6	0.7	**48.2276**	1.641	3.4	ug/L	286	Standard
	Pb	207	199984.5	0.7	**44.2621**	1.381	3.1	ug/L	257	Standard
	Pb	208	845904.8	0.5	**48.3946**	1.395	2.9	ug/L	956	Standard
	U	238	4244.6	0.7	**0.6370**	0.016	2.5	ug/L	17	Standard
>	**Bi**	209	515907.9	2.8				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.1607**	17.590	173.1	mg/L	0	Standard
Mg	24	176.7	13.4	**0.1635**	0.031	19.2	mg/L	32	Standard
K	39	111.7	29.8	**0.2126**	0.107	50.1	mg/L	30	Standard
Ca	43	486.7	20.1	**63.9109**	13.520	21.2	mg/L	48	Standard
Fe	54	4570.1	3.9	**3.7396**	0.111	3.0	mg/L	159	Standard
Fe	57	1611.8	3.6	**4.4774**	0.217	4.9	mg/L	195	Standard
Sc-1	45	42180.3	1.1				mg/L	39543	Standard
Cl	35	34952.3	0.5				ug/L	27642	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	2820.3	6.2				ug/L	1647	Standard
P	31	18733.3	7.5				ug/L	15231	Standard
S	34	2421.9	7.6				ug/L	1845	Standard
Sr	88	105.0	16.5				ug/L	70	Standard
C	12	266.7	9.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	83.3	60.4				mg/L	0	Standard
Dy	164	8334.8	4.4				mg/L	12	Standard
Ho-1	165	5369.3	2.3				mg/L	12	Standard
Er	166	5100.9	4.8				mg/L	20	Standard
I	127	10480.3	8.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		89.272	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.721	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.144
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.609
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606144302
Sample Date/Time: Tuesday, June 28, 2016 23:44:42
Number of Replicates: 3
Autosampler Position: 407
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71243.8	1.4				ug/L	81760	Standard
	Be	9	1080.0	8.5	**1.2377**	0.094	7.6	ug/L	17	Standard
	Al	27	5504266.2	2.7	**40.9647**	0.928	2.3	ug/L	1410	Standard
	Sc	45	42188.7	3.4				ug/L	39543	Standard
	Ti	47	15737.8	0.6	**62.0152**	0.652	1.1	ug/L	39	Standard
	V	51	45512.4	1.5	**6.2276**	0.158	2.5	ug/L	1415	Standard
	Cr	52	44821.9	1.8	**5.2702**	0.176	3.3	ug/L	6946	Standard
	Cr	53	5345.9	2.2	**5.6430**	0.187	3.3	ug/L	328	Standard
	Mn	55	1510551.7	1.4	**228.8078**	5.482	2.4	ug/L	823	Standard
	Co	59	8314.6	0.3	**1.1314**	0.011	1.0	ug/L	252	Standard
	Ni	60	7372.1	1.0	**3.7410**	0.046	1.2	ug/L	192	Standard
	Cu	65	13129.7	1.4	**6.6988**	0.146	2.2	ug/L	141	Standard
	Zn	66	50712.1	0.8	**44.6331**	0.723	1.6	ug/L	491	Standard
>	**Ge**	72	524277.6	1.0				ug/L	515087	Standard
	As	75	7848.1	0.4	**6.8989**	0.093	1.3	ug/L	20	Standard
	Se	82	94.2	13.2	**0.6849**	0.109	15.9	ug/L	15	Standard
	Se-1	77	110.0	9.5	**0.7149**	0.123	17.2	ug/L	48	Standard
>	**Ga**	71	4740.7	7.0				mg/L	90	Standard
	Rb	85	22735.4	3.5				ug/L	23	Standard
	Y	89	510942.2	1.8				ug/L	448510	Standard
>	**Rh**	103	18.3	110.2				ug/L	15	Standard
	Mo	98	3616.2	2.9	**1.3869**	0.053	3.8	ug/L	11	Standard
	Ag	107	415.3	27.2	**0.0487**	0.017	35.1	ug/L	134	Standard
	Cd	111	879.6	1.3	**0.4294**	0.003	0.8	mg/L	7	Standard
	Cd	114	2156.4	4.6	**0.4311**	0.017	3.9	ug/L	16	Standard
>	**In**	115	581659.3	1.0				ug/L	611117	Standard
	Sn	118	1941.8	8.1	**0.2429**	0.025	10.2	ug/L	518	Standard
	Sb	123	795.2	3.5	**0.1642**	0.005	3.1	ug/L	127	Standard
	Ba	135	105670.2	0.5	**53.7566**	0.798	1.5	ug/L	45	Standard
	Ce	140	489350.3	0.7				ug/L	298	Standard
>	**Tb**	159	914906.3	0.9				ug/L	977942	Standard
	Ho	165	5852.8	3.2				ug/L	12	Standard
	Tl	203	2193.8	7.0	**0.2695**	0.018	6.5	ug/L	31	Standard
	Tl	205	1858.4	8.2	**0.2655**	0.024	8.9	ug/L	20	Standard
	Pb	206	250441.6	1.0	**48.7728**	1.107	2.3	ug/L	286	Standard
	Pb	207	208820.1	0.2	**45.0828**	0.807	1.8	ug/L	257	Standard
	Pb	208	871187.9	1.2	**48.6248**	1.437	3.0	ug/L	956	Standard
	U	238	4748.1	0.9	**0.6954**	0.016	2.3	ug/L	17	Standard
>	**Bi**	209	528719.9	1.7				ug/L	557080	Standard

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Na	23	6.7	43.3	**39.8641**	16.152	40.5	mg/L	0	Standard
Mg	24	568.3	2.7	**0.6523**	0.023	3.6	mg/L	32	Standard
K	39	88.3	11.8	**0.1385**	0.034	24.4	mg/L	30	Standard
Ca	43	236.7	18.2	**28.4335**	6.608	23.2	mg/L	48	Standard
Fe	54	3607.3	1.4	**2.9257**	0.132	4.5	mg/L	159	Standard
Fe	57	1208.4	3.1	**3.2044**	0.245	7.6	mg/L	195	Standard
> **Sc-1**	45	42188.7	3.4				mg/L	39543	Standard
Cl	35	33795.0	1.6				ug/L	27642	Standard
Kr	83	3.3	75.5				ug/L	2	Standard
Br	81	2200.2	4.1				ug/L	1647	Standard
P	31	17892.2	3.9				ug/L	15231	Standard
S	34	2398.5	0.8				ug/L	1845	Standard
Sr	88	86.7	23.3				ug/L	70	Standard
C	12	246.7	15.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	76.7	30.1				mg/L	0	Standard
Dy	164	8934.1	5.5				mg/L	12	Standard
Ho-1	165	5852.8	3.2				mg/L	12	Standard
Er	166	5817.8	2.9				mg/L	20	Standard
I	127	10927.3	3.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		87.138	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.784	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.180
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.909
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606144302PS WG574573-01
Sample Date/Time: Tuesday, June 28, 2016 23:47:54
Number of Replicates: 3
Autosampler Position: 408
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74517.8	1.0				ug/L	81760	Standard
	Be	9	49025.9	0.9	**54.1590**	0.839	1.5	ug/L	17	Standard
	Al	27	5488864.5	1.0	**39.0606**	0.777	2.0	ug/L	1410	Standard
	Sc	45	43992.1	1.6				ug/L	39543	Standard
	Ti	47	15590.7	1.3	**62.0794**	2.775	4.5	ug/L	39	Standard
	V	51	384779.8	0.6	**54.7401**	1.764	3.2	ug/L	1415	Standard
	Cr	52	400124.0	1.3	**56.0091**	2.445	4.4	ug/L	6946	Standard
	Cr	53	50664.6	1.6	**56.9262**	0.956	1.7	ug/L	328	Standard
	Mn	55	1785071.4	0.4	**273.1709**	9.729	3.6	ug/L	823	Standard
	Co	59	343226.4	0.5	**48.4551**	1.560	3.2	ug/L	252	Standard
	Ni	60	101539.8	1.7	**53.4214**	2.390	4.5	ug/L	192	Standard
	Cu	65	107630.3	0.5	**56.1285**	1.666	3.0	ug/L	141	Standard
	Zn	66	105446.7	0.4	**94.6554**	2.823	3.0	ug/L	491	Standard
>	**Ge**	72	519316.9	3.3				ug/L	515087	Standard
	As	75	63635.8	1.4	**56.2203**	2.024	3.6	ug/L	20	Standard
	Se	82	5672.0	2.3	**48.8026**	2.645	5.4	ug/L	15	Standard
	Se-1	77	3855.8	0.1	**50.0819**	1.642	3.3	ug/L	48	Standard
>	**Ga**	71	4749.1	6.7				mg/L	90	Standard
	Rb	85	22398.2	1.3				ug/L	23	Standard
	Y	89	511504.7	2.1				ug/L	448510	Standard
>	**Rh**	103	58.3	34.6				ug/L	15	Standard
	Mo	98	3550.9	0.5	**1.3279**	0.015	1.1	ug/L	11	Standard
	Ag	107	317741.2	0.8	**48.5166**	0.462	1.0	ug/L	134	Standard
	Cd	111	103027.6	1.2	**49.4156**	0.686	1.4	mg/L	7	Standard
	Cd	114	250223.1	1.7	**49.3820**	1.399	2.8	ug/L	16	Standard
>	**In**	115	596094.6	1.6				ug/L	611117	Standard
	Sn	118	2016.8	5.9	**0.2476**	0.017	6.7	ug/L	518	Standard
	Sb	123	226110.3	0.9	**49.1269**	0.970	2.0	ug/L	127	Standard
	Ba	135	199376.6	0.4	**98.9961**	1.356	1.4	ug/L	45	Standard
	Ce	140	473631.7	1.6				ug/L	298	Standard
>	**Tb**	159	946510.9	0.6				ug/L	977942	Standard
	Ho	165	5706.1	1.8				ug/L	12	Standard
	Tl	203	404565.2	1.6	**49.2192**	0.432	0.9	ug/L	31	Standard
	Tl	205	358549.4	2.4	**50.2279**	0.323	0.6	ug/L	20	Standard
	Pb	206	506766.3	0.6	**96.0764**	1.688	1.8	ug/L	286	Standard
	Pb	207	430425.5	0.4	**90.4686**	1.648	1.8	ug/L	257	Standard
	Pb	208	1789019.3	1.0	**97.1851**	0.775	0.8	ug/L	956	Standard
	U	238	348425.0	0.3	**49.8561**	0.765	1.5	ug/L	17	Standard
>	**Bi**	209	543434.9	1.8				ug/L	557080	Standard

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Na	23	3.3	86.6	**19.2423**	16.666	86.6	mg/L	0	Standard
Mg	24	530.0	3.8	**0.5773**	0.030	5.2	mg/L	32	Standard
K	39	95.0	5.3	**0.1471**	0.014	9.3	mg/L	30	Standard
Ca	43	235.0	26.6	**26.8058**	8.969	33.5	mg/L	48	Standard
Fe	54	3632.6	2.6	**2.8189**	0.112	4.0	mg/L	159	Standard
Fe	57	1290.1	7.8	**3.2920**	0.337	10.2	mg/L	195	Standard
> **Sc-1**	45	43992.1	1.6				mg/L	39543	Standard
Cl	35	33127.5	1.3				ug/L	27642	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	2050.1	2.6				ug/L	1647	Standard
P	31	18372.8	5.1				ug/L	15231	Standard
S	34	2410.2	0.9				ug/L	1845	Standard
Sr	88	108.3	17.5				ug/L	70	Standard
C	12	236.7	47.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	86.7	70.5				mg/L	0	Standard
Dy	164	8282.4	2.8				mg/L	12	Standard
Ho-1	165	5706.1	1.8				mg/L	12	Standard
Er	166	5427.6	1.3				mg/L	20	Standard
I	127	10600.4	5.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.142	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.821	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.542
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.551
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606144302SDL WG574573-02
Sample Date/Time: Tuesday, June 28, 2016 23:51:05
Number of Replicates: 3
Autosampler Position: 409
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73539.7	0.5				ug/L	81760	Standard
	Be	9	228.3	17.7	**0.2458**	0.045	18.1	ug/L	17	Standard
	Al	27	1128305.0	2.6	**8.1231**	0.173	2.1	ug/L	1410	Standard
	Sc	45	40995.4	3.1				ug/L	39543	Standard
	Ti	47	3133.3	3.6	**12.6953**	0.331	2.6	ug/L	39	Standard
	V	51	9700.8	3.1	**1.2183**	0.050	4.1	ug/L	1415	Standard
	Cr	52	13743.6	3.1	**0.9582**	0.044	4.6	ug/L	6946	Standard
	Cr	53	1285.1	5.5	**1.1537**	0.099	8.6	ug/L	328	Standard
	Mn	55	302649.7	2.2	**47.5055**	0.538	1.1	ug/L	823	Standard
	Co	59	1856.8	5.3	**0.2384**	0.012	4.9	ug/L	252	Standard
	Ni	60	1619.8	3.4	**0.7729**	0.024	3.1	ug/L	192	Standard
	Cu	65	2766.6	1.1	**1.3956**	0.008	0.6	ug/L	141	Standard
	Zn	66	11859.0	1.8	**10.2169**	0.056	0.5	ug/L	491	Standard
>	**Ge**	72	504593.5	1.7				ug/L	515087	Standard
	As	75	1530.8	2.0	**1.4307**	0.048	3.3	ug/L	20	Standard
	Se	82	33.4	31.2	**0.1774**	0.094	53.0	ug/L	15	Standard
	Se-1	77	64.7	12.6	**0.1577**	0.113	71.7	ug/L	48	Standard
>	**Ga**	71	975.0	10.5				mg/L	90	Standard
	Rb	85	4577.4	4.1				ug/L	23	Standard
	Y	89	452862.0	1.2				ug/L	448510	Standard
>	**Rh**	103	23.3	32.7				ug/L	15	Standard
	Mo	98	722.3	4.5	**0.2491**	0.011	4.3	ug/L	11	Standard
	Ag	107	159.0	11.1	**0.0076**	0.003	35.4	ug/L	134	Standard
	Cd	111	175.3	14.8	**0.0794**	0.012	14.8	mg/L	7	Standard
	Cd	114	462.3	4.9	**0.0844**	0.004	4.5	ug/L	16	Standard
>	**In**	115	608749.5	0.7				ug/L	611117	Standard
	Sn	118	845.0	9.9	**0.0416**	0.014	34.5	ug/L	518	Standard
	Sb	123	2112.7	19.6	**0.4370**	0.091	20.8	ug/L	127	Standard
	Ba	135	21046.6	3.7	**10.2079**	0.317	3.1	ug/L	45	Standard
	Ce	140	96335.3	1.6				ug/L	298	Standard
>	**Tb**	159	932545.8	1.3				ug/L	977942	Standard
	Ho	165	1166.7	10.3				ug/L	12	Standard
	Tl	203	511.3	6.9	**0.0588**	0.004	6.8	ug/L	31	Standard
	Tl	205	456.7	14.9	**0.0631**	0.009	14.8	ug/L	20	Standard
	Pb	206	50001.0	0.8	**9.6268**	0.026	0.3	ug/L	286	Standard
	Pb	207	41687.9	1.1	**8.8985**	0.042	0.5	ug/L	257	Standard
	Pb	208	175842.9	0.5	**9.7051**	0.030	0.3	ug/L	956	Standard
	U	238	977.7	3.5	**0.1400**	0.006	4.1	ug/L	17	Standard
>	**Bi**	209	531859.1	0.7				ug/L	557080	Standard

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Na	23	3.3	86.6	**20.9199**	18.126	86.6	mg/L	0	Standard
Mg	24	148.3	20.6	**0.1326**	0.034	25.5	mg/L	32	Standard
K	39	35.0	24.7	**-0.0267**	0.032	120.4	mg/L	30	Standard
Ca	43	75.0	20.0	**5.6602**	2.270	40.1	mg/L	48	Standard
Fe	54	775.4	6.3	**0.5410**	0.062	11.5	mg/L	159	Standard
Fe	57	435.0	3.0	**0.7919**	0.003	0.4	mg/L	195	Standard
> **Sc-1**	45	40995.4	3.1				mg/L	39543	Standard
Cl	35	32746.0	2.5				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1743.4	12.5				ug/L	1647	Standard
P	31	17056.3	1.5				ug/L	15231	Standard
S	34	2336.8	6.2				ug/L	1845	Standard
Sr	88	78.3	20.5				ug/L	70	Standard
C	12	126.7	27.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	89.2				mg/L	0	Standard
Dy	164	1870.0	3.5				mg/L	12	Standard
Ho-1	165	1166.7	10.3				mg/L	12	Standard
Er	166	1116.7	18.2				mg/L	20	Standard
I	127	3388.7	11.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.946	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.963	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.613
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.473
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606144302SDL WG574573-02
Sample Date/Time: Tuesday, June 28, 2016 23:54:17
Number of Replicates: 3
Autosampler Position: 410
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70935.7	2.2				ug/L	81760	Standard
	Be	9	55.0	15.7	**0.0540**	0.009	16.0	ug/L	17	Standard
	Al	27	218570.5	1.6	**1.6201**	0.011	0.7	ug/L	1410	Standard
	Sc	45	39984.4	1.2				ug/L	39543	Standard
	Ti	47	627.7	4.3	**2.4198**	0.114	4.7	ug/L	39	Standard
	V	51	2847.0	3.0	**0.2129**	0.013	6.1	ug/L	1415	Standard
	Cr	52	7618.6	1.2	**0.0637**	0.011	17.1	ug/L	6946	Standard
	Cr	53	580.0	9.6	**0.3354**	0.068	20.2	ug/L	328	Standard
	Mn	55	61547.4	1.3	**9.5745**	0.188	2.0	ug/L	823	Standard
	Co	59	523.0	3.3	**0.0449**	0.003	6.0	ug/L	252	Standard
	Ni	60	493.7	5.6	**0.1635**	0.016	10.1	ug/L	192	Standard
	Cu	65	675.0	3.2	**0.2729**	0.010	3.6	ug/L	141	Standard
	Zn	66	4565.4	1.3	**3.4380**	0.075	2.2	ug/L	491	Standard
>	**Ge**	72	502988.1	0.7				ug/L	515087	Standard
	As	75	269.2	10.7	**0.2856**	0.028	9.7	ug/L	20	Standard
	Se	82	20.7	22.3	**0.0646**	0.042	64.7	ug/L	15	Standard
	Se-1	77	45.7	15.4	**-0.0984**	0.093	94.5	ug/L	48	Standard
>	**Ga**	71	186.7	12.1				mg/L	90	Standard
	Rb	85	835.0	12.4				ug/L	23	Standard
	Y	89	441201.2	2.7				ug/L	448510	Standard
>	**Rh**	103	13.3	94.4				ug/L	15	Standard
	Mo	98	189.0	7.0	**0.0532**	0.006	12.0	ug/L	11	Standard
	Ag	107	91.3	11.0	**-0.0021**	0.002	87.0	ug/L	134	Standard
	Cd	111	37.0	12.7	**0.0150**	0.002	15.9	mg/L	7	Standard
	Cd	114	85.9	30.8	**0.0122**	0.005	43.3	ug/L	16	Standard
>	**In**	115	591854.8	2.3				ug/L	611117	Standard
	Sn	118	648.3	6.3	**0.0113**	0.007	65.4	ug/L	518	Standard
	Sb	123	522.8	33.2	**0.1022**	0.041	39.7	ug/L	127	Standard
	Ba	135	4107.2	1.3	**2.0294**	0.025	1.2	ug/L	45	Standard
	Ce	140	18988.6	1.0				ug/L	298	Standard
>	**Tb**	159	914076.3	1.3				ug/L	977942	Standard
	Ho	165	253.3	13.1				ug/L	12	Standard
	Tl	203	112.3	10.6	**0.0094**	0.002	17.3	ug/L	31	Standard
	Tl	205	90.0	29.4	**0.0108**	0.004	36.1	ug/L	20	Standard
	Pb	206	10230.5	2.1	**1.9438**	0.049	2.5	ug/L	286	Standard
	Pb	207	8531.4	1.5	**1.7976**	0.010	0.6	ug/L	257	Standard
	Pb	208	36086.5	0.6	**1.9686**	0.029	1.5	ug/L	956	Standard
	U	238	209.0	10.0	**0.0280**	0.003	11.9	ug/L	17	Standard
>	**Bi**	209	525348.3	0.9				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	68.3	18.4	**0.0329**	0.017	52.2	mg/L	32	Standard
K	39	41.7	42.1	**-0.0025**	0.057	2323.2	mg/L	30	Standard
Ca	43	35.0	49.5	**-0.0873**	2.606	2984.1	mg/L	48	Standard
Fe	54	276.1	10.3	**0.1102**	0.028	25.1	mg/L	159	Standard
Fe	57	273.3	14.9	**0.2889**	0.146	50.5	mg/L	195	Standard
> **Sc-1**	45	39984.4	1.2				mg/L	39543	Standard
Cl	35	32328.5	1.4				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1603.4	8.8				ug/L	1647	Standard
P	31	16148.6	1.7				ug/L	15231	Standard
S	34	2251.8	6.8				ug/L	1845	Standard
Sr	88	76.7	35.9				ug/L	70	Standard
C	12	146.7	10.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	330.4	18.3				mg/L	12	Standard
Ho-1	165	253.3	13.1				mg/L	12	Standard
Er	166	270.0	22.5				mg/L	20	Standard
I	127	1720.1	18.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		86.761	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.651	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.848
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.304
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 23:57:30
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72062.8	4.4				ug/L	81760	Standard
	Be	9	45152.2	3.9	**51.5939**	1.461	2.8	ug/L	17	Standard
	Al	27	7383002.3	3.7	**54.3407**	0.756	1.4	ug/L	1410	Standard
	Sc	45	39518.2	3.2				ug/L	39543	Standard
	Ti	47	24690.4	0.9	**102.0722**	0.550	0.5	ug/L	39	Standard
	V	51	333814.0	1.2	**49.2501**	0.769	1.6	ug/L	1415	Standard
	Cr	52	345665.5	1.2	**50.0774**	0.577	1.2	ug/L	6946	Standard
	Cr	53	43291.8	1.9	**50.4406**	0.792	1.6	ug/L	328	Standard
	Mn	55	319563.2	0.6	**50.6110**	0.452	0.9	ug/L	823	Standard
	Co	59	337944.7	0.8	**49.4985**	0.535	1.1	ug/L	252	Standard
	Ni	60	91064.9	0.9	**49.6861**	0.418	0.8	ug/L	192	Standard
	Cu	65	92447.5	0.3	**50.0106**	0.369	0.7	ug/L	141	Standard
	Zn	66	53973.0	1.5	**49.8813**	0.957	1.9	ug/L	491	Standard
>	**Ge**	72	500217.2	0.4				ug/L	515087	Standard
	As	75	53742.2	1.5	**49.2630**	0.862	1.7	ug/L	20	Standard
	Se	82	5467.6	1.7	**48.7858**	1.017	2.1	ug/L	15	Standard
	Se-1	77	3788.8	1.0	**51.0702**	0.720	1.4	ug/L	48	Standard
>	**Ga**	71	51.7	5.6				mg/L	90	Standard
	Rb	85	820.0	10.6				ug/L	23	Standard
	Y	89	441206.7	0.2				ug/L	448510	Standard
>	**Rh**	103	33.3	8.7				ug/L	15	Standard
	Mo	98	251795.6	1.0	**94.4274**	1.474	1.6	ug/L	11	Standard
	Ag	107	307525.6	0.6	**46.4306**	0.349	0.8	ug/L	134	Standard
	Cd	111	100206.1	1.3	**47.5308**	1.177	2.5	mg/L	7	Standard
	Cd	114	244073.0	1.7	**47.6209**	0.821	1.7	ug/L	16	Standard
>	**In**	115	602825.2	1.4				ug/L	611117	Standard
	Sn	118	281047.8	1.1	**48.0844**	0.236	0.5	ug/L	518	Standard
	Sb	123	222239.4	0.2	**47.7427**	0.588	1.2	ug/L	127	Standard
	Ba	135	96470.5	0.6	**47.3499**	0.512	1.1	ug/L	45	Standard
	Ce	140	125.0	48.0				ug/L	298	Standard
>	**Tb**	159	921870.8	1.1				ug/L	977942	Standard
	Ho	165	11.7	65.5				ug/L	12	Standard
	Tl	203	392459.6	0.5	**49.4989**	0.479	1.0	ug/L	31	Standard
	Tl	205	352339.7	0.4	**51.1783**	0.770	1.5	ug/L	20	Standard
	Pb	206	250499.8	0.3	**49.1963**	0.428	0.9	ug/L	286	Standard
	Pb	207	226961.6	0.5	**49.4195**	0.337	0.7	ug/L	257	Standard
	Pb	208	926488.8	0.6	**52.1497**	0.850	1.6	ug/L	956	Standard
	U	238	343296.3	1.3	**50.9156**	0.444	0.9	ug/L	17	Standard
>	**Bi**	209	524204.3	1.1				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.4692**	18.124	173.1	mg/L	0	Standard
Mg	24	3737.1	0.3	**4.9245**	0.180	3.7	mg/L	32	Standard
K	39	1403.4	10.2	**4.6088**	0.536	11.6	mg/L	30	Standard
Ca	43	78.3	16.1	**6.5318**	1.619	24.8	mg/L	48	Standard
Fe	54	5604.3	1.6	**4.9425**	0.217	4.4	mg/L	159	Standard
Fe	57	1713.4	2.9	**5.1658**	0.187	3.6	mg/L	195	Standard
Sc-1	45	39518.2	3.2				mg/L	39543	Standard
Cl	35	33439.5	0.8				ug/L	27642	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	1523.4	5.0				ug/L	1647	Standard
P	31	18217.6	1.7				ug/L	15231	Standard
S	34	2641.9	8.4				ug/L	1845	Standard
Sr	88	48.3	11.9				ug/L	70	Standard
C	12	93.3	12.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	9.4	104.5				mg/L	12	Standard
Ho-1	165	11.7	65.5				mg/L	12	Standard
Er	166	13.3	114.6				mg/L	20	Standard
I	127	1510.1	17.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	103.188		
Al	27	108.681		
Sc	45			
Ti	47	102.072		
V	51	98.500		
Cr	52	100.155		
Cr	53			
Mn	55	101.222		
Co	59	98.997		
Ni	60	99.372		
Cu	65	100.021		
Zn	66	99.763		
Ge	72		97.113	
As	75	98.526		
Se	82	97.572		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
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Rb	85			
Y	89			
Rh	103			
Mo	98	94.427		
Ag	107	92.861		
Cd	111	95.062		
Cd	114			
In	115			98.643
Sn	118	96.169		
Sb	123	95.485		
Ba	135	94.700		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.998		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.299		
U	238	101.831		
Bi	209			94.098
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 23:59:47
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Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 00:00:41
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70070.0	1.8				ug/L	81760	Standard
	Be	9	30.0	16.7	**0.0256**	0.006	25.2	ug/L	17	Standard
	Al	27	3812.2	30.7	**0.0144**	0.008	57.9	ug/L	1410	Standard
	Sc	45	40014.5	4.3				ug/L	39543	Standard
	Ti	47	26.7	12.1	**-0.0568**	0.013	23.6	ug/L	39	Standard
	V	51	1145.1	6.3	**-0.0403**	0.010	25.4	ug/L	1415	Standard
	Cr	52	6171.9	1.7	**-0.1619**	0.014	8.6	ug/L	6946	Standard
	Cr	53	411.7	3.9	**0.1320**	0.019	14.5	ug/L	328	Standard
	Mn	55	924.7	19.7	**-0.0044**	0.029	653.9	ug/L	823	Standard
	Co	59	261.3	12.2	**0.0062**	0.005	75.0	ug/L	252	Standard
	Ni	60	171.3	8.8	**-0.0131**	0.008	64.0	ug/L	192	Standard
	Cu	65	132.0	5.3	**-0.0207**	0.004	18.6	ug/L	141	Standard
	Zn	66	427.3	9.5	**-0.4339**	0.039	8.9	ug/L	491	Standard
>	**Ge**	72	510161.6	0.4				ug/L	515087	Standard
	As	75	-21.8	127.1	**0.0207**	0.025	120.4	ug/L	20	Standard
	Se	82	17.0	25.9	**0.0293**	0.038	129.6	ug/L	15	Standard
	Se-1	77	53.7	12.0	**0.0005**	0.088	17869.4	ug/L	48	Standard
>	**Ga**	71	35.0	28.6				mg/L	90	Standard
	Rb	85	33.3	60.6				ug/L	23	Standard
	Y	89	437929.1	1.0				ug/L	448510	Standard
>	**Rh**	103	6.7	43.3				ug/L	15	Standard
	Mo	98	269.2	32.9	**0.0838**	0.033	39.3	ug/L	11	Standard
	Ag	107	120.7	16.7	**0.0024**	0.003	124.0	ug/L	134	Standard
	Cd	111	21.8	34.3	**0.0077**	0.004	48.1	mg/L	7	Standard
	Cd	114	36.7	62.4	**0.0024**	0.005	190.6	ug/L	16	Standard
>	**In**	115	590666.4	0.9				ug/L	611117	Standard
	Sn	118	743.4	12.2	**0.0282**	0.017	60.4	ug/L	518	Standard
	Sb	123	532.5	22.4	**0.1040**	0.027	25.7	ug/L	127	Standard
	Ba	135	71.0	29.1	**0.0104**	0.010	96.8	ug/L	45	Standard
	Ce	140	91.7	65.8				ug/L	298	Standard
>	**Tb**	159	911246.7	0.8				ug/L	977942	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	81.7	41.2	**0.0055**	0.004	77.1	ug/L	31	Standard
	Tl	205	68.3	66.0	**0.0076**	0.007	85.7	ug/L	20	Standard
	Pb	206	297.7	10.9	**-0.0054**	0.007	123.4	ug/L	286	Standard
	Pb	207	283.7	16.0	**0.0035**	0.010	283.6	ug/L	257	Standard
	Pb	208	1155.4	11.3	**0.0043**	0.008	176.0	ug/L	956	Standard
	U	238	70.3	39.4	**0.0074**	0.004	55.5	ug/L	17	Standard
>	**Bi**	209	527005.8	1.2				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	25.0	20.0	**-0.0244**	0.005	21.9	mg/L	32	Standard
K	39	18.3	31.5	**-0.0799**	0.021	26.0	mg/L	30	Standard
Ca	43	16.7	17.3	**-2.8535**	0.318	11.1	mg/L	48	Standard
Fe	54	122.6	39.6	**-0.0261**	0.047	179.6	mg/L	159	Standard
Fe	57	230.0	17.0	**0.1451**	0.148	101.7	mg/L	195	Standard
> **Sc-1**	45	40014.5	4.3				mg/L	39543	Standard
Cl	35	33255.8	1.4				ug/L	27642	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	1523.4	4.7				ug/L	1647	Standard
P	31	17488.4	2.6				ug/L	15231	Standard
S	34	2358.5	3.1				ug/L	1845	Standard
Sr	88	70.0	25.8				ug/L	70	Standard
C	12	73.3	39.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.5	100.0				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	10.0	100.0				mg/L	20	Standard
I	127	1368.4	18.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.044	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.654
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.601
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Wednesday, June 29, 2016 00:02:58
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MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Wednesday, June 29, 2016 09:50:03

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	6.975	1323	2024	0.699	
Mg	23.985	23.975	4506	2020	0.705	
Co	58.933	58.975	11694	2022	0.697	
In	114.904	114.925	22865	2028	0.690	
U	238.050	238.025	47450	2043	0.688	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	9.254
5.575	1.459
5.625	2.417
5.675	3.442
5.725	2.231
5.775	2.296
5.825	3.784
5.875	3.197
5.925	2.400
5.975	1.087
6.025	1.670
6.075	3.521
6.125	2.277
6.175	2.559
6.225	20.588
6.275	74.689
6.325	108.327
6.375	83.853
6.425	69.722
6.475	32.808
6.525	10.642
6.575	8.985
6.625	1.429
6.675	0.941
6.725	0.857
6.775	3.333
6.825	0.822

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6.875	1.277
6.925	1.899
6.975	1.561
7.025	1.195
7.075	1.059
7.125	1.545
7.175	1.743
7.225	3.248
7.275	8.142
7.325	57.701
7.375	91.287
7.425	51.602
7.475	55.902
7.525	100.000
7.575	69.869
7.625	81.441
7.675	81.441
7.725	70.711
7.775	55.902
7.825	59.266
7.875	49.793
7.925	104.583
7.975	98.543
8.025	94.786
8.075	223.607
8.125	81.441
8.175	84.265
8.225	61.237
8.275	81.312
8.325	81.441
8.375	91.287
8.425	82.402
8.475	22.822
22.525	149.071
22.575	52.705
22.625	46.771
22.675	48.627
22.725	39.087
22.775	18.109
22.825	22.048
22.875	36.422
22.925	32.723
22.975	82.685
23.025	39.239
23.075	25.529
23.125	43.064
23.175	21.317

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23.225	22.232
23.275	15.408
23.325	42.127
23.375	37.172
23.425	24.296
23.475	14.668
23.525	3.807
23.575	1.593
23.625	2.258
23.675	1.180
23.725	1.542
23.775	1.943
23.825	1.185
23.875	1.595
23.925	1.324
23.975	1.055
24.025	1.809
24.075	1.103
24.125	1.249
24.175	0.652
24.225	1.203
24.275	3.614
24.325	39.316
24.375	52.355
24.425	20.738
24.475	5.001
24.525	5.067
24.575	0.930
24.625	1.241
24.675	0.972
24.725	1.552
24.775	0.581
24.825	0.736
24.875	1.684
24.925	0.952
24.975	1.395
25.025	0.762
25.075	1.498
25.125	1.418
25.175	1.145
25.225	6.288
25.275	44.605
25.325	50.990
25.375	73.823
25.425	57.334
25.475	7.010
57.525	8.193

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57.575	3.609
57.625	2.367
57.675	3.747
57.725	3.869
57.775	3.226
57.825	1.406
57.875	2.220
57.925	2.049
57.975	2.397
58.025	3.045
58.075	0.897
58.125	1.397
58.175	1.608
58.225	1.481
58.275	5.244
58.325	6.996
58.375	14.816
58.425	39.994
58.475	18.390
58.525	7.862
58.575	1.876
58.625	1.684
58.675	0.757
58.725	2.431
58.775	2.139
58.825	2.293
58.875	1.987
58.925	2.134
58.975	1.760
59.025	2.893
59.075	1.855
59.125	4.126
59.175	3.545
59.225	2.980
59.275	6.918
59.325	57.198
59.375	79.057
59.425	39.123
59.475	32.983
59.525	7.337
59.575	10.704
59.625	4.888
59.675	5.230
59.725	3.575
59.775	2.279
59.825	3.495
59.875	0.859

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59.925	2.164
59.975	4.187
60.025	3.749
60.075	1.767
60.125	4.373
60.175	1.581
60.225	1.647
60.275	29.768
60.325	42.377
60.375	71.261
60.425	71.261
60.475	69.722
113.525	10.800
113.575	6.260
113.625	1.672
113.675	1.646
113.725	1.420
113.775	2.281
113.825	1.446
113.875	0.820
113.925	1.607
113.975	1.407
114.025	1.046
114.075	2.403
114.125	2.090
114.175	3.331
114.225	5.316
114.275	12.354
114.325	37.872
114.375	26.082
114.425	15.800
114.475	3.831
114.525	4.062
114.575	1.808
114.625	2.980
114.675	3.272
114.725	2.895
114.775	1.904
114.825	1.941
114.875	1.809
114.925	0.906
114.975	0.414
115.025	2.617
115.075	0.808
115.125	1.618
115.175	2.428
115.225	3.339

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115.275	5.459
115.325	14.203
115.375	69.869
115.425	66.254
115.475	26.966
115.525	18.235
115.575	7.589
115.625	3.788
115.675	2.661
115.725	3.661
115.775	2.867
115.825	3.952
115.875	6.794
115.925	4.558
115.975	5.421
116.025	1.319
116.075	4.928
116.125	7.259
116.175	4.689
116.225	9.289
116.275	22.491
116.325	26.307
116.375	26.146
116.425	67.711
116.475	40.825
236.525	
236.575	13.258
236.625	39.219
236.675	66.333
236.725	37.815
236.775	20.039
236.825	39.510
236.875	22.934
236.925	27.407
236.975	8.537
237.025	28.853
237.075	45.928
237.125	41.937
237.175	36.377
237.225	26.058
237.275	27.285
237.325	43.196
237.375	45.018
237.425	23.111
237.475	20.908
237.525	26.413
237.575	10.671

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237.625	6.558
237.675	4.584
237.725	2.707
237.775	1.019
237.825	0.867
237.875	0.837
237.925	1.315
237.975	0.556
238.025	1.099
238.075	0.473
238.125	0.980
238.175	0.943
238.225	1.564
238.275	1.714
238.325	1.785
238.375	2.057
238.425	2.571
238.475	6.163
238.525	10.798
238.575	23.407
238.625	35.493
238.675	33.171
238.725	15.721
238.775	9.421
238.825	23.516
238.875	27.721
238.925	14.417
238.975	30.010
239.025	24.993
239.075	29.933
239.125	17.678
239.175	38.433
239.225	46.981
239.275	15.215
239.325	48.601
239.375	50.659
239.425	23.570
239.475	38.955

Approved: July 04, 2016

SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 6/29/2016 10:01:57 AM
End Time: 6/29/2016 10:04:08 AM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 4651.78
        Obtained Intensity (Mg 23.985): 162439.88
        Obtained Intensity (In 114.904): 66202.13
        Obtained Intensity (U 238.05): 140216.56
        Obtained Intensity (Bkgd 220): 0.33
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.018 (=3640.50 / 205153.73)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.004 (=909.89 / 205153.73)
```

Report Date/Time: Wednesday, June 29, 2016 10:04:08
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SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 6/29/2016 10:01:57 AM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 4651.78
                Obtained Intensity (Mg 23.985): 162439.88
                Obtained Intensity (In 114.904): 66202.13
                Obtained Intensity (U 238.05): 140216.56
                Obtained Intensity (Bkgd 220): 0.33
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.018 (=3640.50 / 205153.73)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.004 (=909.89 / 205153.73)
[Passed]  Optimum value(s): N/A

End Time: 6/29/2016 10:04:08 AM
```


Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Wednesday, June 29, 2016 11:22:34
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74698.8	3.1				ug/L		Standard
	Be	9	8.3	124.9				ug/L		Standard
	Al	27	1493.4	9.1				ug/L		Standard
	Sc	45	61029.4	2.9				ug/L		Standard
	Ti	47	35.0	12.5				ug/L		Standard
	V	51	1434.8	4.3				ug/L		Standard
	Cr	52	7634.6	2.5				ug/L		Standard
	Cr	53	363.3	0.8				ug/L		Standard
	Mn	55	747.0	1.6				ug/L		Standard
	Co	59	233.7	7.1				ug/L		Standard
	Ni	60	214.7	3.5				ug/L		Standard
	Cu	65	104.0	12.0				ug/L		Standard
	Zn	66	363.0	3.8				ug/L		Standard
>	**Ge**	72	495142.3	1.3				ug/L		Standard
	As	75	-49.8	7.8				ug/L		Standard
	Se	82	13.7	23.9				ug/L		Standard
	Se-1	77	42.3	9.8				ug/L		Standard
>	**Ga**	71	41.7	25.0				mg/L		Standard
	Rb	85	16.7	91.7				ug/L		Standard
	Y	89	417098.4	0.9				ug/L		Standard
>	**Rh**	103	13.3	86.6				ug/L		Standard
	Mo	98	10.7	10.9				ug/L		Standard
	Ag	107	68.0	6.4				ug/L		Standard
	Cd	111	2.3	24.9				mg/L		Standard
	Cd	114	11.7	106.5				ug/L		Standard
>	**In**	115	587441.1	0.5				ug/L		Standard
	Sn	118	496.7	9.7				ug/L		Standard
	Sb	123	77.7	34.7				ug/L		Standard
	Ba	135	24.3	19.4				ug/L		Standard
	Ce	140	25.0	20.0				ug/L		Standard
>	**Tb**	159	939701.0	1.8				ug/L		Standard
	Ho	165	10.0	50.0				ug/L		Standard
	Tl	203	4.0	25.0				ug/L		Standard
	Tl	205	1.7	173.2				ug/L		Standard
	Pb	206	239.7	3.6				ug/L		Standard
	Pb	207	197.7	3.9				ug/L		Standard
	Pb	208	883.3	3.3				ug/L		Standard
	U	238	3.3	17.3				ug/L		Standard
>	**Bi**	209	523984.5	1.3				ug/L		Standard

Sample ID: Blank
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	Na	23	0.0		mg/L	Standard
	Mg	24	36.7	55.1	mg/L	Standard
	K	39	38.3	52.7	mg/L	Standard
	Ca	43	10.0	50.0	mg/L	Standard
	Fe	54	179.1	14.9	mg/L	Standard
	Fe	57	335.0	10.3	mg/L	Standard
>	**Sc-1**	45	61029.4	2.9	mg/L	Standard
	Cl	35	20194.8	0.8	ug/L	Standard
	Kr	83	4.3	70.5	ug/L	Standard
	Br	81	1546.7	2.4	ug/L	Standard
	P	31	15286.0	3.7	ug/L	Standard
	S	34	1571.7	2.7	ug/L	Standard
	Sr	88	73.3	3.9	ug/L	Standard
	C	12	63.3	24.1	mg/L	Standard
	N	14	0.0		mg/L	Standard
	Hg	202	3.3	173.2	mg/L	Standard
	Dy	164	6.0	187.1	mg/L	Standard
	Ho-1	165	10.0	50.0	mg/L	Standard
	Er	166	13.3	86.6	mg/L	Standard
	I	127	1391.7	17.5	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Wednesday, June 29, 2016 11:25:45
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75658.5	2.0				ug/L	74699	Standard
	Be	9	1.7	173.2				ug/L	8	Standard
	Al	27	1555.1	3.1				ug/L	1493	Standard
	Sc	45	60145.9	2.9				ug/L	61029	Standard
	Ti	47	32.7	4.7				ug/L	35	Standard
	V	51	1434.9	4.0				ug/L	1435	Standard
	Cr	52	7544.5	2.5				ug/L	7635	Standard
	Cr	53	365.0	18.0				ug/L	363	Standard
	Mn	55	783.7	0.8				ug/L	747	Standard
	Co	59	239.0	2.9				ug/L	234	Standard
	Ni	60	220.7	1.8				ug/L	215	Standard
	Cu	65	103.0	8.3				ug/L	104	Standard
	Zn	66	365.0	4.1				ug/L	363	Standard
>	**Ge**	72	495351.7	2.1				ug/L	495142	Standard
	As	75	-40.0	8.7				ug/L	-50	Standard
	Se	82	19.1	38.4				ug/L	14	Standard
	Se-1	77	47.3	15.6				ug/L	42	Standard
>	**Ga**	71	53.3	47.2				mg/L	42	Standard
	Rb	85	15.0	88.2				ug/L	17	Standard
	Y	89	427717.4	1.6				ug/L	417098	Standard
>	**Rh**	103	8.3	34.6				ug/L	13	Standard
	Mo	98	11.1	31.8				ug/L	11	Standard
	Ag	107	86.3	19.8				ug/L	68	Standard
	Cd	111	1.3	43.8				mg/L	2	Standard
	Cd	114	3.6	152.7				ug/L	12	Standard
>	**In**	115	599155.0	1.0				ug/L	587441	Standard
	Sn	118	486.7	3.3				ug/L	497	Standard
	Sb	123	28.2	25.8				ug/L	78	Standard
	Ba	135	25.3	13.9				ug/L	24	Standard
	Ce	140	31.7	59.8				ug/L	25	Standard
>	**Tb**	159	985563.2	0.5				ug/L	939701	Standard
	Ho	165	6.7	86.6				ug/L	10	Standard
	Tl	203	1.7	91.7				ug/L	4	Standard
	Tl	205	0.0					ug/L	2	Standard
	Pb	206	249.7	4.0				ug/L	240	Standard
	Pb	207	216.0	2.0				ug/L	198	Standard
	Pb	208	873.0	4.1				ug/L	883	Standard
	U	238	3.3	34.6				ug/L	3	Standard
>	**Bi**	209	535312.9	0.6				ug/L	523984	Standard

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Na	23	3.3	173.2	mg/L	0	Standard
Mg	24	31.7	18.2	mg/L	37	Standard
K	39	26.7	28.6	mg/L	38	Standard
Ca	43	35.0	24.7	mg/L	10	Standard
Fe	54	130.8	15.0	mg/L	179	Standard
Fe	57	305.0	2.8	mg/L	335	Standard
Sc-1	45	60145.9	2.9	mg/L	61029	Standard
Cl	35	20341.6	1.8	ug/L	20195	Standard
Kr	83	3.0	33.3	ug/L	4	Standard
Br	81	1546.7	10.4	ug/L	1547	Standard
P	31	15145.9	1.8	ug/L	15286	Standard
S	34	1610.1	6.1	ug/L	1572	Standard
Sr	88	86.7	14.5	ug/L	73	Standard
C	12	60.0	28.9	mg/L	63	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	0.0		mg/L	3	Standard
Dy	164	5.7	108.5	mg/L	6	Standard
Ho-1	165	6.7	86.6	mg/L	10	Standard
Er	166	20.0	50.0	mg/L	13	Standard
I	127	1368.4	7.8	mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 1
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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Wednesday, June 29, 2016 11:28:57
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73081.0	3.5				ug/L	74699	Standard
	Be	9	36.7	56.8				ug/L	8	Standard
	Al	27	9102.7	2.7				ug/L	1493	Standard
	Sc	45	58226.8	3.4				ug/L	61029	Standard
	Ti	47	79.0	2.2				ug/L	35	Standard
	V	51	1848.7	2.3				ug/L	1435	Standard
	Cr	52	7933.1	1.4				ug/L	7635	Standard
	Cr	53	350.0	15.1				ug/L	363	Standard
	Mn	55	1375.4	4.6				ug/L	747	Standard
	Co	59	574.7	5.8				ug/L	234	Standard
	Ni	60	324.3	7.6				ug/L	215	Standard
	Cu	65	285.0	4.9				ug/L	104	Standard
	Zn	66	549.3	0.4				ug/L	363	Standard
>	**Ge**	72	493663.5	1.5				ug/L	495142	Standard
	As	75	-10.4	282.1				ug/L	-50	Standard
	Se	82	20.6	18.5				ug/L	14	Standard
	Se-1	77	49.0	19.5				ug/L	42	Standard
>	**Ga**	71	58.3	27.6				mg/L	42	Standard
	Rb	85	25.0	60.0				ug/L	17	Standard
	Y	89	437555.0	0.8				ug/L	417098	Standard
>	**Rh**	103	25.0	34.6				ug/L	13	Standard
	Mo	98	283.4	4.8				ug/L	11	Standard
	Ag	107	412.3	3.2				ug/L	68	Standard
	Cd	111	121.8	9.1				mg/L	2	Standard
	Cd	114	268.9	5.0				ug/L	12	Standard
>	**In**	115	590951.3	0.9				ug/L	587441	Standard
	Sn	118	850.0	6.4				ug/L	497	Standard
	Sb	123	254.5	2.7				ug/L	78	Standard
	Ba	135	136.0	15.7				ug/L	24	Standard
	Ce	140	18.3	56.8				ug/L	25	Standard
>	**Tb**	159	941723.8	1.9				ug/L	939701	Standard
	Ho	165	3.3	86.6				ug/L	10	Standard
	Tl	203	417.3	5.5				ug/L	4	Standard
	Tl	205	348.3	7.4				ug/L	2	Standard
	Pb	206	633.0	0.8				ug/L	240	Standard
	Pb	207	557.0	2.2				ug/L	198	Standard
	Pb	208	2275.4	1.7				ug/L	883	Standard
	U	238	366.3	0.7				ug/L	3	Standard
>	**Bi**	209	512414.5	1.5				ug/L	523984	Standard

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	Na	23	0.0		mg/L	0	Standard
	Mg	24	51.7	24.4	mg/L	37	Standard
	K	39	51.7	24.4	mg/L	38	Standard
	Ca	43	38.3	19.9	mg/L	10	Standard
	Fe	54	160.9	17.5	mg/L	179	Standard
	Fe	57	303.3	9.1	mg/L	335	Standard
>	**Sc-1**	45	58226.8	3.4	mg/L	61029	Standard
	Cl	35	20887.7	1.1	ug/L	20195	Standard
	Kr	83	2.3	107.9	ug/L	4	Standard
	Br	81	1533.4	9.8	ug/L	1547	Standard
	P	31	14952.4	2.3	ug/L	15286	Standard
	S	34	1701.8	4.5	ug/L	1572	Standard
	Sr	88	66.7	31.2	ug/L	73	Standard
	C	12	46.7	65.5	mg/L	63	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	0.0		mg/L	3	Standard
	Dy	164	12.7	89.9	mg/L	6	Standard
	Ho-1	165	3.3	86.6	mg/L	10	Standard
	Er	166	13.3	43.3	mg/L	13	Standard
	I	127	1343.4	21.4	mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 2
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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Wednesday, June 29, 2016 11:32:08
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70836.9	0.7				ug/L	74699	Standard
	Be	9	41495.2	4.9	**50.0000**	2.291	4.6	ug/L	8	Standard
	Al	27	6913642.3	1.4	**50.0000**	0.333	0.7	ug/L	1493	Standard
	Sc	45	58109.6	1.6				ug/L	61029	Standard
	Ti	47	38024.7	0.9	**100.0000**	1.896	1.9	ug/L	35	Standard
	V	51	385028.2	1.3	**50.0000**	1.023	2.0	ug/L	1435	Standard
	Cr	52	378864.5	0.8	**50.0000**	0.813	1.6	ug/L	7635	Standard
	Cr	53	46780.4	0.7	**50.0000**	0.853	1.7	ug/L	363	Standard
	Mn	55	354877.0	1.3	**50.0000**	1.137	2.3	ug/L	747	Standard
	Co	59	336932.8	1.2	**50.0000**	1.027	2.1	ug/L	234	Standard
	Ni	60	94633.6	0.8	**50.0000**	0.638	1.3	ug/L	215	Standard
	Cu	65	94252.3	1.0	**50.0000**	0.913	1.8	ug/L	104	Standard
	Zn	66	55983.3	1.5	**50.0000**	1.110	2.2	ug/L	363	Standard
>	**Ge**	72	497274.4	1.0				ug/L	495142	Standard
	As	75	56952.3	0.9	**50.0000**	0.907	1.8	ug/L	-50	Standard
	Se	82	5614.6	2.5	**50.0000**	1.630	3.3	ug/L	14	Standard
	Se-1	77	3760.8	2.5	**50.0000**	1.757	3.5	ug/L	42	Standard
>	**Ga**	71	60.0	22.0				mg/L	42	Standard
	Rb	85	735.0	7.4				ug/L	17	Standard
	Y	89	413691.0	2.8				ug/L	417098	Standard
>	**Rh**	103	28.3	27.0				ug/L	13	Standard
	Mo	98	261684.0	1.3	**100.0000**	1.411	1.4	ug/L	11	Standard
	Ag	107	317580.7	1.1	**50.0000**	0.030	0.1	ug/L	68	Standard
	Cd	111	102024.7	1.3	**50.0000**	0.465	0.9	mg/L	2	Standard
	Cd	114	251691.0	1.5	**50.0000**	1.089	2.2	ug/L	12	Standard
>	**In**	115	567339.3	1.1				ug/L	587441	Standard
	Sn	118	284919.2	1.1	**50.0000**	0.694	1.4	ug/L	497	Standard
	Sb	123	226852.6	0.2	**50.0000**	0.610	1.2	ug/L	78	Standard
	Ba	135	99575.8	0.1	**50.0000**	0.595	1.2	ug/L	24	Standard
	Ce	140	83.3	34.6				ug/L	25	Standard
>	**Tb**	159	932165.5	0.9				ug/L	939701	Standard
	Ho	165	13.3	21.7				ug/L	10	Standard
	Tl	203	405993.6	0.4	**50.0000**	0.749	1.5	ug/L	4	Standard
	Tl	205	349857.0	1.5	**50.0000**	0.282	0.6	ug/L	2	Standard
	Pb	206	265201.9	0.6	**50.0000**	0.817	1.6	ug/L	240	Standard
	Pb	207	235754.7	0.6	**50.0000**	0.829	1.7	ug/L	198	Standard
	Pb	208	926203.5	0.6	**50.0000**	0.626	1.3	ug/L	883	Standard
	U	238	337413.2	1.0	**50.0000**	0.543	1.1	ug/L	3	Standard
>	**Bi**	209	511781.8	1.3				ug/L	523984	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	3782.1	6.2	**5.0000**	0.388	7.8	mg/L	37	Standard
K	39	2271.8	5.5	**5.0000**	0.254	5.1	mg/L	38	Standard
Ca	43	120.0	23.2	**5.0000**	1.671	33.4	mg/L	10	Standard
Fe	54	5877.0	6.9	**5.0000**	0.418	8.4	mg/L	179	Standard
Fe	57	1703.4	4.4	**5.0000**	0.228	4.6	mg/L	335	Standard
> **Sc-1**	45	58109.6	1.6				mg/L	61029	Standard
Cl	35	22061.4	1.9				ug/L	20195	Standard
Kr	83	2.7	94.4				ug/L	4	Standard
Br	81	1433.4	2.5				ug/L	1547	Standard
P	31	17349.9	2.8				ug/L	15286	Standard
S	34	2026.8	6.8				ug/L	1572	Standard
Sr	88	76.7	26.4				ug/L	73	Standard
C	12	43.3	48.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	33.0	63.6				mg/L	6	Standard
Ho-1	165	13.3	21.7				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	1500.1	14.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 3
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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Wednesday, June 29, 2016 11:35:20
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	70562.3	0.6				ug/L	74699	Standard
	Be	9	83650.3	2.2	**100.5872**	1.689	1.7	ug/L	8	Standard
	Al	27	13996690.0	1.6	**100.8115**	1.548	1.5	ug/L	1493	Standard
	Sc	45	58977.9	1.4				ug/L	61029	Standard
	Ti	47	75710.7	1.4	**200.4046**	3.310	1.7	ug/L	35	Standard
	V	51	745374.0	1.7	**98.8583**	0.465	0.5	ug/L	1435	Standard
	Cr	52	747654.3	1.6	**100.2327**	0.593	0.6	ug/L	7635	Standard
	Cr	53	92243.3	0.8	**99.8509**	0.489	0.5	ug/L	363	Standard
	Mn	55	686210.3	1.7	**98.7774**	1.044	1.1	ug/L	747	Standard
	Co	59	647972.6	0.9	**98.4550**	0.479	0.5	ug/L	234	Standard
	Ni	60	186003.6	1.6	**99.5867**	0.367	0.4	ug/L	215	Standard
	Cu	65	184421.8	1.6	**99.3502**	0.739	0.7	ug/L	104	Standard
	Zn	66	108058.7	1.7	**98.8348**	0.723	0.7	ug/L	363	Standard
>	Ge	72	493312.7	1.3				ug/L	495142	Standard
	As	75	109996.7	2.4	**98.6160**	1.152	1.2	ug/L	-50	Standard
	Se	82	10772.1	0.2	**98.3851**	1.295	1.3	ug/L	14	Standard
	Se-1	77	7226.7	2.3	**98.6814**	1.085	1.1	ug/L	42	Standard
>	Ga	71	88.3	19.9				mg/L	42	Standard
	Rb	85	1528.4	8.2				ug/L	17	Standard
	Y	89	411133.1	2.0				ug/L	417098	Standard
>	Rh	103	50.0	20.0				ug/L	13	Standard
	Mo	98	506691.6	2.0	**196.6866**	6.239	3.2	ug/L	11	Standard
	Ag	107	624459.9	0.9	**99.1146**	1.822	1.8	ug/L	68	Standard
	Cd	111	200021.3	0.6	**98.9639**	1.657	1.7	mg/L	2	Standard
	Cd	114	487602.9	1.3	**98.3617**	2.136	2.2	ug/L	12	Standard
>	In	115	567890.6	1.1				ug/L	587441	Standard
	Sn	118	560558.1	0.7	**99.1782**	1.388	1.4	ug/L	497	Standard
	Sb	123	448476.6	1.3	**99.3779**	2.340	2.4	ug/L	78	Standard
	Ba	135	196432.8	0.6	**99.2744**	1.775	1.8	ug/L	24	Standard
	Ce	140	161.7	46.3				ug/L	25	Standard
>	Tb	159	938936.1	1.2				ug/L	939701	Standard
	Ho	165	10.0					ug/L	10	Standard
	Tl	203	803908.2	0.6	**99.1382**	1.002	1.0	ug/L	4	Standard
	Tl	205	702848.2	0.9	**99.8673**	1.348	1.3	ug/L	2	Standard
	Pb	206	517801.9	1.0	**98.4705**	1.644	1.7	ug/L	240	Standard
	Pb	207	459764.9	1.8	**98.4124**	2.372	2.4	ug/L	198	Standard
	Pb	208	1827348.6	0.4	**98.9940**	0.966	1.0	ug/L	883	Standard
	U	238	674609.9	0.9	**99.6270**	1.321	1.3	ug/L	3	Standard
>	Bi	209	515462.4	0.6				ug/L	523984	Standard

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Na	23	1.7	173.2	**19.9850**	34.606	173.2	mg/L	0	Standard
Mg	24	7435.2	2.2	**9.8676**	0.257	2.6	mg/L	37	Standard
K	39	4282.3	4.3	**9.6823**	0.481	5.0	mg/L	38	Standard
Ca	43	178.3	18.2	**9.1297**	2.109	23.1	mg/L	10	Standard
Fe	54	11328.6	1.8	**9.8033**	0.307	3.1	mg/L	179	Standard
Fe	57	3145.3	5.1	**9.9880**	0.532	5.3	mg/L	335	Standard
Sc-1	45	58977.9	1.4				mg/L	61029	Standard
Cl	35	21244.2	2.5				ug/L	20195	Standard
Kr	83	1.7	34.6				ug/L	4	Standard
Br	81	1583.4	3.9				ug/L	1547	Standard
P	31	17550.2	2.6				ug/L	15286	Standard
S	34	2090.1	3.5				ug/L	1572	Standard
Sr	88	83.3	42.6				ug/L	73	Standard
C	12	56.7	62.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	22.9	66.8				mg/L	6	Standard
Ho-1	165	10.0					mg/L	10	Standard
Er	166	10.0					mg/L	13	Standard
I	127	1638.4	19.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998
Corr. Coef.	Ca	43	Correlation coefficient < 0.998

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Wednesday, June 29, 2016 11:38:33
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	69383.6	2.2				ug/L	74699	Standard
	Be	9	41665.5	1.0	**50.9761**	1.262	2.5	ug/L	8	Standard
	Al	27	7007266.1	0.7	**51.3351**	1.064	2.1	ug/L	1493	Standard
	Sc	45	57040.5	0.5				ug/L	61029	Standard
	Ti	47	39782.2	0.5	**104.1738**	1.427	1.4	ug/L	35	Standard
	V	51	390724.1	1.4	**51.2089**	1.334	2.6	ug/L	1435	Standard
	Cr	52	380689.4	0.9	**50.0149**	1.033	2.1	ug/L	7635	Standard
	Cr	53	46596.6	2.0	**49.7615**	1.193	2.4	ug/L	363	Standard
	Mn	55	364452.5	1.9	**51.8606**	1.232	2.4	ug/L	747	Standard
	Co	59	335357.4	2.0	**50.4145**	0.943	1.9	ug/L	234	Standard
	Ni	60	95528.2	0.6	**50.5685**	0.768	1.5	ug/L	215	Standard
	Cu	65	95355.8	0.8	**50.7995**	0.891	1.8	ug/L	104	Standard
	Zn	66	57795.4	0.9	**52.1095**	0.303	0.6	ug/L	363	Standard
>	Ge	72	498415.5	1.2				ug/L	495142	Standard
	As	75	57290.2	0.4	**50.8755**	0.674	1.3	ug/L	-50	Standard
	Se	82	5486.5	1.1	**49.5278**	0.838	1.7	ug/L	14	Standard
	Se-1	77	3797.8	2.0	**51.0456**	1.569	3.1	ug/L	42	Standard
>	Ga	71	88.3	43.2				mg/L	42	Standard
	Rb	85	576.7	2.8				ug/L	17	Standard
	Y	89	413113.3	1.2				ug/L	417098	Standard
>	Rh	103	26.7	92.5				ug/L	13	Standard
	Mo	98	275236.9	1.8	**107.0386**	1.474	1.4	ug/L	11	Standard
	Ag	107	320241.4	0.9	**50.9276**	0.747	1.5	ug/L	68	Standard
	Cd	111	101502.5	0.4	**50.3185**	0.332	0.7	mg/L	2	Standard
	Cd	114	248344.9	2.5	**50.2016**	1.511	3.0	ug/L	12	Standard
>	In	115	566676.1	0.5				ug/L	587441	Standard
	Sn	118	310270.4	1.9	**54.9671**	1.097	2.0	ug/L	497	Standard
	Sb	123	224427.6	0.4	**49.8273**	0.118	0.2	ug/L	78	Standard
	Ba	135	98607.5	0.6	**49.9289**	0.574	1.1	ug/L	24	Standard
	Ce	140	138.3	11.0				ug/L	25	Standard
>	Tb	159	931841.4	1.3				ug/L	939701	Standard
	Ho	165	10.0	86.6				ug/L	10	Standard
	Tl	203	410286.1	0.9	**50.6578**	0.710	1.4	ug/L	4	Standard
	Tl	205	350970.1	0.3	**49.9294**	0.473	0.9	ug/L	2	Standard
	Pb	206	272426.4	0.6	**51.8371**	0.812	1.6	ug/L	240	Standard
	Pb	207	234103.7	0.5	**50.1331**	0.525	1.0	ug/L	198	Standard
	Pb	208	940824.8	0.3	**50.9948**	0.649	1.3	ug/L	883	Standard
	U	238	333596.8	0.3	**49.3228**	0.442	0.9	ug/L	3	Standard
>	Bi	209	514849.0	1.0				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3822.1	2.3	**5.2142**	0.148	2.8	mg/L	37	Standard
K	39	2126.8	6.1	**4.9163**	0.328	6.7	mg/L	38	Standard
Ca	43	118.3	24.4	**5.4681**	1.919	35.1	mg/L	10	Standard
Fe	54	5948.1	0.7	**5.2575**	0.061	1.2	mg/L	179	Standard
Fe	57	1791.8	1.9	**5.4420**	0.142	2.6	mg/L	335	Standard
> **Sc-1**	45	57040.5	0.5				mg/L	61029	Standard
Cl	35	20895.1	0.7				ug/L	20195	Standard
Kr	83	2.7	57.3				ug/L	4	Standard
Br	81	1520.1	6.3				ug/L	1547	Standard
P	31	17665.3	1.6				ug/L	15286	Standard
S	34	2033.5	1.7				ug/L	1572	Standard
Sr	88	80.0	10.8				ug/L	73	Standard
C	12	70.0	24.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	23.0	24.5				mg/L	6	Standard
Ho-1	165	10.0	86.6				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	1353.4	28.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	101.952		
Al	27	102.670		
Sc	45			
Ti	47	104.174		
V	51	102.418		
Cr	52	100.030		
Cr	53			
Mn	55	103.721		
Co	59	100.829		
Ni	60	101.137		
Cu	65	101.599		
Zn	66	104.219		
> Ge	72		100.661	
As	75	101.751		
Se	82	99.056		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	107.039		
Ag	107	101.855		
Cd	111	100.637		
Cd	114			
In	115		96.465	
Sn	118	109.934		
Sb	123	99.655		
Ba	135	99.858		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.316		
Tl	205			
Pb	206	103.674		
Pb	207	100.266		
Pb	208	101.990		
U	238	98.646		
Bi	209		98.257	
Na	23	0.100		
Mg	24	104.283		
K	39	98.326		
Ca	43	109.361		
Fe	54	105.151		
Fe	57	108.840		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Wednesday, June 29, 2016 11:41:46
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70378.1	2.5				ug/L	74699	Standard
	Be	9	20.0	25.0	**0.0316**	0.005	17.2	ug/L	8	Standard
	Al	27	2221.8	11.1	**0.0027**	0.002	62.7	ug/L	1493	Standard
	Sc	45	58138.1	3.2				ug/L	61029	Standard
	Ti	47	47.0	20.3	**0.0161**	0.026	158.4	ug/L	35	Standard
	V	51	1216.9	5.3	**-0.0330**	0.008	24.4	ug/L	1435	Standard
	Cr	52	6478.4	1.5	**-0.1416**	0.009	6.0	ug/L	7635	Standard
	Cr	53	358.3	10.7	**0.0617**	0.046	74.0	ug/L	363	Standard
	Mn	55	785.0	2.1	**-0.0343**	0.003	7.5	ug/L	747	Standard
	Co	59	292.7	8.2	**0.0075**	0.004	50.2	ug/L	234	Standard
	Ni	60	209.7	4.3	**-0.0109**	0.006	51.3	ug/L	215	Standard
	Cu	65	121.0	5.8	**-0.0381**	0.003	8.4	ug/L	104	Standard
	Zn	66	398.3	6.4	**-0.0865**	0.023	26.3	ug/L	363	Standard
>	**Ge**	72	490643.1	1.0				ug/L	495142	Standard
	As	75	-2.3	851.2	**0.0577**	0.017	30.2	ug/L	-50	Standard
	Se	82	15.9	39.8	**0.0087**	0.059	680.3	ug/L	14	Standard
	Se-1	77	51.3	11.1	**0.0869**	0.077	88.1	ug/L	42	Standard
>	**Ga**	71	46.7	16.4				mg/L	42	Standard
	Rb	85	33.3	45.8				ug/L	17	Standard
	Y	89	424498.7	1.6				ug/L	417098	Standard
>	**Rh**	103	10.0	50.0				ug/L	13	Standard
	Mo	98	405.0	23.6	**0.1487**	0.033	22.3	ug/L	11	Standard
	Ag	107	128.3	5.2	**0.0071**	0.001	8.6	ug/L	68	Standard
	Cd	111	15.0	38.7	**-0.0006**	0.003	474.1	mg/L	2	Standard
	Cd	114	47.2	8.1	**0.0073**	0.001	11.6	ug/L	12	Standard
>	**In**	115	576512.9	2.1				ug/L	587441	Standard
	Sn	118	851.7	19.9	**0.0543**	0.032	58.8	ug/L	497	Standard
	Sb	123	1550.0	28.1	**0.3352**	0.100	29.7	ug/L	78	Standard
	Ba	135	36.7	23.2	**0.0022**	0.004	189.8	ug/L	24	Standard
	Ce	140	21.7	93.3				ug/L	25	Standard
>	**Tb**	159	924023.3	3.2				ug/L	939701	Standard
	Ho	165	10.0	100.0				ug/L	10	Standard
	Tl	203	60.7	18.1	**0.0057**	0.001	22.9	ug/L	4	Standard
	Tl	205	61.7	61.4	**0.0089**	0.005	59.3	ug/L	2	Standard
	Pb	206	271.3	7.0	**-0.0198**	0.004	19.8	ug/L	240	Standard
	Pb	207	237.3	7.1	**-0.0194**	0.004	21.0	ug/L	198	Standard
	Pb	208	1028.3	6.0	**-0.0187**	0.003	15.4	ug/L	883	Standard
	U	238	47.7	28.5	**0.0026**	0.002	78.0	ug/L	3	Standard
>	**Bi**	209	518292.4	0.9				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	35.0	42.9	**-0.0179**	0.019	107.8	mg/L	37	Standard
K	39	36.7	39.4	**-0.0284**	0.035	124.9	mg/L	38	Standard
Ca	43	25.0	40.0	**-0.8569**	0.683	79.6	mg/L	10	Standard
Fe	54	125.6	8.4	**-0.0262**	0.013	49.1	mg/L	179	Standard
Fe	57	296.7	4.9	**-0.0150**	0.061	408.2	mg/L	335	Standard
> **Sc-1**	45	58138.1	3.2				mg/L	61029	Standard
Cl	35	20966.5	2.9				ug/L	20195	Standard
Kr	83	2.3	89.2				ug/L	4	Standard
Br	81	1540.1	1.7				ug/L	1547	Standard
P	31	17027.9	2.4				ug/L	15286	Standard
S	34	1976.8	0.6				ug/L	1572	Standard
Sr	88	85.0	5.9				ug/L	73	Standard
C	12	30.0	33.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	6.3	86.9				mg/L	6	Standard
Ho-1	165	10.0	100.0				mg/L	10	Standard
Er	166	6.7	173.2				mg/L	13	Standard
I	127	1458.4	25.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.091	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.140
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.914
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Ca	43	

Sample ID: QC Std 2
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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Wednesday, June 29, 2016 11:46:53
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66549.2	2.6				ug/L	74699	Standard
	Be	9	181.7	3.2	**0.2393**	0.009	3.6	ug/L	8	Standard
	Al	27	1430.1	59.0	**-0.0024**	0.007	267.2	ug/L	1493	Standard
	Sc	45	54693.6	2.6				ug/L	61029	Standard
	Ti	47	40.3	11.5	**0.0025**	0.013	506.9	ug/L	35	Standard
	V	51	4161.2	3.6	**0.3819**	0.016	4.1	ug/L	1435	Standard
	Cr	52	12463.1	1.9	**0.7390**	0.018	2.5	ug/L	7635	Standard
	Cr	53	996.7	1.0	**0.8006**	0.013	1.6	ug/L	363	Standard
	Mn	55	4091.6	2.3	**0.4679**	0.008	1.8	ug/L	747	Standard
	Co	59	2840.6	1.4	**0.4137**	0.010	2.4	ug/L	234	Standard
	Ni	60	3014.0	1.2	**1.5638**	0.035	2.2	ug/L	215	Standard
	Cu	65	1546.7	1.4	**0.7676**	0.020	2.7	ug/L	104	Standard
	Zn	66	7394.5	0.3	**6.6420**	0.044	0.7	ug/L	363	Standard
>	**Ge**	72	472336.8	0.9				ug/L	495142	Standard
	As	75	394.7	6.3	**0.4290**	0.024	5.7	ug/L	-50	Standard
	Se	82	54.4	27.0	**0.3818**	0.143	37.5	ug/L	14	Standard
	Se-1	77	75.3	14.2	**0.4599**	0.162	35.3	ug/L	42	Standard
>	**Ga**	71	58.3	44.0				mg/L	42	Standard
	Rb	85	8.3	34.6				ug/L	17	Standard
	Y	89	402582.8	1.9				ug/L	417098	Standard
>	**Rh**	103	5.0	100.0				ug/L	13	Standard
	Mo	98	114.4	34.0	**0.0400**	0.016	39.3	ug/L	11	Standard
	Ag	107	2464.9	1.7	**0.3900**	0.008	2.1	ug/L	68	Standard
	Cd	111	479.8	5.6	**0.2365**	0.013	5.7	mg/L	2	Standard
	Cd	114	1217.0	2.5	**0.2507**	0.007	2.6	ug/L	12	Standard
>	**In**	115	551471.6	0.4				ug/L	587441	Standard
	Sn	118	548.3	23.3	**0.0053**	0.024	443.1	ug/L	497	Standard
	Sb	123	2017.6	6.1	**0.4562**	0.029	6.4	ug/L	78	Standard
	Ba	135	1439.7	3.7	**0.7333**	0.029	4.0	ug/L	24	Standard
	Ce	140	11.7	49.5				ug/L	25	Standard
>	**Tb**	159	887425.9	1.8				ug/L	939701	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	701.7	6.6	**0.0871**	0.005	5.3	ug/L	4	Standard
	Tl	205	588.3	14.1	**0.0861**	0.013	15.2	ug/L	2	Standard
	Pb	206	1333.4	2.9	**0.1894**	0.006	3.1	ug/L	240	Standard
	Pb	207	1083.0	1.4	**0.1683**	0.005	3.1	ug/L	198	Standard
	Pb	208	4575.3	2.2	**0.1806**	0.004	2.0	ug/L	883	Standard
	U	238	2677.9	3.2	**0.4017**	0.012	2.9	ug/L	3	Standard
>	**Bi**	209	501924.0	1.5				ug/L	523984	Standard

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Na	23	1.7	173.2	**21.9523**	38.014	173.2	mg/L	0	Standard
Mg	24	43.3	29.0	**-0.0023**	0.020	841.8	mg/L	37	Standard
K	39	33.3	37.7	**-0.0317**	0.032	101.1	mg/L	38	Standard
Ca	43	46.7	12.4	**0.7738**	0.482	62.2	mg/L	10	Standard
Fe	54	100.7	18.6	**-0.0432**	0.016	36.6	mg/L	179	Standard
Fe	57	325.0	8.1	**0.1578**	0.085	53.5	mg/L	335	Standard
> **Sc-1**	45	54693.6	2.6				mg/L	61029	Standard
Cl	35	21199.5	1.6				ug/L	20195	Standard
Kr	83	3.3	17.3				ug/L	4	Standard
Br	81	1403.4	5.3				ug/L	1547	Standard
P	31	11833.0	1.6				ug/L	15286	Standard
S	34	2000.1	8.0				ug/L	1572	Standard
Sr	88	93.3	20.3				ug/L	73	Standard
C	12	56.7	10.2				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	13.0	89.8				mg/L	6	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	1430.1	34.2				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	119.656		
	Al	27	-0.244		
	Sc	45			
	Ti	47			
	V	51	95.473		
	Cr	52	92.381		
	Cr	53			
	Mn	55	93.583		
	Co	59	103.429		
	Ni	60	97.737		
	Cu	65	95.951		
	Zn	66	106.273		
>	Ge	72		95.394	
	As	75	107.259		
	Se	82	95.456		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	97.496		
Cd	111	98.556		
Cd	114			
> In	115			93.877
Sn	118			
Sb	123	114.045		
Ba	135	97.779		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	108.827		
Tl	205			
Pb	206			
Pb	207			
Pb	208	90.316		
U	238	100.429		
> Bi	209			95.790
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Wednesday, June 29, 2016 11:50:53
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71628.9	1.8				ug/L	74699	Standard
	Be	9	13.3	43.3	**0.0235**	0.007	30.3	ug/L	8	Standard
	Al	27	7079214.4	1.4	**50.2405**	1.571	3.1	ug/L	1493	Standard
	Sc	45	57092.4	1.6				ug/L	61029	Standard
	Ti	47	41841.7	1.2	**112.2257**	1.296	1.2	ug/L	35	Standard
	V	51	1975.7	11.7	**0.0706**	0.031	44.3	ug/L	1435	Standard
	Cr	52	7951.4	1.4	**0.0680**	0.015	21.7	ug/L	7635	Standard
	Cr	53	3292.0	3.5	**3.2946**	0.126	3.8	ug/L	363	Standard
	Mn	55	1443.4	4.1	**0.0629**	0.009	13.6	ug/L	747	Standard
	Co	59	431.3	5.1	**0.0292**	0.003	11.6	ug/L	234	Standard
	Ni	60	837.4	1.6	**0.3312**	0.007	2.2	ug/L	215	Standard
	Cu	65	638.0	4.2	**0.2451**	0.015	6.0	ug/L	104	Standard
	Zn	66	1716.8	2.4	**1.1448**	0.039	3.4	ug/L	363	Standard
>	**Ge**	72	486594.7	0.0				ug/L	495142	Standard
	As	75	-47.8	111.3	**0.0161**	0.048	300.1	ug/L	-50	Standard
	Se	82	12.5	17.3	**-0.0221**	0.020	90.2	ug/L	14	Standard
	Se-1	77	285.3	3.8	**3.3530**	0.150	4.5	ug/L	42	Standard
>	**Ga**	71	146.7	5.2				mg/L	42	Standard
	Rb	85	1056.7	1.8				ug/L	17	Standard
	Y	89	409909.2	0.2				ug/L	417098	Standard
>	**Rh**	103	11.7	99.0				ug/L	13	Standard
	Mo	98	258876.2	1.4	**101.0110**	2.466	2.4	ug/L	11	Standard
	Ag	107	250.7	8.2	**0.0271**	0.004	13.5	ug/L	68	Standard
	Cd	111	-191.4	6.3	**-0.1031**	0.005	5.1	mg/L	2	Standard
	Cd	114	476.2	9.0	**0.0945**	0.009	9.4	ug/L	12	Standard
>	**In**	115	564912.9	1.1				ug/L	587441	Standard
	Sn	118	765.0	2.0	**0.0415**	0.002	5.8	ug/L	497	Standard
	Sb	123	314.8	31.7	**0.0658**	0.022	32.8	ug/L	78	Standard
	Ba	135	628.0	0.0	**0.3031**	0.004	1.2	ug/L	24	Standard
	Ce	140	243.3	10.5				ug/L	25	Standard
>	**Tb**	159	934364.8	1.3				ug/L	939701	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	234.7	3.6	**0.0271**	0.001	3.8	ug/L	4	Standard
	Tl	205	175.0	22.3	**0.0250**	0.006	22.8	ug/L	2	Standard
	Pb	206	514.7	3.8	**0.0265**	0.004	16.6	ug/L	240	Standard
	Pb	207	427.7	5.6	**0.0214**	0.005	22.5	ug/L	198	Standard
	Pb	208	1691.4	2.8	**0.0174**	0.002	11.4	ug/L	883	Standard
	U	238	20.7	10.1	**-0.0014**	0.000	22.7	ug/L	3	Standard
>	**Bi**	209	516629.8	0.9				ug/L	523984	Standard

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Na	23	8.3	34.6	**102.8074**	36.030	35.0	mg/L	0	Standard
Mg	24	9604.7	1.9	**13.1909**	0.366	2.8	mg/L	37	Standard
K	39	2033.5	6.6	**4.6893**	0.286	6.1	mg/L	38	Standard
Ca	43	250.0	4.0	**14.3615**	0.772	5.4	mg/L	10	Standard
Fe	54	14441.1	1.7	**12.9538**	0.416	3.2	mg/L	179	Standard
Fe	57	3845.5	3.6	**12.9047**	0.714	5.5	mg/L	335	Standard
> **Sc-1**	45	57092.4	1.6				mg/L	61029	Standard
Cl	35	20428.4	2.1				ug/L	20195	Standard
Kr	83	3.0	57.7				ug/L	4	Standard
Br	81	1493.4	8.7				ug/L	1547	Standard
P	31	15903.3	2.0				ug/L	15286	Standard
S	34	1818.4	8.5				ug/L	1572	Standard
Sr	88	70.0	35.7				ug/L	73	Standard
C	12	136.7	22.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	86.6				mg/L	3	Standard
Dy	164	12.2	93.4				mg/L	6	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	23.3	24.7				mg/L	13	Standard
I	127	2226.8	19.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27	1.005		
Sc	45			
Ti	47	112.226		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.274	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.011		
Ag	107			
Cd	111			
Cd	114			
In	115		96.165	
Sn	118			
Sb	123			
Ba	135			
Ce	140			
Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
Bi	209		98.596	
Na	23	822.459		
Mg	24	263.819		
K	39	93.787		
Ca	43	95.743		
Fe	54	103.630		
Fe	57	103.238		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Wednesday, June 29, 2016 11:54:47
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72764.4	2.4				ug/L	74699	Standard
	Be	9	86093.9	0.6	**100.4334**	2.352	2.3	ug/L	8	Standard
	Al	27	7577089.0	1.5	**52.9410**	1.751	3.3	ug/L	1493	Standard
	Sc	45	54926.1	3.1				ug/L	61029	Standard
	Ti	47	43156.4	1.1	**115.6496**	0.651	0.6	ug/L	35	Standard
	V	51	767037.5	0.7	**103.0563**	0.476	0.5	ug/L	1435	Standard
	Cr	52	743370.8	0.7	**100.9527**	0.091	0.1	ug/L	7635	Standard
	Cr	53	95736.5	0.4	**104.9834**	0.488	0.5	ug/L	363	Standard
	Mn	55	719673.0	1.2	**104.9487**	1.961	1.9	ug/L	747	Standard
	Co	59	684381.8	1.6	**105.3392**	2.464	2.3	ug/L	234	Standard
	Ni	60	184775.9	0.8	**100.2112**	0.878	0.9	ug/L	215	Standard
	Cu	65	183945.6	0.7	**100.3790**	1.285	1.3	ug/L	104	Standard
	Zn	66	111716.4	0.5	**103.5231**	0.465	0.4	ug/L	363	Standard
>	**Ge**	72	487033.1	0.8				ug/L	495142	Standard
	As	75	115123.8	0.6	**104.5507**	0.234	0.2	ug/L	-50	Standard
	Se	82	11162.3	1.3	**103.2681**	1.937	1.9	ug/L	14	Standard
	Se-1	77	7790.3	1.4	**107.8133**	0.940	0.9	ug/L	42	Standard
>	**Ga**	71	155.0	24.4				mg/L	42	Standard
	Rb	85	853.4	12.0				ug/L	17	Standard
	Y	89	414937.1	1.1				ug/L	417098	Standard
>	**Rh**	103	48.3	21.5				ug/L	13	Standard
	Mo	98	271334.5	0.2	**106.0489**	0.711	0.7	ug/L	11	Standard
	Ag	107	596492.9	1.3	**95.3413**	1.752	1.8	ug/L	68	Standard
	Cd	111	202245.3	1.2	**100.7713**	1.934	1.9	mg/L	2	Standard
	Cd	114	489634.1	0.4	**99.4602**	0.649	0.7	ug/L	12	Standard
>	**In**	115	563893.1	0.8				ug/L	587441	Standard
	Sn	118	898.4	12.5	**0.0654**	0.019	28.7	ug/L	497	Standard
	Sb	123	448934.9	1.4	**100.1777**	2.039	2.0	ug/L	78	Standard
	Ba	135	193320.5	0.8	**98.3885**	1.494	1.5	ug/L	24	Standard
	Ce	140	68.3	16.9				ug/L	25	Standard
>	**Tb**	159	922182.5	1.6				ug/L	939701	Standard
	Ho	165	15.0	57.7				ug/L	10	Standard
	Tl	203	808287.0	0.7	**100.1763**	1.478	1.5	ug/L	4	Standard
	Tl	205	710155.2	1.4	**101.4182**	2.560	2.5	ug/L	2	Standard
	Pb	206	542765.1	0.5	**103.7300**	0.986	1.0	ug/L	240	Standard
	Pb	207	466015.8	1.0	**100.2432**	1.559	1.6	ug/L	198	Standard
	Pb	208	1879754.6	0.3	**102.3429**	1.262	1.2	ug/L	883	Standard
	U	238	673426.3	1.1	**99.9548**	2.202	2.2	ug/L	3	Standard
>	**Bi**	209	512933.6	1.2				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	10138.4	1.8	**14.4874**	0.596	4.1	mg/L	37	Standard
K	39	2125.1	3.3	**5.1060**	0.147	2.9	mg/L	38	Standard
Ca	43	265.0	8.2	**16.1201**	2.142	13.3	mg/L	10	Standard
Fe	54	14876.0	0.8	**13.8828**	0.353	2.5	mg/L	179	Standard
Fe	57	3958.9	4.0	**13.8986**	1.069	7.7	mg/L	335	Standard
> **Sc-1**	45	54926.1	3.1				mg/L	61029	Standard
Cl	35	20351.0	1.2				ug/L	20195	Standard
Kr	83	1.7	91.7				ug/L	4	Standard
Br	81	1600.1	9.2				ug/L	1547	Standard
P	31	14895.7	0.4				ug/L	15286	Standard
S	34	1618.4	8.3				ug/L	1572	Standard
Sr	88	85.0	10.2				ug/L	73	Standard
C	12	116.7	71.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	16.2	38.3				mg/L	6	Standard
Ho-1	165	15.0	57.7				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	1496.7	25.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	100.433		
Al	27	1.059		
Sc	45			
Ti	47	115.650		
V	51	103.056		
Cr	52	100.953		
Cr	53			
Mn	55	104.949		
Co	59	105.339		
Ni	60	100.211		
Cu	65	100.379		
Zn	66	103.523		
> Ge	72		98.362	
As	75	104.551		
Se	82	103.268		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	106.049		
Ag	107	95.341		
Cd	111	100.771		
Cd	114			
> In	115		95.991	
Sn	118			
Sb	123	100.178		
Ba	135	98.389		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.176		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.343		
U	238	99.955		
> Bi	209		97.891	
Na	23	0.040		
Mg	24	289.748		
K	39	102.121		
Ca	43	107.468		
Fe	54	111.063		
Fe	57	111.189		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

Sample ID: QC Std 5
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 12:00:10
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74127.8	4.1				ug/L	74699	Standard
	Be	9	44057.3	2.0	**50.4723**	1.532	3.0	ug/L	8	Standard
	Al	27	7182862.5	0.8	**49.2846**	1.691	3.4	ug/L	1493	Standard
	Sc	45	54972.9	1.9				ug/L	61029	Standard
	Ti	47	37035.5	1.0	**100.2235**	3.375	3.4	ug/L	35	Standard
	V	51	380987.7	1.2	**51.6037**	1.920	3.7	ug/L	1435	Standard
	Cr	52	371095.9	0.5	**50.3905**	1.647	3.3	ug/L	7635	Standard
	Cr	53	45648.7	0.9	**50.3715**	0.927	1.8	ug/L	363	Standard
	Mn	55	362758.6	1.1	**53.3556**	2.033	3.8	ug/L	747	Standard
	Co	59	346170.1	1.6	**53.7955**	2.203	4.1	ug/L	234	Standard
	Ni	60	91822.1	1.5	**50.2407**	2.119	4.2	ug/L	215	Standard
	Cu	65	92043.5	2.0	**50.6873**	2.359	4.7	ug/L	104	Standard
	Zn	66	54708.9	1.1	**50.9762**	1.937	3.8	ug/L	363	Standard
>	Ge	72	482505.9	2.7				ug/L	495142	Standard
	As	75	56019.2	1.2	**51.4117**	1.775	3.5	ug/L	-50	Standard
	Se	82	5615.5	1.4	**52.4035**	2.100	4.0	ug/L	14	Standard
	Se-1	77	3787.5	1.5	**52.6293**	2.112	4.0	ug/L	42	Standard
>	Ga	71	63.3	9.1				mg/L	42	Standard
	Rb	85	771.7	5.9				ug/L	17	Standard
	Y	89	419939.4	2.7				ug/L	417098	Standard
>	Rh	103	31.7	9.1				ug/L	13	Standard
	Mo	98	262674.3	2.0	**102.5093**	6.034	5.9	ug/L	11	Standard
	Ag	107	318557.4	0.8	**50.8058**	2.007	4.0	ug/L	68	Standard
	Cd	111	103808.6	0.6	**51.6156**	2.157	4.2	mg/L	2	Standard
	Cd	114	253134.5	2.1	**51.2889**	1.034	2.0	ug/L	12	Standard
>	In	115	565595.5	4.0				ug/L	587441	Standard
	Sn	118	290084.1	1.0	**51.5381**	2.174	4.2	ug/L	497	Standard
	Sb	123	228198.9	1.3	**50.8307**	2.651	5.2	ug/L	78	Standard
	Ba	135	99366.1	0.6	**50.4579**	1.943	3.9	ug/L	24	Standard
	Ce	140	78.3	13.3				ug/L	25	Standard
>	Tb	159	913248.6	2.6				ug/L	939701	Standard
	Ho	165	3.3	86.6				ug/L	10	Standard
	Tl	203	413066.5	1.0	**51.9084**	1.016	2.0	ug/L	4	Standard
	Tl	205	363184.8	0.9	**52.5982**	1.678	3.2	ug/L	2	Standard
	Pb	206	268800.2	0.8	**52.0649**	1.553	3.0	ug/L	240	Standard
	Pb	207	239468.7	1.2	**52.2107**	1.790	3.4	ug/L	198	Standard
	Pb	208	958802.6	0.9	**52.9068**	1.662	3.1	ug/L	883	Standard
	U	238	349772.5	0.2	**52.6413**	1.317	2.5	ug/L	3	Standard
>	Bi	209	505954.2	2.3				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3805.5	5.3	**5.3881**	0.260	4.8	mg/L	37	Standard
K	39	2106.8	1.9	**5.0574**	0.179	3.5	mg/L	38	Standard
Ca	43	101.7	5.7	**4.6110**	0.501	10.9	mg/L	10	Standard
Fe	54	5879.5	1.7	**5.3975**	0.172	3.2	mg/L	179	Standard
Fe	57	1785.1	7.3	**5.6694**	0.625	11.0	mg/L	335	Standard
> **Sc-1**	45	54972.9	1.9				mg/L	61029	Standard
Cl	35	21821.7	0.9				ug/L	20195	Standard
Kr	83	2.0	0.0				ug/L	4	Standard
Br	81	1470.1	4.5				ug/L	1547	Standard
P	31	16677.5	6.0				ug/L	15286	Standard
S	34	1955.1	4.5				ug/L	1572	Standard
Sr	88	73.3	14.2				ug/L	73	Standard
C	12	80.0	66.1				mg/L	63	Standard
N	14	6.7	86.6				mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	15.9	32.3				mg/L	6	Standard
Ho-1	165	3.3	86.6				mg/L	10	Standard
Er	166	16.7	124.9				mg/L	13	Standard
I	127	1668.4	28.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	100.945		
Al	27	98.569		
Sc	45			
Ti	47	100.224		
V	51	103.207		
Cr	52	100.781		
Cr	53			
Mn	55	106.711		
Co	59	107.591		
Ni	60	100.481		
Cu	65	101.375		
Zn	66	101.952		
> Ge	72		97.448	
As	75	102.823		
Se	82	104.807		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	102.509		
Ag	107	101.612		
Cd	111	103.231		
Cd	114			
In	115			96.281
Sn	118	103.076		
Sb	123	101.661		
Ba	135	100.916		
Ce	140			
Tb	159			
Ho	165			
Tl	203	103.817		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.814		
U	238	105.283		
Bi	209			96.559
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 12:07:34
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74348.6	1.0				ug/L	74699	Standard
	Be	9	21.7	26.6	**0.0324**	0.007	20.7	ug/L	8	Standard
	Al	27	1840.1	21.7	**-0.0008**	0.003	358.1	ug/L	1493	Standard
	Sc	45	56396.5	2.8				ug/L	61029	Standard
	Ti	47	36.7	15.0	**-0.0098**	0.014	147.0	ug/L	35	Standard
	V	51	1326.6	5.0	**-0.0153**	0.008	51.0	ug/L	1435	Standard
	Cr	52	6702.5	2.0	**-0.0955**	0.015	16.1	ug/L	7635	Standard
	Cr	53	393.3	15.3	**0.1070**	0.067	63.0	ug/L	363	Standard
	Mn	55	742.7	5.5	**-0.0386**	0.005	13.8	ug/L	747	Standard
	Co	59	250.3	1.5	**0.0016**	0.000	18.8	ug/L	234	Standard
	Ni	60	195.0	9.2	**-0.0170**	0.010	58.7	ug/L	215	Standard
	Cu	65	108.7	1.4	**-0.0438**	0.000	1.1	ug/L	104	Standard
	Zn	66	377.3	7.3	**-0.1000**	0.024	24.2	ug/L	363	Standard
>	**Ge**	72	482419.6	0.7				ug/L	495142	Standard
	As	75	-16.3	122.1	**0.0447**	0.018	40.8	ug/L	-50	Standard
	Se	82	12.2	10.1	**-0.0240**	0.012	49.4	ug/L	14	Standard
	Se-1	77	52.7	12.2	**0.1177**	0.089	75.6	ug/L	42	Standard
>	**Ga**	71	61.7	33.8				mg/L	42	Standard
	Rb	85	30.0	50.0				ug/L	17	Standard
	Y	89	414790.7	2.9				ug/L	417098	Standard
>	**Rh**	103	1.7	173.2				ug/L	13	Standard
	Mo	98	135.9	9.5	**0.0469**	0.005	10.2	ug/L	11	Standard
	Ag	107	96.3	7.3	**0.0024**	0.001	45.2	ug/L	68	Standard
	Cd	111	7.4	43.0	**-0.0042**	0.002	37.1	mg/L	2	Standard
	Cd	114	24.8	51.6	**0.0029**	0.003	88.9	ug/L	12	Standard
>	**In**	115	568967.0	0.5				ug/L	587441	Standard
	Sn	118	628.3	16.1	**0.0164**	0.018	110.8	ug/L	497	Standard
	Sb	123	617.2	40.6	**0.1324**	0.056	42.3	ug/L	78	Standard
	Ba	135	30.7	16.1	**-0.0005**	0.003	469.7	ug/L	24	Standard
	Ce	140	23.3	68.9				ug/L	25	Standard
>	**Tb**	159	918183.5	1.2				ug/L	939701	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	30.3	14.9	**0.0020**	0.001	31.1	ug/L	4	Standard
	Tl	205	23.3	24.7	**0.0035**	0.001	22.2	ug/L	2	Standard
	Pb	206	259.3	0.6	**-0.0221**	0.001	4.2	ug/L	240	Standard
	Pb	207	198.7	1.6	**-0.0277**	0.001	4.0	ug/L	198	Standard
	Pb	208	894.0	2.8	**-0.0259**	0.002	7.7	ug/L	883	Standard
	U	238	15.0	35.3	**-0.0022**	0.001	35.0	ug/L	3	Standard
>	**Bi**	209	518580.7	1.8				ug/L	523984	Standard

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Na	23	1.7	173.2	**20.6253**	35.715	173.2	mg/L	0	Standard
Mg	24	31.7	32.9	**-0.0207**	0.015	73.7	mg/L	37	Standard
K	39	51.7	24.4	**0.0090**	0.027	299.1	mg/L	38	Standard
Ca	43	33.3	31.2	**-0.2319**	0.781	336.6	mg/L	10	Standard
Fe	54	140.8	7.6	**-0.0093**	0.006	67.4	mg/L	179	Standard
Fe	57	256.7	18.9	**-0.1295**	0.180	138.6	mg/L	335	Standard
> **Sc-1**	45	56396.5	2.8				mg/L	61029	Standard
Cl	35	21372.4	1.3				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	1540.1	8.8				ug/L	1547	Standard
P	31	15931.7	0.9				ug/L	15286	Standard
S	34	1863.4	1.4				ug/L	1572	Standard
Sr	88	58.3	17.8				ug/L	73	Standard
C	12	56.7	27.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	6.2	186.6				mg/L	6	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	10.0					mg/L	13	Standard
I	127	1518.4	26.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.431	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.855
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.969
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606066106
Sample Date/Time: Wednesday, June 29, 2016 12:12:15
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78301.9	3.0				ug/L	74699	Standard
	Be	9	591.7	15.8	**0.6482**	0.094	14.5	ug/L	8	Standard
	Al	27	14033022.6	1.2	**91.1117**	1.566	1.7	ug/L	1493	Standard
	Sc	45	64031.7	1.2				ug/L	61029	Standard
	Ti	47	6936.9	1.2	**18.7002**	0.397	2.1	ug/L	35	Standard
	V	51	136379.5	0.6	**18.3618**	0.342	1.9	ug/L	1435	Standard
	Cr	52	135090.6	0.2	**17.7119**	0.504	2.8	ug/L	7635	Standard
	Cr	53	16100.2	3.4	**17.5840**	1.043	5.9	ug/L	363	Standard
	Mn	55	2727656.7	0.9	**402.5207**	10.967	2.7	ug/L	747	Standard
	Co	59	46530.0	0.2	**7.2050**	0.195	2.7	ug/L	234	Standard
	Ni	60	31243.2	1.0	**17.0295**	0.585	3.4	ug/L	215	Standard
	Cu	65	40278.5	0.5	**22.1396**	0.604	2.7	ug/L	104	Standard
	Zn	66	62615.1	0.3	**58.4626**	1.558	2.7	ug/L	363	Standard
>	**Ge**	72	481946.2	2.4				ug/L	495142	Standard
	As	75	4644.7	1.4	**4.3222**	0.154	3.6	ug/L	-50	Standard
	Se	82	54.0	14.6	**0.3688**	0.086	23.4	ug/L	14	Standard
	Se-1	77	96.0	5.2	**0.7275**	0.040	5.5	ug/L	42	Standard
>	**Ga**	71	12810.4	4.6				mg/L	42	Standard
	Rb	85	116256.0	0.7				ug/L	17	Standard
	Y	89	585719.0	1.0				ug/L	417098	Standard
>	**Rh**	103	45.0	33.3				ug/L	13	Standard
	Mo	98	935.2	3.6	**0.3550**	0.010	2.8	ug/L	11	Standard
	Ag	107	931.4	1.2	**0.1340**	0.001	0.5	ug/L	68	Standard
	Cd	111	782.7	0.6	**0.3771**	0.007	1.8	mg/L	2	Standard
	Cd	114	1959.7	7.4	**0.3906**	0.025	6.5	ug/L	12	Standard
>	**In**	115	571359.2	1.2				ug/L	587441	Standard
	Sn	118	1011.7	7.7	**0.0833**	0.012	14.7	ug/L	497	Standard
	Sb	123	336.5	28.9	**0.0698**	0.021	29.4	ug/L	78	Standard
	Ba	135	394959.7	1.6	**198.3814**	1.476	0.7	ug/L	24	Standard
	Ce	140	893729.8	1.7				ug/L	25	Standard
>	**Tb**	159	948738.0	1.3				ug/L	939701	Standard
	Ho	165	15724.8	2.6				ug/L	10	Standard
	Tl	203	658.0	2.7	**0.0791**	0.002	2.2	ug/L	4	Standard
	Tl	205	583.3	11.6	**0.0828**	0.010	12.2	ug/L	2	Standard
	Pb	206	370590.1	1.2	**70.2116**	0.816	1.2	ug/L	240	Standard
	Pb	207	304396.4	0.8	**64.9093**	0.988	1.5	ug/L	198	Standard
	Pb	208	1254498.7	1.7	**67.7133**	1.716	2.5	ug/L	883	Standard
	U	238	3382.4	2.2	**0.4935**	0.016	3.3	ug/L	3	Standard
>	**Bi**	209	517229.2	1.1				ug/L	523984	Standard

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Na	23	3.3	173.2	**36.6019**	63.388	173.2	mg/L	0	Standard
Mg	24	128.3	15.7	**0.0927**	0.024	25.5	mg/L	37	Standard
K	39	566.7	14.3	**1.0807**	0.180	16.7	mg/L	38	Standard
Ca	43	418.3	12.7	**22.6893**	3.491	15.4	mg/L	10	Standard
Fe	54	12793.3	3.0	**10.1983**	0.198	1.9	mg/L	179	Standard
Fe	57	3678.8	1.9	**10.8461**	0.363	3.4	mg/L	335	Standard
Sc-1	45	64031.7	1.2				mg/L	61029	Standard
Cl	35	22050.7	1.1				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	2173.5	11.7				ug/L	1547	Standard
P	31	16252.1	5.4				ug/L	15286	Standard
S	34	2065.1	4.4				ug/L	1572	Standard
Sr	88	140.0	9.4				ug/L	73	Standard
C	12	143.3	22.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	203.3	10.2				mg/L	3	Standard
Dy	164	25060.4	3.8				mg/L	6	Standard
Ho-1	165	15724.8	2.6				mg/L	10	Standard
Er	166	13529.4	4.1				mg/L	13	Standard
I	127	8297.3	2.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		104.824	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.335	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.262
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.711
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606066106
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Method 6020 - Summary Report

Sample ID: L1606066107
Sample Date/Time: Wednesday, June 29, 2016 12:15:26
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79855.0	3.3				ug/L	74699	Standard
	Be	9	765.0	6.8	**0.8219**	0.077	9.4	ug/L	8	Standard
	Al	27	26230756.6	0.7	**167.0452**	4.333	2.6	ug/L	1493	Standard
	Sc	45	64585.8	4.1				ug/L	61029	Standard
	Ti	47	7966.1	1.8	**21.8574**	0.352	1.6	ug/L	35	Standard
	V	51	155637.7	1.4	**21.3440**	0.459	2.1	ug/L	1435	Standard
	Cr	52	137713.7	0.8	**18.3989**	0.313	1.7	ug/L	7635	Standard
	Cr	53	16806.0	3.9	**18.6780**	0.841	4.5	ug/L	363	Standard
	Mn	55	4726467.2	1.1	**709.3402**	2.876	0.4	ug/L	747	Standard
	Co	59	64550.2	0.1	**10.1794**	0.081	0.8	ug/L	234	Standard
	Ni	60	42709.8	0.1	**23.7183**	0.226	1.0	ug/L	215	Standard
	Cu	65	23683.8	1.0	**13.1970**	0.251	1.9	ug/L	104	Standard
	Zn	66	44795.8	1.0	**42.4101**	0.817	1.9	ug/L	363	Standard
>	**Ge**	72	473762.9	0.9				ug/L	495142	Standard
	As	75	7180.0	1.6	**6.7588**	0.066	1.0	ug/L	-50	Standard
	Se	82	142.2	5.2	**1.2157**	0.067	5.5	ug/L	14	Standard
	Se-1	77	110.3	7.6	**0.9569**	0.126	13.2	ug/L	42	Standard
>	**Ga**	71	17858.9	0.4				mg/L	42	Standard
	Rb	85	152815.2	1.7				ug/L	17	Standard
	Y	89	630725.5	1.5				ug/L	417098	Standard
>	**Rh**	103	41.7	25.0				ug/L	13	Standard
	Mo	98	1176.0	1.0	**0.4476**	0.010	2.2	ug/L	11	Standard
	Ag	107	471.0	1.7	**0.0613**	0.002	3.5	ug/L	68	Standard
	Cd	111	231.8	9.8	**0.1061**	0.013	12.1	mg/L	2	Standard
	Cd	114	548.2	12.6	**0.1078**	0.015	13.9	ug/L	12	Standard
>	**In**	115	571871.5	1.5				ug/L	587441	Standard
	Sn	118	1063.4	7.5	**0.0923**	0.015	16.1	ug/L	497	Standard
	Sb	123	198.5	41.2	**0.0396**	0.018	46.2	ug/L	78	Standard
	Ba	135	410562.2	0.2	**206.0643**	2.723	1.3	ug/L	24	Standard
	Ce	140	1020863.3	0.8				ug/L	25	Standard
>	**Tb**	159	935971.5	1.4				ug/L	939701	Standard
	Ho	165	18616.4	1.9				ug/L	10	Standard
	Tl	203	969.7	3.1	**0.1217**	0.006	4.6	ug/L	4	Standard
	Tl	205	781.7	5.1	**0.1148**	0.005	4.1	ug/L	2	Standard
	Pb	206	74583.8	0.8	**14.5751**	0.129	0.9	ug/L	240	Standard
	Pb	207	60293.4	1.5	**13.2552**	0.050	0.4	ug/L	198	Standard
	Pb	208	253434.0	0.7	**14.1059**	0.309	2.2	ug/L	883	Standard
	U	238	4763.7	0.8	**0.7216**	0.012	1.7	ug/L	3	Standard
>	**Bi**	209	499544.2	1.5				ug/L	523984	Standard

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Na	23	8.3	34.6	**90.1824**	29.248	32.4	mg/L	0	Standard
Mg	24	323.3	10.9	**0.3294**	0.041	12.6	mg/L	37	Standard
K	39	788.4	10.3	**1.5298**	0.110	7.2	mg/L	38	Standard
Ca	43	663.3	6.3	**37.0621**	1.711	4.6	mg/L	10	Standard
Fe	54	18630.5	1.2	**14.8018**	0.561	3.8	mg/L	179	Standard
Fe	57	5110.9	3.8	**15.3724**	1.217	7.9	mg/L	335	Standard
> **Sc-1**	45	64585.8	4.1				mg/L	61029	Standard
Cl	35	22235.6	2.9				ug/L	20195	Standard
Kr	83	0.7	173.2				ug/L	4	Standard
Br	81	23104.3	4.2				ug/L	1547	Standard
P	31	15829.9	2.1				ug/L	15286	Standard
S	34	2033.5	3.2				ug/L	1572	Standard
Sr	88	161.7	12.5				ug/L	73	Standard
C	12	96.7	41.8				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	31177.2	1.6				mg/L	6	Standard
Ho-1	165	18616.4	1.9				mg/L	10	Standard
Er	166	16976.2	1.7				mg/L	13	Standard
I	127	9242.8	4.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.903	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.682	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.350
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.336
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606066108
Sample Date/Time: Wednesday, June 29, 2016 12:18:38
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77986.9	1.5				ug/L	74699	Standard
	Be	9	848.4	8.3	**0.9313**	0.087	9.4	ug/L	8	Standard
	Al	27	17300686.4	1.1	**112.7510**	0.475	0.4	ug/L	1493	Standard
	Sc	45	64965.7	2.0				ug/L	61029	Standard
	Ti	47	6993.9	0.6	**18.3803**	0.198	1.1	ug/L	35	Standard
	V	51	170039.3	0.3	**22.3624**	0.095	0.4	ug/L	1435	Standard
	Cr	52	135852.7	1.1	**17.3429**	0.173	1.0	ug/L	7635	Standard
	Cr	53	16400.5	1.1	**17.4496**	0.150	0.9	ug/L	363	Standard
	Mn	55	3732645.2	0.8	**537.0232**	5.661	1.1	ug/L	747	Standard
	Co	59	59499.9	1.1	**8.9910**	0.146	1.6	ug/L	234	Standard
	Ni	60	38977.4	1.0	**20.7345**	0.185	0.9	ug/L	215	Standard
	Cu	65	32324.4	0.5	**17.2976**	0.098	0.6	ug/L	104	Standard
	Zn	66	55484.7	0.8	**50.4392**	0.445	0.9	ug/L	363	Standard
>	**Ge**	72	494184.7	0.5				ug/L	495142	Standard
	As	75	5935.1	0.6	**5.3688**	0.057	1.1	ug/L	-50	Standard
	Se	82	56.5	10.0	**0.3782**	0.052	13.7	ug/L	14	Standard
	Se-1	77	118.0	0.8	**0.9965**	0.019	1.9	ug/L	42	Standard
>	**Ga**	71	16687.5	1.9				mg/L	42	Standard
	Rb	85	157851.4	1.2				ug/L	17	Standard
	Y	89	635672.9	1.6				ug/L	417098	Standard
>	**Rh**	103	68.3	27.7				ug/L	13	Standard
	Mo	98	1214.1	0.7	**0.4777**	0.002	0.4	ug/L	11	Standard
	Ag	107	767.0	3.0	**0.1120**	0.004	3.7	ug/L	68	Standard
	Cd	111	562.6	3.0	**0.2776**	0.008	3.0	mg/L	2	Standard
	Cd	114	1264.6	12.4	**0.2596**	0.032	12.4	ug/L	12	Standard
>	**In**	115	553515.9	0.3				ug/L	587441	Standard
	Sn	118	763.4	11.0	**0.0440**	0.015	34.7	ug/L	497	Standard
	Sb	123	242.9	15.0	**0.0510**	0.008	16.4	ug/L	78	Standard
	Ba	135	429181.6	1.6	**222.5293**	3.912	1.8	ug/L	24	Standard
	Ce	140	1102655.1	2.3				ug/L	25	Standard
>	**Tb**	159	923824.1	1.4				ug/L	939701	Standard
	Ho	165	18663.2	2.9				ug/L	10	Standard
	Tl	203	782.7	3.6	**0.0981**	0.005	5.3	ug/L	4	Standard
	Tl	205	701.7	8.6	**0.1034**	0.010	10.1	ug/L	2	Standard
	Pb	206	213507.8	0.5	**41.9534**	0.898	2.1	ug/L	240	Standard
	Pb	207	175202.2	0.5	**38.7416**	0.683	1.8	ug/L	198	Standard
	Pb	208	727362.3	0.6	**40.7140**	1.033	2.5	ug/L	883	Standard
	U	238	4175.6	1.0	**0.6335**	0.018	2.9	ug/L	3	Standard
>	**Bi**	209	498479.4	1.9				ug/L	523984	Standard

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Na	23	1.7	173.2	**18.0364**	31.231	173.2	mg/L	0	Standard
Mg	24	140.0	21.7	**0.1047**	0.037	35.2	mg/L	37	Standard
K	39	708.4	12.8	**1.3550**	0.168	12.4	mg/L	38	Standard
Ca	43	508.3	5.0	**27.6291**	0.895	3.2	mg/L	10	Standard
Fe	54	15324.4	1.1	**12.0707**	0.309	2.6	mg/L	179	Standard
Fe	57	4262.3	3.3	**12.5338**	0.279	2.2	mg/L	335	Standard
> **Sc-1**	45	64965.7	2.0				mg/L	61029	Standard
Cl	35	21927.9	1.6				ug/L	20195	Standard
Kr	83	2.7	78.1				ug/L	4	Standard
Br	81	2823.6	3.3				ug/L	1547	Standard
P	31	16612.4	1.0				ug/L	15286	Standard
S	34	2085.1	7.7				ug/L	1572	Standard
Sr	88	245.0	14.1				ug/L	73	Standard
C	12	116.7	27.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	93.3	49.5				mg/L	3	Standard
Dy	164	30954.0	1.2				mg/L	6	Standard
Ho-1	165	18663.2	2.9				mg/L	10	Standard
Er	166	16615.8	2.6				mg/L	13	Standard
I	127	11766.2	5.8				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		104.402	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.807	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.225
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.132
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606066109
Sample Date/Time: Wednesday, June 29, 2016 12:21:49
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77037.0	1.5				ug/L	74699	Standard
	Be	9	378.3	6.2	**0.4242**	0.022	5.2	ug/L	8	Standard
	Al	27	13254869.5	1.3	**87.4672**	2.449	2.8	ug/L	1493	Standard
	Sc	45	63133.0	3.0				ug/L	61029	Standard
	Ti	47	8144.2	1.7	**21.2616**	0.854	4.0	ug/L	35	Standard
	V	51	109381.5	1.5	**14.2029**	0.301	2.1	ug/L	1435	Standard
	Cr	52	127693.7	2.3	**16.1132**	0.755	4.7	ug/L	7635	Standard
	Cr	53	15149.2	3.9	**15.9774**	1.000	6.3	ug/L	363	Standard
	Mn	55	3010101.1	0.9	**429.7771**	13.412	3.1	ug/L	747	Standard
	Co	59	32158.1	0.7	**4.8045**	0.098	2.0	ug/L	234	Standard
	Ni	60	23283.5	0.8	**12.2424**	0.383	3.1	ug/L	215	Standard
	Cu	65	9940.9	0.4	**5.2071**	0.131	2.5	ug/L	104	Standard
	Zn	66	24785.3	0.2	**22.1054**	0.470	2.1	ug/L	363	Standard
>	**Ge**	72	498160.0	2.3				ug/L	495142	Standard
	As	75	2943.4	0.7	**2.6727**	0.077	2.9	ug/L	-50	Standard
	Se	82	39.1	13.2	**0.2170**	0.054	24.7	ug/L	14	Standard
	Se-1	77	75.7	11.2	**0.4068**	0.103	25.3	ug/L	42	Standard
>	**Ga**	71	9034.4	2.0				mg/L	42	Standard
	Rb	85	68682.0	2.5				ug/L	17	Standard
	Y	89	539979.1	1.9				ug/L	417098	Standard
>	**Rh**	103	11.7	24.7				ug/L	13	Standard
	Mo	98	3058.1	1.5	**1.1809**	0.018	1.5	ug/L	11	Standard
	Ag	107	334.3	34.2	**0.0400**	0.017	43.3	ug/L	68	Standard
	Cd	111	137.9	39.4	**0.0601**	0.026	43.1	mg/L	2	Standard
	Cd	114	340.6	39.5	**0.0664**	0.026	39.4	ug/L	12	Standard
>	**In**	115	568023.6	1.3				ug/L	587441	Standard
	Sn	118	973.4	3.3	**0.0776**	0.003	4.4	ug/L	497	Standard
	Sb	123	217.2	33.7	**0.0438**	0.016	35.6	ug/L	78	Standard
	Ba	135	138215.3	1.3	**69.8220**	0.106	0.2	ug/L	24	Standard
	Ce	140	545871.5	1.0				ug/L	25	Standard
>	**Tb**	159	946980.1	0.3				ug/L	939701	Standard
	Ho	165	11547.7	1.8				ug/L	10	Standard
	Tl	203	458.7	30.8	**0.0539**	0.017	31.9	ug/L	4	Standard
	Tl	205	360.0	14.1	**0.0505**	0.007	14.1	ug/L	2	Standard
	Pb	206	30575.5	1.0	**5.6549**	0.063	1.1	ug/L	240	Standard
	Pb	207	24590.3	1.3	**5.1132**	0.071	1.4	ug/L	198	Standard
	Pb	208	101567.1	0.7	**5.3447**	0.038	0.7	ug/L	883	Standard
	U	238	5591.0	1.3	**0.8082**	0.011	1.4	ug/L	3	Standard
>	**Bi**	209	523773.4	0.1				ug/L	523984	Standard

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Na	23	1.7	173.2	**19.1528**	33.165	173.2	mg/L	0	Standard
Mg	24	88.3	26.1	**0.0447**	0.026	57.5	mg/L	37	Standard
K	39	410.0	24.0	**0.7638**	0.217	28.4	mg/L	38	Standard
Ca	43	368.3	13.4	**20.0310**	3.643	18.2	mg/L	10	Standard
Fe	54	11096.4	1.9	**8.9581**	0.101	1.1	mg/L	179	Standard
Fe	57	2985.3	3.6	**8.7334**	0.110	1.3	mg/L	335	Standard
Sc-1	45	63133.0	3.0				mg/L	61029	Standard
Cl	35	21859.8	1.0				ug/L	20195	Standard
Kr	83	1.0	0.0				ug/L	4	Standard
Br	81	1696.8	5.1				ug/L	1547	Standard
P	31	15684.8	2.6				ug/L	15286	Standard
S	34	1883.5	4.2				ug/L	1572	Standard
Sr	88	116.7	19.3				ug/L	73	Standard
C	12	100.0	26.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	18768.7	3.5				mg/L	6	Standard
Ho-1	165	11547.7	1.8				mg/L	10	Standard
Er	166	10790.5	1.6				mg/L	13	Standard
I	127	6703.2	5.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		103.130	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.609	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.695
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.960
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606082203
Sample Date/Time: Wednesday, June 29, 2016 12:25:01
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75246.5	2.8				ug/L	74699	Standard
	Be	9	6.7	114.6	**0.0150**	0.008	55.4	ug/L	8	Standard
	Al	27	1140453.8	1.3	**7.6935**	0.186	2.4	ug/L	1493	Standard
	Sc	45	58880.9	1.2				ug/L	61029	Standard
	Ti	47	77.7	5.2	**0.0982**	0.010	10.0	ug/L	35	Standard
	V	51	1502.7	7.0	**0.0058**	0.017	290.5	ug/L	1435	Standard
	Cr	52	10404.9	0.3	**0.3964**	0.023	5.7	ug/L	7635	Standard
	Cr	53	878.4	11.3	**0.6323**	0.120	19.0	ug/L	363	Standard
	Mn	55	64288.8	1.0	**9.1920**	0.174	1.9	ug/L	747	Standard
	Co	59	1249.1	3.1	**0.1540**	0.006	4.1	ug/L	234	Standard
	Ni	60	673.3	4.1	**0.2398**	0.011	4.6	ug/L	215	Standard
	Cu	65	229.7	8.0	**0.0211**	0.010	48.0	ug/L	104	Standard
	Zn	66	2146.2	1.5	**1.5328**	0.038	2.5	ug/L	363	Standard
>	**Ge**	72	489582.8	1.5				ug/L	495142	Standard
	As	75	99.3	9.7	**0.1492**	0.008	5.6	ug/L	-50	Standard
	Se	82	43.5	22.3	**0.2617**	0.085	32.3	ug/L	14	Standard
	Se-1	77	67.7	6.2	**0.3148**	0.059	18.8	ug/L	42	Standard
>	**Ga**	71	61.7	40.8				mg/L	42	Standard
	Rb	85	88606.7	2.0				ug/L	17	Standard
	Y	89	430024.7	1.6				ug/L	417098	Standard
>	**Rh**	103	28.3	50.9				ug/L	13	Standard
	Mo	98	81.5	16.2	**0.0249**	0.005	20.1	ug/L	11	Standard
	Ag	107	97.7	18.1	**0.0021**	0.003	124.3	ug/L	68	Standard
	Cd	111	13.9	57.3	**-0.0013**	0.004	291.1	mg/L	2	Standard
	Cd	114	23.0	35.9	**0.0024**	0.002	67.9	ug/L	12	Standard
>	**In**	115	586341.4	0.7				ug/L	587441	Standard
	Sn	118	508.3	13.9	**-0.0076**	0.011	151.7	ug/L	497	Standard
	Sb	123	156.7	24.2	**0.0294**	0.008	27.7	ug/L	78	Standard
	Ba	135	76489.9	1.2	**37.4252**	0.302	0.8	ug/L	24	Standard
	Ce	140	665.0	13.3				ug/L	25	Standard
>	**Tb**	159	934158.4	1.1				ug/L	939701	Standard
	Ho	165	15.0	66.7				ug/L	10	Standard
	Tl	203	113.7	11.3	**0.0121**	0.002	13.7	ug/L	4	Standard
	Tl	205	93.3	44.6	**0.0133**	0.006	44.3	ug/L	2	Standard
	Pb	206	362.0	5.5	**-0.0029**	0.004	131.1	ug/L	240	Standard
	Pb	207	281.3	6.6	**-0.0103**	0.004	38.7	ug/L	198	Standard
	Pb	208	1197.0	7.1	**-0.0098**	0.005	49.2	ug/L	883	Standard
	U	238	25.0	34.9	**-0.0008**	0.001	168.5	ug/L	3	Standard
>	**Bi**	209	520173.1	0.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3547.1	5.1	**4.6793**	0.186	4.0	mg/L	37	Standard
K	39	1096.7	1.1	**2.3987**	0.055	2.3	mg/L	38	Standard
Ca	43	51.7	27.9	**0.8562**	0.931	108.7	mg/L	10	Standard
Fe	54	433.8	1.2	**0.2430**	0.009	3.5	mg/L	179	Standard
Fe	57	376.7	13.8	**0.2532**	0.189	74.5	mg/L	335	Standard
> **Sc-1**	45	58880.9	1.2				mg/L	61029	Standard
Cl	35	22906.6	0.4				ug/L	20195	Standard
Kr	83	2.3	65.5				ug/L	4	Standard
Br	81	9496.3	3.0				ug/L	1547	Standard
P	31	16589.1	2.9				ug/L	15286	Standard
S	34	2071.8	1.6				ug/L	1572	Standard
Sr	88	118.3	17.1				ug/L	73	Standard
C	12	53.3	10.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	19.0	47.5				mg/L	6	Standard
Ho-1	165	15.0	66.7				mg/L	10	Standard
Er	166	20.0	100.0				mg/L	13	Standard
I	127	14315.1	5.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.733	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.877	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.813
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.273
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606082302
Sample Date/Time: Wednesday, June 29, 2016 12:28:12
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75794.1	0.6				ug/L	74699	Standard
	Be	9	13.3	21.7	**0.0225**	0.003	14.2	ug/L	8	Standard
	Al	27	2805598.0	0.7	**18.8025**	0.242	1.3	ug/L	1493	Standard
	Sc	45	59848.0	1.2				ug/L	61029	Standard
	Ti	47	42.3	20.1	**0.0017**	0.021	1272.3	ug/L	35	Standard
	V	51	1764.1	8.5	**0.0361**	0.018	49.9	ug/L	1435	Standard
	Cr	52	8282.9	3.5	**0.0853**	0.037	43.4	ug/L	7635	Standard
	Cr	53	906.7	14.2	**0.6437**	0.138	21.5	ug/L	363	Standard
	Mn	55	61274.7	1.5	**8.5848**	0.068	0.8	ug/L	747	Standard
	Co	59	3907.8	2.1	**0.5500**	0.015	2.7	ug/L	234	Standard
	Ni	60	654.7	3.9	**0.2231**	0.012	5.6	ug/L	215	Standard
	Cu	65	222.3	1.8	**0.0148**	0.001	8.1	ug/L	104	Standard
	Zn	66	2204.5	3.0	**1.5481**	0.054	3.5	ug/L	363	Standard
>	**Ge**	72	498979.3	0.8				ug/L	495142	Standard
	As	75	72.7	46.8	**0.1239**	0.030	24.0	ug/L	-50	Standard
	Se	82	52.0	6.1	**0.3317**	0.029	8.6	ug/L	14	Standard
	Se-1	77	105.0	8.3	**0.8037**	0.108	13.5	ug/L	42	Standard
>	**Ga**	71	56.7	13.5				mg/L	42	Standard
	Rb	85	343.3	5.1				ug/L	17	Standard
	Y	89	428520.0	1.9				ug/L	417098	Standard
>	**Rh**	103	38.3	27.2				ug/L	13	Standard
	Mo	98	38.4	23.3	**0.0089**	0.004	39.5	ug/L	11	Standard
	Ag	107	77.7	2.7	**-0.0008**	0.000	47.2	ug/L	68	Standard
	Cd	111	5.6	57.3	**-0.0052**	0.002	30.1	mg/L	2	Standard
	Cd	114	18.7	97.5	**0.0016**	0.004	227.0	ug/L	12	Standard
>	**In**	115	580343.3	0.7				ug/L	587441	Standard
	Sn	118	485.0	23.2	**-0.0106**	0.020	190.8	ug/L	497	Standard
	Sb	123	114.5	31.8	**0.0207**	0.008	39.1	ug/L	78	Standard
	Ba	135	150889.3	1.2	**74.6061**	0.512	0.7	ug/L	24	Standard
	Ce	140	123.3	15.3				ug/L	25	Standard
>	**Tb**	159	936316.1	1.2				ug/L	939701	Standard
	Ho	165	18.3	31.5				ug/L	10	Standard
	Tl	203	189.0	9.5	**0.0214**	0.002	8.8	ug/L	4	Standard
	Tl	205	161.7	6.4	**0.0230**	0.002	7.6	ug/L	2	Standard
	Pb	206	327.3	6.0	**-0.0093**	0.004	47.2	ug/L	240	Standard
	Pb	207	269.3	8.1	**-0.0127**	0.005	36.6	ug/L	198	Standard
	Pb	208	1102.3	4.7	**-0.0147**	0.003	21.5	ug/L	883	Standard
	U	238	62.7	10.4	**0.0048**	0.001	17.9	ug/L	3	Standard
>	**Bi**	209	519166.0	1.5				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	5325.9	0.2	**6.9463**	0.099	1.4	mg/L	37	Standard
K	39	75.0	37.1	**0.0544**	0.061	111.8	mg/L	38	Standard
Ca	43	86.7	3.3	**3.0583**	0.130	4.3	mg/L	10	Standard
Fe	54	170.8	11.8	**0.0094**	0.018	186.9	mg/L	179	Standard
Fe	57	311.7	10.3	**0.0068**	0.121	1775.6	mg/L	335	Standard
> **Sc-1**	45	59848.0	1.2				mg/L	61029	Standard
Cl	35	23747.3	1.3				ug/L	20195	Standard
Kr	83	2.7	78.1				ug/L	4	Standard
Br	81	11654.5	4.8				ug/L	1547	Standard
P	31	16051.8	4.0				ug/L	15286	Standard
S	34	1918.5	1.8				ug/L	1572	Standard
Sr	88	140.0	9.4				ug/L	73	Standard
C	12	53.3	39.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	12.2	186.8				mg/L	6	Standard
Ho-1	165	18.3	31.5				mg/L	10	Standard
Er	166	23.3	24.7				mg/L	13	Standard
I	127	13899.7	5.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.466	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.775	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.792
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.080
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606082303
Sample Date/Time: Wednesday, June 29, 2016 12:31:24
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76244.7	1.6				ug/L	74699	Standard
	Be	9	10.0	50.0	**0.0187**	0.005	28.8	ug/L	8	Standard
	Al	27	1789441.8	2.2	**11.9153**	0.077	0.6	ug/L	1493	Standard
	Sc	45	61370.7	1.9				ug/L	61029	Standard
	Ti	47	59.7	11.8	**0.0448**	0.018	40.0	ug/L	35	Standard
	V	51	1976.3	1.1	**0.0601**	0.005	8.2	ug/L	1435	Standard
	Cr	52	8828.6	1.1	**0.1403**	0.016	11.5	ug/L	7635	Standard
	Cr	53	945.0	0.5	**0.6692**	0.006	1.0	ug/L	363	Standard
	Mn	55	180374.5	2.7	**25.1617**	0.439	1.7	ug/L	747	Standard
	Co	59	619.0	3.1	**0.0543**	0.004	7.0	ug/L	234	Standard
	Ni	60	405.7	6.0	**0.0878**	0.011	12.8	ug/L	215	Standard
	Cu	65	208.0	10.3	**0.0056**	0.012	222.0	ug/L	104	Standard
	Zn	66	6989.3	1.3	**5.7979**	0.130	2.2	ug/L	363	Standard
>	**Ge**	72	506777.4	1.1				ug/L	495142	Standard
	As	75	17.4	166.6	**0.0747**	0.025	33.6	ug/L	-50	Standard
	Se	82	43.0	5.9	**0.2447**	0.022	8.9	ug/L	14	Standard
	Se-1	77	89.0	9.0	**0.5677**	0.097	17.0	ug/L	42	Standard
>	**Ga**	71	55.0	18.2				mg/L	42	Standard
	Rb	85	226.7	20.8				ug/L	17	Standard
	Y	89	430230.4	1.6				ug/L	417098	Standard
>	**Rh**	103	23.3	12.4				ug/L	13	Standard
	Mo	98	43.4	8.2	**0.0107**	0.002	14.5	ug/L	11	Standard
	Ag	107	80.3	9.2	**-0.0005**	0.001	248.5	ug/L	68	Standard
	Cd	111	11.9	16.8	**-0.0022**	0.001	43.2	mg/L	2	Standard
	Cd	114	28.1	50.1	**0.0034**	0.003	82.8	ug/L	12	Standard
>	**In**	115	584282.7	1.3				ug/L	587441	Standard
	Sn	118	445.0	7.0	**-0.0181**	0.005	24.8	ug/L	497	Standard
	Sb	123	113.1	24.2	**0.0201**	0.006	28.5	ug/L	78	Standard
	Ba	135	83408.3	1.0	**40.9596**	0.601	1.5	ug/L	24	Standard
	Ce	140	301.7	22.6				ug/L	25	Standard
>	**Tb**	159	946714.8	0.6				ug/L	939701	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	182.7	3.3	**0.0205**	0.001	3.9	ug/L	4	Standard
	Tl	205	160.0	30.8	**0.0227**	0.007	30.9	ug/L	2	Standard
	Pb	206	288.0	1.3	**-0.0170**	0.001	5.3	ug/L	240	Standard
	Pb	207	270.7	6.0	**-0.0126**	0.003	25.4	ug/L	198	Standard
	Pb	208	1097.0	10.5	**-0.0153**	0.006	38.6	ug/L	883	Standard
	U	238	866.7	1.0	**0.1222**	0.001	0.8	ug/L	3	Standard
>	**Bi**	209	520921.7	0.5				ug/L	523984	Standard

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Na	23	1.7	173.2	**19.3655**	33.533	173.2	mg/L	0	Standard
Mg	24	4915.8	1.0	**6.2466**	0.131	2.1	mg/L	37	Standard
K	39	50.0	20.0	**-0.0042**	0.023	541.6	mg/L	38	Standard
Ca	43	65.0	0.0	**1.5606**	0.079	5.0	mg/L	10	Standard
Fe	54	160.0	11.0	**-0.0035**	0.013	359.3	mg/L	179	Standard
Fe	57	281.7	9.1	**-0.1230**	0.068	55.3	mg/L	335	Standard
Sc-1	45	61370.7	1.9				mg/L	61029	Standard
Cl	35	23872.8	0.3				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	8675.8	8.1				ug/L	1547	Standard
P	31	16263.7	3.0				ug/L	15286	Standard
S	34	1945.1	6.6				ug/L	1572	Standard
Sr	88	130.0	24.0				ug/L	73	Standard
C	12	46.7	44.6				mg/L	63	Standard
N	14	6.7	86.6				mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	19.0	57.5				mg/L	6	Standard
Ho-1	165	8.3	34.6				mg/L	10	Standard
Er	166	20.0	100.0				mg/L	13	Standard
I	127	19577.6	2.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		102.070	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.350	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.462
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.415
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606082304
Sample Date/Time: Wednesday, June 29, 2016 12:34:35
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76966.7	2.1				ug/L	74699	Standard
	Be	9	8.3	91.7	**0.0169**	0.009	50.5	ug/L	8	Standard
	Al	27	441491.6	0.4	**2.9030**	0.060	2.1	ug/L	1493	Standard
	Sc	45	60155.9	2.7				ug/L	61029	Standard
	Ti	47	44.0	12.0	**0.0058**	0.013	219.4	ug/L	35	Standard
	V	51	1675.2	9.7	**0.0239**	0.019	79.8	ug/L	1435	Standard
	Cr	52	8137.2	4.7	**0.0630**	0.039	62.0	ug/L	7635	Standard
	Cr	53	611.7	11.7	**0.3248**	0.069	21.3	ug/L	363	Standard
	Mn	55	105254.7	1.8	**14.8182**	0.156	1.1	ug/L	747	Standard
	Co	59	259.7	5.8	**0.0017**	0.003	156.1	ug/L	234	Standard
	Ni	60	230.0	4.9	**-0.0022**	0.007	321.8	ug/L	215	Standard
	Cu	65	165.3	1.5	**-0.0157**	0.002	12.9	ug/L	104	Standard
	Zn	66	2212.5	1.5	**1.5507**	0.010	0.6	ug/L	363	Standard
>	**Ge**	72	500132.0	1.1				ug/L	495142	Standard
	As	75	21.8	38.4	**0.0789**	0.008	9.6	ug/L	-50	Standard
	Se	82	26.9	8.6	**0.1047**	0.023	22.2	ug/L	14	Standard
	Se-1	77	64.0	26.1	**0.2460**	0.230	93.4	ug/L	42	Standard
>	**Ga**	71	55.0	41.7				mg/L	42	Standard
	Rb	85	421.7	18.5				ug/L	17	Standard
	Y	89	429897.2	1.0				ug/L	417098	Standard
>	**Rh**	103	6.7	43.3				ug/L	13	Standard
	Mo	98	29.2	13.0	**0.0052**	0.001	25.4	ug/L	11	Standard
	Ag	107	87.7	6.3	**0.0005**	0.001	182.2	ug/L	68	Standard
	Cd	111	7.0	28.7	**-0.0046**	0.001	19.4	mg/L	2	Standard
	Cd	114	21.6	74.7	**0.0021**	0.003	150.8	ug/L	12	Standard
>	**In**	115	589054.0	1.8				ug/L	587441	Standard
	Sn	118	438.3	5.7	**-0.0199**	0.003	16.6	ug/L	497	Standard
	Sb	123	106.2	8.9	**0.0185**	0.002	12.5	ug/L	78	Standard
	Ba	135	25689.8	1.2	**12.5057**	0.379	3.0	ug/L	24	Standard
	Ce	140	65.0	26.6				ug/L	25	Standard
>	**Tb**	159	953435.2	1.7				ug/L	939701	Standard
	Ho	165	13.3	43.3				ug/L	10	Standard
	Tl	203	91.7	10.9	**0.0091**	0.001	12.8	ug/L	4	Standard
	Tl	205	101.7	11.4	**0.0141**	0.002	11.0	ug/L	2	Standard
	Pb	206	281.0	2.2	**-0.0197**	0.001	5.9	ug/L	240	Standard
	Pb	207	219.0	9.1	**-0.0248**	0.004	16.3	ug/L	198	Standard
	Pb	208	999.0	3.0	**-0.0219**	0.001	6.3	ug/L	883	Standard
	U	238	2.7	21.7	**-0.0040**	0.000	2.0	ug/L	3	Standard
>	**Bi**	209	535313.4	0.3				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	1101.7	8.8	**1.3766**	0.099	7.2	mg/L	37	Standard
K	39	50.0	26.5	**-0.0017**	0.031	1783.7	mg/L	38	Standard
Ca	43	43.3	17.6	**0.2622**	0.555	211.4	mg/L	10	Standard
Fe	54	1079.1	4.5	**0.7903**	0.045	5.7	mg/L	179	Standard
Fe	57	550.0	4.8	**0.8245**	0.134	16.2	mg/L	335	Standard
> **Sc-1**	45	60155.9	2.7				mg/L	61029	Standard
Cl	35	23751.9	0.9				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	3913.8	0.4				ug/L	1547	Standard
P	31	16552.4	4.0				ug/L	15286	Standard
S	34	1948.5	5.9				ug/L	1572	Standard
Sr	88	68.3	30.5				ug/L	73	Standard
C	12	63.3	36.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	19.7	135.8				mg/L	6	Standard
Ho-1	165	13.3	43.3				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	5207.6	8.4				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		103.036	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.008	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.275
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.162
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 12:37:48
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72653.8	1.6				ug/L	74699	Standard
	Be	9	42693.4	2.4	**49.8778**	1.581	3.2	ug/L	8	Standard
	Al	27	7018269.3	1.5	**49.0877**	0.211	0.4	ug/L	1493	Standard
	Sc	45	58700.2	1.7				ug/L	61029	Standard
	Ti	47	37360.7	1.5	**96.4941**	1.122	1.2	ug/L	35	Standard
	V	51	389361.0	0.6	**50.3345**	0.950	1.9	ug/L	1435	Standard
	Cr	52	377308.6	0.5	**48.8761**	0.835	1.7	ug/L	7635	Standard
	Cr	53	46063.3	3.3	**48.5325**	2.229	4.6	ug/L	363	Standard
	Mn	55	355991.7	2.4	**49.9570**	0.746	1.5	ug/L	747	Standard
	Co	59	341523.2	1.7	**50.6452**	0.528	1.0	ug/L	234	Standard
	Ni	60	94080.5	0.6	**49.1230**	0.490	1.0	ug/L	215	Standard
	Cu	65	95078.4	0.9	**49.9689**	1.178	2.4	ug/L	104	Standard
	Zn	66	56040.5	0.8	**49.8274**	0.722	1.4	ug/L	363	Standard
>	Ge	72	505267.2	1.6				ug/L	495142	Standard
	As	75	56871.7	1.3	**49.8175**	0.372	0.7	ug/L	-50	Standard
	Se	82	5593.2	2.1	**49.8004**	0.347	0.7	ug/L	14	Standard
	Se-1	77	3775.1	1.7	**50.0311**	0.568	1.1	ug/L	42	Standard
>	Ga	71	75.0	13.3				mg/L	42	Standard
	Rb	85	800.0	10.3				ug/L	17	Standard
	Y	89	408700.7	0.8				ug/L	417098	Standard
>	Rh	103	18.3	41.7				ug/L	13	Standard
	Mo	98	257910.1	1.9	**100.4657**	4.126	4.1	ug/L	11	Standard
	Ag	107	316989.6	1.3	**50.4692**	0.906	1.8	ug/L	68	Standard
	Cd	111	101914.0	1.0	**50.5948**	1.545	3.1	mg/L	2	Standard
	Cd	114	242699.9	2.4	**49.1311**	2.013	4.1	ug/L	12	Standard
>	In	115	566154.7	2.7				ug/L	587441	Standard
	Sn	118	281464.1	1.7	**49.9153**	1.113	2.2	ug/L	497	Standard
	Sb	123	227316.6	0.8	**50.5420**	1.534	3.0	ug/L	78	Standard
	Ba	135	98379.4	0.9	**49.8785**	1.233	2.5	ug/L	24	Standard
	Ce	140	113.3	20.8				ug/L	25	Standard
>	Tb	159	932106.1	1.1				ug/L	939701	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	406761.4	0.1	**49.7003**	0.911	1.8	ug/L	4	Standard
	Tl	205	354916.5	2.0	**49.9771**	1.877	3.8	ug/L	2	Standard
	Pb	206	263562.6	0.6	**49.6234**	0.874	1.8	ug/L	240	Standard
	Pb	207	235278.4	0.8	**49.8612**	1.016	2.0	ug/L	198	Standard
	Pb	208	929662.3	0.8	**49.8673**	1.247	2.5	ug/L	883	Standard
	U	238	336021.4	1.5	**49.1730**	1.579	3.2	ug/L	3	Standard
>	Bi	209	520331.8	1.7				ug/L	523984	Standard

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Na	23	1.7	173.2	**19.5945**	33.930	173.2	mg/L	0	Standard
Mg	24	3858.8	4.6	**5.1144**	0.246	4.8	mg/L	37	Standard
K	39	2055.1	3.6	**4.6098**	0.203	4.4	mg/L	38	Standard
Ca	43	130.0	23.4	**5.9979**	1.898	31.6	mg/L	10	Standard
Fe	54	5737.9	3.9	**4.9227**	0.278	5.7	mg/L	179	Standard
Fe	57	1583.4	3.8	**4.5245**	0.301	6.7	mg/L	335	Standard
Sc-1	45	58700.2	1.7				mg/L	61029	Standard
Cl	35	23099.6	1.9				ug/L	20195	Standard
Kr	83	2.3	65.5				ug/L	4	Standard
Br	81	1760.1	10.8				ug/L	1547	Standard
P	31	17002.9	0.9				ug/L	15286	Standard
S	34	2305.2	8.6				ug/L	1572	Standard
Sr	88	76.7	10.0				ug/L	73	Standard
C	12	60.0	33.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	9.0	191.6				mg/L	6	Standard
Ho-1	165	8.3	91.7				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	2030.1	31.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	99.756		
Al	27	98.175		
Sc	45			
Ti	47	96.494		
V	51	100.669		
Cr	52	97.752		
Cr	53			
Mn	55	99.914		
Co	59	101.290		
Ni	60	98.246		
Cu	65	99.938		
Zn	66	99.655		
Ge	72		102.045	
As	75	99.635		
Se	82	99.601		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	100.466		
Ag	107	100.938		
Cd	111	101.190		
Cd	114			
> In	115			96.376
Sn	118	99.831		
Sb	123	101.084		
Ba	135	99.757		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.401		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.735		
U	238	98.346		
> Bi	209			99.303
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 12:40:59
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73745.7	1.0				ug/L	74699	Standard
	Be	9	45.0	86.8	**0.0596**	0.045	76.2	ug/L	8	Standard
	Al	27	10763.7	138.2	**0.0612**	0.103	168.8	ug/L	1493	Standard
	Sc	45	59794.4	0.5				ug/L	61029	Standard
	Ti	47	63.7	40.2	**0.0565**	0.070	123.9	ug/L	35	Standard
	V	51	1309.0	5.1	**-0.0256**	0.009	36.2	ug/L	1435	Standard
	Cr	52	7144.0	4.7	**-0.0780**	0.064	81.5	ug/L	7635	Standard
	Cr	53	391.7	5.2	**0.0859**	0.030	34.5	ug/L	363	Standard
	Mn	55	2203.3	114.3	**0.1667**	0.364	218.6	ug/L	747	Standard
	Co	59	375.0	36.8	**0.0187**	0.022	116.6	ug/L	234	Standard
	Ni	60	226.7	25.3	**-0.0048**	0.033	679.9	ug/L	215	Standard
	Cu	65	137.7	45.7	**-0.0307**	0.035	113.4	ug/L	104	Standard
	Zn	66	391.7	8.9	**-0.1025**	0.038	37.5	ug/L	363	Standard
>	**Ge**	72	505094.9	1.9				ug/L	495142	Standard
	As	75	-30.0	135.0	**0.0336**	0.035	105.0	ug/L	-50	Standard
	Se	82	18.1	21.6	**0.0240**	0.035	145.0	ug/L	14	Standard
	Se-1	77	51.7	16.7	**0.0700**	0.104	148.9	ug/L	42	Standard
>	**Ga**	71	55.0	27.3				mg/L	42	Standard
	Rb	85	30.0	72.6				ug/L	17	Standard
	Y	89	416389.1	0.5				ug/L	417098	Standard
>	**Rh**	103	18.3	56.8				ug/L	13	Standard
	Mo	98	292.6	24.5	**0.1060**	0.029	27.7	ug/L	11	Standard
	Ag	107	123.7	36.8	**0.0063**	0.007	108.0	ug/L	68	Standard
	Cd	111	19.1	60.5	**0.0013**	0.005	411.5	mg/L	2	Standard
	Cd	114	51.4	75.2	**0.0080**	0.007	93.3	ug/L	12	Standard
>	**In**	115	578912.4	1.7				ug/L	587441	Standard
	Sn	118	756.7	23.6	**0.0364**	0.029	79.3	ug/L	497	Standard
	Sb	123	391.4	30.7	**0.0806**	0.025	30.9	ug/L	78	Standard
	Ba	135	64.3	74.2	**0.0157**	0.023	147.1	ug/L	24	Standard
	Ce	140	98.3	142.4				ug/L	25	Standard
>	**Tb**	159	938659.9	2.1				ug/L	939701	Standard
	Ho	165	16.7	45.8				ug/L	10	Standard
	Tl	203	80.3	33.4	**0.0079**	0.003	39.1	ug/L	4	Standard
	Tl	205	263.3	142.0	**0.0362**	0.051	140.6	ug/L	2	Standard
	Pb	206	290.0	20.9	**-0.0175**	0.011	60.1	ug/L	240	Standard
	Pb	207	255.0	4.1	**-0.0168**	0.002	14.3	ug/L	198	Standard
	Pb	208	1806.4	80.0	**0.0207**	0.074	360.4	ug/L	883	Standard
	U	238	234.3	149.2	**0.0289**	0.049	171.5	ug/L	3	Standard
>	**Bi**	209	529175.1	1.6				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	48.3	47.8	**-0.0014**	0.030	2108.5	mg/L	37	Standard
K	39	68.3	15.2	**0.0400**	0.023	56.9	mg/L	38	Standard
Ca	43	21.7	74.2	**-1.1227**	1.047	93.2	mg/L	10	Standard
Fe	54	169.2	23.1	**0.0081**	0.034	414.8	mg/L	179	Standard
Fe	57	310.0	16.4	**0.0019**	0.182	9789.6	mg/L	335	Standard
> **Sc-1**	45	59794.4	0.5				mg/L	61029	Standard
Cl	35	23378.7	0.4				ug/L	20195	Standard
Kr	83	4.3	58.1				ug/L	4	Standard
Br	81	1630.1	3.1				ug/L	1547	Standard
P	31	16767.6	2.6				ug/L	15286	Standard
S	34	2153.5	8.8				ug/L	1572	Standard
Sr	88	65.0	27.7				ug/L	73	Standard
C	12	66.7	17.3				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	9.4	186.5				mg/L	6	Standard
Ho-1	165	16.7	45.8				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	1680.1	29.1				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		102.010	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.548
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.991
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Wednesday, June 29, 2016 12:43:16
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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Wednesday, June 29, 2016 12:44:12
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71218.7	0.8				ug/L	74699	Standard
	Be	9	178.3	13.3	**0.2201**	0.029	13.2	ug/L	8	Standard
	Al	27	1766.8	29.5	**-0.0008**	0.004	458.8	ug/L	1493	Standard
	Sc	45	56025.1	1.1				ug/L	61029	Standard
	Ti	47	28.0	7.1	**-0.0318**	0.007	20.5	ug/L	35	Standard
	V	51	4079.9	5.1	**0.3696**	0.041	11.2	ug/L	1435	Standard
	Cr	52	12699.0	0.7	**0.7676**	0.041	5.4	ug/L	7635	Standard
	Cr	53	1050.0	6.6	**0.8579**	0.085	9.9	ug/L	363	Standard
	Mn	55	4110.2	0.9	**0.4692**	0.021	4.5	ug/L	747	Standard
	Co	59	2790.3	0.6	**0.4045**	0.014	3.5	ug/L	234	Standard
	Ni	60	2962.3	1.6	**1.5299**	0.023	1.5	ug/L	215	Standard
	Cu	65	1521.1	1.5	**0.7509**	0.034	4.5	ug/L	104	Standard
	Zn	66	7672.3	2.1	**6.8861**	0.035	0.5	ug/L	363	Standard
>	**Ge**	72	473802.8	2.6				ug/L	495142	Standard
	As	75	358.5	4.9	**0.3943**	0.021	5.3	ug/L	-50	Standard
	Se	82	48.3	16.1	**0.3230**	0.086	26.5	ug/L	14	Standard
	Se-1	77	78.0	9.0	**0.4927**	0.075	15.2	ug/L	42	Standard
>	**Ga**	71	35.0	24.7				mg/L	42	Standard
	Rb	85	21.7	35.3				ug/L	17	Standard
	Y	89	406616.3	2.6				ug/L	417098	Standard
>	**Rh**	103	13.3	43.3				ug/L	13	Standard
	Mo	98	80.8	10.7	**0.0260**	0.003	11.1	ug/L	11	Standard
	Ag	107	2461.5	2.7	**0.3827**	0.004	1.0	ug/L	68	Standard
	Cd	111	469.2	3.6	**0.2272**	0.006	2.5	mg/L	2	Standard
	Cd	114	1121.7	10.1	**0.2273**	0.026	11.5	ug/L	12	Standard
>	**In**	115	560717.1	1.7				ug/L	587441	Standard
	Sn	118	496.7	12.6	**-0.0055**	0.012	217.4	ug/L	497	Standard
	Sb	123	1804.7	2.2	**0.4010**	0.016	3.9	ug/L	78	Standard
	Ba	135	1433.1	2.6	**0.7176**	0.020	2.8	ug/L	24	Standard
	Ce	140	53.3	43.3				ug/L	25	Standard
>	**Tb**	159	901191.9	2.3				ug/L	939701	Standard
	Ho	165	5.0	0.0				ug/L	10	Standard
	Tl	203	658.3	6.7	**0.0809**	0.005	6.0	ug/L	4	Standard
	Tl	205	580.0	6.7	**0.0841**	0.005	5.7	ug/L	2	Standard
	Pb	206	1314.1	4.2	**0.1836**	0.008	4.1	ug/L	240	Standard
	Pb	207	1090.4	5.0	**0.1679**	0.009	5.1	ug/L	198	Standard
	Pb	208	4577.3	1.3	**0.1788**	0.005	3.0	ug/L	883	Standard
	U	238	2625.2	2.7	**0.3906**	0.007	1.9	ug/L	3	Standard
>	**Bi**	209	505831.0	1.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	40.0	12.5	**-0.0088**	0.007	78.9	mg/L	37	Standard
K	39	38.3	19.9	**-0.0218**	0.018	84.6	mg/L	38	Standard
Ca	43	36.7	75.1	**-0.0119**	1.877	15817.5	mg/L	10	Standard
Fe	54	97.1	24.3	**-0.0484**	0.023	47.3	mg/L	179	Standard
Fe	57	295.0	11.9	**0.0175**	0.123	699.1	mg/L	335	Standard
Sc-1	45	56025.1	1.1				mg/L	61029	Standard
Cl	35	22767.8	1.3				ug/L	20195	Standard
Kr	83	2.7	57.3				ug/L	4	Standard
Br	81	1303.4	5.0				ug/L	1547	Standard
P	31	11956.4	1.3				ug/L	15286	Standard
S	34	2061.8	6.1				ug/L	1572	Standard
Sr	88	80.0	22.5				ug/L	73	Standard
C	12	80.0	33.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	0.0					mg/L	6	Standard
Ho-1	165	5.0	0.0				mg/L	10	Standard
Er	166	0.0					mg/L	13	Standard
I	127	1360.1	35.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	110.075		
Al	27			
Sc	45			
Ti	47			
V	51	92.400		
Cr	52	95.955		
Cr	53			
Mn	55	93.844		
Co	59	101.134		
Ni	60	95.616		
Cu	65	93.867		
Zn	66	110.178		
Ge	72		95.690	
As	75	98.586		
Se	82	80.738		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	95.685		
Cd	111	94.646		
Cd	114			
> In	115			95.451
Sn	118			
Sb	123	100.239		
Ba	135	95.683		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.186		
Tl	205			
Pb	206			
Pb	207			
Pb	208	89.410		
U	238	97.655		
> Bi	209			96.535
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
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Method 6020 - Summary Report

Sample ID: PBW 7 WG573548-02
Sample Date/Time: Wednesday, June 29, 2016 12:53:54
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74857.8	1.6				ug/L	74699	Standard
	Be	9	16.7	75.5	**0.0264**	0.014	53.3	ug/L	8	Standard
	Al	27	80794.9	2.0	**0.5353**	0.014	2.5	ug/L	1493	Standard
	Sc	45	58461.0	3.0				ug/L	61029	Standard
	Ti	47	78.0	5.9	**0.0921**	0.013	14.5	ug/L	35	Standard
	V	51	1804.8	0.8	**0.0380**	0.004	11.0	ug/L	1435	Standard
	Cr	52	9792.5	0.9	**0.2676**	0.021	7.7	ug/L	7635	Standard
	Cr	53	633.3	5.7	**0.3397**	0.038	11.1	ug/L	363	Standard
	Mn	55	7868.0	0.9	**0.9563**	0.019	2.0	ug/L	747	Standard
	Co	59	389.7	6.7	**0.0204**	0.003	16.2	ug/L	234	Standard
	Ni	60	396.3	4.2	**0.0829**	0.008	9.4	ug/L	215	Standard
	Cu	65	182.0	8.2	**-0.0081**	0.009	109.2	ug/L	104	Standard
	Zn	66	1432.4	5.9	**0.8274**	0.087	10.5	ug/L	363	Standard
>	**Ge**	72	506709.7	1.0				ug/L	495142	Standard
	As	75	61.7	54.0	**0.1136**	0.029	25.8	ug/L	-50	Standard
	Se	82	57.7	7.0	**0.3762**	0.040	10.6	ug/L	14	Standard
	Se-1	77	48.3	5.2	**0.0243**	0.031	128.3	ug/L	42	Standard
>	**Ga**	71	106.7	35.5				mg/L	42	Standard
	Rb	85	413.3	4.9				ug/L	17	Standard
	Y	89	414741.4	0.4				ug/L	417098	Standard
>	**Rh**	103	15.0	100.0				ug/L	13	Standard
	Mo	98	46.5	23.9	**0.0125**	0.004	33.5	ug/L	11	Standard
	Ag	107	1549.7	3.3	**0.2354**	0.012	5.1	ug/L	68	Standard
	Cd	111	17.2	8.9	**0.0007**	0.001	113.7	mg/L	2	Standard
	Cd	114	63.6	36.2	**0.0109**	0.005	44.4	ug/L	12	Standard
>	**In**	115	562869.1	1.7				ug/L	587441	Standard
	Sn	118	736.7	11.6	**0.0370**	0.017	44.6	ug/L	497	Standard
	Sb	123	216.9	10.9	**0.0443**	0.006	12.6	ug/L	78	Standard
	Ba	135	906.0	5.8	**0.4461**	0.030	6.6	ug/L	24	Standard
	Ce	140	1735.1	5.3				ug/L	25	Standard
>	**Tb**	159	918530.3	1.8				ug/L	939701	Standard
	Ho	165	31.7	32.9				ug/L	10	Standard
	Tl	203	89.3	15.5	**0.0092**	0.002	18.3	ug/L	4	Standard
	Tl	205	86.7	13.3	**0.0124**	0.002	13.0	ug/L	2	Standard
	Pb	206	378.0	4.1	**0.0001**	0.003	2503.4	ug/L	240	Standard
	Pb	207	310.7	3.7	**-0.0040**	0.002	56.8	ug/L	198	Standard
	Pb	208	1268.7	1.9	**-0.0059**	0.001	22.1	ug/L	883	Standard
	U	238	52.0	18.9	**0.0032**	0.001	44.2	ug/L	3	Standard
>	**Bi**	209	520017.2	0.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	98.3	32.7	**0.0678**	0.045	67.0	mg/L	37	Standard
K	39	61.7	9.4	**0.0281**	0.012	42.4	mg/L	38	Standard
Ca	43	31.7	55.5	**-0.4154**	1.202	289.4	mg/L	10	Standard
Fe	54	153.7	8.4	**-0.0024**	0.007	308.5	mg/L	179	Standard
Fe	57	316.7	15.8	**0.0490**	0.173	353.8	mg/L	335	Standard
> **Sc-1**	45	58461.0	3.0				mg/L	61029	Standard
Cl	35	22819.8	1.0				ug/L	20195	Standard
Kr	83	3.7	31.5				ug/L	4	Standard
Br	81	12281.6	4.1				ug/L	1547	Standard
P	31	15094.2	2.5				ug/L	15286	Standard
S	34	1958.5	7.0				ug/L	1572	Standard
Sr	88	78.3	19.5				ug/L	73	Standard
C	12	96.7	21.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	48.1	42.1				mg/L	6	Standard
Ho-1	165	31.7	32.9				mg/L	10	Standard
Er	166	40.0	25.0				mg/L	13	Standard
I	127	2060.1	27.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.213	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.336	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	95.817
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	99.243
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 7 WG573548-03
Sample Date/Time: Wednesday, June 29, 2016 12:57:05
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75779.1	1.4				ug/L	74699	Standard
	Be	9	44266.3	2.0	**49.5806**	1.413	2.8	ug/L	8	Standard
	Al	27	95277.1	2.2	**0.6259**	0.022	3.5	ug/L	1493	Standard
	Sc	45	60008.6	1.7				ug/L	61029	Standard
	Ti	47	61.3	19.5	**0.0533**	0.033	61.1	ug/L	35	Standard
	V	51	383994.5	1.5	**50.7641**	0.334	0.7	ug/L	1435	Standard
	Cr	52	391642.5	1.8	**51.9470**	0.996	1.9	ug/L	7635	Standard
	Cr	53	48176.5	1.3	**51.9174**	0.408	0.8	ug/L	363	Standard
	Mn	55	379234.4	0.1	**54.4505**	0.406	0.7	ug/L	747	Standard
	Co	59	337441.4	0.9	**51.1841**	0.650	1.3	ug/L	234	Standard
	Ni	60	96944.2	1.6	**51.7745**	0.652	1.3	ug/L	215	Standard
	Cu	65	97447.4	0.9	**52.3759**	0.338	0.6	ug/L	104	Standard
	Zn	66	58710.9	1.4	**53.4195**	0.683	1.3	ug/L	363	Standard
>	**Ge**	72	493989.7	0.8				ug/L	495142	Standard
	As	75	54420.0	2.0	**48.7560**	0.745	1.5	ug/L	-50	Standard
	Se	82	5499.8	2.1	**50.0913**	1.110	2.2	ug/L	14	Standard
	Se-1	77	3757.5	2.3	**50.9460**	1.277	2.5	ug/L	42	Standard
>	**Ga**	71	331.7	6.3				mg/L	42	Standard
	Rb	85	1905.1	7.7				ug/L	17	Standard
	Y	89	430193.5	2.2				ug/L	417098	Standard
>	**Rh**	103	21.7	13.3				ug/L	13	Standard
	Mo	98	200.3	5.0	**0.0686**	0.004	5.6	ug/L	11	Standard
	Ag	107	325181.2	0.5	**49.3255**	0.456	0.9	ug/L	68	Standard
	Cd	111	102382.7	0.7	**48.4138**	0.589	1.2	mg/L	2	Standard
	Cd	114	246010.3	1.2	**47.4297**	0.453	1.0	ug/L	12	Standard
>	**In**	115	594099.2	0.9				ug/L	587441	Standard
	Sn	118	733.4	7.5	**0.0295**	0.010	35.4	ug/L	497	Standard
	Sb	123	222790.7	0.6	**47.1842**	0.681	1.4	ug/L	78	Standard
	Ba	135	100456.3	0.7	**48.5175**	0.574	1.2	ug/L	24	Standard
	Ce	140	3297.0	2.9				ug/L	25	Standard
>	**Tb**	159	953975.0	2.3				ug/L	939701	Standard
	Ho	165	81.7	3.5				ug/L	10	Standard
	Tl	203	411383.7	1.0	**49.0691**	0.983	2.0	ug/L	4	Standard
	Tl	205	358822.0	2.1	**49.3118**	1.192	2.4	ug/L	2	Standard
	Pb	206	272876.4	0.6	**50.1549**	0.805	1.6	ug/L	240	Standard
	Pb	207	232281.8	1.2	**48.0517**	0.976	2.0	ug/L	198	Standard
	Pb	208	938885.2	1.2	**49.1601**	1.120	2.3	ug/L	883	Standard
	U	238	337957.9	0.3	**48.2703**	0.691	1.4	ug/L	3	Standard
>	**Bi**	209	532979.3	1.2				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	40.0	12.5	**-0.0126**	0.007	52.7	mg/L	37	Standard
K	39	58.3	21.6	**0.0173**	0.030	174.9	mg/L	38	Standard
Ca	43	60.0	16.7	**1.3313**	0.636	47.7	mg/L	10	Standard
Fe	54	427.3	5.7	**0.2300**	0.018	7.6	mg/L	179	Standard
Fe	57	393.3	4.8	**0.2864**	0.089	31.1	mg/L	335	Standard
> **Sc-1**	45	60008.6	1.7				mg/L	61029	Standard
Cl	35	22904.0	1.4				ug/L	20195	Standard
Kr	83	0.7	86.6				ug/L	4	Standard
Br	81	1933.5	11.4				ug/L	1547	Standard
P	31	15693.1	2.0				ug/L	15286	Standard
S	34	1913.5	5.4				ug/L	1572	Standard
Sr	88	85.0	21.2				ug/L	73	Standard
C	12	106.7	37.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	149.3	43.4				mg/L	6	Standard
Ho-1	165	81.7	3.5				mg/L	10	Standard
Er	166	83.3	45.4				mg/L	13	Standard
I	127	1690.1	32.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.446	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.767	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.133
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.717
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 7 WG573548-03
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Method 6020 - Summary Report

Sample ID: L1606098623 WG573548-01
Sample Date/Time: Wednesday, June 29, 2016 13:00:17
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85536.1	4.6				ug/L	74699	Standard
	Be	9	131.7	4.4	**0.1385**	0.009	6.7	ug/L	8	Standard
	Al	27	51229429.5	1.9	**304.6734**	8.454	2.8	ug/L	1493	Standard
	Sc	45	58156.4	0.7				ug/L	61029	Standard
	Ti	47	291.7	4.0	**0.6976**	0.027	3.9	ug/L	35	Standard
	V	51	2731.2	8.5	**0.1837**	0.035	19.3	ug/L	1435	Standard
	Cr	52	11798.6	2.2	**0.6453**	0.034	5.3	ug/L	7635	Standard
	Cr	53	1541.7	10.7	**1.4199**	0.200	14.1	ug/L	363	Standard
	Mn	55	1519614.4	1.3	**228.6645**	1.850	0.8	ug/L	747	Standard
	Co	59	1958.8	0.9	**0.2737**	0.000	0.1	ug/L	234	Standard
	Ni	60	5664.7	1.6	**3.0483**	0.071	2.3	ug/L	215	Standard
	Cu	65	19925.4	0.1	**11.1201**	0.082	0.7	ug/L	104	Standard
	Zn	66	6263.0	2.6	**5.5559**	0.126	2.3	ug/L	363	Standard
>	**Ge**	72	472304.7	0.8				ug/L	495142	Standard
	As	75	721.9	3.2	**0.7353**	0.022	3.1	ug/L	-50	Standard
	Se	82	400.4	3.0	**3.6870**	0.142	3.9	ug/L	14	Standard
	Se-1	77	187.0	7.2	**2.0610**	0.173	8.4	ug/L	42	Standard
>	**Ga**	71	100.0	8.7				mg/L	42	Standard
	Rb	85	5192.6	2.9				ug/L	17	Standard
	Y	89	424150.6	2.5				ug/L	417098	Standard
>	**Rh**	103	291.7	21.8				ug/L	13	Standard
	Mo	98	1037.1	3.0	**0.3904**	0.016	4.1	ug/L	11	Standard
	Ag	107	150.3	11.8	**0.0106**	0.003	25.5	ug/L	68	Standard
	Cd	111	86.5	9.0	**0.0342**	0.004	11.5	mg/L	2	Standard
	Cd	114	235.1	23.0	**0.0445**	0.010	23.2	ug/L	12	Standard
>	**In**	115	577173.5	1.1				ug/L	587441	Standard
	Sn	118	1115.0	2.8	**0.0996**	0.004	4.3	ug/L	497	Standard
	Sb	123	1725.9	23.2	**0.3715**	0.084	22.5	ug/L	78	Standard
	Ba	135	22344.1	0.8	**11.0965**	0.201	1.8	ug/L	24	Standard
	Ce	140	1543.4	4.9				ug/L	25	Standard
>	**Tb**	159	936227.5	1.2				ug/L	939701	Standard
	Ho	165	78.3	35.2				ug/L	10	Standard
	Tl	203	240.0	4.8	**0.0287**	0.001	5.1	ug/L	4	Standard
	Tl	205	171.7	9.4	**0.0253**	0.002	9.3	ug/L	2	Standard
	Pb	206	666.7	6.9	**0.0592**	0.009	15.2	ug/L	240	Standard
	Pb	207	558.7	0.1	**0.0529**	0.000	0.3	ug/L	198	Standard
	Pb	208	2267.7	0.3	**0.0522**	0.000	0.9	ug/L	883	Standard
	U	238	28225.3	0.9	**4.2785**	0.042	1.0	ug/L	3	Standard
>	**Bi**	209	501665.1	0.1				ug/L	523984	Standard

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Na	23	13.3	43.3	**161.5718**	71.131	44.0	mg/L	0	Standard
Mg	24	24900.4	1.1	**33.6647**	0.149	0.4	mg/L	37	Standard
K	39	1233.4	1.4	**2.7469**	0.062	2.2	mg/L	38	Standard
Ca	43	1560.1	5.5	**100.8648**	4.911	4.9	mg/L	10	Standard
Fe	54	167.1	25.8	**0.0105**	0.039	372.7	mg/L	179	Standard
Fe	57	958.4	6.3	**2.3440**	0.212	9.0	mg/L	335	Standard
Sc-1	45	58156.4	0.7				mg/L	61029	Standard
Cl	35	40465.3	2.5				ug/L	20195	Standard
Kr	83	2.7	57.3				ug/L	4	Standard
Br	81	58241.9	4.1				ug/L	1547	Standard
P	31	17453.4	1.6				ug/L	15286	Standard
S	34	1810.1	8.9				ug/L	1572	Standard
Sr	88	1313.4	8.1				ug/L	73	Standard
C	12	273.3	15.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	3	Standard
Dy	164	89.3	16.3				mg/L	6	Standard
Ho-1	165	78.3	35.2				mg/L	10	Standard
Er	166	83.3	18.3				mg/L	13	Standard
I	127	135078.2	7.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		114.508	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.388	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.252
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.740
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606098635S WG573548-04
Sample Date/Time: Wednesday, June 29, 2016 13:03:28
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	96645.6	0.2				ug/L	74699	Standard
	Be	9	56332.9	2.6	**49.4619**	1.222	2.5	ug/L	8	Standard
	Al	27	56565131.5	1.0	**297.4859**	3.609	1.2	ug/L	1493	Standard
	Sc	45	58999.8	4.0				ug/L	61029	Standard
	Ti	47	369.0	11.5	**0.8968**	0.108	12.0	ug/L	35	Standard
	V	51	390242.6	0.5	**53.2266**	0.984	1.8	ug/L	1435	Standard
	Cr	52	371857.5	2.1	**50.8419**	0.408	0.8	ug/L	7635	Standard
	Cr	53	46974.4	2.3	**52.2114**	1.040	2.0	ug/L	363	Standard
	Mn	55	1851169.7	0.3	**274.7367**	3.654	1.3	ug/L	747	Standard
	Co	59	350457.1	0.5	**54.8326**	0.988	1.8	ug/L	234	Standard
	Ni	60	94372.4	2.0	**51.9777**	0.274	0.5	ug/L	215	Standard
	Cu	65	115580.4	2.6	**64.0828**	0.734	1.1	ug/L	104	Standard
	Zn	66	61118.4	0.5	**57.3902**	0.612	1.1	ug/L	363	Standard
>	**Ge**	72	478993.7	1.6				ug/L	495142	Standard
	As	75	59122.1	0.8	**54.6260**	0.454	0.8	ug/L	-50	Standard
	Se	82	6294.5	0.9	**59.1515**	0.578	1.0	ug/L	14	Standard
	Se-1	77	4101.2	2.7	**57.4162**	0.662	1.2	ug/L	42	Standard
>	**Ga**	71	100.0	18.0				mg/L	42	Standard
	Rb	85	5364.3	1.3				ug/L	17	Standard
	Y	89	423648.2	2.3				ug/L	417098	Standard
>	**Rh**	103	290.0	15.8				ug/L	13	Standard
	Mo	98	1231.1	6.2	**0.4537**	0.027	5.8	ug/L	11	Standard
	Ag	107	140053.7	1.3	**21.3673**	0.341	1.6	ug/L	68	Standard
	Cd	111	101619.5	1.1	**48.3438**	0.154	0.3	mg/L	2	Standard
	Cd	114	248812.6	0.3	**48.2667**	0.577	1.2	ug/L	12	Standard
>	**In**	115	590497.7	1.3				ug/L	587441	Standard
	Sn	118	1276.7	2.9	**0.1227**	0.007	5.6	ug/L	497	Standard
	Sb	123	230648.9	1.4	**49.1452**	0.703	1.4	ug/L	78	Standard
	Ba	135	121100.4	1.0	**58.8551**	1.255	2.1	ug/L	24	Standard
	Ce	140	1580.1	12.1				ug/L	25	Standard
>	**Tb**	159	967679.2	1.8				ug/L	939701	Standard
	Ho	165	70.0	12.4				ug/L	10	Standard
	Tl	203	411213.8	0.9	**50.0486**	0.144	0.3	ug/L	4	Standard
	Tl	205	371375.3	1.6	**52.0881**	1.342	2.6	ug/L	2	Standard
	Pb	206	271184.0	0.3	**50.8655**	0.565	1.1	ug/L	240	Standard
	Pb	207	230172.1	0.3	**48.5918**	0.740	1.5	ug/L	198	Standard
	Pb	208	934549.0	0.8	**49.9358**	0.874	1.8	ug/L	883	Standard
	U	238	386476.6	1.1	**56.3336**	1.024	1.8	ug/L	3	Standard
>	**Bi**	209	522269.6	1.2				ug/L	523984	Standard

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Na	23	8.3	91.7	**99.7813**	89.869	90.1	mg/L	0	Standard
Mg	24	26446.4	1.6	**35.2703**	0.863	2.4	mg/L	37	Standard
K	39	1201.7	4.6	**2.6333**	0.063	2.4	mg/L	38	Standard
Ca	43	1648.4	4.4	**105.1755**	1.490	1.4	mg/L	10	Standard
Fe	54	207.2	35.2	**0.0431**	0.061	140.9	mg/L	179	Standard
Fe	57	976.7	6.7	**2.3580**	0.131	5.6	mg/L	335	Standard
Sc-1	45	58999.8	4.0				mg/L	61029	Standard
Cl	35	42664.0	0.9				ug/L	20195	Standard
Kr	83	3.0	33.3				ug/L	4	Standard
Br	81	62512.1	2.5				ug/L	1547	Standard
P	31	18094.1	2.0				ug/L	15286	Standard
S	34	1855.1	3.1				ug/L	1572	Standard
Sr	88	1376.7	4.2				ug/L	73	Standard
C	12	206.7	24.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	73.5	28.0				mg/L	6	Standard
Ho-1	165	70.0	12.4				mg/L	10	Standard
Er	166	66.7	34.6				mg/L	13	Standard
I	127	146421.6	4.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		129.380	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.739	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.520
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.673
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606098637SD WG573548-05
Sample Date/Time: Wednesday, June 29, 2016 13:06:39
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	99478.9	1.8				ug/L	74699	Standard
	Be	9	55809.3	1.7	**47.6121**	0.679	1.4	ug/L	8	Standard
	Al	27	57079276.5	2.7	**291.6498**	6.801	2.3	ug/L	1493	Standard
	Sc	45	56220.8	1.7				ug/L	61029	Standard
	Ti	47	357.7	29.4	**0.8728**	0.310	35.5	ug/L	35	Standard
	V	51	392795.1	0.3	**53.7087**	1.385	2.6	ug/L	1435	Standard
	Cr	52	364211.2	1.2	**49.9063**	1.054	2.1	ug/L	7635	Standard
	Cr	53	45092.0	2.6	**50.2220**	0.967	1.9	ug/L	363	Standard
	Mn	55	1864825.2	1.1	**277.4410**	6.534	2.4	ug/L	747	Standard
	Co	59	357216.6	1.3	**56.0166**	0.665	1.2	ug/L	234	Standard
	Ni	60	94064.4	0.7	**51.9434**	1.099	2.1	ug/L	215	Standard
	Cu	65	96872.1	1.3	**53.8290**	0.581	1.1	ug/L	104	Standard
	Zn	66	56756.1	1.1	**53.3877**	0.715	1.3	ug/L	363	Standard
>	**Ge**	72	477920.9	2.4				ug/L	495142	Standard
	As	75	58834.8	0.8	**54.4924**	0.918	1.7	ug/L	-50	Standard
	Se	82	6411.7	0.6	**60.4029**	1.057	1.7	ug/L	14	Standard
	Se-1	77	4156.6	3.0	**58.3446**	1.540	2.6	ug/L	42	Standard
>	**Ga**	71	126.7	16.4				mg/L	42	Standard
	Rb	85	5344.3	1.7				ug/L	17	Standard
	Y	89	425761.1	0.9				ug/L	417098	Standard
>	**Rh**	103	338.3	14.4				ug/L	13	Standard
	Mo	98	943.7	3.1	**0.3564**	0.013	3.7	ug/L	11	Standard
	Ag	107	126054.2	0.9	**19.7696**	0.296	1.5	ug/L	68	Standard
	Cd	111	100507.1	1.6	**49.1528**	0.361	0.7	mg/L	2	Standard
	Cd	114	240725.5	3.1	**47.9933**	0.862	1.8	ug/L	12	Standard
>	**In**	115	574417.4	1.5				ug/L	587441	Standard
	Sn	118	1058.4	4.2	**0.0905**	0.005	5.8	ug/L	497	Standard
	Sb	123	229849.5	0.5	**50.3475**	0.456	0.9	ug/L	78	Standard
	Ba	135	119199.1	0.7	**59.5474**	0.534	0.9	ug/L	24	Standard
	Ce	140	1411.7	10.5				ug/L	25	Standard
>	**Tb**	159	946510.5	1.0				ug/L	939701	Standard
	Ho	165	61.7	32.8				ug/L	10	Standard
	Tl	203	404314.5	1.0	**50.2968**	0.720	1.4	ug/L	4	Standard
	Tl	205	368989.1	0.6	**52.8952**	1.157	2.2	ug/L	2	Standard
	Pb	206	274418.5	1.5	**52.6043**	0.331	0.6	ug/L	240	Standard
	Pb	207	233408.5	1.0	**50.3596**	0.394	0.8	ug/L	198	Standard
	Pb	208	945417.2	0.6	**51.6312**	0.704	1.4	ug/L	883	Standard
	U	238	390395.6	1.2	**58.1569**	0.854	1.5	ug/L	3	Standard
>	**Bi**	209	511024.4	1.7				ug/L	523984	Standard

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Na	23	13.3	21.7	**167.0389**	37.375	22.4	mg/L	0	Standard
Mg	24	26820.4	2.0	**37.5161**	0.222	0.6	mg/L	37	Standard
K	39	1165.0	5.8	**2.6799**	0.118	4.4	mg/L	38	Standard
Ca	43	1491.7	10.9	**99.7885**	11.256	11.3	mg/L	10	Standard
Fe	54	157.1	11.5	**0.0062**	0.015	238.1	mg/L	179	Standard
Fe	57	1011.7	5.7	**2.6573**	0.164	6.2	mg/L	335	Standard
> **Sc-1**	45	56220.8	1.7				mg/L	61029	Standard
Cl	35	42892.6	1.5				ug/L	20195	Standard
Kr	83	2.7	43.3				ug/L	4	Standard
Br	81	62984.0	1.3				ug/L	1547	Standard
P	31	17081.3	3.0				ug/L	15286	Standard
S	34	1805.1	2.7				ug/L	1572	Standard
Sr	88	1383.4	10.5				ug/L	73	Standard
C	12	180.0	14.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	124.6	33.0				mg/L	6	Standard
Ho-1	165	61.7	32.8				mg/L	10	Standard
Er	166	43.3	35.3				mg/L	13	Standard
I	127	140810.4	4.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		133.173	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.522	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.783
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.527
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606098637SD WG573548-05
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Method 6020 - Summary Report

Sample ID: L1606098601
Sample Date/Time: Wednesday, June 29, 2016 13:09:51
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	102324.4	1.8				ug/L	74699	Standard
	Be	9	88.3	32.2	**0.0810**	0.024	30.0	ug/L	8	Standard
	Al	27	5114148.7	1.9	**25.3952**	0.605	2.4	ug/L	1493	Standard
	Sc	45	60191.0	1.9				ug/L	61029	Standard
	Ti	47	2779.9	0.6	**7.0936**	0.108	1.5	ug/L	35	Standard
	V	51	5111.4	5.6	**0.4688**	0.033	7.0	ug/L	1435	Standard
	Cr	52	13420.3	3.5	**0.7542**	0.051	6.8	ug/L	7635	Standard
	Cr	53	1458.4	3.3	**1.2196**	0.051	4.2	ug/L	363	Standard
	Mn	55	181173.8	0.3	**25.4046**	0.180	0.7	ug/L	747	Standard
	Co	59	2348.5	2.0	**0.3119**	0.007	2.1	ug/L	234	Standard
	Ni	60	2310.5	3.1	**1.0878**	0.031	2.9	ug/L	215	Standard
	Cu	65	2308.5	3.6	**1.1141**	0.034	3.0	ug/L	104	Standard
	Zn	66	22662.3	0.5	**19.9177**	0.090	0.4	ug/L	363	Standard
>	**Ge**	72	504254.4	0.9				ug/L	495142	Standard
	As	75	859.1	5.1	**0.8126**	0.036	4.5	ug/L	-50	Standard
	Se	82	56.8	14.9	**0.3708**	0.079	21.2	ug/L	14	Standard
	Se-1	77	87.3	17.2	**0.5507**	0.190	34.5	ug/L	42	Standard
>	**Ga**	71	526.7	8.3				mg/L	42	Standard
	Rb	85	16517.3	5.3				ug/L	17	Standard
	Y	89	430302.4	1.6				ug/L	417098	Standard
>	**Rh**	103	86.7	33.8				ug/L	13	Standard
	Mo	98	1898.6	1.4	**0.7136**	0.022	3.1	ug/L	11	Standard
	Ag	107	115.3	8.0	**0.0050**	0.001	29.0	ug/L	68	Standard
	Cd	111	60.8	33.2	**0.0215**	0.010	47.6	mg/L	2	Standard
	Cd	114	128.6	20.8	**0.0232**	0.005	20.9	ug/L	12	Standard
>	**In**	115	581907.5	1.7				ug/L	587441	Standard
	Sn	118	1231.7	10.8	**0.1183**	0.024	20.7	ug/L	497	Standard
	Sb	123	520.8	14.7	**0.1084**	0.016	15.1	ug/L	78	Standard
	Ba	135	41346.0	0.9	**20.3791**	0.217	1.1	ug/L	24	Standard
	Ce	140	23020.8	2.4				ug/L	25	Standard
>	**Tb**	159	964144.3	1.8				ug/L	939701	Standard
	Ho	165	513.3	9.3				ug/L	10	Standard
	Tl	203	211.3	12.7	**0.0234**	0.003	14.7	ug/L	4	Standard
	Tl	205	253.3	62.3	**0.0350**	0.022	63.0	ug/L	2	Standard
	Pb	206	1500.1	2.6	**0.2039**	0.008	4.0	ug/L	240	Standard
	Pb	207	1190.0	4.0	**0.1756**	0.010	5.7	ug/L	198	Standard
	Pb	208	4936.0	2.0	**0.1838**	0.008	4.3	ug/L	883	Standard
	U	238	2034.5	10.8	**0.2852**	0.034	11.8	ug/L	3	Standard
>	**Bi**	209	535012.0	1.1				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	50263.2	0.4	**65.7389**	1.477	2.2	mg/L	37	Standard
K	39	250.0	7.2	**0.4466**	0.047	10.5	mg/L	38	Standard
Ca	43	233.3	8.9	**12.4104**	1.127	9.1	mg/L	10	Standard
Fe	54	825.5	3.8	**0.5718**	0.038	6.7	mg/L	179	Standard
Fe	57	516.7	4.4	**0.7058**	0.045	6.4	mg/L	335	Standard
> **Sc-1**	45	60191.0	1.9				mg/L	61029	Standard
Cl	35	28383.9	2.7				ug/L	20195	Standard
Kr	83	2.0	0.0				ug/L	4	Standard
Br	81	8439.0	2.4				ug/L	1547	Standard
P	31	17857.2	2.8				ug/L	15286	Standard
S	34	1791.8	4.6				ug/L	1572	Standard
Sr	88	506.7	4.7				ug/L	73	Standard
C	12	153.3	22.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	893.4	9.1				mg/L	6	Standard
Ho-1	165	513.3	9.3				mg/L	10	Standard
Er	166	416.7	13.2				mg/L	13	Standard
I	127	18778.3	7.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		136.983	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.840	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.058	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	102.105	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606098603
Sample Date/Time: Wednesday, June 29, 2016 13:13:02
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	106961.3	1.6				ug/L	74699	Standard
	Be	9	178.3	7.1	**0.1492**	0.012	8.2	ug/L	8	Standard
	Al	27	64490531.4	4.4	**306.3886**	9.864	3.2	ug/L	1493	Standard
	Sc	45	59811.2	2.1				ug/L	61029	Standard
	Ti	47	416.0	0.2	**0.9910**	0.025	2.5	ug/L	35	Standard
	V	51	3004.3	2.1	**0.2029**	0.003	1.2	ug/L	1435	Standard
	Cr	52	11901.7	1.5	**0.5854**	0.019	3.3	ug/L	7635	Standard
	Cr	53	991.7	2.3	**0.7459**	0.050	6.7	ug/L	363	Standard
	Mn	55	12370472.2	4.2	**1779.3602**	31.656	1.8	ug/L	747	Standard
	Co	59	18875.4	5.7	**2.8249**	0.100	3.5	ug/L	234	Standard
	Ni	60	12202.3	4.0	**6.4037**	0.114	1.8	ug/L	215	Standard
	Cu	65	16836.0	2.8	**8.9582**	0.039	0.4	ug/L	104	Standard
	Zn	66	24869.4	2.3	**22.3549**	0.039	0.2	ug/L	363	Standard
>	**Ge**	72	494237.2	2.4				ug/L	495142	Standard
	As	75	1554.4	6.7	**1.4489**	0.061	4.2	ug/L	-50	Standard
	Se	82	71.5	7.7	**0.5142**	0.037	7.1	ug/L	14	Standard
	Se-1	77	63.0	12.4	**0.2431**	0.119	49.1	ug/L	42	Standard
>	**Ga**	71	356.7	10.3				mg/L	42	Standard
	Rb	85	9309.5	2.8				ug/L	17	Standard
	Y	89	460268.8	4.1				ug/L	417098	Standard
>	**Rh**	103	310.0	9.7				ug/L	13	Standard
	Mo	98	1407.8	3.5	**0.5012**	0.005	1.0	ug/L	11	Standard
	Ag	107	101.3	22.9	**0.0020**	0.003	151.7	ug/L	68	Standard
	Cd	111	246.3	7.9	**0.1051**	0.008	7.2	mg/L	2	Standard
	Cd	114	605.6	11.0	**0.1111**	0.009	8.4	ug/L	12	Standard
>	**In**	115	612194.6	4.4				ug/L	587441	Standard
	Sn	118	1470.1	15.0	**0.1461**	0.027	18.7	ug/L	497	Standard
	Sb	123	727.1	5.4	**0.1452**	0.003	2.2	ug/L	78	Standard
	Ba	135	24533.2	4.5	**11.4855**	0.055	0.5	ug/L	24	Standard
	Ce	140	44839.6	2.7				ug/L	25	Standard
>	**Tb**	159	1002318.5	3.7				ug/L	939701	Standard
	Ho	165	778.4	7.8				ug/L	10	Standard
	Tl	203	123.7	14.4	**0.0129**	0.002	13.5	ug/L	4	Standard
	Tl	205	116.7	9.9	**0.0161**	0.001	9.2	ug/L	2	Standard
	Pb	206	819.0	5.9	**0.0785**	0.008	10.4	ug/L	240	Standard
	Pb	207	658.0	2.8	**0.0655**	0.007	10.9	ug/L	198	Standard
	Pb	208	2733.4	3.4	**0.0682**	0.002	2.2	ug/L	883	Standard
	U	238	29463.0	4.0	**4.1728**	0.071	1.7	ug/L	3	Standard
>	**Bi**	209	536825.9	2.9				ug/L	523984	Standard

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Na	23	18.3	31.5	**216.6166**	73.255	33.8	mg/L	0	Standard
Mg	24	7246.7	2.5	**9.4794**	0.084	0.9	mg/L	37	Standard
K	39	393.3	11.0	**0.7727**	0.091	11.8	mg/L	38	Standard
Ca	43	1938.5	3.9	**122.4130**	4.002	3.3	mg/L	10	Standard
Fe	54	1213.7	6.6	**0.9123**	0.078	8.6	mg/L	179	Standard
Fe	57	1360.1	3.5	**3.6434**	0.167	4.6	mg/L	335	Standard
Sc-1	45	59811.2	2.1				mg/L	61029	Standard
Cl	35	41831.0	3.4				ug/L	20195	Standard
Kr	83	1.7	91.7				ug/L	4	Standard
Br	81	8062.1	5.5				ug/L	1547	Standard
P	31	19340.7	4.7				ug/L	15286	Standard
S	34	2026.8	7.6				ug/L	1572	Standard
Sr	88	1283.4	13.4				ug/L	73	Standard
C	12	153.3	19.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	1258.4	10.3				mg/L	6	Standard
Ho-1	165	778.4	7.8				mg/L	10	Standard
Er	166	800.0	9.9				mg/L	13	Standard
I	127	76815.4	9.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		143.190	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.817	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.214
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.451
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606098603PS WG574572-01
Sample Date/Time: Wednesday, June 29, 2016 13:16:14
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	107768.6	1.4				ug/L	74699	Standard
	Be	9	63154.7	2.1	**49.7293**	0.735	1.5	ug/L	8	Standard
	Al	27	62883924.9	0.4	**296.6156**	4.197	1.4	ug/L	1493	Standard
	Sc	45	60669.6	1.7				ug/L	61029	Standard
	Ti	47	431.3	11.1	**1.0313**	0.120	11.7	ug/L	35	Standard
	V	51	423481.5	0.7	**56.0150**	0.782	1.4	ug/L	1435	Standard
	Cr	52	394353.4	1.0	**52.3183**	0.613	1.2	ug/L	7635	Standard
	Cr	53	48385.5	1.4	**52.1545**	1.086	2.1	ug/L	363	Standard
	Mn	55	12676353.0	0.9	**1825.0939**	28.984	1.6	ug/L	747	Standard
	Co	59	406698.1	0.5	**61.7025**	0.702	1.1	ug/L	234	Standard
	Ni	60	105609.8	0.7	**56.4229**	0.793	1.4	ug/L	215	Standard
	Cu	65	109624.8	0.4	**58.9403**	0.355	0.6	ug/L	104	Standard
	Zn	66	80974.1	1.0	**73.8592**	1.163	1.6	ug/L	363	Standard
>	Ge	72	493944.8	0.7				ug/L	495142	Standard
	As	75	62963.2	0.4	**56.4099**	0.584	1.0	ug/L	-50	Standard
	Se	82	6528.2	1.4	**59.4919**	1.250	2.1	ug/L	14	Standard
	Se-1	77	4208.9	2.0	**57.1456**	1.224	2.1	ug/L	42	Standard
>	Ga	71	341.7	3.7				mg/L	42	Standard
	Rb	85	9437.9	2.3				ug/L	17	Standard
	Y	89	453637.5	2.0				ug/L	417098	Standard
>	Rh	103	333.3	4.8				ug/L	13	Standard
	Mo	98	1406.8	1.9	**0.5023**	0.008	1.6	ug/L	11	Standard
	Ag	107	336751.7	1.1	**49.7241**	0.838	1.7	ug/L	68	Standard
	Cd	111	110645.7	0.7	**50.9305**	0.669	1.3	mg/L	2	Standard
	Cd	114	268194.0	0.5	**50.3333**	0.438	0.9	ug/L	12	Standard
>	In	115	610323.2	0.7				ug/L	587441	Standard
	Sn	118	1538.4	2.3	**0.1588**	0.006	3.5	ug/L	497	Standard
	Sb	123	241381.6	1.1	**49.7617**	0.807	1.6	ug/L	78	Standard
	Ba	135	126394.4	1.4	**59.4274**	1.193	2.0	ug/L	24	Standard
	Ce	140	44334.8	0.8				ug/L	25	Standard
>	Tb	159	999714.8	1.0				ug/L	939701	Standard
	Ho	165	786.7	10.3				ug/L	10	Standard
	Tl	203	445077.8	1.6	**52.3048**	0.918	1.8	ug/L	4	Standard
	Tl	205	409895.5	2.2	**55.5017**	1.265	2.3	ug/L	2	Standard
	Pb	206	293321.0	0.4	**53.1218**	0.228	0.4	ug/L	240	Standard
	Pb	207	252054.7	0.9	**51.3779**	0.617	1.2	ug/L	198	Standard
	Pb	208	1026149.4	0.5	**52.9396**	0.195	0.4	ug/L	883	Standard
	U	238	420484.7	1.6	**59.1737**	0.984	1.7	ug/L	3	Standard
>	Bi	209	540895.8	0.3				ug/L	523984	Standard

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Na	23	16.7	45.8	**192.4294**	85.849	44.6	mg/L	0	Standard
Mg	24	7256.7	2.5	**9.3609**	0.349	3.7	mg/L	37	Standard
K	39	406.7	8.6	**0.7894**	0.064	8.1	mg/L	38	Standard
Ca	43	1853.4	4.6	**115.2974**	6.640	5.8	mg/L	10	Standard
Fe	54	1091.3	5.4	**0.7921**	0.036	4.5	mg/L	179	Standard
Fe	57	1315.1	6.5	**3.4198**	0.224	6.6	mg/L	335	Standard
> **Sc-1**	45	60669.6	1.7				mg/L	61029	Standard
Cl	35	43150.7	2.4				ug/L	20195	Standard
Kr	83	2.3	49.5				ug/L	4	Standard
Br	81	7932.1	5.6				ug/L	1547	Standard
P	31	18981.9	3.1				ug/L	15286	Standard
S	34	1910.1	1.6				ug/L	1572	Standard
Sr	88	1396.7	9.1				ug/L	73	Standard
C	12	166.7	22.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	1221.7	7.2				mg/L	6	Standard
Ho-1	165	786.7	10.3				mg/L	10	Standard
Er	166	800.0	7.6				mg/L	13	Standard
I	127	76722.5	5.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		144.271	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.758	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.895
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.227
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606098603SDL WG574572-02
Sample Date/Time: Wednesday, June 29, 2016 13:19:25
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	109627.0	2.2				ug/L	74699	Standard
	Be	9	55.0	32.8	**0.0501**	0.014	27.0	ug/L	8	Standard
	Al	27	13052757.9	2.1	**60.5215**	1.604	2.7	ug/L	1493	Standard
	Sc	45	62358.1	1.0				ug/L	61029	Standard
	Ti	47	123.0	14.7	**0.1926**	0.050	25.7	ug/L	35	Standard
	V	51	2451.6	1.0	**0.1057**	0.008	7.9	ug/L	1435	Standard
	Cr	52	10290.8	1.8	**0.2648**	0.008	2.8	ug/L	7635	Standard
	Cr	53	588.3	10.7	**0.2610**	0.063	24.3	ug/L	363	Standard
	Mn	55	2629853.6	1.6	**350.4744**	10.232	2.9	ug/L	747	Standard
	Co	59	4233.3	3.1	**0.5577**	0.018	3.3	ug/L	234	Standard
	Ni	60	2886.6	1.8	**1.3071**	0.037	2.8	ug/L	215	Standard
	Cu	65	3859.5	1.6	**1.8207**	0.021	1.2	ug/L	104	Standard
	Zn	66	7087.3	1.2	**5.5680**	0.153	2.7	ug/L	363	Standard
>	**Ge**	72	533577.2	1.8				ug/L	495142	Standard
	As	75	314.5	3.2	**0.3203**	0.010	3.2	ug/L	-50	Standard
	Se	82	28.2	16.0	**0.1004**	0.037	37.2	ug/L	14	Standard
	Se-1	77	51.7	9.9	**0.0349**	0.075	214.8	ug/L	42	Standard
>	**Ga**	71	153.3	21.0				mg/L	42	Standard
	Rb	85	1916.8	2.5				ug/L	17	Standard
	Y	89	457911.1	1.7				ug/L	417098	Standard
>	**Rh**	103	73.3	17.2				ug/L	13	Standard
	Mo	98	334.8	7.8	**0.1120**	0.009	8.5	ug/L	11	Standard
	Ag	107	142.0	14.1	**0.0075**	0.003	37.0	ug/L	68	Standard
	Cd	111	78.8	16.1	**0.0274**	0.006	20.4	mg/L	2	Standard
	Cd	114	171.7	29.4	**0.0293**	0.009	31.0	ug/L	12	Standard
>	**In**	115	626915.6	0.6				ug/L	587441	Standard
	Sn	118	618.3	15.8	**0.0044**	0.015	338.7	ug/L	497	Standard
	Sb	123	2031.6	21.7	**0.4032**	0.086	21.3	ug/L	78	Standard
	Ba	135	5054.8	0.4	**2.2983**	0.024	1.0	ug/L	24	Standard
	Ce	140	9302.9	0.9				ug/L	25	Standard
>	**Tb**	159	1014481.9	2.3				ug/L	939701	Standard
	Ho	165	175.0	2.9				ug/L	10	Standard
	Tl	203	125.0	17.4	**0.0120**	0.002	18.4	ug/L	4	Standard
	Tl	205	85.0	15.6	**0.0110**	0.002	15.7	ug/L	2	Standard
	Pb	206	501.3	9.2	**0.0141**	0.008	53.2	ug/L	240	Standard
	Pb	207	392.0	5.3	**0.0051**	0.005	98.5	ug/L	198	Standard
	Pb	208	1534.0	5.0	**0.0003**	0.005	1457.8	ug/L	883	Standard
	U	238	6033.2	1.4	**0.7925**	0.020	2.5	ug/L	3	Standard
>	**Bi**	209	576425.9	1.5				ug/L	523984	Standard

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Na	23	3.3	173.2	**37.9583**	65.737	173.2	mg/L	0	Standard
Mg	24	1580.1	4.3	**1.9318**	0.105	5.4	mg/L	37	Standard
K	39	138.3	24.1	**0.1853**	0.073	39.3	mg/L	38	Standard
Ca	43	413.3	5.7	**23.0292**	1.446	6.3	mg/L	10	Standard
Fe	54	367.9	5.4	**0.1671**	0.019	11.4	mg/L	179	Standard
Fe	57	475.0	7.9	**0.5062**	0.132	26.1	mg/L	335	Standard
Sc-1	45	62358.1	1.0				mg/L	61029	Standard
Cl	35	34619.5	1.5				ug/L	20195	Standard
Kr	83	1.3	86.6				ug/L	4	Standard
Br	81	3197.0	3.6				ug/L	1547	Standard
P	31	18749.9	1.5				ug/L	15286	Standard
S	34	2010.1	3.0				ug/L	1572	Standard
Sr	88	305.0	20.5				ug/L	73	Standard
C	12	113.3	31.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	348.8	17.3				mg/L	6	Standard
Ho-1	165	175.0	2.9				mg/L	10	Standard
Er	166	163.3	52.8				mg/L	13	Standard
I	127	19115.4	2.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		146.759	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		107.762	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.720
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.008
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606098603SDL WG574572-02
Sample Date/Time: Wednesday, June 29, 2016 13:22:37
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	107882.7	0.8				ug/L	74699	Standard
	Be	9	30.0	44.1	**0.0312**	0.010	32.7	ug/L	8	Standard
	Al	27	2675117.5	0.8	**12.5917**	0.213	1.7	ug/L	1493	Standard
	Sc	45	65760.7	1.1				ug/L	61029	Standard
	Ti	47	48.3	10.6	**0.0072**	0.012	160.2	ug/L	35	Standard
	V	51	2266.6	5.1	**0.0781**	0.015	19.5	ug/L	1435	Standard
	Cr	52	10143.4	2.6	**0.2243**	0.020	8.9	ug/L	7635	Standard
	Cr	53	413.3	17.1	**0.0775**	0.065	83.8	ug/L	363	Standard
	Mn	55	539662.1	1.4	**70.5366**	0.569	0.8	ug/L	747	Standard
	Co	59	1015.0	2.6	**0.1030**	0.006	5.9	ug/L	234	Standard
	Ni	60	769.4	2.6	**0.2509**	0.010	4.1	ug/L	215	Standard
	Cu	65	948.0	4.2	**0.3607**	0.016	4.4	ug/L	104	Standard
	Zn	66	2642.9	1.7	**1.7518**	0.018	1.1	ug/L	363	Standard
>	**Ge**	72	543000.4	1.8				ug/L	495142	Standard
	As	75	12.5	225.4	**0.0698**	0.023	32.5	ug/L	-50	Standard
	Se	82	15.8	49.7	**-0.0063**	0.066	1051.8	ug/L	14	Standard
	Se-1	77	45.3	17.1	**-0.0563**	0.096	170.3	ug/L	42	Standard
>	**Ga**	71	85.0	15.6				mg/L	42	Standard
	Rb	85	428.3	11.2				ug/L	17	Standard
	Y	89	460200.9	1.8				ug/L	417098	Standard
>	**Rh**	103	35.0	24.7				ug/L	13	Standard
	Mo	98	83.6	11.1	**0.0226**	0.003	14.3	ug/L	11	Standard
	Ag	107	112.7	14.2	**0.0027**	0.002	80.0	ug/L	68	Standard
	Cd	111	20.9	22.0	**0.0011**	0.002	176.9	mg/L	2	Standard
	Cd	114	53.5	39.5	**0.0073**	0.004	50.6	ug/L	12	Standard
>	**In**	115	649578.1	0.2				ug/L	587441	Standard
	Sn	118	553.3	9.5	**-0.0090**	0.008	92.4	ug/L	497	Standard
	Sb	123	558.9	31.9	**0.1041**	0.035	33.4	ug/L	78	Standard
	Ba	135	1064.4	0.7	**0.4543**	0.003	0.7	ug/L	24	Standard
	Ce	140	1928.5	4.3				ug/L	25	Standard
>	**Tb**	159	1049822.6	1.3				ug/L	939701	Standard
	Ho	165	40.0	33.1				ug/L	10	Standard
	Tl	203	40.7	35.8	**0.0026**	0.002	59.7	ug/L	4	Standard
	Tl	205	45.0	38.5	**0.0057**	0.002	36.9	ug/L	2	Standard
	Pb	206	372.0	6.6	**-0.0102**	0.004	38.7	ug/L	240	Standard
	Pb	207	294.7	6.9	**-0.0156**	0.004	25.6	ug/L	198	Standard
	Pb	208	1159.4	2.3	**-0.0199**	0.001	7.3	ug/L	883	Standard
	U	238	1206.0	0.9	**0.1490**	0.002	1.2	ug/L	3	Standard
>	**Bi**	209	598311.7	0.5				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.6400**	30.545	173.2	mg/L	0	Standard
Mg	24	363.3	29.0	**0.3711**	0.131	35.3	mg/L	37	Standard
K	39	63.3	27.7	**0.0157**	0.035	226.7	mg/L	38	Standard
Ca	43	110.0	12.0	**3.9202**	0.707	18.0	mg/L	10	Standard
Fe	54	190.5	10.6	**0.0117**	0.017	142.3	mg/L	179	Standard
Fe	57	268.3	12.0	**-0.2271**	0.110	48.6	mg/L	335	Standard
> **Sc-1**	45	65760.7	1.1				mg/L	61029	Standard
Cl	35	34122.4	1.0				ug/L	20195	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	2286.8	8.5				ug/L	1547	Standard
P	31	19529.2	1.3				ug/L	15286	Standard
S	34	2301.8	4.6				ug/L	1572	Standard
Sr	88	130.0	32.9				ug/L	73	Standard
C	12	83.3	6.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	60.8	35.4				mg/L	6	Standard
Ho-1	165	40.0	33.1				mg/L	10	Standard
Er	166	53.3	28.6				mg/L	13	Standard
I	127	5874.5	8.0				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		144.424	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		109.666	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.578
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		114.185
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 13:25:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	96295.4	4.3				ug/L	74699	Standard
	Be	9	56739.5	4.7	**50.0144**	1.617	3.2	ug/L	8	Standard
	Al	27	8198811.7	1.9	**43.2979**	1.271	2.9	ug/L	1493	Standard
	Sc	45	60020.3	2.0				ug/L	61029	Standard
	Ti	47	38068.4	0.4	**97.0435**	0.523	0.5	ug/L	35	Standard
	V	51	407671.2	1.0	**52.0137**	0.145	0.3	ug/L	1435	Standard
	Cr	52	382711.8	0.9	**48.9253**	0.135	0.3	ug/L	7635	Standard
	Cr	53	47653.2	2.5	**49.5394**	1.027	2.1	ug/L	363	Standard
	Mn	55	366963.7	3.6	**50.8236**	1.362	2.7	ug/L	747	Standard
	Co	59	380449.1	2.9	**55.6813**	1.097	2.0	ug/L	234	Standard
	Ni	60	94585.7	1.1	**48.7401**	0.435	0.9	ug/L	215	Standard
	Cu	65	94763.8	1.5	**49.1432**	0.553	1.1	ug/L	104	Standard
	Zn	66	56752.8	2.3	**49.7949**	0.707	1.4	ug/L	363	Standard
>	Ge	72	511914.0	0.9				ug/L	495142	Standard
	As	75	57985.2	1.9	**50.1285**	0.568	1.1	ug/L	-50	Standard
	Se	82	5989.4	2.5	**52.6418**	0.964	1.8	ug/L	14	Standard
	Se-1	77	3921.2	2.5	**51.3010**	0.802	1.6	ug/L	42	Standard
>	Ga	71	220.0	19.4				mg/L	42	Standard
	Rb	85	765.0	2.0				ug/L	17	Standard
	Y	89	446724.4	3.3				ug/L	417098	Standard
>	Rh	103	20.0	43.3				ug/L	13	Standard
	Mo	98	280984.3	2.1	**102.0498**	2.098	2.1	ug/L	11	Standard
	Ag	107	335763.8	0.9	**49.8677**	1.010	2.0	ug/L	68	Standard
	Cd	111	105816.2	1.8	**48.9835**	0.569	1.2	mg/L	2	Standard
	Cd	114	257781.1	1.6	**48.6563**	0.589	1.2	ug/L	12	Standard
>	In	115	606960.1	2.8				ug/L	587441	Standard
	Sn	118	295693.2	2.0	**48.9061**	0.749	1.5	ug/L	497	Standard
	Sb	123	236523.1	0.9	**49.0438**	0.901	1.8	ug/L	78	Standard
	Ba	135	99992.2	1.5	**47.2781**	0.609	1.3	ug/L	24	Standard
	Ce	140	91.7	6.3				ug/L	25	Standard
>	Tb	159	985978.7	1.6				ug/L	939701	Standard
	Ho	165	11.7	89.2				ug/L	10	Standard
	Tl	203	433708.5	1.0	**49.3829**	0.257	0.5	ug/L	4	Standard
	Tl	205	391770.8	1.1	**51.3967**	0.163	0.3	ug/L	2	Standard
	Pb	206	284957.7	0.7	**50.0002**	0.477	1.0	ug/L	240	Standard
	Pb	207	255175.6	1.7	**50.3910**	0.211	0.4	ug/L	198	Standard
	Pb	208	1010912.5	1.9	**50.5251**	0.466	0.9	ug/L	883	Standard
	U	238	378758.8	0.6	**51.6451**	0.416	0.8	ug/L	3	Standard
>	Bi	209	558275.4	1.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4168.9	2.3	**5.4065**	0.021	0.4	mg/L	37	Standard
K	39	1983.5	2.5	**4.3432**	0.044	1.0	mg/L	38	Standard
Ca	43	106.7	26.7	**4.3258**	1.829	42.3	mg/L	10	Standard
Fe	54	6165.0	5.0	**5.1771**	0.265	5.1	mg/L	179	Standard
Fe	57	1720.1	9.9	**4.8644**	0.466	9.6	mg/L	335	Standard
> **Sc-1**	45	60020.3	2.0				mg/L	61029	Standard
Cl	35	28213.0	5.7				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	1853.5	23.0				ug/L	1547	Standard
P	31	20223.5	3.5				ug/L	15286	Standard
S	34	2575.2	6.1				ug/L	1572	Standard
Sr	88	78.3	26.6				ug/L	73	Standard
C	12	100.0	34.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	9.2	116.5				mg/L	6	Standard
Ho-1	165	11.7	89.2				mg/L	10	Standard
Er	166	16.7	91.7				mg/L	13	Standard
I	127	2436.9	25.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	100.029		
Al	27	86.596		
Sc	45			
Ti	47	97.044		
V	51	104.027		
Cr	52	97.851		
Cr	53			
Mn	55	101.647		
Co	59	111.363		
Ni	60	97.480		
Cu	65	98.286		
Zn	66	99.590		
> Ge	72		103.387	
As	75	100.257		
Se	82	105.284		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	102.050		
Ag	107	99.735		
Cd	111	97.967		
Cd	114			
> In	115		103.323	
Sn	118	97.812		
Sb	123	98.088		
Ba	135	94.556		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.766		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.050		
U	238	103.290		
> Bi	209		106.544	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	
QC Std 6	Co	59	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 13:29:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	94691.7	1.8				ug/L	74699	Standard
	Be	9	76.7	106.2	**0.0755**	0.071	94.2	ug/L	8	Standard
	Al	27	36843.1	136.1	**0.1814**	0.263	145.0	ug/L	1493	Standard
	Sc	45	60632.8	2.3				ug/L	61029	Standard
	Ti	47	43.0	36.1	**-0.0010**	0.038	3637.8	ug/L	35	Standard
	V	51	1519.7	11.1	**-0.0035**	0.019	532.9	ug/L	1435	Standard
	Cr	52	7045.6	5.2	**-0.1157**	0.044	37.8	ug/L	7635	Standard
	Cr	53	391.7	11.6	**0.0747**	0.044	59.2	ug/L	363	Standard
	Mn	55	7226.9	125.7	**0.8342**	1.228	147.2	ug/L	747	Standard
	Co	59	517.7	90.4	**0.0371**	0.066	179.1	ug/L	234	Standard
	Ni	60	246.3	39.3	**0.0014**	0.048	3317.1	ug/L	215	Standard
	Cu	65	191.7	56.6	**-0.0057**	0.054	949.5	ug/L	104	Standard
	Zn	66	417.3	10.8	**-0.0898**	0.036	40.1	ug/L	363	Standard
>	Ge	72	518398.0	1.4				ug/L	495142	Standard
	As	75	-30.5	76.0	**0.0334**	0.020	59.9	ug/L	-50	Standard
	Se	82	13.4	12.4	**-0.0212**	0.016	76.0	ug/L	14	Standard
	Se-1	77	53.3	15.9	**0.0746**	0.106	141.7	ug/L	42	Standard
>	Ga	71	155.0	18.0				mg/L	42	Standard
	Rb	85	21.7	93.3				ug/L	17	Standard
	Y	89	436745.4	0.7				ug/L	417098	Standard
>	Rh	103	15.0	33.3				ug/L	13	Standard
	Mo	98	315.2	32.1	**0.1069**	0.036	33.6	ug/L	11	Standard
	Ag	107	222.7	75.6	**0.0196**	0.025	125.0	ug/L	68	Standard
	Cd	111	57.8	114.5	**0.0184**	0.030	163.6	mg/L	2	Standard
	Cd	114	159.0	130.1	**0.0274**	0.038	140.1	ug/L	12	Standard
>	In	115	616374.3	0.2				ug/L	587441	Standard
	Sn	118	845.0	17.1	**0.0432**	0.024	55.2	ug/L	497	Standard
	Sb	123	593.6	13.2	**0.1170**	0.016	13.9	ug/L	78	Standard
	Ba	135	102.7	102.4	**0.0317**	0.049	153.8	ug/L	24	Standard
	Ce	140	58.3	55.8				ug/L	25	Standard
>	Tb	159	995160.6	1.6				ug/L	939701	Standard
	Ho	165	15.0	100.0				ug/L	10	Standard
	Tl	203	219.0	114.2	**0.0226**	0.028	122.3	ug/L	4	Standard
	Tl	205	381.7	141.6	**0.0491**	0.069	140.6	ug/L	2	Standard
	Pb	206	388.0	38.6	**-0.0042**	0.025	597.1	ug/L	240	Standard
	Pb	207	336.0	35.9	**-0.0047**	0.023	485.4	ug/L	198	Standard
	Pb	208	2012.1	79.6	**0.0246**	0.078	315.7	ug/L	883	Standard
	U	238	395.3	145.1	**0.0482**	0.076	157.9	ug/L	3	Standard
>	Bi	209	567355.9	1.2				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	58.3	34.6	**0.0111**	0.028	248.5	mg/L	37	Standard
K	39	40.0	12.5	**-0.0251**	0.012	46.0	mg/L	38	Standard
Ca	43	31.7	9.1	**-0.5078**	0.213	41.9	mg/L	10	Standard
Fe	54	155.5	6.6	**-0.0056**	0.009	155.5	mg/L	179	Standard
Fe	57	230.0	7.8	**-0.2862**	0.078	27.3	mg/L	335	Standard
> **Sc-1**	45	60632.8	2.3				mg/L	61029	Standard
Cl	35	27178.4	0.6				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	1736.8	2.2				ug/L	1547	Standard
P	31	19502.5	1.8				ug/L	15286	Standard
S	34	2301.8	3.7				ug/L	1572	Standard
Sr	88	75.0	26.7				ug/L	73	Standard
C	12	86.7	17.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	12.7	93.2				mg/L	6	Standard
Ho-1	165	15.0	100.0				mg/L	10	Standard
Er	166	13.3	86.6				mg/L	13	Standard
I	127	1935.1	25.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.697	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.925
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.277
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606098605
Sample Date/Time: Wednesday, June 29, 2016 13:32:14
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	93251.1	1.7				ug/L	74699	Standard
	Be	9	326.7	10.4	**0.3052**	0.035	11.6	ug/L	8	Standard
	Al	27	19740200.2	0.7	**107.5996**	1.185	1.1	ug/L	1493	Standard
	Sc	45	60365.1	2.3				ug/L	61029	Standard
	Ti	47	450.3	3.0	**1.0603**	0.030	2.8	ug/L	35	Standard
	V	51	4644.9	8.0	**0.4097**	0.047	11.5	ug/L	1435	Standard
	Cr	52	12104.2	0.3	**0.5838**	0.010	1.7	ug/L	7635	Standard
	Cr	53	928.4	3.1	**0.6586**	0.026	3.9	ug/L	363	Standard
	Mn	55	98559.3	4.8	**13.7841**	0.650	4.7	ug/L	747	Standard
	Co	59	3296.0	4.6	**0.4539**	0.021	4.7	ug/L	234	Standard
	Ni	60	3163.0	1.8	**1.5389**	0.038	2.4	ug/L	215	Standard
	Cu	65	32310.7	0.8	**16.9827**	0.169	1.0	ug/L	104	Standard
	Zn	66	47105.4	0.5	**41.9893**	0.365	0.9	ug/L	363	Standard
>	**Ge**	72	503086.3	0.5				ug/L	495142	Standard
	As	75	294.8	15.7	**0.3186**	0.040	12.5	ug/L	-50	Standard
	Se	82	52.3	21.7	**0.3309**	0.101	30.6	ug/L	14	Standard
	Se-1	77	70.7	11.4	**0.3303**	0.114	34.4	ug/L	42	Standard
>	**Ga**	71	295.0	9.0				mg/L	42	Standard
	Rb	85	9109.4	3.7				ug/L	17	Standard
	Y	89	448266.6	2.2				ug/L	417098	Standard
>	**Rh**	103	83.3	28.4				ug/L	13	Standard
	Mo	98	1843.0	5.2	**0.6500**	0.034	5.3	ug/L	11	Standard
	Ag	107	226.3	74.5	**0.0200**	0.024	121.9	ug/L	68	Standard
	Cd	111	104.1	84.7	**0.0392**	0.040	101.3	mg/L	2	Standard
	Cd	114	254.7	74.3	**0.0449**	0.035	77.3	ug/L	12	Standard
>	**In**	115	619535.9	1.6				ug/L	587441	Standard
	Sn	118	1750.1	13.2	**0.1895**	0.038	20.1	ug/L	497	Standard
	Sb	123	790.9	17.9	**0.1564**	0.028	18.0	ug/L	78	Standard
	Ba	135	72683.9	1.3	**33.6664**	0.969	2.9	ug/L	24	Standard
	Ce	140	5139.2	3.4				ug/L	25	Standard
>	**Tb**	159	985815.7	2.2				ug/L	939701	Standard
	Ho	165	223.3	9.3				ug/L	10	Standard
	Tl	203	317.0	96.7	**0.0353**	0.035	100.6	ug/L	4	Standard
	Tl	205	193.3	47.9	**0.0263**	0.012	46.4	ug/L	2	Standard
	Pb	206	1382.4	8.3	**0.1795**	0.018	10.0	ug/L	240	Standard
	Pb	207	1152.7	10.0	**0.1653**	0.022	13.1	ug/L	198	Standard
	Pb	208	4722.3	7.7	**0.1699**	0.018	10.3	ug/L	883	Standard
	U	238	9861.9	3.5	**1.3841**	0.043	3.1	ug/L	3	Standard
>	**Bi**	209	540670.7	1.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	6986.6	1.5	**9.0573**	0.310	3.4	mg/L	37	Standard
K	39	308.3	17.9	**0.5733**	0.109	19.0	mg/L	38	Standard
Ca	43	606.7	4.1	**36.2577**	2.485	6.9	mg/L	10	Standard
Fe	54	348.6	15.4	**0.1605**	0.045	28.3	mg/L	179	Standard
Fe	57	585.0	8.4	**0.9378**	0.194	20.7	mg/L	335	Standard
> **Sc-1**	45	60365.1	2.3				mg/L	61029	Standard
Cl	35	31561.5	3.4				ug/L	20195	Standard
Kr	83	0.7	173.2				ug/L	4	Standard
Br	81	4964.2	11.3				ug/L	1547	Standard
P	31	20053.3	1.8				ug/L	15286	Standard
S	34	2155.2	4.8				ug/L	1572	Standard
Sr	88	343.3	18.3				ug/L	73	Standard
C	12	163.3	34.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	294.3	16.7				mg/L	6	Standard
Ho-1	165	223.3	9.3				mg/L	10	Standard
Er	166	120.0	16.7				mg/L	13	Standard
I	127	9371.2	3.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.836	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.604	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.463
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.184
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606098607
Sample Date/Time: Wednesday, June 29, 2016 13:35:26
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	96566.8	1.9				ug/L	74699	Standard
	Be	9	85.0	29.4	**0.0821**	0.021	25.7	ug/L	8	Standard
	Al	27	20333697.9	3.0	**107.0230**	2.931	2.7	ug/L	1493	Standard
	Sc	45	62230.9	2.2				ug/L	61029	Standard
	Ti	47	287.7	7.2	**0.6119**	0.056	9.2	ug/L	35	Standard
	V	51	3941.3	2.6	**0.3001**	0.017	5.7	ug/L	1435	Standard
	Cr	52	11512.0	2.6	**0.4518**	0.053	11.8	ug/L	7635	Standard
	Cr	53	838.4	4.6	**0.5317**	0.044	8.4	ug/L	363	Standard
	Mn	55	502202.8	0.8	**68.3542**	0.721	1.1	ug/L	747	Standard
	Co	59	4570.7	1.4	**0.6201**	0.010	1.6	ug/L	234	Standard
	Ni	60	3293.0	0.7	**1.5464**	0.014	0.9	ug/L	215	Standard
	Cu	65	6694.1	1.0	**3.3123**	0.070	2.1	ug/L	104	Standard
	Zn	66	11579.4	0.2	**9.6129**	0.092	1.0	ug/L	363	Standard
>	**Ge**	72	521399.1	1.0				ug/L	495142	Standard
	As	75	65.2	31.2	**0.1148**	0.017	14.9	ug/L	-50	Standard
	Se	82	28.9	16.0	**0.1117**	0.041	36.5	ug/L	14	Standard
	Se-1	77	63.7	8.1	**0.2056**	0.068	33.2	ug/L	42	Standard
>	**Ga**	71	136.7	35.5				mg/L	42	Standard
	Rb	85	5054.2	2.4				ug/L	17	Standard
	Y	89	452894.0	2.8				ug/L	417098	Standard
>	**Rh**	103	165.0	28.9				ug/L	13	Standard
	Mo	98	1211.0	1.7	**0.4303**	0.008	1.9	ug/L	11	Standard
	Ag	107	106.3	11.0	**0.0028**	0.002	64.6	ug/L	68	Standard
	Cd	111	72.3	5.5	**0.0253**	0.002	7.2	mg/L	2	Standard
	Cd	114	189.4	18.5	**0.0333**	0.006	19.3	ug/L	12	Standard
>	**In**	115	612132.4	0.4				ug/L	587441	Standard
	Sn	118	1080.0	6.7	**0.0827**	0.012	15.0	ug/L	497	Standard
	Sb	123	567.1	13.2	**0.1124**	0.015	13.5	ug/L	78	Standard
	Ba	135	35457.1	0.1	**16.6089**	0.050	0.3	ug/L	24	Standard
	Ce	140	1880.1	4.7				ug/L	25	Standard
>	**Tb**	159	996852.4	0.7				ug/L	939701	Standard
	Ho	165	58.3	17.8				ug/L	10	Standard
	Tl	203	60.0	16.9	**0.0051**	0.001	23.4	ug/L	4	Standard
	Tl	205	60.0	16.7	**0.0081**	0.001	15.8	ug/L	2	Standard
	Pb	206	636.0	0.7	**0.0415**	0.001	3.4	ug/L	240	Standard
	Pb	207	529.0	3.2	**0.0355**	0.003	9.7	ug/L	198	Standard
	Pb	208	2291.4	2.0	**0.0416**	0.003	7.7	ug/L	883	Standard
	U	238	20180.8	2.1	**2.7702**	0.079	2.9	ug/L	3	Standard
>	**Bi**	209	553749.9	0.8				ug/L	523984	Standard

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Na	23	5.0	100.0	**57.0696**	57.922	101.5	mg/L	0	Standard
Mg	24	5551.0	3.6	**6.9630**	0.244	3.5	mg/L	37	Standard
K	39	316.7	11.2	**0.5727**	0.081	14.1	mg/L	38	Standard
Ca	43	636.7	7.9	**36.9594**	3.698	10.0	mg/L	10	Standard
Fe	54	176.9	14.5	**0.0085**	0.018	212.8	mg/L	179	Standard
Fe	57	531.7	3.6	**0.6989**	0.084	12.0	mg/L	335	Standard
> **Sc-1**	45	62230.9	2.2				mg/L	61029	Standard
Cl	35	31386.5	1.7				ug/L	20195	Standard
Kr	83	2.3	89.2				ug/L	4	Standard
Br	81	3093.6	2.6				ug/L	1547	Standard
P	31	20912.8	5.9				ug/L	15286	Standard
S	34	2228.5	4.5				ug/L	1572	Standard
Sr	88	703.3	5.1				ug/L	73	Standard
C	12	126.7	40.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	102.2	30.1				mg/L	6	Standard
Ho-1	165	58.3	17.8				mg/L	10	Standard
Er	166	93.3	6.2				mg/L	13	Standard
I	127	29892.9	5.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.275	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.303	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606098607
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.203
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.681
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606098609
Sample Date/Time: Wednesday, June 29, 2016 13:38:37
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	96550.0	0.2				ug/L	74699	Standard
	Be	9	53.3	14.3	**0.0545**	0.007	12.5	ug/L	8	Standard
	Al	27	22878376.4	1.6	**120.4307**	1.945	1.6	ug/L	1493	Standard
	Sc	45	62031.7	0.8				ug/L	61029	Standard
	Ti	47	1850.4	1.6	**4.6226**	0.192	4.2	ug/L	35	Standard
	V	51	5461.8	0.6	**0.5052**	0.022	4.3	ug/L	1435	Standard
	Cr	52	13396.9	1.2	**0.7280**	0.058	8.0	ug/L	7635	Standard
	Cr	53	1881.8	4.3	**1.6444**	0.138	8.4	ug/L	363	Standard
	Mn	55	79733.3	1.7	**10.9451**	0.135	1.2	ug/L	747	Standard
	Co	59	2496.2	2.4	**0.3289**	0.007	2.0	ug/L	234	Standard
	Ni	60	4821.8	0.8	**2.3714**	0.068	2.9	ug/L	215	Standard
	Cu	65	4208.3	2.7	**2.0873**	0.088	4.2	ug/L	104	Standard
	Zn	66	20900.1	0.5	**18.0858**	0.567	3.1	ug/L	363	Standard
>	**Ge**	72	511251.4	2.6				ug/L	495142	Standard
	As	75	201.6	14.3	**0.2338**	0.023	9.7	ug/L	-50	Standard
	Se	82	54.1	5.4	**0.3394**	0.016	4.7	ug/L	14	Standard
	Se-1	77	103.0	11.2	**0.7418**	0.124	16.8	ug/L	42	Standard
>	**Ga**	71	510.0	8.0				mg/L	42	Standard
	Rb	85	13392.6	2.9				ug/L	17	Standard
	Y	89	437578.5	1.9				ug/L	417098	Standard
>	**Rh**	103	115.0	21.7				ug/L	13	Standard
	Mo	98	379.6	2.6	**0.1321**	0.004	2.9	ug/L	11	Standard
	Ag	107	107.7	0.5	**0.0031**	0.000	8.0	ug/L	68	Standard
	Cd	111	160.7	1.3	**0.0664**	0.001	1.0	mg/L	2	Standard
	Cd	114	395.9	2.3	**0.0726**	0.002	3.0	ug/L	12	Standard
>	**In**	115	607119.7	1.0				ug/L	587441	Standard
	Sn	118	1270.1	2.5	**0.1157**	0.007	5.8	ug/L	497	Standard
	Sb	123	941.4	6.3	**0.1909**	0.012	6.2	ug/L	78	Standard
	Ba	135	18081.1	0.3	**8.5321**	0.064	0.8	ug/L	24	Standard
	Ce	140	9564.7	2.3				ug/L	25	Standard
>	**Tb**	159	994932.9	1.3				ug/L	939701	Standard
	Ho	165	368.3	5.1				ug/L	10	Standard
	Tl	203	147.3	4.5	**0.0153**	0.001	4.3	ug/L	4	Standard
	Tl	205	150.0	15.3	**0.0202**	0.003	16.2	ug/L	2	Standard
	Pb	206	1807.1	1.2	**0.2512**	0.001	0.3	ug/L	240	Standard
	Pb	207	1489.4	1.7	**0.2291**	0.005	2.2	ug/L	198	Standard
	Pb	208	6035.1	2.4	**0.2326**	0.004	1.7	ug/L	883	Standard
	U	238	2872.6	2.3	**0.3933**	0.005	1.2	ug/L	3	Standard
>	**Bi**	209	549776.1	1.1				ug/L	523984	Standard

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Na	23	6.7	114.6	**75.5001**	86.744	114.9	mg/L	0	Standard
Mg	24	5847.8	3.3	**7.3629**	0.301	4.1	mg/L	37	Standard
K	39	155.0	19.6	**0.2229**	0.066	29.5	mg/L	38	Standard
Ca	43	803.4	3.4	**47.4095**	2.024	4.3	mg/L	10	Standard
Fe	54	459.0	5.6	**0.2447**	0.024	9.9	mg/L	179	Standard
Fe	57	691.7	11.1	**1.2400**	0.273	22.0	mg/L	335	Standard
Sc-1	45	62031.7	0.8				mg/L	61029	Standard
Cl	35	35055.2	1.5				ug/L	20195	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	8335.6	0.3				ug/L	1547	Standard
P	31	19207.2	4.0				ug/L	15286	Standard
S	34	2091.8	7.3				ug/L	1572	Standard
Sr	88	440.0	15.9				ug/L	73	Standard
C	12	146.7	7.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	580.9	19.4				mg/L	6	Standard
Ho-1	165	368.3	5.1				mg/L	10	Standard
Er	166	330.0	13.9				mg/L	13	Standard
I	127	13649.5	1.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		129.252	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.253	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.350
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.922
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606098611
Sample Date/Time: Wednesday, June 29, 2016 13:41:50
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	94928.2	1.7				ug/L	74699	Standard
	Be	9	611.7	2.1	**0.5543**	0.002	0.4	ug/L	8	Standard
	Al	27	35531075.2	1.8	**190.3104**	6.477	3.4	ug/L	1493	Standard
	Sc	45	58926.0	1.1				ug/L	61029	Standard
	Ti	47	1221.7	3.3	**3.0767**	0.071	2.3	ug/L	35	Standard
	V	51	7317.6	1.4	**0.7622**	0.017	2.2	ug/L	1435	Standard
	Cr	52	16086.9	1.7	**1.1219**	0.012	1.1	ug/L	7635	Standard
	Cr	53	9996.6	2.0	**10.3612**	0.096	0.9	ug/L	363	Standard
	Mn	55	583301.8	0.5	**82.6724**	0.812	1.0	ug/L	747	Standard
	Co	59	14960.7	0.8	**2.2024**	0.031	1.4	ug/L	234	Standard
	Ni	60	6882.6	4.3	**3.5089**	0.114	3.2	ug/L	215	Standard
	Cu	65	67223.1	1.5	**35.5977**	0.129	0.4	ug/L	104	Standard
	Zn	66	37202.6	1.0	**33.2122**	0.242	0.7	ug/L	363	Standard
>	**Ge**	72	500908.0	1.1				ug/L	495142	Standard
	As	75	1307.8	5.6	**1.2134**	0.054	4.4	ug/L	-50	Standard
	Se	82	362.7	2.0	**3.1282**	0.043	1.4	ug/L	14	Standard
	Se-1	77	555.0	5.1	**6.8873**	0.307	4.5	ug/L	42	Standard
>	**Ga**	71	435.0	11.9				mg/L	42	Standard
	Rb	85	18344.4	2.4				ug/L	17	Standard
	Y	89	436166.7	1.7				ug/L	417098	Standard
>	**Rh**	103	445.0	7.4				ug/L	13	Standard
	Mo	98	3054.9	0.8	**1.1522**	0.023	2.0	ug/L	11	Standard
	Ag	107	121.7	12.3	**0.0060**	0.002	41.3	ug/L	68	Standard
	Cd	111	41.7	14.4	**0.0123**	0.003	24.8	mg/L	2	Standard
	Cd	114	142.6	14.6	**0.0260**	0.004	14.4	ug/L	12	Standard
>	**In**	115	581588.5	1.2				ug/L	587441	Standard
	Sn	118	2201.8	2.3	**0.2861**	0.011	3.9	ug/L	497	Standard
	Sb	123	1347.5	5.7	**0.2874**	0.019	6.6	ug/L	78	Standard
	Ba	135	63997.2	1.5	**31.5730**	0.849	2.7	ug/L	24	Standard
	Ce	140	22939.0	3.1				ug/L	25	Standard
>	**Tb**	159	946929.2	0.6				ug/L	939701	Standard
	Ho	165	348.3	12.2				ug/L	10	Standard
	Tl	203	270.7	7.5	**0.0312**	0.002	6.9	ug/L	4	Standard
	Tl	205	231.7	2.5	**0.0327**	0.001	2.0	ug/L	2	Standard
	Pb	206	3400.0	1.8	**0.5672**	0.008	1.4	ug/L	240	Standard
	Pb	207	2794.6	0.7	**0.5207**	0.008	1.5	ug/L	198	Standard
	Pb	208	11397.0	1.2	**0.5356**	0.008	1.6	ug/L	883	Standard
	U	238	7265.4	1.1	**1.0543**	0.007	0.7	ug/L	3	Standard
>	**Bi**	209	522379.2	0.9				ug/L	523984	Standard

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Na	23	10.0	50.0	**119.8009**	60.997	50.9	mg/L	0	Standard
Mg	24	10421.9	2.0	**13.8711**	0.425	3.1	mg/L	37	Standard
K	39	453.3	5.1	**0.9237**	0.053	5.7	mg/L	38	Standard
Ca	43	1046.7	6.1	**65.9862**	4.937	7.5	mg/L	10	Standard
Fe	54	728.6	2.4	**0.5015**	0.016	3.2	mg/L	179	Standard
Fe	57	860.0	12.2	**1.9559**	0.399	20.4	mg/L	335	Standard
> **Sc-1**	45	58926.0	1.1				mg/L	61029	Standard
Cl	35	32129.4	1.2				ug/L	20195	Standard
Kr	83	1.0	0.0				ug/L	4	Standard
Br	81	75514.4	2.1				ug/L	1547	Standard
P	31	20090.0	4.4				ug/L	15286	Standard
S	34	2098.5	7.9				ug/L	1572	Standard
Sr	88	1583.4	4.7				ug/L	73	Standard
C	12	130.0	7.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	561.0	7.3				mg/L	6	Standard
Ho-1	165	348.3	12.2				mg/L	10	Standard
Er	166	256.7	6.0				mg/L	13	Standard
I	127	84570.2	9.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		127.081	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.164	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.004
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.694
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606098613
Sample Date/Time: Wednesday, June 29, 2016 13:45:02
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	101811.1	2.5				ug/L	74699	Standard
	Be	9	780.0	6.8	**0.6573**	0.030	4.5	ug/L	8	Standard
	Al	27	69460342.3	2.9	**346.7492**	1.873	0.5	ug/L	1493	Standard
	Sc	45	66852.2	1.8				ug/L	61029	Standard
	Ti	47	16395.2	2.4	**40.4139**	0.750	1.9	ug/L	35	Standard
	V	51	44929.4	0.9	**5.3782**	0.102	1.9	ug/L	1435	Standard
	Cr	52	38038.0	1.4	**3.7847**	0.045	1.2	ug/L	7635	Standard
	Cr	53	5357.6	0.6	**5.1013**	0.082	1.6	ug/L	363	Standard
	Mn	55	1205027.8	2.1	**162.0424**	5.610	3.5	ug/L	747	Standard
	Co	59	15267.0	2.9	**2.1291**	0.080	3.8	ug/L	234	Standard
	Ni	60	13379.6	2.6	**6.5697**	0.065	1.0	ug/L	215	Standard
	Cu	65	74766.0	1.3	**37.5331**	0.708	1.9	ug/L	104	Standard
	Zn	66	182914.0	1.7	**156.4214**	2.327	1.5	ug/L	363	Standard
>	**Ge**	72	528583.9	2.0				ug/L	495142	Standard
	As	75	2539.4	2.2	**2.1832**	0.013	0.6	ug/L	-50	Standard
	Se	82	108.7	5.6	**0.7905**	0.071	9.0	ug/L	14	Standard
	Se-1	77	150.3	9.2	**1.3050**	0.161	12.3	ug/L	42	Standard
>	**Ga**	71	5017.5	0.9				mg/L	42	Standard
	Rb	85	95755.1	2.6				ug/L	17	Standard
	Y	89	484844.4	1.2				ug/L	417098	Standard
>	**Rh**	103	451.7	17.2				ug/L	13	Standard
	Mo	98	2711.0	1.7	**0.9675**	0.010	1.1	ug/L	11	Standard
	Ag	107	547.0	8.0	**0.0673**	0.005	7.7	ug/L	68	Standard
	Cd	111	100.9	10.4	**0.0383**	0.005	14.0	mg/L	2	Standard
	Cd	114	263.2	6.1	**0.0470**	0.003	5.8	ug/L	12	Standard
>	**In**	115	613966.8	2.2				ug/L	587441	Standard
	Sn	118	1991.8	3.6	**0.2317**	0.015	6.6	ug/L	497	Standard
	Sb	123	971.4	9.0	**0.1947**	0.014	7.1	ug/L	78	Standard
	Ba	135	97214.2	0.8	**45.4386**	0.665	1.5	ug/L	24	Standard
	Ce	140	163522.7	0.6				ug/L	25	Standard
>	**Tb**	159	1011575.1	2.5				ug/L	939701	Standard
	Ho	165	4682.4	4.2				ug/L	10	Standard
	Tl	203	573.7	3.0	**0.0642**	0.003	4.6	ug/L	4	Standard
	Tl	205	525.0	7.2	**0.0698**	0.005	7.8	ug/L	2	Standard
	Pb	206	15938.7	1.8	**2.7562**	0.018	0.6	ug/L	240	Standard
	Pb	207	13053.6	0.6	**2.5367**	0.043	1.7	ug/L	198	Standard
	Pb	208	53401.0	1.9	**2.6245**	0.013	0.5	ug/L	883	Standard
	U	238	38818.0	2.5	**5.3391**	0.057	1.1	ug/L	3	Standard
>	**Bi**	209	553002.2	2.3				ug/L	523984	Standard

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Na	23	8.3	34.6	**88.0394**	31.556	35.8	mg/L	0	Standard
Mg	24	10193.4	4.3	**11.9448**	0.378	3.2	mg/L	37	Standard
K	39	798.4	2.0	**1.4974**	0.060	4.0	mg/L	38	Standard
Ca	43	1498.4	4.4	**83.9112**	4.508	5.4	mg/L	10	Standard
Fe	54	4251.3	3.0	**3.1535**	0.141	4.5	mg/L	179	Standard
Fe	57	1956.8	0.6	**4.9983**	0.081	1.6	mg/L	335	Standard
Sc-1	45	66852.2	1.8				mg/L	61029	Standard
Cl	35	38555.7	1.3				ug/L	20195	Standard
Kr	83	2.7	78.1				ug/L	4	Standard
Br	81	16405.6	4.1				ug/L	1547	Standard
P	31	22243.0	1.3				ug/L	15286	Standard
S	34	1961.8	3.3				ug/L	1572	Standard
Sr	88	2096.8	8.9				ug/L	73	Standard
C	12	170.0	21.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	107.9				mg/L	3	Standard
Dy	164	7687.7	5.1				mg/L	6	Standard
Ho-1	165	4682.4	4.2				mg/L	10	Standard
Er	166	4197.2	1.1				mg/L	13	Standard
I	127	34873.4	0.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		136.295	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.754	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.515
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.538
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Zn 66 Upper, S, EEE	Zn	66

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Method 6020 - Summary Report

Sample ID: L1606098615
Sample Date/Time: Wednesday, June 29, 2016 13:48:13
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	104439.3	4.8				ug/L	74699	Standard
	Be	9	536.7	12.4	**0.4427**	0.037	8.4	ug/L	8	Standard
	Al	27	77862989.2	8.3	**378.5121**	14.291	3.8	ug/L	1493	Standard
	Sc	45	58982.2	11.3				ug/L	61029	Standard
	Ti	47	2461.2	11.7	**6.5990**	0.434	6.6	ug/L	35	Standard
	V	51	4945.2	8.0	**0.4817**	0.017	3.5	ug/L	1435	Standard
	Cr	52	13134.4	7.3	**0.8107**	0.065	8.0	ug/L	7635	Standard
	Cr	53	1810.1	8.3	**1.6977**	0.117	6.9	ug/L	363	Standard
	Mn	55	1145096.1	8.2	**169.9719**	4.564	2.7	ug/L	747	Standard
	Co	59	4019.2	11.3	**0.5913**	0.032	5.4	ug/L	234	Standard
	Ni	60	7177.1	13.9	**3.8310**	0.314	8.2	ug/L	215	Standard
	Cu	65	41403.8	8.7	**22.8999**	0.588	2.6	ug/L	104	Standard
	Zn	66	43831.2	7.7	**41.0562**	0.750	1.8	ug/L	363	Standard
>	**Ge**	72	478398.7	6.6				ug/L	495142	Standard
	As	75	638.2	9.5	**0.6495**	0.045	6.9	ug/L	-50	Standard
	Se	82	102.9	17.3	**0.8353**	0.172	20.6	ug/L	14	Standard
	Se-1	77	94.0	19.4	**0.7027**	0.185	26.4	ug/L	42	Standard
>	**Ga**	71	463.3	11.0				mg/L	42	Standard
	Rb	85	23055.9	7.7				ug/L	17	Standard
	Y	89	432649.5	7.6				ug/L	417098	Standard
>	**Rh**	103	1188.4	10.3				ug/L	13	Standard
	Mo	98	1350.9	6.9	**0.5044**	0.013	2.5	ug/L	11	Standard
	Ag	107	139.0	6.4	**0.0086**	0.002	19.3	ug/L	68	Standard
	Cd	111	44.6	6.8	**0.0137**	0.002	16.4	mg/L	2	Standard
	Cd	114	129.2	31.8	**0.0237**	0.010	43.4	ug/L	12	Standard
>	**In**	115	583863.5	7.1				ug/L	587441	Standard
	Sn	118	2513.5	5.1	**0.3387**	0.012	3.5	ug/L	497	Standard
	Sb	123	705.1	6.8	**0.1478**	0.002	1.6	ug/L	78	Standard
	Ba	135	26452.2	7.2	**12.9866**	0.138	1.1	ug/L	24	Standard
	Ce	140	27398.2	9.1				ug/L	25	Standard
>	**Tb**	159	958605.6	6.1				ug/L	939701	Standard
	Ho	165	645.0	4.0				ug/L	10	Standard
	Tl	203	134.0	9.5	**0.0146**	0.001	7.1	ug/L	4	Standard
	Tl	205	118.3	6.5	**0.0169**	0.002	13.2	ug/L	2	Standard
	Pb	206	2508.9	7.1	**0.4009**	0.002	0.4	ug/L	240	Standard
	Pb	207	1976.5	6.7	**0.3487**	0.007	2.0	ug/L	198	Standard
	Pb	208	8160.9	6.7	**0.3634**	0.004	1.2	ug/L	883	Standard
	U	238	17292.6	7.2	**2.5205**	0.006	0.2	ug/L	3	Standard
>	**Bi**	209	521380.1	7.3				ug/L	523984	Standard

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Na	23	15.0	57.7	**176.9361**	92.757	52.4	mg/L	0	Standard
Mg	24	28440.1	8.6	**38.0068**	1.323	3.5	mg/L	37	Standard
K	39	673.3	1.9	**1.4418**	0.213	14.8	mg/L	38	Standard
Ca	43	1596.8	5.0	**102.4296**	8.312	8.1	mg/L	10	Standard
Fe	54	1077.2	5.0	**0.8118**	0.070	8.7	mg/L	179	Standard
Fe	57	1203.4	10.1	**3.1714**	0.327	10.3	mg/L	335	Standard
> **Sc-1**	45	58982.2	11.3				mg/L	61029	Standard
Cl	35	41482.2	7.1				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	15648.1	7.3				ug/L	1547	Standard
P	31	20014.9	6.8				ug/L	15286	Standard
S	34	1913.5	9.5				ug/L	1572	Standard
Sr	88	5429.3	11.3				ug/L	73	Standard
C	12	203.3	27.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	3	Standard
Dy	164	1127.2	20.3				mg/L	6	Standard
Ho-1	165	645.0	4.0				mg/L	10	Standard
Er	166	546.7	6.4				mg/L	13	Standard
I	127	112969.0	6.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		139.814	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.618	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.391
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.503
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606098617
Sample Date/Time: Wednesday, June 29, 2016 13:51:25
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	95101.0	2.9				ug/L	74699	Standard
	Be	9	61.7	9.4	**0.0626**	0.004	5.8	ug/L	8	Standard
	Al	27	16761639.5	0.8	**89.6118**	1.975	2.2	ug/L	1493	Standard
	Sc	45	53828.8	0.6				ug/L	61029	Standard
	Ti	47	756.4	12.3	**2.0144**	0.253	12.6	ug/L	35	Standard
	V	51	3040.4	3.6	**0.2328**	0.013	5.5	ug/L	1435	Standard
	Cr	52	11892.0	0.9	**0.6842**	0.022	3.3	ug/L	7635	Standard
	Cr	53	1066.7	2.7	**0.8986**	0.036	4.1	ug/L	363	Standard
	Mn	55	57447.7	1.9	**8.6332**	0.089	1.0	ug/L	747	Standard
	Co	59	1276.7	2.2	**0.1685**	0.005	2.7	ug/L	234	Standard
	Ni	60	2114.5	5.4	**1.0778**	0.056	5.2	ug/L	215	Standard
	Cu	65	5578.0	1.5	**3.0859**	0.022	0.7	ug/L	104	Standard
	Zn	66	8715.8	0.2	**8.0380**	0.061	0.8	ug/L	363	Standard
>	**Ge**	72	465226.7	0.9				ug/L	495142	Standard
	As	75	386.7	5.7	**0.4269**	0.018	4.2	ug/L	-50	Standard
	Se	82	42.7	8.0	**0.2761**	0.036	13.2	ug/L	14	Standard
	Se-1	77	67.0	16.1	**0.3532**	0.150	42.5	ug/L	42	Standard
>	**Ga**	71	183.3	18.2				mg/L	42	Standard
	Rb	85	8882.6	2.7				ug/L	17	Standard
	Y	89	409246.0	2.8				ug/L	417098	Standard
>	**Rh**	103	295.0	13.6				ug/L	13	Standard
	Mo	98	1514.9	3.6	**0.5995**	0.027	4.5	ug/L	11	Standard
	Ag	107	86.3	3.5	**0.0012**	0.001	48.9	ug/L	68	Standard
	Cd	111	45.4	6.6	**0.0152**	0.002	11.0	mg/L	2	Standard
	Cd	114	119.3	31.2	**0.0227**	0.008	33.9	ug/L	12	Standard
>	**In**	115	551838.0	2.1				ug/L	587441	Standard
	Sn	118	896.7	9.3	**0.0688**	0.017	24.4	ug/L	497	Standard
	Sb	123	476.3	5.5	**0.1045**	0.008	7.8	ug/L	78	Standard
	Ba	135	51101.0	1.7	**26.5634**	0.162	0.6	ug/L	24	Standard
	Ce	140	4162.2	9.3				ug/L	25	Standard
>	**Tb**	159	892953.9	1.2				ug/L	939701	Standard
	Ho	165	111.7	20.2				ug/L	10	Standard
	Tl	203	71.0	9.8	**0.0072**	0.001	12.5	ug/L	4	Standard
	Tl	205	50.0	10.0	**0.0075**	0.001	10.0	ug/L	2	Standard
	Pb	206	834.7	3.9	**0.0918**	0.006	7.0	ug/L	240	Standard
	Pb	207	668.0	3.0	**0.0768**	0.004	5.0	ug/L	198	Standard
	Pb	208	2813.8	1.3	**0.0825**	0.002	2.7	ug/L	883	Standard
	U	238	2276.2	2.7	**0.3405**	0.008	2.4	ug/L	3	Standard
>	**Bi**	209	502274.9	0.4				ug/L	523984	Standard

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Na	23	1.7	173.2	**21.6273**	37.451	173.2	mg/L	0	Standard
Mg	24	11037.4	4.7	**16.0863**	0.689	4.3	mg/L	37	Standard
K	39	470.0	10.1	**1.0642**	0.126	11.9	mg/L	38	Standard
Ca	43	383.3	8.5	**24.9281**	2.309	9.3	mg/L	10	Standard
Fe	54	307.3	17.1	**0.1571**	0.051	32.4	mg/L	179	Standard
Fe	57	490.0	5.4	**0.8143**	0.108	13.3	mg/L	335	Standard
> **Sc-1**	45	53828.8	0.6				mg/L	61029	Standard
Cl	35	29673.0	1.2				ug/L	20195	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	4564.0	9.2				ug/L	1547	Standard
P	31	17653.6	5.5				ug/L	15286	Standard
S	34	1876.8	5.1				ug/L	1572	Standard
Sr	88	1206.7	6.6				ug/L	73	Standard
C	12	186.7	18.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	3	Standard
Dy	164	173.0	22.9				mg/L	6	Standard
Ho-1	165	111.7	20.2				mg/L	10	Standard
Er	166	76.7	30.1				mg/L	13	Standard
I	127	8810.9	16.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		127.313	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.958	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.939
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.857
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606098619
Sample Date/Time: Wednesday, June 29, 2016 13:54:36
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	96013.3	1.6				ug/L	74699	Standard
	Be	9	225.0	13.5	**0.2062**	0.024	11.6	ug/L	8	Standard
	Al	27	3833929.3	1.4	**20.2847**	0.231	1.1	ug/L	1493	Standard
	Sc	45	56757.9	4.8				ug/L	61029	Standard
	Ti	47	657.0	3.0	**1.6551**	0.023	1.4	ug/L	35	Standard
	V	51	6468.0	2.1	**0.6763**	0.022	3.3	ug/L	1435	Standard
	Cr	52	12143.2	0.5	**0.6446**	0.043	6.7	ug/L	7635	Standard
	Cr	53	1533.4	8.3	**1.3595**	0.147	10.8	ug/L	363	Standard
	Mn	55	41319.9	1.1	**5.8936**	0.094	1.6	ug/L	747	Standard
	Co	59	1041.4	1.4	**0.1233**	0.005	3.8	ug/L	234	Standard
	Ni	60	1381.7	2.6	**0.6272**	0.001	0.2	ug/L	215	Standard
	Cu	65	22006.0	2.1	**11.9309**	0.100	0.8	ug/L	104	Standard
	Zn	66	12936.5	1.8	**11.6003**	0.101	0.9	ug/L	363	Standard
>	**Ge**	72	486496.6	2.4				ug/L	495142	Standard
	As	75	1429.3	4.7	**1.3578**	0.030	2.2	ug/L	-50	Standard
	Se	82	368.2	2.0	**3.2780**	0.104	3.2	ug/L	14	Standard
	Se-1	77	166.3	2.4	**1.6971**	0.106	6.2	ug/L	42	Standard
>	**Ga**	71	256.7	8.8				mg/L	42	Standard
	Rb	85	6678.1	5.5				ug/L	17	Standard
	Y	89	411615.1	2.5				ug/L	417098	Standard
>	**Rh**	103	45.0	40.1				ug/L	13	Standard
	Mo	98	2416.6	3.5	**0.9418**	0.055	5.8	ug/L	11	Standard
	Ag	107	106.0	14.6	**0.0040**	0.002	49.0	ug/L	68	Standard
	Cd	111	306.3	1.8	**0.1451**	0.002	1.4	mg/L	2	Standard
	Cd	114	658.6	9.3	**0.1319**	0.011	8.6	ug/L	12	Standard
>	**In**	115	562685.3	3.0				ug/L	587441	Standard
	Sn	118	1296.7	5.8	**0.1370**	0.009	6.5	ug/L	497	Standard
	Sb	123	1866.5	3.1	**0.4132**	0.007	1.8	ug/L	78	Standard
	Ba	135	49124.5	1.8	**25.0474**	0.324	1.3	ug/L	24	Standard
	Ce	140	4487.3	4.7				ug/L	25	Standard
>	**Tb**	159	930596.3	3.6				ug/L	939701	Standard
	Ho	165	203.3	14.2				ug/L	10	Standard
	Tl	203	145.3	15.0	**0.0163**	0.002	14.2	ug/L	4	Standard
	Tl	205	131.7	4.4	**0.0191**	0.000	1.8	ug/L	2	Standard
	Pb	206	1800.8	1.2	**0.2755**	0.007	2.5	ug/L	240	Standard
	Pb	207	1451.7	2.6	**0.2445**	0.002	0.8	ug/L	198	Standard
	Pb	208	5832.1	0.4	**0.2459**	0.009	3.7	ug/L	883	Standard
	U	238	34205.2	1.0	**5.1077**	0.154	3.0	ug/L	3	Standard
>	**Bi**	209	509656.0	3.1				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	92209.8	1.7	**128.1856**	8.381	6.5	mg/L	37	Standard
K	39	298.3	3.5	**0.5957**	0.033	5.6	mg/L	38	Standard
Ca	43	80.0	6.3	**2.9252**	0.551	18.8	mg/L	10	Standard
Fe	54	254.0	14.7	**0.0930**	0.030	32.4	mg/L	179	Standard
Fe	57	333.3	5.3	**0.1453**	0.073	50.0	mg/L	335	Standard
> **Sc-1**	45	56757.9	4.8				mg/L	61029	Standard
Cl	35	31152.7	1.5				ug/L	20195	Standard
Kr	83	0.7	86.6				ug/L	4	Standard
Br	81	53109.7	4.4				ug/L	1547	Standard
P	31	17403.3	2.0				ug/L	15286	Standard
S	34	1883.5	7.3				ug/L	1572	Standard
Sr	88	213.3	3.6				ug/L	73	Standard
C	12	256.7	12.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	288.4	16.8				mg/L	6	Standard
Ho-1	165	203.3	14.2				mg/L	10	Standard
Er	166	173.3	23.3				mg/L	13	Standard
I	127	470221.1	5.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.534	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.254	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.786
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.265
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606098625
Sample Date/Time: Wednesday, June 29, 2016 13:57:48
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	102613.0	0.8				ug/L	74699	Standard
	Be	9	78.3	9.8	**0.0724**	0.006	8.8	ug/L	8	Standard
	Al	27	33905192.3	1.5	**167.9500**	3.413	2.0	ug/L	1493	Standard
	Sc	45	63494.4	0.7				ug/L	61029	Standard
	Ti	47	6149.2	2.1	**15.7581**	0.447	2.8	ug/L	35	Standard
	V	51	12969.6	1.6	**1.4837**	0.027	1.8	ug/L	1435	Standard
	Cr	52	17892.2	0.6	**1.3372**	0.031	2.3	ug/L	7635	Standard
	Cr	53	3548.7	0.7	**3.4248**	0.009	0.3	ug/L	363	Standard
	Mn	55	3105877.1	1.7	**436.1197**	10.576	2.4	ug/L	747	Standard
	Co	59	6022.9	2.6	**0.8547**	0.030	3.5	ug/L	234	Standard
	Ni	60	6318.7	1.1	**3.1764**	0.053	1.7	ug/L	215	Standard
	Cu	65	5119.5	1.0	**2.5860**	0.011	0.4	ug/L	104	Standard
	Zn	66	19836.6	0.9	**17.3044**	0.276	1.6	ug/L	363	Standard
>	**Ge**	72	506357.7	0.8				ug/L	495142	Standard
	As	75	1090.3	6.9	**1.0117**	0.071	7.0	ug/L	-50	Standard
	Se	82	334.6	3.6	**2.8439**	0.125	4.4	ug/L	14	Standard
	Se-1	77	270.0	7.0	**2.9935**	0.272	9.1	ug/L	42	Standard
>	**Ga**	71	1363.4	8.0				mg/L	42	Standard
	Rb	85	42725.2	0.9				ug/L	17	Standard
	Y	89	453938.8	1.4				ug/L	417098	Standard
>	**Rh**	103	198.3	19.1				ug/L	13	Standard
	Mo	98	1348.4	1.8	**0.4789**	0.005	1.1	ug/L	11	Standard
	Ag	107	259.3	4.5	**0.0252**	0.002	7.6	ug/L	68	Standard
	Cd	111	351.0	2.3	**0.1529**	0.002	1.6	mg/L	2	Standard
	Cd	114	808.7	5.9	**0.1490**	0.010	6.6	ug/L	12	Standard
>	**In**	115	613191.6	0.9				ug/L	587441	Standard
	Sn	118	795.0	1.9	**0.0357**	0.003	9.4	ug/L	497	Standard
	Sb	123	319.9	2.9	**0.0614**	0.002	3.0	ug/L	78	Standard
	Ba	135	112678.5	1.7	**52.7237**	0.702	1.3	ug/L	24	Standard
	Ce	140	37260.8	2.0				ug/L	25	Standard
>	**Tb**	159	1001354.7	0.4				ug/L	939701	Standard
	Ho	165	1051.7	3.8				ug/L	10	Standard
	Tl	203	322.7	6.7	**0.0353**	0.003	7.6	ug/L	4	Standard
	Tl	205	283.3	17.7	**0.0376**	0.006	16.6	ug/L	2	Standard
	Pb	206	8100.8	1.1	**1.3649**	0.025	1.8	ug/L	240	Standard
	Pb	207	6526.4	1.1	**1.2323**	0.027	2.2	ug/L	198	Standard
	Pb	208	27115.2	0.7	**1.2953**	0.018	1.4	ug/L	883	Standard
	U	238	26591.0	2.4	**3.6542**	0.116	3.2	ug/L	3	Standard
>	**Bi**	209	553363.8	1.0				ug/L	523984	Standard

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Na	23	5.0	100.0	**55.1859**	55.233	100.1	mg/L	0	Standard
Mg	24	8027.1	0.4	**9.8947**	0.087	0.9	mg/L	37	Standard
K	39	523.3	14.3	**0.9970**	0.152	15.2	mg/L	38	Standard
Ca	43	861.7	11.2	**49.8050**	6.018	12.1	mg/L	10	Standard
Fe	54	1108.4	4.4	**0.7648**	0.035	4.5	mg/L	179	Standard
Fe	57	975.0	10.7	**2.1112**	0.341	16.2	mg/L	335	Standard
> **Sc-1**	45	63494.4	0.7				mg/L	61029	Standard
Cl	35	33805.7	1.3				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	35418.0	3.4				ug/L	1547	Standard
P	31	20113.3	1.1				ug/L	15286	Standard
S	34	2053.5	4.6				ug/L	1572	Standard
Sr	88	896.7	5.2				ug/L	73	Standard
C	12	130.0	35.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	1595.5	8.0				mg/L	6	Standard
Ho-1	165	1051.7	3.8				mg/L	10	Standard
Er	166	1000.0	4.0				mg/L	13	Standard
I	127	43091.5	8.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		137.369	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.265	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.384
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.607
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606098627
Sample Date/Time: Wednesday, June 29, 2016 14:00:59
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	98891.7	1.0				ug/L	74699	Standard
	Be	9	638.3	5.3	**0.5552**	0.024	4.3	ug/L	8	Standard
	Al	27	63228292.3	2.4	**324.9422**	4.583	1.4	ug/L	1493	Standard
	Sc	45	59185.4	3.1				ug/L	61029	Standard
	Ti	47	12099.8	1.5	**31.9570**	0.495	1.6	ug/L	35	Standard
	V	51	31610.6	0.8	**4.0089**	0.089	2.2	ug/L	1435	Standard
	Cr	52	29501.7	2.0	**2.9745**	0.066	2.2	ug/L	7635	Standard
	Cr	53	4110.6	4.5	**4.1359**	0.142	3.4	ug/L	363	Standard
	Mn	55	939161.3	0.8	**135.3408**	0.783	0.6	ug/L	747	Standard
	Co	59	11927.7	1.5	**1.7769**	0.013	0.7	ug/L	234	Standard
	Ni	60	10174.7	1.2	**5.3344**	0.025	0.5	ug/L	215	Standard
	Cu	65	63138.6	0.6	**33.9717**	0.415	1.2	ug/L	104	Standard
	Zn	66	96624.1	0.5	**88.3979**	1.021	1.2	ug/L	363	Standard
>	**Ge**	72	492984.7	1.4				ug/L	495142	Standard
	As	75	1814.9	1.7	**1.6870**	0.014	0.9	ug/L	-50	Standard
	Se	82	95.5	0.5	**0.7363**	0.016	2.2	ug/L	14	Standard
	Se-1	77	118.3	17.1	**1.0027**	0.256	25.5	ug/L	42	Standard
>	**Ga**	71	3340.4	1.3				mg/L	42	Standard
	Rb	85	72434.4	1.9				ug/L	17	Standard
	Y	89	474043.5	0.9				ug/L	417098	Standard
>	**Rh**	103	386.7	16.4				ug/L	13	Standard
	Mo	98	2396.5	0.7	**0.9091**	0.018	1.9	ug/L	11	Standard
	Ag	107	338.3	4.7	**0.0399**	0.003	6.7	ug/L	68	Standard
	Cd	111	101.2	9.9	**0.0414**	0.005	12.6	mg/L	2	Standard
	Cd	114	230.2	21.2	**0.0435**	0.009	20.9	ug/L	12	Standard
>	**In**	115	577417.6	1.2				ug/L	587441	Standard
	Sn	118	1793.4	6.6	**0.2178**	0.023	10.5	ug/L	497	Standard
	Sb	123	600.3	4.8	**0.1267**	0.008	6.1	ug/L	78	Standard
	Ba	135	70114.5	1.5	**34.8357**	0.414	1.2	ug/L	24	Standard
	Ce	140	125576.7	1.8				ug/L	25	Standard
>	**Tb**	159	953741.7	1.0				ug/L	939701	Standard
	Ho	165	3755.5	3.8				ug/L	10	Standard
	Tl	203	452.7	12.3	**0.0539**	0.006	11.6	ug/L	4	Standard
	Tl	205	385.0	10.1	**0.0548**	0.005	9.0	ug/L	2	Standard
	Pb	206	12183.9	0.5	**2.2443**	0.020	0.9	ug/L	240	Standard
	Pb	207	9920.2	0.8	**2.0519**	0.018	0.9	ug/L	198	Standard
	Pb	208	42107.7	1.6	**2.2055**	0.026	1.2	ug/L	883	Standard
	U	238	36138.4	1.7	**5.3249**	0.032	0.6	ug/L	3	Standard
>	**Bi**	209	516181.2	1.2				ug/L	523984	Standard

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Na	23	8.3	91.7	**99.8498**	90.493	90.6	mg/L	0	Standard
Mg	24	9524.7	1.9	**12.6179**	0.315	2.5	mg/L	37	Standard
K	39	723.4	10.8	**1.5367**	0.198	12.9	mg/L	38	Standard
Ca	43	1308.4	8.3	**82.6186**	4.814	5.8	mg/L	10	Standard
Fe	54	3102.8	2.2	**2.5749**	0.034	1.3	mg/L	179	Standard
Fe	57	1665.1	3.0	**4.7616**	0.022	0.5	mg/L	335	Standard
Sc-1	45	59185.4	3.1				mg/L	61029	Standard
Cl	35	38114.5	0.9				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	13185.7	5.6				ug/L	1547	Standard
P	31	20465.5	3.4				ug/L	15286	Standard
S	34	1960.1	7.7				ug/L	1572	Standard
Sr	88	1940.1	7.4				ug/L	73	Standard
C	12	216.7	23.7				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	3	Standard
Dy	164	5933.6	2.4				mg/L	6	Standard
Ho-1	165	3755.5	3.8				mg/L	10	Standard
Er	166	3430.4	0.6				mg/L	13	Standard
I	127	31850.1	1.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.387	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.564	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.294
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.511
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 14:04:12
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	95022.8	6.4				ug/L	74699	Standard
	Be	9	57413.6	2.5	**51.3575**	1.980	3.9	ug/L	8	Standard
	Al	27	7949888.2	1.3	**42.6051**	2.208	5.2	ug/L	1493	Standard
	Sc	45	58088.0	4.8				ug/L	61029	Standard
	Ti	47	37651.4	1.9	**100.2698**	3.249	3.2	ug/L	35	Standard
	V	51	404346.6	1.8	**53.8882**	0.844	1.6	ug/L	1435	Standard
	Cr	52	381698.1	1.1	**51.0223**	1.642	3.2	ug/L	7635	Standard
	Cr	53	47042.9	0.3	**51.1128**	1.842	3.6	ug/L	363	Standard
	Mn	55	357326.2	3.2	**51.6830**	0.417	0.8	ug/L	747	Standard
	Co	59	371699.6	2.5	**56.8155**	0.522	0.9	ug/L	234	Standard
	Ni	60	94541.7	1.4	**50.9011**	1.597	3.1	ug/L	215	Standard
	Cu	65	94983.8	1.5	**51.4773**	2.133	4.1	ug/L	104	Standard
	Zn	66	56900.0	0.7	**52.1829**	1.541	3.0	ug/L	363	Standard
>	Ge	72	490310.3	3.4				ug/L	495142	Standard
	As	75	57867.9	1.8	**52.2509**	0.921	1.8	ug/L	-50	Standard
	Se	82	5817.8	2.4	**53.4067**	0.847	1.6	ug/L	14	Standard
	Se-1	77	4012.5	1.4	**54.8814**	1.095	2.0	ug/L	42	Standard
>	Ga	71	80.0	6.3				mg/L	42	Standard
	Rb	85	831.7	8.5				ug/L	17	Standard
	Y	89	423000.5	2.4				ug/L	417098	Standard
>	Rh	103	26.7	57.3				ug/L	13	Standard
	Mo	98	279510.1	1.2	**103.0732**	1.481	1.4	ug/L	11	Standard
	Ag	107	337025.9	0.7	**50.8187**	0.653	1.3	ug/L	68	Standard
	Cd	111	104719.9	1.6	**49.2197**	0.492	1.0	mg/L	2	Standard
	Cd	114	254484.5	1.8	**48.7789**	1.357	2.8	ug/L	12	Standard
>	In	115	597695.8	1.6				ug/L	587441	Standard
	Sn	118	297589.5	3.3	**49.9660**	0.932	1.9	ug/L	497	Standard
	Sb	123	237800.4	0.6	**50.0611**	0.480	1.0	ug/L	78	Standard
	Ba	135	98785.4	1.3	**47.4247**	0.676	1.4	ug/L	24	Standard
	Ce	140	118.3	6.5				ug/L	25	Standard
>	Tb	159	962162.8	1.8				ug/L	939701	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	431721.7	1.4	**50.5906**	0.299	0.6	ug/L	4	Standard
	Tl	205	386667.7	1.8	**52.2055**	0.331	0.6	ug/L	2	Standard
	Pb	206	286495.7	0.6	**51.7458**	1.032	2.0	ug/L	240	Standard
	Pb	207	254256.8	1.2	**51.6830**	0.707	1.4	ug/L	198	Standard
	Pb	208	993731.8	1.4	**51.1193**	0.294	0.6	ug/L	883	Standard
	U	238	371822.3	1.0	**52.1805**	0.682	1.3	ug/L	3	Standard
>	Bi	209	542470.6	1.9				ug/L	523984	Standard

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Na	23	1.7	173.2	**20.6892**	35.826	173.2	mg/L	0	Standard
Mg	24	4115.6	5.8	**5.5148**	0.066	1.2	mg/L	37	Standard
K	39	1971.8	1.5	**4.4711**	0.214	4.8	mg/L	38	Standard
Ca	43	71.7	16.1	**2.2502**	0.891	39.6	mg/L	10	Standard
Fe	54	5897.1	1.5	**5.1229**	0.272	5.3	mg/L	179	Standard
Fe	57	1798.4	2.6	**5.3592**	0.387	7.2	mg/L	335	Standard
Sc-1	45	58088.0	4.8				mg/L	61029	Standard
Cl	35	26443.8	4.7				ug/L	20195	Standard
Kr	83	1.0	0.0				ug/L	4	Standard
Br	81	1943.5	9.9				ug/L	1547	Standard
P	31	18503.0	1.3				ug/L	15286	Standard
S	34	2213.5	3.2				ug/L	1572	Standard
Sr	88	76.7	10.0				ug/L	73	Standard
C	12	120.0	43.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	2.9	217.0				mg/L	6	Standard
Ho-1	165	8.3	34.6				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	3483.8	25.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.715		
Al	27	85.210		
Sc	45			
Ti	47	100.270		
V	51	107.776		
Cr	52	102.045		
Cr	53			
Mn	55	103.366		
Co	59	113.631		
Ni	60	101.802		
Cu	65	102.955		
Zn	66	104.366		
Ge	72		99.024	
As	75	104.502		
Se	82	106.813		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	103.073		
Ag	107	101.637		
Cd	111	98.439		
Cd	114			
In	115			101.746
Sn	118	99.932		
Sb	123	100.122		
Ba	135	94.849		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.181		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.239		
U	238	104.361		
Bi	209			103.528
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	
QC Std 6	Co	59	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 14:07:23
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	87483.9	4.7				ug/L	74699	Standard
	Be	9	21.7	96.1	**0.0292**	0.021	73.0	ug/L	8	Standard
	Al	27	18230.8	94.8	**0.0950**	0.107	112.2	ug/L	1493	Standard
	Sc	45	56471.8	3.5				ug/L	61029	Standard
	Ti	47	36.0	46.7	**-0.0098**	0.050	510.8	ug/L	35	Standard
	V	51	1334.8	2.3	**-0.0125**	0.010	80.4	ug/L	1435	Standard
	Cr	52	6684.1	1.9	**-0.0897**	0.031	35.0	ug/L	7635	Standard
	Cr	53	393.3	6.4	**0.1115**	0.043	38.6	ug/L	363	Standard
	Mn	55	1346.4	57.0	**0.0546**	0.123	224.6	ug/L	747	Standard
	Co	59	278.3	17.3	**0.0065**	0.009	139.3	ug/L	234	Standard
	Ni	60	177.0	5.9	**-0.0261**	0.004	17.0	ug/L	215	Standard
	Cu	65	145.0	10.8	**-0.0230**	0.009	41.3	ug/L	104	Standard
	Zn	66	399.3	2.4	**-0.0757**	0.021	28.0	ug/L	363	Standard
>	**Ge**	72	478426.6	3.3				ug/L	495142	Standard
	As	75	-39.3	49.9	**0.0231**	0.019	81.6	ug/L	-50	Standard
	Se	82	16.5	11.7	**0.0181**	0.023	124.9	ug/L	14	Standard
	Se-1	77	38.7	26.9	**-0.0773**	0.131	170.1	ug/L	42	Standard
>	**Ga**	71	66.7	15.6				mg/L	42	Standard
	Rb	85	18.3	41.7				ug/L	17	Standard
	Y	89	416242.9	2.8				ug/L	417098	Standard
>	**Rh**	103	15.0	57.7				ug/L	13	Standard
	Mo	98	272.1	23.3	**0.0976**	0.024	24.4	ug/L	11	Standard
	Ag	107	106.0	6.8	**0.0036**	0.001	28.2	ug/L	68	Standard
	Cd	111	10.2	22.2	**-0.0030**	0.001	37.6	mg/L	2	Standard
	Cd	114	31.6	53.8	**0.0041**	0.003	80.7	ug/L	12	Standard
>	**In**	115	580179.3	0.7				ug/L	587441	Standard
	Sn	118	746.7	16.1	**0.0348**	0.022	62.5	ug/L	497	Standard
	Sb	123	368.4	24.4	**0.0758**	0.020	26.4	ug/L	78	Standard
	Ba	135	41.0	10.6	**0.0043**	0.002	51.4	ug/L	24	Standard
	Ce	140	38.3	61.6				ug/L	25	Standard
>	**Tb**	159	945404.9	0.5				ug/L	939701	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	65.7	8.7	**0.0061**	0.001	8.8	ug/L	4	Standard
	Tl	205	95.0	45.9	**0.0133**	0.006	45.0	ug/L	2	Standard
	Pb	206	276.0	7.9	**-0.0202**	0.003	15.8	ug/L	240	Standard
	Pb	207	258.0	12.6	**-0.0163**	0.006	36.3	ug/L	198	Standard
	Pb	208	1134.3	12.6	**-0.0143**	0.008	56.7	ug/L	883	Standard
	U	238	91.0	75.8	**0.0087**	0.010	115.9	ug/L	3	Standard
>	**Bi**	209	530301.2	1.8				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	46.7	81.1	**0.0007**	0.054	7923.6	mg/L	37	Standard
K	39	40.0	45.1	**-0.0194**	0.039	202.6	mg/L	38	Standard
Ca	43	28.3	20.4	**-0.5841**	0.427	73.1	mg/L	10	Standard
Fe	54	129.2	39.5	**-0.0191**	0.049	258.2	mg/L	179	Standard
Fe	57	241.7	27.6	**-0.1803**	0.270	149.7	mg/L	335	Standard
> **Sc-1**	45	56471.8	3.5				mg/L	61029	Standard
Cl	35	26027.0	1.3				ug/L	20195	Standard
Kr	83	3.0	57.7				ug/L	4	Standard
Br	81	1783.4	6.5				ug/L	1547	Standard
P	31	18152.5	2.7				ug/L	15286	Standard
S	34	2168.5	1.2				ug/L	1572	Standard
Sr	88	56.7	27.0				ug/L	73	Standard
C	12	93.3	24.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	6.5	86.7				mg/L	6	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	2606.9	21.7				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.624	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.764
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.206
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606098629
Sample Date/Time: Wednesday, June 29, 2016 14:10:36
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	98303.0	2.6				ug/L	74699	Standard
	Be	9	480.0	19.8	**0.4216**	0.078	18.5	ug/L	8	Standard
	Al	27	74581592.0	2.0	**385.7852**	11.899	3.1	ug/L	1493	Standard
	Sc	45	57877.0	1.4				ug/L	61029	Standard
	Ti	47	6572.4	2.9	**18.4374**	0.321	1.7	ug/L	35	Standard
	V	51	8784.7	0.2	**1.0487**	0.019	1.8	ug/L	1435	Standard
	Cr	52	16164.0	1.7	**1.3092**	0.018	1.4	ug/L	7635	Standard
	Cr	53	2105.1	0.9	**2.1070**	0.052	2.5	ug/L	363	Standard
	Mn	55	1145494.2	1.1	**175.8506**	2.171	1.2	ug/L	747	Standard
	Co	59	6198.3	3.2	**0.9668**	0.035	3.6	ug/L	234	Standard
	Ni	60	8328.3	2.3	**4.6339**	0.069	1.5	ug/L	215	Standard
	Cu	65	39558.9	1.3	**22.6316**	0.139	0.6	ug/L	104	Standard
	Zn	66	37507.0	2.0	**36.2726**	0.401	1.1	ug/L	363	Standard
>	**Ge**	72	462898.1	1.3				ug/L	495142	Standard
	As	75	729.1	4.9	**0.7559**	0.035	4.6	ug/L	-50	Standard
	Se	82	97.9	9.3	**0.8168**	0.100	12.2	ug/L	14	Standard
	Se-1	77	92.7	14.7	**0.7365**	0.213	29.0	ug/L	42	Standard
>	**Ga**	71	1238.4	2.6				mg/L	42	Standard
	Rb	85	36981.8	1.6				ug/L	17	Standard
	Y	89	423750.9	0.9				ug/L	417098	Standard
>	**Rh**	103	1170.0	7.1				ug/L	13	Standard
	Mo	98	1333.1	1.3	**0.5111**	0.005	0.9	ug/L	11	Standard
	Ag	107	159.7	2.8	**0.0124**	0.001	8.3	ug/L	68	Standard
	Cd	111	50.7	12.0	**0.0171**	0.003	15.0	mg/L	2	Standard
	Cd	114	154.3	14.1	**0.0289**	0.004	13.0	ug/L	12	Standard
>	**In**	115	568573.6	2.1				ug/L	587441	Standard
	Sn	118	2385.2	8.8	**0.3269**	0.032	9.8	ug/L	497	Standard
	Sb	123	701.5	2.0	**0.1511**	0.004	2.9	ug/L	78	Standard
	Ba	135	49620.1	0.4	**25.0380**	0.447	1.8	ug/L	24	Standard
	Ce	140	69524.2	1.7				ug/L	25	Standard
>	**Tb**	159	941672.2	2.5				ug/L	939701	Standard
	Ho	165	1511.7	2.5				ug/L	10	Standard
	Tl	203	215.3	8.2	**0.0254**	0.002	6.7	ug/L	4	Standard
	Tl	205	171.7	4.4	**0.0251**	0.001	2.6	ug/L	2	Standard
	Pb	206	5244.6	2.1	**0.9485**	0.002	0.2	ug/L	240	Standard
	Pb	207	4168.9	1.9	**0.8423**	0.008	0.9	ug/L	198	Standard
	Pb	208	17565.0	0.7	**0.8990**	0.013	1.4	ug/L	883	Standard
	U	238	17410.3	1.3	**2.6228**	0.019	0.7	ug/L	3	Standard
>	**Bi**	209	504494.7	1.9				ug/L	523984	Standard

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Na	23	13.3	78.1	**161.6266**	126.012	78.0	mg/L	0	Standard
Mg	24	27959.1	0.6	**37.9939**	0.282	0.7	mg/L	37	Standard
K	39	733.4	5.5	**1.5946**	0.079	5.0	mg/L	38	Standard
Ca	43	1693.4	2.8	**110.2950**	4.030	3.7	mg/L	10	Standard
Fe	54	1507.3	3.7	**1.2090**	0.035	2.9	mg/L	179	Standard
Fe	57	1286.7	5.0	**3.5362**	0.177	5.0	mg/L	335	Standard
> **Sc-1**	45	57877.0	1.4				mg/L	61029	Standard
Cl	35	39812.2	0.7				ug/L	20195	Standard
Kr	83	2.3	24.7				ug/L	4	Standard
Br	81	15855.0	0.8				ug/L	1547	Standard
P	31	19874.7	1.1				ug/L	15286	Standard
S	34	1861.8	8.3				ug/L	1572	Standard
Sr	88	5489.3	0.8				ug/L	73	Standard
C	12	143.3	29.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	2426.6	8.1				mg/L	6	Standard
Ho-1	165	1511.7	2.5				mg/L	10	Standard
Er	166	1466.7	15.1				mg/L	13	Standard
I	127	114010.2	6.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		131.599	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.488	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.788
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.280
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606098639
Sample Date/Time: Wednesday, June 29, 2016 14:13:47
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	95709.8	2.9				ug/L	74699	Standard
	Be	9	26.7	92.5	**0.0314**	0.022	70.9	ug/L	8	Standard
	Al	27	47777.1	19.3	**0.2396**	0.041	17.2	ug/L	1493	Standard
	Sc	45	57199.5	2.6				ug/L	61029	Standard
	Ti	47	140.3	60.7	**0.2633**	0.227	86.2	ug/L	35	Standard
	V	51	2113.6	5.5	**0.0856**	0.015	17.8	ug/L	1435	Standard
	Cr	52	11519.7	1.7	**0.5382**	0.024	4.4	ug/L	7635	Standard
	Cr	53	731.7	8.2	**0.4658**	0.068	14.5	ug/L	363	Standard
	Mn	55	10046.3	0.4	**1.3019**	0.003	0.2	ug/L	747	Standard
	Co	59	277.3	4.9	**0.0049**	0.002	38.1	ug/L	234	Standard
	Ni	60	403.7	2.5	**0.0928**	0.006	6.6	ug/L	215	Standard
	Cu	65	2594.2	1.0	**1.2969**	0.011	0.8	ug/L	104	Standard
	Zn	66	5488.0	1.5	**4.5940**	0.065	1.4	ug/L	363	Standard
>	**Ge**	72	492746.6	0.5				ug/L	495142	Standard
	As	75	-23.9	159.7	**0.0381**	0.034	90.0	ug/L	-50	Standard
	Se	82	16.9	42.3	**0.0162**	0.065	398.3	ug/L	14	Standard
	Se-1	77	44.7	15.2	**-0.0080**	0.091	1136.4	ug/L	42	Standard
>	**Ga**	71	35.0	24.7				mg/L	42	Standard
	Rb	85	228.3	6.7				ug/L	17	Standard
	Y	89	426313.2	2.4				ug/L	417098	Standard
>	**Rh**	103	20.0	66.1				ug/L	13	Standard
	Mo	98	146.2	8.6	**0.0487**	0.005	10.8	ug/L	11	Standard
	Ag	107	84.7	10.6	**-0.0000**	0.001	3427.7	ug/L	68	Standard
	Cd	111	14.4	26.2	**-0.0011**	0.002	163.5	mg/L	2	Standard
	Cd	114	36.0	7.5	**0.0048**	0.001	11.2	ug/L	12	Standard
>	**In**	115	592771.3	1.1				ug/L	587441	Standard
	Sn	118	1206.7	2.0	**0.1101**	0.007	6.0	ug/L	497	Standard
	Sb	123	2747.6	2.7	**0.5790**	0.016	2.8	ug/L	78	Standard
	Ba	135	327.7	1.8	**0.1426**	0.002	1.3	ug/L	24	Standard
	Ce	140	215.0	46.7				ug/L	25	Standard
>	**Tb**	159	942434.8	1.8				ug/L	939701	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	30.7	28.5	**0.0019**	0.001	54.2	ug/L	4	Standard
	Tl	205	31.7	59.8	**0.0045**	0.003	57.0	ug/L	2	Standard
	Pb	206	347.7	8.5	**-0.0077**	0.005	63.4	ug/L	240	Standard
	Pb	207	296.0	3.8	**-0.0091**	0.002	22.4	ug/L	198	Standard
	Pb	208	1207.0	5.0	**-0.0113**	0.003	23.3	ug/L	883	Standard
	U	238	16.7	21.1	**-0.0021**	0.000	23.4	ug/L	3	Standard
>	**Bi**	209	536687.4	0.8				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	78.3	9.8	**0.0427**	0.008	19.8	mg/L	37	Standard
K	39	33.3	56.8	**-0.0347**	0.047	136.1	mg/L	38	Standard
Ca	43	38.3	27.2	**0.0551**	0.672	1218.0	mg/L	10	Standard
Fe	54	152.5	13.6	**-0.0001**	0.021	24429.9	mg/L	179	Standard
Fe	57	270.0	10.3	**-0.0961**	0.083	86.0	mg/L	335	Standard
Sc-1	45	57199.5	2.6				mg/L	61029	Standard
Cl	35	30633.6	0.6				ug/L	20195	Standard
Kr	83	2.7	78.1				ug/L	4	Standard
Br	81	2093.5	12.2				ug/L	1547	Standard
P	31	17446.7	2.4				ug/L	15286	Standard
S	34	1971.8	2.9				ug/L	1572	Standard
Sr	88	48.3	26.0				ug/L	73	Standard
C	12	116.7	34.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	9.0	108.0				mg/L	6	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	4304.0	50.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		128.128	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.516	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.907
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.424
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606098641
Sample Date/Time: Wednesday, June 29, 2016 14:16:59
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	87267.4	3.2				ug/L	74699	Standard
	Be	9	11.7	49.5	**0.0189**	0.005	28.8	ug/L	8	Standard
	Al	27	605511.0	1.7	**3.5149**	0.083	2.4	ug/L	1493	Standard
	Sc	45	54390.8	2.9				ug/L	61029	Standard
	Ti	47	93.0	12.4	**0.1442**	0.032	22.4	ug/L	35	Standard
	V	51	1794.1	5.9	**0.0496**	0.015	30.2	ug/L	1435	Standard
	Cr	52	10365.2	1.5	**0.4195**	0.024	5.7	ug/L	7635	Standard
	Cr	53	613.3	8.2	**0.3551**	0.058	16.5	ug/L	363	Standard
	Mn	55	4513.0	1.6	**0.5208**	0.012	2.3	ug/L	747	Standard
	Co	59	310.3	5.3	**0.0112**	0.002	21.0	ug/L	234	Standard
	Ni	60	490.0	6.7	**0.1461**	0.017	11.6	ug/L	215	Standard
	Cu	65	1018.0	2.6	**0.4608**	0.017	3.7	ug/L	104	Standard
	Zn	66	3968.5	2.5	**3.2944**	0.091	2.8	ug/L	363	Standard
>	**Ge**	72	479837.7	0.4				ug/L	495142	Standard
	As	75	-18.8	39.3	**0.0423**	0.007	15.9	ug/L	-50	Standard
	Se	82	16.1	20.6	**0.0139**	0.032	229.1	ug/L	14	Standard
	Se-1	77	51.0	14.8	**0.0980**	0.104	105.7	ug/L	42	Standard
>	**Ga**	71	46.7	22.3				mg/L	42	Standard
	Rb	85	2146.8	6.0				ug/L	17	Standard
	Y	89	405082.7	1.5				ug/L	417098	Standard
>	**Rh**	103	10.0	86.6				ug/L	13	Standard
	Mo	98	183.9	8.1	**0.0672**	0.006	9.5	ug/L	11	Standard
	Ag	107	85.0	8.5	**0.0009**	0.001	123.2	ug/L	68	Standard
	Cd	111	58.3	9.8	**0.0215**	0.003	12.3	mg/L	2	Standard
	Cd	114	162.0	10.0	**0.0312**	0.003	9.6	ug/L	12	Standard
>	**In**	115	556306.9	1.6				ug/L	587441	Standard
	Sn	118	983.4	6.5	**0.0831**	0.013	16.0	ug/L	497	Standard
	Sb	123	290.8	14.6	**0.0617**	0.011	17.2	ug/L	78	Standard
	Ba	135	1301.4	2.0	**0.6554**	0.007	1.1	ug/L	24	Standard
	Ce	140	1251.7	2.7				ug/L	25	Standard
>	**Tb**	159	894371.7	2.0				ug/L	939701	Standard
	Ho	165	23.3	61.9				ug/L	10	Standard
	Tl	203	26.7	21.3	**0.0015**	0.001	46.3	ug/L	4	Standard
	Tl	205	18.3	68.6	**0.0028**	0.002	63.1	ug/L	2	Standard
	Pb	206	368.7	5.0	**-0.0008**	0.004	496.5	ug/L	240	Standard
	Pb	207	301.3	5.5	**-0.0052**	0.004	82.3	ug/L	198	Standard
	Pb	208	1198.4	1.5	**-0.0089**	0.002	20.6	ug/L	883	Standard
	U	238	7.7	32.8	**-0.0033**	0.000	11.3	ug/L	3	Standard
>	**Bi**	209	513924.4	1.5				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	638.3	13.6	**0.8624**	0.151	17.5	mg/L	37	Standard
K	39	86.7	3.3	**0.1010**	0.012	12.3	mg/L	38	Standard
Ca	43	31.7	48.2	**-0.2871**	1.074	374.0	mg/L	10	Standard
Fe	54	129.1	21.5	**-0.0150**	0.029	192.4	mg/L	179	Standard
Fe	57	250.0	12.2	**-0.1181**	0.141	119.7	mg/L	335	Standard
Sc-1	45	54390.8	2.9				mg/L	61029	Standard
Cl	35	28123.4	3.1				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	1706.8	4.2				ug/L	1547	Standard
P	31	17456.7	1.2				ug/L	15286	Standard
S	34	1960.1	4.3				ug/L	1572	Standard
Sr	88	86.7	3.3				ug/L	73	Standard
C	12	86.7	35.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	22.9	67.6				mg/L	6	Standard
Ho-1	165	23.3	61.9				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	6631.5	5.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		116.826	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.909	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.700
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.080
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606102602
Sample Date/Time: Wednesday, June 29, 2016 14:51:20
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	98959.1	4.1				ug/L	74699	Standard
	Be	9	893.4	7.1	**0.7730**	0.024	3.1	ug/L	8	Standard
	Al	27	86838575.1	3.0	**446.1622**	5.675	1.3	ug/L	1493	Standard
	Sc	45	59841.3	1.2				ug/L	61029	Standard
	Ti	47	724.7	2.7	**1.9675**	0.086	4.4	ug/L	35	Standard
	V	51	-99401.9	27.0	**-14.4927**	3.863	26.7	ug/L	1435	Standard
	Cr	52	14286817.6	0.7	**2092.1702**	38.595	1.8	ug/L	7635	Standard
	Cr	53	1819264.9	1.0	**2136.8631**	30.527	1.4	ug/L	363	Standard
	Mn	55	9369393.8	2.3	**1460.7209**	18.166	1.2	ug/L	747	Standard
	Co	59	953653.0	0.8	**156.7618**	2.325	1.5	ug/L	234	Standard
	Ni	60	10094931.6	0.5	**5854.0954**	89.919	1.5	ug/L	215	Standard
	Cu	65	555284.9	0.4	**323.8508**	6.370	2.0	ug/L	104	Standard
	Zn	66	64094.6	1.0	**63.2545**	1.058	1.7	ug/L	363	Standard
>	**Ge**	72	456115.5	1.9				ug/L	495142	Standard
	As	75	3627.2	1.9	**3.5767**	0.135	3.8	ug/L	-50	Standard
	Se	82	1754.2	3.0	**17.2111**	0.289	1.7	ug/L	14	Standard
	Se-1	77	3450.1	4.6	**50.7001**	3.400	6.7	ug/L	42	Standard
>	**Ga**	71	493.3	9.8				mg/L	42	Standard
	Rb	85	15579.7	1.3				ug/L	17	Standard
	Y	89	510259.3	1.5				ug/L	417098	Standard
>	**Rh**	103	536.7	10.8				ug/L	13	Standard
	Mo	98	52406.3	2.2	**22.0721**	0.200	0.9	ug/L	11	Standard
	Ag	107	797.7	2.2	**0.1246**	0.004	3.1	ug/L	68	Standard
	Cd	111	4820.0	1.8	**2.5808**	0.025	1.0	mg/L	2	Standard
	Cd	114	11654.3	2.8	**2.5494**	0.039	1.5	ug/L	12	Standard
>	**In**	115	523117.8	1.3				ug/L	587441	Standard
	Sn	118	2368.5	5.4	**0.3606**	0.023	6.4	ug/L	497	Standard
	Sb	123	2240.5	1.3	**0.5347**	0.001	0.2	ug/L	78	Standard
	Ba	135	135783.1	0.9	**74.4848**	0.361	0.5	ug/L	24	Standard
	Ce	140	104687.1	1.1				ug/L	25	Standard
>	**Tb**	159	898543.7	0.7				ug/L	939701	Standard
	Ho	165	6684.8	2.2				ug/L	10	Standard
	Tl	203	178.0	4.1	**0.0225**	0.001	5.6	ug/L	4	Standard
	Tl	205	203.3	37.2	**0.0321**	0.012	38.4	ug/L	2	Standard
	Pb	206	1304.4	5.0	**0.2026**	0.016	8.1	ug/L	240	Standard
	Pb	207	1055.7	2.5	**0.1793**	0.004	2.5	ug/L	198	Standard
	Pb	208	4341.2	2.0	**0.1854**	0.004	2.0	ug/L	883	Standard
	U	238	4585.0	0.8	**0.7423**	0.007	0.9	ug/L	3	Standard
>	**Bi**	209	467454.5	1.3				ug/L	523984	Standard

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Na	23	5.0	0.0	**58.7812**	0.729	1.2	mg/L	0	Standard
Mg	24	188890.8	2.9	**248.6881**	10.353	4.2	mg/L	37	Standard
K	39	2185.2	4.4	**4.8106**	0.175	3.6	mg/L	38	Standard
Ca	43	1135.0	6.5	**70.5642**	3.873	5.5	mg/L	10	Standard
Fe	54	9878.2	4.8	**8.4031**	0.399	4.8	mg/L	179	Standard
Fe	57	3267.0	5.5	**10.2558**	0.748	7.3	mg/L	335	Standard
> **Sc-1**	45	59841.3	1.2				mg/L	61029	Standard
Cl	35	28240.3	1.1				ug/L	20195	Standard
Kr	83	2.7	142.0				ug/L	4	Standard
Br	81	339155.5	2.6				ug/L	1547	Standard
P	31	29607.2	0.7				ug/L	15286	Standard
S	34	2378.5	1.9				ug/L	1572	Standard
Sr	88	1895.1	7.4				ug/L	73	Standard
C	12	120.0	28.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	86.7	35.3				mg/L	3	Standard
Dy	164	9299.8	2.7				mg/L	6	Standard
Ho-1	165	6684.8	2.2				mg/L	10	Standard
Er	166	6331.3	1.7				mg/L	13	Standard
I	127	153619.9	12.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.478	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.118	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.050
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		89.212
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
V 51 Lower	V	51	

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Cr 52 Upper, S, EEE	Cr	52
Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Co 59 Upper, S, EEE	Co	59
Ni 60 Upper, S, EEE	Ni	60
Cu 65 Upper, S, EEE	Cu	65

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Method 6020 - Summary Report

Sample ID: L1606102604
Sample Date/Time: Wednesday, June 29, 2016 14:54:31
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82386.8	1.6				ug/L	74699	Standard
	Be	9	41.7	50.0	**0.0505**	0.021	41.9	ug/L	8	Standard
	Al	27	6418180.7	1.0	**39.5946**	1.017	2.6	ug/L	1493	Standard
	Sc	45	68191.6	3.4				ug/L	61029	Standard
	Ti	47	2431.5	5.8	**6.2763**	0.263	4.2	ug/L	35	Standard
	V	51	8932.1	2.8	**0.9822**	0.034	3.4	ug/L	1435	Standard
	Cr	52	19971.2	5.8	**1.6585**	0.113	6.8	ug/L	7635	Standard
	Cr	53	16018.5	1.2	**16.9336**	0.479	2.8	ug/L	363	Standard
	Mn	55	134583.1	0.5	**19.1035**	0.326	1.7	ug/L	747	Standard
	Co	59	5374.0	2.6	**0.7730**	0.008	1.1	ug/L	234	Standard
	Ni	60	7430.2	8.6	**3.8249**	0.274	7.2	ug/L	215	Standard
	Cu	65	1488.1	5.9	**0.6921**	0.035	5.0	ug/L	104	Standard
	Zn	66	5451.0	0.8	**4.5156**	0.102	2.3	ug/L	363	Standard
>	**Ge**	72	497254.0	1.7				ug/L	495142	Standard
	As	75	427.8	16.4	**0.4399**	0.063	14.3	ug/L	-50	Standard
	Se	82	161.6	5.9	**1.3278**	0.065	4.9	ug/L	14	Standard
	Se-1	77	695.3	4.1	**8.8552**	0.225	2.5	ug/L	42	Standard
>	**Ga**	71	420.0	2.4				mg/L	42	Standard
	Rb	85	8292.3	2.6				ug/L	17	Standard
	Y	89	430205.9	2.4				ug/L	417098	Standard
>	**Rh**	103	40.0	12.5				ug/L	13	Standard
	Mo	98	177.9	8.2	**0.0624**	0.005	8.3	ug/L	11	Standard
	Ag	107	97.3	5.7	**0.0023**	0.001	38.0	ug/L	68	Standard
	Cd	111	330.0	5.3	**0.1533**	0.008	5.4	mg/L	2	Standard
	Cd	114	777.4	4.0	**0.1527**	0.007	4.3	ug/L	12	Standard
>	**In**	115	575297.3	2.0				ug/L	587441	Standard
	Sn	118	1836.8	3.5	**0.2263**	0.005	2.3	ug/L	497	Standard
	Sb	123	541.3	2.5	**0.1143**	0.005	4.2	ug/L	78	Standard
	Ba	135	259403.2	1.0	**129.4148**	1.250	1.0	ug/L	24	Standard
	Ce	140	48153.1	1.6				ug/L	25	Standard
>	**Tb**	159	953820.3	0.6				ug/L	939701	Standard
	Ho	165	763.4	3.9				ug/L	10	Standard
	Tl	203	147.7	11.5	**0.0162**	0.002	12.5	ug/L	4	Standard
	Tl	205	135.0	25.9	**0.0192**	0.005	26.2	ug/L	2	Standard
	Pb	206	2333.8	1.6	**0.3679**	0.004	1.0	ug/L	240	Standard
	Pb	207	1897.5	1.5	**0.3318**	0.006	1.8	ug/L	198	Standard
	Pb	208	7911.8	1.2	**0.3500**	0.006	1.7	ug/L	883	Standard
	U	238	272.0	3.5	**0.0353**	0.002	4.3	ug/L	3	Standard
>	**Bi**	209	521315.2	0.9				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	45454.8	3.6	**52.4459**	0.539	1.0	mg/L	37	Standard
K	39	88.3	3.3	**0.0609**	0.011	18.4	mg/L	38	Standard
Ca	43	100.0	8.7	**3.1440**	0.659	21.0	mg/L	10	Standard
Fe	54	556.2	7.6	**0.2841**	0.037	12.9	mg/L	179	Standard
Fe	57	410.0	16.9	**0.1734**	0.212	122.1	mg/L	335	Standard
> **Sc-1**	45	68191.6	3.4				mg/L	61029	Standard
Cl	35	26725.6	1.1				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	35244.3	3.6				ug/L	1547	Standard
P	31	35015.4	1.7				ug/L	15286	Standard
S	34	2091.8	5.9				ug/L	1572	Standard
Sr	88	225.0	20.0				ug/L	73	Standard
C	12	103.3	39.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	93.3	12.4				mg/L	3	Standard
Dy	164	1034.1	12.7				mg/L	6	Standard
Ho-1	165	763.4	3.9				mg/L	10	Standard
Er	166	680.0	15.4				mg/L	13	Standard
I	127	80476.5	1.4				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		110.292	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.426	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.933
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.491
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606102606
Sample Date/Time: Wednesday, June 29, 2016 14:57:42
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	93356.7	0.9				ug/L	74699	Standard
	Be	9	136.7	43.6	**0.1318**	0.054	40.9	ug/L	8	Standard
	Al	27	4727947.0	2.8	**25.7324**	0.870	3.4	ug/L	1493	Standard
	Sc	45	71265.6	1.4				ug/L	61029	Standard
	Ti	47	7167.7	1.1	**18.5395**	0.116	0.6	ug/L	35	Standard
	V	51	33631.6	0.4	**4.1963**	0.093	2.2	ug/L	1435	Standard
	Cr	52	43684.3	3.9	**4.7878**	0.170	3.6	ug/L	7635	Standard
	Cr	53	18915.1	0.4	**19.8540**	0.330	1.7	ug/L	363	Standard
	Mn	55	527300.2	1.1	**74.5358**	0.480	0.6	ug/L	747	Standard
	Co	59	47125.2	1.5	**6.9996**	0.016	0.2	ug/L	234	Standard
	Ni	60	57578.9	1.0	**30.2025**	0.274	0.9	ug/L	215	Standard
	Cu	65	3787.5	1.8	**1.9028**	0.007	0.4	ug/L	104	Standard
	Zn	66	29686.7	1.5	**26.3448**	0.262	1.0	ug/L	363	Standard
>	**Ge**	72	502153.4	1.7				ug/L	495142	Standard
	As	75	1552.5	5.8	**1.4257**	0.058	4.0	ug/L	-50	Standard
	Se	82	328.6	4.9	**2.8136**	0.101	3.6	ug/L	14	Standard
	Se-1	77	866.0	3.6	**11.0672**	0.235	2.1	ug/L	42	Standard
>	**Ga**	71	2006.8	3.5				mg/L	42	Standard
	Rb	85	28431.7	2.8				ug/L	17	Standard
	Y	89	467809.8	1.5				ug/L	417098	Standard
>	**Rh**	103	28.3	36.7				ug/L	13	Standard
	Mo	98	2788.7	2.4	**1.0189**	0.018	1.8	ug/L	11	Standard
	Ag	107	187.0	8.5	**0.0152**	0.002	14.7	ug/L	68	Standard
	Cd	111	184.5	8.6	**0.0785**	0.007	8.5	mg/L	2	Standard
	Cd	114	502.9	12.6	**0.0940**	0.013	13.9	ug/L	12	Standard
>	**In**	115	599816.0	1.2				ug/L	587441	Standard
	Sn	118	1385.1	2.5	**0.1375**	0.003	2.2	ug/L	497	Standard
	Sb	123	315.5	7.5	**0.0620**	0.005	7.5	ug/L	78	Standard
	Ba	135	37805.8	2.1	**18.0728**	0.162	0.9	ug/L	24	Standard
	Ce	140	83749.2	1.1				ug/L	25	Standard
>	**Tb**	159	971524.4	1.2				ug/L	939701	Standard
	Ho	165	1393.4	2.1				ug/L	10	Standard
	Tl	203	289.7	7.1	**0.0339**	0.002	6.5	ug/L	4	Standard
	Tl	205	258.3	11.0	**0.0368**	0.004	11.7	ug/L	2	Standard
	Pb	206	3853.2	1.2	**0.6604**	0.004	0.6	ug/L	240	Standard
	Pb	207	3010.0	1.5	**0.5732**	0.009	1.6	ug/L	198	Standard
	Pb	208	13337.3	2.3	**0.6473**	0.013	1.9	ug/L	883	Standard
	U	238	859.0	4.4	**0.1221**	0.005	4.0	ug/L	3	Standard
>	**Bi**	209	516635.2	0.9				ug/L	523984	Standard

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Na	23	1.7	173.2	**16.3563**	28.321	173.2	mg/L	0	Standard
Mg	24	103702.1	2.0	**114.5988**	3.552	3.1	mg/L	37	Standard
K	39	251.7	12.0	**0.3627**	0.062	17.2	mg/L	38	Standard
Ca	43	61.7	26.1	**0.8208**	0.922	112.4	mg/L	10	Standard
Fe	54	1412.4	2.3	**0.8871**	0.015	1.7	mg/L	179	Standard
Fe	57	645.0	2.8	**0.8030**	0.026	3.3	mg/L	335	Standard
> **Sc-1**	45	71265.6	1.4				mg/L	61029	Standard
Cl	35	28407.3	0.4				ug/L	20195	Standard
Kr	83	1.7	34.6				ug/L	4	Standard
Br	81	49253.3	3.6				ug/L	1547	Standard
P	31	41409.9	2.5				ug/L	15286	Standard
S	34	2068.5	4.4				ug/L	1572	Standard
Sr	88	155.0	22.6				ug/L	73	Standard
C	12	133.3	34.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	57.3				mg/L	3	Standard
Dy	164	2353.9	2.8				mg/L	6	Standard
Ho-1	165	1393.4	2.1				mg/L	10	Standard
Er	166	1453.4	9.2				mg/L	13	Standard
I	127	3067238.7	11.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.978	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.416	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.107	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.597	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606102607
Sample Date/Time: Wednesday, June 29, 2016 15:00:54
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86025.2	1.8				ug/L	74699	Standard
	Be	9	83.3	29.6	**0.0901**	0.026	28.3	ug/L	8	Standard
	Al	27	3430436.9	1.2	**20.2582**	0.272	1.3	ug/L	1493	Standard
	Sc	45	67818.2	2.7				ug/L	61029	Standard
	Ti	47	2650.2	2.1	**6.1960**	0.095	1.5	ug/L	35	Standard
	V	51	9706.1	1.4	**0.9634**	0.025	2.6	ug/L	1435	Standard
	Cr	52	14237.0	2.0	**0.7086**	0.035	4.9	ug/L	7635	Standard
	Cr	53	2521.9	11.8	**2.1295**	0.275	12.9	ug/L	363	Standard
	Mn	55	50752.2	3.1	**6.4246**	0.167	2.6	ug/L	747	Standard
	Co	59	8541.7	4.1	**1.1290**	0.040	3.6	ug/L	234	Standard
	Ni	60	2905.6	5.8	**1.2753**	0.074	5.8	ug/L	215	Standard
	Cu	65	1384.7	3.1	**0.5672**	0.017	3.0	ug/L	104	Standard
	Zn	66	5145.2	1.6	**3.7928**	0.039	1.0	ug/L	363	Standard
>	**Ge**	72	549096.7	0.7				ug/L	495142	Standard
	As	75	307.3	24.2	**0.3069**	0.059	19.1	ug/L	-50	Standard
	Se	82	131.2	8.7	**0.9395**	0.088	9.3	ug/L	14	Standard
	Se-1	77	177.7	11.5	**1.5705**	0.241	15.4	ug/L	42	Standard
>	**Ga**	71	765.0	18.4				mg/L	42	Standard
	Rb	85	11574.4	1.2				ug/L	17	Standard
	Y	89	476523.2	1.2				ug/L	417098	Standard
>	**Rh**	103	40.0	54.5				ug/L	13	Standard
	Mo	98	552.0	3.2	**0.1876**	0.008	4.1	ug/L	11	Standard
	Ag	107	103.3	5.6	**0.0019**	0.001	51.8	ug/L	68	Standard
	Cd	111	131.7	9.5	**0.0509**	0.006	12.0	mg/L	2	Standard
	Cd	114	303.7	9.9	**0.0531**	0.005	10.1	ug/L	12	Standard
>	**In**	115	629575.3	1.6				ug/L	587441	Standard
	Sn	118	1851.8	1.5	**0.2011**	0.002	0.9	ug/L	497	Standard
	Sb	123	475.2	2.5	**0.0908**	0.004	4.2	ug/L	78	Standard
	Ba	135	119108.2	2.3	**54.2912**	1.481	2.7	ug/L	24	Standard
	Ce	140	65755.7	1.8				ug/L	25	Standard
>	**Tb**	159	1004571.7	2.5				ug/L	939701	Standard
	Ho	165	1471.7	8.7				ug/L	10	Standard
	Tl	203	123.3	5.2	**0.0121**	0.001	4.7	ug/L	4	Standard
	Tl	205	98.3	10.6	**0.0129**	0.002	11.8	ug/L	2	Standard
	Pb	206	2854.9	1.5	**0.4229**	0.014	3.4	ug/L	240	Standard
	Pb	207	2325.8	2.5	**0.3831**	0.018	4.6	ug/L	198	Standard
	Pb	208	9906.6	0.9	**0.4144**	0.011	2.7	ug/L	883	Standard
	U	238	660.3	1.2	**0.0843**	0.002	2.3	ug/L	3	Standard
>	**Bi**	209	566874.3	1.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	9059.4	5.1	**10.4668**	0.674	6.4	mg/L	37	Standard
K	39	175.0	7.6	**0.2337**	0.017	7.4	mg/L	38	Standard
Ca	43	76.7	10.0	**1.8315**	0.359	19.6	mg/L	10	Standard
Fe	54	778.8	6.8	**0.4564**	0.046	10.1	mg/L	179	Standard
Fe	57	450.0	7.8	**0.3039**	0.129	42.4	mg/L	335	Standard
Sc-1	45	67818.2	2.7				mg/L	61029	Standard
Cl	35	27265.2	1.0				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	4797.4	2.1				ug/L	1547	Standard
P	31	22328.1	2.9				ug/L	15286	Standard
S	34	1868.4	11.0				ug/L	1572	Standard
Sr	88	170.0	23.0				ug/L	73	Standard
C	12	116.7	4.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	2276.8	3.2				mg/L	6	Standard
Ho-1	165	1471.7	8.7				mg/L	10	Standard
Er	166	1323.4	4.9				mg/L	13	Standard
I	127	142556.3	31.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.163	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.897	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.172
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.185
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 15:04:07
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83434.4	4.1				ug/L	74699	Standard
	Be	9	52151.3	1.6	**53.0799**	1.438	2.7	ug/L	8	Standard
	Al	27	8001829.5	1.2	**48.7762**	1.563	3.2	ug/L	1493	Standard
	Sc	45	63472.7	2.1				ug/L	61029	Standard
	Ti	47	41544.5	0.5	**100.8598**	1.507	1.5	ug/L	35	Standard
	V	51	430823.0	0.6	**52.3478**	0.567	1.1	ug/L	1435	Standard
	Cr	52	414183.8	1.0	**50.4520**	0.020	0.0	ug/L	7635	Standard
	Cr	53	51435.5	2.1	**50.9262**	0.597	1.2	ug/L	363	Standard
	Mn	55	402509.0	2.2	**53.1108**	1.647	3.1	ug/L	747	Standard
	Co	59	395807.1	0.7	**55.1753**	0.902	1.6	ug/L	234	Standard
	Ni	60	102515.7	1.1	**50.3079**	0.215	0.4	ug/L	215	Standard
	Cu	65	102297.5	1.1	**50.5232**	0.685	1.4	ug/L	104	Standard
	Zn	66	61288.7	1.4	**51.2272**	0.860	1.7	ug/L	363	Standard
>	Ge	72	537577.7	1.0				ug/L	495142	Standard
	As	75	61234.0	0.5	**50.4168**	0.738	1.5	ug/L	-50	Standard
	Se	82	6132.0	1.1	**51.3300**	1.089	2.1	ug/L	14	Standard
	Se-1	77	4299.6	0.9	**53.6055**	0.977	1.8	ug/L	42	Standard
>	Ga	71	78.3	42.5				mg/L	42	Standard
	Rb	85	866.7	7.4				ug/L	17	Standard
	Y	89	460058.1	1.7				ug/L	417098	Standard
>	Rh	103	33.3	31.2				ug/L	13	Standard
	Mo	98	295506.5	0.5	**103.9241**	2.114	2.0	ug/L	11	Standard
	Ag	107	348188.0	0.5	**50.0657**	0.748	1.5	ug/L	68	Standard
	Cd	111	111062.0	1.3	**49.7777**	0.346	0.7	mg/L	2	Standard
	Cd	114	271614.5	0.9	**49.6432**	0.990	2.0	ug/L	12	Standard
>	In	115	626816.0	1.9				ug/L	587441	Standard
	Sn	118	313548.1	1.3	**50.2246**	1.384	2.8	ug/L	497	Standard
	Sb	123	246409.0	0.1	**49.4692**	0.867	1.8	ug/L	78	Standard
	Ba	135	105775.6	0.8	**48.4328**	1.255	2.6	ug/L	24	Standard
	Ce	140	66.7	48.8				ug/L	25	Standard
>	Tb	159	996778.4	1.8				ug/L	939701	Standard
	Ho	165	16.7	34.6				ug/L	10	Standard
	Tl	203	442598.6	0.7	**50.9461**	0.764	1.5	ug/L	4	Standard
	Tl	205	402531.2	1.7	**53.3816**	0.705	1.3	ug/L	2	Standard
	Pb	206	287928.0	0.2	**51.0713**	0.393	0.8	ug/L	240	Standard
	Pb	207	257921.1	0.2	**51.4941**	0.566	1.1	ug/L	198	Standard
	Pb	208	1040092.9	0.4	**52.5571**	0.545	1.0	ug/L	883	Standard
	U	238	381264.5	1.2	**52.5495**	0.479	0.9	ug/L	3	Standard
>	Bi	209	552262.9	0.9				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4305.6	5.5	**5.2771**	0.213	4.0	mg/L	37	Standard
K	39	2275.2	2.4	**4.7239**	0.217	4.6	mg/L	38	Standard
Ca	43	126.7	42.6	**5.1579**	3.228	62.6	mg/L	10	Standard
Fe	54	6415.2	4.5	**5.0956**	0.328	6.4	mg/L	179	Standard
Fe	57	1851.8	4.1	**4.9827**	0.373	7.5	mg/L	335	Standard
> **Sc-1**	45	63472.7	2.1				mg/L	61029	Standard
Cl	35	28119.4	1.3				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	2310.2	13.5				ug/L	1547	Standard
P	31	19991.5	1.1				ug/L	15286	Standard
S	34	2273.5	5.1				ug/L	1572	Standard
Sr	88	71.7	10.7				ug/L	73	Standard
C	12	66.7	8.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	8.6	116.8				mg/L	6	Standard
Ho-1	165	16.7	34.6				mg/L	10	Standard
Er	166	30.0	0.0				mg/L	13	Standard
I	127	25116.6	23.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	106.160		
Al	27	97.552		
Sc	45			
Ti	47	100.860		
V	51	104.696		
Cr	52	100.904		
Cr	53			
Mn	55	106.222		
Co	59	110.351		
Ni	60	100.616		
Cu	65	101.046		
Zn	66	102.454		
> Ge	72		108.570	
As	75	100.834		
Se	82	102.660		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	103.924		
Ag	107	100.131		
Cd	111	99.555		
Cd	114			
In	115			106.703
Sn	118	100.449		
Sb	123	98.938		
Ba	135	96.866		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.892		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.114		
U	238	105.099		
Bi	209			105.397
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Co	59	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 15:07:18
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85012.9	2.0				ug/L	74699	Standard
	Be	9	28.3	27.0	**0.0359**	0.008	21.1	ug/L	8	Standard
	Al	27	3885.6	39.7	**0.0100**	0.010	97.9	ug/L	1493	Standard
	Sc	45	66216.1	1.0				ug/L	61029	Standard
	Ti	47	42.3	11.2	**-0.0066**	0.011	167.9	ug/L	35	Standard
	V	51	1610.8	4.5	**0.0001**	0.010	18188.0	ug/L	1435	Standard
	Cr	52	7733.0	4.2	**-0.0667**	0.042	62.7	ug/L	7635	Standard
	Cr	53	656.7	7.6	**0.3218**	0.049	15.4	ug/L	363	Standard
	Mn	55	934.4	2.8	**-0.0250**	0.004	15.9	ug/L	747	Standard
	Co	59	270.3	16.3	**0.0003**	0.006	2278.1	ug/L	234	Standard
	Ni	60	353.0	46.0	**0.0492**	0.080	162.9	ug/L	215	Standard
	Cu	65	160.7	5.6	**-0.0245**	0.004	18.2	ug/L	104	Standard
	Zn	66	427.3	1.4	**-0.0957**	0.006	6.2	ug/L	363	Standard
>	**Ge**	72	539852.0	0.5				ug/L	495142	Standard
	As	75	-35.2	72.3	**0.0308**	0.021	67.1	ug/L	-50	Standard
	Se	82	23.4	13.4	**0.0577**	0.027	47.1	ug/L	14	Standard
	Se-1	77	65.0	15.6	**0.1944**	0.131	67.4	ug/L	42	Standard
>	**Ga**	71	48.3	15.8				mg/L	42	Standard
	Rb	85	13.3	21.7				ug/L	17	Standard
	Y	89	460334.1	1.4				ug/L	417098	Standard
>	**Rh**	103	15.0	57.7				ug/L	13	Standard
	Mo	98	325.6	30.7	**0.1063**	0.035	33.0	ug/L	11	Standard
	Ag	107	121.0	14.9	**0.0041**	0.003	62.9	ug/L	68	Standard
	Cd	111	13.2	31.2	**-0.0021**	0.002	85.0	mg/L	2	Standard
	Cd	114	51.9	43.2	**0.0072**	0.004	56.5	ug/L	12	Standard
>	**In**	115	641477.2	0.6				ug/L	587441	Standard
	Sn	118	860.0	23.5	**0.0400**	0.031	77.0	ug/L	497	Standard
	Sb	123	396.3	20.9	**0.0735**	0.016	21.4	ug/L	78	Standard
	Ba	135	45.3	20.4	**0.0043**	0.004	99.1	ug/L	24	Standard
	Ce	140	36.7	15.7				ug/L	25	Standard
>	**Tb**	159	1015779.3	0.6				ug/L	939701	Standard
	Ho	165	5.0	100.0				ug/L	10	Standard
	Tl	203	76.0	35.5	**0.0066**	0.003	43.8	ug/L	4	Standard
	Tl	205	63.3	18.2	**0.0082**	0.001	17.5	ug/L	2	Standard
	Pb	206	309.7	4.7	**-0.0185**	0.002	12.2	ug/L	240	Standard
	Pb	207	263.0	6.6	**-0.0197**	0.003	14.7	ug/L	198	Standard
	Pb	208	1081.0	8.8	**-0.0217**	0.004	19.1	ug/L	883	Standard
	U	238	55.3	39.0	**0.0029**	0.003	97.3	ug/L	3	Standard
>	**Bi**	209	576716.4	0.8				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.8612**	30.928	173.2	mg/L	0	Standard
Mg	24	48.3	39.2	**-0.0075**	0.023	309.1	mg/L	37	Standard
K	39	65.0	38.5	**0.0181**	0.050	275.9	mg/L	38	Standard
Ca	43	31.7	9.1	**-0.6795**	0.172	25.4	mg/L	10	Standard
Fe	54	165.7	15.0	**-0.0089**	0.019	210.6	mg/L	179	Standard
Fe	57	258.3	12.9	**-0.2654**	0.099	37.5	mg/L	335	Standard
Sc-1	45	66216.1	1.0				mg/L	61029	Standard
Cl	35	27856.9	0.3				ug/L	20195	Standard
Kr	83	4.0	43.3				ug/L	4	Standard
Br	81	1983.5	3.1				ug/L	1547	Standard
P	31	20308.6	3.1				ug/L	15286	Standard
S	34	2271.8	3.7				ug/L	1572	Standard
Sr	88	51.7	22.3				ug/L	73	Standard
C	12	73.3	34.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	20.0	86.6				mg/L	6	Standard
Ho-1	165	5.0	100.0				mg/L	10	Standard
Er	166	0.0					mg/L	13	Standard
I	127	13137.4	11.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		109.030	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.199
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.064
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBS M5 WG573099-02
Sample Date/Time: Wednesday, June 29, 2016 15:10:32
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82837.5	1.4				ug/L	74699	Standard
	Be	9	20.0	75.0	**0.0280**	0.015	53.9	ug/L	8	Standard
	Al	27	15988.5	12.5	**0.0848**	0.014	16.0	ug/L	1493	Standard
	Sc	45	64671.1	2.4				ug/L	61029	Standard
	Ti	47	45.0	20.0	**-0.0015**	0.023	1562.0	ug/L	35	Standard
	V	51	1647.0	1.8	**0.0017**	0.004	236.7	ug/L	1435	Standard
	Cr	52	11218.5	4.3	**0.3456**	0.052	15.0	ug/L	7635	Standard
	Cr	53	1063.4	5.0	**0.7116**	0.068	9.6	ug/L	363	Standard
	Mn	55	1756.1	5.1	**0.0801**	0.011	14.2	ug/L	747	Standard
	Co	59	312.3	6.3	**0.0055**	0.003	48.1	ug/L	234	Standard
	Ni	60	1377.4	15.3	**0.5415**	0.099	18.4	ug/L	215	Standard
	Cu	65	261.7	8.1	**0.0235**	0.011	45.2	ug/L	104	Standard
	Zn	66	1613.1	3.7	**0.8814**	0.040	4.6	ug/L	363	Standard
>	**Ge**	72	547319.5	1.5				ug/L	495142	Standard
	As	75	-42.5	100.6	**0.0255**	0.034	133.0	ug/L	-50	Standard
	Se	82	18.0	18.7	**0.0100**	0.027	272.2	ug/L	14	Standard
	Se-1	77	65.0	16.6	**0.1841**	0.145	78.6	ug/L	42	Standard
>	**Ga**	71	66.7	22.9				mg/L	42	Standard
	Rb	85	36.7	56.8				ug/L	17	Standard
	Y	89	450480.7	0.9				ug/L	417098	Standard
>	**Rh**	103	26.7	10.8				ug/L	13	Standard
	Mo	98	139.4	1.7	**0.0435**	0.001	2.2	ug/L	11	Standard
	Ag	107	102.7	18.1	**0.0019**	0.003	140.0	ug/L	68	Standard
	Cd	111	13.1	71.9	**-0.0020**	0.004	209.6	mg/L	2	Standard
	Cd	114	24.5	136.0	**0.0024**	0.006	256.9	ug/L	12	Standard
>	**In**	115	624818.4	0.5				ug/L	587441	Standard
	Sn	118	765.0	2.8	**0.0284**	0.003	12.0	ug/L	497	Standard
	Sb	123	189.1	20.4	**0.0339**	0.008	23.4	ug/L	78	Standard
	Ba	135	83.0	7.9	**0.0221**	0.003	14.0	ug/L	24	Standard
	Ce	140	301.7	18.8				ug/L	25	Standard
>	**Tb**	159	992078.8	0.6				ug/L	939701	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	40.0	57.5	**0.0027**	0.003	94.2	ug/L	4	Standard
	Tl	205	43.3	29.0	**0.0058**	0.002	28.5	ug/L	2	Standard
	Pb	206	319.7	11.1	**-0.0160**	0.006	36.6	ug/L	240	Standard
	Pb	207	262.0	4.6	**-0.0191**	0.002	12.7	ug/L	198	Standard
	Pb	208	1094.7	2.8	**-0.0202**	0.002	8.1	ug/L	883	Standard
	U	238	22.0	58.0	**-0.0015**	0.002	114.9	ug/L	3	Standard
>	**Bi**	209	568214.1	0.6				ug/L	523984	Standard

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	Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
	Mg	24	43.3	17.6	**-0.0124**	0.008	67.7	mg/L	37	Standard
	K	39	35.0	51.5	**-0.0416**	0.036	86.5	mg/L	38	Standard
	Ca	43	30.0	28.9	**-0.7286**	0.543	74.5	mg/L	10	Standard
	Fe	54	174.1	18.8	**0.0014**	0.029	2030.6	mg/L	179	Standard
	Fe	57	266.7	22.0	**-0.2161**	0.204	94.4	mg/L	335	Standard
>	**Sc-1**	45	64671.1	2.4				mg/L	61029	Standard
	Cl	35	28617.0	1.0				ug/L	20195	Standard
	Kr	83	2.0	100.0				ug/L	4	Standard
	Br	81	1953.5	6.4				ug/L	1547	Standard
	P	31	19132.1	3.4				ug/L	15286	Standard
	S	34	2278.5	6.0				ug/L	1572	Standard
	Sr	88	68.3	29.6				ug/L	73	Standard
	C	12	83.3	13.9				mg/L	63	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	3	Standard
	Dy	164	15.5	39.0				mg/L	6	Standard
	Ho-1	165	11.7	24.7				mg/L	10	Standard
	Er	166	23.3	49.5				mg/L	13	Standard
	I	127	8569.1	14.4				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		110.895	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		110.538	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.363
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.441
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: LCSS M5 WG573099-03
Sample Date/Time: Wednesday, June 29, 2016 15:13:43
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83551.5	2.3				ug/L	74699	Standard
	Be	9	25751.9	2.9	**26.1593**	0.514	2.0	ug/L	8	Standard
	Al	27	17496.8	6.9	**0.0930**	0.006	6.2	ug/L	1493	Standard
	Sc	45	66115.6	1.8				ug/L	61029	Standard
	Ti	47	52.7	14.3	**0.0175**	0.016	92.6	ug/L	35	Standard
	V	51	220707.2	1.1	**26.4464**	0.390	1.5	ug/L	1435	Standard
	Cr	52	221818.0	0.7	**26.2660**	0.546	2.1	ug/L	7635	Standard
	Cr	53	27359.7	0.9	**26.6591**	0.406	1.5	ug/L	363	Standard
	Mn	55	204818.9	1.5	**26.6717**	0.451	1.7	ug/L	747	Standard
	Co	59	196776.0	1.4	**27.1279**	0.304	1.1	ug/L	234	Standard
	Ni	60	55651.4	0.4	**26.9765**	0.492	1.8	ug/L	215	Standard
	Cu	65	54836.4	0.8	**26.7594**	0.556	2.1	ug/L	104	Standard
	Zn	66	32934.1	1.1	**27.0387**	0.809	3.0	ug/L	363	Standard
>	**Ge**	72	543210.6	2.2				ug/L	495142	Standard
	As	75	31720.5	1.5	**25.8765**	0.351	1.4	ug/L	-50	Standard
	Se	82	3103.9	1.9	**25.6428**	0.383	1.5	ug/L	14	Standard
	Se-1	77	2231.2	2.7	**27.2211**	0.278	1.0	ug/L	42	Standard
>	**Ga**	71	55.0	47.2				mg/L	42	Standard
	Rb	85	35.0	42.9				ug/L	17	Standard
	Y	89	467716.3	0.8				ug/L	417098	Standard
>	**Rh**	103	13.3	43.3				ug/L	13	Standard
	Mo	98	194.8	10.9	**0.0603**	0.008	12.8	ug/L	11	Standard
	Ag	107	10349.2	1.8	**1.4201**	0.038	2.7	ug/L	68	Standard
	Cd	111	56717.0	1.5	**24.4699**	0.504	2.1	mg/L	2	Standard
	Cd	114	136634.8	1.7	**24.0382**	0.506	2.1	ug/L	12	Standard
>	**In**	115	651063.9	0.8				ug/L	587441	Standard
	Sn	118	761.7	5.5	**0.0229**	0.007	28.6	ug/L	497	Standard
	Sb	123	128047.0	1.0	**24.7441**	0.436	1.8	ug/L	78	Standard
	Ba	135	54350.3	0.9	**23.9455**	0.395	1.6	ug/L	24	Standard
	Ce	140	61.7	26.1				ug/L	25	Standard
>	**Tb**	159	1033159.0	0.5				ug/L	939701	Standard
	Ho	165	16.7	17.3				ug/L	10	Standard
	Tl	203	227266.1	0.5	**24.7175**	0.218	0.9	ug/L	4	Standard
	Tl	205	203485.9	1.6	**25.5015**	0.511	2.0	ug/L	2	Standard
	Pb	206	152382.5	0.6	**25.5050**	0.255	1.0	ug/L	240	Standard
	Pb	207	130131.8	0.7	**24.5130**	0.243	1.0	ug/L	198	Standard
	Pb	208	530327.1	0.9	**25.2835**	0.262	1.0	ug/L	883	Standard
	U	238	189200.1	1.2	**24.6397**	0.334	1.4	ug/L	3	Standard
>	**Bi**	209	584433.1	0.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	41.7	36.7	**-0.0156**	0.017	112.1	mg/L	37	Standard
K	39	38.3	52.7	**-0.0354**	0.042	119.1	mg/L	38	Standard
Ca	43	25.0	52.9	**-1.0705**	0.758	70.8	mg/L	10	Standard
Fe	54	141.4	21.3	**-0.0274**	0.025	92.5	mg/L	179	Standard
Fe	57	241.7	15.7	**-0.3151**	0.126	40.1	mg/L	335	Standard
Sc-1	45	66115.6	1.8				mg/L	61029	Standard
Cl	35	28385.2	0.6				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	2056.8	1.5				ug/L	1547	Standard
P	31	18911.8	2.1				ug/L	15286	Standard
S	34	2256.8	4.9				ug/L	1572	Standard
Sr	88	70.0	39.8				ug/L	73	Standard
C	12	60.0	66.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	9.5	5.0				mg/L	6	Standard
Ho-1	165	16.7	17.3				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	6019.5	14.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		111.851	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		109.708	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.831
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		111.536
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSS M5 WG573099-03
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Method 6020 - Summary Report

Sample ID: L1606088803 WG573099-01
Sample Date/Time: Wednesday, June 29, 2016 15:16:55
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	87864.2	2.8				ug/L	74699	Standard
	Be	9	1871.8	7.3	**1.8142**	0.100	5.5	ug/L	8	Standard
	Al	27	17464438.5	2.2	**101.0382**	1.686	1.7	ug/L	1493	Standard
	Sc	45	88916.8	1.0				ug/L	61029	Standard
	Ti	47	8105.2	1.6	**20.2503**	0.364	1.8	ug/L	35	Standard
	V	51	266665.9	0.8	**33.4185**	0.188	0.6	ug/L	1435	Standard
	Cr	52	308197.4	0.8	**38.5684**	0.415	1.1	ug/L	7635	Standard
	Cr	53	37658.4	2.2	**38.4602**	0.742	1.9	ug/L	363	Standard
	Mn	55	19789542.3	0.8	**2705.9402**	31.717	1.2	ug/L	747	Standard
	Co	59	276278.5	0.6	**39.7944**	0.401	1.0	ug/L	234	Standard
	Ni	60	160372.4	1.4	**81.4241**	1.275	1.6	ug/L	215	Standard
	Cu	65	107769.0	1.4	**55.0229**	0.902	1.6	ug/L	104	Standard
	Zn	66	213527.8	0.7	**185.6475**	1.406	0.8	ug/L	363	Standard
>	**Ge**	72	520092.2	0.4				ug/L	495142	Standard
	As	75	6170.4	1.0	**5.3042**	0.070	1.3	ug/L	-50	Standard
	Se	82	90.8	2.7	**0.6494**	0.023	3.5	ug/L	14	Standard
	Se-1	77	157.7	4.9	**1.4330**	0.106	7.4	ug/L	42	Standard
>	**Ga**	71	47343.9	1.1				mg/L	42	Standard
	Rb	85	380728.2	1.5				ug/L	17	Standard
	Y	89	1106618.3	0.2				ug/L	417098	Standard
>	**Rh**	103	63.3	24.1				ug/L	13	Standard
	Mo	98	980.4	3.2	**0.3366**	0.010	3.0	ug/L	11	Standard
	Ag	107	955.0	6.8	**0.1236**	0.011	9.1	ug/L	68	Standard
	Cd	111	2225.7	2.0	**0.9829**	0.017	1.8	mg/L	2	Standard
	Cd	114	5479.9	1.8	**0.9924**	0.001	0.1	ug/L	12	Standard
>	**In**	115	631161.9	1.7				ug/L	587441	Standard
	Sn	118	413.3	14.8	**-0.0289**	0.009	31.0	ug/L	497	Standard
	Sb	123	370.7	34.4	**0.0695**	0.025	35.4	ug/L	78	Standard
	Ba	135	385428.4	1.0	**175.2729**	2.367	1.4	ug/L	24	Standard
	Ce	140	2007459.4	3.6				ug/L	25	Standard
>	**Tb**	159	1048778.2	1.5				ug/L	939701	Standard
	Ho	165	53168.1	1.9				ug/L	10	Standard
	Tl	203	2332.8	1.5	**0.2668**	0.007	2.6	ug/L	4	Standard
	Tl	205	2056.8	1.1	**0.2730**	0.001	0.5	ug/L	2	Standard
	Pb	206	102474.4	0.3	**18.1326**	0.189	1.0	ug/L	240	Standard
	Pb	207	82544.6	1.5	**16.4326**	0.141	0.9	ug/L	198	Standard
	Pb	208	353310.3	0.4	**17.8060**	0.180	1.0	ug/L	883	Standard
	U	238	9355.9	0.7	**1.2854**	0.017	1.3	ug/L	3	Standard
>	**Bi**	209	552227.6	1.4				ug/L	523984	Standard

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Na	23	1.7	173.2	**13.3403**	23.097	173.1	mg/L	0	Standard
Mg	24	320.0	5.6	**0.2185**	0.016	7.5	mg/L	37	Standard
K	39	1080.0	10.5	**1.5233**	0.156	10.2	mg/L	38	Standard
Ca	43	916.7	12.0	**37.2112**	4.625	12.4	mg/L	10	Standard
Fe	54	75887.5	2.1	**44.0256**	1.050	2.4	mg/L	179	Standard
Fe	57	19502.5	1.2	**44.4256**	0.652	1.5	mg/L	335	Standard
Sc-1	45	88916.8	1.0				mg/L	61029	Standard
Cl	35	27513.6	0.5				ug/L	20195	Standard
Kr	83	0.3	173.2				ug/L	4	Standard
Br	81	3467.1	2.9				ug/L	1547	Standard
P	31	21865.8	2.4				ug/L	15286	Standard
S	34	2631.9	4.0				ug/L	1572	Standard
Sr	88	220.0	6.0				ug/L	73	Standard
C	12	66.7	37.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	15.7				mg/L	3	Standard
Dy	164	86599.4	2.5				mg/L	6	Standard
Ho-1	165	53168.1	1.9				mg/L	10	Standard
Er	166	47260.3	0.7				mg/L	13	Standard
I	127	6809.9	9.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		117.625	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		105.039	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.443
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.390
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606088803S WG573099-04
Sample Date/Time: Wednesday, June 29, 2016 15:20:06
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	88784.5	2.9				ug/L	74699	Standard
	Be	9	27508.3	0.4	**26.3080**	0.631	2.4	ug/L	8	Standard
	Al	27	20794150.5	3.6	**119.0173**	0.902	0.8	ug/L	1493	Standard
	Sc	45	96992.9	2.3				ug/L	61029	Standard
	Ti	47	11606.4	2.4	**28.2553**	0.997	3.5	ug/L	35	Standard
	V	51	594819.7	3.2	**72.7593**	3.186	4.4	ug/L	1435	Standard
	Cr	52	602098.1	1.8	**74.2282**	2.325	3.1	ug/L	7635	Standard
	Cr	53	74295.1	1.5	**74.1206**	1.783	2.4	ug/L	363	Standard
	Mn	55	28090211.5	1.2	**3736.5671**	85.696	2.3	ug/L	747	Standard
	Co	59	552502.8	1.4	**77.4533**	1.929	2.5	ug/L	234	Standard
	Ni	60	270132.5	1.6	**133.5117**	3.898	2.9	ug/L	215	Standard
	Cu	65	201432.2	2.2	**100.1412**	3.335	3.3	ug/L	104	Standard
	Zn	66	320182.0	2.8	**271.0655**	11.001	4.1	ug/L	363	Standard
>	Ge	72	534719.5	1.4				ug/L	495142	Standard
	As	75	41934.7	2.3	**34.7370**	1.197	3.4	ug/L	-50	Standard
	Se	82	2480.2	1.5	**20.7934**	0.607	2.9	ug/L	14	Standard
	Se-1	77	1799.1	2.3	**22.1951**	0.836	3.8	ug/L	42	Standard
>	Ga	71	63861.1	4.0				mg/L	42	Standard
	Rb	85	554637.9	1.8				ug/L	17	Standard
	Y	89	1250941.0	3.4				ug/L	417098	Standard
>	Rh	103	88.3	8.6				ug/L	13	Standard
	Mo	98	1454.1	4.8	**0.5217**	0.033	6.4	ug/L	11	Standard
	Ag	107	4814.4	4.1	**0.7006**	0.018	2.6	ug/L	68	Standard
	Cd	111	56224.0	1.3	**25.9728**	0.111	0.4	mg/L	2	Standard
	Cd	114	138439.7	3.6	**26.0717**	0.493	1.9	ug/L	12	Standard
>	In	115	608045.3	1.7				ug/L	587441	Standard
	Sn	118	518.3	2.0	**-0.0090**	0.001	16.4	ug/L	497	Standard
	Sb	123	2325.7	1.7	**0.4771**	0.008	1.7	ug/L	78	Standard
	Ba	135	587827.7	1.5	**277.4602**	0.795	0.3	ug/L	24	Standard
	Ce	140	2927642.8	0.6				ug/L	25	Standard
>	Tb	159	1033681.4	2.7				ug/L	939701	Standard
	Ho	165	68191.4	0.6				ug/L	10	Standard
	Tl	203	212892.3	0.8	**25.4932**	0.083	0.3	ug/L	4	Standard
	Tl	205	191048.7	1.2	**26.3598**	0.091	0.3	ug/L	2	Standard
	Pb	206	260602.6	2.5	**48.0843**	0.971	2.0	ug/L	240	Standard
	Pb	207	216580.3	1.8	**44.9759**	0.652	1.4	ug/L	198	Standard
	Pb	208	918219.8	1.2	**48.2652**	0.290	0.6	ug/L	883	Standard
	U	238	196774.7	2.4	**28.2131**	0.460	1.6	ug/L	3	Standard
>	Bi	209	530811.0	1.1				ug/L	523984	Standard

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Na	23	1.7	173.2	**12.2205**	21.158	173.1	mg/L	0	Standard
Mg	24	365.0	3.6	**0.2314**	0.007	3.2	mg/L	37	Standard
K	39	1516.7	5.6	**1.9963**	0.137	6.9	mg/L	38	Standard
Ca	43	726.7	5.8	**26.3770**	1.992	7.6	mg/L	10	Standard
Fe	54	108682.6	3.2	**57.8341**	0.799	1.4	mg/L	179	Standard
Fe	57	27718.7	1.4	**58.2169**	0.892	1.5	mg/L	335	Standard
Sc-1	45	96992.9	2.3				mg/L	61029	Standard
Cl	35	26216.7	4.4				ug/L	20195	Standard
Kr	83	3.0	33.3				ug/L	4	Standard
Br	81	4344.0	8.1				ug/L	1547	Standard
P	31	22273.0	3.2				ug/L	15286	Standard
S	34	2523.5	5.1				ug/L	1572	Standard
Sr	88	263.3	11.4				ug/L	73	Standard
C	12	56.7	10.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	52.9				mg/L	3	Standard
Dy	164	111985.6	3.7				mg/L	6	Standard
Ho-1	165	68191.4	0.6				mg/L	10	Standard
Er	166	57569.3	4.1				mg/L	13	Standard
I	127	6513.1	8.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.857	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.993	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.507
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.303
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	

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Cu 65 Upper, S, EEE	Cu	65
Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606088803SD WG573099-05
Sample Date/Time: Wednesday, June 29, 2016 15:23:18
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86779.6	2.9				ug/L	74699	Standard
	Be	9	26783.7	4.5	**26.1889**	0.607	2.3	ug/L	8	Standard
	Al	27	17495490.1	2.1	**102.4852**	1.702	1.7	ug/L	1493	Standard
	Sc	45	84971.1	3.4				ug/L	61029	Standard
	Ti	47	11032.7	2.5	**25.6633**	0.769	3.0	ug/L	35	Standard
	V	51	492228.0	0.7	**57.5050**	0.764	1.3	ug/L	1435	Standard
	Cr	52	556079.4	1.4	**65.4064**	1.154	1.8	ug/L	7635	Standard
	Cr	53	67044.7	1.2	**63.8916**	0.827	1.3	ug/L	363	Standard
	Mn	55	16288704.5	1.7	**2071.2097**	47.470	2.3	ug/L	747	Standard
	Co	59	487642.9	2.1	**65.3439**	1.764	2.7	ug/L	234	Standard
	Ni	60	230286.3	2.0	**108.7653**	2.155	2.0	ug/L	215	Standard
	Cu	65	186555.0	1.4	**88.6352**	1.512	1.7	ug/L	104	Standard
	Zn	66	269449.8	1.5	**217.9309**	3.745	1.7	ug/L	363	Standard
>	**Ge**	72	559301.6	0.7				ug/L	495142	Standard
	As	75	32569.4	2.0	**25.8033**	0.648	2.5	ug/L	-50	Standard
	Se	82	2764.3	2.2	**22.1623**	0.630	2.8	ug/L	14	Standard
	Se-1	77	1950.8	4.1	**23.0256**	1.042	4.5	ug/L	42	Standard
>	**Ga**	71	55862.8	2.2				mg/L	42	Standard
	Rb	85	472783.4	2.1				ug/L	17	Standard
	Y	89	931018.8	1.5				ug/L	417098	Standard
>	**Rh**	103	36.7	47.9				ug/L	13	Standard
	Mo	98	833.5	3.5	**0.3003**	0.015	5.0	ug/L	11	Standard
	Ag	107	3972.2	0.3	**0.5833**	0.011	1.9	ug/L	68	Standard
	Cd	111	54996.2	0.6	**25.7204**	0.316	1.2	mg/L	2	Standard
	Cd	114	133681.6	2.4	**25.4888**	0.206	0.8	ug/L	12	Standard
>	**In**	115	600647.8	1.6				ug/L	587441	Standard
	Sn	118	466.7	16.3	**-0.0167**	0.012	70.0	ug/L	497	Standard
	Sb	123	3387.1	2.7	**0.7053**	0.008	1.2	ug/L	78	Standard
	Ba	135	467382.4	1.0	**223.3343**	2.175	1.0	ug/L	24	Standard
	Ce	140	1516729.6	1.2				ug/L	25	Standard
>	**Tb**	159	1007426.2	2.1				ug/L	939701	Standard
	Ho	165	39640.1	1.9				ug/L	10	Standard
	Tl	203	211811.1	1.3	**24.5598**	0.357	1.5	ug/L	4	Standard
	Tl	205	187359.9	1.8	**25.0339**	0.597	2.4	ug/L	2	Standard
	Pb	206	219015.7	1.1	**39.1225**	0.790	2.0	ug/L	240	Standard
	Pb	207	182856.8	0.5	**36.7608**	0.679	1.8	ug/L	198	Standard
	Pb	208	768036.7	1.8	**39.0813**	0.960	2.5	ug/L	883	Standard
	U	238	187429.9	1.2	**26.0258**	0.546	2.1	ug/L	3	Standard
>	**Bi**	209	548237.3	1.8				ug/L	523984	Standard

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Na	23	6.7	43.3	**55.5842**	25.460	45.8	mg/L	0	Standard
Mg	24	348.3	15.5	**0.2571**	0.039	15.2	mg/L	37	Standard
K	39	1421.7	3.5	**2.1441**	0.098	4.5	mg/L	38	Standard
Ca	43	383.3	17.4	**14.9477**	3.560	23.8	mg/L	10	Standard
Fe	54	86673.1	2.4	**52.6645**	1.510	2.9	mg/L	179	Standard
Fe	57	21795.7	3.1	**52.2085**	3.369	6.5	mg/L	335	Standard
> **Sc-1**	45	84971.1	3.4				mg/L	61029	Standard
Cl	35	24892.4	3.3				ug/L	20195	Standard
Kr	83	2.3	65.5				ug/L	4	Standard
Br	81	3257.0	4.5				ug/L	1547	Standard
P	31	20836.0	2.5				ug/L	15286	Standard
S	34	2406.9	4.4				ug/L	1572	Standard
Sr	88	191.7	46.0				ug/L	73	Standard
C	12	76.7	15.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	20.0				mg/L	3	Standard
Dy	164	63526.1	1.7				mg/L	6	Standard
Ho-1	165	39640.1	1.9				mg/L	10	Standard
Er	166	35224.2	2.0				mg/L	13	Standard
I	127	5139.2	9.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.173	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		112.958	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.248	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	104.629	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	

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Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606088301
Sample Date/Time: Wednesday, June 29, 2016 15:26:29
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84384.4	1.7				ug/L	74699	Standard
	Be	9	1073.4	1.5	**1.0872**	0.032	3.0	ug/L	8	Standard
	Al	27	11940771.9	2.8	**71.9363**	2.792	3.9	ug/L	1493	Standard
	Sc	45	76626.6	1.2				ug/L	61029	Standard
	Ti	47	4374.3	2.0	**10.2834**	0.247	2.4	ug/L	35	Standard
	V	51	162703.8	1.0	**19.2014**	0.098	0.5	ug/L	1435	Standard
	Cr	52	132016.8	1.7	**15.0167**	0.347	2.3	ug/L	7635	Standard
	Cr	53	16153.6	0.8	**15.4073**	0.063	0.4	ug/L	363	Standard
	Mn	55	3262876.5	0.6	**421.8414**	5.005	1.2	ug/L	747	Standard
	Co	59	67832.8	0.7	**9.2120**	0.089	1.0	ug/L	234	Standard
	Ni	60	42623.2	1.3	**20.3743**	0.274	1.3	ug/L	215	Standard
	Cu	65	31205.8	0.3	**14.9935**	0.149	1.0	ug/L	104	Standard
	Zn	66	53134.7	1.9	**43.3429**	0.711	1.6	ug/L	363	Standard
>	**Ge**	72	549915.9	0.8				ug/L	495142	Standard
	As	75	3335.6	3.0	**2.7409**	0.080	2.9	ug/L	-50	Standard
	Se	82	46.6	19.0	**0.2449**	0.076	30.9	ug/L	14	Standard
	Se-1	77	111.7	5.1	**0.7542**	0.066	8.8	ug/L	42	Standard
>	**Ga**	71	17852.2	2.1				mg/L	42	Standard
	Rb	85	173572.1	2.0				ug/L	17	Standard
	Y	89	703667.4	2.2				ug/L	417098	Standard
>	**Rh**	103	33.3	34.6				ug/L	13	Standard
	Mo	98	357.4	3.8	**0.1158**	0.007	6.2	ug/L	11	Standard
	Ag	107	550.0	6.6	**0.0636**	0.007	11.1	ug/L	68	Standard
	Cd	111	273.3	3.2	**0.1105**	0.006	5.2	mg/L	2	Standard
	Cd	114	617.1	4.0	**0.1069**	0.006	5.7	ug/L	12	Standard
>	**In**	115	648944.8	3.3				ug/L	587441	Standard
	Sn	118	606.7	6.6	**-0.0008**	0.003	418.3	ug/L	497	Standard
	Sb	123	137.4	14.1	**0.0224**	0.003	13.8	ug/L	78	Standard
	Ba	135	318337.1	2.2	**140.8176**	2.386	1.7	ug/L	24	Standard
	Ce	140	1211648.5	1.9				ug/L	25	Standard
>	**Tb**	159	1041543.0	2.5				ug/L	939701	Standard
	Ho	165	19666.1	3.2				ug/L	10	Standard
	Tl	203	1035.0	3.0	**0.1143**	0.004	3.7	ug/L	4	Standard
	Tl	205	953.4	8.0	**0.1233**	0.009	7.5	ug/L	2	Standard
	Pb	206	127279.7	1.1	**21.9443**	0.442	2.0	ug/L	240	Standard
	Pb	207	103046.6	1.5	**19.9907**	0.426	2.1	ug/L	198	Standard
	Pb	208	441148.5	1.4	**21.6612**	0.196	0.9	ug/L	883	Standard
	U	238	5034.2	0.5	**0.6713**	0.005	0.8	ug/L	3	Standard
>	**Bi**	209	567168.2	1.1				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	340.0	3.9	**0.2844**	0.011	3.7	mg/L	37	Standard
K	39	688.3	2.3	**1.0975**	0.019	1.8	mg/L	38	Standard
Ca	43	145.0	15.8	**4.7718**	1.160	24.3	mg/L	10	Standard
Fe	54	17324.9	3.4	**11.5598**	0.337	2.9	mg/L	179	Standard
Fe	57	4550.7	3.6	**11.2444**	0.399	3.5	mg/L	335	Standard
Sc-1	45	76626.6	1.2				mg/L	61029	Standard
Cl	35	25558.2	1.3				ug/L	20195	Standard
Kr	83	0.7	173.2				ug/L	4	Standard
Br	81	2263.5	8.1				ug/L	1547	Standard
P	31	20323.6	0.9				ug/L	15286	Standard
S	34	2258.5	1.1				ug/L	1572	Standard
Sr	88	101.7	10.2				ug/L	73	Standard
C	12	116.7	13.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	49.5				mg/L	3	Standard
Dy	164	32996.6	2.0				mg/L	6	Standard
Ho-1	165	19666.1	3.2				mg/L	10	Standard
Er	166	17349.9	3.1				mg/L	13	Standard
I	127	11507.7	1.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		112.966	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		111.062	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	110.470
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	108.241
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606091201
Sample Date/Time: Wednesday, June 29, 2016 15:29:41
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84277.1	1.0				ug/L	74699	Standard
	Be	9	1593.4	6.0	**1.6114**	0.083	5.1	ug/L	8	Standard
	Al	27	15243679.1	1.9	**91.9299**	1.967	2.1	ug/L	1493	Standard
	Sc	45	83538.1	3.1				ug/L	61029	Standard
	Ti	47	10307.8	1.1	**23.4331**	0.360	1.5	ug/L	35	Standard
	V	51	410563.1	0.8	**46.8597**	0.438	0.9	ug/L	1435	Standard
	Cr	52	261972.4	0.3	**29.5747**	0.180	0.6	ug/L	7635	Standard
	Cr	53	32057.2	1.7	**29.6933**	0.417	1.4	ug/L	363	Standard
	Mn	55	12908980.1	3.2	**1604.9549**	58.354	3.6	ug/L	747	Standard
	Co	59	181241.6	3.1	**23.7226**	0.846	3.6	ug/L	234	Standard
	Ni	60	66685.8	0.9	**30.7063**	0.259	0.8	ug/L	215	Standard
	Cu	65	73374.2	0.7	**34.0220**	0.398	1.2	ug/L	104	Standard
	Zn	66	143517.2	0.9	**113.2755**	1.322	1.2	ug/L	363	Standard
>	**Ge**	72	572023.7	0.5				ug/L	495142	Standard
	As	75	16668.5	2.4	**12.9416**	0.353	2.7	ug/L	-50	Standard
	Se	82	187.7	6.4	**1.3421**	0.095	7.1	ug/L	14	Standard
	Se-1	77	232.0	7.5	**2.1278**	0.217	10.2	ug/L	42	Standard
>	**Ga**	71	37605.0	3.4				mg/L	42	Standard
	Rb	85	431124.7	1.0				ug/L	17	Standard
	Y	89	907846.1	0.7				ug/L	417098	Standard
>	**Rh**	103	28.3	27.0				ug/L	13	Standard
	Mo	98	1317.8	2.4	**0.4515**	0.009	1.9	ug/L	11	Standard
	Ag	107	1338.4	1.8	**0.1770**	0.004	2.5	ug/L	68	Standard
	Cd	111	803.3	6.8	**0.3473**	0.022	6.2	mg/L	2	Standard
	Cd	114	1888.8	7.2	**0.3384**	0.023	6.7	ug/L	12	Standard
>	**In**	115	635240.6	1.1				ug/L	587441	Standard
	Sn	118	608.3	2.5	**0.0016**	0.002	109.2	ug/L	497	Standard
	Sb	123	242.0	3.6	**0.0438**	0.002	4.9	ug/L	78	Standard
	Ba	135	645480.7	0.7	**291.6323**	1.817	0.6	ug/L	24	Standard
	Ce	140	2459220.7	0.8				ug/L	25	Standard
>	**Tb**	159	1043691.8	1.6				ug/L	939701	Standard
	Ho	165	34592.8	2.2				ug/L	10	Standard
	Tl	203	3164.7	1.5	**0.3540**	0.007	2.0	ug/L	4	Standard
	Tl	205	2843.6	5.4	**0.3684**	0.020	5.4	ug/L	2	Standard
	Pb	206	325793.2	0.7	**56.4391**	0.926	1.6	ug/L	240	Standard
	Pb	207	262124.0	0.3	**51.1005**	0.344	0.7	ug/L	198	Standard
	Pb	208	1122453.0	1.2	**55.3927**	1.161	2.1	ug/L	883	Standard
	U	238	18503.6	0.6	**2.4863**	0.037	1.5	ug/L	3	Standard
>	**Bi**	209	565563.6	0.9				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	148.3	19.2	**0.0751**	0.029	38.8	mg/L	37	Standard
K	39	1071.7	2.8	**1.6167**	0.038	2.4	mg/L	38	Standard
Ca	43	301.7	16.4	**11.4520**	2.661	23.2	mg/L	10	Standard
Fe	54	45977.7	1.1	**28.3556**	0.839	3.0	mg/L	179	Standard
Fe	57	11742.9	4.0	**28.0839**	0.746	2.7	mg/L	335	Standard
Sc-1	45	83538.1	3.1				mg/L	61029	Standard
Cl	35	25586.9	0.8				ug/L	20195	Standard
Kr	83	2.3	65.5				ug/L	4	Standard
Br	81	3940.5	1.8				ug/L	1547	Standard
P	31	20170.1	2.1				ug/L	15286	Standard
S	34	2405.2	3.2				ug/L	1572	Standard
Sr	88	111.7	6.8				ug/L	73	Standard
C	12	316.7	15.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	146.7	35.0				mg/L	3	Standard
Dy	164	57194.9	2.2				mg/L	6	Standard
Ho-1	165	34592.8	2.2				mg/L	10	Standard
Er	166	32892.3	1.1				mg/L	13	Standard
I	127	48256.8	4.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		112.823	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		115.527	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	108.137
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	107.935
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606091201PS WG573717-03
Sample Date/Time: Wednesday, June 29, 2016 15:32:52
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	84925.7	1.3				ug/L	74699	Standard
	Be	9	54409.2	0.5	**54.3741**	0.919	1.7	ug/L	8	Standard
	Al	27	15619580.7	1.4	**93.4869**	2.147	2.3	ug/L	1493	Standard
	Sc	45	84914.0	2.3				ug/L	61029	Standard
	Ti	47	10489.6	2.4	**24.7035**	0.475	1.9	ug/L	35	Standard
	V	51	847646.1	0.7	**100.4344**	1.074	1.1	ug/L	1435	Standard
	Cr	52	696222.3	1.3	**83.2031**	0.580	0.7	ug/L	7635	Standard
	Cr	53	86425.9	2.6	**83.5032**	1.546	1.9	ug/L	363	Standard
	Mn	55	12964778.0	1.1	**1669.4256**	16.996	1.0	ug/L	747	Standard
	Co	59	568224.0	0.4	**77.1151**	0.744	1.0	ug/L	234	Standard
	Ni	60	176707.0	1.9	**84.4902**	0.918	1.1	ug/L	215	Standard
	Cu	65	181984.3	1.8	**87.5571**	0.864	1.0	ug/L	104	Standard
	Zn	66	208968.8	1.8	**171.0579**	1.957	1.1	ug/L	363	Standard
>	Ge	72	552256.5	0.8				ug/L	495142	Standard
	As	75	82371.4	1.6	**65.9929**	0.953	1.4	ug/L	-50	Standard
	Se	82	6597.3	1.6	**53.7542**	0.590	1.1	ug/L	14	Standard
	Se-1	77	4584.4	1.6	**55.6563**	1.034	1.9	ug/L	42	Standard
>	Ga	71	37593.3	1.5				mg/L	42	Standard
	Rb	85	428376.8	2.4				ug/L	17	Standard
	Y	89	890825.8	0.7				ug/L	417098	Standard
>	Rh	103	50.0	10.0				ug/L	13	Standard
	Mo	98	1335.6	2.9	**0.4503**	0.014	3.2	ug/L	11	Standard
	Ag	107	364007.1	1.3	**50.8126**	0.330	0.6	ug/L	68	Standard
	Cd	111	115695.5	1.2	**50.3468**	0.384	0.8	mg/L	2	Standard
	Cd	114	280904.1	1.9	**49.8365**	0.143	0.3	ug/L	12	Standard
>	In	115	645589.3	1.8				ug/L	587441	Standard
	Sn	118	755.0	4.3	**0.0229**	0.003	13.2	ug/L	497	Standard
	Sb	123	254065.1	1.3	**49.5173**	0.623	1.3	ug/L	78	Standard
	Ba	135	752068.0	1.2	**334.3566**	2.055	0.6	ug/L	24	Standard
	Ce	140	2468196.2	1.3				ug/L	25	Standard
>	Tb	159	1069312.5	1.3				ug/L	939701	Standard
	Ho	165	35102.3	1.1				ug/L	10	Standard
	Tl	203	458369.6	1.1	**50.4504**	0.349	0.7	ug/L	4	Standard
	Tl	205	409805.1	0.9	**51.9806**	1.259	2.4	ug/L	2	Standard
	Pb	206	619020.9	0.8	**105.0729**	1.076	1.0	ug/L	240	Standard
	Pb	207	511972.0	0.6	**97.8107**	1.381	1.4	ug/L	198	Standard
	Pb	208	2150459.1	0.4	**103.9876**	1.211	1.2	ug/L	883	Standard
	U	238	395808.0	0.4	**52.1735**	0.789	1.5	ug/L	3	Standard
>	Bi	209	577539.6	1.5				ug/L	523984	Standard

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Na	23	6.7	43.3	**54.9152**	22.487	40.9	mg/L	0	Standard
Mg	24	118.3	17.1	**0.0444**	0.016	36.3	mg/L	37	Standard
K	39	1026.7	7.6	**1.5167**	0.116	7.6	mg/L	38	Standard
Ca	43	296.7	14.3	**10.9789**	2.237	20.4	mg/L	10	Standard
Fe	54	45524.1	0.4	**27.6104**	0.565	2.0	mg/L	179	Standard
Fe	57	12291.7	1.9	**28.9717**	1.259	4.3	mg/L	335	Standard
> **Sc-1**	45	84914.0	2.3				mg/L	61029	Standard
Cl	35	25819.3	0.8				ug/L	20195	Standard
Kr	83	2.0	0.0				ug/L	4	Standard
Br	81	3963.9	6.7				ug/L	1547	Standard
P	31	20629.0	3.4				ug/L	15286	Standard
S	34	2280.2	5.7				ug/L	1572	Standard
Sr	88	103.3	12.2				ug/L	73	Standard
C	12	333.3	17.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	140.0	7.1				mg/L	3	Standard
Dy	164	56592.8	3.3				mg/L	6	Standard
Ho-1	165	35102.3	1.1				mg/L	10	Standard
Er	166	32397.9	1.1				mg/L	13	Standard
I	127	48815.3	4.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.691	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.535	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.899
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.221
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Upper, S, EEE	V	51	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135
Pb 206 Upper, S, EEE	Pb	206
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1606091201SDL WG573717-04
Sample Date/Time: Wednesday, June 29, 2016 15:36:04
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83450.9	2.1				ug/L	74699	Standard
	Be	9	378.3	16.7	**0.3916**	0.058	14.9	ug/L	8	Standard
	Al	27	3082760.3	2.5	**18.7625**	0.099	0.5	ug/L	1493	Standard
	Sc	45	72303.8	2.1				ug/L	61029	Standard
	Ti	47	2033.1	4.6	**4.7237**	0.243	5.1	ug/L	35	Standard
	V	51	79797.1	0.9	**9.3216**	0.052	0.6	ug/L	1435	Standard
	Cr	52	57744.9	2.6	**5.9945**	0.158	2.6	ug/L	7635	Standard
	Cr	53	6483.1	2.8	**5.9884**	0.155	2.6	ug/L	363	Standard
	Mn	55	2512242.8	1.3	**324.8710**	1.825	0.6	ug/L	747	Standard
	Co	59	34712.7	2.2	**4.6975**	0.071	1.5	ug/L	234	Standard
	Ni	60	13460.0	2.9	**6.3513**	0.158	2.5	ug/L	215	Standard
	Cu	65	15009.4	2.6	**7.1598**	0.141	2.0	ug/L	104	Standard
	Zn	66	29256.2	2.4	**23.6692**	0.389	1.6	ug/L	363	Standard
>	**Ge**	72	549686.2	0.8				ug/L	495142	Standard
	As	75	3156.6	2.0	**2.5979**	0.033	1.3	ug/L	-50	Standard
	Se	82	47.1	17.6	**0.2490**	0.070	28.2	ug/L	14	Standard
	Se-1	77	77.0	11.9	**0.3268**	0.106	32.4	ug/L	42	Standard
>	**Ga**	71	7136.7	1.1				mg/L	42	Standard
	Rb	85	84221.8	1.7				ug/L	17	Standard
	Y	89	569587.4	0.8				ug/L	417098	Standard
>	**Rh**	103	25.0	91.7				ug/L	13	Standard
	Mo	98	271.1	6.9	**0.0847**	0.006	6.6	ug/L	11	Standard
	Ag	107	378.0	10.8	**0.0387**	0.005	13.9	ug/L	68	Standard
	Cd	111	185.8	10.3	**0.0712**	0.009	12.3	mg/L	2	Standard
	Cd	114	406.5	6.5	**0.0684**	0.004	6.4	ug/L	12	Standard
>	**In**	115	660230.6	1.0				ug/L	587441	Standard
	Sn	118	501.7	8.5	**-0.0183**	0.006	32.3	ug/L	497	Standard
	Sb	123	1797.9	20.8	**0.3384**	0.070	20.8	ug/L	78	Standard
	Ba	135	129725.4	1.6	**56.3802**	0.972	1.7	ug/L	24	Standard
	Ce	140	480517.5	2.7				ug/L	25	Standard
>	**Tb**	159	1042248.3	0.8				ug/L	939701	Standard
	Ho	165	6823.2	4.6				ug/L	10	Standard
	Tl	203	727.7	7.7	**0.0794**	0.006	7.1	ug/L	4	Standard
	Tl	205	616.7	4.2	**0.0795**	0.002	2.4	ug/L	2	Standard
	Pb	206	64359.4	2.2	**11.0114**	0.128	1.2	ug/L	240	Standard
	Pb	207	51665.3	2.6	**9.9429**	0.134	1.3	ug/L	198	Standard
	Pb	208	222946.4	0.6	**10.8660**	0.247	2.3	ug/L	883	Standard
	U	238	3701.1	2.3	**0.4902**	0.006	1.1	ug/L	3	Standard
>	**Bi**	209	569638.6	2.0				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	61.7	28.5	**0.0019**	0.018	942.5	mg/L	37	Standard
K	39	203.3	18.5	**0.2649**	0.067	25.4	mg/L	38	Standard
Ca	43	75.0	26.7	**1.4632**	0.987	67.5	mg/L	10	Standard
Fe	54	9325.9	3.5	**6.5358**	0.204	3.1	mg/L	179	Standard
Fe	57	2630.2	2.1	**6.4718**	0.055	0.8	mg/L	335	Standard
Sc-1	45	72303.8	2.1				mg/L	61029	Standard
Cl	35	24972.6	0.9				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	2286.8	8.4				ug/L	1547	Standard
P	31	19043.6	4.4				ug/L	15286	Standard
S	34	2180.2	1.2				ug/L	1572	Standard
Sr	88	81.7	35.9				ug/L	73	Standard
C	12	93.3	22.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	57.3				mg/L	3	Standard
Dy	164	11677.0	2.4				mg/L	6	Standard
Ho-1	165	6823.2	4.6				mg/L	10	Standard
Er	166	6424.7	2.9				mg/L	13	Standard
I	127	12089.8	7.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		111.717	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		111.016	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.391
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.713
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606091201SDL WG573717-04
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Method 6020 - Summary Report

Sample ID: L1606091201SDL WG573717-04
Sample Date/Time: Wednesday, June 29, 2016 15:39:15
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80082.8	1.5				ug/L	74699	Standard
	Be	9	80.0	10.8	**0.0924**	0.009	10.2	ug/L	8	Standard
	Al	27	638793.5	0.9	**4.0416**	0.057	1.4	ug/L	1493	Standard
	Sc	45	66977.8	2.5				ug/L	61029	Standard
	Ti	47	422.3	5.3	**0.8899**	0.044	4.9	ug/L	35	Standard
	V	51	17807.2	0.8	**1.9190**	0.038	2.0	ug/L	1435	Standard
	Cr	52	18051.7	1.5	**1.1605**	0.015	1.3	ug/L	7635	Standard
	Cr	53	1846.8	4.0	**1.4619**	0.067	4.6	ug/L	363	Standard
	Mn	55	540671.4	1.9	**69.4959**	1.549	2.2	ug/L	747	Standard
	Co	59	7520.2	3.3	**0.9841**	0.038	3.8	ug/L	234	Standard
	Ni	60	2912.3	1.6	**1.2710**	0.019	1.5	ug/L	215	Standard
	Cu	65	3203.0	1.2	**1.4395**	0.003	0.2	ug/L	104	Standard
	Zn	66	8550.1	1.3	**6.5648**	0.083	1.3	ug/L	363	Standard
>	**Ge**	72	552153.4	1.0				ug/L	495142	Standard
	As	75	624.0	5.3	**0.5591**	0.024	4.4	ug/L	-50	Standard
	Se	82	21.8	25.1	**0.0396**	0.043	108.7	ug/L	14	Standard
	Se-1	77	57.0	8.0	**0.0772**	0.050	64.2	ug/L	42	Standard
>	**Ga**	71	1470.1	2.9				mg/L	42	Standard
	Rb	85	17425.0	3.8				ug/L	17	Standard
	Y	89	497203.9	1.3				ug/L	417098	Standard
>	**Rh**	103	10.0	50.0				ug/L	13	Standard
	Mo	98	65.7	10.1	**0.0165**	0.003	15.8	ug/L	11	Standard
	Ag	107	156.7	8.7	**0.0087**	0.002	18.0	ug/L	68	Standard
	Cd	111	38.9	11.8	**0.0089**	0.002	23.3	mg/L	2	Standard
	Cd	114	108.8	14.4	**0.0170**	0.003	15.1	ug/L	12	Standard
>	**In**	115	651862.8	1.7				ug/L	587441	Standard
	Sn	118	480.0	4.2	**-0.0206**	0.003	16.7	ug/L	497	Standard
	Sb	123	490.3	31.4	**0.0908**	0.031	34.3	ug/L	78	Standard
	Ba	135	26415.7	0.1	**11.6170**	0.204	1.8	ug/L	24	Standard
	Ce	140	98329.7	0.4				ug/L	25	Standard
>	**Tb**	159	1007324.2	1.5				ug/L	939701	Standard
	Ho	165	1405.1	5.7				ug/L	10	Standard
	Tl	203	169.0	1.6	**0.0177**	0.000	0.8	ug/L	4	Standard
	Tl	205	175.0	8.6	**0.0234**	0.002	8.3	ug/L	2	Standard
	Pb	206	13505.0	1.4	**2.3274**	0.057	2.5	ug/L	240	Standard
	Pb	207	10900.6	1.3	**2.1089**	0.044	2.1	ug/L	198	Standard
	Pb	208	47029.6	1.3	**2.3051**	0.014	0.6	ug/L	883	Standard
	U	238	743.4	3.4	**0.0980**	0.002	2.1	ug/L	3	Standard
>	**Bi**	209	552389.3	1.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	33.3	17.3	**-0.0260**	0.006	22.5	mg/L	37	Standard
K	39	50.0	36.1	**-0.0133**	0.037	281.6	mg/L	38	Standard
Ca	43	41.7	48.5	**-0.1354**	1.146	846.9	mg/L	10	Standard
Fe	54	2020.3	1.1	**1.4233**	0.051	3.6	mg/L	179	Standard
Fe	57	728.4	10.0	**1.1787**	0.168	14.2	mg/L	335	Standard
> **Sc-1**	45	66977.8	2.5				mg/L	61029	Standard
Cl	35	24720.8	1.1				ug/L	20195	Standard
Kr	83	2.7	43.3				ug/L	4	Standard
Br	81	1860.1	4.8				ug/L	1547	Standard
P	31	18349.4	1.0				ug/L	15286	Standard
S	34	1845.1	4.4				ug/L	1572	Standard
Sr	88	65.0	27.7				ug/L	73	Standard
C	12	66.7	31.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	2304.6	5.8				mg/L	6	Standard
Ho-1	165	1405.1	5.7				mg/L	10	Standard
Er	166	1370.1	4.1				mg/L	13	Standard
I	127	4489.0	15.6				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		107.208	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		111.514	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.966
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.421
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 15:42:28
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79858.3	1.9				ug/L	74699	Standard
	Be	9	50198.1	2.5	**53.3484**	1.401	2.6	ug/L	8	Standard
	Al	27	8066966.3	0.3	**51.3427**	0.865	1.7	ug/L	1493	Standard
	Sc	45	68357.2	2.3				ug/L	61029	Standard
	Ti	47	43587.6	0.3	**105.7066**	1.724	1.6	ug/L	35	Standard
	V	51	433103.8	0.8	**52.5653**	0.576	1.1	ug/L	1435	Standard
	Cr	52	431112.3	0.9	**52.4990**	0.789	1.5	ug/L	7635	Standard
	Cr	53	52653.0	1.0	**52.0862**	0.689	1.3	ug/L	363	Standard
	Mn	55	405815.5	1.7	**53.4827**	1.214	2.3	ug/L	747	Standard
	Co	59	390955.7	1.0	**54.4418**	1.354	2.5	ug/L	234	Standard
	Ni	60	105213.1	1.7	**51.5742**	0.488	0.9	ug/L	215	Standard
	Cu	65	104377.6	0.2	**51.4980**	0.905	1.8	ug/L	104	Standard
	Zn	66	61654.9	0.7	**51.4853**	1.289	2.5	ug/L	363	Standard
>	**Ge**	72	538231.7	1.8				ug/L	495142	Standard
	As	75	61802.6	0.2	**50.8282**	0.881	1.7	ug/L	-50	Standard
	Se	82	6211.6	1.2	**51.9313**	0.364	0.7	ug/L	14	Standard
	Se-1	77	4323.6	2.0	**53.8508**	1.659	3.1	ug/L	42	Standard
>	**Ga**	71	60.0	28.9				mg/L	42	Standard
	Rb	85	955.0	5.2				ug/L	17	Standard
	Y	89	475770.1	1.3				ug/L	417098	Standard
>	**Rh**	103	25.0	34.6				ug/L	13	Standard
	Mo	98	290643.5	0.8	**97.6712**	0.653	0.7	ug/L	11	Standard
	Ag	107	354998.2	1.8	**48.7852**	1.288	2.6	ug/L	68	Standard
	Cd	111	115105.3	1.2	**49.3038**	0.151	0.3	mg/L	2	Standard
	Cd	114	278592.4	1.8	**48.6531**	0.360	0.7	ug/L	12	Standard
>	**In**	115	655825.0	1.0				ug/L	587441	Standard
	Sn	118	319548.2	1.2	**48.9035**	0.256	0.5	ug/L	497	Standard
	Sb	123	249456.0	1.2	**47.8604**	0.919	1.9	ug/L	78	Standard
	Ba	135	108215.4	0.8	**47.3455**	0.546	1.2	ug/L	24	Standard
	Ce	140	256.7	76.3				ug/L	25	Standard
>	**Tb**	159	1025574.2	1.9				ug/L	939701	Standard
	Ho	165	15.0	0.0				ug/L	10	Standard
	Tl	203	443897.9	1.2	**50.1327**	1.058	2.1	ug/L	4	Standard
	Tl	205	398087.0	0.7	**51.8003**	0.814	1.6	ug/L	2	Standard
	Pb	206	280554.3	0.5	**48.8226**	0.728	1.5	ug/L	240	Standard
	Pb	207	249585.9	0.6	**48.8846**	0.533	1.1	ug/L	198	Standard
	Pb	208	1026713.8	0.6	**50.9050**	1.131	2.2	ug/L	883	Standard
	U	238	372550.1	0.8	**50.3866**	1.127	2.2	ug/L	3	Standard
>	**Bi**	209	562933.7	1.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4292.3	1.6	**4.8821**	0.035	0.7	mg/L	37	Standard
K	39	2345.2	3.1	**4.5133**	0.080	1.8	mg/L	38	Standard
Ca	43	103.3	10.1	**3.3018**	0.528	16.0	mg/L	10	Standard
Fe	54	6681.2	2.2	**4.9206**	0.153	3.1	mg/L	179	Standard
Fe	57	1928.5	4.0	**4.7824**	0.344	7.2	mg/L	335	Standard
Sc-1	45	68357.2	2.3				mg/L	61029	Standard
Cl	35	26753.6	0.7				ug/L	20195	Standard
Kr	83	3.3	45.8				ug/L	4	Standard
Br	81	1833.4	8.1				ug/L	1547	Standard
P	31	20395.4	2.2				ug/L	15286	Standard
S	34	2408.5	8.3				ug/L	1572	Standard
Sr	88	85.0	25.6				ug/L	73	Standard
C	12	53.3	28.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	15.2	35.5				mg/L	6	Standard
Ho-1	165	15.0	0.0				mg/L	10	Standard
Er	166	30.0	57.7				mg/L	13	Standard
I	127	2536.9	16.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	106.697		
Al	27	102.685		
Sc	45			
Ti	47	105.707		
V	51	105.131		
Cr	52	104.998		
Cr	53			
Mn	55	106.965		
Co	59	108.884		
Ni	60	103.148		
Cu	65	102.996		
Zn	66	102.971		
Ge	72		108.702	
As	75	101.656		
Se	82	103.863		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	97.671		
Ag	107	97.570		
Cd	111	98.608		
Cd	114			
In	115			111.641
Sn	118	97.807		
Sb	123	95.721		
Ba	135	94.691		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.265		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.810		
U	238	100.773		
Bi	209			107.433
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 15:45:40
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76618.3	2.3				ug/L	74699	Standard
	Be	9	25.0	40.0	**0.0352**	0.010	29.8	ug/L	8	Standard
	Al	27	2451.9	23.9	**0.0029**	0.004	131.5	ug/L	1493	Standard
	Sc	45	64234.2	1.5				ug/L	61029	Standard
	Ti	47	38.0	9.5	**-0.0165**	0.010	60.4	ug/L	35	Standard
	V	51	1363.5	4.5	**-0.0292**	0.006	19.9	ug/L	1435	Standard
	Cr	52	7102.3	0.4	**-0.1401**	0.016	11.4	ug/L	7635	Standard
	Cr	53	373.3	16.1	**0.0429**	0.063	148.1	ug/L	363	Standard
	Mn	55	1097.0	20.0	**-0.0025**	0.031	1279.7	ug/L	747	Standard
	Co	59	247.3	6.4	**-0.0027**	0.003	101.3	ug/L	234	Standard
	Ni	60	180.3	4.0	**-0.0351**	0.003	7.6	ug/L	215	Standard
	Cu	65	132.0	9.2	**-0.0382**	0.007	18.6	ug/L	104	Standard
	Zn	66	415.3	4.4	**-0.1038**	0.019	18.2	ug/L	363	Standard
>	**Ge**	72	537099.7	1.7				ug/L	495142	Standard
	As	75	-44.5	23.9	**0.0230**	0.008	35.8	ug/L	-50	Standard
	Se	82	14.3	4.3	**-0.0180**	0.004	23.6	ug/L	14	Standard
	Se-1	77	59.7	7.9	**0.1303**	0.047	35.8	ug/L	42	Standard
>	**Ga**	71	51.7	29.6				mg/L	42	Standard
	Rb	85	35.0	0.0				ug/L	17	Standard
	Y	89	479758.9	0.4				ug/L	417098	Standard
>	**Rh**	103	8.3	34.6				ug/L	13	Standard
	Mo	98	277.2	29.2	**0.0885**	0.026	29.3	ug/L	11	Standard
	Ag	107	131.7	17.8	**0.0055**	0.003	58.6	ug/L	68	Standard
	Cd	111	17.2	29.5	**-0.0005**	0.002	465.0	mg/L	2	Standard
	Cd	114	40.7	69.7	**0.0051**	0.005	98.6	ug/L	12	Standard
>	**In**	115	646048.6	1.6				ug/L	587441	Standard
	Sn	118	843.4	4.5	**0.0366**	0.007	19.0	ug/L	497	Standard
	Sb	123	501.9	29.2	**0.0939**	0.030	32.1	ug/L	78	Standard
	Ba	135	52.0	15.0	**0.0071**	0.003	45.6	ug/L	24	Standard
	Ce	140	70.0	58.5				ug/L	25	Standard
>	**Tb**	159	979678.9	1.9				ug/L	939701	Standard
	Ho	165	13.3	114.6				ug/L	10	Standard
	Tl	203	68.0	38.6	**0.0062**	0.003	47.0	ug/L	4	Standard
	Tl	205	56.7	27.0	**0.0078**	0.002	25.4	ug/L	2	Standard
	Pb	206	311.7	5.0	**-0.0149**	0.002	16.8	ug/L	240	Standard
	Pb	207	257.0	6.3	**-0.0177**	0.002	12.3	ug/L	198	Standard
	Pb	208	1140.4	10.1	**-0.0154**	0.005	31.9	ug/L	883	Standard
	U	238	55.7	48.1	**0.0033**	0.004	107.8	ug/L	3	Standard
>	**Bi**	209	542619.7	2.4				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.9504**	31.082	173.2	mg/L	0	Standard
Mg	24	40.0	54.5	**-0.0162**	0.026	161.8	mg/L	37	Standard
K	39	53.3	59.5	**-0.0020**	0.067	3445.3	mg/L	38	Standard
Ca	43	18.3	103.3	**-1.4157**	1.156	81.6	mg/L	10	Standard
Fe	54	130.7	11.8	**-0.0329**	0.014	41.5	mg/L	179	Standard
Fe	57	301.7	9.1	**-0.1005**	0.081	80.3	mg/L	335	Standard
> **Sc-1**	45	64234.2	1.5				mg/L	61029	Standard
Cl	35	26295.5	2.8				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	1633.4	7.7				ug/L	1547	Standard
P	31	19669.4	2.1				ug/L	15286	Standard
S	34	2230.2	5.1				ug/L	1572	Standard
Sr	88	70.0	21.4				ug/L	73	Standard
C	12	46.7	61.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	12.2	49.4				mg/L	6	Standard
Ho-1	165	13.3	114.6				mg/L	10	Standard
Er	166	23.3	107.9				mg/L	13	Standard
I	127	1980.1	22.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.474	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.977
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.556
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW 60 WG574001-04
Sample Date/Time: Wednesday, June 29, 2016 15:48:53
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79282.0	2.9				ug/L	74699	Standard
	Be	9	31.7	134.3	**0.0407**	0.044	108.3	ug/L	8	Standard
	Al	27	19345.2	59.5	**0.1093**	0.069	63.4	ug/L	1493	Standard
	Sc	45	67500.3	4.8				ug/L	61029	Standard
	Ti	47	51.7	27.5	**0.0181**	0.032	177.8	ug/L	35	Standard
	V	51	1877.4	33.1	**0.0362**	0.072	198.6	ug/L	1435	Standard
	Cr	52	9295.2	4.7	**0.1500**	0.032	21.3	ug/L	7635	Standard
	Cr	53	908.4	6.4	**0.5905**	0.063	10.7	ug/L	363	Standard
	Mn	55	10971.3	111.8	**1.3060**	1.603	122.8	ug/L	747	Standard
	Co	59	555.3	78.4	**0.0407**	0.060	146.5	ug/L	234	Standard
	Ni	60	485.3	47.2	**0.1173**	0.109	92.6	ug/L	215	Standard
	Cu	65	307.3	25.1	**0.0504**	0.035	70.1	ug/L	104	Standard
	Zn	66	1901.5	5.5	**1.1744**	0.056	4.8	ug/L	363	Standard
>	**Ge**	72	528898.5	2.0				ug/L	495142	Standard
	As	75	-0.1	63053.1	**0.0590**	0.043	73.0	ug/L	-50	Standard
	Se	82	20.7	41.6	**0.0373**	0.070	187.2	ug/L	14	Standard
	Se-1	77	69.7	5.4	**0.2713**	0.061	22.4	ug/L	42	Standard
>	**Ga**	71	70.0	75.3				mg/L	42	Standard
	Rb	85	391.7	126.9				ug/L	17	Standard
	Y	89	488721.1	2.3				ug/L	417098	Standard
>	**Rh**	103	16.7	105.4				ug/L	13	Standard
	Mo	98	140.7	71.4	**0.0402**	0.032	80.6	ug/L	11	Standard
	Ag	107	241.3	88.8	**0.0193**	0.028	147.0	ug/L	68	Standard
	Cd	111	97.4	139.8	**0.0324**	0.056	173.4	mg/L	2	Standard
	Cd	114	250.4	134.1	**0.0402**	0.057	140.7	ug/L	12	Standard
>	**In**	115	673056.2	1.0				ug/L	587441	Standard
	Sn	118	918.4	10.7	**0.0424**	0.014	32.3	ug/L	497	Standard
	Sb	123	377.5	33.3	**0.0663**	0.023	34.5	ug/L	78	Standard
	Ba	135	710.7	130.6	**0.2849**	0.392	137.5	ug/L	24	Standard
	Ce	140	2190.4	144.6				ug/L	25	Standard
>	**Tb**	159	1033072.6	2.9				ug/L	939701	Standard
	Ho	165	46.7	118.0				ug/L	10	Standard
	Tl	203	354.0	129.7	**0.0375**	0.050	134.0	ug/L	4	Standard
	Tl	205	175.0	119.3	**0.0226**	0.026	116.3	ug/L	2	Standard
	Pb	206	584.7	65.9	**0.0302**	0.064	211.0	ug/L	240	Standard
	Pb	207	508.0	67.6	**0.0291**	0.064	219.9	ug/L	198	Standard
	Pb	208	1976.7	53.7	**0.0238**	0.049	207.9	ug/L	883	Standard
	U	238	147.7	117.1	**0.0152**	0.023	148.4	ug/L	3	Standard
>	**Bi**	209	558931.4	2.9				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	38.3	32.8	**-0.0206**	0.014	67.5	mg/L	37	Standard
K	39	46.7	37.6	**-0.0214**	0.032	149.6	mg/L	38	Standard
Ca	43	20.0	0.0	**-1.3794**	0.055	4.0	mg/L	10	Standard
Fe	54	191.0	21.0	**0.0073**	0.024	325.9	mg/L	179	Standard
Fe	57	261.7	19.2	**-0.2718**	0.132	48.6	mg/L	335	Standard
> **Sc-1**	45	67500.3	4.8				mg/L	61029	Standard
Cl	35	25962.2	2.0				ug/L	20195	Standard
Kr	83	3.0	33.3				ug/L	4	Standard
Br	81	2216.8	6.9				ug/L	1547	Standard
P	31	19524.2	2.3				ug/L	15286	Standard
S	34	2248.5	4.1				ug/L	1572	Standard
Sr	88	73.3	27.6				ug/L	73	Standard
C	12	46.7	44.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	67.1	124.3				mg/L	6	Standard
Ho-1	165	46.7	118.0				mg/L	10	Standard
Er	166	60.0	130.2				mg/L	13	Standard
I	127	1978.5	35.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.136	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.817	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.574
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.669
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 60 WG574001-05
Sample Date/Time: Wednesday, June 29, 2016 15:52:04
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78008.7	2.7				ug/L	74699	Standard
	Be	9	49798.4	3.1	**54.1693**	0.583	1.1	ug/L	8	Standard
	Al	27	8265.6	3.2	**0.0405**	0.001	2.7	ug/L	1493	Standard
	Sc	45	64878.8	4.3				ug/L	61029	Standard
	Ti	47	43.0	16.3	**-0.0042**	0.019	444.7	ug/L	35	Standard
	V	51	424123.5	0.9	**51.5862**	0.653	1.3	ug/L	1435	Standard
	Cr	52	430096.1	0.4	**52.4970**	1.185	2.3	ug/L	7635	Standard
	Cr	53	53307.0	1.3	**52.8599**	1.230	2.3	ug/L	363	Standard
	Mn	55	405428.0	0.3	**53.5518**	1.000	1.9	ug/L	747	Standard
	Co	59	387903.4	0.1	**54.1349**	1.154	2.1	ug/L	234	Standard
	Ni	60	106395.6	1.4	**52.2826**	1.359	2.6	ug/L	215	Standard
	Cu	65	107418.5	1.1	**53.1215**	1.283	2.4	ug/L	104	Standard
	Zn	66	63602.2	0.4	**53.2433**	1.221	2.3	ug/L	363	Standard
>	**Ge**	72	537059.3	2.0				ug/L	495142	Standard
	As	75	62286.8	1.3	**51.3419**	1.295	2.5	ug/L	-50	Standard
	Se	82	6132.0	1.6	**51.3807**	0.931	1.8	ug/L	14	Standard
	Se-1	77	4215.6	1.2	**52.6015**	0.951	1.8	ug/L	42	Standard
>	**Ga**	71	76.7	32.8				mg/L	42	Standard
	Rb	85	50.0	36.1				ug/L	17	Standard
	Y	89	473307.8	1.1				ug/L	417098	Standard
>	**Rh**	103	23.3	75.3				ug/L	13	Standard
	Mo	98	59.9	20.8	**0.0148**	0.004	26.5	ug/L	11	Standard
	Ag	107	358191.0	0.9	**50.3679**	1.706	3.4	ug/L	68	Standard
	Cd	111	112882.0	2.3	**49.4684**	1.332	2.7	mg/L	2	Standard
	Cd	114	273909.8	1.0	**48.9526**	1.484	3.0	ug/L	12	Standard
>	**In**	115	641215.1	2.7				ug/L	587441	Standard
	Sn	118	785.0	7.1	**0.0286**	0.011	37.9	ug/L	497	Standard
	Sb	123	249794.4	1.0	**49.0383**	1.564	3.2	ug/L	78	Standard
	Ba	135	107708.9	1.4	**48.2176**	1.451	3.0	ug/L	24	Standard
	Ce	140	101.7	27.1				ug/L	25	Standard
>	**Tb**	159	990038.9	2.7				ug/L	939701	Standard
	Ho	165	11.7	99.0				ug/L	10	Standard
	Tl	203	439976.8	0.4	**51.4932**	0.969	1.9	ug/L	4	Standard
	Tl	205	398605.3	0.6	**53.7491**	0.791	1.5	ug/L	2	Standard
	Pb	206	290681.6	0.4	**52.4241**	0.636	1.2	ug/L	240	Standard
	Pb	207	247225.7	0.4	**50.1841**	0.852	1.7	ug/L	198	Standard
	Pb	208	1030904.4	0.6	**52.9701**	1.178	2.2	ug/L	883	Standard
	U	238	368133.3	0.5	**51.5924**	0.851	1.6	ug/L	3	Standard
>	**Bi**	209	543222.2	1.6				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	35.0	28.6	**-0.0227**	0.012	52.0	mg/L	37	Standard
K	39	28.3	50.9	**-0.0559**	0.027	48.5	mg/L	38	Standard
Ca	43	35.0	28.6	**-0.4579**	0.506	110.5	mg/L	10	Standard
Fe	54	138.7	22.6	**-0.0277**	0.025	88.8	mg/L	179	Standard
Fe	57	243.3	16.6	**-0.2916**	0.161	55.3	mg/L	335	Standard
> **Sc-1**	45	64878.8	4.3				mg/L	61029	Standard
Cl	35	24949.9	2.3				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	1880.1	6.1				ug/L	1547	Standard
P	31	18362.8	1.6				ug/L	15286	Standard
S	34	2046.8	4.1				ug/L	1572	Standard
Sr	88	70.0	18.9				ug/L	73	Standard
C	12	56.7	56.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	2.2	249.0				mg/L	6	Standard
Ho-1	165	11.7	99.0				mg/L	10	Standard
Er	166	23.3	49.5				mg/L	13	Standard
I	127	1781.8	25.5				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		104.431	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		108.466	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.154
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.671
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606124702 WG574001-01
Sample Date/Time: Wednesday, June 29, 2016 15:55:16
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	134635.3	6.0				ug/L	74699	Standard
	Be	9	80.0	18.8	**0.0585**	0.013	21.4	ug/L	8	Standard
	Al	27	38117257.0	1.5	**144.1796**	7.359	5.1	ug/L	1493	Standard
	Sc	45	57575.9	1.8				ug/L	61029	Standard
	Ti	47	164.0	8.6	**0.3117**	0.039	12.5	ug/L	35	Standard
	V	51	2694.7	7.4	**0.1512**	0.027	17.7	ug/L	1435	Standard
	Cr	52	13340.2	1.7	**0.7256**	0.017	2.4	ug/L	7635	Standard
	Cr	53	1556.7	8.2	**1.3078**	0.145	11.1	ug/L	363	Standard
	Mn	55	855520.0	4.5	**119.2592**	4.647	3.9	ug/L	747	Standard
	Co	59	4433.3	4.9	**0.6151**	0.027	4.4	ug/L	234	Standard
	Ni	60	11360.3	1.4	**5.7737**	0.123	2.1	ug/L	215	Standard
	Cu	65	4582.0	1.3	**2.2889**	0.015	0.7	ug/L	104	Standard
	Zn	66	3866.8	1.4	**2.9861**	0.052	1.7	ug/L	363	Standard
>	**Ge**	72	509457.0	0.7				ug/L	495142	Standard
	As	75	332.4	10.8	**0.3479**	0.030	8.6	ug/L	-50	Standard
	Se	82	161.9	7.9	**1.2952**	0.108	8.4	ug/L	14	Standard
	Se-1	77	102.3	14.4	**0.7391**	0.192	26.0	ug/L	42	Standard
>	**Ga**	71	95.0	18.2				mg/L	42	Standard
	Rb	85	141592.2	2.6				ug/L	17	Standard
	Y	89	417616.8	3.6				ug/L	417098	Standard
>	**Rh**	103	198.3	13.9				ug/L	13	Standard
	Mo	98	173.0	3.6	**0.0623**	0.003	5.6	ug/L	11	Standard
	Ag	107	339.3	7.8	**0.0417**	0.005	13.0	ug/L	68	Standard
	Cd	111	139.7	8.2	**0.0622**	0.007	10.5	mg/L	2	Standard
	Cd	114	358.4	9.8	**0.0712**	0.009	12.2	ug/L	12	Standard
>	**In**	115	560534.9	2.1				ug/L	587441	Standard
	Sn	118	620.0	5.6	**0.0166**	0.008	49.6	ug/L	497	Standard
	Sb	123	641.7	15.5	**0.1401**	0.024	17.2	ug/L	78	Standard
	Ba	135	5098.9	2.7	**2.5958**	0.100	3.9	ug/L	24	Standard
	Ce	140	815.0	33.2				ug/L	25	Standard
>	**Tb**	159	928792.3	1.3				ug/L	939701	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	1143.7	8.4	**0.1440**	0.014	9.4	ug/L	4	Standard
	Tl	205	1088.4	7.4	**0.1600**	0.012	7.4	ug/L	2	Standard
	Pb	206	578.7	9.2	**0.0425**	0.010	23.1	ug/L	240	Standard
	Pb	207	493.0	9.5	**0.0393**	0.012	31.8	ug/L	198	Standard
	Pb	208	1938.4	3.0	**0.0345**	0.004	12.8	ug/L	883	Standard
	U	238	1219.0	4.3	**0.1816**	0.009	5.1	ug/L	3	Standard
>	**Bi**	209	499083.1	3.3				ug/L	523984	Standard

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Na	23	20.0	43.3	**245.3647**	110.079	44.9	mg/L	0	Standard
Mg	24	80086.1	0.7	**109.5385**	2.239	2.0	mg/L	37	Standard
K	39	1376.7	6.5	**3.1098**	0.163	5.2	mg/L	38	Standard
Ca	43	2828.6	6.5	**186.7611**	8.963	4.8	mg/L	10	Standard
Fe	54	188.7	25.7	**0.0318**	0.047	146.5	mg/L	179	Standard
Fe	57	1751.8	4.9	**5.2348**	0.203	3.9	mg/L	335	Standard
> **Sc-1**	45	57575.9	1.8				mg/L	61029	Standard
Cl	35	65110.3	1.2				ug/L	20195	Standard
Kr	83	3.7	68.6				ug/L	4	Standard
Br	81	22346.5	6.5				ug/L	1547	Standard
P	31	17116.3	3.4				ug/L	15286	Standard
S	34	2223.5	6.9				ug/L	1572	Standard
Sr	88	836.7	13.9				ug/L	73	Standard
C	12	76.7	74.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	52.1	77.4				mg/L	6	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	26.7	57.3				mg/L	13	Standard
I	127	41219.6	7.8				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		180.238	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		102.891	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.420
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.248
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606124702 WG574001-01
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Method 6020 - Summary Report

Sample ID: L1606124702DP WG574001-06
Sample Date/Time: Wednesday, June 29, 2016 15:58:27
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	151702.5	2.0				ug/L	74699	Standard
	Be	9	51.7	59.1	**0.0368**	0.018	48.5	ug/L	8	Standard
	Al	27	41839885.7	0.1	**140.2128**	2.854	2.0	ug/L	1493	Standard
	Sc	45	56811.4	3.1				ug/L	61029	Standard
	Ti	47	131.7	6.1	**0.2545**	0.026	10.2	ug/L	35	Standard
	V	51	2376.3	9.9	**0.1332**	0.026	19.9	ug/L	1435	Standard
	Cr	52	12951.9	1.5	**0.8048**	0.052	6.4	ug/L	7635	Standard
	Cr	53	1565.1	1.7	**1.4417**	0.042	2.9	ug/L	363	Standard
	Mn	55	867683.1	1.0	**130.2493**	3.502	2.7	ug/L	747	Standard
	Co	59	4344.6	3.7	**0.6509**	0.022	3.4	ug/L	234	Standard
	Ni	60	12342.7	0.7	**6.7729**	0.126	1.9	ug/L	215	Standard
	Cu	65	4552.0	1.4	**2.4548**	0.036	1.5	ug/L	104	Standard
	Zn	66	4125.6	2.3	**3.4960**	0.055	1.6	ug/L	363	Standard
>	**Ge**	72	473381.7	2.0				ug/L	495142	Standard
	As	75	389.2	1.9	**0.4231**	0.002	0.6	ug/L	-50	Standard
	Se	82	181.1	4.2	**1.5888**	0.099	6.2	ug/L	14	Standard
	Se-1	77	106.3	18.0	**0.8981**	0.248	27.6	ug/L	42	Standard
>	**Ga**	71	78.3	22.4				mg/L	42	Standard
	Rb	85	147149.5	0.7				ug/L	17	Standard
	Y	89	405581.1	1.8				ug/L	417098	Standard
>	**Rh**	103	178.3	29.5				ug/L	13	Standard
	Mo	98	220.6	12.3	**0.0817**	0.013	15.7	ug/L	11	Standard
	Ag	107	177.0	68.0	**0.0160**	0.020	127.1	ug/L	68	Standard
	Cd	111	65.9	51.9	**0.0256**	0.018	71.0	mg/L	2	Standard
	Cd	114	151.1	49.7	**0.0291**	0.016	55.4	ug/L	12	Standard
>	**In**	115	557347.0	2.4				ug/L	587441	Standard
	Sn	118	766.7	0.4	**0.0437**	0.004	8.6	ug/L	497	Standard
	Sb	123	305.8	17.0	**0.0650**	0.013	20.6	ug/L	78	Standard
	Ba	135	5047.2	3.4	**2.5853**	0.149	5.7	ug/L	24	Standard
	Ce	140	491.7	100.3				ug/L	25	Standard
>	**Tb**	159	935324.5	2.7				ug/L	939701	Standard
	Ho	165	18.3	103.3				ug/L	10	Standard
	Tl	203	947.0	9.8	**0.1179**	0.014	11.5	ug/L	4	Standard
	Tl	205	846.7	27.0	**0.1237**	0.035	28.6	ug/L	2	Standard
	Pb	206	418.3	37.6	**0.0106**	0.032	302.9	ug/L	240	Standard
	Pb	207	351.7	32.0	**0.0074**	0.026	354.3	ug/L	198	Standard
	Pb	208	1404.0	30.0	**0.0041**	0.025	608.6	ug/L	883	Standard
	U	238	972.4	9.3	**0.1427**	0.016	11.1	ug/L	3	Standard
>	**Bi**	209	503603.8	1.5				ug/L	523984	Standard

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Na	23	25.0	34.6	**311.2656**	112.939	36.3	mg/L	0	Standard
Mg	24	85343.0	0.9	**118.3682**	4.384	3.7	mg/L	37	Standard
K	39	1298.4	2.9	**2.9712**	0.147	4.9	mg/L	38	Standard
Ca	43	2830.3	7.5	**189.4839**	12.043	6.4	mg/L	10	Standard
Fe	54	146.6	14.0	**-0.0044**	0.021	483.2	mg/L	179	Standard
Fe	57	1698.4	7.8	**5.1376**	0.623	12.1	mg/L	335	Standard
> **Sc-1**	45	56811.4	3.1				mg/L	61029	Standard
Cl	35	65999.5	1.4				ug/L	20195	Standard
Kr	83	1.3	114.6				ug/L	4	Standard
Br	81	22520.1	6.6				ug/L	1547	Standard
P	31	16799.3	3.7				ug/L	15286	Standard
S	34	2040.1	3.0				ug/L	1572	Standard
Sr	88	920.0	8.9				ug/L	73	Standard
C	12	83.3	25.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	3	Standard
Dy	164	32.1	98.6				mg/L	6	Standard
Ho-1	165	18.3	103.3				mg/L	10	Standard
Er	166	26.7	43.3				mg/L	13	Standard
I	127	45859.6	7.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		203.086	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.605	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.877
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.110
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606126501 WG574001-02
Sample Date/Time: Wednesday, June 29, 2016 16:01:39
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	112017.9	3.5				ug/L	74699	Standard
	Be	9	21.7	35.3	**0.0242**	0.006	26.3	ug/L	8	Standard
	Al	27	58851331.1	1.0	**267.2037**	7.701	2.9	ug/L	1493	Standard
	Sc	45	63265.2	2.1				ug/L	61029	Standard
	Ti	47	314.3	6.0	**0.7250**	0.050	6.9	ug/L	35	Standard
	V	51	84379.6	0.6	**11.0401**	0.098	0.9	ug/L	1435	Standard
	Cr	52	25344.2	1.7	**2.4155**	0.065	2.7	ug/L	7635	Standard
	Cr	53	30644.3	3.7	**33.0161**	1.295	3.9	ug/L	363	Standard
	Mn	55	3058.3	0.3	**0.2937**	0.003	0.9	ug/L	747	Standard
	Co	59	981.4	1.2	**0.1122**	0.002	1.4	ug/L	234	Standard
	Ni	60	4598.7	1.8	**2.3463**	0.051	2.2	ug/L	215	Standard
	Cu	65	1226.7	2.1	**0.5592**	0.015	2.8	ug/L	104	Standard
	Zn	66	2978.0	3.2	**2.2873**	0.091	4.0	ug/L	363	Standard
>	**Ge**	72	492356.2	0.3				ug/L	495142	Standard
	As	75	3467.1	5.3	**3.1728**	0.175	5.5	ug/L	-50	Standard
	Se	82	1561.8	3.2	**14.1732**	0.483	3.4	ug/L	14	Standard
	Se-1	77	3085.3	7.4	**41.8633**	3.228	7.7	ug/L	42	Standard
>	**Ga**	71	63.3	27.7				mg/L	42	Standard
	Rb	85	9206.1	3.0				ug/L	17	Standard
	Y	89	442169.1	3.5				ug/L	417098	Standard
>	**Rh**	103	255.0	11.9				ug/L	13	Standard
	Mo	98	5205.2	3.3	**1.8993**	0.033	1.7	ug/L	11	Standard
	Ag	107	803.7	5.3	**0.1074**	0.005	4.8	ug/L	68	Standard
	Cd	111	45.0	9.2	**0.0131**	0.002	16.6	mg/L	2	Standard
	Cd	114	163.3	22.8	**0.0289**	0.007	22.9	ug/L	12	Standard
>	**In**	115	602229.8	3.0				ug/L	587441	Standard
	Sn	118	683.3	9.8	**0.0193**	0.009	45.4	ug/L	497	Standard
	Sb	123	210.7	19.8	**0.0397**	0.008	19.9	ug/L	78	Standard
	Ba	135	21407.4	0.7	**10.1914**	0.253	2.5	ug/L	24	Standard
	Ce	140	328.3	10.1				ug/L	25	Standard
>	**Tb**	159	984916.0	0.2				ug/L	939701	Standard
	Ho	165	35.0	24.7				ug/L	10	Standard
	Tl	203	94.3	9.0	**0.0098**	0.001	12.0	ug/L	4	Standard
	Tl	205	65.0	40.7	**0.0094**	0.004	40.6	ug/L	2	Standard
	Pb	206	401.3	3.0	**0.0049**	0.001	28.2	ug/L	240	Standard
	Pb	207	354.0	5.2	**0.0056**	0.003	55.2	ug/L	198	Standard
	Pb	208	1436.0	3.5	**0.0035**	0.003	74.9	ug/L	883	Standard
	U	238	31993.4	1.5	**4.7067**	0.092	1.9	ug/L	3	Standard
>	**Bi**	209	517006.9	1.2				ug/L	523984	Standard

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Na	23	5.0	100.0	**55.9813**	56.756	101.4	mg/L	0	Standard
Mg	24	180057.1	1.6	**224.1644**	1.858	0.8	mg/L	37	Standard
K	39	641.7	5.8	**1.2549**	0.096	7.6	mg/L	38	Standard
Ca	43	708.3	7.0	**40.6474**	3.060	7.5	mg/L	10	Standard
Fe	54	157.9	5.8	**-0.0091**	0.008	86.4	mg/L	179	Standard
Fe	57	550.0	17.3	**0.7314**	0.333	45.5	mg/L	335	Standard
> **Sc-1**	45	63265.2	2.1				mg/L	61029	Standard
Cl	35	33676.1	1.7				ug/L	20195	Standard
Kr	83	0.3	173.2				ug/L	4	Standard
Br	81	48808.6	5.5				ug/L	1547	Standard
P	31	23084.3	3.5				ug/L	15286	Standard
S	34	2106.8	4.3				ug/L	1572	Standard
Sr	88	1195.0	6.7				ug/L	73	Standard
C	12	130.0	40.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	9.0	113.3				mg/L	6	Standard
Ho-1	165	35.0	24.7				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	49504.2	3.9				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		149.959	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.437	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.517	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.668	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606126501 WG574001-02
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Method 6020 - Summary Report

Sample ID: L1606126502S WG574001-07
Sample Date/Time: Wednesday, June 29, 2016 16:04:50
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	109865.8	4.5				ug/L	74699	Standard
	Be	9	61395.8	1.0	**47.4912**	2.348	4.9	ug/L	8	Standard
	Al	27	61297739.1	1.7	**284.0961**	17.361	6.1	ug/L	1493	Standard
	Sc	45	64222.6	2.9				ug/L	61029	Standard
	Ti	47	334.7	6.1	**0.7462**	0.065	8.7	ug/L	35	Standard
	V	51	514269.3	0.9	**65.7128**	0.488	0.7	ug/L	1435	Standard
	Cr	52	414721.1	1.2	**53.1400**	0.316	0.6	ug/L	7635	Standard
	Cr	53	79122.8	2.2	**82.5246**	0.802	1.0	ug/L	363	Standard
	Mn	55	379075.2	0.4	**52.5566**	0.801	1.5	ug/L	747	Standard
	Co	59	375122.1	1.7	**54.9533**	1.379	2.5	ug/L	234	Standard
	Ni	60	98886.4	1.8	**50.9941**	0.435	0.9	ug/L	215	Standard
	Cu	65	94781.9	0.9	**49.1885**	0.428	0.9	ug/L	104	Standard
	Zn	66	59708.1	1.0	**52.4531**	0.349	0.7	ug/L	363	Standard
>	**Ge**	72	511580.8	1.5				ug/L	495142	Standard
	As	75	64226.1	0.6	**55.5617**	0.582	1.0	ug/L	-50	Standard
	Se	82	7637.7	1.0	**67.2251**	1.117	1.7	ug/L	14	Standard
	Se-1	77	7177.4	2.9	**94.4764**	1.329	1.4	ug/L	42	Standard
>	**Ga**	71	96.7	7.9				mg/L	42	Standard
	Rb	85	9571.4	0.6				ug/L	17	Standard
	Y	89	459795.2	1.7				ug/L	417098	Standard
>	**Rh**	103	293.3	12.0				ug/L	13	Standard
	Mo	98	5421.1	3.7	**1.9704**	0.066	3.4	ug/L	11	Standard
	Ag	107	318338.0	1.0	**47.4485**	0.356	0.8	ug/L	68	Standard
	Cd	111	104991.2	1.0	**48.7852**	0.464	1.0	mg/L	2	Standard
	Cd	114	250399.7	1.5	**47.4405**	0.760	1.6	ug/L	12	Standard
>	**In**	115	604563.1	0.3				ug/L	587441	Standard
	Sn	118	798.4	4.4	**0.0381**	0.006	16.0	ug/L	497	Standard
	Sb	123	240747.3	1.0	**50.1002**	0.397	0.8	ug/L	78	Standard
	Ba	135	122571.5	0.3	**58.1746**	0.379	0.7	ug/L	24	Standard
	Ce	140	328.3	0.9				ug/L	25	Standard
>	**Tb**	159	981221.4	1.4				ug/L	939701	Standard
	Ho	165	28.3	44.4				ug/L	10	Standard
	Tl	203	414235.7	0.7	**51.0974**	0.645	1.3	ug/L	4	Standard
	Tl	205	378219.2	0.6	**53.7534**	0.090	0.2	ug/L	2	Standard
	Pb	206	277784.6	0.1	**52.8053**	0.305	0.6	ug/L	240	Standard
	Pb	207	237018.9	0.5	**50.7105**	0.514	1.0	ug/L	198	Standard
	Pb	208	965977.0	0.4	**52.3096**	0.506	1.0	ug/L	883	Standard
	U	238	407586.9	0.7	**60.2072**	0.700	1.2	ug/L	3	Standard
>	**Bi**	209	515321.0	0.6				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.6720**	30.600	173.2	mg/L	0	Standard
Mg	24	189285.1	1.3	**232.3057**	9.548	4.1	mg/L	37	Standard
K	39	641.7	6.1	**1.2328**	0.045	3.6	mg/L	38	Standard
Ca	43	760.0	12.3	**43.0240**	4.391	10.2	mg/L	10	Standard
Fe	54	185.4	16.8	**0.0114**	0.028	245.2	mg/L	179	Standard
Fe	57	630.0	4.2	**0.9612**	0.087	9.0	mg/L	335	Standard
> **Sc-1**	45	64222.6	2.9				mg/L	61029	Standard
Cl	35	34933.6	1.5				ug/L	20195	Standard
Kr	83	2.7	114.6				ug/L	4	Standard
Br	81	53306.9	1.0				ug/L	1547	Standard
P	31	23740.3	1.4				ug/L	15286	Standard
S	34	2118.5	3.3				ug/L	1572	Standard
Sr	88	1145.0	3.3				ug/L	73	Standard
C	12	140.0	21.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	28.6	38.4				mg/L	6	Standard
Ho-1	165	28.3	44.4				mg/L	10	Standard
Er	166	30.0	66.7				mg/L	13	Standard
I	127	81496.0	7.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		147.078	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.320	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.915	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.347	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606126502S WG574001-07
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Method 6020 - Summary Report

Sample ID: L1606126503SD WG574001-08
Sample Date/Time: Wednesday, June 29, 2016 16:08:02
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	108017.3	3.5				ug/L	74699	Standard
	Be	9	61104.9	5.2	**47.9870**	0.846	1.8	ug/L	8	Standard
	Al	27	60436124.3	2.1	**284.5445**	9.073	3.2	ug/L	1493	Standard
	Sc	45	65195.1	3.6				ug/L	61029	Standard
	Ti	47	321.3	5.9	**0.6738**	0.054	8.0	ug/L	35	Standard
	V	51	521782.6	1.8	**63.5667**	1.206	1.9	ug/L	1435	Standard
	Cr	52	431117.5	0.3	**52.6702**	0.983	1.9	ug/L	7635	Standard
	Cr	53	81998.0	1.1	**81.5509**	0.729	0.9	ug/L	363	Standard
	Mn	55	379421.8	1.7	**50.1647**	1.838	3.7	ug/L	747	Standard
	Co	59	378746.6	2.0	**52.9167**	2.098	4.0	ug/L	234	Standard
	Ni	60	101643.5	0.7	**49.9872**	1.144	2.3	ug/L	215	Standard
	Cu	65	96036.4	1.2	**47.5169**	0.455	1.0	ug/L	104	Standard
	Zn	66	60629.4	1.5	**50.7689**	0.479	0.9	ug/L	363	Standard
>	**Ge**	72	536566.5	1.9				ug/L	495142	Standard
	As	75	65668.7	0.7	**54.1701**	0.796	1.5	ug/L	-50	Standard
	Se	82	7769.6	1.1	**65.2136**	1.970	3.0	ug/L	14	Standard
	Se-1	77	7316.4	1.6	**91.8340**	1.824	2.0	ug/L	42	Standard
>	**Ga**	71	56.7	22.2				mg/L	42	Standard
	Rb	85	9684.8	3.9				ug/L	17	Standard
	Y	89	458590.9	3.1				ug/L	417098	Standard
>	**Rh**	103	275.0	12.6				ug/L	13	Standard
	Mo	98	5397.9	1.9	**1.9792**	0.040	2.0	ug/L	11	Standard
	Ag	107	315299.7	0.9	**47.4082**	1.008	2.1	ug/L	68	Standard
	Cd	111	105649.0	0.5	**49.5183**	0.751	1.5	mg/L	2	Standard
	Cd	114	256574.5	1.5	**49.0334**	1.028	2.1	ug/L	12	Standard
>	**In**	115	599465.1	2.0				ug/L	587441	Standard
	Sn	118	820.0	11.4	**0.0428**	0.015	34.4	ug/L	497	Standard
	Sb	123	245153.5	0.2	**51.4644**	0.950	1.8	ug/L	78	Standard
	Ba	135	122768.4	0.8	**58.7829**	1.524	2.6	ug/L	24	Standard
	Ce	140	333.3	10.5				ug/L	25	Standard
>	**Tb**	159	983758.7	0.8				ug/L	939701	Standard
	Ho	165	18.3	41.7				ug/L	10	Standard
	Tl	203	416470.0	0.7	**50.8907**	0.470	0.9	ug/L	4	Standard
	Tl	205	377588.7	0.1	**53.1619**	0.172	0.3	ug/L	2	Standard
	Pb	206	279930.3	0.5	**52.7144**	0.351	0.7	ug/L	240	Standard
	Pb	207	238634.3	0.7	**50.5762**	0.275	0.5	ug/L	198	Standard
	Pb	208	958199.8	1.0	**51.4011**	0.688	1.3	ug/L	883	Standard
	U	238	405052.0	0.8	**59.2716**	0.671	1.1	ug/L	3	Standard
>	**Bi**	209	520189.0	0.3				ug/L	523984	Standard

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Na	23	5.0	173.2	**51.9909**	90.042	173.2	mg/L	0	Standard
Mg	24	184795.4	2.1	**223.5320**	12.550	5.6	mg/L	37	Standard
K	39	668.3	13.7	**1.2668**	0.164	13.0	mg/L	38	Standard
Ca	43	725.0	7.3	**40.3567**	2.975	7.4	mg/L	10	Standard
Fe	54	151.4	21.3	**-0.0183**	0.024	132.3	mg/L	179	Standard
Fe	57	623.3	16.5	**0.9045**	0.268	29.6	mg/L	335	Standard
Sc-1	45	65195.1	3.6				mg/L	61029	Standard
Cl	35	33686.7	1.5				ug/L	20195	Standard
Kr	83	1.7	91.7				ug/L	4	Standard
Br	81	51370.3	3.2				ug/L	1547	Standard
P	31	23124.3	1.4				ug/L	15286	Standard
S	34	2101.8	2.3				ug/L	1572	Standard
Sr	88	1251.7	9.6				ug/L	73	Standard
C	12	163.3	19.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	9.4	104.3				mg/L	6	Standard
Ho-1	165	18.3	41.7				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	90519.1	8.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		144.604	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		108.366	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.047	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.276	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606124701
Sample Date/Time: Wednesday, June 29, 2016 16:11:13
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	160464.4	3.8				ug/L	74699	Standard
	Be	9	12485.1	1.8	**6.6126**	0.132	2.0	ug/L	8	Standard
	Al	27	129371635.5	1.7	**410.0067**	8.683	2.1	ug/L	1493	Standard
	Sc	45	97873.5	2.0				ug/L	61029	Standard
	Ti	47	12940.2	2.9	**32.4229**	1.439	4.4	ug/L	35	Standard
	V	51	62587.9	0.8	**7.6988**	0.173	2.3	ug/L	1435	Standard
	Cr	52	130472.4	1.2	**15.7449**	0.176	1.1	ug/L	7635	Standard
	Cr	53	17299.9	2.8	**17.4949**	0.102	0.6	ug/L	363	Standard
	Mn	55	53885293.3	1.0	**7372.4056**	142.217	1.9	ug/L	747	Standard
	Co	59	1486809.2	2.0	**214.4609**	6.754	3.1	ug/L	234	Standard
	Ni	60	953927.1	1.9	**485.1518**	7.673	1.6	ug/L	215	Standard
	Cu	65	14021.8	2.7	**7.0705**	0.048	0.7	ug/L	104	Standard
	Zn	66	1250022.8	1.4	**1089.5042**	11.046	1.0	ug/L	363	Standard
>	**Ge**	72	519921.5	2.2				ug/L	495142	Standard
	As	75	2369.9	1.5	**2.0748**	0.031	1.5	ug/L	-50	Standard
	Se	82	334.2	2.8	**2.7639**	0.140	5.1	ug/L	14	Standard
	Se-1	77	477.7	9.4	**5.6016**	0.492	8.8	ug/L	42	Standard
>	**Ga**	71	3503.7	1.4				mg/L	42	Standard
	Rb	85	155749.9	1.6				ug/L	17	Standard
	Y	89	3051185.4	0.7				ug/L	417098	Standard
>	**Rh**	103	200.0	9.0				ug/L	13	Standard
	Mo	98	648.1	0.8	**0.2277**	0.002	1.0	ug/L	11	Standard
	Ag	107	406.3	10.5	**0.0469**	0.006	13.8	ug/L	68	Standard
	Cd	111	4037.2	2.2	**1.8458**	0.056	3.0	mg/L	2	Standard
	Cd	114	10321.7	4.5	**1.9292**	0.065	3.4	ug/L	12	Standard
>	**In**	115	612067.4	1.8				ug/L	587441	Standard
	Sn	118	936.7	6.3	**0.0593**	0.012	20.5	ug/L	497	Standard
	Sb	123	674.3	5.8	**0.1344**	0.006	4.1	ug/L	78	Standard
	Ba	135	15717.8	1.3	**7.3556**	0.136	1.8	ug/L	24	Standard
	Ce	140	2639736.8	0.7				ug/L	25	Standard
>	**Tb**	159	1213429.7	1.8				ug/L	939701	Standard
	Ho	165	212831.1	0.7				ug/L	10	Standard
	Tl	203	2423.5	3.4	**0.2853**	0.011	3.9	ug/L	4	Standard
	Tl	205	2225.2	6.3	**0.3038**	0.017	5.8	ug/L	2	Standard
	Pb	206	7086.3	0.1	**1.2240**	0.010	0.8	ug/L	240	Standard
	Pb	207	5547.0	2.2	**1.0710**	0.022	2.1	ug/L	198	Standard
	Pb	208	23218.6	1.0	**1.1348**	0.005	0.5	ug/L	883	Standard
	U	238	25740.2	1.8	**3.6463**	0.044	1.2	ug/L	3	Standard
>	**Bi**	209	536711.9	0.7				ug/L	523984	Standard

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Na	23	40.0	57.3	**285.3574**	160.270	56.2	mg/L	0	Standard
Mg	24	87773.6	1.9	**70.5914**	1.090	1.5	mg/L	37	Standard
K	39	1211.7	2.8	**1.5562**	0.053	3.4	mg/L	38	Standard
Ca	43	3308.7	4.2	**127.7939**	4.640	3.6	mg/L	10	Standard
Fe	54	180981.2	2.7	**95.5321**	0.892	0.9	mg/L	179	Standard
Fe	57	48873.8	3.4	**102.4969**	2.098	2.0	mg/L	335	Standard
> **Sc-1**	45	97873.5	2.0				mg/L	61029	Standard
Cl	35	64420.7	1.3				ug/L	20195	Standard
Kr	83	1.3	86.6				ug/L	4	Standard
Br	81	26873.8	3.7				ug/L	1547	Standard
P	31	52208.1	1.4				ug/L	15286	Standard
S	34	1956.8	2.0				ug/L	1572	Standard
Sr	88	1171.7	10.6				ug/L	73	Standard
C	12	126.7	46.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	329920.1	1.3				mg/L	6	Standard
Ho-1	165	212831.1	0.7				mg/L	10	Standard
Er	166	185158.1	1.8				mg/L	13	Standard
I	127	88143.1	6.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		214.815	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.004	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.192
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.429
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Co 59 Upper, S, EEE	Co	59
Ni 60 Upper, S, EEE	Ni	60
Zn 66 Upper, S, EEE	Zn	66

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Sample ID: L1606124701PS WG574688-01
Sample Date/Time: Wednesday, June 29, 2016 16:14:25
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	166369.0	3.1				ug/L	74699	Standard
	Be	9	78228.1	1.5	**39.9183**	0.744	1.9	ug/L	8	Standard
	Al	27	127858501.0	1.9	**390.7420**	6.863	1.8	ug/L	1493	Standard
	Sc	45	95075.8	2.0				ug/L	61029	Standard
	Ti	47	12076.5	3.4	**30.6847**	0.840	2.7	ug/L	35	Standard
	V	51	487373.4	0.7	**62.1823**	0.880	1.4	ug/L	1435	Standard
	Cr	52	506749.0	0.5	**65.0704**	0.602	0.9	ug/L	7635	Standard
	Cr	53	63546.3	1.7	**66.1298**	1.201	1.8	ug/L	363	Standard
	Mn	55	53730576.4	0.3	**7459.5309**	74.503	1.0	ug/L	747	Standard
	Co	59	1866113.9	0.2	**273.1251**	3.396	1.2	ug/L	234	Standard
	Ni	60	1009610.1	0.8	**521.0961**	4.502	0.9	ug/L	215	Standard
	Cu	65	102190.2	1.2	**52.9646**	0.037	0.1	ug/L	104	Standard
	Zn	66	1265218.7	0.3	**1119.1475**	11.121	1.0	ug/L	363	Standard
>	**Ge**	72	512284.2	1.2				ug/L	495142	Standard
	As	75	65072.9	0.3	**56.2148**	0.511	0.9	ug/L	-50	Standard
	Se	82	7179.2	1.0	**63.0878**	0.484	0.8	ug/L	14	Standard
	Se-1	77	4836.8	0.7	**63.3901**	0.749	1.2	ug/L	42	Standard
>	**Ga**	71	3398.7	7.2				mg/L	42	Standard
	Rb	85	158551.9	0.5				ug/L	17	Standard
	Y	89	3079691.2	1.3				ug/L	417098	Standard
>	**Rh**	103	243.3	6.3				ug/L	13	Standard
	Mo	98	610.5	4.6	**0.2160**	0.008	3.7	ug/L	11	Standard
	Ag	107	329069.5	0.6	**48.8691**	0.577	1.2	ug/L	68	Standard
	Cd	111	109320.3	0.2	**50.6101**	0.459	0.9	mg/L	2	Standard
	Cd	114	265491.9	0.4	**50.1152**	0.608	1.2	ug/L	12	Standard
>	**In**	115	606831.5	1.0				ug/L	587441	Standard
	Sn	118	1098.4	5.9	**0.0874**	0.012	14.0	ug/L	497	Standard
	Sb	123	240923.7	1.8	**49.9558**	1.171	2.3	ug/L	78	Standard
	Ba	135	113288.6	0.8	**53.5705**	0.782	1.5	ug/L	24	Standard
	Ce	140	2588807.2	1.1				ug/L	25	Standard
>	**Tb**	159	1203377.0	1.6				ug/L	939701	Standard
	Ho	165	210409.6	1.8				ug/L	10	Standard
	Tl	203	437720.2	1.4	**52.3305**	0.744	1.4	ug/L	4	Standard
	Tl	205	404409.4	0.6	**55.7069**	0.222	0.4	ug/L	2	Standard
	Pb	206	295264.9	0.3	**54.4023**	0.212	0.4	ug/L	240	Standard
	Pb	207	250626.5	0.1	**51.9726**	0.335	0.6	ug/L	198	Standard
	Pb	208	1033784.3	0.4	**54.2614**	0.547	1.0	ug/L	883	Standard
	U	238	423217.8	0.6	**60.5919**	0.666	1.1	ug/L	3	Standard
>	**Bi**	209	531687.2	0.6				ug/L	523984	Standard

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Na	23	31.7	32.9	**235.3667**	80.946	34.4	mg/L	0	Standard
Mg	24	88559.7	0.9	**73.3333**	1.498	2.0	mg/L	37	Standard
K	39	1311.7	6.5	**1.7460**	0.092	5.3	mg/L	38	Standard
Ca	43	3437.1	1.4	**136.8797**	3.742	2.7	mg/L	10	Standard
Fe	54	183063.9	0.7	**99.5077**	1.370	1.4	mg/L	179	Standard
Fe	57	49900.4	2.7	**107.8438**	4.358	4.0	mg/L	335	Standard
> **Sc-1**	45	95075.8	2.0				mg/L	61029	Standard
Cl	35	63889.8	1.2				ug/L	20195	Standard
Kr	83	1.7	34.6				ug/L	4	Standard
Br	81	26186.0	7.9				ug/L	1547	Standard
P	31	52633.0	2.3				ug/L	15286	Standard
S	34	1903.5	2.7				ug/L	1572	Standard
Sr	88	1258.4	8.1				ug/L	73	Standard
C	12	153.3	16.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	3	Standard
Dy	164	329580.7	1.9				mg/L	6	Standard
Ho-1	165	210409.6	1.8				mg/L	10	Standard
Er	166	182077.6	1.3				mg/L	13	Standard
I	127	87547.6	5.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		222.720	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.462	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.301
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.470
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Co 59 Upper, S, EEE	Co	59
Ni 60 Upper, S, EEE	Ni	60
Zn 66 Upper, S, EEE	Zn	66

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Method 6020 - Summary Report

Sample ID: L1606124701SDL WG574688-02
Sample Date/Time: Wednesday, June 29, 2016 16:17:36
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	115043.6	2.7				ug/L	74699	Standard
	Be	9	2510.2	6.0	**1.8579**	0.064	3.4	ug/L	8	Standard
	Al	27	26603666.2	1.3	**117.5773**	3.118	2.7	ug/L	1493	Standard
	Sc	45	70520.4	2.0				ug/L	61029	Standard
	Ti	47	2655.2	2.4	**6.2496**	0.159	2.5	ug/L	35	Standard
	V	51	13651.6	1.3	**1.4451**	0.028	2.0	ug/L	1435	Standard
	Cr	52	32029.5	0.6	**2.9000**	0.113	3.9	ug/L	7635	Standard
	Cr	53	4062.2	6.0	**3.6565**	0.147	4.0	ug/L	363	Standard
	Mn	55	11326454.5	1.3	**1476.9710**	52.700	3.6	ug/L	747	Standard
	Co	59	315829.2	0.8	**43.3845**	1.293	3.0	ug/L	234	Standard
	Ni	60	206220.6	0.5	**99.8677**	2.554	2.6	ug/L	215	Standard
	Cu	65	3227.7	3.3	**1.4714**	0.087	5.9	ug/L	104	Standard
	Zn	66	276031.8	0.8	**228.9686**	6.765	3.0	ug/L	363	Standard
>	**Ge**	72	545622.5	2.3				ug/L	495142	Standard
	As	75	529.0	5.1	**0.4886**	0.031	6.3	ug/L	-50	Standard
	Se	82	109.8	7.8	**0.7692**	0.061	7.9	ug/L	14	Standard
	Se-1	77	127.7	10.6	**0.9669**	0.203	21.0	ug/L	42	Standard
>	**Ga**	71	896.7	4.3				mg/L	42	Standard
	Rb	85	33246.4	0.8				ug/L	17	Standard
	Y	89	1035711.2	2.7				ug/L	417098	Standard
>	**Rh**	103	68.3	33.0				ug/L	13	Standard
	Mo	98	137.2	4.4	**0.0416**	0.001	3.0	ug/L	11	Standard
	Ag	107	193.7	13.0	**0.0144**	0.003	20.5	ug/L	68	Standard
	Cd	111	922.1	1.5	**0.3978**	0.011	2.7	mg/L	2	Standard
	Cd	114	2202.4	8.0	**0.3929**	0.032	8.2	ug/L	12	Standard
>	**In**	115	638835.9	2.4				ug/L	587441	Standard
	Sn	118	601.7	4.7	**-0.0000**	0.004	76937.0	ug/L	497	Standard
	Sb	123	1960.6	22.3	**0.3834**	0.095	24.7	ug/L	78	Standard
	Ba	135	3410.7	1.0	**1.5171**	0.049	3.2	ug/L	24	Standard
	Ce	140	553030.9	1.0				ug/L	25	Standard
>	**Tb**	159	1064988.1	1.7				ug/L	939701	Standard
	Ho	165	44299.7	1.5				ug/L	10	Standard
	Tl	203	596.3	8.1	**0.0662**	0.006	8.4	ug/L	4	Standard
	Tl	205	613.3	10.1	**0.0808**	0.008	10.1	ug/L	2	Standard
	Pb	206	1759.1	0.5	**0.2383**	0.002	0.8	ug/L	240	Standard
	Pb	207	1407.7	5.3	**0.2088**	0.015	7.2	ug/L	198	Standard
	Pb	208	5898.4	2.6	**0.2216**	0.008	3.7	ug/L	883	Standard
	U	238	5357.3	1.2	**0.7271**	0.010	1.3	ug/L	3	Standard
>	**Bi**	209	557502.4	0.2				ug/L	523984	Standard

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Na	23	11.7	89.2	**117.5100**	105.501	89.8	mg/L	0	Standard
Mg	24	18105.8	1.6	**20.1624**	0.144	0.7	mg/L	37	Standard
K	39	321.7	3.6	**0.5016**	0.035	6.9	mg/L	38	Standard
Ca	43	733.4	8.9	**37.5359**	2.964	7.9	mg/L	10	Standard
Fe	54	38163.2	2.6	**27.8607**	0.186	0.7	mg/L	179	Standard
Fe	57	10221.8	1.3	**28.9959**	0.316	1.1	mg/L	335	Standard
> **Sc-1**	45	70520.4	2.0				mg/L	61029	Standard
Cl	35	31180.1	1.1				ug/L	20195	Standard
Kr	83	2.3	89.2				ug/L	4	Standard
Br	81	7325.1	3.6				ug/L	1547	Standard
P	31	24873.7	0.5				ug/L	15286	Standard
S	34	1646.8	8.5				ug/L	1572	Standard
Sr	88	296.7	11.0				ug/L	73	Standard
C	12	96.7	53.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	69181.7	2.0				mg/L	6	Standard
Ho-1	165	44299.7	1.5				mg/L	10	Standard
Er	166	39063.6	1.3				mg/L	13	Standard
I	127	21375.1	3.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		154.010	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.195	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.749
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.397
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Zn 66 Upper, S, EEE	Zn	66

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 16:20:49
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	104492.8	3.9				ug/L	74699	Standard
	Be	9	63869.3	1.0	**51.9084**	1.516	2.9	ug/L	8	Standard
	Al	27	9148865.9	2.6	**44.5067**	0.724	1.6	ug/L	1493	Standard
	Sc	45	68447.7	3.2				ug/L	61029	Standard
	Ti	47	43923.6	1.6	**106.2047**	1.334	1.3	ug/L	35	Standard
	V	51	454775.2	0.5	**55.0469**	0.468	0.8	ug/L	1435	Standard
	Cr	52	431898.3	0.6	**52.4410**	0.316	0.6	ug/L	7635	Standard
	Cr	53	53343.8	2.8	**52.6203**	1.459	2.8	ug/L	363	Standard
	Mn	55	427711.0	4.2	**56.2006**	1.985	3.5	ug/L	747	Standard
	Co	59	425402.4	1.1	**59.0619**	0.614	1.0	ug/L	234	Standard
	Ni	60	106741.4	0.9	**52.1773**	0.185	0.4	ug/L	215	Standard
	Cu	65	106457.4	0.4	**52.3703**	0.176	0.3	ug/L	104	Standard
	Zn	66	63607.9	0.7	**52.9682**	0.530	1.0	ug/L	363	Standard
>	Ge	72	539725.1	0.7				ug/L	495142	Standard
	As	75	63945.9	1.5	**52.4378**	1.123	2.1	ug/L	-50	Standard
	Se	82	6584.0	0.6	**54.8988**	0.684	1.2	ug/L	14	Standard
	Se-1	77	4386.3	1.4	**54.4772**	1.111	2.0	ug/L	42	Standard
>	Ga	71	80.0	16.5				mg/L	42	Standard
	Rb	85	970.0	8.8				ug/L	17	Standard
	Y	89	494238.2	2.5				ug/L	417098	Standard
>	Rh	103	45.0	11.1				ug/L	13	Standard
	Mo	98	317512.9	0.8	**102.4795**	1.834	1.8	ug/L	11	Standard
	Ag	107	378789.7	0.9	**49.9860**	0.591	1.2	ug/L	68	Standard
	Cd	111	119686.6	0.4	**49.2403**	0.865	1.8	mg/L	2	Standard
	Cd	114	291890.5	1.4	**48.9669**	1.322	2.7	ug/L	12	Standard
>	In	115	682927.0	1.5				ug/L	587441	Standard
	Sn	118	338721.1	0.8	**49.7884**	0.723	1.5	ug/L	497	Standard
	Sb	123	263759.6	1.2	**48.5931**	0.331	0.7	ug/L	78	Standard
	Ba	135	111614.3	0.7	**46.9010**	0.972	2.1	ug/L	24	Standard
	Ce	140	1265.1	98.5				ug/L	25	Standard
>	Tb	159	1064058.1	1.0				ug/L	939701	Standard
	Ho	165	88.3	85.2				ug/L	10	Standard
	Tl	203	475263.7	0.7	**51.4258**	1.211	2.4	ug/L	4	Standard
	Tl	205	438160.3	0.4	**54.6297**	1.400	2.6	ug/L	2	Standard
	Pb	206	306629.0	0.6	**51.1326**	1.396	2.7	ug/L	240	Standard
	Pb	207	272793.9	0.3	**51.2040**	1.495	2.9	ug/L	198	Standard
	Pb	208	1100211.2	0.6	**52.2716**	1.709	3.3	ug/L	883	Standard
	U	238	414469.5	0.5	**53.7134**	1.693	3.2	ug/L	3	Standard
>	Bi	209	587705.0	2.9				ug/L	523984	Standard

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Na	23	3.3	173.2	**35.5299**	61.531	173.2	mg/L	0	Standard
Mg	24	4809.1	8.0	**5.4678**	0.353	6.5	mg/L	37	Standard
K	39	2090.1	1.6	**4.0082**	0.167	4.2	mg/L	38	Standard
Ca	43	111.7	10.3	**3.7837**	0.862	22.8	mg/L	10	Standard
Fe	54	7082.4	2.6	**5.2191**	0.217	4.1	mg/L	179	Standard
Fe	57	2040.1	4.3	**5.1108**	0.267	5.2	mg/L	335	Standard
Sc-1	45	68447.7	3.2				mg/L	61029	Standard
Cl	35	25830.7	1.4				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	2190.2	6.5				ug/L	1547	Standard
P	31	18406.2	0.9				ug/L	15286	Standard
S	34	1965.1	6.7				ug/L	1572	Standard
Sr	88	71.7	21.3				ug/L	73	Standard
C	12	103.3	29.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	152.5	102.6				mg/L	6	Standard
Ho-1	165	88.3	85.2				mg/L	10	Standard
Er	166	86.7	74.2				mg/L	13	Standard
I	127	2766.9	21.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	103.817		
Al	27	89.013		
Sc	45			
Ti	47	106.205		
V	51	110.094		
Cr	52	104.882		
Cr	53			
Mn	55	112.401		
Co	59	118.124		
Ni	60	104.355		
Cu	65	104.741		
Zn	66	105.936		
Ge	72		109.004	
As	75	104.876		
Se	82	109.798		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	102.479		
Ag	107	99.972		
Cd	111	98.481		
Cd	114			
In	115		116.255	
Sn	118	99.577		
Sb	123	97.186		
Ba	135	93.802		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.852		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.543		
U	238	107.427		
Bi	209		112.161	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	
QC Std 6	V	51	
QC Std 6	Mn	55	

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QC Std 6	Co	59

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 16:24:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	100067.7	1.3				ug/L	74699	Standard
	Be	9	36.7	7.9	**0.0387**	0.002	5.2	ug/L	8	Standard
	Al	27	10153.6	30.4	**0.0381**	0.015	39.5	ug/L	1493	Standard
	Sc	45	67434.8	2.7				ug/L	61029	Standard
	Ti	47	38.3	21.7	**-0.0212**	0.020	92.7	ug/L	35	Standard
	V	51	1502.7	1.2	**-0.0231**	0.006	25.9	ug/L	1435	Standard
	Cr	52	7451.2	2.4	**-0.1523**	0.012	7.6	ug/L	7635	Standard
	Cr	53	503.3	11.6	**0.1429**	0.063	44.4	ug/L	363	Standard
	Mn	55	3693.5	26.8	**0.3137**	0.134	42.8	ug/L	747	Standard
	Co	59	358.3	10.7	**0.0099**	0.006	62.4	ug/L	234	Standard
	Ni	60	209.7	4.9	**-0.0268**	0.006	22.7	ug/L	215	Standard
	Cu	65	198.7	7.2	**-0.0110**	0.009	80.7	ug/L	104	Standard
	Zn	66	532.3	5.7	**-0.0316**	0.034	106.3	ug/L	363	Standard
>	**Ge**	72	571298.3	2.3				ug/L	495142	Standard
	As	75	-12.4	42.9	**0.0499**	0.004	8.8	ug/L	-50	Standard
	Se	82	23.5	9.9	**0.0476**	0.021	43.8	ug/L	14	Standard
	Se-1	77	58.7	7.7	**0.0749**	0.069	91.8	ug/L	42	Standard
>	**Ga**	71	75.0	26.7				mg/L	42	Standard
	Rb	85	36.7	55.1				ug/L	17	Standard
	Y	89	500557.3	2.5				ug/L	417098	Standard
>	**Rh**	103	30.0	44.1				ug/L	13	Standard
	Mo	98	301.0	26.9	**0.0924**	0.026	27.9	ug/L	11	Standard
	Ag	107	165.0	21.0	**0.0091**	0.004	49.2	ug/L	68	Standard
	Cd	111	19.8	28.3	**0.0003**	0.002	699.6	mg/L	2	Standard
	Cd	114	46.5	85.8	**0.0058**	0.007	116.4	ug/L	12	Standard
>	**In**	115	675355.4	0.8				ug/L	587441	Standard
	Sn	118	876.7	18.6	**0.0359**	0.025	69.7	ug/L	497	Standard
	Sb	123	599.5	22.8	**0.1076**	0.026	24.3	ug/L	78	Standard
	Ba	135	42.7	23.9	**0.0021**	0.004	201.6	ug/L	24	Standard
	Ce	140	140.0	34.4				ug/L	25	Standard
>	**Tb**	159	1044716.9	1.2				ug/L	939701	Standard
	Ho	165	20.0	50.0				ug/L	10	Standard
	Tl	203	103.0	21.9	**0.0094**	0.003	27.0	ug/L	4	Standard
	Tl	205	70.0	58.5	**0.0089**	0.005	57.1	ug/L	2	Standard
	Pb	206	338.7	4.4	**-0.0148**	0.002	16.0	ug/L	240	Standard
	Pb	207	277.7	9.1	**-0.0179**	0.005	28.1	ug/L	198	Standard
	Pb	208	1213.0	9.6	**-0.0165**	0.006	36.1	ug/L	883	Standard
	U	238	62.0	33.9	**0.0036**	0.003	76.1	ug/L	3	Standard
>	**Bi**	209	588682.5	1.2				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.0278**	29.484	173.2	mg/L	0	Standard
Mg	24	56.7	20.4	**0.0014**	0.015	1120.4	mg/L	37	Standard
K	39	36.7	28.4	**-0.0407**	0.021	51.2	mg/L	38	Standard
Ca	43	26.7	28.6	**-1.0029**	0.415	41.4	mg/L	10	Standard
Fe	54	187.4	12.0	**0.0055**	0.017	304.1	mg/L	179	Standard
Fe	57	261.7	6.1	**-0.2681**	0.071	26.5	mg/L	335	Standard
Sc-1	45	67434.8	2.7				mg/L	61029	Standard
Cl	35	26219.3	0.7				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	2243.5	3.0				ug/L	1547	Standard
P	31	19277.3	3.9				ug/L	15286	Standard
S	34	2016.8	11.3				ug/L	1572	Standard
Sr	88	70.0	35.7				ug/L	73	Standard
C	12	120.0	25.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	49.4	87.7				mg/L	6	Standard
Ho-1	165	20.0	50.0				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	2125.2	22.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		115.381	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.966
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		112.347
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606124701SDL WG574688-02
Sample Date/Time: Wednesday, June 29, 2016 16:27:13
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	105717.5	0.5				ug/L	74699	Standard
	Be	9	553.3	1.4	**0.4517**	0.004	0.8	ug/L	8	Standard
	Al	27	5662006.5	2.5	**27.2120**	0.787	2.9	ug/L	1493	Standard
	Sc	45	72131.5	3.8				ug/L	61029	Standard
	Ti	47	604.0	7.1	**1.2783**	0.109	8.5	ug/L	35	Standard
	V	51	3941.0	1.4	**0.2585**	0.002	0.9	ug/L	1435	Standard
	Cr	52	12715.3	2.3	**0.4691**	0.023	4.9	ug/L	7635	Standard
	Cr	53	1340.1	9.1	**0.9313**	0.103	11.1	ug/L	363	Standard
	Mn	55	2452895.1	0.8	**306.4368**	3.099	1.0	ug/L	747	Standard
	Co	59	67057.1	0.2	**8.7998**	0.112	1.3	ug/L	234	Standard
	Ni	60	46732.3	0.4	**21.5970**	0.233	1.1	ug/L	215	Standard
	Cu	65	904.0	6.3	**0.3188**	0.021	6.7	ug/L	104	Standard
	Zn	66	62660.6	1.1	**49.4618**	0.122	0.2	ug/L	363	Standard
>	**Ge**	72	569030.6	1.4				ug/L	495142	Standard
	As	75	59.1	19.2	**0.1055**	0.009	8.4	ug/L	-50	Standard
	Se	82	34.4	3.8	**0.1350**	0.014	10.1	ug/L	14	Standard
	Se-1	77	82.7	11.5	**0.3621**	0.106	29.4	ug/L	42	Standard
>	**Ga**	71	288.3	19.2				mg/L	42	Standard
	Rb	85	7325.1	4.9				ug/L	17	Standard
	Y	89	616528.9	0.8				ug/L	417098	Standard
>	**Rh**	103	13.3	78.1				ug/L	13	Standard
	Mo	98	112.4	8.7	**0.0298**	0.003	9.5	ug/L	11	Standard
	Ag	107	122.3	20.4	**0.0029**	0.003	108.6	ug/L	68	Standard
	Cd	111	198.8	14.6	**0.0723**	0.012	16.2	mg/L	2	Standard
	Cd	114	516.3	5.9	**0.0829**	0.006	6.9	ug/L	12	Standard
>	**In**	115	696026.2	0.9				ug/L	587441	Standard
	Sn	118	760.0	4.7	**0.0151**	0.006	37.2	ug/L	497	Standard
	Sb	123	350.2	21.1	**0.0592**	0.014	23.4	ug/L	78	Standard
	Ba	135	775.0	6.3	**0.3035**	0.019	6.3	ug/L	24	Standard
	Ce	140	119180.2	0.3				ug/L	25	Standard
>	**Tb**	159	1103880.2	1.1				ug/L	939701	Standard
	Ho	165	9261.2	2.5				ug/L	10	Standard
	Tl	203	155.7	9.5	**0.0145**	0.001	9.9	ug/L	4	Standard
	Tl	205	156.7	24.4	**0.0191**	0.005	23.7	ug/L	2	Standard
	Pb	206	668.3	5.9	**0.0368**	0.005	14.8	ug/L	240	Standard
	Pb	207	530.0	3.8	**0.0264**	0.004	13.6	ug/L	198	Standard
	Pb	208	2281.7	2.6	**0.0309**	0.002	6.9	ug/L	883	Standard
	U	238	1160.7	2.8	**0.1411**	0.004	2.6	ug/L	3	Standard
>	**Bi**	209	607087.1	0.9				ug/L	523984	Standard

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Na	23	1.7	173.2	**16.5008**	28.572	173.2	mg/L	0	Standard
Mg	24	3728.8	3.6	**4.0090**	0.135	3.4	mg/L	37	Standard
K	39	85.0	42.4	**0.0464**	0.073	156.7	mg/L	38	Standard
Ca	43	183.3	11.4	**7.2814**	1.162	16.0	mg/L	10	Standard
Fe	54	8713.3	2.8	**6.1146**	0.148	2.4	mg/L	179	Standard
Fe	57	2506.9	1.7	**6.1424**	0.321	5.2	mg/L	335	Standard
> **Sc-1**	45	72131.5	3.8				mg/L	61029	Standard
Cl	35	26208.6	1.1				ug/L	20195	Standard
Kr	83	2.7	21.7				ug/L	4	Standard
Br	81	3227.0	4.8				ug/L	1547	Standard
P	31	20363.7	0.5				ug/L	15286	Standard
S	34	1863.4	4.5				ug/L	1572	Standard
Sr	88	105.0	21.8				ug/L	73	Standard
C	12	56.7	36.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	14855.4	4.1				mg/L	6	Standard
Ho-1	165	9261.2	2.5				mg/L	10	Standard
Er	166	8048.8	4.7				mg/L	13	Standard
I	127	5796.1	1.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		141.525	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.923	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	118.484
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	115.860
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606126504
Sample Date/Time: Wednesday, June 29, 2016 16:30:25
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	101552.6	1.9				ug/L	74699	Standard
	Be	9	25.0	72.1	**0.0287**	0.016	54.3	ug/L	8	Standard
	Al	27	16250197.0	1.8	**81.3578**	2.887	3.5	ug/L	1493	Standard
	Sc	45	67044.7	1.9				ug/L	61029	Standard
	Ti	47	394.3	10.9	**0.8437**	0.094	11.2	ug/L	35	Standard
	V	51	39093.2	1.3	**4.5488**	0.169	3.7	ug/L	1435	Standard
	Cr	52	19068.3	2.3	**1.3348**	0.101	7.6	ug/L	7635	Standard
	Cr	53	5326.0	20.8	**4.9620**	1.165	23.5	ug/L	363	Standard
	Mn	55	6239.0	2.5	**0.6731**	0.027	4.0	ug/L	747	Standard
	Co	59	851.0	2.5	**0.0808**	0.004	4.5	ug/L	234	Standard
	Ni	60	1951.8	2.1	**0.8314**	0.029	3.5	ug/L	215	Standard
	Cu	65	1321.1	4.3	**0.5464**	0.014	2.5	ug/L	104	Standard
	Zn	66	5985.8	0.6	**4.5673**	0.118	2.6	ug/L	363	Standard
>	**Ge**	72	540512.2	2.5				ug/L	495142	Standard
	As	75	1446.2	5.5	**1.2419**	0.041	3.3	ug/L	-50	Standard
	Se	82	841.6	2.6	**6.8893**	0.246	3.6	ug/L	14	Standard
	Se-1	77	609.0	15.5	**7.0254**	1.243	17.7	ug/L	42	Standard
>	**Ga**	71	105.0	12.6				mg/L	42	Standard
	Rb	85	1541.7	7.2				ug/L	17	Standard
	Y	89	489017.5	2.4				ug/L	417098	Standard
>	**Rh**	103	70.0	18.9				ug/L	13	Standard
	Mo	98	501.8	4.3	**0.1636**	0.005	2.9	ug/L	11	Standard
	Ag	107	97.0	7.4	**0.0005**	0.001	200.8	ug/L	68	Standard
	Cd	111	26.4	23.0	**0.0035**	0.003	79.3	mg/L	2	Standard
	Cd	114	74.1	18.4	**0.0109**	0.002	21.9	ug/L	12	Standard
>	**In**	115	652860.7	1.6				ug/L	587441	Standard
	Sn	118	840.0	9.7	**0.0347**	0.012	35.4	ug/L	497	Standard
	Sb	123	289.8	10.9	**0.0517**	0.007	12.7	ug/L	78	Standard
	Ba	135	17710.3	0.6	**7.7715**	0.161	2.1	ug/L	24	Standard
	Ce	140	1525.1	0.6				ug/L	25	Standard
>	**Tb**	159	1031518.0	1.9				ug/L	939701	Standard
	Ho	165	43.3	24.0				ug/L	10	Standard
	Tl	203	163.3	10.6	**0.0174**	0.002	9.6	ug/L	4	Standard
	Tl	205	133.3	16.9	**0.0182**	0.003	18.7	ug/L	2	Standard
	Pb	206	441.3	2.3	**0.0087**	0.001	8.9	ug/L	240	Standard
	Pb	207	362.0	4.8	**0.0037**	0.003	70.2	ug/L	198	Standard
	Pb	208	1549.4	2.6	**0.0058**	0.001	11.8	ug/L	883	Standard
	U	238	23538.3	0.9	**3.3015**	0.086	2.6	ug/L	3	Standard
>	**Bi**	209	542188.4	2.1				ug/L	523984	Standard

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Na	23	3.3	173.2	**35.7447**	61.903	173.2	mg/L	0	Standard
Mg	24	119069.4	0.9	**139.8814**	3.117	2.2	mg/L	37	Standard
K	39	143.3	11.2	**0.1739**	0.028	15.9	mg/L	38	Standard
Ca	43	463.3	1.6	**24.1242**	0.657	2.7	mg/L	10	Standard
Fe	54	197.6	4.4	**0.0142**	0.006	45.1	mg/L	179	Standard
Fe	57	435.0	13.1	**0.2738**	0.196	71.7	mg/L	335	Standard
> **Sc-1**	45	67044.7	1.9				mg/L	61029	Standard
Cl	35	31470.7	2.7				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	73323.9	4.5				ug/L	1547	Standard
P	31	23608.4	2.5				ug/L	15286	Standard
S	34	1800.1	6.6				ug/L	1572	Standard
Sr	88	293.3	6.9				ug/L	73	Standard
C	12	193.3	41.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	86.5	19.9				mg/L	6	Standard
Ho-1	165	43.3	24.0				mg/L	10	Standard
Er	166	73.3	34.3				mg/L	13	Standard
I	127	54762.3	5.8				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		135.949	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		109.163	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.136
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.474
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606126505
Sample Date/Time: Wednesday, June 29, 2016 16:33:36
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	99450.4	1.4				ug/L	74699	Standard
	Be	9	58.3	30.1	**0.0575**	0.016	27.1	ug/L	8	Standard
	Al	27	32118811.5	1.4	**164.1461**	0.108	0.1	ug/L	1493	Standard
	Sc	45	70749.8	1.3				ug/L	61029	Standard
	Ti	47	642.0	2.2	**1.4252**	0.030	2.1	ug/L	35	Standard
	V	51	8228.7	11.8	**0.7915**	0.119	15.1	ug/L	1435	Standard
	Cr	52	11308.2	2.8	**0.3584**	0.044	12.4	ug/L	7635	Standard
	Cr	53	3712.1	10.4	**3.3091**	0.391	11.8	ug/L	363	Standard
	Mn	55	3368829.0	1.1	**438.1329**	6.772	1.5	ug/L	747	Standard
	Co	59	3400.7	28.1	**0.4294**	0.132	30.8	ug/L	234	Standard
	Ni	60	4538.7	3.1	**2.0720**	0.077	3.7	ug/L	215	Standard
	Cu	65	1589.1	4.3	**0.6697**	0.036	5.3	ug/L	104	Standard
	Zn	66	6182.6	5.7	**4.6729**	0.311	6.7	ug/L	363	Standard
>	**Ge**	72	546665.5	0.5				ug/L	495142	Standard
	As	75	6156.5	0.5	**5.0379**	0.006	0.1	ug/L	-50	Standard
	Se	82	164.0	1.8	**1.2151**	0.026	2.2	ug/L	14	Standard
	Se-1	77	258.7	9.7	**2.5862**	0.322	12.5	ug/L	42	Standard
>	**Ga**	71	188.3	13.1				mg/L	42	Standard
	Rb	85	1378.4	10.6				ug/L	17	Standard
	Y	89	484009.6	2.1				ug/L	417098	Standard
>	**Rh**	103	118.3	6.5				ug/L	13	Standard
	Mo	98	286.3	31.1	**0.0925**	0.030	32.6	ug/L	11	Standard
	Ag	107	183.3	43.5	**0.0128**	0.011	86.7	ug/L	68	Standard
	Cd	111	248.2	17.8	**0.1006**	0.018	18.1	mg/L	2	Standard
	Cd	114	590.9	17.2	**0.1032**	0.017	16.3	ug/L	12	Standard
>	**In**	115	642069.8	1.9				ug/L	587441	Standard
	Sn	118	836.7	5.6	**0.0365**	0.010	26.8	ug/L	497	Standard
	Sb	123	288.3	29.8	**0.0524**	0.017	32.5	ug/L	78	Standard
	Ba	135	131296.8	1.0	**58.6819**	0.595	1.0	ug/L	24	Standard
	Ce	140	6513.1	10.5				ug/L	25	Standard
>	**Tb**	159	1012113.9	1.4				ug/L	939701	Standard
	Ho	165	216.7	7.1				ug/L	10	Standard
	Tl	203	185.3	61.4	**0.0202**	0.013	66.8	ug/L	4	Standard
	Tl	205	276.7	88.2	**0.0379**	0.033	87.8	ug/L	2	Standard
	Pb	206	891.4	31.8	**0.0916**	0.052	56.6	ug/L	240	Standard
	Pb	207	748.7	30.8	**0.0839**	0.048	56.6	ug/L	198	Standard
	Pb	208	3050.1	30.7	**0.0846**	0.049	57.6	ug/L	883	Standard
	U	238	21997.6	2.6	**3.1135**	0.091	2.9	ug/L	3	Standard
>	**Bi**	209	537104.2	0.4				ug/L	523984	Standard

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Na	23	13.3	57.3	**132.8617**	77.017	58.0	mg/L	0	Standard
Mg	24	104917.1	1.8	**116.7540**	0.597	0.5	mg/L	37	Standard
K	39	116.7	8.9	**0.1082**	0.018	16.4	mg/L	38	Standard
Ca	43	916.7	6.0	**47.4532**	3.610	7.6	mg/L	10	Standard
Fe	54	3013.9	2.4	**2.0666**	0.083	4.0	mg/L	179	Standard
Fe	57	1381.7	4.1	**2.9770**	0.162	5.4	mg/L	335	Standard
Sc-1	45	70749.8	1.3				mg/L	61029	Standard
Cl	35	30215.4	1.0				ug/L	20195	Standard
Kr	83	1.3	114.6				ug/L	4	Standard
Br	81	35768.9	2.6				ug/L	1547	Standard
P	31	25429.7	2.5				ug/L	15286	Standard
S	34	2313.5	0.3				ug/L	1572	Standard
Sr	88	551.7	8.2				ug/L	73	Standard
C	12	433.3	25.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	3	Standard
Dy	164	279.9	12.3				mg/L	6	Standard
Ho-1	165	216.7	7.1				mg/L	10	Standard
Er	166	280.0	18.9				mg/L	13	Standard
I	127	794211.5	6.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		133.135	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.406	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.299
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.504
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606126505
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Method 6020 - Summary Report

Sample ID: L1606126506
Sample Date/Time: Wednesday, June 29, 2016 16:36:48
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	100252.3	1.1				ug/L	74699	Standard
	Be	9	26.7	39.0	**0.0303**	0.009	29.8	ug/L	8	Standard
	Al	27	69444.0	4.9	**0.3387**	0.017	5.1	ug/L	1493	Standard
	Sc	45	71205.3	1.8				ug/L	61029	Standard
	Ti	47	113.0	20.9	**0.1414**	0.055	38.5	ug/L	35	Standard
	V	51	2901.2	2.9	**0.1267**	0.013	10.0	ug/L	1435	Standard
	Cr	52	23756.9	1.1	**1.6651**	0.003	0.2	ug/L	7635	Standard
	Cr	53	2710.2	4.1	**2.1308**	0.127	5.9	ug/L	363	Standard
	Mn	55	7460.8	10.3	**0.7511**	0.098	13.0	ug/L	747	Standard
	Co	59	456.0	8.6	**0.0207**	0.006	26.8	ug/L	234	Standard
	Ni	60	2497.2	2.2	**0.9949**	0.023	2.3	ug/L	215	Standard
	Cu	65	984.0	1.2	**0.3398**	0.007	2.0	ug/L	104	Standard
	Zn	66	8303.3	0.9	**5.9218**	0.058	1.0	ug/L	363	Standard
>	**Ge**	72	590298.4	1.1				ug/L	495142	Standard
	As	75	7.9	237.8	**0.0655**	0.014	21.6	ug/L	-50	Standard
	Se	82	27.7	14.2	**0.0742**	0.032	43.2	ug/L	14	Standard
	Se-1	77	72.3	15.2	**0.2091**	0.134	63.9	ug/L	42	Standard
>	**Ga**	71	91.7	20.7				mg/L	42	Standard
	Rb	85	308.3	4.1				ug/L	17	Standard
	Y	89	498995.2	1.7				ug/L	417098	Standard
>	**Rh**	103	21.7	48.0				ug/L	13	Standard
	Mo	98	716.7	9.5	**0.2259**	0.023	10.1	ug/L	11	Standard
	Ag	107	155.3	16.4	**0.0076**	0.003	44.6	ug/L	68	Standard
	Cd	111	44.4	12.9	**0.0104**	0.002	21.8	mg/L	2	Standard
	Cd	114	117.5	18.7	**0.0177**	0.004	21.5	ug/L	12	Standard
>	**In**	115	682064.0	0.6				ug/L	587441	Standard
	Sn	118	4689.1	2.4	**0.5966**	0.013	2.3	ug/L	497	Standard
	Sb	123	228.7	11.3	**0.0380**	0.005	12.5	ug/L	78	Standard
	Ba	135	1034.0	4.7	**0.4191**	0.020	4.8	ug/L	24	Standard
	Ce	140	486.7	14.8				ug/L	25	Standard
>	**Tb**	159	1056147.0	0.9				ug/L	939701	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	43.7	26.0	**0.0029**	0.001	43.8	ug/L	4	Standard
	Tl	205	50.0	26.5	**0.0063**	0.002	26.5	ug/L	2	Standard
	Pb	206	665.7	3.1	**0.0376**	0.003	7.4	ug/L	240	Standard
	Pb	207	542.7	5.2	**0.0299**	0.006	20.6	ug/L	198	Standard
	Pb	208	2227.4	4.5	**0.0297**	0.006	20.4	ug/L	883	Standard
	U	238	38.7	20.9	**0.0005**	0.001	221.1	ug/L	3	Standard
>	**Bi**	209	599996.8	1.5				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	216.7	5.8	**0.1745**	0.010	5.5	mg/L	37	Standard
K	39	46.7	49.5	**-0.0257**	0.044	170.8	mg/L	38	Standard
Ca	43	30.0	16.7	**-0.8971**	0.290	32.3	mg/L	10	Standard
Fe	54	200.7	16.8	**0.0076**	0.025	326.7	mg/L	179	Standard
Fe	57	248.3	11.1	**-0.3516**	0.067	19.2	mg/L	335	Standard
> **Sc-1**	45	71205.3	1.8				mg/L	61029	Standard
Cl	35	31458.6	1.1				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	3110.3	10.8				ug/L	1547	Standard
P	31	21037.9	1.6				ug/L	15286	Standard
S	34	2263.5	3.0				ug/L	1572	Standard
Sr	88	58.3	27.6				ug/L	73	Standard
C	12	113.3	13.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	38.9	27.0				mg/L	6	Standard
Ho-1	165	8.3	69.3				mg/L	10	Standard
Er	166	23.3	65.5				mg/L	13	Standard
I	127	20210.2	61.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		134.209	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		119.218	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		116.108
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		114.507
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606126601
Sample Date/Time: Wednesday, June 29, 2016 16:39:59
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	101321.2	3.1				ug/L	74699	Standard
	Be	9	18.3	56.8	**0.0228**	0.008	36.0	ug/L	8	Standard
	Al	27	44431569.1	0.7	**222.9926**	5.415	2.4	ug/L	1493	Standard
	Sc	45	71310.8	2.2				ug/L	61029	Standard
	Ti	47	275.3	6.3	**0.5272**	0.047	8.9	ug/L	35	Standard
	V	51	27907.2	1.9	**3.0387**	0.030	1.0	ug/L	1435	Standard
	Cr	52	13580.1	0.8	**0.5803**	0.015	2.6	ug/L	7635	Standard
	Cr	53	2821.9	2.8	**2.3430**	0.081	3.4	ug/L	363	Standard
	Mn	55	153037.1	1.2	**19.0926**	0.078	0.4	ug/L	747	Standard
	Co	59	1012.0	1.5	**0.0969**	0.001	1.5	ug/L	234	Standard
	Ni	60	4370.3	2.4	**1.9194**	0.048	2.5	ug/L	215	Standard
	Cu	65	751.7	5.3	**0.2499**	0.020	8.0	ug/L	104	Standard
	Zn	66	3518.1	1.4	**2.3650**	0.050	2.1	ug/L	363	Standard
>	**Ge**	72	565652.8	1.1				ug/L	495142	Standard
	As	75	1269.0	4.3	**1.0512**	0.035	3.4	ug/L	-50	Standard
	Se	82	382.5	3.3	**2.9130**	0.125	4.3	ug/L	14	Standard
	Se-1	77	193.3	14.8	**1.6975**	0.369	21.7	ug/L	42	Standard
>	**Ga**	71	66.7	18.9				mg/L	42	Standard
	Rb	85	2323.5	7.7				ug/L	17	Standard
	Y	89	480038.2	1.2				ug/L	417098	Standard
>	**Rh**	103	150.0	3.3				ug/L	13	Standard
	Mo	98	638.7	4.4	**0.2084**	0.010	5.0	ug/L	11	Standard
	Ag	107	92.0	14.1	**-0.0003**	0.002	569.4	ug/L	68	Standard
	Cd	111	195.2	3.6	**0.0755**	0.003	3.5	mg/L	2	Standard
	Cd	114	469.8	19.5	**0.0797**	0.016	19.7	ug/L	12	Standard
>	**In**	115	657497.5	0.6				ug/L	587441	Standard
	Sn	118	753.4	8.5	**0.0205**	0.010	48.9	ug/L	497	Standard
	Sb	123	222.8	13.6	**0.0384**	0.006	15.3	ug/L	78	Standard
	Ba	135	100054.6	0.7	**43.6617**	0.503	1.2	ug/L	24	Standard
	Ce	140	173.3	6.0				ug/L	25	Standard
>	**Tb**	159	1045560.4	1.5				ug/L	939701	Standard
	Ho	165	40.0	25.0				ug/L	10	Standard
	Tl	203	129.3	1.6	**0.0127**	0.000	3.7	ug/L	4	Standard
	Tl	205	133.3	20.7	**0.0174**	0.003	20.0	ug/L	2	Standard
	Pb	206	412.3	3.7	**0.0001**	0.002	2456.7	ug/L	240	Standard
	Pb	207	343.7	8.9	**-0.0032**	0.005	165.7	ug/L	198	Standard
	Pb	208	1432.7	1.3	**-0.0035**	0.002	56.3	ug/L	883	Standard
	U	238	43636.7	0.7	**5.8505**	0.120	2.1	ug/L	3	Standard
>	**Bi**	209	567479.2	1.8				ug/L	523984	Standard

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Na	23	5.0	100.0	**48.6438**	48.507	99.7	mg/L	0	Standard
Mg	24	35550.0	1.9	**39.2140**	0.699	1.8	mg/L	37	Standard
K	39	165.0	24.1	**0.1975**	0.071	36.0	mg/L	38	Standard
Ca	43	596.7	5.4	**29.7553**	2.186	7.3	mg/L	10	Standard
Fe	54	190.1	10.6	**-0.0004**	0.014	3403.7	mg/L	179	Standard
Fe	57	555.0	7.7	**0.5391**	0.093	17.2	mg/L	335	Standard
> **Sc-1**	45	71310.8	2.2				mg/L	61029	Standard
Cl	35	33374.1	0.9				ug/L	20195	Standard
Kr	83	2.0	132.3				ug/L	4	Standard
Br	81	77209.6	1.2				ug/L	1547	Standard
P	31	24828.7	1.5				ug/L	15286	Standard
S	34	2263.5	4.7				ug/L	1572	Standard
Sr	88	591.7	14.4				ug/L	73	Standard
C	12	253.3	22.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	25.0				mg/L	3	Standard
Dy	164	40.1	59.8				mg/L	6	Standard
Ho-1	165	40.0	25.0				mg/L	10	Standard
Er	166	66.7	37.7				mg/L	13	Standard
I	127	2058609.0	7.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		135.640	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.240	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.926
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.301
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606126901
Sample Date/Time: Wednesday, June 29, 2016 16:43:10
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	97179.0	1.2				ug/L	74699	Standard
	Be	9	23.3	44.6	**0.0281**	0.009	33.4	ug/L	8	Standard
	Al	27	25054309.4	1.7	**131.0332**	1.604	1.2	ug/L	1493	Standard
	Sc	45	69363.5	2.7				ug/L	61029	Standard
	Ti	47	323.3	2.8	**0.6992**	0.021	2.9	ug/L	35	Standard
	V	51	12024.0	2.6	**1.3128**	0.037	2.9	ug/L	1435	Standard
	Cr	52	11840.6	1.6	**0.4900**	0.025	5.0	ug/L	7635	Standard
	Cr	53	2901.9	3.9	**2.6451**	0.119	4.5	ug/L	363	Standard
	Mn	55	490032.6	0.8	**66.5395**	0.816	1.2	ug/L	747	Standard
	Co	59	931.7	2.1	**0.0964**	0.003	3.3	ug/L	234	Standard
	Ni	60	2217.5	3.2	**0.9981**	0.030	3.0	ug/L	215	Standard
	Cu	65	599.0	3.0	**0.2013**	0.011	5.4	ug/L	104	Standard
	Zn	66	4806.1	1.2	**3.7141**	0.039	1.0	ug/L	363	Standard
>	**Ge**	72	522601.4	0.6				ug/L	495142	Standard
	As	75	2361.3	3.3	**2.0571**	0.073	3.5	ug/L	-50	Standard
	Se	82	593.9	4.2	**4.9896**	0.230	4.6	ug/L	14	Standard
	Se-1	77	179.7	2.8	**1.7086**	0.076	4.5	ug/L	42	Standard
>	**Ga**	71	105.0	9.5				mg/L	42	Standard
	Rb	85	2805.3	2.5				ug/L	17	Standard
	Y	89	474068.5	3.1				ug/L	417098	Standard
>	**Rh**	103	81.7	12.7				ug/L	13	Standard
	Mo	98	305.2	1.9	**0.0985**	0.004	4.4	ug/L	11	Standard
	Ag	107	99.7	12.7	**0.0010**	0.002	153.4	ug/L	68	Standard
	Cd	111	19.2	16.0	**0.0004**	0.001	278.0	mg/L	2	Standard
	Cd	114	49.5	42.7	**0.0067**	0.004	59.0	ug/L	12	Standard
>	**In**	115	645532.6	2.3				ug/L	587441	Standard
	Sn	118	888.4	9.9	**0.0435**	0.010	24.0	ug/L	497	Standard
	Sb	123	240.8	4.4	**0.0427**	0.002	4.3	ug/L	78	Standard
	Ba	135	155622.1	0.5	**69.2020**	1.756	2.5	ug/L	24	Standard
	Ce	140	928.4	7.9				ug/L	25	Standard
>	**Tb**	159	1004174.2	1.0				ug/L	939701	Standard
	Ho	165	23.3	32.7				ug/L	10	Standard
	Tl	203	115.7	10.5	**0.0121**	0.001	11.5	ug/L	4	Standard
	Tl	205	128.3	22.2	**0.0179**	0.004	22.0	ug/L	2	Standard
	Pb	206	395.0	0.9	**0.0016**	0.001	57.1	ug/L	240	Standard
	Pb	207	323.3	6.0	**-0.0029**	0.004	138.0	ug/L	198	Standard
	Pb	208	1415.7	2.0	**0.0002**	0.001	432.7	ug/L	883	Standard
	U	238	7265.7	2.0	**1.0348**	0.023	2.2	ug/L	3	Standard
>	**Bi**	209	532226.3	0.6				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.4177**	30.160	173.2	mg/L	0	Standard
Mg	24	119202.1	1.4	**135.3768**	3.695	2.7	mg/L	37	Standard
K	39	220.0	8.2	**0.3143**	0.042	13.4	mg/L	38	Standard
Ca	43	398.3	4.4	**19.6130**	0.698	3.6	mg/L	10	Standard
Fe	54	252.1	18.1	**0.0493**	0.029	59.6	mg/L	179	Standard
Fe	57	418.3	9.7	**0.1785**	0.138	77.4	mg/L	335	Standard
Sc-1	45	69363.5	2.7				mg/L	61029	Standard
Cl	35	32454.7	1.8				ug/L	20195	Standard
Kr	83	1.0	173.2				ug/L	4	Standard
Br	81	137582.4	3.7				ug/L	1547	Standard
P	31	24828.7	1.5				ug/L	15286	Standard
S	34	2306.8	3.7				ug/L	1572	Standard
Sr	88	291.7	6.0				ug/L	73	Standard
C	12	323.3	19.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	15.2	73.1				mg/L	6	Standard
Ho-1	165	23.3	32.7				mg/L	10	Standard
Er	166	30.0	33.3				mg/L	13	Standard
I	127	310633.7	2.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		130.094	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		105.546	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.889
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.573
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606127201
Sample Date/Time: Wednesday, June 29, 2016 16:46:22
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	94337.9	2.3				ug/L	74699	Standard
	Be	9	23.3	53.9	**0.0288**	0.012	40.8	ug/L	8	Standard
	Al	27	2978340.1	2.2	**16.0395**	0.522	3.3	ug/L	1493	Standard
	Sc	45	67137.0	4.7				ug/L	61029	Standard
	Ti	47	236.7	18.3	**0.4520**	0.099	21.9	ug/L	35	Standard
	V	51	33734.3	0.8	**3.8201**	0.030	0.8	ug/L	1435	Standard
	Cr	52	13200.4	3.0	**0.5779**	0.062	10.7	ug/L	7635	Standard
	Cr	53	1396.7	5.5	**1.0289**	0.077	7.5	ug/L	363	Standard
	Mn	55	5810.0	55.0	**0.6034**	0.416	68.9	ug/L	747	Standard
	Co	59	597.0	23.2	**0.0441**	0.019	43.4	ug/L	234	Standard
	Ni	60	839.7	12.2	**0.2798**	0.055	19.7	ug/L	215	Standard
	Cu	65	499.7	4.1	**0.1378**	0.013	9.3	ug/L	104	Standard
	Zn	66	1881.8	10.3	**1.0958**	0.181	16.5	ug/L	363	Standard
>	**Ge**	72	550779.1	1.5				ug/L	495142	Standard
	As	75	823.5	3.7	**0.7205**	0.021	2.9	ug/L	-50	Standard
	Se	82	534.3	3.8	**4.2403**	0.211	5.0	ug/L	14	Standard
	Se-1	77	394.7	5.2	**4.2338**	0.183	4.3	ug/L	42	Standard
>	**Ga**	71	76.7	13.6				mg/L	42	Standard
	Rb	85	1120.0	6.4				ug/L	17	Standard
	Y	89	478775.5	2.0				ug/L	417098	Standard
>	**Rh**	103	33.3	52.7				ug/L	13	Standard
	Mo	98	1510.8	4.0	**0.5152**	0.028	5.4	ug/L	11	Standard
	Ag	107	155.0	42.6	**0.0091**	0.010	106.9	ug/L	68	Standard
	Cd	111	66.6	64.6	**0.0216**	0.019	89.7	mg/L	2	Standard
	Cd	114	188.5	50.4	**0.0319**	0.018	55.0	ug/L	12	Standard
>	**In**	115	639482.4	2.0				ug/L	587441	Standard
	Sn	118	738.4	13.9	**0.0215**	0.017	79.5	ug/L	497	Standard
	Sb	123	301.8	22.4	**0.0554**	0.014	26.0	ug/L	78	Standard
	Ba	135	10964.6	1.7	**4.9054**	0.035	0.7	ug/L	24	Standard
	Ce	140	728.4	65.5				ug/L	25	Standard
>	**Tb**	159	995838.4	2.1				ug/L	939701	Standard
	Ho	165	55.0	78.7				ug/L	10	Standard
	Tl	203	165.3	64.1	**0.0175**	0.012	69.7	ug/L	4	Standard
	Tl	205	88.3	34.1	**0.0121**	0.004	34.3	ug/L	2	Standard
	Pb	206	371.3	17.5	**-0.0043**	0.012	275.3	ug/L	240	Standard
	Pb	207	297.3	13.9	**-0.0098**	0.008	82.9	ug/L	198	Standard
	Pb	208	1253.7	10.6	**-0.0098**	0.007	68.1	ug/L	883	Standard
	U	238	7715.3	1.4	**1.0741**	0.027	2.5	ug/L	3	Standard
>	**Bi**	209	544657.1	1.1				ug/L	523984	Standard

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Na	23	8.3	34.6	**87.3928**	30.523	34.9	mg/L	0	Standard
Mg	24	56818.0	2.0	**66.6625**	1.829	2.7	mg/L	37	Standard
K	39	118.3	28.8	**0.1220**	0.059	48.6	mg/L	38	Standard
Ca	43	173.3	14.2	**7.4463**	1.537	20.6	mg/L	10	Standard
Fe	54	200.1	8.9	**0.0164**	0.019	116.3	mg/L	179	Standard
Fe	57	341.7	12.8	**-0.0156**	0.156	997.8	mg/L	335	Standard
> **Sc-1**	45	67137.0	4.7				mg/L	61029	Standard
Cl	35	31870.8	2.6				ug/L	20195	Standard
Kr	83	0.7	173.2				ug/L	4	Standard
Br	81	13232.4	3.4				ug/L	1547	Standard
P	31	22137.8	2.1				ug/L	15286	Standard
S	34	2160.2	8.0				ug/L	1572	Standard
Sr	88	146.7	24.2				ug/L	73	Standard
C	12	170.0	10.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	64.3	100.4				mg/L	6	Standard
Ho-1	165	55.0	78.7				mg/L	10	Standard
Er	166	50.0	60.0				mg/L	13	Standard
I	127	62898.8	4.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		126.291	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.237	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.859
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.945
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606127202
Sample Date/Time: Wednesday, June 29, 2016 16:49:33
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	98788.0	4.1				ug/L	74699	Standard
	Be	9	13.3	57.3	**0.0192**	0.007	36.1	ug/L	8	Standard
	Al	27	43121483.9	2.2	**221.9923**	5.444	2.5	ug/L	1493	Standard
	Sc	45	66930.9	3.1				ug/L	61029	Standard
	Ti	47	1039.7	26.4	**2.4141**	0.661	27.4	ug/L	35	Standard
	V	51	49957.2	0.9	**5.8910**	0.067	1.1	ug/L	1435	Standard
	Cr	52	18344.1	1.8	**1.2538**	0.038	3.0	ug/L	7635	Standard
	Cr	53	24960.6	4.5	**24.5202**	1.080	4.4	ug/L	363	Standard
	Mn	55	17873.9	4.1	**2.2143**	0.103	4.7	ug/L	747	Standard
	Co	59	1405.4	6.7	**0.1586**	0.013	8.4	ug/L	234	Standard
	Ni	60	3876.2	1.9	**1.7810**	0.032	1.8	ug/L	215	Standard
	Cu	65	1407.4	2.7	**0.5921**	0.020	3.4	ug/L	104	Standard
	Zn	66	4623.4	0.6	**3.4401**	0.014	0.4	ug/L	363	Standard
>	**Ge**	72	538103.3	0.3				ug/L	495142	Standard
	As	75	2665.5	0.4	**2.2493**	0.008	0.3	ug/L	-50	Standard
	Se	82	859.9	5.4	**7.0717**	0.401	5.7	ug/L	14	Standard
	Se-1	77	1900.1	5.6	**23.3152**	1.302	5.6	ug/L	42	Standard
>	**Ga**	71	205.0	14.8				mg/L	42	Standard
	Rb	85	12111.5	1.9				ug/L	17	Standard
	Y	89	447538.5	3.5				ug/L	417098	Standard
>	**Rh**	103	186.7	5.6				ug/L	13	Standard
	Mo	98	4087.3	1.0	**1.4942**	0.026	1.7	ug/L	11	Standard
	Ag	107	258.7	10.6	**0.0259**	0.004	14.5	ug/L	68	Standard
	Cd	111	70.2	15.3	**0.0250**	0.005	21.6	mg/L	2	Standard
	Cd	114	224.5	9.2	**0.0407**	0.004	8.7	ug/L	12	Standard
>	**In**	115	600654.0	1.1				ug/L	587441	Standard
	Sn	118	765.0	14.6	**0.0335**	0.020	60.1	ug/L	497	Standard
	Sb	123	166.1	4.9	**0.0306**	0.002	5.1	ug/L	78	Standard
	Ba	135	52090.1	1.0	**24.8744**	0.038	0.2	ug/L	24	Standard
	Ce	140	4474.0	3.6				ug/L	25	Standard
>	**Tb**	159	974974.5	0.9				ug/L	939701	Standard
	Ho	165	80.0	27.2				ug/L	10	Standard
	Tl	203	82.0	10.0	**0.0082**	0.001	13.1	ug/L	4	Standard
	Tl	205	63.3	43.5	**0.0090**	0.004	42.2	ug/L	2	Standard
	Pb	206	1123.7	3.1	**0.1383**	0.006	4.7	ug/L	240	Standard
	Pb	207	914.0	2.3	**0.1218**	0.004	3.1	ug/L	198	Standard
	Pb	208	3779.9	2.5	**0.1267**	0.006	5.0	ug/L	883	Standard
	U	238	23648.8	1.1	**3.4170**	0.057	1.7	ug/L	3	Standard
>	**Bi**	209	526202.0	0.7				ug/L	523984	Standard

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Na	23	5.0	100.0	**53.6294**	53.947	100.6	mg/L	0	Standard
Mg	24	113104.0	1.5	**133.1465**	4.642	3.5	mg/L	37	Standard
K	39	478.3	11.2	**0.8485**	0.082	9.7	mg/L	38	Standard
Ca	43	695.0	6.9	**37.5535**	3.460	9.2	mg/L	10	Standard
Fe	54	250.5	4.6	**0.0553**	0.004	6.4	mg/L	179	Standard
Fe	57	631.7	3.6	**0.8833**	0.015	1.7	mg/L	335	Standard
> **Sc-1**	45	66930.9	3.1				mg/L	61029	Standard
Cl	35	32927.1	2.7				ug/L	20195	Standard
Kr	83	2.7	57.3				ug/L	4	Standard
Br	81	41968.1	3.2				ug/L	1547	Standard
P	31	23413.1	2.8				ug/L	15286	Standard
S	34	2041.8	4.5				ug/L	1572	Standard
Sr	88	750.0	13.9				ug/L	73	Standard
C	12	126.7	19.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	103.6	24.2				mg/L	6	Standard
Ho-1	165	80.0	27.2				mg/L	10	Standard
Er	166	63.3	32.9				mg/L	13	Standard
I	127	36619.2	2.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.248	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.676	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.249
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.423
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606127901
Sample Date/Time: Wednesday, June 29, 2016 16:52:45
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	94669.8	0.8				ug/L	74699	Standard
	Be	9	153.3	14.7	**0.1451**	0.021	14.4	ug/L	8	Standard
	Al	27	36828943.8	1.6	**197.7220**	2.539	1.3	ug/L	1493	Standard
	Sc	45	72494.8	2.9				ug/L	61029	Standard
	Ti	47	9823.2	1.5	**22.6070**	0.583	2.6	ug/L	35	Standard
	V	51	40160.9	1.2	**4.4642**	0.016	0.4	ug/L	1435	Standard
	Cr	52	82051.3	1.3	**8.6794**	0.190	2.2	ug/L	7635	Standard
	Cr	53	10588.7	4.0	**9.7108**	0.425	4.4	ug/L	363	Standard
	Mn	55	3156665.4	1.9	**397.2480**	11.605	2.9	ug/L	747	Standard
	Co	59	13202.1	1.7	**1.7150**	0.048	2.8	ug/L	234	Standard
	Ni	60	14584.3	1.0	**6.7029**	0.116	1.7	ug/L	215	Standard
	Cu	65	6796.9	2.1	**3.0972**	0.099	3.2	ug/L	104	Standard
	Zn	66	29601.9	0.7	**23.2962**	0.407	1.7	ug/L	363	Standard
>	**Ge**	72	565029.1	1.1				ug/L	495142	Standard
	As	75	1169.4	2.0	**0.9746**	0.024	2.5	ug/L	-50	Standard
	Se	82	54.4	2.8	**0.2964**	0.014	4.6	ug/L	14	Standard
	Se-1	77	95.3	8.8	**0.5209**	0.088	16.8	ug/L	42	Standard
>	**Ga**	71	2745.3	10.7				mg/L	42	Standard
	Rb	85	40779.8	2.2				ug/L	17	Standard
	Y	89	501434.2	0.6				ug/L	417098	Standard
>	**Rh**	103	116.7	40.7				ug/L	13	Standard
	Mo	98	6510.4	0.7	**2.1843**	0.030	1.4	ug/L	11	Standard
	Ag	107	146.0	1.2	**0.0072**	0.000	3.6	ug/L	68	Standard
	Cd	111	54.1	19.4	**0.0153**	0.004	28.2	mg/L	2	Standard
	Cd	114	169.8	20.2	**0.0276**	0.006	22.4	ug/L	12	Standard
>	**In**	115	655252.5	1.2				ug/L	587441	Standard
	Sn	118	1435.1	4.4	**0.1255**	0.007	5.6	ug/L	497	Standard
	Sb	123	419.8	7.1	**0.0764**	0.005	6.8	ug/L	78	Standard
	Ba	135	167537.6	1.4	**73.3690**	0.619	0.8	ug/L	24	Standard
	Ce	140	144147.5	0.8				ug/L	25	Standard
>	**Tb**	159	1041877.9	1.3				ug/L	939701	Standard
	Ho	165	2731.9	2.9				ug/L	10	Standard
	Tl	203	237.3	5.5	**0.0244**	0.001	5.3	ug/L	4	Standard
	Tl	205	228.3	8.3	**0.0292**	0.002	8.4	ug/L	2	Standard
	Pb	206	7357.1	0.9	**1.1818**	0.018	1.5	ug/L	240	Standard
	Pb	207	5920.5	2.7	**1.0648**	0.026	2.5	ug/L	198	Standard
	Pb	208	25273.6	1.1	**1.1521**	0.016	1.4	ug/L	883	Standard
	U	238	16614.4	0.8	**2.1915**	0.022	1.0	ug/L	3	Standard
>	**Bi**	209	575969.2	0.6				ug/L	523984	Standard

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Na	23	3.3	86.6	**32.3968**	28.087	86.7	mg/L	0	Standard
Mg	24	3568.8	4.7	**3.8119**	0.091	2.4	mg/L	37	Standard
K	39	285.0	24.6	**0.4167**	0.132	31.6	mg/L	38	Standard
Ca	43	908.4	6.1	**45.7783**	2.516	5.5	mg/L	10	Standard
Fe	54	3605.6	1.3	**2.4364**	0.072	2.9	mg/L	179	Standard
Fe	57	1446.7	0.5	**3.0674**	0.109	3.5	mg/L	335	Standard
Sc-1	45	72494.8	2.9				mg/L	61029	Standard
Cl	35	31293.6	1.2				ug/L	20195	Standard
Kr	83	2.3	49.5				ug/L	4	Standard
Br	81	8015.5	4.3				ug/L	1547	Standard
P	31	26808.7	3.1				ug/L	15286	Standard
S	34	2353.5	0.9				ug/L	1572	Standard
Sr	88	506.7	5.4				ug/L	73	Standard
C	12	183.3	20.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	3	Standard
Dy	164	4522.3	4.2				mg/L	6	Standard
Ho-1	165	2731.9	2.9				mg/L	10	Standard
Er	166	2333.5	8.8				mg/L	13	Standard
I	127	38263.4	7.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		126.735	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		114.114	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.544
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.921
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606127901
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Method 6020 - Summary Report

Sample ID: L1606127901
Sample Date/Time: Wednesday, June 29, 2016 16:55:56
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	94757.1	0.6				ug/L	74699	Standard
	Be	9	16.7	34.6	**0.0226**	0.005	23.2	ug/L	8	Standard
	Al	27	809583.1	0.4	**4.3294**	0.010	0.2	ug/L	1493	Standard
	Sc	45	70063.3	2.2				ug/L	61029	Standard
	Ti	47	239.7	2.8	**0.4418**	0.016	3.7	ug/L	35	Standard
	V	51	2635.2	3.3	**0.1083**	0.010	9.6	ug/L	1435	Standard
	Cr	52	10594.0	0.1	**0.2214**	0.004	1.7	ug/L	7635	Standard
	Cr	53	1061.7	10.6	**0.6708**	0.107	16.0	ug/L	363	Standard
	Mn	55	69843.0	1.9	**8.5894**	0.152	1.8	ug/L	747	Standard
	Co	59	472.7	1.3	**0.0251**	0.001	3.3	ug/L	234	Standard
	Ni	60	497.3	0.6	**0.1075**	0.002	1.4	ug/L	215	Standard
	Cu	65	314.7	2.4	**0.0436**	0.003	7.6	ug/L	104	Standard
	Zn	66	3346.7	3.2	**2.2142**	0.089	4.0	ug/L	363	Standard
>	**Ge**	72	568460.2	0.3				ug/L	495142	Standard
	As	75	-20.7	45.1	**0.0435**	0.007	16.6	ug/L	-50	Standard
	Se	82	18.3	17.6	**0.0072**	0.025	350.3	ug/L	14	Standard
	Se-1	77	58.0	6.2	**0.0694**	0.043	62.2	ug/L	42	Standard
>	**Ga**	71	123.3	16.9				mg/L	42	Standard
	Rb	85	875.0	6.6				ug/L	17	Standard
	Y	89	490331.7	1.2				ug/L	417098	Standard
>	**Rh**	103	16.7	45.8				ug/L	13	Standard
	Mo	98	175.2	3.1	**0.0513**	0.001	2.5	ug/L	11	Standard
	Ag	107	187.0	5.8	**0.0120**	0.001	10.3	ug/L	68	Standard
	Cd	111	8.4	36.2	**-0.0044**	0.001	27.6	mg/L	2	Standard
	Cd	114	20.0	63.9	**0.0013**	0.002	167.4	ug/L	12	Standard
>	**In**	115	676596.2	0.9				ug/L	587441	Standard
	Sn	118	621.7	13.0	**-0.0023**	0.012	549.8	ug/L	497	Standard
	Sb	123	148.0	17.5	**0.0233**	0.005	19.5	ug/L	78	Standard
	Ba	135	3597.4	2.3	**1.5099**	0.025	1.6	ug/L	24	Standard
	Ce	140	3133.7	5.7				ug/L	25	Standard
>	**Tb**	159	1053037.0	0.7				ug/L	939701	Standard
	Ho	165	73.3	37.6				ug/L	10	Standard
	Tl	203	38.7	9.8	**0.0024**	0.000	14.0	ug/L	4	Standard
	Tl	205	30.0	57.7	**0.0039**	0.002	55.8	ug/L	2	Standard
	Pb	206	500.3	0.4	**0.0113**	0.001	11.7	ug/L	240	Standard
	Pb	207	394.7	10.5	**0.0033**	0.008	256.3	ug/L	198	Standard
	Pb	208	1728.4	3.9	**0.0071**	0.003	37.0	ug/L	883	Standard
	U	238	362.3	7.5	**0.0420**	0.004	8.9	ug/L	3	Standard
>	**Bi**	209	594905.3	1.7				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.1214**	29.647	173.2	mg/L	0	Standard
Mg	24	156.7	18.1	**0.1107**	0.028	25.7	mg/L	37	Standard
K	39	30.0	60.1	**-0.0567**	0.034	59.1	mg/L	38	Standard
Ca	43	53.3	5.4	**0.4139**	0.213	51.5	mg/L	10	Standard
Fe	54	254.1	20.9	**0.0493**	0.038	78.1	mg/L	179	Standard
Fe	57	286.7	7.0	**-0.2249**	0.071	31.4	mg/L	335	Standard
> **Sc-1**	45	70063.3	2.2				mg/L	61029	Standard
Cl	35	33357.3	0.7				ug/L	20195	Standard
Kr	83	2.3	89.2				ug/L	4	Standard
Br	81	2703.6	11.1				ug/L	1547	Standard
P	31	21573.7	6.4				ug/L	15286	Standard
S	34	2518.5	1.8				ug/L	1572	Standard
Sr	88	90.0	20.0				ug/L	73	Standard
C	12	76.7	7.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	3	Standard
Dy	164	206.2	21.0				mg/L	6	Standard
Ho-1	165	73.3	37.6				mg/L	10	Standard
Er	166	80.0	12.5				mg/L	13	Standard
I	127	6318.0	20.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		126.852	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.807	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	115.177
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	113.535
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 16:59:09
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92097.4	0.2				ug/L	74699	Standard
	Be	9	59332.7	2.3	**54.6708**	1.340	2.5	ug/L	8	Standard
	Al	27	8920018.4	1.0	**49.2175**	0.589	1.2	ug/L	1493	Standard
	Sc	45	68374.0	2.7				ug/L	61029	Standard
	Ti	47	44746.6	0.7	**103.2626**	1.432	1.4	ug/L	35	Standard
	V	51	467593.6	0.9	**54.0107**	0.396	0.7	ug/L	1435	Standard
	Cr	52	444978.1	1.4	**51.5506**	1.111	2.2	ug/L	7635	Standard
	Cr	53	54491.2	2.0	**51.2973**	1.411	2.7	ug/L	363	Standard
	Mn	55	420710.6	2.8	**52.7641**	1.799	3.4	ug/L	747	Standard
	Co	59	425350.8	2.7	**56.3649**	1.831	3.2	ug/L	234	Standard
	Ni	60	109363.3	1.2	**51.0215**	0.971	1.9	ug/L	215	Standard
	Cu	65	108714.3	1.3	**51.0413**	1.018	2.0	ug/L	104	Standard
	Zn	66	63872.0	1.2	**50.7455**	1.020	2.0	ug/L	363	Standard
>	**Ge**	72	565538.7	0.9				ug/L	495142	Standard
	As	75	65590.6	1.0	**51.3298**	0.623	1.2	ug/L	-50	Standard
	Se	82	6676.5	1.4	**53.1245**	0.865	1.6	ug/L	14	Standard
	Se-1	77	4570.7	2.8	**54.1793**	1.989	3.7	ug/L	42	Standard
>	**Ga**	71	90.0	25.5				mg/L	42	Standard
	Rb	85	980.0	1.8				ug/L	17	Standard
	Y	89	481101.3	1.3				ug/L	417098	Standard
>	**Rh**	103	36.7	20.8				ug/L	13	Standard
	Mo	98	317636.1	2.3	**106.0178**	2.920	2.8	ug/L	11	Standard
	Ag	107	377887.3	1.0	**51.5689**	0.593	1.2	ug/L	68	Standard
	Cd	111	119799.3	1.9	**50.9674**	1.189	2.3	mg/L	2	Standard
	Cd	114	291345.5	1.8	**50.5384**	1.150	2.3	ug/L	12	Standard
>	**In**	115	660345.6	0.5				ug/L	587441	Standard
	Sn	118	333887.3	1.0	**50.7546**	0.756	1.5	ug/L	497	Standard
	Sb	123	263770.3	1.5	**50.2579**	0.987	2.0	ug/L	78	Standard
	Ba	135	110751.0	1.4	**48.1238**	0.926	1.9	ug/L	24	Standard
	Ce	140	100.0	13.2				ug/L	25	Standard
>	**Tb**	159	1027328.3	1.0				ug/L	939701	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	469667.3	0.3	**51.2282**	0.784	1.5	ug/L	4	Standard
	Tl	205	432915.4	1.7	**54.4135**	1.621	3.0	ug/L	2	Standard
	Pb	206	304012.7	1.3	**51.1045**	1.311	2.6	ug/L	240	Standard
	Pb	207	269196.3	1.3	**50.9328**	1.301	2.6	ug/L	198	Standard
	Pb	208	1105976.1	1.5	**52.9652**	1.506	2.8	ug/L	883	Standard
	U	238	408284.4	0.8	**53.3305**	1.093	2.0	ug/L	3	Standard
>	**Bi**	209	582837.4	1.3				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4664.1	3.2	**5.3139**	0.299	5.6	mg/L	37	Standard
K	39	2066.8	2.7	**3.9658**	0.176	4.4	mg/L	38	Standard
Ca	43	83.3	3.5	**2.1752**	0.111	5.1	mg/L	10	Standard
Fe	54	7259.4	3.7	**5.3547**	0.102	1.9	mg/L	179	Standard
Fe	57	2016.8	2.5	**5.0496**	0.304	6.0	mg/L	335	Standard
> **Sc-1**	45	68374.0	2.7				mg/L	61029	Standard
Cl	35	31290.3	2.5				ug/L	20195	Standard
Kr	83	2.3	65.5				ug/L	4	Standard
Br	81	2203.5	6.4				ug/L	1547	Standard
P	31	22518.4	0.7				ug/L	15286	Standard
S	34	2795.3	6.4				ug/L	1572	Standard
Sr	88	58.3	13.1				ug/L	73	Standard
C	12	70.0	37.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	25.1	45.0				mg/L	6	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	33.3	34.6				mg/L	13	Standard
I	127	4404.0	17.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	109.342		
Al	27	98.435		
Sc	45			
Ti	47	103.263		
V	51	108.021		
Cr	52	103.101		
Cr	53			
Mn	55	105.528		
Co	59	112.730		
Ni	60	102.043		
Cu	65	102.083		
Zn	66	101.491		
> Ge	72		114.217	
As	75	102.660		
Se	82	106.249		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	106.018		
Ag	107	103.138		
Cd	111	101.935		
Cd	114			
In	115		112.411	
Sn	118	101.509		
Sb	123	100.516		
Ba	135	96.248		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.456		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.930		
U	238	106.661		
Bi	209		111.232	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Co	59	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 17:02:20
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92622.3	1.7				ug/L	74699	Standard
	Be	9	38.3	64.3	**0.0426**	0.023	52.8	ug/L	8	Standard
	Al	27	23370.4	151.2	**0.1159**	0.196	168.9	ug/L	1493	Standard
	Sc	45	68951.6	1.3				ug/L	61029	Standard
	Ti	47	40.3	21.1	**-0.0139**	0.019	138.6	ug/L	35	Standard
	V	51	1665.7	22.9	**0.0015**	0.044	2840.4	ug/L	1435	Standard
	Cr	52	7712.6	2.1	**-0.0923**	0.036	39.5	ug/L	7635	Standard
	Cr	53	583.3	10.9	**0.2339**	0.049	21.0	ug/L	363	Standard
	Mn	55	4624.3	138.3	**0.4433**	0.816	184.2	ug/L	747	Standard
	Co	59	398.3	65.9	**0.0165**	0.035	212.9	ug/L	234	Standard
	Ni	60	246.3	49.7	**-0.0062**	0.058	932.9	ug/L	215	Standard
	Cu	65	154.7	27.9	**-0.0294**	0.020	68.5	ug/L	104	Standard
	Zn	66	470.3	19.7	**-0.0693**	0.075	107.9	ug/L	363	Standard
>	**Ge**	72	553538.3	2.4				ug/L	495142	Standard
	As	75	-38.0	63.4	**0.0295**	0.019	62.8	ug/L	-50	Standard
	Se	82	20.6	12.7	**0.0307**	0.026	83.7	ug/L	14	Standard
	Se-1	77	63.0	12.0	**0.1490**	0.085	57.3	ug/L	42	Standard
>	**Ga**	71	71.7	14.5				mg/L	42	Standard
	Rb	85	25.0	0.0				ug/L	17	Standard
	Y	89	484828.2	0.4				ug/L	417098	Standard
>	**Rh**	103	11.7	65.5				ug/L	13	Standard
	Mo	98	326.7	26.1	**0.0989**	0.027	26.9	ug/L	11	Standard
	Ag	107	215.0	76.0	**0.0152**	0.021	139.6	ug/L	68	Standard
	Cd	111	16.1	49.4	**-0.0013**	0.003	242.1	mg/L	2	Standard
	Cd	114	45.0	78.6	**0.0054**	0.006	109.2	ug/L	12	Standard
>	**In**	115	687277.7	0.8				ug/L	587441	Standard
	Sn	118	931.7	18.6	**0.0418**	0.027	63.5	ug/L	497	Standard
	Sb	123	489.1	40.1	**0.0853**	0.036	41.8	ug/L	78	Standard
	Ba	135	52.0	47.0	**0.0057**	0.010	177.6	ug/L	24	Standard
	Ce	140	81.7	78.0				ug/L	25	Standard
>	**Tb**	159	1059717.9	1.6				ug/L	939701	Standard
	Ho	165	6.7	86.6				ug/L	10	Standard
	Tl	203	97.3	80.9	**0.0086**	0.008	97.3	ug/L	4	Standard
	Tl	205	126.7	77.5	**0.0158**	0.012	76.4	ug/L	2	Standard
	Pb	206	434.7	47.9	**0.0006**	0.034	5998.1	ug/L	240	Standard
	Pb	207	327.7	41.4	**-0.0091**	0.025	275.6	ug/L	198	Standard
	Pb	208	1259.4	26.8	**-0.0148**	0.016	107.4	ug/L	883	Standard
	U	238	94.7	104.8	**0.0077**	0.013	165.1	ug/L	3	Standard
>	**Bi**	209	593862.7	2.1				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	88.3	93.4	**0.0352**	0.093	262.9	mg/L	37	Standard
K	39	41.7	30.2	**-0.0325**	0.025	77.1	mg/L	38	Standard
Ca	43	21.7	58.1	**-1.3088**	0.708	54.1	mg/L	10	Standard
Fe	54	169.3	10.4	**-0.0113**	0.012	105.6	mg/L	179	Standard
Fe	57	255.0	7.1	**-0.3067**	0.061	20.0	mg/L	335	Standard
> **Sc-1**	45	68951.6	1.3				mg/L	61029	Standard
Cl	35	30862.1	1.0				ug/L	20195	Standard
Kr	83	3.7	31.5				ug/L	4	Standard
Br	81	2130.2	6.5				ug/L	1547	Standard
P	31	22533.4	1.3				ug/L	15286	Standard
S	34	2576.9	2.2				ug/L	1572	Standard
Sr	88	61.7	20.4				ug/L	73	Standard
C	12	70.0	62.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	15.1	95.9				mg/L	6	Standard
Ho-1	165	6.7	86.6				mg/L	10	Standard
Er	166	33.3	69.3				mg/L	13	Standard
I	127	3348.7	10.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.794	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		116.995
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		113.336
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Mn	55	

Sample ID: QC Std 7
Report Date/Time: Wednesday, June 29, 2016 17:04:37
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Method 6020 - Summary Report

Sample ID: L1606127902 WG574001-03
Sample Date/Time: Wednesday, June 29, 2016 17:05:33
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	97844.9	1.2				ug/L	74699	Standard
	Be	9	628.3	5.4	**0.5525**	0.030	5.3	ug/L	8	Standard
	Al	27	67592650.7	0.8	**351.1766**	6.777	1.9	ug/L	1493	Standard
	Sc	45	76196.2	3.2				ug/L	61029	Standard
	Ti	47	35031.5	1.8	**85.4603**	1.454	1.7	ug/L	35	Standard
	V	51	127107.8	0.4	**15.3856**	0.087	0.6	ug/L	1435	Standard
	Cr	52	144594.0	0.9	**17.0395**	0.185	1.1	ug/L	7635	Standard
	Cr	53	17708.7	3.4	**17.4084**	0.576	3.3	ug/L	363	Standard
	Mn	55	9638149.6	0.5	**1281.4698**	6.113	0.5	ug/L	747	Standard
	Co	59	44221.4	1.1	**6.1626**	0.079	1.3	ug/L	234	Standard
	Ni	60	29440.2	0.7	**14.4336**	0.102	0.7	ug/L	215	Standard
	Cu	65	18715.2	1.1	**9.2058**	0.118	1.3	ug/L	104	Standard
	Zn	66	49911.7	1.0	**41.8483**	0.443	1.1	ug/L	363	Standard
>	**Ge**	72	534821.8	0.2				ug/L	495142	Standard
	As	75	5363.3	0.7	**4.4926**	0.039	0.9	ug/L	-50	Standard
	Se	82	81.7	4.2	**0.5509**	0.030	5.5	ug/L	14	Standard
	Se-1	77	90.0	5.1	**0.5184**	0.056	10.8	ug/L	42	Standard
>	**Ga**	71	10246.8	1.6				mg/L	42	Standard
	Rb	85	128176.6	1.2				ug/L	17	Standard
	Y	89	611826.2	1.2				ug/L	417098	Standard
>	**Rh**	103	203.3	5.1				ug/L	13	Standard
	Mo	98	8459.2	1.1	**2.8837**	0.063	2.2	ug/L	11	Standard
	Ag	107	335.7	32.7	**0.0339**	0.015	43.7	ug/L	68	Standard
	Cd	111	167.4	13.2	**0.0649**	0.009	13.6	mg/L	2	Standard
	Cd	114	471.4	29.4	**0.0814**	0.024	29.1	ug/L	12	Standard
>	**In**	115	645352.1	1.1				ug/L	587441	Standard
	Sn	118	2433.5	1.0	**0.2845**	0.006	2.0	ug/L	497	Standard
	Sb	123	747.2	5.1	**0.1415**	0.006	4.4	ug/L	78	Standard
	Ba	135	186708.8	1.1	**83.0208**	0.490	0.6	ug/L	24	Standard
	Ce	140	555105.9	0.4				ug/L	25	Standard
>	**Tb**	159	1017797.9	1.6				ug/L	939701	Standard
	Ho	165	10682.1	1.8				ug/L	10	Standard
	Tl	203	801.4	12.7	**0.0906**	0.011	12.4	ug/L	4	Standard
	Tl	205	726.7	5.1	**0.0967**	0.005	5.6	ug/L	2	Standard
	Pb	206	28687.5	0.5	**5.0315**	0.023	0.5	ug/L	240	Standard
	Pb	207	23046.8	1.0	**4.5438**	0.005	0.1	ug/L	198	Standard
	Pb	208	100519.8	0.6	**5.0199**	0.074	1.5	ug/L	883	Standard
	U	238	32058.9	0.6	**4.4211**	0.050	1.1	ug/L	3	Standard
>	**Bi**	209	551473.5	0.9				ug/L	523984	Standard

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Na	23	16.7	17.3	**153.4719**	22.118	14.4	mg/L	0	Standard
Mg	24	8050.5	4.4	**8.2571**	0.176	2.1	mg/L	37	Standard
K	39	990.0	1.3	**1.6393**	0.041	2.5	mg/L	38	Standard
Ca	43	1383.4	8.1	**67.3924**	3.470	5.1	mg/L	10	Standard
Fe	54	12019.5	0.9	**8.0301**	0.303	3.8	mg/L	179	Standard
Fe	57	3888.8	1.5	**9.5221**	0.470	4.9	mg/L	335	Standard
> **Sc-1**	45	76196.2	3.2				mg/L	61029	Standard
Cl	35	38282.3	2.8				ug/L	20195	Standard
Kr	83	1.7	124.9				ug/L	4	Standard
Br	81	9239.5	4.1				ug/L	1547	Standard
P	31	33428.5	3.8				ug/L	15286	Standard
S	34	2046.8	10.4				ug/L	1572	Standard
Sr	88	885.0	8.4				ug/L	73	Standard
C	12	223.3	22.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	3	Standard
Dy	164	18454.9	2.8				mg/L	6	Standard
Ho-1	165	10682.1	1.8				mg/L	10	Standard
Er	166	9956.6	4.7				mg/L	13	Standard
I	127	65381.5	9.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		130.986	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.014	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.858
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.246
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606127902 WG574001-03
Sample Date/Time: Wednesday, June 29, 2016 17:08:45
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	97333.3	1.1				ug/L	74699	Standard
	Be	9	23.3	32.7	**0.0279**	0.007	23.3	ug/L	8	Standard
	Al	27	1471688.9	2.0	**7.6717**	0.099	1.3	ug/L	1493	Standard
	Sc	45	68584.9	0.8				ug/L	61029	Standard
	Ti	47	736.0	3.1	**1.5714**	0.076	4.9	ug/L	35	Standard
	V	51	4360.2	2.0	**0.3040**	0.018	5.9	ug/L	1435	Standard
	Cr	52	10891.2	1.4	**0.2475**	0.011	4.5	ug/L	7635	Standard
	Cr	53	901.7	3.1	**0.5139**	0.018	3.4	ug/L	363	Standard
	Mn	55	209342.7	1.0	**25.8667**	0.657	2.5	ug/L	747	Standard
	Co	59	1184.0	8.5	**0.1180**	0.016	13.3	ug/L	234	Standard
	Ni	60	823.4	2.4	**0.2566**	0.015	5.7	ug/L	215	Standard
	Cu	65	604.0	5.8	**0.1771**	0.017	9.7	ug/L	104	Standard
	Zn	66	3536.4	2.1	**2.3459**	0.038	1.6	ug/L	363	Standard
>	**Ge**	72	572433.6	1.6				ug/L	495142	Standard
	As	75	56.5	19.8	**0.1032**	0.008	8.2	ug/L	-50	Standard
	Se	82	22.7	8.9	**0.0409**	0.015	36.5	ug/L	14	Standard
	Se-1	77	56.3	3.7	**0.0451**	0.032	71.6	ug/L	42	Standard
>	**Ga**	71	286.7	20.8				mg/L	42	Standard
	Rb	85	2816.9	8.1				ug/L	17	Standard
	Y	89	483993.7	0.1				ug/L	417098	Standard
>	**Rh**	103	11.7	65.5				ug/L	13	Standard
	Mo	98	255.8	9.6	**0.0784**	0.008	10.6	ug/L	11	Standard
	Ag	107	215.7	39.7	**0.0161**	0.012	72.2	ug/L	68	Standard
	Cd	111	33.2	125.7	**0.0061**	0.018	290.4	mg/L	2	Standard
	Cd	114	83.8	140.0	**0.0123**	0.020	164.2	ug/L	12	Standard
>	**In**	115	670122.5	0.4				ug/L	587441	Standard
	Sn	118	730.0	9.6	**0.0149**	0.011	73.4	ug/L	497	Standard
	Sb	123	198.5	22.7	**0.0331**	0.009	26.1	ug/L	78	Standard
	Ba	135	4104.6	4.5	**1.7422**	0.086	5.0	ug/L	24	Standard
	Ce	140	11919.7	3.4				ug/L	25	Standard
>	**Tb**	159	1040073.5	0.3				ug/L	939701	Standard
	Ho	165	248.3	25.2				ug/L	10	Standard
	Tl	203	119.3	122.5	**0.0111**	0.016	142.6	ug/L	4	Standard
	Tl	205	45.0	44.4	**0.0058**	0.003	43.8	ug/L	2	Standard
	Pb	206	1027.4	11.1	**0.0985**	0.020	20.7	ug/L	240	Standard
	Pb	207	828.0	1.8	**0.0839**	0.004	4.9	ug/L	198	Standard
	Pb	208	3389.1	2.4	**0.0853**	0.005	6.3	ug/L	883	Standard
	U	238	690.0	3.8	**0.0840**	0.004	4.3	ug/L	3	Standard
>	**Bi**	209	594228.5	1.0				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	215.0	6.2	**0.1819**	0.016	8.8	mg/L	37	Standard
K	39	53.3	14.3	**-0.0093**	0.014	153.2	mg/L	38	Standard
Ca	43	48.3	15.8	**0.1914**	0.411	214.9	mg/L	10	Standard
Fe	54	443.5	15.8	**0.1966**	0.055	28.1	mg/L	179	Standard
Fe	57	323.3	11.7	**-0.0960**	0.118	122.9	mg/L	335	Standard
> **Sc-1**	45	68584.9	0.8				mg/L	61029	Standard
Cl	35	29711.8	0.5				ug/L	20195	Standard
Kr	83	0.7	173.2				ug/L	4	Standard
Br	81	2166.8	7.4				ug/L	1547	Standard
P	31	19419.1	3.8				ug/L	15286	Standard
S	34	2206.8	3.0				ug/L	1572	Standard
Sr	88	96.7	19.6				ug/L	73	Standard
C	12	46.7	49.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	390.3	4.3				mg/L	6	Standard
Ho-1	165	248.3	25.2				mg/L	10	Standard
Er	166	203.3	36.3				mg/L	13	Standard
I	127	5617.8	25.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		130.301	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		115.610	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.075
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		113.406
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606127903S WG574001-09
Sample Date/Time: Wednesday, June 29, 2016 17:11:56
Number of Replicates: 3
Autosampler Position: 227
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	103734.0	1.8				ug/L	74699	Standard
	Be	9	62659.4	2.5	**51.2580**	0.858	1.7	ug/L	8	Standard
	Al	27	65559814.6	2.9	**321.3254**	12.360	3.8	ug/L	1493	Standard
	Sc	45	78765.9	1.8				ug/L	61029	Standard
	Ti	47	33652.0	1.4	**81.0287**	2.211	2.7	ug/L	35	Standard
	V	51	549023.7	0.9	**66.2300**	1.368	2.1	ug/L	1435	Standard
	Cr	52	510507.6	0.8	**61.9303**	1.817	2.9	ug/L	7635	Standard
	Cr	53	62490.3	1.3	**61.4602**	1.770	2.9	ug/L	363	Standard
	Mn	55	9311676.0	0.4	**1221.9970**	25.998	2.1	ug/L	747	Standard
	Co	59	420012.9	0.8	**58.0870**	1.492	2.6	ug/L	234	Standard
	Ni	60	121605.8	1.9	**59.2404**	2.250	3.8	ug/L	215	Standard
	Cu	65	110409.9	1.5	**54.1128**	1.822	3.4	ug/L	104	Standard
	Zn	66	101498.2	0.9	**84.4641**	2.491	2.9	ug/L	363	Standard
>	**Ge**	72	542031.1	2.4				ug/L	495142	Standard
	As	75	66455.1	1.4	**54.2648**	0.548	1.0	ug/L	-50	Standard
	Se	82	6239.8	1.8	**51.8120**	1.305	2.5	ug/L	14	Standard
	Se-1	77	4136.2	2.8	**51.1231**	1.591	3.1	ug/L	42	Standard
>	**Ga**	71	10863.9	0.3				mg/L	42	Standard
	Rb	85	119392.1	2.4				ug/L	17	Standard
	Y	89	586391.1	1.2				ug/L	417098	Standard
>	**Rh**	103	175.0	15.1				ug/L	13	Standard
	Mo	98	5740.7	2.3	**1.9719**	0.058	3.0	ug/L	11	Standard
	Ag	107	333249.6	2.0	**46.9378**	1.203	2.6	ug/L	68	Standard
	Cd	111	109090.4	0.8	**47.8987**	0.737	1.5	mg/L	2	Standard
	Cd	114	263561.8	0.5	**47.1881**	0.999	2.1	ug/L	12	Standard
>	**In**	115	639905.2	1.9				ug/L	587441	Standard
	Sn	118	1925.1	5.8	**0.2078**	0.017	8.3	ug/L	497	Standard
	Sb	123	124661.9	1.5	**24.5159**	0.713	2.9	ug/L	78	Standard
	Ba	135	268706.4	1.4	**120.5245**	2.161	1.8	ug/L	24	Standard
	Ce	140	538323.1	0.7				ug/L	25	Standard
>	**Tb**	159	1045169.0	2.0				ug/L	939701	Standard
	Ho	165	11317.6	5.4				ug/L	10	Standard
	Tl	203	438870.4	1.4	**49.1992**	0.166	0.3	ug/L	4	Standard
	Tl	205	398898.5	1.5	**51.5243**	0.281	0.5	ug/L	2	Standard
	Pb	206	314887.1	0.5	**54.4073**	0.494	0.9	ug/L	240	Standard
	Pb	207	267442.5	0.8	**52.0088**	0.664	1.3	ug/L	198	Standard
	Pb	208	1101699.4	1.8	**54.2208**	0.536	1.0	ug/L	883	Standard
	U	238	415059.0	1.7	**55.7208**	0.743	1.3	ug/L	3	Standard
>	**Bi**	209	566992.1	1.1				ug/L	523984	Standard

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Na	23	8.3	69.3	**74.8950**	52.957	70.7	mg/L	0	Standard
Mg	24	7490.2	5.9	**7.4319**	0.549	7.4	mg/L	37	Standard
K	39	995.0	6.5	**1.5912**	0.134	8.4	mg/L	38	Standard
Ca	43	1293.4	1.8	**60.7979**	1.957	3.2	mg/L	10	Standard
Fe	54	10550.1	1.1	**6.7940**	0.164	2.4	mg/L	179	Standard
Fe	57	3448.7	1.2	**8.0106**	0.227	2.8	mg/L	335	Standard
> **Sc-1**	45	78765.9	1.8				mg/L	61029	Standard
Cl	35	36168.5	1.3				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	7995.5	8.9				ug/L	1547	Standard
P	31	34405.7	2.4				ug/L	15286	Standard
S	34	1880.1	7.8				ug/L	1572	Standard
Sr	88	881.7	7.6				ug/L	73	Standard
C	12	140.0	46.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	3	Standard
Dy	164	18849.9	4.6				mg/L	6	Standard
Ho-1	165	11317.6	5.4				mg/L	10	Standard
Er	166	9863.2	2.6				mg/L	13	Standard
I	127	61177.5	10.8				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		138.870	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		109.470	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.931
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.208
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606127903S WG574001-09
Sample Date/Time: Wednesday, June 29, 2016 17:15:08
Number of Replicates: 3
Autosampler Position: 228
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	100014.2	2.8				ug/L	74699	Standard
	Be	9	1316.7	11.4	**1.1231**	0.100	8.9	ug/L	8	Standard
	Al	27	1420391.6	2.6	**7.2057**	0.041	0.6	ug/L	1493	Standard
	Sc	45	65355.8	3.5				ug/L	61029	Standard
	Ti	47	751.7	2.2	**1.7435**	0.043	2.4	ug/L	35	Standard
	V	51	12553.2	2.5	**1.3568**	0.030	2.2	ug/L	1435	Standard
	Cr	52	18458.6	1.1	**1.3028**	0.035	2.7	ug/L	7635	Standard
	Cr	53	1771.8	3.3	**1.4619**	0.098	6.7	ug/L	363	Standard
	Mn	55	203580.1	1.5	**27.1635**	0.320	1.2	ug/L	747	Standard
	Co	59	9135.1	1.0	**1.2550**	0.021	1.7	ug/L	234	Standard
	Ni	60	2779.3	1.4	**1.2628**	0.031	2.5	ug/L	215	Standard
	Cu	65	2563.2	1.7	**1.1828**	0.027	2.3	ug/L	104	Standard
	Zn	66	4447.0	0.1	**3.3488**	0.082	2.5	ug/L	363	Standard
>	**Ge**	72	530183.0	2.3				ug/L	495142	Standard
	As	75	1256.2	4.8	**1.1077**	0.065	5.9	ug/L	-50	Standard
	Se	82	144.5	11.0	**1.0936**	0.160	14.6	ug/L	14	Standard
	Se-1	77	149.3	5.6	**1.2873**	0.101	7.8	ug/L	42	Standard
>	**Ga**	71	291.7	12.0				mg/L	42	Standard
	Rb	85	2473.5	8.7				ug/L	17	Standard
	Y	89	480063.9	1.1				ug/L	417098	Standard
>	**Rh**	103	18.3	15.7				ug/L	13	Standard
	Mo	98	168.4	5.0	**0.0496**	0.003	5.9	ug/L	11	Standard
	Ag	107	7406.8	1.4	**0.9815**	0.012	1.2	ug/L	68	Standard
	Cd	111	2324.9	2.0	**0.9649**	0.013	1.3	mg/L	2	Standard
	Cd	114	5499.5	2.5	**0.9362**	0.028	2.9	ug/L	12	Standard
>	**In**	115	671407.0	1.0				ug/L	587441	Standard
	Sn	118	800.0	6.0	**0.0251**	0.007	29.1	ug/L	497	Standard
	Sb	123	3310.0	4.5	**0.6160**	0.025	4.0	ug/L	78	Standard
	Ba	135	5738.4	0.8	**2.4371**	0.009	0.4	ug/L	24	Standard
	Ce	140	11352.6	1.4				ug/L	25	Standard
>	**Tb**	159	1030086.3	0.3				ug/L	939701	Standard
	Ho	165	295.0	7.8				ug/L	10	Standard
	Tl	203	9225.5	0.2	**0.9995**	0.013	1.3	ug/L	4	Standard
	Tl	205	8459.0	5.0	**1.0575**	0.041	3.9	ug/L	2	Standard
	Pb	206	6958.9	0.8	**1.0943**	0.025	2.3	ug/L	240	Standard
	Pb	207	5899.8	0.2	**1.0421**	0.014	1.4	ug/L	198	Standard
	Pb	208	25022.5	1.7	**1.1197**	0.025	2.3	ug/L	883	Standard
	U	238	8748.9	2.2	**1.1326**	0.025	2.2	ug/L	3	Standard
>	**Bi**	209	585775.3	1.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	185.0	5.4	**0.1579**	0.009	5.9	mg/L	37	Standard
K	39	46.7	32.7	**-0.0170**	0.035	202.9	mg/L	38	Standard
Ca	43	53.3	5.4	**0.6286**	0.271	43.1	mg/L	10	Standard
Fe	54	400.2	11.9	**0.1796**	0.048	26.7	mg/L	179	Standard
Fe	57	335.0	9.8	**-0.0119**	0.080	674.7	mg/L	335	Standard
Sc-1	45	65355.8	3.5				mg/L	61029	Standard
Cl	35	29320.3	1.0				ug/L	20195	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	2030.1	9.5				ug/L	1547	Standard
P	31	19806.3	2.6				ug/L	15286	Standard
S	34	2145.2	0.2				ug/L	1572	Standard
Sr	88	86.7	23.3				ug/L	73	Standard
C	12	80.0	66.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	379.6	21.3				mg/L	6	Standard
Ho-1	165	295.0	7.8				mg/L	10	Standard
Er	166	216.7	11.6				mg/L	13	Standard
I	127	5157.6	28.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		133.890	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		107.077	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.294
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		111.792
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606127904SD WG574001-10
Sample Date/Time: Wednesday, June 29, 2016 17:18:19
Number of Replicates: 3
Autosampler Position: 229
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	100168.4	0.8				ug/L	74699	Standard
	Be	9	61913.0	2.3	**52.4502**	1.133	2.2	ug/L	8	Standard
	Al	27	66193036.9	1.4	**335.9039**	6.576	2.0	ug/L	1493	Standard
	Sc	45	75343.6	2.4				ug/L	61029	Standard
	Ti	47	40945.9	1.4	**103.9053**	1.926	1.9	ug/L	35	Standard
	V	51	552663.1	1.5	**70.2550**	1.056	1.5	ug/L	1435	Standard
	Cr	52	495290.7	1.7	**63.3235**	1.419	2.2	ug/L	7635	Standard
	Cr	53	60987.5	1.0	**63.2038**	0.948	1.5	ug/L	363	Standard
	Mn	55	9453870.8	1.1	**1307.2105**	20.907	1.6	ug/L	747	Standard
	Co	59	421300.3	0.1	**61.3867**	0.363	0.6	ug/L	234	Standard
	Ni	60	119269.8	2.5	**61.2106**	1.745	2.9	ug/L	215	Standard
	Cu	65	106997.2	1.7	**55.2474**	1.210	2.2	ug/L	104	Standard
	Zn	66	101243.5	1.4	**88.7847**	1.659	1.9	ug/L	363	Standard
>	**Ge**	72	514295.3	0.5				ug/L	495142	Standard
	As	75	64887.3	0.7	**55.8337**	0.652	1.2	ug/L	-50	Standard
	Se	82	6128.3	0.4	**53.6210**	0.432	0.8	ug/L	14	Standard
	Se-1	77	4025.2	1.7	**52.4403**	1.142	2.2	ug/L	42	Standard
>	**Ga**	71	13474.3	0.3				mg/L	42	Standard
	Rb	85	148814.4	3.2				ug/L	17	Standard
	Y	89	590511.6	1.2				ug/L	417098	Standard
>	**Rh**	103	170.0	19.3				ug/L	13	Standard
	Mo	98	5249.8	1.8	**1.8847**	0.047	2.5	ug/L	11	Standard
	Ag	107	319729.4	0.9	**47.0680**	0.306	0.7	ug/L	68	Standard
	Cd	111	105379.0	1.4	**48.3587**	0.323	0.7	mg/L	2	Standard
	Cd	114	254720.6	1.7	**47.6605**	0.543	1.1	ug/L	12	Standard
>	**In**	115	612131.8	1.0				ug/L	587441	Standard
	Sn	118	2201.8	4.9	**0.2670**	0.017	6.2	ug/L	497	Standard
	Sb	123	135513.9	0.7	**27.8528**	0.396	1.4	ug/L	78	Standard
	Ba	135	276700.5	0.9	**129.7213**	0.066	0.1	ug/L	24	Standard
	Ce	140	594096.9	1.6				ug/L	25	Standard
>	**Tb**	159	982831.9	0.9				ug/L	939701	Standard
	Ho	165	12233.3	1.6				ug/L	10	Standard
	Tl	203	424338.5	0.5	**50.3728**	0.553	1.1	ug/L	4	Standard
	Tl	205	393687.9	2.5	**53.8449**	1.302	2.4	ug/L	2	Standard
	Pb	206	310823.5	0.5	**56.8661**	0.171	0.3	ug/L	240	Standard
	Pb	207	265328.4	0.5	**54.6347**	0.327	0.6	ug/L	198	Standard
	Pb	208	1090751.7	0.6	**56.8486**	0.519	0.9	ug/L	883	Standard
	U	238	409441.4	1.4	**58.2033**	0.887	1.5	ug/L	3	Standard
>	**Bi**	209	535481.7	0.7				ug/L	523984	Standard

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Na	23	6.7	86.6	**61.5240**	53.288	86.6	mg/L	0	Standard
Mg	24	7358.5	1.6	**7.6312**	0.188	2.5	mg/L	37	Standard
K	39	1028.4	3.5	**1.7267**	0.031	1.8	mg/L	38	Standard
Ca	43	1340.1	2.9	**66.0398**	1.115	1.7	mg/L	10	Standard
Fe	54	11628.0	2.4	**7.8474**	0.058	0.7	mg/L	179	Standard
Fe	57	3898.8	5.2	**9.6559**	0.353	3.7	mg/L	335	Standard
Sc-1	45	75343.6	2.4				mg/L	61029	Standard
Cl	35	34624.2	2.4				ug/L	20195	Standard
Kr	83	1.7	34.6				ug/L	4	Standard
Br	81	10260.1	1.8				ug/L	1547	Standard
P	31	37270.8	0.5				ug/L	15286	Standard
S	34	1845.1	3.3				ug/L	1572	Standard
Sr	88	923.4	9.7				ug/L	73	Standard
C	12	203.3	29.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	3	Standard
Dy	164	20358.1	1.7				mg/L	6	Standard
Ho-1	165	12233.3	1.6				mg/L	10	Standard
Er	166	11334.2	2.0				mg/L	13	Standard
I	127	62766.8	7.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		134.096	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.868	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.203
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.194
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ti 47 Upper, S, EEE	Ti	47	

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Mn 55 Upper, S, EEE	Mn	55
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606127904SD WG574001-10
Sample Date/Time: Wednesday, June 29, 2016 17:21:31
Number of Replicates: 3
Autosampler Position: 230
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	96610.6	3.3				ug/L	74699	Standard
	Be	9	1288.4	4.7	**1.1394**	0.049	4.3	ug/L	8	Standard
	Al	27	1461113.0	0.9	**7.6780**	0.187	2.4	ug/L	1493	Standard
	Sc	45	62711.5	6.5				ug/L	61029	Standard
	Ti	47	920.7	1.4	**2.1467**	0.013	0.6	ug/L	35	Standard
	V	51	13378.9	3.6	**1.4502**	0.085	5.9	ug/L	1435	Standard
	Cr	52	18691.9	1.7	**1.3185**	0.044	3.3	ug/L	7635	Standard
	Cr	53	1716.8	3.7	**1.3959**	0.091	6.5	ug/L	363	Standard
	Mn	55	207917.4	1.7	**27.5865**	0.619	2.2	ug/L	747	Standard
	Co	59	9044.0	2.3	**1.2346**	0.031	2.5	ug/L	234	Standard
	Ni	60	2824.3	2.7	**1.2771**	0.044	3.5	ug/L	215	Standard
	Cu	65	2601.9	3.8	**1.1945**	0.050	4.2	ug/L	104	Standard
	Zn	66	4831.1	2.2	**3.6537**	0.142	3.9	ug/L	363	Standard
>	**Ge**	72	533228.6	1.6				ug/L	495142	Standard
	As	75	1337.8	3.9	**1.1692**	0.061	5.2	ug/L	-50	Standard
	Se	82	140.1	2.8	**1.0475**	0.027	2.6	ug/L	14	Standard
	Se-1	77	133.7	3.0	**1.0773**	0.056	5.2	ug/L	42	Standard
>	**Ga**	71	393.3	11.4				mg/L	42	Standard
	Rb	85	3227.0	1.4				ug/L	17	Standard
	Y	89	450037.4	1.9				ug/L	417098	Standard
>	**Rh**	103	18.3	87.7				ug/L	13	Standard
	Mo	98	147.9	13.7	**0.0463**	0.009	18.8	ug/L	11	Standard
	Ag	107	7379.1	1.6	**1.0451**	0.031	3.0	ug/L	68	Standard
	Cd	111	2296.2	2.5	**1.0190**	0.058	5.7	mg/L	2	Standard
	Cd	114	5492.1	3.4	**0.9981**	0.024	2.4	ug/L	12	Standard
>	**In**	115	629018.5	3.2				ug/L	587441	Standard
	Sn	118	580.0	12.2	**-0.0020**	0.010	499.8	ug/L	497	Standard
	Sb	123	3693.7	7.1	**0.7349**	0.053	7.2	ug/L	78	Standard
	Ba	135	5980.2	1.6	**2.7136**	0.046	1.7	ug/L	24	Standard
	Ce	140	12665.3	1.3				ug/L	25	Standard
>	**Tb**	159	1007879.7	3.3				ug/L	939701	Standard
	Ho	165	265.0	7.5				ug/L	10	Standard
	Tl	203	9323.2	2.1	**1.0256**	0.019	1.8	ug/L	4	Standard
	Tl	205	8567.4	1.0	**1.0883**	0.033	3.0	ug/L	2	Standard
	Pb	206	7313.4	2.1	**1.1727**	0.042	3.6	ug/L	240	Standard
	Pb	207	6050.9	2.1	**1.0885**	0.043	4.0	ug/L	198	Standard
	Pb	208	24824.3	2.0	**1.1284**	0.015	1.4	ug/L	883	Standard
	U	238	8436.0	2.0	**1.1088**	0.013	1.2	ug/L	3	Standard
>	**Bi**	209	577014.5	3.2				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	200.0	10.9	**0.1869**	0.033	17.5	mg/L	37	Standard
K	39	61.7	46.1	**0.0210**	0.066	315.1	mg/L	38	Standard
Ca	43	46.7	12.4	**0.3502**	0.375	107.1	mg/L	10	Standard
Fe	54	378.5	13.7	**0.1751**	0.049	28.1	mg/L	179	Standard
Fe	57	365.0	16.4	**0.1419**	0.250	175.9	mg/L	335	Standard
> **Sc-1**	45	62711.5	6.5				mg/L	61029	Standard
Cl	35	27760.1	3.1				ug/L	20195	Standard
Kr	83	3.3	45.8				ug/L	4	Standard
Br	81	2080.1	7.5				ug/L	1547	Standard
P	31	18322.7	2.7				ug/L	15286	Standard
S	34	1913.5	2.4				ug/L	1572	Standard
Sr	88	98.3	10.6				ug/L	73	Standard
C	12	103.3	31.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	615.8	1.7				mg/L	6	Standard
Ho-1	165	265.0	7.5				mg/L	10	Standard
Er	166	296.7	10.3				mg/L	13	Standard
I	127	5109.3	32.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.334	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.692	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.078
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.121
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606127905
Sample Date/Time: Wednesday, June 29, 2016 17:24:42
Number of Replicates: 3
Autosampler Position: 231
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	98923.6	1.9				ug/L	74699	Standard
	Be	9	425.0	5.1	**0.3722**	0.020	5.4	ug/L	8	Standard
	Al	27	40729181.9	0.9	**209.2967**	3.040	1.5	ug/L	1493	Standard
	Sc	45	74965.2	4.5				ug/L	61029	Standard
	Ti	47	31002.7	2.7	**78.7018**	1.731	2.2	ug/L	35	Standard
	V	51	100570.7	0.4	**12.6354**	0.094	0.7	ug/L	1435	Standard
	Cr	52	71317.5	0.6	**8.2486**	0.021	0.3	ug/L	7635	Standard
	Cr	53	8882.6	3.6	**8.9299**	0.295	3.3	ug/L	363	Standard
	Mn	55	1183907.3	1.1	**163.7014**	1.986	1.2	ug/L	747	Standard
	Co	59	16826.7	0.9	**2.4180**	0.026	1.1	ug/L	234	Standard
	Ni	60	14706.8	1.9	**7.4444**	0.110	1.5	ug/L	215	Standard
	Cu	65	7822.7	1.1	**3.9461**	0.031	0.8	ug/L	104	Standard
	Zn	66	28811.4	1.3	**24.9594**	0.201	0.8	ug/L	363	Standard
>	**Ge**	72	513872.0	0.5				ug/L	495142	Standard
	As	75	2302.8	2.2	**2.0406**	0.054	2.6	ug/L	-50	Standard
	Se	82	647.6	3.3	**5.5477**	0.199	3.6	ug/L	14	Standard
	Se-1	77	492.7	1.9	**5.8772**	0.106	1.8	ug/L	42	Standard
>	**Ga**	71	9201.1	2.2				mg/L	42	Standard
	Rb	85	118130.4	0.8				ug/L	17	Standard
	Y	89	544220.1	0.8				ug/L	417098	Standard
>	**Rh**	103	83.3	19.3				ug/L	13	Standard
	Mo	98	4972.1	0.8	**1.6995**	0.011	0.6	ug/L	11	Standard
	Ag	107	221.0	6.7	**0.0181**	0.002	11.5	ug/L	68	Standard
	Cd	111	99.4	11.4	**0.0355**	0.005	13.9	mg/L	2	Standard
	Cd	114	258.8	15.4	**0.0440**	0.007	16.4	ug/L	12	Standard
>	**In**	115	642627.7	0.7				ug/L	587441	Standard
	Sn	118	4954.1	4.3	**0.6806**	0.035	5.1	ug/L	497	Standard
	Sb	123	697.4	10.3	**0.1324**	0.015	11.0	ug/L	78	Standard
	Ba	135	175907.0	0.9	**78.5481**	0.493	0.6	ug/L	24	Standard
	Ce	140	308696.3	0.2				ug/L	25	Standard
>	**Tb**	159	1018138.8	1.9				ug/L	939701	Standard
	Ho	165	5902.8	0.8				ug/L	10	Standard
	Tl	203	694.0	1.8	**0.0782**	0.000	0.4	ug/L	4	Standard
	Tl	205	615.0	15.7	**0.0817**	0.011	14.1	ug/L	2	Standard
	Pb	206	15714.8	1.1	**2.7233**	0.017	0.6	ug/L	240	Standard
	Pb	207	12858.1	1.8	**2.5034**	0.026	1.0	ug/L	198	Standard
	Pb	208	54664.4	0.6	**2.6954**	0.031	1.2	ug/L	883	Standard
	U	238	8998.7	0.4	**1.2376**	0.021	1.7	ug/L	3	Standard
>	**Bi**	209	551643.9	1.7				ug/L	523984	Standard

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Na	23	5.0	100.0	**46.3980**	45.060	97.1	mg/L	0	Standard
Mg	24	7338.4	2.5	**7.6542**	0.303	4.0	mg/L	37	Standard
K	39	668.3	6.0	**1.0889**	0.064	5.9	mg/L	38	Standard
Ca	43	676.7	13.4	**32.4506**	6.121	18.9	mg/L	10	Standard
Fe	54	6512.7	2.4	**4.3601**	0.118	2.7	mg/L	179	Standard
Fe	57	2150.2	3.4	**4.8854**	0.383	7.8	mg/L	335	Standard
Sc-1	45	74965.2	4.5				mg/L	61029	Standard
Cl	35	28544.2	1.7				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	11494.4	5.7				ug/L	1547	Standard
P	31	34679.6	1.6				ug/L	15286	Standard
S	34	2073.5	2.2				ug/L	1572	Standard
Sr	88	356.7	8.9				ug/L	73	Standard
C	12	163.3	55.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	3	Standard
Dy	164	9835.4	4.4				mg/L	6	Standard
Ho-1	165	5902.8	0.8				mg/L	10	Standard
Er	166	5037.5	9.2				mg/L	13	Standard
I	127	62917.2	4.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		132.430	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.783	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.394
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.279
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606127905
Sample Date/Time: Wednesday, June 29, 2016 17:27:54
Number of Replicates: 3
Autosampler Position: 232
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	95902.7	2.3				ug/L	74699	Standard
	Be	9	26.7	54.1	**0.0312**	0.013	41.0	ug/L	8	Standard
	Al	27	866639.8	0.6	**4.5819**	0.130	2.8	ug/L	1493	Standard
	Sc	45	64717.9	1.3				ug/L	61029	Standard
	Ti	47	665.3	5.2	**1.4927**	0.099	6.6	ug/L	35	Standard
	V	51	3898.6	6.9	**0.2752**	0.030	11.1	ug/L	1435	Standard
	Cr	52	9682.4	1.6	**0.1679**	0.023	13.9	ug/L	7635	Standard
	Cr	53	670.0	10.3	**0.3316**	0.072	21.7	ug/L	363	Standard
	Mn	55	29584.3	8.9	**3.7268**	0.331	8.9	ug/L	747	Standard
	Co	59	652.3	12.4	**0.0528**	0.011	20.6	ug/L	234	Standard
	Ni	60	547.0	3.7	**0.1426**	0.010	7.1	ug/L	215	Standard
	Cu	65	341.3	5.6	**0.0636**	0.011	17.0	ug/L	104	Standard
	Zn	66	2764.3	3.0	**1.8532**	0.047	2.5	ug/L	363	Standard
>	**Ge**	72	542890.6	1.0				ug/L	495142	Standard
	As	75	11.1	320.4	**0.0688**	0.029	42.5	ug/L	-50	Standard
	Se	82	31.5	11.6	**0.1237**	0.032	26.0	ug/L	14	Standard
	Se-1	77	57.7	24.7	**0.0971**	0.173	178.1	ug/L	42	Standard
>	**Ga**	71	253.3	16.8				mg/L	42	Standard
	Rb	85	2388.5	2.4				ug/L	17	Standard
	Y	89	480185.0	1.7				ug/L	417098	Standard
>	**Rh**	103	16.7	34.6				ug/L	13	Standard
	Mo	98	144.5	13.4	**0.0432**	0.007	17.2	ug/L	11	Standard
	Ag	107	273.0	44.6	**0.0250**	0.018	70.2	ug/L	68	Standard
	Cd	111	17.1	70.4	**-0.0005**	0.005	1058.7	mg/L	2	Standard
	Cd	114	57.8	101.1	**0.0081**	0.010	129.1	ug/L	12	Standard
>	**In**	115	652419.9	1.9				ug/L	587441	Standard
	Sn	118	705.0	11.1	**0.0141**	0.014	98.8	ug/L	497	Standard
	Sb	123	247.5	32.3	**0.0437**	0.016	37.3	ug/L	78	Standard
	Ba	135	3842.5	3.8	**1.6750**	0.079	4.7	ug/L	24	Standard
	Ce	140	6778.2	3.5				ug/L	25	Standard
>	**Tb**	159	1017174.6	0.9				ug/L	939701	Standard
	Ho	165	125.0	20.8				ug/L	10	Standard
	Tl	203	149.7	88.3	**0.0148**	0.015	98.5	ug/L	4	Standard
	Tl	205	133.3	80.1	**0.0172**	0.014	79.0	ug/L	2	Standard
	Pb	206	748.0	16.8	**0.0568**	0.021	37.3	ug/L	240	Standard
	Pb	207	613.7	10.2	**0.0482**	0.012	24.5	ug/L	198	Standard
	Pb	208	2588.8	11.0	**0.0521**	0.014	26.1	ug/L	883	Standard
	U	238	255.3	28.9	**0.0295**	0.010	33.0	ug/L	3	Standard
>	**Bi**	209	573070.1	0.3				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.8927**	30.982	173.2	mg/L	0	Standard
Mg	24	208.3	5.5	**0.1886**	0.017	8.9	mg/L	37	Standard
K	39	35.0	14.3	**-0.0411**	0.011	27.7	mg/L	38	Standard
Ca	43	31.7	18.2	**-0.6344**	0.363	57.2	mg/L	10	Standard
Fe	54	281.0	17.0	**0.0865**	0.040	45.9	mg/L	179	Standard
Fe	57	258.3	4.5	**-0.2461**	0.039	15.8	mg/L	335	Standard
> **Sc-1**	45	64717.9	1.3				mg/L	61029	Standard
Cl	35	29516.1	1.1				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	2206.8	1.5				ug/L	1547	Standard
P	31	18893.4	3.4				ug/L	15286	Standard
S	34	2140.2	7.5				ug/L	1572	Standard
Sr	88	85.0	23.5				ug/L	73	Standard
C	12	63.3	39.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	226.9	17.7				mg/L	6	Standard
Ho-1	165	125.0	20.8				mg/L	10	Standard
Er	166	133.3	38.5				mg/L	13	Standard
I	127	4113.9	27.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.386	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.643	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.061
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.368
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606128101
Sample Date/Time: Wednesday, June 29, 2016 17:31:05
Number of Replicates: 3
Autosampler Position: 233
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	95248.6	2.8				ug/L	74699	Standard
	Be	9	20.0	25.0	**0.0254**	0.004	15.8	ug/L	8	Standard
	Al	27	13040665.4	1.7	**69.5953**	1.139	1.6	ug/L	1493	Standard
	Sc	45	60164.2	2.0				ug/L	61029	Standard
	Ti	47	192.7	16.8	**0.4120**	0.087	21.1	ug/L	35	Standard
	V	51	8357.2	4.3	**0.9387**	0.048	5.1	ug/L	1435	Standard
	Cr	52	21860.8	2.2	**2.0003**	0.082	4.1	ug/L	7635	Standard
	Cr	53	28106.1	2.4	**30.8448**	0.828	2.7	ug/L	363	Standard
	Mn	55	35106.1	13.3	**5.0193**	0.674	13.4	ug/L	747	Standard
	Co	59	6553.8	6.0	**0.9799**	0.056	5.7	ug/L	234	Standard
	Ni	60	21271.9	1.7	**11.5228**	0.221	1.9	ug/L	215	Standard
	Cu	65	394730.4	1.5	**217.3087**	4.048	1.9	ug/L	104	Standard
	Zn	66	2800.3	3.3	**2.1735**	0.095	4.3	ug/L	363	Standard
>	**Ge**	72	483031.9	0.6				ug/L	495142	Standard
	As	75	2746.8	5.9	**2.5735**	0.152	5.9	ug/L	-50	Standard
	Se	82	892.7	0.7	**8.1998**	0.096	1.2	ug/L	14	Standard
	Se-1	77	2323.2	2.5	**31.9871**	0.998	3.1	ug/L	42	Standard
>	**Ga**	71	476.7	6.4				mg/L	42	Standard
	Rb	85	346107.5	1.7				ug/L	17	Standard
	Y	89	415017.7	1.3				ug/L	417098	Standard
>	**Rh**	103	195.0	26.0				ug/L	13	Standard
	Mo	98	2991.9	3.1	**1.1870**	0.038	3.2	ug/L	11	Standard
	Ag	107	283.3	10.3	**0.0333**	0.004	13.4	ug/L	68	Standard
	Cd	111	47.5	106.4	**0.0162**	0.025	157.7	mg/L	2	Standard
	Cd	114	106.7	47.6	**0.0200**	0.010	52.0	ug/L	12	Standard
>	**In**	115	552878.2	0.7				ug/L	587441	Standard
	Sn	118	3292.0	3.2	**0.5041**	0.021	4.2	ug/L	497	Standard
	Sb	123	2817.9	0.9	**0.6371**	0.010	1.5	ug/L	78	Standard
	Ba	135	115236.2	0.6	**59.8088**	0.708	1.2	ug/L	24	Standard
	Ce	140	265.0	80.7				ug/L	25	Standard
>	**Tb**	159	913633.5	1.5				ug/L	939701	Standard
	Ho	165	16.7	45.8				ug/L	10	Standard
	Tl	203	132.0	58.6	**0.0163**	0.011	65.5	ug/L	4	Standard
	Tl	205	136.7	39.5	**0.0217**	0.009	39.6	ug/L	2	Standard
	Pb	206	460.3	26.2	**0.0258**	0.026	100.0	ug/L	240	Standard
	Pb	207	366.3	38.5	**0.0169**	0.034	199.7	ug/L	198	Standard
	Pb	208	1427.4	18.1	**0.0116**	0.016	136.8	ug/L	883	Standard
	U	238	88.7	86.2	**0.0101**	0.013	124.4	ug/L	3	Standard
>	**Bi**	209	465790.3	0.8				ug/L	523984	Standard

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Na	23	8.3	69.3	**97.9562**	69.038	70.5	mg/L	0	Standard
Mg	24	359246.1	3.7	**470.2454**	9.358	2.0	mg/L	37	Standard
K	39	24917.1	2.4	**55.7677**	1.861	3.3	mg/L	38	Standard
Ca	43	1330.1	6.9	**82.7516**	6.716	8.1	mg/L	10	Standard
Fe	54	200.7	20.7	**0.0339**	0.032	94.4	mg/L	179	Standard
Fe	57	1015.0	10.0	**2.4309**	0.415	17.1	mg/L	335	Standard
> **Sc-1**	45	60164.2	2.0				mg/L	61029	Standard
Cl	35	38169.4	0.5				ug/L	20195	Standard
Kr	83	1.0	0.0				ug/L	4	Standard
Br	81	223802.3	3.7				ug/L	1547	Standard
P	31	18462.9	1.8				ug/L	15286	Standard
S	34	2156.8	3.7				ug/L	1572	Standard
Sr	88	483.3	16.2				ug/L	73	Standard
C	12	163.3	15.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	24.7				mg/L	3	Standard
Dy	164	32.2	122.0				mg/L	6	Standard
Ho-1	165	16.7	45.8				mg/L	10	Standard
Er	166	23.3	99.0				mg/L	13	Standard
I	127	949274.2	9.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		127.510	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.554	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.116
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		88.894
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 17:34:19
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89879.3	3.0				ug/L	74699	Standard
	Be	9	54419.2	2.1	**51.4171**	2.152	4.2	ug/L	8	Standard
	Al	27	8256861.3	1.5	**46.7135**	1.756	3.8	ug/L	1493	Standard
	Sc	45	65086.2	2.0				ug/L	61029	Standard
	Ti	47	41554.9	1.2	**98.5544**	1.167	1.2	ug/L	35	Standard
	V	51	424002.3	1.3	**50.3253**	0.743	1.5	ug/L	1435	Standard
	Cr	52	412948.6	1.6	**49.1234**	1.130	2.3	ug/L	7635	Standard
	Cr	53	52872.1	1.4	**51.1473**	0.096	0.2	ug/L	363	Standard
	Mn	55	374015.3	1.0	**48.1957**	0.700	1.5	ug/L	747	Standard
	Co	59	377049.8	1.0	**51.3472**	0.802	1.6	ug/L	234	Standard
	Ni	60	101943.5	0.6	**48.8763**	0.675	1.4	ug/L	215	Standard
	Cu	65	101706.9	0.4	**49.0730**	0.490	1.0	ug/L	104	Standard
	Zn	66	60100.6	1.2	**49.0556**	0.165	0.3	ug/L	363	Standard
>	**Ge**	72	550256.1	1.3				ug/L	495142	Standard
	As	75	60702.3	2.0	**48.8234**	0.606	1.2	ug/L	-50	Standard
	Se	82	6059.9	1.5	**49.5453**	0.269	0.5	ug/L	14	Standard
	Se-1	77	4264.3	0.7	**51.9185**	0.539	1.0	ug/L	42	Standard
>	**Ga**	71	80.0	16.5				mg/L	42	Standard
	Rb	85	943.4	9.9				ug/L	17	Standard
	Y	89	456697.4	1.9				ug/L	417098	Standard
>	**Rh**	103	31.7	32.9				ug/L	13	Standard
	Mo	98	286840.3	1.0	**98.7855**	2.014	2.0	ug/L	11	Standard
	Ag	107	350242.5	1.1	**49.3132**	0.224	0.5	ug/L	68	Standard
	Cd	111	110565.3	0.7	**48.5306**	0.244	0.5	mg/L	2	Standard
	Cd	114	270182.5	3.7	**48.3546**	1.830	3.8	ug/L	12	Standard
>	**In**	115	640022.5	1.2				ug/L	587441	Standard
	Sn	118	309740.9	1.1	**48.5773**	0.779	1.6	ug/L	497	Standard
	Sb	123	247251.7	1.0	**48.6061**	0.525	1.1	ug/L	78	Standard
	Ba	135	103942.0	1.5	**46.5980**	0.695	1.5	ug/L	24	Standard
	Ce	140	81.7	18.7				ug/L	25	Standard
>	**Tb**	159	1011086.0	0.8				ug/L	939701	Standard
	Ho	165	13.3	94.4				ug/L	10	Standard
	Tl	203	438780.7	1.5	**49.1134**	0.474	1.0	ug/L	4	Standard
	Tl	205	398617.2	2.3	**51.4045**	0.522	1.0	ug/L	2	Standard
	Pb	206	284136.3	1.1	**49.0127**	0.824	1.7	ug/L	240	Standard
	Pb	207	252190.2	0.9	**48.9661**	0.976	2.0	ug/L	198	Standard
	Pb	208	1023481.0	1.1	**50.2926**	0.682	1.4	ug/L	883	Standard
	U	238	380510.7	2.1	**50.9985**	0.305	0.6	ug/L	3	Standard
>	**Bi**	209	567945.0	2.2				ug/L	523984	Standard

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Na	23	1.7	173.2	**18.3524**	31.779	173.2	mg/L	0	Standard
Mg	24	4450.7	2.4	**5.3249**	0.232	4.3	mg/L	37	Standard
K	39	2040.1	4.0	**4.1161**	0.223	5.4	mg/L	38	Standard
Ca	43	101.7	19.9	**3.5019**	1.219	34.8	mg/L	10	Standard
Fe	54	6522.9	1.9	**5.0481**	0.108	2.1	mg/L	179	Standard
Fe	57	1916.8	5.3	**5.0325**	0.229	4.6	mg/L	335	Standard
Sc-1	45	65086.2	2.0				mg/L	61029	Standard
Cl	35	28870.1	1.5				ug/L	20195	Standard
Kr	83	2.7	43.3				ug/L	4	Standard
Br	81	3490.4	22.1				ug/L	1547	Standard
P	31	20260.2	3.0				ug/L	15286	Standard
S	34	2420.2	2.6				ug/L	1572	Standard
Sr	88	90.0	19.2				ug/L	73	Standard
C	12	86.7	6.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	9.5	5.0				mg/L	6	Standard
Ho-1	165	13.3	94.4				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	23970.8	64.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.834		
Al	27	93.427		
Sc	45			
Ti	47	98.554		
V	51	100.651		
Cr	52	98.247		
Cr	53			
Mn	55	96.391		
Co	59	102.694		
Ni	60	97.753		
Cu	65	98.146		
Zn	66	98.111		
Ge	72		111.131	
As	75	97.647		
Se	82	99.091		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.786		
Ag	107	98.626		
Cd	111	97.061		
Cd	114			
> In	115			108.951
Sn	118	97.155		
Sb	123	97.212		
Ba	135	93.196		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.227		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.585		
U	238	101.997		
> Bi	209			108.390
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 17:37:30
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90192.8	3.2				ug/L	74699	Standard
	Be	9	55.0	102.4	**0.0584**	0.051	86.9	ug/L	8	Standard
	Al	27	41697.2	123.7	**0.2160**	0.280	129.5	ug/L	1493	Standard
	Sc	45	66865.6	0.3				ug/L	61029	Standard
	Ti	47	70.3	63.0	**0.0618**	0.107	173.0	ug/L	35	Standard
	V	51	1545.5	1.7	**-0.0068**	0.004	62.6	ug/L	1435	Standard
	Cr	52	7551.9	5.0	**-0.0837**	0.044	52.6	ug/L	7635	Standard
	Cr	53	1056.7	15.9	**0.7243**	0.162	22.4	ug/L	363	Standard
	Mn	55	2100.5	33.7	**0.1299**	0.092	71.2	ug/L	747	Standard
	Co	59	307.3	14.8	**0.0056**	0.006	108.6	ug/L	234	Standard
	Ni	60	288.7	41.6	**0.0182**	0.059	321.7	ug/L	215	Standard
	Cu	65	326.7	64.3	**0.0580**	0.103	178.3	ug/L	104	Standard
	Zn	66	465.0	14.2	**-0.0620**	0.054	86.6	ug/L	363	Standard
>	**Ge**	72	536712.4	0.6				ug/L	495142	Standard
	As	75	-14.2	293.5	**0.0478**	0.034	71.9	ug/L	-50	Standard
	Se	82	26.6	3.7	**0.0859**	0.008	9.9	ug/L	14	Standard
	Se-1	77	71.3	25.4	**0.2781**	0.225	81.0	ug/L	42	Standard
>	**Ga**	71	51.7	22.3				mg/L	42	Standard
	Rb	85	111.7	73.6				ug/L	17	Standard
	Y	89	476031.3	1.1				ug/L	417098	Standard
>	**Rh**	103	26.7	47.2				ug/L	13	Standard
	Mo	98	310.3	31.4	**0.0963**	0.033	33.9	ug/L	11	Standard
	Ag	107	196.3	41.5	**0.0135**	0.011	82.4	ug/L	68	Standard
	Cd	111	44.4	76.9	**0.0108**	0.014	134.5	mg/L	2	Standard
	Cd	114	106.2	73.2	**0.0161**	0.013	83.2	ug/L	12	Standard
>	**In**	115	671001.8	0.7				ug/L	587441	Standard
	Sn	118	950.0	11.1	**0.0476**	0.015	31.2	ug/L	497	Standard
	Sb	123	463.6	17.0	**0.0827**	0.014	17.2	ug/L	78	Standard
	Ba	135	113.3	53.3	**0.0326**	0.026	80.4	ug/L	24	Standard
	Ce	140	100.0	52.9				ug/L	25	Standard
>	**Tb**	159	1042844.6	0.4				ug/L	939701	Standard
	Ho	165	21.7	53.3				ug/L	10	Standard
	Tl	203	169.7	59.1	**0.0166**	0.011	64.7	ug/L	4	Standard
	Tl	205	136.7	25.7	**0.0173**	0.004	24.8	ug/L	2	Standard
	Pb	206	350.0	21.1	**-0.0125**	0.012	95.5	ug/L	240	Standard
	Pb	207	292.7	21.7	**-0.0148**	0.012	78.6	ug/L	198	Standard
	Pb	208	1272.0	10.4	**-0.0133**	0.006	44.8	ug/L	883	Standard
	U	238	124.3	70.3	**0.0117**	0.011	96.0	ug/L	3	Standard
>	**Bi**	209	584508.5	0.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	165.0	89.4	**0.1290**	0.173	134.2	mg/L	37	Standard
K	39	35.0	14.3	**-0.0435**	0.010	22.9	mg/L	38	Standard
Ca	43	33.3	22.9	**-0.6014**	0.442	73.5	mg/L	10	Standard
Fe	54	222.3	16.4	**0.0337**	0.028	82.1	mg/L	179	Standard
Fe	57	293.3	1.0	**-0.1642**	0.011	6.9	mg/L	335	Standard
> **Sc-1**	45	66865.6	0.3				mg/L	61029	Standard
Cl	35	28993.0	1.1				ug/L	20195	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	2536.9	15.9				ug/L	1547	Standard
P	31	21593.7	3.8				ug/L	15286	Standard
S	34	2441.9	4.5				ug/L	1572	Standard
Sr	88	71.7	39.7				ug/L	73	Standard
C	12	43.3	53.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	2.2	286.4				mg/L	6	Standard
Ho-1	165	21.7	53.3				mg/L	10	Standard
Er	166	23.3	65.5				mg/L	13	Standard
I	127	6326.4	22.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.396	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.225
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		111.551
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129403
Sample Date/Time: Wednesday, June 29, 2016 17:40:43
Number of Replicates: 3
Autosampler Position: 234
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	91138.4	2.1				ug/L	74699	Standard
	Be	9	18.3	31.5	**0.0246**	0.005	20.1	ug/L	8	Standard
	Al	27	19782.9	2.5	**0.0970**	0.003	3.0	ug/L	1493	Standard
	Sc	45	69032.0	3.0				ug/L	61029	Standard
	Ti	47	54.0	3.2	**0.0194**	0.002	12.6	ug/L	35	Standard
	V	51	1966.3	6.5	**0.0390**	0.011	28.1	ug/L	1435	Standard
	Cr	52	10805.9	1.1	**0.2915**	0.043	14.7	ug/L	7635	Standard
	Cr	53	2143.5	1.8	**1.7623**	0.077	4.4	ug/L	363	Standard
	Mn	55	3844.5	2.2	**0.3500**	0.018	5.0	ug/L	747	Standard
	Co	59	327.3	8.7	**0.0074**	0.003	41.0	ug/L	234	Standard
	Ni	60	356.0	5.4	**0.0475**	0.008	16.5	ug/L	215	Standard
	Cu	65	696.0	2.6	**0.2337**	0.014	6.0	ug/L	104	Standard
	Zn	66	2205.8	3.0	**1.3661**	0.024	1.8	ug/L	363	Standard
>	**Ge**	72	549152.6	2.2				ug/L	495142	Standard
	As	75	-29.6	63.4	**0.0356**	0.015	42.9	ug/L	-50	Standard
	Se	82	23.9	20.2	**0.0586**	0.040	68.9	ug/L	14	Standard
	Se-1	77	94.7	7.0	**0.5478**	0.105	19.2	ug/L	42	Standard
>	**Ga**	71	51.7	14.8				mg/L	42	Standard
	Rb	85	138.3	25.6				ug/L	17	Standard
	Y	89	465979.4	3.6				ug/L	417098	Standard
>	**Rh**	103	13.3	21.7				ug/L	13	Standard
	Mo	98	5139.1	1.4	**1.7220**	0.056	3.3	ug/L	11	Standard
	Ag	107	110.0	6.9	**0.0022**	0.001	48.4	ug/L	68	Standard
	Cd	111	15.0	26.6	**-0.0015**	0.002	117.9	mg/L	2	Standard
	Cd	114	55.2	20.3	**0.0075**	0.002	25.2	ug/L	12	Standard
>	**In**	115	655841.8	1.8				ug/L	587441	Standard
	Sn	118	1048.4	10.6	**0.0659**	0.015	22.6	ug/L	497	Standard
	Sb	123	219.8	14.7	**0.0379**	0.005	14.5	ug/L	78	Standard
	Ba	135	307.7	5.8	**0.1187**	0.008	7.0	ug/L	24	Standard
	Ce	140	120.0	27.3				ug/L	25	Standard
>	**Tb**	159	1025647.2	2.3				ug/L	939701	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	102.7	26.3	**0.0095**	0.003	29.3	ug/L	4	Standard
	Tl	205	93.3	17.2	**0.0120**	0.002	17.6	ug/L	2	Standard
	Pb	206	348.0	5.5	**-0.0123**	0.003	25.6	ug/L	240	Standard
	Pb	207	291.0	7.0	**-0.0146**	0.003	21.1	ug/L	198	Standard
	Pb	208	1220.0	1.5	**-0.0152**	0.002	10.4	ug/L	883	Standard
	U	238	43.7	3.5	**0.0013**	0.000	20.2	ug/L	3	Standard
>	**Bi**	209	579311.4	1.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	70.0	14.3	**0.0151**	0.014	91.8	mg/L	37	Standard
K	39	41.7	36.7	**-0.0323**	0.032	98.5	mg/L	38	Standard
Ca	43	23.3	24.7	**-1.2220**	0.307	25.1	mg/L	10	Standard
Fe	54	180.7	18.1	**-0.0033**	0.021	642.1	mg/L	179	Standard
Fe	57	228.3	18.9	**-0.3899**	0.112	28.8	mg/L	335	Standard
> **Sc-1**	45	69032.0	3.0				mg/L	61029	Standard
Cl	35	29393.1	0.1				ug/L	20195	Standard
Kr	83	3.7	41.7				ug/L	4	Standard
Br	81	2280.2	16.1				ug/L	1547	Standard
P	31	20889.4	5.8				ug/L	15286	Standard
S	34	2440.2	2.2				ug/L	1572	Standard
Sr	88	78.3	9.8				ug/L	73	Standard
C	12	90.0	19.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	5.2	126.6				mg/L	6	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	30.0	66.7				mg/L	13	Standard
I	127	4447.3	11.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		122.008	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.908	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.644
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.559
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606129403
Sample Date/Time: Wednesday, June 29, 2016 17:43:55
Number of Replicates: 3
Autosampler Position: 235
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89753.4	1.3				ug/L	74699	Standard
	Be	9	13.3	43.3	**0.0203**	0.006	27.7	ug/L	8	Standard
	Al	27	7761551.3	2.6	**43.9444**	1.176	2.7	ug/L	1493	Standard
	Sc	45	64855.2	1.4				ug/L	61029	Standard
	Ti	47	206.0	13.1	**0.3915**	0.063	16.1	ug/L	35	Standard
	V	51	6651.8	1.7	**0.6159**	0.016	2.5	ug/L	1435	Standard
	Cr	52	10534.3	3.3	**0.2860**	0.045	15.8	ug/L	7635	Standard
	Cr	53	2358.5	8.3	**2.0219**	0.206	10.2	ug/L	363	Standard
	Mn	55	48108.9	1.2	**6.2182**	0.039	0.6	ug/L	747	Standard
	Co	59	779.0	1.7	**0.0714**	0.002	2.2	ug/L	234	Standard
	Ni	60	2066.1	2.9	**0.8928**	0.027	3.0	ug/L	215	Standard
	Cu	65	1897.5	0.8	**0.8356**	0.011	1.4	ug/L	104	Standard
	Zn	66	4161.9	4.0	**3.0555**	0.122	4.0	ug/L	363	Standard
>	**Ge**	72	537411.3	0.6				ug/L	495142	Standard
	As	75	1930.1	2.9	**1.6472**	0.048	2.9	ug/L	-50	Standard
	Se	82	65.9	12.2	**0.4151**	0.071	17.1	ug/L	14	Standard
	Se-1	77	143.0	7.4	**1.1820**	0.141	12.0	ug/L	42	Standard
>	**Ga**	71	281.7	11.8				mg/L	42	Standard
	Rb	85	9322.9	0.6				ug/L	17	Standard
	Y	89	483828.6	0.3				ug/L	417098	Standard
>	**Rh**	103	65.0	35.3				ug/L	13	Standard
	Mo	98	2420.2	2.2	**0.8025**	0.008	1.0	ug/L	11	Standard
	Ag	107	86.7	9.0	**-0.0011**	0.001	98.3	ug/L	68	Standard
	Cd	111	21.1	19.4	**0.0011**	0.002	172.0	mg/L	2	Standard
	Cd	114	57.2	8.0	**0.0078**	0.001	8.8	ug/L	12	Standard
>	**In**	115	659947.0	1.4				ug/L	587441	Standard
	Sn	118	1036.7	2.5	**0.0632**	0.002	2.8	ug/L	497	Standard
	Sb	123	514.2	4.3	**0.0939**	0.005	5.0	ug/L	78	Standard
	Ba	135	42292.6	1.8	**18.3786**	0.354	1.9	ug/L	24	Standard
	Ce	140	906.7	5.0				ug/L	25	Standard
>	**Tb**	159	1004743.5	1.0				ug/L	939701	Standard
	Ho	165	30.0	33.3				ug/L	10	Standard
	Tl	203	321.7	3.2	**0.0348**	0.001	3.5	ug/L	4	Standard
	Tl	205	263.3	19.0	**0.0346**	0.006	17.3	ug/L	2	Standard
	Pb	206	528.0	6.8	**0.0212**	0.005	24.5	ug/L	240	Standard
	Pb	207	478.3	8.2	**0.0244**	0.009	35.8	ug/L	198	Standard
	Pb	208	1973.7	3.1	**0.0244**	0.005	18.6	ug/L	883	Standard
	U	238	903.7	2.1	**0.1184**	0.002	1.8	ug/L	3	Standard
>	**Bi**	209	560080.8	1.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	9985.0	3.9	**12.0618**	0.357	3.0	mg/L	37	Standard
K	39	420.0	7.4	**0.7593**	0.061	8.1	mg/L	38	Standard
Ca	43	263.3	2.9	**13.1350**	0.654	5.0	mg/L	10	Standard
Fe	54	210.7	11.6	**0.0297**	0.017	57.3	mg/L	179	Standard
Fe	57	393.3	9.5	**0.1838**	0.119	64.8	mg/L	335	Standard
> **Sc-1**	45	64855.2	1.4				mg/L	61029	Standard
Cl	35	32877.0	2.8				ug/L	20195	Standard
Kr	83	0.7	86.6				ug/L	4	Standard
Br	81	8902.6	4.1				ug/L	1547	Standard
P	31	19829.6	4.1				ug/L	15286	Standard
S	34	2240.2	4.2				ug/L	1572	Standard
Sr	88	221.7	14.7				ug/L	73	Standard
C	12	126.7	4.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	64.1	36.5				mg/L	6	Standard
Ho-1	165	30.0	33.3				mg/L	10	Standard
Er	166	53.3	21.7				mg/L	13	Standard
I	127	24610.0	6.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		120.154	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.537	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.343
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.889
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606129601
Sample Date/Time: Wednesday, June 29, 2016 17:47:06
Number of Replicates: 3
Autosampler Position: 236
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89414.7	0.8				ug/L	74699	Standard
	Be	9	18.3	41.7	**0.0250**	0.007	28.7	ug/L	8	Standard
	Al	27	159581.9	4.0	**0.8936**	0.029	3.3	ug/L	1493	Standard
	Sc	45	67088.2	1.1				ug/L	61029	Standard
	Ti	47	35.7	1.6	**-0.0268**	0.002	7.8	ug/L	35	Standard
	V	51	2172.9	6.2	**0.0559**	0.017	29.8	ug/L	1435	Standard
	Cr	52	9358.6	1.2	**0.0800**	0.026	32.1	ug/L	7635	Standard
	Cr	53	761.7	7.6	**0.3908**	0.063	16.2	ug/L	363	Standard
	Mn	55	2132.8	0.4	**0.1197**	0.005	4.4	ug/L	747	Standard
	Co	59	232.7	3.6	**-0.0065**	0.001	22.5	ug/L	234	Standard
	Ni	60	263.3	7.3	**-0.0009**	0.011	1213.2	ug/L	215	Standard
	Cu	65	215.7	8.8	**-0.0024**	0.009	395.1	ug/L	104	Standard
	Zn	66	2535.5	4.0	**1.5735**	0.060	3.8	ug/L	363	Standard
>	**Ge**	72	566628.0	1.5				ug/L	495142	Standard
	As	75	0.7	2838.5	**0.0602**	0.015	24.5	ug/L	-50	Standard
	Se	82	16.5	13.6	**-0.0062**	0.020	325.1	ug/L	14	Standard
	Se-1	77	57.7	30.4	**0.0671**	0.205	305.9	ug/L	42	Standard
>	**Ga**	71	65.0	35.3				mg/L	42	Standard
	Rb	85	218.3	8.7				ug/L	17	Standard
	Y	89	474347.0	1.6				ug/L	417098	Standard
>	**Rh**	103	16.7	45.8				ug/L	13	Standard
	Mo	98	108.8	9.6	**0.0309**	0.003	10.7	ug/L	11	Standard
	Ag	107	170.0	11.0	**0.0105**	0.003	26.1	ug/L	68	Standard
	Cd	111	6.5	32.0	**-0.0051**	0.001	17.0	mg/L	2	Standard
	Cd	114	10.6	76.1	**-0.0002**	0.001	576.3	ug/L	12	Standard
>	**In**	115	655393.1	1.0				ug/L	587441	Standard
	Sn	118	536.7	6.3	**-0.0123**	0.006	49.5	ug/L	497	Standard
	Sb	123	179.2	10.0	**0.0302**	0.004	12.2	ug/L	78	Standard
	Ba	135	901.0	1.9	**0.3786**	0.012	3.1	ug/L	24	Standard
	Ce	140	38.3	52.7				ug/L	25	Standard
>	**Tb**	159	1019773.4	1.2				ug/L	939701	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	34.7	13.6	**0.0021**	0.001	27.9	ug/L	4	Standard
	Tl	205	33.3	52.7	**0.0044**	0.002	51.3	ug/L	2	Standard
	Pb	206	333.0	5.0	**-0.0144**	0.003	23.5	ug/L	240	Standard
	Pb	207	282.3	6.2	**-0.0157**	0.004	25.6	ug/L	198	Standard
	Pb	208	1187.0	2.0	**-0.0164**	0.002	10.6	ug/L	883	Standard
	U	238	27.0	25.9	**-0.0009**	0.001	108.4	ug/L	3	Standard
>	**Bi**	209	574894.3	1.4				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.3542**	30.050	173.2	mg/L	0	Standard
Mg	24	255.0	18.0	**0.2345**	0.054	23.2	mg/L	37	Standard
K	39	41.7	36.7	**-0.0306**	0.030	98.0	mg/L	38	Standard
Ca	43	31.7	18.2	**-0.7022**	0.343	48.8	mg/L	10	Standard
Fe	54	182.6	4.3	**0.0025**	0.004	177.8	mg/L	179	Standard
Fe	57	238.3	19.9	**-0.3363**	0.155	46.0	mg/L	335	Standard
Sc-1	45	67088.2	1.1				mg/L	61029	Standard
Cl	35	32679.2	0.8				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	2083.5	4.4				ug/L	1547	Standard
P	31	19699.5	2.2				ug/L	15286	Standard
S	34	2248.5	3.2				ug/L	1572	Standard
Sr	88	70.0	56.7				ug/L	73	Standard
C	12	60.0	76.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	42.4	37.5				mg/L	6	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	20.0	86.6				mg/L	13	Standard
I	127	3452.1	27.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		119.700	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		114.437	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.567
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.716
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Wednesday, June 29, 2016 17:50:19
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88962.1	0.9				ug/L	74699	Standard
	Be	9	13.3	43.3	**0.0204**	0.006	27.5	ug/L	8	Standard
	Al	27	8687475.6	2.0	**49.6312**	1.401	2.8	ug/L	1493	Standard
	Sc	45	67439.8	1.2				ug/L	61029	Standard
	Ti	47	49495.1	1.8	**118.6714**	2.776	2.3	ug/L	35	Standard
	V	51	2497.1	11.5	**0.1050**	0.033	31.3	ug/L	1435	Standard
	Cr	52	8893.6	0.7	**0.0677**	0.012	17.4	ug/L	7635	Standard
	Cr	53	8300.6	3.8	**7.8359**	0.175	2.2	ug/L	363	Standard
	Mn	55	1506.4	1.9	**0.0487**	0.003	6.1	ug/L	747	Standard
	Co	59	411.3	2.2	**0.0194**	0.002	11.4	ug/L	234	Standard
	Ni	60	986.0	7.4	**0.3548**	0.029	8.2	ug/L	215	Standard
	Cu	65	754.7	3.5	**0.2650**	0.009	3.4	ug/L	104	Standard
	Zn	66	1997.5	3.6	**1.2085**	0.053	4.4	ug/L	363	Standard
>	**Ge**	72	544457.7	1.7				ug/L	495142	Standard
	As	75	-43.8	164.6	**0.0238**	0.058	245.3	ug/L	-50	Standard
	Se	82	18.8	19.8	**0.0181**	0.034	186.0	ug/L	14	Standard
	Se-1	77	455.0	4.4	**5.0437**	0.245	4.9	ug/L	42	Standard
>	**Ga**	71	186.7	17.4				mg/L	42	Standard
	Rb	85	1130.0	9.7				ug/L	17	Standard
	Y	89	464215.3	1.7				ug/L	417098	Standard
>	**Rh**	103	10.0	100.0				ug/L	13	Standard
	Mo	98	300673.2	0.9	**102.5347**	1.457	1.4	ug/L	11	Standard
	Ag	107	252.3	6.3	**0.0223**	0.003	12.6	ug/L	68	Standard
	Cd	111	-194.8	14.0	**-0.0926**	0.012	12.9	mg/L	2	Standard
	Cd	114	577.1	3.2	**0.1002**	0.004	4.2	ug/L	12	Standard
>	**In**	115	646355.5	1.8				ug/L	587441	Standard
	Sn	118	791.7	5.4	**0.0285**	0.006	21.5	ug/L	497	Standard
	Sb	123	195.6	12.5	**0.0338**	0.004	11.9	ug/L	78	Standard
	Ba	135	712.0	4.0	**0.3001**	0.008	2.7	ug/L	24	Standard
	Ce	140	246.7	7.1				ug/L	25	Standard
>	**Tb**	159	1024202.6	1.1				ug/L	939701	Standard
	Ho	165	23.3	61.9				ug/L	10	Standard
	Tl	203	122.3	9.8	**0.0119**	0.001	11.8	ug/L	4	Standard
	Tl	205	90.0	11.1	**0.0118**	0.001	10.5	ug/L	2	Standard
	Pb	206	533.7	2.0	**0.0208**	0.002	10.5	ug/L	240	Standard
	Pb	207	414.7	3.2	**0.0105**	0.002	21.4	ug/L	198	Standard
	Pb	208	1800.4	3.2	**0.0144**	0.003	21.4	ug/L	883	Standard
	U	238	18.7	20.3	**-0.0019**	0.001	26.8	ug/L	3	Standard
>	**Bi**	209	568876.5	0.5				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	11507.7	5.3	**13.3841**	0.868	6.5	mg/L	37	Standard
K	39	2163.5	5.0	**4.2129**	0.203	4.8	mg/L	38	Standard
Ca	43	273.3	20.1	**13.1286**	3.349	25.5	mg/L	10	Standard
Fe	54	17120.6	2.5	**12.9991**	0.385	3.0	mg/L	179	Standard
Fe	57	4470.7	3.8	**12.6745**	0.387	3.1	mg/L	335	Standard
Sc-1	45	67439.8	1.2				mg/L	61029	Standard
Cl	35	28777.3	2.0				ug/L	20195	Standard
Kr	83	1.7	91.7				ug/L	4	Standard
Br	81	2086.8	10.9				ug/L	1547	Standard
P	31	20233.5	1.2				ug/L	15286	Standard
S	34	2398.5	7.6				ug/L	1572	Standard
Sr	88	63.3	35.6				ug/L	73	Standard
C	12	173.3	8.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	80.0	69.6				mg/L	3	Standard
Dy	164	11.6	52.9				mg/L	6	Standard
Ho-1	165	23.3	61.9				mg/L	10	Standard
Er	166	36.7	56.8				mg/L	13	Standard
I	127	2830.3	21.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27	0.993		
Sc	45			
Ti	47	118.671		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		109.960	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 4
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Rb	85			
Y	89			
Rh	103			
Mo	98	102.535		
Ag	107			
Cd	111			
Cd	114			
In	115			110.029
Sn	118			
Sb	123			
Ba	135			
Ce	140			
Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
Bi	209			108.567
Na	23	0.040		
Mg	24	267.683		
K	39	84.259		
Ca	43	87.524		
Fe	54	103.992		
Fe	57	101.396		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	

Sample ID: QC Std 4
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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Wednesday, June 29, 2016 17:53:31
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88668.7	1.6				ug/L	74699	Standard
	Be	9	115505.6	3.3	**110.5278**	2.817	2.5	ug/L	8	Standard
	Al	27	8938177.8	2.5	**51.2202**	0.471	0.9	ug/L	1493	Standard
	Sc	45	65087.9	3.1				ug/L	61029	Standard
	Ti	47	50197.4	1.2	**122.5394**	1.491	1.2	ug/L	35	Standard
	V	51	859522.7	1.3	**105.1949**	1.380	1.3	ug/L	1435	Standard
	Cr	52	831098.2	2.0	**102.8267**	1.943	1.9	ug/L	7635	Standard
	Cr	53	106911.0	2.3	**106.7884**	2.096	2.0	ug/L	363	Standard
	Mn	55	780341.4	1.6	**103.6433**	1.453	1.4	ug/L	747	Standard
	Co	59	785536.0	0.5	**110.1234**	0.547	0.5	ug/L	234	Standard
	Ni	60	203753.2	2.0	**100.6522**	1.808	1.8	ug/L	215	Standard
	Cu	65	201732.1	0.8	**100.2703**	0.833	0.8	ug/L	104	Standard
	Zn	66	122540.9	0.7	**103.4323**	0.376	0.4	ug/L	363	Standard
>	**Ge**	72	534677.6	0.4				ug/L	495142	Standard
	As	75	124456.8	0.2	**102.9556**	0.389	0.4	ug/L	-50	Standard
	Se	82	12596.7	0.4	**106.1488**	0.433	0.4	ug/L	14	Standard
	Se-1	77	8794.6	0.8	**110.8893**	1.382	1.2	ug/L	42	Standard
>	**Ga**	71	163.3	10.8				mg/L	42	Standard
	Rb	85	966.7	4.8				ug/L	17	Standard
	Y	89	476525.6	1.7				ug/L	417098	Standard
>	**Rh**	103	56.7	53.9				ug/L	13	Standard
	Mo	98	309227.9	0.6	**104.8818**	1.132	1.1	ug/L	11	Standard
	Ag	107	592523.9	2.1	**82.1821**	1.932	2.4	ug/L	68	Standard
	Cd	111	228625.7	1.0	**98.8467**	0.904	0.9	mg/L	2	Standard
	Cd	114	551600.1	1.5	**97.2335**	1.523	1.6	ug/L	12	Standard
>	**In**	115	649797.8	0.6				ug/L	587441	Standard
	Sn	118	1576.7	4.2	**0.1493**	0.011	7.5	ug/L	497	Standard
	Sb	123	495027.3	1.9	**95.8585**	2.358	2.5	ug/L	78	Standard
	Ba	135	210763.3	1.3	**93.0830**	1.687	1.8	ug/L	24	Standard
	Ce	140	70.0	24.7				ug/L	25	Standard
>	**Tb**	159	1005734.4	0.5				ug/L	939701	Standard
	Ho	165	11.7	49.5				ug/L	10	Standard
	Tl	203	893894.1	1.2	**101.2389**	0.317	0.3	ug/L	4	Standard
	Tl	205	815034.2	0.6	**106.3608**	0.654	0.6	ug/L	2	Standard
	Pb	206	583528.7	0.9	**101.9143**	0.243	0.2	ug/L	240	Standard
	Pb	207	499626.1	1.2	**98.2110**	0.372	0.4	ug/L	198	Standard
	Pb	208	2105185.2	0.8	**104.7451**	0.431	0.4	ug/L	883	Standard
	U	238	779429.7	1.7	**105.7078**	0.634	0.6	ug/L	3	Standard
>	**Bi**	209	561247.5	1.2				ug/L	523984	Standard

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Na	23	1.7	173.2	**18.1880**	31.494	173.2	mg/L	0	Standard
Mg	24	12009.8	3.1	**14.4710**	0.020	0.1	mg/L	37	Standard
K	39	2150.2	4.2	**4.3456**	0.256	5.9	mg/L	38	Standard
Ca	43	251.7	12.1	**12.4083**	2.087	16.8	mg/L	10	Standard
Fe	54	17836.2	2.6	**14.0504**	0.592	4.2	mg/L	179	Standard
Fe	57	4537.3	4.4	**13.3981**	0.845	6.3	mg/L	335	Standard
Sc-1	45	65087.9	3.1				mg/L	61029	Standard
Cl	35	27559.7	2.9				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	1986.8	4.8				ug/L	1547	Standard
P	31	19052.0	2.9				ug/L	15286	Standard
S	34	2286.8	6.3				ug/L	1572	Standard
Sr	88	50.0	10.0				ug/L	73	Standard
C	12	120.0	54.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	3	Standard
Dy	164	6.0	200.7				mg/L	6	Standard
Ho-1	165	11.7	49.5				mg/L	10	Standard
Er	166	13.3	86.6				mg/L	13	Standard
I	127	2065.1	25.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	110.528		
Al	27	1.024		
Sc	45			
Ti	47	122.539		
V	51	105.195		
Cr	52	102.827		
Cr	53			
Mn	55	103.643		
Co	59	110.123		
Ni	60	100.652		
Cu	65	100.270		
Zn	66	103.432		
Ge	72		107.985	
As	75	102.956		
Se	82	106.149		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	104.882		
Ag	107	82.182		
Cd	111	98.847		
Cd	114			
> In	115		110.615	
Sn	118			
Sb	123	95.858		
Ba	135	93.083		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.239		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.745		
U	238	105.708		
> Bi	209		107.111	
Na	23	145.504		
Mg	24	289.419		
K	39	86.911		
Ca	43	82.722		
Fe	54	112.403		
Fe	57	107.185		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Ti	47	
QC Std 5	Na	23	

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QC Std 5	Mg	24

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 17:56:44
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88001.7	3.8				ug/L	74699	Standard
	Be	9	58491.1	3.4	**56.4121**	0.807	1.4	ug/L	8	Standard
	Al	27	8741223.1	1.9	**50.5126**	1.685	3.3	ug/L	1493	Standard
	Sc	45	66566.0	2.9				ug/L	61029	Standard
	Ti	47	44065.3	0.6	**105.8464**	2.393	2.3	ug/L	35	Standard
	V	51	439728.9	0.9	**52.8674**	1.388	2.6	ug/L	1435	Standard
	Cr	52	434693.1	0.1	**52.4281**	0.919	1.8	ug/L	7635	Standard
	Cr	53	53735.1	1.4	**52.6541**	1.206	2.3	ug/L	363	Standard
	Mn	55	394255.2	1.0	**51.4522**	0.719	1.4	ug/L	747	Standard
	Co	59	403494.7	0.9	**55.6456**	1.136	2.0	ug/L	234	Standard
	Ni	60	106493.3	0.2	**51.7076**	0.770	1.5	ug/L	215	Standard
	Cu	65	105229.8	0.3	**51.4208**	1.011	2.0	ug/L	104	Standard
	Zn	66	61955.4	1.5	**51.2322**	1.156	2.3	ug/L	363	Standard
>	**Ge**	72	543443.2	1.7				ug/L	495142	Standard
	As	75	62757.8	1.3	**51.1208**	1.290	2.5	ug/L	-50	Standard
	Se	82	6411.0	0.6	**53.0945**	1.065	2.0	ug/L	14	Standard
	Se-1	77	4401.6	1.7	**54.2995**	1.443	2.7	ug/L	42	Standard
>	**Ga**	71	61.7	12.4				mg/L	42	Standard
	Rb	85	943.4	4.4				ug/L	17	Standard
	Y	89	472814.1	2.0				ug/L	417098	Standard
>	**Rh**	103	31.7	36.5				ug/L	13	Standard
	Mo	98	301859.8	0.5	**101.5547**	1.508	1.5	ug/L	11	Standard
	Ag	107	366041.5	1.2	**50.3642**	1.561	3.1	ug/L	68	Standard
	Cd	111	117544.4	1.3	**50.4048**	0.748	1.5	mg/L	2	Standard
	Cd	114	286950.2	2.0	**50.1688**	0.955	1.9	ug/L	12	Standard
>	**In**	115	655193.6	1.9				ug/L	587441	Standard
	Sn	118	333959.0	1.2	**51.1818**	1.510	3.0	ug/L	497	Standard
	Sb	123	261510.0	1.1	**50.2357**	1.515	3.0	ug/L	78	Standard
	Ba	135	110572.3	0.3	**48.4318**	0.852	1.8	ug/L	24	Standard
	Ce	140	81.7	46.0				ug/L	25	Standard
>	**Tb**	159	1009652.9	1.9				ug/L	939701	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	466012.5	0.6	**52.5145**	1.216	2.3	ug/L	4	Standard
	Tl	205	428260.1	0.9	**55.6109**	1.642	3.0	ug/L	2	Standard
	Pb	206	294247.5	0.8	**51.0977**	1.194	2.3	ug/L	240	Standard
	Pb	207	260542.8	0.7	**50.9223**	1.007	2.0	ug/L	198	Standard
	Pb	208	1081629.9	0.8	**53.5152**	1.532	2.9	ug/L	883	Standard
	U	238	403586.7	0.9	**54.4635**	1.402	2.6	ug/L	3	Standard
>	**Bi**	209	564239.9	2.1				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4549.0	2.0	**5.3196**	0.066	1.2	mg/L	37	Standard
K	39	2091.8	2.6	**4.1250**	0.021	0.5	mg/L	38	Standard
Ca	43	106.7	9.8	**3.6589**	0.645	17.6	mg/L	10	Standard
Fe	54	6853.2	4.1	**5.1952**	0.357	6.9	mg/L	179	Standard
Fe	57	1901.8	4.2	**4.8507**	0.081	1.7	mg/L	335	Standard
> **Sc-1**	45	66566.0	2.9				mg/L	61029	Standard
Cl	35	28481.4	2.6				ug/L	20195	Standard
Kr	83	3.3	75.5				ug/L	4	Standard
Br	81	1840.1	18.3				ug/L	1547	Standard
P	31	20427.1	5.4				ug/L	15286	Standard
S	34	2438.5	6.3				ug/L	1572	Standard
Sr	88	80.0	32.5				ug/L	73	Standard
C	12	76.7	7.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	3	Standard
Dy	164	6.5	86.7				mg/L	6	Standard
Ho-1	165	8.3	34.6				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	2150.2	26.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	112.824		
Al	27	101.025		
Sc	45			
Ti	47	105.846		
V	51	105.735		
Cr	52	104.856		
Cr	53			
Mn	55	102.904		
Co	59	111.291		
Ni	60	103.415		
Cu	65	102.842		
Zn	66	102.464		
> Ge	72		109.755	
As	75	102.242		
Se	82	106.189		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.555		
Ag	107	100.728		
Cd	111	100.810		
Cd	114			
In	115		111.533	
Sn	118	102.364		
Sb	123	100.471		
Ba	135	96.864		
Ce	140			
Tb	159			
Ho	165			
Tl	203	105.029		
Tl	205			
Pb	206			
Pb	207			
Pb	208	107.030		
U	238	108.927		
Bi	209		107.683	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Co	59	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 17:59:55
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86353.7	1.4				ug/L	74699	Standard
	Be	9	83.3	67.4	**0.0891**	0.054	60.5	ug/L	8	Standard
	Al	27	42873.5	92.7	**0.2376**	0.231	97.1	ug/L	1493	Standard
	Sc	45	65305.4	1.2				ug/L	61029	Standard
	Ti	47	79.7	51.6	**0.0788**	0.097	123.4	ug/L	35	Standard
	V	51	1461.2	4.4	**-0.0225**	0.008	34.9	ug/L	1435	Standard
	Cr	52	7626.9	6.9	**-0.1029**	0.066	64.1	ug/L	7635	Standard
	Cr	53	760.0	14.8	**0.4057**	0.109	26.8	ug/L	363	Standard
	Mn	55	4546.9	137.2	**0.4388**	0.807	183.9	ug/L	747	Standard
	Co	59	626.0	93.3	**0.0478**	0.080	167.0	ug/L	234	Standard
	Ni	60	409.0	51.9	**0.0715**	0.102	142.7	ug/L	215	Standard
	Cu	65	272.7	44.7	**0.0274**	0.059	215.3	ug/L	104	Standard
	Zn	66	514.0	23.7	**-0.0335**	0.100	300.2	ug/L	363	Standard
>	**Ge**	72	553485.6	1.3				ug/L	495142	Standard
	As	75	-6.7	474.8	**0.0545**	0.025	45.9	ug/L	-50	Standard
	Se	82	20.4	10.3	**0.0278**	0.015	55.0	ug/L	14	Standard
	Se-1	77	66.3	4.4	**0.1906**	0.046	24.0	ug/L	42	Standard
>	**Ga**	71	50.0	10.0				mg/L	42	Standard
	Rb	85	45.0	48.4				ug/L	17	Standard
	Y	89	474090.9	1.7				ug/L	417098	Standard
>	**Rh**	103	18.3	41.7				ug/L	13	Standard
	Mo	98	533.3	54.8	**0.1739**	0.097	56.0	ug/L	11	Standard
	Ag	107	205.7	25.6	**0.0154**	0.007	45.9	ug/L	68	Standard
	Cd	111	43.3	79.3	**0.0106**	0.015	137.7	mg/L	2	Standard
	Cd	114	160.8	66.0	**0.0260**	0.018	70.8	ug/L	12	Standard
>	**In**	115	653140.9	0.6				ug/L	587441	Standard
	Sn	118	840.0	19.7	**0.0347**	0.026	74.7	ug/L	497	Standard
	Sb	123	1054.2	24.1	**0.1991**	0.050	25.2	ug/L	78	Standard
	Ba	135	82.0	54.8	**0.0199**	0.020	97.9	ug/L	24	Standard
	Ce	140	78.3	62.0				ug/L	25	Standard
>	**Tb**	159	1021325.7	0.5				ug/L	939701	Standard
	Ho	165	20.0	66.1				ug/L	10	Standard
	Tl	203	163.0	50.8	**0.0163**	0.009	56.1	ug/L	4	Standard
	Tl	205	543.4	156.5	**0.0696**	0.109	156.0	ug/L	2	Standard
	Pb	206	336.7	16.7	**-0.0136**	0.010	70.5	ug/L	240	Standard
	Pb	207	309.7	12.8	**-0.0104**	0.008	73.2	ug/L	198	Standard
	Pb	208	2162.1	83.2	**0.0313**	0.088	280.1	ug/L	883	Standard
	U	238	524.4	153.4	**0.0652**	0.107	163.8	ug/L	3	Standard
>	**Bi**	209	573163.8	0.1				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.8448**	30.899	173.2	mg/L	0	Standard
Mg	24	123.3	127.6	**0.0829**	0.188	227.1	mg/L	37	Standard
K	39	30.0	66.7	**-0.0524**	0.041	77.8	mg/L	38	Standard
Ca	43	21.7	35.3	**-1.2409**	0.467	37.7	mg/L	10	Standard
Fe	54	185.6	27.6	**0.0086**	0.039	460.9	mg/L	179	Standard
Fe	57	268.3	10.3	**-0.2224**	0.079	35.7	mg/L	335	Standard
> **Sc-1**	45	65305.4	1.2				mg/L	61029	Standard
Cl	35	28806.0	1.7				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	1900.1	3.3				ug/L	1547	Standard
P	31	20240.2	2.7				ug/L	15286	Standard
S	34	2435.2	7.1				ug/L	1572	Standard
Sr	88	65.0	20.4				ug/L	73	Standard
C	12	60.0					mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	25.5	84.0				mg/L	6	Standard
Ho-1	165	20.0	66.1				mg/L	10	Standard
Er	166	23.3	65.5				mg/L	13	Standard
I	127	1926.8	28.8				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		111.783	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.184
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.386
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Mn	55	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Wednesday, June 29, 2016 18:03:08
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84590.6	2.3				ug/L	74699	Standard
	Be	9	260.0	12.0	**0.2687**	0.034	12.7	ug/L	8	Standard
	Al	27	3603.8	43.5	**0.0082**	0.009	110.1	ug/L	1493	Standard
	Sc	45	65034.3	0.9				ug/L	61029	Standard
	Ti	47	43.7	32.9	**-0.0008**	0.035	4199.9	ug/L	35	Standard
	V	51	4694.6	2.2	**0.3894**	0.008	2.0	ug/L	1435	Standard
	Cr	52	14076.2	0.6	**0.7639**	0.008	1.0	ug/L	7635	Standard
	Cr	53	1435.1	6.7	**1.1315**	0.098	8.6	ug/L	363	Standard
	Mn	55	4379.0	3.5	**0.4438**	0.017	3.9	ug/L	747	Standard
	Co	59	3208.0	4.2	**0.4198**	0.015	3.5	ug/L	234	Standard
	Ni	60	3464.1	1.9	**1.6175**	0.036	2.2	ug/L	215	Standard
	Cu	65	1802.1	7.0	**0.8073**	0.055	6.8	ug/L	104	Standard
	Zn	66	8137.9	1.9	**6.5566**	0.074	1.1	ug/L	363	Standard
>	**Ge**	72	526101.8	0.9				ug/L	495142	Standard
	As	75	520.8	10.5	**0.4970**	0.042	8.4	ug/L	-50	Standard
	Se	82	68.5	3.0	**0.4490**	0.013	3.0	ug/L	14	Standard
	Se-1	77	97.0	14.4	**0.6266**	0.169	26.9	ug/L	42	Standard
>	**Ga**	71	35.0	42.9				mg/L	42	Standard
	Rb	85	53.3	5.4				ug/L	17	Standard
	Y	89	462050.3	3.1				ug/L	417098	Standard
>	**Rh**	103	11.7	24.7				ug/L	13	Standard
	Mo	98	178.6	39.2	**0.0548**	0.024	44.0	ug/L	11	Standard
	Ag	107	2989.6	2.3	**0.4006**	0.011	2.7	ug/L	68	Standard
	Cd	111	543.3	9.6	**0.2264**	0.024	10.6	mg/L	2	Standard
	Cd	114	1493.6	11.4	**0.2605**	0.031	12.1	ug/L	12	Standard
>	**In**	115	651766.1	0.6				ug/L	587441	Standard
	Sn	118	551.7	10.5	**-0.0096**	0.009	97.6	ug/L	497	Standard
	Sb	123	2328.3	1.4	**0.4453**	0.009	1.9	ug/L	78	Standard
	Ba	135	1600.4	3.6	**0.6889**	0.030	4.3	ug/L	24	Standard
	Ce	140	6.7	86.6				ug/L	25	Standard
>	**Tb**	159	1010895.5	0.8				ug/L	939701	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	860.7	17.5	**0.0936**	0.016	16.7	ug/L	4	Standard
	Tl	205	718.4	10.6	**0.0918**	0.008	8.5	ug/L	2	Standard
	Pb	206	1533.1	9.5	**0.1909**	0.020	10.6	ug/L	240	Standard
	Pb	207	1247.1	5.1	**0.1700**	0.007	4.3	ug/L	198	Standard
	Pb	208	5357.0	3.3	**0.1870**	0.005	2.6	ug/L	883	Standard
	U	238	3040.0	2.0	**0.3994**	0.014	3.4	ug/L	3	Standard
>	**Bi**	209	573346.3	2.5				ug/L	523984	Standard

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Na	23	1.7	173.2	**18.2178**	31.546	173.2	mg/L	0	Standard
Mg	24	50.0	50.0	**-0.0044**	0.031	706.6	mg/L	37	Standard
K	39	35.0	24.7	**-0.0415**	0.018	44.0	mg/L	38	Standard
Ca	43	26.7	43.3	**-0.9446**	0.676	71.5	mg/L	10	Standard
Fe	54	105.0	32.5	**-0.0546**	0.028	51.3	mg/L	179	Standard
Fe	57	230.0	24.7	**-0.3395**	0.189	55.5	mg/L	335	Standard
Sc-1	45	65034.3	0.9				mg/L	61029	Standard
Cl	35	27747.4	0.7				ug/L	20195	Standard
Kr	83	1.0	0.0				ug/L	4	Standard
Br	81	1776.8	9.7				ug/L	1547	Standard
P	31	14345.1	1.0				ug/L	15286	Standard
S	34	2316.8	2.0				ug/L	1572	Standard
Sr	88	78.3	41.5				ug/L	73	Standard
C	12	70.0	28.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	6.0	100.4				mg/L	6	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	1788.4	30.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	134.333		
Al	27			
Sc	45			
Ti	47			
V	51	97.347		
Cr	52	95.485		
Cr	53			
Mn	55	88.762		
Co	59	104.961		
Ni	60	101.093		
Cu	65	100.908		
Zn	66	104.906		
Ge	72		106.253	
As	75	124.241		
Se	82	112.254		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	100.142		
Cd	111	94.325		
Cd	114			
> In	115			110.950
Sn	118			
Sb	123	111.327		
Ba	135	91.848		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	116.967		
Tl	205			
Pb	206			
Pb	207			
Pb	208	93.500		
U	238	99.844		
> Bi	209			109.420
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 8	Be	9	

Sample ID: QC Std 8
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Method 6020 - Summary Report

Sample ID: PBS M9 WG574192-02
Sample Date/Time: Wednesday, June 29, 2016 18:06:21
Number of Replicates: 3
Autosampler Position: 237
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84464.8	1.8				ug/L	74699	Standard
	Be	9	13.3	94.4	**0.0212**	0.013	60.4	ug/L	8	Standard
	Al	27	11484.4	1.6	**0.0557**	0.001	1.2	ug/L	1493	Standard
	Sc	45	65588.4	2.6				ug/L	61029	Standard
	Ti	47	51.3	20.8	**0.0150**	0.026	174.5	ug/L	35	Standard
	V	51	1499.5	1.3	**-0.0137**	0.003	18.5	ug/L	1435	Standard
	Cr	52	8909.3	1.2	**0.0773**	0.005	6.6	ug/L	7635	Standard
	Cr	53	853.4	5.0	**0.5155**	0.034	6.6	ug/L	363	Standard
	Mn	55	1324.4	4.8	**0.0262**	0.011	41.6	ug/L	747	Standard
	Co	59	237.0	9.4	**-0.0044**	0.004	80.7	ug/L	234	Standard
	Ni	60	317.3	8.0	**0.0315**	0.014	46.0	ug/L	215	Standard
	Cu	65	277.0	2.0	**0.0327**	0.005	14.4	ug/L	104	Standard
	Zn	66	2117.5	3.0	**1.3211**	0.055	4.2	ug/L	363	Standard
>	**Ge**	72	540634.9	1.6				ug/L	495142	Standard
	As	75	-19.3	191.5	**0.0441**	0.030	68.3	ug/L	-50	Standard
	Se	82	22.9	30.4	**0.0532**	0.060	113.4	ug/L	14	Standard
	Se-1	77	66.3	3.1	**0.2096**	0.028	13.1	ug/L	42	Standard
>	**Ga**	71	40.0	45.1				mg/L	42	Standard
	Rb	85	45.0	40.1				ug/L	17	Standard
	Y	89	495113.6	1.2				ug/L	417098	Standard
>	**Rh**	103	20.0	50.0				ug/L	13	Standard
	Mo	98	103.4	4.5	**0.0285**	0.002	7.3	ug/L	11	Standard
	Ag	107	105.3	22.1	**0.0013**	0.003	227.8	ug/L	68	Standard
	Cd	111	14.8	35.7	**-0.0017**	0.002	127.2	mg/L	2	Standard
	Cd	114	30.3	51.7	**0.0031**	0.003	86.4	ug/L	12	Standard
>	**In**	115	666604.9	1.7				ug/L	587441	Standard
	Sn	118	860.0	2.1	**0.0351**	0.004	11.7	ug/L	497	Standard
	Sb	123	400.3	27.4	**0.0716**	0.022	30.7	ug/L	78	Standard
	Ba	135	277.0	2.3	**0.1032**	0.001	0.8	ug/L	24	Standard
	Ce	140	75.0	20.0				ug/L	25	Standard
>	**Tb**	159	1002064.8	2.5				ug/L	939701	Standard
	Ho	165	13.3	21.7				ug/L	10	Standard
	Tl	203	23.7	14.8	**0.0009**	0.000	40.1	ug/L	4	Standard
	Tl	205	18.3	56.8	**0.0026**	0.001	51.0	ug/L	2	Standard
	Pb	206	383.3	7.2	**-0.0041**	0.004	93.5	ug/L	240	Standard
	Pb	207	304.7	4.5	**-0.0100**	0.002	23.2	ug/L	198	Standard
	Pb	208	1385.4	1.0	**-0.0050**	0.001	21.8	ug/L	883	Standard
	U	238	16.0	18.8	**-0.0023**	0.000	16.8	ug/L	3	Standard
>	**Bi**	209	560531.0	1.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	51.7	11.2	**-0.0029**	0.008	286.8	mg/L	37	Standard
K	39	28.3	27.0	**-0.0560**	0.015	26.7	mg/L	38	Standard
Ca	43	25.0	34.6	**-1.0611**	0.483	45.5	mg/L	10	Standard
Fe	54	209.4	8.6	**0.0268**	0.012	44.3	mg/L	179	Standard
Fe	57	206.7	9.2	**-0.4211**	0.048	11.4	mg/L	335	Standard
> **Sc-1**	45	65588.4	2.6				mg/L	61029	Standard
Cl	35	29295.6	1.0				ug/L	20195	Standard
Kr	83	1.7	91.7				ug/L	4	Standard
Br	81	3250.3	3.7				ug/L	1547	Standard
P	31	19926.4	1.7				ug/L	15286	Standard
S	34	2431.9	7.4				ug/L	1572	Standard
Sr	88	63.3	32.9				ug/L	73	Standard
C	12	60.0	16.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	23.2	64.8				mg/L	6	Standard
Ho-1	165	13.3	21.7				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	1665.1	25.5				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		113.074	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		109.188	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.476
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.975
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSS M9 WG574192-03
Sample Date/Time: Wednesday, June 29, 2016 18:09:32
Number of Replicates: 3
Autosampler Position: 238
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83350.4	2.2				ug/L	74699	Standard
	Be	9	28323.1	1.8	**28.8492**	0.865	3.0	ug/L	8	Standard
	Al	27	10196.8	1.6	**0.0488**	0.002	4.6	ug/L	1493	Standard
	Sc	45	65183.2	0.6				ug/L	61029	Standard
	Ti	47	95.7	13.6	**0.1113**	0.027	24.3	ug/L	35	Standard
	V	51	224256.1	0.6	**25.7588**	0.522	2.0	ug/L	1435	Standard
	Cr	52	224696.6	1.0	**25.4792**	0.636	2.5	ug/L	7635	Standard
	Cr	53	27321.3	1.7	**25.5112**	0.743	2.9	ug/L	363	Standard
	Mn	55	202745.7	1.5	**25.3082**	0.750	3.0	ug/L	747	Standard
	Co	59	203564.8	2.3	**26.9126**	1.011	3.8	ug/L	234	Standard
	Ni	60	54379.7	0.7	**25.2634**	0.489	1.9	ug/L	215	Standard
	Cu	65	53975.6	1.0	**25.2465**	0.617	2.4	ug/L	104	Standard
	Zn	66	33582.8	1.1	**26.4199**	0.666	2.5	ug/L	363	Standard
>	**Ge**	72	566570.7	1.5				ug/L	495142	Standard
	As	75	31915.6	1.0	**24.9643**	0.450	1.8	ug/L	-50	Standard
	Se	82	3210.1	2.6	**25.4315**	0.960	3.8	ug/L	14	Standard
	Se-1	77	2232.8	4.1	**26.1060**	1.397	5.4	ug/L	42	Standard
>	**Ga**	71	91.7	13.7				mg/L	42	Standard
	Rb	85	96.7	31.2				ug/L	17	Standard
	Y	89	463441.3	2.1				ug/L	417098	Standard
>	**Rh**	103	25.0	40.0				ug/L	13	Standard
	Mo	98	76.3	5.4	**0.0207**	0.001	6.1	ug/L	11	Standard
	Ag	107	186996.6	1.0	**26.4732**	0.339	1.3	ug/L	68	Standard
	Cd	111	58916.9	1.6	**26.0048**	0.541	2.1	mg/L	2	Standard
	Cd	114	141808.0	1.8	**25.5238**	0.616	2.4	ug/L	12	Standard
>	**In**	115	636399.6	0.6				ug/L	587441	Standard
	Sn	118	665.0	9.8	**0.0103**	0.010	94.1	ug/L	497	Standard
	Sb	123	127977.1	1.2	**25.3000**	0.453	1.8	ug/L	78	Standard
	Ba	135	55490.8	0.9	**25.0111**	0.350	1.4	ug/L	24	Standard
	Ce	140	61.7	36.6				ug/L	25	Standard
>	**Tb**	159	977939.2	1.1				ug/L	939701	Standard
	Ho	165	5.0	100.0				ug/L	10	Standard
	Tl	203	232757.9	0.8	**26.2994**	0.658	2.5	ug/L	4	Standard
	Tl	205	213539.2	0.1	**27.8001**	0.582	2.1	ug/L	2	Standard
	Pb	206	150898.4	0.7	**26.2407**	0.649	2.5	ug/L	240	Standard
	Pb	207	129115.2	1.2	**25.2720**	0.800	3.2	ug/L	198	Standard
	Pb	208	547777.7	0.6	**27.1359**	0.615	2.3	ug/L	883	Standard
	U	238	197609.3	0.3	**26.7341**	0.481	1.8	ug/L	3	Standard
>	**Bi**	209	562718.9	2.0				ug/L	523984	Standard

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Na	23	3.3	86.6	**35.9815**	31.158	86.6	mg/L	0	Standard
Mg	24	53.3	23.6	**-0.0007**	0.015	2138.9	mg/L	37	Standard
K	39	36.7	90.8	**-0.0380**	0.070	183.0	mg/L	38	Standard
Ca	43	26.7	28.6	**-0.9444**	0.462	48.9	mg/L	10	Standard
Fe	54	149.2	16.7	**-0.0198**	0.020	102.0	mg/L	179	Standard
Fe	57	258.3	10.7	**-0.2518**	0.092	36.6	mg/L	335	Standard
> **Sc-1**	45	65183.2	0.6				mg/L	61029	Standard
Cl	35	28068.6	2.1				ug/L	20195	Standard
Kr	83	2.0	0.0				ug/L	4	Standard
Br	81	1853.4	3.5				ug/L	1547	Standard
P	31	20221.8	1.7				ug/L	15286	Standard
S	34	2256.8	4.8				ug/L	1572	Standard
Sr	88	75.0	24.0				ug/L	73	Standard
C	12	113.3	53.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	2.9	203.0				mg/L	6	Standard
Ho-1	165	5.0	100.0				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	1621.8	26.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.582	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.426	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.334
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.392
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606120601 WG574192-01
Sample Date/Time: Wednesday, June 29, 2016 18:12:44
Number of Replicates: 3
Autosampler Position: 239
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89463.4	1.2				ug/L	74699	Standard
	Be	9	386.7	13.6	**0.3740**	0.046	12.2	ug/L	8	Standard
	Al	27	7605562.2	1.6	**43.1976**	0.340	0.8	ug/L	1493	Standard
	Sc	45	72243.5	1.6				ug/L	61029	Standard
	Ti	47	9362.6	0.8	**21.8169**	0.679	3.1	ug/L	35	Standard
	V	51	123334.5	1.4	**14.2946**	0.165	1.2	ug/L	1435	Standard
	Cr	52	107034.1	1.6	**11.7966**	0.478	4.1	ug/L	7635	Standard
	Cr	53	12683.6	2.9	**11.8556**	0.642	5.4	ug/L	363	Standard
	Mn	55	2726083.5	2.1	**347.2409**	2.026	0.6	ug/L	747	Standard
	Co	59	29531.4	3.0	**3.9299**	0.043	1.1	ug/L	234	Standard
	Ni	60	23196.4	0.4	**10.8725**	0.312	2.9	ug/L	215	Standard
	Cu	65	77156.3	0.7	**36.6848**	0.692	1.9	ug/L	104	Standard
	Zn	66	748003.6	1.6	**607.1548**	7.539	1.2	ug/L	363	Standard
>	**Ge**	72	558122.4	2.5				ug/L	495142	Standard
	As	75	3312.8	2.4	**2.6835**	0.016	0.6	ug/L	-50	Standard
	Se	82	112.5	6.7	**0.7726**	0.083	10.8	ug/L	14	Standard
	Se-1	77	130.7	4.7	**0.9656**	0.087	9.0	ug/L	42	Standard
>	**Ga**	71	7793.7	3.0				mg/L	42	Standard
	Rb	85	97459.1	1.1				ug/L	17	Standard
	Y	89	585281.5	2.1				ug/L	417098	Standard
>	**Rh**	103	56.7	13.5				ug/L	13	Standard
	Mo	98	1826.8	4.5	**0.5887**	0.034	5.8	ug/L	11	Standard
	Ag	107	1189.0	7.2	**0.1453**	0.012	8.4	ug/L	68	Standard
	Cd	111	5739.0	1.3	**2.3714**	0.004	0.2	mg/L	2	Standard
	Cd	114	13674.5	3.2	**2.3090**	0.056	2.4	ug/L	12	Standard
>	**In**	115	677670.9	1.2				ug/L	587441	Standard
	Sn	118	2238.5	6.9	**0.2377**	0.027	11.3	ug/L	497	Standard
	Sb	123	1060.8	22.9	**0.1924**	0.043	22.3	ug/L	78	Standard
	Ba	135	275486.3	0.7	**116.6679**	1.279	1.1	ug/L	24	Standard
	Ce	140	521396.3	0.5				ug/L	25	Standard
>	**Tb**	159	1067665.8	1.0				ug/L	939701	Standard
	Ho	165	8012.1	4.7				ug/L	10	Standard
	Tl	203	658.7	5.9	**0.0698**	0.004	5.8	ug/L	4	Standard
	Tl	205	588.3	7.1	**0.0738**	0.005	7.2	ug/L	2	Standard
	Pb	206	280687.1	0.1	**46.9821**	0.294	0.6	ug/L	240	Standard
	Pb	207	217657.6	0.6	**40.9978**	0.453	1.1	ug/L	198	Standard
	Pb	208	937818.9	1.0	**44.7144**	0.652	1.5	ug/L	883	Standard
	U	238	5450.3	0.5	**0.7046**	0.003	0.4	ug/L	3	Standard
>	**Bi**	209	585148.7	0.6				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	733.4	5.7	**0.7343**	0.035	4.8	mg/L	37	Standard
K	39	401.7	1.9	**0.6360**	0.019	3.0	mg/L	38	Standard
Ca	43	643.3	17.5	**31.7962**	5.845	18.4	mg/L	10	Standard
Fe	54	8818.1	2.4	**6.1777**	0.130	2.1	mg/L	179	Standard
Fe	57	2673.6	4.7	**6.5999**	0.243	3.7	mg/L	335	Standard
> **Sc-1**	45	72243.5	1.6				mg/L	61029	Standard
Cl	35	29798.6	1.4				ug/L	20195	Standard
Kr	83	0.7	86.6				ug/L	4	Standard
Br	81	3707.1	5.8				ug/L	1547	Standard
P	31	20168.4	2.0				ug/L	15286	Standard
S	34	2373.5	6.9				ug/L	1572	Standard
Sr	88	256.7	13.8				ug/L	73	Standard
C	12	350.0	7.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	130.0	53.3				mg/L	3	Standard
Dy	164	13278.3	0.5				mg/L	6	Standard
Ho-1	165	8012.1	4.7				mg/L	10	Standard
Er	166	7608.6	3.8				mg/L	13	Standard
I	127	89948.0	2.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.765	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		112.720	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		115.360
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		111.673
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606120602
Sample Date/Time: Wednesday, June 29, 2016 18:15:55
Number of Replicates: 3
Autosampler Position: 240
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88784.4	1.1				ug/L	74699	Standard
	Be	9	281.7	5.7	**0.2767**	0.013	4.7	ug/L	8	Standard
	Al	27	7005404.7	2.4	**40.0898**	0.625	1.6	ug/L	1493	Standard
	Sc	45	70594.2	3.3				ug/L	61029	Standard
	Ti	47	10155.7	1.6	**24.3492**	0.468	1.9	ug/L	35	Standard
	V	51	153110.0	0.2	**18.3086**	0.101	0.6	ug/L	1435	Standard
	Cr	52	102957.6	0.7	**11.6568**	0.092	0.8	ug/L	7635	Standard
	Cr	53	11732.9	3.0	**11.2567**	0.305	2.7	ug/L	363	Standard
	Mn	55	2052735.8	1.1	**268.9604**	2.146	0.8	ug/L	747	Standard
	Co	59	33492.3	1.4	**4.5921**	0.057	1.2	ug/L	234	Standard
	Ni	60	26642.1	0.7	**12.8642**	0.053	0.4	ug/L	215	Standard
	Cu	65	40463.3	0.7	**19.7403**	0.183	0.9	ug/L	104	Standard
	Zn	66	608360.3	0.1	**507.8962**	1.599	0.3	ug/L	363	Standard
>	**Ge**	72	542468.6	0.4				ug/L	495142	Standard
	As	75	4231.0	2.7	**3.5076**	0.102	2.9	ug/L	-50	Standard
	Se	82	256.2	4.5	**1.9932**	0.099	5.0	ug/L	14	Standard
	Se-1	77	208.7	7.7	**1.9860**	0.210	10.6	ug/L	42	Standard
>	**Ga**	71	5872.8	1.9				mg/L	42	Standard
	Rb	85	68412.5	1.5				ug/L	17	Standard
	Y	89	570393.2	0.3				ug/L	417098	Standard
>	**Rh**	103	206.7	25.4				ug/L	13	Standard
	Mo	98	11374.8	0.4	**3.8637**	0.075	1.9	ug/L	11	Standard
	Ag	107	1353.7	2.3	**0.1754**	0.001	0.8	ug/L	68	Standard
	Cd	111	5491.2	1.2	**2.3732**	0.046	1.9	mg/L	2	Standard
	Cd	114	13400.9	1.9	**2.3668**	0.045	1.9	ug/L	12	Standard
>	**In**	115	648040.3	1.6				ug/L	587441	Standard
	Sn	118	1990.1	9.0	**0.2145**	0.033	15.4	ug/L	497	Standard
	Sb	123	589.0	13.2	**0.1100**	0.013	12.1	ug/L	78	Standard
	Ba	135	226861.9	1.0	**100.4795**	2.067	2.1	ug/L	24	Standard
	Ce	140	495305.9	0.7				ug/L	25	Standard
>	**Tb**	159	1028084.3	0.7				ug/L	939701	Standard
	Ho	165	7586.9	1.7				ug/L	10	Standard
	Tl	203	574.7	1.8	**0.0640**	0.002	2.9	ug/L	4	Standard
	Tl	205	501.7	7.3	**0.0663**	0.004	6.1	ug/L	2	Standard
	Pb	206	2490204.6	1.0	**439.6443**	9.561	2.2	ug/L	240	Standard
	Pb	207	1941338.7	1.0	**385.7578**	8.533	2.2	ug/L	198	Standard
	Pb	208	8788859.7	0.3	**442.0013**	4.418	1.0	ug/L	883	Standard
	U	238	27264.2	0.8	**3.7315**	0.055	1.5	ug/L	3	Standard
>	**Bi**	209	555601.8	1.3				ug/L	523984	Standard

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Na	23	15.0	66.7	**151.5495**	103.438	68.3	mg/L	0	Standard
Mg	24	875.0	7.4	**0.9112**	0.062	6.8	mg/L	37	Standard
K	39	308.3	17.3	**0.4774**	0.118	24.7	mg/L	38	Standard
Ca	43	2528.5	1.9	**135.7080**	7.063	5.2	mg/L	10	Standard
Fe	54	8423.7	4.4	**6.0457**	0.457	7.6	mg/L	179	Standard
Fe	57	3312.0	6.3	**8.6682**	0.763	8.8	mg/L	335	Standard
> **Sc-1**	45	70594.2	3.3				mg/L	61029	Standard
Cl	35	33743.5	0.4				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	4283.9	2.2				ug/L	1547	Standard
P	31	21890.8	1.3				ug/L	15286	Standard
S	34	2663.6	6.3				ug/L	1572	Standard
Sr	88	533.3	8.7				ug/L	73	Standard
C	12	600.0	5.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	100.0	26.5				mg/L	3	Standard
Dy	164	11590.5	1.3				mg/L	6	Standard
Ho-1	165	7586.9	1.7				mg/L	10	Standard
Er	166	6698.1	4.4				mg/L	13	Standard
I	127	108507.7	4.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.857	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.558	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	110.316
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	106.034
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

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Sample ID: L1606120603S WG574192-04
Sample Date/Time: Wednesday, June 29, 2016 18:19:07
Number of Replicates: 3
Autosampler Position: 241
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86561.6	0.8				ug/L	74699	Standard
	Be	9	28455.1	4.4	**27.8947**	1.031	3.7	ug/L	8	Standard
	Al	27	11326081.2	0.4	**66.4980**	0.812	1.2	ug/L	1493	Standard
	Sc	45	74033.8	1.5				ug/L	61029	Standard
	Ti	47	13830.6	1.3	**31.7218**	0.771	2.4	ug/L	35	Standard
	V	51	404083.1	0.7	**46.4723**	0.823	1.8	ug/L	1435	Standard
	Cr	52	396378.6	0.5	**45.6257**	0.448	1.0	ug/L	7635	Standard
	Cr	53	48917.2	0.9	**45.8335**	0.539	1.2	ug/L	363	Standard
	Mn	55	3610519.8	1.3	**452.1326**	4.314	1.0	ug/L	747	Standard
	Co	59	243070.7	1.0	**32.0670**	0.356	1.1	ug/L	234	Standard
	Ni	60	87954.6	1.3	**40.8489**	0.598	1.5	ug/L	215	Standard
	Cu	65	138890.7	1.2	**64.9805**	0.614	0.9	ug/L	104	Standard
	Zn	66	982893.1	0.9	**784.3980**	13.633	1.7	ug/L	363	Standard
>	**Ge**	72	567734.3	1.2				ug/L	495142	Standard
	As	75	35264.6	1.3	**27.5210**	0.578	2.1	ug/L	-50	Standard
	Se	82	3103.1	1.8	**24.5237**	0.601	2.4	ug/L	14	Standard
	Se-1	77	2151.2	2.8	**25.0663**	0.745	3.0	ug/L	42	Standard
>	**Ga**	71	14508.6	3.6				mg/L	42	Standard
	Rb	85	180073.9	1.5				ug/L	17	Standard
	Y	89	616764.0	1.9				ug/L	417098	Standard
>	**Rh**	103	85.0	11.8				ug/L	13	Standard
	Mo	98	3441.4	2.1	**1.1615**	0.033	2.8	ug/L	11	Standard
	Ag	107	170180.4	0.7	**23.5897**	0.078	0.3	ug/L	68	Standard
	Cd	111	63817.8	1.8	**27.5852**	0.736	2.7	mg/L	2	Standard
	Cd	114	155790.6	2.3	**27.4604**	0.877	3.2	ug/L	12	Standard
>	**In**	115	649912.7	0.9				ug/L	587441	Standard
	Sn	118	2755.3	3.8	**0.3317**	0.018	5.5	ug/L	497	Standard
	Sb	123	11515.0	1.7	**2.2251**	0.028	1.3	ug/L	78	Standard
	Ba	135	420339.6	0.5	**185.6246**	2.179	1.2	ug/L	24	Standard
	Ce	140	771001.7	1.2				ug/L	25	Standard
>	**Tb**	159	1033151.8	0.5				ug/L	939701	Standard
	Ho	165	11344.2	1.5				ug/L	10	Standard
	Tl	203	220759.0	0.5	**24.6088**	0.113	0.5	ug/L	4	Standard
	Tl	205	203485.6	0.4	**26.1371**	0.140	0.5	ug/L	2	Standard
	Pb	206	518067.3	0.6	**89.0511**	0.447	0.5	ug/L	240	Standard
	Pb	207	415032.4	0.7	**80.2896**	0.537	0.7	ug/L	198	Standard
	Pb	208	1813547.0	1.2	**88.8061**	1.200	1.4	ug/L	883	Standard
	U	238	196913.8	1.4	**26.2850**	0.405	1.5	ug/L	3	Standard
>	**Bi**	209	570191.4	0.2				ug/L	523984	Standard

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Na	23	6.7	43.3	**63.0881**	26.284	41.7	mg/L	0	Standard
Mg	24	761.7	8.6	**0.7448**	0.057	7.6	mg/L	37	Standard
K	39	698.3	9.3	**1.1574**	0.103	8.9	mg/L	38	Standard
Ca	43	761.7	2.5	**37.1357**	0.619	1.7	mg/L	10	Standard
Fe	54	13661.1	2.3	**9.4129**	0.352	3.7	mg/L	179	Standard
Fe	57	3945.5	4.9	**9.9839**	0.617	6.2	mg/L	335	Standard
> **Sc-1**	45	74033.8	1.5				mg/L	61029	Standard
Cl	35	29672.4	3.3				ug/L	20195	Standard
Kr	83	0.7	86.6				ug/L	4	Standard
Br	81	5120.9	2.8				ug/L	1547	Standard
P	31	21184.8	2.3				ug/L	15286	Standard
S	34	2585.2	3.6				ug/L	1572	Standard
Sr	88	278.3	7.3				ug/L	73	Standard
C	12	453.3	23.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	180.0	28.9				mg/L	3	Standard
Dy	164	18295.9	3.4				mg/L	6	Standard
Ho-1	165	11344.2	1.5				mg/L	10	Standard
Er	166	10350.2	2.2				mg/L	13	Standard
I	127	155575.8	4.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.881	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.661	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.635
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.818
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606120603S WG574192-04
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Method 6020 - Summary Report

Sample ID: L1606120604SD WG574192-05
Sample Date/Time: Wednesday, June 29, 2016 18:22:18
Number of Replicates: 3
Autosampler Position: 242
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88318.4	2.5				ug/L	74699	Standard
	Be	9	28910.9	0.8	**27.7911**	0.552	2.0	ug/L	8	Standard
	Al	27	11678142.6	0.8	**67.2186**	1.350	2.0	ug/L	1493	Standard
	Sc	45	75929.8	1.2				ug/L	61029	Standard
	Ti	47	15202.6	0.9	**34.3685**	0.367	1.1	ug/L	35	Standard
	V	51	408247.6	0.9	**46.2682**	0.632	1.4	ug/L	1435	Standard
	Cr	52	411599.1	1.0	**46.7151**	0.586	1.3	ug/L	7635	Standard
	Cr	53	50226.5	2.4	**46.3783**	0.843	1.8	ug/L	363	Standard
	Mn	55	4064951.2	0.1	**501.7134**	5.151	1.0	ug/L	747	Standard
	Co	59	242783.8	0.7	**31.5662**	0.473	1.5	ug/L	234	Standard
	Ni	60	92537.7	0.8	**42.3583**	0.203	0.5	ug/L	215	Standard
	Cu	65	135365.1	1.4	**62.4070**	0.241	0.4	ug/L	104	Standard
	Zn	66	1025151.4	1.0	**806.2133**	6.015	0.7	ug/L	363	Standard
>	**Ge**	72	576071.4	1.0				ug/L	495142	Standard
	As	75	35892.9	0.1	**27.6040**	0.298	1.1	ug/L	-50	Standard
	Se	82	2975.5	0.8	**23.1647**	0.155	0.7	ug/L	14	Standard
	Se-1	77	2118.1	0.7	**24.3051**	0.149	0.6	ug/L	42	Standard
>	**Ga**	71	16053.5	1.5				mg/L	42	Standard
	Rb	85	192660.5	0.7				ug/L	17	Standard
	Y	89	633758.5	0.9				ug/L	417098	Standard
>	**Rh**	103	91.7	22.7				ug/L	13	Standard
	Mo	98	2104.9	2.7	**0.6926**	0.023	3.3	ug/L	11	Standard
	Ag	107	176068.8	0.4	**23.8725**	0.248	1.0	ug/L	68	Standard
	Cd	111	64701.8	0.7	**27.3512**	0.177	0.6	mg/L	2	Standard
	Cd	114	157399.0	1.1	**27.1310**	0.176	0.6	ug/L	12	Standard
>	**In**	115	664480.0	1.2				ug/L	587441	Standard
	Sn	118	2676.9	2.8	**0.3105**	0.015	4.8	ug/L	497	Standard
	Sb	123	10363.1	2.2	**1.9584**	0.055	2.8	ug/L	78	Standard
	Ba	135	439420.6	0.3	**189.8023**	2.264	1.2	ug/L	24	Standard
	Ce	140	842883.5	1.0				ug/L	25	Standard
>	**Tb**	159	1049787.1	1.3				ug/L	939701	Standard
	Ho	165	12211.6	1.7				ug/L	10	Standard
	Tl	203	222058.4	0.3	**24.4396**	0.316	1.3	ug/L	4	Standard
	Tl	205	202828.8	1.6	**25.7185**	0.095	0.4	ug/L	2	Standard
	Pb	206	574235.7	0.3	**97.4667**	1.839	1.9	ug/L	240	Standard
	Pb	207	457211.7	0.6	**87.3408**	1.861	2.1	ug/L	198	Standard
	Pb	208	1979847.3	0.4	**95.7233**	1.171	1.2	ug/L	883	Standard
	U	238	197274.4	0.9	**26.0018**	0.641	2.5	ug/L	3	Standard
>	**Bi**	209	577596.9	1.6				ug/L	523984	Standard

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Na	23	5.0	0.0	**46.3267**	0.533	1.2	mg/L	0	Standard
Mg	24	961.7	5.5	**0.9325**	0.047	5.0	mg/L	37	Standard
K	39	738.4	15.4	**1.1991**	0.216	18.0	mg/L	38	Standard
Ca	43	858.4	11.4	**41.0973**	5.443	13.2	mg/L	10	Standard
Fe	54	16143.5	2.3	**10.8618**	0.122	1.1	mg/L	179	Standard
Fe	57	4519.0	2.4	**11.2744**	0.427	3.8	mg/L	335	Standard
> **Sc-1**	45	75929.8	1.2				mg/L	61029	Standard
Cl	35	29136.0	1.4				ug/L	20195	Standard
Kr	83	1.0	0.0				ug/L	4	Standard
Br	81	5384.3	8.1				ug/L	1547	Standard
P	31	20994.5	3.6				ug/L	15286	Standard
S	34	2526.9	1.1				ug/L	1572	Standard
Sr	88	265.0	8.2				ug/L	73	Standard
C	12	466.7	15.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	193.3	16.6				mg/L	3	Standard
Dy	164	19678.1	2.3				mg/L	6	Standard
Ho-1	165	12211.6	1.7				mg/L	10	Standard
Er	166	11454.3	2.8				mg/L	13	Standard
I	127	133210.9	5.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.233	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		116.345	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.114
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.232
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606120605
Sample Date/Time: Wednesday, June 29, 2016 18:25:30
Number of Replicates: 3
Autosampler Position: 243
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90694.1	2.2				ug/L	74699	Standard
	Be	9	526.7	6.5	**0.5004**	0.031	6.1	ug/L	8	Standard
	Al	27	8237088.6	1.8	**46.1607**	0.953	2.1	ug/L	1493	Standard
	Sc	45	76241.4	2.3				ug/L	61029	Standard
	Ti	47	9939.3	1.0	**23.0163**	0.554	2.4	ug/L	35	Standard
	V	51	146708.3	2.5	**16.9369**	0.672	4.0	ug/L	1435	Standard
	Cr	52	214286.2	1.5	**24.4749**	0.700	2.9	ug/L	7635	Standard
	Cr	53	25651.7	1.8	**24.1415**	0.427	1.8	ug/L	363	Standard
	Mn	55	2369893.5	2.4	**300.0787**	12.076	4.0	ug/L	747	Standard
	Co	59	42091.1	2.2	**5.5844**	0.210	3.8	ug/L	234	Standard
	Ni	60	29674.7	1.4	**13.8532**	0.382	2.8	ug/L	215	Standard
	Cu	65	80108.6	1.5	**37.8555**	1.188	3.1	ug/L	104	Standard
	Zn	66	402296.4	1.3	**324.3434**	9.485	2.9	ug/L	363	Standard
>	**Ge**	72	561626.1	1.7				ug/L	495142	Standard
	As	75	4613.8	0.6	**3.6915**	0.048	1.3	ug/L	-50	Standard
	Se	82	73.3	11.4	**0.4501**	0.057	12.7	ug/L	14	Standard
	Se-1	77	107.3	9.4	**0.6736**	0.125	18.5	ug/L	42	Standard
>	**Ga**	71	10595.4	4.5				mg/L	42	Standard
	Rb	85	117987.7	1.5				ug/L	17	Standard
	Y	89	650208.5	0.3				ug/L	417098	Standard
>	**Rh**	103	85.0	38.6				ug/L	13	Standard
	Mo	98	1074.4	2.1	**0.3404**	0.008	2.3	ug/L	11	Standard
	Ag	107	1521.7	2.8	**0.1876**	0.005	2.8	ug/L	68	Standard
	Cd	111	14943.9	2.9	**6.1278**	0.124	2.0	mg/L	2	Standard
	Cd	114	36335.4	1.3	**6.0807**	0.042	0.7	ug/L	12	Standard
>	**In**	115	684218.1	1.0				ug/L	587441	Standard
	Sn	118	4600.7	0.6	**0.5815**	0.007	1.3	ug/L	497	Standard
	Sb	123	346.8	6.2	**0.0596**	0.003	5.7	ug/L	78	Standard
	Ba	135	305952.3	0.8	**128.3272**	1.108	0.9	ug/L	24	Standard
	Ce	140	926252.0	0.8				ug/L	25	Standard
>	**Tb**	159	1067500.9	0.3				ug/L	939701	Standard
	Ho	165	12695.3	1.4				ug/L	10	Standard
	Tl	203	780.0	9.1	**0.0850**	0.009	10.5	ug/L	4	Standard
	Tl	205	700.0	0.7	**0.0898**	0.001	1.1	ug/L	2	Standard
	Pb	206	317389.9	0.7	**54.3657**	1.082	2.0	ug/L	240	Standard
	Pb	207	249270.6	1.1	**48.0507**	1.100	2.3	ug/L	198	Standard
	Pb	208	1104553.9	2.1	**53.8955**	1.488	2.8	ug/L	883	Standard
	U	238	5524.0	2.1	**0.7309**	0.022	3.0	ug/L	3	Standard
>	**Bi**	209	572007.3	1.4				ug/L	523984	Standard

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Na	23	8.3	34.6	**77.0658**	27.245	35.4	mg/L	0	Standard
Mg	24	545.0	4.9	**0.4986**	0.038	7.7	mg/L	37	Standard
K	39	528.3	15.8	**0.8195**	0.134	16.4	mg/L	38	Standard
Ca	43	966.7	6.0	**46.3930**	3.592	7.7	mg/L	10	Standard
Fe	54	12851.8	4.3	**8.5861**	0.399	4.6	mg/L	179	Standard
Fe	57	3822.2	7.3	**9.3402**	1.007	10.8	mg/L	335	Standard
Sc-1	45	76241.4	2.3				mg/L	61029	Standard
Cl	35	29717.8	2.2				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	3207.0	9.1				ug/L	1547	Standard
P	31	20467.1	0.8				ug/L	15286	Standard
S	34	2505.2	3.0				ug/L	1572	Standard
Sr	88	263.3	8.6				ug/L	73	Standard
C	12	196.7	5.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	123.3	46.8				mg/L	3	Standard
Dy	164	19864.2	0.8				mg/L	6	Standard
Ho-1	165	12695.3	1.4				mg/L	10	Standard
Er	166	11821.3	4.6				mg/L	13	Standard
I	127	41200.9	0.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		121.413	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		113.427	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		116.474
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.165
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606120605PS WG574690-01
Sample Date/Time: Wednesday, June 29, 2016 18:28:41
Number of Replicates: 3
Autosampler Position: 244
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85371.5	1.3				ug/L	74699	Standard
	Be	9	57838.5	0.7	**57.4989**	0.995	1.7	ug/L	8	Standard
	Al	27	8190235.3	0.9	**48.7593**	1.052	2.2	ug/L	1493	Standard
	Sc	45	74174.5	1.1				ug/L	61029	Standard
	Ti	47	9905.9	1.1	**22.7993**	0.140	0.6	ug/L	35	Standard
	V	51	615589.0	1.1	**71.2575**	1.604	2.3	ug/L	1435	Standard
	Cr	52	662720.1	2.0	**77.3523**	0.990	1.3	ug/L	7635	Standard
	Cr	53	81212.1	1.6	**76.6855**	0.228	0.3	ug/L	363	Standard
	Mn	55	2850355.8	1.2	**358.7372**	7.553	2.1	ug/L	747	Standard
	Co	59	453959.9	1.8	**60.2304**	1.747	2.9	ug/L	234	Standard
	Ni	60	139316.4	1.9	**65.0924**	0.607	0.9	ug/L	215	Standard
	Cu	65	189057.7	1.5	**88.9267**	0.405	0.5	ug/L	104	Standard
	Zn	66	476114.4	1.0	**381.6097**	5.307	1.4	ug/L	363	Standard
>	**Ge**	72	564919.1	1.3				ug/L	495142	Standard
	As	75	71672.0	0.5	**56.1469**	0.522	0.9	ug/L	-50	Standard
	Se	82	6681.0	0.4	**53.2203**	0.482	0.9	ug/L	14	Standard
	Se-1	77	4575.0	1.8	**54.2855**	1.161	2.1	ug/L	42	Standard
>	**Ga**	71	10925.6	2.3				mg/L	42	Standard
	Rb	85	119128.2	1.4				ug/L	17	Standard
	Y	89	658944.3	2.5				ug/L	417098	Standard
>	**Rh**	103	98.3	24.0				ug/L	13	Standard
	Mo	98	1073.3	2.3	**0.3534**	0.015	4.1	ug/L	11	Standard
	Ag	107	364831.9	0.7	**49.9049**	1.416	2.8	ug/L	68	Standard
	Cd	111	132655.1	1.4	**56.5569**	1.029	1.8	mg/L	2	Standard
	Cd	114	321468.3	0.7	**55.8946**	1.680	3.0	ug/L	12	Standard
>	**In**	115	659074.5	2.5				ug/L	587441	Standard
	Sn	118	1318.4	1.7	**0.1066**	0.008	7.5	ug/L	497	Standard
	Sb	123	258576.1	0.4	**49.3799**	1.200	2.4	ug/L	78	Standard
	Ba	135	409891.1	0.5	**178.5483**	4.068	2.3	ug/L	24	Standard
	Ce	140	929186.0	0.4				ug/L	25	Standard
>	**Tb**	159	1023915.1	1.8				ug/L	939701	Standard
	Ho	165	12935.5	3.1				ug/L	10	Standard
	Tl	203	455240.8	0.8	**52.4471**	0.837	1.6	ug/L	4	Standard
	Tl	205	420642.4	0.2	**55.8346**	0.392	0.7	ug/L	2	Standard
	Pb	206	614831.5	0.9	**109.2366**	1.843	1.7	ug/L	240	Standard
	Pb	207	503849.3	0.9	**100.7500**	1.617	1.6	ug/L	198	Standard
	Pb	208	2170185.0	1.2	**109.8441**	2.227	2.0	ug/L	883	Standard
	U	238	393858.5	1.0	**54.3381**	1.023	1.9	ug/L	3	Standard
>	**Bi**	209	551780.7	0.8				ug/L	523984	Standard

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Na	23	10.0	86.6	**95.2332**	83.153	87.3	mg/L	0	Standard
Mg	24	453.3	5.6	**0.4164**	0.027	6.4	mg/L	37	Standard
K	39	480.0	7.5	**0.7589**	0.067	8.8	mg/L	38	Standard
Ca	43	940.0	10.6	**46.3668**	5.650	12.2	mg/L	10	Standard
Fe	54	12349.5	1.2	**8.4763**	0.023	0.3	mg/L	179	Standard
Fe	57	3702.1	2.7	**9.2777**	0.167	1.8	mg/L	335	Standard
Sc-1	45	74174.5	1.1				mg/L	61029	Standard
Cl	35	30087.8	0.9				ug/L	20195	Standard
Kr	83	2.7	43.3				ug/L	4	Standard
Br	81	3260.4	2.1				ug/L	1547	Standard
P	31	20787.6	1.7				ug/L	15286	Standard
S	34	2500.2	2.8				ug/L	1572	Standard
Sr	88	245.0	12.4				ug/L	73	Standard
C	12	160.0	54.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	103.3	22.3				mg/L	3	Standard
Dy	164	20338.3	3.5				mg/L	6	Standard
Ho-1	165	12935.5	3.1				mg/L	10	Standard
Er	166	11817.9	3.9				mg/L	13	Standard
I	127	39775.5	3.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		114.288	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		114.092	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	112.194
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	105.305
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1606120605SDL WG574690-02
Sample Date/Time: Wednesday, June 29, 2016 18:31:53
Number of Replicates: 3
Autosampler Position: 245
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84476.5	1.1				ug/L	74699	Standard
	Be	9	178.3	18.7	**0.1869**	0.035	18.6	ug/L	8	Standard
	Al	27	1736036.7	3.1	**10.4319**	0.283	2.7	ug/L	1493	Standard
	Sc	45	72059.3	1.7				ug/L	61029	Standard
	Ti	47	2123.5	6.6	**4.6249**	0.308	6.7	ug/L	35	Standard
	V	51	32734.7	3.8	**3.4666**	0.135	3.9	ug/L	1435	Standard
	Cr	52	51911.1	1.7	**4.8949**	0.101	2.1	ug/L	7635	Standard
	Cr	53	5774.4	3.1	**4.9492**	0.156	3.2	ug/L	363	Standard
	Mn	55	492914.2	2.0	**59.6732**	1.219	2.0	ug/L	747	Standard
	Co	59	9193.8	6.0	**1.1391**	0.070	6.1	ug/L	234	Standard
	Ni	60	6665.5	3.0	**2.8840**	0.083	2.9	ug/L	215	Standard
	Cu	65	17774.1	0.7	**7.9654**	0.025	0.3	ug/L	104	Standard
	Zn	66	87339.7	0.8	**67.1049**	0.286	0.4	ug/L	363	Standard
>	**Ge**	72	585998.9	0.5				ug/L	495142	Standard
	As	75	970.2	5.1	**0.7914**	0.035	4.4	ug/L	-50	Standard
	Se	82	25.1	35.6	**0.0547**	0.068	124.2	ug/L	14	Standard
	Se-1	77	82.0	5.6	**0.3262**	0.050	15.4	ug/L	42	Standard
>	**Ga**	71	2373.5	5.4				mg/L	42	Standard
	Rb	85	23598.4	1.4				ug/L	17	Standard
	Y	89	515408.4	0.8				ug/L	417098	Standard
>	**Rh**	103	21.7	35.3				ug/L	13	Standard
	Mo	98	369.9	37.1	**0.1174**	0.046	39.0	ug/L	11	Standard
	Ag	107	699.0	38.5	**0.0822**	0.037	44.7	ug/L	68	Standard
	Cd	111	3080.1	3.0	**1.2985**	0.040	3.1	mg/L	2	Standard
	Cd	114	7389.1	5.7	**1.2756**	0.072	5.6	ug/L	12	Standard
>	**In**	115	662403.8	0.2				ug/L	587441	Standard
	Sn	118	660.0	13.5	**0.0055**	0.013	245.5	ug/L	497	Standard
	Sb	123	2141.2	12.8	**0.4025**	0.052	13.0	ug/L	78	Standard
	Ba	135	63716.0	0.4	**27.5914**	0.127	0.5	ug/L	24	Standard
	Ce	140	193219.3	1.3				ug/L	25	Standard
>	**Tb**	159	1027182.9	1.4				ug/L	939701	Standard
	Ho	165	2611.9	6.2				ug/L	10	Standard
	Tl	203	353.7	43.7	**0.0374**	0.017	46.4	ug/L	4	Standard
	Tl	205	421.7	67.1	**0.0541**	0.036	67.5	ug/L	2	Standard
	Pb	206	67035.7	2.8	**11.3788**	0.381	3.4	ug/L	240	Standard
	Pb	207	53097.6	2.6	**10.1377**	0.324	3.2	ug/L	198	Standard
	Pb	208	229986.8	1.7	**11.1165**	0.256	2.3	ug/L	883	Standard
	U	238	1351.4	18.8	**0.1748**	0.035	19.9	ug/L	3	Standard
>	**Bi**	209	574350.4	0.6				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	130.0	13.3	**0.0772**	0.020	26.0	mg/L	37	Standard
K	39	128.3	6.0	**0.1263**	0.018	14.2	mg/L	38	Standard
Ca	43	216.7	23.7	**9.0911**	2.889	31.8	mg/L	10	Standard
Fe	54	2661.6	0.9	**1.7733**	0.039	2.2	mg/L	179	Standard
Fe	57	965.0	5.3	**1.7027**	0.101	5.9	mg/L	335	Standard
> **Sc-1**	45	72059.3	1.7				mg/L	61029	Standard
Cl	35	30260.9	1.5				ug/L	20195	Standard
Kr	83	0.3	173.2				ug/L	4	Standard
Br	81	2210.2	10.2				ug/L	1547	Standard
P	31	20780.9	2.4				ug/L	15286	Standard
S	34	2430.2	2.3				ug/L	1572	Standard
Sr	88	83.3	13.9				ug/L	73	Standard
C	12	56.7	40.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	17.3				mg/L	3	Standard
Dy	164	4484.9	5.6				mg/L	6	Standard
Ho-1	165	2611.9	6.2				mg/L	10	Standard
Er	166	2556.9	13.6				mg/L	13	Standard
I	127	10483.6	6.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.090	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		118.350	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.761
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.612
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606120605SDL WG574690-02
Sample Date/Time: Wednesday, June 29, 2016 18:35:04
Number of Replicates: 3
Autosampler Position: 246
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83239.9	3.6				ug/L	74699	Standard
	Be	9	38.3	32.8	**0.0467**	0.013	27.9	ug/L	8	Standard
	Al	27	353337.7	1.0	**2.1460**	0.078	3.6	ug/L	1493	Standard
	Sc	45	70061.7	2.7				ug/L	61029	Standard
	Ti	47	444.3	5.4	**0.9019**	0.065	7.2	ug/L	35	Standard
	V	51	7638.3	1.2	**0.6761**	0.009	1.3	ug/L	1435	Standard
	Cr	52	17382.6	1.1	**0.9981**	0.034	3.5	ug/L	7635	Standard
	Cr	53	1533.4	2.6	**1.0999**	0.009	0.8	ug/L	363	Standard
	Mn	55	100723.4	1.5	**12.3208**	0.101	0.8	ug/L	747	Standard
	Co	59	1988.5	0.8	**0.2223**	0.008	3.5	ug/L	234	Standard
	Ni	60	1493.7	0.8	**0.5638**	0.012	2.1	ug/L	215	Standard
	Cu	65	3674.4	3.3	**1.5981**	0.060	3.8	ug/L	104	Standard
	Zn	66	19238.9	1.8	**14.7255**	0.173	1.2	ug/L	363	Standard
>	**Ge**	72	574541.2	2.2				ug/L	495142	Standard
	As	75	156.2	2.1	**0.1799**	0.005	2.7	ug/L	-50	Standard
	Se	82	23.9	29.5	**0.0491**	0.053	108.8	ug/L	14	Standard
	Se-1	77	58.0	21.2	**0.0603**	0.130	215.1	ug/L	42	Standard
>	**Ga**	71	518.3	4.3				mg/L	42	Standard
	Rb	85	4807.4	2.9				ug/L	17	Standard
	Y	89	501442.7	1.9				ug/L	417098	Standard
>	**Rh**	103	25.0	20.0				ug/L	13	Standard
	Mo	98	84.6	15.3	**0.0217**	0.004	18.8	ug/L	11	Standard
	Ag	107	254.3	9.6	**0.0208**	0.003	15.4	ug/L	68	Standard
	Cd	111	620.8	2.0	**0.2487**	0.004	1.5	mg/L	2	Standard
	Cd	114	1552.7	9.2	**0.2596**	0.025	9.8	ug/L	12	Standard
>	**In**	115	679737.8	0.5				ug/L	587441	Standard
	Sn	118	525.0	13.7	**-0.0171**	0.010	60.3	ug/L	497	Standard
	Sb	123	593.1	26.9	**0.1056**	0.030	28.3	ug/L	78	Standard
	Ba	135	12802.7	1.3	**5.3901**	0.099	1.8	ug/L	24	Standard
	Ce	140	39412.9	3.5				ug/L	25	Standard
>	**Tb**	159	1032176.9	1.0				ug/L	939701	Standard
	Ho	165	550.0	19.7				ug/L	10	Standard
	Tl	203	66.7	15.4	**0.0056**	0.001	20.8	ug/L	4	Standard
	Tl	205	78.3	41.0	**0.0102**	0.004	40.5	ug/L	2	Standard
	Pb	206	13522.4	0.6	**2.2309**	0.023	1.0	ug/L	240	Standard
	Pb	207	10801.2	2.0	**1.9994**	0.022	1.1	ug/L	198	Standard
	Pb	208	47468.1	0.8	**2.2283**	0.042	1.9	ug/L	883	Standard
	U	238	258.3	8.4	**0.0297**	0.002	8.2	ug/L	3	Standard
>	**Bi**	209	576211.7	1.3				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	46.7	16.4	**-0.0125**	0.009	74.1	mg/L	37	Standard
K	39	58.3	35.7	**-0.0022**	0.039	1787.9	mg/L	38	Standard
Ca	43	95.0	32.0	**2.7333**	1.777	65.0	mg/L	10	Standard
Fe	54	697.3	2.7	**0.3769**	0.020	5.3	mg/L	179	Standard
Fe	57	380.0	7.9	**0.0519**	0.104	201.0	mg/L	335	Standard
Sc-1	45	70061.7	2.7				mg/L	61029	Standard
Cl	35	30787.9	1.4				ug/L	20195	Standard
Kr	83	2.3	107.9				ug/L	4	Standard
Br	81	2130.1	1.6				ug/L	1547	Standard
P	31	20966.2	4.2				ug/L	15286	Standard
S	34	2485.2	3.8				ug/L	1572	Standard
Sr	88	90.0	33.3				ug/L	73	Standard
C	12	40.0	66.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	3	Standard
Dy	164	970.4	12.1				mg/L	6	Standard
Ho-1	165	550.0	19.7				mg/L	10	Standard
Er	166	480.0	14.6				mg/L	13	Standard
I	127	3620.4	13.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.434	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		116.036	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115	115.712	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209	109.967	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 18:38:18
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	82768.9	2.2				ug/L	74699	Standard
	Be	9	55586.8	2.9	**56.9851**	0.437	0.8	ug/L	8	Standard
	Al	27	8619622.5	1.7	**52.9268**	0.666	1.3	ug/L	1493	Standard
	Sc	45	69535.9	1.6				ug/L	61029	Standard
	Ti	47	45959.0	2.5	**108.3957**	2.700	2.5	ug/L	35	Standard
	V	51	452339.2	1.9	**53.3985**	1.095	2.1	ug/L	1435	Standard
	Cr	52	452917.5	1.6	**53.6621**	0.813	1.5	ug/L	7635	Standard
	Cr	53	54972.9	2.4	**52.8966**	1.385	2.6	ug/L	363	Standard
	Mn	55	414134.0	1.2	**53.0785**	0.725	1.4	ug/L	747	Standard
	Co	59	411024.9	0.5	**55.6590**	0.257	0.5	ug/L	234	Standard
	Ni	60	111206.0	1.9	**53.0242**	0.984	1.9	ug/L	215	Standard
	Cu	65	110023.1	1.1	**52.7940**	0.716	1.4	ug/L	104	Standard
	Zn	66	64745.4	0.8	**52.5833**	0.259	0.5	ug/L	363	Standard
>	Ge	72	553341.4	0.3				ug/L	495142	Standard
	As	75	65551.1	0.4	**52.4265**	0.227	0.4	ug/L	-50	Standard
	Se	82	6664.4	1.0	**54.1963**	0.405	0.7	ug/L	14	Standard
	Se-1	77	4501.0	1.7	**54.5222**	0.959	1.8	ug/L	42	Standard
>	Ga	71	63.3	38.9				mg/L	42	Standard
	Rb	85	948.4	4.5				ug/L	17	Standard
	Y	89	490323.1	1.2				ug/L	417098	Standard
>	Rh	103	18.3	41.7				ug/L	13	Standard
	Mo	98	304786.5	0.3	**99.6729**	0.315	0.3	ug/L	11	Standard
	Ag	107	371315.6	1.3	**49.6520**	0.733	1.5	ug/L	68	Standard
	Cd	111	119443.2	1.0	**49.7891**	0.404	0.8	mg/L	2	Standard
	Cd	114	290803.0	0.5	**49.4253**	0.213	0.4	ug/L	12	Standard
>	In	115	673907.8	0.2				ug/L	587441	Standard
	Sn	118	339134.4	2.1	**50.5123**	1.079	2.1	ug/L	497	Standard
	Sb	123	262026.6	0.8	**48.9184**	0.455	0.9	ug/L	78	Standard
	Ba	135	111822.5	0.7	**47.6088**	0.434	0.9	ug/L	24	Standard
	Ce	140	206.7	14.6				ug/L	25	Standard
>	Tb	159	1024624.4	0.5				ug/L	939701	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	457896.5	0.3	**51.5737**	0.953	1.8	ug/L	4	Standard
	Tl	205	420019.2	1.0	**54.5041**	0.795	1.5	ug/L	2	Standard
	Pb	206	290158.6	1.2	**50.3552**	0.541	1.1	ug/L	240	Standard
	Pb	207	256755.7	1.2	**50.1530**	0.630	1.3	ug/L	198	Standard
	Pb	208	1071548.3	0.3	**52.9883**	1.261	2.4	ug/L	883	Standard
	U	238	389229.1	0.1	**52.5000**	1.135	2.2	ug/L	3	Standard
>	Bi	209	564495.9	2.1				ug/L	523984	Standard

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Na	23	1.7	173.2	**16.7614**	29.023	173.2	mg/L	0	Standard
Mg	24	4642.4	0.2	**5.1955**	0.100	1.9	mg/L	37	Standard
K	39	2168.5	2.0	**4.0939**	0.144	3.5	mg/L	38	Standard
Ca	43	86.7	35.3	**2.2659**	1.624	71.7	mg/L	10	Standard
Fe	54	7113.4	2.2	**5.1545**	0.030	0.6	mg/L	179	Standard
Fe	57	2041.8	2.3	**5.0193**	0.241	4.8	mg/L	335	Standard
> **Sc-1**	45	69535.9	1.6				mg/L	61029	Standard
Cl	35	30041.8	1.0				ug/L	20195	Standard
Kr	83	1.3	86.6				ug/L	4	Standard
Br	81	1843.4	4.1				ug/L	1547	Standard
P	31	21683.8	2.5				ug/L	15286	Standard
S	34	2823.6	5.0				ug/L	1572	Standard
Sr	88	53.3	39.0				ug/L	73	Standard
C	12	53.3	78.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	12.9	179.7				mg/L	6	Standard
Ho-1	165	8.3	34.6				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	2093.5	24.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	113.970		
Al	27	105.854		
Sc	45			
Ti	47	108.396		
V	51	106.797		
Cr	52	107.324		
Cr	53			
Mn	55	106.157		
Co	59	111.318		
Ni	60	106.048		
Cu	65	105.588		
Zn	66	105.167		
> Ge	72		111.754	
As	75	104.853		
Se	82	108.393		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	99.673		
Ag	107	99.304		
Cd	111	99.578		
Cd	114			
In	115		114.719	
Sn	118	101.025		
Sb	123	97.837		
Ba	135	95.218		
Ce	140			
Tb	159			
Ho	165			
Tl	203	103.147		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.977		
U	238	105.000		
Bi	209		107.731	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Co	59	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 18:41:29
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83048.8	2.8				ug/L	74699	Standard
	Be	9	23.3	68.9	**0.0313**	0.016	52.2	ug/L	8	Standard
	Al	27	3078.7	25.1	**0.0054**	0.004	78.6	ug/L	1493	Standard
	Sc	45	71367.7	1.6				ug/L	61029	Standard
	Ti	47	35.3	33.5	**-0.0277**	0.025	91.3	ug/L	35	Standard
	V	51	1419.9	5.2	**-0.0309**	0.006	18.5	ug/L	1435	Standard
	Cr	52	7844.0	0.2	**-0.0958**	0.021	21.7	ug/L	7635	Standard
	Cr	53	443.3	5.7	**0.0910**	0.034	37.3	ug/L	363	Standard
	Mn	55	990.7	12.0	**-0.0236**	0.012	50.6	ug/L	747	Standard
	Co	59	281.0	9.0	**-0.0000**	0.003	39793.0	ug/L	234	Standard
	Ni	60	196.7	7.3	**-0.0319**	0.005	14.4	ug/L	215	Standard
	Cu	65	145.3	12.4	**-0.0353**	0.007	21.2	ug/L	104	Standard
	Zn	66	464.0	9.4	**-0.0826**	0.026	32.0	ug/L	363	Standard
>	**Ge**	72	564975.6	2.4				ug/L	495142	Standard
	As	75	-39.3	63.0	**0.0286**	0.020	68.3	ug/L	-50	Standard
	Se	82	26.6	20.4	**0.0737**	0.038	51.8	ug/L	14	Standard
	Se-1	77	58.7	15.8	**0.0805**	0.100	124.7	ug/L	42	Standard
>	**Ga**	71	41.7	25.0				mg/L	42	Standard
	Rb	85	35.0	75.6				ug/L	17	Standard
	Y	89	486175.7	0.9				ug/L	417098	Standard
>	**Rh**	103	21.7	58.1				ug/L	13	Standard
	Mo	98	275.2	23.2	**0.0821**	0.020	24.6	ug/L	11	Standard
	Ag	107	144.3	16.7	**0.0059**	0.003	51.4	ug/L	68	Standard
	Cd	111	18.2	29.8	**-0.0005**	0.002	416.8	mg/L	2	Standard
	Cd	114	40.0	61.5	**0.0045**	0.004	89.7	ug/L	12	Standard
>	**In**	115	690622.1	0.6				ug/L	587441	Standard
	Sn	118	806.7	10.4	**0.0228**	0.013	56.6	ug/L	497	Standard
	Sb	123	553.4	29.9	**0.0967**	0.030	31.3	ug/L	78	Standard
	Ba	135	70.0	42.9	**0.0130**	0.012	94.6	ug/L	24	Standard
	Ce	140	61.7	54.0				ug/L	25	Standard
>	**Tb**	159	1047202.6	1.6				ug/L	939701	Standard
	Ho	165	16.7	34.6				ug/L	10	Standard
	Tl	203	75.3	48.5	**0.0063**	0.004	58.9	ug/L	4	Standard
	Tl	205	73.3	27.6	**0.0093**	0.002	26.3	ug/L	2	Standard
	Pb	206	333.0	14.3	**-0.0156**	0.007	42.7	ug/L	240	Standard
	Pb	207	293.0	14.2	**-0.0150**	0.006	43.1	ug/L	198	Standard
	Pb	208	1234.7	14.5	**-0.0154**	0.007	47.2	ug/L	883	Standard
	U	238	61.3	33.0	**0.0035**	0.002	69.2	ug/L	3	Standard
>	**Bi**	209	587080.9	2.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	38.3	15.1	**-0.0227**	0.007	30.4	mg/L	37	Standard
K	39	33.3	22.9	**-0.0512**	0.014	27.0	mg/L	38	Standard
Ca	43	28.3	50.9	**-0.9868**	0.802	81.3	mg/L	10	Standard
Fe	54	132.7	11.9	**-0.0421**	0.011	25.9	mg/L	179	Standard
Fe	57	280.0	10.7	**-0.2593**	0.100	38.4	mg/L	335	Standard
Sc-1	45	71367.7	1.6				mg/L	61029	Standard
Cl	35	29768.6	1.4				ug/L	20195	Standard
Kr	83	1.3	173.2				ug/L	4	Standard
Br	81	2106.8	7.7				ug/L	1547	Standard
P	31	21775.6	2.2				ug/L	15286	Standard
S	34	2523.5	3.0				ug/L	1572	Standard
Sr	88	70.0	49.5				ug/L	73	Standard
C	12	66.7	48.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	19.2	48.3				mg/L	6	Standard
Ho-1	165	16.7	34.6				mg/L	10	Standard
Er	166	16.7	91.7				mg/L	13	Standard
I	127	1905.1	33.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		114.104	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		117.564
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		112.042
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606120701
Sample Date/Time: Wednesday, June 29, 2016 18:44:42
Number of Replicates: 3
Autosampler Position: 247
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82529.2	0.7				ug/L	74699	Standard
	Be	9	748.4	11.5	**0.7773**	0.092	11.9	ug/L	8	Standard
	Al	27	5186124.5	1.1	**31.9282**	0.368	1.2	ug/L	1493	Standard
	Sc	45	73214.8	0.3				ug/L	61029	Standard
	Ti	47	12465.8	1.5	**28.7779**	0.271	0.9	ug/L	35	Standard
	V	51	254152.3	1.7	**29.3595**	0.344	1.2	ug/L	1435	Standard
	Cr	52	145419.2	1.0	**16.2106**	0.127	0.8	ug/L	7635	Standard
	Cr	53	17483.4	2.8	**16.2818**	0.208	1.3	ug/L	363	Standard
	Mn	55	3993207.5	1.0	**503.6001**	3.344	0.7	ug/L	747	Standard
	Co	59	68748.0	1.0	**9.1067**	0.083	0.9	ug/L	234	Standard
	Ni	60	27938.1	3.3	**12.9787**	0.214	1.6	ug/L	215	Standard
	Cu	65	24664.7	1.5	**11.5352**	0.050	0.4	ug/L	104	Standard
	Zn	66	148101.8	1.7	**118.6204**	0.288	0.2	ug/L	363	Standard
>	**Ge**	72	563786.2	1.7				ug/L	495142	Standard
	As	75	6453.5	1.8	**5.1196**	0.031	0.6	ug/L	-50	Standard
	Se	82	62.5	2.1	**0.3624**	0.012	3.2	ug/L	14	Standard
	Se-1	77	114.0	16.7	**0.7504**	0.247	32.9	ug/L	42	Standard
>	**Ga**	71	11409.3	2.4				mg/L	42	Standard
	Rb	85	132848.2	0.6				ug/L	17	Standard
	Y	89	719521.7	0.4				ug/L	417098	Standard
>	**Rh**	103	43.3	43.7				ug/L	13	Standard
	Mo	98	809.7	3.4	**0.2640**	0.011	4.2	ug/L	11	Standard
	Ag	107	5298.9	1.5	**0.7088**	0.004	0.5	ug/L	68	Standard
	Cd	111	3980.4	2.6	**1.6822**	0.055	3.3	mg/L	2	Standard
	Cd	114	9713.7	1.4	**1.6793**	0.030	1.8	ug/L	12	Standard
>	**In**	115	661793.4	1.1				ug/L	587441	Standard
	Sn	118	911.7	2.8	**0.0439**	0.005	10.9	ug/L	497	Standard
	Sb	123	350.1	17.1	**0.0624**	0.012	19.0	ug/L	78	Standard
	Ba	135	341983.5	0.6	**148.3035**	0.748	0.5	ug/L	24	Standard
	Ce	140	2710163.1	0.4				ug/L	25	Standard
>	**Tb**	159	1034801.7	0.1				ug/L	939701	Standard
	Ho	165	19319.0	1.7				ug/L	10	Standard
	Tl	203	872.7	2.5	**0.0967**	0.002	2.5	ug/L	4	Standard
	Tl	205	843.4	5.5	**0.1098**	0.006	5.6	ug/L	2	Standard
	Pb	206	283131.4	1.0	**49.2257**	0.472	1.0	ug/L	240	Standard
	Pb	207	230315.5	1.3	**45.0642**	0.519	1.2	ug/L	198	Standard
	Pb	208	999318.0	0.9	**49.4947**	0.507	1.0	ug/L	883	Standard
	U	238	4899.8	1.7	**0.6576**	0.010	1.6	ug/L	3	Standard
>	**Bi**	209	563366.5	0.2				ug/L	523984	Standard

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Na	23	5.0	0.0	**48.0405**	0.159	0.3	mg/L	0	Standard
Mg	24	875.0	7.7	**0.8766**	0.075	8.6	mg/L	37	Standard
K	39	536.7	5.1	**0.8747**	0.054	6.2	mg/L	38	Standard
Ca	43	571.7	16.7	**27.5670**	4.925	17.9	mg/L	10	Standard
Fe	54	14788.8	1.9	**10.3138**	0.228	2.2	mg/L	179	Standard
Fe	57	4073.9	8.9	**10.4697**	1.059	10.1	mg/L	335	Standard
> **Sc-1**	45	73214.8	0.3				mg/L	61029	Standard
Cl	35	28264.3	0.5				ug/L	20195	Standard
Kr	83	2.0	0.0				ug/L	4	Standard
Br	81	3023.6	7.8				ug/L	1547	Standard
P	31	20599.0	2.2				ug/L	15286	Standard
S	34	2595.2	1.7				ug/L	1572	Standard
Sr	88	203.3	16.4				ug/L	73	Standard
C	12	130.0	40.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	150.0	43.7				mg/L	3	Standard
Dy	164	31532.4	1.2				mg/L	6	Standard
Ho-1	165	19319.0	1.7				mg/L	10	Standard
Er	166	17720.4	2.1				mg/L	13	Standard
I	127	25842.0	0.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.483	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		113.863	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.657
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.516
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606120702
Sample Date/Time: Wednesday, June 29, 2016 18:47:54
Number of Replicates: 3
Autosampler Position: 248
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85381.8	3.5				ug/L	74699	Standard
	Be	9	623.3	3.3	**0.6272**	0.018	2.8	ug/L	8	Standard
	Al	27	4620203.8	1.9	**27.5041**	0.647	2.4	ug/L	1493	Standard
	Sc	45	75576.5	3.2				ug/L	61029	Standard
	Ti	47	6206.6	0.5	**14.3105**	0.192	1.3	ug/L	35	Standard
	V	51	134133.3	1.8	**15.4410**	0.153	1.0	ug/L	1435	Standard
	Cr	52	96500.3	0.7	**10.4416**	0.108	1.0	ug/L	7635	Standard
	Cr	53	11224.2	2.7	**10.3669**	0.448	4.3	ug/L	363	Standard
	Mn	55	3577332.4	1.7	**452.2740**	8.609	1.9	ug/L	747	Standard
	Co	59	47345.9	1.4	**6.2757**	0.086	1.4	ug/L	234	Standard
	Ni	60	24689.4	1.0	**11.4869**	0.101	0.9	ug/L	215	Standard
	Cu	65	29948.9	2.1	**14.0640**	0.244	1.7	ug/L	104	Standard
	Zn	66	164514.2	1.7	**132.1464**	1.033	0.8	ug/L	363	Standard
>	**Ge**	72	562390.3	1.6				ug/L	495142	Standard
	As	75	2776.0	3.7	**2.2412**	0.056	2.5	ug/L	-50	Standard
	Se	82	106.3	15.9	**0.7139**	0.124	17.3	ug/L	14	Standard
	Se-1	77	132.3	11.0	**0.9743**	0.190	19.5	ug/L	42	Standard
>	**Ga**	71	12940.5	1.1				mg/L	42	Standard
	Rb	85	250383.8	1.2				ug/L	17	Standard
	Y	89	695657.2	0.8				ug/L	417098	Standard
>	**Rh**	103	35.0	62.3				ug/L	13	Standard
	Mo	98	1645.8	3.3	**0.5188**	0.023	4.4	ug/L	11	Standard
	Ag	107	671.7	7.7	**0.0746**	0.007	9.4	ug/L	68	Standard
	Cd	111	2017.5	2.8	**0.8116**	0.028	3.5	mg/L	2	Standard
	Cd	114	4822.6	1.0	**0.7964**	0.005	0.7	ug/L	12	Standard
>	**In**	115	691832.3	1.1				ug/L	587441	Standard
	Sn	118	616.7	6.1	**-0.0050**	0.006	126.3	ug/L	497	Standard
	Sb	123	493.2	8.1	**0.0855**	0.008	9.1	ug/L	78	Standard
	Ba	135	281871.8	0.7	**116.9321**	1.732	1.5	ug/L	24	Standard
	Ce	140	1017603.0	1.2				ug/L	25	Standard
>	**Tb**	159	1062512.9	1.9				ug/L	939701	Standard
	Ho	165	14416.9	1.8				ug/L	10	Standard
	Tl	203	1059.0	3.0	**0.1166**	0.005	4.1	ug/L	4	Standard
	Tl	205	896.7	14.9	**0.1158**	0.019	16.8	ug/L	2	Standard
	Pb	206	100858.6	1.2	**17.3191**	0.532	3.1	ug/L	240	Standard
	Pb	207	81475.8	1.0	**15.7413**	0.458	2.9	ug/L	198	Standard
	Pb	208	356757.6	0.9	**17.4487**	0.446	2.6	ug/L	883	Standard
	U	238	6683.8	3.5	**0.8902**	0.048	5.4	ug/L	3	Standard
>	**Bi**	209	569106.4	1.9				ug/L	523984	Standard

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Na	23	3.3	86.6	**31.5301**	27.313	86.6	mg/L	0	Standard
Mg	24	745.0	7.0	**0.7121**	0.061	8.5	mg/L	37	Standard
K	39	773.4	6.0	**1.2683**	0.120	9.5	mg/L	38	Standard
Ca	43	171.7	3.4	**6.2441**	0.546	8.7	mg/L	10	Standard
Fe	54	10724.1	1.5	**7.2104**	0.318	4.4	mg/L	179	Standard
Fe	57	2831.9	1.0	**6.7023**	0.187	2.8	mg/L	335	Standard
> **Sc-1**	45	75576.5	3.2				mg/L	61029	Standard
Cl	35	27596.4	1.5				ug/L	20195	Standard
Kr	83	4.0	66.1				ug/L	4	Standard
Br	81	8432.3	2.7				ug/L	1547	Standard
P	31	20674.1	3.5				ug/L	15286	Standard
S	34	2360.2	7.8				ug/L	1572	Standard
Sr	88	120.0	18.2				ug/L	73	Standard
C	12	350.0	15.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	106.7	43.3				mg/L	3	Standard
Dy	164	23142.4	1.5				mg/L	6	Standard
Ho-1	165	14416.9	1.8				mg/L	10	Standard
Er	166	13422.6	4.3				mg/L	13	Standard
I	127	174464.7	3.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.301	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		113.582	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	117.770	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	108.611	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606120801
Sample Date/Time: Wednesday, June 29, 2016 18:51:05
Number of Replicates: 3
Autosampler Position: 249
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83030.4	3.3				ug/L	74699	Standard
	Be	9	1115.0	11.0	**1.1453**	0.091	8.0	ug/L	8	Standard
	Al	27	17314833.4	0.9	**106.0421**	2.666	2.5	ug/L	1493	Standard
	Sc	45	77183.1	5.1				ug/L	61029	Standard
	Ti	47	40548.2	1.5	**95.7436**	2.793	2.9	ug/L	35	Standard
	V	51	251782.0	1.4	**29.6946**	1.634	5.5	ug/L	1435	Standard
	Cr	52	243737.7	2.0	**28.4388**	0.710	2.5	ug/L	7635	Standard
	Cr	53	29872.8	2.3	**28.6239**	0.690	2.4	ug/L	363	Standard
	Mn	55	3685844.9	1.5	**474.5740**	27.736	5.8	ug/L	747	Standard
	Co	59	66271.6	1.6	**8.9620**	0.528	5.9	ug/L	234	Standard
	Ni	60	46026.2	2.6	**21.8948**	0.433	2.0	ug/L	215	Standard
	Cu	65	42002.8	1.5	**20.1164**	0.608	3.0	ug/L	104	Standard
	Zn	66	111824.0	2.6	**91.2379**	1.710	1.9	ug/L	363	Standard
>	**Ge**	72	553103.7	4.4				ug/L	495142	Standard
	As	75	5557.5	3.1	**4.5033**	0.093	2.1	ug/L	-50	Standard
	Se	82	102.2	5.1	**0.6977**	0.072	10.3	ug/L	14	Standard
	Se-1	77	134.3	12.1	**1.0314**	0.270	26.2	ug/L	42	Standard
>	**Ga**	71	24266.1	1.0				mg/L	42	Standard
	Rb	85	181545.0	2.7				ug/L	17	Standard
	Y	89	698995.8	3.0				ug/L	417098	Standard
>	**Rh**	103	88.3	6.5				ug/L	13	Standard
	Mo	98	2397.1	2.7	**0.8492**	0.049	5.8	ug/L	11	Standard
	Ag	107	1012.7	3.0	**0.1348**	0.009	6.5	ug/L	68	Standard
	Cd	111	911.2	3.1	**0.4060**	0.012	2.9	mg/L	2	Standard
	Cd	114	2080.2	4.3	**0.3830**	0.011	2.9	ug/L	12	Standard
>	**In**	115	618664.5	3.1				ug/L	587441	Standard
	Sn	118	1240.1	3.1	**0.1071**	0.013	12.0	ug/L	497	Standard
	Sb	123	1640.7	2.7	**0.3299**	0.019	5.8	ug/L	78	Standard
	Ba	135	534847.9	1.0	**248.3132**	9.882	4.0	ug/L	24	Standard
	Ce	140	1227932.9	1.4				ug/L	25	Standard
>	**Tb**	159	991058.9	3.3				ug/L	939701	Standard
	Ho	165	19152.1	0.5				ug/L	10	Standard
	Tl	203	1084.7	2.8	**0.1294**	0.004	2.8	ug/L	4	Standard
	Tl	205	976.7	6.4	**0.1361**	0.004	2.8	ug/L	2	Standard
	Pb	206	122644.8	1.6	**22.8364**	1.340	5.9	ug/L	240	Standard
	Pb	207	98294.5	1.0	**20.5914**	1.111	5.4	ug/L	198	Standard
	Pb	208	423360.3	0.4	**22.4444**	1.000	4.5	ug/L	883	Standard
	U	238	7556.2	1.8	**1.0902**	0.045	4.1	ug/L	3	Standard
>	**Bi**	209	526041.8	4.3				ug/L	523984	Standard

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Na	23	10.0	50.0	**92.8331**	50.540	54.4	mg/L	0	Standard
Mg	24	373.3	13.0	**0.3164**	0.050	15.9	mg/L	37	Standard
K	39	846.7	3.0	**1.3673**	0.064	4.7	mg/L	38	Standard
Ca	43	1881.8	8.7	**91.3781**	4.657	5.1	mg/L	10	Standard
Fe	54	16605.4	3.8	**11.0236**	0.942	8.5	mg/L	179	Standard
Fe	57	5247.6	6.9	**13.0290**	0.645	4.9	mg/L	335	Standard
Sc-1	45	77183.1	5.1				mg/L	61029	Standard
Cl	35	28165.5	0.9				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	3540.4	14.7				ug/L	1547	Standard
P	31	23239.5	5.6				ug/L	15286	Standard
S	34	2426.9	3.5				ug/L	1572	Standard
Sr	88	415.0	11.5				ug/L	73	Standard
C	12	173.3	6.7				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	66.7	60.6				mg/L	3	Standard
Dy	164	30988.1	3.0				mg/L	6	Standard
Ho-1	165	19152.1	0.5				mg/L	10	Standard
Er	166	17717.0	2.5				mg/L	13	Standard
I	127	27493.3	1.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.154	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.706	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.315
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.393
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606120801
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Method 6020 - Summary Report

Sample ID: L1606120802
Sample Date/Time: Wednesday, June 29, 2016 18:54:17
Number of Replicates: 3
Autosampler Position: 250
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88923.6	2.8				ug/L	74699	Standard
	Be	9	661.7	11.4	**0.6387**	0.067	10.5	ug/L	8	Standard
	Al	27	15492795.6	1.0	**88.5762**	1.812	2.0	ug/L	1493	Standard
	Sc	45	80386.0	1.0				ug/L	61029	Standard
	Ti	47	20524.2	1.6	**45.7756**	1.470	3.2	ug/L	35	Standard
	V	51	220306.5	1.3	**24.5176**	0.534	2.2	ug/L	1435	Standard
	Cr	52	643370.5	1.6	**72.5457**	2.733	3.8	ug/L	7635	Standard
	Cr	53	78035.6	3.0	**71.2237**	3.200	4.5	ug/L	363	Standard
	Mn	55	3332205.3	1.0	**405.3306**	7.931	2.0	ug/L	747	Standard
	Co	59	49008.5	0.3	**6.2510**	0.159	2.5	ug/L	234	Standard
	Ni	60	36936.6	2.2	**16.5952**	0.689	4.2	ug/L	215	Standard
	Cu	65	48506.2	1.8	**21.9786**	0.680	3.1	ug/L	104	Standard
	Zn	66	431997.7	0.4	**334.6356**	8.273	2.5	ug/L	363	Standard
>	**Ge**	72	584593.6	2.3				ug/L	495142	Standard
	As	75	4706.8	0.7	**3.6196**	0.063	1.8	ug/L	-50	Standard
	Se	82	170.0	3.4	**1.1737**	0.017	1.5	ug/L	14	Standard
	Se-1	77	180.7	11.7	**1.4743**	0.259	17.6	ug/L	42	Standard
>	**Ga**	71	19881.4	1.3				mg/L	42	Standard
	Rb	85	200103.0	1.8				ug/L	17	Standard
	Y	89	657665.4	0.6				ug/L	417098	Standard
>	**Rh**	103	171.7	7.3				ug/L	13	Standard
	Mo	98	1216.9	1.5	**0.3934**	0.011	2.8	ug/L	11	Standard
	Ag	107	1006.0	3.7	**0.1221**	0.007	5.4	ug/L	68	Standard
	Cd	111	4519.9	2.1	**1.8818**	0.049	2.6	mg/L	2	Standard
	Cd	114	11256.2	1.6	**1.9163**	0.030	1.6	ug/L	12	Standard
>	**In**	115	672127.4	1.5				ug/L	587441	Standard
	Sn	118	1105.0	15.3	**0.0707**	0.026	36.7	ug/L	497	Standard
	Sb	123	229.1	10.3	**0.0387**	0.005	12.5	ug/L	78	Standard
	Ba	135	361495.2	1.1	**154.3886**	3.928	2.5	ug/L	24	Standard
	Ce	140	936346.8	0.9				ug/L	25	Standard
>	**Tb**	159	1070983.4	3.2				ug/L	939701	Standard
	Ho	165	13711.2	2.1				ug/L	10	Standard
	Tl	203	1023.7	3.8	**0.1103**	0.006	5.8	ug/L	4	Standard
	Tl	205	995.0	4.8	**0.1256**	0.007	5.2	ug/L	2	Standard
	Pb	206	1451242.4	0.5	**244.9779**	5.608	2.3	ug/L	240	Standard
	Pb	207	1189055.7	0.7	**225.9168**	5.756	2.5	ug/L	198	Standard
	Pb	208	5216722.9	1.2	**250.8847**	7.037	2.8	ug/L	883	Standard
	U	238	9013.7	1.2	**1.1768**	0.034	2.9	ug/L	3	Standard
>	**Bi**	209	581076.6	1.9				ug/L	523984	Standard

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Na	23	6.7	173.2	**57.8631**	100.213	173.2	mg/L	0	Standard
Mg	24	553.3	14.7	**0.4776**	0.083	17.4	mg/L	37	Standard
K	39	1005.0	9.9	**1.5724**	0.167	10.6	mg/L	38	Standard
Ca	43	1240.1	6.3	**56.9237**	3.160	5.6	mg/L	10	Standard
Fe	54	17498.7	0.5	**11.1262**	0.159	1.4	mg/L	179	Standard
Fe	57	5124.2	2.5	**12.1481**	0.285	2.3	mg/L	335	Standard
Sc-1	45	80386.0	1.0				mg/L	61029	Standard
Cl	35	28790.7	0.3				ug/L	20195	Standard
Kr	83	3.0	33.3				ug/L	4	Standard
Br	81	8875.9	6.3				ug/L	1547	Standard
P	31	20292.0	8.4				ug/L	15286	Standard
S	34	2478.5	4.1				ug/L	1572	Standard
Sr	88	438.3	2.4				ug/L	73	Standard
C	12	323.3	22.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	136.7	34.6				mg/L	3	Standard
Dy	164	22618.6	1.5				mg/L	6	Standard
Ho-1	165	13711.2	2.1				mg/L	10	Standard
Er	166	12578.6	1.5				mg/L	13	Standard
I	127	73652.8	8.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		119.043	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		118.066	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	114.416
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	110.896
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1606129101
Sample Date/Time: Wednesday, June 29, 2016 18:57:28
Number of Replicates: 3
Autosampler Position: 251
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89580.8	1.7				ug/L	74699	Standard
	Be	9	360.0	14.7	**0.3489**	0.053	15.3	ug/L	8	Standard
	Al	27	3187676.8	1.0	**18.0772**	0.341	1.9	ug/L	1493	Standard
	Sc	45	73445.9	1.6				ug/L	61029	Standard
	Ti	47	23807.7	6.7	**54.3513**	2.712	5.0	ug/L	35	Standard
	V	51	62405.7	2.9	**6.9715**	0.072	1.0	ug/L	1435	Standard
	Cr	52	100378.5	1.9	**10.7261**	0.052	0.5	ug/L	7635	Standard
	Cr	53	11571.1	3.7	**10.5314**	0.357	3.4	ug/L	363	Standard
	Mn	55	3995310.3	0.7	**497.7426**	6.886	1.4	ug/L	747	Standard
	Co	59	12689.3	1.5	**1.6298**	0.018	1.1	ug/L	234	Standard
	Ni	60	15702.5	1.8	**7.1516**	0.026	0.4	ug/L	215	Standard
	Cu	65	1030601.6	2.5	**480.2115**	2.610	0.5	ug/L	104	Standard
	Zn	66	647092.9	2.6	**513.3926**	3.363	0.7	ug/L	363	Standard
>	**Ge**	72	570780.0	2.0				ug/L	495142	Standard
	As	75	23305.2	1.3	**18.1104**	0.138	0.8	ug/L	-50	Standard
	Se	82	481.4	2.5	**3.6678**	0.121	3.3	ug/L	14	Standard
	Se-1	77	377.3	9.1	**3.8600**	0.402	10.4	ug/L	42	Standard
>	**Ga**	71	43582.7	4.5				mg/L	42	Standard
	Rb	85	26201.0	3.0				ug/L	17	Standard
	Y	89	551000.5	1.0				ug/L	417098	Standard
>	**Rh**	103	178.3	18.7				ug/L	13	Standard
	Mo	98	21134.4	1.3	**6.6476**	0.191	2.9	ug/L	11	Standard
	Ag	107	15204.6	2.3	**1.9441**	0.032	1.6	ug/L	68	Standard
	Cd	111	1466.1	5.3	**0.5801**	0.025	4.4	mg/L	2	Standard
	Cd	114	3712.7	3.5	**0.6050**	0.007	1.1	ug/L	12	Standard
>	**In**	115	700391.9	2.5				ug/L	587441	Standard
	Sn	118	18187.6	2.5	**2.5189**	0.131	5.2	ug/L	497	Standard
	Sb	123	7709.0	2.8	**1.3807**	0.022	1.6	ug/L	78	Standard
	Ba	135	971846.2	1.7	**398.2918**	4.112	1.0	ug/L	24	Standard
	Ce	140	138638.2	1.7				ug/L	25	Standard
>	**Tb**	159	1070571.9	3.6				ug/L	939701	Standard
	Ho	165	2720.2	8.8				ug/L	10	Standard
	Tl	203	657.3	30.6	**0.0422**	0.014	32.0	ug/L	4	Standard
	Tl	205	563.3	26.0	**0.0436**	0.011	26.1	ug/L	2	Standard
	Pb	206	89328.6	2.2	**9.1434**	0.147	1.6	ug/L	240	Standard
	Pb	207	72922.4	1.4	**8.3969**	0.107	1.3	ug/L	198	Standard
	Pb	208	316979.9	0.6	**9.2432**	0.217	2.4	ug/L	883	Standard
	U	238	78871.8	1.7	**6.3120**	0.222	3.5	ug/L	3	Standard
>	**Bi**	209	950965.0	2.0				ug/L	523984	Standard

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Na	23	5.0	173.2	**48.7719**	84.467	173.2	mg/L	0	Standard
Mg	24	613.3	9.8	**0.5934**	0.073	12.3	mg/L	37	Standard
K	39	323.3	7.3	**0.4798**	0.044	9.2	mg/L	38	Standard
Ca	43	198.3	14.8	**7.8949**	1.614	20.4	mg/L	10	Standard
Fe	54	8830.8	5.5	**6.0856**	0.392	6.4	mg/L	179	Standard
Fe	57	2530.2	2.9	**6.0730**	0.228	3.8	mg/L	335	Standard
> **Sc-1**	45	73445.9	1.6				mg/L	61029	Standard
Cl	35	25952.9	0.3				ug/L	20195	Standard
Kr	83	2.0	100.0				ug/L	4	Standard
Br	81	8005.5	5.5				ug/L	1547	Standard
P	31	19060.3	1.8				ug/L	15286	Standard
S	34	1756.8	1.0				ug/L	1572	Standard
Sr	88	518.3	2.8				ug/L	73	Standard
C	12	1226.7	9.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1270.1	11.0				mg/L	3	Standard
Dy	164	4157.3	8.4				mg/L	6	Standard
Ho-1	165	2720.2	8.8				mg/L	10	Standard
Er	166	2643.6	8.4				mg/L	13	Standard
I	127	191520.8	4.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.923	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		115.276	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		119.228
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		181.487
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Cu 65 Upper, S, EEE	Cu	65	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135	
Bi 209 Int Std for sample	Bi	209	Rerun sample

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606138101
Sample Date/Time: Wednesday, June 29, 2016 19:00:40
Number of Replicates: 3
Autosampler Position: 252
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	96098.8	1.2				ug/L	74699	Standard
	Be	9	1650.1	8.9	**1.4642**	0.124	8.5	ug/L	8	Standard
	Al	27	23502208.7	0.7	**124.3024**	1.056	0.8	ug/L	1493	Standard
	Sc	45	81510.4	1.4				ug/L	61029	Standard
	Ti	47	9357.2	0.5	**21.1737**	0.376	1.8	ug/L	35	Standard
	V	51	257600.4	1.3	**29.2098**	0.781	2.7	ug/L	1435	Standard
	Cr	52	224787.2	0.6	**25.1231**	0.400	1.6	ug/L	7635	Standard
	Cr	53	27600.1	3.0	**25.4059**	0.410	1.6	ug/L	363	Standard
	Mn	55	5543699.6	0.4	**686.2289**	8.924	1.3	ug/L	747	Standard
	Co	59	117640.6	0.9	**15.3216**	0.399	2.6	ug/L	234	Standard
	Ni	60	64249.3	0.8	**29.4562**	0.340	1.2	ug/L	215	Standard
	Cu	65	57365.7	1.4	**26.4629**	0.232	0.9	ug/L	104	Standard
	Zn	66	103406.0	1.2	**81.1457**	1.055	1.3	ug/L	363	Standard
>	**Ge**	72	574477.7	1.7				ug/L	495142	Standard
	As	75	12246.4	0.5	**9.4841**	0.110	1.2	ug/L	-50	Standard
	Se	82	125.1	3.5	**0.8446**	0.024	2.8	ug/L	14	Standard
	Se-1	77	164.3	2.5	**1.3176**	0.070	5.3	ug/L	42	Standard
>	**Ga**	71	29587.2	2.2				mg/L	42	Standard
	Rb	85	313937.1	2.6				ug/L	17	Standard
	Y	89	822636.0	0.8				ug/L	417098	Standard
>	**Rh**	103	38.3	49.4				ug/L	13	Standard
	Mo	98	757.2	4.8	**0.2454**	0.010	4.2	ug/L	11	Standard
	Ag	107	953.4	1.4	**0.1164**	0.003	2.3	ug/L	68	Standard
	Cd	111	1588.5	0.6	**0.6638**	0.009	1.4	mg/L	2	Standard
	Cd	114	3783.2	0.8	**0.6501**	0.009	1.4	ug/L	12	Standard
>	**In**	115	664448.0	1.0				ug/L	587441	Standard
	Sn	118	643.3	5.2	**0.0026**	0.004	152.2	ug/L	497	Standard
	Sb	123	269.8	13.5	**0.0469**	0.007	15.6	ug/L	78	Standard
	Ba	135	662128.9	0.5	**286.0118**	2.987	1.0	ug/L	24	Standard
	Ce	140	1687892.1	1.1				ug/L	25	Standard
>	**Tb**	159	1062435.8	0.8				ug/L	939701	Standard
	Ho	165	27182.7	2.2				ug/L	10	Standard
	Tl	203	1364.1	4.3	**0.1521**	0.007	4.3	ug/L	4	Standard
	Tl	205	1335.1	6.0	**0.1737**	0.010	5.7	ug/L	2	Standard
	Pb	206	284182.0	0.3	**49.3998**	0.214	0.4	ug/L	240	Standard
	Pb	207	234533.7	1.0	**45.8828**	0.448	1.0	ug/L	198	Standard
	Pb	208	1023299.4	0.1	**50.6751**	0.295	0.6	ug/L	883	Standard
	U	238	6312.3	2.1	**0.8483**	0.014	1.7	ug/L	3	Standard
>	**Bi**	209	563477.4	0.7				ug/L	523984	Standard

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Na	23	3.3	86.6	**28.8214**	24.963	86.6	mg/L	0	Standard
Mg	24	151.7	18.2	**0.0816**	0.027	33.5	mg/L	37	Standard
K	39	1206.7	9.1	**1.8839**	0.198	10.5	mg/L	38	Standard
Ca	43	230.0	38.1	**8.3188**	4.002	48.1	mg/L	10	Standard
Fe	54	27991.0	1.6	**17.6350**	0.523	3.0	mg/L	179	Standard
Fe	57	7366.8	1.7	**17.6771**	0.511	2.9	mg/L	335	Standard
Sc-1	45	81510.4	1.4				mg/L	61029	Standard
Cl	35	28359.2	2.3				ug/L	20195	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	4510.7	3.7				ug/L	1547	Standard
P	31	20567.3	1.1				ug/L	15286	Standard
S	34	2398.5	2.1				ug/L	1572	Standard
Sr	88	138.3	12.7				ug/L	73	Standard
C	12	220.0	4.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	113.3	35.7				mg/L	3	Standard
Dy	164	44981.5	2.0				mg/L	6	Standard
Ho-1	165	27182.7	2.2				mg/L	10	Standard
Er	166	24606.7	4.9				mg/L	13	Standard
I	127	24668.4	3.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		128.648	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		116.023	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.109
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.537
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606138101
Sample Date/Time: Wednesday, June 29, 2016 19:03:51
Number of Replicates: 3
Autosampler Position: 253
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89738.3	1.4				ug/L	74699	Standard
	Be	9	41.7	6.9	**0.0470**	0.003	6.5	ug/L	8	Standard
	Al	27	505536.2	3.8	**2.8498**	0.087	3.1	ug/L	1493	Standard
	Sc	45	72476.3	1.0				ug/L	61029	Standard
	Ti	47	238.7	3.3	**0.4178**	0.015	3.5	ug/L	35	Standard
	V	51	6994.4	2.1	**0.5793**	0.021	3.7	ug/L	1435	Standard
	Cr	52	13067.6	0.8	**0.4515**	0.011	2.5	ug/L	7635	Standard
	Cr	53	1060.0	5.3	**0.6298**	0.052	8.3	ug/L	363	Standard
	Mn	55	117506.1	2.5	**13.9721**	0.301	2.2	ug/L	747	Standard
	Co	59	2633.2	1.9	**0.2964**	0.006	2.1	ug/L	234	Standard
	Ni	60	1579.1	3.6	**0.5819**	0.030	5.1	ug/L	215	Standard
	Cu	65	1415.4	1.9	**0.5327**	0.017	3.2	ug/L	104	Standard
	Zn	66	4415.0	0.5	**2.9272**	0.025	0.9	ug/L	363	Standard
>	**Ge**	72	591804.3	0.7				ug/L	495142	Standard
	As	75	188.6	12.3	**0.2004**	0.017	8.4	ug/L	-50	Standard
	Se	82	17.7	38.3	**-0.0030**	0.051	1669.1	ug/L	14	Standard
	Se-1	77	53.3	24.5	**-0.0120**	0.145	1206.4	ug/L	42	Standard
>	**Ga**	71	651.7	3.8				mg/L	42	Standard
	Rb	85	6646.5	2.9				ug/L	17	Standard
	Y	89	496582.4	1.4				ug/L	417098	Standard
>	**Rh**	103	10.0	86.6				ug/L	13	Standard
	Mo	98	63.7	13.0	**0.0149**	0.003	17.4	ug/L	11	Standard
	Ag	107	138.0	7.0	**0.0054**	0.001	21.7	ug/L	68	Standard
	Cd	111	41.6	25.2	**0.0093**	0.004	47.8	mg/L	2	Standard
	Cd	114	78.4	6.5	**0.0111**	0.001	8.0	ug/L	12	Standard
>	**In**	115	680653.4	0.9				ug/L	587441	Standard
	Sn	118	558.3	7.0	**-0.0122**	0.005	43.2	ug/L	497	Standard
	Sb	123	143.1	16.8	**0.0222**	0.004	19.8	ug/L	78	Standard
	Ba	135	14129.9	0.6	**5.9423**	0.035	0.6	ug/L	24	Standard
	Ce	140	36747.8	1.4				ug/L	25	Standard
>	**Tb**	159	1046560.0	0.5				ug/L	939701	Standard
	Ho	165	620.0	6.6				ug/L	10	Standard
	Tl	203	40.7	9.9	**0.0027**	0.000	16.9	ug/L	4	Standard
	Tl	205	38.3	19.9	**0.0050**	0.001	18.8	ug/L	2	Standard
	Pb	206	6390.7	0.3	**1.0069**	0.002	0.2	ug/L	240	Standard
	Pb	207	5305.6	1.7	**0.9374**	0.017	1.8	ug/L	198	Standard
	Pb	208	22358.8	1.4	**1.0005**	0.020	2.0	ug/L	883	Standard
	U	238	147.3	10.0	**0.0149**	0.002	12.5	ug/L	3	Standard
>	**Bi**	209	581458.5	0.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	36.7	41.7	**-0.0251**	0.017	67.5	mg/L	37	Standard
K	39	73.3	27.6	**0.0225**	0.038	170.4	mg/L	38	Standard
Ca	43	25.0	40.0	**-1.1927**	0.538	45.1	mg/L	10	Standard
Fe	54	777.1	4.9	**0.4166**	0.030	7.2	mg/L	179	Standard
Fe	57	423.3	1.8	**0.1373**	0.012	9.1	mg/L	335	Standard
> **Sc-1**	45	72476.3	1.0				mg/L	61029	Standard
Cl	35	26907.2	2.4				ug/L	20195	Standard
Kr	83	1.7	124.9				ug/L	4	Standard
Br	81	2140.2	2.1				ug/L	1547	Standard
P	31	19854.7	4.5				ug/L	15286	Standard
S	34	2031.8	8.8				ug/L	1572	Standard
Sr	88	61.7	24.8				ug/L	73	Standard
C	12	66.7	82.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	1031.0	18.9				mg/L	6	Standard
Ho-1	165	620.0	6.6				mg/L	10	Standard
Er	166	536.7	12.4				mg/L	13	Standard
I	127	3175.3	27.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		120.134	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		119.522	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		115.868
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.969
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606138102
Sample Date/Time: Wednesday, June 29, 2016 19:07:03
Number of Replicates: 3
Autosampler Position: 254
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	93009.7	1.6				ug/L	74699	Standard
	Be	9	1248.4	3.0	**1.1470**	0.051	4.5	ug/L	8	Standard
	Al	27	40124336.3	0.4	**219.2936**	2.793	1.3	ug/L	1493	Standard
	Sc	45	83437.5	1.7				ug/L	61029	Standard
	Ti	47	9733.8	0.5	**22.4436**	0.290	1.3	ug/L	35	Standard
	V	51	219254.4	2.3	**25.2954**	0.490	1.9	ug/L	1435	Standard
	Cr	52	167385.2	0.7	**18.8093**	0.105	0.6	ug/L	7635	Standard
	Cr	53	20240.2	3.5	**18.8976**	0.529	2.8	ug/L	363	Standard
	Mn	55	6543259.4	1.4	**825.1579**	15.855	1.9	ug/L	747	Standard
	Co	59	86492.3	2.3	**11.4640**	0.252	2.2	ug/L	234	Standard
	Ni	60	58233.4	1.3	**27.1864**	0.121	0.4	ug/L	215	Standard
	Cu	65	35144.1	1.8	**16.4764**	0.210	1.3	ug/L	104	Standard
	Zn	66	61921.6	1.7	**49.3206**	0.509	1.0	ug/L	363	Standard
>	**Ge**	72	563884.1	0.9				ug/L	495142	Standard
	As	75	5876.5	0.9	**4.6669**	0.080	1.7	ug/L	-50	Standard
	Se	82	62.7	20.2	**0.3638**	0.101	27.7	ug/L	14	Standard
	Se-1	77	116.3	8.0	**0.7757**	0.099	12.7	ug/L	42	Standard
>	**Ga**	71	24224.4	1.6				mg/L	42	Standard
	Rb	85	231886.4	1.9				ug/L	17	Standard
	Y	89	788603.8	0.2				ug/L	417098	Standard
>	**Rh**	103	76.7	50.7				ug/L	13	Standard
	Mo	98	590.2	6.7	**0.1909**	0.011	6.0	ug/L	11	Standard
	Ag	107	590.3	14.1	**0.0675**	0.010	15.2	ug/L	68	Standard
	Cd	111	402.0	10.7	**0.1627**	0.016	9.9	mg/L	2	Standard
	Cd	114	896.6	5.0	**0.1531**	0.007	4.5	ug/L	12	Standard
>	**In**	115	661468.7	1.5				ug/L	587441	Standard
	Sn	118	563.3	17.0	**-0.0090**	0.016	173.2	ug/L	497	Standard
	Sb	123	168.4	11.6	**0.0279**	0.004	15.0	ug/L	78	Standard
	Ba	135	766980.0	0.9	**332.7995**	3.011	0.9	ug/L	24	Standard
	Ce	140	1513996.2	0.9				ug/L	25	Standard
>	**Tb**	159	1057537.7	1.8				ug/L	939701	Standard
	Ho	165	25513.1	1.6				ug/L	10	Standard
	Tl	203	1321.7	3.8	**0.1489**	0.005	3.2	ug/L	4	Standard
	Tl	205	1201.7	6.5	**0.1579**	0.009	5.7	ug/L	2	Standard
	Pb	206	69846.7	2.1	**12.2126**	0.140	1.1	ug/L	240	Standard
	Pb	207	56032.1	2.8	**11.0205**	0.188	1.7	ug/L	198	Standard
	Pb	208	243026.5	0.6	**12.1032**	0.059	0.5	ug/L	883	Standard
	U	238	7981.8	0.7	**1.0851**	0.004	0.3	ug/L	3	Standard
>	**Bi**	209	557709.9	1.1				ug/L	523984	Standard

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Na	23	6.7	86.6	**56.4197**	48.874	86.6	mg/L	0	Standard
Mg	24	238.3	32.7	**0.1607**	0.077	48.1	mg/L	37	Standard
K	39	688.3	8.8	**0.9980**	0.083	8.3	mg/L	38	Standard
Ca	43	911.7	12.3	**39.6249**	5.390	13.6	mg/L	10	Standard
Fe	54	20800.6	0.9	**12.7625**	0.173	1.4	mg/L	179	Standard
Fe	57	6012.9	2.1	**13.8749**	0.248	1.8	mg/L	335	Standard
> **Sc-1**	45	83437.5	1.7				mg/L	61029	Standard
Cl	35	29332.4	1.9				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	2603.6	11.5				ug/L	1547	Standard
P	31	21632.1	2.1				ug/L	15286	Standard
S	34	2746.9	3.7				ug/L	1572	Standard
Sr	88	253.3	10.9				ug/L	73	Standard
C	12	116.7	27.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	45.8				mg/L	3	Standard
Dy	164	42471.8	1.0				mg/L	6	Standard
Ho-1	165	25513.1	1.6				mg/L	10	Standard
Er	166	22212.9	0.4				mg/L	13	Standard
I	127	23259.5	0.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.513	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		113.883	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.602
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.436
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606138102
Sample Date/Time: Wednesday, June 29, 2016 19:10:14
Number of Replicates: 3
Autosampler Position: 255
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85837.5	1.0				ug/L	74699	Standard
	Be	9	38.3	19.9	**0.0455**	0.007	16.1	ug/L	8	Standard
	Al	27	829500.0	3.1	**4.8979**	0.105	2.1	ug/L	1493	Standard
	Sc	45	72806.2	1.9				ug/L	61029	Standard
	Ti	47	228.0	6.2	**0.3999**	0.033	8.1	ug/L	35	Standard
	V	51	5937.2	2.5	**0.4694**	0.017	3.6	ug/L	1435	Standard
	Cr	52	11356.6	1.4	**0.2725**	0.020	7.2	ug/L	7635	Standard
	Cr	53	790.0	13.9	**0.3928**	0.096	24.5	ug/L	363	Standard
	Mn	55	140399.5	1.1	**16.9108**	0.252	1.5	ug/L	747	Standard
	Co	59	1986.1	4.2	**0.2171**	0.011	4.8	ug/L	234	Standard
	Ni	60	1398.7	1.4	**0.5081**	0.009	1.8	ug/L	215	Standard
	Cu	65	887.4	6.1	**0.2997**	0.027	8.9	ug/L	104	Standard
	Zn	66	3530.4	0.8	**2.2796**	0.035	1.5	ug/L	363	Standard
>	**Ge**	72	585343.3	0.6				ug/L	495142	Standard
	As	75	60.2	40.7	**0.1052**	0.019	17.9	ug/L	-50	Standard
	Se	82	19.5	23.7	**0.0127**	0.037	290.2	ug/L	14	Standard
	Se-1	77	54.0	19.3	**0.0032**	0.122	3775.1	ug/L	42	Standard
>	**Ga**	71	611.7	10.2				mg/L	42	Standard
	Rb	85	4939.1	4.6				ug/L	17	Standard
	Y	89	509652.0	1.0				ug/L	417098	Standard
>	**Rh**	103	5.0	100.0				ug/L	13	Standard
	Mo	98	44.1	7.7	**0.0084**	0.001	14.8	ug/L	11	Standard
	Ag	107	136.0	8.3	**0.0049**	0.002	33.6	ug/L	68	Standard
	Cd	111	13.6	15.2	**-0.0024**	0.001	32.7	mg/L	2	Standard
	Cd	114	34.6	39.9	**0.0036**	0.002	62.3	ug/L	12	Standard
>	**In**	115	689569.5	1.2				ug/L	587441	Standard
	Sn	118	635.0	8.5	**-0.0021**	0.008	369.1	ug/L	497	Standard
	Sb	123	120.9	7.4	**0.0179**	0.002	10.7	ug/L	78	Standard
	Ba	135	16312.1	1.7	**6.7731**	0.043	0.6	ug/L	24	Standard
	Ce	140	31461.0	1.2				ug/L	25	Standard
>	**Tb**	159	1048084.0	0.7				ug/L	939701	Standard
	Ho	165	503.3	20.9				ug/L	10	Standard
	Tl	203	28.0	9.4	**0.0013**	0.000	21.0	ug/L	4	Standard
	Tl	205	13.3	21.7	**0.0019**	0.000	19.6	ug/L	2	Standard
	Pb	206	1789.4	1.9	**0.2333**	0.006	2.6	ug/L	240	Standard
	Pb	207	1416.1	2.7	**0.2012**	0.009	4.3	ug/L	198	Standard
	Pb	208	6428.2	1.8	**0.2375**	0.004	1.7	ug/L	883	Standard
	U	238	157.3	5.4	**0.0164**	0.001	7.5	ug/L	3	Standard
>	**Bi**	209	576421.5	0.5				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	65.0	13.3	**0.0052**	0.008	161.5	mg/L	37	Standard
K	39	56.7	10.2	**-0.0092**	0.009	98.8	mg/L	38	Standard
Ca	43	46.7	16.4	**-0.0469**	0.452	963.7	mg/L	10	Standard
Fe	54	615.5	5.2	**0.2993**	0.025	8.2	mg/L	179	Standard
Fe	57	410.0	10.0	**0.0928**	0.096	103.4	mg/L	335	Standard
Sc-1	45	72806.2	1.9				mg/L	61029	Standard
Cl	35	29355.1	3.4				ug/L	20195	Standard
Kr	83	2.3	24.7				ug/L	4	Standard
Br	81	1910.1	15.3				ug/L	1547	Standard
P	31	20493.9	2.3				ug/L	15286	Standard
S	34	2463.5	6.9				ug/L	1572	Standard
Sr	88	83.3	42.1				ug/L	73	Standard
C	12	50.0	34.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	991.0	1.5				mg/L	6	Standard
Ho-1	165	503.3	20.9				mg/L	10	Standard
Er	166	466.7	4.5				mg/L	13	Standard
I	127	2401.9	23.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		114.911	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		118.217	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		117.385
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.007
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 19:13:27
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83999.1	3.6				ug/L	74699	Standard
	Be	9	57157.7	3.6	**57.7443**	0.451	0.8	ug/L	8	Standard
	Al	27	8858742.4	2.0	**53.6133**	0.921	1.7	ug/L	1493	Standard
	Sc	45	70122.0	3.5				ug/L	61029	Standard
	Ti	47	47445.5	0.9	**109.3528**	3.353	3.1	ug/L	35	Standard
	V	51	471838.1	3.0	**54.4025**	0.466	0.9	ug/L	1435	Standard
	Cr	52	466548.5	1.7	**54.0130**	1.261	2.3	ug/L	7635	Standard
	Cr	53	57204.5	1.8	**53.7881**	1.637	3.0	ug/L	363	Standard
	Mn	55	422873.4	1.8	**52.9497**	1.131	2.1	ug/L	747	Standard
	Co	59	420575.5	1.8	**55.6399**	1.134	2.0	ug/L	234	Standard
	Ni	60	114954.2	1.8	**53.5507**	1.121	2.1	ug/L	215	Standard
	Cu	65	113826.7	2.0	**53.3592**	1.065	2.0	ug/L	104	Standard
	Zn	66	66150.5	1.8	**52.4882**	1.217	2.3	ug/L	363	Standard
>	Ge	72	566689.7	3.9				ug/L	495142	Standard
	As	75	66474.1	0.9	**51.9549**	1.668	3.2	ug/L	-50	Standard
	Se	82	6669.2	0.5	**53.0020**	1.808	3.4	ug/L	14	Standard
	Se-1	77	4569.4	1.3	**54.0883**	1.963	3.6	ug/L	42	Standard
>	Ga	71	60.0	25.0				mg/L	42	Standard
	Rb	85	973.4	4.9				ug/L	17	Standard
	Y	89	482055.4	0.8				ug/L	417098	Standard
>	Rh	103	21.7	35.3				ug/L	13	Standard
	Mo	98	311127.6	1.9	**101.8685**	1.475	1.4	ug/L	11	Standard
	Ag	107	381455.1	1.8	**51.0679**	0.625	1.2	ug/L	68	Standard
	Cd	111	122240.5	1.1	**51.0178**	0.254	0.5	mg/L	2	Standard
	Cd	114	297421.0	1.0	**50.6157**	0.803	1.6	ug/L	12	Standard
>	In	115	673075.7	0.6				ug/L	587441	Standard
	Sn	118	341770.5	1.5	**50.9666**	0.480	0.9	ug/L	497	Standard
	Sb	123	266115.5	1.9	**49.7407**	0.724	1.5	ug/L	78	Standard
	Ba	135	114468.8	0.7	**48.7952**	0.078	0.2	ug/L	24	Standard
	Ce	140	298.3	40.9				ug/L	25	Standard
>	Tb	159	1044481.4	1.5				ug/L	939701	Standard
	Ho	165	18.3	83.3				ug/L	10	Standard
	Tl	203	467319.7	1.5	**52.0663**	0.128	0.2	ug/L	4	Standard
	Tl	205	421316.6	1.5	**54.0865**	0.384	0.7	ug/L	2	Standard
	Pb	206	294059.2	2.1	**50.4836**	0.259	0.5	ug/L	240	Standard
	Pb	207	260305.8	2.4	**50.2976**	0.406	0.8	ug/L	198	Standard
	Pb	208	1086866.5	0.8	**53.1659**	0.550	1.0	ug/L	883	Standard
	U	238	395799.2	0.7	**52.8135**	0.760	1.4	ug/L	3	Standard
>	Bi	209	570529.8	1.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4777.4	3.9	**5.3091**	0.347	6.5	mg/L	37	Standard
K	39	2250.2	3.7	**4.2173**	0.198	4.7	mg/L	38	Standard
Ca	43	128.3	12.5	**4.5532**	1.080	23.7	mg/L	10	Standard
Fe	54	7377.7	1.8	**5.3086**	0.144	2.7	mg/L	179	Standard
Fe	57	2055.1	1.5	**5.0082**	0.127	2.5	mg/L	335	Standard
> **Sc-1**	45	70122.0	3.5				mg/L	61029	Standard
Cl	35	30001.0	0.9				ug/L	20195	Standard
Kr	83	1.7	91.7				ug/L	4	Standard
Br	81	2183.5	6.8				ug/L	1547	Standard
P	31	22995.8	1.5				ug/L	15286	Standard
S	34	2830.3	2.9				ug/L	1572	Standard
Sr	88	66.7	24.1				ug/L	73	Standard
C	12	80.0	50.0				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	9.0	108.0				mg/L	6	Standard
Ho-1	165	18.3	83.3				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	1968.5	24.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	115.489		
Al	27	107.227		
Sc	45			
Ti	47	109.353		
V	51	108.805		
Cr	52	108.026		
Cr	53			
Mn	55	105.899		
Co	59	111.280		
Ni	60	107.101		
Cu	65	106.718		
Zn	66	104.976		
> Ge	72		114.450	
As	75	103.910		
Se	82	106.004		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.868		
Ag	107	102.136		
Cd	111	102.036		
Cd	114			
In	115		114.578	
Sn	118	101.933		
Sb	123	99.481		
Ba	135	97.590		
Ce	140			
Tb	159			
Ho	165			
Tl	203	104.133		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.332		
U	238	105.627		
Bi	209		108.883	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Co	59	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 19:16:39
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83692.3	2.8				ug/L	74699	Standard
	Be	9	18.3	15.7	**0.0263**	0.003	12.9	ug/L	8	Standard
	Al	27	3213.7	25.4	**0.0061**	0.004	71.9	ug/L	1493	Standard
	Sc	45	70726.5	3.0				ug/L	61029	Standard
	Ti	47	41.0	12.2	**-0.0158**	0.012	73.1	ug/L	35	Standard
	V	51	1525.1	1.9	**-0.0214**	0.005	22.4	ug/L	1435	Standard
	Cr	52	7659.9	0.9	**-0.1324**	0.015	11.0	ug/L	7635	Standard
	Cr	53	410.0	16.0	**0.0526**	0.061	116.5	ug/L	363	Standard
	Mn	55	997.7	7.3	**-0.0244**	0.010	41.0	ug/L	747	Standard
	Co	59	260.3	1.6	**-0.0033**	0.000	10.0	ug/L	234	Standard
	Ni	60	195.0	3.6	**-0.0341**	0.004	11.2	ug/L	215	Standard
	Cu	65	140.7	10.7	**-0.0385**	0.007	19.0	ug/L	104	Standard
	Zn	66	386.7	3.7	**-0.1493**	0.008	5.7	ug/L	363	Standard
>	**Ge**	72	574185.4	0.9				ug/L	495142	Standard
	As	75	-49.3	11.6	**0.0216**	0.004	19.9	ug/L	-50	Standard
	Se	82	18.5	26.4	**0.0072**	0.039	544.3	ug/L	14	Standard
	Se-1	77	51.3	18.1	**-0.0155**	0.115	739.5	ug/L	42	Standard
>	**Ga**	71	41.7	30.2				mg/L	42	Standard
	Rb	85	33.3	22.9				ug/L	17	Standard
	Y	89	508899.9	2.4				ug/L	417098	Standard
>	**Rh**	103	10.0	50.0				ug/L	13	Standard
	Mo	98	287.2	24.5	**0.0857**	0.020	22.8	ug/L	11	Standard
	Ag	107	140.0	24.8	**0.0054**	0.004	76.0	ug/L	68	Standard
	Cd	111	18.8	30.5	**-0.0003**	0.002	828.9	mg/L	2	Standard
	Cd	114	42.6	5.3	**0.0050**	0.000	2.5	ug/L	12	Standard
>	**In**	115	688571.2	3.6				ug/L	587441	Standard
	Sn	118	896.7	13.9	**0.0365**	0.020	55.6	ug/L	497	Standard
	Sb	123	419.7	28.4	**0.0731**	0.025	33.8	ug/L	78	Standard
	Ba	135	58.0	33.3	**0.0081**	0.008	93.7	ug/L	24	Standard
	Ce	140	43.3	17.6				ug/L	25	Standard
>	**Tb**	159	1032903.3	2.1				ug/L	939701	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	69.3	37.1	**0.0059**	0.003	47.0	ug/L	4	Standard
	Tl	205	78.3	57.2	**0.0101**	0.006	55.2	ug/L	2	Standard
	Pb	206	303.3	6.2	**-0.0195**	0.003	14.1	ug/L	240	Standard
	Pb	207	260.7	8.9	**-0.0200**	0.005	24.1	ug/L	198	Standard
	Pb	208	1157.4	6.9	**-0.0179**	0.003	17.6	ug/L	883	Standard
	U	238	52.0	46.8	**0.0024**	0.003	129.1	ug/L	3	Standard
>	**Bi**	209	575232.2	1.3				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	36.7	28.4	**-0.0241**	0.012	50.4	mg/L	37	Standard
K	39	50.0	26.5	**-0.0190**	0.023	121.8	mg/L	38	Standard
Ca	43	26.7	39.0	**-1.0625**	0.584	55.0	mg/L	10	Standard
Fe	54	147.5	7.0	**-0.0305**	0.005	15.7	mg/L	179	Standard
Fe	57	216.7	8.1	**-0.4394**	0.033	7.6	mg/L	335	Standard
Sc-1	45	70726.5	3.0				mg/L	61029	Standard
Cl	35	29273.6	1.2				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	2073.5	10.2				ug/L	1547	Standard
P	31	23289.7	10.5				ug/L	15286	Standard
S	34	2535.2	3.8				ug/L	1572	Standard
Sr	88	68.3	37.5				ug/L	73	Standard
C	12	66.7	22.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	16.3	126.2				mg/L	6	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	1766.8	31.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		115.964	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		117.215
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.780
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Wednesday, June 29, 2016 19:18:56
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Method 6020 - Summary Report

Sample ID: L1606138103
Sample Date/Time: Wednesday, June 29, 2016 19:19:52
Number of Replicates: 3
Autosampler Position: 256
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88921.9	2.3				ug/L	74699	Standard
	Be	9	1191.7	0.9	**1.1451**	0.025	2.2	ug/L	8	Standard
	Al	27	19716870.1	2.2	**112.7701**	5.073	4.5	ug/L	1493	Standard
	Sc	45	82006.5	3.2				ug/L	61029	Standard
	Ti	47	8807.2	1.6	**20.0178**	0.269	1.3	ug/L	35	Standard
	V	51	208539.0	1.3	**23.7197**	0.153	0.6	ug/L	1435	Standard
	Cr	52	166877.0	1.1	**18.4795**	0.081	0.4	ug/L	7635	Standard
	Cr	53	19956.5	0.7	**18.3731**	0.126	0.7	ug/L	363	Standard
	Mn	55	4948296.7	1.6	**615.4227**	6.037	1.0	ug/L	747	Standard
	Co	59	82754.8	2.1	**10.8165**	0.154	1.4	ug/L	234	Standard
	Ni	60	51698.7	0.5	**23.7942**	0.298	1.3	ug/L	215	Standard
	Cu	65	48855.0	1.6	**22.6321**	0.340	1.5	ug/L	104	Standard
	Zn	66	105467.2	1.2	**83.1726**	0.384	0.5	ug/L	363	Standard
>	**Ge**	72	571655.8	0.7				ug/L	495142	Standard
	As	75	9636.9	0.9	**7.5116**	0.042	0.6	ug/L	-50	Standard
	Se	82	70.5	8.3	**0.4184**	0.042	10.1	ug/L	14	Standard
	Se-1	77	129.0	9.9	**0.9077**	0.153	16.9	ug/L	42	Standard
>	**Ga**	71	22341.5	2.4				mg/L	42	Standard
	Rb	85	210691.8	1.9				ug/L	17	Standard
	Y	89	776017.6	0.9				ug/L	417098	Standard
>	**Rh**	103	61.7	24.8				ug/L	13	Standard
	Mo	98	1324.4	9.6	**0.4208**	0.045	10.6	ug/L	11	Standard
	Ag	107	918.4	2.4	**0.1080**	0.004	3.7	ug/L	68	Standard
	Cd	111	891.1	4.2	**0.3578**	0.020	5.5	mg/L	2	Standard
	Cd	114	2180.6	6.0	**0.3625**	0.017	4.8	ug/L	12	Standard
>	**In**	115	684819.6	1.2				ug/L	587441	Standard
	Sn	118	1785.1	3.5	**0.1674**	0.006	3.8	ug/L	497	Standard
	Sb	123	354.4	3.1	**0.0609**	0.003	4.6	ug/L	78	Standard
	Ba	135	461342.5	1.4	**193.3434**	2.631	1.4	ug/L	24	Standard
	Ce	140	1368480.3	1.7				ug/L	25	Standard
>	**Tb**	159	1075718.6	2.2				ug/L	939701	Standard
	Ho	165	22026.0	1.7				ug/L	10	Standard
	Tl	203	1135.0	2.0	**0.1247**	0.001	0.6	ug/L	4	Standard
	Tl	205	1093.4	11.6	**0.1404**	0.014	10.2	ug/L	2	Standard
	Pb	206	147882.6	1.3	**25.3549**	0.415	1.6	ug/L	240	Standard
	Pb	207	119862.3	0.6	**23.1268**	0.424	1.8	ug/L	198	Standard
	Pb	208	520445.5	2.0	**25.4242**	0.898	3.5	ug/L	883	Standard
	U	238	4663.1	0.9	**0.6178**	0.006	0.9	ug/L	3	Standard
>	**Bi**	209	570570.9	1.5				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	126.7	27.7	**0.0563**	0.032	56.3	mg/L	37	Standard
K	39	878.4	3.1	**1.3326**	0.091	6.9	mg/L	38	Standard
Ca	43	426.7	4.7	**17.5293**	0.460	2.6	mg/L	10	Standard
Fe	54	21094.2	3.4	**13.1896**	0.865	6.6	mg/L	179	Standard
Fe	57	5826.1	1.4	**13.6721**	0.491	3.6	mg/L	335	Standard
> **Sc-1**	45	82006.5	3.2				mg/L	61029	Standard
Cl	35	28772.6	2.0				ug/L	20195	Standard
Kr	83	3.0	66.7				ug/L	4	Standard
Br	81	3580.4	3.6				ug/L	1547	Standard
P	31	21750.6	1.3				ug/L	15286	Standard
S	34	2703.6	0.6				ug/L	1572	Standard
Sr	88	178.3	13.8				ug/L	73	Standard
C	12	233.3	9.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	96.7	36.3				mg/L	3	Standard
Dy	164	37298.5	1.0				mg/L	6	Standard
Ho-1	165	22026.0	1.7				mg/L	10	Standard
Er	166	20383.7	1.3				mg/L	13	Standard
I	127	19701.1	3.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.041	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		115.453	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		116.577
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.891
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606138103
Sample Date/Time: Wednesday, June 29, 2016 19:23:03
Number of Replicates: 3
Autosampler Position: 257
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82351.7	3.3				ug/L	74699	Standard
	Be	9	43.3	24.0	**0.0523**	0.011	20.3	ug/L	8	Standard
	Al	27	430174.7	3.0	**2.6419**	0.016	0.6	ug/L	1493	Standard
	Sc	45	73040.6	1.2				ug/L	61029	Standard
	Ti	47	215.7	6.2	**0.3839**	0.033	8.6	ug/L	35	Standard
	V	51	5937.3	2.7	**0.4853**	0.017	3.5	ug/L	1435	Standard
	Cr	52	11052.0	1.3	**0.2679**	0.017	6.2	ug/L	7635	Standard
	Cr	53	723.4	5.6	**0.3480**	0.038	11.0	ug/L	363	Standard
	Mn	55	109527.8	0.6	**13.4774**	0.102	0.8	ug/L	747	Standard
	Co	59	1998.1	1.8	**0.2248**	0.006	2.5	ug/L	234	Standard
	Ni	60	1283.7	2.7	**0.4700**	0.016	3.4	ug/L	215	Standard
	Cu	65	1177.7	1.9	**0.4444**	0.009	2.1	ug/L	104	Standard
	Zn	66	4258.3	1.3	**2.9218**	0.029	1.0	ug/L	363	Standard
>	**Ge**	72	571680.5	0.6				ug/L	495142	Standard
	As	75	130.4	5.6	**0.1604**	0.006	3.7	ug/L	-50	Standard
	Se	82	14.1	16.1	**-0.0268**	0.018	65.5	ug/L	14	Standard
	Se-1	77	58.0	6.9	**0.0653**	0.044	66.8	ug/L	42	Standard
>	**Ga**	71	521.7	4.0				mg/L	42	Standard
	Rb	85	4554.0	2.0				ug/L	17	Standard
	Y	89	512515.9	2.6				ug/L	417098	Standard
>	**Rh**	103	11.7	24.7				ug/L	13	Standard
	Mo	98	90.4	4.4	**0.0229**	0.001	6.5	ug/L	11	Standard
	Ag	107	144.3	4.6	**0.0058**	0.001	16.1	ug/L	68	Standard
	Cd	111	21.8	34.6	**0.0009**	0.003	335.6	mg/L	2	Standard
	Cd	114	67.8	46.0	**0.0090**	0.005	55.6	ug/L	12	Standard
>	**In**	115	696556.9	1.5				ug/L	587441	Standard
	Sn	118	640.0	3.6	**-0.0023**	0.005	204.9	ug/L	497	Standard
	Sb	123	182.0	15.1	**0.0287**	0.006	19.2	ug/L	78	Standard
	Ba	135	9992.3	2.7	**4.1009**	0.069	1.7	ug/L	24	Standard
	Ce	140	29587.2	2.0				ug/L	25	Standard
>	**Tb**	159	1058949.6	2.5				ug/L	939701	Standard
	Ho	165	493.3	6.5				ug/L	10	Standard
	Tl	203	41.7	21.8	**0.0028**	0.001	37.1	ug/L	4	Standard
	Tl	205	43.3	54.5	**0.0057**	0.003	52.4	ug/L	2	Standard
	Pb	206	3583.8	1.2	**0.5358**	0.012	2.2	ug/L	240	Standard
	Pb	207	2855.9	1.4	**0.4744**	0.011	2.4	ug/L	198	Standard
	Pb	208	12510.0	0.4	**0.5295**	0.006	1.1	ug/L	883	Standard
	U	238	110.3	6.2	**0.0101**	0.001	8.0	ug/L	3	Standard
>	**Bi**	209	579224.4	1.1				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	51.7	29.6	**-0.0092**	0.017	184.4	mg/L	37	Standard
K	39	41.7	61.6	**-0.0375**	0.047	124.3	mg/L	38	Standard
Ca	43	26.7	10.8	**-1.1162**	0.146	13.1	mg/L	10	Standard
Fe	54	584.0	15.6	**0.2752**	0.062	22.7	mg/L	179	Standard
Fe	57	388.3	5.2	**0.0289**	0.063	219.5	mg/L	335	Standard
> **Sc-1**	45	73040.6	1.2				mg/L	61029	Standard
Cl	35	28933.6	1.8				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	2263.5	5.9				ug/L	1547	Standard
P	31	20116.7	3.4				ug/L	15286	Standard
S	34	2530.2	7.0				ug/L	1572	Standard
Sr	88	75.0	23.1				ug/L	73	Standard
C	12	66.7	56.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	963.7	4.1				mg/L	6	Standard
Ho-1	165	493.3	6.5				mg/L	10	Standard
Er	166	410.0	6.5				mg/L	13	Standard
I	127	2373.5	31.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.245	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		115.458	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		118.575
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.542
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606138104
Sample Date/Time: Wednesday, June 29, 2016 19:26:15
Number of Replicates: 3
Autosampler Position: 258
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85261.0	2.3				ug/L	74699	Standard
	Be	9	1065.0	16.2	**1.0661**	0.158	14.8	ug/L	8	Standard
	Al	27	15142099.3	1.2	**90.2750**	1.228	1.4	ug/L	1493	Standard
	Sc	45	77933.3	2.2				ug/L	61029	Standard
	Ti	47	7118.0	1.5	**16.2707**	0.118	0.7	ug/L	35	Standard
	V	51	161044.2	0.8	**18.4034**	0.196	1.1	ug/L	1435	Standard
	Cr	52	146045.2	0.2	**16.1669**	0.325	2.0	ug/L	7635	Standard
	Cr	53	17793.8	1.2	**16.4664**	0.462	2.8	ug/L	363	Standard
	Mn	55	4299510.8	1.0	**538.5113**	8.104	1.5	ug/L	747	Standard
	Co	59	67815.8	1.0	**8.9211**	0.182	2.0	ug/L	234	Standard
	Ni	60	46536.4	1.1	**21.5551**	0.152	0.7	ug/L	215	Standard
	Cu	65	28919.6	1.2	**13.4506**	0.294	2.2	ug/L	104	Standard
	Zn	66	52781.1	1.6	**41.6917**	0.739	1.8	ug/L	363	Standard
>	**Ge**	72	567729.5	1.7				ug/L	495142	Standard
	As	75	4550.5	2.3	**3.6043**	0.141	3.9	ug/L	-50	Standard
	Se	82	43.5	41.5	**0.2091**	0.148	70.8	ug/L	14	Standard
	Se-1	77	118.3	4.0	**0.7906**	0.045	5.7	ug/L	42	Standard
>	**Ga**	71	21335.0	2.6				mg/L	42	Standard
	Rb	85	199689.0	1.1				ug/L	17	Standard
	Y	89	717025.3	1.7				ug/L	417098	Standard
>	**Rh**	103	53.3	39.0				ug/L	13	Standard
	Mo	98	750.2	3.3	**0.2455**	0.003	1.3	ug/L	11	Standard
	Ag	107	572.7	8.1	**0.0655**	0.005	7.5	ug/L	68	Standard
	Cd	111	313.3	5.6	**0.1259**	0.007	5.6	mg/L	2	Standard
	Cd	114	729.6	4.4	**0.1250**	0.007	5.3	ug/L	12	Standard
>	**In**	115	657920.1	2.1				ug/L	587441	Standard
	Sn	118	513.3	6.6	**-0.0162**	0.005	32.2	ug/L	497	Standard
	Sb	123	156.7	10.3	**0.0258**	0.004	14.3	ug/L	78	Standard
	Ba	135	278778.0	0.4	**121.6374**	2.867	2.4	ug/L	24	Standard
	Ce	140	1205012.6	0.9				ug/L	25	Standard
>	**Tb**	159	1028655.6	1.0				ug/L	939701	Standard
	Ho	165	19245.5	0.5				ug/L	10	Standard
	Tl	203	1022.7	4.2	**0.1168**	0.004	3.6	ug/L	4	Standard
	Tl	205	930.0	6.2	**0.1244**	0.008	6.1	ug/L	2	Standard
	Pb	206	75172.7	1.1	**13.3810**	0.239	1.8	ug/L	240	Standard
	Pb	207	60753.2	0.6	**12.1662**	0.152	1.3	ug/L	198	Standard
	Pb	208	268421.8	0.9	**13.6089**	0.053	0.4	ug/L	883	Standard
	U	238	4956.8	1.6	**0.6840**	0.014	2.1	ug/L	3	Standard
>	**Bi**	209	548179.9	0.7				ug/L	523984	Standard

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Na	23	3.3	173.2	**29.7760**	51.565	173.2	mg/L	0	Standard
Mg	24	116.7	8.9	**0.0527**	0.008	15.2	mg/L	37	Standard
K	39	606.7	4.1	**0.9368**	0.065	7.0	mg/L	38	Standard
Ca	43	223.3	26.5	**8.5548**	3.074	35.9	mg/L	10	Standard
Fe	54	18758.0	3.4	**12.3136**	0.167	1.4	mg/L	179	Standard
Fe	57	5059.2	5.4	**12.3881**	0.534	4.3	mg/L	335	Standard
Sc-1	45	77933.3	2.2				mg/L	61029	Standard
Cl	35	27511.6	2.5				ug/L	20195	Standard
Kr	83	4.0	50.0				ug/L	4	Standard
Br	81	2450.2	6.4				ug/L	1547	Standard
P	31	19838.0	2.4				ug/L	15286	Standard
S	34	2438.5	4.0				ug/L	1572	Standard
Sr	88	130.0	10.2				ug/L	73	Standard
C	12	76.7	41.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	124.9				mg/L	3	Standard
Dy	164	31319.3	1.6				mg/L	6	Standard
Ho-1	165	19245.5	0.5				mg/L	10	Standard
Er	166	17009.5	2.0				mg/L	13	Standard
I	127	14255.0	0.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.140	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.660	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.998
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.618
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606138104
Sample Date/Time: Wednesday, June 29, 2016 19:29:26
Number of Replicates: 3
Autosampler Position: 259
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81019.4	0.7				ug/L	74699	Standard
	Be	9	41.7	18.3	**0.0512**	0.008	15.3	ug/L	8	Standard
	Al	27	329954.8	1.9	**2.0568**	0.044	2.2	ug/L	1493	Standard
	Sc	45	70853.8	4.4				ug/L	61029	Standard
	Ti	47	170.0	4.8	**0.2650**	0.022	8.2	ug/L	35	Standard
	V	51	4919.9	1.5	**0.3475**	0.009	2.6	ug/L	1435	Standard
	Cr	52	11144.8	0.5	**0.2299**	0.010	4.3	ug/L	7635	Standard
	Cr	53	798.4	9.1	**0.3907**	0.073	18.6	ug/L	363	Standard
	Mn	55	93006.7	2.2	**10.9903**	0.351	3.2	ug/L	747	Standard
	Co	59	1669.1	4.9	**0.1734**	0.010	5.5	ug/L	234	Standard
	Ni	60	1239.4	3.4	**0.4280**	0.019	4.5	ug/L	215	Standard
	Cu	65	783.4	0.7	**0.2472**	0.006	2.3	ug/L	104	Standard
	Zn	66	3223.7	4.0	**2.0065**	0.120	6.0	ug/L	363	Standard
>	**Ge**	72	593953.7	1.0				ug/L	495142	Standard
	As	75	25.6	116.2	**0.0786**	0.022	28.0	ug/L	-50	Standard
	Se	82	15.5	11.3	**-0.0201**	0.014	71.9	ug/L	14	Standard
	Se-1	77	55.7	3.7	**0.0130**	0.019	145.3	ug/L	42	Standard
>	**Ga**	71	496.7	9.6				mg/L	42	Standard
	Rb	85	4318.9	1.6				ug/L	17	Standard
	Y	89	493099.4	1.2				ug/L	417098	Standard
>	**Rh**	103	8.3	91.7				ug/L	13	Standard
	Mo	98	63.8	10.3	**0.0154**	0.002	13.8	ug/L	11	Standard
	Ag	107	130.3	15.7	**0.0047**	0.003	56.8	ug/L	68	Standard
	Cd	111	7.2	21.0	**-0.0049**	0.001	12.8	mg/L	2	Standard
	Cd	114	27.0	44.7	**0.0025**	0.002	80.8	ug/L	12	Standard
>	**In**	115	665068.2	0.5				ug/L	587441	Standard
	Sn	118	545.0	15.7	**-0.0123**	0.013	107.4	ug/L	497	Standard
	Sb	123	150.6	9.1	**0.0243**	0.003	11.0	ug/L	78	Standard
	Ba	135	6015.5	0.5	**2.5800**	0.016	0.6	ug/L	24	Standard
	Ce	140	25678.4	3.6				ug/L	25	Standard
>	**Tb**	159	1023204.1	0.9				ug/L	939701	Standard
	Ho	165	420.0	5.5				ug/L	10	Standard
	Tl	203	37.3	22.8	**0.0024**	0.001	40.1	ug/L	4	Standard
	Tl	205	30.0	50.0	**0.0040**	0.002	46.9	ug/L	2	Standard
	Pb	206	1995.8	4.0	**0.2734**	0.016	6.0	ug/L	240	Standard
	Pb	207	1576.4	5.4	**0.2364**	0.019	8.0	ug/L	198	Standard
	Pb	208	6805.9	1.7	**0.2606**	0.003	1.1	ug/L	883	Standard
	U	238	99.3	2.5	**0.0089**	0.000	2.4	ug/L	3	Standard
>	**Bi**	209	568219.3	0.9				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	30.0	66.7	**-0.0312**	0.023	74.2	mg/L	37	Standard
K	39	65.0	30.8	**0.0108**	0.043	395.4	mg/L	38	Standard
Ca	43	20.0	0.0	**-1.4338**	0.047	3.3	mg/L	10	Standard
Fe	54	499.3	4.0	**0.2265**	0.010	4.2	mg/L	179	Standard
Fe	57	346.7	6.8	**-0.0592**	0.056	94.8	mg/L	335	Standard
> **Sc-1**	45	70853.8	4.4				mg/L	61029	Standard
Cl	35	26917.9	3.4				ug/L	20195	Standard
Kr	83	2.0	0.0				ug/L	4	Standard
Br	81	1996.8	2.8				ug/L	1547	Standard
P	31	19530.9	2.5				ug/L	15286	Standard
S	34	2235.2	2.4				ug/L	1572	Standard
Sr	88	70.0	18.9				ug/L	73	Standard
C	12	83.3	38.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	818.0	9.1				mg/L	6	Standard
Ho-1	165	420.0	5.5				mg/L	10	Standard
Er	166	390.0	11.8				mg/L	13	Standard
I	127	1930.1	32.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.461	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		119.956	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.214
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.442
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606138105
Sample Date/Time: Wednesday, June 29, 2016 19:32:37
Number of Replicates: 3
Autosampler Position: 260
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86630.3	1.6				ug/L	74699	Standard
	Be	9	1345.1	15.8	**1.3230**	0.188	14.2	ug/L	8	Standard
	Al	27	25518871.0	0.5	**149.7364**	2.025	1.4	ug/L	1493	Standard
	Sc	45	82793.9	1.1				ug/L	61029	Standard
	Ti	47	9047.0	1.1	**21.0343**	0.216	1.0	ug/L	35	Standard
	V	51	241144.8	2.1	**28.0828**	0.136	0.5	ug/L	1435	Standard
	Cr	52	185820.6	3.2	**21.1812**	0.417	2.0	ug/L	7635	Standard
	Cr	53	22667.0	3.7	**21.3886**	0.515	2.4	ug/L	363	Standard
	Mn	55	5666490.2	1.7	**720.7034**	2.244	0.3	ug/L	747	Standard
	Co	59	89984.1	1.6	**12.0322**	0.097	0.8	ug/L	234	Standard
	Ni	60	57928.9	2.2	**27.2782**	0.178	0.7	ug/L	215	Standard
	Cu	65	41127.1	3.0	**19.4650**	0.281	1.4	ug/L	104	Standard
	Zn	66	70831.6	3.1	**56.9699**	0.880	1.5	ug/L	363	Standard
>	**Ge**	72	559032.2	1.6				ug/L	495142	Standard
	As	75	9088.7	3.2	**7.2452**	0.123	1.7	ug/L	-50	Standard
	Se	82	66.3	23.6	**0.3960**	0.117	29.7	ug/L	14	Standard
	Se-1	77	130.0	4.3	**0.9538**	0.045	4.7	ug/L	42	Standard
>	**Ga**	71	25715.1	2.4				mg/L	42	Standard
	Rb	85	243499.9	2.1				ug/L	17	Standard
	Y	89	766854.2	0.5				ug/L	417098	Standard
>	**Rh**	103	51.7	5.6				ug/L	13	Standard
	Mo	98	760.8	5.6	**0.2496**	0.019	7.7	ug/L	11	Standard
	Ag	107	727.0	8.3	**0.0869**	0.010	11.3	ug/L	68	Standard
	Cd	111	420.9	5.2	**0.1721**	0.013	7.6	mg/L	2	Standard
	Cd	114	1021.1	15.6	**0.1761**	0.030	17.3	ug/L	12	Standard
>	**In**	115	657583.1	2.2				ug/L	587441	Standard
	Sn	118	706.7	9.4	**0.0135**	0.012	91.4	ug/L	497	Standard
	Sb	123	160.0	3.9	**0.0265**	0.002	7.0	ug/L	78	Standard
	Ba	135	489546.4	1.0	**213.7510**	6.703	3.1	ug/L	24	Standard
	Ce	140	1473172.3	0.9				ug/L	25	Standard
>	**Tb**	159	1043758.3	1.4				ug/L	939701	Standard
	Ho	165	23187.7	0.9				ug/L	10	Standard
	Tl	203	1287.4	7.3	**0.1458**	0.012	8.5	ug/L	4	Standard
	Tl	205	1168.4	5.5	**0.1545**	0.010	6.8	ug/L	2	Standard
	Pb	206	110607.4	2.3	**19.4839**	0.695	3.6	ug/L	240	Standard
	Pb	207	89635.8	2.2	**17.7667**	0.631	3.6	ug/L	198	Standard
	Pb	208	392577.0	0.9	**19.6965**	0.434	2.2	ug/L	883	Standard
	U	238	8119.8	0.8	**1.1095**	0.020	1.8	ug/L	3	Standard
>	**Bi**	209	554986.0	1.4				ug/L	523984	Standard

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Na	23	5.0	100.0	**42.5482**	42.299	99.4	mg/L	0	Standard
Mg	24	165.0	16.0	**0.0921**	0.027	29.3	mg/L	37	Standard
K	39	870.0	2.5	**1.3032**	0.021	1.6	mg/L	38	Standard
Ca	43	623.3	6.5	**26.5121**	2.122	8.0	mg/L	10	Standard
Fe	54	24836.5	3.4	**15.3836**	0.500	3.3	mg/L	179	Standard
Fe	57	6766.5	3.6	**15.8771**	0.513	3.2	mg/L	335	Standard
Sc-1	45	82793.9	1.1				mg/L	61029	Standard
Cl	35	27591.1	0.8				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	2510.2	7.0				ug/L	1547	Standard
P	31	20592.3	2.0				ug/L	15286	Standard
S	34	2640.2	1.7				ug/L	1572	Standard
Sr	88	220.0	6.0				ug/L	73	Standard
C	12	86.7	24.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	44.6				mg/L	3	Standard
Dy	164	40115.6	1.1				mg/L	6	Standard
Ho-1	165	23187.7	0.9				mg/L	10	Standard
Er	166	21645.5	1.0				mg/L	13	Standard
I	127	13629.5	5.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.973	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		112.903	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.940
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.916
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606138105
Sample Date/Time: Wednesday, June 29, 2016 19:35:50
Number of Replicates: 3
Autosampler Position: 401
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81775.3	3.6				ug/L	74699	Standard
	Be	9	45.0	11.1	**0.0544**	0.006	11.5	ug/L	8	Standard
	Al	27	547945.2	2.8	**3.3933**	0.048	1.4	ug/L	1493	Standard
	Sc	45	73444.3	1.5				ug/L	61029	Standard
	Ti	47	212.7	8.9	**0.3795**	0.037	9.9	ug/L	35	Standard
	V	51	6482.3	2.1	**0.5523**	0.015	2.6	ug/L	1435	Standard
	Cr	52	11556.7	2.9	**0.3347**	0.014	4.0	ug/L	7635	Standard
	Cr	53	865.0	10.6	**0.4848**	0.072	14.9	ug/L	363	Standard
	Mn	55	123099.8	1.9	**15.2575**	0.218	1.4	ug/L	747	Standard
	Co	59	2101.5	1.5	**0.2401**	0.008	3.5	ug/L	234	Standard
	Ni	60	1463.7	4.5	**0.5572**	0.024	4.3	ug/L	215	Standard
	Cu	65	1004.0	2.5	**0.3664**	0.012	3.3	ug/L	104	Standard
	Zn	66	6132.9	2.2	**4.4370**	0.037	0.8	ug/L	363	Standard
>	**Ge**	72	568314.4	1.9				ug/L	495142	Standard
	As	75	135.4	21.1	**0.1651**	0.024	14.5	ug/L	-50	Standard
	Se	82	20.1	25.4	**0.0217**	0.043	197.6	ug/L	14	Standard
	Se-1	77	47.3	2.4	**-0.0575**	0.019	32.3	ug/L	42	Standard
>	**Ga**	71	615.0	5.6				mg/L	42	Standard
	Rb	85	5134.2	2.0				ug/L	17	Standard
	Y	89	506159.2	1.9				ug/L	417098	Standard
>	**Rh**	103	11.7	107.9				ug/L	13	Standard
	Mo	98	50.7	18.0	**0.0105**	0.003	28.3	ug/L	11	Standard
	Ag	107	125.7	10.6	**0.0035**	0.002	48.0	ug/L	68	Standard
	Cd	111	10.9	48.5	**-0.0035**	0.002	62.7	mg/L	2	Standard
	Cd	114	42.4	34.4	**0.0049**	0.002	48.6	ug/L	12	Standard
>	**In**	115	689821.8	0.4				ug/L	587441	Standard
	Sn	118	595.0	5.8	**-0.0080**	0.005	59.8	ug/L	497	Standard
	Sb	123	118.9	14.7	**0.0175**	0.003	18.8	ug/L	78	Standard
	Ba	135	10423.6	1.2	**4.3208**	0.035	0.8	ug/L	24	Standard
	Ce	140	31651.4	0.9				ug/L	25	Standard
>	**Tb**	159	1043112.5	1.4				ug/L	939701	Standard
	Ho	165	500.0	7.2				ug/L	10	Standard
	Tl	203	34.0	12.8	**0.0020**	0.000	23.2	ug/L	4	Standard
	Tl	205	20.0	66.1	**0.0027**	0.002	61.7	ug/L	2	Standard
	Pb	206	2645.2	1.4	**0.3784**	0.005	1.3	ug/L	240	Standard
	Pb	207	2160.5	2.6	**0.3433**	0.011	3.1	ug/L	198	Standard
	Pb	208	9496.8	0.4	**0.3858**	0.004	1.1	ug/L	883	Standard
	U	238	183.7	2.7	**0.0198**	0.001	4.5	ug/L	3	Standard
>	**Bi**	209	577076.9	1.0				ug/L	523984	Standard

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Na	23	1.7	173.2	**15.9398**	27.600	173.2	mg/L	0	Standard
Mg	24	31.7	39.7	**-0.0310**	0.014	45.0	mg/L	37	Standard
K	39	75.0	17.6	**0.0236**	0.024	101.0	mg/L	38	Standard
Ca	43	45.0	44.4	**-0.1502**	1.087	724.0	mg/L	10	Standard
Fe	54	679.1	0.8	**0.3402**	0.010	2.9	mg/L	179	Standard
Fe	57	390.0	9.7	**0.0271**	0.102	376.6	mg/L	335	Standard
> **Sc-1**	45	73444.3	1.5				mg/L	61029	Standard
Cl	35	27695.3	0.4				ug/L	20195	Standard
Kr	83	1.3	114.6				ug/L	4	Standard
Br	81	2046.8	15.0				ug/L	1547	Standard
P	31	20195.1	3.7				ug/L	15286	Standard
S	34	2511.9	7.3				ug/L	1572	Standard
Sr	88	68.3	42.9				ug/L	73	Standard
C	12	50.0	40.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	3	Standard
Dy	164	1042.0	9.5				mg/L	6	Standard
Ho-1	165	500.0	7.2				mg/L	10	Standard
Er	166	446.7	15.2				mg/L	13	Standard
I	127	1841.8	32.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.473	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.778	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		117.428
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.132
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606138107
Sample Date/Time: Wednesday, June 29, 2016 19:39:01
Number of Replicates: 3
Autosampler Position: 402
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84183.2	0.7				ug/L	74699	Standard
	Be	9	1125.0	5.6	**1.1418**	0.071	6.2	ug/L	8	Standard
	Al	27	16362118.1	1.0	**98.7783**	0.357	0.4	ug/L	1493	Standard
	Sc	45	80079.5	2.6				ug/L	61029	Standard
	Ti	47	5684.7	1.2	**13.0248**	0.178	1.4	ug/L	35	Standard
	V	51	193164.5	0.6	**22.2022**	0.395	1.8	ug/L	1435	Standard
	Cr	52	144926.2	1.3	**16.0993**	0.107	0.7	ug/L	7635	Standard
	Cr	53	17089.6	2.1	**15.8598**	0.165	1.0	ug/L	363	Standard
	Mn	55	4945150.4	1.2	**621.8545**	12.591	2.0	ug/L	747	Standard
	Co	59	79442.1	0.4	**10.4972**	0.101	1.0	ug/L	234	Standard
	Ni	60	48759.0	0.6	**22.6802**	0.156	0.7	ug/L	215	Standard
	Cu	65	44548.4	1.0	**20.8546**	0.085	0.4	ug/L	104	Standard
	Zn	66	116987.3	1.0	**93.3289**	1.249	1.3	ug/L	363	Standard
>	**Ge**	72	565487.8	1.3				ug/L	495142	Standard
	As	75	12786.6	1.5	**10.0557**	0.155	1.5	ug/L	-50	Standard
	Se	82	93.9	6.5	**0.6112**	0.058	9.6	ug/L	14	Standard
	Se-1	77	134.7	12.3	**0.9941**	0.220	22.1	ug/L	42	Standard
>	**Ga**	71	20750.9	1.1				mg/L	42	Standard
	Rb	85	229576.4	1.2				ug/L	17	Standard
	Y	89	760564.3	0.9				ug/L	417098	Standard
>	**Rh**	103	26.7	39.0				ug/L	13	Standard
	Mo	98	714.7	6.9	**0.2279**	0.017	7.3	ug/L	11	Standard
	Ag	107	706.7	2.8	**0.0816**	0.003	4.3	ug/L	68	Standard
	Cd	111	991.8	3.3	**0.4053**	0.015	3.7	mg/L	2	Standard
	Cd	114	2256.1	2.3	**0.3810**	0.005	1.2	ug/L	12	Standard
>	**In**	115	674434.0	1.0				ug/L	587441	Standard
	Sn	118	836.7	10.4	**0.0300**	0.012	41.1	ug/L	497	Standard
	Sb	123	542.0	6.0	**0.0969**	0.005	5.6	ug/L	78	Standard
	Ba	135	363437.5	1.5	**154.6607**	2.916	1.9	ug/L	24	Standard
	Ce	140	1323769.8	0.4				ug/L	25	Standard
>	**Tb**	159	1046974.9	0.8				ug/L	939701	Standard
	Ho	165	21420.1	0.8				ug/L	10	Standard
	Tl	203	1015.7	4.2	**0.1138**	0.005	4.5	ug/L	4	Standard
	Tl	205	906.7	2.2	**0.1191**	0.002	2.0	ug/L	2	Standard
	Pb	206	225485.9	0.9	**39.5300**	0.272	0.7	ug/L	240	Standard
	Pb	207	184080.5	0.2	**36.3178**	0.069	0.2	ug/L	198	Standard
	Pb	208	811320.1	0.8	**40.5199**	0.434	1.1	ug/L	883	Standard
	U	238	5280.9	2.0	**0.7154**	0.017	2.3	ug/L	3	Standard
>	**Bi**	209	558508.9	0.3				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	105.0	49.7	**0.0390**	0.054	139.2	mg/L	37	Standard
K	39	875.0	3.0	**1.3597**	0.017	1.3	mg/L	38	Standard
Ca	43	123.3	10.2	**3.4107**	0.543	15.9	mg/L	10	Standard
Fe	54	18540.3	2.4	**11.8486**	0.489	4.1	mg/L	179	Standard
Fe	57	5050.8	2.1	**12.0198**	0.614	5.1	mg/L	335	Standard
> **Sc-1**	45	80079.5	2.6				mg/L	61029	Standard
Cl	35	26211.3	2.3				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	4010.5	1.9				ug/L	1547	Standard
P	31	18821.7	2.8				ug/L	15286	Standard
S	34	2180.2	5.1				ug/L	1572	Standard
Sr	88	100.0	25.0				ug/L	73	Standard
C	12	166.7	30.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	70.0	28.6				mg/L	3	Standard
Dy	164	35314.8	2.4				mg/L	6	Standard
Ho-1	165	21420.1	0.8				mg/L	10	Standard
Er	166	18965.2	4.5				mg/L	13	Standard
I	127	21211.5	3.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.697	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.207	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.809
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.589
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606138107
Sample Date/Time: Wednesday, June 29, 2016 19:42:13
Number of Replicates: 3
Autosampler Position: 403
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79962.1	1.1				ug/L	74699	Standard
	Be	9	35.0	37.8	**0.0449**	0.015	32.4	ug/L	8	Standard
	Al	27	348986.4	2.3	**2.2050**	0.043	1.9	ug/L	1493	Standard
	Sc	45	69050.4	2.1				ug/L	61029	Standard
	Ti	47	147.7	4.0	**0.2190**	0.009	4.2	ug/L	35	Standard
	V	51	5537.0	5.1	**0.4222**	0.040	9.5	ug/L	1435	Standard
	Cr	52	11219.2	0.9	**0.2513**	0.015	5.8	ug/L	7635	Standard
	Cr	53	801.7	3.8	**0.4006**	0.025	6.2	ug/L	363	Standard
	Mn	55	101661.8	3.0	**12.1540**	0.524	4.3	ug/L	747	Standard
	Co	59	1813.1	5.5	**0.1941**	0.015	7.9	ug/L	234	Standard
	Ni	60	1251.7	0.2	**0.4392**	0.009	2.1	ug/L	215	Standard
	Cu	65	1098.7	4.3	**0.3937**	0.026	6.7	ug/L	104	Standard
	Zn	66	4663.4	1.9	**3.1415**	0.081	2.6	ug/L	363	Standard
>	**Ge**	72	587910.1	1.4				ug/L	495142	Standard
	As	75	208.3	5.8	**0.2162**	0.008	3.9	ug/L	-50	Standard
	Se	82	14.6	52.1	**-0.0264**	0.056	213.9	ug/L	14	Standard
	Se-1	77	58.3	15.6	**0.0509**	0.111	217.0	ug/L	42	Standard
>	**Ga**	71	483.3	11.4				mg/L	42	Standard
	Rb	85	4672.4	3.2				ug/L	17	Standard
	Y	89	494582.5	2.5				ug/L	417098	Standard
>	**Rh**	103	10.0	50.0				ug/L	13	Standard
	Mo	98	50.9	2.1	**0.0113**	0.001	5.2	ug/L	11	Standard
	Ag	107	137.0	5.3	**0.0059**	0.001	14.4	ug/L	68	Standard
	Cd	111	22.2	22.2	**0.0016**	0.002	123.1	mg/L	2	Standard
	Cd	114	55.9	25.6	**0.0077**	0.003	34.0	ug/L	12	Standard
>	**In**	115	657881.3	1.7				ug/L	587441	Standard
	Sn	118	586.7	15.6	**-0.0052**	0.012	239.2	ug/L	497	Standard
	Sb	123	130.5	4.0	**0.0208**	0.001	5.8	ug/L	78	Standard
	Ba	135	7584.6	1.4	**3.2933**	0.054	1.6	ug/L	24	Standard
	Ce	140	27601.8	1.0				ug/L	25	Standard
>	**Tb**	159	1004279.0	0.4				ug/L	939701	Standard
	Ho	165	470.0	12.8				ug/L	10	Standard
	Tl	203	31.3	21.7	**0.0018**	0.001	42.5	ug/L	4	Standard
	Tl	205	38.3	39.8	**0.0052**	0.002	37.2	ug/L	2	Standard
	Pb	206	5039.5	2.9	**0.8074**	0.036	4.5	ug/L	240	Standard
	Pb	207	4082.6	3.5	**0.7312**	0.039	5.3	ug/L	198	Standard
	Pb	208	17367.6	1.6	**0.7884**	0.025	3.2	ug/L	883	Standard
	U	238	118.3	14.2	**0.0116**	0.002	21.2	ug/L	3	Standard
>	**Bi**	209	562827.5	1.3				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	41.7	6.9	**-0.0175**	0.004	24.7	mg/L	37	Standard
K	39	65.0	46.8	**0.0126**	0.058	464.1	mg/L	38	Standard
Ca	43	20.0	66.1	**-1.4118**	0.719	50.9	mg/L	10	Standard
Fe	54	548.6	17.9	**0.2728**	0.072	26.3	mg/L	179	Standard
Fe	57	318.3	8.7	**-0.1165**	0.103	88.6	mg/L	335	Standard
> **Sc-1**	45	69050.4	2.1				mg/L	61029	Standard
Cl	35	24683.4	2.1				ug/L	20195	Standard
Kr	83	3.0	33.3				ug/L	4	Standard
Br	81	2036.8	6.4				ug/L	1547	Standard
P	31	17868.9	0.9				ug/L	15286	Standard
S	34	1880.1	5.1				ug/L	1572	Standard
Sr	88	70.0	32.7				ug/L	73	Standard
C	12	63.3	32.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	851.3	21.1				mg/L	6	Standard
Ho-1	165	470.0	12.8				mg/L	10	Standard
Er	166	460.0	19.0				mg/L	13	Standard
I	127	2083.5	32.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.046	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		118.736	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.991
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.413
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606138402
Sample Date/Time: Wednesday, June 29, 2016 19:45:24
Number of Replicates: 3
Autosampler Position: 404
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78829.6	2.0				ug/L	74699	Standard
	Be	9	476.7	4.8	**0.5211**	0.034	6.6	ug/L	8	Standard
	Al	27	790696.4	0.9	**5.0858**	0.055	1.1	ug/L	1493	Standard
	Sc	45	79546.6	1.7				ug/L	61029	Standard
	Ti	47	5657.7	0.8	**12.8152**	0.349	2.7	ug/L	35	Standard
	V	51	106854.5	1.6	**12.0511**	0.193	1.6	ug/L	1435	Standard
	Cr	52	263051.4	1.4	**29.7045**	0.729	2.5	ug/L	7635	Standard
	Cr	53	32229.3	4.0	**29.8443**	0.696	2.3	ug/L	363	Standard
	Mn	55	1259215.6	0.6	**156.4341**	3.728	2.4	ug/L	747	Standard
	Co	59	45647.0	0.6	**5.9475**	0.157	2.6	ug/L	234	Standard
	Ni	60	134444.3	1.6	**62.0317**	0.857	1.4	ug/L	215	Standard
	Cu	65	50137.5	0.5	**23.2180**	0.523	2.3	ug/L	104	Standard
	Zn	66	191528.7	0.9	**151.3328**	2.746	1.8	ug/L	363	Standard
>	**Ge**	72	572152.6	2.7				ug/L	495142	Standard
	As	75	5700.3	1.6	**4.4645**	0.048	1.1	ug/L	-50	Standard
	Se	82	330.0	4.2	**2.4632**	0.049	2.0	ug/L	14	Standard
	Se-1	77	314.7	3.0	**3.1071**	0.115	3.7	ug/L	42	Standard
>	**Ga**	71	3685.4	1.6				mg/L	42	Standard
	Rb	85	41053.9	1.7				ug/L	17	Standard
	Y	89	1388727.0	1.6				ug/L	417098	Standard
>	**Rh**	103	25.0	0.0				ug/L	13	Standard
	Mo	98	3897.2	2.0	**1.2782**	0.019	1.5	ug/L	11	Standard
	Ag	107	551.3	5.8	**0.0614**	0.003	5.7	ug/L	68	Standard
	Cd	111	1240.5	0.7	**0.5131**	0.007	1.4	mg/L	2	Standard
	Cd	114	2915.5	4.4	**0.4970**	0.020	4.1	ug/L	12	Standard
>	**In**	115	669008.5	1.2				ug/L	587441	Standard
	Sn	118	676.7	8.2	**0.0070**	0.008	114.7	ug/L	497	Standard
	Sb	123	186.6	3.8	**0.0309**	0.001	3.8	ug/L	78	Standard
	Ba	135	221251.7	0.3	**94.9139**	1.345	1.4	ug/L	24	Standard
	Ce	140	471655.7	0.9				ug/L	25	Standard
>	**Tb**	159	1067869.0	0.9				ug/L	939701	Standard
	Ho	165	47698.3	1.5				ug/L	10	Standard
	Tl	203	1397.7	2.5	**0.1543**	0.005	3.4	ug/L	4	Standard
	Tl	205	1176.7	6.0	**0.1515**	0.008	5.0	ug/L	2	Standard
	Pb	206	21429.5	1.2	**3.6210**	0.069	1.9	ug/L	240	Standard
	Pb	207	15728.2	0.6	**2.9798**	0.021	0.7	ug/L	198	Standard
	Pb	208	70387.8	1.2	**3.3811**	0.084	2.5	ug/L	883	Standard
	U	238	18087.1	1.2	**2.4141**	0.054	2.2	ug/L	3	Standard
>	**Bi**	209	569388.1	1.3				ug/L	523984	Standard

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Na	23	5.0	173.2	**43.9188**	76.061	173.2	mg/L	0	Standard
Mg	24	210.0	6.3	**0.1429**	0.013	9.0	mg/L	37	Standard
K	39	275.0	8.3	**0.3521**	0.037	10.4	mg/L	38	Standard
Ca	43	148.3	19.8	**4.6742**	1.471	31.5	mg/L	10	Standard
Fe	54	12478.7	2.5	**7.9817**	0.313	3.9	mg/L	179	Standard
Fe	57	3430.4	4.1	**7.8688**	0.221	2.8	mg/L	335	Standard
> **Sc-1**	45	79546.6	1.7				mg/L	61029	Standard
Cl	35	26111.8	0.7				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	2043.5	3.5				ug/L	1547	Standard
P	31	19195.5	2.0				ug/L	15286	Standard
S	34	2368.5	5.4				ug/L	1572	Standard
Sr	88	153.3	13.2				ug/L	73	Standard
C	12	70.0	14.3				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	140.0	18.9				mg/L	3	Standard
Dy	164	65719.4	1.8				mg/L	6	Standard
Ho-1	165	47698.3	1.5				mg/L	10	Standard
Er	166	45979.7	1.2				mg/L	13	Standard
I	127	5242.6	1.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.530	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		115.553	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	113.885
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	108.665
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1606138404
Sample Date/Time: Wednesday, June 29, 2016 19:48:35
Number of Replicates: 3
Autosampler Position: 405
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80955.8	1.9				ug/L	74699	Standard
	Be	9	880.0	13.6	**0.9302**	0.126	13.6	ug/L	8	Standard
	Al	27	4591606.5	1.6	**28.8172**	0.235	0.8	ug/L	1493	Standard
	Sc	45	81773.4	1.2				ug/L	61029	Standard
	Ti	47	8450.7	1.8	**19.2499**	0.245	1.3	ug/L	35	Standard
	V	51	185955.1	1.6	**21.1827**	0.308	1.5	ug/L	1435	Standard
	Cr	52	431888.4	0.7	**49.5778**	0.407	0.8	ug/L	7635	Standard
	Cr	53	54036.2	1.9	**50.4433**	1.377	2.7	ug/L	363	Standard
	Mn	55	1979621.7	0.4	**246.7487**	3.142	1.3	ug/L	747	Standard
	Co	59	89211.3	2.3	**11.6929**	0.262	2.2	ug/L	234	Standard
	Ni	60	241828.7	1.1	**112.0223**	0.265	0.2	ug/L	215	Standard
	Cu	65	79842.9	1.5	**37.1424**	0.248	0.7	ug/L	104	Standard
	Zn	66	363879.1	1.7	**288.7674**	1.874	0.6	ug/L	363	Standard
>	**Ge**	72	570278.1	1.3				ug/L	495142	Standard
	As	75	11266.0	1.4	**8.7923**	0.037	0.4	ug/L	-50	Standard
	Se	82	562.8	1.7	**4.3149**	0.122	2.8	ug/L	14	Standard
	Se-1	77	468.7	10.3	**4.9506**	0.587	11.9	ug/L	42	Standard
>	**Ga**	71	6996.6	2.8				mg/L	42	Standard
	Rb	85	75201.3	3.4				ug/L	17	Standard
	Y	89	1637404.7	1.2				ug/L	417098	Standard
>	**Rh**	103	40.0	12.5				ug/L	13	Standard
	Mo	98	6065.7	2.4	**2.0076**	0.060	3.0	ug/L	11	Standard
	Ag	107	921.4	1.6	**0.1122**	0.003	2.7	ug/L	68	Standard
	Cd	111	1933.3	0.9	**0.8101**	0.015	1.9	mg/L	2	Standard
	Cd	114	4671.7	0.8	**0.8037**	0.006	0.7	ug/L	12	Standard
>	**In**	115	664089.4	1.0				ug/L	587441	Standard
	Sn	118	708.3	7.1	**0.0125**	0.007	53.2	ug/L	497	Standard
	Sb	123	171.2	9.0	**0.0282**	0.003	10.1	ug/L	78	Standard
	Ba	135	217409.8	1.0	**93.9488**	0.914	1.0	ug/L	24	Standard
	Ce	140	744689.2	0.9				ug/L	25	Standard
>	**Tb**	159	1077211.2	1.7				ug/L	939701	Standard
	Ho	165	62662.7	1.1				ug/L	10	Standard
	Tl	203	2865.3	1.3	**0.3204**	0.004	1.2	ug/L	4	Standard
	Tl	205	2535.2	5.2	**0.3286**	0.016	4.9	ug/L	2	Standard
	Pb	206	40598.7	0.9	**6.9743**	0.127	1.8	ug/L	240	Standard
	Pb	207	29975.3	2.2	**5.7854**	0.186	3.2	ug/L	198	Standard
	Pb	208	132785.8	0.6	**6.4904**	0.091	1.4	ug/L	883	Standard
	U	238	27584.4	0.2	**3.7106**	0.059	1.6	ug/L	3	Standard
>	**Bi**	209	565317.9	1.5				ug/L	523984	Standard

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Na	23	1.7	173.2	**14.1527**	24.505	173.1	mg/L	0	Standard
Mg	24	243.3	11.7	**0.1691**	0.025	14.5	mg/L	37	Standard
K	39	461.7	5.5	**0.6478**	0.049	7.5	mg/L	38	Standard
Ca	43	205.0	4.9	**7.1444**	0.559	7.8	mg/L	10	Standard
Fe	54	23854.6	1.3	**14.9557**	0.059	0.4	mg/L	179	Standard
Fe	57	6316.3	1.9	**14.9472**	0.123	0.8	mg/L	335	Standard
> **Sc-1**	45	81773.4	1.2				mg/L	61029	Standard
Cl	35	26395.0	1.0				ug/L	20195	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	8435.7	8.5				ug/L	1547	Standard
P	31	20819.3	1.9				ug/L	15286	Standard
S	34	2495.2	1.6				ug/L	1572	Standard
Sr	88	186.7	12.1				ug/L	73	Standard
C	12	26.7	21.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	520.0	8.4				mg/L	3	Standard
Dy	164	85733.4	1.4				mg/L	6	Standard
Ho-1	165	62662.7	1.1				mg/L	10	Standard
Er	166	61347.3	2.7				mg/L	13	Standard
I	127	12962.2	2.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.376	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		115.175	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	113.048
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	107.888
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 19:51:49
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79632.1	2.5				ug/L	74699	Standard
	Be	9	53037.7	1.9	**56.5448**	1.909	3.4	ug/L	8	Standard
	Al	27	8288547.2	1.5	**52.9043**	0.899	1.7	ug/L	1493	Standard
	Sc	45	68251.7	0.4				ug/L	61029	Standard
	Ti	47	44871.7	1.2	**102.9405**	2.024	2.0	ug/L	35	Standard
	V	51	450952.2	1.7	**51.7787**	1.350	2.6	ug/L	1435	Standard
	Cr	52	441674.6	0.8	**50.8503**	0.824	1.6	ug/L	7635	Standard
	Cr	53	54163.4	3.4	**50.6767**	1.716	3.4	ug/L	363	Standard
	Mn	55	408648.7	3.2	**50.9466**	2.025	4.0	ug/L	747	Standard
	Co	59	404996.9	2.1	**53.3495**	1.595	3.0	ug/L	234	Standard
	Ni	60	109209.9	1.2	**50.6487**	1.081	2.1	ug/L	215	Standard
	Cu	65	108068.7	1.0	**50.4372**	0.990	2.0	ug/L	104	Standard
	Zn	66	63914.2	1.2	**50.4711**	0.538	1.1	ug/L	363	Standard
>	Ge	72	568913.3	1.0				ug/L	495142	Standard
	As	75	64596.5	1.7	**50.2573**	1.198	2.4	ug/L	-50	Standard
	Se	82	6434.6	2.8	**50.8949**	1.678	3.3	ug/L	14	Standard
	Se-1	77	4404.6	0.9	**51.8699**	0.916	1.8	ug/L	42	Standard
>	Ga	71	81.7	19.7				mg/L	42	Standard
	Rb	85	868.4	8.5				ug/L	17	Standard
	Y	89	484608.1	0.7				ug/L	417098	Standard
>	Rh	103	25.0	40.0				ug/L	13	Standard
	Mo	98	300990.3	2.1	**101.3882**	1.976	1.9	ug/L	11	Standard
	Ag	107	359716.1	0.6	**49.5455**	0.289	0.6	ug/L	68	Standard
	Cd	111	115140.5	0.5	**49.4382**	0.205	0.4	mg/L	2	Standard
	Cd	114	277323.3	2.2	**48.5511**	1.074	2.2	ug/L	12	Standard
>	In	115	654244.8	0.1				ug/L	587441	Standard
	Sn	118	326410.3	0.9	**50.0768**	0.438	0.9	ug/L	497	Standard
	Sb	123	257734.5	0.6	**49.5626**	0.244	0.5	ug/L	78	Standard
	Ba	135	107937.1	0.2	**47.3350**	0.075	0.2	ug/L	24	Standard
	Ce	140	156.7	33.8				ug/L	25	Standard
>	Tb	159	993573.1	1.0				ug/L	939701	Standard
	Ho	165	18.3	41.7				ug/L	10	Standard
	Tl	203	442343.3	0.6	**51.3703**	0.497	1.0	ug/L	4	Standard
	Tl	205	397679.6	3.2	**53.2177**	1.929	3.6	ug/L	2	Standard
	Pb	206	282572.7	0.8	**50.5712**	0.781	1.5	ug/L	240	Standard
	Pb	207	252130.0	1.0	**50.7898**	0.969	1.9	ug/L	198	Standard
	Pb	208	1034503.8	1.3	**52.7468**	1.180	2.2	ug/L	883	Standard
	U	238	372072.1	1.5	**51.7486**	1.271	2.5	ug/L	3	Standard
>	Bi	209	547364.2	0.9				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.1101**	29.627	173.2	mg/L	0	Standard
Mg	24	4437.3	1.9	**5.0568**	0.105	2.1	mg/L	37	Standard
K	39	2166.8	4.9	**4.1677**	0.193	4.6	mg/L	38	Standard
Ca	43	105.0	40.7	**3.4097**	2.426	71.2	mg/L	10	Standard
Fe	54	6964.2	0.4	**5.1415**	0.037	0.7	mg/L	179	Standard
Fe	57	2053.5	5.5	**5.1659**	0.318	6.1	mg/L	335	Standard
> **Sc-1**	45	68251.7	0.4				mg/L	61029	Standard
Cl	35	27215.8	2.7				ug/L	20195	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	1920.1	6.9				ug/L	1547	Standard
P	31	20039.9	1.0				ug/L	15286	Standard
S	34	2546.9	7.4				ug/L	1572	Standard
Sr	88	71.7	29.0				ug/L	73	Standard
C	12	70.0	24.7				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	11.7	100.8				mg/L	6	Standard
Ho-1	165	18.3	41.7				mg/L	10	Standard
Er	166	33.3	34.6				mg/L	13	Standard
I	127	1696.8	22.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	113.090		
Al	27	105.809		
Sc	45			
Ti	47	102.941		
V	51	103.557		
Cr	52	101.701		
Cr	53			
Mn	55	101.893		
Co	59	106.699		
Ni	60	101.297		
Cu	65	100.874		
Zn	66	100.942		
> Ge	72		114.899	
As	75	100.515		
Se	82	101.790		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.388		
Ag	107	99.091		
Cd	111	98.876		
Cd	114			
In	115		111.372	
Sn	118	100.154		
Sb	123	99.125		
Ba	135	94.670		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.741		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.494		
U	238	103.497		
Bi	209		104.462	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 19:55:00
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78377.2	0.9				ug/L	74699	Standard
	Be	9	16.7	17.3	**0.0256**	0.003	11.6	ug/L	8	Standard
	Al	27	3955.5	8.5	**0.0123**	0.002	16.7	ug/L	1493	Standard
	Sc	45	70123.6	2.1				ug/L	61029	Standard
	Ti	47	44.3	19.2	**-0.0067**	0.022	331.3	ug/L	35	Standard
	V	51	1494.9	5.1	**-0.0231**	0.005	19.5	ug/L	1435	Standard
	Cr	52	7869.7	1.7	**-0.0976**	0.038	39.0	ug/L	7635	Standard
	Cr	53	438.3	4.0	**0.0839**	0.027	31.8	ug/L	363	Standard
	Mn	55	1323.4	11.3	**0.0175**	0.017	96.4	ug/L	747	Standard
	Co	59	292.0	15.1	**0.0012**	0.005	416.2	ug/L	234	Standard
	Ni	60	231.7	5.0	**-0.0160**	0.006	40.4	ug/L	215	Standard
	Cu	65	142.7	7.1	**-0.0369**	0.003	9.0	ug/L	104	Standard
	Zn	66	477.7	7.4	**-0.0736**	0.020	26.8	ug/L	363	Standard
>	**Ge**	72	568079.4	2.5				ug/L	495142	Standard
	As	75	-36.3	34.6	**0.0313**	0.010	31.8	ug/L	-50	Standard
	Se	82	17.1	26.2	**-0.0026**	0.033	1282.0	ug/L	14	Standard
	Se-1	77	54.3	9.3	**0.0268**	0.068	253.5	ug/L	42	Standard
>	**Ga**	71	40.0	12.5				mg/L	42	Standard
	Rb	85	38.3	19.9				ug/L	17	Standard
	Y	89	483139.1	0.9				ug/L	417098	Standard
>	**Rh**	103	11.7	99.0				ug/L	13	Standard
	Mo	98	291.7	36.0	**0.0908**	0.037	40.3	ug/L	11	Standard
	Ag	107	161.3	21.3	**0.0089**	0.005	57.1	ug/L	68	Standard
	Cd	111	21.8	28.2	**0.0012**	0.002	201.3	mg/L	2	Standard
	Cd	114	48.0	10.4	**0.0061**	0.001	15.7	ug/L	12	Standard
>	**In**	115	669206.2	1.8				ug/L	587441	Standard
	Sn	118	881.7	18.2	**0.0375**	0.022	58.1	ug/L	497	Standard
	Sb	123	447.3	19.7	**0.0797**	0.015	18.9	ug/L	78	Standard
	Ba	135	111.0	14.0	**0.0316**	0.007	21.6	ug/L	24	Standard
	Ce	140	185.0	42.5				ug/L	25	Standard
>	**Tb**	159	1027080.2	0.9				ug/L	939701	Standard
	Ho	165	28.3	10.2				ug/L	10	Standard
	Tl	203	102.0	27.3	**0.0095**	0.003	32.1	ug/L	4	Standard
	Tl	205	76.7	13.6	**0.0100**	0.001	13.1	ug/L	2	Standard
	Pb	206	326.3	10.0	**-0.0155**	0.005	35.3	ug/L	240	Standard
	Pb	207	292.3	4.6	**-0.0139**	0.002	17.4	ug/L	198	Standard
	Pb	208	1226.7	4.7	**-0.0145**	0.003	18.0	ug/L	883	Standard
	U	238	78.7	31.6	**0.0060**	0.003	54.4	ug/L	3	Standard
>	**Bi**	209	574845.6	0.5				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	46.7	34.4	**-0.0124**	0.019	155.4	mg/L	37	Standard
K	39	46.7	44.6	**-0.0238**	0.042	178.2	mg/L	38	Standard
Ca	43	26.7	57.3	**-1.0457**	0.868	83.0	mg/L	10	Standard
Fe	54	161.1	25.9	**-0.0190**	0.033	173.6	mg/L	179	Standard
Fe	57	251.7	19.3	**-0.3314**	0.129	38.8	mg/L	335	Standard
Sc-1	45	70123.6	2.1				mg/L	61029	Standard
Cl	35	27868.9	0.6				ug/L	20195	Standard
Kr	83	0.7	86.6				ug/L	4	Standard
Br	81	2040.1	1.8				ug/L	1547	Standard
P	31	20417.1	4.9				ug/L	15286	Standard
S	34	2425.2	3.5				ug/L	1572	Standard
Sr	88	45.0	40.1				ug/L	73	Standard
C	12	50.0	52.9				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	11.9	129.9				mg/L	6	Standard
Ho-1	165	28.3	10.2				mg/L	10	Standard
Er	166	30.0	57.7				mg/L	13	Standard
I	127	1460.1	42.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		114.731	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.919
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.707
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606138406
Sample Date/Time: Wednesday, June 29, 2016 19:58:13
Number of Replicates: 3
Autosampler Position: 406
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77039.0	4.7				ug/L	74699	Standard
	Be	9	588.3	14.0	**0.6548**	0.074	11.3	ug/L	8	Standard
	Al	27	832772.7	0.7	**5.4883**	0.227	4.1	ug/L	1493	Standard
	Sc	45	75047.3	4.1				ug/L	61029	Standard
	Ti	47	6368.7	0.7	**14.6522**	0.311	2.1	ug/L	35	Standard
	V	51	122665.5	0.9	**14.0720**	0.287	2.0	ug/L	1435	Standard
	Cr	52	293324.5	0.5	**33.7422**	0.348	1.0	ug/L	7635	Standard
	Cr	53	35827.3	1.9	**33.7165**	0.271	0.8	ug/L	363	Standard
	Mn	55	1790039.2	2.5	**225.6481**	2.955	1.3	ug/L	747	Standard
	Co	59	59513.4	2.6	**7.8774**	0.097	1.2	ug/L	234	Standard
	Ni	60	162230.6	1.1	**75.9835**	0.734	1.0	ug/L	215	Standard
	Cu	65	58756.0	0.7	**27.6257**	0.286	1.0	ug/L	104	Standard
	Zn	66	213240.6	1.5	**171.0057**	1.221	0.7	ug/L	363	Standard
>	**Ge**	72	563753.3	1.5				ug/L	495142	Standard
	As	75	6354.9	1.3	**5.0439**	0.138	2.7	ug/L	-50	Standard
	Se	82	268.5	3.3	**2.0114**	0.102	5.1	ug/L	14	Standard
	Se-1	77	256.0	4.1	**2.4577**	0.168	6.8	ug/L	42	Standard
>	**Ga**	71	4010.5	2.8				mg/L	42	Standard
	Rb	85	39651.9	3.3				ug/L	17	Standard
	Y	89	1622063.0	2.1				ug/L	417098	Standard
>	**Rh**	103	33.3	8.7				ug/L	13	Standard
	Mo	98	4372.5	0.7	**1.4952**	0.034	2.3	ug/L	11	Standard
	Ag	107	608.3	2.2	**0.0725**	0.003	3.7	ug/L	68	Standard
	Cd	111	1369.4	3.4	**0.5916**	0.033	5.6	mg/L	2	Standard
	Cd	114	3220.4	7.1	**0.5731**	0.054	9.4	ug/L	12	Standard
>	**In**	115	642314.3	2.8				ug/L	587441	Standard
	Sn	118	866.7	3.3	**0.0411**	0.007	16.9	ug/L	497	Standard
	Sb	123	475.1	9.4	**0.0890**	0.010	11.7	ug/L	78	Standard
	Ba	135	210364.7	1.0	**94.0146**	1.722	1.8	ug/L	24	Standard
	Ce	140	620778.1	1.3				ug/L	25	Standard
>	**Tb**	159	1035282.0	2.1				ug/L	939701	Standard
	Ho	165	58499.4	0.8				ug/L	10	Standard
	Tl	203	1670.8	3.4	**0.1930**	0.007	3.5	ug/L	4	Standard
	Tl	205	1583.4	5.7	**0.2129**	0.013	6.3	ug/L	2	Standard
	Pb	206	23886.1	1.1	**4.2252**	0.039	0.9	ug/L	240	Standard
	Pb	207	17508.1	0.9	**3.4746**	0.041	1.2	ug/L	198	Standard
	Pb	208	79776.0	1.1	**4.0140**	0.064	1.6	ug/L	883	Standard
	U	238	22400.5	0.6	**3.1225**	0.026	0.8	ug/L	3	Standard
>	**Bi**	209	545342.1	0.8				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	190.0	5.3	**0.1344**	0.009	6.3	mg/L	37	Standard
K	39	241.7	12.5	**0.3203**	0.051	16.0	mg/L	38	Standard
Ca	43	168.3	3.4	**6.1267**	0.214	3.5	mg/L	10	Standard
Fe	54	12517.1	3.0	**8.4992**	0.364	4.3	mg/L	179	Standard
Fe	57	3428.7	4.4	**8.4118**	0.531	6.3	mg/L	335	Standard
> **Sc-1**	45	75047.3	4.1				mg/L	61029	Standard
Cl	35	26434.4	2.8				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	2270.2	3.9				ug/L	1547	Standard
P	31	19440.8	0.5				ug/L	15286	Standard
S	34	2256.8	6.7				ug/L	1572	Standard
Sr	88	170.0	33.4				ug/L	73	Standard
C	12	76.7	54.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	300.0	18.6				mg/L	3	Standard
Dy	164	81135.2	0.1				mg/L	6	Standard
Ho-1	165	58499.4	0.8				mg/L	10	Standard
Er	166	56983.6	0.5				mg/L	13	Standard
I	127	5462.7	4.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.133	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		113.857	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	109.341
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	104.076
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1606138408
Sample Date/Time: Wednesday, June 29, 2016 20:01:24
Number of Replicates: 3
Autosampler Position: 407
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79667.3	1.9				ug/L	74699	Standard
	Be	9	540.0	10.4	**0.5836**	0.070	11.9	ug/L	8	Standard
	Al	27	892686.6	1.0	**5.6842**	0.164	2.9	ug/L	1493	Standard
	Sc	45	78111.0	3.7				ug/L	61029	Standard
	Ti	47	6171.3	0.9	**13.8487**	0.141	1.0	ug/L	35	Standard
	V	51	131186.8	0.8	**14.6946**	0.149	1.0	ug/L	1435	Standard
	Cr	52	291322.4	2.4	**32.6724**	0.743	2.3	ug/L	7635	Standard
	Cr	53	35120.7	4.3	**32.2467**	1.471	4.6	ug/L	363	Standard
	Mn	55	2233691.8	2.2	**274.8758**	6.127	2.2	ug/L	747	Standard
	Co	59	65245.2	1.7	**8.4325**	0.147	1.7	ug/L	234	Standard
	Ni	60	190260.1	2.2	**86.9887**	2.023	2.3	ug/L	215	Standard
	Cu	65	66483.6	1.3	**30.5171**	0.399	1.3	ug/L	104	Standard
	Zn	66	187493.0	1.2	**146.6893**	2.307	1.6	ug/L	363	Standard
>	**Ge**	72	577612.7	0.6				ug/L	495142	Standard
	As	75	6445.8	1.9	**4.9929**	0.116	2.3	ug/L	-50	Standard
	Se	82	222.3	2.5	**1.5982**	0.037	2.3	ug/L	14	Standard
	Se-1	77	243.0	1.1	**2.2298**	0.039	1.8	ug/L	42	Standard
>	**Ga**	71	4360.6	1.0				mg/L	42	Standard
	Rb	85	41170.9	1.0				ug/L	17	Standard
	Y	89	1636669.5	0.9				ug/L	417098	Standard
>	**Rh**	103	33.3	22.9				ug/L	13	Standard
	Mo	98	4750.5	1.5	**1.5922**	0.009	0.6	ug/L	11	Standard
	Ag	107	651.7	5.1	**0.0767**	0.003	4.5	ug/L	68	Standard
	Cd	111	1476.5	1.8	**0.6252**	0.009	1.4	mg/L	2	Standard
	Cd	114	3537.9	6.1	**0.6161**	0.029	4.7	ug/L	12	Standard
>	**In**	115	655238.7	1.5				ug/L	587441	Standard
	Sn	118	965.0	3.4	**0.0534**	0.004	7.7	ug/L	497	Standard
	Sb	123	268.7	11.3	**0.0474**	0.005	10.8	ug/L	78	Standard
	Ba	135	196413.8	1.6	**86.0176**	0.137	0.2	ug/L	24	Standard
	Ce	140	596487.3	1.9				ug/L	25	Standard
>	**Tb**	159	1073225.5	1.0				ug/L	939701	Standard
	Ho	165	61178.3	1.7				ug/L	10	Standard
	Tl	203	2456.5	1.8	**0.2718**	0.001	0.3	ug/L	4	Standard
	Tl	205	2150.2	4.8	**0.2763**	0.017	6.1	ug/L	2	Standard
	Pb	206	24200.3	1.9	**4.0880**	0.010	0.3	ug/L	240	Standard
	Pb	207	17656.3	0.7	**3.3464**	0.078	2.3	ug/L	198	Standard
	Pb	208	79187.0	3.1	**3.8025**	0.046	1.2	ug/L	883	Standard
	U	238	22940.4	1.4	**3.0557**	0.038	1.2	ug/L	3	Standard
>	**Bi**	209	570736.3	2.0				ug/L	523984	Standard

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Na	23	3.3	173.2	**28.7877**	49.853	173.2	mg/L	0	Standard
Mg	24	161.7	15.3	**0.0975**	0.019	19.1	mg/L	37	Standard
K	39	273.3	12.8	**0.3583**	0.064	17.7	mg/L	38	Standard
Ca	43	191.7	9.9	**6.9329**	0.825	11.9	mg/L	10	Standard
Fe	54	12889.7	4.6	**8.4015**	0.298	3.5	mg/L	179	Standard
Fe	57	3420.4	5.7	**8.0292**	0.829	10.3	mg/L	335	Standard
Sc-1	45	78111.0	3.7				mg/L	61029	Standard
Cl	35	25108.8	1.1				ug/L	20195	Standard
Kr	83	1.0	173.2				ug/L	4	Standard
Br	81	1990.1	4.1				ug/L	1547	Standard
P	31	18960.2	2.1				ug/L	15286	Standard
S	34	2216.8	7.1				ug/L	1572	Standard
Sr	88	153.3	28.5				ug/L	73	Standard
C	12	110.0	9.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	313.3	12.9				mg/L	3	Standard
Dy	164	83986.8	2.5				mg/L	6	Standard
Ho-1	165	61178.3	1.7				mg/L	10	Standard
Er	166	57776.6	0.9				mg/L	13	Standard
I	127	4875.8	1.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		106.651	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		116.656	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	111.541
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	108.922
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1606138408
Report Date/Time: Wednesday, June 29, 2016 20:03:41
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Method 6020 - Summary Report

Sample ID: L1606138410
Sample Date/Time: Wednesday, June 29, 2016 20:04:36
Number of Replicates: 3
Autosampler Position: 408
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82222.6	2.1				ug/L	74699	Standard
	Be	9	466.7	0.6	**0.4893**	0.010	2.0	ug/L	8	Standard
	Al	27	798979.6	1.9	**4.9264**	0.080	1.6	ug/L	1493	Standard
	Sc	45	79640.5	1.7				ug/L	61029	Standard
	Ti	47	5792.4	2.5	**13.1770**	0.593	4.5	ug/L	35	Standard
	V	51	95139.7	1.4	**10.7518**	0.246	2.3	ug/L	1435	Standard
	Cr	52	279542.5	2.0	**31.7533**	0.664	2.1	ug/L	7635	Standard
	Cr	53	34038.2	1.3	**31.6794**	0.880	2.8	ug/L	363	Standard
	Mn	55	1053790.0	0.3	**131.3975**	3.080	2.3	ug/L	747	Standard
	Co	59	35027.1	0.6	**4.5723**	0.080	1.8	ug/L	234	Standard
	Ni	60	156240.8	1.2	**72.3985**	1.638	2.3	ug/L	215	Standard
	Cu	65	48550.0	0.3	**22.5657**	0.405	1.8	ug/L	104	Standard
	Zn	66	257712.2	0.3	**204.5897**	4.503	2.2	ug/L	363	Standard
>	**Ge**	72	569889.2	2.0				ug/L	495142	Standard
	As	75	6132.6	2.6	**4.8186**	0.190	4.0	ug/L	-50	Standard
	Se	82	361.1	9.2	**2.7244**	0.314	11.5	ug/L	14	Standard
	Se-1	77	331.7	7.4	**3.3212**	0.233	7.0	ug/L	42	Standard
>	**Ga**	71	4152.2	2.1				mg/L	42	Standard
	Rb	85	52623.0	3.5				ug/L	17	Standard
	Y	89	1425089.1	0.3				ug/L	417098	Standard
>	**Rh**	103	33.3	8.7				ug/L	13	Standard
	Mo	98	3927.9	0.3	**1.2648**	0.018	1.4	ug/L	11	Standard
	Ag	107	467.0	2.9	**0.0489**	0.003	5.2	ug/L	68	Standard
	Cd	111	1169.0	3.4	**0.4740**	0.011	2.3	mg/L	2	Standard
	Cd	114	2891.7	1.0	**0.4840**	0.007	1.5	ug/L	12	Standard
>	**In**	115	681463.1	1.2				ug/L	587441	Standard
	Sn	118	755.0	5.0	**0.0168**	0.007	41.1	ug/L	497	Standard
	Sb	123	219.3	13.0	**0.0363**	0.005	13.2	ug/L	78	Standard
	Ba	135	73803.3	1.7	**31.0670**	0.270	0.9	ug/L	24	Standard
	Ce	140	554709.1	1.1				ug/L	25	Standard
>	**Tb**	159	1094015.2	1.4				ug/L	939701	Standard
	Ho	165	50373.6	1.6				ug/L	10	Standard
	Tl	203	1120.7	1.3	**0.1214**	0.002	2.0	ug/L	4	Standard
	Tl	205	941.7	7.2	**0.1194**	0.008	6.7	ug/L	2	Standard
	Pb	206	24028.0	1.2	**4.0020**	0.045	1.1	ug/L	240	Standard
	Pb	207	17504.4	0.3	**3.2701**	0.054	1.6	ug/L	198	Standard
	Pb	208	78967.6	0.8	**3.7402**	0.091	2.4	ug/L	883	Standard
	U	238	25248.7	0.7	**3.3178**	0.077	2.3	ug/L	3	Standard
>	**Bi**	209	578682.9	1.6				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	188.3	33.0	**0.1211**	0.061	50.1	mg/L	37	Standard
K	39	248.3	3.1	**0.3067**	0.020	6.4	mg/L	38	Standard
Ca	43	173.3	7.3	**5.8747**	0.743	12.6	mg/L	10	Standard
Fe	54	14056.9	1.9	**8.9942**	0.034	0.4	mg/L	179	Standard
Fe	57	3822.2	6.9	**8.8892**	0.835	9.4	mg/L	335	Standard
> **Sc-1**	45	79640.5	1.7				mg/L	61029	Standard
Cl	35	25424.6	1.4				ug/L	20195	Standard
Kr	83	1.3	114.6				ug/L	4	Standard
Br	81	2053.5	6.1				ug/L	1547	Standard
P	31	20016.5	1.3				ug/L	15286	Standard
S	34	2301.8	5.1				ug/L	1572	Standard
Sr	88	141.7	32.0				ug/L	73	Standard
C	12	56.7	36.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	133.3	11.5				mg/L	3	Standard
Dy	164	72545.2	2.7				mg/L	6	Standard
Ho-1	165	50373.6	1.6				mg/L	10	Standard
Er	166	47160.0	0.9				mg/L	13	Standard
I	127	6799.9	2.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.072	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		115.096	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		116.005
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.439
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606138412
Sample Date/Time: Wednesday, June 29, 2016 20:07:47
Number of Replicates: 3
Autosampler Position: 409
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81391.5	3.4				ug/L	74699	Standard
	Be	9	565.0	6.9	**0.5962**	0.020	3.4	ug/L	8	Standard
	Al	27	802320.4	2.6	**4.9984**	0.082	1.6	ug/L	1493	Standard
	Sc	45	77871.4	3.1				ug/L	61029	Standard
	Ti	47	8431.3	2.1	**19.3525**	0.252	1.3	ug/L	35	Standard
	V	51	136034.9	0.6	**15.5641**	0.178	1.1	ug/L	1435	Standard
	Cr	52	292890.6	0.7	**33.5584**	0.660	2.0	ug/L	7635	Standard
	Cr	53	35682.0	1.9	**33.4491**	0.599	1.8	ug/L	363	Standard
	Mn	55	2260782.0	0.5	**283.9966**	5.862	2.1	ug/L	747	Standard
	Co	59	82153.8	0.1	**10.8487**	0.184	1.7	ug/L	234	Standard
	Ni	60	172794.1	1.0	**80.6313**	1.536	1.9	ug/L	215	Standard
	Cu	65	63565.7	0.4	**29.7801**	0.432	1.5	ug/L	104	Standard
	Zn	66	251019.4	0.8	**200.6145**	2.591	1.3	ug/L	363	Standard
>	**Ge**	72	565970.9	1.7				ug/L	495142	Standard
	As	75	7636.9	2.3	**6.0250**	0.142	2.4	ug/L	-50	Standard
	Se	82	426.3	0.8	**3.2611**	0.084	2.6	ug/L	14	Standard
	Se-1	77	381.7	1.3	**3.9506**	0.115	2.9	ug/L	42	Standard
>	**Ga**	71	4992.5	2.6				mg/L	42	Standard
	Rb	85	46121.8	0.5				ug/L	17	Standard
	Y	89	1754842.6	1.7				ug/L	417098	Standard
>	**Rh**	103	43.3	35.3				ug/L	13	Standard
	Mo	98	5382.6	1.1	**1.7465**	0.044	2.5	ug/L	11	Standard
	Ag	107	637.3	4.9	**0.0719**	0.004	5.2	ug/L	68	Standard
	Cd	111	1430.5	6.2	**0.5853**	0.028	4.9	mg/L	2	Standard
	Cd	114	3407.8	7.3	**0.5746**	0.047	8.2	ug/L	12	Standard
>	**In**	115	677210.7	1.5				ug/L	587441	Standard
	Sn	118	780.0	4.5	**0.0212**	0.006	30.1	ug/L	497	Standard
	Sb	123	243.4	9.9	**0.0411**	0.005	12.6	ug/L	78	Standard
	Ba	135	199262.8	0.6	**84.4450**	1.189	1.4	ug/L	24	Standard
	Ce	140	678125.1	0.7				ug/L	25	Standard
>	**Tb**	159	1071624.9	1.1				ug/L	939701	Standard
	Ho	165	67051.4	0.5				ug/L	10	Standard
	Tl	203	1859.8	4.4	**0.2096**	0.007	3.5	ug/L	4	Standard
	Tl	205	1828.4	5.2	**0.2396**	0.011	4.7	ug/L	2	Standard
	Pb	206	33182.6	0.6	**5.7494**	0.057	1.0	ug/L	240	Standard
	Pb	207	24419.7	0.3	**4.7511**	0.035	0.7	ug/L	198	Standard
	Pb	208	111320.6	0.3	**5.4889**	0.050	0.9	ug/L	883	Standard
	U	238	25349.9	1.3	**3.4462**	0.014	0.4	ug/L	3	Standard
>	**Bi**	209	559224.1	1.0				ug/L	523984	Standard

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Na	23	3.3	86.6	**30.2574**	26.235	86.7	mg/L	0	Standard
Mg	24	168.3	9.1	**0.1052**	0.014	12.9	mg/L	37	Standard
K	39	280.0	6.4	**0.3709**	0.027	7.3	mg/L	38	Standard
Ca	43	176.7	27.2	**6.2736**	2.632	42.0	mg/L	10	Standard
Fe	54	15625.1	2.7	**10.2448**	0.046	0.4	mg/L	179	Standard
Fe	57	4357.3	3.7	**10.5343**	0.341	3.2	mg/L	335	Standard
> **Sc-1**	45	77871.4	3.1				mg/L	61029	Standard
Cl	35	26050.4	2.2				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	2310.2	5.7				ug/L	1547	Standard
P	31	19966.5	2.1				ug/L	15286	Standard
S	34	2301.8	1.2				ug/L	1572	Standard
Sr	88	181.7	8.4				ug/L	73	Standard
C	12	60.0	66.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	466.7	15.8				mg/L	3	Standard
Dy	164	94635.2	0.7				mg/L	6	Standard
Ho-1	165	67051.4	0.5				mg/L	10	Standard
Er	166	62943.8	1.5				mg/L	13	Standard
I	127	6689.8	6.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.960	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.305	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606138412
Report Date/Time: Wednesday, June 29, 2016 20:10:04
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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	115.281
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	106.725
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 20:11:01
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	78720.7	2.9				ug/L	74699	Standard
	Be	9	53925.8	1.9	**58.1477**	1.206	2.1	ug/L	8	Standard
	Al	27	8443805.5	1.2	**54.5410**	1.847	3.4	ug/L	1493	Standard
	Sc	45	68074.4	3.5				ug/L	61029	Standard
	Ti	47	45146.2	1.1	**105.2966**	1.372	1.3	ug/L	35	Standard
	V	51	452407.6	0.9	**52.8112**	0.533	1.0	ug/L	1435	Standard
	Cr	52	439865.6	0.2	**51.4989**	0.494	1.0	ug/L	7635	Standard
	Cr	53	55131.8	1.5	**52.4610**	1.191	2.3	ug/L	363	Standard
	Mn	55	411766.6	1.7	**52.1886**	1.083	2.1	ug/L	747	Standard
	Co	59	411137.6	1.8	**55.0576**	1.090	2.0	ug/L	234	Standard
	Ni	60	108563.6	1.0	**51.1869**	0.633	1.2	ug/L	215	Standard
	Cu	65	108514.2	0.8	**51.4879**	0.273	0.5	ug/L	104	Standard
	Zn	66	63813.1	1.5	**51.2390**	0.656	1.3	ug/L	363	Standard
>	Ge	72	559563.9	0.9				ug/L	495142	Standard
	As	75	65025.3	0.7	**51.4299**	0.351	0.7	ug/L	-50	Standard
	Se	82	6607.2	0.8	**53.1327**	0.267	0.5	ug/L	14	Standard
	Se-1	77	4509.3	0.5	**54.0117**	0.383	0.7	ug/L	42	Standard
>	Ga	71	68.3	11.2				mg/L	42	Standard
	Rb	85	971.7	11.9				ug/L	17	Standard
	Y	89	484276.8	2.3				ug/L	417098	Standard
>	Rh	103	33.3	52.7				ug/L	13	Standard
	Mo	98	305352.5	1.7	**102.8803**	2.601	2.5	ug/L	11	Standard
	Ag	107	366186.0	1.2	**50.4411**	0.533	1.1	ug/L	68	Standard
	Cd	111	118185.8	1.5	**50.7502**	0.681	1.3	mg/L	2	Standard
	Cd	114	288421.2	1.0	**50.5001**	0.711	1.4	ug/L	12	Standard
>	In	115	654225.0	1.4				ug/L	587441	Standard
	Sn	118	325668.1	1.2	**49.9654**	0.174	0.3	ug/L	497	Standard
	Sb	123	260726.4	2.1	**50.1401**	0.797	1.6	ug/L	78	Standard
	Ba	135	109583.9	1.3	**48.0616**	0.591	1.2	ug/L	24	Standard
	Ce	140	191.7	20.9				ug/L	25	Standard
>	Tb	159	983539.2	1.4				ug/L	939701	Standard
	Ho	165	21.7	13.3				ug/L	10	Standard
	Tl	203	449254.6	0.7	**52.6820**	0.493	0.9	ug/L	4	Standard
	Tl	205	410287.0	1.8	**55.4353**	1.032	1.9	ug/L	2	Standard
	Pb	206	287176.7	1.5	**51.8952**	0.724	1.4	ug/L	240	Standard
	Pb	207	254226.6	1.1	**51.7082**	0.492	1.0	ug/L	198	Standard
	Pb	208	1062593.6	0.7	**54.7051**	0.438	0.8	ug/L	883	Standard
	U	238	383746.1	0.8	**53.8863**	0.314	0.6	ug/L	3	Standard
>	Bi	209	542059.3	0.3				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.9421**	31.068	173.2	mg/L	0	Standard
Mg	24	4572.4	3.8	**5.2291**	0.219	4.2	mg/L	37	Standard
K	39	2235.2	5.1	**4.3138**	0.121	2.8	mg/L	38	Standard
Ca	43	108.3	35.8	**3.6601**	2.380	65.0	mg/L	10	Standard
Fe	54	7126.2	2.9	**5.2851**	0.313	5.9	mg/L	179	Standard
Fe	57	2081.8	4.0	**5.2741**	0.321	6.1	mg/L	335	Standard
> **Sc-1**	45	68074.4	3.5				mg/L	61029	Standard
Cl	35	27726.7	0.9				ug/L	20195	Standard
Kr	83	0.7	86.6				ug/L	4	Standard
Br	81	1910.1	6.0				ug/L	1547	Standard
P	31	20502.2	2.0				ug/L	15286	Standard
S	34	2426.9	4.0				ug/L	1572	Standard
Sr	88	50.0	26.5				ug/L	73	Standard
C	12	73.3	20.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	15.9	37.3				mg/L	6	Standard
Ho-1	165	21.7	13.3				mg/L	10	Standard
Er	166	16.7	34.6				mg/L	13	Standard
I	127	1525.1	31.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	116.295		
Al	27	109.082		
Sc	45			
Ti	47	105.297		
V	51	105.622		
Cr	52	102.998		
Cr	53			
Mn	55	104.377		
Co	59	110.115		
Ni	60	102.374		
Cu	65	102.976		
Zn	66	102.478		
> Ge	72		113.011	
As	75	102.860		
Se	82	106.265		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	102.880		
Ag	107	100.882		
Cd	111	101.500		
Cd	114			
In	115		111.369	
Sn	118	99.931		
Sb	123	100.280		
Ba	135	96.123		
Ce	140			
Tb	159			
Ho	165			
Tl	203	105.364		
Tl	205			
Pb	206			
Pb	207			
Pb	208	109.410		
U	238	107.773		
Bi	209		103.450	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Co	59	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 20:14:12
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79194.8	0.3				ug/L	74699	Standard
	Be	9	31.7	9.1	**0.0415**	0.003	7.4	ug/L	8	Standard
	Al	27	5331.0	39.7	**0.0208**	0.013	64.7	ug/L	1493	Standard
	Sc	45	70443.5	2.7				ug/L	61029	Standard
	Ti	47	45.0	15.6	**-0.0077**	0.016	206.1	ug/L	35	Standard
	V	51	1613.4	5.4	**-0.0133**	0.013	95.3	ug/L	1435	Standard
	Cr	52	7981.4	3.6	**-0.1047**	0.047	45.2	ug/L	7635	Standard
	Cr	53	418.3	25.3	**0.0570**	0.103	180.4	ug/L	363	Standard
	Mn	55	1741.1	30.3	**0.0658**	0.068	103.0	ug/L	747	Standard
	Co	59	378.7	17.0	**0.0117**	0.009	74.2	ug/L	234	Standard
	Ni	60	306.7	29.3	**0.0162**	0.043	265.9	ug/L	215	Standard
	Cu	65	193.0	22.7	**-0.0150**	0.021	143.0	ug/L	104	Standard
	Zn	66	576.0	19.1	**-0.0039**	0.093	2387.7	ug/L	363	Standard
>	**Ge**	72	580508.2	1.5				ug/L	495142	Standard
	As	75	-17.3	276.0	**0.0468**	0.036	77.6	ug/L	-50	Standard
	Se	82	19.7	47.6	**0.0162**	0.076	468.0	ug/L	14	Standard
	Se-1	77	62.3	8.8	**0.1062**	0.073	68.4	ug/L	42	Standard
>	**Ga**	71	43.3	24.0				mg/L	42	Standard
	Rb	85	53.3	27.1				ug/L	17	Standard
	Y	89	466004.6	0.7				ug/L	417098	Standard
>	**Rh**	103	18.3	41.7				ug/L	13	Standard
	Mo	98	326.5	17.1	**0.1045**	0.019	18.6	ug/L	11	Standard
	Ag	107	195.7	20.5	**0.0141**	0.005	38.2	ug/L	68	Standard
	Cd	111	49.8	49.3	**0.0134**	0.010	76.8	mg/L	2	Standard
	Cd	114	97.6	30.0	**0.0150**	0.005	33.6	ug/L	12	Standard
>	**In**	115	653349.0	0.9				ug/L	587441	Standard
	Sn	118	958.4	16.5	**0.0527**	0.023	43.7	ug/L	497	Standard
	Sb	123	468.2	24.3	**0.0858**	0.021	24.7	ug/L	78	Standard
	Ba	135	169.0	53.9	**0.0580**	0.039	67.5	ug/L	24	Standard
	Ce	140	383.3	72.7				ug/L	25	Standard
>	**Tb**	159	1008003.3	2.5				ug/L	939701	Standard
	Ho	165	33.3	56.8				ug/L	10	Standard
	Tl	203	138.0	27.1	**0.0136**	0.004	29.9	ug/L	4	Standard
	Tl	205	128.3	47.6	**0.0167**	0.008	47.6	ug/L	2	Standard
	Pb	206	364.7	12.5	**-0.0084**	0.008	93.5	ug/L	240	Standard
	Pb	207	321.7	11.0	**-0.0076**	0.006	84.7	ug/L	198	Standard
	Pb	208	1298.7	10.5	**-0.0103**	0.007	67.0	ug/L	883	Standard
	U	238	121.3	35.3	**0.0118**	0.006	48.9	ug/L	3	Standard
>	**Bi**	209	569222.6	0.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	31.7	50.8	**-0.0295**	0.019	63.3	mg/L	37	Standard
K	39	58.3	13.1	**-0.0021**	0.017	817.3	mg/L	38	Standard
Ca	43	26.7	28.6	**-1.0586**	0.442	41.7	mg/L	10	Standard
Fe	54	154.2	11.8	**-0.0252**	0.011	43.9	mg/L	179	Standard
Fe	57	258.3	4.9	**-0.3125**	0.056	18.0	mg/L	335	Standard
> **Sc-1**	45	70443.5	2.7				mg/L	61029	Standard
Cl	35	27476.9	1.3				ug/L	20195	Standard
Kr	83	1.3	86.6				ug/L	4	Standard
Br	81	1946.8	3.9				ug/L	1547	Standard
P	31	20592.3	4.9				ug/L	15286	Standard
S	34	2348.5	2.8				ug/L	1572	Standard
Sr	88	75.0	46.7				ug/L	73	Standard
C	12	43.3	13.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	74.1	39.2				mg/L	6	Standard
Ho-1	165	33.3	56.8				mg/L	10	Standard
Er	166	53.3	71.0				mg/L	13	Standard
I	127	1293.4	30.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		117.241	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.219
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.633
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW 43 WG573291-03
Sample Date/Time: Wednesday, June 29, 2016 20:17:26
Number of Replicates: 3
Autosampler Position: 410
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78266.6	1.0				ug/L	74699	Standard
	Be	9	21.7	58.1	**0.0312**	0.014	44.4	ug/L	8	Standard
	Al	27	32901.2	14.4	**0.2003**	0.031	15.3	ug/L	1493	Standard
	Sc	45	68990.1	1.1				ug/L	61029	Standard
	Ti	47	59.7	25.6	**0.0271**	0.036	131.8	ug/L	35	Standard
	V	51	1740.6	13.9	**0.0036**	0.029	816.2	ug/L	1435	Standard
	Cr	52	10743.1	2.3	**0.2282**	0.033	14.5	ug/L	7635	Standard
	Cr	53	856.7	10.0	**0.4710**	0.086	18.2	ug/L	363	Standard
	Mn	55	4965.9	44.9	**0.4694**	0.280	59.7	ug/L	747	Standard
	Co	59	438.7	27.8	**0.0202**	0.016	81.0	ug/L	234	Standard
	Ni	60	464.7	17.9	**0.0906**	0.040	44.1	ug/L	215	Standard
	Cu	65	288.0	10.4	**0.0300**	0.015	49.7	ug/L	104	Standard
	Zn	66	2615.6	1.4	**1.6135**	0.041	2.5	ug/L	363	Standard
>	**Ge**	72	573366.1	0.8				ug/L	495142	Standard
	As	75	-37.9	81.3	**0.0303**	0.024	78.8	ug/L	-50	Standard
	Se	82	11.3	32.8	**-0.0488**	0.029	60.5	ug/L	14	Standard
	Se-1	77	61.0	9.1	**0.0990**	0.067	67.3	ug/L	42	Standard
>	**Ga**	71	31.7	9.1				mg/L	42	Standard
	Rb	85	100.0	26.5				ug/L	17	Standard
	Y	89	479627.1	2.2				ug/L	417098	Standard
>	**Rh**	103	1.7	173.2				ug/L	13	Standard
	Mo	98	155.9	47.8	**0.0477**	0.025	52.9	ug/L	11	Standard
	Ag	107	191.7	76.1	**0.0140**	0.020	145.7	ug/L	68	Standard
	Cd	111	21.5	58.8	**0.0014**	0.005	377.2	mg/L	2	Standard
	Cd	114	53.4	80.4	**0.0074**	0.008	102.3	ug/L	12	Standard
>	**In**	115	641242.2	1.6				ug/L	587441	Standard
	Sn	118	930.0	4.7	**0.0512**	0.008	15.1	ug/L	497	Standard
	Sb	123	286.5	19.6	**0.0520**	0.011	21.3	ug/L	78	Standard
	Ba	135	402.7	93.5	**0.1636**	0.167	102.4	ug/L	24	Standard
	Ce	140	951.7	120.0				ug/L	25	Standard
>	**Tb**	159	992014.1	1.0				ug/L	939701	Standard
	Ho	165	68.3	105.1				ug/L	10	Standard
	Tl	203	138.0	108.8	**0.0140**	0.017	122.9	ug/L	4	Standard
	Tl	205	136.7	67.7	**0.0182**	0.012	67.1	ug/L	2	Standard
	Pb	206	481.7	43.4	**0.0137**	0.037	272.5	ug/L	240	Standard
	Pb	207	395.0	43.8	**0.0084**	0.035	416.2	ug/L	198	Standard
	Pb	208	1692.0	26.2	**0.0108**	0.023	209.9	ug/L	883	Standard
	U	238	120.3	76.5	**0.0121**	0.013	104.7	ug/L	3	Standard
>	**Bi**	209	557465.1	0.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	46.7	43.3	**-0.0120**	0.023	188.7	mg/L	37	Standard
K	39	41.7	73.3	**-0.0331**	0.059	178.0	mg/L	38	Standard
Ca	43	16.7	45.8	**-1.5897**	0.437	27.5	mg/L	10	Standard
Fe	54	190.8	15.9	**0.0047**	0.022	466.7	mg/L	179	Standard
Fe	57	281.7	18.5	**-0.2277**	0.154	67.5	mg/L	335	Standard
> **Sc-1**	45	68990.1	1.1				mg/L	61029	Standard
Cl	35	27241.8	2.0				ug/L	20195	Standard
Kr	83	3.3	34.6				ug/L	4	Standard
Br	81	1960.1	2.7				ug/L	1547	Standard
P	31	19042.0	2.0				ug/L	15286	Standard
S	34	2271.8	2.5				ug/L	1572	Standard
Sr	88	70.0	14.3				ug/L	73	Standard
C	12	93.3	12.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	57.4	72.5				mg/L	6	Standard
Ho-1	165	68.3	105.1				mg/L	10	Standard
Er	166	53.3	75.8				mg/L	13	Standard
I	127	1241.7	37.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.776	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		115.798	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.159
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.390
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: LCSW 43 WG573291-04
Sample Date/Time: Wednesday, June 29, 2016 20:20:37
Number of Replicates: 3
Autosampler Position: 411
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79286.9	1.2				ug/L	74699	Standard
	Be	9	55518.2	1.7	**59.4178**	0.565	1.0	ug/L	8	Standard
	Al	27	18234.3	3.1	**0.1035**	0.005	4.4	ug/L	1493	Standard
	Sc	45	71925.5	3.7				ug/L	61029	Standard
	Ti	47	66.7	12.9	**0.0416**	0.023	54.2	ug/L	35	Standard
	V	51	464385.2	1.4	**52.3659**	1.151	2.2	ug/L	1435	Standard
	Cr	52	468709.1	0.6	**53.0500**	1.578	3.0	ug/L	7635	Standard
	Cr	53	57400.2	0.6	**52.7689**	1.471	2.8	ug/L	363	Standard
	Mn	55	425738.4	0.7	**52.1249**	1.035	2.0	ug/L	747	Standard
	Co	59	411335.9	1.2	**53.2163**	1.483	2.8	ug/L	234	Standard
	Ni	60	114540.7	1.0	**52.1842**	1.705	3.3	ug/L	215	Standard
	Cu	65	115424.0	0.4	**52.9151**	1.312	2.5	ug/L	104	Standard
	Zn	66	68318.0	0.2	**53.0163**	1.377	2.6	ug/L	363	Standard
>	**Ge**	72	579422.8	2.7				ug/L	495142	Standard
	As	75	63888.1	1.5	**48.8227**	1.412	2.9	ug/L	-50	Standard
	Se	82	6548.4	1.5	**50.8872**	2.152	4.2	ug/L	14	Standard
	Se-1	77	4570.0	2.1	**52.8570**	0.847	1.6	ug/L	42	Standard
>	**Ga**	71	68.3	27.7				mg/L	42	Standard
	Rb	85	96.7	7.9				ug/L	17	Standard
	Y	89	471340.1	1.5				ug/L	417098	Standard
>	**Rh**	103	33.3	52.7				ug/L	13	Standard
	Mo	98	1844.9	1.6	**0.6204**	0.021	3.4	ug/L	11	Standard
	Ag	107	386699.9	0.4	**53.6468**	1.108	2.1	ug/L	68	Standard
	Cd	111	120754.4	0.7	**52.2256**	1.320	2.5	mg/L	2	Standard
	Cd	114	290744.9	1.2	**51.2713**	1.454	2.8	ug/L	12	Standard
>	**In**	115	649724.4	1.8				ug/L	587441	Standard
	Sn	118	890.0	5.4	**0.0430**	0.007	15.1	ug/L	497	Standard
	Sb	123	259622.2	1.1	**50.2896**	1.419	2.8	ug/L	78	Standard
	Ba	135	113320.2	1.2	**50.0586**	1.415	2.8	ug/L	24	Standard
	Ce	140	216.7	24.0				ug/L	25	Standard
>	**Tb**	159	1024515.0	4.0				ug/L	939701	Standard
	Ho	165	13.3	57.3				ug/L	10	Standard
	Tl	203	467714.3	0.2	**50.8953**	1.428	2.8	ug/L	4	Standard
	Tl	205	419104.4	1.0	**52.5470**	1.541	2.9	ug/L	2	Standard
	Pb	206	302725.5	0.9	**50.7682**	1.716	3.4	ug/L	240	Standard
	Pb	207	257785.2	0.8	**48.6571**	1.672	3.4	ug/L	198	Standard
	Pb	208	1092150.5	0.9	**52.1642**	0.990	1.9	ug/L	883	Standard
	U	238	389261.3	0.3	**50.7252**	1.507	3.0	ug/L	3	Standard
>	**Bi**	209	584427.6	2.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	56.7	20.4	**-0.0027**	0.015	535.8	mg/L	37	Standard
K	39	35.0	42.9	**-0.0491**	0.026	52.4	mg/L	38	Standard
Ca	43	18.3	15.7	**-1.5405**	0.154	10.0	mg/L	10	Standard
Fe	54	173.6	39.1	**-0.0145**	0.044	301.9	mg/L	179	Standard
Fe	57	231.7	7.6	**-0.4064**	0.037	9.2	mg/L	335	Standard
Sc-1	45	71925.5	3.7				mg/L	61029	Standard
Cl	35	25598.9	2.5				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	1866.8	9.1				ug/L	1547	Standard
P	31	19263.9	1.4				ug/L	15286	Standard
S	34	2041.8	5.6				ug/L	1572	Standard
Sr	88	55.0	27.3				ug/L	73	Standard
C	12	76.7	37.7				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	3	Standard
Dy	164	19.2	93.9				mg/L	6	Standard
Ho-1	165	13.3	57.3				mg/L	10	Standard
Er	166	16.7	124.9				mg/L	13	Standard
I	127	1405.1	22.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.142	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		117.021	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.602
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		111.535
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 43 WG573291-04
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Method 6020 - Summary Report

Sample ID: L1606097401 WG573291-01
Sample Date/Time: Wednesday, June 29, 2016 20:23:48
Number of Replicates: 3
Autosampler Position: 412
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81548.9	1.6				ug/L	74699	Standard
	Be	9	36.7	15.7	**0.0457**	0.006	12.1	ug/L	8	Standard
	Al	27	11596363.1	1.3	**72.2698**	0.564	0.8	ug/L	1493	Standard
	Sc	45	73884.7	1.3				ug/L	61029	Standard
	Ti	47	344.7	7.0	**0.7127**	0.059	8.2	ug/L	35	Standard
	V	51	2330.4	3.5	**0.0834**	0.015	17.8	ug/L	1435	Standard
	Cr	52	13306.8	2.8	**0.5995**	0.076	12.7	ug/L	7635	Standard
	Cr	53	1323.4	7.3	**0.9647**	0.110	11.4	ug/L	363	Standard
	Mn	55	1766896.9	0.7	**229.1909**	3.866	1.7	ug/L	747	Standard
	Co	59	11800.3	0.6	**1.5775**	0.021	1.4	ug/L	234	Standard
	Ni	60	3337.7	1.4	**1.4870**	0.026	1.7	ug/L	215	Standard
	Cu	65	729.0	2.5	**0.2502**	0.002	1.0	ug/L	104	Standard
	Zn	66	5843.1	1.1	**4.3791**	0.046	1.0	ug/L	363	Standard
>	**Ge**	72	548022.2	2.0				ug/L	495142	Standard
	As	75	368.2	8.1	**0.3569**	0.029	8.2	ug/L	-50	Standard
	Se	82	62.0	10.3	**0.3726**	0.060	16.1	ug/L	14	Standard
	Se-1	77	77.3	2.7	**0.3344**	0.023	6.7	ug/L	42	Standard
>	**Ga**	71	126.7	17.8				mg/L	42	Standard
	Rb	85	31524.4	1.4				ug/L	17	Standard
	Y	89	492847.4	3.2				ug/L	417098	Standard
>	**Rh**	103	60.0	14.4				ug/L	13	Standard
	Mo	98	169.7	8.5	**0.0488**	0.006	11.4	ug/L	11	Standard
	Ag	107	132.7	27.4	**0.0046**	0.005	112.7	ug/L	68	Standard
	Cd	111	39.0	30.5	**0.0081**	0.005	64.3	mg/L	2	Standard
	Cd	114	83.8	14.7	**0.0119**	0.002	19.5	ug/L	12	Standard
>	**In**	115	686408.4	2.0				ug/L	587441	Standard
	Sn	118	1350.1	6.2	**0.1033**	0.015	14.9	ug/L	497	Standard
	Sb	123	1853.5	25.3	**0.3348**	0.082	24.4	ug/L	78	Standard
	Ba	135	131659.9	0.9	**55.0560**	1.555	2.8	ug/L	24	Standard
	Ce	140	2260.2	0.8				ug/L	25	Standard
>	**Tb**	159	1046624.7	1.4				ug/L	939701	Standard
	Ho	165	75.0	29.1				ug/L	10	Standard
	Tl	203	216.3	9.4	**0.0226**	0.002	8.3	ug/L	4	Standard
	Tl	205	203.3	8.6	**0.0265**	0.002	7.2	ug/L	2	Standard
	Pb	206	535.3	4.4	**0.0217**	0.002	11.2	ug/L	240	Standard
	Pb	207	421.7	4.6	**0.0124**	0.003	25.0	ug/L	198	Standard
	Pb	208	1891.4	2.2	**0.0194**	0.001	4.1	ug/L	883	Standard
	U	238	92.7	15.8	**0.0080**	0.002	21.9	ug/L	3	Standard
>	**Bi**	209	565094.9	1.8				ug/L	523984	Standard

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Na	23	1.7	173.2	**16.0814**	27.845	173.2	mg/L	0	Standard
Mg	24	5874.5	4.9	**6.2016**	0.379	6.1	mg/L	37	Standard
K	39	696.7	5.3	**1.1574**	0.052	4.5	mg/L	38	Standard
Ca	43	108.3	19.2	**3.1206**	1.021	32.7	mg/L	10	Standard
Fe	54	752.2	10.4	**0.3885**	0.054	13.9	mg/L	179	Standard
Fe	57	410.0	11.6	**0.0774**	0.139	179.8	mg/L	335	Standard
Sc-1	45	73884.7	1.3				mg/L	61029	Standard
Cl	35	27603.8	2.8				ug/L	20195	Standard
Kr	83	3.0	66.7				ug/L	4	Standard
Br	81	11711.2	8.2				ug/L	1547	Standard
P	31	22032.7	3.4				ug/L	15286	Standard
S	34	2200.2	1.4				ug/L	1572	Standard
Sr	88	218.3	6.6				ug/L	73	Standard
C	12	103.3	43.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	96.2	10.7				mg/L	6	Standard
Ho-1	165	75.0	29.1				mg/L	10	Standard
Er	166	80.0	33.1				mg/L	13	Standard
I	127	173019.2	10.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		109.170	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		110.680	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		116.847
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.846
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606097401 WG573291-01
Report Date/Time: Wednesday, June 29, 2016 20:26:05
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Method 6020 - Summary Report

Sample ID: L1606097409S WG573291-05
Sample Date/Time: Wednesday, June 29, 2016 20:27:00
Number of Replicates: 3
Autosampler Position: 413
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77620.1	3.1				ug/L	74699	Standard
	Be	9	53947.6	2.9	**58.9852**	0.884	1.5	ug/L	8	Standard
	Al	27	10156417.9	2.3	**66.5068**	0.592	0.9	ug/L	1493	Standard
	Sc	45	69663.2	3.3				ug/L	61029	Standard
	Ti	47	217.3	7.1	**0.4124**	0.032	7.7	ug/L	35	Standard
	V	51	458159.6	2.1	**55.0030**	1.779	3.2	ug/L	1435	Standard
	Cr	52	452840.8	0.8	**54.5717**	1.179	2.2	ug/L	7635	Standard
	Cr	53	56488.5	2.6	**55.2901**	2.221	4.0	ug/L	363	Standard
	Mn	55	2082250.4	1.8	**271.9842**	8.205	3.0	ug/L	747	Standard
	Co	59	416796.8	1.5	**57.3937**	1.632	2.8	ug/L	234	Standard
	Ni	60	112326.5	0.8	**54.4621**	1.176	2.2	ug/L	215	Standard
	Cu	65	110417.6	0.6	**53.8701**	0.759	1.4	ug/L	104	Standard
	Zn	66	70959.5	1.2	**58.6468**	1.068	1.8	ug/L	363	Standard
>	Ge	72	544304.5	1.4				ug/L	495142	Standard
	As	75	66583.4	2.1	**54.1492**	1.789	3.3	ug/L	-50	Standard
	Se	82	6605.0	1.3	**54.6200**	1.423	2.6	ug/L	14	Standard
	Se-1	77	4636.4	0.8	**57.1316**	0.988	1.7	ug/L	42	Standard
>	Ga	71	90.0	19.2				mg/L	42	Standard
	Rb	85	30654.3	2.7				ug/L	17	Standard
	Y	89	497057.5	2.9				ug/L	417098	Standard
>	Rh	103	38.3	52.7				ug/L	13	Standard
	Mo	98	163.0	7.4	**0.0487**	0.002	4.2	ug/L	11	Standard
	Ag	107	371099.4	2.0	**50.7567**	1.341	2.6	ug/L	68	Standard
	Cd	111	118377.9	2.8	**50.4636**	1.124	2.2	mg/L	2	Standard
	Cd	114	281427.9	1.4	**48.9324**	1.490	3.0	ug/L	12	Standard
>	In	115	659308.0	4.2				ug/L	587441	Standard
	Sn	118	1090.0	7.1	**0.0721**	0.019	25.7	ug/L	497	Standard
	Sb	123	259620.0	1.8	**49.5761**	1.212	2.4	ug/L	78	Standard
	Ba	135	232712.5	1.7	**101.3728**	3.182	3.1	ug/L	24	Standard
	Ce	140	941.7	8.0				ug/L	25	Standard
>	Tb	159	982549.7	3.5				ug/L	939701	Standard
	Ho	165	31.7	24.1				ug/L	10	Standard
	Tl	203	453507.3	1.5	**53.4353**	0.634	1.2	ug/L	4	Standard
	Tl	205	415041.8	2.5	**56.3402**	0.862	1.5	ug/L	2	Standard
	Pb	206	296774.5	1.1	**53.8916**	0.589	1.1	ug/L	240	Standard
	Pb	207	252251.9	1.7	**51.5506**	0.378	0.7	ug/L	198	Standard
	Pb	208	1071354.8	2.3	**55.4200**	1.065	1.9	ug/L	883	Standard
	U	238	381907.7	2.6	**53.8787**	0.717	1.3	ug/L	3	Standard
>	Bi	209	539522.1	2.0				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.4920**	30.288	173.2	mg/L	0	Standard
Mg	24	5339.3	3.4	**5.9734**	0.106	1.8	mg/L	37	Standard
K	39	681.7	10.6	**1.2038**	0.100	8.3	mg/L	38	Standard
Ca	43	128.3	25.3	**4.6217**	2.038	44.1	mg/L	10	Standard
Fe	54	542.4	5.6	**0.2649**	0.028	10.4	mg/L	179	Standard
Fe	57	371.7	15.7	**0.0334**	0.176	526.0	mg/L	335	Standard
> **Sc-1**	45	69663.2	3.3				mg/L	61029	Standard
Cl	35	28661.1	2.0				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	10680.4	5.1				ug/L	1547	Standard
P	31	21703.9	3.0				ug/L	15286	Standard
S	34	2123.5	4.7				ug/L	1572	Standard
Sr	88	153.3	22.2				ug/L	73	Standard
C	12	123.3	28.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	57.6	48.4				mg/L	6	Standard
Ho-1	165	31.7	24.1				mg/L	10	Standard
Er	166	50.0	91.7				mg/L	13	Standard
I	127	154285.8	7.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.911	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.929	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606097409S WG573291-05
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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	112.234
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.965
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606097409S WG573291-05
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Method 6020 - Summary Report

Sample ID: L1606097411SD WG573291-06
Sample Date/Time: Wednesday, June 29, 2016 20:30:11
Number of Replicates: 3
Autosampler Position: 414
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77405.6	1.5				ug/L	74699	Standard
	Be	9	55655.4	2.7	**61.0164**	1.576	2.6	ug/L	8	Standard
	Al	27	12086433.4	1.6	**79.3694**	1.985	2.5	ug/L	1493	Standard
	Sc	45	69212.8	2.6				ug/L	61029	Standard
	Ti	47	325.0	3.5	**0.6412**	0.031	4.8	ug/L	35	Standard
	V	51	466207.8	0.7	**53.8111**	1.021	1.9	ug/L	1435	Standard
	Cr	52	460631.7	1.4	**53.3535**	1.026	1.9	ug/L	7635	Standard
	Cr	53	56936.8	2.6	**53.5625**	1.349	2.5	ug/L	363	Standard
	Mn	55	2273187.5	1.8	**285.5286**	8.405	2.9	ug/L	747	Standard
	Co	59	417957.8	1.5	**55.3411**	1.481	2.7	ug/L	234	Standard
	Ni	60	114539.0	0.3	**53.3968**	0.715	1.3	ug/L	215	Standard
	Cu	65	111050.1	0.5	**52.0971**	0.842	1.6	ug/L	104	Standard
	Zn	66	69817.2	1.2	**55.4674**	1.299	2.3	ug/L	363	Standard
>	**Ge**	72	566018.8	1.2				ug/L	495142	Standard
	As	75	67402.1	1.8	**52.7097**	1.486	2.8	ug/L	-50	Standard
	Se	82	6620.3	2.0	**52.6418**	1.659	3.2	ug/L	14	Standard
	Se-1	77	4557.0	3.8	**53.9777**	2.700	5.0	ug/L	42	Standard
>	**Ga**	71	128.3	43.8				mg/L	42	Standard
	Rb	85	32409.6	0.5				ug/L	17	Standard
	Y	89	470382.0	1.0				ug/L	417098	Standard
>	**Rh**	103	61.7	24.8				ug/L	13	Standard
	Mo	98	196.1	5.9	**0.0618**	0.004	5.9	ug/L	11	Standard
	Ag	107	374581.1	0.3	**52.7275**	0.291	0.6	ug/L	68	Standard
	Cd	111	118658.6	1.5	**52.0656**	0.397	0.8	mg/L	2	Standard
	Cd	114	286274.0	2.6	**51.2138**	0.959	1.9	ug/L	12	Standard
>	**In**	115	640194.5	0.7				ug/L	587441	Standard
	Sn	118	1251.7	9.2	**0.1018**	0.017	16.3	ug/L	497	Standard
	Sb	123	263336.7	0.4	**51.7531**	0.327	0.6	ug/L	78	Standard
	Ba	135	250997.3	0.8	**112.5129**	0.934	0.8	ug/L	24	Standard
	Ce	140	2000.1	6.5				ug/L	25	Standard
>	**Tb**	159	984120.1	1.6				ug/L	939701	Standard
	Ho	165	48.3	11.9				ug/L	10	Standard
	Tl	203	459854.1	0.1	**53.6772**	0.823	1.5	ug/L	4	Standard
	Tl	205	414544.5	0.5	**55.7557**	1.089	2.0	ug/L	2	Standard
	Pb	206	298100.5	1.1	**53.6266**	1.109	2.1	ug/L	240	Standard
	Pb	207	253941.0	0.3	**51.4145**	0.875	1.7	ug/L	198	Standard
	Pb	208	1061848.2	0.5	**54.4146**	0.782	1.4	ug/L	883	Standard
	U	238	385197.1	0.6	**53.8449**	1.070	2.0	ug/L	3	Standard
>	**Bi**	209	544631.3	1.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	5929.5	2.1	**6.6847**	0.075	1.1	mg/L	37	Standard
K	39	801.7	4.2	**1.4479**	0.027	1.8	mg/L	38	Standard
Ca	43	125.0	31.2	**4.4423**	2.177	49.0	mg/L	10	Standard
Fe	54	841.7	6.4	**0.4916**	0.050	10.2	mg/L	179	Standard
Fe	57	441.7	5.4	**0.2489**	0.040	15.9	mg/L	335	Standard
> **Sc-1**	45	69212.8	2.6				mg/L	61029	Standard
Cl	35	28869.5	0.9				ug/L	20195	Standard
Kr	83	3.7	56.8				ug/L	4	Standard
Br	81	12511.8	0.5				ug/L	1547	Standard
P	31	22511.8	6.4				ug/L	15286	Standard
S	34	2320.2	4.3				ug/L	1572	Standard
Sr	88	170.0	8.8				ug/L	73	Standard
C	12	80.0	25.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	3	Standard
Dy	164	93.8	22.7				mg/L	6	Standard
Ho-1	165	48.3	11.9				mg/L	10	Standard
Er	166	60.0	57.7				mg/L	13	Standard
I	127	186712.7	7.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.624	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.314	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	108.980
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.940
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606097401PS WG573790-03
Sample Date/Time: Wednesday, June 29, 2016 20:33:23
Number of Replicates: 3
Autosampler Position: 415
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77767.4	1.4				ug/L	74699	Standard
	Be	9	54620.0	3.0	**59.5914**	1.002	1.7	ug/L	8	Standard
	Al	27	11452990.5	1.0	**74.8575**	1.594	2.1	ug/L	1493	Standard
	Sc	45	70666.1	1.7				ug/L	61029	Standard
	Ti	47	337.7	3.5	**0.6996**	0.031	4.4	ug/L	35	Standard
	V	51	448357.3	1.6	**53.6764**	0.056	0.1	ug/L	1435	Standard
	Cr	52	455460.2	1.4	**54.7521**	0.846	1.5	ug/L	7635	Standard
	Cr	53	57375.1	1.7	**56.0052**	0.200	0.4	ug/L	363	Standard
	Mn	55	2154709.7	0.5	**280.7294**	3.122	1.1	ug/L	747	Standard
	Co	59	404569.2	0.4	**55.5661**	0.653	1.2	ug/L	234	Standard
	Ni	60	112633.8	1.0	**54.4757**	0.921	1.7	ug/L	215	Standard
	Cu	65	109355.9	1.1	**53.2239**	1.011	1.9	ug/L	104	Standard
	Zn	66	70498.3	1.6	**58.1166**	0.789	1.4	ug/L	363	Standard
>	**Ge**	72	545627.2	1.6				ug/L	495142	Standard
	As	75	64850.8	0.9	**52.6029**	0.345	0.7	ug/L	-50	Standard
	Se	82	6485.5	1.8	**53.4847**	0.149	0.3	ug/L	14	Standard
	Se-1	77	4411.0	1.9	**54.1848**	0.787	1.5	ug/L	42	Standard
>	**Ga**	71	161.7	1.8				mg/L	42	Standard
	Rb	85	30524.1	1.7				ug/L	17	Standard
	Y	89	474875.4	0.7				ug/L	417098	Standard
>	**Rh**	103	60.0	16.7				ug/L	13	Standard
	Mo	98	163.5	8.5	**0.0491**	0.004	8.3	ug/L	11	Standard
	Ag	107	365805.1	1.5	**50.1795**	1.312	2.6	ug/L	68	Standard
	Cd	111	117534.8	0.9	**50.2525**	0.249	0.5	mg/L	2	Standard
	Cd	114	285376.1	1.5	**49.7475**	0.497	1.0	ug/L	12	Standard
>	**In**	115	657058.7	1.4				ug/L	587441	Standard
	Sn	118	1523.4	8.4	**0.1383**	0.017	12.1	ug/L	497	Standard
	Sb	123	259036.8	1.0	**49.6101**	1.139	2.3	ug/L	78	Standard
	Ba	135	239792.4	1.1	**104.7386**	1.629	1.6	ug/L	24	Standard
	Ce	140	2208.5	2.2				ug/L	25	Standard
>	**Tb**	159	1019758.9	1.4				ug/L	939701	Standard
	Ho	165	71.7	21.3				ug/L	10	Standard
	Tl	203	456925.9	1.0	**51.8248**	0.434	0.8	ug/L	4	Standard
	Tl	205	410087.8	1.3	**53.5969**	1.082	2.0	ug/L	2	Standard
	Pb	206	289464.5	1.3	**50.5998**	1.170	2.3	ug/L	240	Standard
	Pb	207	248071.4	0.9	**48.8073**	1.130	2.3	ug/L	198	Standard
	Pb	208	1050860.8	0.8	**52.3325**	1.144	2.2	ug/L	883	Standard
	U	238	380364.0	0.7	**51.6678**	1.019	2.0	ug/L	3	Standard
>	**Bi**	209	560465.1	1.6				ug/L	523984	Standard

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Na	23	1.7	173.2	**16.2901**	28.207	173.2	mg/L	0	Standard
Mg	24	5812.8	3.2	**6.4153**	0.191	3.0	mg/L	37	Standard
K	39	706.7	5.8	**1.2347**	0.072	5.8	mg/L	38	Standard
Ca	43	108.3	32.4	**3.3848**	1.922	56.8	mg/L	10	Standard
Fe	54	723.0	16.6	**0.3920**	0.096	24.5	mg/L	179	Standard
Fe	57	435.0	5.7	**0.2027**	0.073	35.8	mg/L	335	Standard
> **Sc-1**	45	70666.1	1.7				mg/L	61029	Standard
Cl	35	28625.7	0.6				ug/L	20195	Standard
Kr	83	1.7	34.6				ug/L	4	Standard
Br	81	11964.7	4.0				ug/L	1547	Standard
P	31	22167.9	1.3				ug/L	15286	Standard
S	34	2268.5	2.8				ug/L	1572	Standard
Sr	88	201.7	11.5				ug/L	73	Standard
C	12	93.3	34.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	3	Standard
Dy	164	120.1	22.8				mg/L	6	Standard
Ho-1	165	71.7	21.3				mg/L	10	Standard
Er	166	66.7	60.6				mg/L	13	Standard
I	127	179600.9	7.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.108	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.196	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.851
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.962
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606097401PS WG573790-03
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Method 6020 - Summary Report

Sample ID: L1606097401SDL WG573790-04
Sample Date/Time: Wednesday, June 29, 2016 20:36:34
Number of Replicates: 3
Autosampler Position: 416
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77070.7	3.6				ug/L	74699	Standard
	Be	9	45.0	33.3	**0.0568**	0.015	26.1	ug/L	8	Standard
	Al	27	2260304.8	1.2	**14.9037**	0.448	3.0	ug/L	1493	Standard
	Sc	45	68278.6	3.1				ug/L	61029	Standard
	Ti	47	83.0	9.9	**0.0892**	0.019	21.8	ug/L	35	Standard
	V	51	2192.5	3.4	**0.0673**	0.008	12.3	ug/L	1435	Standard
	Cr	52	10144.1	1.9	**0.2156**	0.020	9.5	ug/L	7635	Standard
	Cr	53	686.7	4.8	**0.3429**	0.034	10.1	ug/L	363	Standard
	Mn	55	355711.8	1.3	**46.1130**	0.456	1.0	ug/L	747	Standard
	Co	59	2492.2	1.8	**0.3045**	0.007	2.2	ug/L	234	Standard
	Ni	60	828.7	2.9	**0.2769**	0.011	3.8	ug/L	215	Standard
	Cu	65	280.0	0.7	**0.0325**	0.001	2.6	ug/L	104	Standard
	Zn	66	2517.5	2.7	**1.6325**	0.059	3.6	ug/L	363	Standard
>	**Ge**	72	546825.8	0.3				ug/L	495142	Standard
	As	75	65.5	45.7	**0.1126**	0.024	21.6	ug/L	-50	Standard
	Se	82	28.6	15.9	**0.0977**	0.038	38.5	ug/L	14	Standard
	Se-1	77	61.3	12.0	**0.1380**	0.090	65.2	ug/L	42	Standard
>	**Ga**	71	98.3	5.9				mg/L	42	Standard
	Rb	85	6301.3	2.8				ug/L	17	Standard
	Y	89	489576.3	2.2				ug/L	417098	Standard
>	**Rh**	103	21.7	48.0				ug/L	13	Standard
	Mo	98	47.0	21.8	**0.0100**	0.004	35.1	ug/L	11	Standard
	Ag	107	179.0	15.1	**0.0115**	0.004	30.5	ug/L	68	Standard
	Cd	111	35.6	11.4	**0.0072**	0.002	22.2	mg/L	2	Standard
	Cd	114	102.0	28.8	**0.0155**	0.005	31.8	ug/L	12	Standard
>	**In**	115	661161.0	0.8				ug/L	587441	Standard
	Sn	118	795.0	15.7	**0.0261**	0.018	68.8	ug/L	497	Standard
	Sb	123	2322.3	23.7	**0.4382**	0.107	24.4	ug/L	78	Standard
	Ba	135	26230.7	1.3	**11.3705**	0.051	0.4	ug/L	24	Standard
	Ce	140	480.0	13.3				ug/L	25	Standard
>	**Tb**	159	1000122.3	1.4				ug/L	939701	Standard
	Ho	165	26.7	10.8				ug/L	10	Standard
	Tl	203	156.0	22.9	**0.0163**	0.004	24.4	ug/L	4	Standard
	Tl	205	150.0	15.3	**0.0202**	0.003	14.3	ug/L	2	Standard
	Pb	206	403.0	8.6	**0.0007**	0.006	871.4	ug/L	240	Standard
	Pb	207	342.3	5.9	**-0.0013**	0.004	288.2	ug/L	198	Standard
	Pb	208	1497.0	5.1	**0.0020**	0.004	181.5	ug/L	883	Standard
	U	238	114.0	13.2	**0.0113**	0.002	17.4	ug/L	3	Standard
>	**Bi**	209	549941.1	1.0				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	1213.4	3.4	**1.3365**	0.084	6.3	mg/L	37	Standard
K	39	180.0	11.1	**0.2425**	0.050	20.5	mg/L	38	Standard
Ca	43	46.7	22.3	**0.1064**	0.547	514.2	mg/L	10	Standard
Fe	54	286.0	10.0	**0.0782**	0.017	21.6	mg/L	179	Standard
Fe	57	306.7	10.9	**-0.1437**	0.079	55.0	mg/L	335	Standard
> **Sc-1**	45	68278.6	3.1				mg/L	61029	Standard
Cl	35	28506.1	0.3				ug/L	20195	Standard
Kr	83	1.7	34.6				ug/L	4	Standard
Br	81	3947.2	6.9				ug/L	1547	Standard
P	31	19479.2	3.3				ug/L	15286	Standard
S	34	2088.5	5.3				ug/L	1572	Standard
Sr	88	101.7	24.8				ug/L	73	Standard
C	12	60.0	60.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	52.5	9.9				mg/L	6	Standard
Ho-1	165	26.7	10.8				mg/L	10	Standard
Er	166	16.7	69.3				mg/L	13	Standard
I	127	39316.0	2.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.175	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.438	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606097401SDL WG573790-04
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.549
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.954
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606097401SDL WG573790-04
Sample Date/Time: Wednesday, June 29, 2016 20:39:46
Number of Replicates: 3
Autosampler Position: 417
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76547.9	2.1				ug/L	74699	Standard
	Be	9	28.3	27.0	**0.0389**	0.008	20.5	ug/L	8	Standard
	Al	27	465099.1	0.7	**3.0756**	0.044	1.4	ug/L	1493	Standard
	Sc	45	68169.7	0.9				ug/L	61029	Standard
	Ti	47	36.7	6.9	**-0.0243**	0.006	24.2	ug/L	35	Standard
	V	51	2063.3	3.2	**0.0438**	0.007	16.8	ug/L	1435	Standard
	Cr	52	9662.1	0.8	**0.1188**	0.007	6.3	ug/L	7635	Standard
	Cr	53	523.3	10.2	**0.1664**	0.051	30.7	ug/L	363	Standard
	Mn	55	72938.2	2.1	**9.0325**	0.175	1.9	ug/L	747	Standard
	Co	59	731.7	15.3	**0.0598**	0.015	24.7	ug/L	234	Standard
	Ni	60	309.0	4.2	**0.0207**	0.006	30.5	ug/L	215	Standard
	Cu	65	310.7	4.3	**0.0426**	0.006	14.7	ug/L	104	Standard
	Zn	66	2601.2	2.1	**1.6324**	0.044	2.7	ug/L	363	Standard
>	**Ge**	72	565002.4	0.2				ug/L	495142	Standard
	As	75	-33.8	92.8	**0.0331**	0.025	74.3	ug/L	-50	Standard
	Se	82	20.9	22.0	**0.0285**	0.036	128.0	ug/L	14	Standard
	Se-1	77	57.7	17.5	**0.0697**	0.122	174.5	ug/L	42	Standard
>	**Ga**	71	58.3	9.9				mg/L	42	Standard
	Rb	85	1335.1	7.2				ug/L	17	Standard
	Y	89	490772.8	1.5				ug/L	417098	Standard
>	**Rh**	103	15.0	57.7				ug/L	13	Standard
	Mo	98	24.2	10.4	**0.0025**	0.001	32.4	ug/L	11	Standard
	Ag	107	143.3	39.3	**0.0071**	0.008	112.3	ug/L	68	Standard
	Cd	111	11.6	65.7	**-0.0029**	0.003	116.5	mg/L	2	Standard
	Cd	114	25.4	61.7	**0.0024**	0.003	115.9	ug/L	12	Standard
>	**In**	115	647709.2	0.5				ug/L	587441	Standard
	Sn	118	543.3	5.3	**-0.0103**	0.004	42.8	ug/L	497	Standard
	Sb	123	784.5	24.6	**0.1481**	0.037	24.8	ug/L	78	Standard
	Ba	135	5327.9	0.7	**2.3449**	0.015	0.6	ug/L	24	Standard
	Ce	140	110.0	7.9				ug/L	25	Standard
>	**Tb**	159	986009.2	0.5				ug/L	939701	Standard
	Ho	165	10.0	100.0				ug/L	10	Standard
	Tl	203	50.7	34.9	**0.0041**	0.002	51.6	ug/L	4	Standard
	Tl	205	46.7	71.3	**0.0064**	0.005	70.3	ug/L	2	Standard
	Pb	206	376.3	19.7	**-0.0043**	0.014	323.1	ug/L	240	Standard
	Pb	207	290.7	20.1	**-0.0119**	0.012	103.4	ug/L	198	Standard
	Pb	208	1284.0	11.0	**-0.0091**	0.008	86.4	ug/L	883	Standard
	U	238	44.0	79.9	**0.0017**	0.005	294.8	ug/L	3	Standard
>	**Bi**	209	552760.9	1.2				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	246.7	9.1	**0.2201**	0.028	12.6	mg/L	37	Standard
K	39	50.0	40.0	**-0.0154**	0.039	250.4	mg/L	38	Standard
Ca	43	20.0	43.3	**-1.3952**	0.477	34.2	mg/L	10	Standard
Fe	54	182.5	25.5	**0.0004**	0.036	9653.1	mg/L	179	Standard
Fe	57	256.7	8.8	**-0.2933**	0.068	23.1	mg/L	335	Standard
Sc-1	45	68169.7	0.9				mg/L	61029	Standard
Cl	35	28987.0	1.4				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	2360.2	9.1				ug/L	1547	Standard
P	31	19090.4	2.0				ug/L	15286	Standard
S	34	2190.2	0.6				ug/L	1572	Standard
Sr	88	73.3	27.6				ug/L	73	Standard
C	12	46.7	44.6				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	22.7	102.4				mg/L	6	Standard
Ho-1	165	10.0	100.0				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	10453.6	7.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.475	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.109	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.259
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.492
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 20:42:59
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73968.6	3.7				ug/L	74699	Standard
	Be	9	51786.8	4.7	**59.3953**	0.618	1.0	ug/L	8	Standard
	Al	27	8138418.2	2.1	**55.9353**	1.016	1.8	ug/L	1493	Standard
	Sc	45	66422.0	2.7				ug/L	61029	Standard
	Ti	47	44367.5	1.4	**105.9251**	2.261	2.1	ug/L	35	Standard
	V	51	448161.7	0.9	**53.5504**	0.563	1.1	ug/L	1435	Standard
	Cr	52	438098.2	0.5	**52.5206**	0.674	1.3	ug/L	7635	Standard
	Cr	53	53648.2	1.8	**52.2574**	1.658	3.2	ug/L	363	Standard
	Mn	55	415062.2	0.8	**53.8560**	1.244	2.3	ug/L	747	Standard
	Co	59	407202.7	0.3	**55.8201**	1.033	1.9	ug/L	234	Standard
	Ni	60	107214.7	0.8	**51.7442**	0.748	1.4	ug/L	215	Standard
	Cu	65	106835.8	1.9	**51.8884**	1.090	2.1	ug/L	104	Standard
	Zn	66	63121.9	0.7	**51.8882**	0.831	1.6	ug/L	363	Standard
>	Ge	72	546729.2	1.7				ug/L	495142	Standard
	As	75	63950.8	1.3	**51.7792**	1.311	2.5	ug/L	-50	Standard
	Se	82	6522.2	2.4	**53.7001**	1.978	3.7	ug/L	14	Standard
	Se-1	77	4462.7	1.0	**54.7224**	0.944	1.7	ug/L	42	Standard
>	Ga	71	48.3	11.9				mg/L	42	Standard
	Rb	85	921.7	10.0				ug/L	17	Standard
	Y	89	469877.0	1.2				ug/L	417098	Standard
>	Rh	103	31.7	45.6				ug/L	13	Standard
	Mo	98	306064.1	0.6	**105.7488**	1.650	1.6	ug/L	11	Standard
	Ag	107	358011.4	0.7	**50.5757**	0.461	0.9	ug/L	68	Standard
	Cd	111	116953.2	1.0	**51.5035**	0.389	0.8	mg/L	2	Standard
	Cd	114	288128.0	0.1	**51.7395**	0.785	1.5	ug/L	12	Standard
>	In	115	637946.0	1.6				ug/L	587441	Standard
	Sn	118	327214.8	2.0	**51.4831**	0.238	0.5	ug/L	497	Standard
	Sb	123	254525.5	0.5	**50.2034**	0.722	1.4	ug/L	78	Standard
	Ba	135	108828.5	1.0	**48.9489**	0.332	0.7	ug/L	24	Standard
	Ce	140	90.0	29.4				ug/L	25	Standard
>	Tb	159	958314.6	1.8				ug/L	939701	Standard
	Ho	165	11.7	49.5				ug/L	10	Standard
	Tl	203	447416.0	0.6	**53.4811**	1.019	1.9	ug/L	4	Standard
	Tl	205	409322.9	1.6	**56.3810**	1.712	3.0	ug/L	2	Standard
	Pb	206	283417.6	0.7	**52.2045**	0.689	1.3	ug/L	240	Standard
	Pb	207	252263.1	0.7	**52.2984**	0.513	1.0	ug/L	198	Standard
	Pb	208	1062273.6	1.1	**55.7538**	1.546	2.8	ug/L	883	Standard
	U	238	385444.7	0.9	**55.1725**	1.082	2.0	ug/L	3	Standard
>	Bi	209	531871.1	1.6				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4377.3	2.2	**5.1285**	0.149	2.9	mg/L	37	Standard
K	39	2180.2	1.8	**4.3148**	0.109	2.5	mg/L	38	Standard
Ca	43	118.3	10.6	**4.3366**	0.588	13.6	mg/L	10	Standard
Fe	54	6990.5	4.3	**5.3088**	0.233	4.4	mg/L	179	Standard
Fe	57	2083.5	2.8	**5.4386**	0.352	6.5	mg/L	335	Standard
> **Sc-1**	45	66422.0	2.7				mg/L	61029	Standard
Cl	35	29309.7	0.2				ug/L	20195	Standard
Kr	83	2.3	24.7				ug/L	4	Standard
Br	81	2156.8	3.9				ug/L	1547	Standard
P	31	21223.2	2.6				ug/L	15286	Standard
S	34	2665.2	2.0				ug/L	1572	Standard
Sr	88	71.7	8.1				ug/L	73	Standard
C	12	56.7	40.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	19.8	1.4				mg/L	6	Standard
Ho-1	165	11.7	49.5				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	2623.6	23.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	118.791		
Al	27	111.871		
Sc	45			
Ti	47	105.925		
V	51	107.101		
Cr	52	105.041		
Cr	53			
Mn	55	107.712		
Co	59	111.640		
Ni	60	103.488		
Cu	65	103.777		
Zn	66	103.776		
> Ge	72		110.419	
As	75	103.558		
Se	82	107.400		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	105.749		
Ag	107	101.151		
Cd	111	103.007		
Cd	114			
In	115		108.597	
Sn	118	102.966		
Sb	123	100.407		
Ba	135	97.898		
Ce	140			
Tb	159			
Ho	165			
Tl	203	106.962		
Tl	205			
Pb	206			
Pb	207			
Pb	208	111.508		
U	238	110.345		
Bi	209		101.505	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	
QC Std 6	Co	59	

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QC Std 6	Pb	208
QC Std 6	U	238

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 20:46:11
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75383.8	1.3				ug/L	74699	Standard
	Be	9	28.3	20.4	**0.0395**	0.006	15.9	ug/L	8	Standard
	Al	27	2638.6	20.0	**0.0044**	0.003	78.6	ug/L	1493	Standard
	Sc	45	68713.9	3.5				ug/L	61029	Standard
	Ti	47	37.7	13.4	**-0.0232**	0.011	49.4	ug/L	35	Standard
	V	51	1533.2	3.6	**-0.0202**	0.008	41.3	ug/L	1435	Standard
	Cr	52	7879.4	2.2	**-0.1054**	0.029	27.9	ug/L	7635	Standard
	Cr	53	448.3	16.3	**0.0885**	0.063	71.1	ug/L	363	Standard
	Mn	55	901.4	5.8	**-0.0363**	0.007	18.9	ug/L	747	Standard
	Co	59	283.3	10.0	**-0.0002**	0.004	1542.3	ug/L	234	Standard
	Ni	60	186.3	2.6	**-0.0379**	0.003	8.3	ug/L	215	Standard
	Cu	65	132.7	3.4	**-0.0421**	0.001	3.4	ug/L	104	Standard
	Zn	66	415.3	5.4	**-0.1263**	0.014	10.9	ug/L	363	Standard
>	**Ge**	72	573402.3	1.2				ug/L	495142	Standard
	As	75	-34.2	13.3	**0.0332**	0.003	10.5	ug/L	-50	Standard
	Se	82	17.2	23.7	**-0.0025**	0.031	1279.2	ug/L	14	Standard
	Se-1	77	54.3	12.3	**0.0204**	0.082	402.5	ug/L	42	Standard
>	**Ga**	71	35.0	37.8				mg/L	42	Standard
	Rb	85	30.0	28.9				ug/L	17	Standard
	Y	89	465691.4	1.8				ug/L	417098	Standard
>	**Rh**	103	6.7	43.3				ug/L	13	Standard
	Mo	98	268.8	25.2	**0.0874**	0.025	29.0	ug/L	11	Standard
	Ag	107	132.7	5.0	**0.0058**	0.001	22.7	ug/L	68	Standard
	Cd	111	15.2	35.4	**-0.0012**	0.003	209.6	mg/L	2	Standard
	Cd	114	58.4	20.0	**0.0084**	0.002	23.7	ug/L	12	Standard
>	**In**	115	638175.3	2.2				ug/L	587441	Standard
	Sn	118	866.7	15.8	**0.0416**	0.019	45.6	ug/L	497	Standard
	Sb	123	616.5	30.1	**0.1169**	0.034	29.1	ug/L	78	Standard
	Ba	135	50.7	18.3	**0.0068**	0.005	67.0	ug/L	24	Standard
	Ce	140	28.3	27.0				ug/L	25	Standard
>	**Tb**	159	990005.2	3.0				ug/L	939701	Standard
	Ho	165	6.7	86.6				ug/L	10	Standard
	Tl	203	92.0	24.5	**0.0086**	0.003	32.5	ug/L	4	Standard
	Tl	205	76.7	43.4	**0.0102**	0.005	44.4	ug/L	2	Standard
	Pb	206	305.7	10.6	**-0.0179**	0.007	38.8	ug/L	240	Standard
	Pb	207	274.7	5.9	**-0.0162**	0.004	23.3	ug/L	198	Standard
	Pb	208	1058.7	7.3	**-0.0216**	0.005	23.5	ug/L	883	Standard
	U	238	60.3	25.7	**0.0037**	0.002	61.2	ug/L	3	Standard
>	**Bi**	209	564302.2	2.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	35.0	37.8	**-0.0253**	0.014	54.1	mg/L	37	Standard
K	39	45.0	19.2	**-0.0261**	0.014	54.4	mg/L	38	Standard
Ca	43	26.7	39.0	**-1.0220**	0.608	59.5	mg/L	10	Standard
Fe	54	162.5	17.8	**-0.0163**	0.018	110.8	mg/L	179	Standard
Fe	57	258.3	8.1	**-0.2948**	0.047	15.9	mg/L	335	Standard
Sc-1	45	68713.9	3.5				mg/L	61029	Standard
Cl	35	28935.6	0.2				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	1740.1	12.2				ug/L	1547	Standard
P	31	21446.8	2.8				ug/L	15286	Standard
S	34	2463.5	5.1				ug/L	1572	Standard
Sr	88	71.7	17.6				ug/L	73	Standard
C	12	43.3	13.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	12.9	115.2				mg/L	6	Standard
Ho-1	165	6.7	86.6				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	2023.5	28.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		115.806	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.636
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.694
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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2.3.3 Metals CVAA Data (Mercury)

2.3.3.1 Summary Data

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-02	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	126F-061416	**Prep Method:**	7470A	**Prep Date:**	06/16/2016 07:27
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/26/2016 12:23
Workgroup #:	WG573236	**Analyst:**	AMA	**Run Date:**	06/26/2016 13:19
Collect Date:	06/14/2016 11:10	**Dilution:**	1	**File ID:**	M7.062616.131930
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-03	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	C08-061416	**Prep Method:**	7470A	**Prep Date:**	06/16/2016 07:27
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/26/2016 12:23
Workgroup #:	WG573236	**Analyst:**	AMA	**Run Date:**	06/26/2016 13:22
Collect Date:	06/14/2016 13:10	**Dilution:**	1	**File ID:**	M7.062616.132202
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-04	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	C03-061416	**Prep Method:**	7470A	**Prep Date:**	06/16/2016 07:27
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/26/2016 12:23
Workgroup #:	WG573236	**Analyst:**	AMA	**Run Date:**	06/26/2016 13:24
Collect Date:	06/14/2016 14:15	**Dilution:**	1	**File ID:**	M7.062616.132434
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.3.2 QC Summary

Example Cold Vapor Mercury Calculations
Hydra AA Mercury Analyzer / CETAC M-7600 Quick Trace Mercury Analyzer

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and five standards.

2.0 Calculating the concentration (C) of an element in water using data from run log and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to Volume (mL)	40
Vi = Aliquot Volume (mL)	40
D = Manual dilution factor, if required (10X = 10)	1
Cx = Concentration of element in ppb (ug/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Ws} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to volume (mL)	40
Ws = Aliquot weight (g)	0.6
D = Manual dilution factor	1
Cx = Concentration of element in ug/kg	6.67

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

1 Cx = Concentration calculated as received (wet basis)	6.67
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	8.33

8.33 ug/kg = 0.00833 mg/kg

Microbac Laboratories Inc.
Metals Digest Log

Workgroup: WG572915
Analyst: REK
Spike Analyst: REK
Method: 7470A
Run Date: 06/16/2016 07:27
Hotblock Start Temp: 95.2 @ 07:15
Hotblock End Temp: 95 @ 09:15
Instrument: HB7

SOP: ME404 Revison 17
Spike Solution: STD76639
Spike Witness: VC
H2SO4 Lot #: COA18359
40 & 50 ML. DIGESTION TU COA18772
HNO3 Lot #: COA18905
K2S2O8 1:1 Lot #: RGT37046
KMnO4 1:1 Lot #: RGT37082
Mercury Water ICV Lot #: STD76641
HG H2O STDS 10PPM Lot #: STD76647

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Spike Amount	Due Date
1	WG572915-02	BLANK	1	40 mL	40 mL		
2	WG572915-03	LCS	1	40 mL	40 mL	4 mL	
3	L16060764-01	SAMP	1	40 mL	40 mL		06/28/16
4	L16060764-02	SAMP	1	40 mL	40 mL		06/28/16
5	L16060764-03	SAMP	1	40 mL	40 mL		06/28/16
6	WG572915-01	REF	1	40 mL	40 mL		
7	L16060764-04	RS01	1	40 mL	40 mL		06/28/16
8	WG572915-04	MS	1	36 mL	40 mL	4 mL	
9	L16060764-05	MS01	1	36 mL	40 mL	4 mL	06/28/16
10	WG572915-05	MSD	1	36 mL	40 mL	4 mL	
11	L16060764-06	SD01	1	36 mL	40 mL	4 mL	06/28/16
12	L16060794-01	SAMP	1	40 mL	40 mL		06/24/16
13	L16060794-02	SAMP	1	40 mL	40 mL		06/24/16
14	L16060794-03	SAMP	1	40 mL	40 mL		06/24/16
15	L16060794-04	SAMP	1	40 mL	40 mL		06/24/16
16	L16060822-02	SAMP	1	40 mL	40 mL		06/24/16
17	L16060822-03	SAMP	1	40 mL	40 mL		06/24/16
18	L16060823-02	SAMP	1	40 mL	40 mL		06/24/16
19	L16060823-03	SAMP	1	40 mL	40 mL		06/24/16
20	L16060823-04	SAMP	1	40 mL	40 mL		06/24/16
21	L16060840-01	SAMP	1	40 mL	40 mL		06/29/16
22	L16060840-02	SAMP	1	40 mL	40 mL		06/29/16
23	L16060840-03	SAMP	1	40 mL	40 mL		06/29/16
24	L16060840-04	SAMP	1	40 mL	40 mL		06/29/16
25	L16060840-05	SAMP	1	40 mL	40 mL		06/29/16
26	L16060840-06	SAMP	1	40 mL	40 mL		06/29/16

Analyst: [signature]

Reviewer: [signature]

* All calibration and check standards are prepared and digested with sample batch following the procedures in section 7.0 of SOP ME404/ME405.

HB_DIG - Modified 07/26/2012
PDF ID: 4809801
Report generated: 06/16/2016 12:16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 062616A.CSV
Analyst1: AMA Analyst2: N/A
Method: 7470A/245.1 SOP: ME404 Rev: 17
Maintenance Log ID:

Calibration Std: STD76647 ICV Std: STD76641 Post Spike: STD76647
ICSA: N/A ICSAB: N/A Int. Std:
CCV: LLCCV: Tuning Sol :
Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 573236

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	M7.062616.121106	WG574322-01	Calibration Point		1		06/26/16 12:11
2	M7.062616.121337	WG574322-02	Calibration Point		1		06/26/16 12:13
3	M7.062616.121609	WG574322-03	Calibration Point		1		06/26/16 12:16
4	M7.062616.121841	WG574322-04	Calibration Point		1		06/26/16 12:18
5	M7.062616.122114	WG574322-05	Calibration Point		1		06/26/16 12:21
6	M7.062616.122348	WG574322-06	Calibration Point		1		06/26/16 12:23
7	M7.062616.122622	WG574322-07	Initial Calibration Verification		1		06/26/16 12:26
8	M7.062616.122853	WG574322-08	Initial Calib Blank		1		06/26/16 12:28
9	M7.062616.123125	WG574322-09	CCV		1		06/26/16 12:31
10	M7.062616.123356	WG574322-10	CCB		1		06/26/16 12:33
11	M7.062616.123627	WG572915-02	Method/Prep Blank	40/40	1		06/26/16 12:36
12	M7.062616.123858	WG572915-03	Laboratory Control S	40/40	1		06/26/16 12:38
13	M7.062616.124129	L16060764-01	MW-23-004	40/40	1		06/26/16 12:41
14	M7.062616.124401	WG573236-01	Post Digestion Spike		1	L16060764-01	06/26/16 12:44
15	M7.062616.124633	L16060764-02	MW-23-002		1		06/26/16 12:46
16	M7.062616.124905	L16060764-03	FD-061316		1		06/26/16 12:49
17	M7.062616.125137	WG572915-05	Matrix Spike Duplica	36/40	1	L16060764-04	06/26/16 12:51
18	M7.062616.125410	L16060764-04	MW-23-005		1	WG572915-01	06/26/16 12:54
19	M7.062616.125643	WG572915-04	Matrix Spike	36/40	1	L16060764-04	06/26/16 12:56
20	M7.062616.125916	L16060794-01	A08-MW06-Y1S2	40/40	1		06/26/16 12:59
21	M7.062616.130149	WG574322-11	CCV		1		06/26/16 13:01
22	M7.062616.130420	WG574322-12	CCB		1		06/26/16 13:04
23	M7.062616.130654	L16060794-02	A08-MW09-Y1S2	40/40	1		06/26/16 13:06
24	M7.062616.130927	L16060794-03	A09-MW02-Y1S2	40/40	1		06/26/16 13:09
25	M7.062616.131158	L16060794-04	A09-MW07-Y1S2	40/40	1		06/26/16 13:11
26	M7.062616.131428	L16060822-02	18WW03F-061416	40/40	1		06/26/16 13:14
27	M7.062616.131659	L16060822-03	18CPTMW04SW-061416	40/40	1		06/26/16 13:16
28	M7.062616.131930	L16060823-02	126F-061416	40/40	1		06/26/16 13:19
29	M7.062616.132202	L16060823-03	C08-061416	40/40	1		06/26/16 13:22
30	M7.062616.132434	L16060823-04	C03-061416	40/40	1		06/26/16 13:24
31	M7.062616.132706	L16060840-01	MW-24-004R	40/40	1		06/26/16 13:27
32	M7.062616.132938	L16060840-02	MW-24-003R	40/40	1		06/26/16 13:29
33	M7.062616.133211	WG574322-13	CCV		1		06/26/16 13:32
34	M7.062616.133441	WG574322-14	CCB		1		06/26/16 13:34

Page: 1 Approved: June 29, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 062616A.CSV

Analyst1: AMA Analyst2: N/A

Method: 7470A/245.1 SOP: ME404 Rev: 17

Maintenance Log ID:

Calibration Std: STD76647 ICV Std: STD76641 Post Spike: STD76647

ICSA: N/A ICSAB: N/A Int. Std:

CCV: LLCCV: Tuning Sol :

Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 573236

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	M7.062616.133714	L16060840-03	FR-061416-24	40/40	1		06/26/16 13:37
36	M7.062616.133947	L16060840-04	MW-24-002R	40/40	1		06/26/16 13:39
37	M7.062616.134220	L16060840-05	MW-24-005	40/40	1		06/26/16 13:42
38	M7.062616.134454	L16060840-06	EB-LOW FLOW TUBING	40/40	1		06/26/16 13:44
39	M7.062616.134726	WG574322-15	CCV		1		06/26/16 13:47
40	M7.062616.134957	WG574322-16	CCB		1		06/26/16 13:49

Page: 2 Approved: June 29, 2016

Microbac Laboratories Inc.

Data Checklist

Date: 26-JUN-2016
Analyst: AMA
Analyst: NA
Method: 7470A/245.1
Instrument: CVAA1
Curve Workgroup: 574322
Runlog ID: 75946
Analytical Workgroups: 573236

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	0794, 0822, 0823, 0840
Client Forms	X
Level X	
Level 3	0840
Level 4	0794, 0822, 0823
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	AMA
Secondary Reviewer	BKT
Comments	

Primary Reviewer:
28-JUN-2016
Alexandra M. Alfred

Secondary Reviewer:
29-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-29-2016 12:56:19

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 7470A

AAB#: WG573236

Login Number: L16060823

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
126F-061416	02	06/14/16					06/16/2016	1.8	28		06/26/16	12.1	28	
C08-061416	03	06/14/16					06/16/2016	1.8	28		06/26/16	12	28	
C03-061416	04	06/14/16					06/16/2016	1.7	28		06/26/16	12	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4828279
Report generated 06/28/2016 10:48

METHOD BLANK SUMMARY

Login Number: L16060823
Blank File ID: M7.062616.123627
Prep Date: 06/16/16 07:27
Analyzed Date: 06/26/16 12:36
Analyst: AMA

Work Group: WG573236
Blank Sample ID: WG572915-02
Instrument ID: CVAA1
Method: 7470A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572915-03	M7.062616.123858	06/26/16 12:38	01
126F-061416	L16060823-02	M7.062616.131930	06/26/16 13:19	01
C08-061416	L16060823-03	M7.062616.132202	06/26/16 13:22	01
C03-061416	L16060823-04	M7.062616.132434	06/26/16 13:24	01

Report Name: BLANK_SUMMARY
PDF File ID: 4828280
Report generated 06/28/2016 10:48

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060823 Prep Date: 06/16/16 07:27 Sample ID: WG572915-02
Instrument ID: CVAA1 Run Date: 06/26/16 12:36 Prep Method: 7470A
File ID: M7.062616.123627 Analyst: AMA Method: 7470A
Workgroup (AAB#): WG573236 Matrix: Water Units: mg/L
Contract #: Cal ID: CVAA1-26-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Mercury	0.000100	0.000400	0.000100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4828281
28-JUN-2016 10:48

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060823 Run Date: 06/26/2016 Sample ID: WG572915-03
Instrument ID: CVAA1 Run Time: 12:38 Prep Method: 7470A
File ID: M7.062616.123858 Analyst: AMA Method: 7470A
Workgroup (AAB#): WG573236 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76639 Cal ID: CVAA1-26-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Mercury	0.00400	0.00421	105	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4828282
Report generated: 06/28/2016 10:48

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060823 Cal ID: CVAA1 - Worknum: WG573236
Instrument ID: CVAA1 Contract #: Method: 7470A
Parent ID: WG572915-01 File ID: M7.062616.125410 Dil: 1 Matrix: WATER
Sample ID: WG572915-04 MS File ID: M7.062616.125643 Dil: 1 Units: mg/L
Sample ID: WG572915-05 MSD File ID: M7.062616.125137 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Mercury	ND	0.00444	0.00479	108	0.00444	0.00480	108	0.0463	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4828283
Report generated 06/28/2016 10:48

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060823 **Worknum:** WG573236
Instrument ID: CVAA1 **Method:** 7470A
Post Spike ID: WG573236-01 **File ID:** M7.062616.124401 **Dil:** 1 **Units:** ug/L
Sample ID: L16060764-01 **File ID:** M7.062616.124129 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MERCURY	1.07		0	U	1	107.1	85 - 115	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4828278
Report generated: 06/28/2016 10:48

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060823
Analytical Method: 7470A
ICAL Worknum: WG574322

Workgroup (AAB#): WG573236
Instrument ID: CVAA1
Initial Calibration Date: 06/26/2016 12:23

Analyte	WG574322-01		WG574322-02		WG574322-03		WG574322-04		WG574322-05		WG574322-06	
	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT
Mercury	0	57.64	0.200	2673	1.00	13280	2.00	26640	5.00	66160	10.0	128600

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4828284
Report generated 06/28/2016 10:48

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060823
Analytical Method: 7470A
ICAL Worknum: WG574322

Workgroup (AAB#): WG573236
Instrument ID: CVAA1
Initial Calibration Date: 06/26/2016 12:23

Analyte	R	Q
Mercury	1.000	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4828284
Report generated 06/28/2016 10:48

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060823
Instrument ID: CVAA1
File ID: M7.062616.122853
Workgroup (AAB#): WG573236
Matrix: WATER

Run Date: 06/26/2016
Run Time: 12:28
Analyst: AMA
Cal ID: CVAA1 - 26-JUN-16

Sample ID: WG574322-08
Method: 7470A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
MERCURY	.1	.4	.1	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4828286
Report generated 06/28/2016 10:48

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/26/2016
Sample ID: WG574322-10
Instrument ID: CVAA1
Run Time: 12:33
Method: 7470A
File ID: M7.062616.123356
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG573236
Cal ID: CVAA1 - 26-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4828288
Report generated 06/28/2016 10:48

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/26/2016
Sample ID: WG574322-12
Instrument ID: CVAA1
Run Time: 13:04
Method: 7470A
File ID: M7.062616.130420
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG573236
Cal ID: CVAA1 - 26-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4828288
Report generated 06/28/2016 10:48

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/26/2016
Sample ID: WG574322-14
Instrument ID: CVAA1
Run Time: 13:34
Method: 7470A
File ID: M7.062616.133441
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG573236
Cal ID: CVAA1 - 26-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4828288
Report generated 06/28/2016 10:48

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060823 Run Date: 06/26/2016 Sample ID: WG574322-07
Instrument ID: CVAA1 Run Time: 12:26 Method: 7470A
File ID: M7.062616.122622 Analyst: AMA Units: ug/L
Workgroup (AAB#): WG573236 Cal ID: CVAA1 - 26-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Mercury		2	2.12	106	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4828285
Report generated 06/28/2016 10:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/26/2016
Sample ID: WG574322-09
Instrument ID: CVAA1
Run Time: 12:31
Method: 7470A
File ID: M7.062616.123125
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG573236
Cal ID: CVAA1 - 26-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00210	mg/L	105	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4828287
Report generated 06/28/2016 10:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/26/2016
Sample ID: WG574322-11
Instrument ID: CVAA1
Run Time: 13:01
Method: 7470A
File ID: M7.062616.130149
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG573236
Cal ID: CVAA1 - 26-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00219	mg/L	109	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4828287
Report generated 06/28/2016 10:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/26/2016
Sample ID: WG574322-13
Instrument ID: CVAA1
Run Time: 13:32
Method: 7470A
File ID: M7.062616.133211
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG573236
Cal ID: CVAA1 - 26-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00223	mg/L	112	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4828287
Report generated 06/28/2016 10:48

2.3.3.3 Raw Data

PDM CVAA1 245.1/7470/7471

Report Generated By CETAC QuickTrace
Analyst: VOA
Worksheet file: C:\Program Files (x86)\QuickTrace\Worksheets\062616A.wsz
Date Started: 6/26/2016 11:26:47 AM
Comment:

Results

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
Standard #0					STD	06/26/16 12:11:06 pm	0.0000	58	36.36		1.00
Replicates	72.2	26.9	61.9	69.6							
Standard #1 (0.2 ug/L)					STD	06/26/16 12:13:37 pm	0.2000	2673	0.35		1.00
Replicates	2686.9	2668.0	2667.5	2669.0							
Standard #2 (1.0 ug/L)					STD	06/26/16 12:16:09 pm	1.0000	13283	0.12		1.00
Replicates	13271.5	13294.2	13266.7	13300.2							
Standard #3 (2.0 ug/L)					STD	06/26/16 12:18:41 pm	2.0000	26641	0.01		1.00
Replicates	26642.8	26641.1	26641.1	26638.4							
Standard #4 (5.0 ug/L)					STD	06/26/16 12:21:14 pm	5.0000	66159	0.11		1.00
Replicates	66221.6	66218.8	66109.5	66085.3							
Standard #5 (10.0 ug/L)					STD	06/26/16 12:23:48 pm	10.0000	128636	0.07		1.00
Replicates	128716.2	128712.3	128583.1	128533.8							

Calibration

Equation: A = 499.952 + 12881.860C
R2: 0.99980
SEE: 796.4388
Flags:

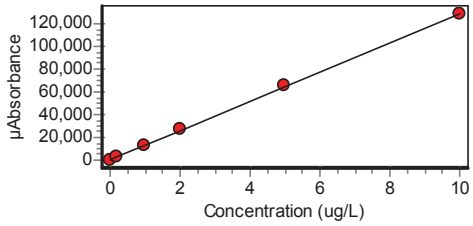

ICV					ICV	06/26/16 12:26:22 pm	2.1170	27772	0.16		1.00
Replicates	27815.3	27806.0	27744.4	27723.2							
% Recovery	105.86										

Approved: June 28, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
ICB					ICB	06/26/16 12:28:53 pm	-0.0379	11	291.32		1.00
Replicates	4.1	-22.5	57.6	6.8							
CCV					CCV	06/26/16 12:31:25 pm	2.0950	27485	0.16		1.00
Replicates	27434.8	27461.4	27527.1	27517.9							
% Recovery	104.74										
CCB					CCB	06/26/16 12:33:56 pm	-0.0387	1	964.00		1.00
Replicates	9.0	5.0	-0.8	-9.8							
WG572915-02					UNK	06/26/16 12:36:27 pm	-0.0350	50	39.52		1.00
Replicates	72.8	57.2	40.4	27.9							
WG572915-03					UNK	06/26/16 12:38:58 pm	4.2070	54690	0.15		1.00
Replicates	54575.2	54727.8	54702.1	54755.0							
L1606076401					UNK	06/26/16 12:41:29 pm	-0.0379	11	72.00		1.00
Replicates	8.4	14.3	21.3	1.9							
WG573236-01					SPK	06/26/16 12:44:01 pm	1.0710	14290	0.11		1.00
Replicates	14266.8	14293.4	14303.5	14296.9							
% Recovery	110.84										
L1606076402					UNK	06/26/16 12:46:33 pm	-0.0345	56	29.18		1.00
Replicates	46.7	78.1	41.1	58.6							
L1606076403					UNK	06/26/16 12:49:05 pm	-0.0307	104	20.90		1.00
Replicates	76.8	97.6	116.7	125.9							
WG572915-01					UNK	06/26/16 12:51:37 pm	4.3160	56092	0.13		1.00
Replicates	56018.1	56175.3	56135.9	56040.3							
L1606076405					MSK	06/26/16 12:54:10 pm	-0.0402	-17	79.85	N	1.00
Replicates	-11.0	-38.2	-11.2	-9.2							
% Recovery	-108.89										
L1606076406					MSDUP	06/26/16 12:56:43 pm	4.3140	56069	0.23	D	1.00
Replicates	55903.2	56042.6	56133.8	56194.6							
% Recovery	-0.05	RPD 203.76									

Approved: June 28, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1606079401					UNK	06/26/16 12:59:16 pm	-0.0393	-7	153.33		1.00
Replicates	-17.5	2.6	1.3	-12.4							
CCV					CCV	06/26/16 01:01:49 pm	2.1870	28674	0.28		1.00
Replicates	28565.4	28662.0	28726.3	28743.6							
% Recovery	109.36										
CCB					CCB	06/26/16 01:04:20 pm	-0.0400	-15	71.00		1.00
Replicates	-20.6	-24.4	-16.6	0.3							
L1606079402					UNK	06/26/16 01:06:54 pm	-0.0360	36	40.24		1.00
Replicates	40.1	23.8	25.1	54.5							
L1606079403					UNK	06/26/16 01:09:27 pm	0.0214	775	1.64		1.00
Replicates	766.0	779.2	763.7	791.0							
L1606079404					UNK	06/26/16 01:11:58 pm	-0.0321	87	18.96		1.00
Replicates	68.6	84.0	86.7	108.7							
L1606082202					UNK	06/26/16 01:14:28 pm	-0.0340	62	33.50		1.00
Replicates	78.3	50.1	79.4	38.2							
L1606082203					UNK	06/26/16 01:16:59 pm	-0.0350	49	26.85		1.00
Replicates	46.5	64.4	52.2	32.7							
L1606082302					UNK	06/26/16 01:19:30 pm	-0.0247	181	8.96		1.00
Replicates	178.7	199.1	187.1	160.4							
L1606082303					UNK	06/26/16 01:22:02 pm	-0.0283	135	14.85		1.00
Replicates	148.4	150.3	135.4	106.8							
L1606082304					UNK	06/26/16 01:24:34 pm	-0.0349	51	26.20		1.00
Replicates	38.5	67.5	41.8	55.0							
L1606084001					UNK	06/26/16 01:27:06 pm	-0.0336	67	31.06		1.00
Replicates	78.3	84.6	37.9	65.6							

Approved: June 28, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1606084002					UNK	06/26/16 01:29:38 pm	-0.0355	42	37.05		1.00
Replicates	37.5	51.9	22.2	56.9							
CCV					CCV	06/26/16 01:32:11 pm	2.2310	29245	0.47		1.00
Replicates	29065.4	29210.7	29333.0	29372.9							
% Recovery	111.57										
CCB					CCB	06/26/16 01:34:41 pm	-0.0387	1	222.94		1.00
Replicates	7.9	10.6	18.4	-34.1							
L1606084003					UNK	06/26/16 01:37:14 pm	-0.0343	58	10.23		1.00
Replicates	58.3	56.5	65.5	51.2							
L1606084004					UNK	06/26/16 01:39:47 pm	-0.0311	99	14.17		1.00
Replicates	85.9	113.0	88.0	109.0							
L1606084005					UNK	06/26/16 01:42:20 pm	-0.0347	53	38.40		1.00
Replicates	51.7	58.0	26.5	75.7							
L1606084006					UNK	06/26/16 01:44:54 pm	-0.0362	34	52.68		1.00
Replicates	39.2	7.6	40.3	47.5							
CCV					CCV	06/26/16 01:47:26 pm	2.2480	29454	0.57		1.00
Replicates	29236.8	29421.4	29529.4	29626.5							
% Recovery	112.38										
CCB					CCB	06/26/16 01:49:57 pm	-0.0385	4	182.59		1.00
Replicates	14.9	-3.5	0.5	5.6							

Approved: June 28, 2016

Alexandra M. Alfred

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
July 8, 2016

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BNB - Brandi N. Bentley
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJQ - Cameron J. Quick
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
CV - Carl Volkman
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
EMW - ERIC M. WILKEN
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LJH - Lacey J. Hendershot
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
NPH - Natalie P. Hart
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
July 08, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
July 08, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Debra Richmann
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD	pH:	
Project Name/Location:	Longhorn		
Project Number:	60274185.0013BH 1824 MR10		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Total Metals	1,4 - DIOXANE	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 18/24	126-061416			6/14/16	1110		✓	W	6	✓	✓		✓					
	126F-061416			6/14/16	1110		✓	W	1			✓						
	C08-061416			6/14/16	1310		✓	W	7	✓	✓	✓	✓					
	C03-061416			6/14/16	1415		✓	W	7	✓	✓	✓	✓					
	TRIP BLANK			6/14/16			✓	W	2	✓								

Comments: **STANDARD TAT**

	Date	Time	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature) Scott Beesinger	6/14/16	1530					
Relinquished by: (Signature)	Date	Time	Received by: (Signature)			Time	Remarks:

Microbac OVD
Received: 06/15/2016 09:56
By: BRENDA GREGORY
221000087199

Brenda Gregory

*Homogenize all composite samples prior to analysis

ager, Pink QA/QC Manager

00675122

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060823
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 24-JUN-2016

Samplenum	Container ID	Products
L16060823-01	760859	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	15-JUN-2016 14:53	BRG		
2	ANALYZ	V1	ORG4	16-JUN-2016 08:15	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:15	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	15-JUN-2016 14:53	BRG		
2	ANALYZ	V1	ORG4	16-JUN-2016 08:15	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:15	CLS	JST	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	15-JUN-2016 14:53	BRG		
2	ANALYZ	V1	ORG4	16-JUN-2016 08:15	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:15	CLS	JST	

Samplenum	Container ID	Products
L16060823-01	760860	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:53	BRG		
2	PREP	W1	EXT	15-JUN-2016 17:32	CPD	AZH	
3	DISP	EXT	DISP	16-JUN-2016 15:22	BJO	BJO	
4	ANALYZ*	EXT	SEMI	20-JUN-2016 09:18	NPH	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:53	BRG		
2	STORE	W1	A1	24-JUN-2016 08:23	BRG	BRG	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060823
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 24-JUN-2016

Samplenum	Container ID	Products
L16060823-01	760861	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:53	BRG		
2	ANALYZ	W1	SEM	24-JUN-2016 12:12	JWR	BRG	
3	STORE	SEM	A1	29-JUN-2016 13:20	CLS	JWR	

Samplenum	Container ID	Products
L16060823-02	760862	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:53	BRG		
2	PREP	W1	DIG	15-JUN-2016 14:59	AC	CLS	
3	ANALYZ*	DIG	METALS	17-JUN-2016 14:30	CJQ	AC	
4	STORE	DIG	A1	17-JUN-2016 14:50	CLS	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060823-03	760863	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	15-JUN-2016 14:53	BRG		
2	ANALYZ	V1	ORG4	16-JUN-2016 08:15	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:15	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	15-JUN-2016 14:53	BRG		
2	ANALYZ	V1	ORG4	16-JUN-2016 08:16	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:15	CLS	JST	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	15-JUN-2016 14:53	BRG		
2	ANALYZ	V1	ORG4	16-JUN-2016 08:16	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:15	CLS	JST	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060823
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 24-JUN-2016

Samplenum	Container ID	Products
L16060823-03	760864	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:53	BRG		
2	PREP	W1	EXT	15-JUN-2016 17:32	CPD	AZH	
3	DISP	EXT	DISP	16-JUN-2016 15:22	BJO	BJO	
4	ANALYZ*	EXT	SEMI	20-JUN-2016 09:18	NPH	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:53	BRG		
2	STORE	W1	A1	24-JUN-2016 08:23	BRG	BRG	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060823-03	760865	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:53	BRG		
2	ANALYZ	W1	SEM	24-JUN-2016 12:12	JWR	BRG	
3	STORE	SEM	A1	29-JUN-2016 13:20	CLS	JWR	

Samplenum	Container ID	Products
L16060823-03	760866	HG K MG MN-MS NA NI-MS PB-MS SB-MS SE-AX TL-MS

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:53	BRG		
2	PREP	W1	DIG	15-JUN-2016 14:59	AC	CLS	
3	ANALYZ*	DIG	METALS	17-JUN-2016 14:30	CJQ	AC	
4	STORE	DIG	A1	17-JUN-2016 14:50	CLS	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060823
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 24-JUN-2016

Samplenum	Container ID	Products
L16060823-04	760867	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	15-JUN-2016 14:53	BRG		
2	ANALYZ	V1	ORG4	16-JUN-2016 08:15	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:15	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	15-JUN-2016 14:53	BRG		
2	ANALYZ	V1	ORG4	16-JUN-2016 08:15	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:15	CLS	JST	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	15-JUN-2016 14:53	BRG		
2	ANALYZ	V1	ORG4	16-JUN-2016 08:15	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:15	CLS	JST	

Samplenum	Container ID	Products
L16060823-04	760868	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:53	BRG		
2	PREP	W1	EXT	15-JUN-2016 17:32	CPD	AZH	
3	DISP	EXT	DISP	16-JUN-2016 15:23	BJO	BJO	
4	ANALYZ*	EXT	SEMI	20-JUN-2016 09:18	NPH	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:53	BRG		
2	STORE	W1	A1	24-JUN-2016 08:23	BRG	BRG	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060823
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 24-JUN-2016

Samplenum	Container ID	Products
L16060823-04	760869	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:53	BRG		
2	ANALYZ	W1	SEM	24-JUN-2016 12:12	JWR	BRG	
3	STORE	SEM	A1	29-JUN-2016 13:20	CLS	JWR	

Samplenum	Container ID	Products
L16060823-04	760870	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:53	BRG		
2	PREP	W1	DIG	15-JUN-2016 14:59	AC	CLS	
3	ANALYZ*	DIG	METALS	17-JUN-2016 14:30	CJQ	AC	
4	STORE	DIG	A1	17-JUN-2016 14:50	CLS	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060823-05	760871	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	15-JUN-2016 14:53	BRG		
2	ANALYZ	V1	ORG4	16-JUN-2016 08:15	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:15	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	15-JUN-2016 14:53	BRG		
2	ANALYZ	V1	ORG4	16-JUN-2016 08:15	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:15	CLS	JST	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16060927

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Michelle Taylor – Client Services Specialist
(740) 373-4071
Michelle.Taylor@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on July 06 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
0015011	H	6.0		J2317164993	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18CPTMW23SW-061516	L16060927-01	06/15/2016 08:00	06/16/2016 10:10
18CPTMW23-061516	L16060927-02	06/15/2016 09:05	06/16/2016 10:10
18CPTMW19SW-061516	L16060927-03	06/15/2016 10:15	06/16/2016 10:10
18CPTMW19-061516	L16060927-04	06/15/2016 11:15	06/16/2016 10:10
TRIP BLANK	L16060927-05	06/15/2016 00:01	06/16/2016 10:10

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16060927
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.0 Summary Data

1.1 Narratives

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060927
Project Name:		**Method:**	8260
Prep Batch Number(s):	573645, 573771, 573991	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-07-06 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden	Franci Bolden	Analyst I	2016-07-06 17:10:40

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060927
Project Name:		**Method:**	8260
Prep Batch Number(s):	573645, 573771, 573991	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-07-06 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060927
Project Name:		**Method:**	8260
Prep Batch Number(s):	573645, 573771, 573991	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-07-06 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060927
Project Name:		**Method:**	8260
Prep Batch Number(s):	573645, 573771, 573991	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-07-06 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060927
Project Name:		**Method:**	8260
Prep Batch Number(s):	573645, 573771, 573991	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-07-06 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060927
Project Name:		**Method:**	8260
Prep Batch Number(s):	573645, 573771, 573991	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-07-06 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) Bromomethane was below the LCL and Carbon Tetrachloride, 2,2-Dichloropropane and Trichlorofluoromethane exceeded the UCL in CCV WG573770-02 analyzed 06/22/2016 on HPMS8.
2,2-Dichloropropane exceeded the UCL in CCV WG573990-02 analyzed 06/23/2016 on HPMS8.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060927
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573299	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-28 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-06-28 13:53:35

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060927
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573299	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-28 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?		X			1
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060927
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573299	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-28 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060927
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573299	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-28 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060927
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573299	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-28 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060927
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573299	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-28 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. Sample 02 yielded a recovery for the surrogate that was above the acceptance criteria. This sample was run at a dilution and the surrogate result was within acceptance limits, indicating matrix interference.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060927
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574101	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Wade DeLong	Wade DeLong	Chemist I	2016-06-28 17:46:14

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060927
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574101	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060927
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574101	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060927
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574101	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060927
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574101	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060927
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574101	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060927-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW23SW-061516	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573991	**Analyst:**	FJB	**Run Date:**	06/24/2016 00:24
Collect Date:	06/15/2016 08:00	**Dilution:**	1	**File ID:**	8M413199
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	9.67	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	111	85	115	
1,2-Dichloroethane-d4	116	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	101	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060927-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW23SW-061516	**Prep Method:**	3520C	**Prep Date:**	06/21/2016 17:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573853	**Analyst:**	MES	**Run Date:**	06/23/2016 15:30
Collect Date:	06/15/2016 08:00	**Dilution:**	1	**File ID:**	15M18514
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	32.4	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060927-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW23SW-061516	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 19:02
Collect Date:	06/15/2016 08:00	**Dilution:**	1	**File ID:**	1LM.LM35501
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.407		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16060927-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW23-061516	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573771	**Analyst:**	FJB	**Run Date:**	06/22/2016 18:40
Collect Date:	06/15/2016 09:05	**Dilution:**	1	**File ID:**	8M413169
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	1.59		1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	5.45		1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	1.06		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	214		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	10.1		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	232		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	4.09		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.256	J	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	1.22		1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.858	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	5.89		1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	115	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	99.4	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060927-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW23-061516	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573991	**Analyst:**	FJB	**Run Date:**	06/23/2016 22:56
Collect Date:	06/15/2016 09:05	**Dilution:**	200	**File ID:**	8M413196
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Trichloroethene	79-01-6	3820		200	100	50.0

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	116	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	101	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060927-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW23-061516	**Prep Method:**	3520C	**Prep Date:**	06/21/2016 17:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573853	**Analyst:**	MES	**Run Date:**	06/23/2016 15:53
Collect Date:	06/15/2016 09:05	**Dilution:**	1	**File ID:**	15M18515
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	7.62	J	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	133	20	129	*

J	The reported result is an estimated value.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060927-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW23-061516	**Prep Method:**	3520C	**Prep Date:**	06/21/2016 17:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573853	**Analyst:**	MES	**Run Date:**	06/25/2016 12:46
Collect Date:	06/15/2016 09:05	**Dilution:**	10	**File ID:**	15M18553
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	8.02	J	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	109	20	129	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060927-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW23-061516	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 19:21
Collect Date:	06/15/2016 09:05	**Dilution:**	1000	**File ID:**	1LM.LM35502
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2310		400	200	100

Certificate of Analysis

Sample #:	L16060927-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW19SW-061516	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573991	**Analyst:**	FJB	**Run Date:**	06/24/2016 00:53
Collect Date:	06/15/2016 10:15	**Dilution:**	1	**File ID:**	8M413200
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.388	J	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	0.599	J	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.506	J	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.484	J	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	119	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	103	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060927-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW19SW-061516	**Prep Method:**	3520C	**Prep Date:**	06/21/2016 17:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573853	**Analyst:**	MES	**Run Date:**	06/23/2016 16:15
Collect Date:	06/15/2016 10:15	**Dilution:**	1	**File ID:**	15M18516
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	37.5	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060927-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW19SW-061516	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/24/2016 23:18
Collect Date:	06/15/2016 10:15	**Dilution:**	1	**File ID:**	1LM.LM35473
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1.25		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16060927-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW19-061516	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573645	**Analyst:**	FJB	**Run Date:**	06/22/2016 03:34
Collect Date:	06/15/2016 11:15	**Dilution:**	1	**File ID:**	8M413145
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	114	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	99.9	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060927-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW19-061516	**Prep Method:**	3520C	**Prep Date:**	06/21/2016 17:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573853	**Analyst:**	MES	**Run Date:**	06/23/2016 16:38
Collect Date:	06/15/2016 11:15	**Dilution:**	1	**File ID:**	15M18517
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	40.5	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060927-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW19-061516	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/24/2016 23:37
Collect Date:	06/15/2016 11:15	**Dilution:**	1	**File ID:**	1LM.LM35474
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	5.31		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16060927-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573645	**Analyst:**	FJB	**Run Date:**	06/21/2016 22:44
Collect Date:	06/15/2016 00:01	**Dilution:**	1	**File ID:**	8M413135
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	111	85	115	
1,2-Dichloroethane-d4	112	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	100	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060927-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW23SW-061516	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573991	**Analyst:**	FJB	**Run Date:**	06/24/2016 00:24
Collect Date:	06/15/2016 08:00	**Dilution:**	1	**File ID:**	8M413199
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	9.67	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	111	85	115	
1,2-Dichloroethane-d4	116	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	101	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060927-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW23-061516	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573771	**Analyst:**	FJB	**Run Date:**	06/22/2016 18:40
Collect Date:	06/15/2016 09:05	**Dilution:**	1	**File ID:**	8M413169
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	1.59		1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	5.45		1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	1.06		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	214		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	10.1		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	232		1.00	0.500	0.250

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	4.09		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.256	J	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	1.22		1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.858	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	5.89		1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	115	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	99.4	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060927-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW23-061516	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573991	**Analyst:**	FJB	**Run Date:**	06/23/2016 22:56
Collect Date:	06/15/2016 09:05	**Dilution:**	200	**File ID:**	8M413196
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Trichloroethene	79-01-6	3820		200	100	50.0

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	116	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	101	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060927-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW19SW-061516	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573991	**Analyst:**	FJB	**Run Date:**	06/24/2016 00:53
Collect Date:	06/15/2016 10:15	**Dilution:**	1	**File ID:**	8M413200
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.388	J	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	0.599	J	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.506	J	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.484	J	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	119	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	103	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060927-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW19-061516	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573645	**Analyst:**	FJB	**Run Date:**	06/22/2016 03:34
Collect Date:	06/15/2016 11:15	**Dilution:**	1	**File ID:**	8M413145
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	114	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	99.9	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060927-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573645	**Analyst:**	FJB	**Run Date:**	06/21/2016 22:44
Collect Date:	06/15/2016 00:01	**Dilution:**	1	**File ID:**	8M413135
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	111	85	115	
1,2-Dichloroethane-d4	112	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	100	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051316
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53752

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG568561

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412209	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 08:38
8M412210	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 08:57
8M412211	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 09:29
8M412212	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 09:56
8M412213	WG568561-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/13/16 10:19
8M412214	WG568561-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/13/16 10:51
8M412215	WG568565-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76072	05/13/16 11:36
8M412216	BFB CHECK	NA	1	1	STD76034	05/13/16 12:04
8M412217	BFB CHECK	NA	1	1	STD76034	05/13/16 12:18
8M412218	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 12:36
8M412219	RINSE	NA	1	1		05/13/16 13:00
8M412220	WG568561-02 0.3ug/L STD 8260	NA	1	1	STD76127	05/13/16 13:29
8M412221	WG568561-03 0.4ug/L STD 8260	NA	1	1	STD76127	05/13/16 13:58
8M412222	WG568561-04 1ug/L STD 8260	NA	1	1	STD76127	05/13/16 14:27
8M412223	WG568561-05 2ug/L STD 8260	NA	1	1	STD76127	05/13/16 14:56
8M412224	WG568561-06 5ug/L STD 8260	NA	1	1	STD76127	05/13/16 15:25
8M412225	WG568561-07 20ug/L STD 8260	NA	1	1	STD76127	05/13/16 15:54
8M412226	WG568561-08 50ug/L STD 8260	NA	1	1	STD76127	05/13/16 16:23
8M412227	WG568561-09 100ug/L STD 8260	NA	1	1	STD76127	05/13/16 16:52
8M412228	WG568561-10 200ug/L STD 8260	NA	1	1	STD76127	05/13/16 17:21
8M412229	WG568561-11 300ug/L STD 8260	NA	1	1	STD76127	05/13/16 17:50
8M412230	RINSE	NA	1	1		05/13/16 18:19
8M412231	RINSE	NA	1	1		05/13/16 18:49
8M412232	WG568561-12 50ug/L ALT SRC STD 8260	NA	1	1	STD76109	05/13/16 19:17
8M412233	RINSE	NA	1	1		05/13/16 19:46

Comments

Seq.	Rerun	Dil.	Reason	Analytes
5	X			
File ID: 8M412213				
	Several compounds were low, DNR.			
6				
File ID: 8M412214				

Approved: May 20, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS8	Dataset:	051316		
Analyst1:	TMB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	23
Method:	624	SOP:	MSV10	Rev:	14
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:	53752				

Internal Standard: STD75899 Surrogate Standard: STD75899

CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG568561

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			Two C compounds failed. DNR. Run a curve.	
7 File ID: 8M412215				
			DNR.	

Approved: May 20, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 062116
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53790

Internal Standard: STD75370 Surrogate Standard: STD76370
CCV: STD76578 LCS: STD76597 MS/MSD: STD76597

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG573645

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M413124	WG573644-01 BFB 50ng 8260	NA	1	1	STD76496	06/21/16 17:23
8M413125	WG573644-02 50ug/L CCV 8260	NA	1	1	STD76715	06/21/16 17:51
8M413126	WG573644-02 50ug/L CCV 8260	NA	1	1	STD76578	06/21/16 18:23
8M413127	WG573787-01 100ug/L CCV A9	NA	1	1	STDXXXXX	06/21/16 18:52
8M413128	WG573645-01 BLANK 8260	NA	1	1		06/21/16 19:21
8M413129	WG573645-02 20ug/L LCS 8260	NA	1	1	STD76744	06/21/16 19:50
8M413130	WG573645-03 20ug/L LCS2 8260	NA	1	1	STD76744	06/21/16 20:19
8M413131	L16060994-11 5X B 826-SPE D1	<2	1	5		06/21/16 20:48
8M413132	L16060724-01 5X B 8260 D1	<2	1	5		06/21/16 21:17
8M413133	L16061128-04 A 826-SPE1	5	1	1		06/21/16 21:46
8M413134	L16061128-05 A 826-SPE1	5	1	1		06/21/16 22:15
8M413135	L16060927-05 A 826-LOW	<2	1	1		06/21/16 22:44
8M413136	L16061016-01 A 826-SPE	<2	1	1		06/21/16 23:14
8M413137	L16061016-20 A 826-SPE	<2	1	1		06/21/16 23:43
8M413138	L16061016-21 A 826-SPE	<2	1	1		06/22/16 00:12
8M413139	L16060994-09 B 826-SPE	<2	1	1		06/22/16 00:41
8M413140	L16060998-01 5X B 826-SPE 00	<2	1	5		06/22/16 01:10
8M413141	L16061128-01 A 826-SPE1	7	1	1		06/22/16 01:38
8M413142	L16061128-02 A 826-SPE1	7	1	1		06/22/16 02:07
8M413143	L16061128-03 A 826-SPE1	7	1	1		06/22/16 02:35
8M413144	L16061001-01 A 826-SPE	<2	1	1		06/22/16 03:05
8M413145	L16060927-04 A 826-LOW	<2	1	1		06/22/16 03:34
8M413146	L16060927-01 A 826-LOW	<2	1	1		06/22/16 04:03
8M413147	L16060927-03 A 826-LOW	<2	1	1		06/22/16 04:32
8M413148	L16060927-02 20X A 826-LOW	<2	1	20		06/22/16 05:00
8M413149	WG573648-01 20ug/L LCS 624	NA	2	1	STD76744	06/22/16 05:30
8M413150	WG573648-02 20ug/L LCS2 624	NA	2	1	STD76744	06/22/16 05:59
8M413151	RINSE	NA	2	1		06/22/16 06:28
8M413152	WG573648-03 BLANK 624	NA	2	1		06/22/16 06:57
8M413153	L16061067-01 A 624-SPE	6	2	1		06/22/16 07:26
8M413154	L16061079-01 A 624-SPE5	6	2	1		06/22/16 07:55
8M413155	L16061134-02 A 624-SPE	8	2	1		06/22/16 08:23
8M413156	L16061135-02 A 624-SPE	7	2	1		06/22/16 08:52
8M413157	L16061170-06 A 624-SPE1	<2	2	1		06/22/16 09:22

Approved: June 30, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 062116
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53790

Internal Standard: STD75370 Surrogate Standard: STD76370
CCV: STD76578 LCS: STD76597 MS/MSD: STD76597

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG573645

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M413158	L16061132-01 50X A 624-SPE1	7	2	50		06/22/16 09:51
8M413159	L16061123-01 10X A 624-SPE	7	2	10		06/22/16 10:20
8M413160	L16061123-02 100X A 624-SPE	7	2	100		06/22/16 10:49

Comments

Seq.	Rerun	Dil.	Reason	Analytes
23	X	200	Over Calibration Range	tce
File ID: 8M413146				
L16060927-01 sample labelled incorrectly, was actually 02.				
24	X	1	Carry-over contamination	
File ID: 8M413147				
L16060927-03				
25	X	1	Analyzed too dilute	
File ID: 8M413148				
L16060927-02 vial labelled incorrectly, was actually sample 01				
30				
File ID: 8M413153				
L16061067-01 CT1 Cooler temp out				
35				
File ID: 8M413158				
L16061132-01 Reporting limits elevated due to foamy sample matrix. Attempt at 10X dilution with antifoam was aborted by instrument foam sensor.				

Approved: June 30, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 062216
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75370 Surrogate Standard: STD76370
CCV: STD76578 LCS: STD76744 MS/MSD: STD76744

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG573771

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M413161	WG573770-01 BFB 50ng 8260	NA	1	1	STD76496	06/22/16 14:38
8M413162	WG573770-02 50ug/L CCV 8260	NA	1	1	STD76578	06/22/16 15:06
8M413163	WG573770-02 50ug/L CCV 8260	NA	1	1	STD76578	06/22/16 15:41
8M413164	WGXXXXXX-01 100ug/L A9CCV 8260	NA	1	1	STDXXXXX	06/22/16 16:10
8M413165	WG573771-01 BLANK 8260	NA	1	1		06/22/16 16:39
8M413166	WG573771-02 20ug/L LCS 8260	NA	1	1	STD76744	06/22/16 17:13
8M413167	L16060829-02 10X 826-TC-SPE	NA	17	10		06/22/16 17:42
8M413168	L16060927-01 200X B 826-LOW	<2	1	200		06/22/16 18:11
8M413169	L16060927-02 B 826-LOW	<2	1	1		06/22/16 18:40
8M413170	L16060927-03 B 826-LOW	<2	1	1		06/22/16 19:09
8M413171	L16060896-06 TB A 826-SPE	<2	1	1		06/22/16 19:38
8M413172	L16060896-07 RB A 826-SPE	<2	1	1		06/22/16 20:07
8M413173	L16060930-04 TB A 826-SPE	<2	1	1		06/22/16 20:37
8M413174	L16060986-21 REF A 826-SPE	<2	1	1		06/22/16 21:06
8M413175	L16060986-31 MS A 826-SPE	<2	1	1	STD76744	06/22/16 21:35
8M413176	L16060986-33 MSD A 826-SPE	<2	1	1	STD76744	06/22/16 22:03
8M413177	L16060986-01 A 826-SPE	<2	1	1		06/22/16 22:32
8M413178	L16060986-03 A 826-SPE	<2	1	1		06/22/16 23:01
8M413179	L16060986-05 A 826-SPE	<2	1	1		06/22/16 23:30
8M413180	L16060896-01 A 826-SPE	<2	1	1		06/22/16 23:59
8M413181	L16060896-02 A 826-SPE	<2	1	1		06/23/16 00:27
8M413182	L16060896-03 A 826-SPE	<2	1	1		06/23/16 00:56
8M413183	L16060896-04 A 826-SPE	<2	1	1		06/23/16 01:25
8M413184	L16060896-05 A 826-SPE	<2	1	1		06/23/16 01:54
8M413185	L16060930-03 10X A 826-SPE	7	1	10		06/23/16 02:23
8M413186	CCV	NA	1	1		06/23/16 02:51
8M413187	RINSE	NA	1	1		06/23/16 03:21
8M413188	WG573023-01 10X FBLK	NA	17	10		06/23/16 03:50
8M413189	10X GROUNDWATER	NA	1	10		06/23/16 04:19

Comments

Seq.	Rerun	Dil.	Reason	Analytes
8	X	1	Analyzed too dilute	

Approved: June 27, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 062216
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75370 Surrogate Standard: STD76370
CCV: STD76578 LCS: STD76744 MS/MSD: STD76744

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG573771

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
File ID: 8M413168				
	L16060927-01		Samples 01 and 02 A and C vials labels had been switched. This caused B vials to be analyzed at incorrect dilutions.	
9	X	200	Over Calibration Range	tce
File ID: 8M413169				
	L16060927-02		Samples 01 and 02 A and C vials labels had been switched. This caused B vials to be analyzed at incorrect dilutions.	
10	X	1	Carry-over contamination	
File ID: 8M413170				
	L16060927-03			
11	X	1	Carry-over contamination	
File ID: 8M413171				
	L16060896-06			
12	X	1	Carry-over contamination	
File ID: 8M413172				
	L16060896-07			
25	X	1	Analyzed too dilute	
File ID: 8M413185				
	L16060930-03			

Approved: June 27, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 062316
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD76370 Surrogate Standard: STD76370
CCV: STD76715 LCS: STD76744 MS/MSD: STD76744

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG573991

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M413190	WG573990-01 BFB 50ng 8260	NA	1	1	STD76496	06/23/16 19:56
8M413191	WG573990-02 50ug/L CCV 8260	NA	1	1	STD76715	06/23/16 20:24
8M413192	WG573990-02 50ug/L CCV 8260	NA	1	1	STD76715	06/23/16 21:00
8M413193	WG573XXX-01 100ug/L CCV A9	NA	1	1	STDXXXXX	06/23/16 21:30
8M413194	WG573991-01 BLANK 8260	NA	1	1		06/23/16 21:59
8M413195	WG573991-02 20ug/L LCS 8260	NA	1	1	STD76744	06/23/16 22:28
8M413196	L16060927-02 200X C 826-LOW D1	<2	1	200		06/23/16 22:56
8M413197	L16060978-05 A 826-SPE	<2	1	1		06/23/16 23:26
8M413198	L16060992-01 A 826-SPE	<2	1	1		06/23/16 23:55
8M413199	L16060927-01 C 826-LOW	<2	1	1		06/24/16 00:24
8M413200	L16060927-03 C 826-LOW	<2	1	1		06/24/16 00:53
8M413201	L16060992-04 A 826-SPE	<2	1	1		06/24/16 01:22
8M413202	L16061095-12 A 826-SPE	<2	1	1		06/24/16 01:51
8M413203	L16061095-13 A 826-SPE	<2	1	1		06/24/16 02:20
8M413204	L16060896-06 B 826-SPE	<2	1	1		06/24/16 02:49
8M413205	L16060896-07 B 826-SPE	<2	1	1		06/24/16 03:18
8M413206	L16060930-03 B+C 826-SPE	7	1	1	SEDIMENT	06/24/16 03:47
8M413207	L16060730-03 B 826-LOW A1	<2	1	1		06/24/16 04:16
8M413208	L16060823-04 B 826-LOW A1	<2	1	1		06/24/16 04:46
8M413209	L16061068-01 REF 10X A 826-LOW	NA	1	10		06/24/16 05:15
8M413210	L16061068-02 MS 10X A 826-LOW	NA	1	10	STD76744	06/24/16 05:44
8M413211	L16061068-03 MSD 10X A 826-LOW	NA	1	10	STD76744	06/24/16 06:13
8M413212	L16060978-03 10X A 826-SPE	11	1	10		06/24/16 06:42
8M413213	L16060978-04 10X A 826-SPE	11	1	10		06/24/16 07:11
8M413214	L16061068-04 A 826-LOW	<2	1	1		06/24/16 07:40
8M413215	RINSE	NA	1	1		06/24/16 08:09
8M413216	RINSE	NA	1	1		06/24/16 08:38
8M413217	GROUNDWATER	NA	1	1		06/24/16 09:07

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 8M413191				

Approved: June 29, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 062316
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD76370 Surrogate Standard: STD76370
CCV: STD76715 LCS: STD76744 MS/MSD: STD76744

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG573991

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
	DNR.			
4				
File ID: 8M413193				
	Not needed, DNR.			
23	X	100	Over Calibration Range	TOLUENE
File ID: 8M413212				
25			Carry-over contamination	
File ID: 8M413214				

Approved: June 29, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Data Checklist

Date: 13-MAY-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75126
Analytical Workgroups: WG568561

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	TMB
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
17-MAY-2016
Tiffany Bailey

Secondary Reviewer:
20-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2016 11:18:36

Microbac Laboratories Inc.

Data Checklist

Date: 21-JUN-2016
Analyst: FJB
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75920
Analytical Workgroups: WG573645, WG573648

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	FJB
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
30-JUN-2016

Secondary Reviewer:
30-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-30-2016 14:47:57

Microbac Laboratories Inc.

Data Checklist

Date: 22-JUN-2016
Analyst: FJB
Analyst: NA
Method: 8260B
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75952
Analytical Workgroups: WG573771

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	WTD
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	FJB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
27-JUN-2016

Secondary Reviewer:
27-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-27-2016 16:24:53

Microbac Laboratories Inc.

Data Checklist

Date: 23-JUN-2016
Analyst: FJB
Analyst: NA
Method: 8260B
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 76008
Analytical Workgroups: WG573991

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	WTD
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
29-JUN-2016
Tiffany Bailey

Secondary Reviewer:
29-JUN-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-29-2016 14:37:11

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG573645

Login Number: L16060927

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW19-061516	04	06/15/16					06/22/2016	6.7	14		06/22/16	6.7	14	
TRIP BLANK	05	06/15/16					06/21/2016	6.9	14		06/21/16	6.9	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4831243
Report generated 06/30/2016 15:02

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG573771

Login Number: L16060927

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW23-061516	02	06/15/16					06/22/2016	7.4	14		06/22/16	7.4	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4831243
Report generated 06/30/2016 15:02

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG573991

Login Number: L16060927

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW23SW-061516	01	06/15/16					06/24/2016	8.7	14		06/24/16	8.7	14	
18CPTMW23-061516	02	06/15/16					06/23/2016	8.6	14		06/23/16	8.6	14	
18CPTMW19SW-061516	03	06/15/16					06/24/2016	8.6	14		06/24/16	8.6	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4831243
Report generated 06/30/2016 15:02

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060927
Instrument Id: HPMS8
Workgroup (AAB#): WG573645

Method: 8260
CAL ID: HPMS8-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16060927-04	1.00	01	114	112	99.9	104
L16060927-05	1.00	01	112	111	100	103
WG573645-01	1.00	01	110	111	99.8	105
WG573645-02	1.00	01	109	107	98.0	103
WG573645-03	1.00	01	106	108	99.0	102

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4831249
Report generated: 06/30/2016 15:03

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060927
Instrument Id: HPMS8
Workgroup (AAB#): WG573991

Method: 8260
CAL ID: HPMS8 - 13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16060927-01	1.00	01	116	111	101	104
L16060927-02	200	DL01	116	112	101	101
L16060927-03	1.00	01	119	113	103	104
WG573991-01	1.00	01	115	113	102	102
WG573991-02	1.00	01	113	110	98.9	103

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4831249
Report generated: 06/30/2016 15:03

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060927
Instrument Id: HPMS8
Workgroup (AAB#): WG573771

Method: 8260
CAL ID: HPMS8-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16060927-02	1.00	01	115	112	99.4	105
WG573771-01	1.00	01	111	107	98.4	104
WG573771-02	1.00	01	113	110	103	103

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4831249
Report generated: 06/30/2016 15:03

METHOD BLANK SUMMARY

Login Number: L16060927
Blank File ID: 8M413128
Prep Date: 06/21/16 19:21
Analyzed Date: 06/21/16 19:21
Analyst: FJB

Work Group: WG573645
Blank Sample ID: WG573645-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573645-02	8M413129	06/21/16 19:50	01
LCS2	WG573645-03	8M413130	06/21/16 20:19	01
TRIP BLANK	L16060927-05	8M413135	06/21/16 22:44	01
18CPTMW19-061516	L16060927-04	8M413145	06/22/16 03:34	01

Report Name: BLANK_SUMMARY
PDF File ID: 4833866
Report generated 06/30/2016 15:02

METHOD BLANK SUMMARY

Login Number: L16060927
Blank File ID: 8M413194
Prep Date: 06/23/16 21:59
Analyzed Date: 06/23/16 21:59
Analyst: FJB

Work Group: WG573991
Blank Sample ID: WG573991-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573991-02	8M413195	06/23/16 22:28	01
18CPTMW23-061516	L16060927-02	8M413196	06/23/16 22:56	DL01
18CPTMW23SW-061516	L16060927-01	8M413199	06/24/16 00:24	01
18CPTMW19SW-061516	L16060927-03	8M413200	06/24/16 00:53	01

Report Name: BLANK_SUMMARY
PDF File ID: 4833866
Report generated 06/30/2016 15:02

METHOD BLANK SUMMARY

Login Number: L16060927
Blank File ID: 8M413165
Prep Date: 06/22/16 16:39
Analyzed Date: 06/22/16 16:39
Analyst: FJB

Work Group: WG573771
Blank Sample ID: WG573771-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573771-02	8M413166	06/22/16 17:13	01
18CPTMW23-061516	L16060927-02	8M413169	06/22/16 18:40	01

Report Name: BLANK_SUMMARY
PDF File ID: 4833866
Report generated 06/30/2016 15:02

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16060927 Prep Date: 06/21/16 19:21 Sample ID: WG573645-01
Instrument ID: HPMS8 Run Date: 06/21/16 19:21 Prep Method: 5030B/5030C/503
File ID: 8M413128 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573645 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 4831244
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Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060927 Prep Date: 06/21/16 19:21 Sample ID: WG573645-01
Instrument ID: HPMS8 Run Date: 06/21/16 19:21 Prep Method: 5030B/5030C/503
File ID: 8M413128 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573645 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	111	85 - 115	PASS
1,2-Dichloroethane-d4	110	70 - 120	PASS
Toluene-d8	105	85 - 120	PASS
4-Bromofluorobenzene	99.8	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4831244
30-JUN-2016 15:02

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16060927 Prep Date: 06/22/16 16:39 Sample ID: WG573771-01
Instrument ID: HPMS8 Run Date: 06/22/16 16:39 Prep Method: 5030B/5030C/503
File ID: 8M413165 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573771 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
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Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16060927 Prep Date: 06/22/16 16:39 Sample ID: WG573771-01
Instrument ID: HPMS8 Run Date: 06/22/16 16:39 Prep Method: 5030B/5030C/503
File ID: 8M413165 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573771 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	107	85 - 115	PASS
1,2-Dichloroethane-d4	111	70 - 120	PASS
Toluene-d8	104	85 - 120	PASS
4-Bromofluorobenzene	98.4	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4831244
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Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060927 Prep Date: 06/23/16 21:59 Sample ID: WG573991-01
Instrument ID: HPMS8 Run Date: 06/23/16 21:59 Prep Method: 5030B/5030C/503
File ID: 8M413194 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573991 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4831244
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Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060927 Prep Date: 06/23/16 21:59 Sample ID: WG573991-01
Instrument ID: HPMS8 Run Date: 06/23/16 21:59 Prep Method: 5030B/5030C/503
File ID: 8M413194 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573991 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	113	85 - 115	PASS
1,2-Dichloroethane-d4	115	70 - 120	PASS
Toluene-d8	102	85 - 120	PASS
4-Bromofluorobenzene	102	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4831244
30-JUN-2016 15:02

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060927 Run Date: 06/22/2016 Sample ID: WG573771-02
Instrument ID: HPMS8 Run Time: 17:13 Prep Method: 5030B/5030C/503
File ID: 8M413166 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573771 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD76744 Cal ID: HPMS8-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	22.3	111	40 - 140	
Benzene	20.0	22.4	112	80 - 120	
Bromobenzene	20.0	20.3	102	75 - 125	
Bromochloromethane	20.0	21.5	108	65 - 130	
Bromodichloromethane	20.0	23.6	118	75 - 120	
Bromoform	20.0	19.6	97.8	70 - 130	
Bromomethane	20.0	18.1	90.3	30 - 145	
2-Butanone	20.0	20.3	101	30 - 150	
n-Butylbenzene	20.0	19.7	98.5	70 - 135	
sec-Butylbenzene	20.0	20.9	104	70 - 125	
tert-Butylbenzene	20.0	20.4	102	70 - 130	
Carbon disulfide	20.0	21.9	109	35 - 160	
Carbon tetrachloride	20.0	24.5	123	65 - 140	
Chlorobenzene	20.0	20.6	103	80 - 120	
Chlorodibromomethane	20.0	20.4	102	60 - 135	
Chloroethane	20.0	24.5	122	60 - 135	
Chloroform	20.0	22.8	114	65 - 135	
Chloromethane	20.0	23.9	120	40 - 125	
2-Chlorotoluene	20.0	20.5	102	75 - 125	
4-Chlorotoluene	20.0	20.6	103	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	17.9	89.5	50 - 130	
1,2-Dibromoethane	20.0	20.0	100	80 - 120	
Dibromomethane	20.0	20.8	104	75 - 125	
1,2-Dichlorobenzene	20.0	20.6	103	70 - 120	
1,3-Dichlorobenzene	20.0	20.6	103	75 - 125	
1,4-Dichlorobenzene	20.0	20.5	102	75 - 125	
Dichlorodifluoromethane	20.0	30.6	153	30 - 155	
1,1-Dichloroethane	20.0	21.8	109	70 - 135	
1,2-Dichloroethane	20.0	24.7	123	70 - 130	
1,1-Dichloroethene	20.0	22.6	113	70 - 130	
cis-1,2-Dichloroethene	20.0	22.5	112	70 - 125	
trans-1,2-Dichloroethene	20.0	22.4	112	60 - 140	
1,2-Dichloropropane	20.0	21.7	109	75 - 125	
1,3-Dichloropropane	20.0	21.5	107	75 - 125	
2,2-Dichloropropane	20.0	26.5	133	70 - 135	
cis-1,3-Dichloropropene	20.0	24.8	124	70 - 130	
trans-1,3-Dichloropropene	20.0	21.6	108	55 - 140	
1,1-Dichloropropene	20.0	22.6	113	75 - 130	
Ethylbenzene	20.0	20.3	102	75 - 125	
2-Hexanone	20.0	16.8	84.1	55 - 130	
Hexachlorobutadiene	20.0	21.3	107	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4831245
Report generated: 06/30/2016 15:02

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060927 Run Date: 06/22/2016 Sample ID: WG573771-02
Instrument ID: HPMS8 Run Time: 17:13 Prep Method: 5030B/5030C/503
File ID: 8M413166 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573771 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD76744 Cal ID: HPMS8-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	21.9	110	75 - 125	
p-Isopropyltoluene	20.0	20.6	103	75 - 130	
4-Methyl-2-pentanone	20.0	20.5	103	60 - 135	
Methylene chloride	20.0	21.6	108	55 - 140	
Naphthalene	20.0	16.4	81.9	55 - 140	
n-Propylbenzene	20.0	21.2	106	70 - 130	
Styrene	20.0	21.2	106	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	21.0	105	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	18.2	91.2	65 - 130	
Tetrachloroethene	20.0	21.5	108	45 - 150	
Toluene	20.0	20.6	103	75 - 120	
1,2,3-Trichlorobenzene	20.0	17.8	89.1	55 - 140	
1,2,4-Trichlorobenzene	20.0	19.3	96.3	65 - 135	
1,1,1-Trichloroethane	20.0	24.6	123	65 - 130	
1,1,2-Trichloroethane	20.0	19.9	99.5	75 - 125	
Trichlorofluoromethane	20.0	25.6	128	60 - 145	
1,2,3-Trichloropropane	20.0	19.5	97.6	75 - 125	
1,2,4-Trimethylbenzene	20.0	20.4	102	75 - 130	
1,3,5-Trimethylbenzene	20.0	21.3	106	75 - 130	
Vinyl chloride	20.0	28.6	143	50 - 145	
o-Xylene	20.0	21.0	105	80 - 120	
m-,p-Xylene	40.0	42.3	106	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	110	85 - 115	PASS
1,2-Dichloroethane-d4	113	70 - 120	PASS
Toluene-d8	103	85 - 120	PASS
4-Bromofluorobenzene	103	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4831245
Report generated: 06/30/2016 15:02

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060927 | Run Date: 06/23/2016 | Sample ID: WG573991-02
Instrument ID: HPMS8 | Run Time: 22:28 | Prep Method: 5030B/5030C/503
File ID: 8M413195 | Analyst: FJB | Method: 8260B
Workgroup (AAB#): WG573991 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD76744 | Cal ID: HPMS8-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	24.0	120	40 - 140	
Benzene	20.0	21.8	109	80 - 120	
Bromobenzene	20.0	19.4	97.1	75 - 125	
Bromochloromethane	20.0	21.6	108	65 - 130	
Bromodichloromethane	20.0	23.4	117	75 - 120	
Bromoform	20.0	19.1	95.6	70 - 130	
Bromomethane	20.0	17.2	86.1	30 - 145	
2-Butanone	20.0	21.2	106	30 - 150	
n-Butylbenzene	20.0	19.0	94.8	70 - 135	
sec-Butylbenzene	20.0	20.2	101	70 - 125	
tert-Butylbenzene	20.0	20.0	99.8	70 - 130	
Carbon disulfide	20.0	20.9	104	35 - 160	
Carbon tetrachloride	20.0	24.4	122	65 - 140	
Chlorobenzene	20.0	20.7	104	80 - 120	
Chlorodibromomethane	20.0	20.4	102	60 - 135	
Chloroethane	20.0	23.4	117	60 - 135	
Chloroform	20.0	22.7	114	65 - 135	
Chloromethane	20.0	23.0	115	40 - 125	
2-Chlorotoluene	20.0	18.4	92.0	75 - 125	
4-Chlorotoluene	20.0	22.2	111	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	17.1	85.6	50 - 130	
1,2-Dibromoethane	20.0	19.8	98.9	80 - 120	
Dibromomethane	20.0	20.7	104	75 - 125	
1,2-Dichlorobenzene	20.0	19.4	96.9	70 - 120	
1,3-Dichlorobenzene	20.0	20.2	101	75 - 125	
1,4-Dichlorobenzene	20.0	19.8	99.0	75 - 125	
Dichlorodifluoromethane	20.0	28.6	143	30 - 155	
1,1-Dichloroethane	20.0	21.4	107	70 - 135	
1,2-Dichloroethane	20.0	24.7	123	70 - 130	
1,1-Dichloroethene	20.0	22.4	112	70 - 130	
cis-1,2-Dichloroethene	20.0	22.0	110	70 - 125	
trans-1,2-Dichloroethene	20.0	22.1	111	60 - 140	
1,2-Dichloropropane	20.0	21.6	108	75 - 125	
1,3-Dichloropropane	20.0	21.4	107	75 - 125	
2,2-Dichloropropane	20.0	25.6	128	70 - 135	
cis-1,3-Dichloropropene	20.0	24.5	122	70 - 130	
trans-1,3-Dichloropropene	20.0	21.2	106	55 - 140	
1,1-Dichloropropene	20.0	21.8	109	75 - 130	
Ethylbenzene	20.0	20.1	100	75 - 125	
2-Hexanone	20.0	17.3	86.5	55 - 130	
Hexachlorobutadiene	20.0	20.7	103	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4831245
Report generated: 06/30/2016 15:02

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060927 Run Date: 06/23/2016 Sample ID: WG573991-02
Instrument ID: HPMS8 Run Time: 22:28 Prep Method: 5030B/5030C/503
File ID: 8M413195 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573991 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD76744 Cal ID: HPMS8-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	21.7	109	75 - 125	
p-Isopropyltoluene	20.0	19.8	98.9	75 - 130	
4-Methyl-2-pentanone	20.0	19.9	99.3	60 - 135	
Methylene chloride	20.0	21.3	107	55 - 140	
Naphthalene	20.0	15.2	76.1	55 - 140	
n-Propylbenzene	20.0	20.9	104	70 - 130	
Styrene	20.0	21.1	105	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	20.9	105	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	17.1	85.3	65 - 130	
Tetrachloroethene	20.0	20.9	105	45 - 150	
Toluene	20.0	20.6	103	75 - 120	
1,2,3-Trichlorobenzene	20.0	17.5	87.3	55 - 140	
1,2,4-Trichlorobenzene	20.0	18.5	92.5	65 - 135	
1,1,1-Trichloroethane	20.0	24.7	123	65 - 130	
1,1,2-Trichloroethane	20.0	19.2	95.9	75 - 125	
Trichloroethene	20.0	23.4	117	70 - 125	
Trichlorofluoromethane	20.0	24.5	123	60 - 145	
1,2,3-Trichloropropane	20.0	19.1	95.6	75 - 125	
1,2,4-Trimethylbenzene	20.0	19.9	99.5	75 - 130	
1,3,5-Trimethylbenzene	20.0	20.8	104	75 - 130	
Vinyl chloride	20.0	27.9	139	50 - 145	
o-Xylene	20.0	21.2	106	80 - 120	
m-,p-Xylene	40.0	42.0	105	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	110	85 - 115	PASS
1,2-Dichloroethane-d4	113	70 - 120	PASS
Toluene-d8	103	85 - 120	PASS
4-Bromofluorobenzene	98.9	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4831245
Report generated: 06/30/2016 15:02

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060927 Analyst: FJB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG573645 Units: ug/L
QC Key: DOD4 Lot #: STD76744

Sample ID: WG573645-02 LCS File ID: 8M413129 Run Date: 06/21/2016 19:50
Sample ID: WG573645-03 LCS2 File ID: 8M413130 Run Date: 06/21/2016 20:19

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	21.0	105	20.0	20.4	102	2.55	80 - 130	30	
1,1,1-Trichloroethane	20.0	23.5	118	20.0	23.3	117	0.919	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	17.9	89.4	20.0	17.4	87.0	2.68	65 - 130	30	
1,1,2-Trichloroethane	20.0	20.2	101	20.0	19.3	96.3	4.89	75 - 125	30	
1,1-Dichloroethane	20.0	21.9	109	20.0	21.1	106	3.48	70 - 135	30	
1,1-Dichloroethene	20.0	22.3	111	20.0	22.0	110	1.36	70 - 130	30	
1,1-Dichloropropene	20.0	22.7	114	20.0	22.4	112	1.58	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	18.7	93.4	20.0	18.5	92.4	0.993	55 - 140	30	
1,2,3-Trichloropropane	20.0	19.2	95.9	20.0	19.3	96.5	0.580	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	19.7	98.4	20.0	19.2	95.8	2.71	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	20.1	100	20.0	19.8	99.0	1.25	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	17.8	88.8	20.0	17.7	88.5	0.377	50 - 130	30	
1,2-Dibromoethane	20.0	20.3	102	20.0	19.7	98.5	3.03	80 - 120	30	
1,2-Dichlorobenzene	20.0	19.9	99.6	20.0	19.5	97.3	2.40	70 - 120	30	
1,2-Dichloroethane	20.0	23.9	119	20.0	23.0	115	3.72	70 - 130	30	
1,2-Dichloropropane	20.0	22.0	110	20.0	21.9	109	0.534	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	21.1	106	20.0	20.8	104	1.31	75 - 130	30	
1,3-Dichlorobenzene	20.0	20.4	102	20.0	20.3	102	0.603	75 - 125	30	
1,3-Dichloropropane	20.0	21.5	108	20.0	20.9	104	3.09	75 - 125	30	
1,4-Dichlorobenzene	20.0	20.4	102	20.0	20.2	101	0.886	75 - 125	30	
2,2-Dichloropropane	20.0	25.5	128	20.0	24.8	124	2.80	70 - 135	30	
2-Butanone	20.0	20.2	101	20.0	19.7	98.5	2.44	30 - 150	30	
2-Chlorotoluene	20.0	20.9	105	20.0	20.7	104	1.14	75 - 125	30	
2-Hexanone	20.0	17.1	85.6	20.0	18.2	90.8	5.87	55 - 130	30	
4-Chlorotoluene	20.0	20.6	103	20.0	19.9	99.7	3.22	75 - 130	30	
4-Methyl-2-pentanone	20.0	21.5	107	20.0	19.0	94.9	12.3	60 - 135	30	
Acetone	20.0	20.1	101	20.0	21.6	108	7.09	40 - 140	30	
Benzene	20.0	22.6	113	20.0	22.1	111	2.24	80 - 120	30	
Bromobenzene	20.0	20.0	99.9	20.0	19.8	99.0	0.968	75 - 125	30	
Bromochloromethane	20.0	22.3	112	20.0	21.3	107	4.47	65 - 130	30	
Bromodichloromethane	20.0	22.9	114	20.0	22.3	111	2.63	75 - 120	30	
Bromoform	20.0	20.1	100	20.0	19.2	96.0	4.39	70 - 130	30	
Bromomethane	20.0	19.0	94.8	20.0	18.4	92.1	2.85	30 - 145	30	
Carbon disulfide	20.0	21.8	109	20.0	21.2	106	3.01	35 - 160	30	
Carbon tetrachloride	20.0	23.8	119	20.0	23.0	115	3.50	65 - 140	30	
Chlorobenzene	20.0	21.3	107	20.0	20.5	103	3.62	80 - 120	30	
Chloroethane	20.0	24.4	122	20.0	23.6	118	3.50	60 - 135	30	
Chloroform	20.0	22.6	113	20.0	21.9	110	2.82	65 - 135	30	
Chloromethane	20.0	23.8	119	20.0	23.4	117	2.06	40 - 125	30	
cis-1,2-Dichloroethene	20.0	22.6	113	20.0	21.8	109	3.37	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4833867
Report generated: 06/30/2016 15:02

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060927 Analyst: FJB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG573645 Units: ug/L
QC Key: DOD4 Lot #: STD76744

Sample ID: WG573645-02 LCS File ID: 8M413129 Run Date: 06/21/2016 19:50
Sample ID: WG573645-03 LCS2 File ID: 8M413130 Run Date: 06/21/2016 20:19

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	24.5	123	20.0	24.0	120	2.38	70 - 130	30	
Chlorodibromomethane	20.0	20.6	103	20.0	20.0	100	2.71	60 - 135	30	
Dibromomethane	20.0	20.1	100	20.0	19.9	99.3	1.03	75 - 125	30	
Dichlorodifluoromethane	20.0	28.3	142	20.0	28.0	140	1.27	30 - 155	30	
Ethylbenzene	20.0	20.0	100	20.0	19.8	99.0	1.03	75 - 125	30	
Hexachlorobutadiene	20.0	21.3	106	20.0	21.1	106	0.619	50 - 140	30	
Isopropylbenzene	20.0	22.1	111	20.0	21.9	109	1.21	75 - 125	30	
m-,p-Xylene	40.0	43.1	108	40.0	41.7	104	3.24	75 - 130	30	
Methylene chloride	20.0	21.8	109	20.0	21.3	107	2.40	55 - 140	30	
n-Butylbenzene	20.0	19.8	99.0	20.0	19.6	97.8	1.17	70 - 135	30	
n-Propylbenzene	20.0	21.2	106	20.0	20.9	105	1.09	70 - 130	30	
Naphthalene	20.0	16.1	80.4	20.0	16.5	82.3	2.32	55 - 140	30	
o-Xylene	20.0	21.4	107	20.0	21.1	106	1.42	80 - 120	30	
p-Isopropyltoluene	20.0	20.7	103	20.0	20.1	101	2.77	75 - 130	30	
sec-Butylbenzene	20.0	20.8	104	20.0	20.5	103	1.09	70 - 125	30	
Styrene	20.0	21.3	106	20.0	20.9	104	1.89	65 - 135	30	
tert-Butylbenzene	20.0	21.0	105	20.0	20.4	102	3.11	70 - 130	30	
Tetrachloroethene	20.0	21.6	108	20.0	21.5	108	0.381	45 - 150	30	
Toluene	20.0	21.0	105	20.0	20.7	104	1.65	75 - 120	30	
trans-1,2-Dichloroethene	20.0	22.7	113	20.0	22.2	111	1.86	60 - 140	30	
trans-1,3-Dichloropropene	20.0	21.5	107	20.0	20.5	103	4.66	55 - 140	30	
Trichloroethene	20.0	23.5	118	20.0	23.2	116	1.28	70 - 125	30	
Trichlorofluoromethane	20.0	24.5	122	20.0	23.4	117	4.35	60 - 145	30	
Vinyl chloride	20.0	27.3	137	20.0	27.0	135	1.13	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	109	106	70 - 120	PASS
Dibromofluoromethane	107	108	85 - 115	PASS
4-Bromofluorobenzene	98.0	99.0	75 - 120	PASS
Toluene-d8	103	102	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4833867
Report generated: 06/30/2016 15:02

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060927
Instrument: HPMS8
Analyst: TMB
Workgroup: WG568561

Tune ID: WG568561-01
Run Date: 05/13/2016
Run Time: 12:36
File ID: 8M412218
Cal ID: HPMS8 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	16.7	6575	PASS
75.0	95.0	30.0	60.0	51.3	20171	PASS
95.0	95.0	100	100	100	39312	PASS
96.0	95.0	5.00	9.00	6.74	2649	PASS
173	174	0	2.00	0.363	122	PASS
174	95.0	50.0	100	85.5	33616	PASS
175	174	5.00	9.00	8.17	2746	PASS
176	174	95.0	101	99.2	33360	PASS
177	176	5.00	9.00	6.80	2267	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG568561-02	STD	01	05/13/2016 13:29	
WG568561-03	STD	01	05/13/2016 13:58	
WG568561-04	STD	01	05/13/2016 14:27	
WG568561-05	STD	01	05/13/2016 14:56	
WG568561-06	STD	01	05/13/2016 15:25	
WG568561-07	STD	01	05/13/2016 15:54	
WG568561-08	STD-CCV	01	05/13/2016 16:23	
WG568561-09	STD	01	05/13/2016 16:52	
WG568561-10	STD	01	05/13/2016 17:21	
WG568561-11	STD	01	05/13/2016 17:50	
WG568561-12	SSCV	01	05/13/2016 19:17	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4831247
Report generated 06/30/2016 15:02

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060927
Instrument: HPMS8
Analyst: FJB
Workgroup: WG573644

Tune ID: WG573644-01
Run Date: 06/21/2016
Run Time: 17:23
File ID: 8M413124
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	17.2	10071	PASS
75.0	95.0	30.0	60.0	53.8	31493	PASS
95.0	95.0	100	100	100	58490	PASS
96.0	95.0	5.00	9.00	6.51	3806	PASS
173	174	0	2.00	0.364	174	PASS
174	95.0	50.0	100	81.7	47778	PASS
175	174	5.00	9.00	7.65	3655	PASS
176	174	95.0	101	96.2	45946	PASS
177	176	5.00	9.00	6.54	3004	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573644-02	CCV	01	06/21/2016 18:23	
WG573787-01	CCV	01	06/21/2016 18:52	
WG573645-01	BLANK	01	06/21/2016 19:21	
WG573645-02	LCS	01	06/21/2016 19:50	
WG573645-03	LCS2	01	06/21/2016 20:19	
L16060927-05	TRIP BLANK	01	06/21/2016 22:44	
L16060927-04	18CPTMW19-061516	01	06/22/2016 03:34	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4831247
Report generated 06/30/2016 15:02

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060927
Instrument: HPMS8
Analyst: FJB
Workgroup: WG573770

Tune ID: WG573770-01
Run Date: 06/22/2016
Run Time: 14:38
File ID: 8M413161
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.6	8091	PASS
75.0	95.0	30.0	60.0	56.5	23343	PASS
95.0	95.0	100	100	100	41328	PASS
96.0	95.0	5.00	9.00	6.39	2639	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	77.4	31974	PASS
175	174	5.00	9.00	8.17	2612	PASS
176	174	95.0	101	95.1	30422	PASS
177	176	5.00	9.00	7.09	2156	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573770-02	CCV	01	06/22/2016 15:41	
WG573771-01	BLANK	01	06/22/2016 16:39	
WG573771-02	LCS	01	06/22/2016 17:13	
L16060927-02	18CPTMW23-061516	01	06/22/2016 18:40	
WG573023-01	FBLK1	DL01	06/23/2016 03:50	*

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4831247
Report generated 06/30/2016 15:02

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060927
Instrument: HPMS8
Analyst: FJB
Workgroup: WG573990

Tune ID: WG573990-01
Run Date: 06/23/2016
Run Time: 19:56
File ID: 8M413190
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.0	10373	PASS
75.0	95.0	30.0	60.0	58.1	31797	PASS
95.0	95.0	100	100	100	54685	PASS
96.0	95.0	5.00	9.00	6.95	3803	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	76.1	41629	PASS
175	174	5.00	9.00	7.18	2991	PASS
176	174	95.0	101	95.9	39941	PASS
177	176	5.00	9.00	6.76	2702	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573990-02	CCV	01	06/23/2016 21:00	
WG573991-01	BLANK	01	06/23/2016 21:59	
WG573991-02	LCS	01	06/23/2016 22:28	
L16060927-02	18CPTMW23-061516	DL01	06/23/2016 22:56	
L16060927-01	18CPTMW23SW-061516	01	06/24/2016 00:24	
L16060927-03	18CPTMW19SW-061516	01	06/24/2016 00:53	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4831247
Report generated 06/30/2016 15:02

Calibration Table Report
Method: 8260WT.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Calibration: Sat May 14 18:08:06 2016
Curve: WG568561
Calibration Files

	Compound	0.3 8M412220.D	0.4 8M412221.D	1 8M412222.D	2 8M412223.D	5 8M412224.D	20 8M412225.D	50 8M412226.D	100 8M412227.D	200 8M412228.D	300 8M412229.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane		0.427	0.390	0.397	0.364	0.468	0.439	0.452	0.427	0.408	0.419	7.751		
P	Chloromethane			0.264	0.257	0.223	0.253	0.240	0.240	0.239	0.241	0.245	5.336		
C	Vinyl Chloride		0.274	0.296	0.297	0.277	0.299	0.292	0.299	0.292	0.288	0.290	3.191		
T	1,3-Butadiene				0.218	0.208	0.242	0.251	0.277	0.254	0.254	0.243	9.644		
T	Bromomethane			0.129	0.133	0.127	0.162	0.167	0.187	0.205	0.212	0.165	20.449		1.000
T	Chloroethane		0.173	0.157	0.153	0.143	0.164	0.157	0.163	0.164	0.164	0.160	5.354		
T	Trichlorofluoromethane		0.544	0.538	0.559	0.506	0.570	0.538	0.551	0.531	0.525	0.540	3.520		
T	Diethyl ether			0.130	0.138	0.123	0.132	0.125	0.128		0.127	0.129	3.866		
T	Isoprene		0.335	0.351	0.334	0.293	0.334	0.320	0.334	0.322	0.329	0.328	4.867		
T	Acrolein				0.012	0.010	0.010	0.011	0.012		0.014	0.012	12.987		
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.256	0.269	0.240	0.260	0.249	0.257	0.251	0.250	0.254	3.397		
T	Acetone					0.023	0.030	0.029	0.030	0.028	0.028	0.028	9.132		
C	1,1-Dichloroethene		0.424	0.407	0.406	0.387	0.416	0.398	0.409	0.400	0.393	0.404	2.830		
T	Tert-Butyl Alcohol				0.010	0.009	0.009	0.009	0.009		0.009	0.009	2.872		
T	Dimethyl Sulfide		0.133	0.142	0.152	0.137	0.145	0.142	0.151	0.147	0.151	0.145	4.534		
T	Iodomethane				0.019	0.024	0.066	0.101	0.129	0.135	0.131	0.087	58.244		0.998
T	Methyl acetate					0.075	0.076	0.074	0.078	0.076	0.078	0.076	2.221		
T	Methylene Chloride			0.274	0.265	0.244	0.263	0.250	0.255	0.254	0.252	0.257	3.686		
T	Carbon Disulfide			0.888	0.922	0.801	0.873	0.816	0.854	0.813	0.802	0.846	5.346		
T	Acrylonitrile			0.027	0.035	0.033	0.038	0.038	0.039		0.044	0.036	14.671		
T	Methyl Tert Butyl Ether			0.534	0.543	0.521	0.586	0.579	0.585	0.560	0.546	0.557	4.455		
T	trans-1,2-Dichloroethene		0.389	0.395	0.364	0.352	0.381	0.367	0.372	0.364	0.358	0.371	3.858		
T	n-Hexane					0.265	0.280	0.270	0.286	0.275	0.279	0.276	2.732		
T	Diisopropyl ether			0.600	0.607	0.548	0.588	0.572	0.571		0.567	0.579	3.559		
T	Vinyl Acetate				0.256	0.243	0.270	0.275	0.266	0.271	0.275	0.265	4.509		
P	1,1-Dichloroethane		0.441	0.463	0.486	0.434	0.488	0.464	0.470	0.459	0.447	0.461	4.012		
T	Ethyl-Tert-Butyl ether			0.616	0.645	0.590	0.641	0.628	0.619		0.603	0.620	3.188		
T	2-Butanone					0.035	0.042	0.043	0.045	0.041	0.043	0.041	8.268		
T	Propionitrile			0.010	0.012	0.012	0.013	0.012	0.013		0.013	0.012	8.354		
T	2,2-Dichloropropane		0.471	0.462	0.520	0.476	0.503	0.494	0.497	0.483	0.470	0.486	3.839		
T	cis-1,2-Dichloroethene		0.299	0.298	0.291	0.267	0.295	0.282	0.289	0.283	0.277	0.287	3.685		
C	Chloroform	0.563	0.567	0.581	0.536	0.509	0.566	0.543	0.546	0.529	0.506	0.545	4.619		
T	1-Bromopropane			0.034	0.040	0.040	0.043	0.041	0.043	0.043	0.044	0.041	7.649		
T	Bromochloromethane		0.131	0.164	0.147	0.137	0.154	0.148	0.151	0.148	0.145	0.147	6.598		
T	Tetrahydrofuran			0.034	0.028	0.025	0.026	0.026	0.026		0.026	0.027	11.724		
S	Dibromofluoromethane			0.249	0.261	0.257	0.280	0.271	0.284	0.271	0.275	0.269	4.465		
T	1,1,1-Trichloroethane		0.492	0.537	0.515	0.496	0.545	0.525	0.533	0.515	0.499	0.517	3.660		
T	Cyclohexane			0.373	0.369	0.335	0.359	0.344	0.366	0.356	0.364	0.358	3.619		
T	1,1-Dichloropropene			0.414	0.399	0.369	0.403	0.395	0.399	0.392	0.382	0.394	3.488		
T	Tert-Amyl-Methyl ether			0.567	0.587	0.534	0.576	0.568	0.561		0.549	0.563	3.077		
T	Carbon Tetrachloride		0.444	0.456	0.462	0.441	0.481	0.465	0.474	0.462	0.448	0.4594	2.92173		
S	1,2-Dichloroethane-d4			0.241	0.309	0.276	0.312	0.295	0.301	0.284	0.286	0.288	7.93644		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.347	0.335	0.354	0.336	0.371	0.36	0.364	0.349	0.338	0.3505	3.65503		
T	Benzene		1.128	1.084	1.071	0.977	1.085	1.033	1.019	0.963	0.883	1.0269	7.39343		
T	Trichloroethene		0.285	0.275	0.276	0.251	0.283	0.273	0.279	0.273	0.27	0.2739	3.66126		
T	Methylcyclohexane					0.396	0.426	0.408	0.429	0.416	0.422	0.4161	2.94153		
C	1,2-Dichloropropane		0.239	0.222	0.233	0.207	0.238	0.226	0.233	0.231	0.229	0.2286	4.30096		
T	Bromodichloromethane		0.369	0.382	0.412	0.385	0.426	0.421	0.417	0.41	0.395	0.4018	4.93305		
T	1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.0011	14.5817		
T	Dibromomethane		0.141	0.13	0.137	0.128	0.141	0.134	0.137	0.136	0.133	0.1353	3.26799		
T	2-Chloroethyl Vinyl Ether				0.1	0.084	0.103	0.104	0.103	0.095	0.098	0.0983	7.09792		
T	4-Methyl-2-Pentanone					0.033	0.042	0.042	0.043	0.04	0.041	0.0401	8.66859		
T	cis-1,3-Dichloropropene		0.391	0.393	0.386	0.398	0.431	0.428	0.428	0.42	0.405	0.409	4.41527		

T	Dimethyl Disulfide					0.182	0.218	0.221	0.23	0.229	0.23	0.2183	8.49419	
I	Chlorobenzene-d5	ISTD												
S	Toluene-d8			1.282	1.295	1.228	1.385	1.333	1.378	1.289	1.278	1.3084	4.07746	
C	Toluene		1.653	1.696	1.678	1.507	1.647	1.554	1.545	1.418	1.27	1.552	8.98325	
T	Ethyl Methacrylate			0.251	0.293	0.268	0.314	0.314	0.327	0.309	0.31	0.2981	8.76897	
T	Paraldehyde											0	0	
T	trans-1,3-Dichloropropene			0.472	0.51	0.466	0.561	0.552	0.553	0.533	0.515	0.5201	7.01006	
T	1,1,2-Trichloroethane		0.261	0.241	0.242	0.222	0.254	0.249	0.252	0.243	0.241	0.2449	4.54209	
T	2-Hexanone					0.042	0.053	0.053	0.056	0.051	0.053	0.0515	9.50479	
T	1,3-Dichloropropane		0.355	0.442	0.465	0.42	0.468	0.454	0.457	0.437	0.428	0.436	7.93348	
T	Tetrachloroethene		0.355	0.337	0.336	0.306	0.333	0.325	0.337	0.334	0.33	0.3325	3.83886	
T	Dibromochloromethane		0.349	0.336	0.338	0.328	0.373	0.372	0.383	0.373	0.367	0.3576	5.60043	
T	1,2-Dibromoethane		0.233	0.234	0.234	0.227	0.259	0.254	0.258	0.251	0.247	0.2441	5.04151	
T	1-Chlorohexane		0.532	0.584	0.505	0.502	0.54	0.52	0.547	0.521	0.516	0.5298	4.7826	
P	Chlorobenzene		1.029	1.173	1.09	1.007	1.099	1.037	1.043	1.002	0.939	1.0466	6.41465	
T	1,1,1,2-Tetrachloroethane		0.392	0.399	0.403	0.357	0.431	0.414	0.424	0.417	0.413	0.4055	5.39495	
C	Ethylbenzene		0.6	0.594	0.59	0.532	0.586	0.559	0.57	0.564	0.558	0.5726	3.7769	
T	m-,p-Xylene		0.744	0.696	0.691	0.643	0.713	0.67	0.673	0.634	0.581	0.6716	7.12586	
T	o-Xylene			0.691	0.651	0.614	0.692	0.658	0.667	0.65	0.63	0.6567	4.11758	
T	Styrene		1.05	1.06	1.096	1.043	1.159	1.124	1.12	1.061	0.98	1.077	4.96781	
P	Bromoform			0.177	0.21	0.181	0.226	0.221	0.232	0.227	0.223	0.2121	10.0546	
T	Isopropylbenzene		1.853	1.891	1.871	1.708	1.897	1.781	1.75	1.573	1.377	1.7444	9.92447	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.426	0.492	0.503	0.486	0.543	0.51	0.527	0.513	0.514	0.5018	6.60291	
S	p-Bromofluorobenzene				1.054	0.976	1.071	1.016	1.053	1.031	1.046	1.0352	3.05136	
T	1,2,3-Trichloropropane			0.119	0.158	0.161	0.162	0.155	0.162	0.16	0.158	0.1545	9.40789	
T	trans-1,4-Dichloro-2-Butene			0.085	0.118	0.12	0.149	0.151	0.16	0.159	0.161	0.1376	19.9543	1.000
T	n-Propylbenzene		4.139	4.239	4.243	4.051	4.241	3.953	3.882	3.419	2.935	3.9003	11.4439	
T	Bromobenzene	0.796	0.708	0.843	0.837	0.778	0.84	0.798	0.817	0.803	0.803	0.8022	4.93253	
T	1,3,5-Trimethylbenzene		2.941	2.93	2.941	2.839	3.053	2.882	2.871	2.689	2.423	2.8411	6.50391	
T	2-Chlorotoluene		2.917	2.935	2.929	2.712	2.861	2.795	2.682	2.533	2.145	2.7231	9.37022	
T	4-Chlorotoluene		2.681	2.596	2.581	2.474	2.625	2.326	2.447	2.286	2.121	2.4597	7.49558	
T	a-Methylstyrene					1.257	1.406	1.34	1.384	1.35	1.351	1.3479	3.77654	
T	tert-Butylbenzene			0.587	0.555	0.53	0.571	0.533	0.552	0.561	0.558	0.5558	3.34508	
T	1,2,4-Trimethylbenzene		2.955	3.168	3.127	2.936	3.12	2.914	2.937	2.709	2.427	2.9214	7.97314	
T	sec-Butylbenzene			3.701	3.536	3.487	3.607	3.34	3.332	3.045	2.69	3.3424	9.93324	
T	p-Isopropyltoluene			3.112	3.062	2.903	2.988	2.813	2.809	2.634	2.382	2.8379	8.45265	
T	1,3-Dichlorobenzene		1.484	1.617	1.627	1.53	1.605	1.531	1.549	1.51	1.45	1.5448	3.95774	
T	1,4-Dichlorobenzene	1.713	1.524	1.672	1.594	1.503	1.6	1.511	1.535	1.49	1.431	1.5574	5.56562	
T	n-Butylbenzene			3.143	2.96	2.895	3.002	2.791	2.792	2.571	2.292	2.8056	9.55812	
T	1,2-Dichlorobenzene	1.59	1.307	1.415	1.41	1.322	1.404	1.333	1.356	1.315	1.286	1.3739	6.4618	
T	1,2-Dibromo-3-Chloropropane				0.085	0.103	0.102	0.103	0.106	0.104	0.103	0.1007	6.86771	
T	1,2,4-Trichlorobenzene		1.074	1.01	1.028	0.982	1.069	1.013	1.036	1.029	1.002	1.0269	2.90829	
T	Hexachlorobutadiene		0.516	0.476	0.483	0.447	0.487	0.459	0.48	0.485	0.485	0.4798	4.00465	
T	Naphthalene		1.594	1.457	1.574	1.455	1.63	1.552	1.564	1.485	1.422	1.5258	4.75891	
T	1,2,3-Trichlorobenzene	0.913	0.934	0.905	0.862	0.805	0.877	0.824	0.862	0.846	0.835	0.8664	4.7474	

Tue May 17 11:49:41 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060927 Run Date: 05/13/2016 Sample ID: WG568561-12
Instrument ID: HPMS8 Run Time: 19:17 Method: 8260B
File ID: 8M412232 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG568561 Cal ID: HPMS8 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.1	ug/L	0.513	5.70	20	
1,1-Dichloroethene	CCC	50.0	46.0	ug/L	0.372	8.10	20	
1,2-Dichloropropane	CCC	50.0	51.0	ug/L	0.233	1.90	20	
Ethylbenzene	CCC	50.0	48.2	ug/L	0.552	3.60	20	
Toluene	CCC	50.0	49.1	ug/L	1.52	1.80	20	
Vinyl Chloride	CCC	50.0	52.4	ug/L	0.304	4.80	20	
Bromoform	SPCC	50.0	48.2	ug/L	0.205	3.60	20	
Chlorobenzene	SPCC	50.0	50.2	ug/L	1.05	0.400	20	
Chloromethane	SPCC	50.0	50.7	ug/L	0.248	1.40	20	
1,1-Dichloroethane	SPCC	50.0	46.7	ug/L	0.431	6.60	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.6	ug/L	0.498	0.800	20	
Acetone		50.0	57.5	ug/L	0.0324	15.1	20	
Benzene		50.0	48.5	ug/L	0.997	3.00	20	
Bromobenzene		50.0	49.5	ug/L	0.794	1.10	20	
Bromochloromethane		50.0	47.5	ug/L	0.140	4.90	20	
Bromodichloromethane		50.0	48.3	ug/L	0.388	3.40	20	
Bromomethane		50.0	46.4	ug/L	0.162	7.20	20	
2-Butanone		50.0	53.0	ug/L	0.0438	6.00	20	
n-Butylbenzene		50.0	49.7	ug/L	2.79	0.700	20	
sec-Butylbenzene		50.0	51.3	ug/L	3.43	2.70	20	
tert-Butylbenzene		50.0	50.9	ug/L	0.566	1.90	20	
Carbon Disulfide		50.0	42.3	ug/L	0.716	15.4	20	
Carbon Tetrachloride		50.0	46.2	ug/L	0.425	7.50	20	
Dibromochloromethane		50.0	49.7	ug/L	0.355	0.700	20	
Chloroethane		50.0	53.3	ug/L	0.170	6.70	20	
2-Chlorotoluene		50.0	51.6	ug/L	2.81	3.10	20	
4-Chlorotoluene		50.0	48.3	ug/L	2.37	3.50	20	
1,2-Dibromo-3-Chloropropane		50.0	48.5	ug/L	0.0977	3.00	20	
1,2-Dibromoethane		50.0	51.1	ug/L	0.250	2.20	20	
Dibromomethane		50.0	45.8	ug/L	0.124	8.40	20	
1,2-Dichlorobenzene		50.0	50.5	ug/L	1.39	1.00	20	
1,3-Dichlorobenzene		50.0	50.9	ug/L	1.57	1.80	20	
1,4-Dichlorobenzene		50.0	50.5	ug/L	1.57	0.900	20	
Dichlorodifluoromethane		50.0	54.2	ug/L	0.455	8.40	20	
1,2-Dichloroethane		50.0	49.0	ug/L	0.344	2.00	20	
cis-1,2-Dichloroethene		50.0	48.9	ug/L	0.281	2.20	20	
trans-1,2-Dichloroethene		50.0	48.1	ug/L	0.357	3.90	20	
1,3-Dichloropropane		50.0	53.7	ug/L	0.468	7.30	20	
2,2-Dichloropropane		50.0	47.9	ug/L	0.466	4.20	20	
cis-1,3-Dichloropropene		50.0	53.9	ug/L	0.441	7.80	20	
trans-1,3-Dichloropropene		50.0	50.7	ug/L	0.527	1.30	20	
1,1-Dichloropropene		50.0	47.5	ug/L	0.374	5.10	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4831246
Report generated 06/30/2016 15:02

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060927 Run Date: 05/13/2016 Sample ID: WG568561-12
Instrument ID: HPMS8 Run Time: 19:17 Method: 8260B
File ID: 8M412232 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG568561 Cal ID: HPMS8 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	53.6	ug/L	0.0552	7.20	20	
Hexachlorobutadiene		50.0	52.1	ug/L	0.500	4.20	20	
Isopropylbenzene		50.0	51.1	ug/L	1.78	2.20	20	
p-Isopropyltoluene		50.0	50.1	ug/L	2.85	0.300	20	
4-Methyl-2-Pentanone		50.0	51.9	ug/L	0.0416	3.70	20	
Methylene Chloride		50.0	48.4	ug/L	0.249	3.10	20	
Naphthalene		50.0	45.8	ug/L	1.40	8.40	20	
n-Propylbenzene		50.0	51.9	ug/L	4.05	3.80	20	
Styrene		50.0	51.5	ug/L	1.11	3.00	20	
1,1,1,2-Tetrachloroethane		50.0	49.4	ug/L	0.400	1.20	20	
Tetrachloroethene		50.0	47.8	ug/L	0.318	4.40	20	
1,2,3-Trichlorobenzene		50.0	47.7	ug/L	0.827	4.50	20	
1,2,4-Trichlorobenzene		50.0	50.1	ug/L	1.03	0.200	20	
1,1,1-Trichloroethane		50.0	47.6	ug/L	0.492	4.80	20	
1,1,2-Trichloroethane		50.0	49.0	ug/L	0.240	1.90	20	
Trichloroethene		50.0	51.1	ug/L	0.280	2.10	20	
Trichlorofluoromethane		50.0	46.9	ug/L	0.507	6.10	20	
1,2,3-Trichloropropane		50.0	50.1	ug/L	0.155	0.200	20	
1,2,4-Trimethylbenzene		50.0	49.7	ug/L	2.90	0.700	20	
1,3,5-Trimethylbenzene		50.0	51.6	ug/L	2.93	3.30	20	
o-Xylene		50.0	50.6	ug/L	0.664	1.10	20	
m-,p-Xylene		100	101	ug/L	0.679	1.10	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4831246
Report generated 06/30/2016 15:02

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060927 Run Date: 06/21/2016 Sample ID: WG573644-02
Instrument ID: HPMS8 Run Time: 18:23 Method: 8260B
File ID: 8M413126 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG573645 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	53.3	ug/L	0.580	6.54	20	
1,1-Dichloroethene	CCC	50.0	53.5	ug/L	0.433	7.04	20	
1,2-Dichloropropane	CCC	50.0	50.3	ug/L	0.230	0.500	20	
Ethylbenzene	CCC	50.0	47.5	ug/L	0.544	4.94	20	
Toluene	CCC	50.0	48.5	ug/L	1.51	3.03	20	
Vinyl Chloride	CCC	50.0	54.4	ug/L	0.316	8.72	20	
Bromoform	SPCC	50.0	52.5	ug/L	0.223	5.01	20	
Chlorobenzene	SPCC	50.0	48.2	ug/L	1.01	3.50	20	
Chloromethane	SPCC	50.0	46.8	ug/L	0.229	6.35	20	
1,1-Dichloroethane	SPCC	50.0	53.0	ug/L	0.489	5.95	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	45.0	ug/L	0.452	10.0	20	
Xylenes		150	146	ug/L	0.644	2.96	20	
Acetone		50.0	57.7	ug/L	0.0325	15.4	20	
Benzene		50.0	51.8	ug/L	1.06	3.56	20	
Bromobenzene		50.0	48.5	ug/L	0.779	2.91	20	
Bromochloromethane		50.0	54.1	ug/L	0.159	8.24	20	
Bromodichloromethane		50.0	54.1	ug/L	0.435	8.14	20	
Bromomethane		50.0	40.5	ug/L	0.141	18.9	20	
2-Butanone		50.0	48.6	ug/L	0.0401	2.87	20	
n-Butylbenzene		50.0	47.3	ug/L	2.65	5.48	20	
sec-Butylbenzene		50.0	47.6	ug/L	3.18	4.85	20	
tert-Butylbenzene		50.0	47.5	ug/L	0.528	5.02	20	
Carbon Disulfide		50.0	53.3	ug/L	0.903	6.70	20	
Carbon Tetrachloride		50.0	56.0	ug/L	0.514	11.9	20	
Dibromochloromethane		50.0	50.2	ug/L	0.359	0.303	20	
Chloroethane		50.0	52.5	ug/L	0.168	5.06	20	
2-Chlorotoluene		50.0	48.3	ug/L	2.63	3.37	20	
4-Chlorotoluene		50.0	46.4	ug/L	2.28	7.20	20	
1,2-Dibromo-3-Chloropropane		50.0	45.5	ug/L	0.0916	9.09	20	
1,2-Dibromoethane		50.0	47.6	ug/L	0.233	4.74	20	
Dibromomethane		50.0	50.8	ug/L	0.137	1.57	20	
1,2-Dichlorobenzene		50.0	46.7	ug/L	1.28	6.54	20	
1,3-Dichlorobenzene		50.0	48.5	ug/L	1.50	2.95	20	
1,4-Dichlorobenzene		50.0	47.3	ug/L	1.47	5.34	20	
Dichlorodifluoromethane		50.0	50.1	ug/L	0.420	0.103	20	
1,2-Dichloroethane		50.0	54.9	ug/L	0.385	9.81	20	
cis-1,2-Dichloroethene		50.0	52.2	ug/L	0.300	4.49	20	
trans-1,2-Dichloroethene		50.0	52.6	ug/L	0.391	5.28	20	
1,3-Dichloropropane		50.0	48.2	ug/L	0.420	3.60	20	
2,2-Dichloropropane		50.0	59.0	ug/L	0.573	18.0	20	
cis-1,3-Dichloropropene		50.0	53.6	ug/L	0.438	7.12	20	
trans-1,3-Dichloropropene		50.0	50.7	ug/L	0.528	1.50	20	

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060927 Run Date: 06/21/2016 Sample ID: WG573644-02
Instrument ID: HPMS8 Run Time: 18:23 Method: 8260B
File ID: 8M413126 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG573645 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	53.6	ug/L	0.423	7.28	20	
2-Hexanone		50.0	46.4	ug/L	0.0478	7.10	20	
Hexachlorobutadiene		50.0	48.7	ug/L	0.467	2.62	20	
Isopropylbenzene		50.0	50.1	ug/L	1.75	0.245	20	
p-Isopropyltoluene		50.0	48.3	ug/L	2.74	3.38	20	
4-Methyl-2-Pentanone		50.0	49.6	ug/L	0.0398	0.795	20	
Methylene Chloride		50.0	50.9	ug/L	0.262	1.79	20	
Naphthalene		50.0	45.1	ug/L	1.38	9.72	20	
n-Propylbenzene		50.0	48.3	ug/L	3.77	3.36	20	
Styrene		50.0	49.6	ug/L	1.07	0.785	20	
1,1,1,2-Tetrachloroethane		50.0	49.9	ug/L	0.404	0.290	20	
Tetrachloroethene		50.0	52.0	ug/L	0.346	3.96	20	
1,2,3-Trichlorobenzene		50.0	46.5	ug/L	0.805	7.04	20	
1,2,4-Trichlorobenzene		50.0	49.1	ug/L	1.01	1.80	20	
1,1,1-Trichloroethane		50.0	55.7	ug/L	0.576	11.4	20	
1,1,2-Trichloroethane		50.0	47.4	ug/L	0.232	5.26	20	
Trichloroethene		50.0	53.9	ug/L	0.295	7.70	20	
Trichlorofluoromethane		50.0	55.5	ug/L	0.600	11.0	20	
1,2,3-Trichloropropane		50.0	46.8	ug/L	0.145	6.47	20	
1,2,4-Trimethylbenzene		50.0	48.0	ug/L	2.81	3.94	20	
1,3,5-Trimethylbenzene		50.0	48.7	ug/L	2.77	2.62	20	
o-Xylene		50.0	48.5	ug/L	0.637	3.01	20	
m-,p-Xylene		100	97.1	ug/L	0.652	2.93	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

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Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060927 Run Date: 06/22/2016 Sample ID: WG573770-02
Instrument ID: HPMS8 Run Time: 15:41 Method: 8260B
File ID: 8M413163 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG573771 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	55.7	ug/L	0.607	11.5	20	
1,1-Dichloroethene	CCC	50.0	56.9	ug/L	0.460	13.7	20	
1,2-Dichloropropane	CCC	50.0	50.5	ug/L	0.231	0.966	20	
Ethylbenzene	CCC	50.0	49.7	ug/L	0.569	0.554	20	
Toluene	CCC	50.0	50.6	ug/L	1.57	1.21	20	
Vinyl Chloride	CCC	50.0	57.6	ug/L	0.334	15.1	20	
Bromoform	SPCC	50.0	53.4	ug/L	0.226	6.72	20	
Chlorobenzene	SPCC	50.0	50.0	ug/L	1.05	0.0460	20	
Chloromethane	SPCC	50.0	49.7	ug/L	0.243	0.692	20	
1,1-Dichloroethane	SPCC	50.0	55.2	ug/L	0.509	10.4	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	43.6	ug/L	0.438	12.8	20	
Xylenes		150	153	ug/L	0.679	2.23	20	
Acetone		50.0	58.5	ug/L	0.0329	17.1	20	
Benzene		50.0	53.3	ug/L	1.09	6.55	20	
Bromobenzene		50.0	48.3	ug/L	0.775	3.39	20	
Bromochloromethane		50.0	54.5	ug/L	0.160	8.95	20	
Bromodichloromethane		50.0	57.0	ug/L	0.458	13.9	20	
Bromomethane		50.0	36.7	ug/L	0.127	26.7	20	*
2-Butanone		50.0	48.2	ug/L	0.0399	3.53	20	
n-Butylbenzene		50.0	47.9	ug/L	2.69	4.27	20	
sec-Butylbenzene		50.0	48.0	ug/L	3.21	3.97	20	
tert-Butylbenzene		50.0	47.1	ug/L	0.524	5.78	20	
Carbon Disulfide		50.0	58.5	ug/L	0.990	17.0	20	
Carbon Tetrachloride		50.0	60.9	ug/L	0.560	21.8	20	*
Dibromochloromethane		50.0	52.0	ug/L	0.372	3.99	20	
Chloroethane		50.0	52.8	ug/L	0.169	5.64	20	
2-Chlorotoluene		50.0	49.6	ug/L	2.70	0.747	20	
4-Chlorotoluene		50.0	46.7	ug/L	2.30	6.56	20	
1,2-Dibromo-3-Chloropropane		50.0	45.0	ug/L	0.0907	9.95	20	
1,2-Dibromoethane		50.0	49.4	ug/L	0.241	1.19	20	
Dibromomethane		50.0	50.7	ug/L	0.137	1.43	20	
1,2-Dichlorobenzene		50.0	46.7	ug/L	1.28	6.56	20	
1,3-Dichlorobenzene		50.0	48.7	ug/L	1.50	2.60	20	
1,4-Dichlorobenzene		50.0	48.0	ug/L	1.49	4.08	20	
Dichlorodifluoromethane		50.0	53.9	ug/L	0.452	7.84	20	
1,2-Dichloroethane		50.0	58.1	ug/L	0.407	16.1	20	
cis-1,2-Dichloroethene		50.0	53.4	ug/L	0.306	6.71	20	
trans-1,2-Dichloroethene		50.0	54.3	ug/L	0.404	8.64	20	
1,3-Dichloropropane		50.0	48.3	ug/L	0.421	3.37	20	
2,2-Dichloropropane		50.0	63.7	ug/L	0.619	27.3	20	*
cis-1,3-Dichloropropene		50.0	55.8	ug/L	0.456	11.6	20	
trans-1,3-Dichloropropene		50.0	52.5	ug/L	0.546	5.05	20	

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060927 Run Date: 06/22/2016 Sample ID: WG573770-02
Instrument ID: HPMS8 Run Time: 15:41 Method: 8260B
File ID: 8M413163 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG573771 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	56.4	ug/L	0.445	12.8	20	
2-Hexanone		50.0	44.7	ug/L	0.0460	10.6	20	
Hexachlorobutadiene		50.0	48.0	ug/L	0.461	3.92	20	
Isopropylbenzene		50.0	52.2	ug/L	1.82	4.34	20	
p-Isopropyltoluene		50.0	48.7	ug/L	2.76	2.68	20	
4-Methyl-2-Pentanone		50.0	47.2	ug/L	0.0379	5.67	20	
Methylene Chloride		50.0	50.8	ug/L	0.261	1.57	20	
Naphthalene		50.0	43.2	ug/L	1.32	13.5	20	
n-Propylbenzene		50.0	48.6	ug/L	3.79	2.73	20	
Styrene		50.0	51.9	ug/L	1.12	3.79	20	
1,1,1,2-Tetrachloroethane		50.0	52.0	ug/L	0.421	3.93	20	
Tetrachloroethene		50.0	54.4	ug/L	0.362	8.81	20	
1,2,3-Trichlorobenzene		50.0	44.1	ug/L	0.765	11.7	20	
1,2,4-Trichlorobenzene		50.0	47.3	ug/L	0.971	5.49	20	
1,1,1-Trichloroethane		50.0	59.7	ug/L	0.618	19.4	20	
1,1,2-Trichloroethane		50.0	48.0	ug/L	0.235	4.02	20	
Trichlorofluoromethane		50.0	60.6	ug/L	0.655	21.2	20	*
1,2,3-Trichloropropane		50.0	45.8	ug/L	0.142	8.31	20	
1,2,4-Trimethylbenzene		50.0	48.9	ug/L	2.86	2.17	20	
1,3,5-Trimethylbenzene		50.0	49.8	ug/L	2.83	0.374	20	
o-Xylene		50.0	51.2	ug/L	0.673	2.41	20	
m-,p-Xylene		100	102	ug/L	0.686	2.14	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

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Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060927 Run Date: 06/23/2016 Sample ID: WG573990-02
Instrument ID: HPMS8 Run Time: 21:00 Method: 8260B
File ID: 8M413192 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG573991 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	54.9	ug/L	0.598	9.72	20	
1,1-Dichloroethene	CCC	50.0	54.2	ug/L	0.439	8.49	20	
1,2-Dichloropropane	CCC	50.0	49.4	ug/L	0.226	1.11	20	
Ethylbenzene	CCC	50.0	46.8	ug/L	0.536	6.46	20	
Toluene	CCC	50.0	47.3	ug/L	1.47	5.48	20	
Vinyl Chloride	CCC	50.0	56.0	ug/L	0.325	12.0	20	
Bromoform	SPCC	50.0	50.5	ug/L	0.214	0.904	20	
Chlorobenzene	SPCC	50.0	47.1	ug/L	0.986	5.76	20	
Chloromethane	SPCC	50.0	47.4	ug/L	0.232	5.29	20	
1,1-Dichloroethane	SPCC	50.0	53.1	ug/L	0.490	6.25	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	43.2	ug/L	0.433	13.7	20	
Xylenes		150	143	ug/L	0.633	4.33	20	
Acetone		50.0	55.7	ug/L	0.0313	11.4	20	
Benzene		50.0	51.7	ug/L	1.06	3.36	20	
Bromobenzene		50.0	48.2	ug/L	0.773	3.63	20	
Bromochloromethane		50.0	53.3	ug/L	0.157	6.63	20	
Bromodichloromethane		50.0	56.3	ug/L	0.452	12.6	20	
Bromomethane		50.0	44.2	ug/L	0.154	11.6	20	
2-Butanone		50.0	47.8	ug/L	0.0395	4.39	20	
n-Butylbenzene		50.0	47.6	ug/L	2.67	4.73	20	
sec-Butylbenzene		50.0	48.0	ug/L	3.21	3.91	20	
tert-Butylbenzene		50.0	46.7	ug/L	0.520	6.51	20	
Carbon Disulfide		50.0	55.6	ug/L	0.940	11.2	20	
Carbon Tetrachloride		50.0	60.0	ug/L	0.551	19.9	20	
Dibromochloromethane		50.0	49.7	ug/L	0.356	0.505	20	
Chloroethane		50.0	49.8	ug/L	0.159	0.424	20	
2-Chlorotoluene		50.0	47.6	ug/L	2.59	4.80	20	
4-Chlorotoluene		50.0	47.6	ug/L	2.34	4.71	20	
1,2-Dibromo-3-Chloropropane		50.0	44.8	ug/L	0.0902	10.5	20	
1,2-Dibromoethane		50.0	47.7	ug/L	0.233	4.68	20	
Dibromomethane		50.0	50.5	ug/L	0.137	0.985	20	
1,2-Dichlorobenzene		50.0	46.5	ug/L	1.28	7.08	20	
1,3-Dichlorobenzene		50.0	48.2	ug/L	1.49	3.65	20	
1,4-Dichlorobenzene		50.0	47.0	ug/L	1.46	5.94	20	
Dichlorodifluoromethane		50.0	52.4	ug/L	0.439	4.74	20	
1,2-Dichloroethane		50.0	58.3	ug/L	0.409	16.6	20	
cis-1,2-Dichloroethene		50.0	52.0	ug/L	0.298	3.98	20	
trans-1,2-Dichloroethene		50.0	52.6	ug/L	0.391	5.23	20	
1,3-Dichloropropane		50.0	46.4	ug/L	0.405	7.22	20	
2,2-Dichloropropane		50.0	61.6	ug/L	0.599	23.3	20	*
cis-1,3-Dichloropropene		50.0	54.4	ug/L	0.445	8.81	20	
trans-1,3-Dichloropropene		50.0	49.5	ug/L	0.515	0.990	20	

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060927 Run Date: 06/23/2016 Sample ID: WG573990-02
Instrument ID: HPMS8 Run Time: 21:00 Method: 8260B
File ID: 8M413192 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG573991 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	54.7	ug/L	0.431	9.40	20	
2-Hexanone		50.0	42.6	ug/L	0.0438	14.9	20	
Hexachlorobutadiene		50.0	49.1	ug/L	0.471	1.81	20	
Isopropylbenzene		50.0	49.8	ug/L	1.74	0.478	20	
p-Isopropyltoluene		50.0	48.6	ug/L	2.76	2.77	20	
4-Methyl-2-Pentanone		50.0	48.0	ug/L	0.0386	3.95	20	
Methylene Chloride		50.0	50.2	ug/L	0.258	0.364	20	
Naphthalene		50.0	43.5	ug/L	1.33	13.1	20	
n-Propylbenzene		50.0	48.3	ug/L	3.77	3.46	20	
Styrene		50.0	48.6	ug/L	1.05	2.85	20	
1,1,1,2-Tetrachloroethane		50.0	49.6	ug/L	0.402	0.773	20	
Tetrachloroethene		50.0	49.7	ug/L	0.331	0.579	20	
1,2,3-Trichlorobenzene		50.0	43.5	ug/L	0.754	13.0	20	
1,2,4-Trichlorobenzene		50.0	46.2	ug/L	0.949	7.59	20	
1,1,1-Trichloroethane		50.0	58.9	ug/L	0.609	17.8	20	
1,1,2-Trichloroethane		50.0	45.7	ug/L	0.224	8.57	20	
Trichloroethene		50.0	54.4	ug/L	0.298	8.88	20	
Trichlorofluoromethane		50.0	58.4	ug/L	0.630	16.7	20	
1,2,3-Trichloropropane		50.0	44.8	ug/L	0.139	10.3	20	
1,2,4-Trimethylbenzene		50.0	48.5	ug/L	2.84	2.95	20	
1,3,5-Trimethylbenzene		50.0	49.0	ug/L	2.78	2.08	20	
o-Xylene		50.0	47.1	ug/L	0.619	5.74	20	
m-,p-Xylene		100	96.4	ug/L	0.647	3.63	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

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Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060927
Instrument ID: HPMS8
Workgroup (AAB#): WG573645

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	288225	539116	778260
Upper Limit	NA	NA	576450	1078232	1556520
Lower Limit	NA	NA	144113	269558	389130
L16060927-04	1.00	01	289525	517764	676177
L16060927-05	1.00	01	324131	585008	753725
WG573645-01	1.00	01	336359	605610	793415
WG573645-02	1.00	01	338876	608259	813093
WG573645-03	1.00	01	337211	606723	801570

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
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Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060927
Instrument ID: HPMS8
Workgroup (AAB#): WG573771

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	288225	539116	778260
Upper Limit	NA	NA	576450	1078232	1556520
Lower Limit	NA	NA	144113	269558	389130
L16060927-02	1.00	01	305295	540795	719947
WG573771-01	1.00	01	305326	554912	723354
WG573771-02	1.00	01	303556	551241	717279

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
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Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060927
Instrument ID: HPMS8
Workgroup (AAB#): WG573991

ICAL CCV Number: WG568561-08
CAL ID: HPMS8-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	288225	539116	778260
Upper Limit	NA	NA	576450	1078232	1556520
Lower Limit	NA	NA	144113	269558	389130
L16060927-01	1.00	01	289917	516753	665575
L16060927-02	200	DL01	298222	542068	693727
L16060927-03	1.00	01	285769	514724	664173
WG573991-01	1.00	01	300577	547838	695599
WG573991-02	1.00	01	307359	541017	709070

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4833868
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Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060927
Instrument ID: HPMS8
Workgroup (AAB#): WG573645

ICAL CCV Number: WG568561-08
CAL ID: HPMS8-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	17.6	14.58	10.71
Upper Limit	NA	NA	18.1	15.08	11.21
Lower Limit	NA	NA	17.1	14.08	10.21
L16060927-04	1.00	01	17.6	14.57	10.71
L16060927-05	1.00	01	17.59	14.58	10.71
WG573645-01	1.00	01	17.6	14.57	10.71
WG573645-02	1.00	01	17.6	14.57	10.71
WG573645-03	1.00	01	17.6	14.57	10.71

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4833870
Report generated: 06/30/2016 15:03

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060927
Instrument ID: HPMS8
Workgroup (AAB#): WG573771

ICAL CCV Number: WG568561-08
CAL ID: HPMS8-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	17.6	14.58	10.71
Upper Limit	NA	NA	18.1	15.08	11.21
Lower Limit	NA	NA	17.1	14.08	10.21
L16060927-02	1.00	01	17.6	14.57	10.71
WG573771-01	1.00	01	17.6	14.57	10.71
WG573771-02	1.00	01	17.6	14.57	10.71

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4833870
Report generated: 06/30/2016 15:03

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060927
Instrument ID: HPMS8
Workgroup (AAB#): WG573991

ICAL CCV Number: WG568561-08
CAL ID: HPMS8-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	17.6	14.58	10.71
Upper Limit	NA	NA	18.1	15.08	11.21
Lower Limit	NA	NA	17.1	14.08	10.21
L16060927-01	1.00	01	17.6	14.58	10.71
L16060927-02	200	DL01	17.6	14.57	10.71
L16060927-03	1.00	01	17.6	14.57	10.71
WG573991-01	1.00	01	17.6	14.57	10.71
WG573991-02	1.00	01	17.6	14.57	10.71

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4833870
Report generated: 06/30/2016 15:03

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413199.D Vial: 10
Acq On : 24 Jun 2016 00:24 Operator: FJB
Sample : L16060927-01 C 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 24 00:46:08 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	665575	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	516753	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	289917	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	199022	27.8312 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.32%		
43) 1,2-Dichloroethane-d4	10.30	65	221801	28.9267 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 115.72%		
58) Toluene-d8	12.68	98	701354	25.9334 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.72%		
80) p-Bromofluorobenzene	16.07	95	301623	25.1256 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.52%		

Target Compounds					Qvalue
3) Chloromethane	3.62	50	1785	0.2740 ug/L	80
13) Acetone	6.25	43	7239	9.6670 ug/L	93
20) Carbon Disulfide	7.29	76	4782	0.2123 ug/L #	74
28) Ethyl-Tert-Butyl ether	8.61	59	5727	0.3468 ug/L #	45
29) 2-Butanone	8.89	43	210	0.1909 ug/L #	47

(#) = qualifier out of range (m) = manual integration
8M413199.D 8260WT.M Mon Jun 27 12:41:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413199.D Vial: 10
Acq On : 24 Jun 2016 00:24 Operator: FJB
Sample : L16060927-01 C 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 24 0:46 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

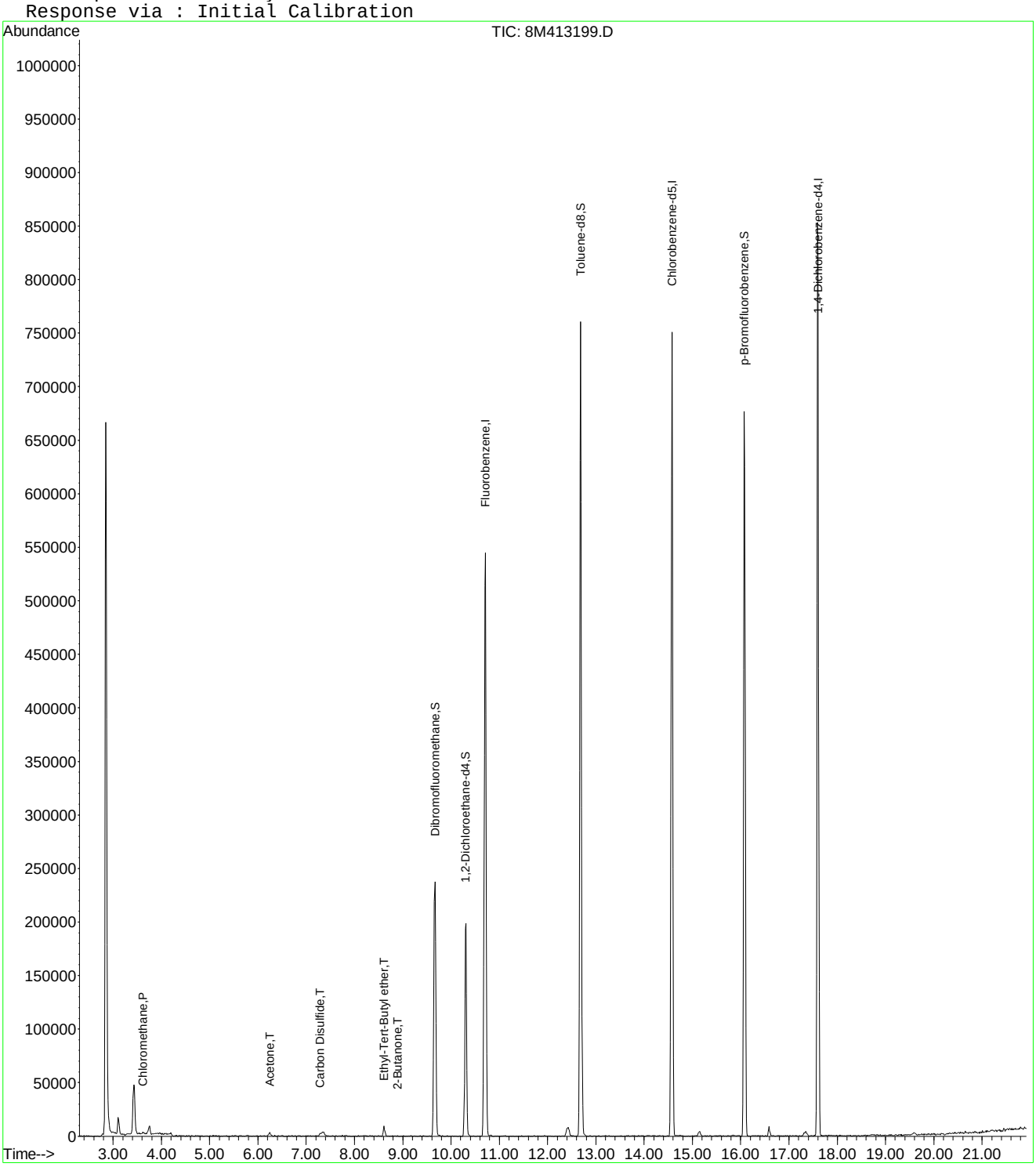

8M413199.D 8260WT.M Mon Jun 27 12:41:50 2016 Page 2

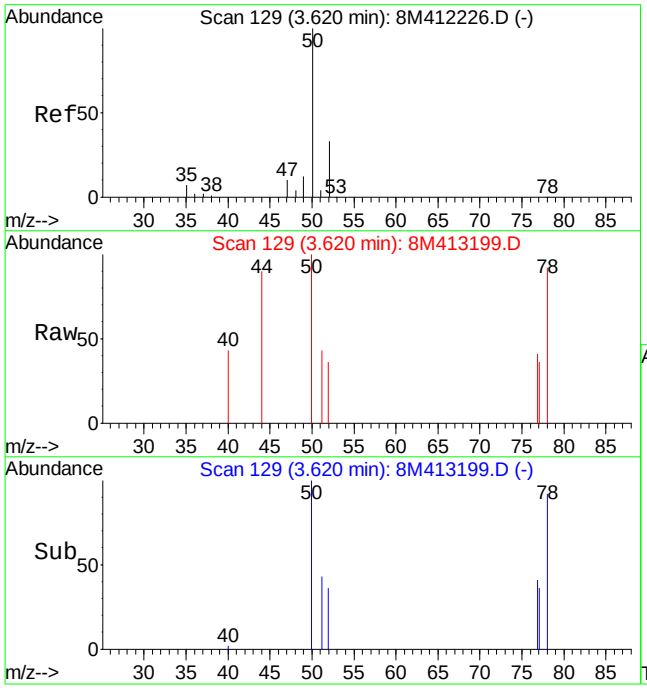

#3
Chloromethane
Concen: 0.27 ug/L
RT: 3.62 min Scan# 129
Delta R.T. 0.00 min
Lab File: 8M413199.D
Acq: 24 Jun 2016 00:24

Tgt Ion: 50 Resp: 1785

Ion	Ratio	Lower	Upper
50	100		
52	22.0	19.9	46.3

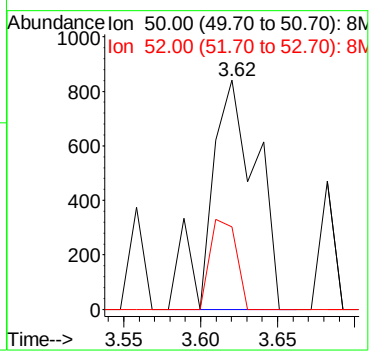

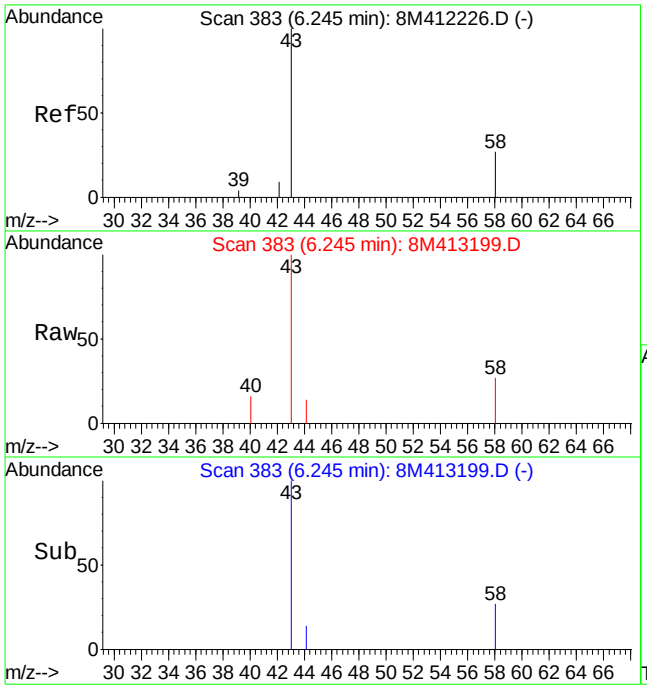

#13
Acetone
Concen: 9.67 ug/L
RT: 6.25 min Scan# 383
Delta R.T. 0.00 min
Lab File: 8M413199.D
Acq: 24 Jun 2016 00:24

Tgt Ion: 43 Resp: 7239

Ion	Ratio	Lower	Upper
43	100		
58	21.7	15.2	35.4

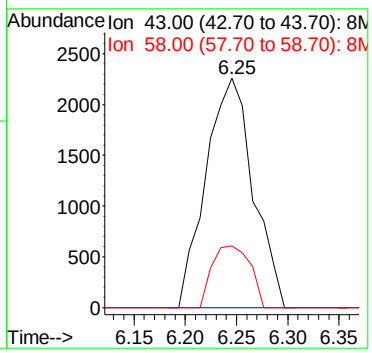

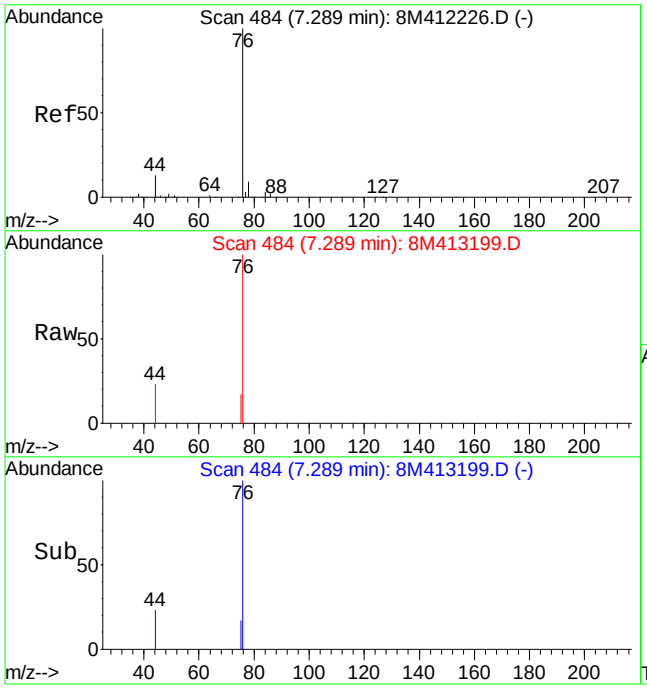

#20
Carbon Disulfide
Concen: 0.21 ug/L
RT: 7.29 min Scan# 484
Delta R.T. 0.00 min
Lab File: 8M413199.D
Acq: 24 Jun 2016 00:24

Tgt Ion: 76 Resp: 4782

Ion	Ratio	Lower	Upper
76	100		
78	0.0	5.6	13.0#

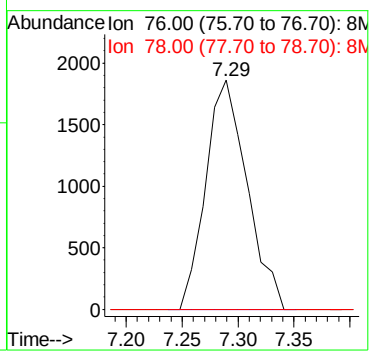

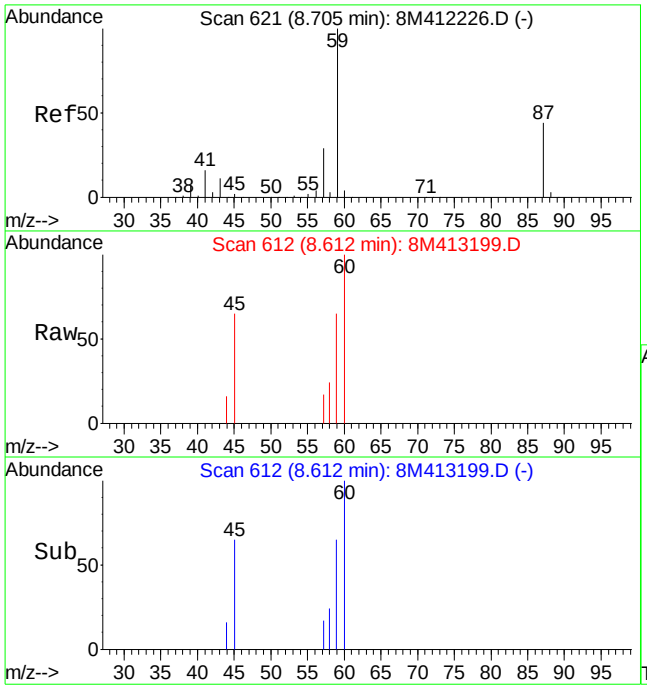

#28
Ethyl-Tert-Butyl ether
Concen: 0.35 ug/L
RT: 8.61 min Scan# 612
Delta R.T. -0.09 min
Lab File: 8M413199.D
Acq: 24 Jun 2016 00:24

Tgt Ion: 59 Resp: 5727

Ion	Ratio	Lower	Upper
59	100		
87	0.0	26.8	62.4#
57	10.1	17.4	40.6#

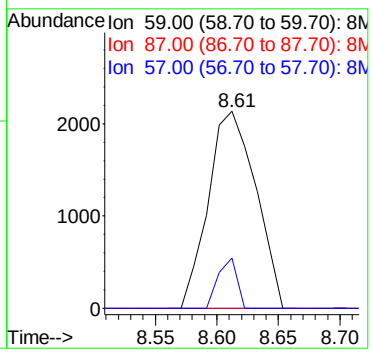

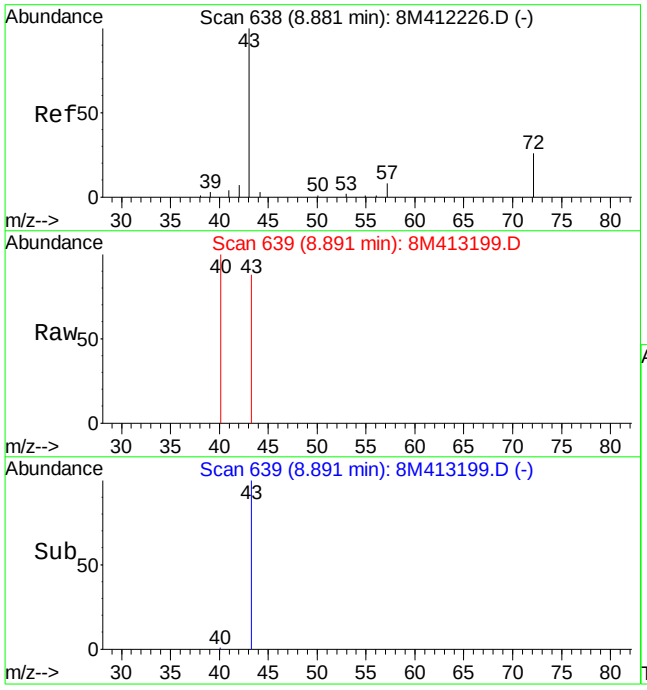

#29
2-Butanone
Concen: 0.19 ug/L
RT: 8.89 min Scan# 639
Delta R.T. 0.01 min
Lab File: 8M413199.D
Acq: 24 Jun 2016 00:24

Tgt Ion: 43 Resp: 210

Ion	Ratio	Lower	Upper
43	100		
72	0.0	16.4	38.4#

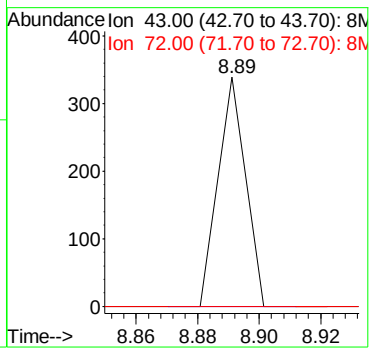

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062216\8M413169.D Vial: 9
Acq On : 22 Jun 2016 18:40 Operator: FJB
Sample : L16060927-02 B 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 22 19:02:37 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	719947	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	540795	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	305295	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	215671	27.8817 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.52%		
43) 1,2-Dichloroethane-d4	10.30	65	237782	28.6689 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 114.68%		
58) Toluene-d8	12.68	98	745228	26.3306 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.32%		
80) p-Bromofluorobenzene	16.08	95	314218	24.8563 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.44%		

Target Compounds					Qvalue
4) Vinyl Chloride	3.84	62	49252	5.8917 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	445801	60.9719 ug/L	96
13) Acetone	6.16	43	5498	6.7876 ug/L #	50
14) 1,1-Dichloroethene	6.47	61	117459	10.0895 ug/L	99
16) Dimethyl Sulfide	6.74	62	3777	0.9074 ug/L	92
19) Methylene Chloride	7.26	84	1895	0.2558 ug/L	88
20) Carbon Disulfide	7.30	76	3368	0.1382 ug/L #	74
23) trans-1,2-Dichloroethene	7.70	61	43691	4.0851 ug/L	95
27) 1,1-Dichloroethane	8.32	63	14036	1.0567 ug/L	94
32) cis-1,2-Dichloroethene	9.17	96	1920731	232.4198 ug/L	85
33) Chloroform	9.37	83	85451	5.4486 ug/L	99
36) Tetrahydrofuran	9.63	42	202	0.2577 ug/L #	24
39) Cyclohexane	9.94	56	1842	0.1786 ug/L #	76
45) 1,2-Dichloroethane	10.42	62	2158475	213.8341 ug/L	93
46) Benzene	10.47	78	47122	1.5934 ug/L #	1
47) Trichloroethene	11.21	130	16920395	2145.1934 ug/L	97
48) Methylcyclohexane	11.21	83	503714	42.0369 ug/L #	1
63) 1,1,2-Trichloroethane	13.18	97	4548	0.8585 ug/L	85
66) Tetrachloroethene	13.60	164	8783	1.2210 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M413169.D 8260WT.M Mon Jun 27 12:40:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062216\8M413169.D Vial: 9
Acq On : 22 Jun 2016 18:40 Operator: FJB
Sample : L16060927-02 B 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 22 19:02 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

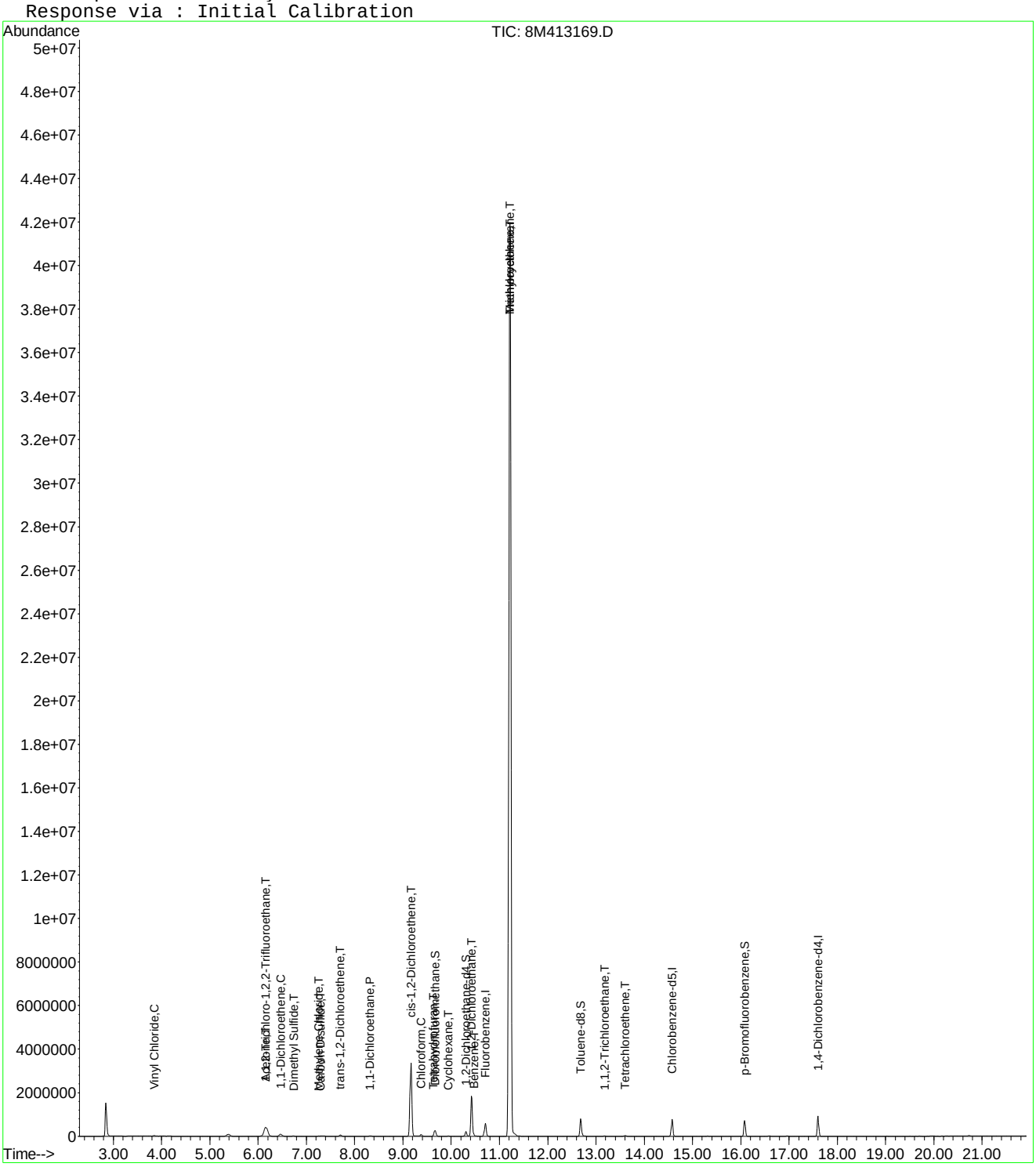

8M413169.D 8260WT.M Mon Jun 27 12:40:11 2016 Page 2

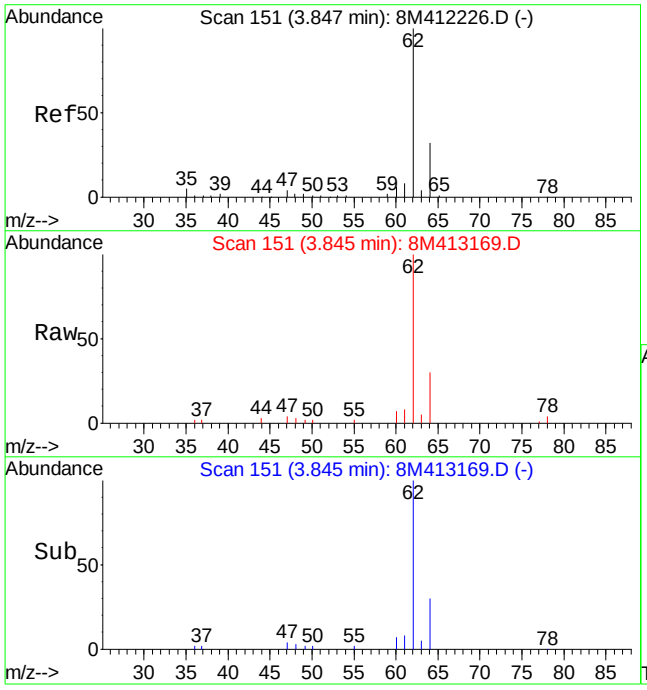

#4
Vinyl Chloride
Concen: 5.89 ug/L
RT: 3.84 min Scan# 151
Delta R.T. -0.00 min
Lab File: 8M413169.D
Acq: 22 Jun 2016 18:40

Tgt Ion: 62 Resp: 49252

Ion	Ratio	Lower	Upper
62	100		
64	31.9	19.3	45.1

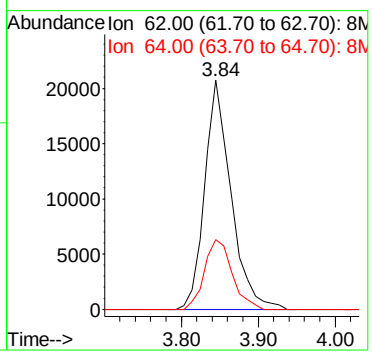

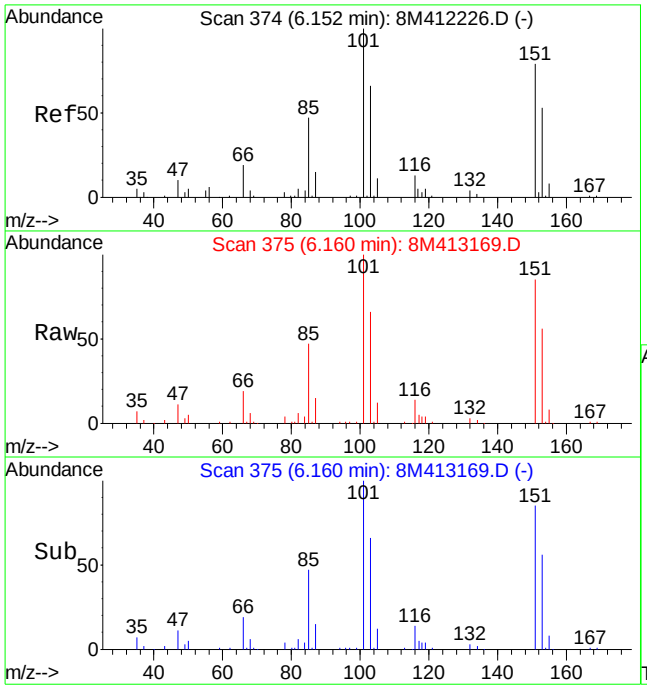

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 60.97 ug/L
RT: 6.16 min Scan# 375
Delta R.T. 0.01 min
Lab File: 8M413169.D
Acq: 22 Jun 2016 18:40

Tgt Ion:101 Resp: 445801

Ion	Ratio	Lower	Upper
101	100		
151	84.2	40.2	120.2

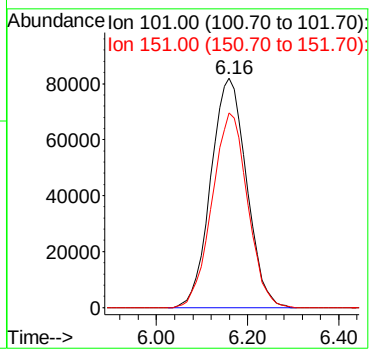

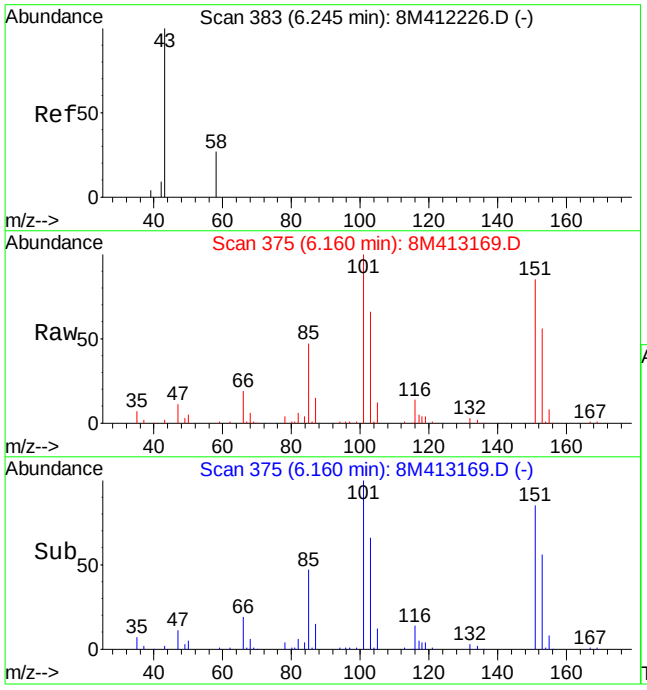

#13
Acetone
Concen: 6.79 ug/L
RT: 6.16 min Scan# 375
Delta R.T. -0.09 min
Lab File: 8M413169.D
Acq: 22 Jun 2016 18:40

Tgt Ion: 43 Resp: 5498

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.2	35.4#

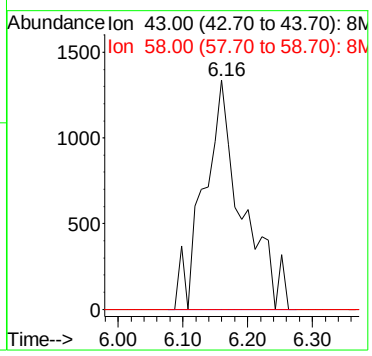

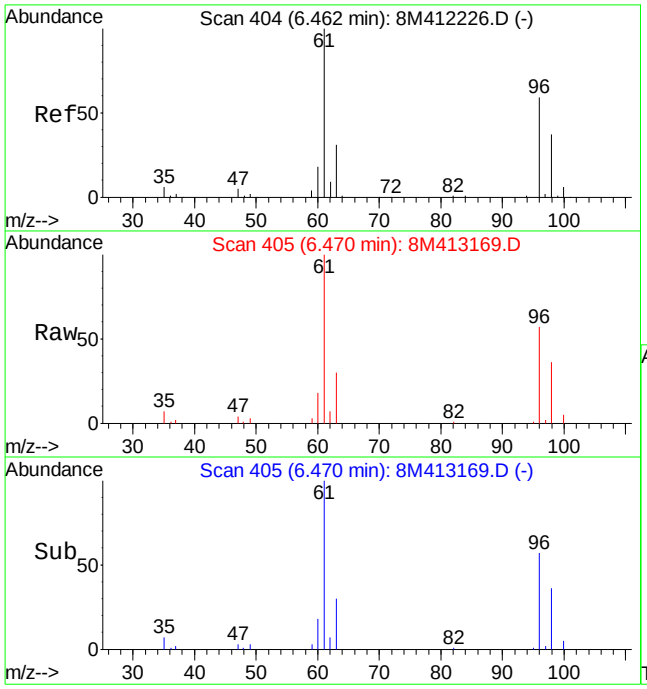

#14
1,1-Dichloroethene
Concen: 10.09 ug/L
RT: 6.47 min Scan# 405
Delta R.T. 0.01 min
Lab File: 8M413169.D
Acq: 22 Jun 2016 18:40

Tgt Ion: 61 Resp: 117459

Ion	Ratio	Lower	Upper
61	100		
96	58.4	34.6	80.8

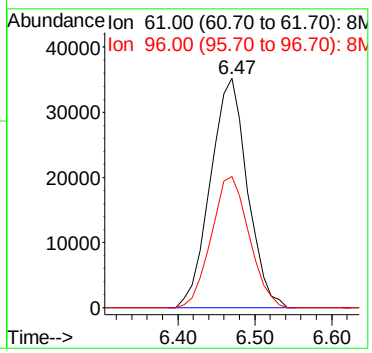

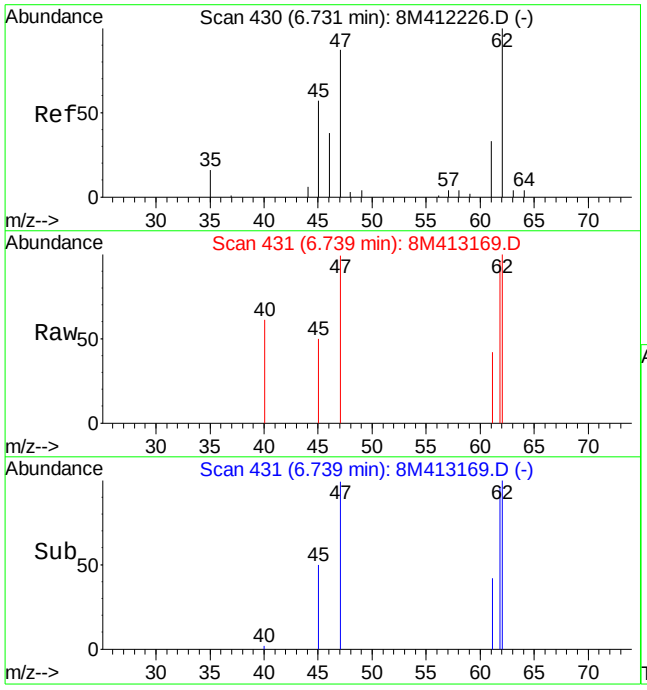

#16
Dimethyl Sulfide
Concen: 0.91 ug/L
RT: 6.74 min Scan# 431
Delta R.T. 0.01 min
Lab File: 8M413169.D
Acq: 22 Jun 2016 18:40

Tgt Ion: 62 Resp: 3777

Ion	Ratio	Lower	Upper
62	100		
47	81.0	53.2	124.0

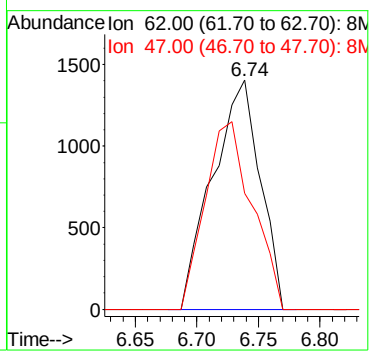

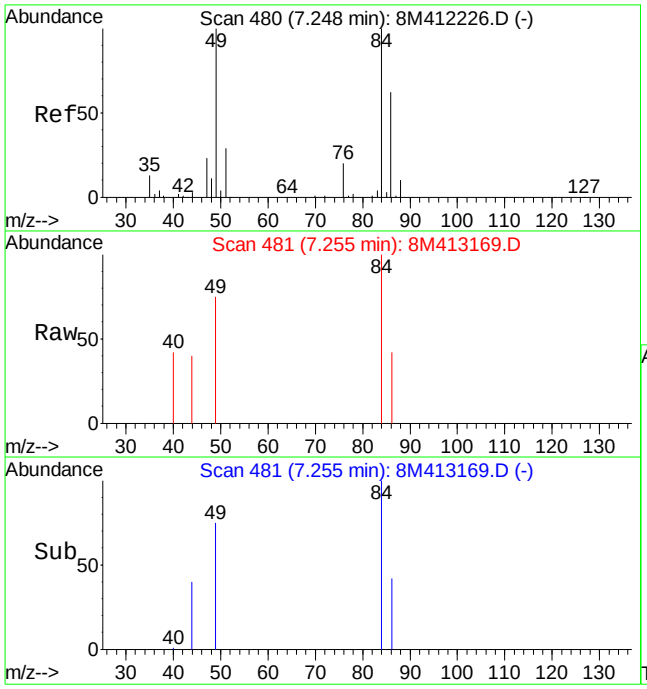

#19
Methylene Chloride
Concen: 0.26 ug/L
RT: 7.26 min Scan# 481
Delta R.T. 0.01 min
Lab File: 8M413169.D
Acq: 22 Jun 2016 18:40

Tgt Ion: 84 Resp: 1895

Ion	Ratio	Lower	Upper
84	100		
49	88.8	60.5	141.3

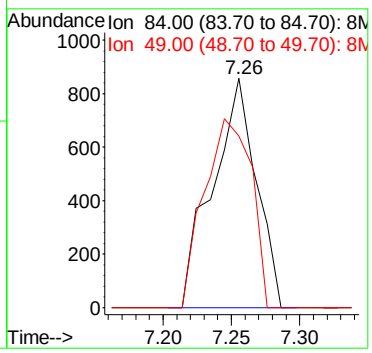

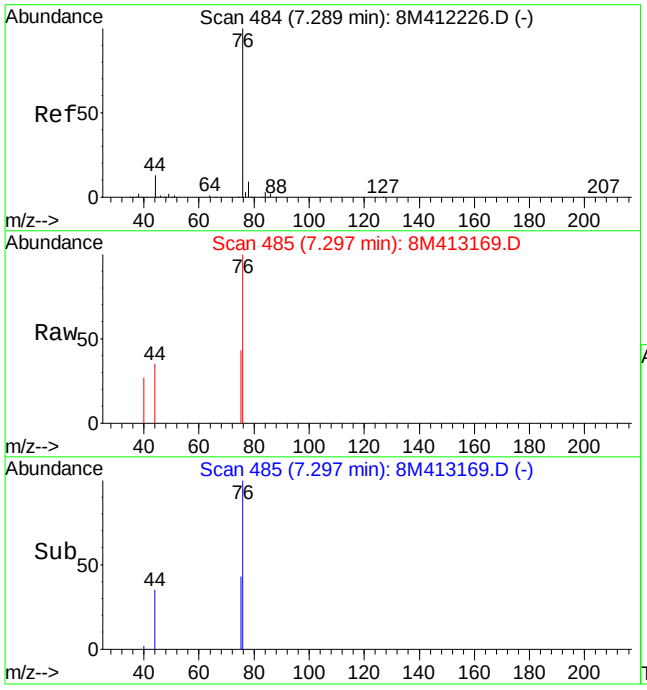

#20
Carbon Disulfide
Concen: 0.14 ug/L
RT: 7.30 min Scan# 485
Delta R.T. 0.01 min
Lab File: 8M413169.D
Acq: 22 Jun 2016 18:40

Tgt Ion: 76 Resp: 3368

Ion	Ratio	Lower	Upper
76	100		
78	0.0	5.6	13.0#

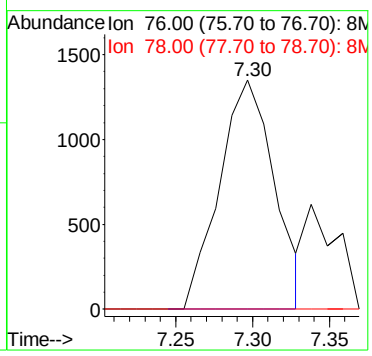

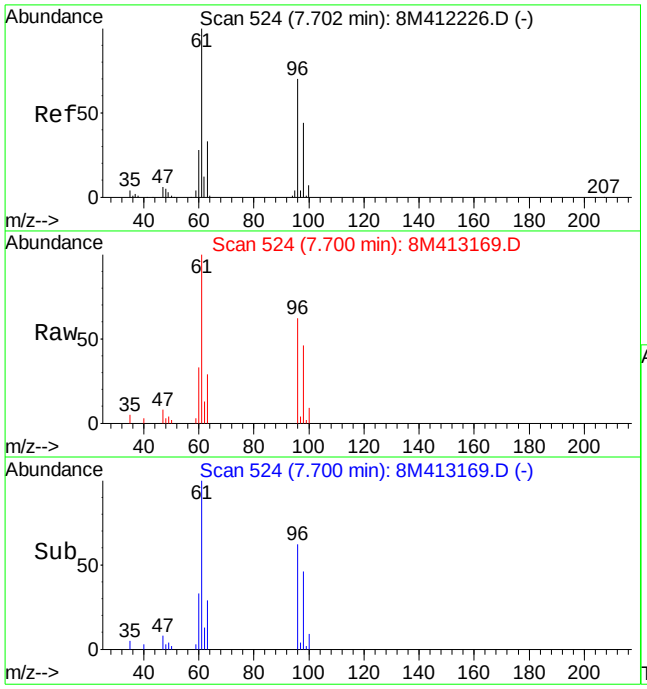

#23
trans-1,2-Dichloroethene
Concen: 4.09 ug/L
RT: 7.70 min Scan# 524
Delta R.T. -0.00 min
Lab File: 8M413169.D
Acq: 22 Jun 2016 18:40

Tgt Ion: 61 Resp: 43691

Ion	Ratio	Lower	Upper
61	100		
96	65.9	41.8	97.4

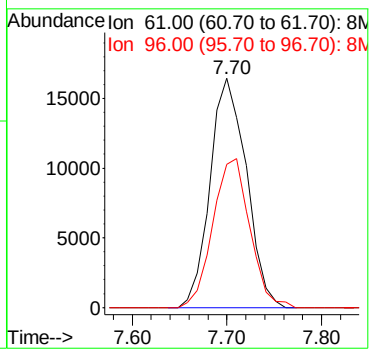

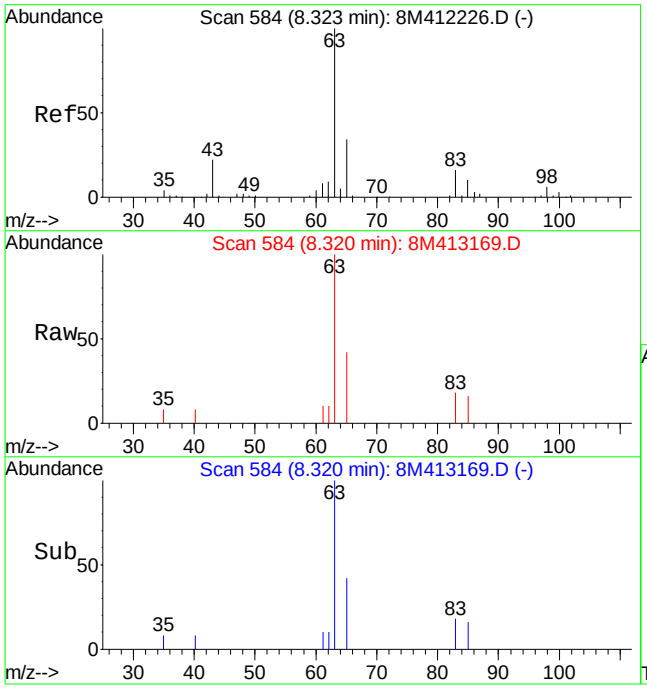

#27
1,1-Dichloroethane
Concen: 1.06 ug/L
RT: 8.32 min Scan# 584
Delta R.T. -0.00 min
Lab File: 8M413169.D
Acq: 22 Jun 2016 18:40

Tgt Ion: 63 Resp: 14036

Ion	Ratio	Lower	Upper
63	100		
65	29.7	20.2	47.0
83	13.2	9.1	21.1

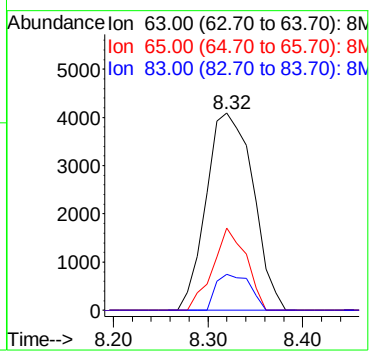

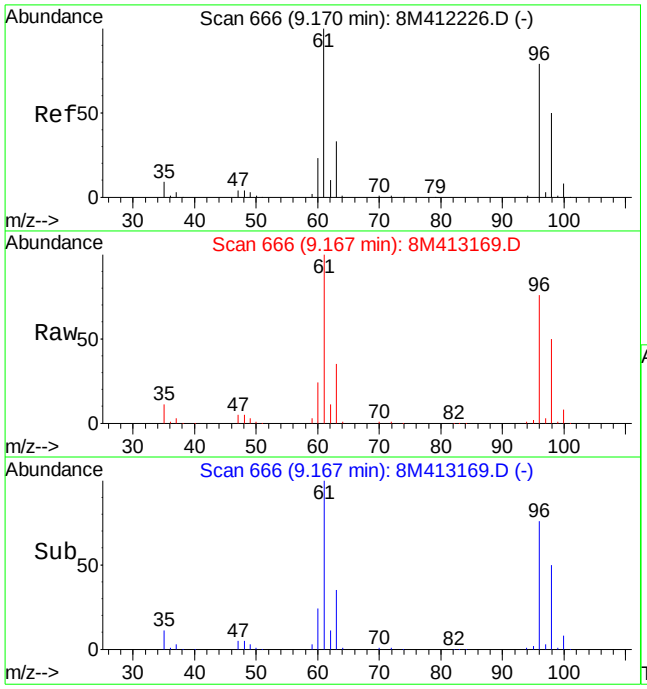

#32
cis-1,2-Dichloroethene
Concen: 232.42 ug/L
RT: 9.17 min Scan# 666
Delta R.T. -0.00 min
Lab File: 8M413169.D
Acq: 22 Jun 2016 18:40

Tgt Ion: 96 Resp: 1920731

Ion	Ratio	Lower	Upper
96	100		
61	132.6	91.5	213.5

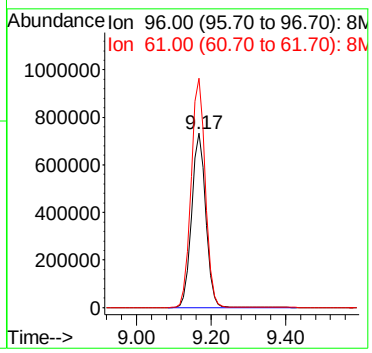

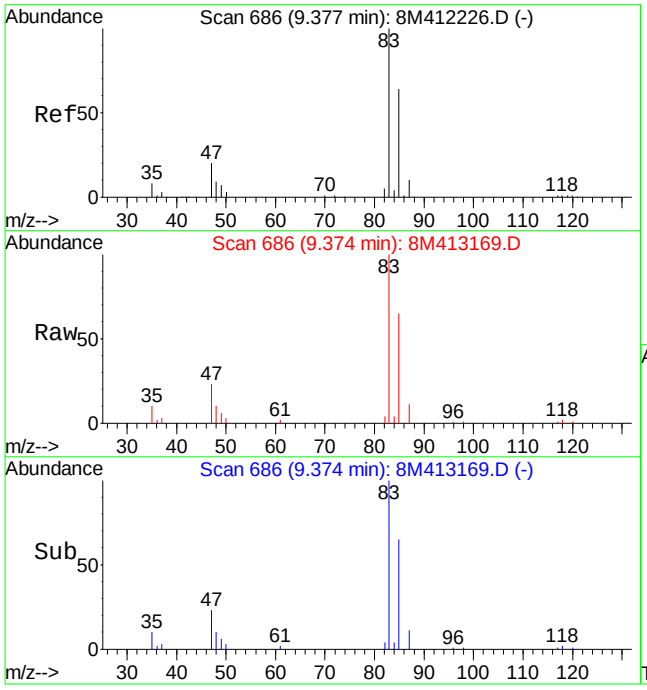

#33
Chloroform
Concen: 5.45 ug/L
RT: 9.37 min Scan# 686
Delta R.T. -0.00 min
Lab File: 8M413169.D
Acq: 22 Jun 2016 18:40

Tgt Ion: 83 Resp: 85451

Ion	Ratio	Lower	Upper
83	100		
85	63.6	37.5	87.5

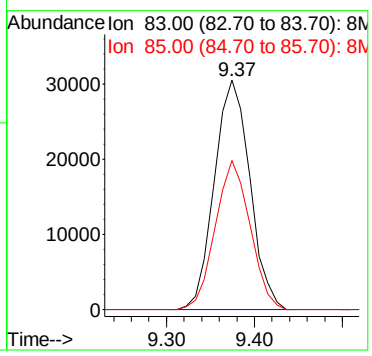

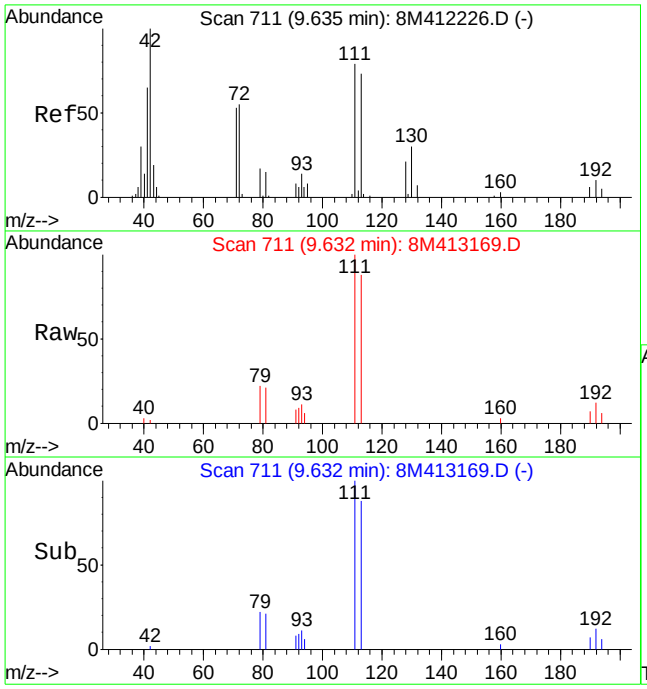

#36
Tetrahydrofuran
Concen: 0.26 ug/L
RT: 9.63 min Scan# 711
Delta R.T. -0.00 min
Lab File: 8M413169.D
Acq: 22 Jun 2016 18:40

Tgt Ion: 42 Resp: 202

Ion	Ratio	Lower	Upper
42	100		
72	0.0	33.8	78.8#
71	0.0	32.0	74.8#

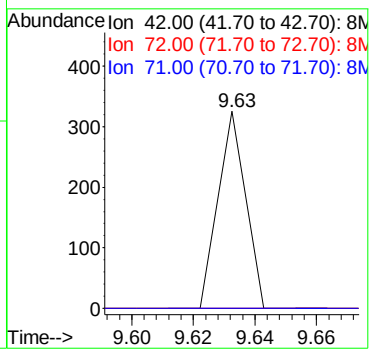

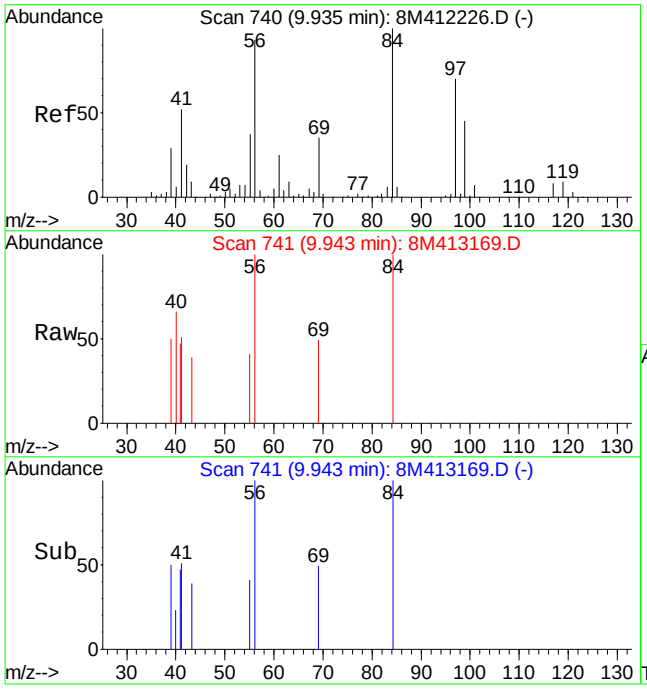

#39
Cyclohexane
Concen: 0.18 ug/L
RT: 9.94 min Scan# 741
Delta R.T. 0.01 min
Lab File: 8M413169.D
Acq: 22 Jun 2016 18:40

Tgt Ion: 56 Resp: 1842

Ion	Ratio	Lower	Upper
56	100		
84	88.3	64.5	150.5
69	13.0	22.0	51.4#

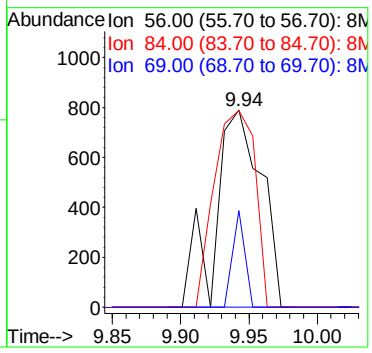

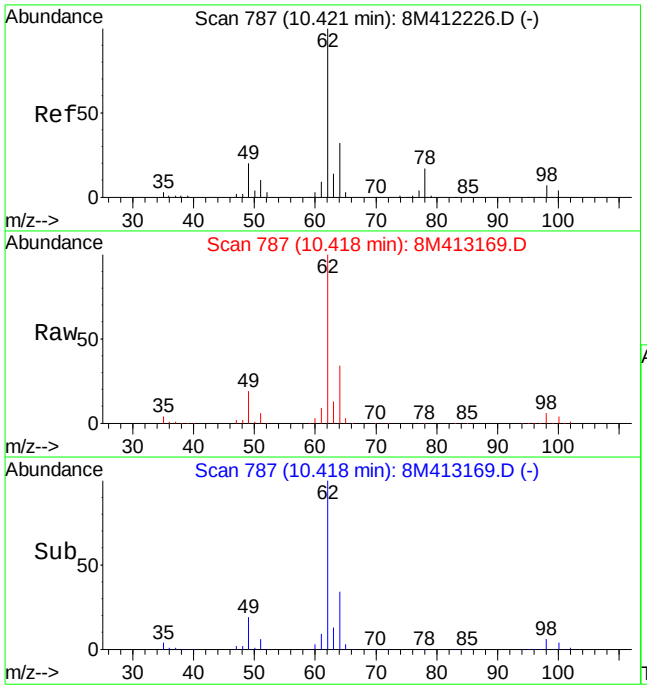

#45
1,2-Dichloroethane
Concen: 213.83 ug/L
RT: 10.42 min Scan# 787
Delta R.T. -0.00 min
Lab File: 8M413169.D
Acq: 22 Jun 2016 18:40

Tgt Ion: 62 Resp: 2158475

Ion	Ratio	Lower	Upper
62	100		
64	33.2	19.6	45.6
49	18.7	15.5	36.1

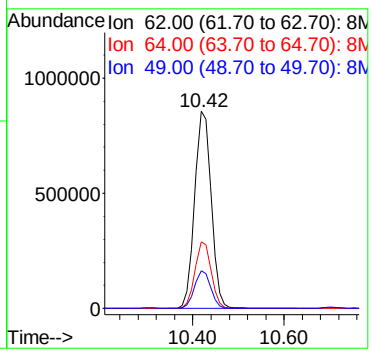

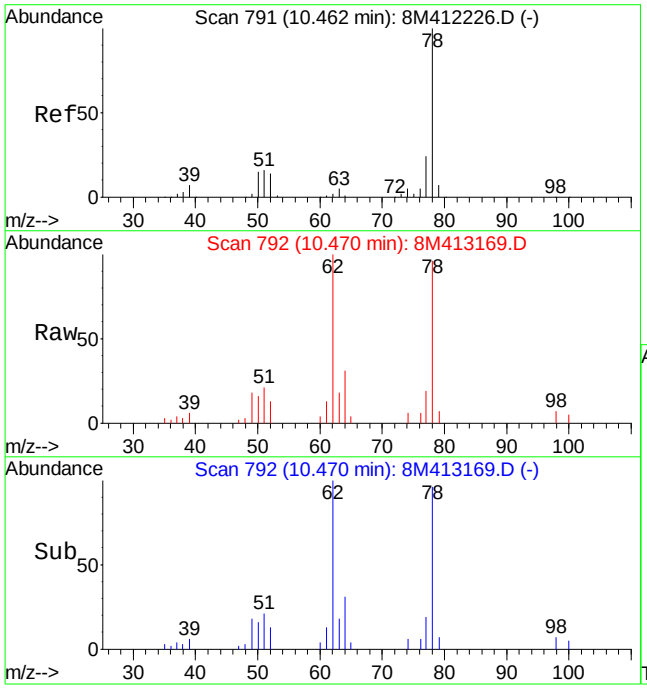

#46
Benzene
Concen: 1.59 ug/L
RT: 10.47 min Scan# 792
Delta R.T. 0.01 min
Lab File: 8M413169.D
Acq: 22 Jun 2016 18:40

Tgt Ion: 78 Resp: 47122

Ion	Ratio	Lower	Upper
78	100		
52	16.3	8.4	19.6
51	286.4	10.9	25.5#

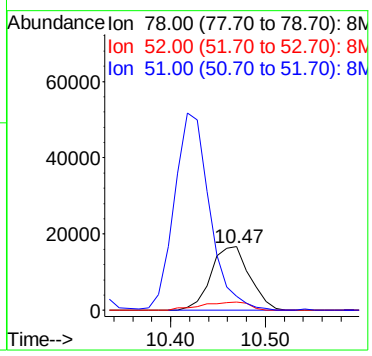

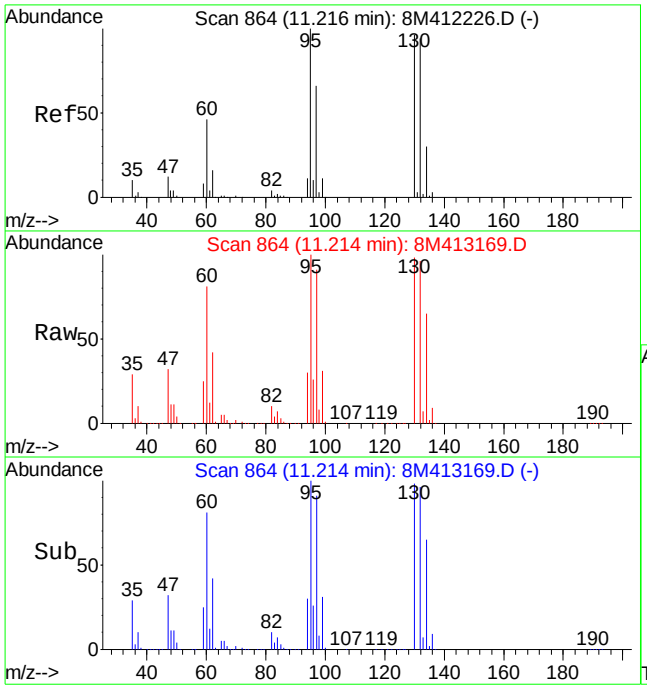

#47
Trichloroethene
Concen: 2145.19 ug/L
RT: 11.21 min Scan# 864
Delta R.T. -0.00 min
Lab File: 8M413169.D
Acq: 22 Jun 2016 18:40

Tgt Ion:130 Resp:16920395

Ion	Ratio	Lower	Upper
130	100		
132	98.2	58.0	135.2
95	103.0	64.9	151.5

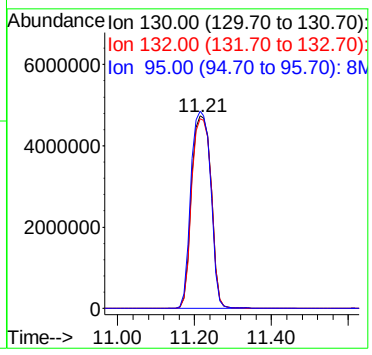

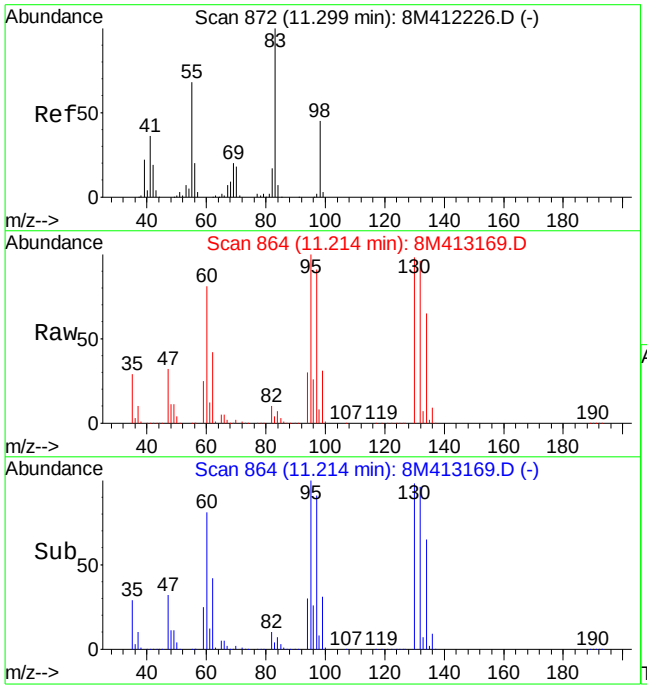

#48
Methylcyclohexane
Concen: 42.04 ug/L
RT: 11.21 min Scan# 864
Delta R.T. -0.09 min
Lab File: 8M413169.D
Acq: 22 Jun 2016 18:40

Tgt Ion: 83 Resp: 503714

Ion	Ratio	Lower	Upper
83	100		
55	0.1	40.9	95.3#
98	199.2	28.1	65.7#

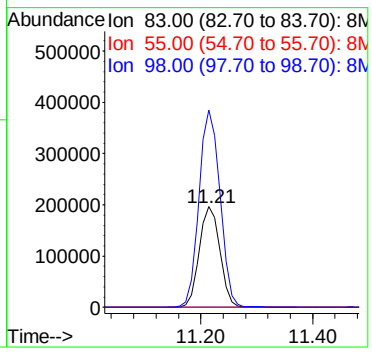

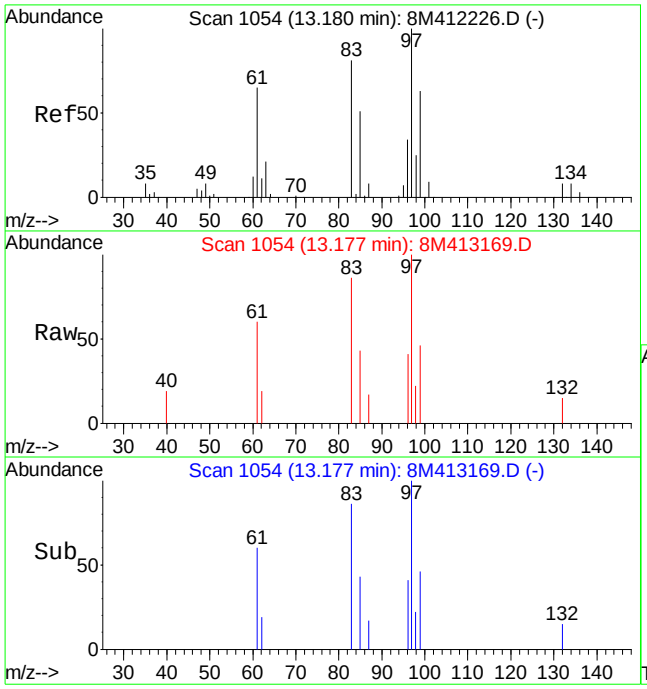

#63
1,1,2-Trichloroethane
Concen: 0.86 ug/L
RT: 13.18 min Scan# 1054
Delta R.T. -0.00 min
Lab File: 8M413169.D
Acq: 22 Jun 2016 18:40

Tgt Ion: 97 Resp: 4548

Ion	Ratio	Lower	Upper
97	100		
83	70.9	50.9	118.9

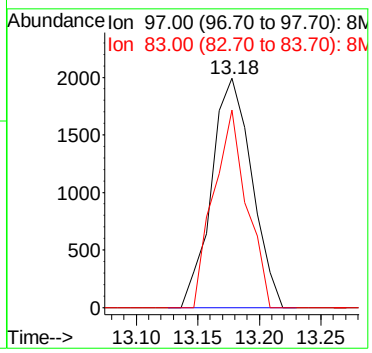

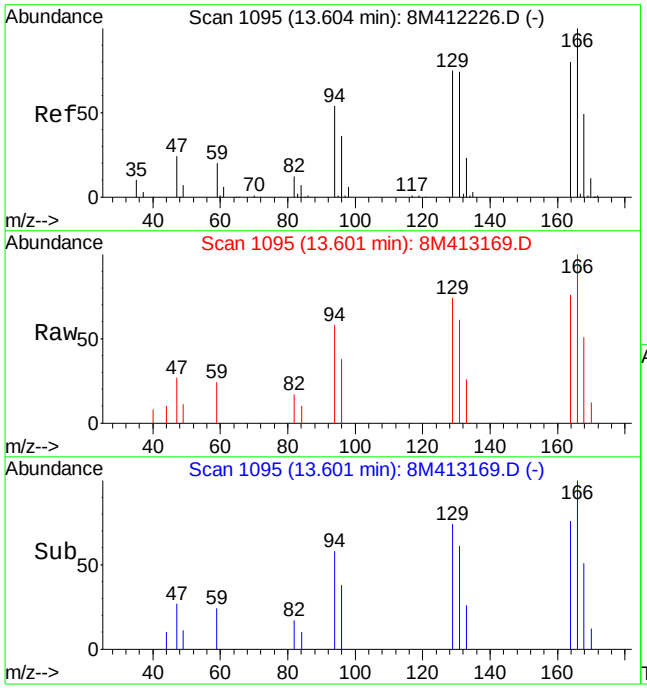

#66
Tetrachloroethene
Concen: 1.22 ug/L
RT: 13.60 min Scan# 1095
Delta R.T. -0.00 min
Lab File: 8M413169.D
Acq: 22 Jun 2016 18:40

Tgt Ion:164 Resp: 8783

Ion	Ratio	Lower	Upper
164	100		
129	98.0	56.6	132.2
94	70.5	40.7	95.1

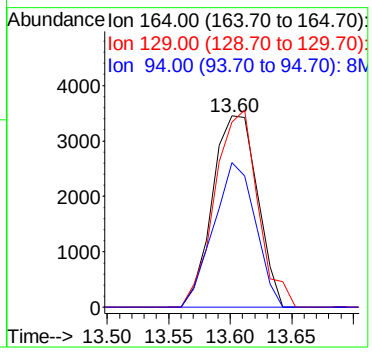

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413196.D Vial: 7
Acq On : 23 Jun 2016 22:56 Operator: FJB
Sample : L16060927-02 200X C 826-LOW D1 Inst : HPMS8
Misc : 1,200 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 23:18:55 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	693727	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	542068	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	298222	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	209484	28.1054 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 112.44%		
43) 1,2-Dichloroethane-d4	10.30	65	232136	29.0460 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 116.20%		
58) Toluene-d8	12.68	98	719106	25.3480 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.40%		
80) p-Bromofluorobenzene	16.07	95	310834	25.1718 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.68%		

Target Compounds

					Qvalue
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1124	0.1595 ug/L	69
19) Methylene Chloride	7.25	84	1850	0.2591 ug/L	94
20) Carbon Disulfide	7.29	76	13434	0.5723 ug/L #	80
32) cis-1,2-Dichloroethene	9.17	96	9050	1.1365 ug/L	83
45) 1,2-Dichloroethane	10.42	62	10312	1.0602 ug/L	91
47) Trichloroethene	11.22	130	145308	19.1187 ug/L	99
48) Methylcyclohexane	11.21	83	1919	0.1662 ug/L #	1
51) 1,4-Dioxane	11.70	88	888	27.8668 ug/L #	26
98) 1,2,4-Trichlorobenzene	20.28	180	1884	0.1538 ug/L #	76
100) Naphthalene	20.64	128	6385	0.3508 ug/L	99
101) 1,2,3-Trichlorobenzene	20.96	180	1289	0.1247 ug/L #	76

(#) = qualifier out of range (m) = manual integration
8M413196.D 8260WT.M Mon Jun 27 12:41:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413196.D Vial: 7
Acq On : 23 Jun 2016 22:56 Operator: FJB
Sample : L16060927-02 200X C 826-LOW D1 Inst : HPMS8
Misc : 1,200 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 23:18 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

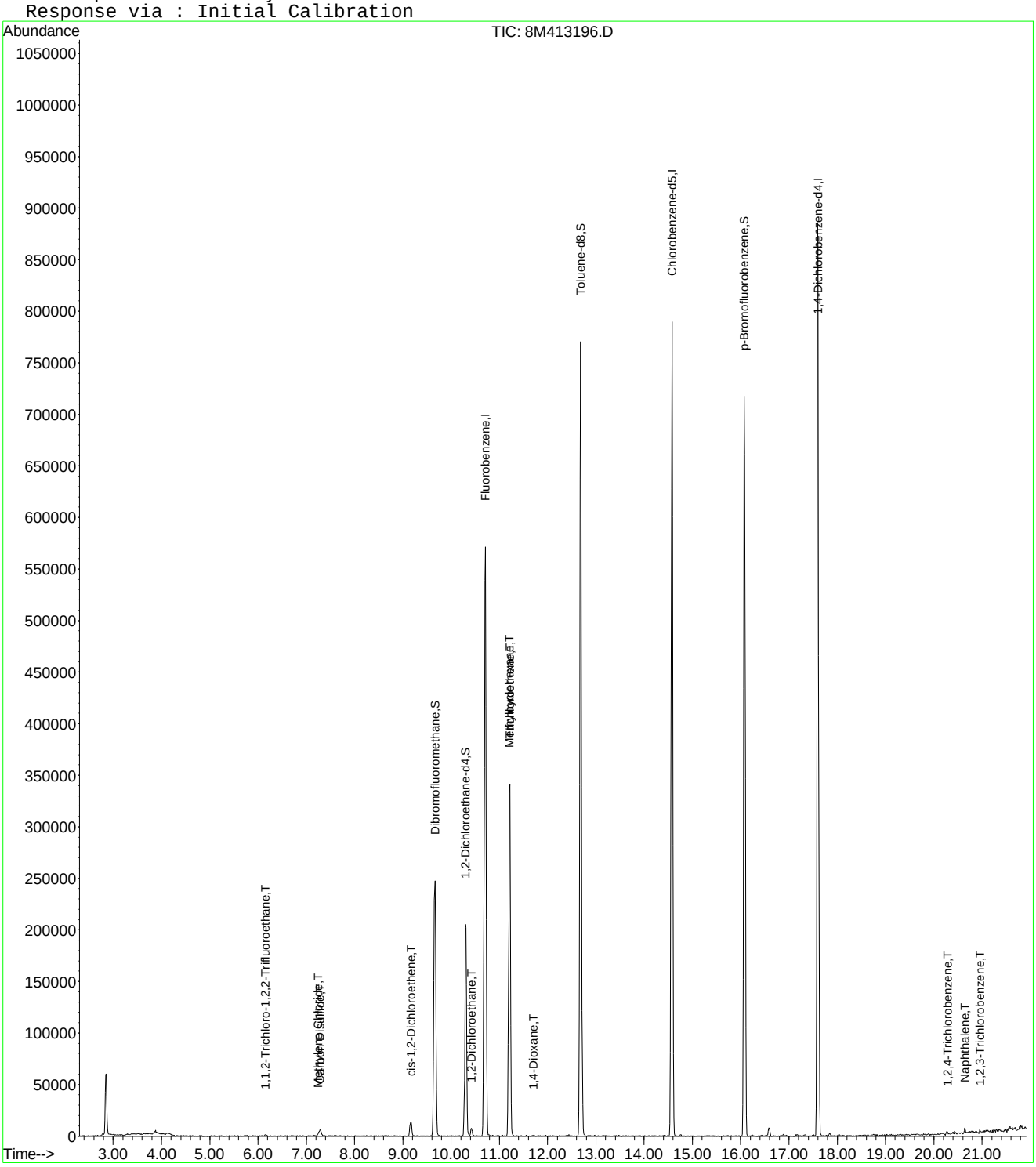

8M413196.D 8260WT.M Mon Jun 27 12:41:36 2016 Page 2

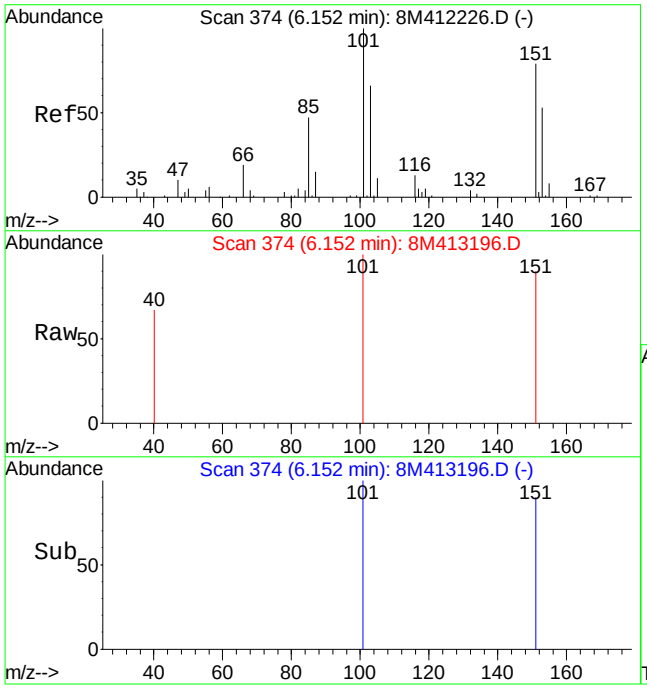

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 0.16 ug/L
RT: 6.15 min Scan# 374
Delta R.T. -0.00 min
Lab File: 8M413196.D
Acq: 23 Jun 2016 22:56

Tgt Ion:101 Resp: 1124

Ion	Ratio	Lower	Upper
101	100		
151	52.9	40.2	120.2

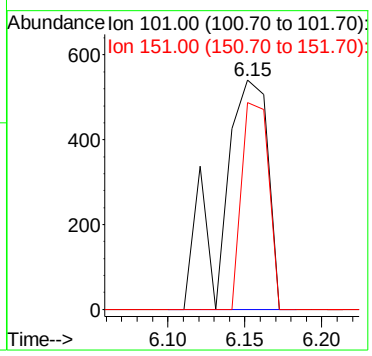

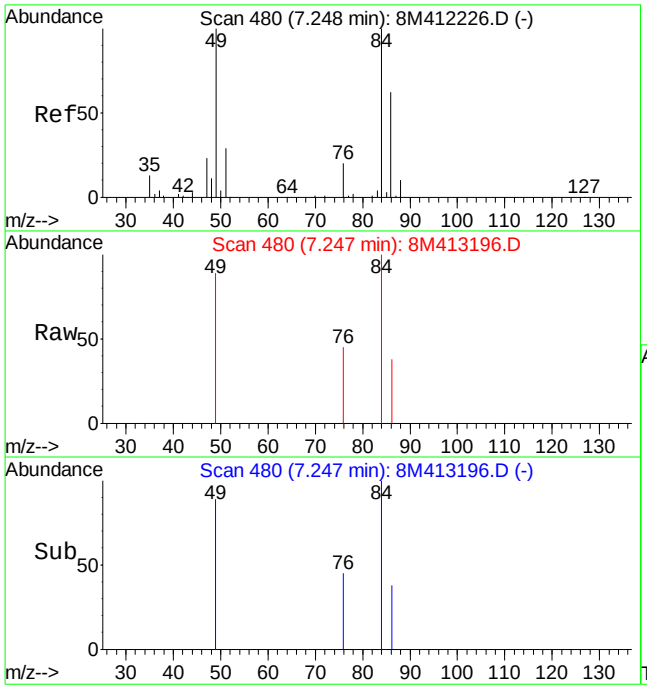

#19
Methylene Chloride
Concen: 0.26 ug/L
RT: 7.25 min Scan# 480
Delta R.T. -0.00 min
Lab File: 8M413196.D
Acq: 23 Jun 2016 22:56

Tgt Ion: 84 Resp: 1850

Ion	Ratio	Lower	Upper
84	100		
49	95.2	60.5	141.3

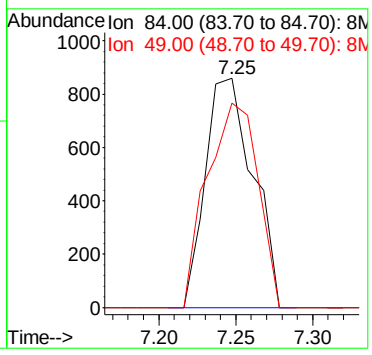

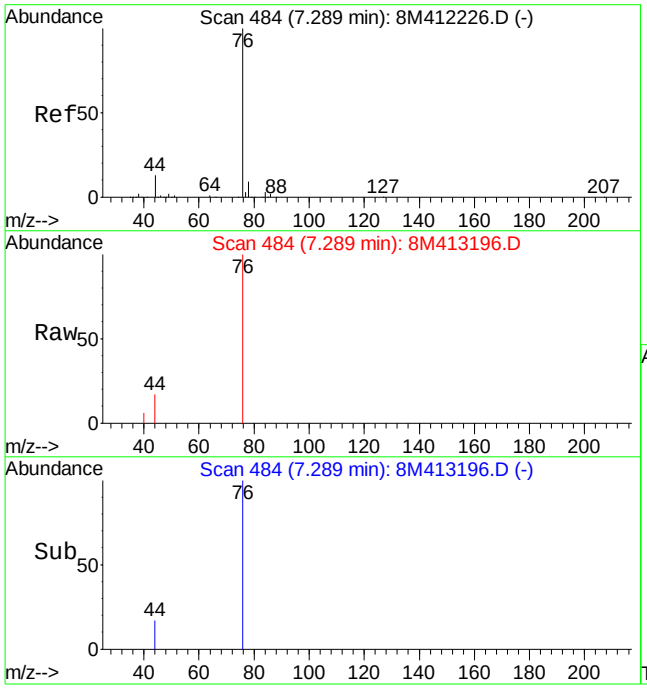

#20
Carbon Disulfide
Concen: 0.57 ug/L
RT: 7.29 min Scan# 484
Delta R.T. -0.00 min
Lab File: 8M413196.D
Acq: 23 Jun 2016 22:56

Tgt Ion: 76 Resp: 13434

Ion	Ratio	Lower	Upper
76	100		
78	1.9	5.6	13.0#

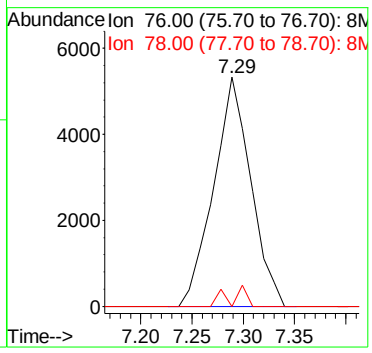

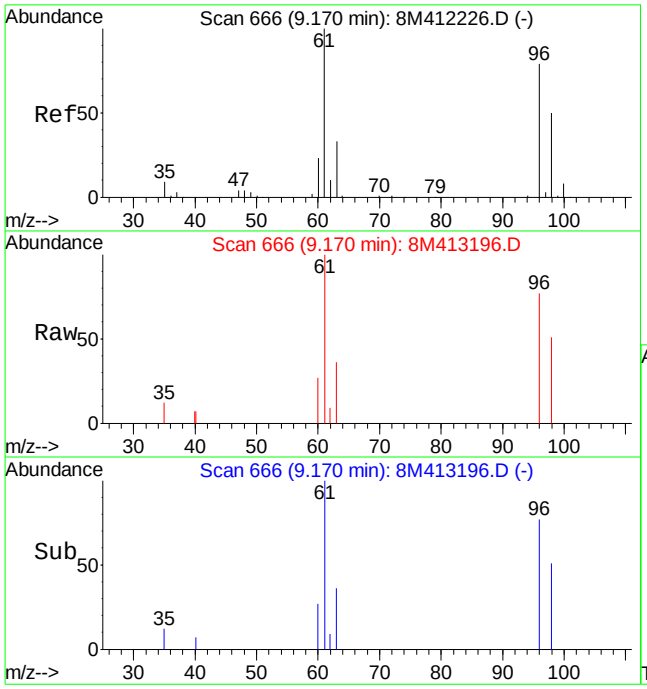

#32
cis-1,2-Dichloroethene
Concen: 1.14 ug/L
RT: 9.17 min Scan# 666
Delta R.T. -0.00 min
Lab File: 8M413196.D
Acq: 23 Jun 2016 22:56

Tgt Ion: 96 Resp: 9050

Ion	Ratio	Lower	Upper
96	100		
61	130.5	91.5	213.5

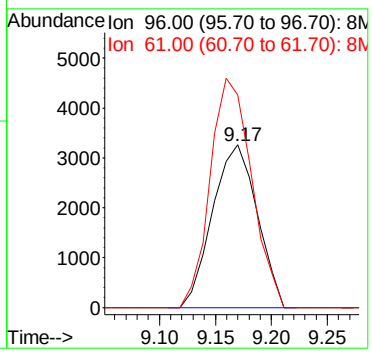

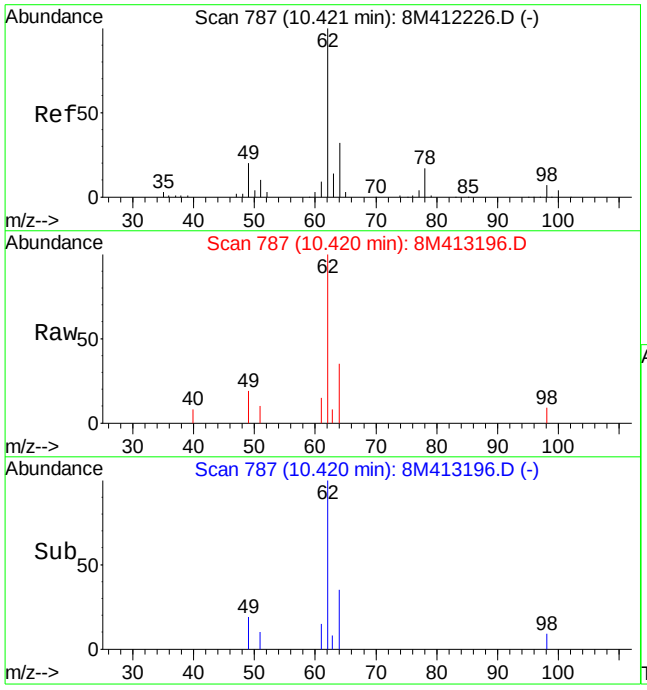

#45
1,2-Dichloroethane
Concen: 1.06 ug/L
RT: 10.42 min Scan# 787
Delta R.T. -0.00 min
Lab File: 8M413196.D
Acq: 23 Jun 2016 22:56

Tgt Ion: 62 Resp: 10312

Ion	Ratio	Lower	Upper
62	100		
64	31.6	19.6	45.6
49	16.4	15.5	36.1

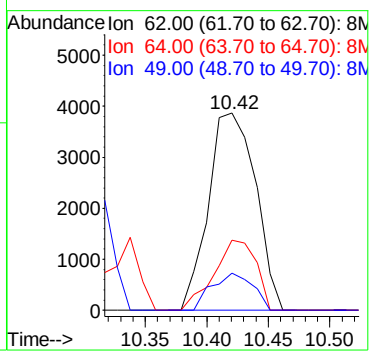

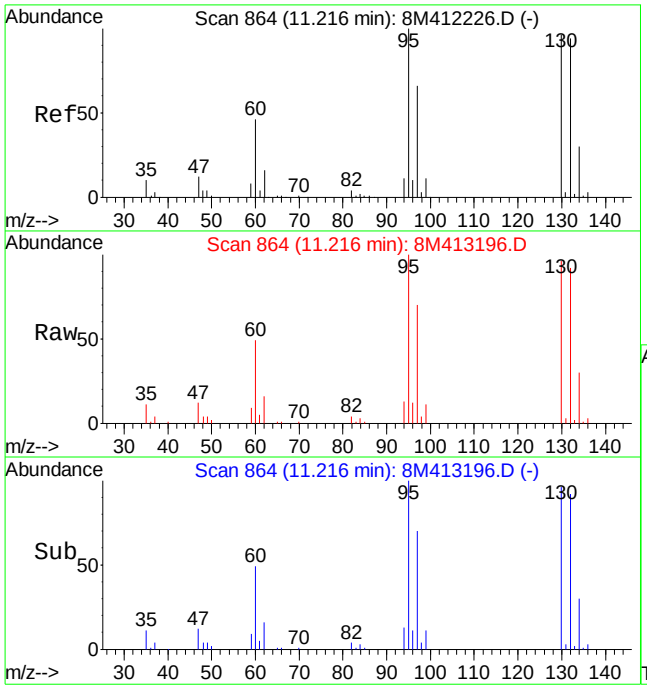

#47
Trichloroethene
Concen: 19.12 ug/L
RT: 11.22 min Scan# 864
Delta R.T. -0.00 min
Lab File: 8M413196.D
Acq: 23 Jun 2016 22:56

Tgt Ion:130 Resp: 145308

Ion	Ratio	Lower	Upper
130	100		
132	97.6	58.0	135.2
95	108.0	64.9	151.5

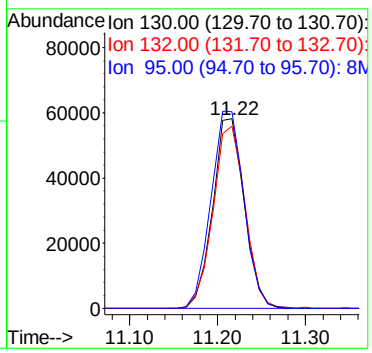

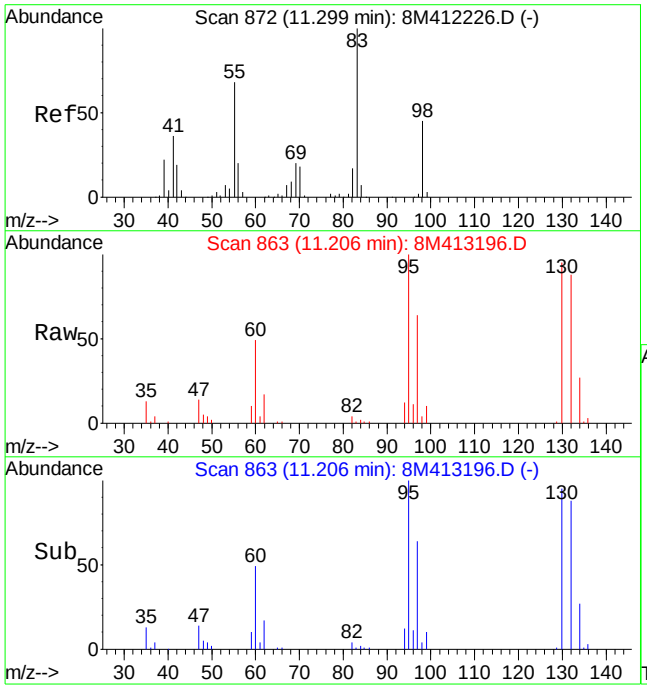

#48
Methylcyclohexane
Concen: 0.17 ug/L
RT: 11.21 min Scan# 863
Delta R.T. -0.09 min
Lab File: 8M413196.D
Acq: 23 Jun 2016 22:56

Tgt Ion: 83 Resp: 1919

Ion	Ratio	Lower	Upper
83	100		
55	0.0	40.9	95.3#
98	246.0	28.1	65.7#

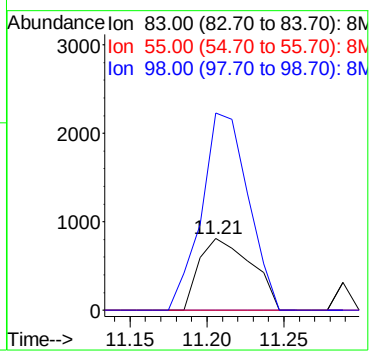

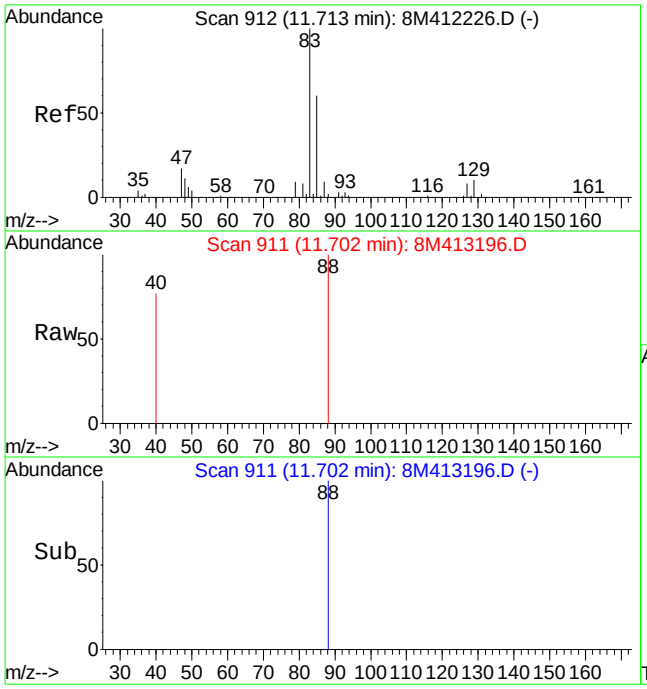

#51
1,4-Dioxane
Concen: 27.87 ug/L
RT: 11.70 min Scan# 911
Delta R.T. -0.01 min
Lab File: 8M413196.D
Acq: 23 Jun 2016 22:56

Tgt Ion: 88 Resp: 888

Ion	Ratio	Lower	Upper
88	100		
58	0.0	31.4	73.2#

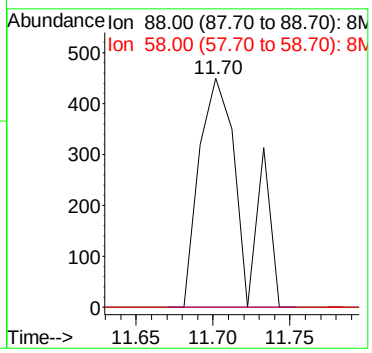

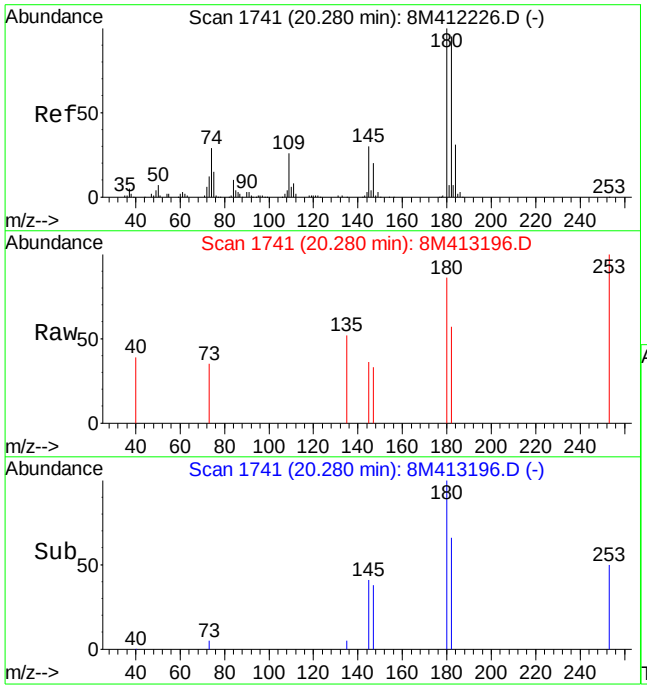

#98
1,2,4-Trichlorobenzene
Concen: 0.15 ug/L
RT: 20.28 min Scan# 1741
Delta R.T. -0.00 min
Lab File: 8M413196.D
Acq: 23 Jun 2016 22:56

Tgt Ion:180 Resp: 1884

Ion	Ratio	Lower	Upper
180	100		
182	74.8	56.8	132.4
145	11.2	18.4	42.8#

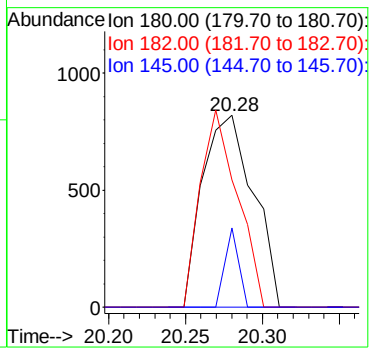

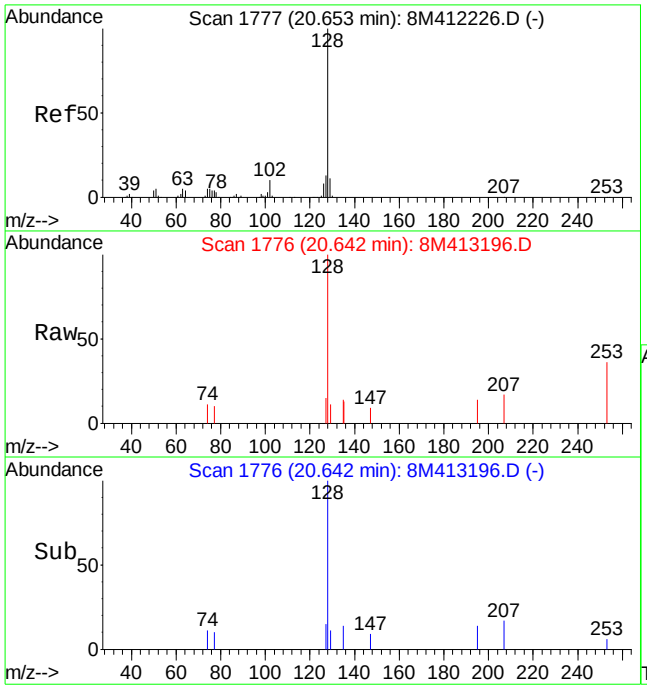

#100
Naphthalene
Concen: 0.35 ug/L
RT: 20.64 min Scan# 1776
Delta R.T. -0.01 min
Lab File: 8M413196.D
Acq: 23 Jun 2016 22:56

Tgt Ion:128 Resp: 6385

Ion	Ratio	Lower	Upper
128	100		
127	12.8	7.8	18.2

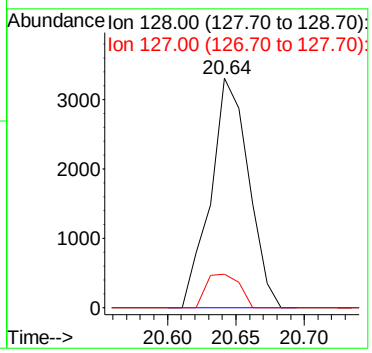

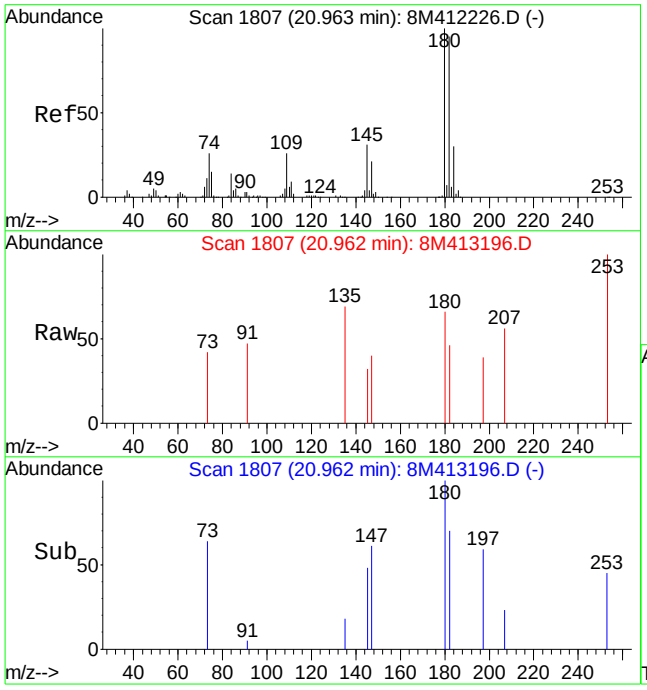

#101
1,2,3-Trichlorobenzene
Concen: 0.12 ug/L
RT: 20.96 min Scan# 1807
Delta R.T. -0.00 min
Lab File: 8M413196.D
Acq: 23 Jun 2016 22:56

Tgt Ion:180 Resp: 1289

Ion	Ratio	Lower	Upper
180	100		
182	84.8	57.8	135.0
145	0.0	20.1	46.9#

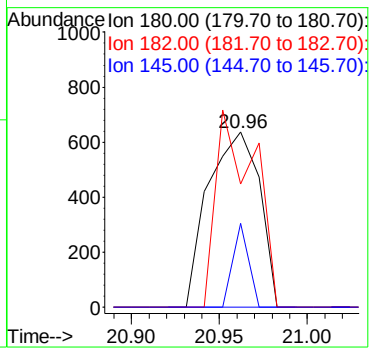

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413200.D Vial: 11
Acq On : 24 Jun 2016 00:53 Operator: FJB
Sample : L16060927-03 C 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 24 01:15:15 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	664173	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	514724	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	285769	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	201374	28.2196 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 112.88%		
43) 1,2-Dichloroethane-d4	10.31	65	228249	29.8305 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 119.32%		
58) Toluene-d8	12.68	98	698077	25.9140 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.64%		
80) p-Bromofluorobenzene	16.07	95	305251	25.7969 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.20%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.08	85	165260	14.8408 ug/L	99
3) Chloromethane	3.61	50	1709	0.2629 ug/L	90
8) Trichlorofluoromethane	5.39	101	6942	0.4838 ug/L #	1
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	1575828	233.6238 ug/L	94
13) Acetone	6.16	43	19869	26.5893 ug/L #	70
20) Carbon Disulfide	7.29	76	13455	0.5987 ug/L	97
28) Ethyl-Tert-Butyl ether	8.62	59	5420	0.3289 ug/L #	47
33) Chloroform	9.39	83	3618	0.2501 ug/L	89
35) Bromochloromethane	9.60	130	1515	0.3875 ug/L	94
52) Dibromomethane	11.81	93	1819	0.5060 ug/L	84

(#) = qualifier out of range (m) = manual integration
8M413200.D 8260WT.M Mon Jun 27 12:41:53 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413200.D Vial: 11
Acq On : 24 Jun 2016 00:53 Operator: FJB
Sample : L16060927-03 C 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 24 1:15 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

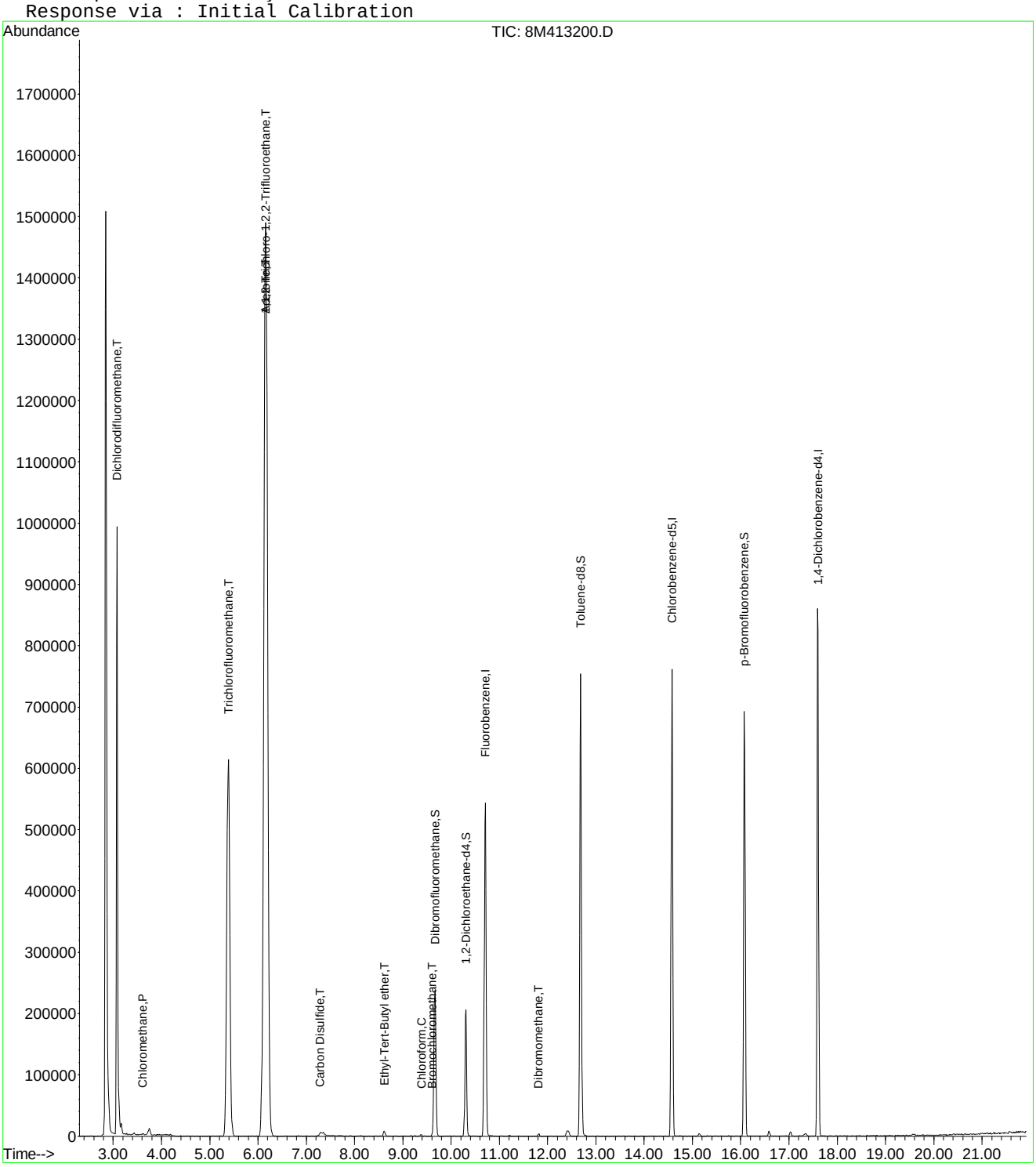

8M413200.D 8260WT.M Mon Jun 27 12:41:54 2016 Page 2

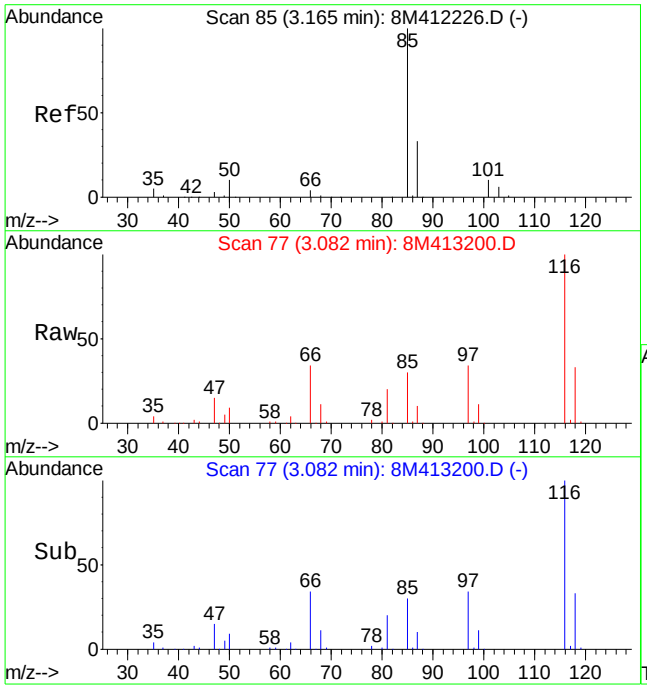

#2
Dichlorodifluoromethane
Concen: 14.84 ug/L
RT: 3.08 min Scan# 77
Delta R.T. -0.08 min
Lab File: 8M413200.D
Acq: 24 Jun 2016 00:53

Tgt Ion: 85 Resp: 165260

Ion	Ratio	Lower	Upper
85	100		
87	32.0	19.6	45.8

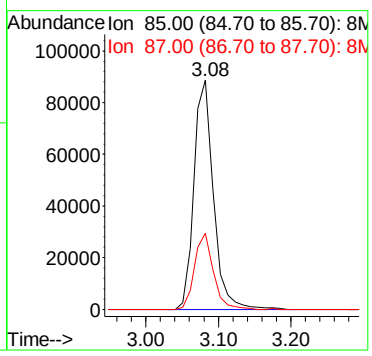

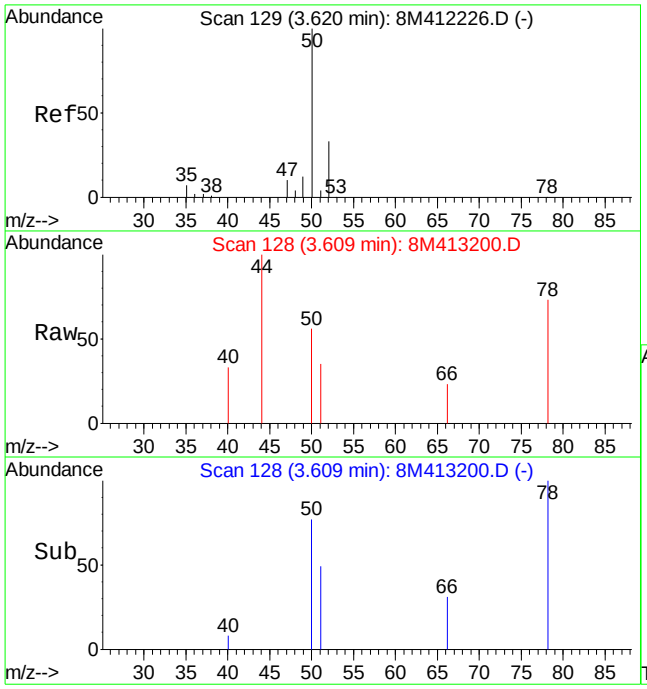

#3
Chloromethane
Concen: 0.26 ug/L
RT: 3.61 min Scan# 128
Delta R.T. -0.01 min
Lab File: 8M413200.D
Acq: 24 Jun 2016 00:53

Tgt Ion: 50 Resp: 1709

Ion	Ratio	Lower	Upper
50	100		
52	27.6	19.9	46.3

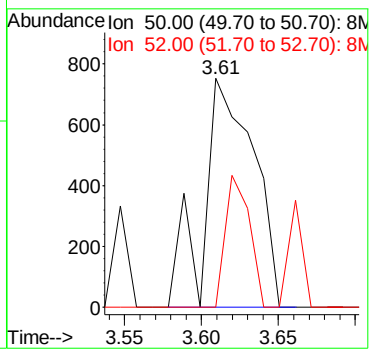

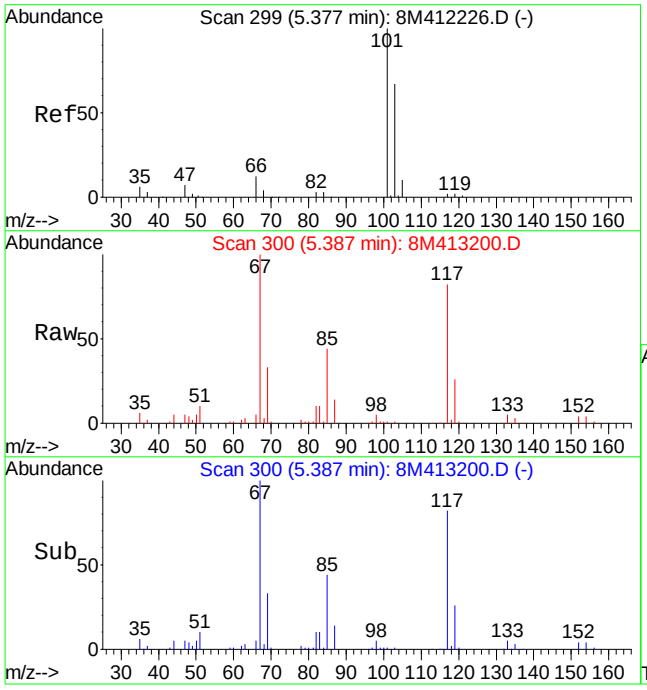

#8
Trichlorofluoromethane
Concen: 0.48 ug/L
RT: 5.39 min Scan# 300
Delta R.T. 0.01 min
Lab File: 8M413200.D
Acq: 24 Jun 2016 00:53

Tgt Ion:101 Resp: 6942

Ion	Ratio	Lower	Upper
101	100		
103	52.3	39.2	91.6
66	442.0	7.0	16.4#

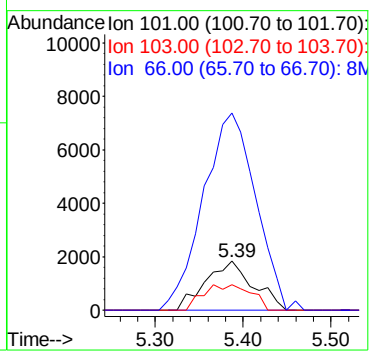

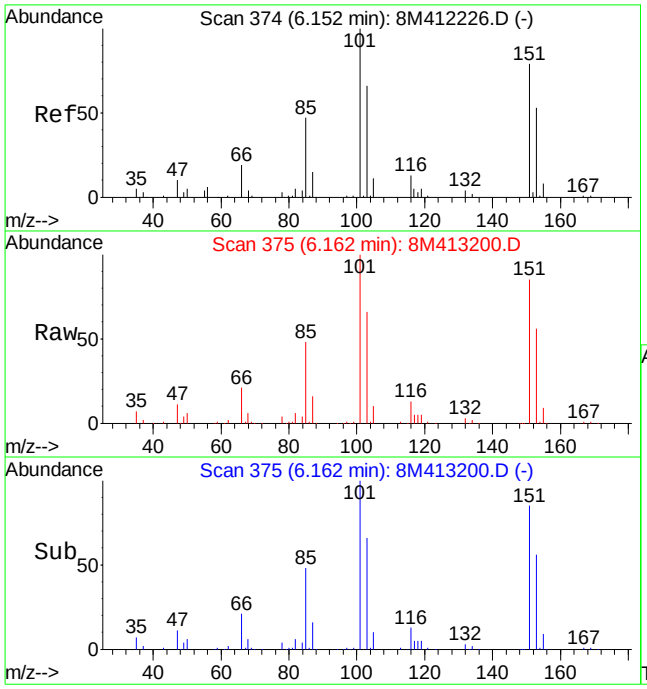

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 233.62 ug/L
RT: 6.16 min Scan# 375
Delta R.T. 0.01 min
Lab File: 8M413200.D
Acq: 24 Jun 2016 00:53

Tgt Ion:101 Resp: 1575828

Ion	Ratio	Lower	Upper
101	100		
151	85.1	40.2	120.2

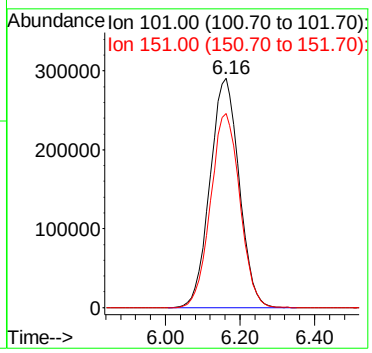

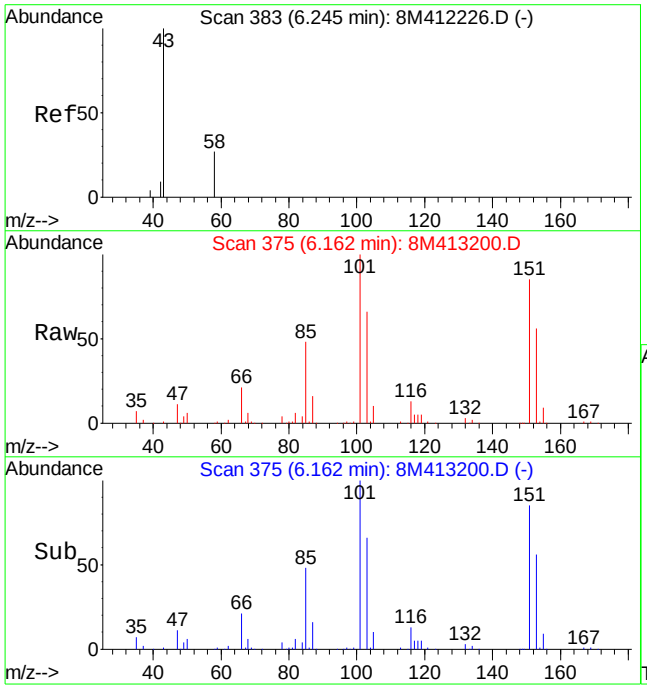

#13
Acetone
Concen: 26.59 ug/L
RT: 6.16 min Scan# 375
Delta R.T. -0.08 min
Lab File: 8M413200.D
Acq: 24 Jun 2016 00:53

Tgt Ion: 43 Resp: 19869

Ion	Ratio	Lower	Upper
43	100		
58	9.9	15.2	35.4#

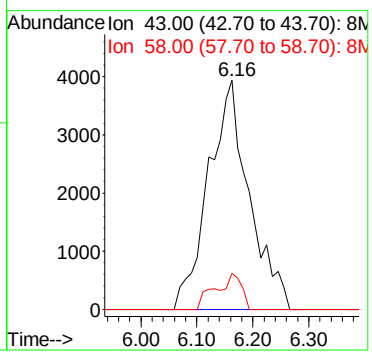

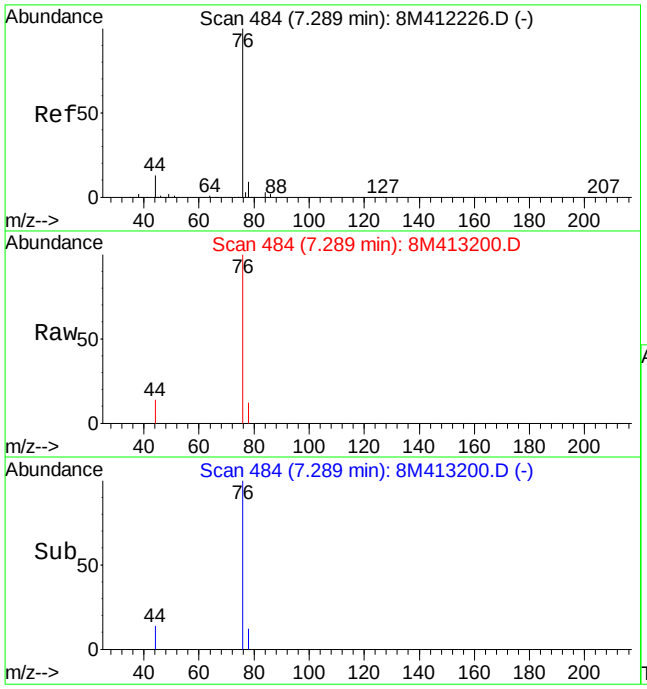

#20
Carbon Disulfide
Concen: 0.60 ug/L
RT: 7.29 min Scan# 484
Delta R.T. -0.00 min
Lab File: 8M413200.D
Acq: 24 Jun 2016 00:53

Tgt Ion: 76 Resp: 13455

Ion	Ratio	Lower	Upper
76	100		
78	8.3	5.6	13.0

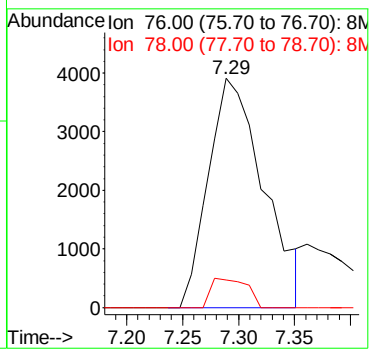

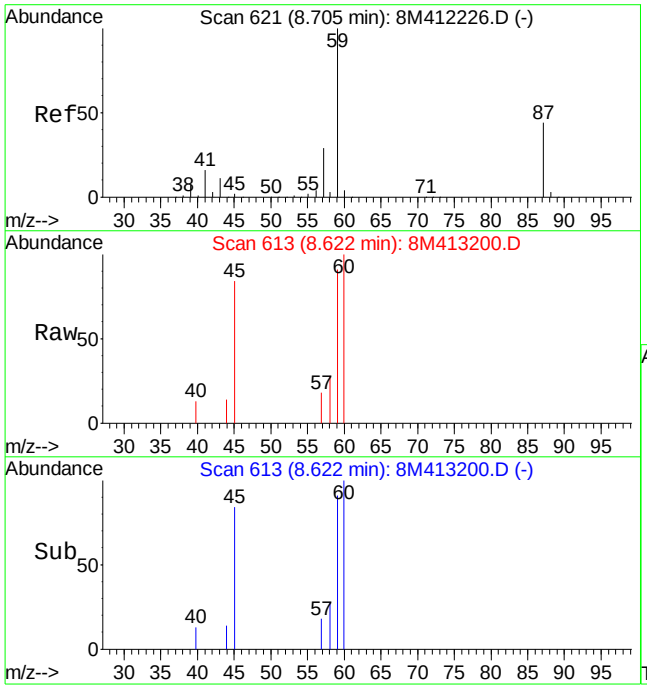

#28
Ethyl-Tert-Butyl ether
Concen: 0.33 ug/L
RT: 8.62 min Scan# 613
Delta R.T. -0.08 min
Lab File: 8M413200.D
Acq: 24 Jun 2016 00:53

Tgt Ion: 59 Resp: 5420

Ion	Ratio	Lower	Upper
59	100		
87	0.0	26.8	62.4#
57	13.9	17.4	40.6#

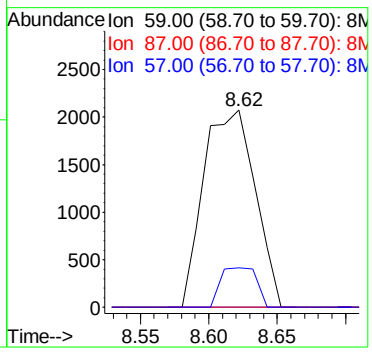

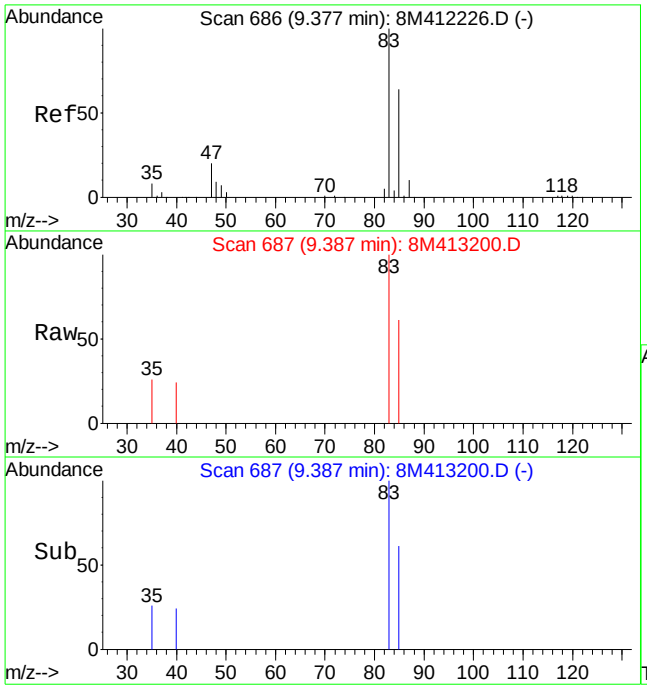

#33
Chloroform
Concen: 0.25 ug/L
RT: 9.39 min Scan# 687
Delta R.T. 0.01 min
Lab File: 8M413200.D
Acq: 24 Jun 2016 00:53

Tgt Ion: 83 Resp: 3618

Ion	Ratio	Lower	Upper
83	100		
85	54.3	37.5	87.5

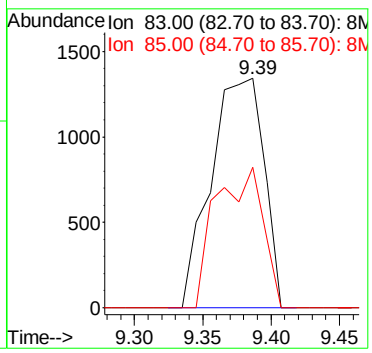

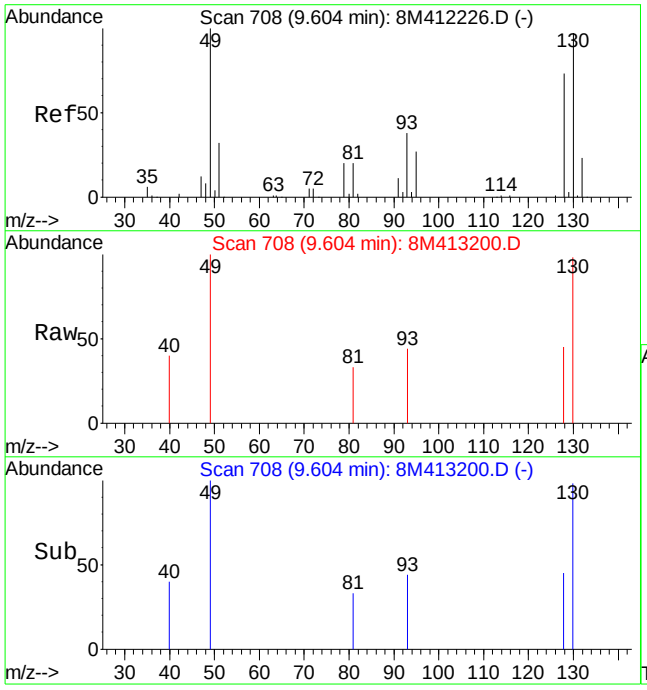

#35
Bromochloromethane
Concen: 0.39 ug/L
RT: 9.60 min Scan# 708
Delta R.T. -0.00 min
Lab File: 8M413200.D
Acq: 24 Jun 2016 00:53

Tgt Ion:130 Resp: 1515

Ion	Ratio	Lower	Upper
130	100		
128	72.5	46.1	107.5
49	97.8	63.3	147.7

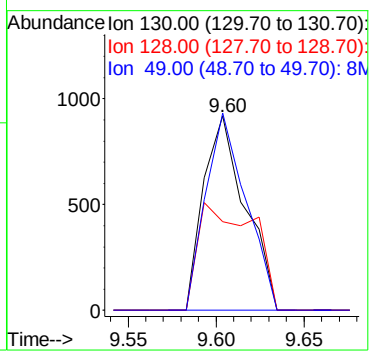

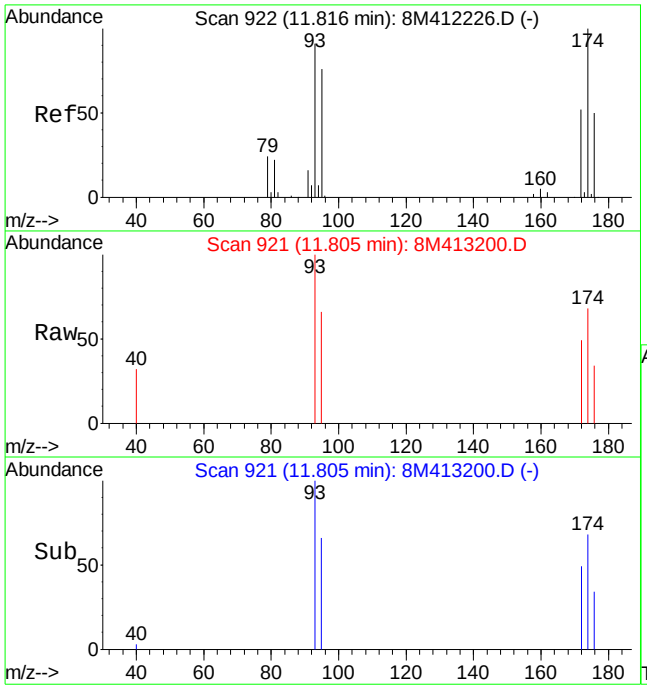

#52
Dibromomethane
Concen: 0.51 ug/L
RT: 11.81 min Scan# 921
Delta R.T. -0.01 min
Lab File: 8M413200.D
Acq: 24 Jun 2016 00:53

Tgt Ion: 93 Resp: 1819

Ion	Ratio	Lower	Upper
93	100		
95	78.0	49.7	116.1
174	78.7	62.3	145.3

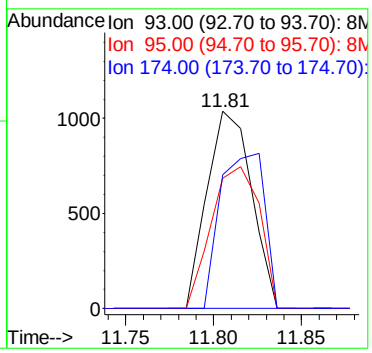

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062116\8M413145.D Vial: 22
Acq On : 22 Jun 2016 3:34 Operator: FJB
Sample : L16060927-04 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 22 03:56:14 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	676177	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	517764	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	289525	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	202889	27.9271 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.72%		
43) 1,2-Dichloroethane-d4	10.30	65	222170	28.5205 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 114.08%		
58) Toluene-d8	12.68	98	707274	26.1012 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.40%		
80) p-Bromofluorobenzene	16.08	95	299500	24.9825 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.92%		

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
8M413145.D 8260WT.M Fri Jun 24 17:21:15 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062116\8M413145.D Vial: 22
Acq On : 22 Jun 2016 3:34 Operator: FJB
Sample : L16060927-04 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 22 3:56 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

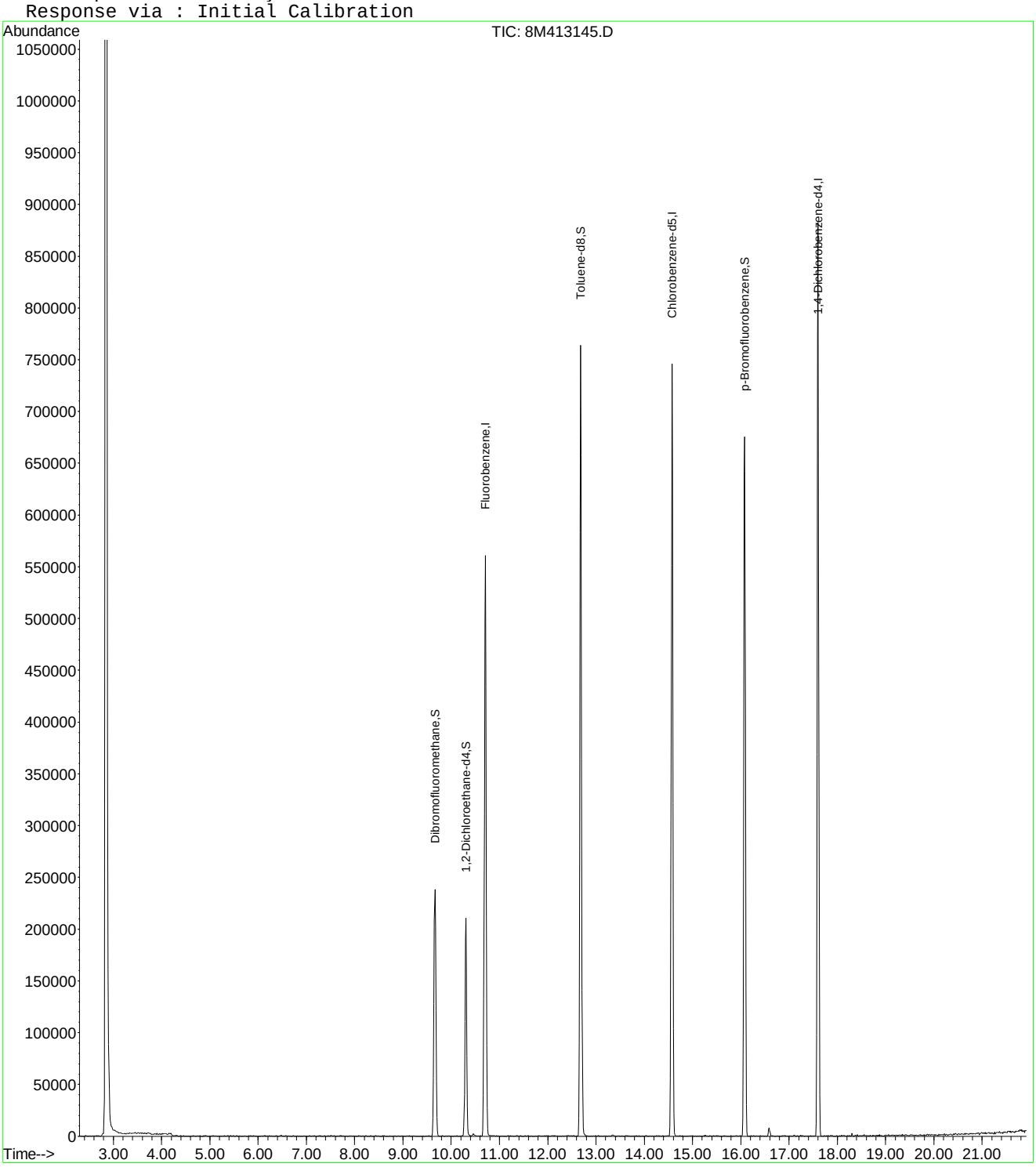

8M413145.D 8260WT.M Fri Jun 24 17:21:16 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062116\8M413135.D Vial: 12
Acq On : 21 Jun 2016 22:44 Operator: FJB
Sample : L16060927-05 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 21 23:06:49 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	753725	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	585008	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	324131	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	224626	27.7380 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.96%		
43) 1,2-Dichloroethane-d4	10.31	65	243766	28.0732 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.28%		
58) Toluene-d8	12.69	98	790206	25.8097 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.24%		
80) p-Bromofluorobenzene	16.07	95	337050	25.1130 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.44%		

Target Compounds					Qvalue
36) Tetrahydrofuran	9.63	42	1126	1.3722 ug/L #	52

(#) = qualifier out of range (m) = manual integration
8M413135.D 8260WT.M Fri Jun 24 17:20:31 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062116\8M413135.D Vial: 12
Acq On : 21 Jun 2016 22:44 Operator: FJB
Sample : L16060927-05 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 21 23:06 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

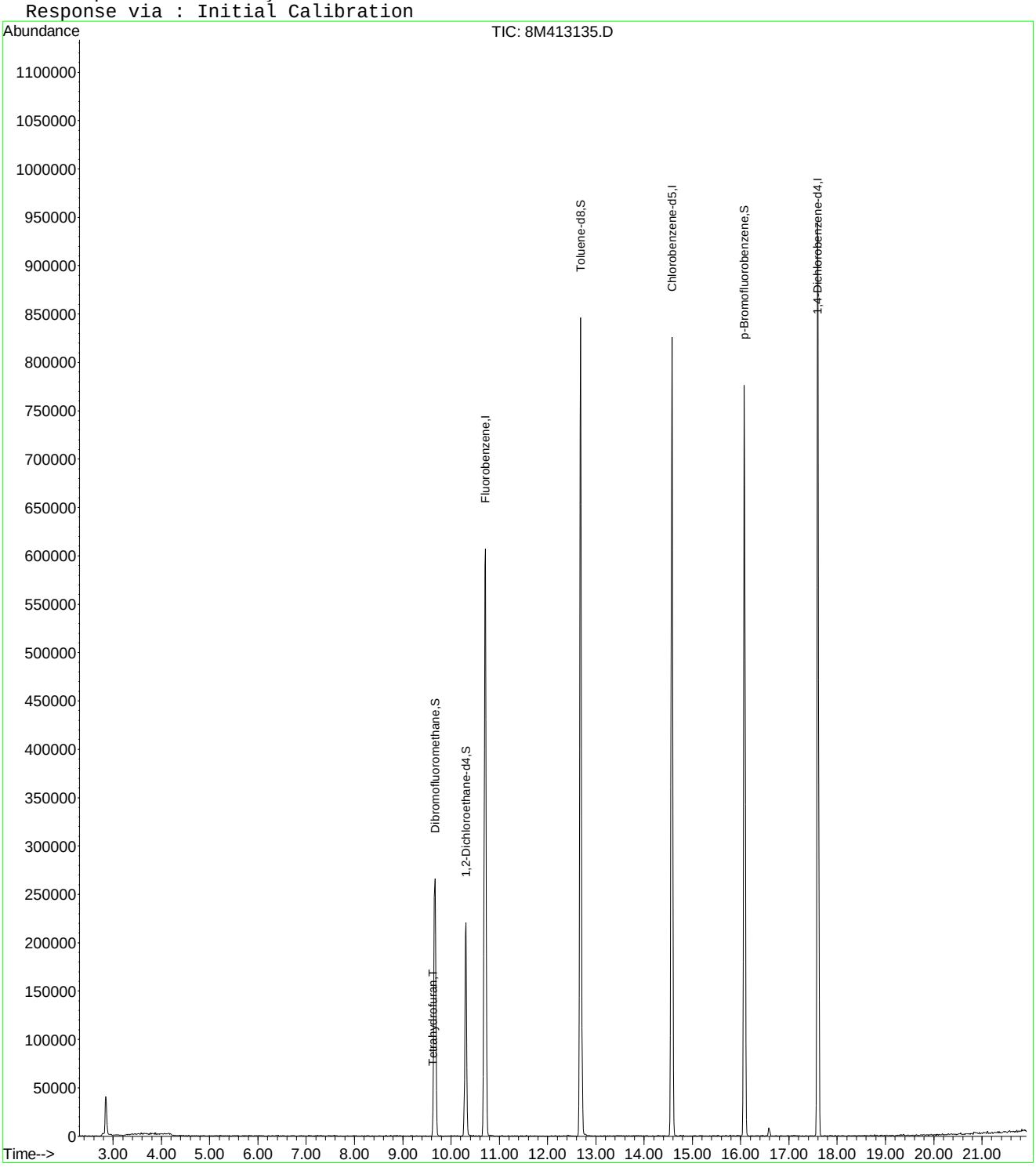

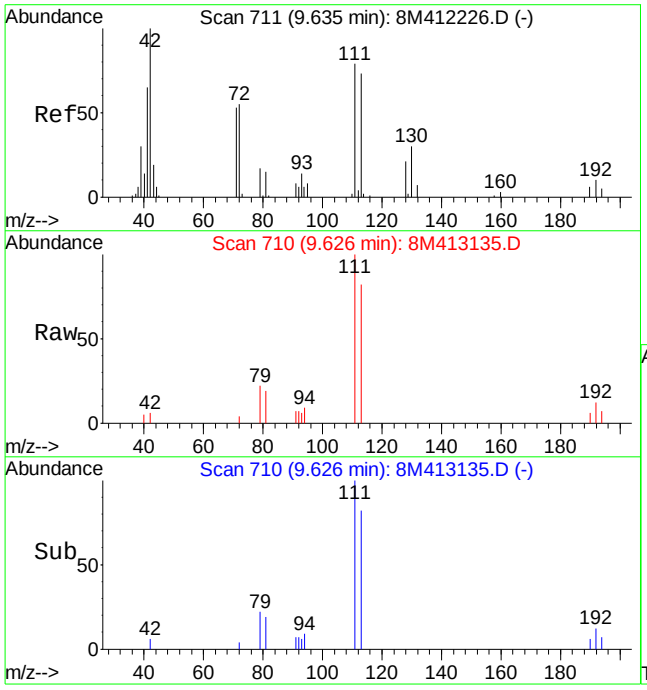

#36
Tetrahydrofuran
Concen: 1.37 ug/L
RT: 9.63 min Scan# 710
Delta R.T. -0.01 min
Lab File: 8M413135.D
Acq: 21 Jun 2016 22:44

Tgt Ion: 42 Resp: 1126

Ion	Ratio	Lower	Upper
42	100		
72	73.0	33.8	78.8
71	0.0	32.0	74.8#

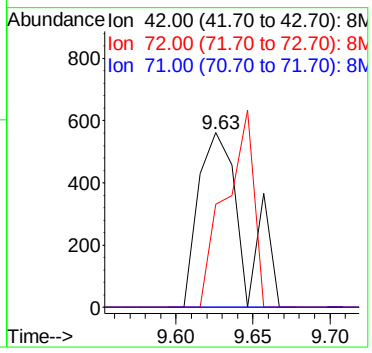

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:40:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	823748	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	571926	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	299321	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	12.68	98	567	0.0189 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.08%#	
80) p-Bromofluorobenzene	16.08	95	313	0.0253 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	3836	0.2778 ug/L	91
3) Chloromethane	3.62	50	3658	0.4537 ug/L	95
4) Vinyl Chloride	3.85	62	2516	0.2630 ug/L #	58
5) 1,3-Butadiene	3.91	54	2079	0.2592 ug/L	71
6) Bromomethane	4.73	94	1152	0.6530 ug/L #	55
7) Chloroethane	4.90	64	1112	0.2113 ug/L #	72
8) Trichlorofluoromethane	5.35	101	2706	0.1520 ug/L #	53
10) Isoprene	5.93	67	2147	0.1987 ug/L	85
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1746	0.2087 ug/L	97
14) 1,1-Dichloroethene	6.48	61	3332	0.2501 ug/L	75
16) Dimethyl Sulfide	6.73	62	1099	0.2308 ug/L	95
19) Methylene Chloride	7.26	84	3414	0.4028 ug/L	88
20) Carbon Disulfide	7.30	76	10739	0.3853 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	4927	0.2686 ug/L #	60
23) trans-1,2-Dichloroethene	7.70	61	3879	0.3170 ug/L	98
24) n-Hexane	7.78	57	2794	0.3075 ug/L	85
26) Vinyl Acetate	8.30	43	1973	0.2259 ug/L #	70
27) 1,1-Dichloroethane	8.33	63	4881	0.3212 ug/L #	88
31) 2,2-Dichloropropane	9.11	77	4966	0.3101 ug/L	89
32) cis-1,2-Dichloroethene	9.17	96	2958	0.3128 ug/L	87
33) Chloroform	9.37	83	5564	0.3101 ug/L	95
34) 1-Bromopropane	9.52	122	210	0.1551 ug/L #	1
35) Bromochloromethane	9.60	130	1386	0.2858 ug/L	76
36) Tetrahydrofuran	9.62	42	1849	2.0617 ug/L #	60
38) 1,1,1-Trichloroethane	9.91	97	4978	0.2921 ug/L	95
39) Cyclohexane	9.93	56	3120	0.2644 ug/L #	85
40) 1,1-Dichloropropene	10.11	75	3779	0.2909 ug/L	97
42) Carbon Tetrachloride	10.24	117	4835	0.3194 ug/L #	74
45) 1,2-Dichloroethane	10.43	62	3295	0.2853 ug/L #	81
46) Benzene	10.46	78	11279	0.3333 ug/L	93
47) Trichloroethene	11.20	130	2410	0.2670 ug/L	97
48) Methylcyclohexane	11.31	83	3936	0.2871 ug/L	84
49) 1,2-Dichloropropane	11.42	63	2136	0.2836 ug/L	88
50) Bromodichloromethane	11.73	83	3767	0.2845 ug/L #	91
52) Dibromomethane	11.82	93	700	0.1570 ug/L #	59
53) 2-Chloroethyl Vinyl Ether	12.02	63	847	0.2616 ug/L #	47
55) cis-1,3-Dichloropropene	12.36	75	4763	0.3535 ug/L	84
56) Dimethyl Disulfide	12.63	79	1647	0.2290 ug/L	82
59) Toluene	12.78	91	11513	0.3243 ug/L	92
60) Ethyl Methacrylate	12.89	69	1631	0.2392 ug/L #	64

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:40:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
62)	trans-1,3-Dichloropropene	12.96	75	3626	0.3047 ug/L		82
63)	1,1,2-Trichloroethane	13.18	97	1409	0.2515 ug/L		98
65)	1,3-Dichloropropane	13.49	76	2584	0.2590 ug/L		93
66)	Tetrachloroethene	13.61	164	2678	0.3520 ug/L	#	75
67)	Dibromochloromethane	13.87	129	2126	0.2599 ug/L		79
68)	1,2-Dibromoethane	14.12	107	1895	0.3394 ug/L		91
69)	1-Chlorohexane	14.21	91	3835	0.3164 ug/L		99
70)	Chlorobenzene	14.62	112	7968	0.3328 ug/L		88
71)	1,1,1,2-Tetrachloroethane	14.67	131	2872	0.3096 ug/L		87
72)	Ethylbenzene	14.64	106	3844	0.2934 ug/L		81
73)	m-,p-Xylene	14.75	106	10447	0.6799 ug/L		96
74)	o-Xylene	15.31	106	4577	0.3047 ug/L		97
75)	Styrene	15.35	104	7545	0.3062 ug/L		95
76)	Bromoform	15.84	173	1301	0.2681 ug/L	#	51
77)	Isopropylbenzene	15.74	105	13119	0.3287 ug/L		90
79)	1,1,2,2-Tetrachloroethane	15.96	83	1714	0.2853 ug/L	#	85
83)	n-Propylbenzene	16.24	91	15676	0.3357 ug/L		92
84)	Bromobenzene	16.38	156	2859	0.2977 ug/L		90
85)	1,3,5-Trimethylbenzene	16.43	105	10873	0.3196 ug/L		99
86)	2-Chlorotoluene	16.52	91	11133	0.3415 ug/L		96
87)	4-Chlorotoluene	16.56	91	10305	0.3499 ug/L		97
88)	a-Methylstyrene	16.83	118	4090	0.2534 ug/L		86
89)	tert-Butylbenzene	16.90	134	1734	0.2606 ug/L		72
90)	1,2,4-Trimethylbenzene	16.95	105	10734	0.3069 ug/L		89
91)	sec-Butylbenzene	17.16	105	13749	0.3436 ug/L		97
92)	p-Isopropyltoluene	17.32	119	10847	0.3192 ug/L		95
93)	1,3-Dichlorobenzene	17.52	146	6023	0.3257 ug/L		99
94)	1,4-Dichlorobenzene	17.65	146	6152	0.3299 ug/L	#	60
95)	n-Butylbenzene	17.85	91	11161	0.3323 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	5711	0.3472 ug/L		92
98)	1,2,4-Trichlorobenzene	20.29	180	4203	0.3418 ug/L		91
99)	Hexachlorobutadiene	20.43	225	1894	0.3297 ug/L		84
100)	Naphthalene	20.65	128	6039	0.3306 ug/L		91
101)	1,2,3-Trichlorobenzene	20.96	180	3279	0.3161 ug/L		86

(#) = qualifier out of range (m) = manual integration

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2778	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.4537	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.2630	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	0.2592	0.0	100	0.03
6	T	Bromomethane	-1.0000	0.9911	0.0	100	0.00
7	T	Chloroethane	-1.0000	0.2113	0.0	100	0.00
8	T	Trichlorofluoromethane	-1.0000	0.1520	0.0	100	-0.02
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.90#
10	T	Isoprene	-1.0000	0.1987	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.13#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2087	0.0	100	0.00
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	-1.0000	0.2501	0.0	100	0.02
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.58#
16	T	Dimethyl Sulfide	-1.0000	0.2308	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.0000	0.0	0	-7.00#
19	T	Methylene Chloride	-1.0000	0.4028	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.3853	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.43#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2686	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	-1.0000	0.3170	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.3075	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.2259	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.3212	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.98#
31	T	2,2-Dichloropropane	-1.0000	0.3101	0.0	100	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.3128	0.0	100	0.00
33	C	Chloroform	0.3000	0.3101	-3.4	100	0.00
34		1-Bromopropane	-1.0000	0.1551	0.0	100	0.00
35	T	Bromochloromethane	-1.0000	0.2858	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	2.0617	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	-1.0000	0.2921	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.2644	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.2909	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	-1.0000	0.3194	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	-1.0000	0.2853	0.0	100	0.00
46	T	Benzene	-1.0000	0.3333	0.0	100	0.00
47	T	Trichloroethene	-1.0000	0.2670	0.0	100	-0.01
48	T	Methylcyclohexane	-1.0000	0.2871	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2836	0.0	100	0.00
50	T	Bromodichloromethane	-1.0000	0.2845	0.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	-1.0000	0.1570	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2616	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.05#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.3535	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2290	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0189	0.0	100	0.00
59	C	Toluene	-1.0000	0.3243	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2392	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3047	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.2515	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	-1.0000	0.2590	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.3520	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.2599	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.3394	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.3164	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.3328	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.3096	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.2934	0.0	100	-0.01
73	T	m-,p-Xylene	-1.0000	0.6799	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.3047	0.0	100	0.00
75	T	Styrene	-1.0000	0.3062	0.0	100	0.00
76	P	Bromoform	-1.0000	0.2681	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.3287	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2853	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0253	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.1103	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	-1.0000	0.3357	0.0	100	0.00
84	T	Bromobenzene	0.3000	0.2977	0.8	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.3196	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.3415	0.0	100	0.00
87	T	4-Chlorotoluene	-1.0000	0.3499	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2534	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.2606	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.3069	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3436	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.3192	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.3257	0.0	100	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.3299	-10.0	100	0.00
95	T	n-Butylbenzene	-1.0000	0.3323	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.3472	-15.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.3418	0.0	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.3297	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.3306	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.3161	-5.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412220.D 8260WT.M Sat May 14 18:03:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	801173	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	557498	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	293108	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
80) p-Bromofluorobenzene	16.08	95	343	0.0286 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	5478	0.3262 ug/L	79
3) Chloromethane	3.63	50	3930	0.2484 ug/L	85
4) Vinyl Chloride	3.84	62	3512	0.3288 ug/L	97
5) 1,3-Butadiene	3.90	54	2479	0.2375 ug/L #	75
6) Bromomethane	4.73	94	1343	0.9497 ug/L	85
7) Chloroethane	4.90	64	2219	0.3174 ug/L #	43
8) Trichlorofluoromethane	5.36	101	6974	0.3289 ug/L #	93
10) Isoprene	5.94	67	4288	0.3952 ug/L #	62
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	3168	0.3263 ug/L #	40
14) 1,1-Dichloroethene	6.47	61	5431	0.2882 ug/L	92
16) Dimethyl Sulfide	6.74	62	1708	0.2453 ug/L	64
19) Methylene Chloride	7.24	84	3785	0.4239 ug/L #	43
20) Carbon Disulfide	7.29	76	12437	0.4565 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	6580	0.3336 ug/L #	76
23) trans-1,2-Dichloroethene	7.71	61	4990	0.2928 ug/L	96
24) n-Hexane	7.79	57	3110	0.2011 ug/L	99
26) Vinyl Acetate	8.31	43	2753	0.1566 ug/L	100
27) 1,1-Dichloroethane	8.32	63	5655	0.2774 ug/L #	92
31) 2,2-Dichloropropane	9.10	77	6035	0.3360 ug/L	82
32) cis-1,2-Dichloroethene	9.16	96	3837	0.3762 ug/L	74
33) Chloroform	9.37	83	7267	0.3842 ug/L	100
34) 1-Bromopropane	9.50	122	234	0.1456 ug/L #	1
35) Bromochloromethane	9.60	130	1674	0.3137 ug/L	62
36) Tetrahydrofuran	9.62	42	447	0.2146 ug/L #	41
38) 1,1,1-Trichloroethane	9.91	97	6304	0.3305 ug/L	90
39) Cyclohexane	9.94	56	4658	0.2238 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	5172	0.3768 ug/L	80
42) Carbon Tetrachloride	10.25	117	5692	0.3172 ug/L	95
45) 1,2-Dichloroethane	10.43	62	4443	0.2796 ug/L #	63
46) Benzene	10.46	78	14456	0.4134 ug/L #	77
47) Trichloroethene	11.21	130	3659	0.3626 ug/L	98
48) Methylcyclohexane	11.29	83	5025	0.3562 ug/L	84
49) 1,2-Dichloropropane	11.42	63	3060	0.3007 ug/L	98
50) Bromodichloromethane	11.73	83	4734	0.3343 ug/L #	93
52) Dibromomethane	11.82	93	1805	0.3767 ug/L	84
55) cis-1,3-Dichloropropene	12.36	75	5008	0.3514 ug/L	90
56) Dimethyl Disulfide	12.63	79	1921	0.2573 ug/L	85
59) Toluene	12.78	91	14742	0.4416 ug/L	98
60) Ethyl Methacrylate	12.90	69	2062	0.3292 ug/L	66
62) trans-1,3-Dichloropropene	12.96	75	3693	0.3171 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
63)	1,1,2-Trichloroethane	13.18	97	2326	0.4391 ug/L		70
65)	1,3-Dichloropropane	13.49	76	3163	0.3219 ug/L		88
66)	Tetrachloroethene	13.61	164	3164	0.4185 ug/L		93
67)	Dibromochloromethane	13.87	129	3113	0.3727 ug/L		86
68)	1,2-Dibromoethane	14.12	107	2076	0.3760 ug/L		90
69)	1-Chlorohexane	14.21	91	4746	0.4174 ug/L		80
70)	Chlorobenzene	14.62	112	9180	0.3960 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.66	131	3501	0.3876 ug/L		95
72)	Ethylbenzene	14.65	106	5348	0.4066 ug/L		84
73)	m-,p-Xylene	14.75	106	13269	0.8757 ug/L		89
74)	o-Xylene	15.31	106	6019	0.3943 ug/L		97
75)	Styrene	15.35	104	9370	0.3849 ug/L		95
76)	Bromoform	15.83	173	1198	0.2500 ug/L	#	76
77)	Isopropylbenzene	15.73	105	16528	0.4270 ug/L		92
79)	1,1,2,2-Tetrachloroethane	15.96	83	1999	0.3419 ug/L	#	83
83)	n-Propylbenzene	16.25	91	19410	0.4297 ug/L		95
84)	Bromobenzene	16.37	156	3319	0.3524 ug/L		75
85)	1,3,5-Trimethylbenzene	16.42	105	13794	0.4127 ug/L		95
86)	2-Chlorotoluene	16.51	91	13678	0.4729 ug/L		90
87)	4-Chlorotoluene	16.56	91	12572	0.4219 ug/L		98
88)	a-Methylstyrene	16.84	118	5739	0.3485 ug/L		96
89)	tert-Butylbenzene	16.90	134	2254	0.3403 ug/L		55
90)	1,2,4-Trimethylbenzene	16.95	105	13859	0.4051 ug/L		90
91)	sec-Butylbenzene	17.17	105	17612	0.4382 ug/L		90
92)	p-Isopropyltoluene	17.32	119	13616	0.3968 ug/L		90
93)	1,3-Dichlorobenzene	17.52	146	6961	0.3724 ug/L		86
94)	1,4-Dichlorobenzene	17.64	146	7149	0.3832 ug/L	#	1
95)	n-Butylbenzene	17.85	91	15223	0.4664 ug/L		91
96)	1,2-Dichlorobenzene	18.14	146	6129	0.3742 ug/L		92
98)	1,2,4-Trichlorobenzene	20.28	180	5035	0.3969 ug/L		97
99)	Hexachlorobutadiene	20.44	225	2420	0.4122 ug/L		83
100)	Naphthalene	20.65	128	7474	0.3874 ug/L	#	84
101)	1,2,3-Trichlorobenzene	20.96	180	4378	0.4056 ug/L	#	78

(#) = qualifier out of range (m) = manual integration
8M412221.D 8260WT.M Fri May 13 14:20:39 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

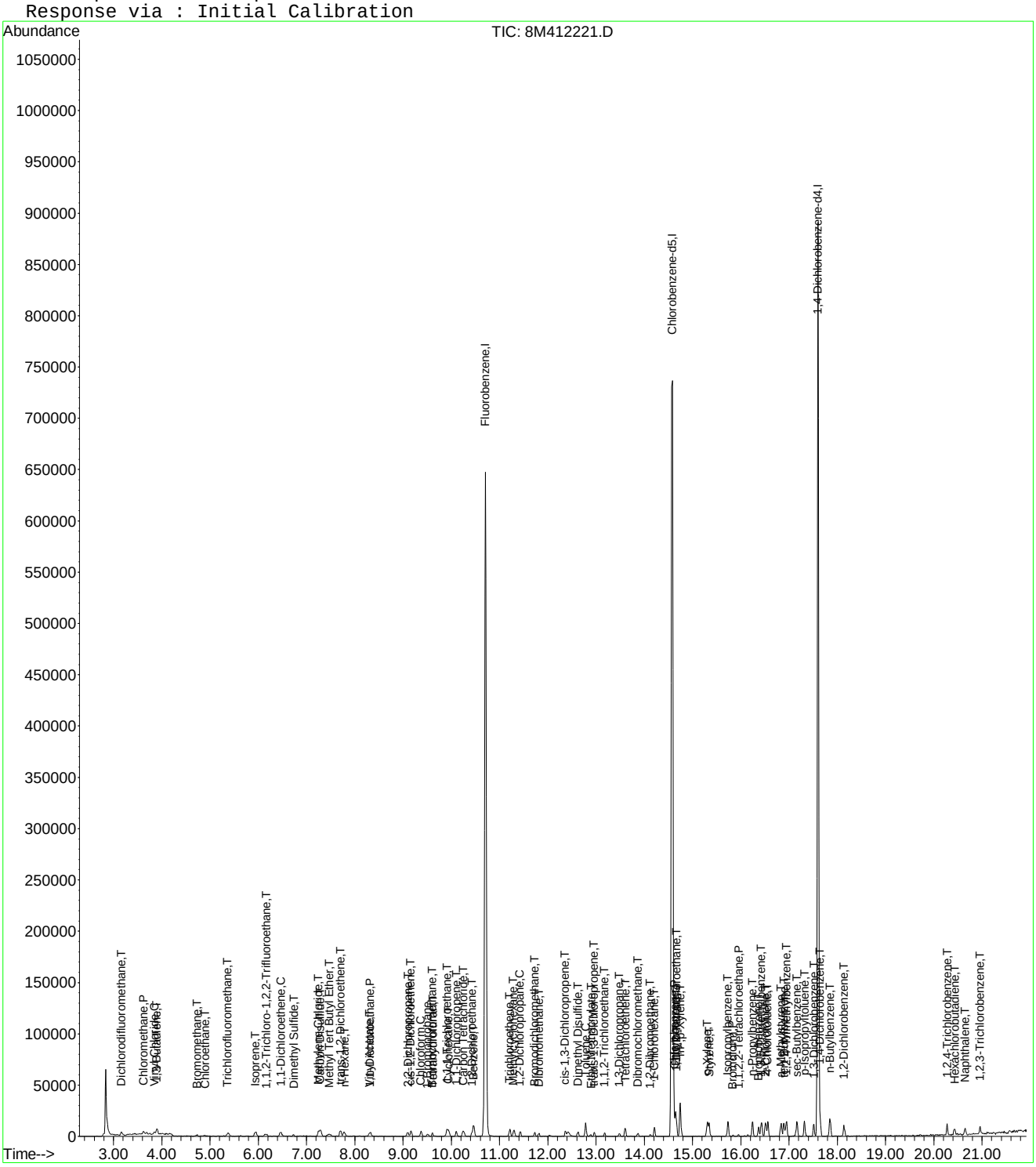

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	0.4000	0.4078	-2.0	100	0.00
3	P	Chloromethane	-1.0000	0.5012	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.3775	5.6	100	0.00
5	T	1,3-Butadiene	-1.0000	0.3178	0.0	100	0.02
6	T	Bromomethane	-1.0000	1.0253	0.0	100	0.00
7	T	Chloroethane	0.4000	0.4335	-8.4	100	0.00
8	T	Trichlorofluoromethane	0.4000	0.4029	-0.7	100	-0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.90#
10	T	Isoprene	0.4000	0.4079	-2.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.13#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3894	0.0	100	0.02
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	0.4000	0.4192	-4.8	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.58#
16	T	Dimethyl Sulfide	0.4000	0.3687	7.8	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.2179	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4591	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4587	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.43#
22	T	Methyl Tert Butyl Ether	-1.0000	0.3688	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.4193	-4.8	100	0.00
24	T	n-Hexane	-1.0000	0.3519	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.3241	0.0	100	0.02
27	P	1,1-Dichloroethane	0.4000	0.3826	4.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.98#
31	T	2,2-Dichloropropane	0.4000	0.3874	3.1	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.4172	-4.3	100	-0.01
33	C	Chloroform	0.4000	0.4164	-4.1	100	0.00
34		1-Bromopropane	-1.0000	0.1776	0.0	100	-0.01
35	T	Bromochloromethane	0.4000	0.3550	11.3	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.5125	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	0.4000	0.3803	4.9	100	0.00
39	T	Cyclohexane	-1.0000	0.4058	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4093	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	0.4000	0.3867	3.3	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	0.4000	0.3955	1.1	100	0.00
46	T	Benzene	0.4000	0.4393	-9.8	100	0.00
47	T	Trichloroethene	0.4000	0.4169	-4.2	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3768	0.0	100	-0.01
49	C	1,2-Dichloropropane	0.4000	0.4177	-4.4	100	0.00
50	T	Bromodichloromethane	0.4000	0.3676	8.1	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	0.4000	0.4162	-4.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1401	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.05#

(#) = Out of Range

8M412221.D 8260WT.M Sat May 14 18:03:54 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3821	4.5	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2746	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0000	0.0	0	-12.68#
59	C	Toluene	0.4000	0.4259	-6.5	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3102	0.0	100	0.02
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3184	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.4259	-6.5	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	0.4000	0.3253	18.7	100	0.00
66	T	Tetrachloroethene	0.4000	0.4267	-6.7	100	0.00
67	T	Dibromochloromethane	0.4000	0.3904	2.4	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.3814	4.6	100	0.00
69	T	1-Chlorohexane	0.4000	0.4017	-0.4	100	0.00
70	P	Chlorobenzene	0.4000	0.3933	1.7	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3872	3.2	100	0.00
72	C	Ethylbenzene	0.4000	0.4188	-4.7	100	0.00
73	T	m-,p-Xylene	0.8000	0.8859	-10.7	100	0.00
74	T	o-Xylene	-1.0000	0.4110	0.0	100	0.00
75	T	Styrene	0.4000	0.3901	2.5	100	0.00
76	P	Bromoform	-1.0000	0.2533	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.4249	-6.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.3398	15.1	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0283	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.14#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	0.4000	0.4245	-6.1	100	0.00
84	T	Bromobenzene	0.4000	0.3529	11.8	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.4141	-3.5	100	0.00
86	T	2-Chlorotoluene	0.4000	0.4284	-7.1	100	0.00
87	T	4-Chlorotoluene	0.4000	0.4359	-9.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.3631	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3459	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	0.4000	0.4046	-1.2	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.4494	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4092	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.3844	3.9	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.3915	2.1	100	0.00
95	T	n-Butylbenzene	-1.0000	0.4628	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.3805	4.9	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	0.4000	0.4182	-4.5	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.4302	-7.5	100	0.00
100	T	Naphthalene	0.4000	0.4178	-4.5	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.4310	-7.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412221.D 8260WT.M Sat May 14 18:03:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	795577	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	547129	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	284579	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.65	111	3962	0.3966 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery	= 1.60%#	
43) 1,2-Dichloroethane-d4	10.31	65	3835	0.3356 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery	= 1.36%#	
58) Toluene-d8	12.68	98	14023	0.4957 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 2.00%#	
80) p-Bromofluorobenzene	16.08	95	6483	0.5565 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery	= 2.24%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	12402	0.7438 ug/L	97
3) Chloromethane	3.62	50	8415	0.5357 ug/L #	75
4) Vinyl Chloride	3.84	62	9412	0.8873 ug/L	89
5) 1,3-Butadiene	3.90	54	6974	0.6729 ug/L	81
6) Bromomethane	4.73	94	4114	1.3123 ug/L	92
7) Chloroethane	4.90	64	4983	0.7178 ug/L #	80
8) Trichlorofluoromethane	5.38	101	17133	0.8136 ug/L #	96
9) Diethyl ether	5.90	59	20707	3.2140 ug/L	84
10) Isoprene	5.94	67	11176	1.0373 ug/L	76
11) Acrolein	6.14	56	246	0.4300 ug/L #	15
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	8135	0.8438 ug/L	96
13) Acetone	6.24	43	413	0.2115 ug/L #	48
14) 1,1-Dichloroethene	6.46	61	12947	0.6919 ug/L	91
15) Tert-Butyl Alcohol	6.59	59	3316	7.3747 ug/L #	55
16) Dimethyl Sulfide	6.72	62	4505	0.6515 ug/L	79
18) Methyl acetate	7.00	43	2119	0.3630 ug/L #	66
19) Methylene Chloride	7.24	84	8723	0.9837 ug/L #	43
20) Carbon Disulfide	7.29	76	28246	1.0441 ug/L	100
21) Acrylonitrile	7.43	53	2164	0.8620 ug/L	76
22) Methyl Tert Butyl Ether	7.47	73	16998	0.8678 ug/L	84
23) trans-1,2-Dichloroethene	7.70	61	12571	0.7427 ug/L	100
24) n-Hexane	7.78	57	9382	0.6109 ug/L	82
25) Diisopropyl ether	8.12	45	95400	2.1939 ug/L #	91
26) Vinyl Acetate	8.30	43	6750	0.3867 ug/L #	89
27) 1,1-Dichloroethane	8.32	63	14721	0.7271 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	97972	3.2102 ug/L	88
29) 2-Butanone	8.88	43	380	0.1215 ug/L #	57
30) Propionitrile	8.99	54	1593	2.0138 ug/L #	56
31) 2,2-Dichloropropane	9.09	77	14691	0.8236 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	9482	0.9362 ug/L	72
33) Chloroform	9.37	83	18494	0.9845 ug/L	94
34) 1-Bromopropane	9.50	122	1092	0.6844 ug/L	80
35) Bromochloromethane	9.61	130	5234	0.9877 ug/L #	55
36) Tetrahydrofuran	9.63	42	5415	2.6185 ug/L #	68
38) 1,1,1-Trichloroethane	9.91	97	17074	0.9016 ug/L	92
39) Cyclohexane	9.94	56	11865	0.5740 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	13172	0.9663 ug/L	87
41) Tert-Amyl-Methyl ether	10.21	73	90255	4.6173 ug/L #	88
42) Carbon Tetrachloride	10.25	117	14515	0.8146 ug/L	95
45) 1,2-Dichloroethane	10.42	62	10675	0.6766 ug/L	85

(#) = qualifier out of range (m) = manual integration
8M412222.D 8260WT.M Fri May 13 14:49:47 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	10.47	78	34504	0.9938 ug/L		84
47)	Trichloroethene	11.21	130	8752	0.8735 ug/L		93
48)	Methylcyclohexane	11.30	83	13513	0.9646 ug/L		79
49)	1,2-Dichloropropane	11.43	63	7057	0.6982 ug/L	#	67
50)	Bromodichloromethane	11.73	83	12147	0.8638 ug/L		96
52)	Dibromomethane	11.81	93	4130	0.8681 ug/L		95
53)	2-Chloroethyl Vinyl Ether	12.03	63	2694	0.6366 ug/L		86
54)	4-Methyl-2-Pentanone	12.06	58	848	0.3671 ug/L	#	41
55)	cis-1,3-Dichloropropene	12.36	75	12521	0.8847 ug/L		97
56)	Dimethyl Disulfide	12.63	79	5799	0.7821 ug/L		96
59)	Toluene	12.79	91	37114	1.1328 ug/L		95
60)	Ethyl Methacrylate	12.88	69	5490	0.8930 ug/L		69
62)	trans-1,3-Dichloropropene	12.96	75	10328	0.9035 ug/L		92
63)	1,1,2-Trichloroethane	13.18	97	5274	1.0144 ug/L		93
64)	2-Hexanone	13.10	58	397	0.2127 ug/L	#	1
65)	1,3-Dichloropropane	13.49	76	9673	1.0032 ug/L		73
66)	Tetrachloroethene	13.61	164	7373	0.9937 ug/L		95
67)	Dibromochloromethane	13.87	129	7358	0.8977 ug/L		95
68)	1,2-Dibromoethane	14.13	107	5123	0.9454 ug/L		95
69)	1-Chlorohexane	14.21	91	12790	1.1461 ug/L		79
70)	Chlorobenzene	14.62	112	25662	1.1281 ug/L		89
71)	1,1,1,2-Tetrachloroethane	14.66	131	8722	0.9838 ug/L		94
72)	Ethylbenzene	14.65	106	13009	1.0078 ug/L		87
73)	m-,p-Xylene	14.75	106	30465	2.0486 ug/L		84
74)	o-Xylene	15.31	106	15133	1.0101 ug/L		84
75)	Styrene	15.35	104	23191	0.9707 ug/L		91
76)	Bromoform	15.84	173	3875	0.8240 ug/L		96
77)	Isopropylbenzene	15.74	105	41382	1.0895 ug/L		95
79)	1,1,2,2-Tetrachloroethane	15.95	83	5604	0.9873 ug/L	#	93
81)	1,2,3-Trichloropropane	16.15	110	1355	0.7428 ug/L	#	1
82)	trans-1,4-Dichloro-2-Buten	16.19	53	962	0.3479 ug/L	#	1
83)	n-Propylbenzene	16.25	91	48249	1.1002 ug/L		99
84)	Bromobenzene	16.37	156	9598	1.0497 ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	33355	1.0278 ug/L		96
86)	2-Chlorotoluene	16.51	91	33408	1.1895 ug/L		94
87)	4-Chlorotoluene	16.56	91	29548	1.0213 ug/L		95
88)	a-Methylstyrene	16.84	118	14414	0.9014 ug/L		91
89)	tert-Butylbenzene	16.89	134	6686	1.0398 ug/L		86
90)	1,2,4-Trimethylbenzene	16.95	105	36066	1.0857 ug/L		96
91)	sec-Butylbenzene	17.16	105	42128	1.0796 ug/L		96
92)	p-Isopropyltoluene	17.32	119	35424	1.0633 ug/L		94
93)	1,3-Dichlorobenzene	17.52	146	18409	1.0144 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	19031	1.0506 ug/L	#	62
95)	n-Butylbenzene	17.85	91	35772	1.1288 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	16104	1.0126 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.14	75	1262	1.0152 ug/L	#	53
98)	1,2,4-Trichlorobenzene	20.28	180	11494	0.9331 ug/L		98
99)	Hexachlorobutadiene	20.43	225	5421	0.9510 ug/L		98
100)	Naphthalene	20.65	128	16581	0.8853 ug/L		100
101)	1,2,3-Trichlorobenzene	20.96	180	10306	0.9835 ug/L		94

(#) = qualifier out of range (m) = manual integration
8M412222.D 8260WT.M Fri May 13 14:49:48 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

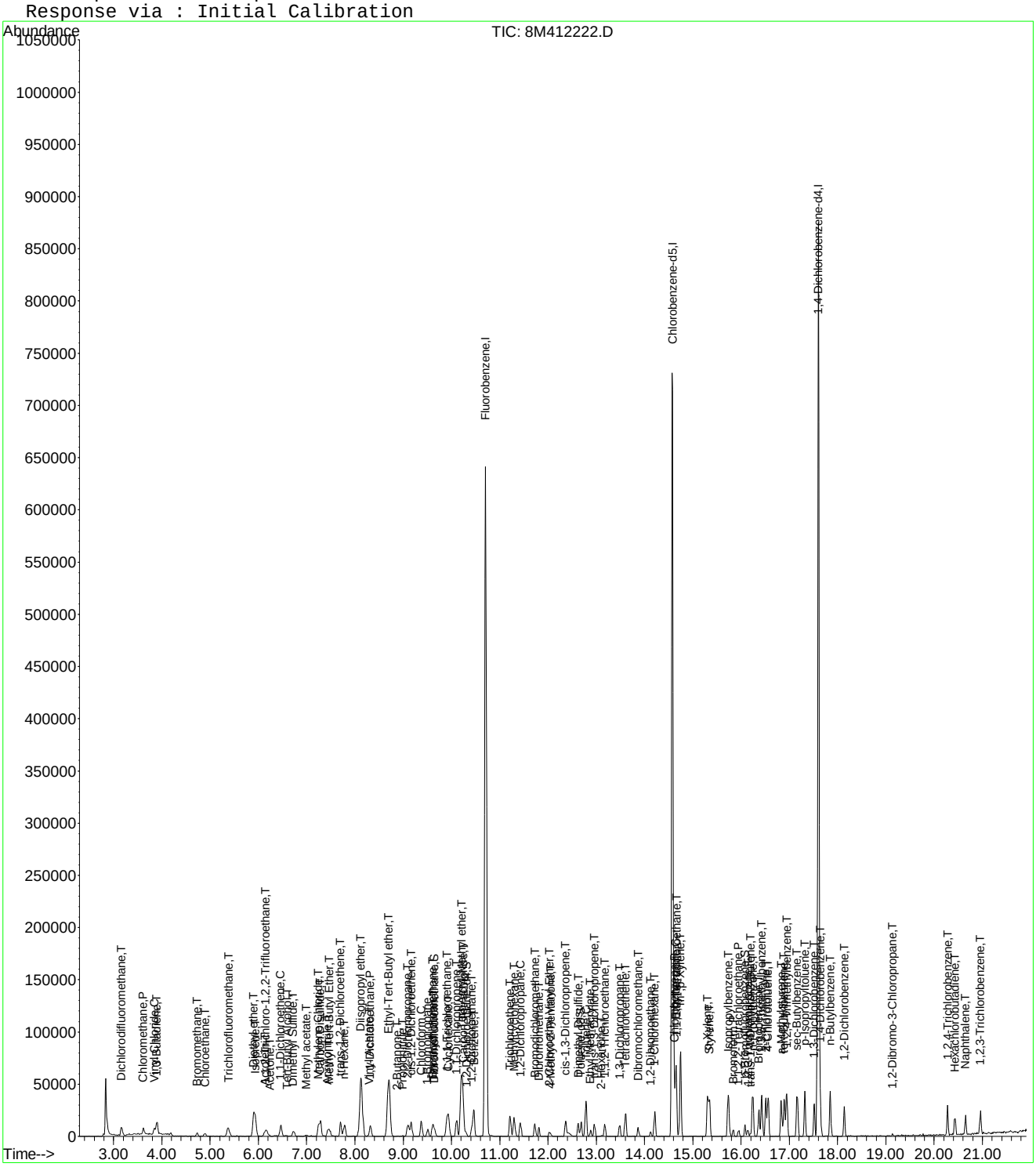

8M412222.D 8260WT.M Fri May 13 14:49:48 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:05:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9298	7.0	100	0.00
3	P	Chloromethane	1.0000	1.0808	-8.1	100	0.00
4	C	Vinyl Chloride	1.0000	1.0189	-1.9	100	0.00
5	T	1,3-Butadiene	-1.0000	0.9002	0.0	100	0.02
6	T	Bromomethane	1.0000	1.2082	-20.8	100	0.00
7	T	Chloroethane	1.0000	0.9803	2.0	100	0.00
8	T	Trichlorofluoromethane	1.0000	0.9968	0.3	100	0.00
9	T	Diethyl ether	5.0000	5.0462	-0.9	100	0.00
10	T	Isoprene	1.0000	1.0707	-7.1	100	0.00
11	T	Acrolein	-1.0000	0.6696	0.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0069	-0.7	100	0.00
13	T	Acetone	-1.0000	0.4614	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	1.0064	-0.6	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	11.5604	0.0	0	0.02
16	T	Dimethyl Sulfide	1.0000	0.9794	2.1	100	-0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.8758	0.0	100	0.00
19	T	Methylene Chloride	1.0000	1.0655	-6.5	100	0.00
20	T	Carbon Disulfide	1.0000	1.0492	-4.9	100	0.00
21	T	Acrylonitrile	2.5000	1.8633	25.5#	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9593	4.1	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	1.0636	-6.4	100	0.00
24	T	n-Hexane	-1.0000	1.0690	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	5.1784	-3.6	100	0.00
26	T	Vinyl Acetate	-1.0000	0.8002	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0029	-0.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.9635	0.7	100	0.00
29	T	2-Butanone	-1.0000	0.2889	0.0	100	0.00
30	T	Propionitrile	5.0000	4.1566	16.9	100	0.00
31	T	2,2-Dichloropropane	1.0000	0.9498	5.0	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	1.0383	-3.8	100	0.00
33	C	Chloroform	1.0000	1.0671	-6.7	100	0.00
34		1-Bromopropane	1.0000	0.8348	16.5	100	-0.01
35	T	Bromochloromethane	1.0000	1.1177	-11.8	100	0.00
36	T	Tetrahydrofuran	5.0000	6.2516	-25.0#	100	0.00
37	S	Dibromofluoromethane	0.5000	0.4635	7.3	100	-0.01
38	T	1,1,1-Trichloroethane	1.0000	1.0372	-3.7	100	0.00
39	T	Cyclohexane	1.0000	1.0411	-4.1	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0498	-5.0	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	5.0344	-0.7	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.9930	0.7	100	0.00
43	S	1,2-Dichloroethane-d4	0.5000	0.4184	16.3	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	1.0000	0.9570	4.3	100	0.00
46	T	Benzene	1.0000	1.0558	-5.6	100	0.00
47	T	Trichloroethene	1.0000	1.0041	-0.4	100	0.00
48	T	Methylcyclohexane	-1.0000	1.0205	0.0	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.9700	3.0	100	0.00
50	T	Bromodichloromethane	1.0000	0.9500	5.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	1.0000	0.9590	4.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.8616	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.6639	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:05:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9621	3.8	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.8348	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	0.5000	0.4897	2.1	100	0.00
59	C	Toluene	1.0000	1.0927	-9.3	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.8416	15.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	1.0000	0.9073	9.3	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.9840	1.6	100	0.00
64	T	2-Hexanone	-1.0000	0.3525	0.0	100	-0.01
65	T	1,3-Dichloropropane	1.0000	1.0137	-1.4	100	0.00
66	T	Tetrachloroethene	1.0000	1.0132	-1.3	100	0.00
67	T	Dibromochloromethane	1.0000	0.9402	6.0	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.9590	4.1	100	0.00
69	T	1-Chlorohexane	1.0000	1.1031	-10.3	100	0.00
70	P	Chlorobenzene	1.0000	1.1204	-12.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.9829	1.7	100	0.00
72	C	Ethylbenzene	1.0000	1.0381	-3.8	100	0.00
73	T	m-,p-Xylene	2.0000	2.0726	-3.6	100	0.00
74	T	o-Xylene	1.0000	1.0530	-5.3	100	0.00
75	T	Styrene	1.0000	0.9839	1.6	100	0.00
76	P	Bromoform	1.0000	0.8348	16.5	100	0.00
77	T	Isopropylbenzene	1.0000	1.0840	-8.4	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	0.9810	1.9	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5502	0.0	100	0.00
81	T	1,2,3-Trichloropropane	1.0000	0.7703	23.0	100	0.02
82	T	trans-1,4-Dichloro-2-Butene	1.0000	1.1443	-14.4	100	0.00
83	T	n-Propylbenzene	1.0000	1.0868	-8.7	100	0.00
84	T	Bromobenzene	1.0000	1.0510	-5.1	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	1.0314	-3.1	100	0.00
86	T	2-Chlorotoluene	1.0000	1.0778	-7.8	100	0.00
87	T	4-Chlorotoluene	1.0000	1.0553	-5.5	100	0.00
88	T	a-Methylstyrene	-1.0000	0.9394	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	1.0567	-5.7	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	1.0845	-8.5	100	0.00
91	T	sec-Butylbenzene	1.0000	1.1073	-10.7	100	0.00
92	T	p-Isopropyltoluene	1.0000	1.0966	-9.7	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0469	-4.7	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	1.0735	-7.3	100	0.00
95	T	n-Butylbenzene	1.0000	1.1201	-12.0	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0297	-3.0	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.1006	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	1.0000	0.9832	1.7	100	0.00
99	T	Hexachlorobutadiene	1.0000	0.9925	0.7	100	0.00
100	T	Naphthalene	1.0000	0.9547	4.5	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	1.0450	-4.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	782460	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.57	117	543252	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	286450	25.00	ug/L	0.01

System Monitoring Compounds						
37) Dibromofluoromethane	9.66	111	8161	0.8307	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.32%#		
43) 1,2-Dichloroethane-d4	10.30	65	9681	0.8613	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.44%#		
58) Toluene-d8	12.68	98	28135	1.0016	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.00%#		
80) p-Bromofluorobenzene	16.08	95	12079	1.0302	ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.12%#		

Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.16	85	24870	1.5166	ug/L	98
3) Chloromethane	3.62	50	16106	1.0425	ug/L	93
4) Vinyl Chloride	3.85	62	18562	1.7792	ug/L	94
5) 1,3-Butadiene	3.90	54	13617	1.3360	ug/L	92
6) Bromomethane	4.73	94	8329	1.8804	ug/L	94
7) Chloroethane	4.90	64	9562	1.4006	ug/L	86
8) Trichlorofluoromethane	5.39	101	34970	1.6885	ug/L	97
9) Diethyl ether	5.90	59	107986	17.0420	ug/L	79
10) Isoprene	5.93	67	20936	1.9757	ug/L	73
11) Acrolein	6.14	56	4864	8.6444	ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	16832	1.7751	ug/L	99
13) Acetone	6.23	43	1519	0.7908	ug/L #	48
14) 1,1-Dichloroethene	6.47	61	25394	1.3798	ug/L	89
15) Tert-Butyl Alcohol	6.58	59	14891	33.6725	ug/L	85
16) Dimethyl Sulfide	6.73	62	9489	1.3953	ug/L	79
17) Iodomethane	6.98	142	1211	1.3472	ug/L #	60
18) Methyl acetate	7.01	43	5064	0.8821	ug/L #	79
19) Methylene Chloride	7.25	84	16579	1.9010	ug/L	52
20) Carbon Disulfide	7.29	76	57693	2.1683	ug/L	98
21) Acrylonitrile	7.43	53	13848	5.6089	ug/L	93
22) Methyl Tert Butyl Ether	7.47	73	33991	1.7644	ug/L	84
23) trans-1,2-Dichloroethene	7.70	61	22786	1.3688	ug/L	88
24) n-Hexane	7.79	57	18282	1.2105	ug/L	84
25) Diisopropyl ether	8.12	45	475271	11.1128	ug/L #	92
26) Vinyl Acetate	8.29	43	15998	0.9318	ug/L	93
27) 1,1-Dichloroethane	8.32	63	30419	1.5277	ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	505010	16.8250	ug/L	89
29) 2-Butanone	8.90	43	2250	0.7313	ug/L #	57
30) Propionitrile	8.99	54	9373	12.0479	ug/L	86
31) 2,2-Dichloropropane	9.10	77	32521	1.8538	ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	18238	1.8309	ug/L	91
33) Chloroform	9.37	83	33543	1.8156	ug/L	99
34) 1-Bromopropane	9.52	122	2513	1.6014	ug/L	88
35) Bromochloromethane	9.60	130	9189	1.7632	ug/L	67
36) Tetrahydrofuran	9.63	42	22074	10.8529	ug/L #	66
38) 1,1,1-Trichloroethane	9.90	97	32268	1.7324	ug/L	96
39) Cyclohexane	9.93	56	23097	1.1362	ug/L #	65
40) 1,1-Dichloropropene	10.10	75	24988	1.8639	ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	459535	23.9029	ug/L	87
42) Carbon Tetrachloride	10.24	117	28935	1.6512	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412223.D 8260WT.M Fri May 13 15:18:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.42	62	22142	1.4270 ug/L #	83
46)	Benzene	10.46	78	67028	1.9629 ug/L	83
47)	Trichloroethene	11.21	130	17287	1.7543 ug/L	96
48)	Methylcyclohexane	11.30	83	26050	1.8907 ug/L	84
49)	1,2-Dichloropropane	11.42	63	14582	1.4670 ug/L	77
50)	Bromodichloromethane	11.73	83	25794	1.8651 ug/L	93
51)	1,4-Dioxane	11.73	88	1282	32.3515 ug/L	74
52)	Dibromomethane	11.81	93	8575	1.8325 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.02	63	6234	1.4979 ug/L	100
54)	4-Methyl-2-Pentanone	12.06	58	2139	0.9416 ug/L	84
55)	cis-1,3-Dichloropropene	12.37	75	24153	1.7353 ug/L	98
56)	Dimethyl Disulfide	12.62	79	12288	1.6851 ug/L	99
59)	Toluene	12.79	91	72944	2.2423 ug/L	95
60)	Ethyl Methacrylate	12.88	69	12716	2.0832 ug/L	71
62)	trans-1,3-Dichloropropene	12.96	75	22163	1.9527 ug/L	100
63)	1,1,2-Trichloroethane	13.18	97	10537	2.0412 ug/L	99
64)	2-Hexanone	13.13	58	2200	1.1873 ug/L #	65
65)	1,3-Dichloropropane	13.49	76	20212	2.1112 ug/L	72
66)	Tetrachloroethene	13.60	164	14595	1.9811 ug/L	90
67)	Dibromochloromethane	13.87	129	14698	1.8061 ug/L	98
68)	1,2-Dibromoethane	14.12	107	10152	1.8869 ug/L	95
69)	1-Chlorohexane	14.21	91	21960	1.9818 ug/L	89
70)	Chlorobenzene	14.62	112	47376	2.0974 ug/L	81
71)	1,1,1,2-Tetrachloroethane	14.66	131	17526	1.9910 ug/L	97
72)	Ethylbenzene	14.66	106	25628	1.9996 ug/L	92
73)	m-,p-Xylene	14.74	106	60087	4.0693 ug/L	84
74)	o-Xylene	15.31	106	28289	1.9017 ug/L	79
75)	Styrene	15.35	104	47644	2.0086 ug/L	92
76)	Bromoform	15.84	173	9145	1.9585 ug/L	95
77)	Isopropylbenzene	15.73	105	81301	2.1557 ug/L	97
79)	1,1,2,2-Tetrachloroethane	15.95	83	11538	2.0194 ug/L	95
81)	1,2,3-Trichloropropane	16.13	110	3630	1.9770 ug/L	94
82)	trans-1,4-Dichloro-2-Buten	16.19	53	2699	0.9698 ug/L #	36
83)	n-Propylbenzene	16.24	91	97233	2.2026 ug/L	96
84)	Bromobenzene	16.37	156	19174	2.0834 ug/L	92
85)	1,3,5-Trimethylbenzene	16.42	105	67395	2.0631 ug/L	97
86)	2-Chlorotoluene	16.51	91	67110	2.3739 ug/L	94
87)	4-Chlorotoluene	16.56	91	59154	2.0313 ug/L	92
88)	a-Methylstyrene	16.84	118	29415	1.8275 ug/L	86
89)	tert-Butylbenzene	16.89	134	12716	1.9647 ug/L	67
90)	1,2,4-Trimethylbenzene	16.95	105	71669	2.1435 ug/L	94
91)	sec-Butylbenzene	17.17	105	81038	2.0632 ug/L	98
92)	p-Isopropyltoluene	17.32	119	70170	2.0924 ug/L	92
93)	1,3-Dichlorobenzene	17.52	146	37289	2.0413 ug/L	93
94)	1,4-Dichlorobenzene	17.64	146	36528	2.0034 ug/L #	73
95)	n-Butylbenzene	17.85	91	67823	2.1262 ug/L	96
96)	1,2-Dichlorobenzene	18.14	146	32322	2.0190 ug/L	92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	1955	1.5624 ug/L	94
98)	1,2,4-Trichlorobenzene	20.28	180	23558	1.9000 ug/L	98
99)	Hexachlorobutadiene	20.43	225	11066	1.9286 ug/L	99
100)	Naphthalene	20.65	128	36066	1.9130 ug/L	99
101)	1,2,3-Trichlorobenzene	20.96	180	19765	1.8738 ug/L	95

(#) = qualifier out of range (m) = manual integration
8M412223.D 8260WT.M Fri May 13 15:18:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

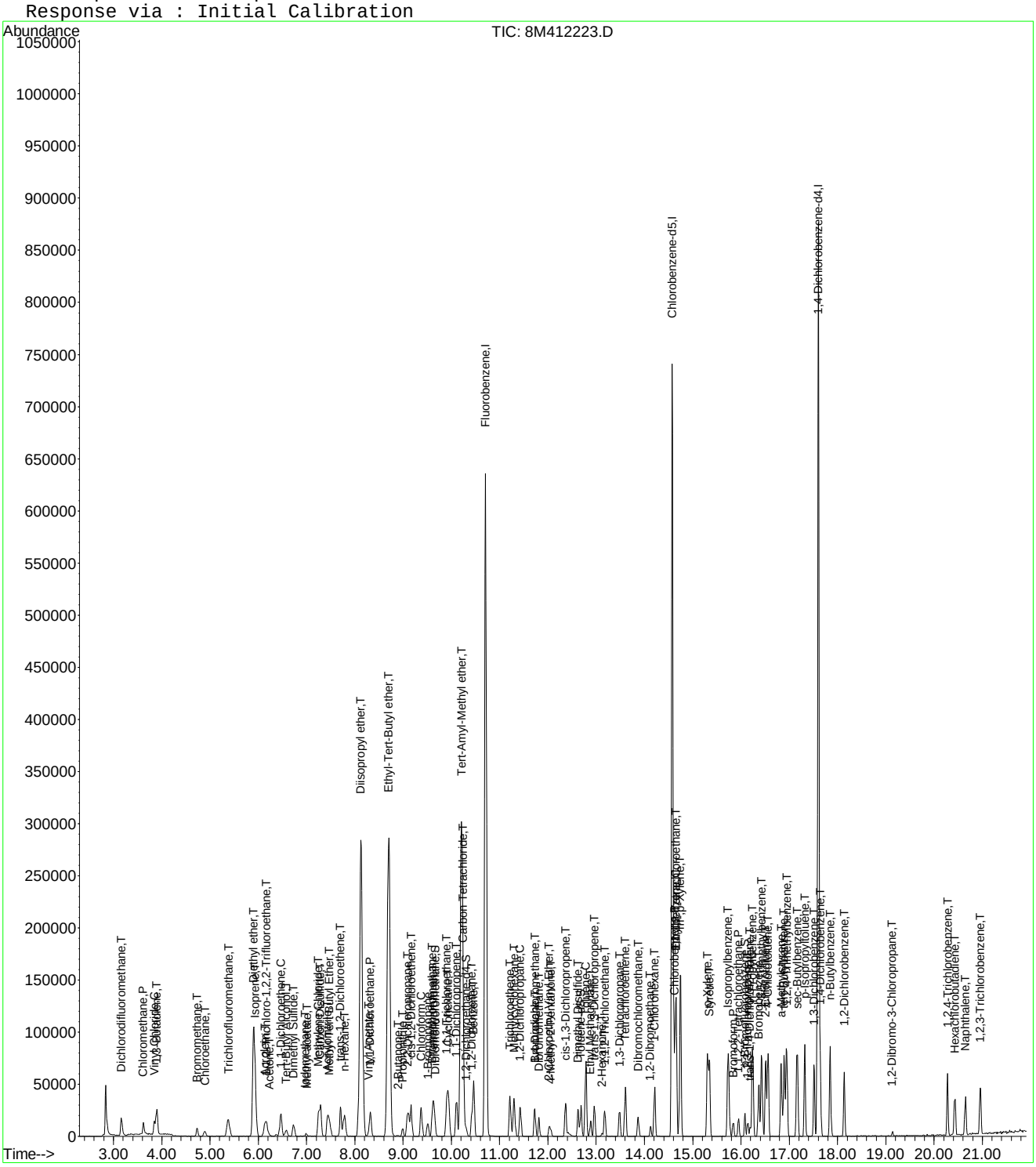

8M412223.D 8260WT.M Fri May 13 15:18:37 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.8958	5.2	100	0.00
3	P	Chloromethane	2.0000	2.1033	-5.2	100	0.00
4	C	Vinyl Chloride	2.0000	2.0431	-2.2	100	0.00
5	T	1,3-Butadiene	2.0000	1.7872	10.6	100	0.02
6	T	Bromomethane	2.0000	2.0126	-0.6	100	0.00
7	T	Chloroethane	2.0000	1.9127	4.4	100	0.00
8	T	Trichlorofluoromethane	2.0000	2.0686	-3.4	100	0.00
9	T	Diethyl ether	25.0000	26.7567	-7.0	100	0.00
10	T	Isoprene	2.0000	2.0394	-2.0	100	0.00
11	T	Acrolein	12.5000	13.4606	-7.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	2.1182	-5.9	100	0.02
13	T	Acetone	-1.0000	1.7255	0.0	100	-0.01
14	C	1,1-Dichloroethene	2.0000	2.0070	-0.4	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	52.7840	-5.6	100	0.00
16	T	Dimethyl Sulfide	2.0000	2.0975	-4.9	100	0.00
17	T	Iodomethane	2.0000	3.0680	-53.4#	100	0.00
18	T	Methyl acetate	-1.0000	2.1281	0.0	100	0.00
19	T	Methylene Chloride	2.0000	2.0590	-3.0	100	0.00
20	T	Carbon Disulfide	2.0000	2.1789	-8.9	100	0.00
21	T	Acrylonitrile	12.5000	12.1237	3.0	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.9505	2.5	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.9603	2.0	100	0.00
24	T	n-Hexane	-1.0000	2.1181	0.0	100	0.00
25	T	Diisopropyl ether	25.0000	26.2305	-4.9	100	0.00
26	T	Vinyl Acetate	2.0000	1.9284	3.6	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.1072	-5.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	26.0139	-4.1	100	0.00
29	T	2-Butanone	-1.0000	1.7396	0.0	100	0.02
30	T	Propionitrile	25.0000	24.8668	0.5	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1378	-6.9	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0306	-1.5	100	0.00
33	C	Chloroform	2.0000	1.9679	1.6	100	0.00
34		1-Bromopropane	2.0000	1.9533	2.3	100	0.00
35	T	Bromochloromethane	2.0000	1.9951	0.2	100	0.00
36	T	Tetrahydrofuran	25.0000	25.9117	-3.6	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9708	2.9	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.9930	0.3	100	0.00
39	T	Cyclohexane	2.0000	2.0605	-3.0	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0248	-1.2	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	26.0627	-4.3	100	0.00
42	T	Carbon Tetrachloride	2.0000	2.0126	-0.6	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0740	-7.4	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	2.0000	2.0183	-0.9	100	0.00
46	T	Benzene	2.0000	2.0854	-4.3	100	0.00
47	T	Trichloroethene	2.0000	2.0166	-0.8	100	0.00
48	T	Methylcyclohexane	-1.0000	2.0003	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0380	-1.9	100	0.00
50	T	Bromodichloromethane	2.0000	2.0511	-2.6	100	0.00
51	T	1,4-Dioxane	-1.0000	35.6688	0.0	100	0.02
52	T	Dibromomethane	2.0000	2.0246	-1.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	2.0271	-1.4	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.7027	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.8869	5.7	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.7986	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	0.9896	1.0	100	0.00
59	C	Toluene	2.0000	2.1628	-8.1	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.9633	1.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	2.0000	1.9609	2.0	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.9800	1.0	100	0.00
64	T	2-Hexanone	-1.0000	1.9672	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.1332	-6.7	100	0.00
66	T	Tetrachloroethene	2.0000	2.0198	-1.0	100	0.00
67	T	Dibromochloromethane	2.0000	1.8915	5.4	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.9141	4.3	100	0.00
69	T	1-Chlorohexane	2.0000	1.9075	4.6	100	0.00
70	P	Chlorobenzene	2.0000	2.0831	-4.2	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.9892	0.5	100	0.00
72	C	Ethylbenzene	2.0000	2.0596	-3.0	100	0.00
73	T	m-,p-Xylene	4.0000	4.1170	-2.9	100	0.00
74	T	o-Xylene	2.0000	1.9825	0.9	100	0.00
75	T	Styrene	2.0000	2.0358	-1.8	100	0.00
76	P	Bromoform	2.0000	1.9841	0.8	100	0.00
77	T	Isopropylbenzene	2.0000	2.1448	-7.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	2.0066	-0.3	100	0.00
80	S	p-Bromofluorobenzene	1.0000	1.0184	-1.8	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	2.0501	-2.5	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	2.0915	-4.6	100	0.00
83	T	n-Propylbenzene	2.0000	2.1757	-8.8	100	0.00
84	T	Bromobenzene	2.0000	2.0859	-4.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.0703	-3.5	100	0.00
86	T	2-Chlorotoluene	2.0000	2.1509	-7.5	100	0.00
87	T	4-Chlorotoluene	2.0000	2.0989	-4.9	100	0.00
88	T	a-Methylstyrene	-1.0000	1.9045	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	1.9967	0.2	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.1411	-7.1	100	0.00
91	T	sec-Butylbenzene	2.0000	2.1161	-5.8	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.1579	-7.9	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.1067	-5.3	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.0470	-2.4	100	0.00
95	T	n-Butylbenzene	2.0000	2.1098	-5.5	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0532	-2.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.6938	15.3	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	2.0021	-0.1	100	0.00
99	T	Hexachlorobutadiene	2.0000	2.0128	-0.6	100	0.00
100	T	Naphthalene	2.0000	2.0630	-3.2	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9910	0.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412223.D 8260WT.M Sat May 14 18:08:14 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	768397	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	534372	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	274234	25.00 ug/L	0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	19775	2.0496 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	8.20%#	
43) 1,2-Dichloroethane-d4	10.30	65	21200	1.9207 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	7.68%#	
58) Toluene-d8	12.68	98	65647	2.3758 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	9.52%#	
80) p-Bromofluorobenzene	16.08	95	26759	2.3838 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	9.52%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	55961	3.4750 ug/L	99
3) Chloromethane	3.62	50	34194	2.2538 ug/L	100
4) Vinyl Chloride	3.84	62	42506	4.1488 ug/L	99
5) 1,3-Butadiene	3.89	54	32006	3.1976 ug/L	93
6) Bromomethane	4.72	94	19582	3.4204 ug/L	94
7) Chloroethane	4.90	64	22000	3.2814 ug/L	84
8) Trichlorofluoromethane	5.37	101	77715	3.8212 ug/L	96
9) Diethyl ether	5.90	59	188516	30.2955 ug/L	79
10) Isoprene	5.94	67	44975	4.3218 ug/L	78
11) Acrolein	6.15	56	7712	13.9568 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	36867	3.9591 ug/L	99
13) Acetone	6.24	43	3578	1.8967 ug/L	85
14) 1,1-Dichloroethene	6.47	61	59405	3.2870 ug/L	95
15) Tert-Butyl Alcohol	6.58	59	27833	64.0897 ug/L #	82
16) Dimethyl Sulfide	6.73	62	21102	3.1597 ug/L	77
17) Iodomethane	6.99	142	3667	1.8964 ug/L	95
18) Methyl acetate	7.00	43	11500	2.0398 ug/L #	86
19) Methylene Chloride	7.24	84	37533	4.3823 ug/L	52
20) Carbon Disulfide	7.29	76	123060	4.7097 ug/L	100
21) Acrylonitrile	7.43	53	25653	10.5804 ug/L	99
22) Methyl Tert Butyl Ether	7.47	73	80005	4.2289 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	54124	3.3108 ug/L	94
24) n-Hexane	7.78	57	40758	2.7480 ug/L	82
25) Diisopropyl ether	8.12	45	841400	20.0337 ug/L #	91
26) Vinyl Acetate	8.30	43	37284	2.2113 ug/L #	90
27) 1,1-Dichloroethane	8.32	63	66711	3.4116 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	907423	30.7852 ug/L	89
29) 2-Butanone	8.89	43	5359	1.7738 ug/L #	82
30) Propionitrile	8.99	54	17933	23.4726 ug/L	100
31) 2,2-Dichloropropane	9.10	77	73150	4.2462 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	41036	4.1950 ug/L	89
33) Chloroform	9.37	83	78227	4.3116 ug/L	99
34) 1-Bromopropane	9.52	122	6162	3.9986 ug/L	99
35) Bromochloromethane	9.60	130	20988	4.1009 ug/L #	62
36) Tetrahydrofuran	9.62	42	38098	19.0742 ug/L #	62
38) 1,1,1-Trichloroethane	9.91	97	76152	4.1633 ug/L	97
39) Cyclohexane	9.94	56	51439	2.5767 ug/L #	66
40) 1,1-Dichloropropene	10.11	75	56645	4.3027 ug/L	93
41) Tert-Amyl-Methyl ether	10.21	73	821180	43.4958 ug/L	87
42) Carbon Tetrachloride	10.25	117	67831	3.9416 ug/L	96

(#) = qualifier out of range (m) = manual integration
8M412224.D 8260WT.M Fri May 13 15:47:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	51708	3.3934 ug/L		85
46)	Benzene	10.46	78	150204	4.4792 ug/L		86
47)	Trichloroethene	11.21	130	38500	3.9784 ug/L		94
48)	Methylcyclohexane	11.30	83	60897	4.5008 ug/L		81
49)	1,2-Dichloropropane	11.43	63	31773	3.2549 ug/L		77
50)	Bromodichloromethane	11.73	83	59127	4.3535 ug/L		94
51)	1,4-Dioxane	11.71	88	2719	69.8702 ug/L	#	62
52)	Dibromomethane	11.81	93	19711	4.2894 ug/L		96
53)	2-Chloroethyl Vinyl Ether	12.03	63	12946	3.1676 ug/L		98
54)	4-Methyl-2-Pentanone	12.05	58	5129	2.2991 ug/L	#	78
55)	cis-1,3-Dichloropropene	12.36	75	61169	4.4752 ug/L		94
56)	Dimethyl Disulfide	12.62	79	27966	3.9053 ug/L		98
59)	Toluene	12.78	91	161007	5.0316 ug/L		97
60)	Ethyl Methacrylate	12.88	69	28595	4.7624 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	49791	4.4599 ug/L		97
63)	1,1,2-Trichloroethane	13.18	97	23678	4.6631 ug/L		99
64)	2-Hexanone	13.11	58	4499	2.4685 ug/L	#	97
65)	1,3-Dichloropropane	13.49	76	44838	4.7614 ug/L		73
66)	Tetrachloroethene	13.60	164	32715	4.5144 ug/L		97
67)	Dibromochloromethane	13.87	129	35009	4.3734 ug/L		98
68)	1,2-Dibromoethane	14.13	107	24247	4.5815 ug/L		99
69)	1-Chlorohexane	14.21	91	53599	4.9176 ug/L		84
70)	Chlorobenzene	14.62	112	107618	4.8437 ug/L		95
71)	1,1,1,2-Tetrachloroethane	14.65	131	38120	4.4025 ug/L		96
72)	Ethylbenzene	14.65	106	56905	4.5138 ug/L		91
73)	m-,p-Xylene	14.75	106	137390	9.4592 ug/L		86
74)	o-Xylene	15.31	106	65650	4.4866 ug/L		85
75)	Styrene	15.35	104	111433	4.7758 ug/L		91
76)	Bromoform	15.84	173	19346	4.2121 ug/L		97
77)	Isopropylbenzene	15.73	105	182523	4.9200 ug/L		96
79)	1,1,2,2-Tetrachloroethane	15.95	83	26655	4.8730 ug/L		99
81)	1,2,3-Trichloropropane	16.13	110	8840	5.0289 ug/L		81
82)	trans-1,4-Dichloro-2-Buten	16.19	53	6584	2.4712 ug/L	#	51
83)	n-Propylbenzene	16.24	91	222196	5.2576 ug/L		96
84)	Bromobenzene	16.37	156	42665	4.8423 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	155714	4.9790 ug/L		93
86)	2-Chlorotoluene	16.52	91	148764	5.4968 ug/L		94
87)	4-Chlorotoluene	16.56	91	135679	4.8666 ug/L		94
88)	a-Methylstyrene	16.84	118	68945	4.4743 ug/L		91
89)	tert-Butylbenzene	16.89	134	29069	4.6914 ug/L		77
90)	1,2,4-Trimethylbenzene	16.95	105	161016	5.0301 ug/L		94
91)	sec-Butylbenzene	17.17	105	191273	5.0866 ug/L		94
92)	p-Isopropyltoluene	17.32	119	159232	4.9597 ug/L		93
93)	1,3-Dichlorobenzene	17.52	146	83896	4.7972 ug/L		95
94)	1,4-Dichlorobenzene	17.64	146	82462	4.7242 ug/L		86
95)	n-Butylbenzene	17.85	91	158787	5.1996 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	72524	4.7321 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	5629	4.6990 ug/L		76
98)	1,2,4-Trichlorobenzene	20.28	180	53855	4.5369 ug/L		98
99)	Hexachlorobutadiene	20.43	225	24504	4.4608 ug/L		93
100)	Naphthalene	20.65	128	79806	4.4217 ug/L		98
101)	1,2,3-Trichlorobenzene	20.96	180	44150	4.3720 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412224.D 8260WT.M Fri May 13 15:47:44 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

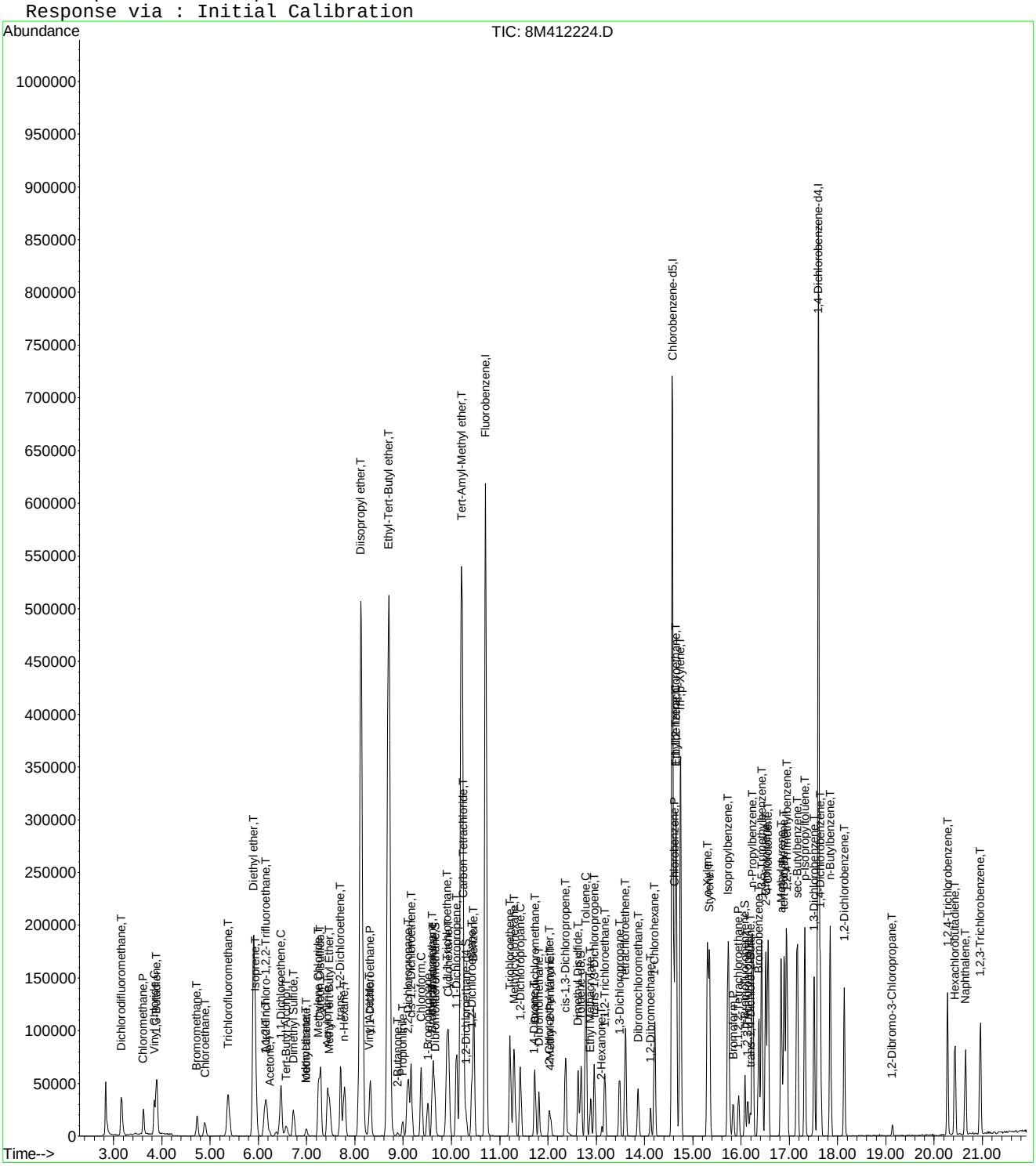

8M412224.D 8260WT.M Fri May 13 15:47:44 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.3438	13.1	100	0.00
3	P	Chloromethane	5.0000	4.5471	9.1	100	0.00
4	C	Vinyl Chloride	5.0000	4.7641	4.7	100	0.00
5	T	1,3-Butadiene	5.0000	4.2777	14.4	100	0.00
6	T	Bromomethane	5.0000	4.1880	16.2	100	-0.01
7	T	Chloroethane	5.0000	4.4813	10.4	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.6812	6.4	100	0.00
9	T	Diethyl ether	50.0000	47.5652	4.9	100	0.00
10	T	Isoprene	5.0000	4.4611	10.8	100	0.00
11	T	Acrolein	25.0000	21.7328	13.1	100	0.02
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.7244	5.5	100	0.00
13	T	Acetone	5.0000	4.1387	17.2	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.7810	4.4	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	100.4650	-0.5	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.7499	5.0	100	0.00
17	T	Iodomethane	5.0000	3.7634	24.7	100	0.00
18	T	Methyl acetate	5.0000	4.9211	1.6	100	0.00
19	T	Methylene Chloride	5.0000	4.7467	5.1	100	0.00
20	T	Carbon Disulfide	5.0000	4.7328	5.3	100	0.00
21	T	Acrylonitrile	25.0000	22.8698	8.5	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.6750	6.5	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.7415	5.2	100	0.00
24	T	n-Hexane	5.0000	4.8084	3.8	100	0.00
25	T	Diisopropyl ether	50.0000	47.2872	5.4	100	0.00
26	T	Vinyl Acetate	5.0000	4.5766	8.5	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.7058	5.9	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	47.5984	4.8	100	0.00
29	T	2-Butanone	5.0000	4.2191	15.6	100	0.00
30	T	Propionitrile	50.0000	48.4475	3.1	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.8965	2.1	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.6525	7.0	100	0.00
33	C	Chloroform	5.0000	4.6735	6.5	100	0.00
34		1-Bromopropane	5.0000	4.8774	2.5	100	0.00
35	T	Bromochloromethane	5.0000	4.6403	7.2	100	0.00
36	T	Tetrahydrofuran	50.0000	45.5400	8.9	100	-0.01
37	S	Dibromofluoromethane	2.5000	2.3953	4.2	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.7896	4.2	100	0.00
39	T	Cyclohexane	5.0000	4.6730	6.5	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.6741	6.5	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	47.6211	4.8	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.8044	3.9	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.3949	4.2	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	5.0000	4.7996	4.0	100	0.00
46	T	Benzene	5.0000	4.7588	4.8	100	0.00
47	T	Trichloroethene	5.0000	4.5733	8.5	100	0.00
48	T	Methylcyclohexane	5.0000	4.7616	4.8	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.5219	9.6	100	0.00
50	T	Bromodichloromethane	5.0000	4.7878	4.2	100	0.00
51	T	1,4-Dioxane	100.0000	77.0346	23.0	100	0.00
52	T	Dibromomethane	5.0000	4.7390	5.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.2867	14.3	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.1576	16.8	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.8662	2.7	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.1683	16.6	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.3473	6.1	100	0.00
59	C	Toluene	5.0000	4.8533	2.9	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.4883	10.2	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	5.0000	4.4786	10.4	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.5231	9.5	100	0.00
64	T	2-Hexanone	5.0000	4.0898	18.2	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.8109	3.8	100	0.00
66	T	Tetrachloroethene	5.0000	4.6028	7.9	100	0.00
67	T	Dibromochloromethane	5.0000	4.5802	8.4	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.6475	7.1	100	0.00
69	T	1-Chlorohexane	5.0000	4.7331	5.3	100	0.00
70	P	Chlorobenzene	5.0000	4.8107	3.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.3984	12.0	100	0.00
72	C	Ethylbenzene	5.0000	4.6492	7.0	100	0.00
73	T	m-,p-Xylene	10.0000	9.5700	4.3	100	0.00
74	T	o-Xylene	5.0000	4.6773	6.5	100	0.00
75	T	Styrene	5.0000	4.8405	3.2	100	0.00
76	P	Bromoform	5.0000	4.2672	14.7	100	0.00
77	T	Isopropylbenzene	5.0000	4.8951	2.1	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	4.8422	3.2	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.3565	5.7	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.2150	-4.3	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.3781	12.4	100	0.00
83	T	n-Propylbenzene	5.0000	5.1935	-3.9	100	0.00
84	T	Bromobenzene	5.0000	4.8483	3.0	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	4.9964	0.1	100	0.00
86	T	2-Chlorotoluene	5.0000	4.9803	0.4	100	0.00
87	T	4-Chlorotoluene	5.0000	5.0286	-0.6	100	0.00
88	T	a-Methylstyrene	5.0000	4.6629	6.7	100	0.00
89	T	tert-Butylbenzene	5.0000	4.7677	4.6	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.0245	-0.5	100	0.00
91	T	sec-Butylbenzene	5.0000	5.2170	-4.3	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.1150	-2.3	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	4.9511	1.0	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	4.8270	3.5	100	0.00
95	T	n-Butylbenzene	5.0000	5.1595	-3.2	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	4.8122	3.8	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	5.0942	-1.9	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.7808	4.4	100	0.00
99	T	Hexachlorobutadiene	5.0000	4.6555	6.9	100	0.00
100	T	Naphthalene	5.0000	4.7684	4.6	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.6455	7.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412224.D 8260WT.M Sat May 14 18:08:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	770027	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	531490	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	283594	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	86295	10.9569 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 43.84%#		
43) 1,2-Dichloroethane-d4	10.30	65	96239	11.3450 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 45.36%#		
58) Toluene-d8	12.68	98	294491	10.9223 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 43.68%#		
80) p-Bromofluorobenzene	16.08	95	121459	10.5490 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 42.20%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	288235	23.7135 ug/L	99
3) Chloromethane	3.62	50	155712	20.3784 ug/L	98
4) Vinyl Chloride	3.84	62	184250	20.9368 ug/L	95
5) 1,3-Butadiene	3.89	54	149348	22.7750 ug/L	96
6) Bromomethane	4.73	94	100098	25.0143 ug/L	99
7) Chloroethane	4.89	64	100876	20.9404 ug/L	91
8) Trichlorofluoromethane	5.37	101	351299	21.2512 ug/L	98
9) Diethyl ether	5.90	59	324317	80.8265 ug/L	78
10) Isoprene	5.94	67	205842	20.3622 ug/L	77
11) Acrolein	6.14	56	12049	34.8201 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	159996	20.3859 ug/L	97
13) Acetone	6.25	43	18459	25.7405 ug/L	98
14) 1,1-Dichloroethene	6.47	61	256241	20.5065 ug/L	92
15) Tert-Butyl Alcohol	6.57	59	43922	153.5712 ug/L	93
16) Dimethyl Sulfide	6.73	62	89456	20.6087 ug/L	83
17) Iodomethane	6.99	142	40622	61.0474 ug/L	93
18) Methyl acetate	7.00	43	46598	20.2171 ug/L #	85
19) Methylene Chloride	7.25	84	161897	20.1338 ug/L	52
20) Carbon Disulfide	7.30	76	538090	20.0802 ug/L	98
21) Acrylonitrile	7.43	53	46305	46.9889 ug/L	100
22) Methyl Tert Butyl Ether	7.47	73	361116	22.0137 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	234754	20.3175 ug/L	90
24) n-Hexane	7.78	57	172498	21.1165 ug/L	84
25) Diisopropyl ether	8.12	45	1447822	80.3755 ug/L #	91
26) Vinyl Acetate	8.30	43	166501	21.7017 ug/L #	88
27) 1,1-Dichloroethane	8.33	63	300321	21.3849 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	1579265	83.0733 ug/L	89
29) 2-Butanone	8.88	43	25681	23.9099 ug/L	87
30) Propionitrile	8.98	54	30953	89.5673 ug/L	94
31) 2,2-Dichloropropane	9.10	77	309575	20.8527 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	181973	20.4488 ug/L	89
33) Chloroform	9.37	83	348925	20.5535 ug/L	96
34) 1-Bromopropane	9.52	122	26723	22.7206 ug/L	96
35) Bromochloromethane	9.61	130	94952	21.3181 ug/L	65
36) Tetrahydrofuran	9.63	42	63066	70.5772 ug/L #	57
38) 1,1,1-Trichloroethane	9.91	97	335486	21.3640 ug/L	99
39) Cyclohexane	9.94	56	221040	19.9984 ug/L #	64
40) 1,1-Dichloropropene	10.11	75	248373	20.4717 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1418183	81.7883 ug/L	88
42) Carbon Tetrachloride	10.25	117	296471	21.3449 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412225.D 8260WT.M Fri May 13 16:16:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	228665	21.6403	ug/L		85
46)	Benzene	10.46	78	668449	20.3769	ug/L		86
47)	Trichloroethene	11.21	130	174107	20.7980	ug/L		96
48)	Methylcyclohexane	11.29	83	262275	21.4887	ug/L		82
49)	1,2-Dichloropropane	11.43	63	146868	21.1883	ug/L	#	72
50)	Bromodichloromethane	11.73	83	262192	21.9986	ug/L		98
51)	1,4-Dioxane	11.71	88	5351	196.3837	ug/L		76
52)	Dibromomethane	11.81	93	86951	21.0734	ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	63586	22.4600	ug/L		91
54)	4-Methyl-2-Pentanone	12.05	58	25754	25.0531	ug/L	#	73
55)	cis-1,3-Dichloropropene	12.36	75	265439	21.9841	ug/L		99
56)	Dimethyl Disulfide	12.63	79	134192	23.9412	ug/L		100
59)	Toluene	12.78	91	700473	20.1722	ug/L		99
60)	Ethyl Methacrylate	12.88	69	133361	23.2046	ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	238585	23.2548	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	107901	21.0216	ug/L		99
64)	2-Hexanone	13.11	58	22561	25.2093	ug/L	#	85
65)	1,3-Dichloropropane	13.49	76	198804	22.2491	ug/L		74
66)	Tetrachloroethene	13.60	164	141791	20.0055	ug/L		94
67)	Dibromochloromethane	13.87	129	158465	22.0695	ug/L		99
68)	1,2-Dibromoethane	14.13	107	110085	22.3366	ug/L		100
69)	1-Chlorohexane	14.21	91	229753	20.3591	ug/L		83
70)	Chlorobenzene	14.62	112	467492	20.4613	ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.65	131	183079	22.2095	ug/L		96
72)	Ethylbenzene	14.65	106	249016	20.2289	ug/L		90
73)	m-,p-Xylene	14.75	106	606381	41.1308	ug/L		88
74)	o-Xylene	15.30	106	294106	21.2106	ug/L		90
75)	Styrene	15.35	104	492781	21.8207	ug/L		89
76)	Bromoform	15.83	173	95911	23.8070	ug/L		99
77)	Isopropylbenzene	15.73	105	806678	20.7280	ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	123253	22.7779	ug/L		95
81)	1,2,3-Trichloropropane	16.14	110	36712	22.1354	ug/L		94
82)	trans-1,4-Dichloro-2-Buten	16.18	53	33702	27.6513	ug/L	#	56
83)	n-Propylbenzene	16.24	91	962196	20.3511	ug/L		97
84)	Bromobenzene	16.37	156	190566	21.2033	ug/L		94
85)	1,3,5-Trimethylbenzene	16.43	105	692633	20.9615	ug/L		94
86)	2-Chlorotoluene	16.51	91	649077	19.9155	ug/L		96
87)	4-Chlorotoluene	16.56	91	595446	20.3225	ug/L		95
88)	a-Methylstyrene	16.83	118	318960	22.3680	ug/L		92
89)	tert-Butylbenzene	16.90	134	129440	20.4705	ug/L		83
90)	1,2,4-Trimethylbenzene	16.95	105	707749	20.4783	ug/L		94
91)	sec-Butylbenzene	17.17	105	818359	20.1802	ug/L		97
92)	p-Isopropyltoluene	17.32	119	677859	19.7492	ug/L		96
93)	1,3-Dichlorobenzene	17.52	146	364065	20.5126	ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	363066	19.9874	ug/L		92
95)	n-Butylbenzene	17.85	91	681055	20.0187	ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	318612	19.9358	ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	23070	21.6419	ug/L		93
98)	1,2,4-Trichlorobenzene	20.28	180	242455	20.8863	ug/L		98
99)	Hexachlorobutadiene	20.43	225	110384	20.2523	ug/L		96
100)	Naphthalene	20.65	128	369849	21.4526	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	198876	19.8356	ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration

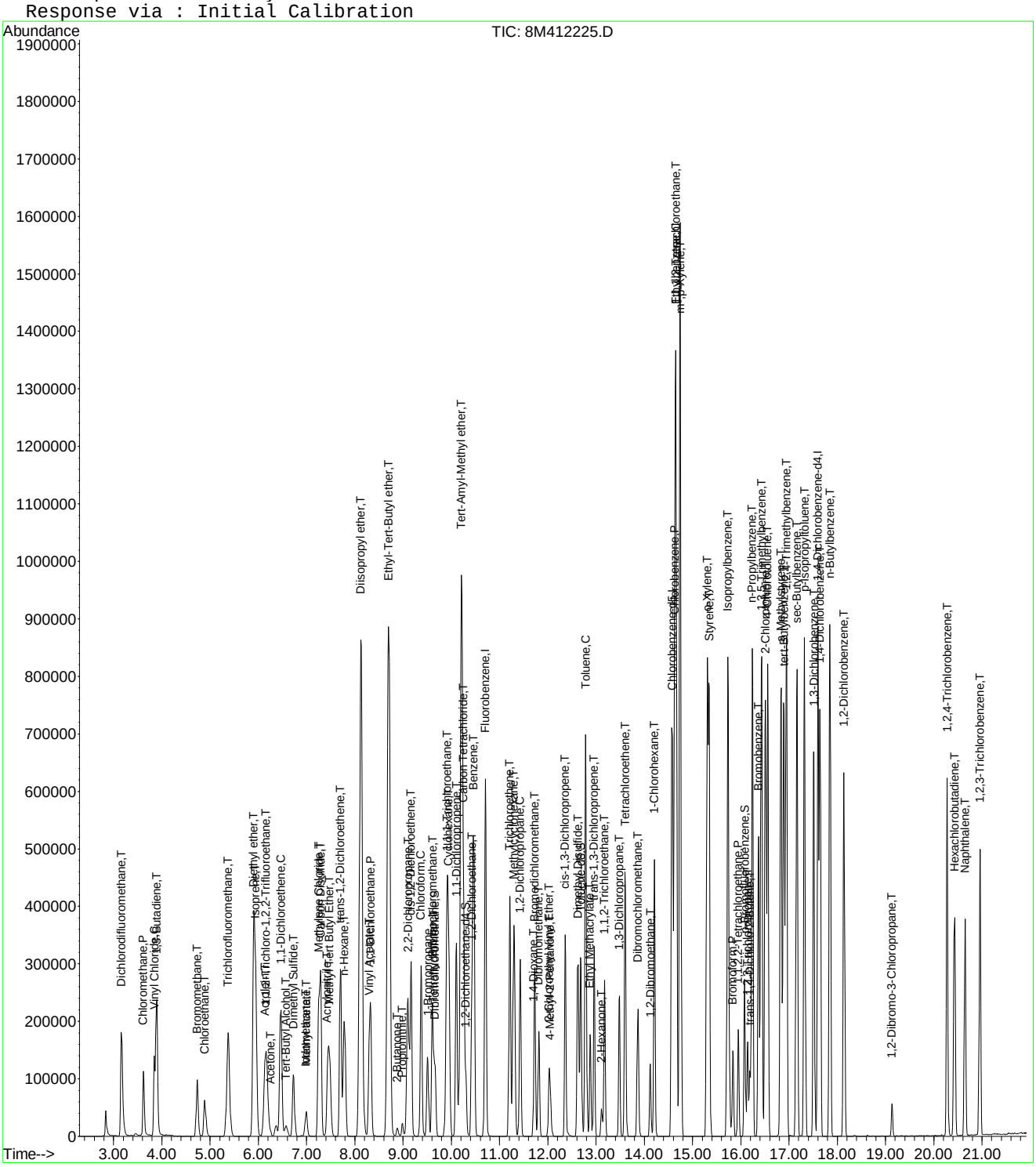

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45:30 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	778260	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	539116	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	288225	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	211053	26.5139 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.04%		
43) 1,2-Dichloroethane-d4	10.31	65	229348	26.7504 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.00%		
58) Toluene-d8	12.68	98	718491	26.2709 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.08%		
80) p-Bromofluorobenzene	16.07	95	292755	25.0180 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.08%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	682745	55.5761 ug/L	100
3) Chloromethane	3.62	50	372858	48.2806 ug/L	98
4) Vinyl Chloride	3.85	62	453905	51.0328 ug/L	96
5) 1,3-Butadiene	3.88	54	390501	58.9199 ug/L	99
6) Bromomethane	4.74	94	260493	64.4080 ug/L	97
7) Chloroethane	4.89	64	244336	50.1840 ug/L	91
8) Trichlorofluoromethane	5.38	101	837676	50.1376 ug/L	99
9) Diethyl ether	5.90	59	389327	96.0019 ug/L	79
10) Isoprene	5.94	67	498060	48.7477 ug/L	76
11) Acrolein	6.13	56	17644	50.4496 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	387643	48.8691 ug/L	97
13) Acetone	6.25	43	45901	63.3305 ug/L	97
14) 1,1-Dichloroethene	6.46	61	619744	49.0724 ug/L	94
15) Tert-Butyl Alcohol	6.58	59	53656	185.6211 ug/L	91
16) Dimethyl Sulfide	6.73	62	221107	50.3993 ug/L	82
17) Iodomethane	6.98	142	157872	234.7428 ug/L	94
18) Methyl acetate	7.00	43	114759	49.2629 ug/L #	81
19) Methylene Chloride	7.25	84	389653	47.9453 ug/L	52
20) Carbon Disulfide	7.29	76	1269941	46.8897 ug/L	99
21) Acrylonitrile	7.43	53	59882	60.1236 ug/L	97
22) Methyl Tert Butyl Ether	7.46	73	901668	54.3843 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	571507	48.9396 ug/L	93
24) n-Hexane	7.79	57	419656	50.8290 ug/L	83
25) Diisopropyl ether	8.13	45	1781012	97.8265 ug/L #	90
26) Vinyl Acetate	8.29	43	428708	55.2866 ug/L #	89
27) 1,1-Dichloroethane	8.32	63	722574	50.9078 ug/L	96
28) Ethyl-Tert-Butyl ether	8.71	59	1955100	101.7552 ug/L	89
29) 2-Butanone	8.88	43	66579	61.3316 ug/L #	82
30) Propionitrile	8.98	54	38235	109.4684 ug/L	95
31) 2,2-Dichloropropane	9.10	77	768496	51.2175 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	439590	48.8754 ug/L	91
33) Chloroform	9.38	83	844564	49.2230 ug/L	97
34) 1-Bromopropane	9.51	122	63442	53.3693 ug/L	99
35) Bromochloromethane	9.60	130	230119	51.1185 ug/L	66
36) Tetrahydrofuran	9.64	42	79437	87.9575 ug/L #	62
38) 1,1,1-Trichloroethane	9.90	97	817606	51.5150 ug/L	99
39) Cyclohexane	9.93	56	535882	47.9707 ug/L #	65
40) 1,1-Dichloropropene	10.10	75	615439	50.1899 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1769381	100.9628 ug/L	88
42) Carbon Tetrachloride	10.24	117	724058	51.5782 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412226.D 8260WT.M Fri May 13 16:45:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45:30 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	561107	52.5401 ug/L		85
46)	Benzene	10.46	78	1607407	48.4816 ug/L		86
47)	Trichloroethene	11.22	130	424998	50.2312 ug/L		96
48)	Methylcyclohexane	11.30	83	635339	51.5040 ug/L		83
49)	1,2-Dichloropropane	11.42	63	351908	50.2320 ug/L	#	71
50)	Bromodichloromethane	11.72	83	654943	54.3701 ug/L		97
51)	1,4-Dioxane	11.71	88	7573	274.9918 ug/L		73
52)	Dibromomethane	11.82	93	209167	50.1574 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	162319	56.7281 ug/L		93
54)	4-Methyl-2-Pentanone	12.05	58	64928	62.4928 ug/L		80
55)	cis-1,3-Dichloropropene	12.36	75	666861	54.6463 ug/L		98
56)	Dimethyl Disulfide	12.62	79	343446	60.6260 ug/L		96
59)	Toluene	12.79	91	1676069	47.5846 ug/L		100
60)	Ethyl Methacrylate	12.88	69	338996	58.1503 ug/L		69
62)	trans-1,3-Dichloropropene	12.96	75	594749	57.1499 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	268432	51.5570 ug/L		98
64)	2-Hexanone	13.12	58	56859	62.6347 ug/L	#	83
65)	1,3-Dichloropropane	13.48	76	489226	53.9770 ug/L		75
66)	Tetrachloroethene	13.60	164	350332	48.7296 ug/L		95
67)	Dibromochloromethane	13.86	129	401149	55.0780 ug/L		100
68)	1,2-Dibromoethane	14.12	107	273580	54.7252 ug/L		99
69)	1-Chlorohexane	14.21	91	560883	48.9984 ug/L		82
70)	Chlorobenzene	14.63	112	1117812	48.2326 ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	446892	53.4462 ug/L		99
72)	Ethylbenzene	14.66	106	603074	48.2980 ug/L		91
73)	m-,p-Xylene	14.74	106	1443780	96.5463 ug/L		90
74)	o-Xylene	15.31	106	709244	50.4265 ug/L		90
75)	Styrene	15.34	104	1212099	52.9133 ug/L		91
76)	Bromoform	15.84	173	238354	58.3272 ug/L		100
77)	Isopropylbenzene	15.73	105	1919993	48.6372 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	294266	53.5083 ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	89279	52.9656 ug/L		93
82)	trans-1,4-Dichloro-2-Buten	16.19	53	86829	70.0956 ug/L	#	53
83)	n-Propylbenzene	16.24	91	2278994	47.4277 ug/L		98
84)	Bromobenzene	16.37	156	459959	50.3549 ug/L		93
85)	1,3,5-Trimethylbenzene	16.43	105	1661486	49.4745 ug/L		95
86)	2-Chlorotoluene	16.51	91	1611031	48.6367 ug/L		97
87)	4-Chlorotoluene	16.56	91	1341051	45.0344 ug/L		95
88)	a-Methylstyrene	16.83	118	772611	53.3111 ug/L		90
89)	tert-Butylbenzene	16.89	134	307503	47.8493 ug/L		81
90)	1,2,4-Trimethylbenzene	16.94	105	1679809	47.8234 ug/L		95
91)	sec-Butylbenzene	17.16	105	1925411	46.7166 ug/L		97
92)	p-Isopropyltoluene	17.32	119	1621383	46.4795 ug/L		95
93)	1,3-Dichlorobenzene	17.51	146	882656	48.9327 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	871210	47.1909 ug/L		92
95)	n-Butylbenzene	17.85	91	1608832	46.5296 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	768548	47.3159 ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	59586	54.9992 ug/L		86
98)	1,2,4-Trichlorobenzene	20.28	180	583880	49.4902 ug/L		100
99)	Hexachlorobutadiene	20.44	225	264699	47.7844 ug/L		98
100)	Naphthalene	20.65	128	894629	51.0579 ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	475246	46.6387 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412226.D 8260WT.M Fri May 13 16:45:33 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration

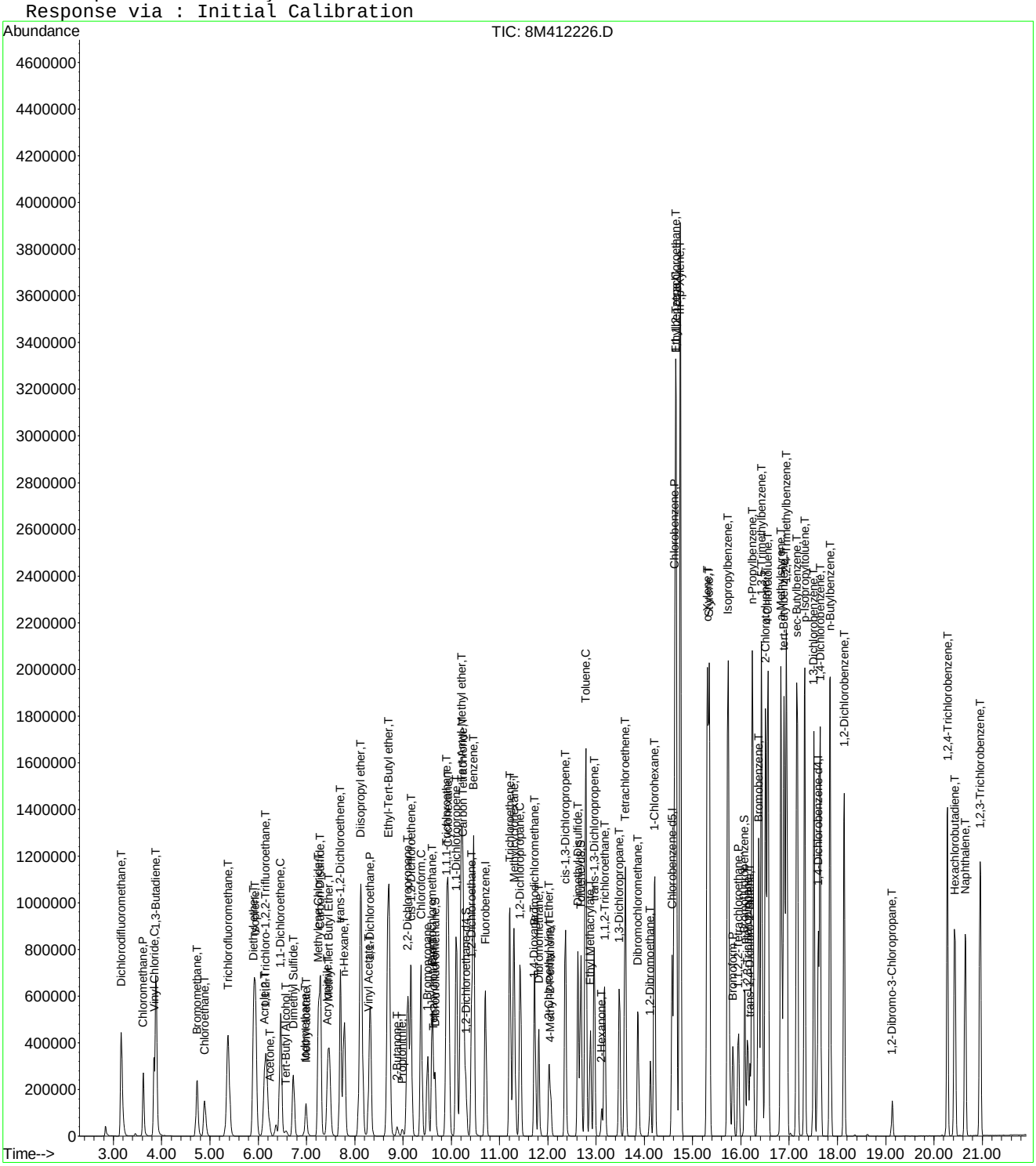
Abundance
TIC: 8M412226.D
Time-->
Dichlorodifluoromethane,T
Chloromethane,P
Vinyl Chloride,C
1,3-Butadiene,T
Bromomethane,T
Chloroethane,T
Trichlorofluoromethane,T
Acetone,T
Tert-Butyl Alcohol,T
Dimethyl Sulfide,T
1,1-Dichloroethene,C
Tert Butyl Ether,T
Methyl Acetate,T
Tert-Butyl Alcohol,T
Tert-Butyl Ether,T
Tert-Butyl Ether,T
Tert-Butyl Ether,T
Tert-Butyl Ether,T
Methyl Acrylate,T
Methyl Acrylate,T
Methyl Acrylate

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	809533	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	559075	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	296193	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	460283	53.9056 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 215.64%#		
43) 1,2-Dichloroethane-d4	10.30	65	488116	52.5821 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 210.32%#		
58) Toluene-d8	12.68	98	1540572	52.8075 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 211.24%#		
80) p-Bromofluorobenzene	16.08	95	623735	51.1573 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 204.64%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	1463283	109.1068 ug/L	100
3) Chloromethane	3.62	50	778702	97.2380 ug/L	98
4) Vinyl Chloride	3.84	62	968312	103.4979 ug/L	95
5) 1,3-Butadiene	3.88	54	896569	120.4972 ug/L	95
6) Bromomethane	4.73	94	605228	129.8677 ug/L	99
7) Chloroethane	4.89	64	528153	103.4126 ug/L	90
8) Trichlorofluoromethane	5.37	101	1782726	101.4754 ug/L	99
9) Diethyl ether	5.90	59	828091	197.4770 ug/L	79
10) Isoprene	5.94	67	1080684	101.8037 ug/L	78
11) Acrolein	6.14	56	38655	109.5572 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	833546	101.0906 ug/L	97
13) Acetone	6.24	43	97515	109.1944 ug/L	100
14) 1,1-Dichloroethene	6.46	61	1323999	100.6729 ug/L	93
15) Tert-Butyl Alcohol	6.57	59	114220	387.5328 ug/L	91
16) Dimethyl Sulfide	6.73	62	489571	106.5996 ug/L	82
17) Iodomethane	6.99	142	416890	244.5557 ug/L	97
18) Methyl acetate	7.00	43	252444	104.3161 ug/L #	81
19) Methylene Chloride	7.24	84	827241	98.5346 ug/L	53
20) Carbon Disulfide	7.29	76	2766110	99.3432 ug/L	100
21) Acrylonitrile	7.43	53	126153	113.2272 ug/L	98
22) Methyl Tert Butyl Ether	7.46	73	1894494	105.8643 ug/L	87
23) trans-1,2-Dichloroethene	7.70	61	1203701	99.1822 ug/L	93
24) n-Hexane	7.78	57	926226	105.3097 ug/L	84
25) Diisopropyl ether	8.12	45	3699807	196.0386 ug/L #	90
26) Vinyl Acetate	8.29	43	860820	101.8643 ug/L #	88
27) 1,1-Dichloroethane	8.32	63	1521237	101.5567 ug/L	96
28) Ethyl-Tert-Butyl ether	8.70	59	4005676	198.2271 ug/L	89
29) 2-Butanone	8.88	43	145126	112.6698 ug/L #	81
30) Propionitrile	8.98	54	83038	219.1648 ug/L	97
31) 2,2-Dichloropropane	9.11	77	1610615	102.0557 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	935490	99.9944 ug/L	89
33) Chloroform	9.37	83	1766988	98.8341 ug/L	98
34) 1-Bromopropane	9.51	122	139657	108.5299 ug/L	100
35) Bromochloromethane	9.61	130	488678	102.8480 ug/L	66
36) Tetrahydrofuran	9.63	42	167812	187.5699 ug/L #	61
38) 1,1,1-Trichloroethane	9.91	97	1724504	102.7713 ug/L	100
39) Cyclohexane	9.94	56	1185537	102.8628 ug/L #	66
40) 1,1-Dichloropropene	10.11	75	1293224	100.8377 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	3634806	198.1264 ug/L	88
42) Carbon Tetrachloride	10.25	117	1534696	103.3979 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412227.D 8260WT.M Fri May 13 17:14:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	1177876	103.7352 ug/L		85
46)	Benzene	10.46	78	3298928	95.8405 ug/L		87
47)	Trichloroethene	11.21	130	903490	101.9036 ug/L		97
48)	Methylcyclohexane	11.30	83	1389528	104.6454 ug/L		83
49)	1,2-Dichloropropane	11.43	63	755128	102.5297 ug/L		73
50)	Bromodichloromethane	11.73	83	1351612	104.6036 ug/L		99
51)	1,4-Dioxane	11.72	88	16303	473.9624 ug/L		68
52)	Dibromomethane	11.81	93	445130	101.6543 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.02	63	333977	105.4228 ug/L		92
54)	4-Methyl-2-Pentanone	12.05	58	138980	110.1494 ug/L	#	77
55)	cis-1,3-Dichloropropene	12.36	75	1387475	105.9136 ug/L		100
56)	Dimethyl Disulfide	12.62	79	745504	111.3169 ug/L		97
59)	Toluene	12.78	91	3455614	95.2346 ug/L		99
60)	Ethyl Methacrylate	12.88	69	731009	113.5760 ug/L		70
62)	trans-1,3-Dichloropropene	12.96	75	1236182	107.9445 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	564076	103.0604 ug/L		99
64)	2-Hexanone	13.12	58	126268	114.5366 ug/L	#	79
65)	1,3-Dichloropropane	13.48	76	1021082	105.2672 ug/L		74
66)	Tetrachloroethene	13.60	164	752835	101.4023 ug/L		95
67)	Dibromochloromethane	13.87	129	856499	109.6525 ug/L		100
68)	1,2-Dibromoethane	14.12	107	577701	107.6426 ug/L		98
69)	1-Chlorohexane	14.21	91	1222720	103.0385 ug/L		82
70)	Chlorobenzene	14.62	112	2332247	97.2408 ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	947925	106.1463 ug/L		99
72)	Ethylbenzene	14.66	106	1275519	98.8771 ug/L		97
73)	m-,p-Xylene	14.75	106	3009424	194.2602 ug/L		98
74)	o-Xylene	15.31	106	1490638	100.8068 ug/L		93
75)	Styrene	15.35	104	2503721	102.8373 ug/L		88
76)	Bromoform	15.83	173	517827	114.0520 ug/L		100
77)	Isopropylbenzene	15.73	105	3913141	95.4433 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	624965	106.8610 ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	192087	107.3268 ug/L		97
82)	trans-1,4-Dichloro-2-Buten	16.18	53	189214	128.4818 ug/L	#	59
83)	n-Propylbenzene	16.24	91	4599057	93.6644 ug/L		100
84)	Bromobenzene	16.37	156	968011	102.1426 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	3401719	97.9556 ug/L		97
86)	2-Chlorotoluene	16.52	91	3177047	93.8267 ug/L		98
87)	4-Chlorotoluene	16.56	91	2899171	96.0712 ug/L		96
88)	a-Methylstyrene	16.84	118	1639166	103.6811 ug/L		90
89)	tert-Butylbenzene	16.90	134	654025	99.4199 ug/L		85
90)	1,2,4-Trimethylbenzene	16.95	105	3479295	96.7054 ug/L		97
91)	sec-Butylbenzene	17.17	105	3947832	94.2785 ug/L		98
92)	p-Isopropyltoluene	17.32	119	3328450	94.4148 ug/L		97
93)	1,3-Dichlorobenzene	17.52	146	1834740	98.9074 ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	1818309	96.6271 ug/L		92
95)	n-Butylbenzene	17.85	91	3308330	94.4002 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	1606254	97.0179 ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	125368	107.7020 ug/L		87
98)	1,2,4-Trichlorobenzene	20.28	180	1227926	100.7076 ug/L		99
99)	Hexachlorobutadiene	20.43	225	569213	100.5231 ug/L		97
100)	Naphthalene	20.65	128	1852486	101.2968 ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	1021163	98.5794 ug/L		100

(#) = qualifier out of range (m) = manual integration
8M412227.D 8260WT.M Fri May 13 17:14:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration

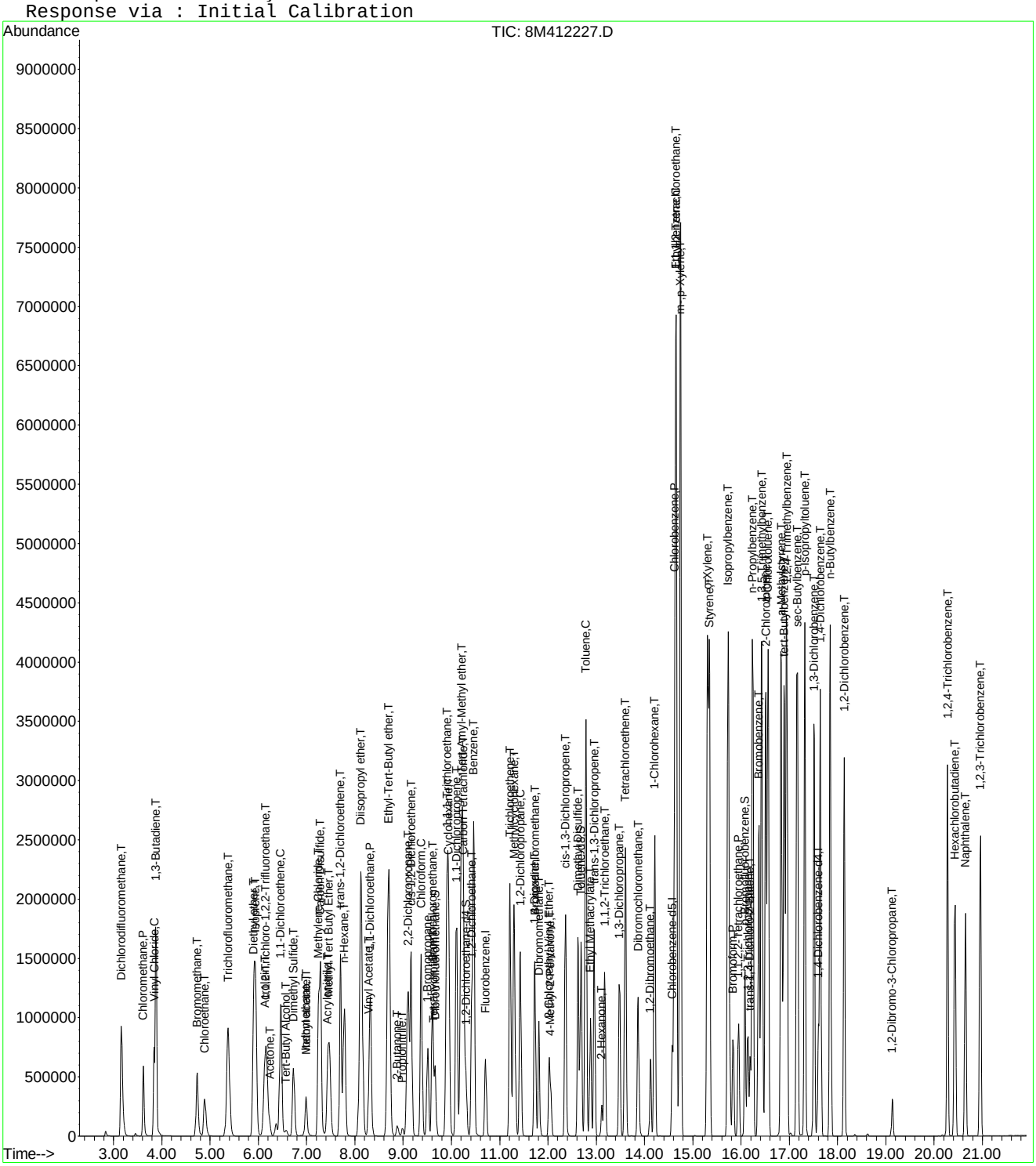

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	828540	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	578848	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	301401	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	898145	101.4517 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 405.80%#		
43) 1,2-Dichloroethane-d4	10.30	65	939848	98.0779 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 392.32%#		
58) Toluene-d8	12.68	98	2984162	97.8805 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 391.52%#		
80) p-Bromofluorobenzene	16.08	95	1242720	99.7023 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 398.80%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	2830517	203.5621 ug/L	98
3) Chloromethane	3.62	50	1586058	194.4056 ug/L	97
4) Vinyl Chloride	3.83	62	1935009	201.0738 ug/L	94
5) 1,3-Butadiene	3.88	54	1684964	212.5477 ug/L	94
6) Bromomethane	4.72	94	1358068	271.2231 ug/L	99
7) Chloroethane	4.89	64	1084803	206.5255 ug/L	90
8) Trichlorofluoromethane	5.37	101	3516760	195.1756 ug/L	99
10) Isoprene	5.94	67	2136665	196.1573 ug/L	78
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1662142	196.5993 ug/L	95
13) Acetone	6.24	43	187748	200.7963 ug/L	97
14) 1,1-Dichloroethene	6.46	61	2649821	196.6732 ug/L	92
15) Tert-Butyl Alcohol	6.58	59	6024	20.0950 ug/L #	87
16) Dimethyl Sulfide	6.73	62	976862	205.8822 ug/L	82
17) Iodomethane	6.99	142	896947	398.7987 ug/L	100
18) Methyl acetate	7.00	43	504293	201.4324 ug/L #	81
19) Methylene Chloride	7.25	84	1684780	196.5546 ug/L	52
20) Carbon Disulfide	7.29	76	5386210	189.2120 ug/L	99
21) Acrylonitrile	7.45	53	30354	26.0447 ug/L #	32
22) Methyl Tert Butyl Ether	7.46	73	3711011	200.6529 ug/L	87
23) trans-1,2-Dichloroethene	7.70	61	2410498	194.2902 ug/L	92
24) n-Hexane	7.78	57	1821777	199.7288 ug/L	84
26) Vinyl Acetate	8.29	43	1796217	206.9060 ug/L #	88
27) 1,1-Dichloroethane	8.32	63	3042055	197.9863 ug/L	95
29) 2-Butanone	8.88	43	271767	199.8193 ug/L #	77
30) Propionitrile	8.90	54	208	0.5280 ug/L #	1
31) 2,2-Dichloropropane	9.11	77	3202633	197.6970 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	1875631	195.8883 ug/L	89
33) Chloroform	9.37	83	3506648	191.9199 ug/L	99
34) 1-Bromopropane	9.51	122	286158	214.2313 ug/L	99
35) Bromochloromethane	9.60	130	980373	200.7807 ug/L	66
36) Tetrahydrofuran	9.62	42	2381	2.6275 ug/L	87
38) 1,1,1-Trichloroethane	9.91	97	3410306	197.7909 ug/L	99
39) Cyclohexane	9.94	56	2357393	198.8974 ug/L #	66
40) 1,1-Dichloropropene	10.10	75	2601175	197.8946 ug/L	96
42) Carbon Tetrachloride	10.25	117	3062767	200.6417 ug/L	99
45) 1,2-Dichloroethane	10.42	62	2313662	198.0324 ug/L	85
46) Benzene	10.46	78	6379817	182.1771 ug/L	89
47) Trichloroethene	11.21	130	1810459	198.9741 ug/L	97
48) Methylcyclohexane	11.30	83	2755373	200.4193 ug/L	83
49) 1,2-Dichloropropane	11.43	63	1528407	202.0331 ug/L	74

(#) = qualifier out of range (m) = manual integration
8M412228.D 8260WT.M Fri May 13 17:43:34 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
50)	Bromodichloromethane	11.73	83	2716764	204.0895 ug/L		99
51)	1,4-Dioxane	11.73	88	3865	104.9352 ug/L	#	18
52)	Dibromomethane	11.81	93	898971	200.1154 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.02	63	631656	192.7236 ug/L		90
54)	4-Methyl-2-Pentanone	12.05	58	262702	198.3957 ug/L	#	75
55)	cis-1,3-Dichloropropene	12.36	75	2784162	205.9153 ug/L		99
56)	Dimethyl Disulfide	12.62	79	1518705	215.4711 ug/L		95
59)	Toluene	12.78	91	6564353	175.9274 ug/L		96
60)	Ethyl Methacrylate	12.88	69	1429837	209.8161 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	2468609	205.4771 ug/L		98
63)	1,1,2-Trichloroethane	13.18	97	1124672	197.6019 ug/L		100
64)	2-Hexanone	13.12	58	237678	200.9290 ug/L	#	81
65)	1,3-Dichloropropane	13.48	76	2023247	199.9545 ug/L		76
66)	Tetrachloroethene	13.60	164	1546618	200.8018 ug/L		97
67)	Dibromochloromethane	13.87	129	1726523	210.5823 ug/L		100
68)	1,2-Dibromoethane	14.12	107	1163160	207.0667 ug/L		99
69)	1-Chlorohexane	14.21	91	2414147	195.6413 ug/L		83
70)	Chlorobenzene	14.62	112	4641169	187.6386 ug/L		94
71)	1,1,1,2-Tetrachloroethane	14.66	131	1929251	206.8372 ug/L		99
72)	Ethylbenzene	14.66	106	2611321	195.8267 ug/L		88
73)	m-,p-Xylene	14.75	106	5876234	367.8657 ug/L		83
74)	o-Xylene	15.31	106	3012318	196.4899 ug/L		98
75)	Styrene	15.35	104	4913204	194.1235 ug/L		86
76)	Bromoform	15.83	173	1052629	218.7989 ug/L		100
77)	Isopropylbenzene	15.73	105	7284624	172.7305 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	1237171	205.8673 ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	386738	209.7906 ug/L	#	54
82)	trans-1,4-Dichloro-2-Buten	16.19	53	382467	243.6526 ug/L		76
83)	n-Propylbenzene	16.24	91	8244387	166.5110 ug/L		93
84)	Bromobenzene	16.37	156	1935166	200.1305 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	6482975	183.9948 ug/L		98
86)	2-Chlorotoluene	16.52	91	6108308	178.8549 ug/L		99
87)	4-Chlorotoluene	16.56	91	5513221	180.5508 ug/L		99
88)	a-Methylstyrene	16.84	118	3255254	200.4995 ug/L		89
89)	tert-Butylbenzene	16.90	134	1351569	202.1005 ug/L		92
90)	1,2,4-Trimethylbenzene	16.95	105	6531416	179.2445 ug/L		97
91)	sec-Butylbenzene	17.17	105	7342730	173.9814 ug/L		97
92)	p-Isopropyltoluene	17.32	119	6352010	178.7315 ug/L		99
93)	1,3-Dichlorobenzene	17.52	146	3640547	193.1654 ug/L		90
94)	1,4-Dichlorobenzene	17.64	146	3593548	188.4603 ug/L		91
95)	n-Butylbenzene	17.85	91	6198060	175.4375 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	3171699	188.9651 ug/L		89
97)	1,2-Dibromo-3-Chloropropan	19.13	75	249646	207.5645 ug/L		88
98)	1,2,4-Trichlorobenzene	20.28	180	2480626	199.7296 ug/L		99
99)	Hexachlorobutadiene	20.43	225	1169411	202.7981 ug/L		98
100)	Naphthalene	20.65	128	3580198	192.0323 ug/L		97
101)	1,2,3-Trichlorobenzene	20.96	180	2040570	193.9298 ug/L		100

(#) = qualifier out of range (m) = manual integration
8M412228.D 8260WT.M Fri May 13 17:43:35 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration

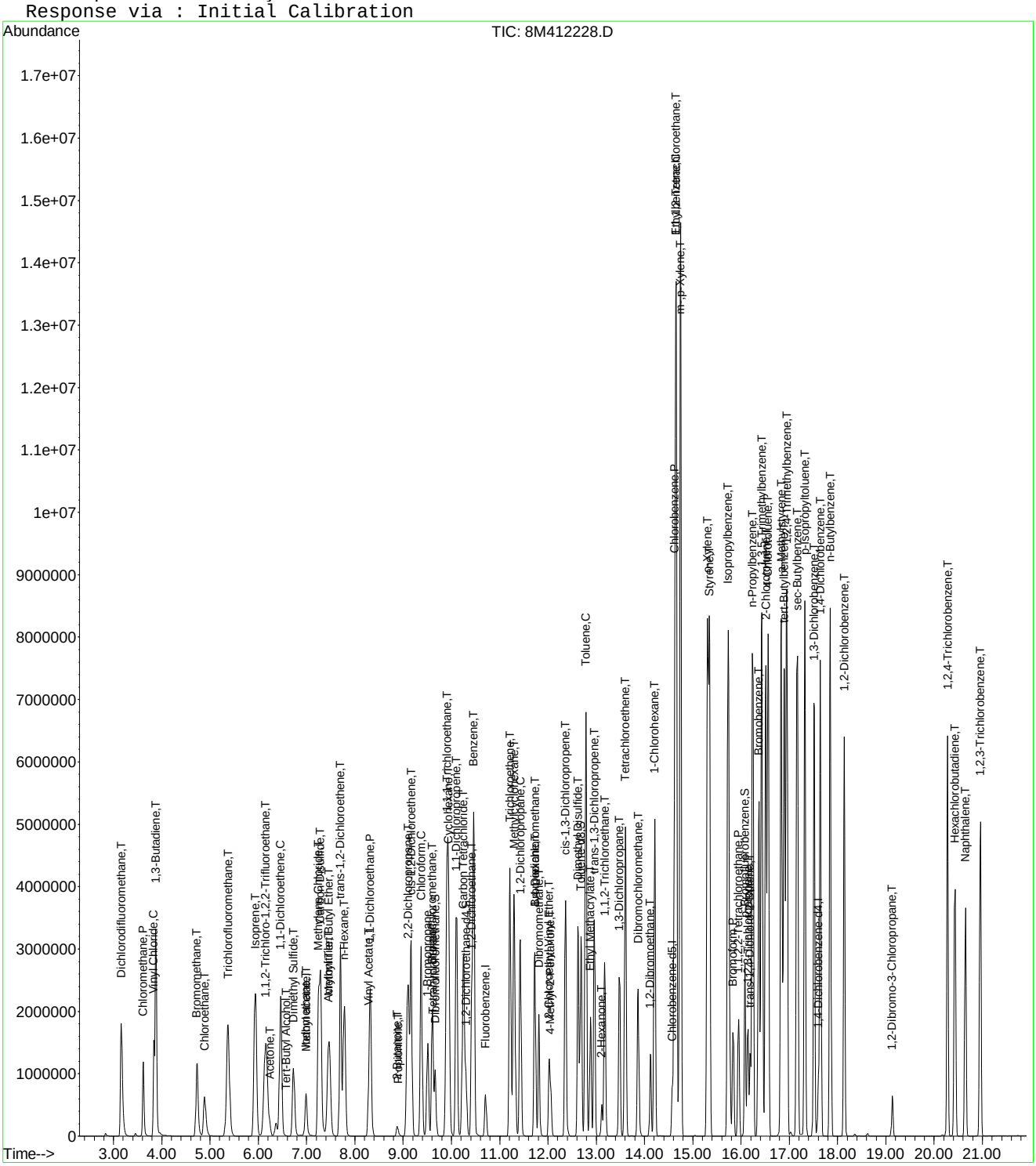

8M412228.D 8260WT.M Fri May 13 17:43:35 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	855409	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	599314	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	305726	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	1411837	154.4674 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 617.88%#		
43) 1,2-Dichloroethane-d4	10.30	65	1466019	148.1811 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 592.72%#		
58) Toluene-d8	12.69	98	4594713	145.5601 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 582.24%#		
80) p-Bromofluorobenzene	16.08	95	1918996	151.7813 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 607.12%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	4191932	292.0014 ug/L	97
3) Chloromethane	3.62	50	2474035	293.7212 ug/L	97
4) Vinyl Chloride	3.83	62	2956347	297.5552 ug/L	94
5) 1,3-Butadiene	3.87	54	2605506	318.3447 ug/L	94
6) Bromomethane	4.72	94	2177550	421.2239 ug/L	98
7) Chloroethane	4.89	64	1688005	311.2693 ug/L	90
8) Trichlorofluoromethane	5.37	101	5387662	289.6161 ug/L	99
9) Diethyl ether	5.90	59	1306432	295.4610 ug/L	80
10) Isoprene	5.93	67	3377164	300.3032 ug/L	78
11) Acrolein	6.14	56	70572	185.7401 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	2563878	293.7317 ug/L	94
13) Acetone	6.24	43	283185	293.3529 ug/L	90
14) 1,1-Dichloroethene	6.46	61	4031745	289.8421 ug/L	91
15) Tert-Butyl Alcohol	6.58	59	181796	587.3907 ug/L	90
16) Dimethyl Sulfide	6.73	62	1553493	317.1280 ug/L	81
17) Iodomethane	6.99	142	1347307	580.2206 ug/L	98
18) Methyl acetate	7.00	43	800046	309.5287 ug/L #	80
19) Methylene Chloride	7.24	84	2587731	292.4144 ug/L	52
20) Carbon Disulfide	7.29	76	8228181	279.9683 ug/L	98
21) Acrylonitrile	7.43	53	228227	189.6753 ug/L	94
22) Methyl Tert Butyl Ether	7.46	73	5605924	293.5892 ug/L	88
23) trans-1,2-Dichloroethene	7.70	61	3678699	287.1957 ug/L	92
24) n-Hexane	7.78	57	2863434	304.0691 ug/L	86
25) Diisopropyl ether	8.12	45	5819647	292.7898 ug/L #	89
26) Vinyl Acetate	8.30	43	2819503	314.5767 ug/L #	87
27) 1,1-Dichloroethane	8.32	63	4586531	289.1293 ug/L	94
28) Ethyl-Tert-Butyl ether	8.70	59	6190206	290.3321 ug/L	89
29) 2-Butanone	8.88	43	439359	312.8959 ug/L #	76
30) Propionitrile	8.99	54	133197	327.4673 ug/L	95
31) 2,2-Dichloropropane	9.10	77	4821388	288.2735 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	2847005	287.9976 ug/L	89
33) Chloroform	9.37	83	5197860	275.5447 ug/L	100
34) 1-Bromopropane	9.51	122	450012	326.3179 ug/L	100
35) Bromochloromethane	9.61	130	1490221	295.6112 ug/L	66
36) Tetrahydrofuran	9.63	42	271736	290.4491 ug/L #	62
38) 1,1,1-Trichloroethane	9.91	97	5126354	287.9792 ug/L	98
39) Cyclohexane	9.94	56	3733392	305.0987 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	3923871	289.1471 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	5639573	291.3713 ug/L	88
42) Carbon Tetrachloride	10.25	117	4598150	291.7629 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412229.D 8260WT.M Fri May 13 18:12:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	3468738	287.5726	ug/L		86
46)	Benzene	10.46	78	9065861	250.7462	ug/L		93
47)	Trichloroethene	11.21	130	2772282	295.1106	ug/L		97
48)	Methylcyclohexane	11.30	83	4327357	304.8748	ug/L		84
49)	1,2-Dichloropropane	11.43	63	2350729	300.9718	ug/L		74
50)	Bromodichloromethane	11.73	83	4051493	294.7973	ug/L		99
51)	1,4-Dioxane	11.72	88	26614	699.8767	ug/L		67
52)	Dibromomethane	11.81	93	1369945	295.3776	ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.03	63	1006317	297.3917	ug/L		90
54)	4-Methyl-2-Pentanone	12.06	58	424684	310.6522	ug/L	#	76
55)	cis-1,3-Dichloropropene	12.36	75	4156310	297.7431	ug/L		97
56)	Dimethyl Disulfide	12.63	79	2359825	324.2911	ug/L		94
59)	Toluene	12.78	91	9135213	236.4669	ug/L		90
60)	Ethyl Methacrylate	12.88	69	2228037	315.7801	ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	3700845	297.5240	ug/L		96
63)	1,1,2-Trichloroethane	13.18	97	1730199	293.6104	ug/L		100
64)	2-Hexanone	13.11	58	381967	311.8816	ug/L	#	78
65)	1,3-Dichloropropane	13.49	76	3080177	294.0141	ug/L		76
66)	Tetrachloroethene	13.60	164	2374435	297.7522	ug/L		96
67)	Dibromochloromethane	13.87	129	2638145	310.7838	ug/L		100
68)	1,2-Dibromoethane	14.13	107	1778561	305.8085	ug/L		99
69)	1-Chlorohexane	14.21	91	3712592	290.5924	ug/L		84
70)	Chlorobenzene	14.63	112	6754240	263.7433	ug/L		90
71)	1,1,1,2-Tetrachloroethane	14.65	131	2967650	307.3001	ug/L		100
72)	Ethylbenzene	14.65	106	4014412	290.7661	ug/L		70
73)	m-,p-Xylene	14.75	106	8357822	505.3514	ug/L		70
74)	o-Xylene	15.31	106	4530840	285.4488	ug/L		88
75)	Styrene	15.35	104	7050702	269.0641	ug/L		82
76)	Bromoform	15.84	173	1602587	321.7373	ug/L		99
77)	Isopropylbenzene	15.73	105	9900817	226.7477	ug/L		90
79)	1,1,2,2-Tetrachloroethane	15.95	83	1885953	309.3861	ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	581198	310.8176	ug/L		61
82)	trans-1,4-Dichloro-2-Buten	16.18	53	589705	370.3601	ug/L		82
83)	n-Propylbenzene	16.25	91	10768378	214.4110	ug/L		86
84)	Bromobenzene	16.37	156	2947671	300.5290	ug/L		99
85)	1,3,5-Trimethylbenzene	16.43	105	8890651	248.7580	ug/L		92
86)	2-Chlorotoluene	16.51	91	7868844	227.1449	ug/L		92
87)	4-Chlorotoluene	16.57	91	7782731	251.2687	ug/L		93
88)	a-Methylstyrene	16.84	118	4955768	300.9205	ug/L		86
89)	tert-Butylbenzene	16.90	134	2046401	301.6701	ug/L		95
90)	1,2,4-Trimethylbenzene	16.95	105	8903769	240.8932	ug/L		89
91)	sec-Butylbenzene	17.17	105	9867862	230.5051	ug/L		91
92)	p-Isopropyltoluene	17.32	119	8738927	242.4155	ug/L		94
93)	1,3-Dichlorobenzene	17.52	146	5319954	278.2806	ug/L		87
94)	1,4-Dichlorobenzene	17.64	146	5248511	271.3593	ug/L		88
95)	n-Butylbenzene	17.85	91	8408157	234.6279	ug/L		92
96)	1,2-Dichlorobenzene	18.14	146	4717385	277.0787	ug/L		87
97)	1,2-Dibromo-3-Chloropropan	19.13	75	377070	309.0741	ug/L		91
98)	1,2,4-Trichlorobenzene	20.28	180	3677657	291.9206	ug/L		98
99)	Hexachlorobutadiene	20.43	225	1780695	304.4378	ug/L		96
100)	Naphthalene	20.65	128	5216751	275.8542	ug/L		95
101)	1,2,3-Trichlorobenzene	20.96	180	3064908	287.1593	ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412229.D 8260WT.M Fri May 13 18:12:36 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration

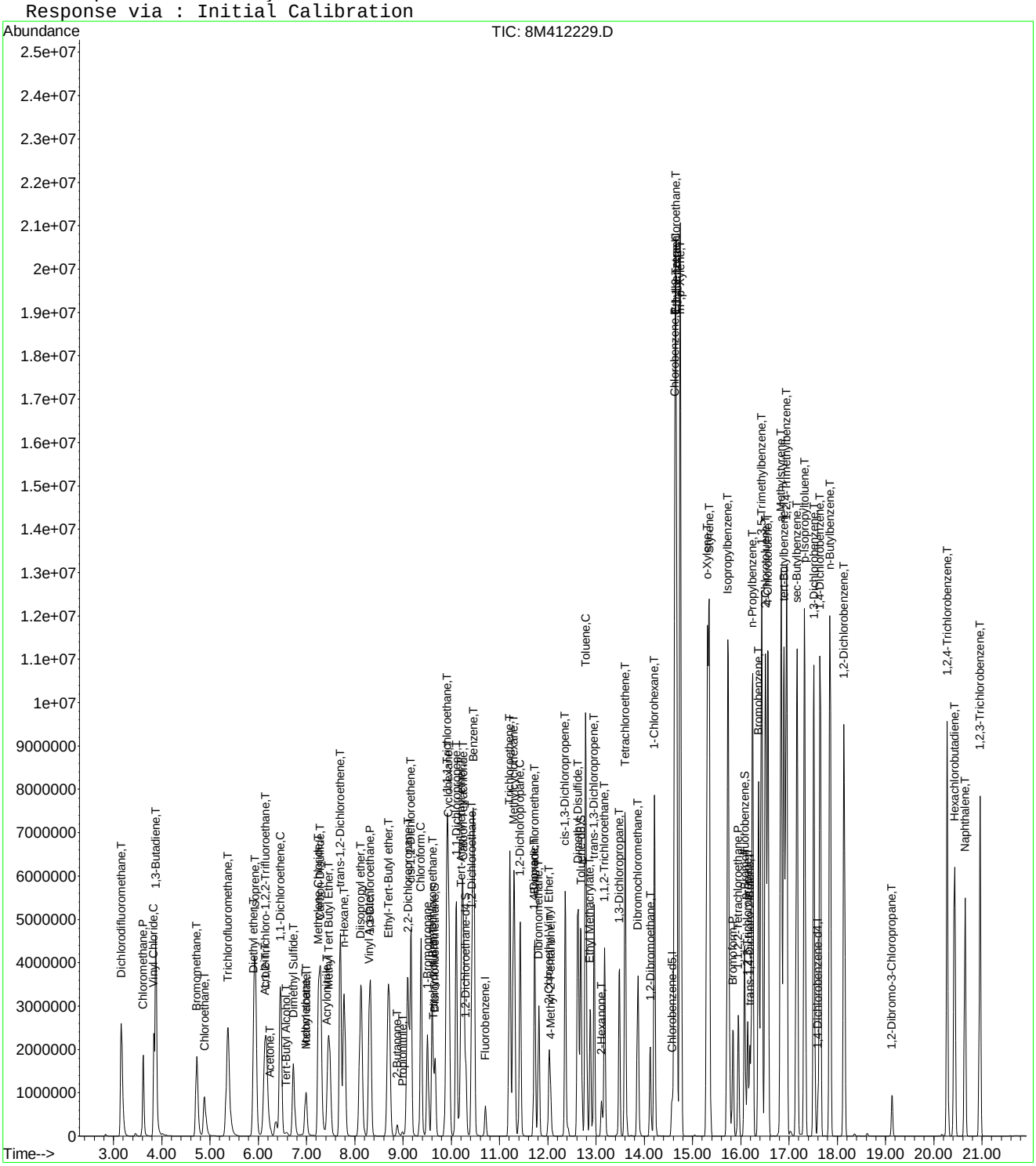

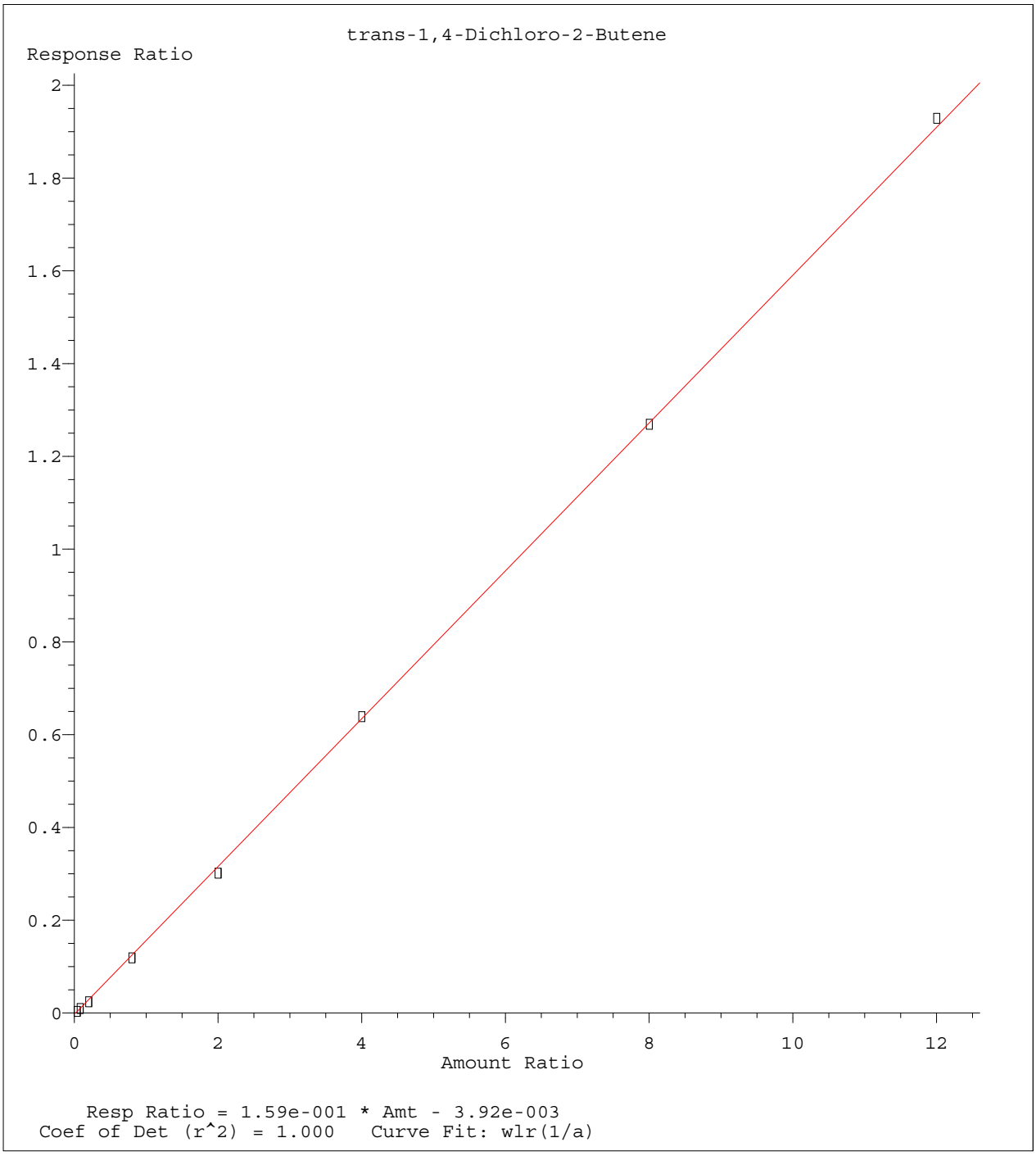

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

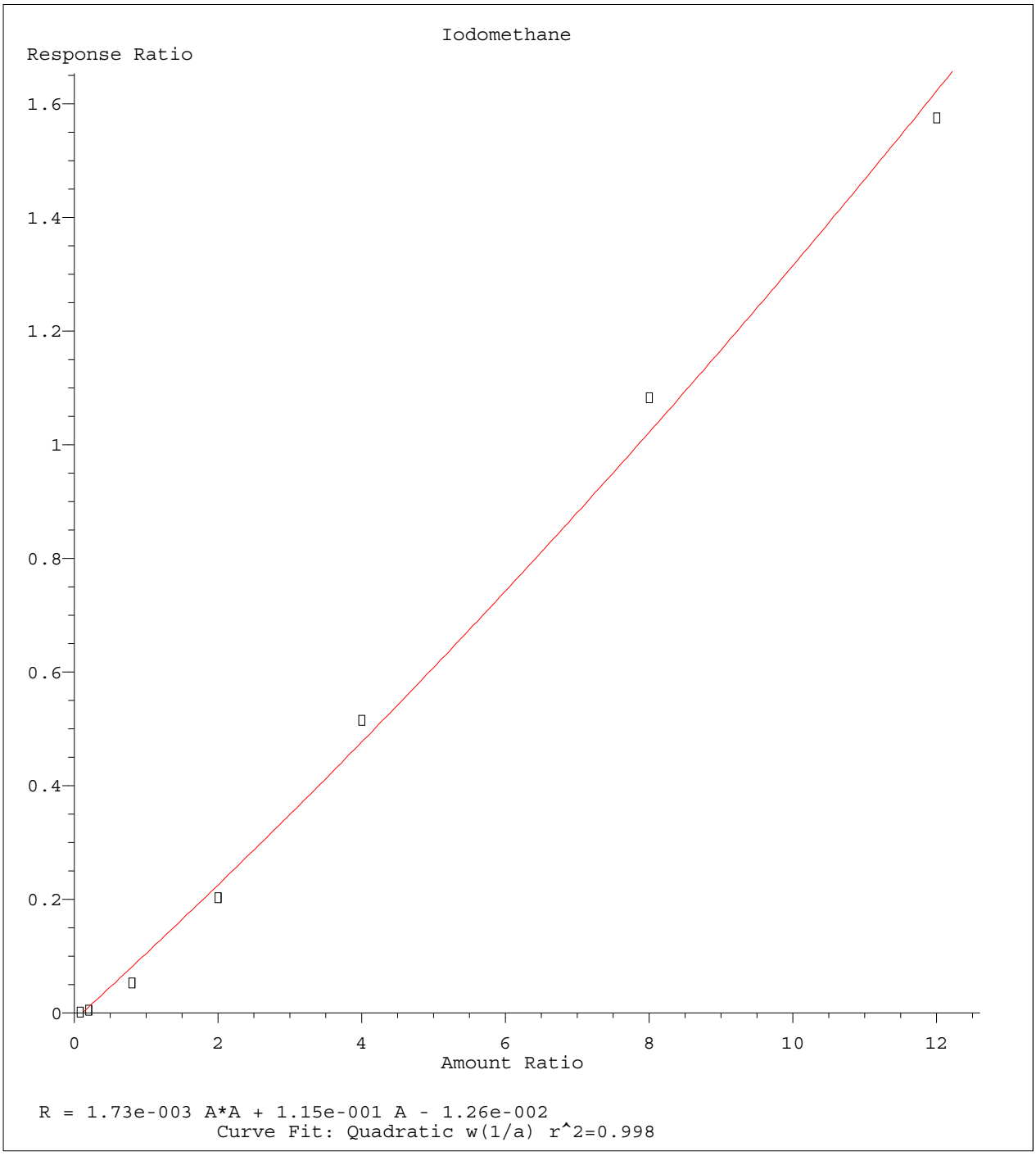

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

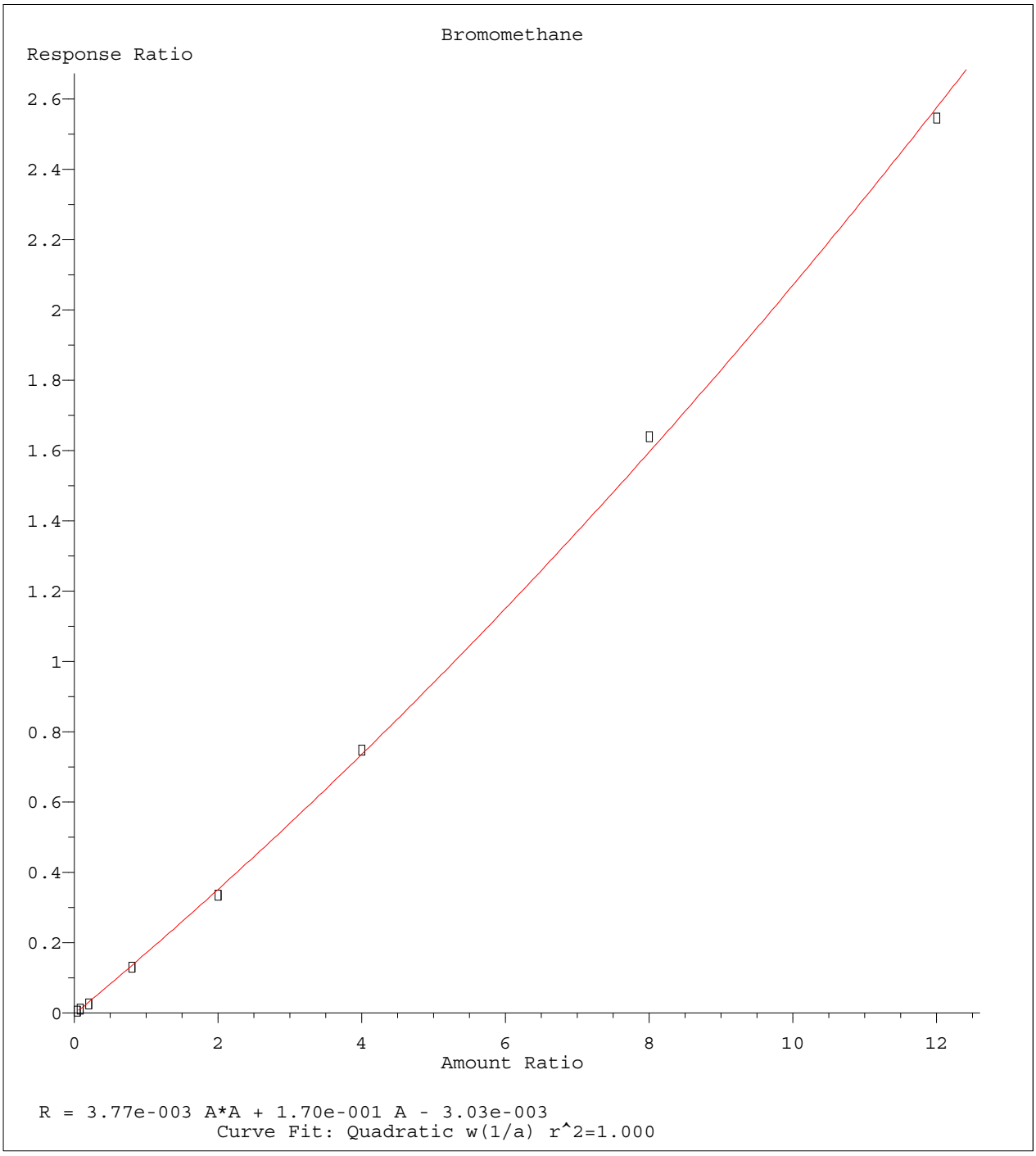

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:44:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Tue May 17 11:43:20 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	837879	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	574720	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	304324	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	229742	25.5204 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.08%		
43) 1,2-Dichloroethane-d4	10.31	65	238672	24.7259 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.92%		
58) Toluene-d8	12.68	98	776362	25.8115 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.24%		
80) p-Bromofluorobenzene	16.07	95	315683	25.0519 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.20%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	761591	54.2141 ug/L	99
3) Chloromethane	3.62	50	415589	50.6814 ug/L	100
4) Vinyl Chloride	3.84	62	509607	52.3810 ug/L	100
5) 1,3-Butadiene	3.88	54	347562	42.6002 ug/L	97
6) Bromomethane	4.73	94	272060	46.3924 ug/L	99
7) Chloroethane	4.88	64	285509	53.3336 ug/L	98
8) Trichlorofluoromethane	5.37	101	849580	46.9313 ug/L	100
9) Diethyl ether	5.90	59	451307	104.4282 ug/L	99
10) Isoprene	5.93	67	582863	53.0208 ug/L	99
11) Acrolein	6.13	56	38877	100.4722 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	419584	49.3091 ug/L	97
13) Acetone	6.23	43	54234	57.5310 ug/L	94
14) 1,1-Dichloroethene	6.46	61	622831	45.9700 ug/L	99
15) Tert-Butyl Alcohol	6.59	59	59797	197.9422 ug/L	97
16) Dimethyl Sulfide	6.73	62	351814	72.6234 ug/L	98
17) Iodomethane	6.99	142	92716	26.2832 ug/L	99
18) Methyl acetate	7.00	43	127540	50.0514 ug/L	98
19) Methylene Chloride	7.25	84	417642	48.4385 ug/L	99
20) Carbon Disulfide	7.29	76	1199899	42.3200 ug/L	100
21) Acrylonitrile	7.43	53	65324	53.4074 ug/L	93
22) Methyl Tert Butyl Ether	7.46	73	949572	50.8859 ug/L	97
23) trans-1,2-Dichloroethene	7.70	61	598296	48.0666 ug/L	99
24) n-Hexane	7.77	57	425106	45.9930 ug/L	99
25) Diisopropyl ether	8.13	45	2040382	105.1615 ug/L	98
26) Vinyl Acetate	8.29	43	415568	46.7802 ug/L	99
27) 1,1-Dichloroethane	8.32	63	721661	46.6846 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	2040020	98.1343 ug/L	99
29) 2-Butanone	8.88	43	73394	52.9905 ug/L	99
30) Propionitrile	8.98	54	42290	104.7756 ug/L	100
31) 2,2-Dichloropropane	9.10	77	780073	47.8861 ug/L	99
32) cis-1,2-Dichloroethene	9.16	96	470465	48.9162 ug/L	98
33) Chloroform	9.38	83	860252	47.1317 ug/L	100
34) 1-Bromopropane	9.51	122	98585	71.5615 ug/L	98
35) Bromochloromethane	9.60	130	234493	47.5456 ug/L	99
36) Tetrahydrofuran	9.62	42	86049	94.3281 ug/L	99
38) 1,1,1-Trichloroethane	9.90	97	825167	47.5949 ug/L	100
39) Cyclohexane	9.93	56	586721	48.8808 ug/L	97
40) 1,1-Dichloropropene	10.10	75	627217	47.4632 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1962875	103.9618 ug/L	99
42) Carbon Tetrachloride	10.24	117	711823	46.2363 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M412232.D 8260WT.M Tue May 17 11:44:38 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	108	0.00
2	T	Dichlorodifluoromethane	50.0000	54.2141	-8.4	112	0.00
3	P	Chloromethane	50.0000	50.6814	-1.4	111	0.00
4	C	Vinyl Chloride	50.0000	52.3811	-4.8	112	-0.01
5	T	1,3-Butadiene	50.0000	42.6002	14.8	89	0.00
6	T	Bromomethane	50.0000	46.3924	7.2	104	-0.01
7	T	Chloroethane	50.0000	53.3336	-6.7	117	-0.01
8	T	Trichlorofluoromethane	50.0000	46.9313	6.1	101	-0.01
9	T	Diethyl ether	100.0000	104.4282	-4.4	116	0.00
10	T	Isoprene	50.0000	53.0208	-6.0	117	0.00
11	T	Acrolein	50.0000	100.4722	-100.9#	220	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	49.3091	1.4	108	0.00
13	T	Acetone	50.0000	57.5310	-15.1	118	-0.01
14	C	1,1-Dichloroethene	50.0000	45.9700	8.1	100	0.00
15	T	Tert-Butyl Alcohol	200.0000	197.9423	1.0	108	0.01
16	T	Dimethyl Sulfide	50.0000	72.6234	-45.2#	159	0.00
17	T	Iodomethane	50.0000	26.2832	47.4#	59	0.01
18	T	Methyl acetate	50.0000	50.0514	-0.1	111	0.00
19	T	Methylene Chloride	50.0000	48.4385	3.1	107	0.00
20	T	Carbon Disulfide	50.0000	42.3200	15.4	94	0.00
21	T	Acrylonitrile	50.0000	53.4074	-6.8	109	0.00
22	T	Methyl Tert Butyl Ether	50.0000	50.8859	-1.8	105	0.00
23	T	trans-1,2-Dichloroethene	50.0000	48.0666	3.9	105	0.00
24	T	n-Hexane	50.0000	45.9930	8.0	101	-0.01
25	T	Diisopropyl ether	100.0000	105.1615	-5.2	115	0.00
26	T	Vinyl Acetate	50.0000	46.7802	6.4	97	0.00
27	P	1,1-Dichloroethane	50.0000	46.6846	6.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.1343	1.9	104	0.00
29	T	2-Butanone	50.0000	52.9905	-6.0	110	0.00
30	T	Propionitrile	100.0000	104.7756	-4.8	111	0.00
31	T	2,2-Dichloropropane	50.0000	47.8861	4.2	102	0.00
32	T	cis-1,2-Dichloroethene	50.0000	48.9162	2.2	107	-0.01
33	C	Chloroform	50.0000	47.1317	5.7	102	0.00
34		1-Bromopropane	50.0000	71.5615	-43.1#	155	0.00
35	T	Bromochloromethane	50.0000	47.5456	4.9	102	0.00
36	T	Tetrahydrofuran	100.0000	94.3281	5.7	108	-0.01
37	S	Dibromofluoromethane	25.0000	25.5204	-2.1	109	0.00
38	T	1,1,1-Trichloroethane	50.0000	47.5949	4.8	101	0.00
39	T	Cyclohexane	50.0000	48.8808	2.2	109	0.00
40	T	1,1-Dichloropropene	50.0000	47.4632	5.1	102	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	103.9618	-4.0	111	0.00
42	T	Carbon Tetrachloride	50.0000	46.2363	7.5	98	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.7259	1.1	104	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	49.0148	2.0	103	0.00
46	T	Benzene	50.0000	48.5232	3.0	104	0.00
47	T	Trichloroethene	50.0000	51.0658	-2.1	110	0.00
48	T	Methylcyclohexane	50.0000	49.8573	0.3	109	0.00
49	C	1,2-Dichloropropane	50.0000	50.9747	-1.9	111	0.00
50	T	Bromodichloromethane	50.0000	48.3053	3.4	99	0.00
51	T	1,4-Dioxane	200.0000	216.9538	-8.5	110	0.01
52	T	Dibromomethane	50.0000	45.8126	8.4	99	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	51.2623	-2.5	104	0.00
54	T	4-Methyl-2-Pentanone	50.0000	51.8715	-3.7	107	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.8979	-7.8	111	0.00
56	T	Dimethyl Disulfide	50.0000	52.2714	-4.5	111	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	107	0.00
58	S	Toluene-d8	25.0000	25.8115	-3.2	108	0.00
59	C	Toluene	50.0000	49.0912	1.8	105	0.00
60	T	Ethyl Methacrylate	50.0000	55.9509	-11.9	113	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	50.6740	-1.3	102	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.0377	1.9	103	0.00
64	T	2-Hexanone	50.0000	53.6057	-7.2	112	0.00
65	T	1,3-Dichloropropane	50.0000	53.6720	-7.3	110	0.00
66	T	Tetrachloroethene	50.0000	47.8053	4.4	104	0.00
67	T	Dibromochloromethane	50.0000	49.6585	0.7	102	0.00
68	T	1,2-Dibromoethane	50.0000	51.1121	-2.2	105	0.00
69	T	1-Chlorohexane	50.0000	51.0611	-2.1	111	0.00
70	P	Chlorobenzene	50.0000	50.1844	-0.4	108	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	49.3793	1.2	103	0.00
72	C	Ethylbenzene	50.0000	48.2013	3.6	105	0.00
73	T	m-,p-Xylene	100.0000	101.1341	-1.1	108	0.00
74	T	o-Xylene	50.0000	50.5675	-1.1	108	0.00
75	T	Styrene	50.0000	51.5086	-3.0	105	0.00
76	P	Bromoform	50.0000	48.2227	3.6	99	0.00
77	T	Isopropylbenzene	50.0000	51.1140	-2.2	107	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	106	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	49.6172	0.8	103	0.00
80	S	p-Bromofluorobenzene	25.0000	25.0519	-0.2	108	0.00
81	T	1,2,3-Trichloropropane	50.0000	50.0849	-0.2	106	0.01
82	T	trans-1,4-Dichloro-2-Butene	50.0000	39.2043	21.6	86	0.00
83	T	n-Propylbenzene	50.0000	51.9237	-3.8	108	0.00
84	T	Bromobenzene	50.0000	49.4648	1.1	105	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	51.6344	-3.3	107	0.00
86	T	2-Chlorotoluene	50.0000	51.5639	-3.1	106	0.00
87	T	4-Chlorotoluene	50.0000	48.2650	3.5	108	0.00
88	T	a-Methylstyrene	50.0000	56.4132	-12.8	120	0.00
89	T	tert-Butylbenzene	50.0000	50.9494	-1.9	112	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	49.6617	0.7	105	0.00
91	T	sec-Butylbenzene	50.0000	51.3386	-2.7	108	0.00
92	T	p-Isopropyltoluene	50.0000	50.1261	-0.3	107	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.8943	-1.8	108	0.00
94	T	1,4-Dichlorobenzene	50.0000	50.4742	-0.9	110	0.00
95	T	n-Butylbenzene	50.0000	49.6520	0.7	105	0.00
96	T	1,2-Dichlorobenzene	50.0000	50.4907	-1.0	110	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	48.4851	3.0	100	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	50.1129	-0.2	107	0.00
99	T	Hexachlorobutadiene	50.0000	52.0919	-4.2	115	0.00
100	T	Naphthalene	50.0000	45.8047	8.4	95	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	47.7353	4.5	106	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412232.D 8260WT.M Sat May 14 18:09:03 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062116\8M413126.D Vial: 3
Acq On : 21 Jun 2016 18:23 Operator: FJB
Sample : WG573644-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 21 18:45:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	842468	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	634272	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	348189	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	242647	26.8071 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.24%		
43) 1,2-Dichloroethane-d4	10.30	65	262534	27.0498 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 108.20%		
58) Toluene-d8	12.68	98	848655	25.5659 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.28%		
80) p-Bromofluorobenzene	16.08	95	365799	25.3719 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.48%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	706967	50.0516 ug/L	100
3) Chloromethane	3.62	50	386080	46.8263 ug/L	100
4) Vinyl Chloride	3.84	62	531769	54.3613 ug/L	100
5) 1,3-Butadiene	3.89	54	469338	57.2127 ug/L	96
6) Bromomethane	4.73	94	237465	40.5323 ug/L	99
7) Chloroethane	4.89	64	282748	52.5301 ug/L	98
8) Trichlorofluoromethane	5.37	101	1010155	55.4976 ug/L	100
9) Diethyl ether	5.90	59	465053	107.0227 ug/L	98
10) Isoprene	5.94	67	560373	50.6973 ug/L	99
11) Acrolein	6.14	56	17931	46.0877 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	460994	53.8805 ug/L	94
13) Acetone	6.24	43	54713	57.7230 ug/L	99
14) 1,1-Dichloroethene	6.47	61	729079	53.5188 ug/L	100
15) Tert-Butyl Alcohol	6.57	59	48518	159.7312 ug/L	97
16) Dimethyl Sulfide	6.73	62	239591	49.1883 ug/L	100
17) Iodomethane	6.99	142	129268	35.2171 ug/L	98
18) Methyl acetate	7.00	43	133943	52.2779 ug/L	99
19) Methylene Chloride	7.24	84	441231	50.8956 ug/L	99
20) Carbon Disulfide	7.29	76	1520883	53.3488 ug/L	100
21) Acrylonitrile	7.43	53	66221	53.8458 ug/L	97
22) Methyl Tert Butyl Ether	7.46	73	1012281	53.9509 ug/L	100
23) trans-1,2-Dichloroethene	7.70	61	658832	52.6417 ug/L	99
24) n-Hexane	7.78	57	525323	56.5261 ug/L	100
25) Diisopropyl ether	8.12	45	2046398	104.8971 ug/L	99
26) Vinyl Acetate	8.30	43	419641	46.9814 ug/L	99
27) 1,1-Dichloroethane	8.32	63	823421	52.9774 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	2274881	108.8361 ug/L	98
29) 2-Butanone	8.88	43	67631	48.5636 ug/L	93
30) Propionitrile	8.98	54	41084	101.2332 ug/L	94
31) 2,2-Dichloropropane	9.10	77	966004	58.9767 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	505239	52.2457 ug/L	100
33) Chloroform	9.37	83	977628	53.2708 ug/L	100
34) 1-Bromopropane	9.51	122	79927	57.7019 ug/L	99
35) Bromochloromethane	9.61	130	268391	54.1223 ug/L	95
36) Tetrahydrofuran	9.63	42	81203	88.5309 ug/L	93
38) 1,1,1-Trichloroethane	9.91	97	970703	55.6843 ug/L	100
39) Cyclohexane	9.94	56	642456	53.2326 ug/L	98
40) 1,1-Dichloropropene	10.11	75	712738	53.6410 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	2069642	109.0195 ug/L	99
42) Carbon Tetrachloride	10.25	117	866447	55.9733 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062116\8M413126.D Vial: 3
Acq On : 21 Jun 2016 18:23 Operator: FJB
Sample : WG573644-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 21 18:45:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	648513	54.9030 ug/L		100
46)	Benzene	10.46	78	1791975	51.7816 ug/L		100
47)	Trichloroethene	11.21	130	497052	53.8524 ug/L		98
48)	Methylcyclohexane	11.30	83	772305	55.0785 ug/L		98
49)	1,2-Dichloropropane	11.43	63	387114	50.2500 ug/L		96
50)	Bromodichloromethane	11.73	83	732132	54.0715 ug/L		99
51)	1,4-Dioxane	11.72	88	5489	141.8410 ug/L		84
52)	Dibromomethane	11.81	93	231585	50.7834 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.03	63	149076	45.0223 ug/L		96
54)	4-Methyl-2-Pentanone	12.06	58	67090	49.6023 ug/L		95
55)	cis-1,3-Dichloropropene	12.36	75	738187	53.5621 ug/L		99
56)	Dimethyl Disulfide	12.62	79	379506	51.5921 ug/L		100
59)	Toluene	12.78	91	1909258	48.4871 ug/L		100
60)	Ethyl Methacrylate	12.88	69	368867	48.7782 ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	669685	50.7497 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	294334	47.3701 ug/L		99
64)	2-Hexanone	13.12	58	60649	46.4489 ug/L	#	98
65)	1,3-Dichloropropane	13.48	76	533207	48.1994 ug/L		100
66)	Tetrachloroethene	13.60	164	438543	51.9821 ug/L		94
67)	Dibromochloromethane	13.87	129	454999	50.1513 ug/L		99
68)	1,2-Dibromoethane	14.13	107	294945	47.6288 ug/L		100
69)	1-Chlorohexane	14.21	91	667148	49.6341 ug/L		99
70)	Chlorobenzene	14.62	112	1281159	48.2494 ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.65	131	512855	49.8550 ug/L		99
72)	Ethylbenzene	14.65	106	690518	47.5308 ug/L		100
73)	m-,p-Xylene	14.75	106	1654045	97.0666 ug/L		100
74)	o-Xylene	15.31	106	807880	48.4927 ug/L		99
75)	Styrene	15.35	104	1355516	49.6076 ug/L		97
76)	Bromoform	15.83	173	282531	52.5027 ug/L		99
77)	Isopropylbenzene	15.73	105	2218306	50.1226 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	314446	44.9902 ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	100648	46.7642 ug/L		89
82)	trans-1,4-Dichloro-2-Buten	16.18	53	98274	44.8606 ug/L		88
83)	n-Propylbenzene	16.24	91	2624924	48.3222 ug/L		99
84)	Bromobenzene	16.37	156	542381	48.5427 ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	1926734	48.6921 ug/L		100
86)	2-Chlorotoluene	16.50	91	1832398	48.3152 ug/L		99
87)	4-Chlorotoluene	16.56	91	1589494	46.3979 ug/L		100
88)	a-Methylstyrene	16.83	118	856154	45.6045 ug/L		100
89)	tert-Butylbenzene	16.89	134	367638	47.4906 ug/L		98
90)	1,2,4-Trimethylbenzene	16.94	105	1954303	48.0312 ug/L		99
91)	sec-Butylbenzene	17.16	105	2214729	47.5764 ug/L		98
92)	p-Isopropyltoluene	17.32	119	1909463	48.3096 ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	1043963	48.5233 ug/L		98
94)	1,4-Dichlorobenzene	17.64	146	1026577	47.3283 ug/L		99
95)	n-Butylbenzene	17.85	91	1846719	47.2606 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	894170	46.7296 ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.13	75	63774	45.4568 ug/L		97
98)	1,2,4-Trichlorobenzene	20.28	180	702261	49.0994 ug/L		100
99)	Hexachlorobutadiene	20.43	225	325396	48.6913 ug/L		98
100)	Naphthalene	20.65	128	959183	45.1381 ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	560837	46.4781 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M413126.D 8260WT.M Fri Jun 24 17:14:32 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062116\8M413126.D Vial: 3
Acq On : 21 Jun 2016 18:23 Operator: FJB
Sample : WG573644-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 21 18:45 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

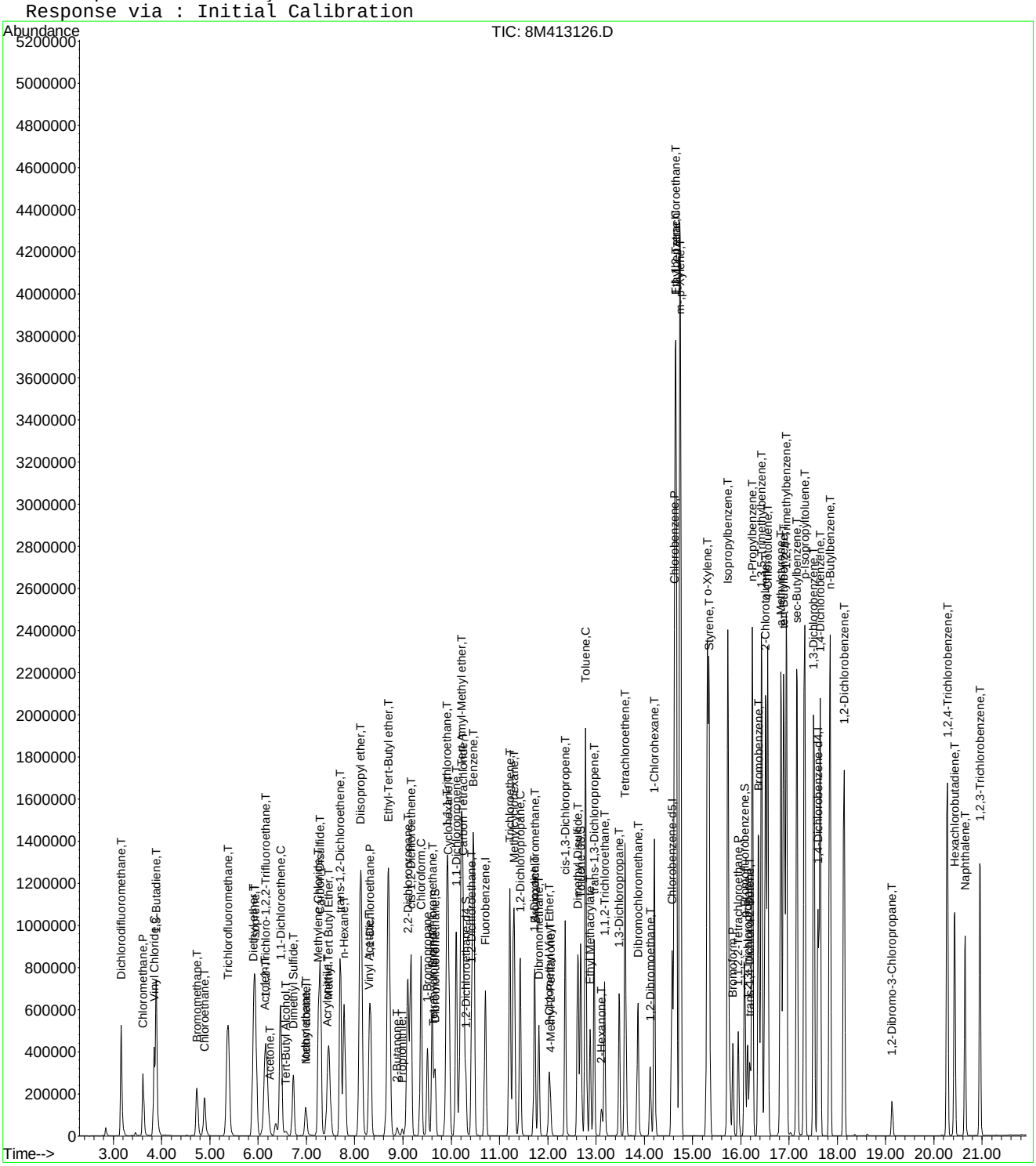

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062116\8M413126.D Vial: 3
Acq On : 21 Jun 2016 18:23 Operator: FJB
Sample : WG573644-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	108	0.00
2	T	Dichlorodifluoromethane	0.4192	0.4196	-0.1	104	0.00
3	P	Chloromethane	0.2447	0.2291	6.3	104	0.00
4	C	Vinyl Chloride	0.2903	0.3156	-8.7	117	0.00
5	T	1,3-Butadiene	0.2434	0.2786	-14.4	120	0.00
6	T	Bromomethane	0.1654	0.1409	14.8	91	0.00
7	T	Chloroethane	0.1597	0.1678	-5.1	116	0.00
8	T	Trichlorofluoromethane	0.5401	0.5995	-11.0	121	0.00
9	T	Diethyl ether	0.1290	0.1380	-7.0	119	0.00
10	T	Isoprene	0.3280	0.3326	-1.4	113	0.00
11	T	Acrolein	0.0116	0.0106	7.9	102	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2539	0.2736	-7.8	119	0.00
13	T	Acetone	0.0281	0.0325	-15.4	119	0.00
14	C	1,1-Dichloroethene	0.4043	0.4327	-7.0	118	0.00
15	T	Tert-Butyl Alcohol	0.0090	0.0072	20.1	87	0.00
16	T	Dimethyl Sulfide	0.1445	0.1422	1.6	108	0.00
17	T	Iodomethane	0.0866	0.0767	11.4	82	0.00
18	T	Methyl acetate	0.0760	0.0795	-4.6	117	0.00
19	T	Methylene Chloride	0.2573	0.2619	-1.8	113	0.00
20	T	Carbon Disulfide	0.8460	0.9026	-6.7	120	0.00
21	T	Acrylonitrile	0.0365	0.0393	-7.7	111	0.00
22	T	Methyl Tert Butyl Ether	0.5568	0.6008	-7.9	112	0.00
23	T	trans-1,2-Dichloroethene	0.3714	0.3910	-5.3	115	0.00
24	T	n-Hexane	0.2758	0.3118	-13.1	125	0.00
25	T	Diisopropyl ether	0.5789	0.6073	-4.9	115	0.00
26	T	Vinyl Acetate	0.2651	0.2490	6.0	98	0.00
27	P	1,1-Dichloroethane	0.4612	0.4887	-6.0	114	0.00
28	T	Ethyl-Tert-Butyl ether	0.6203	0.6751	-8.8	116	0.00
29	T	2-Butanone	0.0413	0.0401	2.9	102	0.00
30	T	Propionitrile	0.0120	0.0122	-1.2	107	0.00
31	T	2,2-Dichloropropane	0.4860	0.5733	-18.0	126	0.00
32	T	cis-1,2-Dichloroethene	0.2870	0.2999	-4.5	115	0.00
33	C	Chloroform	0.5446	0.5802	-6.5	116	0.00
34		1-Bromopropane	0.0411	0.0474	-15.4	126	0.00
35	T	Bromochloromethane	0.1472	0.1593	-8.2	117	0.00
36	T	Tetrahydrofuran	0.0272	0.0241	11.5	102	0.00
37	S	Dibromofluoromethane	0.2686	0.2880	-7.2	115	0.00
38	T	1,1,1-Trichloroethane	0.5173	0.5761	-11.4	119	0.00
39	T	Cyclohexane	0.3581	0.3813	-6.5	120	0.00
40	T	1,1-Dichloropropene	0.3943	0.4230	-7.3	116	0.00
41	T	Tert-Amyl-Methyl ether	0.5634	0.6142	-9.0	117	0.00
42	T	Carbon Tetrachloride	0.4593	0.5142	-11.9	120	0.00
43	S	1,2-Dichloroethane-d4	0.2880	0.3116	-8.2	114	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.3505	0.3849	-9.8	116	0.00
46	T	Benzene	1.0269	1.0635	-3.6	111	0.00
47	T	Trichloroethene	0.2739	0.2950	-7.7	117	0.00
48	T	Methylcyclohexane	0.4161	0.4584	-10.2	122	0.00
49	C	1,2-Dichloropropane	0.2286	0.2298	-0.5	110	0.00
50	T	Bromodichloromethane	0.4018	0.4345	-8.1	112	0.00
51	T	1,4-Dioxane	0.0012	0.0008	29.6#	72	0.00
52	T	Dibromomethane	0.1353	0.1374	-1.6	111	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0983	0.0885	10.0	92	0.00
54	T	4-Methyl-2-Pentanone	0.0401	0.0398	0.8	103	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062116\8M413126.D Vial: 3
Acq On : 21 Jun 2016 18:23 Operator: FJB
Sample : WG573644-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4090	0.4381	-7.1	111	0.00
56	T	Dimethyl Disulfide	0.2183	0.2252	-3.2	110	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	118	0.00
58	S	Toluene-d8	1.3084	1.3380	-2.3	118	0.00
59	C	Toluene	1.5520	1.5051	3.0	114	0.00
60	T	Ethyl Methacrylate	0.2981	0.2908	2.4	109	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.5201	0.5279	-1.5	113	0.00
63	T	1,1,2-Trichloroethane	0.2449	0.2320	5.3	110	0.00
64	T	2-Hexanone	0.0515	0.0478	7.1	107	0.00
65	T	1,3-Dichloropropane	0.4360	0.4203	3.6	109	0.00
66	T	Tetrachloroethene	0.3325	0.3457	-4.0	125	0.00
67	T	Dibromochloromethane	0.3576	0.3587	-0.3	113	0.00
68	T	1,2-Dibromoethane	0.2441	0.2325	4.7	108	0.00
69	T	1-Chlorohexane	0.5298	0.5259	0.7	119	0.00
70	P	Chlorobenzene	1.0466	1.0099	3.5	115	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4055	0.4043	0.3	115	0.00
72	C	Ethylbenzene	0.5726	0.5443	4.9	114	0.00
73	T	m-,p-Xylene	0.6716	0.6520	2.9	115	0.00
74	T	o-Xylene	0.6566	0.6369	3.0	114	0.00
75	T	Styrene	1.0770	1.0686	0.8	112	0.00
76	P	Bromoform	0.2121	0.2227	-5.0	119	0.00
77	T	Isopropylbenzene	1.7444	1.7487	-0.2	116	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	121	0.00
79	P	1,1,2,2-Tetrachloroethane	0.5018	0.4515	10.0	107	0.00
80	S	p-Bromofluorobenzene	1.0352	1.0506	-1.5	125	0.00
81	T	1,2,3-Trichloropropane	0.1545	0.1445	6.5	113	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1376	0.1411	-2.6	113	0.00
83	T	n-Propylbenzene	3.9003	3.7694	3.4	115	0.00
84	T	Bromobenzene	0.8022	0.7789	2.9	118	0.00
85	T	1,3,5-Trimethylbenzene	2.8411	2.7668	2.6	116	0.00
86	T	2-Chlorotoluene	2.7231	2.6313	3.4	114	0.00
87	T	4-Chlorotoluene	2.4597	2.2825	7.2	119	0.00
88	T	a-Methylstyrene	1.3479	1.2294	8.8	111	0.00
89	T	tert-Butylbenzene	0.5558	0.5279	5.0	120	0.00
90	T	1,2,4-Trimethylbenzene	2.9214	2.8064	3.9	116	0.00
91	T	sec-Butylbenzene	3.3424	3.1803	4.8	115	0.00
92	T	p-Isopropyltoluene	2.8379	2.7420	3.4	118	0.00
93	T	1,3-Dichlorobenzene	1.5448	1.4991	3.0	118	0.00
94	T	1,4-Dichlorobenzene	1.5574	1.4742	5.3	118	0.00
95	T	n-Butylbenzene	2.8056	2.6519	5.5	115	0.00
96	T	1,2-Dichlorobenzene	1.3739	1.2840	6.5	116	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1007	0.0916	9.1	107	0.00
98	T	1,2,4-Trichlorobenzene	1.0269	1.0085	1.8	120	0.00
99	T	Hexachlorobutadiene	0.4798	0.4673	2.6	123	0.00
100	T	Naphthalene	1.5257	1.3774	9.7	107	0.00
101	T	1,2,3-Trichlorobenzene	0.8664	0.8054	7.0	118	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413126.D 8260WT.M Fri Jun 24 17:18:55 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062116\8M413126.D Vial: 3
Acq On : 21 Jun 2016 18:23 Operator: FJB
Sample : WG573644-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	108	0.00
2	T	Dichlorodifluoromethane	50.0000	50.0516	-0.1	104	0.00
3	P	Chloromethane	50.0000	46.8263	6.3	104	0.00
4	C	Vinyl Chloride	50.0000	54.3613	-8.7	117	0.00
5	T	1,3-Butadiene	50.0000	57.2127	-14.4	120	0.00
6	T	Bromomethane	50.0000	40.5323	18.9	91	0.00
7	T	Chloroethane	50.0000	52.5301	-5.1	116	0.00
8	T	Trichlorofluoromethane	50.0000	55.4976	-11.0	121	0.00
9	T	Diethyl ether	100.0000	107.0227	-7.0	119	0.00
10	T	Isoprene	50.0000	50.6973	-1.4	113	0.00
11	T	Acrolein	50.0000	46.0877	7.8	102	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	53.8805	-7.8	119	0.00
13	T	Acetone	50.0000	57.7230	-15.4	119	0.00
14	C	1,1-Dichloroethene	50.0000	53.5189	-7.0	118	0.00
15	T	Tert-Butyl Alcohol	200.0000	159.7312	20.1	87	0.00
16	T	Dimethyl Sulfide	50.0000	49.1883	1.6	108	0.00
17	T	Iodomethane	50.0000	35.2171	29.6#	82	0.00
18	T	Methyl acetate	50.0000	52.2779	-4.6	117	0.00
19	T	Methylene Chloride	50.0000	50.8956	-1.8	113	0.00
20	T	Carbon Disulfide	50.0000	53.3488	-6.7	120	0.00
21	T	Acrylonitrile	50.0000	53.8458	-7.7	111	0.00
22	T	Methyl Tert Butyl Ether	50.0000	53.9509	-7.9	112	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.6417	-5.3	115	0.00
24	T	n-Hexane	50.0000	56.5261	-13.1	125	0.00
25	T	Diisopropyl ether	100.0000	104.8971	-4.9	115	0.00
26	T	Vinyl Acetate	50.0000	46.9814	6.0	98	0.00
27	P	1,1-Dichloroethane	50.0000	52.9774	-6.0	114	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	108.8361	-8.8	116	0.00
29	T	2-Butanone	50.0000	48.5636	2.9	102	0.00
30	T	Propionitrile	100.0000	101.2332	-1.2	107	0.00
31	T	2,2-Dichloropropane	50.0000	58.9767	-18.0	126	0.00
32	T	cis-1,2-Dichloroethene	50.0000	52.2457	-4.5	115	0.00
33	C	Chloroform	50.0000	53.2708	-6.5	116	0.00
34		1-Bromopropane	50.0000	57.7019	-15.4	126	0.00
35	T	Bromochloromethane	50.0000	54.1223	-8.2	117	0.00
36	T	Tetrahydrofuran	100.0000	88.5309	11.5	102	0.00
37	S	Dibromofluoromethane	25.0000	26.8071	-7.2	115	0.00
38	T	1,1,1-Trichloroethane	50.0000	55.6843	-11.4	119	0.00
39	T	Cyclohexane	50.0000	53.2326	-6.5	120	0.00
40	T	1,1-Dichloropropene	50.0000	53.6410	-7.3	116	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	109.0195	-9.0	117	0.00
42	T	Carbon Tetrachloride	50.0000	55.9733	-11.9	120	0.00
43	S	1,2-Dichloroethane-d4	25.0000	27.0498	-8.2	114	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	54.9030	-9.8	116	0.00
46	T	Benzene	50.0000	51.7816	-3.6	111	0.00
47	T	Trichloroethene	50.0000	53.8524	-7.7	117	0.00
48	T	Methylcyclohexane	50.0000	55.0785	-10.2	122	0.00
49	C	1,2-Dichloropropane	50.0000	50.2500	-0.5	110	0.00
50	T	Bromodichloromethane	50.0000	54.0715	-8.1	112	0.00
51	T	1,4-Dioxane	200.0000	141.8410	29.1#	72	0.00
52	T	Dibromomethane	50.0000	50.7834	-1.6	111	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	45.0223	10.0	92	0.00
54	T	4-Methyl-2-Pentanone	50.0000	49.6023	0.8	103	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062116\8M413126.D Vial: 3
Acq On : 21 Jun 2016 18:23 Operator: FJB
Sample : WG573644-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.5621	-7.1	111	0.00
56	T	Dimethyl Disulfide	50.0000	51.5921	-3.2	110	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	118	0.00
58	S	Toluene-d8	25.0000	25.5659	-2.3	118	0.00
59	C	Toluene	50.0000	48.4871	3.0	114	0.00
60	T	Ethyl Methacrylate	50.0000	48.7782	2.4	109	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	50.7497	-1.5	113	0.00
63	T	1,1,2-Trichloroethane	50.0000	47.3701	5.3	110	0.00
64	T	2-Hexanone	50.0000	46.4489	7.1	107	0.00
65	T	1,3-Dichloropropane	50.0000	48.1994	3.6	109	0.00
66	T	Tetrachloroethene	50.0000	51.9821	-4.0	125	0.00
67	T	Dibromochloromethane	50.0000	50.1513	-0.3	113	0.00
68	T	1,2-Dibromoethane	50.0000	47.6288	4.7	108	0.00
69	T	1-Chlorohexane	50.0000	49.6341	0.7	119	0.00
70	P	Chlorobenzene	50.0000	48.2494	3.5	115	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	49.8550	0.3	115	0.00
72	C	Ethylbenzene	50.0000	47.5308	4.9	114	0.00
73	T	m-,p-Xylene	100.0000	97.0666	2.9	115	0.00
74	T	o-Xylene	50.0000	48.4927	3.0	114	0.00
75	T	Styrene	50.0000	49.6076	0.8	112	0.00
76	P	Bromoform	50.0000	52.5027	-5.0	119	0.00
77	T	Isopropylbenzene	50.0000	50.1226	-0.2	116	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	121	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	44.9902	10.0	107	0.00
80	S	p-Bromofluorobenzene	25.0000	25.3719	-1.5	125	0.00
81	T	1,2,3-Trichloropropane	50.0000	46.7642	6.5	113	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	44.8606	10.3	113	0.00
83	T	n-Propylbenzene	50.0000	48.3222	3.4	115	0.00
84	T	Bromobenzene	50.0000	48.5427	2.9	118	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	48.6921	2.6	116	0.00
86	T	2-Chlorotoluene	50.0000	48.3152	3.4	114	0.00
87	T	4-Chlorotoluene	50.0000	46.3979	7.2	119	0.00
88	T	a-Methylstyrene	50.0000	45.6045	8.8	111	0.00
89	T	tert-Butylbenzene	50.0000	47.4906	5.0	120	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	48.0312	3.9	116	0.00
91	T	sec-Butylbenzene	50.0000	47.5763	4.8	115	0.00
92	T	p-Isopropyltoluene	50.0000	48.3096	3.4	118	0.00
93	T	1,3-Dichlorobenzene	50.0000	48.5234	3.0	118	0.00
94	T	1,4-Dichlorobenzene	50.0000	47.3283	5.3	118	0.00
95	T	n-Butylbenzene	50.0000	47.2606	5.5	115	0.00
96	T	1,2-Dichlorobenzene	50.0000	46.7296	6.5	116	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	45.4568	9.1	107	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	49.0994	1.8	120	0.00
99	T	Hexachlorobutadiene	50.0000	48.6914	2.6	123	0.00
100	T	Naphthalene	50.0000	45.1381	9.7	107	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	46.4781	7.0	118	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413126.D 8260WT.M Fri Jun 24 17:18:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062216\8M413163.D Vial: 3
Acq On : 22 Jun 2016 15:41 Operator: FJB
Sample : WG573770-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 22 16:05:40 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	733044	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	548013	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	310940	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	213894	27.1579 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 108.64%		
43) 1,2-Dichloroethane-d4	10.30	65	238865	28.2849 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 113.12%		
58) Toluene-d8	12.68	98	756784	26.3867 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.56%		
80) p-Bromofluorobenzene	16.08	95	326001	25.3202 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.28%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	662713	53.9222 ug/L	100
3) Chloromethane	3.62	50	356220	49.6540 ug/L	100
4) Vinyl Chloride	3.84	62	489912	57.5583 ug/L	99
5) 1,3-Butadiene	3.89	54	474280	66.4454 ug/L	94
6) Bromomethane	4.73	94	186080	36.6673 ug/L	100
7) Chloroethane	4.89	64	247391	52.8222 ug/L	98
8) Trichlorofluoromethane	5.37	101	959949	60.6119 ug/L	100
9) Diethyl ether	5.90	59	374507	99.0505 ug/L	98
10) Isoprene	5.94	67	563283	58.5676 ug/L	97
11) Acrolein	6.14	56	12754	37.6748 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	409083	54.9504 ug/L	95
13) Acetone	6.23	43	48270	58.5273 ug/L	97
14) 1,1-Dichloroethene	6.46	61	674118	56.8711 ug/L	97
15) Tert-Butyl Alcohol	6.56	59	46245	174.9747 ug/L	99
16) Dimethyl Sulfide	6.73	62	213259	50.3179 ug/L	100
17) Iodomethane	6.99	142	144082	44.1276 ug/L	97
18) Methyl acetate	7.00	43	124376	55.7902 ug/L	98
19) Methylene Chloride	7.25	84	383069	50.7825 ug/L	100
20) Carbon Disulfide	7.29	76	1450754	58.4851 ug/L	99
21) Acrylonitrile	7.43	53	55427	51.7966 ug/L	99
22) Methyl Tert Butyl Ether	7.46	73	880555	53.9358 ug/L	100
23) trans-1,2-Dichloroethene	7.70	61	591515	54.3180 ug/L	100
24) n-Hexane	7.78	57	463490	57.3174 ug/L	99
25) Diisopropyl ether	8.12	45	1751539	103.1850 ug/L	96
26) Vinyl Acetate	8.30	43	337574	43.4350 ug/L	99
27) 1,1-Dichloroethane	8.32	63	746209	55.1763 ug/L	100
28) Ethyl-Tert-Butyl ether	8.70	59	1993570	109.6148 ug/L	99
29) 2-Butanone	8.88	43	58450	48.2362 ug/L	94
30) Propionitrile	8.99	54	33973	96.2072 ug/L	99
31) 2,2-Dichloropropane	9.10	77	907242	63.6573 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	448932	53.3528 ug/L	98
33) Chloroform	9.37	83	889950	55.7319 ug/L	100
34) 1-Bromopropane	9.51	122	76625	63.5756 ug/L	99
35) Bromochloromethane	9.60	130	235050	54.4744 ug/L	96
36) Tetrahydrofuran	9.63	42	72506	90.8490 ug/L	98
38) 1,1,1-Trichloroethane	9.91	97	905263	59.6822 ug/L	99
39) Cyclohexane	9.93	56	580560	55.2847 ug/L	97
40) 1,1-Dichloropropene	10.10	75	652272	56.4182 ug/L	100
41) Tert-Amyl-Methyl ether	10.21	73	1799715	108.9522 ug/L	100
42) Carbon Tetrachloride	10.25	117	820447	60.9134 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413163.D 8260WT.M Mon Jun 27 12:27:20 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062216\8M413163.D Vial: 3
Acq On : 22 Jun 2016 15:41 Operator: FJB
Sample : WG573770-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 22 16:05:40 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.42	62	596728	58.0600 ug/L	98
46)	Benzene	10.46	78	1604181	53.2746 ug/L	99
47)	Trichloroethene	11.21	130	444764	55.3804 ug/L	99
48)	Methylcyclohexane	11.30	83	700951	57.4519 ug/L	98
49)	1,2-Dichloropropane	11.42	63	338396	50.4831 ug/L	89
50)	Bromodichloromethane	11.73	83	670981	56.9525 ug/L	100
51)	1,4-Dioxane	11.72	88	5139	152.6197 ug/L	86
52)	Dibromomethane	11.81	93	201226	50.7129 ug/L	96
53)	2-Chloroethyl Vinyl Ether	12.02	63	131607	45.6796 ug/L	98
54)	4-Methyl-2-Pentanone	12.05	58	55508	47.1653 ug/L	93
55)	cis-1,3-Dichloropropene	12.36	75	669136	55.7993 ug/L	100
56)	Dimethyl Disulfide	12.62	79	368346	57.5498 ug/L	98
59)	Toluene	12.78	91	1721616	50.6037 ug/L	100
60)	Ethyl Methacrylate	12.88	69	334116	51.1373 ug/L	96
62)	trans-1,3-Dichloropropene	12.96	75	598850	52.5249 ug/L	99
63)	1,1,2-Trichloroethane	13.18	97	257636	47.9905 ug/L	100
64)	2-Hexanone	13.12	58	50408	44.6823 ug/L #	96
65)	1,3-Dichloropropane	13.48	76	461776	48.3128 ug/L	98
66)	Tetrachloroethene	13.60	164	396562	54.4048 ug/L	96
67)	Dibromochloromethane	13.87	129	407562	51.9936 ug/L	100
68)	1,2-Dibromoethane	14.12	107	264335	49.4046 ug/L	100
69)	1-Chlorohexane	14.21	91	625960	53.9001 ug/L	98
70)	Chlorobenzene	14.62	112	1147614	50.0230 ug/L	99
71)	1,1,1,2-Tetrachloroethane	14.66	131	461856	51.9643 ug/L	98
72)	Ethylbenzene	14.66	106	624125	49.7229 ug/L	99
73)	m-,p-Xylene	14.75	106	1503763	102.1378 ug/L	99
74)	o-Xylene	15.31	106	737081	51.2070 ug/L	100
75)	Styrene	15.35	104	1225122	51.8929 ug/L	97
76)	Bromoform	15.83	173	248085	53.3581 ug/L	99
77)	Isopropylbenzene	15.73	105	1994935	52.1706 ug/L	99
79)	1,1,2,2-Tetrachloroethane	15.95	83	272075	43.5912 ug/L	99
81)	1,2,3-Trichloropropane	16.13	110	88111	45.8434 ug/L	85
82)	trans-1,4-Dichloro-2-Buten	16.18	53	93400	47.7038 ug/L	78
83)	n-Propylbenzene	16.24	91	2359407	48.6375 ug/L	99
84)	Bromobenzene	16.37	156	481990	48.3055 ug/L	97
85)	1,3,5-Trimethylbenzene	16.42	105	1760230	49.8132 ug/L	99
86)	2-Chlorotoluene	16.51	91	1680776	49.6264 ug/L	99
87)	4-Chlorotoluene	16.56	91	1429354	46.7216 ug/L	99
88)	a-Methylstyrene	16.83	118	848740	50.6254 ug/L	99
89)	tert-Butylbenzene	16.89	134	325684	47.1110 ug/L	98
90)	1,2,4-Trimethylbenzene	16.94	105	1777262	48.9126 ug/L	100
91)	sec-Butylbenzene	17.16	105	1996091	48.0164 ug/L	99
92)	p-Isopropyltoluene	17.32	119	1717647	48.6625 ug/L	99
93)	1,3-Dichlorobenzene	17.51	146	935639	48.6981 ug/L	98
94)	1,4-Dichlorobenzene	17.64	146	929018	47.9614 ug/L	97
95)	n-Butylbenzene	17.85	91	1670321	47.8670 ug/L	99
96)	1,2-Dichlorobenzene	18.14	146	798369	46.7212 ug/L	99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	56411	45.0254 ug/L	99
98)	1,2,4-Trichlorobenzene	20.28	180	603545	47.2526 ug/L	99
99)	Hexachlorobutadiene	20.43	225	286706	48.0413 ug/L	98
100)	Naphthalene	20.65	128	820336	43.2287 ug/L	99
101)	1,2,3-Trichlorobenzene	20.96	180	475605	44.1363 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413163.D 8260WT.M Mon Jun 27 12:27:21 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062216\8M413163.D Vial: 3
Acq On : 22 Jun 2016 15:41 Operator: FJB
Sample : WG573770-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 22 16:05 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

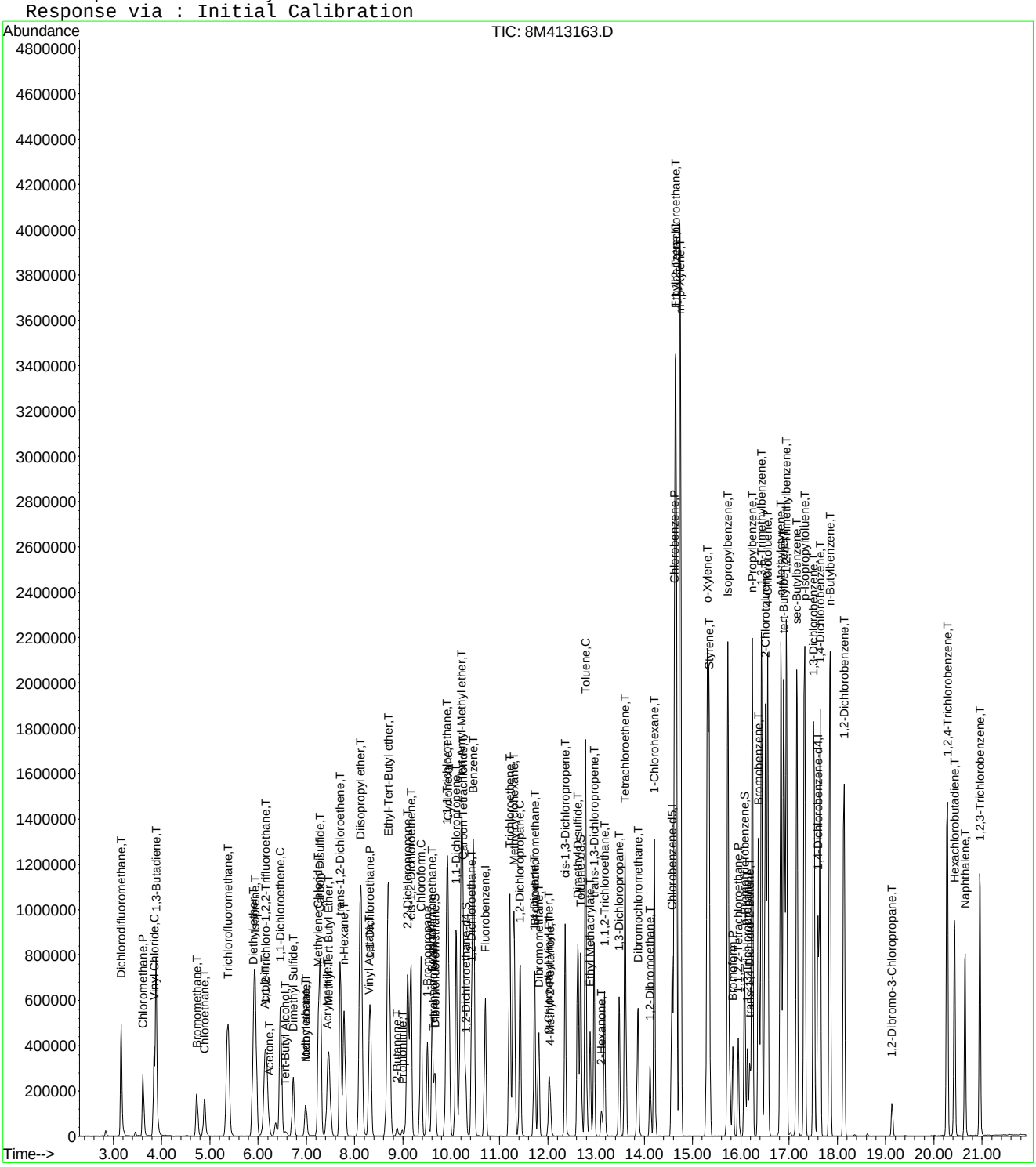

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062216\8M413163.D Vial: 3
Acq On : 22 Jun 2016 15:41 Operator: FJB
Sample : WG573770-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	94	0.00
2	T	Dichlorodifluoromethane	0.4192	0.4520	-7.8	97	0.00
3	P	Chloromethane	0.2447	0.2430	0.7	96	0.00
4	C	Vinyl Chloride	0.2903	0.3342	-15.1	108	0.00
5	T	1,3-Butadiene	0.2434	0.3235	-32.9#	121	0.00
6	T	Bromomethane	0.1654	0.1269	23.3	71	0.00
7	T	Chloroethane	0.1597	0.1687	-5.6	101	0.00
8	T	Trichlorofluoromethane	0.5401	0.6548	-21.2	115	0.00
9	T	Diethyl ether	0.1290	0.1277	1.0	96	0.00
10	T	Isoprene	0.3280	0.3842	-17.1	113	0.00
11	T	Acrolein	0.0116	0.0087	24.7	72	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2539	0.2790	-9.9	106	0.00
13	T	Acetone	0.0281	0.0329	-17.0	105	-0.01
14	C	1,1-Dichloroethene	0.4043	0.4598	-13.7	109	0.00
15	T	Tert-Butyl Alcohol	0.0090	0.0079	12.4	83	-0.01
16	T	Dimethyl Sulfide	0.1445	0.1455	-0.6	96	0.00
17	T	Iodomethane	0.0866	0.0983	-13.5	91	0.00
18	T	Methyl acetate	0.0760	0.0848	-11.6	108	0.00
19	T	Methylene Chloride	0.2573	0.2613	-1.6	98	0.00
20	T	Carbon Disulfide	0.8460	0.9895	-17.0	114	0.00
21	T	Acrylonitrile	0.0365	0.0378	-3.6	93	0.00
22	T	Methyl Tert Butyl Ether	0.5568	0.6006	-7.9	98	0.00
23	T	trans-1,2-Dichloroethene	0.3714	0.4035	-8.6	104	0.00
24	T	n-Hexane	0.2758	0.3161	-14.6	110	0.00
25	T	Diisopropyl ether	0.5789	0.5974	-3.2	98	0.00
26	T	Vinyl Acetate	0.2651	0.2303	13.1	79	0.00
27	P	1,1-Dichloroethane	0.4612	0.5090	-10.4	103	0.00
28	T	Ethyl-Tert-Butyl ether	0.6203	0.6799	-9.6	102	0.00
29	T	2-Butanone	0.0413	0.0399	3.5	88	0.00
30	T	Propionitrile	0.0120	0.0116	3.7	89	0.00
31	T	2,2-Dichloropropane	0.4860	0.6188	-27.3#	118	0.00
32	T	cis-1,2-Dichloroethene	0.2870	0.3062	-6.7	102	0.00
33	C	Chloroform	0.5446	0.6070	-11.5	105	0.00
34		1-Bromopropane	0.0411	0.0523	-27.2#	121	0.00
35	T	Bromochloromethane	0.1472	0.1603	-8.9	102	0.00
36	T	Tetrahydrofuran	0.0272	0.0247	9.1	91	0.00
37	S	Dibromofluoromethane	0.2686	0.2918	-8.6	101	0.00
38	T	1,1,1-Trichloroethane	0.5173	0.6175	-19.4	111	0.00
39	T	Cyclohexane	0.3581	0.3960	-10.6	108	0.00
40	T	1,1-Dichloropropene	0.3943	0.4449	-12.8	106	0.00
41	T	Tert-Amyl-Methyl ether	0.5634	0.6138	-9.0	102	0.00
42	T	Carbon Tetrachloride	0.4593	0.5596	-21.8	113	0.00
43	S	1,2-Dichloroethane-d4	0.2880	0.3258	-13.1	104	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.3505	0.4070	-16.1	106	0.00
46	T	Benzene	1.0269	1.0942	-6.5	100	0.00
47	T	Trichloroethene	0.2739	0.3034	-10.8	105	0.00
48	T	Methylcyclohexane	0.4161	0.4781	-14.9	110	0.00
49	C	1,2-Dichloropropane	0.2286	0.2308	-1.0	96	0.00
50	T	Bromodichloromethane	0.4018	0.4577	-13.9	102	0.00
51	T	1,4-Dioxane	0.0012	0.0009	23.5	68	0.00
52	T	Dibromomethane	0.1353	0.1373	-1.4	96	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0983	0.0898	8.6	81	0.00
54	T	4-Methyl-2-Pentanone	0.0401	0.0379	5.7	85	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062216\8M413163.D Vial: 3
Acq On : 22 Jun 2016 15:41 Operator: FJB
Sample : WG573770-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4090	0.4564	-11.6	100	0.00
56	T	Dimethyl Disulfide	0.2183	0.2512	-15.1	107	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	102	0.00
58	S	Toluene-d8	1.3084	1.3810	-5.5	105	0.00
59	C	Toluene	1.5520	1.5708	-1.2	103	0.00
60	T	Ethyl Methacrylate	0.2981	0.3048	-2.3	99	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.5201	0.5464	-5.0	101	0.00
63	T	1,1,2-Trichloroethane	0.2449	0.2351	4.0	96	0.00
64	T	2-Hexanone	0.0515	0.0460	10.6	89	0.00
65	T	1,3-Dichloropropane	0.4360	0.4213	3.4	94	0.00
66	T	Tetrachloroethene	0.3325	0.3618	-8.8	113	0.00
67	T	Dibromochloromethane	0.3576	0.3719	-4.0	102	0.00
68	T	1,2-Dibromoethane	0.2441	0.2412	1.2	97	0.00
69	T	1-Chlorohexane	0.5298	0.5711	-7.8	112	0.00
70	P	Chlorobenzene	1.0466	1.0471	-0.0	103	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4055	0.4214	-3.9	103	0.00
72	C	Ethylbenzene	0.5726	0.5694	0.6	103	0.00
73	T	m-,p-Xylene	0.6716	0.6860	-2.1	104	0.00
74	T	o-Xylene	0.6566	0.6725	-2.4	104	0.00
75	T	Styrene	1.0770	1.1178	-3.8	101	0.00
76	P	Bromoform	0.2121	0.2264	-6.7	104	0.00
77	T	Isopropylbenzene	1.7444	1.8201	-4.3	104	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	108	0.00
79	P	1,1,2,2-Tetrachloroethane	0.5018	0.4375	12.8	92	0.00
80	S	p-Bromofluorobenzene	1.0352	1.0484	-1.3	111	0.00
81	T	1,2,3-Trichloropropane	0.1545	0.1417	8.3	99	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1376	0.1502	-9.2	108	0.00
83	T	n-Propylbenzene	3.9003	3.7940	2.7	104	0.00
84	T	Bromobenzene	0.8022	0.7751	3.4	105	0.00
85	T	1,3,5-Trimethylbenzene	2.8411	2.8305	0.4	106	0.00
86	T	2-Chlorotoluene	2.7231	2.7027	0.7	104	0.00
87	T	4-Chlorotoluene	2.4597	2.2984	6.6	107	0.00
88	T	a-Methylstyrene	1.3479	1.3648	-1.3	110	0.00
89	T	tert-Butylbenzene	0.5558	0.5237	5.8	106	0.00
90	T	1,2,4-Trimethylbenzene	2.9214	2.8579	2.2	106	0.00
91	T	sec-Butylbenzene	3.3424	3.2098	4.0	104	0.00
92	T	p-Isopropyltoluene	2.8379	2.7620	2.7	106	0.00
93	T	1,3-Dichlorobenzene	1.5448	1.5045	2.6	106	0.00
94	T	1,4-Dichlorobenzene	1.5574	1.4939	4.1	107	0.00
95	T	n-Butylbenzene	2.8056	2.6859	4.3	104	0.00
96	T	1,2-Dichlorobenzene	1.3739	1.2838	6.6	104	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1007	0.0907	9.9	95	0.00
98	T	1,2,4-Trichlorobenzene	1.0269	0.9705	5.5	103	0.00
99	T	Hexachlorobutadiene	0.4798	0.4610	3.9	108	0.00
100	T	Naphthalene	1.5257	1.3191	13.5	92	0.00
101	T	1,2,3-Trichlorobenzene	0.8664	0.7648	11.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413163.D 8260WT.M Mon Jun 27 12:36:37 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062216\8M413163.D Vial: 3
Acq On : 22 Jun 2016 15:41 Operator: FJB
Sample : WG573770-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	94	0.00
2	T	Dichlorodifluoromethane	50.0000	53.9222	-7.8	97	0.00
3	P	Chloromethane	50.0000	49.6540	0.7	96	0.00
4	C	Vinyl Chloride	50.0000	57.5583	-15.1	108	0.00
5	T	1,3-Butadiene	50.0000	66.4454	-32.9#	121	0.00
6	T	Bromomethane	50.0000	36.6673	26.7#	71	0.00
7	T	Chloroethane	50.0000	52.8222	-5.6	101	0.00
8	T	Trichlorofluoromethane	50.0000	60.6119	-21.2	115	0.00
9	T	Diethyl ether	100.0000	99.0505	0.9	96	0.00
10	T	Isoprene	50.0000	58.5676	-17.1	113	0.00
11	T	Acrolein	50.0000	37.6748	24.7	72	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	54.9504	-9.9	106	0.00
13	T	Acetone	50.0000	58.5273	-17.1	105	-0.01
14	C	1,1-Dichloroethene	50.0000	56.8711	-13.7	109	0.00
15	T	Tert-Butyl Alcohol	200.0000	174.9747	12.5	83	-0.01
16	T	Dimethyl Sulfide	50.0000	50.3179	-0.6	96	0.00
17	T	Iodomethane	50.0000	44.1276	11.7	91	0.00
18	T	Methyl acetate	50.0000	55.7902	-11.6	108	0.00
19	T	Methylene Chloride	50.0000	50.7825	-1.6	98	0.00
20	T	Carbon Disulfide	50.0000	58.4851	-17.0	114	0.00
21	T	Acrylonitrile	50.0000	51.7966	-3.6	93	0.00
22	T	Methyl Tert Butyl Ether	50.0000	53.9358	-7.9	98	0.00
23	T	trans-1,2-Dichloroethene	50.0000	54.3180	-8.6	104	0.00
24	T	n-Hexane	50.0000	57.3174	-14.6	110	0.00
25	T	Diisopropyl ether	100.0000	103.1850	-3.2	98	0.00
26	T	Vinyl Acetate	50.0000	43.4350	13.1	79	0.00
27	P	1,1-Dichloroethane	50.0000	55.1763	-10.4	103	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	109.6148	-9.6	102	0.00
29	T	2-Butanone	50.0000	48.2362	3.5	88	0.00
30	T	Propionitrile	100.0000	96.2072	3.8	89	0.00
31	T	2,2-Dichloropropane	50.0000	63.6573	-27.3#	118	0.00
32	T	cis-1,2-Dichloroethene	50.0000	53.3528	-6.7	102	0.00
33	C	Chloroform	50.0000	55.7319	-11.5	105	0.00
34		1-Bromopropane	50.0000	63.5756	-27.2#	121	0.00
35	T	Bromochloromethane	50.0000	54.4744	-8.9	102	0.00
36	T	Tetrahydrofuran	100.0000	90.8490	9.2	91	0.00
37	S	Dibromofluoromethane	25.0000	27.1579	-8.6	101	0.00
38	T	1,1,1-Trichloroethane	50.0000	59.6822	-19.4	111	0.00
39	T	Cyclohexane	50.0000	55.2847	-10.6	108	0.00
40	T	1,1-Dichloropropene	50.0000	56.4182	-12.8	106	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	108.9522	-9.0	102	0.00
42	T	Carbon Tetrachloride	50.0000	60.9134	-21.8	113	0.00
43	S	1,2-Dichloroethane-d4	25.0000	28.2849	-13.1	104	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	58.0600	-16.1	106	0.00
46	T	Benzene	50.0000	53.2746	-6.5	100	0.00
47	T	Trichloroethene	50.0000	55.3804	-10.8	105	0.00
48	T	Methylcyclohexane	50.0000	57.4519	-14.9	110	0.00
49	C	1,2-Dichloropropane	50.0000	50.4831	-1.0	96	0.00
50	T	Bromodichloromethane	50.0000	56.9525	-13.9	102	0.00
51	T	1,4-Dioxane	200.0000	152.6197	23.7	68	0.00
52	T	Dibromomethane	50.0000	50.7129	-1.4	96	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	45.6796	8.6	81	0.00
54	T	4-Methyl-2-Pentanone	50.0000	47.1653	5.7	85	0.00

(#) = Out of Range
8M413163.D 8260WT.M Mon Jun 27 12:36:39 2016 Page 1

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062216\8M413163.D Vial: 3
Acq On : 22 Jun 2016 15:41 Operator: FJB
Sample : WG573770-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	55.7993	-11.6	100	0.00
56	T	Dimethyl Disulfide	50.0000	57.5498	-15.1	107	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	102	0.00
58	S	Toluene-d8	25.0000	26.3867	-5.5	105	0.00
59	C	Toluene	50.0000	50.6037	-1.2	103	0.00
60	T	Ethyl Methacrylate	50.0000	51.1373	-2.3	99	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	52.5249	-5.0	101	0.00
63	T	1,1,2-Trichloroethane	50.0000	47.9905	4.0	96	0.00
64	T	2-Hexanone	50.0000	44.6823	10.6	89	0.00
65	T	1,3-Dichloropropane	50.0000	48.3128	3.4	94	0.00
66	T	Tetrachloroethene	50.0000	54.4048	-8.8	113	0.00
67	T	Dibromochloromethane	50.0000	51.9936	-4.0	102	0.00
68	T	1,2-Dibromoethane	50.0000	49.4046	1.2	97	0.00
69	T	1-Chlorohexane	50.0000	53.9001	-7.8	112	0.00
70	P	Chlorobenzene	50.0000	50.0230	-0.0	103	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	51.9643	-3.9	103	0.00
72	C	Ethylbenzene	50.0000	49.7229	0.6	103	0.00
73	T	m-,p-Xylene	100.0000	102.1378	-2.1	104	0.00
74	T	o-Xylene	50.0000	51.2070	-2.4	104	0.00
75	T	Styrene	50.0000	51.8929	-3.8	101	0.00
76	P	Bromoform	50.0000	53.3581	-6.7	104	0.00
77	T	Isopropylbenzene	50.0000	52.1706	-4.3	104	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	108	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	43.5912	12.8	92	0.00
80	S	p-Bromofluorobenzene	25.0000	25.3202	-1.3	111	0.00
81	T	1,2,3-Trichloropropane	50.0000	45.8434	8.3	99	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	47.7038	4.6	108	0.00
83	T	n-Propylbenzene	50.0000	48.6375	2.7	104	0.00
84	T	Bromobenzene	50.0000	48.3055	3.4	105	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	49.8132	0.4	106	0.00
86	T	2-Chlorotoluene	50.0000	49.6264	0.7	104	0.00
87	T	4-Chlorotoluene	50.0000	46.7216	6.6	107	0.00
88	T	a-Methylstyrene	50.0000	50.6254	-1.3	110	0.00
89	T	tert-Butylbenzene	50.0000	47.1110	5.8	106	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	48.9126	2.2	106	0.00
91	T	sec-Butylbenzene	50.0000	48.0164	4.0	104	0.00
92	T	p-Isopropyltoluene	50.0000	48.6625	2.7	106	0.00
93	T	1,3-Dichlorobenzene	50.0000	48.6981	2.6	106	0.00
94	T	1,4-Dichlorobenzene	50.0000	47.9614	4.1	107	0.00
95	T	n-Butylbenzene	50.0000	47.8670	4.3	104	0.00
96	T	1,2-Dichlorobenzene	50.0000	46.7212	6.6	104	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	45.0254	9.9	95	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	47.2526	5.5	103	0.00
99	T	Hexachlorobutadiene	50.0000	48.0413	3.9	108	0.00
100	T	Naphthalene	50.0000	43.2287	13.5	92	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	44.1363	11.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413163.D 8260WT.M Mon Jun 27 12:36:40 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413192.D Vial: 3
Acq On : 23 Jun 2016 21:00 Operator: FJB
Sample : WG573990-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76715 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 21:22:50 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	725028	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	565784	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	309614	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	215407	27.6524 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.60%		
43) 1,2-Dichloroethane-d4	10.30	65	235972	28.2513 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 113.00%		
58) Toluene-d8	12.68	98	743592	25.1124 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.44%		
80) p-Bromofluorobenzene	16.08	95	325934	25.4234 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.68%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	636587	52.3691 ug/L	100
3) Chloromethane	3.62	50	336005	47.3540 ug/L	99
4) Vinyl Chloride	3.84	62	471297	55.9835 ug/L	99
5) 1,3-Butadiene	3.88	54	466509	66.0793 ug/L	94
6) Bromomethane	4.73	94	223807	44.2082 ug/L	96
7) Chloroethane	4.89	64	230630	49.7879 ug/L	97
8) Trichlorofluoromethane	5.37	101	914053	58.3521 ug/L	99
9) Diethyl ether	5.90	59	365966	97.8617 ug/L	97
10) Isoprene	5.94	67	528954	55.6063 ug/L	97
11) Acrolein	6.14	56	12820	38.2884 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	398018	54.0552 ug/L	94
13) Acetone	6.23	43	45416	55.6757 ug/L	96
14) 1,1-Dichloroethene	6.47	61	635976	54.2465 ug/L	98
15) Tert-Butyl Alcohol	6.58	59	52882	202.2989 ug/L	98
16) Dimethyl Sulfide	6.73	62	202068	48.2045 ug/L	99
17) Iodomethane	6.99	142	143986	44.5471 ug/L	100
18) Methyl acetate	7.00	43	125266	56.8107 ug/L	98
19) Methylene Chloride	7.25	84	374398	50.1818 ug/L	100
20) Carbon Disulfide	7.29	76	1363583	55.5787 ug/L	100
21) Acrylonitrile	7.43	53	52604	49.7020 ug/L	93
22) Methyl Tert Butyl Ether	7.46	73	871485	53.9704 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	566696	52.6143 ug/L	100
24) n-Hexane	7.78	57	459061	57.3974 ug/L	99
25) Diisopropyl ether	8.12	45	1678736	99.9895 ug/L	96
26) Vinyl Acetate	8.30	43	314225	40.8778 ug/L	100
27) 1,1-Dichloroethane	8.33	63	710629	53.1263 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1931789	107.3922 ug/L	98
29) 2-Butanone	8.88	43	57296	47.8066 ug/L	96
30) Propionitrile	8.98	54	34033	97.4427 ug/L	94
31) 2,2-Dichloropropane	9.10	77	868732	61.6292 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	432671	51.9888 ug/L	98
33) Chloroform	9.37	83	866433	54.8591 ug/L	100
34) 1-Bromopropane	9.51	122	73212	61.4154 ug/L	100
35) Bromochloromethane	9.61	130	227524	53.3132 ug/L	95
36) Tetrahydrofuran	9.63	42	69393	87.9098 ug/L	97
38) 1,1,1-Trichloroethane	9.91	97	883344	58.8810 ug/L	100
39) Cyclohexane	9.94	56	560595	53.9737 ug/L	97
40) 1,1-Dichloropropene	10.11	75	625468	54.6979 ug/L	100
41) Tert-Amyl-Methyl ether	10.21	73	1774358	108.6048 ug/L	100
42) Carbon Tetrachloride	10.25	117	798795	59.9616 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413192.D 8260WT.M Mon Jun 27 12:30:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413192.D Vial: 3
Acq On : 23 Jun 2016 21:00 Operator: FJB
Sample : WG573990-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76715 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 21:22:50 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	592395	58.2757 ug/L		98
46)	Benzene	10.46	78	1539106	51.6786 ug/L		99
47)	Trichloroethene	11.21	130	432431	54.4401 ug/L		99
48)	Methylcyclohexane	11.30	83	686795	56.9140 ug/L		99
49)	1,2-Dichloropropane	11.43	63	327801	49.4432 ug/L		91
50)	Bromodichloromethane	11.73	83	655856	56.2842 ug/L		100
51)	1,4-Dioxane	11.72	88	6670	200.2779 ug/L		83
52)	Dibromomethane	11.81	93	198160	50.4924 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	128306	45.0262 ug/L		95
54)	4-Methyl-2-Pentanone	12.06	58	55902	48.0253 ug/L		91
55)	cis-1,3-Dichloropropene	12.36	75	645256	54.4029 ug/L		100
56)	Dimethyl Disulfide	12.63	79	358712	56.6642 ug/L		98
59)	Toluene	12.78	91	1659929	47.2580 ug/L		99
60)	Ethyl Methacrylate	12.88	69	327740	48.5859 ug/L		95
62)	trans-1,3-Dichloropropene	12.96	75	582725	49.5052 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	253367	45.7129 ug/L		100
64)	2-Hexanone	13.11	58	49571	42.5602 ug/L	#	95
65)	1,3-Dichloropropane	13.49	76	457785	46.3909 ug/L		96
66)	Tetrachloroethene	13.60	164	374094	49.7104 ug/L		98
67)	Dibromochloromethane	13.87	129	402599	49.7473 ug/L		98
68)	1,2-Dibromoethane	14.13	107	263257	47.6577 ug/L		98
69)	1-Chlorohexane	14.21	91	606471	50.5817 ug/L		98
70)	Chlorobenzene	14.62	112	1116015	47.1177 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.65	131	455262	49.6136 ug/L		99
72)	Ethylbenzene	14.65	106	606126	46.7722 ug/L		99
73)	m-,p-Xylene	14.75	106	1464859	96.3703 ug/L		98
74)	o-Xylene	15.31	106	700366	47.1280 ug/L		96
75)	Styrene	15.35	104	1184000	48.5758 ug/L		95
76)	Bromoform	15.83	173	242179	50.4518 ug/L		99
77)	Isopropylbenzene	15.73	105	1964495	49.7609 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	268196	43.1537 ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	85820	44.8426 ug/L		85
82)	trans-1,4-Dichloro-2-Buten	16.18	53	93736	48.0756 ug/L		75
83)	n-Propylbenzene	16.24	91	2331548	48.2690 ug/L		99
84)	Bromobenzene	16.37	156	478746	48.1858 ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	1722684	48.9595 ug/L		99
86)	2-Chlorotoluene	16.51	91	1605346	47.6022 ug/L		99
87)	4-Chlorotoluene	16.56	91	1451412	47.6458 ug/L		100
88)	a-Methylstyrene	16.83	118	820053	49.1238 ug/L		100
89)	tert-Butylbenzene	16.90	134	321775	46.7449 ug/L		97
90)	1,2,4-Trimethylbenzene	16.94	105	1755727	48.5269 ug/L		100
91)	sec-Butylbenzene	17.17	105	1988839	48.0468 ug/L		99
92)	p-Isopropyltoluene	17.32	119	1708694	48.6162 ug/L		99
93)	1,3-Dichlorobenzene	17.52	146	921602	48.1730 ug/L		98
94)	1,4-Dichlorobenzene	17.64	146	907047	47.0277 ug/L		99
95)	n-Butylbenzene	17.85	91	1655056	47.6327 ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	790507	46.4592 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	55858	44.7749 ug/L		98
98)	1,2,4-Trichlorobenzene	20.28	180	587639	46.2043 ug/L		98
99)	Hexachlorobutadiene	20.43	225	291731	49.0927 ug/L		98
100)	Naphthalene	20.65	128	821061	43.4522 ug/L		98
101)	1,2,3-Trichlorobenzene	20.96	180	466895	43.5136 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M413192.D 8260WT.M Mon Jun 27 12:30:01 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413192.D Vial: 3
Acq On : 23 Jun 2016 21:00 Operator: FJB
Sample : WG573990-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76715 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 21:22 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

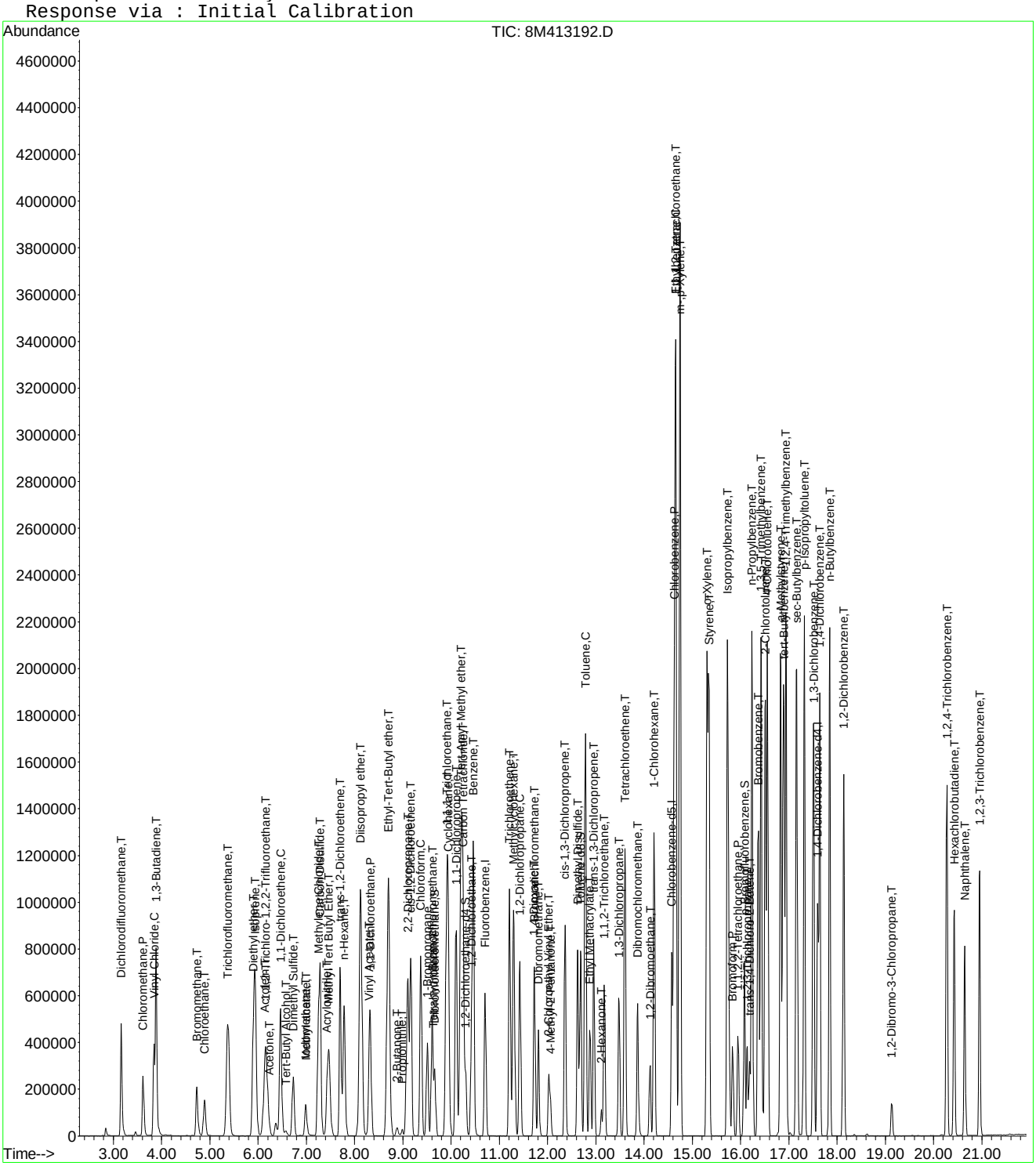

8M413192.D 8260WT.M Mon Jun 27 12:30:03 2016 Page 3

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413192.D Vial: 3
Acq On : 23 Jun 2016 21:00 Operator: FJB
Sample : WG573990-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76715 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	93	0.00
2	T	Dichlorodifluoromethane	0.4192	0.4390	-4.7	93	0.00
3	P	Chloromethane	0.2447	0.2317	5.3	90	0.00
4	C	Vinyl Chloride	0.2903	0.3250	-12.0	104	0.00
5	T	1,3-Butadiene	0.2434	0.3217	-32.2#	119	0.00
6	T	Bromomethane	0.1654	0.1543	6.7	86	0.00
7	T	Chloroethane	0.1597	0.1591	0.4	94	0.00
8	T	Trichlorofluoromethane	0.5401	0.6304	-16.7	109	0.00
9	T	Diethyl ether	0.1290	0.1262	2.1	94	0.00
10	T	Isoprene	0.3280	0.3648	-11.2	106	0.00
11	T	Acrolein	0.0116	0.0088	23.5	73	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2539	0.2745	-8.1	103	0.00
13	T	Acetone	0.0281	0.0313	-11.3	99	-0.01
14	C	1,1-Dichloroethene	0.4043	0.4386	-8.5	103	0.00
15	T	Tert-Butyl Alcohol	0.0090	0.0091	-1.2	95	0.00
16	T	Dimethyl Sulfide	0.1445	0.1394	3.6	91	0.00
17	T	Iodomethane	0.0866	0.0993	-14.7	91	0.00
18	T	Methyl acetate	0.0760	0.0864	-13.6	109	0.00
19	T	Methylene Chloride	0.2573	0.2582	-0.4	96	0.00
20	T	Carbon Disulfide	0.8460	0.9404	-11.2	107	0.00
21	T	Acrylonitrile	0.0365	0.0363	0.6	88	0.00
22	T	Methyl Tert Butyl Ether	0.5568	0.6010	-7.9	97	0.00
23	T	trans-1,2-Dichloroethene	0.3714	0.3908	-5.2	99	0.00
24	T	n-Hexane	0.2758	0.3166	-14.8	109	0.00
25	T	Diisopropyl ether	0.5789	0.5788	0.0	94	0.00
26	T	Vinyl Acetate	0.2651	0.2167	18.2	73	0.00
27	P	1,1-Dichloroethane	0.4612	0.4901	-6.3	98	0.00
28	T	Ethyl-Tert-Butyl ether	0.6203	0.6661	-7.4	99	0.00
29	T	2-Butanone	0.0413	0.0395	4.4	86	0.00
30	T	Propionitrile	0.0120	0.0117	2.5	89	0.00
31	T	2,2-Dichloropropane	0.4860	0.5991	-23.3	113	0.00
32	T	cis-1,2-Dichloroethene	0.2870	0.2984	-4.0	98	0.00
33	C	Chloroform	0.5446	0.5975	-9.7	103	0.00
34		1-Bromopropane	0.0411	0.0505	-22.8	115	0.00
35	T	Bromochloromethane	0.1472	0.1569	-6.6	99	0.00
36	T	Tetrahydrofuran	0.0272	0.0239	12.1	87	0.00
37	S	Dibromofluoromethane	0.2686	0.2971	-10.6	102	0.00
38	T	1,1,1-Trichloroethane	0.5173	0.6092	-17.8	108	0.00
39	T	Cyclohexane	0.3581	0.3866	-7.9	105	0.00
40	T	1,1-Dichloropropene	0.3943	0.4313	-9.4	102	0.00
41	T	Tert-Amyl-Methyl ether	0.5634	0.6118	-8.6	100	0.00
42	T	Carbon Tetrachloride	0.4593	0.5509	-19.9	110	0.00
43	S	1,2-Dichloroethane-d4	0.2880	0.3255	-13.0	103	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.3505	0.4085	-16.5	106	0.00
46	T	Benzene	1.0269	1.0614	-3.4	96	0.00
47	T	Trichloroethene	0.2739	0.2982	-8.9	102	0.00
48	T	Methylcyclohexane	0.4161	0.4736	-13.8	108	0.00
49	C	1,2-Dichloropropane	0.2286	0.2261	1.1	93	0.00
50	T	Bromodichloromethane	0.4018	0.4523	-12.6	100	0.00
51	T	1,4-Dioxane	0.0012	0.0012	0.0	88	0.00
52	T	Dibromomethane	0.1353	0.1367	-1.0	95	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0983	0.0885	10.0	79	0.00
54	T	4-Methyl-2-Pentanone	0.0401	0.0386	4.0	86	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413192.D Vial: 3
Acq On : 23 Jun 2016 21:00 Operator: FJB
Sample : WG573990-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76715 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4090	0.4450	-8.8	97	0.00
56	T	Dimethyl Disulfide	0.2183	0.2474	-13.3	104	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	105	0.00
58	S	Toluene-d8	1.3084	1.3143	-0.5	103	0.00
59	C	Toluene	1.5520	1.4669	5.5	99	0.00
60	T	Ethyl Methacrylate	0.2981	0.2896	2.8	97	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.5201	0.5150	1.0	98	0.00
63	T	1,1,2-Trichloroethane	0.2449	0.2239	8.6	94	0.00
64	T	2-Hexanone	0.0515	0.0438	14.9	87	0.00
65	T	1,3-Dichloropropane	0.4360	0.4046	7.2	94	0.00
66	T	Tetrachloroethene	0.3325	0.3306	0.6	107	0.00
67	T	Dibromochloromethane	0.3576	0.3558	0.5	100	0.00
68	T	1,2-Dibromoethane	0.2441	0.2327	4.7	96	0.00
69	T	1-Chlorohexane	0.5298	0.5360	-1.2	108	0.00
70	P	Chlorobenzene	1.0466	0.9863	5.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4055	0.4023	0.8	102	0.00
72	C	Ethylbenzene	0.5726	0.5356	6.5	101	0.00
73	T	m-,p-Xylene	0.6716	0.6473	3.6	101	0.00
74	T	o-Xylene	0.6566	0.6189	5.7	99	0.00
75	T	Styrene	1.0770	1.0463	2.8	98	0.00
76	P	Bromoform	0.2121	0.2140	-0.9	102	0.00
77	T	Isopropylbenzene	1.7444	1.7361	0.5	102	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	107	0.00
79	P	1,1,2,2-Tetrachloroethane	0.5018	0.4331	13.7	91	0.00
80	S	p-Bromofluorobenzene	1.0352	1.0527	-1.7	111	0.00
81	T	1,2,3-Trichloropropane	0.1545	0.1386	10.3	96	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1376	0.1514	-10.0	108	0.00
83	T	n-Propylbenzene	3.9003	3.7653	3.5	102	0.00
84	T	Bromobenzene	0.8022	0.7731	3.6	104	0.00
85	T	1,3,5-Trimethylbenzene	2.8411	2.7820	2.1	104	0.00
86	T	2-Chlorotoluene	2.7231	2.5925	4.8	100	0.00
87	T	4-Chlorotoluene	2.4597	2.3439	4.7	108	0.00
88	T	a-Methylstyrene	1.3479	1.3243	1.8	106	0.00
89	T	tert-Butylbenzene	0.5558	0.5196	6.5	105	0.00
90	T	1,2,4-Trimethylbenzene	2.9214	2.8354	2.9	105	0.00
91	T	sec-Butylbenzene	3.3424	3.2118	3.9	103	0.00
92	T	p-Isopropyltoluene	2.8379	2.7594	2.8	105	0.00
93	T	1,3-Dichlorobenzene	1.5448	1.4883	3.7	104	0.00
94	T	1,4-Dichlorobenzene	1.5574	1.4648	5.9	104	0.00
95	T	n-Butylbenzene	2.8056	2.6728	4.7	103	0.00
96	T	1,2-Dichlorobenzene	1.3739	1.2766	7.1	103	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1007	0.0902	10.4	94	0.00
98	T	1,2,4-Trichlorobenzene	1.0269	0.9490	7.6	101	0.00
99	T	Hexachlorobutadiene	0.4798	0.4711	1.8	110	0.00
100	T	Naphthalene	1.5257	1.3259	13.1	92	0.00
101	T	1,2,3-Trichlorobenzene	0.8664	0.7540	13.0	98	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413192.D 8260WT.M Mon Jun 27 12:37:25 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413192.D Vial: 3
Acq On : 23 Jun 2016 21:00 Operator: FJB
Sample : WG573990-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76715 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	93	0.00
2	T	Dichlorodifluoromethane	50.0000	52.3691	-4.7	93	0.00
3	P	Chloromethane	50.0000	47.3540	5.3	90	0.00
4	C	Vinyl Chloride	50.0000	55.9835	-12.0	104	0.00
5	T	1,3-Butadiene	50.0000	66.0793	-32.2#	119	0.00
6	T	Bromomethane	50.0000	44.2082	11.6	86	0.00
7	T	Chloroethane	50.0000	49.7878	0.4	94	0.00
8	T	Trichlorofluoromethane	50.0000	58.3521	-16.7	109	0.00
9	T	Diethyl ether	100.0000	97.8617	2.1	94	0.00
10	T	Isoprene	50.0000	55.6063	-11.2	106	0.00
11	T	Acrolein	50.0000	38.2884	23.4	73	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	54.0552	-8.1	103	0.00
13	T	Acetone	50.0000	55.6757	-11.4	99	-0.01
14	C	1,1-Dichloroethene	50.0000	54.2465	-8.5	103	0.00
15	T	Tert-Butyl Alcohol	200.0000	202.2989	-1.1	95	0.00
16	T	Dimethyl Sulfide	50.0000	48.2045	3.6	91	0.00
17	T	Iodomethane	50.0000	44.5471	10.9	91	0.00
18	T	Methyl acetate	50.0000	56.8107	-13.6	109	0.00
19	T	Methylene Chloride	50.0000	50.1818	-0.4	96	0.00
20	T	Carbon Disulfide	50.0000	55.5787	-11.2	107	0.00
21	T	Acrylonitrile	50.0000	49.7020	0.6	88	0.00
22	T	Methyl Tert Butyl Ether	50.0000	53.9704	-7.9	97	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.6143	-5.2	99	0.00
24	T	n-Hexane	50.0000	57.3974	-14.8	109	0.00
25	T	Diisopropyl ether	100.0000	99.9895	0.0	94	0.00
26	T	Vinyl Acetate	50.0000	40.8778	18.2	73	0.00
27	P	1,1-Dichloroethane	50.0000	53.1264	-6.3	98	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	107.3922	-7.4	99	0.00
29	T	2-Butanone	50.0000	47.8066	4.4	86	0.00
30	T	Propionitrile	100.0000	97.4427	2.6	89	0.00
31	T	2,2-Dichloropropane	50.0000	61.6292	-23.3	113	0.00
32	T	cis-1,2-Dichloroethene	50.0000	51.9888	-4.0	98	0.00
33	C	Chloroform	50.0000	54.8591	-9.7	103	0.00
34		1-Bromopropane	50.0000	61.4154	-22.8	115	0.00
35	T	Bromochloromethane	50.0000	53.3132	-6.6	99	0.00
36	T	Tetrahydrofuran	100.0000	87.9098	12.1	87	0.00
37	S	Dibromofluoromethane	25.0000	27.6524	-10.6	102	0.00
38	T	1,1,1-Trichloroethane	50.0000	58.8810	-17.8	108	0.00
39	T	Cyclohexane	50.0000	53.9737	-7.9	105	0.00
40	T	1,1-Dichloropropene	50.0000	54.6979	-9.4	102	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	108.6048	-8.6	100	0.00
42	T	Carbon Tetrachloride	50.0000	59.9616	-19.9	110	0.00
43	S	1,2-Dichloroethane-d4	25.0000	28.2513	-13.0	103	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	58.2756	-16.6	106	0.00
46	T	Benzene	50.0000	51.6786	-3.4	96	0.00
47	T	Trichloroethene	50.0000	54.4400	-8.9	102	0.00
48	T	Methylcyclohexane	50.0000	56.9140	-13.8	108	0.00
49	C	1,2-Dichloropropane	50.0000	49.4432	1.1	93	0.00
50	T	Bromodichloromethane	50.0000	56.2841	-12.6	100	0.00
51	T	1,4-Dioxane	200.0000	200.2779	-0.1	88	0.00
52	T	Dibromomethane	50.0000	50.4924	-1.0	95	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	45.0262	9.9	79	0.00
54	T	4-Methyl-2-Pentanone	50.0000	48.0253	3.9	86	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413192.D Vial: 3
Acq On : 23 Jun 2016 21:00 Operator: FJB
Sample : WG573990-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76715 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	54.4029	-8.8	97	0.00
56	T	Dimethyl Disulfide	50.0000	56.6642	-13.3	104	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	105	0.00
58	S	Toluene-d8	25.0000	25.1124	-0.4	103	0.00
59	C	Toluene	50.0000	47.2580	5.5	99	0.00
60	T	Ethyl Methacrylate	50.0000	48.5859	2.8	97	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	49.5052	1.0	98	0.00
63	T	1,1,2-Trichloroethane	50.0000	45.7129	8.6	94	0.00
64	T	2-Hexanone	50.0000	42.5602	14.9	87	0.00
65	T	1,3-Dichloropropane	50.0000	46.3909	7.2	94	0.00
66	T	Tetrachloroethene	50.0000	49.7104	0.6	107	0.00
67	T	Dibromochloromethane	50.0000	49.7473	0.5	100	0.00
68	T	1,2-Dibromoethane	50.0000	47.6577	4.7	96	0.00
69	T	1-Chlorohexane	50.0000	50.5817	-1.2	108	0.00
70	P	Chlorobenzene	50.0000	47.1177	5.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	49.6136	0.8	102	0.00
72	C	Ethylbenzene	50.0000	46.7722	6.5	101	0.00
73	T	m-,p-Xylene	100.0000	96.3703	3.6	101	0.00
74	T	o-Xylene	50.0000	47.1280	5.7	99	0.00
75	T	Styrene	50.0000	48.5758	2.8	98	0.00
76	P	Bromoform	50.0000	50.4518	-0.9	102	0.00
77	T	Isopropylbenzene	50.0000	49.7609	0.5	102	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	107	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	43.1537	13.7	91	0.00
80	S	p-Bromofluorobenzene	25.0000	25.4234	-1.7	111	0.00
81	T	1,2,3-Trichloropropane	50.0000	44.8426	10.3	96	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	48.0756	3.8	108	0.00
83	T	n-Propylbenzene	50.0000	48.2690	3.5	102	0.00
84	T	Bromobenzene	50.0000	48.1858	3.6	104	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	48.9595	2.1	104	0.00
86	T	2-Chlorotoluene	50.0000	47.6022	4.8	100	0.00
87	T	4-Chlorotoluene	50.0000	47.6458	4.7	108	0.00
88	T	a-Methylstyrene	50.0000	49.1238	1.8	106	0.00
89	T	tert-Butylbenzene	50.0000	46.7449	6.5	105	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	48.5269	2.9	105	0.00
91	T	sec-Butylbenzene	50.0000	48.0468	3.9	103	0.00
92	T	p-Isopropyltoluene	50.0000	48.6162	2.8	105	0.00
93	T	1,3-Dichlorobenzene	50.0000	48.1730	3.7	104	0.00
94	T	1,4-Dichlorobenzene	50.0000	47.0277	5.9	104	0.00
95	T	n-Butylbenzene	50.0000	47.6327	4.7	103	0.00
96	T	1,2-Dichlorobenzene	50.0000	46.4592	7.1	103	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	44.7749	10.5	94	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	46.2043	7.6	101	0.00
99	T	Hexachlorobutadiene	50.0000	49.0927	1.8	110	0.00
100	T	Naphthalene	50.0000	43.4522	13.1	92	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	43.5136	13.0	98	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413192.D 8260WT.M Mon Jun 27 12:37:29 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\2\DATA\051316\8M412218.D          Vial: 3
Acq On    : 13 May 2016  12:36                       Operator: TMB
Sample    : WG568561-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD76034                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
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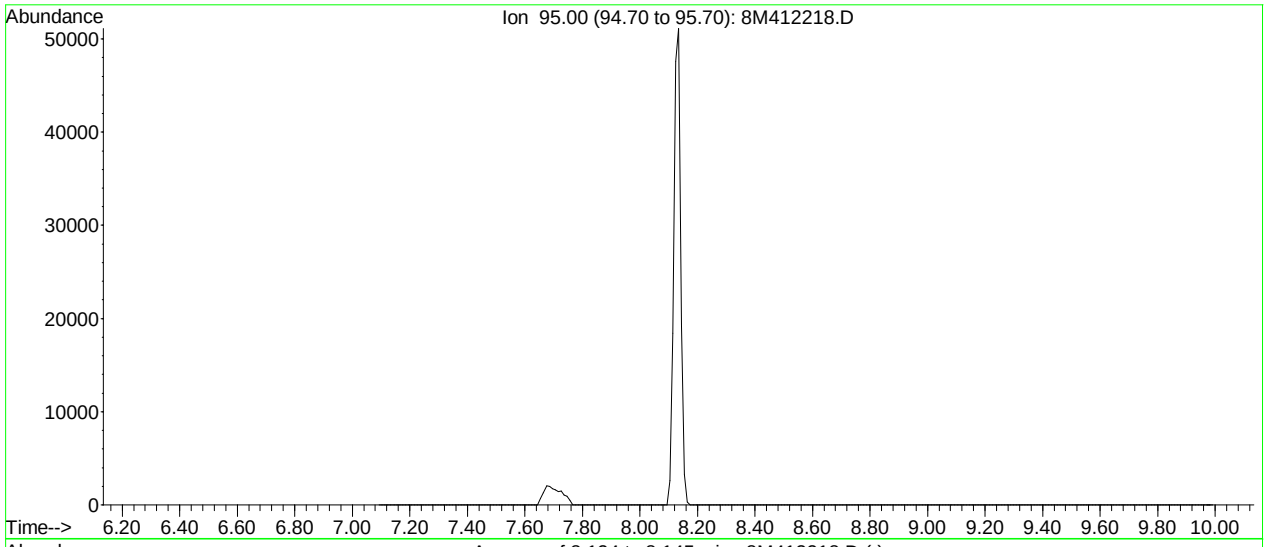

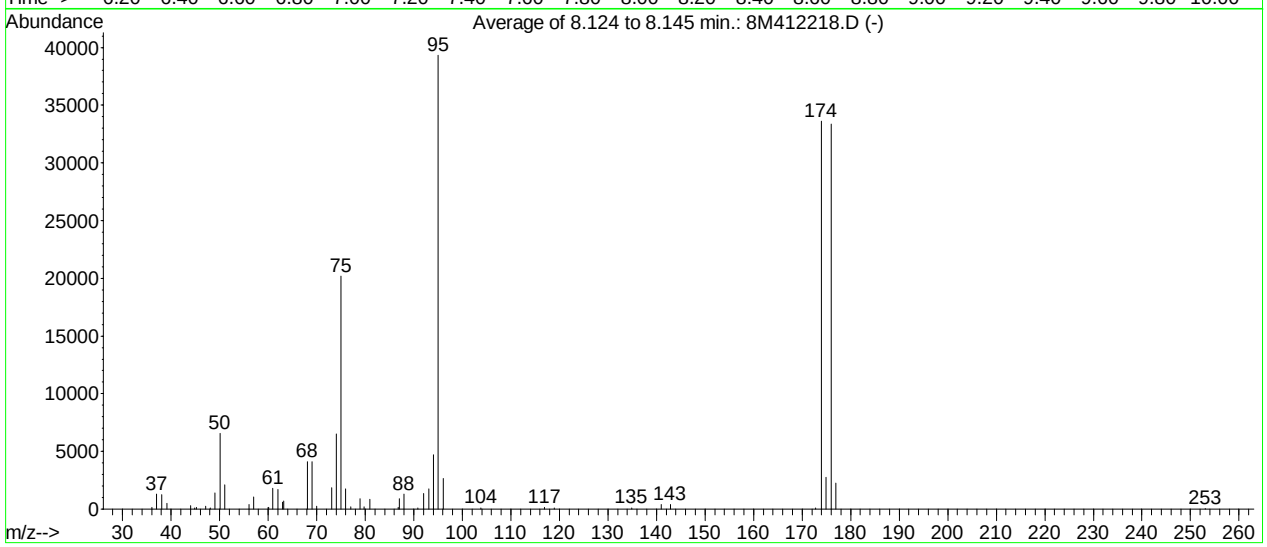

AutoFind: Scans 102, 103, 104; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.7	6575	PASS
75	95	30	60	51.3	20171	PASS
95	95	100	100	100.0	39312	PASS
96	95	5	9	6.7	2649	PASS
173	174	0.00	2	0.4	122	PASS
174	95	50	100	85.5	33616	PASS
175	174	5	9	8.2	2746	PASS
176	174	95	101	99.2	33360	PASS
177	176	5	9	6.8	2267	PASS

8M412218.D BFB.M Fri May 13 12:47:24 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062116\8M413124.D Vial: 1
Acq On    : 21 Jun 2016  17:23                        Operator: FJB
Sample    : WG573644-01 BFB 50ng 8260                 Inst    : HPMS8
Misc      : 1,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title     : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
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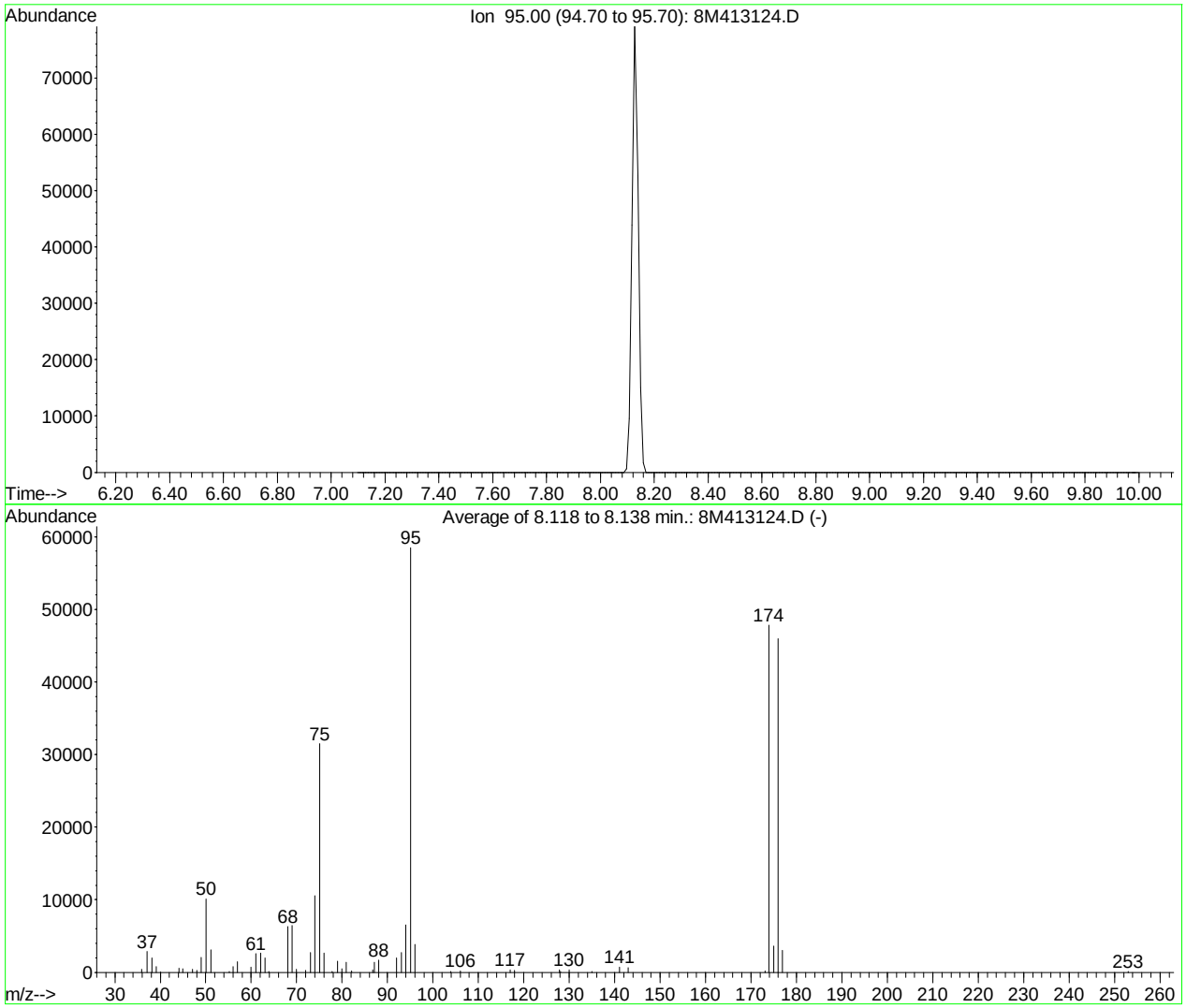

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 96

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.2	10071	PASS
75	95	30	60	53.8	31493	PASS
95	95	100	100	100.0	58490	PASS
96	95	5	9	6.5	3806	PASS
173	174	0.00	2	0.4	174	PASS
174	95	50	100	81.7	47778	PASS
175	174	5	9	7.6	3655	PASS
176	174	95	101	96.2	45946	PASS
177	176	5	9	6.5	3004	PASS

8M413124.D 8260WT.M Fri Jun 24 17:18:42 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062216\8M413161.D Vial: 1
Acq On    : 22 Jun 2016  14:38                        Operator: FJB
Sample    : WG573770-01 BFB 50ng 8260                 Inst    : HPMS8
Misc      : 1,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title     : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
```

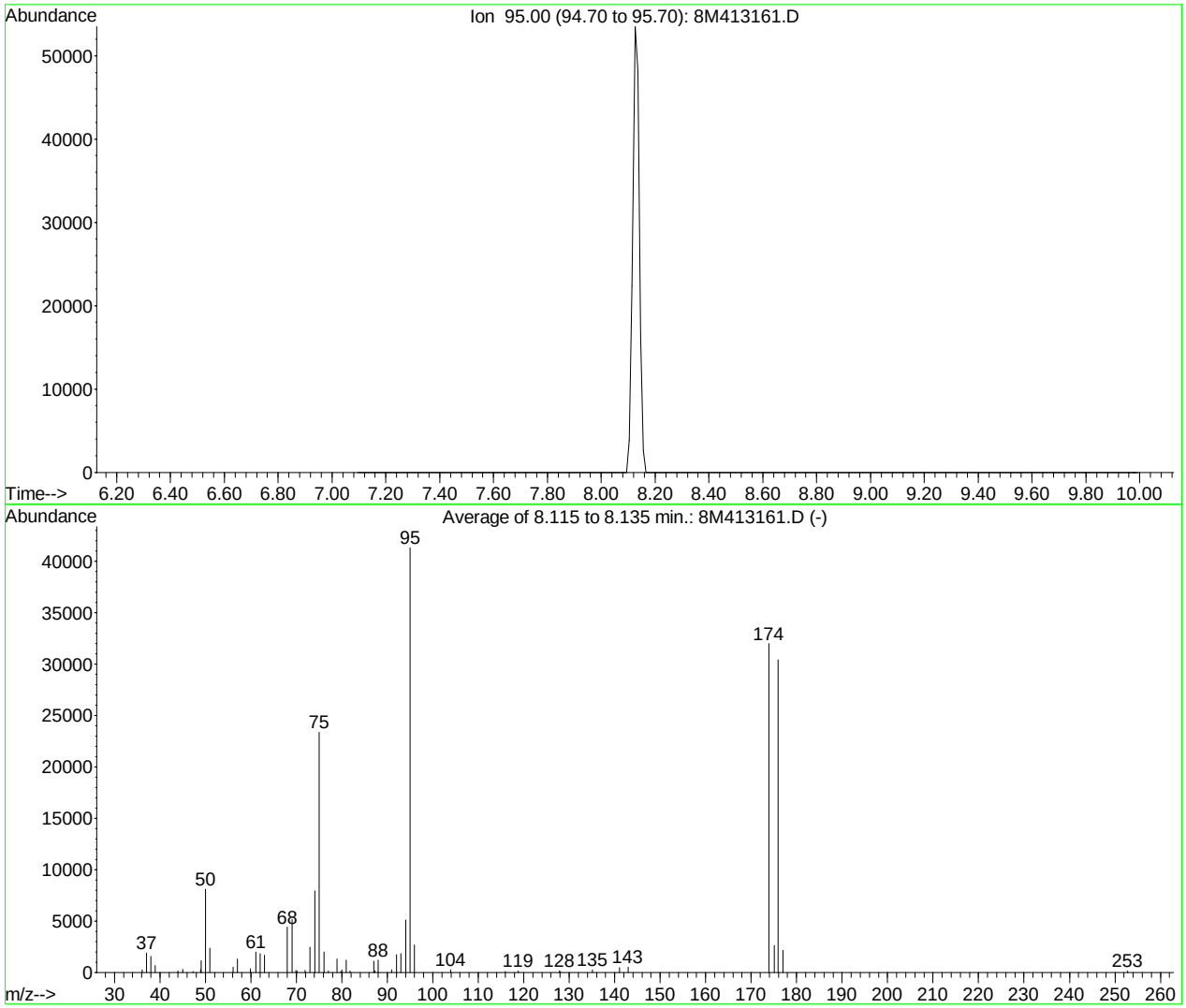

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.6	8091	PASS
75	95	30	60	56.5	23343	PASS
95	95	100	100	100.0	41328	PASS
96	95	5	9	6.4	2639	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	77.4	31974	PASS
175	174	5	9	8.2	2612	PASS
176	174	95	101	95.1	30422	PASS
177	176	5	9	7.1	2156	PASS

8M413161.D 8260WT.M Mon Jun 27 12:36:23 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413190.D Vial: 1
Acq On    : 23 Jun 2016  19:56                        Operator: FJB
Sample    : WG573990-01 BFB 50ng 8260                 Inst    : HPMS8
Misc      : 1,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title     : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
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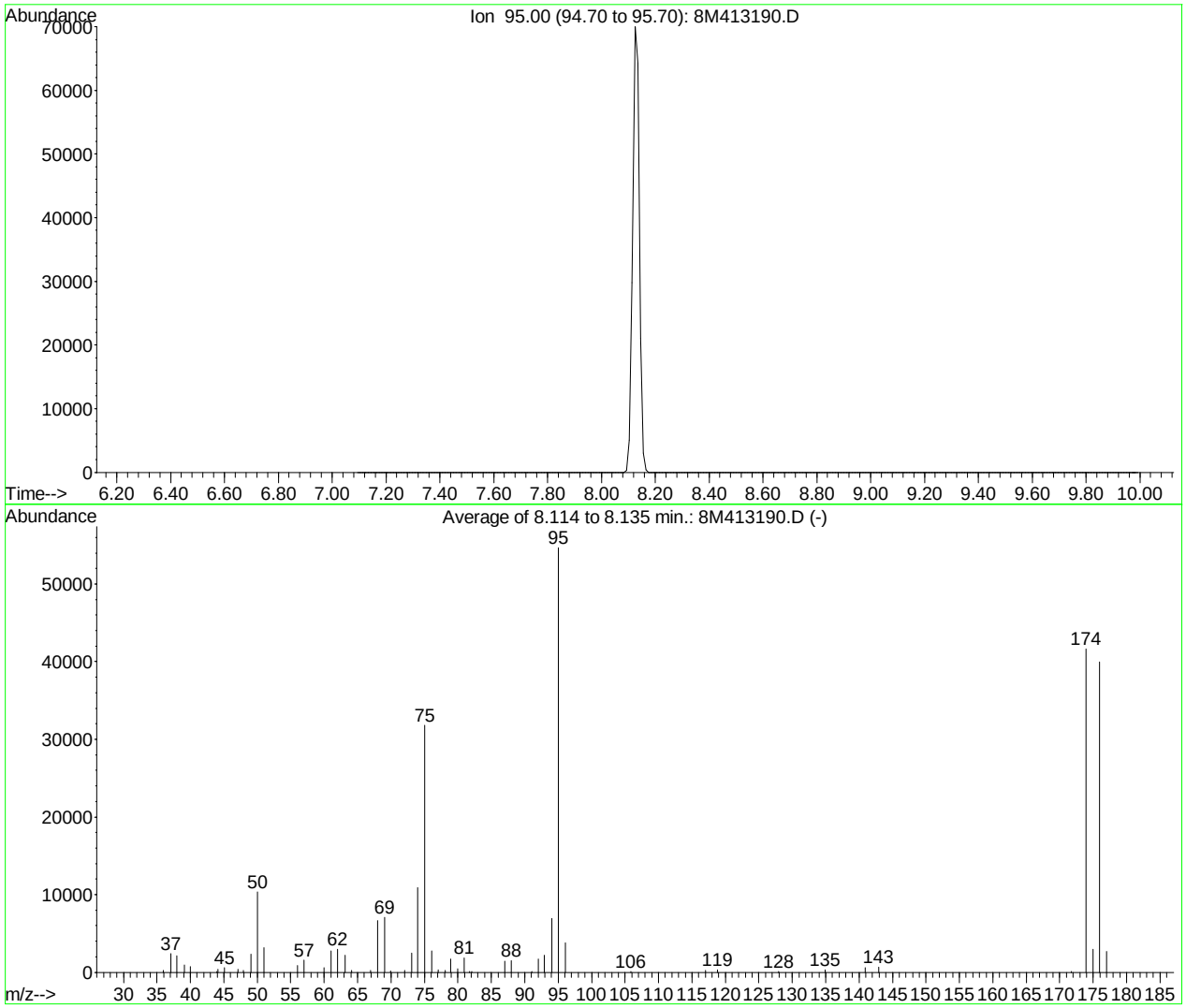

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 96

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.0	10373	PASS
75	95	30	60	58.1	31797	PASS
95	95	100	100	100.0	54685	PASS
96	95	5	9	7.0	3803	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	76.1	41629	PASS
175	174	5	9	7.2	2991	PASS
176	174	95	101	95.9	39941	PASS
177	176	5	9	6.8	2702	PASS

8M413190.D 8260WT.M Mon Jun 27 12:37:11 2016

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062116\8M413128.D Vial: 5
Acq On : 21 Jun 2016 19:21 Operator: FJB
Sample : WG573645-01 BLANK 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 21 19:43:27 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	793415	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	605610	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	336359	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	237002	27.8022 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.20%		
43) 1,2-Dichloroethane-d4	10.30	65	251076	27.4686 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 109.88%		
58) Toluene-d8	12.68	98	831111	26.2223 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.88%		
80) p-Bromofluorobenzene	16.08	95	347372	24.9412 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.76%		
Target Compounds					Qvalue
36) Tetrahydrofuran	9.63	42	779	0.9018 ug/L #	80

(#) = qualifier out of range (m) = manual integration
8M413128.D 8260WT.M Fri Jun 24 17:20:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062116\8M413128.D Vial: 5
Acq On : 21 Jun 2016 19:21 Operator: FJB
Sample : WG573645-01 BLANK 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 21 19:43 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

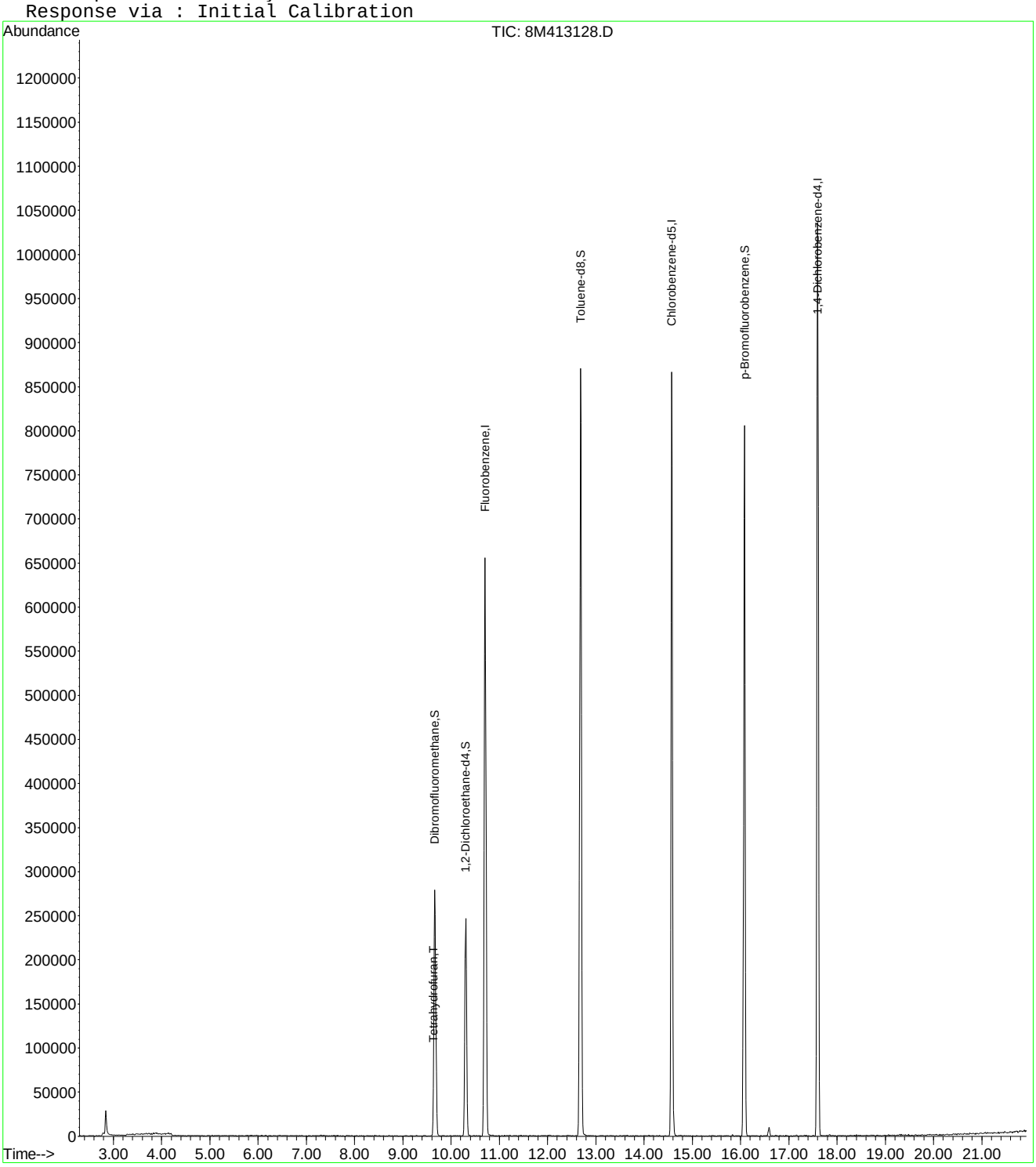

8M413128.D 8260WT.M Fri Jun 24 17:20:01 2016 Page 2

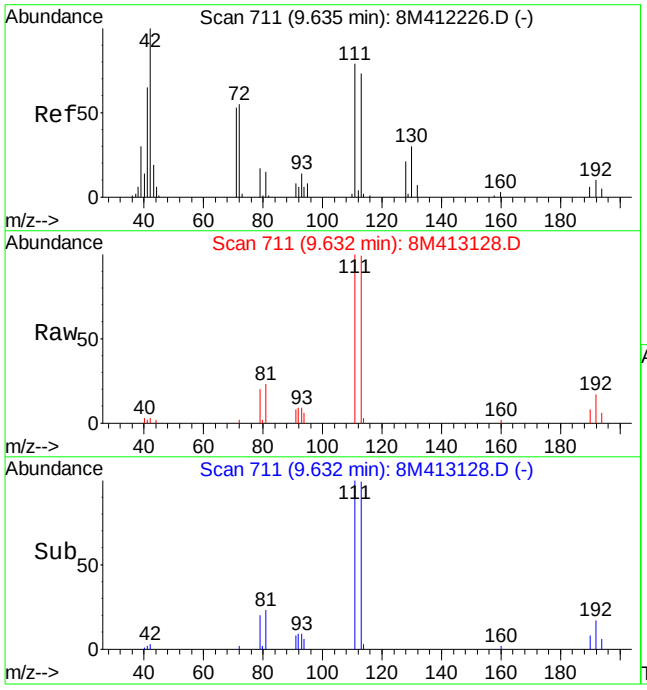

#36
Tetrahydrofuran
Concen: 0.90 ug/L
RT: 9.63 min Scan# 711
Delta R.T. -0.00 min
Lab File: 8M413128.D
Acq: 21 Jun 2016 19:21

Tgt Ion: 42 Resp: 779

Ion	Ratio	Lower	Upper
42	100		
72	62.8	33.8	78.8
71	30.2	32.0	74.8#

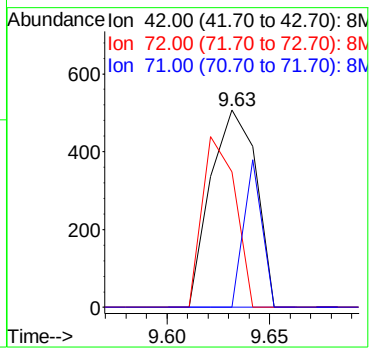

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062116\8M413128.D Vial: 5
Acq On : 21 Jun 2016 19:21 Operator: FJB
Sample : WG573645-01 BLANK 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 24 17:12:25 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 10:02:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	793415	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	605610	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	336359	25.00 ug/L	0.00

Target Compounds					Qvalue
13) Cyclohexanone	15.83	55	886	6.4403 ug/L #	43

(#) = qualifier out of range (m) = manual integration
8M413128.D A9FOOWT.M Fri Jun 24 17:12:27 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062116\8M413128.D Vial: 5
Acq On : 21 Jun 2016 19:21 Operator: FJB
Sample : WG573645-01 BLANK 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 24 17:12 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 10:02:03 2016
Response via : Initial Calibration

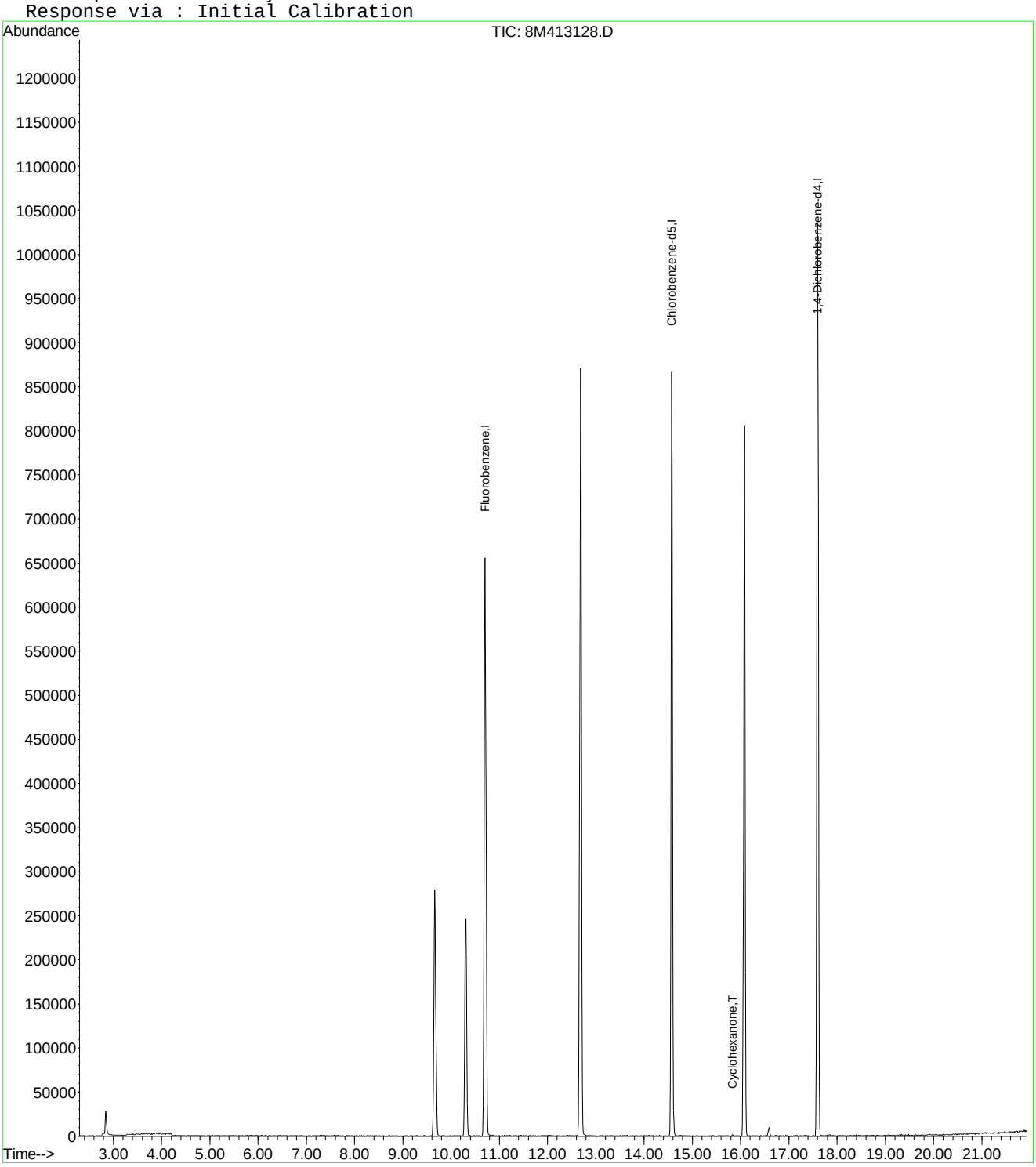

8M413128.D A9FOOWT.M Fri Jun 24 17:12:27 2016 Page 2

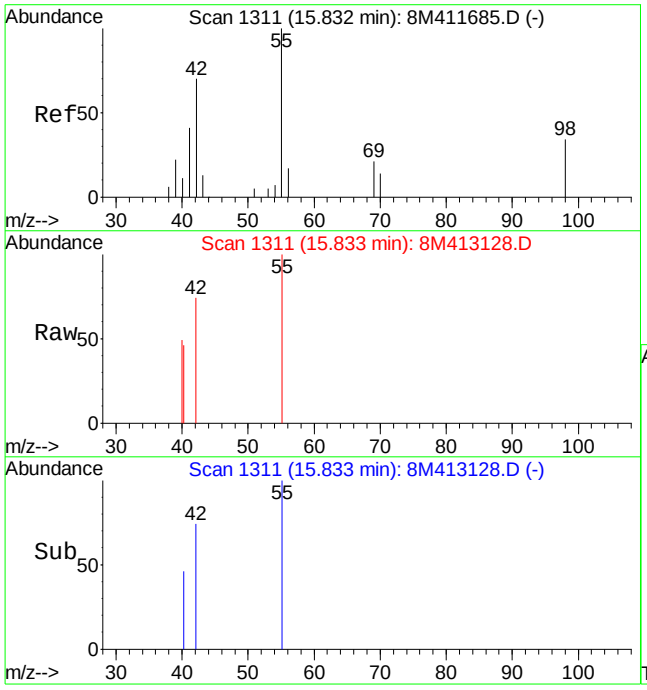

#13
Cyclohexanone
Concen: 6.44 ug/L
RT: 15.83 min Scan# 1311
Delta R.T. -0.00 min
Lab File: 8M413128.D
Acq: 21 Jun 2016 19:21

Tgt Ion: 55 Resp: 886

Ion	Ratio	Lower	Upper
55	100		
98	0.0	19.2	44.8#

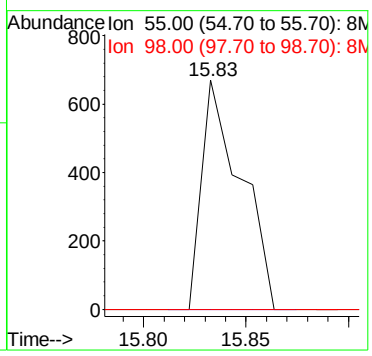

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062216\8M413165.D Vial: 5
Acq On : 22 Jun 2016 16:39 Operator: FJB
Sample : WG573771-01 BLANK 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 22 17:01:46 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	723354	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	554912	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	305326	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	207968	26.7592 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.04%		
43) 1,2-Dichloroethane-d4	10.30	65	231478	27.7774 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.12%		
58) Toluene-d8	12.68	98	755342	26.0090 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.04%		
80) p-Bromofluorobenzene	16.08	95	311112	24.6081 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.44%		

Target Compounds					Qvalue
36) Tetrahydrofuran	9.64	42	677	0.8596 ug/L #	24

(#) = qualifier out of range (m) = manual integration
8M413165.D 8260WT.M Mon Jun 27 12:39:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062216\8M413165.D Vial: 5
Acq On : 22 Jun 2016 16:39 Operator: FJB
Sample : WG573771-01 BLANK 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 22 17:01 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

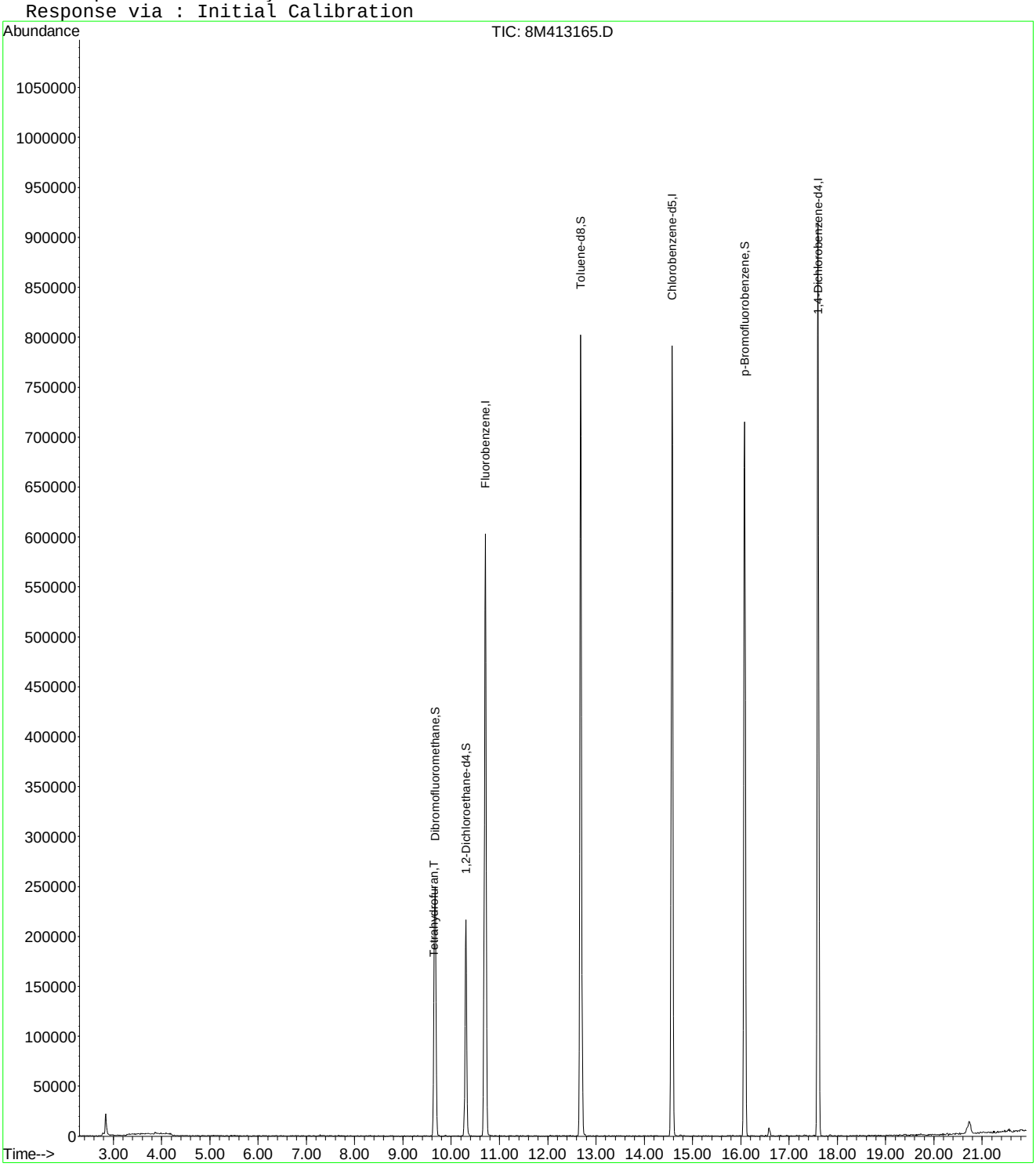

8M413165.D 8260WT.M Mon Jun 27 12:39:57 2016 Page 2

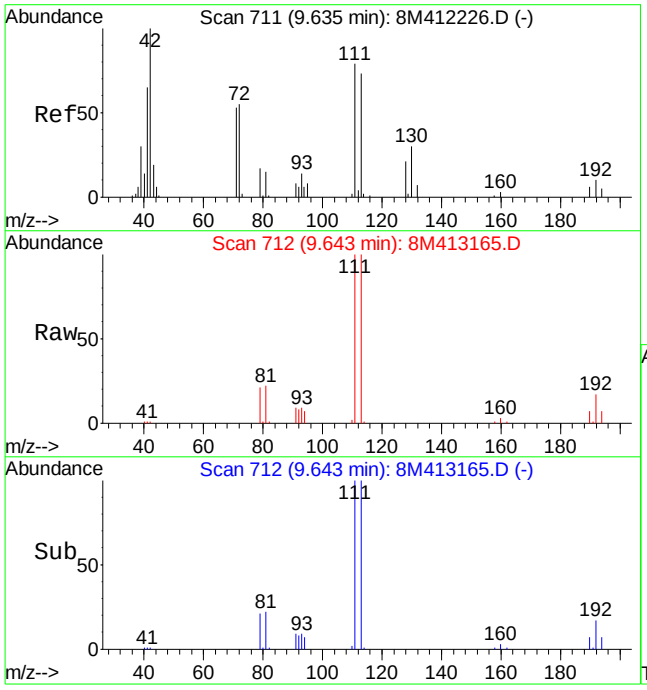

#36
Tetrahydrofuran
Concen: 0.86 ug/L
RT: 9.64 min Scan# 712
Delta R.T. 0.01 min
Lab File: 8M413165.D
Acq: 22 Jun 2016 16:39

Tgt Ion: 42 Resp: 677

Ion	Ratio	Lower	Upper
42	100		
72	0.0	33.8	78.8#
71	0.0	32.0	74.8#

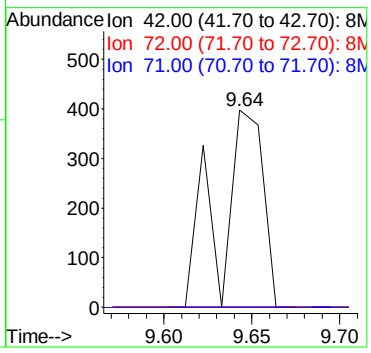

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413194.D Vial: 5
Acq On : 23 Jun 2016 21:59 Operator: FJB
Sample : WG573991-01 BLANK 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 22:21:08 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	695599	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	547838	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	300577	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	210658	28.1869 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 112.76%		
43) 1,2-Dichloroethane-d4	10.30	65	230039	28.7061 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 114.84%		
58) Toluene-d8	12.68	98	731476	25.5125 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.04%		
80) p-Bromofluorobenzene	16.08	95	315963	25.3867 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.56%		
Target Compounds					Qvalue
36) Tetrahydrofuran	9.62	42	624	0.8240 ug/L	82

(#) = qualifier out of range (m) = manual integration
8M413194.D 8260WT.M Mon Jun 27 12:41:31 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413194.D Vial: 5
Acq On : 23 Jun 2016 21:59 Operator: FJB
Sample : WG573991-01 BLANK 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 22:21 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

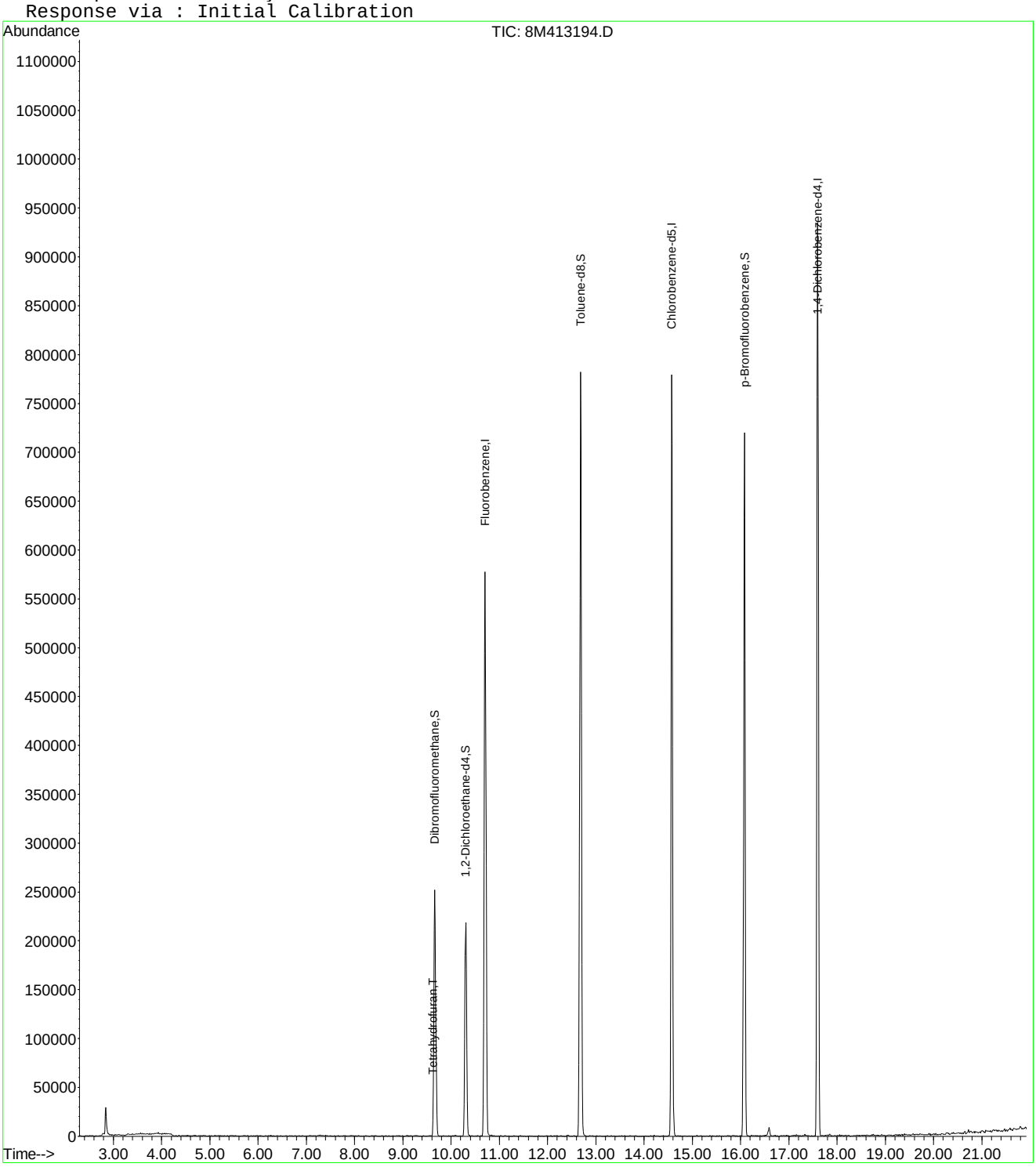

8M413194.D 8260WT.M Mon Jun 27 12:41:32 2016 Page 2

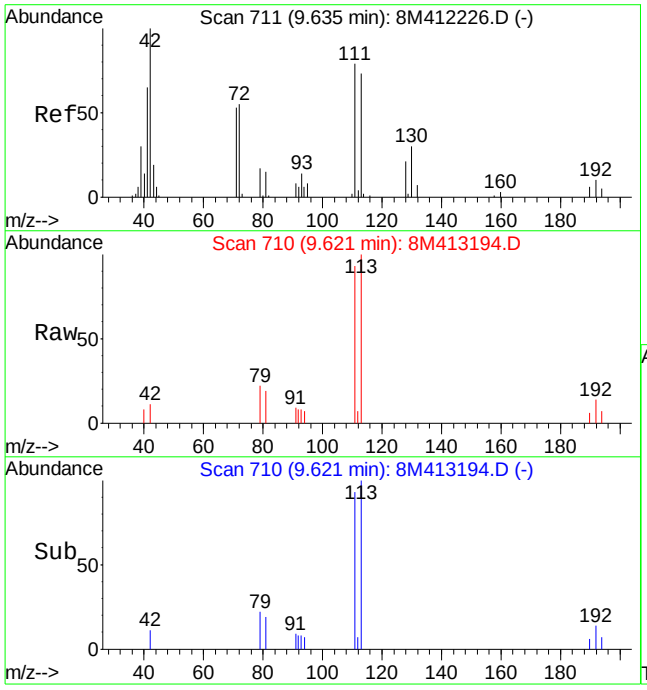

#36
Tetrahydrofuran
Concen: 0.82 ug/L
RT: 9.62 min Scan# 710
Delta R.T. -0.01 min
Lab File: 8M413194.D
Acq: 23 Jun 2016 21:59

Tgt Ion: 42 Resp: 624

Ion	Ratio	Lower	Upper
42	100		
72	65.5	33.8	78.8
71	70.5	32.0	74.8

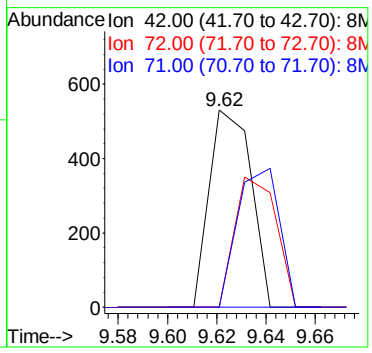

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062116\8M413129.D Vial: 6
Acq On : 21 Jun 2016 19:50 Operator: FJB
Sample : WG573645-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 21 20:12:25 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	813093	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	608259	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	338876	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	234764	26.8732 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.48%		
43) 1,2-Dichloroethane-d4	10.30	65	255637	27.2908 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 109.16%		
58) Toluene-d8	12.68	98	823364	25.8647 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.44%		
80) p-Bromofluorobenzene	16.08	95	343893	24.5080 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.04%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	385920	28.3093 ug/L	99
3) Chloromethane	3.62	50	189733	23.8434 ug/L	100
4) Vinyl Chloride	3.84	62	257972	27.3245 ug/L	99
5) 1,3-Butadiene	3.89	54	170429	21.5260 ug/L	98
6) Bromomethane	4.73	94	103832	18.9505 ug/L	98
7) Chloroethane	4.89	64	126869	24.4218 ug/L	97
8) Trichlorofluoromethane	5.37	101	429622	24.4560 ug/L	98
9) Diethyl ether	5.90	59	445162	106.1463 ug/L	98
10) Isoprene	5.94	67	269952	25.3050 ug/L	98
11) Acrolein	6.14	56	34375	91.5454 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	196953	23.8513 ug/L	92
13) Acetone	6.23	43	18414	20.1289 ug/L	99
14) 1,1-Dichloroethene	6.47	61	292924	22.2792 ug/L	98
15) Tert-Butyl Alcohol	6.57	59	41436	141.3442 ug/L	99
16) Dimethyl Sulfide	6.73	62	182770	38.8785 ug/L	100
17) Iodomethane	6.99	142	54446	17.0625 ug/L	97
18) Methyl acetate	7.00	43	45533	18.4135 ug/L	99
19) Methylene Chloride	7.24	84	182767	21.8436 ug/L	97
20) Carbon Disulfide	7.29	76	600770	21.8348 ug/L	100
21) Acrylonitrile	7.43	53	24317	20.4871 ug/L	95
22) Methyl Tert Butyl Ether	7.46	73	413774	22.8493 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	273761	22.6642 ug/L	100
24) n-Hexane	7.78	57	207172	23.0976 ug/L	99
25) Diisopropyl ether	8.12	45	2021506	107.3647 ug/L	98
26) Vinyl Acetate	8.30	43	201601	23.3859 ug/L	99
27) 1,1-Dichloroethane	8.32	63	327791	21.8514 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	2130780	105.6249 ug/L	99
29) 2-Butanone	8.88	43	27143	20.1947 ug/L	94
30) Propionitrile	8.98	54	34357	87.7160 ug/L	94
31) 2,2-Dichloropropane	9.09	77	403710	25.5379 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	210713	22.5766 ug/L	100
33) Chloroform	9.37	83	399749	22.5692 ug/L	99
34) 1-Bromopropane	9.51	122	42874	32.0703 ug/L	98
35) Bromochloromethane	9.61	130	106778	22.3102 ug/L	95
36) Tetrahydrofuran	9.63	42	79690	90.0202 ug/L	99
38) 1,1,1-Trichloroethane	9.91	97	396102	23.5433 ug/L	98
39) Cyclohexane	9.94	56	263296	22.6043 ug/L	99
40) 1,1-Dichloropropene	10.11	75	291240	22.7108 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	2008618	109.6275 ug/L	100
42) Carbon Tetrachloride	10.25	117	356159	23.8394 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M413129.D 8260WT.M Fri Jun 24 17:14:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062116\8M413129.D Vial: 6
Acq On : 21 Jun 2016 19:50 Operator: FJB
Sample : WG573645-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 21 20:12:25 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	272087	23.8670 ug/L		99
46)	Benzene	10.46	78	755460	22.6187 ug/L		99
47)	Trichloroethene	11.21	130	209527	23.5210 ug/L		99
48)	Methylcyclohexane	11.30	83	314343	23.2279 ug/L		99
49)	1,2-Dichloropropane	11.43	63	163555	21.9975 ug/L		96
50)	Bromodichloromethane	11.73	83	298750	22.8613 ug/L		100
51)	1,4-Dioxane	11.71	88	2412	64.5802 ug/L		85
52)	Dibromomethane	11.81	93	88284	20.0589 ug/L		96
53)	2-Chloroethyl Vinyl Ether	12.03	63	64637	20.2262 ug/L		96
54)	4-Methyl-2-Pentanone	12.05	58	28023	21.4670 ug/L		98
55)	cis-1,3-Dichloropropene	12.36	75	326532	24.5488 ug/L		97
56)	Dimethyl Disulfide	12.62	79	158616	22.3421 ug/L		94
59)	Toluene	12.78	91	794671	21.0444 ug/L		100
60)	Ethyl Methacrylate	12.88	69	153222	21.1283 ug/L		97
62)	trans-1,3-Dichloropropene	12.96	75	272048	21.4979 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	120470	20.2176 ug/L		99
64)	2-Hexanone	13.11	58	21435	17.1184 ug/L	#	94
65)	1,3-Dichloropropane	13.48	76	228486	21.5374 ug/L		97
66)	Tetrachloroethene	13.60	164	174802	21.6060 ug/L		98
67)	Dibromochloromethane	13.87	129	179224	20.5994 ug/L		100
68)	1,2-Dibromoethane	14.13	107	120622	20.3115 ug/L		99
69)	1-Chlorohexane	14.21	91	272223	21.1188 ug/L		98
70)	Chlorobenzene	14.62	112	542483	21.3040 ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.65	131	206850	20.9680 ug/L		97
72)	Ethylbenzene	14.65	106	278765	20.0090 ug/L		96
73)	m-,p-Xylene	14.75	106	703885	43.0736 ug/L		97
74)	o-Xylene	15.31	106	342035	21.4085 ug/L		99
75)	Styrene	15.35	104	556990	21.2558 ug/L		98
76)	Bromoform	15.83	173	103480	20.0520 ug/L		99
77)	Isopropylbenzene	15.73	105	938778	22.1188 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	121621	17.8795 ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	40186	19.1848 ug/L		81
82)	trans-1,4-Dichloro-2-Buten	16.18	53	33643	16.1778 ug/L		95
83)	n-Propylbenzene	16.24	91	1119012	21.1660 ug/L		99
84)	Bromobenzene	16.37	156	217365	19.9887 ug/L		96
85)	1,3,5-Trimethylbenzene	16.42	105	813102	21.1133 ug/L		100
86)	2-Chlorotoluene	16.51	91	772842	20.9377 ug/L		99
87)	4-Chlorotoluene	16.56	91	686310	20.5842 ug/L		100
88)	a-Methylstyrene	16.82	118	388387	21.2566 ug/L		100
89)	tert-Butylbenzene	16.90	134	158309	21.0120 ug/L		95
90)	1,2,4-Trimethylbenzene	16.94	105	794341	20.0591 ug/L		99
91)	sec-Butylbenzene	17.17	105	940451	20.7578 ug/L		99
92)	p-Isopropyltoluene	17.32	119	796285	20.6998 ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	427880	20.4344 ug/L		97
94)	1,4-Dichlorobenzene	17.64	146	430799	20.4070 ug/L		98
95)	n-Butylbenzene	17.85	91	752865	19.7966 ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	371132	19.9285 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	24263	17.7694 ug/L		97
98)	1,2,4-Trichlorobenzene	20.28	180	273983	19.6823 ug/L		99
99)	Hexachlorobutadiene	20.43	225	138397	21.2785 ug/L		97
100)	Naphthalene	20.65	128	332733	16.0884 ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	219276	18.6714 ug/L		96

(#) = qualifier out of range (m) = manual integration
8M413129.D 8260WT.M Fri Jun 24 17:14:48 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062116\8M413129.D Vial: 6
Acq On : 21 Jun 2016 19:50 Operator: FJB
Sample : WG573645-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 21 20:12 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

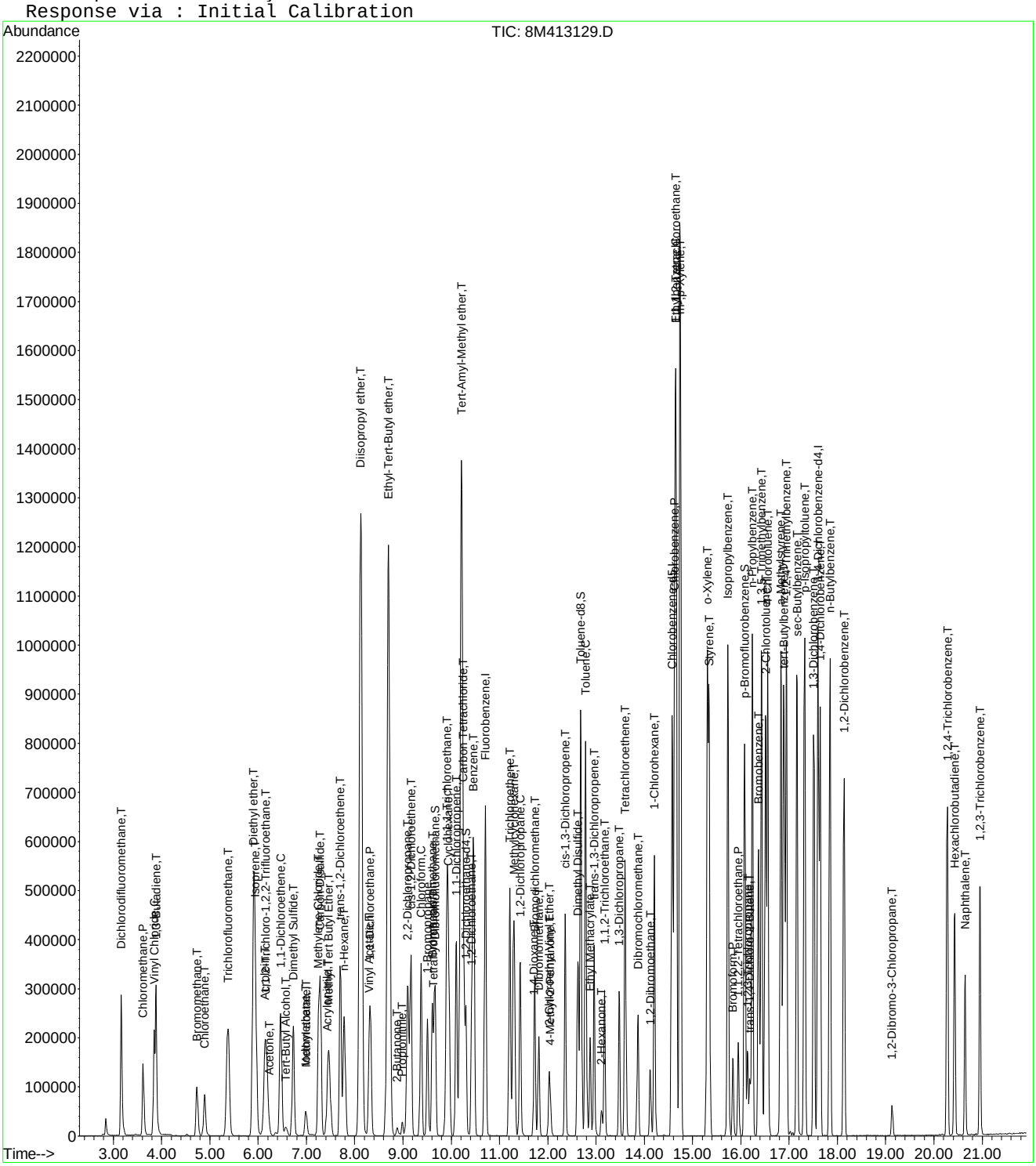

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062216\8M413166.D Vial: 6
Acq On : 22 Jun 2016 17:13 Operator: FJB
Sample : WG573771-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 22 17:35:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	717279	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	551241	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	303556	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	212482	27.5716 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.28%		
43) 1,2-Dichloroethane-d4	10.30	65	233548	28.2631 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 113.04%		
58) Toluene-d8	12.68	98	743229	25.7624 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.04%		
80) p-Bromofluorobenzene	16.08	95	322867	25.6868 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.76%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	367471	30.5567 ug/L	100
3) Chloromethane	3.62	50	168107	23.9477 ug/L	99
4) Vinyl Chloride	3.84	62	237940	28.5693 ug/L	99
5) 1,3-Butadiene	3.89	54	145361	20.8123 ug/L	96
6) Bromomethane	4.73	94	87164	18.0686 ug/L	97
7) Chloroethane	4.89	64	112178	24.4783 ug/L	98
8) Trichlorofluoromethane	5.37	101	396918	25.6125 ug/L	100
9) Diethyl ether	5.90	59	391516	105.8250 ug/L	97
10) Isoprene	5.94	67	240447	25.5501 ug/L	98
11) Acrolein	6.14	56	28422	85.8027 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	174066	23.8955 ug/L	94
13) Acetone	6.24	43	17983	22.2836 ug/L	98
14) 1,1-Dichloroethene	6.47	61	262370	22.6210 ug/L	98
15) Tert-Butyl Alcohol	6.57	59	39305	151.9848 ug/L	99
16) Dimethyl Sulfide	6.73	62	156204	37.6659 ug/L	97
17) Iodomethane	6.99	142	37210	13.8558 ug/L	94
18) Methyl acetate	7.00	43	41812	19.1674 ug/L	99
19) Methylene Chloride	7.25	84	159561	21.6175 ug/L	98
20) Carbon Disulfide	7.29	76	530568	21.8592 ug/L	99
21) Acrylonitrile	7.43	53	21810	20.8294 ug/L	94
22) Methyl Tert Butyl Ether	7.46	73	374130	23.4199 ug/L	100
23) trans-1,2-Dichloroethene	7.70	61	238512	22.3836 ug/L	98
24) n-Hexane	7.78	57	175503	22.1806 ug/L	99
25) Diisopropyl ether	8.12	45	1743957	104.9964 ug/L	96
26) Vinyl Acetate	8.29	43	167340	22.0046 ug/L	100
27) 1,1-Dichloroethane	8.32	63	288871	21.8292 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1890531	106.2340 ug/L	98
29) 2-Butanone	8.88	43	24012	20.2516 ug/L	99
30) Propionitrile	8.99	54	33230	96.1714 ug/L	97
31) 2,2-Dichloropropane	9.10	77	369805	26.5179 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	185007	22.4702 ug/L	99
33) Chloroform	9.37	83	356893	22.8412 ug/L	100
34) 1-Bromopropane	9.51	122	38563	32.6989 ug/L	98
35) Bromochloromethane	9.61	130	90818	21.5103 ug/L	96
36) Tetrahydrofuran	9.63	42	66658	85.3573 ug/L	97
38) 1,1,1-Trichloroethane	9.91	97	365510	24.6270 ug/L	99
39) Cyclohexane	9.93	56	225900	21.9845 ug/L	99
40) 1,1-Dichloropropene	10.11	75	255902	22.6207 ug/L	100
41) Tert-Amyl-Methyl ether	10.21	73	1807896	111.8530 ug/L	100
42) Carbon Tetrachloride	10.25	117	323502	24.5460 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413166.D 8260WT.M Mon Jun 27 12:27:37 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062216\8M413166.D Vial: 6
Acq On : 22 Jun 2016 17:13 Operator: FJB
Sample : WG573771-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 22 17:35:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.42	62	248337	24.6936 ug/L	99
46)	Benzene	10.46	78	661098	22.4375 ug/L	99
47)	Trichloroethene	11.21	130	184798	23.5161 ug/L	99
48)	Methylcyclohexane	11.30	83	272829	22.8533 ug/L	99
49)	1,2-Dichloropropane	11.43	63	142472	21.7216 ug/L	90
50)	Bromodichloromethane	11.73	83	271759	23.5737 ug/L	99
51)	1,4-Dioxane	11.72	88	2920	88.6251 ug/L	89
52)	Dibromomethane	11.81	93	80951	20.8496 ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.02	63	55876	19.8203 ug/L	96
54)	4-Methyl-2-Pentanone	12.05	58	23648	20.5354 ug/L	96
55)	cis-1,3-Dichloropropene	12.36	75	290707	24.7749 ug/L	99
56)	Dimethyl Disulfide	12.63	79	138771	22.1579 ug/L	93
59)	Toluene	12.78	91	704595	20.5890 ug/L	99
60)	Ethyl Methacrylate	12.88	69	134164	20.4139 ug/L	100
62)	trans-1,3-Dichloropropene	12.96	75	248009	21.6254 ug/L	99
63)	1,1,2-Trichloroethane	13.18	97	107509	19.9087 ug/L	99
64)	2-Hexanone	13.11	58	19078	16.8120 ug/L #	88
65)	1,3-Dichloropropane	13.48	76	206231	21.4503 ug/L	97
66)	Tetrachloroethene	13.60	164	157755	21.5159 ug/L	96
67)	Dibromochloromethane	13.87	129	160851	20.4000 ug/L	100
68)	1,2-Dibromoethane	14.13	107	107833	20.0361 ug/L	98
69)	1-Chlorohexane	14.21	91	238474	20.4142 ug/L	99
70)	Chlorobenzene	14.62	112	475785	20.6174 ug/L	98
71)	1,1,1,2-Tetrachloroethane	14.65	131	187326	20.9530 ug/L	98
72)	Ethylbenzene	14.65	106	256653	20.3273 ug/L	98
73)	m-,p-Xylene	14.75	106	625804	42.2566 ug/L	94
74)	o-Xylene	15.31	106	304157	21.0069 ug/L	95
75)	Styrene	15.35	104	502553	21.1621 ug/L	96
76)	Bromoform	15.83	173	91459	19.5558 ug/L	99
77)	Isopropylbenzene	15.73	105	843877	21.9394 ug/L	100
79)	1,1,2,2-Tetrachloroethane	15.95	83	111182	18.2466 ug/L	99
81)	1,2,3-Trichloropropane	16.14	110	36636	19.5251 ug/L	78
82)	trans-1,4-Dichloro-2-Buten	16.18	53	31600	16.9336 ug/L	90
83)	n-Propylbenzene	16.24	91	1005131	21.2241 ug/L	99
84)	Bromobenzene	16.37	156	197914	20.3176 ug/L	95
85)	1,3,5-Trimethylbenzene	16.42	105	734640	21.2955 ug/L	99
86)	2-Chlorotoluene	16.51	91	676287	20.4537 ug/L	100
87)	4-Chlorotoluene	16.56	91	616450	20.6402 ug/L	99
88)	a-Methylstyrene	16.82	118	349834	21.3744 ug/L	98
89)	tert-Butylbenzene	16.89	134	137492	20.3723 ug/L	97
90)	1,2,4-Trimethylbenzene	16.94	105	722350	20.3636 ug/L	100
91)	sec-Butylbenzene	17.17	105	847665	20.8868 ug/L	100
92)	p-Isopropyltoluene	17.32	119	711448	20.6463 ug/L	100
93)	1,3-Dichlorobenzene	17.51	146	386130	20.5862 ug/L	99
94)	1,4-Dichlorobenzene	17.64	146	386877	20.4587 ug/L	100
95)	n-Butylbenzene	17.85	91	671169	19.7018 ug/L	100
96)	1,2-Dichlorobenzene	18.14	146	344448	20.6477 ug/L	98
97)	1,2-Dibromo-3-Chloropropan	19.13	75	21900	17.9051 ug/L	94
98)	1,2,4-Trichlorobenzene	20.28	180	240189	19.2623 ug/L	97
99)	Hexachlorobutadiene	20.43	225	124346	21.3426 ug/L	99
100)	Naphthalene	20.65	128	303563	16.3858 ug/L	99
101)	1,2,3-Trichlorobenzene	20.96	180	187462	17.8197 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062216\8M413166.D Vial: 6
Acq On : 22 Jun 2016 17:13 Operator: FJB
Sample : WG573771-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 22 17:35 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

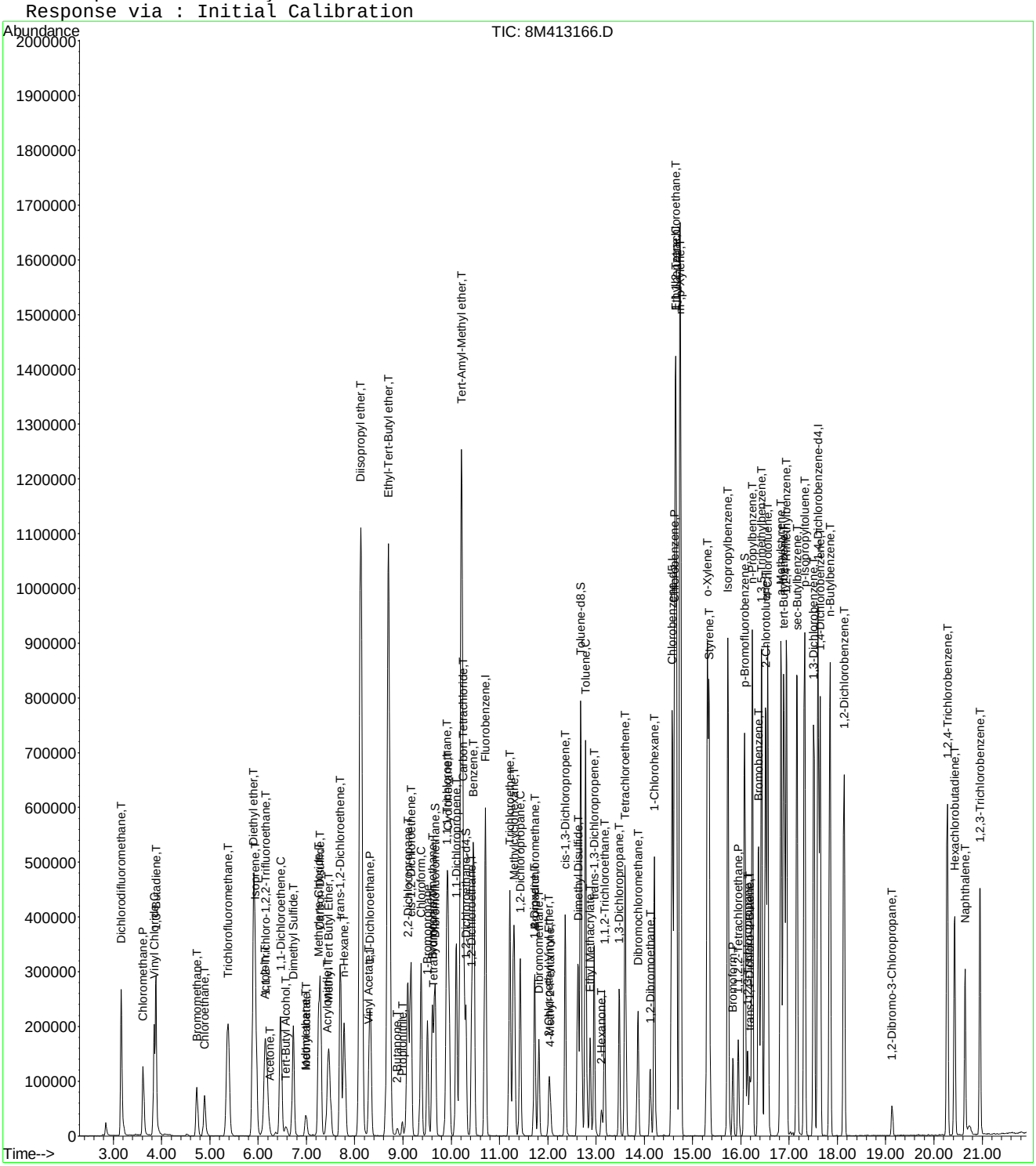

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413195.D Vial: 6
Acq On : 23 Jun 2016 22:28 Operator: FJB
Sample : WG573991-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 22:50:03 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	709070	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	541017	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	307359	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	209450	27.4928 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.96%		
43) 1,2-Dichloroethane-d4	10.31	65	229900	28.1438 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.56%		
58) Toluene-d8	12.68	98	729028	25.7477 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.00%		
80) p-Bromofluorobenzene	16.07	95	314680	24.7257 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.92%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	339836	28.5859 ug/L	99
3) Chloromethane	3.62	50	159886	23.0403 ug/L	100
4) Vinyl Chloride	3.84	62	229600	27.8871 ug/L	99
5) 1,3-Butadiene	3.88	54	140587	20.3618 ug/L	99
6) Bromomethane	4.72	94	81952	17.2192 ug/L	98
7) Chloroethane	4.89	64	105860	23.3671 ug/L	98
8) Trichlorofluoromethane	5.38	101	375940	24.5397 ug/L	99
9) Diethyl ether	5.90	59	379335	103.7196 ug/L	97
10) Isoprene	5.94	67	220602	23.7127 ug/L	96
11) Acrolein	6.13	56	25939	79.2134 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	164574	22.8540 ug/L	93
13) Acetone	6.24	43	19152	24.0069 ug/L	87
14) 1,1-Dichloroethene	6.46	61	256541	22.3745 ug/L	96
15) Tert-Butyl Alcohol	6.57	59	45376	177.4915 ug/L	96
16) Dimethyl Sulfide	6.73	62	153966	37.5561 ug/L	98
17) Iodomethane	6.98	142	63771	21.9232 ug/L	96
18) Methyl acetate	7.00	43	43450	20.1489 ug/L	98
19) Methylene Chloride	7.25	84	155667	21.3341 ug/L	99
20) Carbon Disulfide	7.29	76	500362	20.8534 ug/L	99
21) Acrylonitrile	7.43	53	20108	19.4263 ug/L	95
22) Methyl Tert Butyl Ether	7.46	73	358831	22.7223 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	233011	22.1205 ug/L	99
24) n-Hexane	7.78	57	168096	21.4904 ug/L	97
25) Diisopropyl ether	8.12	45	1709292	104.1008 ug/L	97
26) Vinyl Acetate	8.30	43	136128	18.1075 ug/L	99
27) 1,1-Dichloroethane	8.32	63	280479	21.4404 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	1832290	104.1533 ug/L	98
29) 2-Butanone	8.88	43	24883	21.2291 ug/L	100
30) Propionitrile	8.98	54	32526	95.2238 ug/L	98
31) 2,2-Dichloropropane	9.10	77	352384	25.5613 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	179136	22.0090 ug/L	95
33) Chloroform	9.38	83	351389	22.7493 ug/L	99
34) 1-Bromopropane	9.51	122	39005	33.4565 ug/L	91
35) Bromochloromethane	9.60	130	90313	21.6383 ug/L	94
36) Tetrahydrofuran	9.63	42	64447	83.4814 ug/L	94
38) 1,1,1-Trichloroethane	9.90	97	361985	24.6718 ug/L	99
39) Cyclohexane	9.94	56	211867	20.8575 ug/L	96
40) 1,1-Dichloropropene	10.10	75	243522	21.7756 ug/L	100
41) Tert-Amyl-Methyl ether	10.21	73	1748040	109.4019 ug/L	100
42) Carbon Tetrachloride	10.24	117	317988	24.4070 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413195.D Vial: 6
Acq On : 23 Jun 2016 22:28 Operator: FJB
Sample : WG573991-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 22:50:03 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.42	62	245331	24.6771 ug/L	98
46)	Benzene	10.46	78	636186	21.8420 ug/L	99
47)	Trichloroethene	11.21	130	181612	23.3782 ug/L	99
48)	Methylcyclohexane	11.30	83	258623	21.9142 ug/L	99
49)	1,2-Dichloropropane	11.43	63	139989	21.5901 ug/L	90
50)	Bromodichloromethane	11.72	83	266207	23.3595 ug/L	100
51)	1,4-Dioxane	11.72	88	2551	78.3219 ug/L	94
52)	Dibromomethane	11.81	93	79612	20.7422 ug/L	96
53)	2-Chloroethyl Vinyl Ether	12.02	63	54338	19.4979 ug/L	95
54)	4-Methyl-2-Pentanone	12.06	58	22608	19.8596 ug/L	96
55)	cis-1,3-Dichloropropene	12.36	75	284141	24.4957 ug/L	100
56)	Dimethyl Disulfide	12.62	79	134379	21.7050 ug/L	88
59)	Toluene	12.79	91	690554	20.5600 ug/L	99
60)	Ethyl Methacrylate	12.88	69	136325	21.1347 ug/L	100
62)	trans-1,3-Dichloropropene	12.96	75	238780	21.2141 ug/L	100
63)	1,1,2-Trichloroethane	13.18	97	101653	19.1800 ug/L	99
64)	2-Hexanone	13.11	58	19262	17.2949 ug/L #	96
65)	1,3-Dichloropropane	13.48	76	201584	21.3632 ug/L	96
66)	Tetrachloroethene	13.60	164	150481	20.9116 ug/L	99
67)	Dibromochloromethane	13.86	129	157618	20.3677 ug/L	100
68)	1,2-Dibromoethane	14.12	107	104511	19.7859 ug/L	99
69)	1-Chlorohexane	14.21	91	228001	19.8866 ug/L	98
70)	Chlorobenzene	14.63	112	469098	20.7118 ug/L	99
71)	1,1,1,2-Tetrachloroethane	14.66	131	183570	20.9209 ug/L	99
72)	Ethylbenzene	14.66	106	248486	20.0524 ug/L	96
73)	m-,p-Xylene	14.74	106	610436	41.9979 ug/L	96
74)	o-Xylene	15.31	106	301773	21.2361 ug/L	97
75)	Styrene	15.34	104	491214	21.0756 ug/L	97
76)	Bromoform	15.83	173	87737	19.1145 ug/L	98
77)	Isopropylbenzene	15.73	105	820778	21.7422 ug/L	100
79)	1,1,2,2-Tetrachloroethane	15.95	83	105306	17.0684 ug/L	100
81)	1,2,3-Trichloropropane	16.13	110	36317	19.1156 ug/L #	31
82)	trans-1,4-Dichloro-2-Buten	16.19	53	29611	15.7173 ug/L #	4
83)	n-Propylbenzene	16.24	91	1001969	20.8955 ug/L	99
84)	Bromobenzene	16.37	156	191590	19.4250 ug/L	97
85)	1,3,5-Trimethylbenzene	16.42	105	724823	20.7509 ug/L	98
86)	2-Chlorotoluene	16.51	91	616163	18.4047 ug/L	92
87)	4-Chlorotoluene	16.56	91	670668	22.1777 ug/L	91
88)	a-Methylstyrene	16.83	118	336395	20.2990 ug/L	98
89)	tert-Butylbenzene	16.89	134	136372	19.9564 ug/L	99
90)	1,2,4-Trimethylbenzene	16.94	105	714803	19.9015 ug/L	99
91)	sec-Butylbenzene	17.16	105	828940	20.1726 ug/L	99
92)	p-Isopropyltoluene	17.32	119	690041	19.7773 ug/L	99
93)	1,3-Dichlorobenzene	17.51	146	383600	20.1982 ug/L	98
94)	1,4-Dichlorobenzene	17.64	146	379062	19.7974 ug/L	100
95)	n-Butylbenzene	17.84	91	654053	18.9618 ug/L	99
96)	1,2-Dichlorobenzene	18.14	146	327323	19.3784 ug/L	99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	21199	17.1175 ug/L	94
98)	1,2,4-Trichlorobenzene	20.27	180	233503	18.4944 ug/L	98
99)	Hexachlorobutadiene	20.43	225	122070	20.6927 ug/L	98
100)	Naphthalene	20.64	128	285406	15.2151 ug/L	98
101)	1,2,3-Trichlorobenzene	20.95	180	185957	17.4579 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M413195.D 8260WT.M Mon Jun 27 12:30:19 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413195.D Vial: 6
Acq On : 23 Jun 2016 22:28 Operator: FJB
Sample : WG573991-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 22:50 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

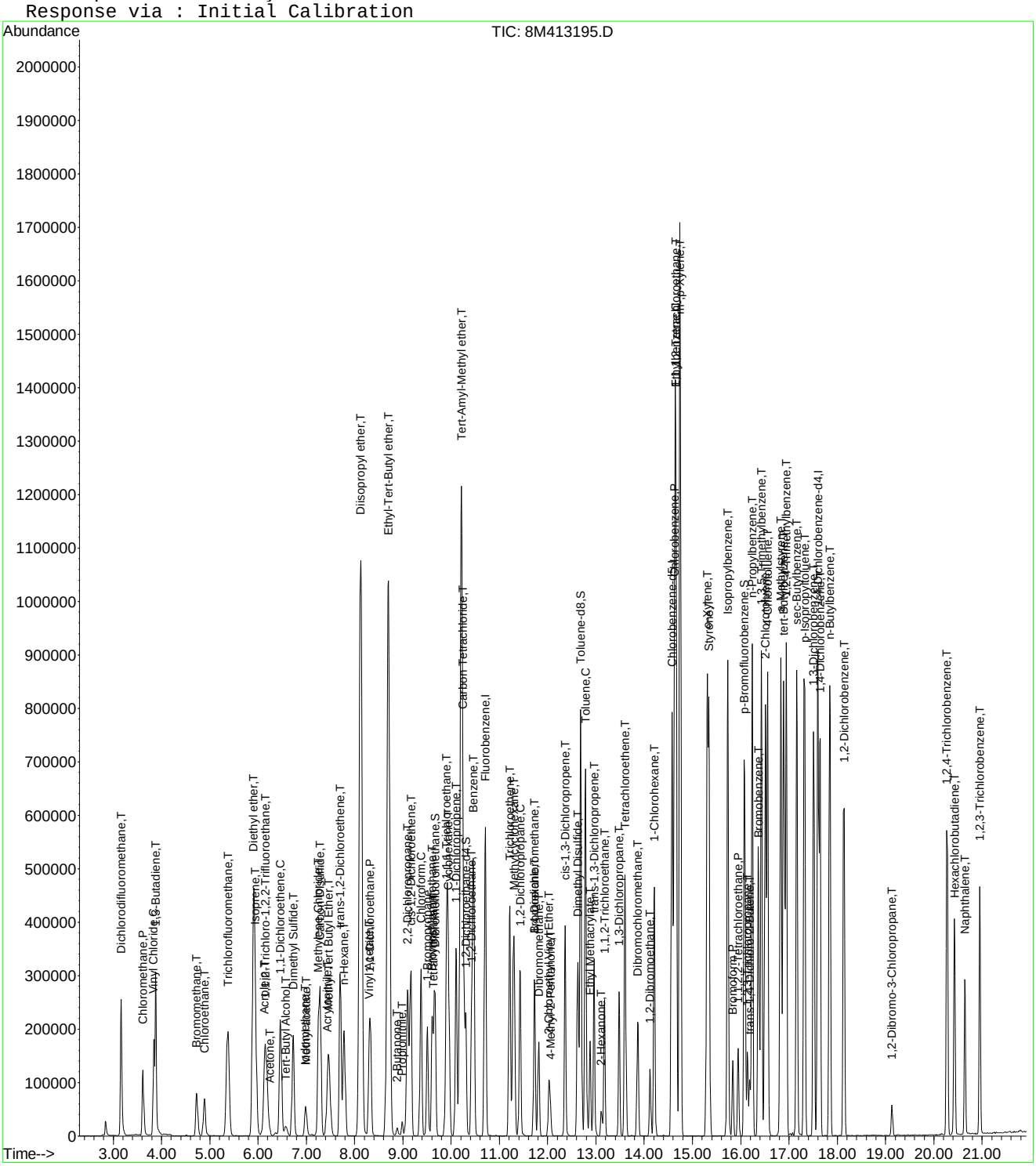

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062116\8M413130.D Vial: 7
Acq On : 21 Jun 2016 20:19 Operator: FJB
Sample : WG573645-03 20ug/L LCS2 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 21 20:41:24 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	801570	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	606723	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	337211	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	232312	26.9748 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.88%		
43) 1,2-Dichloroethane-d4	10.30	65	244814	26.5111 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 106.04%		
58) Toluene-d8	12.68	98	807456	25.4292 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.72%		
80) p-Bromofluorobenzene	16.08	95	345700	24.7584 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.04%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	375654	27.9524 ug/L	99
3) Chloromethane	3.62	50	183223	23.3563 ug/L	99
4) Vinyl Chloride	3.84	62	251449	27.0165 ug/L	100
5) 1,3-Butadiene	3.88	54	171496	21.9722 ug/L	99
6) Bromomethane	4.73	94	99370	18.4182 ug/L	97
7) Chloroethane	4.89	64	120768	23.5816 ug/L	97
8) Trichlorofluoromethane	5.37	101	405508	23.4152 ug/L	99
9) Diethyl ether	5.90	59	429224	103.8172 ug/L	98
10) Isoprene	5.93	67	259996	24.7221 ug/L	98
11) Acrolein	6.13	56	33670	90.9570 ug/L	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	190538	23.4061 ug/L	94
13) Acetone	6.24	43	19487	21.6080 ug/L	98
14) 1,1-Dichloroethene	6.46	61	284861	21.9774 ug/L	97
15) Tert-Butyl Alcohol	6.57	59	44593	154.2999 ug/L	96
16) Dimethyl Sulfide	6.73	62	172245	37.1664 ug/L	97
17) Iodomethane	6.99	142	67479	20.7087 ug/L	100
18) Methyl acetate	6.99	43	45353	18.6044 ug/L	99
19) Methylene Chloride	7.24	84	175900	21.3251 ug/L	97
20) Carbon Disulfide	7.29	76	574700	21.1876 ug/L	100
21) Acrylonitrile	7.43	53	23931	20.4517 ug/L	98
22) Methyl Tert Butyl Ether	7.46	73	395219	22.1384 ug/L	100
23) trans-1,2-Dichloroethene	7.70	61	264912	22.2469 ug/L	99
24) n-Hexane	7.78	57	204188	23.0922 ug/L	98
25) Diisopropyl ether	8.12	45	1967896	106.0199 ug/L	98
26) Vinyl Acetate	8.30	43	186340	21.9263 ug/L	99
27) 1,1-Dichloroethane	8.32	63	312098	21.1043 ug/L	100
28) Ethyl-Tert-Butyl ether	8.70	59	2048753	103.0187 ug/L	99
29) 2-Butanone	8.88	43	26114	19.7084 ug/L	96
30) Propionitrile	8.98	54	34706	89.8808 ug/L	96
31) 2,2-Dichloropropane	9.09	77	386993	24.8323 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	200847	21.8289 ug/L	97
33) Chloroform	9.37	83	383139	21.9424 ug/L	100
34) 1-Bromopropane	9.51	122	41941	31.8234 ug/L	100
35) Bromochloromethane	9.60	130	100661	21.3345 ug/L	95
36) Tetrahydrofuran	9.63	42	73556	84.2855 ug/L	99
38) 1,1,1-Trichloroethane	9.91	97	386918	23.3280 ug/L	100
39) Cyclohexane	9.94	56	252690	22.0057 ug/L	100
40) 1,1-Dichloropropene	10.11	75	282605	22.3542 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1942419	107.5385 ug/L	99
42) Carbon Tetrachloride	10.24	117	339027	23.0189 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M413130.D 8260WT.M Fri Jun 24 17:14:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062116\8M413130.D Vial: 7
Acq On : 21 Jun 2016 20:19 Operator: FJB
Sample : WG573645-03 20ug/L LCS2 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 21 20:41:24 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	258437	22.9955	ug/L		99
46)	Benzene	10.46	78	728220	22.1166	ug/L		99
47)	Trichloroethene	11.21	130	203927	23.2215	ug/L		99
48)	Methylcyclohexane	11.30	83	305222	22.8782	ug/L		99
49)	1,2-Dichloropropane	11.43	63	160378	21.8803	ug/L		95
50)	Bromodichloromethane	11.73	83	286882	22.2687	ug/L		100
51)	1,4-Dioxane	11.72	88	4962	134.7651	ug/L		91
52)	Dibromomethane	11.81	93	86145	19.8542	ug/L		95
53)	2-Chloroethyl Vinyl Ether	12.02	63	61951	19.6644	ug/L		99
54)	4-Methyl-2-Pentanone	12.06	58	24431	18.9844	ug/L		93
55)	cis-1,3-Dichloropropene	12.36	75	314346	23.9724	ug/L		98
56)	Dimethyl Disulfide	12.62	79	151414	21.6343	ug/L		94
59)	Toluene	12.78	91	779721	20.7007	ug/L		98
60)	Ethyl Methacrylate	12.88	69	145866	20.1649	ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	259013	20.5196	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	114431	19.2527	ug/L		99
64)	2-Hexanone	13.11	58	22675	18.1545	ug/L	#	94
65)	1,3-Dichloropropane	13.48	76	220977	20.8823	ug/L		99
66)	Tetrachloroethene	13.60	164	173697	21.5238	ug/L		94
67)	Dibromochloromethane	13.87	129	173994	20.0489	ug/L		100
68)	1,2-Dibromoethane	14.12	107	116731	19.7061	ug/L		98
69)	1-Chlorohexane	14.21	91	262320	20.4021	ug/L		99
70)	Chlorobenzene	14.62	112	521869	20.5464	ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.65	131	201136	20.4404	ug/L		99
72)	Ethylbenzene	14.65	106	275214	19.8041	ug/L		96
73)	m-,p-Xylene	14.75	106	679738	41.7013	ug/L		95
74)	o-Xylene	15.31	106	336370	21.1072	ug/L		99
75)	Styrene	15.35	104	545154	20.8568	ug/L		97
76)	Bromoform	15.83	173	98789	19.1915	ug/L		99
77)	Isopropylbenzene	15.73	105	925159	21.8531	ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	117825	17.4069	ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	40221	19.2963	ug/L		75
82)	trans-1,4-Dichloro-2-Buten	16.18	53	32499	15.7229	ug/L		94
83)	n-Propylbenzene	16.24	91	1101437	20.9364	ug/L		100
84)	Bromobenzene	16.37	156	214213	19.7961	ug/L		96
85)	1,3,5-Trimethylbenzene	16.42	105	798614	20.8395	ug/L		100
86)	2-Chlorotoluene	16.52	91	760317	20.7001	ug/L		99
87)	4-Chlorotoluene	16.56	91	661306	19.9322	ug/L		100
88)	a-Methylstyrene	16.83	118	382596	21.0431	ug/L		98
89)	tert-Butylbenzene	16.90	134	152707	20.3685	ug/L		97
90)	1,2,4-Trimethylbenzene	16.94	105	780583	19.8091	ug/L		99
91)	sec-Butylbenzene	17.16	105	925679	20.5326	ug/L		100
92)	p-Isopropyltoluene	17.32	119	770708	20.1338	ug/L		98
93)	1,3-Dichlorobenzene	17.52	146	423219	20.3116	ug/L		97
94)	1,4-Dichlorobenzene	17.64	146	424902	20.2270	ug/L		97
95)	n-Butylbenzene	17.85	91	740475	19.5669	ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	360566	19.4567	ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.13	75	24053	17.7026	ug/L		99
98)	1,2,4-Trichlorobenzene	20.28	180	265360	19.1570	ug/L		98
99)	Hexachlorobutadiene	20.43	225	136867	21.1471	ug/L		100
100)	Naphthalene	20.65	128	338862	16.4656	ug/L		100
101)	1,2,3-Trichlorobenzene	20.96	180	216043	18.4869	ug/L		97

(#) = qualifier out of range (m) = manual integration
8M413130.D 8260WT.M Fri Jun 24 17:14:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062116\8M413130.D Vial: 7
Acq On : 21 Jun 2016 20:19 Operator: FJB
Sample : WG573645-03 20ug/L LCS2 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 21 20:41 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

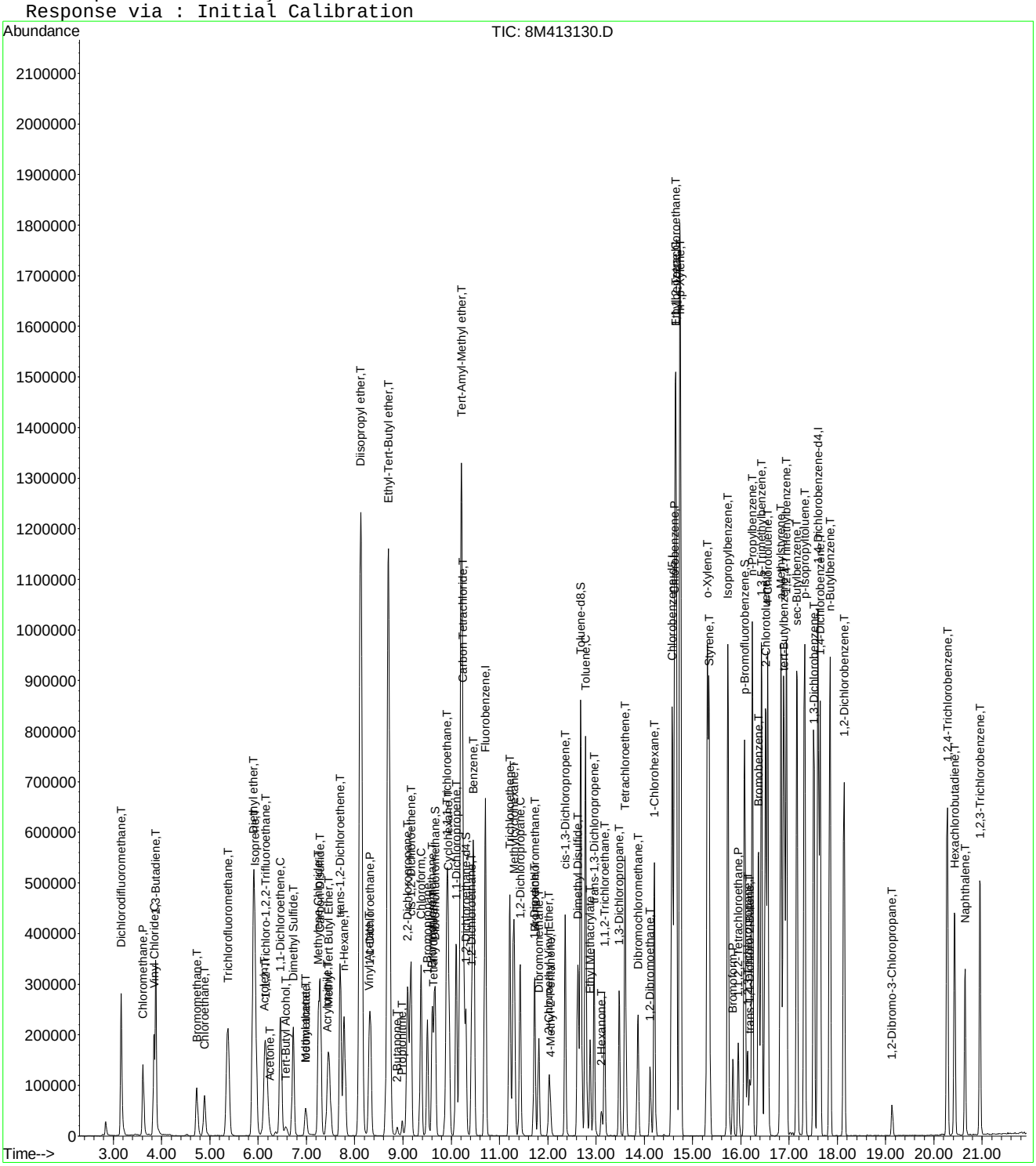

8M413130.D 8260WT.M Fri Jun 24 17:14:57 2016 Page 3

2.2 Semivolatiles Data

2.2.1 Semivolatiles GC/MS Data (Dioxane)

2.2.1.1 Summary Data

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060927-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW23SW-061516	**Prep Method:**	3520C	**Prep Date:**	06/21/2016 17:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573853	**Analyst:**	MES	**Run Date:**	06/23/2016 15:30
Collect Date:	06/15/2016 08:00	**Dilution:**	1	**File ID:**	15M18514
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	32.4	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060927-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW23-061516	**Prep Method:**	3520C	**Prep Date:**	06/21/2016 17:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573853	**Analyst:**	MES	**Run Date:**	06/23/2016 15:53
Collect Date:	06/15/2016 09:05	**Dilution:**	1	**File ID:**	15M18515
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	7.62	J	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	133	20	129	*

J	The reported result is an estimated value.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060927-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW23-061516	**Prep Method:**	3520C	**Prep Date:**	06/21/2016 17:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573853	**Analyst:**	MES	**Run Date:**	06/25/2016 12:46
Collect Date:	06/15/2016 09:05	**Dilution:**	10	**File ID:**	15M18553
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	8.02	J	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	109	20	129	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060927-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW19SW-061516	**Prep Method:**	3520C	**Prep Date:**	06/21/2016 17:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573853	**Analyst:**	MES	**Run Date:**	06/23/2016 16:15
Collect Date:	06/15/2016 10:15	**Dilution:**	1	**File ID:**	15M18516
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	37.5	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060927-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW19-061516	**Prep Method:**	3520C	**Prep Date:**	06/21/2016 17:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573853	**Analyst:**	MES	**Run Date:**	06/23/2016 16:38
Collect Date:	06/15/2016 11:15	**Dilution:**	1	**File ID:**	15M18517
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	40.5	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.2.1.2 QC Summary Data

Example 8270 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	1261197
Cis = Concentration of the specific internal standard (ug/mL)	40
Ais = Area of the characteristic ion of the specific internal standard	608044
Cx = Concentration of the compound in the standard being measured (ug/mL)	50
RF = Calculated Response Factor	**1.65935**

2.0 Calculating the concentration (C) of a compound in water using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Vi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Vi = Initial volume of sample extracted from prep log (mL)	1021
Cx = Concentration of the compound in the sample being measured (ug/mL)	0.016947
Cx = Concentration of the compound in the sample being measured (ug/L)	**16.947**

3.0 Calculating the concentration (C) of a compound in soil using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Wi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Wi = Initial weight of sample extracted (g) from prep log	30
Cx = Concentration of the compound in the sample being measured (ug/g)	0.576763
Cx = Concentration of the compound in the sample being measured (ug/kg)	**576.7627**

Dry weight correction:

Percent solids (PCT_S)	50
Cd = (Cx) (100)/PCT_S	**1153.525** ug/kg

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve plot

b = intercept from curve plot

Step 2: Calculate y from Quantitation Report

y = 16790/784838 = 0.02139

Step 3: Solve for x

x = (y - b)/m = [(0.02139 -(- 0.0435)]/ 0.0783 = 0.829

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.829) = 20.72 ug/L

Example Spreadsheet Calculation:

Slope from curve, m:	0.0783	
Intercept from curve, b:	-0.0435	
Area of analyte, Ax:	16790	
Area of Internal Standard , Ais:	784484	
Concentration of IS, Cis	25.00	ug/L
Response Ratio (y) :	0.021403	
Amount Ratio:	0.828897	
Concentration (Cx):	20.72241	ug/L

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**0.0259**	
Value of B from plot:	**0.0596**	
Value of C from plot:	**-0.0165**	
Area of analyte from quantitation report:	**203233**	
Area of IS from quantiation report:	**1425653**	
Response ratio, y:	**0.142554**	
C - y:	**-0.15905**	
Root 1 - Computed amount ratio , X1:	**-3.88278**	
Root 2 - Computed amount ratio , X2:	**1.581623**	use this solution
Concentration of IS, Cis:	**40.00**	
Concentration of analyte, Cx:	**63.26**	ug/L

Microbac Laboratories Inc.
Continuous Sample Extract Log

Workgroup: WG573299
Analyst: CPD
Spike Analyst: CPD
Method: 3520C
Run Date: 06/21/2016 17:01
SOP: EXB01 Revison 20
Spike Witness: JLD
Surr Solution: STD76628

TIME ON: 17:45 OFF: 12:10 ON: 16:00 OFF: 11:05

CH2CL2 Lot #: COA18982
sodium sulfate Lot #: COA18814
10N NaOH Lot #: RGT37076
1:1 H2SO4 Lot #: RGT36755

	SAMPLE #	Type	Reference	Prod	pH	Init Amnt	Surr Amnt	Spike Amnt	Spike Sol	Final Vol	Color
1	L16060927-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
2	L16060927-02	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
3	L16060927-03	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
4	L16060927-04	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
5	L16060930-03	SAMP		827-DIOX	<2>12	1000 mL	.05 mL			1 mL	Colored
6	L16060978-03	SAMP		827-DIOX	<2>12	800 mL	.05 mL			1 mL	Colored
7	L16060978-04	SAMP		827-DIOX	<2>12	890 mL	.05 mL			1 mL	Colored
8	L16061026-04	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
9	L16061026-05	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
10	L16061026-07	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
11	L16061055-04	SAMP		827-DIOX	<2>12	520 mL	.05 mL			1 mL	Colored
12	L16061055-07	SAMP		827-DIOX	<2>12	880 mL	.05 mL			1 mL	Colored
13	WG573299-01	BLANK		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
14	WG573299-02	LCS		827-DIOXANE	<2>12	1000 mL	.05 mL	.1 mL	STD75281	1 mL	Transparent
15	WG573299-03	LCS2		827-DIOXANE	<2>12	1000 mL	.05 mL	.1 mL	STD75281	1 mL	Transparent

Due to insufficient sample volume, this preparation batch failed to include the method prescribed MS and MSD.

Analyst: Chelsie Davis

Reviewer: Justin Hesson

EXTRACT - Modified 01/23/2009
PDF ID: 4819876
Report generated: 06/24/2016 10:45

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062116
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573365

Internal STD: STD76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: STD74214 MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18455	BAKEOUT	1	1		06/21/16 08:46
2	15M18456	WG573501-01 5PPM DFTPP STD	1	1	STD75016	06/21/16 09:05
3	15M18457	WG573501-01 5PPM DFTPP STD	1	1	STD75016	06/21/16 09:34
4	15M18458	WG573501-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 09:52
5	15M18459	WG573501-03 10 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 10:27
6	15M18460	WG573501-04 7.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 10:49
7	15M18461	WG573501-05 2.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:12
8	15M18462	WG573501-06 1 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:34
9	15M18463	WG573501-07 0.4 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:57
10	15M18464	WG573501-08 5PPM 1,4-DIOXANE ALT SRC	1	1	STD74214	06/21/16 12:20
11	15M18465	WG572806-01 BLANK 6/15	1	1		06/21/16 12:54
12	15M18466	WG572806-02 LCS 6/15	1	1		06/21/16 13:17
13	15M18467	WG572806-03 LCSDUP 6/15	1	1		06/21/16 13:40
14	15M18468	WG573008-01 BLANK 6/17	7	1	SOIL	06/21/16 14:03
15	15M18469	WG573008-02 LCS 6/17	7	1	SOIL	06/21/16 14:26
16	15M18470	WG573008-03 LCSDUP 6/17	7	1	SOIL	06/21/16 14:48
17	15M18471	L16060730-01	1	1		06/21/16 15:11
18	15M18472	L16060730-02	1	1		06/21/16 15:34
19	15M18473	L16060854-01	1	1		06/21/16 15:57
20	15M18474	L16060730-03	1	1		06/21/16 16:19
21	15M18475	L16060756-04 827-DIOX	1	1		06/21/16 16:46
22	15M18476	L16060822-01	1	1		06/21/16 17:08
23	15M18477	L16060822-03	1	1		06/21/16 17:31
24	15M18478	L16060822-04	1	1		06/21/16 17:54
25	15M18479	L16060822-05	1	1		06/21/16 18:17
26	15M18480	L16060823-01	1	1		06/21/16 18:40
27	15M18481	L16060823-03	1	1		06/21/16 19:02
28	15M18482	L16060823-04	1	1		06/21/16 19:25
29	15M18483	L16060809-03 827-DIOX	1	1		06/21/16 19:48
30	15M18484	L16060854-01 2X	1	2		06/21/16 20:10
31	15M18485	BAKEOUT	1	1		06/21/16 20:33
32	15M18486	BAKEOUT	1	1		06/21/16 20:55
33	15M18487	BAKEOUT	1	1		06/21/16 21:18

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062116

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573365

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD: STD74214

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
	WG573501-01 5PPM DFTPP STD rerun DFTPP, pentachlorophenol tailing >2.			
14				
	WG573008-01 BLANK 6/17 DNR-not needed.			
15				
	WG573008-02 LCS DNR-not needed.			
16				
	WG573008-03 LCSDUP DNR-not needed.			
19	X	2	Over Calibration Range	
	L16060854-01			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062316
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573853

Internal STD: STD76627 Surrogate STD: NA Calibration STD
CCV STD: STD74784 LCS STD: MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18504	BAKEOUT	1	1		06/23/16 10:23
2	15M18505	WG573879-01 5PPM DFTPP STD	1	1	STD75016	06/23/16 10:43
3	15M18506	WG573879-01 5PPM DFTPP STD	1	1	STD75016	06/23/16 10:59
4	15M18507	WG573879-01 5PPM DFTPP STD	1	1	STD75016	06/23/16 12:04
5	15M18508	WG573879-01 5PPM DFTPP STD	1	1	STD75016	06/23/16 13:20
6	15M18509	WG573879-01 5PPM DFTPP STD	1	1	STD75016	06/23/16 13:42
7	15M18510	WG573879-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/23/16 13:59
8	15M18511	WG573299-01 BLANK 6/21	1	1		06/23/16 14:22
9	15M18512	WG573299-02 LCS 6/21	1	1		06/23/16 14:45
10	15M18513	WG573299-03 LCSDUP 6/21	1	1		06/23/16 15:07
11	15M18514	L16060927-01 827-DIOX	1	1		06/23/16 15:30
12	15M18515	L16060927-02 827-DIOX	1	1		06/23/16 15:53
13	15M18516	L16060927-03 827-DIOX	1	1		06/23/16 16:15
14	15M18517	L16060927-04 827-DIOX	1	1		06/23/16 16:38
15	15M18518	L16060930-03 827-DIOX	1	1		06/23/16 17:00
16	15M18519	L16060978-03 827-DIOX	1	1		06/23/16 17:23
17	15M18520	L16060978-04 827-DIOX	1	1		06/23/16 17:46
18	15M18521	L16061026-04 827-DIOX	1	1		06/23/16 18:08
19	15M18522	L16061026-05 827-DIOX	1	1		06/23/16 18:31
20	15M18523	L16061026-07 827-DIOX	1	1		06/23/16 18:54
21	15M18524	L16061055-04 827-DIOX	1	1		06/23/16 19:16
22	15M18525	L16061055-07 827-DIOX	1	1		06/23/16 19:39
23	15M18526	BAKEOUT	1	1		06/23/16 20:02
24	15M18527	BAKEOUT	1	1		06/23/16 20:24
25	15M18528	BAKEOUT	1	1		06/23/16 20:47

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
	Rerun DFTPP, degradation >20%.			
3				
	Rerun DFTPP, degradation >20%. Changing the liner.			
4				

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062316

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573853

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
	Rerun DFTPP, degradation still >20%. Changing the gold seal.			
5				
	Rerun DFTPP, degradation still >20%. Clipping the column.			
12	X	10	Surrogate standard failure	
	L16060927-02 high surrogate due to SMI; reanalyzing at a dilution to confirm.			
16	X	10	Over Calibration Range	
	L16060978-03			
17	X	20	Over Calibration Range	
	L16060978-04			
19	X	20	Over Calibration Range	
	L16061026-05 high surrogate due to SMI.			
21	X	10	Over Calibration Range	
	L16061055-04 827-DIOX one high surrogate due to SMI.			
22	X	100	Over Calibration Range	
	L16061055-07 827-DIOX one low surrogate due to obvious SMI.			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062516

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574187,WG573853,WG574186

Internal STD: STD76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: MS/MSD STD:

Comments: The following may need re-extracted due to low LCS/LCSDUP recoveries:L16060637-02, 756-01 to -03,809-01,02,930-01,-02,1213,-01 to -06

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18543	BAKEOUT	1	1		06/25/16 09:07
2	15M18544	WG574029-01 5PPM DFTPP STD	1	1	STD75016	06/25/16 09:27
3	15M18545	WG574029-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/25/16 09:44
4	15M18546	WG573815-01 BLANK 6/23	7	1	SOIL	06/25/16 10:08
5	15M18547	WG573815-02 LCS 6/23	7	1	SOIL	06/25/16 10:30
6	15M18548	WG573815-03 LCSDUP 6/23	7	1	SOIL	06/25/16 10:53
7	15M18549	WG573975-01 BLANK 6/24	7	1	SOIL	06/25/16 11:16
8	15M18550	WG573975-02 LCS 6/24	7	1	SOIL	06/25/16 11:38
9	15M18551	WG573975-03 LCSDUP 6/24	7	1	SOIL	06/25/16 12:01
10	15M18552	L16061026-07 RR 827-DIOX	1	10		06/25/16 12:24
11	15M18553	L16060927-02 10X 827-DIOX	1	10		06/25/16 12:46
12	15M18554	L16060978-03 10X 827-DIOX	1	10		06/25/16 13:09
13	15M18555	L16061055-04 10X 827-DIOX	1	10		06/25/16 13:32
14	15M18556	L16060978-04 20X 827-DIOX	1	20		06/25/16 13:54
15	15M18557	L16061026-05 20X 827-DIOX	1	20		06/25/16 14:17
16	15M18558	L16061055-07 100X 827-DIOX	1	100		06/25/16 14:40
17	15M18559	L16060637-02 RE 827-DIOX	7	1	SOIL	06/25/16 15:02
18	15M18560	L16060756-01 RE 827-DIOX	7	1	SOIL	06/25/16 15:25
19	15M18561	L16060756-02 RE 827-DIOX	7	1	SOIL	06/25/16 15:47
20	15M18562	L16060756-03 RE 827-DIOX	7	1	SOIL	06/25/16 16:10
21	15M18563	L16060809-01 RE 827-DIOX	7	1	SOIL	06/25/16 16:33
22	15M18564	L16060809-02 RE 827-DIOX	7	1	SOIL	06/25/16 16:55
23	15M18565	L16060930-01 RE 827-DIOX	7	1	SOIL	06/25/16 17:18
24	15M18566	L16060930-02 RE 827-DIOX	7	1	SOIL	06/25/16 17:40
25	15M18567	L16060978-02 RE 2X 827-DIOX	7	2	SOIL	06/25/16 18:03
26	15M18568	L16061055-03 RE 827-DIOX	7	1	SOIL	06/25/16 18:26
27	15M18569	L16061055-05 RE 827-DIOX	7	1	SOIL	06/25/16 18:48
28	15M18570	L16061055-06 RE 827-DIOX	7	1	SOIL	06/25/16 19:11
29	15M18571	L16061213-01 827-DIOX	7	1	SOIL	06/25/16 19:34
30	15M18572	L16061213-02 827-DIOX	7	1	SOIL	06/25/16 19:56
31	15M18573	L16061213-03 827-DIOX	7	1	SOIL	06/25/16 20:19
32	15M18574	L16061213-04 827-DIOX	7	1	SOIL	06/25/16 20:42
33	15M18575	L16061213-05 5X 827-DIOX	7	5	SOIL	06/25/16 21:04

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062516
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574187,WG573853,WG574186

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	15M18576	L16061213-06 5X 827-DIOX	7	5	SOIL	06/25/16 21:27
35	15M18577	BAKEOUT	1	1		06/25/16 21:49
36	15M18578	BAKEOUT	1	1		06/25/16 22:11
37	15M18579	BAKEOUT	1	1		06/25/16 22:34
38	15M18580	BAKEOUT	1	1		06/25/16 22:56
39	15M18581	BAKEOUT	1	1		06/25/16 23:19
40	15M18582	BAKEOUT	1	1		06/25/16 23:42
41	15M18583	BAKEOUT	1	1		06/26/16 00:04

Comments

Seq.	Rerun	Dil.	Reason	Analytes
5				
	WG573815-02 LCS 6/23 low remix and rerun.			
6				
	WG573815-03 LCSDUP 6/23 low remix and rerun.			
9				
	WG573975-03 LCSDUP 6/24 marginally low; rerun. Rerun was acceptable. Not report this run.			
10				
	L16061026-07 RR 827-DIOX DNR-confirms previous results.			
11				
	L16060927-02 10X 827-DIOX surrogate is good; indicates SMI in the straight run.			
13				
	L16061055-04 10X 827-DIOX surrogate is good; indicates SMI in the straight run.			
15	X	40	Over Calibration Range	
	L16061026-05 20X 827-DIOX DNR			
17				
	L16060637-02 RE 827-DIOX surrogate is good; does not confirm low surrogate in original extraction.			
18				
	L16060756-01 RE 827-DIOX low surrogate recovery; does not confirm original extraction. Needs re-extracted.			
33	X	1	Analyzed too dilute	
	L16061213-05 5X 827-DIOX DNR			
34	X	1	Analyzed too dilute	
	L16061213-06 5X 827-DIOX DNR			

Page: 2 Approved: 27-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 21-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75850
Analytical Workgroups: L16060730, 060756, 060809, 060822, 060823, 060854

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 22-JUN-2016

Secondary Reviewer: 22-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-22-2016 16:00:51

Microbac Laboratories Inc.

Data Checklist

Date: 23-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75899
Analytical Workgroups: L16060927,060930,060978,-061026,061055

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: Secondary Reviewer:
24-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-24-2016 14:48:11

Microbac Laboratories Inc.

Data Checklist

Date: 25-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75935
Analytical Workgroups: 060927, 06-978, 06-1055, 06-637, 06-756, 06-809, 06-930, 06-1213

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer:
27-JUN-2016

Secondary Reviewer:
27-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-27-2016 14:41:23

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8270D

AAB#: WG573853

Login Number: L16060927

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW23SW-061516	01	06/15/16					06/21/2016	6.4	7		06/23/16	1.9	40	
18CPTMW23-061516	02	06/15/16					06/21/2016	6.3	7		06/23/16	2	40	
18CPTMW23-061516	02	06/15/16					06/21/2016	6.3	7		06/25/16	3.8	40	
18CPTMW19SW-061516	03	06/15/16					06/21/2016	6.3	7		06/23/16	2	40	
18CPTMW19-061516	04	06/15/16					06/21/2016	6.2	7		06/23/16	2	40	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4822545
Report generated 06/28/2016 09:16

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060927
Instrument Id: HPMS15
Workgroup (AAB#): WG573853

Method: 827-DIOXANE
CAL ID: HPMS15-21-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1
L16060927-01	1.00	01	32.4
L16060927-02	1.00	01	133
L16060927-02	10.0	DL01	109
L16060927-03	1.00	01	37.5
L16060927-04	1.00	01	40.5
WG573299-01	1.00	01	28.7
WG573299-02	1.00	01	37.8
WG573299-03	1.00	01	46.8

Surrogates	Surrogate Limits
1 - 1,4-Dioxane-d8	20 - 129

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4822553
Report generated: 06/28/2016 09:16

METHOD BLANK SUMMARY

Login Number: L16060927
Blank File ID: 15M18511
Prep Date: 06/21/16 17:01
Analyzed Date: 06/23/16 14:22
Analyst: MES

Work Group: WG573853
Blank Sample ID: WG573299-01
Instrument ID: HPMS15
Method: 8270D

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573299-02	15M18512	06/23/16 14:45	01
LCS2	WG573299-03	15M18513	06/23/16 15:07	01
18CPTMW23SW-061516	L16060927-01	15M18514	06/23/16 15:30	01
18CPTMW23-061516	L16060927-02	15M18515	06/23/16 15:53	01
18CPTMW19SW-061516	L16060927-03	15M18516	06/23/16 16:15	01
18CPTMW19-061516	L16060927-04	15M18517	06/23/16 16:38	01
18CPTMW23-061516	L16060927-02	15M18553	06/25/16 12:46	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4823844
Report generated 06/28/2016 09:16

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060927 Prep Date: 06/21/16 17:01 Sample ID: WG573299-01
Instrument ID: HPMS15 Run Date: 06/23/16 14:22 Prep Method: 3520C
File ID: 15M18511 Analyst: MES Method: 8270D
Workgroup (AAB#): WG573853 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS15-21-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
1,4-Dioxane	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	28.7	20 - 129	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4822546
28-JUN-2016 09:16

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060927 Analyst: MES Prep Method: 3520C
Instrument ID: HPMS15 Matrix: Water Method: 8270D
Workgroup (AAB#): WG573853 Units: ug/L
QC Key: DOD4 Lot #: STD75281

Sample ID: WG573299-02 LCS File ID: 15M18512 Run Date: 06/23/2016 14:45
Sample ID: WG573299-03 LCS2 File ID: 15M18513 Run Date: 06/23/2016 15:07

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,4-Dioxane	5.00	1.88	37.6	5.00	2.32	46.4	20.8	30 - 104	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,4-Dioxane-d8	37.8	46.8	20 - 129	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4822547
Report generated: 06/28/2016 09:16

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16060927
Instrument: HPMS15
Analyst: MES
Workgroup: WG573501

Tune ID: WG573501-01
Run Date: 06/21/2016
Run Time: 09:34
File ID: 15M18457
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	38.8	34488	PASS
68.0	69.0	0	2.00	1.36	500	PASS
69.0	198	0	100	41.4	36833	PASS
70.0	69.0	0	2.00	0.467	172	PASS
127	198	40.0	60.0	51.9	46131	PASS
197	198	0	1.00	0	0	PASS
198	198	100	100	100	88880	PASS
199	198	5.00	9.00	6.66	5918	PASS
275	198	10.0	30.0	24.9	22090	PASS
365	198	1.00	100	2.65	2358	PASS
441	443	0.0100	100	75.7	9586	PASS
442	198	40.0	100	73.4	65261	PASS
443	442	17.0	23.0	19.4	12659	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573501-02	STD-CCV	01	06/21/2016 09:52	
WG573501-03	STD	01	06/21/2016 10:27	
WG573501-04	STD	01	06/21/2016 10:49	
WG573501-05	STD	01	06/21/2016 11:12	
WG573501-06	STD	01	06/21/2016 11:34	
WG573501-07	STD	01	06/21/2016 11:57	
WG573501-08	SSCV	01	06/21/2016 12:20	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4822550
Report generated 06/28/2016 09:16

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16060927
Instrument: HPMS15
Analyst: MES
Workgroup: WG573879

Tune ID: WG573879-01
Run Date: 06/23/2016
Run Time: 13:42
File ID: 15M18509
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	37.0	43111	PASS
68.0	69.0	0	2.00	1.10	506	PASS
69.0	198	0	100	39.4	45795	PASS
70.0	69.0	0	2.00	0.157	72	PASS
127	198	40.0	60.0	51.3	59752	PASS
197	198	0	1.00	0	0	PASS
198	198	100	100	100	116364	PASS
199	198	5.00	9.00	7.09	8249	PASS
275	198	10.0	30.0	24.9	28968	PASS
365	198	1.00	100	2.82	3278	PASS
441	443	0.0100	100	79.2	13093	PASS
442	198	40.0	100	74.3	86464	PASS
443	442	17.0	23.0	19.1	16541	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573879-02	CCV	01	06/23/2016 13:59	
WG573299-01	BLANK	01	06/23/2016 14:22	
WG573299-02	LCS	01	06/23/2016 14:45	
WG573299-03	LCS2	01	06/23/2016 15:07	
L16060927-01	18CPTMW23SW-061516	01	06/23/2016 15:30	
L16060927-02	18CPTMW23-061516	01	06/23/2016 15:53	
L16060927-03	18CPTMW19SW-061516	01	06/23/2016 16:15	
L16060927-04	18CPTMW19-061516	01	06/23/2016 16:38	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4822550
Report generated 06/28/2016 09:16

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16060927
Instrument: HPMS15
Analyst: MES
Workgroup: WG574029

Tune ID: WG574029-01
Run Date: 06/25/2016
Run Time: 09:27
File ID: 15M18544
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	30.5	29885	PASS
68.0	69.0	0	2.00	1.68	556	PASS
69.0	198	0	100	33.9	33149	PASS
70.0	69.0	0	2.00	0.477	158	PASS
127	198	40.0	60.0	47.2	46146	PASS
197	198	0	1.00	0	0	PASS
198	198	100	100	100	97832	PASS
199	198	5.00	9.00	6.64	6499	PASS
275	198	10.0	30.0	26.5	25877	PASS
365	198	1.00	100	2.93	2871	PASS
441	443	0.0100	100	78.3	12355	PASS
442	198	40.0	100	85.7	83872	PASS
443	442	17.0	23.0	18.8	15788	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG574029-02	CCV	01	06/25/2016 09:44	
L16060927-02	18CPTMW23-061516	DL01	06/25/2016 12:46	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4822550
Report generated 06/28/2016 09:16

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060927
Analytical Method: 8270D
ICAL Workgroup: WG573501

Instrument ID: HPMS15
Initial Calibration Date: 21-JUN-16 11:57
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
1,4-Dioxane		0.3060	2.56		

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4822548
Report generated 06/28/2016 09:16

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060927
Analytical Method: 8270D

Instrument ID: HPMS15
Initial Calibration Date: 21-JUN-16 11:57
Column ID: F

Analyte	WG573501-02			WG573501-03			WG573501-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	5.00	60883.0000	0.3073	10.0	138820.000	0.3164	7.50	103182.000	0.3106

INT_CAL - Modified 03/06/2008
PDF File ID: 4822548
Report generated 06/28/2016 09:16

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060927

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 21-JUN-16 11:57

Column ID: F

Analyte	WG573501-05			WG573501-06			WG573501-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	2.50	26333.0000	0.2969	1.00	13250.0000	0.2966	0.400	5650.00000	0.3081

INT_CAL - Modified 03/06/2008
PDF File ID: 4822548
Report generated 06/28/2016 09:16

Calibration Table Report
Method: DIOXANE_D8.M
Title: OVD MSS01 SIM 1,4-dioxane ICAL 062116
Last Calibration: Tue Jun 21 12:51:17 2016
Curve:WG573501
Calibration Files

Compound	10 15M18459.D	7.5 15M18460.D	5 15M18458.D	2.5 15M18461.D	1 15M18462.D	0.4 15M18463.D	Avg	%RSD
1,4-Dichlorobenzene-d4	ISTD							
1,4-Dioxane	0.316	0.311	0.307	0.297	0.297	0.308	0.306	2.558
1,4-Dioxane-d8	0.426	0.418	0.417	0.402	0.395		0.411	3.044
Nitrobenzene-d5	1.202	1.173	1.128	1.002	0.927	0.906	1.056	12.163
2-Fluorobiphenyl	2.735	2.736	2.691	2.621	2.563	2.651	2.666	2.548
p-Terphenyl-d14	2.793	2.774	2.622	2.460	2.367	2.405	2.570	7.266

Wed Jun 22 12:17:33 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060927 Run Date: 06/21/2016 Sample ID: WG573501-08
Instrument ID: HPMS15 Run Time: 12:20 Method: 8270D
File ID: 15M18464 Analyst: MES QC Key: DOD4
ICal Workgroup: WG573501 Cal ID: HPMS15 - 21-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
1,4-Dioxane		5000	5050	ug/L	0.309	0.900	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4822549
Report generated 06/28/2016 09:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060927
Run Date: 06/23/2016
Sample ID: WG573879-02
Instrument ID: HPMS15
Run Time: 13:59
Method: 8270D
File ID: 15M18510
Analyst: MES
QC Key: DOD4
Workgroup (AAB#): WG573853
Cal ID: HPMS15 - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,4-Dioxane		5000	4530	ug/L	0.277	9.36	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4822551
Report generated 06/28/2016 09:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060927
Run Date: 06/25/2016
Sample ID: WG574029-02
Instrument ID: HPMS15
Run Time: 09:44
Method: 8270D
File ID: 15M18545
Analyst: MES
QC Key: DOD4
Workgroup (AAB#): WG573853
Cal ID: HPMS15 - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,4-Dioxane		5000	4170	ug/L	0.255	16.6	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4822551
Report generated 06/28/2016 09:16

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060927
Instrument ID: HPMS15
Workgroup (AAB#): WG573853

ICAL CCV Number: WG573501-02
CAL ID: HPMS15-21-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG573501-02	NA	NA	39637
Upper Limit	NA	NA	79274
Lower Limit	NA	NA	19819
L16060927-01	1.00	01	52572
L16060927-02	1.00	01	52222
L16060927-02	10.0	DL01	44449
L16060927-03	1.00	01	56209
L16060927-04	1.00	01	51577
WG573299-01	1.00	01	57608
WG573299-02	1.00	01	51597
WG573299-03	1.00	01	54701

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4822552
Report generated 06/28/2016 09:16

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060927
Instrument ID: HPMS15
Workgroup (AAB#): WG573853

ICAL CCV Number: WG573501-02
CAL ID: HPMS15-21-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG573501-02	NA	NA	6.93
Upper Limit	NA	NA	7.43
Lower Limit	NA	NA	6.43
L16060927-01	1.00	01	6.933
L16060927-02	1.00	01	6.929
L16060927-02	10.0	DL01	6.896
L16060927-03	1.00	01	6.933
L16060927-04	1.00	01	6.933
WG573299-01	1.00	01	6.929
WG573299-02	1.00	01	6.929
WG573299-03	1.00	01	6.929

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4823845
Report generated: 06/28/2016 09:16

2.2.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18514.D
Acq On : 23 Jun 2016 15:30
Operator : MES
Sample : L16060927-01 827-DIOX
Misc : 1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 23 15:52:27 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	52572	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	35041	1.6198	ug/L	0.04
Spiked Amount 5.000			Recovery	=	32.40%	
4) Nitrobenzene-d5	7.431	82	2549	0.0459	ug/L	0.00
Spiked Amount 5.000			Recovery	=	1.00%	
5) 2-Fluorobiphenyl	8.919	172	664	0.0047	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.166	244	763	0.0056	ug/L	-0.02
Spiked Amount 5.000			Recovery	=	0.20%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18514.D
Acq On : 23 Jun 2016 15:30
Operator : MES
Sample : L16060927-01 827-DIOX
Misc : 1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 23 15:52:27 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

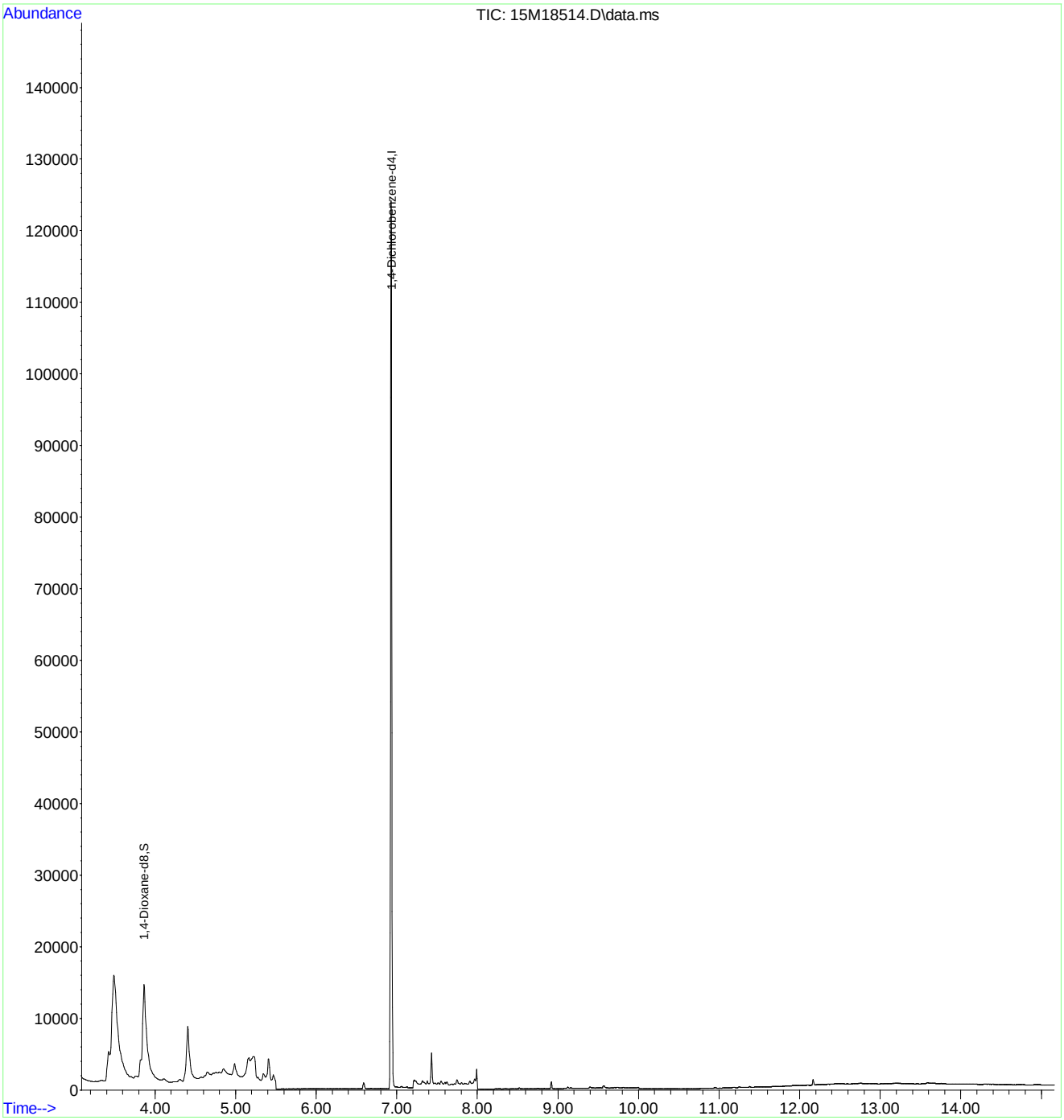

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18515.D
Acq On : 23 Jun 2016 15:53
Operator : MES
Sample : L16060927-02 827-DIOX
Misc : 1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 24 10:29:50 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.929	152	52222	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.848	96	142971m	6.6534	ug/L	0.02
Spiked Amount 5.000			Recovery	= 133.00%		
4) Nitrobenzene-d5	7.431	82	3760	0.0682	ug/L	0.00
Spiked Amount 5.000			Recovery	= 1.40%		
5) 2-Fluorobiphenyl	8.919	172	1557	0.0112	ug/L	0.00
Spiked Amount 5.000			Recovery	= 0.20%		
6) p-Terphenyl-d14	12.166	244	949	0.0071	ug/L	-0.02
Spiked Amount 5.000			Recovery	= 0.20%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	121747	7.6196	ug/L	86

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18515.D
Acq On : 23 Jun 2016 15:53
Operator : MES
Sample : L16060927-02 827-DIOX
Misc : 1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 24 10:29:50 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

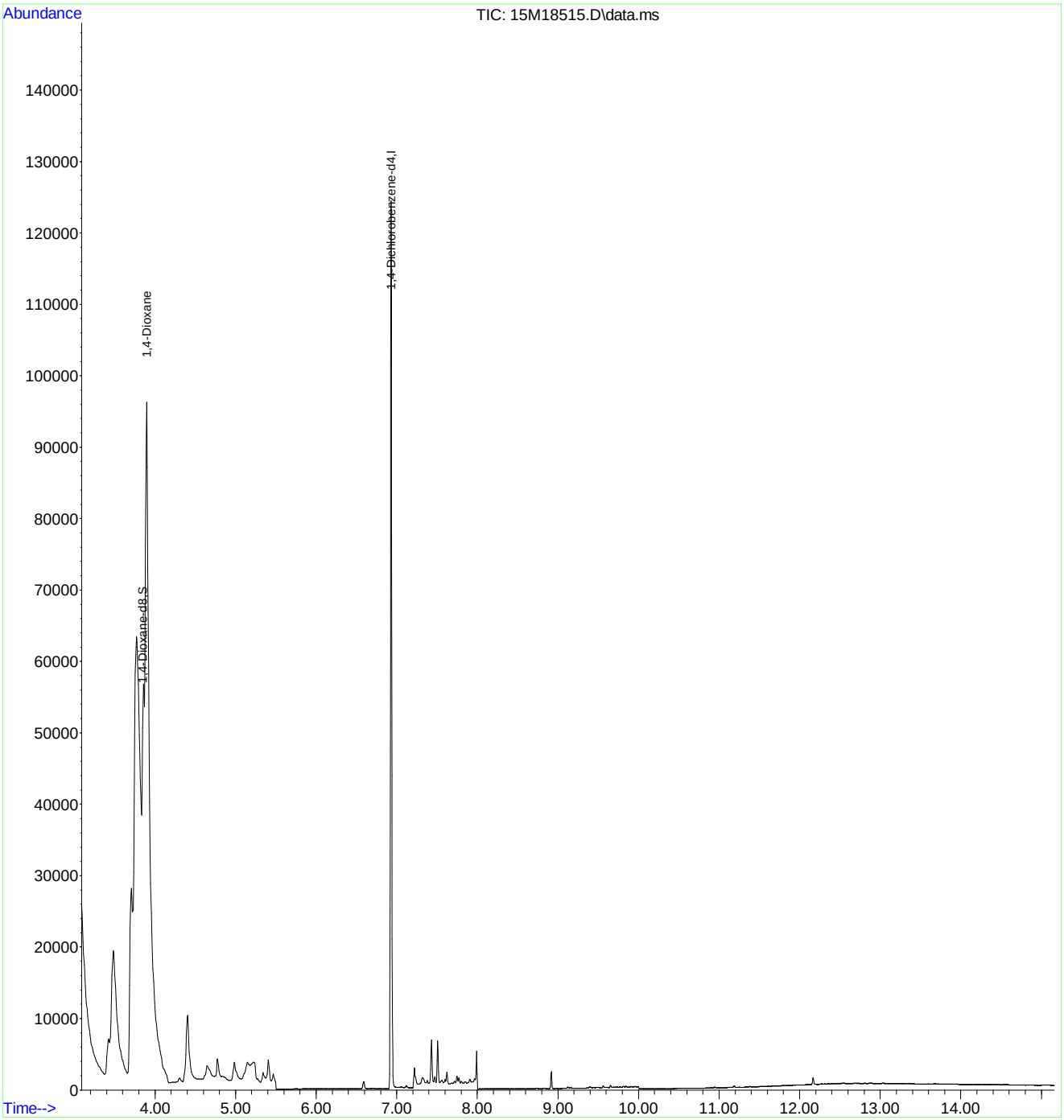

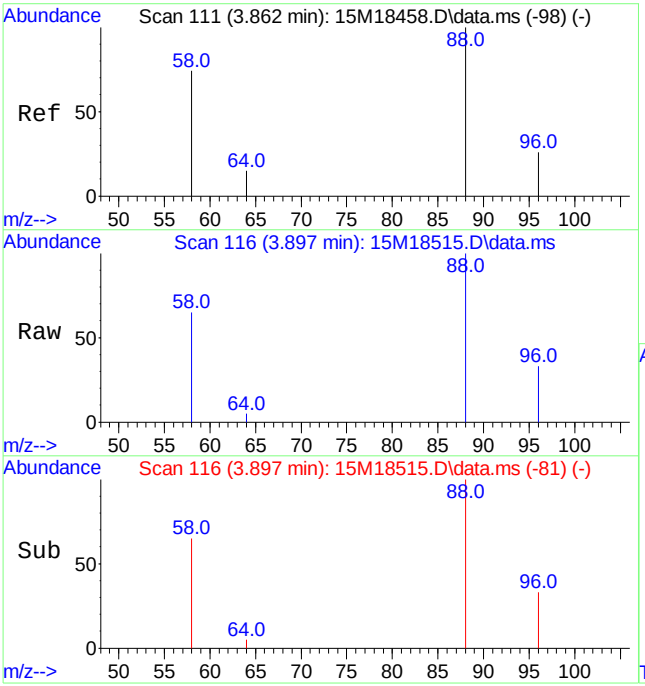

#2
1,4-Dioxane
Concen: 7.62 ug/L
RT: 3.897 min Scan# 116
Delta R.T. 0.035 min
Lab File: 15M18515.D
Acq: 23 Jun 2016 15:53

Tgt Ion: 58 Resp: 121747

Ion	Ratio	Lower	Upper
58	100		
88	152.0	103.1	240.7

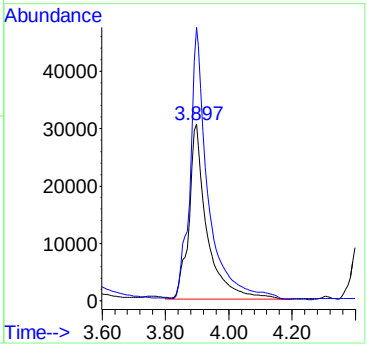

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18515.D
Acq On : 23 Jun 2016 15:53
Operator : MES
Sample : L16060927-02 827-DIOX
Misc : 1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 23 17:16:01 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

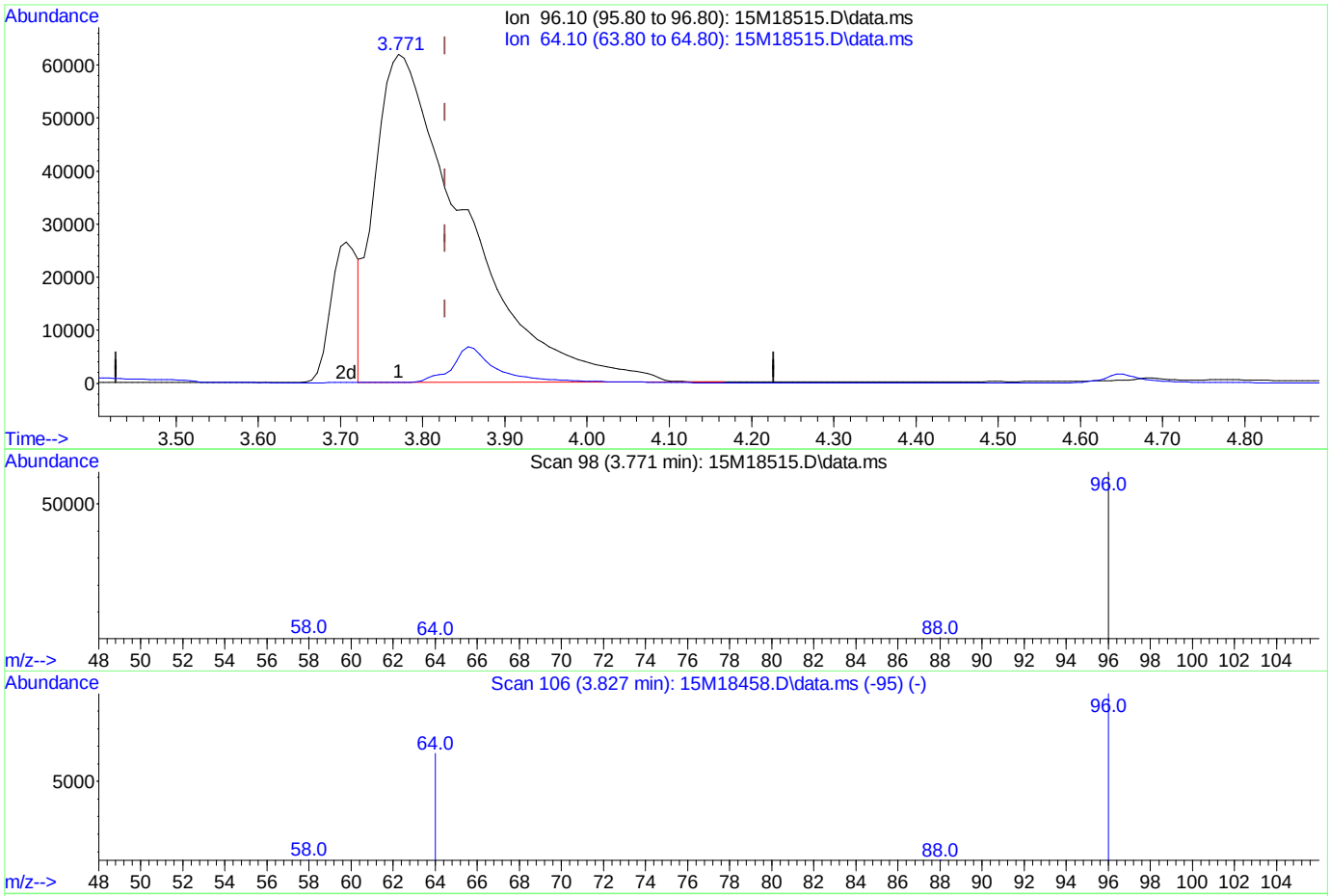

TIC: 15M18515.D\data.ms

(3) 1,4-Dioxane-d8 (S)

3.771min (-0.056) 21.96 ug/L

response 471929

Ion	Exp%	Act%
96.10	100.00	100.00
64.10	74.80	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18515.D
Acq On : 23 Jun 2016 15:53
Operator : MES
Sample : L16060927-02 827-DIOX
Misc : 1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 23 17:16:01 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

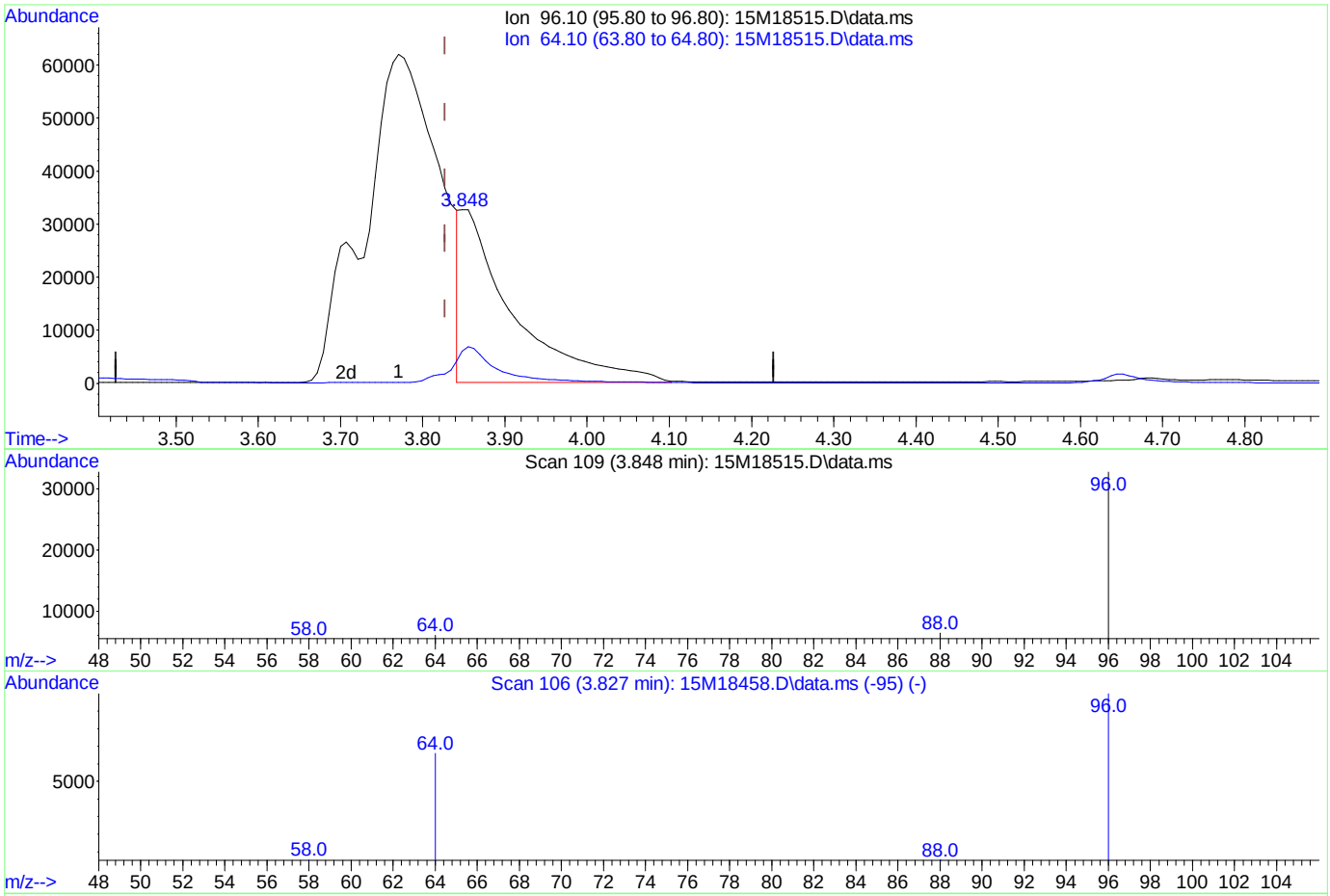

TIC: 15M18515.D\data.ms

(3) 1,4-Dioxane-d8 (S)

3.848min (+ 0.021) 6.65 ug/L mint

response 142971

Ion	Exp%	Act%
96.10	100.00	100.00
64.10	74.80	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

Analyst: 06/24/2016 12:00 Supervisor: 06/24/2016 14:34

#2 - Data system splits the peak incorrectly or integrates a false peak as a rider peak

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062516\
Data File : 15M18553.D
Acq On : 25 Jun 2016 12:46
Operator : MES
Sample : L16060927-02 10X 827-DIOX
Misc : 1,10
ALS Vial : 10 Sample Multiplier: 10

Quant Time: Jun 26 17:44:43 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.896	152	44449	1.0000	ug/mL	#-0.04
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.764	96	9927	5.4275	ug/L	-0.06
Spiked Amount 5.000			Recovery	=	108.60%	
4) Nitrobenzene-d5	7.404	82	289	0.0616	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	1.20%	
5) 2-Fluorobiphenyl	8.890	172	148	0.0125	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.20%	
6) p-Terphenyl-d14	12.085	244	5	0.0004	ug/L	-0.10
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.799	58	10910	0.8022	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062516\
Data File : 15M18553.D
Acq On : 25 Jun 2016 12:46
Operator : MES
Sample : L16060927-02 10X 827-DIOX
Misc : 1,10
ALS Vial : 10 Sample Multiplier: 10

Quant Time: Jun 26 17:44:43 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

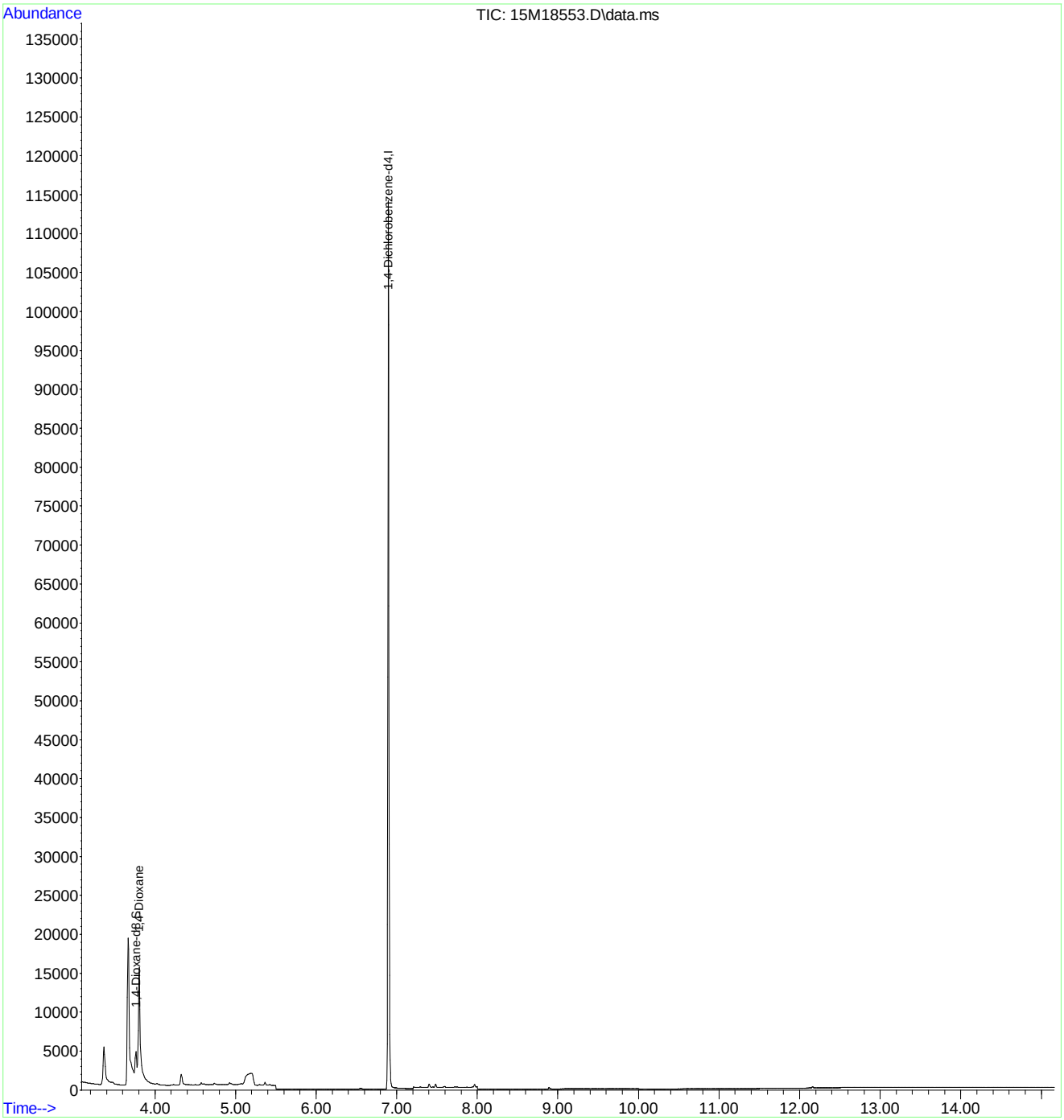

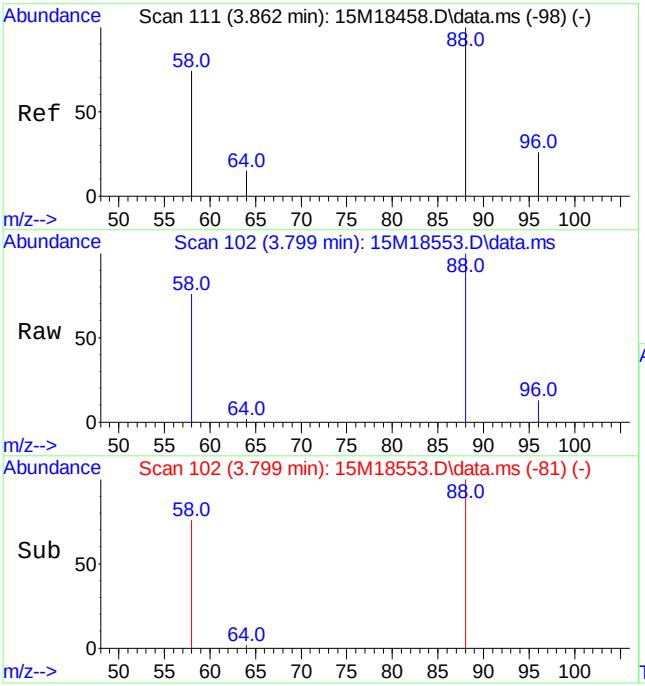

#2
1,4-Dioxane
Concen: 0.80 ug/L
RT: 3.799 min Scan# 102
Delta R.T. -0.063 min
Lab File: 15M18553.D
Acq: 25 Jun 2016 12:46

Tgt Ion: 58 Resp: 10910

Ion	Ratio	Lower	Upper
58	100		
88	149.2	103.1	240.7

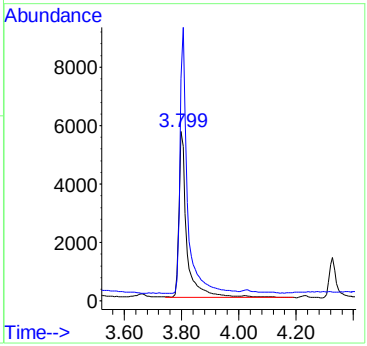

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18516.D
Acq On : 23 Jun 2016 16:15
Operator : MES
Sample : L16060927-03 827-DIOX
Misc : 1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 23 17:16:26 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	56209	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	43386	1.8758	ug/L	0.04
Spiked Amount 5.000			Recovery	=	37.60%	
4) Nitrobenzene-d5	7.431	82	3380	0.0569	ug/L	0.00
Spiked Amount 5.000			Recovery	=	1.20%	
5) 2-Fluorobiphenyl	8.919	172	1644	0.0110	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.20%	
6) p-Terphenyl-d14	12.166	244	2195	0.0152	ug/L	-0.02
Spiked Amount 5.000			Recovery	=	0.40%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18516.D
Acq On : 23 Jun 2016 16:15
Operator : MES
Sample : L16060927-03 827-DIOX
Misc : 1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 23 17:16:26 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

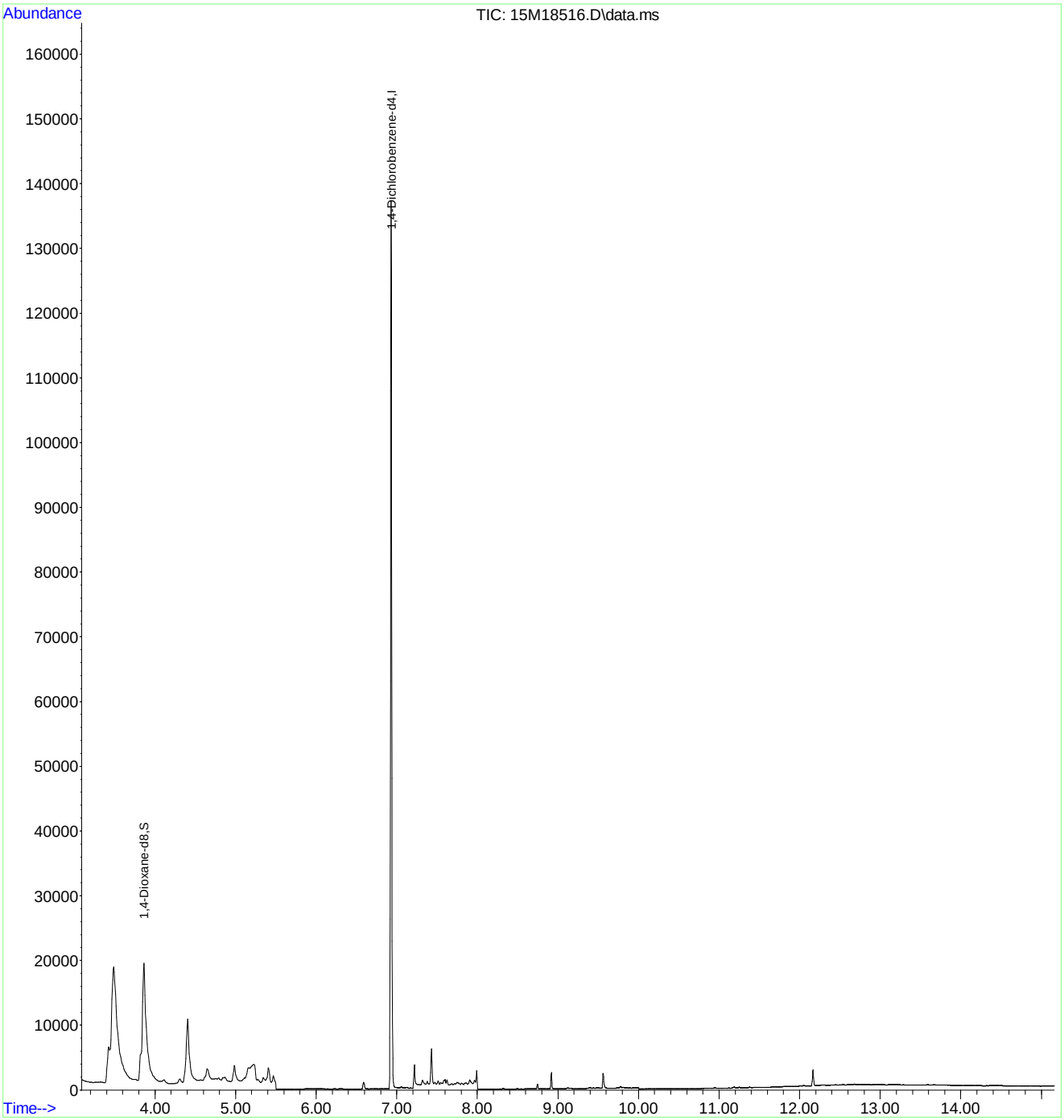

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18517.D
Acq On : 23 Jun 2016 16:38
Operator : MES
Sample : L16060927-04 827-DIOX
Misc : 1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 23 17:16:29 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	51577	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	42956	2.0240	ug/L	0.04
Spiked Amount 5.000			Recovery	=	40.40%	
4) Nitrobenzene-d5	7.216	82	1787	0.0328	ug/L	-0.21
Spiked Amount 5.000			Recovery	=	0.60%	
5) 2-Fluorobiphenyl	8.919	172	341	0.0025	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.166	244	2435	0.0184	ug/L	-0.02
Spiked Amount 5.000			Recovery	=	0.40%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18517.D
Acq On : 23 Jun 2016 16:38
Operator : MES
Sample : L16060927-04 827-DIOX
Misc : 1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 23 17:16:29 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

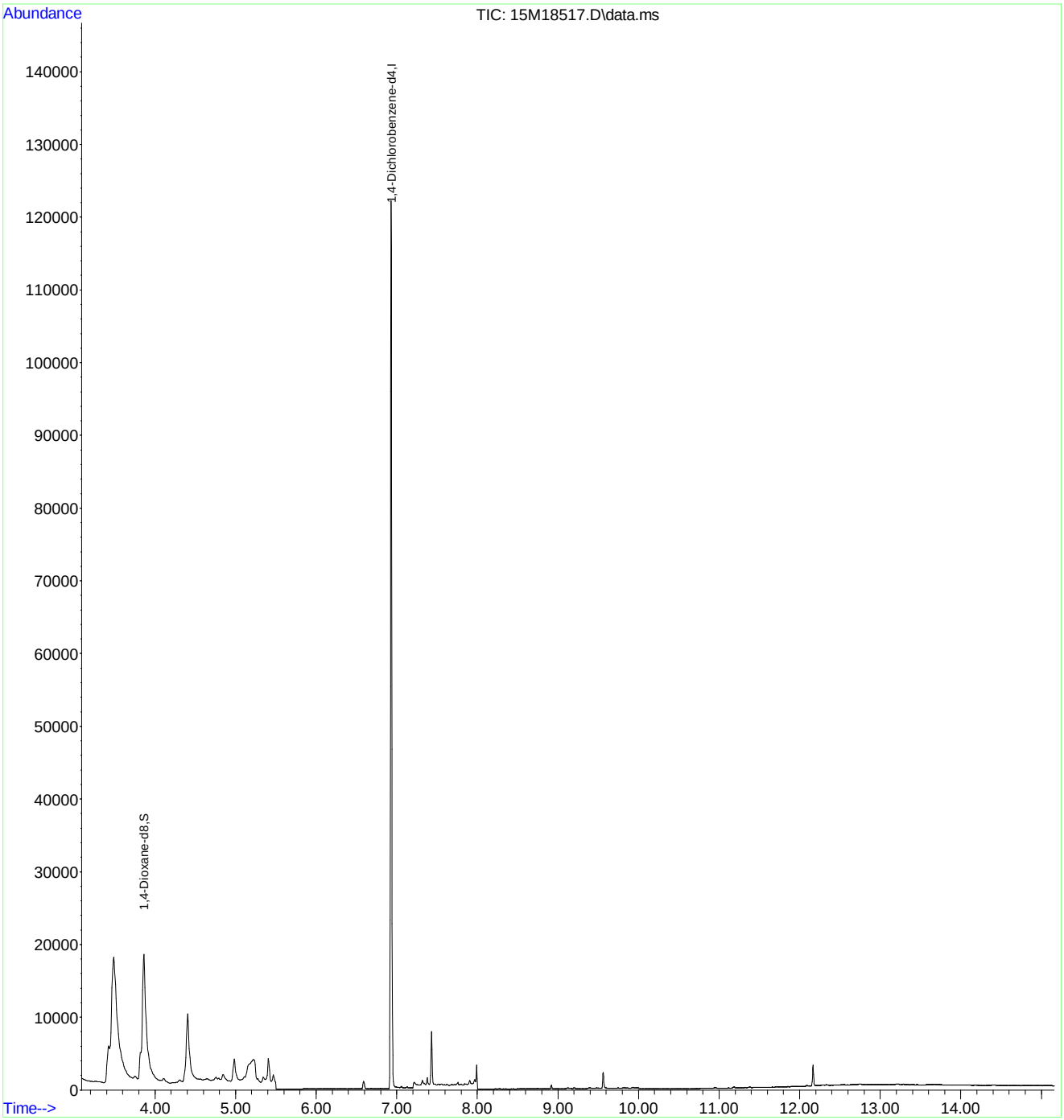

2.2.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 22 08:04:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	39637	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.827	96	82573	5.0627 ug/L	0.00
Spiked Amount 5.000			Recovery	= 101.20%	
4) Nitrobenzene-d5	7.431	82	223381	5.3353 ug/L	0.00
Spiked Amount 5.000			Recovery	= 106.80%	
5) 2-Fluorobiphenyl	8.922	172	533101	5.0444 ug/L	0.00
Spiked Amount 5.000			Recovery	= 100.80%	
6) p-Terphenyl-d14	12.184	244	519544	5.1003 ug/L	0.00
Spiked Amount 5.000			Recovery	= 102.00%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.862	58	60883	5.0202 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 22 08:04:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

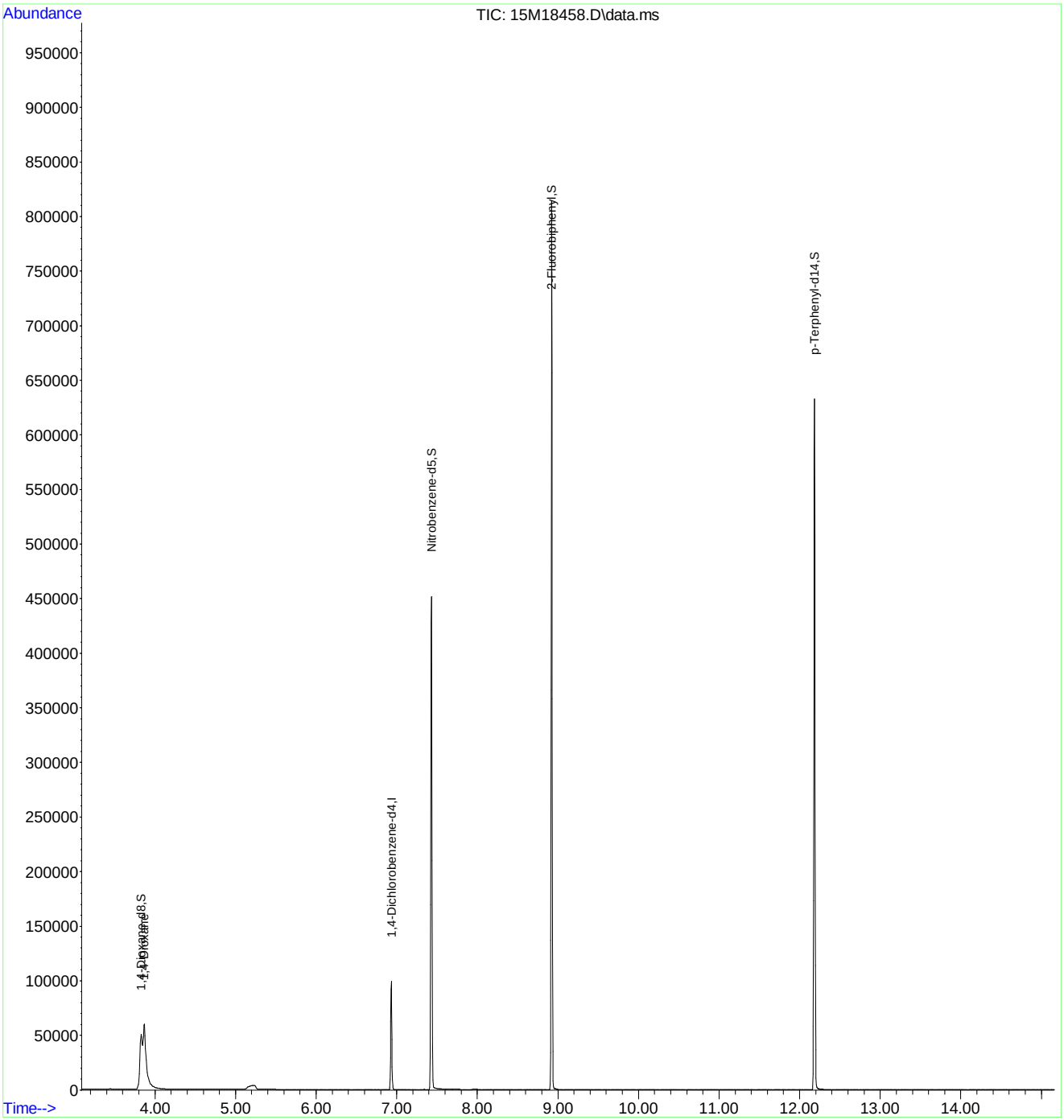

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18459.D
Acq On : 21 Jun 2016 10:27
Operator : MES
Sample : WG573501-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 22 08:04:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	43874	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	186767	10.3452	ug/L	0.00
Spiked Amount 5.000			Recovery = 207.00%			
4) Nitrobenzene-d5	7.431	82	527549	11.3834	ug/L	0.00
Spiked Amount 5.000			Recovery = 227.60%			
5) 2-Fluorobiphenyl	8.926	172	1199799	10.2565	ug/L	0.00
Spiked Amount 5.000			Recovery = 205.20%			
6) p-Terphenyl-d14	12.240	244	1225328	10.8672	ug/L	0.06
Spiked Amount 5.000			Recovery = 217.40%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	138820	10.3412	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18459.D
Acq On : 21 Jun 2016 10:27
Operator : MES
Sample : WG573501-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 22 08:04:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

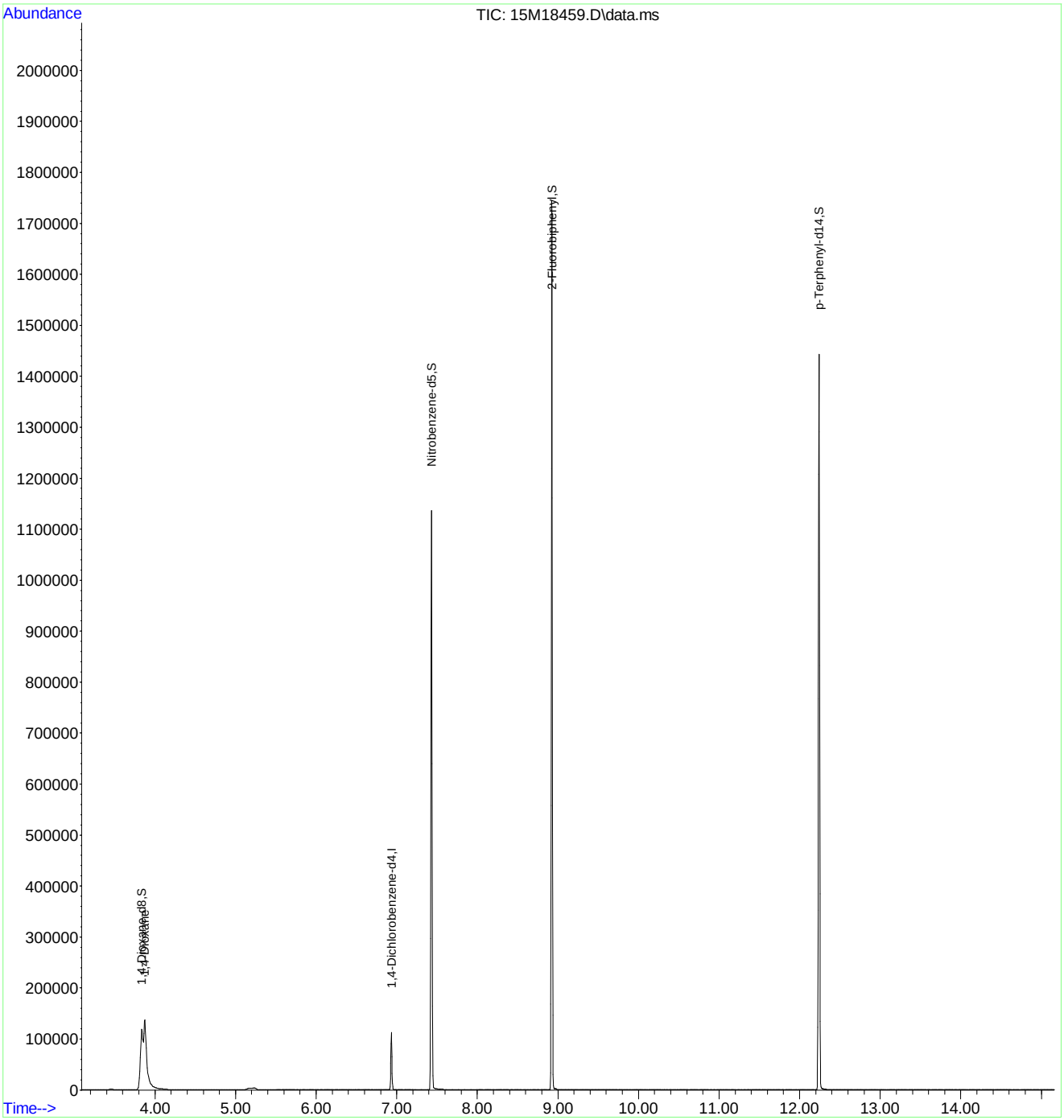

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18460.D
Acq On : 21 Jun 2016 10:49
Operator : MES
Sample : WG573501-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 22 08:04:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	44299	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.834	96	138833	7.6163 ug/L	0.00
Spiked Amount 5.000			Recovery	= 152.40%	
4) Nitrobenzene-d5	7.431	82	389810	8.3306 ug/L	0.00
Spiked Amount 5.000			Recovery	= 166.60%	
5) 2-Fluorobiphenyl	8.923	172	909050	7.6965 ug/L	0.00
Spiked Amount 5.000			Recovery	= 154.00%	
6) p-Terphenyl-d14	12.203	244	921380	8.0931 ug/L	0.02
Spiked Amount 5.000			Recovery	= 161.80%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.876	58	103182	7.6127 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18460.D
Acq On : 21 Jun 2016 10:49
Operator : MES
Sample : WG573501-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 22 08:04:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

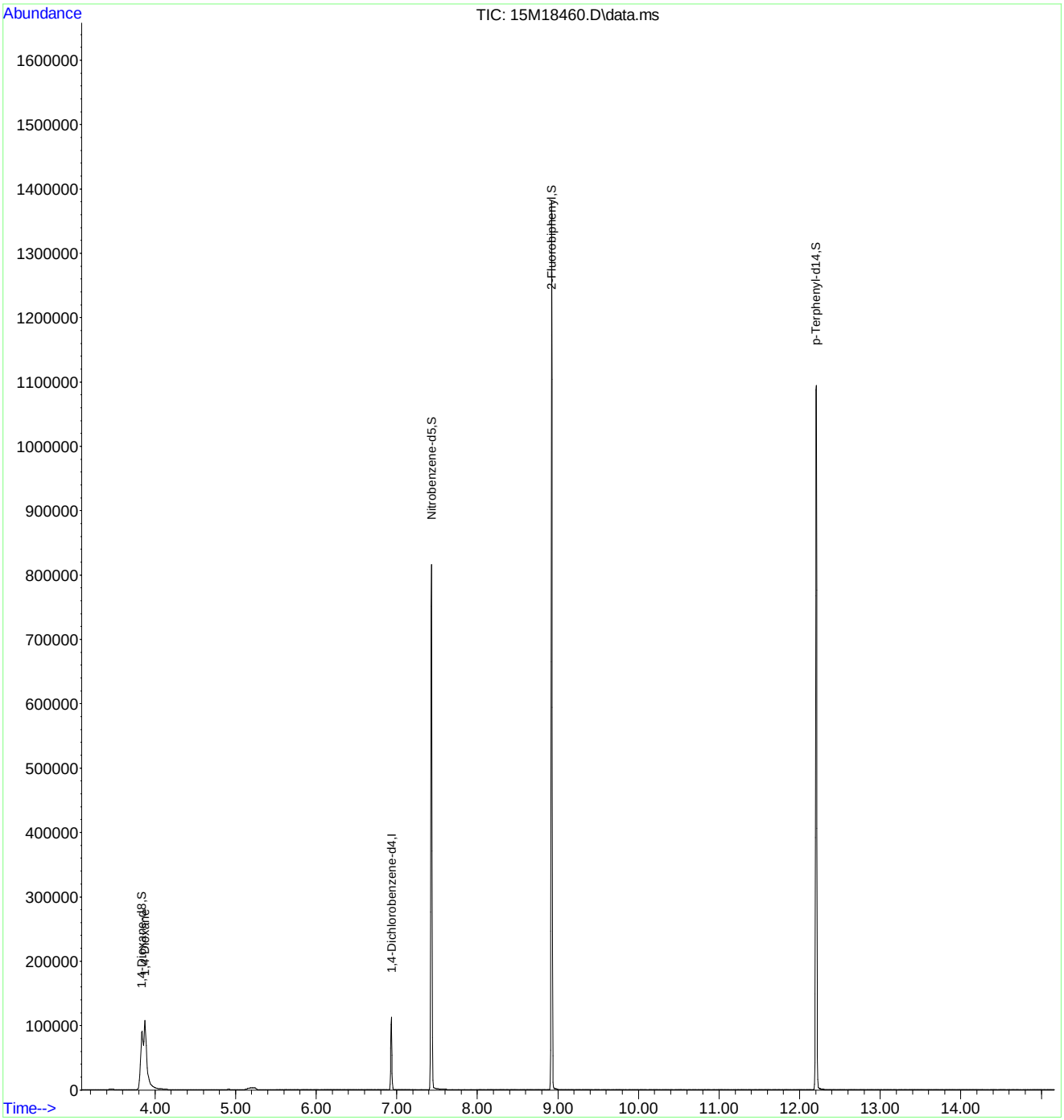

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18461.D
Acq On : 21 Jun 2016 11:12
Operator : MES
Sample : WG573501-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 22 08:04:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	35478	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.827	96	35630	2.4406	ug/L	0.00
Spiked Amount 5.000			Recovery = 48.80%			
4) Nitrobenzene-d5	7.431	82	88869	2.3714	ug/L	0.00
Spiked Amount 5.000			Recovery = 47.40%			
5) 2-Fluorobiphenyl	8.923	172	232500	2.4579	ug/L	0.00
Spiked Amount 5.000			Recovery = 49.20%			
6) p-Terphenyl-d14	12.199	244	218191	2.3930	ug/L	0.02
Spiked Amount 5.000			Recovery = 47.80%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.862	58	26333	2.4259	ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18461.D
Acq On : 21 Jun 2016 11:12
Operator : MES
Sample : WG573501-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 22 08:04:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

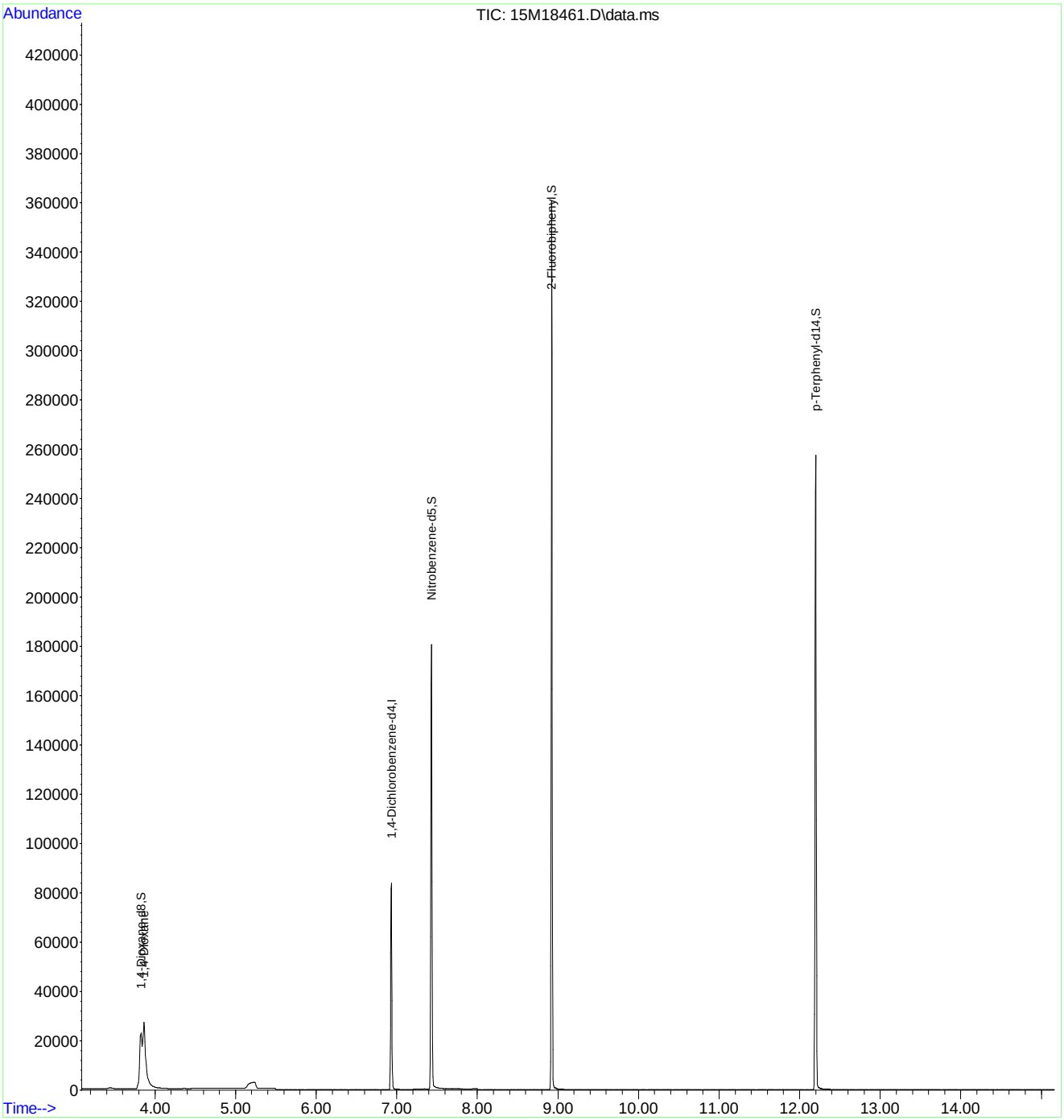

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18462.D
Acq On : 21 Jun 2016 11:34
Operator : MES
Sample : WG573501-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 22 08:04:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	44672	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.841	96	17660	0.9607	ug/L	0.01
Spiked Amount 5.000			Recovery	=	19.20%	
4) Nitrobenzene-d5	7.431	82	41409	0.8776	ug/L	0.00
Spiked Amount 5.000			Recovery	=	17.60%	
5) 2-Fluorobiphenyl	8.922	172	114491	0.9612	ug/L	0.00
Spiked Amount 5.000			Recovery	=	19.20%	
6) p-Terphenyl-d14	12.203	244	105713	0.9208	ug/L	0.02
Spiked Amount 5.000			Recovery	=	18.40%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.876	58	13250	0.9694	ug/L	82

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18462.D
Acq On : 21 Jun 2016 11:34
Operator : MES
Sample : WG573501-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 22 08:04:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

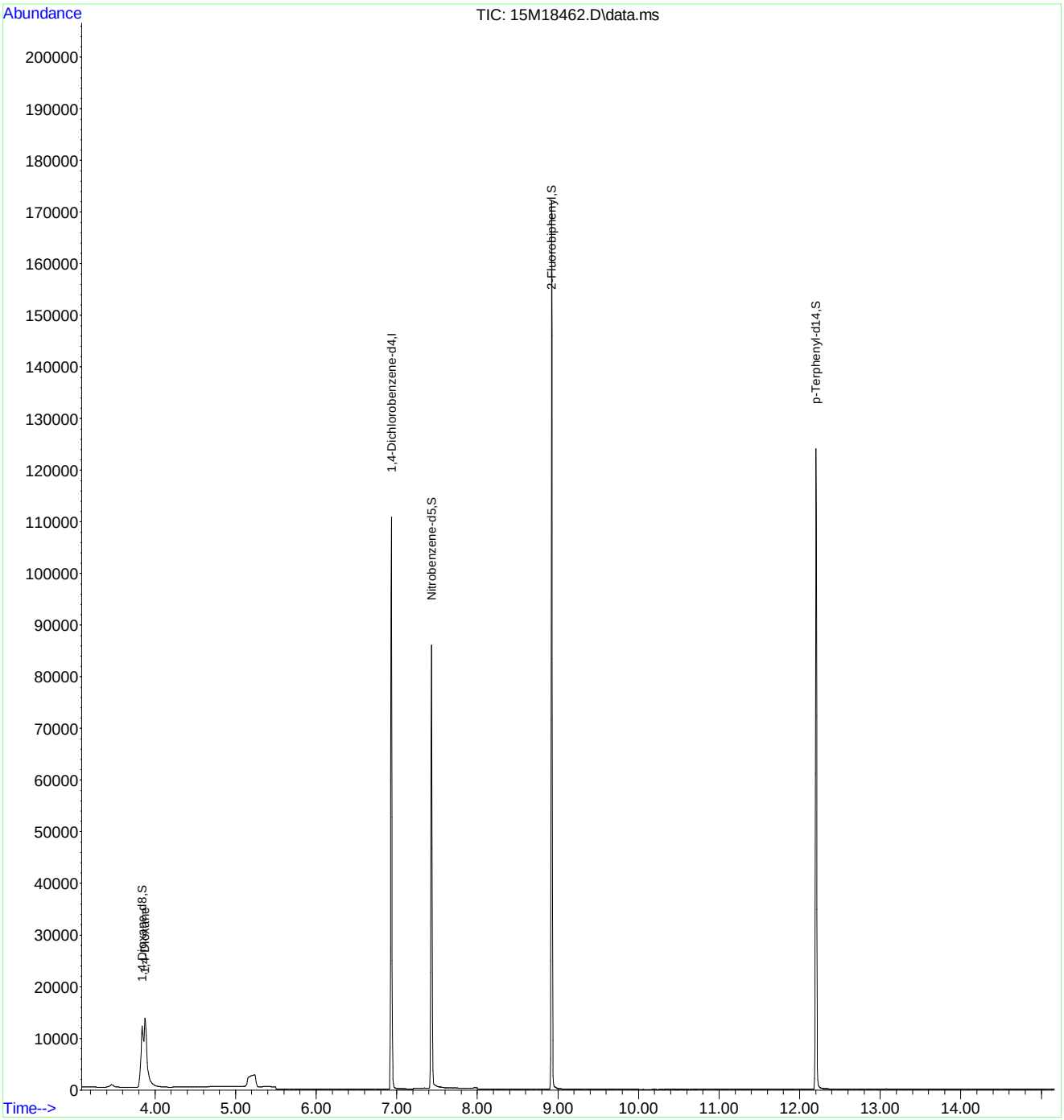

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18463.D
Acq On : 21 Jun 2016 11:57
Operator : MES
Sample : WG573501-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 22 08:04:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	45840	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.841	96	7629	0.4045	ug/L	0.01
Spiked Amount 5.000			Recovery	=	8.00%	
4) Nitrobenzene-d5	7.431	82	16604	0.3429	ug/L	0.00
Spiked Amount 5.000			Recovery	=	6.80%	
5) 2-Fluorobiphenyl	8.923	172	48617	0.3978	ug/L	0.00
Spiked Amount 5.000			Recovery	=	8.00%	
6) p-Terphenyl-d14	12.210	244	44097	0.3743	ug/L	0.03
Spiked Amount 5.000			Recovery	=	7.40%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.876	58	5650	0.4028	ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18463.D
Acq On : 21 Jun 2016 11:57
Operator : MES
Sample : WG573501-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 22 08:04:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

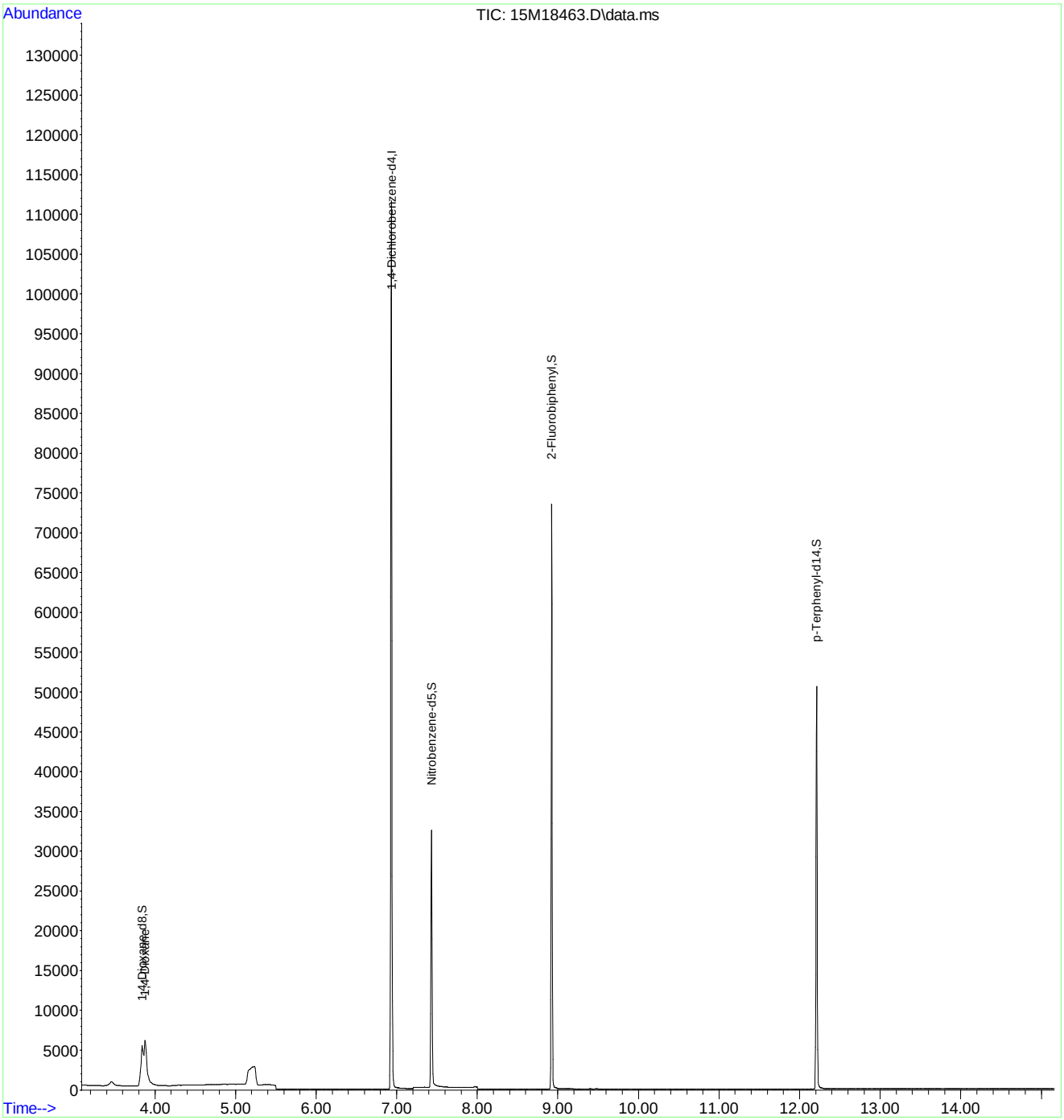

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	41944	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.792	96	22	0.0013	ug/L	-0.04
Spiked Amount 5.000			Recovery	=	0.00%	
4) Nitrobenzene-d5	7.436	82	56	0.0013	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
5) 2-Fluorobiphenyl	8.926	172	23	0.0002	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.214	244	128	0.0012	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	64750	5.0454	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

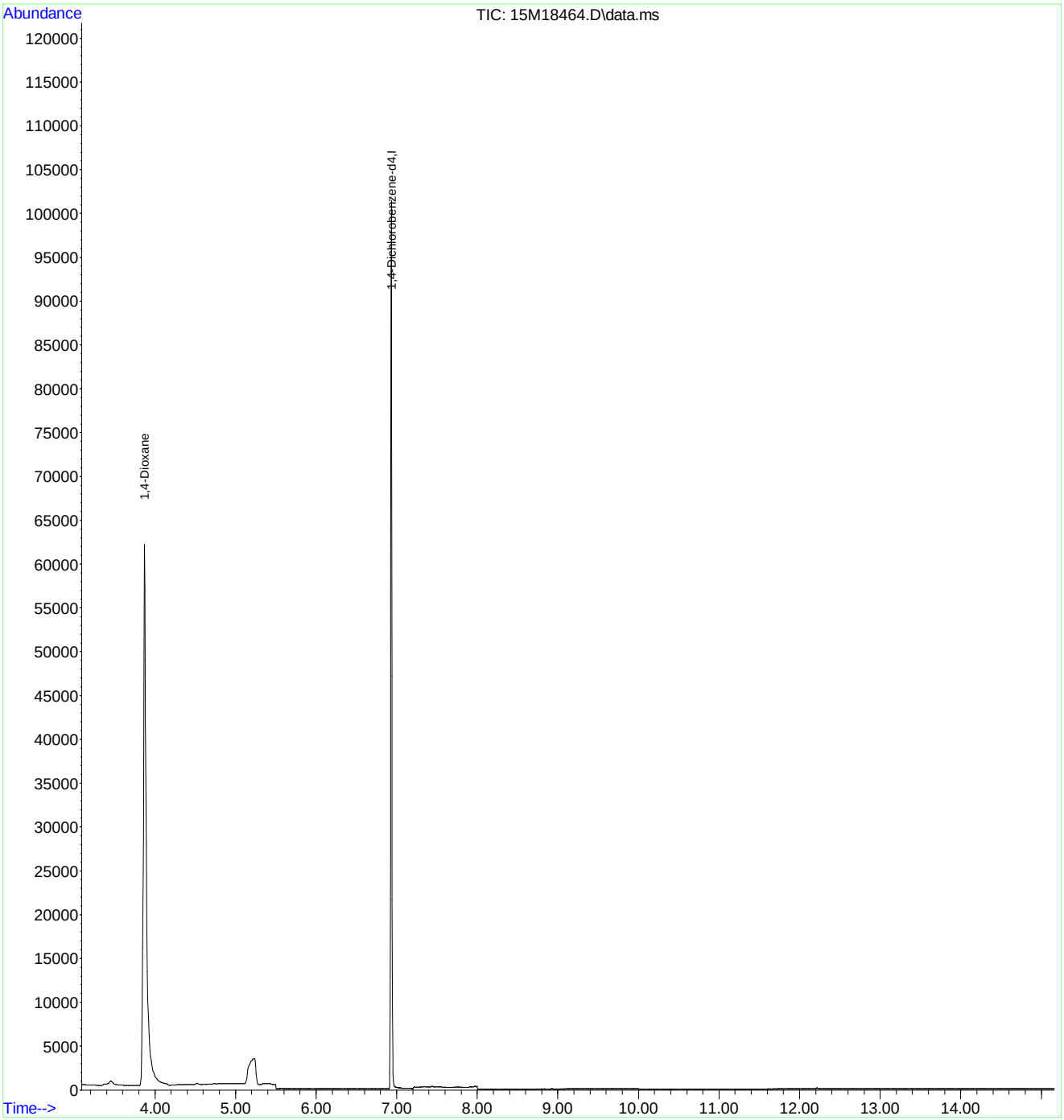

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	106	0.00
2	1,4-Dioxane	5.000	5.045	-0.9	106	0.00
3 S	1,4-Dioxane-d8	5.000	0.001	100.0#	0	-0.04
4 S	Nitrobenzene-d5	5.000	0.001	100.0#	0	0.00
5 S	2-Fluorobiphenyl	5.000	0.000	100.0#	0	0.00
6 S	p-Terphenyl-d14	5.000	0.001	100.0#	0	0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18510.D
Acq On : 23 Jun 2016 13:59
Operator : MES
Sample : WG573879-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 23 14:15:55 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.929	152	50565	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.848	96	96203	4.6237 ug/L	0.02
Spiked Amount 5.000			Recovery	= 92.40%	
4) Nitrobenzene-d5	7.426	82	280398	5.2498 ug/L	0.00
Spiked Amount 5.000			Recovery	= 105.00%	
5) 2-Fluorobiphenyl	8.919	172	664952	4.9322 ug/L	0.00
Spiked Amount 5.000			Recovery	= 98.60%	
6) p-Terphenyl-d14	12.155	244	665166	5.1186 ug/L	-0.03
Spiked Amount 5.000			Recovery	= 102.40%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.883	58	70119	4.5322 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18510.D
Acq On : 23 Jun 2016 13:59
Operator : MES
Sample : WG573879-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 23 14:15:55 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

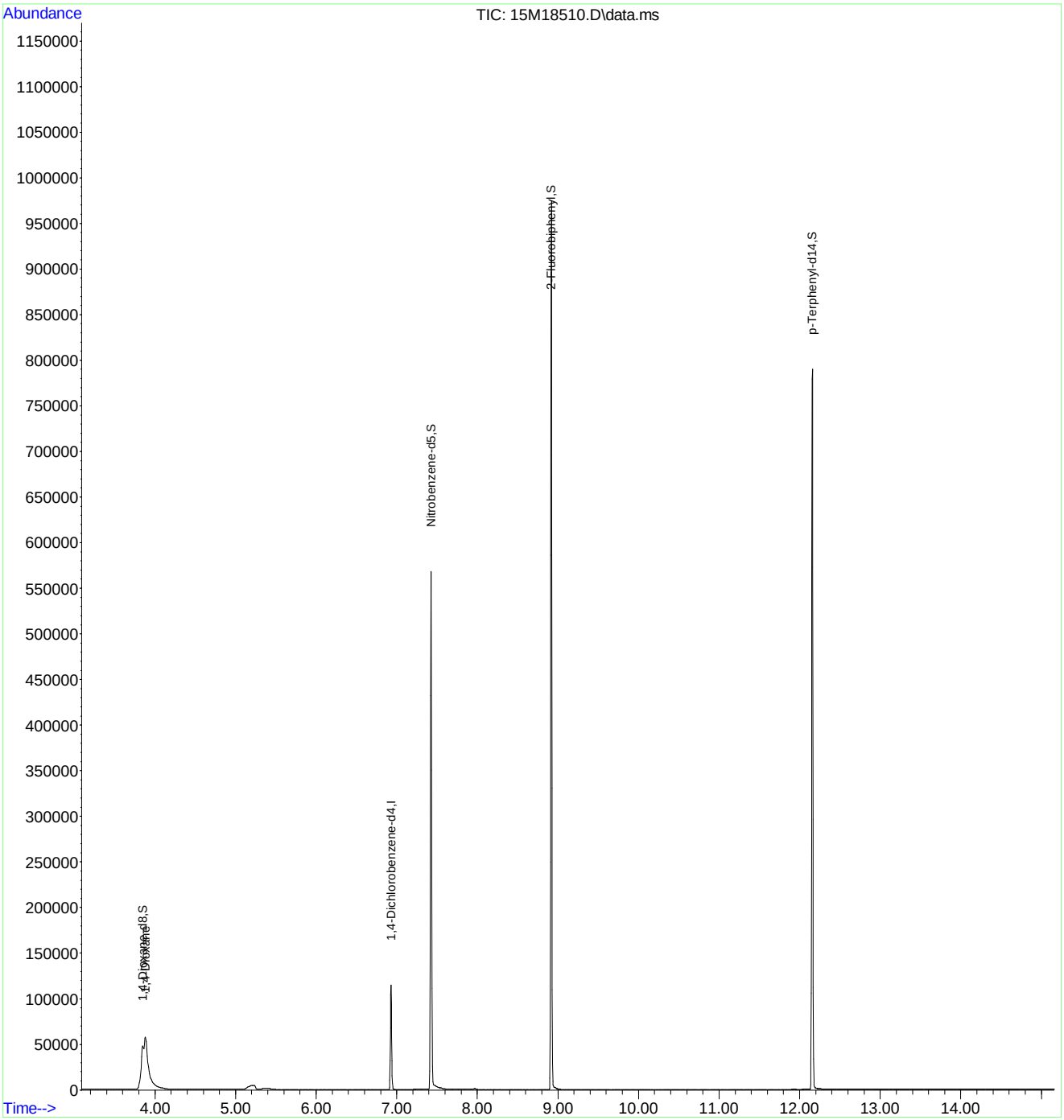

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18510.D
Acq On : 23 Jun 2016 13:59
Operator : MES
Sample : WG573879-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 23 14:15:55 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	128	0.00
2	1,4-Dioxane	0.306	0.277	9.5	115	0.02
3 S	1,4-Dioxane-d8	0.411	0.381	7.3	117	0.02
4 S	Nitrobenzene-d5	1.056	1.109	-5.0	126	0.00
5 S	2-Fluorobiphenyl	2.666	2.630	1.4	125	0.00
6 S	p-Terphenyl-d14	2.570	2.631	-2.4	128	-0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18510.D
Acq On : 23 Jun 2016 13:59
Operator : MES
Sample : WG573879-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 23 14:15:55 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	128	0.00
2	1,4-Dioxane	5.000	4.532	9.4	115	0.02
3 S	1,4-Dioxane-d8	5.000	4.624	7.5	117	0.02
4 S	Nitrobenzene-d5	5.000	5.250	-5.0	126	0.00
5 S	2-Fluorobiphenyl	5.000	4.932	1.4	125	0.00
6 S	p-Terphenyl-d14	5.000	5.119	-2.4	128	-0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062516\
Data File : 15M18545.D
Acq On : 25 Jun 2016 9:44
Operator : MES
Sample : WG574029-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 25 10:02:11 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.900	152	49570	1.0000 ug/mL	#-0.03
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.820	96	86328	4.2323 ug/L	0.00
Spiked Amount 5.000			Recovery	= 84.60%	
4) Nitrobenzene-d5	7.399	82	272067	5.1960 ug/L	-0.03
Spiked Amount 5.000			Recovery	= 104.00%	
5) 2-Fluorobiphenyl	8.889	172	614471	4.6492 ug/L	-0.03
Spiked Amount 5.000			Recovery	= 93.00%	
6) p-Terphenyl-d14	12.133	244	671949	5.2746 ug/L	-0.05
Spiked Amount 5.000			Recovery	= 105.40%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.855	58	63262	4.1711 ug/L	89

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062516\
Data File : 15M18545.D
Acq On : 25 Jun 2016 9:44
Operator : MES
Sample : WG574029-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 25 10:02:11 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

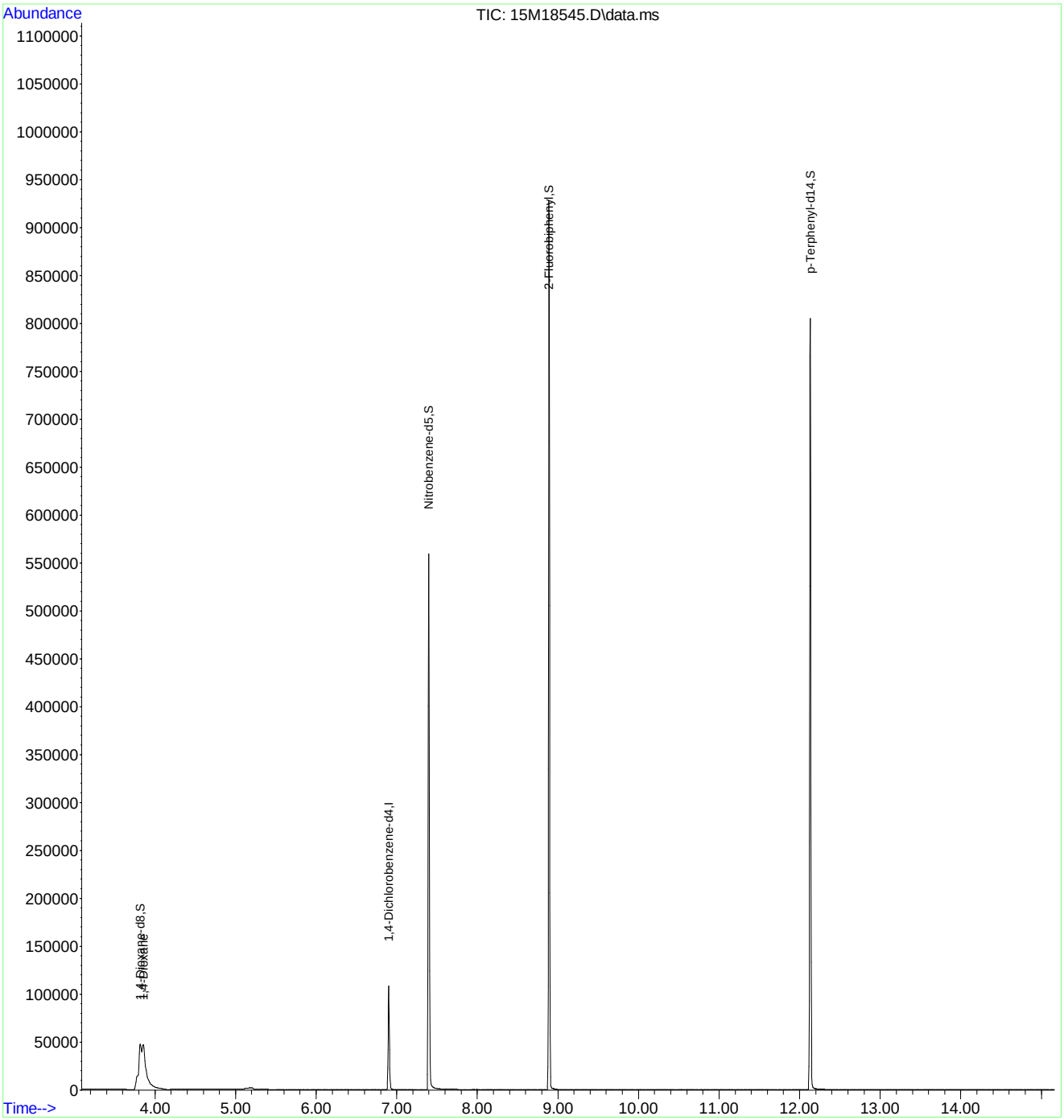

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062516\
Data File : 15M18545.D
Acq On : 25 Jun 2016 9:44
Operator : MES
Sample : WG574029-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 25 10:02:11 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	125	-0.03
2	1,4-Dioxane	0.306	0.255	16.7	104	0.00
3 S	1,4-Dioxane-d8	0.411	0.348	15.3	105	0.00
4 S	Nitrobenzene-d5	1.056	1.098	-4.0	122	-0.03
5 S	2-Fluorobiphenyl	2.666	2.479	7.0	115	-0.03
6 S	p-Terphenyl-d14	2.570	2.711	-5.5	129	-0.05

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062516\
Data File : 15M18545.D
Acq On : 25 Jun 2016 9:44
Operator : MES
Sample : WG574029-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 25 10:02:11 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	125	-0.03
2	1,4-Dioxane	5.000	4.171	16.6	104	0.00
3 S	1,4-Dioxane-d8	5.000	4.232	15.4	105	0.00
4 S	Nitrobenzene-d5	5.000	5.196	-3.9	122	-0.03
5 S	2-Fluorobiphenyl	5.000	4.649	7.0	115	-0.03
6 S	p-Terphenyl-d14	5.000	5.275	-5.5	129	-0.05

(#) = Out of Range SPCC's out = 0 CCC's out = 0

2.2.1.5 Raw QC Data

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

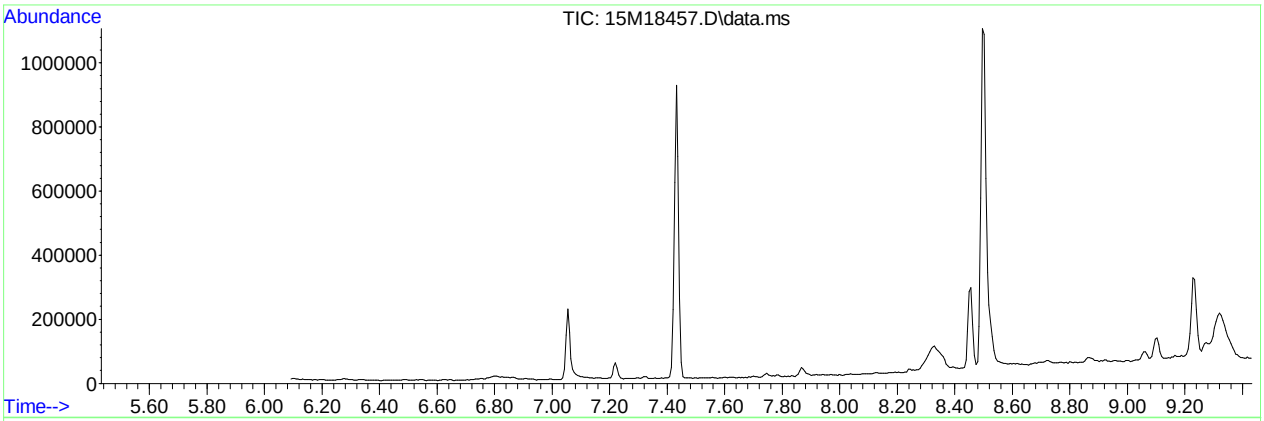

AutoFind: Scans 234, 235, 236; Background Corrected with Scan 228

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	38.8	34488	PASS
68	69	0.00	2	1.4	500	PASS
69	198	0.00	100	41.4	36833	PASS
70	69	0.00	2	0.5	172	PASS
127	198	40	60	51.9	46131	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	88880	PASS
199	198	5	9	6.7	5918	PASS
275	198	10	30	24.9	22090	PASS
365	198	1	100	2.7	2358	PASS
441	443	0.01	100	75.7	9586	PASS
442	198	40	100	73.4	65261	PASS
443	442	17	23	19.4	12659	PASS

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

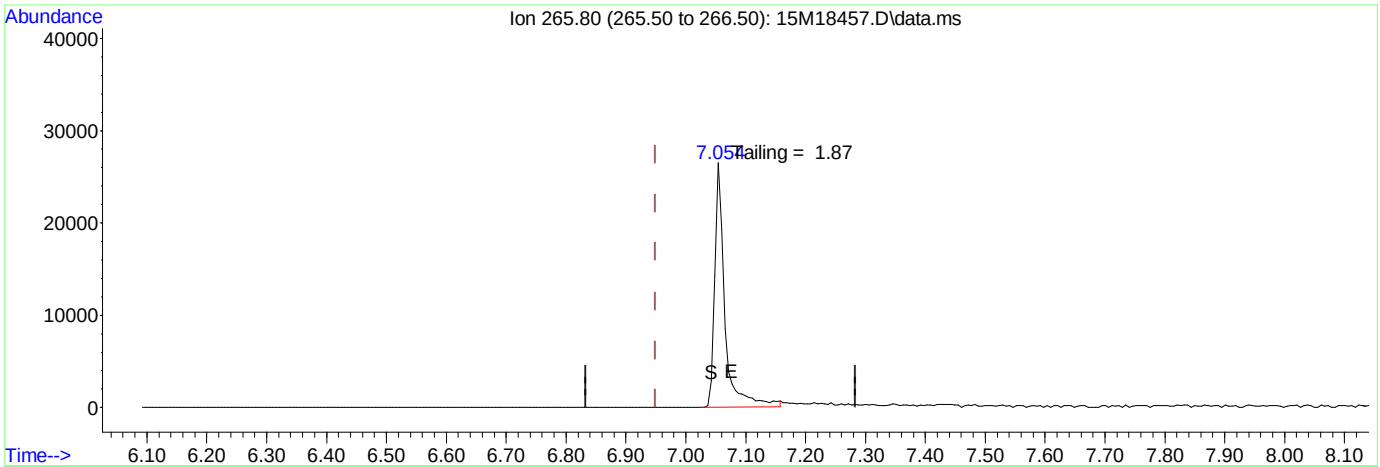

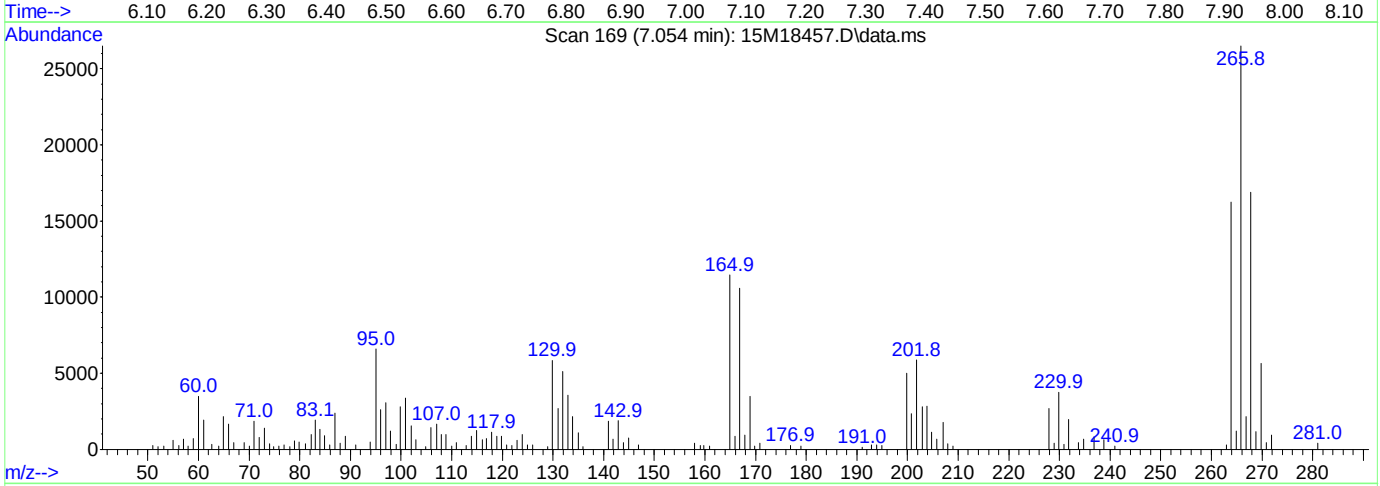

TIC: 15M18457.D\data.ms

(1) Pentachlorophenol

7.054min (+ 0.105) 0.00 ug/ml

response 30738

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

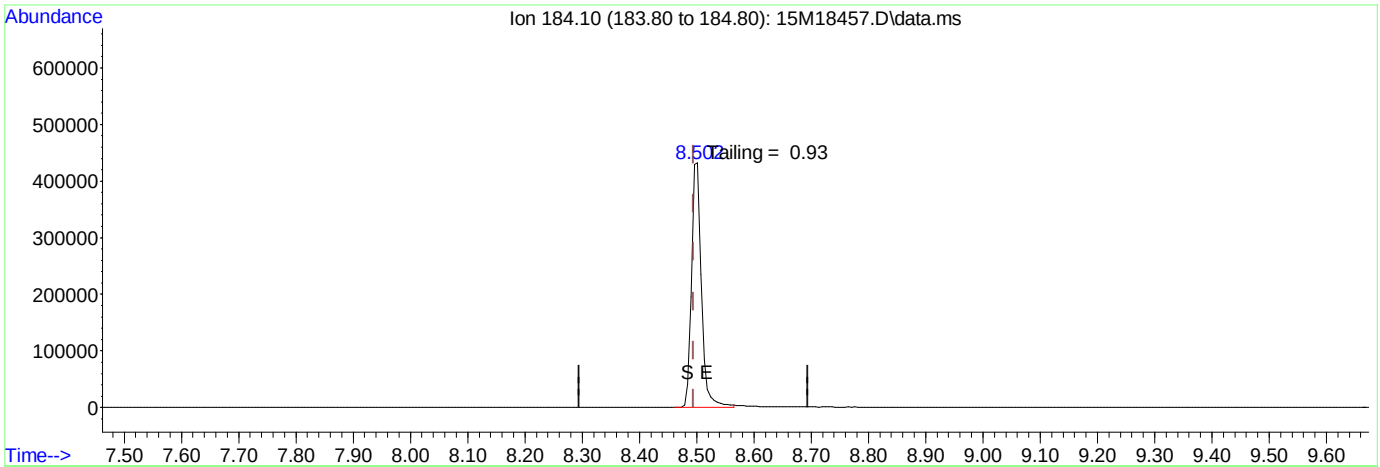

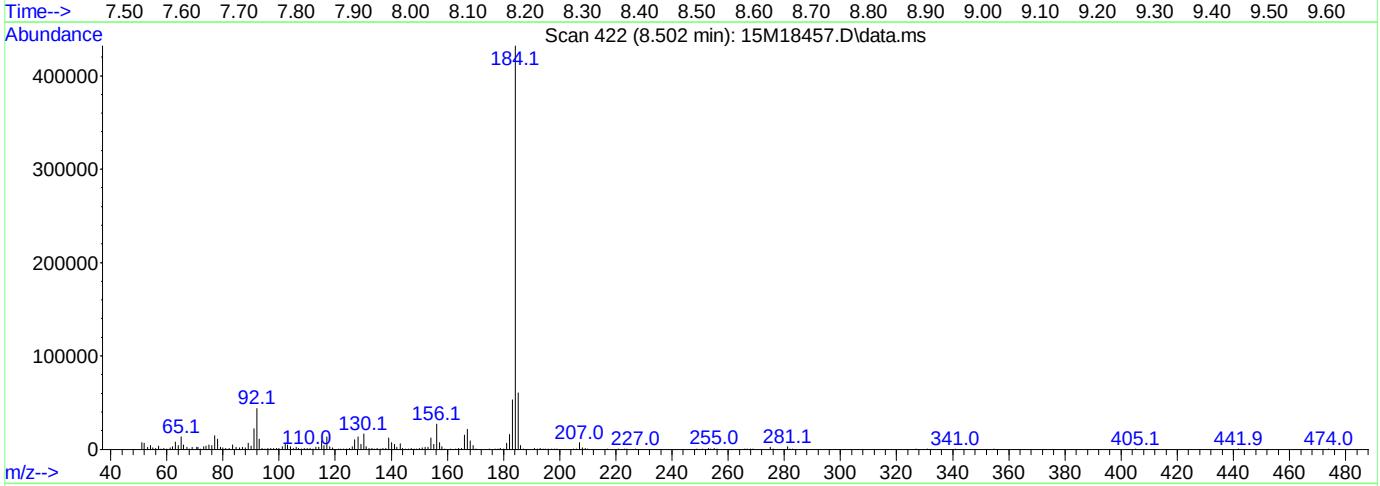

TIC: 15M18457.D\data.ms

(2) Benzidine

8.502min (+ 0.008) 0.00 ug/ml

response 532770

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

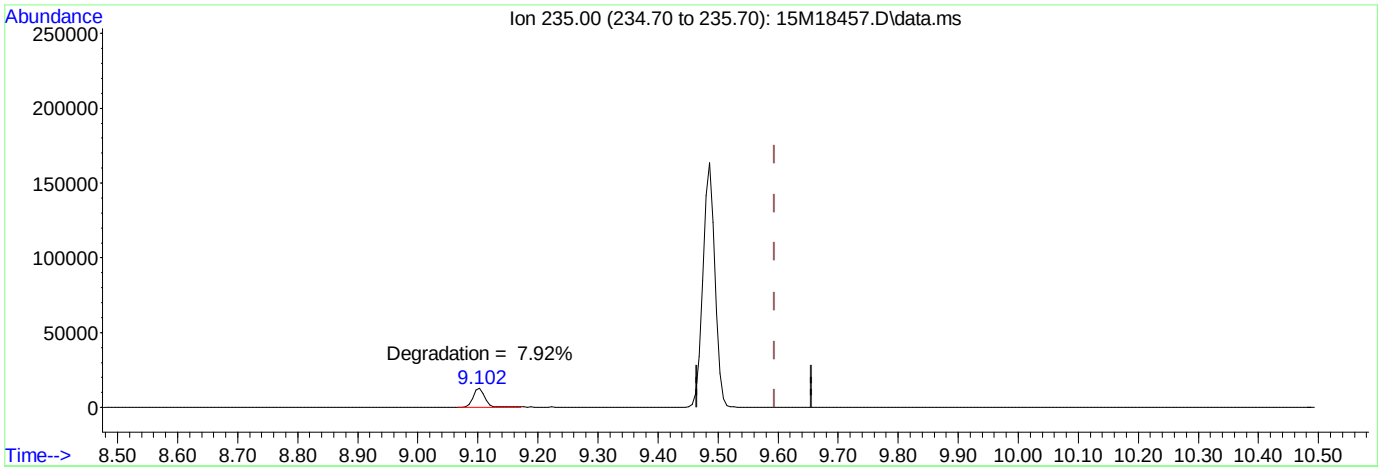

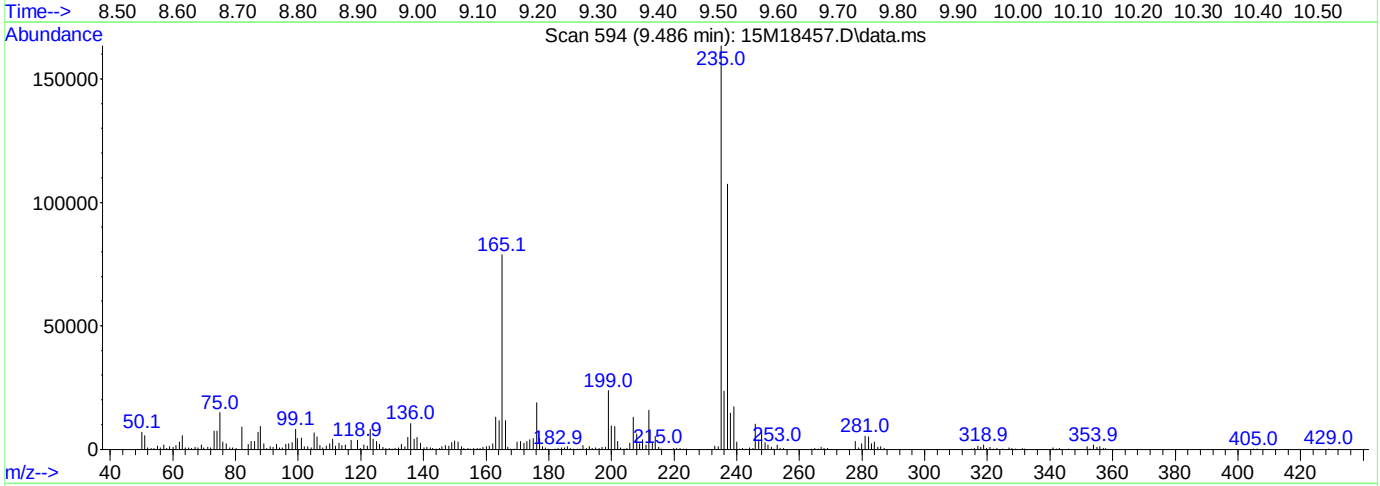

TIC: 15M18457.D\data.ms

(3) DDT

9.486min (-0.108) 0.00 ug/ml

response 180187

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18509.D
Acq On : 23 Jun 2016 13:42
Operator : MES
Sample : WG573879-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

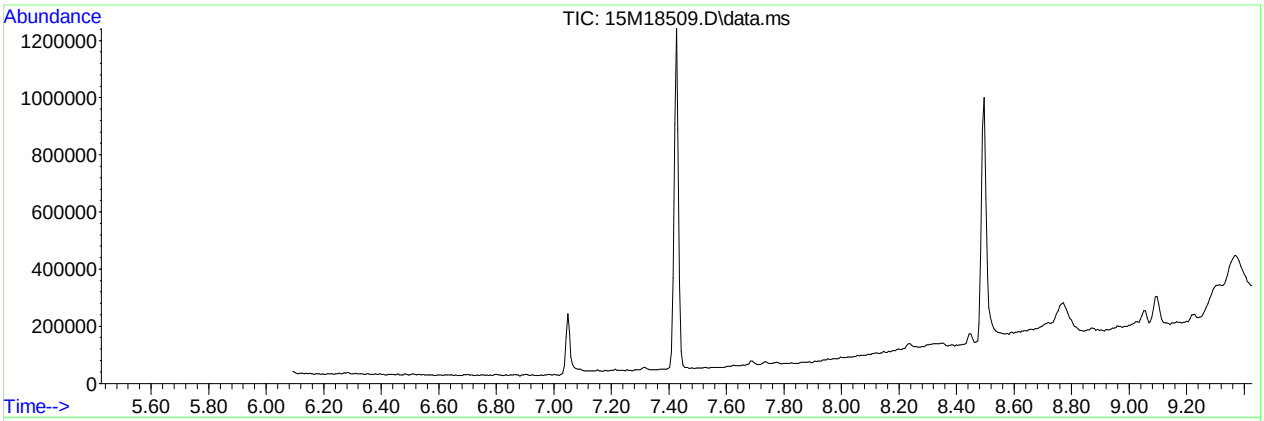

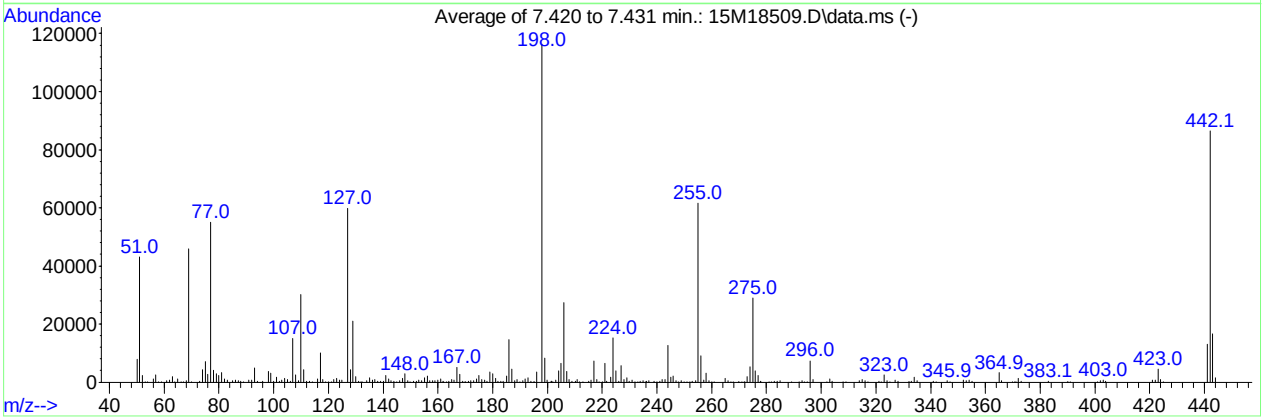

AutoFind: Scans 233, 234, 235; Background Corrected with Scan 227

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	37.0	43111	PASS
68	69	0.00	2	1.1	506	PASS
69	198	0.00	100	39.4	45795	PASS
70	69	0.00	2	0.2	72	PASS
127	198	40	60	51.3	59752	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	116364	PASS
199	198	5	9	7.1	8249	PASS
275	198	10	30	24.9	28968	PASS
365	198	1	100	2.8	3278	PASS
441	443	0.01	100	79.2	13093	PASS
442	198	40	100	74.3	86464	PASS
443	442	17	23	19.1	16541	PASS

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18509.D
Acq On : 23 Jun 2016 13:42
Operator : MES
Sample : WG573879-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 23 13:53:21 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

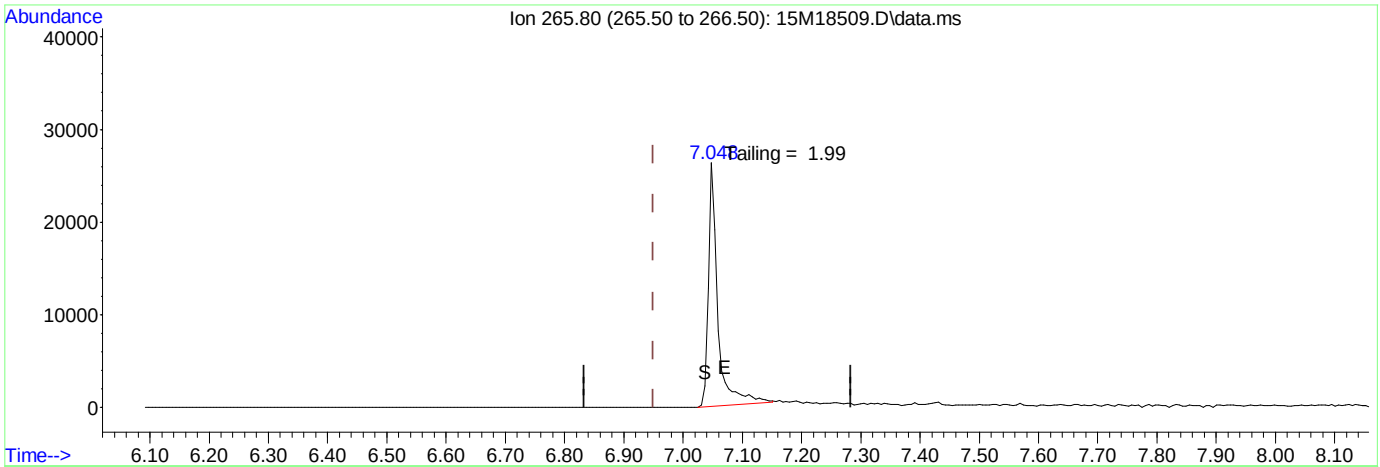

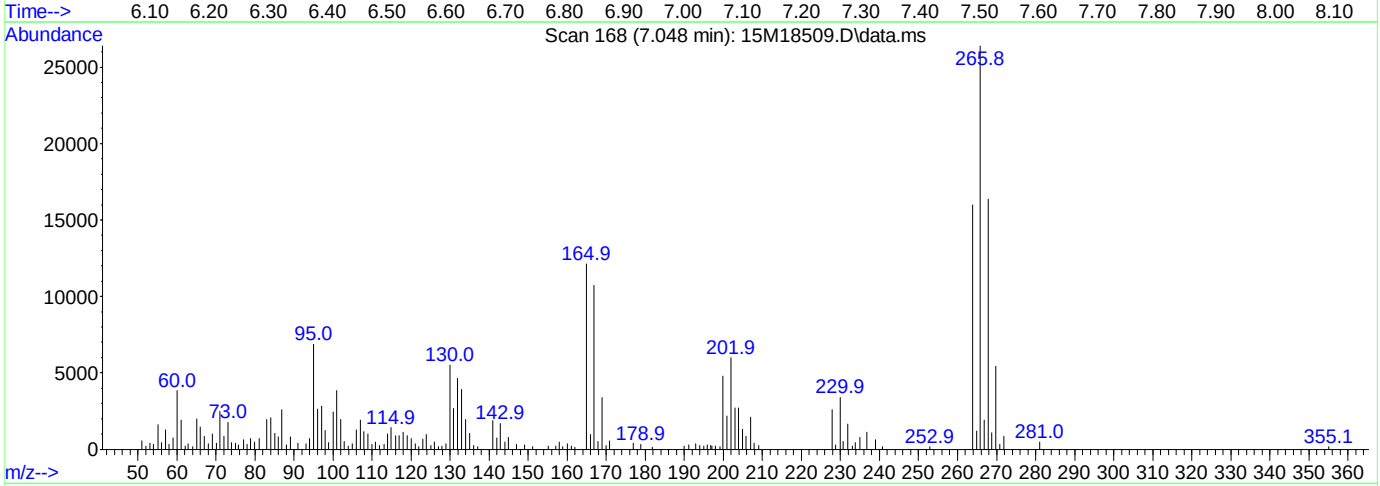

TIC: 15M18509.D\data.ms

(1) Pentachlorophenol

7.048min (+ 0.099) 0.00 ug/ml

response 32081

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18509.D
Acq On : 23 Jun 2016 13:42
Operator : MES
Sample : WG573879-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 23 13:53:21 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

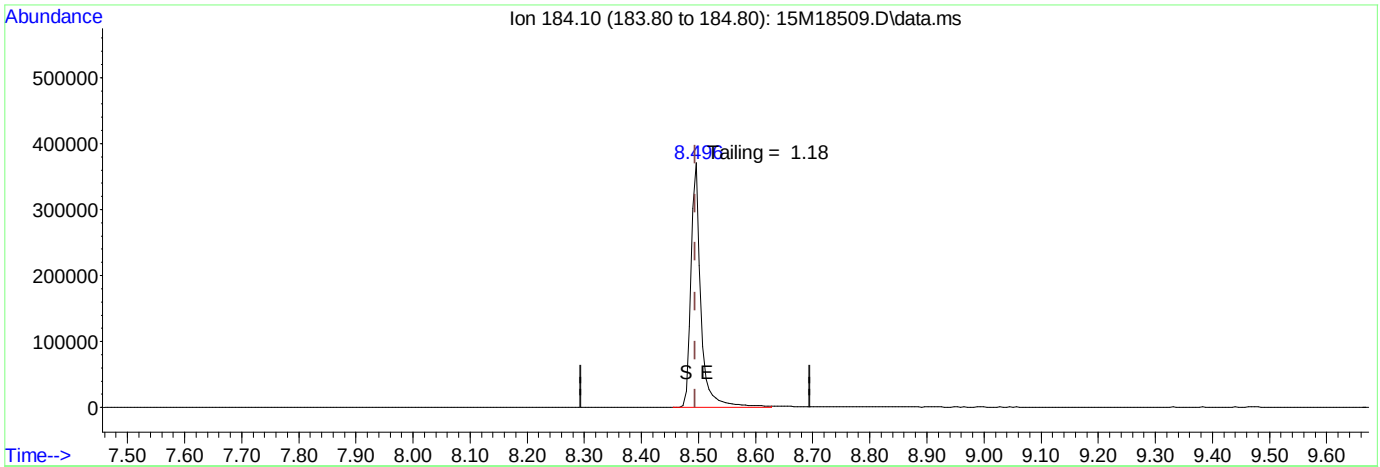

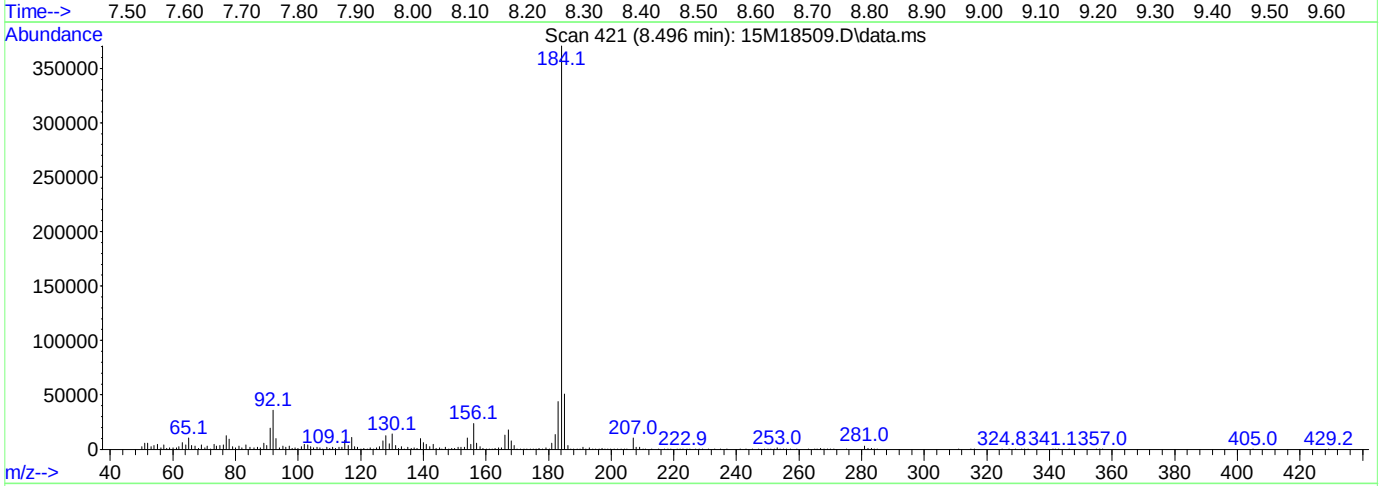

TIC: 15M18509.D\data.ms

(2) Benzidine

8.496min (+ 0.002) 0.00 ug/ml

response 452358

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18509.D
Acq On : 23 Jun 2016 13:42
Operator : MES
Sample : WG573879-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 23 13:53:21 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

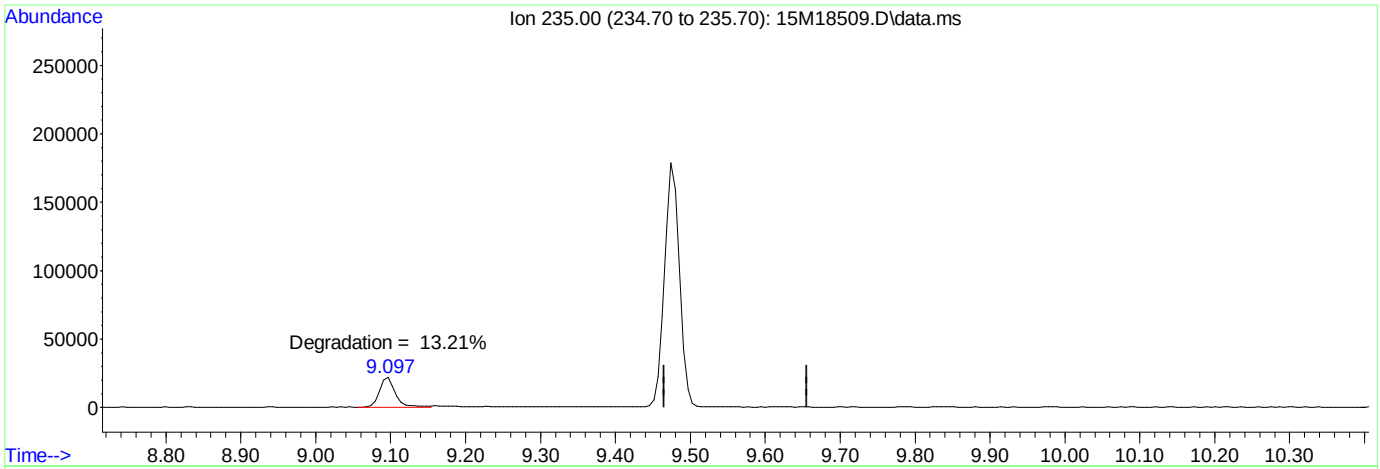

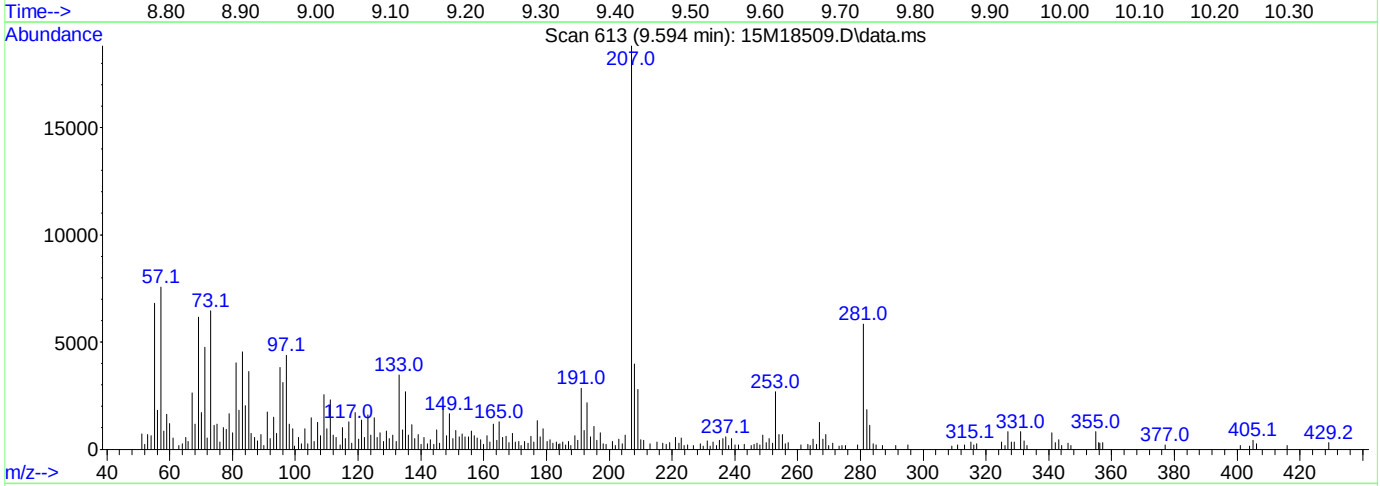

TIC: 15M18509.D\data.ms

(3) DDT

9.594min (-9.594) 0.00 ug/ml

response 0

Ion	Exp%	Act%
235.00	100.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062516\
Data File : 15M18544.D
Acq On : 25 Jun 2016 9:27
Operator : MES
Sample : WG574029-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

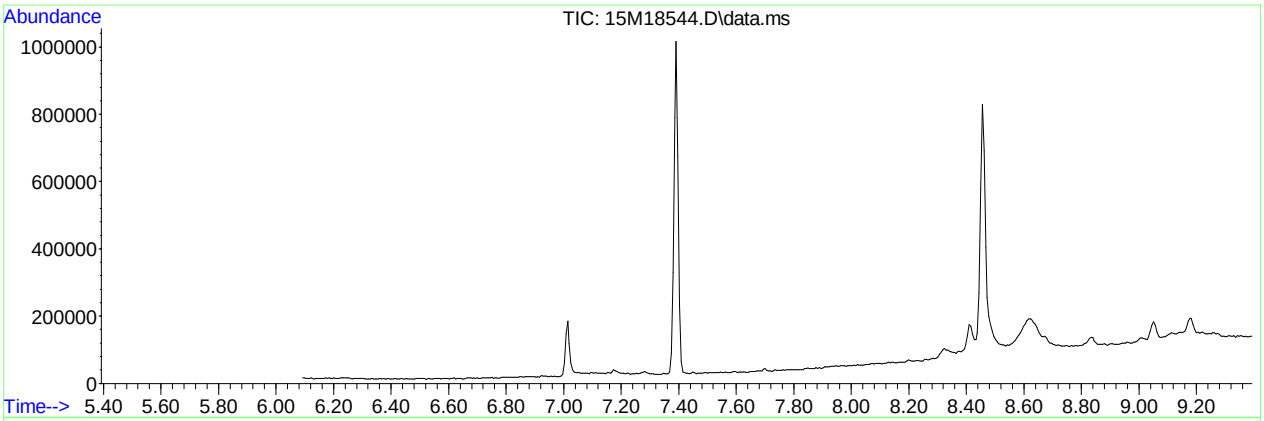

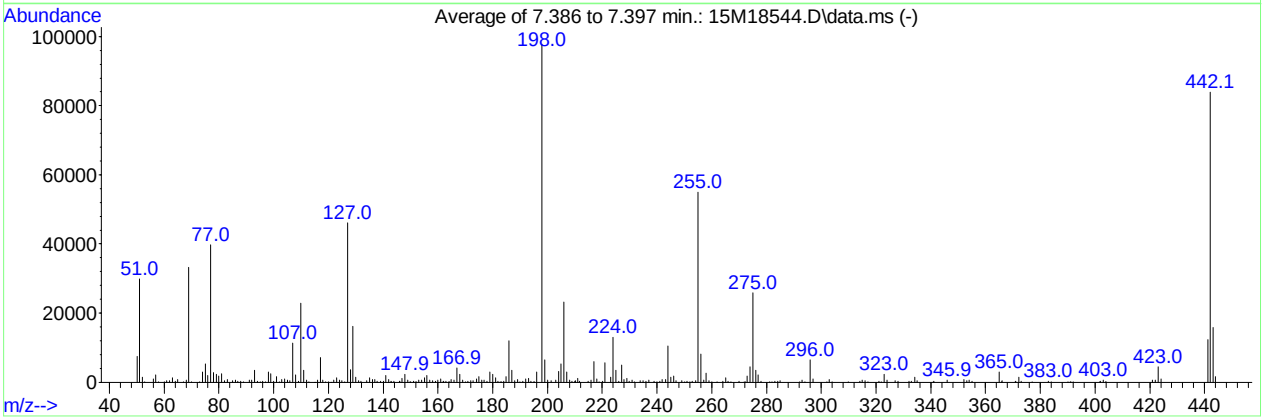

AutoFind: Scans 227, 228, 229; Background Corrected with Scan 221

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	30.5	29885	PASS
68	69	0.00	2	1.7	556	PASS
69	198	0.00	100	33.9	33149	PASS
70	69	0.00	2	0.5	158	PASS
127	198	40	60	47.2	46146	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	97832	PASS
199	198	5	9	6.6	6499	PASS
275	198	10	30	26.5	25877	PASS
365	198	1	100	2.9	2871	PASS
441	443	0.01	100	78.3	12355	PASS
442	198	40	100	85.7	83872	PASS
443	442	17	23	18.8	15788	PASS

Data Path : C:\msdchem\1\data\062516\
Data File : 15M18544.D
Acq On : 25 Jun 2016 9:27
Operator : MES
Sample : WG574029-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 25 09:38:05 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

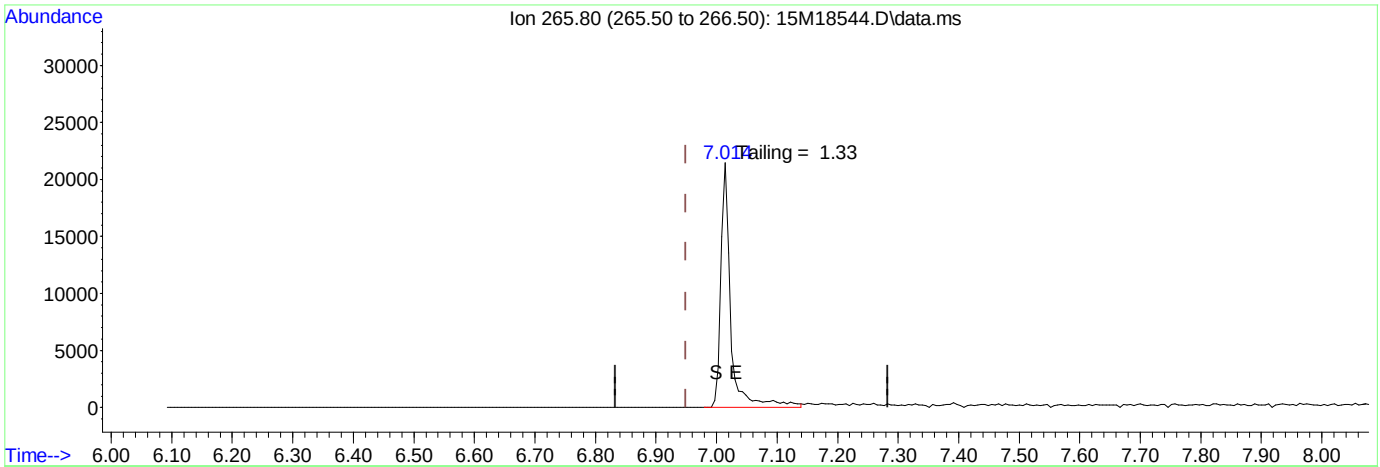

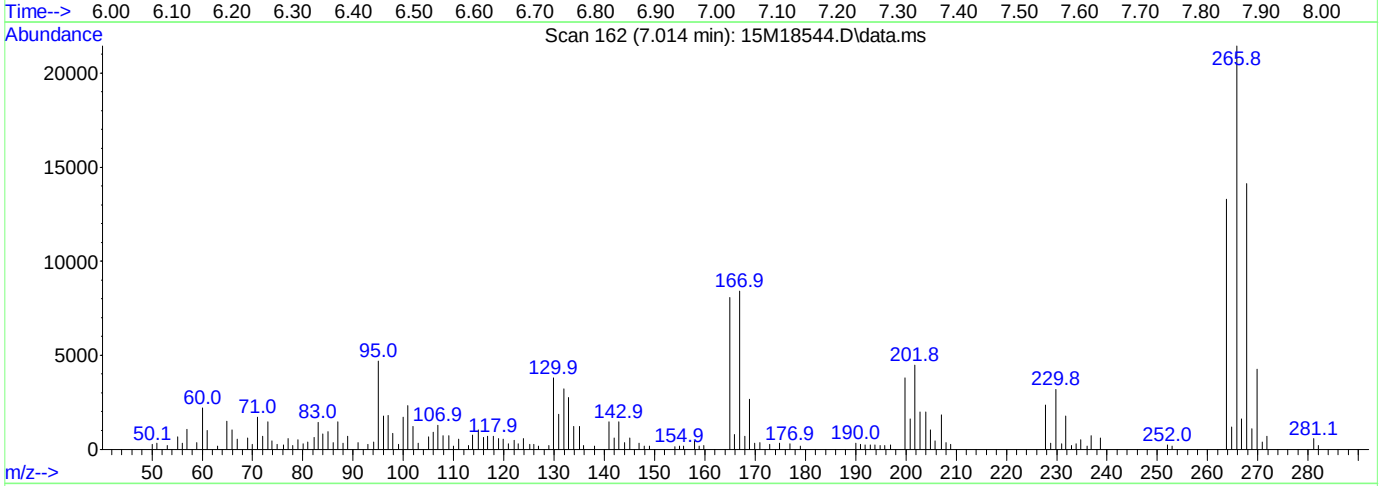

TIC: 15M18544.D\data.ms

(1) Pentachlorophenol

7.014min (+ 0.065) 0.00 ug/ml

response 23506

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062516\
Data File : 15M18544.D
Acq On : 25 Jun 2016 9:27
Operator : MES
Sample : WG574029-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 25 09:38:05 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

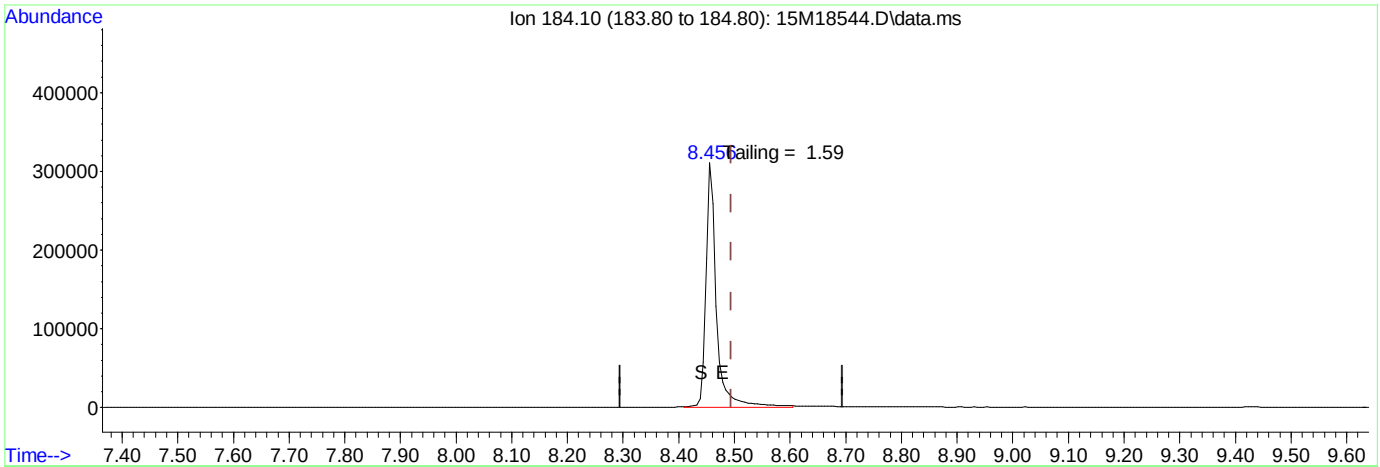

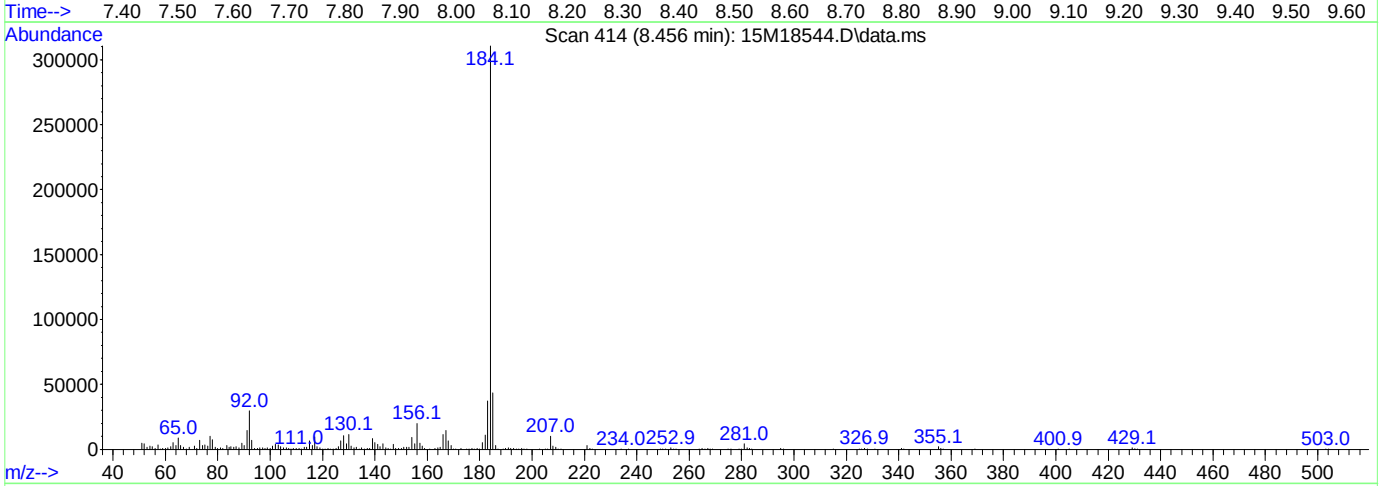

TIC: 15M18544.D\data.ms

(2) Benzidine

8.456min (-0.038) 0.00 ug/ml

response 410023

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062516\
Data File : 15M18544.D
Acq On : 25 Jun 2016 9:27
Operator : MES
Sample : WG574029-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 25 09:38:05 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

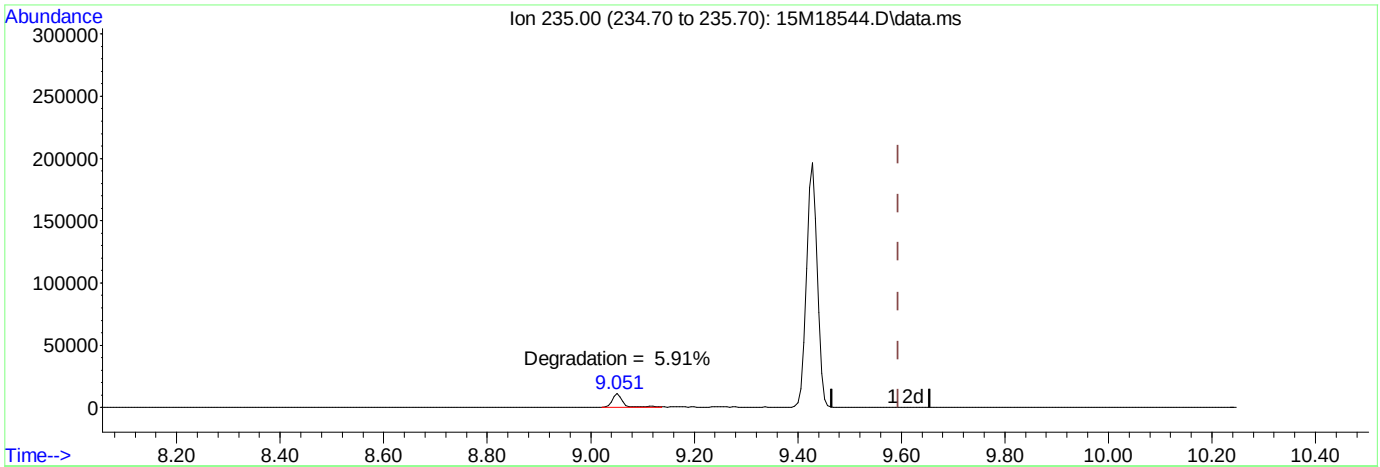

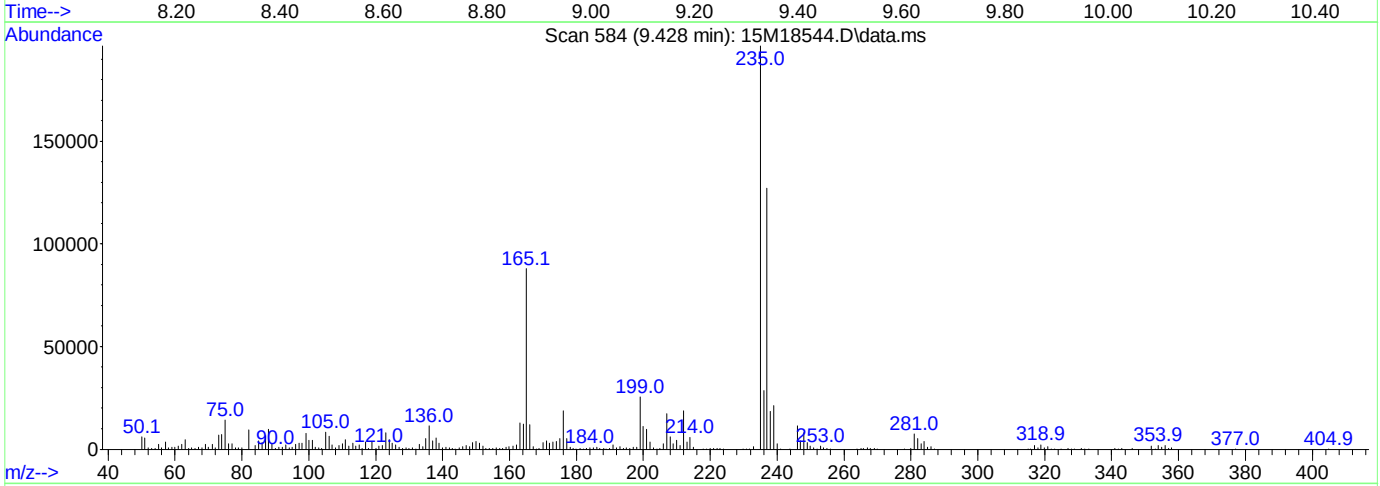

TIC: 15M18544.D\data.ms

(3) DDT

9.428min (-0.166) 0.00 ug/ml mint

response 292084

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18511.D
Acq On : 23 Jun 2016 14:22
Operator : MES
Sample : WG573299-01 BLANK 6/21
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 23 15:52:24 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.929	152	57608	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	33985	1.4337	ug/L	0.04
Spiked Amount 5.000			Recovery = 28.60%			
4) Nitrobenzene-d5	7.426	82	1290209	21.2028	ug/L	0.00
Spiked Amount 5.000			Recovery = 424.00%			
5) 2-Fluorobiphenyl	8.919	172	2634137	17.1496	ug/L	0.00
Spiked Amount 5.000			Recovery = 343.00%			
6) p-Terphenyl-d14	12.162	244	4420616	29.8588	ug/L	-0.02
Spiked Amount 5.000			Recovery = 597.20%			

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18511.D
Acq On : 23 Jun 2016 14:22
Operator : MES
Sample : WG573299-01 BLANK 6/21
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 23 15:52:24 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

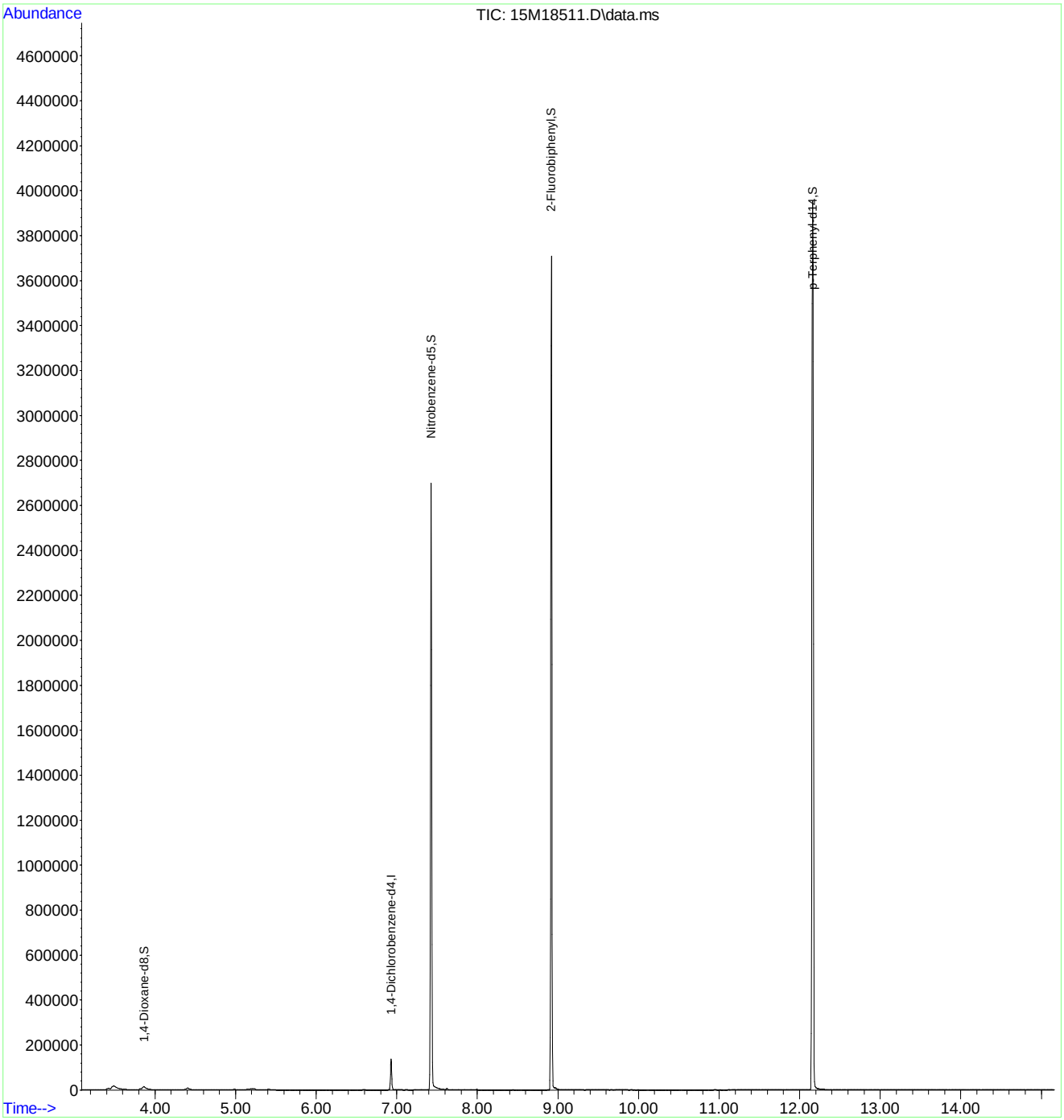

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18512.D
Acq On : 23 Jun 2016 14:45
Operator : MES
Sample : WG573299-02 LCS 6/21
Misc : 1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 23 15:52:38 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.929	152	51597	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	40084	1.8880	ug/L	0.04
Spiked Amount 5.000			Recovery	=	37.80%	
4) Nitrobenzene-d5	7.431	82	2991	0.0549	ug/L	0.00
Spiked Amount 5.000			Recovery	=	1.00%	
5) 2-Fluorobiphenyl	8.919	172	1228	0.0089	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.20%	
6) p-Terphenyl-d14	12.159	244	1342	0.0101	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	29708	1.8818	ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18512.D
Acq On : 23 Jun 2016 14:45
Operator : MES
Sample : WG573299-02 LCS 6/21
Misc : 1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 23 15:52:38 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

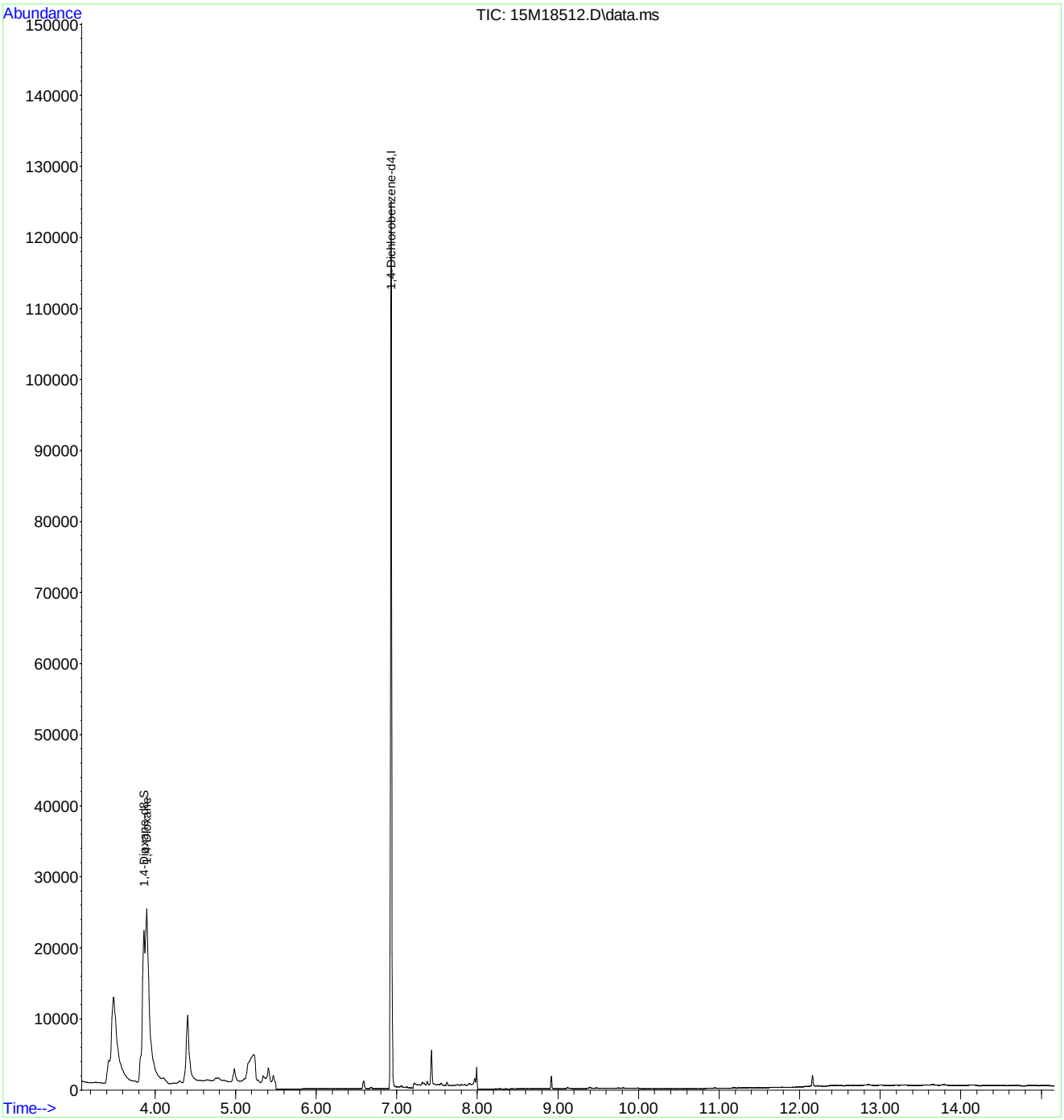

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18513.D
Acq On : 23 Jun 2016 15:07
Operator : MES
Sample : WG573299-03 LCSDUP 6/21
Misc : 1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 23 15:52:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.929	152	54701	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	52635	2.3384	ug/L	0.04
Spiked Amount 5.000			Recovery	=	46.80%	
4) Nitrobenzene-d5	7.431	82	5866	0.1015	ug/L	0.00
Spiked Amount 5.000			Recovery	=	2.00%	
5) 2-Fluorobiphenyl	8.919	172	4684	0.0321	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.60%	
6) p-Terphenyl-d14	12.151	244	1266	0.0090	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	38804	2.3185	ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18513.D
Acq On : 23 Jun 2016 15:07
Operator : MES
Sample : WG573299-03 LCSDUP 6/21
Misc : 1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 23 15:52:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

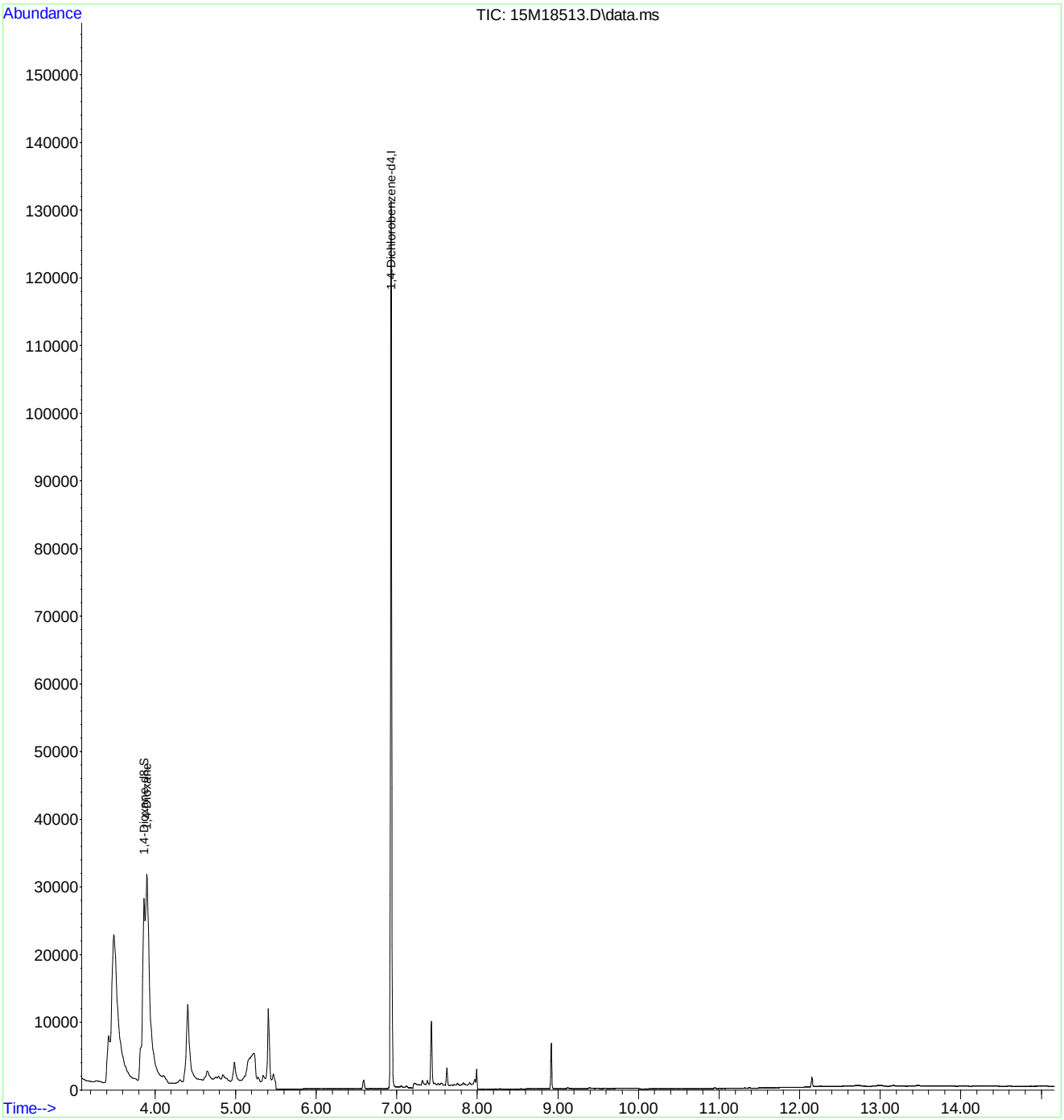

2.2 General Chromatography Data

2.2.2 6850 LC/MS Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060927-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW23SW-061516	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 19:02
Collect Date:	06/15/2016 08:00	**Dilution:**	1	**File ID:**	1LM.LM35501
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.407		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16060927-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW23-061516	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 19:21
Collect Date:	06/15/2016 09:05	**Dilution:**	1000	**File ID:**	1LM.LM35502
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2310		400	200	100

Certificate of Analysis

Sample #:	L16060927-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW19SW-061516	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/24/2016 23:18
Collect Date:	06/15/2016 10:15	**Dilution:**	1	**File ID:**	1LM.LM35473
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1.25		0.400	0.200	0.100

Certificate of Analysis

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Sample #:	L16060927-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW19-061516	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/24/2016 23:37
Collect Date:	06/15/2016 11:15	**Dilution:**	1	**File ID:**	1LM.LM35474
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	5.31		0.400	0.200	0.100

2.2.2.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1380 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG574101-01 MCT	9,990.	
-02 Blank	0.33	
-03 LCS	0.48	
-04 LCS2	0.51	
L16060823-01	9,120.	
-03	7,440.	
-04	1,943.	
L16060927-01	750.	
-02	652.	
-03	446.	
-04	162.7	
L16061026-01	6,910.	
-03	238.	
-04	965.	
-05	1,526.	
-07	220.	
L16061142-01	165.3	
-02	81.1	
-04	83.1	
-06	728.	
-07	74.2	
L16061144-01	118.6	
-02	118.7	
-03	110.1	

Analyst: John Richards

Date/Time: 06/27/16 / 20:00

DCN#119317

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

Page: 1 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

Page: 2 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 062416_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG574101 (waters)

Internal STD: STD18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments: Samples initially analyzed at dilutions were done so based on their historical results. Samples tagged with (NR) did not conform to their historical results. These samples were reanalyzed on the end of the sequence as neat or at dilutions based on the results of their initial analysis.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35462	WG574102-01 CCB	1	1		06/24/16 19:50
2	1LM.LM35463	WG574102-02 CCV (1.0ug/L)	1	1	STD75510	06/24/16 20:09
3	1LM.LM35464	WG574101-05 MRL (0.2ug/L)	1	1	STD75510	06/24/16 20:28
4	1LM.LM35465	WG574101-01 MCT (0.2ug/L)	1	1	STD75512	06/24/16 20:47
5	1LM.LM35466	WG574101-02 BLANK	1	1		06/24/16 21:06
6	1LM.LM35467	WG574101-03 LCS (0.2ug/L)	1	1	STD75512	06/24/16 21:25
7	1LM.LM35468	L16060823-01	1	1		06/24/16 21:44
8	1LM.LM35469	L16060823-03	1	1		06/24/16 22:03
9	1LM.LM35470	L16060823-04 (10x)	1	10		06/24/16 22:22
10	1LM.LM35471	L16060927-01 (100x) (NR)	1	100		06/24/16 22:41
11	1LM.LM35472	L16060927-02 (100x) (NR)	1	100		06/24/16 23:00
12	1LM.LM35473	L16060927-03	1	1		06/24/16 23:18
13	1LM.LM35474	L16060927-04	1	1		06/24/16 23:37
14	1LM.LM35475	WG574102-03 CCV (1.0ug/L)	1	1	STD75510	06/24/16 23:56
15	1LM.LM35476	WG574101-06 MRL (0.2ug/L)	1	1	STD75510	06/25/16 00:15
16	1LM.LM35477	WG574102-04 CCB	1	1		06/25/16 00:34
17	1LM.LM35478	L16061026-01 (100x) (NR)	1	100		06/25/16 00:53
18	1LM.LM35479	L16061026-03 (100x)	1	100		06/25/16 01:12
19	1LM.LM35480	L16061026-04 (10,000x)	1	10000		06/25/16 01:31
20	1LM.LM35481	L16061026-05 (100,000x) (NR)	1	100000		06/25/16 01:50
21	1LM.LM35482	L16061026-07 (10x) (NR)	1	10		06/25/16 02:09
22	1LM.LM35483	L16061142-01	1	1		06/25/16 02:28
23	1LM.LM35484	L16061142-02	1	1		06/25/16 02:47
24	1LM.LM35485	L16061142-04	1	1		06/25/16 03:06
25	1LM.LM35486	L16061142-06 (10x) (NR)	1	10		06/25/16 03:25
26	1LM.LM35487	L16061142-07	1	1		06/25/16 03:44
27	1LM.LM35488	WG574102-05 CCV (1.0ug/L)	1	1	STD75510	06/25/16 04:03
28	1LM.LM35489	WG574101-07 MRL (0.2ug/L)	1	1	STD75510	06/25/16 04:22
29	1LM.LM35490	WG574102-06 CCB	1	1		06/25/16 04:40
30	1LM.LM35491	WG574101-04 LCS2 (0.2ug/L)	1	1	STD75512	06/25/16 04:59
31	1LM.LM35492	L16061144-01	1	1		06/25/16 05:18
32	1LM.LM35493	L16061144-02	1	1		06/25/16 05:37
33	1LM.LM35494	L16061144-03 (10x) (NR)	1	10		06/25/16 05:56

Page: 1 Approved: 28-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 062416_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG574101 (waters)

Internal STD: STD18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 NA

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM35495	WG574102-07 CCV (1.0ug/L)	1	1	STD75510	06/25/16 06:15
35	1LM.LM35496	WG574101-08 MRL (0.2ug/L)	1	1	STD75510	06/25/16 06:34
36	1LM.LM35497	WG574102-08 CCB	1	1		06/25/16 06:53
37	1LM.LM35498	WG574102-09 CCV (1.0ug/L)	1	1	STD75510	06/25/16 18:06
38	1LM.LM35499	WG574101-09 MRL (0.2ug/L)	1	1	STD75510	06/25/16 18:25
39	1LM.LM35500	WG574102-10 CCB	1	1		06/25/16 18:44
40	1LM.LM35501	L16060927-01 (RR Neat)	1	1		06/25/16 19:02
41	1LM.LM35502	L16060927-02 (RR 1000x)	1	1000		06/25/16 19:21
42	1LM.LM35503	L16061026-01 (RR Neat)	1	1		06/25/16 19:40
43	1LM.LM35504	L16061026-05 (RR 10,000x)	1	10000		06/25/16 19:59
44	1LM.LM35505	L16061026-07 (RR 50x)	1	50		06/25/16 20:18
45	1LM.LM35506	L16061142-06 (RR Neat)	1	1		06/25/16 20:37
46	1LM.LM35507	L16061144-03 (RR Neat)	1	1		06/25/16 20:56
47	1LM.LM35508	WG574102-11 CCV (1.0ug/L)	1	1	STD75510	06/25/16 21:15
48	1LM.LM35509	WG574101-10 MRL (0.2ug/L)	1	1	STD75510	06/25/16 21:34
49	1LM.LM35510	WG574102-12 CCB	1	1		06/25/16 21:53

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 2 Approved: 28-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
04-MAY-2016
John Richards

Secondary Reviewer:
05-MAY-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 24-JUN-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 75960
Analytical Workgroups: L16060823, 0927, 1026, 1142, 1144

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 27-JUN-2016 John Richards

Secondary Reviewer: 28-JUN-2016 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-28-2016 14:00:55

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG574101

Login Number: L16060927

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW23SW-061516	01	06/15/16					06/24/2016	9.5	28		06/25/16	1	28	
18CPTMW23-061516	02	06/15/16					06/24/2016	9.4	28		06/25/16	1	28	
18CPTMW19SW-061516	03	06/15/16					06/24/2016	9.4	28		06/24/16	.2	28	
18CPTMW19-061516	04	06/15/16					06/24/2016	9.3	28		06/24/16	.2	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4827770
Report generated 06/28/2016 14:16

METHOD BLANK SUMMARY

Login Number: L16060927
Blank File ID: 1LM.LM35466
Prep Date: 06/24/16 19:00
Analyzed Date: 06/24/16 21:06
Analyst: JWR

Work Group: WG574101
Blank Sample ID: WG574101-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG574101-05	1LM.LM35464	06/24/16 20:28	01
MCT	WG574101-01	1LM.LM35465	06/24/16 20:47	01
LCS	WG574101-03	1LM.LM35467	06/24/16 21:25	01
18CPTMW19SW-061516	L16060927-03	1LM.LM35473	06/24/16 23:18	01
18CPTMW19-061516	L16060927-04	1LM.LM35474	06/24/16 23:37	01
QCMRL	WG574101-06	1LM.LM35476	06/25/16 00:15	01
QCMRL	WG574101-07	1LM.LM35489	06/25/16 04:22	01
LCS2	WG574101-04	1LM.LM35491	06/25/16 04:59	01
QCMRL	WG574101-08	1LM.LM35496	06/25/16 06:34	01
QCMRL	WG574101-09	1LM.LM35499	06/25/16 18:25	01
18CPTMW23SW-061516	L16060927-01	1LM.LM35501	06/25/16 19:02	01
18CPTMW23-061516	L16060927-02	1LM.LM35502	06/25/16 19:21	DL01
QCMRL	WG574101-10	1LM.LM35509	06/25/16 21:34	01

Report Name: BLANK_SUMMARY
PDF File ID: 4827771
Report generated 06/28/2016 14:16

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060927 Prep Date: 06/24/16 19:00 Sample ID: WG574101-02
Instrument ID: LCMS1 Run Date: 06/24/16 21:06 Prep Method: 6850
File ID: 1LM.LM35466 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4827772
28-JUN-2016 14:16

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060927 Analyst: JWR Prep Method: 6850
Instrument ID: LCMS1 Matrix: Water Method: 6850
Workgroup (AAB#): WG574101 Units: ug/L
QC Key: DOD4 Lot #: STD75512

Sample ID: WG574101-03 LCS File ID: 1LM.LM35467 Run Date: 06/24/2016 21:25
Sample ID: WG574101-04 LCS2 File ID: 1LM.LM35491 Run Date: 06/25/2016 04:59

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Perchlorate	0.200	0.208	104	0.200	0.213	107	2.38	80 - 120	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4827773
Report generated: 06/28/2016 14:16

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060927
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4828715
Report generated 06/28/2016 14:16

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060927

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4828715
Report generated 06/28/2016 14:16

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060927

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4828715
Report generated 06/28/2016 14:16

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060927

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008
PDF File ID: 4828715
Report generated 06/28/2016 14:16

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060927 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4828716
Report generated 06/28/2016 14:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060927
Run Date: 06/24/2016
Sample ID: WG574102-01
Instrument ID: LCMS1
Run Time: 19:50
Method: 6850
File ID: 1LM.LM35462
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827776
Report generated 06/28/2016 14:16

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060927
Run Date: 06/25/2016
Sample ID: WG574102-04
Instrument ID: LCMS1
Run Time: 00:34
Method: 6850
File ID: 1LM.LM35477
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827776
Report generated 06/28/2016 14:16

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060927
Run Date: 06/25/2016
Sample ID: WG574102-06
Instrument ID: LCMS1
Run Time: 04:40
Method: 6850
File ID: 1LM.LM35490
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827776
Report generated 06/28/2016 14:16

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060927
Run Date: 06/25/2016
Sample ID: WG574102-08
Instrument ID: LCMS1
Run Time: 06:53
Method: 6850
File ID: 1LM.LM35497
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827776
Report generated 06/28/2016 14:16

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060927
Run Date: 06/25/2016
Sample ID: WG574102-10
Instrument ID: LCMS1
Run Time: 18:44
Method: 6850
File ID: 1LM.LM35500
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827776
Report generated 06/28/2016 14:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060927
Run Date: 06/25/2016
Sample ID: WG574102-12
Instrument ID: LCMS1
Run Time: 21:53
Method: 6850
File ID: 1LM.LM35510
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827776
Report generated 06/28/2016 14:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060927 Run Date: 06/24/2016 Sample ID: WG574102-02
Instrument ID: LCMS1 Run Time: 20:09 Method: 6850
File ID: 1LM.LM35463 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG574101 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.70	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827775
Report generated 06/28/2016 14:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060927
Run Date: 06/24/2016
Sample ID: WG574102-03
Instrument ID: LCMS1
Run Time: 23:56
Method: 6850
File ID: 1LM.LM35475
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.70	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827775
Report generated 06/28/2016 14:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060927
Run Date: 06/25/2016
Sample ID: WG574102-05
Instrument ID: LCMS1
Run Time: 04:03
Method: 6850
File ID: 1LM.LM35488
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.75	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827775
Report generated 06/28/2016 14:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060927
Run Date: 06/25/2016
Sample ID: WG574102-07
Instrument ID: LCMS1
Run Time: 06:15
Method: 6850
File ID: 1LM.LM35495
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.72	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827775
Report generated 06/28/2016 14:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060927
Run Date: 06/25/2016
Sample ID: WG574102-09
Instrument ID: LCMS1
Run Time: 18:06
Method: 6850
File ID: 1LM.LM35498
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.76	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827775
Report generated 06/28/2016 14:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060927 Run Date: 06/25/2016 Sample ID: WG574102-11
Instrument ID: LCMS1 Run Time: 21:15 Method: 6850
File ID: 1LM.LM35508 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG574101 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.73	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827775
Report generated 06/28/2016 14:16

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060927 Run Date: 06/24/2016 Sample ID: WG574101-05

Instrument ID: LCMS1 Run Time: 20:28 Prep Method: 6850

File ID: 1LM.LM35464 Analyst: JWR Method: 6850

Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L

Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827774
Report generated 06/28/2016 14:16

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060927 Run Date: 06/25/2016 Sample ID: WG574101-06

Instrument ID: LCMS1 Run Time: 00:15 Prep Method: 6850

File ID: 1LM.LM35476 Analyst: JWR Method: 6850

Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L

Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.198	99.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827774
Report generated 06/28/2016 14:16

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060927 Run Date: 06/25/2016 Sample ID: WG574101-07

Instrument ID: LCMS1 Run Time: 04:22 Prep Method: 6850

File ID: 1LM.LM35489 Analyst: JWR Method: 6850

Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L

Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.211	106	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827774
Report generated 06/28/2016 14:16

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060927 Run Date: 06/25/2016 Sample ID: WG574101-08
Instrument ID: LCMS1 Run Time: 06:34 Prep Method: 6850
File ID: 1LM.LM35496 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.201	101	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827774
Report generated 06/28/2016 14:16

Login Number: L16060927 Run Date: 06/25/2016 Sample ID: WG574101-09
Instrument ID: LCMS1 Run Time: 18:25 Prep Method: 6850
File ID: 1LM.LM35499 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.207	104	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827774
Report generated 06/28/2016 14:16

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060927 Run Date: 06/25/2016 Sample ID: WG574101-10

Instrument ID: LCMS1 Run Time: 21:34 Prep Method: 6850

File ID: 1LM.LM35509 Analyst: JWR Method: 6850

Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L

Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827774
Report generated 06/28/2016 14:16

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16060927
Instrument ID: LCMS1
Workgroup (AAB#): WG574101

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16060927-01	1.00	01	390000
L16060927-02	1000	DL01	471000
L16060927-03	1.00	01	418000
L16060927-04	1.00	01	463000
WG574101-02	1.00	01	443000
WG574101-03	1.00	01	444000
WG574101-04	1.00	01	526000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4827777
Report generated 06/28/2016 14:16

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**	6850	**Samplenum:**	L16060927-01
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35501
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 19:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	53800	19600	2.74	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**	6850	**Samplenum:**	L16060927-02
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35502
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 19:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	367000	129000	2.84	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**	6850	**Samplenum:**	L16060927-03
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35473
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 23:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	176000	61700	2.85	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**	6850	**Samplenum:**	L16060927-04
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35474
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 23:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	828000	283000	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**	6850	**Samplenum:**	WG574101-01
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35465
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 20:47	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	28100	10000	2.81	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**	6850	**Samplenum:**	WG574101-02
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35466
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 21:06	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**	6850	**Samplenum:**	WG574101-03
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35467
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 21:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	31600	11800	2.68	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**	6850	**Samplenum:**	WG574101-04
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35491
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 04:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38300	14000	2.74	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**	6850	**Samplenum:**	WG574101-05
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35464
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 20:28	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	31600	12100	2.61	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**	6850	**Samplenum:**	WG574101-06
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35476
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 00:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35000	13100	2.67	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**	6850	**Samplenum:**	WG574101-07
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35489
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 04:22	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38900	13400	2.90	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**	6850	**Samplenum:**	WG574101-08
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35496
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 06:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38000	14100	2.70	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**	6850	**Samplenum:**	WG574101-09
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35499
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 18:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32900	11500	2.86	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**	6850	**Samplenum:**	WG574101-10
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35509
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 21:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37900	14000	2.71	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**		**Samplenum:**	WG574102-01
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:50	**File ID:**	1LM.LM35462
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 19:50	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**		**Samplenum:**	WG574102-02
Instrument:	LCMS1	**Prep Date:**	06/24/2016 20:09	**File ID:**	1LM.LM35463
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 20:09	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	152000	55500	2.74	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**		**Samplenum:**	WG574102-03
Instrument:	LCMS1	**Prep Date:**	06/24/2016 23:56	**File ID:**	1LM.LM35475
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 23:56	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	170000	57500	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**		**Samplenum:**	WG574102-04
Instrument:	LCMS1	**Prep Date:**	06/25/2016 00:34	**File ID:**	1LM.LM35477
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 00:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	824	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**		**Samplenum:**	WG574102-05
Instrument:	LCMS1	**Prep Date:**	06/25/2016 04:03	**File ID:**	1LM.LM35488
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 04:03	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	179000	60200	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**		**Samplenum:**	WG574102-06
Instrument:	LCMS1	**Prep Date:**	06/25/2016 04:40	**File ID:**	1LM.LM35490
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 04:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**		**Samplenum:**	WG574102-07
Instrument:	LCMS1	**Prep Date:**	06/25/2016 06:15	**File ID:**	1LM.LM35495
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 06:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	189000	63400	2.98	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**		**Samplenum:**	WG574102-08
Instrument:	LCMS1	**Prep Date:**	06/25/2016 06:53	**File ID:**	1LM.LM35497
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 06:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	518	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**		**Samplenum:**	WG574102-09
Instrument:	LCMS1	**Prep Date:**	06/25/2016 18:06	**File ID:**	1LM.LM35498
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 18:06	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	161000	56700	2.84	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**		**Samplenum:**	WG574102-10
Instrument:	LCMS1	**Prep Date:**	06/25/2016 18:44	**File ID:**	1LM.LM35500
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 18:44	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**		**Samplenum:**	WG574102-11
Instrument:	LCMS1	**Prep Date:**	06/25/2016 21:15	**File ID:**	1LM.LM35508
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 21:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	176000	59300	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**		**Samplenum:**	WG574102-12
Instrument:	LCMS1	**Prep Date:**	06/25/2016 21:53	**File ID:**	1LM.LM35510
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 21:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

2.2.2.3 Sample Data

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Printed: 6/27/2016 7:52 PM

Data File	LM35501.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 7:02:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060927-01 (RR Neat)	**Injection Vial**	28.00
Data File	LM35501.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 7:02:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	L16060927-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.900e+05	9.36	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.380e+04	9.37	N/A	0.407
Perchlorate conf	1.960e+04	9.36	N/A	0.431

O18LP (Internal Standard)

RT (Exp. RT): 9.36(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

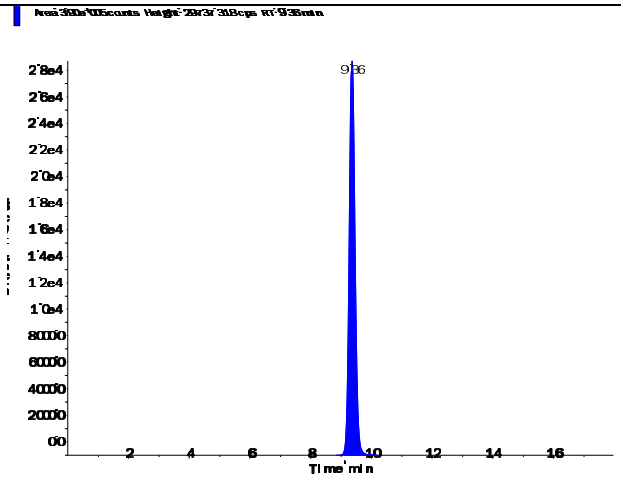

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.37 (9.84) min
Calculated conc:	0.407 ng/ml
Area Ratio:	0.138
Sample Type:	(Unknown)

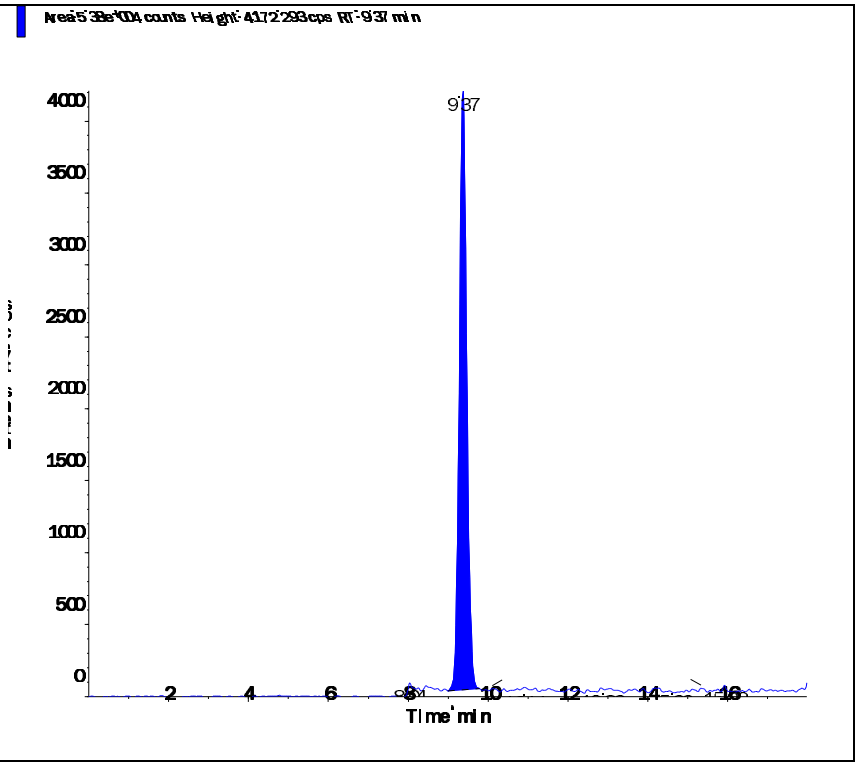

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.36 (9.84) min
Calculated conc:	0.431 ng/ml
Area Ratio:	0.05
Sample Type:	(Unknown)

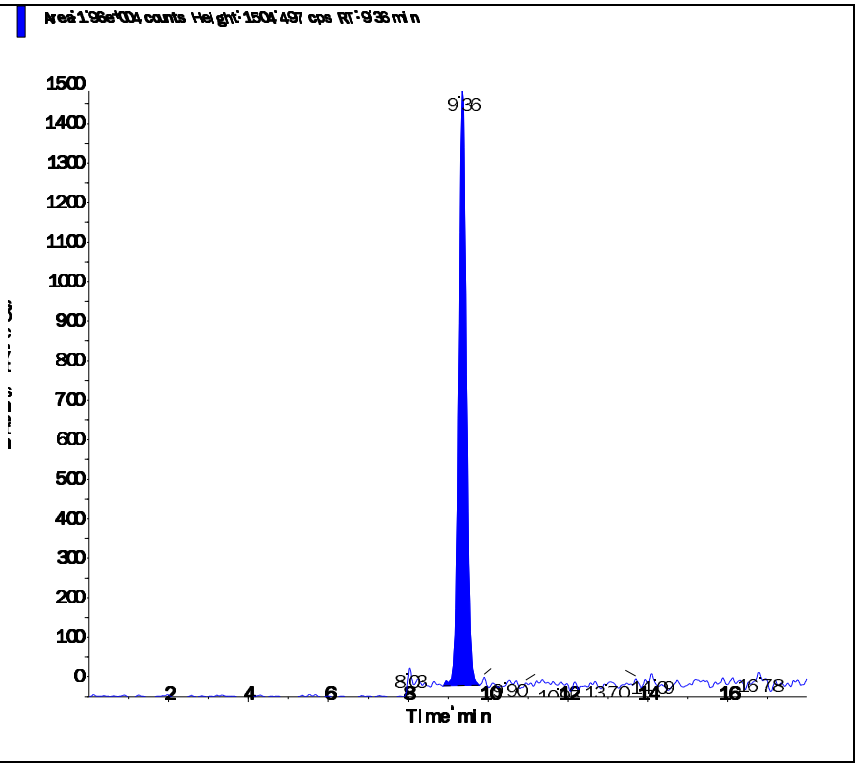

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Data File	LM35502.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 7:21:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060927-02 (RR 1000x)	**Injection Vial**	29.00
Data File	LM35502.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 7:21:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	L16060927-02	**Dilution Factor**	1.00
Sample Comment	11,000.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.710e+05	9.62	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.670e+05	9.63	N/A	2.31
Perchlorate conf	1.290e+05	9.62	N/A	2.44

O18LP (Internal Standard)

RT (Exp. RT): 9.62(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

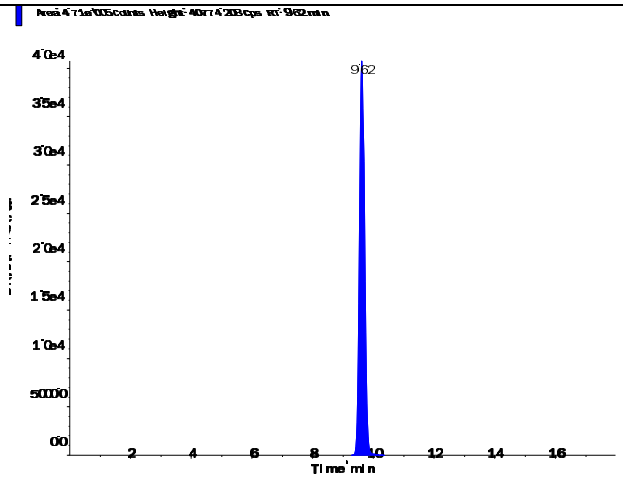

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	2.31 ng/ml
Area Ratio:	0.779
Sample Type:	(Unknown)

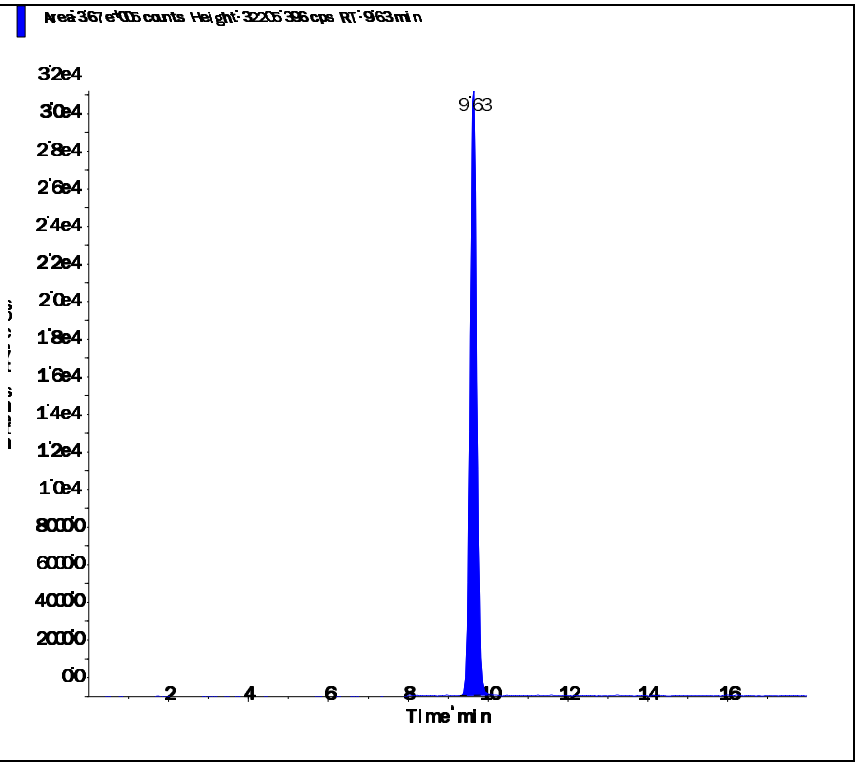

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.62 (9.84) min
Calculated conc:	2.44 ng/ml
Area Ratio:	0.274
Sample Type:	(Unknown)

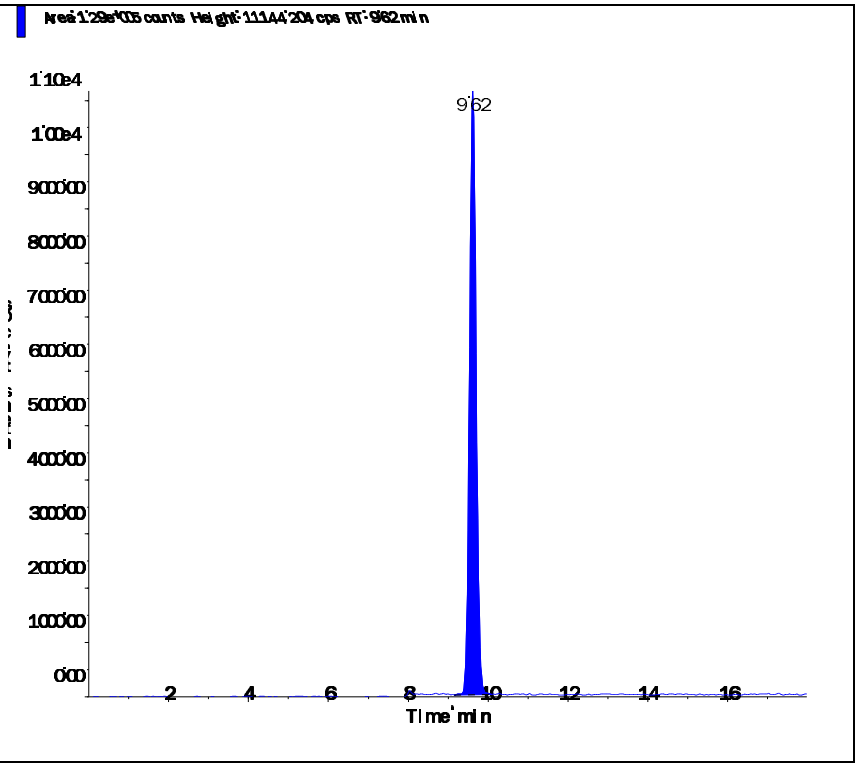

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Data File	LM35473.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 11:18:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060927-03	**Injection Vial**	13.00
Data File	LM35473.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 11:18:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	L16060927-03	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.180e+05	9.37	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.760e+05	9.38	N/A	1.25
Perchlorate conf	6.170e+04	9.37	N/A	1.30

O18LP (Internal Standard)

RT (Exp. RT): 9.37(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

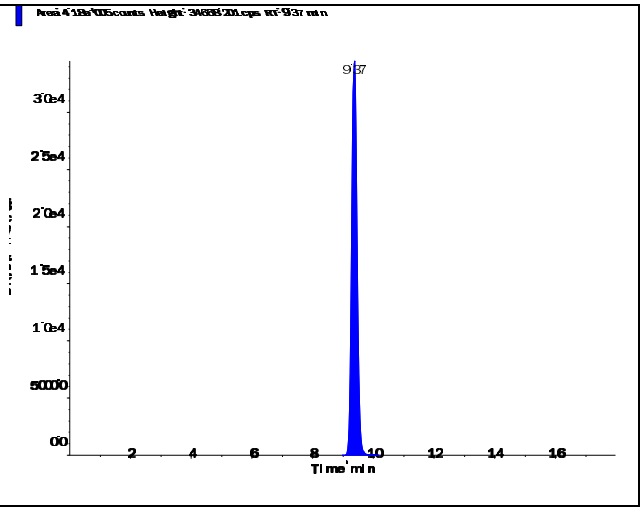

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	1.25 ng/ml
Area Ratio:	0.421
Sample Type:	(Unknown)

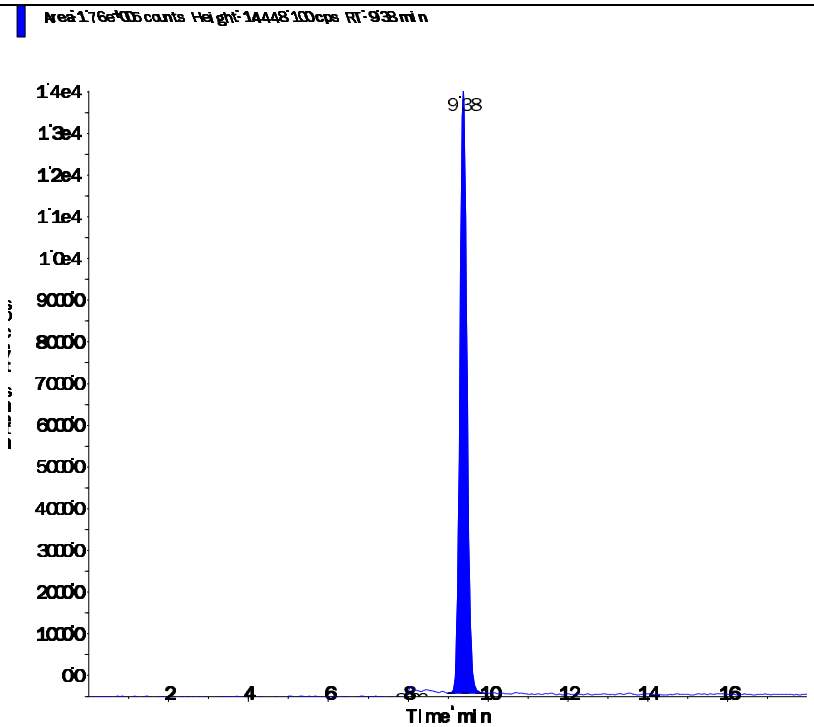

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.37 (9.84) min
Calculated conc:	1.30 ng/ml
Area Ratio:	0.147
Sample Type:	(Unknown)

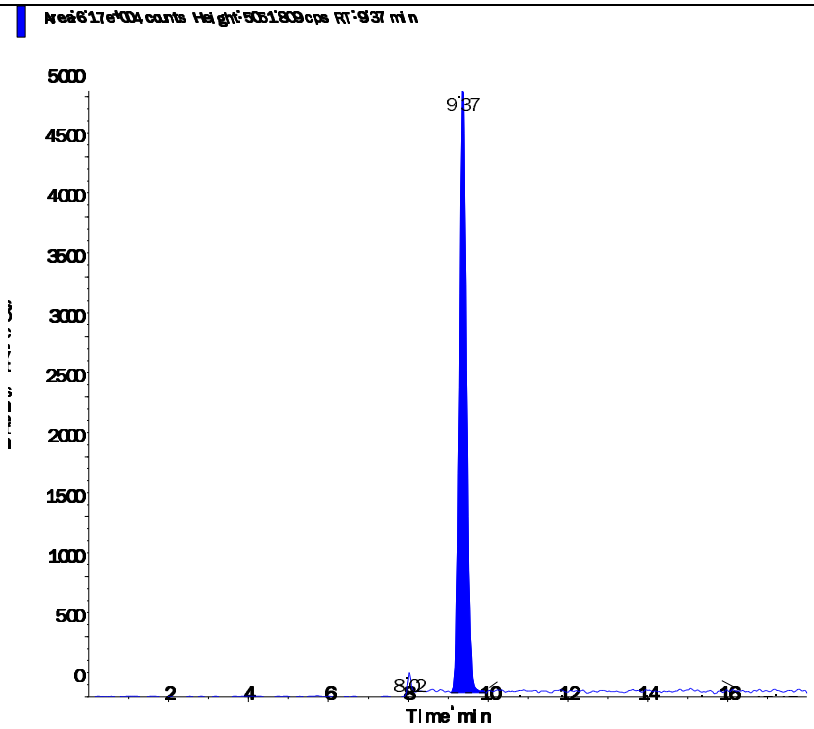

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Printed: 6/27/2016 7:42 PM

Data File	LM35474.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 11:37:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060927-04	**Injection Vial**	14.00
Data File	LM35474.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 11:37:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	L16060927-04	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.630e+05	9.50	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.280e+05	9.51	N/A	5.31
Perchlorate conf	2.830e+05	9.50	N/A	5.46

O18LP (Internal Standard)

RT (Exp. RT): 9.50(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

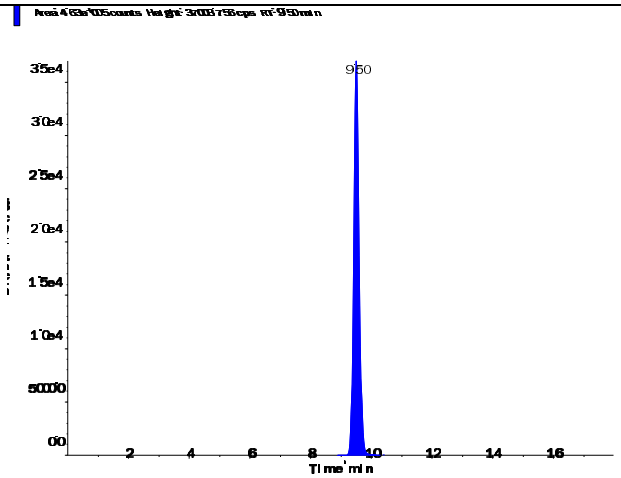

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.51 (9.84) min
Calculated conc:	5.31 ng/ml
Area Ratio:	1.787
Sample Type:	(Unknown)

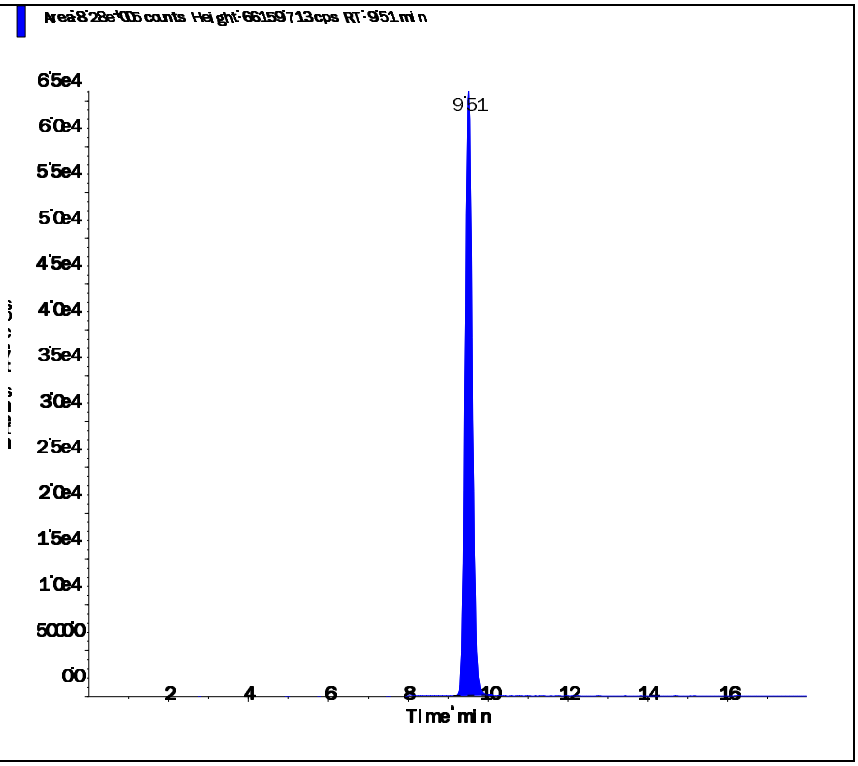

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.50 (9.84) min
Calculated conc:	5.46 ng/ml
Area Ratio:	0.612
Sample Type:	(Unknown)

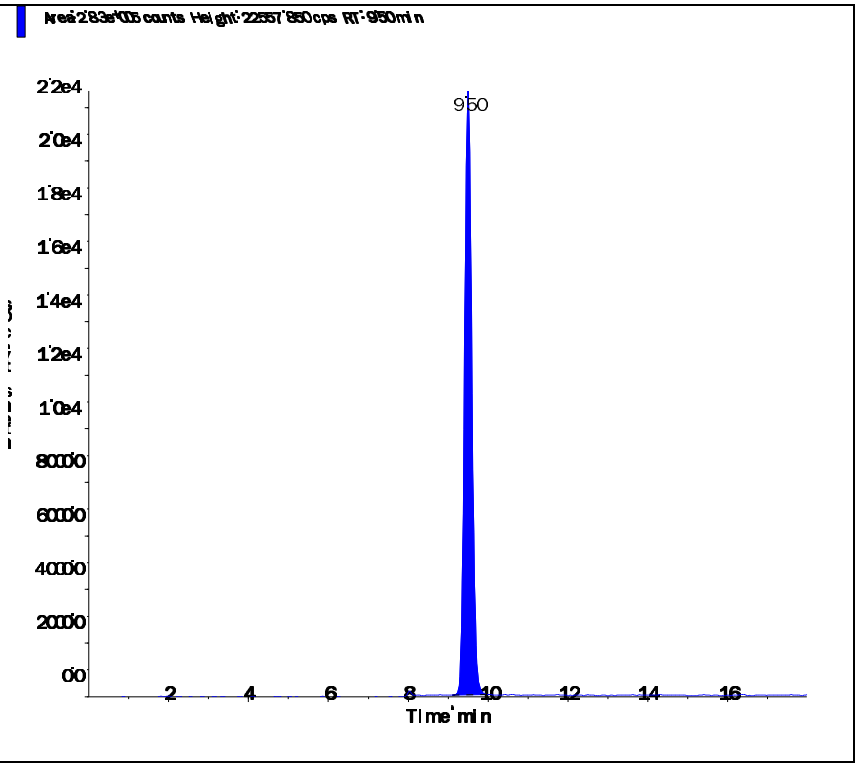

2.2.2.4 Standards Data

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Data File	LM34686.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

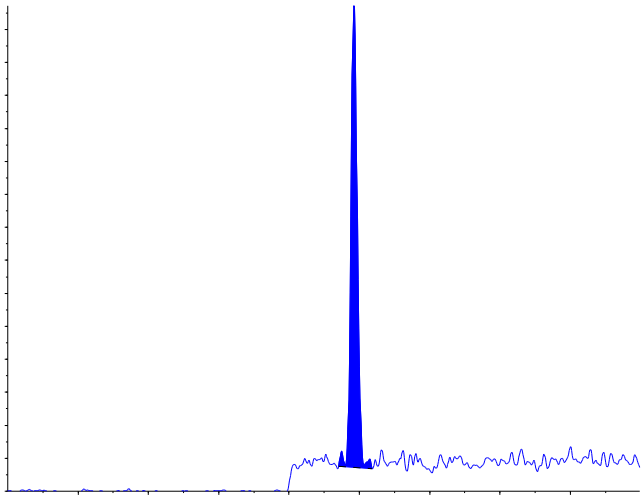

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	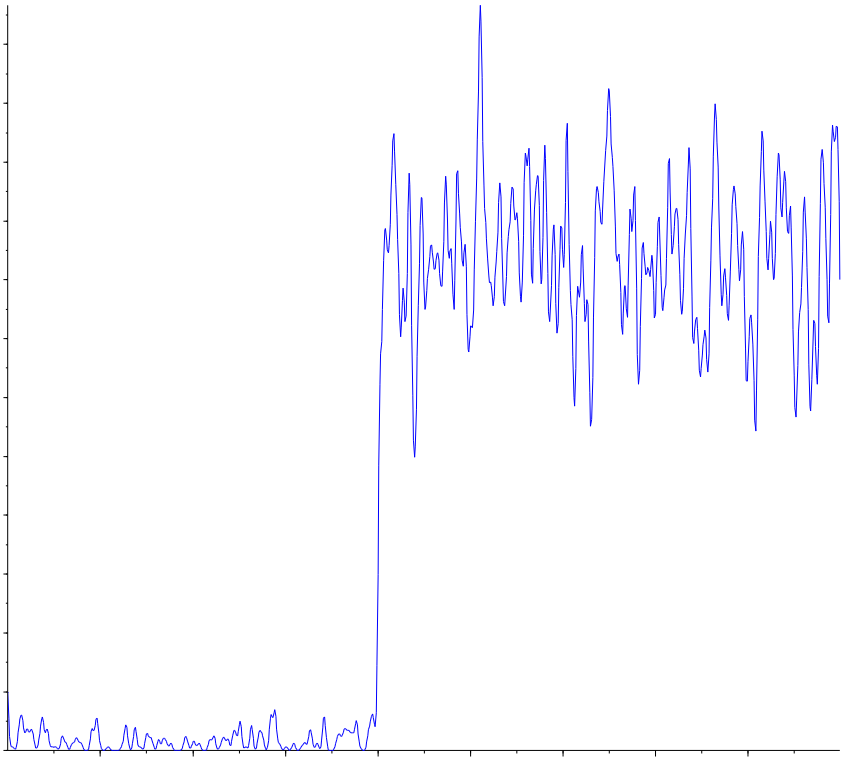
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	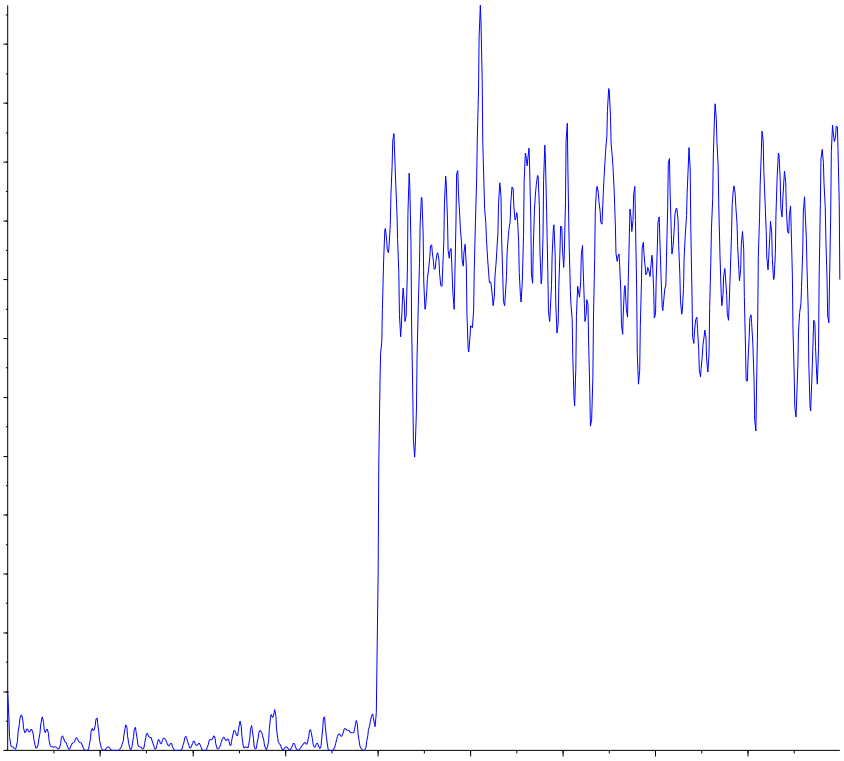

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Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

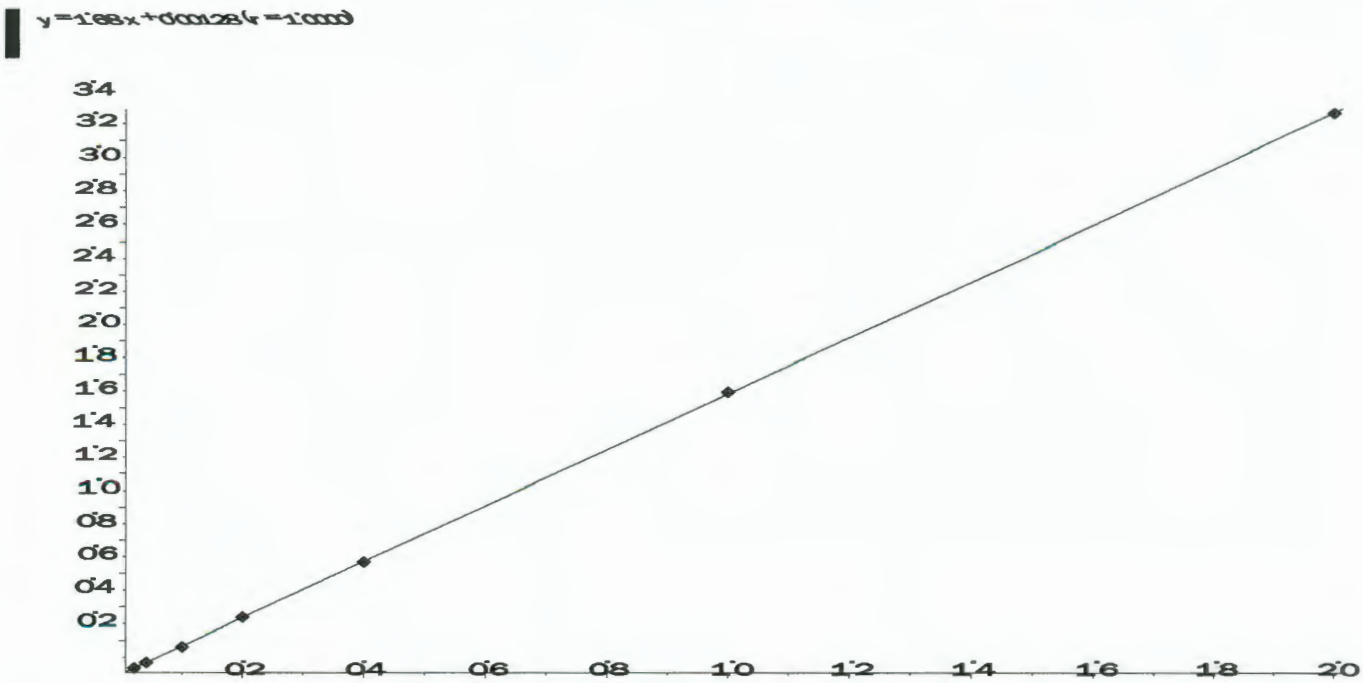

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Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

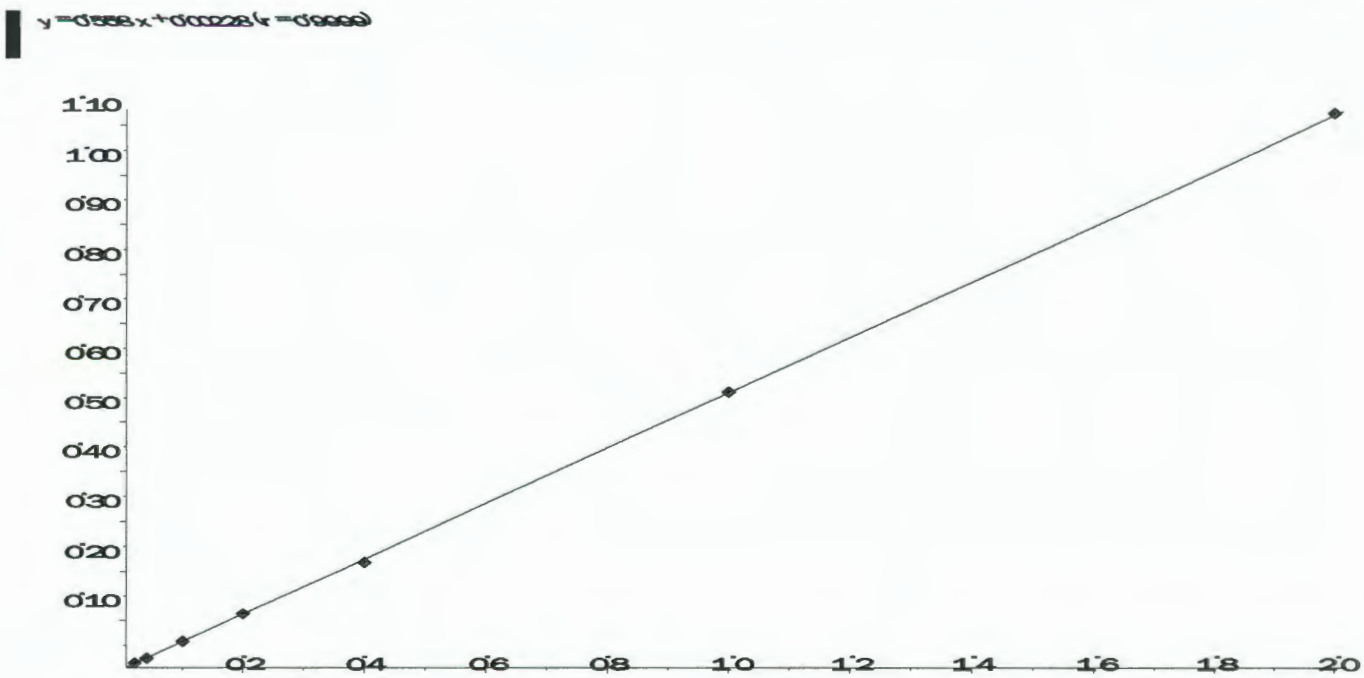

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Data File	LM34687.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

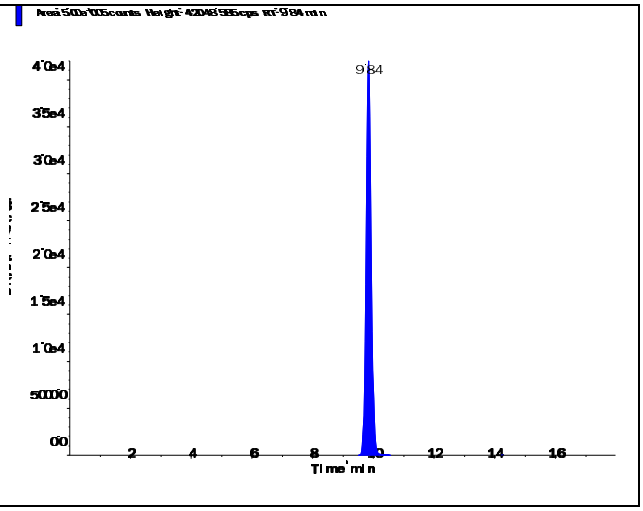

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.103 ng/ml
Area Ratio:	0.036
Sample Type:	(Standard)

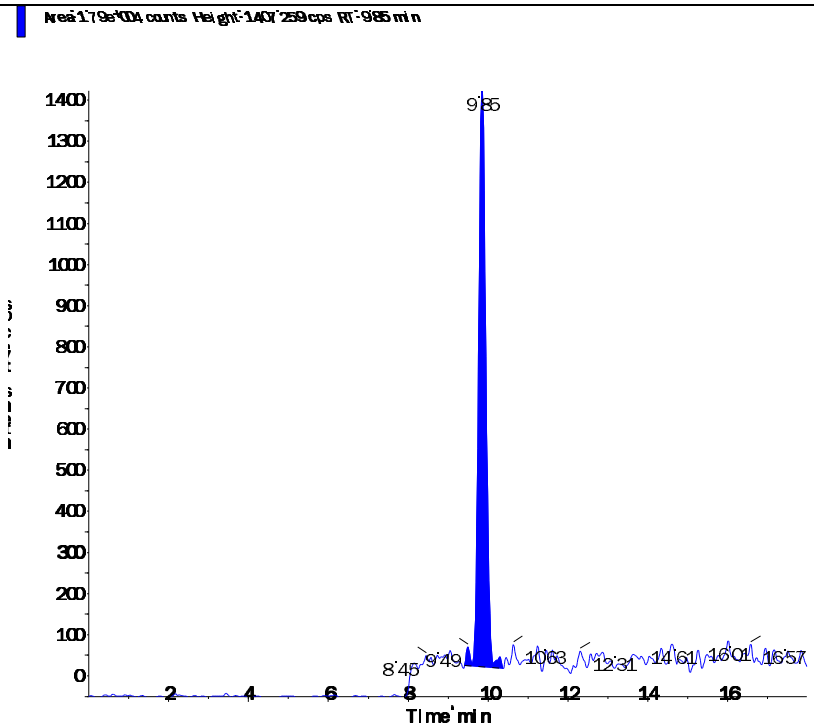

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.104 ng/ml
Area Ratio:	0.014
Sample Type:	(Standard)

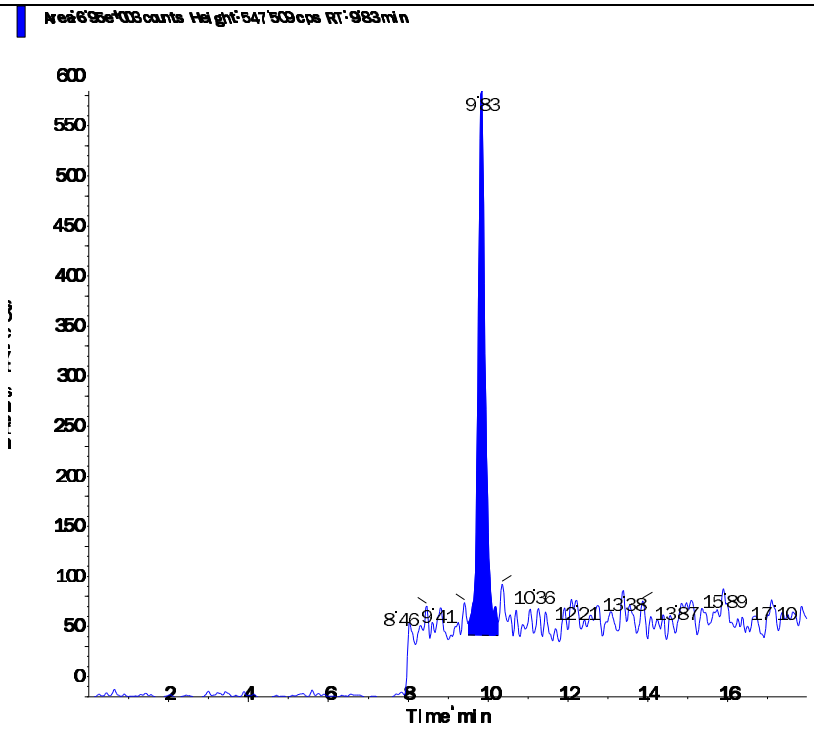

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Data File	LM34688.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

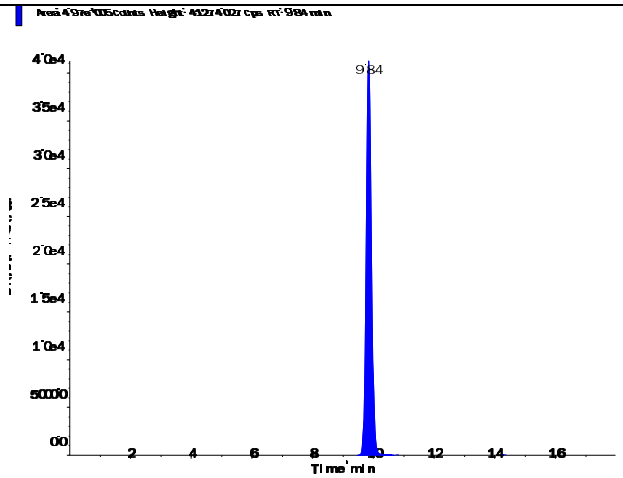

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

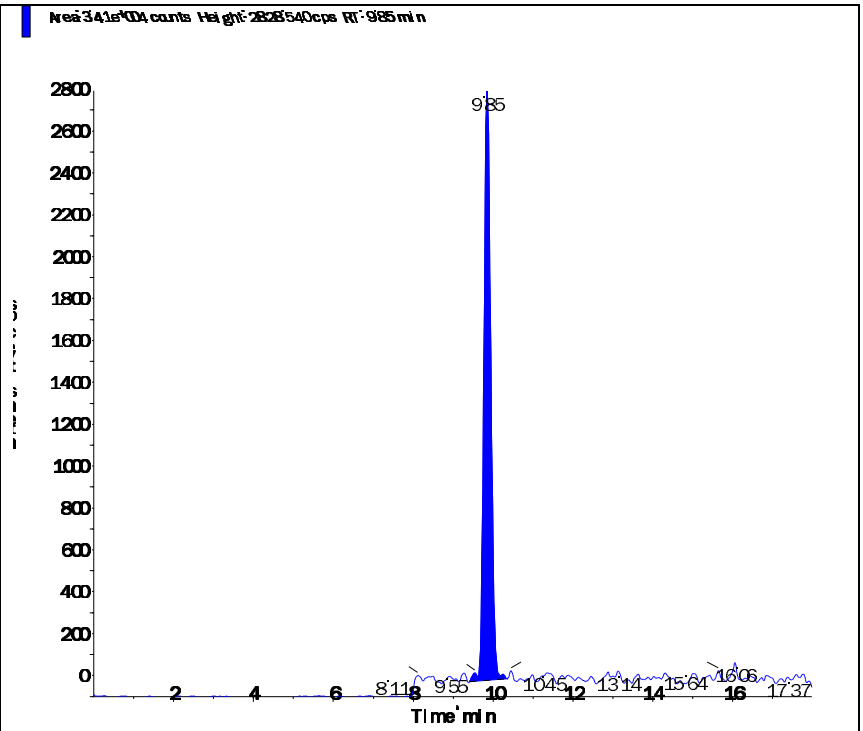

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

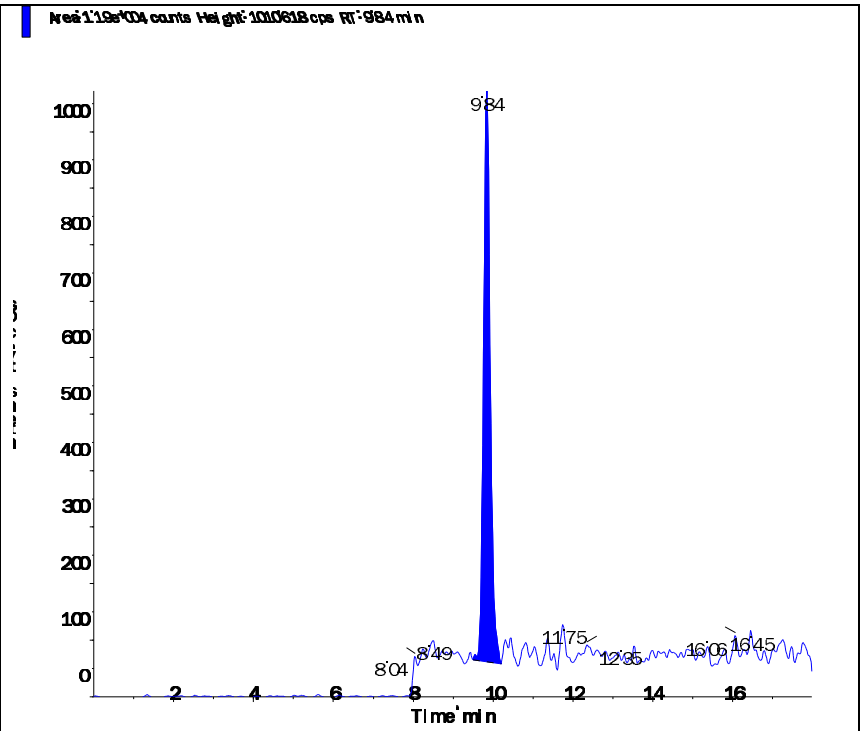

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Data File	LM34689.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

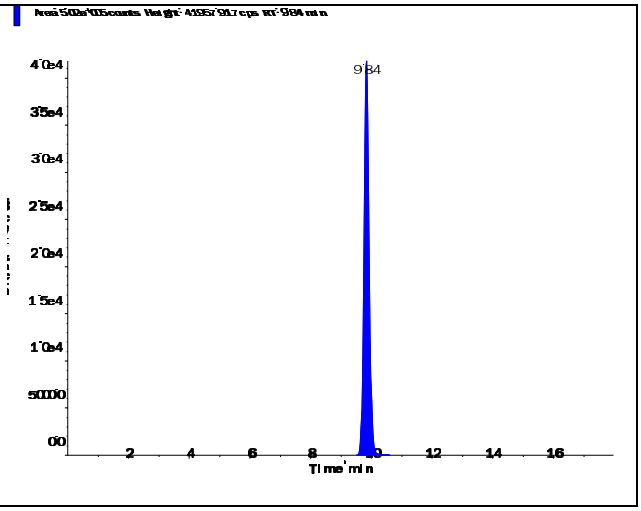

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.483 ng/ml
Area Ratio:	0.164
Sample Type:	(Standard)

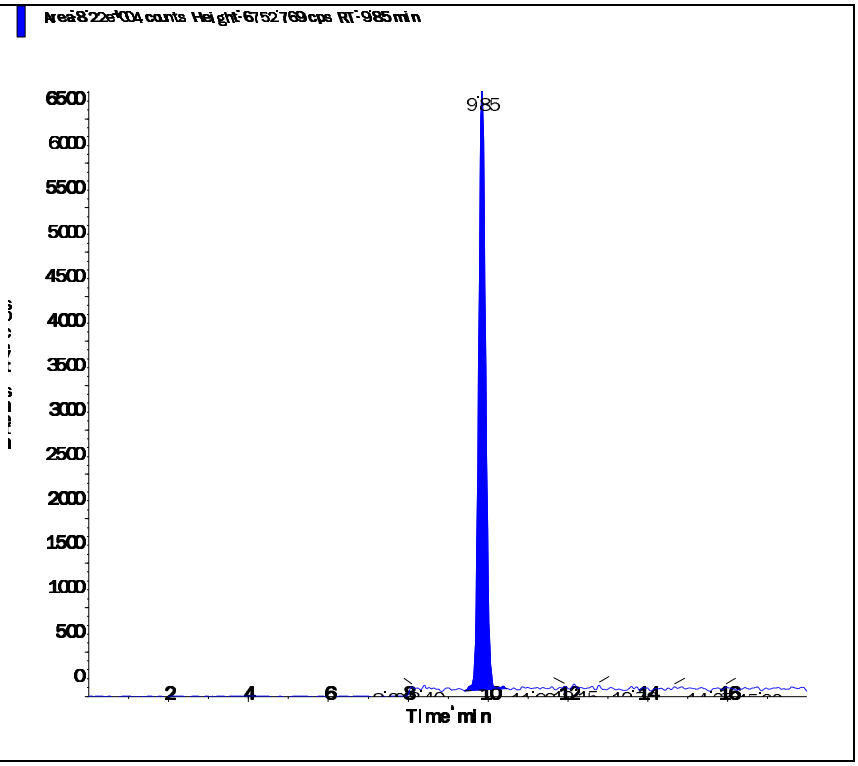

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.503 ng/ml
Area Ratio:	0.058
Sample Type:	(Standard)

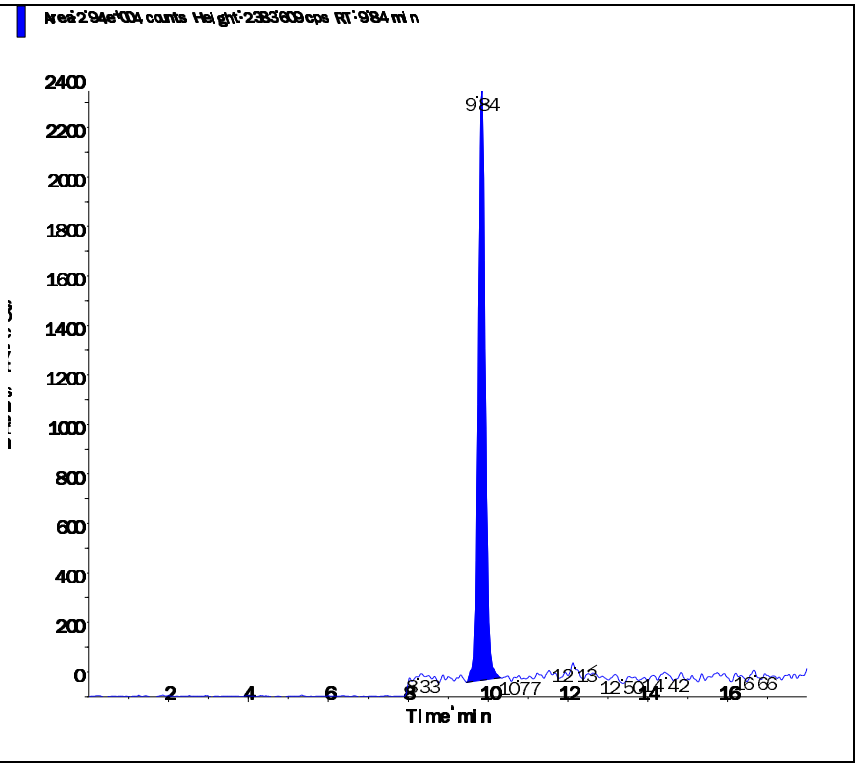

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Data File	LM34690.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

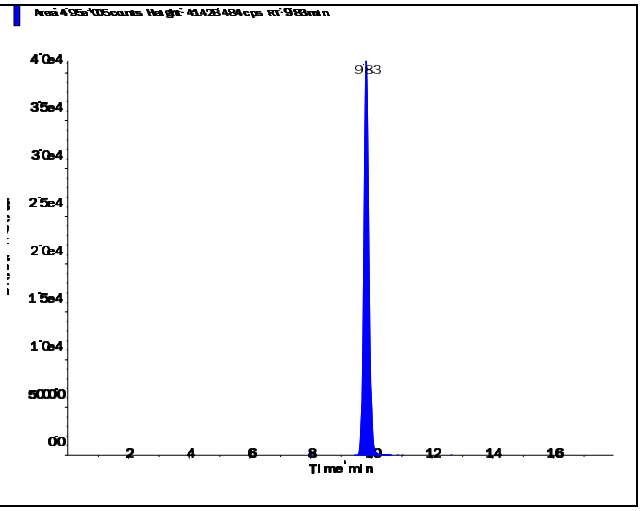

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

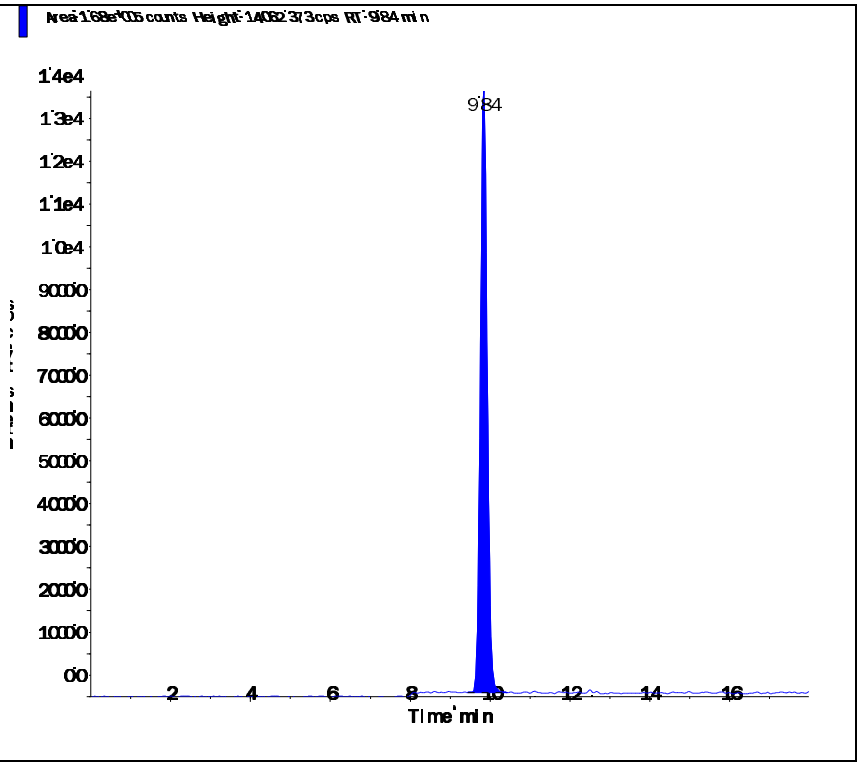

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

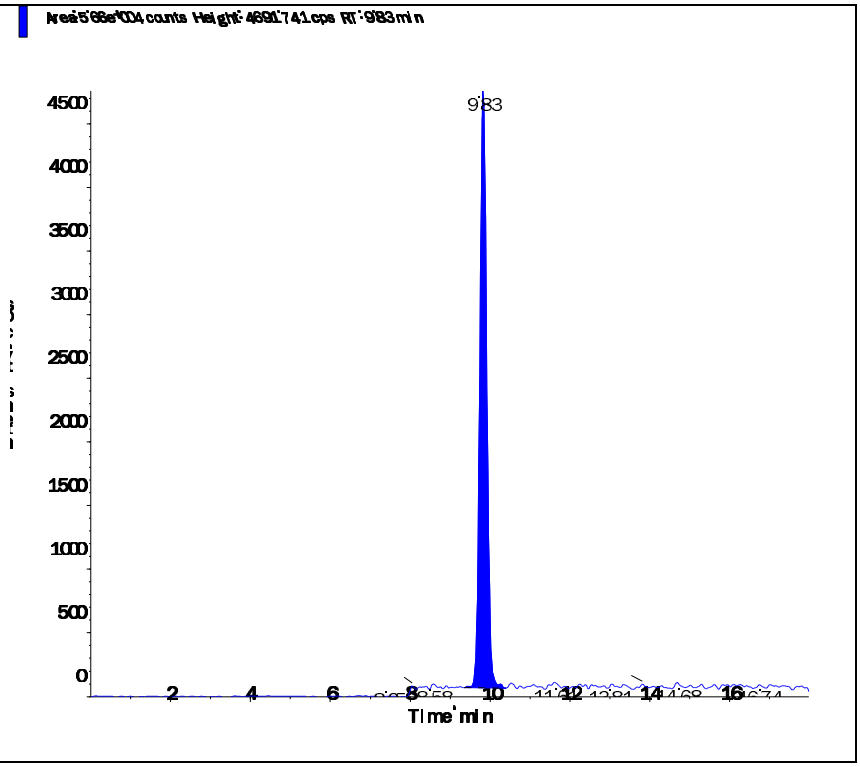

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Data File	LM34691.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

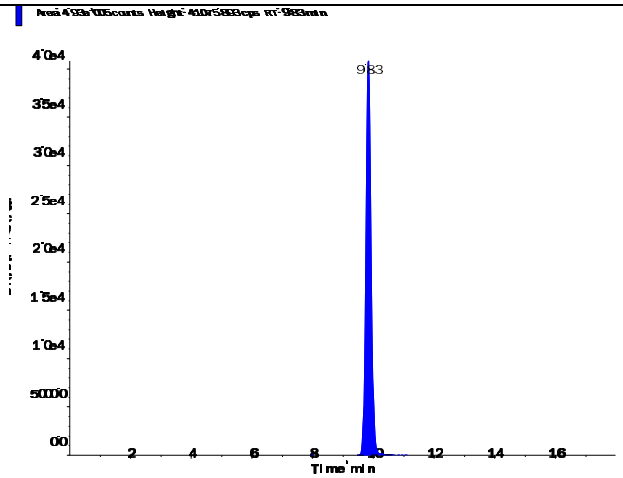

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.99 ng/ml
Area Ratio:	0.669
Sample Type:	(Standard)

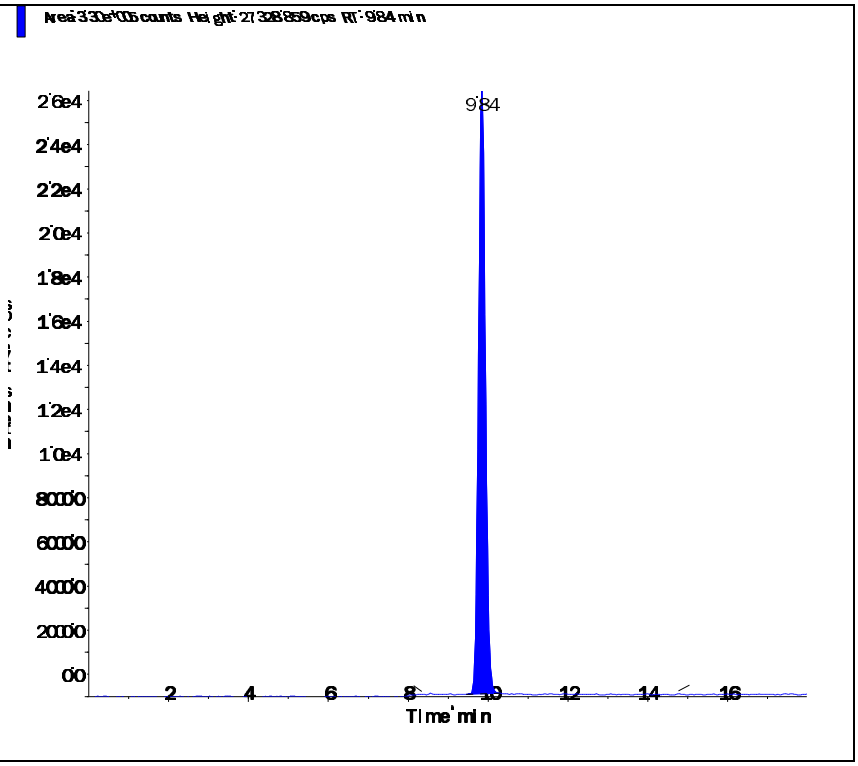

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.94 ng/ml
Area Ratio:	0.219
Sample Type:	(Standard)

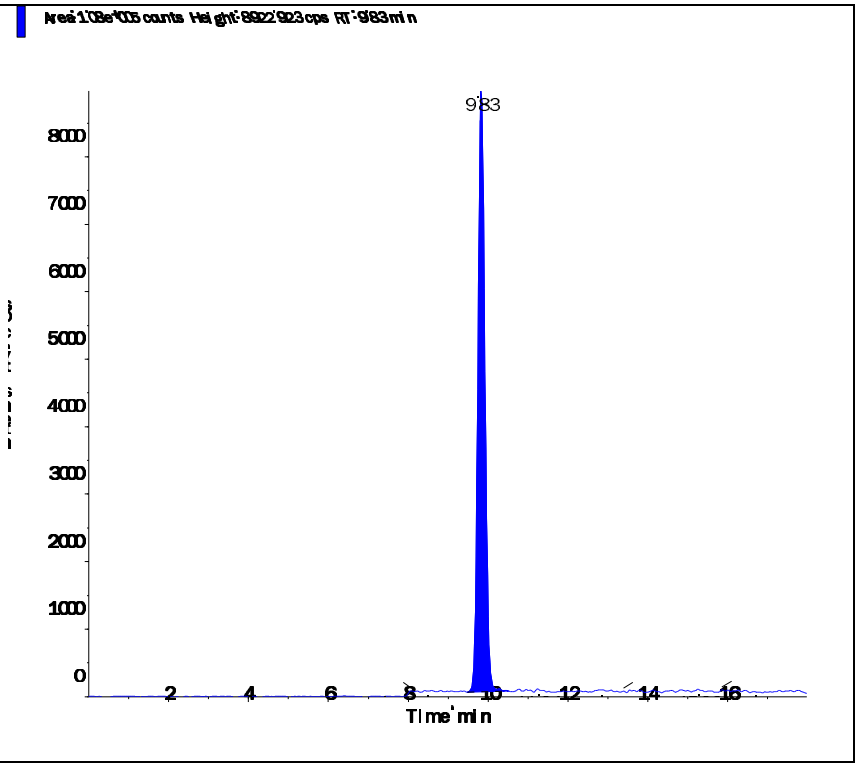

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Data File	LM34692.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

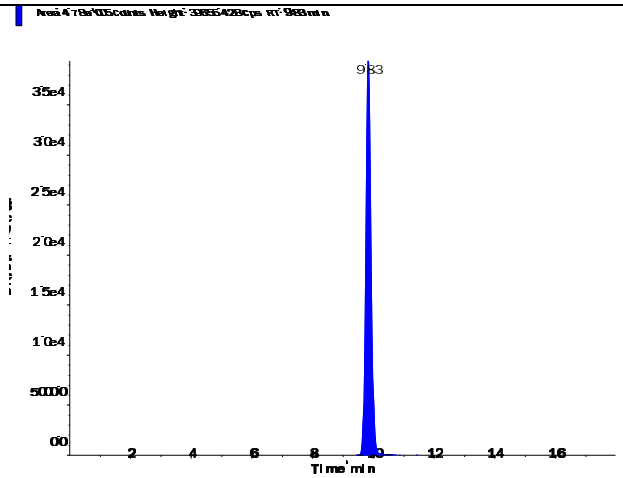

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

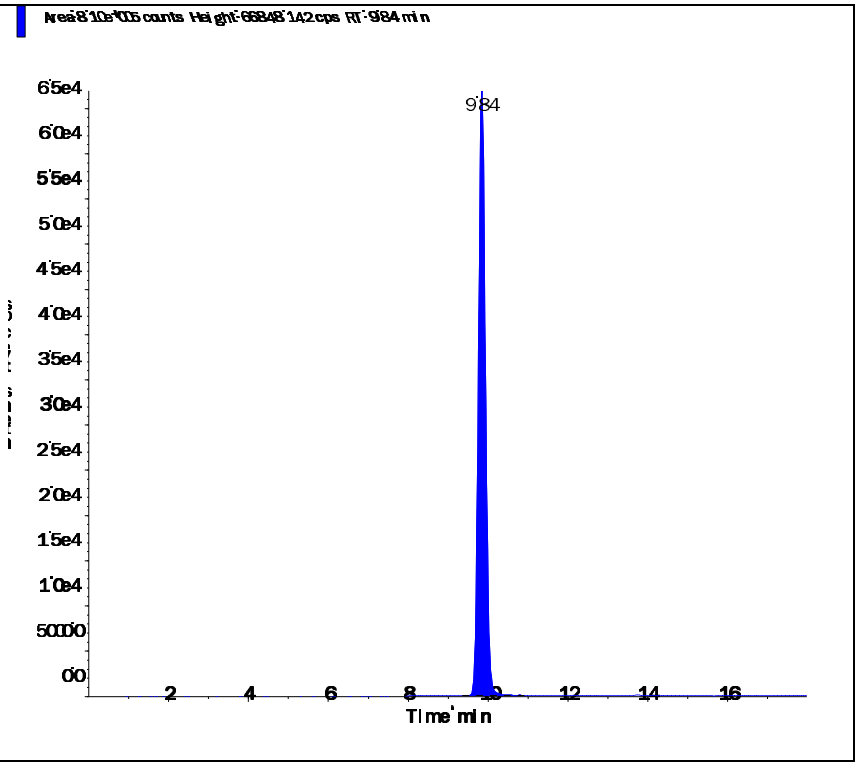

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

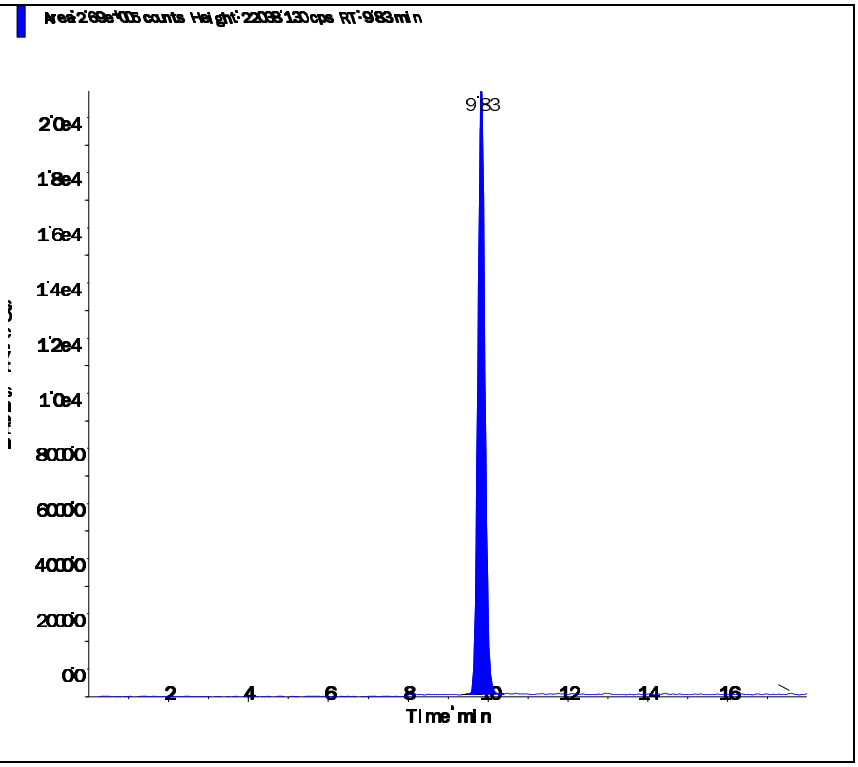

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Data File	LM34693.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

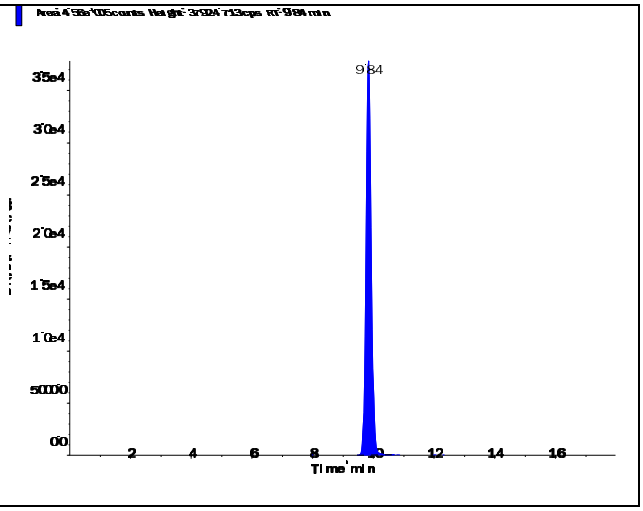

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 9.99 ng/ml Area Ratio: 3.36 Sample Type: (Standard)	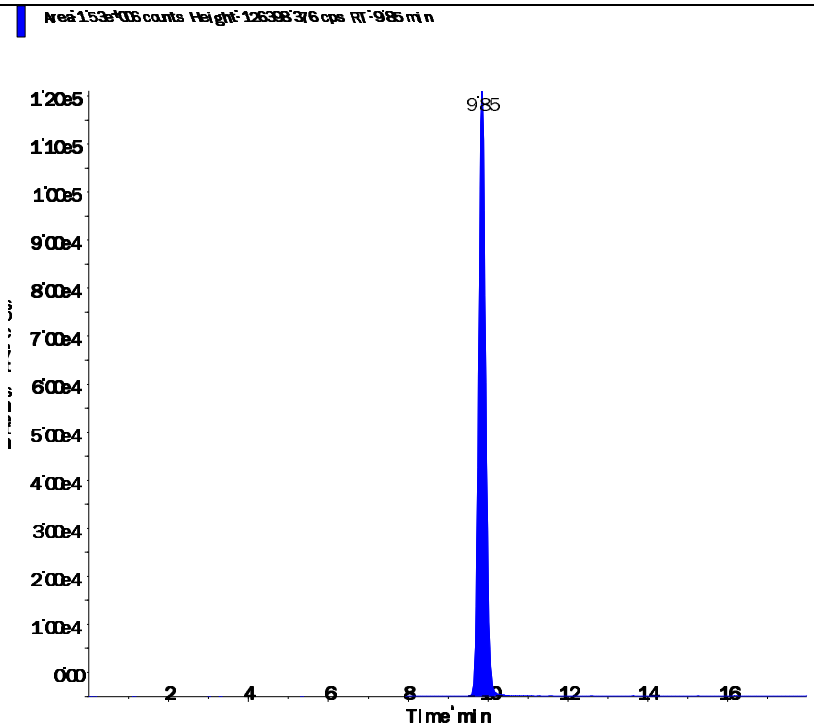
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 10.00 ng/ml Area Ratio: 1.122 Sample Type: (Standard)	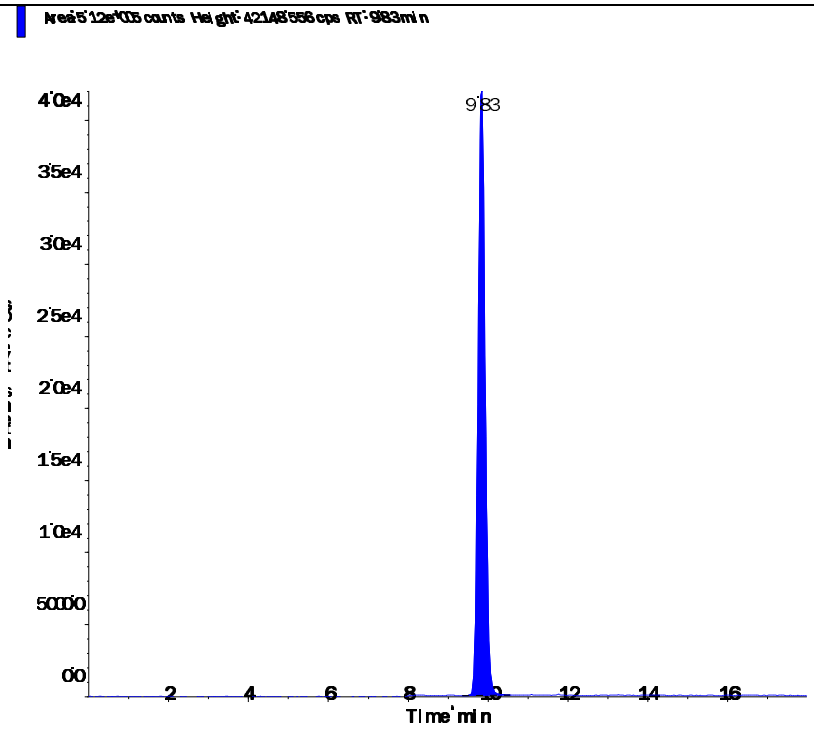

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Printed: 5/4/2016 1:23 PM

Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

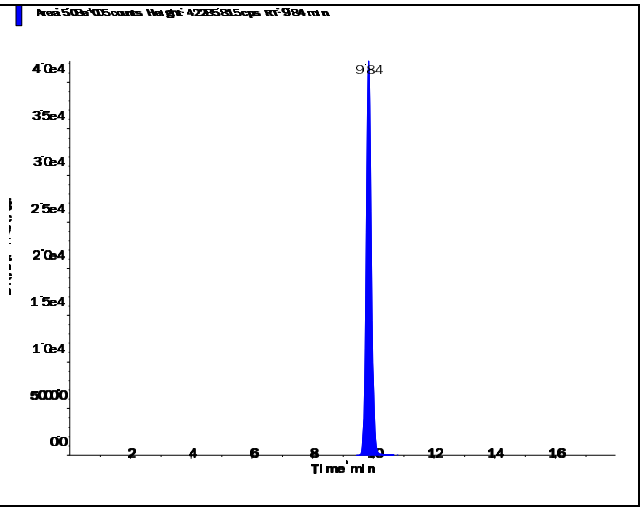

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.332
Sample Type:	(Quality Control)

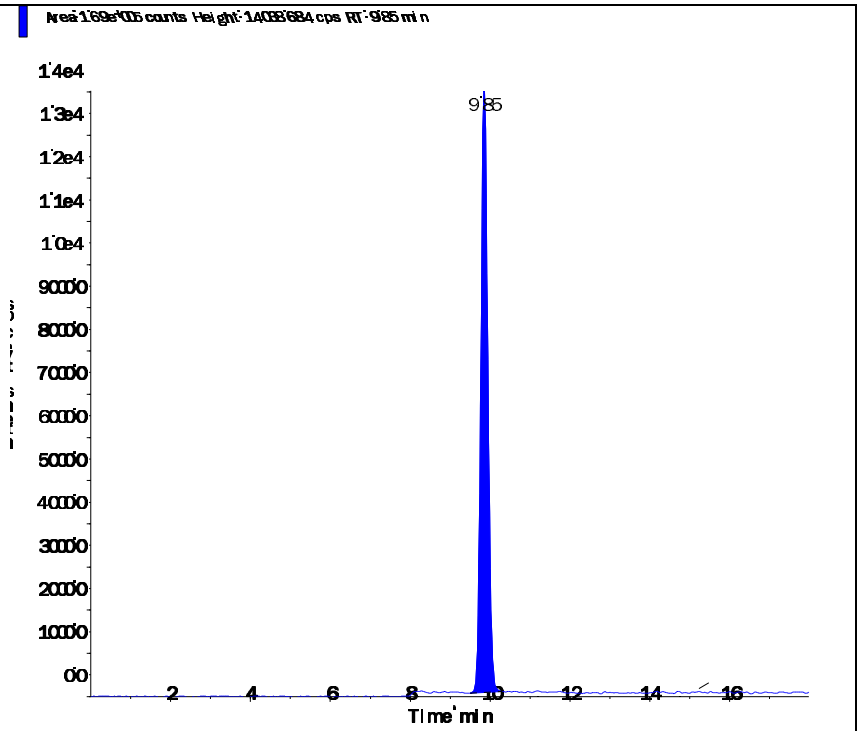

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

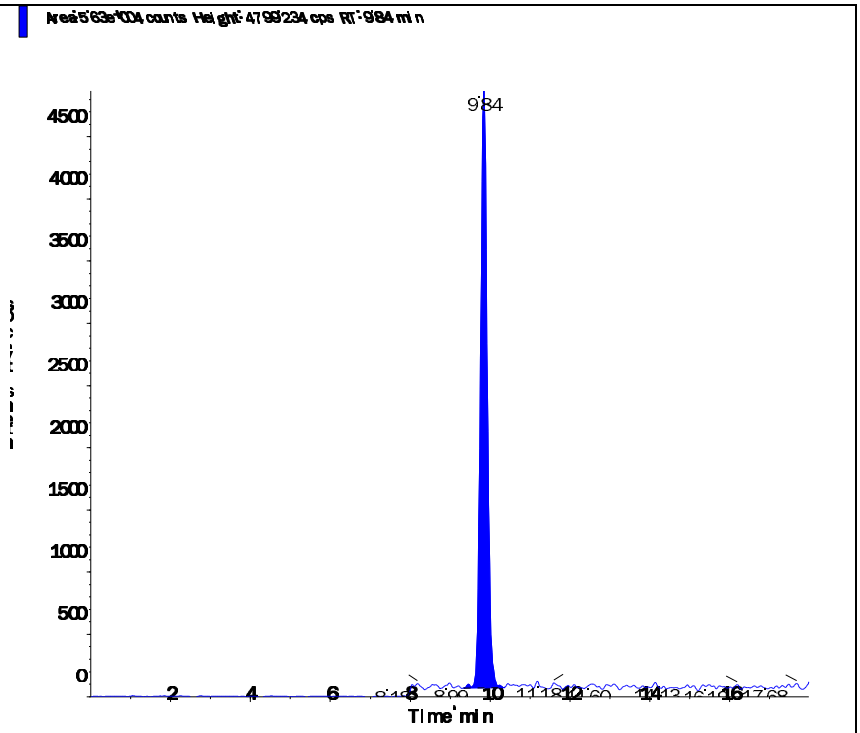

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Data File	LM35463.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 8:09:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35463.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 8:09:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.450e+05	9.34	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.520e+05	9.35	1.00	1.01
Perchlorate conf	5.550e+04	9.33	1.00	1.10

O18LP (Internal Standard)

RT (Exp. RT): 9.34(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

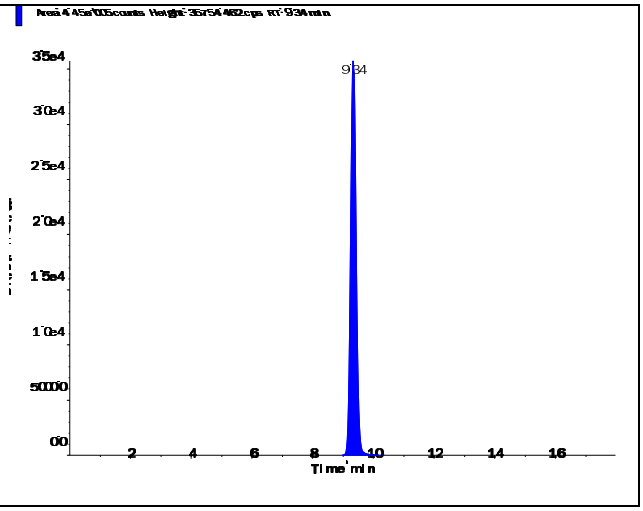

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.341
Sample Type:	(Quality Control)

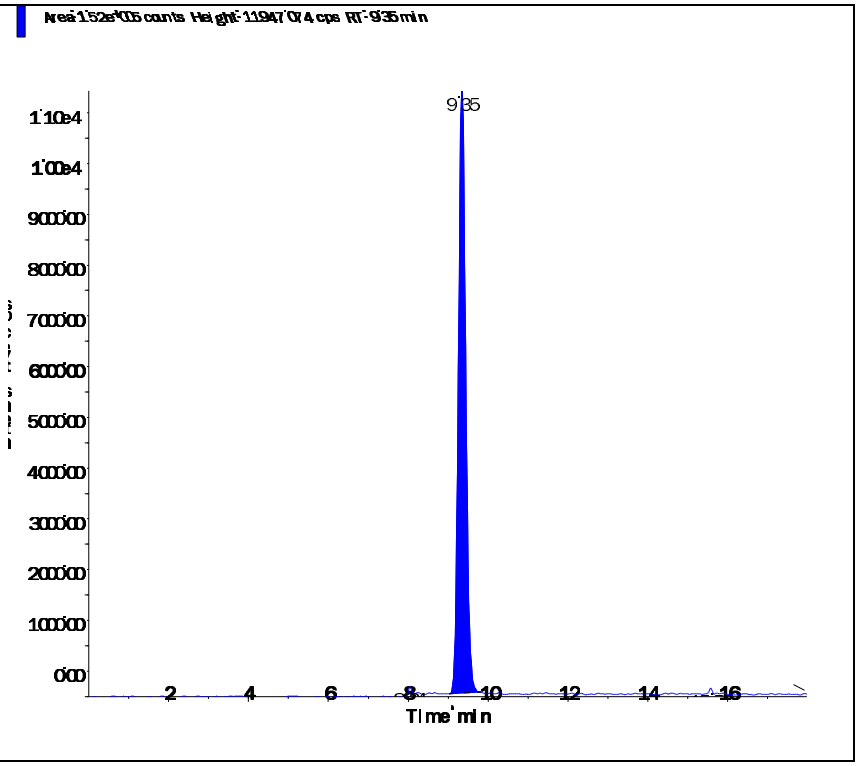

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.33 (9.84) min
Calculated conc:	1.10 ng/ml
Area Ratio:	0.125
Sample Type:	(Quality Control)

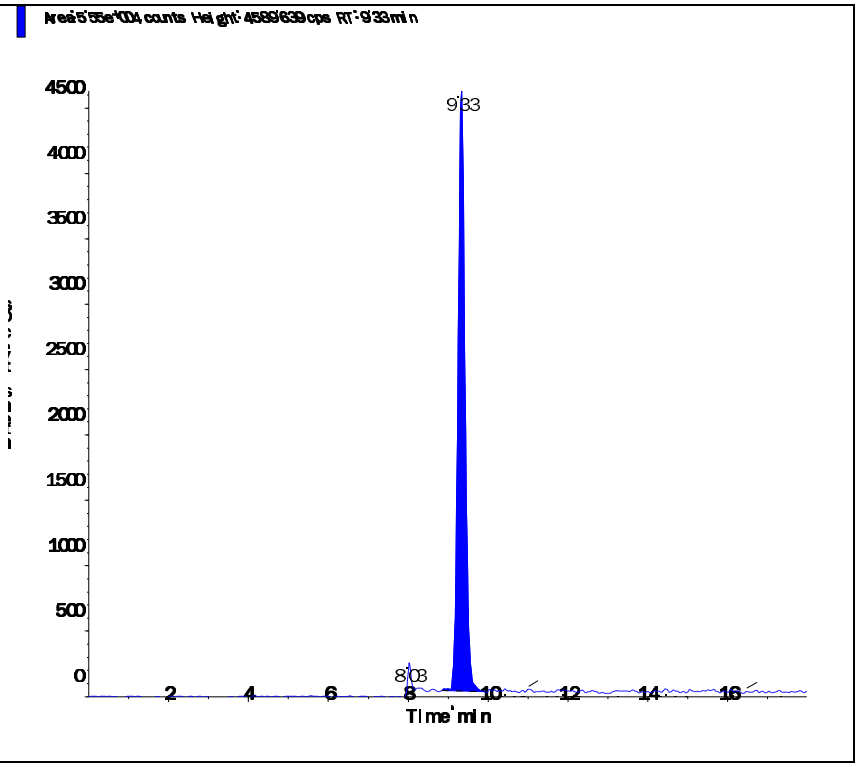

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Data File	LM35475.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 11:56:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35475.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 11:56:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.980e+05	9.32	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.700e+05	9.33	1.00	1.01
Perchlorate conf	5.750e+04	9.32	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.32(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

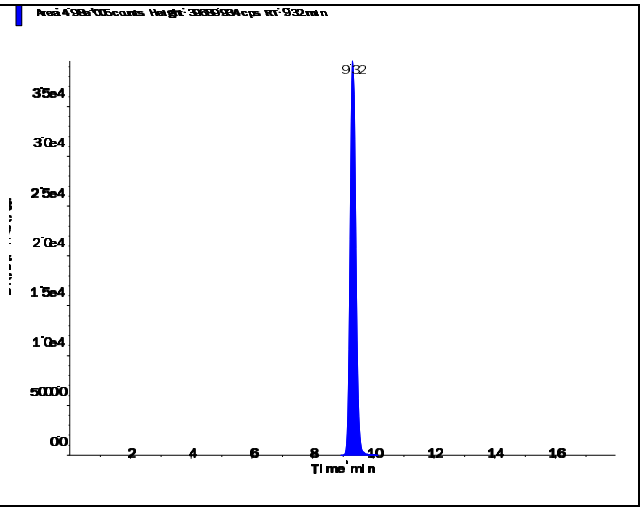

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.33 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.34
Sample Type:	(Quality Control)

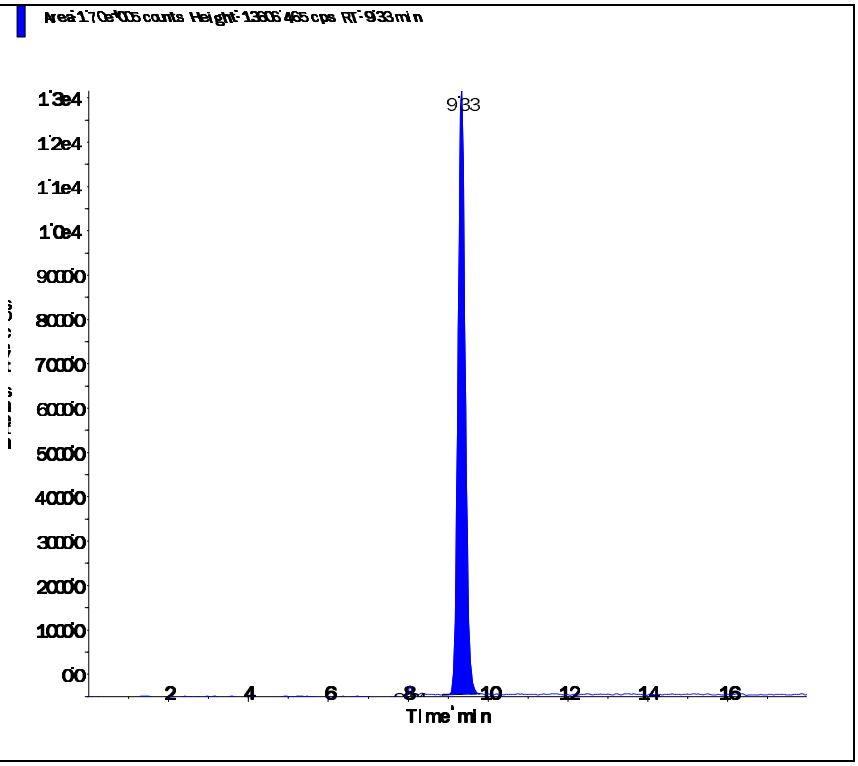

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.32 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.115
Sample Type:	(Quality Control)

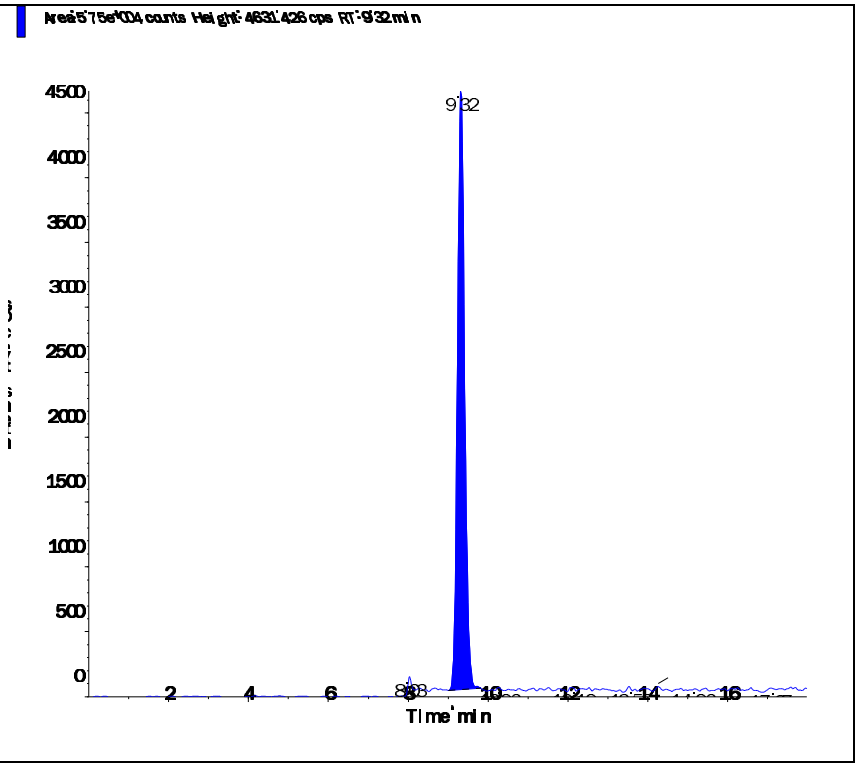

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Data File	LM35488.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 4:03:05 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35488.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 4:03:05 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.33	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+05	9.34	1.00	1.04
Perchlorate conf	6.020e+04	9.32	1.00	1.03

O18LP (Internal Standard)

RT (Exp. RT): 9.33(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

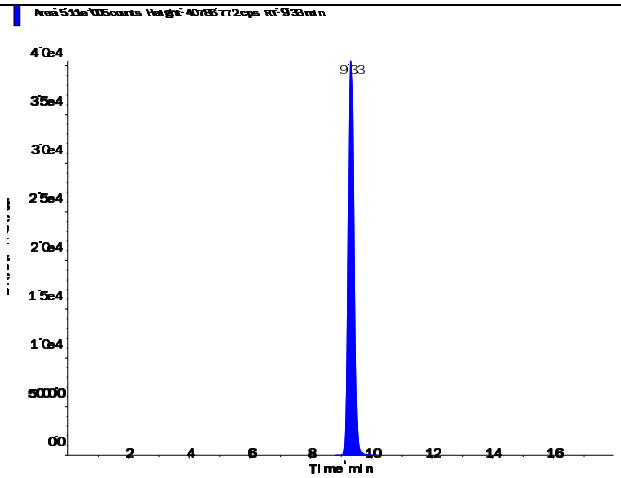

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.34 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.35
Sample Type:	(Quality Control)

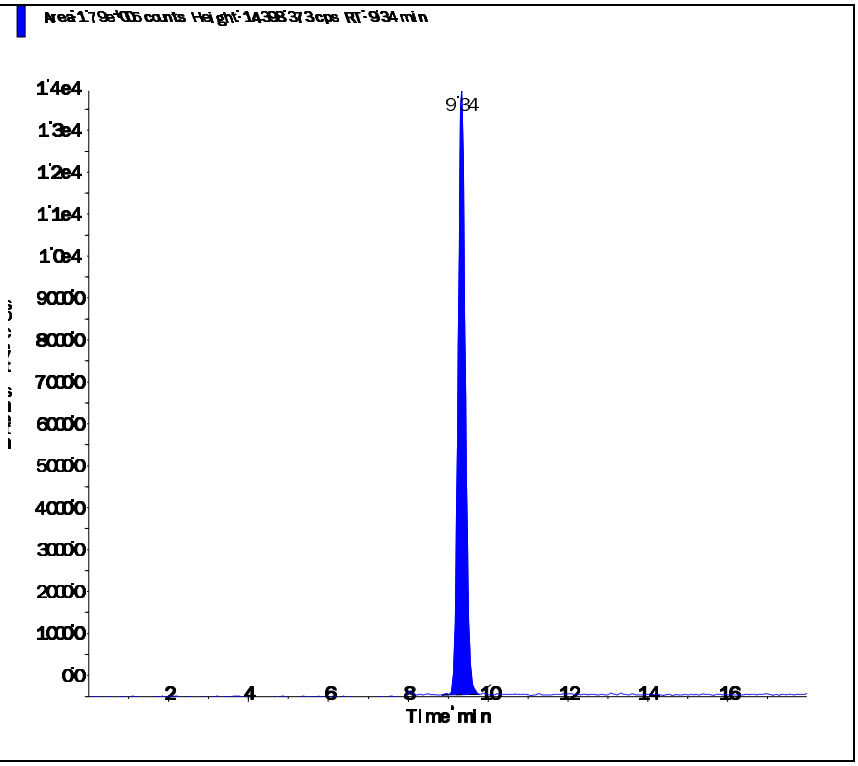

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.32 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.118
Sample Type:	(Quality Control)

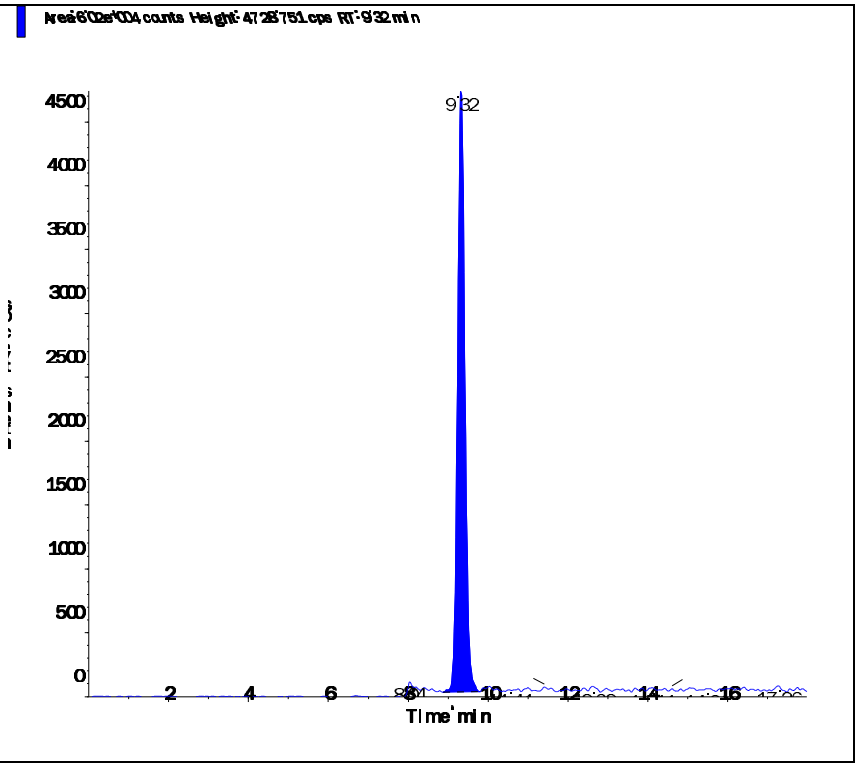

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Data File	LM35495.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:15:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35495.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:15:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.500e+05	9.33	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.890e+05	9.35	1.00	1.02
Perchlorate conf	6.340e+04	9.33	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.33(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

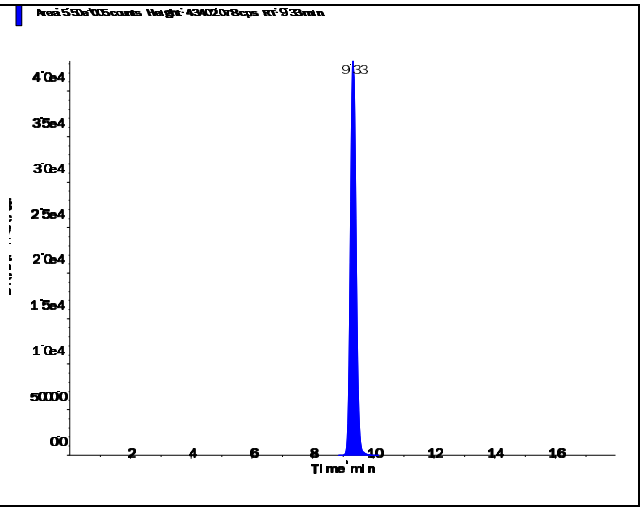

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.35 (9.84) min Calculated conc: 1.02 ng/ml Area Ratio: 0.345 Sample Type: (Quality Control)	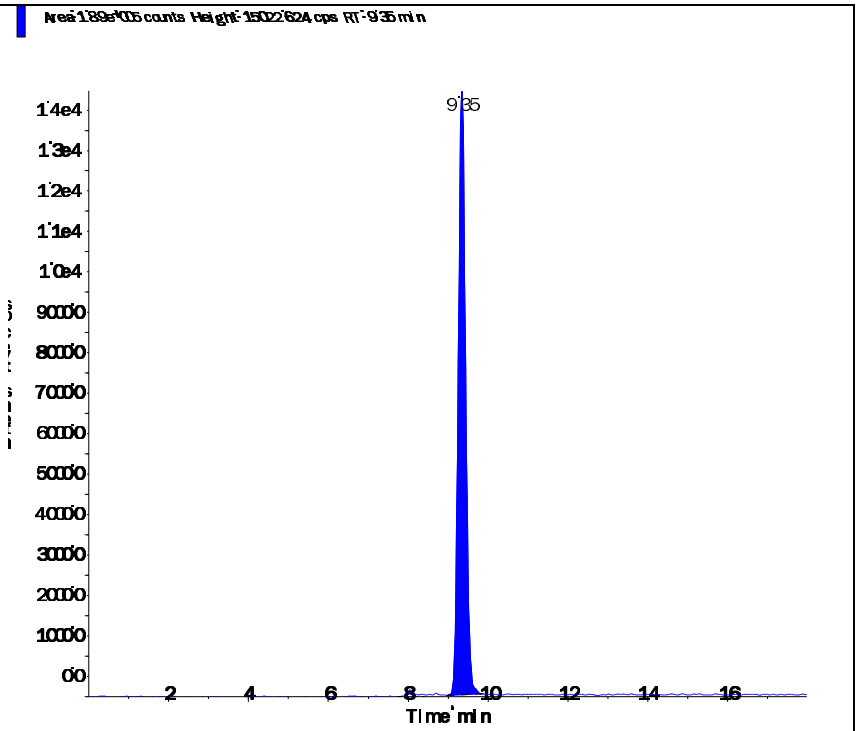
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.33 (9.84) min Calculated conc: 1.01 ng/ml Area Ratio: 0.115 Sample Type: (Quality Control)	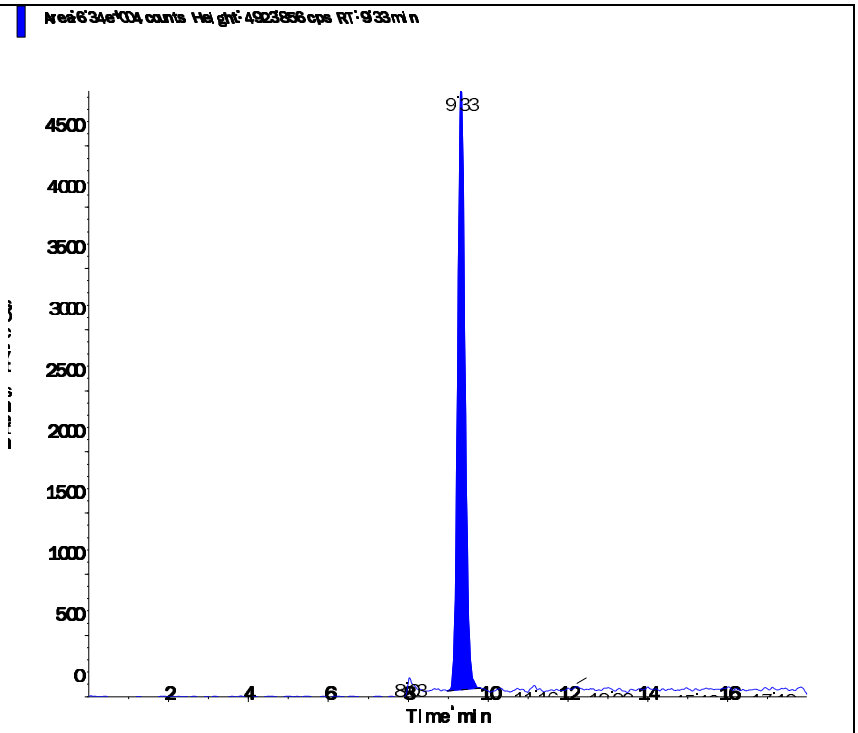

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Data File	LM35498.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:06:10 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35498.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:06:10 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.580e+05	9.34	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.610e+05	9.35	1.00	1.04
Perchlorate conf	5.670e+04	9.34	1.00	1.09

O18LP (Internal Standard)

RT (Exp. RT): 9.34(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

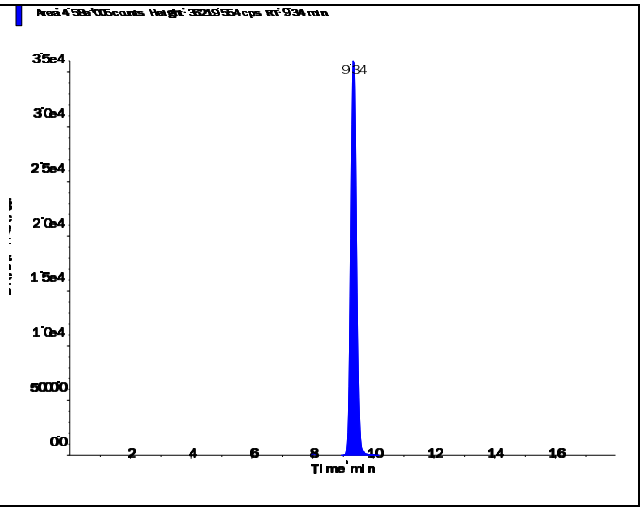

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.353
Sample Type:	(Quality Control)

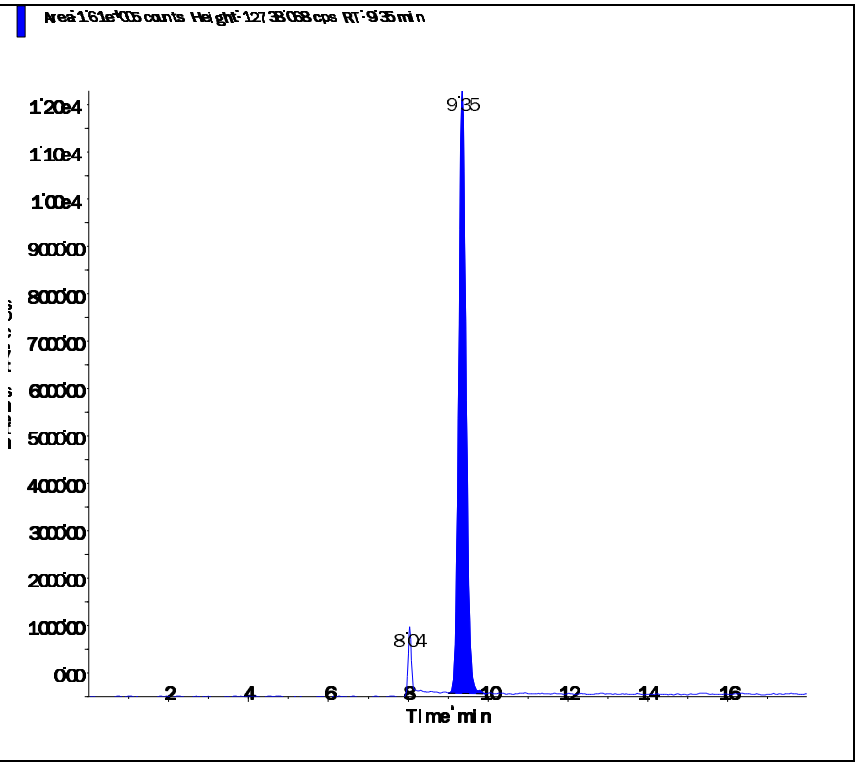

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.34 (9.84) min
Calculated conc:	1.09 ng/ml
Area Ratio:	0.124
Sample Type:	(Quality Control)

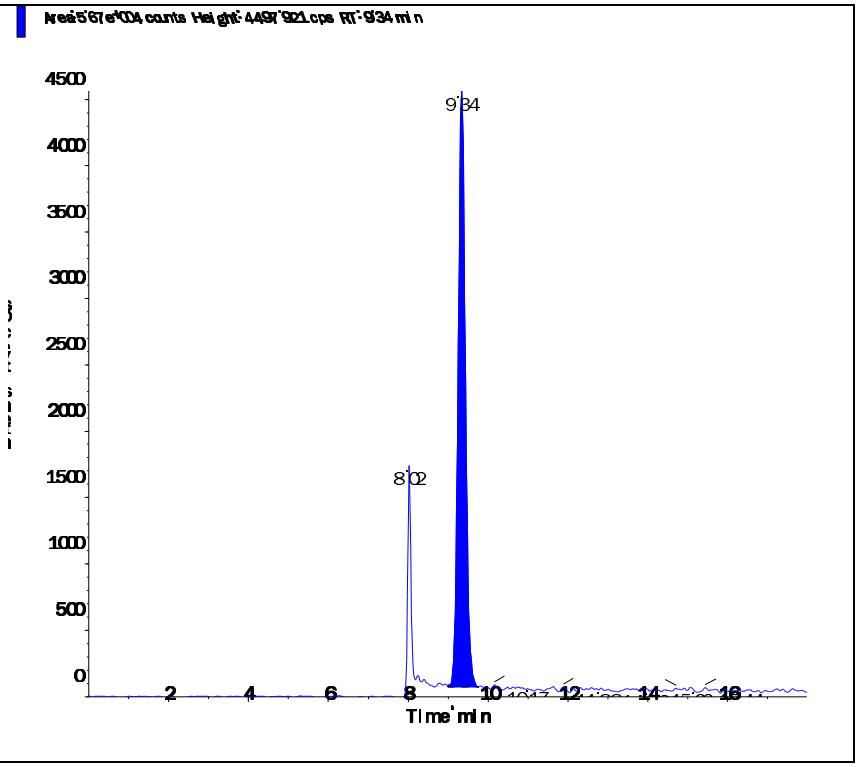

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Printed: 6/27/2016 7:55 PM

Data File	LM35508.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 9:15:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-11 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35508.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 9:15:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.090e+05	9.35	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.760e+05	9.36	1.00	1.02
Perchlorate conf	5.930e+04	9.35	1.00	1.02

O18LP (Internal Standard)

RT (Exp. RT): 9.35(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

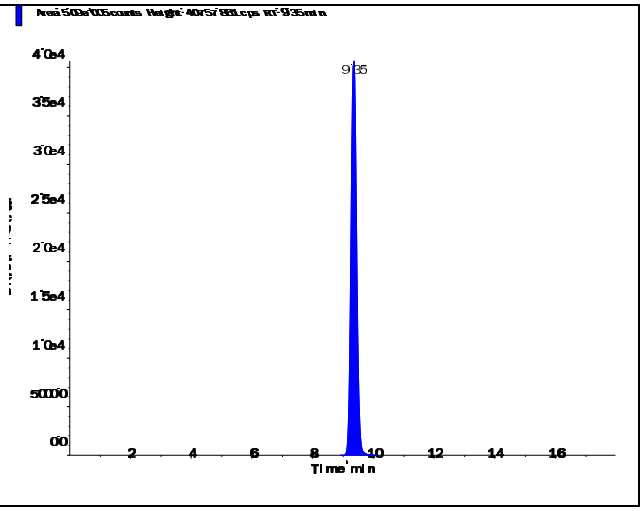

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.36 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.345
Sample Type:	(Quality Control)

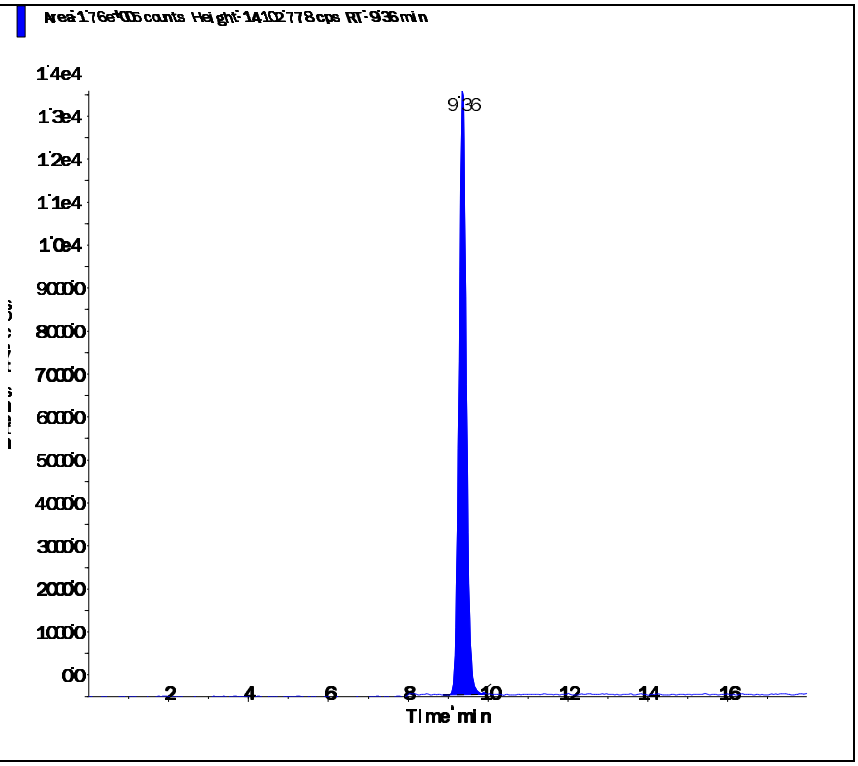

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.117
Sample Type:	(Quality Control)

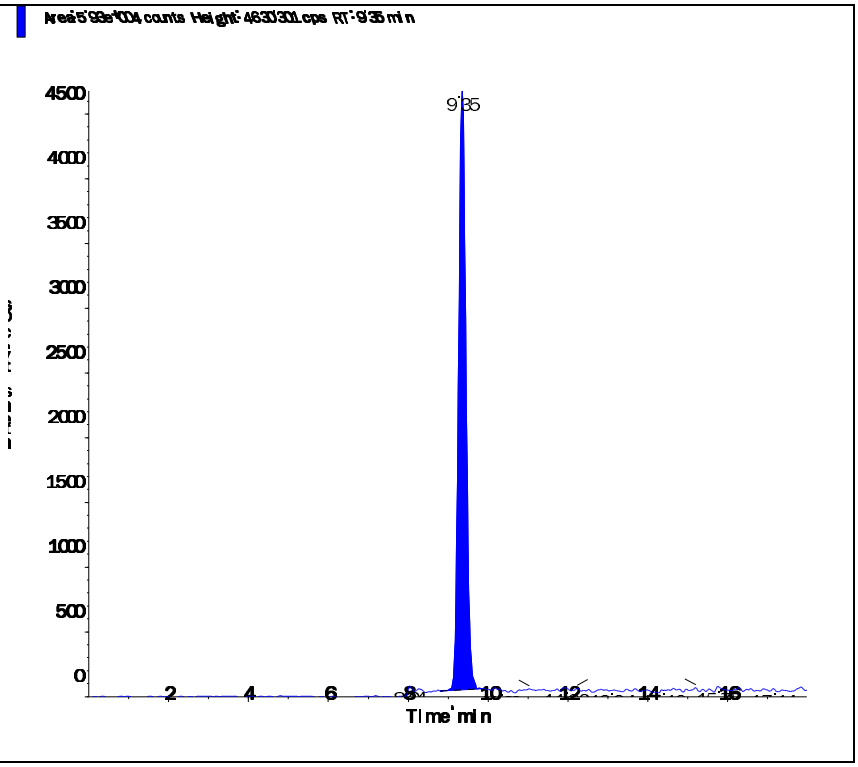

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Printed: 6/27/2016 7:39 PM

Data File	LM35464.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 8:28:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-05 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35464.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 8:28:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.490e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.160e+04	9.40	N/A	0.206
Perchlorate conf	1.210e+04	9.37	N/A	0.222

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

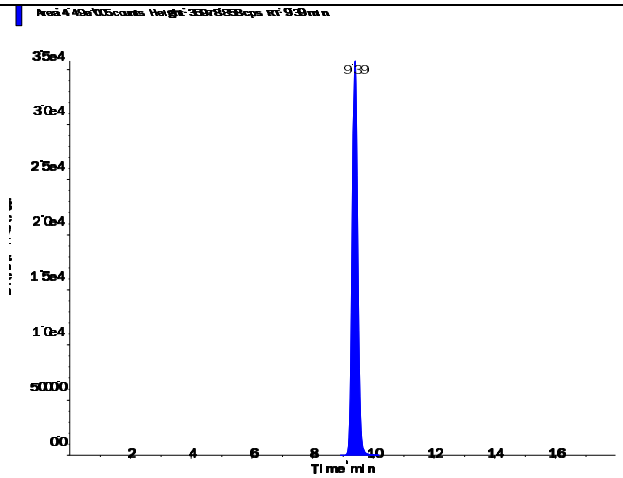

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

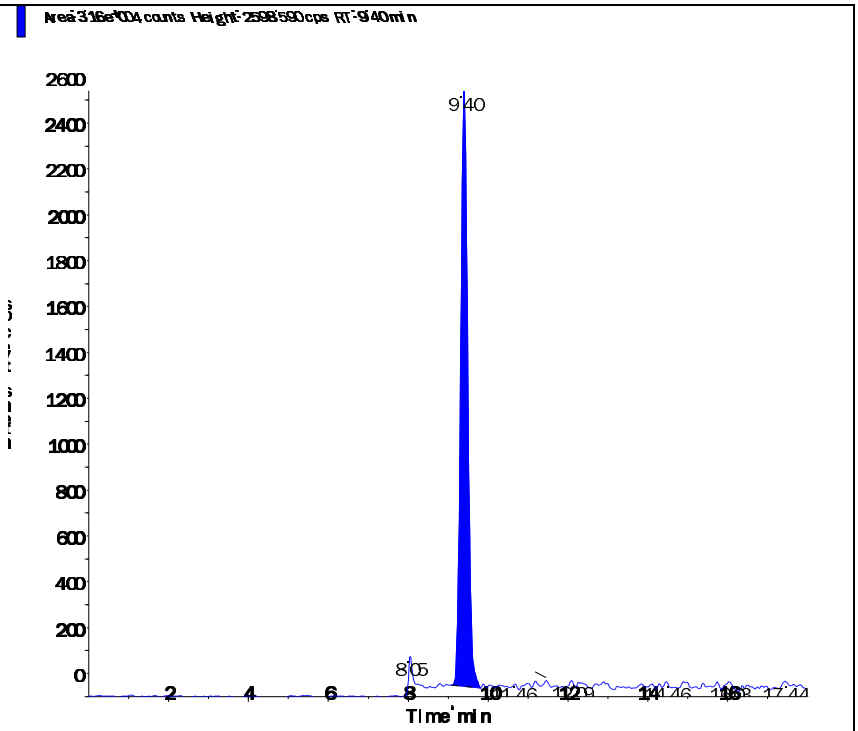

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.37 (9.84) min
Calculated conc:	0.222 ng/ml
Area Ratio:	0.027
Sample Type:	(Unknown)

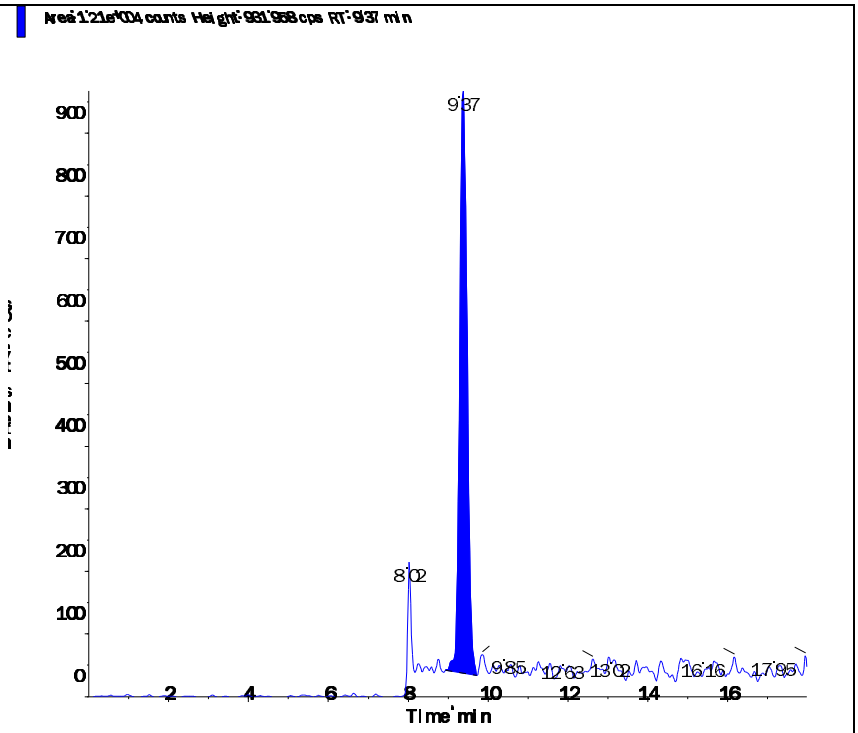

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Data File	LM35476.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 12:15:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-06 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35476.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 12:15:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.160e+05	9.36	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.500e+04	9.37	N/A	0.198
Perchlorate conf	1.310e+04	9.35	N/A	0.207

O18LP (Internal Standard)

RT (Exp. RT): 9.36(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

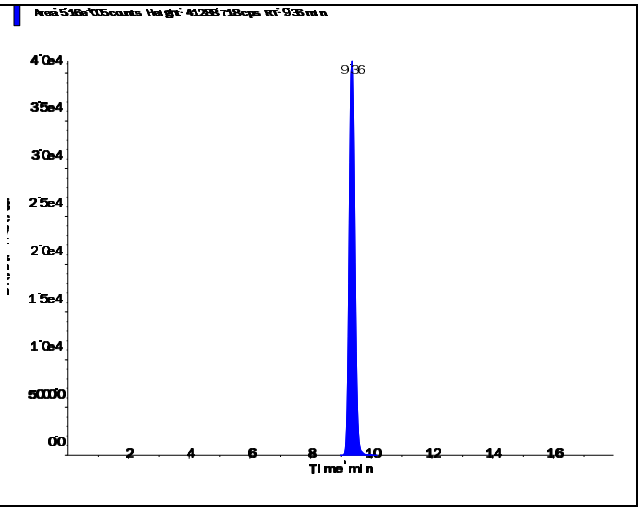

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.37 (9.84) min
Calculated conc:	0.198 ng/ml
Area Ratio:	0.068
Sample Type:	(Unknown)

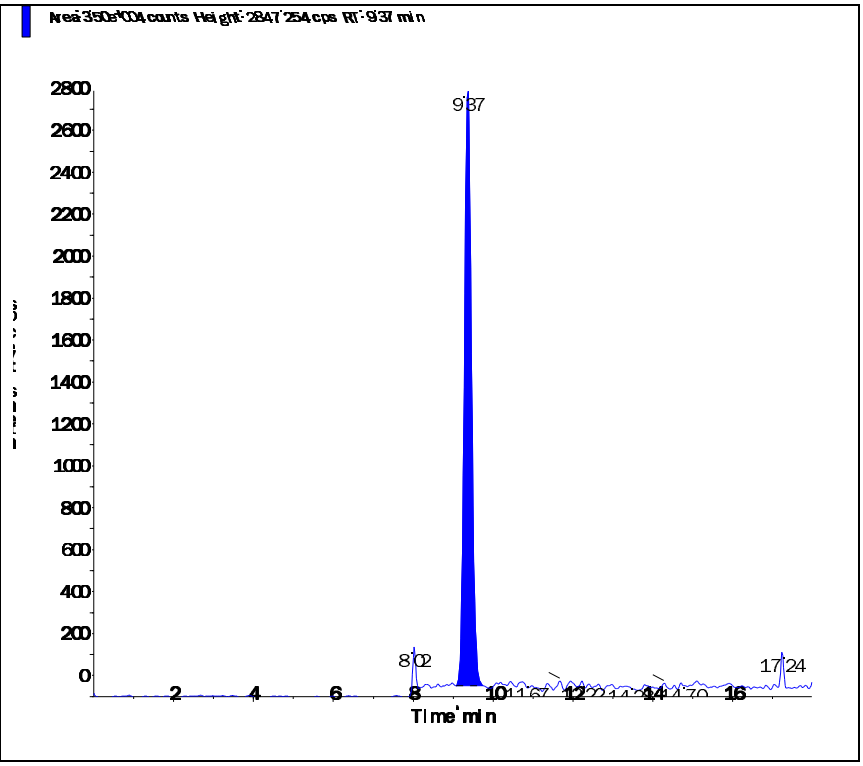

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

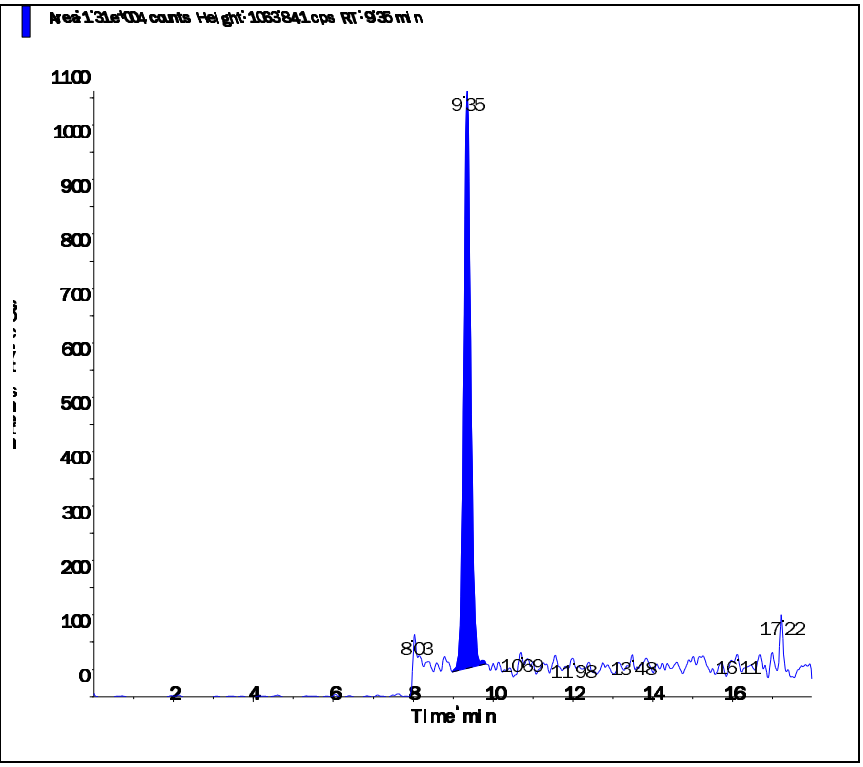

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Data File	LM35489.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 4:22:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35489.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 4:22:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.380e+05	9.37	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.890e+04	9.39	N/A	0.211
Perchlorate conf	1.340e+04	9.38	N/A	0.202

O18LP (Internal Standard)

RT (Exp. RT): 9.37(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

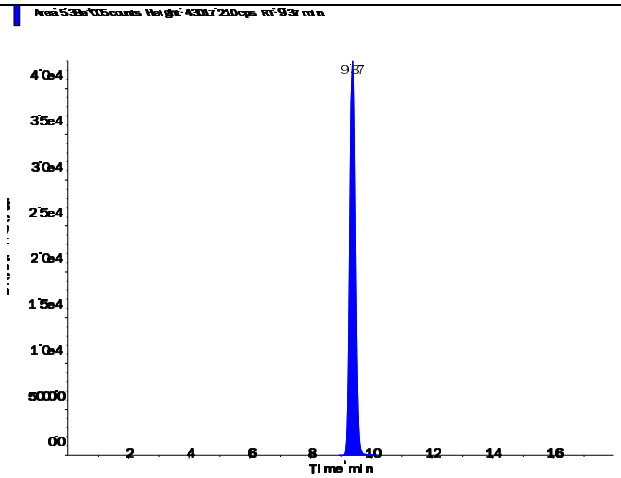

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.39 (9.84) min Calculated conc: 0.211 ng/ml Area Ratio: 0.072 Sample Type: (Unknown)	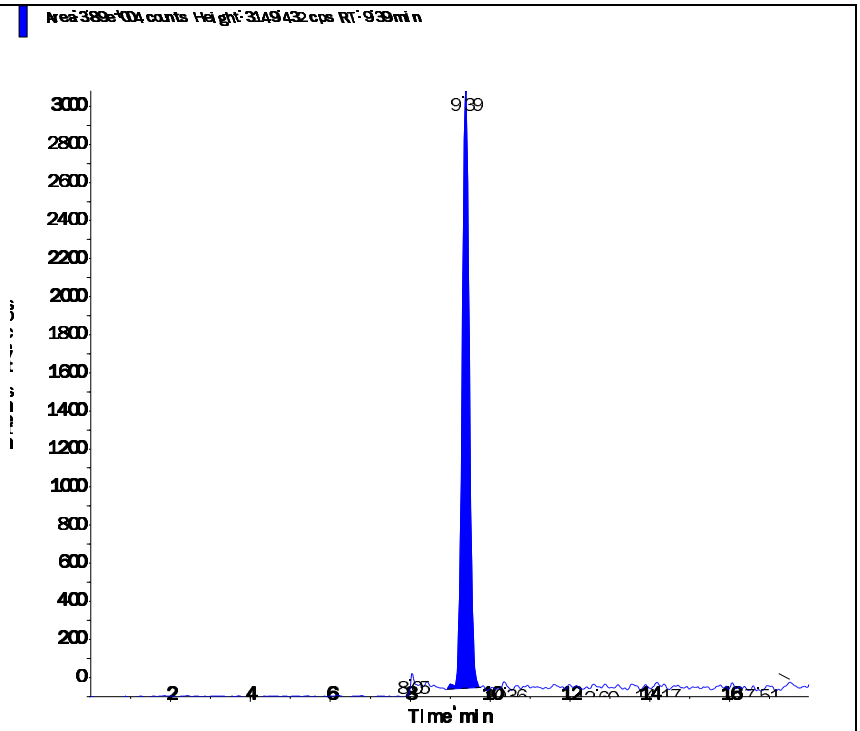
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.38 (9.84) min Calculated conc: 0.202 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	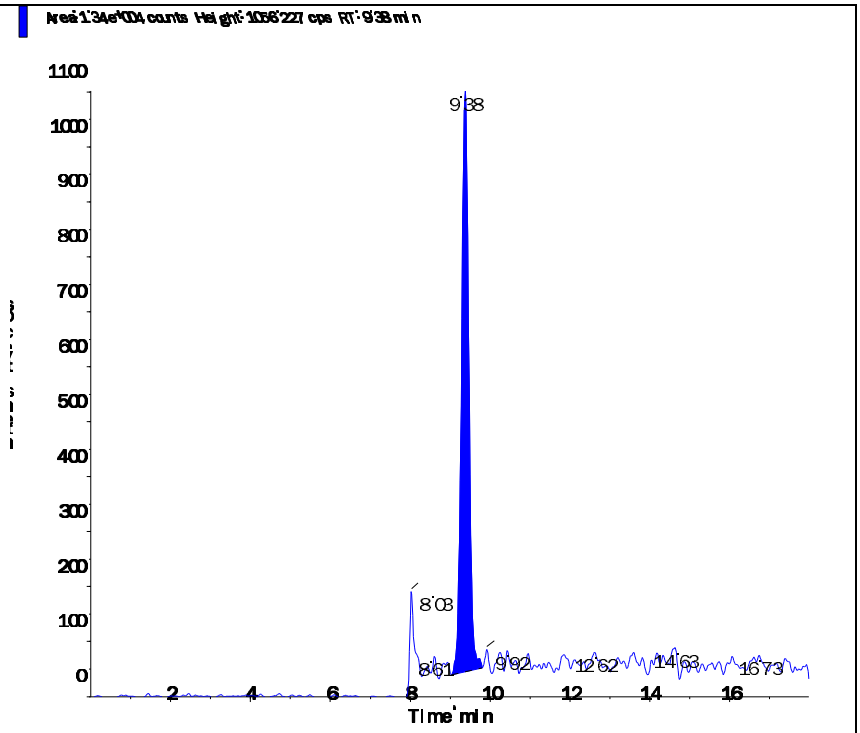

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Data File	LM35496.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:34:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-08 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35496.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:34:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.520e+05	9.38	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.800e+04	9.39	N/A	0.201
Perchlorate conf	1.410e+04	9.38	N/A	0.208

O18LP (Internal Standard)

RT (Exp. RT): 9.38(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

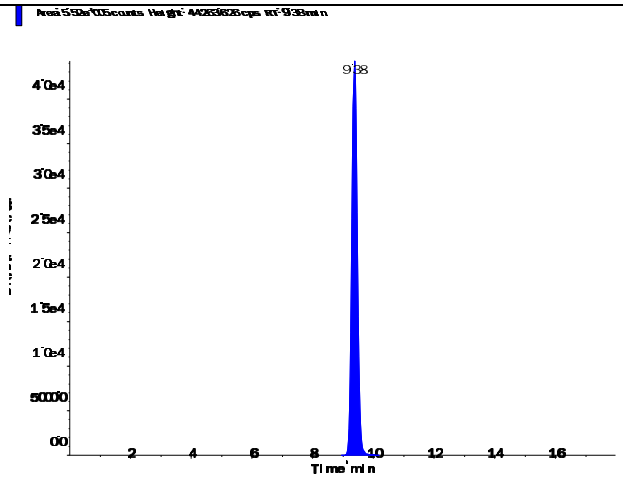

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

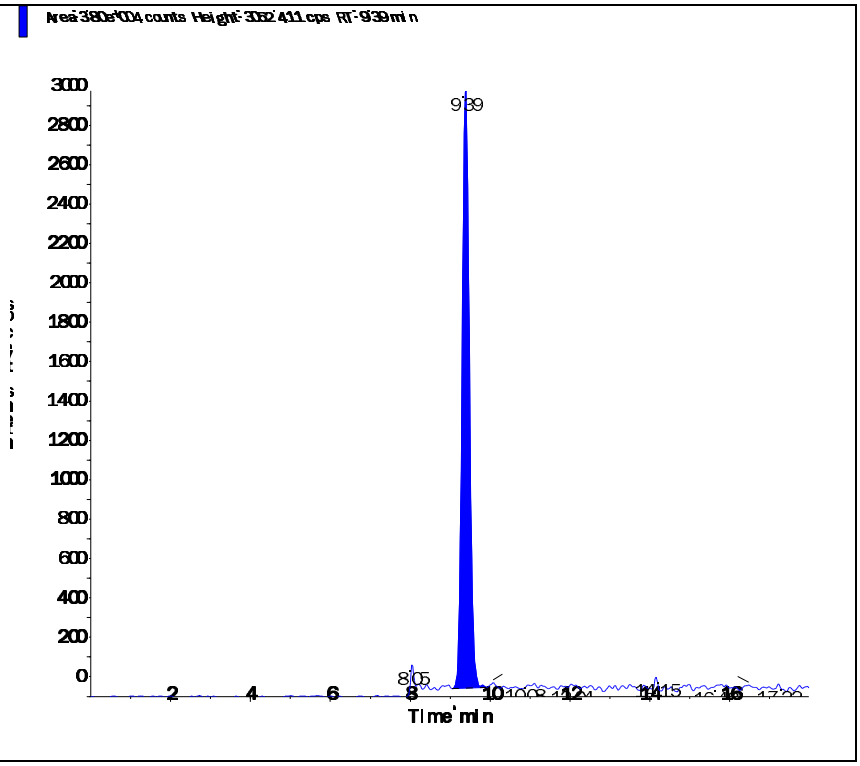

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	0.208 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

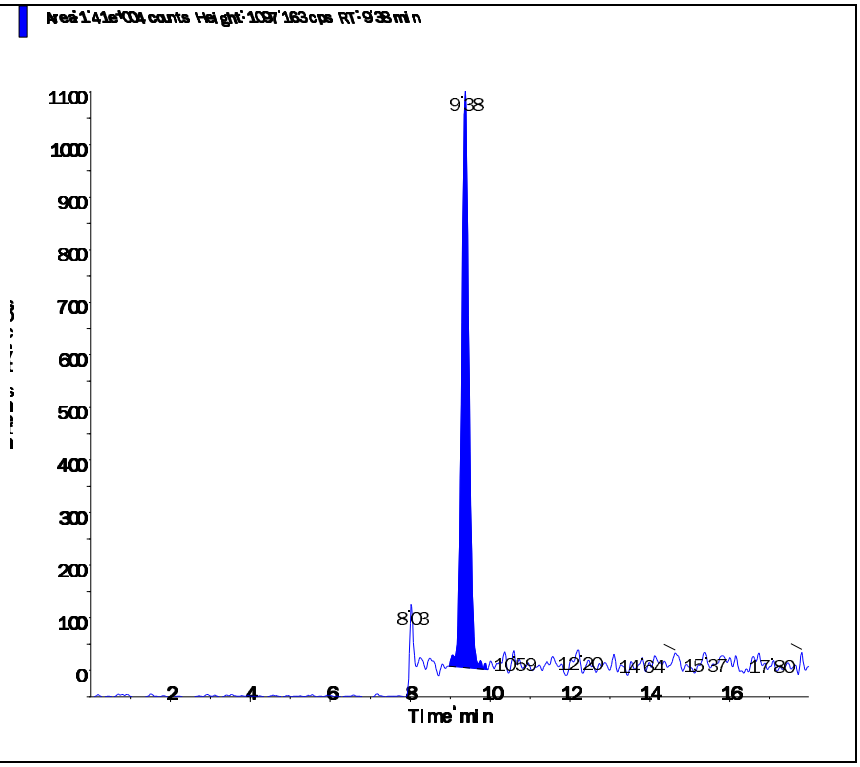

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Data File	LM35499.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:25:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-09 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35499.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:25:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.640e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.290e+04	9.40	N/A	0.207
Perchlorate conf	1.150e+04	9.38	N/A	0.201

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

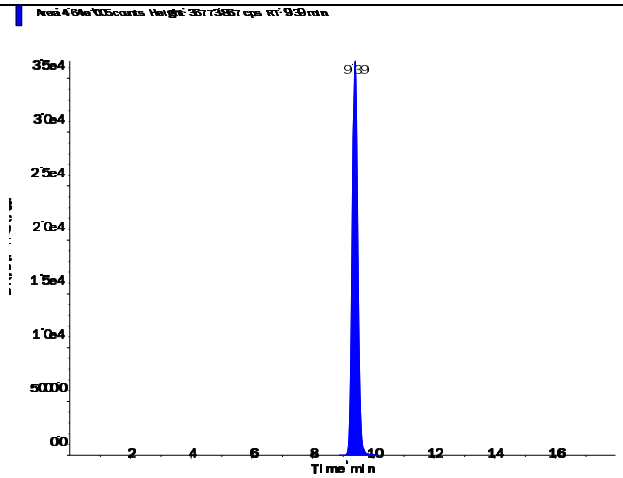

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

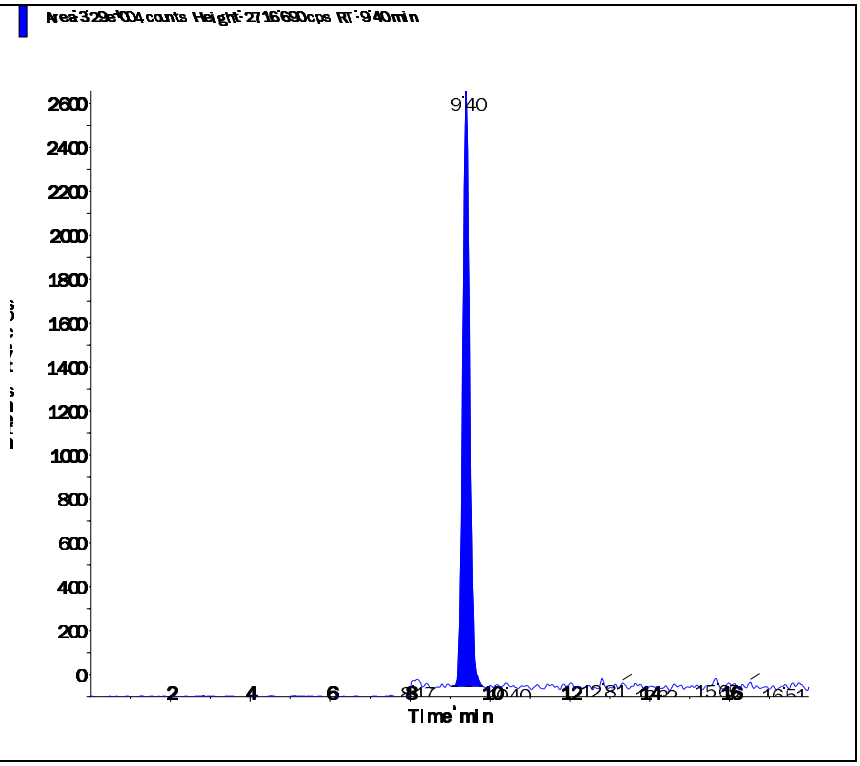

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

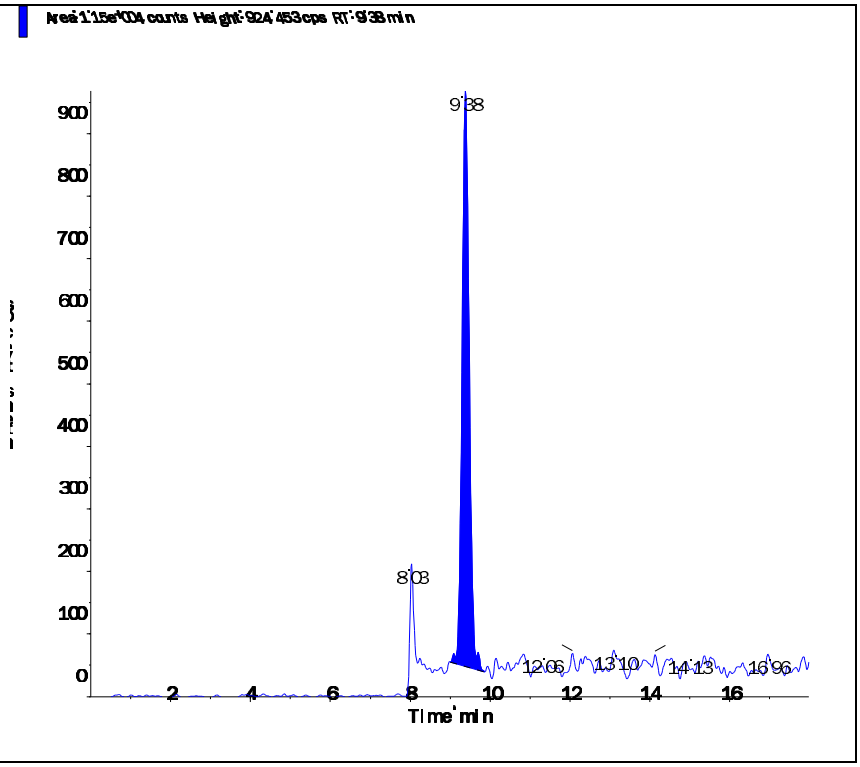

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Data File	LM35509.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 9:34:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-10 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35509.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 9:34:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-10	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.370e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.790e+04	9.40	N/A	0.206
Perchlorate conf	1.400e+04	9.39	N/A	0.214

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

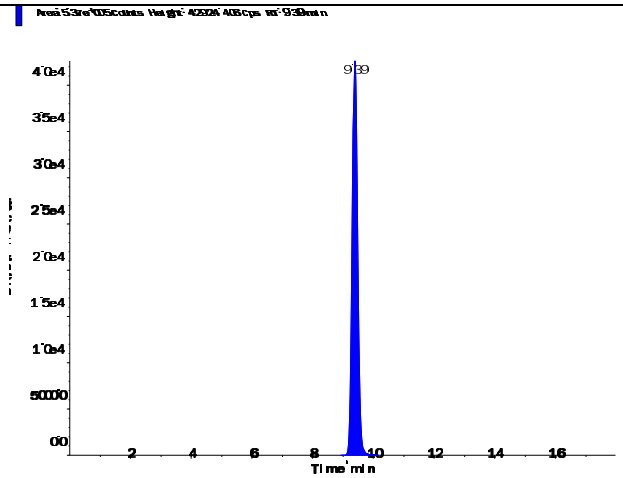

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.40 (9.84) min Calculated conc: 0.206 ng/ml Area Ratio: 0.071 Sample Type: (Unknown)	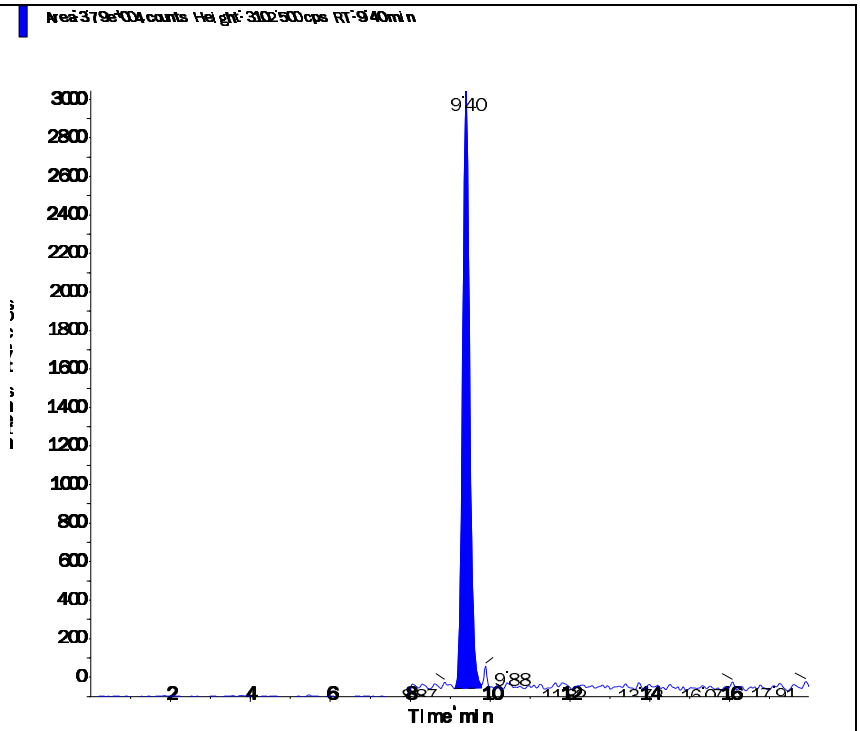
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.39 (9.84) min Calculated conc: 0.214 ng/ml Area Ratio: 0.026 Sample Type: (Unknown)	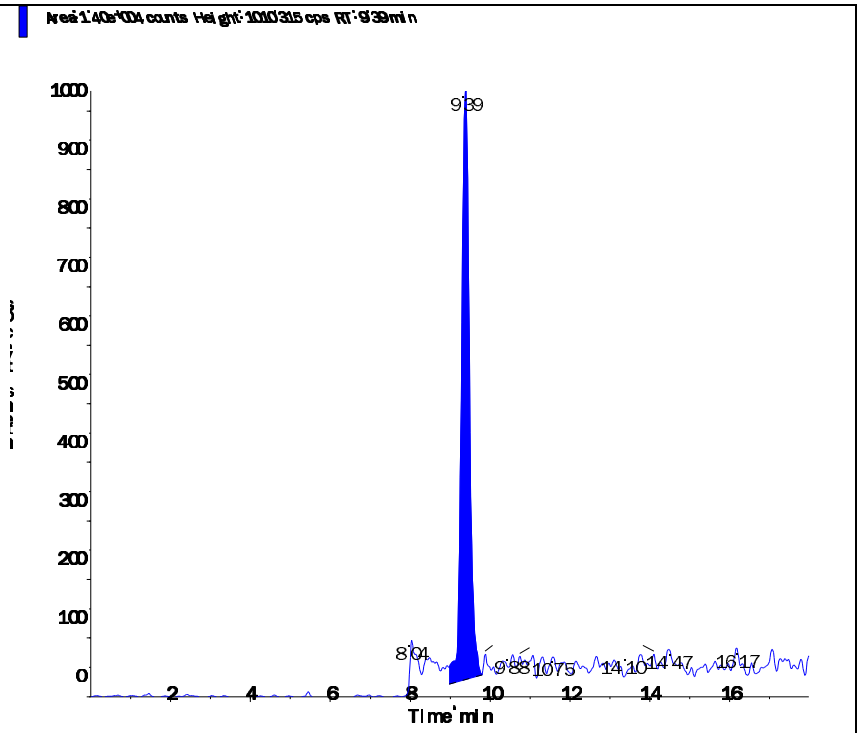

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Data File	LM35462.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 7:50:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-01 CCB	**Injection Vial**	1.00
Data File	LM35462.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 7:50:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.420e+05	9.58	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.58(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

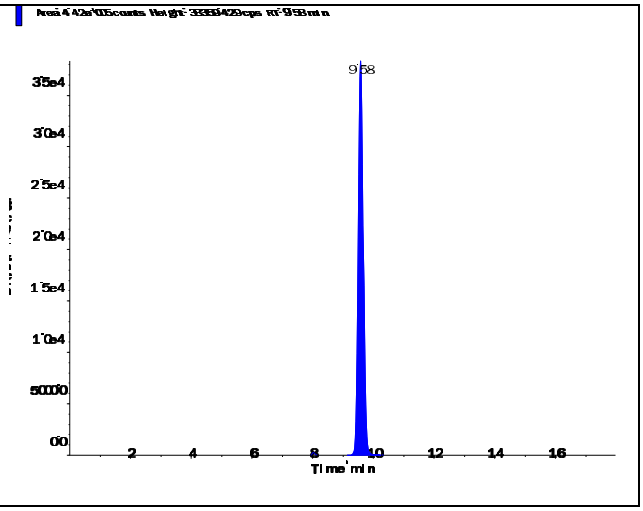

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	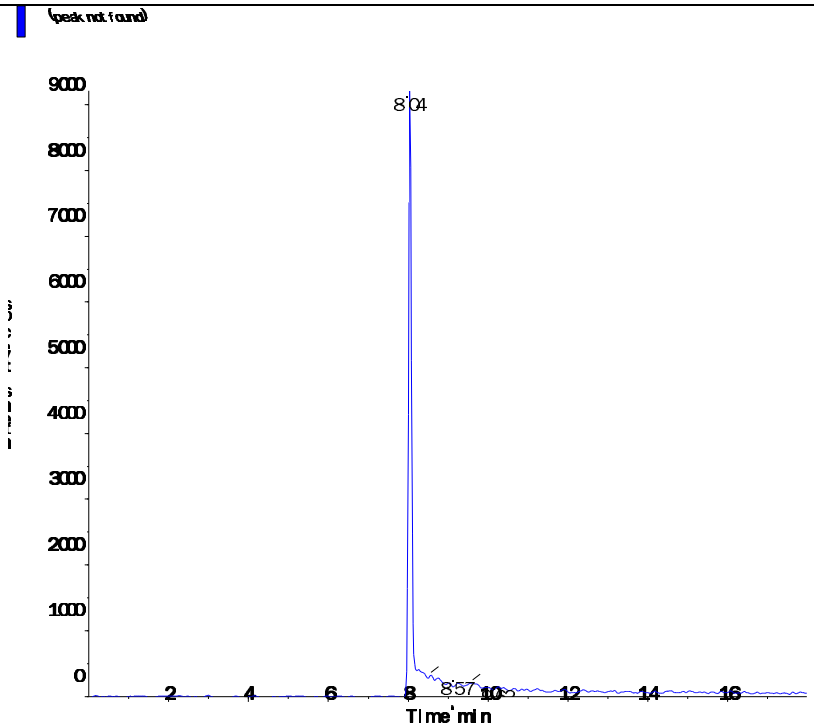
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	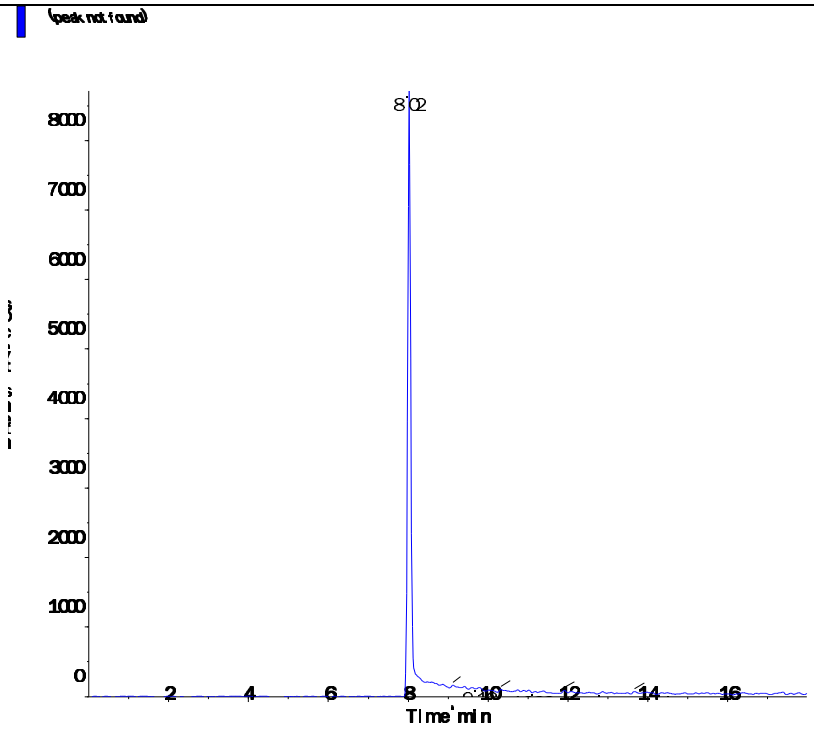

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Printed: 6/27/2016 7:43 PM

Data File	LM35477.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 12:34:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-04 CCB	**Injection Vial**	1.00
Data File	LM35477.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 12:34:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.240e+05	9.57	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	8.240e+02	9.53	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.57(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

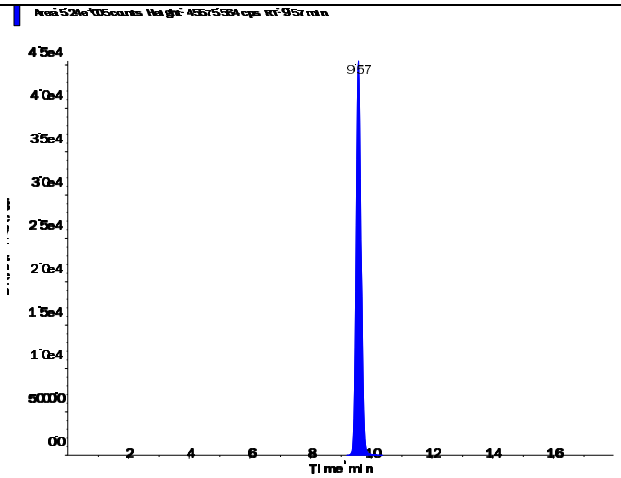

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	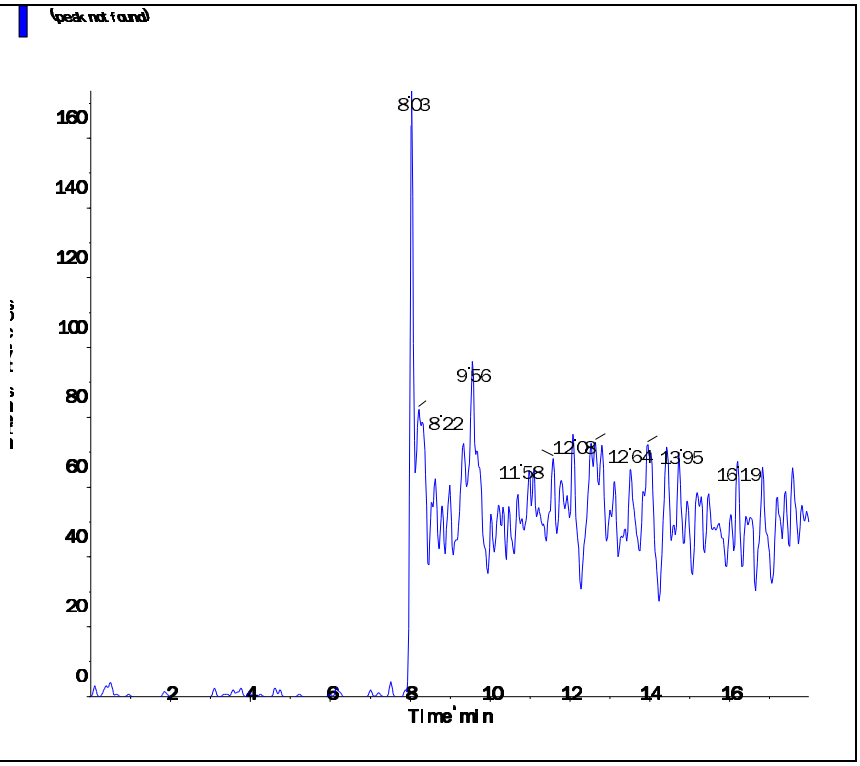
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.53 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	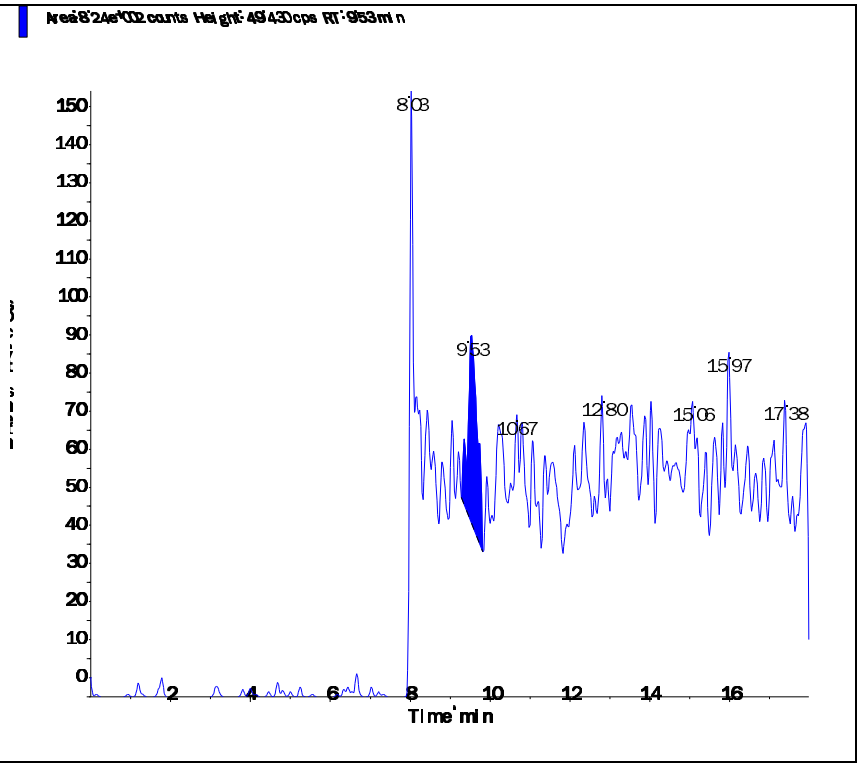

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Data File	LM35490.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 4:40:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-06 CCB	**Injection Vial**	1.00
Data File	LM35490.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 4:40:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.420e+05	9.59	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.59(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

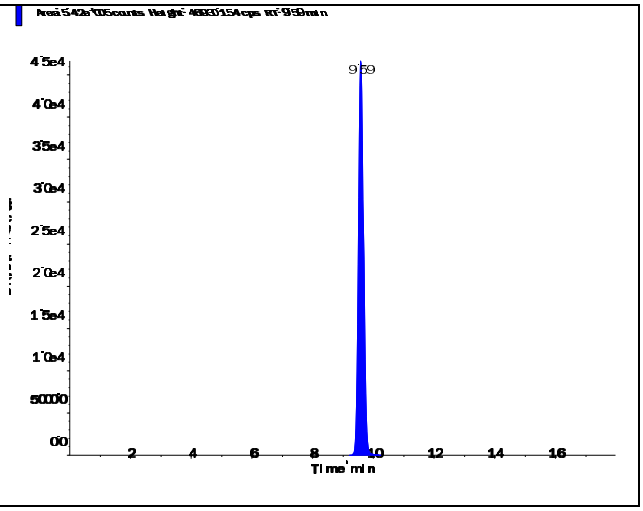

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Printed: 6/27/2016 7:48 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

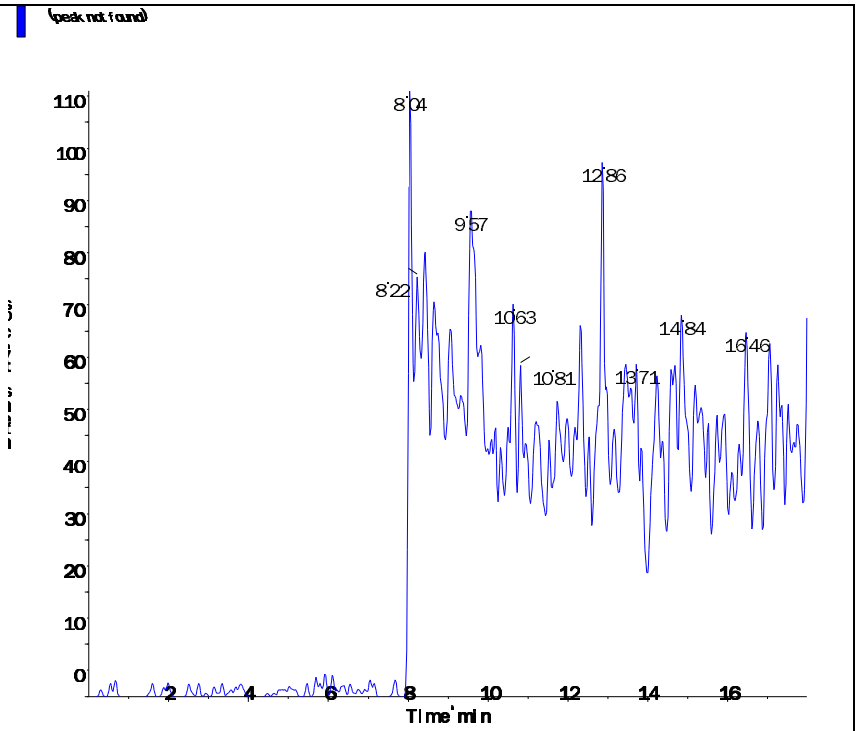

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

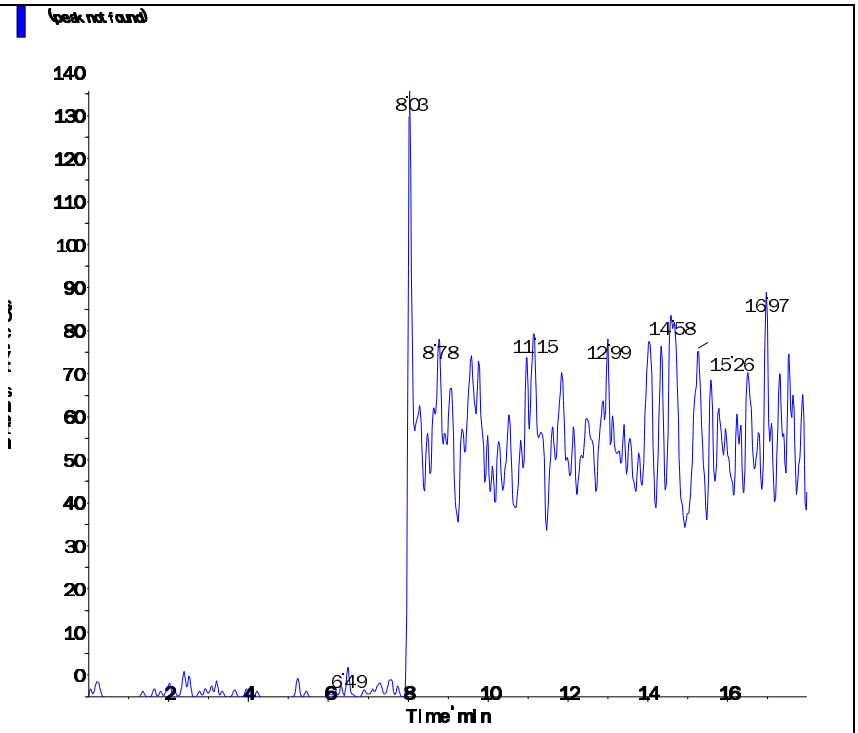

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Data File	LM35497.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:53:28 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-08 CCB	**Injection Vial**	1.00
Data File	LM35497.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:53:28 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.550e+05	9.59	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	5.180e+02	9.63	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.59(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

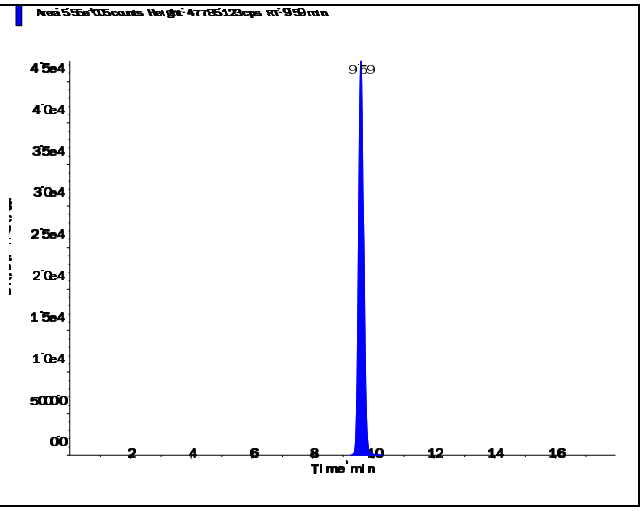

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	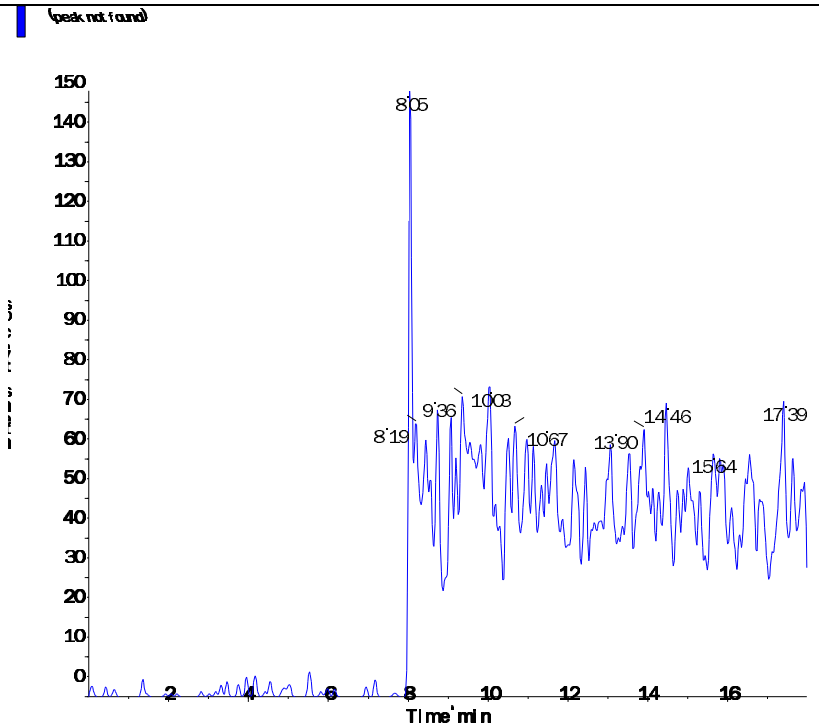
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.63 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	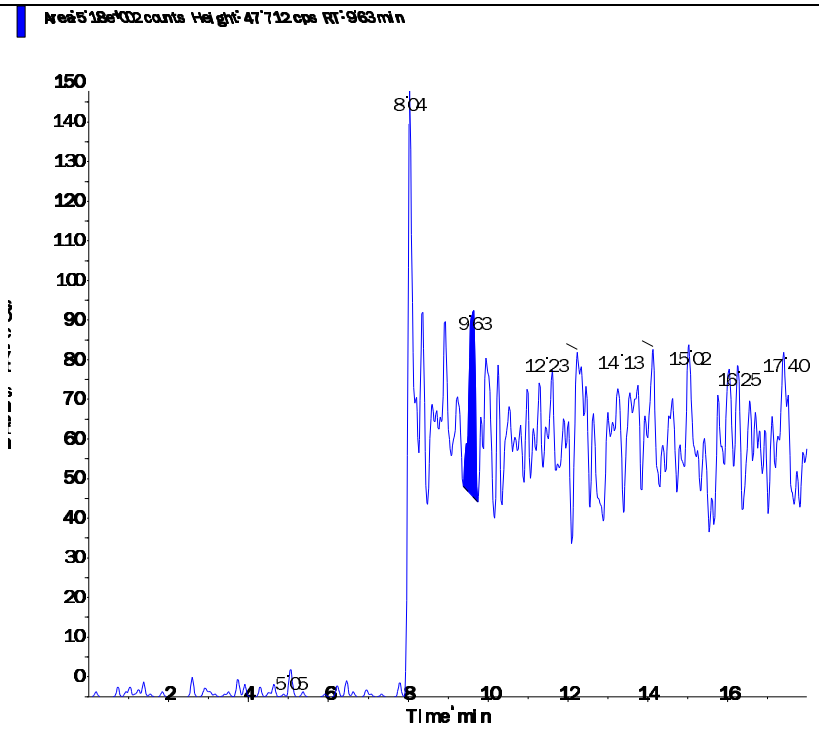

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Data File	LM35500.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:44:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-10 CCB	**Injection Vial**	1.00
Data File	LM35500.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:44:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.840e+05	9.61	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.61(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

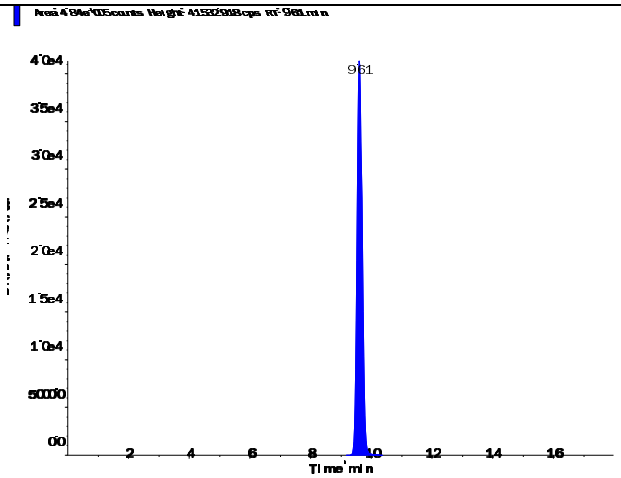

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	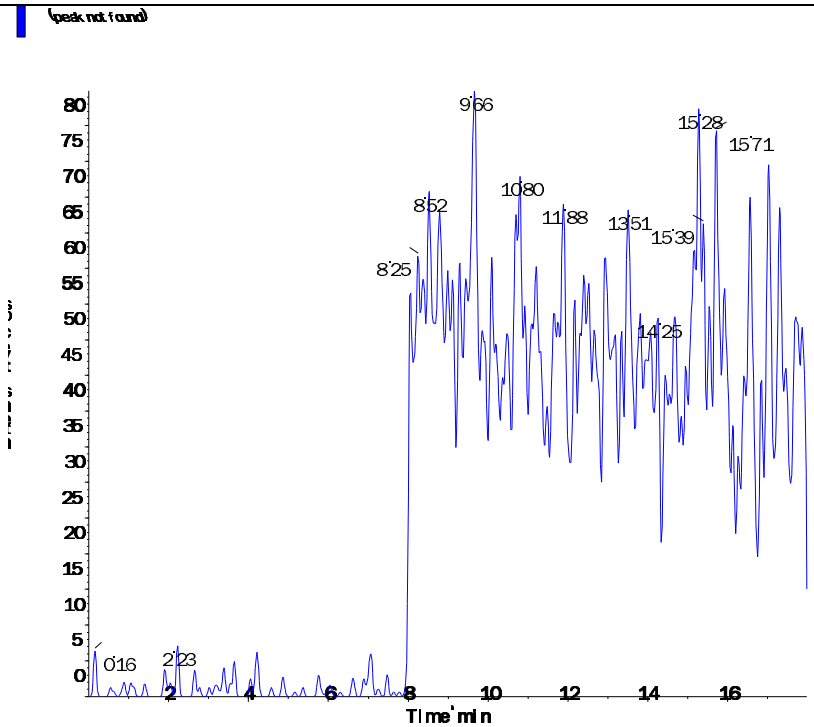
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	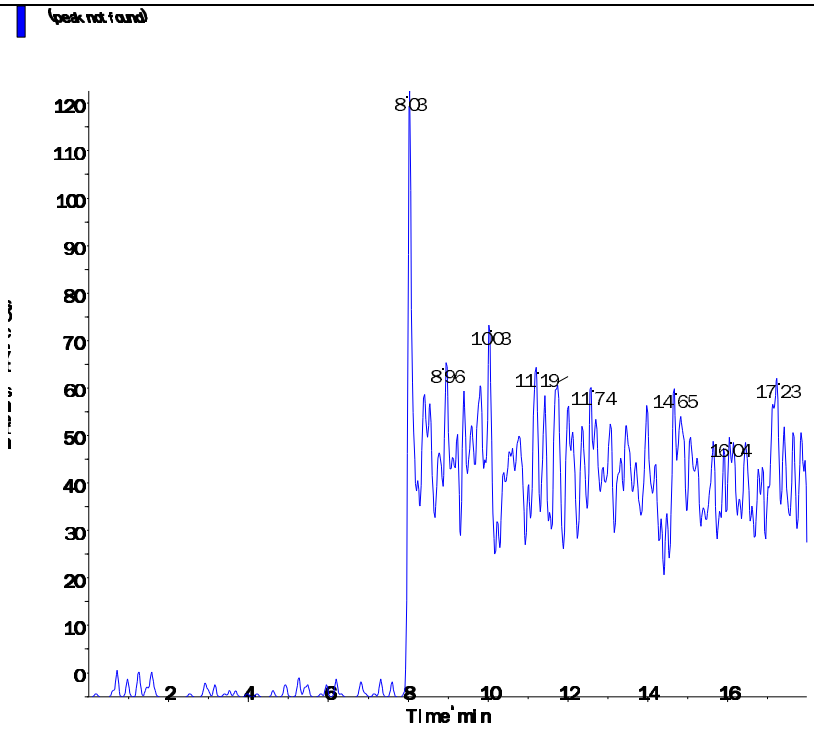

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Data File	LM35510.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 9:53:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-12 CCB	**Injection Vial**	1.00
Data File	LM35510.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 9:53:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-12	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.380e+05	9.61	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.61(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

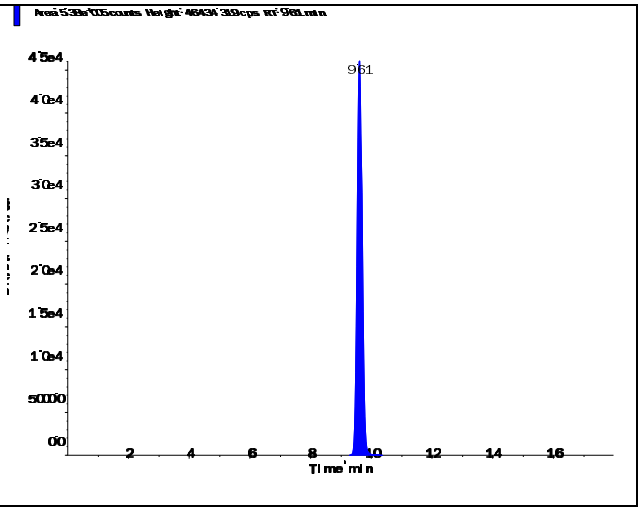

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

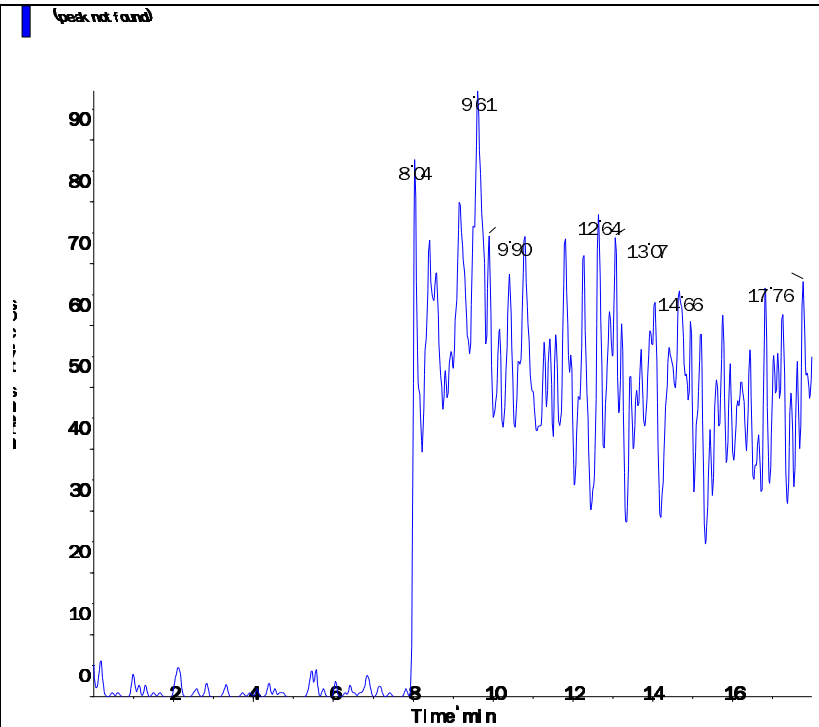

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

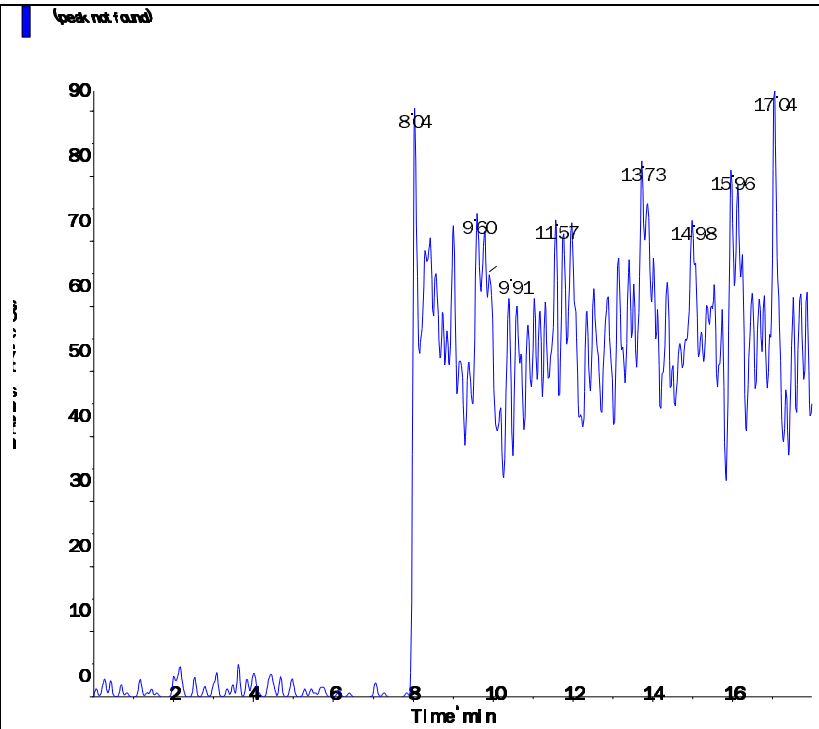

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Data File	LM35465.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 8:47:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM35465.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 8:47:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.320e+05	8.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.810e+04	8.97	N/A	0.19
Perchlorate conf	1.000e+04	8.95	N/A	0.188

O18LP (Internal Standard)

RT (Exp. RT): 8.95(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

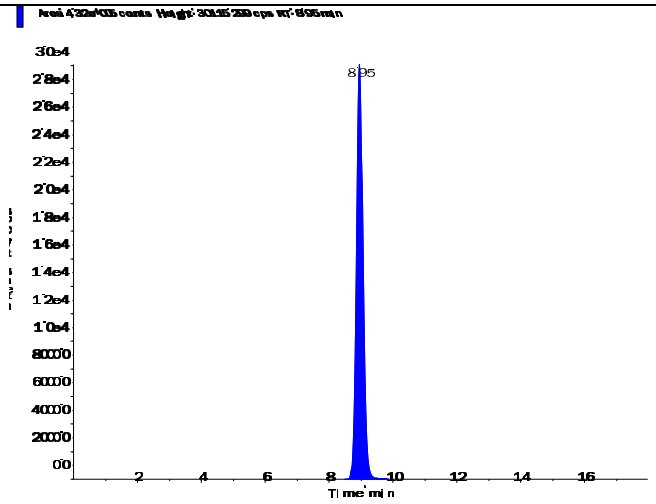

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	8.97 (9.84) min
Calculated conc:	0.19 ng/ml
Area Ratio:	0.065
Sample Type:	(Unknown)

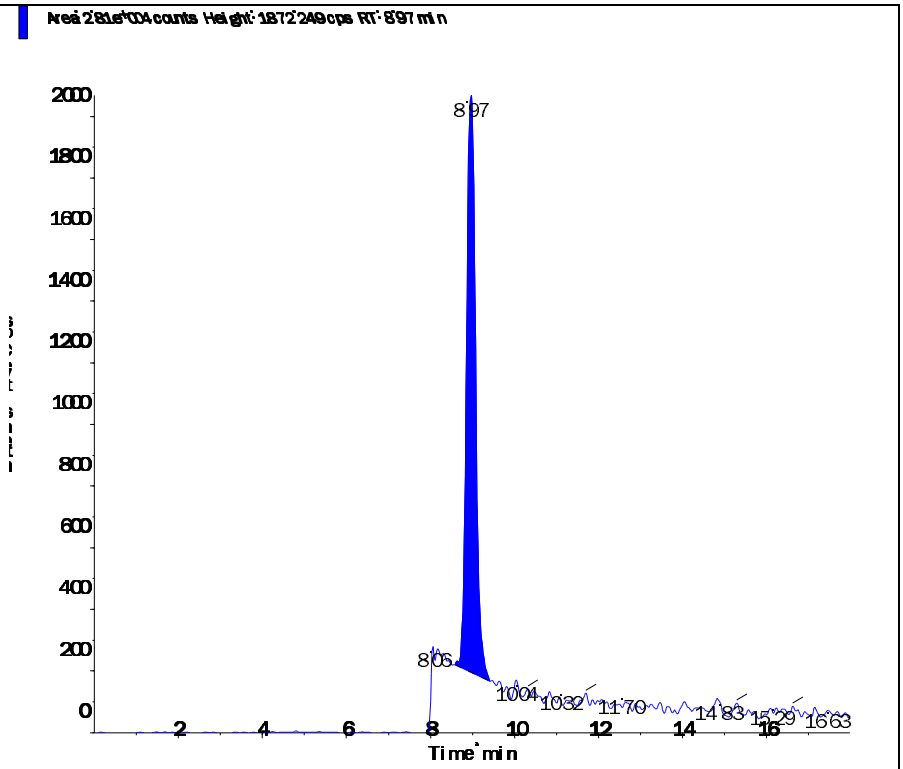

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	8.95 (9.84) min
Calculated conc:	0.188 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

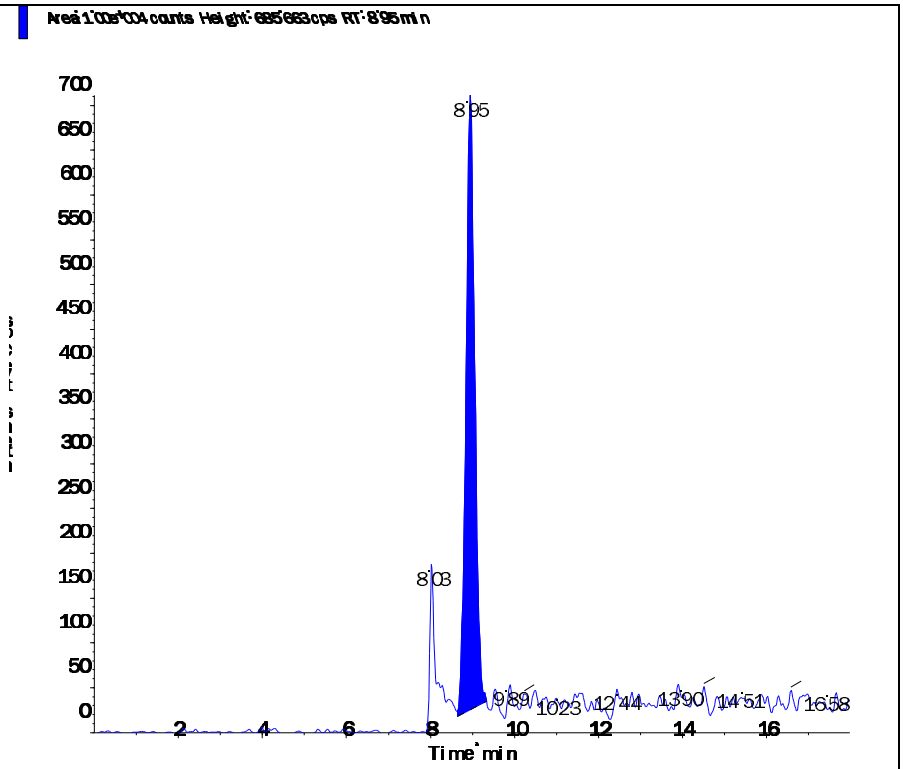

Printing Time: 4:34:28 PM
Printing Date: Saturday, June 25, 2016

Sample Name: "WG574101-01 MCT (0.2ug/L)" Sample ID: "WG574101-01" File: "LM35465.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.219 ug/L
Acq. Date:	6/24/2016
Acq. Time:	8:47:28 PM
Modified:	No
Proc. Algorithm:	Analyst Classic
Bunching Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Exp. Width:	0.20
Sep. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Valley
Retention Time:	8.97 min
Area:	3.23e+004 counts
Height:	1951.523 cps
Start Time:	8.526 min
End Time:	9.417 min

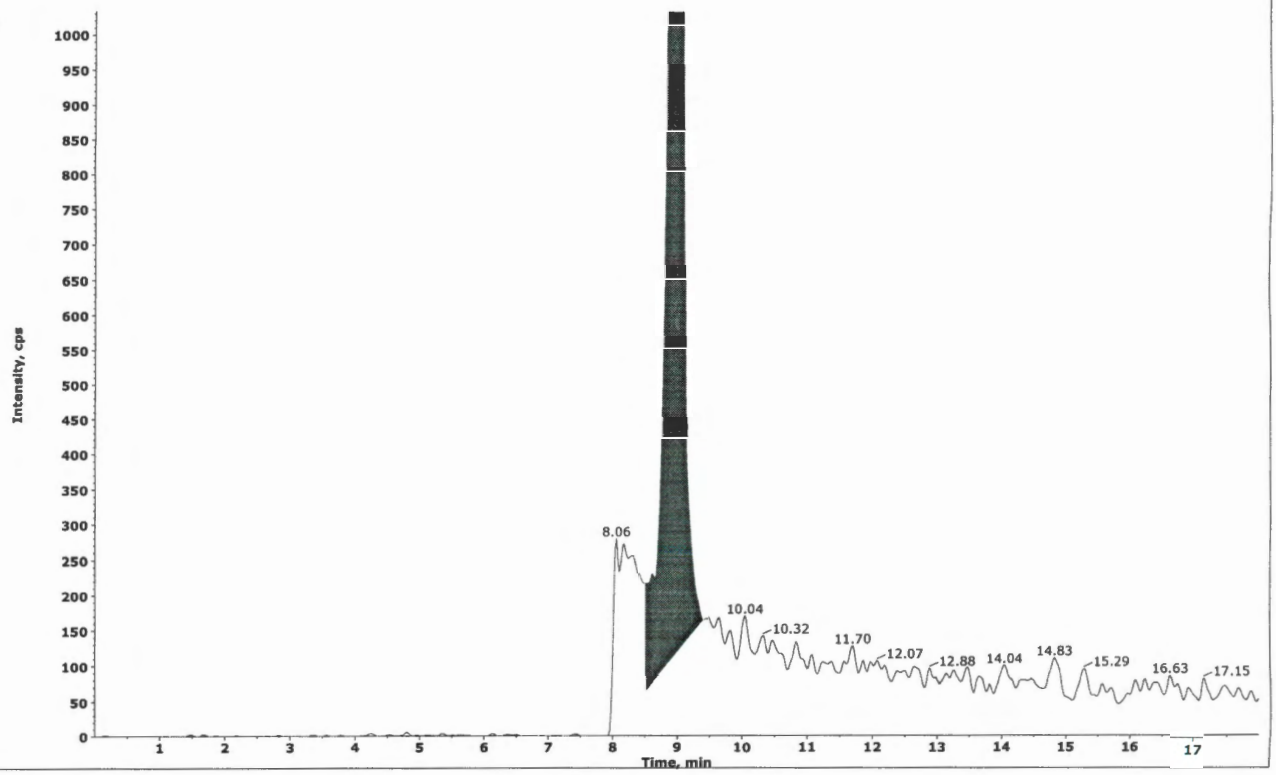

Collected by: N/A
Electronic Signature: no
Operator: lcmsl

Printing Time: 4:36:56 PM
Printing Date: Saturday, June 25, 2016

Sample Name: "WG574101-01 MCT (0.2ug/L)" Sample ID: "WG574101-01" File: "LM35465.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.190 ug/L
Acq. Date:	6/24/2016
Acq. Time:	8:47:28 PM
Modified:	Yes
Proc. Algorithm:	Analyst Classic
Smoothing Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Sep. Width:	0.20
Sep. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Manual
Retention Time:	8.97 min
Area:	2.81e+004 counts
Height:	1872.249 cps
Start Time:	8.587 min
End Time:	9.417 min

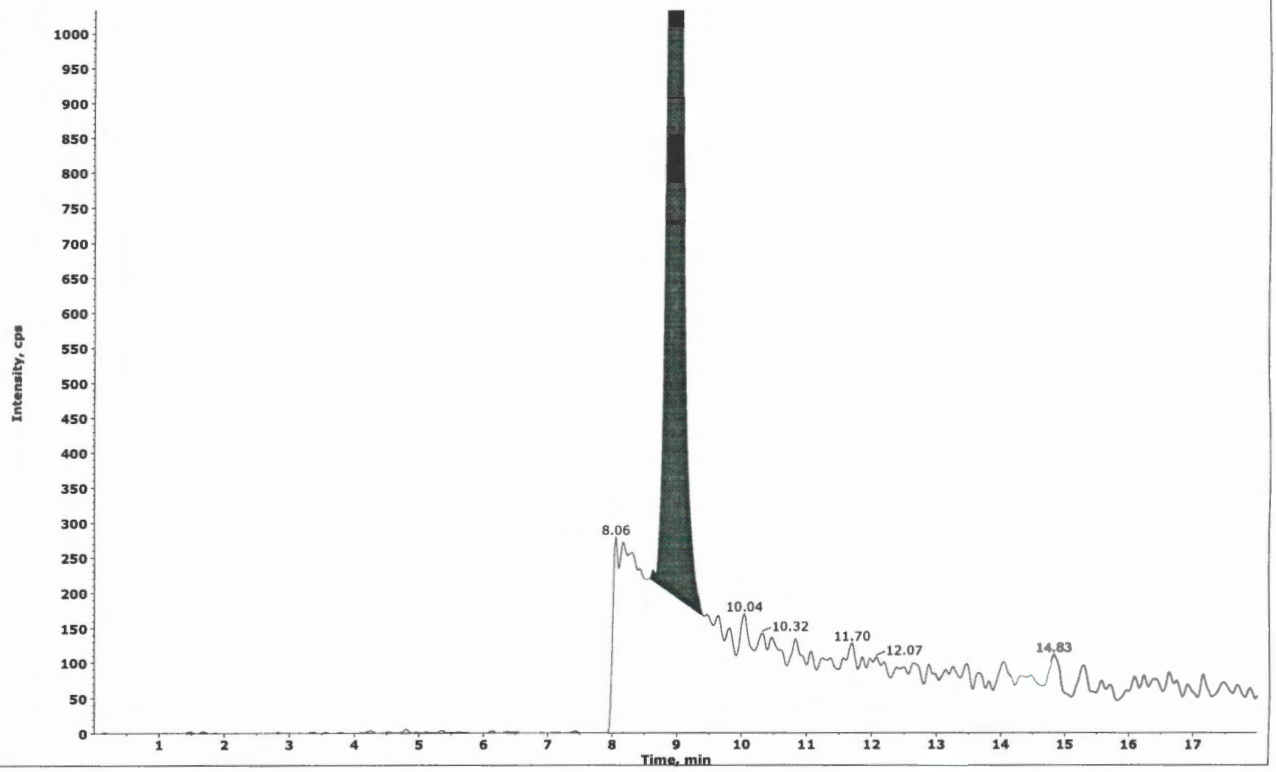

#4
JWR 06/25/16

✓ WTD
06-28-16

Collected by: N/A
Electronic Signature: no
Operator: lcms1

2.2.2.5 Raw QC Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:40 PM

Data File	LM35466.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 9:06:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-02 BLANK	**Injection Vial**	5.00
Data File	LM35466.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 9:06:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.430e+05	9.50	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.50(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

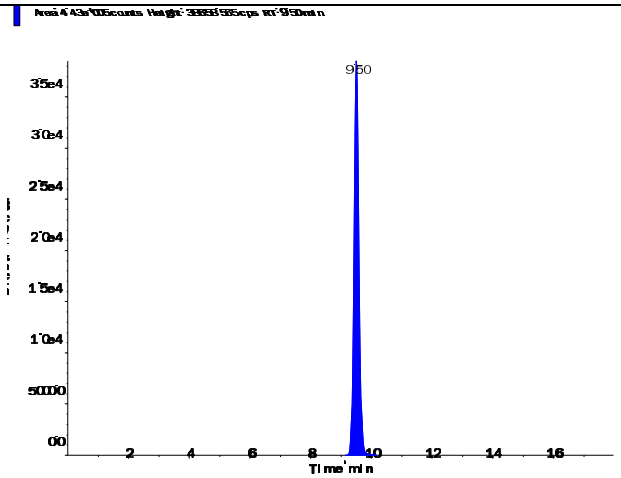

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:40 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

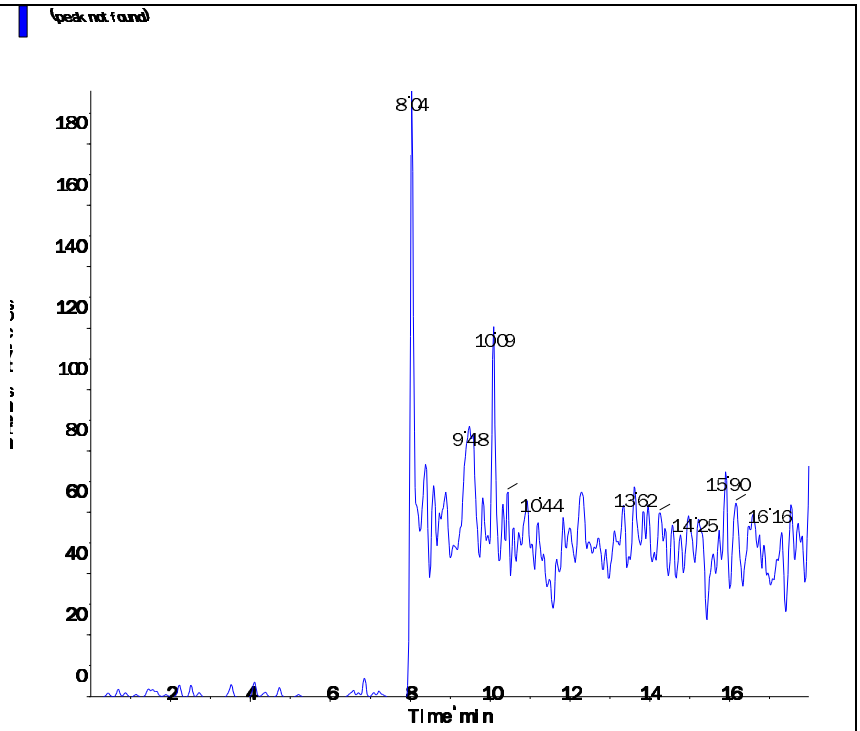

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

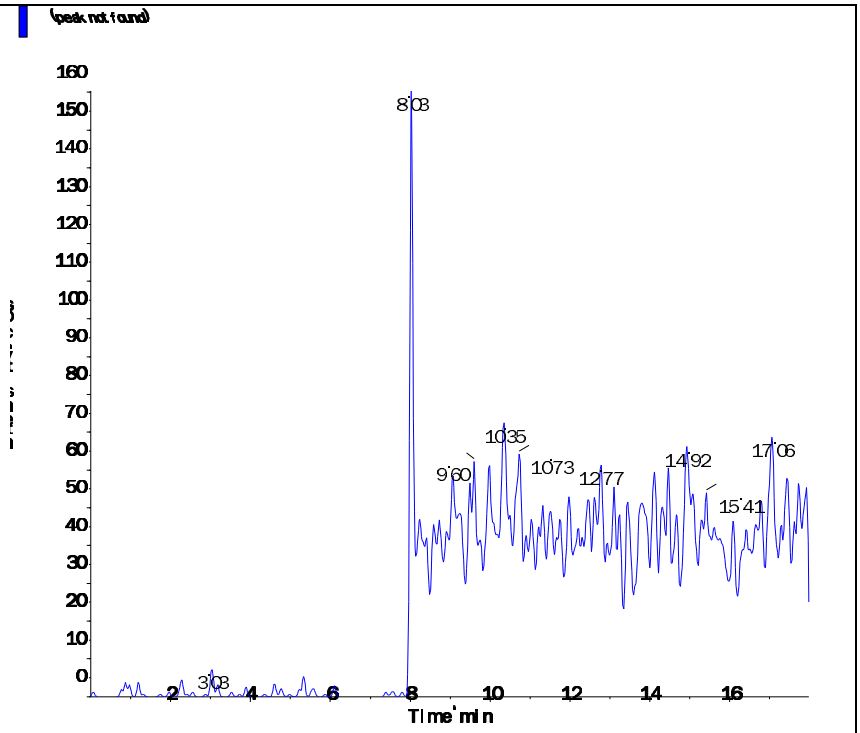

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:40 PM

Data File	LM35467.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 9:25:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM35467.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 9:25:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.440e+05	9.53	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.160e+04	9.54	N/A	0.208
Perchlorate conf	1.180e+04	9.53	N/A	0.217

O18LP (Internal Standard)

RT (Exp. RT): 9.53(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

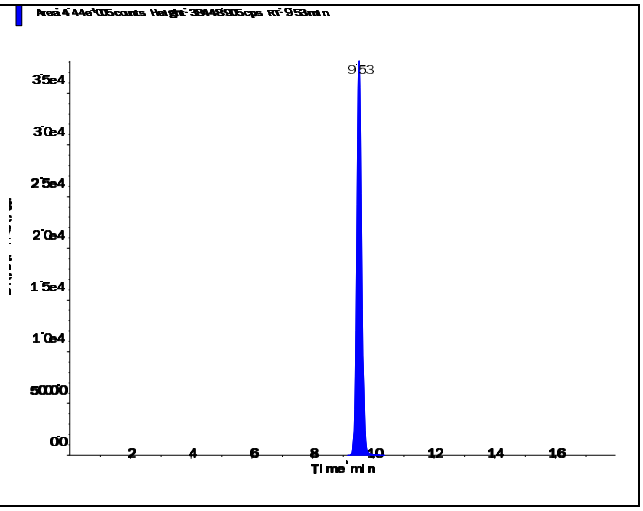

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:40 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.54 (9.84) min
Calculated conc:	0.208 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

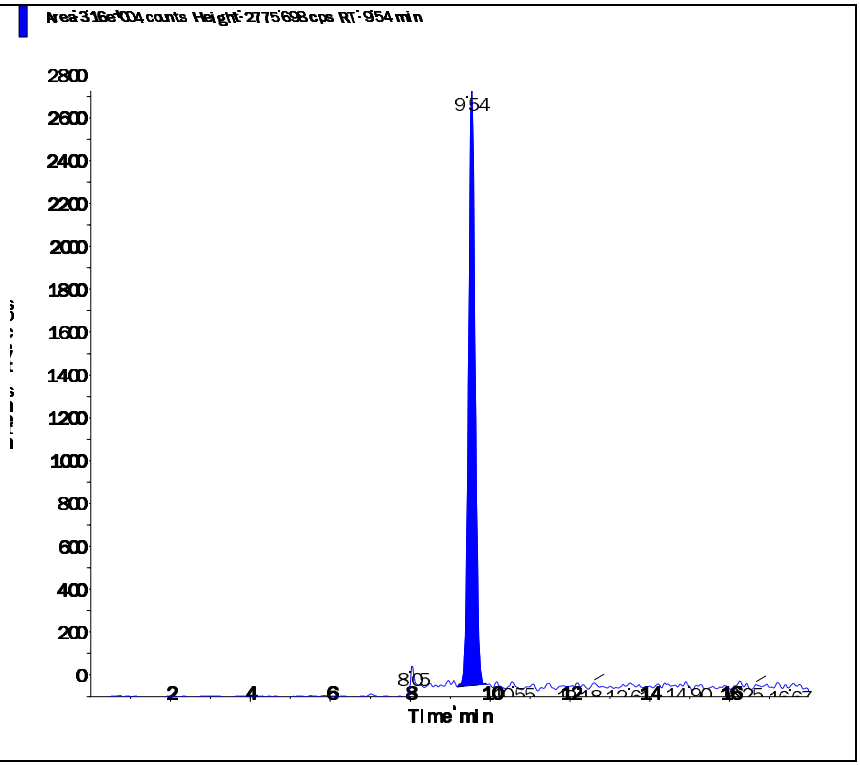

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.53 (9.84) min
Calculated conc:	0.217 ng/ml
Area Ratio:	0.027
Sample Type:	(Unknown)

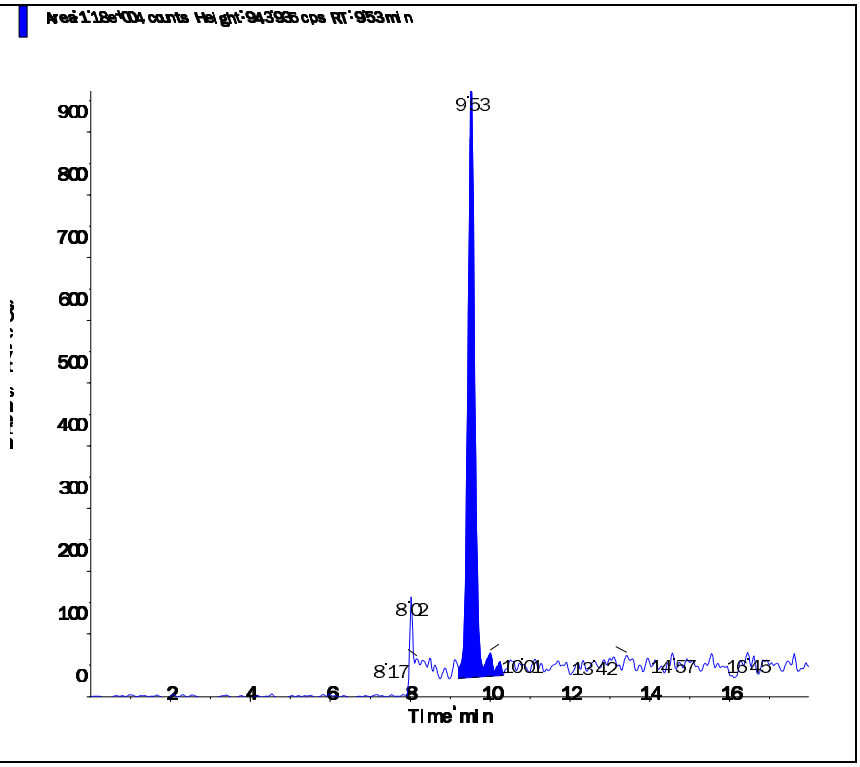

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:48 PM

Data File	LM35491.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 4:59:54 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-04 LCS2 (0.2ug/L)	**Injection Vial**	7.00
Data File	LM35491.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 4:59:54 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.260e+05	9.57	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.830e+04	9.59	N/A	0.213
Perchlorate conf	1.400e+04	9.57	N/A	0.218

O18LP (Internal Standard)

RT (Exp. RT): 9.57(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

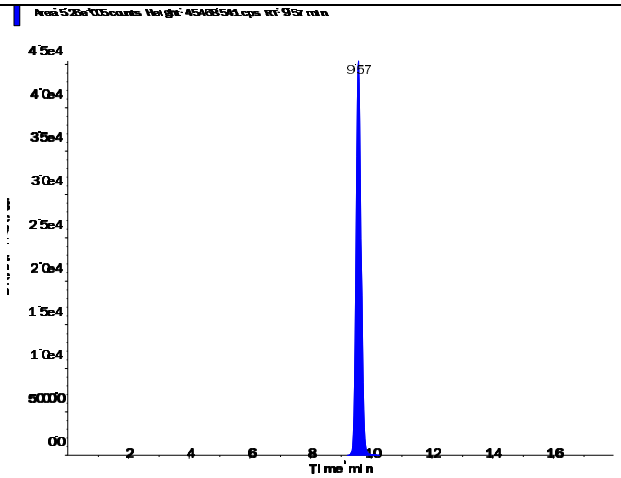

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:48 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.59 (9.84) min
Calculated conc:	0.213 ng/ml
Area Ratio:	0.073
Sample Type:	(Unknown)

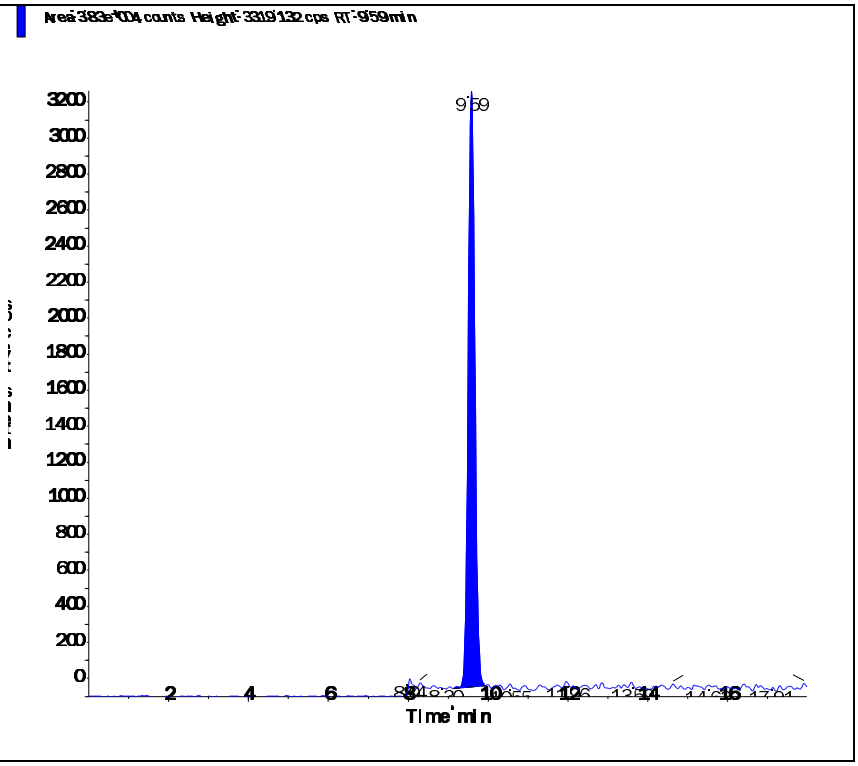

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.57 (9.84) min
Calculated conc:	0.218 ng/ml
Area Ratio:	0.027
Sample Type:	(Unknown)

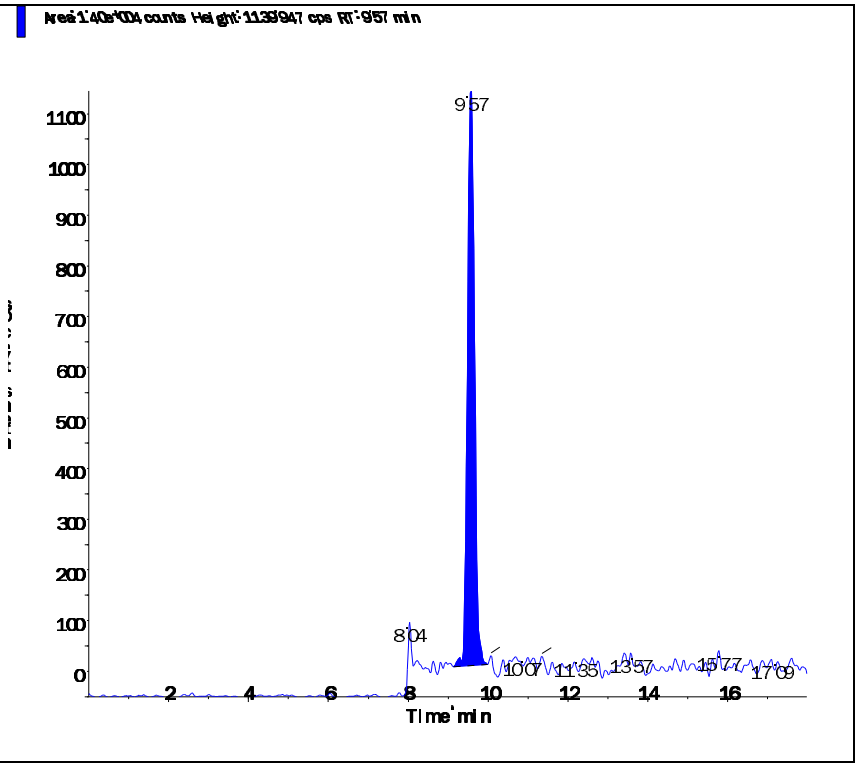

s.dataFile Page 2 of 2

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
July 6, 2016

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BNB - Brandi N. Bentley
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJQ - Cameron J. Quick
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
CV - Carl Volkman
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
EMW - ERIC M. WILKEN
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LJH - Lacey J. Hendershot
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
NPH - Natalie P. Hart
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
July 06, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
July 06, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Debra Richmann
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD	pH:	
Project Name/Location:	Longhorn		
Project Number:	60274185.0013BH 1824 MR10		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Total Metals	1,4 - DIOXANE	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 18/24	18CPTMW23SW-061516			6/15/16	0800		✓	W	6	✓	✓		✓					
	18CPTMW23-061516			6/15/16	0905		✓	W	6	✓	✓		✓					
	18CPTMW19SW-061516			6/15/16	1015		✓	W	6	✓	✓		✓					
	18CPTMW19-061516			6/15/16	1115		✓	W	6	✓	✓		✓					
	TRIP BLANK			6/15/16			✓	W	2	✓								

Comments: **STANDARD TAT**

	Date	Time		Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature) Scott Beesinger	6/15/16	1545				
Relinquished by: (Signature)	Date	Time		Time	Remarks:	

Microbac OVD
Received: 06/16/2016 10:10
By: BRENDA GREENWALT 221000087284

Brenda Greenwalt ... Manager, Pink QA/QC Manager

*Homogenize all composite samples prior to analysis

00675644

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060927
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 27-JUN-2016

Samplenum	Container ID	Products
L16060927-01	761670	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-JUN-2016 15:16	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 07:41	AWE	CLS	
3	STORE	ORG4	A1	30-JUN-2016 16:12	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-JUN-2016 15:16	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 07:41	AWE	CLS	
3	STORE	ORG4	A1	30-JUN-2016 16:12	CLS	JST	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	ORG4	16-JUN-2016 15:16	CLS		
2	STORE	ORG4	A1	30-JUN-2016 16:12	CLS	JST	

Samplenum	Container ID	Products
L16060927-01	761671	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-JUN-2016 15:16	CLS		
2	PREP	W1	EXT	20-JUN-2016 16:36	CPD	BRG	
3	ANALYZ*	EXT	SEMI	23-JUN-2016 09:21	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-JUN-2016 15:16	CLS		
2	STORE	W1	A1	24-JUN-2016 08:22	BRG	BRG	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060927-01	761672	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-JUN-2016 15:16	CLS		
2	ANALYZ	W1	SEM	24-JUN-2016 12:12	JWR	BRG	
3	STORE	SEM	A1	29-JUN-2016 13:20	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060927
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 27-JUN-2016

Samplenum	Container ID	Products
L16060927-02	761673	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-JUN-2016 15:16	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 07:41	AWE	CLS	
3	STORE	ORG4	A1	30-JUN-2016 16:12	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-JUN-2016 15:16	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 07:41	AWE	CLS	
3	STORE	ORG4	A1	30-JUN-2016 16:12	CLS	JST	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-JUN-2016 15:16	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 07:41	AWE	CLS	
3	STORE	ORG4	A1	30-JUN-2016 16:12	CLS	JST	

Samplenum	Container ID	Products
L16060927-02	761674	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-JUN-2016 15:16	CLS		
2	PREP	W1	EXT	20-JUN-2016 16:36	CPD	BRG	
3	ANALYZ*	EXT	SEMI	23-JUN-2016 09:21	SCB	CPD	
4	DISP	EXT	DISP	24-JUN-2016 11:59	BJO	BJO	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-JUN-2016 15:16	CLS		
2	STORE	W1	A1	24-JUN-2016 08:22	BRG	BRG	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060927
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 27-JUN-2016

Samplenum	Container ID	Products
L16060927-02	761675	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-JUN-2016 15:16	CLS		
2	ANALYZ	W1	SEM	24-JUN-2016 12:12	JWR	BRG	
3	STORE	SEM	A1	29-JUN-2016 13:20	CLS	JWR	

Samplenum	Container ID	Products
L16060927-03	761676	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-JUN-2016 15:16	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 07:41	AWE	CLS	
3	STORE	ORG4	A1	30-JUN-2016 16:12	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-JUN-2016 15:16	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 07:41	AWE	CLS	
3	STORE	ORG4	A1	30-JUN-2016 16:12	CLS	JST	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	ORG4	16-JUN-2016 15:16	CLS		
2	STORE	ORG4	A1	30-JUN-2016 16:12	CLS	JST	

Samplenum	Container ID	Products
L16060927-03	761677	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-JUN-2016 15:16	CLS		
2	PREP	W1	EXT	20-JUN-2016 16:36	CPD	BRG	
3	ANALYZ*	EXT	SEMI	23-JUN-2016 09:21	SCB	CPD	
4	DISP	EXT	DISP	24-JUN-2016 11:59	BJO	BJO	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-JUN-2016 15:16	CLS		
2	STORE	W1	A1	24-JUN-2016 08:22	BRG	BRG	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060927
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 27-JUN-2016

Samplenum	Container ID	Products
L16060927-03	761678	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-JUN-2016 15:16	CLS		
2	ANALYZ	W1	SEM	24-JUN-2016 12:12	JWR	BRG	
3	STORE	SEM	A1	29-JUN-2016 13:20	CLS	JWR	

Samplenum	Container ID	Products
L16060927-04	761679	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-JUN-2016 15:16	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 07:41	AWE	CLS	
3	STORE	ORG4	A1	30-JUN-2016 16:12	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-JUN-2016 15:16	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 07:41	AWE	CLS	
3	STORE	ORG4	A1	30-JUN-2016 16:12	CLS	JST	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-JUN-2016 15:16	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 07:41	AWE	CLS	
3	STORE	ORG4	A1	30-JUN-2016 16:12	CLS	JST	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060927
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 27-JUN-2016

Samplenum	Container ID	Products
L16060927-04	761680	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-JUN-2016 15:16	CLS		
2	PREP	W1	EXT	20-JUN-2016 16:36	CPD	BRG	
3	ANALYZ*	EXT	SEMI	23-JUN-2016 09:21	SCB	CPD	
4	DISP	EXT	DISP	24-JUN-2016 11:59	BJO	BJO	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-JUN-2016 15:16	CLS		
2	STORE	W1	A1	24-JUN-2016 08:23	BRG	BRG	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060927-04	761681	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-JUN-2016 15:16	CLS		
2	ANALYZ	W1	SEM	24-JUN-2016 12:12	JWR	BRG	
3	STORE	SEM	A1	29-JUN-2016 13:20	CLS	JWR	

Samplenum	Container ID	Products
L16060927-05	761682	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-JUN-2016 15:16	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 07:41	AWE	CLS	
3	STORE	ORG4	A1	30-JUN-2016 16:12	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-JUN-2016 15:16	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 07:41	AWE	CLS	
3	STORE	ORG4	A1	30-JUN-2016 16:12	CLS	JST	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16061026

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Michelle Taylor – Client Services Specialist
(740) 373-4071
Michelle.Taylor@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on July 12 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
0019780	H	5.0		J2317164975	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18WW16-061616	L16061026-01	06/16/2016 07:55	06/17/2016 09:48
18WW16F-061616	L16061026-02	06/16/2016 07:55	06/17/2016 09:48
102-061616	L16061026-03	06/16/2016 08:40	06/17/2016 09:48
129-061616	L16061026-04	06/16/2016 09:05	06/17/2016 09:48
120-061616	L16061026-05	06/16/2016 09:25	06/17/2016 09:48
120F-061616	L16061026-06	06/16/2016 09:25	06/17/2016 09:48
123-061616	L16061026-07	06/16/2016 09:55	06/17/2016 09:48
TRIP BLANK	L16061026-08	06/16/2016 00:01	06/17/2016 09:48

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16061026
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.1 Narratives

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	8260
Prep Batch Number(s):	573776,573953	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-29 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2016-06-29 20:07:04

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	8260
Prep Batch Number(s):	573776,573953	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-29 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	8260
Prep Batch Number(s):	573776,573953	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-29 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	8260
Prep Batch Number(s):	573776,573953	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-29 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	8260
Prep Batch Number(s):	573776,573953	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-29 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	8260
Prep Batch Number(s):	573776,573953	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-29 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1)Bromomethane and 2-Hexanone exceeded the UCL in the CCV analyzed 06/22/106 om HPMS11.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573299	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-29 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-06-29 15:41:36

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573299	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-29 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573299	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-29 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573299	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-29 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573299	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-29 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573299	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-29 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574101	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Wade DeLong	Wade DeLong	Chemist I	2016-06-28 17:49:28

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574101	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574101	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574101	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574101	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574101	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573656	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Maren Beery	Maren Beery	Metals Supervisor	2016-07-11 15:22:46

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573656	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				ER#1
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573656	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573656	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573656	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573656	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - Client sample 02 required dilution analysis in order to obtain results for calcium, iron, magnesium and sodium within the calibration range. Client samples 04 and 06 required dilution analyses in order to obtain results for sodium within the calibration range.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG573548	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Maren Beery	Maren Beery	Metals Supervisor	2016-07-11 14:48:25

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG573548	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				ER#1
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?		X			ER#3
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG573548	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				ER#2
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG573548	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			ER#4
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG573548	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG573548	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - Client sample 02 required dilution analysis in order to obtain results for chromium, cobalt, copper, manganese, and nickel within the calibration range. Client sample 04 required dilution analysis in order to obtain a result for barium within the calibration range.

ER#2 - Due to a result that was noncompliant on the negative side upon initial analysis, vanadium for client sample 02 was reported from a dilution analysis.

ER#3 - The method blank analyzed on 29-JUN-2016 yielded a result for manganese greater than the LOD and less than the LOQ. However, all client samples had manganese concentrations that were greater than ten times that of the method blank.

ER#4 - Due to continuing calibration verification failure for cobalt on 29-JUN-2016 at 13:25, all QA/QC and client samples were reanalyzed on a later calibration for cobalt. Due to low level continuing calibration verification failure for chromium on 05-Jul-2016 at 19:20, client sample 02 was reanalyzed on a later calibration which was compliant for chromium.

ER#5 - The CCB analyzed on 29-JUN-2016 at 13:29 yielded a result for manganese greater than the LOD and less than the LOQ. However, all client samples had manganese concentrations that were greater than ten times that of the calibration blank.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG573569	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Maren Beery	Maren Beery	Metals Supervisor	2016-07-11 14:42:01

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG573569	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG573569	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG573569	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG573569	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG573569	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	18WW16-061616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573776	**Analyst:**	JDS	**Run Date:**	06/23/2016 01:14
Collect Date:	06/16/2016 07:55	**Dilution:**	1	**File ID:**	11M12817
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	0.605	J	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	108	85	115	
1,2-Dichloroethane-d4	104	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	91.3	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW16-061616	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 19:40
Collect Date:	06/16/2016 07:55	**Dilution:**	1	**File ID:**	1LM.LM35503
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	5.76		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16061026-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW16F-061616	**Prep Method:**	3015	**Prep Date:**	06/22/2016 07:53
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 10:26
Workgroup #:	WG574214	**Analyst:**	JYH	**Run Date:**	06/27/2016 11:42
Collect Date:	06/16/2016 07:55	**Dilution:**	1	**File ID:**	T3.062716.114220
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.331		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Potassium, Total	7440-09-7	13.0		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW16F-061616	**Prep Method:**	3015	**Prep Date:**	06/22/2016 07:53
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 10:26
Workgroup #:	WG574214	**Analyst:**	JYH	**Run Date:**	06/27/2016 13:00
Collect Date:	06/16/2016 07:55	**Dilution:**	20	**File ID:**	T3.062716.130008
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	195		10.0	5.00	2.50
Iron, Total	7439-89-6	21.5		4.00	2.00	1.00
Magnesium, Total	7439-95-4	146		20.0	10.0	5.00
Sodium, Total	7440-23-5	587		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW16F-061616	**Prep Method:**	3015	**Prep Date:**	06/21/2016 11:18
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/29/2016 11:35
Workgroup #:	WG574572	**Analyst:**	BKT	**Run Date:**	06/29/2016 14:51
Collect Date:	06/16/2016 07:55	**Dilution:**	1	**File ID:**	NI.062916.145120
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00134	J	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00894		0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.186		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.00645		0.00120	0.000600	0.000300
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Zinc, Total	7440-66-6	0.158		0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW16F-061616	**Prep Method:**	3015	**Prep Date:**	06/21/2016 11:18
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/05/2016 09:36
Workgroup #:	WG574572	**Analyst:**	JYH	**Run Date:**	07/05/2016 16:05
Collect Date:	06/16/2016 07:55	**Dilution:**	20	**File ID:**	NI.070516.160533
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Cobalt, Total	7440-48-4	0.355		0.0400	0.0200	0.0100
Copper, Total	7440-50-8	0.828		0.0800	0.0400	0.0200
Manganese, Total	7439-96-5	3.12		0.0800	0.0400	0.0200
Vanadium, Total	7440-62-2	0.0200	U	0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW16F-061616	**Prep Method:**	3015	**Prep Date:**	06/21/2016 11:18
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/05/2016 09:36
Workgroup #:	WG574572	**Analyst:**	JYH	**Run Date:**	07/05/2016 16:08
Collect Date:	06/16/2016 07:55	**Dilution:**	200	**File ID:**	NI.070516.160845
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nickel, Total	7440-02-0	14.3		1.60	0.800	0.400

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW16F-061616	**Prep Method:**	3015	**Prep Date:**	06/21/2016 11:18
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/06/2016 09:17
Workgroup #:	WG574572	**Analyst:**	JYH	**Run Date:**	07/06/2016 15:27
Collect Date:	06/16/2016 07:55	**Dilution:**	200	**File ID:**	NI.070616.152752
Sample Tag:	DL03	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chromium, Total	7440-47-3	4.62		0.800	0.400	0.200

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-02	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18WW16F-061616	**Prep Method:**	7470A	**Prep Date:**	06/21/2016 12:47
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/24/2016 11:43
Workgroup #:	WG573634	**Analyst:**	AMA	**Run Date:**	06/24/2016 12:18
Collect Date:	06/16/2016 07:55	**Dilution:**	1	**File ID:**	M7.062416.121852
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	102-061616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573776	**Analyst:**	JDS	**Run Date:**	06/22/2016 23:06
Collect Date:	06/16/2016 08:40	**Dilution:**	1	**File ID:**	11M12813
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	85	115	
1,2-Dichloroethane-d4	98.7	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	91.0	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	102-061616	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 01:12
Collect Date:	06/16/2016 08:40	**Dilution:**	100	**File ID:**	1LM.LM35479
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	107		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L16061026-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	129-061616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573776	**Analyst:**	JDS	**Run Date:**	06/23/2016 00:10
Collect Date:	06/16/2016 09:05	**Dilution:**	5	**File ID:**	11M12815
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	25.0	U	50.0	25.0	12.5
Benzene	71-43-2	1.25	U	5.00	1.25	0.625
Bromobenzene	108-86-1	1.25	U	5.00	1.25	0.625
Bromochloromethane	74-97-5	2.00	U	5.00	2.00	1.00
Bromodichloromethane	75-27-4	2.50	U	5.00	2.50	1.25
Bromoform	75-25-2	5.00	U	10.0	5.00	2.50
Bromomethane	74-83-9	5.00	Q	10.0	5.00	2.50
2-Butanone	78-93-3	25.0	U	50.0	25.0	12.5
n-Butylbenzene	104-51-8	2.50	U	5.00	2.50	1.25
sec-Butylbenzene	135-98-8	2.50	U	5.00	2.50	1.25
tert-Butylbenzene	98-06-6	2.50	U	5.00	2.50	1.25
Carbon disulfide	75-15-0	5.00	U	10.0	5.00	2.50
Carbon tetrachloride	56-23-5	2.50	U	5.00	2.50	1.25
Chlorobenzene	108-90-7	1.25	U	5.00	1.25	0.625
Chlorodibromomethane	124-48-1	2.50	U	5.00	2.50	1.25
Chloroethane	75-00-3	5.00	U	10.0	5.00	2.50
Chloroform	67-66-3	3.28	J	5.00	1.25	0.625
Chloromethane	74-87-3	5.00	U	10.0	5.00	2.50
2-Chlorotoluene	95-49-8	1.25	U	5.00	1.25	0.625
4-Chlorotoluene	106-43-4	2.50	U	5.00	2.50	1.25

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Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	10.0	U	25.0	10.0	5.00
1,2-Dibromoethane	106-93-4	2.50	U	5.00	2.50	1.25
Dibromomethane	74-95-3	2.50	U	5.00	2.50	1.25
1,2-Dichlorobenzene	95-50-1	1.25	U	5.00	1.25	0.625
1,3-Dichlorobenzene	541-73-1	2.50	U	5.00	2.50	1.25
1,4-Dichlorobenzene	106-46-7	1.25	U	5.00	1.25	0.625
Dichlorodifluoromethane	75-71-8	2.50	U	5.00	2.50	1.25
1,1-Dichloroethane	75-34-3	1.25	U	5.00	1.25	0.625
1,2-Dichloroethane	107-06-2	25.4		5.00	2.50	1.25
1,1-Dichloroethene	75-35-4	5.00	U	10.0	5.00	2.50
cis-1,2-Dichloroethene	156-59-2	5.02		5.00	2.50	1.25
trans-1,2-Dichloroethene	156-60-5	2.50	U	5.00	2.50	1.25
1,2-Dichloropropane	78-87-5	2.00	U	5.00	2.00	1.00
1,3-Dichloropropane	142-28-9	2.00	U	5.00	2.00	1.00
2,2-Dichloropropane	594-20-7	2.50	U	5.00	2.50	1.25
cis-1,3-Dichloropropene	10061-01-5	2.50	U	5.00	2.50	1.25
trans-1,3-Dichloropropene	10061-02-6	5.00	U	10.0	5.00	2.50
1,1-Dichloropropene	563-58-6	2.50	U	5.00	2.50	1.25
Ethylbenzene	100-41-4	2.50	U	5.00	2.50	1.25
2-Hexanone	591-78-6	25.0	Q	50.0	25.0	12.5
Hexachlorobutadiene	87-68-3	2.50	U	5.00	2.50	1.25
Isopropylbenzene	98-82-8	2.50	U	5.00	2.50	1.25
p-Isopropyltoluene	99-87-6	2.50	U	5.00	2.50	1.25
4-Methyl-2-pentanone	108-10-1	25.0	U	50.0	25.0	12.5
Methylene chloride	75-09-2	2.50	U	5.00	2.50	1.25
Naphthalene	91-20-3	2.00	U	5.00	2.00	1.00
n-Propylbenzene	103-65-1	1.25	U	5.00	1.25	0.625
Styrene	100-42-5	1.25	U	5.00	1.25	0.625
1,1,1,2-Tetrachloroethane	630-20-6	2.50	U	5.00	2.50	1.25
1,1,2,2-Tetrachloroethane	79-34-5	2.00	U	5.00	2.00	1.00
Tetrachloroethene	127-18-4	2.50	U	5.00	2.50	1.25
Toluene	108-88-3	2.50	U	5.00	2.50	1.25
1,2,3-Trichlorobenzene	87-61-6	1.50	U	5.00	1.50	0.750
1,2,4-Trichlorobenzene	120-82-1	2.00	U	5.00	2.00	1.00
1,1,1-Trichloroethane	71-55-6	2.50	U	5.00	2.50	1.25
1,1,2-Trichloroethane	79-00-5	2.50	U	5.00	2.50	1.25
Trichlorofluoromethane	75-69-4	2.50	U	5.00	2.50	1.25
1,2,3-Trichloropropane	96-18-4	5.00	U	10.0	5.00	2.50
1,2,4-Trimethylbenzene	95-63-6	2.50	U	5.00	2.50	1.25

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,3,5-Trimethylbenzene	108-67-8	2.50	U	5.00	2.50	1.25
Vinyl chloride	75-01-4	2.50	U	5.00	2.50	1.25
o-Xylene	95-47-6	2.50	U	5.00	2.50	1.25
m-,p-Xylene	179601-23-1	5.00	U	10.0	5.00	2.50

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	100	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	94.7	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	129-061616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573953	**Analyst:**	JDS	**Run Date:**	06/23/2016 19:11
Collect Date:	06/16/2016 09:05	**Dilution:**	20	**File ID:**	11M12835
Sample Tag:	DL02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Trichloroethene	79-01-6	1630		20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	94.7	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	129-061616	**Prep Method:**	3520C	**Prep Date:**	06/21/2016 17:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573853	**Analyst:**	MES	**Run Date:**	06/23/2016 18:08
Collect Date:	06/16/2016 09:05	**Dilution:**	1	**File ID:**	15M18521
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	6.52		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	115	20	129	

Certificate of Analysis

Sample #:	L16061026-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	129-061616	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 01:31
Collect Date:	06/16/2016 09:05	**Dilution:**	10000	**File ID:**	1LM.LM35480
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	8950		4000	2000	1000

Certificate of Analysis

Sample #:	L16061026-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	129-061616	**Prep Method:**	3015	**Prep Date:**	06/22/2016 07:53
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 10:26
Workgroup #:	WG574214	**Analyst:**	JYH	**Run Date:**	06/27/2016 11:46
Collect Date:	06/16/2016 09:05	**Dilution:**	1	**File ID:**	T3.062716.114614
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.644		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	13.2		0.500	0.250	0.125
Iron, Total	7439-89-6	1.18		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	10.4		1.00	0.500	0.250
Potassium, Total	7440-09-7	0.716	J	2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

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Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	129-061616	**Prep Method:**	3015	**Prep Date:**	06/22/2016 07:53
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 10:26
Workgroup #:	WG574214	**Analyst:**	JYH	**Run Date:**	06/27/2016 13:03
Collect Date:	06/16/2016 09:05	**Dilution:**	20	**File ID:**	T3.062716.130358
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sodium, Total	7440-23-5	146		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	129-061616	**Prep Method:**	3015	**Prep Date:**	06/21/2016 11:18
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/05/2016 09:36
Workgroup #:	WG574572	**Analyst:**	JYH	**Run Date:**	07/05/2016 16:11
Collect Date:	06/16/2016 09:05	**Dilution:**	1	**File ID:**	NI.070516.161156
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Cobalt, Total	7440-48-4	0.00182	J	0.00200	0.00100	0.000500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	129-061616	**Prep Method:**	3015	**Prep Date:**	06/21/2016 11:18
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/29/2016 11:35
Workgroup #:	WG574572	**Analyst:**	BKT	**Run Date:**	06/29/2016 14:54
Collect Date:	06/16/2016 09:05	**Dilution:**	1	**File ID:**	NI.062916.145431
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00110	J	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000383	J	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00415		0.00400	0.00200	0.00100
Copper, Total	7440-50-8	0.00173	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.000875	J	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.0478		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00956		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00246		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	129-061616	**Prep Method:**	3015	**Prep Date:**	06/21/2016 11:18
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/05/2016 09:36
Workgroup #:	WG574572	**Analyst:**	JYH	**Run Date:**	07/05/2016 16:15
Collect Date:	06/16/2016 09:05	**Dilution:**	20	**File ID:**	NI.070516.161508
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.293		0.120	0.0600	0.0300

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-04	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	129-061616	**Prep Method:**	7470A	**Prep Date:**	06/21/2016 12:47
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/24/2016 11:43
Workgroup #:	WG573634	**Analyst:**	AMA	**Run Date:**	06/24/2016 12:26
Collect Date:	06/16/2016 09:05	**Dilution:**	1	**File ID:**	M7.062416.122629
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	120-061616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573776	**Analyst:**	JDS	**Run Date:**	06/23/2016 00:42
Collect Date:	06/16/2016 09:25	**Dilution:**	100	**File ID:**	11M12816
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	500	U	1000	500	250
Benzene	71-43-2	25.0	U	100	25.0	12.5
Bromobenzene	108-86-1	25.0	U	100	25.0	12.5
Bromochloromethane	74-97-5	40.0	U	100	40.0	20.0
Bromodichloromethane	75-27-4	50.0	U	100	50.0	25.0
Bromoform	75-25-2	100	U	200	100	50.0
Bromomethane	74-83-9	100	Q	200	100	50.0
2-Butanone	78-93-3	500	U	1000	500	250
n-Butylbenzene	104-51-8	50.0	U	100	50.0	25.0
sec-Butylbenzene	135-98-8	50.0	U	100	50.0	25.0
tert-Butylbenzene	98-06-6	50.0	U	100	50.0	25.0
Carbon disulfide	75-15-0	100	U	200	100	50.0
Carbon tetrachloride	56-23-5	50.0	U	100	50.0	25.0
Chlorobenzene	108-90-7	25.0	U	100	25.0	12.5
Chlorodibromomethane	124-48-1	50.0	U	100	50.0	25.0
Chloroethane	75-00-3	100	U	200	100	50.0
Chloroform	67-66-3	38.0	J	100	25.0	12.5
Chloromethane	74-87-3	100	U	200	100	50.0
2-Chlorotoluene	95-49-8	25.0	U	100	25.0	12.5
4-Chlorotoluene	106-43-4	50.0	U	100	50.0	25.0
1,2-Dibromo-3-chloropropane	96-12-8	200	U	500	200	100
1,2-Dibromoethane	106-93-4	50.0	U	100	50.0	25.0
Dibromomethane	74-95-3	50.0	U	100	50.0	25.0
1,2-Dichlorobenzene	95-50-1	25.0	U	100	25.0	12.5
1,3-Dichlorobenzene	541-73-1	50.0	U	100	50.0	25.0
1,4-Dichlorobenzene	106-46-7	25.0	U	100	25.0	12.5
Dichlorodifluoromethane	75-71-8	50.0	U	100	50.0	25.0
1,1-Dichloroethane	75-34-3	25.0	U	100	25.0	12.5
1,2-Dichloroethane	107-06-2	32.1	J	100	50.0	25.0
1,1-Dichloroethene	75-35-4	134	J	200	100	50.0
cis-1,2-Dichloroethene	156-59-2	1510		100	50.0	25.0

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Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	50.0	U	100	50.0	25.0
1,2-Dichloropropane	78-87-5	40.0	U	100	40.0	20.0
1,3-Dichloropropane	142-28-9	40.0	U	100	40.0	20.0
2,2-Dichloropropane	594-20-7	50.0	U	100	50.0	25.0
cis-1,3-Dichloropropene	10061-01-5	50.0	U	100	50.0	25.0
trans-1,3-Dichloropropene	10061-02-6	100	U	200	100	50.0
1,1-Dichloropropene	563-58-6	50.0	U	100	50.0	25.0
Ethylbenzene	100-41-4	50.0	U	100	50.0	25.0
2-Hexanone	591-78-6	500	Q	1000	500	250
Hexachlorobutadiene	87-68-3	50.0	U	100	50.0	25.0
Isopropylbenzene	98-82-8	50.0	U	100	50.0	25.0
p-Isopropyltoluene	99-87-6	50.0	U	100	50.0	25.0
4-Methyl-2-pentanone	108-10-1	500	U	1000	500	250
Methylene chloride	75-09-2	50.0	U	100	50.0	25.0
Naphthalene	91-20-3	40.0	U	100	40.0	20.0
n-Propylbenzene	103-65-1	25.0	U	100	25.0	12.5
Styrene	100-42-5	25.0	U	100	25.0	12.5
1,1,1,2-Tetrachloroethane	630-20-6	50.0	U	100	50.0	25.0
1,1,2,2-Tetrachloroethane	79-34-5	40.0	U	100	40.0	20.0
Tetrachloroethene	127-18-4	50.0	U	100	50.0	25.0
Toluene	108-88-3	50.0	U	100	50.0	25.0
1,2,3-Trichlorobenzene	87-61-6	30.0	U	100	30.0	15.0
1,2,4-Trichlorobenzene	120-82-1	40.0	U	100	40.0	20.0
1,1,1-Trichloroethane	71-55-6	50.0	U	100	50.0	25.0
1,1,2-Trichloroethane	79-00-5	50.0	U	100	50.0	25.0
Trichloroethene	79-01-6	17100		100	50.0	25.0
Trichlorofluoromethane	75-69-4	50.0	U	100	50.0	25.0
1,2,3-Trichloropropane	96-18-4	100	U	200	100	50.0
1,2,4-Trimethylbenzene	95-63-6	50.0	U	100	50.0	25.0
1,3,5-Trimethylbenzene	108-67-8	50.0	U	100	50.0	25.0
Vinyl chloride	75-01-4	88.7	J	100	50.0	25.0
o-Xylene	95-47-6	50.0	U	100	50.0	25.0
m-,p-Xylene	179601-23-1	100	U	200	100	50.0

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	94.1	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	120-061616	**Prep Method:**	3520C	**Prep Date:**	06/21/2016 17:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573853	**Analyst:**	MES	**Run Date:**	06/27/2016 15:30
Collect Date:	06/16/2016 09:25	**Dilution:**	40	**File ID:**	15M18600
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	220		80.0	40.0	20.0

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	0.000	20	129	*

Certificate of Analysis

Sample #:	L16061026-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	120-061616	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 19:59
Collect Date:	06/16/2016 09:25	**Dilution:**	10000	**File ID:**	1LM.LM35504
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	32700		4000	2000	1000

Certificate of Analysis

Sample #:	L16061026-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	120F-061616	**Prep Method:**	3015	**Prep Date:**	06/22/2016 07:53
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 10:26
Workgroup #:	WG574214	**Analyst:**	JYH	**Run Date:**	06/27/2016 11:50
Collect Date:	06/16/2016 09:25	**Dilution:**	1	**File ID:**	T3.062716.115009
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	1.53		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	6.89		0.500	0.250	0.125
Iron, Total	7439-89-6	2.04		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	7.27		1.00	0.500	0.250
Potassium, Total	7440-09-7	1.55	J	2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	120F-061616	**Prep Method:**	3015	**Prep Date:**	06/22/2016 07:53
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 10:26
Workgroup #:	WG574214	**Analyst:**	JYH	**Run Date:**	06/27/2016 13:15
Collect Date:	06/16/2016 09:25	**Dilution:**	20	**File ID:**	T3.062716.131528
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sodium, Total	7440-23-5	303		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	120F-061616	**Prep Method:**	3015	**Prep Date:**	06/21/2016 11:18
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/29/2016 11:35
Workgroup #:	WG574572	**Analyst:**	BKT	**Run Date:**	06/29/2016 14:57
Collect Date:	06/16/2016 09:25	**Dilution:**	1	**File ID:**	NI.062916.145742
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00356		0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.0452		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.0120		0.00400	0.00200	0.00100
Copper, Total	7440-50-8	0.00476		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00162	J	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.186		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.0755		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.0105		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0659		0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	120F-061616	**Prep Method:**	3015	**Prep Date:**	06/21/2016 11:18
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/05/2016 09:36
Workgroup #:	WG574572	**Analyst:**	JYH	**Run Date:**	07/05/2016 16:30
Collect Date:	06/16/2016 09:25	**Dilution:**	1	**File ID:**	NI.070516.163034
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Cobalt, Total	7440-48-4	0.0151		0.00200	0.00100	0.000500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-06	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	120F-061616	**Prep Method:**	7470A	**Prep Date:**	06/21/2016 12:47
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/24/2016 11:43
Workgroup #:	WG573634	**Analyst:**	AMA	**Run Date:**	06/24/2016 12:31
Collect Date:	06/16/2016 09:25	**Dilution:**	1	**File ID:**	M7.062416.123133
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	123-061616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573776	**Analyst:**	JDS	**Run Date:**	06/22/2016 23:38
Collect Date:	06/16/2016 09:55	**Dilution:**	1	**File ID:**	11M12814
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.20		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	14.4		1.00	0.500	0.250

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	80.1		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	99.4	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	93.5	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	123-061616	**Prep Method:**	3520C	**Prep Date:**	06/21/2016 17:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573853	**Analyst:**	MES	**Run Date:**	06/23/2016 18:54
Collect Date:	06/16/2016 09:55	**Dilution:**	1	**File ID:**	15M18523
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	0.587	J	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	50.8	20	129	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	123-061616	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 20:18
Collect Date:	06/16/2016 09:55	**Dilution:**	50	**File ID:**	1LM.LM35505
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	105		20.0	10.0	5.00

Certificate of Analysis

Sample #:	L16061026-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	123-061616	**Prep Method:**	3015	**Prep Date:**	06/22/2016 07:53
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 10:26
Workgroup #:	WG574214	**Analyst:**	JYH	**Run Date:**	06/27/2016 11:54
Collect Date:	06/16/2016 09:55	**Dilution:**	1	**File ID:**	T3.062716.115400
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	1.42		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	8.16		0.500	0.250	0.125
Iron, Total	7439-89-6	1.66		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	4.83		1.00	0.500	0.250
Potassium, Total	7440-09-7	0.713	J	2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	26.0		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	123-061616	**Prep Method:**	3015	**Prep Date:**	06/21/2016 11:18
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/29/2016 11:35
Workgroup #:	WG574572	**Analyst:**	BKT	**Run Date:**	06/29/2016 15:00
Collect Date:	06/16/2016 09:55	**Dilution:**	1	**File ID:**	NI.062916.150054
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.000767	J	0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.136		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00177	J	0.00400	0.00200	0.00100
Copper, Total	7440-50-8	0.00142	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00104	J	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.0161		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00319	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00241		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	123-061616	**Prep Method:**	3015	**Prep Date:**	06/21/2016 11:18
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/05/2016 09:36
Workgroup #:	WG574572	**Analyst:**	JYH	**Run Date:**	07/05/2016 16:34
Collect Date:	06/16/2016 09:55	**Dilution:**	1	**File ID:**	NI.070516.163440
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Cobalt, Total	7440-48-4	0.00250		0.00200	0.00100	0.000500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-07	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	123-061616	**Prep Method:**	7470A	**Prep Date:**	06/21/2016 12:47
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/24/2016 11:43
Workgroup #:	WG573634	**Analyst:**	AMA	**Run Date:**	06/24/2016 12:34
Collect Date:	06/16/2016 09:55	**Dilution:**	1	**File ID:**	M7.062416.123404
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573776	**Analyst:**	JDS	**Run Date:**	06/22/2016 20:27
Collect Date:	06/16/2016 00:01	**Dilution:**	1	**File ID:**	11M12808
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

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Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	92.3	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	93.0	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	18WW16-061616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573776	**Analyst:**	JDS	**Run Date:**	06/23/2016 01:14
Collect Date:	06/16/2016 07:55	**Dilution:**	1	**File ID:**	11M12817
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	0.605	J	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

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Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	108	85	115	
1,2-Dichloroethane-d4	104	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	91.3	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	102-061616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573776	**Analyst:**	JDS	**Run Date:**	06/22/2016 23:06
Collect Date:	06/16/2016 08:40	**Dilution:**	1	**File ID:**	11M12813
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

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Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	85	115	
1,2-Dichloroethane-d4	98.7	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	91.0	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	129-061616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573776	**Analyst:**	JDS	**Run Date:**	06/23/2016 00:10
Collect Date:	06/16/2016 09:05	**Dilution:**	5	**File ID:**	11M12815
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	25.0	U	50.0	25.0	12.5
Benzene	71-43-2	1.25	U	5.00	1.25	0.625
Bromobenzene	108-86-1	1.25	U	5.00	1.25	0.625
Bromochloromethane	74-97-5	2.00	U	5.00	2.00	1.00
Bromodichloromethane	75-27-4	2.50	U	5.00	2.50	1.25
Bromoform	75-25-2	5.00	U	10.0	5.00	2.50
Bromomethane	74-83-9	5.00	Q	10.0	5.00	2.50
2-Butanone	78-93-3	25.0	U	50.0	25.0	12.5
n-Butylbenzene	104-51-8	2.50	U	5.00	2.50	1.25
sec-Butylbenzene	135-98-8	2.50	U	5.00	2.50	1.25
tert-Butylbenzene	98-06-6	2.50	U	5.00	2.50	1.25
Carbon disulfide	75-15-0	5.00	U	10.0	5.00	2.50
Carbon tetrachloride	56-23-5	2.50	U	5.00	2.50	1.25
Chlorobenzene	108-90-7	1.25	U	5.00	1.25	0.625
Chlorodibromomethane	124-48-1	2.50	U	5.00	2.50	1.25
Chloroethane	75-00-3	5.00	U	10.0	5.00	2.50
Chloroform	67-66-3	3.28	J	5.00	1.25	0.625
Chloromethane	74-87-3	5.00	U	10.0	5.00	2.50
2-Chlorotoluene	95-49-8	1.25	U	5.00	1.25	0.625
4-Chlorotoluene	106-43-4	2.50	U	5.00	2.50	1.25
1,2-Dibromo-3-chloropropane	96-12-8	10.0	U	25.0	10.0	5.00
1,2-Dibromoethane	106-93-4	2.50	U	5.00	2.50	1.25
Dibromomethane	74-95-3	2.50	U	5.00	2.50	1.25
1,2-Dichlorobenzene	95-50-1	1.25	U	5.00	1.25	0.625
1,3-Dichlorobenzene	541-73-1	2.50	U	5.00	2.50	1.25
1,4-Dichlorobenzene	106-46-7	1.25	U	5.00	1.25	0.625
Dichlorodifluoromethane	75-71-8	2.50	U	5.00	2.50	1.25
1,1-Dichloroethane	75-34-3	1.25	U	5.00	1.25	0.625
1,2-Dichloroethane	107-06-2	25.4		5.00	2.50	1.25
1,1-Dichloroethene	75-35-4	5.00	U	10.0	5.00	2.50
cis-1,2-Dichloroethene	156-59-2	5.02		5.00	2.50	1.25

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	2.50	U	5.00	2.50	1.25
1,2-Dichloropropane	78-87-5	2.00	U	5.00	2.00	1.00
1,3-Dichloropropane	142-28-9	2.00	U	5.00	2.00	1.00
2,2-Dichloropropane	594-20-7	2.50	U	5.00	2.50	1.25
cis-1,3-Dichloropropene	10061-01-5	2.50	U	5.00	2.50	1.25
trans-1,3-Dichloropropene	10061-02-6	5.00	U	10.0	5.00	2.50
1,1-Dichloropropene	563-58-6	2.50	U	5.00	2.50	1.25
Ethylbenzene	100-41-4	2.50	U	5.00	2.50	1.25
2-Hexanone	591-78-6	25.0	Q	50.0	25.0	12.5
Hexachlorobutadiene	87-68-3	2.50	U	5.00	2.50	1.25
Isopropylbenzene	98-82-8	2.50	U	5.00	2.50	1.25
p-Isopropyltoluene	99-87-6	2.50	U	5.00	2.50	1.25
4-Methyl-2-pentanone	108-10-1	25.0	U	50.0	25.0	12.5
Methylene chloride	75-09-2	2.50	U	5.00	2.50	1.25
Naphthalene	91-20-3	2.00	U	5.00	2.00	1.00
n-Propylbenzene	103-65-1	1.25	U	5.00	1.25	0.625
Styrene	100-42-5	1.25	U	5.00	1.25	0.625
1,1,1,2-Tetrachloroethane	630-20-6	2.50	U	5.00	2.50	1.25
1,1,2,2-Tetrachloroethane	79-34-5	2.00	U	5.00	2.00	1.00
Tetrachloroethene	127-18-4	2.50	U	5.00	2.50	1.25
Toluene	108-88-3	2.50	U	5.00	2.50	1.25
1,2,3-Trichlorobenzene	87-61-6	1.50	U	5.00	1.50	0.750
1,2,4-Trichlorobenzene	120-82-1	2.00	U	5.00	2.00	1.00
1,1,1-Trichloroethane	71-55-6	2.50	U	5.00	2.50	1.25
1,1,2-Trichloroethane	79-00-5	2.50	U	5.00	2.50	1.25
Trichlorofluoromethane	75-69-4	2.50	U	5.00	2.50	1.25
1,2,3-Trichloropropane	96-18-4	5.00	U	10.0	5.00	2.50
1,2,4-Trimethylbenzene	95-63-6	2.50	U	5.00	2.50	1.25
1,3,5-Trimethylbenzene	108-67-8	2.50	U	5.00	2.50	1.25
Vinyl chloride	75-01-4	2.50	U	5.00	2.50	1.25
o-Xylene	95-47-6	2.50	U	5.00	2.50	1.25
m-,p-Xylene	179601-23-1	5.00	U	10.0	5.00	2.50

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	100	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	94.7	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	129-061616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573953	**Analyst:**	JDS	**Run Date:**	06/23/2016 19:11
Collect Date:	06/16/2016 09:05	**Dilution:**	20	**File ID:**	11M12835
Sample Tag:	DL02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Trichloroethene	79-01-6	1630		20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	94.7	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	120-061616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573776	**Analyst:**	JDS	**Run Date:**	06/23/2016 00:42
Collect Date:	06/16/2016 09:25	**Dilution:**	100	**File ID:**	11M12816
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	500	U	1000	500	250
Benzene	71-43-2	25.0	U	100	25.0	12.5
Bromobenzene	108-86-1	25.0	U	100	25.0	12.5
Bromochloromethane	74-97-5	40.0	U	100	40.0	20.0
Bromodichloromethane	75-27-4	50.0	U	100	50.0	25.0
Bromoform	75-25-2	100	U	200	100	50.0
Bromomethane	74-83-9	100	Q	200	100	50.0
2-Butanone	78-93-3	500	U	1000	500	250
n-Butylbenzene	104-51-8	50.0	U	100	50.0	25.0
sec-Butylbenzene	135-98-8	50.0	U	100	50.0	25.0
tert-Butylbenzene	98-06-6	50.0	U	100	50.0	25.0
Carbon disulfide	75-15-0	100	U	200	100	50.0
Carbon tetrachloride	56-23-5	50.0	U	100	50.0	25.0
Chlorobenzene	108-90-7	25.0	U	100	25.0	12.5
Chlorodibromomethane	124-48-1	50.0	U	100	50.0	25.0
Chloroethane	75-00-3	100	U	200	100	50.0
Chloroform	67-66-3	38.0	J	100	25.0	12.5
Chloromethane	74-87-3	100	U	200	100	50.0
2-Chlorotoluene	95-49-8	25.0	U	100	25.0	12.5
4-Chlorotoluene	106-43-4	50.0	U	100	50.0	25.0
1,2-Dibromo-3-chloropropane	96-12-8	200	U	500	200	100
1,2-Dibromoethane	106-93-4	50.0	U	100	50.0	25.0
Dibromomethane	74-95-3	50.0	U	100	50.0	25.0
1,2-Dichlorobenzene	95-50-1	25.0	U	100	25.0	12.5
1,3-Dichlorobenzene	541-73-1	50.0	U	100	50.0	25.0
1,4-Dichlorobenzene	106-46-7	25.0	U	100	25.0	12.5
Dichlorodifluoromethane	75-71-8	50.0	U	100	50.0	25.0
1,1-Dichloroethane	75-34-3	25.0	U	100	25.0	12.5
1,2-Dichloroethane	107-06-2	32.1	J	100	50.0	25.0
1,1-Dichloroethene	75-35-4	134	J	200	100	50.0
cis-1,2-Dichloroethene	156-59-2	1510		100	50.0	25.0

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Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	50.0	U	100	50.0	25.0
1,2-Dichloropropane	78-87-5	40.0	U	100	40.0	20.0
1,3-Dichloropropane	142-28-9	40.0	U	100	40.0	20.0
2,2-Dichloropropane	594-20-7	50.0	U	100	50.0	25.0
cis-1,3-Dichloropropene	10061-01-5	50.0	U	100	50.0	25.0
trans-1,3-Dichloropropene	10061-02-6	100	U	200	100	50.0
1,1-Dichloropropene	563-58-6	50.0	U	100	50.0	25.0
Ethylbenzene	100-41-4	50.0	U	100	50.0	25.0
2-Hexanone	591-78-6	500	Q	1000	500	250
Hexachlorobutadiene	87-68-3	50.0	U	100	50.0	25.0
Isopropylbenzene	98-82-8	50.0	U	100	50.0	25.0
p-Isopropyltoluene	99-87-6	50.0	U	100	50.0	25.0
4-Methyl-2-pentanone	108-10-1	500	U	1000	500	250
Methylene chloride	75-09-2	50.0	U	100	50.0	25.0
Naphthalene	91-20-3	40.0	U	100	40.0	20.0
n-Propylbenzene	103-65-1	25.0	U	100	25.0	12.5
Styrene	100-42-5	25.0	U	100	25.0	12.5
1,1,1,2-Tetrachloroethane	630-20-6	50.0	U	100	50.0	25.0
1,1,2,2-Tetrachloroethane	79-34-5	40.0	U	100	40.0	20.0
Tetrachloroethene	127-18-4	50.0	U	100	50.0	25.0
Toluene	108-88-3	50.0	U	100	50.0	25.0
1,2,3-Trichlorobenzene	87-61-6	30.0	U	100	30.0	15.0
1,2,4-Trichlorobenzene	120-82-1	40.0	U	100	40.0	20.0
1,1,1-Trichloroethane	71-55-6	50.0	U	100	50.0	25.0
1,1,2-Trichloroethane	79-00-5	50.0	U	100	50.0	25.0
Trichloroethene	79-01-6	17100		100	50.0	25.0
Trichlorofluoromethane	75-69-4	50.0	U	100	50.0	25.0
1,2,3-Trichloropropane	96-18-4	100	U	200	100	50.0
1,2,4-Trimethylbenzene	95-63-6	50.0	U	100	50.0	25.0
1,3,5-Trimethylbenzene	108-67-8	50.0	U	100	50.0	25.0
Vinyl chloride	75-01-4	88.7	J	100	50.0	25.0
o-Xylene	95-47-6	50.0	U	100	50.0	25.0
m-,p-Xylene	179601-23-1	100	U	200	100	50.0

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	94.1	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	123-061616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573776	**Analyst:**	JDS	**Run Date:**	06/22/2016 23:38
Collect Date:	06/16/2016 09:55	**Dilution:**	1	**File ID:**	11M12814
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.20		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	14.4		1.00	0.500	0.250

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	80.1		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	99.4	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	93.5	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573776	**Analyst:**	JDS	**Run Date:**	06/22/2016 20:27
Collect Date:	06/16/2016 00:01	**Dilution:**	1	**File ID:**	11M12808
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	92.3	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	93.0	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 051316
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 / OVAP MSV01 Rev: 23 / 0
Method: 5030B/5030C/5035A SOP: PAT01 / OVAP PAT01 Rev: 18 / 0
Method: 624 SOP: MSV10 Rev: 14
Maintenance Log ID:

Internal Standard: STD76110 Surrogate Standard: STD75929
CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG568769

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M11835	RINSE	NA	1	1		05/13/16 11:59
11M11836	WG568769-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 14:15
11M11837	WG568769-02 0.3ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 14:40
11M11838	WG568769-03 0.4ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 15:12
11M11839	WG568769-04 1.0ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 15:43
11M11840	WG568769-05 2.0ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 16:15
11M11841	WG568769-06 5.0ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 16:47
11M11842	WG568769-07 20ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 17:19
11M11843	WG568769-08 50ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 17:51
11M11844	WG568769-09 100ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 18:22
11M11845	WG568769-10 200ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 18:54
11M11846	WG568769-11 300ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 19:26
11M11847	RINSE	NA	1	1		05/13/16 19:58
11M11848	WG568769-12 50ug/L ALT SRC STD 8260	NA	1	1	STD76109	05/13/16 20:30
11M11849	RINSE	NA	1	1		05/13/16 21:02
11M11850	RINSE	NA	1	1		05/13/16 21:34

Approved: May 23, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 062216
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 24
Method: 624 SOP: MSV10 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD76580 Surrogate Standard: STD76383
CCV: STD76405 LCS: STD76744 MS/MSD: STD76744

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG573776

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M12798	WG573773-01 50ng BFB STD 8260	NA	1	1	STD76496	06/22/16 14:52
11M12799	WG573773-02 50ug/L CCV STD 8260	NA	1	1	STD76405	06/22/16 15:16
11M12800	WG573773-02 50ug/L CCV STD 8260	NA	1	1	STD76405	06/22/16 15:49
11M12801	WG573773-02 50ug/L CCV STD 8260	NA	1	1	STD76405	06/22/16 16:43
11M12802	WGXXXXXX-01 100ug/L A9-CCV STD 826	NA	1	1	STDXXXXX	06/22/16 17:15
11M12803	WG573776-01 BLANK STD 8260	NA	1	1		06/22/16 17:47
11M12804	WG573776-02 20ug/L LCS STD 8260	NA	1	1	STD76744	06/22/16 18:19
11M12805	L16060974-09 A MS 2.5X 826-SPE	<2	1	2.5	STD76744	06/22/16 18:51
11M12806	L16060974-11 A MSD 2.5X 826-SPE	<2	1	2.5	STD76744	06/22/16 19:23
11M12807	L16060883-02 B D1 20X 826-SPE	<2	1	20		06/22/16 19:55
11M12808	L16061026-08 A TB 826-LOW	<2	1	1		06/22/16 20:27
11M12809	L16060974-01 A REF 2.5X 826-SPE	<2	1	2.5		06/22/16 20:59
11M12810	L16060974-03 A 826-SPE	<2	1	1		06/22/16 21:31
11M12811	L16060974-02 A 826-SPE	<2	1	1		06/22/16 22:03
11M12812	L16060974-04 A 826-SPE	<2	1	1		06/22/16 22:34
11M12813	L16061026-03 A 826-SPE	<2	1	1		06/22/16 23:06
11M12814	L16061026-07 A 826-SPE	<2	1	1		06/22/16 23:38
11M12815	L16061026-04 A 5X 826-LOW	<2	1	5		06/23/16 00:10
11M12816	L16061026-05 A 100X 826-LOW	<2	1	100		06/23/16 00:42
11M12817	L16061026-01 A 826-LOW	<2	1	1		06/23/16 01:14
11M12818	L16060974-05 A 826-SPE	<2	1	1		06/23/16 01:46
11M12819	L16060974-06 A 826-SPE	<2	1	1		06/23/16 02:18
11M12820	RINSE	NA	1	1		06/23/16 02:50
11M12821	WG573776-06 BLANK2 STD 624	NA	2	1		06/23/16 03:22
11M12822	L16061132-01 B 00 10X AF 624-SPE1	7	2	10		06/23/16 03:51
11M12823	L16061245-01 A 624-SPE	<2	2	1		06/23/16 04:23
11M12824	CCV	NA	1	1		06/23/16 04:55
11M12825	RINSE	NA	1	1		06/23/16 05:27
11M12826	RINSE	NA	1	1		06/23/16 05:59

Comments

Seq.	Rerun	Dil.	Reason	Analytes
3	X			

Approved: June 28, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS11	Dataset:	062216		
Analyst1:	JDS	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	24
Method:	624	SOP:	MSV10	Rev:	15
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:					

Internal Standard: STD76580 Surrogate Standard: STD76383

CCV: STD76405 LCS: STD76744 MS/MSD: STD76744

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG573776

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
File ID: 11M12800				
	software error caused instrument data to be overwritten by snapshot data.			
8	X	1	Analyzed too dilute	
File ID: 11M12805				
	L16060974-09 MS			
9	X	1	Analyzed too dilute	
File ID: 11M12806				
	L16060974-11 MSD			
12	X	1	Analyzed too dilute	
File ID: 11M12809				
	L16060974-01 REF			
18	X	20	Over Calibration Range	trichloroethene
File ID: 11M12815				
	L16061026-04			
25				
File ID: 11M12822				
	L16061132-01 sample aborted by foam sensor. DNR			

Approved: June 28, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 062316
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 24
Method: 5030B/530C/5035A SOP: PAT01 Rev: 15

Maintenance Log ID: 53789

Internal Standard: STD76580 Surrogate Standard: STD76383
CCV: STD76781 LCS: STD76744 MS/MSD: STD76744

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG573953

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M12827	WG573951-01 50ng BFB STD 8260	NA	1	1	STD76496	06/23/16 15:00
11M12828	WG573951-02 50ug/L CCV STD 8260	NA	1	1	STD76781	06/23/16 15:25
11M12829	WG573951-02 50ug/L CCV STD 8260	NA	1	1	STD76781	06/23/16 15:59
11M12830	WGXXXXXX-01 100ug/L A9-CCV STD 826	NA	1	1	STDXXXXX	06/23/16 16:31
11M12831	WG573953-01 BLANK STD 8260	NA	1	1		06/23/16 17:03
11M12832	WG573953-02 20ug/L LCS STD 8260	NA	1	1	STD76744	06/23/16 17:35
11M12833	L16060974-09 B 00 MS 826-SPE	<2	1	1	STD76744	06/23/16 18:07
11M12834	L16060974-11 B 00 MSD 826-SPE	<2	1	1	STD76744	06/23/16 18:39
11M12835	L16061026-04 B D1 20X 826-LOW	<2	1	20		06/23/16 19:11
11M12836	L16060986-43 A TB 826-SPE	<2	1	1		06/23/16 19:43
11M12837	L16060974-01 B 00 REF 826-SPE	<2	1	1		06/23/16 20:15
11M12838	L16060986-39 A 826-SPE	<2	1	1		06/23/16 20:47
11M12839	L16060986-41 A 826-SPE	<2	1	1		06/23/16 21:19
11M12840	L16060986-44 A 826-SPE	<2	1	1		06/23/16 21:51
11M12841	L16060986-07 A 826-SPE	<2	1	1		06/23/16 22:22
11M12842	L16060986-09 A 826-SPE	<2	1	1		06/23/16 22:54
11M12843	L16060986-11 A 826-SPE	<2	1	1		06/23/16 23:26
11M12844	L16060986-17 A 826-SPE	<2	1	1		06/23/16 23:58
11M12845	L16060986-19 A 826-SPE	<2	1	1		06/24/16 00:30
11M12846	L16060986-25 A 826-SPE	<2	1	1		06/24/16 01:02
11M12847	L16060986-13 A 826-SPE	<2	1	1		06/24/16 01:34
11M12848	L16060986-27 A 826-SPE	<2	1	1		06/24/16 02:05
11M12849	L16060986-29 A 5X 826-SPE	<2	1	5		06/24/16 02:37
11M12850	CCV	NA	1	1		06/24/16 03:09
11M12851	RINSE	NA	1	1		06/24/16 03:41
11M12852	RINSE	NA	1	1		06/24/16 04:13

Approved: June 29, 2016
Sarah Vandenberg

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Microbac Laboratories Inc.

Data Checklist

Date: 13-MAY-2016
Analyst: JDS
Analyst: NA
Method: 8260B
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 75133
Analytical Workgroups: WG568769

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	X
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
23-MAY-2016

Secondary Reviewer:
23-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-23-2016 15:39:32

Microbac Laboratories Inc.

Data Checklist

Date: 22-JUN-2016
Analyst: JDS
Analyst: NA
Method: 8260B
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 75958
Analytical Workgroups: WG573776

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	WTD
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	X
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
27-JUN-2016

Secondary Reviewer:
28-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-28-2016 12:52:44

Microbac Laboratories Inc.

Data Checklist

Date: 23-JUN-2016
Analyst: JDS
Analyst: NA
Method: 8260B
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 76012
Analytical Workgroups: WG573953

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	WTD
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
29-JUN-2016

Secondary Reviewer:
29-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-29-2016 15:36:52

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG573776

Login Number: L16061026

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW16-061616	01	06/16/16					06/23/2016	6.7	14		06/23/16	6.7	14	
102-061616	03	06/16/16					06/22/2016	6.6	14		06/22/16	6.6	14	
129-061616	04	06/16/16					06/23/2016	6.6	14		06/23/16	6.6	14	
120-061616	05	06/16/16					06/23/2016	6.6	14		06/23/16	6.6	14	
123-061616	07	06/16/16					06/22/2016	6.6	14		06/22/16	6.6	14	
TRIP BLANK	08	06/16/16					06/22/2016	6.9	14		06/22/16	6.9	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4827747
Report generated 06/29/2016 16:05

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG573953

Login Number: L16061026

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
129-061616	04	06/16/16					06/23/2016	7.4	14		06/23/16	7.4	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4827747
Report generated 06/29/2016 16:05

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061026
Instrument Id: HPMS11
Workgroup (AAB#): WG573776

Method: 8260
CAL ID: HPMS11-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16061026-01	1.00	01	104	108	91.3	100
L16061026-03	1.00	01	98.7	105	91.0	101
L16061026-04	5.00	DL01	100	106	94.7	102
L16061026-05	100	DL01	103	106	94.1	102
L16061026-07	1.00	01	99.4	106	93.5	100
L16061026-08	1.00	01	92.3	103	93.0	101
WG573776-01	1.00	01	93.4	101	92.6	99.9
WG573776-02	1.00	01	92.9	104	93.0	101
WG573776-06	1.00	01	105	107	95.5	101

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4827755
Report generated: 06/29/2016 16:05

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061026
Instrument Id: HPMS11
Workgroup (AAB#): WG573953

Method: 8260
CAL ID: HPMS11-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16061026-04	20.0	DL02	103	107	94.7	100
WG573953-01	1.00	01	100	104	93.8	100
WG573953-02	1.00	01	103	109	92.0	100

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4827755
Report generated: 06/29/2016 16:05

METHOD BLANK SUMMARY

Login Number: L16061026
Blank File ID: 11M12803
Prep Date: 06/22/16 17:47
Analyzed Date: 06/22/16 17:47
Analyst: JDS

Work Group: WG573776
Blank Sample ID: WG573776-01
Instrument ID: HPMS11
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573776-02	11M12804	06/22/16 18:19	01
TRIP BLANK	L16061026-08	11M12808	06/22/16 20:27	01
102-061616	L16061026-03	11M12813	06/22/16 23:06	01
123-061616	L16061026-07	11M12814	06/22/16 23:38	01
129-061616	L16061026-04	11M12815	06/23/16 00:10	DL01
120-061616	L16061026-05	11M12816	06/23/16 00:42	DL01
18WW16-061616	L16061026-01	11M12817	06/23/16 01:14	01

Report Name: BLANK_SUMMARY
PDF File ID: 4827748
Report generated 06/29/2016 16:05

METHOD BLANK SUMMARY

Login Number: L16061026
Blank File ID: 11M12831
Prep Date: 06/23/16 17:03
Analyzed Date: 06/23/16 17:03
Analyst: JDS

Work Group: WG573953
Blank Sample ID: WG573953-01
Instrument ID: HPMS11
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573953-02	11M12832	06/23/16 17:35	01
129-061616	L16061026-04	11M12835	06/23/16 19:11	DL02

Report Name: BLANK_SUMMARY
PDF File ID: 4827748
Report generated 06/29/2016 16:05

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16061026 Prep Date: 06/22/16 17:47 Sample ID: WG573776-01
Instrument ID: HPMS11 Run Date: 06/22/16 17:47 Prep Method: 5030B/5030C/503
File ID: 11M12803 Analyst: JDS Method: 8260B
Workgroup (AAB#): WG573776 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 4827749
29-JUN-2016 16:05

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061026 Prep Date: 06/22/16 17:47 Sample ID: WG573776-01
Instrument ID: HPMS11 Run Date: 06/22/16 17:47 Prep Method: 5030B/5030C/503
File ID: 11M12803 Analyst: JDS Method: 8260B
Workgroup (AAB#): WG573776 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	101	85 - 115	PASS
1,2-Dichloroethane-d4	93.4	70 - 120	PASS
Toluene-d8	99.9	85 - 120	PASS
4-Bromofluorobenzene	92.6	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4827749
29-JUN-2016 16:05

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061026 Prep Date: 06/23/16 17:03 Sample ID: WG573953-01
Instrument ID: HPMS11 Run Date: 06/23/16 17:03 Prep Method: 5030B/5030C/503
File ID: 11M12831 Analyst: JDS Method: 8260B
Workgroup (AAB#): WG573953 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Trichloroethene	0.250	1.00	0.250	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	104	85 - 115	PASS
1,2-Dichloroethane-d4	100	70 - 120	PASS
Toluene-d8	100	85 - 120	PASS
4-Bromofluorobenzene	93.8	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4827749
29-JUN-2016 16:05

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061026 | Run Date: 06/22/2016 | Sample ID: WG573776-02
Instrument ID: HPMS11 | Run Time: 18:19 | Prep Method: 5030B/5030C/503
File ID: 11M12804 | Analyst: JDS | Method: 8260B
Workgroup (AAB#): WG573776 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD76744 | Cal ID: HPMS11-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	18.2	90.8	40 - 140	
Benzene	20.0	19.2	95.9	80 - 120	
Bromobenzene	20.0	19.8	98.8	75 - 125	
Bromochloromethane	20.0	22.4	112	65 - 130	
Bromodichloromethane	20.0	19.6	98.0	75 - 120	
Bromoform	20.0	19.8	98.9	70 - 130	
Bromomethane	20.0	23.4	117	30 - 145	
2-Butanone	20.0	19.3	96.6	30 - 150	
n-Butylbenzene	20.0	17.3	86.7	70 - 135	
sec-Butylbenzene	20.0	18.9	94.6	70 - 125	
tert-Butylbenzene	20.0	20.0	99.8	70 - 130	
Carbon disulfide	20.0	18.5	92.4	35 - 160	
Carbon tetrachloride	20.0	18.2	91.2	65 - 140	
Chlorobenzene	20.0	20.2	101	80 - 120	
Chlorodibromomethane	20.0	20.4	102	60 - 135	
Chloroethane	20.0	20.9	104	60 - 135	
Chloroform	20.0	18.6	93.1	65 - 135	
Chloromethane	20.0	20.3	102	40 - 125	
2-Chlorotoluene	20.0	19.5	97.6	75 - 125	
4-Chlorotoluene	20.0	18.9	94.5	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	16.9	84.6	50 - 130	
1,2-Dibromoethane	20.0	20.8	104	80 - 120	
Dibromomethane	20.0	19.7	98.4	75 - 125	
1,2-Dichlorobenzene	20.0	20.3	101	70 - 120	
1,3-Dichlorobenzene	20.0	19.7	98.7	75 - 125	
1,4-Dichlorobenzene	20.0	19.9	99.3	75 - 125	
Dichlorodifluoromethane	20.0	21.8	109	30 - 155	
1,1-Dichloroethane	20.0	17.9	89.4	70 - 135	
1,2-Dichloroethane	20.0	19.0	95.2	70 - 130	
1,1-Dichloroethene	20.0	17.0	84.8	70 - 130	
cis-1,2-Dichloroethene	20.0	20.8	104	70 - 125	
trans-1,2-Dichloroethene	20.0	19.9	99.6	60 - 140	
1,2-Dichloropropane	20.0	19.3	96.3	75 - 125	
1,3-Dichloropropane	20.0	21.3	106	75 - 125	
2,2-Dichloropropane	20.0	17.8	89.2	70 - 135	
cis-1,3-Dichloropropene	20.0	21.8	109	70 - 130	
trans-1,3-Dichloropropene	20.0	19.5	97.5	55 - 140	
1,1-Dichloropropene	20.0	18.4	92.0	75 - 130	
Ethylbenzene	20.0	19.2	95.9	75 - 125	
2-Hexanone	20.0	16.4	82.0	55 - 130	
Hexachlorobutadiene	20.0	16.6	82.8	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4827750
Report generated: 06/29/2016 16:05

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061026 Run Date: 06/22/2016 Sample ID: WG573776-02
Instrument ID: HPMS11 Run Time: 18:19 Prep Method: 5030B/5030C/503
File ID: 11M12804 Analyst: JDS Method: 8260B
Workgroup (AAB#): WG573776 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD76744 Cal ID: HPMS11-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	19.5	97.7	75 - 125	
p-Isopropyltoluene	20.0	18.8	94.1	75 - 130	
4-Methyl-2-pentanone	20.0	19.2	95.8	60 - 135	
Methylene chloride	20.0	20.4	102	55 - 140	
Naphthalene	20.0	18.1	90.5	55 - 140	
n-Propylbenzene	20.0	19.4	96.9	70 - 130	
Styrene	20.0	20.3	101	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	19.7	98.5	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	18.4	91.8	65 - 130	
Tetrachloroethene	20.0	19.3	96.7	45 - 150	
Toluene	20.0	19.5	97.7	75 - 120	
1,2,3-Trichlorobenzene	20.0	19.2	96.2	55 - 140	
1,2,4-Trichlorobenzene	20.0	19.5	97.5	65 - 135	
1,1,1-Trichloroethane	20.0	18.6	93.2	65 - 130	
1,1,2-Trichloroethane	20.0	20.9	104	75 - 125	
Trichloroethene	20.0	21.4	107	70 - 125	
Trichlorofluoromethane	20.0	18.6	92.9	60 - 145	
1,2,3-Trichloropropane	20.0	20.0	99.9	75 - 125	
1,2,4-Trimethylbenzene	20.0	19.3	96.5	75 - 130	
1,3,5-Trimethylbenzene	20.0	19.4	97.1	75 - 130	
Vinyl chloride	20.0	22.8	114	50 - 145	
o-Xylene	20.0	19.9	99.6	80 - 120	
m-,p-Xylene	40.0	38.9	97.3	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	104	85 - 115	PASS
1,2-Dichloroethane-d4	92.9	70 - 120	PASS
Toluene-d8	101	85 - 120	PASS
4-Bromofluorobenzene	93.0	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4827750
Report generated: 06/29/2016 16:05

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061026 Run Date: 06/23/2016 Sample ID: WG573953-02
Instrument ID: HPMS11 Run Time: 17:35 Prep Method: 5030B/5030C/503
File ID: 11M12832 Analyst: JDS Method: 8260B
Workgroup (AAB#): WG573953 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD76744 Cal ID: HPMS11-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Trichloroethene	20.0	22.7	113	70 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	109	85 - 115	PASS
1,2-Dichloroethane-d4	103	70 - 120	PASS
Toluene-d8	100	85 - 120	PASS
4-Bromofluorobenzene	92.0	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4827750
Report generated: 06/29/2016 16:05

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061026
Instrument: HPMS11
Analyst: JDS
Workgroup: WG568769

Tune ID: WG568769-01
Run Date: 05/13/2016
Run Time: 14:15
File ID: 11M11836
Cal ID: HPMS11 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	24.2	11638	PASS
75.0	95.0	30.0	60.0	50.2	24088	PASS
95.0	95.0	100	100	100	48016	PASS
96.0	95.0	5.00	9.00	6.26	3008	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	86.2	41402	PASS
175	174	5.00	9.00	8.26	3421	PASS
176	174	95.0	101	97.3	40288	PASS
177	176	5.00	9.00	6.92	2789	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG568769-02	STD	01	05/13/2016 14:40	
WG568769-03	STD	01	05/13/2016 15:12	
WG568769-04	STD	01	05/13/2016 15:43	
WG568769-05	STD	01	05/13/2016 16:15	
WG568769-06	STD	01	05/13/2016 16:47	
WG568769-07	STD	01	05/13/2016 17:19	
WG568769-08	STD-CCV	01	05/13/2016 17:51	
WG568769-09	STD	01	05/13/2016 18:22	
WG568769-10	STD	01	05/13/2016 18:54	
WG568769-11	STD	01	05/13/2016 19:26	
WG568769-12	SSCV	01	05/13/2016 20:30	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4827752
Report generated 06/29/2016 16:05

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061026
Instrument: HPMS11
Analyst: JDS
Workgroup: WG573773

Tune ID: WG573773-01
Run Date: 06/22/2016
Run Time: 14:52
File ID: 11M12798
Cal ID: HPMS11 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.4	9816	PASS
75.0	95.0	30.0	60.0	48.3	23186	PASS
95.0	95.0	100	100	100	48053	PASS
96.0	95.0	5.00	9.00	7.38	3544	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	89.6	43074	PASS
175	174	5.00	9.00	7.57	3259	PASS
176	174	95.0	101	100	43058	PASS
177	176	5.00	9.00	6.83	2940	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573773-02	CCV	01	06/22/2016 16:43	
WG573776-01	BLANK	01	06/22/2016 17:47	
WG573776-02	LCS	01	06/22/2016 18:19	
L16061026-08	TRIP BLANK	01	06/22/2016 20:27	
L16061026-03	102-061616	01	06/22/2016 23:06	
L16061026-07	123-061616	01	06/22/2016 23:38	
L16061026-04	129-061616	DL01	06/23/2016 00:10	
L16061026-05	120-061616	DL01	06/23/2016 00:42	
L16061026-01	18WW16-061616	01	06/23/2016 01:14	
WG573776-06	BLANK2	01	06/23/2016 03:22	*

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4827752
Report generated 06/29/2016 16:05

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061026
Instrument: HPMS11
Analyst: JDS
Workgroup: WG573951

Tune ID: WG573951-01
Run Date: 06/23/2016
Run Time: 15:00
File ID: 11M12827
Cal ID: HPMS11 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.6	6638	PASS
75.0	95.0	30.0	60.0	51.9	15962	PASS
95.0	95.0	100	100	100	30738	PASS
96.0	95.0	5.00	9.00	6.62	2035	PASS
173	174	0	2.00	0.406	109	PASS
174	95.0	50.0	100	87.4	26851	PASS
175	174	5.00	9.00	7.85	2109	PASS
176	174	95.0	101	95.6	25668	PASS
177	176	5.00	9.00	7.02	1803	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573951-02	CCV	01	06/23/2016 15:59	
WG573953-01	BLANK	01	06/23/2016 17:03	
WG573953-02	LCS	01	06/23/2016 17:35	
L16061026-04	129-061616	DL02	06/23/2016 19:11	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4827752
Report generated 06/29/2016 16:05

Calibration Table Report
Method: 8260WT.M
Title: 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Calibration: Sat May 14 18:45:57 2016
Curve: WG568769
Calibration Files

	Compound	0.3 11M11837.D	0.4 11M11838.D	1 11M11839.D	2 11M11840.D	5 11M11841.D	20 11M11842.D	50 11M11843.D	100 11M11844.D	200 11M11845.D	300 11M11846.D	Avg	%RSD	Linear	Quadratic
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.345	0.368	0.326	0.431	0.400	0.424	0.417	0.424	0.392	10.308		
P	Chloromethane			0.348	0.363	0.289	0.310	0.276	0.296	0.305	0.324	0.314	9.474		
C	Vinyl Chloride		0.275	0.241	0.249	0.244	0.268	0.250	0.271	0.271	0.276	0.261	5.458		
T	1,3-Butadiene					0.242	0.284	0.269	0.264	0.256	0.240	0.259	6.530		
T	Bromomethane			0.167	0.174	0.164	0.180	0.165	0.182	0.194	0.206	0.179	8.292		
T	Chloroethane			0.164	0.165	0.151	0.174	0.161	0.171	0.173	0.181	0.167	5.524		
T	Trichlorofluoromethane		0.514	0.523	0.537	0.496	0.552	0.498	0.524	0.514	0.514	0.519	3.376		
T	Diethyl ether			0.189	0.191	0.195	0.196	0.188	0.193		0.192	0.192	1.552		
T	Isoprene					0.299	0.331	0.317	0.323	0.325	0.325	0.320	3.522		
T	Acrolein			0.013	0.022	0.024	0.024	0.024	0.025		0.027	0.023	19.436	0.999	
T	1,1,2-Trichloro-1,2,2-Trifluor			0.261	0.245	0.234	0.268	0.245	0.252	0.254	0.257	0.252	4.225		
T	Acetone					0.063	0.067	0.058	0.057	0.057	0.054	0.059	7.931		
C	1,1-Dichloroethene		0.459	0.452	0.460	0.429	0.492	0.441	0.464	0.461	0.461	0.458	3.810		
T	Tert-Butyl Alcohol			0.014	0.015	0.017	0.018	0.017	0.017		0.017	0.016	9.673		
T	Dimethyl Sulfide					0.169	0.185	0.186	0.185	0.188	0.184	0.183	3.765		
T	Iodomethane				0.043	0.072	0.164	0.206	0.217	0.219	0.208	0.162	45.603		0.999
T	Methyl acetate				0.182	0.317	0.215	0.178	0.176	0.169	0.168	0.201	26.745		1.000
T	Methylene Chloride			0.239	0.256	0.230	0.243	0.224	0.232	0.234	0.238	0.237	4.076		
T	Carbon Disulfide			0.737	0.762	0.714	0.798	0.783	0.783	0.782	0.770	0.766	3.624		
T	Acrylonitrile			0.072	0.069	0.075	0.085	0.081	0.085		0.090	0.080	9.576		
T	Methyl Tert Butyl Ether			0.568	0.546	0.564	0.650	0.585	0.606	0.612	0.595	0.591	5.543		
T	trans-1,2-Dichloroethene		0.288	0.230	0.264	0.229	0.263	0.242	0.251	0.254	0.260	0.253	7.263		
T	n-Hexane				0.424	0.377	0.450	0.431	0.426	0.424	0.422	0.422	5.186		
T	Diisopropyl ether			1.034	1.075	1.083	1.055	1.046	1.062		1.015	1.053	2.218		
T	Vinyl Acetate					0.235	0.391	0.393	0.395	0.430	0.431	0.379	19.260	0.999	
P	1,1-Dichloroethane		0.463	0.517	0.527	0.505	0.535	0.495	0.513	0.511	0.508	0.508	4.023		
T	Ethyl-Tert-Butyl ether			0.815	0.854	0.881	0.876	0.855	0.873		0.844	0.857	2.667		
T	2-Butanone					0.079	0.097	0.087	0.092	0.092	0.091	0.090	6.720		
T	Propionitrile			0.023	0.025	0.026	0.029	0.027	0.027		0.027	0.026	7.381		
T	2,2-Dichloropropane		0.325	0.372	0.435	0.395	0.406	0.386	0.422	0.418	0.419	0.398	8.479		
T	cis-1,2-Dichloroethene		0.276	0.266	0.289	0.269	0.294	0.271	0.280	0.284	0.285	0.279	3.456		
C	Chloroform	0.587	0.483	0.491	0.514	0.480	0.509	0.470	0.486	0.489	0.482	0.499	6.767		
T	1-Bromopropane			0.014	0.041	0.045	0.047	0.048	0.049	0.050	0.050	0.043	28.190	1.000	
T	Bromochloromethane		0.115	0.140	0.169	0.167	0.188	0.172	0.179	0.180	0.181	0.166	14.065		
T	Tetrahydrofuran			0.074	0.061	0.058	0.067	0.061	0.062		0.059	0.063	8.769		
S	Dibromofluoromethane				0.251	0.266	0.284	0.268	0.284	0.285	0.278	0.274	4.605		
T	1,1,1-Trichloroethane		0.475	0.478	0.508	0.471	0.515	0.477	0.502	0.499	0.495	0.491	3.293		
T	Cyclohexane		0.477	0.485	0.547	0.509	0.574	0.551	0.560	0.558	0.556	0.535	6.606		
T	1,1-Dichloropropene		0.342	0.350	0.346	0.332	0.370	0.339	0.358	0.359	0.362	0.351	3.562		
T	Carbon Tetrachloride		0.409	0.457	0.522	0.465	0.518	0.473	0.496	0.492	0.486	0.480	7.177		
T	Tert-Amyl-Methyl ether			0.565	0.596	0.603	0.611	0.588	0.605		0.6	0.59537	2.5818		
S	1,2-Dichloroethane-d4			0.315	0.304	0.32	0.326	0.303	0.319	0.31	0.298	0.31197	3.15125		
T	1,2-Dichloroethane		0.388	0.391	0.419	0.395	0.441	0.402	0.413	0.409	0.391	0.40536	4.2274		
T	Benzene		1.058	0.952	1.016	0.923	0.996	0.908	0.943	0.931	0.914	0.96002	5.38884		
T	Trichloroethene		0.308	0.317	0.329	0.306	0.322	0.294	0.313	0.309	0.311	0.31204	3.21019		
T	Methylcyclohexane		0.332	0.37	0.389	0.35	0.411	0.401	0.4	0.405	0.407	0.3851	7.28708		
C	1,2-Dichloropropane		0.259	0.262	0.273	0.254	0.276	0.257	0.268	0.27	0.273	0.26575	2.95636		
T	1,4-Dioxane				0.001	0.001	0.002	0.001	0.002		0.002	0.0014	19.4617	0.999	
T	Bromodichloromethane		0.346	0.346	0.373	0.362	0.4	0.369	0.387	0.389	0.385	0.37307	5.09783		
T	Dibromomethane		0.118	0.136	0.135	0.137	0.149	0.137	0.146	0.145	0.144	0.13848	6.69192		
T	2-Chloroethyl Vinyl Ether					0.112	0.138	0.128	0.136	0.138	0.135	0.13098	7.7176		
T	4-Methyl-2-Pentanone					0.06	0.08	0.073	0.076	0.077	0.077	0.07387	9.67651		
T	cis-1,3-Dichloropropene		0.326	0.338	0.358	0.357	0.406	0.379	0.395	0.401	0.399	0.37315	7.91395		
T	Dimethyl Disulfide					0.185	0.229	0.227	0.233	0.238	0.235	0.22454	8.74309		

I	Chlorobenzene-d5	ISTD												
S	Toluene-d8				1.101	1.093	1.115	1.056	1.103	1.092	1.044	1.08625	2.42896	
C	Toluene		1.309	1.253	1.287	1.269	1.347	1.249	1.287	1.241	1.149	1.2656	4.33323	
T	Ethyl Methacrylate			0.234	0.233	0.25	0.299	0.285	0.289	0.291	0.281	0.27024	9.93745	
T	trans-1,3-Dichloropropene			0.335	0.388	0.387	0.448	0.418	0.432	0.43	0.412	0.40623	8.82781	
T	1,1,2-Trichloroethane		0.222	0.201	0.243	0.21	0.246	0.221	0.228	0.227	0.221	0.22442	6.30977	
T	2-Hexanone					0.137	0.179	0.165	0.172	0.172	0.165	0.16482	8.91224	
T	1,3-Dichloropropane		0.337	0.338	0.351	0.355	0.396	0.361	0.374	0.373	0.358	0.36039	5.16222	
T	Tetrachloroethene		0.274	0.287	0.317	0.286	0.306	0.286	0.3	0.299	0.294	0.29431	4.41886	
T	Dibromochloromethane		0.283	0.297	0.336	0.33	0.378	0.354	0.372	0.372	0.359	0.3423	9.88235	
T	1,2-Dibromoethane		0.232	0.182	0.228	0.214	0.243	0.224	0.233	0.235	0.232	0.22485	7.92714	
T	1-Chlorohexane		0.37	0.399	0.414	0.391	0.442	0.429	0.44	0.438	0.432	0.41726	6.09034	
P	Chlorobenzene		0.927	0.917	0.998	0.932	0.976	0.909	0.93	0.902	0.853	0.92715	4.48215	
T	1,1,1,2-Tetrachloroethane		0.341	0.361	0.405	0.366	0.388	0.371	0.384	0.385	0.376	0.37515	4.87731	
C	Ethylbenzene		0.453	0.457	0.512	0.463	0.495	0.466	0.482	0.479	0.472	0.47542	3.94078	
T	m-,p-Xylene		0.619	0.583	0.605	0.564	0.604	0.568	0.579	0.559	0.522	0.57798	5.08853	
T	o-Xylene		0.539	0.549	0.574	0.539	0.6	0.561	0.574	0.57	0.557	0.56249	3.43829	
T	Styrene		0.865	0.848	0.897	0.918	1.018	0.955	0.985	0.959	0.917	0.92933	5.96246	
P	Bromoform			0.172	0.189	0.185	0.226	0.21	0.225	0.226	0.228	0.20747	10.9157	
T	Isopropylbenzene		1.515	1.456	1.567	1.46	1.592	1.493	1.534	1.449	1.323	1.48754	5.34769	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.288	0.357	0.369	0.371	0.441	0.396	0.412	0.428	0.442	0.38931	12.6902	
S	p-Bromofluorobenzene				0.772	0.784	0.794	0.716	0.767	0.789	0.773	0.77065	3.38935	
T	1,2,3-Trichloropropane			0.087	0.129	0.138	0.151	0.137	0.142	0.148	0.148	0.13515	15.3522	0.999
T	trans-1,4-Dichloro-2-Butene			0.105	0.117	0.124	0.177	0.178	0.184	0.192	0.193	0.15883	23.0996	0.999
T	n-Propylbenzene		2.87	2.8	3.077	2.949	3.134	2.886	2.979	2.836	2.526	2.89527	6.10377	
T	Bromobenzene	0.663	0.778	0.81	0.798	0.765	0.784	0.718	0.752	0.769	0.76	0.75973	5.57443	
T	1,3,5-Trimethylbenzene		2.338	2.056	2.263	2.172	2.357	2.166	2.252	2.223	2.059	2.20939	4.86261	
T	2-Chlorotoluene		2.158	2.096	2.122	2.033	2.128	1.936	2.002	1.954	1.82	2.0279	5.4704	
T	4-Chlorotoluene		1.782	1.755	1.937	1.808	1.916	1.763	1.832	1.838	1.717	1.8165	4.03452	
T	a-Methylstyrene			1	1.066	1.101	1.241	1.231	1.235	1.242	1.208	1.16555	8.18507	
T	tert-Butylbenzene		0.378	0.44	0.48	0.489	0.498	0.458	0.483	0.49	0.497	0.46809	8.31778	
T	1,2,4-Trimethylbenzene		2.159	2.195	2.274	2.295	2.472	2.234	2.309	2.244	2.067	2.24981	4.97706	
T	sec-Butylbenzene			2.593	2.734	2.647	2.87	2.634	2.723	2.617	2.404	2.65291	5.05975	
T	p-Isopropyltoluene			2.247	2.592	2.45	2.641	2.43	2.506	2.404	2.226	2.43674	6.05243	
T	1,3-Dichlorobenzene		1.487	1.488	1.538	1.46	1.53	1.398	1.451	1.446	1.406	1.46732	3.33475	
T	1,4-Dichlorobenzene	1.482	1.601	1.511	1.569	1.484	1.538	1.404	1.456	1.434	1.395	1.4873	4.59741	
T	n-Butylbenzene		2.048	2.099	2.295	2.049	2.32	2.134	2.224	2.136	2.021	2.14721	5.09289	
T	1,2-Dichlorobenzene	1.33	1.26	1.333	1.432	1.33	1.406	1.296	1.343	1.326	1.31	1.33665	3.71841	
T	1,2-Dibromo-3-Chloropropane				0.057	0.079	0.096	0.081	0.086	0.087	0.091	0.08248	15.3444	0.999
T	1,2,4-Trichlorobenzene		0.927	0.903	0.957	0.956	1.042	0.972	0.998	1.002	1.047	0.97808	4.96993	
T	Hexachlorobutadiene		0.393	0.381	0.451	0.418	0.447	0.415	0.441	0.442	0.49	0.43089	7.64497	
T	Naphthalene		1.885	1.633	1.765	1.712	2.026	1.824	1.878	1.821	1.794	1.81543	6.15168	
T	1,2,3-Trichlorobenzene	0.854	0.957	0.865	0.918	0.834	0.946	0.86	0.889	0.912	0.943	0.89764	4.8559	

Tue May 17 13:57:02 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061026 Run Date: 05/13/2016 Sample ID: WG568769-12
Instrument ID: HPMS11 Run Time: 20:30 Method: 8260B
File ID: 11M11848 Analyst: JDS QC Key: DOD4
ICal Workgroup: WG568769 Cal ID: HPMS11 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.6	ug/L	0.475	4.80	20	
1,1-Dichloroethene	CCC	50.0	47.5	ug/L	0.435	4.90	20	
1,2-Dichloropropane	CCC	50.0	52.8	ug/L	0.281	5.60	20	
Ethylbenzene	CCC	50.0	52.4	ug/L	0.498	4.80	20	
Toluene	CCC	50.0	53.8	ug/L	1.36	7.50	20	
Vinyl Chloride	CCC	50.0	56.1	ug/L	0.292	12.2	20	
Bromoform	SPCC	50.0	49.8	ug/L	0.207	0.300	20	
Chlorobenzene	SPCC	50.0	53.3	ug/L	0.988	6.60	20	
Chloromethane	SPCC	50.0	55.1	ug/L	0.346	10.2	20	
1,1-Dichloroethane	SPCC	50.0	48.5	ug/L	0.493	3.00	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	54.9	ug/L	0.428	9.90	20	
Acetone		50.0	49.7	ug/L	0.0590	0.700	20	
Benzene		50.0	51.2	ug/L	0.983	2.40	20	
Bromobenzene		50.0	51.6	ug/L	0.785	3.30	20	
Bromochloromethane		50.0	53.9	ug/L	0.179	7.80	20	
Bromodichloromethane		50.0	49.5	ug/L	0.370	0.900	20	
Bromomethane		50.0	50.5	ug/L	0.181	1.00	20	
2-Butanone		50.0	50.3	ug/L	0.0904	0.700	20	
n-Butylbenzene		50.0	53.9	ug/L	2.31	7.80	20	
sec-Butylbenzene		50.0	55.9	ug/L	2.97	11.8	20	
tert-Butylbenzene		50.0	56.5	ug/L	0.529	13.1	20	
Carbon Disulfide		50.0	44.7	ug/L	0.685	10.6	20	
Carbon Tetrachloride		50.0	47.3	ug/L	0.454	5.30	20	
Dibromochloromethane		50.0	52.5	ug/L	0.360	5.10	20	
Chloroethane		50.0	58.9	ug/L	0.197	17.7	20	
2-Chlorotoluene		50.0	52.8	ug/L	2.14	5.50	20	
4-Chlorotoluene		50.0	55.4	ug/L	2.01	10.8	20	
1,2-Dibromo-3-Chloropropane		50.0	48.1	ug/L	0.0844	3.80	20	
1,2-Dibromoethane		50.0	52.6	ug/L	0.237	5.30	20	
Dibromomethane		50.0	48.0	ug/L	0.133	3.90	20	
1,2-Dichlorobenzene		50.0	53.6	ug/L	1.43	7.20	20	
1,3-Dichlorobenzene		50.0	52.7	ug/L	1.55	5.40	20	
1,4-Dichlorobenzene		50.0	53.0	ug/L	1.58	6.10	20	
Dichlorodifluoromethane		50.0	56.6	ug/L	0.443	13.2	20	
1,2-Dichloroethane		50.0	47.9	ug/L	0.388	4.20	20	
cis-1,2-Dichloroethene		50.0	53.2	ug/L	0.297	6.30	20	
trans-1,2-Dichloroethene		50.0	52.1	ug/L	0.264	4.30	20	
1,3-Dichloropropane		50.0	56.3	ug/L	0.406	12.6	20	
2,2-Dichloropropane		50.0	45.6	ug/L	0.362	8.90	20	
cis-1,3-Dichloropropene		50.0	57.6	ug/L	0.430	15.2	20	
trans-1,3-Dichloropropene		50.0	52.1	ug/L	0.423	4.20	20	
1,1-Dichloropropene		50.0	50.1	ug/L	0.352	0.200	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4827751
Report generated 06/29/2016 16:05

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061026 Run Date: 05/13/2016 Sample ID: WG568769-12
Instrument ID: HPMS11 Run Time: 20:30 Method: 8260B
File ID: 11M11848 Analyst: JDS QC Key: DOD4
ICal Workgroup: WG568769 Cal ID: HPMS11 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	52.2	ug/L	0.172	4.40	20	
Hexachlorobutadiene		50.0	55.9	ug/L	0.482	11.8	20	
Isopropylbenzene		50.0	54.2	ug/L	1.61	8.50	20	
p-Isopropyltoluene		50.0	54.7	ug/L	2.67	9.40	20	
4-Methyl-2-Pentanone		50.0	52.6	ug/L	0.0777	5.10	20	
Methylene Chloride		50.0	52.0	ug/L	0.246	4.00	20	
Naphthalene		50.0	51.1	ug/L	1.86	2.30	20	
n-Propylbenzene		50.0	56.6	ug/L	3.28	13.2	20	
Styrene		50.0	55.0	ug/L	1.02	9.90	20	
1,1,1,2-Tetrachloroethane		50.0	51.0	ug/L	0.383	2.10	20	
Tetrachloroethene		50.0	52.2	ug/L	0.307	4.40	20	
1,2,3-Trichlorobenzene		50.0	54.1	ug/L	0.971	8.10	20	
1,2,4-Trichlorobenzene		50.0	55.4	ug/L	1.08	10.9	20	
1,1,1-Trichloroethane		50.0	48.1	ug/L	0.472	3.90	20	
1,1,2-Trichloroethane		50.0	52.8	ug/L	0.237	5.50	20	
Trichloroethene		50.0	52.3	ug/L	0.327	4.60	20	
Trichlorofluoromethane		50.0	47.5	ug/L	0.494	4.90	20	
1,2,3-Trichloropropane		50.0	50.1	ug/L	0.147	0.300	20	
1,2,4-Trimethylbenzene		50.0	53.8	ug/L	2.42	7.70	20	
1,3,5-Trimethylbenzene		50.0	55.1	ug/L	2.44	10.3	20	
o-Xylene		50.0	54.7	ug/L	0.615	9.40	20	
m-,p-Xylene		100	107	ug/L	0.620	7.20	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4827751
Report generated 06/29/2016 16:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026 Run Date: 06/22/2016 Sample ID: WG573773-02
Instrument ID: HPMS11 Run Time: 16:43 Method: 8260B
File ID: 11M12801 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG573776 Cal ID: HPMS11 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	48.8	ug/L	0.488	2.32	20	
1,1-Dichloroethene	CCC	50.0	49.6	ug/L	0.454	0.854	20	
1,2-Dichloropropane	CCC	50.0	49.9	ug/L	0.265	0.160	20	
Ethylbenzene	CCC	50.0	52.1	ug/L	0.495	4.11	20	
Toluene	CCC	50.0	52.7	ug/L	1.33	5.41	20	
Vinyl Chloride	CCC	50.0	56.5	ug/L	0.294	12.9	20	
Bromoform	SPCC	50.0	53.8	ug/L	0.223	7.54	20	
Chlorobenzene	SPCC	50.0	52.1	ug/L	0.966	4.14	20	
Chloromethane	SPCC	50.0	51.6	ug/L	0.324	3.17	20	
1,1-Dichloroethane	SPCC	50.0	49.9	ug/L	0.507	0.198	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	50.7	ug/L	0.395	1.35	20	
Xylenes		150	156	ug/L	0.592	3.81	20	
Acetone		50.0	40.8	ug/L	0.0484	18.5	20	
Benzene		50.0	51.2	ug/L	0.984	2.45	20	
Bromobenzene		50.0	52.3	ug/L	0.795	4.58	20	
Bromochloromethane		50.0	59.1	ug/L	0.196	18.2	20	
Bromodichloromethane		50.0	50.8	ug/L	0.379	1.57	20	
Bromomethane		50.0	60.5	ug/L	0.217	21.0	20	*
2-Butanone		50.0	41.0	ug/L	0.0735	18.1	20	
n-Butylbenzene		50.0	48.5	ug/L	2.08	2.97	20	
sec-Butylbenzene		50.0	50.7	ug/L	2.69	1.38	20	
tert-Butylbenzene		50.0	52.9	ug/L	0.495	5.77	20	
Carbon Disulfide		50.0	53.9	ug/L	0.826	7.79	20	
Carbon Tetrachloride		50.0	50.7	ug/L	0.486	1.33	20	
Dibromochloromethane		50.0	54.3	ug/L	0.372	8.63	20	
Chloroethane		50.0	54.4	ug/L	0.182	8.85	20	
2-Chlorotoluene		50.0	49.7	ug/L	2.02	0.598	20	
4-Chlorotoluene		50.0	49.3	ug/L	1.79	1.39	20	
1,2-Dibromo-3-Chloropropane		50.0	44.1	ug/L	0.0773	11.8	20	
1,2-Dibromoethane		50.0	52.5	ug/L	0.236	5.06	20	
Dibromomethane		50.0	51.4	ug/L	0.142	2.79	20	
1,2-Dichlorobenzene		50.0	50.8	ug/L	1.36	1.54	20	
1,3-Dichlorobenzene		50.0	51.3	ug/L	1.51	2.57	20	
1,4-Dichlorobenzene		50.0	50.4	ug/L	1.50	0.809	20	
Dichlorodifluoromethane		50.0	56.3	ug/L	0.441	12.7	20	
1,2-Dichloroethane		50.0	47.1	ug/L	0.382	5.81	20	
cis-1,2-Dichloroethene		50.0	53.4	ug/L	0.298	6.81	20	
trans-1,2-Dichloroethene		50.0	54.1	ug/L	0.274	8.15	20	
1,3-Dichloropropane		50.0	51.2	ug/L	0.369	2.33	20	
2,2-Dichloropropane		50.0	53.9	ug/L	0.429	7.88	20	
cis-1,3-Dichloropropene		50.0	53.4	ug/L	0.399	6.84	20	
trans-1,3-Dichloropropene		50.0	51.7	ug/L	0.420	3.38	20	

CCV - Modified 03/05/2008
PDF File ID: 4827753
Report generated 06/29/2016 16:05

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026 Run Date: 06/22/2016 Sample ID: WG573773-02
Instrument ID: HPMS11 Run Time: 16:43 Method: 8260B
File ID: 11M12801 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG573776 Cal ID: HPMS11 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	51.8	ug/L	0.364	3.68	20	
2-Hexanone		50.0	38.7	ug/L	0.127	22.7	20	*
Hexachlorobutadiene		50.0	49.5	ug/L	0.427	0.931	20	
Isopropylbenzene		50.0	51.2	ug/L	1.52	2.34	20	
p-Isopropyltoluene		50.0	51.0	ug/L	2.48	1.91	20	
4-Methyl-2-Pentanone		50.0	44.7	ug/L	0.0660	10.6	20	
Methylene Chloride		50.0	51.4	ug/L	0.244	2.89	20	
Naphthalene		50.0	50.1	ug/L	1.82	0.171	20	
n-Propylbenzene		50.0	51.1	ug/L	2.96	2.26	20	
Styrene		50.0	54.0	ug/L	1.00	7.94	20	
1,1,1,2-Tetrachloroethane		50.0	51.9	ug/L	0.390	3.90	20	
Tetrachloroethene		50.0	54.5	ug/L	0.321	9.08	20	
1,2,3-Trichlorobenzene		50.0	48.9	ug/L	0.878	2.20	20	
1,2,4-Trichlorobenzene		50.0	50.6	ug/L	0.990	1.23	20	
1,1,1-Trichloroethane		50.0	50.1	ug/L	0.493	0.290	20	
1,1,2-Trichloroethane		50.0	52.0	ug/L	0.234	4.06	20	
Trichloroethene		50.0	53.9	ug/L	0.337	7.86	20	
Trichlorofluoromethane		50.0	51.3	ug/L	0.533	2.70	20	
1,2,3-Trichloropropane		50.0	49.1	ug/L	0.143	1.82	20	
1,2,4-Trimethylbenzene		50.0	51.1	ug/L	2.30	2.11	20	
1,3,5-Trimethylbenzene		50.0	50.9	ug/L	2.25	1.81	20	
o-Xylene		50.0	51.8	ug/L	0.582	3.51	20	
m-,p-Xylene		100	104	ug/L	0.601	3.95	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4827753
Report generated 06/29/2016 16:05

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 06/23/2016
Sample ID: WG573951-02
Instrument ID: HPMS11
Run Time: 15:59
Method: 8260B
File ID: 11M12829
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG573953
Cal ID: HPMS11 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.3	ug/L	0.502	0.640	20	
1,1-Dichloroethene	CCC	50.0	50.0	ug/L	0.458	0.000800	20	
1,2-Dichloropropane	CCC	50.0	49.0	ug/L	0.261	1.97	20	
Ethylbenzene	CCC	50.0	49.1	ug/L	0.467	1.79	20	
Toluene	CCC	50.0	49.3	ug/L	1.25	1.50	20	
Vinyl Chloride	CCC	50.0	57.5	ug/L	0.300	15.0	20	
Bromoform	SPCC	50.0	54.2	ug/L	0.225	8.31	20	
Chlorobenzene	SPCC	50.0	50.1	ug/L	0.929	0.231	20	
Chloromethane	SPCC	50.0	53.2	ug/L	0.334	6.45	20	
1,1-Dichloroethane	SPCC	50.0	49.6	ug/L	0.504	0.761	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	46.5	ug/L	0.362	6.94	20	
Trichloroethene		50.0	52.3	ug/L	0.326	4.56	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4827753
Report generated 06/29/2016 16:05

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061026
Instrument ID: HPMS11
Workgroup (AAB#): WG573776

ICAL CCV Number: WG568769-08
CAL ID: HPMS11-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568769-08	NA	NA	263885	438582	521583
Upper Limit	NA	NA	527770	877164	1043166
Lower Limit	NA	NA	131943	219291	260792
L16061026-01	1.00	01	262492	442694	496621
L16061026-03	1.00	01	286068	484683	555060
L16061026-04	5.00	DL01	276226	471668	534594
L16061026-05	100	DL01	269312	458713	517460
L16061026-07	1.00	01	285222	492737	557279
L16061026-08	1.00	01	313293	533935	611363
WG573776-01	1.00	01	320378	558566	634960
WG573776-02	1.00	01	335580	569515	650667

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4827754
Report generated 06/29/2016 16:05

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061026
Instrument ID: HPMS11
Workgroup (AAB#): WG573953

ICAL CCV Number: WG568769-08
CAL ID: HPMS11-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568769-08	NA	NA	263885	438582	521583
Upper Limit	NA	NA	527770	877164	1043166
Lower Limit	NA	NA	131943	219291	260792
L16061026-04	20.0	DL02	268568	457128	507627
WG573953-01	1.00	01	257668	439921	499965
WG573953-02	1.00	01	275615	445760	489086

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4827754
Report generated 06/29/2016 16:05

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061026
Instrument ID: HPMS11
Workgroup (AAB#): WG573776

ICAL CCV Number: WG568769-08
CAL ID: HPMS11-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568769-08	NA	NA	17.06	14.25	10.61
Upper Limit	NA	NA	17.56	14.75	11.11
Lower Limit	NA	NA	16.56	13.75	10.11
L16061026-01	1.00	01	17.06	14.25	10.61
L16061026-03	1.00	01	17.06	14.25	10.61
L16061026-04	5.00	DL01	17.06	14.25	10.61
L16061026-05	100	DL01	17.06	14.25	10.61
L16061026-07	1.00	01	17.06	14.25	10.61
L16061026-08	1.00	01	17.06	14.25	10.61
WG573776-01	1.00	01	17.06	14.25	10.61
WG573776-02	1.00	01	17.06	14.25	10.61

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4827756
Report generated: 06/29/2016 16:05

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061026
Instrument ID: HPMS11
Workgroup (AAB#): WG573953

ICAL CCV Number: WG568769-08
CAL ID: HPMS11-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568769-08	NA	NA	17.06	14.25	10.61
Upper Limit	NA	NA	17.56	14.75	11.11
Lower Limit	NA	NA	16.56	13.75	10.11
L16061026-04	20.0	DL02	17.06	14.25	10.61
WG573953-01	1.00	01	17.06	14.25	10.61
WG573953-02	1.00	01	17.06	14.25	10.61

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4827756
Report generated: 06/29/2016 16:05

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062216\11M12817.D Vial: 20
Acq On : 23 Jun 2016 1:14 Operator: JDS
Sample : L16061026-01 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 24 14:58:43 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	496621	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	442694	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	262492	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	147182	27.0799 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 108.32%		
43) 1,2-Dichloroethane-d4	10.24	65	161862	26.1184 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 104.48%		
57) Toluene-d8	12.47	98	483174	25.1194 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.48%		
78) p-Bromofluorobenzene	15.64	95	184611	22.8152 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 91.28%		

Target Compounds

					Qvalue
3) Chloromethane	3.72	50	3770	0.6050 ug/L	92
4) Vinyl Chloride	3.97	62	856	0.1654 ug/L #	44
13) Acetone	6.34	43	478	0.4053 ug/L #	49
46) Trichloroethene	11.09	130	1544	0.2491 ug/L	86

(#) = qualifier out of range (m) = manual integration
11M12817.D 8260WT.M Fri Jun 24 14:58:44 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062216\11M12817.D Vial: 20
Acq On : 23 Jun 2016 1:14 Operator: JDS
Sample : L16061026-01 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 24 14:58 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

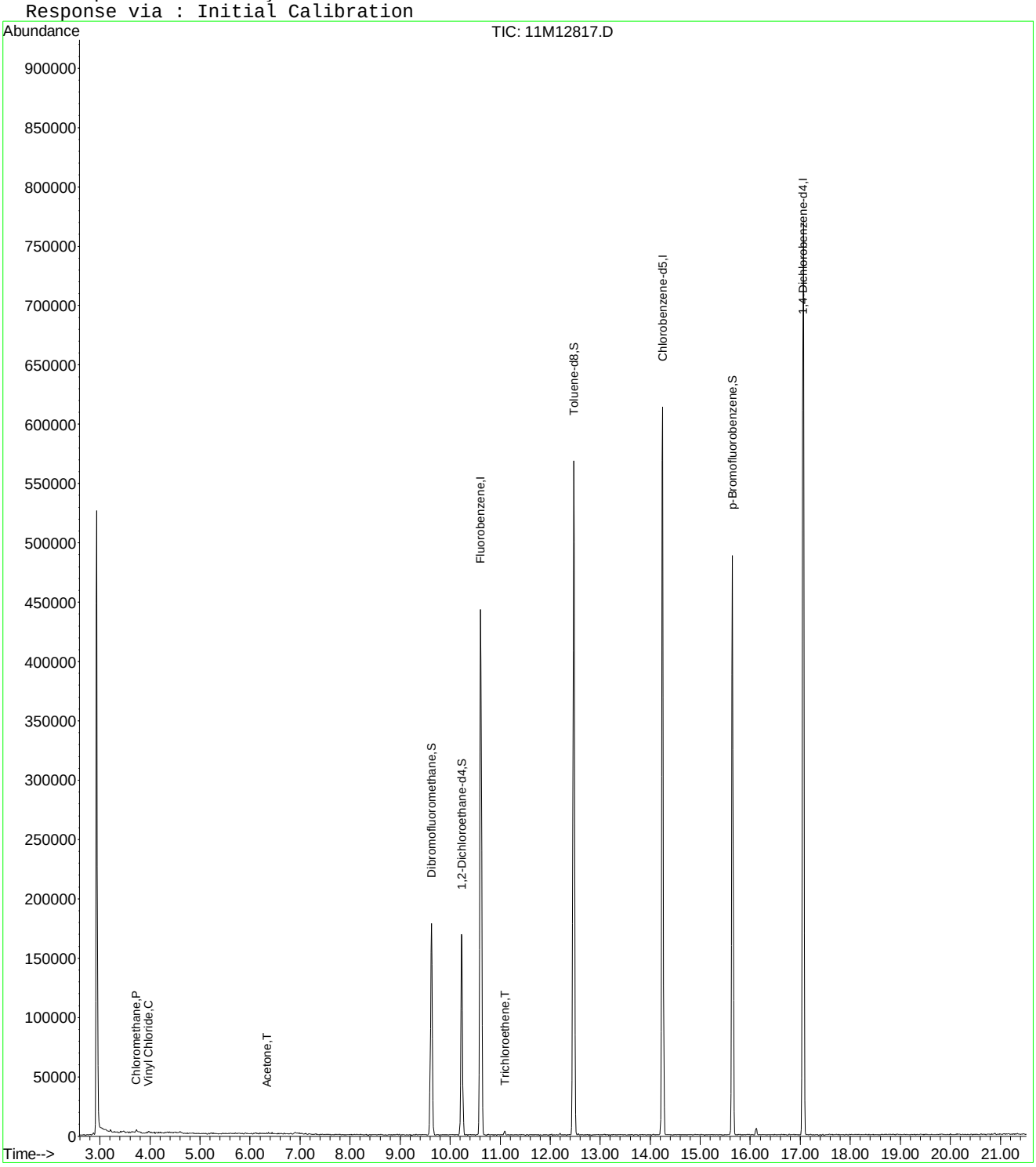

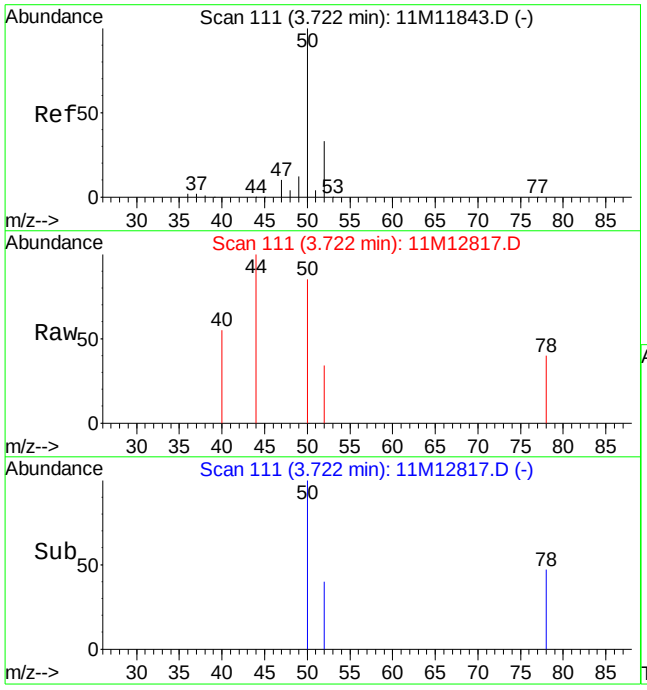

#3
Chloromethane
Concen: 0.60 ug/L
RT: 3.72 min Scan# 111
Delta R.T. 0.00 min
Lab File: 11M12817.D
Acq: 23 Jun 2016 1:14

Tgt Ion: 50 Resp: 3770

Ion	Ratio	Lower	Upper
50	100		
52	38.0	20.0	46.6

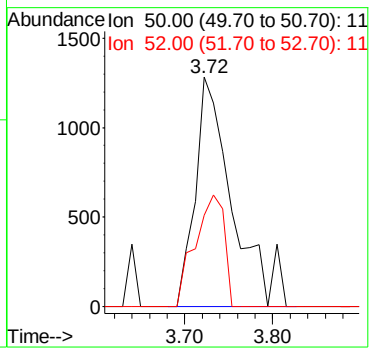

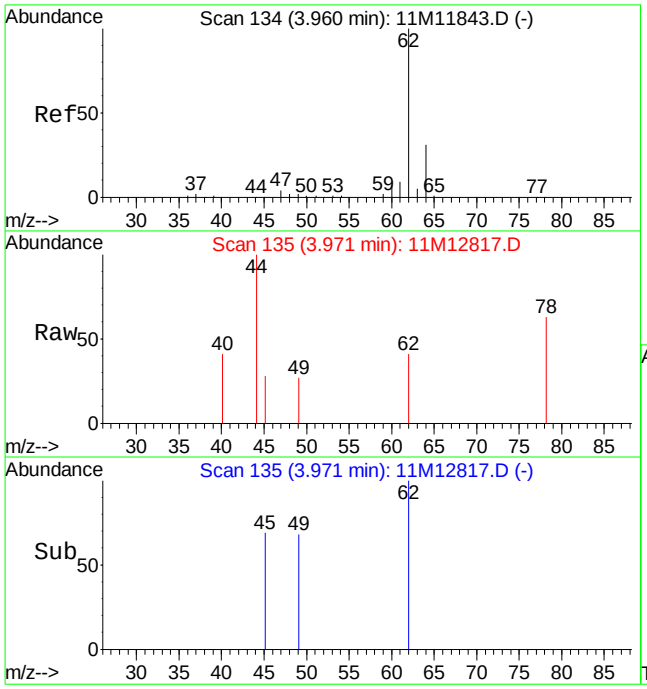

#4
Vinyl Chloride
Concen: 0.17 ug/L
RT: 3.97 min Scan# 135
Delta R.T. 0.01 min
Lab File: 11M12817.D
Acq: 23 Jun 2016 1:14

Tgt Ion: 62 Resp: 856

Ion	Ratio	Lower	Upper
62	100		
64	0.0	18.4	43.0#

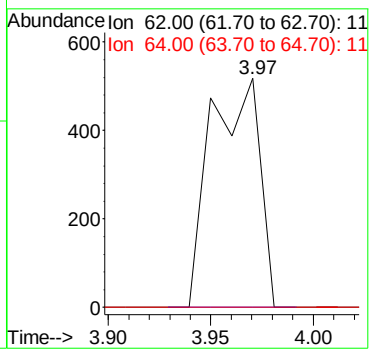

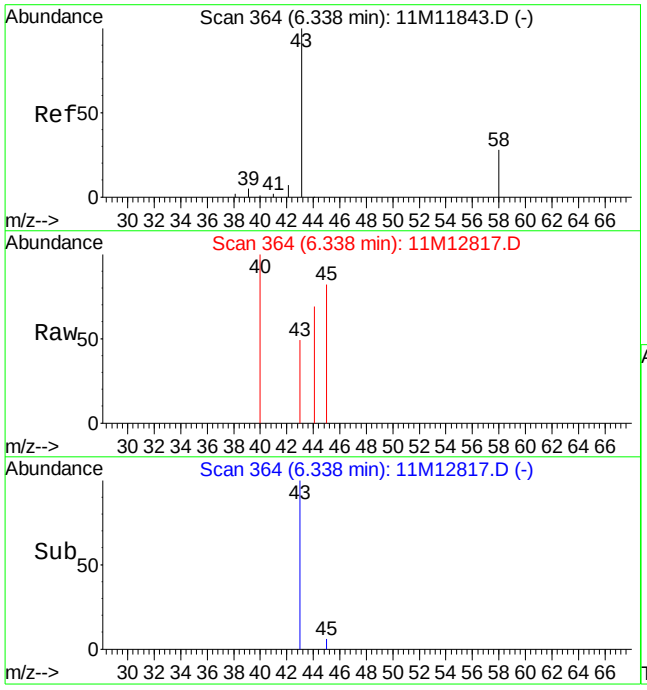

#13
Acetone
Concen: 0.41 ug/L
RT: 6.34 min Scan# 364
Delta R.T. 0.00 min
Lab File: 11M12817.D
Acq: 23 Jun 2016 1:14

Tgt Ion: 43 Resp: 478

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

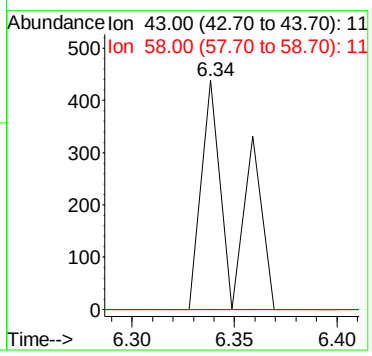

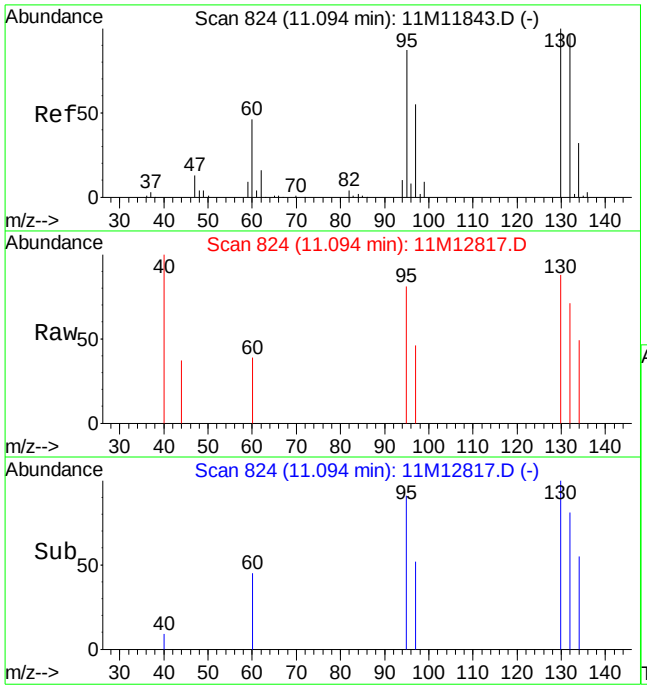

#46
Trichloroethene
Concen: 0.25 ug/L
RT: 11.09 min Scan# 824
Delta R.T. 0.00 min
Lab File: 11M12817.D
Acq: 23 Jun 2016 1:14

Tgt Ion:130 Resp: 1544

Ion	Ratio	Lower	Upper
130	100		
132	114.9	58.3	136.1
95	101.5	55.6	129.8

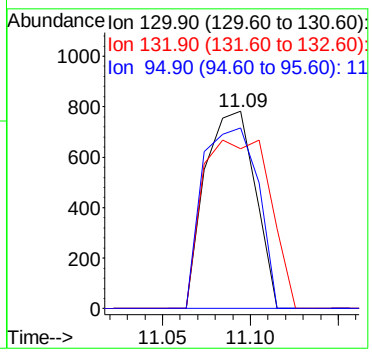

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062216\11M12813.D Vial: 16
Acq On : 22 Jun 2016 23:06 Operator: JDS
Sample : L16060974-03 A 826-SPE Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 24 14:58:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	555060	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	484683	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	286068	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	158938	26.1641 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.64%		
43) 1,2-Dichloroethane-d4	10.24	65	170923	24.6767 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.72%		
57) Toluene-d8	12.47	98	531603	25.2429 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.96%		
78) p-Bromofluorobenzene	15.64	95	200718	22.7614 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 91.04%		

Target Compounds					Qvalue
13) Acetone	6.33	43	793	0.6017 ug/L #	49

(#) = qualifier out of range (m) = manual integration
11M12813.D 8260WT.M Fri Jun 24 14:58:34 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062216\11M12813.D Vial: 16
Acq On : 22 Jun 2016 23:06 Operator: JDS
Sample : L16060974-03 A 826-SPE Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 24 14:58 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

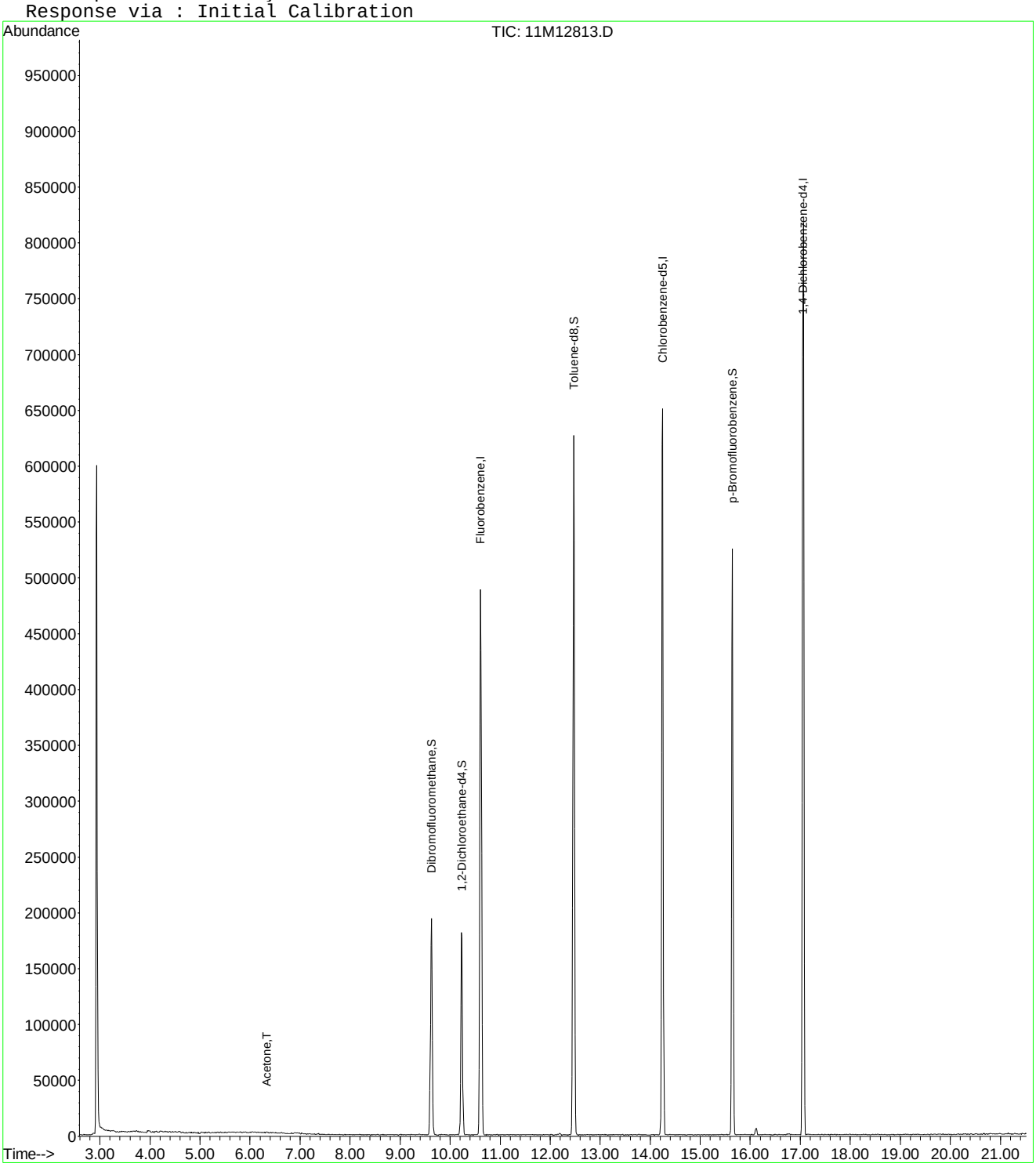

11M12813.D 8260WT.M Fri Jun 24 14:58:34 2016 Page 2

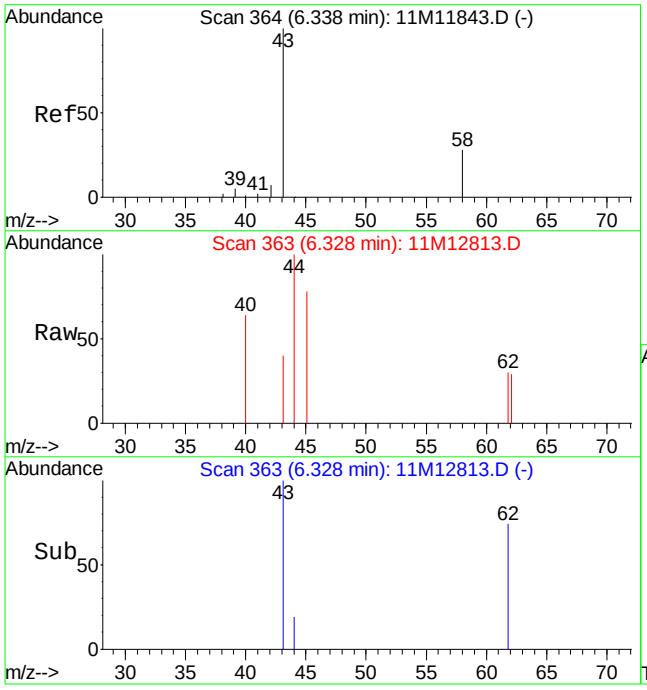

#13
Acetone
Concen: 0.60 ug/L
RT: 6.33 min Scan# 363
Delta R.T. -0.01 min
Lab File: 11M12813.D
Acq: 22 Jun 2016 23:06

Tgt Ion: 43 Resp: 793

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

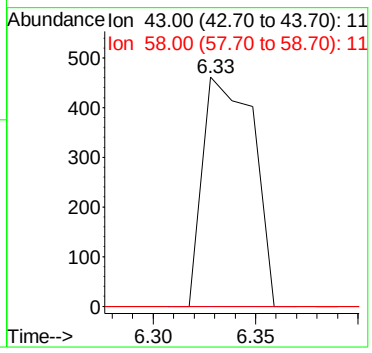

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062216\11M12815.D Vial: 18
Acq On : 23 Jun 2016 00:10 Operator: JDS
Sample : L16061026-04 A 5X 826-LOW Inst : hpms11
Misc : 1,5 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 24 14:58:38 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	534594	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	471668	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	276226	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	155657	26.6049 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.40%		
43) 1,2-Dichloroethane-d4	10.23	65	167579	25.1202 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.48%		
57) Toluene-d8	12.47	98	525050	25.6197 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.48%		
78) p-Bromofluorobenzene	15.64	95	201645	23.6813 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.72%		

Target Compounds

					Qvalue
12) 1,1,2-Trichloro-1,2,2-Trif	6.24	101	36649	6.8020 ug/L	95
13) Acetone	6.36	43	189	0.1489 ug/L #	49
14) 1,1-Dichloroethene	6.55	61	1475	0.1507 ug/L #	46
32) cis-1,2-Dichloroethene	9.15	96	5996	1.0040 ug/L	76
33) Chloroform	9.35	83	7004	0.6563 ug/L	96
36) Tetrahydrofuran	9.60	42	973	0.7180 ug/L #	66
44) 1,2-Dichloroethane	10.34	62	44118	5.0896 ug/L	88
46) Trichloroethene	11.09	130	2136212	320.1444 ug/L	98
47) Methylcyclohexane	11.08	83	21923	2.6622 ug/L #	1

(#) = qualifier out of range (m) = manual integration
11M12815.D 8260WT.M Fri Jun 24 14:58:39 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062216\11M12815.D Vial: 18
Acq On : 23 Jun 2016 00:10 Operator: JDS
Sample : L16061026-04 A 5X 826-LOW Inst : hpms11
Misc : 1,5 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 24 14:58 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

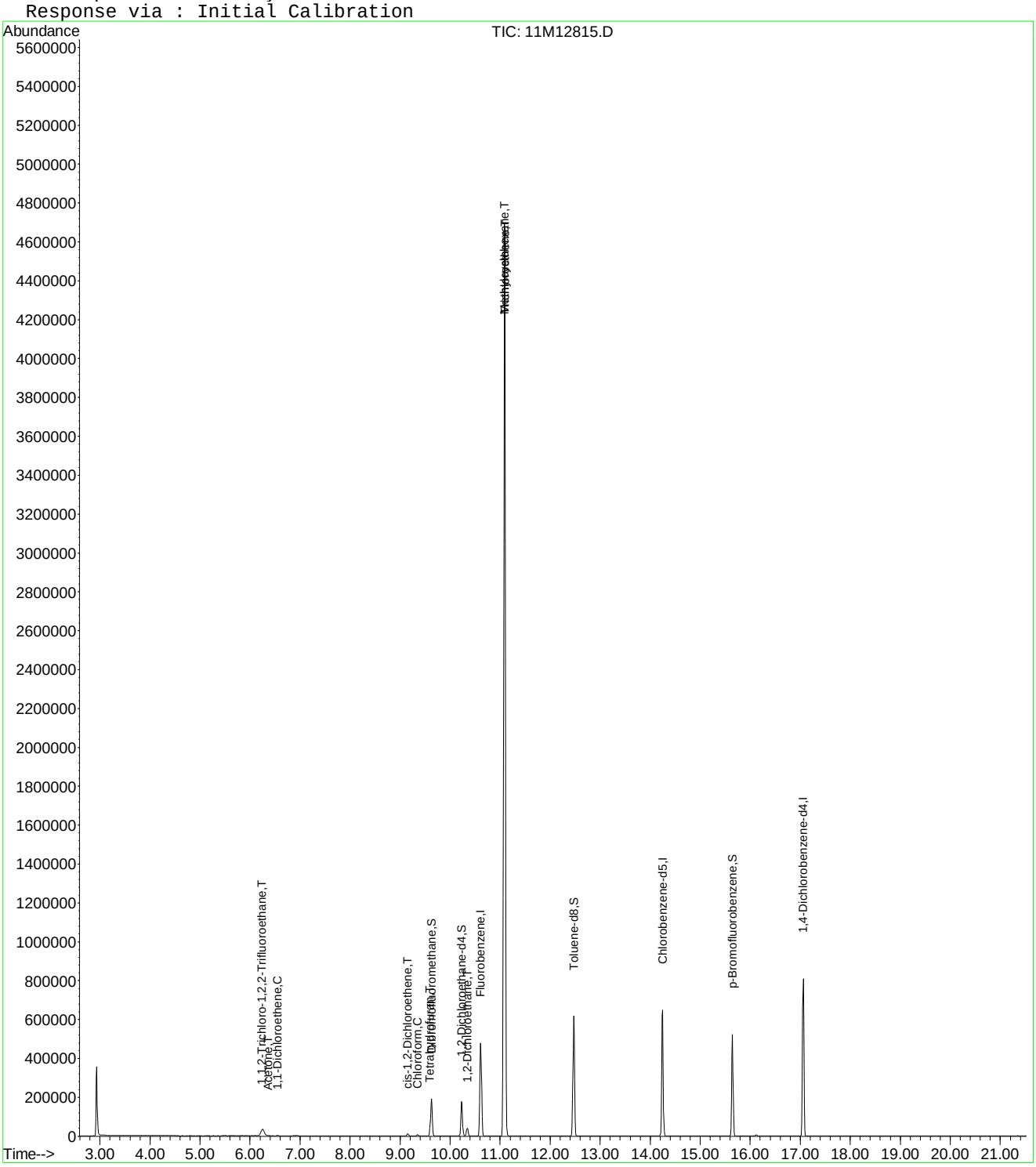

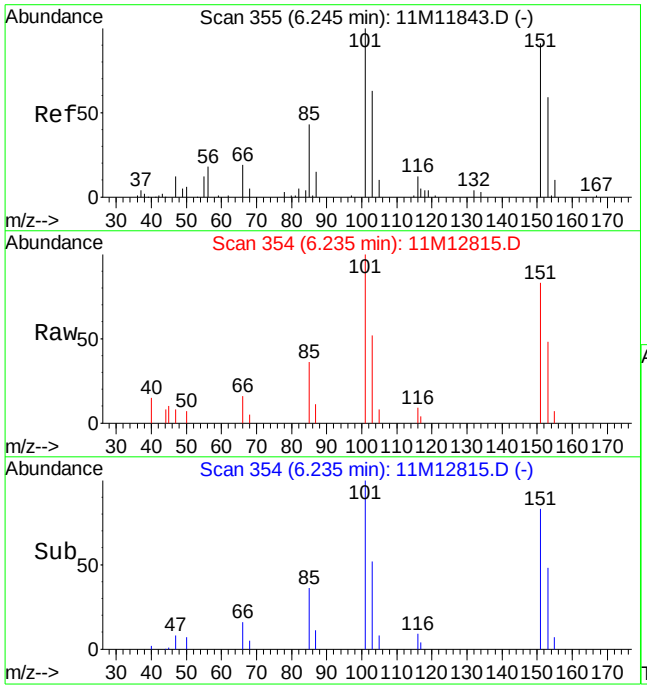

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 6.80 ug/L
RT: 6.24 min Scan# 354
Delta R.T. -0.01 min
Lab File: 11M12815.D
Acq: 23 Jun 2016 00:10

Tgt Ion:101 Resp: 36649

Ion	Ratio	Lower	Upper
101	100		
151	95.9	50.7	130.7

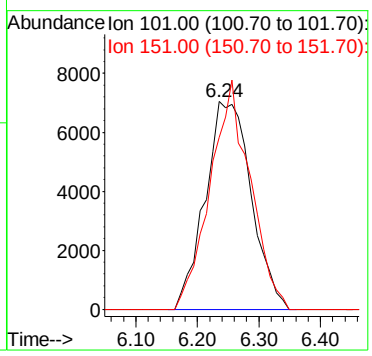

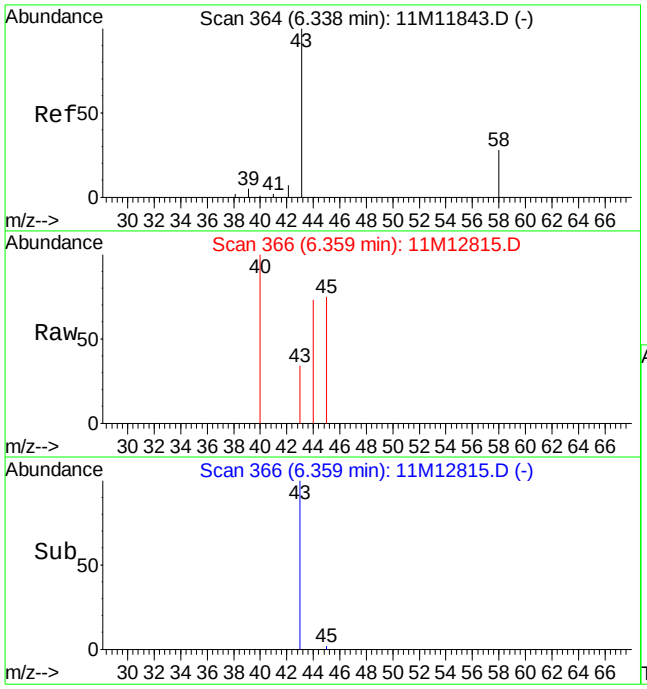

#13
Acetone
Concen: 0.15 ug/L
RT: 6.36 min Scan# 366
Delta R.T. 0.02 min
Lab File: 11M12815.D
Acq: 23 Jun 2016 00:10

Tgt Ion: 43 Resp: 189

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

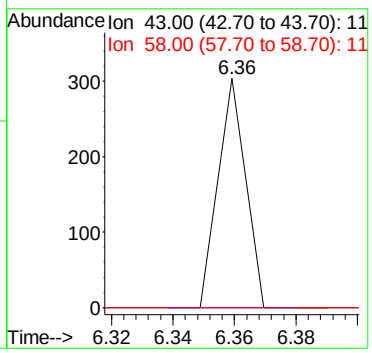

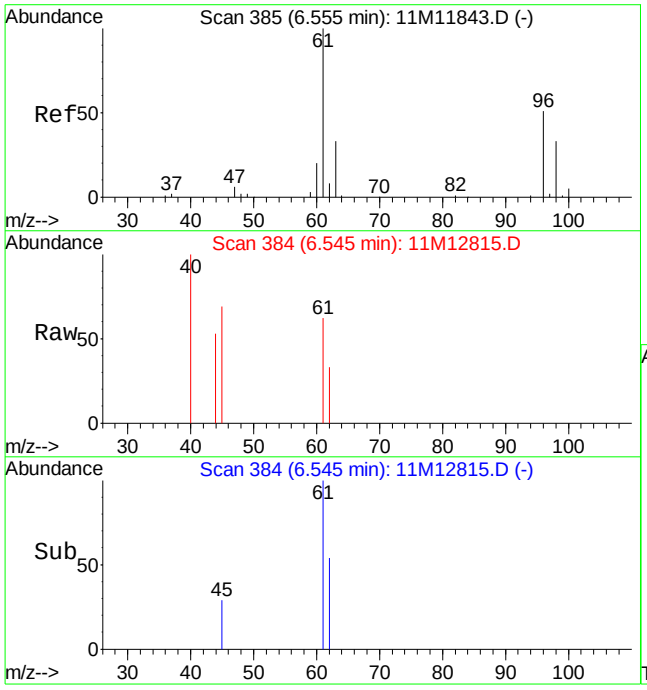

#14
1,1-Dichloroethene
Concen: 0.15 ug/L
RT: 6.55 min Scan# 384
Delta R.T. -0.01 min
Lab File: 11M12815.D
Acq: 23 Jun 2016 00:10

Tgt Ion: 61 Resp: 1475

Ion	Ratio	Lower	Upper
61	100		
96	13.2	30.1	70.3#

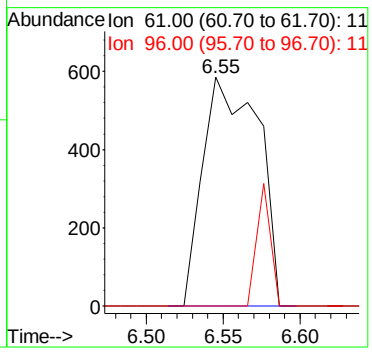

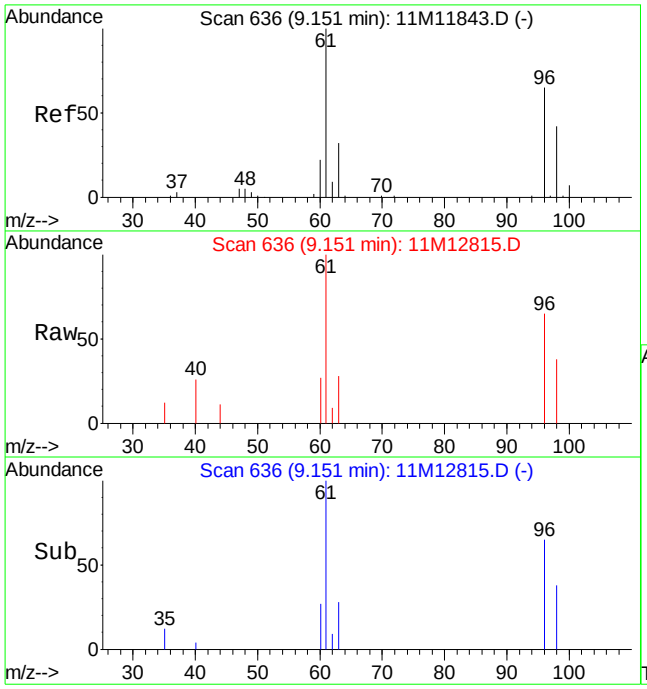

#32
cis-1,2-Dichloroethene
Concen: 1.00 ug/L
RT: 9.15 min Scan# 636
Delta R.T. 0.00 min
Lab File: 11M12815.D
Acq: 23 Jun 2016 00:10

Tgt Ion: 96 Resp: 5996

Ion	Ratio	Lower	Upper
96	100		
61	142.2	105.2	245.6

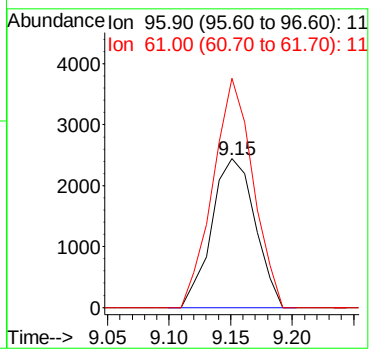

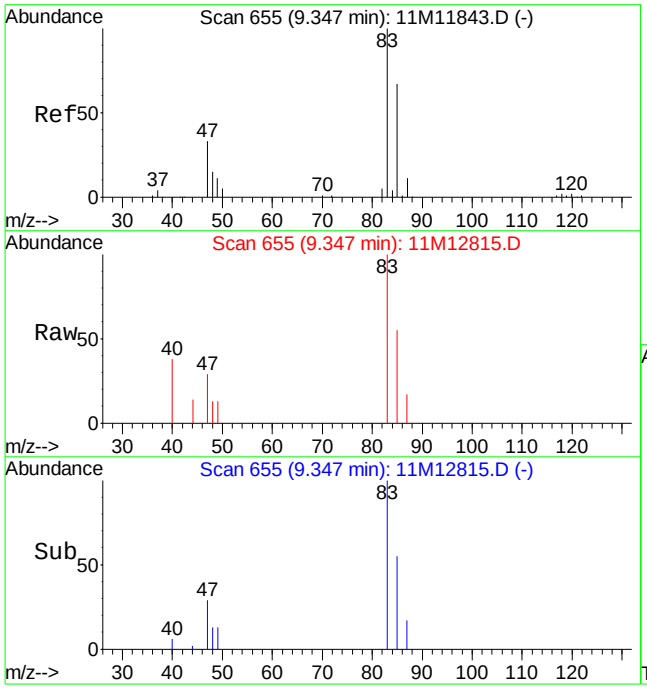

#33
Chloroform
Concen: 0.66 ug/L
RT: 9.35 min Scan# 655
Delta R.T. 0.00 min
Lab File: 11M12815.D
Acq: 23 Jun 2016 00:10

Tgt Ion: 83 Resp: 7004

Ion	Ratio	Lower	Upper
83	100		
85	62.3	39.2	91.4

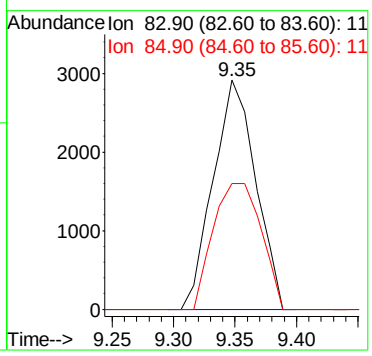

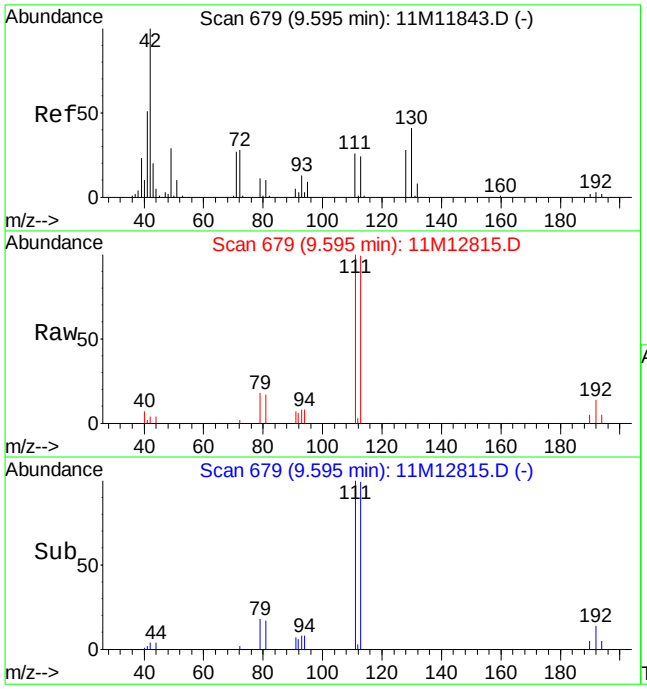

#36
Tetrahydrofuran
Concen: 0.72 ug/L
RT: 9.60 min Scan# 679
Delta R.T. 0.00 min
Lab File: 11M12815.D
Acq: 23 Jun 2016 00:10

Tgt Ion: 42 Resp: 973

Ion	Ratio	Lower	Upper
42	100		
71	0.0	16.4	38.2#
72	19.5	16.6	38.8

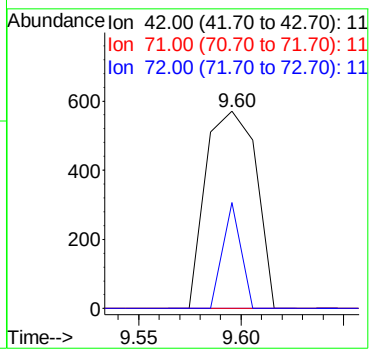

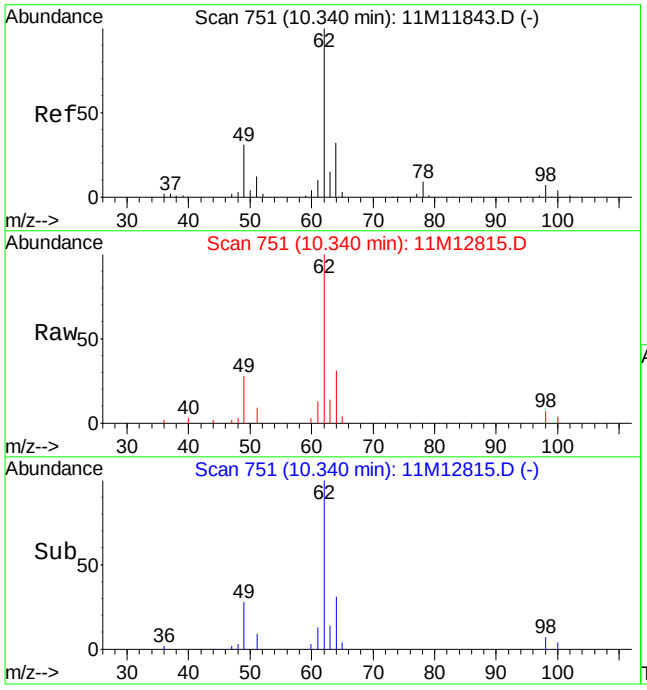

#44
1,2-Dichloroethane
Concen: 5.09 ug/L
RT: 10.34 min Scan# 751
Delta R.T. 0.00 min
Lab File: 11M12815.D
Acq: 23 Jun 2016 00:10

Tgt Ion: 62 Resp: 44118

Ion	Ratio	Lower	Upper
62	100		
64	29.1	18.7	43.7
49	26.3	22.3	52.1

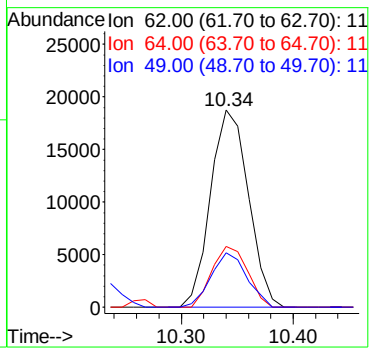

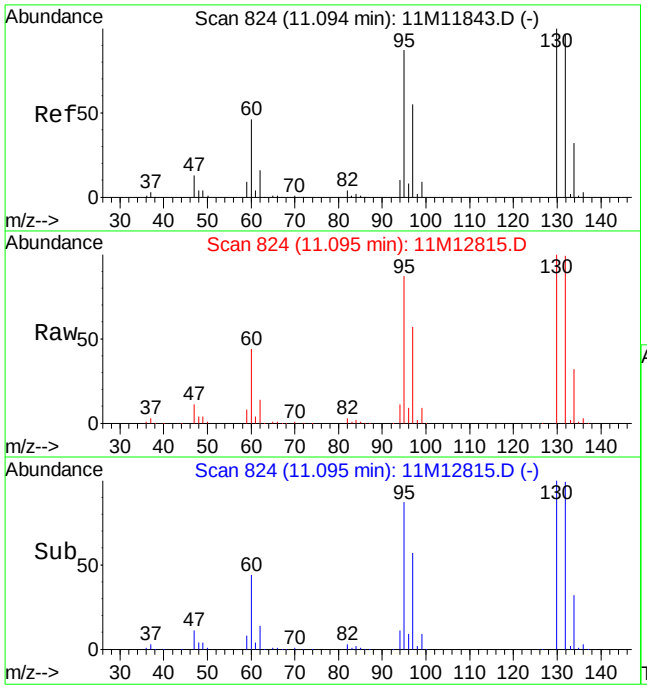

#46
Trichloroethene
Concen: 320.14 ug/L
RT: 11.09 min Scan# 824
Delta R.T. 0.00 min
Lab File: 11M12815.D
Acq: 23 Jun 2016 00:10

Tgt Ion:130 Resp: 2136212

Ion	Ratio	Lower	Upper
130	100		
132	96.8	58.3	136.1
95	89.6	55.6	129.8

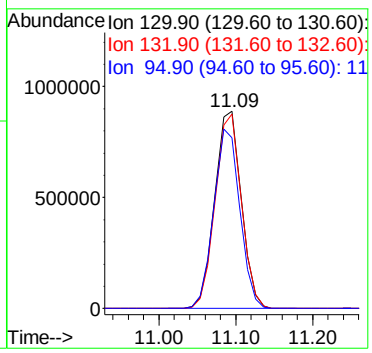

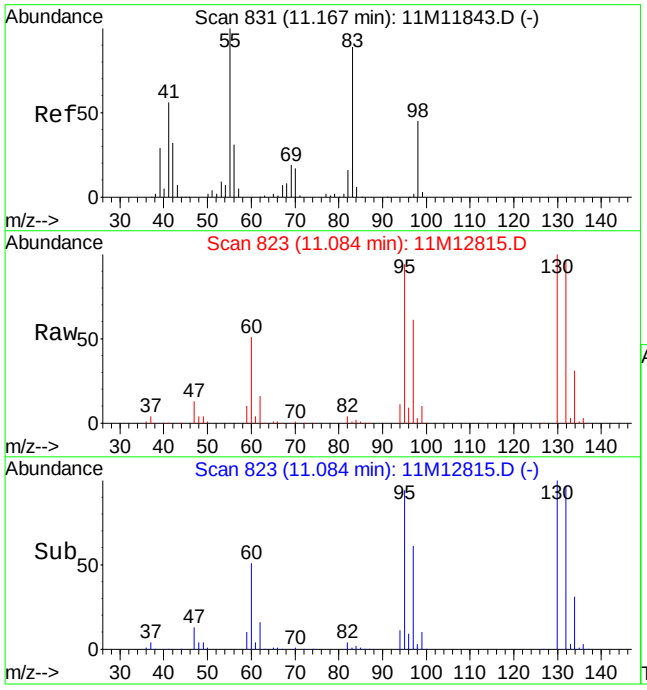

#47
Methylcyclohexane
Concen: 2.66 ug/L
RT: 11.08 min Scan# 823
Delta R.T. -0.08 min
Lab File: 11M12815.D
Acq: 23 Jun 2016 00:10

Tgt Ion: 83 Resp: 21923

Ion	Ratio	Lower	Upper
83	100		
55	0.0	66.5	155.1#
98	236.9	29.9	69.7#

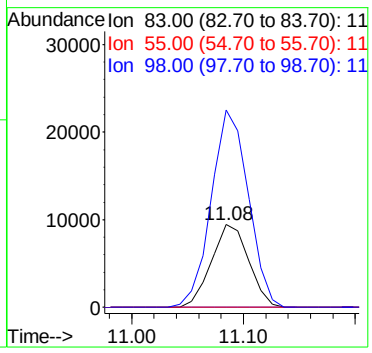

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062316\11M12835.D Vial: 9
Acq On : 23 Jun 2016 19:11 Operator: JDS
Sample : L16061026-04 B D1 20X 826-LOW Inst : hpms11
Misc : 1,20 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 24 15:00:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	507627	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	457128	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	268568	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	148019	26.6434 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.56%		
43) 1,2-Dichloroethane-d4	10.24	65	163290	25.7776 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.12%		
57) Toluene-d8	12.47	98	498634	25.1047 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.40%		
78) p-Bromofluorobenzene	15.64	95	195933	23.6666 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.68%		

Target Compounds

					Qvalue
3) Chloromethane	3.74	50	1416	0.2223 ug/L	97
6) Bromomethane	4.86	94	830	0.2282 ug/L	77
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	9036	1.7662 ug/L	96
13) Acetone	6.34	43	1216	1.0088 ug/L #	49
15) Tert-Butyl Alcohol	6.64	59	889	2.6663 ug/L #	56
17) Iodomethane	7.07	142	1039	2.4967 ug/L #	29
18) Methyl acetate	7.07	43	472	Below Cal #	71
20) Carbon Disulfide	7.36	76	2264	0.1455 ug/L #	75
29) 2-Butanone	8.87	43	280	0.1537 ug/L #	62
30) Propionitrile	8.99	54	676	1.2666 ug/L #	60
32) cis-1,2-Dichloroethene	9.15	96	1534	0.2705 ug/L	88
33) Chloroform	9.36	83	1713	0.1690 ug/L	71
36) Tetrahydrofuran	9.61	42	1610	1.2512 ug/L #	47
42) Tert-Amyl-Methyl ether	10.14	73	1878	0.1553 ug/L #	63
44) 1,2-Dichloroethane	10.34	62	10039	1.2197 ug/L	86
46) Trichloroethene	11.09	130	515068	81.2916 ug/L	97
47) Methylcyclohexane	11.08	83	4917	0.6288 ug/L #	1
62) 2-Hexanone	12.86	43	403	0.1337 ug/L #	34
64) Tetrachloroethene	13.34	164	809	0.1503 ug/L #	53
96) 1,2,4-Trichlorobenzene	19.54	180	1319	0.1255 ug/L #	43
98) Naphthalene	19.89	128	4993	0.2560 ug/L #	77
99) 1,2,3-Trichlorobenzene	20.18	180	1619	0.1679 ug/L #	63

(#) = qualifier out of range (m) = manual integration
11M12835.D 8260WT.M Fri Jun 24 15:00:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062316\11M12835.D Vial: 9
Acq On : 23 Jun 2016 19:11 Operator: JDS
Sample : L16061026-04 B D1 20X 826-LOW Inst : hpms11
Misc : 1,20 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 24 15:00 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

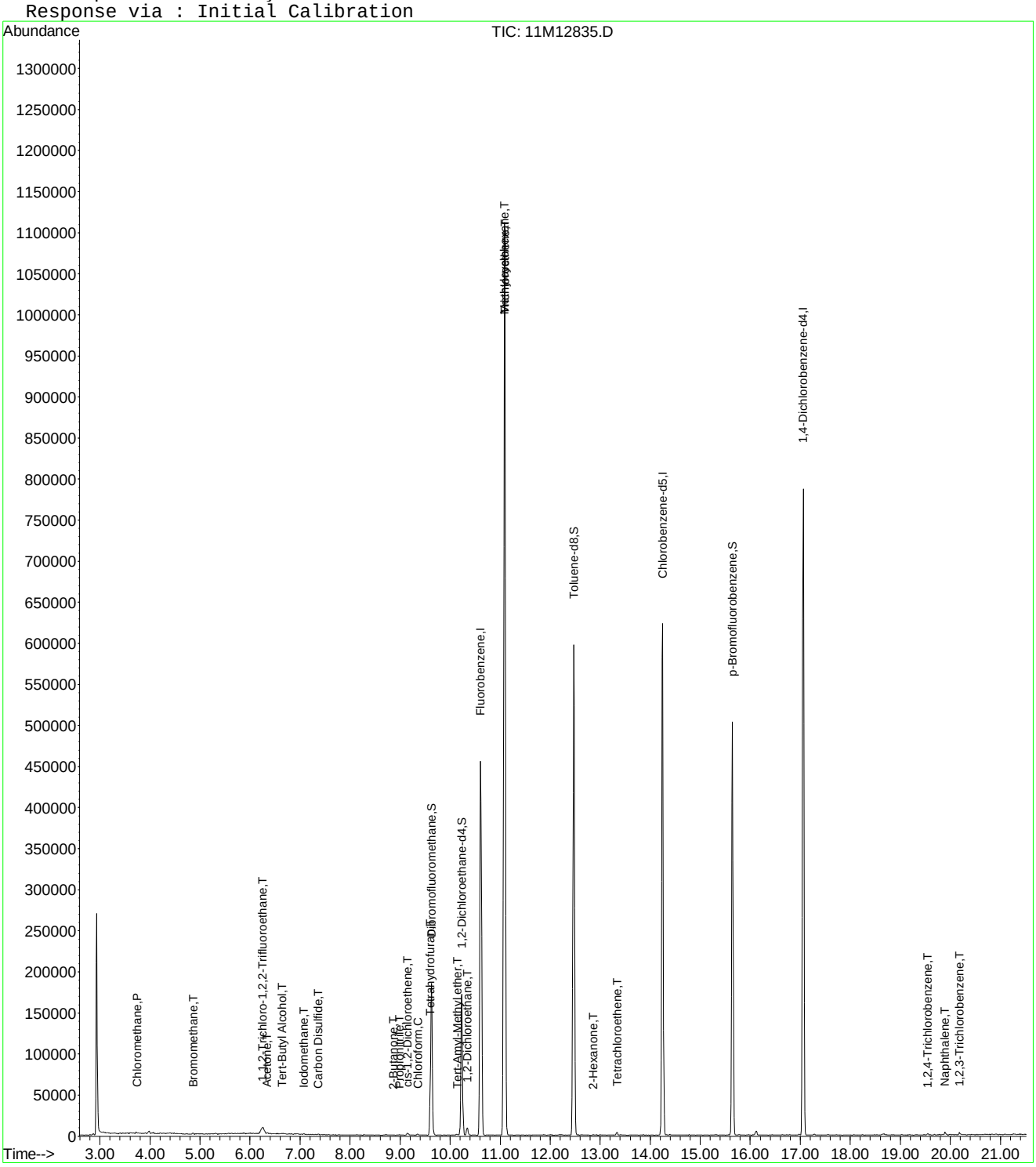

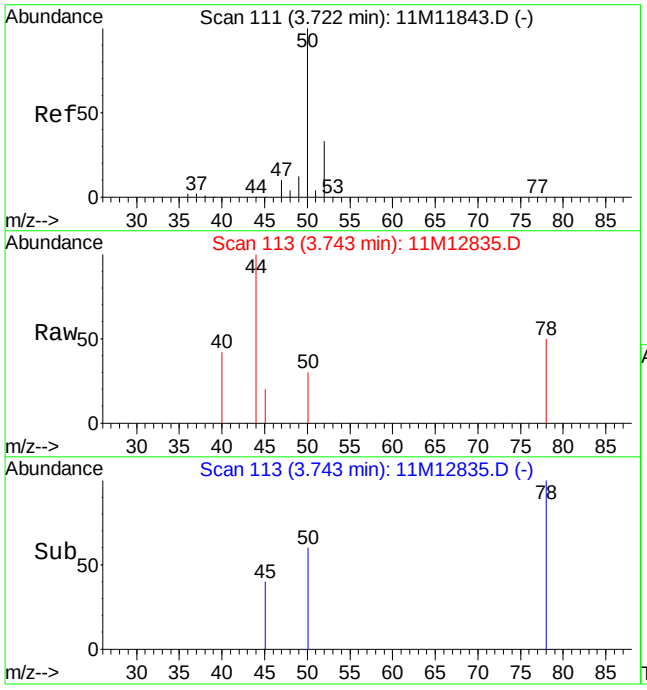

#3
Chloromethane
Concen: 0.22 ug/L
RT: 3.74 min Scan# 113
Delta R.T. 0.02 min
Lab File: 11M12835.D
Acq: 23 Jun 2016 19:11

Tgt Ion: 50 Resp: 1416

Ion	Ratio	Lower	Upper
50	100		
52	31.5	20.0	46.6

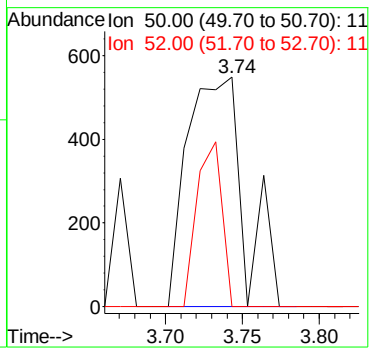

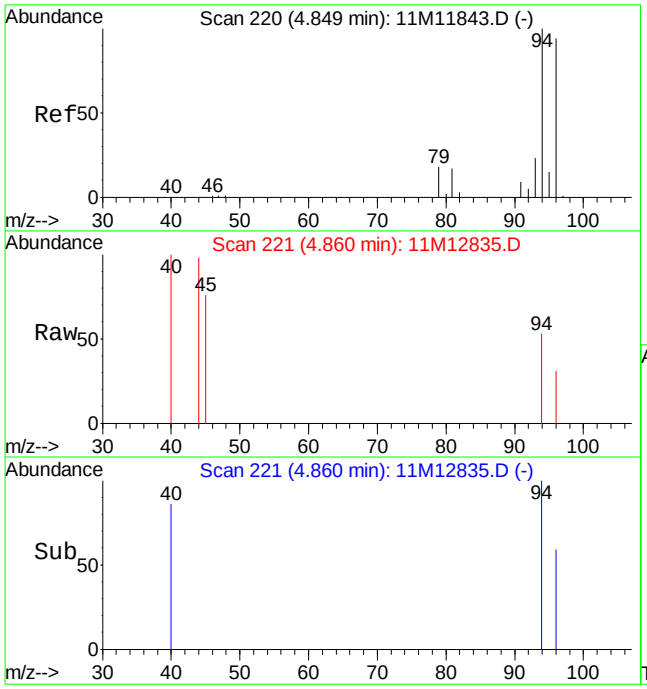

#6
Bromomethane
Concen: 0.23 ug/L
RT: 4.86 min Scan# 221
Delta R.T. 0.01 min
Lab File: 11M12835.D
Acq: 23 Jun 2016 19:11

Tgt Ion: 94 Resp: 830

Ion	Ratio	Lower	Upper
94	100		
96	71.9	56.5	131.9

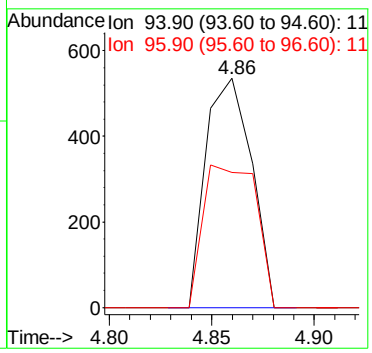

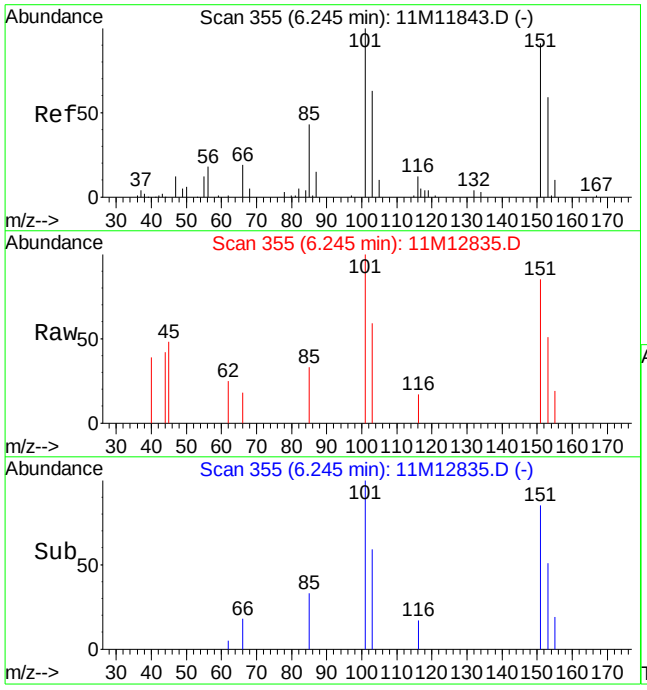

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 1.77 ug/L
RT: 6.25 min Scan# 355
Delta R.T. 0.00 min
Lab File: 11M12835.D
Acq: 23 Jun 2016 19:11

Tgt Ion:101 Resp: 9036

Ion	Ratio	Lower	Upper
101	100		
151	94.6	50.7	130.7

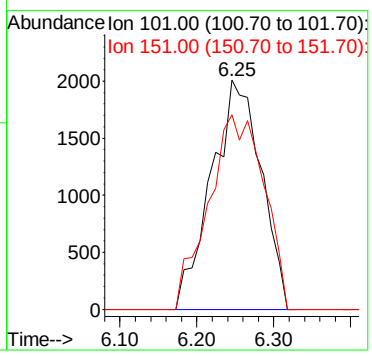

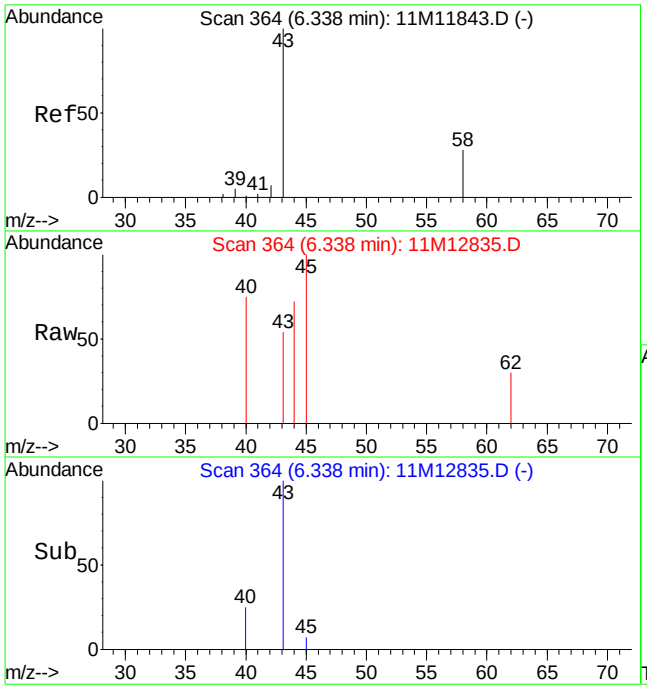

#13
Acetone
Concen: 1.01 ug/L
RT: 6.34 min Scan# 364
Delta R.T. 0.00 min
Lab File: 11M12835.D
Acq: 23 Jun 2016 19:11

Tgt Ion: 43 Resp: 1216

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

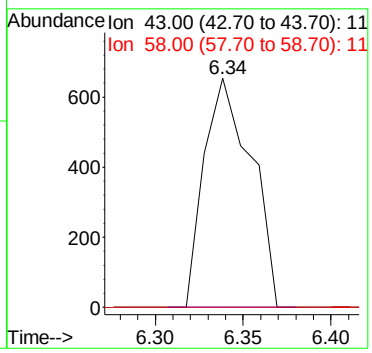

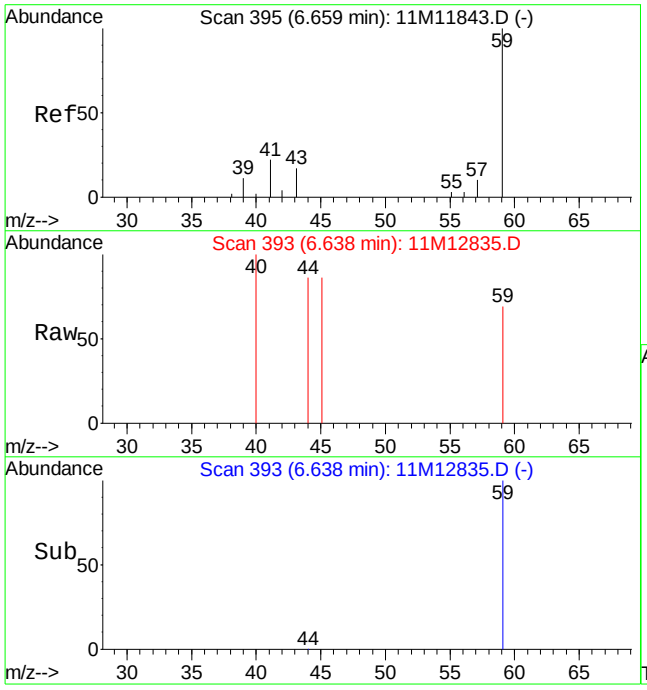

#15
Tert-Butyl Alcohol
Concen: 2.67 ug/L
RT: 6.64 min Scan# 393
Delta R.T. -0.02 min
Lab File: 11M12835.D
Acq: 23 Jun 2016 19:11

Tgt Ion: 59 Resp: 889

Ion	Ratio	Lower	Upper
59	100		
41	0.0	15.3	35.7#
57	0.0	6.2	14.4#

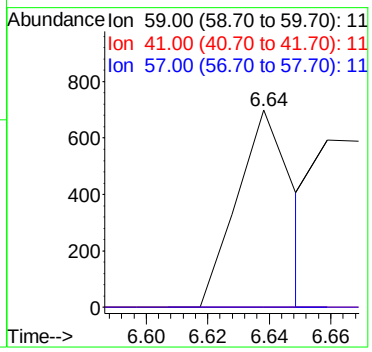

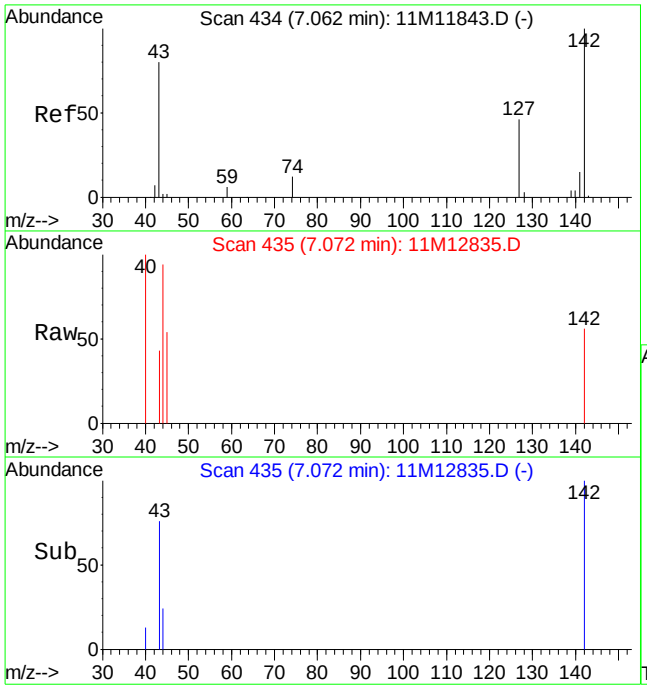

#17
Iodomethane
Concen: 2.50 ug/L
RT: 7.07 min Scan# 435
Delta R.T. 0.01 min
Lab File: 11M12835.D
Acq: 23 Jun 2016 19:11

Tgt Ion:142 Resp: 1039

Ion	Ratio	Lower	Upper
142	100		
127	0.0	29.0	67.6#

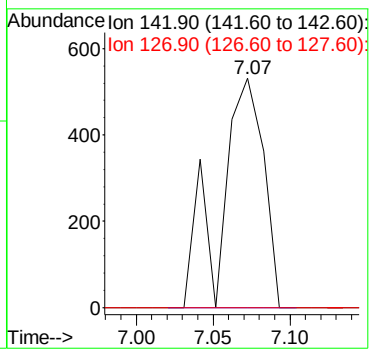

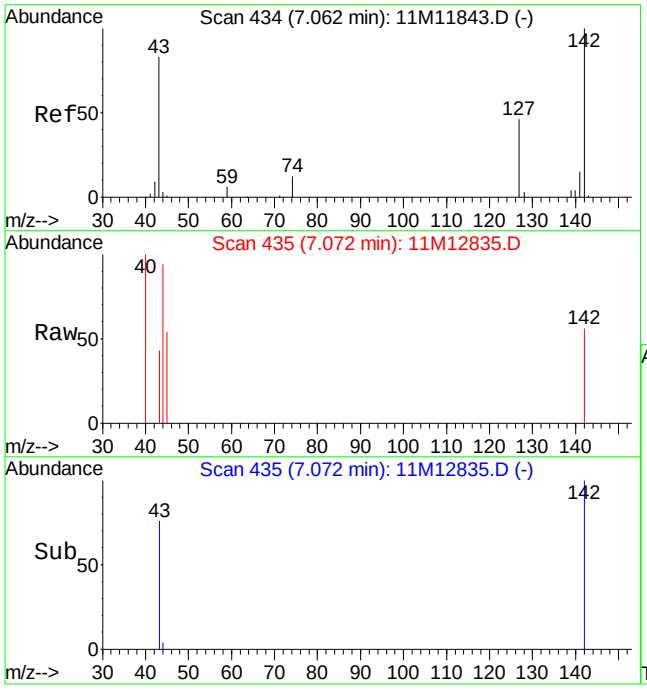

#18
Methyl acetate
Concen: Below Cal
RT: 7.07 min Scan# 435
Delta R.T. 0.01 min
Lab File: 11M12835.D
Acq: 23 Jun 2016 19:11

Tgt Ion: 43 Resp: 472

Ion	Ratio	Lower	Upper
43	100		
74	0.0	8.2	19.0#
59	0.0	3.9	9.1#

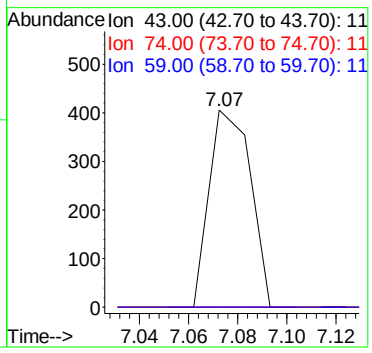

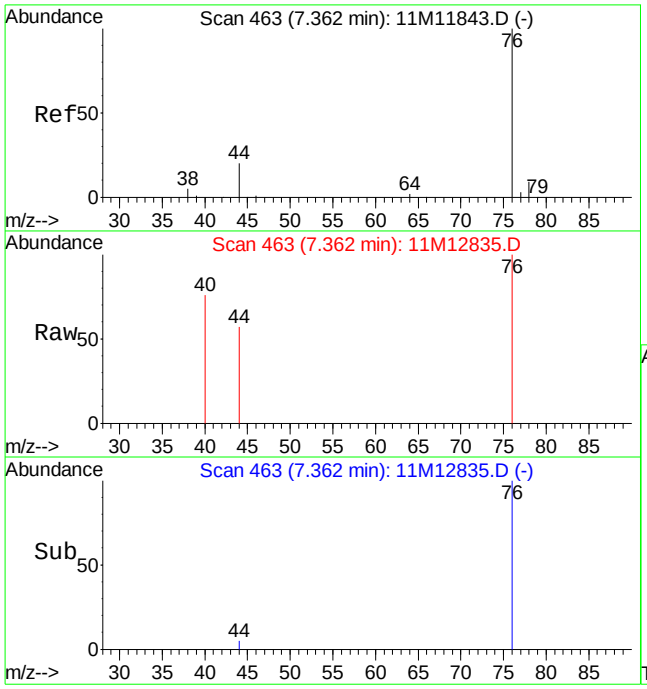

#20
Carbon Disulfide
Concen: 0.15 ug/L
RT: 7.36 min Scan# 463
Delta R.T. 0.00 min
Lab File: 11M12835.D
Acq: 23 Jun 2016 19:11

Tgt Ion: 76 Resp: 2264

Ion	Ratio	Lower	Upper
76	100		
78	0.0	5.5	12.9#

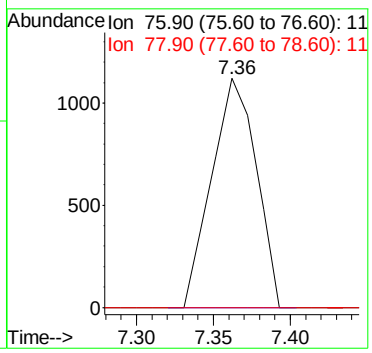

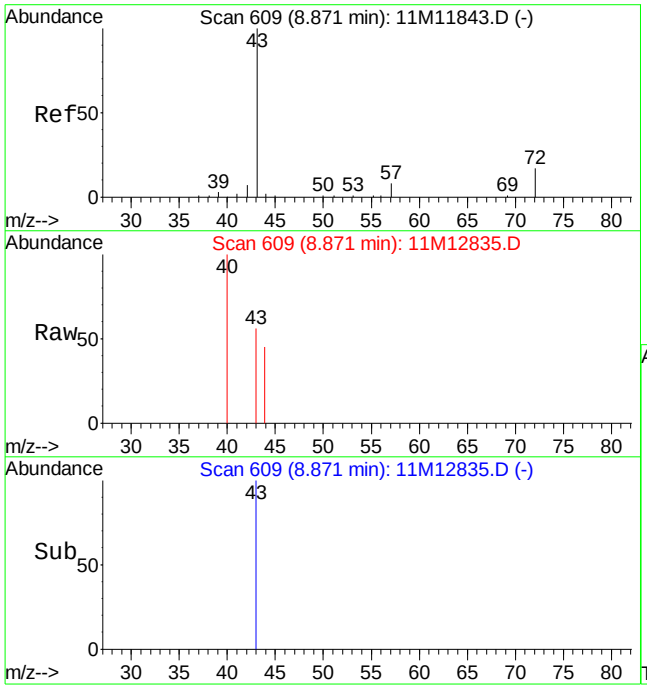

#29
2-Butanone
Concen: 0.15 ug/L
RT: 8.87 min Scan# 609
Delta R.T. 0.00 min
Lab File: 11M12835.D
Acq: 23 Jun 2016 19:11

Tgt Ion: 43 Resp: 280

Ion	Ratio	Lower	Upper
43	100		
72	0.0	9.6	22.4#

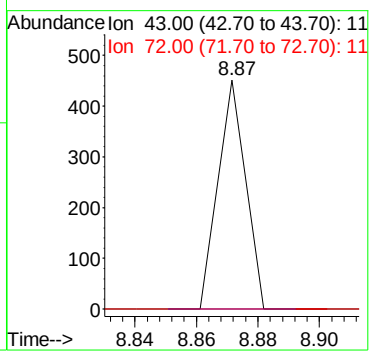

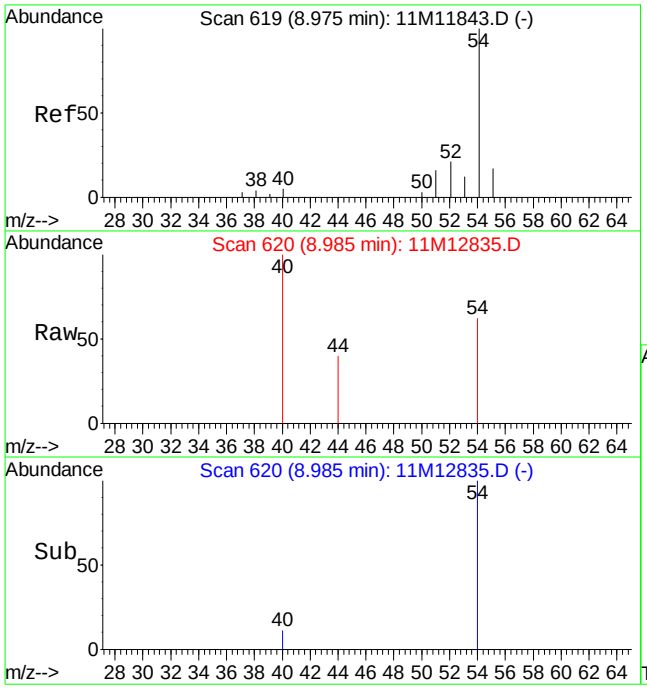

#30
Propionitrile
Concen: 1.27 ug/L
RT: 8.99 min Scan# 620
Delta R.T. 0.01 min
Lab File: 11M12835.D
Acq: 23 Jun 2016 19:11

Tgt Ion: 54 Resp: 676

Ion	Ratio	Lower	Upper
54	100		
55	0.0	10.3	24.1#

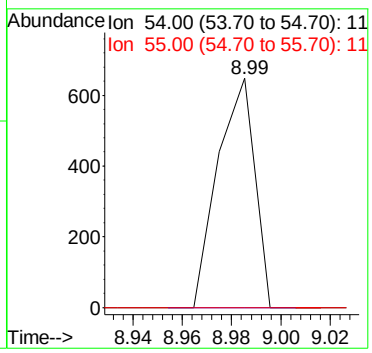

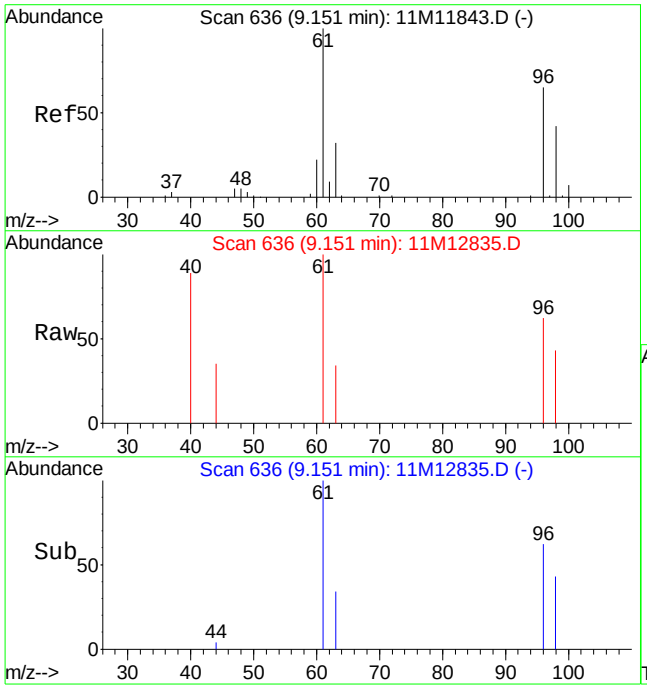

#32
cis-1,2-Dichloroethene
Concen: 0.27 ug/L
RT: 9.15 min Scan# 636
Delta R.T. 0.00 min
Lab File: 11M12835.D
Acq: 23 Jun 2016 19:11

Tgt Ion: 96 Resp: 1534

Ion	Ratio	Lower	Upper
96	100		
61	158.9	105.2	245.6

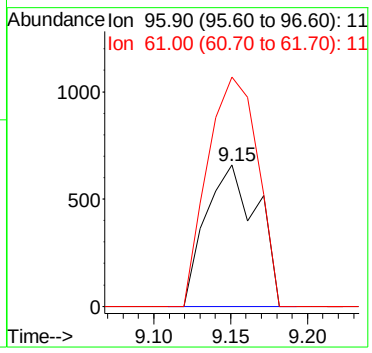

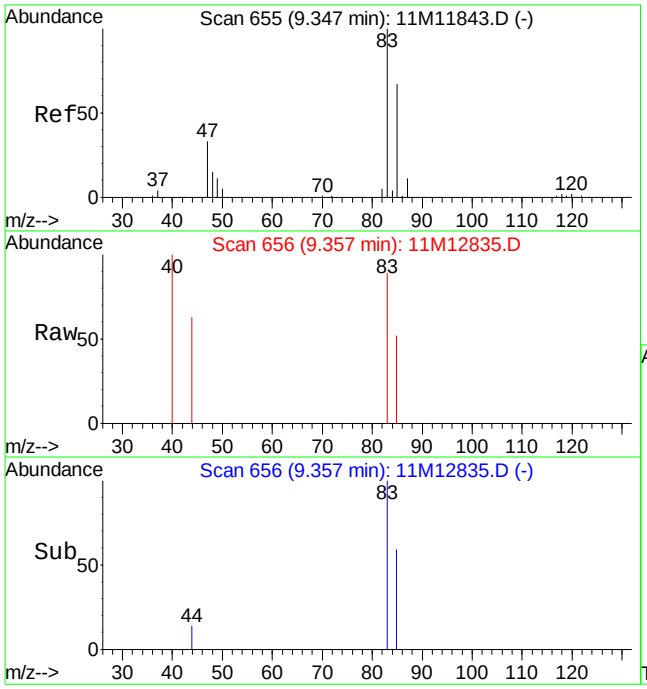

#33
Chloroform
Concen: 0.17 ug/L
RT: 9.36 min Scan# 656
Delta R.T. 0.01 min
Lab File: 11M12835.D
Acq: 23 Jun 2016 19:11

Tgt Ion: 83 Resp: 1713

Ion	Ratio	Lower	Upper
83	100		
85	42.5	39.2	91.4

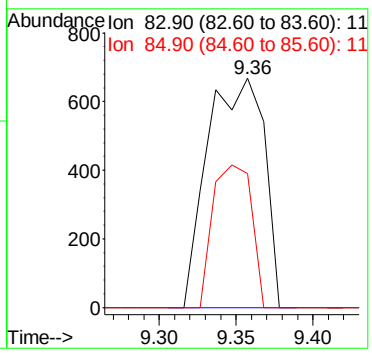

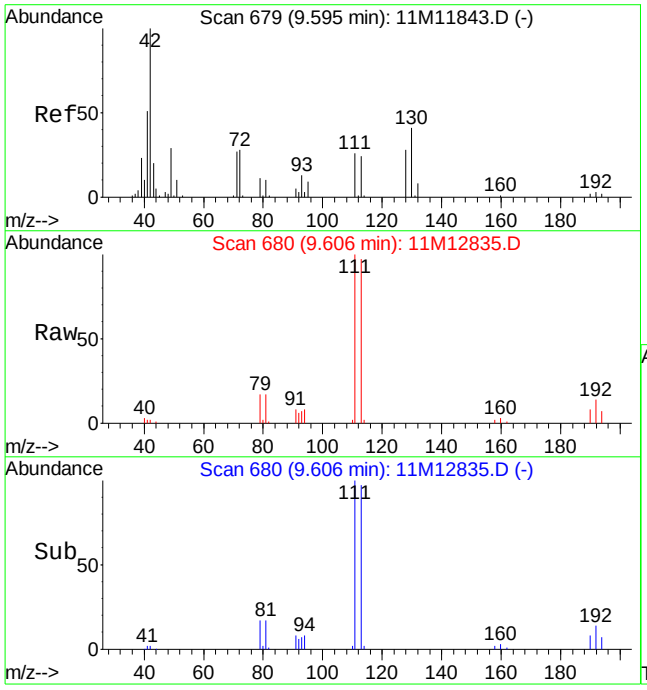

#36
Tetrahydrofuran
Concen: 1.25 ug/L
RT: 9.61 min Scan# 680
Delta R.T. 0.01 min
Lab File: 11M12835.D
Acq: 23 Jun 2016 19:11

Tgt Ion: 42 Resp: 1610

Ion	Ratio	Lower	Upper
42	100		
71	0.0	16.4	38.2#
72	0.0	16.6	38.8#

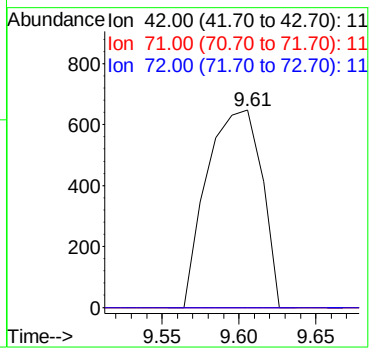

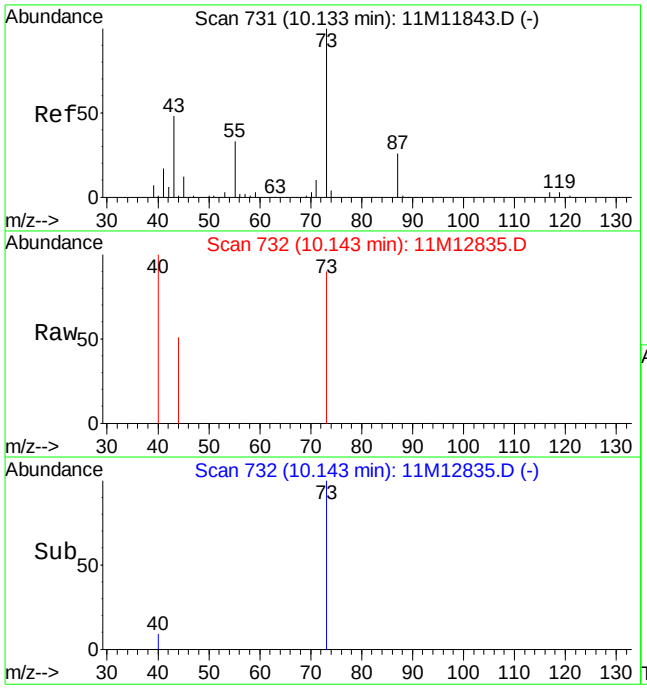

#42
Tert-Amyl-Methyl ether
Concen: 0.16 ug/L
RT: 10.14 min Scan# 732
Delta R.T. 0.01 min
Lab File: 11M12835.D
Acq: 23 Jun 2016 19:11

Tgt Ion: 73 Resp: 1878

Ion	Ratio	Lower	Upper
73	100		
55	11.1	20.1	46.9#
57	0.0	1.4	3.4#

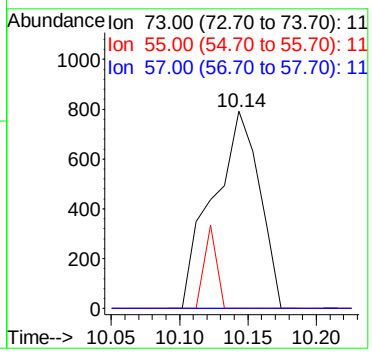

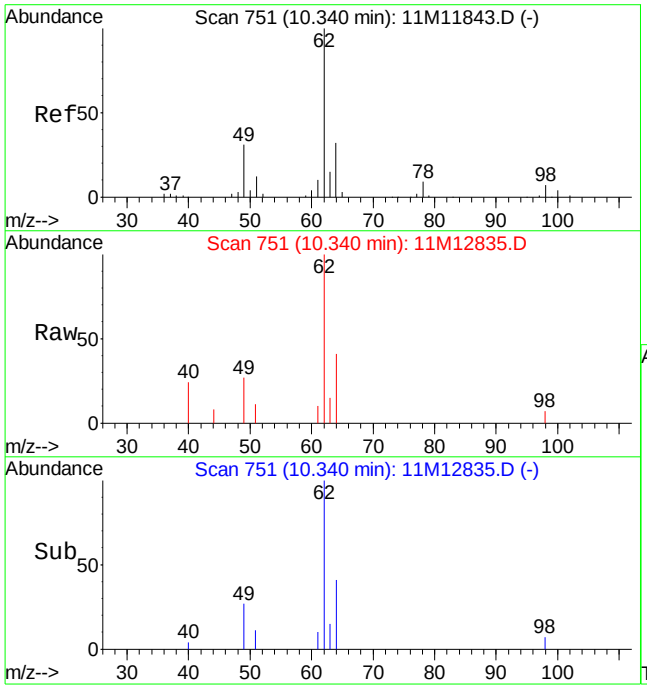

#44
1,2-Dichloroethane
Concen: 1.22 ug/L
RT: 10.34 min Scan# 751
Delta R.T. 0.00 min
Lab File: 11M12835.D
Acq: 23 Jun 2016 19:11

Tgt Ion: 62 Resp: 10039

Ion	Ratio	Lower	Upper
62	100		
64	35.4	18.7	43.7
49	25.2	22.3	52.1

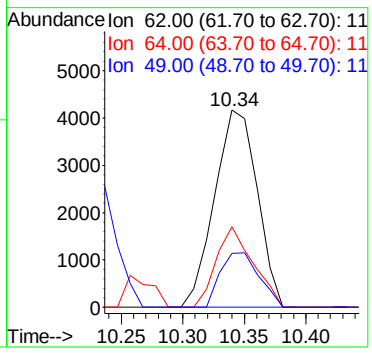

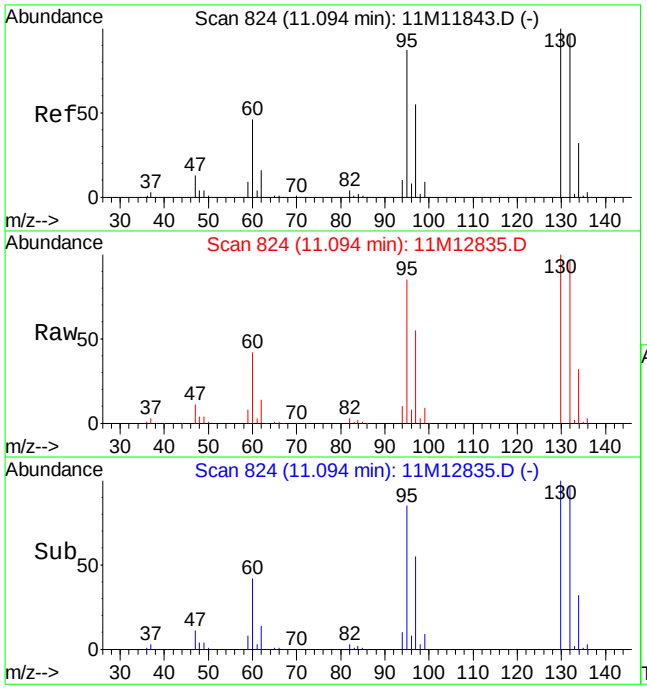

#46
Trichloroethene
Concen: 81.29 ug/L
RT: 11.09 min Scan# 824
Delta R.T. 0.00 min
Lab File: 11M12835.D
Acq: 23 Jun 2016 19:11

Tgt Ion:130 Resp: 515068

Ion	Ratio	Lower	Upper
130	100		
132	96.6	58.3	136.1
95	87.9	55.6	129.8

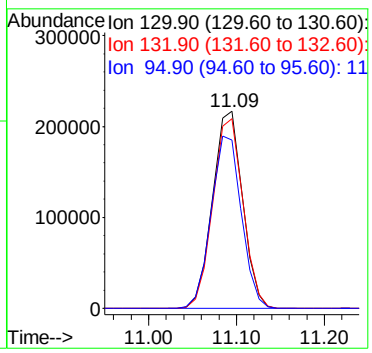

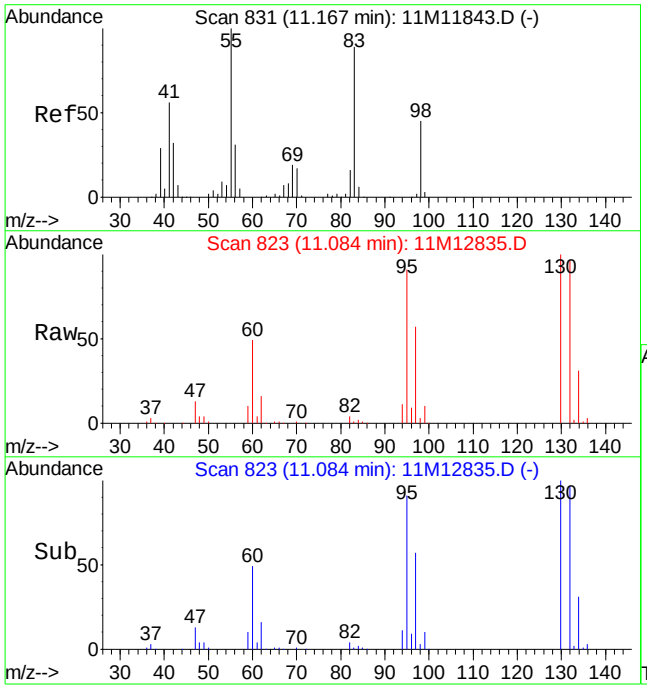

#47
Methylcyclohexane
Concen: 0.63 ug/L
RT: 11.08 min Scan# 823
Delta R.T. -0.08 min
Lab File: 11M12835.D
Acq: 23 Jun 2016 19:11

Tgt Ion: 83 Resp: 4917

Ion	Ratio	Lower	Upper
83	100		
55	0.0	66.5	155.1#
98	254.8	29.9	69.7#

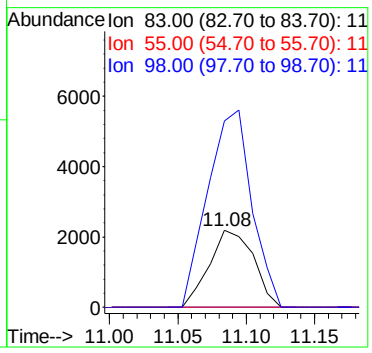

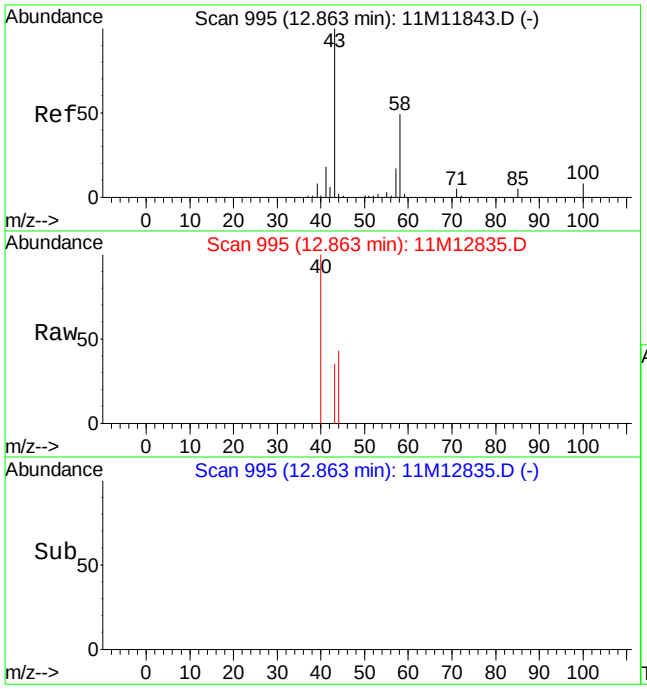

#62
2-Hexanone
Concen: 0.13 ug/L
RT: 12.86 min Scan# 995
Delta R.T. -0.00 min
Lab File: 11M12835.D
Acq: 23 Jun 2016 19:11

Tgt Ion: 43 Resp: 403

Ion	Ratio	Lower	Upper
43	100		
58	0.0	29.0	67.6#
85	0.0	3.2	7.6#

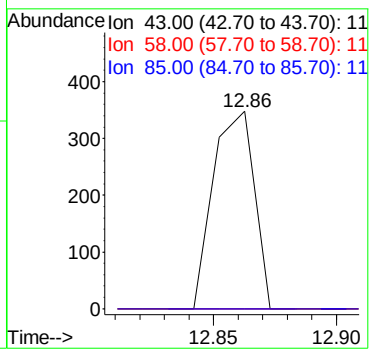

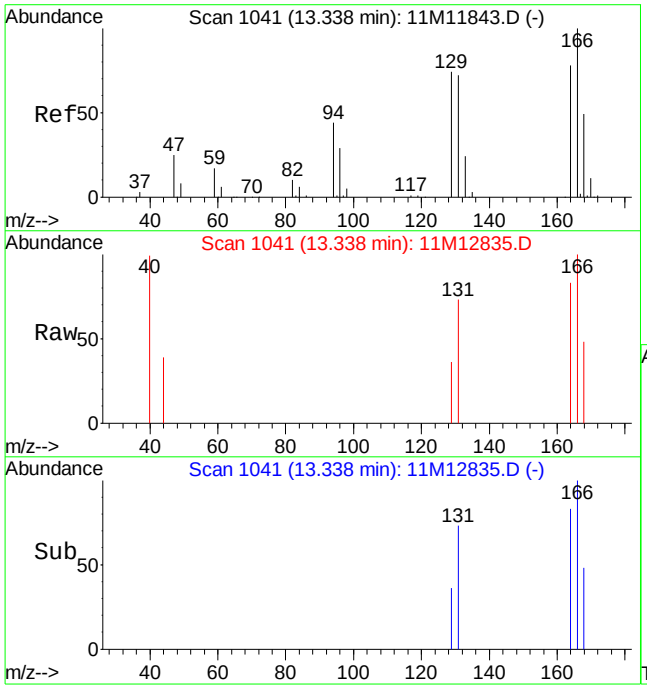

#64
Tetrachloroethene
Concen: 0.15 ug/L
RT: 13.34 min Scan# 1041
Delta R.T. 0.00 min
Lab File: 11M12835.D
Acq: 23 Jun 2016 19:11

Tgt Ion:164 Resp: 809

Ion	Ratio	Lower	Upper
164	100		
129	142.4	57.9	135.1#

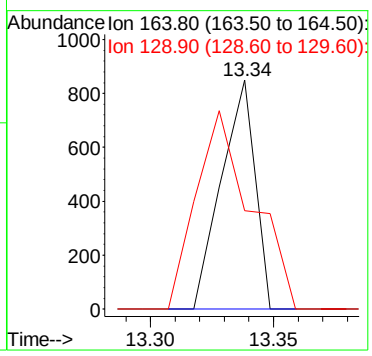

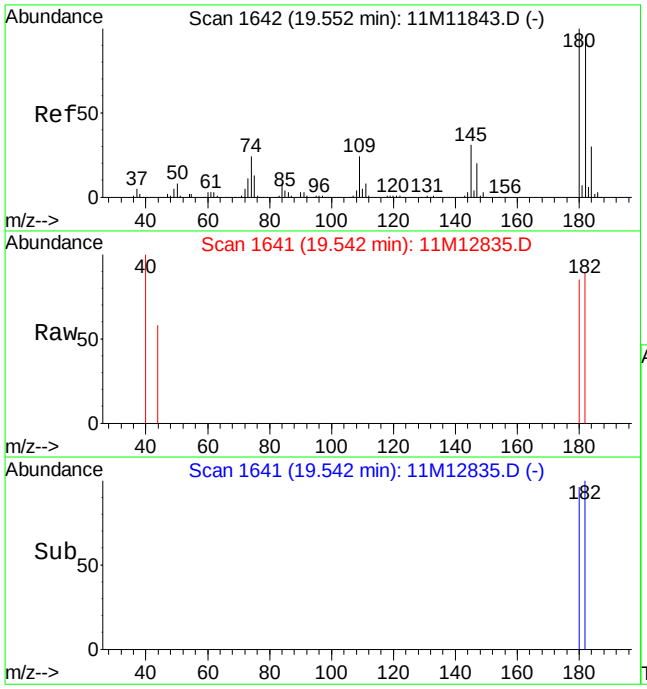

#96
1,2,4-Trichlorobenzene
Concen: 0.13 ug/L
RT: 19.54 min Scan# 1641
Delta R.T. -0.01 min
Lab File: 11M12835.D
Acq: 23 Jun 2016 19:11

Tgt Ion:180 Resp: 1319

Ion	Ratio	Lower	Upper
180	100		
145	0.0	19.1	44.7#

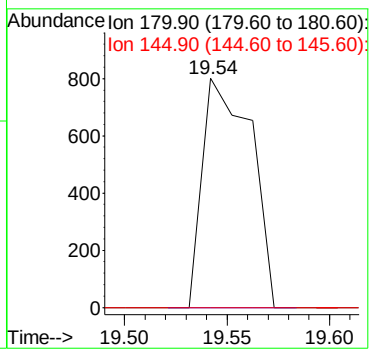

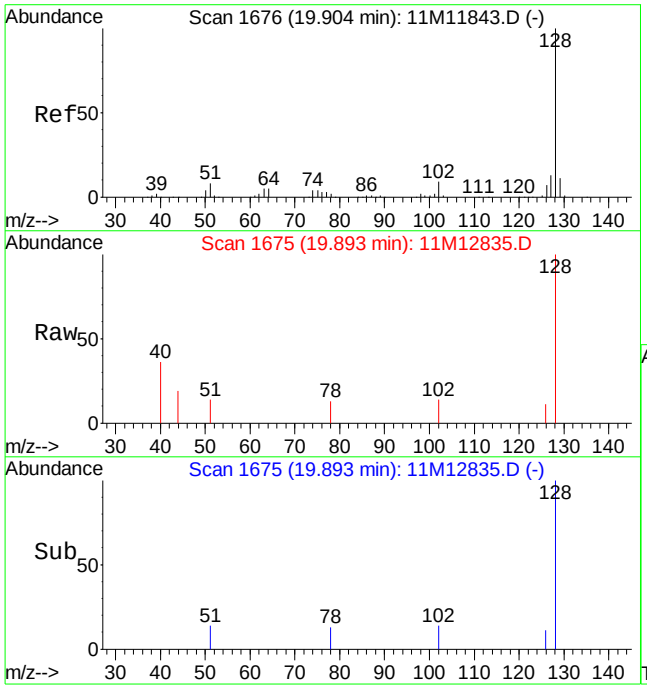

#98
Naphthalene
Concen: 0.26 ug/L
RT: 19.89 min Scan# 1675
Delta R.T. -0.01 min
Lab File: 11M12835.D
Acq: 23 Jun 2016 19:11

Tgt Ion:128 Resp: 4993

Ion	Ratio	Lower	Upper
128	100		
127	3.7	11.7	14.3#

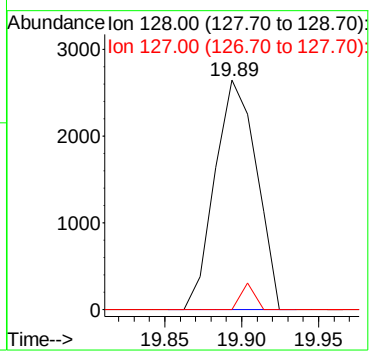

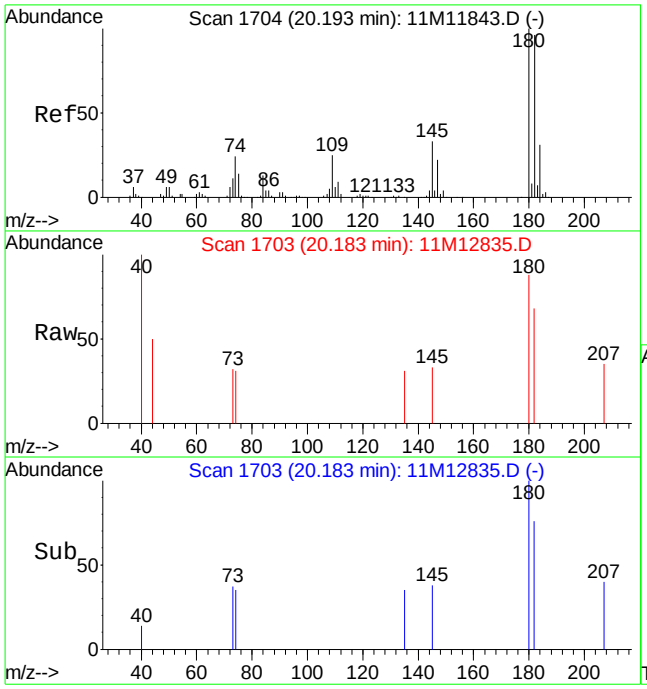

#99
1,2,3-Trichlorobenzene
Concen: 0.17 ug/L
RT: 20.18 min Scan# 1703
Delta R.T. -0.01 min
Lab File: 11M12835.D
Acq: 23 Jun 2016 19:11

Tgt Ion:180 Resp: 1619

Ion	Ratio	Lower	Upper
180	100		
145	12.5	20.3	47.3#

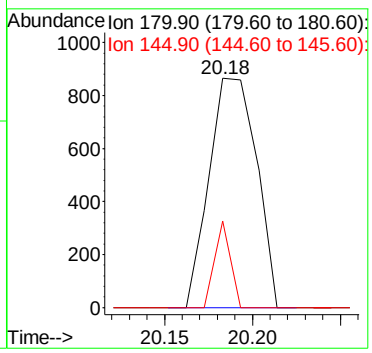

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062216\11M12816.D Vial: 19
Acq On : 23 Jun 2016 00:42 Operator: JDS
Sample : L16061026-05 A 100X 826-LOW Inst : hpms11
Misc : 1,100 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 24 14:58:40 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	517460	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	458713	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	269312	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	150082	26.5014 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.00%		
43) 1,2-Dichloroethane-d4	10.24	65	165759	25.6701 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.68%		
57) Toluene-d8	12.47	98	507453	25.4604 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.84%		
78) p-Bromofluorobenzene	15.64	95	195293	23.5241 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.08%		

Target Compounds

					Qvalue
4) Vinyl Chloride	3.96	62	4784	0.8872 ug/L #	77
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	2825	0.5417 ug/L	94
14) 1,1-Dichloroethene	6.56	61	12701	1.3408 ug/L	99
23) trans-1,2-Dichloroethene	7.74	96	796	0.1518 ug/L	92
27) 1,1-Dichloroethane	8.34	63	2267	0.2155 ug/L #	52
32) cis-1,2-Dichloroethene	9.15	96	87564	15.1476 ug/L	80
33) Chloroform	9.35	83	3921	0.3796 ug/L	96
36) Tetrahydrofuran	9.60	42	1032	0.7867 ug/L #	47
44) 1,2-Dichloroethane	10.34	62	2692	0.3208 ug/L #	76
46) Trichloroethene	11.09	130	1107013	171.3964 ug/L	98
47) Methylcyclohexane	11.09	83	11347	1.4235 ug/L #	1

(#) = qualifier out of range (m) = manual integration
11M12816.D 8260WT.M Fri Jun 24 14:58:41 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062216\11M12816.D Vial: 19
Acq On : 23 Jun 2016 00:42 Operator: JDS
Sample : L16061026-05 A 100X 826-LOW Inst : hpms11
Misc : 1,100 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 24 14:58 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

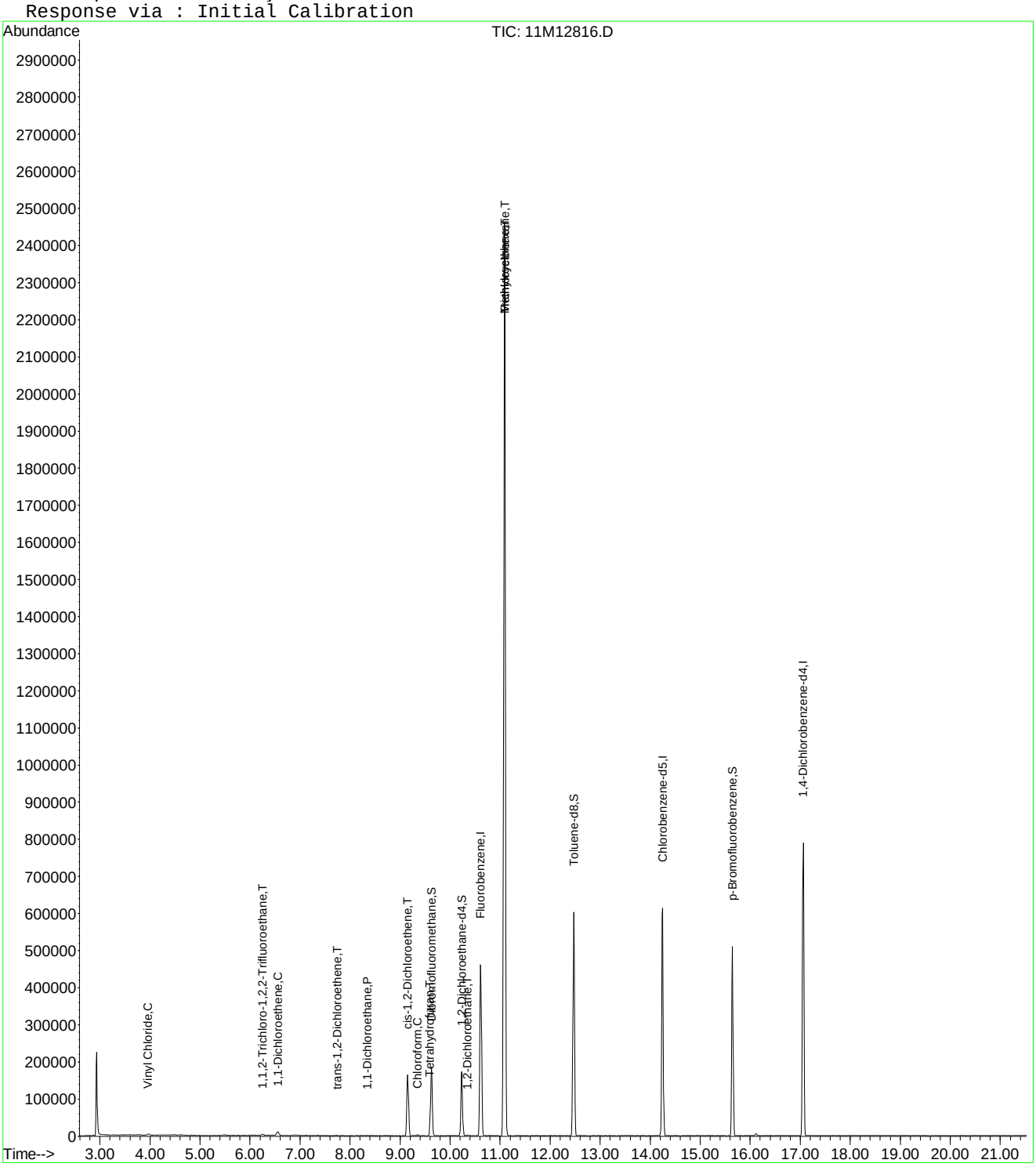

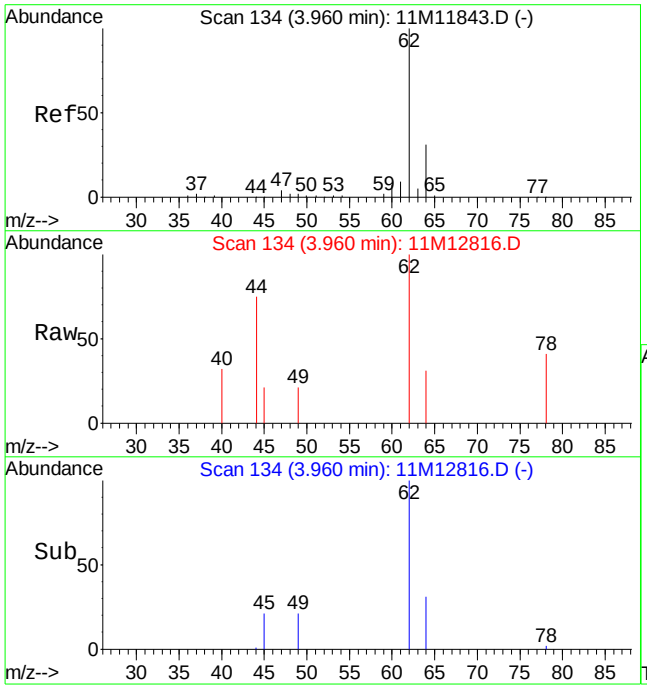

#4
Vinyl Chloride
Concen: 0.89 ug/L
RT: 3.96 min Scan# 134
Delta R.T. 0.00 min
Lab File: 11M12816.D
Acq: 23 Jun 2016 00:42

Tgt Ion: 62 Resp: 4784

Ion	Ratio	Lower	Upper
62	100		
64	18.1	18.4	43.0#

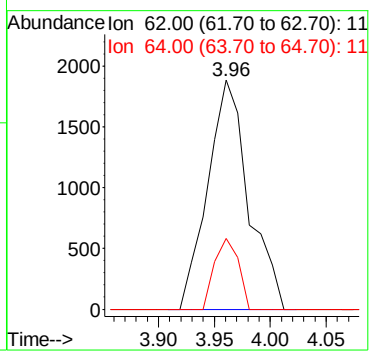

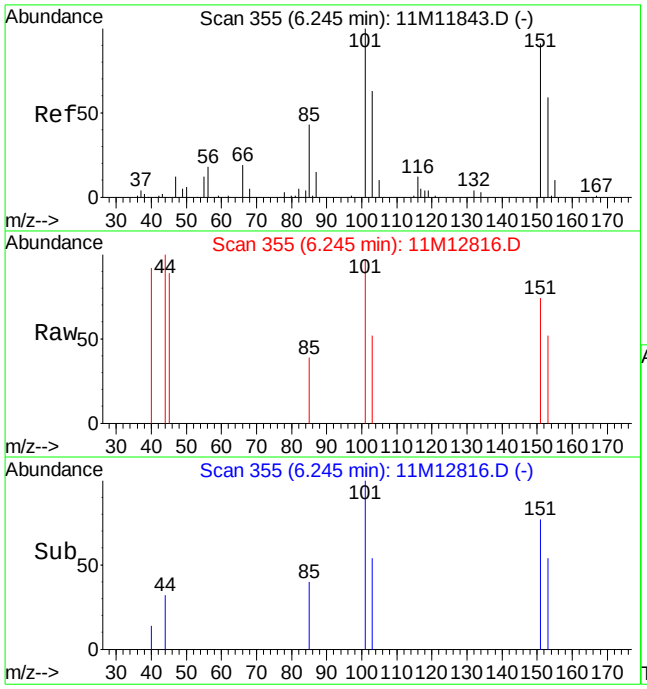

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 0.54 ug/L
RT: 6.25 min Scan# 355
Delta R.T. 0.00 min
Lab File: 11M12816.D
Acq: 23 Jun 2016 00:42

Tgt Ion:101 Resp: 2825

Ion	Ratio	Lower	Upper
101	100		
151	96.1	50.7	130.7

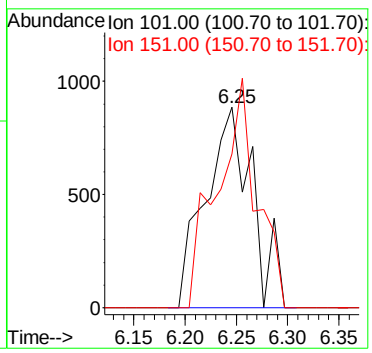

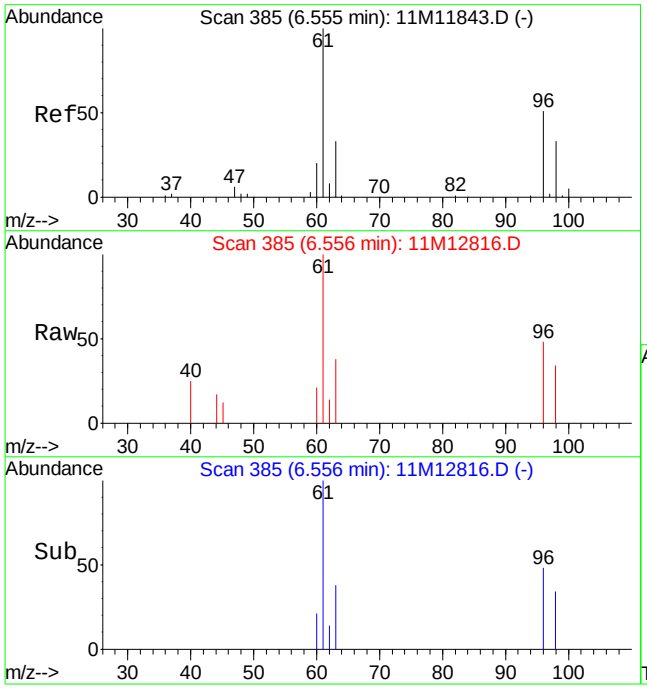

#14
1,1-Dichloroethene
Concen: 1.34 ug/L
RT: 6.56 min Scan# 385
Delta R.T. 0.00 min
Lab File: 11M12816.D
Acq: 23 Jun 2016 00:42

Tgt Ion: 61 Resp: 12701

Ion	Ratio	Lower	Upper
61	100		
96	49.6	30.1	70.3

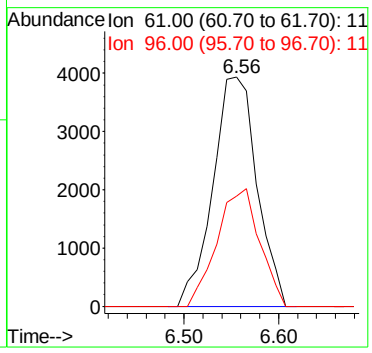

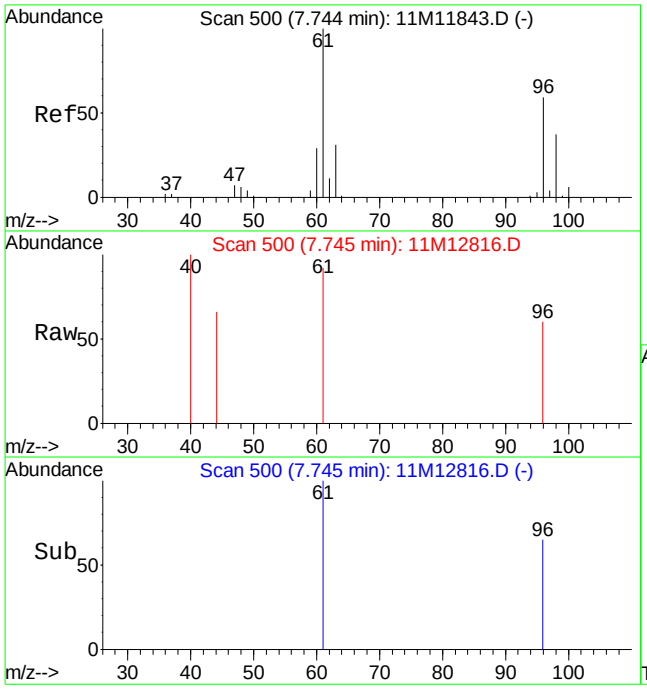

#23
trans-1,2-Dichloroethene
Concen: 0.15 ug/L
RT: 7.74 min Scan# 500
Delta R.T. 0.00 min
Lab File: 11M12816.D
Acq: 23 Jun 2016 00:42

Tgt Ion: 96 Resp: 796

Ion	Ratio	Lower	Upper
96	100		
61	178.0	100.6	234.6

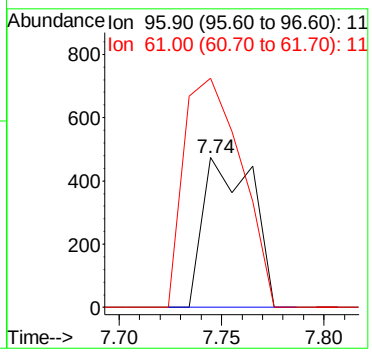

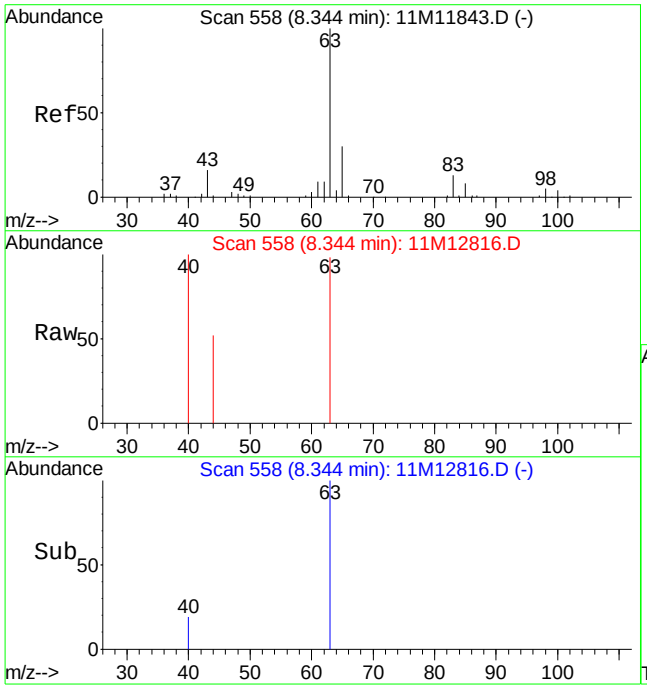

#27
1,1-Dichloroethane
Concen: 0.22 ug/L
RT: 8.34 min Scan# 558
Delta R.T. 0.00 min
Lab File: 11M12816.D
Acq: 23 Jun 2016 00:42

Tgt Ion: 63 Resp: 2267

Ion	Ratio	Lower	Upper
63	100		
65	0.0	17.8	41.6#
83	0.0	7.4	17.4#

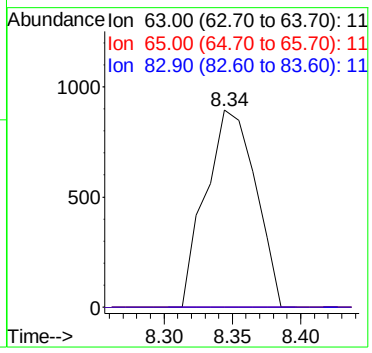

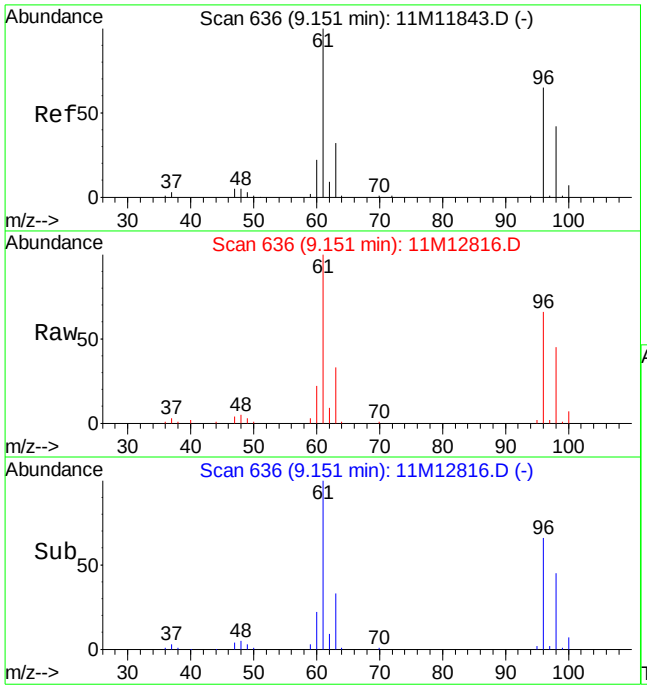

#32
cis-1,2-Dichloroethene
Concen: 15.15 ug/L
RT: 9.15 min Scan# 636
Delta R.T. 0.00 min
Lab File: 11M12816.D
Acq: 23 Jun 2016 00:42

Tgt Ion: 96 Resp: 87564

Ion	Ratio	Lower	Upper
96	100		
61	146.9	105.2	245.6

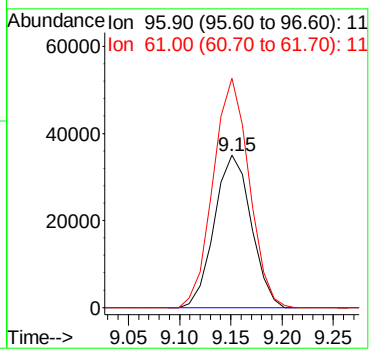

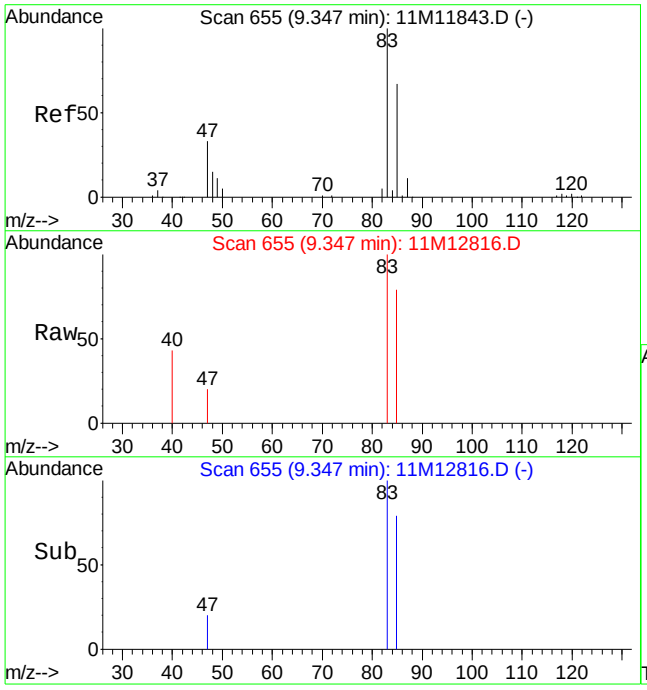

#33
Chloroform
Concen: 0.38 ug/L
RT: 9.35 min Scan# 655
Delta R.T. 0.00 min
Lab File: 11M12816.D
Acq: 23 Jun 2016 00:42

Tgt Ion: 83 Resp: 3921

Ion	Ratio	Lower	Upper
83	100		
85	68.1	39.2	91.4

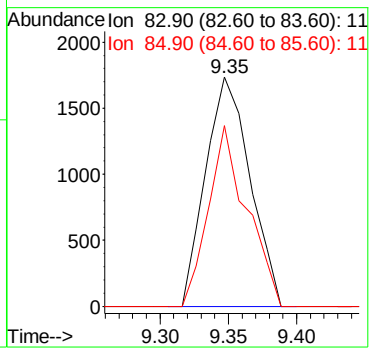

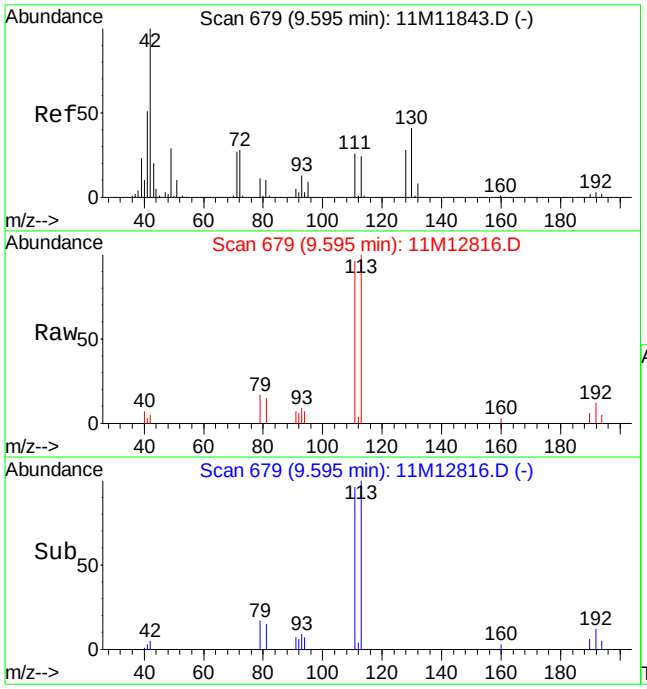

#36
Tetrahydrofuran
Concen: 0.79 ug/L
RT: 9.60 min Scan# 679
Delta R.T. 0.00 min
Lab File: 11M12816.D
Acq: 23 Jun 2016 00:42

Tgt Ion: 42 Resp: 1032

Ion	Ratio	Lower	Upper
42	100		
71	0.0	16.4	38.2#
72	0.0	16.6	38.8#

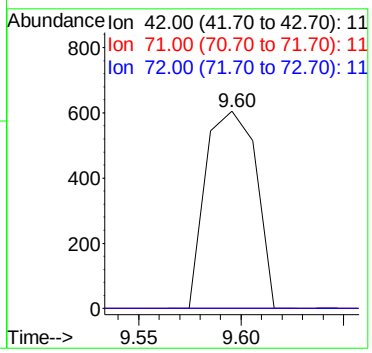

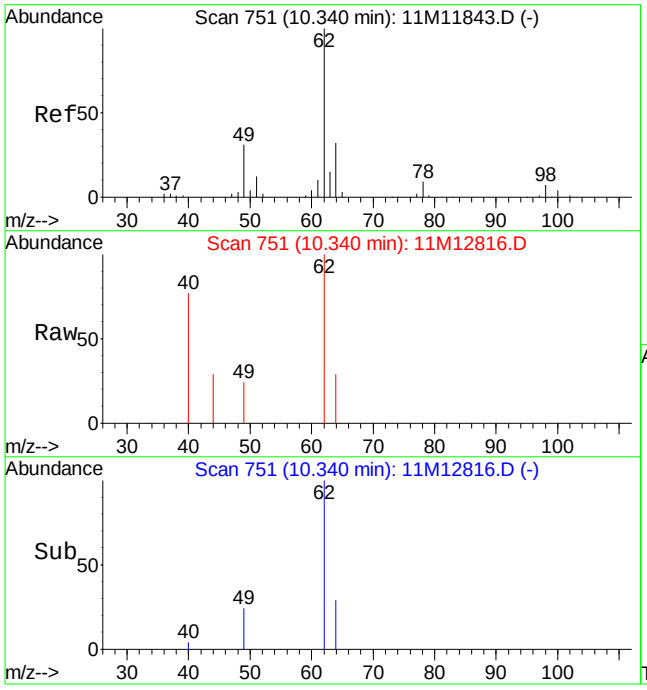

#44
1,2-Dichloroethane
Concen: 0.32 ug/L
RT: 10.34 min Scan# 751
Delta R.T. 0.00 min
Lab File: 11M12816.D
Acq: 23 Jun 2016 00:42

Tgt Ion: 62 Resp: 2692

Ion	Ratio	Lower	Upper
62	100		
64	24.6	18.7	43.7
49	16.6	22.3	52.1#

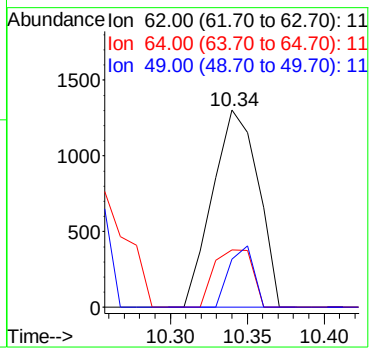

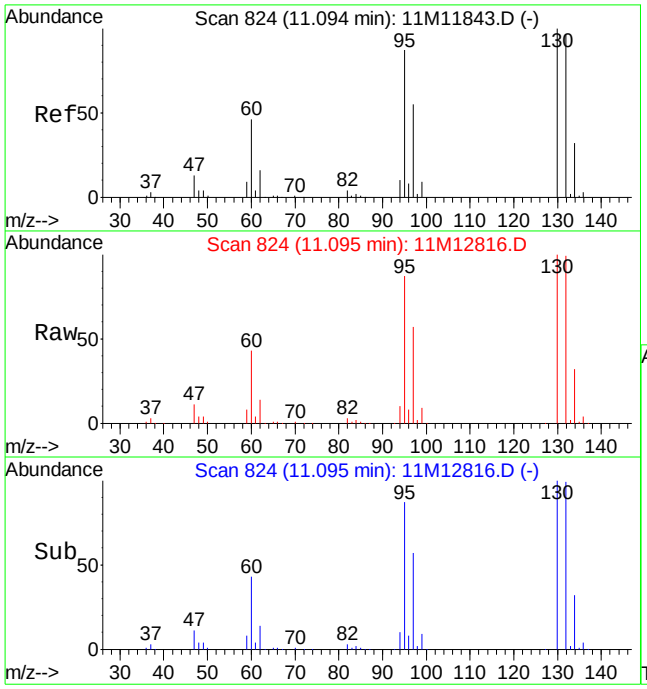

#46
Trichloroethene
Concen: 171.40 ug/L
RT: 11.09 min Scan# 824
Delta R.T. 0.00 min
Lab File: 11M12816.D
Acq: 23 Jun 2016 00:42

Tgt Ion:130 Resp: 1107013

Ion	Ratio	Lower	Upper
130	100		
132	98.0	58.3	136.1
95	89.6	55.6	129.8

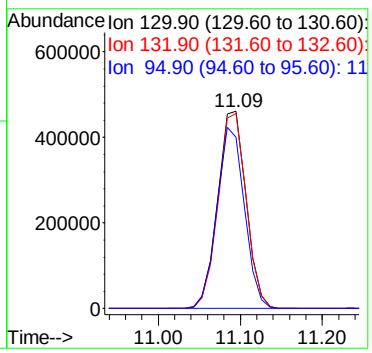

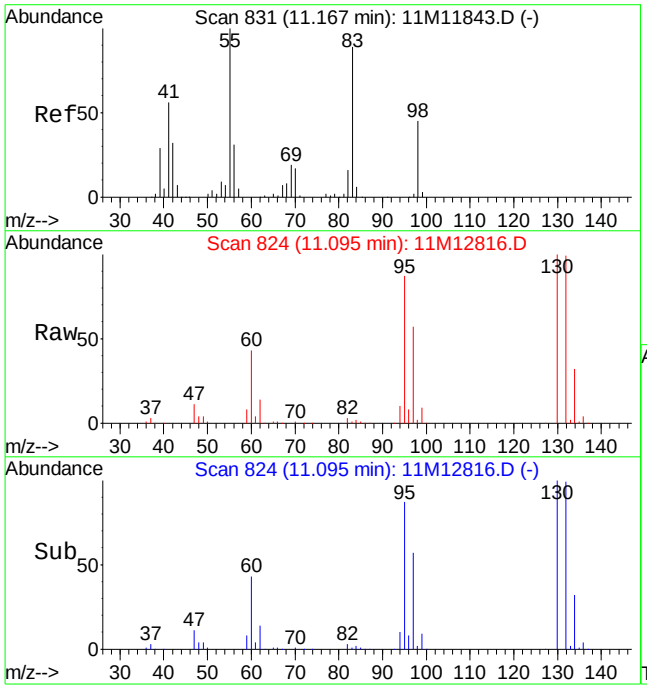

#47
Methylcyclohexane
Concen: 1.42 ug/L
RT: 11.09 min Scan# 824
Delta R.T. -0.07 min
Lab File: 11M12816.D
Acq: 23 Jun 2016 00:42

Tgt Ion: 83 Resp: 11347

Ion	Ratio	Lower	Upper
83	100		
55	0.0	66.5	155.1#
98	238.3	29.9	69.7#

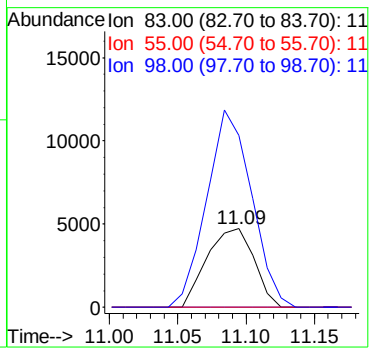

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062216\11M12814.D Vial: 17
Acq On : 22 Jun 2016 23:38 Operator: JDS
Sample : L16060974-07 A 826-SPE Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 24 14:58:35 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	557279	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	492737	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	285222	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	161635	26.5021 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.00%		
43) 1,2-Dichloroethane-d4	10.23	65	172830	24.8527 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.40%		
57) Toluene-d8	12.47	98	536215	25.0457 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.20%		
78) p-Bromofluorobenzene	15.64	95	205601	23.3843 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.52%		

Target Compounds

					Qvalue
3) Chloromethane	3.73	50	925	0.1323 ug/L #	41
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	9847	1.7532 ug/L	98
13) Acetone	6.36	43	380	0.2872 ug/L #	49
14) 1,1-Dichloroethene	6.56	61	1518	0.1488 ug/L #	27
32) cis-1,2-Dichloroethene	9.15	96	89484	14.3737 ug/L	75
44) 1,2-Dichloroethane	10.34	62	10814	1.1968 ug/L	92
46) Trichloroethene	11.09	130	556994	80.0762 ug/L	98
47) Methylcyclohexane	11.09	83	5328	0.6207 ug/L #	1

(#) = qualifier out of range (m) = manual integration
11M12814.D 8260WT.M Fri Jun 24 14:58:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062216\11M12814.D Vial: 17
Acq On : 22 Jun 2016 23:38 Operator: JDS
Sample : L16060974-07 A 826-SPE Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 24 14:58 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

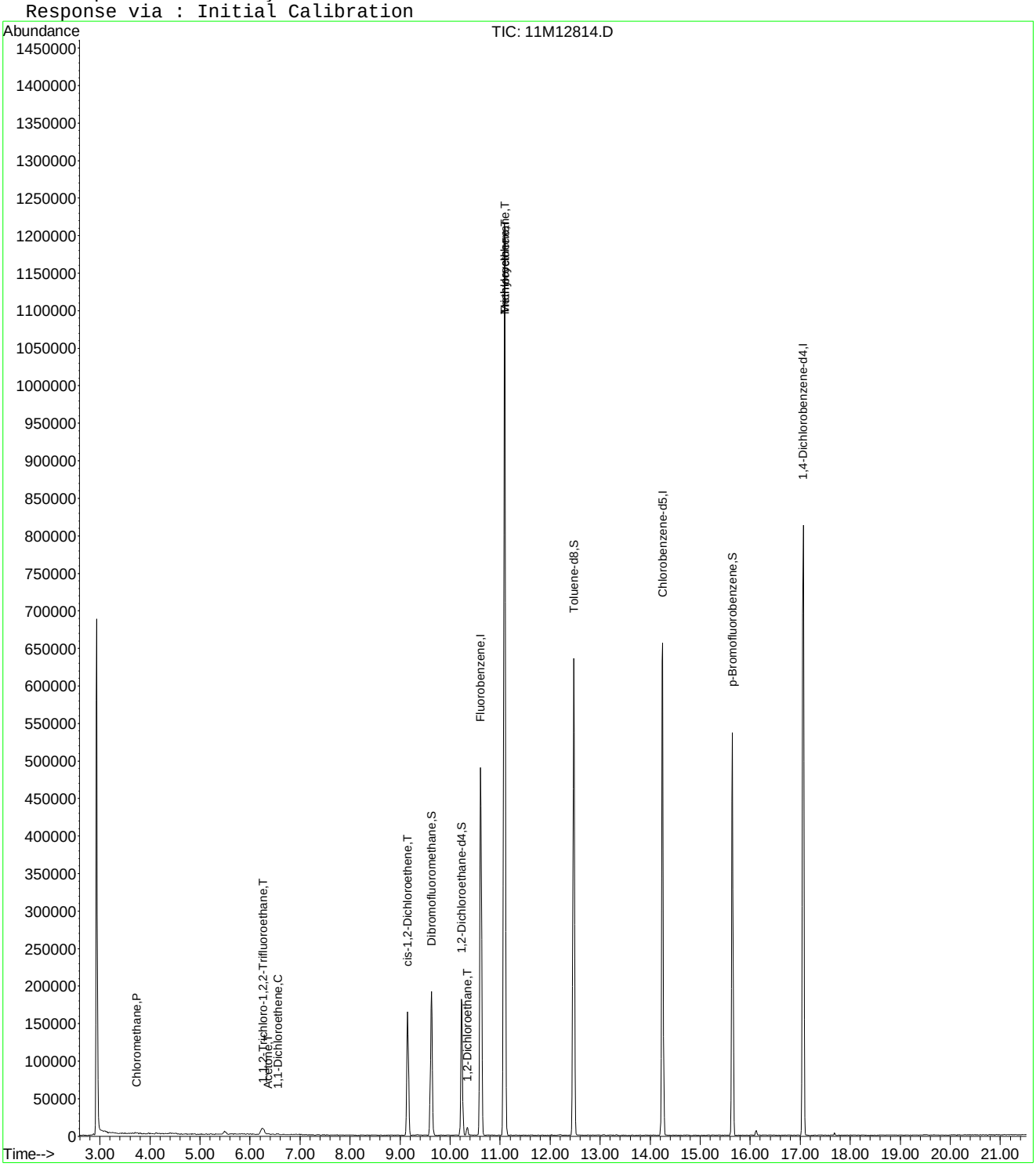

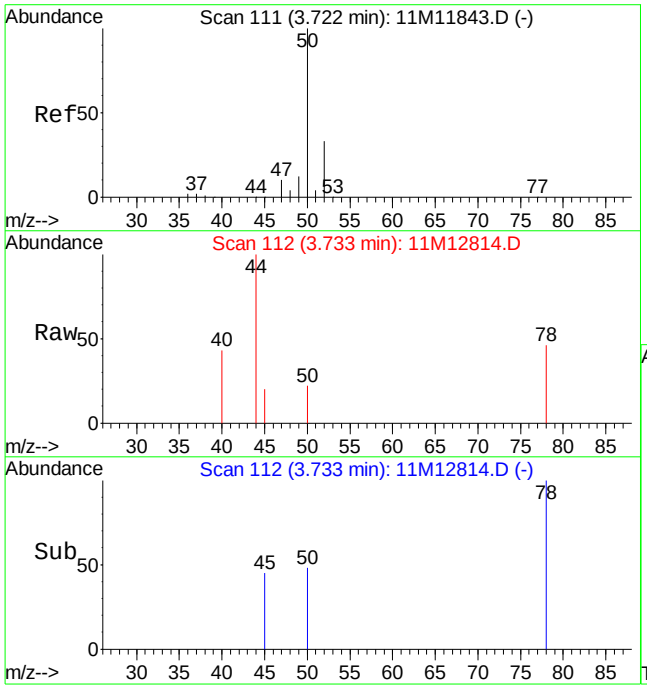

#3
Chloromethane
Concen: 0.13 ug/L
RT: 3.73 min Scan# 112
Delta R.T. 0.01 min
Lab File: 11M12814.D
Acq: 22 Jun 2016 23:38

Tgt Ion: 50 Resp: 925

Ion	Ratio	Lower	Upper
50	100		
52	0.0	20.0	46.6#

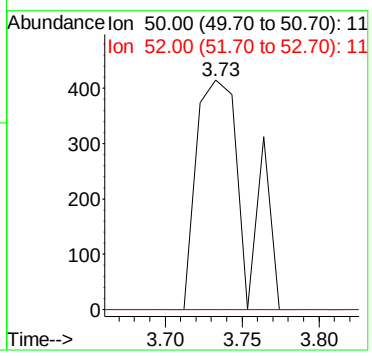

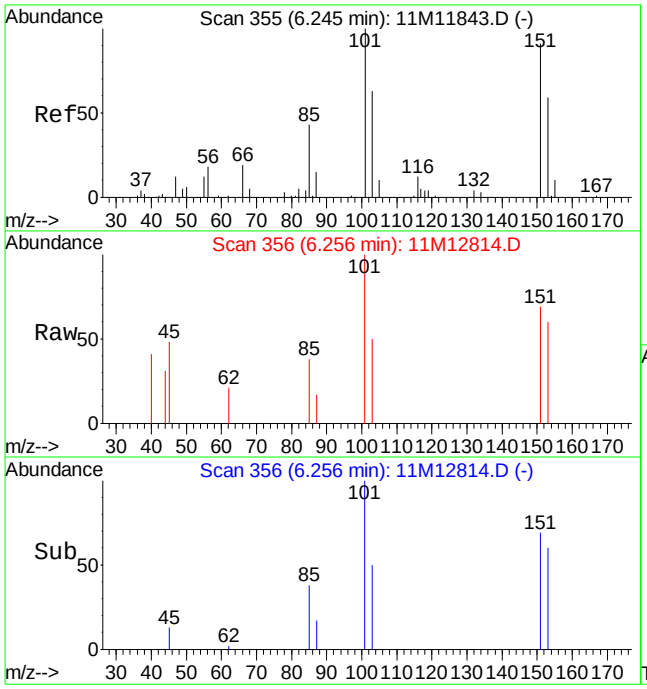

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 1.75 ug/L
RT: 6.26 min Scan# 356
Delta R.T. 0.01 min
Lab File: 11M12814.D
Acq: 22 Jun 2016 23:38

Tgt Ion:101 Resp: 9847

Ion	Ratio	Lower	Upper
101	100		
151	89.0	50.7	130.7

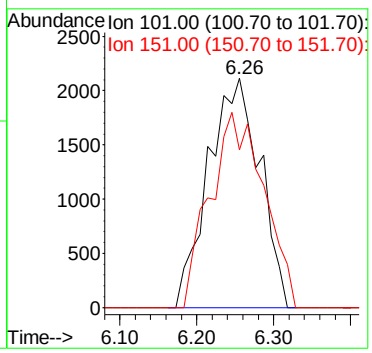

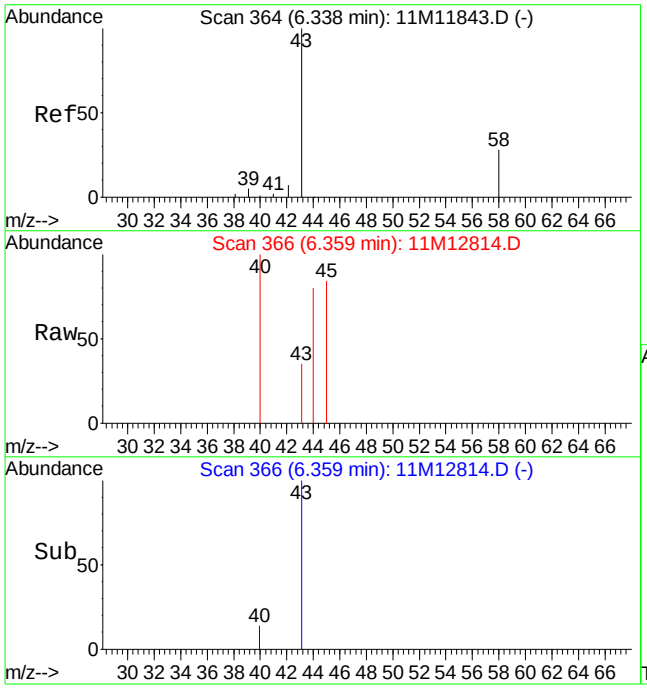

#13
Acetone
Concen: 0.29 ug/L
RT: 6.36 min Scan# 366
Delta R.T. 0.02 min
Lab File: 11M12814.D
Acq: 22 Jun 2016 23:38

Tgt Ion: 43 Resp: 380

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

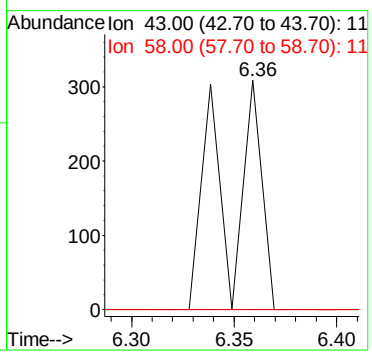

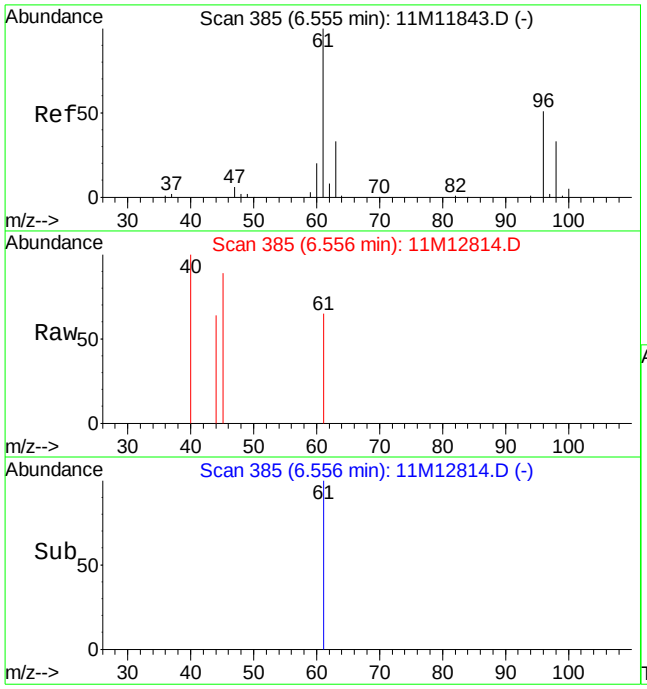

#14
1,1-Dichloroethene
Concen: 0.15 ug/L
RT: 6.56 min Scan# 385
Delta R.T. 0.00 min
Lab File: 11M12814.D
Acq: 22 Jun 2016 23:38

Tgt Ion: 61 Resp: 1518

Ion	Ratio	Lower	Upper
61	100		
96	0.0	30.1	70.3#

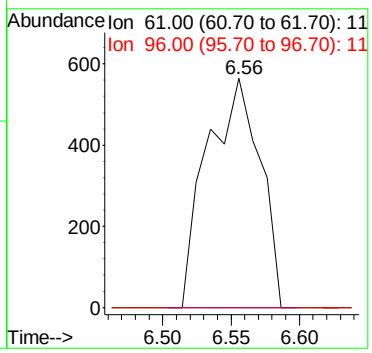

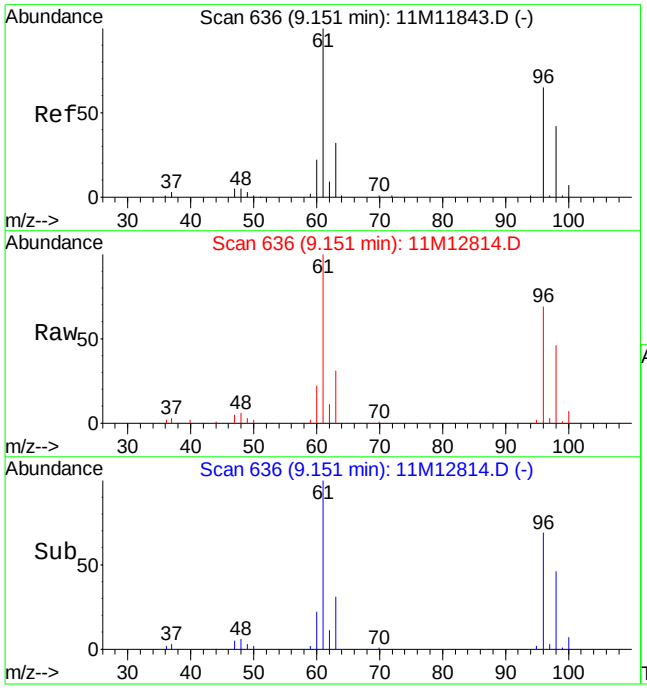

#32
cis-1,2-Dichloroethene
Concen: 14.37 ug/L
RT: 9.15 min Scan# 636
Delta R.T. 0.00 min
Lab File: 11M12814.D
Acq: 22 Jun 2016 23:38

Tgt Ion: 96 Resp: 89484

Ion	Ratio	Lower	Upper
96	100		
61	141.0	105.2	245.6

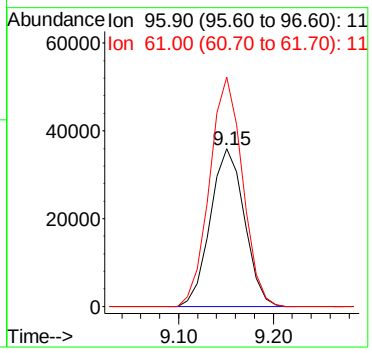

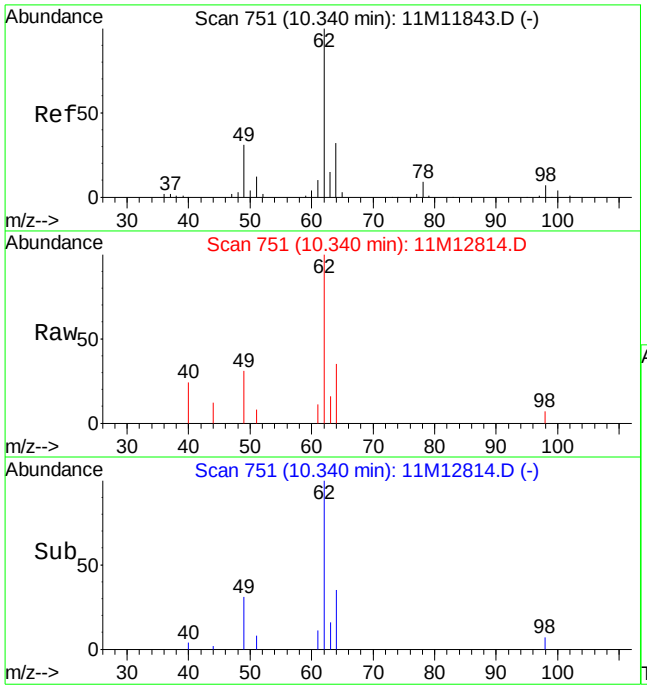

#44
1,2-Dichloroethane
Concen: 1.20 ug/L
RT: 10.34 min Scan# 751
Delta R.T. 0.00 min
Lab File: 11M12814.D
Acq: 22 Jun 2016 23:38

Tgt Ion: 62 Resp: 10814

Ion	Ratio	Lower	Upper
62	100		
64	31.0	18.7	43.7
49	28.3	22.3	52.1

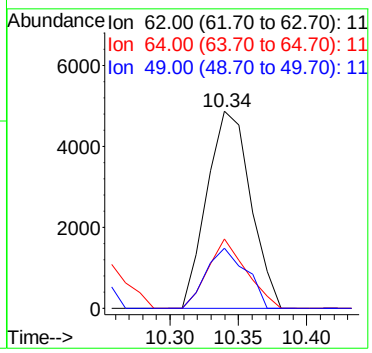

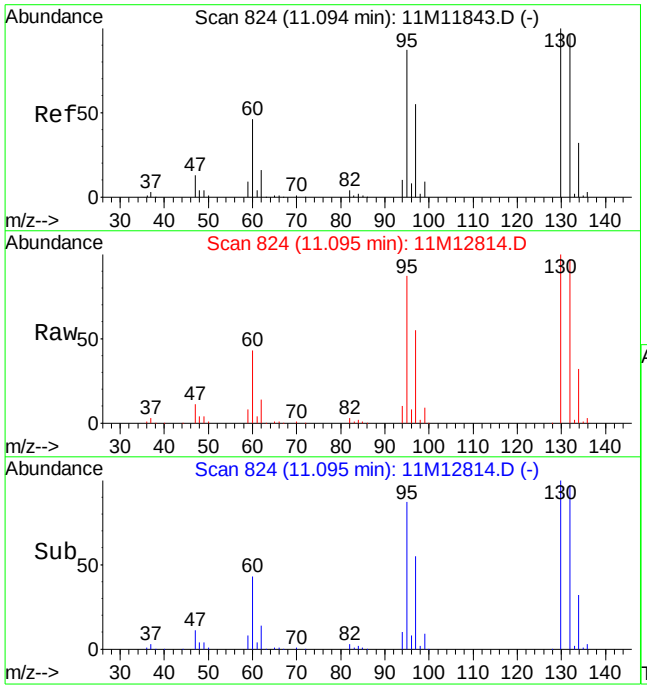

#46
Trichloroethene
Concen: 80.08 ug/L
RT: 11.09 min Scan# 824
Delta R.T. 0.00 min
Lab File: 11M12814.D
Acq: 22 Jun 2016 23:38

Tgt Ion:130 Resp: 556994

Ion	Ratio	Lower	Upper
130	100		
132	96.5	58.3	136.1
95	89.1	55.6	129.8

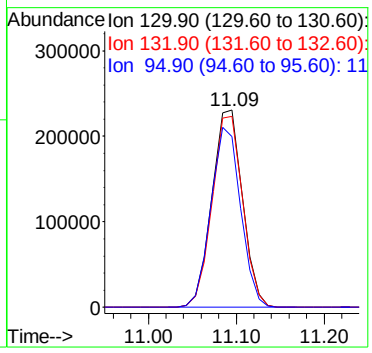

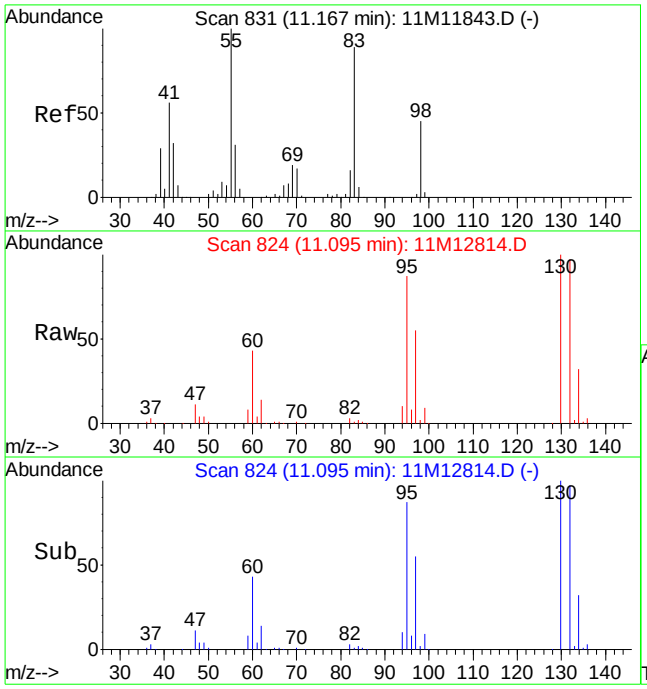

#47
Methylcyclohexane
Concen: 0.62 ug/L
RT: 11.09 min Scan# 824
Delta R.T. -0.07 min
Lab File: 11M12814.D
Acq: 22 Jun 2016 23:38

Tgt Ion: 83 Resp: 5328

Ion	Ratio	Lower	Upper
83	100		
55	0.0	66.5	155.1#
98	246.2	29.9	69.7#

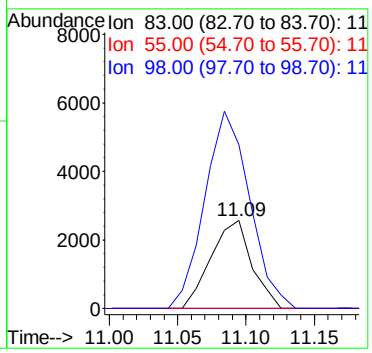

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062216\11M12808.D Vial: 11
Acq On : 22 Jun 2016 20:27 Operator: JDS
Sample : L16061026-08 A TB 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 24 14:58:21 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	611363	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	533935	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	313293	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	171569	25.6423 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.56%		
43) 1,2-Dichloroethane-d4	10.23	65	176032	23.0738 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 92.28%		
57) Toluene-d8	12.47	98	587180	25.3101 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.24%		
78) p-Bromofluorobenzene	15.64	95	224618	23.2582 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.04%		

Target Compounds

					Qvalue
3) Chloromethane	3.72	50	1080	0.1408 ug/L #	1
6) Bromomethane	4.86	94	701	0.1600 ug/L #	31
13) Acetone	6.35	43	697	0.4801 ug/L #	49
16) Dimethyl Sulfide	6.81	62	1450	0.3244 ug/L #	1
17) Iodomethane	7.07	142	414	2.3406 ug/L #	29
36) Tetrahydrofuran	9.60	42	2429	1.5673 ug/L	85
58) Toluene	12.56	91	4943	0.1829 ug/L	98
98) Naphthalene	19.89	128	3247	0.1427 ug/L #	67

(#) = qualifier out of range (m) = manual integration
11M12808.D 8260WT.M Fri Jun 24 14:58:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062216\11M12808.D Vial: 11
Acq On : 22 Jun 2016 20:27 Operator: JDS
Sample : L16061026-08 A TB 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 24 14:58 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

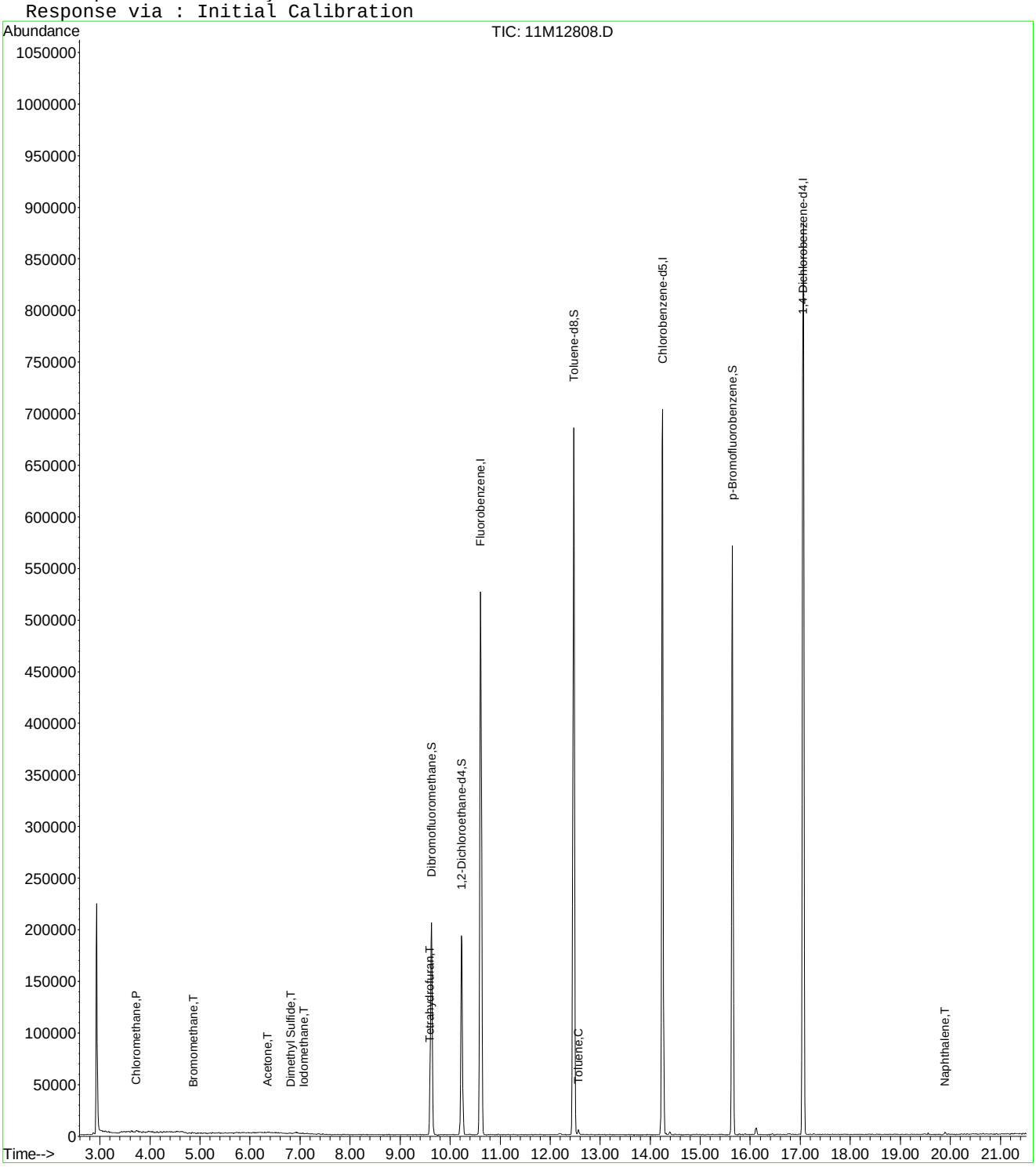

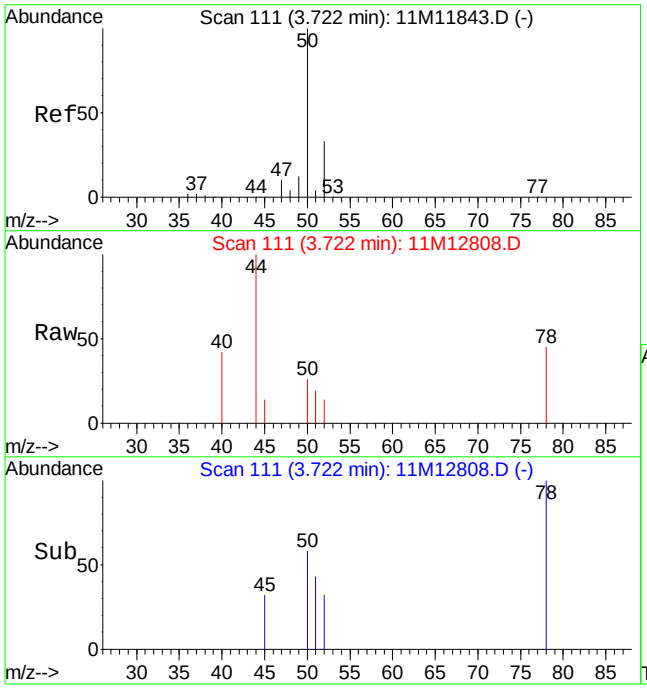

#3
Chloromethane
Concen: 0.14 ug/L
RT: 3.72 min Scan# 111
Delta R.T. 0.00 min
Lab File: 11M12808.D
Acq: 22 Jun 2016 20:27

Tgt Ion: 50 Resp: 1080

Ion	Ratio	Lower	Upper
50	100		
52	113.8	20.0	46.6#

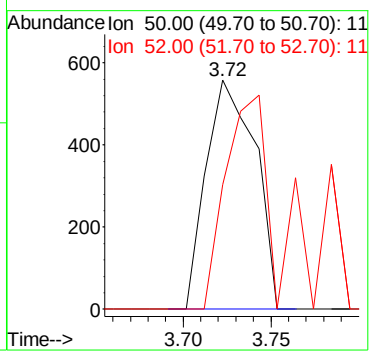

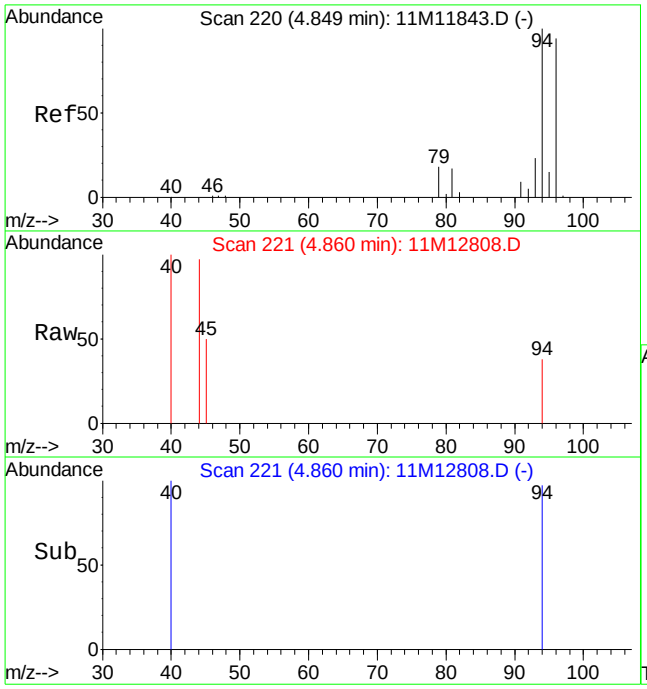

#6
Bromomethane
Concen: 0.16 ug/L
RT: 4.86 min Scan# 221
Delta R.T. 0.01 min
Lab File: 11M12808.D
Acq: 22 Jun 2016 20:27

Tgt Ion: 94 Resp: 701

Ion	Ratio	Lower	Upper
94	100		
96	27.1	56.5	131.9#

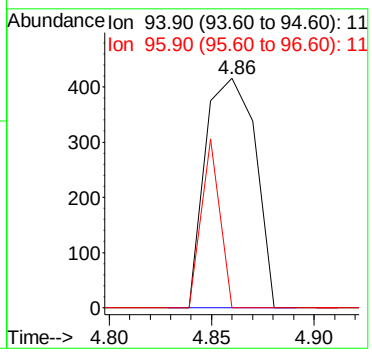

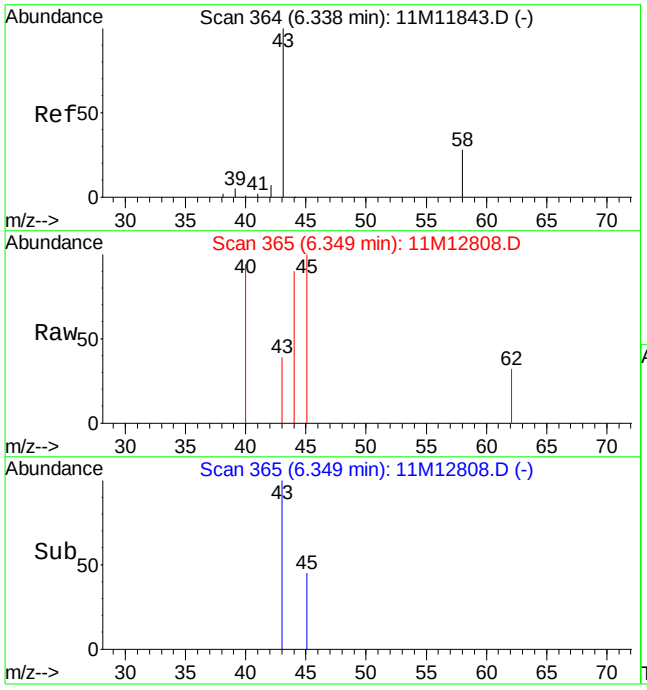

#13
Acetone
Concen: 0.48 ug/L
RT: 6.35 min Scan# 365
Delta R.T. 0.01 min
Lab File: 11M12808.D
Acq: 22 Jun 2016 20:27

Tgt Ion: 43 Resp: 697

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

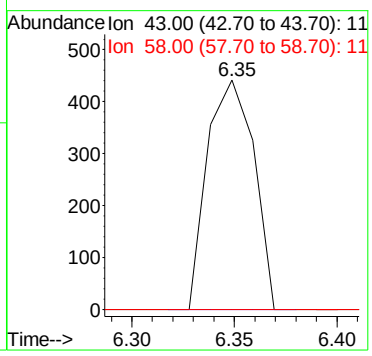

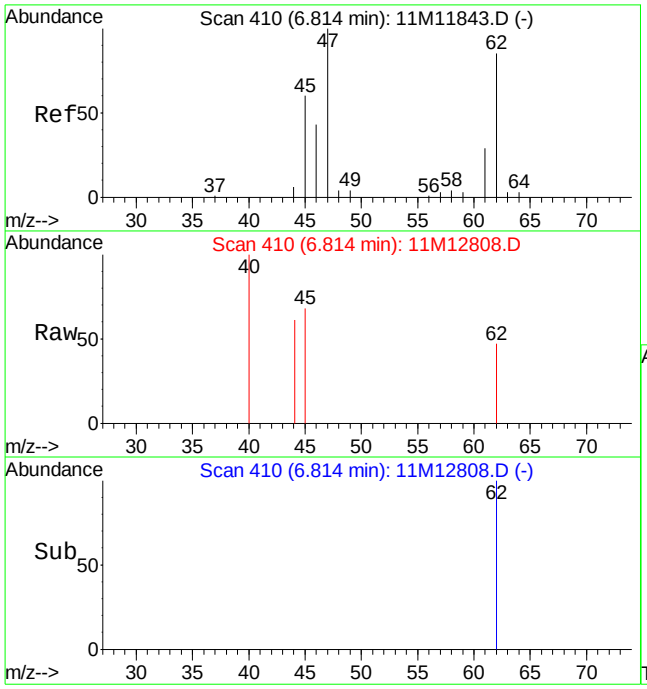

#16
Dimethyl Sulfide
Concen: 0.32 ug/L
RT: 6.81 min Scan# 410
Delta R.T. 0.00 min
Lab File: 11M12808.D
Acq: 22 Jun 2016 20:27

Tgt Ion: 62 Resp: 1450

Ion	Ratio	Lower	Upper
62	100		
47	0.0	73.4	171.2#

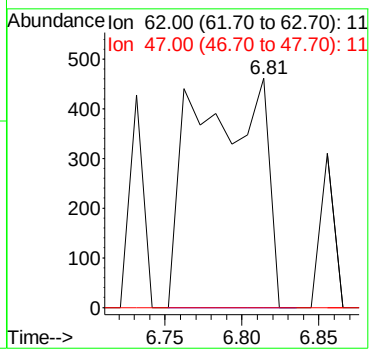

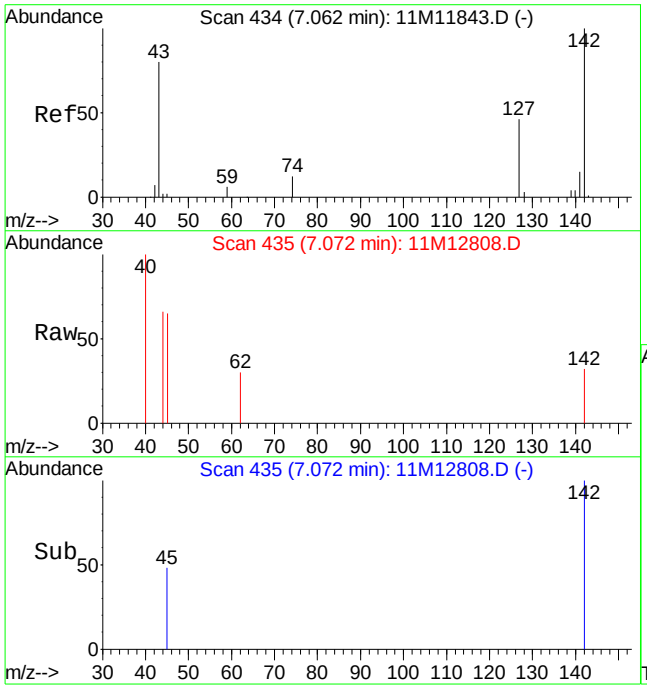

#17
Iodomethane
Concen: 2.34 ug/L
RT: 7.07 min Scan# 435
Delta R.T. 0.01 min
Lab File: 11M12808.D
Acq: 22 Jun 2016 20:27

Tgt Ion:142 Resp: 414

Ion	Ratio	Lower	Upper
142	100		
127	0.0	29.0	67.6#

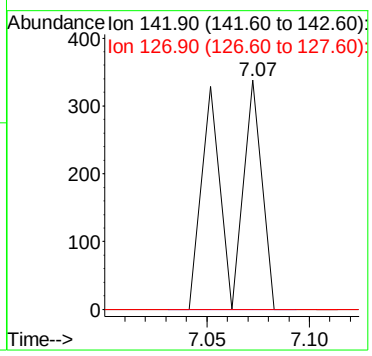

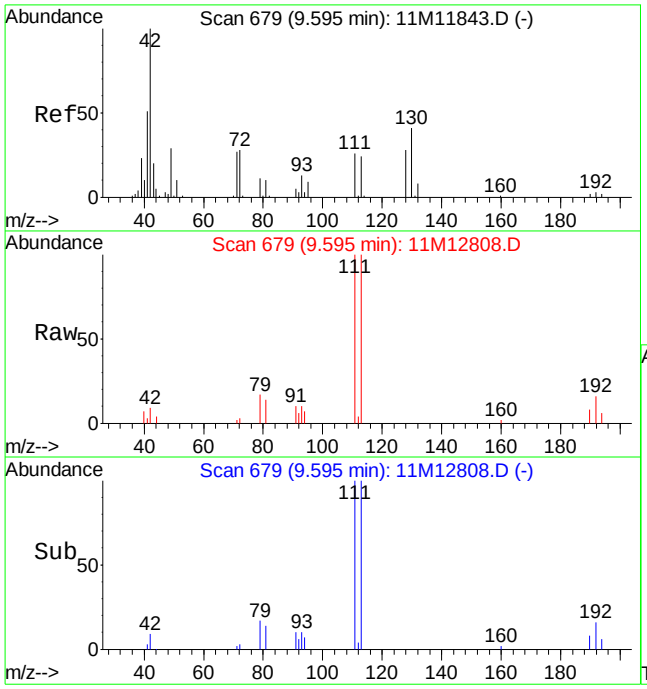

#36
Tetrahydrofuran
Concen: 1.57 ug/L
RT: 9.60 min Scan# 679
Delta R.T. 0.00 min
Lab File: 11M12808.D
Acq: 22 Jun 2016 20:27

Tgt Ion: 42 Resp: 2429

Ion	Ratio	Lower	Upper
42	100		
71	17.3	16.4	38.2
72	22.3	16.6	38.8

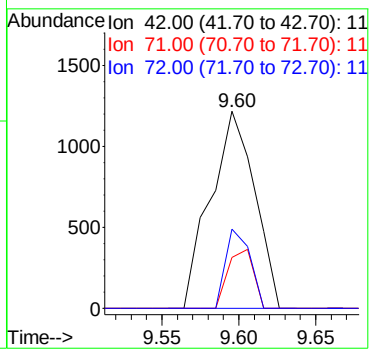

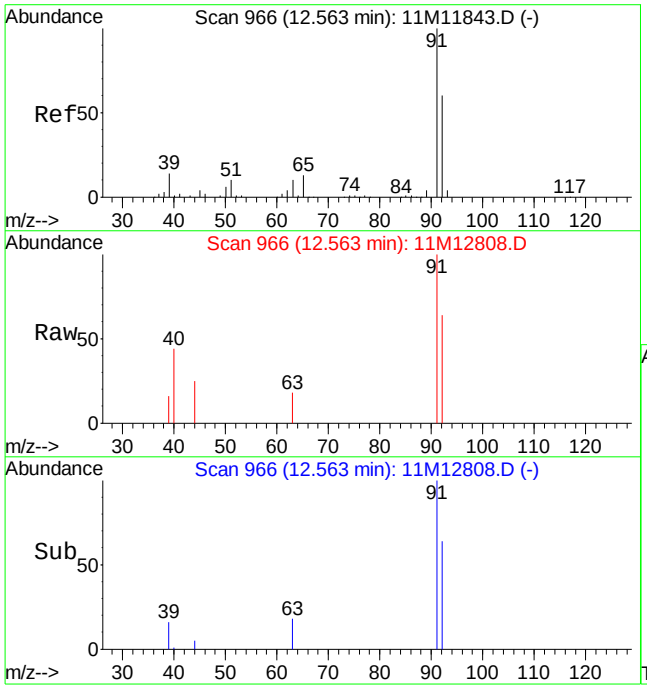

#58
Toluene
Concen: 0.18 ug/L
RT: 12.56 min Scan# 966
Delta R.T. 0.00 min
Lab File: 11M12808.D
Acq: 22 Jun 2016 20:27

Tgt Ion: 91 Resp: 4943

Ion	Ratio	Lower	Upper
91	100		
92	61.3	35.7	83.3

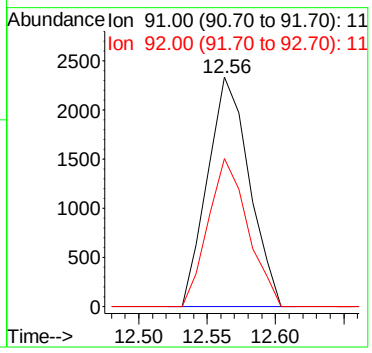

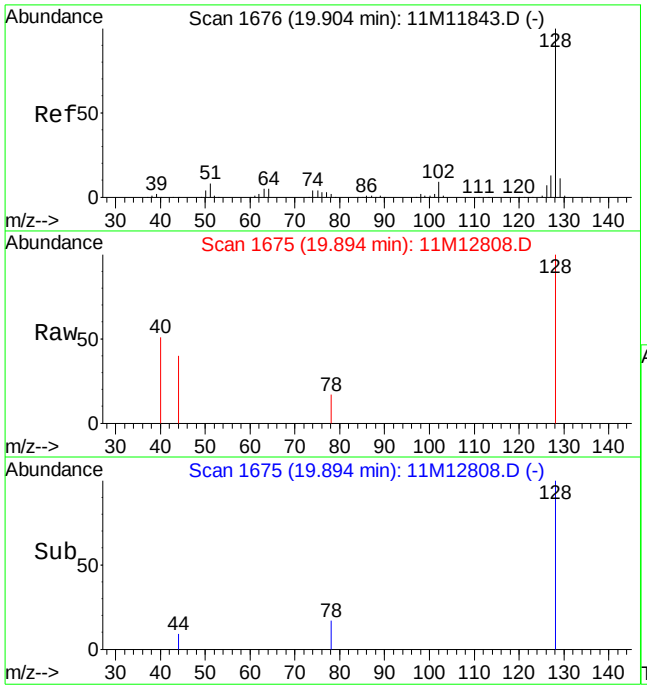

#98
Naphthalene
Concen: 0.14 ug/L
RT: 19.89 min Scan# 1675
Delta R.T. -0.01 min
Lab File: 11M12808.D
Acq: 22 Jun 2016 20:27

Tgt Ion:128 Resp: 3247

Ion	Ratio	Lower	Upper
128	100		
127	0.0	11.7	14.3#

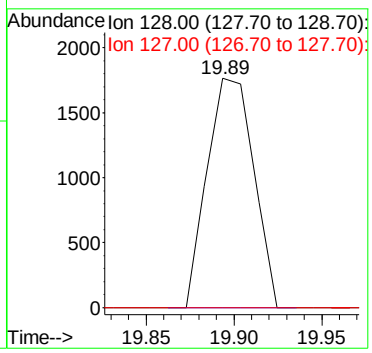

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:20 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	538041	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	450050	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	251600	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
57) Toluene-d8	12.47	98	210	0.0099 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.04%#	
78) p-Bromofluorobenzene	15.64	95	566	0.0689 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	2475	0.3135 ug/L #	66
3) Chloromethane	3.72	50	4639	0.6471 ug/L	91
4) Vinyl Chloride	3.96	62	1882	0.3288 ug/L #	44
5) 1,3-Butadiene	4.01	54	1564	0.2900 ug/L #	19
6) Bromomethane	4.84	94	1717	0.4723 ug/L	83
7) Chloroethane	5.00	64	616	0.1589 ug/L #	45
8) Trichlorofluoromethane	5.49	101	3531	0.3330 ug/L	97
10) Isoprene	6.04	67	1746	0.2381 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	1344	0.2515 ug/L	96
13) Acetone	6.34	43	2389	1.4850 ug/L #	45
14) 1,1-Dichloroethene	6.56	61	3780	0.3817 ug/L	78
16) Dimethyl Sulfide	6.80	62	762	0.1697 ug/L	78
18) Methyl acetate	7.02	43	24685	4.4975 ug/L #	70
19) Methylene Chloride	7.31	84	1766	0.3184 ug/L	74
20) Carbon Disulfide	7.36	76	5848	0.3373 ug/L	92
22) Methyl Tert Butyl Ether	7.54	73	3068	0.2131 ug/L #	48
23) trans-1,2-Dichloroethene	7.75	96	1449	0.2556 ug/L	91
24) n-Hexane	7.82	57	3745	0.4031 ug/L #	73
26) Vinyl Acetate	8.30	43	2410	0.6995 ug/L #	78
27) 1,1-Dichloroethane	8.35	63	3312	0.2969 ug/L #	76
31) 2,2-Dichloropropane	9.10	77	2449	0.3040 ug/L #	42
32) cis-1,2-Dichloroethene	9.15	96	1729	0.2748 ug/L	96
33) Chloroform	9.35	83	3792	0.3639 ug/L	92
35) Bromochloromethane	9.56	130	948	0.2355 ug/L #	68
38) 1,1,1-Trichloroethane	9.85	97	3449	0.3423 ug/L #	79
39) Cyclohexane	9.88	56	3639	0.2986 ug/L #	84
40) 1,1-Dichloropropene	10.04	75	2365	0.3106 ug/L #	53
41) Carbon Tetrachloride	10.17	117	2613	0.2748 ug/L	87
44) 1,2-Dichloroethane	10.35	62	2493	0.2788 ug/L #	73
45) Benzene	10.38	78	7133	0.3275 ug/L	99
46) Trichloroethene	11.09	130	1973	0.2780 ug/L	93
47) Methylcyclohexane	11.17	83	2570	0.2986 ug/L	84
48) 1,2-Dichloropropane	11.29	63	1665	0.2692 ug/L	87
50) Bromodichloromethane	11.57	83	2418	0.2950 ug/L #	82
51) Dibromomethane	11.65	93	756	0.2331 ug/L	88
54) cis-1,3-Dichloropropene	12.17	75	1869	0.2166 ug/L #	82
55) Dimethyl Disulfide	12.42	79	1028	0.1910 ug/L	95
58) Toluene	12.57	91	7355	0.3156 ug/L	91
59) Ethyl Methacrylate	12.64	69	1041	0.1887 ug/L	88
60) trans-1,3-Dichloropropene	12.72	75	1951	0.2556 ug/L #	51

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:20 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
61)	1,1,2-Trichloroethane	12.92	97	1087	0.2492 ug/L	87
62)	2-Hexanone	12.86	43	687	0.1910 ug/L #	29
63)	1,3-Dichloropropane	13.21	76	1673	0.2309 ug/L	94
64)	Tetrachloroethene	13.34	164	1703	0.3238 ug/L	94
65)	Dibromochloromethane	13.59	129	1515	0.2406 ug/L	92
66)	1,2-Dibromoethane	13.82	107	966	0.2181 ug/L	98
67)	1-Chlorohexane	13.89	91	2128	0.2784 ug/L	97
68)	Chlorobenzene	14.29	112	5248	0.3062 ug/L	99
69)	1,1,1,2-Tetrachloroethane	14.32	131	2025	0.3082 ug/L	98
70)	Ethylbenzene	14.31	106	2602	0.2992 ug/L	88
71)	m-,p-Xylene	14.40	106	6296	0.6083 ug/L	82
72)	o-Xylene	14.92	106	3032	0.2937 ug/L	95
73)	Styrene	14.95	104	4953	0.2828 ug/L	95
75)	Isopropylbenzene	15.31	105	7848	0.3006 ug/L	93
77)	1,1,2,2-Tetrachloroethane	15.52	83	1145	0.2759 ug/L	68
81)	n-Propylbenzene	15.79	91	9421	0.3332 ug/L	94
82)	Bromobenzene	15.92	156	2002	0.2551 ug/L	66
83)	1,3,5-Trimethylbenzene	15.95	105	6742	0.3138 ug/L	91
84)	2-Chlorotoluene	16.05	91	6735	0.3228 ug/L	96
85)	4-Chlorotoluene	16.09	91	6023	0.3518 ug/L	99
86)	a-Methylstyrene	16.34	118	2850	0.2387 ug/L	95
87)	tert-Butylbenzene	16.39	134	1197	0.2539 ug/L	64
88)	1,2,4-Trimethylbenzene	16.44	105	6992	0.3180 ug/L	88
89)	sec-Butylbenzene	16.65	105	8335	0.3278 ug/L	97
90)	p-Isopropyltoluene	16.79	119	7094	0.3065 ug/L	96
91)	1,3-Dichlorobenzene	16.98	146	4505	0.3090 ug/L	96
92)	1,4-Dichlorobenzene	17.10	146	4475	0.3006 ug/L #	1
93)	n-Butylbenzene	17.28	91	7076	0.3396 ug/L #	93
94)	1,2-Dichlorobenzene	17.56	146	4016	0.2922 ug/L	100
96)	1,2,4-Trichlorobenzene	19.55	180	2964	0.2902 ug/L	99
97)	Hexachlorobutadiene	19.69	225	1160	0.2796 ug/L #	71
98)	Naphthalene	19.90	128	4679	0.2394 ug/L #	93
99)	1,2,3-Trichlorobenzene	20.19	180	2578	0.2696 ug/L	87

(#) = qualifier out of range (m) = manual integration
11M11837.D 8260WT.M Fri May 13 17:04:21 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration

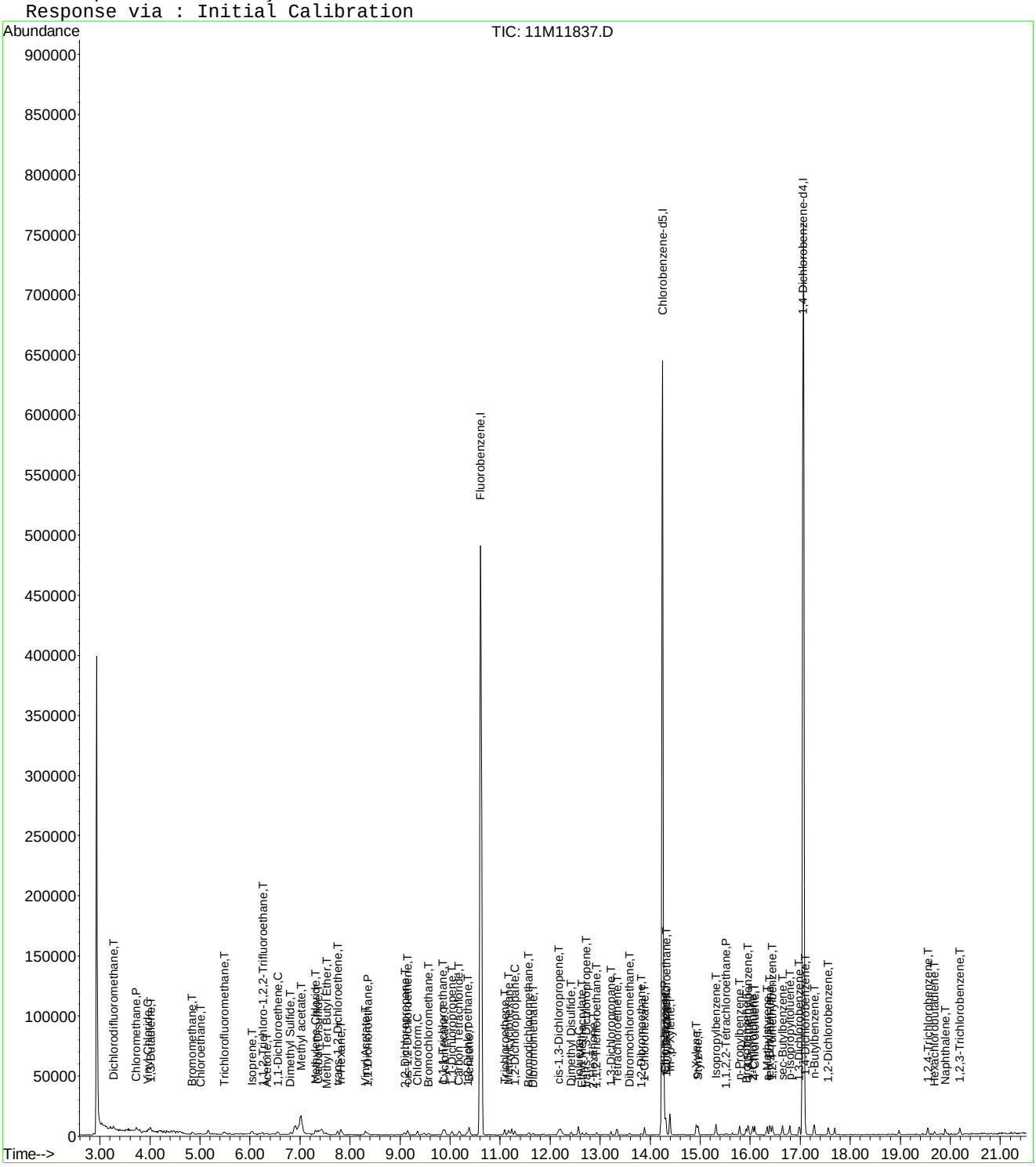

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:40:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2936	0.0	0	0.00
3	P	Chloromethane	-1.0000	0.6871	0.0	0	0.00
4	C	Vinyl Chloride	-1.0000	0.3357	0.0	0	0.00
5	T	1,3-Butadiene	-1.0000	0.2805	0.0	0	0.01
6	T	Bromomethane	-1.0000	0.4454	0.0	0	-0.01
7	T	Chloroethane	-1.0000	0.1710	0.0	0	0.00
8	T	Trichlorofluoromethane	-1.0000	0.3160	0.0	0	0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.01#
10	T	Isoprene	-1.0000	0.2535	0.0	0	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.23#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2478	0.0	0	0.01
13	T	Acetone	-1.0000	1.8699	0.0	0	0.00
14	C	1,1-Dichloroethene	-1.0000	0.3838	0.0	0	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.66#
16	T	Dimethyl Sulfide	-1.0000	0.1937	0.0	0	-0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.06#
18	T	Methyl acetate	-1.0000	5.1442	0.0	0	-0.04
19	T	Methylene Chloride	-1.0000	0.3464	0.0	0	0.00
20	T	Carbon Disulfide	-1.0000	0.3546	0.0	0	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.49#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2413	0.0	0	0.02
23	T	trans-1,2-Dichloroethene	-1.0000	0.2658	0.0	0	0.01
24	T	n-Hexane	-1.0000	0.4125	0.0	0	0.00
25	T	Diisopropyl ether	-1.0000	0.0083	0.0	0	0.08
26	T	Vinyl Acetate	-1.0000	2.6933	0.0	0	-0.01
27	P	1,1-Dichloroethane	-1.0000	0.3028	0.0	0	0.01
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.70#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.87#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.97#
31	T	2,2-Dichloropropane	-1.0000	0.2862	0.0	0	0.01
32	T	cis-1,2-Dichloroethene	-1.0000	0.2877	0.0	0	0.00
33	C	Chloroform	0.3000	0.3530	-17.7	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.48#
35	T	Bromochloromethane	-1.0000	0.2656	0.0	0	-0.01
36	T	Tetrahydrofuran	-1.0000	0.0000	0.0	0	-9.60#
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.63#
38	T	1,1,1-Trichloroethane	-1.0000	0.3263	0.0	0	0.00
39	T	Cyclohexane	-1.0000	0.3159	0.0	0	0.00
40	T	1,1-Dichloropropene	-1.0000	0.3134	0.0	0	0.00
41	T	Carbon Tetrachloride	-1.0000	0.2532	0.0	0	-0.01
42	T	Tert-Amyl-Methyl ether	-1.0000	0.0152	0.0	0	-0.09
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.23#
44	T	1,2-Dichloroethane	-1.0000	0.2858	0.0	0	0.01
45	T	Benzene	-1.0000	0.3452	0.0	0	0.00
46	T	Trichloroethene	-1.0000	0.2938	0.0	0	0.00
47	T	Methylcyclohexane	-1.0000	0.3101	0.0	0	0.00
48	C	1,2-Dichloropropane	-1.0000	0.2911	0.0	0	0.00
49	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.55#
50	T	Bromodichloromethane	-1.0000	0.3012	0.0	0	0.00
51	T	Dibromomethane	-1.0000	0.2537	0.0	0	0.00
52	T	2-Chloroethyl Vinyl Ether	-1.0000	0.0000	0.0	0	-11.84#
53	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-11.87#
54	T	cis-1,3-Dichloropropene	-1.0000	0.2327	0.0	0	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:40:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	-1.0000	0.2127	0.0	0	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	-1.0000	0.0107	0.0	0	0.00
58	C	Toluene	-1.0000	0.3228	0.0	0	0.01
59	T	Ethyl Methacrylate	-1.0000	0.2140	0.0	0	-0.01
60	T	trans-1,3-Dichloropropene	-1.0000	0.2668	0.0	0	-0.01
61	T	1,1,2-Trichloroethane	-1.0000	0.2691	0.0	0	-0.01
62	T	2-Hexanone	-1.0000	0.2315	0.0	0	0.00
63	T	1,3-Dichloropropane	-1.0000	0.2579	0.0	0	0.00
64	T	Tetrachloroethene	-1.0000	0.3214	0.0	0	0.00
65	T	Dibromochloromethane	-1.0000	0.2459	0.0	0	0.00
66	T	1,2-Dibromoethane	-1.0000	0.2387	0.0	0	0.00
67	T	1-Chlorohexane	-1.0000	0.2833	0.0	0	0.00
68	P	Chlorobenzene	-1.0000	0.3144	0.0	0	0.00
69	T	1,1,1,2-Tetrachloroethane	-1.0000	0.2998	0.0	0	0.00
70	C	Ethylbenzene	-1.0000	0.3040	0.0	0	0.00
71	T	m-,p-Xylene	-1.0000	0.6051	0.0	0	0.01
72	T	o-Xylene	-1.0000	0.2994	0.0	0	0.00
73	T	Styrene	-1.0000	0.2961	0.0	0	0.00
74	P	Bromoform	-1.0000	0.0798	0.0	0	-0.01
75	T	Isopropylbenzene	-1.0000	0.2931	0.0	0	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2922	0.0	0	0.00
78	S	p-Bromofluorobenzene	-1.0000	0.0730	0.0	0	0.00
79	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-15.70#
80	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-15.74#
81	T	n-Propylbenzene	-1.0000	0.3233	0.0	0	0.00
82	T	Bromobenzene	0.3000	0.2618	12.7	100	0.00
83	T	1,3,5-Trimethylbenzene	-1.0000	0.3032	0.0	0	-0.01
84	T	2-Chlorotoluene	-1.0000	0.3300	0.0	0	0.00
85	T	4-Chlorotoluene	-1.0000	0.3295	0.0	0	0.00
86	T	a-Methylstyrene	-1.0000	0.2430	0.0	0	0.00
87	T	tert-Butylbenzene	-1.0000	0.2541	0.0	0	-0.01
88	T	1,2,4-Trimethylbenzene	-1.0000	0.3088	0.0	0	0.00
89	T	sec-Butylbenzene	-1.0000	0.3122	0.0	0	0.00
90	T	p-Isopropyltoluene	-1.0000	0.2893	0.0	0	0.00
91	T	1,3-Dichlorobenzene	-1.0000	0.3051	0.0	0	0.00
92	T	1,4-Dichlorobenzene	0.3000	0.2990	0.3	100	0.00
93	T	n-Butylbenzene	-1.0000	0.3274	0.0	0	0.00
94	T	1,2-Dichlorobenzene	0.3000	0.2985	0.5	100	-0.01
95	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-18.49#
96	T	1,2,4-Trichlorobenzene	-1.0000	0.3011	0.0	0	0.00
97	T	Hexachlorobutadiene	-1.0000	0.2675	0.0	0	0.00
98	T	Naphthalene	-1.0000	0.2561	0.0	0	0.00
99	T	1,2,3-Trichlorobenzene	0.3000	0.2854	4.9	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11837.D 8260WT.M Sat May 14 18:41:07 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11838.D Vial: 4
Acq On : 13 May 2016 15:12 Operator: JDS
Sample : WG568769-03 0.4ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:23 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	515473	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	435266	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	244818	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
57) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
78) p-Bromofluorobenzene	15.64	95	236	0.0295 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	2765	0.3656 ug/L #	66
3) Chloromethane	3.72	50	4021	0.5854 ug/L #	77
4) Vinyl Chloride	3.96	62	2267	0.4134 ug/L #	64
5) 1,3-Butadiene	4.01	54	2044	0.3956 ug/L #	18
6) Bromomethane	4.85	94	1571	0.4511 ug/L	89
7) Chloroethane	5.01	64	1496	0.4029 ug/L #	45
8) Trichlorofluoromethane	5.49	101	4241	0.4175 ug/L	96
10) Isoprene	6.03	67	2394	0.3408 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	1439	0.2811 ug/L #	23
13) Acetone	6.33	43	1125	0.7299 ug/L #	45
14) 1,1-Dichloroethene	6.56	61	3786	0.3990 ug/L	77
16) Dimethyl Sulfide	6.80	62	1622	0.3769 ug/L	59
18) Methyl acetate	7.01	43	21364	4.0629 ug/L #	70
19) Methylene Chloride	7.32	84	2266	0.4265 ug/L	97
20) Carbon Disulfide	7.35	76	6628	0.3991 ug/L #	82
22) Methyl Tert Butyl Ether	7.52	73	4808	0.3486 ug/L #	74
23) trans-1,2-Dichloroethene	7.74	96	2372	0.4368 ug/L	93
24) n-Hexane	7.83	57	4212	0.4732 ug/L #	73
26) Vinyl Acetate	8.34	43	434	0.1315 ug/L #	78
27) 1,1-Dichloroethane	8.34	63	3822	0.3576 ug/L #	89
29) 2-Butanone	8.88	43	484	0.2099 ug/L #	60
31) 2,2-Dichloropropane	9.09	77	2680	0.3472 ug/L #	55
32) cis-1,2-Dichloroethene	9.15	96	2277	0.3777 ug/L	91
33) Chloroform	9.35	83	3981	0.3988 ug/L	89
35) Bromochloromethane	9.57	130	952	0.2468 ug/L	57
36) Tetrahydrofuran	9.59	42	212	0.1340 ug/L #	46
38) 1,1,1-Trichloroethane	9.85	97	3917	0.4058 ug/L #	84
39) Cyclohexane	9.88	56	3935	0.3371 ug/L #	80
40) 1,1-Dichloropropene	10.04	75	2817	0.3862 ug/L	82
41) Carbon Tetrachloride	10.18	117	3373	0.3702 ug/L #	88
44) 1,2-Dichloroethane	10.35	62	3201	0.3737 ug/L #	78
45) Benzene	10.39	78	8729	0.4184 ug/L	90
46) Trichloroethene	11.08	130	2537	0.3731 ug/L	93
47) Methylcyclohexane	11.17	83	2742	0.3325 ug/L	90
48) 1,2-Dichloropropane	11.29	63	2133	0.3600 ug/L	84
50) Bromodichloromethane	11.58	83	2857	0.3638 ug/L #	84
51) Dibromomethane	11.65	93	972	0.3128 ug/L	81
52) 2-Chloroethyl Vinyl Ether	11.85	63	791	0.2560 ug/L #	50
54) cis-1,3-Dichloropropene	12.17	75	2689	0.3253 ug/L	99
55) Dimethyl Disulfide	12.42	79	1113	0.2158 ug/L	74

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11838.D Vial: 4
Acq On : 13 May 2016 15:12 Operator: JDS
Sample : WG568769-03 0.4ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:23 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
58)	Toluene	12.56	91	9113	0.4043 ug/L		99
59)	Ethyl Methacrylate	12.65	69	1556	0.2916 ug/L		96
60)	trans-1,3-Dichloropropene	12.73	75	2303	0.3119 ug/L		86
61)	1,1,2-Trichloroethane	12.94	97	1549	0.3672 ug/L		85
62)	2-Hexanone	12.86	43	840	0.2415 ug/L	#	11
63)	1,3-Dichloropropane	13.21	76	2345	0.3346 ug/L		82
64)	Tetrachloroethene	13.34	164	1905	0.3745 ug/L		88
65)	Dibromochloromethane	13.59	129	1972	0.3238 ug/L		89
66)	1,2-Dibromoethane	13.82	107	1617	0.3776 ug/L		69
67)	1-Chlorohexane	13.89	91	2578	0.3487 ug/L		77
68)	Chlorobenzene	14.29	112	6458	0.3896 ug/L		93
69)	1,1,1,2-Tetrachloroethane	14.31	131	2374	0.3736 ug/L		98
70)	Ethylbenzene	14.31	106	3158	0.3754 ug/L		79
71)	m-,p-Xylene	14.39	106	8621	0.8613 ug/L		93
72)	o-Xylene	14.93	106	3752	0.3758 ug/L		96
73)	Styrene	14.95	104	6027	0.3558 ug/L		90
74)	Bromoform	15.44	173	931	0.2454 ug/L		87
75)	Isopropylbenzene	15.31	105	10551	0.4179 ug/L		95
77)	1,1,2,2-Tetrachloroethane	15.52	83	1129	0.2796 ug/L		84
79)	1,2,3-Trichloropropane	15.71	110	200	0.1341 ug/L	#	28
81)	n-Propylbenzene	15.79	91	11244	0.4087 ug/L		98
82)	Bromobenzene	15.91	156	3048	0.3991 ug/L		95
83)	1,3,5-Trimethylbenzene	15.96	105	9158	0.4381 ug/L		92
84)	2-Chlorotoluene	16.05	91	8455	0.4164 ug/L		96
85)	4-Chlorotoluene	16.09	91	6979	0.4189 ug/L		92
86)	a-Methylstyrene	16.34	118	4052	0.3488 ug/L		74
87)	tert-Butylbenzene	16.40	134	1479	0.3224 ug/L		63
88)	1,2,4-Trimethylbenzene	16.45	105	8457	0.3953 ug/L		95
89)	sec-Butylbenzene	16.65	105	10479	0.4236 ug/L		93
90)	p-Isopropyltoluene	16.79	119	9613	0.4269 ug/L		93
91)	1,3-Dichlorobenzene	16.98	146	5826	0.4107 ug/L		93
92)	1,4-Dichlorobenzene	17.10	146	6273	0.4331 ug/L	#	74
93)	n-Butylbenzene	17.28	91	8021	0.3956 ug/L	#	91
94)	1,2-Dichlorobenzene	17.57	146	4937	0.3691 ug/L		97
96)	1,2,4-Trichlorobenzene	19.55	180	3632	0.3655 ug/L		95
97)	Hexachlorobutadiene	19.69	225	1539	0.3812 ug/L		96
98)	Naphthalene	19.90	128	7383	0.3882 ug/L		97
99)	1,2,3-Trichlorobenzene	20.19	180	3748	0.4028 ug/L		84

(#) = qualifier out of range (m) = manual integration
11M11838.D 8260WT.M Fri May 13 17:04:24 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11838.D Vial: 4
Acq On : 13 May 2016 15:12 Operator: JDS
Sample : WG568769-03 0.4ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration

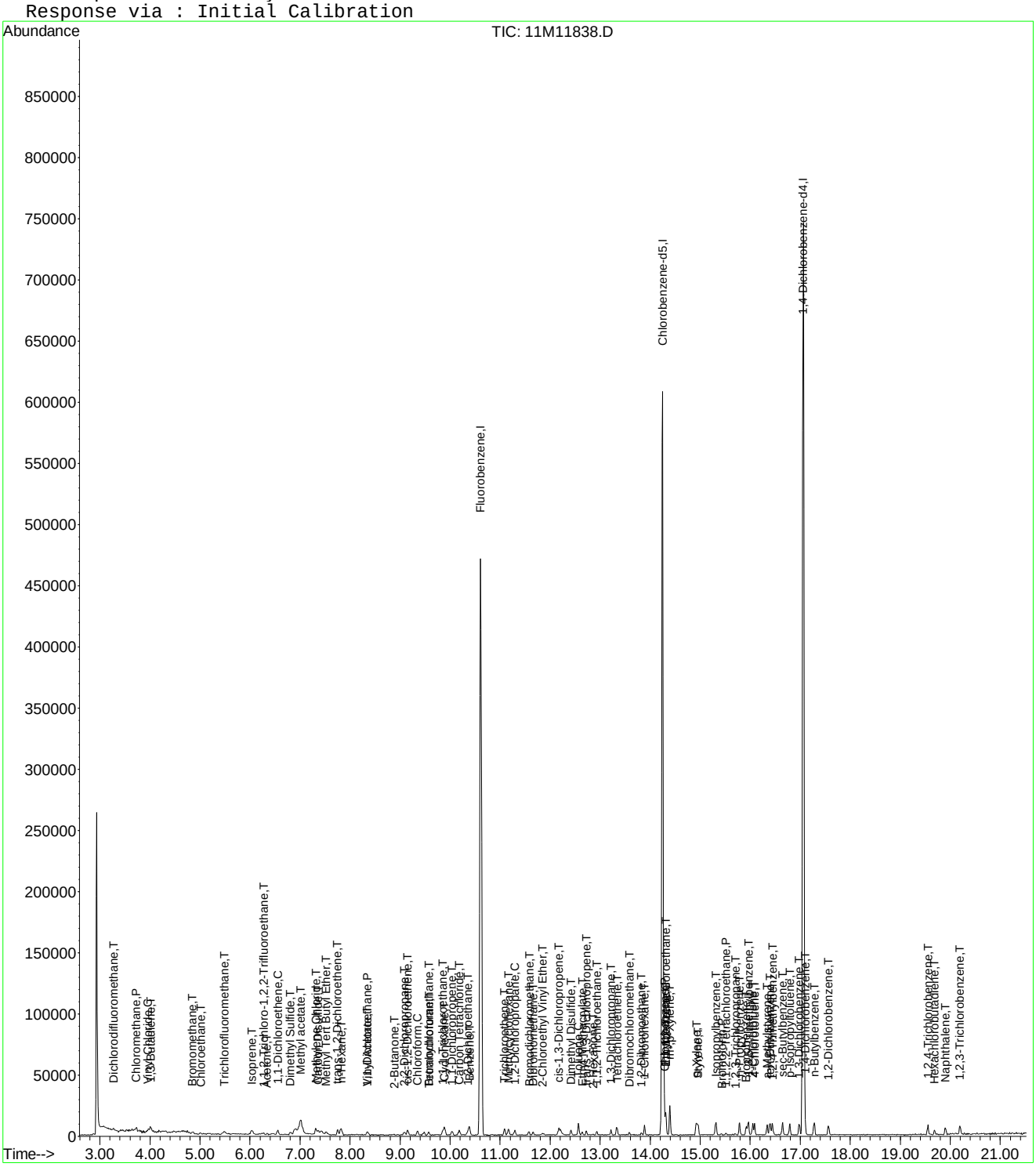

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:25 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	523425	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	440574	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	249989	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	1729	0.2910 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.16%#	
43) 1,2-Dichloroethane-d4	10.23	65	3301	0.4585 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	1.84%#	
57) Toluene-d8	12.47	98	9307	0.4494 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	1.80%#	
78) p-Bromofluorobenzene	15.64	95	4047	0.4956 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	7215	0.9394 ug/L	98
3) Chloromethane	3.72	50	7292	1.0455 ug/L	80
4) Vinyl Chloride	3.96	62	5040	0.9051 ug/L	92
5) 1,3-Butadiene	4.02	54	5876	1.1198 ug/L #	76
6) Bromomethane	4.85	94	3488	0.9862 ug/L	94
7) Chloroethane	4.99	64	3425	0.9083 ug/L #	57
8) Trichlorofluoromethane	5.49	101	10960	1.0625 ug/L	95
9) Diethyl ether	6.01	59	19830	4.2253 ug/L	90
10) Isoprene	6.04	67	6121	0.8582 ug/L	94
11) Acrolein	6.25	56	697	1.2730 ug/L	65
12) 1,1,2-Trichloro-1,2,2-Trif	6.27	101	5456	1.0497 ug/L	90
13) Acetone	6.34	43	1782	1.1386 ug/L #	45
14) 1,1-Dichloroethene	6.55	61	9456	0.9814 ug/L	91
15) Tert-Butyl Alcohol	6.67	59	2848	6.8484 ug/L #	67
16) Dimethyl Sulfide	6.80	62	3631	0.8310 ug/L	93
18) Methyl acetate	7.01	43	20953	3.9242 ug/L #	70
19) Methylene Chloride	7.31	84	5001	0.9270 ug/L	97
20) Carbon Disulfide	7.36	76	15438	0.9154 ug/L	99
21) Acrylonitrile	7.50	53	3780	1.8795 ug/L	89
22) Methyl Tert Butyl Ether	7.53	73	11891	0.8490 ug/L	90
23) trans-1,2-Dichloroethene	7.75	96	4815	0.8732 ug/L	95
24) n-Hexane	7.82	57	9213	1.0194 ug/L #	81
25) Diisopropyl ether	8.15	45	108233	4.5267 ug/L	99
26) Vinyl Acetate	8.31	43	1723	0.5141 ug/L #	78
27) 1,1-Dichloroethane	8.34	63	10818	0.9968 ug/L	95
28) Ethyl-Tert-Butyl ether	8.70	59	85288	4.3548 ug/L	99
29) 2-Butanone	8.88	43	1368	0.5844 ug/L #	60
30) Propionitrile	8.99	54	2406	3.5185 ug/L #	60
31) 2,2-Dichloropropane	9.09	77	7787	0.9935 ug/L	90
32) cis-1,2-Dichloroethene	9.15	96	5567	0.9095 ug/L	94
33) Chloroform	9.35	83	10278	1.0139 ug/L	96
34) 1-Bromopropane	9.48	122	295	0.2934 ug/L	49
35) Bromochloromethane	9.57	130	2941	0.7509 ug/L	88
36) Tetrahydrofuran	9.60	42	7790	4.8493 ug/L	92
38) 1,1,1-Trichloroethane	9.85	97	10000	1.0202 ug/L #	90
39) Cyclohexane	9.88	56	10164	0.8574 ug/L	98
40) 1,1-Dichloropropene	10.04	75	7321	0.9884 ug/L	92
41) Carbon Tetrachloride	10.18	117	9558	1.0331 ug/L	98
42) Tert-Amyl-Methyl ether	10.13	73	59107	4.2417 ug/L	97
44) 1,2-Dichloroethane	10.34	62	8181	0.9406 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:25 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	Benzene	10.38	78	19924	0.9404 ug/L		95
46)	Trichloroethene	11.08	130	6636	0.9611 ug/L		92
47)	Methylcyclohexane	11.18	83	7740	0.9243 ug/L		94
48)	1,2-Dichloropropane	11.29	63	5477	0.9103 ug/L		99
49)	1,4-Dioxane	11.55	88	187	5.1264 ug/L	#	10
50)	Bromodichloromethane	11.57	83	7238	0.9076 ug/L		94
51)	Dibromomethane	11.65	93	2839	0.8997 ug/L		97
52)	2-Chloroethyl Vinyl Ether	11.84	63	1934	0.6164 ug/L	#	72
53)	4-Methyl-2-Pentanone	11.87	58	1016	0.5282 ug/L	#	42
54)	cis-1,3-Dichloropropene	12.17	75	7078	0.8432 ug/L		99
55)	Dimethyl Disulfide	12.42	79	3514	0.6710 ug/L		93
58)	Toluene	12.56	91	22074	0.9676 ug/L		96
59)	Ethyl Methacrylate	12.64	69	4130	0.7646 ug/L		88
60)	trans-1,3-Dichloropropene	12.73	75	5897	0.7891 ug/L		90
61)	1,1,2-Trichloroethane	12.94	97	3547	0.8307 ug/L		96
62)	2-Hexanone	12.87	43	2461	0.6990 ug/L	#	63
63)	1,3-Dichloropropane	13.21	76	5965	0.8410 ug/L		87
64)	Tetrachloroethene	13.34	164	5050	0.9809 ug/L		94
65)	Dibromochloromethane	13.59	129	5237	0.8497 ug/L		90
66)	1,2-Dibromoethane	13.82	107	3214	0.7414 ug/L		91
67)	1-Chlorohexane	13.89	91	7025	0.9387 ug/L		91
68)	Chlorobenzene	14.29	112	16160	0.9630 ug/L		95
69)	1,1,1,2-Tetrachloroethane	14.32	131	6361	0.9889 ug/L		97
70)	Ethylbenzene	14.31	106	8050	0.9455 ug/L		93
71)	m-,p-Xylene	14.39	106	20545	2.0278 ug/L		95
72)	o-Xylene	14.92	106	9683	0.9581 ug/L		96
73)	Styrene	14.96	104	14946	0.8716 ug/L		98
74)	Bromoform	15.43	173	3024	0.7876 ug/L		97
75)	Isopropylbenzene	15.31	105	25656	1.0039 ug/L		92
77)	1,1,2,2-Tetrachloroethane	15.52	83	3569	0.8655 ug/L		89
79)	1,2,3-Trichloropropane	15.71	110	872	0.5724 ug/L		84
80)	trans-1,4-Dichloro-2-Buten	15.74	53	1048	0.6163 ug/L	#	44
81)	n-Propylbenzene	15.79	91	27998	0.9967 ug/L		98
82)	Bromobenzene	15.92	156	8101	1.0388 ug/L		89
83)	1,3,5-Trimethylbenzene	15.96	105	20563	0.9633 ug/L		98
84)	2-Chlorotoluene	16.05	91	20962	1.0111 ug/L		96
85)	4-Chlorotoluene	16.09	91	17553	1.0318 ug/L		100
86)	a-Methylstyrene	16.34	118	10002	0.8431 ug/L		97
87)	tert-Butylbenzene	16.40	134	4396	0.9384 ug/L		84
88)	1,2,4-Trimethylbenzene	16.44	105	21945	1.0045 ug/L		96
89)	sec-Butylbenzene	16.65	105	25927	1.0263 ug/L		100
90)	p-Isopropyltoluene	16.79	119	22467	0.9771 ug/L		96
91)	1,3-Dichlorobenzene	16.98	146	14883	1.0274 ug/L		96
92)	1,4-Dichlorobenzene	17.10	146	15106	1.0213 ug/L	#	67
93)	n-Butylbenzene	17.28	91	20991	1.0139 ug/L		98
94)	1,2-Dichlorobenzene	17.57	146	13331	0.9762 ug/L		99
95)	1,2-Dibromo-3-Chloropropan	18.49	75	493	0.5750 ug/L		75
96)	1,2,4-Trichlorobenzene	19.55	180	9030	0.8899 ug/L		96
97)	Hexachlorobutadiene	19.69	225	3810	0.9242 ug/L		95
98)	Naphthalene	19.90	128	16333	0.8410 ug/L		99
99)	1,2,3-Trichlorobenzene	20.19	180	8645	0.9098 ug/L		88

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration

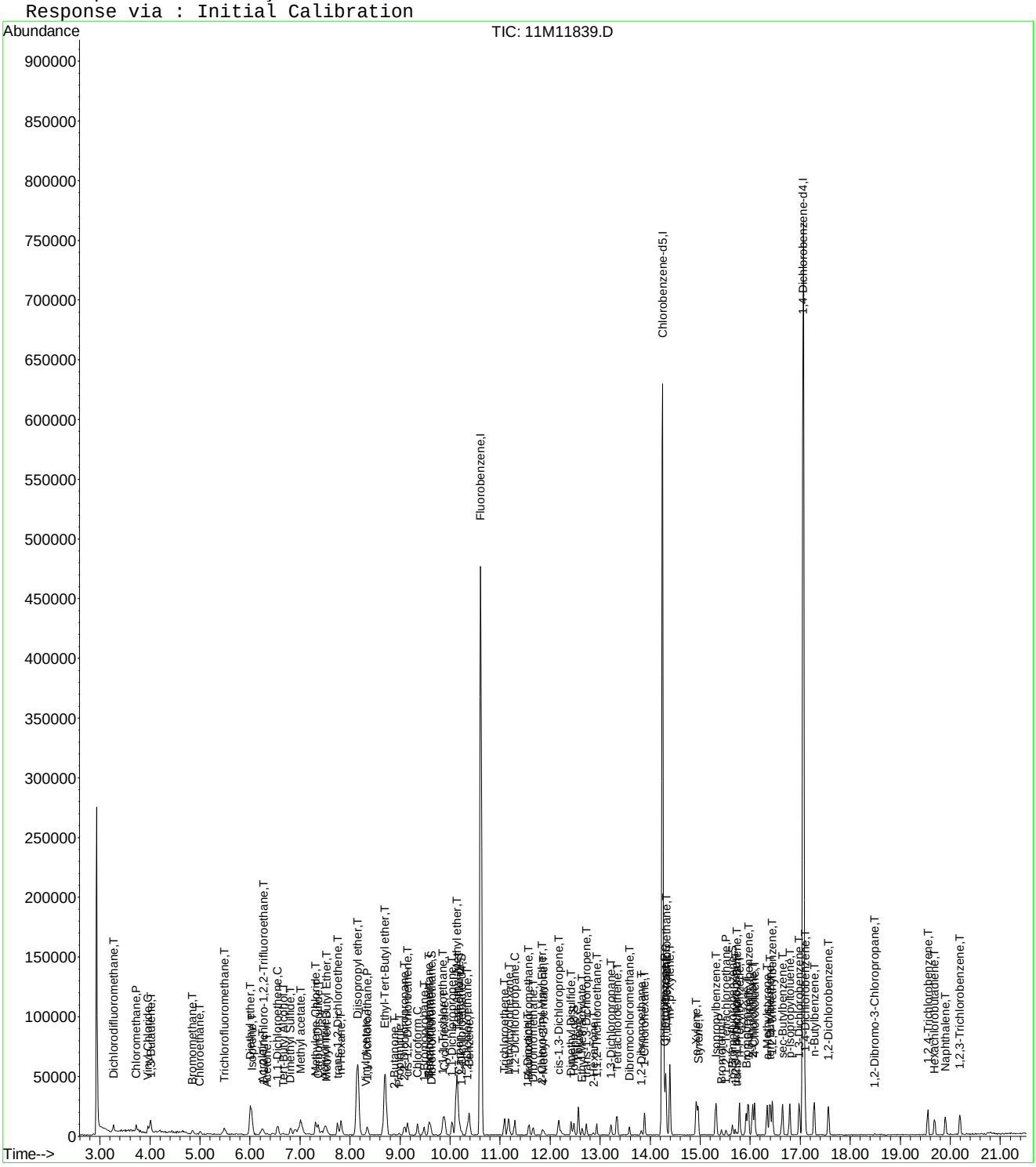

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:40:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.8798	12.0	100	0.00
3	P	Chloromethane	1.0000	1.1102	-11.0	100	0.00
4	C	Vinyl Chloride	1.0000	0.9240	7.6	100	0.00
5	T	1,3-Butadiene	-1.0000	1.0834	0.0	100	0.02
6	T	Bromomethane	1.0000	0.9301	7.0	100	0.00
7	T	Chloroethane	1.0000	0.9773	2.3	100	-0.01
8	T	Trichlorofluoromethane	1.0000	1.0081	-0.8	100	0.01
9	T	Diethyl ether	5.0000	4.9318	1.4	100	0.00
10	T	Isoprene	-1.0000	0.9134	0.0	100	0.00
11	T	Acrolein	2.5000	2.7854	-11.4	100	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0342	-3.4	100	0.02
13	T	Acetone	-1.0000	1.4337	0.0	0	0.00
14	C	1,1-Dichloroethene	1.0000	0.9868	1.3	100	-0.01
15	T	Tert-Butyl Alcohol	10.0000	8.2841	17.2	100	0.01
16	T	Dimethyl Sulfide	-1.0000	0.9488	0.0	100	-0.01
17	T	Iodomethane	-1.0000	2.2962	0.0	0	0.01
18	T	Methyl acetate	-1.0000	4.2835	0.0	0	-0.05
19	T	Methylene Chloride	1.0000	1.0084	-0.8	100	0.00
20	T	Carbon Disulfide	1.0000	0.9624	3.8	100	0.00
21	T	Acrylonitrile	2.5000	2.2683	9.3	100	0.01
22	T	Methyl Tert Butyl Ether	1.0000	0.9614	3.9	100	0.01
23	T	trans-1,2-Dichloroethene	1.0000	0.9079	9.2	100	0.01
24	T	n-Hexane	-1.0000	1.0430	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	4.9106	1.8	100	0.00
26	T	Vinyl Acetate	-1.0000	2.6242	0.0	0	0.00
27	P	1,1-Dichloroethane	1.0000	1.0166	-1.7	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.7543	4.9	100	0.00
29	T	2-Butanone	-1.0000	0.7280	0.0	0	0.01
30	T	Propionitrile	5.0000	4.3718	12.6	100	0.01
31	T	2,2-Dichloropropane	1.0000	0.9353	6.5	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	0.9520	4.8	100	0.00
33	C	Chloroform	1.0000	0.9836	1.6	100	0.00
34	T	1-Bromopropane	1.0000	0.9106	8.9	100	0.00
35	T	Bromochloromethane	1.0000	0.8469	15.3	100	0.00
36	T	Tetrahydrofuran	5.0000	5.8710	-17.4	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.3018	0.0	100	0.00
38	T	1,1,1-Trichloroethane	1.0000	0.9725	2.8	100	0.00
39	T	Cyclohexane	1.0000	0.9069	9.3	100	0.00
40	T	1,1-Dichloropropene	1.0000	0.9971	0.3	100	0.00
41	T	Carbon Tetrachloride	1.0000	0.9518	4.8	100	0.00
42	T	Tert-Amyl-Methyl ether	5.0000	4.7417	5.2	100	0.00
43	S	1,2-Dichloroethane-d4	0.5000	0.5054	-1.1	100	0.00
44	T	1,2-Dichloroethane	1.0000	0.9639	3.6	100	0.00
45	T	Benzene	1.0000	0.9912	0.9	100	0.00
46	T	Trichloroethene	1.0000	1.0157	-1.6	100	-0.01
47	T	Methylcyclohexane	1.0000	0.9600	4.0	100	0.01
48	C	1,2-Dichloropropane	1.0000	0.9844	1.6	100	0.00
49	T	1,4-Dioxane	-1.0000	28.5532	0.0	0	0.00
50	T	Bromodichloromethane	1.0000	0.9266	7.3	100	0.00
51	T	Dibromomethane	1.0000	0.9792	2.1	100	0.00
52	T	2-Chloroethyl Vinyl Ether	-1.0000	0.7053	0.0	100	0.00
53	T	4-Methyl-2-Pentanone	-1.0000	0.6569	0.0	0	0.00
54	T	cis-1,3-Dichloropropene	1.0000	0.9060	9.4	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:40:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	-1.0000	0.7475	0.0	100	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	-1.0000	0.4862	0.0	100	0.00
58	C	Toluene	1.0000	0.9897	1.0	100	0.00
59	T	Ethyl Methacrylate	1.0000	0.8672	13.3	100	-0.01
60	T	trans-1,3-Dichloropropene	1.0000	0.8237	17.6	100	0.00
61	T	1,1,2-Trichloroethane	1.0000	0.8969	10.3	100	0.00
62	T	2-Hexanone	-1.0000	0.8473	0.0	100	0.01
63	T	1,3-Dichloropropane	1.0000	0.9392	6.1	100	0.00
64	T	Tetrachloroethene	1.0000	0.9737	2.6	100	0.00
65	T	Dibromochloromethane	1.0000	0.8681	13.2	100	0.00
66	T	1,2-Dibromoethane	1.0000	0.8111	18.9	100	0.00
67	T	1-Chlorohexane	1.0000	0.9554	4.5	100	0.00
68	P	Chlorobenzene	1.0000	0.9890	1.1	100	0.00
69	T	1,1,1,2-Tetrachloroethane	1.0000	0.9621	3.8	100	0.00
70	C	Ethylbenzene	1.0000	0.9608	3.9	100	0.00
71	T	m-,p-Xylene	2.0000	2.0170	-0.9	100	0.00
72	T	o-Xylene	1.0000	0.9768	2.3	100	0.00
73	T	Styrene	1.0000	0.9126	8.7	100	0.01
74	P	Bromoform	1.0000	0.8271	17.3	100	0.00
75	T	Isopropylbenzene	1.0000	0.9787	2.1	100	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	1.0000	0.9168	8.3	100	0.00
78	S	p-Bromofluorobenzene	-1.0000	0.5252	0.0	100	0.00
79	T	1,2,3-Trichloropropane	1.0000	0.9573	4.3	100	0.01
80	T	trans-1,4-Dichloro-2-Butene	1.0000	1.2934	-29.3#	100	0.00
81	T	n-Propylbenzene	1.0000	0.9671	3.3	100	0.00
82	T	Bromobenzene	1.0000	1.0663	-6.6	100	0.00
83	T	1,3,5-Trimethylbenzene	1.0000	0.9307	6.9	100	0.00
84	T	2-Chlorotoluene	1.0000	1.0337	-3.4	100	0.00
85	T	4-Chlorotoluene	1.0000	0.9664	3.4	100	0.00
86	T	a-Methylstyrene	1.0000	0.8582	14.2	100	0.00
87	T	tert-Butylbenzene	1.0000	0.9392	6.1	100	0.00
88	T	1,2,4-Trimethylbenzene	1.0000	0.9755	2.5	100	0.00
89	T	sec-Butylbenzene	1.0000	0.9774	2.3	100	0.00
90	T	p-Isopropyltoluene	1.0000	0.9221	7.8	100	0.00
91	T	1,3-Dichlorobenzene	1.0000	1.0144	-1.4	100	0.00
92	T	1,4-Dichlorobenzene	1.0000	1.0157	-1.6	100	0.00
93	T	n-Butylbenzene	1.0000	0.9776	2.2	100	0.00
94	T	1,2-Dichlorobenzene	1.0000	0.9974	0.3	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.1961	0.0	100	0.00
96	T	1,2,4-Trichlorobenzene	1.0000	0.9233	7.7	100	0.00
97	T	Hexachlorobutadiene	1.0000	0.8843	11.6	100	0.00
98	T	Naphthalene	1.0000	0.8997	10.0	100	0.00
99	T	1,2,3-Trichlorobenzene	1.0000	0.9631	3.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11839.D 8260WT.M Sat May 14 18:41:49 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:26 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	504626	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	418265	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	241104	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	5067	0.8846 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.52%#	
43) 1,2-Dichloroethane-d4	10.23	65	6143	0.8851 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.56%#	
57) Toluene-d8	12.47	98	18425	0.9371 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	3.76%#	
78) p-Bromofluorobenzene	15.64	95	7442	0.9449 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	3.76%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	14866	2.0077 ug/L	98
3) Chloromethane	3.72	50	14641	2.1775 ug/L	94
4) Vinyl Chloride	3.96	62	10045	1.8711 ug/L	99
5) 1,3-Butadiene	4.01	54	10590	2.0934 ug/L	82
6) Bromomethane	4.85	94	7024	2.0600 ug/L	94
7) Chloroethane	4.99	64	6661	1.8324 ug/L	97
8) Trichlorofluoromethane	5.49	101	21690	2.1811 ug/L	99
9) Diethyl ether	6.01	59	96350	21.2945 ug/L	97
10) Isoprene	6.04	67	12682	1.8443 ug/L	94
11) Acrolein	6.23	56	5531	10.4784 ug/L	91
12) 1,1,2-Trichloro-1,2,2-Trif	6.23	101	9909	1.9774 ug/L	96
13) Acetone	6.35	43	3346	2.2176 ug/L #	68
14) 1,1-Dichloroethene	6.56	61	18584	2.0007 ug/L	98
15) Tert-Butyl Alcohol	6.66	59	15203	37.9194 ug/L #	93
16) Dimethyl Sulfide	6.81	62	7308	1.7348 ug/L	98
17) Iodomethane	7.06	142	1747	0.4335 ug/L #	49
18) Methyl acetate	7.01	43	17794	3.4567 ug/L #	75
19) Methylene Chloride	7.31	84	10330	1.9861 ug/L	99
20) Carbon Disulfide	7.36	76	30745	1.8910 ug/L	99
21) Acrylonitrile	7.49	53	17499	9.0252 ug/L	91
22) Methyl Tert Butyl Ether	7.52	73	22031	1.6315 ug/L	97
23) trans-1,2-Dichloroethene	7.74	96	10660	2.0051 ug/L	95
24) n-Hexane	7.82	57	17125	1.9654 ug/L #	94
25) Diisopropyl ether	8.15	45	542272	23.5246 ug/L	99
26) Vinyl Acetate	8.31	43	6813	2.1084 ug/L #	84
27) 1,1-Dichloroethane	8.34	63	21278	2.0336 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	431080	22.8311 ug/L	100
29) 2-Butanone	8.87	43	3175	1.4068 ug/L #	60
30) Propionitrile	8.99	54	12529	19.0049 ug/L	98
31) 2,2-Dichloropropane	9.09	77	17576	2.3259 ug/L	94
32) cis-1,2-Dichloroethene	9.15	96	11652	1.9746 ug/L	96
33) Chloroform	9.35	83	20769	2.1252 ug/L	96
34) 1-Bromopropane	9.48	122	1648	1.7003 ug/L	70
35) Bromochloromethane	9.57	130	6812	1.8040 ug/L	100
36) Tetrahydrofuran	9.60	42	30834	19.9093 ug/L	96
38) 1,1,1-Trichloroethane	9.84	97	20518	2.1713 ug/L #	94
39) Cyclohexane	9.88	56	22087	1.9325 ug/L	98
40) 1,1-Dichloropropene	10.04	75	13954	1.9542 ug/L	98
41) Carbon Tetrachloride	10.18	117	21054	2.3604 ug/L	98
42) Tert-Amyl-Methyl ether	10.13	73	300593	22.3753 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M11840.D 8260WT.M Fri May 13 17:04:27 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:26 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
44)	1,2-Dichloroethane	10.34	62	16928	2.0188 ug/L		98
45)	Benzene	10.38	78	41004	2.0075 ug/L		97
46)	Trichloroethene	11.08	130	13283	1.9954 ug/L		96
47)	Methylcyclohexane	11.17	83	15711	1.9461 ug/L		95
48)	1,2-Dichloropropane	11.29	63	11010	1.8980 ug/L		91
49)	1,4-Dioxane	11.55	88	898	25.5347 ug/L		88
50)	Bromodichloromethane	11.57	83	15058	1.9584 ug/L		100
51)	Dibromomethane	11.66	93	5461	1.7952 ug/L		97
52)	2-Chloroethyl Vinyl Ether	11.84	63	4894	1.6180 ug/L		83
53)	4-Methyl-2-Pentanone	11.87	58	2173	1.1717 ug/L	#	65
54)	cis-1,3-Dichloropropene	12.17	75	14440	1.7842 ug/L		91
55)	Dimethyl Disulfide	12.42	79	7378	1.4613 ug/L		97
58)	Toluene	12.56	91	43051	1.9877 ug/L		98
59)	Ethyl Methacrylate	12.64	69	7792	1.5195 ug/L		95
60)	trans-1,3-Dichloropropene	12.73	75	12991	1.8310 ug/L		98
61)	1,1,2-Trichloroethane	12.93	97	8138	2.0075 ug/L		91
62)	2-Hexanone	12.86	43	4715	1.4106 ug/L	#	61
63)	1,3-Dichloropropane	13.21	76	11740	1.7434 ug/L		95
64)	Tetrachloroethene	13.34	164	10610	2.1708 ug/L		90
65)	Dibromochloromethane	13.59	129	11236	1.9202 ug/L		96
66)	1,2-Dibromoethane	13.82	107	7613	1.8499 ug/L		99
67)	1-Chlorohexane	13.89	91	13853	1.9499 ug/L		96
68)	Chlorobenzene	14.29	112	33381	2.0954 ug/L		99
69)	1,1,1,2-Tetrachloroethane	14.32	131	13541	2.2175 ug/L		97
70)	Ethylbenzene	14.31	106	17116	2.1175 ug/L		98
71)	m-,p-Xylene	14.39	106	40469	4.2073 ug/L		95
72)	o-Xylene	14.92	106	19196	2.0006 ug/L		99
73)	Styrene	14.96	104	30019	1.8440 ug/L		92
74)	Bromoform	15.43	173	6309	1.7308 ug/L		96
75)	Isopropylbenzene	15.31	105	52419	2.1605 ug/L		98
77)	1,1,2,2-Tetrachloroethane	15.51	83	7118	1.7898 ug/L		100
79)	1,2,3-Trichloropropane	15.70	110	2487	1.6927 ug/L		98
80)	trans-1,4-Dichloro-2-Buten	15.74	53	2265	1.3810 ug/L		68
81)	n-Propylbenzene	15.79	91	59353	2.1908 ug/L		100
82)	Bromobenzene	15.91	156	15393	2.0465 ug/L		97
83)	1,3,5-Trimethylbenzene	15.95	105	43641	2.1197 ug/L		98
84)	2-Chlorotoluene	16.05	91	40923	2.0467 ug/L		96
85)	4-Chlorotoluene	16.09	91	37360	2.2771 ug/L		97
86)	a-Methylstyrene	16.34	118	20567	1.7976 ug/L		92
87)	tert-Butylbenzene	16.40	134	9253	2.0481 ug/L		89
88)	1,2,4-Trimethylbenzene	16.44	105	43857	2.0815 ug/L		99
89)	sec-Butylbenzene	16.65	105	52733	2.1643 ug/L		99
90)	p-Isopropyltoluene	16.79	119	49990	2.2541 ug/L		98
91)	1,3-Dichlorobenzene	16.98	146	29674	2.1240 ug/L		99
92)	1,4-Dichlorobenzene	17.10	146	30258	2.1211 ug/L		87
93)	n-Butylbenzene	17.28	91	44260	2.2167 ug/L		98
94)	1,2-Dichlorobenzene	17.57	146	27619	2.0969 ug/L		95
95)	1,2-Dibromo-3-Chloropropan	18.49	75	1094	1.3229 ug/L		60
96)	1,2,4-Trichlorobenzene	19.55	180	18455	1.8857 ug/L		98
97)	Hexachlorobutadiene	19.69	225	8691	2.1858 ug/L		89
98)	Naphthalene	19.90	128	34041	1.8174 ug/L	#	95
99)	1,2,3-Trichlorobenzene	20.19	180	17703	1.9318 ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration

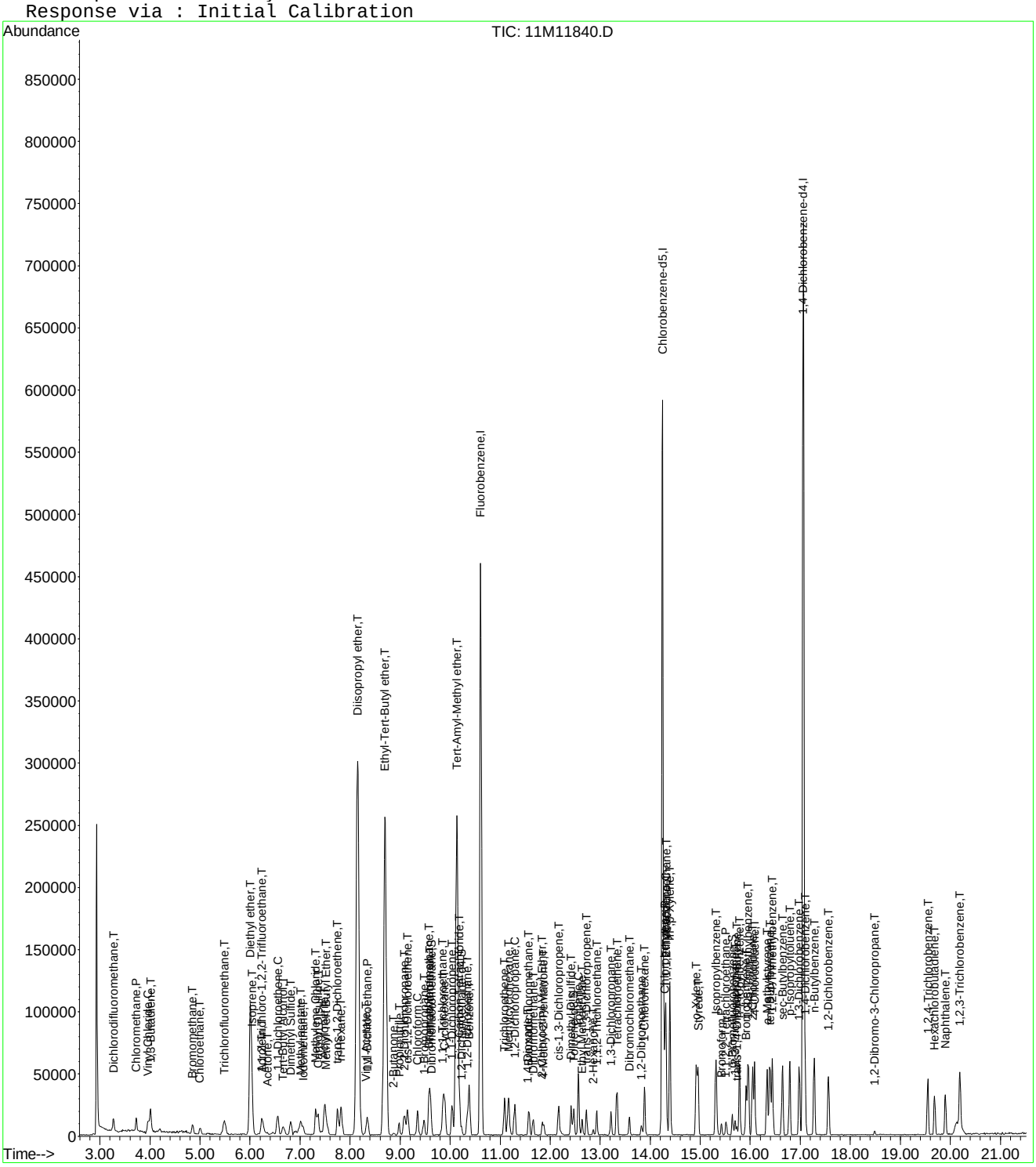

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.8802	6.0	100	0.00
3	P	Chloromethane	2.0000	2.3121	-15.6	100	0.00
4	C	Vinyl Chloride	2.0000	1.9102	4.5	100	0.00
5	T	1,3-Butadiene	-1.0000	2.0253	0.0	100	0.01
6	T	Bromomethane	2.0000	1.9427	2.9	100	0.00
7	T	Chloroethane	2.0000	1.9714	1.4	100	-0.01
8	T	Trichlorofluoromethane	2.0000	2.0694	-3.5	100	0.01
9	T	Diethyl ether	25.0000	24.8555	0.6	100	0.00
10	T	Isoprene	-1.0000	1.9630	0.0	100	0.00
11	T	Acrolein	12.5000	12.0322	3.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.9483	2.6	100	-0.01
13	T	Acetone	-1.0000	2.7924	0.0	100	0.01
14	C	1,1-Dichloroethene	2.0000	2.0117	-0.6	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	45.8688	8.3	100	0.00
16	T	Dimethyl Sulfide	-1.0000	1.9809	0.0	100	0.00
17	T	Iodomethane	2.0000	2.6580	-32.9#	100	0.00
18	T	Methyl acetate	2.0000	0.8555	57.2#	100	0.00
19	T	Methylene Chloride	2.0000	2.1606	-8.0	100	0.00
20	T	Carbon Disulfide	2.0000	1.9879	0.6	100	0.00
21	T	Acrylonitrile	12.5000	10.8919	12.9	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.8475	7.6	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	2.0850	-4.2	100	0.00
24	T	n-Hexane	2.0000	2.0110	-0.6	100	0.00
25	T	Diisopropyl ether	25.0000	25.5200	-2.1	100	0.00
26	T	Vinyl Acetate	-1.0000	3.2184	0.0	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.0741	-3.7	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	24.9254	0.3	100	0.00
29	T	2-Butanone	-1.0000	1.7527	0.0	0	0.00
30	T	Propionitrile	25.0000	23.6140	5.5	100	0.01
31	T	2,2-Dichloropropane	2.0000	2.1897	-9.5	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0669	-3.3	100	0.00
33	C	Chloroform	2.0000	2.0616	-3.1	100	0.00
34	T	1-Bromopropane	2.0000	2.2551	-12.8	100	0.00
35	T	Bromochloromethane	2.0000	2.0347	-1.7	100	0.00
36	T	Tetrahydrofuran	25.0000	24.1040	3.6	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9175	8.3	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	2.0696	-3.5	100	-0.01
39	T	Cyclohexane	2.0000	2.0442	-2.2	100	0.00
40	T	1,1-Dichloropropene	2.0000	1.9713	1.4	100	0.00
41	T	Carbon Tetrachloride	2.0000	2.1748	-8.7	100	0.00
42	T	Tert-Amyl-Methyl ether	25.0000	25.0128	-0.1	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	0.9755	2.4	100	0.00
44	T	1,2-Dichloroethane	2.0000	2.0689	-3.4	100	0.00
45	T	Benzene	2.0000	2.1160	-5.8	100	0.00
46	T	Trichloroethene	2.0000	2.1089	-5.4	100	-0.01
47	T	Methylcyclohexane	2.0000	2.0212	-1.1	100	0.00
48	C	1,2-Dichloropropane	2.0000	2.0525	-2.6	100	0.00
49	T	1,4-Dioxane	50.0000	49.5313	0.9	100	0.00
50	T	Bromodichloromethane	2.0000	1.9996	0.0	100	0.00
51	T	Dibromomethane	2.0000	1.9537	2.3	100	0.01
52	T	2-Chloroethyl Vinyl Ether	-1.0000	1.8512	0.0	100	0.00
53	T	4-Methyl-2-Pentanone	-1.0000	1.4573	0.0	100	0.00
54	T	cis-1,3-Dichloropropene	2.0000	1.9172	4.1	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	-1.0000	1.6278	0.0	100	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	1.0000	1.0138	-1.4	100	0.00
58	C	Toluene	2.0000	2.0332	-1.7	100	0.00
59	T	Ethyl Methacrylate	2.0000	1.7234	13.8	100	-0.01
60	T	trans-1,3-Dichloropropene	2.0000	1.9114	4.4	100	0.00
61	T	1,1,2-Trichloroethane	2.0000	2.1674	-8.4	100	0.00
62	T	2-Hexanone	-1.0000	1.7098	0.0	100	0.00
63	T	1,3-Dichloropropane	2.0000	1.9471	2.6	100	0.00
64	T	Tetrachloroethene	2.0000	2.1547	-7.7	100	0.00
65	T	Dibromochloromethane	2.0000	1.9620	1.9	100	0.00
66	T	1,2-Dibromoethane	2.0000	2.0238	-1.2	100	0.00
67	T	1-Chlorohexane	2.0000	1.9844	0.8	100	0.00
68	P	Chlorobenzene	2.0000	2.1520	-7.6	100	0.00
69	T	1,1,1,2-Tetrachloroethane	2.0000	2.1574	-7.9	100	0.00
70	C	Ethylbenzene	2.0000	2.1518	-7.6	100	0.00
71	T	m-,p-Xylene	4.0000	4.1851	-4.6	100	0.00
72	T	o-Xylene	2.0000	2.0398	-2.0	100	0.00
73	T	Styrene	2.0000	1.9307	3.5	100	0.01
74	P	Bromoform	2.0000	1.8176	9.1	100	0.00
75	T	Isopropylbenzene	2.0000	2.1063	-5.3	100	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	2.0000	1.8958	5.2	100	-0.01
78	S	p-Bromofluorobenzene	1.0000	1.0013	-0.1	100	0.00
79	T	1,2,3-Trichloropropane	2.0000	2.1172	-5.9	100	0.00
80	T	trans-1,4-Dichloro-2-Butene	2.0000	1.9762	1.2	100	0.00
81	T	n-Propylbenzene	2.0000	2.1256	-6.3	100	0.00
82	T	Bromobenzene	2.0000	2.1009	-5.0	100	-0.01
83	T	1,3,5-Trimethylbenzene	2.0000	2.0481	-2.4	100	-0.01
84	T	2-Chlorotoluene	2.0000	2.0925	-4.6	100	0.00
85	T	4-Chlorotoluene	2.0000	2.1326	-6.6	100	0.00
86	T	a-Methylstyrene	2.0000	1.8297	8.5	100	0.00
87	T	tert-Butylbenzene	2.0000	2.0497	-2.5	100	0.00
88	T	1,2,4-Trimethylbenzene	2.0000	2.0213	-1.1	100	0.00
89	T	sec-Butylbenzene	2.0000	2.0611	-3.1	100	0.00
90	T	p-Isopropyltoluene	2.0000	2.1272	-6.4	100	0.00
91	T	1,3-Dichlorobenzene	2.0000	2.0970	-4.8	100	0.00
92	T	1,4-Dichlorobenzene	2.0000	2.1095	-5.5	100	0.00
93	T	n-Butylbenzene	2.0000	2.1373	-6.9	100	0.00
94	T	1,2-Dichlorobenzene	2.0000	2.1425	-7.1	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	2.0000	1.9175	4.1	100	0.00
96	T	1,2,4-Trichlorobenzene	2.0000	1.9565	2.2	100	0.00
97	T	Hexachlorobutadiene	2.0000	2.0914	-4.6	100	0.00
98	T	Naphthalene	2.0000	1.9443	2.8	100	0.00
99	T	1,2,3-Trichlorobenzene	2.0000	2.0449	-2.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11840.D 8260WT.M Sat May 14 18:46:53 2016 Page 2

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:46 2016 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Single Level Calibration

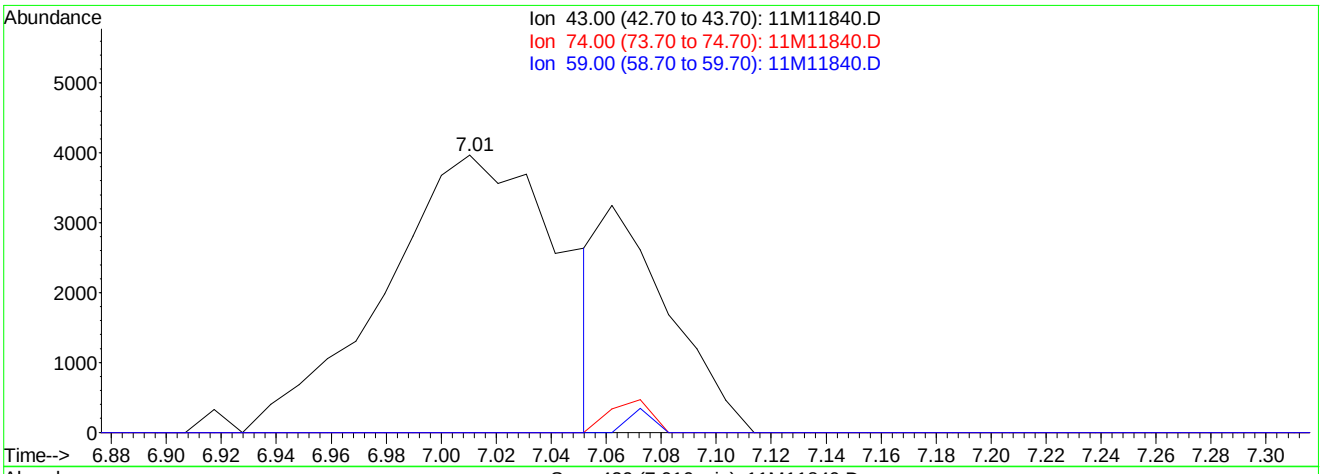

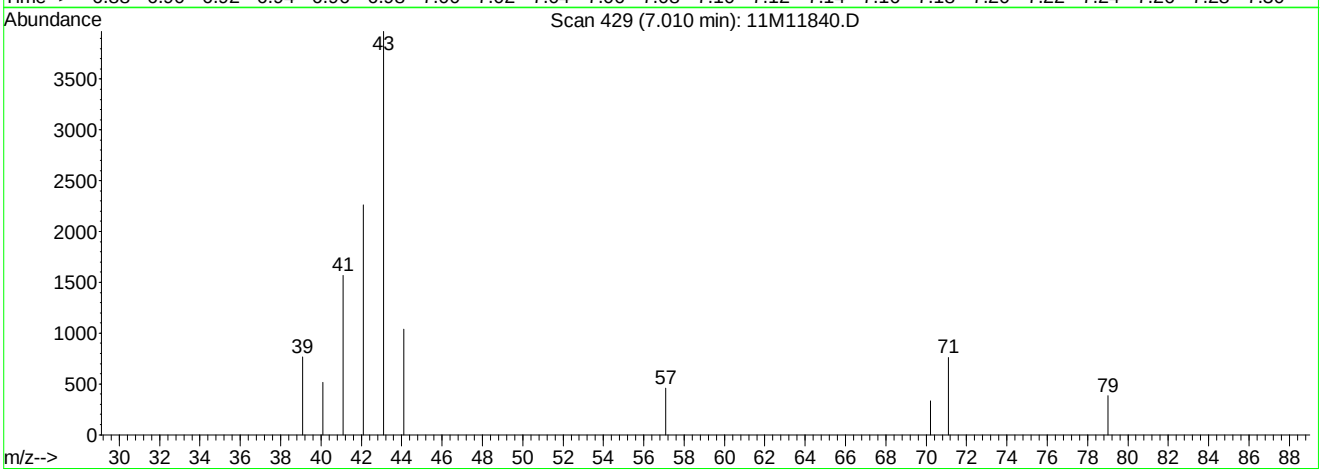

TIC: 11M11840.D

(18) Methyl acetate (T)

7.01min 3.69ug/L

response 17794

Ion	Exp%	Act%
43.00	100	100
74.00	13.60	2.82#
59.00	6.50	1.21#
0.00	0.00	0.00

11M11840.D 8260WT.M Sat May 14 18:46:34 2016

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:46 2016 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Single Level Calibration

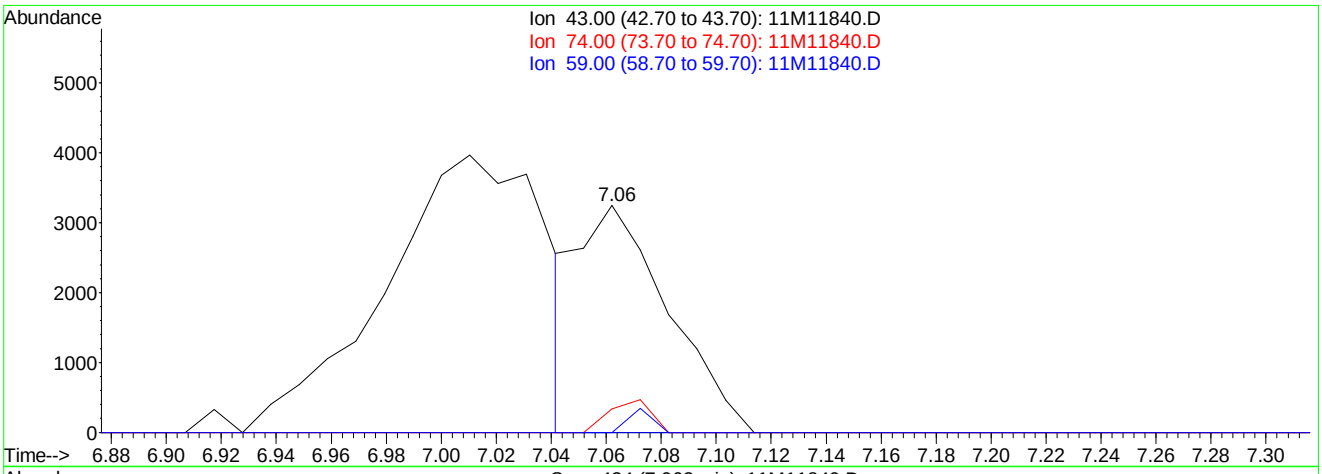

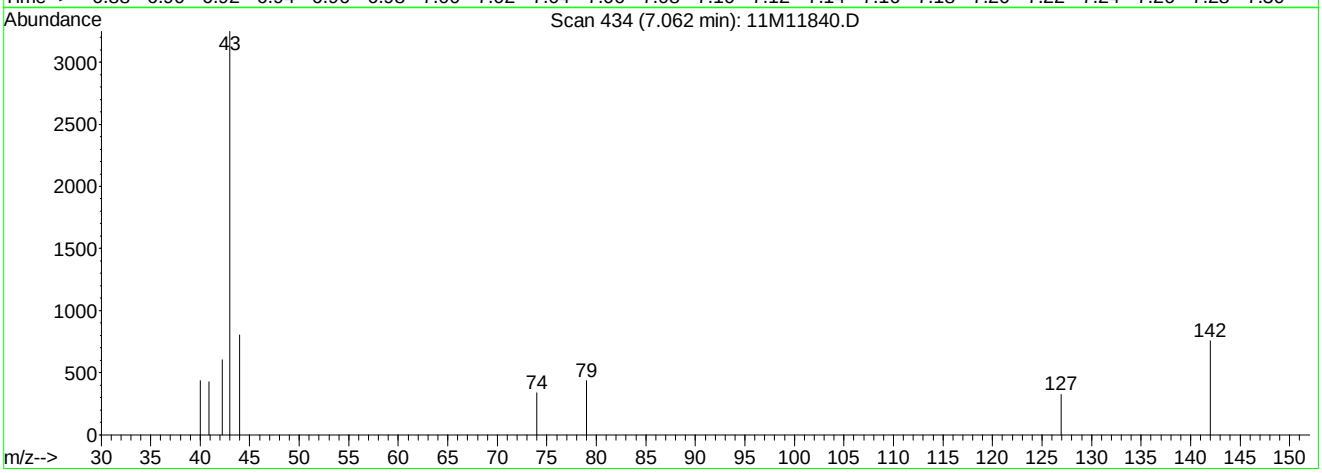

TIC: 11M11840.D

(18) Methyl acetate (T)

7.06min 0.86ug/L mint

response 7344

Ion	Exp%	Act%
43.00	100	100
74.00	13.60	6.84#
59.00	6.50	2.93#
0.00	0.00	0.00

11M11840.D 8260WT.M Sat May 14 18:46:39 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:12:58 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 17:07:56 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	510485	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	424113	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	244127	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	13577	2.3093 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	9.24%#	
43) 1,2-Dichloroethane-d4	10.23	65	16340	2.3640 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	9.44%#	
57) Toluene-d8	12.47	98	46369	2.3570 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	9.44%#	
78) p-Bromofluorobenzene	15.64	95	19139	2.4218 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	9.68%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	33260	4.2909 ug/L	97
3) Chloromethane	3.72	50	29484	4.2588 ug/L	100
4) Vinyl Chloride	3.96	62	24947	4.6446 ug/L	98
5) 1,3-Butadiene	4.00	54	24704	4.8274 ug/L	87
6) Bromomethane	4.85	94	16794	4.7876 ug/L	96
7) Chloroethane	5.00	64	15417	4.1982 ug/L	96
8) Trichlorofluoromethane	5.48	101	50663	4.8750 ug/L	98
9) Diethyl ether	6.01	59	199353	45.0064 ug/L	100
10) Isoprene	6.04	67	30513	4.3864 ug/L	99
11) Acrolein	6.25	56	12345	23.3877 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	23865	4.5585 ug/L	97
13) Acetone	6.35	43	6439	4.2186 ug/L	86
14) 1,1-Dichloroethene	6.56	61	43769	4.6158 ug/L	96
15) Tert-Butyl Alcohol	6.66	59	34212	87.4805 ug/L	100
16) Dimethyl Sulfide	6.81	62	17251	4.0482 ug/L	99
17) Iodomethane	7.06	142	7385	2.0684 ug/L	94
18) Methyl acetate	7.06	43	32363	5.4250 ug/L #	83
19) Methylene Chloride	7.31	84	23476	4.4707 ug/L	98
20) Carbon Disulfide	7.36	76	72931	4.4715 ug/L	98
21) Acrylonitrile	7.49	53	38039	20.0847 ug/L	96
22) Methyl Tert Butyl Ether	7.52	73	57597	4.3071 ug/L	98
23) trans-1,2-Dichloroethene	7.74	96	23369	4.3390 ug/L	99
24) n-Hexane	7.82	57	38507	4.3615 ug/L	99
25) Diisopropyl ether	8.15	45	1105208	48.2180 ug/L	99
26) Vinyl Acetate	8.31	43	24007	7.3442 ug/L	97
27) 1,1-Dichloroethane	8.34	63	51535	4.8316 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	899266	48.1312 ug/L	99
29) 2-Butanone	8.88	43	8098	3.5469 ug/L	98
30) Propionitrile	8.98	54	26204	41.2561 ug/L	97
31) 2,2-Dichloropropane	9.09	77	40285	5.2526 ug/L	97
32) cis-1,2-Dichloroethene	9.15	96	27456	4.6081 ug/L	91
33) Chloroform	9.35	83	48958	4.7306 ug/L	97
34) 1-Bromopropane	9.47	122	4632	4.9482 ug/L	88
35) Bromochloromethane	9.57	130	17073	4.6807 ug/L	99
36) Tetrahydrofuran	9.60	42	59638	39.6839 ug/L	99
38) 1,1,1-Trichloroethane	9.85	97	48123	4.8983 ug/L	100
39) Cyclohexane	9.88	56	51945	4.5931 ug/L	98
40) 1,1-Dichloropropene	10.04	75	33867	4.6344 ug/L	99
41) Carbon Tetrachloride	10.17	117	47434	5.0851 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	615710	46.3601 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:12:58 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 17:07:56 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	40281	4.6727 ug/L	99
45)	Benzene	10.38	78	94223	4.6151 ug/L	99
46)	Trichloroethene	11.08	130	31195	4.7740 ug/L	96
47)	Methylcyclohexane	11.17	83	35731	4.4100 ug/L	96
48)	1,2-Dichloropropane	11.29	63	25973	4.4921 ug/L	93
49)	1,4-Dioxane	11.56	88	2747	80.2363 ug/L	93
50)	Bromodichloromethane	11.57	83	36997	4.7467 ug/L	99
51)	Dibromomethane	11.65	93	13963	4.5774 ug/L	97
52)	2-Chloroethyl Vinyl Ether	11.84	63	11417	3.7313 ug/L	95
53)	4-Methyl-2-Pentanone	11.87	58	6133	3.2690 ug/L	90
54)	cis-1,3-Dichloropropene	12.17	75	36461	4.5343 ug/L	100
55)	Dimethyl Disulfide	12.42	79	18914	3.7032 ug/L	99
58)	Toluene	12.56	91	107617	4.9467 ug/L	100
59)	Ethyl Methacrylate	12.65	69	21187	4.1021 ug/L	99
60)	trans-1,3-Dichloropropene	12.73	75	32824	4.5778 ug/L	99
61)	1,1,2-Trichloroethane	12.94	97	17791	4.3060 ug/L	98
62)	2-Hexanone	12.86	43	11606	3.4244 ug/L	99
63)	1,3-Dichloropropane	13.21	76	30121	4.5460 ug/L	97
64)	Tetrachloroethene	13.33	164	24241	4.8819 ug/L	95
65)	Dibromochloromethane	13.59	129	27989	4.7024 ug/L	95
66)	1,2-Dibromoethane	13.82	107	18147	4.4382 ug/L	96
67)	1-Chlorohexane	13.89	91	33195	4.6591 ug/L	97
68)	Chlorobenzene	14.29	112	79059	4.9583 ug/L	98
69)	1,1,1,2-Tetrachloroethane	14.32	131	31047	4.8956 ug/L	97
70)	Ethylbenzene	14.31	106	39304	4.8168 ug/L	95
71)	m-,p-Xylene	14.39	106	95751	9.7273 ug/L	95
72)	o-Xylene	14.92	106	45759	4.7228 ug/L	96
73)	Styrene	14.95	104	77900	4.8227 ug/L	98
74)	Bromoform	15.43	173	15663	4.1856 ug/L	97
75)	Isopropylbenzene	15.31	105	123883	4.9827 ug/L	99
77)	1,1,2,2-Tetrachloroethane	15.51	83	18105	4.4049 ug/L	100
79)	1,2,3-Trichloropropane	15.70	110	6717	4.7266 ug/L	85
80)	trans-1,4-Dichloro-2-Buten	15.74	53	6067	3.6507 ug/L	69
81)	n-Propylbenzene	15.79	91	143972	5.2435 ug/L	99
82)	Bromobenzene	15.92	156	37345	4.9800 ug/L	93
83)	1,3,5-Trimethylbenzene	15.95	105	106030	5.0309 ug/L	100
84)	2-Chlorotoluene	16.05	91	99279	4.9734 ug/L	100
85)	4-Chlorotoluene	16.09	91	88275	5.1992 ug/L	98
86)	a-Methylstyrene	16.34	118	53766	4.7153 ug/L	98
87)	tert-Butylbenzene	16.39	134	23868	5.2956 ug/L	97
88)	1,2,4-Trimethylbenzene	16.44	105	112072	5.2401 ug/L	99
89)	sec-Butylbenzene	16.65	105	129249	5.1810 ug/L	99
90)	p-Isopropyltoluene	16.79	119	119605	5.2524 ug/L	98
91)	1,3-Dichlorobenzene	16.98	146	71265	5.0271 ug/L	99
92)	1,4-Dichlorobenzene	17.10	146	72437	5.0122 ug/L	96
93)	n-Butylbenzene	17.28	91	100062	4.9277 ug/L	99
94)	1,2-Dichlorobenzene	17.57	146	64925	4.9520 ug/L	98
95)	1,2-Dibromo-3-Chloropropan	18.49	75	3875	4.6567 ug/L	87
96)	1,2,4-Trichlorobenzene	19.55	180	46664	4.8629 ug/L	97
97)	Hexachlorobutadiene	19.69	225	20419	5.1319 ug/L	96
98)	Naphthalene	19.90	128	83612	4.4869 ug/L	99
99)	1,2,3-Trichlorobenzene	20.19	180	40714	4.5323 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M11841.D 8260WT.M Fri May 13 17:12:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:12 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 17:07:56 2016
Response via : Initial Calibration

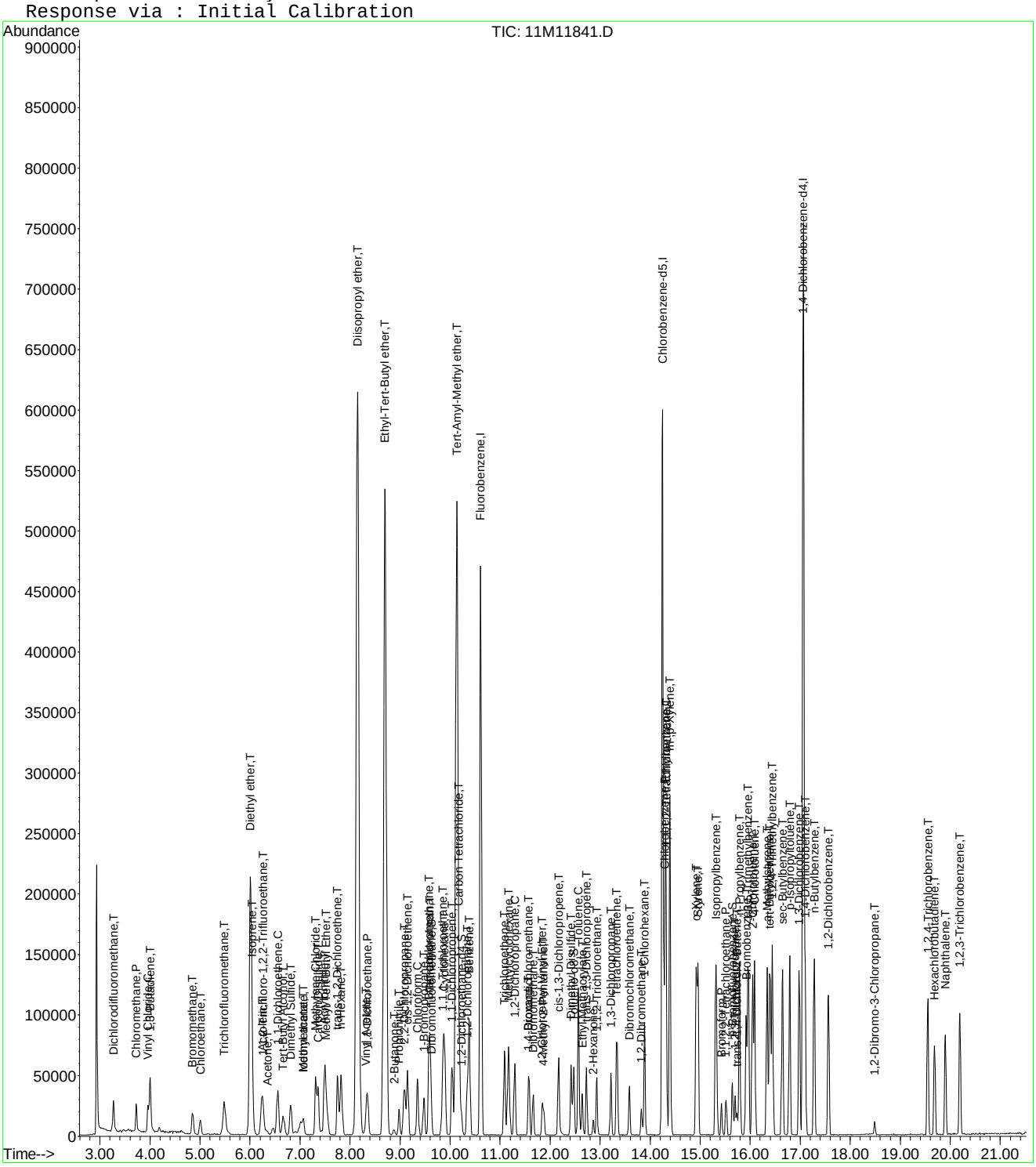

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.1584	16.8	100	0.00
3	P	Chloromethane	5.0000	4.6027	7.9	100	0.00
4	C	Vinyl Chloride	5.0000	4.6895	6.2	100	0.00
5	T	1,3-Butadiene	5.0000	4.6702	6.6	100	0.00
6	T	Bromomethane	5.0000	4.5915	8.2	100	0.00
7	T	Chloroethane	5.0000	4.5105	9.8	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.7781	4.4	100	0.00
9	T	Diethyl ether	50.0000	50.8371	-1.7	100	0.00
10	T	Isoprene	5.0000	4.6688	6.6	100	0.00
11	T	Acrolein	25.0000	24.7297	1.1	100	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.6385	7.2	100	0.01
13	T	Acetone	5.0000	5.3120	-6.2	100	0.01
14	C	1,1-Dichloroethene	5.0000	4.6835	6.3	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	102.0360	-2.0	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.6223	7.6	100	0.00
17	T	Iodomethane	5.0000	3.9124	21.8	100	0.00
18	T	Methyl acetate	5.0000	7.5474	-50.9#	100	0.00
19	T	Methylene Chloride	5.0000	4.8539	2.9	100	0.00
20	T	Carbon Disulfide	5.0000	4.6615	6.8	100	0.00
21	T	Acrylonitrile	25.0000	23.4049	6.4	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.7747	4.5	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.5182	9.6	100	0.00
24	T	n-Hexane	5.0000	4.4700	10.6	100	0.00
25	T	Diisopropyl ether	50.0000	51.4154	-2.8	100	0.00
26	T	Vinyl Acetate	5.0000	5.1698	-3.4	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.9658	0.7	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	51.3996	-2.8	100	0.00
29	T	2-Butanone	5.0000	4.4190	11.6	100	0.01
30	T	Propionitrile	50.0000	48.8210	2.4	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.9614	0.8	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.8145	3.7	100	0.00
33	C	Chloroform	5.0000	4.8039	3.9	100	0.00
34	T	1-Bromopropane	5.0000	5.1449	-2.9	100	0.00
35	T	Bromochloromethane	5.0000	5.0410	-0.8	100	0.00
36	T	Tetrahydrofuran	50.0000	46.0861	7.8	100	0.00
37	S	Dibromofluoromethane	2.5000	2.4302	2.8	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.7984	4.0	100	0.00
39	T	Cyclohexane	5.0000	4.7526	4.9	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.7295	5.4	100	0.00
41	T	Carbon Tetrachloride	5.0000	4.8435	3.1	100	-0.01
42	T	Tert-Amyl-Methyl ether	50.0000	50.6462	-1.3	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.5650	-2.6	100	0.00
44	T	1,2-Dichloroethane	5.0000	4.8665	2.7	100	0.00
45	T	Benzene	5.0000	4.8065	3.9	100	0.00
46	T	Trichloroethene	5.0000	4.8959	2.1	100	-0.01
47	T	Methylcyclohexane	5.0000	4.5439	9.1	100	0.00
48	C	1,2-Dichloropropane	5.0000	4.7864	4.3	100	0.00
49	T	1,4-Dioxane	100.0000	102.6541	-2.7	100	0.01
50	T	Bromodichloromethane	5.0000	4.8566	2.9	100	0.00
51	T	Dibromomethane	5.0000	4.9379	1.2	100	0.00
52	T	2-Chloroethyl Vinyl Ether	5.0000	4.2689	14.6	100	0.00
53	T	4-Methyl-2-Pentanone	5.0000	4.0658	18.7	100	0.00
54	T	cis-1,3-Dichloropropene	5.0000	4.7853	4.3	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	5.0000	4.1252	17.5	100	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	2.5000	2.5163	-0.7	100	0.00
58	C	Toluene	5.0000	5.0124	-0.2	100	0.00
59	T	Ethyl Methacrylate	5.0000	4.6214	7.6	100	0.00
60	T	trans-1,3-Dichloropropene	5.0000	4.7629	4.7	100	0.00
61	T	1,1,2-Trichloroethane	5.0000	4.6730	6.5	100	0.00
62	T	2-Hexanone	5.0000	4.1507	17.0	100	0.00
63	T	1,3-Dichloropropane	5.0000	4.9267	1.5	100	0.00
64	T	Tetrachloroethene	5.0000	4.8551	2.9	100	-0.01
65	T	Dibromochloromethane	5.0000	4.8199	3.6	100	0.00
66	T	1,2-Dibromoethane	5.0000	4.7575	4.8	100	0.00
67	T	1-Chlorohexane	5.0000	4.6895	6.2	100	0.00
68	P	Chlorobenzene	5.0000	5.0264	-0.5	100	0.00
69	T	1,1,1,2-Tetrachloroethane	5.0000	4.8783	2.4	100	0.00
70	C	Ethylbenzene	5.0000	4.8732	2.5	100	0.00
71	T	m-,p-Xylene	10.0000	9.7654	2.3	100	0.00
72	T	o-Xylene	5.0000	4.7954	4.1	100	0.00
73	T	Styrene	5.0000	4.9411	1.2	100	0.00
74	P	Bromoform	5.0000	4.4503	11.0	100	0.00
75	T	Isopropylbenzene	5.0000	4.9091	1.8	100	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	5.0000	4.7624	4.8	100	-0.01
78	S	p-Bromofluorobenzene	2.5000	2.5432	-1.7	100	0.00
79	T	1,2,3-Trichloropropane	5.0000	5.0393	-0.8	100	0.00
80	T	trans-1,4-Dichloro-2-Butene	5.0000	4.0050	19.9	100	0.00
81	T	n-Propylbenzene	5.0000	5.0923	-1.8	100	0.00
82	T	Bromobenzene	5.0000	5.0338	-0.7	100	0.00
83	T	1,3,5-Trimethylbenzene	5.0000	4.9145	1.7	100	-0.01
84	T	2-Chlorotoluene	5.0000	5.0134	-0.3	100	0.00
85	T	4-Chlorotoluene	5.0000	4.9765	0.5	100	0.00
86	T	a-Methylstyrene	5.0000	4.7239	5.5	100	0.00
87	T	tert-Butylbenzene	5.0000	5.2217	-4.4	100	-0.01
88	T	1,2,4-Trimethylbenzene	5.0000	5.1012	-2.0	100	0.00
89	T	sec-Butylbenzene	5.0000	4.9892	0.2	100	0.00
90	T	p-Isopropyltoluene	5.0000	5.0265	-0.5	100	0.00
91	T	1,3-Dichlorobenzene	5.0000	4.9737	0.5	100	0.00
92	T	1,4-Dichlorobenzene	5.0000	4.9875	0.2	100	0.00
93	T	n-Butylbenzene	5.0000	4.7722	4.6	100	0.00
94	T	1,2-Dichlorobenzene	5.0000	4.9741	0.5	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	5.0000	5.1051	-2.1	100	0.00
96	T	1,2,4-Trichlorobenzene	5.0000	4.8858	2.3	100	0.00
97	T	Hexachlorobutadiene	5.0000	4.8528	2.9	100	0.00
98	T	Naphthalene	5.0000	4.7164	5.7	100	0.00
99	T	1,2,3-Trichlorobenzene	5.0000	4.6448	7.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11841.D 8260WT.M Sat May 14 18:48:20 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11842.D Vial: 7
Acq On : 13 May 2016 17:19 Operator: JDS
Sample : WG568769-07 20ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:53 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	512017	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	433937	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	255524	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	58089	10.3664 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 41.48%#		
43) 1,2-Dichloroethane-d4	10.23	65	66804	10.4555 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 41.84%#		
57) Toluene-d8	12.47	98	193532	10.2645 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 41.04%#		
78) p-Bromofluorobenzene	15.64	95	81186	10.3070 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 41.24%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	176636	22.0179 ug/L	99
3) Chloromethane	3.72	50	126901	19.7510 ug/L	98
4) Vinyl Chloride	3.96	62	109592	20.5394 ug/L	98
5) 1,3-Butadiene	4.00	54	116317	21.9237 ug/L	96
6) Bromomethane	4.85	94	73878	20.1380 ug/L	93
7) Chloroethane	5.00	64	71103	20.7401 ug/L	100
8) Trichlorofluoromethane	5.49	101	225913	21.2425 ug/L	99
9) Diethyl ether	6.01	59	321203	81.6650 ug/L	99
10) Isoprene	6.04	67	135641	20.6925 ug/L	98
11) Acrolein	6.24	56	19366	37.8284 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	109792	21.2757 ug/L	99
13) Acetone	6.34	43	27399	22.5356 ug/L	96
14) 1,1-Dichloroethene	6.56	61	201658	21.5139 ug/L	98
15) Tert-Butyl Alcohol	6.67	59	60081	178.6532 ug/L	99
16) Dimethyl Sulfide	6.81	62	75759	20.2383 ug/L	97
17) Iodomethane	7.06	142	67280	17.2594 ug/L	97
18) Methyl acetate	7.07	43	87945	22.4983 ug/L	96
19) Methylene Chloride	7.31	84	99453	20.5013 ug/L	100
20) Carbon Disulfide	7.36	76	327043	20.8410 ug/L	100
21) Acrylonitrile	7.49	53	69618	42.7070 ug/L	95
22) Methyl Tert Butyl Ether	7.52	73	266288	22.0086 ug/L	99
23) trans-1,2-Dichloroethene	7.75	96	107858	20.7912 ug/L	99
24) n-Hexane	7.82	57	184135	21.3111 ug/L	99
25) Diisopropyl ether	8.15	45	1729257	80.2062 ug/L	99
26) Vinyl Acetate	8.31	43	160029	20.6235 ug/L	99
27) 1,1-Dichloroethane	8.34	63	218994	21.0387 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1435318	81.7933 ug/L	100
29) 2-Butanone	8.87	43	39878	21.6958 ug/L	99
30) Propionitrile	8.97	54	47221	87.7149 ug/L	99
31) 2,2-Dichloropropane	9.09	77	166427	20.4352 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	120620	21.0877 ug/L	99
33) Chloroform	9.35	83	208615	20.4085 ug/L	99
34) 1-Bromopropane	9.48	122	19153	19.2424 ug/L	96
35) Bromochloromethane	9.57	130	77189	22.7226 ug/L	99
36) Tetrahydrofuran	9.60	42	109362	84.2581 ug/L	100
38) 1,1,1-Trichloroethane	9.85	97	210871	20.9631 ug/L	98
39) Cyclohexane	9.88	56	235071	21.4428 ug/L	99
40) 1,1-Dichloropropene	10.04	75	151682	21.1188 ug/L	99
41) Carbon Tetrachloride	10.17	117	212111	21.5941 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	1001790	82.1572 ug/L	100

(#) = qualifier out of range (m) = manual integration
11M11842.D 8260WT.M Sat May 14 18:50:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11842.D Vial: 7
Acq On : 13 May 2016 17:19 Operator: JDS
Sample : WG568769-07 20ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:53 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	180438	21.7339	ug/L	99
45)	Benzene	10.38	78	407777	20.7394	ug/L	100
46)	Trichloroethene	11.08	130	132094	20.6692	ug/L	99
47)	Methylcyclohexane	11.17	83	168355	21.3455	ug/L	98
48)	1,2-Dichloropropane	11.29	63	112875	20.7388	ug/L	99
49)	1,4-Dioxane	11.56	88	4948	165.8209	ug/L	99
50)	Bromodichloromethane	11.57	83	163762	21.4329	ug/L	98
51)	Dibromomethane	11.65	93	61028	21.5174	ug/L	98
52)	2-Chloroethyl Vinyl Ether	11.84	63	56664	21.1238	ug/L	99
53)	4-Methyl-2-Pentanone	11.87	58	32621	21.5609	ug/L	99
54)	cis-1,3-Dichloropropene	12.17	75	166399	21.7735	ug/L	100
55)	Dimethyl Disulfide	12.42	79	93808	20.3984	ug/L	99
58)	Toluene	12.56	91	467769	21.2936	ug/L	99
59)	Ethyl Methacrylate	12.64	69	103892	22.1484	ug/L	98
60)	trans-1,3-Dichloropropene	12.73	75	155661	22.0759	ug/L	100
61)	1,1,2-Trichloroethane	12.94	97	85297	21.8971	ug/L	100
62)	2-Hexanone	12.86	43	62113	21.7109	ug/L	99
63)	1,3-Dichloropropane	13.21	76	137448	21.9726	ug/L	98
64)	Tetrachloroethene	13.34	164	106368	20.8217	ug/L	99
65)	Dibromochloromethane	13.59	129	131143	22.0723	ug/L	99
66)	1,2-Dibromoethane	13.82	107	84381	21.6209	ug/L	99
67)	1-Chlorohexane	13.89	91	153420	21.1830	ug/L	100
68)	Chlorobenzene	14.29	112	338669	21.0446	ug/L	99
69)	1,1,1,2-Tetrachloroethane	14.32	131	134571	20.6660	ug/L	98
70)	Ethylbenzene	14.31	106	171752	20.8130	ug/L	97
71)	m-,p-Xylene	14.39	106	419228	41.7882	ug/L	99
72)	o-Xylene	14.92	106	208125	21.3170	ug/L	99
73)	Styrene	14.95	104	353452	21.9116	ug/L	98
74)	Bromoform	15.43	173	78592	21.8247	ug/L	100
75)	Isopropylbenzene	15.31	105	552747	21.4078	ug/L	99
77)	1,1,2,2-Tetrachloroethane	15.52	83	90122	22.6486	ug/L	98
79)	1,2,3-Trichloropropane	15.70	110	30969	20.9562	ug/L	97
80)	trans-1,4-Dichloro-2-Buten	15.74	53	36190	19.3325	ug/L	86
81)	n-Propylbenzene	15.79	91	640711	21.6512	ug/L	100
82)	Bromobenzene	15.92	156	160227	20.6340	ug/L	100
83)	1,3,5-Trimethylbenzene	15.95	105	481759	21.3337	ug/L	100
84)	2-Chlorotoluene	16.05	91	435100	20.9919	ug/L	99
85)	4-Chlorotoluene	16.09	91	391759	21.1004	ug/L	100
86)	a-Methylstyrene	16.34	118	253642	21.2911	ug/L	99
87)	tert-Butylbenzene	16.39	134	101859	21.2903	ug/L	99
88)	1,2,4-Trimethylbenzene	16.44	105	505239	21.9714	ug/L	98
89)	sec-Butylbenzene	16.65	105	586770	21.6398	ug/L	100
90)	p-Isopropyltoluene	16.79	119	539795	21.6735	ug/L	100
91)	1,3-Dichlorobenzene	16.98	146	312832	20.8591	ug/L	99
92)	1,4-Dichlorobenzene	17.10	146	314339	20.6779	ug/L	99
93)	n-Butylbenzene	17.28	91	474312	21.6121	ug/L	99
94)	1,2-Dichlorobenzene	17.57	146	287316	21.0305	ug/L	100
95)	1,2-Dibromo-3-Chloropropan	18.49	75	19607	22.2193	ug/L	89
96)	1,2,4-Trichlorobenzene	19.55	180	212916	21.2982	ug/L	100
97)	Hexachlorobutadiene	19.69	225	91388	20.7507	ug/L	99
98)	Naphthalene	19.90	128	414073	22.3154	ug/L	99
99)	1,2,3-Trichlorobenzene	20.19	180	193437	21.0836	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11842.D Vial: 7
Acq On : 13 May 2016 17:19 Operator: JDS
Sample : WG568769-07 20ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

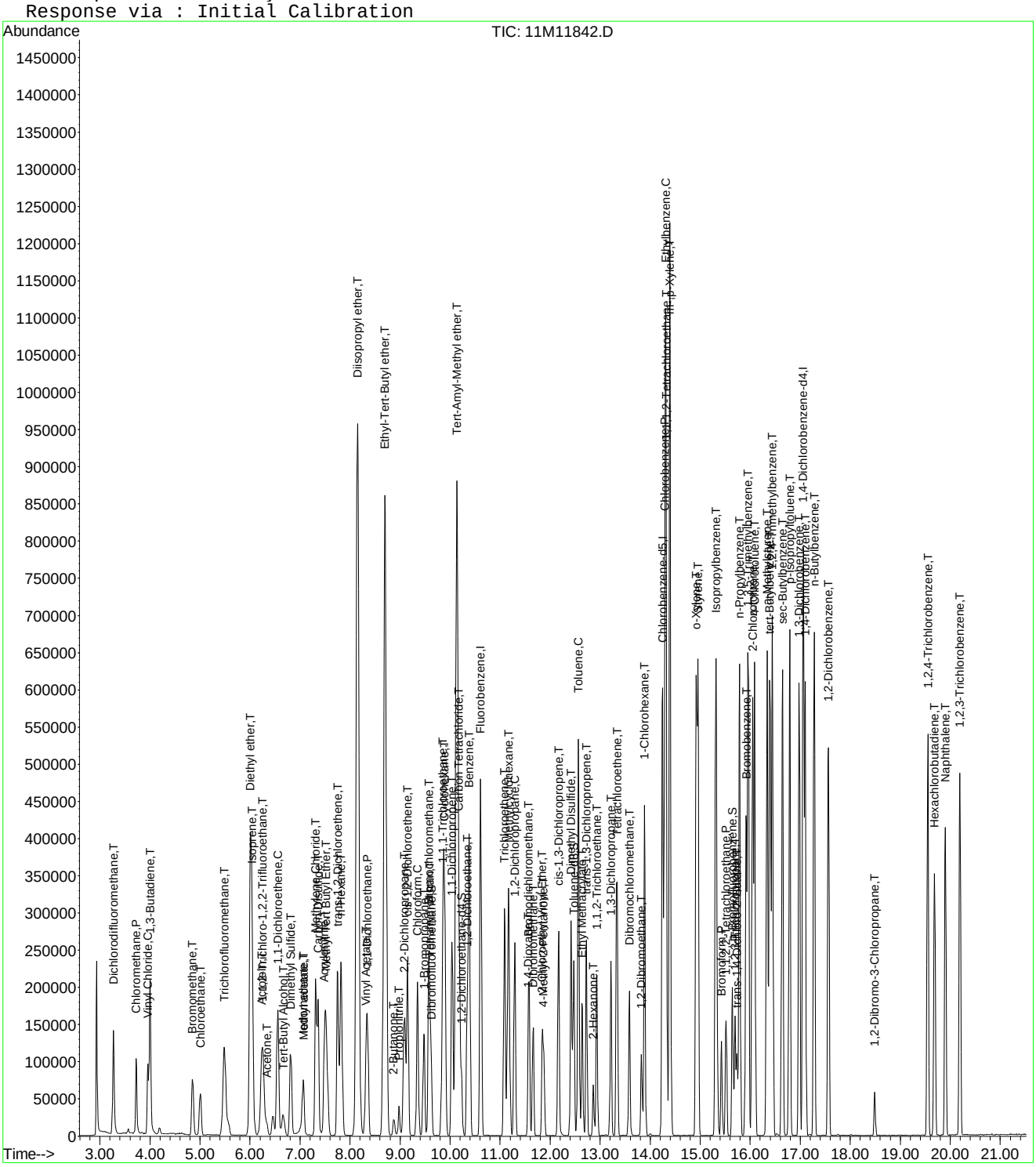

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11843.D Vial: 8
Acq On : 13 May 2016 17:51 Operator: JDS
Sample : WG568769-08 50ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:56 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	521583	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	438582	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	263885	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	139784	24.4879 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.96%		
43) 1,2-Dichloroethane-d4	10.23	65	158200	24.3058 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.24%		
57) Toluene-d8	12.47	98	462969	24.2947 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.16%		
78) p-Bromofluorobenzene	15.64	95	188875	23.2189 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.88%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	416971	51.0228 ug/L	100
3) Chloromethane	3.72	50	287508	43.9273 ug/L	100
4) Vinyl Chloride	3.96	62	261024	48.0232 ug/L	100
5) 1,3-Butadiene	4.00	54	280913	51.9760 ug/L	100
6) Bromomethane	4.85	94	172294	46.1032 ug/L	100
7) Chloroethane	5.00	64	167978	48.0991 ug/L	100
8) Trichlorofluoromethane	5.48	101	519806	47.9806 ug/L	100
9) Diethyl ether	6.01	59	391891	97.8098 ug/L	100
10) Isoprene	6.04	67	331169	49.5943 ug/L	100
11) Acrolein	6.23	56	25228	47.9550 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	255341	48.5730 ug/L	100
13) Acetone	6.34	43	57896	46.7459 ug/L	98
14) 1,1-Dichloroethene	6.56	61	459793	48.1534 ug/L	100
15) Tert-Butyl Alcohol	6.66	59	69395	202.5643 ug/L	100
16) Dimethyl Sulfide	6.81	62	193959	50.8640 ug/L	100
17) Iodomethane	7.06	142	214554	49.3519 ug/L	100
18) Methyl acetate	7.06	43	185465	48.1983 ug/L	100
19) Methylene Chloride	7.31	84	233601	47.2715 ug/L	100
20) Carbon Disulfide	7.36	76	816514	51.0786 ug/L	100
21) Acrylonitrile	7.49	53	84821	51.0789 ug/L	100
22) Methyl Tert Butyl Ether	7.52	73	610666	49.5457 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	252405	47.7624 ug/L	100
24) n-Hexane	7.82	57	449694	51.0913 ug/L	100
25) Diisopropyl ether	8.15	45	2181723	99.3365 ug/L	100
26) Vinyl Acetate	8.31	43	410275	48.2141 ug/L	100
27) 1,1-Dichloroethane	8.34	63	516691	48.7281 ug/L	100
28) Ethyl-Tert-Butyl ether	8.70	59	1783350	99.7625 ug/L	100
29) 2-Butanone	8.87	43	91238	48.7281 ug/L	100
30) Propionitrile	8.97	54	56538	103.0954 ug/L	100
31) 2,2-Dichloropropane	9.09	77	402511	48.5170 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	282222	48.4353 ug/L	100
33) Chloroform	9.35	83	489993	47.0562 ug/L	100
34) 1-Bromopropane	9.48	122	50180	48.4991 ug/L	100
35) Bromochloromethane	9.57	130	179921	51.9932 ug/L	100
36) Tetrahydrofuran	9.60	42	127999	96.8083 ug/L	100
38) 1,1,1-Trichloroethane	9.85	97	497667	48.5667 ug/L	100
39) Cyclohexane	9.88	56	575045	51.4928 ug/L	100
40) 1,1-Dichloropropene	10.04	75	353148	48.2674 ug/L	100
41) Carbon Tetrachloride	10.18	117	493225	49.2921 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	1227500	98.8215 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11843.D Vial: 8
Acq On : 13 May 2016 17:51 Operator: JDS
Sample : WG568769-08 50ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:56 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	419000	49.5434	ug/L	100
45)	Benzene	10.38	78	947514	47.3064	ug/L	100
46)	Trichloroethene	11.09	130	307211	47.1888	ug/L	100
47)	Methylcyclohexane	11.17	83	418631	52.1043	ug/L	100
48)	1,2-Dichloropropane	11.29	63	268423	48.4136	ug/L	100
49)	1,4-Dioxane	11.55	88	5866	189.1665	ug/L	100
50)	Bromodichloromethane	11.57	83	385292	49.5015	ug/L	100
51)	Dibromomethane	11.65	93	142910	49.4635	ug/L	100
52)	2-Chloroethyl Vinyl Ether	11.84	63	133225	48.7541	ug/L	100
53)	4-Methyl-2-Pentanone	11.87	58	75720	49.1295	ug/L	100
54)	cis-1,3-Dichloropropene	12.17	75	394857	50.7199	ug/L	100
55)	Dimethyl Disulfide	12.42	79	236984	50.5867	ug/L	100
58)	Toluene	12.56	91	1095397	49.3360	ug/L	100
59)	Ethyl Methacrylate	12.65	69	249821	52.6944	ug/L	100
60)	trans-1,3-Dichloropropene	12.73	75	366443	51.4187	ug/L	100
61)	1,1,2-Trichloroethane	12.93	97	194150	49.3135	ug/L	100
62)	2-Hexanone	12.86	43	144364	49.9264	ug/L	100
63)	1,3-Dichloropropane	13.21	76	316783	50.1049	ug/L	100
64)	Tetrachloroethene	13.34	164	251037	48.6205	ug/L	100
65)	Dibromochloromethane	13.59	129	310662	51.7330	ug/L	100
66)	1,2-Dibromoethane	13.82	107	196704	49.8676	ug/L	100
67)	1-Chlorohexane	13.89	91	376690	51.4596	ug/L	100
68)	Chlorobenzene	14.29	112	797442	49.0276	ug/L	100
69)	1,1,1,2-Tetrachloroethane	14.32	131	325801	49.5033	ug/L	100
70)	Ethylbenzene	14.31	106	408749	49.0078	ug/L	100
71)	m-,p-Xylene	14.39	106	996141	98.2427	ug/L	100
72)	o-Xylene	14.92	106	492043	49.8632	ug/L	100
73)	Styrene	14.95	104	838125	51.4077	ug/L	100
74)	Bromoform	15.43	173	184100	50.5823	ug/L	100
75)	Isopropylbenzene	15.31	105	1309383	50.1751	ug/L	100
77)	1,1,2,2-Tetrachloroethane	15.52	83	208930	50.8426	ug/L	100
79)	1,2,3-Trichloropropane	15.70	110	72411	46.9859	ug/L	100
80)	trans-1,4-Dichloro-2-Buten	15.74	53	94075	47.5347	ug/L	100
81)	n-Propylbenzene	15.79	91	1522917	49.8325	ug/L	100
82)	Bromobenzene	15.92	156	379178	47.2834	ug/L	100
83)	1,3,5-Trimethylbenzene	15.96	105	1143246	49.0221	ug/L	100
84)	2-Chlorotoluene	16.05	91	1021921	47.7415	ug/L	100
85)	4-Chlorotoluene	16.09	91	930690	48.5394	ug/L	100
86)	a-Methylstyrene	16.34	118	649847	52.8208	ug/L	100
87)	tert-Butylbenzene	16.40	134	241955	48.9705	ug/L	100
88)	1,2,4-Trimethylbenzene	16.44	105	1178963	49.6454	ug/L	100
89)	sec-Butylbenzene	16.65	105	1390388	49.6522	ug/L	100
90)	p-Isopropyltoluene	16.79	119	1282252	49.8529	ug/L	100
91)	1,3-Dichlorobenzene	16.98	146	737967	47.6473	ug/L	100
92)	1,4-Dichlorobenzene	17.10	146	740977	47.1987	ug/L	100
93)	n-Butylbenzene	17.28	91	1126170	49.6883	ug/L	100
94)	1,2-Dichlorobenzene	17.57	146	684016	48.4812	ug/L	100
95)	1,2-Dibromo-3-Chloropropan	18.49	75	42848	46.3023	ug/L	100
96)	1,2,4-Trichlorobenzene	19.55	180	512927	49.6830	ug/L	100
97)	Hexachlorobutadiene	19.69	225	219129	48.1793	ug/L	100
98)	Naphthalene	19.90	128	962852	50.2463	ug/L	100
99)	1,2,3-Trichlorobenzene	20.19	180	453828	47.8975	ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11843.D Vial: 8
Acq On : 13 May 2016 17:51 Operator: JDS
Sample : WG568769-08 50ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

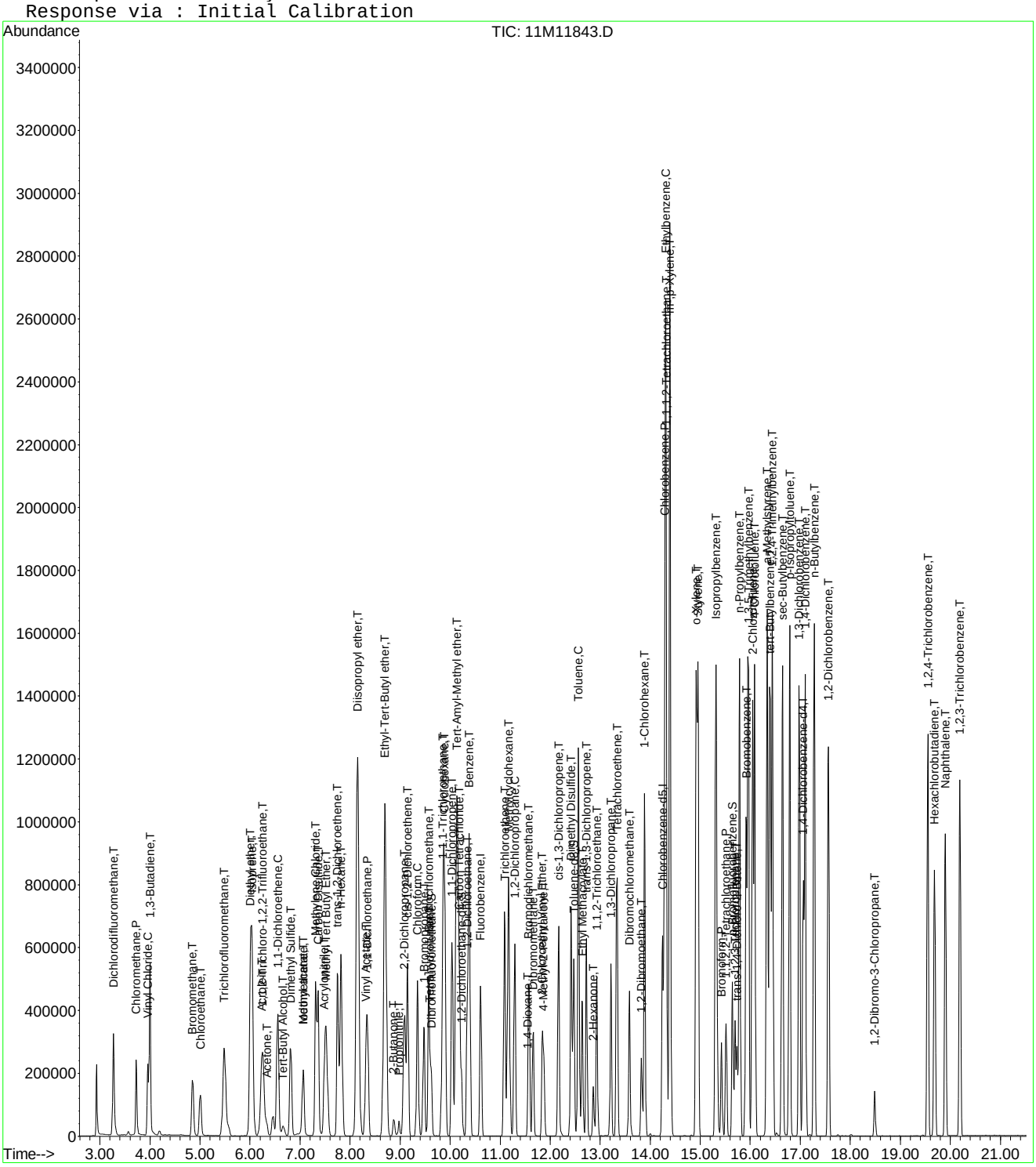

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11844.D Vial: 9
Acq On : 13 May 2016 18:22 Operator: JDS
Sample : WG568769-09 100ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:57 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	541540	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	458522	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	275719	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	307700	51.9175 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 207.68%#		
43) 1,2-Dichloroethane-d4	10.23	65	345779	51.1676 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 204.68%#		
57) Toluene-d8	12.47	98	1011334	50.7627 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 203.04%#		
78) p-Bromofluorobenzene	15.64	95	423157	49.7872 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 199.16%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	918088	108.2020 ug/L	100
3) Chloromethane	3.72	50	641242	94.3625 ug/L	99
4) Vinyl Chloride	3.95	62	586615	103.9481 ug/L	100
5) 1,3-Butadiene	3.99	54	571156	101.7838 ug/L	99
6) Bromomethane	4.85	94	394826	101.7560 ug/L	99
7) Chloroethane	5.00	64	370541	102.1913 ug/L	99
8) Trichlorofluoromethane	5.48	101	1135647	100.9627 ug/L	98
9) Diethyl ether	6.01	59	836495	201.0821 ug/L	99
10) Isoprene	6.04	67	699724	100.9257 ug/L	100
11) Acrolein	6.24	56	55228	99.4421 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	545013	99.8560 ug/L	100
13) Acetone	6.34	43	123799	96.2731 ug/L	95
14) 1,1-Dichloroethene	6.56	61	1004294	101.3022 ug/L	100
15) Tert-Butyl Alcohol	6.66	59	148134	416.4687 ug/L	98
16) Dimethyl Sulfide	6.81	62	401237	101.3432 ug/L	100
17) Iodomethane	7.06	142	471112	102.3553 ug/L	100
18) Methyl acetate	7.07	43	381031	98.0957 ug/L	99
19) Methylene Chloride	7.31	84	501609	97.7649 ug/L	99
20) Carbon Disulfide	7.36	76	1695322	102.1458 ug/L	100
21) Acrylonitrile	7.49	53	184461	106.9881 ug/L	99
22) Methyl Tert Butyl Ether	7.52	73	1312901	102.5951 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	542907	98.9478 ug/L	98
24) n-Hexane	7.82	57	921942	100.8849 ug/L	99
25) Diisopropyl ether	8.15	45	4599625	201.7086 ug/L	99
26) Vinyl Acetate	8.31	43	855488	94.3763 ug/L	99
27) 1,1-Dichloroethane	8.34	63	1111115	100.9254 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	3780769	203.7060 ug/L	100
29) 2-Butanone	8.87	43	198511	102.1130 ug/L	100
30) Propionitrile	8.98	54	118699	208.4678 ug/L	97
31) 2,2-Dichloropropane	9.09	77	914695	106.1904 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	606774	100.2977 ug/L	99
33) Chloroform	9.35	83	1053766	97.4685 ug/L	100
34) 1-Bromopropane	9.48	122	106914	98.8615 ug/L	100
35) Bromochloromethane	9.57	130	387239	107.7795 ug/L	100
36) Tetrahydrofuran	9.60	42	270148	196.7890 ug/L	99
38) 1,1,1-Trichloroethane	9.85	97	1088263	102.2884 ug/L	99
39) Cyclohexane	9.88	56	1213186	104.6320 ug/L	100
40) 1,1-Dichloropropene	10.04	75	775674	102.1101 ug/L	98
41) Carbon Tetrachloride	10.18	117	1074698	103.4456 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	2619501	203.1147 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11844.D Vial: 9
Acq On : 13 May 2016 18:22 Operator: JDS
Sample : WG568769-09 100ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:57 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	895394	101.9714	ug/L	100
45)	Benzene	10.38	78	2041856	98.1867	ug/L	100
46)	Trichloroethene	11.08	130	677193	100.1861	ug/L	99
47)	Methylcyclohexane	11.17	83	867487	103.9915	ug/L	100
48)	1,2-Dichloropropane	11.29	63	580562	100.8530	ug/L	98
49)	1,4-Dioxane	11.56	88	13651	395.0901	ug/L	100
50)	Bromodichloromethane	11.57	83	837797	103.6717	ug/L	99
51)	Dibromomethane	11.65	93	315786	105.2707	ug/L	99
52)	2-Chloroethyl Vinyl Ether	11.84	63	293822	103.5626	ug/L	100
53)	4-Methyl-2-Pentanone	11.87	58	164890	103.0430	ug/L	98
54)	cis-1,3-Dichloropropene	12.17	75	854611	105.7305	ug/L	99
55)	Dimethyl Disulfide	12.42	79	505463	103.9202	ug/L	99
58)	Toluene	12.56	91	2361378	101.7300	ug/L	100
59)	Ethyl Methacrylate	12.65	69	529740	106.8782	ug/L	98
60)	trans-1,3-Dichloropropene	12.73	75	793063	106.4420	ug/L	99
61)	1,1,2-Trichloroethane	12.94	97	418327	101.6330	ug/L	99
62)	2-Hexanone	12.86	43	314588	104.0648	ug/L	99
63)	1,3-Dichloropropane	13.21	76	685844	103.7610	ug/L	100
64)	Tetrachloroethene	13.34	164	550335	101.9528	ug/L	99
65)	Dibromochloromethane	13.59	129	681591	108.5659	ug/L	100
66)	1,2-Dibromoethane	13.82	107	427945	103.7729	ug/L	99
67)	1-Chlorohexane	13.89	91	807177	105.4730	ug/L	98
68)	Chlorobenzene	14.29	112	1705646	100.3046	ug/L	99
69)	1,1,1,2-Tetrachloroethane	14.32	131	704959	102.4557	ug/L	100
70)	Ethylbenzene	14.31	106	883839	101.3614	ug/L	99
71)	m-,p-Xylene	14.39	106	2123651	200.3333	ug/L	98
72)	o-Xylene	14.92	106	1053682	102.1356	ug/L	100
73)	Styrene	14.95	104	1807222	106.0282	ug/L	99
74)	Bromoform	15.43	173	412378	108.3755	ug/L	100
75)	Isopropylbenzene	15.31	105	2813193	103.1127	ug/L	99
77)	1,1,2,2-Tetrachloroethane	15.52	83	454052	105.7501	ug/L	99
79)	1,2,3-Trichloropropane	15.70	110	156532	96.8210	ug/L	100
80)	trans-1,4-Dichloro-2-Buten	15.74	53	203327	97.5343	ug/L	96
81)	n-Propylbenzene	15.79	91	3285915	102.9061	ug/L	99
82)	Bromobenzene	15.92	156	828973	98.9359	ug/L	99
83)	1,3,5-Trimethylbenzene	15.96	105	2483230	101.9102	ug/L	100
84)	2-Chlorotoluene	16.05	91	2208423	98.7437	ug/L	100
85)	4-Chlorotoluene	16.09	91	2020827	100.8710	ug/L	100
86)	a-Methylstyrene	16.34	118	1361545	105.9190	ug/L	99
87)	tert-Butylbenzene	16.40	134	532522	103.1540	ug/L	98
88)	1,2,4-Trimethylbenzene	16.44	105	2546912	102.6457	ug/L	100
89)	sec-Butylbenzene	16.65	105	3003570	102.6569	ug/L	99
90)	p-Isopropyltoluene	16.79	119	2763313	102.8241	ug/L	99
91)	1,3-Dichlorobenzene	16.98	146	1600684	98.9134	ug/L	100
92)	1,4-Dichlorobenzene	17.10	146	1605475	97.8762	ug/L	100
93)	n-Butylbenzene	17.28	91	2452438	103.5609	ug/L	100
94)	1,2-Dichlorobenzene	17.57	146	1481276	100.4827	ug/L	100
95)	1,2-Dibromo-3-Chloropropan	18.49	75	95062	97.5959	ug/L	99
96)	1,2,4-Trichlorobenzene	19.55	180	1100416	102.0133	ug/L	100
97)	Hexachlorobutadiene	19.69	225	486893	102.4572	ug/L	100
98)	Naphthalene	19.90	128	2071229	103.4477	ug/L	100
99)	1,2,3-Trichlorobenzene	20.19	180	980181	99.0092	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11844.D Vial: 9
Acq On : 13 May 2016 18:22 Operator: JDS
Sample : WG568769-09 100ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

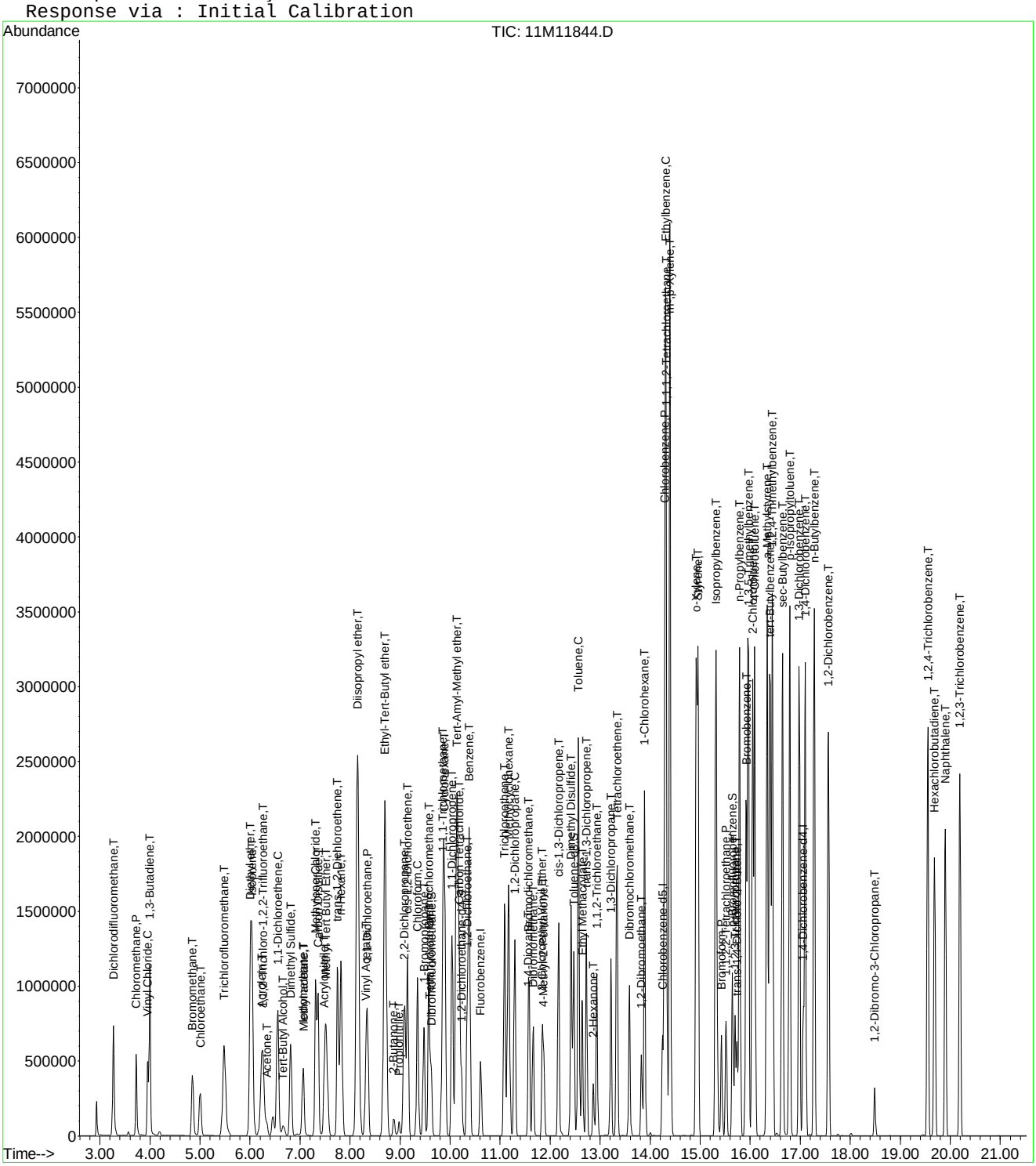

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11845.D Vial: 10
Acq On : 13 May 2016 18:54 Operator: JDS
Sample : WG568769-10 200ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:59 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	552905	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	473364	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	274188	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	629894	104.0960 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 416.40%#		
43) 1,2-Dichloroethane-d4	10.23	65	684792	99.2511 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 397.00%#		
57) Toluene-d8	12.47	98	2068111	100.5516 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 402.20%#		
78) p-Bromofluorobenzene	15.64	95	864999	102.3411 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 409.36%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	1843265	212.7741 ug/L	99
3) Chloromethane	3.72	50	1346993	194.1434 ug/L	100
4) Vinyl Chloride	3.95	62	1199147	208.1209 ug/L	100
5) 1,3-Butadiene	3.99	54	1131910	197.5677 ug/L	97
6) Bromomethane	4.85	94	859963	217.0771 ug/L	100
7) Chloroethane	5.00	64	764060	206.3883 ug/L	100
8) Trichlorofluoromethane	5.48	101	2275404	198.1327 ug/L	100
9) Diethyl ether	6.03	59	2592	0.6103 ug/L #	21
10) Isoprene	6.04	67	1435794	202.8369 ug/L	97
11) Acrolein	6.25	56	3061	6.8231 ug/L	88
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	1123889	201.6837 ug/L	99
13) Acetone	6.34	43	254053	193.5049 ug/L	96
14) 1,1-Dichloroethene	6.56	61	2040432	201.5858 ug/L	99
15) Tert-Butyl Alcohol	6.67	59	7729	21.2829 ug/L #	82
16) Dimethyl Sulfide	6.81	62	830179	205.3739 ug/L	99
17) Iodomethane	7.06	142	969857	206.1133 ug/L	99
18) Methyl acetate	7.07	43	749575	196.5068 ug/L	97
19) Methylene Chloride	7.31	84	1035656	197.7029 ug/L	97
20) Carbon Disulfide	7.36	76	3459748	204.1704 ug/L	99
21) Acrylonitrile	7.52	53	35662	20.2589 ug/L #	39
22) Methyl Tert Butyl Ether	7.52	73	2706665	207.1616 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	1121963	200.2808 ug/L	99
24) n-Hexane	7.82	57	1873652	200.8128 ug/L	99
25) Diisopropyl ether	8.16	45	16567	0.7116 ug/L #	87
26) Vinyl Acetate	8.31	43	1904053	202.8645 ug/L	100
27) 1,1-Dichloroethane	8.34	63	2261904	201.2314 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	9063	0.4783 ug/L	90
29) 2-Butanone	8.87	43	407543	205.3288 ug/L	99
30) Propionitrile	8.97	54	4182	7.1938 ug/L #	60
31) 2,2-Dichloropropane	9.09	77	1850091	210.3692 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	1257477	203.5843 ug/L	100
33) Chloroform	9.35	83	2160999	195.7739 ug/L	100
34) 1-Bromopropane	9.48	122	222798	201.1267 ug/L	98
35) Bromochloromethane	9.57	130	798076	217.5612 ug/L	99
36) Tetrahydrofuran	9.60	42	9110	6.4998 ug/L	97
38) 1,1,1-Trichloroethane	9.85	97	2208198	203.2875 ug/L	99
39) Cyclohexane	9.88	56	2467804	208.4625 ug/L	100
40) 1,1-Dichloropropene	10.04	75	1587009	204.6205 ug/L	99
41) Carbon Tetrachloride	10.18	117	2174730	205.0269 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	6538	0.4965 ug/L #	83

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11845.D Vial: 10
Acq On : 13 May 2016 18:54 Operator: JDS
Sample : WG568769-10 200ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:59 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
44)	1,2-Dichloroethane	10.34	62	1808450	201.7209 ug/L		99
45)	Benzene	10.38	78	4119227	194.0096 ug/L		99
46)	Trichloroethene	11.09	130	1367103	198.0963 ug/L		100
47)	Methylcyclohexane	11.17	83	1789256	210.0812 ug/L		99
48)	1,2-Dichloropropane	11.29	63	1196100	203.5109 ug/L		99
49)	1,4-Dioxane	11.57	88	2656	94.1370 ug/L	#	31
50)	Bromodichloromethane	11.58	83	1721733	208.6734 ug/L		99
51)	Dibromomethane	11.66	93	641583	209.4825 ug/L		100
52)	2-Chloroethyl Vinyl Ether	11.84	63	608231	209.9748 ug/L		99
53)	4-Methyl-2-Pentanone	11.87	58	342251	209.4831 ug/L		99
54)	cis-1,3-Dichloropropene	12.17	75	1772737	214.8108 ug/L		100
55)	Dimethyl Disulfide	12.42	79	1052498	211.9395 ug/L		98
58)	Toluene	12.56	91	4699240	196.0993 ug/L		98
59)	Ethyl Methacrylate	12.65	69	1101451	215.2567 ug/L		97
60)	trans-1,3-Dichloropropene	12.73	75	1627488	211.5866 ug/L		99
61)	1,1,2-Trichloroethane	12.93	97	860113	202.4133 ug/L		99
62)	2-Hexanone	12.86	43	651287	208.6888 ug/L		99
63)	1,3-Dichloropropane	13.21	76	1412360	206.9756 ug/L		99
64)	Tetrachloroethene	13.34	164	1133410	203.3874 ug/L		99
65)	Dibromochloromethane	13.59	129	1409248	217.4313 ug/L		99
66)	1,2-Dibromoethane	13.82	107	889951	209.0389 ug/L		99
67)	1-Chlorohexane	13.89	91	1659272	210.0173 ug/L		97
68)	Chlorobenzene	14.29	112	3416597	194.6214 ug/L		98
69)	1,1,1,2-Tetrachloroethane	14.32	131	1457008	205.1158 ug/L		100
70)	Ethylbenzene	14.31	106	1814385	201.5551 ug/L		91
71)	m-,p-Xylene	14.39	106	4230307	386.5510 ug/L		85
72)	o-Xylene	14.92	106	2156790	202.5071 ug/L		96
73)	Styrene	14.96	104	3630570	206.3240 ug/L		98
74)	Bromoform	15.43	173	854308	217.4778 ug/L		100
75)	Isopropylbenzene	15.31	105	5485636	194.7621 ug/L		97
77)	1,1,2,2-Tetrachloroethane	15.52	83	939708	220.0830 ug/L		98
79)	1,2,3-Trichloropropane	15.70	110	325518	202.0716 ug/L		99
80)	trans-1,4-Dichloro-2-Buten	15.74	53	421012	202.2796 ug/L		97
81)	n-Propylbenzene	15.79	91	6220435	195.8952 ug/L		95
82)	Bromobenzene	15.92	156	1685980	202.3412 ug/L		99
83)	1,3,5-Trimethylbenzene	15.96	105	4875063	201.1866 ug/L		97
84)	2-Chlorotoluene	16.05	91	4287026	192.7532 ug/L		98
85)	4-Chlorotoluene	16.09	91	4030756	202.3214 ug/L		98
86)	a-Methylstyrene	16.34	118	2724122	213.1015 ug/L		98
87)	tert-Butylbenzene	16.40	134	1075661	209.5280 ug/L		96
88)	1,2,4-Trimethylbenzene	16.44	105	4921395	199.4496 ug/L		97
89)	sec-Butylbenzene	16.65	105	5740919	197.3104 ug/L		97
90)	p-Isopropyltoluene	16.79	119	5274037	197.3451 ug/L		95
91)	1,3-Dichlorobenzene	16.98	146	3171808	197.0945 ug/L		99
92)	1,4-Dichlorobenzene	17.10	146	3145357	192.8244 ug/L		99
93)	n-Butylbenzene	17.28	91	4684496	198.9203 ug/L		97
94)	1,2-Dichlorobenzene	17.57	146	2909224	198.4498 ug/L		99
95)	1,2-Dibromo-3-Chloropropan	18.49	75	191088	196.6217 ug/L		99
96)	1,2,4-Trichlorobenzene	19.55	180	2198003	204.9021 ug/L		99
97)	Hexachlorobutadiene	19.69	225	969160	205.0797 ug/L		99
98)	Naphthalene	19.90	128	3994903	200.6399 ug/L		98
99)	1,2,3-Trichlorobenzene	20.19	180	1999949	203.1452 ug/L		99

(#) = qualifier out of range (m) = manual integration
11M11845.D 8260WT.M Sat May 14 18:51:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11845.D Vial: 10
Acq On : 13 May 2016 18:54 Operator: JDS
Sample : WG568769-10 200ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

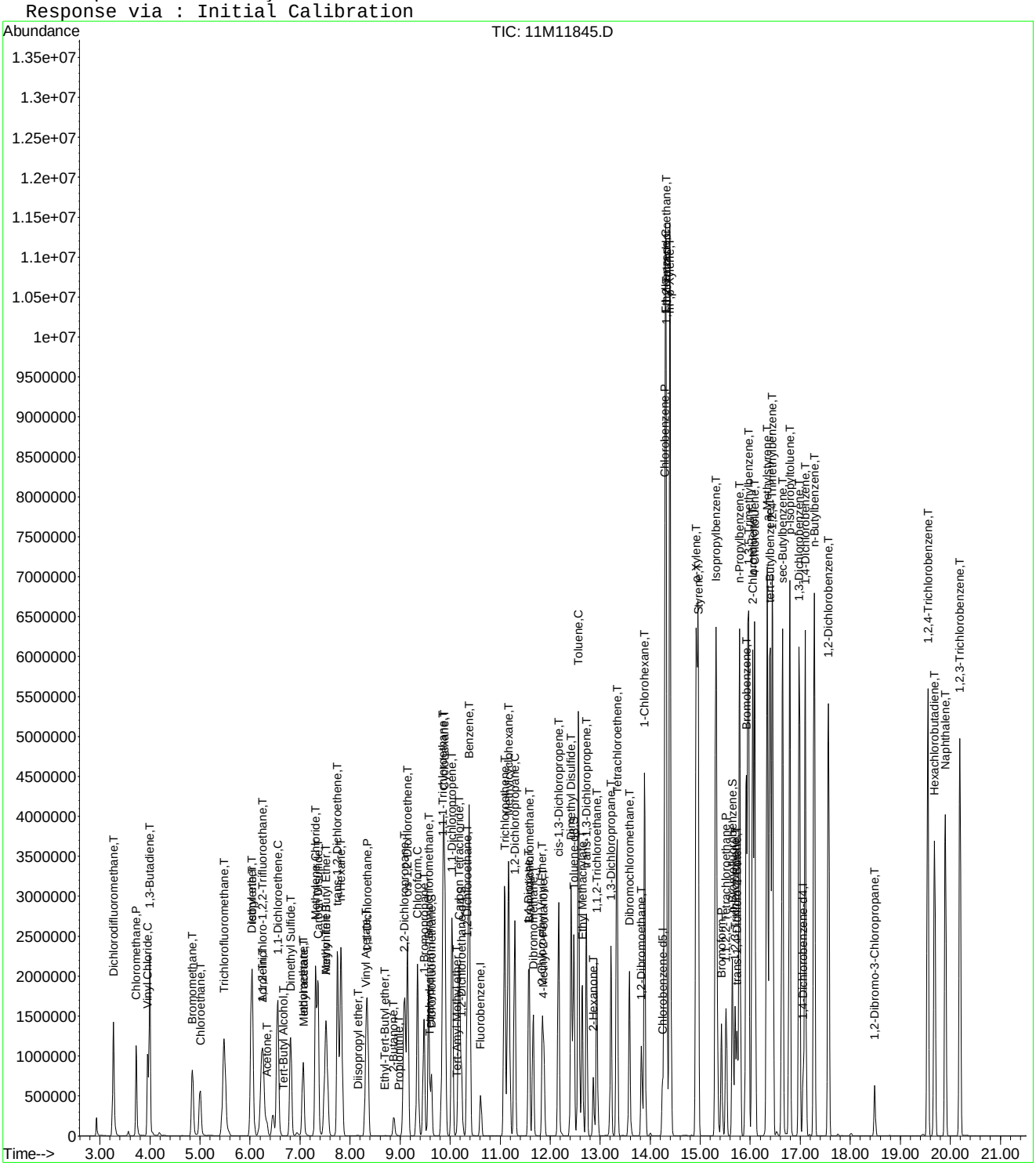
Abundance
TIC: 11M11845.D
Time-->
Dichlorodifluoromethane,T
Chloromethane,P
Vinyl Chloride,C
1,3-Butadiene,T
Bromomethane,T
Chloroethane,T
Trichlorofluoromethane,T
Acrolein
Acetone,T
Tert-Butyl Alcohol,T
1,1-Dichloroethene,C
Dimethyl Sulfide,T
Methylene Chloride,T
Carbon Disulfide,T
Methyl Tert-Butyl Ether,T
Methyl Acetate,T
Methyl Iodide,T
Allyl Chloride,T
Diisopropyl ether,T
Ethyl-Tert-Butyl ether,T
Propanal,T
Vinyl Acetate,T
Chloroprene,T
Acrylonitrile,T
Propionitrile,T
Methacrylonitrile,T
Tert-Amyl Methyl Ether,T
Tert-Amyl Alcohol,T
Fluorobenzene,I
Benzene,T
Carbon Tetrachloride,T
1,2-Dichloroethane,I
1,1,1-Trichloroethane,T
1,1-Dichloropropene,T
Trichloroethene,T
Dibromomethane,T
1,2-Dichloropropane,C
Bromodichloromethane,T
Cyclohexane,T
Methyl Cyclohexane,T
Dibromomethane,T
1,2-Dichloroethane,T
Cyclohexanone,T
Cyclopentanone,T
Cyclohexanone,T
Cyclopentanone,T
Cyclohexanone,T
Cyclopentanone

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11846.D Vial: 11
Acq On : 13 May 2016 19:26 Operator: JDS
Sample : WG568769-11 300ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:51:01 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	543599	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	479542	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	277309	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	905755	152.2472 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 609.00%#		
43) 1,2-Dichloroethane-d4	10.23	65	970758	143.1066 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 572.44%#		
57) Toluene-d8	12.47	98	3002456	144.0987 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 576.40%#		
78) p-Bromofluorobenzene	15.64	95	1285822	150.4179 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 601.68%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	2762707	324.3678 ug/L	99
3) Chloromethane	3.72	50	2113477	309.8323 ug/L	100
4) Vinyl Chloride	3.95	62	1802126	318.1269 ug/L	100
5) 1,3-Butadiene	3.99	54	1562377	277.3715 ug/L	98
6) Bromomethane	4.85	94	1341865	344.5204 ug/L	100
7) Chloroethane	5.00	64	1181546	324.6236 ug/L	100
8) Trichlorofluoromethane	5.48	101	3351045	296.7904 ug/L	99
9) Diethyl ether	6.01	59	1250668	299.5049 ug/L	97
10) Isoprene	6.04	67	2121830	304.8859 ug/L	97
11) Acrolein	6.23	56	87016	155.2272 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	1679276	306.5076 ug/L	99
13) Acetone	6.34	43	352141	272.8074 ug/L	95
14) 1,1-Dichloroethene	6.56	61	3009080	302.3733 ug/L	98
15) Tert-Butyl Alcohol	6.67	59	227782	637.9680 ug/L	97
16) Dimethyl Sulfide	6.81	62	1199487	301.8151 ug/L	96
17) Iodomethane	7.06	142	1359092	295.3515 ug/L	96
18) Methyl acetate	7.07	43	1093862	303.3719 ug/L	97
19) Methylene Chloride	7.31	84	1550974	301.1438 ug/L	91
20) Carbon Disulfide	7.36	76	5025219	301.6304 ug/L	99
21) Acrylonitrile	7.49	53	292311	168.8994 ug/L	94
22) Methyl Tert Butyl Ether	7.52	73	3880019	302.0512 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	1693308	307.4459 ug/L	98
24) n-Hexane	7.82	57	2752540	300.0599 ug/L	99
25) Diisopropyl ether	8.15	45	6621718	289.2841 ug/L	99
26) Vinyl Acetate	8.31	43	2814279	303.7518 ug/L	99
27) 1,1-Dichloroethane	8.34	63	3313473	299.8312 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	5508427	295.6672 ug/L	99
29) 2-Butanone	8.87	43	590742	302.7235 ug/L	97
30) Propionitrile	8.99	54	177454	310.4771 ug/L	98
31) 2,2-Dichloropropane	9.09	77	2735421	316.3626 ug/L	99
32) cis-1,2-Dichloroethene	9.15	96	1856543	305.7181 ug/L	98
33) Chloroform	9.35	83	3144758	289.7739 ug/L	100
34) 1-Bromopropane	9.48	122	329211	301.9597 ug/L	98
35) Bromochloromethane	9.57	130	1179409	327.0194 ug/L	97
36) Tetrahydrofuran	9.60	42	386389	280.3985 ug/L	96
38) 1,1,1-Trichloroethane	9.85	97	3227247	302.1877 ug/L	99
39) Cyclohexane	9.88	56	3625895	311.5332 ug/L	99
40) 1,1-Dichloropropene	10.04	75	2360605	309.5743 ug/L	100
41) Carbon Tetrachloride	10.18	117	3172921	304.2542 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	3912691	302.2388 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11846.D Vial: 11
Acq On : 13 May 2016 19:26 Operator: JDS
Sample : WG568769-11 300ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:51:01 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
44)	1,2-Dichloroethane	10.34	62	2551762	289.5052 ug/L		98
45)	Benzene	10.38	78	5961793	285.5987 ug/L		97
46)	Trichloroethene	11.09	130	2025948	298.5901 ug/L		99
47)	Methylcyclohexane	11.17	83	2657028	317.3092 ug/L		98
48)	1,2-Dichloropropane	11.29	63	1781372	308.2809 ug/L		96
49)	1,4-Dioxane	11.56	88	21540	607.7372 ug/L		100
50)	Bromodichloromethane	11.57	83	2511276	309.5762 ug/L		100
51)	Dibromomethane	11.65	93	939605	312.0413 ug/L		99
52)	2-Chloroethyl Vinyl Ether	11.84	63	879534	308.8327 ug/L		100
53)	4-Methyl-2-Pentanone	11.87	58	505191	314.5081 ug/L		99
54)	cis-1,3-Dichloropropene	12.17	75	2604960	321.0589 ug/L		99
55)	Dimethyl Disulfide	12.42	79	1529785	313.3234 ug/L		99
58)	Toluene	12.56	91	6613670	272.4329 ug/L		95
59)	Ethyl Methacrylate	12.65	69	1618015	312.1351 ug/L		94
60)	trans-1,3-Dichloropropene	12.73	75	2369133	304.0383 ug/L		98
61)	1,1,2-Trichloroethane	12.93	97	1271039	295.2644 ug/L		98
62)	2-Hexanone	12.86	43	950079	300.5074 ug/L		97
63)	1,3-Dichloropropane	13.21	76	2062188	298.3119 ug/L		97
64)	Tetrachloroethene	13.34	164	1691190	299.5697 ug/L		98
65)	Dibromochloromethane	13.59	129	2065480	314.5750 ug/L		100
66)	1,2-Dibromoethane	13.82	107	1334668	309.4588 ug/L		99
67)	1-Chlorohexane	13.89	91	2483371	310.2757 ug/L		95
68)	Chlorobenzene	14.29	112	4911463	276.1698 ug/L		96
69)	1,1,1,2-Tetrachloroethane	14.32	131	2161701	300.4009 ug/L		100
70)	Ethylbenzene	14.31	106	2715675	297.7904 ug/L		79
71)	m-,p-Xylene	14.39	106	6004062	541.5626 ug/L		73
72)	o-Xylene	14.92	106	3202500	296.8179 ug/L		90
73)	Styrene	14.96	104	5278134	296.0902 ug/L		96
74)	Bromoform	15.43	173	1313245	330.0007 ug/L		100
75)	Isopropylbenzene	15.31	105	7610374	266.7178 ug/L		92
77)	1,1,2,2-Tetrachloroethane	15.52	83	1470787	340.5868 ug/L		97
79)	1,2,3-Trichloropropane	15.70	110	494041	303.0514 ug/L		98
80)	trans-1,4-Dichloro-2-Buten	15.74	53	640812	304.0444 ug/L		94
81)	n-Propylbenzene	15.79	91	8405785	261.7374 ug/L		88
82)	Bromobenzene	15.92	156	2530711	300.3025 ug/L		98
83)	1,3,5-Trimethylbenzene	15.96	105	6851753	279.5793 ug/L		93
84)	2-Chlorotoluene	16.05	91	6055423	269.1996 ug/L		95
85)	4-Chlorotoluene	16.09	91	5712933	283.5299 ug/L		94
86)	a-Methylstyrene	16.34	118	4020347	310.9625 ug/L		96
87)	tert-Butylbenzene	16.40	134	1654009	318.5583 ug/L		89
88)	1,2,4-Trimethylbenzene	16.44	105	6879061	275.6504 ug/L		91
89)	sec-Butylbenzene	16.65	105	7999374	271.8373 ug/L		92
90)	p-Isopropyltoluene	16.79	119	7406083	274.0036 ug/L		90
91)	1,3-Dichlorobenzene	16.98	146	4679194	287.4903 ug/L		97
92)	1,4-Dichlorobenzene	17.10	146	4642399	281.3967 ug/L		96
93)	n-Butylbenzene	17.28	91	6723928	282.3084 ug/L		93
94)	1,2-Dichlorobenzene	17.57	146	4360022	294.0672 ug/L		96
95)	1,2-Dibromo-3-Chloropropan	18.49	75	302346	307.2381 ug/L		100
96)	1,2,4-Trichlorobenzene	19.55	180	3482946	321.0328 ug/L		97
97)	Hexachlorobutadiene	19.69	225	1629665	340.9652 ug/L		98
98)	Naphthalene	19.90	128	5970381	296.4815 ug/L	#	96
99)	1,2,3-Trichlorobenzene	20.19	180	3137470	315.1025 ug/L		98

(#) = qualifier out of range (m) = manual integration
11M11846.D 8260WT.M Sat May 14 18:51:02 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11846.D Vial: 11
Acq On : 13 May 2016 19:26 Operator: JDS
Sample : WG568769-11 300ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:51 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

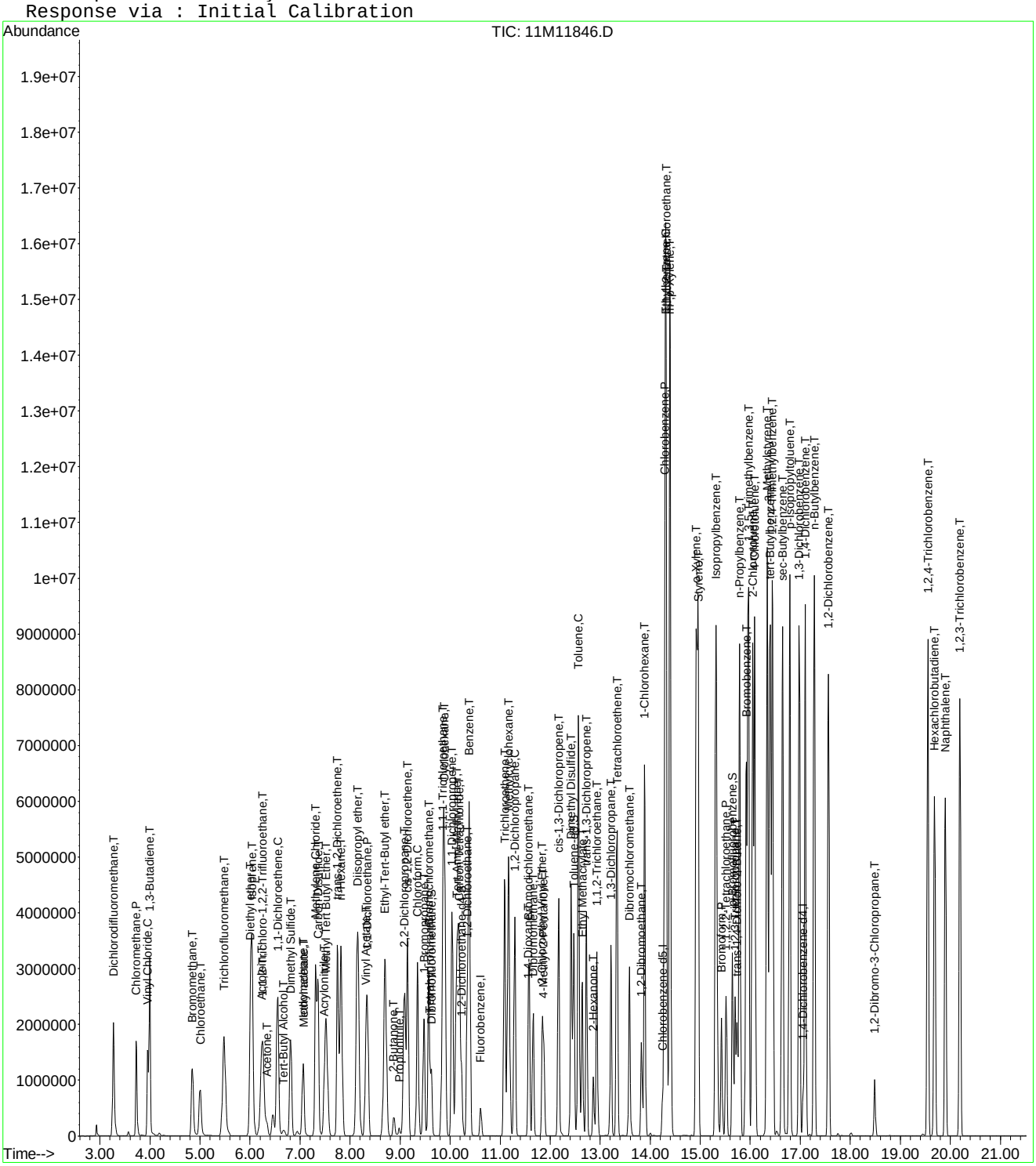

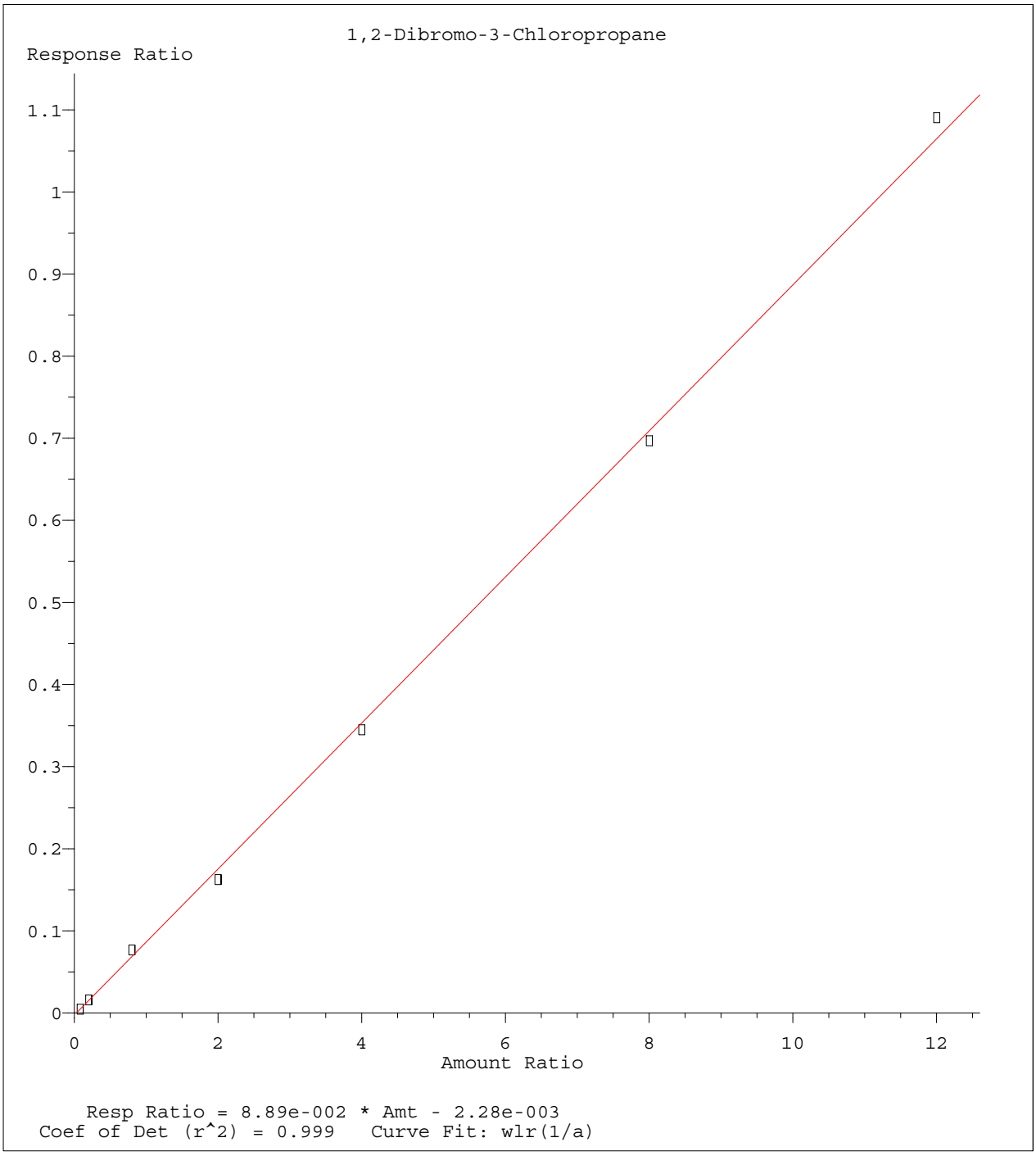

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

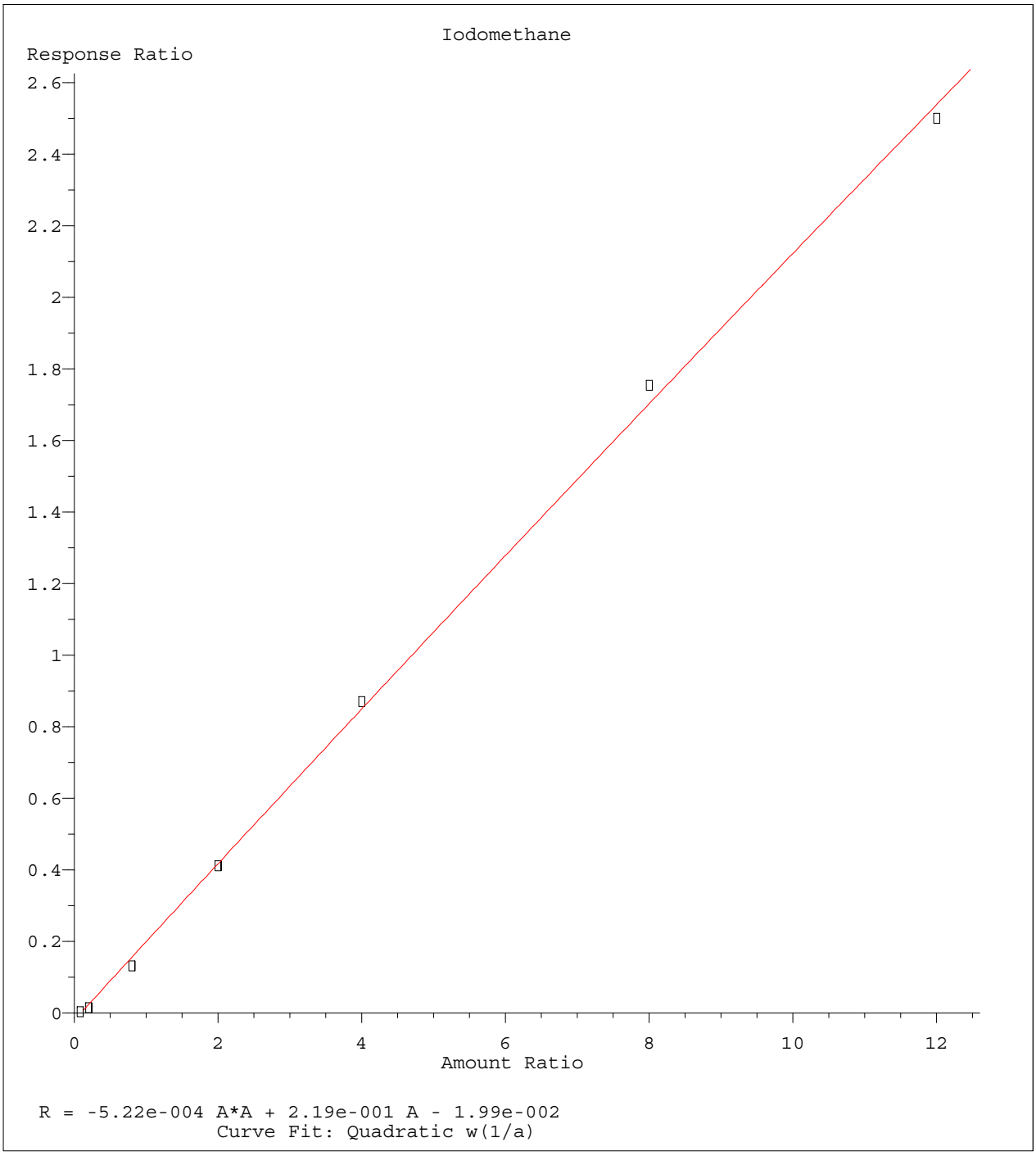

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

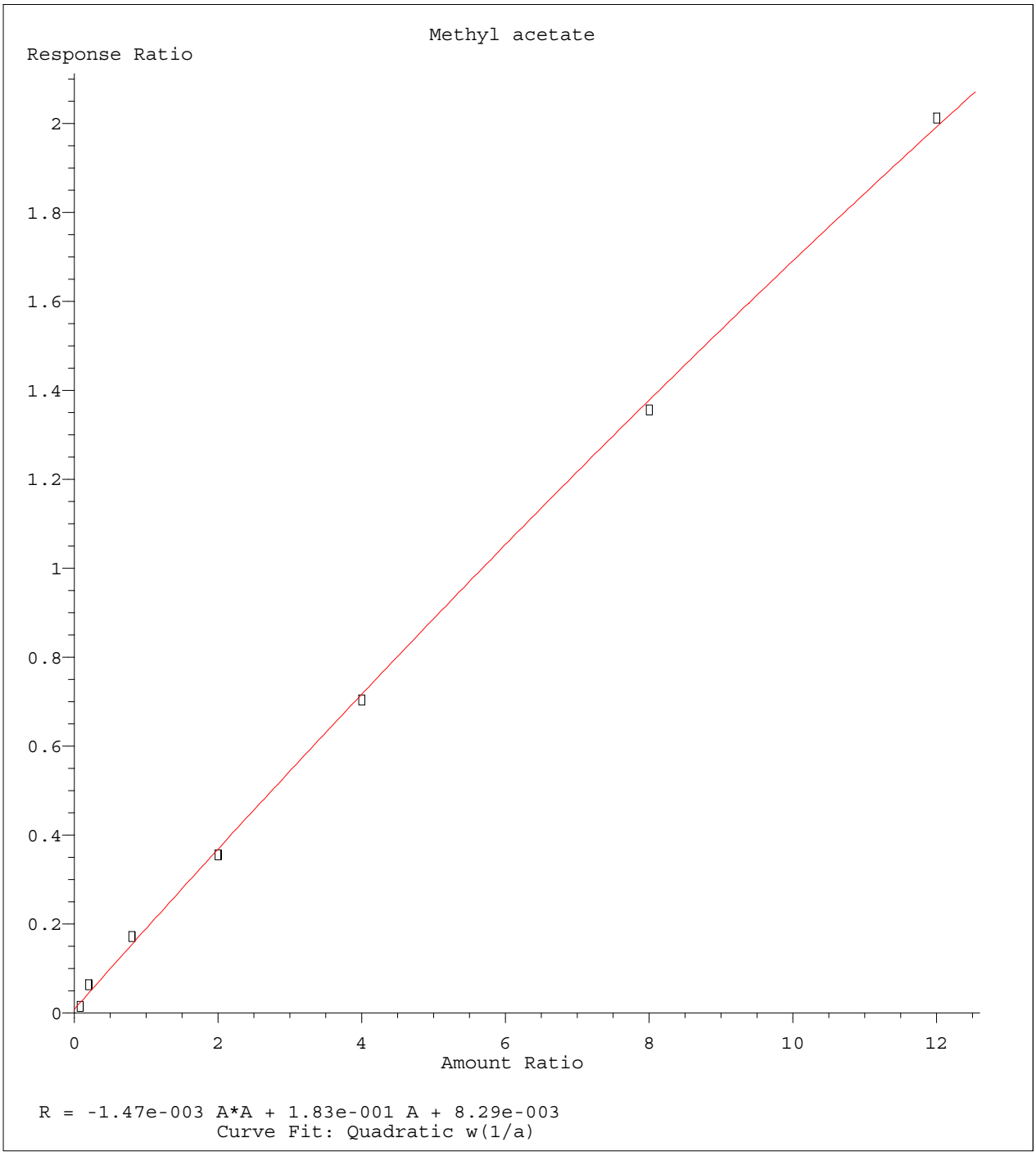

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

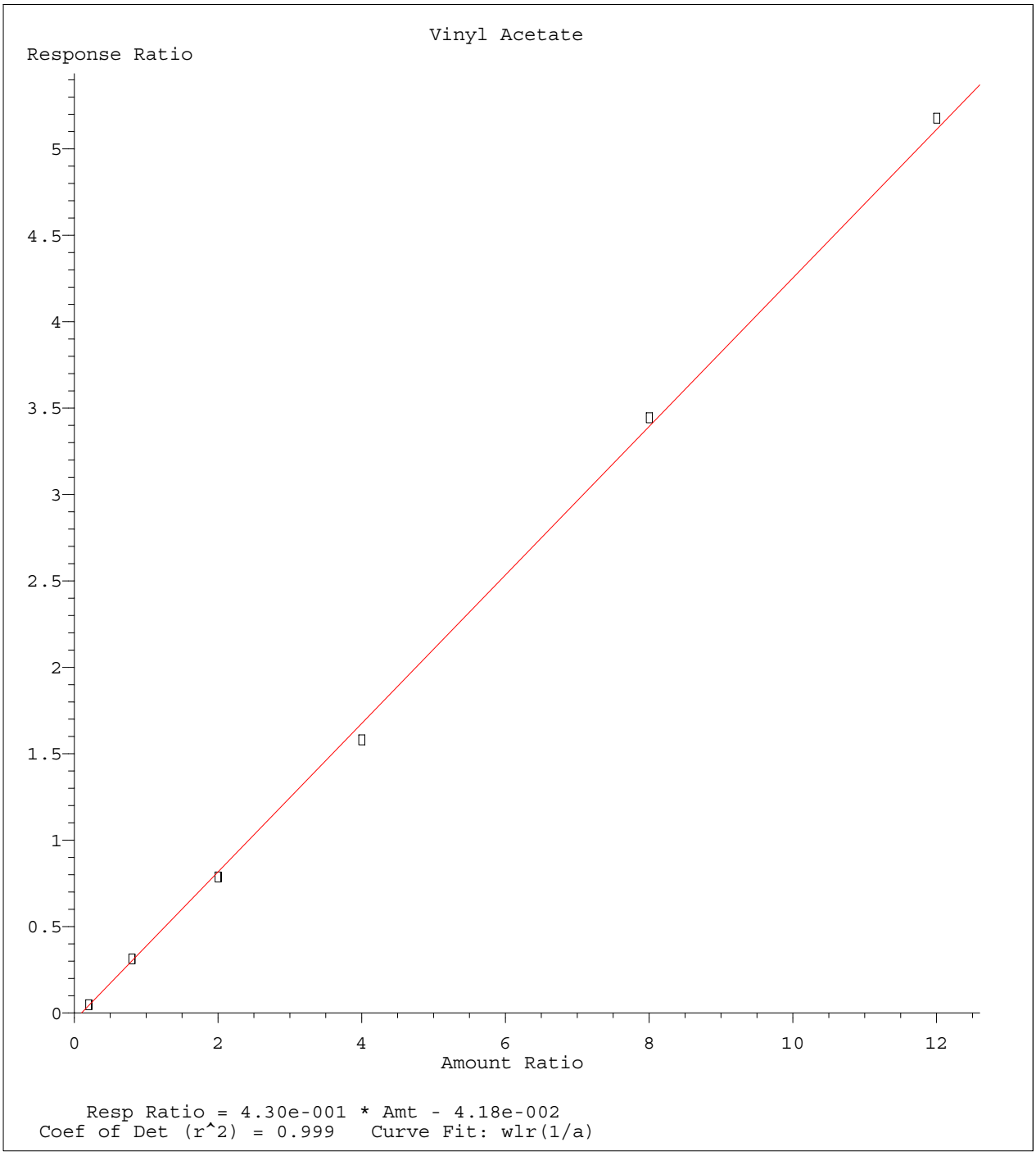

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

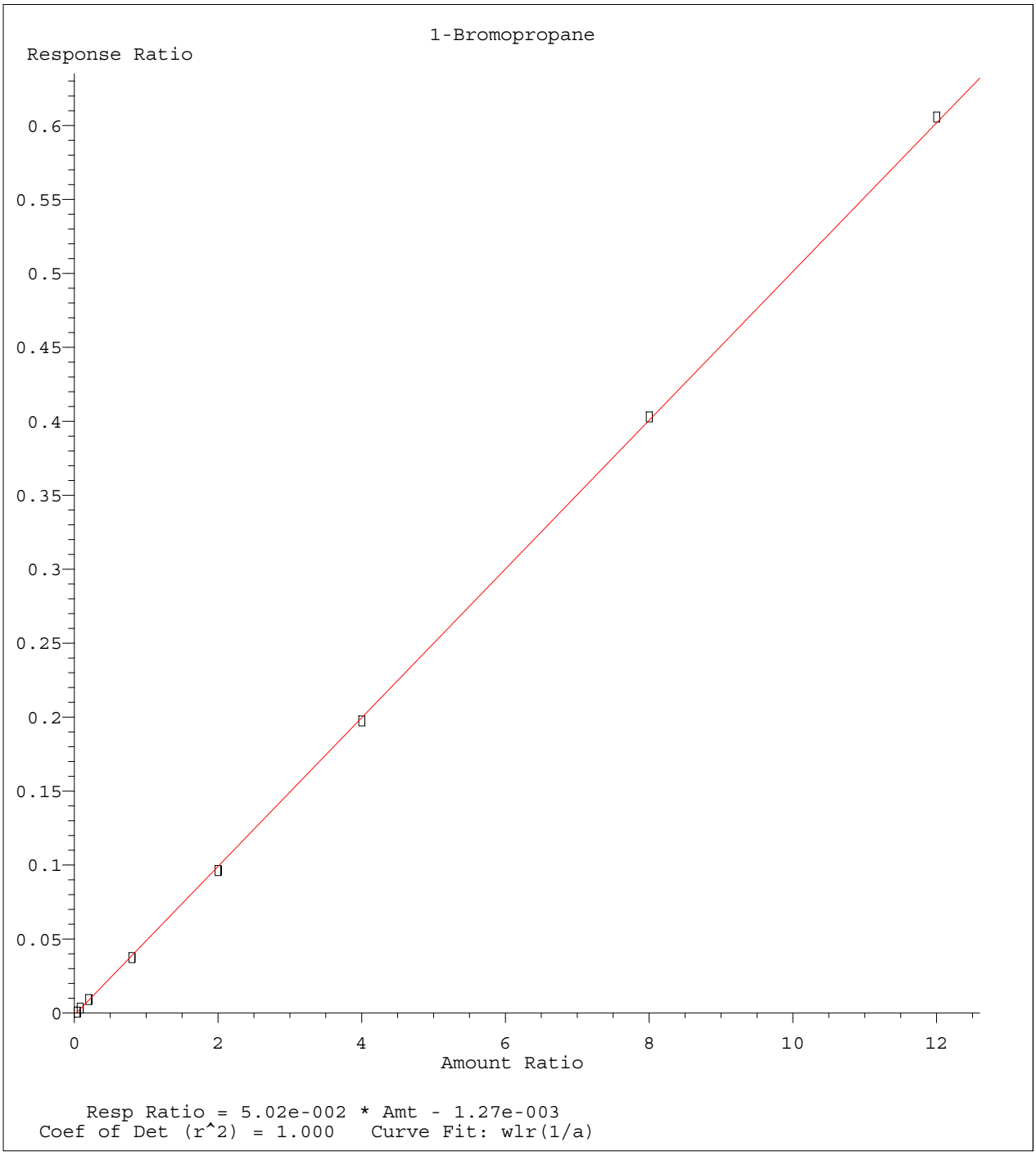

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

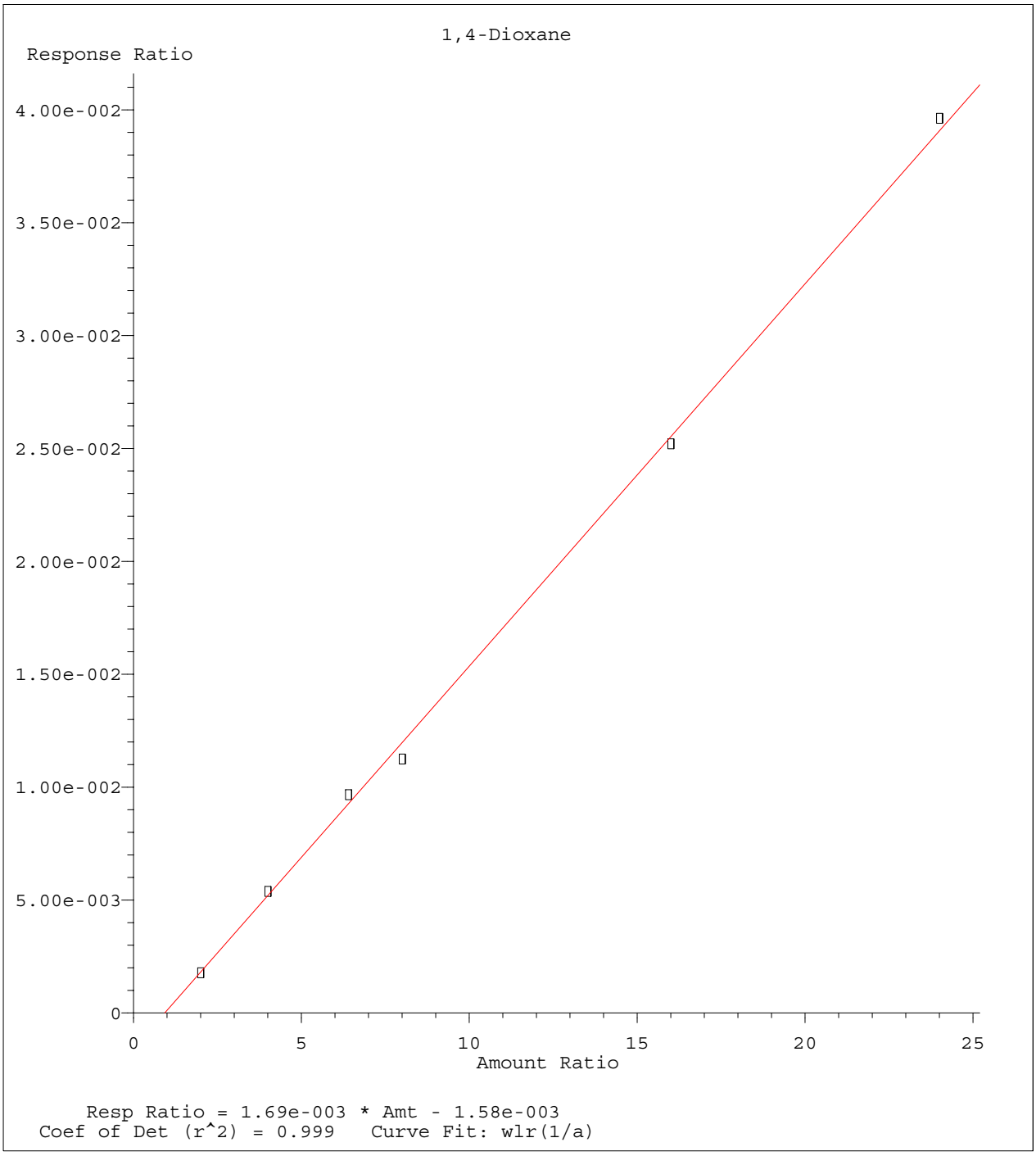

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

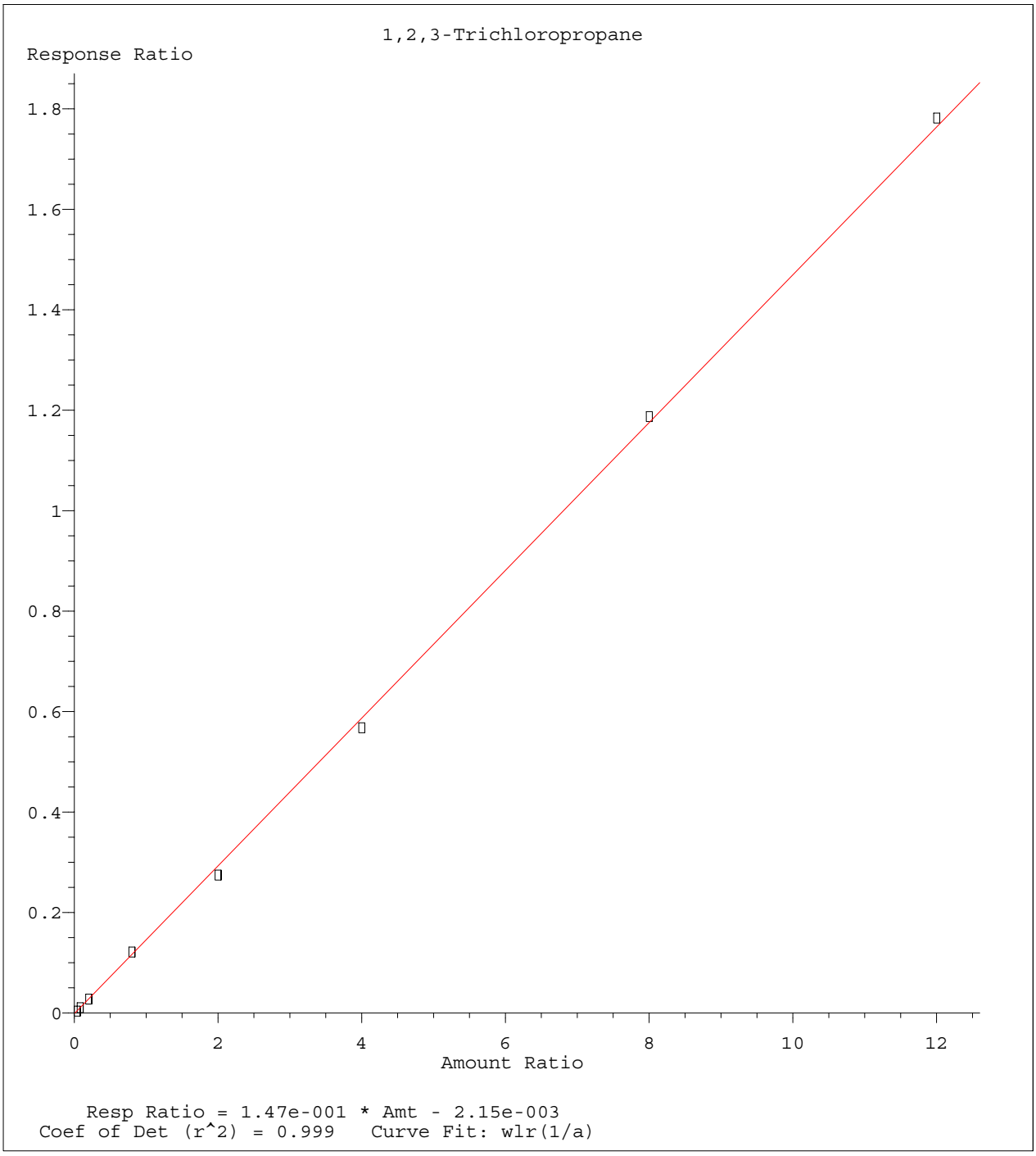

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

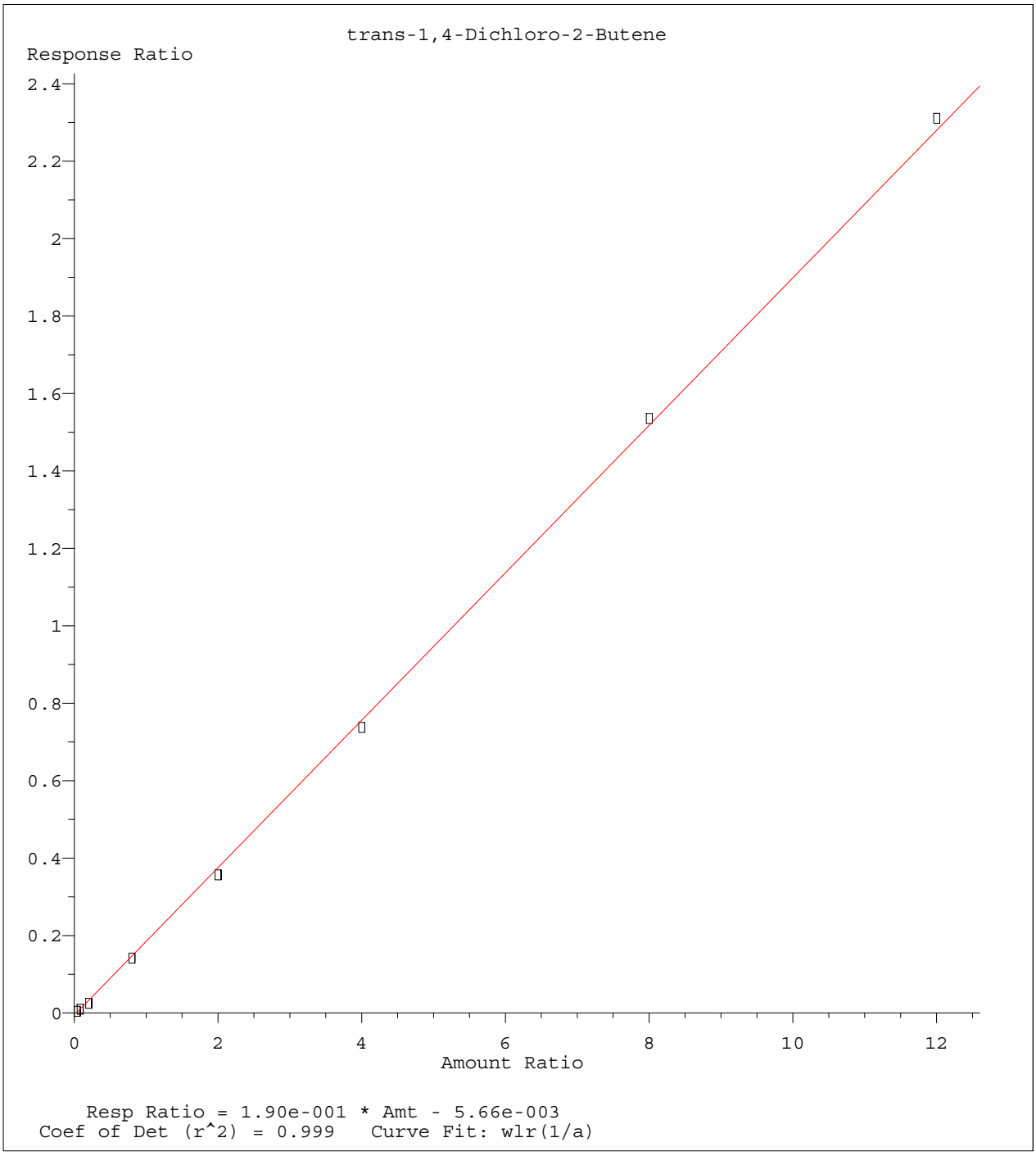

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

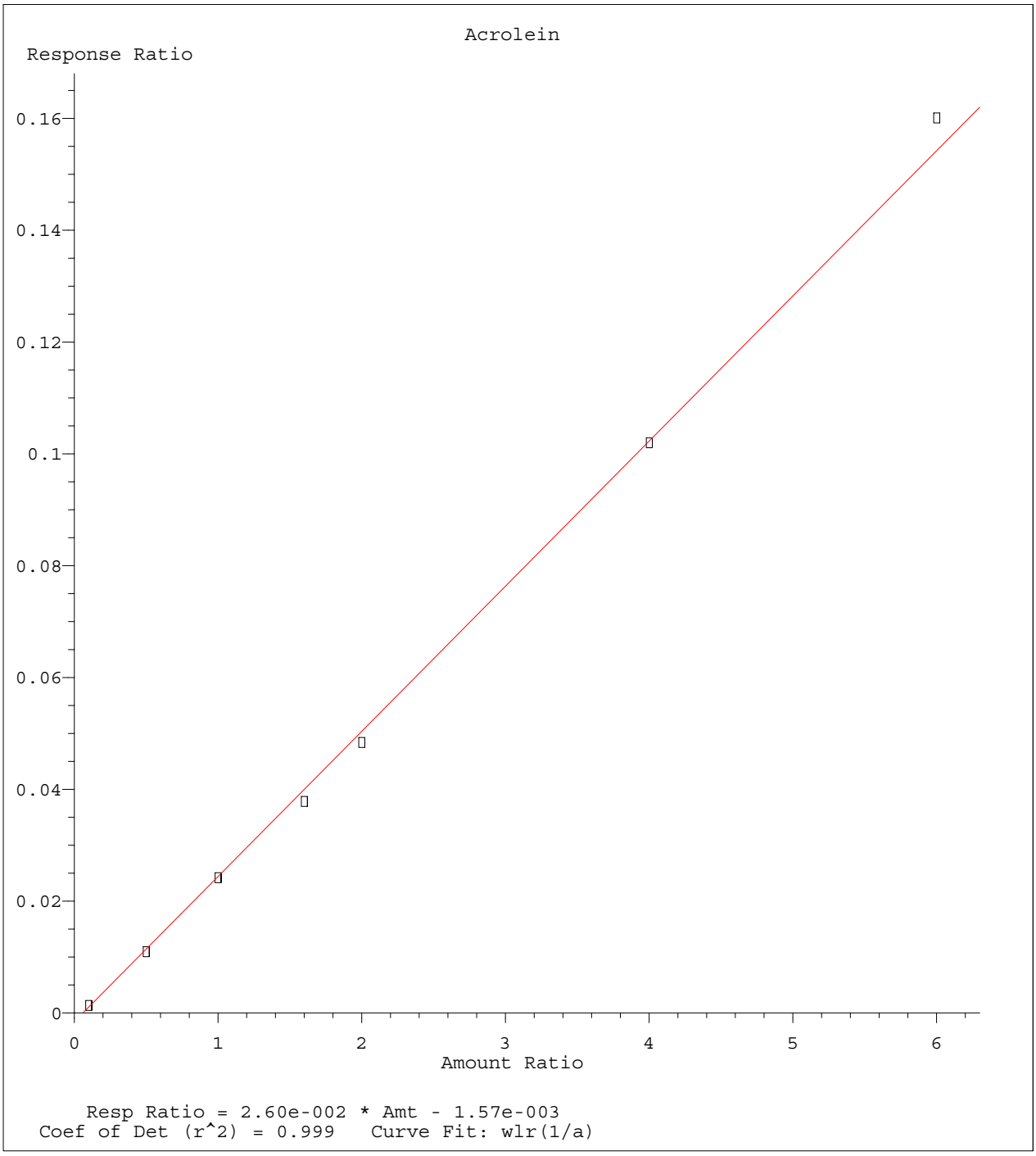

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:47:09 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	559172	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	461765	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	267551	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	155853	25.4675 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.88%		
43) 1,2-Dichloroethane-d4	10.23	65	160000	22.9299 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 91.72%		
57) Toluene-d8	12.47	98	531547	26.4930 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.96%		
78) p-Bromofluorobenzene	15.64	95	203747	24.7040 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.80%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	495777	56.5878 ug/L	98
3) Chloromethane	3.72	50	386673	55.1069 ug/L	100
4) Vinyl Chloride	3.95	62	326996	56.1165 ug/L	100
5) 1,3-Butadiene	3.99	54	212443	36.6650 ug/L	98
6) Bromomethane	4.84	94	202280	50.4885 ug/L	99
7) Chloroethane	5.00	64	220373	58.8601 ug/L	99
8) Trichlorofluoromethane	5.48	101	552017	47.5286 ug/L	99
9) Diethyl ether	6.01	59	453011	105.4639 ug/L	97
10) Isoprene	6.04	67	388108	54.2141 ug/L	93
11) Acrolein	6.23	56	56029	97.7296 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	292836	51.9609 ug/L	99
13) Acetone	6.35	43	65954	49.6723 ug/L	97
14) 1,1-Dichloroethene	6.55	61	486567	47.5319 ug/L	96
15) Tert-Butyl Alcohol	6.67	59	79387	216.1534 ug/L	96
16) Dimethyl Sulfide	6.81	62	290204	70.9875 ug/L	94
17) Iodomethane	7.06	142	176766	38.4128 ug/L	92
18) Methyl acetate	7.07	43	200985	48.7416 ug/L	98
19) Methylene Chloride	7.31	84	275442	51.9916 ug/L	91
20) Carbon Disulfide	7.35	76	765803	44.6859 ug/L	99
21) Acrylonitrile	7.49	53	93674	52.6181 ug/L	100
22) Methyl Tert Butyl Ether	7.52	73	687029	51.9942 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	295337	52.1295 ug/L	97
24) n-Hexane	7.82	57	420811	44.5959 ug/L	99
25) Diisopropyl ether	8.15	45	2449232	104.0201 ug/L	98
26) Vinyl Acetate	8.31	43	395913	43.6417 ug/L	99
27) 1,1-Dichloroethane	8.34	63	551372	48.5033 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1884917	98.3560 ug/L	99
29) 2-Butanone	8.87	43	101045	50.3380 ug/L	98
30) Propionitrile	8.99	54	62190	105.7785 ug/L	98
31) 2,2-Dichloropropane	9.09	77	405332	45.5727 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	332086	53.1618 ug/L	94
33) Chloroform	9.35	83	531122	47.5773 ug/L	100
34) 1-Bromopropane	9.48	122	76460	68.6656 ug/L	96
35) Bromochloromethane	9.57	130	199933	53.8923 ug/L	96
36) Tetrahydrofuran	9.60	42	131835	93.0068 ug/L	96
38) 1,1,1-Trichloroethane	9.85	97	527857	48.0501 ug/L	99
39) Cyclohexane	9.88	56	601180	50.2142 ug/L	99
40) 1,1-Dichloropropene	10.04	75	393057	50.1107 ug/L	100
41) Carbon Tetrachloride	10.18	117	507914	47.3479 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	1406419	105.6143 ug/L	97

(#) = qualifier out of range (m) = manual integration
11M11848.D 8260WT.M Sat May 14 18:47:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:47:09 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	434117	47.8802	ug/L	99
45)	Benzene	10.38	78	1098993	51.1808	ug/L	100
46)	Trichloroethene	11.08	130	365193	52.3242	ug/L	99
47)	Methylcyclohexane	11.17	83	450581	52.3110	ug/L	97
48)	1,2-Dichloropropane	11.29	63	313901	52.8102	ug/L	94
49)	1,4-Dioxane	11.56	88	6366	191.2043	ug/L	95
50)	Bromodichloromethane	11.57	83	413329	49.5339	ug/L	99
51)	Dibromomethane	11.65	93	148822	48.0471	ug/L	97
52)	2-Chloroethyl Vinyl Ether	11.84	63	152083	51.9140	ug/L	99
53)	4-Methyl-2-Pentanone	11.87	58	86849	52.5623	ug/L	99
54)	cis-1,3-Dichloropropene	12.17	75	480729	57.5993	ug/L	99
55)	Dimethyl Disulfide	12.42	79	261188	52.0055	ug/L	96
58)	Toluene	12.56	91	1256481	53.7500	ug/L	100
59)	Ethyl Methacrylate	12.65	69	284944	57.0854	ug/L	90
60)	trans-1,3-Dichloropropene	12.73	75	391013	52.1118	ug/L	97
61)	1,1,2-Trichloroethane	12.93	97	218717	52.7643	ug/L	99
62)	2-Hexanone	12.86	43	158873	52.1857	ug/L	98
63)	1,3-Dichloropropane	13.21	76	374611	56.2767	ug/L	95
64)	Tetrachloroethene	13.34	164	283714	52.1906	ug/L	97
65)	Dibromochloromethane	13.59	129	332092	52.5252	ug/L	99
66)	1,2-Dibromoethane	13.82	107	218604	52.6373	ug/L	99
67)	1-Chlorohexane	13.89	91	420217	54.5237	ug/L	92
68)	Chlorobenzene	14.29	112	912650	53.2936	ug/L	100
69)	1,1,1,2-Tetrachloroethane	14.32	131	353663	51.0389	ug/L	98
70)	Ethylbenzene	14.31	106	460093	52.3943	ug/L	99
71)	m-,p-Xylene	14.39	106	1144896	107.2445	ug/L	98
72)	o-Xylene	14.92	106	568307	54.7003	ug/L	100
73)	Styrene	14.95	104	943635	54.9735	ug/L	98
74)	Bromoform	15.43	173	190959	49.8328	ug/L	99
75)	Isopropylbenzene	15.31	105	1490416	54.2449	ug/L	100
77)	1,1,2,2-Tetrachloroethane	15.52	83	228913	54.9422	ug/L	100
79)	1,2,3-Trichloropropane	15.70	110	78385	50.1407	ug/L	92
80)	trans-1,4-Dichloro-2-Buten	15.74	53	73730	36.9129	ug/L	62
81)	n-Propylbenzene	15.79	91	1753049	56.5769	ug/L	99
82)	Bromobenzene	15.92	156	419932	51.6479	ug/L	99
83)	1,3,5-Trimethylbenzene	15.95	105	1303495	55.1277	ug/L	99
84)	2-Chlorotoluene	16.05	91	1145029	52.7599	ug/L	99
85)	4-Chlorotoluene	16.09	91	1077116	55.4064	ug/L	99
86)	a-Methylstyrene	16.34	118	741671	59.4584	ug/L	99
87)	tert-Butylbenzene	16.40	134	283244	56.5417	ug/L	95
88)	1,2,4-Trimethylbenzene	16.44	105	1296091	53.8297	ug/L	99
89)	sec-Butylbenzene	16.65	105	1586978	55.8961	ug/L	100
90)	p-Isopropyltoluene	16.79	119	1426648	54.7069	ug/L	99
91)	1,3-Dichlorobenzene	16.98	146	827515	52.6969	ug/L	98
92)	1,4-Dichlorobenzene	17.10	146	844174	53.0354	ug/L	98
93)	n-Butylbenzene	17.28	91	1238500	53.8957	ug/L	99
94)	1,2-Dichlorobenzene	17.57	146	766416	53.5772	ug/L	98
95)	1,2-Dibromo-3-Chloropropan	18.49	75	45158	48.1046	ug/L	97
96)	1,2,4-Trichlorobenzene	19.55	180	580278	55.4365	ug/L	99
97)	Hexachlorobutadiene	19.69	225	257859	55.9180	ug/L	98
98)	Naphthalene	19.90	128	993390	51.1296	ug/L	100
99)	1,2,3-Trichlorobenzene	20.19	180	519374	54.0642	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:47 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

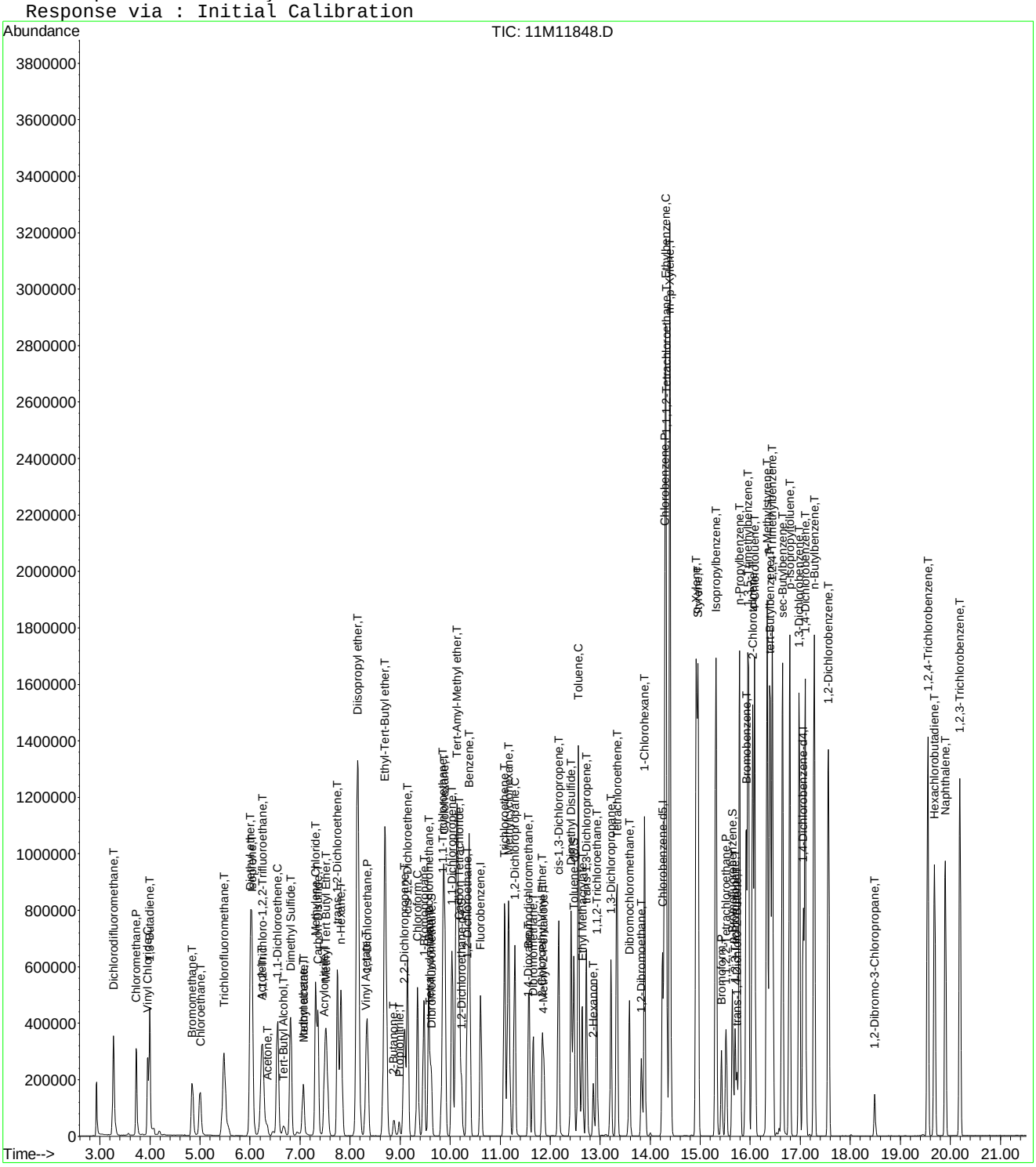

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	107	0.00
2	T	Dichlorodifluoromethane	50.0000	56.5878	-13.2	119	0.00
3	P	Chloromethane	50.0000	55.1069	-10.2	134	0.00
4	C	Vinyl Chloride	50.0000	56.1165	-12.2	125	-0.01
5	T	1,3-Butadiene	50.0000	36.6650	26.7#	76	-0.01
6	T	Bromomethane	50.0000	50.4885	-1.0	117	-0.01
7	T	Chloroethane	50.0000	58.8601	-17.7	131	0.00
8	T	Trichlorofluoromethane	50.0000	47.5286	4.9	106	0.00
9	T	Diethyl ether	100.0000	105.4639	-5.5	116	0.00
10	T	Isoprene	50.0000	54.2141	-8.4	117	0.00
11	T	Acrolein	50.0000	97.7296	-95.5#	222	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	51.9609	-3.9	115	0.00
13	T	Acetone	50.0000	49.6723	0.7	110	0.01
14	C	1,1-Dichloroethene	50.0000	47.5320	4.9	106	-0.01
15	T	Tert-Butyl Alcohol	200.0000	216.1534	-8.1	114	0.01
16	T	Dimethyl Sulfide	50.0000	70.9875	-42.0#	150	0.00
17	T	Iodomethane	50.0000	38.4128	23.2	82	0.00
18	T	Methyl acetate	50.0000	48.7416	2.5	108	0.01
19	T	Methylene Chloride	50.0000	51.9916	-4.0	118	0.00
20	T	Carbon Disulfide	50.0000	44.6859	10.6	94	-0.01
21	T	Acrylonitrile	50.0000	52.6181	-5.2	110	0.00
22	T	Methyl Tert Butyl Ether	50.0000	51.9942	-4.0	113	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.1295	-4.3	117	0.00
24	T	n-Hexane	50.0000	44.5959	10.8	94	0.00
25	T	Diisopropyl ether	100.0000	104.0201	-4.0	112	0.00
26	T	Vinyl Acetate	50.0000	43.6417	12.7	96	0.00
27	P	1,1-Dichloroethane	50.0000	48.5033	3.0	107	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.3560	1.6	106	0.00
29	T	2-Butanone	50.0000	50.3381	-0.7	111	0.00
30	T	Propionitrile	100.0000	105.7786	-5.8	110	0.01
31	T	2,2-Dichloropropane	50.0000	45.5727	8.9	101	0.00
32	T	cis-1,2-Dichloroethene	50.0000	53.1618	-6.3	118	0.00
33	C	Chloroform	50.0000	47.5773	4.8	108	0.00
34	T	1-Bromopropane	50.0000	68.6656	-37.3#	152	0.00
35	T	Bromochloromethane	50.0000	53.8923	-7.8	111	0.00
36	T	Tetrahydrofuran	100.0000	93.0068	7.0	103	0.00
37	S	Dibromofluoromethane	25.0000	25.4675	-1.9	111	0.00
38	T	1,1,1-Trichloroethane	50.0000	48.0501	3.9	106	0.00
39	T	Cyclohexane	50.0000	50.2142	-0.4	105	0.00
40	T	1,1-Dichloropropene	50.0000	50.1107	-0.2	111	0.00
41	T	Carbon Tetrachloride	50.0000	47.3479	5.3	103	0.00
42	T	Tert-Amyl-Methyl ether	100.0000	105.6143	-5.6	115	0.00
43	S	1,2-Dichloroethane-d4	25.0000	22.9299	8.3	101	0.00
44	T	1,2-Dichloroethane	50.0000	47.8802	4.2	104	0.00
45	T	Benzene	50.0000	51.1809	-2.4	116	0.00
46	T	Trichloroethene	50.0000	52.3242	-4.6	119	-0.01
47	T	Methylcyclohexane	50.0000	52.3110	-4.6	108	0.00
48	C	1,2-Dichloropropane	50.0000	52.8102	-5.6	117	0.00
49	T	1,4-Dioxane	200.0000	191.2043	4.4	109	0.01
50	T	Bromodichloromethane	50.0000	49.5339	0.9	107	0.00
51	T	Dibromomethane	50.0000	48.0471	3.9	104	0.00
52	T	2-Chloroethyl Vinyl Ether	50.0000	51.9140	-3.8	114	0.00
53	T	4-Methyl-2-Pentanone	50.0000	52.5623	-5.1	115	0.00
54	T	cis-1,3-Dichloropropene	50.0000	57.5993	-15.2	122	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	50.0000	52.0055	-4.0	110	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	105	0.00
57	S	Toluene-d8	25.0000	26.4930	-6.0	115	0.00
58	C	Toluene	50.0000	53.7500	-7.5	115	0.00
59	T	Ethyl Methacrylate	50.0000	57.0854	-14.2	114	0.00
60	T	trans-1,3-Dichloropropene	50.0000	52.1118	-4.2	107	0.00
61	T	1,1,2-Trichloroethane	50.0000	52.7643	-5.5	113	0.00
62	T	2-Hexanone	50.0000	52.1857	-4.4	110	0.00
63	T	1,3-Dichloropropane	50.0000	56.2767	-12.6	118	0.00
64	T	Tetrachloroethene	50.0000	52.1906	-4.4	113	0.00
65	T	Dibromochloromethane	50.0000	52.5251	-5.1	107	0.00
66	T	1,2-Dibromoethane	50.0000	52.6373	-5.3	111	0.00
67	T	1-Chlorohexane	50.0000	54.5237	-9.0	112	0.00
68	P	Chlorobenzene	50.0000	53.2936	-6.6	114	0.00
69	T	1,1,1,2-Tetrachloroethane	50.0000	51.0388	-2.1	109	0.00
70	C	Ethylbenzene	50.0000	52.3943	-4.8	113	0.00
71	T	m-,p-Xylene	100.0000	107.2445	-7.2	115	0.00
72	T	o-Xylene	50.0000	54.7003	-9.4	115	0.00
73	T	Styrene	50.0000	54.9735	-9.9	113	0.00
74	P	Bromoform	50.0000	49.8327	0.3	104	0.00
75	T	Isopropylbenzene	50.0000	54.2449	-8.5	114	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	101	0.00
77	P	1,1,2,2-Tetrachloroethane	50.0000	54.9422	-9.9	110	0.00
78	S	p-Bromofluorobenzene	25.0000	24.7040	1.2	108	0.00
79	T	1,2,3-Trichloropropane	50.0000	50.1407	-0.3	108	0.00
80	T	trans-1,4-Dichloro-2-Butene	50.0000	36.9129	26.2#	78	0.00
81	T	n-Propylbenzene	50.0000	56.5769	-13.2	115	0.00
82	T	Bromobenzene	50.0000	51.6479	-3.3	111	0.00
83	T	1,3,5-Trimethylbenzene	50.0000	55.1277	-10.3	114	-0.01
84	T	2-Chlorotoluene	50.0000	52.7599	-5.5	112	0.00
85	T	4-Chlorotoluene	50.0000	55.4064	-10.8	116	0.00
86	T	a-Methylstyrene	50.0000	59.4584	-18.9	114	0.00
87	T	tert-Butylbenzene	50.0000	56.5417	-13.1	117	0.00
88	T	1,2,4-Trimethylbenzene	50.0000	53.8297	-7.7	110	0.00
89	T	sec-Butylbenzene	50.0000	55.8961	-11.8	114	0.00
90	T	p-Isopropyltoluene	50.0000	54.7069	-9.4	111	0.00
91	T	1,3-Dichlorobenzene	50.0000	52.6969	-5.4	112	0.00
92	T	1,4-Dichlorobenzene	50.0000	53.0354	-6.1	114	0.00
93	T	n-Butylbenzene	50.0000	53.8957	-7.8	110	0.00
94	T	1,2-Dichlorobenzene	50.0000	53.5772	-7.2	112	0.00
95	T	1,2-Dibromo-3-Chloropropane	50.0000	48.1046	3.8	105	0.00
96	T	1,2,4-Trichlorobenzene	50.0000	55.4365	-10.9	113	0.00
97	T	Hexachlorobutadiene	50.0000	55.9180	-11.8	118	0.00
98	T	Naphthalene	50.0000	51.1296	-2.3	103	0.00
99	T	1,2,3-Trichlorobenzene	50.0000	54.0642	-8.1	114	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11848.D 8260WT.M Sat May 14 18:47:20 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\1\DATA\051316\11M11836.D          Vial: 2
Acq On    : 13 May 2016  14:15                        Operator: JDS
Sample    : WG568769-01 50ng BFB STD 8260             Inst    : hpms11
Misc      : 1,1 STD76034                              Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title     : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
```

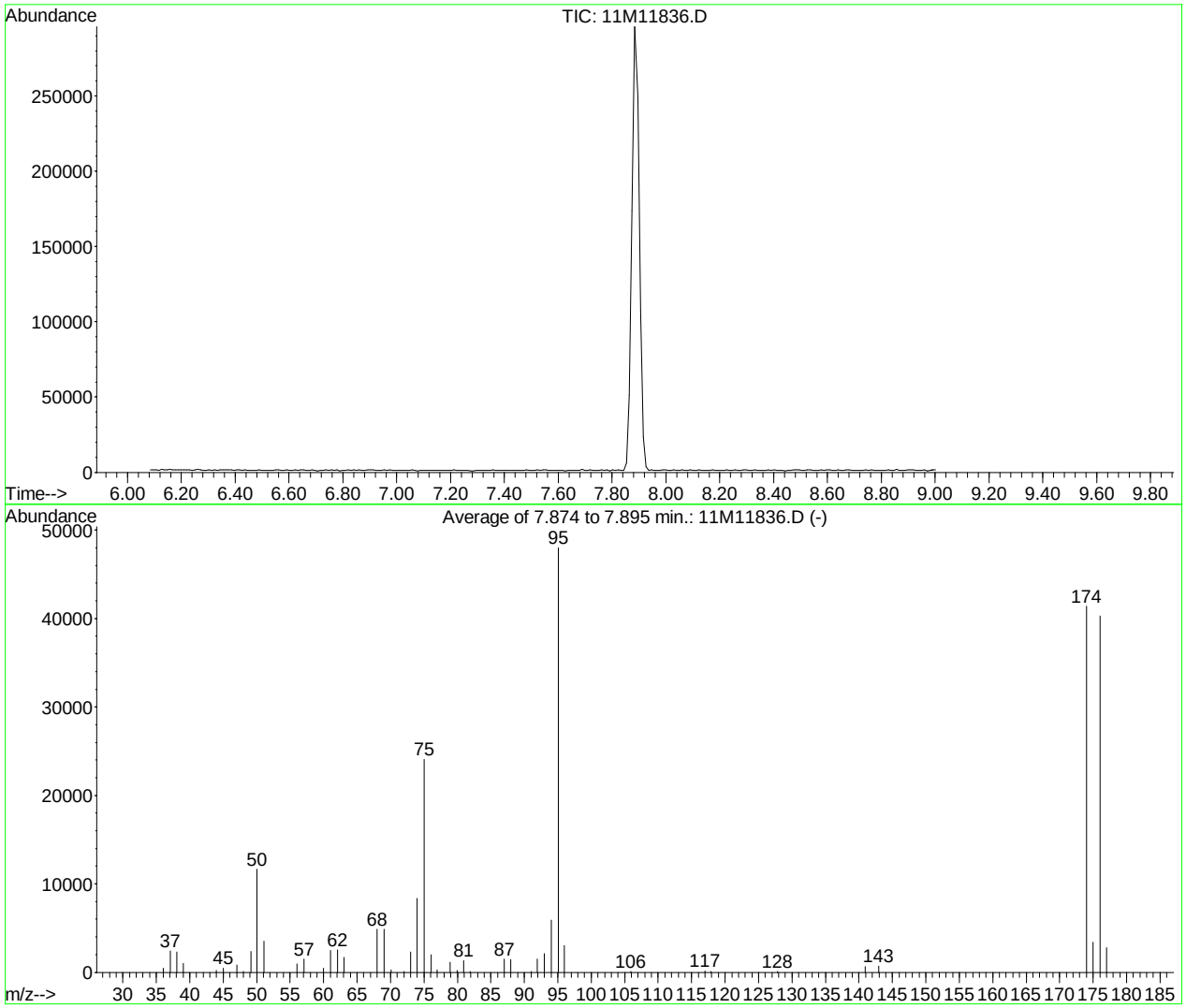

AutoFind: Scans 174, 175, 176; Background Corrected with Scan 169

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	24.2	11638	PASS
75	95	30	60	50.2	24088	PASS
95	95	100	100	100.0	48016	PASS
96	95	5	9	6.3	3008	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	86.2	41402	PASS
175	174	5	9	8.3	3421	PASS
176	174	95	101	97.3	40288	PASS
177	176	5	9	6.9	2789	PASS

11M11836.D 8260WT.M Tue May 17 14:18:03 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062216\11M12803.D Vial: 6
Acq On : 22 Jun 2016 17:47 Operator: JDS
Sample : WG573776-01 BLANK STD 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 24 14:57:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	634960	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	558566	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	320378	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	175648	25.2763 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.12%		
43) 1,2-Dichloroethane-d4	10.23	65	185042	23.3535 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 93.40%		
57) Toluene-d8	12.47	98	606105	24.9737 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.88%		
78) p-Bromofluorobenzene	15.64	95	228605	23.1476 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.60%		

Target Compounds

					Qvalue
3) Chloromethane	3.71	50	1290	0.1619 ug/L	100
6) Bromomethane	4.85	94	1156	0.2541 ug/L	88
13) Acetone	6.36	43	196	0.1300 ug/L #	49
16) Dimethyl Sulfide	6.81	62	689	0.1484 ug/L #	1
36) Tetrahydrofuran	9.60	42	1673	1.0394 ug/L #	63

(#) = qualifier out of range (m) = manual integration
11M12803.D 8260WT.M Fri Jun 24 14:57:42 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062216\11M12803.D Vial: 6
Acq On : 22 Jun 2016 17:47 Operator: JDS
Sample : WG573776-01 BLANK STD 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 24 14:57 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

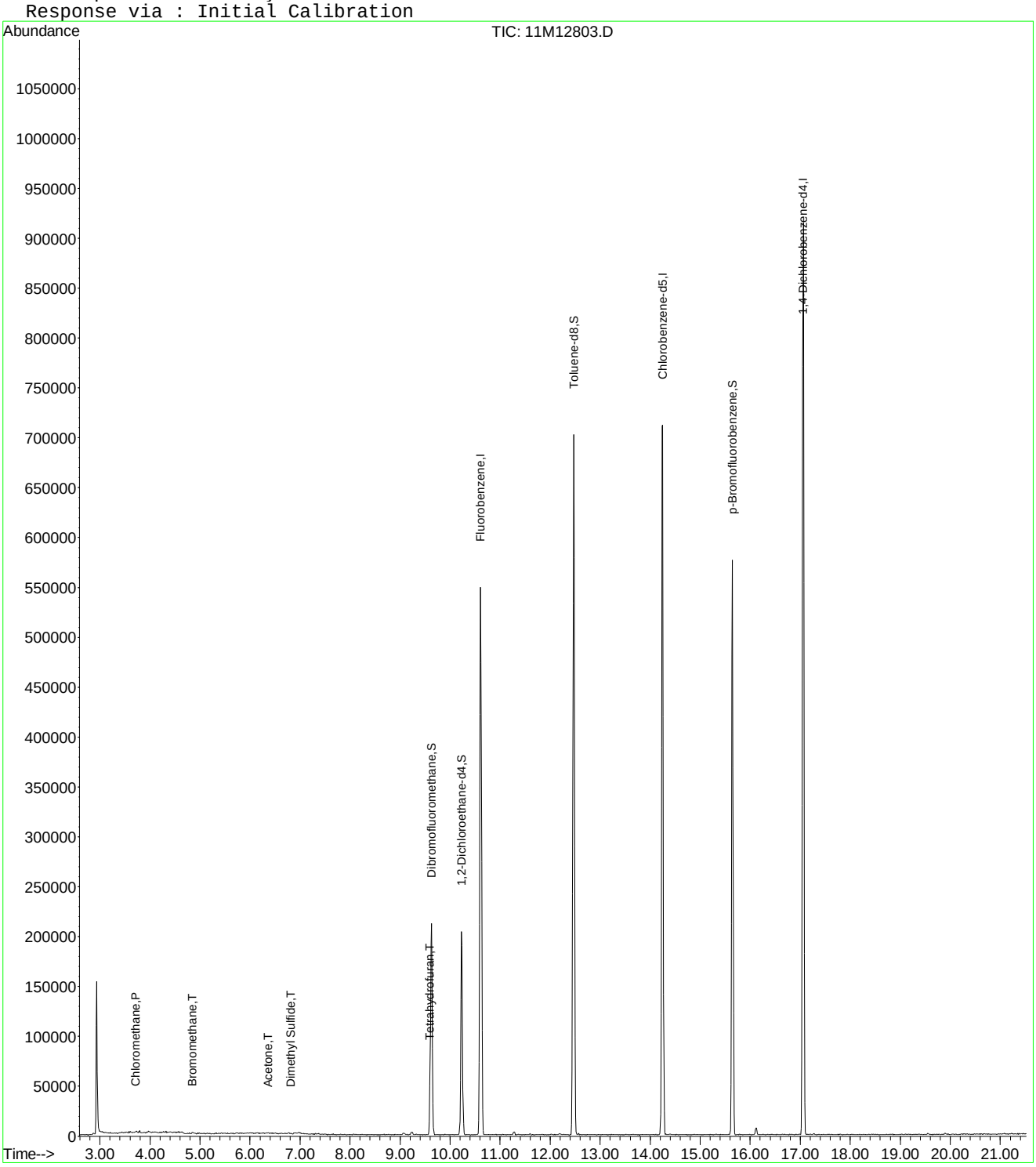

11M12803.D 8260WT.M Fri Jun 24 14:57:42 2016 Page 2

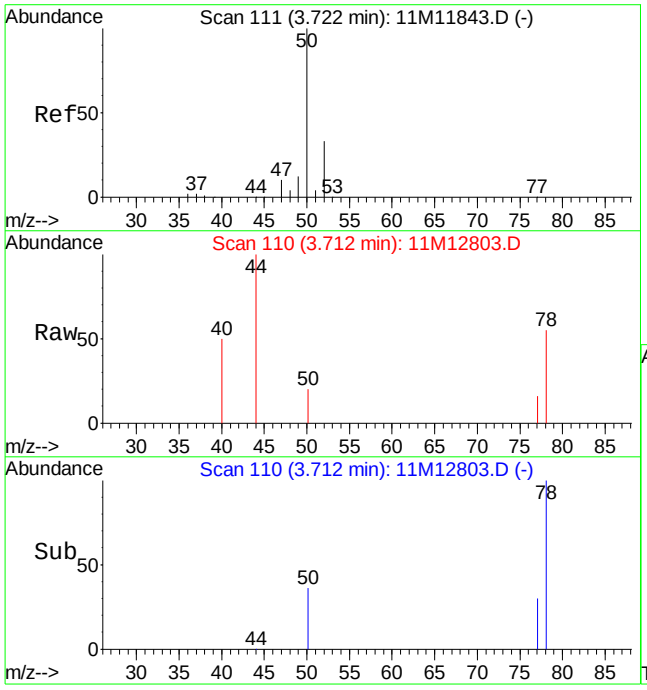

#3
Chloromethane
Concen: 0.16 ug/L
RT: 3.71 min Scan# 110
Delta R.T. -0.01 min
Lab File: 11M12803.D
Acq: 22 Jun 2016 17:47

Tgt Ion: 50 Resp: 1290

Ion	Ratio	Lower	Upper
50	100		
52	33.6	20.0	46.6

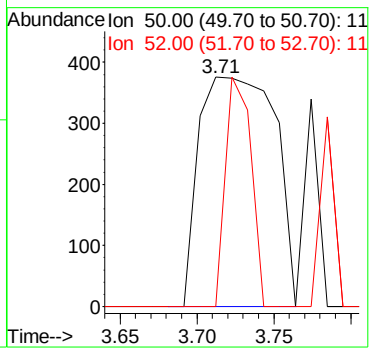

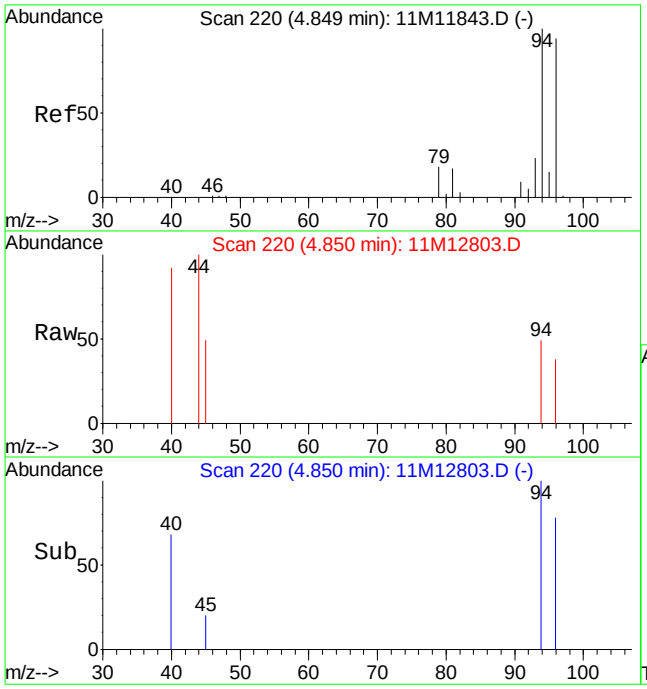

#6
Bromomethane
Concen: 0.25 ug/L
RT: 4.85 min Scan# 220
Delta R.T. 0.00 min
Lab File: 11M12803.D
Acq: 22 Jun 2016 17:47

Tgt Ion: 94 Resp: 1156

Ion	Ratio	Lower	Upper
94	100		
96	82.4	56.5	131.9

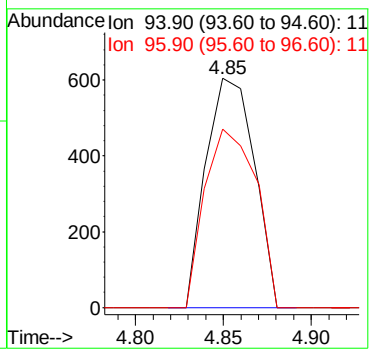

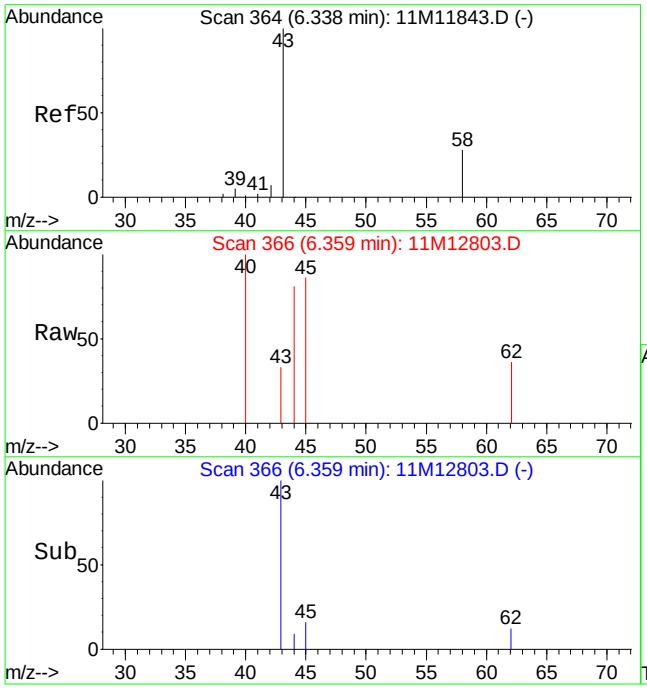

#13
Acetone
Concen: 0.13 ug/L
RT: 6.36 min Scan# 366
Delta R.T. 0.02 min
Lab File: 11M12803.D
Acq: 22 Jun 2016 17:47

Tgt Ion: 43 Resp: 196

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

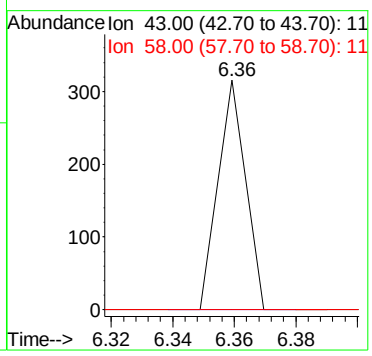

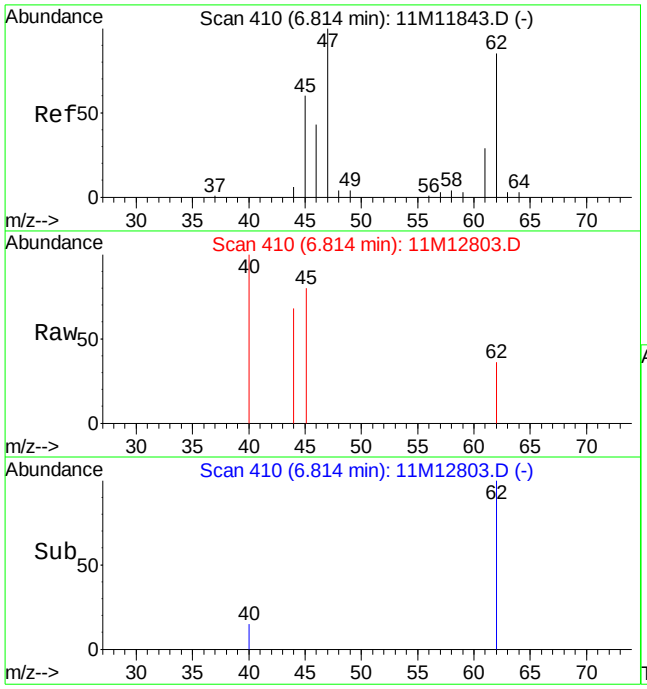

#16
Dimethyl Sulfide
Concen: 0.15 ug/L
RT: 6.81 min Scan# 410
Delta R.T. 0.00 min
Lab File: 11M12803.D
Acq: 22 Jun 2016 17:47

Tgt Ion: 62 Resp: 689

Ion	Ratio	Lower	Upper
62	100		
47	0.0	73.4	171.2#

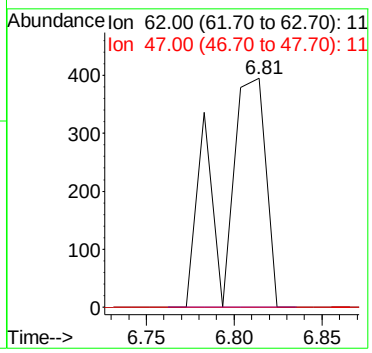

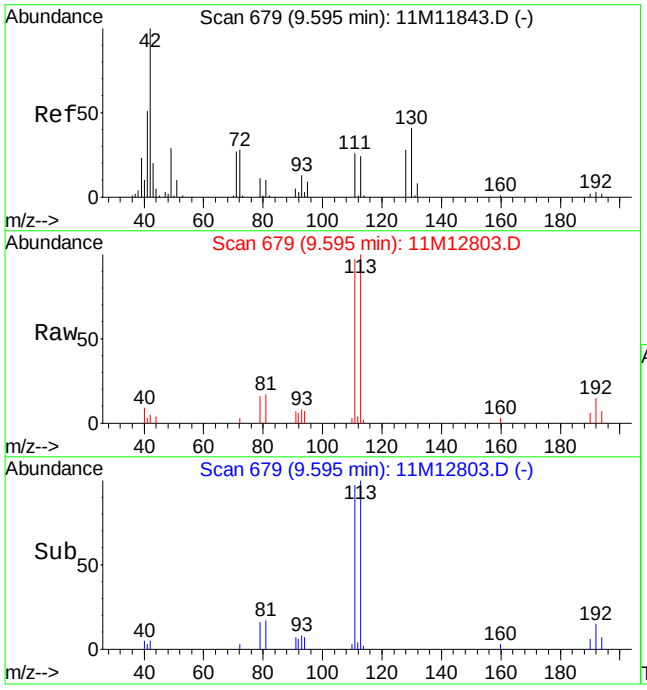

#36
Tetrahydrofuran
Concen: 1.04 ug/L
RT: 9.60 min Scan# 679
Delta R.T. 0.00 min
Lab File: 11M12803.D
Acq: 22 Jun 2016 17:47

Tgt Ion: 42 Resp: 1673

Ion	Ratio	Lower	Upper
42	100		
71	0.0	16.4	38.2#
72	16.3	16.6	38.8#

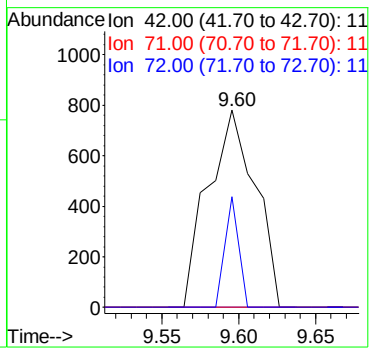

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062316\11M12831.D Vial: 5
Acq On : 23 Jun 2016 17:03 Operator: JDS
Sample : WG573953-01 BLANK STD 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 24 15:00:03 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	499965	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	439921	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	257668	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	142460	26.0358 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.16%		
43) 1,2-Dichloroethane-d4	10.23	65	155998	25.0038 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.00%		
57) Toluene-d8	12.47	98	478018	25.0080 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.04%		
78) p-Bromofluorobenzene	15.64	95	186251	23.4488 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.80%		

Target Compounds					Qvalue
13) Acetone	6.36	43	189	0.1592 ug/L #	49
36) Tetrahydrofuran	9.60	42	1570	1.2388 ug/L #	47

(#) = qualifier out of range (m) = manual integration
11M12831.D 8260WT.M Fri Jun 24 15:00:04 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062316\11M12831.D Vial: 5
Acq On : 23 Jun 2016 17:03 Operator: JDS
Sample : WG573953-01 BLANK STD 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 24 15:00 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

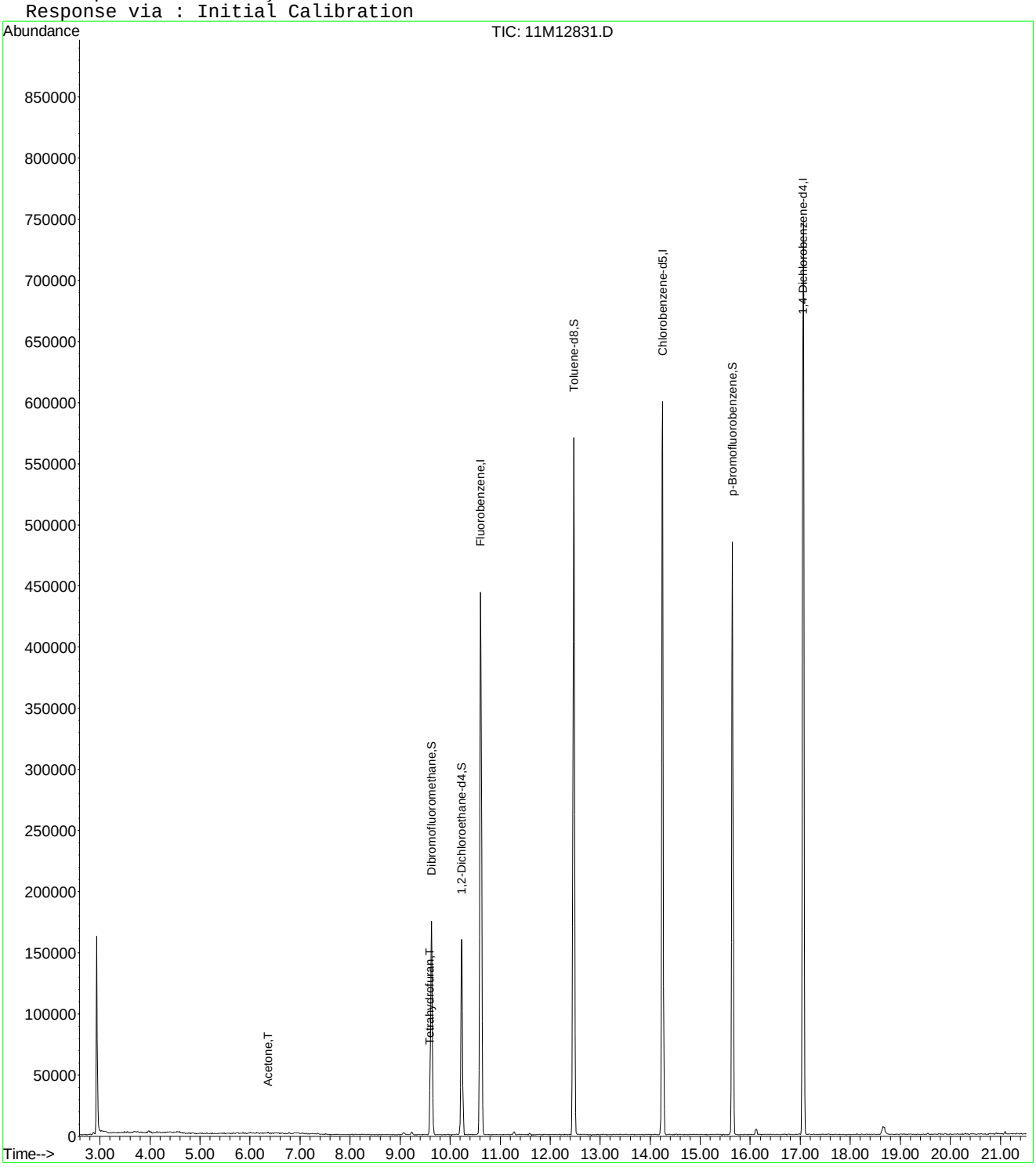

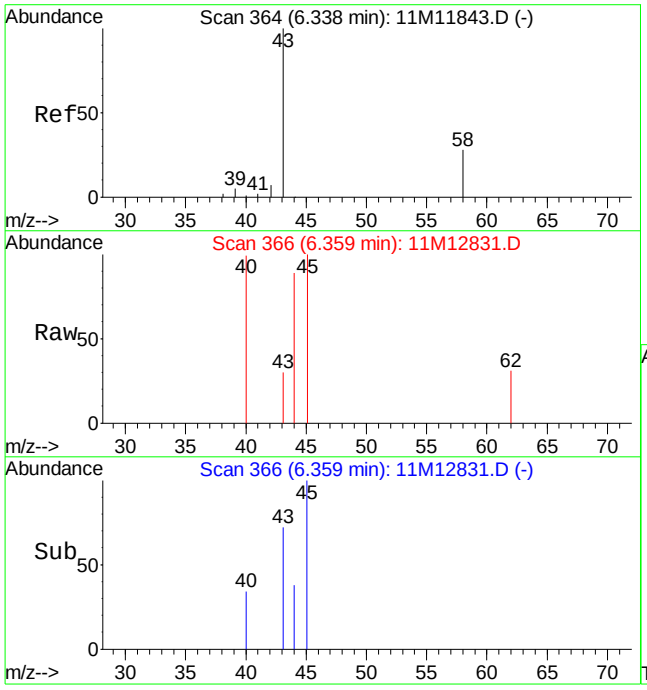

#13
Acetone
Concen: 0.16 ug/L
RT: 6.36 min Scan# 366
Delta R.T. 0.02 min
Lab File: 11M12831.D
Acq: 23 Jun 2016 17:03

Tgt Ion: 43 Resp: 189

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

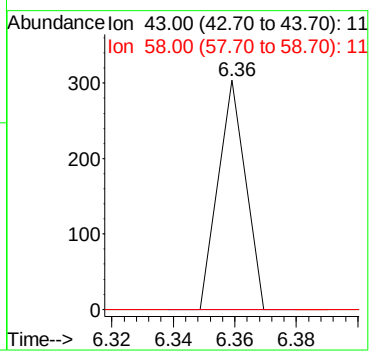

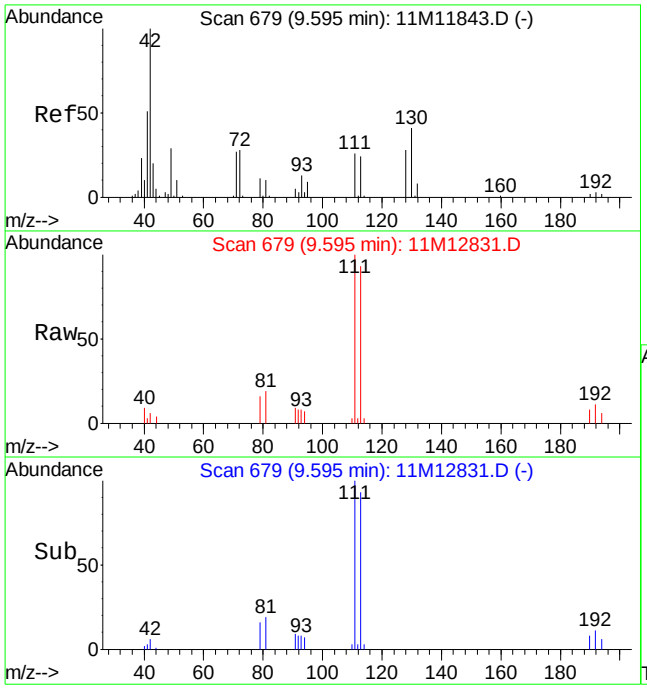

#36
Tetrahydrofuran
Concen: 1.24 ug/L
RT: 9.60 min Scan# 679
Delta R.T. 0.00 min
Lab File: 11M12831.D
Acq: 23 Jun 2016 17:03

Tgt Ion: 42 Resp: 1570

Ion	Ratio	Lower	Upper
42	100		
71	0.0	16.4	38.2#
72	0.0	16.6	38.8#

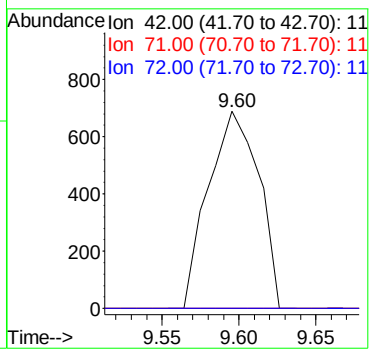

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062216\11M12821.D Vial: 24
Acq On : 23 Jun 2016 3:22 Operator: JDS
Sample : WG573776-06 BLANK2 STD 624 Inst : hpms11
Misc : 2,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 24 14:58:49 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	472579	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	423378	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	244523	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	137765	26.6368 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.56%		
43) 1,2-Dichloroethane-d4	10.24	65	154837	26.2559 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 105.04%		
57) Toluene-d8	12.47	98	463037	25.1708 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.68%		
78) p-Bromofluorobenzene	15.64	95	180039	23.8852 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.56%		

Target Compounds					Qvalue
36) Tetrahydrofuran	9.60	42	1098	0.9166 ug/L #	47

(#) = qualifier out of range (m) = manual integration
11M12821.D 8260WT.M Fri Jun 24 14:58:50 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062216\11M12821.D Vial: 24
Acq On : 23 Jun 2016 3:22 Operator: JDS
Sample : WG573776-06 BLANK2 STD 624 Inst : hpms11
Misc : 2,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 24 14:58 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

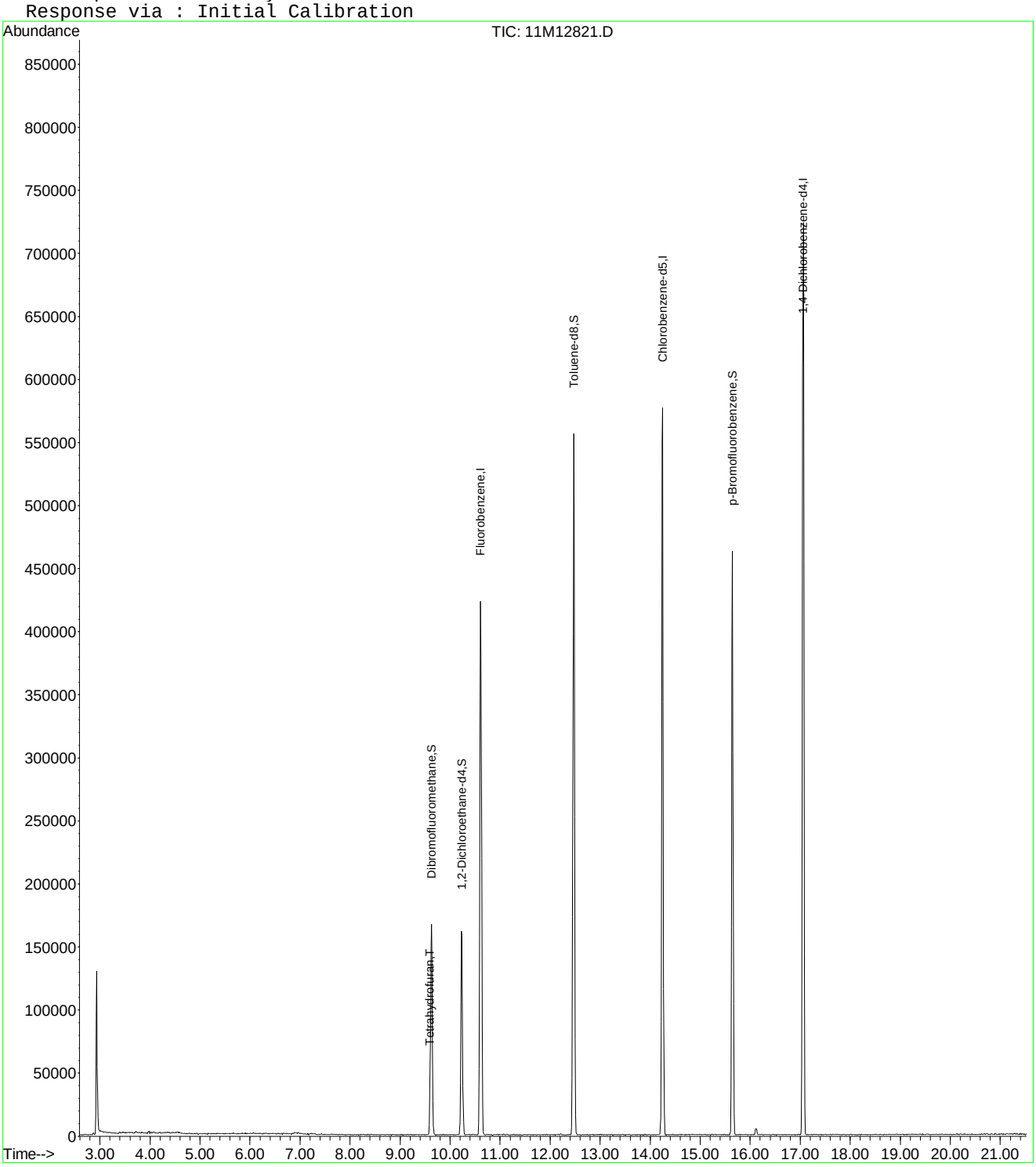

11M12821.D 8260WT.M Fri Jun 24 14:58:50 2016 Page 2

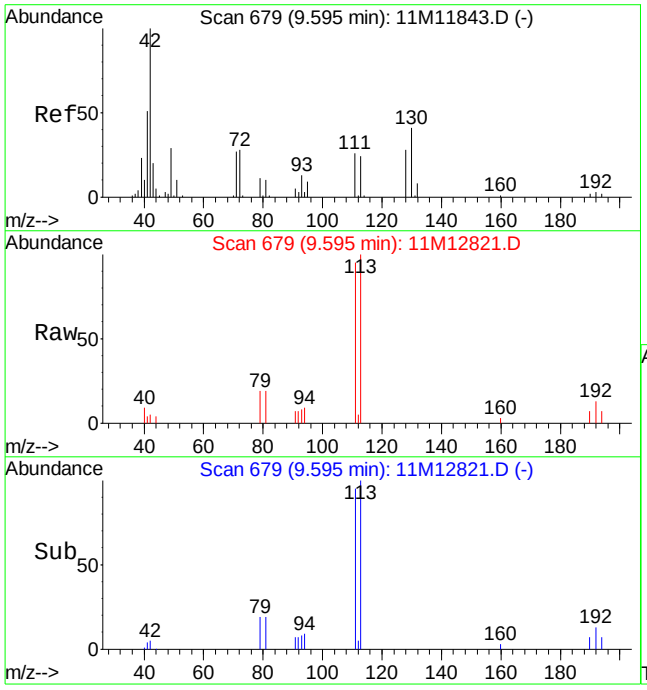

#36
Tetrahydrofuran
Concen: 0.92 ug/L
RT: 9.60 min Scan# 679
Delta R.T. 0.00 min
Lab File: 11M12821.D
Acq: 23 Jun 2016 3:22

Tgt Ion: 42 Resp: 1098

Ion	Ratio	Lower	Upper
42	100		
71	0.0	16.4	38.2#
72	0.0	16.6	38.8#

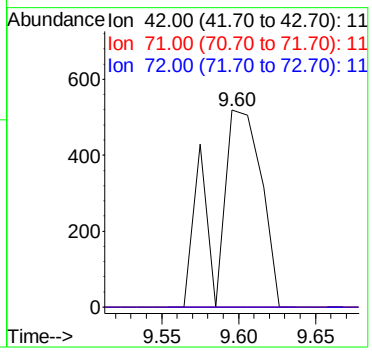

2.2 Semivolatiles Data

2.2.1 Semivolatiles GC/MS Data (Dioxane)

2.2.1.1 Summary Data

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	129-061616	**Prep Method:**	3520C	**Prep Date:**	06/21/2016 17:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573853	**Analyst:**	MES	**Run Date:**	06/23/2016 18:08
Collect Date:	06/16/2016 09:05	**Dilution:**	1	**File ID:**	15M18521
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	6.52		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	115	20	129	

Certificate of Analysis

Sample #:	L16061026-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	120-061616	**Prep Method:**	3520C	**Prep Date:**	06/21/2016 17:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573853	**Analyst:**	MES	**Run Date:**	06/27/2016 15:30
Collect Date:	06/16/2016 09:25	**Dilution:**	40	**File ID:**	15M18600
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	220		80.0	40.0	20.0

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	0.000	20	129	*

Certificate of Analysis

Sample #:	L16061026-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	123-061616	**Prep Method:**	3520C	**Prep Date:**	06/21/2016 17:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573853	**Analyst:**	MES	**Run Date:**	06/23/2016 18:54
Collect Date:	06/16/2016 09:55	**Dilution:**	1	**File ID:**	15M18523
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	0.587	J	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	50.8	20	129	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.2.1.2 QC Summary Data

Example 8270 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	1261197
Cis = Concentration of the specific internal standard (ug/mL)	40
Ais = Area of the characteristic ion of the specific internal standard	608044
Cx = Concentration of the compound in the standard being measured (ug/mL)	50
RF = Calculated Response Factor	**1.65935**

2.0 Calculating the concentration (C) of a compound in water using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Vi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Vi = Initial volume of sample extracted from prep log (mL)	1021
Cx = Concentration of the compound in the sample being measured (ug/mL)	0.016947
Cx = Concentration of the compound in the sample being measured (ug/L)	**16.947**

3.0 Calculating the concentration (C) of a compound in soil using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Wi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Wi = Initial weight of sample extracted (g) from prep log	30
Cx = Concentration of the compound in the sample being measured (ug/g)	0.576763
Cx = Concentration of the compound in the sample being measured (ug/kg)	**576.7627**

Dry weight correction:

Percent solids (PCT_S)	50
Cd = (Cx) (100)/PCT_S	**1153.525** ug/kg

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve plot

b = intercept from curve plot

Step 2: Calculate y from Quantitation Report

y = 16790/784838 = 0.02139

Step 3: Solve for x

x = (y - b)/m = [(0.02139 -(- 0.0435)]/ 0.0783 = 0.829

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.829) = 20.72 ug/L

Example Spreadsheet Calculation:

Slope from curve, m:	0.0783	
Intercept from curve, b:	-0.0435	
Area of analyte, Ax:	16790	
Area of Internal Standard , Ais:	784484	
Concentration of IS, Cis	25.00	ug/L
Response Ratio (y) :	0.021403	
Amount Ratio:	0.828897	
Concentration (Cx):	20.72241	ug/L

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**0.0259**	
Value of B from plot:	**0.0596**	
Value of C from plot:	**-0.0165**	
Area of analyte from quantitation report:	**203233**	
Area of IS from quantiation report:	**1425653**	
Response ratio, y:	**0.142554**	
C - y:	**-0.15905**	
Root 1 - Computed amount ratio , X1:	**-3.88278**	
Root 2 - Computed amount ratio , X2:	**1.581623**	use this solution
Concentration of IS, Cis:	**40.00**	
Concentration of analyte, Cx:	**63.26**	ug/L

Microbac Laboratories Inc.
Continuous Sample Extract Log

Workgroup: WG573299
Analyst: CPD
Spike Analyst: CPD
Method: 3520C
Run Date: 06/21/2016 17:01
SOP: EXB01 Revison 20
Spike Witness: JLD
Surr Solution: STD76628

TIME ON: 17:45 OFF: 12:10 ON: 16:00 OFF: 11:05

CH2CL2 Lot #: COA18982
sodium sulfate Lot #: COA18814
10N NaOH Lot #: RGT37076
1:1 H2SO4 Lot #: RGT36755

	SAMPLE #	Type	Reference	Prod	pH	Init Amnt	Surr Amnt	Spike Amnt	Spike Sol	Final Vol	Color
1	L16060927-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
2	L16060927-02	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
3	L16060927-03	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
4	L16060927-04	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
5	L16060930-03	SAMP		827-DIOX	<2>12	1000 mL	.05 mL			1 mL	Colored
6	L16060978-03	SAMP		827-DIOX	<2>12	800 mL	.05 mL			1 mL	Colored
7	L16060978-04	SAMP		827-DIOX	<2>12	890 mL	.05 mL			1 mL	Colored
8	L16061026-04	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
9	L16061026-05	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
10	L16061026-07	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
11	L16061055-04	SAMP		827-DIOX	<2>12	520 mL	.05 mL			1 mL	Colored
12	L16061055-07	SAMP		827-DIOX	<2>12	880 mL	.05 mL			1 mL	Colored
13	WG573299-01	BLANK		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
14	WG573299-02	LCS		827-DIOXANE	<2>12	1000 mL	.05 mL	.1 mL	STD75281	1 mL	Transparent
15	WG573299-03	LCS2		827-DIOXANE	<2>12	1000 mL	.05 mL	.1 mL	STD75281	1 mL	Transparent

Due to insufficient sample volume, this preparation batch failed to include the method prescribed MS and MSD.

Analyst: Chelsie Davis

Reviewer: Justin Hesson

EXTRACT - Modified 01/23/2009
PDF ID: 4819879
Report generated: 06/24/2016 10:45

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062116
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573365

Internal STD: STD76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: STD74214 MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18455	BAKEOUT	1	1		06/21/16 08:46
2	15M18456	WG573501-01 5PPM DFTPP STD	1	1	STD75016	06/21/16 09:05
3	15M18457	WG573501-01 5PPM DFTPP STD	1	1	STD75016	06/21/16 09:34
4	15M18458	WG573501-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 09:52
5	15M18459	WG573501-03 10 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 10:27
6	15M18460	WG573501-04 7.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 10:49
7	15M18461	WG573501-05 2.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:12
8	15M18462	WG573501-06 1 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:34
9	15M18463	WG573501-07 0.4 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:57
10	15M18464	WG573501-08 5PPM 1,4-DIOXANE ALT SRC	1	1	STD74214	06/21/16 12:20
11	15M18465	WG572806-01 BLANK 6/15	1	1		06/21/16 12:54
12	15M18466	WG572806-02 LCS 6/15	1	1		06/21/16 13:17
13	15M18467	WG572806-03 LCSDUP 6/15	1	1		06/21/16 13:40
14	15M18468	WG573008-01 BLANK 6/17	7	1	SOIL	06/21/16 14:03
15	15M18469	WG573008-02 LCS 6/17	7	1	SOIL	06/21/16 14:26
16	15M18470	WG573008-03 LCSDUP 6/17	7	1	SOIL	06/21/16 14:48
17	15M18471	L16060730-01	1	1		06/21/16 15:11
18	15M18472	L16060730-02	1	1		06/21/16 15:34
19	15M18473	L16060854-01	1	1		06/21/16 15:57
20	15M18474	L16060730-03	1	1		06/21/16 16:19
21	15M18475	L16060756-04 827-DIOX	1	1		06/21/16 16:46
22	15M18476	L16060822-01	1	1		06/21/16 17:08
23	15M18477	L16060822-03	1	1		06/21/16 17:31
24	15M18478	L16060822-04	1	1		06/21/16 17:54
25	15M18479	L16060822-05	1	1		06/21/16 18:17
26	15M18480	L16060823-01	1	1		06/21/16 18:40
27	15M18481	L16060823-03	1	1		06/21/16 19:02
28	15M18482	L16060823-04	1	1		06/21/16 19:25
29	15M18483	L16060809-03 827-DIOX	1	1		06/21/16 19:48
30	15M18484	L16060854-01 2X	1	2		06/21/16 20:10
31	15M18485	BAKEOUT	1	1		06/21/16 20:33
32	15M18486	BAKEOUT	1	1		06/21/16 20:55
33	15M18487	BAKEOUT	1	1		06/21/16 21:18

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062116

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573365

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD: STD74214

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
	WG573501-01 5PPM DFTPP STD rerun DFTPP, pentachlorophenol tailing >2.			
14				
	WG573008-01 BLANK 6/17 DNR-not needed.			
15				
	WG573008-02 LCS DNR-not needed.			
16				
	WG573008-03 LCSDUP DNR-not needed.			
19	X	2	Over Calibration Range	
	L16060854-01			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062316
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573853

Internal STD: STD76627 Surrogate STD: NA Calibration STD
CCV STD: STD74784 LCS STD: MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18504	BAKEOUT	1	1		06/23/16 10:23
2	15M18505	WG573879-01 5PPM DFTPP STD	1	1	STD75016	06/23/16 10:43
3	15M18506	WG573879-01 5PPM DFTPP STD	1	1	STD75016	06/23/16 10:59
4	15M18507	WG573879-01 5PPM DFTPP STD	1	1	STD75016	06/23/16 12:04
5	15M18508	WG573879-01 5PPM DFTPP STD	1	1	STD75016	06/23/16 13:20
6	15M18509	WG573879-01 5PPM DFTPP STD	1	1	STD75016	06/23/16 13:42
7	15M18510	WG573879-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/23/16 13:59
8	15M18511	WG573299-01 BLANK 6/21	1	1		06/23/16 14:22
9	15M18512	WG573299-02 LCS 6/21	1	1		06/23/16 14:45
10	15M18513	WG573299-03 LCSDUP 6/21	1	1		06/23/16 15:07
11	15M18514	L16060927-01 827-DIOX	1	1		06/23/16 15:30
12	15M18515	L16060927-02 827-DIOX	1	1		06/23/16 15:53
13	15M18516	L16060927-03 827-DIOX	1	1		06/23/16 16:15
14	15M18517	L16060927-04 827-DIOX	1	1		06/23/16 16:38
15	15M18518	L16060930-03 827-DIOX	1	1		06/23/16 17:00
16	15M18519	L16060978-03 827-DIOX	1	1		06/23/16 17:23
17	15M18520	L16060978-04 827-DIOX	1	1		06/23/16 17:46
18	15M18521	L16061026-04 827-DIOX	1	1		06/23/16 18:08
19	15M18522	L16061026-05 827-DIOX	1	1		06/23/16 18:31
20	15M18523	L16061026-07 827-DIOX	1	1		06/23/16 18:54
21	15M18524	L16061055-04 827-DIOX	1	1		06/23/16 19:16
22	15M18525	L16061055-07 827-DIOX	1	1		06/23/16 19:39
23	15M18526	BAKEOUT	1	1		06/23/16 20:02
24	15M18527	BAKEOUT	1	1		06/23/16 20:24
25	15M18528	BAKEOUT	1	1		06/23/16 20:47

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
	Rerun DFTPP, degradation >20%.			
3				
	Rerun DFTPP, degradation >20%. Changing the liner.			
4				

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062316

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573853

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
	Rerun DFTPP, degradation still >20%. Changing the gold seal.			
5				
	Rerun DFTPP, degradation still >20%. Clipping the column.			
12	X	10	Surrogate standard failure	
	L16060927-02 high surrogate due to SMI; reanalyzing at a dilution to confirm.			
16	X	10	Over Calibration Range	
	L16060978-03			
17	X	20	Over Calibration Range	
	L16060978-04			
19	X	20	Over Calibration Range	
	L16061026-05 high surrogate due to SMI.			
21	X	10	Over Calibration Range	
	L16061055-04 827-DIOX one high surrogate due to SMI.			
22	X	100	Over Calibration Range	
	L16061055-07 827-DIOX one low surrogate due to obvious SMI.			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062716

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574301,WG574187,WG574186,WG573853

Internal STD: STD76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: MS/MSD STD:

Comments: All samples associated with extraction workgroup WG573815 are being re-extracted due to low LCSDUP recovery: L16060637-02,756-01 to-03,809-01 and -02,930-01 and -02, 1213-01 to -06.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18584	BAKEOUT	1	1		06/27/16 08:21
13	15M18585	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 08:41
14	15M18586	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 08:58
2	15M18587	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 09:22
3	15M18588	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 09:38
4	15M18589	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 10:23
5	15M18590	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 11:15
6	15M18591	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 11:32
7	15M18592	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 12:20
8	15M18593	WG574241-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/27/16 12:37
9	15M18594	WG573975-03 LCSDUP 6/24 RR	7	1	SOIL	06/27/16 13:15
10	15M18595	WG573815-02 LCS 6/23 RR	7	1	SOIL	06/27/16 13:37
11	15M18596	WG573815-03 LCSDUP 6/23 RR	7	1	SOIL	06/27/16 13:59
12	15M18597	WG573812-01 BLANK 6/22	1	1		06/27/16 14:22
15	15M18598	WG573812-02 LCS 6/22	1	1		06/27/16 14:45
16	15M18599	WG573812-03 LCSDUP 6/22	1	1		06/27/16 15:07
17	15M18600	L16061026-05 40X	1	40		06/27/16 15:30
18	15M18601	L16061213-05 827-DIOX	7	1	SOIL	06/27/16 15:52
19	15M18602	L16061213-06 827-DIOX	7	1		06/27/16 16:15
20	15M18603	L16061233-02 827-DIOX	1	1		06/27/16 16:38
21	15M18604	L16061124-01	1	1		06/27/16 17:01
22	15M18605	L16061142-01	1	1		06/27/16 17:23
23	15M18606	L16061142-06	1	1		06/27/16 17:46
24	15M18607	L16061142-07	1	1		06/27/16 18:09
25	15M18608	L16061144-01	1	1		06/27/16 18:31
26	15M18609	L16061144-02	1	1		06/27/16 18:54
27	15M18610	L16061144-03	1	1		06/27/16 19:17
28	15M18611	L16061227-01	1	1		06/27/16 19:39
29	15M18612	L16061227-06	1	1		06/27/16 20:02
30	15M18613	L16061227-07	1	1		06/27/16 20:25
31	15M18614	L16061124-01 2X	1	2		06/27/16 20:47
32	15M18615	BAKEOUT	1	1		06/27/16 21:10
33	15M18616	BAKEOUT	1	1		06/27/16 21:32

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062716

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574301,WG574187,WG574186,WG573853

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	15M18617	BAKEOUT	1	1		06/27/16 21:55

Comments

Seq.	Rerun	Dil.	Reason	Analytes
13				
	Rerun DFTPP, wrong standard was analyzed.			
14				
	Rerun DFTPP, wrong standard was analyzed.			
2				
	Rerun DFTPP, ion failures. Liner needs changed.			
3				
	Rerun DFTPP, degradation >20%.			
4				
	Rerun DFTPP, degradation >20%. Changed the gold seal.			
5				
	Rerun DFTPP, benzidine tailing >2.			
6				
	Rerun DFTPP, benzidine tailing >2. Clipped 5cm from the column.			
9				
	WG573975-03 LCSDUP 6/24 RR recovery is acceptable. Not reporting the run from 6/25/16.			
11				
	WG573815-03 LCSDUP 6/23 RR low recovery; confirms the original run.			
21	X	2	Over Calibration Range	
	L16061124-01			
28				
	L16061227-01 Needs re-extracted; surrogate recovery is low.			

Page: 2 Approved: 28-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 21-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75850
Analytical Workgroups: L16060730, 060756, 060809, 060822, 060823, 060854

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 22-JUN-2016

Secondary Reviewer: 22-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-22-2016 16:00:51

Microbac Laboratories Inc.

Data Checklist

Date: 23-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75899
Analytical Workgroups: L16060927,060930,060978,-061026,061055

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: Secondary Reviewer:
24-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-24-2016 14:48:11

Microbac Laboratories Inc.

Data Checklist

Date: 27-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75949
Analytical Workgroups: L16061026,061213,WG573956-LCSDUP RR,061124,1142,1144,1227,123

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
28-JUN-2016

Secondary Reviewer:
28-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-28-2016 14:33:27

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8270D

AAB#: WG573853

Login Number: L16061026

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
129-061616	04	06/16/16					06/21/2016	5.3	7		06/23/16	2	40	
120-061616	05	06/16/16					06/21/2016	5.3	7		06/27/16	5.9	40	
123-061616	07	06/16/16					06/21/2016	5.3	7		06/23/16	2.1	40	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4822554
Report generated 06/29/2016 08:21

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061026
Instrument Id: HPMS15
Workgroup (AAB#): WG573853

Method: 827-DIOXANE
CAL ID: HPMS15-21-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1
L16061026-04	1.00	01	115
L16061026-05	40.0	DL01	DL
L16061026-07	1.00	01	50.8
WG573299-01	1.00	01	28.7
WG573299-02	1.00	01	37.8
WG573299-03	1.00	01	46.8

Surrogates	Surrogate Limits		
1 - 1,4-Dioxane-d8	20	-	129

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4822562
Report generated: 06/29/2016 08:21

METHOD BLANK SUMMARY

Login Number: L16061026
Blank File ID: 15M18511
Prep Date: 06/21/16 17:01
Analyzed Date: 06/23/16 14:22
Analyst: MES

Work Group: WG573853
Blank Sample ID: WG573299-01
Instrument ID: HPMS15
Method: 8270D

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573299-02	15M18512	06/23/16 14:45	01
LCS2	WG573299-03	15M18513	06/23/16 15:07	01
129-061616	L16061026-04	15M18521	06/23/16 18:08	01
123-061616	L16061026-07	15M18523	06/23/16 18:54	01
120-061616	L16061026-05	15M18600	06/27/16 15:30	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4828845
Report generated 06/29/2016 08:21

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061026 Prep Date: 06/21/16 17:01 Sample ID: WG573299-01
Instrument ID: HPMS15 Run Date: 06/23/16 14:22 Prep Method: 3520C
File ID: 15M18511 Analyst: MES Method: 8270D
Workgroup (AAB#): WG573853 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS15-21-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
1,4-Dioxane	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	28.7	20 - 129	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4822555
29-JUN-2016 08:21

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061026 Analyst: MES Prep Method: 3520C
Instrument ID: HPMS15 Matrix: Water Method: 8270D
Workgroup (AAB#): WG573853 Units: ug/L
QC Key: DOD4 Lot #: STD75281

Sample ID: WG573299-02 LCS File ID: 15M18512 Run Date: 06/23/2016 14:45
Sample ID: WG573299-03 LCS2 File ID: 15M18513 Run Date: 06/23/2016 15:07

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,4-Dioxane	5.00	1.88	37.6	5.00	2.32	46.4	20.8	30 - 104	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,4-Dioxane-d8	37.8	46.8	20 - 129	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4822556
Report generated: 06/29/2016 08:21

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16061026
Instrument: HPMS15
Analyst: MES
Workgroup: WG573501

Tune ID: WG573501-01
Run Date: 06/21/2016
Run Time: 09:34
File ID: 15M18457
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	38.8	34488	PASS
68.0	69.0	0	2.00	1.36	500	PASS
69.0	198	0	100	41.4	36833	PASS
70.0	69.0	0	2.00	0.467	172	PASS
127	198	40.0	60.0	51.9	46131	PASS
197	198	0	1.00	0	0	PASS
198	198	100	100	100	88880	PASS
199	198	5.00	9.00	6.66	5918	PASS
275	198	10.0	30.0	24.9	22090	PASS
365	198	1.00	100	2.65	2358	PASS
441	443	0.0100	100	75.7	9586	PASS
442	198	40.0	100	73.4	65261	PASS
443	442	17.0	23.0	19.4	12659	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573501-02	STD-CCV	01	06/21/2016 09:52	
WG573501-03	STD	01	06/21/2016 10:27	
WG573501-04	STD	01	06/21/2016 10:49	
WG573501-05	STD	01	06/21/2016 11:12	
WG573501-06	STD	01	06/21/2016 11:34	
WG573501-07	STD	01	06/21/2016 11:57	
WG573501-08	SSCV	01	06/21/2016 12:20	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4822559
Report generated 06/29/2016 08:21

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16061026
Instrument: HPMS15
Analyst: MES
Workgroup: WG573879

Tune ID: WG573879-01
Run Date: 06/23/2016
Run Time: 13:42
File ID: 15M18509
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	37.0	43111	PASS
68.0	69.0	0	2.00	1.10	506	PASS
69.0	198	0	100	39.4	45795	PASS
70.0	69.0	0	2.00	0.157	72	PASS
127	198	40.0	60.0	51.3	59752	PASS
197	198	0	1.00	0	0	PASS
198	198	100	100	100	116364	PASS
199	198	5.00	9.00	7.09	8249	PASS
275	198	10.0	30.0	24.9	28968	PASS
365	198	1.00	100	2.82	3278	PASS
441	443	0.0100	100	79.2	13093	PASS
442	198	40.0	100	74.3	86464	PASS
443	442	17.0	23.0	19.1	16541	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573879-02	CCV	01	06/23/2016 13:59	
WG573299-01	BLANK	01	06/23/2016 14:22	
WG573299-02	LCS	01	06/23/2016 14:45	
WG573299-03	LCS2	01	06/23/2016 15:07	
L16061026-04	129-061616	01	06/23/2016 18:08	
L16061026-07	123-061616	01	06/23/2016 18:54	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4822559
Report generated 06/29/2016 08:21

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16061026
Instrument: HPMS15
Analyst: MES
Workgroup: WG574241

Tune ID: WG574241-01
Run Date: 06/27/2016
Run Time: 12:20
File ID: 15M18592
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	33.2	31989	PASS
68.0	69.0	0	2.00	1.61	580	PASS
69.0	198	0	100	37.4	35954	PASS
70.0	69.0	0	2.00	0.617	222	PASS
127	198	40.0	60.0	50.4	48459	PASS
197	198	0	1.00	0.425	409	PASS
198	198	100	100	100	96232	PASS
199	198	5.00	9.00	6.65	6399	PASS
275	198	10.0	30.0	25.2	24236	PASS
365	198	1.00	100	2.50	2410	PASS
441	443	0.0100	100	75.7	10371	PASS
442	198	40.0	100	73.9	71133	PASS
443	442	17.0	23.0	19.3	13708	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG574241-02	CCV	01	06/27/2016 12:37	
L16061026-05	120-061616	DL01	06/27/2016 15:30	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4822559
Report generated 06/29/2016 08:21

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061026
Analytical Method: 8270D
ICAL Workgroup: WG573501

Instrument ID: HPMS15
Initial Calibration Date: 21-JUN-16 11:57
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
1,4-Dioxane		0.3060	2.56		

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4822557
Report generated 06/29/2016 08:21

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061026

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 21-JUN-16 11:57

Column ID: F

Analyte	WG573501-02			WG573501-03			WG573501-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	5.00	60883.0000	0.3073	10.0	138820.000	0.3164	7.50	103182.000	0.3106

INT_CAL - Modified 03/06/2008
PDF File ID: 4822557
Report generated 06/29/2016 08:21

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061026

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 21-JUN-16 11:57

Column ID: F

Analyte	WG573501-05			WG573501-06			WG573501-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	2.50	26333.0000	0.2969	1.00	13250.0000	0.2966	0.400	5650.00000	0.3081

INT_CAL - Modified 03/06/2008
PDF File ID: 4822557
Report generated 06/29/2016 08:21

Calibration Table Report
Method: DIOXANE_D8.M
Title: OVD MSS01 SIM 1,4-dioxane ICAL 062116
Last Calibration: Tue Jun 21 12:51:17 2016
Curve:WG573501
Calibration Files

Compound	10 15M18459.D	7.5 15M18460.D	5 15M18458.D	2.5 15M18461.D	1 15M18462.D	0.4 15M18463.D	Avg	%RSD
1,4-Dichlorobenzene-d4	ISTD							
1,4-Dioxane	0.316	0.311	0.307	0.297	0.297	0.308	0.306	2.558
1,4-Dioxane-d8	0.426	0.418	0.417	0.402	0.395		0.411	3.044
Nitrobenzene-d5	1.202	1.173	1.128	1.002	0.927	0.906	1.056	12.163
2-Fluorobiphenyl	2.735	2.736	2.691	2.621	2.563	2.651	2.666	2.548
p-Terphenyl-d14	2.793	2.774	2.622	2.460	2.367	2.405	2.570	7.266

Wed Jun 22 12:17:33 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061026 Run Date: 06/21/2016 Sample ID: WG573501-08
Instrument ID: HPMS15 Run Time: 12:20 Method: 8270D
File ID: 15M18464 Analyst: MES QC Key: DOD4
ICal Workgroup: WG573501 Cal ID: HPMS15 - 21-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
1,4-Dioxane		5000	5050	ug/L	0.309	0.900	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4822558
Report generated 06/29/2016 08:21

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 06/23/2016
Sample ID: WG573879-02
Instrument ID: HPMS15
Run Time: 13:59
Method: 8270D
File ID: 15M18510
Analyst: MES
QC Key: DOD4
Workgroup (AAB#): WG573853
Cal ID: HPMS15 - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,4-Dioxane		5000	4530	ug/L	0.277	9.36	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4822560
Report generated 06/29/2016 08:21

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 06/27/2016
Sample ID: WG574241-02
Instrument ID: HPMS15
Run Time: 12:37
Method: 8270D
File ID: 15M18593
Analyst: MES
QC Key: DOD4
Workgroup (AAB#): WG573853
Cal ID: HPMS15 - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,4-Dioxane		5000	4360	ug/L	0.267	12.8	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4822560
Report generated 06/29/2016 08:21

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061026
Instrument ID: HPMS15
Workgroup (AAB#): WG573853

ICAL CCV Number: WG573501-02
CAL ID: HPMS15-21-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG573501-02	NA	NA	39637
Upper Limit	NA	NA	79274
Lower Limit	NA	NA	19819
L16061026-04	1.00	01	55282
L16061026-05	40.0	DL01	46495
L16061026-07	1.00	01	44830
WG573299-01	1.00	01	57608
WG573299-02	1.00	01	51597
WG573299-03	1.00	01	54701

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4822561
Report generated 06/29/2016 08:21

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061026
Instrument ID: HPMS15
Workgroup (AAB#): WG573853

ICAL CCV Number: WG573501-02
CAL ID: HPMS15-21-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG573501-02	NA	NA	6.93
Upper Limit	NA	NA	7.43
Lower Limit	NA	NA	6.43
L16061026-04	1.00	01	6.929
L16061026-05	40.0	DL01	6.896
L16061026-07	1.00	01	6.929
WG573299-01	1.00	01	6.929
WG573299-02	1.00	01	6.929
WG573299-03	1.00	01	6.929

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4828846
Report generated: 06/29/2016 08:21

2.2.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18521.D
Acq On : 23 Jun 2016 18:08
Operator : MES
Sample : L16061026-04 827-DIOX
Misc : 1,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jun 24 08:01:29 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.929	152	55282	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.771	96	130983	5.7581	ug/L	-0.06
Spiked Amount 5.000			Recovery	=	115.20%	
4) Nitrobenzene-d5	7.431	82	7452	0.1276	ug/L	0.00
Spiked Amount 5.000			Recovery	=	2.60%	
5) 2-Fluorobiphenyl	8.919	172	1842	0.0125	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.20%	
6) p-Terphenyl-d14	12.184	244	137	0.0010	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	110340	6.5234	ug/L	85

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18521.D
Acq On : 23 Jun 2016 18:08
Operator : MES
Sample : L16061026-04 827-DIOX
Misc : 1,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jun 24 08:01:29 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

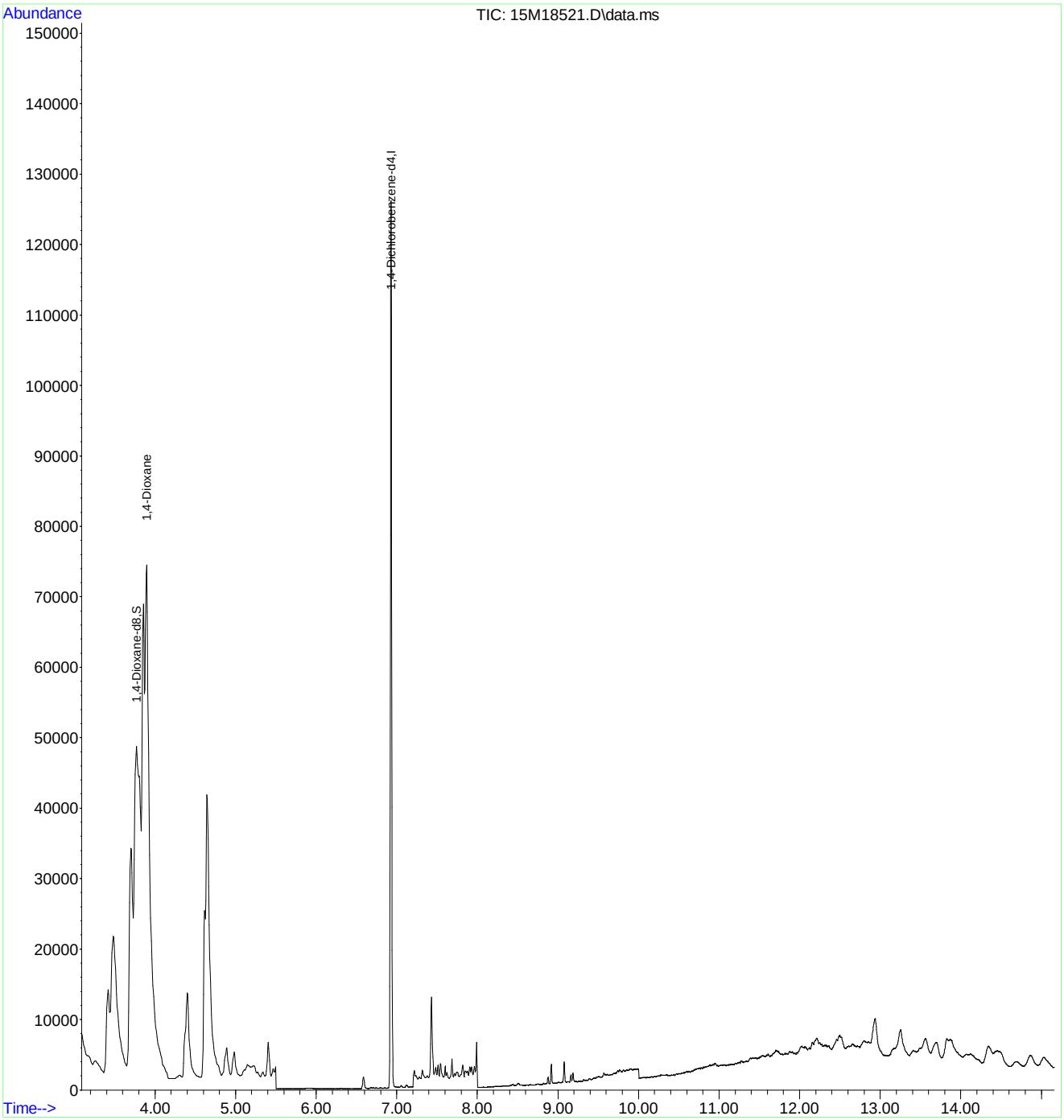

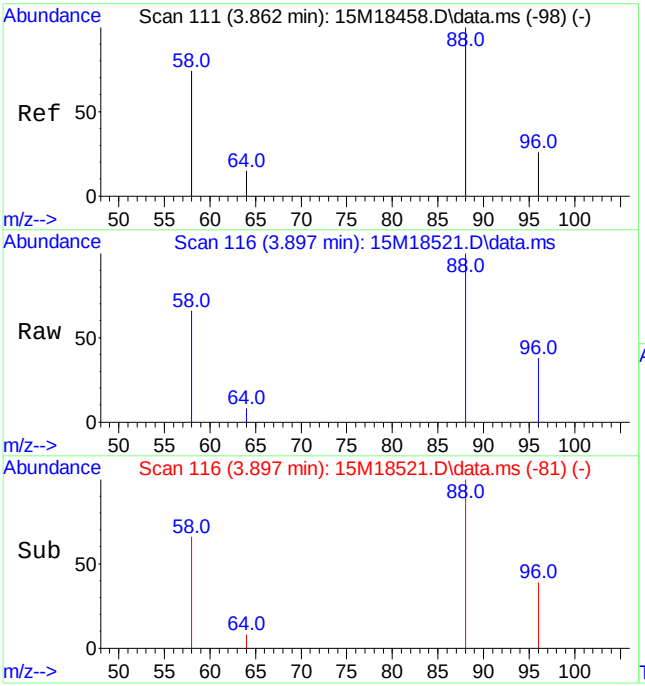

#2
1,4-Dioxane
Concen: 6.52 ug/L
RT: 3.897 min Scan# 116
Delta R.T. 0.035 min
Lab File: 15M18521.D
Acq: 23 Jun 2016 18:08

Tgt Ion: 58 Resp: 110340

Ion	Ratio	Lower	Upper
58	100		
88	151.6	103.1	240.7

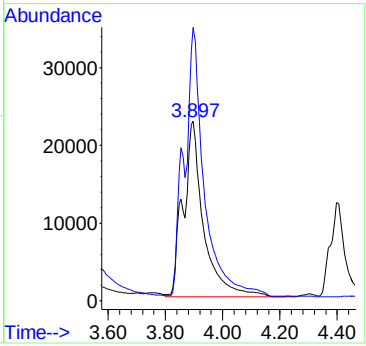

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18600.D
Acq On : 27 Jun 2016 15:30
Operator : MES
Sample : L16061026-05 40X
Misc : 1,40
ALS Vial : 9 Sample Multiplier: 40

Quant Time: Jun 27 17:44:13 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.896	152	46495	1.0000	ug/mL	#-0.04
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.665	96	84849	177.3975	ug/L	-0.16
Spiked Amount 5.000			Recovery	= 3548.00%		
4) Nitrobenzene-d5	7.404	82	94	0.0766	ug/L	-0.03
Spiked Amount 5.000			Recovery	= 1.60%		
5) 2-Fluorobiphenyl	8.889	172	85	0.0274	ug/L	-0.03
Spiked Amount 5.000			Recovery	= 0.60%		
6) p-Terphenyl-d14	12.103	244	3	0.0010	ug/L	-0.08
Spiked Amount 5.000			Recovery	= 0.00%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.799	58	78397	5.5109	ug/L	87

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18600.D
Acq On : 27 Jun 2016 15:30
Operator : MES
Sample : L16061026-05 40X
Misc : 1,40
ALS Vial : 9 Sample Multiplier: 40

Quant Time: Jun 27 17:44:13 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

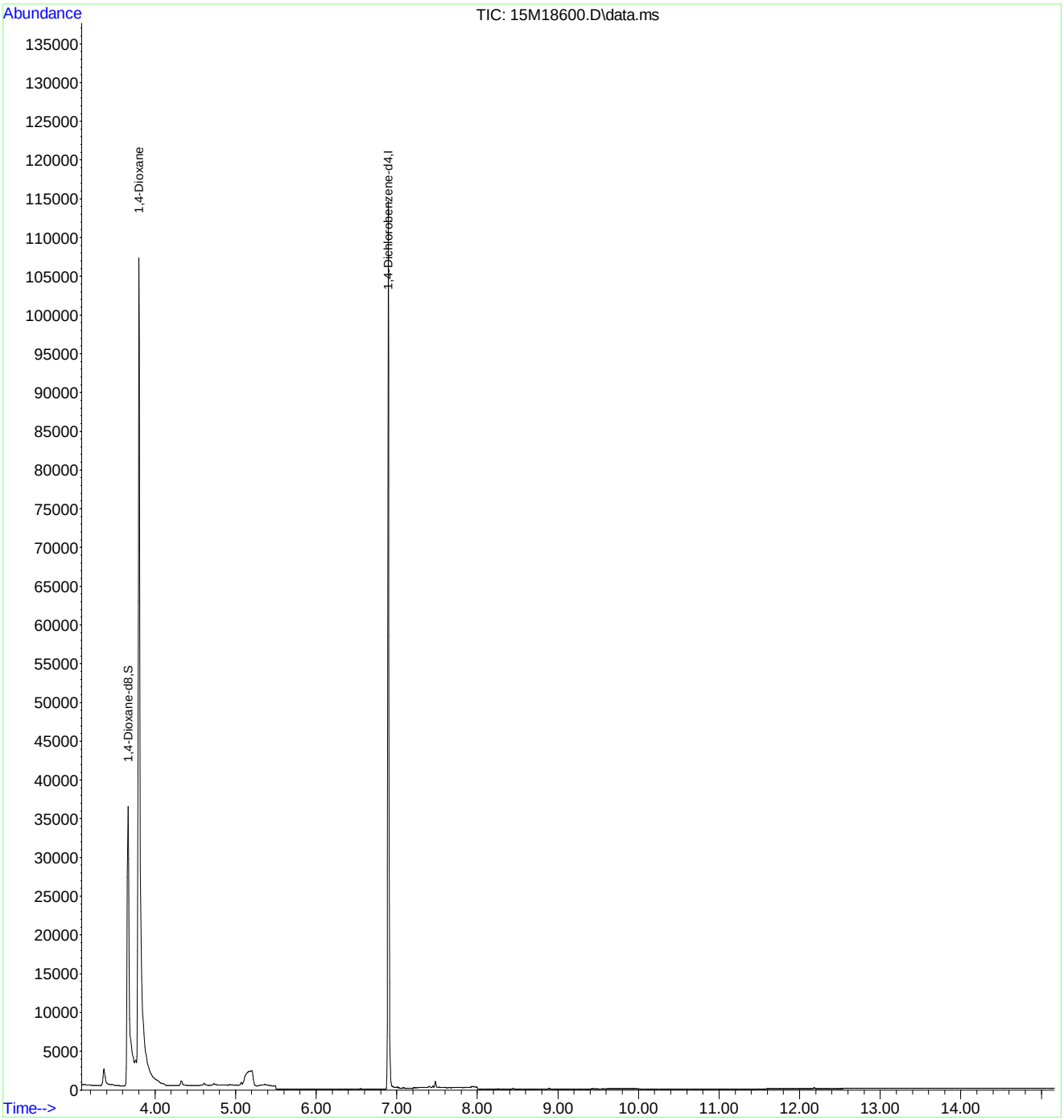

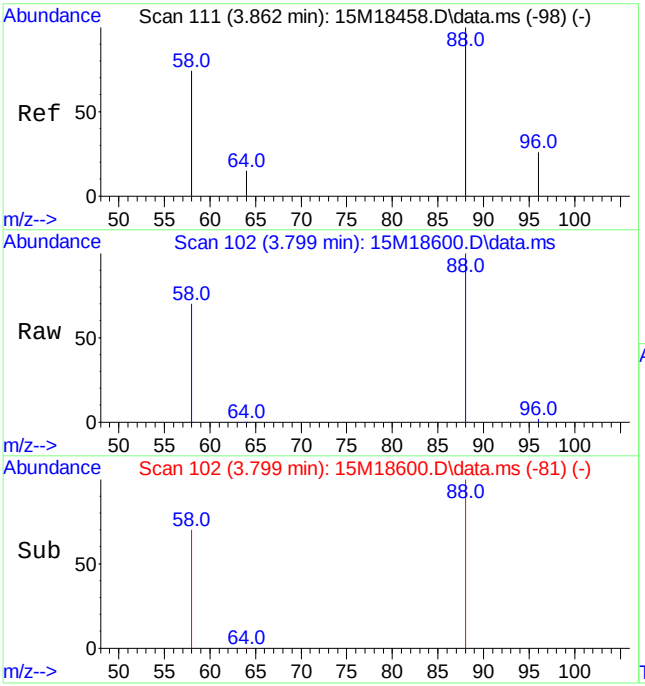

#2
1,4-Dioxane
Concen: 5.51 ug/L
RT: 3.799 min Scan# 102
Delta R.T. -0.063 min
Lab File: 15M18600.D
Acq: 27 Jun 2016 15:30

Tgt Ion: 58 Resp: 78397

Ion	Ratio	Lower	Upper
58	100		
88	154.3	103.1	240.7

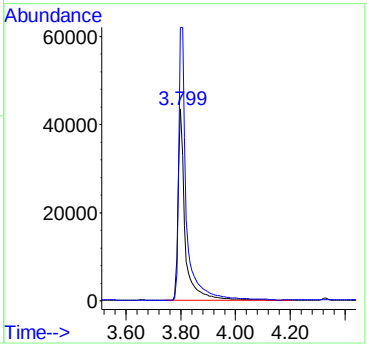

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18523.D
Acq On : 23 Jun 2016 18:54
Operator : MES
Sample : L16061026-07 827-DIOX
Misc : 1,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 24 08:01:35 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.929	152	44830	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.848	96	46839	2.5391	ug/L	0.02
Spiked Amount 5.000			Recovery	=	50.80%	
4) Nitrobenzene-d5	7.431	82	6116	0.1292	ug/L	0.00
Spiked Amount 5.000			Recovery	=	2.60%	
5) 2-Fluorobiphenyl	8.919	172	2445	0.0205	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.40%	
6) p-Terphenyl-d14	12.151	244	474	0.0041	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.883	58	8049	0.5868	ug/L	89

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18523.D
Acq On : 23 Jun 2016 18:54
Operator : MES
Sample : L16061026-07 827-DIOX
Misc : 1,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 24 08:01:35 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

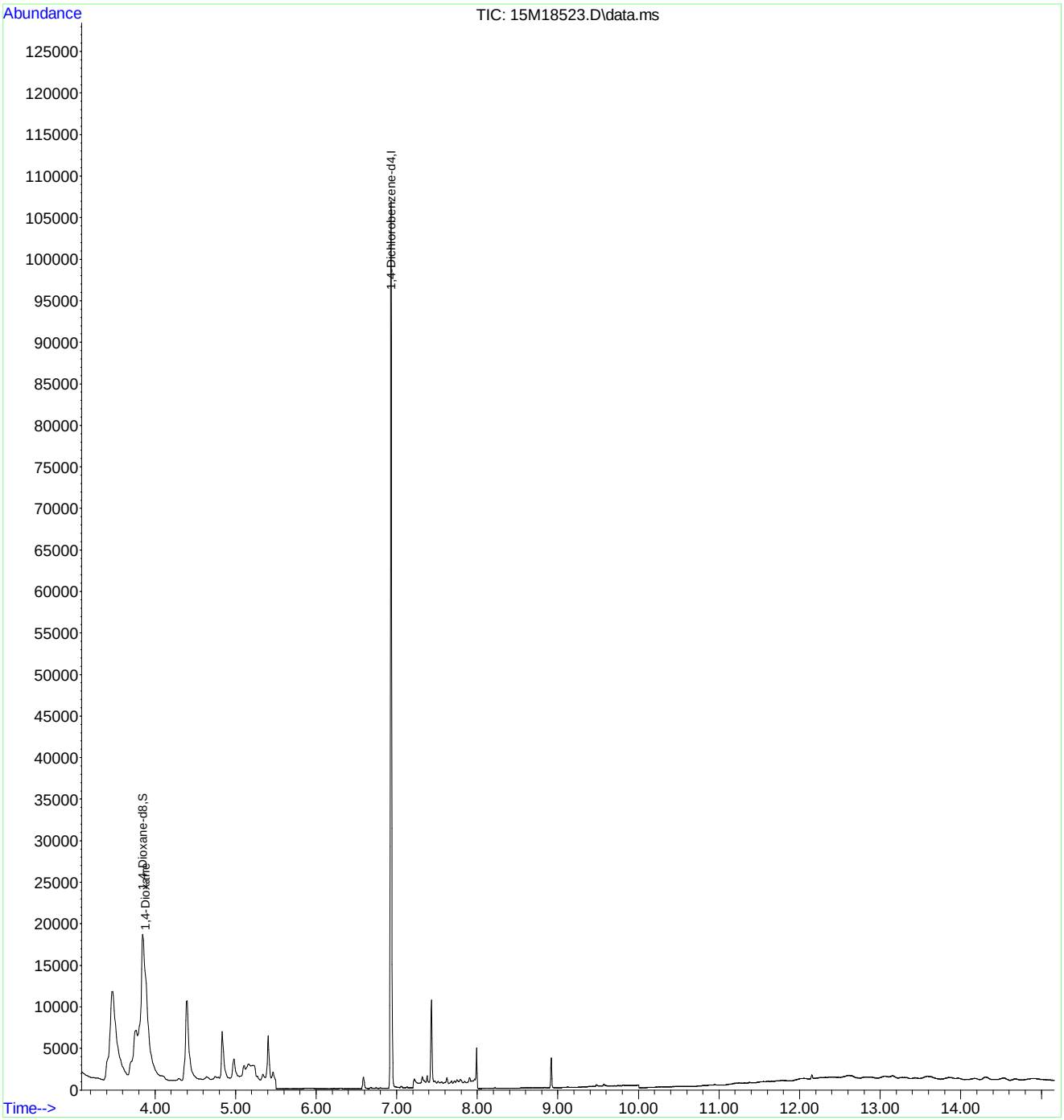

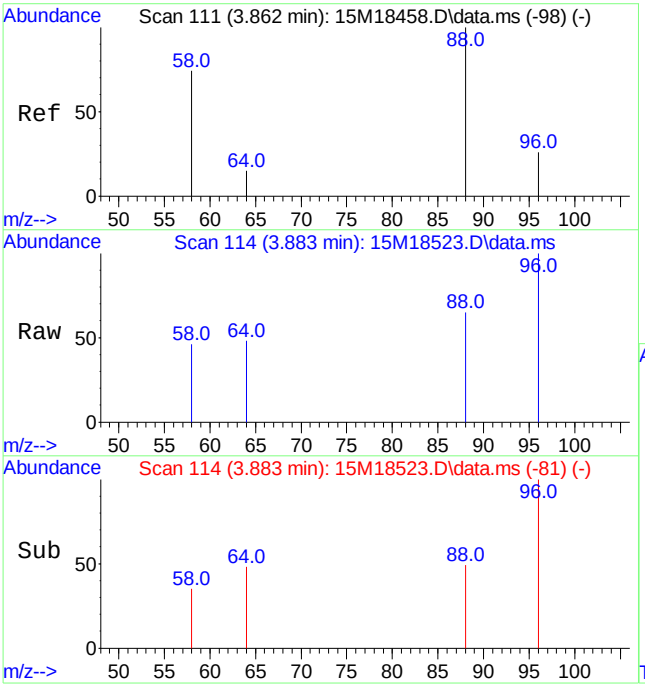

#2
1,4-Dioxane
Concen: 0.59 ug/L
RT: 3.883 min Scan# 114
Delta R.T. 0.021 min
Lab File: 15M18523.D
Acq: 23 Jun 2016 18:54

Tgt Ion: 58 Resp: 8049

Ion	Ratio	Lower	Upper
58	100		
88	156.7	103.1	240.7

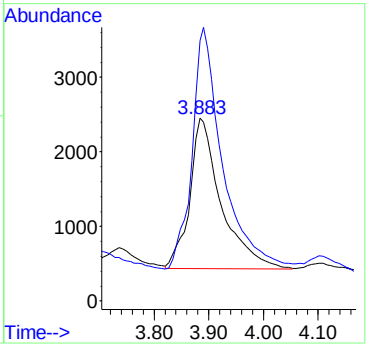

2.2.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 22 08:04:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	39637	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.827	96	82573	5.0627 ug/L	0.00
Spiked Amount 5.000			Recovery	= 101.20%	
4) Nitrobenzene-d5	7.431	82	223381	5.3353 ug/L	0.00
Spiked Amount 5.000			Recovery	= 106.80%	
5) 2-Fluorobiphenyl	8.922	172	533101	5.0444 ug/L	0.00
Spiked Amount 5.000			Recovery	= 100.80%	
6) p-Terphenyl-d14	12.184	244	519544	5.1003 ug/L	0.00
Spiked Amount 5.000			Recovery	= 102.00%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.862	58	60883	5.0202 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 22 08:04:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

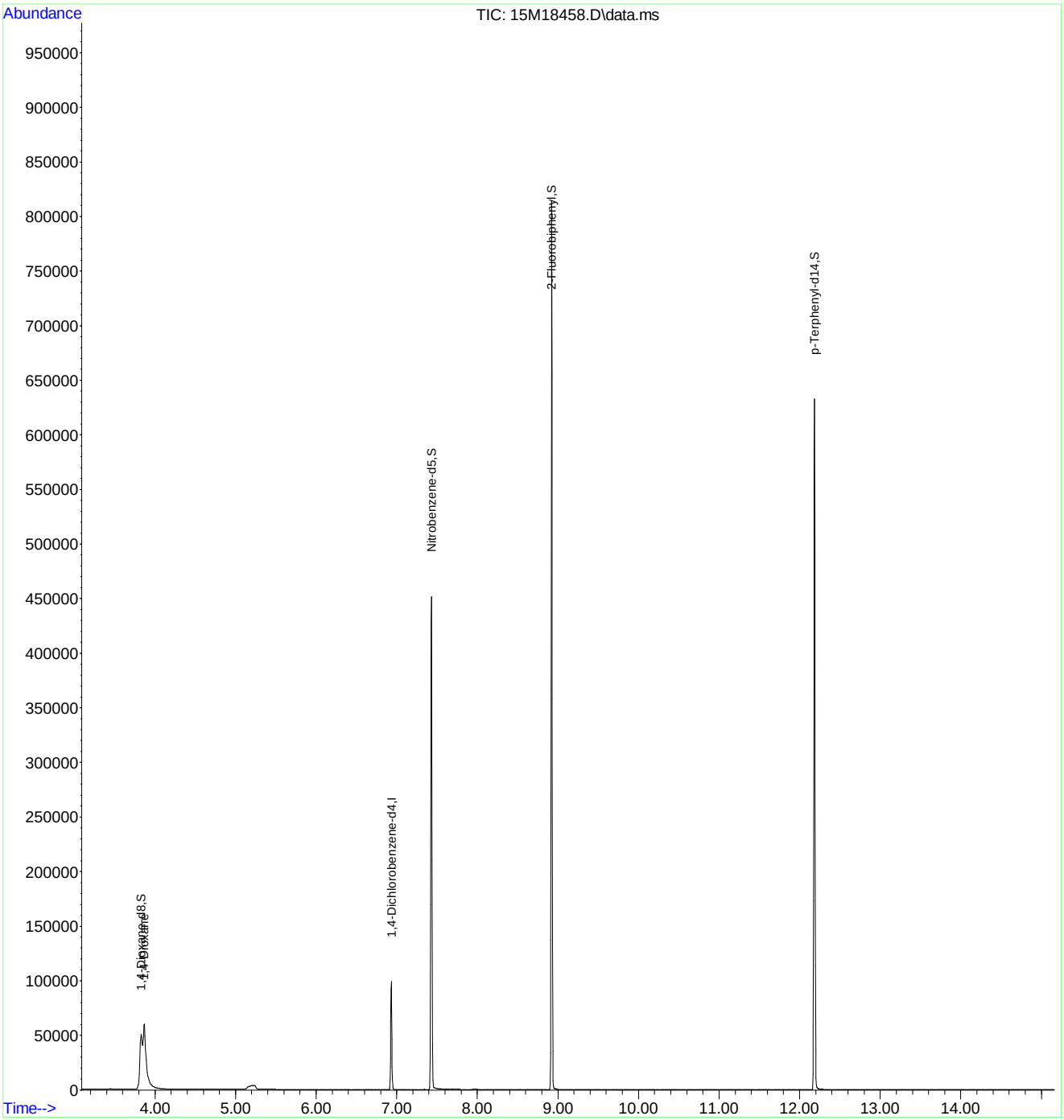

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18459.D
Acq On : 21 Jun 2016 10:27
Operator : MES
Sample : WG573501-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 22 08:04:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	43874	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	186767	10.3452	ug/L	0.00
Spiked Amount 5.000			Recovery = 207.00%			
4) Nitrobenzene-d5	7.431	82	527549	11.3834	ug/L	0.00
Spiked Amount 5.000			Recovery = 227.60%			
5) 2-Fluorobiphenyl	8.926	172	1199799	10.2565	ug/L	0.00
Spiked Amount 5.000			Recovery = 205.20%			
6) p-Terphenyl-d14	12.240	244	1225328	10.8672	ug/L	0.06
Spiked Amount 5.000			Recovery = 217.40%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	138820	10.3412	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18459.D
Acq On : 21 Jun 2016 10:27
Operator : MES
Sample : WG573501-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 22 08:04:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

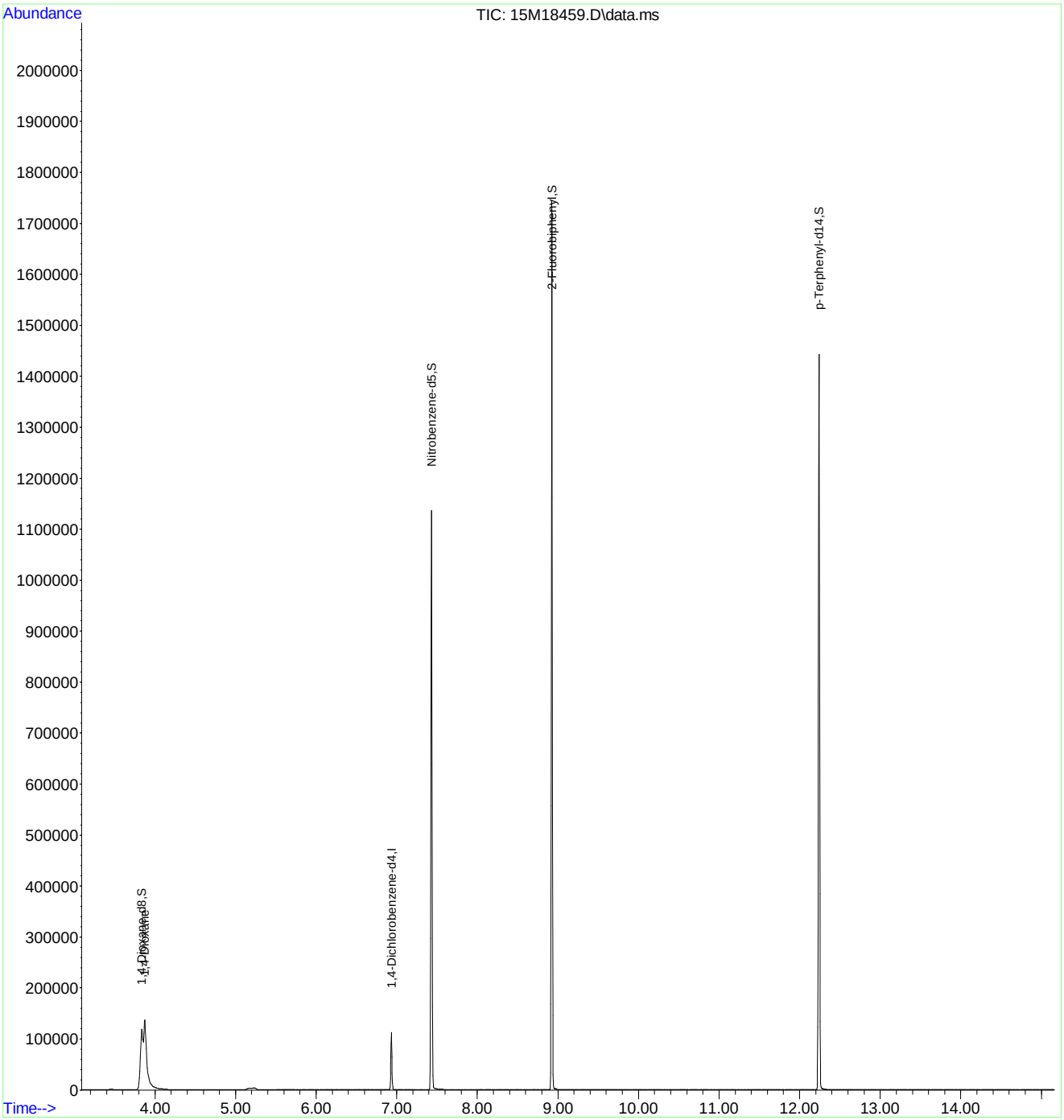

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18460.D
Acq On : 21 Jun 2016 10:49
Operator : MES
Sample : WG573501-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 22 08:04:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	44299	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.834	96	138833	7.6163 ug/L	0.00
Spiked Amount 5.000			Recovery	= 152.40%	
4) Nitrobenzene-d5	7.431	82	389810	8.3306 ug/L	0.00
Spiked Amount 5.000			Recovery	= 166.60%	
5) 2-Fluorobiphenyl	8.923	172	909050	7.6965 ug/L	0.00
Spiked Amount 5.000			Recovery	= 154.00%	
6) p-Terphenyl-d14	12.203	244	921380	8.0931 ug/L	0.02
Spiked Amount 5.000			Recovery	= 161.80%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.876	58	103182	7.6127 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18460.D
Acq On : 21 Jun 2016 10:49
Operator : MES
Sample : WG573501-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 22 08:04:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

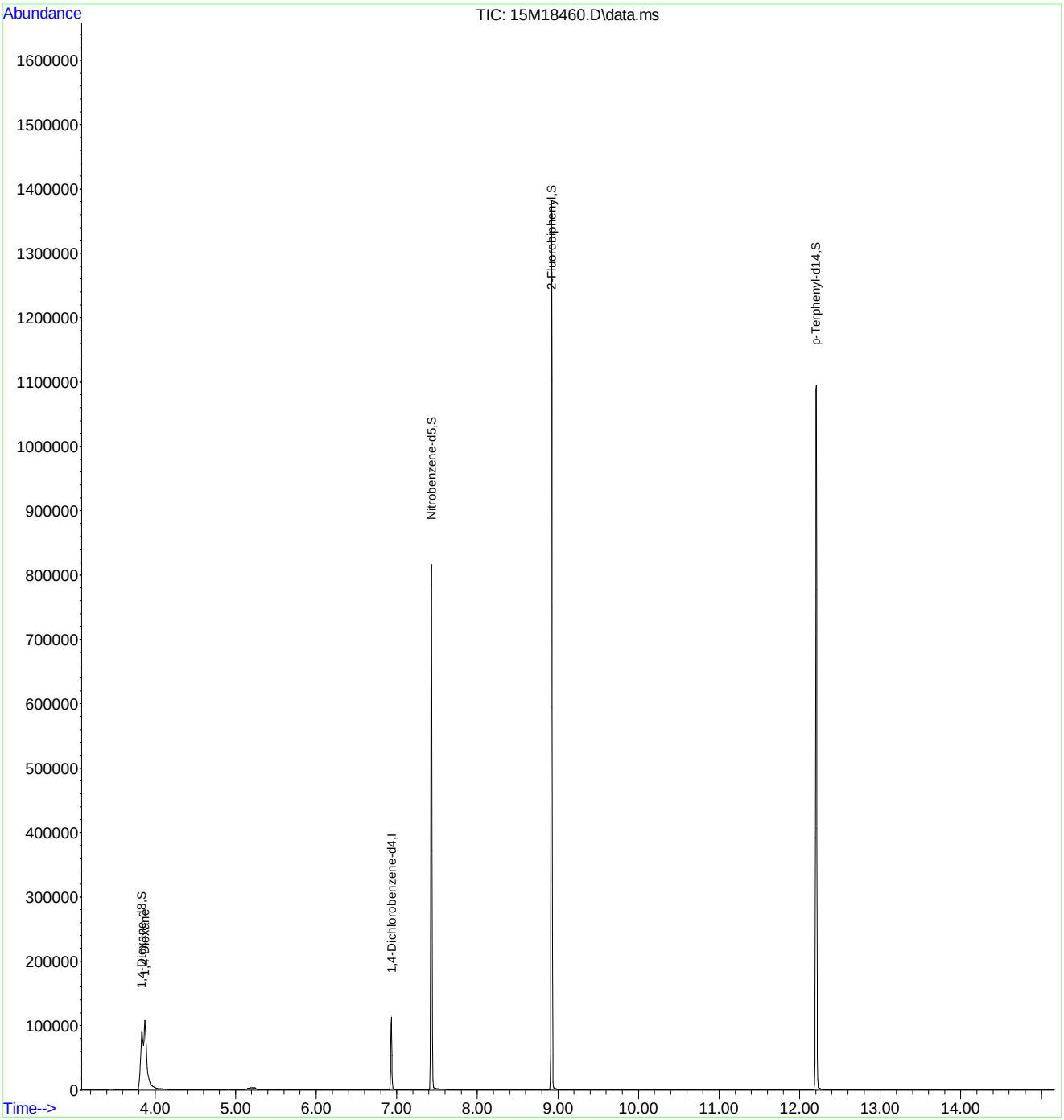

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18461.D
Acq On : 21 Jun 2016 11:12
Operator : MES
Sample : WG573501-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 22 08:04:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	35478	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.827	96	35630	2.4406	ug/L	0.00
Spiked Amount 5.000			Recovery = 48.80%			
4) Nitrobenzene-d5	7.431	82	88869	2.3714	ug/L	0.00
Spiked Amount 5.000			Recovery = 47.40%			
5) 2-Fluorobiphenyl	8.923	172	232500	2.4579	ug/L	0.00
Spiked Amount 5.000			Recovery = 49.20%			
6) p-Terphenyl-d14	12.199	244	218191	2.3930	ug/L	0.02
Spiked Amount 5.000			Recovery = 47.80%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.862	58	26333	2.4259	ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18461.D
Acq On : 21 Jun 2016 11:12
Operator : MES
Sample : WG573501-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 22 08:04:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

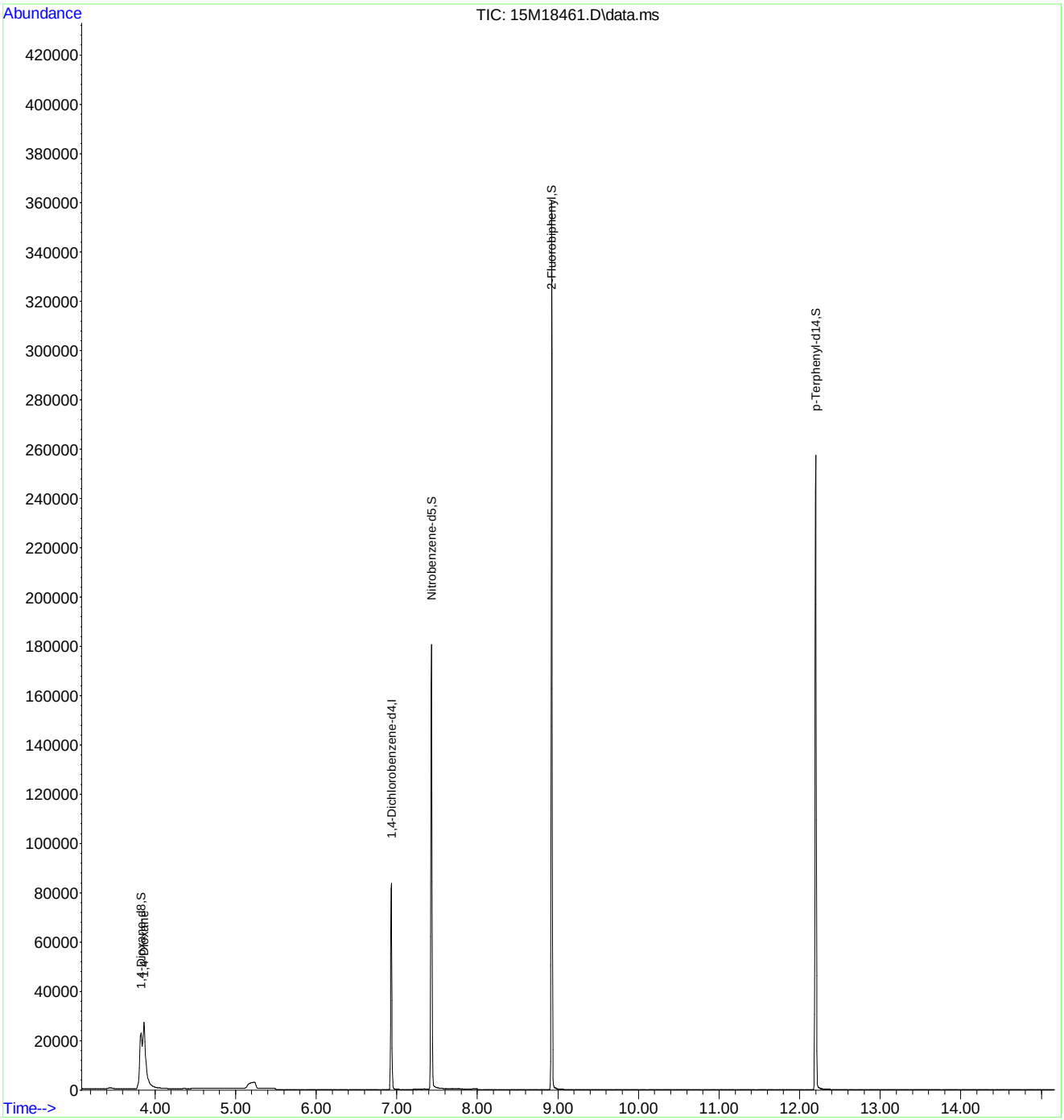

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18462.D
Acq On : 21 Jun 2016 11:34
Operator : MES
Sample : WG573501-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 22 08:04:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	44672	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.841	96	17660	0.9607	ug/L	0.01
Spiked Amount 5.000			Recovery	=	19.20%	
4) Nitrobenzene-d5	7.431	82	41409	0.8776	ug/L	0.00
Spiked Amount 5.000			Recovery	=	17.60%	
5) 2-Fluorobiphenyl	8.922	172	114491	0.9612	ug/L	0.00
Spiked Amount 5.000			Recovery	=	19.20%	
6) p-Terphenyl-d14	12.203	244	105713	0.9208	ug/L	0.02
Spiked Amount 5.000			Recovery	=	18.40%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.876	58	13250	0.9694	ug/L	82

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18462.D
Acq On : 21 Jun 2016 11:34
Operator : MES
Sample : WG573501-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 22 08:04:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

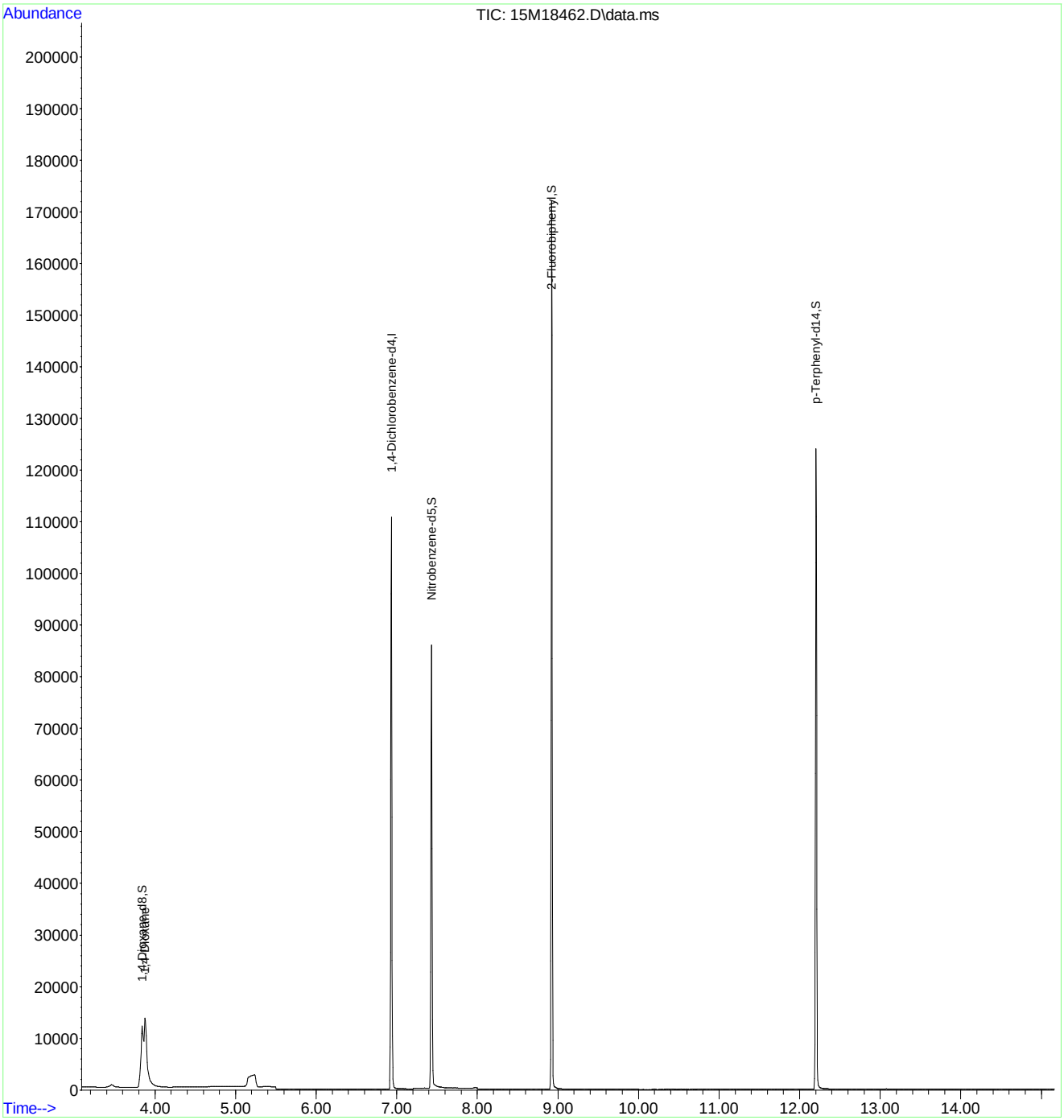

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18463.D
Acq On : 21 Jun 2016 11:57
Operator : MES
Sample : WG573501-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 22 08:04:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	45840	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.841	96	7629	0.4045	ug/L	0.01
Spiked Amount 5.000			Recovery	=	8.00%	
4) Nitrobenzene-d5	7.431	82	16604	0.3429	ug/L	0.00
Spiked Amount 5.000			Recovery	=	6.80%	
5) 2-Fluorobiphenyl	8.923	172	48617	0.3978	ug/L	0.00
Spiked Amount 5.000			Recovery	=	8.00%	
6) p-Terphenyl-d14	12.210	244	44097	0.3743	ug/L	0.03
Spiked Amount 5.000			Recovery	=	7.40%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.876	58	5650	0.4028	ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18463.D
Acq On : 21 Jun 2016 11:57
Operator : MES
Sample : WG573501-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 22 08:04:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

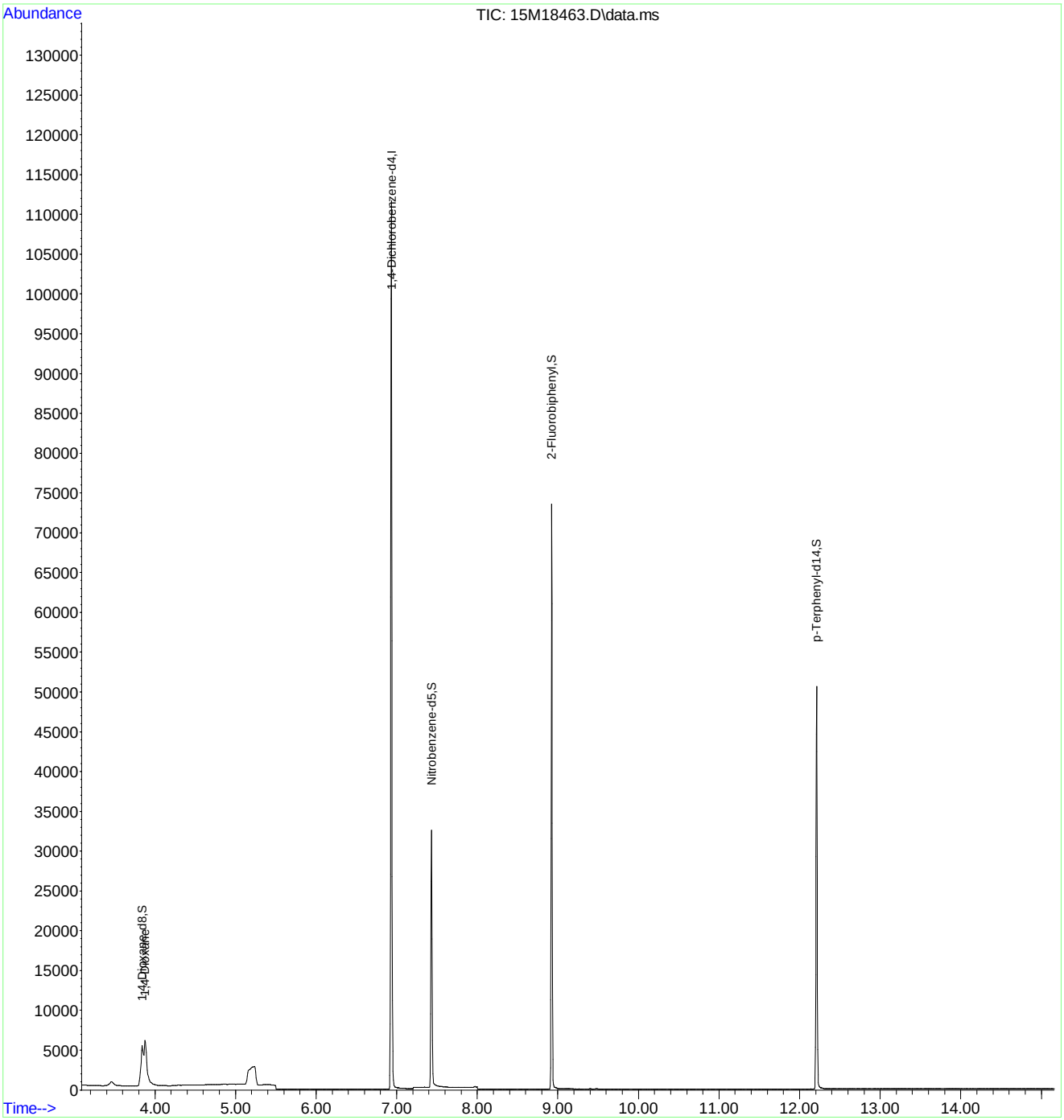

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	41944	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.792	96	22	0.0013	ug/L	-0.04
Spiked Amount 5.000			Recovery	=	0.00%	
4) Nitrobenzene-d5	7.436	82	56	0.0013	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
5) 2-Fluorobiphenyl	8.926	172	23	0.0002	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.214	244	128	0.0012	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	64750	5.0454	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

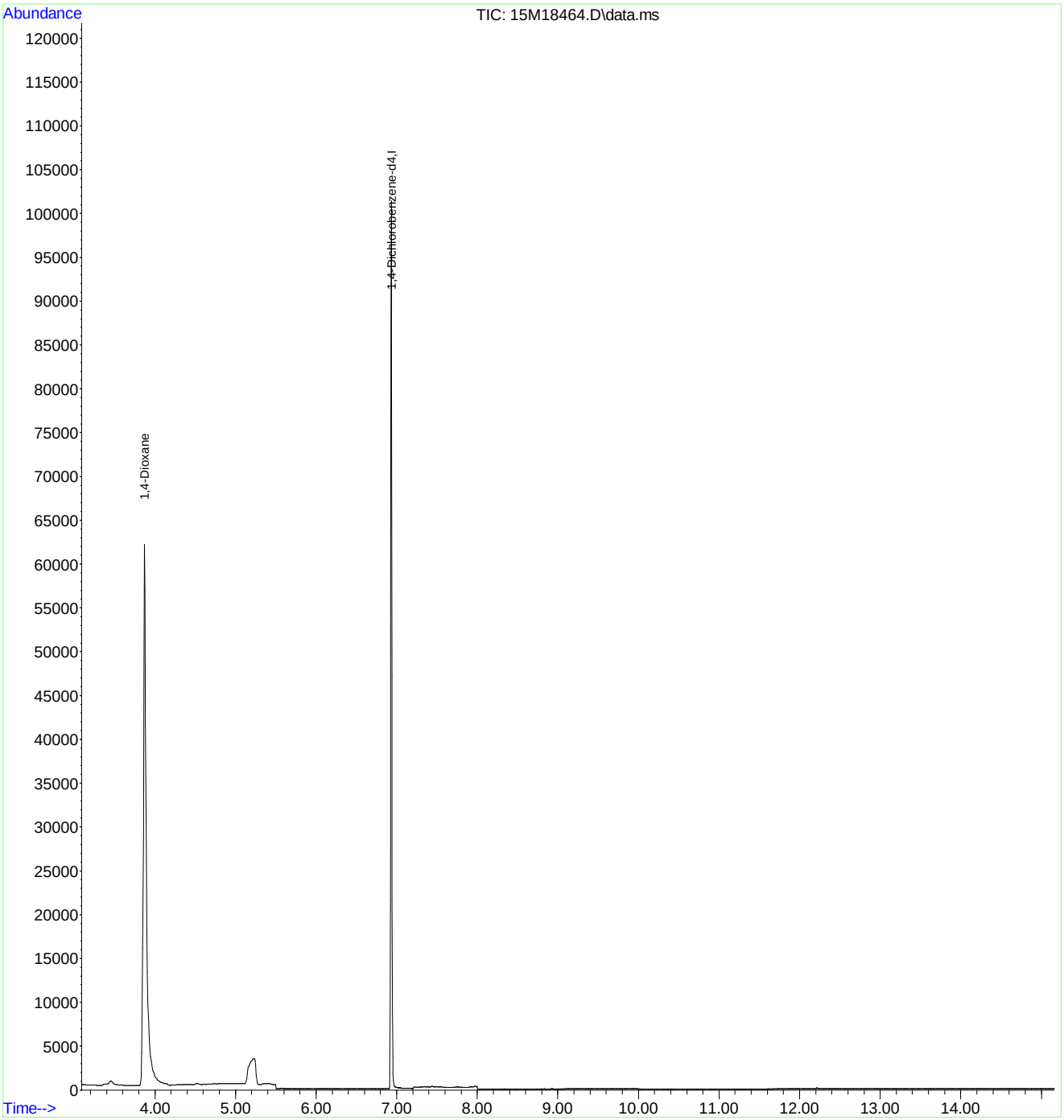

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	106	0.00
2		1,4-Dioxane	5.000	5.045	-0.9	106	0.00
3	S	1,4-Dioxane-d8	5.000	0.001	100.0#	0	-0.04
4	S	Nitrobenzene-d5	5.000	0.001	100.0#	0	0.00
5	S	2-Fluorobiphenyl	5.000	0.000	100.0#	0	0.00
6	S	p-Terphenyl-d14	5.000	0.001	100.0#	0	0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18510.D
Acq On : 23 Jun 2016 13:59
Operator : MES
Sample : WG573879-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 23 14:15:55 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.929	152	50565	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.848	96	96203	4.6237 ug/L	0.02
Spiked Amount 5.000			Recovery	= 92.40%	
4) Nitrobenzene-d5	7.426	82	280398	5.2498 ug/L	0.00
Spiked Amount 5.000			Recovery	= 105.00%	
5) 2-Fluorobiphenyl	8.919	172	664952	4.9322 ug/L	0.00
Spiked Amount 5.000			Recovery	= 98.60%	
6) p-Terphenyl-d14	12.155	244	665166	5.1186 ug/L	-0.03
Spiked Amount 5.000			Recovery	= 102.40%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.883	58	70119	4.5322 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18510.D
Acq On : 23 Jun 2016 13:59
Operator : MES
Sample : WG573879-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 23 14:15:55 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

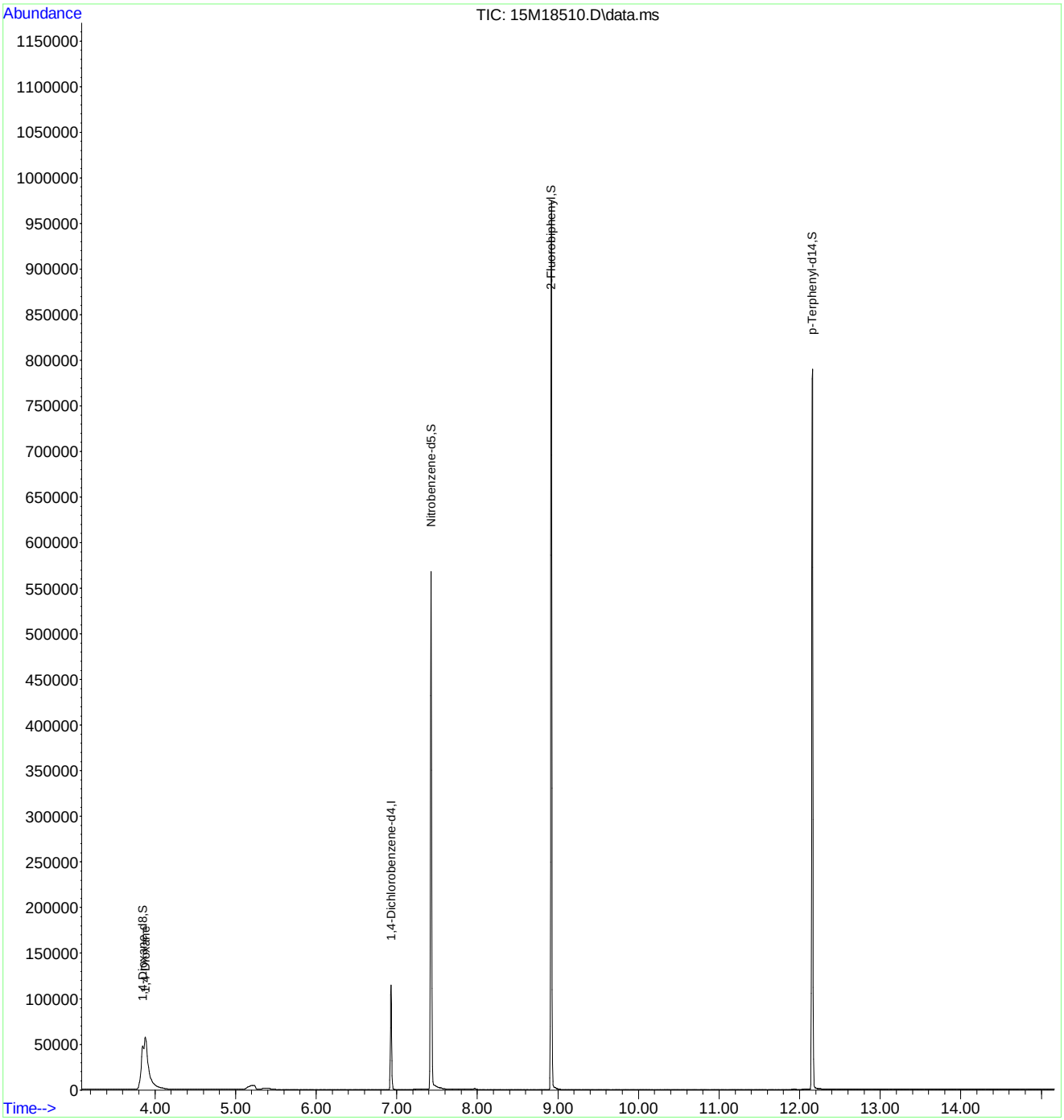

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18510.D
Acq On : 23 Jun 2016 13:59
Operator : MES
Sample : WG573879-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 23 14:15:55 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	128	0.00
2	1,4-Dioxane	0.306	0.277	9.5	115	0.02
3 S	1,4-Dioxane-d8	0.411	0.381	7.3	117	0.02
4 S	Nitrobenzene-d5	1.056	1.109	-5.0	126	0.00
5 S	2-Fluorobiphenyl	2.666	2.630	1.4	125	0.00
6 S	p-Terphenyl-d14	2.570	2.631	-2.4	128	-0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18510.D
Acq On : 23 Jun 2016 13:59
Operator : MES
Sample : WG573879-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 23 14:15:55 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	128	0.00
2	1,4-Dioxane	5.000	4.532	9.4	115	0.02
3 S	1,4-Dioxane-d8	5.000	4.624	7.5	117	0.02
4 S	Nitrobenzene-d5	5.000	5.250	-5.0	126	0.00
5 S	2-Fluorobiphenyl	5.000	4.932	1.4	125	0.00
6 S	p-Terphenyl-d14	5.000	5.119	-2.4	128	-0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18593.D
Acq On : 27 Jun 2016 12:37
Operator : MES
Sample : WG574241-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 27 13:07:36 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.892	152	42974	1.0000 ug/mL	#-0.04
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.749	96	78711	4.4512 ug/L	-0.08
Spiked Amount 5.000			Recovery	= 89.00%	
4) Nitrobenzene-d5	7.393	82	235288	5.1833 ug/L	-0.04
Spiked Amount 5.000			Recovery	= 103.60%	
5) 2-Fluorobiphenyl	8.886	172	551093	4.8097 ug/L	-0.04
Spiked Amount 5.000			Recovery	= 96.20%	
6) p-Terphenyl-d14	12.170	244	561144	5.0809 ug/L	-0.01
Spiked Amount 5.000			Recovery	= 101.60%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.785	58	57358	4.3623 ug/L	88

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18593.D
Acq On : 27 Jun 2016 12:37
Operator : MES
Sample : WG574241-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 27 13:07:36 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

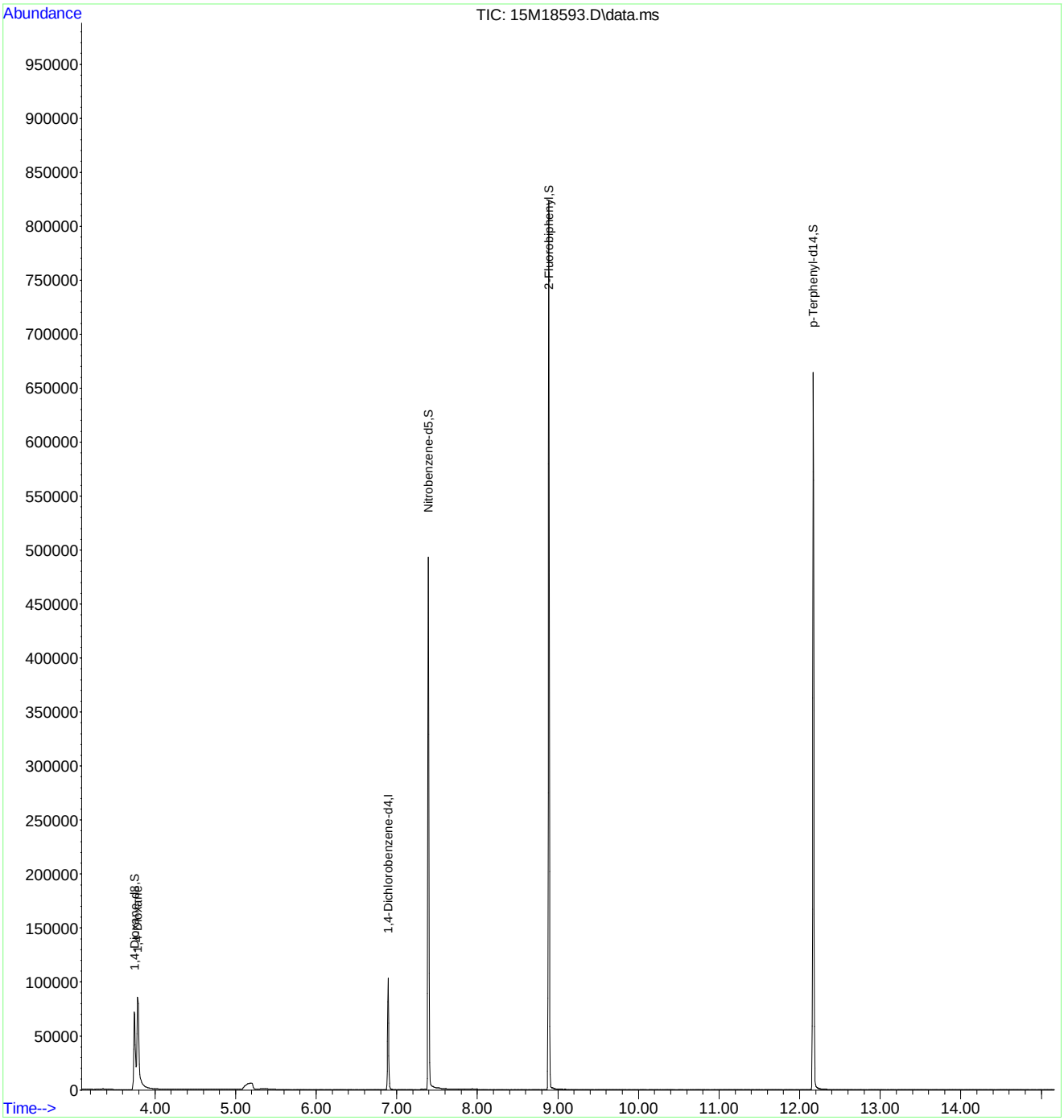

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18593.D
Acq On : 27 Jun 2016 12:37
Operator : MES
Sample : WG574241-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 27 13:07:36 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	108	-0.04
2	1,4-Dioxane	0.306	0.267	12.7	94	-0.08
3 S	1,4-Dioxane-d8	0.411	0.366	10.9	95	-0.08
4 S	Nitrobenzene-d5	1.056	1.095	-3.7	105	-0.04
5 S	2-Fluorobiphenyl	2.666	2.565	3.8	103	-0.04
6 S	p-Terphenyl-d14	2.570	2.612	-1.6	108	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18593.D
Acq On : 27 Jun 2016 12:37
Operator : MES
Sample : WG574241-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 27 13:07:36 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	108	-0.04
2	1,4-Dioxane	5.000	4.362	12.8	94	-0.08
3 S	1,4-Dioxane-d8	5.000	4.451	11.0	95	-0.08
4 S	Nitrobenzene-d5	5.000	5.183	-3.7	105	-0.04
5 S	2-Fluorobiphenyl	5.000	4.810	3.8	103	-0.04
6 S	p-Terphenyl-d14	5.000	5.081	-1.6	108	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

2.2.1.5 Raw QC Data

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

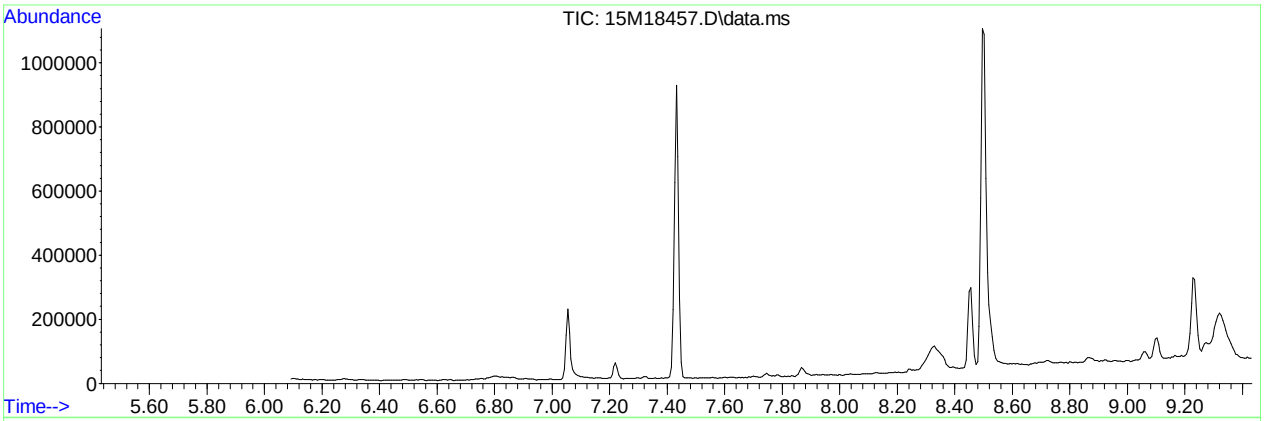

AutoFind: Scans 234, 235, 236; Background Corrected with Scan 228

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	38.8	34488	PASS
68	69	0.00	2	1.4	500	PASS
69	198	0.00	100	41.4	36833	PASS
70	69	0.00	2	0.5	172	PASS
127	198	40	60	51.9	46131	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	88880	PASS
199	198	5	9	6.7	5918	PASS
275	198	10	30	24.9	22090	PASS
365	198	1	100	2.7	2358	PASS
441	443	0.01	100	75.7	9586	PASS
442	198	40	100	73.4	65261	PASS
443	442	17	23	19.4	12659	PASS

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

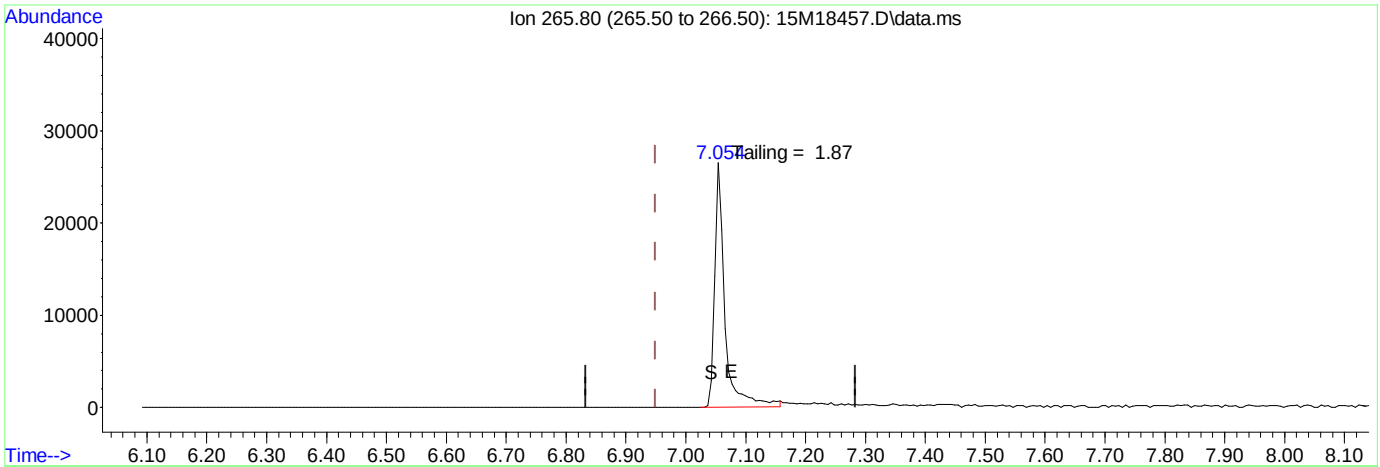

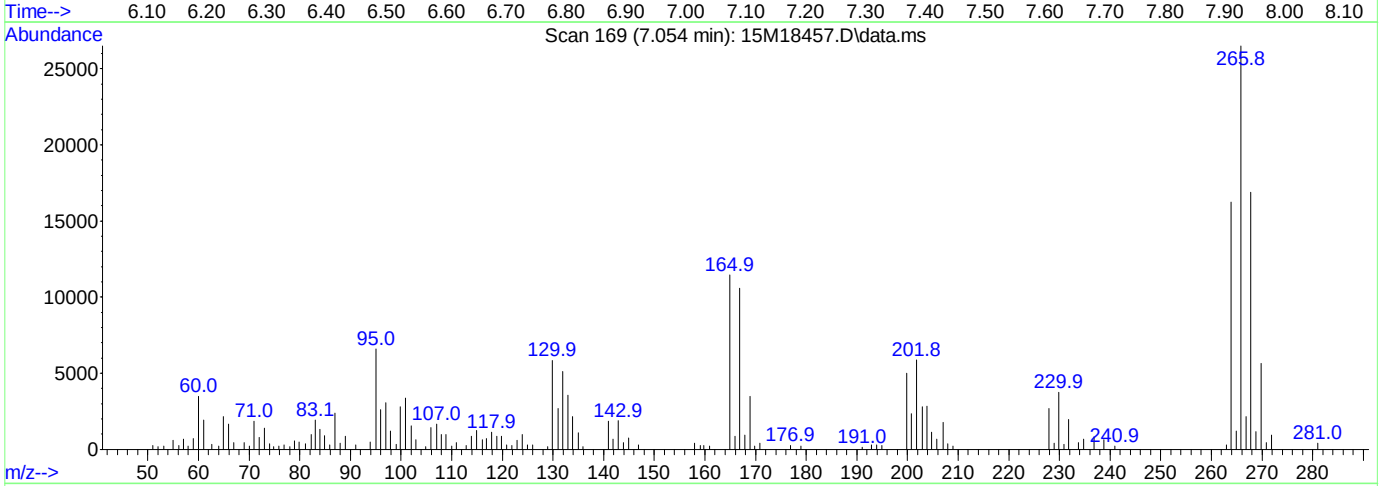

TIC: 15M18457.D\data.ms

(1) Pentachlorophenol

7.054min (+ 0.105) 0.00 ug/ml

response 30738

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

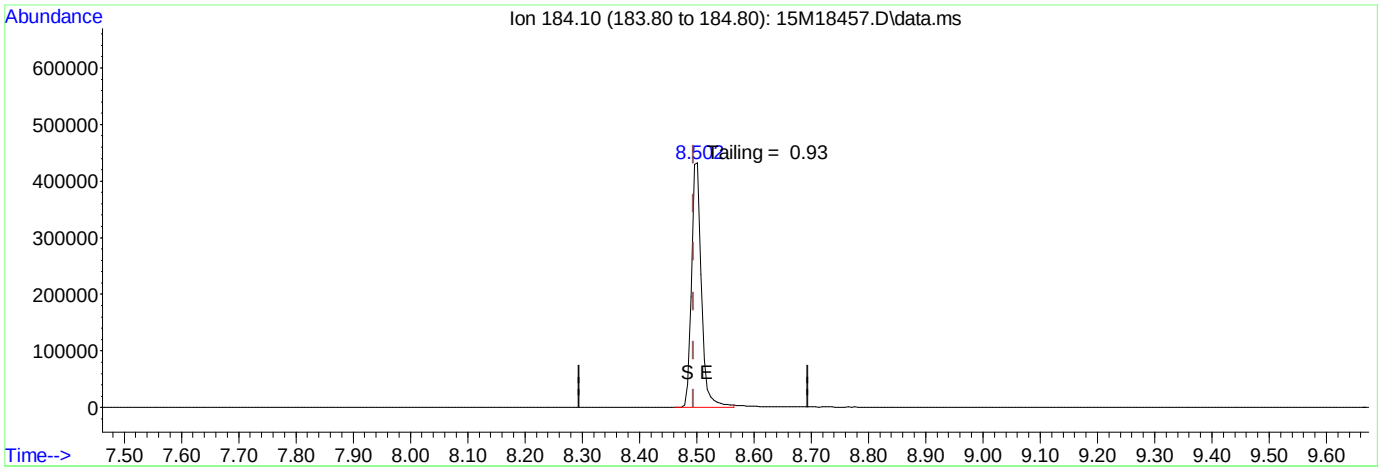

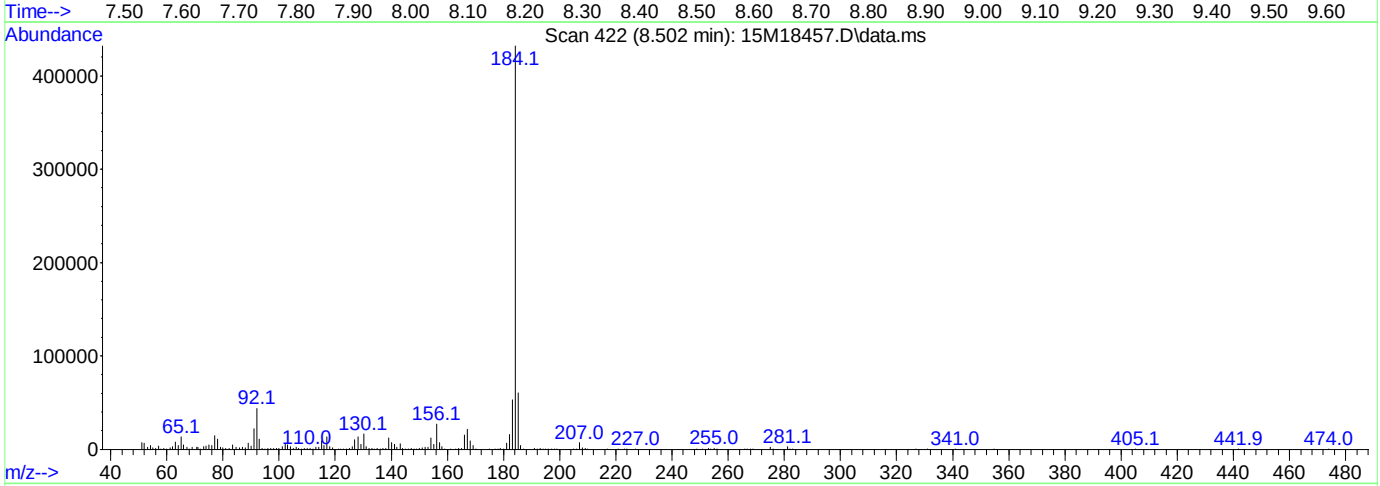

TIC: 15M18457.D\data.ms

(2) Benzidine

8.502min (+ 0.008) 0.00 ug/ml

response 532770

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

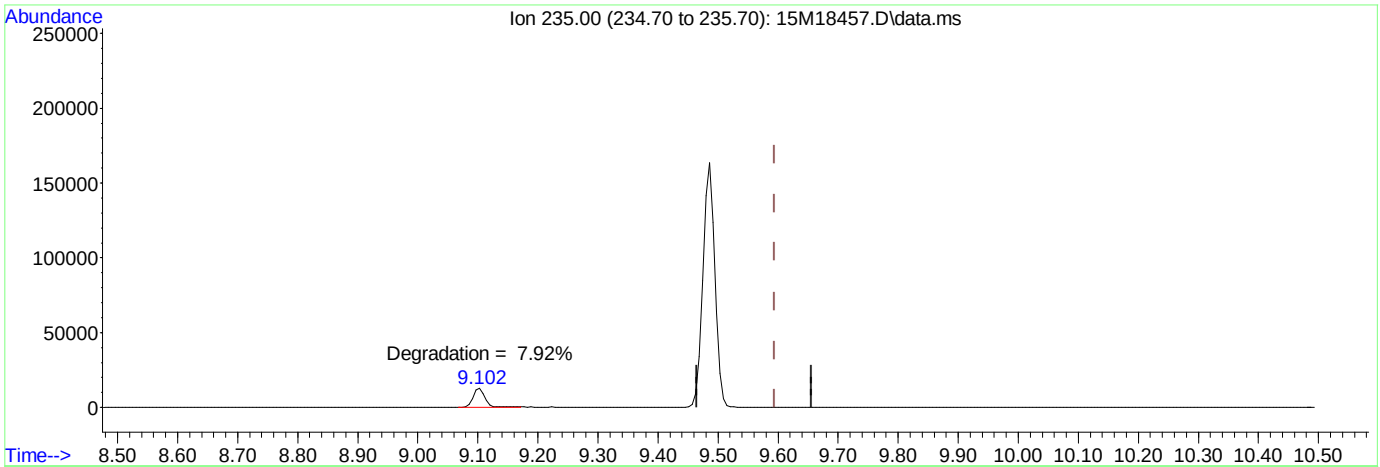

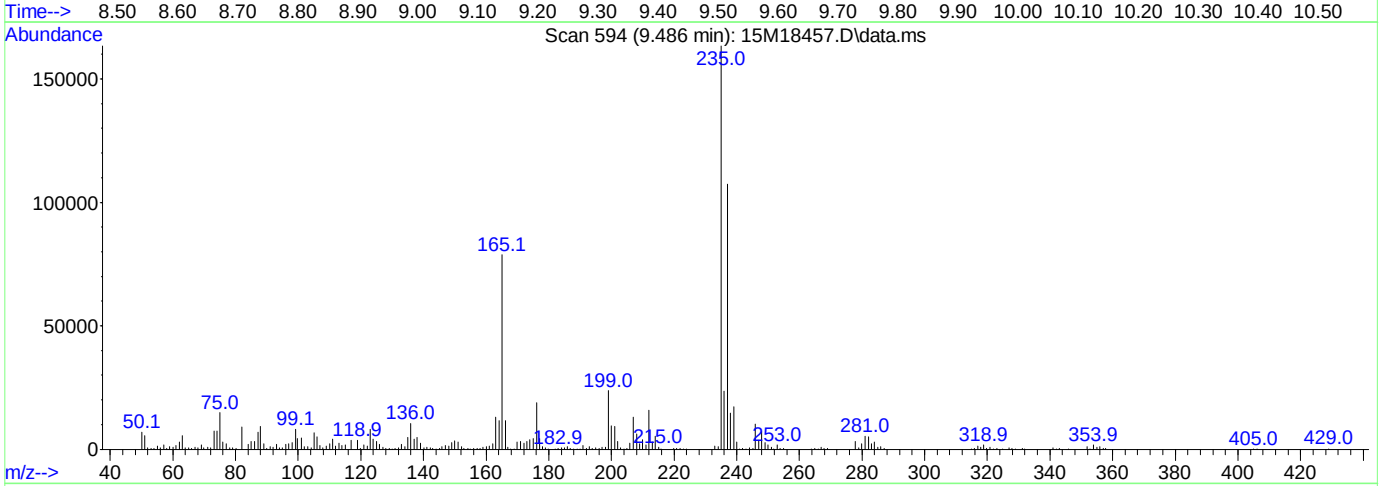

TIC: 15M18457.D\data.ms

(3) DDT

9.486min (-0.108) 0.00 ug/ml

response 180187

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18509.D
Acq On : 23 Jun 2016 13:42
Operator : MES
Sample : WG573879-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

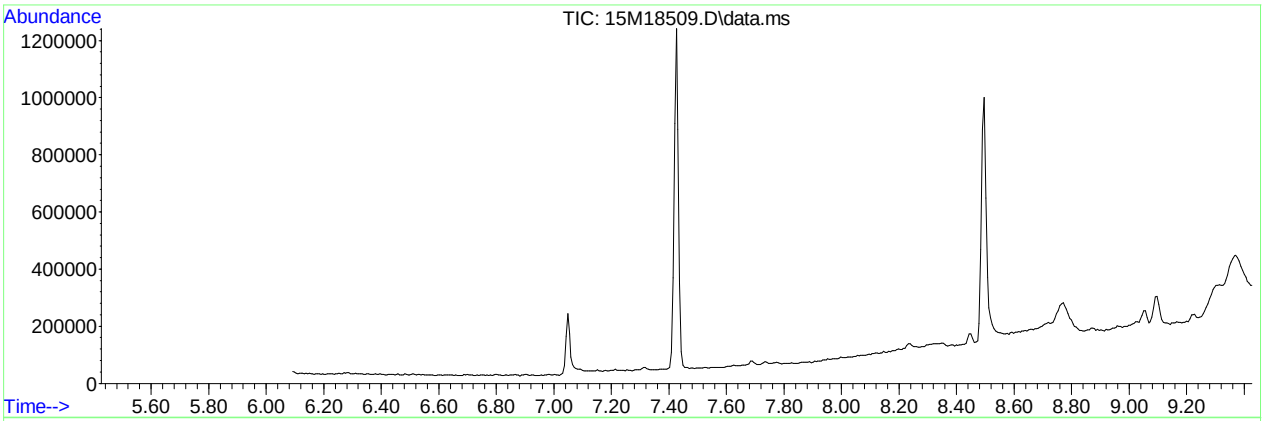

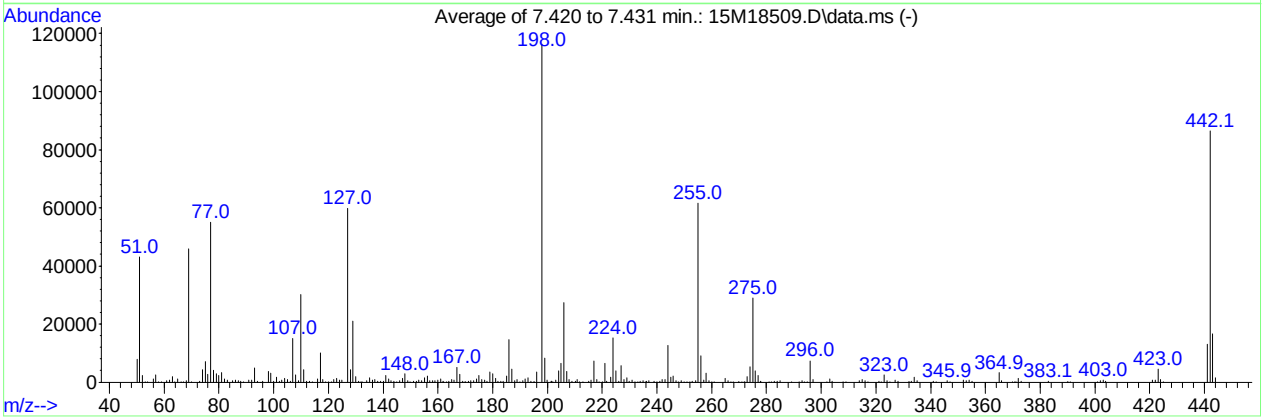

AutoFind: Scans 233, 234, 235; Background Corrected with Scan 227

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	37.0	43111	PASS
68	69	0.00	2	1.1	506	PASS
69	198	0.00	100	39.4	45795	PASS
70	69	0.00	2	0.2	72	PASS
127	198	40	60	51.3	59752	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	116364	PASS
199	198	5	9	7.1	8249	PASS
275	198	10	30	24.9	28968	PASS
365	198	1	100	2.8	3278	PASS
441	443	0.01	100	79.2	13093	PASS
442	198	40	100	74.3	86464	PASS
443	442	17	23	19.1	16541	PASS

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18509.D
Acq On : 23 Jun 2016 13:42
Operator : MES
Sample : WG573879-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 23 13:53:21 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

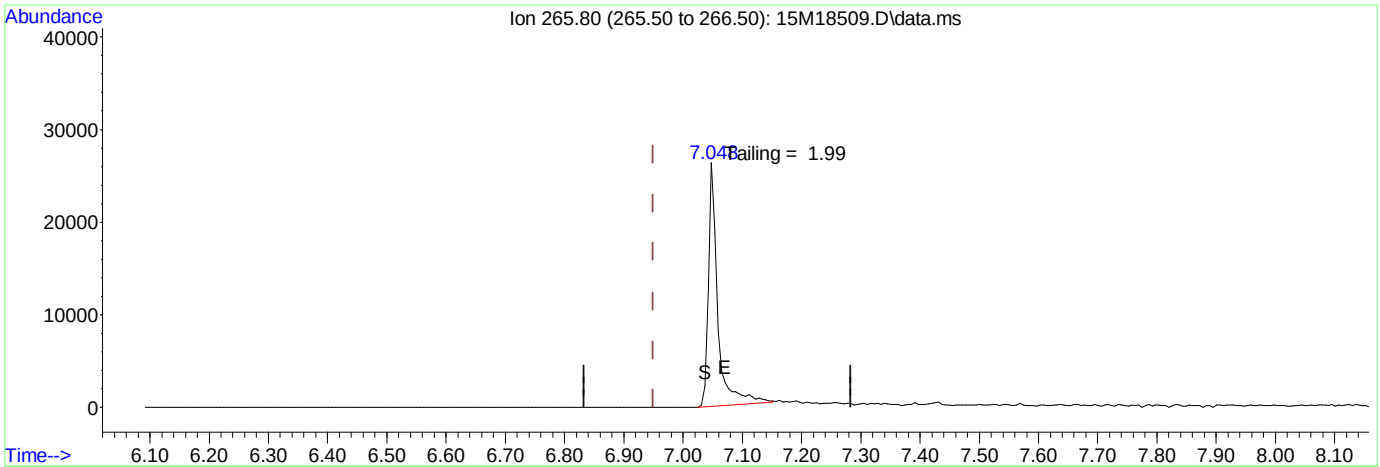

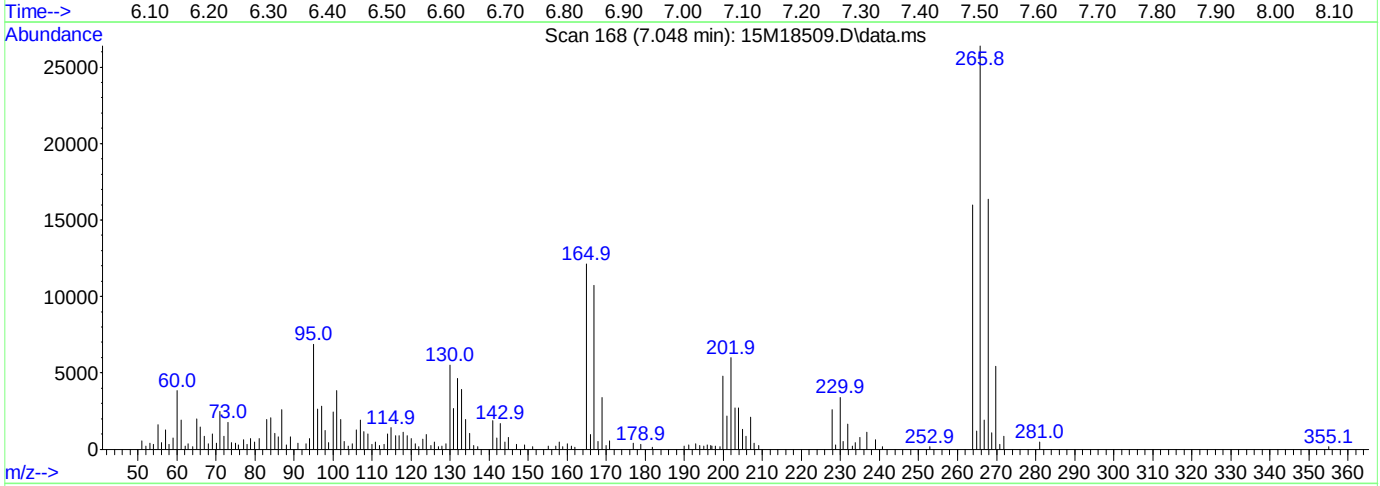

(1) Pentachlorophenol

7.048min (+ 0.099) 0.00 ug/ml

response 32081

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18509.D
Acq On : 23 Jun 2016 13:42
Operator : MES
Sample : WG573879-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 23 13:53:21 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

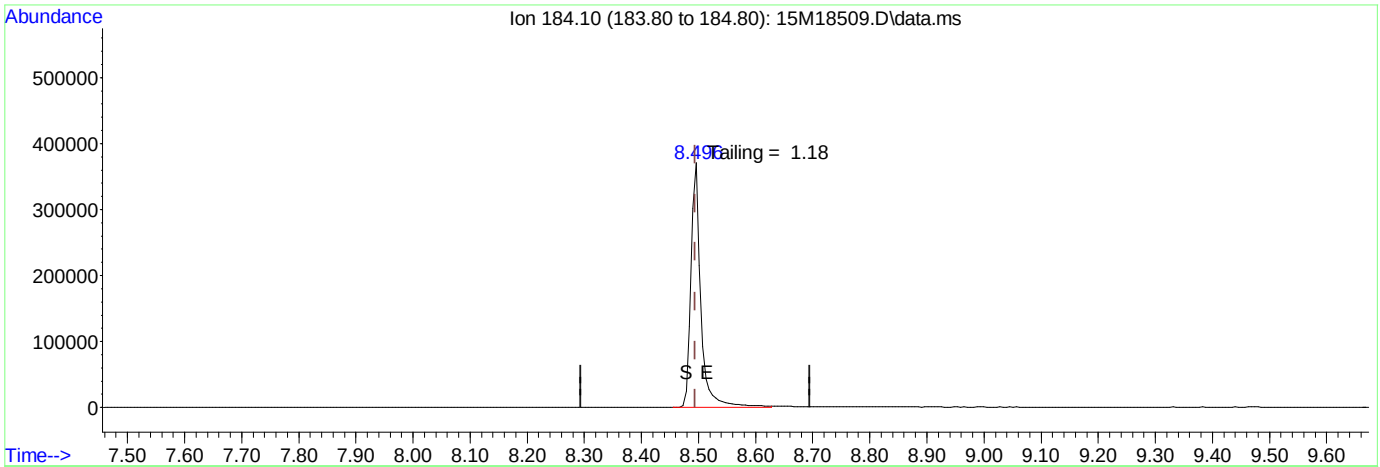

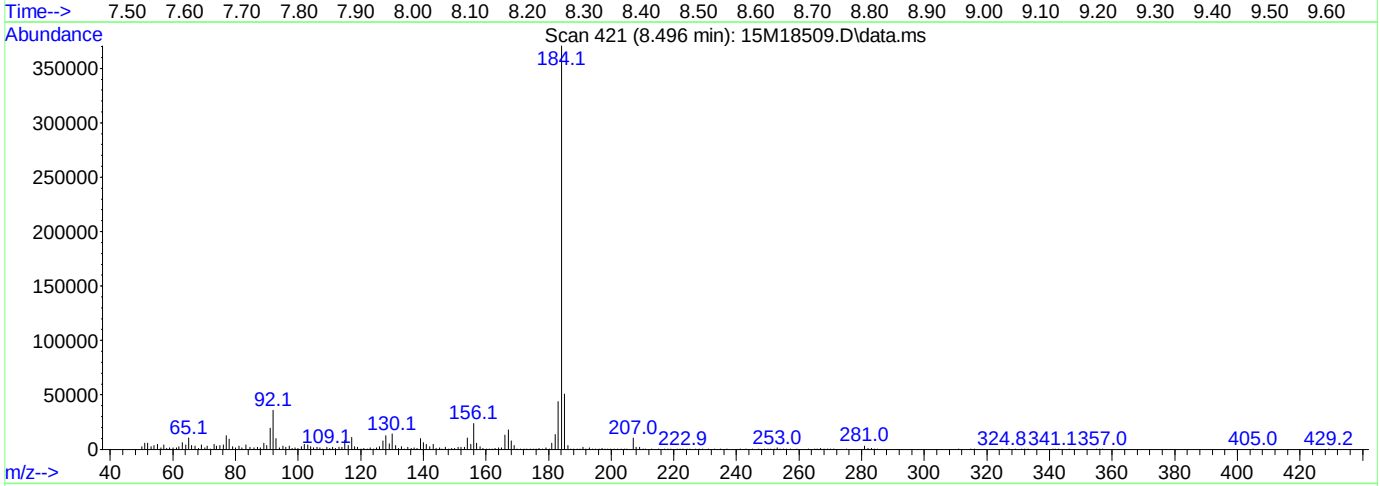

TIC: 15M18509.D\data.ms

(2) Benzidine

8.496min (+ 0.002) 0.00 ug/ml

response 452358

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18509.D
Acq On : 23 Jun 2016 13:42
Operator : MES
Sample : WG573879-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 23 13:53:21 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

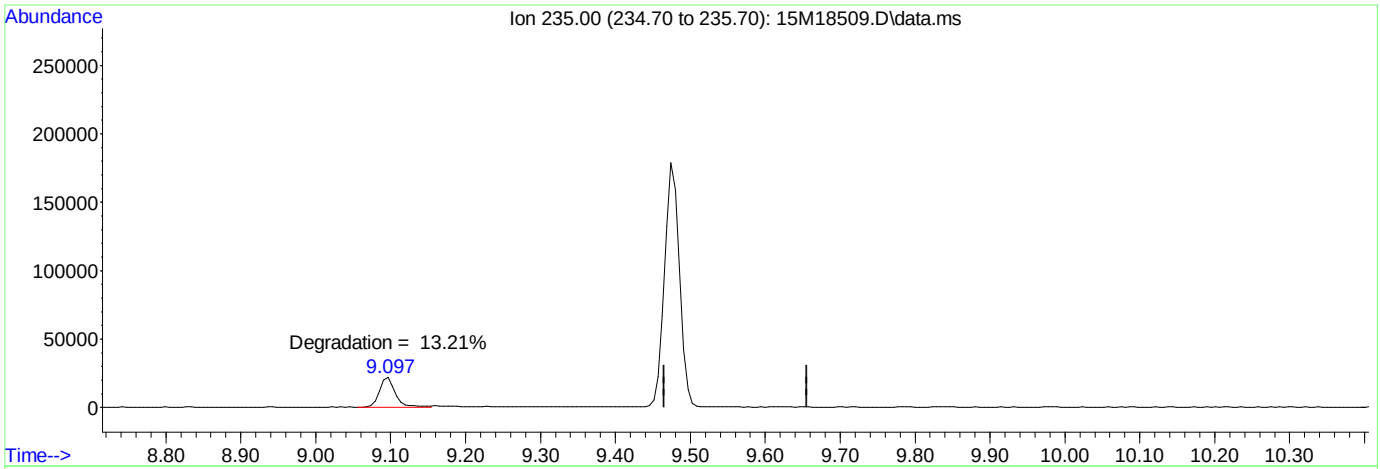

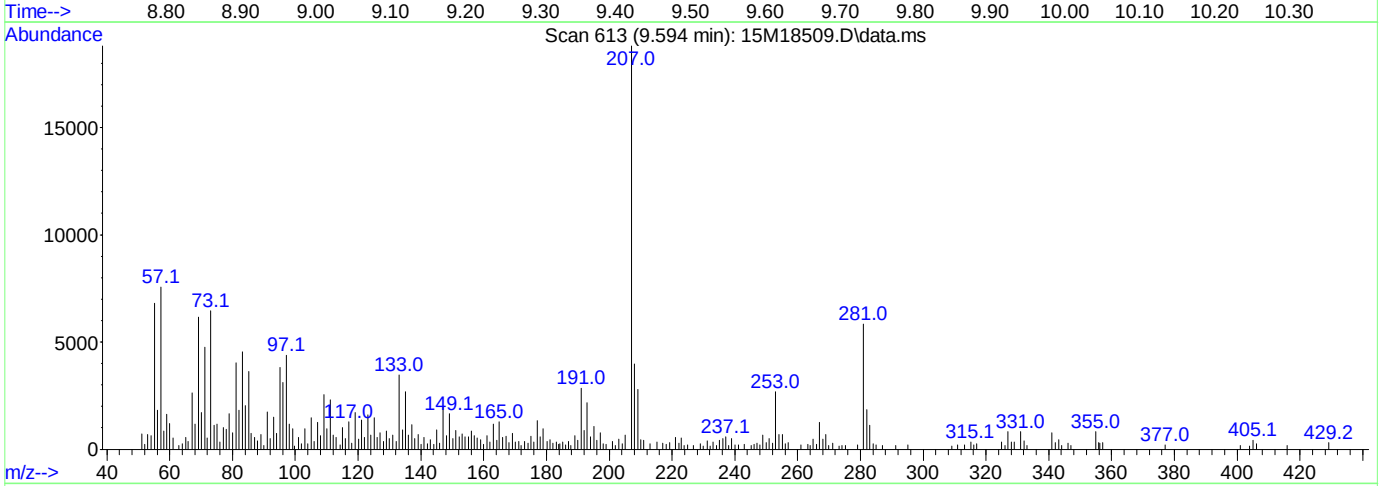

(3) DDT

9.594min (-9.594) 0.00 ug/ml

response 0

Ion	Exp%	Act%
235.00	100.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18592.D
Acq On : 27 Jun 2016 12:20
Operator : MES
Sample : WG574241-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

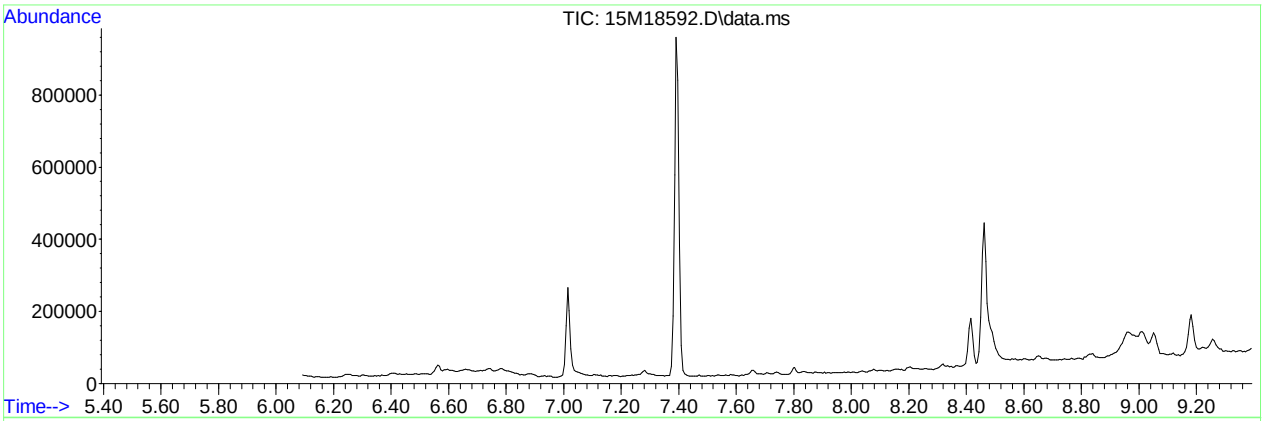

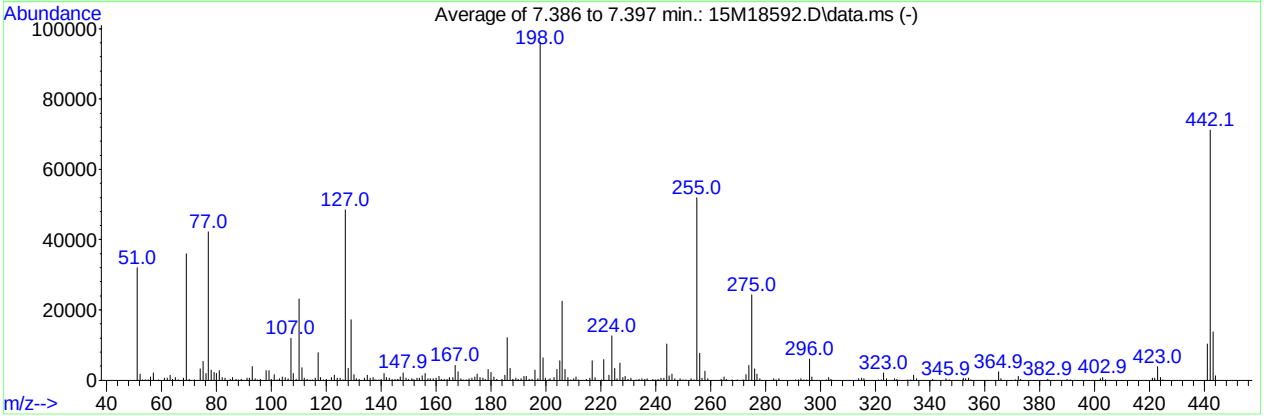

AutoFind: Scans 227, 228, 229; Background Corrected with Scan 221

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	33.2	31989	PASS
68	69	0.00	2	1.6	580	PASS
69	198	0.00	100	37.4	35954	PASS
70	69	0.00	2	0.6	222	PASS
127	198	40	60	50.4	48459	PASS
197	198	0.00	1	0.4	409	PASS
198	198	100	100	100.0	96232	PASS
199	198	5	9	6.6	6399	PASS
275	198	10	30	25.2	24236	PASS
365	198	1	100	2.5	2410	PASS
441	443	0.01	100	75.7	10371	PASS
442	198	40	100	73.9	71133	PASS
443	442	17	23	19.3	13708	PASS

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18592.D
Acq On : 27 Jun 2016 12:20
Operator : MES
Sample : WG574241-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 27 12:31:57 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

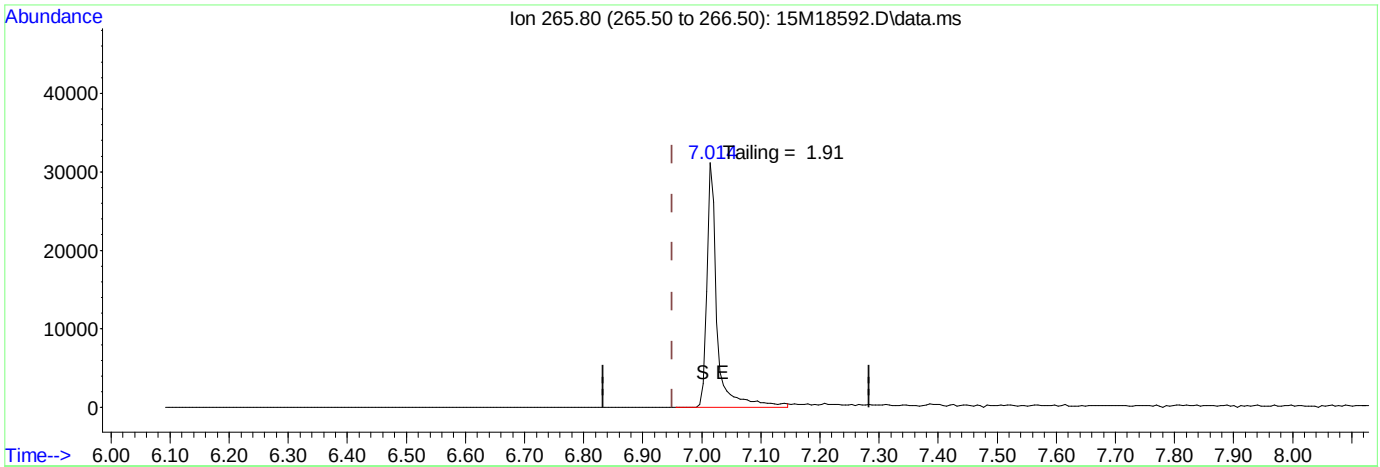

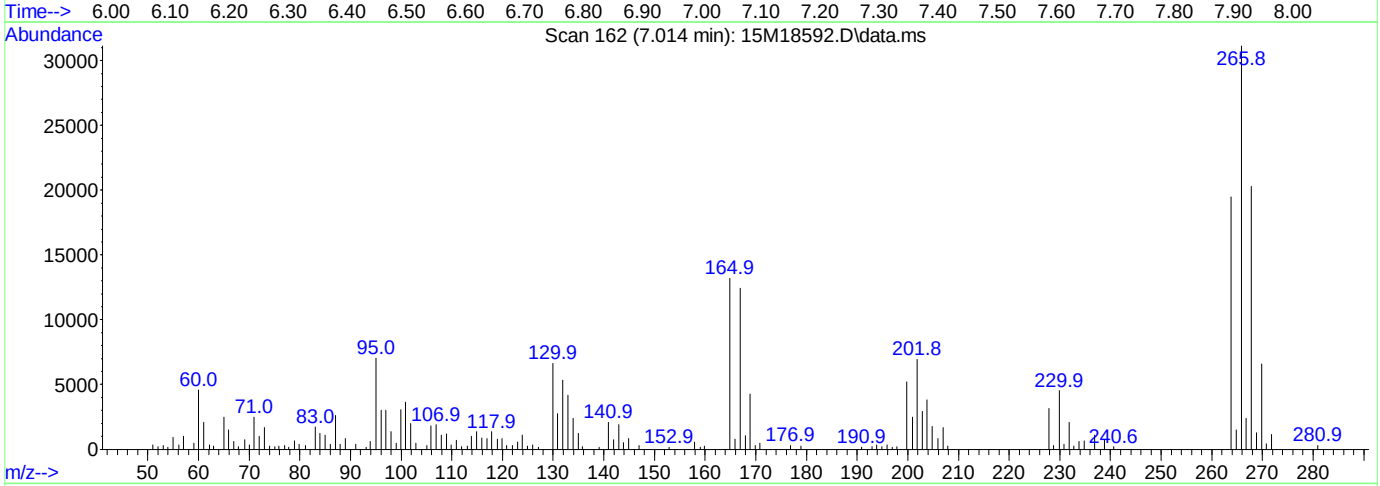

(1) Pentachlorophenol

7.014min (+ 0.065) 0.00 ug/ml

response 37276

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18592.D
Acq On : 27 Jun 2016 12:20
Operator : MES
Sample : WG574241-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 27 12:31:57 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

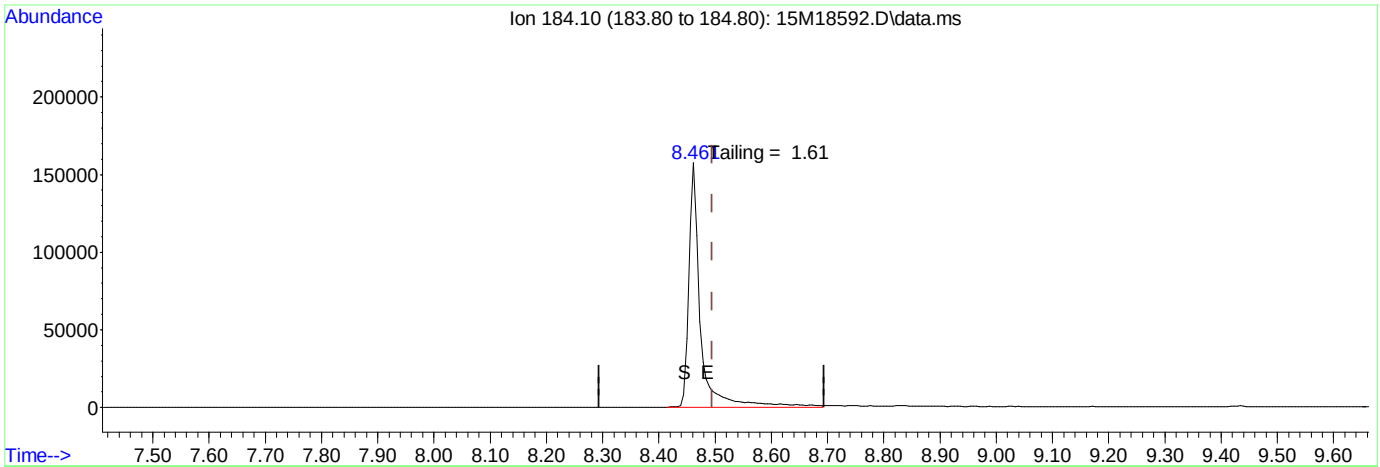

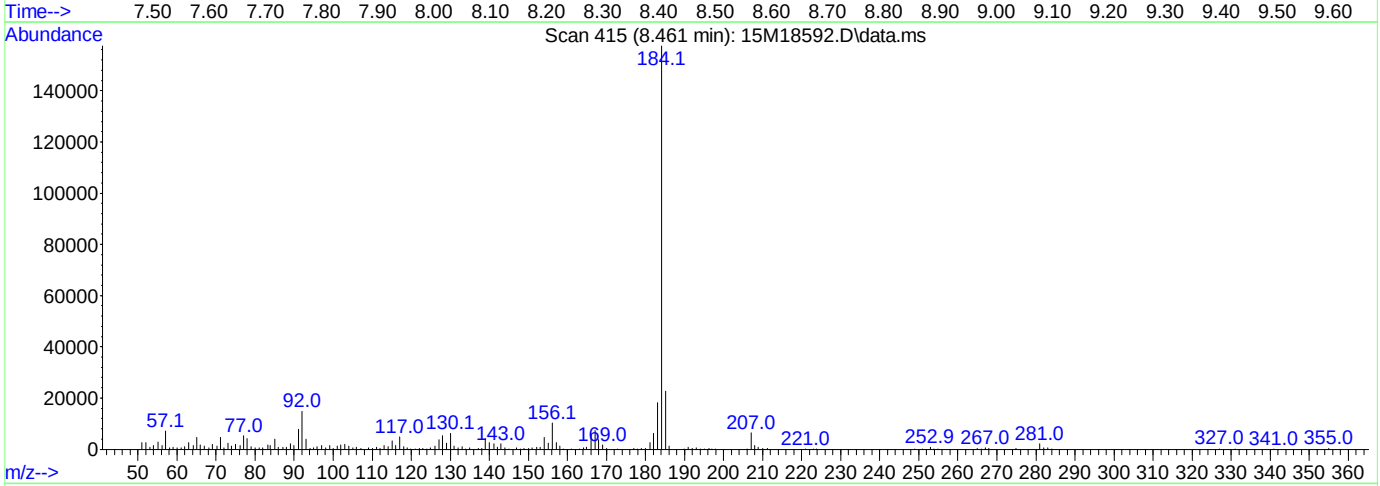

TIC: 15M18592.D\data.ms

(2) Benzidine

8.461min (-0.033) 0.00 ug/ml

response 225697

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18592.D
Acq On : 27 Jun 2016 12:20
Operator : MES
Sample : WG574241-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 27 12:31:57 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

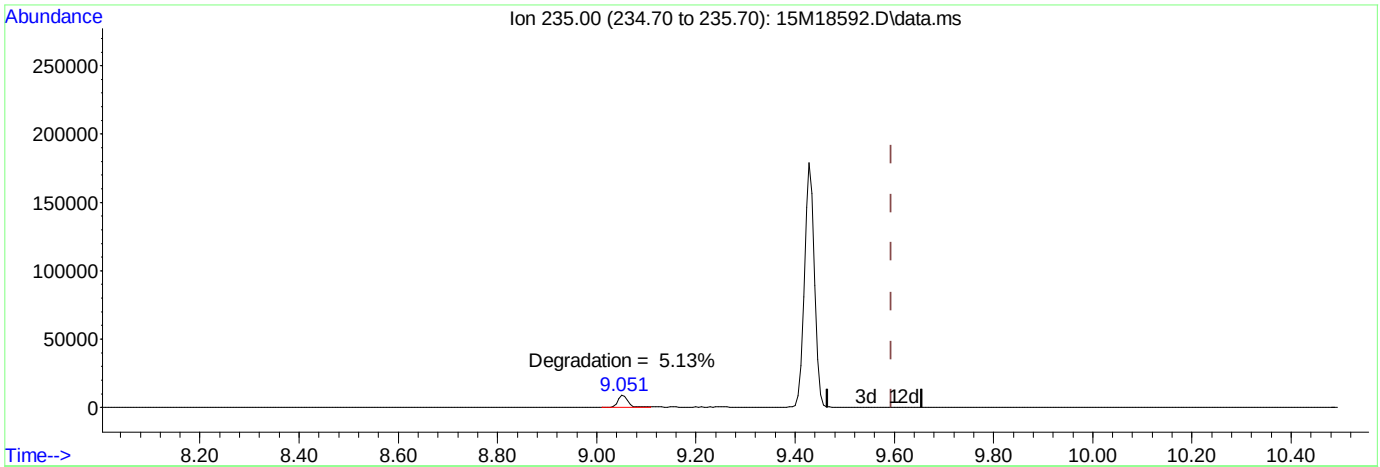

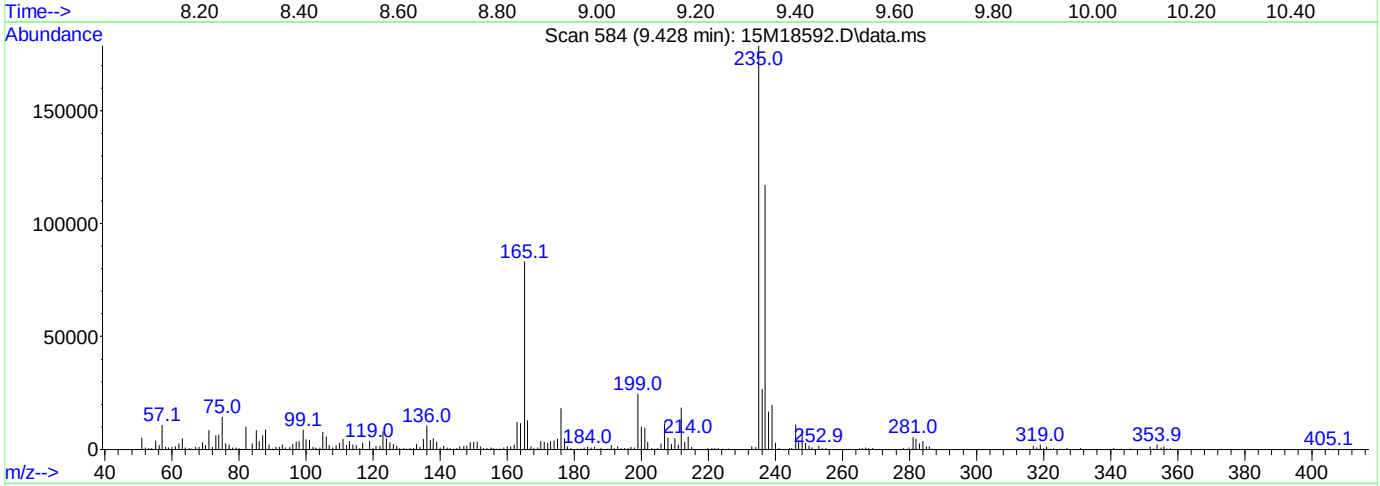

TIC: 15M18592.D\data.ms

(3) DDT

9.428min (-0.166) 0.00 ug/ml mint

response 273417

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18511.D
Acq On : 23 Jun 2016 14:22
Operator : MES
Sample : WG573299-01 BLANK 6/21
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 23 15:52:24 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.929	152	57608	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	33985	1.4337	ug/L	0.04
Spiked Amount 5.000			Recovery = 28.60%			
4) Nitrobenzene-d5	7.426	82	1290209	21.2028	ug/L	0.00
Spiked Amount 5.000			Recovery = 424.00%			
5) 2-Fluorobiphenyl	8.919	172	2634137	17.1496	ug/L	0.00
Spiked Amount 5.000			Recovery = 343.00%			
6) p-Terphenyl-d14	12.162	244	4420616	29.8588	ug/L	-0.02
Spiked Amount 5.000			Recovery = 597.20%			

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18511.D
Acq On : 23 Jun 2016 14:22
Operator : MES
Sample : WG573299-01 BLANK 6/21
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 23 15:52:24 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

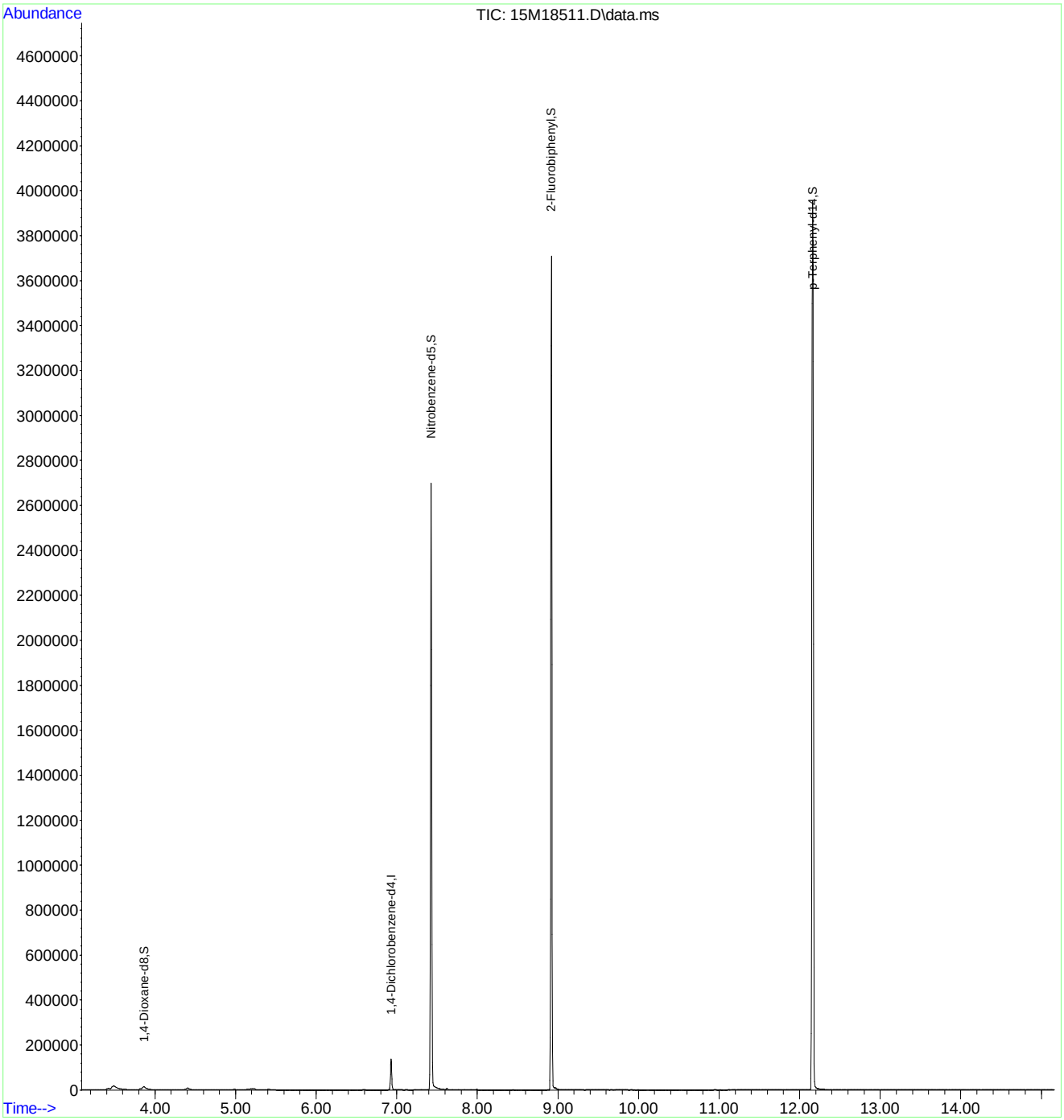

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18512.D
Acq On : 23 Jun 2016 14:45
Operator : MES
Sample : WG573299-02 LCS 6/21
Misc : 1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 23 15:52:38 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.929	152	51597	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	40084	1.8880	ug/L	0.04
Spiked Amount 5.000			Recovery	=	37.80%	
4) Nitrobenzene-d5	7.431	82	2991	0.0549	ug/L	0.00
Spiked Amount 5.000			Recovery	=	1.00%	
5) 2-Fluorobiphenyl	8.919	172	1228	0.0089	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.20%	
6) p-Terphenyl-d14	12.159	244	1342	0.0101	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	29708	1.8818	ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18512.D
Acq On : 23 Jun 2016 14:45
Operator : MES
Sample : WG573299-02 LCS 6/21
Misc : 1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 23 15:52:38 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

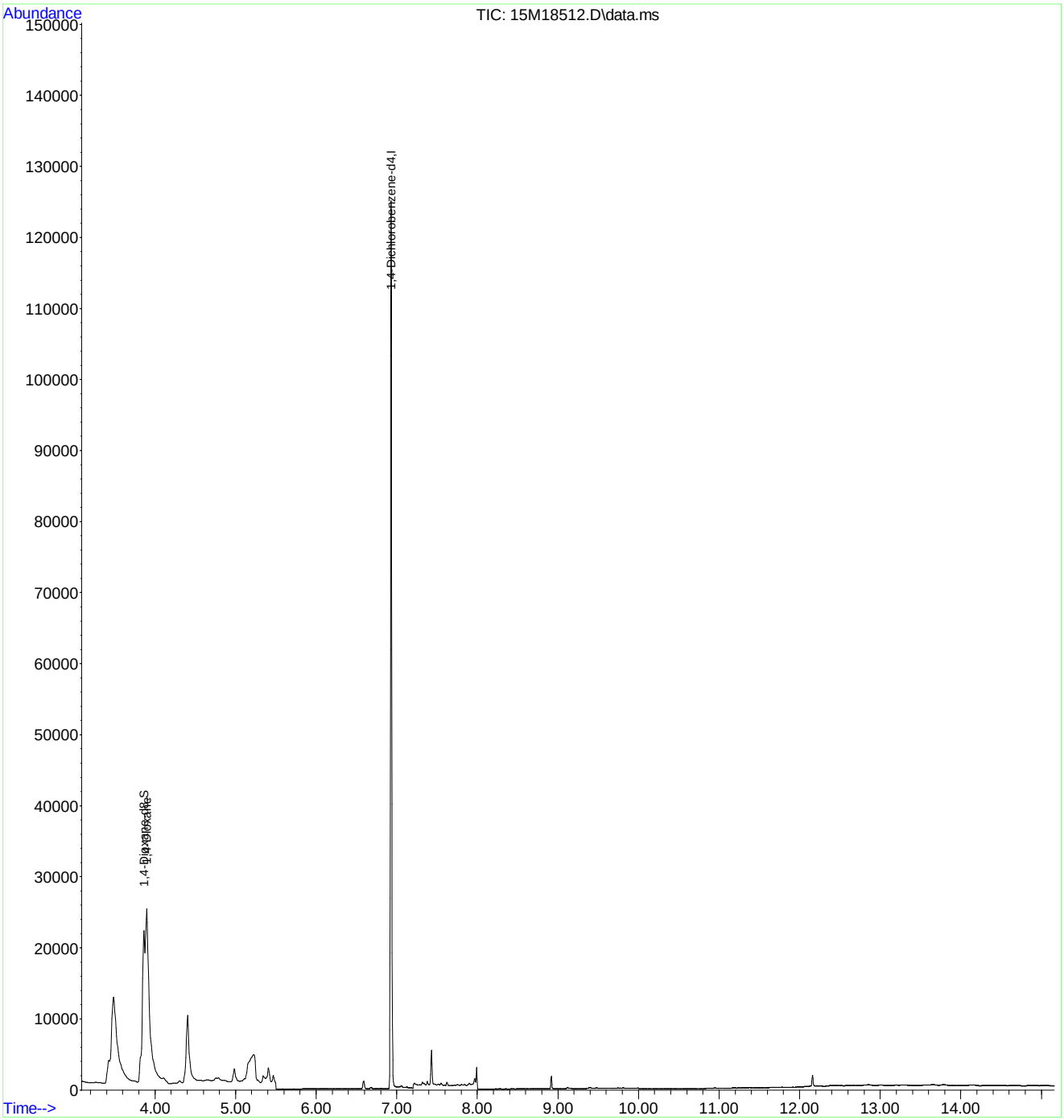

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18513.D
Acq On : 23 Jun 2016 15:07
Operator : MES
Sample : WG573299-03 LCSDUP 6/21
Misc : 1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 23 15:52:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.929	152	54701	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	52635	2.3384	ug/L	0.04
Spiked Amount 5.000			Recovery	=	46.80%	
4) Nitrobenzene-d5	7.431	82	5866	0.1015	ug/L	0.00
Spiked Amount 5.000			Recovery	=	2.00%	
5) 2-Fluorobiphenyl	8.919	172	4684	0.0321	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.60%	
6) p-Terphenyl-d14	12.151	244	1266	0.0090	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	38804	2.3185	ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18513.D
Acq On : 23 Jun 2016 15:07
Operator : MES
Sample : WG573299-03 LCSDUP 6/21
Misc : 1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 23 15:52:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

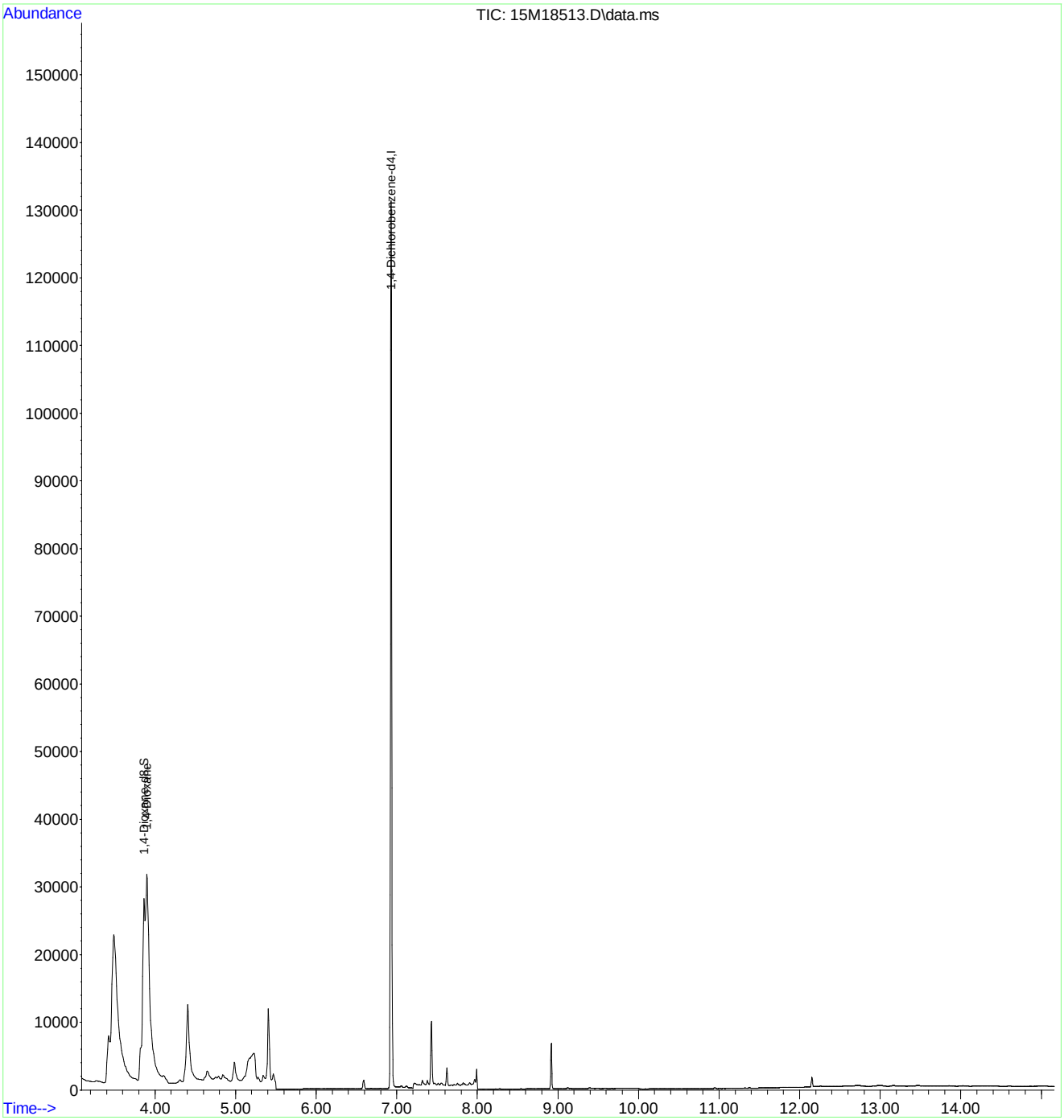

2.2 General Chromatography Data

2.2.2 6850 LC/MS Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW16-061616	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 19:40
Collect Date:	06/16/2016 07:55	**Dilution:**	1	**File ID:**	1LM.LM35503
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	5.76		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16061026-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	102-061616	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 01:12
Collect Date:	06/16/2016 08:40	**Dilution:**	100	**File ID:**	1LM.LM35479
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	107		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L16061026-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	129-061616	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 01:31
Collect Date:	06/16/2016 09:05	**Dilution:**	10000	**File ID:**	1LM.LM35480
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	8950		4000	2000	1000

Certificate of Analysis

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Sample #:	L16061026-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	120-061616	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 19:59
Collect Date:	06/16/2016 09:25	**Dilution:**	10000	**File ID:**	1LM.LM35504
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	32700		4000	2000	1000

Certificate of Analysis

Sample #:	L16061026-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	123-061616	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 20:18
Collect Date:	06/16/2016 09:55	**Dilution:**	50	**File ID:**	1LM.LM35505
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	105		20.0	10.0	5.00

2.2.2.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1380 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG574101-01 MCT	9,990.	
-02 Blank	0.33	
-03 LCS	0.48	
-04 LCS2	0.51	
L16060823-01	9,120.	
-03	7,440.	
-04	1,943.	
L16060927-01	750.	
-02	652.	
-03	446.	
-04	162.7	
L16061026-01	6,910.	
-03	238.	
-04	965.	
-05	1,526.	
-07	220.	
L16061142-01	165.3	
-02	81.1	
-04	83.1	
-06	728.	
-07	74.2	
L16061144-01	118.6	
-02	118.7	
-03	110.1	

Analyst: John Richards

Date/Time: 06/27/16 / 20:00

DCN#119317

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

Page: 1 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

Page: 2 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 062416_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG574101 (waters)

Internal STD: STD18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments: Samples initially analyzed at dilutions were done so based on their historical results. Samples tagged with (NR) did not conform to their historical results. These samples were reanalyzed on the end of the sequence as neat or at dilutions based on the results of their initial analysis.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35462	WG574102-01 CCB	1	1		06/24/16 19:50
2	1LM.LM35463	WG574102-02 CCV (1.0ug/L)	1	1	STD75510	06/24/16 20:09
3	1LM.LM35464	WG574101-05 MRL (0.2ug/L)	1	1	STD75510	06/24/16 20:28
4	1LM.LM35465	WG574101-01 MCT (0.2ug/L)	1	1	STD75512	06/24/16 20:47
5	1LM.LM35466	WG574101-02 BLANK	1	1		06/24/16 21:06
6	1LM.LM35467	WG574101-03 LCS (0.2ug/L)	1	1	STD75512	06/24/16 21:25
7	1LM.LM35468	L16060823-01	1	1		06/24/16 21:44
8	1LM.LM35469	L16060823-03	1	1		06/24/16 22:03
9	1LM.LM35470	L16060823-04 (10x)	1	10		06/24/16 22:22
10	1LM.LM35471	L16060927-01 (100x) (NR)	1	100		06/24/16 22:41
11	1LM.LM35472	L16060927-02 (100x) (NR)	1	100		06/24/16 23:00
12	1LM.LM35473	L16060927-03	1	1		06/24/16 23:18
13	1LM.LM35474	L16060927-04	1	1		06/24/16 23:37
14	1LM.LM35475	WG574102-03 CCV (1.0ug/L)	1	1	STD75510	06/24/16 23:56
15	1LM.LM35476	WG574101-06 MRL (0.2ug/L)	1	1	STD75510	06/25/16 00:15
16	1LM.LM35477	WG574102-04 CCB	1	1		06/25/16 00:34
17	1LM.LM35478	L16061026-01 (100x) (NR)	1	100		06/25/16 00:53
18	1LM.LM35479	L16061026-03 (100x)	1	100		06/25/16 01:12
19	1LM.LM35480	L16061026-04 (10,000x)	1	10000		06/25/16 01:31
20	1LM.LM35481	L16061026-05 (100,000x) (NR)	1	100000		06/25/16 01:50
21	1LM.LM35482	L16061026-07 (10x) (NR)	1	10		06/25/16 02:09
22	1LM.LM35483	L16061142-01	1	1		06/25/16 02:28
23	1LM.LM35484	L16061142-02	1	1		06/25/16 02:47
24	1LM.LM35485	L16061142-04	1	1		06/25/16 03:06
25	1LM.LM35486	L16061142-06 (10x) (NR)	1	10		06/25/16 03:25
26	1LM.LM35487	L16061142-07	1	1		06/25/16 03:44
27	1LM.LM35488	WG574102-05 CCV (1.0ug/L)	1	1	STD75510	06/25/16 04:03
28	1LM.LM35489	WG574101-07 MRL (0.2ug/L)	1	1	STD75510	06/25/16 04:22
29	1LM.LM35490	WG574102-06 CCB	1	1		06/25/16 04:40
30	1LM.LM35491	WG574101-04 LCS2 (0.2ug/L)	1	1	STD75512	06/25/16 04:59
31	1LM.LM35492	L16061144-01	1	1		06/25/16 05:18
32	1LM.LM35493	L16061144-02	1	1		06/25/16 05:37
33	1LM.LM35494	L16061144-03 (10x) (NR)	1	10		06/25/16 05:56

Page: 1 Approved: 28-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 062416_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG574101 (waters)

Internal STD: STD18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 NA

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM35495	WG574102-07 CCV (1.0ug/L)	1	1	STD75510	06/25/16 06:15
35	1LM.LM35496	WG574101-08 MRL (0.2ug/L)	1	1	STD75510	06/25/16 06:34
36	1LM.LM35497	WG574102-08 CCB	1	1		06/25/16 06:53
37	1LM.LM35498	WG574102-09 CCV (1.0ug/L)	1	1	STD75510	06/25/16 18:06
38	1LM.LM35499	WG574101-09 MRL (0.2ug/L)	1	1	STD75510	06/25/16 18:25
39	1LM.LM35500	WG574102-10 CCB	1	1		06/25/16 18:44
40	1LM.LM35501	L16060927-01 (RR Neat)	1	1		06/25/16 19:02
41	1LM.LM35502	L16060927-02 (RR 1000x)	1	1000		06/25/16 19:21
42	1LM.LM35503	L16061026-01 (RR Neat)	1	1		06/25/16 19:40
43	1LM.LM35504	L16061026-05 (RR 10,000x)	1	10000		06/25/16 19:59
44	1LM.LM35505	L16061026-07 (RR 50x)	1	50		06/25/16 20:18
45	1LM.LM35506	L16061142-06 (RR Neat)	1	1		06/25/16 20:37
46	1LM.LM35507	L16061144-03 (RR Neat)	1	1		06/25/16 20:56
47	1LM.LM35508	WG574102-11 CCV (1.0ug/L)	1	1	STD75510	06/25/16 21:15
48	1LM.LM35509	WG574101-10 MRL (0.2ug/L)	1	1	STD75510	06/25/16 21:34
49	1LM.LM35510	WG574102-12 CCB	1	1		06/25/16 21:53

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 2 Approved: 28-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
04-MAY-2016
John Richards

Secondary Reviewer:
05-MAY-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 24-JUN-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 75960
Analytical Workgroups: L16060823, 0927, 1026, 1142, 1144

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
27-JUN-2016

Secondary Reviewer:
28-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-28-2016 14:00:55

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG574101

Login Number: L16061026

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW16-061616	01	06/16/16					06/24/2016	8.5	28		06/25/16	1	28	
102-061616	03	06/16/16					06/24/2016	8.4	28		06/25/16	.3	28	
129-061616	04	06/16/16					06/24/2016	8.4	28		06/25/16	.3	28	
120-061616	05	06/16/16					06/24/2016	8.4	28		06/25/16	1	28	
123-061616	07	06/16/16					06/24/2016	8.4	28		06/25/16	1.1	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4827778
Report generated 06/28/2016 14:17

METHOD BLANK SUMMARY

Login Number: L16061026
Blank File ID: 1LM.LM35466
Prep Date: 06/24/16 19:00
Analyzed Date: 06/24/16 21:06
Analyst: JWR

Work Group: WG574101
Blank Sample ID: WG574101-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG574101-05	1LM.LM35464	06/24/16 20:28	01
MCT	WG574101-01	1LM.LM35465	06/24/16 20:47	01
LCS	WG574101-03	1LM.LM35467	06/24/16 21:25	01
QCMRL	WG574101-06	1LM.LM35476	06/25/16 00:15	01
102-061616	L16061026-03	1LM.LM35479	06/25/16 01:12	DL01
129-061616	L16061026-04	1LM.LM35480	06/25/16 01:31	DL01
QCMRL	WG574101-07	1LM.LM35489	06/25/16 04:22	01
LCS2	WG574101-04	1LM.LM35491	06/25/16 04:59	01
QCMRL	WG574101-08	1LM.LM35496	06/25/16 06:34	01
QCMRL	WG574101-09	1LM.LM35499	06/25/16 18:25	01
18WW16-061616	L16061026-01	1LM.LM35503	06/25/16 19:40	01
120-061616	L16061026-05	1LM.LM35504	06/25/16 19:59	DL01
123-061616	L16061026-07	1LM.LM35505	06/25/16 20:18	DL01
QCMRL	WG574101-10	1LM.LM35509	06/25/16 21:34	01

Report Name: BLANK_SUMMARY
PDF File ID: 4827779
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061026 Prep Date: 06/24/16 19:00 Sample ID: WG574101-02
Instrument ID: LCMS1 Run Date: 06/24/16 21:06 Prep Method: 6850
File ID: 1LM.LM35466 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4827780
28-JUN-2016 14:17

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061026 Analyst: JWR Prep Method: 6850
Instrument ID: LCMS1 Matrix: Water Method: 6850
Workgroup (AAB#): WG574101 Units: ug/L
QC Key: DOD4 Lot #: STD75512

Sample ID: WG574101-03 LCS File ID: 1LM.LM35467 Run Date: 06/24/2016 21:25
Sample ID: WG574101-04 LCS2 File ID: 1LM.LM35491 Run Date: 06/25/2016 04:59

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Perchlorate	0.200	0.208	104	0.200	0.213	107	2.38	80 - 120	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4827781
Report generated: 06/28/2016 14:17

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061026
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4828717
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061026

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4828717
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061026

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4828717
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061026

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008
PDF File ID: 4828717
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061026 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4828718
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 06/24/2016
Sample ID: WG574102-01
Instrument ID: LCMS1
Run Time: 19:50
Method: 6850
File ID: 1LM.LM35462
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827784
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 06/25/2016
Sample ID: WG574102-04
Instrument ID: LCMS1
Run Time: 00:34
Method: 6850
File ID: 1LM.LM35477
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827784
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 06/25/2016
Sample ID: WG574102-06
Instrument ID: LCMS1
Run Time: 04:40
Method: 6850
File ID: 1LM.LM35490
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827784
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 06/25/2016
Sample ID: WG574102-08
Instrument ID: LCMS1
Run Time: 06:53
Method: 6850
File ID: 1LM.LM35497
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827784
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 06/25/2016
Sample ID: WG574102-10
Instrument ID: LCMS1
Run Time: 18:44
Method: 6850
File ID: 1LM.LM35500
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827784
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 06/25/2016
Sample ID: WG574102-12
Instrument ID: LCMS1
Run Time: 21:53
Method: 6850
File ID: 1LM.LM35510
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827784
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026 Run Date: 06/24/2016 Sample ID: WG574102-02
Instrument ID: LCMS1 Run Time: 20:09 Method: 6850
File ID: 1LM.LM35463 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG574101 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.70	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827783
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 06/24/2016
Sample ID: WG574102-03
Instrument ID: LCMS1
Run Time: 23:56
Method: 6850
File ID: 1LM.LM35475
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.70	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827783
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026 Run Date: 06/25/2016 Sample ID: WG574102-05
Instrument ID: LCMS1 Run Time: 04:03 Method: 6850
File ID: 1LM.LM35488 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG574101 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.75	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827783
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026 Run Date: 06/25/2016 Sample ID: WG574102-07
Instrument ID: LCMS1 Run Time: 06:15 Method: 6850
File ID: 1LM.LM35495 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG574101 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.72	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827783
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026 Run Date: 06/25/2016 Sample ID: WG574102-09
Instrument ID: LCMS1 Run Time: 18:06 Method: 6850
File ID: 1LM.LM35498 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG574101 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.76	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827783
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026 Run Date: 06/25/2016 Sample ID: WG574102-11
Instrument ID: LCMS1 Run Time: 21:15 Method: 6850
File ID: 1LM.LM35508 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG574101 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.73	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827783
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061026 Run Date: 06/24/2016 Sample ID: WG574101-05
Instrument ID: LCMS1 Run Time: 20:28 Prep Method: 6850
File ID: 1LM.LM35464 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827782
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061026 Run Date: 06/25/2016 Sample ID: WG574101-06

Instrument ID: LCMS1 Run Time: 00:15 Prep Method: 6850

File ID: 1LM.LM35476 Analyst: JWR Method: 6850

Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L

Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.198	99.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827782
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061026 Run Date: 06/25/2016 Sample ID: WG574101-07
Instrument ID: LCMS1 Run Time: 04:22 Prep Method: 6850
File ID: 1LM.LM35489 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.211	106	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827782
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061026 Run Date: 06/25/2016 Sample ID: WG574101-08
Instrument ID: LCMS1 Run Time: 06:34 Prep Method: 6850
File ID: 1LM.LM35496 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.201	101	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827782
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061026 Run Date: 06/25/2016 Sample ID: WG574101-09
Instrument ID: LCMS1 Run Time: 18:25 Prep Method: 6850
File ID: 1LM.LM35499 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.207	104	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827782
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061026 Run Date: 06/25/2016 Sample ID: WG574101-10
Instrument ID: LCMS1 Run Time: 21:34 Prep Method: 6850
File ID: 1LM.LM35509 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827782
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16061026
Instrument ID: LCMS1
Workgroup (AAB#): WG574101

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16061026-01	1.00	01	359000
L16061026-03	100	DL01	498000
L16061026-04	10000	DL01	491000
L16061026-05	10000	DL01	457000
L16061026-07	50.0	DL01	490000
WG574101-02	1.00	01	443000
WG574101-03	1.00	01	444000
WG574101-04	1.00	01	526000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4827785
Report generated 06/28/2016 14:17

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**	6850	**Samplenum:**	L16061026-01
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35503
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 19:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	697000	245000	2.84	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**	6850	**Samplenum:**	L16061026-03
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35479
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 01:12	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	180000	63800	2.82	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**	6850	**Samplenum:**	L16061026-04
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35480
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 01:31	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	148000	50500	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**	6850	**Samplenum:**	L16061026-05
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35504
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 19:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	504000	174000	2.90	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**	6850	**Samplenum:**	L16061026-07
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35505
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 20:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	348000	120000	2.90	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**	6850	**Samplenum:**	WG574101-01
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35465
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 20:47	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	28100	10000	2.81	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**	6850	**Samplenum:**	WG574101-02
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35466
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 21:06	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**	6850	**Samplenum:**	WG574101-03
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35467
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 21:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	31600	11800	2.68	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**	6850	**Samplenum:**	WG574101-04
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35491
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 04:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38300	14000	2.74	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**	6850	**Samplenum:**	WG574101-05
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35464
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 20:28	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	31600	12100	2.61	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**	6850	**Samplenum:**	WG574101-06
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35476
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 00:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35000	13100	2.67	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**	6850	**Samplenum:**	WG574101-07
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35489
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 04:22	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38900	13400	2.90	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**	6850	**Samplenum:**	WG574101-08
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35496
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 06:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38000	14100	2.70	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**	6850	**Samplenum:**	WG574101-09
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35499
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 18:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32900	11500	2.86	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**	6850	**Samplenum:**	WG574101-10
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35509
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 21:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37900	14000	2.71	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**		**Samplenum:**	WG574102-01
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:50	**File ID:**	1LM.LM35462
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 19:50	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**		**Samplenum:**	WG574102-02
Instrument:	LCMS1	**Prep Date:**	06/24/2016 20:09	**File ID:**	1LM.LM35463
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 20:09	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	152000	55500	2.74	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**		**Samplenum:**	WG574102-03
Instrument:	LCMS1	**Prep Date:**	06/24/2016 23:56	**File ID:**	1LM.LM35475
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 23:56	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	170000	57500	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**		**Samplenum:**	WG574102-04
Instrument:	LCMS1	**Prep Date:**	06/25/2016 00:34	**File ID:**	1LM.LM35477
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 00:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	824	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**		**Samplenum:**	WG574102-05
Instrument:	LCMS1	**Prep Date:**	06/25/2016 04:03	**File ID:**	1LM.LM35488
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 04:03	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	179000	60200	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**		**Samplenum:**	WG574102-06
Instrument:	LCMS1	**Prep Date:**	06/25/2016 04:40	**File ID:**	1LM.LM35490
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 04:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**		**Samplenum:**	WG574102-07
Instrument:	LCMS1	**Prep Date:**	06/25/2016 06:15	**File ID:**	1LM.LM35495
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 06:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	189000	63400	2.98	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**		**Samplenum:**	WG574102-08
Instrument:	LCMS1	**Prep Date:**	06/25/2016 06:53	**File ID:**	1LM.LM35497
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 06:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	518	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**		**Samplenum:**	WG574102-09
Instrument:	LCMS1	**Prep Date:**	06/25/2016 18:06	**File ID:**	1LM.LM35498
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 18:06	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	161000	56700	2.84	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**		**Samplenum:**	WG574102-10
Instrument:	LCMS1	**Prep Date:**	06/25/2016 18:44	**File ID:**	1LM.LM35500
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 18:44	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**		**Samplenum:**	WG574102-11
Instrument:	LCMS1	**Prep Date:**	06/25/2016 21:15	**File ID:**	1LM.LM35508
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 21:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	176000	59300	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**		**Samplenum:**	WG574102-12
Instrument:	LCMS1	**Prep Date:**	06/25/2016 21:53	**File ID:**	1LM.LM35510
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 21:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

2.2.2.3 Sample Data

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Data File	LM35503.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 7:40:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061026-01 (RR Neat)	**Injection Vial**	30.00
Data File	LM35503.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 7:40:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	L16061026-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.590e+05	9.15	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	6.970e+05	9.16	N/A	5.76
Perchlorate conf	2.450e+05	9.14	N/A	6.10

O18LP (Internal Standard)

RT (Exp. RT): 9.15(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

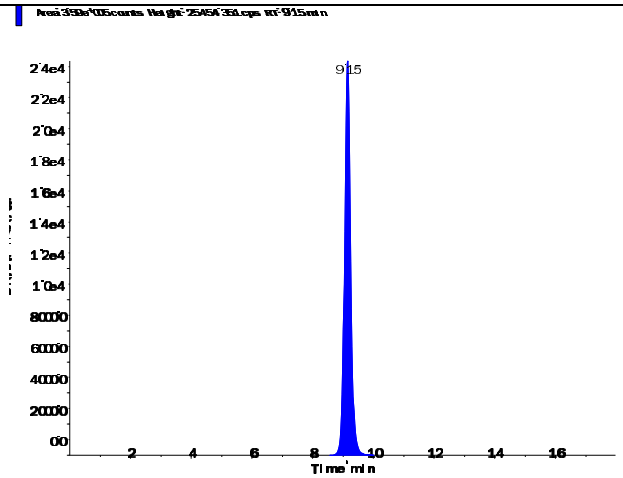

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.16 (9.84) min Calculated conc: 5.76 ng/ml Area Ratio: 1.94 Sample Type: (Unknown)	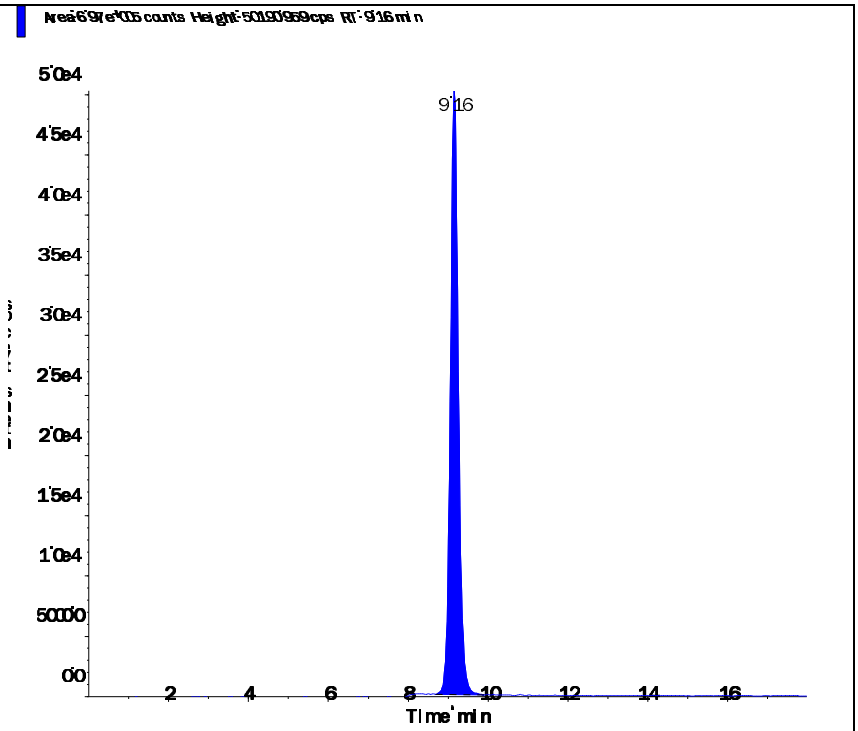
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.14 (9.84) min Calculated conc: 6.10 ng/ml Area Ratio: 0.683 Sample Type: (Unknown)	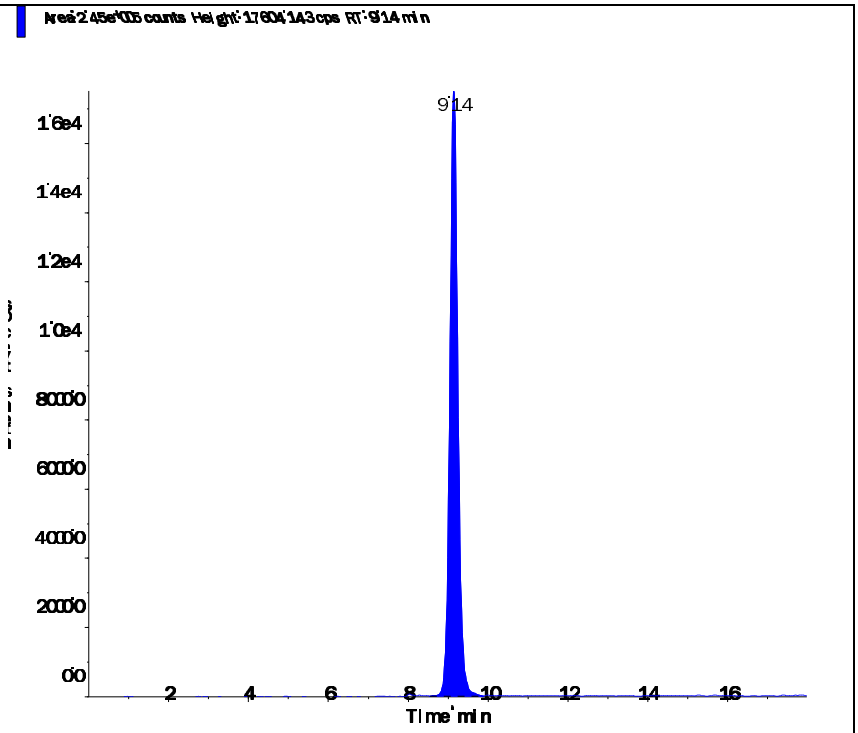

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Data File	LM35479.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 1:12:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061026-03 (100x)	**Injection Vial**	16.00
Data File	LM35479.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 1:12:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	L16061026-03	**Dilution Factor**	1.00
Sample Comment	1,100 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.980e+05	9.60	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.800e+05	9.62	N/A	1.07
Perchlorate conf	6.380e+04	9.60	N/A	1.13

O18LP (Internal Standard)

RT (Exp. RT): 9.60(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

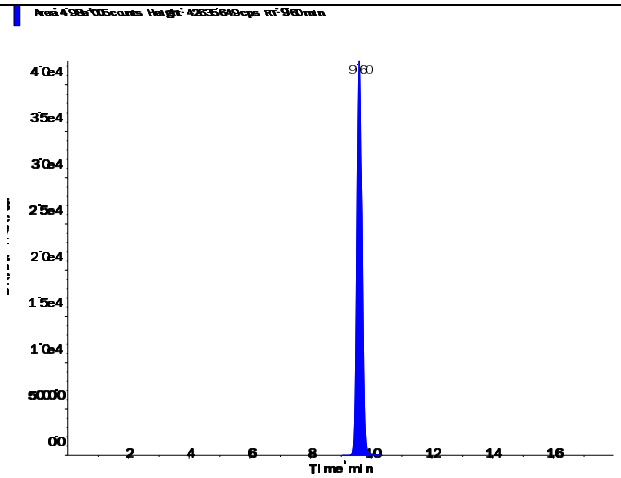

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.62 (9.84) min
Calculated conc:	1.07 ng/ml
Area Ratio:	0.362
Sample Type:	(Unknown)

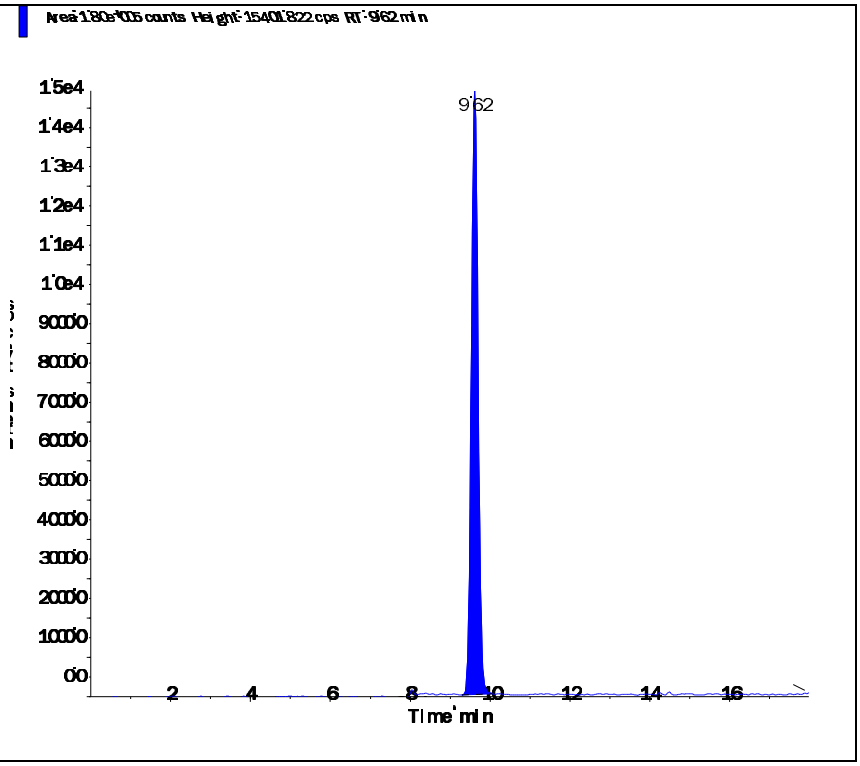

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.60 (9.84) min
Calculated conc:	1.13 ng/ml
Area Ratio:	0.128
Sample Type:	(Unknown)

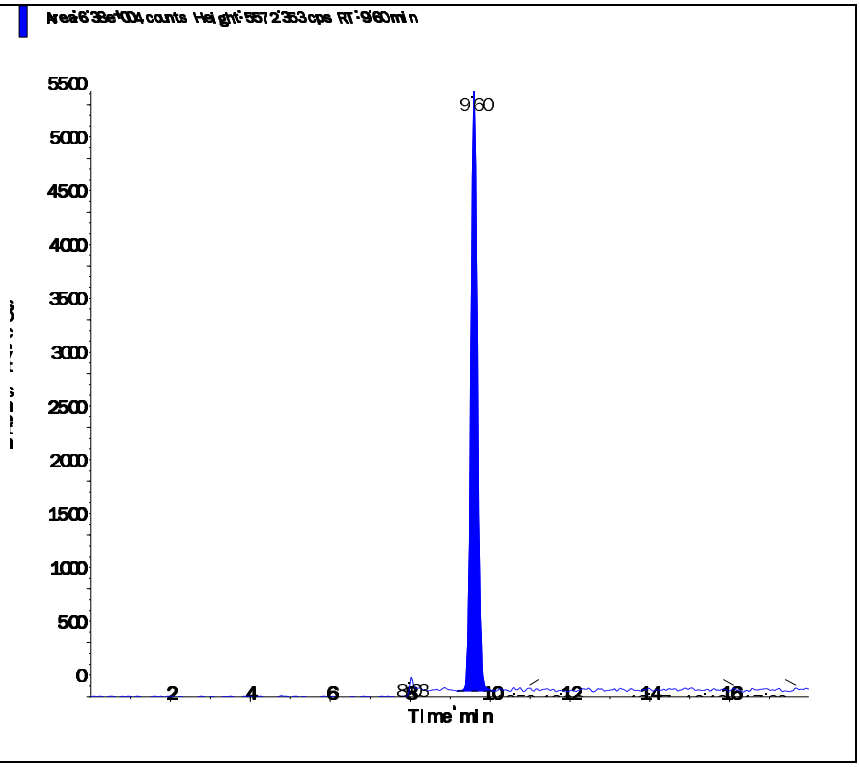

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Data File	LM35480.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 1:31:29 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061026-04 (10,000x)	**Injection Vial**	17.00
Data File	LM35480.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 1:31:29 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	L16061026-04	**Dilution Factor**	1.00
Sample Comment	1,10000 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.910e+05	9.61	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.480e+05	9.62	N/A	0.895
Perchlorate conf	5.050e+04	9.60	N/A	0.90

O18LP (Internal Standard)

RT (Exp. RT): 9.61(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

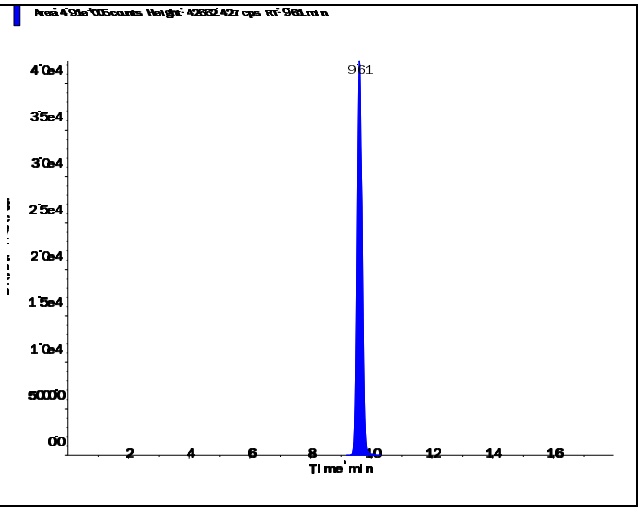

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.62 (9.84) min
Calculated conc:	0.895 ng/ml
Area Ratio:	0.302
Sample Type:	(Unknown)

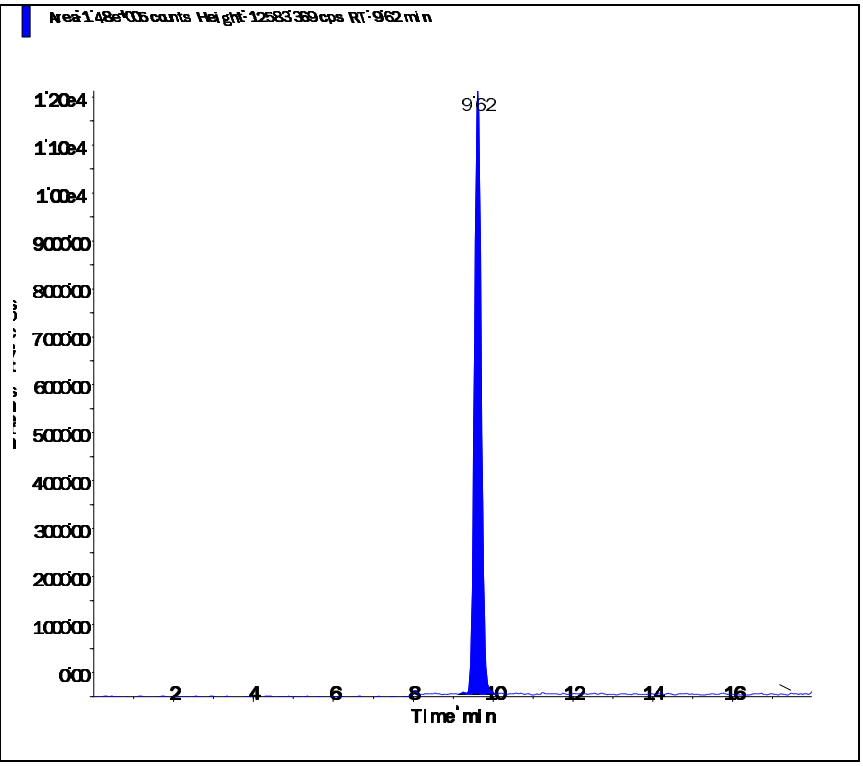

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.60 (9.84) min
Calculated conc:	0.90 ng/ml
Area Ratio:	0.103
Sample Type:	(Unknown)

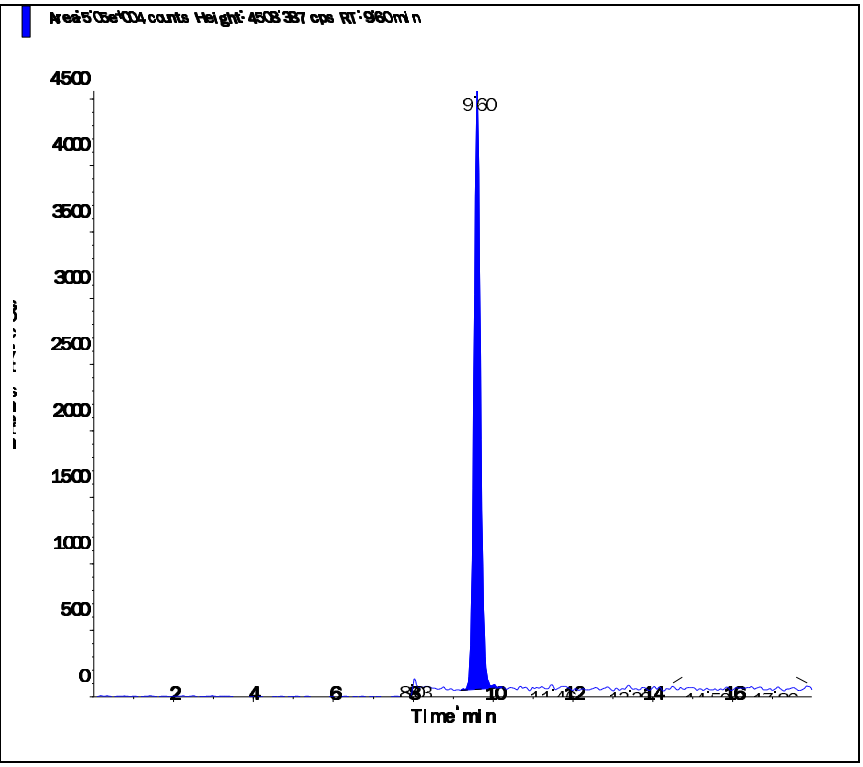

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Data File	LM35504.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 7:59:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061026-05 (RR 10,000x)	**Injection Vial**	31.00
Data File	LM35504.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 7:59:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	L16061026-05	**Dilution Factor**	1.00
Sample Comment	110,000.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.570e+05	9.62	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.040e+05	9.64	N/A	3.27
Perchlorate conf	1.740e+05	9.62	N/A	3.38

O18LP (Internal Standard)

RT (Exp. RT): 9.62(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

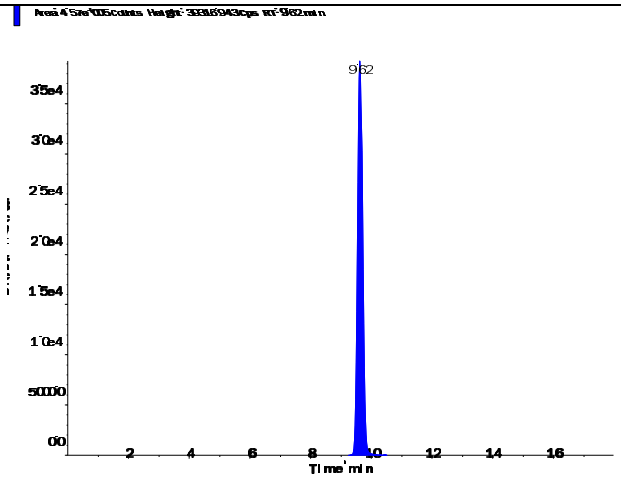

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.64 (9.84) min Calculated conc: 3.27 ng/ml Area Ratio: 1.101 Sample Type: (Unknown)	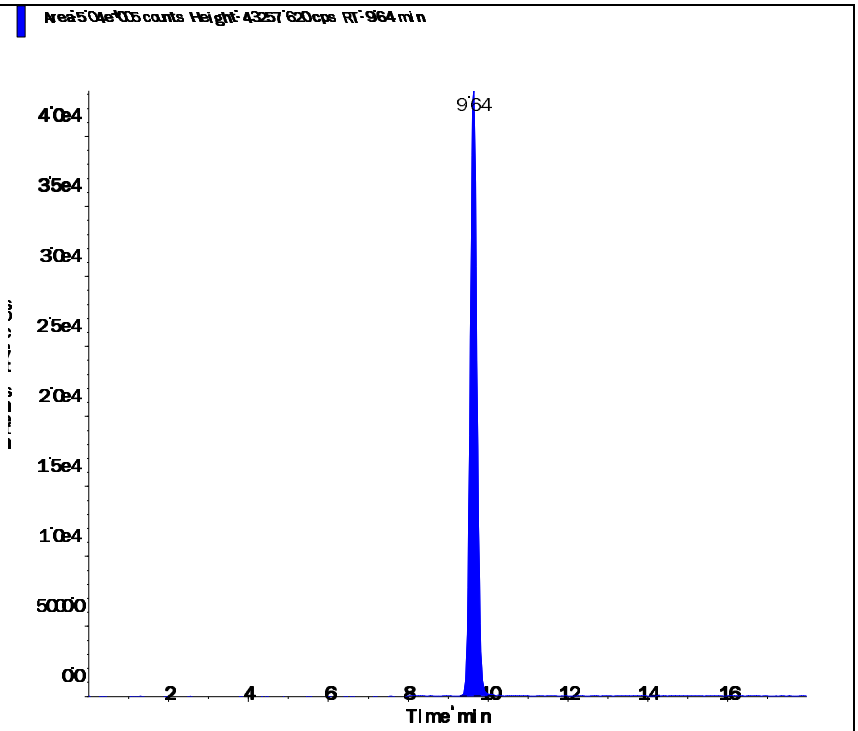
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.62 (9.84) min Calculated conc: 3.38 ng/ml Area Ratio: 0.38 Sample Type: (Unknown)	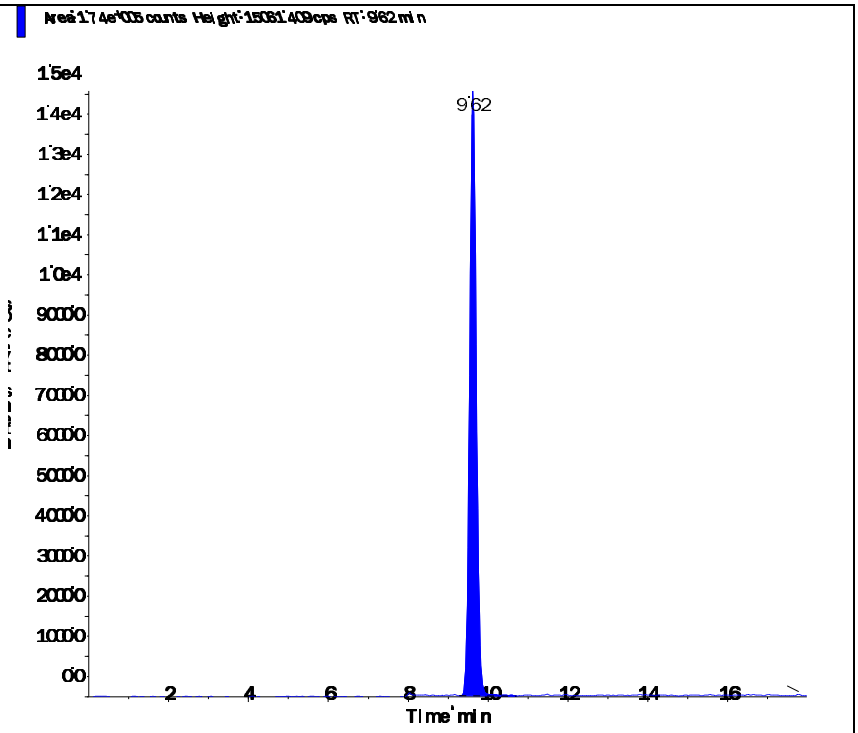

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Data File	LM35505.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 8:18:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061026-07 (RR 50x)	**Injection Vial**	32.00
Data File	LM35505.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 8:18:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	L16061026-07	**Dilution Factor**	1.00
Sample Comment	150.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.900e+05	9.62	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.480e+05	9.64	N/A	2.10
Perchlorate conf	1.200e+05	9.62	N/A	2.18

O18LP (Internal Standard)

RT (Exp. RT): 9.62(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

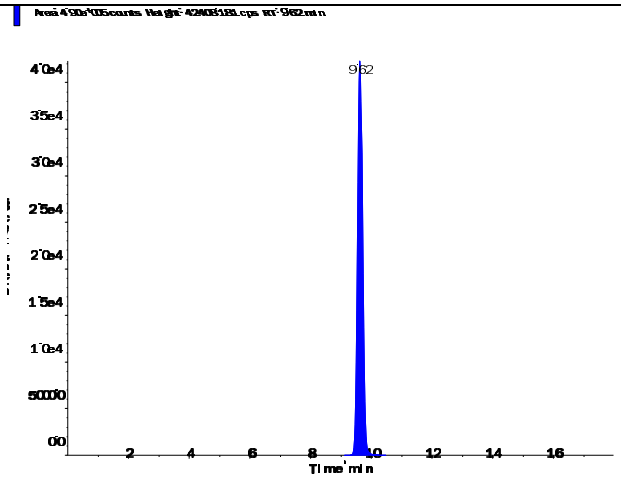

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.64 (9.84) min Calculated conc: 2.10 ng/ml Area Ratio: 0.709 Sample Type: (Unknown)	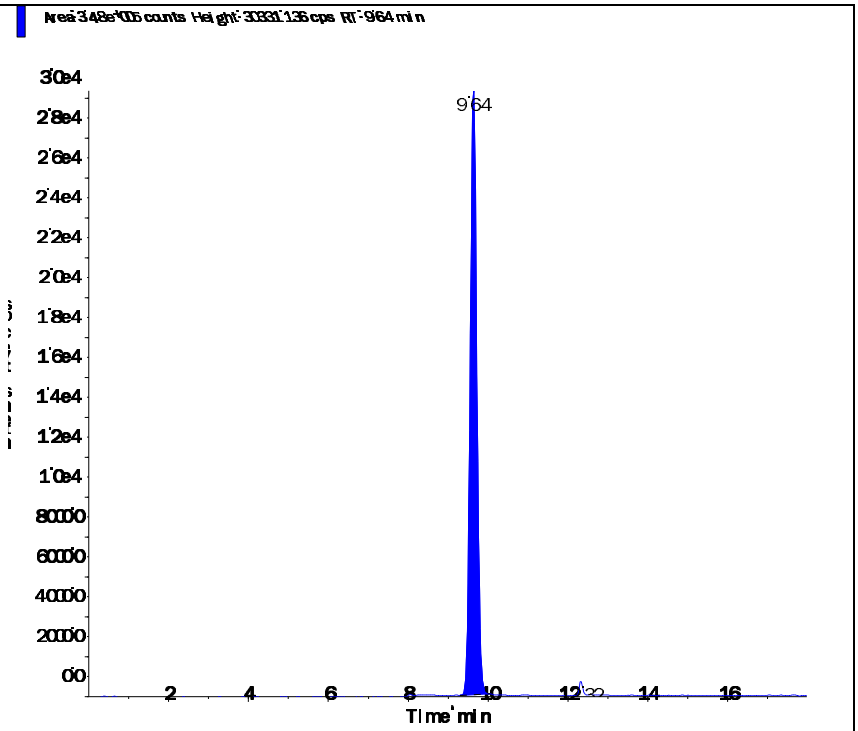
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.62 (9.84) min Calculated conc: 2.18 ng/ml Area Ratio: 0.245 Sample Type: (Unknown)	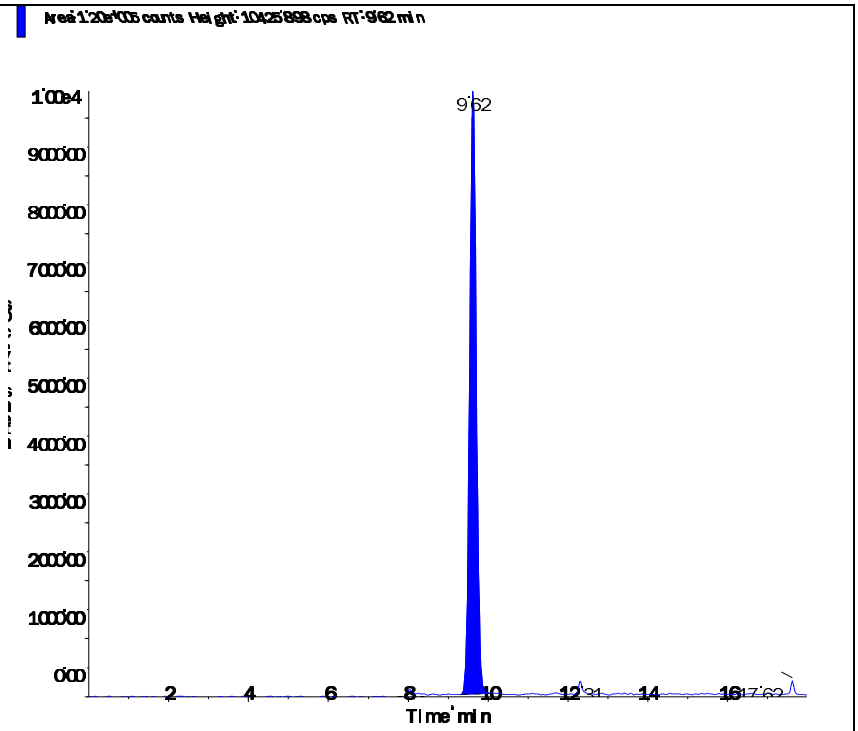

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2.2.2.4 Standards Data

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Data File	LM34686.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

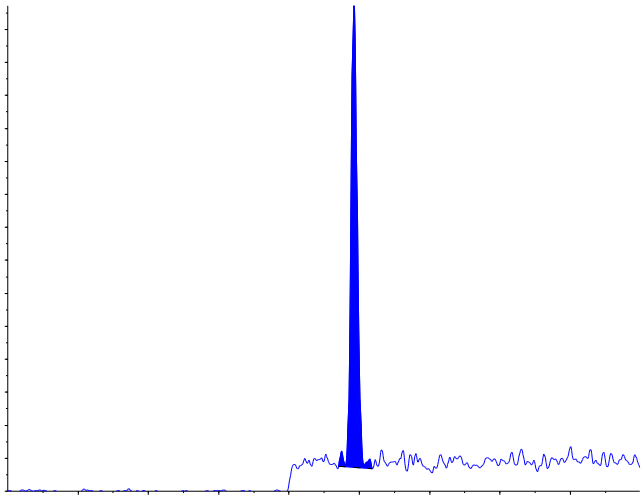

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	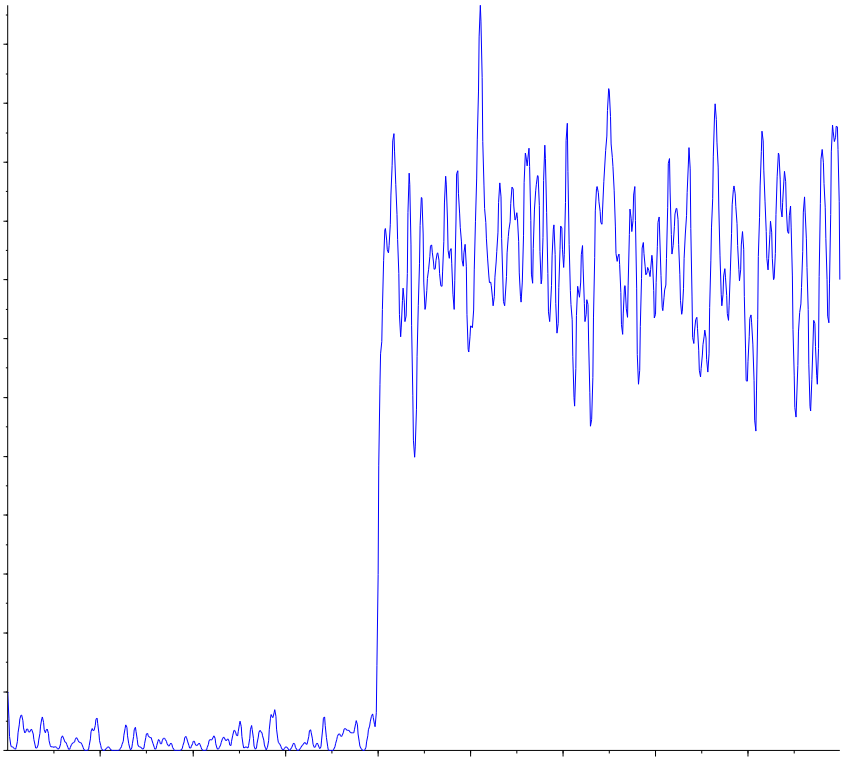
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	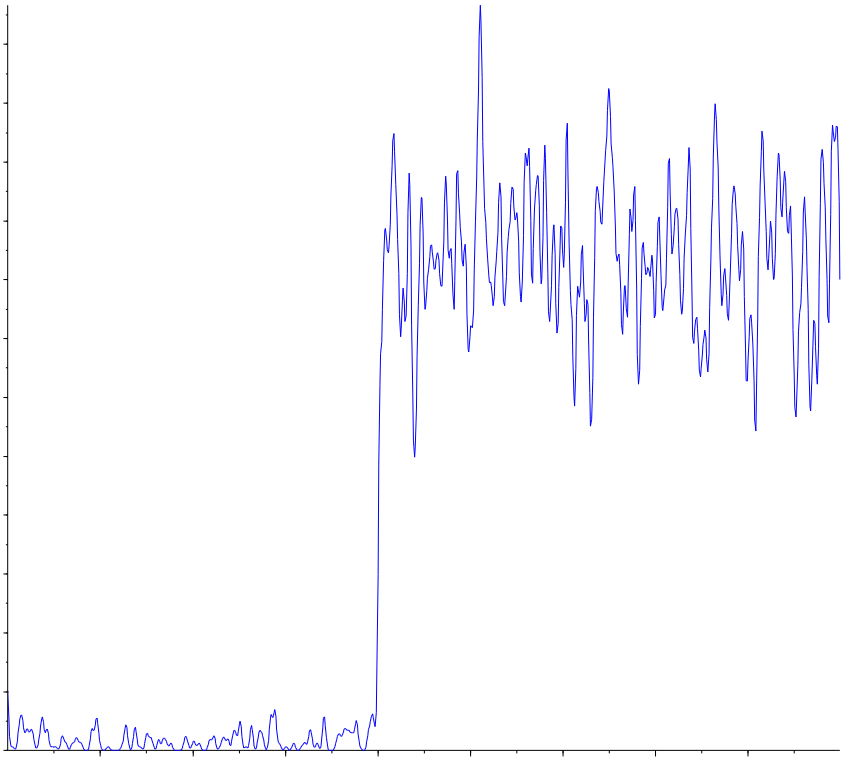

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Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

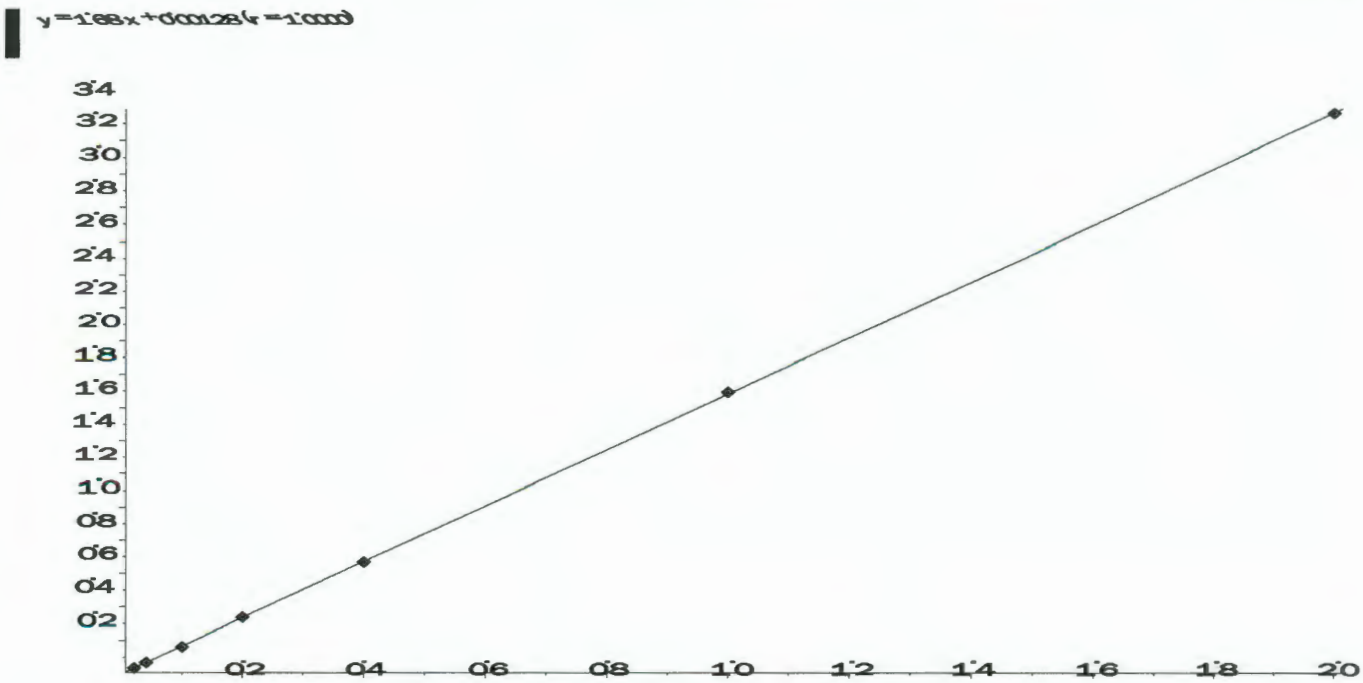

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Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

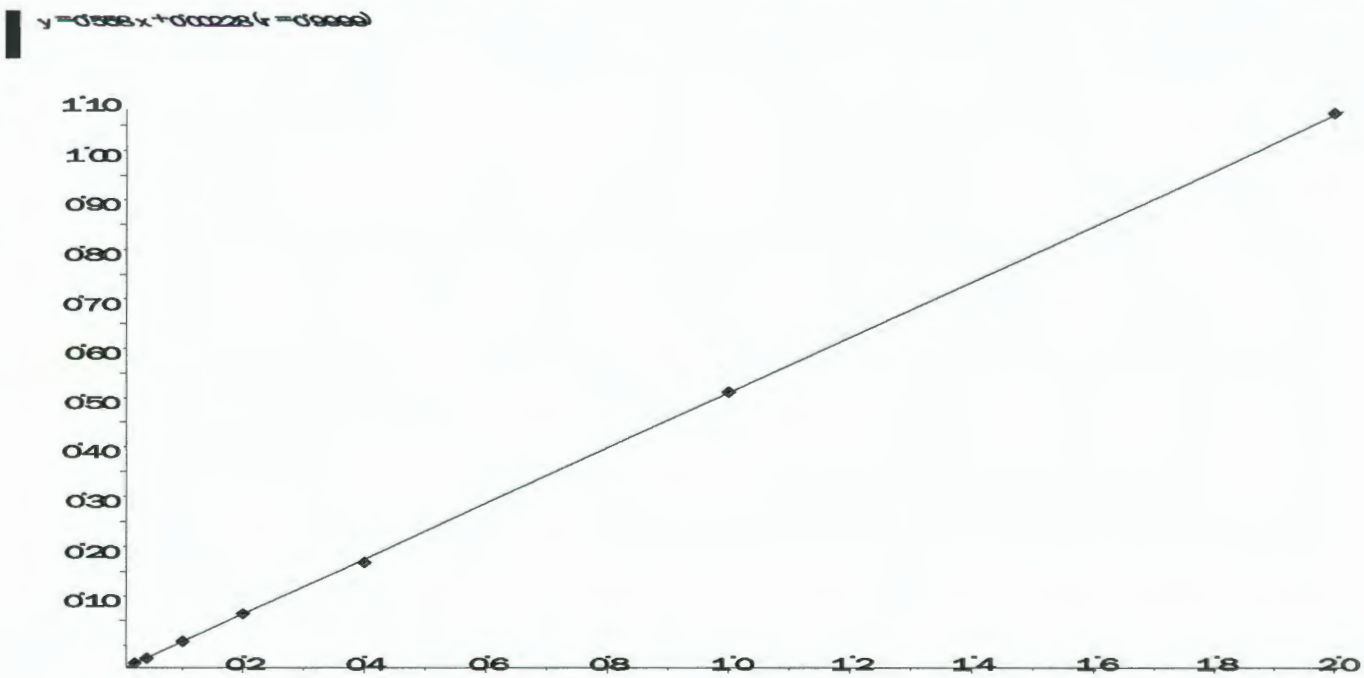

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Data File	LM34687.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

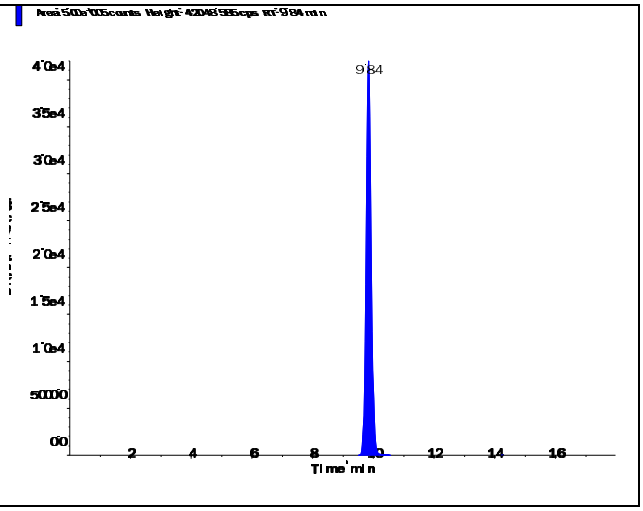

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.103 ng/ml
Area Ratio:	0.036
Sample Type:	(Standard)

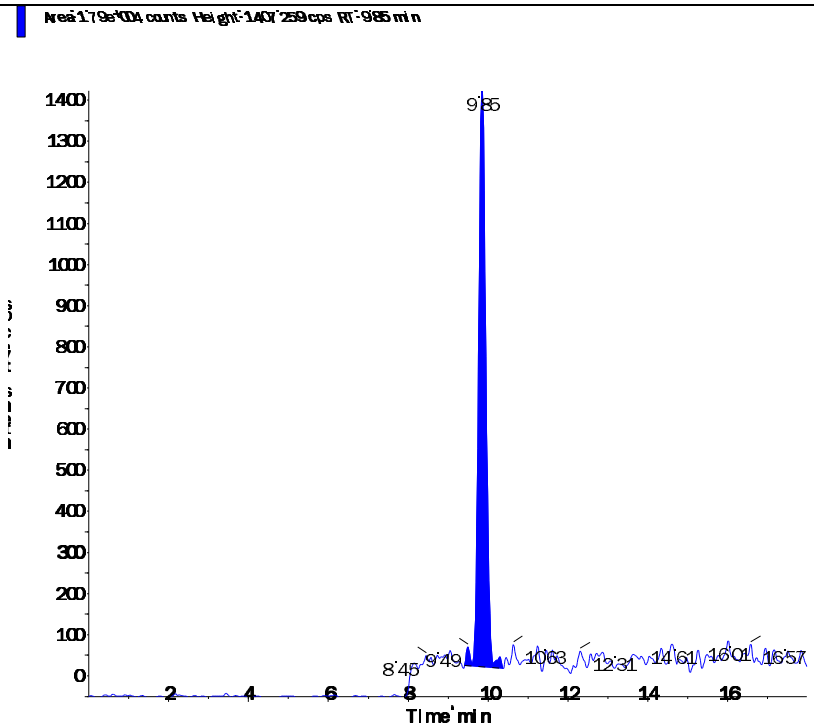

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.104 ng/ml
Area Ratio:	0.014
Sample Type:	(Standard)

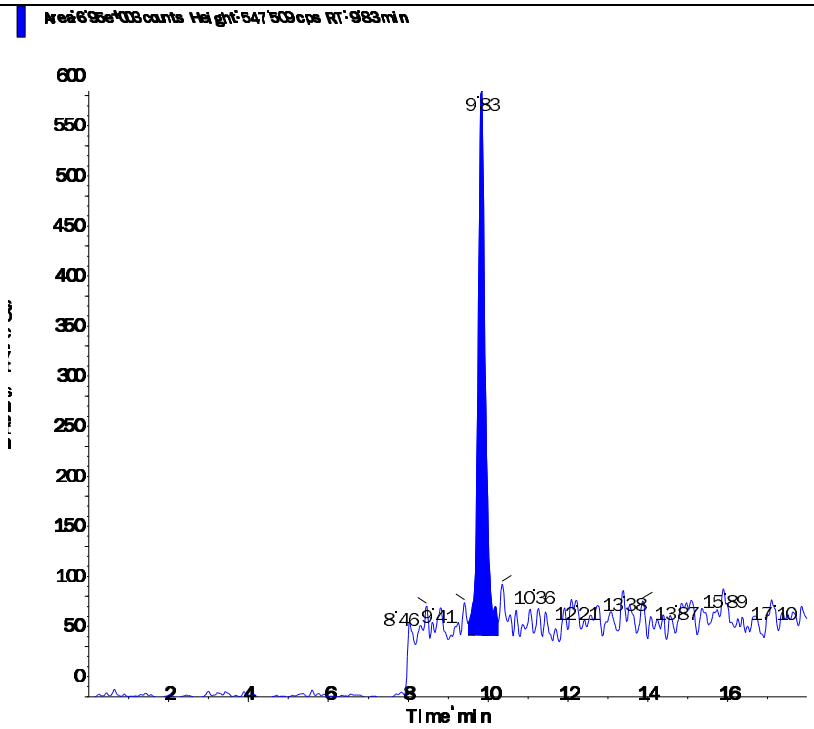

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Data File	LM34688.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

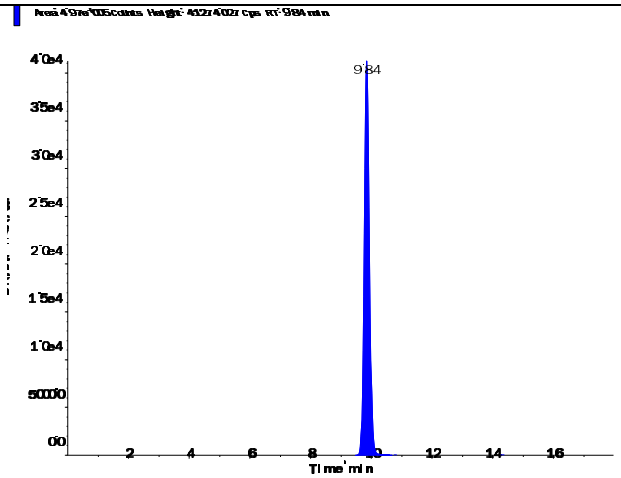

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

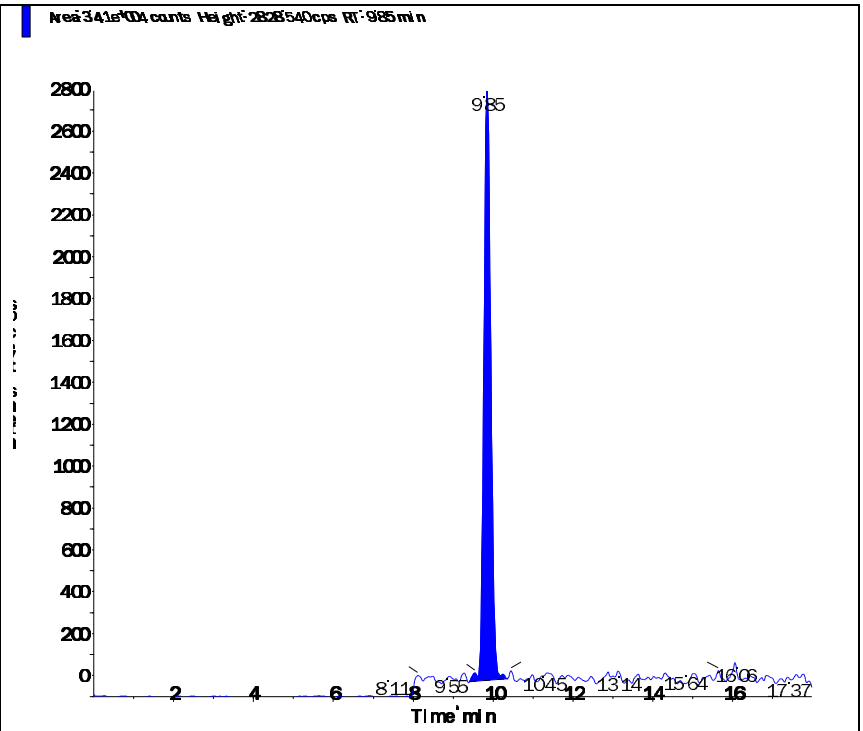

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

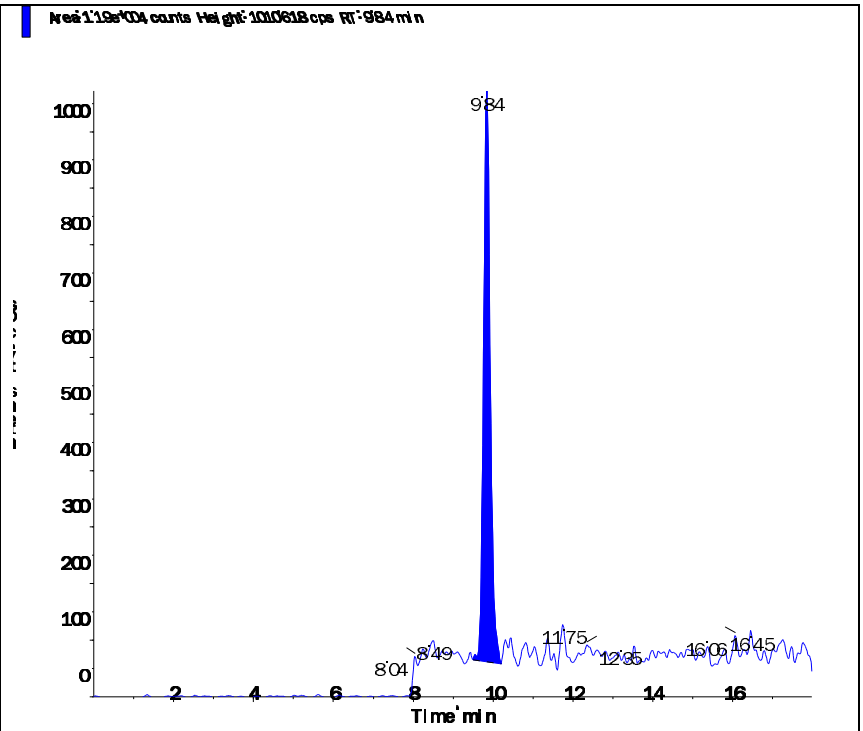

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Data File	LM34689.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

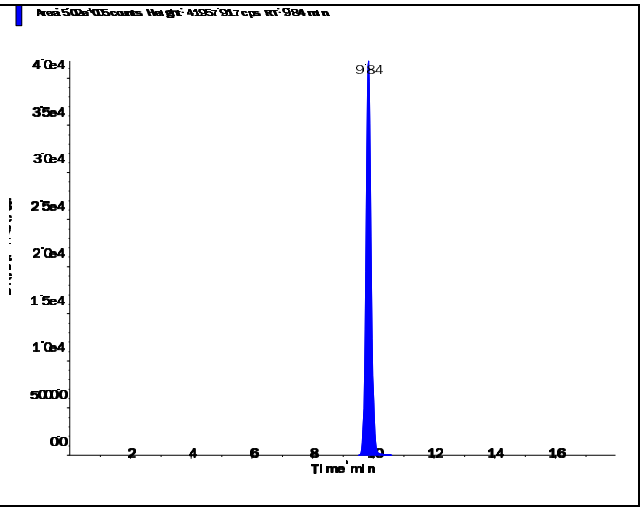

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.483 ng/ml
Area Ratio:	0.164
Sample Type:	(Standard)

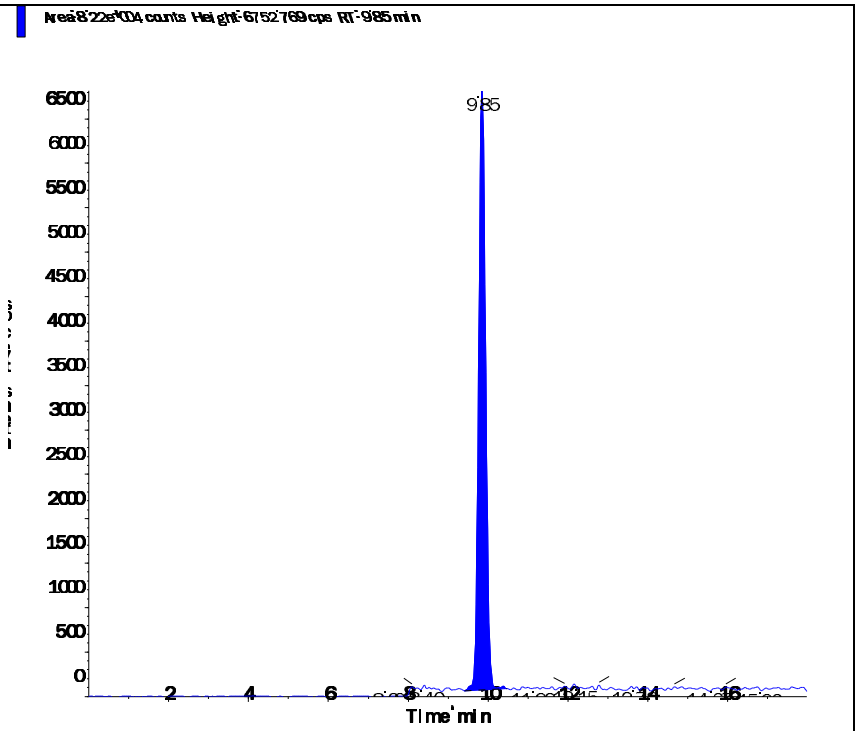

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.503 ng/ml
Area Ratio:	0.058
Sample Type:	(Standard)

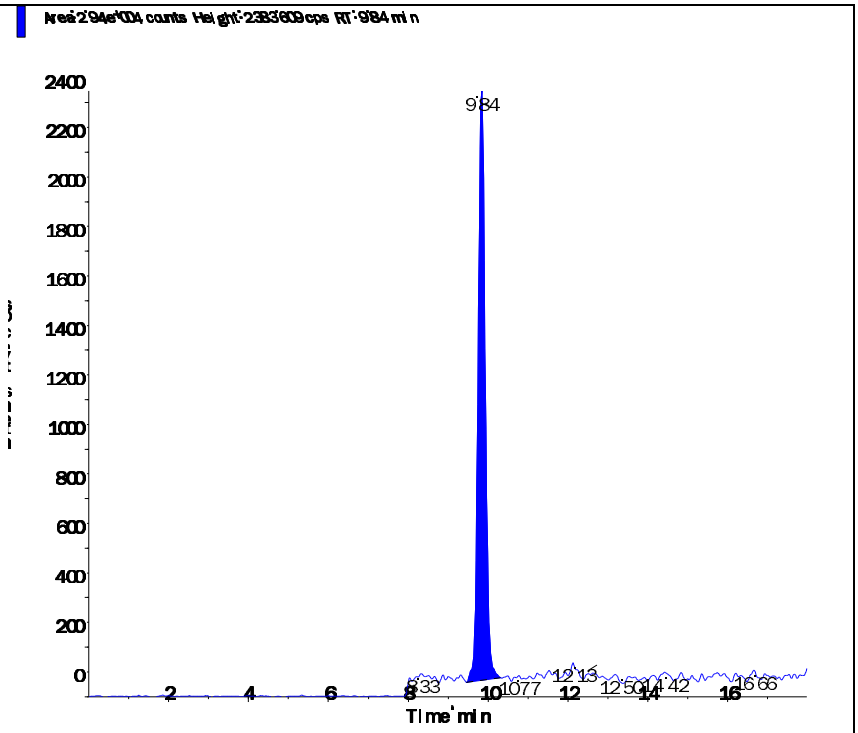

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Data File	LM34690.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

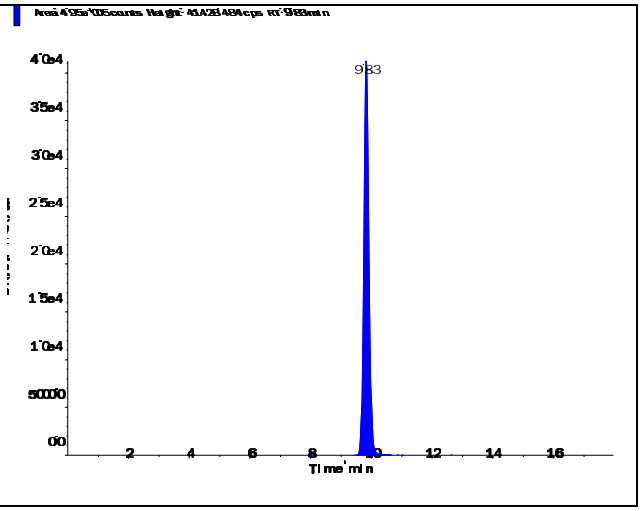

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

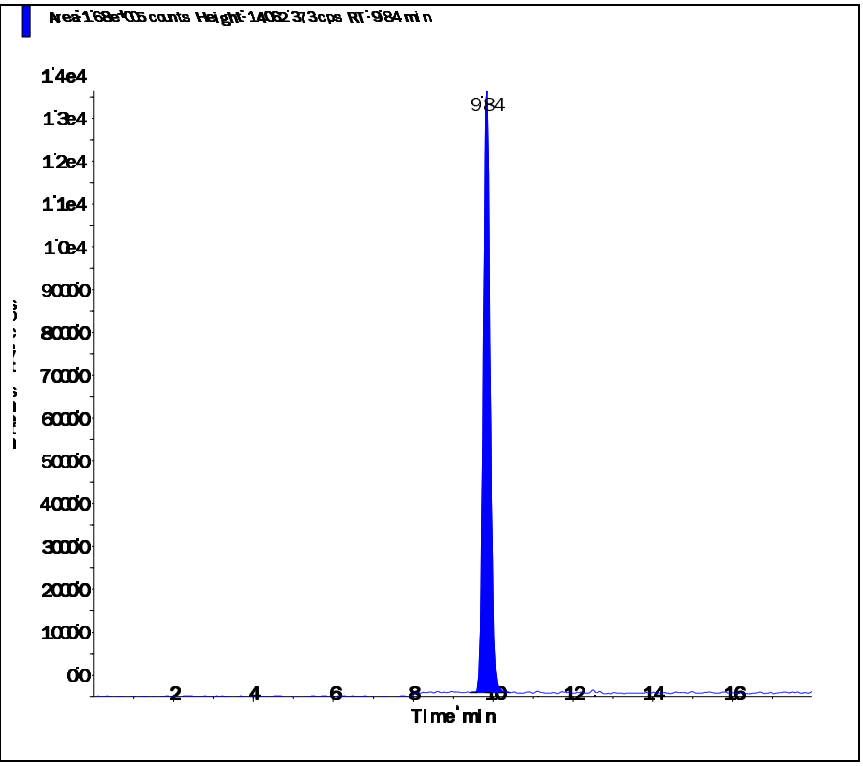

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

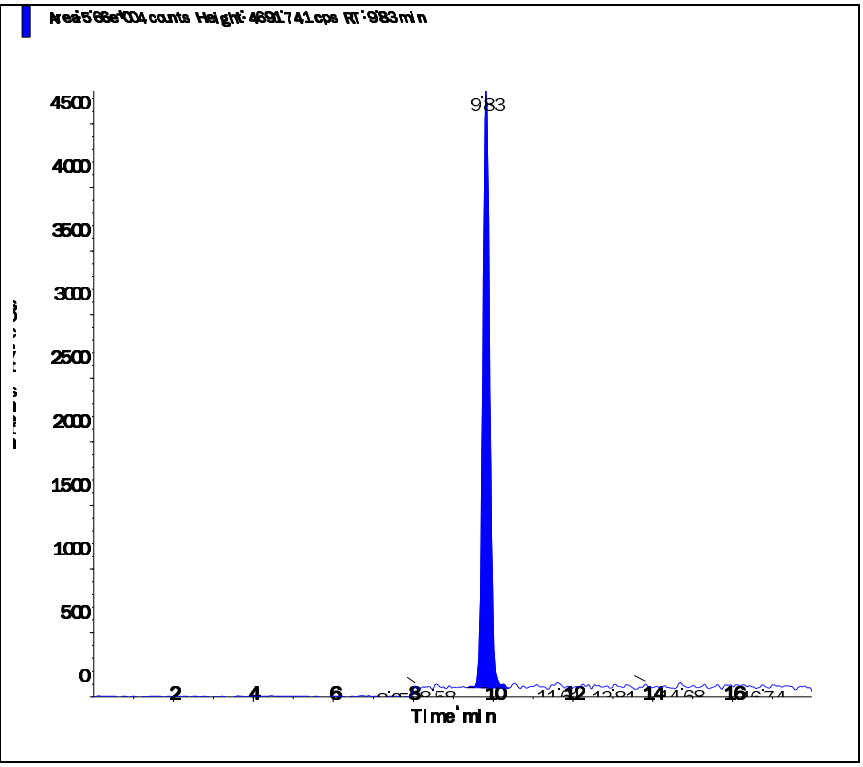

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Data File	LM34691.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

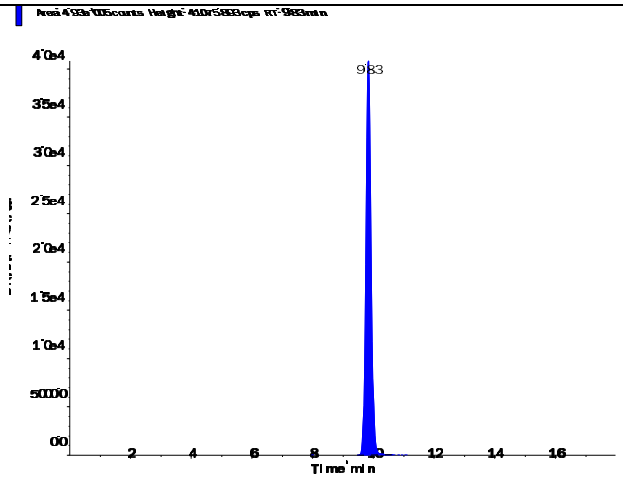

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 1.99 ng/ml Area Ratio: 0.669 Sample Type: (Standard)	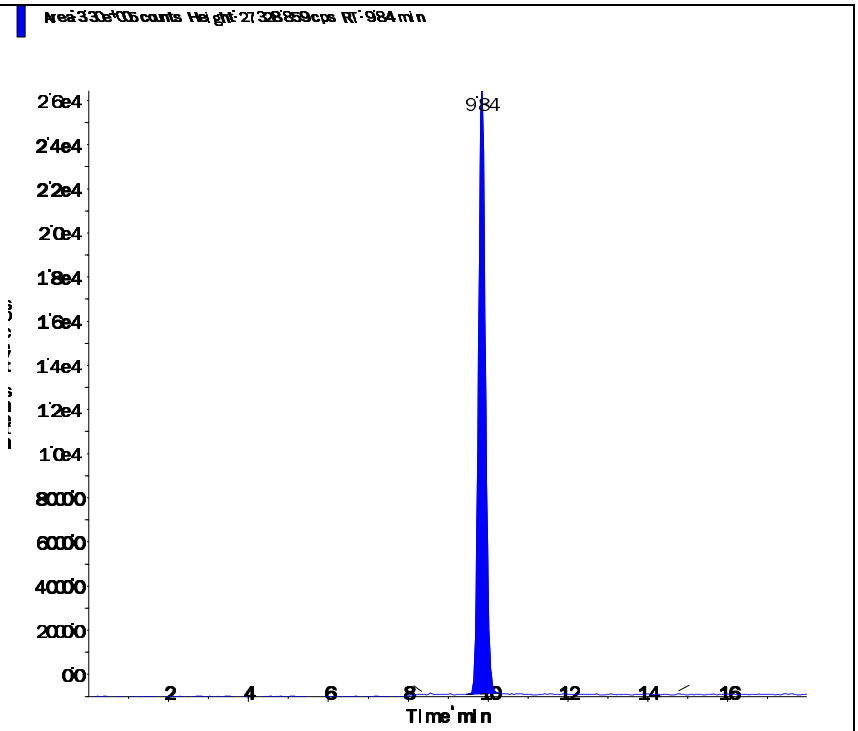
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 1.94 ng/ml Area Ratio: 0.219 Sample Type: (Standard)	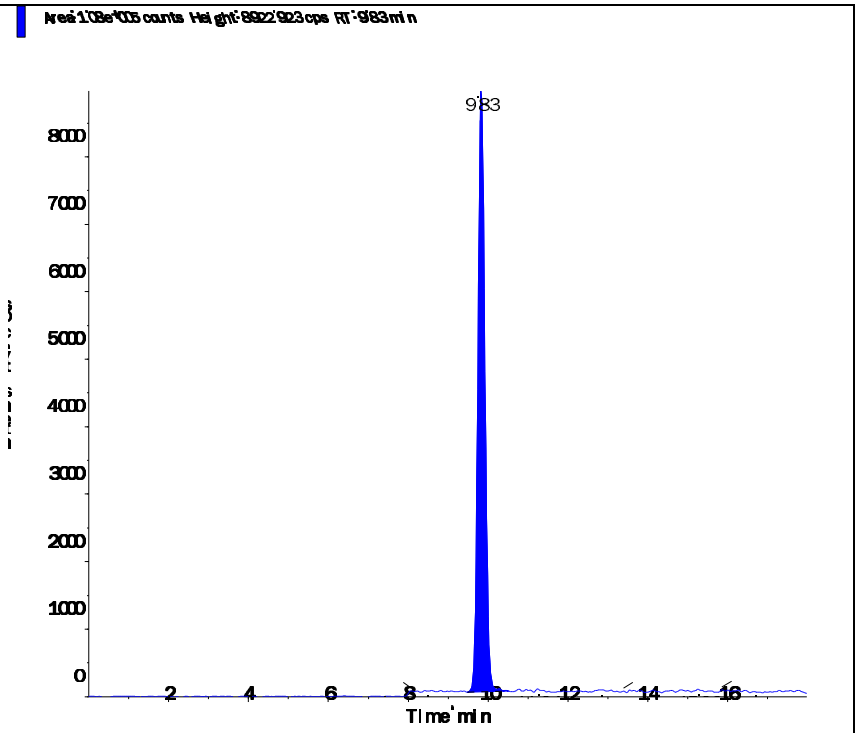

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Data File	LM34692.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

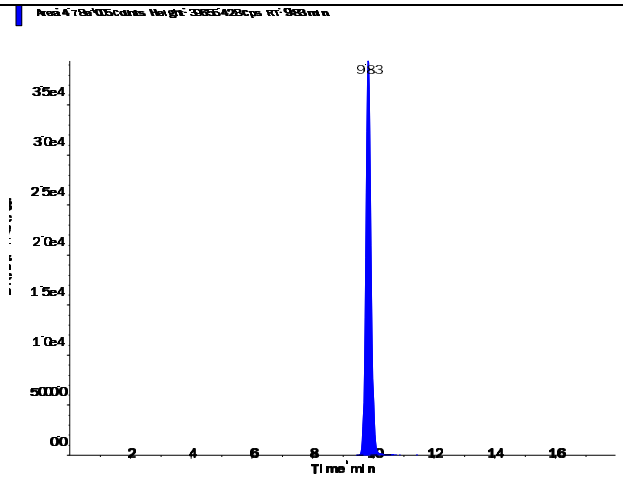

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

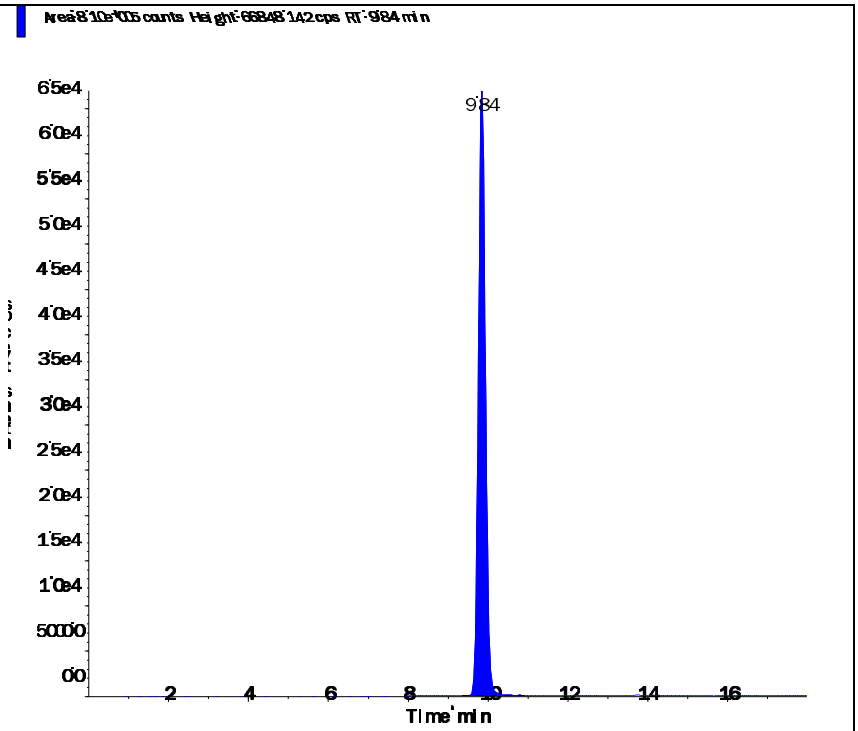

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

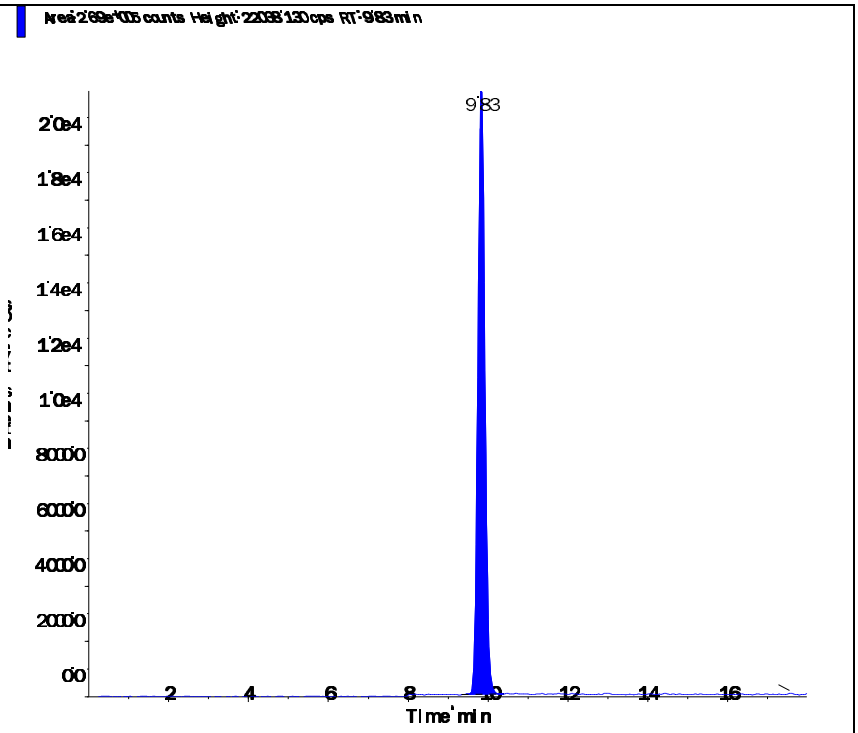

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Printed: 6/27/2016 7:38 PM

Data File	LM34693.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

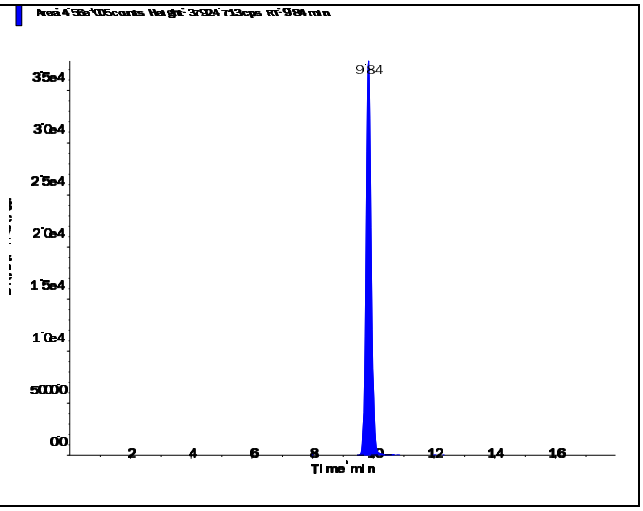

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 9.99 ng/ml Area Ratio: 3.36 Sample Type: (Standard)	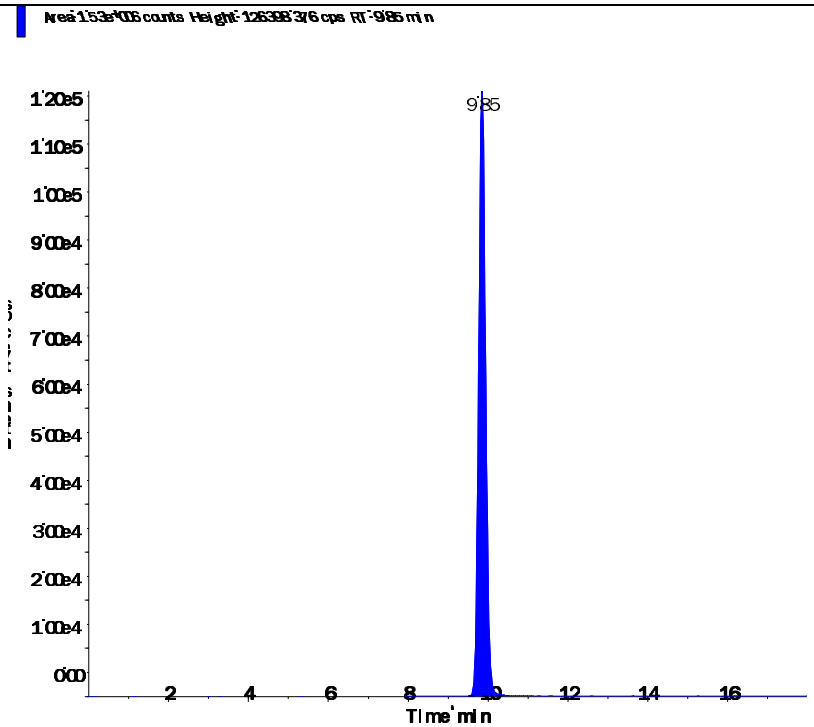
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 10.00 ng/ml Area Ratio: 1.122 Sample Type: (Standard)	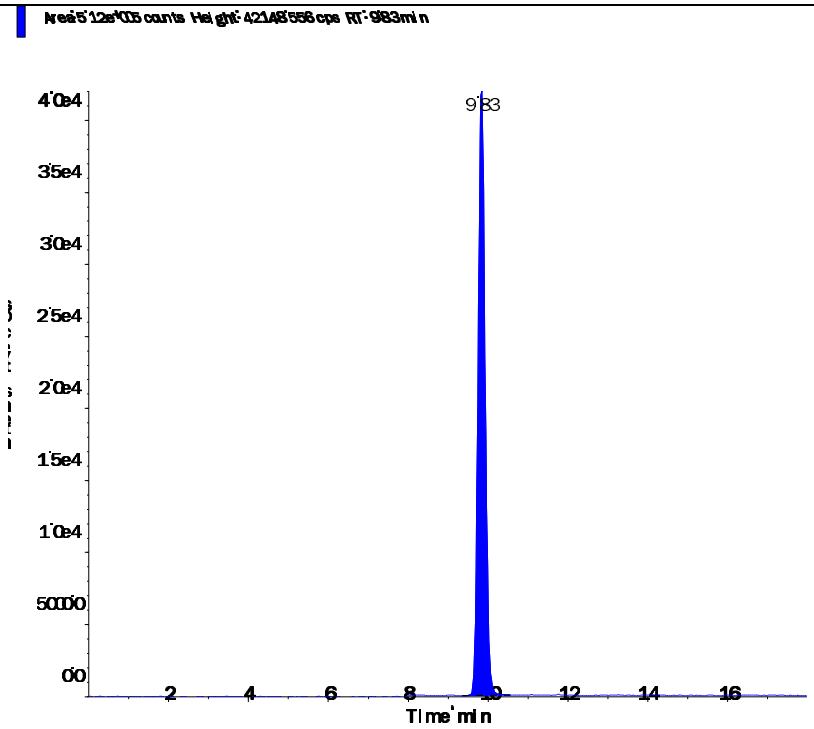

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Printed: 5/4/2016 1:23 PM

Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

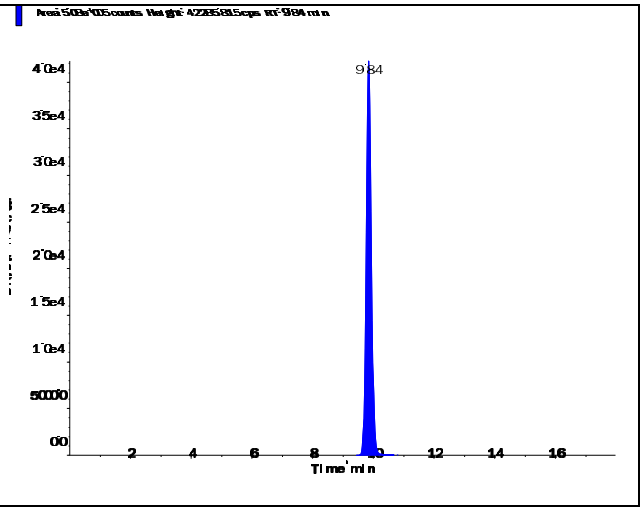

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.332
Sample Type:	(Quality Control)

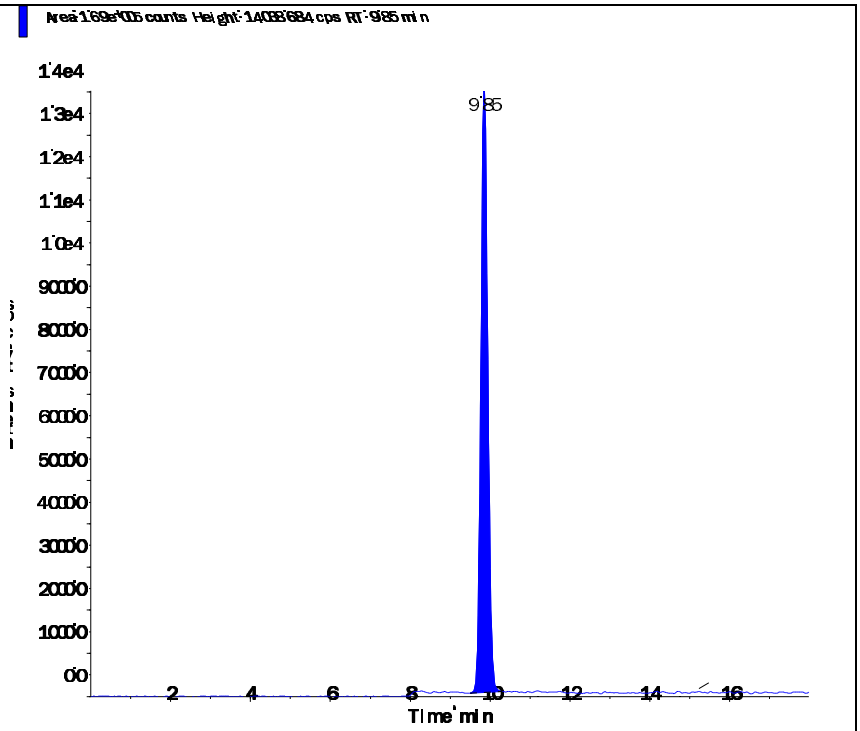

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

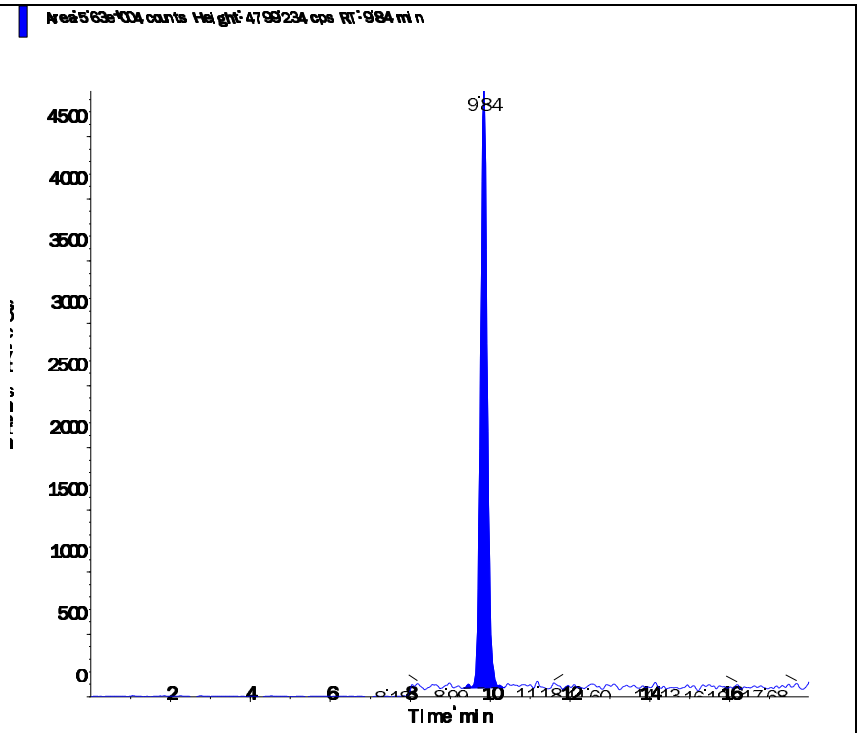

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Data File	LM35463.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 8:09:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35463.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 8:09:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.450e+05	9.34	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.520e+05	9.35	1.00	1.01
Perchlorate conf	5.550e+04	9.33	1.00	1.10

O18LP (Internal Standard)

RT (Exp. RT): 9.34(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

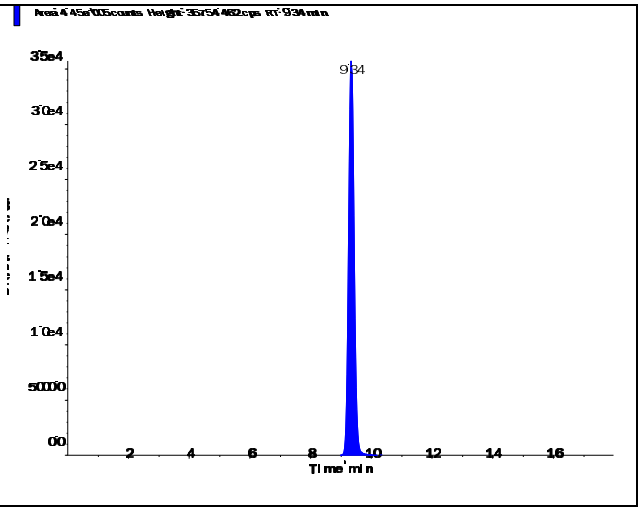

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.341
Sample Type:	(Quality Control)

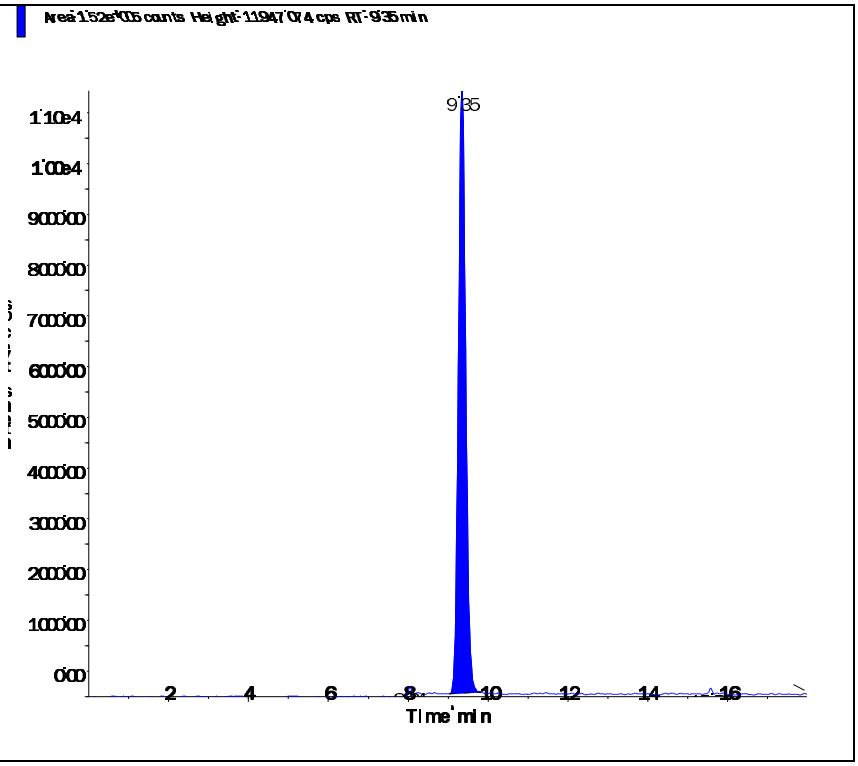

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.33 (9.84) min
Calculated conc:	1.10 ng/ml
Area Ratio:	0.125
Sample Type:	(Quality Control)

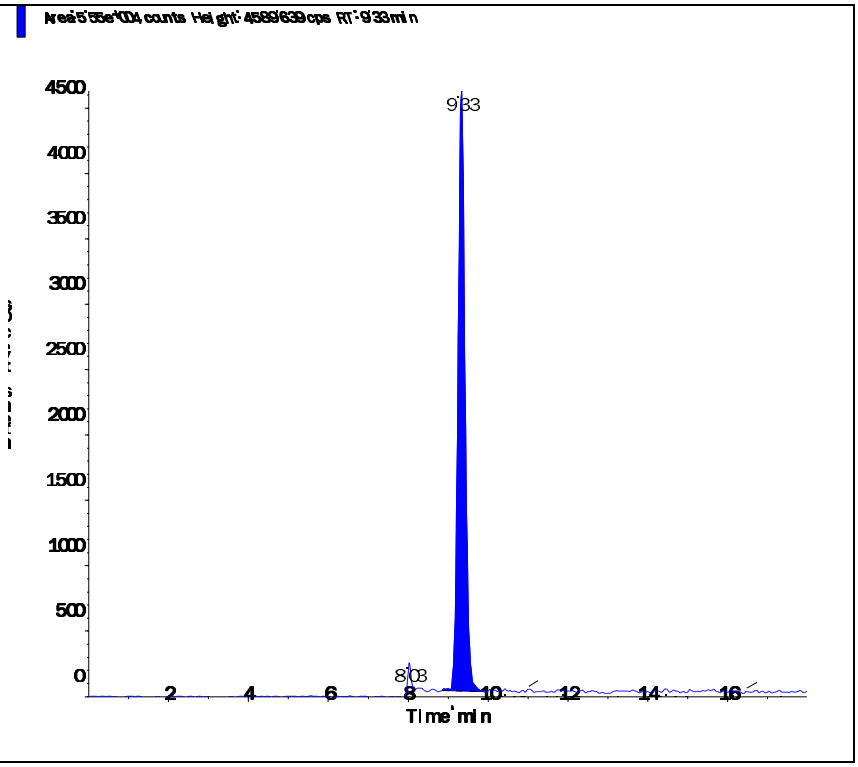

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Data File	LM35475.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 11:56:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35475.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 11:56:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.980e+05	9.32	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.700e+05	9.33	1.00	1.01
Perchlorate conf	5.750e+04	9.32	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.32(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

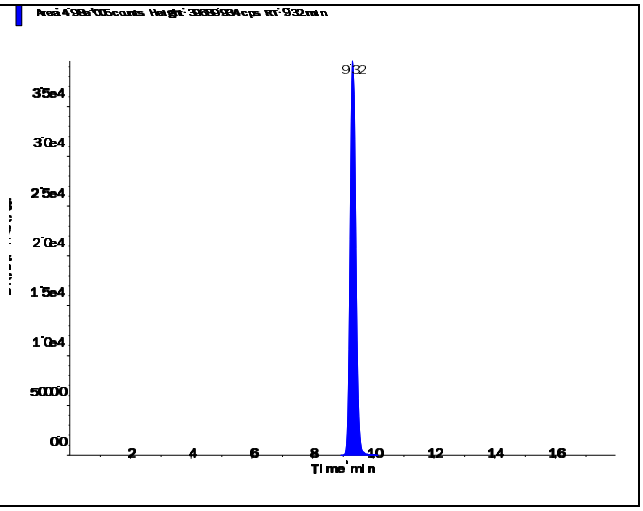

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.33 (9.84) min Calculated conc: 1.01 ng/ml Area Ratio: 0.34 Sample Type: (Quality Control)	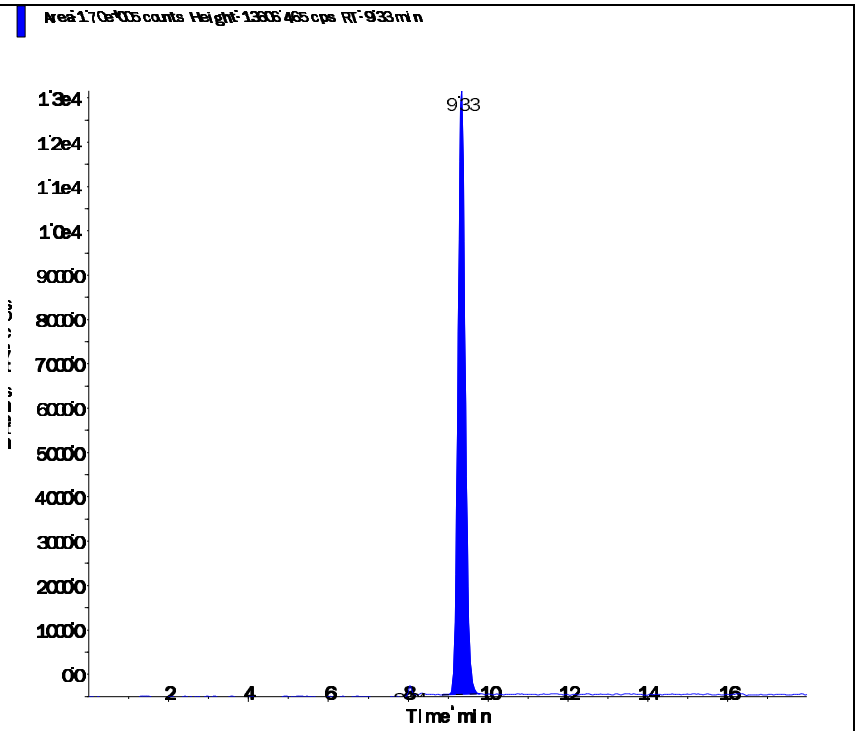
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.32 (9.84) min Calculated conc: 1.01 ng/ml Area Ratio: 0.115 Sample Type: (Quality Control)	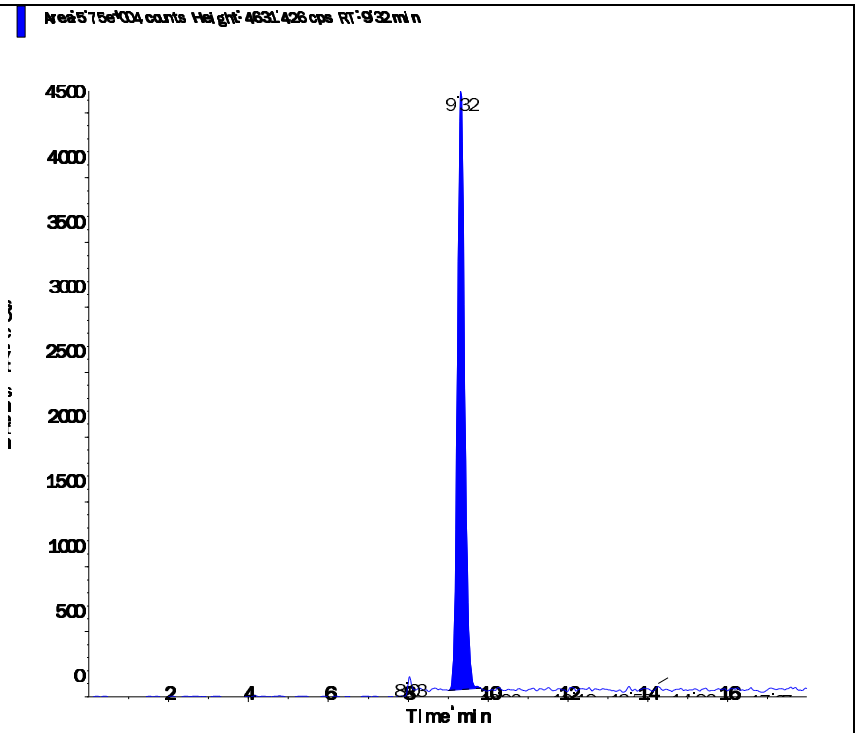

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Data File	LM35488.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 4:03:05 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35488.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 4:03:05 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.33	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+05	9.34	1.00	1.04
Perchlorate conf	6.020e+04	9.32	1.00	1.03

O18LP (Internal Standard)

RT (Exp. RT): 9.33(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

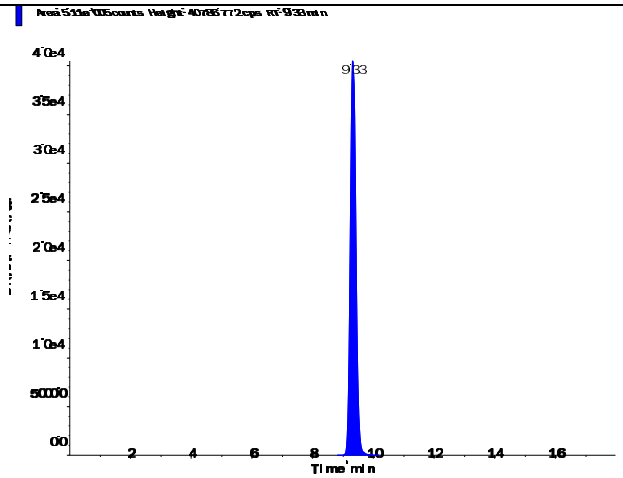

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.34 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.35
Sample Type:	(Quality Control)

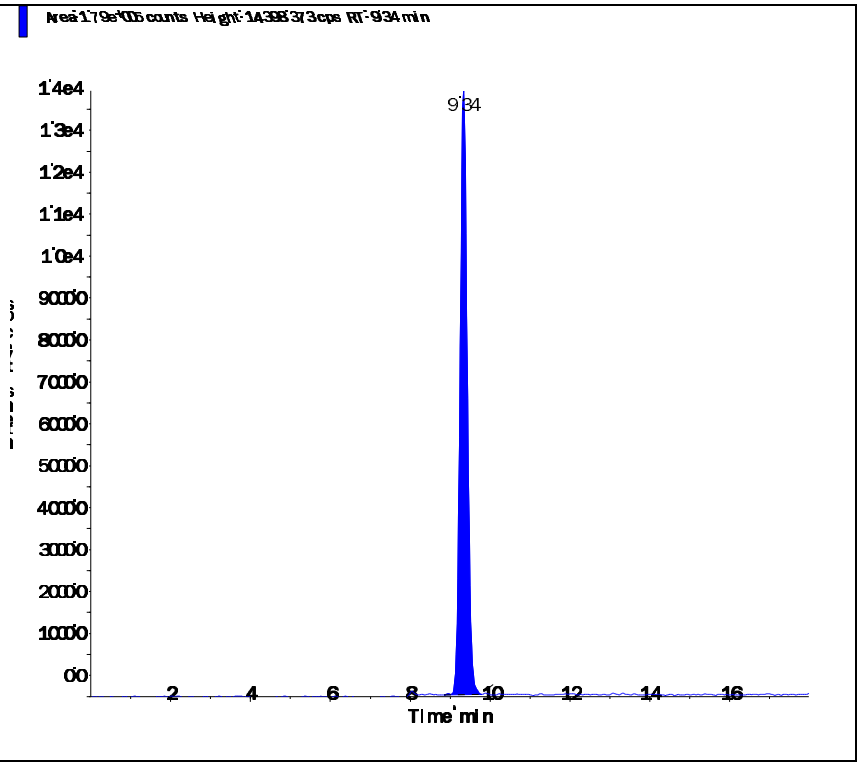

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.32 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.118
Sample Type:	(Quality Control)

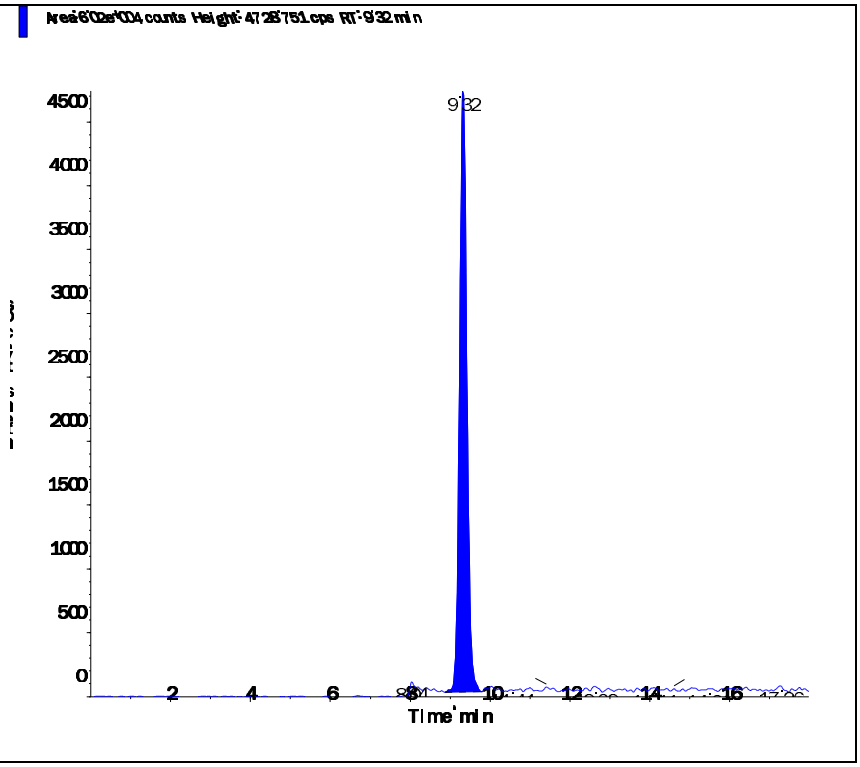

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Data File	LM35495.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:15:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35495.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:15:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.500e+05	9.33	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.890e+05	9.35	1.00	1.02
Perchlorate conf	6.340e+04	9.33	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.33(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

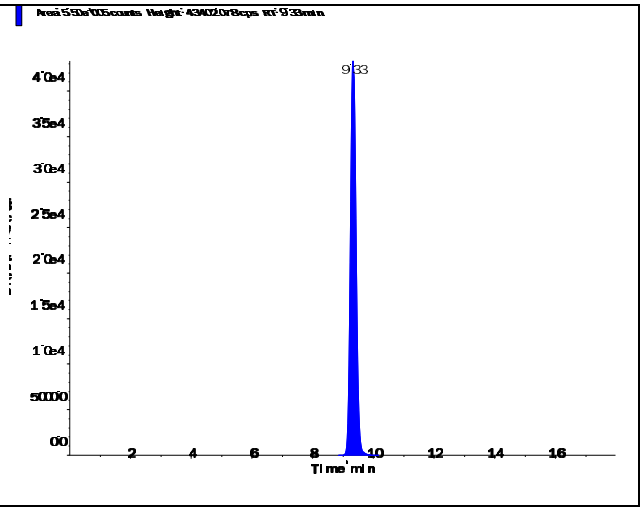

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.345
Sample Type:	(Quality Control)

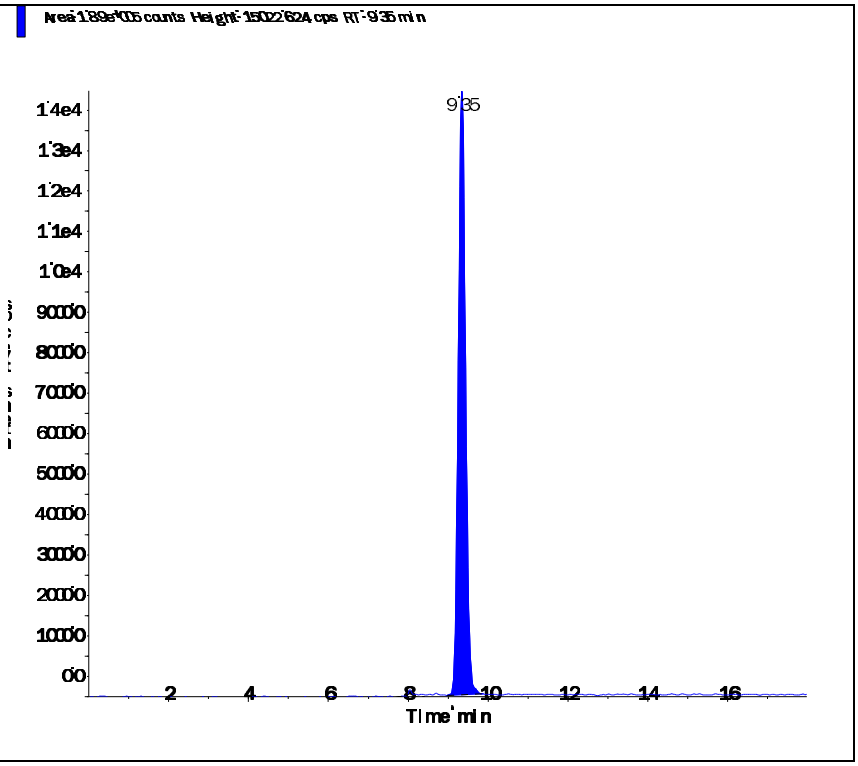

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.33 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.115
Sample Type:	(Quality Control)

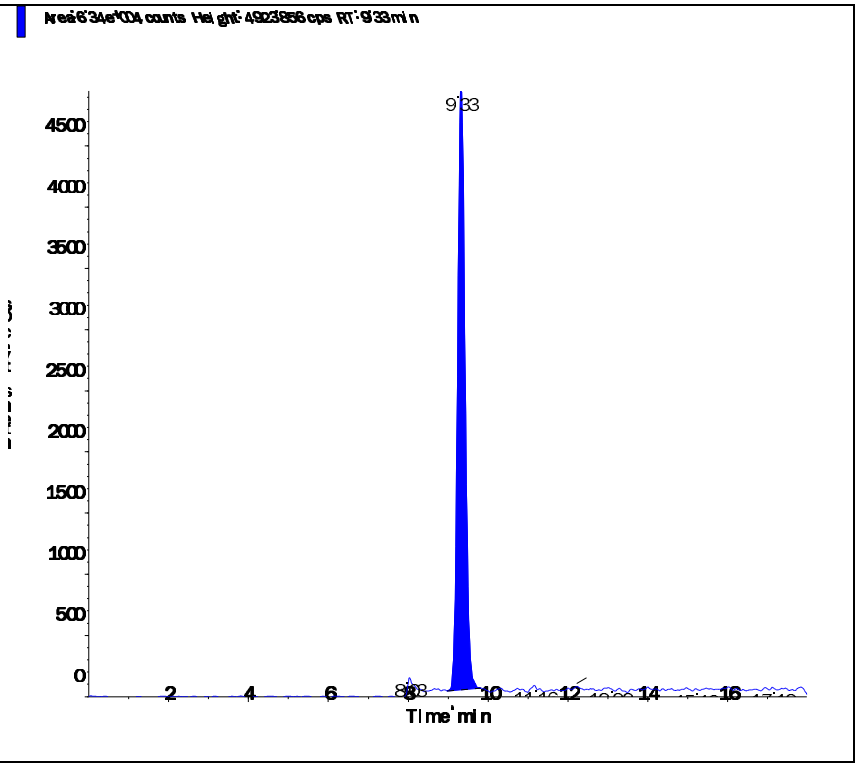

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Data File	LM35498.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:06:10 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35498.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:06:10 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.580e+05	9.34	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.610e+05	9.35	1.00	1.04
Perchlorate conf	5.670e+04	9.34	1.00	1.09

O18LP (Internal Standard)

RT (Exp. RT): 9.34(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

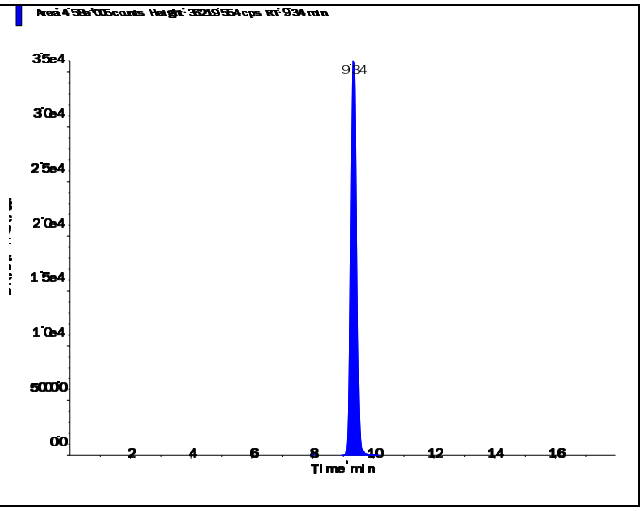

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.353
Sample Type:	(Quality Control)

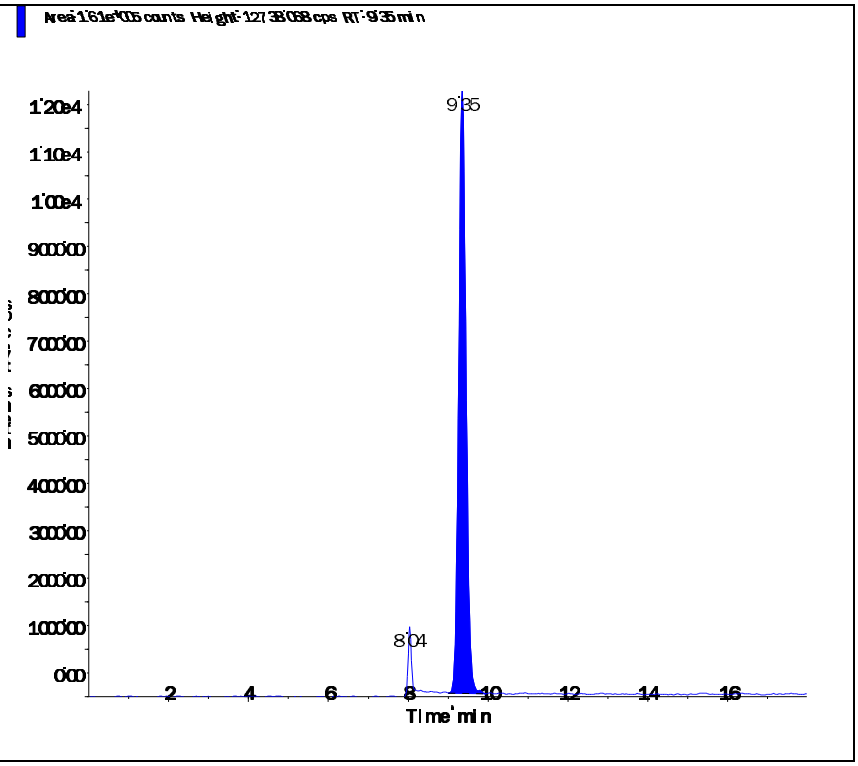

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.34 (9.84) min
Calculated conc:	1.09 ng/ml
Area Ratio:	0.124
Sample Type:	(Quality Control)

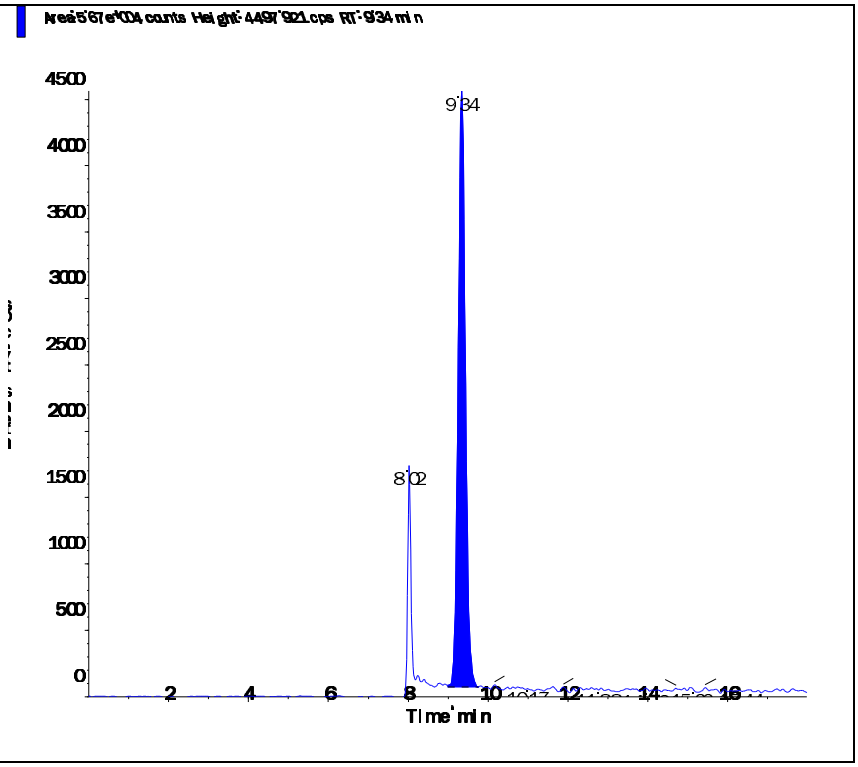

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Data File	LM35508.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 9:15:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-11 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35508.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 9:15:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.090e+05	9.35	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.760e+05	9.36	1.00	1.02
Perchlorate conf	5.930e+04	9.35	1.00	1.02

O18LP (Internal Standard)

RT (Exp. RT): 9.35(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

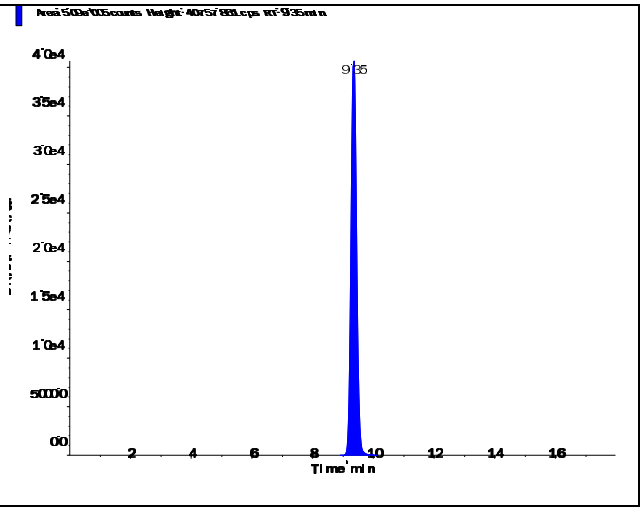

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.36 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.345
Sample Type:	(Quality Control)

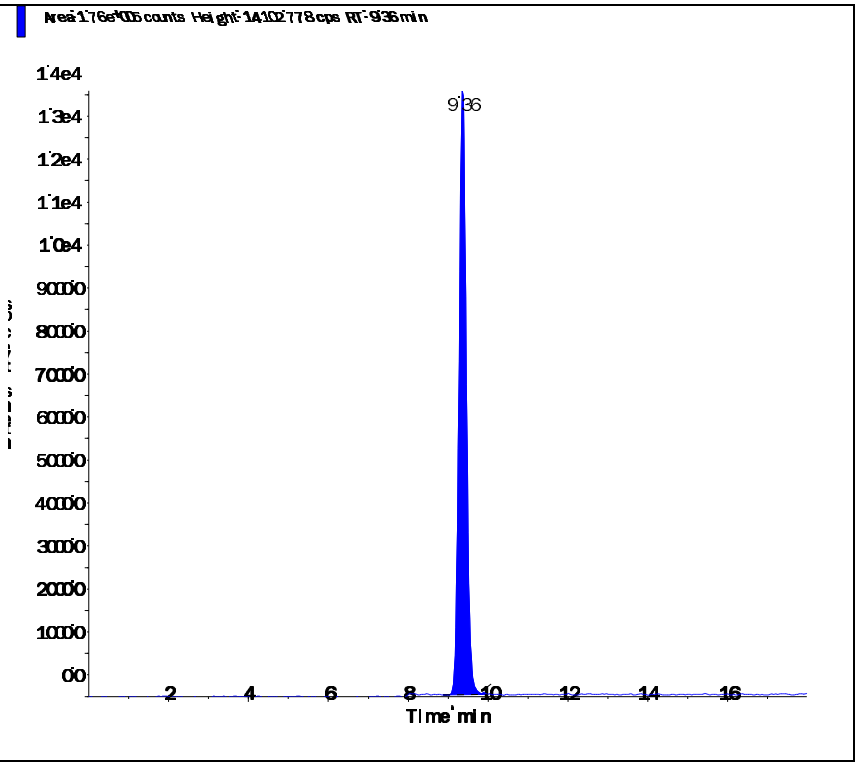

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.117
Sample Type:	(Quality Control)

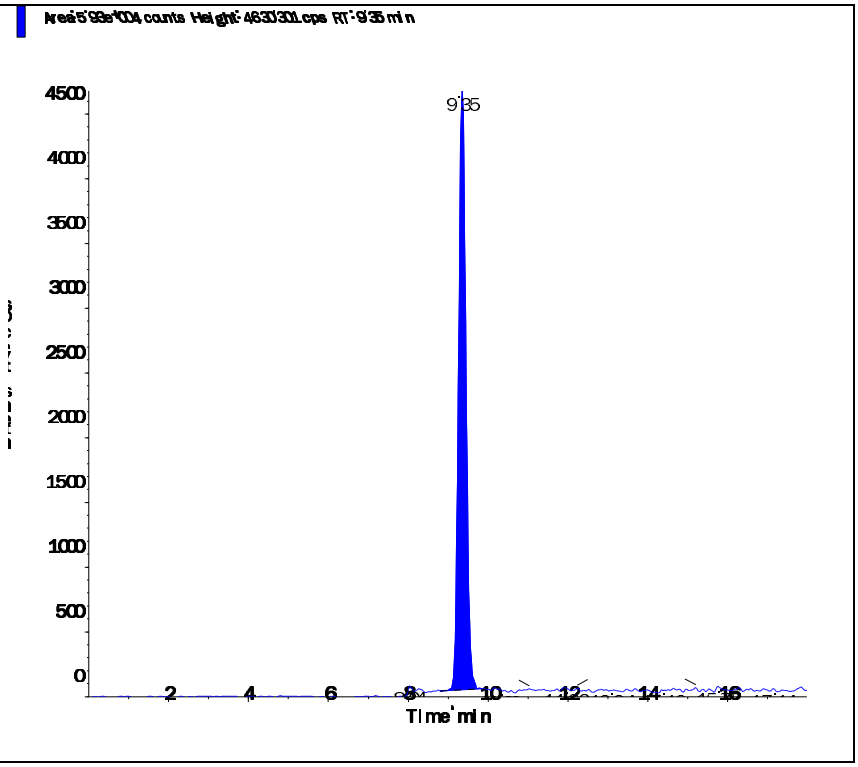

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Data File	LM35464.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 8:28:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-05 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35464.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 8:28:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.490e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.160e+04	9.40	N/A	0.206
Perchlorate conf	1.210e+04	9.37	N/A	0.222

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

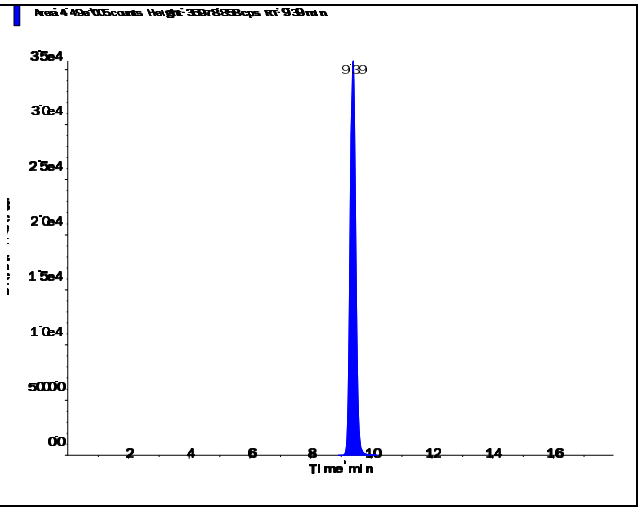

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

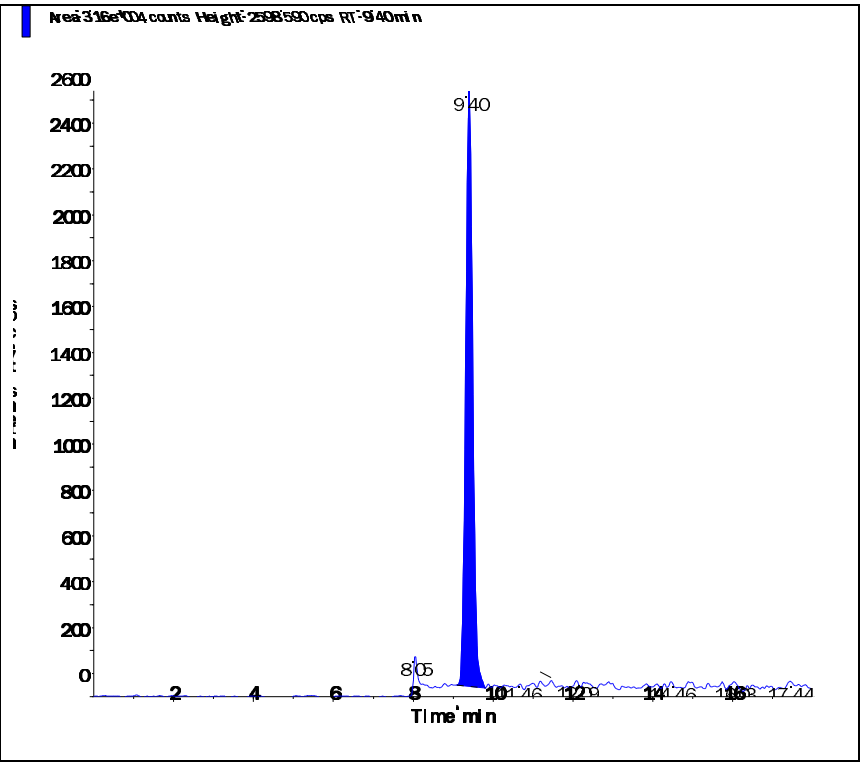

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.37 (9.84) min
Calculated conc:	0.222 ng/ml
Area Ratio:	0.027
Sample Type:	(Unknown)

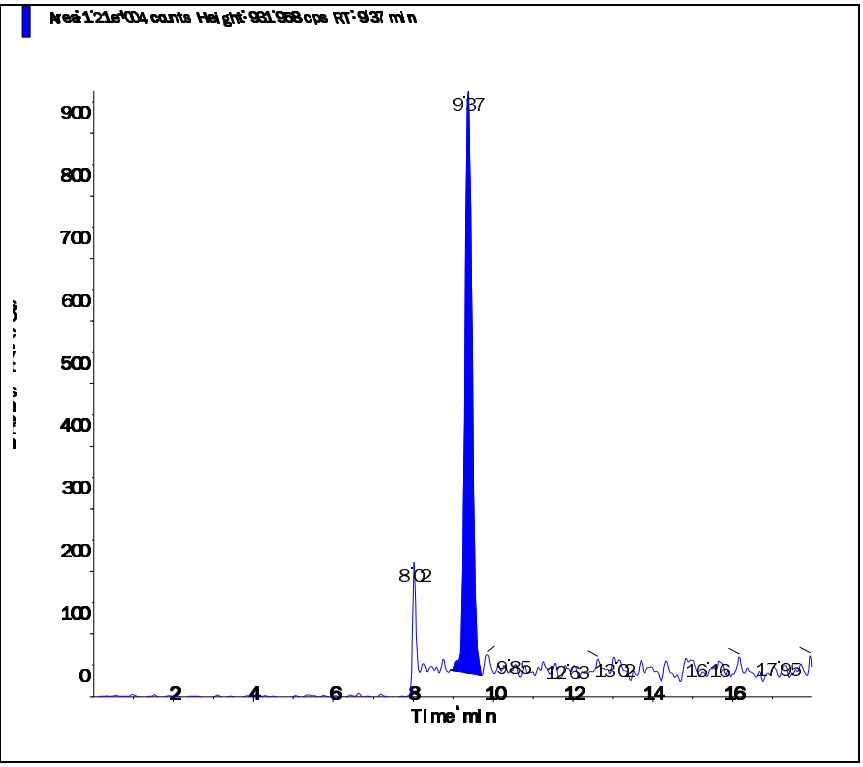

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Data File	LM35476.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 12:15:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-06 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35476.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 12:15:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.160e+05	9.36	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.500e+04	9.37	N/A	0.198
Perchlorate conf	1.310e+04	9.35	N/A	0.207

O18LP (Internal Standard)

RT (Exp. RT): 9.36(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

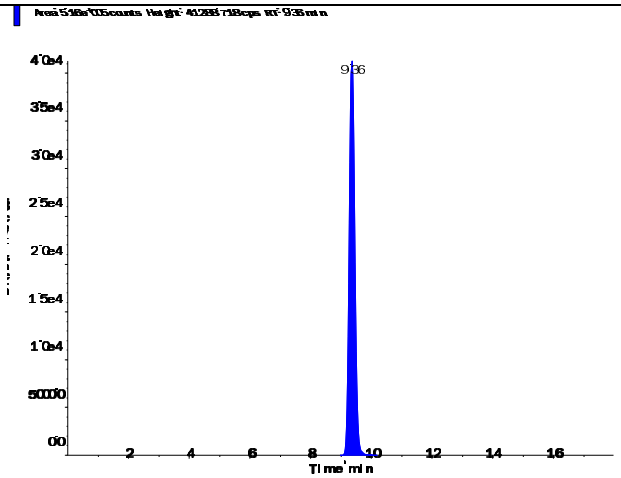

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.37 (9.84) min
Calculated conc:	0.198 ng/ml
Area Ratio:	0.068
Sample Type:	(Unknown)

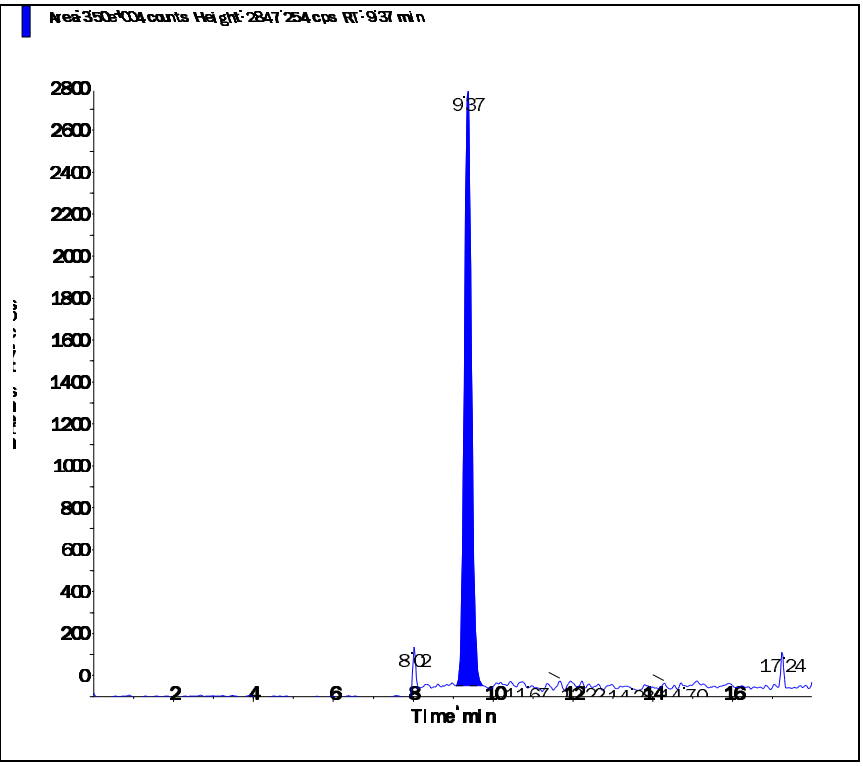

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

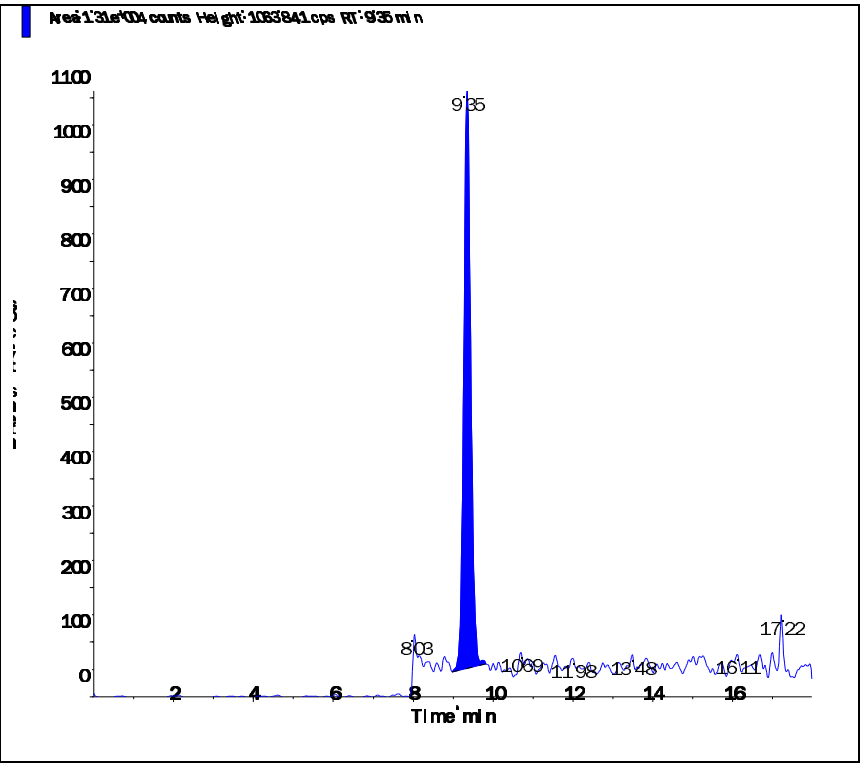

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Data File	LM35489.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 4:22:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35489.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 4:22:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.380e+05	9.37	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.890e+04	9.39	N/A	0.211
Perchlorate conf	1.340e+04	9.38	N/A	0.202

O18LP (Internal Standard)

RT (Exp. RT): 9.37(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

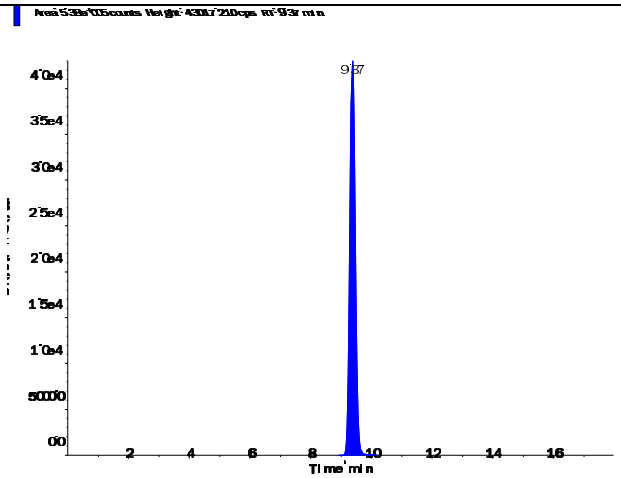

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	0.211 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

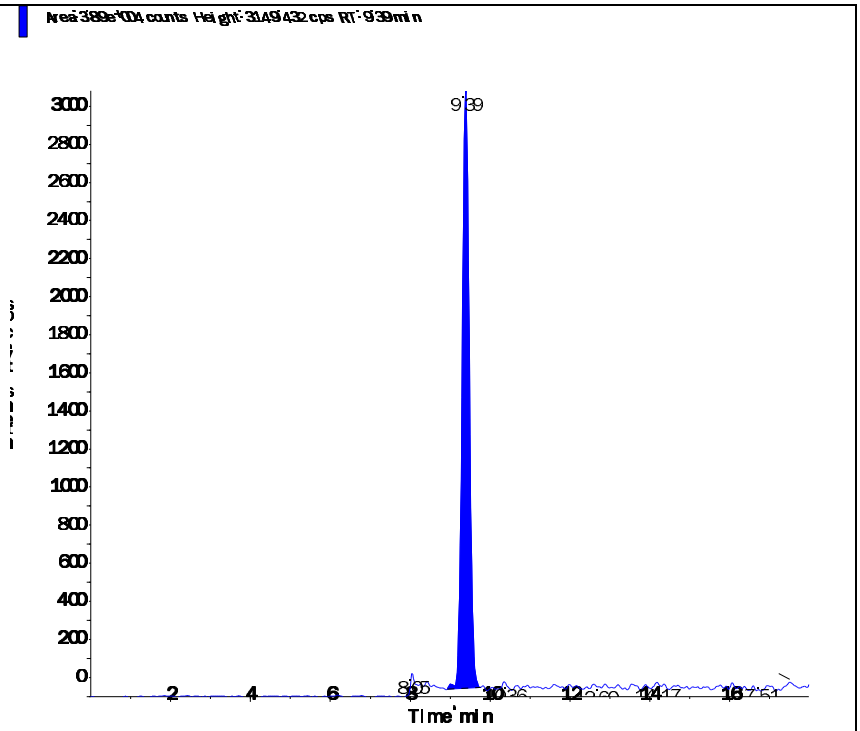

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	0.202 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

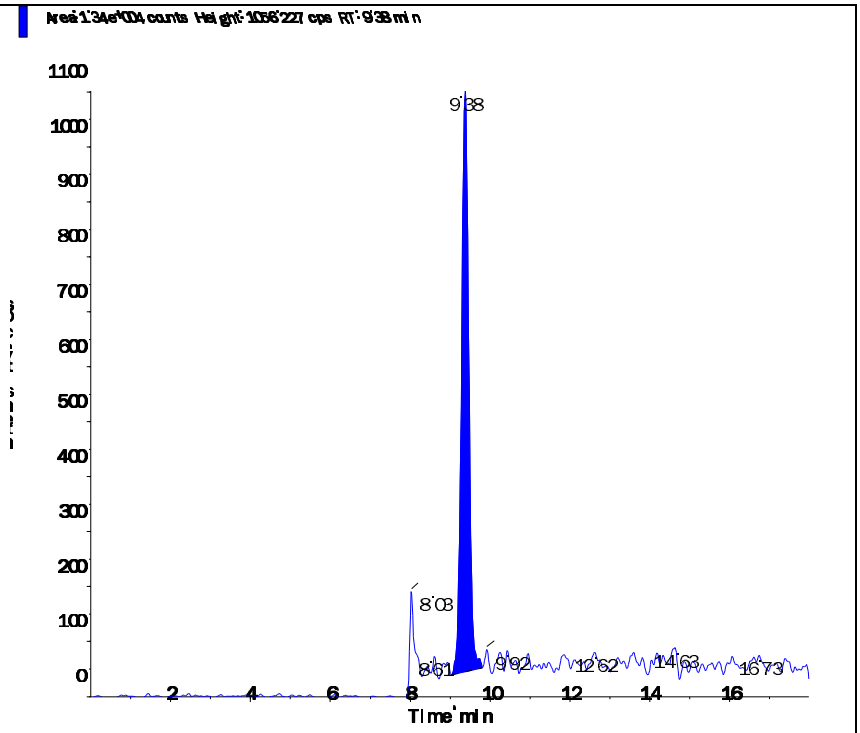

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Data File	LM35496.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:34:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-08 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35496.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:34:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.520e+05	9.38	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.800e+04	9.39	N/A	0.201
Perchlorate conf	1.410e+04	9.38	N/A	0.208

O18LP (Internal Standard)

RT (Exp. RT): 9.38(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

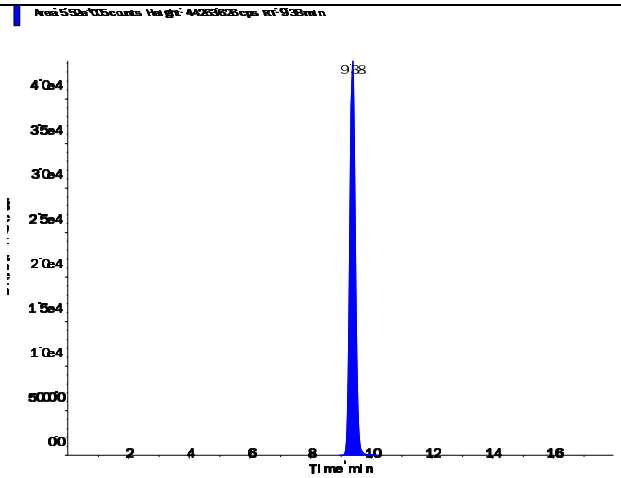

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

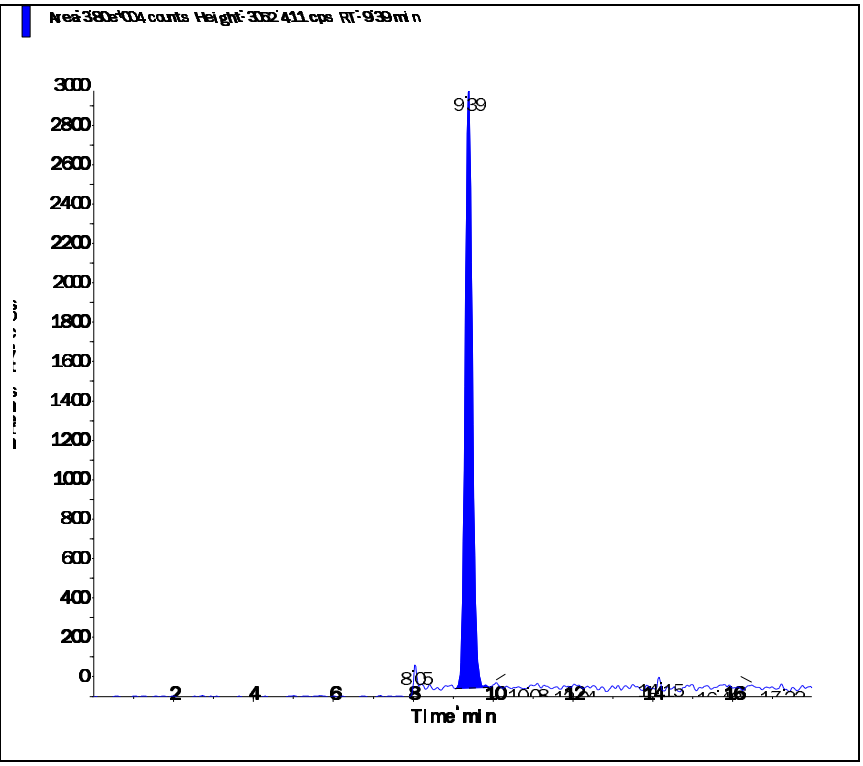

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	0.208 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

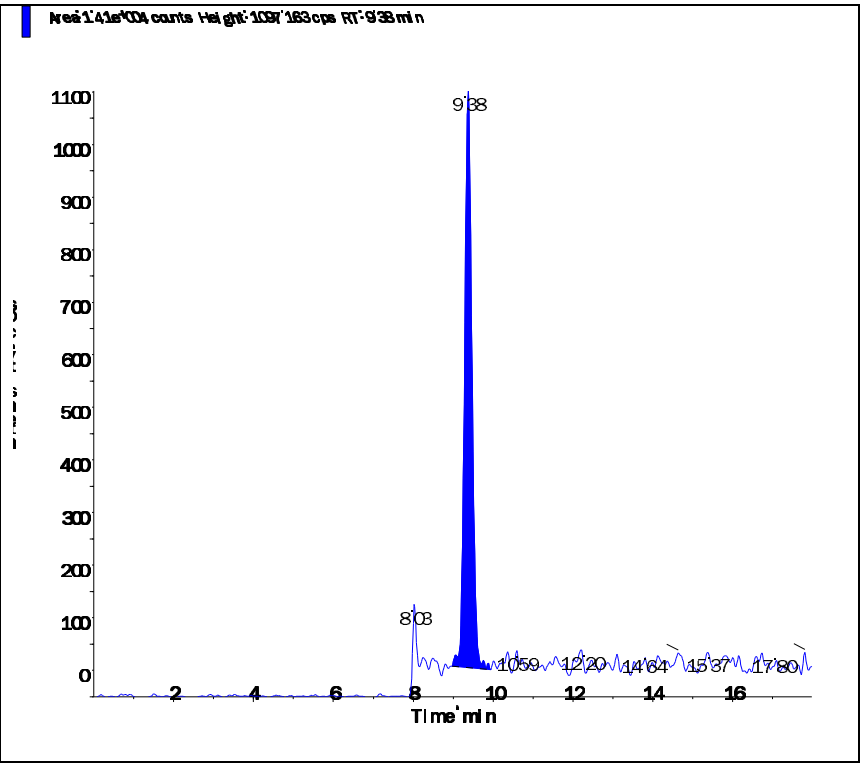

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Data File	LM35499.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:25:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-09 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35499.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:25:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.640e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.290e+04	9.40	N/A	0.207
Perchlorate conf	1.150e+04	9.38	N/A	0.201

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

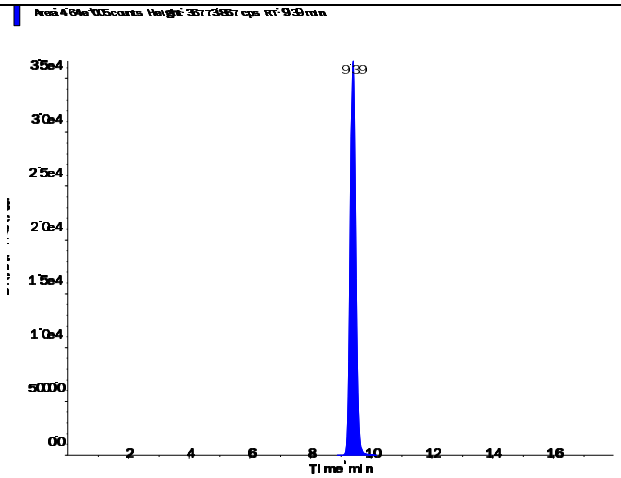

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

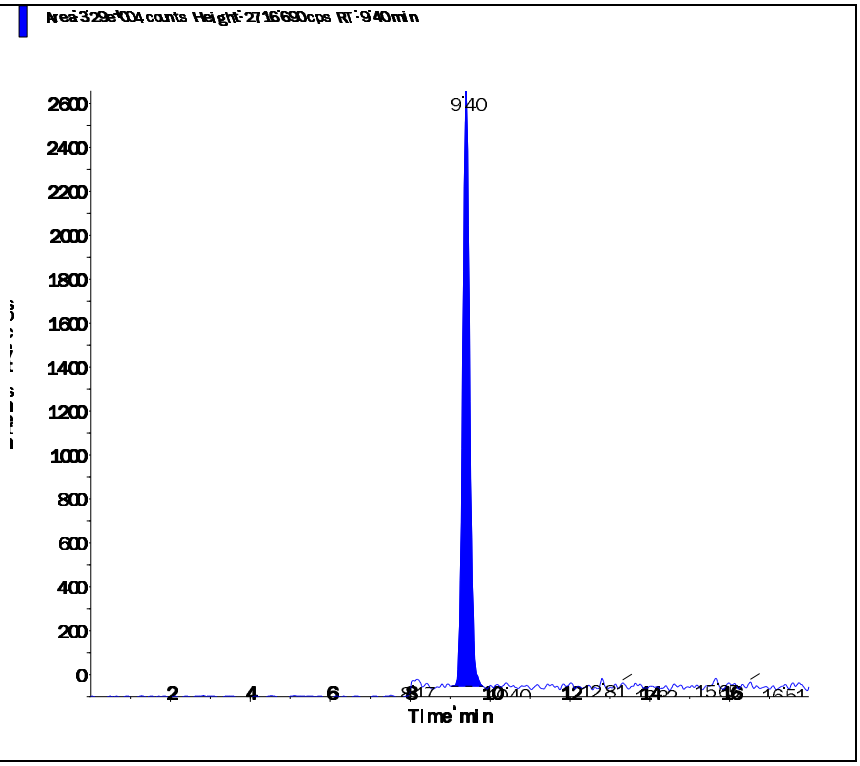

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

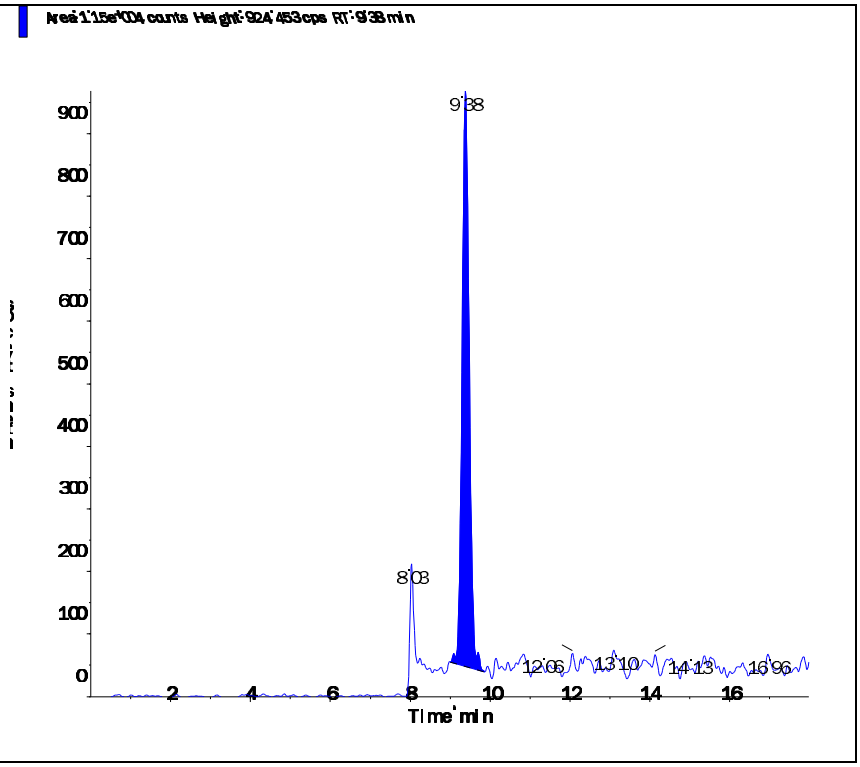

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Data File	LM35509.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 9:34:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-10 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35509.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 9:34:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-10	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.370e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.790e+04	9.40	N/A	0.206
Perchlorate conf	1.400e+04	9.39	N/A	0.214

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

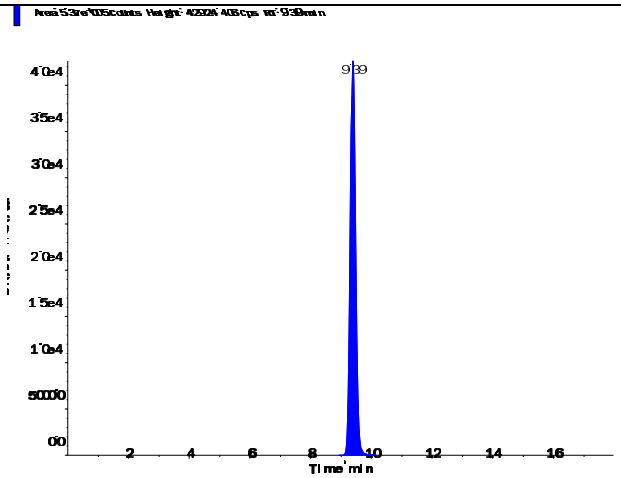

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.40 (9.84) min Calculated conc: 0.206 ng/ml Area Ratio: 0.071 Sample Type: (Unknown)	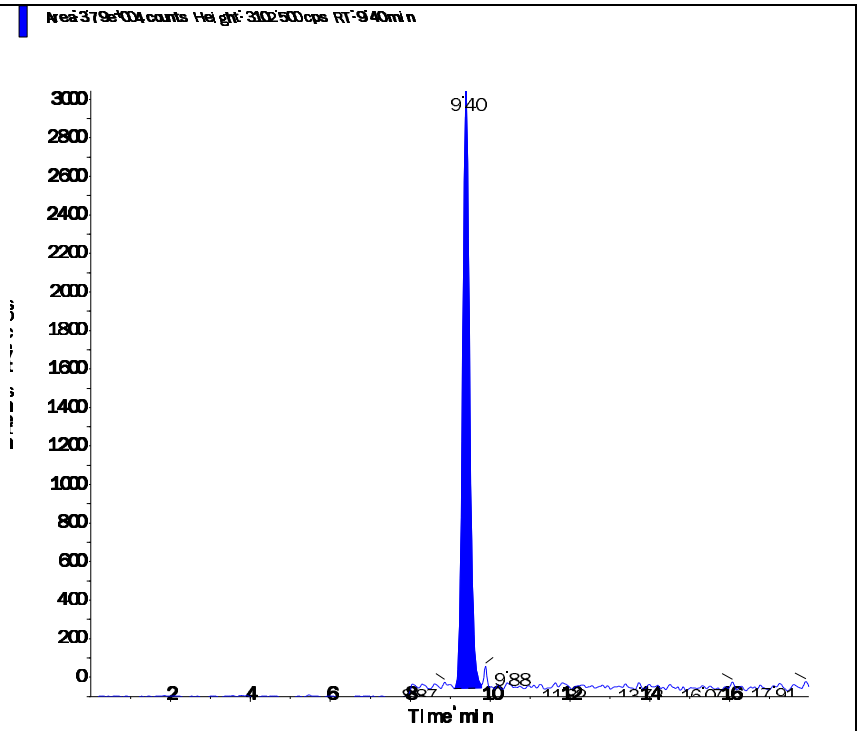
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.39 (9.84) min Calculated conc: 0.214 ng/ml Area Ratio: 0.026 Sample Type: (Unknown)	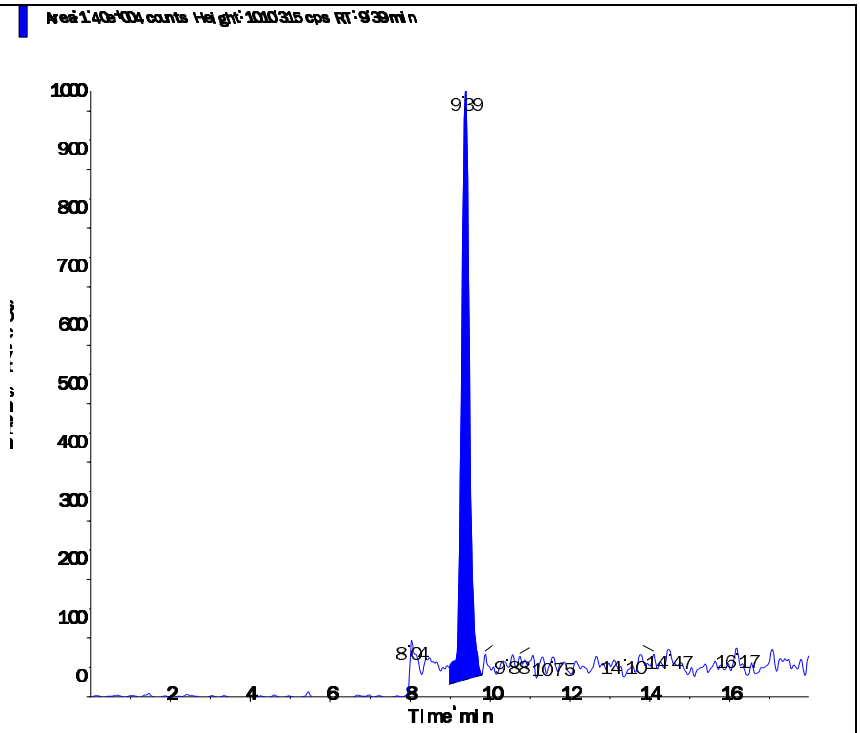

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Data File	LM35462.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 7:50:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-01 CCB	**Injection Vial**	1.00
Data File	LM35462.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 7:50:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.420e+05	9.58	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.58(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

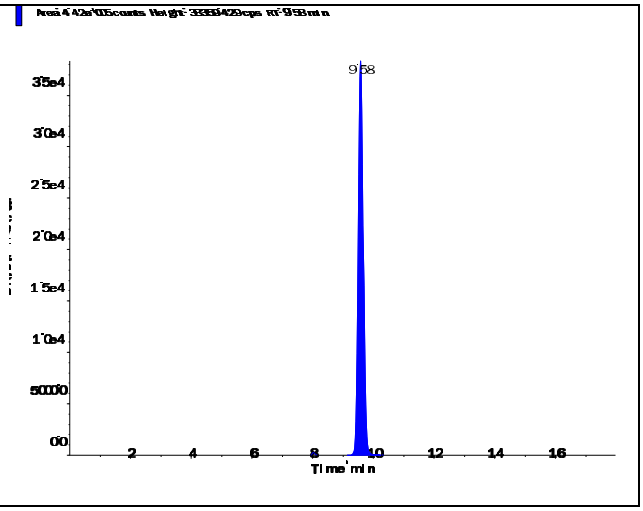

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	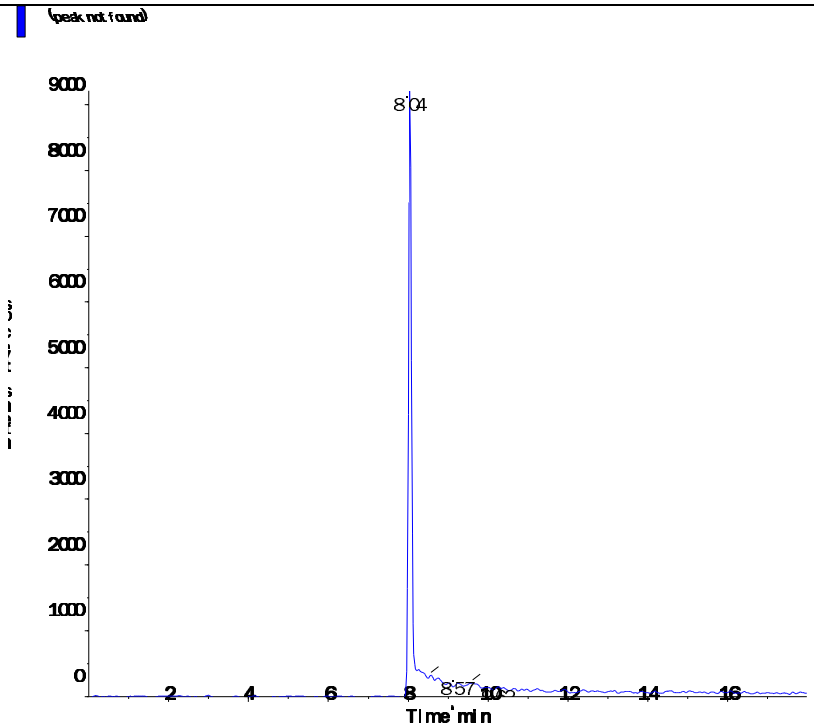
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	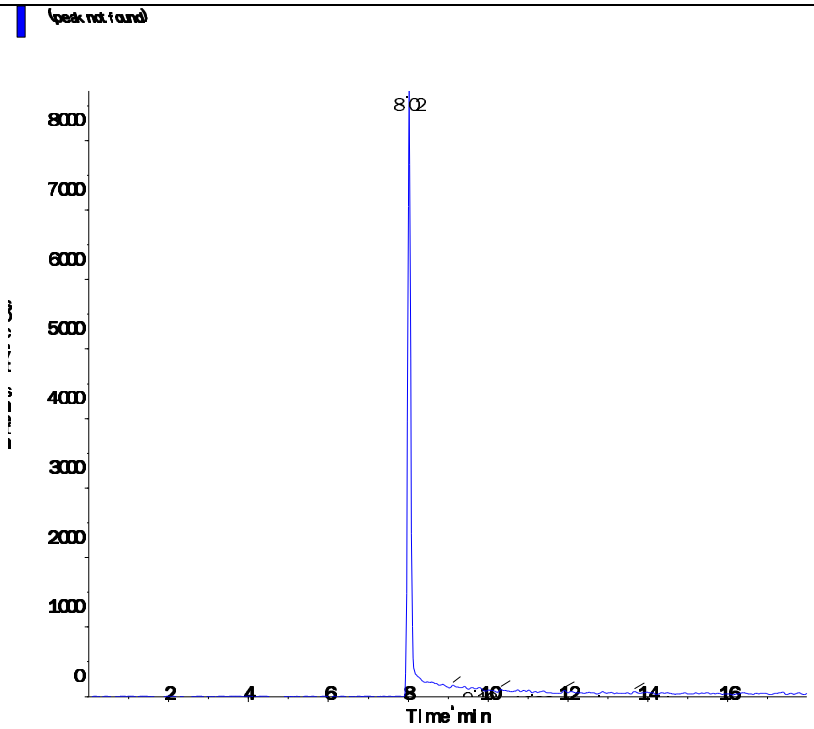

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Data File	LM35477.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 12:34:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-04 CCB	**Injection Vial**	1.00
Data File	LM35477.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 12:34:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.240e+05	9.57	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	8.240e+02	9.53	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.57(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

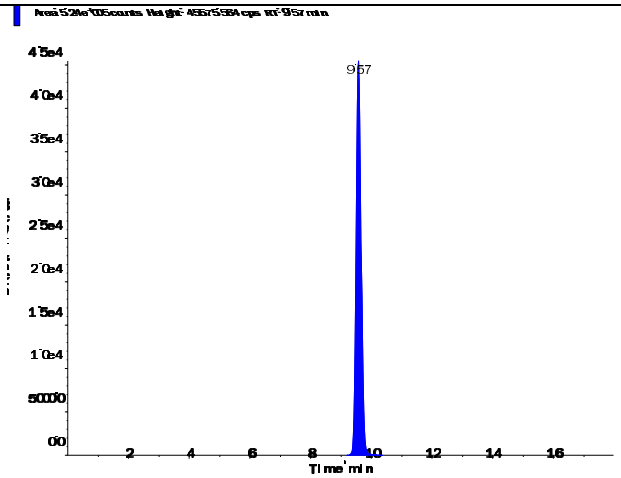

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

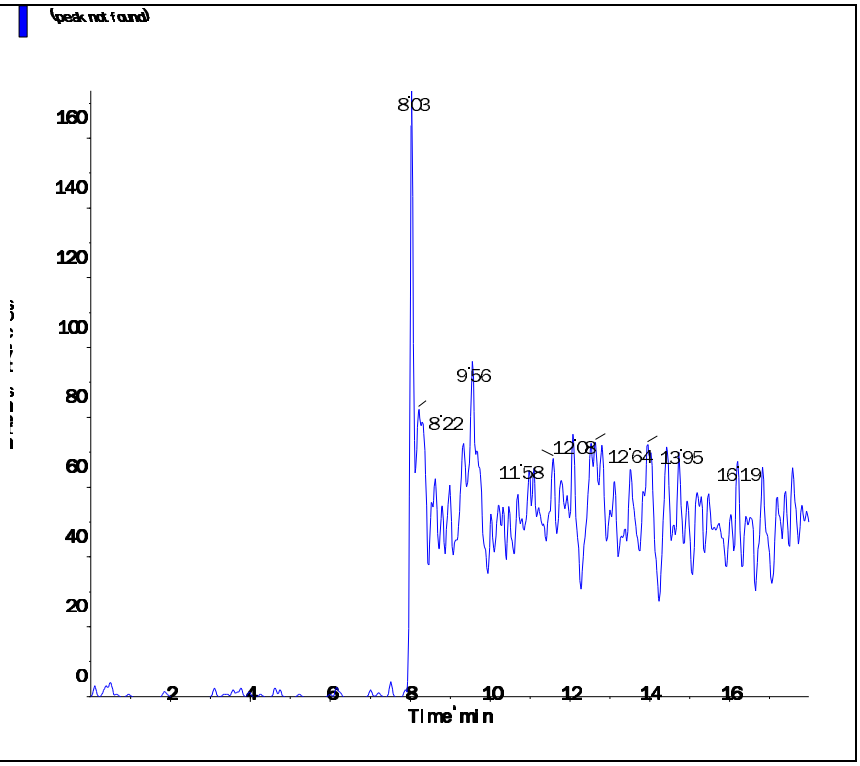

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.53 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

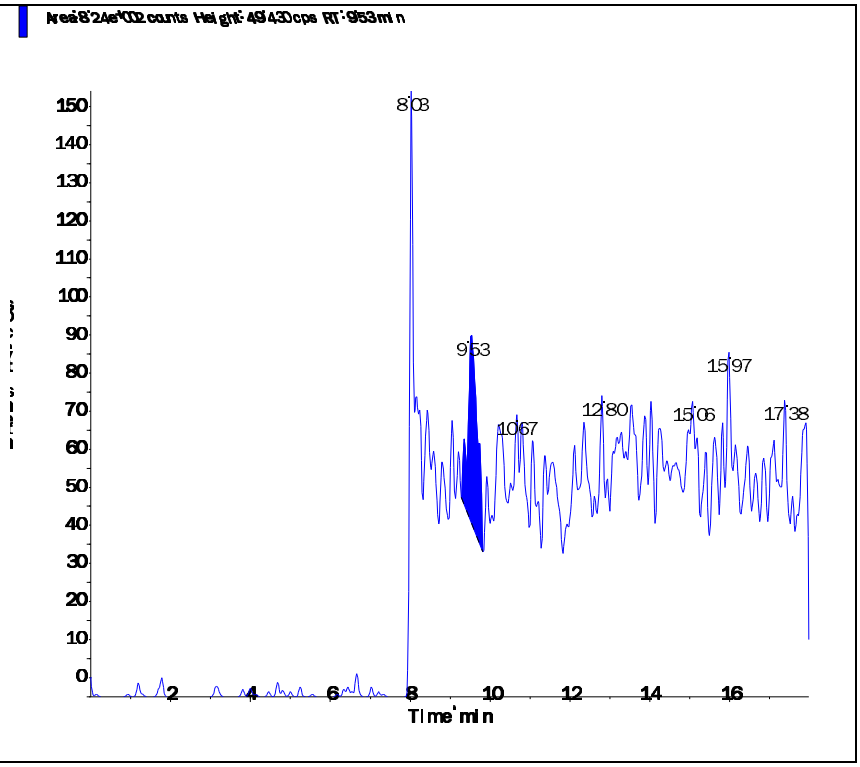

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Printed: 6/27/2016 7:48 PM

Data File	LM35490.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 4:40:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-06 CCB	**Injection Vial**	1.00
Data File	LM35490.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 4:40:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.420e+05	9.59	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.59(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

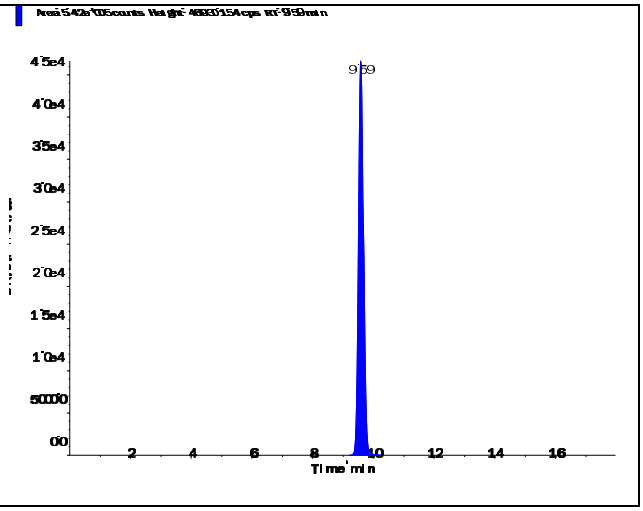

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

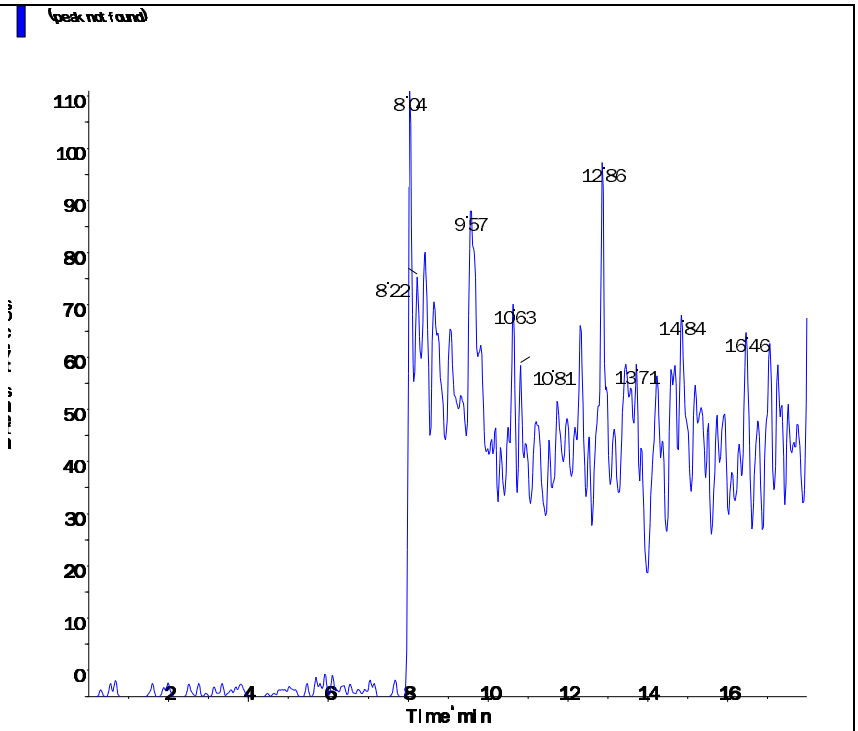

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

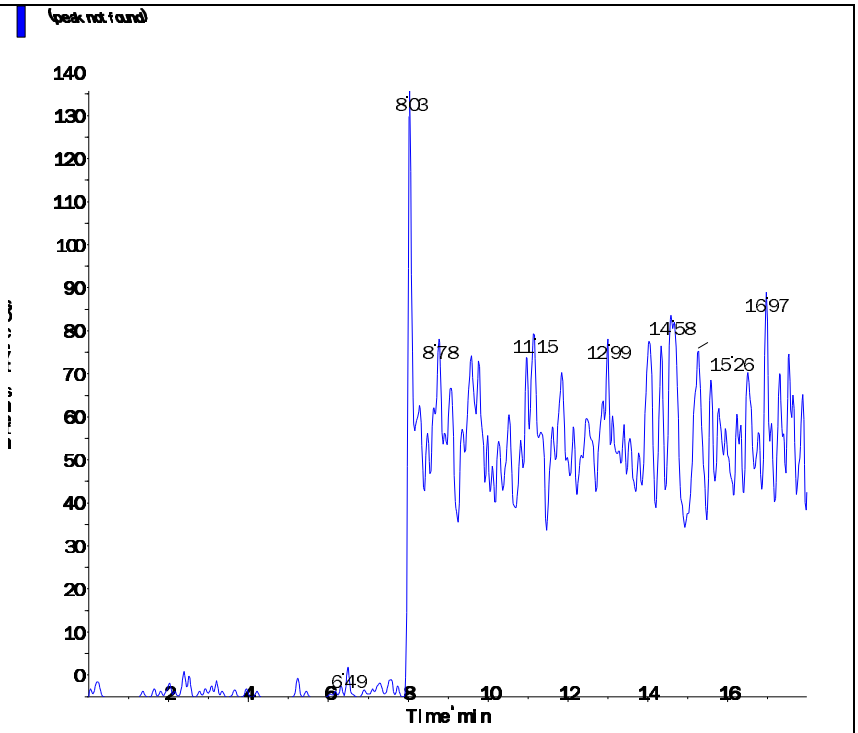

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Printed: 6/27/2016 7:51 PM

Data File	LM35497.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:53:28 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-08 CCB	**Injection Vial**	1.00
Data File	LM35497.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:53:28 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.550e+05	9.59	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	5.180e+02	9.63	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.59(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

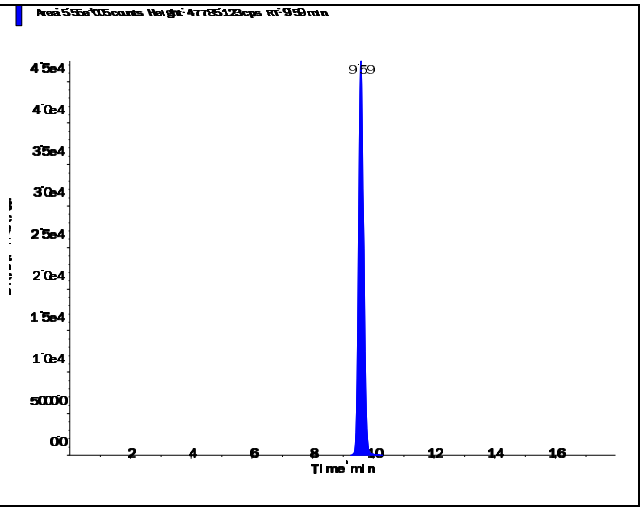

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Printed: 6/27/2016 7:51 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	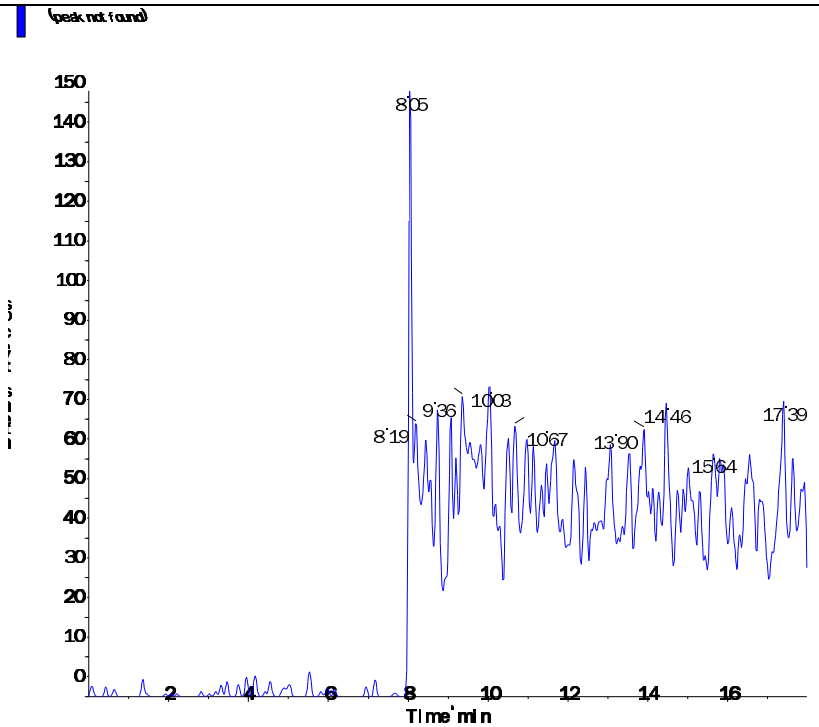
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.63 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	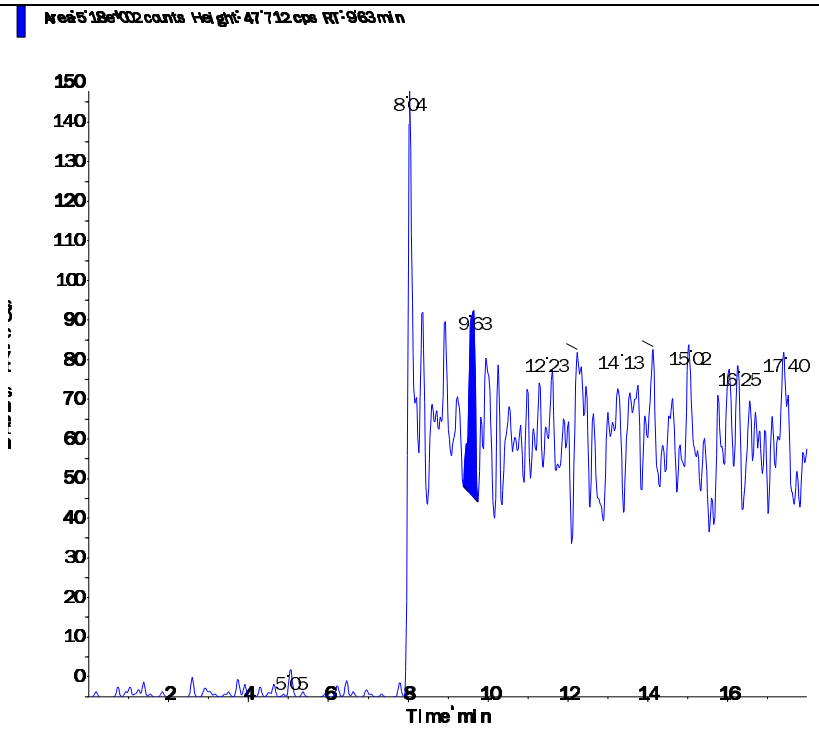

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Created with Analyst Reporter
Printed: 6/27/2016 7:52 PM

Data File	LM35500.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:44:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-10 CCB	**Injection Vial**	1.00
Data File	LM35500.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:44:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.840e+05	9.61	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.61(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

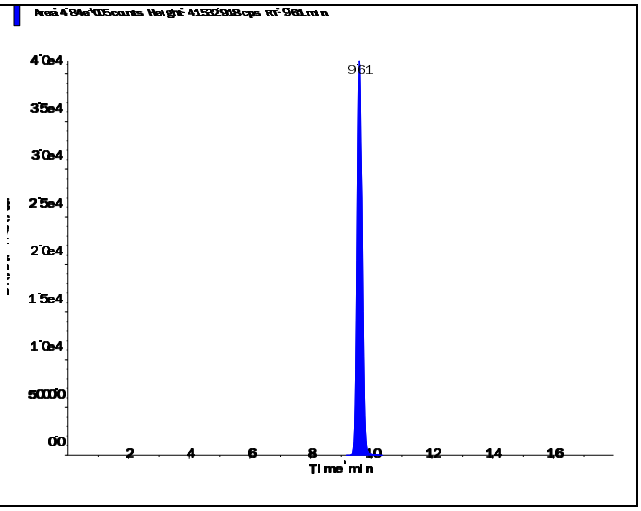

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	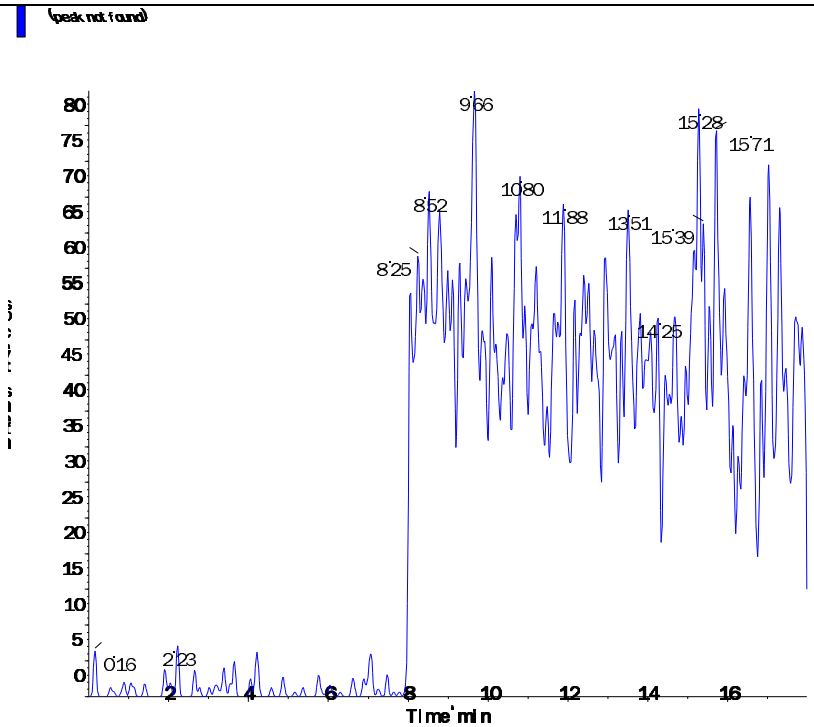
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	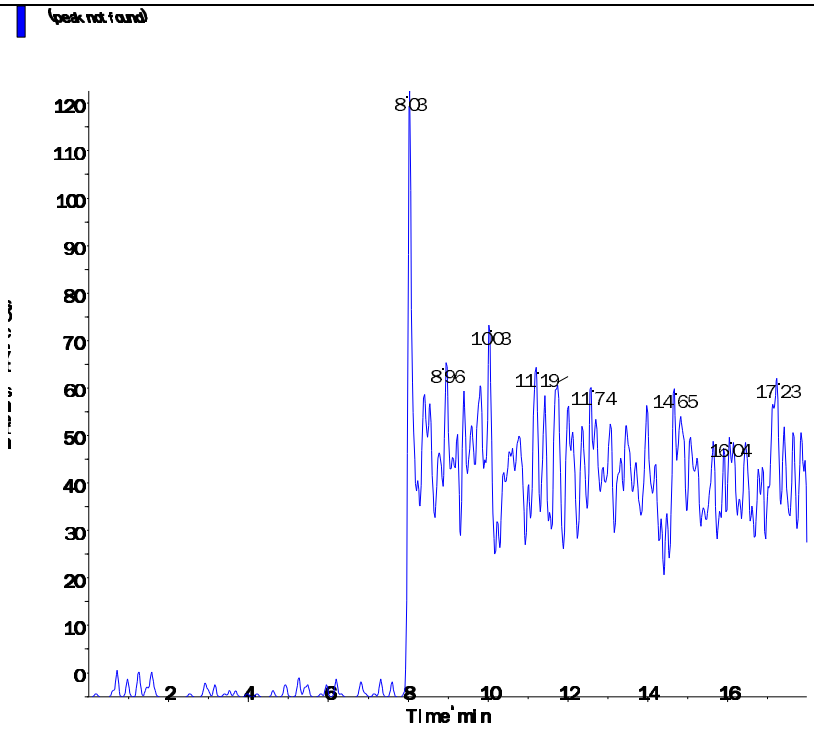

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Data File	LM35510.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 9:53:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-12 CCB	**Injection Vial**	1.00
Data File	LM35510.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 9:53:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-12	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.380e+05	9.61	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.61(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

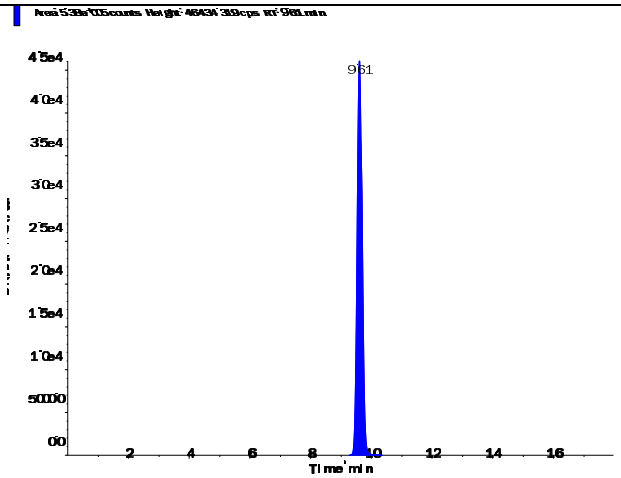

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

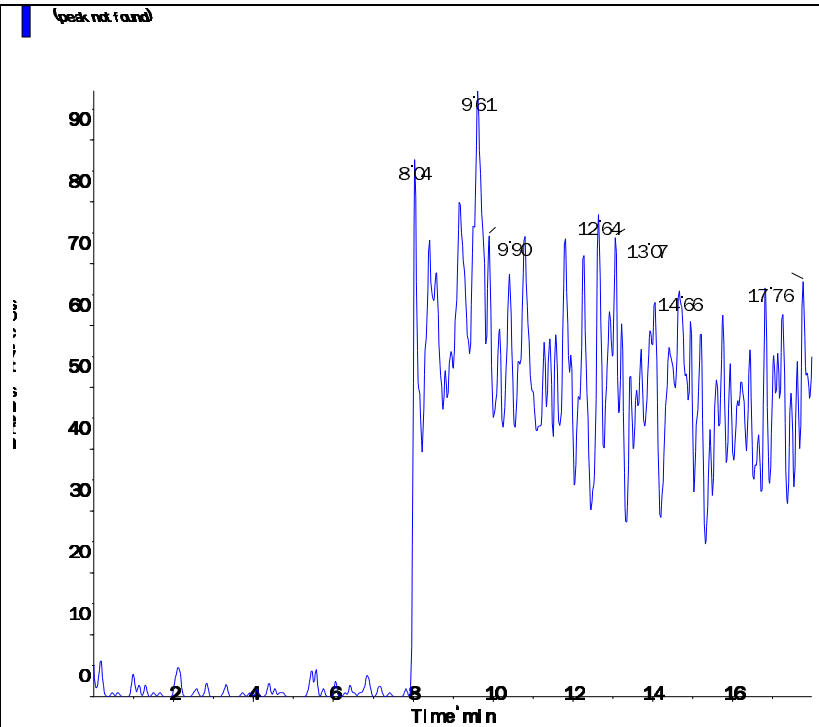

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

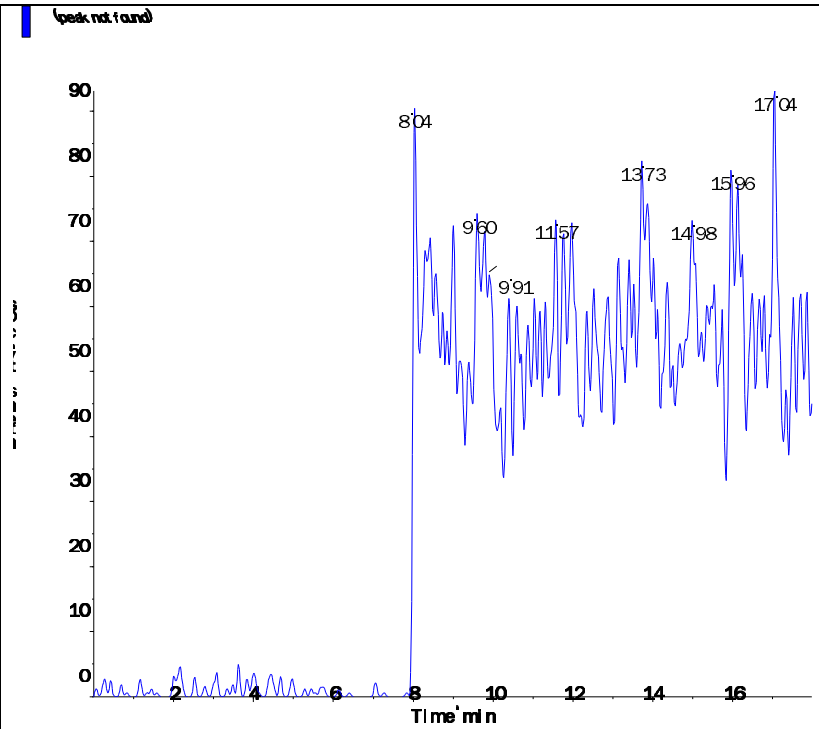

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Printed: 6/27/2016 7:39 PM

Data File	LM35465.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 8:47:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM35465.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 8:47:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.320e+05	8.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.810e+04	8.97	N/A	0.19
Perchlorate conf	1.000e+04	8.95	N/A	0.188

O18LP (Internal Standard)

RT (Exp. RT): 8.95(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

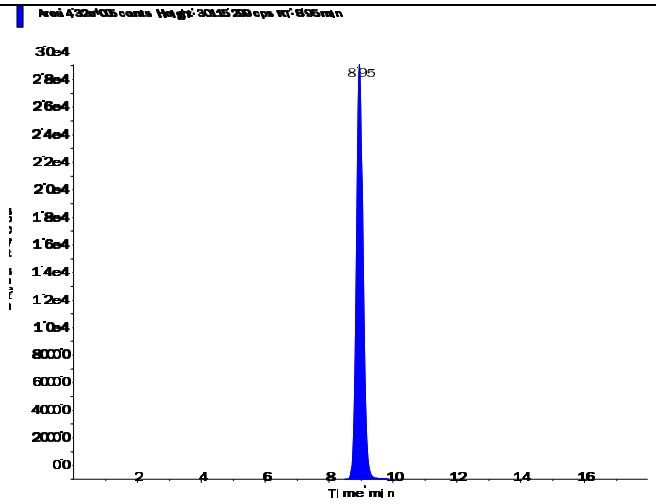

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Printed: 6/27/2016 7:39 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	8.97 (9.84) min
Calculated conc:	0.19 ng/ml
Area Ratio:	0.065
Sample Type:	(Unknown)

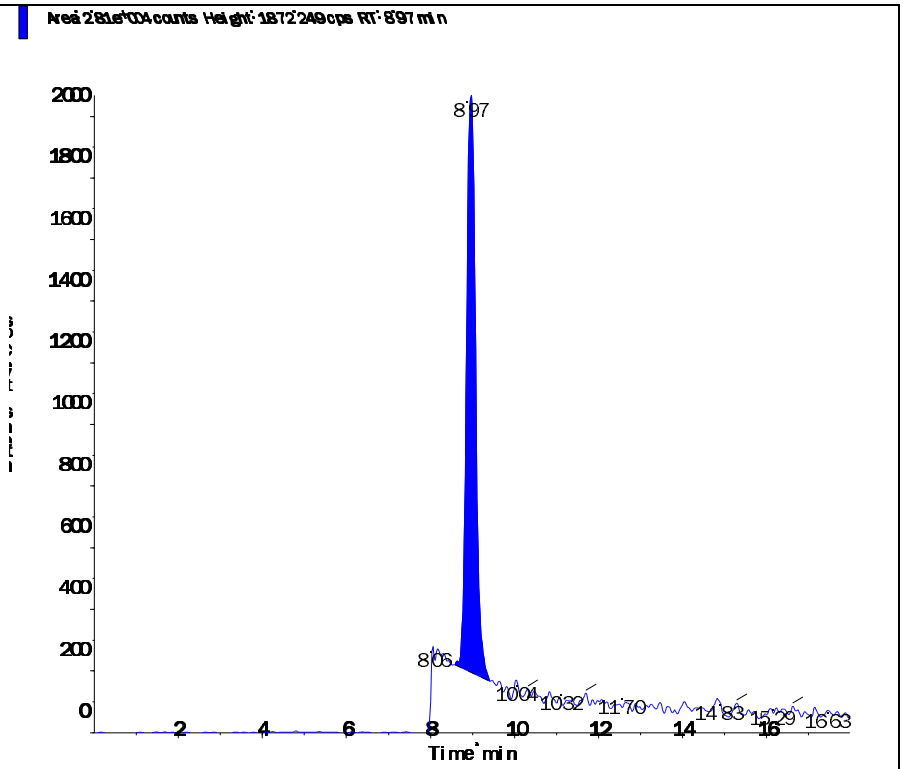

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	8.95 (9.84) min
Calculated conc:	0.188 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

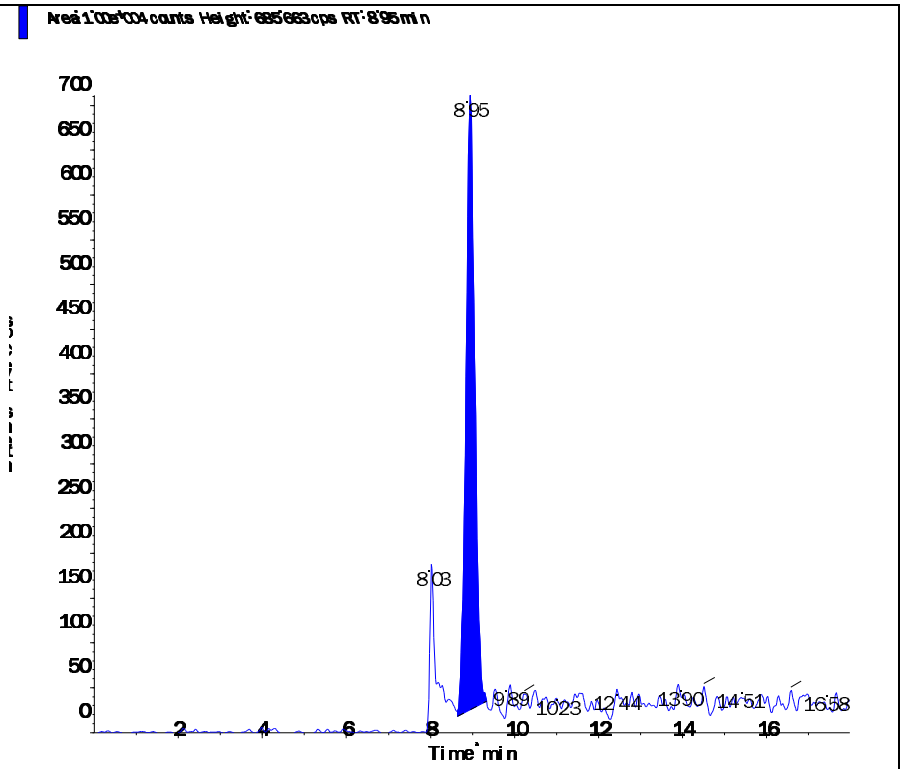

Printing Time: 4:34:28 PM
Printing Date: Saturday, June 25, 2016

Sample Name: "WG574101-01 MCT (0.2ug/L)" Sample ID: "WG574101-01" File: "LM35465.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1	
Sample Type:	Unknown	
Concentration:	N/A	
Calculated Conc:	0.219	ug/L
Acq. Date:	6/24/2016	
Acq. Time:	8:47:28 PM	
Modified:	No	
Proc. Algorithm:	Analyst Classic	
Bunching Factor:	2	
Noise Threshold:	18.48	cps
Area Threshold:	92.40	cps
Num. Smooths:	5	
Exp. Width:	0.20	
Exp. Height:	0.01	
Exp. Peak Ratio:	5.00	
Exp. Adj. Ratio:	4.00	
Exp. Val. Ratio:	3.00	
RT Window:	30.000	sec
Expected RT:	9.84	min
Use Relative RT:	Yes	
Int. Type:	Valley	
Retention Time:	8.97	min
Area:	3.23e+004	counts
Height:	1951.523	cps
Start Time:	8.526	min
End Time:	9.417	min

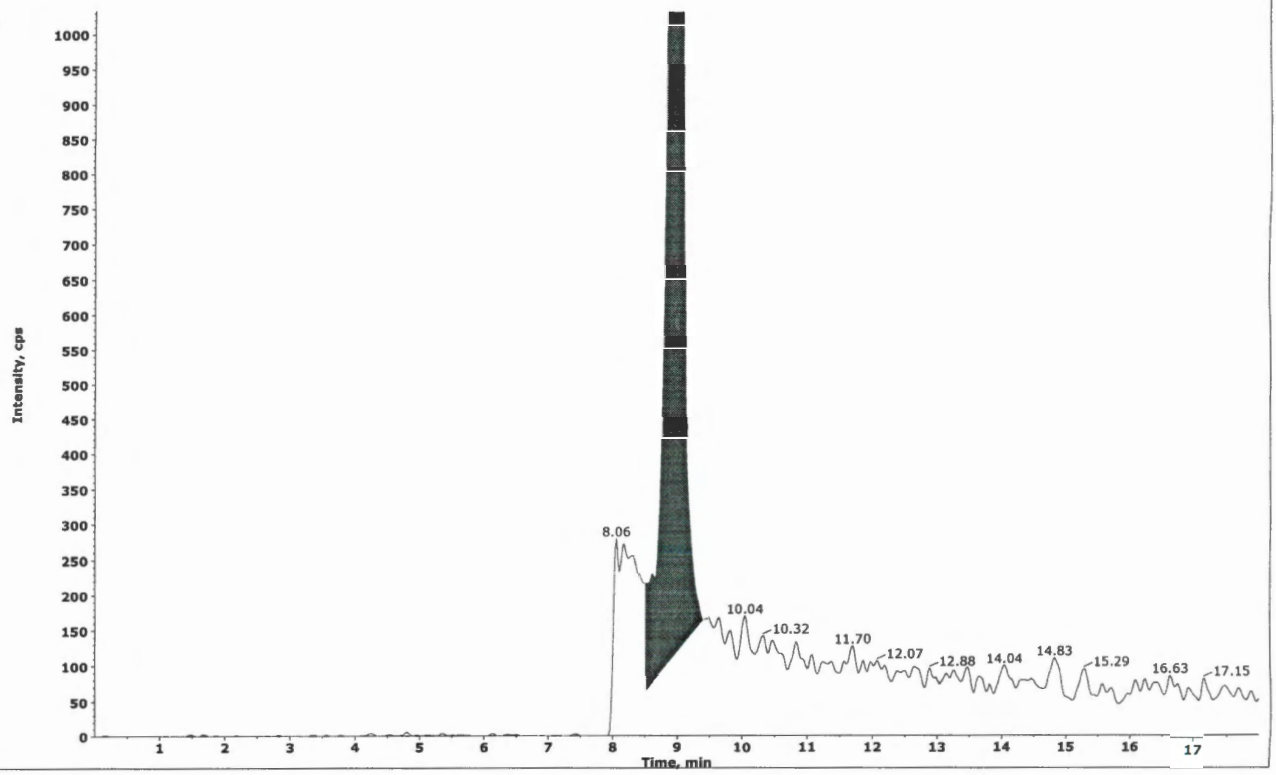

Collected by: N/A
Electronic Signature: no
Operator: lcmsl

Printing Time: 4:36:56 PM
Printing Date: Saturday, June 25, 2016

Sample Name: "WG574101-01 MCT (0.2ug/L)" Sample ID: "WG574101-01" File: "LM35465.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.190 ug/L
Acq. Date:	6/24/2016
Acq. Time:	8:47:28 PM
Modified:	Yes
Proc. Algorithm:	Analyst Classic
Smoothing Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Sep. Width:	0.20
Sep. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Manual
Retention Time:	8.97 min
Area:	2.81e+004 counts
Height:	1872.249 cps
Start Time:	8.587 min
End Time:	9.417 min

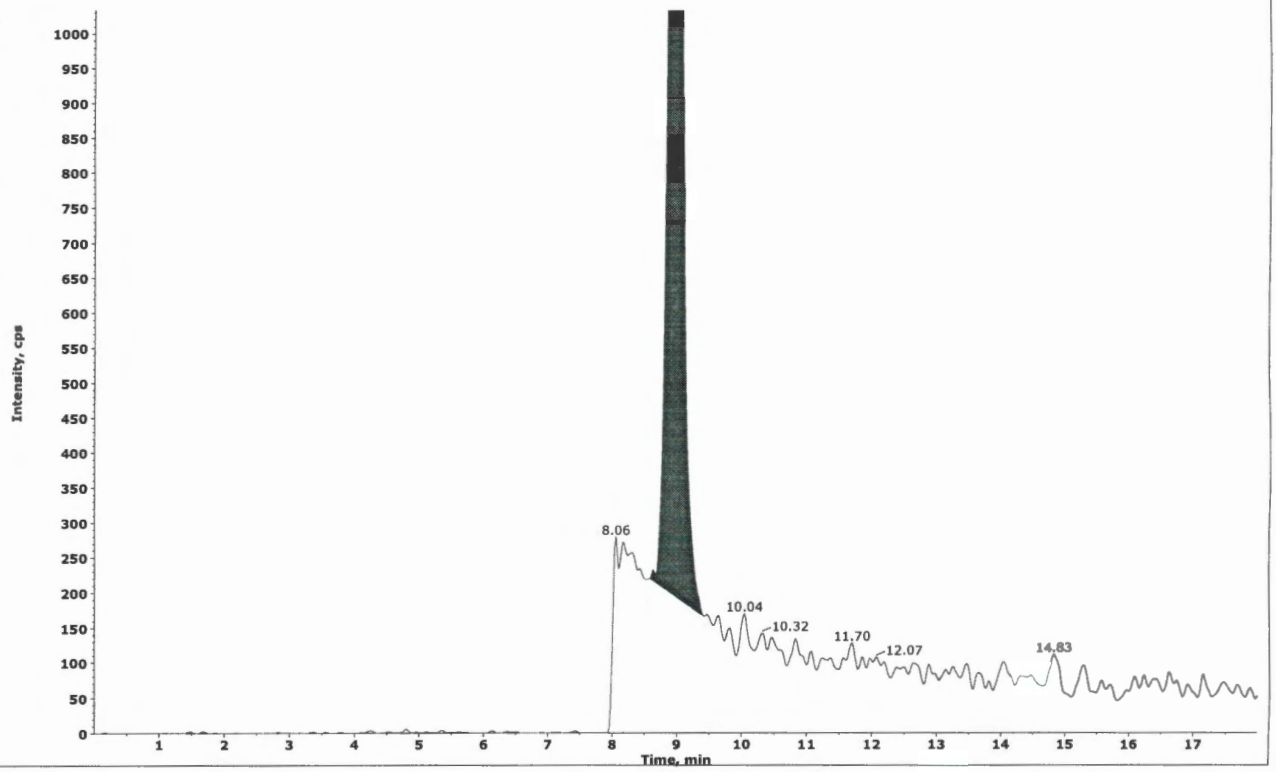

#4
JWR 06/25/16

✓ WTD
06-28-16

Collected by: N/A
Electronic Signature: no
Operator: lcms1

2.2.2.5 Raw QC Data

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Data File	LM35466.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 9:06:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-02 BLANK	**Injection Vial**	5.00
Data File	LM35466.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 9:06:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.430e+05	9.50	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.50(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

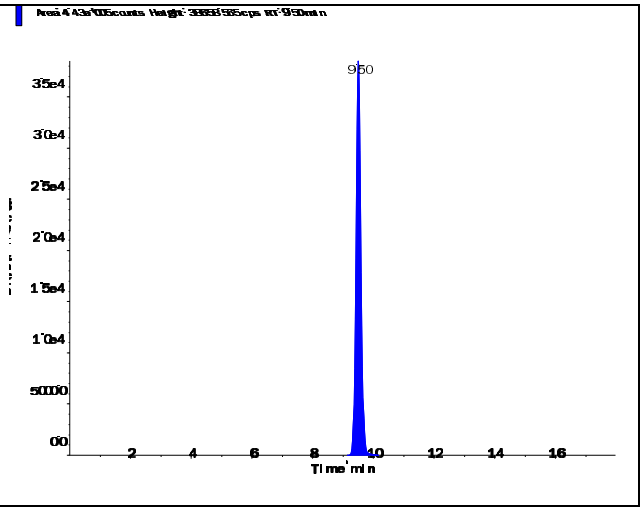

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Created with Analyst Reporter
Printed: 6/27/2016 7:40 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	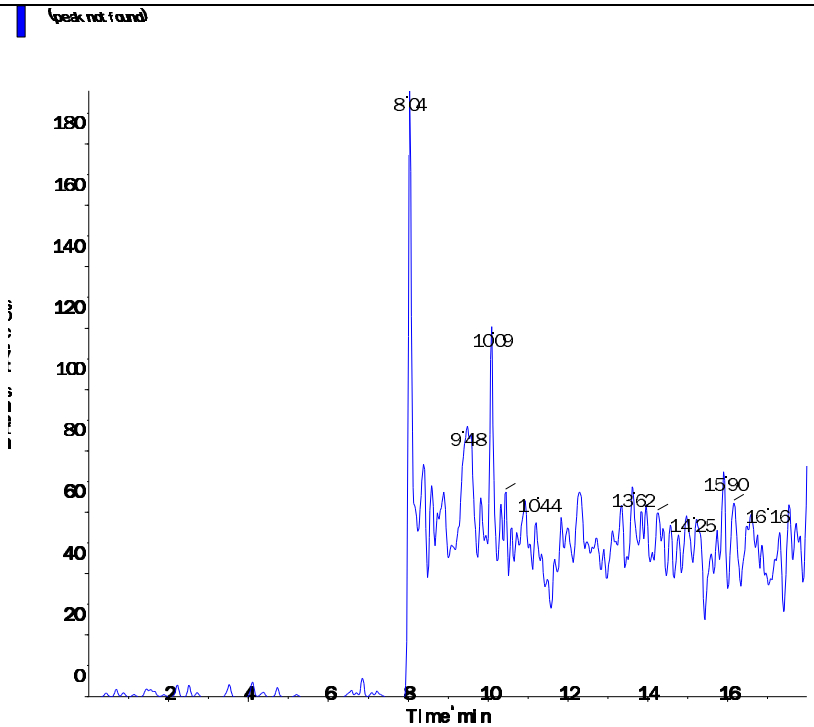
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	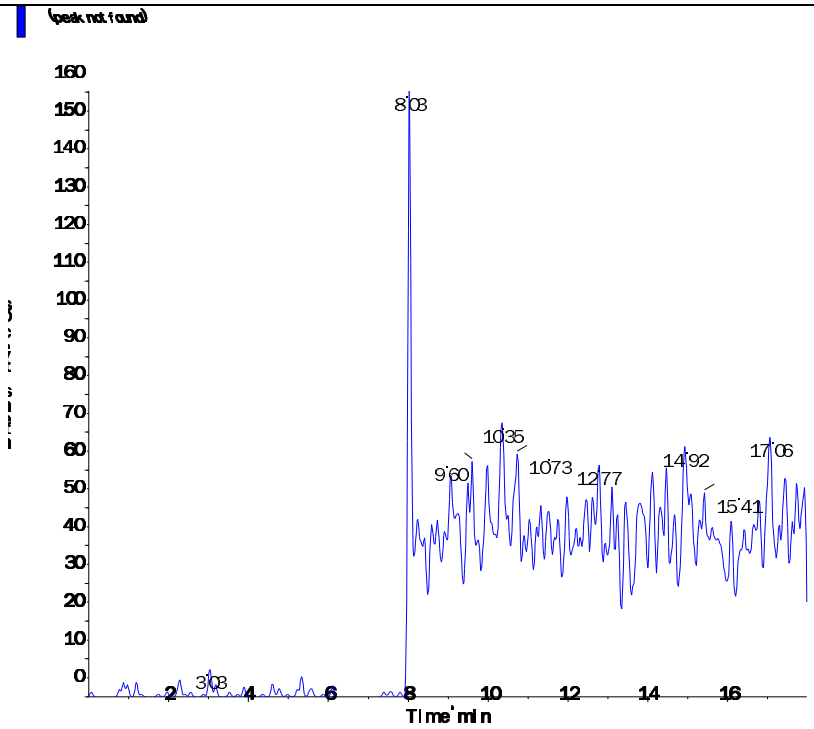

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:40 PM

Data File	LM35467.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 9:25:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM35467.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 9:25:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.440e+05	9.53	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.160e+04	9.54	N/A	0.208
Perchlorate conf	1.180e+04	9.53	N/A	0.217

O18LP (Internal Standard)

RT (Exp. RT): 9.53(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

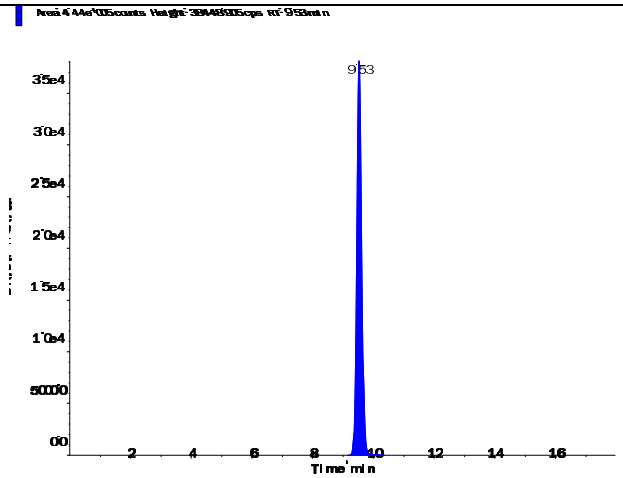

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:40 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.54 (9.84) min
Calculated conc:	0.208 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

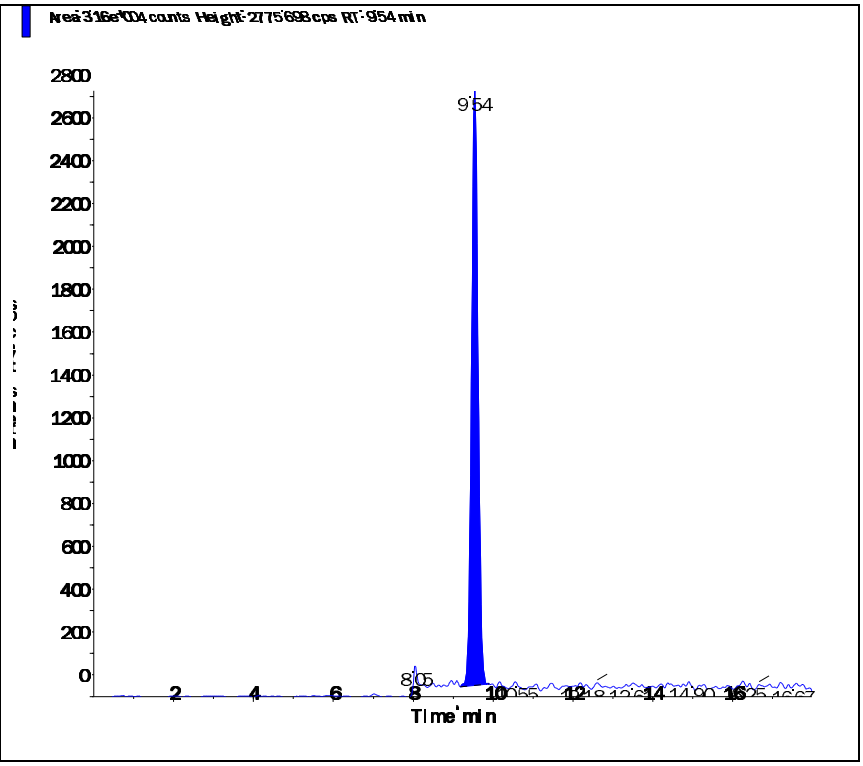

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.53 (9.84) min
Calculated conc:	0.217 ng/ml
Area Ratio:	0.027
Sample Type:	(Unknown)

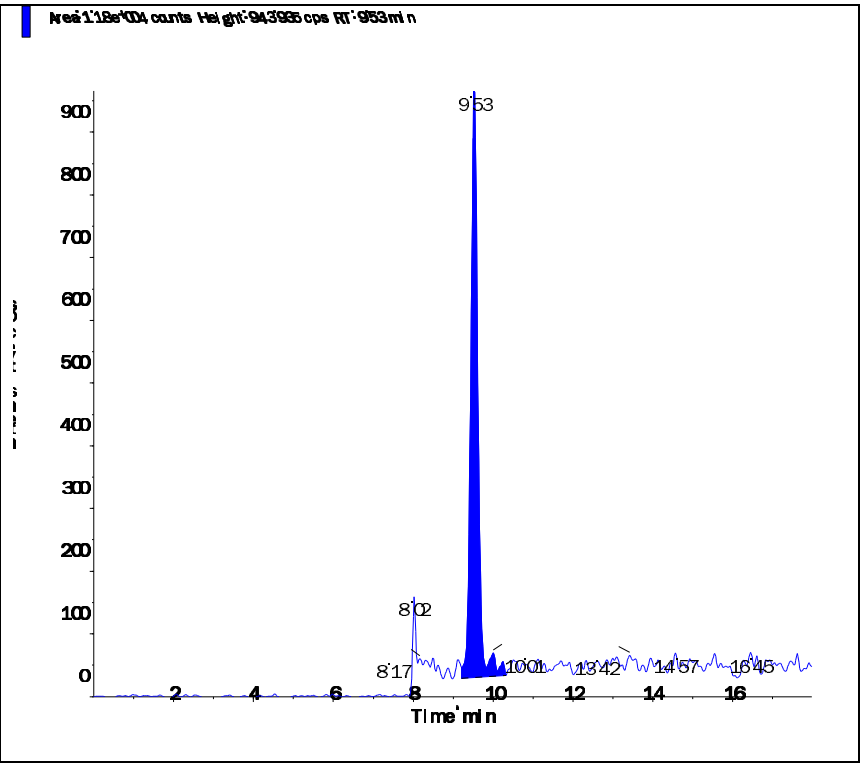

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:48 PM

Data File	LM35491.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 4:59:54 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-04 LCS2 (0.2ug/L)	**Injection Vial**	7.00
Data File	LM35491.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 4:59:54 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.260e+05	9.57	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.830e+04	9.59	N/A	0.213
Perchlorate conf	1.400e+04	9.57	N/A	0.218

O18LP (Internal Standard)

RT (Exp. RT): 9.57(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

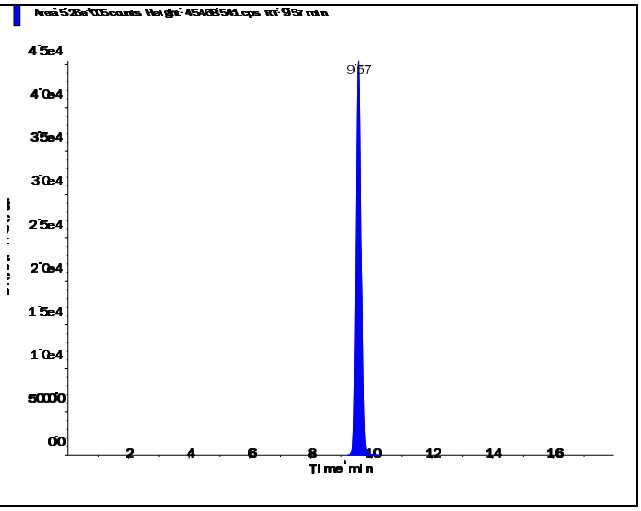

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:48 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.59 (9.84) min
Calculated conc:	0.213 ng/ml
Area Ratio:	0.073
Sample Type:	(Unknown)

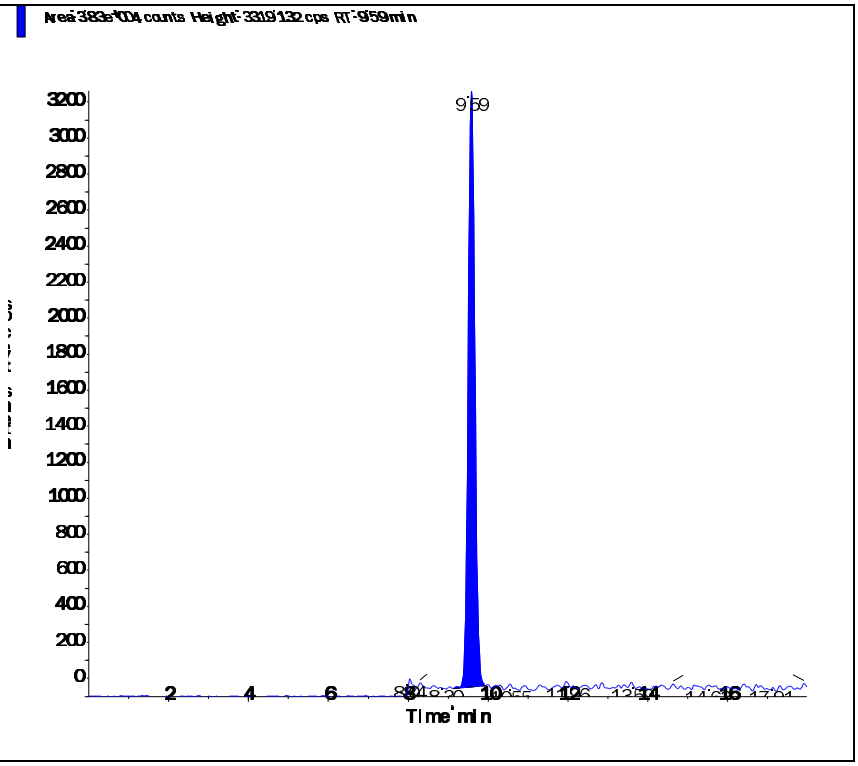

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.57 (9.84) min
Calculated conc:	0.218 ng/ml
Area Ratio:	0.027
Sample Type:	(Unknown)

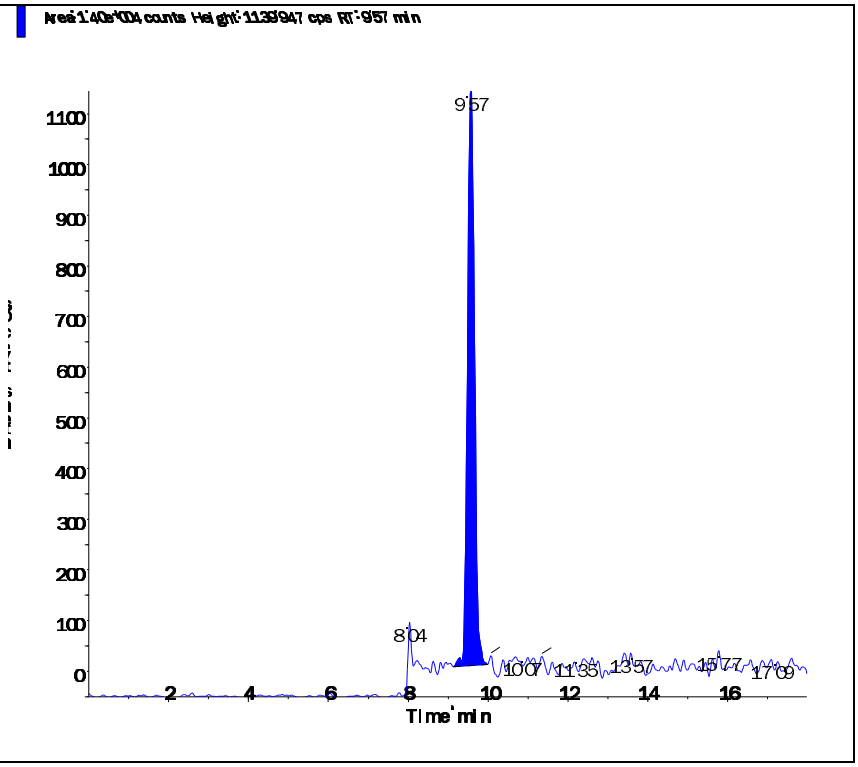

s.dataFile Page 2 of 2

2.3 Metals Data

2.3.1 Metals I C P Data

2.3.1.1 Summary Data

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW16F-061616	**Prep Method:**	3015	**Prep Date:**	06/22/2016 07:53
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 10:26
Workgroup #:	WG574214	**Analyst:**	JYH	**Run Date:**	06/27/2016 11:42
Collect Date:	06/16/2016 07:55	**Dilution:**	1	**File ID:**	T3.062716.114220
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.331		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Potassium, Total	7440-09-7	13.0		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW16F-061616	**Prep Method:**	3015	**Prep Date:**	06/22/2016 07:53
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 10:26
Workgroup #:	WG574214	**Analyst:**	JYH	**Run Date:**	06/27/2016 13:00
Collect Date:	06/16/2016 07:55	**Dilution:**	20	**File ID:**	T3.062716.130008
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	195		10.0	5.00	2.50
Iron, Total	7439-89-6	21.5		4.00	2.00	1.00
Magnesium, Total	7439-95-4	146		20.0	10.0	5.00
Sodium, Total	7440-23-5	587		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	129-061616	**Prep Method:**	3015	**Prep Date:**	06/22/2016 07:53
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 10:26
Workgroup #:	WG574214	**Analyst:**	JYH	**Run Date:**	06/27/2016 11:46
Collect Date:	06/16/2016 09:05	**Dilution:**	1	**File ID:**	T3.062716.114614
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.644		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	13.2		0.500	0.250	0.125
Iron, Total	7439-89-6	1.18		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	10.4		1.00	0.500	0.250
Potassium, Total	7440-09-7	0.716	J	2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	129-061616	**Prep Method:**	3015	**Prep Date:**	06/22/2016 07:53
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 10:26
Workgroup #:	WG574214	**Analyst:**	JYH	**Run Date:**	06/27/2016 13:03
Collect Date:	06/16/2016 09:05	**Dilution:**	20	**File ID:**	T3.062716.130358
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sodium, Total	7440-23-5	146		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	120F-061616	**Prep Method:**	3015	**Prep Date:**	06/22/2016 07:53
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 10:26
Workgroup #:	WG574214	**Analyst:**	JYH	**Run Date:**	06/27/2016 11:50
Collect Date:	06/16/2016 09:25	**Dilution:**	1	**File ID:**	T3.062716.115009
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	1.53		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	6.89		0.500	0.250	0.125
Iron, Total	7439-89-6	2.04		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	7.27		1.00	0.500	0.250
Potassium, Total	7440-09-7	1.55	J	2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	120F-061616	**Prep Method:**	3015	**Prep Date:**	06/22/2016 07:53
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 10:26
Workgroup #:	WG574214	**Analyst:**	JYH	**Run Date:**	06/27/2016 13:15
Collect Date:	06/16/2016 09:25	**Dilution:**	20	**File ID:**	T3.062716.131528
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sodium, Total	7440-23-5	303		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	123-061616	**Prep Method:**	3015	**Prep Date:**	06/22/2016 07:53
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 10:26
Workgroup #:	WG574214	**Analyst:**	JYH	**Run Date:**	06/27/2016 11:54
Collect Date:	06/16/2016 09:55	**Dilution:**	1	**File ID:**	T3.062716.115400
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	1.42		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	8.16		0.500	0.250	0.125
Iron, Total	7439-89-6	1.66		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	4.83		1.00	0.500	0.250
Potassium, Total	7440-09-7	0.713	J	2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	26.0		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.1.2 QC Summary Data

Example 6010 Calculations
Thermo Scientific iCAP

1.0 Initial Calibration (ICAL) Parameters
For a multi-point calibration, the system performs linear regression from data consisting of a blank and four standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG573656
Analyst: ERP
Spike Analyst: ERP
Run Date: 06/22/2016 07:53
Method: 3015
Balance: BAL019
Instrument: MW-4
Instrument Start: 06/22/2016 08:14

SOP: ME407 Revison 19
Spike Solution: STD76576
Spike Witness: VC
HNO3 Lot #: COA18905
HCL Lot #: COA18769
40 & 50 ML. DIGESTION TU COA18987
ICP Filters- fisher-Lot# RGT35619

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG573656-02	BLANK	1	40 mL	50 mL	206.478 g	206.475 g		
2	WG573656-03	LCS	1	40 mL	50 mL	213.551 g	213.556 g	5 mL	
3	L16060840-01	SAMP	1	40 mL	50 mL	205.261 g	205.248 g		06/29/16
4	L16060840-02	SAMP	1	40 mL	50 mL	205.378 g	205.365 g		06/29/16
5	L16060840-03	SAMP	1	40 mL	50 mL	206.649 g	206.637 g		06/29/16
6	L16060840-04	SAMP	1	40 mL	50 mL	205.952 g	205.94 g		06/29/16
7	L16060840-05	SAMP	1	40 mL	50 mL	204.164 g	204.152 g		06/29/16
8	L16060840-06	SAMP	1	40 mL	50 mL	204.89 g	204.875 g		06/29/16
9	WG573656-01	REF	1	40 mL	50 mL	205.243 g	205.233 g		
10	L16060996-01	RS01	1	40 mL	50 mL	205.243 g	205.233 g		07/01/16
11	WG573656-04	MS	1	40 mL	50 mL	209.524 g	209.507 g	5 mL	
12	L16060996-02	MS01	1	40 mL	50 mL	209.524 g	209.507 g	5 mL	07/01/16
13	WG573656-05	MSD	1	40 mL	50 mL	211.803 g	211.788 g	5 mL	
14	L16060996-03	SD01	1	40 mL	50 mL	211.803 g	211.788 g	5 mL	07/01/16
15	L16060996-04	SAMP	1	40 mL	50 mL	203.833 g	203.826 g		07/01/16
16	L16060996-05	SAMP	1	40 mL	50 mL	207.088 g	207.078 g		07/01/16
17	L16060996-06	SAMP	1	40 mL	50 mL	205.731 g	205.723 g		07/01/16
18	L16060996-07	SAMP	1	40 mL	50 mL	204.58 g	204.57 g		07/01/16
19	L16060996-08	SAMP	1	40 mL	50 mL	204.442 g	204.434 g		07/01/16
20	L16060996-09	SAMP	1	40 mL	50 mL	206.06 g	206.051 g		07/01/16
21	L16061026-02	SAMP	1	40 mL	50 mL	207.271 g	207.264 g		06/28/16
22	L16061026-04	SAMP	1	40 mL	50 mL	207.035 g	207.028 g		06/28/16
23	L16061026-06	SAMP	1	40 mL	50 mL	205.716 g	205.709 g		06/28/16
24	L16061026-07	SAMP	1	40 mL	50 mL	206.892 g	206.885 g		06/28/16
25	L16061116-23	SAMP	1	40 mL	50 mL	205.051 g	205.04 g		07/01/16
26	L16061116-24	SAMP	1	40 mL	50 mL	207.895 g	207.88 g		07/01/16
27	L16061179-01	SAMP	1	40 mL	50 mL	208.78 g	208.772 g		06/28/16

L16061026-06	filtered digestate
L16061026-07	filtered digestate

Analyst: Erin Potter

Reviewer: Vicki Collins

MW_DIG - Modified 09/30/2009
PDF ID: 4817590
Report generated: 06/22/2016 09:06

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062716T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574214,574076

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.062716.101109	WG574382-01	Calibration Point		1		06/27/16 10:11
2	T3.062716.101506	WG574382-02	Calibration Point		1		06/27/16 10:15
3	T3.062716.101903	WG574382-03	Calibration Point		1		06/27/16 10:19
4	T3.062716.102300	WG574382-04	Calibration Point		1		06/27/16 10:23
5	T3.062716.102637	WG574382-05	Calibration Point		1		06/27/16 10:26
6	T3.062716.103013	WG574382-06	Initial Calibration Verification		1		06/27/16 10:30
7	T3.062716.103339	WG574382-07	Initial Calib Blank		1		06/27/16 10:33
8	T3.062716.103737	WG574382-08	Low Level Initial Calibration V		1		06/27/16 10:37
9	T3.062716.104131	WG574382-09	Interference Check		1		06/27/16 10:41
10	T3.062716.104522	WG574382-10	Interference Check		1		06/27/16 10:45
11	T3.062716.104904	WG574382-11	CCV		1		06/27/16 10:49
12	T3.062716.105241	WG574382-12	CCB		1		06/27/16 10:52
13	T3.062716.105639	WG573656-02	Method/Prep Blank	40/50	1		06/27/16 10:56
14	T3.062716.110423	WG573656-03	Laboratory Control S	40/50	1		06/27/16 11:04
15	T3.062716.110802	WG573656-01	Reference Sample		1	L16060996-01	06/27/16 11:08
16	T3.062716.111157	WG573656-04	Matrix Spike	40/50	1	L16060996-01	06/27/16 11:11
17	T3.062716.111535	WG573656-05	Matrix Spike Duplica	40/50	1	L16060996-01	06/27/16 11:15
18	T3.062716.111914	L16061179-01	13273-G06-WQ-W0218	40/50	1		06/27/16 11:19
19	T3.062716.112312	WG574214-01	Post Digestion Spike		1	L16061179-01	06/27/16 11:23
20	T3.062716.112651	WG574214-02	Serial Dilution		5	L16061179-01	06/27/16 11:26
21	T3.062716.113048	WG574214-02	Serial Dilution		25	L16061179-01	06/27/16 11:30
22	T3.062716.113445	WG574382-13	CCV		1		06/27/16 11:34
23	T3.062716.113822	WG574382-14	CCB		1		06/27/16 11:38
24	T3.062716.114220	L16061026-02	18WW16F-061616	40/50	1		06/27/16 11:42
25	T3.062716.114614	L16061026-04	129-061616	40/50	1		06/27/16 11:46
26	T3.062716.115009	L16061026-06	120F-061616	40/50	1		06/27/16 11:50
27	T3.062716.115400	L16061026-07	123-061616	40/50	1		06/27/16 11:54
28	T3.062716.115753	L16060840-01	MW-24-004R	40/50	1		06/27/16 11:57
29	T3.062716.120148	L16060840-02	MW-24-003R	40/50	1		06/27/16 12:01
30	T3.062716.120539	L16060840-03	FR-061416-24	40/50	1		06/27/16 12:05
31	T3.062716.120930	L16060840-04	MW-24-002R	40/50	1		06/27/16 12:09
32	T3.062716.121323	L16060840-05	MW-24-005	40/50	1		06/27/16 12:13
33	T3.062716.121733	L16060840-06	EB-LOW FLOW TUBING	40/50	1		06/27/16 12:17
34	T3.062716.122130	WG574382-15	CCV		1		06/27/16 12:21

Page: 1 Approved: June 28, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062716T3.1R.TXT

Analyst1: JYH Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 574214,574076

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.062716.122507	WG574382-16	CCB		1		06/27/16 12:25
36	T3.062716.122905	L16060996-04	MW-21-006	40/50	1		06/27/16 12:29
37	T3.062716.123259	L16060996-05	MW-21-002	40/50	1		06/27/16 12:32
38	T3.062716.123653	L16060996-06	FD-061516-21	40/50	1		06/27/16 12:36
39	T3.062716.124047	L16060996-07	MW-21-009	40/50	1		06/27/16 12:40
40	T3.062716.124440	L16060996-08	MW-21-005	40/50	1		06/27/16 12:44
41	T3.062716.124834	L16060996-09	MW-21-004	40/50	1		06/27/16 12:48
42	T3.062716.125227	L16061116-23	062016-PS-CB027	40/50	1		06/27/16 12:52
43	T3.062716.125618	L16061116-24	062016-PS-CB027	40/50	1		06/27/16 12:56
44	T3.062716.130008	L16061026-02	18WW16F-061616	40/50	20		06/27/16 13:00
45	T3.062716.130358	L16061026-04	129-061616	40/50	20		06/27/16 13:03
46	T3.062716.130753	WG574382-17	CCV		1		06/27/16 13:07
47	T3.062716.131130	WG574382-18	CCB		1		06/27/16 13:11
48	T3.062716.131528	L16061026-06	120F-061616	40/50	20		06/27/16 13:15
49	T3.062716.131923	L16061290-03	MW16F-062116	40/50	20		06/27/16 13:19
50	T3.062716.132320	WG574382-19	CCV		1		06/27/16 13:23
51	T3.062716.132646	WG574382-20	CCB		1		06/27/16 13:26
52	T3.062716.133045	WG574382-21	Low Level Continuing Calibra		1		06/27/16 13:30

Page: 2 Approved: June 28, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 27-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 574382
Runlog ID: 75950
Analytical Workgroups: 574656,574076

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	840,996
Level 4	1026,1179,1290
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer:

Secondary Reviewer:
28-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-28-2016 10:41:09

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010C

AAB#: WG574214

Login Number: L16061026

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW16F-061616	02	06/16/16					06/22/2016	6	180		06/27/16	11.2	180	
18WW16F-061616	02	06/16/16					06/22/2016	6	180		06/27/16	11.2	180	
129-061616	04	06/16/16					06/22/2016	6	180		06/27/16	11.2	180	
129-061616	04	06/16/16					06/22/2016	6	180		06/27/16	11.1	180	
120F-061616	06	06/16/16					06/22/2016	5.9	180		06/27/16	11.2	180	
120F-061616	06	06/16/16					06/22/2016	5.9	180		06/27/16	11.1	180	
123-061616	07	06/16/16					06/22/2016	5.9	180		06/27/16	11.1	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4827991
Report generated 06/28/2016 09:31

METHOD BLANK SUMMARY

Login Number: L16061026
Blank File ID: T3.062716.105639
Prep Date: 06/22/16 07:53
Analyzed Date: 06/27/16 10:56
Analyst: JYH

Work Group: WG574214
Blank Sample ID: WG573656-02
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573656-03	T3.062716.110423	06/27/16 11:04	01
18WW16F-061616	L16061026-02	T3.062716.114220	06/27/16 11:42	01
129-061616	L16061026-04	T3.062716.114614	06/27/16 11:46	01
120F-061616	L16061026-06	T3.062716.115009	06/27/16 11:50	01
123-061616	L16061026-07	T3.062716.115400	06/27/16 11:54	01
18WW16F-061616	L16061026-02	T3.062716.130008	06/27/16 13:00	DL01
129-061616	L16061026-04	T3.062716.130358	06/27/16 13:03	DL01
120F-061616	L16061026-06	T3.062716.131528	06/27/16 13:15	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4827992
Report generated 06/28/2016 09:31

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061026 Prep Date: 06/22/16 07:53 Sample ID: WG573656-02
Instrument ID: ICP-THERMO3 Run Date: 06/27/16 10:56 Prep Method: 3015
File ID: T3.062716.105639 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG574214 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-27-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Aluminum, Total	0.0500	0.200	0.0500	1	U
Beryllium, Total	0.00500	0.0200	0.00500	1	U
Calcium, Total	0.125	0.500	0.125	1	U
Iron, Total	0.0500	0.200	0.0500	1	U
Magnesium, Total	0.250	1.00	0.250	1	U
Potassium, Total	0.500	2.00	0.500	1	U
Selenium, Total	0.00500	0.0200	-0.00914	1	U
Sodium, Total	0.250	1.00	0.250	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4827993
28-JUN-2016 09:31

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061026 Run Date: 06/27/2016 Sample ID: WG573656-03
Instrument ID: ICP-THERMO3 Run Time: 11:04 Prep Method: 3015
File ID: T3.062716.110423 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG574214 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76576 Cal ID: ICP-TH-27-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Aluminum, Total	6.25	5.90	94.4	80 - 120	
Beryllium, Total	0.0313	0.0292	93.4	80 - 120	
Calcium, Total	6.25	6.02	96.4	80 - 120	
Iron, Total	2.50	2.39	95.4	80 - 120	
Magnesium, Total	6.25	6.02	96.3	80 - 120	
Potassium, Total	31.3	29.8	95.4	80 - 120	
Selenium, Total	0.250	0.235	93.8	80 - 120	
Sodium, Total	31.3	30.2	96.6	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4827994
Report generated: 06/28/2016 09:31

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061026 Cal ID: ICP-THERMO3 - Worknum: WG574214
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG573656-01 File ID: T3.062716.110802 Dil: 1 Matrix: WATER
Sample ID: WG573656-04 MS File ID: T3.062716.111157 Dil: 1 Units: mg/L
Sample ID: WG573656-05 MSD File ID: T3.062716.111535 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Aluminum	ND	6.25	5.92	94.7	6.25	5.98	95.7	1.09	80 - 120	20	
Beryllium	ND	0.0313	0.0293	93.6	0.0313	0.0293	93.8	0.213	80 - 120	20	
Calcium	70.2	6.25	76.5	100	6.25	76.1	95.1	0.411	80 - 120	20	
Iron	ND	2.50	2.41	96.3	2.50	2.41	96.6	0.301	80 - 120	20	
Magnesium	28.5	6.25	34.1	89.6	6.25	34.1	89.2	0.0733	80 - 120	20	
Potassium	ND	31.3	30.2	96.6	31.3	30.2	96.7	0.0579	80 - 120	20	
Selenium	ND	0.250	0.228	91.3	0.250	0.236	94.3	3.28	80 - 120	20	
Sodium	5.16	31.3	35.4	96.6	31.3	35.3	96.4	0.212	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4827995
Report generated 06/28/2016 09:31

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16061026 **Worknum:** WG574214
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG574214-02 **File ID:** T3.062716.112651 **Dil:** 5 **Units:** ug/L
Sample: L16061179-01 **File ID:** T3.062716.111914 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	20.8		ND	U		
Beryllium	ND	U	ND	U		
Calcium	186		98.0		47.20	E
Iron	29.3		101		243.00	E
Magnesium	74.1		ND	U		
Potassium	74.5		887		1090.00	E
Selenium	ND	U	ND	U		
Sodium	151		545		261.00	E

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4827989
06/28/2016 09:31

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061026 **Worknum:** WG574214
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG574214-01 **File ID:** T3.062716.112312 **Dil:** 1 **Units:** ug/L
Sample ID: L16061179-01 **File ID:** T3.062716.111914 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	4690		0	U	5000	93.9	75 - 125	
BERYLLIUM	23.0		0	U	25	92.1	75 - 125	
CALCIUM	4980		186	F	5000	96.2	75 - 125	
IRON	1910		0	U	2000	95.6	75 - 125	
MAGNESIUM	4720		0	U	5000	94.4	75 - 125	
POTASSIUM	23400		0	U	25000	93.7	75 - 125	
SELENIUM	179		0	U	200	89.7	75 - 125	
SODIUM	23800		0	U	25000	95.4	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4827990
Report generated: 06/28/2016 09:31

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061026	Workgroup (AAB#):	WG574214
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG574382	Initial Calibration Date:	27-JUN-2016 10:26

	WG574382-01		WG574382-02		WG574382-03		WG574382-04		WG574382-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000800	.1	0.00149	.2	0.00217	10	0.0861	20	0.161	.999541	
BERYLLIUM	0	0.000690	.0005	0.00111	.001	0.00148	.05	0.0508	.1	0.0959	.999682	
CALCIUM	0	0.00169	.1	0.00256	.2	0.00981	10	0.474	20	0.899	.998908	
IRON	0	0.0000700	.04	0.000210	.08	0.00147	4	0.0959	8	0.181	.998751	
MAGNESIUM	0	-0.0000400	NA	NA	.2	0.00164	10	0.0916	20	0.172	.999436	
POTASSIUM	0	-0.0166	.5	0.00590	1	0.0309	50	2.79	100	5.30	.999643	
SELENIUM	0	-0.000420	NA	NA	.008	-0.000340	.4	0.00633	.8	0.0123	.999365	
SODIUM	0	-0.0629	.5	0.0187	1	0.0937	50	9.16	100	17.5	.999663	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4827998
Report generated: 28-JUN-2016 09:31

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061026
Run Date: 06/27/2016
Sample ID: WG574382-07
Instrument ID: ICP-THERMO3
Run Time: 10:33
Method: 6010C
File ID: T3.062716.103339
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574214
Cal ID: ICP-THERI - 27-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	-.00421	F
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4828000
Report generated 06/28/2016 09:31

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 06/27/2016
Sample ID: WG574382-12
Instrument ID: ICP-THERMO3
Run Time: 10:52
Method: 6010C
File ID: T3.062716.105241
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574214
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	-0.00430	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4828003
Report generated 06/28/2016 09:31

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 06/27/2016
Sample ID: WG574382-14
Instrument ID: ICP-THERMO3
Run Time: 11:38
Method: 6010C
File ID: T3.062716.113822
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574214
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4828003
Report generated 06/28/2016 09:31

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 06/27/2016
Sample ID: WG574382-16
Instrument ID: ICP-THERMO3
Run Time: 12:25
Method: 6010C
File ID: T3.062716.122507
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574214
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4828003
Report generated 06/28/2016 09:31

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 06/27/2016
Sample ID: WG574382-18
Instrument ID: ICP-THERMO3
Run Time: 13:11
Method: 6010C
File ID: T3.062716.131130
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574214
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4828003
Report generated 06/28/2016 09:31

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 06/27/2016
Sample ID: WG574382-20
Instrument ID: ICP-THERMO3
Run Time: 13:26
Method: 6010C
File ID: T3.062716.132646
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574214
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4828003
Report generated 06/28/2016 09:31

Microbac Laboratories Inc.
INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061026
Run Date: 06/27/2016
Sample ID: WG574382-06
Instrument ID: ICP-THERMO3
Run Time: 10:30
Method: 6010C
File ID: T3.062716.103013
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574214
Cal ID: ICP-TH - 27-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	10.0	100	90 - 110	
Beryllium		.05	0.0495	99.0	90 - 110	
Calcium		10	9.89	98.9	90 - 110	
Iron		4	3.95	98.7	90 - 110	
Magnesium		10	10.0	100	90 - 110	
Potassium		50	49.5	99.0	90 - 110	
Selenium		.4	0.405	101	90 - 110	
Sodium		50	49.6	99.1	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4827999
Report generated 06/28/2016 09:31

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 06/27/2016
Sample ID: WG574382-11
Instrument ID: ICP-THERMO3
Run Time: 10:49
Method: 6010C
File ID: T3.062716.104904
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574214
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.7	mg/L	107	90 - 110		
Beryllium		0.0500	0.0516	mg/L	103	90 - 110		
Calcium		10.0	10.8	mg/L	108	90 - 110		
Iron		4.00	4.30	mg/L	108	90 - 110		
Magnesium		10.0	10.8	mg/L	108	90 - 110		
Potassium		50.0	51.5	mg/L	103	90 - 110		
Selenium		0.400	0.421	mg/L	105	90 - 110		
Sodium		50.0	51.6	mg/L	103	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4828002
Report generated 06/28/2016 09:31

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 06/27/2016
Sample ID: WG574382-13
Instrument ID: ICP-THERMO3
Run Time: 11:34
Method: 6010C
File ID: T3.062716.113445
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574214
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.3	mg/L	103	90 - 110		
Beryllium		0.0500	0.0508	mg/L	102	90 - 110		
Calcium		10.0	10.2	mg/L	102	90 - 110		
Iron		4.00	4.09	mg/L	102	90 - 110		
Magnesium		10.0	10.3	mg/L	103	90 - 110		
Potassium		50.0	50.8	mg/L	102	90 - 110		
Selenium		0.400	0.410	mg/L	103	90 - 110		
Sodium		50.0	51.2	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4828002
Report generated 06/28/2016 09:31

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 06/27/2016
Sample ID: WG574382-15
Instrument ID: ICP-THERMO3
Run Time: 12:21
Method: 6010C
File ID: T3.062716.122130
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574214
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.3	mg/L	103	90 - 110		
Beryllium		0.0500	0.0508	mg/L	102	90 - 110		
Calcium		10.0	10.9	mg/L	109	90 - 110		
Iron		4.00	4.34	mg/L	109	90 - 110		
Magnesium		10.0	10.8	mg/L	108	90 - 110		
Potassium		50.0	53.5	mg/L	107	90 - 110		
Selenium		0.400	0.416	mg/L	104	90 - 110		
Sodium		50.0	54.6	mg/L	109	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4828002
Report generated 06/28/2016 09:31

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 06/27/2016
Sample ID: WG574382-17
Instrument ID: ICP-THERMO3
Run Time: 13:07
Method: 6010C
File ID: T3.062716.130753
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574214
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.98	mg/L	99.8	90 - 110		
Beryllium		0.0500	0.0490	mg/L	97.9	90 - 110		
Calcium		10.0	9.54	mg/L	95.4	90 - 110		
Iron		4.00	3.77	mg/L	94.1	90 - 110		
Magnesium		10.0	9.47	mg/L	94.7	90 - 110		
Potassium		50.0	47.1	mg/L	94.2	90 - 110		
Selenium		0.400	0.421	mg/L	105	90 - 110		
Sodium		50.0	48.1	mg/L	96.2	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4828002
Report generated 06/28/2016 09:31

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 06/27/2016
Sample ID: WG574382-19
Instrument ID: ICP-THERMO3
Run Time: 13:23
Method: 6010C
File ID: T3.062716.132320
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574214
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.90	mg/L	99.0	90 - 110		
Beryllium		0.0500	0.0485	mg/L	97.0	90 - 110		
Calcium		10.0	9.79	mg/L	97.9	90 - 110		
Iron		4.00	3.90	mg/L	97.4	90 - 110		
Magnesium		10.0	9.50	mg/L	95.0	90 - 110		
Potassium		50.0	47.8	mg/L	95.6	90 - 110		
Selenium		0.400	0.409	mg/L	102	90 - 110		
Sodium		50.0	49.3	mg/L	98.7	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4828002
Report generated 06/28/2016 09:31

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061026
Run Date: 06/27/2016
Sample ID: WG574382-08
Instrument ID: ICP-THERMO3
Run Time: 10:37
Method: 6010C
File ID: T3.062716.103737
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574214
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.161	mg/L	101	70 - 130		
Beryllium		0.00160	0.00171	mg/L	107	70 - 130		
Calcium		0.400	0.413	mg/L	103	70 - 130		
Iron		0.0800	0.0618	mg/L	77.3	70 - 130		
Magnesium		0.400	0.370	mg/L	92.5	70 - 130		
Potassium		0.800	0.831	mg/L	104	70 - 130		
Selenium		0.0160	0.0156	mg/L	97.2	70 - 130		
Sodium		0.400	0.456	mg/L	114	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4828004
Report generated 06/28/2016 09:31

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061026
Run Date: 06/27/2016
Sample ID: WG574382-21
Instrument ID: ICP-THERMO3
Run Time: 13:30
Method: 6010C
File ID: T3.062716.133045
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574214
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.168	mg/L	105	70 - 130		
Beryllium		0.00160	0.00157	mg/L	98.1	70 - 130		
Calcium		0.400	0.410	mg/L	102	70 - 130		
Iron		0.0800	0.0608	mg/L	76.0	70 - 130		
Magnesium		0.400	0.392	mg/L	98.0	70 - 130		
Potassium		0.800	0.912	mg/L	114	70 - 130		
Selenium		0.0160	0.0148	mg/L	92.2	70 - 130		
Sodium		0.400	0.499	mg/L	125	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4828004
Report generated 06/28/2016 09:31

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061026
Instrument ID: ICP-THERMO3
Sol. A : WG574382-09 **File ID:** T3.062716.104131
Sol. AB : WG574382-10 **File ID:** T3.062716.104522

Workgroup (AAB#): WG574214
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	274	110	250	256	102	
Beryllium	NS	-0.0000500	NS	0.250	0.237	94.8	
Calcium	250	255	102	250	239	95.6	
Iron	100	101	101	100	93.5	93.5	
Magnesium	250	258	103	250	239	95.6	
Potassium	NS	-0.0902	NS	5.00	5.12	102	
Selenium	NS	-0.00510	NS	0.250	0.245	98.0	
Sodium	NS	0.0834	NS	5.00	5.19	104	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4828001
Report generated 06/28/2016 09:31

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061026 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	AG	AL	AS	B	BA
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000410	0	0	0
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0.0115	0	-0.0000800
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0.000260	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	-0.000289	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	-0.0000490	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.0000120	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0.0000300	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4827997
Report generated: 06/28/2016 09:31

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061026 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	BE	CA	CD	CO	CR
ALUMINUM	308.20	0	0	0	-0.000820	0
ANTIMONY	206.80	0	0	0	0	0.0200
ARSENIC	189.00	0	0	0	0	-0.00190
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0.00343	0
CADMIUM	228.80	0	0	0	-0.00390	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	-0.000200
COPPER	224.70	0	0	0	0.0000770	-0.00100
IRON	261.10	0	0	0	0	-0.00100
LEAD	220.30	0	0	0	-0.0000130	-0.000132
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.0000500
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	-0.000860	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0.00000500	0	0	0
THALLIUM	190.80	0	0	0	0.00240	0.000276
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	-0.00480
ZINC	206.20	0	0	0	0	-0.00180
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4827997
Report generated: 06/28/2016 09:31

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061026 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	CU	FE	K	LI	MG
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000560	0	0	0
ARSENIC	189.00	0	-0.0000500	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0.000300	0	0	0
CADMIUM	228.80	0	-0.0000190	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000500	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0.00160	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0.000609	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.00000300
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0.0000420	0	0	0
PHOSPHORUS	214.90	-0.323	0.000900	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000270	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000400	0	0	0
VANADIUM	292.40	0	0.00000700	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	-0.0000300	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4827997
Report generated: 06/28/2016 09:31

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061026 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	MN	MO	NA	NI	P
ALUMINUM	308.20	0	0.0163	0	0	0
ANTIMONY	206.80	0	-0.00310	0	-0.00350	0
ARSENIC	189.00	0	0.00120	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	-0.00190	0	0	0
CADMIUM	228.80	0	0.0000320	0	-0.000770	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0.000360	0	0	0	0
COBALT	228.60	0	-0.00200	0	0.000100	0
COPPER	224.70	0	0.00160	0	-0.0123	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	-0.00210	0	0.000110	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	-0.00290	-0.0230	0	0	0
MANGANESE	257.60	0	0.0000300	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0.00710	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0.000600	0.000580	0	0	0
SILICON	212.40	0	0.0187	0	0	0
SILVER	328.00	0	-0.0000430	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0.00100	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000153	0	0	0
VANADIUM	292.40	-0.000200	-0.00830	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4827997
Report generated: 06/28/2016 09:31

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061026 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	PB	SB	SE	SI	SN
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0	0	0	-0.0220
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0.00440	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4827997
Report generated: 06/28/2016 09:31

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061026 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	SR	TI	TL	V	ZN
ALUMINUM	308.20	0	0	0	0.0950	0
ANTIMONY	206.80	0	0.00110	0	-0.00360	0
ARSENIC	189.00	0	0	0	0.000107	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	-0.00000700	0	0.000990	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0.000102	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000550	0	0	0
COBALT	228.60	0	0.00210	0	0.0000200	0
COPPER	224.70	0	0.000269	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	-0.000126	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	-0.00290	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	-0.000110	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	-0.00100	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000720	0	-0.000260	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.000800	0	-0.00490	0
TIN	189.90	0	-0.00190	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0.000820	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4827997
Report generated: 06/28/2016 09:31

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061026 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	ZR
ALUMINUM	308.20	0
ANTIMONY	206.80	0
ARSENIC	189.00	0
BARIUM	455.40	0
BERYLLIUM	313.10	0
BORON	249.60	0
CADMIUM	228.80	0
CALCIUM	422.60	0
CHROMIUM	267.70	0
COBALT	228.60	0
COPPER	224.70	0
IRON	261.10	0
LEAD	220.30	0
LITHIUM	670.70	0
MAGNESIUM	279.00	0
MANGANESE	257.60	0
MOLYBDENUM	202.00	0
NICKEL	231.60	0
PHOSPHORUS	214.90	0
POTASSIUM	766.40	0
SELENIUM	196.00	0
SILICON	212.40	0
SILVER	328.00	0
SODIUM	589.50	0
STRONTIUM	407.70	0
THALLIUM	190.80	0
TIN	189.90	0
TITANIUM	337.20	0
VANADIUM	292.40	0
ZINC	206.20	0
ZIRCONIUM	339.10	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4827997
Report generated: 06/28/2016 09:31

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16061026 **Date:** 04/29/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	900.0
Antimony	20.00	45.0
Arsenic	10.00	45.0
Barium	10.00	45.0
Beryllium	10.00	1.8
Boron	20.00	45.0
Cadmium	20.00	4.5
Calcium	5.00	270.0
Chromium	20.00	36.0
Cobalt	20.00	45.0
Copper	20.00	180.0
Iron	5.00	720.0
Lead	20.00	225.0
Lithium	5.00	36.0
Magnesium	5.00	900.0
Manganese	10.00	36.0
Molybdenum	20.00	27.0
Nickel	20.00	90.0
Phosphorus	20.00	180.0
Potassium	5.00	450.0
Selenium	20.00	90.0
Silicon	20.00	36.0
Silver	10.00	9.0
Sodium	5.00	270.0
Strontium	5.00	9.0
Thallium	20.00	18.0
Tin	20.00	45.0
Titanium	5.00	36.0
Vanadium	20.00	27.0
Zinc	20.00	45.0
Zirconium	10.00	45.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4827996
Report generated: 06/28/2016 09:31

2.3.1.3 Raw Data

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.000219	0.051332	0.000000	1.000000
Al 308.215 {109}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.000797	0.008110	0.000000	1.000000
As 189.042 {478}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.000055	0.023360	0.000000	1.000000
B 249.678 {135}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.000001	0.022663	0.000000	1.000000
Ba 455.403 { 74}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.055586	2.146038	0.000000	1.000000
Be 313.107 {108}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.000688	0.950408	0.000000	1.000000
Ca 422.673 { 80}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.001692	0.045598	0.000000	1.000000
Cd 228.802 {447}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.000094	0.563612	0.000000	1.000000
Co 228.616 {447}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.000104	0.359063	0.000000	1.000000
Cr 267.716 {126}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.000207	0.060248	0.000000	1.000000
Cu 224.700 {450}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.000063	0.126227	0.000000	1.000000
Fe 261.187 {129}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.000073	0.023032	0.000000	1.000000
K 766.490 { 44}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.016555	0.054237	0.000000	1.000000
Li 670.784 { 50}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.004397	1.544241	0.000000	1.000000
Mg 279.079 {121}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.000044	0.008813	0.000000	1.000000
Mn 257.610 {131}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.000249	0.281817	0.000000	1.000000
Mo 202.030 {467}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.000046	0.182222	0.000000	1.000000
Na 589.592 { 57}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.062909	0.178536	0.000000	1.000000
Ni 231.604 {446}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.000706	0.133269	0.000000	1.000000
P 214.914 {457}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.000179	0.013467	0.000000	1.000000
Pb 220.353 {453}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.000979	0.062395	0.000000	1.000000
Sb 206.833 {463}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.000288	0.029684	0.000000	1.000000
Se 196.090 {472}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.000416	0.016174	0.000000	1.000000
Si 212.412 {459}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.002457	0.038614	0.000000	1.000000
Sn 189.989 {477}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.000032	0.070434	0.000000	1.000000
Sr 407.771 { 83}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.000984	3.576768	0.000000	1.000000
Ti 337.280 {100}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.001213	0.097488	0.000000	1.000000
Tl 190.856 {477}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.000404	0.028714	0.000000	1.000000
V 292.402 {115}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.000025	0.070640	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.000222	0.414339	0.000000	1.000000
Zr 339.198 { 99}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.004799	3.597030	0.000000	1.000000

Approved: June 28, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999219	0.000005	0.002404	0.008013	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999541	0.000016	0.010486	0.034953	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999717	0.000002	0.003514	0.011712	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999559	0.000003	0.003229	0.010763	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999622	0.000374	0.001188	0.003959	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999682	0.000008	0.000105	0.000351	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.998908	0.000135	0.046468	0.154893	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999582	0.000006	0.000295	0.000984	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999651	0.000012	0.000445	0.001484	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999210	0.000008	0.001312	0.004375	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999350	0.000015	0.001489	0.004962	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.998751	0.000029	0.029643	0.098810	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999643	0.000460	0.132623	0.442075	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999776	0.000321	0.004353	0.014511	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999436	0.000029	0.087066	0.290220	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999089	0.000038	0.002851	0.009505	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999789	0.000024	0.000466	0.001553	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999663	0.001472	0.035366	0.117888	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999563	0.000013	0.001271	0.004238	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999580	0.000024	0.007845	0.026150	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.998800	0.000010	0.003957	0.013189	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999499	0.000007	0.004891	0.016304	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999365	0.000002	0.007423	0.024744	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999891	0.000018	0.002581	0.008604	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999675	0.000011	0.000958	0.003192	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999546	0.000684	0.000493	0.001644	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.997531	0.000043	0.009062	0.030207	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999388	0.000005	0.003390	0.011298	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999660	0.000012	0.001079	0.003598	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999413	0.000090	0.000220	0.000735	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.999407	0.000786	0.000564	0.001879	OK.	1.000000	0.000000	1	0

Approved: June 28, 2016

Sample Name: S0 Acquired: 6/27/2016 10:11:09 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00022**	**.00080**	**.00005**	**-.00000**	**.05558**	**.00069**	**.00169**
Stddev	.00009	.00005	.00001	.00001	.00343	.00010	.00171
%RSD	41.038	6.2901	19.225	757.31	6.1761	14.508	100.89
#1	-.00028	.00085	.00004	.00001	.05677	.00057	.00305
#2	-.00012	.00079	.00007	-.00001	.05827	.00074	-.00023
#3	-.00027	.00075	.00006	.00000	.05171	.00075	.00226

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00009**	**-.00010**	**.00021**	**.00006**	**.00007**	**-.01656**	**-.00440**
Stddev	.00009	.00008	.00005	.00012	.00021	.00039	.00634
%RSD	91.046	78.768	26.095	189.05	283.56	2.3394	144.17
#1	-.00005	-.00014	.00014	.00010	.00028	-.01656	.00211
#2	-.00019	-.00016	.00023	.00016	.00009	-.01694	-.00474
#3	-.00004	-.00001	.00024	-.00007	-.00014	-.01617	-.01056

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00004**	**.00025**	**-.00005**	**-.06293**	**-.00071**	**-.00018**	**-.00098**
Stddev	.00014	.00078	.00008	.01073	.00010	.00001	.00026
%RSD	309.31	312.25	167.27	17.052	14.737	6.2600	26.253
#1	-.00014	.00113	-.00005	-.06678	-.00074	-.00017	-.00122
#2	.00011	-.00035	.00003	-.05080	-.00079	-.00019	-.00101
#3	-.00010	-.00004	-.00012	-.07120	-.00059	-.00018	-.00071

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00029**	**-.00042**	**.00246**	**.00003**	**.00098**	**-.00121**	**-.00040**
Stddev	.00006	.00008	.00007	.00002	.00168	.00048	.00011
%RSD	21.252	20.303	2.7310	73.870	172.37	39.424	26.113
#1	.00028	-.00050	.00242	.00001	.00288	-.00094	-.00028
#2	.00035	-.00033	.00242	.00005	-.00031	-.00176	-.00045
#3	.00023	-.00042	.00253	.00003	.00036	-.00093	-.00047

Approved: June 28, 2016

Sample Name: S0 Acquired: 6/27/2016 10:11:09 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	-.00002	.00022	-.00480
Stddev	.00006	.00004	.00081
%RSD	232.69	19.281	16.811
#1	.00001	.00027	-.00516
#2	.00000	.00020	-.00387
#3	-.00009	.00019	-.00536
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9360.7	56289.	2789.5
Stddev	12.0	199.	9.9
%RSD	.12862	.35359	.35524
#1	9347.7	56429.	2778.2
#2	9362.8	56061.	2796.7
#3	9371.5	56376.	2793.6

Approved: June 28, 2016

Sample Name: S1 Acquired: 6/27/2016 10:15:06 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00002**	**.00149**	**.07501**	**.00111**	**.00256**	**.00019**	**.00048**
Stddev	.00004	.00003	.00130	.00003	.00054	.00000	.00012
%RSD	235.36	1.8291	1.7274	3.0313	21.065	2.0861	24.410
#1	.00003	.00146	.07531	.00115	.00264	.00019	.00036
#2	-.00003	.00151	.07359	.00111	.00199	.00019	.00059
#3	.00005	.00151	.07613	.00108	.00306	.00020	.00049

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00052**	**.00073**	**.00021**	**.00590**	**.00180**	**.00157**	**.01873**
Stddev	.00010	.00013	.00039	.00261	.00100	.00005	.00232
%RSD	18.633	17.713	184.86	44.235	55.870	3.0472	12.407
#1	.00062	.00086	.00004	.00630	.00167	.00152	.02125
#2	.00042	.00060	.00065	.00312	.00086	.00158	.01668
#3	.00052	.00074	-.00007	.00829	.00286	.00161	.01826

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00019**	**.00098**	**-.00091**	**.00069**	**.00415**	**.00064**	**.03417**
Stddev	.00010	.00003	.00038	.00011	.00003	.00003	.00071
%RSD	53.461	3.4756	41.630	15.291	.77728	4.6599	2.0672
#1	-.00029	.00101	-.00109	.00069	.00416	.00068	.03441
#2	-.00009	.00099	-.00047	.00080	.00418	.00063	.03337
#3	-.00018	.00095	-.00116	.00059	.00412	.00062	.03472

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00142**	**.00056**	**.00379**	**.02139**
Stddev	.00038	.00006	.00002	.00234
%RSD	26.838	9.9829	.42124	10.947
#1	-.00118	.00061	.00377	.02369
#2	-.00121	.00058	.00380	.02146
#3	-.00186	.00050	.00379	.01901

Approved: June 28, 2016

Sample Name: S1 Acquired: 6/27/2016 10:15:06 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9406.4**	**56869.**	**2813.2**
Stddev	17.9	99.	5.4
%RSD	.18981	.17489	.19258
#1	9415.6	56895.	2818.5
#2	9417.7	56760.	2813.3
#3	9385.8	56954.	2807.7

Approved: June 28, 2016

Sample Name: S2 Acquired: 6/27/2016 10:19:03 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00019	.00217	.00019	.00017	.09097	.00148	.00981
Stddev	.00010	.00007	.00004	.00006	.00192	.00005	.00183
%RSD	52.118	3.1223	20.733	37.133	2.1077	3.6422	18.643
#1	.00022	.00221	.00022	.00021	.09288	.00154	.01182
#2	.00008	.00209	.00021	.00019	.09098	.00149	.00936
#3	.00027	.00220	.00015	.00010	.08905	.00143	.00824

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00046	.00101	.00085	.00125	.00147	.03094	.02040
Stddev	.00011	.00020	.00003	.00016	.00011	.00596	.00709
%RSD	24.286	20.196	3.9657	12.594	7.8265	19.261	34.737
#1	.00054	.00105	.00082	.00140	.00135	.03776	.02303
#2	.00050	.00119	.00084	.00127	.00157	.02830	.01238
#3	.00033	.00079	.00088	.00108	.00148	.02676	.02580

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00164	.00196	.00309	.09374	.00041	.00222	-.00046
Stddev	.00038	.00079	.00004	.01209	.00013	.00011	.00029
%RSD	23.225	40.222	1.2531	12.896	30.782	4.8080	63.126
#1	.00162	.00249	.00314	.08010	.00046	.00212	-.00025
#2	.00127	.00233	.00308	.09800	.00050	.00233	-.00079
#3	.00203	.00105	.00307	.10312	.00026	.00221	-.00034

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00091	-.00034	.00573	.00119	.06491	.00017	-.00015
Stddev	.00010	.00006	.00002	.00005	.00081	.00072	.00004
%RSD	10.635	17.225	.29680	4.1503	1.2526	428.70	27.714
#1	.00083	-.00029	.00572	.00116	.06568	.00089	-.00012
#2	.00102	-.00033	.00575	.00125	.06406	-.00056	-.00013
#3	.00090	-.00040	.00572	.00117	.06500	.00018	-.00019

Approved: June 28, 2016

Sample Name: S2 Acquired: 6/27/2016 10:19:03 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00120	.00738	.04944
Stddev	.00007	.00006	.00070
%RSD	5.6773	.87197	1.4116
#1	.00118	.00744	.05008
#2	.00114	.00738	.04954
#3	.00127	.00732	.04870
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9443.2	56709.	2845.2
Stddev	3.5	174.	6.8
%RSD	.03751	.30616	.23990
#1	9441.6	56633.	2837.4
#2	9447.3	56587.	2849.5
#3	9440.8	56908.	2848.9

Approved: June 28, 2016

Sample Name: S3 Acquired: 6/27/2016 10:23:00 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.02092	.08605	.00965	.01177	2.2814	.05082	.47399	.03171
Stddev	.00009	.00009	.00006	.00007	.0081	.00011	.00141	.00016
%RSD	.44413	.10972	.62223	.59949	.35348	.21174	.29780	.50827
#1	.02097	.08616	.00961	.01185	2.2766	.05071	.47378	.03182
#2	.02098	.08602	.00972	.01174	2.2908	.05092	.47550	.03179
#3	.02081	.08598	.00962	.01172	2.2769	.05085	.47271	.03153

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.07428	.03147	.06632	.09593	2.7929	1.5861	.09155	.14801
Stddev	.00025	.00009	.00009	.00042	.0165	.0024	.00035	.00046
%RSD	.34137	.28140	.13410	.43596	.58971	.15475	.37815	.31281
#1	.07440	.03141	.06640	.09607	2.7817	1.5848	.09185	.14757
#2	.07444	.03143	.06635	.09545	2.8118	1.5890	.09164	.14849
#3	.07398	.03157	.06622	.09625	2.7852	1.5847	.09117	.14798

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.18692	9.1586	.06869	.13735	.03188	.03618	.00633	.19982
Stddev	.00095	.0246	.00038	.00018	.00005	.00008	.00006	.00030
%RSD	.50865	.26851	.55910	.13312	.14375	.21004	.95433	.15185
#1	.18754	9.1579	.06868	.13721	.03187	.03616	.00627	.19957
#2	.18740	9.1836	.06909	.13756	.03193	.03626	.00639	.20015
#3	.18583	9.1344	.06832	.13729	.03184	.03611	.00632	.19973

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.07280	3.7149	.09996	.01331	.07292	.43380	3.7667
Stddev	.00018	.0060	.00049	.00007	.00019	.00078	.0189
%RSD	.24836	.16167	.49462	.49011	.25771	.17890	.50287
#1	.07265	3.7109	.09960	.01337	.07280	.43456	3.7451
#2	.07300	3.7218	.09976	.01324	.07314	.43381	3.7806
#3	.07274	3.7121	.10052	.01332	.07283	.43301	3.7744

Approved: June 28, 2016

Sample Name: S3 Acquired: 6/27/2016 10:23:00 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9721.9**	**58099.**	**2930.8**
Stddev	18.9	74.	10.9
%RSD	.19470	.12678	.37352
#1	9743.1	58020.	2942.5
#2	9706.5	58111.	2920.7
#3	9716.1	58166.	2929.2

Approved: June 28, 2016

Sample Name: S4 Acquired: 6/27/2016 10:26:37 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.03974	.16089	.01833	.02213	4.2645	.09586	.89929	.06038
Stddev	.00005	.00019	.00006	.00006	.0077	.00012	.00503	.00018
%RSD	.11654	.11956	.34341	.25502	.18096	.12203	.55878	.29985
#1	.03968	.16079	.01837	.02214	4.2575	.09600	.89526	.06018
#2	.03976	.16111	.01826	.02207	4.2633	.09579	.89769	.06053
#3	.03977	.16076	.01837	.02218	4.2728	.09580	.90492	.06045

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.14063	.05916	.12449	.18125	5.3047	3.0377	.17177	.27547
Stddev	.00052	.00006	.00037	.00104	.0273	.0084	.00079	.00147
%RSD	.37329	.09570	.29429	.57556	.51409	.27796	.45809	.53422
#1	.14021	.05914	.12420	.18098	5.2909	3.0280	.17115	.27390
#2	.14121	.05922	.12491	.18037	5.2872	3.0420	.17150	.27568
#3	.14045	.05912	.12437	.18241	5.3361	3.0431	.17265	.27682

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.35921	17.472	.12976	.25968	.06042	.06915	.01227	.38616
Stddev	.00077	.044	.00041	.00013	.00014	.00023	.00002	.00037
%RSD	.21360	.25231	.31950	.04942	.23319	.32893	.13923	.09489
#1	.35987	17.454	.12931	.25960	.06034	.06889	.01229	.38588
#2	.35938	17.440	.13013	.25983	.06033	.06932	.01226	.38658
#3	.35837	17.522	.12985	.25962	.06058	.06923	.01226	.38603

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13808	7.0066	.19048	.02529	.13828	.80821	7.0194
Stddev	.00024	.0219	.00266	.00011	.00020	.00129	.0190
%RSD	.17717	.31279	1.3974	.43280	.14820	.16017	.27028
#1	.13814	6.9980	.18870	.02521	.13848	.80908	7.0103
#2	.13829	6.9903	.18921	.02525	.13830	.80882	7.0066
#3	.13781	7.0315	.19354	.02541	.13807	.80672	7.0412

Approved: June 28, 2016

Sample Name: S4 Acquired: 6/27/2016 10:26:37 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9771.3**	**58546.**	**2991.1**
Stddev	5.3	169.	6.3
%RSD	.05411	.28803	.21196
#1	9765.6	58357.	2985.0
#2	9776.0	58602.	2997.6
#3	9772.3	58680.	2990.8

Approved: June 28, 2016

Sample Name: ICV Acquired: 6/27/2016 10:30:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39656	9.9968	.39605	.49913	.99354	.04949	9.8900	.04960
Stddev	.00038	.0168	.00361	.00130	.00797	.00012	.1192	.00034
%RSD	.09463	.16774	.91201	.26037	.80254	.24834	1.2050	.67893
#1	.39683	10.016	.39921	.49920	.99329	.04957	9.8437	.04996
#2	.39672	9.9871	.39211	.49780	1.0016	.04955	10.025	.04956
#3	.39613	9.9872	.39682	.50040	.98569	.04935	9.8010	.04929
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19960	.49616	.50076	3.9491	49.503	.98788	10.028	.49846
Stddev	.00072	.00107	.00153	.0174	.377	.01095	.058	.00163
%RSD	.36296	.21613	.30576	.43969	.76139	1.1083	.57412	.32766
#1	.20035	.49503	.50215	3.9291	49.521	.98444	9.9746	.49786
#2	.19954	.49627	.49912	3.9607	49.871	1.0001	10.089	.50030
#3	.19890	.49717	.50101	3.9574	49.117	.97907	10.020	.49721
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98929	49.553	.50008	9.9383	.49711	1.1842	.40491	4.9048
Stddev	.00695	.361	.00310	.0420	.00341	.0012	.00380	.0152
%RSD	.70230	.72857	.61963	.42238	.68619	.10088	.93725	.30954
#1	.99664	49.590	.50317	9.9837	.49981	1.1844	.40809	4.9217
#2	.98842	49.894	.50009	9.9303	.49824	1.1853	.40593	4.9005
#3	.98282	49.175	.49697	9.9009	.49328	1.1829	.40071	4.8922
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 28, 2016

Sample Name: ICV Acquired: 6/27/2016 10:30:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99382	.99081	.99014	.50327	.99007	1.0044	.99998
Stddev	.00477	.00901	.00242	.00334	.00183	.0042	.00712
%RSD	.47986	.90979	.24468	.66313	.18511	.41413	.71179
#1	.99906	.99161	.99266	.50658	.98958	1.0088	1.0007
#2	.99266	.99939	.98992	.50331	.99209	1.0036	1.0067
#3	.98974	.98142	.98783	.49991	.98852	1.0006	.99254
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9944.5	59548.	3007.2
Stddev	7.0	104.	19.1
%RSD	.07028	.17468	.63490
#1	9939.5	59668.	3013.8
#2	9941.5	59493.	2985.7
#3	9952.5	59483.	3022.1

Approved: June 28, 2016

Sample Name: ICB Acquired: 6/27/2016 10:33:39 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00174	.00806	-.00035	.00524	.00096	.00003	.04488
Stddev	.00255	.00339	.00155	.00316	.00054	.00006	.03416
%RSD	146.61	42.061	438.03	60.356	56.377	169.93	76.128
#1	.00413	.01096	-.00078	.00453	.00153	.00002	.04662
#2	-.00095	.00889	-.00165	.00869	.00045	-.00001	.07814
#3	.00204	.00433	.00137	.00249	.00091	.00010	.00988
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	.00021	.00264	.00138	-.01027	.11431	-.00187
Stddev	.00023	.00025	.00090	.00135	.02697	.10019	.00400
%RSD	90.076	117.41	34.187	98.005	262.67	87.648	214.31
#1	.00019	.00011	.00242	.00087	.02024	.22955	-.00367
#2	.00007	.00003	.00363	.00292	-.02010	.06552	-.00465
#3	.00052	.00050	.00186	.00036	-.03093	.04786	.00272
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.07897	.00101	.00510	.11885	-.00064	F .01147	-.00335
Stddev	.04472	.00084	.00024	.04616	.00013	.00517	.00352
%RSD	56.634	82.917	4.6972	38.837	20.205	45.049	105.12
#1	-.03785	.00103	.00483	.16190	-.00071	.01200	-.00401
#2	-.12658	.00016	.00517	.12455	-.00049	.01635	.00046
#3	-.07246	.00185	.00530	.07011	-.00073	.00606	-.00650
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						.01000	
Low Limit						-.01000	

Approved: June 28, 2016

Sample Name: ICB Acquired: 6/27/2016 10:33:39 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00383	-.00421	.01837	.00133	.00214	-.00619	.00159
Stddev	.00530	.00215	.00326	.00121	.00026	.00445	.00067
%RSD	138.24	51.159	17.738	90.647	12.024	71.914	42.141
#1	.00877	-.00203	.02032	.00237	.00238	-.00553	.00121
#2	-.00176	-.00633	.02019	.00162	.00218	-.01094	.00119
#3	.00449	-.00427	.01461	.00001	.00187	-.00211	.00236
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00117	.00107	.00150
Stddev	.00040	.00023	.00032
%RSD	33.968	21.646	21.450
#1	.00144	.00132	.00117
#2	.00136	.00103	.00151
#3	.00071	.00086	.00182
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9485.8	56960.	2827.2
Stddev	22.7	62.	13.4
%RSD	.23928	.10801	.47261
#1	9462.0	57031.	2842.2
#2	9488.3	56934.	2822.9
#3	9507.2	56917.	2816.6

Approved: June 28, 2016

Sample Name: LLICV Acquired: 6/27/2016 10:37:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00811	.16107	.00546	.08342	.00820	.00171	.41320	.00104
Stddev	.00154	.00831	.00174	.00283	.00174	.00005	.05309	.00032
%RSD	18.985	5.1608	31.869	3.3900	21.229	3.2040	12.848	30.976
#1	.00877	.17043	.00450	.08566	.00976	.00165	.44800	.00137
#2	.00635	.15823	.00748	.08024	.00632	.00173	.35210	.00072
#3	.00921	.15456	.00442	.08437	.00853	.00175	.43951	.00104
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00385	.00622	.00454	.06184	.83144	.08347	.36989	.00868
Stddev	.00035	.00111	.00053	.00835	.03960	.00277	.07407	.00380
%RSD	9.1544	17.869	11.677	13.497	4.7632	3.3221	20.024	43.760
#1	.00354	.00567	.00393	.06716	.81243	.08203	.29122	.00933
#2	.00376	.00549	.00491	.06614	.87696	.08170	.38018	.00459
#3	.00423	.00750	.00478	.05222	.80492	.08666	.43828	.01210
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00933	.45563	.01629	.80974	.00826	.08707	.01555	.84594
Stddev	.00021	.01951	.00128	.00898	.00183	.00241	.00253	.00721
%RSD	2.2323	4.2816	7.8796	1.1092	22.131	2.7708	16.251	.85208
#1	.00915	.46087	.01543	.81937	.00648	.08622	.01843	.85233
#2	.00956	.43404	.01777	.80827	.01013	.08979	.01372	.84735
#3	.00929	.47199	.01568	.80159	.00817	.08519	.01449	.83813
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: LLICV Acquired: 6/27/2016 10:37:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41453**	**.04310**	**.02153**	**.15768**	**.00889**	**.01738**	**.04625**
Stddev	.00755	.00023	.00874	.00411	.00040	.00018	.00135
%RSD	1.8207	.53307	40.597	2.6083	4.5428	1.0465	2.9262
#1	.41925	.04320	.01815	.15896	.00867	.01736	.04544
#2	.41852	.04284	.03146	.16100	.00865	.01758	.04550
#3	.40583	.04326	.01499	.15308	.00936	.01721	.04781
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9608.8**	**58008.**	**2882.7**
Stddev	13.9	202.	11.3
%RSD	.14503	.34866	.39311
#1	9595.5	57793.	2870.0
#2	9607.5	58037.	2891.6
#3	9623.3	58195.	2886.6

Approved: June 28, 2016

Sample Name: ICSA Acquired: 6/27/2016 10:41:31 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00348**	**274.46**	**-.00360**	**-.01905**	**-.00118**	**-.00005**	**255.24**	**-.00047**
Stddev	.00080	.12	.00424	.00363	.00140	.00007	.64	.00022
%RSD	22.958	.04489	117.79	19.069	118.85	159.46	.24922	45.496
#1	-.00266	274.32	-.00283	-.01618	-.00225	-.00002	254.54	-.00071
#2	-.00425	274.55	-.00817	-.01785	-.00168	-.00013	255.78	-.00029
#3	-.00353	274.52	.00020	-.02314	.00040	.00001	255.40	-.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00138**	**.00013**	**.00026**	**100.86**	**-.09019**	**.00712**	**258.19**	**-.00082**
Stddev	.00020	.00043	.00219	.24	.06234	.00564	.51	.00449
%RSD	14.369	328.27	851.02	.23590	69.125	79.115	.19632	546.94
#1	-.00121	.00037	.00206	100.59	-.14551	.00643	257.65	-.00388
#2	-.00133	-.00036	.00088	100.95	-.02263	.00187	258.26	-.00293
#3	-.00159	.00038	-.00218	101.04	-.10243	.01307	258.66	.00434
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**.08336**	**-.00068**	**.02055**	**.00062**	**-.00085**	**-.00510**	**-.01322**
Stddev	.00049	.00057	.00126	.01032	.00616	.00460	.00665	.00103
%RSD	550.79	.68258	185.29	50.215	988.12	543.87	130.28	7.7725
#1	-.00016	.08380	-.00213	.03143	-.00603	.00410	-.01192	-.01441
#2	.00065	.08356	.00000	.01933	.00179	-.00500	.00136	-.01264
#3	-.00023	.08271	.00009	.01090	.00611	-.00163	-.00475	-.01262
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: ICSA Acquired: 6/27/2016 10:41:31 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	.00072	.00255	-.00142	-.00297	-.00684	-.00350
Stddev	.00092	.00022	.00227	.00469	.00113	.00030	.00043
%RSD	104.29	30.744	88.699	331.16	38.033	4.3723	12.250
#1	.00194	.00091	.00433	-.00152	-.00422	-.00699	-.00322
#2	.00027	.00078	.00000	-.00606	-.00263	-.00650	-.00330
#3	.00043	.00048	.00332	.00333	-.00204	-.00704	-.00400
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9003.1	53741.	2830.1
Stddev	29.5	88.	13.2
%RSD	.32793	.16418	.46682
#1	8969.0	53843.	2836.5
#2	9019.7	53686.	2838.9
#3	9020.6	53695.	2814.9

Approved: June 28, 2016

Sample Name: ICSAB Acquired: 6/27/2016 10:45:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49885	256.39	.25252	-.01918	.24309	.23676	239.36	.48503
Stddev	.00077	.65	.00502	.00271	.00045	.00050	.30	.00068
%RSD	.15367	.25216	1.9898	14.136	.18678	.21093	.12664	.14053
#1	.49899	255.73	.25330	-.01721	.24333	.23629	239.67	.48508
#2	.49802	256.43	.25711	-.01805	.24256	.23671	239.35	.48569
#3	.49953	257.02	.24715	-.02227	.24337	.23729	239.06	.48433
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.23429	.24086	.24530	93.507	5.1189	.00241	239.40	.23738
Stddev	.00111	.00266	.00136	.226	.0691	.00187	.35	.00351
%RSD	.47486	1.1032	.55335	.24199	1.3498	77.806	.14736	1.4794
#1	.23518	.23891	.24433	93.596	5.0482	.00227	239.45	.24113
#2	.23465	.24388	.24472	93.675	5.1223	.00060	239.72	.23418
#3	.23304	.23978	.24685	93.249	5.1863	.00434	239.02	.23682
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00053	5.1902	.46938	.09211	.47966	.49223	.24503	-.02683
Stddev	.00007	.0094	.00026	.00814	.00226	.00746	.00251	.00281
%RSD	13.615	.18091	.05557	8.8363	.47050	1.5148	1.0231	10.477
#1	-.00046	5.1797	.46968	.08370	.48227	.49724	.24688	-.02680
#2	-.00060	5.1978	.46920	.09995	.47849	.49580	.24602	-.02404
#3	-.00052	5.1931	.46926	.09267	.47824	.48366	.24217	-.02966
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: ICSAB Acquired: 6/27/2016 10:45:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	.00073	-.00122	.45265	.24279	.46530	-.00351
Stddev	.00042	.00033	.00788	.00412	.00036	.00116	.00030
%RSD	67.531	45.343	645.29	.90940	.14968	.24968	8.4247
#1	.00101	.00064	-.00686	.45617	.24254	.46493	-.00322
#2	.00071	.00109	.00778	.44813	.24320	.46660	-.00349
#3	.00017	.00045	-.00458	.45366	.24261	.46437	-.00381
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9451.1	56687.	2980.7
Stddev	12.7	235.	6.1
%RSD	.13402	.41481	.20363
#1	9456.2	56956.	2985.6
#2	9436.6	56517.	2982.5
#3	9460.3	56590.	2973.9

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 10:49:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41238**	**10.669**	**.41191**	**.52005**	**1.0384**	**.05158**	**10.784**	**.05227**
Stddev	.00183	.046	.00331	.00113	.0055	.00021	.067	.00041
%RSD	.44263	.42702	.80236	.21781	.53089	.39861	.62379	.77509
#1	.41421	10.697	.41543	.52118	1.0324	.05173	10.736	.05274
#2	.41056	10.694	.40887	.52006	1.0433	.05167	10.860	.05201
#3	.41238	10.617	.41143	.51892	1.0395	.05134	10.754	.05206
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20803**	**.51861**	**.51945**	**4.3037**	**51.532**	**1.0319**	**10.785**	**.52164**
Stddev	.00094	.00265	.00200	.0480	.292	.0030	.169	.00151
%RSD	.45047	.51067	.38573	1.1144	.56743	.29472	1.5692	.28971
#1	.20905	.51951	.52105	4.2715	51.286	1.0285	10.755	.52005
#2	.20720	.52068	.51721	4.3588	51.855	1.0344	10.967	.52182
#3	.20783	.51562	.52010	4.2807	51.456	1.0328	10.633	.52306
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0260**	**51.605**	**.52017**	**10.355**	**.51948**	**1.2287**	**.42141**	**5.0896**
Stddev	.0062	.392	.00213	.026	.00211	.0063	.00578	.0141
%RSD	.60581	.75948	.40961	.24947	.40593	.51662	1.3721	.27654
#1	1.0327	51.153	.52203	10.384	.52081	1.2352	.42600	5.1052
#2	1.0247	51.808	.51785	10.341	.52057	1.2225	.42332	5.0779
#3	1.0205	51.853	.52065	10.339	.51705	1.2285	.41492	5.0858
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 10:49:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0329**	**1.0366**	**1.0326**	**.52078**	**1.0290**	**1.0446**	**1.0377**
Stddev	.0036	.0061	.0096	.00149	.0042	.0040	.0092
%RSD	.34765	.58644	.92987	.28568	.40577	.38739	.89149
#1	1.0370	1.0299	1.0217	.52198	1.0329	1.0493	1.0281
#2	1.0312	1.0418	1.0361	.52124	1.0295	1.0419	1.0386
#3	1.0304	1.0380	1.0399	.51911	1.0246	1.0427	1.0465
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9679.9**	**58019.**	**2940.7**
Stddev	31.4	99.	31.3
%RSD	.32391	.17011	1.0639
#1	9650.4	58117.	2973.3
#2	9676.5	57919.	2937.9
#3	9712.8	58020.	2910.9

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 10:52:41 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00082**	**.03709**	**-.00042**	**.00235**	**.00221**	**.00011**	**.02800**	**.00010**
Stddev	.00285	.00947	.00333	.00050	.00064	.00007	.06022	.00006
%RSD	347.74	25.544	801.20	21.057	29.249	66.828	215.11	60.876
#1	.00282	.04765	-.00314	.00195	.00194	.00016	.00724	.00009
#2	.00208	.02934	.00330	.00220	.00174	.00014	.09585	.00005
#3	-.00244	.03428	-.00140	.00291	.00294	.00003	-.01910	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.00256**	**-.00018**	**.01123**	**.17852**	**-.00287**	**.01155**	**.00102**
Stddev	.00023	.00130	.00111	.02322	.06304	.00388	.06528	.00239
%RSD	1385.9	50.913	614.81	206.72	35.311	135.30	565.34	235.33
#1	-.00006	.00365	-.00083	-.00086	.24920	-.00008	.05161	.00372
#2	.00023	.00291	.00111	.03801	.15825	-.00730	.04682	.00017
#3	-.00022	.00112	-.00082	-.00345	.12812	-.00122	-.06378	-.00084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00391**	**.11054**	**-.00006**	**.00936**	**-.00106**	**.00780**	**-.00430**	**.01094**
Stddev	.00026	.02224	.00106	.00259	.00450	.00116	.00727	.00205
%RSD	6.5484	20.121	1773.4	27.704	423.55	14.865	169.26	18.686
#1	.00386	.10773	-.00045	.01132	-.00217	.00693	-.00997	.01182
#2	.00368	.13405	.00114	.01035	.00389	.00735	.00390	.00861
#3	.00419	.08984	-.00087	.00642	-.00490	.00911	-.00683	.01240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 10:52:41 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00074**	**.00171**	**-.00592**	**.00236**	**.00119**	**.00045**	**.00147**
Stddev	.00073	.00018	.00639	.00105	.00056	.00012	.00032
%RSD	97.462	10.324	107.89	44.349	47.225	27.229	21.897
#1	.00158	.00178	-.00302	.00218	.00104	.00058	.00181
#2	.00028	.00184	-.01324	.00141	.00182	.00042	.00143
#3	.00037	.00151	-.00150	.00348	.00072	.00034	.00117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9210.0**	**55620.**	**2799.3**
Stddev	17.9	95.	5.4
%RSD	.19389	.17128	.19191
#1	9214.9	55547.	2802.8
#2	9190.2	55728.	2793.2
#3	9224.9	55585.	2802.1

Approved: June 28, 2016

Sample Name: PBW AD Acquired: 6/27/2016 10:56:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573656-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**-.00551**	**-.00164**	**.00133**	**-.00255**	**.00001**	**-.02140**	**.00006**
Stddev	.00131	.00261	.00242	.00099	.00017	.00008	.01807	.00008
%RSD	918.94	47.461	147.34	73.999	6.7565	679.86	84.478	126.18
#1	.00002	-.00708	-.00377	.00068	-.00272	-.00003	-.02206	-.00001
#2	-.00152	-.00249	.00099	.00085	-.00237	.00011	-.00300	.00014
#3	.00108	-.00696	-.00214	.00247	-.00257	-.00004	-.03913	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.00044**	**-.00011**	**-.01481**	**.08157**	**-.00450**	**-.05709**	**-.00127**
Stddev	.00038	.00059	.00174	.01969	.08524	.00309	.05809	.00048
%RSD	282.02	134.36	1518.6	132.89	104.49	68.616	101.75	38.034
#1	-.00023	.00035	.00020	.00330	.03640	-.00806	-.03041	-.00111
#2	.00028	-.00010	.00145	-.03577	.17989	-.00289	-.01713	-.00088
#3	-.00045	.00107	-.00199	-.01198	.02843	-.00255	-.12373	-.00181
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00120**	**.12315**	**-.00007**	**.00271**	**.00049**	**-.00196**	**-.00731**	**-.02994**
Stddev	.00005	.02063	.00058	.00658	.00069	.00072	.00330	.00107
%RSD	4.3907	16.754	814.35	242.50	141.11	36.905	45.123	3.5596
#1	.00125	.13009	.00059	.01030	.00122	-.00130	-.00403	-.02923
#2	.00120	.13943	-.00033	-.00131	.00041	-.00184	-.01063	-.02942
#3	.00114	.09994	-.00048	-.00086	-.00016	-.00274	-.00728	-.03117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Approved: June 28, 2016

Sample Name: PBW AD Acquired: 6/27/2016 10:56:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573656-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.00122	.00010	.00267	.00012	.00086	.00027
Stddev	.00021	.00039	.00337	.00318	.00091	.00006	.00046
%RSD	418.85	32.122	3386.6	119.01	765.24	7.0777	171.03
#1	.00014	.00104	-.00194	.00621	.00001	.00079	.00037
#2	-.00019	.00095	.00399	.00178	.00108	.00091	.00068
#3	.00020	.00167	-.00175	.00003	-.00073	.00089	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10078.	61154.	3066.5
Stddev	38.	65.	16.3
%RSD	.37265	.10633	.53272
#1	10035.	61205.	3085.2
#2	10105.	61081.	3054.8
#3	10094.	61176.	3059.6

Approved: June 28, 2016

Sample Name: PBW AD Acquired: 6/27/2016 10:56:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573656-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**-.00551**	**-.00164**	**.00133**	**-.00255**	**.00001**	**-.02140**	**.00006**
Stddev	.00131	.00261	.00242	.00099	.00017	.00008	.01807	.00008
%RSD	907.10	47.461	147.33	74.064	6.7565	679.87	84.478	126.16
#1	.00002	-.00708	-.00377	.00068	-.00272	-.00003	-.02206	-.00001
#2	-.00153	-.00249	.00099	.00085	-.00237	.00011	-.00300	.00014
#3	.00108	-.00696	-.00214	.00247	-.00257	-.00004	-.03913	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.00044**	**-.00011**	**-.01686**	**.08157**	**-.00450**	**-.05709**	**-.00127**
Stddev	.00038	.00059	.00176	.02442	.08524	.00309	.05809	.00048
%RSD	282.05	134.26	1612.9	144.86	104.49	68.616	101.75	38.034
#1	-.00023	.00035	.00021	-.00014	.03640	-.00806	-.03041	-.00111
#2	.00028	-.00010	.00147	-.04488	.17989	-.00289	-.01713	-.00088
#3	-.00045	.00107	-.00200	-.00555	.02843	-.00255	-.12373	-.00181
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00120**	**.12315**	**-.00007**	**.00272**	**.00049**	**-.00196**	**-.00731**	**-.02994**
Stddev	.00005	.02063	.00058	.00658	.00069	.00072	.00330	.00107
%RSD	4.3907	16.754	815.45	242.20	141.11	36.924	45.121	3.5596
#1	.00125	.13009	.00059	.01031	.00122	-.00130	-.00403	-.02923
#2	.00120	.13943	-.00033	-.00129	.00041	-.00184	-.01062	-.02942
#3	.00114	.09994	-.00048	-.00087	-.00016	-.00274	-.00727	-.03117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: PBW AD Acquired: 6/27/2016 10:56:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573656-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.00122	.00009	.00267	.00012	.00086	.00027
Stddev	.00021	.00039	.00336	.00318	.00091	.00006	.00046
%RSD	419.00	32.122	3582.0	119.01	765.15	7.0777	170.99
#1	.00014	.00104	-.00194	.00621	.00001	.00079	.00037
#2	-.00019	.00095	.00397	.00178	.00108	.00091	.00068
#3	.00020	.00167	-.00175	.00003	-.00073	.00089	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10078.	61154.	3066.5
Stddev	38.	65.	16.3
%RSD	.37265	.10633	.53272
#1	10035.	61205.	3085.2
#2	10105.	61081.	3054.8
#3	10094.	61176.	3059.6

Approved: June 28, 2016

Sample Name: LCSW AD Acquired: 6/27/2016 11:04:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573656-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.18930	4.7185	.19003	.93469	.47985	.02336	4.8179	.02393
Stddev	.00264	.0066	.00083	.00065	.00055	.00013	.0255	.00027
%RSD	1.3934	.14053	.43752	.06932	.11364	.56886	.52848	1.1239
#1	.18653	4.7163	.19007	.93542	.48039	.02321	4.8423	.02405
#2	.19179	4.7132	.19083	.93448	.47985	.02342	4.7915	.02363
#3	.18958	4.7259	.18917	.93418	.47930	.02346	4.8198	.02412
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09659	.23846	.24088	1.9086	23.854	.48243	4.8127	.24088
Stddev	.00021	.00006	.00176	.0299	.024	.00111	.0520	.00346
%RSD	.21848	.02654	.72986	1.5671	.09958	.22942	1.0798	1.4373
#1	.09683	.23854	.24210	1.8741	23.834	.48253	4.8448	.24488
#2	.09652	.23842	.24168	1.9261	23.880	.48128	4.7527	.23902
#3	.09642	.23843	.23887	1.9256	23.848	.48349	4.8404	.23875
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48317	24.148	.24158	4.6577	.24353	.56968	.18766	2.2805
Stddev	.00185	.055	.00273	.0177	.00404	.00132	.00193	.0062
%RSD	.38336	.22645	1.1294	.38107	1.6575	.23248	1.0271	.27261
#1	.48319	24.206	.24282	4.6549	.24677	.56938	.18565	2.2798
#2	.48502	24.139	.24347	4.6766	.24481	.56853	.18785	2.2870
#3	.48131	24.098	.23845	4.6414	.23901	.57113	.18949	2.2746
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: LCSW AD Acquired: 6/27/2016 11:04:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573656-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.47831	.48449	.47945	.24451	.47571	.47996	.00474
Stddev	.00220	.00031	.00246	.00024	.00157	.00168	.00104
%RSD	.46005	.06434	.51251	.09744	.33103	.35074	21.927
#1	.47940	.48464	.47744	.24424	.47543	.48089	.00375
#2	.47976	.48413	.48219	.24467	.47429	.48098	.00463
#3	.47578	.48470	.47872	.24462	.47740	.47802	.00582
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10036.	60667.	3061.3
Stddev	16.	132.	7.4
%RSD	.15906	.21753	.24216
#1	10038.	60818.	3054.0
#2	10019.	60573.	3061.1
#3	10050.	60609.	3068.8

Approved: June 28, 2016

Sample Name: L1606099601 Acquired: 6/27/2016 11:08:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573656-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00124	.00326	-.00134	.00556	.00464	-.00007	56.162	.00040
Stddev	.00178	.00987	.00131	.00195	.00069	.00003	.529	.00030
%RSD	144.06	302.41	98.032	35.136	14.856	45.396	.94107	74.669
#1	.00220	.00071	.00016	.00782	.00529	-.00003	55.776	.00007
#2	.00234	.01416	-.00191	.00447	.00392	-.00009	55.945	.00048
#3	-.00082	-.00508	-.00226	.00439	.00472	-.00008	56.764	.00066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00030	.00191	.00098	.00705	.36876	-.00116	22.804	.00093
Stddev	.00019	.00044	.00158	.01150	.11856	.00128	.343	.00214
%RSD	64.737	23.037	160.94	163.08	32.150	110.47	1.5021	228.81
#1	-.00024	.00235	.00067	.01641	.45961	-.00058	22.504	.00325
#2	-.00052	.00191	.00270	-.00578	.41204	-.00262	23.177	-.00096
#3	-.00015	.00147	-.00042	.01053	.23465	-.00027	22.730	.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00111	4.1289	.00028	.00948	.00046	.00145	.00097	2.9475
Stddev	.00031	.0524	.00074	.00210	.00339	.00155	.00585	.0217
%RSD	27.978	1.2680	265.78	22.177	735.63	107.03	604.94	.73695
#1	.00110	4.0702	-.00001	.00869	.00432	.00119	-.00275	2.9626
#2	.00081	4.1708	.00111	.00789	-.00092	.00310	.00771	2.9573
#3	.00143	4.1456	-.00027	.01186	-.00202	.00004	-.00206	2.9226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606099601 Acquired: 6/27/2016 11:08:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573656-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.08076	-.01280	.00056	.00130	.00146	-.00019
Stddev	.00029	.00049	.00307	.00274	.00086	.00015	.00072
%RSD	60.177	.60538	24.011	488.83	65.984	10.053	371.62
#1	.00039	.08032	-.01635	-.00058	.00183	.00138	-.00101
#2	.00024	.08128	-.01096	.00369	.00175	.00163	.00038
#3	.00080	.08066	-.01109	-.00142	.00031	.00137	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10059.	60827.	3058.7
Stddev	29.	228.	2.0
%RSD	.29168	.37466	.06551
#1	10025.	60569.	3056.7
#2	10081.	61002.	3058.5
#3	10070.	60909.	3060.7

Approved: June 28, 2016

Sample Name: L1606099602S Acquired: 6/27/2016 11:11:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573656-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.18813	4.7350	.18948	.94279	.48703	.02341	61.170	.02398
Stddev	.00277	.0076	.00172	.00254	.00188	.00011	.164	.00007
%RSD	1.4748	.16161	.90580	.26991	.38499	.47028	.26817	.30979
#1	.18980	4.7388	.19100	.94494	.48912	.02350	61.264	.02400
#2	.18493	4.7400	.18981	.93998	.48647	.02346	61.266	.02403
#3	.18966	4.7262	.18762	.94345	.48550	.02329	60.981	.02389
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09458	.23494	.23535	1.9256	24.153	.48381	27.282	.23869
Stddev	.00063	.00040	.00037	.0171	.111	.00423	.196	.00329
%RSD	.66218	.16824	.15837	.88843	.45831	.87512	.71904	1.3801
#1	.09454	.23528	.23512	1.9446	24.042	.48848	27.445	.23993
#2	.09522	.23450	.23515	1.9207	24.263	.48274	27.064	.24118
#3	.09397	.23504	.23578	1.9114	24.153	.48021	27.336	.23495
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48631	28.289	.23480	4.7714	.23561	.57505	.18257	5.2951
Stddev	.00099	.078	.00097	.0059	.00124	.00076	.00243	.0024
%RSD	.20421	.27704	.41396	.12448	.52582	.13199	1.3292	.04484
#1	.48717	28.373	.23464	4.7777	.23525	.57420	.18377	5.2952
#2	.48654	28.219	.23585	4.7707	.23699	.57531	.17978	5.2974
#3	.48523	28.274	.23393	4.7659	.23459	.57565	.18417	5.2926
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606099602S Acquired: 6/27/2016 11:11:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573656-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47604**	**.56589**	**.46385**	**.24049**	**.47449**	**.47286**	**.00122**
Stddev	.00004	.00229	.00771	.00260	.00102	.00053	.00044
%RSD	.00866	.40463	1.6627	1.0819	.21533	.11153	35.825
#1	.47602	.56845	.46505	.24323	.47561	.47256	.00081
#2	.47609	.56517	.45561	.23806	.47362	.47346	.00118
#3	.47602	.56404	.47090	.24019	.47423	.47254	.00168
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9956.7**	**60350.**	**3056.9**
Stddev	32.2	88.	8.3
%RSD	.32388	.14559	.27133
#1	9988.9	60290.	3047.9
#2	9924.4	60310.	3058.6
#3	9956.7	60451.	3064.2

Approved: June 28, 2016

Sample Name: L1606099603SD Acquired: 6/27/2016 11:15:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573656-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19028	4.7868	.19269	.94867	.48722	.02346	60.919	.02406
Stddev	.00212	.0181	.00136	.00219	.00189	.00006	.253	.00014
%RSD	1.1126	.37744	.70818	.23039	.38720	.26793	.41487	.57233
#1	.19148	4.7722	.19359	.94673	.48507	.02353	60.675	.02401
#2	.18784	4.8070	.19112	.95104	.48802	.02344	60.902	.02395
#3	.19154	4.7811	.19336	.94824	.48858	.02341	61.180	.02421
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09518	.23692	.23715	1.9314	24.167	.48716	27.262	.23905
Stddev	.00047	.00079	.00143	.0184	.183	.00439	.044	.00192
%RSD	.49502	.33520	.60154	.95364	.75718	.90103	.16297	.80434
#1	.09469	.23782	.23571	1.9395	23.964	.48436	27.211	.23873
#2	.09522	.23634	.23856	1.9445	24.216	.48492	27.285	.23730
#3	.09563	.23660	.23717	1.9104	24.319	.49222	27.291	.24111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48886	28.229	.23606	4.7975	.24121	.57136	.18866	5.3330
Stddev	.00146	.184	.00176	.0017	.00169	.00269	.01260	.0141
%RSD	.29961	.65348	.74735	.03493	.70048	.47096	6.6800	.26466
#1	.49043	28.016	.23710	4.7973	.24241	.57255	.18833	5.3193
#2	.48863	28.338	.23706	4.7959	.24195	.57324	.20142	5.3475
#3	.48753	28.333	.23402	4.7993	.23928	.56827	.17622	5.3323
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606099603SD Acquired: 6/27/2016 11:15:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573656-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47890**	**.56537**	**.47324**	**.24435**	**.47813**	**.47683**	**.00060**
Stddev	.00286	.00273	.01175	.00100	.00128	.00077	.00020
%RSD	.59645	.48334	2.4839	.40879	.26843	.16191	32.886
#1	.48155	.56309	.46094	.24471	.47955	.47751	.00072
#2	.47926	.56463	.47442	.24512	.47781	.47699	.00071
#3	.47587	.56840	.48436	.24322	.47704	.47599	.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9937.3**	**60391.**	**3077.2**
Stddev	14.8	124.	21.3
%RSD	.14891	.20584	.69260
#1	9920.4	60281.	3101.8
#2	9943.6	60366.	3065.2
#3	9947.9	60526.	3064.6

Approved: June 28, 2016

Sample Name: L1606117901 Acquired: 6/27/2016 11:19:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00072	.02080	-.00015	.00912	-.00135	-.00001	.18554	.00009
Stddev	.00163	.01061	.00134	.00085	.00073	.00009	.03244	.00025
%RSD	227.50	50.989	907.80	9.2958	53.948	957.01	17.482	271.74
#1	.00097	.03252	.00133	.00831	-.00071	.00008	.19286	-.00017
#2	.00220	.01803	-.00129	.01000	-.00120	-.00010	.15007	.00033
#3	-.00102	.01186	-.00049	.00904	-.00214	-.00001	.21370	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00031	.00195	.00009	.02926	.07448	-.00083	.07412	.00218
Stddev	.00030	.00118	.00112	.04525	.16774	.00245	.02265	.00214
%RSD	96.395	60.268	1181.8	154.65	225.20	294.22	30.559	98.076
#1	-.00038	.00143	-.00002	-.01797	-.07824	-.00029	.04822	.00395
#2	.00002	.00330	.00126	.03352	.04769	.00130	.09021	.00278
#3	-.00058	.00112	-.00096	.07223	.25401	-.00351	.08393	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	.15073	.00024	.00759	-.00104	.00154	-.00041	-.01205
Stddev	.00034	.03848	.00074	.00602	.00153	.00314	.00173	.00267
%RSD	38.727	25.532	313.77	79.298	146.52	204.07	419.45	22.167
#1	.00069	.14959	-.00056	.01447	.00072	.00196	.00111	-.00897
#2	.00069	.18977	.00089	.00499	-.00186	.00444	-.00229	-.01372
#3	.00129	.11282	.00038	.00331	-.00200	-.00179	-.00006	-.01346
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606117901 Acquired: 6/27/2016 11:19:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00000	.00123	-.00396	-.00083	.00060	.00107	-.00024
Stddev	.00073	.00029	.00070	.00214	.00012	.00021	.00050
%RSD	69743.	23.931	17.704	257.74	20.309	19.961	205.14
#1	.00084	.00157	-.00320	.00160	.00049	.00130	-.00015
#2	-.00035	.00106	-.00411	-.00168	.00073	.00102	-.00078
#3	-.00049	.00105	-.00458	-.00242	.00059	.00088	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10211.	62110.	3089.5
Stddev	13.	186.	5.8
%RSD	.12645	.29961	.18789
#1	10203.	62198.	3083.6
#2	10225.	61896.	3095.2
#3	10204.	62236.	3089.7

Approved: June 28, 2016

Sample Name: L1606117901PS Acquired: 6/27/2016 11:23:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574214-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.18751	4.6924	.18741	.92180	.47420	.02302	4.9755	.02354
Stddev	.00138	.0184	.00060	.00040	.00158	.00005	.0105	.00025
%RSD	.73597	.39242	.32238	.04391	.33360	.22042	.21030	1.0799
#1	.18888	4.7119	.18682	.92179	.47602	.02303	4.9647	.02334
#2	.18612	4.6753	.18739	.92141	.47324	.02296	4.9856	.02383
#3	.18752	4.6899	.18803	.92222	.47333	.02306	4.9762	.02345
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09588	.23472	.23888	1.9126	23.415	.47894	4.7182	.23827
Stddev	.00035	.00100	.00116	.0071	.048	.00290	.0903	.00057
%RSD	.36630	.42739	.48450	.37295	.20447	.60570	1.9132	.24122
#1	.09598	.23575	.23947	1.9074	23.375	.48172	4.6611	.23837
#2	.09616	.23375	.23962	1.9096	23.402	.47593	4.6712	.23766
#3	.09549	.23467	.23755	1.9207	23.468	.47917	4.8222	.23879
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.47661	23.842	.23804	4.6066	.23860	.55603	.17930	2.2773
Stddev	.00152	.022	.00175	.0111	.00481	.00366	.00848	.0068
%RSD	.31904	.09402	.73670	.24161	2.0142	.65792	4.7280	.29846
#1	.47744	23.817	.23835	4.6121	.23447	.55198	.16952	2.2796
#2	.47754	23.847	.23962	4.6139	.24387	.55702	.18392	2.2826
#3	.47486	23.861	.23616	4.5938	.23746	.55910	.18447	2.2696
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606117901PS Acquired: 6/27/2016 11:23:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574214-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47165**	**.47956**	**.47085**	**.24029**	**.46670**	**.47457**	**.00055**
Stddev	.00140	.00029	.00956	.00263	.00189	.00170	.00039
%RSD	.29768	.06000	2.0311	1.0939	.40453	.35895	71.804
#1	.47125	.47964	.47754	.23905	.46790	.47446	.00081
#2	.47321	.47924	.47511	.23851	.46452	.47633	.00075
#3	.47048	.47980	.45990	.24331	.46767	.47292	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10135.**	**61356.**	**3086.5**
Stddev	4.	169.	6.2
%RSD	.04127	.27468	.20041
#1	10138.	61169.	3079.4
#2	10130.	61496.	3090.6
#3	10136.	61402.	3089.5

Approved: June 28, 2016

Sample Name: L1606117901SDL Acquired: 6/27/2016 11:26:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574214-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00182	-.00876	-.00158	.00420	-.00145	-.00006	.01959	.00013
Stddev	.00139	.00831	.00054	.00197	.00159	.00007	.02852	.00015
%RSD	76.113	94.876	34.316	46.949	109.92	115.61	145.60	111.05
#1	.00305	.00028	-.00125	.00647	-.00089	.00000	.04998	.00030
#2	.00209	-.01048	-.00128	.00316	-.00021	-.00005	.01539	.00002
#3	.00032	-.01607	-.00220	.00296	-.00325	-.00013	-.00660	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00024	.00078	.00077	.02010	.17744	-.00181	-.00514	.00019
Stddev	.00029	.00095	.00050	.00816	.07146	.00342	.03381	.00246
%RSD	124.09	121.80	65.402	40.597	40.275	189.49	657.34	1314.0
#1	-.00049	.00179	.00026	.01194	.25402	.00022	-.02869	.00024
#2	-.00029	-.00010	.00079	.02826	.11253	-.00576	-.02034	-.00230
#3	.00008	.00065	.00126	.02009	.16576	.00012	.03360	.00262
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00092	.10897	.00042	.00853	-.00135	.00022	-.00397	-.02369
Stddev	.00009	.00391	.00083	.00771	.00206	.00158	.00375	.00072
%RSD	9.7431	3.5859	195.85	90.342	152.42	719.67	94.434	3.0224
#1	.00096	.10458	.00127	.00472	.00097	.00168	-.00530	-.02420
#2	.00082	.11027	-.00039	.00348	-.00298	-.00146	.00026	-.02287
#3	.00099	.11207	.00039	.01741	-.00204	.00043	-.00687	-.02400
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606117901SDL Acquired: 6/27/2016 11:26:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574214-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00095	.00206	.00175	.00023	.00090	-.00011
Stddev	.00081	.00029	.00575	.00174	.00011	.00015	.00028
%RSD	447.31	30.155	279.47	99.665	49.179	16.523	251.35
#1	-.00057	.00062	.00863	.00026	.00024	.00096	-.00037
#2	.00104	.00111	-.00043	.00367	.00012	.00101	-.00014
#3	.00008	.00112	-.00203	.00132	.00035	.00073	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10479.	63800.	3157.1
Stddev	55.	94.	17.6
%RSD	.52430	.14744	.55775
#1	10534.	63713.	3156.5
#2	10480.	63899.	3175.0
#3	10424.	63787.	3139.8

Approved: June 28, 2016

Sample Name: L1606117901SDL Acquired: 6/27/2016 11:30:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574214-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**-.01463**	**-.00147**	**.00136**	**-.00217**	**-.00007**	**-.02052**
Stddev	.00223	.00395	.00125	.00151	.00072	.00009	.04242
%RSD	4811.9	27.034	84.817	111.15	33.177	132.09	206.74
#1	-.00198	-.01008	-.00234	.00035	-.00228	-.00011	.02000
#2	-.00031	-.01726	-.00004	.00309	-.00284	.00003	-.06461
#3	.00243	-.01654	-.00202	.00064	-.00141	-.00012	-.01694
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**-.00005**	**.00100**	**-.00041**	F **-.02087**	**.05390**	**-.00380**
Stddev	.00014	.00044	.00061	.00080	.02667	.11692	.00540
%RSD	89.389	864.20	61.266	196.75	127.82	216.92	141.87
#1	.00015	-.00056	.00069	-.00020	-.05130	-.07225	-.00999
#2	.00002	.00022	.00171	.00027	-.00157	.15862	-.00007
#3	.00030	.00019	.00061	-.00129	-.00972	.07533	-.00135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03363**	**.00221**	**.00046**	**.04075**	**-.00021**	**.00528**	**-.00228**
Stddev	.02463	.00034	.00014	.01938	.00110	.00417	.00173
%RSD	73.257	15.401	29.515	47.560	531.64	78.936	75.715
#1	.00529	.00248	.00060	.03410	.00021	.00120	-.00371
#2	.04992	.00232	.00047	.02557	-.00145	.00953	-.00036
#3	.04568	.00183	.00032	.06258	.00062	.00510	-.00278
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 28, 2016

Sample Name: L1606117901SDL Acquired: 6/27/2016 11:30:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574214-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00148**	**.00052**	**-.02939**	**-.00005**	**.00027**	**-.00175**	**.00170**
Stddev	.00281	.00262	.00025	.00021	.00036	.00601	.00037
%RSD	189.85	505.51	.84423	394.19	132.35	344.06	22.015
#1	-.00270	.00158	-.02920	-.00027	.00047	-.00069	.00166
#2	-.00348	-.00246	-.02967	.00015	-.00014	.00367	.00209
#3	.00173	.00244	-.02930	-.00004	.00049	-.00822	.00134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00042**	**.00042**	**-.00030**
Stddev	.00063	.00012	.00034
%RSD	149.80	28.720	112.76
#1	-.00114	.00032	-.00062
#2	.00002	.00038	-.00036
#3	-.00014	.00055	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10431.**	**63091.**	**3111.2**
Stddev	16.	252.	21.2
%RSD	.15804	.39869	.68135
#1	10444.	63211.	3098.3
#2	10438.	63260.	3135.7
#3	10413.	62802.	3099.7

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 11:34:45 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41029**	**10.314**	**.41311**	**.51300**	**1.0292**	**.05084**	**10.180**	**.05150**
Stddev	.00136	.009	.00246	.00180	.0068	.00017	.038	.00051
%RSD	.33182	.09125	.59569	.35017	.65999	.32692	.37198	.99887
#1	.40919	10.310	.41560	.51161	1.0232	.05065	10.141	.05186
#2	.40986	10.307	.41306	.51237	1.0366	.05092	10.217	.05173
#3	.41181	10.325	.41068	.51503	1.0278	.05095	10.182	.05091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20710**	**.51032**	**.52099**	**4.0892**	**50.815**	**1.0221**	**10.252**	**.51220**
Stddev	.00166	.00085	.00175	.0040	.318	.0029	.037	.00281
%RSD	.80235	.16676	.33637	.09673	.62496	.28272	.36345	.54826
#1	.20850	.50937	.52285	4.0847	50.552	1.0201	10.295	.50976
#2	.20755	.51102	.52076	4.0921	51.168	1.0255	10.238	.51527
#3	.20526	.51055	.51937	4.0908	50.726	1.0208	10.224	.51156
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0210**	**51.237**	**.51895**	**10.296**	**.51615**	**1.2226**	**.41042**	**5.0648**
Stddev	.0077	.306	.00211	.030	.00345	.0091	.00397	.0173
%RSD	.75227	.59797	.40704	.29113	.66809	.74330	.96773	.34141
#1	1.0285	50.954	.52109	10.330	.51651	1.2329	.41221	5.0786
#2	1.0215	51.563	.51889	10.286	.51254	1.2195	.41319	5.0704
#3	1.0131	51.194	.51687	10.272	.51941	1.2156	.40587	5.0454
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 11:34:45 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0301**	**1.0276**	**1.0224**	**.52111**	**1.0183**	**1.0425**	**1.0206**
Stddev	.0050	.0038	.0117	.00210	.0025	.0036	.0032
%RSD	.48419	.37352	1.1487	.40271	.24354	.34135	.30940
#1	1.0346	1.0244	1.0153	.52324	1.0181	1.0453	1.0170
#2	1.0309	1.0319	1.0359	.52105	1.0159	1.0436	1.0231
#3	1.0247	1.0267	1.0159	.51905	1.0209	1.0385	1.0217
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9545.4**	**57355.**	**2920.6**
Stddev	16.0	98.	12.9
%RSD	.16742	.17123	.44036
#1	9535.4	57468.	2935.4
#2	9537.0	57297.	2914.0
#3	9563.8	57299.	2912.3

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 11:38:22 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**.00504**	**-.00201**	**.00368**	**.00256**	**.00009**	**.01404**
Stddev	.00219	.00642	.00250	.00148	.00163	.00009	.04911
%RSD	527.90	127.30	124.48	40.110	63.751	100.94	349.75
#1	.00239	.00398	.00030	.00311	.00407	.00018	.06082
#2	-.00194	.01193	-.00166	.00536	.00276	.00009	.01840
#3	.00080	-.00078	-.00467	.00258	.00083	.00000	-.03710
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00012**	**-.00005**	**.00229**	**.00038**	**.02444**	**.20214**	**-.00177**
Stddev	.00013	.00037	.00132	.00078	.03885	.05544	.00386
%RSD	111.48	696.52	57.782	205.08	158.97	27.426	217.74
#1	-.00023	.00007	.00222	.00101	.05224	.16080	.00022
#2	.00003	-.00047	.00100	.00062	-.01995	.26514	-.00622
#3	-.00016	.00024	.00364	-.00049	.04104	.18047	.00068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.03023**	**.00028**	**.00420**	**.13919**	**-.00004**	F **.01462**	**.00241**
Stddev	.11455	.00120	.00024	.02048	.00017	.00305	.00207
%RSD	378.91	434.05	5.6517	14.715	417.93	20.859	86.062
#1	-.03575	.00137	.00447	.15454	-.00014	.01761	.00384
#2	-.14193	-.00101	.00411	.11593	.00015	.01475	.00003
#3	.08698	.00047	.00403	.14709	-.00013	.01151	.00335
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						.01000	
Low Limit						-.01000	

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 11:38:22 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00518	-.00119	.01136	.00155	.00215	-.00792	.00076
Stddev	.00420	.00357	.00200	.00064	.00047	.00257	.00569
%RSD	81.176	299.26	17.574	41.045	21.906	32.387	751.91
#1	.00995	-.00456	.01333	.00222	.00256	-.00563	-.00271
#2	.00206	.00254	.01141	.00146	.00225	-.01069	-.00235
#3	.00351	-.00155	.00934	.00096	.00164	-.00745	.00733
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00124	.00038	.00159
Stddev	.00096	.00031	.00019
%RSD	76.994	82.329	11.704
#1	.00222	.00051	.00138
#2	.00031	.00062	.00166
#3	.00119	.00002	.00173
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9358.9	56547.	2794.8
Stddev	20.4	165.	12.6
%RSD	.21850	.29146	.44991
#1	9359.7	56591.	2780.9
#2	9338.0	56684.	2805.3
#3	9378.9	56364.	2798.2

Approved: June 28, 2016

Sample Name: L1606102602 Acquired: 6/27/2016 11:42:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**.26453**	**-.00232**	**.01137**	**.14455**	**.00168**	**156.80**
Stddev	.00213	.00553	.00315	.00190	.00153	.00005	.86
%RSD	514.79	2.0924	135.85	16.713	1.0603	2.7135	.54868
#1	.00257	.27024	-.00572	.00947	.14575	.00166	157.76
#2	.00036	.26416	-.00174	.01139	.14507	.00165	156.58
#3	-.00169	.25919	.00050	.01327	.14282	.00174	156.08
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00793**	**.29026**	**4.1463**	**.79834**	**18.146**	**10.415**	**.14997**
Stddev	.00013	.00197	.0069	.00546	.096	.012	.00155
%RSD	1.6398	.67726	.16696	.68358	.52983	.11605	1.0303
#1	.00806	.29105	4.1518	.80306	18.217	10.402	.15171
#2	.00780	.29171	4.1487	.79960	18.185	10.426	.14875
#3	.00793	.28803	4.1385	.79237	18.036	10.416	.14945
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**117.35**	**2.7508**	**.04403**	F **463.92**	**11.613**	**.23944**	**.00538**
Stddev	.19	.0034	.00069	5.22	.075	.00408	.00236
%RSD	.16323	.12385	1.5776	1.1254	.64419	1.7056	43.762
#1	117.53	2.7538	.04451	469.94	11.676	.23503	.00518
#2	117.15	2.7516	.04435	460.70	11.634	.24308	.00783
#3	117.37	2.7471	.04323	461.11	11.530	.24022	.00313
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 28, 2016

Sample Name: L1606102602 Acquired: 6/27/2016 11:42:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -.03604	.00167	21.855	-.00030	2.7919	-.02523	.00328
Stddev	.00078	.00175	.048	.00077	.0132	.01080	.00542
%RSD	2.1519	104.78	.21795	256.83	.47315	42.798	165.41
#1	-.03690	.00316	21.910	-.00045	2.8052	-.02849	.00549
#2	-.03581	.00211	21.837	.00053	2.7919	-.03401	-.00290
#3	-.03540	-.00026	21.820	-.00099	2.7788	-.01317	.00724
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	45.000						
Low Limit	-.02000						

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00181	.12543	-.00203
Stddev	.00054	.00077	.00044
%RSD	29.945	.61364	21.462
#1	-.00127	.12603	-.00164
#2	-.00180	.12571	-.00195
#3	-.00236	.12456	-.00250
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9341.9	56331.	2987.1
Stddev	32.3	177.	26.1
%RSD	.34579	.31360	.87222
#1	9359.2	56340.	2957.6
#2	9362.0	56151.	2996.7
#3	9304.7	56503.	3007.0

Approved: June 28, 2016

Sample Name: L1606102604 Acquired: 6/27/2016 11:46:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.51537	-.00135	.04849	.25692	.00002	10.597	.00065
Stddev	.00097	.00417	.00160	.00232	.00117	.00006	.071	.00028
%RSD	119.61	.80856	118.17	4.7769	.45645	334.00	.67436	43.209
#1	.00084	.51600	-.00179	.04829	.25614	.00001	10.599	.00088
#2	.00178	.51092	-.00268	.05091	.25827	-.00004	10.668	.00073
#3	-.00017	.51918	.00042	.04629	.25636	.00009	10.525	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00143	.00804	.00219	.94506	.57282	.01957	8.3432	.04056
Stddev	.00025	.00118	.00070	.02358	.17090	.00552	.1393	.00132
%RSD	17.728	14.672	31.807	2.4955	29.835	28.200	1.6694	3.2511
#1	.00136	.00921	.00247	.92684	.76429	.02561	8.4862	.03904
#2	.00171	.00806	.00270	.97170	.43570	.01479	8.3352	.04139
#3	.00122	.00685	.00140	.93664	.51849	.01831	8.2080	.04125
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00079	111.22	.01184	.05038	.00139	.00283	-.00142	30.099
Stddev	.00005	.58	.00193	.00219	.00224	.00277	.00860	.182
%RSD	6.3443	.52474	16.326	4.3492	161.71	98.192	607.40	.60408
#1	.00082	110.78	.01373	.04932	.00371	.00258	-.00365	30.191
#2	.00082	111.88	.01193	.05290	.00122	.00018	-.00868	30.217
#3	.00073	111.00	.00987	.04892	-.00077	.00571	.00808	29.890
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606102604 Acquired: 6/27/2016 11:46:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00070	.21272	.00487	.00126	.00108	.00766	.00061
Stddev	.00022	.00072	.00311	.00378	.00014	.00024	.00054
%RSD	31.509	.33665	63.798	300.82	12.513	3.1489	89.018
#1	.00046	.21236	.00741	.00517	.00119	.00770	.00081
#2	.00077	.21354	.00140	.00095	.00112	.00788	.00102
#3	.00089	.21225	.00580	-.00236	.00093	.00740	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9804.0	59120.	3006.8
Stddev	14.0	114.	4.7
%RSD	.14307	.19206	.15632
#1	9819.7	59017.	3005.4
#2	9792.7	59241.	3002.9
#3	9799.5	59101.	3012.0

Approved: June 28, 2016

Sample Name: L1606102606 Acquired: 6/27/2016 11:50:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	1.2239	-.00174	.01161	.03727	.00027	5.5157
Stddev	.00080	.0104	.00223	.00250	.00221	.00006	.1070
%RSD	652.80	.85109	128.19	21.558	5.9287	21.417	1.9394
#1	.00092	1.2359	.00079	.01170	.03931	.00028	5.6257
#2	.00014	1.2178	-.00341	.00906	.03758	.00032	5.4120
#3	-.00069	1.2180	-.00260	.01407	.03493	.00021	5.5094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.01245	.00844	.00357	1.6333	1.2394	.06022
Stddev	.00012	.00034	.00111	.00096	.0776	.0714	.00425
%RSD	29.771	2.7570	13.173	26.915	4.7517	5.7615	7.0639
#1	.00032	.01223	.00839	.00440	1.7197	1.3197	.06065
#2	.00055	.01228	.00957	.00252	1.5695	1.2156	.06423
#3	.00036	.01285	.00735	.00380	1.6107	1.1830	.05576
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.8139	.13811	.00206	248.44	.05729	.26089	.00094
Stddev	.1184	.00127	.00026	6.69	.00127	.00873	.00227
%RSD	2.0371	.91838	12.474	2.6922	2.2255	3.3451	240.98
#1	5.8695	.13935	.00185	255.89	.05875	.25082	.00120
#2	5.8943	.13817	.00234	242.94	.05639	.26617	-.00144
#3	5.6779	.13682	.00197	246.50	.05673	.26568	.00307
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 28, 2016

Sample Name: L1606102606 Acquired: 6/27/2016 11:50:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.00105	F 36.384	.00024	.10851	.01712	-.00030
Stddev	.00500	.00476	.192	.00071	.00323	.00573	.00124
%RSD	1024.8	454.95	.52638	293.29	2.9813	33.469	416.21
#1	.00624	-.00445	36.500	-.00042	.11191	.02347	-.00061
#2	-.00191	.00369	36.488	.00015	.10548	.01232	-.00135
#3	-.00286	.00389	36.163	.00100	.10813	.01557	.00107
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-1.0000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00535	.16936	.00138
Stddev	.00042	.00122	.00039
%RSD	7.7851	.71943	28.035
#1	.00578	.16980	.00152
#2	.00533	.17029	.00168
#3	.00495	.16798	.00094
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9626.3	57886.	2983.8
Stddev	18.3	261.	74.6
%RSD	.19058	.45101	2.5006
#1	9647.5	57585.	2901.3
#2	9616.7	58049.	3046.6
#3	9614.8	58025.	3003.6

Approved: June 28, 2016

Sample Name: L1606102607 Acquired: 6/27/2016 11:54:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00031	1.1323	-.00238	.04660	.10958	.00010	6.5258	.00037
Stddev	.00080	.0175	.00050	.00030	.00243	.00010	.0579	.00010
%RSD	257.95	1.5429	20.924	.64173	2.2156	104.38	.88676	26.723
#1	-.00092	1.1127	-.00240	.04687	.10738	.00021	6.4875	.00037
#2	.00060	1.1463	-.00188	.04628	.10917	.00010	6.4976	.00027
#3	-.00061	1.1378	-.00287	.04666	.11218	-.00000	6.5924	.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00187	.00297	.00159	1.3290	.57069	.00275	3.8665	.01222
Stddev	.00009	.00021	.00046	.0290	.04032	.00285	.0619	.00283
%RSD	4.6234	7.1037	28.704	2.1787	7.0656	103.56	1.6015	23.182
#1	.00187	.00273	.00106	1.3104	.54271	.00511	3.8437	.01540
#2	.00178	.00310	.00180	1.3143	.61691	.00356	3.8192	.00998
#3	.00195	.00309	.00189	1.3624	.55245	-.00042	3.9366	.01126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00103	20.808	.00171	.02360	-.00106	.00153	.00040	8.8461
Stddev	.00018	.091	.00048	.00800	.00292	.00392	.00140	.1098
%RSD	17.429	.43937	27.803	33.897	275.11	256.50	351.43	1.2414
#1	.00085	20.802	.00191	.01627	-.00308	.00603	-.00121	8.9294
#2	.00103	20.719	.00205	.03214	.00229	-.00117	.00118	8.8872
#3	.00121	20.902	.00117	.02239	-.00240	-.00027	.00122	8.7216
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606102607 Acquired: 6/27/2016 11:54:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.12250	.01094	.00018	.00267	.07442	.00061
Stddev	.00032	.00081	.00149	.00374	.00039	.00117	.00047
%RSD	181.48	.65945	13.593	2023.2	14.549	1.5745	76.234
#1	-.00005	.12246	.01133	-.00363	.00276	.07517	.00038
#2	.00054	.12171	.01218	.00033	.00300	.07502	.00115
#3	.00004	.12332	.00929	.00385	.00224	.07307	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9791.2	59635.	2975.2
Stddev	8.5	18.	25.1
%RSD	.08713	.02982	.84202
#1	9783.0	59652.	2959.7
#2	9790.4	59616.	3004.1
#3	9800.1	59637.	2961.9

Approved: June 28, 2016

Sample Name: L1606084001 Acquired: 6/27/2016 11:57:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00102	.00453	-.00231	.01392	.03067	-.00008	53.120	.00080
Stddev	.00088	.01618	.00071	.00201	.00012	.00007	.441	.00016
%RSD	86.051	357.15	30.592	14.417	.38086	81.244	.83058	20.432
#1	.00104	-.00250	-.00154	.01565	.03054	-.00015	53.330	.00085
#2	.00013	-.00695	-.00246	.01439	.03076	-.00007	53.418	.00062
#3	.00188	.02304	-.00294	.01172	.03072	-.00002	52.613	.00093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.00170	.00123	.32459	1.0265	-.00206	12.392	.94460
Stddev	.00013	.00072	.00102	.00668	.0613	.00244	.121	.00127
%RSD	16.603	42.489	83.413	2.0577	5.9742	118.69	.97455	.13438
#1	.00096	.00095	.00005	.31956	1.0133	-.00472	12.401	.94427
#2	.00077	.00177	.00186	.33217	.97280	-.00155	12.267	.94353
#3	.00070	.00239	.00178	.32204	1.0933	.00009	12.508	.94600
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00065	5.1723	.00021	.01672	-.00134	-.00196	.00063	4.1375
Stddev	.00018	.0275	.00068	.00105	.00210	.00242	.00481	.0318
%RSD	28.323	.53205	318.26	6.3027	156.43	123.76	761.62	.76821
#1	.00086	5.1913	.00009	.01551	.00023	.00018	.00452	4.1074
#2	.00051	5.1849	-.00040	.01723	-.00053	-.00459	.00212	4.1343
#3	.00057	5.1407	.00095	.01742	-.00372	-.00146	-.00475	4.1707
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606084001 Acquired: 6/27/2016 11:57:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00070**	**.24263**	**-.01886**	**-.00031**	**-.00033**	**.01399**	**-.00001**
Stddev	.00032	.00045	.00470	.00047	.00081	.00026	.00028
%RSD	46.464	.18625	24.915	152.40	243.31	1.8674	2189.7
#1	-.00052	.24229	-.02136	-.00072	-.00123	.01369	-.00029
#2	-.00050	.24315	-.01344	-.00041	.00034	.01408	-.00002
#3	-.00107	.24246	-.02177	.00020	-.00011	.01419	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9610.5**	**58693.**	**2932.5**
Stddev	88.7	624.	9.6
%RSD	.92300	1.0624	.32835
#1	9677.1	58033.	2921.5
#2	9644.5	59272.	2936.8
#3	9509.8	58775.	2939.2

Approved: June 28, 2016

Sample Name: L1606084002 Acquired: 6/27/2016 12:01:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00128	-.00139	.00224	.08634	.09552	-.00002	120.61	.00014
Stddev	.00250	.00876	.00171	.00338	.00036	.00006	.69	.00026
%RSD	194.67	631.07	76.296	3.9175	.37645	245.45	.57215	192.80
#1	-.00402	-.01109	.00064	.08244	.09586	.00004	119.84	.00033
#2	-.00069	.00593	.00204	.08824	.09555	-.00007	121.15	-.00016
#3	.00087	.00100	.00403	.08835	.09514	-.00004	120.85	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00063	.00077	.00147	43.081	4.5386	.00310	11.268	.67312
Stddev	.00017	.00005	.00320	.235	.0338	.00167	.145	.00147
%RSD	26.964	6.9558	217.13	.54506	.74492	54.079	1.2833	.21851
#1	-.00075	.00072	.00503	42.809	4.5769	.00120	11.171	.67359
#2	-.00043	.00076	.00055	43.216	4.5263	.00372	11.198	.67430
#3	-.00069	.00082	-.00116	43.216	4.5127	.00437	11.434	.67147
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00116	5.4244	.00012	.11801	.00233	.00183	-.00652	7.6403
Stddev	.00020	.0386	.00089	.00434	.00125	.00095	.00211	.1136
%RSD	17.017	.71102	759.90	3.6803	53.783	51.671	32.377	1.4866
#1	.00110	5.3838	-.00060	.11342	.00098	.00292	-.00818	7.7661
#2	.00100	5.4288	.00111	.11857	.00255	.00144	-.00414	7.6097
#3	.00138	5.4605	-.00016	.12205	.00346	.00115	-.00724	7.5452
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606084002 Acquired: 6/27/2016 12:01:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.68115	.00149	.00003	.00035	.00200	-.00075
Stddev	.00013	.00063	.00809	.00250	.00042	.00020	.00050
%RSD	21.360	.09243	543.95	9778.5	119.63	9.8337	66.242
#1	.00061	.68055	.00036	-.00281	-.00013	.00223	-.00067
#2	.00046	.68181	-.00598	.00096	.00057	.00186	-.00128
#3	.00071	.68110	.01008	.00193	.00063	.00192	-.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9739.0	57938.	2928.4
Stddev	102.1	129.	16.1
%RSD	1.0478	.22223	.54818
#1	9622.7	57791.	2946.0
#2	9781.2	57992.	2924.9
#3	9813.3	58031.	2914.5

Approved: June 28, 2016

Sample Name: L1606084003 Acquired: 6/27/2016 12:05:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00121	.08071	.00172	.09081	.09959	-.00012	123.30	.00045
Stddev	.00149	.00384	.00171	.00145	.00117	.00007	1.07	.00020
%RSD	122.93	4.7551	99.258	1.5948	1.1749	56.220	.86783	45.782
#1	.00002	.08463	.00369	.09156	.09973	-.00020	122.33	.00068
#2	.00073	.07696	.00088	.08914	.10068	-.00009	124.45	.00031
#3	.00288	.08054	.00059	.09174	.09835	-.00007	123.11	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00069	.00087	.00289	43.973	4.6960	.00430	11.675	.66419
Stddev	.00015	.00041	.00047	.300	.1683	.00551	.133	.00687
%RSD	21.226	47.747	16.160	.68244	3.5840	127.88	1.1395	1.0342
#1	-.00071	.00059	.00238	43.670	4.7091	-.00204	11.575	.65887
#2	-.00082	.00134	.00298	44.270	4.8574	.00712	11.826	.67195
#3	-.00053	.00067	.00330	43.978	4.5216	.00783	11.625	.66177
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00136	5.5885	.00111	.13500	.00082	.00343	-.00607	7.9482
Stddev	.00015	.0707	.00031	.00464	.00148	.00147	.00397	.0520
%RSD	10.645	1.2649	27.924	3.4356	181.08	42.697	65.305	.65412
#1	.00123	5.5076	.00132	.14035	.00252	.00509	-.00876	7.9966
#2	.00152	5.6384	.00075	.13201	-.00018	.00231	-.00152	7.9546
#3	.00135	5.6196	.00126	.13265	.00012	.00290	-.00794	7.8933
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606084003 Acquired: 6/27/2016 12:05:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00054**	**.69838**	**.00629**	**.00178**	**-.00059**	**.00222**	**-.00084**
Stddev	.00157	.00675	.00940	.00291	.00056	.00018	.00039
%RSD	291.19	.96596	149.56	163.25	95.098	8.3166	46.054
#1	-.00069	.69240	.00543	.00493	-.00119	.00201	-.00053
#2	.00110	.70570	.01609	.00124	-.00007	.00234	-.00128
#3	-.00203	.69705	-.00266	-.00082	-.00052	.00232	-.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9762.2**	**58678.**	**2957.0**
Stddev	32.4	138.	19.3
%RSD	.33194	.23584	.65148
#1	9726.5	58612.	2972.9
#2	9770.6	58584.	2935.6
#3	9789.6	58837.	2962.6

Approved: June 28, 2016

Sample Name: L1606084004 Acquired: 6/27/2016 12:09:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00340	.57839	.00309	.04986	.07128	-.00014	78.157	.00024
Stddev	.00231	.00473	.00177	.00231	.00149	.00006	.489	.00016
%RSD	67.902	.81696	57.428	4.6304	2.0875	41.855	.62597	66.282
#1	.00236	.58363	.00106	.04772	.07297	-.00021	78.703	.00036
#2	.00179	.57447	.00437	.05231	.07070	-.00013	77.759	.00006
#3	.00604	.57706	.00382	.04954	.07017	-.00009	78.008	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	.00268	.00209	13.902	2.3115	.00063	10.947	6.5059
Stddev	.00048	.00131	.00044	.065	.1653	.00105	.167	.0351
%RSD	65.715	48.910	20.939	.46649	7.1526	166.23	1.5274	.53929
#1	.00027	.00338	.00167	13.930	2.4961	.00110	10.946	6.5456
#2	.00070	.00349	.00255	13.949	2.1770	.00137	10.779	6.4928
#3	.00124	.00117	.00206	13.828	2.2613	-.00057	11.114	6.4792
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	6.4050	.00124	.08236	.00411	-.00373	.00110	7.1748
Stddev	.00021	.0135	.00010	.00949	.00291	.00074	.00066	.0315
%RSD	24.174	.21060	7.7642	11.522	70.779	19.789	59.906	.43949
#1	.00092	6.4182	.00133	.09095	.00714	-.00298	.00137	7.1943
#2	.00065	6.3912	.00123	.08397	.00386	-.00375	.00158	7.1917
#3	.00106	6.4055	.00114	.07217	.00134	-.00446	.00035	7.1384
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606084004 Acquired: 6/27/2016 12:09:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00046**	**.46037**	**.01892**	**-.00148**	**.00190**	**.00560**	**.00084**
Stddev	.00044	.00319	.00662	.00110	.00051	.00012	.00070
%RSD	94.473	.69285	34.994	74.711	26.966	2.1834	83.839
#1	-.00082	.46398	.02521	-.00240	.00240	.00568	.00094
#2	.00003	.45792	.01952	-.00177	.00138	.00566	.00149
#3	-.00060	.45920	.01202	-.00026	.00192	.00546	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9834.1**	**59607.**	**3008.2**
Stddev	10.8	123.	8.6
%RSD	.10933	.20604	.28680
#1	9822.0	59582.	3001.2
#2	9842.6	59499.	3017.8
#3	9837.6	59741.	3005.5

Approved: June 28, 2016

Sample Name: L1606084005 Acquired: 6/27/2016 12:13:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.00668	-.00213	.05778	.13125	-.00012	73.966	.00069
Stddev	.00063	.00810	.00246	.00044	.00094	.00005	.524	.00019
%RSD	961.46	121.37	115.65	.76854	.71462	44.545	.70822	27.315
#1	.00045	.01321	-.00423	.05814	.13220	-.00015	74.552	.00072
#2	.00012	-.00239	-.00273	.05791	.13032	-.00015	73.804	.00085
#3	-.00077	.00921	.00058	.05728	.13121	-.00006	73.542	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.00184	.00120	7.9376	2.7914	-.00180	9.2146	6.0686
Stddev	.00052	.00037	.00060	.0230	.0535	.00432	.1741	.0460
%RSD	124.87	20.296	50.060	.29024	1.9151	239.98	1.8892	.75859
#1	.00002	.00226	.00162	7.9508	2.7329	-.00167	9.4003	6.1216
#2	.00100	.00155	.00148	7.9110	2.8376	.00245	9.1881	6.0382
#3	.00022	.00171	.00051	7.9510	2.8038	-.00619	9.0552	6.0461
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00401	5.5235	.00009	.03809	.00162	.00315	.00025	5.3185
Stddev	.00034	.0158	.00120	.00432	.00281	.00219	.00692	.0583
%RSD	8.3556	.28595	1268.4	11.330	173.81	69.373	2730.8	1.0955
#1	.00384	5.5412	-.00129	.03382	.00477	.00067	-.00567	5.2569
#2	.00440	5.5110	.00065	.04245	-.00066	.00477	-.00143	5.3727
#3	.00379	5.5181	.00092	.03799	.00075	.00402	.00786	5.3258
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606084005 Acquired: 6/27/2016 12:13:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.43025	-.01337	.00358	.00145	.00273	.00046
Stddev	.00078	.00329	.00402	.00506	.00034	.00007	.00083
%RSD	245.46	.76446	30.110	141.13	23.301	2.6980	182.02
#1	-.00058	.43394	-.01623	-.00199	.00115	.00271	.00009
#2	.00069	.42916	-.00876	.00789	.00138	.00281	-.00013
#3	.00083	.42764	-.01510	.00485	.00182	.00266	.00141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9841.4	59195.	3025.3
Stddev	94.8	297.	10.0
%RSD	.96296	.50136	.33059
#1	9950.6	59537.	3015.3
#2	9781.1	59011.	3035.3
#3	9792.5	59037.	3025.3

Approved: June 28, 2016

Sample Name: L1606084006 Acquired: 6/27/2016 12:17:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00164	-.00719	-.00434	.00375	-.00054	.00002	.11974	.00043
Stddev	.00261	.00725	.00073	.00189	.00054	.00006	.00960	.00020
%RSD	159.01	100.86	16.872	50.405	100.03	227.54	8.0185	45.897
#1	-.00010	-.00070	-.00454	.00485	-.00005	-.00000	.11624	.00065
#2	.00465	-.00585	-.00353	.00157	-.00045	-.00001	.13060	.00028
#3	.00038	-.01502	-.00495	.00483	-.00112	.00009	.11238	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.00229	.00265	-.00130	.02514	-.00449	.04252	.00721
Stddev	.00026	.00051	.00063	.00266	.08048	.00083	.04044	.00181
%RSD	173.46	22.403	23.726	203.56	320.08	18.531	95.099	25.105
#1	.00029	.00183	.00312	-.00319	.11298	-.00545	.04311	.00535
#2	.00032	.00284	.00289	.00173	-.04506	-.00414	.00179	.00897
#3	-.00015	.00218	.00193	-.00246	.00751	-.00389	.08265	.00733
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.18897	.00020	-.00594	-.00252	-.00088	-.00520	-.00198
Stddev	.00048	.00835	.00100	.00884	.00248	.00457	.00518	.00107
%RSD	253.64	4.4186	510.98	148.75	98.389	518.63	99.733	53.864
#1	-.00019	.19627	-.00072	.00197	-.00532	.00083	-.00935	-.00093
#2	.00002	.17986	.00004	-.01549	-.00162	.00258	.00061	-.00194
#3	.00073	.19077	.00127	-.00432	-.00061	-.00606	-.00686	-.00307
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606084006 Acquired: 6/27/2016 12:17:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00085	.00072	-.00045	-.00026	.00094	.00173	-.00031
Stddev	.00035	.00028	.00524	.00154	.00035	.00024	.00032
%RSD	41.281	38.237	1171.4	600.81	37.636	13.582	100.73
#1	.00126	.00102	-.00580	.00038	.00116	.00170	-.00050
#2	.00070	.00048	.00466	-.00202	.00112	.00152	-.00049
#3	.00061	.00067	-.00020	.00086	.00053	.00198	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9745.8	60648.	2978.8
Stddev	99.8	834.	31.6
%RSD	1.0242	1.3759	1.0602
#1	9633.7	61604.	2998.6
#2	9778.5	60275.	2942.3
#3	9825.2	60065.	2995.3

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 12:21:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40982	10.326	.41213	.51242	1.0926	.05082	10.880	.05201
Stddev	.00878	.252	.01063	.01050	.0236	.00138	.223	.00114
%RSD	2.1419	2.4371	2.5798	2.0490	2.1601	2.7195	2.0480	2.1946
#1	.40490	10.191	.41289	.50779	1.1037	.04992	11.005	.05241
#2	.41995	10.616	.40114	.52444	1.0655	.05241	10.623	.05073
#3	.40460	10.170	.42237	.50503	1.1087	.05012	11.012	.05290
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20803	.50919	.52134	4.3447	53.527	1.0805	10.776	.54239
Stddev	.00484	.01280	.01202	.1267	1.095	.0260	.268	.00962
%RSD	2.3249	2.5137	2.3048	2.9152	2.0452	2.4085	2.4916	1.7730
#1	.20997	.50240	.52340	4.3706	54.097	1.0939	10.816	.54819
#2	.20252	.52396	.50843	4.2071	52.265	1.0505	10.489	.53129
#3	.21159	.50123	.53220	4.4564	54.220	1.0971	11.021	.54769
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0267	54.607	.52138	10.371	.52185	1.2269	.41575	5.0879
Stddev	.0227	1.123	.01426	.241	.01274	.0284	.01189	.1164
%RSD	2.2055	2.0562	2.7346	2.3230	2.4413	2.3136	2.8599	2.2884
#1	1.0360	55.161	.52713	10.417	.52334	1.2314	.41415	5.1192
#2	1.0009	53.314	.50515	10.110	.50843	1.1965	.40474	4.9590
#3	1.0433	55.345	.53187	10.585	.53378	1.2528	.42836	5.1854
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 12:21:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0336**	**1.0901**	**1.0684**	**.51892**	**1.0206**	**1.0509**	**1.0769**
Stddev	.0240	.0234	.0198	.00908	.0266	.0248	.0112
%RSD	2.3229	2.1457	1.8498	1.7494	2.6067	2.3611	1.0424
#1	1.0429	1.1002	1.0762	.52256	1.0058	1.0571	1.0826
#2	1.0064	1.0633	1.0460	.50859	1.0513	1.0236	1.0640
#3	1.0516	1.1067	1.0831	.52561	1.0046	1.0721	1.0842
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9564.4**	**57358.**	**2776.3**
Stddev	173.7	1171.	41.5
%RSD	1.8165	2.0418	1.4935
#1	9502.6	58080.	2762.2
#2	9760.6	56007.	2823.0
#3	9430.0	57987.	2743.8

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 12:25:07 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00801	-.00103	.00276	.00212	.00010	.01237
Stddev	.00054	.00191	.00555	.00165	.00059	.00005	.02593
%RSD	305.81	23.874	537.57	59.553	27.793	47.886	209.61
#1	-.00026	.00966	.00519	.00338	.00190	.00007	.02126
#2	.00001	.00845	-.00548	.00401	.00279	.00007	.03268
#3	.00077	.00592	-.00281	.00090	.00167	.00015	-.01683
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	-.00008	.00176	.00058	-.00953	.07351	-.00534
Stddev	.00020	.00028	.00092	.00111	.01699	.12532	.00361
%RSD	218.62	347.28	52.557	191.12	178.34	170.47	67.695
#1	-.00011	-.00011	.00227	.00172	-.02080	.11336	-.00262
#2	.00029	.00021	.00069	.00051	-.01780	.17407	-.00944
#3	.00010	-.00035	.00231	-.00049	.01002	-.06689	-.00396
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03981	.00109	.00405	.14258	-.00036	F .01086	-.00169
Stddev	.10294	.00213	.00039	.04484	.00148	.00691	.00374
%RSD	258.57	194.73	9.6251	31.448	414.81	63.624	221.75
#1	.05401	.00259	.00446	.16898	.00116	.01849	-.00130
#2	-.06949	-.00134	.00368	.16795	-.00043	.00505	.00185
#3	.13492	.00203	.00401	.09081	-.00180	.00903	-.00561
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						.01000	
Low Limit						-.01000	

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 12:25:07 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00417**	**-.00073**	**.01248**	**.00092**	**.00175**	**-.00304**	**-.00057**
Stddev	.00221	.00348	.00144	.00071	.00054	.00973	.00215
%RSD	53.083	478.32	11.507	77.419	30.591	319.59	377.76
#1	.00663	.00318	.01101	.00084	.00217	.00790	.00142
#2	.00236	-.00349	.01254	.00166	.00193	-.00634	-.00285
#3	.00351	-.00187	.01388	.00025	.00115	-.01070	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00062**	**.00044**	**.00126**
Stddev	.00058	.00021	.00081
%RSD	93.624	46.980	64.473
#1	.00079	.00067	.00217
#2	-.00003	.00035	.00059
#3	.00109	.00029	.00103
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9088.4**	**55797.**	**2803.9**
Stddev	32.8	363.	16.7
%RSD	.36063	.64995	.59502
#1	9123.1	56185.	2793.2
#2	9058.0	55741.	2823.1
#3	9084.0	55466.	2795.3

Approved: June 28, 2016

Sample Name: L1606099604 Acquired: 6/27/2016 12:29:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.00580	.00190	.08139	.16840	-.00013	103.32	.00028
Stddev	.00128	.00535	.00228	.00254	.00185	.00011	.61	.00017
%RSD	659.73	92.321	120.00	3.1234	1.1007	81.225	.59136	59.820
#1	-.00019	.00495	.00330	.08419	.17029	-.00020	104.00	.00042
#2	.00163	.00092	-.00073	.08076	.16658	-.00019	103.14	.00010
#3	-.00085	.01152	.00315	.07922	.16832	-.00001	102.82	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00208	.00210	.00220	6.9135	5.7572	.00318	22.797	1.3714
Stddev	.00011	.00106	.00087	.0506	.1417	.00514	.164	.0068
%RSD	5.4227	50.496	39.640	.73143	2.4607	161.87	.71742	.49651
#1	.00195	.00113	.00136	6.9709	5.9167	.00682	22.816	1.3781
#2	.00218	.00193	.00214	6.8940	5.7092	-.00270	22.951	1.3717
#3	.00210	.00323	.00310	6.8755	5.6458	.00541	22.625	1.3644
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00150	62.898	.00398	.00777	.00038	.00178	-.00471	6.2512
Stddev	.00040	.352	.00112	.00125	.00232	.00142	.00311	.1087
%RSD	26.641	.56029	28.045	16.108	606.93	79.640	66.020	1.7380
#1	.00104	63.287	.00289	.00700	.00207	.00015	-.00636	6.1377
#2	.00168	62.806	.00392	.00922	.00135	.00276	-.00666	6.3542
#3	.00178	62.600	.00512	.00710	-.00227	.00244	-.00112	6.2616
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606099604 Acquired: 6/27/2016 12:29:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00021**	**.65534**	**-.02030**	**.00255**	**.00033**	**.00193**	**.00063**
Stddev	.00084	.00661	.00061	.00162	.00088	.00009	.00010
%RSD	408.85	1.0090	3.0257	63.401	268.16	4.7892	15.595
#1	.00026	.66296	-.01985	.00143	.00108	.00204	.00054
#2	.00030	.65206	-.02005	.00182	-.00064	.00187	.00073
#3	-.00118	.65102	-.02100	.00441	.00055	.00188	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9558.4**	**57612.**	**2936.4**
Stddev	116.5	315.	16.4
%RSD	1.2191	.54701	.55800
#1	9690.7	57619.	2920.8
#2	9471.2	57923.	2953.4
#3	9513.3	57293.	2935.0

Approved: June 28, 2016

Sample Name: L1606099605 Acquired: 6/27/2016 12:32:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00062	.00440	.00035	.08600	.15334	-.00004	92.678	.00021
Stddev	.00208	.00968	.00234	.00157	.00545	.00009	2.912	.00015
%RSD	334.34	219.84	676.18	1.8291	3.5523	214.26	3.1425	70.670
#1	-.00176	.01391	-.00219	.08664	.15180	.00006	91.339	.00015
#2	-.00188	.00474	.00081	.08715	.14883	-.00009	90.677	.00010
#3	.00178	-.00544	.00241	.08421	.15939	-.00010	96.020	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00365	.00086	.00243	6.0484	5.7709	.00063	31.503	.66090
Stddev	.00047	.00042	.00069	.1770	.1598	.00208	1.094	.02168
%RSD	12.764	48.920	28.484	2.9268	2.7695	327.96	3.4720	3.2802
#1	.00403	.00109	.00318	5.9427	5.7426	.00246	30.808	.65326
#2	.00379	.00111	.00182	5.9498	5.6271	.00107	30.938	.64407
#3	.00313	.00037	.00230	6.2528	5.9430	-.00163	32.764	.68536
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00159	61.738	.00237	.01553	-.00133	-.00075	.00297	7.5875
Stddev	.00014	1.868	.00046	.00404	.00513	.00268	.00109	.0444
%RSD	9.1322	3.0264	19.551	26.021	385.98	357.61	36.581	.58550
#1	.00174	60.825	.00241	.01740	.00350	-.00313	.00247	7.6172
#2	.00145	60.502	.00188	.01089	-.00672	.00216	.00422	7.5364
#3	.00158	63.888	.00280	.01829	-.00077	-.00128	.00222	7.6088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606099605 Acquired: 6/27/2016 12:32:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.55768	-.01630	.00067	-.00017	.00329	-.00008
Stddev	.00043	.01691	.00417	.00102	.00046	.00006	.00023
%RSD	123.49	3.0323	25.549	153.35	265.30	1.7576	273.28
#1	-.00015	.55046	-.02083	.00130	.00034	.00334	.00017
#2	.00059	.54557	-.01263	.00121	-.00055	.00330	-.00027
#3	.00062	.57700	-.01545	-.00051	-.00031	.00322	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9505.0	58408.	2954.9
Stddev	81.9	1154.	71.1
%RSD	.86161	1.9755	2.4052
#1	9512.0	57442.	2997.1
#2	9583.1	58096.	2994.7
#3	9419.8	59685.	2872.8

Approved: June 28, 2016

Sample Name: L1606099606 Acquired: 6/27/2016 12:36:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	-.00165	-.00025	.08564	.14629	-.00000	89.804	.00032
Stddev	.00112	.01113	.00212	.00090	.00530	.00004	2.055	.00020
%RSD	524.99	674.83	853.55	1.0466	3.6261	1039.4	2.2878	63.164
#1	-.00107	-.01404	-.00260	.08522	.14152	-.00005	87.909	.00022
#2	.00100	.00748	.00036	.08503	.14536	.00003	89.515	.00019
#3	.00071	.00161	.00150	.08667	.15200	.00000	91.988	.00055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00381	.00210	.00165	5.4359	5.6681	.00480	30.776	.64316
Stddev	.00033	.00040	.00014	.1393	.3324	.00308	.659	.01538
%RSD	8.6138	18.872	8.4193	2.5628	5.8637	64.199	2.1405	2.3911
#1	.00416	.00166	.00181	5.3390	5.2912	.00550	30.170	.63168
#2	.00374	.00222	.00155	5.3732	5.9193	.00143	30.682	.63716
#3	.00352	.00242	.00160	5.5956	5.7937	.00748	31.477	.66063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00113	59.640	.00253	.00574	-.00082	.00120	-.00418	7.2856
Stddev	.00018	1.339	.00036	.00490	.00097	.00213	.00105	.0742
%RSD	16.247	2.2447	14.289	85.380	118.02	177.90	25.030	1.0179
#1	.00127	58.460	.00258	.00918	-.00191	.00329	-.00447	7.3494
#2	.00120	59.366	.00286	.00013	-.00009	.00129	-.00505	7.3032
#3	.00092	61.095	.00214	.00790	-.00046	-.00098	-.00302	7.2042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606099606 Acquired: 6/27/2016 12:36:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	.54135	-.01376	.00040	-.00120	.00295	.00019
Stddev	.00026	.01206	.01048	.00370	.00038	.00007	.00031
%RSD	36.596	2.2286	76.185	932.18	31.665	2.5208	166.02
#1	.00092	.53114	-.02355	-.00349	-.00076	.00294	.00053
#2	.00079	.53824	-.01502	.00080	-.00140	.00303	.00011
#3	.00042	.55466	-.00270	.00387	-.00144	.00288	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9559.9	57603.	2976.2
Stddev	50.2	882.	41.3
%RSD	.52468	1.5319	1.3891
#1	9523.1	58519.	3014.9
#2	9539.5	56758.	2981.1
#3	9617.0	57532.	2932.6

Approved: June 28, 2016

Sample Name: L1606099607 Acquired: 6/27/2016 12:40:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00065	.02230	-.00450	.01108	.02439	-.00009	66.480	.00028
Stddev	.00090	.00160	.00101	.00392	.00092	.00006	.638	.00009
%RSD	138.75	7.1527	22.436	35.403	3.7818	65.215	.95998	33.028
#1	.00137	.02347	-.00529	.01551	.02514	-.00011	66.633	.00038
#2	.00095	.02049	-.00484	.00964	.02466	-.00015	67.029	.00020
#3	-.00037	.02295	-.00336	.00808	.02336	-.00003	65.780	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	.00261	.00143	.00596	.78106	-.00208	22.738	.00477
Stddev	.00016	.00097	.00054	.00364	.04317	.00124	.231	.00310
%RSD	209.97	37.223	38.069	61.110	5.5276	59.612	1.0158	65.020
#1	.00010	.00357	.00150	.00834	.79239	-.00102	22.748	.00706
#2	-.00014	.00263	.00194	.00177	.73335	-.00177	22.964	.00601
#3	-.00020	.00163	.00085	.00778	.81744	-.00344	22.502	.00124
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00133	37.923	-.00023	.01749	-.00363	.00068	-.00604	3.0026
Stddev	.00021	.357	.00012	.00610	.00208	.00469	.01001	.0238
%RSD	15.717	.94215	53.708	34.863	57.244	691.11	165.66	.79333
#1	.00125	38.024	-.00022	.01463	-.00430	.00280	.00439	3.0290
#2	.00117	38.219	-.00036	.02449	-.00528	.00393	-.00694	2.9963
#3	.00157	37.526	-.00011	.01335	-.00130	-.00469	-.01558	2.9826
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606099607 Acquired: 6/27/2016 12:40:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00021**	**.18785**	**-.01422**	**.00080**	**-.00056**	**.00150**	**.00005**
Stddev	.00064	.00221	.01247	.00073	.00042	.00008	.00019
%RSD	298.26	1.1744	87.668	90.724	75.529	5.2164	388.21
#1	-.00057	.18821	-.01454	-.00004	-.00039	.00152	.00027
#2	-.00060	.18986	-.00160	.00120	-.00025	.00158	-.00007
#3	.00052	.18549	-.02652	.00124	-.00105	.00142	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9625.0**	**57772.**	**2941.4**
Stddev	36.2	586.	22.1
%RSD	.37614	1.0139	.75110
#1	9589.4	58436.	2946.1
#2	9661.8	57328.	2917.4
#3	9623.9	57553.	2960.8

Approved: June 28, 2016

Sample Name: L1606099608 Acquired: 6/27/2016 12:44:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	-.00400	-.00422	.02442	.03822	-.00001	83.891	.00034
Stddev	.00221	.00770	.00245	.00158	.00186	.00003	2.002	.00031
%RSD	807.22	192.30	58.014	6.4809	4.8795	554.60	2.3863	89.786
#1	.00167	.00126	-.00362	.02390	.03905	.00003	85.735	.00061
#2	.00143	-.01284	-.00691	.02619	.03952	-.00002	84.176	.00001
#3	-.00228	-.00043	-.00212	.02316	.03608	-.00003	81.762	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00047	.00209	-.00003	-.01556	1.4704	.00084	27.649	.00085
Stddev	.00056	.00083	.00024	.04252	.1367	.00339	.634	.00109
%RSD	120.26	39.828	718.46	273.26	9.2945	402.48	2.2947	127.95
#1	-.00029	.00113	.00015	.01609	1.6204	-.00304	28.230	.00203
#2	-.00110	.00260	.00006	-.06389	1.3530	.00320	27.744	-.00012
#3	-.00002	.00253	-.00031	.00112	1.4378	.00237	26.972	.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	14.025	.00030	.00574	-.00047	.00142	-.00271	4.1744
Stddev	.00012	.309	.00096	.00391	.00392	.00326	.00511	.0659
%RSD	19.654	2.2009	321.09	68.078	840.14	229.87	188.88	1.5797
#1	.00046	14.291	-.00049	.00124	.00385	-.00144	-.00858	4.2497
#2	.00065	14.097	.00137	.00774	-.00380	.00496	.00078	4.1468
#3	.00067	13.687	.00002	.00825	-.00145	.00073	-.00032	4.1267
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606099608 Acquired: 6/27/2016 12:44:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00084	.27436	-.01978	.00108	-.00021	.00139	.00004
Stddev	.00051	.00737	.00167	.00298	.00020	.00042	.00088
%RSD	60.476	2.6846	8.4580	276.35	96.056	30.038	2176.4
#1	.00048	.28120	-.02080	-.00127	-.00011	.00096	-.00045
#2	.00143	.27533	-.02070	.00007	-.00045	.00179	-.00049
#3	.00062	.26656	-.01785	.00444	-.00007	.00143	.00105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9658.7	58755.	2964.1
Stddev	91.6	479.	46.2
%RSD	.94862	.81444	1.5591
#1	9554.0	59299.	2924.6
#2	9698.2	58563.	2952.9
#3	9724.0	58402.	3014.9

Approved: June 28, 2016

Sample Name: L1606099609 Acquired: 6/27/2016 12:48:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	-.00165	-.00164	.02800	.04080	-.00005	79.419	.00020
Stddev	.00144	.01010	.00345	.00084	.00081	.00005	.294	.00013
%RSD	904.18	610.85	210.58	3.0153	1.9890	101.31	.37081	67.386
#1	-.00165	-.00621	.00217	.02847	.04012	-.00005	79.151	.00012
#2	-.00005	-.00866	-.00254	.02851	.04170	-.00010	79.371	.00035
#3	.00122	.00992	-.00454	.02703	.04060	-.00000	79.734	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00217	.00166	1.5879	2.0306	-.00104	26.930	.09297
Stddev	.00011	.00067	.00041	.0178	.0539	.00177	.185	.00101
%RSD	198.11	31.130	24.824	1.1212	2.6567	169.28	.68530	1.0817
#1	-.00004	.00198	.00182	1.5969	2.0012	-.00243	26.817	.09181
#2	.00003	.00160	.00198	1.5673	2.0929	.00095	26.831	.09351
#3	.00018	.00291	.00120	1.5993	1.9978	-.00165	27.143	.09359
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00378	15.834	.00047	.00185	-.00068	.00054	-.00357	4.8185
Stddev	.00016	.099	.00142	.00274	.00173	.00291	.00711	.0240
%RSD	4.2873	.62302	302.36	147.91	253.19	536.20	199.32	.49750
#1	.00360	15.733	.00204	.00453	-.00160	.00292	-.01102	4.8453
#2	.00391	15.841	-.00074	.00196	-.00175	.00142	-.00283	4.8113
#3	.00382	15.930	.00011	-.00094	.00131	-.00271	.00315	4.7990
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606099609 Acquired: 6/27/2016 12:48:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00041**	**.50689**	**-.01603**	**-.00012**	**.00024**	**.00132**	**.00004**
Stddev	.00051	.00207	.00331	.00296	.00071	.00015	.00003
%RSD	122.28	.40838	20.614	2431.3	295.76	11.101	65.300
#1	-.00086	.50564	-.01656	.00002	.00084	.00147	.00001
#2	-.00052	.50575	-.01250	-.00315	-.00055	.00118	.00004
#3	.00014	.50928	-.01905	.00276	.00043	.00130	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9626.1**	**58293.**	**2964.2**
Stddev	20.6	405.	2.4
%RSD	.21356	.69449	.08122
#1	9613.0	58609.	2962.4
#2	9649.8	58434.	2966.9
#3	9615.6	57837.	2963.3

Approved: June 28, 2016

Sample Name: L1606111623 Acquired: 6/27/2016 12:52:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00147	.01556	.00438	.34960	.01944	.00464	21.262	.00011
Stddev	.00220	.00714	.00244	.00217	.00139	.00008	.175	.00026
%RSD	150.19	45.914	55.653	.61929	7.1373	1.6984	.82515	246.93
#1	.00261	.02114	.00269	.35205	.01916	.00470	21.452	.00033
#2	-.00107	.01803	.00328	.34794	.02095	.00467	21.229	.00017
#3	.00286	.00751	.00718	.34880	.01822	.00455	21.106	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	.00359	.00308	.01919	4.9518	.00186	9.2859	.00223
Stddev	.00020	.00096	.00072	.01132	.0871	.00204	.0483	.00253
%RSD	26.204	26.861	23.462	58.996	1.7581	109.65	.51972	113.63
#1	.00052	.00359	.00285	.02309	4.8522	.00180	9.2359	.00360
#2	.00086	.00263	.00390	.00644	4.9899	.00393	9.3323	-.00069
#3	.00087	.00455	.00250	.02805	5.0133	-.00015	9.2894	.00377
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2853	142.47	.00504	.05255	-.00148	-.00027	.00638	3.3753
Stddev	.0046	.05	.00090	.00619	.00245	.00321	.00461	.0181
%RSD	.36184	.03676	17.858	11.771	165.71	1172.5	72.258	.53501
#1	1.2812	142.46	.00437	.04543	-.00416	.00001	.00525	3.3544
#2	1.2904	142.53	.00606	.05561	-.00095	-.00361	.00244	3.3867
#3	1.2843	142.43	.00468	.05661	.00066	.00278	.01145	3.3846
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606111623 Acquired: 6/27/2016 12:52:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	.17063	-.00486	.10658	2.7863	.00832	.00293
Stddev	.00042	.00034	.00551	.00239	.0072	.00022	.00040
%RSD	65.420	.19950	113.37	2.2436	.25677	2.6012	13.547
#1	.00097	.17024	-.00043	.10882	2.7881	.00807	.00261
#2	.00017	.17079	-.00312	.10406	2.7784	.00847	.00281
#3	.00077	.17087	-.01102	.10687	2.7923	.00842	.00338
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9640.9	57918.	2931.6
Stddev	63.9	253.	5.2
%RSD	.66309	.43737	.17860
#1	9706.3	57711.	2937.4
#2	9637.9	58200.	2927.2
#3	9578.6	57841.	2930.2

Approved: June 28, 2016

Sample Name: L1606111624 Acquired: 6/27/2016 12:56:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00035	-.00937	.00229	.34841	.01823	.00462	20.849	.00020
Stddev	.00272	.00762	.00155	.00132	.00111	.00006	.357	.00036
%RSD	778.23	81.308	67.611	.37972	6.0899	1.2421	1.7140	175.16
#1	.00231	-.00854	.00224	.34926	.01889	.00469	20.690	.00048
#2	-.00024	-.00220	.00077	.34688	.01695	.00458	20.599	-.00020
#3	-.00312	-.01737	.00386	.34907	.01886	.00460	21.258	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.00358	.00241	.00141	4.9328	-.00143	8.9933	.00088
Stddev	.00039	.00084	.00071	.01661	.0286	.00191	.2621	.00152
%RSD	41.102	23.367	29.333	1179.3	.58066	133.79	2.9139	171.80
#1	.00128	.00441	.00275	.00238	4.9523	-.00291	8.7732	.00227
#2	.00104	.00274	.00288	.01751	4.9000	.00073	8.9236	.00111
#3	.00052	.00360	.00159	-.01567	4.9463	-.00209	9.2832	-.00074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.3099	139.68	.00458	.05064	.00100	.00160	.00511	3.3994
Stddev	.0115	1.69	.00119	.00399	.00202	.00134	.01025	.0147
%RSD	.87517	1.2074	26.070	7.8709	201.03	83.535	200.37	.43322
#1	1.3217	138.45	.00428	.05313	.00056	.00152	.01443	3.4160
#2	1.3093	138.98	.00357	.04605	-.00076	.00031	-.00586	3.3942
#3	1.2988	141.60	.00590	.05276	.00320	.00298	.00677	3.3879
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606111624 Acquired: 6/27/2016 12:56:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.16713**	**-.01305**	**.10902**	**2.8061**	**.00565**	**.00181**
Stddev	.00110	.00200	.00201	.00362	.0198	.00017	.00047
%RSD	2965.9	1.1939	15.396	3.3176	.70560	3.0758	26.191
#1	.00109	.16647	-.01124	.11271	2.8277	.00557	.00141
#2	-.00111	.16554	-.01521	.10886	2.8016	.00554	.00169
#3	-.00010	.16937	-.01269	.10548	2.7889	.00585	.00234
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9621.1**	**58104.**	**2981.3**
Stddev	30.0	389.	29.4
%RSD	.31156	.66925	.98702
#1	9591.7	57688.	2988.3
#2	9651.6	58165.	3006.6
#3	9620.1	58458.	2949.0

Approved: June 28, 2016

Sample Name: L1606102602 Acquired: 6/27/2016 13:00:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.00205	-.00136	.00107	.00338	-.00000	7.7827	.00040
Stddev	.00107	.00744	.00195	.00235	.00045	.00005	.1451	.00005
%RSD	486.55	362.63	143.73	219.19	13.467	1020.0	1.8641	13.006
#1	-.00007	.00972	-.00084	.00337	.00386	-.00001	7.6418	.00039
#2	-.00067	-.00514	.00028	.00118	.00331	.00005	7.9316	.00045
#3	.00141	.00158	-.00351	-.00133	.00296	-.00005	7.7745	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01549	.21171	.04406	.85896	.46778	.00399	5.8381	.13373
Stddev	.00042	.00465	.00090	.03523	.09590	.00226	.2053	.00527
%RSD	2.6989	2.1945	2.0404	4.1009	20.502	56.710	3.5163	3.9399
#1	.01595	.21640	.04347	.85962	.49628	.00152	5.6471	.12924
#2	.01537	.20711	.04509	.89386	.36085	.00448	6.0552	.13953
#3	.01514	.21162	.04361	.82342	.54620	.00596	5.8120	.13242
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00408	23.497	.65304	.01847	-.00152	-.00473	.00137	1.1130
Stddev	.00023	.589	.00091	.00293	.00244	.00451	.00512	.0018
%RSD	5.7186	2.5087	.13863	15.888	160.52	95.318	373.36	.15722
#1	.00432	22.966	.65370	.01509	-.00185	-.00890	.00472	1.1127
#2	.00405	24.132	.65201	.01989	.00107	-.00537	.00391	1.1149
#3	.00386	23.394	.65342	.02042	-.00378	.00006	-.00452	1.1114
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606102602 Acquired: 6/27/2016 13:00:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.13845**	**-.00360**	**.00164**	**.00318**	**.00781**	**-.00040**
Stddev	.00028	.00342	.01364	.00088	.00009	.00014	.00006
%RSD	162.07	2.4708	378.91	53.643	2.7914	1.8499	16.297
#1	-.00041	.13497	.01208	.00068	.00319	.00794	-.00047
#2	.00013	.14180	-.01270	.00183	.00309	.00785	-.00038
#3	-.00024	.13857	-.01018	.00241	.00326	.00765	-.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10522.**	**63691.**	**3160.7**
Stddev	147.	1450.	56.7
%RSD	1.3981	2.2767	1.7935
#1	10388.	62026.	3208.2
#2	10501.	64677.	3097.9
#3	10679.	64370.	3176.0

Approved: June 28, 2016

Sample Name: L1606102604 Acquired: 6/27/2016 13:03:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00120	.02320	-.00068	.00317	.01081	-.00005	.53402	.00002
Stddev	.00006	.00903	.00370	.00080	.00173	.00015	.04625	.00007
%RSD	4.8840	38.933	545.28	25.090	16.044	287.43	8.6606	360.15
#1	.00115	.03309	.00318	.00228	.01279	-.00004	.54280	.00007
#2	.00120	.01539	-.00419	.00343	.01009	.00009	.57525	.00005
#3	.00127	.02113	-.00102	.00380	.00955	-.00021	.48401	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.00131	-.00136	.02682	.04953	-.00210	.41888	.00169
Stddev	.00009	.00024	.00075	.02522	.04733	.00367	.07583	.00236
%RSD	89.070	18.283	55.333	94.024	95.563	174.33	18.102	140.13
#1	-.00016	.00148	-.00209	.01757	.00624	-.00538	.50346	.00180
#2	.00000	.00141	-.00059	.00754	.04227	.00186	.35699	.00399
#3	-.00016	.00104	-.00138	.05537	.10006	-.00279	.39619	-.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	5.8344	.00024	.00937	-.00078	-.00008	-.00087	1.5329
Stddev	.00017	.1289	.00146	.00288	.00160	.00208	.00351	.0177
%RSD	18.772	2.2091	603.01	30.760	204.78	2500.1	404.55	1.1558
#1	.00104	5.9515	.00088	.00698	-.00120	.00230	-.00352	1.5130
#2	.00098	5.6963	-.00143	.01257	.00098	-.00158	.00311	1.5385
#3	.00072	5.8554	.00127	.00855	-.00212	-.00096	-.00220	1.5471
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606102604 Acquired: 6/27/2016 13:03:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.01129**	**-.00425**	**.00453**	**.00073**	**.00062**	**-.00033**
Stddev	.00016	.00049	.00124	.00218	.00029	.00001	.00040
%RSD	168.17	4.3032	29.246	48.226	39.627	1.7802	124.10
#1	-.00024	.01184	-.00555	.00662	.00044	.00062	-.00011
#2	.00008	.01092	-.00308	.00226	.00073	.00061	-.00008
#3	-.00014	.01111	-.00410	.00470	.00102	.00063	-.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10264.**	**61770.**	**3063.1**
Stddev	82.	1823.	36.6
%RSD	.80048	2.9515	1.1947
#1	10355.	59854.	3033.0
#2	10241.	61974.	3103.8
#3	10196.	63483.	3052.5

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 13:07:53 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39855	9.9772	.42046	.50344	.95772	.04895	9.5448	.05172
Stddev	.00683	.1980	.00527	.01093	.00739	.00095	.0947	.00030
%RSD	1.7128	1.9841	1.2532	2.1714	.77178	1.9362	.99206	.57149
#1	.39069	9.7501	.42628	.49084	.95811	.04786	9.4971	.05193
#2	.40204	10.069	.41910	.50905	.95015	.04942	9.4833	.05186
#3	.40294	10.113	.41601	.51043	.96492	.04957	9.6538	.05138
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20728	.49174	.52427	3.7658	47.113	.95130	9.4667	.47419
Stddev	.00145	.01084	.00292	.0457	.314	.00824	.2111	.00912
%RSD	.70027	2.2054	.55705	1.2121	.66610	.86617	2.2300	1.9228
#1	.20870	.48004	.52679	3.7302	47.107	.95111	9.2849	.48066
#2	.20735	.49371	.52495	3.7499	46.802	.94315	9.4170	.46377
#3	.20580	.50146	.52107	3.8173	47.430	.95963	9.6982	.47816
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0270	48.116	.52240	10.440	.51931	1.2424	.42085	5.1300
Stddev	.0100	.448	.00357	.065	.00444	.0023	.00479	.0296
%RSD	.97214	.93093	.68267	.62704	.85492	.18669	1.1372	.57801
#1	1.0357	48.131	.52517	10.496	.52062	1.2397	.42531	5.1539
#2	1.0293	47.660	.52366	10.455	.52295	1.2439	.42146	5.1394
#3	1.0161	48.555	.51838	10.368	.51436	1.2434	.41579	5.0968
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 13:07:53 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0297**	**.95746**	**.93834**	**.51847**	**.98130**	**1.0528**	**.95999**
Stddev	.0063	.00952	.01582	.00063	.02074	.0067	.01007
%RSD	.61354	.99395	1.6856	.12159	2.1136	.63322	1.0495
#1	1.0359	.95765	.94753	.51819	.95739	1.0591	.95621
#2	1.0300	.94785	.92008	.51919	.99197	1.0533	.95235
#3	1.0233	.96688	.94742	.51802	.99452	1.0458	.97141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9551.0**	**58673.**	**3085.7**
Stddev	21.5	957.	26.3
%RSD	.22509	1.6314	.85238
#1	9526.7	59766.	3082.4
#2	9558.6	58271.	3113.4
#3	9567.7	57983.	3061.2

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 13:11:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**-.00445**	**-.00119**	**.00208**	**-.00135**	**-.00001**	**-.01457**	**.00003**
Stddev	.00236	.00341	.00067	.00250	.00099	.00005	.05566	.00031
%RSD	1640.9	76.698	56.614	120.45	73.479	318.32	382.09	1088.0
#1	-.00287	-.00801	-.00141	.00100	-.00037	-.00003	.02640	.00026
#2	.00127	-.00415	-.00043	.00029	-.00133	.00004	-.07794	.00015
#3	.00117	-.00120	-.00172	.00493	-.00235	-.00005	.00784	-.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00027**	**.00199**	**-.00040**	**-.00353**	**.17000**	**-.00171**	**.00538**	**.00159**
Stddev	.00010	.00055	.00131	.03844	.02716	.00277	.06978	.00187
%RSD	35.764	27.862	324.55	1087.7	15.978	162.37	1297.3	117.63
#1	.00032	.00216	.00054	.04081	.15267	-.00456	-.00664	.00232
#2	.00016	.00244	-.00190	-.02729	.20130	.00098	-.05761	.00298
#3	.00034	.00137	.00015	-.02412	.15602	-.00155	.08039	-.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00379**	**.14492**	**.00033**	**.00576**	**-.00060**	**.00422**	**.00182**	**.00473**
Stddev	.00034	.01572	.00035	.01026	.00051	.00038	.00185	.00216
%RSD	8.8594	10.849	107.73	177.93	84.779	8.9533	101.57	45.720
#1	.00391	.14066	.00063	-.00473	-.00071	.00432	.00390	.00674
#2	.00406	.16233	-.00006	.00626	-.00004	.00454	.00119	.00499
#3	.00342	.13177	.00041	.01577	-.00103	.00380	.00036	.00244
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 13:11:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	.00183	-.00426	.00298	.00111	.00029	.00146
Stddev	.00071	.00019	.00560	.00028	.00120	.00009	.00044
%RSD	94.654	10.537	131.40	9.4307	107.69	30.310	30.073
#1	-.00003	.00189	-.00424	.00272	.00097	.00036	.00109
#2	.00137	.00161	.00133	.00328	.00238	.00032	.00194
#3	.00091	.00198	-.00988	.00294	-.00001	.00019	.00134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9906.1	59989.	3002.2
Stddev	128.4	1165.	36.0
%RSD	1.2959	1.9425	1.1986
#1	9929.8	60699.	2993.2
#2	9767.5	58645.	2971.6
#3	10021.	60625.	3041.8

Approved: June 28, 2016

Sample Name: L1606102606 Acquired: 6/27/2016 13:15:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00116	.04310	-.00091	.00135	-.00138	-.00011	.24063	-.00005
Stddev	.00111	.00627	.00105	.00334	.00056	.00005	.02008	.00033
%RSD	96.010	14.536	114.92	247.26	40.605	47.397	8.3444	670.72
#1	.00206	.03718	.00029	.00008	-.00171	-.00017	.26380	-.00039
#2	-.00008	.04246	-.00143	.00513	-.00073	-.00009	.22972	.00028
#3	.00149	.04966	-.00159	-.00117	-.00170	-.00007	.22837	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.00158	.00015	.07506	.12658	-.00200	.31903	.00533
Stddev	.00016	.00116	.00212	.01437	.08050	.00181	.11842	.00296
%RSD	39.271	73.288	1442.2	19.147	63.596	90.890	37.118	55.433
#1	.00059	.00233	.00165	.06693	.20692	-.00396	.40405	.00527
#2	.00032	.00216	.00107	.09165	.12692	-.00037	.18378	.00241
#3	.00031	.00025	-.00228	.06659	.04591	-.00166	.36926	.00832
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00102	12.138	.00292	.01735	-.00104	-.00224	-.00069	1.7912
Stddev	.00024	.512	.00070	.00389	.00235	.00340	.00256	.0299
%RSD	23.803	4.2149	24.131	22.406	225.03	151.77	368.24	1.6684
#1	.00119	12.592	.00310	.01880	-.00327	.00006	.00221	1.7616
#2	.00113	11.584	.00351	.02030	-.00127	-.00063	-.00261	1.7906
#3	.00074	12.237	.00214	.01294	.00141	-.00615	-.00168	1.8214
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606102606 Acquired: 6/27/2016 13:15:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.00523**	**-.00029**	**.00262**	**.00035**	**.00896**	**.00010**
Stddev	.00061	.00027	.00252	.00323	.00155	.00029	.00031
%RSD	158.35	5.1856	883.43	123.20	444.62	3.2537	301.10
#1	-.00031	.00523	.00262	.00309	-.00004	.00869	.00034
#2	-.00102	.00496	-.00161	-.00082	-.00097	.00891	.00022
#3	.00019	.00550	-.00187	.00560	.00206	.00927	-.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10417.**	**62883.**	**3149.1**
Stddev	112.	932.	103.0
%RSD	1.0779	1.4828	3.2700
#1	10511.	63478.	3064.6
#2	10447.	63364.	3263.8
#3	10293.	61809.	3118.8

Approved: June 28, 2016

Sample Name: L1606129003 Acquired: 6/27/2016 13:19:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	-.00490	-.00263	.00116	.01488	-.00005	.94835	.00015
Stddev	.00069	.00784	.00207	.00095	.00153	.00008	.04705	.00024
%RSD	1049.5	159.97	78.911	82.431	10.267	159.57	4.9610	155.58
#1	.00007	.00408	-.00489	.00009	.01319	-.00005	.89413	.00038
#2	-.00081	-.01036	-.00082	.00191	.01529	-.00014	.97836	-.00009
#3	.00054	-.00843	-.00217	.00147	.01616	.00003	.97256	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.00029	-.00021	1.5518	.25213	-.00855	.61811	.02470
Stddev	.00039	.00089	.00104	.0399	.11756	.00244	.10475	.00149
%RSD	197.27	311.51	508.66	2.5733	46.628	28.589	16.946	6.0350
#1	.00030	-.00038	.00014	1.5114	.14886	-.01109	.56411	.02301
#2	.00052	-.00006	-.00138	1.5912	.22746	-.00621	.73884	.02584
#3	-.00023	.00130	.00062	1.5527	.38007	-.00834	.55139	.02525
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	5.6687	.00119	.01042	-.00074	.00208	.00052	.41967
Stddev	.00026	.1634	.00066	.00843	.00287	.00220	.00352	.01113
%RSD	90.448	2.8821	55.491	80.953	390.80	105.66	671.07	2.6529
#1	.00015	5.4801	.00181	.00715	.00094	.00366	-.00340	.42637
#2	.00058	5.7661	.00050	.00411	-.00406	-.00043	.00157	.42582
#3	.00012	5.7600	.00125	.02000	.00091	.00301	.00340	.40682
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606129003 Acquired: 6/27/2016 13:19:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.02183	.00273	.00216	.00029	.00131	-.00013
Stddev	.00047	.00102	.00597	.00367	.00048	.00011	.00029
%RSD	147.15	4.6769	218.71	169.95	165.96	8.6066	231.95
#1	.00006	.02065	.00326	.00621	.00084	.00127	.00001
#2	.00004	.02241	-.00349	-.00095	.00002	.00123	-.00046
#3	.00086	.02242	.00842	.00122	.00000	.00144	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10192.	62198.	3074.6
Stddev	151.	896.	60.3
%RSD	1.4841	1.4413	1.9622
#1	10087.	63037.	3142.4
#2	10123.	62304.	3026.8
#3	10365.	61254.	3054.7

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 13:23:20 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39466**	**9.8952**	**.40043**	**.50143**	**.97919**	**.04849**	**9.7927**	**.05038**
Stddev	.01306	.3836	.01000	.02169	.00739	.00183	.0660	.00133
%RSD	3.3098	3.8763	2.4963	4.3256	.75498	3.7815	.67452	2.6465
#1	.38704	9.6439	.40978	.48959	.97741	.04728	9.8281	.05184
#2	.38719	9.7049	.40160	.48825	.98731	.04758	9.8334	.05005
#3	.40974	10.337	.38990	.52647	.97285	.05060	9.7165	.04923
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20069**	**.48650**	**.50460**	**3.8975**	**47.776**	**.97248**	**9.4955**	**.48926**
Stddev	.00441	.01900	.01134	.0630	.388	.00867	.0671	.00174
%RSD	2.1979	3.9054	2.2474	1.6171	.81251	.89105	.70691	.35652
#1	.20508	.47470	.51551	3.8721	47.744	.97251	9.4735	.48919
#2	.20071	.47638	.50543	3.9692	48.180	.98114	9.5709	.49104
#3	.19626	.50842	.49287	3.8510	47.405	.96381	9.4422	.48755
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99535**	**49.328**	**.50566**	**10.124**	**.50743**	**1.2005**	**.40926**	**4.9655**
Stddev	.02398	.381	.01095	.218	.01442	.0269	.00502	.1016
%RSD	2.4097	.77333	2.1647	2.1554	2.8422	2.2416	1.2268	2.0468
#1	1.0203	49.197	.51675	10.351	.52175	1.2284	.41424	5.0701
#2	.99336	49.758	.50537	10.104	.50763	1.1982	.40933	4.9591
#3	.97242	49.030	.49486	9.9158	.49291	1.1748	.40420	4.8672
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 13:23:20 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99630	.97913	.95380	.50300	.97315	1.0214	.97706
Stddev	.02300	.00787	.00906	.01053	.03812	.0240	.00719
%RSD	2.3082	.80329	.94947	2.0942	3.9168	2.3493	.73581
#1	1.0198	.97521	.96013	.51368	.94863	1.0450	.97116
#2	.99534	.98818	.95783	.50269	.95376	1.0222	.97495
#3	.97380	.97399	.94342	.49262	1.0171	.99699	.98507
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9660.1	58486.	3001.0
Stddev	163.9	1564.	9.9
%RSD	1.6964	2.6746	.32945
#1	9505.7	59464.	2995.2
#2	9642.7	59312.	2995.4
#3	9832.0	56682.	3012.5

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 13:26:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.00303**	**-.00373**	**.00500**	**-.00055**	**-.00003**	**.00393**
Stddev	.00170	.00499	.00268	.00031	.00065	.00008	.03122
%RSD	1689.8	164.71	71.961	6.1638	118.06	299.30	794.56
#1	.00106	.00037	-.00375	.00491	-.00130	.00001	-.03094
#2	.00068	-.00007	-.00103	.00474	-.00008	.00003	.01342
#3	-.00205	.00879	-.00640	.00534	-.00028	-.00012	.02931
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**.00015**	**.00156**	**-.00015**	**-.01189**	**.13544**	**-.00177**
Stddev	.00011	.00034	.00096	.00093	.01157	.09102	.00528
%RSD	70.413	226.11	61.816	600.89	97.339	67.203	297.58
#1	.00003	.00039	.00064	-.00100	-.00558	.20922	-.00741
#2	.00018	-.00024	.00149	-.00030	-.02525	.03373	.00306
#3	.00025	.00029	.00256	.00084	-.00484	.16338	-.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01205**	**.00050**	**.00395**	**.16416**	**.00017**	F **.01114**	**-.00270**
Stddev	.01807	.00205	.00042	.03616	.00046	.00174	.00166
%RSD	150.01	409.81	10.590	22.026	265.71	15.573	61.523
#1	.02884	.00064	.00398	.19851	-.00024	.01014	-.00178
#2	-.00708	.00248	.00436	.12643	.00066	.01014	-.00462
#3	.01438	-.00162	.00352	.16753	.00010	.01315	-.00170
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						.01000	
Low Limit						-.01000	

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 13:26:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00393	.00112	.00872	.00073	.00181	.01167	.00102
Stddev	.00151	.00746	.00139	.00019	.00058	.00506	.00117
%RSD	38.515	664.39	15.940	25.365	32.293	43.335	115.09
#1	.00316	-.00100	.00967	.00052	.00245	.00931	.00206
#2	.00567	.00941	.00935	.00088	.00131	.00823	.00126
#3	.00295	-.00504	.00712	.00078	.00166	.01748	-.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00126	.00021	.00147
Stddev	.00076	.00021	.00080
%RSD	60.083	103.19	54.681
#1	.00163	.00042	.00075
#2	.00039	.00020	.00233
#3	.00175	-.00000	.00132
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9947.5	59758.	3010.4
Stddev	96.7	1863.	52.9
%RSD	.97166	3.1170	1.7571
#1	10052.	59475.	3024.7
#2	9862.1	61746.	2951.8
#3	9928.1	58053.	3054.7

Approved: June 28, 2016

Sample Name: LLCCV Acquired: 6/27/2016 13:30:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00878	.16766	.00389	.08557	.00677	.00157	.40977	.00073
Stddev	.00207	.00346	.00021	.00327	.00081	.00006	.02595	.00024
%RSD	23.531	2.0622	5.4293	3.8191	11.914	3.9744	6.3339	33.165
#1	.01068	.16888	.00391	.08931	.00721	.00156	.38214	.00070
#2	.00908	.17034	.00409	.08409	.00584	.00164	.41351	.00098
#3	.00658	.16376	.00367	.08329	.00727	.00151	.43365	.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00384	.00587	.00477	.06082	.91229	.08113	.39200	.00719
Stddev	.00038	.00131	.00041	.02730	.02861	.00171	.10933	.00172
%RSD	9.8067	22.365	8.5727	44.890	3.1359	2.1106	27.890	23.950
#1	.00418	.00493	.00504	.05726	.93538	.08181	.26640	.00586
#2	.00392	.00737	.00430	.03548	.92120	.07919	.44374	.00914
#3	.00343	.00531	.00496	.08973	.88029	.08240	.46585	.00658
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00867	.49948	.01573	.80363	.00797	.08206	.01475	.83298
Stddev	.00028	.02628	.00123	.00471	.00119	.00489	.00371	.00454
%RSD	3.1854	5.2609	7.8331	.58570	14.963	5.9538	25.165	.54557
#1	.00835	.47045	.01523	.80835	.00800	.08756	.01866	.83750
#2	.00881	.52163	.01713	.80362	.00915	.08036	.01127	.83302
#3	.00884	.50635	.01482	.79893	.00677	.07824	.01432	.82841
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: LLCCV Acquired: 6/27/2016 13:30:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40284	.04313	.02333	.15595	.00848	.01704	.04589
Stddev	.00545	.00068	.00788	.00367	.00039	.00004	.00162
%RSD	1.3539	1.5742	33.792	2.3562	4.5484	.25639	3.5272
#1	.40779	.04330	.03084	.15591	.00827	.01709	.04451
#2	.40373	.04238	.02402	.15965	.00892	.01703	.04548
#3	.39699	.04370	.01512	.15230	.00824	.01701	.04767
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9797.4	58651.	2881.8
Stddev	19.7	674.	40.9
%RSD	.20082	1.1484	1.4200
#1	9782.0	58269.	2909.3
#2	9819.6	58255.	2901.4
#3	9790.6	59429.	2834.8

Approved: June 28, 2016

2.3.2 Metals ICP-MS Data

2.3.2.1 Summary Data

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW16F-061616	**Prep Method:**	3015	**Prep Date:**	06/21/2016 11:18
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/29/2016 11:35
Workgroup #:	WG574572	**Analyst:**	BKT	**Run Date:**	06/29/2016 14:51
Collect Date:	06/16/2016 07:55	**Dilution:**	1	**File ID:**	NI.062916.145120
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00134	J	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00894		0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.186		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.00645		0.00120	0.000600	0.000300
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Zinc, Total	7440-66-6	0.158		0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW16F-061616	**Prep Method:**	3015	**Prep Date:**	06/21/2016 11:18
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/05/2016 09:36
Workgroup #:	WG574572	**Analyst:**	JYH	**Run Date:**	07/05/2016 16:05
Collect Date:	06/16/2016 07:55	**Dilution:**	20	**File ID:**	NI.070516.160533
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Cobalt, Total	7440-48-4	0.355		0.0400	0.0200	0.0100
Copper, Total	7440-50-8	0.828		0.0800	0.0400	0.0200
Manganese, Total	7439-96-5	3.12		0.0800	0.0400	0.0200
Vanadium, Total	7440-62-2	0.0200	U	0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW16F-061616	**Prep Method:**	3015	**Prep Date:**	06/21/2016 11:18
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/06/2016 09:17
Workgroup #:	WG574572	**Analyst:**	JYH	**Run Date:**	07/06/2016 15:27
Collect Date:	06/16/2016 07:55	**Dilution:**	200	**File ID:**	NI.070616.152752
Sample Tag:	DL03	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chromium, Total	7440-47-3	4.62		0.800	0.400	0.200

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW16F-061616	**Prep Method:**	3015	**Prep Date:**	06/21/2016 11:18
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/05/2016 09:36
Workgroup #:	WG574572	**Analyst:**	JYH	**Run Date:**	07/05/2016 16:08
Collect Date:	06/16/2016 07:55	**Dilution:**	200	**File ID:**	NI.070516.160845
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nickel, Total	7440-02-0	14.3		1.60	0.800	0.400

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	129-061616	**Prep Method:**	3015	**Prep Date:**	06/21/2016 11:18
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/29/2016 11:35
Workgroup #:	WG574572	**Analyst:**	BKT	**Run Date:**	06/29/2016 14:54
Collect Date:	06/16/2016 09:05	**Dilution:**	1	**File ID:**	NI.062916.145431
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00110	J	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000383	J	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00415		0.00400	0.00200	0.00100
Copper, Total	7440-50-8	0.00173	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.000875	J	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.0478		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00956		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00246		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	129-061616	**Prep Method:**	3015	**Prep Date:**	06/21/2016 11:18
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/05/2016 09:36
Workgroup #:	WG574572	**Analyst:**	JYH	**Run Date:**	07/05/2016 16:11
Collect Date:	06/16/2016 09:05	**Dilution:**	1	**File ID:**	NI.070516.161156
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Cobalt, Total	7440-48-4	0.00182	J	0.00200	0.00100	0.000500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	129-061616	**Prep Method:**	3015	**Prep Date:**	06/21/2016 11:18
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/05/2016 09:36
Workgroup #:	WG574572	**Analyst:**	JYH	**Run Date:**	07/05/2016 16:15
Collect Date:	06/16/2016 09:05	**Dilution:**	20	**File ID:**	NI.070516.161508
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.293		0.120	0.0600	0.0300

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	120F-061616	**Prep Method:**	3015	**Prep Date:**	06/21/2016 11:18
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/29/2016 11:35
Workgroup #:	WG574572	**Analyst:**	BKT	**Run Date:**	06/29/2016 14:57
Collect Date:	06/16/2016 09:25	**Dilution:**	1	**File ID:**	NI.062916.145742
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00356		0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.0452		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.0120		0.00400	0.00200	0.00100
Copper, Total	7440-50-8	0.00476		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00162	J	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.186		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.0755		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.0105		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0659		0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	120F-061616	**Prep Method:**	3015	**Prep Date:**	06/21/2016 11:18
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/05/2016 09:36
Workgroup #:	WG574572	**Analyst:**	JYH	**Run Date:**	07/05/2016 16:30
Collect Date:	06/16/2016 09:25	**Dilution:**	1	**File ID:**	NI.070516.163034
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Cobalt, Total	7440-48-4	0.0151		0.00200	0.00100	0.000500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	123-061616	**Prep Method:**	3015	**Prep Date:**	06/21/2016 11:18
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/05/2016 09:36
Workgroup #:	WG574572	**Analyst:**	JYH	**Run Date:**	07/05/2016 16:34
Collect Date:	06/16/2016 09:55	**Dilution:**	1	**File ID:**	NI.070516.163440
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Cobalt, Total	7440-48-4	0.00250		0.00200	0.00100	0.000500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	123-061616	**Prep Method:**	3015	**Prep Date:**	06/21/2016 11:18
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/29/2016 11:35
Workgroup #:	WG574572	**Analyst:**	BKT	**Run Date:**	06/29/2016 15:00
Collect Date:	06/16/2016 09:55	**Dilution:**	1	**File ID:**	NI.062916.150054
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.000767	J	0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.136		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00177	J	0.00400	0.00200	0.00100
Copper, Total	7440-50-8	0.00142	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00104	J	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.0161		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00319	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00241		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer NexION 300X

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	100
Vi = Initial volume	40
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/L)	0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	200
Vi = Initial volume	0.5
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/kg)	40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	40
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	50

50 ug/kg = 0.050 mg/kg

Perkin Elmer NexION ICP/MS

STANDARDS KEY

QC Std 1 - ICV
QC Std 2 - ICB
QC Std 3 - LLICV
QC Std 4 - ICSA
QC Std 5 - ICSAB
QC Std 6 - CCV
QC Std 7 - CCB
QC Std 8 - LLCCV

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.00005	0.05	0.1
Sb	10	0	0.00005	0.05	0.1
As	10	0	0.00005	0.05	0.1
Ba	10	0	0.00005	0.05	0.1
Be	10	0	0.00005	0.05	0.1
Ca	1000	0	0.005	5	10
Cd	10	0	0.0005	0.05	0.1
Cr	10	0	0.0005	0.05	0.1
Co	10	0	0.0005	0.05	0.1
Cu	10	0	0.0005	0.05	0.1
Fe	1000	0	0.005	5	10
Pb	10	0	0.00005	0.05	0.1
Mg	1000	0	0.005	5	10
Mn	10	0	0.00005	0.05	0.1
Ni	10	0	0.00005	0.05	0.1
K	1000	0	0.005	5	10
Se	10	0	0.00005	0.05	0.1
Ag	10	0	0.00005	0.05	0.1
Na	1000	0	0.005	5	10
Tl	10	0	0.00005	0.05	0.1
V	10	0	0.00005	0.05	0.1
U	1000	0	0.00005	0.05	0.1
Zn	10	0	0.00005	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG573548
Analyst: VC
Spike Analyst: VC
Run Date: 06/21/2016 11:18
Method: 3015
Balance: BAL016
Instrument: MW-4
Instrument Start: 06/21/2016 11:33

SOP: ME407 Revison 19
Spike Solution: STD75998
Spike Witness: ERP
40 & 50 ML. DIGESTION TU COA18987
HNO3 Lot #: COA18905
MS Filters- fisher-Lot#R RGT35621

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG573548-02	BLANK	1	20 mL	50 mL	181.353 g	181.33 g		
2	WG573548-03	LCS	1	20 mL	50 mL	182.64 g	182.591 g	.25 mL	
3	L16060986-01	SAMP	1	20 mL	50 mL	183.712 g	183.69 g		06/27/16
4	L16060986-03	SAMP	1	20 mL	50 mL	184.065 g	184.038 g		06/27/16
5	L16060986-05	SAMP	1	20 mL	50 mL	184.546 g	184.518 g		06/27/16
6	L16060986-07	SAMP	1	20 mL	50 mL	183.279 g	183.251 g		06/27/16
7	L16060986-09	SAMP	1	20 mL	50 mL	180.961 g	180.921 g		06/27/16
8	L16060986-11	SAMP	1	20 mL	50 mL	183.322 g	183.289 g		06/27/16
9	L16060986-13	SAMP	1	20 mL	50 mL	182.911 g	182.887 g		06/27/16
10	L16060986-15	SAMP	1	20 mL	50 mL	180.852 g	180.836 g		06/27/16
11	L16060986-17	SAMP	1	20 mL	50 mL	184.362 g	184.347 g		06/27/16
12	L16060986-19	SAMP	1	20 mL	50 mL	181.353 g	181.343 g		06/27/16
13	WG573548-01	REF	1	20 mL	50 mL	182.733 g	182.717 g		
14	L16060986-23	RS03	1	20 mL	50 mL	182.733 g	182.717 g		06/27/16
15	L16060986-25	SAMP	1	20 mL	50 mL	183.941 g	183.923 g		06/27/16
16	L16060986-27	SAMP	1	20 mL	50 mL	180.794 g	180.793 g		06/27/16
17	L16060986-29	SAMP	1	20 mL	50 mL	182.177 g	182.161 g		06/27/16
18	WG573548-04	MS	1	20 mL	50 mL	182.271 g	182.257 g	.25 mL	
19	L16060986-35	MS03	1	20 mL	50 mL	182.271 g	182.257 g	.25 mL	06/27/16
20	WG573548-05	MSD	1	20 mL	50 mL	184.375 g	184.35 g	.25 mL	
21	L16060986-37	SD03	1	20 mL	50 mL	184.375 g	184.35 g	.25 mL	06/27/16
22	L16060986-39	SAMP	1	20 mL	50 mL	181.551 g	181.533 g		06/27/16
23	L16060986-41	SAMP	1	20 mL	50 mL	184.38 g	184.379 g		06/27/16
24	L16061026-02	SAMP	1	20 mL	50 mL	182.267 g	182.259 g		06/28/16
25	L16061026-04	SAMP	1	20 mL	50 mL	182.882 g	182.893 g		06/28/16
26	L16061026-06	SAMP	1	20 mL	50 mL	180.796 g	180.773 g		06/28/16
27	L16061026-07	SAMP	1	20 mL	50 mL	181.26 g	181.246 g		06/28/16

L16060986-01	FILTERED DIGESTATE
L16060986-09	FILTERED DIGESTATE
L16060986-13	FILTERED DIGESTATE
L16060986-15	FILTERED DIGESTATE
L16060986-25	FILTERED DIGESTATE
L16060986-27	FILTERED DIGESTATE
L16060986-29	FILTERED DIGESTATE

MW_DIG - Modified 09/30/2009
PDF ID: 4816619
Report generated: 06/21/2016 12:51

Microbac Laboratories Inc.
Microwave Digestion Log

Analyst: Vicki Collins

SOP:
Spike Solution:
Reviewer: Sam Potter
Spike Witness:

Method:
Balance:
Instrument:
Instrument Start:

MW_DIG - Modified 09/30/2009
PDF ID: 4816619
Report generated: 06/21/2016 12:51

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062916A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573722,574570,574572,573717,574688,574690,573790

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.062916.112234	Blank	Blank		1		06/29/16 11:22
2	NI.062916.112545	WG574676-01	Calibration Point		1		06/29/16 11:25
3	NI.062916.112857	WG574676-02	Calibration Point		1		06/29/16 11:28
4	NI.062916.113208	WG574676-03	Calibration Point		1		06/29/16 11:32
5	NI.062916.113520	WG574676-04	Calibration Point		1		06/29/16 11:35
6	NI.062916.113833	WG574676-05	Initial Calibration Verification		1		06/29/16 11:38
7	NI.062916.114146	WG574676-06	Initial Calib Blank		1		06/29/16 11:41
8	NI.062916.114653	WG574676-07	Low Level Initial Calibration V		1		06/29/16 11:46
9	NI.062916.115053	WG574676-08	Interference Check		1		06/29/16 11:50
10	NI.062916.115447	WG574676-09	Interference Check		1		06/29/16 11:54
11	NI.062916.120010	WG574676-10	CCV		1		06/29/16 12:00
12	NI.062916.120734	WG574676-11	CCB		1		06/29/16 12:07
13	NI.062916.121215	L16060661-06	US23SS02502A	.253/100	1		06/29/16 12:12
14	NI.062916.121526	L16060661-07	US23SS02505A	.257/100	1		06/29/16 12:15
15	NI.062916.121838	L16060661-08	US23SS02602A	.257/100	1		06/29/16 12:18
16	NI.062916.122149	L16060661-09	US23SS02605A	.25/100	1		06/29/16 12:21
17	NI.062916.122501	L16060822-03	18CPTMW04SW-061416	20/50	10		06/29/16 12:25
18	NI.062916.122812	L16060823-02	126F-061416	20/50	50		06/29/16 12:28
19	NI.062916.123124	L16060823-03	C08-061416	20/50	50		06/29/16 12:31
20	NI.062916.123435	L16060823-04	C03-061416	20/50	50		06/29/16 12:34
21	NI.062916.123748	WG574676-12	CCV		1		06/29/16 12:37
22	NI.062916.124059	WG574676-13	CCB		1		06/29/16 12:40
23	NI.062916.124412	WG574676-14	Low Level Continuing Calibra		1		06/29/16 12:44
24	NI.062916.125354	WG573548-02	Method/Prep Blank	20/50	1		06/29/16 12:53
25	NI.062916.125705	WG573548-03	Laboratory Control S	20/50	1		06/29/16 12:57
26	NI.062916.130017	WG573548-01	Reference Sample		1	L16060986-23	06/29/16 13:00
27	NI.062916.130328	WG573548-04	Matrix Spike	20/50	1	L16060986-23	06/29/16 13:03
28	NI.062916.130639	WG573548-05	Matrix Spike Duplica	20/50	1	L16060986-23	06/29/16 13:06
29	NI.062916.130951	L16060986-01	MW-07-04	20/50	1		06/29/16 13:09
30	NI.062916.131302	L16060986-03	MW-01-10	20/50	1		06/29/16 13:13
31	NI.062916.131614	WG574572-01	Post Digestion Spike		1	L16060986-03	06/29/16 13:16
32	NI.062916.131925	WG574572-02	Serial Dilution		5	L16060986-03	06/29/16 13:19
33	NI.062916.132237	WG574572-02	Serial Dilution		25	L16060986-03	06/29/16 13:22
34	NI.062916.132550	WG574676-15	CCV		1		06/29/16 13:25

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062916A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573722,574570,574572,573717,574688,574690,573790

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.062916.132901	WG574676-16	CCB		1		06/29/16 13:29
36	NI.062916.133214	L16060986-05	MW-03-12	20/50	1		06/29/16 13:32
37	NI.062916.133526	L16060986-07	MW-01-07	20/50	1		06/29/16 13:35
38	NI.062916.133837	L16060986-09	MW-03-11	20/50	1		06/29/16 13:38
39	NI.062916.134150	L16060986-11	MW-01-01	20/50	1		06/29/16 13:41
40	NI.062916.134502	L16060986-13	MW-03-09	20/50	1		06/29/16 13:45
41	NI.062916.134813	L16060986-15	MW-01-08	20/50	1		06/29/16 13:48
42	NI.062916.135125	L16060986-17	MW-03-06	20/50	1		06/29/16 13:51
43	NI.062916.135436	L16060986-19	MW-03-05	20/50	1		06/29/16 13:54
44	NI.062916.135748	L16060986-25	MW-01-02	20/50	1		06/29/16 13:57
45	NI.062916.140059	L16060986-27	DUP 1	20/50	1		06/29/16 14:00
46	NI.062916.140412	WG574676-17	CCV		1		06/29/16 14:04
47	NI.062916.140723	WG574676-18	CCB		1		06/29/16 14:07
48	NI.062916.141036	L16060986-29	DUP 2	20/50	1		06/29/16 14:10
49	NI.062916.141347	L16060986-39	EQUIP BLANK 1	20/50	1		06/29/16 14:13
50	NI.062916.141659	L16060986-41	EQUIP BLANK 2	20/50	1		06/29/16 14:16
51	NI.062916.145120	L16061026-02	18WW16F-061616	20/50	1		06/29/16 14:51
52	NI.062916.145431	L16061026-04	129-061616	20/50	1		06/29/16 14:54
53	NI.062916.145742	L16061026-06	120F-061616	20/50	1		06/29/16 14:57
54	NI.062916.150054	L16061026-07	123-061616	20/50	1		06/29/16 15:00
55	NI.062916.150407	WG574676-19	CCV		1		06/29/16 15:04
56	NI.062916.150718	WG574676-20	CCB		1		06/29/16 15:07
57	NI.062916.151032	WG573099-02	Method/Prep Blank	.25/100	1		06/29/16 15:10
58	NI.062916.151343	WG573099-03	Laboratory Control S	.25/100	1		06/29/16 15:13
59	NI.062916.151655	WG573099-01	Reference Sample		10	L16060888-03	06/29/16 15:16
60	NI.062916.152006	WG573099-04	Matrix Spike	.255/100	10	L16060888-03	06/29/16 15:20
61	NI.062916.152318	WG573099-05	Matrix Spike Duplica	.254/100	10	L16060888-03	06/29/16 15:23
62	NI.062916.152629	L16060883-01	WC01	.252/100	1		06/29/16 15:26
63	NI.062916.152941	L16060912-01	WH8011	.25/100	1		06/29/16 15:29
64	NI.062916.153252	WG573717-03	Post Digestion Spike		1	L16060912-01	06/29/16 15:32
65	NI.062916.153604	WG573717-04	Serial Dilution		5	L16060912-01	06/29/16 15:36
66	NI.062916.153915	WG573717-04	Serial Dilution		25	L16060912-01	06/29/16 15:39
67	NI.062916.154228	WG574676-21	CCV		1		06/29/16 15:42
68	NI.062916.154540	WG574676-22	CCB		1		06/29/16 15:45

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062916A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573722,574570,574572,573717,574688,574690,573790

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.062916.154853	WG574001-04	Method/Prep Blank	20/50	1		06/29/16 15:48
70	NI.062916.155204	WG574001-05	Laboratory Control S	20/50	1		06/29/16 15:52
71	NI.062916.155516	WG574001-01	Reference Sample		1	L16061247-02	06/29/16 15:55
72	NI.062916.155827	WG574001-06	Duplicate	20/50	1	L16061247-02	06/29/16 15:58
73	NI.062916.160139	WG574001-02	Reference Sample		1	L16061265-01	06/29/16 16:01
74	NI.062916.160450	WG574001-07	Matrix Spike	20/50	1	L16061265-01	06/29/16 16:04
75	NI.062916.160802	WG574001-08	Matrix Spike Duplica	20/50	1	L16061265-01	06/29/16 16:08
76	NI.062916.161113	L16061247-01	WMB09	20/50	1		06/29/16 16:11
77	NI.062916.161425	WG574688-01	Post Digestion Spike		1	L16061247-01	06/29/16 16:14
78	NI.062916.161736	WG574688-02	Serial Dilution		5	L16061247-01	06/29/16 16:17
79	NI.062916.162049	WG574676-23	CCV		1		06/29/16 16:20
80	NI.062916.162401	WG574676-24	CCB		1		06/29/16 16:24
81	NI.062916.162713	WG574688-02	Serial Dilution		25	L16061247-01	06/29/16 16:27
82	NI.062916.163025	L16061265-04	SS007MWOB16-007	20/50	1		06/29/16 16:30
83	NI.062916.163336	L16061265-05	SS007MWOB21-007	20/50	1		06/29/16 16:33
84	NI.062916.163648	L16061265-06	FQC-RB06211601-CC	20/50	1		06/29/16 16:36
85	NI.062916.163959	L16061266-01	ST008MW0805-007	20/50	1		06/29/16 16:39
86	NI.062916.164310	L16061269-01	FT002MW0204-007	20/50	1		06/29/16 16:43
87	NI.062916.164622	L16061272-01	SS007MW0B18-007	20/50	1		06/29/16 16:46
88	NI.062916.164933	L16061272-02	SS007MWN752-007	20/50	1		06/29/16 16:49
89	NI.062916.165245	L16061279-01	XU936TW007A	20/50	1		06/29/16 16:52
90	NI.062916.165556	L16061279-01	XU936TW007A	20/50	50		06/29/16 16:55
91	NI.062916.165909	WG574676-25	CCV		1		06/29/16 16:59
92	NI.062916.170220	WG574676-26	CCB		1		06/29/16 17:02
93	NI.062916.170533	WG574001-03	Reference Sample		1	L16061279-02	06/29/16 17:05
94	NI.062916.170845	WG574001-03	Reference Sample		50	L16061279-02	06/29/16 17:08
95	NI.062916.171156	WG574001-09	Matrix Spike	20/50	1	L16061279-02	06/29/16 17:11
96	NI.062916.171508	WG574001-09	Matrix Spike	20/50	50	L16061279-02	06/29/16 17:15
97	NI.062916.171819	WG574001-10	Matrix Spike Duplica	20/50	1	L16061279-02	06/29/16 17:18
98	NI.062916.172131	WG574001-10	Matrix Spike Duplica	20/50	50	L16061279-02	06/29/16 17:21
99	NI.062916.172442	L16061279-05	XU936TW019A	20/50	1		06/29/16 17:24
100	NI.062916.172754	L16061279-05	XU936TW019A	20/50	50		06/29/16 17:27
101	NI.062916.173105	L16061281-01	J6F0803-01	20/50	1		06/29/16 17:31
102	NI.062916.173419	WG574676-27	CCV		1		06/29/16 17:34

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062916A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573722,574570,574572,573717,574688,574690,573790

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.062916.173730	WG574676-28	CCB		1		06/29/16 17:37
104	NI.062916.174043	L16061294-03	EB01	20/50	1		06/29/16 17:40
105	NI.062916.174355	L16061294-03	EB01	20/50	50		06/29/16 17:43
106	NI.062916.174706	L16061296-01	OUTFALL 002/COMP	20/50	1		06/29/16 17:47
107	NI.062916.175019	WG574676-29	Interference Check		1		06/29/16 17:50
108	NI.062916.175331	WG574676-30	Interference Check		1		06/29/16 17:53
109	NI.062916.175644	WG574676-31	CCV		1		06/29/16 17:56
110	NI.062916.175955	WG574676-32	CCB		1		06/29/16 17:59
111	NI.062916.180308	WG574676-33	Low Level Continuing Calibra		1		06/29/16 18:03
112	NI.062916.180621	WG574192-02	Method/Prep Blank	.25/100	1		06/29/16 18:06
113	NI.062916.180932	WG574192-03	Laboratory Control S	.25/100	1		06/29/16 18:09
114	NI.062916.181244	WG574192-01	Reference Sample		1	L16061206-01	06/29/16 18:12
115	NI.062916.181555	L16061206-02	LF003SD0311-007 DUP	.251/100	1		06/29/16 18:15
116	NI.062916.181907	WG574192-04	Matrix Spike	.25/100	1	L16061206-01	06/29/16 18:19
117	NI.062916.182218	WG574192-05	Matrix Spike Duplica	.253/100	1	L16061206-01	06/29/16 18:22
118	NI.062916.182530	L16061206-05	LF003SD0312-007	.25/100	1		06/29/16 18:25
119	NI.062916.182841	WG574690-01	Post Digestion Spike		1	L16061206-05	06/29/16 18:28
120	NI.062916.183153	WG574690-02	Serial Dilution		5	L16061206-05	06/29/16 18:31
121	NI.062916.183504	WG574690-02	Serial Dilution		25	L16061206-05	06/29/16 18:35
122	NI.062916.183818	WG574676-34	CCV		1		06/29/16 18:38
123	NI.062916.184129	WG574676-35	CCB		1		06/29/16 18:41
124	NI.062916.184442	L16061207-01	SS007SD0709-007	.251/100	1		06/29/16 18:44
125	NI.062916.184754	L16061207-02	SS007SD0710-007	.25/100	1		06/29/16 18:47
126	NI.062916.185105	L16061208-01	DP005SD0513-007	.252/100	1		06/29/16 18:51
127	NI.062916.185417	L16061208-02	DP005SD0514-007	.251/100	1		06/29/16 18:54
128	NI.062916.185728	L16061291-01	V6F0270-01	.253/100	1		06/29/16 18:57
129	NI.062916.190040	L16061381-01	XU936DS00500A	.254/100	1		06/29/16 19:00
130	NI.062916.190351	L16061381-01	XU936DS00500A	.254/100	50		06/29/16 19:03
131	NI.062916.190703	L16061381-02	XU936DS00505A	.258/100	1		06/29/16 19:07
132	NI.062916.191014	L16061381-02	XU936DS00505A	.258/100	50		06/29/16 19:10
133	NI.062916.191327	WG574676-36	CCV		1		06/29/16 19:13
134	NI.062916.191639	WG574676-37	CCB		1		06/29/16 19:16
135	NI.062916.191952	L16061381-03	XU936DS00300A	.252/100	1		06/29/16 19:19
136	NI.062916.192303	L16061381-03	XU936DS00300A	.252/100	50		06/29/16 19:23

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062916A.REP

Analyst1: BKT Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705

ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607

CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345

Stannous : Hydroxylamine :

Workgroups: 573722,574570,574572,573717,574688,574690,573790

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	NI.062916.192615	L16061381-04	XU936DS00305A	.25/100	1		06/29/16 19:26
138	NI.062916.192926	L16061381-04	XU936DS00305A	.25/100	50		06/29/16 19:29
139	NI.062916.193237	L16061381-05	XU936DS00305C	.253/100	1		06/29/16 19:32
140	NI.062916.193550	L16061381-05	XU936DS00305C	.253/100	50		06/29/16 19:35
141	NI.062916.193901	L16061381-07	XU936DS00400A	.252/100	1		06/29/16 19:39
142	NI.062916.194213	L16061381-07	XU936DS00400A	.252/100	50		06/29/16 19:42
143	NI.062916.194524	L16061384-02	BFB-16-019	.253/100	1		06/29/16 19:45
144	NI.062916.194835	L16061384-04	BFB-16-020	.253/100	1		06/29/16 19:48
145	NI.062916.195149	WG574676-38	CCV		1		06/29/16 19:51
146	NI.062916.195500	WG574676-39	CCB		1		06/29/16 19:55
147	NI.062916.195813	L16061384-06	BFB-16-021	.253/100	1		06/29/16 19:58
148	NI.062916.200124	L16061384-08	BFB-16-022	.251/100	1		06/29/16 20:01
149	NI.062916.200436	L16061384-10	BFB-16-023	.254/100	1		06/29/16 20:04
150	NI.062916.200747	L16061384-12	BFB-16-024	.254/100	1		06/29/16 20:07
151	NI.062916.201101	WG574676-40	CCV		1		06/29/16 20:11
152	NI.062916.201412	WG574676-41	CCB		1		06/29/16 20:14
153	NI.062916.201726	WG573291-03	Method/Prep Blank	20/50	1		06/29/16 20:17
154	NI.062916.202037	WG573291-04	Laboratory Control S	20/50	1		06/29/16 20:20
155	NI.062916.202348	WG573291-01	Reference Sample		1	L16060974-01	06/29/16 20:23
156	NI.062916.202700	WG573291-05	Matrix Spike	20/50	1	L16060974-01	06/29/16 20:27
157	NI.062916.203011	WG573291-06	Matrix Spike Duplica	20/50	1	L16060974-01	06/29/16 20:30
158	NI.062916.203323	WG573790-03	Post Digestion Spike		1	L16060974-01	06/29/16 20:33
159	NI.062916.203634	WG573790-04	Serial Dilution		5	L16060974-01	06/29/16 20:36
160	NI.062916.203946	WG573790-04	Serial Dilution		25	L16060974-01	06/29/16 20:39
161	NI.062916.204259	WG574676-42	CCV		1		06/29/16 20:42
162	NI.062916.204611	WG574676-43	CCB		1		06/29/16 20:46

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070516A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD76567
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76989
Stannous : Hydroxylamine :

Workgroups: 575049,575057,575052,575054,574236,574690,574572,575217

Comments: Additional Workgroup: 574822

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.070516.092352	Blank	Blank		1		07/05/16 09:23
2	NI.070516.092704	WG575179-01	Calibration Point		1		07/05/16 09:27
3	NI.070516.093015	WG575179-02	Calibration Point		1		07/05/16 09:30
4	NI.070516.093327	WG575179-03	Calibration Point		1		07/05/16 09:33
5	NI.070516.093638	WG575179-04	Calibration Point		1		07/05/16 09:36
6	NI.070516.093952	WG575179-05	ICV		1		07/05/16 09:39
7	NI.070516.094305	WG575179-06	ICB		1		07/05/16 09:43
8	NI.070516.094618	WG575179-07	LLICV		1		07/05/16 09:46
9	NI.070516.095016	WG575179-08	Initial Calibration Verification		1		07/05/16 09:50
10	NI.070516.095329	WG575179-09	Initial Calib Blank		1		07/05/16 09:53
11	NI.070516.095642	WG575179-10	Low Level Initial Calibration V		1		07/05/16 09:56
12	NI.070516.095958	WG575179-11	Interference Check		1		07/05/16 09:59
13	NI.070516.100317	WG575179-12	Interference Check		1		07/05/16 10:03
14	NI.070516.100630	WG575179-13	CCV		1		07/05/16 10:06
15	NI.070516.100941	WG575179-14	CCB		1		07/05/16 10:09
16	NI.070516.101530	WG574663-02	Method/Prep Blank	.25/100	1		07/05/16 10:15
17	NI.070516.101841	WG574663-03	Laboratory Control S	.25/100	1		07/05/16 10:18
18	NI.070516.102152	WG574663-01	Reference Sample		1	L16061451-06	07/05/16 10:21
19	NI.070516.102504	WG574663-04	Matrix Spike	.252/100	1	L16061451-06	07/05/16 10:25
20	NI.070516.102815	WG574663-05	Matrix Spike Duplica	.253/100	1	L16061451-06	07/05/16 10:28
21	NI.070516.103127	L16061451-01	GS165SS062016S-ES	.254/100	1		07/05/16 10:31
22	NI.070516.103438	L16061451-02	GS159SS062116G-ES	.251/100	1		07/05/16 10:34
23	NI.070516.103750	WG575049-01	Post Digestion Spike		1	L16061451-02	07/05/16 10:37
24	NI.070516.104101	WG575049-02	Serial Dilution		5	L16061451-02	07/05/16 10:41
25	NI.070516.104413	WG575049-02	Serial Dilution		25	L16061451-02	07/05/16 10:44
26	NI.070516.104726	WG575179-15	CCV		1		07/05/16 10:47
27	NI.070516.105037	WG575179-16	CCB		1		07/05/16 10:50
28	NI.070516.105350	L16061451-03	GS164SS062116S-ES	.252/100	1		07/05/16 10:53
29	NI.070516.105702	L16061451-04	GS164SS062116P-ES	.257/100	1		07/05/16 10:57
30	NI.070516.110013	L16061451-05	GS154SS062316X-ES	.252/100	1		07/05/16 11:00
31	NI.070516.110324	L16061451-07	GS153SS0622316X-ES	.256/100	1		07/05/16 11:03
32	NI.070516.110636	L16061451-08	GS153SS062316X-ESD	.256/100	1		07/05/16 11:06
33	NI.070516.110948	L16061445-03	TS935DS00800A	.255/100	1		07/05/16 11:09
34	NI.070516.111259	L16061445-07	TS935DS00900A		1		07/05/16 11:12

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070516A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD76567
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76989
Stannous : Hydroxylamine :

Workgroups: 575049,575057,575052,575054,574236,574690,574572,575217

Comments: Additional Workgroup: 574822

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.070516.111611	L16061445-08	TS935DS00905A	.255/100	1		07/05/16 11:16
36	NI.070516.111922	L16061445-09	TS935DS00905C	.256/100	1		07/05/16 11:19
37	NI.070516.112234	L16061445-10	TS935DS01000A	.256/100	1		07/05/16 11:22
38	NI.070516.112546	WG575179-17	CCV		1		07/05/16 11:25
39	NI.070516.112857	WG575179-18	CCB		1		07/05/16 11:28
40	NI.070516.113210	L16061445-11	TS935DS01005A	.256/100	1		07/05/16 11:32
41	NI.070516.113521	L16061445-12	TS935DS01205A	.254/100	1		07/05/16 11:35
42	NI.070516.113833	L16061451-01	GS165SS062016S-ES	.251/100	10		07/05/16 11:38
43	NI.070516.114144	L16061451-02	GS159SS062116G-ES	.25/100	10		07/05/16 11:41
44	NI.070516.114455	WG575057-01	Post Digestion Spike		10	L16061451-02	07/05/16 11:44
45	NI.070516.114807	WG575057-02	Serial Dilution		50	L16061451-02	07/05/16 11:48
46	NI.070516.115118	L16061451-03	GS164SS062116S-ES	.251/100	10		07/05/16 11:51
47	NI.070516.115430	L16061451-04	GS164SS062116P-ES	.253/100	10		07/05/16 11:54
48	NI.070516.115741	L16061451-05	GS154SS062316X-ES		10		07/05/16 11:57
49	NI.070516.120052	WG574521-02	Reference Sample		10	L16061451-06	07/05/16 12:00
50	NI.070516.120406	WG575179-19	CCV		1		07/05/16 12:04
51	NI.070516.120717	WG575179-20	CCB		1		07/05/16 12:07
52	NI.070516.121030	L16061451-07	GS153SS0622316X-ES	.253/100	10		07/05/16 12:10
53	NI.070516.121342	L16061451-08	GS153SS062316X-ESD	.256/100	10		07/05/16 12:13
54	NI.070516.121654	WG574521-07	Matrix Spike	.258/100	10	L16061451-06	07/05/16 12:16
55	NI.070516.122005	WG574521-08	Matrix Spike Duplica	.256/100	10	L16061451-06	07/05/16 12:20
56	NI.070516.122318	WG575179-21	CCV		1		07/05/16 12:23
57	NI.070516.122629	WG575179-22	CCB		1		07/05/16 12:26
58	NI.070516.122942	WG574664-02	Method/Prep Blank	20/50	1		07/05/16 12:29
59	NI.070516.123254	WG574664-03	Laboratory Control S	20/50	1		07/05/16 12:32
60	NI.070516.123605	WG574664-01	Reference Sample		1	L16061548-01	07/05/16 12:36
61	NI.070516.123917	WG574664-04	Duplicate	20/50	1	L16061548-01	07/05/16 12:39
62	NI.070516.124228	WG574664-05	Matrix Spike	20/50	1	L16061548-01	07/05/16 12:42
63	NI.070516.124540	WG574664-06	Matrix Spike Duplica	20/50	1	L16061548-01	07/05/16 12:45
64	NI.070516.124851	L16061544-01	S6F0335-01	20/50	1		07/05/16 12:48
65	NI.070516.125203	WG575052-01	Post Digestion Spike		1	L16061544-01	07/05/16 12:52
66	NI.070516.125514	WG575052-02	Serial Dilution		5	L16061544-01	07/05/16 12:55
67	NI.070516.125826	WG575052-02	Serial Dilution		25	L16061544-01	07/05/16 12:58
68	NI.070516.130139	WG575179-23	CCV		1		07/05/16 13:01

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070516A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD76567
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76989
Stannous : Hydroxylamine :

Workgroups: 575049,575057,575052,575054,574236,574690,574572,575217

Comments: Additional Workgroup: 574822

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.070516.130450	WG575179-24	CCB		1		07/05/16 13:04
70	NI.070516.130802	L16061546-01	S6F0336-01	20/50	1		07/05/16 13:08
71	NI.070516.131114	L16061547-01	S6F0337-01	20/50	1		07/05/16 13:11
72	NI.070516.131425	L16061313-02	MW-5	20/50	1		07/05/16 13:14
73	NI.070516.131737	L16061313-03	MW-5	20/50	1		07/05/16 13:17
74	NI.070516.132050	WG575179-25	CCV		1		07/05/16 13:20
75	NI.070516.132401	WG575179-26	CCB		1		07/05/16 13:24
76	NI.070516.132714	WG574733-02	Method/Prep Blank	20/50	1		07/05/16 13:27
77	NI.070516.133026	WG574733-03	Laboratory Control S	20/50	1		07/05/16 13:30
78	NI.070516.133337	WG574733-01	Reference Sample		1	L16061556-06	07/05/16 13:33
79	NI.070516.133649	WG574733-04	Duplicate	20/50	1	L16061556-06	07/05/16 13:36
80	NI.070516.134000	WG574733-05	Matrix Spike	20/50	1	L16061556-06	07/05/16 13:40
81	NI.070516.134312	WG574733-06	Matrix Spike Duplica	20/50	1	L16061556-06	07/05/16 13:43
82	NI.070516.134623	L16061644-01	OUTFALL 002/COMP	20/50	1		07/05/16 13:46
83	NI.070516.134935	WG575054-01	Post Digestion Spike		1	L16061644-01	07/05/16 13:49
84	NI.070516.135246	WG575054-02	Serial Dilution		5	L16061644-01	07/05/16 13:52
85	NI.070516.135719	L16061445-07	TS935DS00900A	.25/100	10		07/05/16 13:57
86	NI.070516.140031	WG575179-27	CCV		1		07/05/16 14:00
87	NI.070516.140343	WG575179-28	CCB		1		07/05/16 14:03
88	NI.070516.140655	L16061559-01	LH18/24-SP650-6374-GRAB	20/50	1		07/05/16 14:06
89	NI.070516.141021	L16061559-02	LH18/24-SP650-6374-COMP	20/50	1		07/05/16 14:10
90	NI.070516.141332	L16061581-03	OUTFALL 203		1		07/05/16 14:13
91	NI.070516.141644	WG574664-01	Reference Sample		2	L16061548-01	07/05/16 14:16
92	NI.070516.141955	WG574664-04	Duplicate	20/50	2	L16061548-01	07/05/16 14:19
93	NI.070516.142314	WG574664-05	Matrix Spike	20/50	2	L16061548-01	07/05/16 14:23
94	NI.070516.142626	WG574664-06	Matrix Spike Duplica	20/50	2	L16061548-01	07/05/16 14:26
95	NI.070516.142939	WG575179-29	CCV		1		07/05/16 14:29
96	NI.070516.143251	WG575179-30	CCB		1		07/05/16 14:32
97	NI.070516.143603	WG575179-31	Low Level Continuing Calibra		1		07/05/16 14:36
98	NI.070516.143943	WG573653-03	Method/Prep Blank	20/50	1		07/05/16 14:39
99	NI.070516.144254	WG573653-04	Laboratory Control S	20/50	1		07/05/16 14:42
100	NI.070516.144606	WG573653-01	Reference Sample		1	L16060764-04	07/05/16 14:46
101	NI.070516.144917	WG573653-05	Matrix Spike	20/50	1	L16060764-04	07/05/16 14:49
102	NI.070516.145229	WG573653-06	Matrix Spike Duplica	20/50	1	L16060764-04	07/05/16 14:52

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070516A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD76567
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76989
Stannous : Hydroxylamine :

Workgroups: 575049,575057,575052,575054,574236,574690,574572,575217

Comments: Additional Workgroup: 574822

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.070516.145558	L16060840-01	MW-24-004R	20/50	1		07/05/16 14:55
104	NI.070516.145909	L16060840-02	MW-24-003R	20/50	1		07/05/16 14:59
105	NI.070516.150221	WG574236-03	Post Digestion Spike		1	L16060840-02	07/05/16 15:02
106	NI.070516.150532	WG574236-04	Serial Dilution		5	L16060840-02	07/05/16 15:05
107	NI.070516.150843	L16061581-03	OUTFALL 203	20/50	1000		07/05/16 15:08
108	NI.070516.151157	WG575179-32	CCV		1		07/05/16 15:11
109	NI.070516.151517	WG575179-33	CCB		1		07/05/16 15:15
110	NI.070516.151839	L16060840-03	FR-061416-24	20/50	1		07/05/16 15:18
111	NI.070516.152150	L16060840-04	MW-24-002R	20/50	1		07/05/16 15:21
112	NI.070516.152502	L16060840-05	MW-24-005	20/50	1		07/05/16 15:25
113	NI.070516.152813	L16060840-06	EB-LOW FLOW TUBING	20/50	1		07/05/16 15:28
114	NI.070516.153125	L16061291-01	V6F0270-01	.253/100	50		07/05/16 15:31
115	NI.070516.153436	L16061533-04	EB05	20/50	1		07/05/16 15:34
116	NI.070516.153748	L16061533-05	EB04	20/50	1		07/05/16 15:37
117	NI.070516.154100	WG575179-34	CCV		1		07/05/16 15:41
118	NI.070516.154411	WG575179-35	CCB		1		07/05/16 15:44
119	NI.070516.154936	WG573548-02	Method/Prep Blank	20/50	1		07/05/16 15:49
120	NI.070516.155247	WG573548-03	Laboratory Control S	20/50	1		07/05/16 15:52
121	NI.070516.155559	WG573548-01	Reference Sample		1	L16060986-23	07/05/16 15:55
122	NI.070516.155910	WG573548-04	Matrix Spike	20/50	1	L16060986-23	07/05/16 15:59
123	NI.070516.160221	WG573548-05	Matrix Spike Duplica	20/50	1	L16060986-23	07/05/16 16:02
124	NI.070516.160533	L16061026-02	18WW16F-061616	20/50	20		07/05/16 16:05
125	NI.070516.160845	L16061026-02	18WW16F-061616	20/50	200		07/05/16 16:08
126	NI.070516.161156	L16061026-04	129-061616	20/50	1		07/05/16 16:11
127	NI.070516.161508	L16061026-04	129-061616	20/50	20		07/05/16 16:15
128	NI.070516.161820	WG575179-36	CCV		1		07/05/16 16:18
129	NI.070516.162132	WG575179-37	CCB		1		07/05/16 16:21
130	NI.070516.163034	L16061026-06	120F-061616	20/50	1		07/05/16 16:30
131	NI.070516.163440	L16061026-07	123-061616	20/50	1		07/05/16 16:34
132	NI.070516.163751	WG574572-03	Post Digestion Spike		1	L16061026-07	07/05/16 16:37
133	NI.070516.164103	WG574572-04	Serial Dilution		5	L16061026-07	07/05/16 16:41
134	NI.070516.164414	WG574572-04	Serial Dilution		25	L16061026-07	07/05/16 16:44
135	NI.070516.164727	WG575179-38	CCV		1		07/05/16 16:47
136	NI.070516.165039	WG575179-39	CCB		1		07/05/16 16:50

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070516A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD76567
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76989
Stannous : Hydroxylamine :

Workgroups: 575049,575057,575052,575054,574236,574690,574572,575217

Comments: Additional Workgroup: 574822

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	NI.070516.165352	WG575144-02	Method/Prep Blank	.25/100	1		07/05/16 16:53
138	NI.070516.165703	WG575144-03	Laboratory Control S	.25/100	1		07/05/16 16:57
139	NI.070516.170015	WG575144-01	Reference Sample		1	L16070088-01	07/05/16 17:00
140	NI.070516.170326	WG575144-04	Matrix Spike	.255/100	1	L16070088-01	07/05/16 17:03
141	NI.070516.170638	WG575144-05	Matrix Spike Duplica	.252/100	1	L16070088-01	07/05/16 17:06
142	NI.070516.170949	WG575217-01	Post Digestion Spike		1	L16070088-01	07/05/16 17:09
143	NI.070516.171301	WG575217-02	Serial Dilution		5	L16070088-01	07/05/16 17:13
144	NI.070516.171612	WG575217-02	Serial Dilution		25	L16070088-01	07/05/16 17:16
145	NI.070516.171925	WG575179-40	CCV		1		07/05/16 17:19
146	NI.070516.172236	WG575179-41	CCB		1		07/05/16 17:22
147	NI.070516.172549	WG573662-03	Method/Prep Blank	20/50	1		07/05/16 17:25
148	NI.070516.172901	WG573662-04	Laboratory Control S	20/50	1		07/05/16 17:29
149	NI.070516.173212	L16060907-01	MW21-061516	20/50	50		07/05/16 17:32
150	NI.070516.173523	L16060907-02	MW21-061516	20/50	50		07/05/16 17:35
151	NI.070516.173835	L16060907-04	MW35-061516	20/50	1		07/05/16 17:38
152	NI.070516.174147	L16060907-05	MW35-061516	20/50	1		07/05/16 17:41
153	NI.070516.174458	L16060907-07	MW11S-061516	20/50	1		07/05/16 17:44
154	NI.070516.174810	WG574822-01	Post Digestion Spike		1	L16060907-07	07/05/16 17:48
155	NI.070516.175121	L16060907-07	MW11S-061516		5		07/05/16 17:51
156	NI.070516.175433	WG574822-02	Serial Dilution		25	L16060907-07	07/05/16 17:54
157	NI.070516.175746	WG575179-42	CCV		1		07/05/16 17:57
158	NI.070516.180057	WG575179-43	CCB		1		07/05/16 18:00
159	NI.070516.180410	L16060907-08	MW11S-061516		1		07/05/16 18:04
160	NI.070516.180721	L16060907-10	DUP-GW-061516		1		07/05/16 18:07
161	NI.070516.181033	L16060907-11	DUP-GW-061516		1		07/05/16 18:10
162	NI.070516.181344	L16060907-12	MW31-061516		50		07/05/16 18:13
163	NI.070516.181656	L16060907-13	MW31-061516		50		07/05/16 18:16
164	NI.070516.182008	WG573662-01	Reference Sample		1	L16060907-14	07/05/16 18:20
165	NI.070516.182319	WG573662-02	Reference Sample		1	L16060907-15	07/05/16 18:23
166	NI.070516.182631	WG573662-05	Matrix Spike	20/50	1	L16060907-14	07/05/16 18:26
167	NI.070516.182942	WG573662-07	Matrix Spike	20/50	1	L16060907-15	07/05/16 18:29
168	NI.070516.183254	WG573662-06	Matrix Spike Duplica	20/50	1	L16060907-14	07/05/16 18:32
169	NI.070516.183607	WG575179-44	CCV		1		07/05/16 18:36
170	NI.070516.183919	WG575179-45	CCB		1		07/05/16 18:39

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070516A.REP

Analyst1: JYH Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD76567

ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607

CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76989

Stannous : Hydroxylamine :

Workgroups: 575049,575057,575052,575054,574236,574690,574572,575217

Comments: Additional Workgroup: 574822

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
171	NI.070516.184232	WG573662-08	Matrix Spike Duplica	20/50	1	L16060907-15	07/05/16 18:42
172	NI.070516.184543	L16060907-21	MW36-061516	20/50	1		07/05/16 18:45
173	NI.070516.184855	L16060907-22	MW36-061516	20/50	1		07/05/16 18:48
174	NI.070516.185206	L16061128-01	MW-23-104	20/50	1		07/05/16 18:52
175	NI.070516.185518	L16061128-02	MW-23-103	20/50	1		07/05/16 18:55
176	NI.070516.185829	L16061128-03	FD062016	20/50	1		07/05/16 18:58
177	NI.070516.190141	L16061128-04	EB WATER A	20/50	1		07/05/16 19:01
178	NI.070516.190452	L16061128-04	EB WATER A		100		07/05/16 19:04
179	NI.070516.190804	WG575179-46	Interference Check		1		07/05/16 19:08
180	NI.070516.191116	WG575179-47	Interference Check		1		07/05/16 19:11
181	NI.070516.191429	WG575179-48	CCV		1		07/05/16 19:14
182	NI.070516.191740	WG575179-49	CCB		1		07/05/16 19:17
183	NI.070516.192053	WG575179-50	Low Level Continuing Calibra		1		07/05/16 19:20

Comments

Seq.	Rerun	Dil.	Reason	Analytes
7			Rerun to verify. JYH	
45			Wrong dilution factor. JYH	
90			Wrong sample label. JYH	
100			Seq. 100-102: wrong WG numbers. JYH	
159			Wrong sample label. JYH	

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070616B.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD77006 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76989
Stannous : Hydroxylamine :

Workgroups: 574825,575052,575023,574822,574572,574573,574824,574688

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.070616.090452	Blank	Blank		1		07/06/16 09:04
2	NI.070616.090803	WG575370-01	Calibration Point		1		07/06/16 09:08
3	NI.070616.091115	WG575370-02	Calibration Point		1		07/06/16 09:11
4	NI.070616.091426	WG575370-03	Calibration Point		1		07/06/16 09:14
5	NI.070616.091738	WG575370-04	Calibration Point		1		07/06/16 09:17
6	NI.070616.092051	WG575370-05	Initial Calibration Verification		1		07/06/16 09:20
7	NI.070616.092404	WG575370-06	Initial Calib Blank		1		07/06/16 09:24
8	NI.070616.092717	WG575370-07	Low Level Initial Calibration V		1		07/06/16 09:27
9	NI.070616.093029	WG575370-08	Interference Check		1		07/06/16 09:30
10	NI.070616.093340	WG575370-09	Interference Check		1		07/06/16 09:33
11	NI.070616.093653	WG575370-10	CCV		1		07/06/16 09:36
12	NI.070616.094005	WG575370-11	CCB		1		07/06/16 09:40
13	NI.070616.094317	WG574195-02	Method/Prep Blank	.25/100	1		07/06/16 09:43
14	NI.070616.094629	WG574195-03	Laboratory Control S	.25/100	1		07/06/16 09:46
15	NI.070616.094940	WG574195-01	Reference Sample		1	L16061294-11	07/06/16 09:49
16	NI.070616.095252	WG574195-04	Matrix Spike	.257/100	1	L16061294-11	07/06/16 09:52
17	NI.070616.095603	WG574195-05	Matrix Spike Duplica	.252/100	1	L16061294-11	07/06/16 09:56
18	NI.070616.095915	L16061294-01	XU936DS00700A	.255/100	1		07/06/16 09:59
19	NI.070616.100226	L16061294-02	XU936DS00705A	.251/100	1		07/06/16 10:02
20	NI.070616.100538	WG574825-01	Post Digestion Spike		1	L16061294-02	07/06/16 10:05
21	NI.070616.100849	WG574825-02	Serial Dilution		5	L16061294-02	07/06/16 10:08
22	NI.070616.101201	WG574825-02	Serial Dilution		25	L16061294-02	07/06/16 10:12
23	NI.070616.101514	WG575370-12	CCV		1		07/06/16 10:15
24	NI.070616.101825	WG575370-13	CCB		1		07/06/16 10:18
25	NI.070616.102139	L16061294-04	XU936DS01100A	.25/100	1		07/06/16 10:21
26	NI.070616.102450	L16061294-05	XU936DS01105A	.252/100	1		07/06/16 10:24
27	NI.070616.102802	L16061294-06	XU936DS01500A	.25/100	1		07/06/16 10:28
28	NI.070616.103113	L16061294-07	XU936DS01505A	.25/100	1		07/06/16 10:31
29	NI.070616.103425	L16061294-08	XU936DS01505C	.255/100	1		07/06/16 10:34
30	NI.070616.103737	L16061294-09	XU936DS01900A	.256/100	1		07/06/16 10:37
31	NI.070616.104048	L16061294-10	XU936DS01905A	.251/100	1		07/06/16 10:40
32	NI.070616.104400	L16061294-14	XU936DS00200A	.256/100	1		07/06/16 10:44
33	NI.070616.104711	L16061294-15	XU936DS00205A	.251/100	1		07/06/16 10:47
34	NI.070616.105023	L16061381-08	XU936DS00405A	.256/100	1		07/06/16 10:50

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070616B.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD77006 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76989
Stannous : Hydroxylamine :

Workgroups: 574825,575052,575023,574822,574572,574573,574824,574688

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.070616.105336	WG575370-14	CCV		1		07/06/16 10:53
36	NI.070616.114231	WG575370-15	CCB		1		07/06/16 11:42
37	NI.070616.114547	WG575370-16	CCV		1		07/06/16 11:45
38	NI.070616.114858	WG575370-17	CCB		1		07/06/16 11:48
39	NI.070616.115343	WG574195-01	Reference Sample		50	L16061294-11	07/06/16 11:53
40	NI.070616.115654	WG574195-04	Matrix Spike	.257/100	50	L16061294-11	07/06/16 11:56
41	NI.070616.120005	WG574195-05	Matrix Spike Duplica	.252/100	50	L16061294-11	07/06/16 12:00
42	NI.070616.120317	L16061294-01	XU936DS00700A	.255/100	50		07/06/16 12:03
43	NI.070616.120628	L16061294-02	XU936DS00705A	.251/100	50		07/06/16 12:06
44	NI.070616.120940	WG574825-01	Post Digestion Spike		50	L16061294-02	07/06/16 12:09
45	NI.070616.121251	WG574825-02	Serial Dilution		250	L16061294-02	07/06/16 12:12
46	NI.070616.121603	L16061294-04	XU936DS01100A	.25/100	50		07/06/16 12:16
47	NI.070616.121914	L16061294-05	XU936DS01105A	.252/100	50		07/06/16 12:19
48	NI.070616.122225	L16061294-06	XU936DS01500A	.25/100	50		07/06/16 12:22
49	NI.070616.122538	WG575370-18	CCV		1		07/06/16 12:25
50	NI.070616.122850	WG575370-19	CCB		1		07/06/16 12:28
51	NI.070616.123202	L16061294-07	XU936DS01505A	.25/100	50		07/06/16 12:32
52	NI.070616.123514	L16061294-08	XU936DS01505C	.255/100	50		07/06/16 12:35
53	NI.070616.123825	L16061294-09	XU936DS01900A	.256/100	50		07/06/16 12:38
54	NI.070616.124137	L16061294-10	XU936DS01905A	.251/100	50		07/06/16 12:41
55	NI.070616.124448	L16061294-14	XU936DS00200A	.256/100	50		07/06/16 12:44
56	NI.070616.124759	L16061294-15	XU936DS00205A	.251/100	50		07/06/16 12:47
57	NI.070616.125111	L16061381-08	XU936DS00405A	.256/100	50		07/06/16 12:51
58	NI.070616.125423	WG575370-20	CCV		1		07/06/16 12:54
59	NI.070616.125735	WG575370-21	CCB		1		07/06/16 12:57
60	NI.070616.130440	L16061313-06	MW-4	20/50	1		07/06/16 13:04
61	NI.070616.130752	L16061313-07	MW-4	20/50	1		07/06/16 13:07
62	NI.070616.131103	L16061313-08	MW-3	20/50	1		07/06/16 13:11
63	NI.070616.131415	L16061313-09	MW-3	20/50	1		07/06/16 13:14
64	NI.070616.131726	L16061313-10	DUPLICATE	20/50	1		07/06/16 13:17
65	NI.070616.132037	L16061313-11	DUPLICATE	20/50	1		07/06/16 13:20
66	NI.070616.132349	L16061313-12	MW-2D	20/50	1		07/06/16 13:23
67	NI.070616.132700	L16061313-13	MW-2D	20/50	1		07/06/16 13:27
68	NI.070616.133012	L16061313-14	EQ-RINSE	20/50	1		07/06/16 13:30

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070616B.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD77006 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76989
Stannous : Hydroxylamine :

Workgroups: 574825,575052,575023,574822,574572,574573,574824,574688

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.070616.133325	WG575370-22	CCV		1		07/06/16 13:33
70	NI.070616.133636	WG575370-23	CCB		1		07/06/16 13:36
71	NI.070616.134017	WG574881-02	Method/Prep Blank	.25/100	1		07/06/16 13:40
72	NI.070616.134329	WG574881-03	Laboratory Control S	.25/100	1		07/06/16 13:43
73	NI.070616.134640	WG574881-01	Reference Sample		1	L16061533-03	07/06/16 13:46
74	NI.070616.134951	WG574881-04	Matrix Spike	.25/100	1	L16061533-03	07/06/16 13:49
75	NI.070616.135303	WG574881-05	Matrix Spike Duplica	.254/100	1	L16061533-03	07/06/16 13:53
76	NI.070616.135614	L16061488-01	NV79-01	.25/100	1		07/06/16 13:56
77	NI.070616.135926	L16061488-02	NV79-02	.258/100	1		07/06/16 13:59
78	NI.070616.140318	WG575023-01	Post Digestion Spike		1	L16061488-02	07/06/16 14:03
79	NI.070616.140630	WG575023-02	Serial Dilution		5	L16061488-02	07/06/16 14:06
80	NI.070616.140941	WG575023-02	Serial Dilution		25	L16061488-02	07/06/16 14:09
81	NI.070616.141254	WG575370-24	CCV		1		07/06/16 14:12
82	NI.070616.141606	WG575370-25	CCB		1		07/06/16 14:16
83	NI.070616.142024	L16061488-03	NV79-03	.259/100	1		07/06/16 14:20
84	NI.070616.142336	L16061488-04	NV79-04	.257/100	1		07/06/16 14:23
85	NI.070616.142647	L16061533-01	TS935DS01100A	.253/100	1		07/06/16 14:26
86	NI.070616.142958	L16061533-02	TS935DS01100C	.255/100	1		07/06/16 14:29
87	NI.070616.143310	L16061643-01	V6F0315-01	.254/100	1		07/06/16 14:33
88	NI.070616.143621	L16061643-02	V6F0315-02	.253/100	1		07/06/16 14:36
89	NI.070616.143933	L16061687-01	TR0059	.252/100	1		07/06/16 14:39
90	NI.070616.144244	L16061296-01	OUTFALL 002/COMP		1		07/06/16 14:42
91	NI.070616.144556	L16061313-08	MW-3	20/50	10		07/06/16 14:45
92	NI.070616.144907	L16061313-10	DUPLICATE	20/50	10		07/06/16 14:49
93	NI.070616.145220	WG575370-26	CCV		1		07/06/16 14:52
94	NI.070616.145531	WG575370-27	CCB		1		07/06/16 14:55
95	NI.070616.150731	L16060907-08	MW11S-061516	20/50	100		07/06/16 15:07
96	NI.070616.151042	L16060907-10	DUP-GW-061516	20/50	100		07/06/16 15:10
97	NI.070616.151354	L16060907-11	DUP-GW-061516	20/50	100		07/06/16 15:13
98	NI.070616.151705	L16060907-12	MW31-061516	20/50	1		07/06/16 15:17
99	NI.070616.152017	L16060907-13	MW31-061516	20/50	1		07/06/16 15:20
100	NI.070616.152328	L16061026-02	18WW16F-061616		1		07/06/16 15:23
101	NI.070616.152752	L16061026-02	18WW16F-061616	20/50	200		07/06/16 15:27
102	NI.070616.153105	WG575370-28	CCV		1		07/06/16 15:31

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070616B.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD77006 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76989
Stannous : Hydroxylamine :

Workgroups: 574825,575052,575023,574822,574572,574573,574824,574688

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.070616.153417	WG575370-29	CCB		1		07/06/16 15:34
104	NI.070616.155033	WG574306-02	Method/Prep Blank	.25/100	1		07/06/16 15:50
105	NI.070616.155345	WG574306-03	Laboratory Control S	.25/100	1		07/06/16 15:53
106	NI.070616.155656	L16061297-01	XU936DS01805A	.259/100	1		07/06/16 15:56
107	NI.070616.160008	L16061297-02	XU936DS01800A	.25/100	1		07/06/16 16:00
108	NI.070616.160319	L16061297-03	XU936DS01405A	.256/100	1		07/06/16 16:03
109	NI.070616.160631	L16061297-04	XU936DS01405C	.258/100	1		07/06/16 16:06
110	NI.070616.160942	L16061297-05	XU936DS02005A	.25/100	1		07/06/16 16:09
111	NI.070616.161318	L16061297-06	XU936DS01605A	.258/100	1		07/06/16 16:13
112	NI.070616.161629	WG574573-03	Post Digestion Spike		1	L16061297-06	07/06/16 16:16
113	NI.070616.161940	WG574573-04	Serial Dilution		5	L16061297-06	07/06/16 16:19
114	NI.070616.162253	WG575370-30	CCV		1		07/06/16 16:22
115	NI.070616.162605	WG575370-31	CCB		1		07/06/16 16:26
116	NI.070616.162917	WG574306-01	Reference Sample		1	L16061297-07	07/06/16 16:29
117	NI.070616.163229	WG574306-04	Matrix Spike	.253/100	1	L16061297-07	07/06/16 16:32
118	NI.070616.163540	WG574306-05	Matrix Spike Duplica	.255/100	1	L16061297-07	07/06/16 16:35
119	NI.070616.163852	L16061297-10	XU936DS01705A	.254/100	1		07/06/16 16:38
120	NI.070616.164203	L16061297-11	XU936DS01305A	.253/100	1		07/06/16 16:42
121	NI.070616.164515	L16061297-12	XU936DS01205A	.251/100	1		07/06/16 16:45
122	NI.070616.164826	L16061297-13	XU936DS00800A	.252/100	1		07/06/16 16:48
123	NI.070616.165137	L16061297-14	XU936DS00805A	.25/100	1		07/06/16 16:51
124	NI.070616.165449	L16061297-15	XU936DS00900A	.259/100	1		07/06/16 16:54
125	NI.070616.165800	L16061297-16	XU936DS00905A	.256/100	1		07/06/16 16:58
126	NI.070616.170113	WG575370-32	CCV		1		07/06/16 17:01
127	NI.070616.170425	WG575370-33	CCB		1		07/06/16 17:04
128	NI.070616.170737	L16061297-17	XU936DS00905C	.25/100	1		07/06/16 17:07
129	NI.070616.171049	L16061297-18	XU936DS01005A	.255/100	1		07/06/16 17:10
130	NI.070616.171400	L16061297-19	XU936DS00600A	.258/100	1		07/06/16 17:14
131	NI.070616.171712	L16061297-20	XU936DS00605A	.259/100	1		07/06/16 17:17
132	NI.070616.172023	L16061297-01	XU936DS01805A	.259/100	50		07/06/16 17:20
133	NI.070616.172334	L16061297-02	XU936DS01800A	.25/100	50		07/06/16 17:23
134	NI.070616.172646	L16061297-03	XU936DS01405A	.256/100	50		07/06/16 17:26
135	NI.070616.172957	L16061297-04	XU936DS01405C	.258/100	50		07/06/16 17:29
136	NI.070616.173309	L16061297-05	XU936DS02005A	.25/100	50		07/06/16 17:33

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070616B.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD77006 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76989
Stannous : Hydroxylamine :

Workgroups: 574825,575052,575023,574822,574572,574573,574824,574688

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	NI.070616.173620	L16061297-06	XU936DS01605A	.258/100	50		07/06/16 17:36
138	NI.070616.173934	WG575370-34	CCV		1		07/06/16 17:39
139	NI.070616.174245	WG575370-35	CCB		1		07/06/16 17:42
140	NI.070616.174559	WG574573-03	Post Digestion Spike		50	L16061297-06	07/06/16 17:45
141	NI.070616.174910	WG574573-04	Serial Dilution		250	L16061297-06	07/06/16 17:49
142	NI.070616.175222	WG574306-01	Reference Sample		50	L16061297-07	07/06/16 17:52
143	NI.070616.175533	WG574306-04	Matrix Spike	.253/100	50	L16061297-07	07/06/16 17:55
144	NI.070616.175844	WG574306-05	Matrix Spike Duplica	.255/100	50	L16061297-07	07/06/16 17:58
145	NI.070616.180156	L16061297-10	XU936DS01705A	.254/100	50		07/06/16 18:01
146	NI.070616.180507	L16061297-11	XU936DS01305A	.253/100	50		07/06/16 18:05
147	NI.070616.180818	L16061297-12	XU936DS01205A	.251/100	50		07/06/16 18:08
148	NI.070616.181130	L16061297-13	XU936DS00800A	.252/100	50		07/06/16 18:11
149	NI.070616.181441	L16061297-14	XU936DS00805A	.25/100	50		07/06/16 18:14
150	NI.070616.181755	WG575370-36	CCV		1		07/06/16 18:17
151	NI.070616.182106	WG575370-37	CCB		1		07/06/16 18:21
152	NI.070616.182419	L16061297-15	XU936DS00900A	.259/100	50		07/06/16 18:24
153	NI.070616.182731	L16061297-16	XU936DS00905A	.256/100	50		07/06/16 18:27
154	NI.070616.183042	L16061297-17	XU936DS00905C	.25/100	50		07/06/16 18:30
155	NI.070616.183353	L16061297-18	XU936DS01005A	.255/100	50		07/06/16 18:33
156	NI.070616.183705	L16061297-19	XU936DS00600A	.258/100	50		07/06/16 18:37
157	NI.070616.184016	L16061297-20	XU936DS00605A	.259/100	50		07/06/16 18:40
158	NI.070616.184328	L16061452-01	18CPTMW12SW-062416	20/50	50		07/06/16 18:43
159	NI.070616.184639	L16061453-01	MW2-062416	20/50	50		07/06/16 18:46
160	NI.070616.184952	WG575370-38	CCV		1		07/06/16 18:49
161	NI.070616.185304	WG575370-39	CCB		1		07/06/16 18:53
162	NI.070616.185616	L16061453-03	18CPTMW01SW-062416	20/50	50		07/06/16 18:56
163	NI.070616.185928	L16061296-01	OUTFALL 002/COMP	20/50	1		07/06/16 18:59
164	NI.070616.190239	L16061453-03	18CPTMW01SW-062416		500		07/06/16 19:02
165	NI.070616.190551	WG575370-40	Interference Check		1		07/06/16 19:05
166	NI.070616.190902	WG575370-41	Interference Check		1		07/06/16 19:09
167	NI.070616.191215	WG575370-42	CCV		1		07/06/16 19:12
168	NI.070616.191526	WG575370-43	CCB		1		07/06/16 19:15
169	NI.070616.191839	WG575370-44	Low Level Continuing Calibra		1		07/06/16 19:18

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Microbac Laboratories Inc.

Data Checklist

Date: 29-JUN-2016
Analyst: BKT
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 574676
Runlog ID: 76013
Analytical Workgroups: 573722,574570,574572,573717,574688,574690,573790

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1279,1294,1381,1384
Level 4	661,822,823,883,912,974,986,1026
Level 4	1206,1207,1208,1265,1266,1269,1272
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BKT
Secondary Reviewer	JYH
Comments	

Primary Reviewer:
04-JUL-2016

Secondary Reviewer:
05-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-05-2016 12:36:33

Microbac Laboratories Inc.

Data Checklist

Date: 05-JUL-2016
Analyst: JYH
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 575179
Runlog ID: 76106
Analytical Workgroups: 575049,575057,575052,575054,574236,574690,574572,575217

Additional Workgroup	574822
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1445,1533,1128
Level 4	1451,1559,840,1026,088,907
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	BKT
Comments	

Primary Reviewer:
06-JUL-2016

Secondary Reviewer:
06-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-06-2016 20:27:37

Microbac Laboratories Inc.

Data Checklist

Date: 06-JUL-2016
Analyst: JYH
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 575370
Runlog ID: 76130
Analytical Workgroups: 574825,575052,575023,574822,574572,574573,574824,574688

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1294,1533,1297
Level 4	1687,907,1026,1452,1453
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	BKT
Comments	

Primary Reviewer:
07-JUL-2016

Secondary Reviewer:
07-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-07-2016 15:29:19

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG574572

Login Number: L16061026

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW16F-061616	02	06/16/16					06/21/2016	5.1	180		07/06/16	20.3	180	
18WW16F-061616	02	06/16/16					06/21/2016	5.1	180		07/05/16	19.3	180	
18WW16F-061616	02	06/16/16					06/21/2016	5.1	180		06/29/16	13.3	180	
18WW16F-061616	02	06/16/16					06/21/2016	5.1	180		07/05/16	19.3	180	
129-061616	04	06/16/16					06/21/2016	5.1	180		07/05/16	19.3	180	
129-061616	04	06/16/16					06/21/2016	5.1	180		07/05/16	19.3	180	
129-061616	04	06/16/16					06/21/2016	5.1	180		06/29/16	13.2	180	
120F-061616	06	06/16/16					06/21/2016	5.1	180		06/29/16	13.2	180	
120F-061616	06	06/16/16					06/21/2016	5.1	180		07/05/16	19.3	180	
123-061616	07	06/16/16					06/21/2016	5.1	180		06/29/16	13.2	180	
123-061616	07	06/16/16					06/21/2016	5.1	180		07/05/16	19.3	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4832316
Report generated 07/07/2016 08:33

METHOD BLANK SUMMARY

Login Number: L16061026
Blank File ID: NI.062916.125354
Prep Date: 06/21/16 11:18
Analyzed Date: 06/29/16 12:53
Analyst: BKT

Work Group: WG574572
Blank Sample ID: WG573548-02
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573548-03	NI.062916.125705	06/29/16 12:57	01
18WW16F-061616	L16061026-02	NI.062916.145120	06/29/16 14:51	01
129-061616	L16061026-04	NI.062916.145431	06/29/16 14:54	01
120F-061616	L16061026-06	NI.062916.145742	06/29/16 14:57	01
123-061616	L16061026-07	NI.062916.150054	06/29/16 15:00	01
LCS	WG573548-03	NI.070516.155247	07/05/16 15:52	02
18WW16F-061616	L16061026-02	NI.070516.160533	07/05/16 16:05	DL01
18WW16F-061616	L16061026-02	NI.070516.160845	07/05/16 16:08	DL02
129-061616	L16061026-04	NI.070516.161156	07/05/16 16:11	02
129-061616	L16061026-04	NI.070516.161508	07/05/16 16:15	DL01
120F-061616	L16061026-06	NI.070516.163034	07/05/16 16:30	02
123-061616	L16061026-07	NI.070516.163440	07/05/16 16:34	02
18WW16F-061616	L16061026-02	NI.070616.152752	07/06/16 15:27	DL03

Report Name: BLANK_SUMMARY
PDF File ID: 4832317
Report generated 07/07/2016 08:33

METHOD BLANK SUMMARY

Login Number: L16061026
Blank File ID: NI.070516.154936
Prep Date: 06/21/16 11:18
Analyzed Date: 07/05/16 15:49
Analyst: JYH

Work Group: WG574572
Blank Sample ID: WG573548-02
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573548-03	NI.062916.125705	06/29/16 12:57	01
18WW16F-061616	L16061026-02	NI.062916.145120	06/29/16 14:51	01
129-061616	L16061026-04	NI.062916.145431	06/29/16 14:54	01
120F-061616	L16061026-06	NI.062916.145742	06/29/16 14:57	01
123-061616	L16061026-07	NI.062916.150054	06/29/16 15:00	01
LCS	WG573548-03	NI.070516.155247	07/05/16 15:52	02
18WW16F-061616	L16061026-02	NI.070516.160533	07/05/16 16:05	DL01
18WW16F-061616	L16061026-02	NI.070516.160845	07/05/16 16:08	DL02
129-061616	L16061026-04	NI.070516.161156	07/05/16 16:11	02
129-061616	L16061026-04	NI.070516.161508	07/05/16 16:15	DL01
120F-061616	L16061026-06	NI.070516.163034	07/05/16 16:30	02
123-061616	L16061026-07	NI.070516.163440	07/05/16 16:34	02
18WW16F-061616	L16061026-02	NI.070616.152752	07/06/16 15:27	DL03

Report Name: BLANK_SUMMARY
PDF File ID: 4832317
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061026 Prep Date: 06/21/16 11:18 Sample ID: WG573548-02
Instrument ID: ICP-MS2 Run Date: 06/29/16 12:53 Prep Method: 3015
File ID: NI.062916.125354 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG574572 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-29-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Antimony, Total	0.000500	0.00200	0.000500	1	U
Arsenic, Total	0.000500	0.00200	0.000500	1	U
Barium, Total	0.00150	0.00600	0.00150	1	U
Cadmium, Total	0.000300	0.00120	0.000300	1	U
Chromium, Total	0.00100	0.00400	0.00100	1	U
Copper, Total	0.00100	0.00400	0.00100	1	U
Lead, Total	0.000500	0.00200	0.000500	1	U
Manganese, Total	0.00100	0.00400	0.00239	1	*
Nickel, Total	0.00200	0.00800	0.00200	1	U
Silver, Total	0.000500	0.00200	0.000589	1	J
Thallium, Total	0.000100	0.000400	0.000100	1	U
Vanadium, Total	0.000500	0.00200	0.000500	1	U
Zinc, Total	0.0125	0.0500	0.0125	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4832318
07-JUL-2016 08:33

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061026 Prep Date: 06/21/16 11:18 Sample ID: WG573548-02
Instrument ID: ICP-MS2 Run Date: 07/05/16 15:49 Prep Method: 3015
File ID: NI.070516.154936 Analyst: JYH Method: 6020A
Workgroup (AAB#): WG574572 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-05-JUL-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Cobalt, Total	0.000500	0.00200	0.000500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4832318
07-JUL-2016 08:33

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061026 Run Date: 06/29/2016 Sample ID: WG573548-03
Instrument ID: ICP-MS2 Run Time: 12:57 Prep Method: 3015
File ID: NI.062916.125705 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG574572 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD75998 Cal ID: ICP-MS-29-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Antimony, Total	0.125	0.118	94.4	80 - 120	
Arsenic, Total	0.125	0.122	97.5	80 - 120	
Barium, Total	0.125	0.121	97.0	80 - 120	
Cadmium, Total	0.125	0.121	96.8	80 - 120	
Chromium, Total	0.125	0.130	104	80 - 120	
Copper, Total	0.125	0.131	105	80 - 120	
Lead, Total	0.125	0.123	98.3	80 - 120	
Manganese, Total	0.125	0.136	109	80 - 120	
Nickel, Total	0.125	0.129	104	80 - 120	
Silver, Total	0.125	0.123	98.7	80 - 120	
Thallium, Total	0.125	0.123	98.1	80 - 120	
Vanadium, Total	0.125	0.127	102	80 - 120	
Zinc, Total	0.125	0.134	107	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4832319
Report generated: 07/07/2016 08:33

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061026 Run Date: 07/05/2016 Sample ID: WG573548-03
Instrument ID: ICP-MS2 Run Time: 15:52 Prep Method: 3015
File ID: NI.070516.155247 Analyst: JYH Method: 6020A
Workgroup (AAB#): WG574572 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD75998 Cal ID: ICP-MS-05-JUL-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Cobalt, Total	0.125	0.115	91.6	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4832319
Report generated: 07/07/2016 08:33

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061026 Cal ID: ICP-MS2- Worknum: WG574572
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG573548-01 File ID: NI.062916.130017 Dil: 1 Matrix: WATER
Sample ID: WG573548-04 MS File ID: NI.062916.130328 Dil: 1 Units: mg/L
Sample ID: WG573548-05 MSD File ID: NI.062916.130639 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Antimony	0.000929	0.125	0.123	97.5	0.125	0.126	100	2.42	80 - 120	20	
Arsenic	0.00184	0.125	0.137	108	0.125	0.136	108	0.245	80 - 120	20	
Barium	0.0277	0.125	0.147	95.5	0.125	0.149	96.9	1.17	80 - 120	20	
Cadmium	ND	0.125	0.121	96.7	0.125	0.123	98.3	1.66	80 - 120	20	
Chromium	0.00161	0.125	0.127	100	0.125	0.125	98.5	1.86	80 - 120	20	
Copper	0.0278	0.125	0.160	106	0.125	0.135	85.4	17.4	80 - 120	20	
Lead	ND	0.125	0.125	99.9	0.125	0.129	103	3.34	80 - 120	20	
Manganese	0.572	0.125	0.687	92.1	0.125	0.694	97.6	0.980	80 - 120	20	
Nickel	0.00762	0.125	0.130	97.9	0.125	0.130	97.8	0.0660	80 - 120	20	
Silver	ND	0.125	0.0534	42.7	0.125	0.0494	39.5	7.77	80 - 120	20	*
Thallium	ND	0.125	0.125	100	0.125	0.126	101	0.495	80 - 120	20	
Vanadium	ND	0.125	0.133	106	0.125	0.134	107	0.902	80 - 120	20	
Zinc	0.0139	0.125	0.143	104	0.125	0.133	95.7	7.23	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4832320
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061026 Cal ID: ICP-MS2 - Worknum: WG574572
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG573548-01 File ID: NI.070516.155559 Dil: 1 Matrix: WATER
Sample ID: WG573548-04 MS File ID: NI.070516.155910 Dil: 1 Units: mg/L
Sample ID: WG573548-05 MSD File ID: NI.070516.160221 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Cobalt	0.000653	0.125	0.122	97.1	0.125	0.118	94.0	3.22	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4832320
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16061026 **Worknum:** WG574572
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG574572-02 **File ID:** NI.062916.131925 **Dil:** 5 **Units:** ug/L
Sample: L16060986-03 **File ID:** NI.062916.131302 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	ND	U	2.02	F	1290.00	
Arsenic	1.45	X	1.60	F	10.50	
Barium	11.5	X	11.5	F	0.05	
Cadmium	ND	U	ND	U		
Chromium	0.585	F	ND	U		
Cobalt	2.82	X	2.79	F	1.29	
Copper	8.96	X	9.10	X	1.62	
Lead	ND	U	ND	U		
Manganese	1780		1750		1.52	
Nickel	6.40	X	6.54	F	2.06	
Silver	ND	U	ND	U		
Thallium	ND	U	ND	U		
Vanadium	0.203	F	ND	U		
Zinc	22.4	X	27.8	F	24.50	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4832314
07/07/2016 08:33

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16061026 **Worknum:** WG574572
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG574572-04 **File ID:** NI.070516.164103 **Dil:** 5 **Units:** ug/L
Sample: L16061026-07 **File ID:** NI.070516.163440 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	ND	U	1.70	F	1140.00	
Arsenic	0.283	F	ND	U		
Barium	49.6	X	54.2	X	9.24	
Cadmium	ND	U	ND	U		
Chromium	0.588	F	ND	U		
Cobalt	1.00	X	1.09	F	9.13	
Copper	0.617	F	ND	U		
Lead	0.406	F	ND	U		
Manganese	5.52	X	5.72	F	3.64	
Nickel	0.977	F	ND	U		
Silver	ND	U	ND	U		
Thallium	ND	U	ND	U		
Vanadium	0.831	X	ND	U		
Zinc	ND	U	ND	U		

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4832314
07/07/2016 08:33

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061026 **Worknum:** WG574572
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG574572-01 **File ID:** NI.062916.131614 **Dil:** 1 **Units:** ug/L
Sample ID: L16060986-03 **File ID:** NI.062916.131302 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	49.8		0	U	50	99.5	75 - 125	
ARSENIC	56.4		1.45		50	109.9	75 - 125	
BARIUM	59.4		11.5		50	95.9	75 - 125	
CADMIUM	50.9		0	U	50	101.9	75 - 125	
CHROMIUM	52.3		0.585	F	50	103.5	75 - 125	
COBALT	61.7		2.82		50	117.8	75 - 125	
COPPER	58.9		8.96		50	100.0	75 - 125	
LEAD	52.9		0	U	50	105.9	75 - 125	
MANGANESE	1830		1780		50	91.5	75 - 125	
NICKEL	56.4		6.40		50	100.0	75 - 125	
SILVER	49.7		0	U	50	99.5	75 - 125	
THALLIUM	52.3		0	U	50	104.6	75 - 125	
VANADIUM	56.0		0.203	F	50	111.6	75 - 125	
ZINC	73.9		22.4		50	103.0	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4832315
Report generated: 07/07/2016 08:33

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061026 **Worknum:** WG574572
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG574572-03 **File ID:** NI.070516.163751 **Dil:** 1 **Units:** ug/L
Sample ID: L16061026-07 **File ID:** NI.070516.163440 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	47.9		0	U	50	95.8	75 - 125	
ARSENIC	48.7		0.283	F	50	96.8	75 - 125	
BARIUM	95.8		49.6		50	92.3	75 - 125	
CADMIUM	48.2		0	U	50	96.5	75 - 125	
CHROMIUM	47.4		0.588	F	50	93.6	75 - 125	
COBALT	49.1		1.00		50	96.2	75 - 125	
COPPER	48.5		0.617	F	50	95.8	75 - 125	
LEAD	50.1		0.406	F	50	99.3	75 - 125	
MANGANESE	51.9		5.52		50	92.8	75 - 125	
NICKEL	48.0		0.977	F	50	94.0	75 - 125	
SILVER	47.2		0	U	50	94.4	75 - 125	
THALLIUM	47.8		0	U	50	95.6	75 - 125	
VANADIUM	47.9		0.831		50	94.1	75 - 125	
ZINC	52.8		0	U	50	105.7	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4832315
Report generated: 07/07/2016 08:33

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061026	Workgroup (AAB#):	WG574572
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG574676	Initial Calibration Date:	29-JUN-2016 11:35

	WG574676-01		WG574676-02		WG574676-03		WG574676-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	28.2	.4	255	50	227000	100	448000	.999981	
ARSENIC	0	-40.0	.4	-10.4	50	57000	100	110000	.999904	
BARIUM	0	25.3	.4	136	50	99600	100	196000	.999974	
CADMIUM	0	1.30	.4	122	50	102000	100	200000	.999946	
CHROMIUM	0	7540	.4	7930	50	379000	100	748000	.999997	
COBALT	0	239	.4	575	50	337000	100	648000	.99988	
COPPER	0	103	.4	285	50	94300	100	184000	.999979	
LEAD	0	873	.4	2280	50	926000	100	1830000	.999949	
MANGANESE	0	784	.4	1380	50	355000	100	686000	.999925	
NICKEL	0	221	.4	324	50	94600	100	186000	.999991	
SILVER	0	86.3	.4	412	50	318000	100	624000	.999961	
THALLIUM	0	1.70	.4	417	50	406000	100	804000	.999963	
VANADIUM	0	1430	.4	1850	50	385000	100	745000	.999935	
ZINC	0	365	.4	549	50	56000	100	108000	.999932	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4832323
Report generated: 07-JUL-2016 08:33

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061026	Workgroup (AAB#):	WG574572
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG575179	Initial Calibration Date:	05-JUL-2016 09:36

	WG575179-01		WG575179-02		WG575179-03		WG575179-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	109	.4	306	50	221000	100	451000	.999882	
ARSENIC	0	-83.8	.4	-2.10	50	57500	100	112000	.99994	
BARIUM	0	34.0	.4	149	50	99900	100	193000	.999924	
CADMIUM	0	3.00	.4	116	50	106000	100	204000	.999881	
CHROMIUM	0	6920	.4	7550	50	368000	100	707000	.999922	
COBALT	0	156	.4	528	50	345000	100	669000	.999911	
COPPER	0	141	.4	251	50	95800	100	184000	.999865	
LEAD	0	731	.4	1810	50	908000	100	1770000	.999981	
MANGANESE	0	831	.4	1190	50	322000	100	624000	.999917	
NICKEL	0	385	.4	484	50	95600	100	184000	.999886	
SILVER	0	67.3	.4	421	50	337000	100	642000	.999841	
THALLIUM	0	4.30	.4	436	50	404000	100	778000	.999935	
VANADIUM	0	1410	.4	1710	50	367000	100	713000	.99994	
ZINC	0	188	.4	239	50	56400	100	109000	.999877	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4832323
Report generated: 07-JUL-2016 08:33

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061026	Workgroup (AAB#):	WG574572
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG575370	Initial Calibration Date:	06-JUL-2016 09:17

	WG575370-01		WG575370-02		WG575370-03		WG575370-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	280	.4	308	50	202000	100	429000	.999223	
ARSENIC	0	-74.4	.4	-50.4	50	52000	100	105000	1	
BARIUM	0	25.7	.4	66.7	50	92500	100	184000	.999984	
CADMIUM	0	4.30	.4	21.6	50	97200	100	190000	.999996	
CHROMIUM	0	6680	.4	6770	50	353000	100	705000	.999996	
COBALT	0	226	.4	269	50	306000	100	609000	.999959	
COPPER	0	110	.4	106	50	84100	100	171000	1	
LEAD	0	774	.4	923	50	894000	100	1760000	.999728	
MANGANESE	0	812	.4	892	50	312000	100	615000	.999906	
NICKEL	0	364	.4	348	50	84600	100	171000	1	
SILVER	0	71.3	.4	172	50	300000	100	609000	.99988	
THALLIUM	0	9.70	.4	134	50	381000	100	759000	.999873	
VANADIUM	0	1280	.4	1370	50	354000	100	719000	.999998	
ZINC	0	186	.4	165	50	50700	100	103000	.999997	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4832323
Report generated: 07-JUL-2016 08:33

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061026
Instrument ID: ICP-MS2
File ID: NI.062916.114146
Workgroup (AAB#): WG574572
Matrix: WATER

Run Date: 06/29/2016
Run Time: 11:41
Analyst: BKT
Cal ID: ICP-MS2 - 29-JUN-16

Sample ID: WG574676-06
Method: 6020A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
COPPER	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.335	F
THALLIUM	.04	.16	.04	U
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4832325
Report generated 07/07/2016 08:34

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061026
Instrument ID: ICP-MS2
File ID: NI.070516.095329
Workgroup (AAB#): WG574572
Matrix: WATER

Run Date: 07/05/2016
Run Time: 09:53
Analyst: JYH
Cal ID: ICP-MS2 - 05-JUL-16

Sample ID: WG575179-09
Method: 6020A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
COPPER	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.2	U
THALLIUM	.04	.16	.04	U
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4832325
Report generated 07/07/2016 08:34

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061026
Instrument ID: ICP-MS2
File ID: NI.070616.092404
Workgroup (AAB#): WG574572
Matrix: WATER

Run Date: 07/06/2016
Run Time: 09:24
Analyst: JYH
Cal ID: ICP-MS2 - 06-JUL-16

Sample ID: WG575370-06
Method: 6020A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
COPPER	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.236	F
THALLIUM	.04	.16	.0496	F
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4832325
Report generated 07/07/2016 08:34

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 06/29/2016
Sample ID: WG574676-11
Instrument ID: ICP-MS2
Run Time: 12:07
Method: 6020A
File ID: NI.062916.120734
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4832328
Report generated 07/07/2016 08:34

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 06/29/2016
Sample ID: WG574676-13
Instrument ID: ICP-MS2
Run Time: 12:40
Method: 6020A
File ID: NI.062916.124059
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4832328
Report generated 07/07/2016 08:34

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 06/29/2016
Sample ID: WG574676-16
Instrument ID: ICP-MS2
Run Time: 13:29
Method: 6020A
File ID: NI.062916.132901
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.834	F
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4832328
Report generated 07/07/2016 08:34

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 06/29/2016
Sample ID: WG574676-18
Instrument ID: ICP-MS2
Run Time: 14:07
Method: 6020A
File ID: NI.062916.140723
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4832328
Report generated 07/07/2016 08:34

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 06/29/2016
Sample ID: WG574676-20
Instrument ID: ICP-MS2
Run Time: 15:07
Method: 6020A
File ID: NI.062916.150718
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Login Number: L16061026
Run Date: 06/29/2016
Sample ID: WG574676-28
Instrument ID: ICP-MS2
Run Time: 17:37
Method: 6020A
File ID: NI.062916.173730
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Login Number: L16061026
Run Date: 06/29/2016
Sample ID: WG574676-32
Instrument ID: ICP-MS2
Run Time: 17:59
Method: 6020A
File ID: NI.062916.175955
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.439	F
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Microbac Laboratories Inc.
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Login Number: L16061026
Run Date: 07/05/2016
Sample ID: WG575179-14
Instrument ID: ICP-MS2
Run Time: 10:09
Method: 6020A
File ID: NI.070516.100941
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 05-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.322	F
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 07/05/2016
Sample ID: WG575179-35
Instrument ID: ICP-MS2
Run Time: 15:44
Method: 6020A
File ID: NI.070516.154411
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 05-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 07/05/2016
Sample ID: WG575179-37
Instrument ID: ICP-MS2
Run Time: 16:21
Method: 6020A
File ID: NI.070516.162132
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 05-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 07/05/2016
Sample ID: WG575179-39
Instrument ID: ICP-MS2
Run Time: 16:50
Method: 6020A
File ID: NI.070516.165039
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 05-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.217	F
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Login Number: L16061026
Run Date: 07/05/2016
Sample ID: WG575179-45
Instrument ID: ICP-MS2
Run Time: 18:39
Method: 6020A
File ID: NI.070516.183919
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 05-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Login Number: L16061026
Run Date: 07/05/2016
Sample ID: WG575179-49
Instrument ID: ICP-MS2
Run Time: 19:17
Method: 6020A
File ID: NI.070516.191740
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 05-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Login Number: L16061026
Run Date: 07/06/2016
Sample ID: WG575370-11
Instrument ID: ICP-MS2
Run Time: 09:40
Method: 6020A
File ID: NI.070616.094005
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 06-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.361	F
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0461	F
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 07/06/2016
Sample ID: WG575370-27
Instrument ID: ICP-MS2
Run Time: 14:55
Method: 6020A
File ID: NI.070616.145531
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 06-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.418	F
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0458	F
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 07/06/2016
Sample ID: WG575370-29
Instrument ID: ICP-MS2
Run Time: 15:34
Method: 6020A
File ID: NI.070616.153417
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 06-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0477	F
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 07/06/2016
Sample ID: WG575370-39
Instrument ID: ICP-MS2
Run Time: 18:53
Method: 6020A
File ID: NI.070616.185304
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 06-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0424	F
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 07/06/2016
Sample ID: WG575370-43
Instrument ID: ICP-MS2
Run Time: 19:15
Method: 6020A
File ID: NI.070616.191526
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 06-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.298	F
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0490	F
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061026
Run Date: 07/06/2016
Sample ID: WG575370-05
Instrument ID: ICP-MS2
Run Time: 09:20
Method: 6020A
File ID: NI.070616.092051
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 06-JUL-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	51.8	104	90 - 110	
Arsenic		50	50.2	100	90 - 110	
Barium		50	51.1	102	90 - 110	
Cadmium		50	50.8	102	90 - 110	
Chromium		50	50.2	100	90 - 110	
Cobalt		50	50.7	101	90 - 110	
Copper		50	50.0	100	90 - 110	
Lead		50	50.8	102	90 - 110	
Manganese		50	50.7	101	90 - 110	
Nickel		50	49.7	99.4	90 - 110	
Silver		50	50.9	102	90 - 110	
Thallium		50	50.3	101	90 - 110	
Vanadium		50	50.7	101	90 - 110	
Zinc		50	50.3	101	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4832324
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061026 Run Date: 06/29/2016 Sample ID: WG574676-05
Instrument ID: ICP-MS2 Run Time: 11:38 Method: 6020A
File ID: NI.062916.113833 Analyst: BKT Units: ug/L
Workgroup (AAB#): WG574572 Cal ID: ICP-MS - 29-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	49.8	99.7	90 - 110	
Arsenic		50	50.9	102	90 - 110	
Barium		50	49.9	99.9	90 - 110	
Cadmium		50	50.3	101	90 - 110	
Chromium		50	50.0	100	90 - 110	
Cobalt		50	50.4	101	90 - 110	
Copper		50	50.8	102	90 - 110	
Lead		50	51.0	102	90 - 110	
Manganese		50	51.9	104	90 - 110	
Nickel		50	50.6	101	90 - 110	
Silver		50	50.9	102	90 - 110	
Thallium		50	50.7	101	90 - 110	
Vanadium		50	51.2	102	90 - 110	
Zinc		50	52.1	104	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4832324
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061026 Run Date: 07/05/2016 Sample ID: WG575179-08
Instrument ID: ICP-MS2 Run Time: 09:50 Method: 6020A
File ID: NI.070516.095016 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG574572 Cal ID: ICP-MS - 05-JUL-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	49.1	98.2	90 - 110	
Arsenic		50	47.5	95.1	90 - 110	
Barium		50	47.9	95.8	90 - 110	
Cadmium		50	47.9	95.8	90 - 110	
Chromium		50	48.0	96.0	90 - 110	
Cobalt		50	48.4	96.8	90 - 110	
Copper		50	48.0	96.1	90 - 110	
Lead		50	48.1	96.1	90 - 110	
Manganese		50	48.1	96.3	90 - 110	
Nickel		50	48.0	96.0	90 - 110	
Silver		50	48.0	95.9	90 - 110	
Thallium		50	48.0	96.0	90 - 110	
Vanadium		50	48.2	96.3	90 - 110	
Zinc		50	48.3	96.6	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4832324
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 06/29/2016
Sample ID: WG574676-10
Instrument ID: ICP-MS2
Run Time: 12:00
Method: 6020A
File ID: NI.062916.120010
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0508	mg/L	102	90 - 110		
Arsenic		0.0500	0.0514	mg/L	103	90 - 110		
Barium		0.0500	0.0505	mg/L	101	90 - 110		
Cadmium		0.0500	0.0516	mg/L	103	90 - 110		
Chromium		0.0500	0.0504	mg/L	101	90 - 110		
Cobalt		0.0500	0.0538	mg/L	108	90 - 110		
Copper		0.0500	0.0507	mg/L	101	90 - 110		
Lead		0.0500	0.0529	mg/L	106	90 - 110		
Manganese		0.0500	0.0534	mg/L	107	90 - 110		
Nickel		0.0500	0.0502	mg/L	100	90 - 110		
Silver		0.0500	0.0508	mg/L	102	90 - 110		
Thallium		0.0500	0.0519	mg/L	104	90 - 110		
Vanadium		0.0500	0.0516	mg/L	103	90 - 110		
Zinc		0.0500	0.0510	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 06/29/2016
Sample ID: WG574676-12
Instrument ID: ICP-MS2
Run Time: 12:37
Method: 6020A
File ID: NI.062916.123748
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0505	mg/L	101	90 - 110		
Arsenic		0.0500	0.0498	mg/L	99.6	90 - 110		
Barium		0.0500	0.0499	mg/L	99.8	90 - 110		
Cadmium		0.0500	0.0506	mg/L	101	90 - 110		
Chromium		0.0500	0.0489	mg/L	97.8	90 - 110		
Cobalt		0.0500	0.0506	mg/L	101	90 - 110		
Copper		0.0500	0.0500	mg/L	99.9	90 - 110		
Lead		0.0500	0.0499	mg/L	99.7	90 - 110		
Manganese		0.0500	0.0500	mg/L	99.9	90 - 110		
Nickel		0.0500	0.0491	mg/L	98.2	90 - 110		
Silver		0.0500	0.0505	mg/L	101	90 - 110		
Thallium		0.0500	0.0497	mg/L	99.4	90 - 110		
Vanadium		0.0500	0.0503	mg/L	101	90 - 110		
Zinc		0.0500	0.0498	mg/L	99.7	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 06/29/2016
Sample ID: WG574676-15
Instrument ID: ICP-MS2
Run Time: 13:25
Method: 6020A
File ID: NI.062916.132550
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0490	mg/L	98.1	90 - 110		
Arsenic		0.0500	0.0501	mg/L	100	90 - 110		
Barium		0.0500	0.0473	mg/L	94.6	90 - 110		
Cadmium		0.0500	0.0490	mg/L	98.0	90 - 110		
Chromium		0.0500	0.0489	mg/L	97.9	90 - 110		
Cobalt		0.0500	0.0557	mg/L	111	90 - 110		*
Copper		0.0500	0.0491	mg/L	98.3	90 - 110		
Lead		0.0500	0.0505	mg/L	101	90 - 110		
Manganese		0.0500	0.0508	mg/L	102	90 - 110		
Nickel		0.0500	0.0487	mg/L	97.5	90 - 110		
Silver		0.0500	0.0499	mg/L	99.7	90 - 110		
Thallium		0.0500	0.0494	mg/L	98.8	90 - 110		
Vanadium		0.0500	0.0520	mg/L	104	90 - 110		
Zinc		0.0500	0.0498	mg/L	99.6	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 06/29/2016
Sample ID: WG574676-17
Instrument ID: ICP-MS2
Run Time: 14:04
Method: 6020A
File ID: NI.062916.140412
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0501	mg/L	100	90 - 110		
Arsenic		0.0500	0.0523	mg/L	105	90 - 110		
Barium		0.0500	0.0474	mg/L	94.8	90 - 110		
Cadmium		0.0500	0.0492	mg/L	98.4	90 - 110		
Chromium		0.0500	0.0510	mg/L	102	90 - 110		
Cobalt		0.0500	0.0568	mg/L	114	90 - 110		*
Copper		0.0500	0.0515	mg/L	103	90 - 110		
Lead		0.0500	0.0511	mg/L	102	90 - 110		
Manganese		0.0500	0.0517	mg/L	103	90 - 110		
Nickel		0.0500	0.0509	mg/L	102	90 - 110		
Silver		0.0500	0.0508	mg/L	102	90 - 110		
Thallium		0.0500	0.0506	mg/L	101	90 - 110		
Vanadium		0.0500	0.0539	mg/L	108	90 - 110		
Zinc		0.0500	0.0522	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026 Run Date: 06/29/2016 Sample ID: WG574676-19
Instrument ID: ICP-MS2 Run Time: 15:04 Method: 6020A
File ID: NI.062916.150407 Analyst: BKT QC Key: DOD4
Workgroup (AAB#): WG574572 Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0495	mg/L	98.9	90 - 110		
Arsenic		0.0500	0.0504	mg/L	101	90 - 110		
Barium		0.0500	0.0484	mg/L	96.9	90 - 110		
Cadmium		0.0500	0.0498	mg/L	99.6	90 - 110		
Chromium		0.0500	0.0505	mg/L	101	90 - 110		
Cobalt		0.0500	0.0552	mg/L	110	90 - 110		
Copper		0.0500	0.0505	mg/L	101	90 - 110		
Lead		0.0500	0.0526	mg/L	105	90 - 110		
Manganese		0.0500	0.0531	mg/L	106	90 - 110		
Nickel		0.0500	0.0503	mg/L	101	90 - 110		
Silver		0.0500	0.0501	mg/L	100	90 - 110		
Thallium		0.0500	0.0509	mg/L	102	90 - 110		
Vanadium		0.0500	0.0523	mg/L	105	90 - 110		
Zinc		0.0500	0.0512	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 06/29/2016
Sample ID: WG574676-27
Instrument ID: ICP-MS2
Run Time: 17:34
Method: 6020A
File ID: NI.062916.173419
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0486	mg/L	97.2	90 - 110		
Arsenic		0.0500	0.0488	mg/L	97.6	90 - 110		
Barium		0.0500	0.0466	mg/L	93.2	90 - 110		
Cadmium		0.0500	0.0485	mg/L	97.1	90 - 110		
Chromium		0.0500	0.0491	mg/L	98.2	90 - 110		
Cobalt		0.0500	0.0513	mg/L	103	90 - 110		
Copper		0.0500	0.0491	mg/L	98.1	90 - 110		
Lead		0.0500	0.0503	mg/L	101	90 - 110		
Manganese		0.0500	0.0482	mg/L	96.4	90 - 110		
Nickel		0.0500	0.0489	mg/L	97.8	90 - 110		
Silver		0.0500	0.0493	mg/L	98.6	90 - 110		
Thallium		0.0500	0.0491	mg/L	98.2	90 - 110		
Vanadium		0.0500	0.0503	mg/L	101	90 - 110		
Zinc		0.0500	0.0491	mg/L	98.1	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 06/29/2016
Sample ID: WG574676-31
Instrument ID: ICP-MS2
Run Time: 17:56
Method: 6020A
File ID: NI.062916.175644
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0502	mg/L	100	90 - 110		
Arsenic		0.0500	0.0511	mg/L	102	90 - 110		
Barium		0.0500	0.0484	mg/L	96.9	90 - 110		
Cadmium		0.0500	0.0504	mg/L	101	90 - 110		
Chromium		0.0500	0.0524	mg/L	105	90 - 110		
Cobalt		0.0500	0.0556	mg/L	111	90 - 110		*
Copper		0.0500	0.0514	mg/L	103	90 - 110		
Lead		0.0500	0.0535	mg/L	107	90 - 110		
Manganese		0.0500	0.0515	mg/L	103	90 - 110		
Nickel		0.0500	0.0517	mg/L	103	90 - 110		
Silver		0.0500	0.0504	mg/L	101	90 - 110		
Thallium		0.0500	0.0525	mg/L	105	90 - 110		
Vanadium		0.0500	0.0529	mg/L	106	90 - 110		
Zinc		0.0500	0.0512	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 07/05/2016
Sample ID: WG575179-13
Instrument ID: ICP-MS2
Run Time: 10:06
Method: 6020A
File ID: NI.070516.100630
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 05-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0520	mg/L	104	90 - 110		
Arsenic		0.0500	0.0487	mg/L	97.3	90 - 110		
Barium		0.0500	0.0490	mg/L	98.0	90 - 110		
Cadmium		0.0500	0.0495	mg/L	99.1	90 - 110		
Chromium		0.0500	0.0494	mg/L	98.9	90 - 110		
Cobalt		0.0500	0.0498	mg/L	99.6	90 - 110		
Copper		0.0500	0.0491	mg/L	98.3	90 - 110		
Lead		0.0500	0.0502	mg/L	100	90 - 110		
Manganese		0.0500	0.0491	mg/L	98.3	90 - 110		
Nickel		0.0500	0.0496	mg/L	99.2	90 - 110		
Silver		0.0500	0.0494	mg/L	98.8	90 - 110		
Thallium		0.0500	0.0500	mg/L	100	90 - 110		
Vanadium		0.0500	0.0498	mg/L	99.6	90 - 110		
Zinc		0.0500	0.0497	mg/L	99.4	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 07/05/2016
Sample ID: WG575179-34
Instrument ID: ICP-MS2
Run Time: 15:41
Method: 6020A
File ID: NI.070516.154100
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 05-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0493	mg/L	98.6	90 - 110		
Arsenic		0.0500	0.0472	mg/L	94.5	90 - 110		
Barium		0.0500	0.0462	mg/L	92.3	90 - 110		
Cadmium		0.0500	0.0473	mg/L	94.6	90 - 110		
Chromium		0.0500	0.0464	mg/L	92.8	90 - 110		
Cobalt		0.0500	0.0480	mg/L	96.0	90 - 110		
Copper		0.0500	0.0471	mg/L	94.2	90 - 110		
Lead		0.0500	0.0499	mg/L	99.7	90 - 110		
Manganese		0.0500	0.0452	mg/L	90.4	90 - 110		
Nickel		0.0500	0.0467	mg/L	93.3	90 - 110		
Silver		0.0500	0.0474	mg/L	94.8	90 - 110		
Thallium		0.0500	0.0478	mg/L	95.5	90 - 110		
Vanadium		0.0500	0.0465	mg/L	93.0	90 - 110		
Zinc		0.0500	0.0502	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 07/05/2016
Sample ID: WG575179-36
Instrument ID: ICP-MS2
Run Time: 16:18
Method: 6020A
File ID: NI.070516.161820
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 05-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0477	mg/L	95.4	90 - 110		
Arsenic		0.0500	0.0479	mg/L	95.8	90 - 110		
Barium		0.0500	0.0456	mg/L	91.2	90 - 110		
Cadmium		0.0500	0.0471	mg/L	94.3	90 - 110		
Chromium		0.0500	0.0473	mg/L	94.7	90 - 110		
Cobalt		0.0500	0.0491	mg/L	98.2	90 - 110		
Copper		0.0500	0.0478	mg/L	95.5	90 - 110		
Lead		0.0500	0.0505	mg/L	101	90 - 110		
Manganese		0.0500	0.0463	mg/L	92.7	90 - 110		
Nickel		0.0500	0.0472	mg/L	94.3	90 - 110		
Silver		0.0500	0.0467	mg/L	93.4	90 - 110		
Thallium		0.0500	0.0479	mg/L	95.7	90 - 110		
Vanadium		0.0500	0.0470	mg/L	94.1	90 - 110		
Zinc		0.0500	0.0491	mg/L	98.1	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 07/05/2016
Sample ID: WG575179-38
Instrument ID: ICP-MS2
Run Time: 16:47
Method: 6020A
File ID: NI.070516.164727
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 05-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0516	mg/L	103	90 - 110		
Arsenic		0.0500	0.0499	mg/L	99.8	90 - 110		
Barium		0.0500	0.0480	mg/L	95.9	90 - 110		
Cadmium		0.0500	0.0496	mg/L	99.3	90 - 110		
Chromium		0.0500	0.0492	mg/L	98.4	90 - 110		
Cobalt		0.0500	0.0503	mg/L	101	90 - 110		
Copper		0.0500	0.0492	mg/L	98.3	90 - 110		
Lead		0.0500	0.0521	mg/L	104	90 - 110		
Manganese		0.0500	0.0483	mg/L	96.6	90 - 110		
Nickel		0.0500	0.0490	mg/L	98.0	90 - 110		
Silver		0.0500	0.0492	mg/L	98.5	90 - 110		
Thallium		0.0500	0.0500	mg/L	100	90 - 110		
Vanadium		0.0500	0.0488	mg/L	97.6	90 - 110		
Zinc		0.0500	0.0510	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 07/05/2016
Sample ID: WG575179-44
Instrument ID: ICP-MS2
Run Time: 18:36
Method: 6020A
File ID: NI.070516.183607
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 05-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0534	mg/L	107	90 - 110		
Arsenic		0.0500	0.0512	mg/L	102	90 - 110		
Barium		0.0500	0.0500	mg/L	100	90 - 110		
Cadmium		0.0500	0.0514	mg/L	103	90 - 110		
Chromium		0.0500	0.0508	mg/L	102	90 - 110		
Cobalt		0.0500	0.0523	mg/L	105	90 - 110		
Copper		0.0500	0.0510	mg/L	102	90 - 110		
Lead		0.0500	0.0546	mg/L	109	90 - 110		
Manganese		0.0500	0.0500	mg/L	100	90 - 110		
Nickel		0.0500	0.0513	mg/L	103	90 - 110		
Silver		0.0500	0.0508	mg/L	102	90 - 110		
Thallium		0.0500	0.0521	mg/L	104	90 - 110		
Vanadium		0.0500	0.0503	mg/L	101	90 - 110		
Zinc		0.0500	0.0529	mg/L	106	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 07/05/2016
Sample ID: WG575179-48
Instrument ID: ICP-MS2
Run Time: 19:14
Method: 6020A
File ID: NI.070516.191429
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 05-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0500	mg/L	100	90 - 110		
Arsenic		0.0500	0.0478	mg/L	95.5	90 - 110		
Barium		0.0500	0.0462	mg/L	92.3	90 - 110		
Cadmium		0.0500	0.0476	mg/L	95.3	90 - 110		
Chromium		0.0500	0.0470	mg/L	94.0	90 - 110		
Cobalt		0.0500	0.0486	mg/L	97.3	90 - 110		
Copper		0.0500	0.0475	mg/L	94.9	90 - 110		
Lead		0.0500	0.0507	mg/L	101	90 - 110		
Manganese		0.0500	0.0465	mg/L	92.9	90 - 110		
Nickel		0.0500	0.0472	mg/L	94.3	90 - 110		
Silver		0.0500	0.0472	mg/L	94.3	90 - 110		
Thallium		0.0500	0.0484	mg/L	96.8	90 - 110		
Vanadium		0.0500	0.0472	mg/L	94.4	90 - 110		
Zinc		0.0500	0.0491	mg/L	98.2	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 07/06/2016
Sample ID: WG575370-10
Instrument ID: ICP-MS2
Run Time: 09:36
Method: 6020A
File ID: NI.070616.093653
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 06-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0511	mg/L	102	90 - 110		
Arsenic		0.0500	0.0505	mg/L	101	90 - 110		
Barium		0.0500	0.0490	mg/L	97.9	90 - 110		
Cadmium		0.0500	0.0493	mg/L	98.7	90 - 110		
Chromium		0.0500	0.0505	mg/L	101	90 - 110		
Cobalt		0.0500	0.0509	mg/L	102	90 - 110		
Copper		0.0500	0.0504	mg/L	101	90 - 110		
Lead		0.0500	0.0511	mg/L	102	90 - 110		
Manganese		0.0500	0.0513	mg/L	103	90 - 110		
Nickel		0.0500	0.0502	mg/L	100	90 - 110		
Silver		0.0500	0.0493	mg/L	98.6	90 - 110		
Thallium		0.0500	0.0505	mg/L	101	90 - 110		
Vanadium		0.0500	0.0507	mg/L	101	90 - 110		
Zinc		0.0500	0.0507	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 07/06/2016
Sample ID: WG575370-26
Instrument ID: ICP-MS2
Run Time: 14:52
Method: 6020A
File ID: NI.070616.145220
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 06-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0512	mg/L	102	90 - 110		
Arsenic		0.0500	0.0508	mg/L	102	90 - 110		
Barium		0.0500	0.0499	mg/L	99.8	90 - 110		
Cadmium		0.0500	0.0508	mg/L	102	90 - 110		
Chromium		0.0500	0.0519	mg/L	104	90 - 110		
Cobalt		0.0500	0.0506	mg/L	101	90 - 110		
Copper		0.0500	0.0515	mg/L	103	90 - 110		
Lead		0.0500	0.0525	mg/L	105	90 - 110		
Manganese		0.0500	0.0530	mg/L	106	90 - 110		
Nickel		0.0500	0.0518	mg/L	104	90 - 110		
Silver		0.0500	0.0499	mg/L	99.7	90 - 110		
Thallium		0.0500	0.0508	mg/L	102	90 - 110		
Vanadium		0.0500	0.0504	mg/L	101	90 - 110		
Zinc		0.0500	0.0512	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 07/06/2016
Sample ID: WG575370-28
Instrument ID: ICP-MS2
Run Time: 15:31
Method: 6020A
File ID: NI.070616.153105
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 06-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0504	mg/L	101	90 - 110		
Arsenic		0.0500	0.0512	mg/L	102	90 - 110		
Barium		0.0500	0.0495	mg/L	99.0	90 - 110		
Cadmium		0.0500	0.0505	mg/L	101	90 - 110		
Chromium		0.0500	0.0523	mg/L	105	90 - 110		
Cobalt		0.0500	0.0520	mg/L	104	90 - 110		
Copper		0.0500	0.0523	mg/L	105	90 - 110		
Lead		0.0500	0.0529	mg/L	106	90 - 110		
Manganese		0.0500	0.0537	mg/L	107	90 - 110		
Nickel		0.0500	0.0525	mg/L	105	90 - 110		
Silver		0.0500	0.0502	mg/L	100	90 - 110		
Thallium		0.0500	0.0513	mg/L	103	90 - 110		
Vanadium		0.0500	0.0512	mg/L	102	90 - 110		
Zinc		0.0500	0.0519	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 07/06/2016
Sample ID: WG575370-38
Instrument ID: ICP-MS2
Run Time: 18:49
Method: 6020A
File ID: NI.070616.184952
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 06-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0496	mg/L	99.2	90 - 110		
Arsenic		0.0500	0.0503	mg/L	101	90 - 110		
Barium		0.0500	0.0491	mg/L	98.3	90 - 110		
Cadmium		0.0500	0.0501	mg/L	100	90 - 110		
Chromium		0.0500	0.0517	mg/L	103	90 - 110		
Cobalt		0.0500	0.0499	mg/L	99.8	90 - 110		
Copper		0.0500	0.0514	mg/L	103	90 - 110		
Lead		0.0500	0.0522	mg/L	104	90 - 110		
Manganese		0.0500	0.0527	mg/L	105	90 - 110		
Nickel		0.0500	0.0516	mg/L	103	90 - 110		
Silver		0.0500	0.0490	mg/L	98.0	90 - 110		
Thallium		0.0500	0.0508	mg/L	102	90 - 110		
Vanadium		0.0500	0.0496	mg/L	99.2	90 - 110		
Zinc		0.0500	0.0512	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 07/06/2016
Sample ID: WG575370-42
Instrument ID: ICP-MS2
Run Time: 19:12
Method: 6020A
File ID: NI.070616.191215
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 06-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0526	mg/L	105	90 - 110		
Arsenic		0.0500	0.0506	mg/L	101	90 - 110		
Barium		0.0500	0.0495	mg/L	99.0	90 - 110		
Cadmium		0.0500	0.0507	mg/L	101	90 - 110		
Chromium		0.0500	0.0517	mg/L	103	90 - 110		
Cobalt		0.0500	0.0513	mg/L	103	90 - 110		
Copper		0.0500	0.0513	mg/L	103	90 - 110		
Lead		0.0500	0.0521	mg/L	104	90 - 110		
Manganese		0.0500	0.0530	mg/L	106	90 - 110		
Nickel		0.0500	0.0514	mg/L	103	90 - 110		
Silver		0.0500	0.0501	mg/L	100	90 - 110		
Thallium		0.0500	0.0512	mg/L	102	90 - 110		
Vanadium		0.0500	0.0506	mg/L	101	90 - 110		
Zinc		0.0500	0.0513	mg/L	103	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061026
Run Date: 06/29/2016
Sample ID: WG574676-07
Instrument ID: ICP-MS2
Run Time: 11:46
Method: 6020A
File ID: NI.062916.114653
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.456	ug/L	114	70 - 130		
Arsenic		0.400	0.429	ug/L	107	70 - 130		
Barium		0.750	0.733	ug/L	97.8	70 - 130		
Cadmium		0.240	0.237	ug/L	98.5	70 - 130		
Chromium		0.800	0.739	ug/L	92.4	70 - 130		
Cobalt		0.400	0.414	ug/L	103	70 - 130		
Copper		0.800	0.768	ug/L	96.0	70 - 130		
Lead		0.200	0.181	ug/L	90.3	70 - 130		
Manganese		0.500	0.468	ug/L	93.6	70 - 130		
Nickel		1.60	1.56	ug/L	97.7	70 - 130		
Silver		0.400	0.390	ug/L	97.5	70 - 130		
Thallium		0.0800	0.0871	ug/L	109	70 - 130		
Vanadium		0.400	0.382	ug/L	95.5	70 - 130		
Zinc		6.25	6.64	ug/L	106	70 - 130		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061026
Run Date: 06/29/2016
Sample ID: WG574676-14
Instrument ID: ICP-MS2
Run Time: 12:44
Method: 6020A
File ID: NI.062916.124412
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.401	ug/L	100	70 - 130		
Arsenic		0.400	0.394	ug/L	98.6	70 - 130		
Barium		0.750	0.718	ug/L	95.7	70 - 130		
Cadmium		0.240	0.227	ug/L	94.7	70 - 130		
Chromium		0.800	0.768	ug/L	96.0	70 - 130		
Cobalt		0.400	0.405	ug/L	101	70 - 130		
Copper		0.800	0.751	ug/L	93.9	70 - 130		
Lead		0.200	0.179	ug/L	89.4	70 - 130		
Manganese		0.500	0.469	ug/L	93.8	70 - 130		
Nickel		1.60	1.53	ug/L	95.6	70 - 130		
Silver		0.400	0.383	ug/L	95.7	70 - 130		
Thallium		0.0800	0.0809	ug/L	101	70 - 130		
Vanadium		0.400	0.370	ug/L	92.4	70 - 130		
Zinc		6.25	6.89	ug/L	110	70 - 130		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061026
Run Date: 06/29/2016
Sample ID: WG574676-33
Instrument ID: ICP-MS2
Run Time: 18:03
Method: 6020A
File ID: NI.062916.180308
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.445	ug/L	111	70 - 130		
Arsenic		0.400	0.497	ug/L	124	70 - 130		
Barium		0.750	0.689	ug/L	91.9	70 - 130		
Cadmium		0.240	0.226	ug/L	94.3	70 - 130		
Chromium		0.800	0.764	ug/L	95.5	70 - 130		
Cobalt		0.400	0.420	ug/L	105	70 - 130		
Copper		0.800	0.807	ug/L	101	70 - 130		
Lead		0.200	0.187	ug/L	93.5	70 - 130		
Manganese		0.500	0.444	ug/L	88.8	70 - 130		
Nickel		1.60	1.62	ug/L	101	70 - 130		
Silver		0.400	0.401	ug/L	100	70 - 130		
Thallium		0.0800	0.0936	ug/L	117	70 - 130		
Vanadium		0.400	0.389	ug/L	97.4	70 - 130		
Zinc		6.25	6.56	ug/L	105	70 - 130		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061026
Run Date: 07/05/2016
Sample ID: WG575179-10
Instrument ID: ICP-MS2
Run Time: 09:56
Method: 6020A
File ID: NI.070516.095642
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 05-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.365	ug/L	91.1	70 - 130		
Arsenic		0.400	0.341	ug/L	85.2	70 - 130		
Barium		0.750	0.667	ug/L	88.9	70 - 130		
Cadmium		0.240	0.221	ug/L	92.2	70 - 130		
Chromium		0.800	0.612	ug/L	76.5	70 - 130		
Cobalt		0.400	0.364	ug/L	90.9	70 - 130		
Copper		0.800	0.720	ug/L	90.0	70 - 130		
Lead		0.200	0.178	ug/L	88.8	70 - 130		
Manganese		0.500	0.427	ug/L	85.4	70 - 130		
Nickel		1.60	1.39	ug/L	87.1	70 - 130		
Silver		0.400	0.360	ug/L	90.0	70 - 130		
Thallium		0.0800	0.0696	ug/L	87.0	70 - 130		
Vanadium		0.400	0.325	ug/L	81.2	70 - 130		
Zinc		6.25	6.36	ug/L	102	70 - 130		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061026
Run Date: 07/05/2016
Sample ID: WG575179-31
Instrument ID: ICP-MS2
Run Time: 14:36
Method: 6020A
File ID: NI.070516.143603
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 05-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.367	ug/L	91.8	70 - 130		
Arsenic		0.400	0.475	ug/L	119	70 - 130		
Barium		0.750	0.629	ug/L	83.8	70 - 130		
Cadmium		0.240	0.213	ug/L	88.6	70 - 130		
Chromium		0.800	0.664	ug/L	83.0	70 - 130		
Cobalt		0.400	0.365	ug/L	91.3	70 - 130		
Copper		0.800	0.937	ug/L	117	70 - 130		
Lead		0.200	0.182	ug/L	91.0	70 - 130		
Manganese		0.500	0.362	ug/L	72.4	70 - 130		
Nickel		1.60	1.44	ug/L	89.8	70 - 130		
Silver		0.400	0.358	ug/L	89.4	70 - 130		
Thallium		0.0800	0.0750	ug/L	93.8	70 - 130		
Vanadium		0.400	0.396	ug/L	99.0	70 - 130		
Zinc		6.25	6.51	ug/L	104	70 - 130		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061026
Run Date: 07/05/2016
Sample ID: WG575179-50
Instrument ID: ICP-MS2
Run Time: 19:20
Method: 6020A
File ID: NI.070516.192053
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 05-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.370	ug/L	92.5	70 - 130		
Arsenic		0.400	0.371	ug/L	92.7	70 - 130		
Barium		0.750	0.628	ug/L	83.7	70 - 130		
Cadmium		0.240	0.215	ug/L	89.5	70 - 130		
Chromium		0.800	0.520	ug/L	65.0	70 - 130		*
Cobalt		0.400	0.363	ug/L	90.7	70 - 130		
Copper		0.800	0.679	ug/L	84.9	70 - 130		
Lead		0.200	0.185	ug/L	92.4	70 - 130		
Manganese		0.500	0.423	ug/L	84.6	70 - 130		
Nickel		1.60	1.32	ug/L	82.4	70 - 130		
Silver		0.400	0.342	ug/L	85.4	70 - 130		
Thallium		0.0800	0.0766	ug/L	95.8	70 - 130		
Vanadium		0.400	0.317	ug/L	79.3	70 - 130		
Zinc		6.25	5.99	ug/L	95.9	70 - 130		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061026
Run Date: 07/06/2016
Sample ID: WG575370-07
Instrument ID: ICP-MS2
Run Time: 09:27
Method: 6020A
File ID: NI.070616.092717
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 06-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.435	ug/L	109	70 - 130		
Arsenic		0.400	0.418	ug/L	105	70 - 130		
Barium		0.750	0.739	ug/L	98.5	70 - 130		
Cadmium		0.240	0.274	ug/L	114	70 - 130		
Chromium		0.800	0.743	ug/L	92.9	70 - 130		
Cobalt		0.400	0.423	ug/L	106	70 - 130		
Copper		0.800	0.816	ug/L	102	70 - 130		
Lead		0.200	0.240	ug/L	120	70 - 130		
Manganese		0.500	0.495	ug/L	99.0	70 - 130		
Nickel		1.60	1.57	ug/L	98.4	70 - 130		
Silver		0.400	0.428	ug/L	107	70 - 130		
Thallium		0.0800	0.120	ug/L	150	70 - 130		*
Vanadium		0.400	0.398	ug/L	99.5	70 - 130		
Zinc		6.25	6.43	ug/L	103	70 - 130		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061026
Run Date: 07/06/2016
Sample ID: WG575370-44
Instrument ID: ICP-MS2
Run Time: 19:18
Method: 6020A
File ID: NI.070616.191839
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 06-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.451	ug/L	113	70 - 130		
Arsenic		0.400	0.437	ug/L	109	70 - 130		
Barium		0.750	0.726	ug/L	96.8	70 - 130		
Cadmium		0.240	0.283	ug/L	118	70 - 130		
Chromium		0.800	0.809	ug/L	101	70 - 130		
Cobalt		0.400	0.419	ug/L	105	70 - 130		
Copper		0.800	0.837	ug/L	105	70 - 130		
Lead		0.200	0.243	ug/L	121	70 - 130		
Manganese		0.500	0.498	ug/L	99.7	70 - 130		
Nickel		1.60	1.57	ug/L	98.0	70 - 130		
Silver		0.400	0.418	ug/L	105	70 - 130		
Thallium		0.0800	0.113	ug/L	142	70 - 130		*
Vanadium		0.400	0.395	ug/L	98.8	70 - 130		
Zinc		6.25	6.69	ug/L	107	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
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Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061026
Instrument ID: ICP-MS2
Sol. A : WG574676-08 **File ID:** NI.062916.115053
Sol. AB : WG574676-09 **File ID:** NI.062916.115447

Workgroup (AAB#): WG574572
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.0658	NS	100	100	100	
Arsenic	NS	0.0161	NS	100	105	105	
Barium	NS	0.303	NS	100	98.4	98.4	
Cadmium	NS	-0.103	NS	100	101	101	
Chromium	NS	0.0680	NS	100	101	101	
Cobalt	NS	0.0292	NS	100	105	105	
Copper	NS	0.245	NS	100	100	100	
Lead	NS	0.0174	NS	100	102	102	
Manganese	NS	0.0629	NS	100	105	105	
Nickel	NS	0.331	NS	100	100	100	
Silver	NS	0.0271	NS	100	95.3	95.3	
Thallium	NS	0.0271	NS	100	100	100	
Vanadium	NS	0.0706	NS	100	103	103	
Zinc	NS	1.14	NS	100	104	104	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

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Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061026
Instrument ID: ICP-MS2
Sol. A : WG575179-11 **File ID:** NI.070516.095958
Sol. AB : WG575179-12 **File ID:** NI.070516.100317

Workgroup (AAB#): WG574572
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.133	NS	100	96.1	96.1	
Arsenic	NS	-0.00770	NS	100	97.9	97.9	
Barium	NS	0.724	NS	100	94.5	94.5	
Cadmium	NS	-0.0970	NS	100	96.4	96.4	
Chromium	NS	0.0752	NS	100	94.6	94.6	
Cobalt	NS	0.0303	NS	100	94.9	94.9	
Copper	NS	0.309	NS	100	94.8	94.8	
Lead	NS	0.112	NS	100	96.0	96.0	
Manganese	NS	0.227	NS	100	96.2	96.2	
Nickel	NS	0.346	NS	100	94.6	94.6	
Silver	NS	0.0320	NS	100	83.4	83.4	
Thallium	NS	0.0119	NS	100	95.8	95.8	
Vanadium	NS	0.0220	NS	100	95.9	95.9	
Zinc	NS	1.07	NS	100	98.0	98.0	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

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Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061026
Instrument ID: ICP-MS2
Sol. A : WG575370-08 **File ID:** NI.070616.093029
Sol. AB : WG575370-09 **File ID:** NI.070616.093340

Workgroup (AAB#): WG574572
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.462	NS	100	101	101	
Arsenic	NS	0.0530	NS	100	103	103	
Barium	NS	0.0414	NS	100	101	101	
Cadmium	NS	-0.0508	NS	100	101	101	
Chromium	NS	-0.0525	NS	100	101	101	
Cobalt	NS	0.0720	NS	100	101	101	
Copper	NS	0.326	NS	100	102	102	
Lead	NS	0.0662	NS	100	103	103	
Manganese	NS	0.305	NS	100	102	102	
Nickel	NS	0.313	NS	100	100	100	
Silver	NS	0.0592	NS	100	85.4	85.4	
Thallium	NS	0.0459	NS	100	101	101	
Vanadium	NS	0.0677	NS	100	102	102	
Zinc	NS	0.776	NS	100	103	103	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4832326
Report generated 07/07/2016 08:34

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16061026 **Analytical Method:** 6020
Analytical Workgroup: WG574572 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 29-JUN-2016 11:25

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060986-03	SAMP	29-JUN-2016 13:13	102.451	99.817	104.214
L16061026-02	SAMP	29-JUN-2016 14:51	89.212	92.118	89.05
L16061026-04	SAMP	29-JUN-2016 14:54	99.491	100.426	97.933
L16061026-06	SAMP	29-JUN-2016 14:57	98.597	101.416	102.107
L16061026-07	SAMP	29-JUN-2016 15:00	108.185	110.897	107.172
WG573548-02	BLANK	29-JUN-2016 12:53	99.243	102.336	95.817
WG573548-03	LCS	29-JUN-2016 12:57	101.717	99.767	101.133
WG574572-01	PSPK	29-JUN-2016 13:16	103.227	99.758	103.895
WG574572-02	SERIAL	29-JUN-2016 13:19	110.008	107.762	106.72
WG574676-05	ICV	29-JUN-2016 11:38	98.257	100.661	96.465
WG574676-06	ICB	29-JUN-2016 11:41	98.914	99.091	98.14
WG574676-07	LLICV	29-JUN-2016 11:46	95.79	95.394	93.877
WG574676-08	ICS	29-JUN-2016 11:50	98.596	98.274	96.165
WG574676-09	ICS	29-JUN-2016 11:54	97.891	98.362	95.991
WG574676-10	CCV	29-JUN-2016 12:00	96.559	97.448	96.281
WG574676-11	CCB	29-JUN-2016 12:07	98.969	97.431	96.855
WG574676-12	CCV	29-JUN-2016 12:37	99.303	102.045	96.376
WG574676-13	CCB	29-JUN-2016 12:40	100.991	102.01	98.548
WG574676-14	LLCCV	29-JUN-2016 12:44	96.535	95.69	95.451
WG574676-15	CCV	29-JUN-2016 13:25	106.544	103.387	103.323
WG574676-16	CCB	29-JUN-2016 13:29	108.277	104.697	104.925
WG574676-17	CCV	29-JUN-2016 14:04	103.528	99.024	101.746
WG574676-18	CCB	29-JUN-2016 14:07	101.206	96.624	98.764
WG574676-19	CCV	29-JUN-2016 15:04	105.397	108.57	106.703
WG574676-20	CCB	29-JUN-2016 15:07	110.064	109.03	109.199
WG574676-27	CCV	29-JUN-2016 17:34	108.39	111.131	108.951
WG574676-28	CCB	29-JUN-2016 17:37	111.551	108.396	114.225
WG574676-29	ICS	29-JUN-2016 17:50	108.567	109.96	110.029
WG574676-30	ICS	29-JUN-2016 17:53	107.111	107.985	110.615
WG574676-31	CCV	29-JUN-2016 17:56	107.683	109.755	111.533
WG574676-32	CCB	29-JUN-2016 17:59	109.386	111.783	111.184
WG574676-33	LLCCV	29-JUN-2016 18:03	109.42	106.253	110.95

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4832322
Report generated: 07/07/2016 08:33

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16061026 **Analytical Method:** 6020
Analytical Workgroup: WG574572 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** JYH
ICAL Date: 05-JUL-2016 09:27

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16061026-02	SAMP	05-JUL-2016 16:05	94.287	91.198	89.78
L16061026-02	SAMP	05-JUL-2016 16:08	97.897	93.356	92.167
L16061026-04	SAMP	05-JUL-2016 16:11	91.832	92.14	89.87
L16061026-04	SAMP	05-JUL-2016 16:15	97.428	92.369	91.144
L16061026-06	SAMP	05-JUL-2016 16:30	95.394	97.869	94.043
L16061026-07	SAMP	05-JUL-2016 16:34	102.173	100.031	99.495
WG573548-02	BLANK	05-JUL-2016 15:49	103.53	101.565	100.369
WG573548-03	LCS	05-JUL-2016 15:52	105.736	104.394	102.796
WG574572-03	PSPK	05-JUL-2016 16:37	102.672	100.652	98.295
WG574572-04	SERIAL	05-JUL-2016 16:41	92.841	89.382	87.188
WG575179-08	ICV	05-JUL-2016 09:50	102.945	104.163	101.103
WG575179-09	ICB	05-JUL-2016 09:53	106.273	107.834	104.639
WG575179-10	LLICV	05-JUL-2016 09:56	103.717	103.348	100.336
WG575179-11	ICS	05-JUL-2016 09:59	100.676	104.095	100.563
WG575179-12	ICS	05-JUL-2016 10:03	104.334	104.793	101.346
WG575179-13	CCV	05-JUL-2016 10:06	100.487	101.459	98.934
WG575179-14	CCB	05-JUL-2016 10:09	106.259	106.237	103.837
WG575179-31	LLCCV	05-JUL-2016 14:36	104.64	97.001	97.387
WG575179-34	CCV	05-JUL-2016 15:41	102.603	101.933	100.295
WG575179-35	CCB	05-JUL-2016 15:44	103.599	100.34	100.262
WG575179-36	CCV	05-JUL-2016 16:18	102.519	101.09	100.867
WG575179-37	CCB	05-JUL-2016 16:21	103.756	100.989	100.122
WG575179-38	CCV	05-JUL-2016 16:47	99.118	97.387	96.41
WG575179-39	CCB	05-JUL-2016 16:50	103.672	101.386	99.679
WG575179-44	CCV	05-JUL-2016 18:36	93.79	92.321	90.717
WG575179-45	CCB	05-JUL-2016 18:39	95.372	91.574	91.3
WG575179-46	ICS	05-JUL-2016 19:08	96.603	92.626	90.775
WG575179-47	ICS	05-JUL-2016 19:11	100.276	99.569	98.291
WG575179-48	CCV	05-JUL-2016 19:14	98.609	96.908	96.301
WG575179-49	CCB	05-JUL-2016 19:17	99.252	96.583	95.361
WG575179-50	LLCCV	05-JUL-2016 19:20	97.791	94.181	93.271

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4832322
Report generated: 07/07/2016 08:33

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16061026 **Analytical Method:** 6020
Analytical Workgroup: WG574572 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** JYH
ICAL Date: 06-JUL-2016 09:08

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16061026-02	SAMP	06-JUL-2016 15:27	98.394	99.815	95.637
WG575370-05	ICV	06-JUL-2016 09:20	100.585	102.463	96.381
WG575370-06	ICB	06-JUL-2016 09:24	100.788	98.692	102.109
WG575370-07	LLICV	06-JUL-2016 09:27	102.41	100.394	95.13
WG575370-08	ICS	06-JUL-2016 09:30	96.414	92.465	92.27
WG575370-09	ICS	06-JUL-2016 09:33	98.737	100.154	96.13
WG575370-10	CCV	06-JUL-2016 09:36	99.702	100.07	99.191
WG575370-11	CCB	06-JUL-2016 09:40	101.529	104.208	96.95
WG575370-26	CCV	06-JUL-2016 14:52	100.655	107.561	102.626
WG575370-27	CCB	06-JUL-2016 14:55	101.918	106.69	102.86
WG575370-28	CCV	06-JUL-2016 15:31	102.288	107.867	104.707
WG575370-29	CCB	06-JUL-2016 15:34	102.911	105.994	103.202
WG575370-38	CCV	06-JUL-2016 18:49	99.508	108.232	103.152
WG575370-39	CCB	06-JUL-2016 18:53	99.139	106.573	101.58
WG575370-40	ICS	06-JUL-2016 19:05	91.725	95.835	90.284
WG575370-41	ICS	06-JUL-2016 19:09	97.884	104.251	99.368
WG575370-42	CCV	06-JUL-2016 19:12	98.906	104.728	100.841
WG575370-43	CCB	06-JUL-2016 19:15	98.402	104.006	99.572
WG575370-44	LLCCV	06-JUL-2016 19:18	98.022	101.982	97.937

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4832322
Report generated: 07/07/2016 08:33

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16061026 **Date:** 04/19/2016
Insturment ID: ICP-MS2 **Method:** 6020A

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Uranium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4832321
Report generated: 07/07/2016 08:33

2.3.2.3 Raw Data

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Wednesday, June 29, 2016 09:50:03

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	6.975	1323	2024	0.699	
Mg	23.985	23.975	4506	2020	0.705	
Co	58.933	58.975	11694	2022	0.697	
In	114.904	114.925	22865	2028	0.690	
U	238.050	238.025	47450	2043	0.688	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	9.254
5.575	1.459
5.625	2.417
5.675	3.442
5.725	2.231
5.775	2.296
5.825	3.784
5.875	3.197
5.925	2.400
5.975	1.087
6.025	1.670
6.075	3.521
6.125	2.277
6.175	2.559
6.225	20.588
6.275	74.689
6.325	108.327
6.375	83.853
6.425	69.722
6.475	32.808
6.525	10.642
6.575	8.985
6.625	1.429
6.675	0.941
6.725	0.857
6.775	3.333
6.825	0.822

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6.875	1.277
6.925	1.899
6.975	1.561
7.025	1.195
7.075	1.059
7.125	1.545
7.175	1.743
7.225	3.248
7.275	8.142
7.325	57.701
7.375	91.287
7.425	51.602
7.475	55.902
7.525	100.000
7.575	69.869
7.625	81.441
7.675	81.441
7.725	70.711
7.775	55.902
7.825	59.266
7.875	49.793
7.925	104.583
7.975	98.543
8.025	94.786
8.075	223.607
8.125	81.441
8.175	84.265
8.225	61.237
8.275	81.312
8.325	81.441
8.375	91.287
8.425	82.402
8.475	22.822
22.525	149.071
22.575	52.705
22.625	46.771
22.675	48.627
22.725	39.087
22.775	18.109
22.825	22.048
22.875	36.422
22.925	32.723
22.975	82.685
23.025	39.239
23.075	25.529
23.125	43.064
23.175	21.317

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23.225	22.232
23.275	15.408
23.325	42.127
23.375	37.172
23.425	24.296
23.475	14.668
23.525	3.807
23.575	1.593
23.625	2.258
23.675	1.180
23.725	1.542
23.775	1.943
23.825	1.185
23.875	1.595
23.925	1.324
23.975	1.055
24.025	1.809
24.075	1.103
24.125	1.249
24.175	0.652
24.225	1.203
24.275	3.614
24.325	39.316
24.375	52.355
24.425	20.738
24.475	5.001
24.525	5.067
24.575	0.930
24.625	1.241
24.675	0.972
24.725	1.552
24.775	0.581
24.825	0.736
24.875	1.684
24.925	0.952
24.975	1.395
25.025	0.762
25.075	1.498
25.125	1.418
25.175	1.145
25.225	6.288
25.275	44.605
25.325	50.990
25.375	73.823
25.425	57.334
25.475	7.010
57.525	8.193

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57.575	3.609
57.625	2.367
57.675	3.747
57.725	3.869
57.775	3.226
57.825	1.406
57.875	2.220
57.925	2.049
57.975	2.397
58.025	3.045
58.075	0.897
58.125	1.397
58.175	1.608
58.225	1.481
58.275	5.244
58.325	6.996
58.375	14.816
58.425	39.994
58.475	18.390
58.525	7.862
58.575	1.876
58.625	1.684
58.675	0.757
58.725	2.431
58.775	2.139
58.825	2.293
58.875	1.987
58.925	2.134
58.975	1.760
59.025	2.893
59.075	1.855
59.125	4.126
59.175	3.545
59.225	2.980
59.275	6.918
59.325	57.198
59.375	79.057
59.425	39.123
59.475	32.983
59.525	7.337
59.575	10.704
59.625	4.888
59.675	5.230
59.725	3.575
59.775	2.279
59.825	3.495
59.875	0.859

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59.925	2.164
59.975	4.187
60.025	3.749
60.075	1.767
60.125	4.373
60.175	1.581
60.225	1.647
60.275	29.768
60.325	42.377
60.375	71.261
60.425	71.261
60.475	69.722
113.525	10.800
113.575	6.260
113.625	1.672
113.675	1.646
113.725	1.420
113.775	2.281
113.825	1.446
113.875	0.820
113.925	1.607
113.975	1.407
114.025	1.046
114.075	2.403
114.125	2.090
114.175	3.331
114.225	5.316
114.275	12.354
114.325	37.872
114.375	26.082
114.425	15.800
114.475	3.831
114.525	4.062
114.575	1.808
114.625	2.980
114.675	3.272
114.725	2.895
114.775	1.904
114.825	1.941
114.875	1.809
114.925	0.906
114.975	0.414
115.025	2.617
115.075	0.808
115.125	1.618
115.175	2.428
115.225	3.339

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115.275	5.459
115.325	14.203
115.375	69.869
115.425	66.254
115.475	26.966
115.525	18.235
115.575	7.589
115.625	3.788
115.675	2.661
115.725	3.661
115.775	2.867
115.825	3.952
115.875	6.794
115.925	4.558
115.975	5.421
116.025	1.319
116.075	4.928
116.125	7.259
116.175	4.689
116.225	9.289
116.275	22.491
116.325	26.307
116.375	26.146
116.425	67.711
116.475	40.825
236.525	
236.575	13.258
236.625	39.219
236.675	66.333
236.725	37.815
236.775	20.039
236.825	39.510
236.875	22.934
236.925	27.407
236.975	8.537
237.025	28.853
237.075	45.928
237.125	41.937
237.175	36.377
237.225	26.058
237.275	27.285
237.325	43.196
237.375	45.018
237.425	23.111
237.475	20.908
237.525	26.413
237.575	10.671

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237.625	6.558
237.675	4.584
237.725	2.707
237.775	1.019
237.825	0.867
237.875	0.837
237.925	1.315
237.975	0.556
238.025	1.099
238.075	0.473
238.125	0.980
238.175	0.943
238.225	1.564
238.275	1.714
238.325	1.785
238.375	2.057
238.425	2.571
238.475	6.163
238.525	10.798
238.575	23.407
238.625	35.493
238.675	33.171
238.725	15.721
238.775	9.421
238.825	23.516
238.875	27.721
238.925	14.417
238.975	30.010
239.025	24.993
239.075	29.933
239.125	17.678
239.175	38.433
239.225	46.981
239.275	15.215
239.325	48.601
239.375	50.659
239.425	23.570
239.475	38.955

Approved: July 04, 2016

SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 6/29/2016 10:01:57 AM
End Time: 6/29/2016 10:04:08 AM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 4651.78
        Obtained Intensity (Mg 23.985): 162439.88
        Obtained Intensity (In 114.904): 66202.13
        Obtained Intensity (U 238.05): 140216.56
        Obtained Intensity (Bkgd 220): 0.33
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.018 (=3640.50 / 205153.73)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.004 (=909.89 / 205153.73)
```

Report Date/Time: Wednesday, June 29, 2016 10:04:08
Page 1

Approved: July 04, 2016

SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 6/29/2016 10:01:57 AM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 4651.78
                Obtained Intensity (Mg 23.985): 162439.88
                Obtained Intensity (In 114.904): 66202.13
                Obtained Intensity (U 238.05): 140216.56
                Obtained Intensity (Bkgd 220): 0.33
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.018 (=3640.50 / 205153.73)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.004 (=909.89 / 205153.73)
[Passed]  Optimum value(s): N/A

End Time: 6/29/2016 10:04:08 AM
```


Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Wednesday, June 29, 2016 11:22:34
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74698.8	3.1				ug/L		Standard
	Be	9	8.3	124.9				ug/L		Standard
	Al	27	1493.4	9.1				ug/L		Standard
	Sc	45	61029.4	2.9				ug/L		Standard
	Ti	47	35.0	12.5				ug/L		Standard
	V	51	1434.8	4.3				ug/L		Standard
	Cr	52	7634.6	2.5				ug/L		Standard
	Cr	53	363.3	0.8				ug/L		Standard
	Mn	55	747.0	1.6				ug/L		Standard
	Co	59	233.7	7.1				ug/L		Standard
	Ni	60	214.7	3.5				ug/L		Standard
	Cu	65	104.0	12.0				ug/L		Standard
	Zn	66	363.0	3.8				ug/L		Standard
>	Ge	72	495142.3	1.3				ug/L		Standard
	As	75	-49.8	7.8				ug/L		Standard
	Se	82	13.7	23.9				ug/L		Standard
	Se-1	77	42.3	9.8				ug/L		Standard
>	Ga	71	41.7	25.0				mg/L		Standard
	Rb	85	16.7	91.7				ug/L		Standard
	Y	89	417098.4	0.9				ug/L		Standard
>	Rh	103	13.3	86.6				ug/L		Standard
	Mo	98	10.7	10.9				ug/L		Standard
	Ag	107	68.0	6.4				ug/L		Standard
	Cd	111	2.3	24.9				mg/L		Standard
	Cd	114	11.7	106.5				ug/L		Standard
>	In	115	587441.1	0.5				ug/L		Standard
	Sn	118	496.7	9.7				ug/L		Standard
	Sb	123	77.7	34.7				ug/L		Standard
	Ba	135	24.3	19.4				ug/L		Standard
	Ce	140	25.0	20.0				ug/L		Standard
>	Tb	159	939701.0	1.8				ug/L		Standard
	Ho	165	10.0	50.0				ug/L		Standard
	Tl	203	4.0	25.0				ug/L		Standard
	Tl	205	1.7	173.2				ug/L		Standard
	Pb	206	239.7	3.6				ug/L		Standard
	Pb	207	197.7	3.9				ug/L		Standard
	Pb	208	883.3	3.3				ug/L		Standard
	U	238	3.3	17.3				ug/L		Standard
>	Bi	209	523984.5	1.3				ug/L		Standard

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	Na	23	0.0		mg/L	Standard
	Mg	24	36.7	55.1	mg/L	Standard
	K	39	38.3	52.7	mg/L	Standard
	Ca	43	10.0	50.0	mg/L	Standard
	Fe	54	179.1	14.9	mg/L	Standard
	Fe	57	335.0	10.3	mg/L	Standard
>	**Sc-1**	45	61029.4	2.9	mg/L	Standard
	Cl	35	20194.8	0.8	ug/L	Standard
	Kr	83	4.3	70.5	ug/L	Standard
	Br	81	1546.7	2.4	ug/L	Standard
	P	31	15286.0	3.7	ug/L	Standard
	S	34	1571.7	2.7	ug/L	Standard
	Sr	88	73.3	3.9	ug/L	Standard
	C	12	63.3	24.1	mg/L	Standard
	N	14	0.0		mg/L	Standard
	Hg	202	3.3	173.2	mg/L	Standard
	Dy	164	6.0	187.1	mg/L	Standard
	Ho-1	165	10.0	50.0	mg/L	Standard
	Er	166	13.3	86.6	mg/L	Standard
	I	127	1391.7	17.5	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Wednesday, June 29, 2016 11:25:45
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75658.5	2.0				ug/L	74699	Standard
	Be	9	1.7	173.2				ug/L	8	Standard
	Al	27	1555.1	3.1				ug/L	1493	Standard
	Sc	45	60145.9	2.9				ug/L	61029	Standard
	Ti	47	32.7	4.7				ug/L	35	Standard
	V	51	1434.9	4.0				ug/L	1435	Standard
	Cr	52	7544.5	2.5				ug/L	7635	Standard
	Cr	53	365.0	18.0				ug/L	363	Standard
	Mn	55	783.7	0.8				ug/L	747	Standard
	Co	59	239.0	2.9				ug/L	234	Standard
	Ni	60	220.7	1.8				ug/L	215	Standard
	Cu	65	103.0	8.3				ug/L	104	Standard
	Zn	66	365.0	4.1				ug/L	363	Standard
>	**Ge**	72	495351.7	2.1				ug/L	495142	Standard
	As	75	-40.0	8.7				ug/L	-50	Standard
	Se	82	19.1	38.4				ug/L	14	Standard
	Se-1	77	47.3	15.6				ug/L	42	Standard
>	**Ga**	71	53.3	47.2				mg/L	42	Standard
	Rb	85	15.0	88.2				ug/L	17	Standard
	Y	89	427717.4	1.6				ug/L	417098	Standard
>	**Rh**	103	8.3	34.6				ug/L	13	Standard
	Mo	98	11.1	31.8				ug/L	11	Standard
	Ag	107	86.3	19.8				ug/L	68	Standard
	Cd	111	1.3	43.8				mg/L	2	Standard
	Cd	114	3.6	152.7				ug/L	12	Standard
>	**In**	115	599155.0	1.0				ug/L	587441	Standard
	Sn	118	486.7	3.3				ug/L	497	Standard
	Sb	123	28.2	25.8				ug/L	78	Standard
	Ba	135	25.3	13.9				ug/L	24	Standard
	Ce	140	31.7	59.8				ug/L	25	Standard
>	**Tb**	159	985563.2	0.5				ug/L	939701	Standard
	Ho	165	6.7	86.6				ug/L	10	Standard
	Tl	203	1.7	91.7				ug/L	4	Standard
	Tl	205	0.0					ug/L	2	Standard
	Pb	206	249.7	4.0				ug/L	240	Standard
	Pb	207	216.0	2.0				ug/L	198	Standard
	Pb	208	873.0	4.1				ug/L	883	Standard
	U	238	3.3	34.6				ug/L	3	Standard
>	**Bi**	209	535312.9	0.6				ug/L	523984	Standard

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Na	23	3.3	173.2	mg/L	0	Standard
Mg	24	31.7	18.2	mg/L	37	Standard
K	39	26.7	28.6	mg/L	38	Standard
Ca	43	35.0	24.7	mg/L	10	Standard
Fe	54	130.8	15.0	mg/L	179	Standard
Fe	57	305.0	2.8	mg/L	335	Standard
Sc-1	45	60145.9	2.9	mg/L	61029	Standard
Cl	35	20341.6	1.8	ug/L	20195	Standard
Kr	83	3.0	33.3	ug/L	4	Standard
Br	81	1546.7	10.4	ug/L	1547	Standard
P	31	15145.9	1.8	ug/L	15286	Standard
S	34	1610.1	6.1	ug/L	1572	Standard
Sr	88	86.7	14.5	ug/L	73	Standard
C	12	60.0	28.9	mg/L	63	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	0.0		mg/L	3	Standard
Dy	164	5.7	108.5	mg/L	6	Standard
Ho-1	165	6.7	86.6	mg/L	10	Standard
Er	166	20.0	50.0	mg/L	13	Standard
I	127	1368.4	7.8	mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 1
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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Wednesday, June 29, 2016 11:28:57
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73081.0	3.5				ug/L	74699	Standard
	Be	9	36.7	56.8				ug/L	8	Standard
	Al	27	9102.7	2.7				ug/L	1493	Standard
	Sc	45	58226.8	3.4				ug/L	61029	Standard
	Ti	47	79.0	2.2				ug/L	35	Standard
	V	51	1848.7	2.3				ug/L	1435	Standard
	Cr	52	7933.1	1.4				ug/L	7635	Standard
	Cr	53	350.0	15.1				ug/L	363	Standard
	Mn	55	1375.4	4.6				ug/L	747	Standard
	Co	59	574.7	5.8				ug/L	234	Standard
	Ni	60	324.3	7.6				ug/L	215	Standard
	Cu	65	285.0	4.9				ug/L	104	Standard
	Zn	66	549.3	0.4				ug/L	363	Standard
>	**Ge**	72	493663.5	1.5				ug/L	495142	Standard
	As	75	-10.4	282.1				ug/L	-50	Standard
	Se	82	20.6	18.5				ug/L	14	Standard
	Se-1	77	49.0	19.5				ug/L	42	Standard
>	**Ga**	71	58.3	27.6				mg/L	42	Standard
	Rb	85	25.0	60.0				ug/L	17	Standard
	Y	89	437555.0	0.8				ug/L	417098	Standard
>	**Rh**	103	25.0	34.6				ug/L	13	Standard
	Mo	98	283.4	4.8				ug/L	11	Standard
	Ag	107	412.3	3.2				ug/L	68	Standard
	Cd	111	121.8	9.1				mg/L	2	Standard
	Cd	114	268.9	5.0				ug/L	12	Standard
>	**In**	115	590951.3	0.9				ug/L	587441	Standard
	Sn	118	850.0	6.4				ug/L	497	Standard
	Sb	123	254.5	2.7				ug/L	78	Standard
	Ba	135	136.0	15.7				ug/L	24	Standard
	Ce	140	18.3	56.8				ug/L	25	Standard
>	**Tb**	159	941723.8	1.9				ug/L	939701	Standard
	Ho	165	3.3	86.6				ug/L	10	Standard
	Tl	203	417.3	5.5				ug/L	4	Standard
	Tl	205	348.3	7.4				ug/L	2	Standard
	Pb	206	633.0	0.8				ug/L	240	Standard
	Pb	207	557.0	2.2				ug/L	198	Standard
	Pb	208	2275.4	1.7				ug/L	883	Standard
	U	238	366.3	0.7				ug/L	3	Standard
>	**Bi**	209	512414.5	1.5				ug/L	523984	Standard

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	Na	23	0.0		mg/L	0	Standard
	Mg	24	51.7	24.4	mg/L	37	Standard
	K	39	51.7	24.4	mg/L	38	Standard
	Ca	43	38.3	19.9	mg/L	10	Standard
	Fe	54	160.9	17.5	mg/L	179	Standard
	Fe	57	303.3	9.1	mg/L	335	Standard
>	**Sc-1**	45	58226.8	3.4	mg/L	61029	Standard
	Cl	35	20887.7	1.1	ug/L	20195	Standard
	Kr	83	2.3	107.9	ug/L	4	Standard
	Br	81	1533.4	9.8	ug/L	1547	Standard
	P	31	14952.4	2.3	ug/L	15286	Standard
	S	34	1701.8	4.5	ug/L	1572	Standard
	Sr	88	66.7	31.2	ug/L	73	Standard
	C	12	46.7	65.5	mg/L	63	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	0.0		mg/L	3	Standard
	Dy	164	12.7	89.9	mg/L	6	Standard
	Ho-1	165	3.3	86.6	mg/L	10	Standard
	Er	166	13.3	43.3	mg/L	13	Standard
	I	127	1343.4	21.4	mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Wednesday, June 29, 2016 11:32:08
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70836.9	0.7				ug/L	74699	Standard
	Be	9	41495.2	4.9	**50.0000**	2.291	4.6	ug/L	8	Standard
	Al	27	6913642.3	1.4	**50.0000**	0.333	0.7	ug/L	1493	Standard
	Sc	45	58109.6	1.6				ug/L	61029	Standard
	Ti	47	38024.7	0.9	**100.0000**	1.896	1.9	ug/L	35	Standard
	V	51	385028.2	1.3	**50.0000**	1.023	2.0	ug/L	1435	Standard
	Cr	52	378864.5	0.8	**50.0000**	0.813	1.6	ug/L	7635	Standard
	Cr	53	46780.4	0.7	**50.0000**	0.853	1.7	ug/L	363	Standard
	Mn	55	354877.0	1.3	**50.0000**	1.137	2.3	ug/L	747	Standard
	Co	59	336932.8	1.2	**50.0000**	1.027	2.1	ug/L	234	Standard
	Ni	60	94633.6	0.8	**50.0000**	0.638	1.3	ug/L	215	Standard
	Cu	65	94252.3	1.0	**50.0000**	0.913	1.8	ug/L	104	Standard
	Zn	66	55983.3	1.5	**50.0000**	1.110	2.2	ug/L	363	Standard
>	**Ge**	72	497274.4	1.0				ug/L	495142	Standard
	As	75	56952.3	0.9	**50.0000**	0.907	1.8	ug/L	-50	Standard
	Se	82	5614.6	2.5	**50.0000**	1.630	3.3	ug/L	14	Standard
	Se-1	77	3760.8	2.5	**50.0000**	1.757	3.5	ug/L	42	Standard
>	**Ga**	71	60.0	22.0				mg/L	42	Standard
	Rb	85	735.0	7.4				ug/L	17	Standard
	Y	89	413691.0	2.8				ug/L	417098	Standard
>	**Rh**	103	28.3	27.0				ug/L	13	Standard
	Mo	98	261684.0	1.3	**100.0000**	1.411	1.4	ug/L	11	Standard
	Ag	107	317580.7	1.1	**50.0000**	0.030	0.1	ug/L	68	Standard
	Cd	111	102024.7	1.3	**50.0000**	0.465	0.9	mg/L	2	Standard
	Cd	114	251691.0	1.5	**50.0000**	1.089	2.2	ug/L	12	Standard
>	**In**	115	567339.3	1.1				ug/L	587441	Standard
	Sn	118	284919.2	1.1	**50.0000**	0.694	1.4	ug/L	497	Standard
	Sb	123	226852.6	0.2	**50.0000**	0.610	1.2	ug/L	78	Standard
	Ba	135	99575.8	0.1	**50.0000**	0.595	1.2	ug/L	24	Standard
	Ce	140	83.3	34.6				ug/L	25	Standard
>	**Tb**	159	932165.5	0.9				ug/L	939701	Standard
	Ho	165	13.3	21.7				ug/L	10	Standard
	Tl	203	405993.6	0.4	**50.0000**	0.749	1.5	ug/L	4	Standard
	Tl	205	349857.0	1.5	**50.0000**	0.282	0.6	ug/L	2	Standard
	Pb	206	265201.9	0.6	**50.0000**	0.817	1.6	ug/L	240	Standard
	Pb	207	235754.7	0.6	**50.0000**	0.829	1.7	ug/L	198	Standard
	Pb	208	926203.5	0.6	**50.0000**	0.626	1.3	ug/L	883	Standard
	U	238	337413.2	1.0	**50.0000**	0.543	1.1	ug/L	3	Standard
>	**Bi**	209	511781.8	1.3				ug/L	523984	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	3782.1	6.2	**5.0000**	0.388	7.8	mg/L	37	Standard
K	39	2271.8	5.5	**5.0000**	0.254	5.1	mg/L	38	Standard
Ca	43	120.0	23.2	**5.0000**	1.671	33.4	mg/L	10	Standard
Fe	54	5877.0	6.9	**5.0000**	0.418	8.4	mg/L	179	Standard
Fe	57	1703.4	4.4	**5.0000**	0.228	4.6	mg/L	335	Standard
> **Sc-1**	45	58109.6	1.6				mg/L	61029	Standard
Cl	35	22061.4	1.9				ug/L	20195	Standard
Kr	83	2.7	94.4				ug/L	4	Standard
Br	81	1433.4	2.5				ug/L	1547	Standard
P	31	17349.9	2.8				ug/L	15286	Standard
S	34	2026.8	6.8				ug/L	1572	Standard
Sr	88	76.7	26.4				ug/L	73	Standard
C	12	43.3	48.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	33.0	63.6				mg/L	6	Standard
Ho-1	165	13.3	21.7				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	1500.1	14.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Wednesday, June 29, 2016 11:35:20
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	70562.3	0.6				ug/L	74699	Standard
	Be	9	83650.3	2.2	**100.5872**	1.689	1.7	ug/L	8	Standard
	Al	27	13996690.0	1.6	**100.8115**	1.548	1.5	ug/L	1493	Standard
	Sc	45	58977.9	1.4				ug/L	61029	Standard
	Ti	47	75710.7	1.4	**200.4046**	3.310	1.7	ug/L	35	Standard
	V	51	745374.0	1.7	**98.8583**	0.465	0.5	ug/L	1435	Standard
	Cr	52	747654.3	1.6	**100.2327**	0.593	0.6	ug/L	7635	Standard
	Cr	53	92243.3	0.8	**99.8509**	0.489	0.5	ug/L	363	Standard
	Mn	55	686210.3	1.7	**98.7774**	1.044	1.1	ug/L	747	Standard
	Co	59	647972.6	0.9	**98.4550**	0.479	0.5	ug/L	234	Standard
	Ni	60	186003.6	1.6	**99.5867**	0.367	0.4	ug/L	215	Standard
	Cu	65	184421.8	1.6	**99.3502**	0.739	0.7	ug/L	104	Standard
	Zn	66	108058.7	1.7	**98.8348**	0.723	0.7	ug/L	363	Standard
>	Ge	72	493312.7	1.3				ug/L	495142	Standard
	As	75	109996.7	2.4	**98.6160**	1.152	1.2	ug/L	-50	Standard
	Se	82	10772.1	0.2	**98.3851**	1.295	1.3	ug/L	14	Standard
	Se-1	77	7226.7	2.3	**98.6814**	1.085	1.1	ug/L	42	Standard
>	Ga	71	88.3	19.9				mg/L	42	Standard
	Rb	85	1528.4	8.2				ug/L	17	Standard
	Y	89	411133.1	2.0				ug/L	417098	Standard
>	Rh	103	50.0	20.0				ug/L	13	Standard
	Mo	98	506691.6	2.0	**196.6866**	6.239	3.2	ug/L	11	Standard
	Ag	107	624459.9	0.9	**99.1146**	1.822	1.8	ug/L	68	Standard
	Cd	111	200021.3	0.6	**98.9639**	1.657	1.7	mg/L	2	Standard
	Cd	114	487602.9	1.3	**98.3617**	2.136	2.2	ug/L	12	Standard
>	In	115	567890.6	1.1				ug/L	587441	Standard
	Sn	118	560558.1	0.7	**99.1782**	1.388	1.4	ug/L	497	Standard
	Sb	123	448476.6	1.3	**99.3779**	2.340	2.4	ug/L	78	Standard
	Ba	135	196432.8	0.6	**99.2744**	1.775	1.8	ug/L	24	Standard
	Ce	140	161.7	46.3				ug/L	25	Standard
>	Tb	159	938936.1	1.2				ug/L	939701	Standard
	Ho	165	10.0					ug/L	10	Standard
	Tl	203	803908.2	0.6	**99.1382**	1.002	1.0	ug/L	4	Standard
	Tl	205	702848.2	0.9	**99.8673**	1.348	1.3	ug/L	2	Standard
	Pb	206	517801.9	1.0	**98.4705**	1.644	1.7	ug/L	240	Standard
	Pb	207	459764.9	1.8	**98.4124**	2.372	2.4	ug/L	198	Standard
	Pb	208	1827348.6	0.4	**98.9940**	0.966	1.0	ug/L	883	Standard
	U	238	674609.9	0.9	**99.6270**	1.321	1.3	ug/L	3	Standard
>	Bi	209	515462.4	0.6				ug/L	523984	Standard

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Na	23	1.7	173.2	**19.9850**	34.606	173.2	mg/L	0	Standard
Mg	24	7435.2	2.2	**9.8676**	0.257	2.6	mg/L	37	Standard
K	39	4282.3	4.3	**9.6823**	0.481	5.0	mg/L	38	Standard
Ca	43	178.3	18.2	**9.1297**	2.109	23.1	mg/L	10	Standard
Fe	54	11328.6	1.8	**9.8033**	0.307	3.1	mg/L	179	Standard
Fe	57	3145.3	5.1	**9.9880**	0.532	5.3	mg/L	335	Standard
Sc-1	45	58977.9	1.4				mg/L	61029	Standard
Cl	35	21244.2	2.5				ug/L	20195	Standard
Kr	83	1.7	34.6				ug/L	4	Standard
Br	81	1583.4	3.9				ug/L	1547	Standard
P	31	17550.2	2.6				ug/L	15286	Standard
S	34	2090.1	3.5				ug/L	1572	Standard
Sr	88	83.3	42.6				ug/L	73	Standard
C	12	56.7	62.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	22.9	66.8				mg/L	6	Standard
Ho-1	165	10.0					mg/L	10	Standard
Er	166	10.0					mg/L	13	Standard
I	127	1638.4	19.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998
Corr. Coef.	Ca	43	Correlation coefficient < 0.998

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Wednesday, June 29, 2016 11:38:33
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	69383.6	2.2				ug/L	74699	Standard
	Be	9	41665.5	1.0	**50.9761**	1.262	2.5	ug/L	8	Standard
	Al	27	7007266.1	0.7	**51.3351**	1.064	2.1	ug/L	1493	Standard
	Sc	45	57040.5	0.5				ug/L	61029	Standard
	Ti	47	39782.2	0.5	**104.1738**	1.427	1.4	ug/L	35	Standard
	V	51	390724.1	1.4	**51.2089**	1.334	2.6	ug/L	1435	Standard
	Cr	52	380689.4	0.9	**50.0149**	1.033	2.1	ug/L	7635	Standard
	Cr	53	46596.6	2.0	**49.7615**	1.193	2.4	ug/L	363	Standard
	Mn	55	364452.5	1.9	**51.8606**	1.232	2.4	ug/L	747	Standard
	Co	59	335357.4	2.0	**50.4145**	0.943	1.9	ug/L	234	Standard
	Ni	60	95528.2	0.6	**50.5685**	0.768	1.5	ug/L	215	Standard
	Cu	65	95355.8	0.8	**50.7995**	0.891	1.8	ug/L	104	Standard
	Zn	66	57795.4	0.9	**52.1095**	0.303	0.6	ug/L	363	Standard
>	Ge	72	498415.5	1.2				ug/L	495142	Standard
	As	75	57290.2	0.4	**50.8755**	0.674	1.3	ug/L	-50	Standard
	Se	82	5486.5	1.1	**49.5278**	0.838	1.7	ug/L	14	Standard
	Se-1	77	3797.8	2.0	**51.0456**	1.569	3.1	ug/L	42	Standard
>	Ga	71	88.3	43.2				mg/L	42	Standard
	Rb	85	576.7	2.8				ug/L	17	Standard
	Y	89	413113.3	1.2				ug/L	417098	Standard
>	Rh	103	26.7	92.5				ug/L	13	Standard
	Mo	98	275236.9	1.8	**107.0386**	1.474	1.4	ug/L	11	Standard
	Ag	107	320241.4	0.9	**50.9276**	0.747	1.5	ug/L	68	Standard
	Cd	111	101502.5	0.4	**50.3185**	0.332	0.7	mg/L	2	Standard
	Cd	114	248344.9	2.5	**50.2016**	1.511	3.0	ug/L	12	Standard
>	In	115	566676.1	0.5				ug/L	587441	Standard
	Sn	118	310270.4	1.9	**54.9671**	1.097	2.0	ug/L	497	Standard
	Sb	123	224427.6	0.4	**49.8273**	0.118	0.2	ug/L	78	Standard
	Ba	135	98607.5	0.6	**49.9289**	0.574	1.1	ug/L	24	Standard
	Ce	140	138.3	11.0				ug/L	25	Standard
>	Tb	159	931841.4	1.3				ug/L	939701	Standard
	Ho	165	10.0	86.6				ug/L	10	Standard
	Tl	203	410286.1	0.9	**50.6578**	0.710	1.4	ug/L	4	Standard
	Tl	205	350970.1	0.3	**49.9294**	0.473	0.9	ug/L	2	Standard
	Pb	206	272426.4	0.6	**51.8371**	0.812	1.6	ug/L	240	Standard
	Pb	207	234103.7	0.5	**50.1331**	0.525	1.0	ug/L	198	Standard
	Pb	208	940824.8	0.3	**50.9948**	0.649	1.3	ug/L	883	Standard
	U	238	333596.8	0.3	**49.3228**	0.442	0.9	ug/L	3	Standard
>	Bi	209	514849.0	1.0				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3822.1	2.3	**5.2142**	0.148	2.8	mg/L	37	Standard
K	39	2126.8	6.1	**4.9163**	0.328	6.7	mg/L	38	Standard
Ca	43	118.3	24.4	**5.4681**	1.919	35.1	mg/L	10	Standard
Fe	54	5948.1	0.7	**5.2575**	0.061	1.2	mg/L	179	Standard
Fe	57	1791.8	1.9	**5.4420**	0.142	2.6	mg/L	335	Standard
> **Sc-1**	45	57040.5	0.5				mg/L	61029	Standard
Cl	35	20895.1	0.7				ug/L	20195	Standard
Kr	83	2.7	57.3				ug/L	4	Standard
Br	81	1520.1	6.3				ug/L	1547	Standard
P	31	17665.3	1.6				ug/L	15286	Standard
S	34	2033.5	1.7				ug/L	1572	Standard
Sr	88	80.0	10.8				ug/L	73	Standard
C	12	70.0	24.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	23.0	24.5				mg/L	6	Standard
Ho-1	165	10.0	86.6				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	1353.4	28.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	101.952		
Al	27	102.670		
Sc	45			
Ti	47	104.174		
V	51	102.418		
Cr	52	100.030		
Cr	53			
Mn	55	103.721		
Co	59	100.829		
Ni	60	101.137		
Cu	65	101.599		
Zn	66	104.219		
> Ge	72		100.661	
As	75	101.751		
Se	82	99.056		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	107.039		
Ag	107	101.855		
Cd	111	100.637		
Cd	114			
In	115		96.465	
Sn	118	109.934		
Sb	123	99.655		
Ba	135	99.858		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.316		
Tl	205			
Pb	206	103.674		
Pb	207	100.266		
Pb	208	101.990		
U	238	98.646		
Bi	209		98.257	
Na	23	0.100		
Mg	24	104.283		
K	39	98.326		
Ca	43	109.361		
Fe	54	105.151		
Fe	57	108.840		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Wednesday, June 29, 2016 11:41:46
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70378.1	2.5				ug/L	74699	Standard
	Be	9	20.0	25.0	**0.0316**	0.005	17.2	ug/L	8	Standard
	Al	27	2221.8	11.1	**0.0027**	0.002	62.7	ug/L	1493	Standard
	Sc	45	58138.1	3.2				ug/L	61029	Standard
	Ti	47	47.0	20.3	**0.0161**	0.026	158.4	ug/L	35	Standard
	V	51	1216.9	5.3	**-0.0330**	0.008	24.4	ug/L	1435	Standard
	Cr	52	6478.4	1.5	**-0.1416**	0.009	6.0	ug/L	7635	Standard
	Cr	53	358.3	10.7	**0.0617**	0.046	74.0	ug/L	363	Standard
	Mn	55	785.0	2.1	**-0.0343**	0.003	7.5	ug/L	747	Standard
	Co	59	292.7	8.2	**0.0075**	0.004	50.2	ug/L	234	Standard
	Ni	60	209.7	4.3	**-0.0109**	0.006	51.3	ug/L	215	Standard
	Cu	65	121.0	5.8	**-0.0381**	0.003	8.4	ug/L	104	Standard
	Zn	66	398.3	6.4	**-0.0865**	0.023	26.3	ug/L	363	Standard
>	**Ge**	72	490643.1	1.0				ug/L	495142	Standard
	As	75	-2.3	851.2	**0.0577**	0.017	30.2	ug/L	-50	Standard
	Se	82	15.9	39.8	**0.0087**	0.059	680.3	ug/L	14	Standard
	Se-1	77	51.3	11.1	**0.0869**	0.077	88.1	ug/L	42	Standard
>	**Ga**	71	46.7	16.4				mg/L	42	Standard
	Rb	85	33.3	45.8				ug/L	17	Standard
	Y	89	424498.7	1.6				ug/L	417098	Standard
>	**Rh**	103	10.0	50.0				ug/L	13	Standard
	Mo	98	405.0	23.6	**0.1487**	0.033	22.3	ug/L	11	Standard
	Ag	107	128.3	5.2	**0.0071**	0.001	8.6	ug/L	68	Standard
	Cd	111	15.0	38.7	**-0.0006**	0.003	474.1	mg/L	2	Standard
	Cd	114	47.2	8.1	**0.0073**	0.001	11.6	ug/L	12	Standard
>	**In**	115	576512.9	2.1				ug/L	587441	Standard
	Sn	118	851.7	19.9	**0.0543**	0.032	58.8	ug/L	497	Standard
	Sb	123	1550.0	28.1	**0.3352**	0.100	29.7	ug/L	78	Standard
	Ba	135	36.7	23.2	**0.0022**	0.004	189.8	ug/L	24	Standard
	Ce	140	21.7	93.3				ug/L	25	Standard
>	**Tb**	159	924023.3	3.2				ug/L	939701	Standard
	Ho	165	10.0	100.0				ug/L	10	Standard
	Tl	203	60.7	18.1	**0.0057**	0.001	22.9	ug/L	4	Standard
	Tl	205	61.7	61.4	**0.0089**	0.005	59.3	ug/L	2	Standard
	Pb	206	271.3	7.0	**-0.0198**	0.004	19.8	ug/L	240	Standard
	Pb	207	237.3	7.1	**-0.0194**	0.004	21.0	ug/L	198	Standard
	Pb	208	1028.3	6.0	**-0.0187**	0.003	15.4	ug/L	883	Standard
	U	238	47.7	28.5	**0.0026**	0.002	78.0	ug/L	3	Standard
>	**Bi**	209	518292.4	0.9				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	35.0	42.9	**-0.0179**	0.019	107.8	mg/L	37	Standard
K	39	36.7	39.4	**-0.0284**	0.035	124.9	mg/L	38	Standard
Ca	43	25.0	40.0	**-0.8569**	0.683	79.6	mg/L	10	Standard
Fe	54	125.6	8.4	**-0.0262**	0.013	49.1	mg/L	179	Standard
Fe	57	296.7	4.9	**-0.0150**	0.061	408.2	mg/L	335	Standard
> **Sc-1**	45	58138.1	3.2				mg/L	61029	Standard
Cl	35	20966.5	2.9				ug/L	20195	Standard
Kr	83	2.3	89.2				ug/L	4	Standard
Br	81	1540.1	1.7				ug/L	1547	Standard
P	31	17027.9	2.4				ug/L	15286	Standard
S	34	1976.8	0.6				ug/L	1572	Standard
Sr	88	85.0	5.9				ug/L	73	Standard
C	12	30.0	33.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	6.3	86.9				mg/L	6	Standard
Ho-1	165	10.0	100.0				mg/L	10	Standard
Er	166	6.7	173.2				mg/L	13	Standard
I	127	1458.4	25.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.091	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.140
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.914
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Wednesday, June 29, 2016 11:46:53
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66549.2	2.6				ug/L	74699	Standard
	Be	9	181.7	3.2	**0.2393**	0.009	3.6	ug/L	8	Standard
	Al	27	1430.1	59.0	**-0.0024**	0.007	267.2	ug/L	1493	Standard
	Sc	45	54693.6	2.6				ug/L	61029	Standard
	Ti	47	40.3	11.5	**0.0025**	0.013	506.9	ug/L	35	Standard
	V	51	4161.2	3.6	**0.3819**	0.016	4.1	ug/L	1435	Standard
	Cr	52	12463.1	1.9	**0.7390**	0.018	2.5	ug/L	7635	Standard
	Cr	53	996.7	1.0	**0.8006**	0.013	1.6	ug/L	363	Standard
	Mn	55	4091.6	2.3	**0.4679**	0.008	1.8	ug/L	747	Standard
	Co	59	2840.6	1.4	**0.4137**	0.010	2.4	ug/L	234	Standard
	Ni	60	3014.0	1.2	**1.5638**	0.035	2.2	ug/L	215	Standard
	Cu	65	1546.7	1.4	**0.7676**	0.020	2.7	ug/L	104	Standard
	Zn	66	7394.5	0.3	**6.6420**	0.044	0.7	ug/L	363	Standard
>	**Ge**	72	472336.8	0.9				ug/L	495142	Standard
	As	75	394.7	6.3	**0.4290**	0.024	5.7	ug/L	-50	Standard
	Se	82	54.4	27.0	**0.3818**	0.143	37.5	ug/L	14	Standard
	Se-1	77	75.3	14.2	**0.4599**	0.162	35.3	ug/L	42	Standard
>	**Ga**	71	58.3	44.0				mg/L	42	Standard
	Rb	85	8.3	34.6				ug/L	17	Standard
	Y	89	402582.8	1.9				ug/L	417098	Standard
>	**Rh**	103	5.0	100.0				ug/L	13	Standard
	Mo	98	114.4	34.0	**0.0400**	0.016	39.3	ug/L	11	Standard
	Ag	107	2464.9	1.7	**0.3900**	0.008	2.1	ug/L	68	Standard
	Cd	111	479.8	5.6	**0.2365**	0.013	5.7	mg/L	2	Standard
	Cd	114	1217.0	2.5	**0.2507**	0.007	2.6	ug/L	12	Standard
>	**In**	115	551471.6	0.4				ug/L	587441	Standard
	Sn	118	548.3	23.3	**0.0053**	0.024	443.1	ug/L	497	Standard
	Sb	123	2017.6	6.1	**0.4562**	0.029	6.4	ug/L	78	Standard
	Ba	135	1439.7	3.7	**0.7333**	0.029	4.0	ug/L	24	Standard
	Ce	140	11.7	49.5				ug/L	25	Standard
>	**Tb**	159	887425.9	1.8				ug/L	939701	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	701.7	6.6	**0.0871**	0.005	5.3	ug/L	4	Standard
	Tl	205	588.3	14.1	**0.0861**	0.013	15.2	ug/L	2	Standard
	Pb	206	1333.4	2.9	**0.1894**	0.006	3.1	ug/L	240	Standard
	Pb	207	1083.0	1.4	**0.1683**	0.005	3.1	ug/L	198	Standard
	Pb	208	4575.3	2.2	**0.1806**	0.004	2.0	ug/L	883	Standard
	U	238	2677.9	3.2	**0.4017**	0.012	2.9	ug/L	3	Standard
>	**Bi**	209	501924.0	1.5				ug/L	523984	Standard

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Na	23	1.7	173.2	**21.9523**	38.014	173.2	mg/L	0	Standard
Mg	24	43.3	29.0	**-0.0023**	0.020	841.8	mg/L	37	Standard
K	39	33.3	37.7	**-0.0317**	0.032	101.1	mg/L	38	Standard
Ca	43	46.7	12.4	**0.7738**	0.482	62.2	mg/L	10	Standard
Fe	54	100.7	18.6	**-0.0432**	0.016	36.6	mg/L	179	Standard
Fe	57	325.0	8.1	**0.1578**	0.085	53.5	mg/L	335	Standard
> **Sc-1**	45	54693.6	2.6				mg/L	61029	Standard
Cl	35	21199.5	1.6				ug/L	20195	Standard
Kr	83	3.3	17.3				ug/L	4	Standard
Br	81	1403.4	5.3				ug/L	1547	Standard
P	31	11833.0	1.6				ug/L	15286	Standard
S	34	2000.1	8.0				ug/L	1572	Standard
Sr	88	93.3	20.3				ug/L	73	Standard
C	12	56.7	10.2				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	13.0	89.8				mg/L	6	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	1430.1	34.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	119.656		
Al	27	-0.244		
Sc	45			
Ti	47			
V	51	95.473		
Cr	52	92.381		
Cr	53			
Mn	55	93.583		
Co	59	103.429		
Ni	60	97.737		
Cu	65	95.951		
Zn	66	106.273		
> Ge	72		95.394	
As	75	107.259		
Se	82	95.456		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	97.496		
Cd	111	98.556		
Cd	114			
> In	115			93.877
Sn	118			
Sb	123	114.045		
Ba	135	97.779		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	108.827		
Tl	205			
Pb	206			
Pb	207			
Pb	208	90.316		
U	238	100.429		
> Bi	209			95.790
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Wednesday, June 29, 2016 11:50:53
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	71628.9	1.8				ug/L	74699	Standard
	Be	9	13.3	43.3	**0.0235**	0.007	30.3	ug/L	8	Standard
	Al	27	7079214.4	1.4	**50.2405**	1.571	3.1	ug/L	1493	Standard
	Sc	45	57092.4	1.6				ug/L	61029	Standard
	Ti	47	41841.7	1.2	**112.2257**	1.296	1.2	ug/L	35	Standard
	V	51	1975.7	11.7	**0.0706**	0.031	44.3	ug/L	1435	Standard
	Cr	52	7951.4	1.4	**0.0680**	0.015	21.7	ug/L	7635	Standard
	Cr	53	3292.0	3.5	**3.2946**	0.126	3.8	ug/L	363	Standard
	Mn	55	1443.4	4.1	**0.0629**	0.009	13.6	ug/L	747	Standard
	Co	59	431.3	5.1	**0.0292**	0.003	11.6	ug/L	234	Standard
	Ni	60	837.4	1.6	**0.3312**	0.007	2.2	ug/L	215	Standard
	Cu	65	638.0	4.2	**0.2451**	0.015	6.0	ug/L	104	Standard
	Zn	66	1716.8	2.4	**1.1448**	0.039	3.4	ug/L	363	Standard
>	Ge	72	486594.7	0.0				ug/L	495142	Standard
	As	75	-47.8	111.3	**0.0161**	0.048	300.1	ug/L	-50	Standard
	Se	82	12.5	17.3	**-0.0221**	0.020	90.2	ug/L	14	Standard
	Se-1	77	285.3	3.8	**3.3530**	0.150	4.5	ug/L	42	Standard
>	Ga	71	146.7	5.2				mg/L	42	Standard
	Rb	85	1056.7	1.8				ug/L	17	Standard
	Y	89	409909.2	0.2				ug/L	417098	Standard
>	Rh	103	11.7	99.0				ug/L	13	Standard
	Mo	98	258876.2	1.4	**101.0110**	2.466	2.4	ug/L	11	Standard
	Ag	107	250.7	8.2	**0.0271**	0.004	13.5	ug/L	68	Standard
	Cd	111	-191.4	6.3	**-0.1031**	0.005	5.1	mg/L	2	Standard
	Cd	114	476.2	9.0	**0.0945**	0.009	9.4	ug/L	12	Standard
>	In	115	564912.9	1.1				ug/L	587441	Standard
	Sn	118	765.0	2.0	**0.0415**	0.002	5.8	ug/L	497	Standard
	Sb	123	314.8	31.7	**0.0658**	0.022	32.8	ug/L	78	Standard
	Ba	135	628.0	0.0	**0.3031**	0.004	1.2	ug/L	24	Standard
	Ce	140	243.3	10.5				ug/L	25	Standard
>	Tb	159	934364.8	1.3				ug/L	939701	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	234.7	3.6	**0.0271**	0.001	3.8	ug/L	4	Standard
	Tl	205	175.0	22.3	**0.0250**	0.006	22.8	ug/L	2	Standard
	Pb	206	514.7	3.8	**0.0265**	0.004	16.6	ug/L	240	Standard
	Pb	207	427.7	5.6	**0.0214**	0.005	22.5	ug/L	198	Standard
	Pb	208	1691.4	2.8	**0.0174**	0.002	11.4	ug/L	883	Standard
	U	238	20.7	10.1	**-0.0014**	0.000	22.7	ug/L	3	Standard
>	Bi	209	516629.8	0.9				ug/L	523984	Standard

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Na	23	8.3	34.6	**102.8074**	36.030	35.0	mg/L	0	Standard
Mg	24	9604.7	1.9	**13.1909**	0.366	2.8	mg/L	37	Standard
K	39	2033.5	6.6	**4.6893**	0.286	6.1	mg/L	38	Standard
Ca	43	250.0	4.0	**14.3615**	0.772	5.4	mg/L	10	Standard
Fe	54	14441.1	1.7	**12.9538**	0.416	3.2	mg/L	179	Standard
Fe	57	3845.5	3.6	**12.9047**	0.714	5.5	mg/L	335	Standard
Sc-1	45	57092.4	1.6				mg/L	61029	Standard
Cl	35	20428.4	2.1				ug/L	20195	Standard
Kr	83	3.0	57.7				ug/L	4	Standard
Br	81	1493.4	8.7				ug/L	1547	Standard
P	31	15903.3	2.0				ug/L	15286	Standard
S	34	1818.4	8.5				ug/L	1572	Standard
Sr	88	70.0	35.7				ug/L	73	Standard
C	12	136.7	22.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	86.6				mg/L	3	Standard
Dy	164	12.2	93.4				mg/L	6	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	23.3	24.7				mg/L	13	Standard
I	127	2226.8	19.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27	1.005		
Sc	45			
Ti	47	112.226		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.274	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.011		
Ag	107			
Cd	111			
Cd	114			
In	115		96.165	
Sn	118			
Sb	123			
Ba	135			
Ce	140			
Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
Bi	209		98.596	
Na	23	822.459		
Mg	24	263.819		
K	39	93.787		
Ca	43	95.743		
Fe	54	103.630		
Fe	57	103.238		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Wednesday, June 29, 2016 11:54:47
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72764.4	2.4				ug/L	74699	Standard
	Be	9	86093.9	0.6	**100.4334**	2.352	2.3	ug/L	8	Standard
	Al	27	7577089.0	1.5	**52.9410**	1.751	3.3	ug/L	1493	Standard
	Sc	45	54926.1	3.1				ug/L	61029	Standard
	Ti	47	43156.4	1.1	**115.6496**	0.651	0.6	ug/L	35	Standard
	V	51	767037.5	0.7	**103.0563**	0.476	0.5	ug/L	1435	Standard
	Cr	52	743370.8	0.7	**100.9527**	0.091	0.1	ug/L	7635	Standard
	Cr	53	95736.5	0.4	**104.9834**	0.488	0.5	ug/L	363	Standard
	Mn	55	719673.0	1.2	**104.9487**	1.961	1.9	ug/L	747	Standard
	Co	59	684381.8	1.6	**105.3392**	2.464	2.3	ug/L	234	Standard
	Ni	60	184775.9	0.8	**100.2112**	0.878	0.9	ug/L	215	Standard
	Cu	65	183945.6	0.7	**100.3790**	1.285	1.3	ug/L	104	Standard
	Zn	66	111716.4	0.5	**103.5231**	0.465	0.4	ug/L	363	Standard
>	**Ge**	72	487033.1	0.8				ug/L	495142	Standard
	As	75	115123.8	0.6	**104.5507**	0.234	0.2	ug/L	-50	Standard
	Se	82	11162.3	1.3	**103.2681**	1.937	1.9	ug/L	14	Standard
	Se-1	77	7790.3	1.4	**107.8133**	0.940	0.9	ug/L	42	Standard
>	**Ga**	71	155.0	24.4				mg/L	42	Standard
	Rb	85	853.4	12.0				ug/L	17	Standard
	Y	89	414937.1	1.1				ug/L	417098	Standard
>	**Rh**	103	48.3	21.5				ug/L	13	Standard
	Mo	98	271334.5	0.2	**106.0489**	0.711	0.7	ug/L	11	Standard
	Ag	107	596492.9	1.3	**95.3413**	1.752	1.8	ug/L	68	Standard
	Cd	111	202245.3	1.2	**100.7713**	1.934	1.9	mg/L	2	Standard
	Cd	114	489634.1	0.4	**99.4602**	0.649	0.7	ug/L	12	Standard
>	**In**	115	563893.1	0.8				ug/L	587441	Standard
	Sn	118	898.4	12.5	**0.0654**	0.019	28.7	ug/L	497	Standard
	Sb	123	448934.9	1.4	**100.1777**	2.039	2.0	ug/L	78	Standard
	Ba	135	193320.5	0.8	**98.3885**	1.494	1.5	ug/L	24	Standard
	Ce	140	68.3	16.9				ug/L	25	Standard
>	**Tb**	159	922182.5	1.6				ug/L	939701	Standard
	Ho	165	15.0	57.7				ug/L	10	Standard
	Tl	203	808287.0	0.7	**100.1763**	1.478	1.5	ug/L	4	Standard
	Tl	205	710155.2	1.4	**101.4182**	2.560	2.5	ug/L	2	Standard
	Pb	206	542765.1	0.5	**103.7300**	0.986	1.0	ug/L	240	Standard
	Pb	207	466015.8	1.0	**100.2432**	1.559	1.6	ug/L	198	Standard
	Pb	208	1879754.6	0.3	**102.3429**	1.262	1.2	ug/L	883	Standard
	U	238	673426.3	1.1	**99.9548**	2.202	2.2	ug/L	3	Standard
>	**Bi**	209	512933.6	1.2				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	10138.4	1.8	**14.4874**	0.596	4.1	mg/L	37	Standard
K	39	2125.1	3.3	**5.1060**	0.147	2.9	mg/L	38	Standard
Ca	43	265.0	8.2	**16.1201**	2.142	13.3	mg/L	10	Standard
Fe	54	14876.0	0.8	**13.8828**	0.353	2.5	mg/L	179	Standard
Fe	57	3958.9	4.0	**13.8986**	1.069	7.7	mg/L	335	Standard
> **Sc-1**	45	54926.1	3.1				mg/L	61029	Standard
Cl	35	20351.0	1.2				ug/L	20195	Standard
Kr	83	1.7	91.7				ug/L	4	Standard
Br	81	1600.1	9.2				ug/L	1547	Standard
P	31	14895.7	0.4				ug/L	15286	Standard
S	34	1618.4	8.3				ug/L	1572	Standard
Sr	88	85.0	10.2				ug/L	73	Standard
C	12	116.7	71.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	16.2	38.3				mg/L	6	Standard
Ho-1	165	15.0	57.7				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	1496.7	25.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	100.433		
Al	27	1.059		
Sc	45			
Ti	47	115.650		
V	51	103.056		
Cr	52	100.953		
Cr	53			
Mn	55	104.949		
Co	59	105.339		
Ni	60	100.211		
Cu	65	100.379		
Zn	66	103.523		
> Ge	72		98.362	
As	75	104.551		
Se	82	103.268		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	106.049		
Ag	107	95.341		
Cd	111	100.771		
Cd	114			
In	115		95.991	
Sn	118			
Sb	123	100.178		
Ba	135	98.389		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.176		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.343		
U	238	99.955		
Bi	209		97.891	
Na	23	0.040		
Mg	24	289.748		
K	39	102.121		
Ca	43	107.468		
Fe	54	111.063		
Fe	57	111.189		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

Sample ID: QC Std 5
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 12:00:10
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74127.8	4.1				ug/L	74699	Standard
	Be	9	44057.3	2.0	**50.4723**	1.532	3.0	ug/L	8	Standard
	Al	27	7182862.5	0.8	**49.2846**	1.691	3.4	ug/L	1493	Standard
	Sc	45	54972.9	1.9				ug/L	61029	Standard
	Ti	47	37035.5	1.0	**100.2235**	3.375	3.4	ug/L	35	Standard
	V	51	380987.7	1.2	**51.6037**	1.920	3.7	ug/L	1435	Standard
	Cr	52	371095.9	0.5	**50.3905**	1.647	3.3	ug/L	7635	Standard
	Cr	53	45648.7	0.9	**50.3715**	0.927	1.8	ug/L	363	Standard
	Mn	55	362758.6	1.1	**53.3556**	2.033	3.8	ug/L	747	Standard
	Co	59	346170.1	1.6	**53.7955**	2.203	4.1	ug/L	234	Standard
	Ni	60	91822.1	1.5	**50.2407**	2.119	4.2	ug/L	215	Standard
	Cu	65	92043.5	2.0	**50.6873**	2.359	4.7	ug/L	104	Standard
	Zn	66	54708.9	1.1	**50.9762**	1.937	3.8	ug/L	363	Standard
>	Ge	72	482505.9	2.7				ug/L	495142	Standard
	As	75	56019.2	1.2	**51.4117**	1.775	3.5	ug/L	-50	Standard
	Se	82	5615.5	1.4	**52.4035**	2.100	4.0	ug/L	14	Standard
	Se-1	77	3787.5	1.5	**52.6293**	2.112	4.0	ug/L	42	Standard
>	Ga	71	63.3	9.1				mg/L	42	Standard
	Rb	85	771.7	5.9				ug/L	17	Standard
	Y	89	419939.4	2.7				ug/L	417098	Standard
>	Rh	103	31.7	9.1				ug/L	13	Standard
	Mo	98	262674.3	2.0	**102.5093**	6.034	5.9	ug/L	11	Standard
	Ag	107	318557.4	0.8	**50.8058**	2.007	4.0	ug/L	68	Standard
	Cd	111	103808.6	0.6	**51.6156**	2.157	4.2	mg/L	2	Standard
	Cd	114	253134.5	2.1	**51.2889**	1.034	2.0	ug/L	12	Standard
>	In	115	565595.5	4.0				ug/L	587441	Standard
	Sn	118	290084.1	1.0	**51.5381**	2.174	4.2	ug/L	497	Standard
	Sb	123	228198.9	1.3	**50.8307**	2.651	5.2	ug/L	78	Standard
	Ba	135	99366.1	0.6	**50.4579**	1.943	3.9	ug/L	24	Standard
	Ce	140	78.3	13.3				ug/L	25	Standard
>	Tb	159	913248.6	2.6				ug/L	939701	Standard
	Ho	165	3.3	86.6				ug/L	10	Standard
	Tl	203	413066.5	1.0	**51.9084**	1.016	2.0	ug/L	4	Standard
	Tl	205	363184.8	0.9	**52.5982**	1.678	3.2	ug/L	2	Standard
	Pb	206	268800.2	0.8	**52.0649**	1.553	3.0	ug/L	240	Standard
	Pb	207	239468.7	1.2	**52.2107**	1.790	3.4	ug/L	198	Standard
	Pb	208	958802.6	0.9	**52.9068**	1.662	3.1	ug/L	883	Standard
	U	238	349772.5	0.2	**52.6413**	1.317	2.5	ug/L	3	Standard
>	Bi	209	505954.2	2.3				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3805.5	5.3	**5.3881**	0.260	4.8	mg/L	37	Standard
K	39	2106.8	1.9	**5.0574**	0.179	3.5	mg/L	38	Standard
Ca	43	101.7	5.7	**4.6110**	0.501	10.9	mg/L	10	Standard
Fe	54	5879.5	1.7	**5.3975**	0.172	3.2	mg/L	179	Standard
Fe	57	1785.1	7.3	**5.6694**	0.625	11.0	mg/L	335	Standard
> **Sc-1**	45	54972.9	1.9				mg/L	61029	Standard
Cl	35	21821.7	0.9				ug/L	20195	Standard
Kr	83	2.0	0.0				ug/L	4	Standard
Br	81	1470.1	4.5				ug/L	1547	Standard
P	31	16677.5	6.0				ug/L	15286	Standard
S	34	1955.1	4.5				ug/L	1572	Standard
Sr	88	73.3	14.2				ug/L	73	Standard
C	12	80.0	66.1				mg/L	63	Standard
N	14	6.7	86.6				mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	15.9	32.3				mg/L	6	Standard
Ho-1	165	3.3	86.6				mg/L	10	Standard
Er	166	16.7	124.9				mg/L	13	Standard
I	127	1668.4	28.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	100.945		
Al	27	98.569		
Sc	45			
Ti	47	100.224		
V	51	103.207		
Cr	52	100.781		
Cr	53			
Mn	55	106.711		
Co	59	107.591		
Ni	60	100.481		
Cu	65	101.375		
Zn	66	101.952		
> Ge	72		97.448	
As	75	102.823		
Se	82	104.807		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	102.509		
Ag	107	101.612		
Cd	111	103.231		
Cd	114			
> In	115			96.281
Sn	118	103.076		
Sb	123	101.661		
Ba	135	100.916		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	103.817		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.814		
U	238	105.283		
> Bi	209			96.559
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 12:07:34
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74348.6	1.0				ug/L	74699	Standard
	Be	9	21.7	26.6	**0.0324**	0.007	20.7	ug/L	8	Standard
	Al	27	1840.1	21.7	**-0.0008**	0.003	358.1	ug/L	1493	Standard
	Sc	45	56396.5	2.8				ug/L	61029	Standard
	Ti	47	36.7	15.0	**-0.0098**	0.014	147.0	ug/L	35	Standard
	V	51	1326.6	5.0	**-0.0153**	0.008	51.0	ug/L	1435	Standard
	Cr	52	6702.5	2.0	**-0.0955**	0.015	16.1	ug/L	7635	Standard
	Cr	53	393.3	15.3	**0.1070**	0.067	63.0	ug/L	363	Standard
	Mn	55	742.7	5.5	**-0.0386**	0.005	13.8	ug/L	747	Standard
	Co	59	250.3	1.5	**0.0016**	0.000	18.8	ug/L	234	Standard
	Ni	60	195.0	9.2	**-0.0170**	0.010	58.7	ug/L	215	Standard
	Cu	65	108.7	1.4	**-0.0438**	0.000	1.1	ug/L	104	Standard
	Zn	66	377.3	7.3	**-0.1000**	0.024	24.2	ug/L	363	Standard
>	Ge	72	482419.6	0.7				ug/L	495142	Standard
	As	75	-16.3	122.1	**0.0447**	0.018	40.8	ug/L	-50	Standard
	Se	82	12.2	10.1	**-0.0240**	0.012	49.4	ug/L	14	Standard
	Se-1	77	52.7	12.2	**0.1177**	0.089	75.6	ug/L	42	Standard
>	Ga	71	61.7	33.8				mg/L	42	Standard
	Rb	85	30.0	50.0				ug/L	17	Standard
	Y	89	414790.7	2.9				ug/L	417098	Standard
>	Rh	103	1.7	173.2				ug/L	13	Standard
	Mo	98	135.9	9.5	**0.0469**	0.005	10.2	ug/L	11	Standard
	Ag	107	96.3	7.3	**0.0024**	0.001	45.2	ug/L	68	Standard
	Cd	111	7.4	43.0	**-0.0042**	0.002	37.1	mg/L	2	Standard
	Cd	114	24.8	51.6	**0.0029**	0.003	88.9	ug/L	12	Standard
>	In	115	568967.0	0.5				ug/L	587441	Standard
	Sn	118	628.3	16.1	**0.0164**	0.018	110.8	ug/L	497	Standard
	Sb	123	617.2	40.6	**0.1324**	0.056	42.3	ug/L	78	Standard
	Ba	135	30.7	16.1	**-0.0005**	0.003	469.7	ug/L	24	Standard
	Ce	140	23.3	68.9				ug/L	25	Standard
>	Tb	159	918183.5	1.2				ug/L	939701	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	30.3	14.9	**0.0020**	0.001	31.1	ug/L	4	Standard
	Tl	205	23.3	24.7	**0.0035**	0.001	22.2	ug/L	2	Standard
	Pb	206	259.3	0.6	**-0.0221**	0.001	4.2	ug/L	240	Standard
	Pb	207	198.7	1.6	**-0.0277**	0.001	4.0	ug/L	198	Standard
	Pb	208	894.0	2.8	**-0.0259**	0.002	7.7	ug/L	883	Standard
	U	238	15.0	35.3	**-0.0022**	0.001	35.0	ug/L	3	Standard
>	Bi	209	518580.7	1.8				ug/L	523984	Standard

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Na	23	1.7	173.2	**20.6253**	35.715	173.2	mg/L	0	Standard
Mg	24	31.7	32.9	**-0.0207**	0.015	73.7	mg/L	37	Standard
K	39	51.7	24.4	**0.0090**	0.027	299.1	mg/L	38	Standard
Ca	43	33.3	31.2	**-0.2319**	0.781	336.6	mg/L	10	Standard
Fe	54	140.8	7.6	**-0.0093**	0.006	67.4	mg/L	179	Standard
Fe	57	256.7	18.9	**-0.1295**	0.180	138.6	mg/L	335	Standard
Sc-1	45	56396.5	2.8				mg/L	61029	Standard
Cl	35	21372.4	1.3				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	1540.1	8.8				ug/L	1547	Standard
P	31	15931.7	0.9				ug/L	15286	Standard
S	34	1863.4	1.4				ug/L	1572	Standard
Sr	88	58.3	17.8				ug/L	73	Standard
C	12	56.7	27.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	6.2	186.6				mg/L	6	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	10.0					mg/L	13	Standard
I	127	1518.4	26.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.431	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.855
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.969
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Wednesday, June 29, 2016 12:09:51
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Method 6020 - Summary Report

Sample ID: L1606066106
Sample Date/Time: Wednesday, June 29, 2016 12:12:15
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78301.9	3.0				ug/L	74699	Standard
	Be	9	591.7	15.8	**0.6482**	0.094	14.5	ug/L	8	Standard
	Al	27	14033022.6	1.2	**91.1117**	1.566	1.7	ug/L	1493	Standard
	Sc	45	64031.7	1.2				ug/L	61029	Standard
	Ti	47	6936.9	1.2	**18.7002**	0.397	2.1	ug/L	35	Standard
	V	51	136379.5	0.6	**18.3618**	0.342	1.9	ug/L	1435	Standard
	Cr	52	135090.6	0.2	**17.7119**	0.504	2.8	ug/L	7635	Standard
	Cr	53	16100.2	3.4	**17.5840**	1.043	5.9	ug/L	363	Standard
	Mn	55	2727656.7	0.9	**402.5207**	10.967	2.7	ug/L	747	Standard
	Co	59	46530.0	0.2	**7.2050**	0.195	2.7	ug/L	234	Standard
	Ni	60	31243.2	1.0	**17.0295**	0.585	3.4	ug/L	215	Standard
	Cu	65	40278.5	0.5	**22.1396**	0.604	2.7	ug/L	104	Standard
	Zn	66	62615.1	0.3	**58.4626**	1.558	2.7	ug/L	363	Standard
>	**Ge**	72	481946.2	2.4				ug/L	495142	Standard
	As	75	4644.7	1.4	**4.3222**	0.154	3.6	ug/L	-50	Standard
	Se	82	54.0	14.6	**0.3688**	0.086	23.4	ug/L	14	Standard
	Se-1	77	96.0	5.2	**0.7275**	0.040	5.5	ug/L	42	Standard
>	**Ga**	71	12810.4	4.6				mg/L	42	Standard
	Rb	85	116256.0	0.7				ug/L	17	Standard
	Y	89	585719.0	1.0				ug/L	417098	Standard
>	**Rh**	103	45.0	33.3				ug/L	13	Standard
	Mo	98	935.2	3.6	**0.3550**	0.010	2.8	ug/L	11	Standard
	Ag	107	931.4	1.2	**0.1340**	0.001	0.5	ug/L	68	Standard
	Cd	111	782.7	0.6	**0.3771**	0.007	1.8	mg/L	2	Standard
	Cd	114	1959.7	7.4	**0.3906**	0.025	6.5	ug/L	12	Standard
>	**In**	115	571359.2	1.2				ug/L	587441	Standard
	Sn	118	1011.7	7.7	**0.0833**	0.012	14.7	ug/L	497	Standard
	Sb	123	336.5	28.9	**0.0698**	0.021	29.4	ug/L	78	Standard
	Ba	135	394959.7	1.6	**198.3814**	1.476	0.7	ug/L	24	Standard
	Ce	140	893729.8	1.7				ug/L	25	Standard
>	**Tb**	159	948738.0	1.3				ug/L	939701	Standard
	Ho	165	15724.8	2.6				ug/L	10	Standard
	Tl	203	658.0	2.7	**0.0791**	0.002	2.2	ug/L	4	Standard
	Tl	205	583.3	11.6	**0.0828**	0.010	12.2	ug/L	2	Standard
	Pb	206	370590.1	1.2	**70.2116**	0.816	1.2	ug/L	240	Standard
	Pb	207	304396.4	0.8	**64.9093**	0.988	1.5	ug/L	198	Standard
	Pb	208	1254498.7	1.7	**67.7133**	1.716	2.5	ug/L	883	Standard
	U	238	3382.4	2.2	**0.4935**	0.016	3.3	ug/L	3	Standard
>	**Bi**	209	517229.2	1.1				ug/L	523984	Standard

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Na	23	3.3	173.2	**36.6019**	63.388	173.2	mg/L	0	Standard
Mg	24	128.3	15.7	**0.0927**	0.024	25.5	mg/L	37	Standard
K	39	566.7	14.3	**1.0807**	0.180	16.7	mg/L	38	Standard
Ca	43	418.3	12.7	**22.6893**	3.491	15.4	mg/L	10	Standard
Fe	54	12793.3	3.0	**10.1983**	0.198	1.9	mg/L	179	Standard
Fe	57	3678.8	1.9	**10.8461**	0.363	3.4	mg/L	335	Standard
> **Sc-1**	45	64031.7	1.2				mg/L	61029	Standard
Cl	35	22050.7	1.1				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	2173.5	11.7				ug/L	1547	Standard
P	31	16252.1	5.4				ug/L	15286	Standard
S	34	2065.1	4.4				ug/L	1572	Standard
Sr	88	140.0	9.4				ug/L	73	Standard
C	12	143.3	22.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	203.3	10.2				mg/L	3	Standard
Dy	164	25060.4	3.8				mg/L	6	Standard
Ho-1	165	15724.8	2.6				mg/L	10	Standard
Er	166	13529.4	4.1				mg/L	13	Standard
I	127	8297.3	2.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.824	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.335	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.262
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.711
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606066107
Sample Date/Time: Wednesday, June 29, 2016 12:15:26
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79855.0	3.3				ug/L	74699	Standard
	Be	9	765.0	6.8	**0.8219**	0.077	9.4	ug/L	8	Standard
	Al	27	26230756.6	0.7	**167.0452**	4.333	2.6	ug/L	1493	Standard
	Sc	45	64585.8	4.1				ug/L	61029	Standard
	Ti	47	7966.1	1.8	**21.8574**	0.352	1.6	ug/L	35	Standard
	V	51	155637.7	1.4	**21.3440**	0.459	2.1	ug/L	1435	Standard
	Cr	52	137713.7	0.8	**18.3989**	0.313	1.7	ug/L	7635	Standard
	Cr	53	16806.0	3.9	**18.6780**	0.841	4.5	ug/L	363	Standard
	Mn	55	4726467.2	1.1	**709.3402**	2.876	0.4	ug/L	747	Standard
	Co	59	64550.2	0.1	**10.1794**	0.081	0.8	ug/L	234	Standard
	Ni	60	42709.8	0.1	**23.7183**	0.226	1.0	ug/L	215	Standard
	Cu	65	23683.8	1.0	**13.1970**	0.251	1.9	ug/L	104	Standard
	Zn	66	44795.8	1.0	**42.4101**	0.817	1.9	ug/L	363	Standard
>	**Ge**	72	473762.9	0.9				ug/L	495142	Standard
	As	75	7180.0	1.6	**6.7588**	0.066	1.0	ug/L	-50	Standard
	Se	82	142.2	5.2	**1.2157**	0.067	5.5	ug/L	14	Standard
	Se-1	77	110.3	7.6	**0.9569**	0.126	13.2	ug/L	42	Standard
>	**Ga**	71	17858.9	0.4				mg/L	42	Standard
	Rb	85	152815.2	1.7				ug/L	17	Standard
	Y	89	630725.5	1.5				ug/L	417098	Standard
>	**Rh**	103	41.7	25.0				ug/L	13	Standard
	Mo	98	1176.0	1.0	**0.4476**	0.010	2.2	ug/L	11	Standard
	Ag	107	471.0	1.7	**0.0613**	0.002	3.5	ug/L	68	Standard
	Cd	111	231.8	9.8	**0.1061**	0.013	12.1	mg/L	2	Standard
	Cd	114	548.2	12.6	**0.1078**	0.015	13.9	ug/L	12	Standard
>	**In**	115	571871.5	1.5				ug/L	587441	Standard
	Sn	118	1063.4	7.5	**0.0923**	0.015	16.1	ug/L	497	Standard
	Sb	123	198.5	41.2	**0.0396**	0.018	46.2	ug/L	78	Standard
	Ba	135	410562.2	0.2	**206.0643**	2.723	1.3	ug/L	24	Standard
	Ce	140	1020863.3	0.8				ug/L	25	Standard
>	**Tb**	159	935971.5	1.4				ug/L	939701	Standard
	Ho	165	18616.4	1.9				ug/L	10	Standard
	Tl	203	969.7	3.1	**0.1217**	0.006	4.6	ug/L	4	Standard
	Tl	205	781.7	5.1	**0.1148**	0.005	4.1	ug/L	2	Standard
	Pb	206	74583.8	0.8	**14.5751**	0.129	0.9	ug/L	240	Standard
	Pb	207	60293.4	1.5	**13.2552**	0.050	0.4	ug/L	198	Standard
	Pb	208	253434.0	0.7	**14.1059**	0.309	2.2	ug/L	883	Standard
	U	238	4763.7	0.8	**0.7216**	0.012	1.7	ug/L	3	Standard
>	**Bi**	209	499544.2	1.5				ug/L	523984	Standard

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Na	23	8.3	34.6	**90.1824**	29.248	32.4	mg/L	0	Standard
Mg	24	323.3	10.9	**0.3294**	0.041	12.6	mg/L	37	Standard
K	39	788.4	10.3	**1.5298**	0.110	7.2	mg/L	38	Standard
Ca	43	663.3	6.3	**37.0621**	1.711	4.6	mg/L	10	Standard
Fe	54	18630.5	1.2	**14.8018**	0.561	3.8	mg/L	179	Standard
Fe	57	5110.9	3.8	**15.3724**	1.217	7.9	mg/L	335	Standard
> **Sc-1**	45	64585.8	4.1				mg/L	61029	Standard
Cl	35	22235.6	2.9				ug/L	20195	Standard
Kr	83	0.7	173.2				ug/L	4	Standard
Br	81	23104.3	4.2				ug/L	1547	Standard
P	31	15829.9	2.1				ug/L	15286	Standard
S	34	2033.5	3.2				ug/L	1572	Standard
Sr	88	161.7	12.5				ug/L	73	Standard
C	12	96.7	41.8				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	31177.2	1.6				mg/L	6	Standard
Ho-1	165	18616.4	1.9				mg/L	10	Standard
Er	166	16976.2	1.7				mg/L	13	Standard
I	127	9242.8	4.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.903	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.682	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.350
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.336
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606066108
Sample Date/Time: Wednesday, June 29, 2016 12:18:38
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77986.9	1.5				ug/L	74699	Standard
	Be	9	848.4	8.3	**0.9313**	0.087	9.4	ug/L	8	Standard
	Al	27	17300686.4	1.1	**112.7510**	0.475	0.4	ug/L	1493	Standard
	Sc	45	64965.7	2.0				ug/L	61029	Standard
	Ti	47	6993.9	0.6	**18.3803**	0.198	1.1	ug/L	35	Standard
	V	51	170039.3	0.3	**22.3624**	0.095	0.4	ug/L	1435	Standard
	Cr	52	135852.7	1.1	**17.3429**	0.173	1.0	ug/L	7635	Standard
	Cr	53	16400.5	1.1	**17.4496**	0.150	0.9	ug/L	363	Standard
	Mn	55	3732645.2	0.8	**537.0232**	5.661	1.1	ug/L	747	Standard
	Co	59	59499.9	1.1	**8.9910**	0.146	1.6	ug/L	234	Standard
	Ni	60	38977.4	1.0	**20.7345**	0.185	0.9	ug/L	215	Standard
	Cu	65	32324.4	0.5	**17.2976**	0.098	0.6	ug/L	104	Standard
	Zn	66	55484.7	0.8	**50.4392**	0.445	0.9	ug/L	363	Standard
>	**Ge**	72	494184.7	0.5				ug/L	495142	Standard
	As	75	5935.1	0.6	**5.3688**	0.057	1.1	ug/L	-50	Standard
	Se	82	56.5	10.0	**0.3782**	0.052	13.7	ug/L	14	Standard
	Se-1	77	118.0	0.8	**0.9965**	0.019	1.9	ug/L	42	Standard
>	**Ga**	71	16687.5	1.9				mg/L	42	Standard
	Rb	85	157851.4	1.2				ug/L	17	Standard
	Y	89	635672.9	1.6				ug/L	417098	Standard
>	**Rh**	103	68.3	27.7				ug/L	13	Standard
	Mo	98	1214.1	0.7	**0.4777**	0.002	0.4	ug/L	11	Standard
	Ag	107	767.0	3.0	**0.1120**	0.004	3.7	ug/L	68	Standard
	Cd	111	562.6	3.0	**0.2776**	0.008	3.0	mg/L	2	Standard
	Cd	114	1264.6	12.4	**0.2596**	0.032	12.4	ug/L	12	Standard
>	**In**	115	553515.9	0.3				ug/L	587441	Standard
	Sn	118	763.4	11.0	**0.0440**	0.015	34.7	ug/L	497	Standard
	Sb	123	242.9	15.0	**0.0510**	0.008	16.4	ug/L	78	Standard
	Ba	135	429181.6	1.6	**222.5293**	3.912	1.8	ug/L	24	Standard
	Ce	140	1102655.1	2.3				ug/L	25	Standard
>	**Tb**	159	923824.1	1.4				ug/L	939701	Standard
	Ho	165	18663.2	2.9				ug/L	10	Standard
	Tl	203	782.7	3.6	**0.0981**	0.005	5.3	ug/L	4	Standard
	Tl	205	701.7	8.6	**0.1034**	0.010	10.1	ug/L	2	Standard
	Pb	206	213507.8	0.5	**41.9534**	0.898	2.1	ug/L	240	Standard
	Pb	207	175202.2	0.5	**38.7416**	0.683	1.8	ug/L	198	Standard
	Pb	208	727362.3	0.6	**40.7140**	1.033	2.5	ug/L	883	Standard
	U	238	4175.6	1.0	**0.6335**	0.018	2.9	ug/L	3	Standard
>	**Bi**	209	498479.4	1.9				ug/L	523984	Standard

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Na	23	1.7	173.2	**18.0364**	31.231	173.2	mg/L	0	Standard
Mg	24	140.0	21.7	**0.1047**	0.037	35.2	mg/L	37	Standard
K	39	708.4	12.8	**1.3550**	0.168	12.4	mg/L	38	Standard
Ca	43	508.3	5.0	**27.6291**	0.895	3.2	mg/L	10	Standard
Fe	54	15324.4	1.1	**12.0707**	0.309	2.6	mg/L	179	Standard
Fe	57	4262.3	3.3	**12.5338**	0.279	2.2	mg/L	335	Standard
> **Sc-1**	45	64965.7	2.0				mg/L	61029	Standard
Cl	35	21927.9	1.6				ug/L	20195	Standard
Kr	83	2.7	78.1				ug/L	4	Standard
Br	81	2823.6	3.3				ug/L	1547	Standard
P	31	16612.4	1.0				ug/L	15286	Standard
S	34	2085.1	7.7				ug/L	1572	Standard
Sr	88	245.0	14.1				ug/L	73	Standard
C	12	116.7	27.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	93.3	49.5				mg/L	3	Standard
Dy	164	30954.0	1.2				mg/L	6	Standard
Ho-1	165	18663.2	2.9				mg/L	10	Standard
Er	166	16615.8	2.6				mg/L	13	Standard
I	127	11766.2	5.8				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		104.402	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.807	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.225
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.132
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606066109
Sample Date/Time: Wednesday, June 29, 2016 12:21:49
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77037.0	1.5				ug/L	74699	Standard
	Be	9	378.3	6.2	**0.4242**	0.022	5.2	ug/L	8	Standard
	Al	27	13254869.5	1.3	**87.4672**	2.449	2.8	ug/L	1493	Standard
	Sc	45	63133.0	3.0				ug/L	61029	Standard
	Ti	47	8144.2	1.7	**21.2616**	0.854	4.0	ug/L	35	Standard
	V	51	109381.5	1.5	**14.2029**	0.301	2.1	ug/L	1435	Standard
	Cr	52	127693.7	2.3	**16.1132**	0.755	4.7	ug/L	7635	Standard
	Cr	53	15149.2	3.9	**15.9774**	1.000	6.3	ug/L	363	Standard
	Mn	55	3010101.1	0.9	**429.7771**	13.412	3.1	ug/L	747	Standard
	Co	59	32158.1	0.7	**4.8045**	0.098	2.0	ug/L	234	Standard
	Ni	60	23283.5	0.8	**12.2424**	0.383	3.1	ug/L	215	Standard
	Cu	65	9940.9	0.4	**5.2071**	0.131	2.5	ug/L	104	Standard
	Zn	66	24785.3	0.2	**22.1054**	0.470	2.1	ug/L	363	Standard
>	**Ge**	72	498160.0	2.3				ug/L	495142	Standard
	As	75	2943.4	0.7	**2.6727**	0.077	2.9	ug/L	-50	Standard
	Se	82	39.1	13.2	**0.2170**	0.054	24.7	ug/L	14	Standard
	Se-1	77	75.7	11.2	**0.4068**	0.103	25.3	ug/L	42	Standard
>	**Ga**	71	9034.4	2.0				mg/L	42	Standard
	Rb	85	68682.0	2.5				ug/L	17	Standard
	Y	89	539979.1	1.9				ug/L	417098	Standard
>	**Rh**	103	11.7	24.7				ug/L	13	Standard
	Mo	98	3058.1	1.5	**1.1809**	0.018	1.5	ug/L	11	Standard
	Ag	107	334.3	34.2	**0.0400**	0.017	43.3	ug/L	68	Standard
	Cd	111	137.9	39.4	**0.0601**	0.026	43.1	mg/L	2	Standard
	Cd	114	340.6	39.5	**0.0664**	0.026	39.4	ug/L	12	Standard
>	**In**	115	568023.6	1.3				ug/L	587441	Standard
	Sn	118	973.4	3.3	**0.0776**	0.003	4.4	ug/L	497	Standard
	Sb	123	217.2	33.7	**0.0438**	0.016	35.6	ug/L	78	Standard
	Ba	135	138215.3	1.3	**69.8220**	0.106	0.2	ug/L	24	Standard
	Ce	140	545871.5	1.0				ug/L	25	Standard
>	**Tb**	159	946980.1	0.3				ug/L	939701	Standard
	Ho	165	11547.7	1.8				ug/L	10	Standard
	Tl	203	458.7	30.8	**0.0539**	0.017	31.9	ug/L	4	Standard
	Tl	205	360.0	14.1	**0.0505**	0.007	14.1	ug/L	2	Standard
	Pb	206	30575.5	1.0	**5.6549**	0.063	1.1	ug/L	240	Standard
	Pb	207	24590.3	1.3	**5.1132**	0.071	1.4	ug/L	198	Standard
	Pb	208	101567.1	0.7	**5.3447**	0.038	0.7	ug/L	883	Standard
	U	238	5591.0	1.3	**0.8082**	0.011	1.4	ug/L	3	Standard
>	**Bi**	209	523773.4	0.1				ug/L	523984	Standard

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Na	23	1.7	173.2	**19.1528**	33.165	173.2	mg/L	0	Standard
Mg	24	88.3	26.1	**0.0447**	0.026	57.5	mg/L	37	Standard
K	39	410.0	24.0	**0.7638**	0.217	28.4	mg/L	38	Standard
Ca	43	368.3	13.4	**20.0310**	3.643	18.2	mg/L	10	Standard
Fe	54	11096.4	1.9	**8.9581**	0.101	1.1	mg/L	179	Standard
Fe	57	2985.3	3.6	**8.7334**	0.110	1.3	mg/L	335	Standard
> **Sc-1**	45	63133.0	3.0				mg/L	61029	Standard
Cl	35	21859.8	1.0				ug/L	20195	Standard
Kr	83	1.0	0.0				ug/L	4	Standard
Br	81	1696.8	5.1				ug/L	1547	Standard
P	31	15684.8	2.6				ug/L	15286	Standard
S	34	1883.5	4.2				ug/L	1572	Standard
Sr	88	116.7	19.3				ug/L	73	Standard
C	12	100.0	26.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	18768.7	3.5				mg/L	6	Standard
Ho-1	165	11547.7	1.8				mg/L	10	Standard
Er	166	10790.5	1.6				mg/L	13	Standard
I	127	6703.2	5.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.130	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.609	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.695
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.960
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606082203
Sample Date/Time: Wednesday, June 29, 2016 12:25:01
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75246.5	2.8				ug/L	74699	Standard
	Be	9	6.7	114.6	**0.0150**	0.008	55.4	ug/L	8	Standard
	Al	27	1140453.8	1.3	**7.6935**	0.186	2.4	ug/L	1493	Standard
	Sc	45	58880.9	1.2				ug/L	61029	Standard
	Ti	47	77.7	5.2	**0.0982**	0.010	10.0	ug/L	35	Standard
	V	51	1502.7	7.0	**0.0058**	0.017	290.5	ug/L	1435	Standard
	Cr	52	10404.9	0.3	**0.3964**	0.023	5.7	ug/L	7635	Standard
	Cr	53	878.4	11.3	**0.6323**	0.120	19.0	ug/L	363	Standard
	Mn	55	64288.8	1.0	**9.1920**	0.174	1.9	ug/L	747	Standard
	Co	59	1249.1	3.1	**0.1540**	0.006	4.1	ug/L	234	Standard
	Ni	60	673.3	4.1	**0.2398**	0.011	4.6	ug/L	215	Standard
	Cu	65	229.7	8.0	**0.0211**	0.010	48.0	ug/L	104	Standard
	Zn	66	2146.2	1.5	**1.5328**	0.038	2.5	ug/L	363	Standard
>	**Ge**	72	489582.8	1.5				ug/L	495142	Standard
	As	75	99.3	9.7	**0.1492**	0.008	5.6	ug/L	-50	Standard
	Se	82	43.5	22.3	**0.2617**	0.085	32.3	ug/L	14	Standard
	Se-1	77	67.7	6.2	**0.3148**	0.059	18.8	ug/L	42	Standard
>	**Ga**	71	61.7	40.8				mg/L	42	Standard
	Rb	85	88606.7	2.0				ug/L	17	Standard
	Y	89	430024.7	1.6				ug/L	417098	Standard
>	**Rh**	103	28.3	50.9				ug/L	13	Standard
	Mo	98	81.5	16.2	**0.0249**	0.005	20.1	ug/L	11	Standard
	Ag	107	97.7	18.1	**0.0021**	0.003	124.3	ug/L	68	Standard
	Cd	111	13.9	57.3	**-0.0013**	0.004	291.1	mg/L	2	Standard
	Cd	114	23.0	35.9	**0.0024**	0.002	67.9	ug/L	12	Standard
>	**In**	115	586341.4	0.7				ug/L	587441	Standard
	Sn	118	508.3	13.9	**-0.0076**	0.011	151.7	ug/L	497	Standard
	Sb	123	156.7	24.2	**0.0294**	0.008	27.7	ug/L	78	Standard
	Ba	135	76489.9	1.2	**37.4252**	0.302	0.8	ug/L	24	Standard
	Ce	140	665.0	13.3				ug/L	25	Standard
>	**Tb**	159	934158.4	1.1				ug/L	939701	Standard
	Ho	165	15.0	66.7				ug/L	10	Standard
	Tl	203	113.7	11.3	**0.0121**	0.002	13.7	ug/L	4	Standard
	Tl	205	93.3	44.6	**0.0133**	0.006	44.3	ug/L	2	Standard
	Pb	206	362.0	5.5	**-0.0029**	0.004	131.1	ug/L	240	Standard
	Pb	207	281.3	6.6	**-0.0103**	0.004	38.7	ug/L	198	Standard
	Pb	208	1197.0	7.1	**-0.0098**	0.005	49.2	ug/L	883	Standard
	U	238	25.0	34.9	**-0.0008**	0.001	168.5	ug/L	3	Standard
>	**Bi**	209	520173.1	0.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3547.1	5.1	**4.6793**	0.186	4.0	mg/L	37	Standard
K	39	1096.7	1.1	**2.3987**	0.055	2.3	mg/L	38	Standard
Ca	43	51.7	27.9	**0.8562**	0.931	108.7	mg/L	10	Standard
Fe	54	433.8	1.2	**0.2430**	0.009	3.5	mg/L	179	Standard
Fe	57	376.7	13.8	**0.2532**	0.189	74.5	mg/L	335	Standard
> **Sc-1**	45	58880.9	1.2				mg/L	61029	Standard
Cl	35	22906.6	0.4				ug/L	20195	Standard
Kr	83	2.3	65.5				ug/L	4	Standard
Br	81	9496.3	3.0				ug/L	1547	Standard
P	31	16589.1	2.9				ug/L	15286	Standard
S	34	2071.8	1.6				ug/L	1572	Standard
Sr	88	118.3	17.1				ug/L	73	Standard
C	12	53.3	10.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	19.0	47.5				mg/L	6	Standard
Ho-1	165	15.0	66.7				mg/L	10	Standard
Er	166	20.0	100.0				mg/L	13	Standard
I	127	14315.1	5.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.733	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.877	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.813
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.273
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606082302
Sample Date/Time: Wednesday, June 29, 2016 12:28:12
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75794.1	0.6				ug/L	74699	Standard
	Be	9	13.3	21.7	**0.0225**	0.003	14.2	ug/L	8	Standard
	Al	27	2805598.0	0.7	**18.8025**	0.242	1.3	ug/L	1493	Standard
	Sc	45	59848.0	1.2				ug/L	61029	Standard
	Ti	47	42.3	20.1	**0.0017**	0.021	1272.3	ug/L	35	Standard
	V	51	1764.1	8.5	**0.0361**	0.018	49.9	ug/L	1435	Standard
	Cr	52	8282.9	3.5	**0.0853**	0.037	43.4	ug/L	7635	Standard
	Cr	53	906.7	14.2	**0.6437**	0.138	21.5	ug/L	363	Standard
	Mn	55	61274.7	1.5	**8.5848**	0.068	0.8	ug/L	747	Standard
	Co	59	3907.8	2.1	**0.5500**	0.015	2.7	ug/L	234	Standard
	Ni	60	654.7	3.9	**0.2231**	0.012	5.6	ug/L	215	Standard
	Cu	65	222.3	1.8	**0.0148**	0.001	8.1	ug/L	104	Standard
	Zn	66	2204.5	3.0	**1.5481**	0.054	3.5	ug/L	363	Standard
>	**Ge**	72	498979.3	0.8				ug/L	495142	Standard
	As	75	72.7	46.8	**0.1239**	0.030	24.0	ug/L	-50	Standard
	Se	82	52.0	6.1	**0.3317**	0.029	8.6	ug/L	14	Standard
	Se-1	77	105.0	8.3	**0.8037**	0.108	13.5	ug/L	42	Standard
>	**Ga**	71	56.7	13.5				mg/L	42	Standard
	Rb	85	343.3	5.1				ug/L	17	Standard
	Y	89	428520.0	1.9				ug/L	417098	Standard
>	**Rh**	103	38.3	27.2				ug/L	13	Standard
	Mo	98	38.4	23.3	**0.0089**	0.004	39.5	ug/L	11	Standard
	Ag	107	77.7	2.7	**-0.0008**	0.000	47.2	ug/L	68	Standard
	Cd	111	5.6	57.3	**-0.0052**	0.002	30.1	mg/L	2	Standard
	Cd	114	18.7	97.5	**0.0016**	0.004	227.0	ug/L	12	Standard
>	**In**	115	580343.3	0.7				ug/L	587441	Standard
	Sn	118	485.0	23.2	**-0.0106**	0.020	190.8	ug/L	497	Standard
	Sb	123	114.5	31.8	**0.0207**	0.008	39.1	ug/L	78	Standard
	Ba	135	150889.3	1.2	**74.6061**	0.512	0.7	ug/L	24	Standard
	Ce	140	123.3	15.3				ug/L	25	Standard
>	**Tb**	159	936316.1	1.2				ug/L	939701	Standard
	Ho	165	18.3	31.5				ug/L	10	Standard
	Tl	203	189.0	9.5	**0.0214**	0.002	8.8	ug/L	4	Standard
	Tl	205	161.7	6.4	**0.0230**	0.002	7.6	ug/L	2	Standard
	Pb	206	327.3	6.0	**-0.0093**	0.004	47.2	ug/L	240	Standard
	Pb	207	269.3	8.1	**-0.0127**	0.005	36.6	ug/L	198	Standard
	Pb	208	1102.3	4.7	**-0.0147**	0.003	21.5	ug/L	883	Standard
	U	238	62.7	10.4	**0.0048**	0.001	17.9	ug/L	3	Standard
>	**Bi**	209	519166.0	1.5				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	5325.9	0.2	**6.9463**	0.099	1.4	mg/L	37	Standard
K	39	75.0	37.1	**0.0544**	0.061	111.8	mg/L	38	Standard
Ca	43	86.7	3.3	**3.0583**	0.130	4.3	mg/L	10	Standard
Fe	54	170.8	11.8	**0.0094**	0.018	186.9	mg/L	179	Standard
Fe	57	311.7	10.3	**0.0068**	0.121	1775.6	mg/L	335	Standard
> **Sc-1**	45	59848.0	1.2				mg/L	61029	Standard
Cl	35	23747.3	1.3				ug/L	20195	Standard
Kr	83	2.7	78.1				ug/L	4	Standard
Br	81	11654.5	4.8				ug/L	1547	Standard
P	31	16051.8	4.0				ug/L	15286	Standard
S	34	1918.5	1.8				ug/L	1572	Standard
Sr	88	140.0	9.4				ug/L	73	Standard
C	12	53.3	39.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	12.2	186.8				mg/L	6	Standard
Ho-1	165	18.3	31.5				mg/L	10	Standard
Er	166	23.3	24.7				mg/L	13	Standard
I	127	13899.7	5.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.466	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.775	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.792	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.080	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606082303
Sample Date/Time: Wednesday, June 29, 2016 12:31:24
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76244.7	1.6				ug/L	74699	Standard
	Be	9	10.0	50.0	**0.0187**	0.005	28.8	ug/L	8	Standard
	Al	27	1789441.8	2.2	**11.9153**	0.077	0.6	ug/L	1493	Standard
	Sc	45	61370.7	1.9				ug/L	61029	Standard
	Ti	47	59.7	11.8	**0.0448**	0.018	40.0	ug/L	35	Standard
	V	51	1976.3	1.1	**0.0601**	0.005	8.2	ug/L	1435	Standard
	Cr	52	8828.6	1.1	**0.1403**	0.016	11.5	ug/L	7635	Standard
	Cr	53	945.0	0.5	**0.6692**	0.006	1.0	ug/L	363	Standard
	Mn	55	180374.5	2.7	**25.1617**	0.439	1.7	ug/L	747	Standard
	Co	59	619.0	3.1	**0.0543**	0.004	7.0	ug/L	234	Standard
	Ni	60	405.7	6.0	**0.0878**	0.011	12.8	ug/L	215	Standard
	Cu	65	208.0	10.3	**0.0056**	0.012	222.0	ug/L	104	Standard
	Zn	66	6989.3	1.3	**5.7979**	0.130	2.2	ug/L	363	Standard
>	**Ge**	72	506777.4	1.1				ug/L	495142	Standard
	As	75	17.4	166.6	**0.0747**	0.025	33.6	ug/L	-50	Standard
	Se	82	43.0	5.9	**0.2447**	0.022	8.9	ug/L	14	Standard
	Se-1	77	89.0	9.0	**0.5677**	0.097	17.0	ug/L	42	Standard
>	**Ga**	71	55.0	18.2				mg/L	42	Standard
	Rb	85	226.7	20.8				ug/L	17	Standard
	Y	89	430230.4	1.6				ug/L	417098	Standard
>	**Rh**	103	23.3	12.4				ug/L	13	Standard
	Mo	98	43.4	8.2	**0.0107**	0.002	14.5	ug/L	11	Standard
	Ag	107	80.3	9.2	**-0.0005**	0.001	248.5	ug/L	68	Standard
	Cd	111	11.9	16.8	**-0.0022**	0.001	43.2	mg/L	2	Standard
	Cd	114	28.1	50.1	**0.0034**	0.003	82.8	ug/L	12	Standard
>	**In**	115	584282.7	1.3				ug/L	587441	Standard
	Sn	118	445.0	7.0	**-0.0181**	0.005	24.8	ug/L	497	Standard
	Sb	123	113.1	24.2	**0.0201**	0.006	28.5	ug/L	78	Standard
	Ba	135	83408.3	1.0	**40.9596**	0.601	1.5	ug/L	24	Standard
	Ce	140	301.7	22.6				ug/L	25	Standard
>	**Tb**	159	946714.8	0.6				ug/L	939701	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	182.7	3.3	**0.0205**	0.001	3.9	ug/L	4	Standard
	Tl	205	160.0	30.8	**0.0227**	0.007	30.9	ug/L	2	Standard
	Pb	206	288.0	1.3	**-0.0170**	0.001	5.3	ug/L	240	Standard
	Pb	207	270.7	6.0	**-0.0126**	0.003	25.4	ug/L	198	Standard
	Pb	208	1097.0	10.5	**-0.0153**	0.006	38.6	ug/L	883	Standard
	U	238	866.7	1.0	**0.1222**	0.001	0.8	ug/L	3	Standard
>	**Bi**	209	520921.7	0.5				ug/L	523984	Standard

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Na	23	1.7	173.2	**19.3655**	33.533	173.2	mg/L	0	Standard
Mg	24	4915.8	1.0	**6.2466**	0.131	2.1	mg/L	37	Standard
K	39	50.0	20.0	**-0.0042**	0.023	541.6	mg/L	38	Standard
Ca	43	65.0	0.0	**1.5606**	0.079	5.0	mg/L	10	Standard
Fe	54	160.0	11.0	**-0.0035**	0.013	359.3	mg/L	179	Standard
Fe	57	281.7	9.1	**-0.1230**	0.068	55.3	mg/L	335	Standard
> **Sc-1**	45	61370.7	1.9				mg/L	61029	Standard
Cl	35	23872.8	0.3				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	8675.8	8.1				ug/L	1547	Standard
P	31	16263.7	3.0				ug/L	15286	Standard
S	34	1945.1	6.6				ug/L	1572	Standard
Sr	88	130.0	24.0				ug/L	73	Standard
C	12	46.7	44.6				mg/L	63	Standard
N	14	6.7	86.6				mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	19.0	57.5				mg/L	6	Standard
Ho-1	165	8.3	34.6				mg/L	10	Standard
Er	166	20.0	100.0				mg/L	13	Standard
I	127	19577.6	2.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.070	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.350	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.462
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.415
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606082304
Sample Date/Time: Wednesday, June 29, 2016 12:34:35
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76966.7	2.1				ug/L	74699	Standard
	Be	9	8.3	91.7	**0.0169**	0.009	50.5	ug/L	8	Standard
	Al	27	441491.6	0.4	**2.9030**	0.060	2.1	ug/L	1493	Standard
	Sc	45	60155.9	2.7				ug/L	61029	Standard
	Ti	47	44.0	12.0	**0.0058**	0.013	219.4	ug/L	35	Standard
	V	51	1675.2	9.7	**0.0239**	0.019	79.8	ug/L	1435	Standard
	Cr	52	8137.2	4.7	**0.0630**	0.039	62.0	ug/L	7635	Standard
	Cr	53	611.7	11.7	**0.3248**	0.069	21.3	ug/L	363	Standard
	Mn	55	105254.7	1.8	**14.8182**	0.156	1.1	ug/L	747	Standard
	Co	59	259.7	5.8	**0.0017**	0.003	156.1	ug/L	234	Standard
	Ni	60	230.0	4.9	**-0.0022**	0.007	321.8	ug/L	215	Standard
	Cu	65	165.3	1.5	**-0.0157**	0.002	12.9	ug/L	104	Standard
	Zn	66	2212.5	1.5	**1.5507**	0.010	0.6	ug/L	363	Standard
>	**Ge**	72	500132.0	1.1				ug/L	495142	Standard
	As	75	21.8	38.4	**0.0789**	0.008	9.6	ug/L	-50	Standard
	Se	82	26.9	8.6	**0.1047**	0.023	22.2	ug/L	14	Standard
	Se-1	77	64.0	26.1	**0.2460**	0.230	93.4	ug/L	42	Standard
>	**Ga**	71	55.0	41.7				mg/L	42	Standard
	Rb	85	421.7	18.5				ug/L	17	Standard
	Y	89	429897.2	1.0				ug/L	417098	Standard
>	**Rh**	103	6.7	43.3				ug/L	13	Standard
	Mo	98	29.2	13.0	**0.0052**	0.001	25.4	ug/L	11	Standard
	Ag	107	87.7	6.3	**0.0005**	0.001	182.2	ug/L	68	Standard
	Cd	111	7.0	28.7	**-0.0046**	0.001	19.4	mg/L	2	Standard
	Cd	114	21.6	74.7	**0.0021**	0.003	150.8	ug/L	12	Standard
>	**In**	115	589054.0	1.8				ug/L	587441	Standard
	Sn	118	438.3	5.7	**-0.0199**	0.003	16.6	ug/L	497	Standard
	Sb	123	106.2	8.9	**0.0185**	0.002	12.5	ug/L	78	Standard
	Ba	135	25689.8	1.2	**12.5057**	0.379	3.0	ug/L	24	Standard
	Ce	140	65.0	26.6				ug/L	25	Standard
>	**Tb**	159	953435.2	1.7				ug/L	939701	Standard
	Ho	165	13.3	43.3				ug/L	10	Standard
	Tl	203	91.7	10.9	**0.0091**	0.001	12.8	ug/L	4	Standard
	Tl	205	101.7	11.4	**0.0141**	0.002	11.0	ug/L	2	Standard
	Pb	206	281.0	2.2	**-0.0197**	0.001	5.9	ug/L	240	Standard
	Pb	207	219.0	9.1	**-0.0248**	0.004	16.3	ug/L	198	Standard
	Pb	208	999.0	3.0	**-0.0219**	0.001	6.3	ug/L	883	Standard
	U	238	2.7	21.7	**-0.0040**	0.000	2.0	ug/L	3	Standard
>	**Bi**	209	535313.4	0.3				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	1101.7	8.8	**1.3766**	0.099	7.2	mg/L	37	Standard
K	39	50.0	26.5	**-0.0017**	0.031	1783.7	mg/L	38	Standard
Ca	43	43.3	17.6	**0.2622**	0.555	211.4	mg/L	10	Standard
Fe	54	1079.1	4.5	**0.7903**	0.045	5.7	mg/L	179	Standard
Fe	57	550.0	4.8	**0.8245**	0.134	16.2	mg/L	335	Standard
> **Sc-1**	45	60155.9	2.7				mg/L	61029	Standard
Cl	35	23751.9	0.9				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	3913.8	0.4				ug/L	1547	Standard
P	31	16552.4	4.0				ug/L	15286	Standard
S	34	1948.5	5.9				ug/L	1572	Standard
Sr	88	68.3	30.5				ug/L	73	Standard
C	12	63.3	36.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	19.7	135.8				mg/L	6	Standard
Ho-1	165	13.3	43.3				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	5207.6	8.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.036	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.008	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.275
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.162
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 12:37:48
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72653.8	1.6				ug/L	74699	Standard
	Be	9	42693.4	2.4	**49.8778**	1.581	3.2	ug/L	8	Standard
	Al	27	7018269.3	1.5	**49.0877**	0.211	0.4	ug/L	1493	Standard
	Sc	45	58700.2	1.7				ug/L	61029	Standard
	Ti	47	37360.7	1.5	**96.4941**	1.122	1.2	ug/L	35	Standard
	V	51	389361.0	0.6	**50.3345**	0.950	1.9	ug/L	1435	Standard
	Cr	52	377308.6	0.5	**48.8761**	0.835	1.7	ug/L	7635	Standard
	Cr	53	46063.3	3.3	**48.5325**	2.229	4.6	ug/L	363	Standard
	Mn	55	355991.7	2.4	**49.9570**	0.746	1.5	ug/L	747	Standard
	Co	59	341523.2	1.7	**50.6452**	0.528	1.0	ug/L	234	Standard
	Ni	60	94080.5	0.6	**49.1230**	0.490	1.0	ug/L	215	Standard
	Cu	65	95078.4	0.9	**49.9689**	1.178	2.4	ug/L	104	Standard
	Zn	66	56040.5	0.8	**49.8274**	0.722	1.4	ug/L	363	Standard
>	Ge	72	505267.2	1.6				ug/L	495142	Standard
	As	75	56871.7	1.3	**49.8175**	0.372	0.7	ug/L	-50	Standard
	Se	82	5593.2	2.1	**49.8004**	0.347	0.7	ug/L	14	Standard
	Se-1	77	3775.1	1.7	**50.0311**	0.568	1.1	ug/L	42	Standard
>	Ga	71	75.0	13.3				mg/L	42	Standard
	Rb	85	800.0	10.3				ug/L	17	Standard
	Y	89	408700.7	0.8				ug/L	417098	Standard
>	Rh	103	18.3	41.7				ug/L	13	Standard
	Mo	98	257910.1	1.9	**100.4657**	4.126	4.1	ug/L	11	Standard
	Ag	107	316989.6	1.3	**50.4692**	0.906	1.8	ug/L	68	Standard
	Cd	111	101914.0	1.0	**50.5948**	1.545	3.1	mg/L	2	Standard
	Cd	114	242699.9	2.4	**49.1311**	2.013	4.1	ug/L	12	Standard
>	In	115	566154.7	2.7				ug/L	587441	Standard
	Sn	118	281464.1	1.7	**49.9153**	1.113	2.2	ug/L	497	Standard
	Sb	123	227316.6	0.8	**50.5420**	1.534	3.0	ug/L	78	Standard
	Ba	135	98379.4	0.9	**49.8785**	1.233	2.5	ug/L	24	Standard
	Ce	140	113.3	20.8				ug/L	25	Standard
>	Tb	159	932106.1	1.1				ug/L	939701	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	406761.4	0.1	**49.7003**	0.911	1.8	ug/L	4	Standard
	Tl	205	354916.5	2.0	**49.9771**	1.877	3.8	ug/L	2	Standard
	Pb	206	263562.6	0.6	**49.6234**	0.874	1.8	ug/L	240	Standard
	Pb	207	235278.4	0.8	**49.8612**	1.016	2.0	ug/L	198	Standard
	Pb	208	929662.3	0.8	**49.8673**	1.247	2.5	ug/L	883	Standard
	U	238	336021.4	1.5	**49.1730**	1.579	3.2	ug/L	3	Standard
>	Bi	209	520331.8	1.7				ug/L	523984	Standard

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Na	23	1.7	173.2	**19.5945**	33.930	173.2	mg/L	0	Standard
Mg	24	3858.8	4.6	**5.1144**	0.246	4.8	mg/L	37	Standard
K	39	2055.1	3.6	**4.6098**	0.203	4.4	mg/L	38	Standard
Ca	43	130.0	23.4	**5.9979**	1.898	31.6	mg/L	10	Standard
Fe	54	5737.9	3.9	**4.9227**	0.278	5.7	mg/L	179	Standard
Fe	57	1583.4	3.8	**4.5245**	0.301	6.7	mg/L	335	Standard
Sc-1	45	58700.2	1.7				mg/L	61029	Standard
Cl	35	23099.6	1.9				ug/L	20195	Standard
Kr	83	2.3	65.5				ug/L	4	Standard
Br	81	1760.1	10.8				ug/L	1547	Standard
P	31	17002.9	0.9				ug/L	15286	Standard
S	34	2305.2	8.6				ug/L	1572	Standard
Sr	88	76.7	10.0				ug/L	73	Standard
C	12	60.0	33.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	9.0	191.6				mg/L	6	Standard
Ho-1	165	8.3	91.7				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	2030.1	31.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	99.756		
Al	27	98.175		
Sc	45			
Ti	47	96.494		
V	51	100.669		
Cr	52	97.752		
Cr	53			
Mn	55	99.914		
Co	59	101.290		
Ni	60	98.246		
Cu	65	99.938		
Zn	66	99.655		
Ge	72		102.045	
As	75	99.635		
Se	82	99.601		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	100.466		
Ag	107	100.938		
Cd	111	101.190		
Cd	114			
> In	115			96.376
Sn	118	99.831		
Sb	123	101.084		
Ba	135	99.757		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.401		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.735		
U	238	98.346		
> Bi	209			99.303
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 12:40:59
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73745.7	1.0				ug/L	74699	Standard
	Be	9	45.0	86.8	**0.0596**	0.045	76.2	ug/L	8	Standard
	Al	27	10763.7	138.2	**0.0612**	0.103	168.8	ug/L	1493	Standard
	Sc	45	59794.4	0.5				ug/L	61029	Standard
	Ti	47	63.7	40.2	**0.0565**	0.070	123.9	ug/L	35	Standard
	V	51	1309.0	5.1	**-0.0256**	0.009	36.2	ug/L	1435	Standard
	Cr	52	7144.0	4.7	**-0.0780**	0.064	81.5	ug/L	7635	Standard
	Cr	53	391.7	5.2	**0.0859**	0.030	34.5	ug/L	363	Standard
	Mn	55	2203.3	114.3	**0.1667**	0.364	218.6	ug/L	747	Standard
	Co	59	375.0	36.8	**0.0187**	0.022	116.6	ug/L	234	Standard
	Ni	60	226.7	25.3	**-0.0048**	0.033	679.9	ug/L	215	Standard
	Cu	65	137.7	45.7	**-0.0307**	0.035	113.4	ug/L	104	Standard
	Zn	66	391.7	8.9	**-0.1025**	0.038	37.5	ug/L	363	Standard
>	Ge	72	505094.9	1.9				ug/L	495142	Standard
	As	75	-30.0	135.0	**0.0336**	0.035	105.0	ug/L	-50	Standard
	Se	82	18.1	21.6	**0.0240**	0.035	145.0	ug/L	14	Standard
	Se-1	77	51.7	16.7	**0.0700**	0.104	148.9	ug/L	42	Standard
>	Ga	71	55.0	27.3				mg/L	42	Standard
	Rb	85	30.0	72.6				ug/L	17	Standard
	Y	89	416389.1	0.5				ug/L	417098	Standard
>	Rh	103	18.3	56.8				ug/L	13	Standard
	Mo	98	292.6	24.5	**0.1060**	0.029	27.7	ug/L	11	Standard
	Ag	107	123.7	36.8	**0.0063**	0.007	108.0	ug/L	68	Standard
	Cd	111	19.1	60.5	**0.0013**	0.005	411.5	mg/L	2	Standard
	Cd	114	51.4	75.2	**0.0080**	0.007	93.3	ug/L	12	Standard
>	In	115	578912.4	1.7				ug/L	587441	Standard
	Sn	118	756.7	23.6	**0.0364**	0.029	79.3	ug/L	497	Standard
	Sb	123	391.4	30.7	**0.0806**	0.025	30.9	ug/L	78	Standard
	Ba	135	64.3	74.2	**0.0157**	0.023	147.1	ug/L	24	Standard
	Ce	140	98.3	142.4				ug/L	25	Standard
>	Tb	159	938659.9	2.1				ug/L	939701	Standard
	Ho	165	16.7	45.8				ug/L	10	Standard
	Tl	203	80.3	33.4	**0.0079**	0.003	39.1	ug/L	4	Standard
	Tl	205	263.3	142.0	**0.0362**	0.051	140.6	ug/L	2	Standard
	Pb	206	290.0	20.9	**-0.0175**	0.011	60.1	ug/L	240	Standard
	Pb	207	255.0	4.1	**-0.0168**	0.002	14.3	ug/L	198	Standard
	Pb	208	1806.4	80.0	**0.0207**	0.074	360.4	ug/L	883	Standard
	U	238	234.3	149.2	**0.0289**	0.049	171.5	ug/L	3	Standard
>	Bi	209	529175.1	1.6				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	48.3	47.8	**-0.0014**	0.030	2108.5	mg/L	37	Standard
K	39	68.3	15.2	**0.0400**	0.023	56.9	mg/L	38	Standard
Ca	43	21.7	74.2	**-1.1227**	1.047	93.2	mg/L	10	Standard
Fe	54	169.2	23.1	**0.0081**	0.034	414.8	mg/L	179	Standard
Fe	57	310.0	16.4	**0.0019**	0.182	9789.6	mg/L	335	Standard
> **Sc-1**	45	59794.4	0.5				mg/L	61029	Standard
Cl	35	23378.7	0.4				ug/L	20195	Standard
Kr	83	4.3	58.1				ug/L	4	Standard
Br	81	1630.1	3.1				ug/L	1547	Standard
P	31	16767.6	2.6				ug/L	15286	Standard
S	34	2153.5	8.8				ug/L	1572	Standard
Sr	88	65.0	27.7				ug/L	73	Standard
C	12	66.7	17.3				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	9.4	186.5				mg/L	6	Standard
Ho-1	165	16.7	45.8				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	1680.1	29.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.010	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.548	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.991	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Wednesday, June 29, 2016 12:43:16
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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Wednesday, June 29, 2016 12:44:12
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71218.7	0.8				ug/L	74699	Standard
	Be	9	178.3	13.3	**0.2201**	0.029	13.2	ug/L	8	Standard
	Al	27	1766.8	29.5	**-0.0008**	0.004	458.8	ug/L	1493	Standard
	Sc	45	56025.1	1.1				ug/L	61029	Standard
	Ti	47	28.0	7.1	**-0.0318**	0.007	20.5	ug/L	35	Standard
	V	51	4079.9	5.1	**0.3696**	0.041	11.2	ug/L	1435	Standard
	Cr	52	12699.0	0.7	**0.7676**	0.041	5.4	ug/L	7635	Standard
	Cr	53	1050.0	6.6	**0.8579**	0.085	9.9	ug/L	363	Standard
	Mn	55	4110.2	0.9	**0.4692**	0.021	4.5	ug/L	747	Standard
	Co	59	2790.3	0.6	**0.4045**	0.014	3.5	ug/L	234	Standard
	Ni	60	2962.3	1.6	**1.5299**	0.023	1.5	ug/L	215	Standard
	Cu	65	1521.1	1.5	**0.7509**	0.034	4.5	ug/L	104	Standard
	Zn	66	7672.3	2.1	**6.8861**	0.035	0.5	ug/L	363	Standard
>	**Ge**	72	473802.8	2.6				ug/L	495142	Standard
	As	75	358.5	4.9	**0.3943**	0.021	5.3	ug/L	-50	Standard
	Se	82	48.3	16.1	**0.3230**	0.086	26.5	ug/L	14	Standard
	Se-1	77	78.0	9.0	**0.4927**	0.075	15.2	ug/L	42	Standard
>	**Ga**	71	35.0	24.7				mg/L	42	Standard
	Rb	85	21.7	35.3				ug/L	17	Standard
	Y	89	406616.3	2.6				ug/L	417098	Standard
>	**Rh**	103	13.3	43.3				ug/L	13	Standard
	Mo	98	80.8	10.7	**0.0260**	0.003	11.1	ug/L	11	Standard
	Ag	107	2461.5	2.7	**0.3827**	0.004	1.0	ug/L	68	Standard
	Cd	111	469.2	3.6	**0.2272**	0.006	2.5	mg/L	2	Standard
	Cd	114	1121.7	10.1	**0.2273**	0.026	11.5	ug/L	12	Standard
>	**In**	115	560717.1	1.7				ug/L	587441	Standard
	Sn	118	496.7	12.6	**-0.0055**	0.012	217.4	ug/L	497	Standard
	Sb	123	1804.7	2.2	**0.4010**	0.016	3.9	ug/L	78	Standard
	Ba	135	1433.1	2.6	**0.7176**	0.020	2.8	ug/L	24	Standard
	Ce	140	53.3	43.3				ug/L	25	Standard
>	**Tb**	159	901191.9	2.3				ug/L	939701	Standard
	Ho	165	5.0	0.0				ug/L	10	Standard
	Tl	203	658.3	6.7	**0.0809**	0.005	6.0	ug/L	4	Standard
	Tl	205	580.0	6.7	**0.0841**	0.005	5.7	ug/L	2	Standard
	Pb	206	1314.1	4.2	**0.1836**	0.008	4.1	ug/L	240	Standard
	Pb	207	1090.4	5.0	**0.1679**	0.009	5.1	ug/L	198	Standard
	Pb	208	4577.3	1.3	**0.1788**	0.005	3.0	ug/L	883	Standard
	U	238	2625.2	2.7	**0.3906**	0.007	1.9	ug/L	3	Standard
>	**Bi**	209	505831.0	1.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	40.0	12.5	**-0.0088**	0.007	78.9	mg/L	37	Standard
K	39	38.3	19.9	**-0.0218**	0.018	84.6	mg/L	38	Standard
Ca	43	36.7	75.1	**-0.0119**	1.877	15817.5	mg/L	10	Standard
Fe	54	97.1	24.3	**-0.0484**	0.023	47.3	mg/L	179	Standard
Fe	57	295.0	11.9	**0.0175**	0.123	699.1	mg/L	335	Standard
Sc-1	45	56025.1	1.1				mg/L	61029	Standard
Cl	35	22767.8	1.3				ug/L	20195	Standard
Kr	83	2.7	57.3				ug/L	4	Standard
Br	81	1303.4	5.0				ug/L	1547	Standard
P	31	11956.4	1.3				ug/L	15286	Standard
S	34	2061.8	6.1				ug/L	1572	Standard
Sr	88	80.0	22.5				ug/L	73	Standard
C	12	80.0	33.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	0.0					mg/L	6	Standard
Ho-1	165	5.0	0.0				mg/L	10	Standard
Er	166	0.0					mg/L	13	Standard
I	127	1360.1	35.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	110.075		
Al	27			
Sc	45			
Ti	47			
V	51	92.400		
Cr	52	95.955		
Cr	53			
Mn	55	93.844		
Co	59	101.134		
Ni	60	95.616		
Cu	65	93.867		
Zn	66	110.178		
Ge	72		95.690	
As	75	98.586		
Se	82	80.738		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	95.685		
Cd	111	94.646		
Cd	114			
> In	115			95.451
Sn	118			
Sb	123	100.239		
Ba	135	95.683		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.186		
Tl	205			
Pb	206			
Pb	207			
Pb	208	89.410		
U	238	97.655		
> Bi	209			96.535
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
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Method 6020 - Summary Report

Sample ID: PBW 7 WG573548-02
Sample Date/Time: Wednesday, June 29, 2016 12:53:54
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74857.8	1.6				ug/L	74699	Standard
	Be	9	16.7	75.5	**0.0264**	0.014	53.3	ug/L	8	Standard
	Al	27	80794.9	2.0	**0.5353**	0.014	2.5	ug/L	1493	Standard
	Sc	45	58461.0	3.0				ug/L	61029	Standard
	Ti	47	78.0	5.9	**0.0921**	0.013	14.5	ug/L	35	Standard
	V	51	1804.8	0.8	**0.0380**	0.004	11.0	ug/L	1435	Standard
	Cr	52	9792.5	0.9	**0.2676**	0.021	7.7	ug/L	7635	Standard
	Cr	53	633.3	5.7	**0.3397**	0.038	11.1	ug/L	363	Standard
	Mn	55	7868.0	0.9	**0.9563**	0.019	2.0	ug/L	747	Standard
	Co	59	389.7	6.7	**0.0204**	0.003	16.2	ug/L	234	Standard
	Ni	60	396.3	4.2	**0.0829**	0.008	9.4	ug/L	215	Standard
	Cu	65	182.0	8.2	**-0.0081**	0.009	109.2	ug/L	104	Standard
	Zn	66	1432.4	5.9	**0.8274**	0.087	10.5	ug/L	363	Standard
>	**Ge**	72	506709.7	1.0				ug/L	495142	Standard
	As	75	61.7	54.0	**0.1136**	0.029	25.8	ug/L	-50	Standard
	Se	82	57.7	7.0	**0.3762**	0.040	10.6	ug/L	14	Standard
	Se-1	77	48.3	5.2	**0.0243**	0.031	128.3	ug/L	42	Standard
>	**Ga**	71	106.7	35.5				mg/L	42	Standard
	Rb	85	413.3	4.9				ug/L	17	Standard
	Y	89	414741.4	0.4				ug/L	417098	Standard
>	**Rh**	103	15.0	100.0				ug/L	13	Standard
	Mo	98	46.5	23.9	**0.0125**	0.004	33.5	ug/L	11	Standard
	Ag	107	1549.7	3.3	**0.2354**	0.012	5.1	ug/L	68	Standard
	Cd	111	17.2	8.9	**0.0007**	0.001	113.7	mg/L	2	Standard
	Cd	114	63.6	36.2	**0.0109**	0.005	44.4	ug/L	12	Standard
>	**In**	115	562869.1	1.7				ug/L	587441	Standard
	Sn	118	736.7	11.6	**0.0370**	0.017	44.6	ug/L	497	Standard
	Sb	123	216.9	10.9	**0.0443**	0.006	12.6	ug/L	78	Standard
	Ba	135	906.0	5.8	**0.4461**	0.030	6.6	ug/L	24	Standard
	Ce	140	1735.1	5.3				ug/L	25	Standard
>	**Tb**	159	918530.3	1.8				ug/L	939701	Standard
	Ho	165	31.7	32.9				ug/L	10	Standard
	Tl	203	89.3	15.5	**0.0092**	0.002	18.3	ug/L	4	Standard
	Tl	205	86.7	13.3	**0.0124**	0.002	13.0	ug/L	2	Standard
	Pb	206	378.0	4.1	**0.0001**	0.003	2503.4	ug/L	240	Standard
	Pb	207	310.7	3.7	**-0.0040**	0.002	56.8	ug/L	198	Standard
	Pb	208	1268.7	1.9	**-0.0059**	0.001	22.1	ug/L	883	Standard
	U	238	52.0	18.9	**0.0032**	0.001	44.2	ug/L	3	Standard
>	**Bi**	209	520017.2	0.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	98.3	32.7	**0.0678**	0.045	67.0	mg/L	37	Standard
K	39	61.7	9.4	**0.0281**	0.012	42.4	mg/L	38	Standard
Ca	43	31.7	55.5	**-0.4154**	1.202	289.4	mg/L	10	Standard
Fe	54	153.7	8.4	**-0.0024**	0.007	308.5	mg/L	179	Standard
Fe	57	316.7	15.8	**0.0490**	0.173	353.8	mg/L	335	Standard
> **Sc-1**	45	58461.0	3.0				mg/L	61029	Standard
Cl	35	22819.8	1.0				ug/L	20195	Standard
Kr	83	3.7	31.5				ug/L	4	Standard
Br	81	12281.6	4.1				ug/L	1547	Standard
P	31	15094.2	2.5				ug/L	15286	Standard
S	34	1958.5	7.0				ug/L	1572	Standard
Sr	88	78.3	19.5				ug/L	73	Standard
C	12	96.7	21.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	48.1	42.1				mg/L	6	Standard
Ho-1	165	31.7	32.9				mg/L	10	Standard
Er	166	40.0	25.0				mg/L	13	Standard
I	127	2060.1	27.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.213	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.336	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.817
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.243
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 7 WG573548-02
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Method 6020 - Summary Report

Sample ID: LCSW 7 WG573548-03
Sample Date/Time: Wednesday, June 29, 2016 12:57:05
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75779.1	1.4				ug/L	74699	Standard
	Be	9	44266.3	2.0	**49.5806**	1.413	2.8	ug/L	8	Standard
	Al	27	95277.1	2.2	**0.6259**	0.022	3.5	ug/L	1493	Standard
	Sc	45	60008.6	1.7				ug/L	61029	Standard
	Ti	47	61.3	19.5	**0.0533**	0.033	61.1	ug/L	35	Standard
	V	51	383994.5	1.5	**50.7641**	0.334	0.7	ug/L	1435	Standard
	Cr	52	391642.5	1.8	**51.9470**	0.996	1.9	ug/L	7635	Standard
	Cr	53	48176.5	1.3	**51.9174**	0.408	0.8	ug/L	363	Standard
	Mn	55	379234.4	0.1	**54.4505**	0.406	0.7	ug/L	747	Standard
	Co	59	337441.4	0.9	**51.1841**	0.650	1.3	ug/L	234	Standard
	Ni	60	96944.2	1.6	**51.7745**	0.652	1.3	ug/L	215	Standard
	Cu	65	97447.4	0.9	**52.3759**	0.338	0.6	ug/L	104	Standard
	Zn	66	58710.9	1.4	**53.4195**	0.683	1.3	ug/L	363	Standard
>	Ge	72	493989.7	0.8				ug/L	495142	Standard
	As	75	54420.0	2.0	**48.7560**	0.745	1.5	ug/L	-50	Standard
	Se	82	5499.8	2.1	**50.0913**	1.110	2.2	ug/L	14	Standard
	Se-1	77	3757.5	2.3	**50.9460**	1.277	2.5	ug/L	42	Standard
>	Ga	71	331.7	6.3				mg/L	42	Standard
	Rb	85	1905.1	7.7				ug/L	17	Standard
	Y	89	430193.5	2.2				ug/L	417098	Standard
>	Rh	103	21.7	13.3				ug/L	13	Standard
	Mo	98	200.3	5.0	**0.0686**	0.004	5.6	ug/L	11	Standard
	Ag	107	325181.2	0.5	**49.3255**	0.456	0.9	ug/L	68	Standard
	Cd	111	102382.7	0.7	**48.4138**	0.589	1.2	mg/L	2	Standard
	Cd	114	246010.3	1.2	**47.4297**	0.453	1.0	ug/L	12	Standard
>	In	115	594099.2	0.9				ug/L	587441	Standard
	Sn	118	733.4	7.5	**0.0295**	0.010	35.4	ug/L	497	Standard
	Sb	123	222790.7	0.6	**47.1842**	0.681	1.4	ug/L	78	Standard
	Ba	135	100456.3	0.7	**48.5175**	0.574	1.2	ug/L	24	Standard
	Ce	140	3297.0	2.9				ug/L	25	Standard
>	Tb	159	953975.0	2.3				ug/L	939701	Standard
	Ho	165	81.7	3.5				ug/L	10	Standard
	Tl	203	411383.7	1.0	**49.0691**	0.983	2.0	ug/L	4	Standard
	Tl	205	358822.0	2.1	**49.3118**	1.192	2.4	ug/L	2	Standard
	Pb	206	272876.4	0.6	**50.1549**	0.805	1.6	ug/L	240	Standard
	Pb	207	232281.8	1.2	**48.0517**	0.976	2.0	ug/L	198	Standard
	Pb	208	938885.2	1.2	**49.1601**	1.120	2.3	ug/L	883	Standard
	U	238	337957.9	0.3	**48.2703**	0.691	1.4	ug/L	3	Standard
>	Bi	209	532979.3	1.2				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	40.0	12.5	**-0.0126**	0.007	52.7	mg/L	37	Standard
K	39	58.3	21.6	**0.0173**	0.030	174.9	mg/L	38	Standard
Ca	43	60.0	16.7	**1.3313**	0.636	47.7	mg/L	10	Standard
Fe	54	427.3	5.7	**0.2300**	0.018	7.6	mg/L	179	Standard
Fe	57	393.3	4.8	**0.2864**	0.089	31.1	mg/L	335	Standard
> **Sc-1**	45	60008.6	1.7				mg/L	61029	Standard
Cl	35	22904.0	1.4				ug/L	20195	Standard
Kr	83	0.7	86.6				ug/L	4	Standard
Br	81	1933.5	11.4				ug/L	1547	Standard
P	31	15693.1	2.0				ug/L	15286	Standard
S	34	1913.5	5.4				ug/L	1572	Standard
Sr	88	85.0	21.2				ug/L	73	Standard
C	12	106.7	37.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	149.3	43.4				mg/L	6	Standard
Ho-1	165	81.7	3.5				mg/L	10	Standard
Er	166	83.3	45.4				mg/L	13	Standard
I	127	1690.1	32.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.446	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.767	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.133
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.717
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 7 WG573548-03
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Method 6020 - Summary Report

Sample ID: L1606098623 WG573548-01
Sample Date/Time: Wednesday, June 29, 2016 13:00:17
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85536.1	4.6				ug/L	74699	Standard
	Be	9	131.7	4.4	**0.1385**	0.009	6.7	ug/L	8	Standard
	Al	27	51229429.5	1.9	**304.6734**	8.454	2.8	ug/L	1493	Standard
	Sc	45	58156.4	0.7				ug/L	61029	Standard
	Ti	47	291.7	4.0	**0.6976**	0.027	3.9	ug/L	35	Standard
	V	51	2731.2	8.5	**0.1837**	0.035	19.3	ug/L	1435	Standard
	Cr	52	11798.6	2.2	**0.6453**	0.034	5.3	ug/L	7635	Standard
	Cr	53	1541.7	10.7	**1.4199**	0.200	14.1	ug/L	363	Standard
	Mn	55	1519614.4	1.3	**228.6645**	1.850	0.8	ug/L	747	Standard
	Co	59	1958.8	0.9	**0.2737**	0.000	0.1	ug/L	234	Standard
	Ni	60	5664.7	1.6	**3.0483**	0.071	2.3	ug/L	215	Standard
	Cu	65	19925.4	0.1	**11.1201**	0.082	0.7	ug/L	104	Standard
	Zn	66	6263.0	2.6	**5.5559**	0.126	2.3	ug/L	363	Standard
>	**Ge**	72	472304.7	0.8				ug/L	495142	Standard
	As	75	721.9	3.2	**0.7353**	0.022	3.1	ug/L	-50	Standard
	Se	82	400.4	3.0	**3.6870**	0.142	3.9	ug/L	14	Standard
	Se-1	77	187.0	7.2	**2.0610**	0.173	8.4	ug/L	42	Standard
>	**Ga**	71	100.0	8.7				mg/L	42	Standard
	Rb	85	5192.6	2.9				ug/L	17	Standard
	Y	89	424150.6	2.5				ug/L	417098	Standard
>	**Rh**	103	291.7	21.8				ug/L	13	Standard
	Mo	98	1037.1	3.0	**0.3904**	0.016	4.1	ug/L	11	Standard
	Ag	107	150.3	11.8	**0.0106**	0.003	25.5	ug/L	68	Standard
	Cd	111	86.5	9.0	**0.0342**	0.004	11.5	mg/L	2	Standard
	Cd	114	235.1	23.0	**0.0445**	0.010	23.2	ug/L	12	Standard
>	**In**	115	577173.5	1.1				ug/L	587441	Standard
	Sn	118	1115.0	2.8	**0.0996**	0.004	4.3	ug/L	497	Standard
	Sb	123	1725.9	23.2	**0.3715**	0.084	22.5	ug/L	78	Standard
	Ba	135	22344.1	0.8	**11.0965**	0.201	1.8	ug/L	24	Standard
	Ce	140	1543.4	4.9				ug/L	25	Standard
>	**Tb**	159	936227.5	1.2				ug/L	939701	Standard
	Ho	165	78.3	35.2				ug/L	10	Standard
	Tl	203	240.0	4.8	**0.0287**	0.001	5.1	ug/L	4	Standard
	Tl	205	171.7	9.4	**0.0253**	0.002	9.3	ug/L	2	Standard
	Pb	206	666.7	6.9	**0.0592**	0.009	15.2	ug/L	240	Standard
	Pb	207	558.7	0.1	**0.0529**	0.000	0.3	ug/L	198	Standard
	Pb	208	2267.7	0.3	**0.0522**	0.000	0.9	ug/L	883	Standard
	U	238	28225.3	0.9	**4.2785**	0.042	1.0	ug/L	3	Standard
>	**Bi**	209	501665.1	0.1				ug/L	523984	Standard

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Na	23	13.3	43.3	**161.5718**	71.131	44.0	mg/L	0	Standard
Mg	24	24900.4	1.1	**33.6647**	0.149	0.4	mg/L	37	Standard
K	39	1233.4	1.4	**2.7469**	0.062	2.2	mg/L	38	Standard
Ca	43	1560.1	5.5	**100.8648**	4.911	4.9	mg/L	10	Standard
Fe	54	167.1	25.8	**0.0105**	0.039	372.7	mg/L	179	Standard
Fe	57	958.4	6.3	**2.3440**	0.212	9.0	mg/L	335	Standard
Sc-1	45	58156.4	0.7				mg/L	61029	Standard
Cl	35	40465.3	2.5				ug/L	20195	Standard
Kr	83	2.7	57.3				ug/L	4	Standard
Br	81	58241.9	4.1				ug/L	1547	Standard
P	31	17453.4	1.6				ug/L	15286	Standard
S	34	1810.1	8.9				ug/L	1572	Standard
Sr	88	1313.4	8.1				ug/L	73	Standard
C	12	273.3	15.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	3	Standard
Dy	164	89.3	16.3				mg/L	6	Standard
Ho-1	165	78.3	35.2				mg/L	10	Standard
Er	166	83.3	18.3				mg/L	13	Standard
I	127	135078.2	7.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		114.508	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.388	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.252
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.740
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606098635S WG573548-04
Sample Date/Time: Wednesday, June 29, 2016 13:03:28
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	96645.6	0.2				ug/L	74699	Standard
	Be	9	56332.9	2.6	**49.4619**	1.222	2.5	ug/L	8	Standard
	Al	27	56565131.5	1.0	**297.4859**	3.609	1.2	ug/L	1493	Standard
	Sc	45	58999.8	4.0				ug/L	61029	Standard
	Ti	47	369.0	11.5	**0.8968**	0.108	12.0	ug/L	35	Standard
	V	51	390242.6	0.5	**53.2266**	0.984	1.8	ug/L	1435	Standard
	Cr	52	371857.5	2.1	**50.8419**	0.408	0.8	ug/L	7635	Standard
	Cr	53	46974.4	2.3	**52.2114**	1.040	2.0	ug/L	363	Standard
	Mn	55	1851169.7	0.3	**274.7367**	3.654	1.3	ug/L	747	Standard
	Co	59	350457.1	0.5	**54.8326**	0.988	1.8	ug/L	234	Standard
	Ni	60	94372.4	2.0	**51.9777**	0.274	0.5	ug/L	215	Standard
	Cu	65	115580.4	2.6	**64.0828**	0.734	1.1	ug/L	104	Standard
	Zn	66	61118.4	0.5	**57.3902**	0.612	1.1	ug/L	363	Standard
>	**Ge**	72	478993.7	1.6				ug/L	495142	Standard
	As	75	59122.1	0.8	**54.6260**	0.454	0.8	ug/L	-50	Standard
	Se	82	6294.5	0.9	**59.1515**	0.578	1.0	ug/L	14	Standard
	Se-1	77	4101.2	2.7	**57.4162**	0.662	1.2	ug/L	42	Standard
>	**Ga**	71	100.0	18.0				mg/L	42	Standard
	Rb	85	5364.3	1.3				ug/L	17	Standard
	Y	89	423648.2	2.3				ug/L	417098	Standard
>	**Rh**	103	290.0	15.8				ug/L	13	Standard
	Mo	98	1231.1	6.2	**0.4537**	0.027	5.8	ug/L	11	Standard
	Ag	107	140053.7	1.3	**21.3673**	0.341	1.6	ug/L	68	Standard
	Cd	111	101619.5	1.1	**48.3438**	0.154	0.3	mg/L	2	Standard
	Cd	114	248812.6	0.3	**48.2667**	0.577	1.2	ug/L	12	Standard
>	**In**	115	590497.7	1.3				ug/L	587441	Standard
	Sn	118	1276.7	2.9	**0.1227**	0.007	5.6	ug/L	497	Standard
	Sb	123	230648.9	1.4	**49.1452**	0.703	1.4	ug/L	78	Standard
	Ba	135	121100.4	1.0	**58.8551**	1.255	2.1	ug/L	24	Standard
	Ce	140	1580.1	12.1				ug/L	25	Standard
>	**Tb**	159	967679.2	1.8				ug/L	939701	Standard
	Ho	165	70.0	12.4				ug/L	10	Standard
	Tl	203	411213.8	0.9	**50.0486**	0.144	0.3	ug/L	4	Standard
	Tl	205	371375.3	1.6	**52.0881**	1.342	2.6	ug/L	2	Standard
	Pb	206	271184.0	0.3	**50.8655**	0.565	1.1	ug/L	240	Standard
	Pb	207	230172.1	0.3	**48.5918**	0.740	1.5	ug/L	198	Standard
	Pb	208	934549.0	0.8	**49.9358**	0.874	1.8	ug/L	883	Standard
	U	238	386476.6	1.1	**56.3336**	1.024	1.8	ug/L	3	Standard
>	**Bi**	209	522269.6	1.2				ug/L	523984	Standard

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Na	23	8.3	91.7	**99.7813**	89.869	90.1	mg/L	0	Standard
Mg	24	26446.4	1.6	**35.2703**	0.863	2.4	mg/L	37	Standard
K	39	1201.7	4.6	**2.6333**	0.063	2.4	mg/L	38	Standard
Ca	43	1648.4	4.4	**105.1755**	1.490	1.4	mg/L	10	Standard
Fe	54	207.2	35.2	**0.0431**	0.061	140.9	mg/L	179	Standard
Fe	57	976.7	6.7	**2.3580**	0.131	5.6	mg/L	335	Standard
> **Sc-1**	45	58999.8	4.0				mg/L	61029	Standard
Cl	35	42664.0	0.9				ug/L	20195	Standard
Kr	83	3.0	33.3				ug/L	4	Standard
Br	81	62512.1	2.5				ug/L	1547	Standard
P	31	18094.1	2.0				ug/L	15286	Standard
S	34	1855.1	3.1				ug/L	1572	Standard
Sr	88	1376.7	4.2				ug/L	73	Standard
C	12	206.7	24.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	73.5	28.0				mg/L	6	Standard
Ho-1	165	70.0	12.4				mg/L	10	Standard
Er	166	66.7	34.6				mg/L	13	Standard
I	127	146421.6	4.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.380	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.739	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.520
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.673
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606098637SD WG573548-05
Sample Date/Time: Wednesday, June 29, 2016 13:06:39
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	99478.9	1.8				ug/L	74699	Standard
	Be	9	55809.3	1.7	**47.6121**	0.679	1.4	ug/L	8	Standard
	Al	27	57079276.5	2.7	**291.6498**	6.801	2.3	ug/L	1493	Standard
	Sc	45	56220.8	1.7				ug/L	61029	Standard
	Ti	47	357.7	29.4	**0.8728**	0.310	35.5	ug/L	35	Standard
	V	51	392795.1	0.3	**53.7087**	1.385	2.6	ug/L	1435	Standard
	Cr	52	364211.2	1.2	**49.9063**	1.054	2.1	ug/L	7635	Standard
	Cr	53	45092.0	2.6	**50.2220**	0.967	1.9	ug/L	363	Standard
	Mn	55	1864825.2	1.1	**277.4410**	6.534	2.4	ug/L	747	Standard
	Co	59	357216.6	1.3	**56.0166**	0.665	1.2	ug/L	234	Standard
	Ni	60	94064.4	0.7	**51.9434**	1.099	2.1	ug/L	215	Standard
	Cu	65	96872.1	1.3	**53.8290**	0.581	1.1	ug/L	104	Standard
	Zn	66	56756.1	1.1	**53.3877**	0.715	1.3	ug/L	363	Standard
>	**Ge**	72	477920.9	2.4				ug/L	495142	Standard
	As	75	58834.8	0.8	**54.4924**	0.918	1.7	ug/L	-50	Standard
	Se	82	6411.7	0.6	**60.4029**	1.057	1.7	ug/L	14	Standard
	Se-1	77	4156.6	3.0	**58.3446**	1.540	2.6	ug/L	42	Standard
>	**Ga**	71	126.7	16.4				mg/L	42	Standard
	Rb	85	5344.3	1.7				ug/L	17	Standard
	Y	89	425761.1	0.9				ug/L	417098	Standard
>	**Rh**	103	338.3	14.4				ug/L	13	Standard
	Mo	98	943.7	3.1	**0.3564**	0.013	3.7	ug/L	11	Standard
	Ag	107	126054.2	0.9	**19.7696**	0.296	1.5	ug/L	68	Standard
	Cd	111	100507.1	1.6	**49.1528**	0.361	0.7	mg/L	2	Standard
	Cd	114	240725.5	3.1	**47.9933**	0.862	1.8	ug/L	12	Standard
>	**In**	115	574417.4	1.5				ug/L	587441	Standard
	Sn	118	1058.4	4.2	**0.0905**	0.005	5.8	ug/L	497	Standard
	Sb	123	229849.5	0.5	**50.3475**	0.456	0.9	ug/L	78	Standard
	Ba	135	119199.1	0.7	**59.5474**	0.534	0.9	ug/L	24	Standard
	Ce	140	1411.7	10.5				ug/L	25	Standard
>	**Tb**	159	946510.5	1.0				ug/L	939701	Standard
	Ho	165	61.7	32.8				ug/L	10	Standard
	Tl	203	404314.5	1.0	**50.2968**	0.720	1.4	ug/L	4	Standard
	Tl	205	368989.1	0.6	**52.8952**	1.157	2.2	ug/L	2	Standard
	Pb	206	274418.5	1.5	**52.6043**	0.331	0.6	ug/L	240	Standard
	Pb	207	233408.5	1.0	**50.3596**	0.394	0.8	ug/L	198	Standard
	Pb	208	945417.2	0.6	**51.6312**	0.704	1.4	ug/L	883	Standard
	U	238	390395.6	1.2	**58.1569**	0.854	1.5	ug/L	3	Standard
>	**Bi**	209	511024.4	1.7				ug/L	523984	Standard

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Na	23	13.3	21.7	**167.0389**	37.375	22.4	mg/L	0	Standard
Mg	24	26820.4	2.0	**37.5161**	0.222	0.6	mg/L	37	Standard
K	39	1165.0	5.8	**2.6799**	0.118	4.4	mg/L	38	Standard
Ca	43	1491.7	10.9	**99.7885**	11.256	11.3	mg/L	10	Standard
Fe	54	157.1	11.5	**0.0062**	0.015	238.1	mg/L	179	Standard
Fe	57	1011.7	5.7	**2.6573**	0.164	6.2	mg/L	335	Standard
> **Sc-1**	45	56220.8	1.7				mg/L	61029	Standard
Cl	35	42892.6	1.5				ug/L	20195	Standard
Kr	83	2.7	43.3				ug/L	4	Standard
Br	81	62984.0	1.3				ug/L	1547	Standard
P	31	17081.3	3.0				ug/L	15286	Standard
S	34	1805.1	2.7				ug/L	1572	Standard
Sr	88	1383.4	10.5				ug/L	73	Standard
C	12	180.0	14.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	124.6	33.0				mg/L	6	Standard
Ho-1	165	61.7	32.8				mg/L	10	Standard
Er	166	43.3	35.3				mg/L	13	Standard
I	127	140810.4	4.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		133.173	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.522	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.783
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.527
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606098637SD WG573548-05
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Method 6020 - Summary Report

Sample ID: L1606098601
Sample Date/Time: Wednesday, June 29, 2016 13:09:51
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	102324.4	1.8				ug/L	74699	Standard
	Be	9	88.3	32.2	**0.0810**	0.024	30.0	ug/L	8	Standard
	Al	27	5114148.7	1.9	**25.3952**	0.605	2.4	ug/L	1493	Standard
	Sc	45	60191.0	1.9				ug/L	61029	Standard
	Ti	47	2779.9	0.6	**7.0936**	0.108	1.5	ug/L	35	Standard
	V	51	5111.4	5.6	**0.4688**	0.033	7.0	ug/L	1435	Standard
	Cr	52	13420.3	3.5	**0.7542**	0.051	6.8	ug/L	7635	Standard
	Cr	53	1458.4	3.3	**1.2196**	0.051	4.2	ug/L	363	Standard
	Mn	55	181173.8	0.3	**25.4046**	0.180	0.7	ug/L	747	Standard
	Co	59	2348.5	2.0	**0.3119**	0.007	2.1	ug/L	234	Standard
	Ni	60	2310.5	3.1	**1.0878**	0.031	2.9	ug/L	215	Standard
	Cu	65	2308.5	3.6	**1.1141**	0.034	3.0	ug/L	104	Standard
	Zn	66	22662.3	0.5	**19.9177**	0.090	0.4	ug/L	363	Standard
>	**Ge**	72	504254.4	0.9				ug/L	495142	Standard
	As	75	859.1	5.1	**0.8126**	0.036	4.5	ug/L	-50	Standard
	Se	82	56.8	14.9	**0.3708**	0.079	21.2	ug/L	14	Standard
	Se-1	77	87.3	17.2	**0.5507**	0.190	34.5	ug/L	42	Standard
>	**Ga**	71	526.7	8.3				mg/L	42	Standard
	Rb	85	16517.3	5.3				ug/L	17	Standard
	Y	89	430302.4	1.6				ug/L	417098	Standard
>	**Rh**	103	86.7	33.8				ug/L	13	Standard
	Mo	98	1898.6	1.4	**0.7136**	0.022	3.1	ug/L	11	Standard
	Ag	107	115.3	8.0	**0.0050**	0.001	29.0	ug/L	68	Standard
	Cd	111	60.8	33.2	**0.0215**	0.010	47.6	mg/L	2	Standard
	Cd	114	128.6	20.8	**0.0232**	0.005	20.9	ug/L	12	Standard
>	**In**	115	581907.5	1.7				ug/L	587441	Standard
	Sn	118	1231.7	10.8	**0.1183**	0.024	20.7	ug/L	497	Standard
	Sb	123	520.8	14.7	**0.1084**	0.016	15.1	ug/L	78	Standard
	Ba	135	41346.0	0.9	**20.3791**	0.217	1.1	ug/L	24	Standard
	Ce	140	23020.8	2.4				ug/L	25	Standard
>	**Tb**	159	964144.3	1.8				ug/L	939701	Standard
	Ho	165	513.3	9.3				ug/L	10	Standard
	Tl	203	211.3	12.7	**0.0234**	0.003	14.7	ug/L	4	Standard
	Tl	205	253.3	62.3	**0.0350**	0.022	63.0	ug/L	2	Standard
	Pb	206	1500.1	2.6	**0.2039**	0.008	4.0	ug/L	240	Standard
	Pb	207	1190.0	4.0	**0.1756**	0.010	5.7	ug/L	198	Standard
	Pb	208	4936.0	2.0	**0.1838**	0.008	4.3	ug/L	883	Standard
	U	238	2034.5	10.8	**0.2852**	0.034	11.8	ug/L	3	Standard
>	**Bi**	209	535012.0	1.1				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	50263.2	0.4	**65.7389**	1.477	2.2	mg/L	37	Standard
K	39	250.0	7.2	**0.4466**	0.047	10.5	mg/L	38	Standard
Ca	43	233.3	8.9	**12.4104**	1.127	9.1	mg/L	10	Standard
Fe	54	825.5	3.8	**0.5718**	0.038	6.7	mg/L	179	Standard
Fe	57	516.7	4.4	**0.7058**	0.045	6.4	mg/L	335	Standard
> **Sc-1**	45	60191.0	1.9				mg/L	61029	Standard
Cl	35	28383.9	2.7				ug/L	20195	Standard
Kr	83	2.0	0.0				ug/L	4	Standard
Br	81	8439.0	2.4				ug/L	1547	Standard
P	31	17857.2	2.8				ug/L	15286	Standard
S	34	1791.8	4.6				ug/L	1572	Standard
Sr	88	506.7	4.7				ug/L	73	Standard
C	12	153.3	22.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	893.4	9.1				mg/L	6	Standard
Ho-1	165	513.3	9.3				mg/L	10	Standard
Er	166	416.7	13.2				mg/L	13	Standard
I	127	18778.3	7.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		136.983	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.840	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.058	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	102.105	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606098603
Sample Date/Time: Wednesday, June 29, 2016 13:13:02
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	106961.3	1.6				ug/L	74699	Standard
	Be	9	178.3	7.1	**0.1492**	0.012	8.2	ug/L	8	Standard
	Al	27	64490531.4	4.4	**306.3886**	9.864	3.2	ug/L	1493	Standard
	Sc	45	59811.2	2.1				ug/L	61029	Standard
	Ti	47	416.0	0.2	**0.9910**	0.025	2.5	ug/L	35	Standard
	V	51	3004.3	2.1	**0.2029**	0.003	1.2	ug/L	1435	Standard
	Cr	52	11901.7	1.5	**0.5854**	0.019	3.3	ug/L	7635	Standard
	Cr	53	991.7	2.3	**0.7459**	0.050	6.7	ug/L	363	Standard
	Mn	55	12370472.2	4.2	**1779.3602**	31.656	1.8	ug/L	747	Standard
	Co	59	18875.4	5.7	**2.8249**	0.100	3.5	ug/L	234	Standard
	Ni	60	12202.3	4.0	**6.4037**	0.114	1.8	ug/L	215	Standard
	Cu	65	16836.0	2.8	**8.9582**	0.039	0.4	ug/L	104	Standard
	Zn	66	24869.4	2.3	**22.3549**	0.039	0.2	ug/L	363	Standard
>	**Ge**	72	494237.2	2.4				ug/L	495142	Standard
	As	75	1554.4	6.7	**1.4489**	0.061	4.2	ug/L	-50	Standard
	Se	82	71.5	7.7	**0.5142**	0.037	7.1	ug/L	14	Standard
	Se-1	77	63.0	12.4	**0.2431**	0.119	49.1	ug/L	42	Standard
>	**Ga**	71	356.7	10.3				mg/L	42	Standard
	Rb	85	9309.5	2.8				ug/L	17	Standard
	Y	89	460268.8	4.1				ug/L	417098	Standard
>	**Rh**	103	310.0	9.7				ug/L	13	Standard
	Mo	98	1407.8	3.5	**0.5012**	0.005	1.0	ug/L	11	Standard
	Ag	107	101.3	22.9	**0.0020**	0.003	151.7	ug/L	68	Standard
	Cd	111	246.3	7.9	**0.1051**	0.008	7.2	mg/L	2	Standard
	Cd	114	605.6	11.0	**0.1111**	0.009	8.4	ug/L	12	Standard
>	**In**	115	612194.6	4.4				ug/L	587441	Standard
	Sn	118	1470.1	15.0	**0.1461**	0.027	18.7	ug/L	497	Standard
	Sb	123	727.1	5.4	**0.1452**	0.003	2.2	ug/L	78	Standard
	Ba	135	24533.2	4.5	**11.4855**	0.055	0.5	ug/L	24	Standard
	Ce	140	44839.6	2.7				ug/L	25	Standard
>	**Tb**	159	1002318.5	3.7				ug/L	939701	Standard
	Ho	165	778.4	7.8				ug/L	10	Standard
	Tl	203	123.7	14.4	**0.0129**	0.002	13.5	ug/L	4	Standard
	Tl	205	116.7	9.9	**0.0161**	0.001	9.2	ug/L	2	Standard
	Pb	206	819.0	5.9	**0.0785**	0.008	10.4	ug/L	240	Standard
	Pb	207	658.0	2.8	**0.0655**	0.007	10.9	ug/L	198	Standard
	Pb	208	2733.4	3.4	**0.0682**	0.002	2.2	ug/L	883	Standard
	U	238	29463.0	4.0	**4.1728**	0.071	1.7	ug/L	3	Standard
>	**Bi**	209	536825.9	2.9				ug/L	523984	Standard

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Na	23	18.3	31.5	**216.6166**	73.255	33.8	mg/L	0	Standard
Mg	24	7246.7	2.5	**9.4794**	0.084	0.9	mg/L	37	Standard
K	39	393.3	11.0	**0.7727**	0.091	11.8	mg/L	38	Standard
Ca	43	1938.5	3.9	**122.4130**	4.002	3.3	mg/L	10	Standard
Fe	54	1213.7	6.6	**0.9123**	0.078	8.6	mg/L	179	Standard
Fe	57	1360.1	3.5	**3.6434**	0.167	4.6	mg/L	335	Standard
> **Sc-1**	45	59811.2	2.1				mg/L	61029	Standard
Cl	35	41831.0	3.4				ug/L	20195	Standard
Kr	83	1.7	91.7				ug/L	4	Standard
Br	81	8062.1	5.5				ug/L	1547	Standard
P	31	19340.7	4.7				ug/L	15286	Standard
S	34	2026.8	7.6				ug/L	1572	Standard
Sr	88	1283.4	13.4				ug/L	73	Standard
C	12	153.3	19.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	1258.4	10.3				mg/L	6	Standard
Ho-1	165	778.4	7.8				mg/L	10	Standard
Er	166	800.0	9.9				mg/L	13	Standard
I	127	76815.4	9.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		143.190	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.817	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.214
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.451
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606098603PS WG574572-01
Sample Date/Time: Wednesday, June 29, 2016 13:16:14
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	107768.6	1.4				ug/L	74699	Standard
	Be	9	63154.7	2.1	**49.7293**	0.735	1.5	ug/L	8	Standard
	Al	27	62883924.9	0.4	**296.6156**	4.197	1.4	ug/L	1493	Standard
	Sc	45	60669.6	1.7				ug/L	61029	Standard
	Ti	47	431.3	11.1	**1.0313**	0.120	11.7	ug/L	35	Standard
	V	51	423481.5	0.7	**56.0150**	0.782	1.4	ug/L	1435	Standard
	Cr	52	394353.4	1.0	**52.3183**	0.613	1.2	ug/L	7635	Standard
	Cr	53	48385.5	1.4	**52.1545**	1.086	2.1	ug/L	363	Standard
	Mn	55	12676353.0	0.9	**1825.0939**	28.984	1.6	ug/L	747	Standard
	Co	59	406698.1	0.5	**61.7025**	0.702	1.1	ug/L	234	Standard
	Ni	60	105609.8	0.7	**56.4229**	0.793	1.4	ug/L	215	Standard
	Cu	65	109624.8	0.4	**58.9403**	0.355	0.6	ug/L	104	Standard
	Zn	66	80974.1	1.0	**73.8592**	1.163	1.6	ug/L	363	Standard
>	Ge	72	493944.8	0.7				ug/L	495142	Standard
	As	75	62963.2	0.4	**56.4099**	0.584	1.0	ug/L	-50	Standard
	Se	82	6528.2	1.4	**59.4919**	1.250	2.1	ug/L	14	Standard
	Se-1	77	4208.9	2.0	**57.1456**	1.224	2.1	ug/L	42	Standard
>	Ga	71	341.7	3.7				mg/L	42	Standard
	Rb	85	9437.9	2.3				ug/L	17	Standard
	Y	89	453637.5	2.0				ug/L	417098	Standard
>	Rh	103	333.3	4.8				ug/L	13	Standard
	Mo	98	1406.8	1.9	**0.5023**	0.008	1.6	ug/L	11	Standard
	Ag	107	336751.7	1.1	**49.7241**	0.838	1.7	ug/L	68	Standard
	Cd	111	110645.7	0.7	**50.9305**	0.669	1.3	mg/L	2	Standard
	Cd	114	268194.0	0.5	**50.3333**	0.438	0.9	ug/L	12	Standard
>	In	115	610323.2	0.7				ug/L	587441	Standard
	Sn	118	1538.4	2.3	**0.1588**	0.006	3.5	ug/L	497	Standard
	Sb	123	241381.6	1.1	**49.7617**	0.807	1.6	ug/L	78	Standard
	Ba	135	126394.4	1.4	**59.4274**	1.193	2.0	ug/L	24	Standard
	Ce	140	44334.8	0.8				ug/L	25	Standard
>	Tb	159	999714.8	1.0				ug/L	939701	Standard
	Ho	165	786.7	10.3				ug/L	10	Standard
	Tl	203	445077.8	1.6	**52.3048**	0.918	1.8	ug/L	4	Standard
	Tl	205	409895.5	2.2	**55.5017**	1.265	2.3	ug/L	2	Standard
	Pb	206	293321.0	0.4	**53.1218**	0.228	0.4	ug/L	240	Standard
	Pb	207	252054.7	0.9	**51.3779**	0.617	1.2	ug/L	198	Standard
	Pb	208	1026149.4	0.5	**52.9396**	0.195	0.4	ug/L	883	Standard
	U	238	420484.7	1.6	**59.1737**	0.984	1.7	ug/L	3	Standard
>	Bi	209	540895.8	0.3				ug/L	523984	Standard

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Na	23	16.7	45.8	**192.4294**	85.849	44.6	mg/L	0	Standard
Mg	24	7256.7	2.5	**9.3609**	0.349	3.7	mg/L	37	Standard
K	39	406.7	8.6	**0.7894**	0.064	8.1	mg/L	38	Standard
Ca	43	1853.4	4.6	**115.2974**	6.640	5.8	mg/L	10	Standard
Fe	54	1091.3	5.4	**0.7921**	0.036	4.5	mg/L	179	Standard
Fe	57	1315.1	6.5	**3.4198**	0.224	6.6	mg/L	335	Standard
> **Sc-1**	45	60669.6	1.7				mg/L	61029	Standard
Cl	35	43150.7	2.4				ug/L	20195	Standard
Kr	83	2.3	49.5				ug/L	4	Standard
Br	81	7932.1	5.6				ug/L	1547	Standard
P	31	18981.9	3.1				ug/L	15286	Standard
S	34	1910.1	1.6				ug/L	1572	Standard
Sr	88	1396.7	9.1				ug/L	73	Standard
C	12	166.7	22.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	1221.7	7.2				mg/L	6	Standard
Ho-1	165	786.7	10.3				mg/L	10	Standard
Er	166	800.0	7.6				mg/L	13	Standard
I	127	76722.5	5.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		144.271	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.758	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.895
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.227
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606098603PS WG574572-01
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Method 6020 - Summary Report

Sample ID: L1606098603SDL WG574572-02
Sample Date/Time: Wednesday, June 29, 2016 13:19:25
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	109627.0	2.2				ug/L	74699	Standard
	Be	9	55.0	32.8	**0.0501**	0.014	27.0	ug/L	8	Standard
	Al	27	13052757.9	2.1	**60.5215**	1.604	2.7	ug/L	1493	Standard
	Sc	45	62358.1	1.0				ug/L	61029	Standard
	Ti	47	123.0	14.7	**0.1926**	0.050	25.7	ug/L	35	Standard
	V	51	2451.6	1.0	**0.1057**	0.008	7.9	ug/L	1435	Standard
	Cr	52	10290.8	1.8	**0.2648**	0.008	2.8	ug/L	7635	Standard
	Cr	53	588.3	10.7	**0.2610**	0.063	24.3	ug/L	363	Standard
	Mn	55	2629853.6	1.6	**350.4744**	10.232	2.9	ug/L	747	Standard
	Co	59	4233.3	3.1	**0.5577**	0.018	3.3	ug/L	234	Standard
	Ni	60	2886.6	1.8	**1.3071**	0.037	2.8	ug/L	215	Standard
	Cu	65	3859.5	1.6	**1.8207**	0.021	1.2	ug/L	104	Standard
	Zn	66	7087.3	1.2	**5.5680**	0.153	2.7	ug/L	363	Standard
>	**Ge**	72	533577.2	1.8				ug/L	495142	Standard
	As	75	314.5	3.2	**0.3203**	0.010	3.2	ug/L	-50	Standard
	Se	82	28.2	16.0	**0.1004**	0.037	37.2	ug/L	14	Standard
	Se-1	77	51.7	9.9	**0.0349**	0.075	214.8	ug/L	42	Standard
>	**Ga**	71	153.3	21.0				mg/L	42	Standard
	Rb	85	1916.8	2.5				ug/L	17	Standard
	Y	89	457911.1	1.7				ug/L	417098	Standard
>	**Rh**	103	73.3	17.2				ug/L	13	Standard
	Mo	98	334.8	7.8	**0.1120**	0.009	8.5	ug/L	11	Standard
	Ag	107	142.0	14.1	**0.0075**	0.003	37.0	ug/L	68	Standard
	Cd	111	78.8	16.1	**0.0274**	0.006	20.4	mg/L	2	Standard
	Cd	114	171.7	29.4	**0.0293**	0.009	31.0	ug/L	12	Standard
>	**In**	115	626915.6	0.6				ug/L	587441	Standard
	Sn	118	618.3	15.8	**0.0044**	0.015	338.7	ug/L	497	Standard
	Sb	123	2031.6	21.7	**0.4032**	0.086	21.3	ug/L	78	Standard
	Ba	135	5054.8	0.4	**2.2983**	0.024	1.0	ug/L	24	Standard
	Ce	140	9302.9	0.9				ug/L	25	Standard
>	**Tb**	159	1014481.9	2.3				ug/L	939701	Standard
	Ho	165	175.0	2.9				ug/L	10	Standard
	Tl	203	125.0	17.4	**0.0120**	0.002	18.4	ug/L	4	Standard
	Tl	205	85.0	15.6	**0.0110**	0.002	15.7	ug/L	2	Standard
	Pb	206	501.3	9.2	**0.0141**	0.008	53.2	ug/L	240	Standard
	Pb	207	392.0	5.3	**0.0051**	0.005	98.5	ug/L	198	Standard
	Pb	208	1534.0	5.0	**0.0003**	0.005	1457.8	ug/L	883	Standard
	U	238	6033.2	1.4	**0.7925**	0.020	2.5	ug/L	3	Standard
>	**Bi**	209	576425.9	1.5				ug/L	523984	Standard

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Na	23	3.3	173.2	**37.9583**	65.737	173.2	mg/L	0	Standard
Mg	24	1580.1	4.3	**1.9318**	0.105	5.4	mg/L	37	Standard
K	39	138.3	24.1	**0.1853**	0.073	39.3	mg/L	38	Standard
Ca	43	413.3	5.7	**23.0292**	1.446	6.3	mg/L	10	Standard
Fe	54	367.9	5.4	**0.1671**	0.019	11.4	mg/L	179	Standard
Fe	57	475.0	7.9	**0.5062**	0.132	26.1	mg/L	335	Standard
Sc-1	45	62358.1	1.0				mg/L	61029	Standard
Cl	35	34619.5	1.5				ug/L	20195	Standard
Kr	83	1.3	86.6				ug/L	4	Standard
Br	81	3197.0	3.6				ug/L	1547	Standard
P	31	18749.9	1.5				ug/L	15286	Standard
S	34	2010.1	3.0				ug/L	1572	Standard
Sr	88	305.0	20.5				ug/L	73	Standard
C	12	113.3	31.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	348.8	17.3				mg/L	6	Standard
Ho-1	165	175.0	2.9				mg/L	10	Standard
Er	166	163.3	52.8				mg/L	13	Standard
I	127	19115.4	2.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		146.759	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		107.762	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.720
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.008
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606098603SDL WG574572-02
Sample Date/Time: Wednesday, June 29, 2016 13:22:37
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	107882.7	0.8				ug/L	74699	Standard
	Be	9	30.0	44.1	**0.0312**	0.010	32.7	ug/L	8	Standard
	Al	27	2675117.5	0.8	**12.5917**	0.213	1.7	ug/L	1493	Standard
	Sc	45	65760.7	1.1				ug/L	61029	Standard
	Ti	47	48.3	10.6	**0.0072**	0.012	160.2	ug/L	35	Standard
	V	51	2266.6	5.1	**0.0781**	0.015	19.5	ug/L	1435	Standard
	Cr	52	10143.4	2.6	**0.2243**	0.020	8.9	ug/L	7635	Standard
	Cr	53	413.3	17.1	**0.0775**	0.065	83.8	ug/L	363	Standard
	Mn	55	539662.1	1.4	**70.5366**	0.569	0.8	ug/L	747	Standard
	Co	59	1015.0	2.6	**0.1030**	0.006	5.9	ug/L	234	Standard
	Ni	60	769.4	2.6	**0.2509**	0.010	4.1	ug/L	215	Standard
	Cu	65	948.0	4.2	**0.3607**	0.016	4.4	ug/L	104	Standard
	Zn	66	2642.9	1.7	**1.7518**	0.018	1.1	ug/L	363	Standard
>	**Ge**	72	543000.4	1.8				ug/L	495142	Standard
	As	75	12.5	225.4	**0.0698**	0.023	32.5	ug/L	-50	Standard
	Se	82	15.8	49.7	**-0.0063**	0.066	1051.8	ug/L	14	Standard
	Se-1	77	45.3	17.1	**-0.0563**	0.096	170.3	ug/L	42	Standard
>	**Ga**	71	85.0	15.6				mg/L	42	Standard
	Rb	85	428.3	11.2				ug/L	17	Standard
	Y	89	460200.9	1.8				ug/L	417098	Standard
>	**Rh**	103	35.0	24.7				ug/L	13	Standard
	Mo	98	83.6	11.1	**0.0226**	0.003	14.3	ug/L	11	Standard
	Ag	107	112.7	14.2	**0.0027**	0.002	80.0	ug/L	68	Standard
	Cd	111	20.9	22.0	**0.0011**	0.002	176.9	mg/L	2	Standard
	Cd	114	53.5	39.5	**0.0073**	0.004	50.6	ug/L	12	Standard
>	**In**	115	649578.1	0.2				ug/L	587441	Standard
	Sn	118	553.3	9.5	**-0.0090**	0.008	92.4	ug/L	497	Standard
	Sb	123	558.9	31.9	**0.1041**	0.035	33.4	ug/L	78	Standard
	Ba	135	1064.4	0.7	**0.4543**	0.003	0.7	ug/L	24	Standard
	Ce	140	1928.5	4.3				ug/L	25	Standard
>	**Tb**	159	1049822.6	1.3				ug/L	939701	Standard
	Ho	165	40.0	33.1				ug/L	10	Standard
	Tl	203	40.7	35.8	**0.0026**	0.002	59.7	ug/L	4	Standard
	Tl	205	45.0	38.5	**0.0057**	0.002	36.9	ug/L	2	Standard
	Pb	206	372.0	6.6	**-0.0102**	0.004	38.7	ug/L	240	Standard
	Pb	207	294.7	6.9	**-0.0156**	0.004	25.6	ug/L	198	Standard
	Pb	208	1159.4	2.3	**-0.0199**	0.001	7.3	ug/L	883	Standard
	U	238	1206.0	0.9	**0.1490**	0.002	1.2	ug/L	3	Standard
>	**Bi**	209	598311.7	0.5				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.6400**	30.545	173.2	mg/L	0	Standard
Mg	24	363.3	29.0	**0.3711**	0.131	35.3	mg/L	37	Standard
K	39	63.3	27.7	**0.0157**	0.035	226.7	mg/L	38	Standard
Ca	43	110.0	12.0	**3.9202**	0.707	18.0	mg/L	10	Standard
Fe	54	190.5	10.6	**0.0117**	0.017	142.3	mg/L	179	Standard
Fe	57	268.3	12.0	**-0.2271**	0.110	48.6	mg/L	335	Standard
> **Sc-1**	45	65760.7	1.1				mg/L	61029	Standard
Cl	35	34122.4	1.0				ug/L	20195	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	2286.8	8.5				ug/L	1547	Standard
P	31	19529.2	1.3				ug/L	15286	Standard
S	34	2301.8	4.6				ug/L	1572	Standard
Sr	88	130.0	32.9				ug/L	73	Standard
C	12	83.3	6.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	60.8	35.4				mg/L	6	Standard
Ho-1	165	40.0	33.1				mg/L	10	Standard
Er	166	53.3	28.6				mg/L	13	Standard
I	127	5874.5	8.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		144.424	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.666	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.578
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		114.185
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 13:25:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	96295.4	4.3				ug/L	74699	Standard
	Be	9	56739.5	4.7	**50.0144**	1.617	3.2	ug/L	8	Standard
	Al	27	8198811.7	1.9	**43.2979**	1.271	2.9	ug/L	1493	Standard
	Sc	45	60020.3	2.0				ug/L	61029	Standard
	Ti	47	38068.4	0.4	**97.0435**	0.523	0.5	ug/L	35	Standard
	V	51	407671.2	1.0	**52.0137**	0.145	0.3	ug/L	1435	Standard
	Cr	52	382711.8	0.9	**48.9253**	0.135	0.3	ug/L	7635	Standard
	Cr	53	47653.2	2.5	**49.5394**	1.027	2.1	ug/L	363	Standard
	Mn	55	366963.7	3.6	**50.8236**	1.362	2.7	ug/L	747	Standard
	Co	59	380449.1	2.9	**55.6813**	1.097	2.0	ug/L	234	Standard
	Ni	60	94585.7	1.1	**48.7401**	0.435	0.9	ug/L	215	Standard
	Cu	65	94763.8	1.5	**49.1432**	0.553	1.1	ug/L	104	Standard
	Zn	66	56752.8	2.3	**49.7949**	0.707	1.4	ug/L	363	Standard
>	Ge	72	511914.0	0.9				ug/L	495142	Standard
	As	75	57985.2	1.9	**50.1285**	0.568	1.1	ug/L	-50	Standard
	Se	82	5989.4	2.5	**52.6418**	0.964	1.8	ug/L	14	Standard
	Se-1	77	3921.2	2.5	**51.3010**	0.802	1.6	ug/L	42	Standard
>	Ga	71	220.0	19.4				mg/L	42	Standard
	Rb	85	765.0	2.0				ug/L	17	Standard
	Y	89	446724.4	3.3				ug/L	417098	Standard
>	Rh	103	20.0	43.3				ug/L	13	Standard
	Mo	98	280984.3	2.1	**102.0498**	2.098	2.1	ug/L	11	Standard
	Ag	107	335763.8	0.9	**49.8677**	1.010	2.0	ug/L	68	Standard
	Cd	111	105816.2	1.8	**48.9835**	0.569	1.2	mg/L	2	Standard
	Cd	114	257781.1	1.6	**48.6563**	0.589	1.2	ug/L	12	Standard
>	In	115	606960.1	2.8				ug/L	587441	Standard
	Sn	118	295693.2	2.0	**48.9061**	0.749	1.5	ug/L	497	Standard
	Sb	123	236523.1	0.9	**49.0438**	0.901	1.8	ug/L	78	Standard
	Ba	135	99992.2	1.5	**47.2781**	0.609	1.3	ug/L	24	Standard
	Ce	140	91.7	6.3				ug/L	25	Standard
>	Tb	159	985978.7	1.6				ug/L	939701	Standard
	Ho	165	11.7	89.2				ug/L	10	Standard
	Tl	203	433708.5	1.0	**49.3829**	0.257	0.5	ug/L	4	Standard
	Tl	205	391770.8	1.1	**51.3967**	0.163	0.3	ug/L	2	Standard
	Pb	206	284957.7	0.7	**50.0002**	0.477	1.0	ug/L	240	Standard
	Pb	207	255175.6	1.7	**50.3910**	0.211	0.4	ug/L	198	Standard
	Pb	208	1010912.5	1.9	**50.5251**	0.466	0.9	ug/L	883	Standard
	U	238	378758.8	0.6	**51.6451**	0.416	0.8	ug/L	3	Standard
>	Bi	209	558275.4	1.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4168.9	2.3	**5.4065**	0.021	0.4	mg/L	37	Standard
K	39	1983.5	2.5	**4.3432**	0.044	1.0	mg/L	38	Standard
Ca	43	106.7	26.7	**4.3258**	1.829	42.3	mg/L	10	Standard
Fe	54	6165.0	5.0	**5.1771**	0.265	5.1	mg/L	179	Standard
Fe	57	1720.1	9.9	**4.8644**	0.466	9.6	mg/L	335	Standard
> **Sc-1**	45	60020.3	2.0				mg/L	61029	Standard
Cl	35	28213.0	5.7				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	1853.5	23.0				ug/L	1547	Standard
P	31	20223.5	3.5				ug/L	15286	Standard
S	34	2575.2	6.1				ug/L	1572	Standard
Sr	88	78.3	26.6				ug/L	73	Standard
C	12	100.0	34.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	9.2	116.5				mg/L	6	Standard
Ho-1	165	11.7	89.2				mg/L	10	Standard
Er	166	16.7	91.7				mg/L	13	Standard
I	127	2436.9	25.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	100.029		
Al	27	86.596		
Sc	45			
Ti	47	97.044		
V	51	104.027		
Cr	52	97.851		
Cr	53			
Mn	55	101.647		
Co	59	111.363		
Ni	60	97.480		
Cu	65	98.286		
Zn	66	99.590		
> Ge	72		103.387	
As	75	100.257		
Se	82	105.284		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	102.050		
Ag	107	99.735		
Cd	111	97.967		
Cd	114			
In	115		103.323	
Sn	118	97.812		
Sb	123	98.088		
Ba	135	94.556		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.766		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.050		
U	238	103.290		
Bi	209		106.544	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	
QC Std 6	Co	59	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 13:29:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	94691.7	1.8				ug/L	74699	Standard
	Be	9	76.7	106.2	**0.0755**	0.071	94.2	ug/L	8	Standard
	Al	27	36843.1	136.1	**0.1814**	0.263	145.0	ug/L	1493	Standard
	Sc	45	60632.8	2.3				ug/L	61029	Standard
	Ti	47	43.0	36.1	**-0.0010**	0.038	3637.8	ug/L	35	Standard
	V	51	1519.7	11.1	**-0.0035**	0.019	532.9	ug/L	1435	Standard
	Cr	52	7045.6	5.2	**-0.1157**	0.044	37.8	ug/L	7635	Standard
	Cr	53	391.7	11.6	**0.0747**	0.044	59.2	ug/L	363	Standard
	Mn	55	7226.9	125.7	**0.8342**	1.228	147.2	ug/L	747	Standard
	Co	59	517.7	90.4	**0.0371**	0.066	179.1	ug/L	234	Standard
	Ni	60	246.3	39.3	**0.0014**	0.048	3317.1	ug/L	215	Standard
	Cu	65	191.7	56.6	**-0.0057**	0.054	949.5	ug/L	104	Standard
	Zn	66	417.3	10.8	**-0.0898**	0.036	40.1	ug/L	363	Standard
>	Ge	72	518398.0	1.4				ug/L	495142	Standard
	As	75	-30.5	76.0	**0.0334**	0.020	59.9	ug/L	-50	Standard
	Se	82	13.4	12.4	**-0.0212**	0.016	76.0	ug/L	14	Standard
	Se-1	77	53.3	15.9	**0.0746**	0.106	141.7	ug/L	42	Standard
>	Ga	71	155.0	18.0				mg/L	42	Standard
	Rb	85	21.7	93.3				ug/L	17	Standard
	Y	89	436745.4	0.7				ug/L	417098	Standard
>	Rh	103	15.0	33.3				ug/L	13	Standard
	Mo	98	315.2	32.1	**0.1069**	0.036	33.6	ug/L	11	Standard
	Ag	107	222.7	75.6	**0.0196**	0.025	125.0	ug/L	68	Standard
	Cd	111	57.8	114.5	**0.0184**	0.030	163.6	mg/L	2	Standard
	Cd	114	159.0	130.1	**0.0274**	0.038	140.1	ug/L	12	Standard
>	In	115	616374.3	0.2				ug/L	587441	Standard
	Sn	118	845.0	17.1	**0.0432**	0.024	55.2	ug/L	497	Standard
	Sb	123	593.6	13.2	**0.1170**	0.016	13.9	ug/L	78	Standard
	Ba	135	102.7	102.4	**0.0317**	0.049	153.8	ug/L	24	Standard
	Ce	140	58.3	55.8				ug/L	25	Standard
>	Tb	159	995160.6	1.6				ug/L	939701	Standard
	Ho	165	15.0	100.0				ug/L	10	Standard
	Tl	203	219.0	114.2	**0.0226**	0.028	122.3	ug/L	4	Standard
	Tl	205	381.7	141.6	**0.0491**	0.069	140.6	ug/L	2	Standard
	Pb	206	388.0	38.6	**-0.0042**	0.025	597.1	ug/L	240	Standard
	Pb	207	336.0	35.9	**-0.0047**	0.023	485.4	ug/L	198	Standard
	Pb	208	2012.1	79.6	**0.0246**	0.078	315.7	ug/L	883	Standard
	U	238	395.3	145.1	**0.0482**	0.076	157.9	ug/L	3	Standard
>	Bi	209	567355.9	1.2				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	58.3	34.6	**0.0111**	0.028	248.5	mg/L	37	Standard
K	39	40.0	12.5	**-0.0251**	0.012	46.0	mg/L	38	Standard
Ca	43	31.7	9.1	**-0.5078**	0.213	41.9	mg/L	10	Standard
Fe	54	155.5	6.6	**-0.0056**	0.009	155.5	mg/L	179	Standard
Fe	57	230.0	7.8	**-0.2862**	0.078	27.3	mg/L	335	Standard
> **Sc-1**	45	60632.8	2.3				mg/L	61029	Standard
Cl	35	27178.4	0.6				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	1736.8	2.2				ug/L	1547	Standard
P	31	19502.5	1.8				ug/L	15286	Standard
S	34	2301.8	3.7				ug/L	1572	Standard
Sr	88	75.0	26.7				ug/L	73	Standard
C	12	86.7	17.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	12.7	93.2				mg/L	6	Standard
Ho-1	165	15.0	100.0				mg/L	10	Standard
Er	166	13.3	86.6				mg/L	13	Standard
I	127	1935.1	25.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.697	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.925
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.277
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606098605
Sample Date/Time: Wednesday, June 29, 2016 13:32:14
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	93251.1	1.7				ug/L	74699	Standard
	Be	9	326.7	10.4	**0.3052**	0.035	11.6	ug/L	8	Standard
	Al	27	19740200.2	0.7	**107.5996**	1.185	1.1	ug/L	1493	Standard
	Sc	45	60365.1	2.3				ug/L	61029	Standard
	Ti	47	450.3	3.0	**1.0603**	0.030	2.8	ug/L	35	Standard
	V	51	4644.9	8.0	**0.4097**	0.047	11.5	ug/L	1435	Standard
	Cr	52	12104.2	0.3	**0.5838**	0.010	1.7	ug/L	7635	Standard
	Cr	53	928.4	3.1	**0.6586**	0.026	3.9	ug/L	363	Standard
	Mn	55	98559.3	4.8	**13.7841**	0.650	4.7	ug/L	747	Standard
	Co	59	3296.0	4.6	**0.4539**	0.021	4.7	ug/L	234	Standard
	Ni	60	3163.0	1.8	**1.5389**	0.038	2.4	ug/L	215	Standard
	Cu	65	32310.7	0.8	**16.9827**	0.169	1.0	ug/L	104	Standard
	Zn	66	47105.4	0.5	**41.9893**	0.365	0.9	ug/L	363	Standard
>	**Ge**	72	503086.3	0.5				ug/L	495142	Standard
	As	75	294.8	15.7	**0.3186**	0.040	12.5	ug/L	-50	Standard
	Se	82	52.3	21.7	**0.3309**	0.101	30.6	ug/L	14	Standard
	Se-1	77	70.7	11.4	**0.3303**	0.114	34.4	ug/L	42	Standard
>	**Ga**	71	295.0	9.0				mg/L	42	Standard
	Rb	85	9109.4	3.7				ug/L	17	Standard
	Y	89	448266.6	2.2				ug/L	417098	Standard
>	**Rh**	103	83.3	28.4				ug/L	13	Standard
	Mo	98	1843.0	5.2	**0.6500**	0.034	5.3	ug/L	11	Standard
	Ag	107	226.3	74.5	**0.0200**	0.024	121.9	ug/L	68	Standard
	Cd	111	104.1	84.7	**0.0392**	0.040	101.3	mg/L	2	Standard
	Cd	114	254.7	74.3	**0.0449**	0.035	77.3	ug/L	12	Standard
>	**In**	115	619535.9	1.6				ug/L	587441	Standard
	Sn	118	1750.1	13.2	**0.1895**	0.038	20.1	ug/L	497	Standard
	Sb	123	790.9	17.9	**0.1564**	0.028	18.0	ug/L	78	Standard
	Ba	135	72683.9	1.3	**33.6664**	0.969	2.9	ug/L	24	Standard
	Ce	140	5139.2	3.4				ug/L	25	Standard
>	**Tb**	159	985815.7	2.2				ug/L	939701	Standard
	Ho	165	223.3	9.3				ug/L	10	Standard
	Tl	203	317.0	96.7	**0.0353**	0.035	100.6	ug/L	4	Standard
	Tl	205	193.3	47.9	**0.0263**	0.012	46.4	ug/L	2	Standard
	Pb	206	1382.4	8.3	**0.1795**	0.018	10.0	ug/L	240	Standard
	Pb	207	1152.7	10.0	**0.1653**	0.022	13.1	ug/L	198	Standard
	Pb	208	4722.3	7.7	**0.1699**	0.018	10.3	ug/L	883	Standard
	U	238	9861.9	3.5	**1.3841**	0.043	3.1	ug/L	3	Standard
>	**Bi**	209	540670.7	1.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	6986.6	1.5	**9.0573**	0.310	3.4	mg/L	37	Standard
K	39	308.3	17.9	**0.5733**	0.109	19.0	mg/L	38	Standard
Ca	43	606.7	4.1	**36.2577**	2.485	6.9	mg/L	10	Standard
Fe	54	348.6	15.4	**0.1605**	0.045	28.3	mg/L	179	Standard
Fe	57	585.0	8.4	**0.9378**	0.194	20.7	mg/L	335	Standard
> **Sc-1**	45	60365.1	2.3				mg/L	61029	Standard
Cl	35	31561.5	3.4				ug/L	20195	Standard
Kr	83	0.7	173.2				ug/L	4	Standard
Br	81	4964.2	11.3				ug/L	1547	Standard
P	31	20053.3	1.8				ug/L	15286	Standard
S	34	2155.2	4.8				ug/L	1572	Standard
Sr	88	343.3	18.3				ug/L	73	Standard
C	12	163.3	34.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	294.3	16.7				mg/L	6	Standard
Ho-1	165	223.3	9.3				mg/L	10	Standard
Er	166	120.0	16.7				mg/L	13	Standard
I	127	9371.2	3.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.836	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.604	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.463
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.184
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606098607
Sample Date/Time: Wednesday, June 29, 2016 13:35:26
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	96566.8	1.9				ug/L	74699	Standard
	Be	9	85.0	29.4	**0.0821**	0.021	25.7	ug/L	8	Standard
	Al	27	20333697.9	3.0	**107.0230**	2.931	2.7	ug/L	1493	Standard
	Sc	45	62230.9	2.2				ug/L	61029	Standard
	Ti	47	287.7	7.2	**0.6119**	0.056	9.2	ug/L	35	Standard
	V	51	3941.3	2.6	**0.3001**	0.017	5.7	ug/L	1435	Standard
	Cr	52	11512.0	2.6	**0.4518**	0.053	11.8	ug/L	7635	Standard
	Cr	53	838.4	4.6	**0.5317**	0.044	8.4	ug/L	363	Standard
	Mn	55	502202.8	0.8	**68.3542**	0.721	1.1	ug/L	747	Standard
	Co	59	4570.7	1.4	**0.6201**	0.010	1.6	ug/L	234	Standard
	Ni	60	3293.0	0.7	**1.5464**	0.014	0.9	ug/L	215	Standard
	Cu	65	6694.1	1.0	**3.3123**	0.070	2.1	ug/L	104	Standard
	Zn	66	11579.4	0.2	**9.6129**	0.092	1.0	ug/L	363	Standard
>	**Ge**	72	521399.1	1.0				ug/L	495142	Standard
	As	75	65.2	31.2	**0.1148**	0.017	14.9	ug/L	-50	Standard
	Se	82	28.9	16.0	**0.1117**	0.041	36.5	ug/L	14	Standard
	Se-1	77	63.7	8.1	**0.2056**	0.068	33.2	ug/L	42	Standard
>	**Ga**	71	136.7	35.5				mg/L	42	Standard
	Rb	85	5054.2	2.4				ug/L	17	Standard
	Y	89	452894.0	2.8				ug/L	417098	Standard
>	**Rh**	103	165.0	28.9				ug/L	13	Standard
	Mo	98	1211.0	1.7	**0.4303**	0.008	1.9	ug/L	11	Standard
	Ag	107	106.3	11.0	**0.0028**	0.002	64.6	ug/L	68	Standard
	Cd	111	72.3	5.5	**0.0253**	0.002	7.2	mg/L	2	Standard
	Cd	114	189.4	18.5	**0.0333**	0.006	19.3	ug/L	12	Standard
>	**In**	115	612132.4	0.4				ug/L	587441	Standard
	Sn	118	1080.0	6.7	**0.0827**	0.012	15.0	ug/L	497	Standard
	Sb	123	567.1	13.2	**0.1124**	0.015	13.5	ug/L	78	Standard
	Ba	135	35457.1	0.1	**16.6089**	0.050	0.3	ug/L	24	Standard
	Ce	140	1880.1	4.7				ug/L	25	Standard
>	**Tb**	159	996852.4	0.7				ug/L	939701	Standard
	Ho	165	58.3	17.8				ug/L	10	Standard
	Tl	203	60.0	16.9	**0.0051**	0.001	23.4	ug/L	4	Standard
	Tl	205	60.0	16.7	**0.0081**	0.001	15.8	ug/L	2	Standard
	Pb	206	636.0	0.7	**0.0415**	0.001	3.4	ug/L	240	Standard
	Pb	207	529.0	3.2	**0.0355**	0.003	9.7	ug/L	198	Standard
	Pb	208	2291.4	2.0	**0.0416**	0.003	7.7	ug/L	883	Standard
	U	238	20180.8	2.1	**2.7702**	0.079	2.9	ug/L	3	Standard
>	**Bi**	209	553749.9	0.8				ug/L	523984	Standard

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Na	23	5.0	100.0	**57.0696**	57.922	101.5	mg/L	0	Standard
Mg	24	5551.0	3.6	**6.9630**	0.244	3.5	mg/L	37	Standard
K	39	316.7	11.2	**0.5727**	0.081	14.1	mg/L	38	Standard
Ca	43	636.7	7.9	**36.9594**	3.698	10.0	mg/L	10	Standard
Fe	54	176.9	14.5	**0.0085**	0.018	212.8	mg/L	179	Standard
Fe	57	531.7	3.6	**0.6989**	0.084	12.0	mg/L	335	Standard
> **Sc-1**	45	62230.9	2.2				mg/L	61029	Standard
Cl	35	31386.5	1.7				ug/L	20195	Standard
Kr	83	2.3	89.2				ug/L	4	Standard
Br	81	3093.6	2.6				ug/L	1547	Standard
P	31	20912.8	5.9				ug/L	15286	Standard
S	34	2228.5	4.5				ug/L	1572	Standard
Sr	88	703.3	5.1				ug/L	73	Standard
C	12	126.7	40.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	102.2	30.1				mg/L	6	Standard
Ho-1	165	58.3	17.8				mg/L	10	Standard
Er	166	93.3	6.2				mg/L	13	Standard
I	127	29892.9	5.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.275	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.303	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.203
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.681
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606098607
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Method 6020 - Summary Report

Sample ID: L1606098609
Sample Date/Time: Wednesday, June 29, 2016 13:38:37
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	96550.0	0.2				ug/L	74699	Standard
	Be	9	53.3	14.3	**0.0545**	0.007	12.5	ug/L	8	Standard
	Al	27	22878376.4	1.6	**120.4307**	1.945	1.6	ug/L	1493	Standard
	Sc	45	62031.7	0.8				ug/L	61029	Standard
	Ti	47	1850.4	1.6	**4.6226**	0.192	4.2	ug/L	35	Standard
	V	51	5461.8	0.6	**0.5052**	0.022	4.3	ug/L	1435	Standard
	Cr	52	13396.9	1.2	**0.7280**	0.058	8.0	ug/L	7635	Standard
	Cr	53	1881.8	4.3	**1.6444**	0.138	8.4	ug/L	363	Standard
	Mn	55	79733.3	1.7	**10.9451**	0.135	1.2	ug/L	747	Standard
	Co	59	2496.2	2.4	**0.3289**	0.007	2.0	ug/L	234	Standard
	Ni	60	4821.8	0.8	**2.3714**	0.068	2.9	ug/L	215	Standard
	Cu	65	4208.3	2.7	**2.0873**	0.088	4.2	ug/L	104	Standard
	Zn	66	20900.1	0.5	**18.0858**	0.567	3.1	ug/L	363	Standard
>	**Ge**	72	511251.4	2.6				ug/L	495142	Standard
	As	75	201.6	14.3	**0.2338**	0.023	9.7	ug/L	-50	Standard
	Se	82	54.1	5.4	**0.3394**	0.016	4.7	ug/L	14	Standard
	Se-1	77	103.0	11.2	**0.7418**	0.124	16.8	ug/L	42	Standard
>	**Ga**	71	510.0	8.0				mg/L	42	Standard
	Rb	85	13392.6	2.9				ug/L	17	Standard
	Y	89	437578.5	1.9				ug/L	417098	Standard
>	**Rh**	103	115.0	21.7				ug/L	13	Standard
	Mo	98	379.6	2.6	**0.1321**	0.004	2.9	ug/L	11	Standard
	Ag	107	107.7	0.5	**0.0031**	0.000	8.0	ug/L	68	Standard
	Cd	111	160.7	1.3	**0.0664**	0.001	1.0	mg/L	2	Standard
	Cd	114	395.9	2.3	**0.0726**	0.002	3.0	ug/L	12	Standard
>	**In**	115	607119.7	1.0				ug/L	587441	Standard
	Sn	118	1270.1	2.5	**0.1157**	0.007	5.8	ug/L	497	Standard
	Sb	123	941.4	6.3	**0.1909**	0.012	6.2	ug/L	78	Standard
	Ba	135	18081.1	0.3	**8.5321**	0.064	0.8	ug/L	24	Standard
	Ce	140	9564.7	2.3				ug/L	25	Standard
>	**Tb**	159	994932.9	1.3				ug/L	939701	Standard
	Ho	165	368.3	5.1				ug/L	10	Standard
	Tl	203	147.3	4.5	**0.0153**	0.001	4.3	ug/L	4	Standard
	Tl	205	150.0	15.3	**0.0202**	0.003	16.2	ug/L	2	Standard
	Pb	206	1807.1	1.2	**0.2512**	0.001	0.3	ug/L	240	Standard
	Pb	207	1489.4	1.7	**0.2291**	0.005	2.2	ug/L	198	Standard
	Pb	208	6035.1	2.4	**0.2326**	0.004	1.7	ug/L	883	Standard
	U	238	2872.6	2.3	**0.3933**	0.005	1.2	ug/L	3	Standard
>	**Bi**	209	549776.1	1.1				ug/L	523984	Standard

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Na	23	6.7	114.6	**75.5001**	86.744	114.9	mg/L	0	Standard
Mg	24	5847.8	3.3	**7.3629**	0.301	4.1	mg/L	37	Standard
K	39	155.0	19.6	**0.2229**	0.066	29.5	mg/L	38	Standard
Ca	43	803.4	3.4	**47.4095**	2.024	4.3	mg/L	10	Standard
Fe	54	459.0	5.6	**0.2447**	0.024	9.9	mg/L	179	Standard
Fe	57	691.7	11.1	**1.2400**	0.273	22.0	mg/L	335	Standard
> **Sc-1**	45	62031.7	0.8				mg/L	61029	Standard
Cl	35	35055.2	1.5				ug/L	20195	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	8335.6	0.3				ug/L	1547	Standard
P	31	19207.2	4.0				ug/L	15286	Standard
S	34	2091.8	7.3				ug/L	1572	Standard
Sr	88	440.0	15.9				ug/L	73	Standard
C	12	146.7	7.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	580.9	19.4				mg/L	6	Standard
Ho-1	165	368.3	5.1				mg/L	10	Standard
Er	166	330.0	13.9				mg/L	13	Standard
I	127	13649.5	1.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.252	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.253	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.350
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	104.922
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606098611
Sample Date/Time: Wednesday, June 29, 2016 13:41:50
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	94928.2	1.7				ug/L	74699	Standard
	Be	9	611.7	2.1	**0.5543**	0.002	0.4	ug/L	8	Standard
	Al	27	35531075.2	1.8	**190.3104**	6.477	3.4	ug/L	1493	Standard
	Sc	45	58926.0	1.1				ug/L	61029	Standard
	Ti	47	1221.7	3.3	**3.0767**	0.071	2.3	ug/L	35	Standard
	V	51	7317.6	1.4	**0.7622**	0.017	2.2	ug/L	1435	Standard
	Cr	52	16086.9	1.7	**1.1219**	0.012	1.1	ug/L	7635	Standard
	Cr	53	9996.6	2.0	**10.3612**	0.096	0.9	ug/L	363	Standard
	Mn	55	583301.8	0.5	**82.6724**	0.812	1.0	ug/L	747	Standard
	Co	59	14960.7	0.8	**2.2024**	0.031	1.4	ug/L	234	Standard
	Ni	60	6882.6	4.3	**3.5089**	0.114	3.2	ug/L	215	Standard
	Cu	65	67223.1	1.5	**35.5977**	0.129	0.4	ug/L	104	Standard
	Zn	66	37202.6	1.0	**33.2122**	0.242	0.7	ug/L	363	Standard
>	**Ge**	72	500908.0	1.1				ug/L	495142	Standard
	As	75	1307.8	5.6	**1.2134**	0.054	4.4	ug/L	-50	Standard
	Se	82	362.7	2.0	**3.1282**	0.043	1.4	ug/L	14	Standard
	Se-1	77	555.0	5.1	**6.8873**	0.307	4.5	ug/L	42	Standard
>	**Ga**	71	435.0	11.9				mg/L	42	Standard
	Rb	85	18344.4	2.4				ug/L	17	Standard
	Y	89	436166.7	1.7				ug/L	417098	Standard
>	**Rh**	103	445.0	7.4				ug/L	13	Standard
	Mo	98	3054.9	0.8	**1.1522**	0.023	2.0	ug/L	11	Standard
	Ag	107	121.7	12.3	**0.0060**	0.002	41.3	ug/L	68	Standard
	Cd	111	41.7	14.4	**0.0123**	0.003	24.8	mg/L	2	Standard
	Cd	114	142.6	14.6	**0.0260**	0.004	14.4	ug/L	12	Standard
>	**In**	115	581588.5	1.2				ug/L	587441	Standard
	Sn	118	2201.8	2.3	**0.2861**	0.011	3.9	ug/L	497	Standard
	Sb	123	1347.5	5.7	**0.2874**	0.019	6.6	ug/L	78	Standard
	Ba	135	63997.2	1.5	**31.5730**	0.849	2.7	ug/L	24	Standard
	Ce	140	22939.0	3.1				ug/L	25	Standard
>	**Tb**	159	946929.2	0.6				ug/L	939701	Standard
	Ho	165	348.3	12.2				ug/L	10	Standard
	Tl	203	270.7	7.5	**0.0312**	0.002	6.9	ug/L	4	Standard
	Tl	205	231.7	2.5	**0.0327**	0.001	2.0	ug/L	2	Standard
	Pb	206	3400.0	1.8	**0.5672**	0.008	1.4	ug/L	240	Standard
	Pb	207	2794.6	0.7	**0.5207**	0.008	1.5	ug/L	198	Standard
	Pb	208	11397.0	1.2	**0.5356**	0.008	1.6	ug/L	883	Standard
	U	238	7265.4	1.1	**1.0543**	0.007	0.7	ug/L	3	Standard
>	**Bi**	209	522379.2	0.9				ug/L	523984	Standard

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Na	23	10.0	50.0	**119.8009**	60.997	50.9	mg/L	0	Standard
Mg	24	10421.9	2.0	**13.8711**	0.425	3.1	mg/L	37	Standard
K	39	453.3	5.1	**0.9237**	0.053	5.7	mg/L	38	Standard
Ca	43	1046.7	6.1	**65.9862**	4.937	7.5	mg/L	10	Standard
Fe	54	728.6	2.4	**0.5015**	0.016	3.2	mg/L	179	Standard
Fe	57	860.0	12.2	**1.9559**	0.399	20.4	mg/L	335	Standard
> **Sc-1**	45	58926.0	1.1				mg/L	61029	Standard
Cl	35	32129.4	1.2				ug/L	20195	Standard
Kr	83	1.0	0.0				ug/L	4	Standard
Br	81	75514.4	2.1				ug/L	1547	Standard
P	31	20090.0	4.4				ug/L	15286	Standard
S	34	2098.5	7.9				ug/L	1572	Standard
Sr	88	1583.4	4.7				ug/L	73	Standard
C	12	130.0	7.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	561.0	7.3				mg/L	6	Standard
Ho-1	165	348.3	12.2				mg/L	10	Standard
Er	166	256.7	6.0				mg/L	13	Standard
I	127	84570.2	9.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		127.081	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.164	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.004
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.694
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606098613
Sample Date/Time: Wednesday, June 29, 2016 13:45:02
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	101811.1	2.5				ug/L	74699	Standard
	Be	9	780.0	6.8	**0.6573**	0.030	4.5	ug/L	8	Standard
	Al	27	69460342.3	2.9	**346.7492**	1.873	0.5	ug/L	1493	Standard
	Sc	45	66852.2	1.8				ug/L	61029	Standard
	Ti	47	16395.2	2.4	**40.4139**	0.750	1.9	ug/L	35	Standard
	V	51	44929.4	0.9	**5.3782**	0.102	1.9	ug/L	1435	Standard
	Cr	52	38038.0	1.4	**3.7847**	0.045	1.2	ug/L	7635	Standard
	Cr	53	5357.6	0.6	**5.1013**	0.082	1.6	ug/L	363	Standard
	Mn	55	1205027.8	2.1	**162.0424**	5.610	3.5	ug/L	747	Standard
	Co	59	15267.0	2.9	**2.1291**	0.080	3.8	ug/L	234	Standard
	Ni	60	13379.6	2.6	**6.5697**	0.065	1.0	ug/L	215	Standard
	Cu	65	74766.0	1.3	**37.5331**	0.708	1.9	ug/L	104	Standard
	Zn	66	182914.0	1.7	**156.4214**	2.327	1.5	ug/L	363	Standard
>	**Ge**	72	528583.9	2.0				ug/L	495142	Standard
	As	75	2539.4	2.2	**2.1832**	0.013	0.6	ug/L	-50	Standard
	Se	82	108.7	5.6	**0.7905**	0.071	9.0	ug/L	14	Standard
	Se-1	77	150.3	9.2	**1.3050**	0.161	12.3	ug/L	42	Standard
>	**Ga**	71	5017.5	0.9				mg/L	42	Standard
	Rb	85	95755.1	2.6				ug/L	17	Standard
	Y	89	484844.4	1.2				ug/L	417098	Standard
>	**Rh**	103	451.7	17.2				ug/L	13	Standard
	Mo	98	2711.0	1.7	**0.9675**	0.010	1.1	ug/L	11	Standard
	Ag	107	547.0	8.0	**0.0673**	0.005	7.7	ug/L	68	Standard
	Cd	111	100.9	10.4	**0.0383**	0.005	14.0	mg/L	2	Standard
	Cd	114	263.2	6.1	**0.0470**	0.003	5.8	ug/L	12	Standard
>	**In**	115	613966.8	2.2				ug/L	587441	Standard
	Sn	118	1991.8	3.6	**0.2317**	0.015	6.6	ug/L	497	Standard
	Sb	123	971.4	9.0	**0.1947**	0.014	7.1	ug/L	78	Standard
	Ba	135	97214.2	0.8	**45.4386**	0.665	1.5	ug/L	24	Standard
	Ce	140	163522.7	0.6				ug/L	25	Standard
>	**Tb**	159	1011575.1	2.5				ug/L	939701	Standard
	Ho	165	4682.4	4.2				ug/L	10	Standard
	Tl	203	573.7	3.0	**0.0642**	0.003	4.6	ug/L	4	Standard
	Tl	205	525.0	7.2	**0.0698**	0.005	7.8	ug/L	2	Standard
	Pb	206	15938.7	1.8	**2.7562**	0.018	0.6	ug/L	240	Standard
	Pb	207	13053.6	0.6	**2.5367**	0.043	1.7	ug/L	198	Standard
	Pb	208	53401.0	1.9	**2.6245**	0.013	0.5	ug/L	883	Standard
	U	238	38818.0	2.5	**5.3391**	0.057	1.1	ug/L	3	Standard
>	**Bi**	209	553002.2	2.3				ug/L	523984	Standard

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Na	23	8.3	34.6	**88.0394**	31.556	35.8	mg/L	0	Standard
Mg	24	10193.4	4.3	**11.9448**	0.378	3.2	mg/L	37	Standard
K	39	798.4	2.0	**1.4974**	0.060	4.0	mg/L	38	Standard
Ca	43	1498.4	4.4	**83.9112**	4.508	5.4	mg/L	10	Standard
Fe	54	4251.3	3.0	**3.1535**	0.141	4.5	mg/L	179	Standard
Fe	57	1956.8	0.6	**4.9983**	0.081	1.6	mg/L	335	Standard
Sc-1	45	66852.2	1.8				mg/L	61029	Standard
Cl	35	38555.7	1.3				ug/L	20195	Standard
Kr	83	2.7	78.1				ug/L	4	Standard
Br	81	16405.6	4.1				ug/L	1547	Standard
P	31	22243.0	1.3				ug/L	15286	Standard
S	34	1961.8	3.3				ug/L	1572	Standard
Sr	88	2096.8	8.9				ug/L	73	Standard
C	12	170.0	21.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	107.9				mg/L	3	Standard
Dy	164	7687.7	5.1				mg/L	6	Standard
Ho-1	165	4682.4	4.2				mg/L	10	Standard
Er	166	4197.2	1.1				mg/L	13	Standard
I	127	34873.4	0.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		136.295	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.754	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.515
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.538
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Zn 66 Upper, S, EEE	Zn	66

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Method 6020 - Summary Report

Sample ID: L1606098615
Sample Date/Time: Wednesday, June 29, 2016 13:48:13
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	104439.3	4.8				ug/L	74699	Standard
	Be	9	536.7	12.4	**0.4427**	0.037	8.4	ug/L	8	Standard
	Al	27	77862989.2	8.3	**378.5121**	14.291	3.8	ug/L	1493	Standard
	Sc	45	58982.2	11.3				ug/L	61029	Standard
	Ti	47	2461.2	11.7	**6.5990**	0.434	6.6	ug/L	35	Standard
	V	51	4945.2	8.0	**0.4817**	0.017	3.5	ug/L	1435	Standard
	Cr	52	13134.4	7.3	**0.8107**	0.065	8.0	ug/L	7635	Standard
	Cr	53	1810.1	8.3	**1.6977**	0.117	6.9	ug/L	363	Standard
	Mn	55	1145096.1	8.2	**169.9719**	4.564	2.7	ug/L	747	Standard
	Co	59	4019.2	11.3	**0.5913**	0.032	5.4	ug/L	234	Standard
	Ni	60	7177.1	13.9	**3.8310**	0.314	8.2	ug/L	215	Standard
	Cu	65	41403.8	8.7	**22.8999**	0.588	2.6	ug/L	104	Standard
	Zn	66	43831.2	7.7	**41.0562**	0.750	1.8	ug/L	363	Standard
>	**Ge**	72	478398.7	6.6				ug/L	495142	Standard
	As	75	638.2	9.5	**0.6495**	0.045	6.9	ug/L	-50	Standard
	Se	82	102.9	17.3	**0.8353**	0.172	20.6	ug/L	14	Standard
	Se-1	77	94.0	19.4	**0.7027**	0.185	26.4	ug/L	42	Standard
>	**Ga**	71	463.3	11.0				mg/L	42	Standard
	Rb	85	23055.9	7.7				ug/L	17	Standard
	Y	89	432649.5	7.6				ug/L	417098	Standard
>	**Rh**	103	1188.4	10.3				ug/L	13	Standard
	Mo	98	1350.9	6.9	**0.5044**	0.013	2.5	ug/L	11	Standard
	Ag	107	139.0	6.4	**0.0086**	0.002	19.3	ug/L	68	Standard
	Cd	111	44.6	6.8	**0.0137**	0.002	16.4	mg/L	2	Standard
	Cd	114	129.2	31.8	**0.0237**	0.010	43.4	ug/L	12	Standard
>	**In**	115	583863.5	7.1				ug/L	587441	Standard
	Sn	118	2513.5	5.1	**0.3387**	0.012	3.5	ug/L	497	Standard
	Sb	123	705.1	6.8	**0.1478**	0.002	1.6	ug/L	78	Standard
	Ba	135	26452.2	7.2	**12.9866**	0.138	1.1	ug/L	24	Standard
	Ce	140	27398.2	9.1				ug/L	25	Standard
>	**Tb**	159	958605.6	6.1				ug/L	939701	Standard
	Ho	165	645.0	4.0				ug/L	10	Standard
	Tl	203	134.0	9.5	**0.0146**	0.001	7.1	ug/L	4	Standard
	Tl	205	118.3	6.5	**0.0169**	0.002	13.2	ug/L	2	Standard
	Pb	206	2508.9	7.1	**0.4009**	0.002	0.4	ug/L	240	Standard
	Pb	207	1976.5	6.7	**0.3487**	0.007	2.0	ug/L	198	Standard
	Pb	208	8160.9	6.7	**0.3634**	0.004	1.2	ug/L	883	Standard
	U	238	17292.6	7.2	**2.5205**	0.006	0.2	ug/L	3	Standard
>	**Bi**	209	521380.1	7.3				ug/L	523984	Standard

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Na	23	15.0	57.7	**176.9361**	92.757	52.4	mg/L	0	Standard
Mg	24	28440.1	8.6	**38.0068**	1.323	3.5	mg/L	37	Standard
K	39	673.3	1.9	**1.4418**	0.213	14.8	mg/L	38	Standard
Ca	43	1596.8	5.0	**102.4296**	8.312	8.1	mg/L	10	Standard
Fe	54	1077.2	5.0	**0.8118**	0.070	8.7	mg/L	179	Standard
Fe	57	1203.4	10.1	**3.1714**	0.327	10.3	mg/L	335	Standard
> **Sc-1**	45	58982.2	11.3				mg/L	61029	Standard
Cl	35	41482.2	7.1				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	15648.1	7.3				ug/L	1547	Standard
P	31	20014.9	6.8				ug/L	15286	Standard
S	34	1913.5	9.5				ug/L	1572	Standard
Sr	88	5429.3	11.3				ug/L	73	Standard
C	12	203.3	27.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	3	Standard
Dy	164	1127.2	20.3				mg/L	6	Standard
Ho-1	165	645.0	4.0				mg/L	10	Standard
Er	166	546.7	6.4				mg/L	13	Standard
I	127	112969.0	6.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		139.814	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.618	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.391
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.503
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606098617
Sample Date/Time: Wednesday, June 29, 2016 13:51:25
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	95101.0	2.9				ug/L	74699	Standard
	Be	9	61.7	9.4	**0.0626**	0.004	5.8	ug/L	8	Standard
	Al	27	16761639.5	0.8	**89.6118**	1.975	2.2	ug/L	1493	Standard
	Sc	45	53828.8	0.6				ug/L	61029	Standard
	Ti	47	756.4	12.3	**2.0144**	0.253	12.6	ug/L	35	Standard
	V	51	3040.4	3.6	**0.2328**	0.013	5.5	ug/L	1435	Standard
	Cr	52	11892.0	0.9	**0.6842**	0.022	3.3	ug/L	7635	Standard
	Cr	53	1066.7	2.7	**0.8986**	0.036	4.1	ug/L	363	Standard
	Mn	55	57447.7	1.9	**8.6332**	0.089	1.0	ug/L	747	Standard
	Co	59	1276.7	2.2	**0.1685**	0.005	2.7	ug/L	234	Standard
	Ni	60	2114.5	5.4	**1.0778**	0.056	5.2	ug/L	215	Standard
	Cu	65	5578.0	1.5	**3.0859**	0.022	0.7	ug/L	104	Standard
	Zn	66	8715.8	0.2	**8.0380**	0.061	0.8	ug/L	363	Standard
>	**Ge**	72	465226.7	0.9				ug/L	495142	Standard
	As	75	386.7	5.7	**0.4269**	0.018	4.2	ug/L	-50	Standard
	Se	82	42.7	8.0	**0.2761**	0.036	13.2	ug/L	14	Standard
	Se-1	77	67.0	16.1	**0.3532**	0.150	42.5	ug/L	42	Standard
>	**Ga**	71	183.3	18.2				mg/L	42	Standard
	Rb	85	8882.6	2.7				ug/L	17	Standard
	Y	89	409246.0	2.8				ug/L	417098	Standard
>	**Rh**	103	295.0	13.6				ug/L	13	Standard
	Mo	98	1514.9	3.6	**0.5995**	0.027	4.5	ug/L	11	Standard
	Ag	107	86.3	3.5	**0.0012**	0.001	48.9	ug/L	68	Standard
	Cd	111	45.4	6.6	**0.0152**	0.002	11.0	mg/L	2	Standard
	Cd	114	119.3	31.2	**0.0227**	0.008	33.9	ug/L	12	Standard
>	**In**	115	551838.0	2.1				ug/L	587441	Standard
	Sn	118	896.7	9.3	**0.0688**	0.017	24.4	ug/L	497	Standard
	Sb	123	476.3	5.5	**0.1045**	0.008	7.8	ug/L	78	Standard
	Ba	135	51101.0	1.7	**26.5634**	0.162	0.6	ug/L	24	Standard
	Ce	140	4162.2	9.3				ug/L	25	Standard
>	**Tb**	159	892953.9	1.2				ug/L	939701	Standard
	Ho	165	111.7	20.2				ug/L	10	Standard
	Tl	203	71.0	9.8	**0.0072**	0.001	12.5	ug/L	4	Standard
	Tl	205	50.0	10.0	**0.0075**	0.001	10.0	ug/L	2	Standard
	Pb	206	834.7	3.9	**0.0918**	0.006	7.0	ug/L	240	Standard
	Pb	207	668.0	3.0	**0.0768**	0.004	5.0	ug/L	198	Standard
	Pb	208	2813.8	1.3	**0.0825**	0.002	2.7	ug/L	883	Standard
	U	238	2276.2	2.7	**0.3405**	0.008	2.4	ug/L	3	Standard
>	**Bi**	209	502274.9	0.4				ug/L	523984	Standard

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Na	23	1.7	173.2	**21.6273**	37.451	173.2	mg/L	0	Standard
Mg	24	11037.4	4.7	**16.0863**	0.689	4.3	mg/L	37	Standard
K	39	470.0	10.1	**1.0642**	0.126	11.9	mg/L	38	Standard
Ca	43	383.3	8.5	**24.9281**	2.309	9.3	mg/L	10	Standard
Fe	54	307.3	17.1	**0.1571**	0.051	32.4	mg/L	179	Standard
Fe	57	490.0	5.4	**0.8143**	0.108	13.3	mg/L	335	Standard
> **Sc-1**	45	53828.8	0.6				mg/L	61029	Standard
Cl	35	29673.0	1.2				ug/L	20195	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	4564.0	9.2				ug/L	1547	Standard
P	31	17653.6	5.5				ug/L	15286	Standard
S	34	1876.8	5.1				ug/L	1572	Standard
Sr	88	1206.7	6.6				ug/L	73	Standard
C	12	186.7	18.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	3	Standard
Dy	164	173.0	22.9				mg/L	6	Standard
Ho-1	165	111.7	20.2				mg/L	10	Standard
Er	166	76.7	30.1				mg/L	13	Standard
I	127	8810.9	16.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		127.313	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.958	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.939
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.857
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606098619
Sample Date/Time: Wednesday, June 29, 2016 13:54:36
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	96013.3	1.6				ug/L	74699	Standard
	Be	9	225.0	13.5	**0.2062**	0.024	11.6	ug/L	8	Standard
	Al	27	3833929.3	1.4	**20.2847**	0.231	1.1	ug/L	1493	Standard
	Sc	45	56757.9	4.8				ug/L	61029	Standard
	Ti	47	657.0	3.0	**1.6551**	0.023	1.4	ug/L	35	Standard
	V	51	6468.0	2.1	**0.6763**	0.022	3.3	ug/L	1435	Standard
	Cr	52	12143.2	0.5	**0.6446**	0.043	6.7	ug/L	7635	Standard
	Cr	53	1533.4	8.3	**1.3595**	0.147	10.8	ug/L	363	Standard
	Mn	55	41319.9	1.1	**5.8936**	0.094	1.6	ug/L	747	Standard
	Co	59	1041.4	1.4	**0.1233**	0.005	3.8	ug/L	234	Standard
	Ni	60	1381.7	2.6	**0.6272**	0.001	0.2	ug/L	215	Standard
	Cu	65	22006.0	2.1	**11.9309**	0.100	0.8	ug/L	104	Standard
	Zn	66	12936.5	1.8	**11.6003**	0.101	0.9	ug/L	363	Standard
>	**Ge**	72	486496.6	2.4				ug/L	495142	Standard
	As	75	1429.3	4.7	**1.3578**	0.030	2.2	ug/L	-50	Standard
	Se	82	368.2	2.0	**3.2780**	0.104	3.2	ug/L	14	Standard
	Se-1	77	166.3	2.4	**1.6971**	0.106	6.2	ug/L	42	Standard
>	**Ga**	71	256.7	8.8				mg/L	42	Standard
	Rb	85	6678.1	5.5				ug/L	17	Standard
	Y	89	411615.1	2.5				ug/L	417098	Standard
>	**Rh**	103	45.0	40.1				ug/L	13	Standard
	Mo	98	2416.6	3.5	**0.9418**	0.055	5.8	ug/L	11	Standard
	Ag	107	106.0	14.6	**0.0040**	0.002	49.0	ug/L	68	Standard
	Cd	111	306.3	1.8	**0.1451**	0.002	1.4	mg/L	2	Standard
	Cd	114	658.6	9.3	**0.1319**	0.011	8.6	ug/L	12	Standard
>	**In**	115	562685.3	3.0				ug/L	587441	Standard
	Sn	118	1296.7	5.8	**0.1370**	0.009	6.5	ug/L	497	Standard
	Sb	123	1866.5	3.1	**0.4132**	0.007	1.8	ug/L	78	Standard
	Ba	135	49124.5	1.8	**25.0474**	0.324	1.3	ug/L	24	Standard
	Ce	140	4487.3	4.7				ug/L	25	Standard
>	**Tb**	159	930596.3	3.6				ug/L	939701	Standard
	Ho	165	203.3	14.2				ug/L	10	Standard
	Tl	203	145.3	15.0	**0.0163**	0.002	14.2	ug/L	4	Standard
	Tl	205	131.7	4.4	**0.0191**	0.000	1.8	ug/L	2	Standard
	Pb	206	1800.8	1.2	**0.2755**	0.007	2.5	ug/L	240	Standard
	Pb	207	1451.7	2.6	**0.2445**	0.002	0.8	ug/L	198	Standard
	Pb	208	5832.1	0.4	**0.2459**	0.009	3.7	ug/L	883	Standard
	U	238	34205.2	1.0	**5.1077**	0.154	3.0	ug/L	3	Standard
>	**Bi**	209	509656.0	3.1				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	92209.8	1.7	**128.1856**	8.381	6.5	mg/L	37	Standard
K	39	298.3	3.5	**0.5957**	0.033	5.6	mg/L	38	Standard
Ca	43	80.0	6.3	**2.9252**	0.551	18.8	mg/L	10	Standard
Fe	54	254.0	14.7	**0.0930**	0.030	32.4	mg/L	179	Standard
Fe	57	333.3	5.3	**0.1453**	0.073	50.0	mg/L	335	Standard
> **Sc-1**	45	56757.9	4.8				mg/L	61029	Standard
Cl	35	31152.7	1.5				ug/L	20195	Standard
Kr	83	0.7	86.6				ug/L	4	Standard
Br	81	53109.7	4.4				ug/L	1547	Standard
P	31	17403.3	2.0				ug/L	15286	Standard
S	34	1883.5	7.3				ug/L	1572	Standard
Sr	88	213.3	3.6				ug/L	73	Standard
C	12	256.7	12.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	288.4	16.8				mg/L	6	Standard
Ho-1	165	203.3	14.2				mg/L	10	Standard
Er	166	173.3	23.3				mg/L	13	Standard
I	127	470221.1	5.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.534	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.254	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.786
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.265
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606098625
Sample Date/Time: Wednesday, June 29, 2016 13:57:48
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	102613.0	0.8				ug/L	74699	Standard
	Be	9	78.3	9.8	**0.0724**	0.006	8.8	ug/L	8	Standard
	Al	27	33905192.3	1.5	**167.9500**	3.413	2.0	ug/L	1493	Standard
	Sc	45	63494.4	0.7				ug/L	61029	Standard
	Ti	47	6149.2	2.1	**15.7581**	0.447	2.8	ug/L	35	Standard
	V	51	12969.6	1.6	**1.4837**	0.027	1.8	ug/L	1435	Standard
	Cr	52	17892.2	0.6	**1.3372**	0.031	2.3	ug/L	7635	Standard
	Cr	53	3548.7	0.7	**3.4248**	0.009	0.3	ug/L	363	Standard
	Mn	55	3105877.1	1.7	**436.1197**	10.576	2.4	ug/L	747	Standard
	Co	59	6022.9	2.6	**0.8547**	0.030	3.5	ug/L	234	Standard
	Ni	60	6318.7	1.1	**3.1764**	0.053	1.7	ug/L	215	Standard
	Cu	65	5119.5	1.0	**2.5860**	0.011	0.4	ug/L	104	Standard
	Zn	66	19836.6	0.9	**17.3044**	0.276	1.6	ug/L	363	Standard
>	**Ge**	72	506357.7	0.8				ug/L	495142	Standard
	As	75	1090.3	6.9	**1.0117**	0.071	7.0	ug/L	-50	Standard
	Se	82	334.6	3.6	**2.8439**	0.125	4.4	ug/L	14	Standard
	Se-1	77	270.0	7.0	**2.9935**	0.272	9.1	ug/L	42	Standard
>	**Ga**	71	1363.4	8.0				mg/L	42	Standard
	Rb	85	42725.2	0.9				ug/L	17	Standard
	Y	89	453938.8	1.4				ug/L	417098	Standard
>	**Rh**	103	198.3	19.1				ug/L	13	Standard
	Mo	98	1348.4	1.8	**0.4789**	0.005	1.1	ug/L	11	Standard
	Ag	107	259.3	4.5	**0.0252**	0.002	7.6	ug/L	68	Standard
	Cd	111	351.0	2.3	**0.1529**	0.002	1.6	mg/L	2	Standard
	Cd	114	808.7	5.9	**0.1490**	0.010	6.6	ug/L	12	Standard
>	**In**	115	613191.6	0.9				ug/L	587441	Standard
	Sn	118	795.0	1.9	**0.0357**	0.003	9.4	ug/L	497	Standard
	Sb	123	319.9	2.9	**0.0614**	0.002	3.0	ug/L	78	Standard
	Ba	135	112678.5	1.7	**52.7237**	0.702	1.3	ug/L	24	Standard
	Ce	140	37260.8	2.0				ug/L	25	Standard
>	**Tb**	159	1001354.7	0.4				ug/L	939701	Standard
	Ho	165	1051.7	3.8				ug/L	10	Standard
	Tl	203	322.7	6.7	**0.0353**	0.003	7.6	ug/L	4	Standard
	Tl	205	283.3	17.7	**0.0376**	0.006	16.6	ug/L	2	Standard
	Pb	206	8100.8	1.1	**1.3649**	0.025	1.8	ug/L	240	Standard
	Pb	207	6526.4	1.1	**1.2323**	0.027	2.2	ug/L	198	Standard
	Pb	208	27115.2	0.7	**1.2953**	0.018	1.4	ug/L	883	Standard
	U	238	26591.0	2.4	**3.6542**	0.116	3.2	ug/L	3	Standard
>	**Bi**	209	553363.8	1.0				ug/L	523984	Standard

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Na	23	5.0	100.0	**55.1859**	55.233	100.1	mg/L	0	Standard
Mg	24	8027.1	0.4	**9.8947**	0.087	0.9	mg/L	37	Standard
K	39	523.3	14.3	**0.9970**	0.152	15.2	mg/L	38	Standard
Ca	43	861.7	11.2	**49.8050**	6.018	12.1	mg/L	10	Standard
Fe	54	1108.4	4.4	**0.7648**	0.035	4.5	mg/L	179	Standard
Fe	57	975.0	10.7	**2.1112**	0.341	16.2	mg/L	335	Standard
> **Sc-1**	45	63494.4	0.7				mg/L	61029	Standard
Cl	35	33805.7	1.3				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	35418.0	3.4				ug/L	1547	Standard
P	31	20113.3	1.1				ug/L	15286	Standard
S	34	2053.5	4.6				ug/L	1572	Standard
Sr	88	896.7	5.2				ug/L	73	Standard
C	12	130.0	35.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	1595.5	8.0				mg/L	6	Standard
Ho-1	165	1051.7	3.8				mg/L	10	Standard
Er	166	1000.0	4.0				mg/L	13	Standard
I	127	43091.5	8.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		137.369	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.265	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.384
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	105.607
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606098627
Sample Date/Time: Wednesday, June 29, 2016 14:00:59
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	98891.7	1.0				ug/L	74699	Standard
	Be	9	638.3	5.3	**0.5552**	0.024	4.3	ug/L	8	Standard
	Al	27	63228292.3	2.4	**324.9422**	4.583	1.4	ug/L	1493	Standard
	Sc	45	59185.4	3.1				ug/L	61029	Standard
	Ti	47	12099.8	1.5	**31.9570**	0.495	1.6	ug/L	35	Standard
	V	51	31610.6	0.8	**4.0089**	0.089	2.2	ug/L	1435	Standard
	Cr	52	29501.7	2.0	**2.9745**	0.066	2.2	ug/L	7635	Standard
	Cr	53	4110.6	4.5	**4.1359**	0.142	3.4	ug/L	363	Standard
	Mn	55	939161.3	0.8	**135.3408**	0.783	0.6	ug/L	747	Standard
	Co	59	11927.7	1.5	**1.7769**	0.013	0.7	ug/L	234	Standard
	Ni	60	10174.7	1.2	**5.3344**	0.025	0.5	ug/L	215	Standard
	Cu	65	63138.6	0.6	**33.9717**	0.415	1.2	ug/L	104	Standard
	Zn	66	96624.1	0.5	**88.3979**	1.021	1.2	ug/L	363	Standard
>	**Ge**	72	492984.7	1.4				ug/L	495142	Standard
	As	75	1814.9	1.7	**1.6870**	0.014	0.9	ug/L	-50	Standard
	Se	82	95.5	0.5	**0.7363**	0.016	2.2	ug/L	14	Standard
	Se-1	77	118.3	17.1	**1.0027**	0.256	25.5	ug/L	42	Standard
>	**Ga**	71	3340.4	1.3				mg/L	42	Standard
	Rb	85	72434.4	1.9				ug/L	17	Standard
	Y	89	474043.5	0.9				ug/L	417098	Standard
>	**Rh**	103	386.7	16.4				ug/L	13	Standard
	Mo	98	2396.5	0.7	**0.9091**	0.018	1.9	ug/L	11	Standard
	Ag	107	338.3	4.7	**0.0399**	0.003	6.7	ug/L	68	Standard
	Cd	111	101.2	9.9	**0.0414**	0.005	12.6	mg/L	2	Standard
	Cd	114	230.2	21.2	**0.0435**	0.009	20.9	ug/L	12	Standard
>	**In**	115	577417.6	1.2				ug/L	587441	Standard
	Sn	118	1793.4	6.6	**0.2178**	0.023	10.5	ug/L	497	Standard
	Sb	123	600.3	4.8	**0.1267**	0.008	6.1	ug/L	78	Standard
	Ba	135	70114.5	1.5	**34.8357**	0.414	1.2	ug/L	24	Standard
	Ce	140	125576.7	1.8				ug/L	25	Standard
>	**Tb**	159	953741.7	1.0				ug/L	939701	Standard
	Ho	165	3755.5	3.8				ug/L	10	Standard
	Tl	203	452.7	12.3	**0.0539**	0.006	11.6	ug/L	4	Standard
	Tl	205	385.0	10.1	**0.0548**	0.005	9.0	ug/L	2	Standard
	Pb	206	12183.9	0.5	**2.2443**	0.020	0.9	ug/L	240	Standard
	Pb	207	9920.2	0.8	**2.0519**	0.018	0.9	ug/L	198	Standard
	Pb	208	42107.7	1.6	**2.2055**	0.026	1.2	ug/L	883	Standard
	U	238	36138.4	1.7	**5.3249**	0.032	0.6	ug/L	3	Standard
>	**Bi**	209	516181.2	1.2				ug/L	523984	Standard

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Na	23	8.3	91.7	**99.8498**	90.493	90.6	mg/L	0	Standard
Mg	24	9524.7	1.9	**12.6179**	0.315	2.5	mg/L	37	Standard
K	39	723.4	10.8	**1.5367**	0.198	12.9	mg/L	38	Standard
Ca	43	1308.4	8.3	**82.6186**	4.814	5.8	mg/L	10	Standard
Fe	54	3102.8	2.2	**2.5749**	0.034	1.3	mg/L	179	Standard
Fe	57	1665.1	3.0	**4.7616**	0.022	0.5	mg/L	335	Standard
> **Sc-1**	45	59185.4	3.1				mg/L	61029	Standard
Cl	35	38114.5	0.9				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	13185.7	5.6				ug/L	1547	Standard
P	31	20465.5	3.4				ug/L	15286	Standard
S	34	1960.1	7.7				ug/L	1572	Standard
Sr	88	1940.1	7.4				ug/L	73	Standard
C	12	216.7	23.7				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	3	Standard
Dy	164	5933.6	2.4				mg/L	6	Standard
Ho-1	165	3755.5	3.8				mg/L	10	Standard
Er	166	3430.4	0.6				mg/L	13	Standard
I	127	31850.1	1.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.387	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.564	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.294
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.511
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 14:04:12
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	95022.8	6.4				ug/L	74699	Standard
	Be	9	57413.6	2.5	**51.3575**	1.980	3.9	ug/L	8	Standard
	Al	27	7949888.2	1.3	**42.6051**	2.208	5.2	ug/L	1493	Standard
	Sc	45	58088.0	4.8				ug/L	61029	Standard
	Ti	47	37651.4	1.9	**100.2698**	3.249	3.2	ug/L	35	Standard
	V	51	404346.6	1.8	**53.8882**	0.844	1.6	ug/L	1435	Standard
	Cr	52	381698.1	1.1	**51.0223**	1.642	3.2	ug/L	7635	Standard
	Cr	53	47042.9	0.3	**51.1128**	1.842	3.6	ug/L	363	Standard
	Mn	55	357326.2	3.2	**51.6830**	0.417	0.8	ug/L	747	Standard
	Co	59	371699.6	2.5	**56.8155**	0.522	0.9	ug/L	234	Standard
	Ni	60	94541.7	1.4	**50.9011**	1.597	3.1	ug/L	215	Standard
	Cu	65	94983.8	1.5	**51.4773**	2.133	4.1	ug/L	104	Standard
	Zn	66	56900.0	0.7	**52.1829**	1.541	3.0	ug/L	363	Standard
>	Ge	72	490310.3	3.4				ug/L	495142	Standard
	As	75	57867.9	1.8	**52.2509**	0.921	1.8	ug/L	-50	Standard
	Se	82	5817.8	2.4	**53.4067**	0.847	1.6	ug/L	14	Standard
	Se-1	77	4012.5	1.4	**54.8814**	1.095	2.0	ug/L	42	Standard
>	Ga	71	80.0	6.3				mg/L	42	Standard
	Rb	85	831.7	8.5				ug/L	17	Standard
	Y	89	423000.5	2.4				ug/L	417098	Standard
>	Rh	103	26.7	57.3				ug/L	13	Standard
	Mo	98	279510.1	1.2	**103.0732**	1.481	1.4	ug/L	11	Standard
	Ag	107	337025.9	0.7	**50.8187**	0.653	1.3	ug/L	68	Standard
	Cd	111	104719.9	1.6	**49.2197**	0.492	1.0	mg/L	2	Standard
	Cd	114	254484.5	1.8	**48.7789**	1.357	2.8	ug/L	12	Standard
>	In	115	597695.8	1.6				ug/L	587441	Standard
	Sn	118	297589.5	3.3	**49.9660**	0.932	1.9	ug/L	497	Standard
	Sb	123	237800.4	0.6	**50.0611**	0.480	1.0	ug/L	78	Standard
	Ba	135	98785.4	1.3	**47.4247**	0.676	1.4	ug/L	24	Standard
	Ce	140	118.3	6.5				ug/L	25	Standard
>	Tb	159	962162.8	1.8				ug/L	939701	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	431721.7	1.4	**50.5906**	0.299	0.6	ug/L	4	Standard
	Tl	205	386667.7	1.8	**52.2055**	0.331	0.6	ug/L	2	Standard
	Pb	206	286495.7	0.6	**51.7458**	1.032	2.0	ug/L	240	Standard
	Pb	207	254256.8	1.2	**51.6830**	0.707	1.4	ug/L	198	Standard
	Pb	208	993731.8	1.4	**51.1193**	0.294	0.6	ug/L	883	Standard
	U	238	371822.3	1.0	**52.1805**	0.682	1.3	ug/L	3	Standard
>	Bi	209	542470.6	1.9				ug/L	523984	Standard

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Na	23	1.7	173.2	**20.6892**	35.826	173.2	mg/L	0	Standard
Mg	24	4115.6	5.8	**5.5148**	0.066	1.2	mg/L	37	Standard
K	39	1971.8	1.5	**4.4711**	0.214	4.8	mg/L	38	Standard
Ca	43	71.7	16.1	**2.2502**	0.891	39.6	mg/L	10	Standard
Fe	54	5897.1	1.5	**5.1229**	0.272	5.3	mg/L	179	Standard
Fe	57	1798.4	2.6	**5.3592**	0.387	7.2	mg/L	335	Standard
> **Sc-1**	45	58088.0	4.8				mg/L	61029	Standard
Cl	35	26443.8	4.7				ug/L	20195	Standard
Kr	83	1.0	0.0				ug/L	4	Standard
Br	81	1943.5	9.9				ug/L	1547	Standard
P	31	18503.0	1.3				ug/L	15286	Standard
S	34	2213.5	3.2				ug/L	1572	Standard
Sr	88	76.7	10.0				ug/L	73	Standard
C	12	120.0	43.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	2.9	217.0				mg/L	6	Standard
Ho-1	165	8.3	34.6				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	3483.8	25.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	102.715		
Al	27	85.210		
Sc	45			
Ti	47	100.270		
V	51	107.776		
Cr	52	102.045		
Cr	53			
Mn	55	103.366		
Co	59	113.631		
Ni	60	101.802		
Cu	65	102.955		
Zn	66	104.366		
> Ge	72		99.024	
As	75	104.502		
Se	82	106.813		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	103.073		
Ag	107	101.637		
Cd	111	98.439		
Cd	114			
In	115		101.746	
Sn	118	99.932		
Sb	123	100.122		
Ba	135	94.849		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.181		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.239		
U	238	104.361		
Bi	209		103.528	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	
QC Std 6	Co	59	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 14:07:23
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	87483.9	4.7				ug/L	74699	Standard
	Be	9	21.7	96.1	**0.0292**	0.021	73.0	ug/L	8	Standard
	Al	27	18230.8	94.8	**0.0950**	0.107	112.2	ug/L	1493	Standard
	Sc	45	56471.8	3.5				ug/L	61029	Standard
	Ti	47	36.0	46.7	**-0.0098**	0.050	510.8	ug/L	35	Standard
	V	51	1334.8	2.3	**-0.0125**	0.010	80.4	ug/L	1435	Standard
	Cr	52	6684.1	1.9	**-0.0897**	0.031	35.0	ug/L	7635	Standard
	Cr	53	393.3	6.4	**0.1115**	0.043	38.6	ug/L	363	Standard
	Mn	55	1346.4	57.0	**0.0546**	0.123	224.6	ug/L	747	Standard
	Co	59	278.3	17.3	**0.0065**	0.009	139.3	ug/L	234	Standard
	Ni	60	177.0	5.9	**-0.0261**	0.004	17.0	ug/L	215	Standard
	Cu	65	145.0	10.8	**-0.0230**	0.009	41.3	ug/L	104	Standard
	Zn	66	399.3	2.4	**-0.0757**	0.021	28.0	ug/L	363	Standard
>	**Ge**	72	478426.6	3.3				ug/L	495142	Standard
	As	75	-39.3	49.9	**0.0231**	0.019	81.6	ug/L	-50	Standard
	Se	82	16.5	11.7	**0.0181**	0.023	124.9	ug/L	14	Standard
	Se-1	77	38.7	26.9	**-0.0773**	0.131	170.1	ug/L	42	Standard
>	**Ga**	71	66.7	15.6				mg/L	42	Standard
	Rb	85	18.3	41.7				ug/L	17	Standard
	Y	89	416242.9	2.8				ug/L	417098	Standard
>	**Rh**	103	15.0	57.7				ug/L	13	Standard
	Mo	98	272.1	23.3	**0.0976**	0.024	24.4	ug/L	11	Standard
	Ag	107	106.0	6.8	**0.0036**	0.001	28.2	ug/L	68	Standard
	Cd	111	10.2	22.2	**-0.0030**	0.001	37.6	mg/L	2	Standard
	Cd	114	31.6	53.8	**0.0041**	0.003	80.7	ug/L	12	Standard
>	**In**	115	580179.3	0.7				ug/L	587441	Standard
	Sn	118	746.7	16.1	**0.0348**	0.022	62.5	ug/L	497	Standard
	Sb	123	368.4	24.4	**0.0758**	0.020	26.4	ug/L	78	Standard
	Ba	135	41.0	10.6	**0.0043**	0.002	51.4	ug/L	24	Standard
	Ce	140	38.3	61.6				ug/L	25	Standard
>	**Tb**	159	945404.9	0.5				ug/L	939701	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	65.7	8.7	**0.0061**	0.001	8.8	ug/L	4	Standard
	Tl	205	95.0	45.9	**0.0133**	0.006	45.0	ug/L	2	Standard
	Pb	206	276.0	7.9	**-0.0202**	0.003	15.8	ug/L	240	Standard
	Pb	207	258.0	12.6	**-0.0163**	0.006	36.3	ug/L	198	Standard
	Pb	208	1134.3	12.6	**-0.0143**	0.008	56.7	ug/L	883	Standard
	U	238	91.0	75.8	**0.0087**	0.010	115.9	ug/L	3	Standard
>	**Bi**	209	530301.2	1.8				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	46.7	81.1	**0.0007**	0.054	7923.6	mg/L	37	Standard
K	39	40.0	45.1	**-0.0194**	0.039	202.6	mg/L	38	Standard
Ca	43	28.3	20.4	**-0.5841**	0.427	73.1	mg/L	10	Standard
Fe	54	129.2	39.5	**-0.0191**	0.049	258.2	mg/L	179	Standard
Fe	57	241.7	27.6	**-0.1803**	0.270	149.7	mg/L	335	Standard
Sc-1	45	56471.8	3.5				mg/L	61029	Standard
Cl	35	26027.0	1.3				ug/L	20195	Standard
Kr	83	3.0	57.7				ug/L	4	Standard
Br	81	1783.4	6.5				ug/L	1547	Standard
P	31	18152.5	2.7				ug/L	15286	Standard
S	34	2168.5	1.2				ug/L	1572	Standard
Sr	88	56.7	27.0				ug/L	73	Standard
C	12	93.3	24.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	6.5	86.7				mg/L	6	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	2606.9	21.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.624	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.764	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	101.206	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606098629
Sample Date/Time: Wednesday, June 29, 2016 14:10:36
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	98303.0	2.6				ug/L	74699	Standard
	Be	9	480.0	19.8	**0.4216**	0.078	18.5	ug/L	8	Standard
	Al	27	74581592.0	2.0	**385.7852**	11.899	3.1	ug/L	1493	Standard
	Sc	45	57877.0	1.4				ug/L	61029	Standard
	Ti	47	6572.4	2.9	**18.4374**	0.321	1.7	ug/L	35	Standard
	V	51	8784.7	0.2	**1.0487**	0.019	1.8	ug/L	1435	Standard
	Cr	52	16164.0	1.7	**1.3092**	0.018	1.4	ug/L	7635	Standard
	Cr	53	2105.1	0.9	**2.1070**	0.052	2.5	ug/L	363	Standard
	Mn	55	1145494.2	1.1	**175.8506**	2.171	1.2	ug/L	747	Standard
	Co	59	6198.3	3.2	**0.9668**	0.035	3.6	ug/L	234	Standard
	Ni	60	8328.3	2.3	**4.6339**	0.069	1.5	ug/L	215	Standard
	Cu	65	39558.9	1.3	**22.6316**	0.139	0.6	ug/L	104	Standard
	Zn	66	37507.0	2.0	**36.2726**	0.401	1.1	ug/L	363	Standard
>	**Ge**	72	462898.1	1.3				ug/L	495142	Standard
	As	75	729.1	4.9	**0.7559**	0.035	4.6	ug/L	-50	Standard
	Se	82	97.9	9.3	**0.8168**	0.100	12.2	ug/L	14	Standard
	Se-1	77	92.7	14.7	**0.7365**	0.213	29.0	ug/L	42	Standard
>	**Ga**	71	1238.4	2.6				mg/L	42	Standard
	Rb	85	36981.8	1.6				ug/L	17	Standard
	Y	89	423750.9	0.9				ug/L	417098	Standard
>	**Rh**	103	1170.0	7.1				ug/L	13	Standard
	Mo	98	1333.1	1.3	**0.5111**	0.005	0.9	ug/L	11	Standard
	Ag	107	159.7	2.8	**0.0124**	0.001	8.3	ug/L	68	Standard
	Cd	111	50.7	12.0	**0.0171**	0.003	15.0	mg/L	2	Standard
	Cd	114	154.3	14.1	**0.0289**	0.004	13.0	ug/L	12	Standard
>	**In**	115	568573.6	2.1				ug/L	587441	Standard
	Sn	118	2385.2	8.8	**0.3269**	0.032	9.8	ug/L	497	Standard
	Sb	123	701.5	2.0	**0.1511**	0.004	2.9	ug/L	78	Standard
	Ba	135	49620.1	0.4	**25.0380**	0.447	1.8	ug/L	24	Standard
	Ce	140	69524.2	1.7				ug/L	25	Standard
>	**Tb**	159	941672.2	2.5				ug/L	939701	Standard
	Ho	165	1511.7	2.5				ug/L	10	Standard
	Tl	203	215.3	8.2	**0.0254**	0.002	6.7	ug/L	4	Standard
	Tl	205	171.7	4.4	**0.0251**	0.001	2.6	ug/L	2	Standard
	Pb	206	5244.6	2.1	**0.9485**	0.002	0.2	ug/L	240	Standard
	Pb	207	4168.9	1.9	**0.8423**	0.008	0.9	ug/L	198	Standard
	Pb	208	17565.0	0.7	**0.8990**	0.013	1.4	ug/L	883	Standard
	U	238	17410.3	1.3	**2.6228**	0.019	0.7	ug/L	3	Standard
>	**Bi**	209	504494.7	1.9				ug/L	523984	Standard

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Na	23	13.3	78.1	**161.6266**	126.012	78.0	mg/L	0	Standard
Mg	24	27959.1	0.6	**37.9939**	0.282	0.7	mg/L	37	Standard
K	39	733.4	5.5	**1.5946**	0.079	5.0	mg/L	38	Standard
Ca	43	1693.4	2.8	**110.2950**	4.030	3.7	mg/L	10	Standard
Fe	54	1507.3	3.7	**1.2090**	0.035	2.9	mg/L	179	Standard
Fe	57	1286.7	5.0	**3.5362**	0.177	5.0	mg/L	335	Standard
> **Sc-1**	45	57877.0	1.4				mg/L	61029	Standard
Cl	35	39812.2	0.7				ug/L	20195	Standard
Kr	83	2.3	24.7				ug/L	4	Standard
Br	81	15855.0	0.8				ug/L	1547	Standard
P	31	19874.7	1.1				ug/L	15286	Standard
S	34	1861.8	8.3				ug/L	1572	Standard
Sr	88	5489.3	0.8				ug/L	73	Standard
C	12	143.3	29.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	2426.6	8.1				mg/L	6	Standard
Ho-1	165	1511.7	2.5				mg/L	10	Standard
Er	166	1466.7	15.1				mg/L	13	Standard
I	127	114010.2	6.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		131.599	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.488	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.788
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.280
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606098639
Sample Date/Time: Wednesday, June 29, 2016 14:13:47
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	95709.8	2.9				ug/L	74699	Standard
	Be	9	26.7	92.5	**0.0314**	0.022	70.9	ug/L	8	Standard
	Al	27	47777.1	19.3	**0.2396**	0.041	17.2	ug/L	1493	Standard
	Sc	45	57199.5	2.6				ug/L	61029	Standard
	Ti	47	140.3	60.7	**0.2633**	0.227	86.2	ug/L	35	Standard
	V	51	2113.6	5.5	**0.0856**	0.015	17.8	ug/L	1435	Standard
	Cr	52	11519.7	1.7	**0.5382**	0.024	4.4	ug/L	7635	Standard
	Cr	53	731.7	8.2	**0.4658**	0.068	14.5	ug/L	363	Standard
	Mn	55	10046.3	0.4	**1.3019**	0.003	0.2	ug/L	747	Standard
	Co	59	277.3	4.9	**0.0049**	0.002	38.1	ug/L	234	Standard
	Ni	60	403.7	2.5	**0.0928**	0.006	6.6	ug/L	215	Standard
	Cu	65	2594.2	1.0	**1.2969**	0.011	0.8	ug/L	104	Standard
	Zn	66	5488.0	1.5	**4.5940**	0.065	1.4	ug/L	363	Standard
>	**Ge**	72	492746.6	0.5				ug/L	495142	Standard
	As	75	-23.9	159.7	**0.0381**	0.034	90.0	ug/L	-50	Standard
	Se	82	16.9	42.3	**0.0162**	0.065	398.3	ug/L	14	Standard
	Se-1	77	44.7	15.2	**-0.0080**	0.091	1136.4	ug/L	42	Standard
>	**Ga**	71	35.0	24.7				mg/L	42	Standard
	Rb	85	228.3	6.7				ug/L	17	Standard
	Y	89	426313.2	2.4				ug/L	417098	Standard
>	**Rh**	103	20.0	66.1				ug/L	13	Standard
	Mo	98	146.2	8.6	**0.0487**	0.005	10.8	ug/L	11	Standard
	Ag	107	84.7	10.6	**-0.0000**	0.001	3427.7	ug/L	68	Standard
	Cd	111	14.4	26.2	**-0.0011**	0.002	163.5	mg/L	2	Standard
	Cd	114	36.0	7.5	**0.0048**	0.001	11.2	ug/L	12	Standard
>	**In**	115	592771.3	1.1				ug/L	587441	Standard
	Sn	118	1206.7	2.0	**0.1101**	0.007	6.0	ug/L	497	Standard
	Sb	123	2747.6	2.7	**0.5790**	0.016	2.8	ug/L	78	Standard
	Ba	135	327.7	1.8	**0.1426**	0.002	1.3	ug/L	24	Standard
	Ce	140	215.0	46.7				ug/L	25	Standard
>	**Tb**	159	942434.8	1.8				ug/L	939701	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	30.7	28.5	**0.0019**	0.001	54.2	ug/L	4	Standard
	Tl	205	31.7	59.8	**0.0045**	0.003	57.0	ug/L	2	Standard
	Pb	206	347.7	8.5	**-0.0077**	0.005	63.4	ug/L	240	Standard
	Pb	207	296.0	3.8	**-0.0091**	0.002	22.4	ug/L	198	Standard
	Pb	208	1207.0	5.0	**-0.0113**	0.003	23.3	ug/L	883	Standard
	U	238	16.7	21.1	**-0.0021**	0.000	23.4	ug/L	3	Standard
>	**Bi**	209	536687.4	0.8				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	78.3	9.8	**0.0427**	0.008	19.8	mg/L	37	Standard
K	39	33.3	56.8	**-0.0347**	0.047	136.1	mg/L	38	Standard
Ca	43	38.3	27.2	**0.0551**	0.672	1218.0	mg/L	10	Standard
Fe	54	152.5	13.6	**-0.0001**	0.021	24429.9	mg/L	179	Standard
Fe	57	270.0	10.3	**-0.0961**	0.083	86.0	mg/L	335	Standard
Sc-1	45	57199.5	2.6				mg/L	61029	Standard
Cl	35	30633.6	0.6				ug/L	20195	Standard
Kr	83	2.7	78.1				ug/L	4	Standard
Br	81	2093.5	12.2				ug/L	1547	Standard
P	31	17446.7	2.4				ug/L	15286	Standard
S	34	1971.8	2.9				ug/L	1572	Standard
Sr	88	48.3	26.0				ug/L	73	Standard
C	12	116.7	34.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	9.0	108.0				mg/L	6	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	4304.0	50.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		128.128	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.516	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.907
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.424
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606098641
Sample Date/Time: Wednesday, June 29, 2016 14:16:59
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	87267.4	3.2				ug/L	74699	Standard
	Be	9	11.7	49.5	**0.0189**	0.005	28.8	ug/L	8	Standard
	Al	27	605511.0	1.7	**3.5149**	0.083	2.4	ug/L	1493	Standard
	Sc	45	54390.8	2.9				ug/L	61029	Standard
	Ti	47	93.0	12.4	**0.1442**	0.032	22.4	ug/L	35	Standard
	V	51	1794.1	5.9	**0.0496**	0.015	30.2	ug/L	1435	Standard
	Cr	52	10365.2	1.5	**0.4195**	0.024	5.7	ug/L	7635	Standard
	Cr	53	613.3	8.2	**0.3551**	0.058	16.5	ug/L	363	Standard
	Mn	55	4513.0	1.6	**0.5208**	0.012	2.3	ug/L	747	Standard
	Co	59	310.3	5.3	**0.0112**	0.002	21.0	ug/L	234	Standard
	Ni	60	490.0	6.7	**0.1461**	0.017	11.6	ug/L	215	Standard
	Cu	65	1018.0	2.6	**0.4608**	0.017	3.7	ug/L	104	Standard
	Zn	66	3968.5	2.5	**3.2944**	0.091	2.8	ug/L	363	Standard
>	**Ge**	72	479837.7	0.4				ug/L	495142	Standard
	As	75	-18.8	39.3	**0.0423**	0.007	15.9	ug/L	-50	Standard
	Se	82	16.1	20.6	**0.0139**	0.032	229.1	ug/L	14	Standard
	Se-1	77	51.0	14.8	**0.0980**	0.104	105.7	ug/L	42	Standard
>	**Ga**	71	46.7	22.3				mg/L	42	Standard
	Rb	85	2146.8	6.0				ug/L	17	Standard
	Y	89	405082.7	1.5				ug/L	417098	Standard
>	**Rh**	103	10.0	86.6				ug/L	13	Standard
	Mo	98	183.9	8.1	**0.0672**	0.006	9.5	ug/L	11	Standard
	Ag	107	85.0	8.5	**0.0009**	0.001	123.2	ug/L	68	Standard
	Cd	111	58.3	9.8	**0.0215**	0.003	12.3	mg/L	2	Standard
	Cd	114	162.0	10.0	**0.0312**	0.003	9.6	ug/L	12	Standard
>	**In**	115	556306.9	1.6				ug/L	587441	Standard
	Sn	118	983.4	6.5	**0.0831**	0.013	16.0	ug/L	497	Standard
	Sb	123	290.8	14.6	**0.0617**	0.011	17.2	ug/L	78	Standard
	Ba	135	1301.4	2.0	**0.6554**	0.007	1.1	ug/L	24	Standard
	Ce	140	1251.7	2.7				ug/L	25	Standard
>	**Tb**	159	894371.7	2.0				ug/L	939701	Standard
	Ho	165	23.3	61.9				ug/L	10	Standard
	Tl	203	26.7	21.3	**0.0015**	0.001	46.3	ug/L	4	Standard
	Tl	205	18.3	68.6	**0.0028**	0.002	63.1	ug/L	2	Standard
	Pb	206	368.7	5.0	**-0.0008**	0.004	496.5	ug/L	240	Standard
	Pb	207	301.3	5.5	**-0.0052**	0.004	82.3	ug/L	198	Standard
	Pb	208	1198.4	1.5	**-0.0089**	0.002	20.6	ug/L	883	Standard
	U	238	7.7	32.8	**-0.0033**	0.000	11.3	ug/L	3	Standard
>	**Bi**	209	513924.4	1.5				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	638.3	13.6	**0.8624**	0.151	17.5	mg/L	37	Standard
K	39	86.7	3.3	**0.1010**	0.012	12.3	mg/L	38	Standard
Ca	43	31.7	48.2	**-0.2871**	1.074	374.0	mg/L	10	Standard
Fe	54	129.1	21.5	**-0.0150**	0.029	192.4	mg/L	179	Standard
Fe	57	250.0	12.2	**-0.1181**	0.141	119.7	mg/L	335	Standard
Sc-1	45	54390.8	2.9				mg/L	61029	Standard
Cl	35	28123.4	3.1				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	1706.8	4.2				ug/L	1547	Standard
P	31	17456.7	1.2				ug/L	15286	Standard
S	34	1960.1	4.3				ug/L	1572	Standard
Sr	88	86.7	3.3				ug/L	73	Standard
C	12	86.7	35.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	22.9	67.6				mg/L	6	Standard
Ho-1	165	23.3	61.9				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	6631.5	5.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		116.826	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.909	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.700
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.080
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606102602
Sample Date/Time: Wednesday, June 29, 2016 14:51:20
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	98959.1	4.1				ug/L	74699	Standard
	Be	9	893.4	7.1	**0.7730**	0.024	3.1	ug/L	8	Standard
	Al	27	86838575.1	3.0	**446.1622**	5.675	1.3	ug/L	1493	Standard
	Sc	45	59841.3	1.2				ug/L	61029	Standard
	Ti	47	724.7	2.7	**1.9675**	0.086	4.4	ug/L	35	Standard
	V	51	-99401.9	27.0	**-14.4927**	3.863	26.7	ug/L	1435	Standard
	Cr	52	14286817.6	0.7	**2092.1702**	38.595	1.8	ug/L	7635	Standard
	Cr	53	1819264.9	1.0	**2136.8631**	30.527	1.4	ug/L	363	Standard
	Mn	55	9369393.8	2.3	**1460.7209**	18.166	1.2	ug/L	747	Standard
	Co	59	953653.0	0.8	**156.7618**	2.325	1.5	ug/L	234	Standard
	Ni	60	10094931.6	0.5	**5854.0954**	89.919	1.5	ug/L	215	Standard
	Cu	65	555284.9	0.4	**323.8508**	6.370	2.0	ug/L	104	Standard
	Zn	66	64094.6	1.0	**63.2545**	1.058	1.7	ug/L	363	Standard
>	**Ge**	72	456115.5	1.9				ug/L	495142	Standard
	As	75	3627.2	1.9	**3.5767**	0.135	3.8	ug/L	-50	Standard
	Se	82	1754.2	3.0	**17.2111**	0.289	1.7	ug/L	14	Standard
	Se-1	77	3450.1	4.6	**50.7001**	3.400	6.7	ug/L	42	Standard
>	**Ga**	71	493.3	9.8				mg/L	42	Standard
	Rb	85	15579.7	1.3				ug/L	17	Standard
	Y	89	510259.3	1.5				ug/L	417098	Standard
>	**Rh**	103	536.7	10.8				ug/L	13	Standard
	Mo	98	52406.3	2.2	**22.0721**	0.200	0.9	ug/L	11	Standard
	Ag	107	797.7	2.2	**0.1246**	0.004	3.1	ug/L	68	Standard
	Cd	111	4820.0	1.8	**2.5808**	0.025	1.0	mg/L	2	Standard
	Cd	114	11654.3	2.8	**2.5494**	0.039	1.5	ug/L	12	Standard
>	**In**	115	523117.8	1.3				ug/L	587441	Standard
	Sn	118	2368.5	5.4	**0.3606**	0.023	6.4	ug/L	497	Standard
	Sb	123	2240.5	1.3	**0.5347**	0.001	0.2	ug/L	78	Standard
	Ba	135	135783.1	0.9	**74.4848**	0.361	0.5	ug/L	24	Standard
	Ce	140	104687.1	1.1				ug/L	25	Standard
>	**Tb**	159	898543.7	0.7				ug/L	939701	Standard
	Ho	165	6684.8	2.2				ug/L	10	Standard
	Tl	203	178.0	4.1	**0.0225**	0.001	5.6	ug/L	4	Standard
	Tl	205	203.3	37.2	**0.0321**	0.012	38.4	ug/L	2	Standard
	Pb	206	1304.4	5.0	**0.2026**	0.016	8.1	ug/L	240	Standard
	Pb	207	1055.7	2.5	**0.1793**	0.004	2.5	ug/L	198	Standard
	Pb	208	4341.2	2.0	**0.1854**	0.004	2.0	ug/L	883	Standard
	U	238	4585.0	0.8	**0.7423**	0.007	0.9	ug/L	3	Standard
>	**Bi**	209	467454.5	1.3				ug/L	523984	Standard

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Na	23	5.0	0.0	**58.7812**	0.729	1.2	mg/L	0	Standard
Mg	24	188890.8	2.9	**248.6881**	10.353	4.2	mg/L	37	Standard
K	39	2185.2	4.4	**4.8106**	0.175	3.6	mg/L	38	Standard
Ca	43	1135.0	6.5	**70.5642**	3.873	5.5	mg/L	10	Standard
Fe	54	9878.2	4.8	**8.4031**	0.399	4.8	mg/L	179	Standard
Fe	57	3267.0	5.5	**10.2558**	0.748	7.3	mg/L	335	Standard
> **Sc-1**	45	59841.3	1.2				mg/L	61029	Standard
Cl	35	28240.3	1.1				ug/L	20195	Standard
Kr	83	2.7	142.0				ug/L	4	Standard
Br	81	339155.5	2.6				ug/L	1547	Standard
P	31	29607.2	0.7				ug/L	15286	Standard
S	34	2378.5	1.9				ug/L	1572	Standard
Sr	88	1895.1	7.4				ug/L	73	Standard
C	12	120.0	28.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	86.7	35.3				mg/L	3	Standard
Dy	164	9299.8	2.7				mg/L	6	Standard
Ho-1	165	6684.8	2.2				mg/L	10	Standard
Er	166	6331.3	1.7				mg/L	13	Standard
I	127	153619.9	12.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.478	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.118	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	89.050
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	89.212
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
V 51 Lower	V	51	

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Cr 52 Upper, S, EEE	Cr	52
Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Co 59 Upper, S, EEE	Co	59
Ni 60 Upper, S, EEE	Ni	60
Cu 65 Upper, S, EEE	Cu	65

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Method 6020 - Summary Report

Sample ID: L1606102604
Sample Date/Time: Wednesday, June 29, 2016 14:54:31
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82386.8	1.6				ug/L	74699	Standard
	Be	9	41.7	50.0	**0.0505**	0.021	41.9	ug/L	8	Standard
	Al	27	6418180.7	1.0	**39.5946**	1.017	2.6	ug/L	1493	Standard
	Sc	45	68191.6	3.4				ug/L	61029	Standard
	Ti	47	2431.5	5.8	**6.2763**	0.263	4.2	ug/L	35	Standard
	V	51	8932.1	2.8	**0.9822**	0.034	3.4	ug/L	1435	Standard
	Cr	52	19971.2	5.8	**1.6585**	0.113	6.8	ug/L	7635	Standard
	Cr	53	16018.5	1.2	**16.9336**	0.479	2.8	ug/L	363	Standard
	Mn	55	134583.1	0.5	**19.1035**	0.326	1.7	ug/L	747	Standard
	Co	59	5374.0	2.6	**0.7730**	0.008	1.1	ug/L	234	Standard
	Ni	60	7430.2	8.6	**3.8249**	0.274	7.2	ug/L	215	Standard
	Cu	65	1488.1	5.9	**0.6921**	0.035	5.0	ug/L	104	Standard
	Zn	66	5451.0	0.8	**4.5156**	0.102	2.3	ug/L	363	Standard
>	**Ge**	72	497254.0	1.7				ug/L	495142	Standard
	As	75	427.8	16.4	**0.4399**	0.063	14.3	ug/L	-50	Standard
	Se	82	161.6	5.9	**1.3278**	0.065	4.9	ug/L	14	Standard
	Se-1	77	695.3	4.1	**8.8552**	0.225	2.5	ug/L	42	Standard
>	**Ga**	71	420.0	2.4				mg/L	42	Standard
	Rb	85	8292.3	2.6				ug/L	17	Standard
	Y	89	430205.9	2.4				ug/L	417098	Standard
>	**Rh**	103	40.0	12.5				ug/L	13	Standard
	Mo	98	177.9	8.2	**0.0624**	0.005	8.3	ug/L	11	Standard
	Ag	107	97.3	5.7	**0.0023**	0.001	38.0	ug/L	68	Standard
	Cd	111	330.0	5.3	**0.1533**	0.008	5.4	mg/L	2	Standard
	Cd	114	777.4	4.0	**0.1527**	0.007	4.3	ug/L	12	Standard
>	**In**	115	575297.3	2.0				ug/L	587441	Standard
	Sn	118	1836.8	3.5	**0.2263**	0.005	2.3	ug/L	497	Standard
	Sb	123	541.3	2.5	**0.1143**	0.005	4.2	ug/L	78	Standard
	Ba	135	259403.2	1.0	**129.4148**	1.250	1.0	ug/L	24	Standard
	Ce	140	48153.1	1.6				ug/L	25	Standard
>	**Tb**	159	953820.3	0.6				ug/L	939701	Standard
	Ho	165	763.4	3.9				ug/L	10	Standard
	Tl	203	147.7	11.5	**0.0162**	0.002	12.5	ug/L	4	Standard
	Tl	205	135.0	25.9	**0.0192**	0.005	26.2	ug/L	2	Standard
	Pb	206	2333.8	1.6	**0.3679**	0.004	1.0	ug/L	240	Standard
	Pb	207	1897.5	1.5	**0.3318**	0.006	1.8	ug/L	198	Standard
	Pb	208	7911.8	1.2	**0.3500**	0.006	1.7	ug/L	883	Standard
	U	238	272.0	3.5	**0.0353**	0.002	4.3	ug/L	3	Standard
>	**Bi**	209	521315.2	0.9				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	45454.8	3.6	**52.4459**	0.539	1.0	mg/L	37	Standard
K	39	88.3	3.3	**0.0609**	0.011	18.4	mg/L	38	Standard
Ca	43	100.0	8.7	**3.1440**	0.659	21.0	mg/L	10	Standard
Fe	54	556.2	7.6	**0.2841**	0.037	12.9	mg/L	179	Standard
Fe	57	410.0	16.9	**0.1734**	0.212	122.1	mg/L	335	Standard
> **Sc-1**	45	68191.6	3.4				mg/L	61029	Standard
Cl	35	26725.6	1.1				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	35244.3	3.6				ug/L	1547	Standard
P	31	35015.4	1.7				ug/L	15286	Standard
S	34	2091.8	5.9				ug/L	1572	Standard
Sr	88	225.0	20.0				ug/L	73	Standard
C	12	103.3	39.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	93.3	12.4				mg/L	3	Standard
Dy	164	1034.1	12.7				mg/L	6	Standard
Ho-1	165	763.4	3.9				mg/L	10	Standard
Er	166	680.0	15.4				mg/L	13	Standard
I	127	80476.5	1.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.292	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.426	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.933
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.491
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606102606
Sample Date/Time: Wednesday, June 29, 2016 14:57:42
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	93356.7	0.9				ug/L	74699	Standard
	Be	9	136.7	43.6	**0.1318**	0.054	40.9	ug/L	8	Standard
	Al	27	4727947.0	2.8	**25.7324**	0.870	3.4	ug/L	1493	Standard
	Sc	45	71265.6	1.4				ug/L	61029	Standard
	Ti	47	7167.7	1.1	**18.5395**	0.116	0.6	ug/L	35	Standard
	V	51	33631.6	0.4	**4.1963**	0.093	2.2	ug/L	1435	Standard
	Cr	52	43684.3	3.9	**4.7878**	0.170	3.6	ug/L	7635	Standard
	Cr	53	18915.1	0.4	**19.8540**	0.330	1.7	ug/L	363	Standard
	Mn	55	527300.2	1.1	**74.5358**	0.480	0.6	ug/L	747	Standard
	Co	59	47125.2	1.5	**6.9996**	0.016	0.2	ug/L	234	Standard
	Ni	60	57578.9	1.0	**30.2025**	0.274	0.9	ug/L	215	Standard
	Cu	65	3787.5	1.8	**1.9028**	0.007	0.4	ug/L	104	Standard
	Zn	66	29686.7	1.5	**26.3448**	0.262	1.0	ug/L	363	Standard
>	**Ge**	72	502153.4	1.7				ug/L	495142	Standard
	As	75	1552.5	5.8	**1.4257**	0.058	4.0	ug/L	-50	Standard
	Se	82	328.6	4.9	**2.8136**	0.101	3.6	ug/L	14	Standard
	Se-1	77	866.0	3.6	**11.0672**	0.235	2.1	ug/L	42	Standard
>	**Ga**	71	2006.8	3.5				mg/L	42	Standard
	Rb	85	28431.7	2.8				ug/L	17	Standard
	Y	89	467809.8	1.5				ug/L	417098	Standard
>	**Rh**	103	28.3	36.7				ug/L	13	Standard
	Mo	98	2788.7	2.4	**1.0189**	0.018	1.8	ug/L	11	Standard
	Ag	107	187.0	8.5	**0.0152**	0.002	14.7	ug/L	68	Standard
	Cd	111	184.5	8.6	**0.0785**	0.007	8.5	mg/L	2	Standard
	Cd	114	502.9	12.6	**0.0940**	0.013	13.9	ug/L	12	Standard
>	**In**	115	599816.0	1.2				ug/L	587441	Standard
	Sn	118	1385.1	2.5	**0.1375**	0.003	2.2	ug/L	497	Standard
	Sb	123	315.5	7.5	**0.0620**	0.005	7.5	ug/L	78	Standard
	Ba	135	37805.8	2.1	**18.0728**	0.162	0.9	ug/L	24	Standard
	Ce	140	83749.2	1.1				ug/L	25	Standard
>	**Tb**	159	971524.4	1.2				ug/L	939701	Standard
	Ho	165	1393.4	2.1				ug/L	10	Standard
	Tl	203	289.7	7.1	**0.0339**	0.002	6.5	ug/L	4	Standard
	Tl	205	258.3	11.0	**0.0368**	0.004	11.7	ug/L	2	Standard
	Pb	206	3853.2	1.2	**0.6604**	0.004	0.6	ug/L	240	Standard
	Pb	207	3010.0	1.5	**0.5732**	0.009	1.6	ug/L	198	Standard
	Pb	208	13337.3	2.3	**0.6473**	0.013	1.9	ug/L	883	Standard
	U	238	859.0	4.4	**0.1221**	0.005	4.0	ug/L	3	Standard
>	**Bi**	209	516635.2	0.9				ug/L	523984	Standard

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Na	23	1.7	173.2	**16.3563**	28.321	173.2	mg/L	0	Standard
Mg	24	103702.1	2.0	**114.5988**	3.552	3.1	mg/L	37	Standard
K	39	251.7	12.0	**0.3627**	0.062	17.2	mg/L	38	Standard
Ca	43	61.7	26.1	**0.8208**	0.922	112.4	mg/L	10	Standard
Fe	54	1412.4	2.3	**0.8871**	0.015	1.7	mg/L	179	Standard
Fe	57	645.0	2.8	**0.8030**	0.026	3.3	mg/L	335	Standard
> **Sc-1**	45	71265.6	1.4				mg/L	61029	Standard
Cl	35	28407.3	0.4				ug/L	20195	Standard
Kr	83	1.7	34.6				ug/L	4	Standard
Br	81	49253.3	3.6				ug/L	1547	Standard
P	31	41409.9	2.5				ug/L	15286	Standard
S	34	2068.5	4.4				ug/L	1572	Standard
Sr	88	155.0	22.6				ug/L	73	Standard
C	12	133.3	34.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	57.3				mg/L	3	Standard
Dy	164	2353.9	2.8				mg/L	6	Standard
Ho-1	165	1393.4	2.1				mg/L	10	Standard
Er	166	1453.4	9.2				mg/L	13	Standard
I	127	3067238.7	11.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.978	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.416	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.107	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.597	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606102607
Sample Date/Time: Wednesday, June 29, 2016 15:00:54
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86025.2	1.8				ug/L	74699	Standard
	Be	9	83.3	29.6	**0.0901**	0.026	28.3	ug/L	8	Standard
	Al	27	3430436.9	1.2	**20.2582**	0.272	1.3	ug/L	1493	Standard
	Sc	45	67818.2	2.7				ug/L	61029	Standard
	Ti	47	2650.2	2.1	**6.1960**	0.095	1.5	ug/L	35	Standard
	V	51	9706.1	1.4	**0.9634**	0.025	2.6	ug/L	1435	Standard
	Cr	52	14237.0	2.0	**0.7086**	0.035	4.9	ug/L	7635	Standard
	Cr	53	2521.9	11.8	**2.1295**	0.275	12.9	ug/L	363	Standard
	Mn	55	50752.2	3.1	**6.4246**	0.167	2.6	ug/L	747	Standard
	Co	59	8541.7	4.1	**1.1290**	0.040	3.6	ug/L	234	Standard
	Ni	60	2905.6	5.8	**1.2753**	0.074	5.8	ug/L	215	Standard
	Cu	65	1384.7	3.1	**0.5672**	0.017	3.0	ug/L	104	Standard
	Zn	66	5145.2	1.6	**3.7928**	0.039	1.0	ug/L	363	Standard
>	**Ge**	72	549096.7	0.7				ug/L	495142	Standard
	As	75	307.3	24.2	**0.3069**	0.059	19.1	ug/L	-50	Standard
	Se	82	131.2	8.7	**0.9395**	0.088	9.3	ug/L	14	Standard
	Se-1	77	177.7	11.5	**1.5705**	0.241	15.4	ug/L	42	Standard
>	**Ga**	71	765.0	18.4				mg/L	42	Standard
	Rb	85	11574.4	1.2				ug/L	17	Standard
	Y	89	476523.2	1.2				ug/L	417098	Standard
>	**Rh**	103	40.0	54.5				ug/L	13	Standard
	Mo	98	552.0	3.2	**0.1876**	0.008	4.1	ug/L	11	Standard
	Ag	107	103.3	5.6	**0.0019**	0.001	51.8	ug/L	68	Standard
	Cd	111	131.7	9.5	**0.0509**	0.006	12.0	mg/L	2	Standard
	Cd	114	303.7	9.9	**0.0531**	0.005	10.1	ug/L	12	Standard
>	**In**	115	629575.3	1.6				ug/L	587441	Standard
	Sn	118	1851.8	1.5	**0.2011**	0.002	0.9	ug/L	497	Standard
	Sb	123	475.2	2.5	**0.0908**	0.004	4.2	ug/L	78	Standard
	Ba	135	119108.2	2.3	**54.2912**	1.481	2.7	ug/L	24	Standard
	Ce	140	65755.7	1.8				ug/L	25	Standard
>	**Tb**	159	1004571.7	2.5				ug/L	939701	Standard
	Ho	165	1471.7	8.7				ug/L	10	Standard
	Tl	203	123.3	5.2	**0.0121**	0.001	4.7	ug/L	4	Standard
	Tl	205	98.3	10.6	**0.0129**	0.002	11.8	ug/L	2	Standard
	Pb	206	2854.9	1.5	**0.4229**	0.014	3.4	ug/L	240	Standard
	Pb	207	2325.8	2.5	**0.3831**	0.018	4.6	ug/L	198	Standard
	Pb	208	9906.6	0.9	**0.4144**	0.011	2.7	ug/L	883	Standard
	U	238	660.3	1.2	**0.0843**	0.002	2.3	ug/L	3	Standard
>	**Bi**	209	566874.3	1.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	9059.4	5.1	**10.4668**	0.674	6.4	mg/L	37	Standard
K	39	175.0	7.6	**0.2337**	0.017	7.4	mg/L	38	Standard
Ca	43	76.7	10.0	**1.8315**	0.359	19.6	mg/L	10	Standard
Fe	54	778.8	6.8	**0.4564**	0.046	10.1	mg/L	179	Standard
Fe	57	450.0	7.8	**0.3039**	0.129	42.4	mg/L	335	Standard
> **Sc-1**	45	67818.2	2.7				mg/L	61029	Standard
Cl	35	27265.2	1.0				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	4797.4	2.1				ug/L	1547	Standard
P	31	22328.1	2.9				ug/L	15286	Standard
S	34	1868.4	11.0				ug/L	1572	Standard
Sr	88	170.0	23.0				ug/L	73	Standard
C	12	116.7	4.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	2276.8	3.2				mg/L	6	Standard
Ho-1	165	1471.7	8.7				mg/L	10	Standard
Er	166	1323.4	4.9				mg/L	13	Standard
I	127	142556.3	31.5				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		115.163	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		110.897	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.172
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.185
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 15:04:07
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83434.4	4.1				ug/L	74699	Standard
	Be	9	52151.3	1.6	**53.0799**	1.438	2.7	ug/L	8	Standard
	Al	27	8001829.5	1.2	**48.7762**	1.563	3.2	ug/L	1493	Standard
	Sc	45	63472.7	2.1				ug/L	61029	Standard
	Ti	47	41544.5	0.5	**100.8598**	1.507	1.5	ug/L	35	Standard
	V	51	430823.0	0.6	**52.3478**	0.567	1.1	ug/L	1435	Standard
	Cr	52	414183.8	1.0	**50.4520**	0.020	0.0	ug/L	7635	Standard
	Cr	53	51435.5	2.1	**50.9262**	0.597	1.2	ug/L	363	Standard
	Mn	55	402509.0	2.2	**53.1108**	1.647	3.1	ug/L	747	Standard
	Co	59	395807.1	0.7	**55.1753**	0.902	1.6	ug/L	234	Standard
	Ni	60	102515.7	1.1	**50.3079**	0.215	0.4	ug/L	215	Standard
	Cu	65	102297.5	1.1	**50.5232**	0.685	1.4	ug/L	104	Standard
	Zn	66	61288.7	1.4	**51.2272**	0.860	1.7	ug/L	363	Standard
>	Ge	72	537577.7	1.0				ug/L	495142	Standard
	As	75	61234.0	0.5	**50.4168**	0.738	1.5	ug/L	-50	Standard
	Se	82	6132.0	1.1	**51.3300**	1.089	2.1	ug/L	14	Standard
	Se-1	77	4299.6	0.9	**53.6055**	0.977	1.8	ug/L	42	Standard
>	Ga	71	78.3	42.5				mg/L	42	Standard
	Rb	85	866.7	7.4				ug/L	17	Standard
	Y	89	460058.1	1.7				ug/L	417098	Standard
>	Rh	103	33.3	31.2				ug/L	13	Standard
	Mo	98	295506.5	0.5	**103.9241**	2.114	2.0	ug/L	11	Standard
	Ag	107	348188.0	0.5	**50.0657**	0.748	1.5	ug/L	68	Standard
	Cd	111	111062.0	1.3	**49.7777**	0.346	0.7	mg/L	2	Standard
	Cd	114	271614.5	0.9	**49.6432**	0.990	2.0	ug/L	12	Standard
>	In	115	626816.0	1.9				ug/L	587441	Standard
	Sn	118	313548.1	1.3	**50.2246**	1.384	2.8	ug/L	497	Standard
	Sb	123	246409.0	0.1	**49.4692**	0.867	1.8	ug/L	78	Standard
	Ba	135	105775.6	0.8	**48.4328**	1.255	2.6	ug/L	24	Standard
	Ce	140	66.7	48.8				ug/L	25	Standard
>	Tb	159	996778.4	1.8				ug/L	939701	Standard
	Ho	165	16.7	34.6				ug/L	10	Standard
	Tl	203	442598.6	0.7	**50.9461**	0.764	1.5	ug/L	4	Standard
	Tl	205	402531.2	1.7	**53.3816**	0.705	1.3	ug/L	2	Standard
	Pb	206	287928.0	0.2	**51.0713**	0.393	0.8	ug/L	240	Standard
	Pb	207	257921.1	0.2	**51.4941**	0.566	1.1	ug/L	198	Standard
	Pb	208	1040092.9	0.4	**52.5571**	0.545	1.0	ug/L	883	Standard
	U	238	381264.5	1.2	**52.5495**	0.479	0.9	ug/L	3	Standard
>	Bi	209	552262.9	0.9				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4305.6	5.5	**5.2771**	0.213	4.0	mg/L	37	Standard
K	39	2275.2	2.4	**4.7239**	0.217	4.6	mg/L	38	Standard
Ca	43	126.7	42.6	**5.1579**	3.228	62.6	mg/L	10	Standard
Fe	54	6415.2	4.5	**5.0956**	0.328	6.4	mg/L	179	Standard
Fe	57	1851.8	4.1	**4.9827**	0.373	7.5	mg/L	335	Standard
> **Sc-1**	45	63472.7	2.1				mg/L	61029	Standard
Cl	35	28119.4	1.3				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	2310.2	13.5				ug/L	1547	Standard
P	31	19991.5	1.1				ug/L	15286	Standard
S	34	2273.5	5.1				ug/L	1572	Standard
Sr	88	71.7	10.7				ug/L	73	Standard
C	12	66.7	8.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	8.6	116.8				mg/L	6	Standard
Ho-1	165	16.7	34.6				mg/L	10	Standard
Er	166	30.0	0.0				mg/L	13	Standard
I	127	25116.6	23.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	106.160		
Al	27	97.552		
Sc	45			
Ti	47	100.860		
V	51	104.696		
Cr	52	100.904		
Cr	53			
Mn	55	106.222		
Co	59	110.351		
Ni	60	100.616		
Cu	65	101.046		
Zn	66	102.454		
> Ge	72		108.570	
As	75	100.834		
Se	82	102.660		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	103.924		
Ag	107	100.131		
Cd	111	99.555		
Cd	114			
In	115		106.703	
Sn	118	100.449		
Sb	123	98.938		
Ba	135	96.866		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.892		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.114		
U	238	105.099		
Bi	209		105.397	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Co	59	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 15:07:18
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85012.9	2.0				ug/L	74699	Standard
	Be	9	28.3	27.0	**0.0359**	0.008	21.1	ug/L	8	Standard
	Al	27	3885.6	39.7	**0.0100**	0.010	97.9	ug/L	1493	Standard
	Sc	45	66216.1	1.0				ug/L	61029	Standard
	Ti	47	42.3	11.2	**-0.0066**	0.011	167.9	ug/L	35	Standard
	V	51	1610.8	4.5	**0.0001**	0.010	18188.0	ug/L	1435	Standard
	Cr	52	7733.0	4.2	**-0.0667**	0.042	62.7	ug/L	7635	Standard
	Cr	53	656.7	7.6	**0.3218**	0.049	15.4	ug/L	363	Standard
	Mn	55	934.4	2.8	**-0.0250**	0.004	15.9	ug/L	747	Standard
	Co	59	270.3	16.3	**0.0003**	0.006	2278.1	ug/L	234	Standard
	Ni	60	353.0	46.0	**0.0492**	0.080	162.9	ug/L	215	Standard
	Cu	65	160.7	5.6	**-0.0245**	0.004	18.2	ug/L	104	Standard
	Zn	66	427.3	1.4	**-0.0957**	0.006	6.2	ug/L	363	Standard
>	**Ge**	72	539852.0	0.5				ug/L	495142	Standard
	As	75	-35.2	72.3	**0.0308**	0.021	67.1	ug/L	-50	Standard
	Se	82	23.4	13.4	**0.0577**	0.027	47.1	ug/L	14	Standard
	Se-1	77	65.0	15.6	**0.1944**	0.131	67.4	ug/L	42	Standard
>	**Ga**	71	48.3	15.8				mg/L	42	Standard
	Rb	85	13.3	21.7				ug/L	17	Standard
	Y	89	460334.1	1.4				ug/L	417098	Standard
>	**Rh**	103	15.0	57.7				ug/L	13	Standard
	Mo	98	325.6	30.7	**0.1063**	0.035	33.0	ug/L	11	Standard
	Ag	107	121.0	14.9	**0.0041**	0.003	62.9	ug/L	68	Standard
	Cd	111	13.2	31.2	**-0.0021**	0.002	85.0	mg/L	2	Standard
	Cd	114	51.9	43.2	**0.0072**	0.004	56.5	ug/L	12	Standard
>	**In**	115	641477.2	0.6				ug/L	587441	Standard
	Sn	118	860.0	23.5	**0.0400**	0.031	77.0	ug/L	497	Standard
	Sb	123	396.3	20.9	**0.0735**	0.016	21.4	ug/L	78	Standard
	Ba	135	45.3	20.4	**0.0043**	0.004	99.1	ug/L	24	Standard
	Ce	140	36.7	15.7				ug/L	25	Standard
>	**Tb**	159	1015779.3	0.6				ug/L	939701	Standard
	Ho	165	5.0	100.0				ug/L	10	Standard
	Tl	203	76.0	35.5	**0.0066**	0.003	43.8	ug/L	4	Standard
	Tl	205	63.3	18.2	**0.0082**	0.001	17.5	ug/L	2	Standard
	Pb	206	309.7	4.7	**-0.0185**	0.002	12.2	ug/L	240	Standard
	Pb	207	263.0	6.6	**-0.0197**	0.003	14.7	ug/L	198	Standard
	Pb	208	1081.0	8.8	**-0.0217**	0.004	19.1	ug/L	883	Standard
	U	238	55.3	39.0	**0.0029**	0.003	97.3	ug/L	3	Standard
>	**Bi**	209	576716.4	0.8				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.8612**	30.928	173.2	mg/L	0	Standard
Mg	24	48.3	39.2	**-0.0075**	0.023	309.1	mg/L	37	Standard
K	39	65.0	38.5	**0.0181**	0.050	275.9	mg/L	38	Standard
Ca	43	31.7	9.1	**-0.6795**	0.172	25.4	mg/L	10	Standard
Fe	54	165.7	15.0	**-0.0089**	0.019	210.6	mg/L	179	Standard
Fe	57	258.3	12.9	**-0.2654**	0.099	37.5	mg/L	335	Standard
Sc-1	45	66216.1	1.0				mg/L	61029	Standard
Cl	35	27856.9	0.3				ug/L	20195	Standard
Kr	83	4.0	43.3				ug/L	4	Standard
Br	81	1983.5	3.1				ug/L	1547	Standard
P	31	20308.6	3.1				ug/L	15286	Standard
S	34	2271.8	3.7				ug/L	1572	Standard
Sr	88	51.7	22.3				ug/L	73	Standard
C	12	73.3	34.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	20.0	86.6				mg/L	6	Standard
Ho-1	165	5.0	100.0				mg/L	10	Standard
Er	166	0.0					mg/L	13	Standard
I	127	13137.4	11.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		109.030	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.199
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.064
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBS M5 WG573099-02
Sample Date/Time: Wednesday, June 29, 2016 15:10:32
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82837.5	1.4				ug/L	74699	Standard
	Be	9	20.0	75.0	**0.0280**	0.015	53.9	ug/L	8	Standard
	Al	27	15988.5	12.5	**0.0848**	0.014	16.0	ug/L	1493	Standard
	Sc	45	64671.1	2.4				ug/L	61029	Standard
	Ti	47	45.0	20.0	**-0.0015**	0.023	1562.0	ug/L	35	Standard
	V	51	1647.0	1.8	**0.0017**	0.004	236.7	ug/L	1435	Standard
	Cr	52	11218.5	4.3	**0.3456**	0.052	15.0	ug/L	7635	Standard
	Cr	53	1063.4	5.0	**0.7116**	0.068	9.6	ug/L	363	Standard
	Mn	55	1756.1	5.1	**0.0801**	0.011	14.2	ug/L	747	Standard
	Co	59	312.3	6.3	**0.0055**	0.003	48.1	ug/L	234	Standard
	Ni	60	1377.4	15.3	**0.5415**	0.099	18.4	ug/L	215	Standard
	Cu	65	261.7	8.1	**0.0235**	0.011	45.2	ug/L	104	Standard
	Zn	66	1613.1	3.7	**0.8814**	0.040	4.6	ug/L	363	Standard
>	**Ge**	72	547319.5	1.5				ug/L	495142	Standard
	As	75	-42.5	100.6	**0.0255**	0.034	133.0	ug/L	-50	Standard
	Se	82	18.0	18.7	**0.0100**	0.027	272.2	ug/L	14	Standard
	Se-1	77	65.0	16.6	**0.1841**	0.145	78.6	ug/L	42	Standard
>	**Ga**	71	66.7	22.9				mg/L	42	Standard
	Rb	85	36.7	56.8				ug/L	17	Standard
	Y	89	450480.7	0.9				ug/L	417098	Standard
>	**Rh**	103	26.7	10.8				ug/L	13	Standard
	Mo	98	139.4	1.7	**0.0435**	0.001	2.2	ug/L	11	Standard
	Ag	107	102.7	18.1	**0.0019**	0.003	140.0	ug/L	68	Standard
	Cd	111	13.1	71.9	**-0.0020**	0.004	209.6	mg/L	2	Standard
	Cd	114	24.5	136.0	**0.0024**	0.006	256.9	ug/L	12	Standard
>	**In**	115	624818.4	0.5				ug/L	587441	Standard
	Sn	118	765.0	2.8	**0.0284**	0.003	12.0	ug/L	497	Standard
	Sb	123	189.1	20.4	**0.0339**	0.008	23.4	ug/L	78	Standard
	Ba	135	83.0	7.9	**0.0221**	0.003	14.0	ug/L	24	Standard
	Ce	140	301.7	18.8				ug/L	25	Standard
>	**Tb**	159	992078.8	0.6				ug/L	939701	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	40.0	57.5	**0.0027**	0.003	94.2	ug/L	4	Standard
	Tl	205	43.3	29.0	**0.0058**	0.002	28.5	ug/L	2	Standard
	Pb	206	319.7	11.1	**-0.0160**	0.006	36.6	ug/L	240	Standard
	Pb	207	262.0	4.6	**-0.0191**	0.002	12.7	ug/L	198	Standard
	Pb	208	1094.7	2.8	**-0.0202**	0.002	8.1	ug/L	883	Standard
	U	238	22.0	58.0	**-0.0015**	0.002	114.9	ug/L	3	Standard
>	**Bi**	209	568214.1	0.6				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	43.3	17.6	**-0.0124**	0.008	67.7	mg/L	37	Standard
K	39	35.0	51.5	**-0.0416**	0.036	86.5	mg/L	38	Standard
Ca	43	30.0	28.9	**-0.7286**	0.543	74.5	mg/L	10	Standard
Fe	54	174.1	18.8	**0.0014**	0.029	2030.6	mg/L	179	Standard
Fe	57	266.7	22.0	**-0.2161**	0.204	94.4	mg/L	335	Standard
> **Sc-1**	45	64671.1	2.4				mg/L	61029	Standard
Cl	35	28617.0	1.0				ug/L	20195	Standard
Kr	83	2.0	100.0				ug/L	4	Standard
Br	81	1953.5	6.4				ug/L	1547	Standard
P	31	19132.1	3.4				ug/L	15286	Standard
S	34	2278.5	6.0				ug/L	1572	Standard
Sr	88	68.3	29.6				ug/L	73	Standard
C	12	83.3	13.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	15.5	39.0				mg/L	6	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	23.3	49.5				mg/L	13	Standard
I	127	8569.1	14.4				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		110.895	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		110.538	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.363
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.441
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSS M5 WG573099-03
Sample Date/Time: Wednesday, June 29, 2016 15:13:43
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83551.5	2.3				ug/L	74699	Standard
	Be	9	25751.9	2.9	**26.1593**	0.514	2.0	ug/L	8	Standard
	Al	27	17496.8	6.9	**0.0930**	0.006	6.2	ug/L	1493	Standard
	Sc	45	66115.6	1.8				ug/L	61029	Standard
	Ti	47	52.7	14.3	**0.0175**	0.016	92.6	ug/L	35	Standard
	V	51	220707.2	1.1	**26.4464**	0.390	1.5	ug/L	1435	Standard
	Cr	52	221818.0	0.7	**26.2660**	0.546	2.1	ug/L	7635	Standard
	Cr	53	27359.7	0.9	**26.6591**	0.406	1.5	ug/L	363	Standard
	Mn	55	204818.9	1.5	**26.6717**	0.451	1.7	ug/L	747	Standard
	Co	59	196776.0	1.4	**27.1279**	0.304	1.1	ug/L	234	Standard
	Ni	60	55651.4	0.4	**26.9765**	0.492	1.8	ug/L	215	Standard
	Cu	65	54836.4	0.8	**26.7594**	0.556	2.1	ug/L	104	Standard
	Zn	66	32934.1	1.1	**27.0387**	0.809	3.0	ug/L	363	Standard
>	**Ge**	72	543210.6	2.2				ug/L	495142	Standard
	As	75	31720.5	1.5	**25.8765**	0.351	1.4	ug/L	-50	Standard
	Se	82	3103.9	1.9	**25.6428**	0.383	1.5	ug/L	14	Standard
	Se-1	77	2231.2	2.7	**27.2211**	0.278	1.0	ug/L	42	Standard
>	**Ga**	71	55.0	47.2				mg/L	42	Standard
	Rb	85	35.0	42.9				ug/L	17	Standard
	Y	89	467716.3	0.8				ug/L	417098	Standard
>	**Rh**	103	13.3	43.3				ug/L	13	Standard
	Mo	98	194.8	10.9	**0.0603**	0.008	12.8	ug/L	11	Standard
	Ag	107	10349.2	1.8	**1.4201**	0.038	2.7	ug/L	68	Standard
	Cd	111	56717.0	1.5	**24.4699**	0.504	2.1	mg/L	2	Standard
	Cd	114	136634.8	1.7	**24.0382**	0.506	2.1	ug/L	12	Standard
>	**In**	115	651063.9	0.8				ug/L	587441	Standard
	Sn	118	761.7	5.5	**0.0229**	0.007	28.6	ug/L	497	Standard
	Sb	123	128047.0	1.0	**24.7441**	0.436	1.8	ug/L	78	Standard
	Ba	135	54350.3	0.9	**23.9455**	0.395	1.6	ug/L	24	Standard
	Ce	140	61.7	26.1				ug/L	25	Standard
>	**Tb**	159	1033159.0	0.5				ug/L	939701	Standard
	Ho	165	16.7	17.3				ug/L	10	Standard
	Tl	203	227266.1	0.5	**24.7175**	0.218	0.9	ug/L	4	Standard
	Tl	205	203485.9	1.6	**25.5015**	0.511	2.0	ug/L	2	Standard
	Pb	206	152382.5	0.6	**25.5050**	0.255	1.0	ug/L	240	Standard
	Pb	207	130131.8	0.7	**24.5130**	0.243	1.0	ug/L	198	Standard
	Pb	208	530327.1	0.9	**25.2835**	0.262	1.0	ug/L	883	Standard
	U	238	189200.1	1.2	**24.6397**	0.334	1.4	ug/L	3	Standard
>	**Bi**	209	584433.1	0.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	41.7	36.7	**-0.0156**	0.017	112.1	mg/L	37	Standard
K	39	38.3	52.7	**-0.0354**	0.042	119.1	mg/L	38	Standard
Ca	43	25.0	52.9	**-1.0705**	0.758	70.8	mg/L	10	Standard
Fe	54	141.4	21.3	**-0.0274**	0.025	92.5	mg/L	179	Standard
Fe	57	241.7	15.7	**-0.3151**	0.126	40.1	mg/L	335	Standard
Sc-1	45	66115.6	1.8				mg/L	61029	Standard
Cl	35	28385.2	0.6				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	2056.8	1.5				ug/L	1547	Standard
P	31	18911.8	2.1				ug/L	15286	Standard
S	34	2256.8	4.9				ug/L	1572	Standard
Sr	88	70.0	39.8				ug/L	73	Standard
C	12	60.0	66.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	9.5	5.0				mg/L	6	Standard
Ho-1	165	16.7	17.3				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	6019.5	14.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		111.851	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		109.708	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.831
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		111.536
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606088803 WG573099-01
Sample Date/Time: Wednesday, June 29, 2016 15:16:55
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	87864.2	2.8				ug/L	74699	Standard
	Be	9	1871.8	7.3	**1.8142**	0.100	5.5	ug/L	8	Standard
	Al	27	17464438.5	2.2	**101.0382**	1.686	1.7	ug/L	1493	Standard
	Sc	45	88916.8	1.0				ug/L	61029	Standard
	Ti	47	8105.2	1.6	**20.2503**	0.364	1.8	ug/L	35	Standard
	V	51	266665.9	0.8	**33.4185**	0.188	0.6	ug/L	1435	Standard
	Cr	52	308197.4	0.8	**38.5684**	0.415	1.1	ug/L	7635	Standard
	Cr	53	37658.4	2.2	**38.4602**	0.742	1.9	ug/L	363	Standard
	Mn	55	19789542.3	0.8	**2705.9402**	31.717	1.2	ug/L	747	Standard
	Co	59	276278.5	0.6	**39.7944**	0.401	1.0	ug/L	234	Standard
	Ni	60	160372.4	1.4	**81.4241**	1.275	1.6	ug/L	215	Standard
	Cu	65	107769.0	1.4	**55.0229**	0.902	1.6	ug/L	104	Standard
	Zn	66	213527.8	0.7	**185.6475**	1.406	0.8	ug/L	363	Standard
>	**Ge**	72	520092.2	0.4				ug/L	495142	Standard
	As	75	6170.4	1.0	**5.3042**	0.070	1.3	ug/L	-50	Standard
	Se	82	90.8	2.7	**0.6494**	0.023	3.5	ug/L	14	Standard
	Se-1	77	157.7	4.9	**1.4330**	0.106	7.4	ug/L	42	Standard
>	**Ga**	71	47343.9	1.1				mg/L	42	Standard
	Rb	85	380728.2	1.5				ug/L	17	Standard
	Y	89	1106618.3	0.2				ug/L	417098	Standard
>	**Rh**	103	63.3	24.1				ug/L	13	Standard
	Mo	98	980.4	3.2	**0.3366**	0.010	3.0	ug/L	11	Standard
	Ag	107	955.0	6.8	**0.1236**	0.011	9.1	ug/L	68	Standard
	Cd	111	2225.7	2.0	**0.9829**	0.017	1.8	mg/L	2	Standard
	Cd	114	5479.9	1.8	**0.9924**	0.001	0.1	ug/L	12	Standard
>	**In**	115	631161.9	1.7				ug/L	587441	Standard
	Sn	118	413.3	14.8	**-0.0289**	0.009	31.0	ug/L	497	Standard
	Sb	123	370.7	34.4	**0.0695**	0.025	35.4	ug/L	78	Standard
	Ba	135	385428.4	1.0	**175.2729**	2.367	1.4	ug/L	24	Standard
	Ce	140	2007459.4	3.6				ug/L	25	Standard
>	**Tb**	159	1048778.2	1.5				ug/L	939701	Standard
	Ho	165	53168.1	1.9				ug/L	10	Standard
	Tl	203	2332.8	1.5	**0.2668**	0.007	2.6	ug/L	4	Standard
	Tl	205	2056.8	1.1	**0.2730**	0.001	0.5	ug/L	2	Standard
	Pb	206	102474.4	0.3	**18.1326**	0.189	1.0	ug/L	240	Standard
	Pb	207	82544.6	1.5	**16.4326**	0.141	0.9	ug/L	198	Standard
	Pb	208	353310.3	0.4	**17.8060**	0.180	1.0	ug/L	883	Standard
	U	238	9355.9	0.7	**1.2854**	0.017	1.3	ug/L	3	Standard
>	**Bi**	209	552227.6	1.4				ug/L	523984	Standard

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Na	23	1.7	173.2	**13.3403**	23.097	173.1	mg/L	0	Standard
Mg	24	320.0	5.6	**0.2185**	0.016	7.5	mg/L	37	Standard
K	39	1080.0	10.5	**1.5233**	0.156	10.2	mg/L	38	Standard
Ca	43	916.7	12.0	**37.2112**	4.625	12.4	mg/L	10	Standard
Fe	54	75887.5	2.1	**44.0256**	1.050	2.4	mg/L	179	Standard
Fe	57	19502.5	1.2	**44.4256**	0.652	1.5	mg/L	335	Standard
> **Sc-1**	45	88916.8	1.0				mg/L	61029	Standard
Cl	35	27513.6	0.5				ug/L	20195	Standard
Kr	83	0.3	173.2				ug/L	4	Standard
Br	81	3467.1	2.9				ug/L	1547	Standard
P	31	21865.8	2.4				ug/L	15286	Standard
S	34	2631.9	4.0				ug/L	1572	Standard
Sr	88	220.0	6.0				ug/L	73	Standard
C	12	66.7	37.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	15.7				mg/L	3	Standard
Dy	164	86599.4	2.5				mg/L	6	Standard
Ho-1	165	53168.1	1.9				mg/L	10	Standard
Er	166	47260.3	0.7				mg/L	13	Standard
I	127	6809.9	9.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.625	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.039	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.443
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.390
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606088803S WG573099-04
Sample Date/Time: Wednesday, June 29, 2016 15:20:06
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	88784.5	2.9				ug/L	74699	Standard
	Be	9	27508.3	0.4	**26.3080**	0.631	2.4	ug/L	8	Standard
	Al	27	20794150.5	3.6	**119.0173**	0.902	0.8	ug/L	1493	Standard
	Sc	45	96992.9	2.3				ug/L	61029	Standard
	Ti	47	11606.4	2.4	**28.2553**	0.997	3.5	ug/L	35	Standard
	V	51	594819.7	3.2	**72.7593**	3.186	4.4	ug/L	1435	Standard
	Cr	52	602098.1	1.8	**74.2282**	2.325	3.1	ug/L	7635	Standard
	Cr	53	74295.1	1.5	**74.1206**	1.783	2.4	ug/L	363	Standard
	Mn	55	28090211.5	1.2	**3736.5671**	85.696	2.3	ug/L	747	Standard
	Co	59	552502.8	1.4	**77.4533**	1.929	2.5	ug/L	234	Standard
	Ni	60	270132.5	1.6	**133.5117**	3.898	2.9	ug/L	215	Standard
	Cu	65	201432.2	2.2	**100.1412**	3.335	3.3	ug/L	104	Standard
	Zn	66	320182.0	2.8	**271.0655**	11.001	4.1	ug/L	363	Standard
>	Ge	72	534719.5	1.4				ug/L	495142	Standard
	As	75	41934.7	2.3	**34.7370**	1.197	3.4	ug/L	-50	Standard
	Se	82	2480.2	1.5	**20.7934**	0.607	2.9	ug/L	14	Standard
	Se-1	77	1799.1	2.3	**22.1951**	0.836	3.8	ug/L	42	Standard
>	Ga	71	63861.1	4.0				mg/L	42	Standard
	Rb	85	554637.9	1.8				ug/L	17	Standard
	Y	89	1250941.0	3.4				ug/L	417098	Standard
>	Rh	103	88.3	8.6				ug/L	13	Standard
	Mo	98	1454.1	4.8	**0.5217**	0.033	6.4	ug/L	11	Standard
	Ag	107	4814.4	4.1	**0.7006**	0.018	2.6	ug/L	68	Standard
	Cd	111	56224.0	1.3	**25.9728**	0.111	0.4	mg/L	2	Standard
	Cd	114	138439.7	3.6	**26.0717**	0.493	1.9	ug/L	12	Standard
>	In	115	608045.3	1.7				ug/L	587441	Standard
	Sn	118	518.3	2.0	**-0.0090**	0.001	16.4	ug/L	497	Standard
	Sb	123	2325.7	1.7	**0.4771**	0.008	1.7	ug/L	78	Standard
	Ba	135	587827.7	1.5	**277.4602**	0.795	0.3	ug/L	24	Standard
	Ce	140	2927642.8	0.6				ug/L	25	Standard
>	Tb	159	1033681.4	2.7				ug/L	939701	Standard
	Ho	165	68191.4	0.6				ug/L	10	Standard
	Tl	203	212892.3	0.8	**25.4932**	0.083	0.3	ug/L	4	Standard
	Tl	205	191048.7	1.2	**26.3598**	0.091	0.3	ug/L	2	Standard
	Pb	206	260602.6	2.5	**48.0843**	0.971	2.0	ug/L	240	Standard
	Pb	207	216580.3	1.8	**44.9759**	0.652	1.4	ug/L	198	Standard
	Pb	208	918219.8	1.2	**48.2652**	0.290	0.6	ug/L	883	Standard
	U	238	196774.7	2.4	**28.2131**	0.460	1.6	ug/L	3	Standard
>	Bi	209	530811.0	1.1				ug/L	523984	Standard

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Na	23	1.7	173.2	**12.2205**	21.158	173.1	mg/L	0	Standard
Mg	24	365.0	3.6	**0.2314**	0.007	3.2	mg/L	37	Standard
K	39	1516.7	5.6	**1.9963**	0.137	6.9	mg/L	38	Standard
Ca	43	726.7	5.8	**26.3770**	1.992	7.6	mg/L	10	Standard
Fe	54	108682.6	3.2	**57.8341**	0.799	1.4	mg/L	179	Standard
Fe	57	27718.7	1.4	**58.2169**	0.892	1.5	mg/L	335	Standard
Sc-1	45	96992.9	2.3				mg/L	61029	Standard
Cl	35	26216.7	4.4				ug/L	20195	Standard
Kr	83	3.0	33.3				ug/L	4	Standard
Br	81	4344.0	8.1				ug/L	1547	Standard
P	31	22273.0	3.2				ug/L	15286	Standard
S	34	2523.5	5.1				ug/L	1572	Standard
Sr	88	263.3	11.4				ug/L	73	Standard
C	12	56.7	10.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	52.9				mg/L	3	Standard
Dy	164	111985.6	3.7				mg/L	6	Standard
Ho-1	165	68191.4	0.6				mg/L	10	Standard
Er	166	57569.3	4.1				mg/L	13	Standard
I	127	6513.1	8.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.857	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.993	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.507
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.303
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	

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Cu 65 Upper, S, EEE	Cu	65
Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606088803SD WG573099-05
Sample Date/Time: Wednesday, June 29, 2016 15:23:18
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86779.6	2.9				ug/L	74699	Standard
	Be	9	26783.7	4.5	**26.1889**	0.607	2.3	ug/L	8	Standard
	Al	27	17495490.1	2.1	**102.4852**	1.702	1.7	ug/L	1493	Standard
	Sc	45	84971.1	3.4				ug/L	61029	Standard
	Ti	47	11032.7	2.5	**25.6633**	0.769	3.0	ug/L	35	Standard
	V	51	492228.0	0.7	**57.5050**	0.764	1.3	ug/L	1435	Standard
	Cr	52	556079.4	1.4	**65.4064**	1.154	1.8	ug/L	7635	Standard
	Cr	53	67044.7	1.2	**63.8916**	0.827	1.3	ug/L	363	Standard
	Mn	55	16288704.5	1.7	**2071.2097**	47.470	2.3	ug/L	747	Standard
	Co	59	487642.9	2.1	**65.3439**	1.764	2.7	ug/L	234	Standard
	Ni	60	230286.3	2.0	**108.7653**	2.155	2.0	ug/L	215	Standard
	Cu	65	186555.0	1.4	**88.6352**	1.512	1.7	ug/L	104	Standard
	Zn	66	269449.8	1.5	**217.9309**	3.745	1.7	ug/L	363	Standard
>	**Ge**	72	559301.6	0.7				ug/L	495142	Standard
	As	75	32569.4	2.0	**25.8033**	0.648	2.5	ug/L	-50	Standard
	Se	82	2764.3	2.2	**22.1623**	0.630	2.8	ug/L	14	Standard
	Se-1	77	1950.8	4.1	**23.0256**	1.042	4.5	ug/L	42	Standard
>	**Ga**	71	55862.8	2.2				mg/L	42	Standard
	Rb	85	472783.4	2.1				ug/L	17	Standard
	Y	89	931018.8	1.5				ug/L	417098	Standard
>	**Rh**	103	36.7	47.9				ug/L	13	Standard
	Mo	98	833.5	3.5	**0.3003**	0.015	5.0	ug/L	11	Standard
	Ag	107	3972.2	0.3	**0.5833**	0.011	1.9	ug/L	68	Standard
	Cd	111	54996.2	0.6	**25.7204**	0.316	1.2	mg/L	2	Standard
	Cd	114	133681.6	2.4	**25.4888**	0.206	0.8	ug/L	12	Standard
>	**In**	115	600647.8	1.6				ug/L	587441	Standard
	Sn	118	466.7	16.3	**-0.0167**	0.012	70.0	ug/L	497	Standard
	Sb	123	3387.1	2.7	**0.7053**	0.008	1.2	ug/L	78	Standard
	Ba	135	467382.4	1.0	**223.3343**	2.175	1.0	ug/L	24	Standard
	Ce	140	1516729.6	1.2				ug/L	25	Standard
>	**Tb**	159	1007426.2	2.1				ug/L	939701	Standard
	Ho	165	39640.1	1.9				ug/L	10	Standard
	Tl	203	211811.1	1.3	**24.5598**	0.357	1.5	ug/L	4	Standard
	Tl	205	187359.9	1.8	**25.0339**	0.597	2.4	ug/L	2	Standard
	Pb	206	219015.7	1.1	**39.1225**	0.790	2.0	ug/L	240	Standard
	Pb	207	182856.8	0.5	**36.7608**	0.679	1.8	ug/L	198	Standard
	Pb	208	768036.7	1.8	**39.0813**	0.960	2.5	ug/L	883	Standard
	U	238	187429.9	1.2	**26.0258**	0.546	2.1	ug/L	3	Standard
>	**Bi**	209	548237.3	1.8				ug/L	523984	Standard

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Na	23	6.7	43.3	**55.5842**	25.460	45.8	mg/L	0	Standard
Mg	24	348.3	15.5	**0.2571**	0.039	15.2	mg/L	37	Standard
K	39	1421.7	3.5	**2.1441**	0.098	4.5	mg/L	38	Standard
Ca	43	383.3	17.4	**14.9477**	3.560	23.8	mg/L	10	Standard
Fe	54	86673.1	2.4	**52.6645**	1.510	2.9	mg/L	179	Standard
Fe	57	21795.7	3.1	**52.2085**	3.369	6.5	mg/L	335	Standard
> **Sc-1**	45	84971.1	3.4				mg/L	61029	Standard
Cl	35	24892.4	3.3				ug/L	20195	Standard
Kr	83	2.3	65.5				ug/L	4	Standard
Br	81	3257.0	4.5				ug/L	1547	Standard
P	31	20836.0	2.5				ug/L	15286	Standard
S	34	2406.9	4.4				ug/L	1572	Standard
Sr	88	191.7	46.0				ug/L	73	Standard
C	12	76.7	15.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	20.0				mg/L	3	Standard
Dy	164	63526.1	1.7				mg/L	6	Standard
Ho-1	165	39640.1	1.9				mg/L	10	Standard
Er	166	35224.2	2.0				mg/L	13	Standard
I	127	5139.2	9.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.173	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		112.958	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.248
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.629
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	

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Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606088301
Sample Date/Time: Wednesday, June 29, 2016 15:26:29
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84384.4	1.7				ug/L	74699	Standard
	Be	9	1073.4	1.5	**1.0872**	0.032	3.0	ug/L	8	Standard
	Al	27	11940771.9	2.8	**71.9363**	2.792	3.9	ug/L	1493	Standard
	Sc	45	76626.6	1.2				ug/L	61029	Standard
	Ti	47	4374.3	2.0	**10.2834**	0.247	2.4	ug/L	35	Standard
	V	51	162703.8	1.0	**19.2014**	0.098	0.5	ug/L	1435	Standard
	Cr	52	132016.8	1.7	**15.0167**	0.347	2.3	ug/L	7635	Standard
	Cr	53	16153.6	0.8	**15.4073**	0.063	0.4	ug/L	363	Standard
	Mn	55	3262876.5	0.6	**421.8414**	5.005	1.2	ug/L	747	Standard
	Co	59	67832.8	0.7	**9.2120**	0.089	1.0	ug/L	234	Standard
	Ni	60	42623.2	1.3	**20.3743**	0.274	1.3	ug/L	215	Standard
	Cu	65	31205.8	0.3	**14.9935**	0.149	1.0	ug/L	104	Standard
	Zn	66	53134.7	1.9	**43.3429**	0.711	1.6	ug/L	363	Standard
>	**Ge**	72	549915.9	0.8				ug/L	495142	Standard
	As	75	3335.6	3.0	**2.7409**	0.080	2.9	ug/L	-50	Standard
	Se	82	46.6	19.0	**0.2449**	0.076	30.9	ug/L	14	Standard
	Se-1	77	111.7	5.1	**0.7542**	0.066	8.8	ug/L	42	Standard
>	**Ga**	71	17852.2	2.1				mg/L	42	Standard
	Rb	85	173572.1	2.0				ug/L	17	Standard
	Y	89	703667.4	2.2				ug/L	417098	Standard
>	**Rh**	103	33.3	34.6				ug/L	13	Standard
	Mo	98	357.4	3.8	**0.1158**	0.007	6.2	ug/L	11	Standard
	Ag	107	550.0	6.6	**0.0636**	0.007	11.1	ug/L	68	Standard
	Cd	111	273.3	3.2	**0.1105**	0.006	5.2	mg/L	2	Standard
	Cd	114	617.1	4.0	**0.1069**	0.006	5.7	ug/L	12	Standard
>	**In**	115	648944.8	3.3				ug/L	587441	Standard
	Sn	118	606.7	6.6	**-0.0008**	0.003	418.3	ug/L	497	Standard
	Sb	123	137.4	14.1	**0.0224**	0.003	13.8	ug/L	78	Standard
	Ba	135	318337.1	2.2	**140.8176**	2.386	1.7	ug/L	24	Standard
	Ce	140	1211648.5	1.9				ug/L	25	Standard
>	**Tb**	159	1041543.0	2.5				ug/L	939701	Standard
	Ho	165	19666.1	3.2				ug/L	10	Standard
	Tl	203	1035.0	3.0	**0.1143**	0.004	3.7	ug/L	4	Standard
	Tl	205	953.4	8.0	**0.1233**	0.009	7.5	ug/L	2	Standard
	Pb	206	127279.7	1.1	**21.9443**	0.442	2.0	ug/L	240	Standard
	Pb	207	103046.6	1.5	**19.9907**	0.426	2.1	ug/L	198	Standard
	Pb	208	441148.5	1.4	**21.6612**	0.196	0.9	ug/L	883	Standard
	U	238	5034.2	0.5	**0.6713**	0.005	0.8	ug/L	3	Standard
>	**Bi**	209	567168.2	1.1				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	340.0	3.9	**0.2844**	0.011	3.7	mg/L	37	Standard
K	39	688.3	2.3	**1.0975**	0.019	1.8	mg/L	38	Standard
Ca	43	145.0	15.8	**4.7718**	1.160	24.3	mg/L	10	Standard
Fe	54	17324.9	3.4	**11.5598**	0.337	2.9	mg/L	179	Standard
Fe	57	4550.7	3.6	**11.2444**	0.399	3.5	mg/L	335	Standard
> **Sc-1**	45	76626.6	1.2				mg/L	61029	Standard
Cl	35	25558.2	1.3				ug/L	20195	Standard
Kr	83	0.7	173.2				ug/L	4	Standard
Br	81	2263.5	8.1				ug/L	1547	Standard
P	31	20323.6	0.9				ug/L	15286	Standard
S	34	2258.5	1.1				ug/L	1572	Standard
Sr	88	101.7	10.2				ug/L	73	Standard
C	12	116.7	13.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	49.5				mg/L	3	Standard
Dy	164	32996.6	2.0				mg/L	6	Standard
Ho-1	165	19666.1	3.2				mg/L	10	Standard
Er	166	17349.9	3.1				mg/L	13	Standard
I	127	11507.7	1.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.966	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.062	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	110.470
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	108.241
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606091201
Sample Date/Time: Wednesday, June 29, 2016 15:29:41
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84277.1	1.0				ug/L	74699	Standard
	Be	9	1593.4	6.0	**1.6114**	0.083	5.1	ug/L	8	Standard
	Al	27	15243679.1	1.9	**91.9299**	1.967	2.1	ug/L	1493	Standard
	Sc	45	83538.1	3.1				ug/L	61029	Standard
	Ti	47	10307.8	1.1	**23.4331**	0.360	1.5	ug/L	35	Standard
	V	51	410563.1	0.8	**46.8597**	0.438	0.9	ug/L	1435	Standard
	Cr	52	261972.4	0.3	**29.5747**	0.180	0.6	ug/L	7635	Standard
	Cr	53	32057.2	1.7	**29.6933**	0.417	1.4	ug/L	363	Standard
	Mn	55	12908980.1	3.2	**1604.9549**	58.354	3.6	ug/L	747	Standard
	Co	59	181241.6	3.1	**23.7226**	0.846	3.6	ug/L	234	Standard
	Ni	60	66685.8	0.9	**30.7063**	0.259	0.8	ug/L	215	Standard
	Cu	65	73374.2	0.7	**34.0220**	0.398	1.2	ug/L	104	Standard
	Zn	66	143517.2	0.9	**113.2755**	1.322	1.2	ug/L	363	Standard
>	**Ge**	72	572023.7	0.5				ug/L	495142	Standard
	As	75	16668.5	2.4	**12.9416**	0.353	2.7	ug/L	-50	Standard
	Se	82	187.7	6.4	**1.3421**	0.095	7.1	ug/L	14	Standard
	Se-1	77	232.0	7.5	**2.1278**	0.217	10.2	ug/L	42	Standard
>	**Ga**	71	37605.0	3.4				mg/L	42	Standard
	Rb	85	431124.7	1.0				ug/L	17	Standard
	Y	89	907846.1	0.7				ug/L	417098	Standard
>	**Rh**	103	28.3	27.0				ug/L	13	Standard
	Mo	98	1317.8	2.4	**0.4515**	0.009	1.9	ug/L	11	Standard
	Ag	107	1338.4	1.8	**0.1770**	0.004	2.5	ug/L	68	Standard
	Cd	111	803.3	6.8	**0.3473**	0.022	6.2	mg/L	2	Standard
	Cd	114	1888.8	7.2	**0.3384**	0.023	6.7	ug/L	12	Standard
>	**In**	115	635240.6	1.1				ug/L	587441	Standard
	Sn	118	608.3	2.5	**0.0016**	0.002	109.2	ug/L	497	Standard
	Sb	123	242.0	3.6	**0.0438**	0.002	4.9	ug/L	78	Standard
	Ba	135	645480.7	0.7	**291.6323**	1.817	0.6	ug/L	24	Standard
	Ce	140	2459220.7	0.8				ug/L	25	Standard
>	**Tb**	159	1043691.8	1.6				ug/L	939701	Standard
	Ho	165	34592.8	2.2				ug/L	10	Standard
	Tl	203	3164.7	1.5	**0.3540**	0.007	2.0	ug/L	4	Standard
	Tl	205	2843.6	5.4	**0.3684**	0.020	5.4	ug/L	2	Standard
	Pb	206	325793.2	0.7	**56.4391**	0.926	1.6	ug/L	240	Standard
	Pb	207	262124.0	0.3	**51.1005**	0.344	0.7	ug/L	198	Standard
	Pb	208	1122453.0	1.2	**55.3927**	1.161	2.1	ug/L	883	Standard
	U	238	18503.6	0.6	**2.4863**	0.037	1.5	ug/L	3	Standard
>	**Bi**	209	565563.6	0.9				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	148.3	19.2	**0.0751**	0.029	38.8	mg/L	37	Standard
K	39	1071.7	2.8	**1.6167**	0.038	2.4	mg/L	38	Standard
Ca	43	301.7	16.4	**11.4520**	2.661	23.2	mg/L	10	Standard
Fe	54	45977.7	1.1	**28.3556**	0.839	3.0	mg/L	179	Standard
Fe	57	11742.9	4.0	**28.0839**	0.746	2.7	mg/L	335	Standard
Sc-1	45	83538.1	3.1				mg/L	61029	Standard
Cl	35	25586.9	0.8				ug/L	20195	Standard
Kr	83	2.3	65.5				ug/L	4	Standard
Br	81	3940.5	1.8				ug/L	1547	Standard
P	31	20170.1	2.1				ug/L	15286	Standard
S	34	2405.2	3.2				ug/L	1572	Standard
Sr	88	111.7	6.8				ug/L	73	Standard
C	12	316.7	15.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	146.7	35.0				mg/L	3	Standard
Dy	164	57194.9	2.2				mg/L	6	Standard
Ho-1	165	34592.8	2.2				mg/L	10	Standard
Er	166	32892.3	1.1				mg/L	13	Standard
I	127	48256.8	4.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		112.823	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		115.527	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.137
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.935
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606091201PS WG573717-03
Sample Date/Time: Wednesday, June 29, 2016 15:32:52
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84925.7	1.3				ug/L	74699	Standard
	Be	9	54409.2	0.5	**54.3741**	0.919	1.7	ug/L	8	Standard
	Al	27	15619580.7	1.4	**93.4869**	2.147	2.3	ug/L	1493	Standard
	Sc	45	84914.0	2.3				ug/L	61029	Standard
	Ti	47	10489.6	2.4	**24.7035**	0.475	1.9	ug/L	35	Standard
	V	51	847646.1	0.7	**100.4344**	1.074	1.1	ug/L	1435	Standard
	Cr	52	696222.3	1.3	**83.2031**	0.580	0.7	ug/L	7635	Standard
	Cr	53	86425.9	2.6	**83.5032**	1.546	1.9	ug/L	363	Standard
	Mn	55	12964778.0	1.1	**1669.4256**	16.996	1.0	ug/L	747	Standard
	Co	59	568224.0	0.4	**77.1151**	0.744	1.0	ug/L	234	Standard
	Ni	60	176707.0	1.9	**84.4902**	0.918	1.1	ug/L	215	Standard
	Cu	65	181984.3	1.8	**87.5571**	0.864	1.0	ug/L	104	Standard
	Zn	66	208968.8	1.8	**171.0579**	1.957	1.1	ug/L	363	Standard
>	**Ge**	72	552256.5	0.8				ug/L	495142	Standard
	As	75	82371.4	1.6	**65.9929**	0.953	1.4	ug/L	-50	Standard
	Se	82	6597.3	1.6	**53.7542**	0.590	1.1	ug/L	14	Standard
	Se-1	77	4584.4	1.6	**55.6563**	1.034	1.9	ug/L	42	Standard
>	**Ga**	71	37593.3	1.5				mg/L	42	Standard
	Rb	85	428376.8	2.4				ug/L	17	Standard
	Y	89	890825.8	0.7				ug/L	417098	Standard
>	**Rh**	103	50.0	10.0				ug/L	13	Standard
	Mo	98	1335.6	2.9	**0.4503**	0.014	3.2	ug/L	11	Standard
	Ag	107	364007.1	1.3	**50.8126**	0.330	0.6	ug/L	68	Standard
	Cd	111	115695.5	1.2	**50.3468**	0.384	0.8	mg/L	2	Standard
	Cd	114	280904.1	1.9	**49.8365**	0.143	0.3	ug/L	12	Standard
>	**In**	115	645589.3	1.8				ug/L	587441	Standard
	Sn	118	755.0	4.3	**0.0229**	0.003	13.2	ug/L	497	Standard
	Sb	123	254065.1	1.3	**49.5173**	0.623	1.3	ug/L	78	Standard
	Ba	135	752068.0	1.2	**334.3566**	2.055	0.6	ug/L	24	Standard
	Ce	140	2468196.2	1.3				ug/L	25	Standard
>	**Tb**	159	1069312.5	1.3				ug/L	939701	Standard
	Ho	165	35102.3	1.1				ug/L	10	Standard
	Tl	203	458369.6	1.1	**50.4504**	0.349	0.7	ug/L	4	Standard
	Tl	205	409805.1	0.9	**51.9806**	1.259	2.4	ug/L	2	Standard
	Pb	206	619020.9	0.8	**105.0729**	1.076	1.0	ug/L	240	Standard
	Pb	207	511972.0	0.6	**97.8107**	1.381	1.4	ug/L	198	Standard
	Pb	208	2150459.1	0.4	**103.9876**	1.211	1.2	ug/L	883	Standard
	U	238	395808.0	0.4	**52.1735**	0.789	1.5	ug/L	3	Standard
>	**Bi**	209	577539.6	1.5				ug/L	523984	Standard

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Na	23	6.7	43.3	**54.9152**	22.487	40.9	mg/L	0	Standard
Mg	24	118.3	17.1	**0.0444**	0.016	36.3	mg/L	37	Standard
K	39	1026.7	7.6	**1.5167**	0.116	7.6	mg/L	38	Standard
Ca	43	296.7	14.3	**10.9789**	2.237	20.4	mg/L	10	Standard
Fe	54	45524.1	0.4	**27.6104**	0.565	2.0	mg/L	179	Standard
Fe	57	12291.7	1.9	**28.9717**	1.259	4.3	mg/L	335	Standard
> **Sc-1**	45	84914.0	2.3				mg/L	61029	Standard
Cl	35	25819.3	0.8				ug/L	20195	Standard
Kr	83	2.0	0.0				ug/L	4	Standard
Br	81	3963.9	6.7				ug/L	1547	Standard
P	31	20629.0	3.4				ug/L	15286	Standard
S	34	2280.2	5.7				ug/L	1572	Standard
Sr	88	103.3	12.2				ug/L	73	Standard
C	12	333.3	17.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	140.0	7.1				mg/L	3	Standard
Dy	164	56592.8	3.3				mg/L	6	Standard
Ho-1	165	35102.3	1.1				mg/L	10	Standard
Er	166	32397.9	1.1				mg/L	13	Standard
I	127	48815.3	4.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.691	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.535	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.899
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.221
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Upper, S, EEE	V	51	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135
Pb 206 Upper, S, EEE	Pb	206
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1606091201SDL WG573717-04
Sample Date/Time: Wednesday, June 29, 2016 15:36:04
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83450.9	2.1				ug/L	74699	Standard
	Be	9	378.3	16.7	**0.3916**	0.058	14.9	ug/L	8	Standard
	Al	27	3082760.3	2.5	**18.7625**	0.099	0.5	ug/L	1493	Standard
	Sc	45	72303.8	2.1				ug/L	61029	Standard
	Ti	47	2033.1	4.6	**4.7237**	0.243	5.1	ug/L	35	Standard
	V	51	79797.1	0.9	**9.3216**	0.052	0.6	ug/L	1435	Standard
	Cr	52	57744.9	2.6	**5.9945**	0.158	2.6	ug/L	7635	Standard
	Cr	53	6483.1	2.8	**5.9884**	0.155	2.6	ug/L	363	Standard
	Mn	55	2512242.8	1.3	**324.8710**	1.825	0.6	ug/L	747	Standard
	Co	59	34712.7	2.2	**4.6975**	0.071	1.5	ug/L	234	Standard
	Ni	60	13460.0	2.9	**6.3513**	0.158	2.5	ug/L	215	Standard
	Cu	65	15009.4	2.6	**7.1598**	0.141	2.0	ug/L	104	Standard
	Zn	66	29256.2	2.4	**23.6692**	0.389	1.6	ug/L	363	Standard
>	**Ge**	72	549686.2	0.8				ug/L	495142	Standard
	As	75	3156.6	2.0	**2.5979**	0.033	1.3	ug/L	-50	Standard
	Se	82	47.1	17.6	**0.2490**	0.070	28.2	ug/L	14	Standard
	Se-1	77	77.0	11.9	**0.3268**	0.106	32.4	ug/L	42	Standard
>	**Ga**	71	7136.7	1.1				mg/L	42	Standard
	Rb	85	84221.8	1.7				ug/L	17	Standard
	Y	89	569587.4	0.8				ug/L	417098	Standard
>	**Rh**	103	25.0	91.7				ug/L	13	Standard
	Mo	98	271.1	6.9	**0.0847**	0.006	6.6	ug/L	11	Standard
	Ag	107	378.0	10.8	**0.0387**	0.005	13.9	ug/L	68	Standard
	Cd	111	185.8	10.3	**0.0712**	0.009	12.3	mg/L	2	Standard
	Cd	114	406.5	6.5	**0.0684**	0.004	6.4	ug/L	12	Standard
>	**In**	115	660230.6	1.0				ug/L	587441	Standard
	Sn	118	501.7	8.5	**-0.0183**	0.006	32.3	ug/L	497	Standard
	Sb	123	1797.9	20.8	**0.3384**	0.070	20.8	ug/L	78	Standard
	Ba	135	129725.4	1.6	**56.3802**	0.972	1.7	ug/L	24	Standard
	Ce	140	480517.5	2.7				ug/L	25	Standard
>	**Tb**	159	1042248.3	0.8				ug/L	939701	Standard
	Ho	165	6823.2	4.6				ug/L	10	Standard
	Tl	203	727.7	7.7	**0.0794**	0.006	7.1	ug/L	4	Standard
	Tl	205	616.7	4.2	**0.0795**	0.002	2.4	ug/L	2	Standard
	Pb	206	64359.4	2.2	**11.0114**	0.128	1.2	ug/L	240	Standard
	Pb	207	51665.3	2.6	**9.9429**	0.134	1.3	ug/L	198	Standard
	Pb	208	222946.4	0.6	**10.8660**	0.247	2.3	ug/L	883	Standard
	U	238	3701.1	2.3	**0.4902**	0.006	1.1	ug/L	3	Standard
>	**Bi**	209	569638.6	2.0				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	61.7	28.5	**0.0019**	0.018	942.5	mg/L	37	Standard
K	39	203.3	18.5	**0.2649**	0.067	25.4	mg/L	38	Standard
Ca	43	75.0	26.7	**1.4632**	0.987	67.5	mg/L	10	Standard
Fe	54	9325.9	3.5	**6.5358**	0.204	3.1	mg/L	179	Standard
Fe	57	2630.2	2.1	**6.4718**	0.055	0.8	mg/L	335	Standard
Sc-1	45	72303.8	2.1				mg/L	61029	Standard
Cl	35	24972.6	0.9				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	2286.8	8.4				ug/L	1547	Standard
P	31	19043.6	4.4				ug/L	15286	Standard
S	34	2180.2	1.2				ug/L	1572	Standard
Sr	88	81.7	35.9				ug/L	73	Standard
C	12	93.3	22.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	57.3				mg/L	3	Standard
Dy	164	11677.0	2.4				mg/L	6	Standard
Ho-1	165	6823.2	4.6				mg/L	10	Standard
Er	166	6424.7	2.9				mg/L	13	Standard
I	127	12089.8	7.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.717	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.016	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.391
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.713
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606091201SDL WG573717-04
Sample Date/Time: Wednesday, June 29, 2016 15:39:15
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80082.8	1.5				ug/L	74699	Standard
	Be	9	80.0	10.8	**0.0924**	0.009	10.2	ug/L	8	Standard
	Al	27	638793.5	0.9	**4.0416**	0.057	1.4	ug/L	1493	Standard
	Sc	45	66977.8	2.5				ug/L	61029	Standard
	Ti	47	422.3	5.3	**0.8899**	0.044	4.9	ug/L	35	Standard
	V	51	17807.2	0.8	**1.9190**	0.038	2.0	ug/L	1435	Standard
	Cr	52	18051.7	1.5	**1.1605**	0.015	1.3	ug/L	7635	Standard
	Cr	53	1846.8	4.0	**1.4619**	0.067	4.6	ug/L	363	Standard
	Mn	55	540671.4	1.9	**69.4959**	1.549	2.2	ug/L	747	Standard
	Co	59	7520.2	3.3	**0.9841**	0.038	3.8	ug/L	234	Standard
	Ni	60	2912.3	1.6	**1.2710**	0.019	1.5	ug/L	215	Standard
	Cu	65	3203.0	1.2	**1.4395**	0.003	0.2	ug/L	104	Standard
	Zn	66	8550.1	1.3	**6.5648**	0.083	1.3	ug/L	363	Standard
>	**Ge**	72	552153.4	1.0				ug/L	495142	Standard
	As	75	624.0	5.3	**0.5591**	0.024	4.4	ug/L	-50	Standard
	Se	82	21.8	25.1	**0.0396**	0.043	108.7	ug/L	14	Standard
	Se-1	77	57.0	8.0	**0.0772**	0.050	64.2	ug/L	42	Standard
>	**Ga**	71	1470.1	2.9				mg/L	42	Standard
	Rb	85	17425.0	3.8				ug/L	17	Standard
	Y	89	497203.9	1.3				ug/L	417098	Standard
>	**Rh**	103	10.0	50.0				ug/L	13	Standard
	Mo	98	65.7	10.1	**0.0165**	0.003	15.8	ug/L	11	Standard
	Ag	107	156.7	8.7	**0.0087**	0.002	18.0	ug/L	68	Standard
	Cd	111	38.9	11.8	**0.0089**	0.002	23.3	mg/L	2	Standard
	Cd	114	108.8	14.4	**0.0170**	0.003	15.1	ug/L	12	Standard
>	**In**	115	651862.8	1.7				ug/L	587441	Standard
	Sn	118	480.0	4.2	**-0.0206**	0.003	16.7	ug/L	497	Standard
	Sb	123	490.3	31.4	**0.0908**	0.031	34.3	ug/L	78	Standard
	Ba	135	26415.7	0.1	**11.6170**	0.204	1.8	ug/L	24	Standard
	Ce	140	98329.7	0.4				ug/L	25	Standard
>	**Tb**	159	1007324.2	1.5				ug/L	939701	Standard
	Ho	165	1405.1	5.7				ug/L	10	Standard
	Tl	203	169.0	1.6	**0.0177**	0.000	0.8	ug/L	4	Standard
	Tl	205	175.0	8.6	**0.0234**	0.002	8.3	ug/L	2	Standard
	Pb	206	13505.0	1.4	**2.3274**	0.057	2.5	ug/L	240	Standard
	Pb	207	10900.6	1.3	**2.1089**	0.044	2.1	ug/L	198	Standard
	Pb	208	47029.6	1.3	**2.3051**	0.014	0.6	ug/L	883	Standard
	U	238	743.4	3.4	**0.0980**	0.002	2.1	ug/L	3	Standard
>	**Bi**	209	552389.3	1.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	33.3	17.3	**-0.0260**	0.006	22.5	mg/L	37	Standard
K	39	50.0	36.1	**-0.0133**	0.037	281.6	mg/L	38	Standard
Ca	43	41.7	48.5	**-0.1354**	1.146	846.9	mg/L	10	Standard
Fe	54	2020.3	1.1	**1.4233**	0.051	3.6	mg/L	179	Standard
Fe	57	728.4	10.0	**1.1787**	0.168	14.2	mg/L	335	Standard
> **Sc-1**	45	66977.8	2.5				mg/L	61029	Standard
Cl	35	24720.8	1.1				ug/L	20195	Standard
Kr	83	2.7	43.3				ug/L	4	Standard
Br	81	1860.1	4.8				ug/L	1547	Standard
P	31	18349.4	1.0				ug/L	15286	Standard
S	34	1845.1	4.4				ug/L	1572	Standard
Sr	88	65.0	27.7				ug/L	73	Standard
C	12	66.7	31.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	2304.6	5.8				mg/L	6	Standard
Ho-1	165	1405.1	5.7				mg/L	10	Standard
Er	166	1370.1	4.1				mg/L	13	Standard
I	127	4489.0	15.6				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		107.208	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		111.514	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.966
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.421
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 15:42:28
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79858.3	1.9				ug/L	74699	Standard
	Be	9	50198.1	2.5	**53.3484**	1.401	2.6	ug/L	8	Standard
	Al	27	8066966.3	0.3	**51.3427**	0.865	1.7	ug/L	1493	Standard
	Sc	45	68357.2	2.3				ug/L	61029	Standard
	Ti	47	43587.6	0.3	**105.7066**	1.724	1.6	ug/L	35	Standard
	V	51	433103.8	0.8	**52.5653**	0.576	1.1	ug/L	1435	Standard
	Cr	52	431112.3	0.9	**52.4990**	0.789	1.5	ug/L	7635	Standard
	Cr	53	52653.0	1.0	**52.0862**	0.689	1.3	ug/L	363	Standard
	Mn	55	405815.5	1.7	**53.4827**	1.214	2.3	ug/L	747	Standard
	Co	59	390955.7	1.0	**54.4418**	1.354	2.5	ug/L	234	Standard
	Ni	60	105213.1	1.7	**51.5742**	0.488	0.9	ug/L	215	Standard
	Cu	65	104377.6	0.2	**51.4980**	0.905	1.8	ug/L	104	Standard
	Zn	66	61654.9	0.7	**51.4853**	1.289	2.5	ug/L	363	Standard
>	**Ge**	72	538231.7	1.8				ug/L	495142	Standard
	As	75	61802.6	0.2	**50.8282**	0.881	1.7	ug/L	-50	Standard
	Se	82	6211.6	1.2	**51.9313**	0.364	0.7	ug/L	14	Standard
	Se-1	77	4323.6	2.0	**53.8508**	1.659	3.1	ug/L	42	Standard
>	**Ga**	71	60.0	28.9				mg/L	42	Standard
	Rb	85	955.0	5.2				ug/L	17	Standard
	Y	89	475770.1	1.3				ug/L	417098	Standard
>	**Rh**	103	25.0	34.6				ug/L	13	Standard
	Mo	98	290643.5	0.8	**97.6712**	0.653	0.7	ug/L	11	Standard
	Ag	107	354998.2	1.8	**48.7852**	1.288	2.6	ug/L	68	Standard
	Cd	111	115105.3	1.2	**49.3038**	0.151	0.3	mg/L	2	Standard
	Cd	114	278592.4	1.8	**48.6531**	0.360	0.7	ug/L	12	Standard
>	**In**	115	655825.0	1.0				ug/L	587441	Standard
	Sn	118	319548.2	1.2	**48.9035**	0.256	0.5	ug/L	497	Standard
	Sb	123	249456.0	1.2	**47.8604**	0.919	1.9	ug/L	78	Standard
	Ba	135	108215.4	0.8	**47.3455**	0.546	1.2	ug/L	24	Standard
	Ce	140	256.7	76.3				ug/L	25	Standard
>	**Tb**	159	1025574.2	1.9				ug/L	939701	Standard
	Ho	165	15.0	0.0				ug/L	10	Standard
	Tl	203	443897.9	1.2	**50.1327**	1.058	2.1	ug/L	4	Standard
	Tl	205	398087.0	0.7	**51.8003**	0.814	1.6	ug/L	2	Standard
	Pb	206	280554.3	0.5	**48.8226**	0.728	1.5	ug/L	240	Standard
	Pb	207	249585.9	0.6	**48.8846**	0.533	1.1	ug/L	198	Standard
	Pb	208	1026713.8	0.6	**50.9050**	1.131	2.2	ug/L	883	Standard
	U	238	372550.1	0.8	**50.3866**	1.127	2.2	ug/L	3	Standard
>	**Bi**	209	562933.7	1.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4292.3	1.6	**4.8821**	0.035	0.7	mg/L	37	Standard
K	39	2345.2	3.1	**4.5133**	0.080	1.8	mg/L	38	Standard
Ca	43	103.3	10.1	**3.3018**	0.528	16.0	mg/L	10	Standard
Fe	54	6681.2	2.2	**4.9206**	0.153	3.1	mg/L	179	Standard
Fe	57	1928.5	4.0	**4.7824**	0.344	7.2	mg/L	335	Standard
Sc-1	45	68357.2	2.3				mg/L	61029	Standard
Cl	35	26753.6	0.7				ug/L	20195	Standard
Kr	83	3.3	45.8				ug/L	4	Standard
Br	81	1833.4	8.1				ug/L	1547	Standard
P	31	20395.4	2.2				ug/L	15286	Standard
S	34	2408.5	8.3				ug/L	1572	Standard
Sr	88	85.0	25.6				ug/L	73	Standard
C	12	53.3	28.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	15.2	35.5				mg/L	6	Standard
Ho-1	165	15.0	0.0				mg/L	10	Standard
Er	166	30.0	57.7				mg/L	13	Standard
I	127	2536.9	16.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	106.697		
Al	27	102.685		
Sc	45			
Ti	47	105.707		
V	51	105.131		
Cr	52	104.998		
Cr	53			
Mn	55	106.965		
Co	59	108.884		
Ni	60	103.148		
Cu	65	102.996		
Zn	66	102.971		
Ge	72		108.702	
As	75	101.656		
Se	82	103.863		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	97.671		
Ag	107	97.570		
Cd	111	98.608		
Cd	114			
In	115			111.641
Sn	118	97.807		
Sb	123	95.721		
Ba	135	94.691		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.265		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.810		
U	238	100.773		
Bi	209			107.433
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 15:45:40
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	76618.3	2.3				ug/L	74699	Standard
	Be	9	25.0	40.0	**0.0352**	0.010	29.8	ug/L	8	Standard
	Al	27	2451.9	23.9	**0.0029**	0.004	131.5	ug/L	1493	Standard
	Sc	45	64234.2	1.5				ug/L	61029	Standard
	Ti	47	38.0	9.5	**-0.0165**	0.010	60.4	ug/L	35	Standard
	V	51	1363.5	4.5	**-0.0292**	0.006	19.9	ug/L	1435	Standard
	Cr	52	7102.3	0.4	**-0.1401**	0.016	11.4	ug/L	7635	Standard
	Cr	53	373.3	16.1	**0.0429**	0.063	148.1	ug/L	363	Standard
	Mn	55	1097.0	20.0	**-0.0025**	0.031	1279.7	ug/L	747	Standard
	Co	59	247.3	6.4	**-0.0027**	0.003	101.3	ug/L	234	Standard
	Ni	60	180.3	4.0	**-0.0351**	0.003	7.6	ug/L	215	Standard
	Cu	65	132.0	9.2	**-0.0382**	0.007	18.6	ug/L	104	Standard
	Zn	66	415.3	4.4	**-0.1038**	0.019	18.2	ug/L	363	Standard
>	Ge	72	537099.7	1.7				ug/L	495142	Standard
	As	75	-44.5	23.9	**0.0230**	0.008	35.8	ug/L	-50	Standard
	Se	82	14.3	4.3	**-0.0180**	0.004	23.6	ug/L	14	Standard
	Se-1	77	59.7	7.9	**0.1303**	0.047	35.8	ug/L	42	Standard
>	Ga	71	51.7	29.6				mg/L	42	Standard
	Rb	85	35.0	0.0				ug/L	17	Standard
	Y	89	479758.9	0.4				ug/L	417098	Standard
>	Rh	103	8.3	34.6				ug/L	13	Standard
	Mo	98	277.2	29.2	**0.0885**	0.026	29.3	ug/L	11	Standard
	Ag	107	131.7	17.8	**0.0055**	0.003	58.6	ug/L	68	Standard
	Cd	111	17.2	29.5	**-0.0005**	0.002	465.0	mg/L	2	Standard
	Cd	114	40.7	69.7	**0.0051**	0.005	98.6	ug/L	12	Standard
>	In	115	646048.6	1.6				ug/L	587441	Standard
	Sn	118	843.4	4.5	**0.0366**	0.007	19.0	ug/L	497	Standard
	Sb	123	501.9	29.2	**0.0939**	0.030	32.1	ug/L	78	Standard
	Ba	135	52.0	15.0	**0.0071**	0.003	45.6	ug/L	24	Standard
	Ce	140	70.0	58.5				ug/L	25	Standard
>	Tb	159	979678.9	1.9				ug/L	939701	Standard
	Ho	165	13.3	114.6				ug/L	10	Standard
	Tl	203	68.0	38.6	**0.0062**	0.003	47.0	ug/L	4	Standard
	Tl	205	56.7	27.0	**0.0078**	0.002	25.4	ug/L	2	Standard
	Pb	206	311.7	5.0	**-0.0149**	0.002	16.8	ug/L	240	Standard
	Pb	207	257.0	6.3	**-0.0177**	0.002	12.3	ug/L	198	Standard
	Pb	208	1140.4	10.1	**-0.0154**	0.005	31.9	ug/L	883	Standard
	U	238	55.7	48.1	**0.0033**	0.004	107.8	ug/L	3	Standard
>	Bi	209	542619.7	2.4				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.9504**	31.082	173.2	mg/L	0	Standard
Mg	24	40.0	54.5	**-0.0162**	0.026	161.8	mg/L	37	Standard
K	39	53.3	59.5	**-0.0020**	0.067	3445.3	mg/L	38	Standard
Ca	43	18.3	103.3	**-1.4157**	1.156	81.6	mg/L	10	Standard
Fe	54	130.7	11.8	**-0.0329**	0.014	41.5	mg/L	179	Standard
Fe	57	301.7	9.1	**-0.1005**	0.081	80.3	mg/L	335	Standard
> **Sc-1**	45	64234.2	1.5				mg/L	61029	Standard
Cl	35	26295.5	2.8				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	1633.4	7.7				ug/L	1547	Standard
P	31	19669.4	2.1				ug/L	15286	Standard
S	34	2230.2	5.1				ug/L	1572	Standard
Sr	88	70.0	21.4				ug/L	73	Standard
C	12	46.7	61.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	12.2	49.4				mg/L	6	Standard
Ho-1	165	13.3	114.6				mg/L	10	Standard
Er	166	23.3	107.9				mg/L	13	Standard
I	127	1980.1	22.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.474	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.977
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.556
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW 60 WG574001-04
Sample Date/Time: Wednesday, June 29, 2016 15:48:53
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79282.0	2.9				ug/L	74699	Standard
	Be	9	31.7	134.3	**0.0407**	0.044	108.3	ug/L	8	Standard
	Al	27	19345.2	59.5	**0.1093**	0.069	63.4	ug/L	1493	Standard
	Sc	45	67500.3	4.8				ug/L	61029	Standard
	Ti	47	51.7	27.5	**0.0181**	0.032	177.8	ug/L	35	Standard
	V	51	1877.4	33.1	**0.0362**	0.072	198.6	ug/L	1435	Standard
	Cr	52	9295.2	4.7	**0.1500**	0.032	21.3	ug/L	7635	Standard
	Cr	53	908.4	6.4	**0.5905**	0.063	10.7	ug/L	363	Standard
	Mn	55	10971.3	111.8	**1.3060**	1.603	122.8	ug/L	747	Standard
	Co	59	555.3	78.4	**0.0407**	0.060	146.5	ug/L	234	Standard
	Ni	60	485.3	47.2	**0.1173**	0.109	92.6	ug/L	215	Standard
	Cu	65	307.3	25.1	**0.0504**	0.035	70.1	ug/L	104	Standard
	Zn	66	1901.5	5.5	**1.1744**	0.056	4.8	ug/L	363	Standard
>	**Ge**	72	528898.5	2.0				ug/L	495142	Standard
	As	75	-0.1	63053.1	**0.0590**	0.043	73.0	ug/L	-50	Standard
	Se	82	20.7	41.6	**0.0373**	0.070	187.2	ug/L	14	Standard
	Se-1	77	69.7	5.4	**0.2713**	0.061	22.4	ug/L	42	Standard
>	**Ga**	71	70.0	75.3				mg/L	42	Standard
	Rb	85	391.7	126.9				ug/L	17	Standard
	Y	89	488721.1	2.3				ug/L	417098	Standard
>	**Rh**	103	16.7	105.4				ug/L	13	Standard
	Mo	98	140.7	71.4	**0.0402**	0.032	80.6	ug/L	11	Standard
	Ag	107	241.3	88.8	**0.0193**	0.028	147.0	ug/L	68	Standard
	Cd	111	97.4	139.8	**0.0324**	0.056	173.4	mg/L	2	Standard
	Cd	114	250.4	134.1	**0.0402**	0.057	140.7	ug/L	12	Standard
>	**In**	115	673056.2	1.0				ug/L	587441	Standard
	Sn	118	918.4	10.7	**0.0424**	0.014	32.3	ug/L	497	Standard
	Sb	123	377.5	33.3	**0.0663**	0.023	34.5	ug/L	78	Standard
	Ba	135	710.7	130.6	**0.2849**	0.392	137.5	ug/L	24	Standard
	Ce	140	2190.4	144.6				ug/L	25	Standard
>	**Tb**	159	1033072.6	2.9				ug/L	939701	Standard
	Ho	165	46.7	118.0				ug/L	10	Standard
	Tl	203	354.0	129.7	**0.0375**	0.050	134.0	ug/L	4	Standard
	Tl	205	175.0	119.3	**0.0226**	0.026	116.3	ug/L	2	Standard
	Pb	206	584.7	65.9	**0.0302**	0.064	211.0	ug/L	240	Standard
	Pb	207	508.0	67.6	**0.0291**	0.064	219.9	ug/L	198	Standard
	Pb	208	1976.7	53.7	**0.0238**	0.049	207.9	ug/L	883	Standard
	U	238	147.7	117.1	**0.0152**	0.023	148.4	ug/L	3	Standard
>	**Bi**	209	558931.4	2.9				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	38.3	32.8	**-0.0206**	0.014	67.5	mg/L	37	Standard
K	39	46.7	37.6	**-0.0214**	0.032	149.6	mg/L	38	Standard
Ca	43	20.0	0.0	**-1.3794**	0.055	4.0	mg/L	10	Standard
Fe	54	191.0	21.0	**0.0073**	0.024	325.9	mg/L	179	Standard
Fe	57	261.7	19.2	**-0.2718**	0.132	48.6	mg/L	335	Standard
> **Sc-1**	45	67500.3	4.8				mg/L	61029	Standard
Cl	35	25962.2	2.0				ug/L	20195	Standard
Kr	83	3.0	33.3				ug/L	4	Standard
Br	81	2216.8	6.9				ug/L	1547	Standard
P	31	19524.2	2.3				ug/L	15286	Standard
S	34	2248.5	4.1				ug/L	1572	Standard
Sr	88	73.3	27.6				ug/L	73	Standard
C	12	46.7	44.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	67.1	124.3				mg/L	6	Standard
Ho-1	165	46.7	118.0				mg/L	10	Standard
Er	166	60.0	130.2				mg/L	13	Standard
I	127	1978.5	35.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.136	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.817	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.574
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.669
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 60 WG574001-05
Sample Date/Time: Wednesday, June 29, 2016 15:52:04
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	78008.7	2.7				ug/L	74699	Standard
	Be	9	49798.4	3.1	**54.1693**	0.583	1.1	ug/L	8	Standard
	Al	27	8265.6	3.2	**0.0405**	0.001	2.7	ug/L	1493	Standard
	Sc	45	64878.8	4.3				ug/L	61029	Standard
	Ti	47	43.0	16.3	**-0.0042**	0.019	444.7	ug/L	35	Standard
	V	51	424123.5	0.9	**51.5862**	0.653	1.3	ug/L	1435	Standard
	Cr	52	430096.1	0.4	**52.4970**	1.185	2.3	ug/L	7635	Standard
	Cr	53	53307.0	1.3	**52.8599**	1.230	2.3	ug/L	363	Standard
	Mn	55	405428.0	0.3	**53.5518**	1.000	1.9	ug/L	747	Standard
	Co	59	387903.4	0.1	**54.1349**	1.154	2.1	ug/L	234	Standard
	Ni	60	106395.6	1.4	**52.2826**	1.359	2.6	ug/L	215	Standard
	Cu	65	107418.5	1.1	**53.1215**	1.283	2.4	ug/L	104	Standard
	Zn	66	63602.2	0.4	**53.2433**	1.221	2.3	ug/L	363	Standard
>	Ge	72	537059.3	2.0				ug/L	495142	Standard
	As	75	62286.8	1.3	**51.3419**	1.295	2.5	ug/L	-50	Standard
	Se	82	6132.0	1.6	**51.3807**	0.931	1.8	ug/L	14	Standard
	Se-1	77	4215.6	1.2	**52.6015**	0.951	1.8	ug/L	42	Standard
>	Ga	71	76.7	32.8				mg/L	42	Standard
	Rb	85	50.0	36.1				ug/L	17	Standard
	Y	89	473307.8	1.1				ug/L	417098	Standard
>	Rh	103	23.3	75.3				ug/L	13	Standard
	Mo	98	59.9	20.8	**0.0148**	0.004	26.5	ug/L	11	Standard
	Ag	107	358191.0	0.9	**50.3679**	1.706	3.4	ug/L	68	Standard
	Cd	111	112882.0	2.3	**49.4684**	1.332	2.7	mg/L	2	Standard
	Cd	114	273909.8	1.0	**48.9526**	1.484	3.0	ug/L	12	Standard
>	In	115	641215.1	2.7				ug/L	587441	Standard
	Sn	118	785.0	7.1	**0.0286**	0.011	37.9	ug/L	497	Standard
	Sb	123	249794.4	1.0	**49.0383**	1.564	3.2	ug/L	78	Standard
	Ba	135	107708.9	1.4	**48.2176**	1.451	3.0	ug/L	24	Standard
	Ce	140	101.7	27.1				ug/L	25	Standard
>	Tb	159	990038.9	2.7				ug/L	939701	Standard
	Ho	165	11.7	99.0				ug/L	10	Standard
	Tl	203	439976.8	0.4	**51.4932**	0.969	1.9	ug/L	4	Standard
	Tl	205	398605.3	0.6	**53.7491**	0.791	1.5	ug/L	2	Standard
	Pb	206	290681.6	0.4	**52.4241**	0.636	1.2	ug/L	240	Standard
	Pb	207	247225.7	0.4	**50.1841**	0.852	1.7	ug/L	198	Standard
	Pb	208	1030904.4	0.6	**52.9701**	1.178	2.2	ug/L	883	Standard
	U	238	368133.3	0.5	**51.5924**	0.851	1.6	ug/L	3	Standard
>	Bi	209	543222.2	1.6				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	35.0	28.6	**-0.0227**	0.012	52.0	mg/L	37	Standard
K	39	28.3	50.9	**-0.0559**	0.027	48.5	mg/L	38	Standard
Ca	43	35.0	28.6	**-0.4579**	0.506	110.5	mg/L	10	Standard
Fe	54	138.7	22.6	**-0.0277**	0.025	88.8	mg/L	179	Standard
Fe	57	243.3	16.6	**-0.2916**	0.161	55.3	mg/L	335	Standard
> **Sc-1**	45	64878.8	4.3				mg/L	61029	Standard
Cl	35	24949.9	2.3				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	1880.1	6.1				ug/L	1547	Standard
P	31	18362.8	1.6				ug/L	15286	Standard
S	34	2046.8	4.1				ug/L	1572	Standard
Sr	88	70.0	18.9				ug/L	73	Standard
C	12	56.7	56.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	2.2	249.0				mg/L	6	Standard
Ho-1	165	11.7	99.0				mg/L	10	Standard
Er	166	23.3	49.5				mg/L	13	Standard
I	127	1781.8	25.5				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		104.431	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		108.466	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.154
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.671
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 60 WG574001-05
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Method 6020 - Summary Report

Sample ID: L1606124702 WG574001-01
Sample Date/Time: Wednesday, June 29, 2016 15:55:16
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	134635.3	6.0				ug/L	74699	Standard
	Be	9	80.0	18.8	**0.0585**	0.013	21.4	ug/L	8	Standard
	Al	27	38117257.0	1.5	**144.1796**	7.359	5.1	ug/L	1493	Standard
	Sc	45	57575.9	1.8				ug/L	61029	Standard
	Ti	47	164.0	8.6	**0.3117**	0.039	12.5	ug/L	35	Standard
	V	51	2694.7	7.4	**0.1512**	0.027	17.7	ug/L	1435	Standard
	Cr	52	13340.2	1.7	**0.7256**	0.017	2.4	ug/L	7635	Standard
	Cr	53	1556.7	8.2	**1.3078**	0.145	11.1	ug/L	363	Standard
	Mn	55	855520.0	4.5	**119.2592**	4.647	3.9	ug/L	747	Standard
	Co	59	4433.3	4.9	**0.6151**	0.027	4.4	ug/L	234	Standard
	Ni	60	11360.3	1.4	**5.7737**	0.123	2.1	ug/L	215	Standard
	Cu	65	4582.0	1.3	**2.2889**	0.015	0.7	ug/L	104	Standard
	Zn	66	3866.8	1.4	**2.9861**	0.052	1.7	ug/L	363	Standard
>	**Ge**	72	509457.0	0.7				ug/L	495142	Standard
	As	75	332.4	10.8	**0.3479**	0.030	8.6	ug/L	-50	Standard
	Se	82	161.9	7.9	**1.2952**	0.108	8.4	ug/L	14	Standard
	Se-1	77	102.3	14.4	**0.7391**	0.192	26.0	ug/L	42	Standard
>	**Ga**	71	95.0	18.2				mg/L	42	Standard
	Rb	85	141592.2	2.6				ug/L	17	Standard
	Y	89	417616.8	3.6				ug/L	417098	Standard
>	**Rh**	103	198.3	13.9				ug/L	13	Standard
	Mo	98	173.0	3.6	**0.0623**	0.003	5.6	ug/L	11	Standard
	Ag	107	339.3	7.8	**0.0417**	0.005	13.0	ug/L	68	Standard
	Cd	111	139.7	8.2	**0.0622**	0.007	10.5	mg/L	2	Standard
	Cd	114	358.4	9.8	**0.0712**	0.009	12.2	ug/L	12	Standard
>	**In**	115	560534.9	2.1				ug/L	587441	Standard
	Sn	118	620.0	5.6	**0.0166**	0.008	49.6	ug/L	497	Standard
	Sb	123	641.7	15.5	**0.1401**	0.024	17.2	ug/L	78	Standard
	Ba	135	5098.9	2.7	**2.5958**	0.100	3.9	ug/L	24	Standard
	Ce	140	815.0	33.2				ug/L	25	Standard
>	**Tb**	159	928792.3	1.3				ug/L	939701	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	1143.7	8.4	**0.1440**	0.014	9.4	ug/L	4	Standard
	Tl	205	1088.4	7.4	**0.1600**	0.012	7.4	ug/L	2	Standard
	Pb	206	578.7	9.2	**0.0425**	0.010	23.1	ug/L	240	Standard
	Pb	207	493.0	9.5	**0.0393**	0.012	31.8	ug/L	198	Standard
	Pb	208	1938.4	3.0	**0.0345**	0.004	12.8	ug/L	883	Standard
	U	238	1219.0	4.3	**0.1816**	0.009	5.1	ug/L	3	Standard
>	**Bi**	209	499083.1	3.3				ug/L	523984	Standard

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Na	23	20.0	43.3	**245.3647**	110.079	44.9	mg/L	0	Standard
Mg	24	80086.1	0.7	**109.5385**	2.239	2.0	mg/L	37	Standard
K	39	1376.7	6.5	**3.1098**	0.163	5.2	mg/L	38	Standard
Ca	43	2828.6	6.5	**186.7611**	8.963	4.8	mg/L	10	Standard
Fe	54	188.7	25.7	**0.0318**	0.047	146.5	mg/L	179	Standard
Fe	57	1751.8	4.9	**5.2348**	0.203	3.9	mg/L	335	Standard
> **Sc-1**	45	57575.9	1.8				mg/L	61029	Standard
Cl	35	65110.3	1.2				ug/L	20195	Standard
Kr	83	3.7	68.6				ug/L	4	Standard
Br	81	22346.5	6.5				ug/L	1547	Standard
P	31	17116.3	3.4				ug/L	15286	Standard
S	34	2223.5	6.9				ug/L	1572	Standard
Sr	88	836.7	13.9				ug/L	73	Standard
C	12	76.7	74.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	52.1	77.4				mg/L	6	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	26.7	57.3				mg/L	13	Standard
I	127	41219.6	7.8				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		180.238	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		102.891	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.420
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.248
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606124702DP WG574001-06
Sample Date/Time: Wednesday, June 29, 2016 15:58:27
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	151702.5	2.0				ug/L	74699	Standard
	Be	9	51.7	59.1	**0.0368**	0.018	48.5	ug/L	8	Standard
	Al	27	41839885.7	0.1	**140.2128**	2.854	2.0	ug/L	1493	Standard
	Sc	45	56811.4	3.1				ug/L	61029	Standard
	Ti	47	131.7	6.1	**0.2545**	0.026	10.2	ug/L	35	Standard
	V	51	2376.3	9.9	**0.1332**	0.026	19.9	ug/L	1435	Standard
	Cr	52	12951.9	1.5	**0.8048**	0.052	6.4	ug/L	7635	Standard
	Cr	53	1565.1	1.7	**1.4417**	0.042	2.9	ug/L	363	Standard
	Mn	55	867683.1	1.0	**130.2493**	3.502	2.7	ug/L	747	Standard
	Co	59	4344.6	3.7	**0.6509**	0.022	3.4	ug/L	234	Standard
	Ni	60	12342.7	0.7	**6.7729**	0.126	1.9	ug/L	215	Standard
	Cu	65	4552.0	1.4	**2.4548**	0.036	1.5	ug/L	104	Standard
	Zn	66	4125.6	2.3	**3.4960**	0.055	1.6	ug/L	363	Standard
>	**Ge**	72	473381.7	2.0				ug/L	495142	Standard
	As	75	389.2	1.9	**0.4231**	0.002	0.6	ug/L	-50	Standard
	Se	82	181.1	4.2	**1.5888**	0.099	6.2	ug/L	14	Standard
	Se-1	77	106.3	18.0	**0.8981**	0.248	27.6	ug/L	42	Standard
>	**Ga**	71	78.3	22.4				mg/L	42	Standard
	Rb	85	147149.5	0.7				ug/L	17	Standard
	Y	89	405581.1	1.8				ug/L	417098	Standard
>	**Rh**	103	178.3	29.5				ug/L	13	Standard
	Mo	98	220.6	12.3	**0.0817**	0.013	15.7	ug/L	11	Standard
	Ag	107	177.0	68.0	**0.0160**	0.020	127.1	ug/L	68	Standard
	Cd	111	65.9	51.9	**0.0256**	0.018	71.0	mg/L	2	Standard
	Cd	114	151.1	49.7	**0.0291**	0.016	55.4	ug/L	12	Standard
>	**In**	115	557347.0	2.4				ug/L	587441	Standard
	Sn	118	766.7	0.4	**0.0437**	0.004	8.6	ug/L	497	Standard
	Sb	123	305.8	17.0	**0.0650**	0.013	20.6	ug/L	78	Standard
	Ba	135	5047.2	3.4	**2.5853**	0.149	5.7	ug/L	24	Standard
	Ce	140	491.7	100.3				ug/L	25	Standard
>	**Tb**	159	935324.5	2.7				ug/L	939701	Standard
	Ho	165	18.3	103.3				ug/L	10	Standard
	Tl	203	947.0	9.8	**0.1179**	0.014	11.5	ug/L	4	Standard
	Tl	205	846.7	27.0	**0.1237**	0.035	28.6	ug/L	2	Standard
	Pb	206	418.3	37.6	**0.0106**	0.032	302.9	ug/L	240	Standard
	Pb	207	351.7	32.0	**0.0074**	0.026	354.3	ug/L	198	Standard
	Pb	208	1404.0	30.0	**0.0041**	0.025	608.6	ug/L	883	Standard
	U	238	972.4	9.3	**0.1427**	0.016	11.1	ug/L	3	Standard
>	**Bi**	209	503603.8	1.5				ug/L	523984	Standard

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Na	23	25.0	34.6	**311.2656**	112.939	36.3	mg/L	0	Standard
Mg	24	85343.0	0.9	**118.3682**	4.384	3.7	mg/L	37	Standard
K	39	1298.4	2.9	**2.9712**	0.147	4.9	mg/L	38	Standard
Ca	43	2830.3	7.5	**189.4839**	12.043	6.4	mg/L	10	Standard
Fe	54	146.6	14.0	**-0.0044**	0.021	483.2	mg/L	179	Standard
Fe	57	1698.4	7.8	**5.1376**	0.623	12.1	mg/L	335	Standard
Sc-1	45	56811.4	3.1				mg/L	61029	Standard
Cl	35	65999.5	1.4				ug/L	20195	Standard
Kr	83	1.3	114.6				ug/L	4	Standard
Br	81	22520.1	6.6				ug/L	1547	Standard
P	31	16799.3	3.7				ug/L	15286	Standard
S	34	2040.1	3.0				ug/L	1572	Standard
Sr	88	920.0	8.9				ug/L	73	Standard
C	12	83.3	25.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	3	Standard
Dy	164	32.1	98.6				mg/L	6	Standard
Ho-1	165	18.3	103.3				mg/L	10	Standard
Er	166	26.7	43.3				mg/L	13	Standard
I	127	45859.6	7.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		203.086	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.605	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.877
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.110
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606126501 WG574001-02
Sample Date/Time: Wednesday, June 29, 2016 16:01:39
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	112017.9	3.5				ug/L	74699	Standard
	Be	9	21.7	35.3	**0.0242**	0.006	26.3	ug/L	8	Standard
	Al	27	58851331.1	1.0	**267.2037**	7.701	2.9	ug/L	1493	Standard
	Sc	45	63265.2	2.1				ug/L	61029	Standard
	Ti	47	314.3	6.0	**0.7250**	0.050	6.9	ug/L	35	Standard
	V	51	84379.6	0.6	**11.0401**	0.098	0.9	ug/L	1435	Standard
	Cr	52	25344.2	1.7	**2.4155**	0.065	2.7	ug/L	7635	Standard
	Cr	53	30644.3	3.7	**33.0161**	1.295	3.9	ug/L	363	Standard
	Mn	55	3058.3	0.3	**0.2937**	0.003	0.9	ug/L	747	Standard
	Co	59	981.4	1.2	**0.1122**	0.002	1.4	ug/L	234	Standard
	Ni	60	4598.7	1.8	**2.3463**	0.051	2.2	ug/L	215	Standard
	Cu	65	1226.7	2.1	**0.5592**	0.015	2.8	ug/L	104	Standard
	Zn	66	2978.0	3.2	**2.2873**	0.091	4.0	ug/L	363	Standard
>	**Ge**	72	492356.2	0.3				ug/L	495142	Standard
	As	75	3467.1	5.3	**3.1728**	0.175	5.5	ug/L	-50	Standard
	Se	82	1561.8	3.2	**14.1732**	0.483	3.4	ug/L	14	Standard
	Se-1	77	3085.3	7.4	**41.8633**	3.228	7.7	ug/L	42	Standard
>	**Ga**	71	63.3	27.7				mg/L	42	Standard
	Rb	85	9206.1	3.0				ug/L	17	Standard
	Y	89	442169.1	3.5				ug/L	417098	Standard
>	**Rh**	103	255.0	11.9				ug/L	13	Standard
	Mo	98	5205.2	3.3	**1.8993**	0.033	1.7	ug/L	11	Standard
	Ag	107	803.7	5.3	**0.1074**	0.005	4.8	ug/L	68	Standard
	Cd	111	45.0	9.2	**0.0131**	0.002	16.6	mg/L	2	Standard
	Cd	114	163.3	22.8	**0.0289**	0.007	22.9	ug/L	12	Standard
>	**In**	115	602229.8	3.0				ug/L	587441	Standard
	Sn	118	683.3	9.8	**0.0193**	0.009	45.4	ug/L	497	Standard
	Sb	123	210.7	19.8	**0.0397**	0.008	19.9	ug/L	78	Standard
	Ba	135	21407.4	0.7	**10.1914**	0.253	2.5	ug/L	24	Standard
	Ce	140	328.3	10.1				ug/L	25	Standard
>	**Tb**	159	984916.0	0.2				ug/L	939701	Standard
	Ho	165	35.0	24.7				ug/L	10	Standard
	Tl	203	94.3	9.0	**0.0098**	0.001	12.0	ug/L	4	Standard
	Tl	205	65.0	40.7	**0.0094**	0.004	40.6	ug/L	2	Standard
	Pb	206	401.3	3.0	**0.0049**	0.001	28.2	ug/L	240	Standard
	Pb	207	354.0	5.2	**0.0056**	0.003	55.2	ug/L	198	Standard
	Pb	208	1436.0	3.5	**0.0035**	0.003	74.9	ug/L	883	Standard
	U	238	31993.4	1.5	**4.7067**	0.092	1.9	ug/L	3	Standard
>	**Bi**	209	517006.9	1.2				ug/L	523984	Standard

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Na	23	5.0	100.0	**55.9813**	56.756	101.4	mg/L	0	Standard
Mg	24	180057.1	1.6	**224.1644**	1.858	0.8	mg/L	37	Standard
K	39	641.7	5.8	**1.2549**	0.096	7.6	mg/L	38	Standard
Ca	43	708.3	7.0	**40.6474**	3.060	7.5	mg/L	10	Standard
Fe	54	157.9	5.8	**-0.0091**	0.008	86.4	mg/L	179	Standard
Fe	57	550.0	17.3	**0.7314**	0.333	45.5	mg/L	335	Standard
Sc-1	45	63265.2	2.1				mg/L	61029	Standard
Cl	35	33676.1	1.7				ug/L	20195	Standard
Kr	83	0.3	173.2				ug/L	4	Standard
Br	81	48808.6	5.5				ug/L	1547	Standard
P	31	23084.3	3.5				ug/L	15286	Standard
S	34	2106.8	4.3				ug/L	1572	Standard
Sr	88	1195.0	6.7				ug/L	73	Standard
C	12	130.0	40.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	9.0	113.3				mg/L	6	Standard
Ho-1	165	35.0	24.7				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	49504.2	3.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		149.959	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.437	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.517	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.668	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606126502S WG574001-07
Sample Date/Time: Wednesday, June 29, 2016 16:04:50
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	109865.8	4.5				ug/L	74699	Standard
	Be	9	61395.8	1.0	**47.4912**	2.348	4.9	ug/L	8	Standard
	Al	27	61297739.1	1.7	**284.0961**	17.361	6.1	ug/L	1493	Standard
	Sc	45	64222.6	2.9				ug/L	61029	Standard
	Ti	47	334.7	6.1	**0.7462**	0.065	8.7	ug/L	35	Standard
	V	51	514269.3	0.9	**65.7128**	0.488	0.7	ug/L	1435	Standard
	Cr	52	414721.1	1.2	**53.1400**	0.316	0.6	ug/L	7635	Standard
	Cr	53	79122.8	2.2	**82.5246**	0.802	1.0	ug/L	363	Standard
	Mn	55	379075.2	0.4	**52.5566**	0.801	1.5	ug/L	747	Standard
	Co	59	375122.1	1.7	**54.9533**	1.379	2.5	ug/L	234	Standard
	Ni	60	98886.4	1.8	**50.9941**	0.435	0.9	ug/L	215	Standard
	Cu	65	94781.9	0.9	**49.1885**	0.428	0.9	ug/L	104	Standard
	Zn	66	59708.1	1.0	**52.4531**	0.349	0.7	ug/L	363	Standard
>	Ge	72	511580.8	1.5				ug/L	495142	Standard
	As	75	64226.1	0.6	**55.5617**	0.582	1.0	ug/L	-50	Standard
	Se	82	7637.7	1.0	**67.2251**	1.117	1.7	ug/L	14	Standard
	Se-1	77	7177.4	2.9	**94.4764**	1.329	1.4	ug/L	42	Standard
>	Ga	71	96.7	7.9				mg/L	42	Standard
	Rb	85	9571.4	0.6				ug/L	17	Standard
	Y	89	459795.2	1.7				ug/L	417098	Standard
>	Rh	103	293.3	12.0				ug/L	13	Standard
	Mo	98	5421.1	3.7	**1.9704**	0.066	3.4	ug/L	11	Standard
	Ag	107	318338.0	1.0	**47.4485**	0.356	0.8	ug/L	68	Standard
	Cd	111	104991.2	1.0	**48.7852**	0.464	1.0	mg/L	2	Standard
	Cd	114	250399.7	1.5	**47.4405**	0.760	1.6	ug/L	12	Standard
>	In	115	604563.1	0.3				ug/L	587441	Standard
	Sn	118	798.4	4.4	**0.0381**	0.006	16.0	ug/L	497	Standard
	Sb	123	240747.3	1.0	**50.1002**	0.397	0.8	ug/L	78	Standard
	Ba	135	122571.5	0.3	**58.1746**	0.379	0.7	ug/L	24	Standard
	Ce	140	328.3	0.9				ug/L	25	Standard
>	Tb	159	981221.4	1.4				ug/L	939701	Standard
	Ho	165	28.3	44.4				ug/L	10	Standard
	Tl	203	414235.7	0.7	**51.0974**	0.645	1.3	ug/L	4	Standard
	Tl	205	378219.2	0.6	**53.7534**	0.090	0.2	ug/L	2	Standard
	Pb	206	277784.6	0.1	**52.8053**	0.305	0.6	ug/L	240	Standard
	Pb	207	237018.9	0.5	**50.7105**	0.514	1.0	ug/L	198	Standard
	Pb	208	965977.0	0.4	**52.3096**	0.506	1.0	ug/L	883	Standard
	U	238	407586.9	0.7	**60.2072**	0.700	1.2	ug/L	3	Standard
>	Bi	209	515321.0	0.6				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.6720**	30.600	173.2	mg/L	0	Standard
Mg	24	189285.1	1.3	**232.3057**	9.548	4.1	mg/L	37	Standard
K	39	641.7	6.1	**1.2328**	0.045	3.6	mg/L	38	Standard
Ca	43	760.0	12.3	**43.0240**	4.391	10.2	mg/L	10	Standard
Fe	54	185.4	16.8	**0.0114**	0.028	245.2	mg/L	179	Standard
Fe	57	630.0	4.2	**0.9612**	0.087	9.0	mg/L	335	Standard
> **Sc-1**	45	64222.6	2.9				mg/L	61029	Standard
Cl	35	34933.6	1.5				ug/L	20195	Standard
Kr	83	2.7	114.6				ug/L	4	Standard
Br	81	53306.9	1.0				ug/L	1547	Standard
P	31	23740.3	1.4				ug/L	15286	Standard
S	34	2118.5	3.3				ug/L	1572	Standard
Sr	88	1145.0	3.3				ug/L	73	Standard
C	12	140.0	21.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	28.6	38.4				mg/L	6	Standard
Ho-1	165	28.3	44.4				mg/L	10	Standard
Er	166	30.0	66.7				mg/L	13	Standard
I	127	81496.0	7.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		147.078	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.320	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.915	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.347	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606126503SD WG574001-08
Sample Date/Time: Wednesday, June 29, 2016 16:08:02
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	108017.3	3.5				ug/L	74699	Standard
	Be	9	61104.9	5.2	**47.9870**	0.846	1.8	ug/L	8	Standard
	Al	27	60436124.3	2.1	**284.5445**	9.073	3.2	ug/L	1493	Standard
	Sc	45	65195.1	3.6				ug/L	61029	Standard
	Ti	47	321.3	5.9	**0.6738**	0.054	8.0	ug/L	35	Standard
	V	51	521782.6	1.8	**63.5667**	1.206	1.9	ug/L	1435	Standard
	Cr	52	431117.5	0.3	**52.6702**	0.983	1.9	ug/L	7635	Standard
	Cr	53	81998.0	1.1	**81.5509**	0.729	0.9	ug/L	363	Standard
	Mn	55	379421.8	1.7	**50.1647**	1.838	3.7	ug/L	747	Standard
	Co	59	378746.6	2.0	**52.9167**	2.098	4.0	ug/L	234	Standard
	Ni	60	101643.5	0.7	**49.9872**	1.144	2.3	ug/L	215	Standard
	Cu	65	96036.4	1.2	**47.5169**	0.455	1.0	ug/L	104	Standard
	Zn	66	60629.4	1.5	**50.7689**	0.479	0.9	ug/L	363	Standard
>	Ge	72	536566.5	1.9				ug/L	495142	Standard
	As	75	65668.7	0.7	**54.1701**	0.796	1.5	ug/L	-50	Standard
	Se	82	7769.6	1.1	**65.2136**	1.970	3.0	ug/L	14	Standard
	Se-1	77	7316.4	1.6	**91.8340**	1.824	2.0	ug/L	42	Standard
>	Ga	71	56.7	22.2				mg/L	42	Standard
	Rb	85	9684.8	3.9				ug/L	17	Standard
	Y	89	458590.9	3.1				ug/L	417098	Standard
>	Rh	103	275.0	12.6				ug/L	13	Standard
	Mo	98	5397.9	1.9	**1.9792**	0.040	2.0	ug/L	11	Standard
	Ag	107	315299.7	0.9	**47.4082**	1.008	2.1	ug/L	68	Standard
	Cd	111	105649.0	0.5	**49.5183**	0.751	1.5	mg/L	2	Standard
	Cd	114	256574.5	1.5	**49.0334**	1.028	2.1	ug/L	12	Standard
>	In	115	599465.1	2.0				ug/L	587441	Standard
	Sn	118	820.0	11.4	**0.0428**	0.015	34.4	ug/L	497	Standard
	Sb	123	245153.5	0.2	**51.4644**	0.950	1.8	ug/L	78	Standard
	Ba	135	122768.4	0.8	**58.7829**	1.524	2.6	ug/L	24	Standard
	Ce	140	333.3	10.5				ug/L	25	Standard
>	Tb	159	983758.7	0.8				ug/L	939701	Standard
	Ho	165	18.3	41.7				ug/L	10	Standard
	Tl	203	416470.0	0.7	**50.8907**	0.470	0.9	ug/L	4	Standard
	Tl	205	377588.7	0.1	**53.1619**	0.172	0.3	ug/L	2	Standard
	Pb	206	279930.3	0.5	**52.7144**	0.351	0.7	ug/L	240	Standard
	Pb	207	238634.3	0.7	**50.5762**	0.275	0.5	ug/L	198	Standard
	Pb	208	958199.8	1.0	**51.4011**	0.688	1.3	ug/L	883	Standard
	U	238	405052.0	0.8	**59.2716**	0.671	1.1	ug/L	3	Standard
>	Bi	209	520189.0	0.3				ug/L	523984	Standard

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Na	23	5.0	173.2	**51.9909**	90.042	173.2	mg/L	0	Standard
Mg	24	184795.4	2.1	**223.5320**	12.550	5.6	mg/L	37	Standard
K	39	668.3	13.7	**1.2668**	0.164	13.0	mg/L	38	Standard
Ca	43	725.0	7.3	**40.3567**	2.975	7.4	mg/L	10	Standard
Fe	54	151.4	21.3	**-0.0183**	0.024	132.3	mg/L	179	Standard
Fe	57	623.3	16.5	**0.9045**	0.268	29.6	mg/L	335	Standard
Sc-1	45	65195.1	3.6				mg/L	61029	Standard
Cl	35	33686.7	1.5				ug/L	20195	Standard
Kr	83	1.7	91.7				ug/L	4	Standard
Br	81	51370.3	3.2				ug/L	1547	Standard
P	31	23124.3	1.4				ug/L	15286	Standard
S	34	2101.8	2.3				ug/L	1572	Standard
Sr	88	1251.7	9.6				ug/L	73	Standard
C	12	163.3	19.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	9.4	104.3				mg/L	6	Standard
Ho-1	165	18.3	41.7				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	90519.1	8.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		144.604	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.366	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.047	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.276	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606126503SD WG574001-08
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Method 6020 - Summary Report

Sample ID: L1606124701
Sample Date/Time: Wednesday, June 29, 2016 16:11:13
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	160464.4	3.8				ug/L	74699	Standard
	Be	9	12485.1	1.8	**6.6126**	0.132	2.0	ug/L	8	Standard
	Al	27	129371635.5	1.7	**410.0067**	8.683	2.1	ug/L	1493	Standard
	Sc	45	97873.5	2.0				ug/L	61029	Standard
	Ti	47	12940.2	2.9	**32.4229**	1.439	4.4	ug/L	35	Standard
	V	51	62587.9	0.8	**7.6988**	0.173	2.3	ug/L	1435	Standard
	Cr	52	130472.4	1.2	**15.7449**	0.176	1.1	ug/L	7635	Standard
	Cr	53	17299.9	2.8	**17.4949**	0.102	0.6	ug/L	363	Standard
	Mn	55	53885293.3	1.0	**7372.4056**	142.217	1.9	ug/L	747	Standard
	Co	59	1486809.2	2.0	**214.4609**	6.754	3.1	ug/L	234	Standard
	Ni	60	953927.1	1.9	**485.1518**	7.673	1.6	ug/L	215	Standard
	Cu	65	14021.8	2.7	**7.0705**	0.048	0.7	ug/L	104	Standard
	Zn	66	1250022.8	1.4	**1089.5042**	11.046	1.0	ug/L	363	Standard
>	**Ge**	72	519921.5	2.2				ug/L	495142	Standard
	As	75	2369.9	1.5	**2.0748**	0.031	1.5	ug/L	-50	Standard
	Se	82	334.2	2.8	**2.7639**	0.140	5.1	ug/L	14	Standard
	Se-1	77	477.7	9.4	**5.6016**	0.492	8.8	ug/L	42	Standard
>	**Ga**	71	3503.7	1.4				mg/L	42	Standard
	Rb	85	155749.9	1.6				ug/L	17	Standard
	Y	89	3051185.4	0.7				ug/L	417098	Standard
>	**Rh**	103	200.0	9.0				ug/L	13	Standard
	Mo	98	648.1	0.8	**0.2277**	0.002	1.0	ug/L	11	Standard
	Ag	107	406.3	10.5	**0.0469**	0.006	13.8	ug/L	68	Standard
	Cd	111	4037.2	2.2	**1.8458**	0.056	3.0	mg/L	2	Standard
	Cd	114	10321.7	4.5	**1.9292**	0.065	3.4	ug/L	12	Standard
>	**In**	115	612067.4	1.8				ug/L	587441	Standard
	Sn	118	936.7	6.3	**0.0593**	0.012	20.5	ug/L	497	Standard
	Sb	123	674.3	5.8	**0.1344**	0.006	4.1	ug/L	78	Standard
	Ba	135	15717.8	1.3	**7.3556**	0.136	1.8	ug/L	24	Standard
	Ce	140	2639736.8	0.7				ug/L	25	Standard
>	**Tb**	159	1213429.7	1.8				ug/L	939701	Standard
	Ho	165	212831.1	0.7				ug/L	10	Standard
	Tl	203	2423.5	3.4	**0.2853**	0.011	3.9	ug/L	4	Standard
	Tl	205	2225.2	6.3	**0.3038**	0.017	5.8	ug/L	2	Standard
	Pb	206	7086.3	0.1	**1.2240**	0.010	0.8	ug/L	240	Standard
	Pb	207	5547.0	2.2	**1.0710**	0.022	2.1	ug/L	198	Standard
	Pb	208	23218.6	1.0	**1.1348**	0.005	0.5	ug/L	883	Standard
	U	238	25740.2	1.8	**3.6463**	0.044	1.2	ug/L	3	Standard
>	**Bi**	209	536711.9	0.7				ug/L	523984	Standard

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Na	23	40.0	57.3	**285.3574**	160.270	56.2	mg/L	0	Standard
Mg	24	87773.6	1.9	**70.5914**	1.090	1.5	mg/L	37	Standard
K	39	1211.7	2.8	**1.5562**	0.053	3.4	mg/L	38	Standard
Ca	43	3308.7	4.2	**127.7939**	4.640	3.6	mg/L	10	Standard
Fe	54	180981.2	2.7	**95.5321**	0.892	0.9	mg/L	179	Standard
Fe	57	48873.8	3.4	**102.4969**	2.098	2.0	mg/L	335	Standard
> **Sc-1**	45	97873.5	2.0				mg/L	61029	Standard
Cl	35	64420.7	1.3				ug/L	20195	Standard
Kr	83	1.3	86.6				ug/L	4	Standard
Br	81	26873.8	3.7				ug/L	1547	Standard
P	31	52208.1	1.4				ug/L	15286	Standard
S	34	1956.8	2.0				ug/L	1572	Standard
Sr	88	1171.7	10.6				ug/L	73	Standard
C	12	126.7	46.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	329920.1	1.3				mg/L	6	Standard
Ho-1	165	212831.1	0.7				mg/L	10	Standard
Er	166	185158.1	1.8				mg/L	13	Standard
I	127	88143.1	6.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		214.815	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.004	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.192
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.429
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Co 59 Upper, S, EEE	Co	59
Ni 60 Upper, S, EEE	Ni	60
Zn 66 Upper, S, EEE	Zn	66

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Method 6020 - Summary Report

Sample ID: L1606124701PS WG574688-01
Sample Date/Time: Wednesday, June 29, 2016 16:14:25
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	166369.0	3.1				ug/L	74699	Standard
	Be	9	78228.1	1.5	**39.9183**	0.744	1.9	ug/L	8	Standard
	Al	27	127858501.0	1.9	**390.7420**	6.863	1.8	ug/L	1493	Standard
	Sc	45	95075.8	2.0				ug/L	61029	Standard
	Ti	47	12076.5	3.4	**30.6847**	0.840	2.7	ug/L	35	Standard
	V	51	487373.4	0.7	**62.1823**	0.880	1.4	ug/L	1435	Standard
	Cr	52	506749.0	0.5	**65.0704**	0.602	0.9	ug/L	7635	Standard
	Cr	53	63546.3	1.7	**66.1298**	1.201	1.8	ug/L	363	Standard
	Mn	55	53730576.4	0.3	**7459.5309**	74.503	1.0	ug/L	747	Standard
	Co	59	1866113.9	0.2	**273.1251**	3.396	1.2	ug/L	234	Standard
	Ni	60	1009610.1	0.8	**521.0961**	4.502	0.9	ug/L	215	Standard
	Cu	65	102190.2	1.2	**52.9646**	0.037	0.1	ug/L	104	Standard
	Zn	66	1265218.7	0.3	**1119.1475**	11.121	1.0	ug/L	363	Standard
>	**Ge**	72	512284.2	1.2				ug/L	495142	Standard
	As	75	65072.9	0.3	**56.2148**	0.511	0.9	ug/L	-50	Standard
	Se	82	7179.2	1.0	**63.0878**	0.484	0.8	ug/L	14	Standard
	Se-1	77	4836.8	0.7	**63.3901**	0.749	1.2	ug/L	42	Standard
>	**Ga**	71	3398.7	7.2				mg/L	42	Standard
	Rb	85	158551.9	0.5				ug/L	17	Standard
	Y	89	3079691.2	1.3				ug/L	417098	Standard
>	**Rh**	103	243.3	6.3				ug/L	13	Standard
	Mo	98	610.5	4.6	**0.2160**	0.008	3.7	ug/L	11	Standard
	Ag	107	329069.5	0.6	**48.8691**	0.577	1.2	ug/L	68	Standard
	Cd	111	109320.3	0.2	**50.6101**	0.459	0.9	mg/L	2	Standard
	Cd	114	265491.9	0.4	**50.1152**	0.608	1.2	ug/L	12	Standard
>	**In**	115	606831.5	1.0				ug/L	587441	Standard
	Sn	118	1098.4	5.9	**0.0874**	0.012	14.0	ug/L	497	Standard
	Sb	123	240923.7	1.8	**49.9558**	1.171	2.3	ug/L	78	Standard
	Ba	135	113288.6	0.8	**53.5705**	0.782	1.5	ug/L	24	Standard
	Ce	140	2588807.2	1.1				ug/L	25	Standard
>	**Tb**	159	1203377.0	1.6				ug/L	939701	Standard
	Ho	165	210409.6	1.8				ug/L	10	Standard
	Tl	203	437720.2	1.4	**52.3305**	0.744	1.4	ug/L	4	Standard
	Tl	205	404409.4	0.6	**55.7069**	0.222	0.4	ug/L	2	Standard
	Pb	206	295264.9	0.3	**54.4023**	0.212	0.4	ug/L	240	Standard
	Pb	207	250626.5	0.1	**51.9726**	0.335	0.6	ug/L	198	Standard
	Pb	208	1033784.3	0.4	**54.2614**	0.547	1.0	ug/L	883	Standard
	U	238	423217.8	0.6	**60.5919**	0.666	1.1	ug/L	3	Standard
>	**Bi**	209	531687.2	0.6				ug/L	523984	Standard

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Na	23	31.7	32.9	**235.3667**	80.946	34.4	mg/L	0	Standard
Mg	24	88559.7	0.9	**73.3333**	1.498	2.0	mg/L	37	Standard
K	39	1311.7	6.5	**1.7460**	0.092	5.3	mg/L	38	Standard
Ca	43	3437.1	1.4	**136.8797**	3.742	2.7	mg/L	10	Standard
Fe	54	183063.9	0.7	**99.5077**	1.370	1.4	mg/L	179	Standard
Fe	57	49900.4	2.7	**107.8438**	4.358	4.0	mg/L	335	Standard
> **Sc-1**	45	95075.8	2.0				mg/L	61029	Standard
Cl	35	63889.8	1.2				ug/L	20195	Standard
Kr	83	1.7	34.6				ug/L	4	Standard
Br	81	26186.0	7.9				ug/L	1547	Standard
P	31	52633.0	2.3				ug/L	15286	Standard
S	34	1903.5	2.7				ug/L	1572	Standard
Sr	88	1258.4	8.1				ug/L	73	Standard
C	12	153.3	16.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	3	Standard
Dy	164	329580.7	1.9				mg/L	6	Standard
Ho-1	165	210409.6	1.8				mg/L	10	Standard
Er	166	182077.6	1.3				mg/L	13	Standard
I	127	87547.6	5.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		222.720	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.462	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	103.301
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	101.470
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Co 59 Upper, S, EEE	Co	59
Ni 60 Upper, S, EEE	Ni	60
Zn 66 Upper, S, EEE	Zn	66

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Method 6020 - Summary Report

Sample ID: L1606124701SDL WG574688-02
Sample Date/Time: Wednesday, June 29, 2016 16:17:36
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	115043.6	2.7				ug/L	74699	Standard
	Be	9	2510.2	6.0	**1.8579**	0.064	3.4	ug/L	8	Standard
	Al	27	26603666.2	1.3	**117.5773**	3.118	2.7	ug/L	1493	Standard
	Sc	45	70520.4	2.0				ug/L	61029	Standard
	Ti	47	2655.2	2.4	**6.2496**	0.159	2.5	ug/L	35	Standard
	V	51	13651.6	1.3	**1.4451**	0.028	2.0	ug/L	1435	Standard
	Cr	52	32029.5	0.6	**2.9000**	0.113	3.9	ug/L	7635	Standard
	Cr	53	4062.2	6.0	**3.6565**	0.147	4.0	ug/L	363	Standard
	Mn	55	11326454.5	1.3	**1476.9710**	52.700	3.6	ug/L	747	Standard
	Co	59	315829.2	0.8	**43.3845**	1.293	3.0	ug/L	234	Standard
	Ni	60	206220.6	0.5	**99.8677**	2.554	2.6	ug/L	215	Standard
	Cu	65	3227.7	3.3	**1.4714**	0.087	5.9	ug/L	104	Standard
	Zn	66	276031.8	0.8	**228.9686**	6.765	3.0	ug/L	363	Standard
>	**Ge**	72	545622.5	2.3				ug/L	495142	Standard
	As	75	529.0	5.1	**0.4886**	0.031	6.3	ug/L	-50	Standard
	Se	82	109.8	7.8	**0.7692**	0.061	7.9	ug/L	14	Standard
	Se-1	77	127.7	10.6	**0.9669**	0.203	21.0	ug/L	42	Standard
>	**Ga**	71	896.7	4.3				mg/L	42	Standard
	Rb	85	33246.4	0.8				ug/L	17	Standard
	Y	89	1035711.2	2.7				ug/L	417098	Standard
>	**Rh**	103	68.3	33.0				ug/L	13	Standard
	Mo	98	137.2	4.4	**0.0416**	0.001	3.0	ug/L	11	Standard
	Ag	107	193.7	13.0	**0.0144**	0.003	20.5	ug/L	68	Standard
	Cd	111	922.1	1.5	**0.3978**	0.011	2.7	mg/L	2	Standard
	Cd	114	2202.4	8.0	**0.3929**	0.032	8.2	ug/L	12	Standard
>	**In**	115	638835.9	2.4				ug/L	587441	Standard
	Sn	118	601.7	4.7	**-0.0000**	0.004	76937.0	ug/L	497	Standard
	Sb	123	1960.6	22.3	**0.3834**	0.095	24.7	ug/L	78	Standard
	Ba	135	3410.7	1.0	**1.5171**	0.049	3.2	ug/L	24	Standard
	Ce	140	553030.9	1.0				ug/L	25	Standard
>	**Tb**	159	1064988.1	1.7				ug/L	939701	Standard
	Ho	165	44299.7	1.5				ug/L	10	Standard
	Tl	203	596.3	8.1	**0.0662**	0.006	8.4	ug/L	4	Standard
	Tl	205	613.3	10.1	**0.0808**	0.008	10.1	ug/L	2	Standard
	Pb	206	1759.1	0.5	**0.2383**	0.002	0.8	ug/L	240	Standard
	Pb	207	1407.7	5.3	**0.2088**	0.015	7.2	ug/L	198	Standard
	Pb	208	5898.4	2.6	**0.2216**	0.008	3.7	ug/L	883	Standard
	U	238	5357.3	1.2	**0.7271**	0.010	1.3	ug/L	3	Standard
>	**Bi**	209	557502.4	0.2				ug/L	523984	Standard

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Na	23	11.7	89.2	**117.5100**	105.501	89.8	mg/L	0	Standard
Mg	24	18105.8	1.6	**20.1624**	0.144	0.7	mg/L	37	Standard
K	39	321.7	3.6	**0.5016**	0.035	6.9	mg/L	38	Standard
Ca	43	733.4	8.9	**37.5359**	2.964	7.9	mg/L	10	Standard
Fe	54	38163.2	2.6	**27.8607**	0.186	0.7	mg/L	179	Standard
Fe	57	10221.8	1.3	**28.9959**	0.316	1.1	mg/L	335	Standard
> **Sc-1**	45	70520.4	2.0				mg/L	61029	Standard
Cl	35	31180.1	1.1				ug/L	20195	Standard
Kr	83	2.3	89.2				ug/L	4	Standard
Br	81	7325.1	3.6				ug/L	1547	Standard
P	31	24873.7	0.5				ug/L	15286	Standard
S	34	1646.8	8.5				ug/L	1572	Standard
Sr	88	296.7	11.0				ug/L	73	Standard
C	12	96.7	53.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	69181.7	2.0				mg/L	6	Standard
Ho-1	165	44299.7	1.5				mg/L	10	Standard
Er	166	39063.6	1.3				mg/L	13	Standard
I	127	21375.1	3.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		154.010	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.195	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.749
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.397
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Zn 66 Upper, S, EEE	Zn	66

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 16:20:49
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	104492.8	3.9				ug/L	74699	Standard
	Be	9	63869.3	1.0	**51.9084**	1.516	2.9	ug/L	8	Standard
	Al	27	9148865.9	2.6	**44.5067**	0.724	1.6	ug/L	1493	Standard
	Sc	45	68447.7	3.2				ug/L	61029	Standard
	Ti	47	43923.6	1.6	**106.2047**	1.334	1.3	ug/L	35	Standard
	V	51	454775.2	0.5	**55.0469**	0.468	0.8	ug/L	1435	Standard
	Cr	52	431898.3	0.6	**52.4410**	0.316	0.6	ug/L	7635	Standard
	Cr	53	53343.8	2.8	**52.6203**	1.459	2.8	ug/L	363	Standard
	Mn	55	427711.0	4.2	**56.2006**	1.985	3.5	ug/L	747	Standard
	Co	59	425402.4	1.1	**59.0619**	0.614	1.0	ug/L	234	Standard
	Ni	60	106741.4	0.9	**52.1773**	0.185	0.4	ug/L	215	Standard
	Cu	65	106457.4	0.4	**52.3703**	0.176	0.3	ug/L	104	Standard
	Zn	66	63607.9	0.7	**52.9682**	0.530	1.0	ug/L	363	Standard
>	Ge	72	539725.1	0.7				ug/L	495142	Standard
	As	75	63945.9	1.5	**52.4378**	1.123	2.1	ug/L	-50	Standard
	Se	82	6584.0	0.6	**54.8988**	0.684	1.2	ug/L	14	Standard
	Se-1	77	4386.3	1.4	**54.4772**	1.111	2.0	ug/L	42	Standard
>	Ga	71	80.0	16.5				mg/L	42	Standard
	Rb	85	970.0	8.8				ug/L	17	Standard
	Y	89	494238.2	2.5				ug/L	417098	Standard
>	Rh	103	45.0	11.1				ug/L	13	Standard
	Mo	98	317512.9	0.8	**102.4795**	1.834	1.8	ug/L	11	Standard
	Ag	107	378789.7	0.9	**49.9860**	0.591	1.2	ug/L	68	Standard
	Cd	111	119686.6	0.4	**49.2403**	0.865	1.8	mg/L	2	Standard
	Cd	114	291890.5	1.4	**48.9669**	1.322	2.7	ug/L	12	Standard
>	In	115	682927.0	1.5				ug/L	587441	Standard
	Sn	118	338721.1	0.8	**49.7884**	0.723	1.5	ug/L	497	Standard
	Sb	123	263759.6	1.2	**48.5931**	0.331	0.7	ug/L	78	Standard
	Ba	135	111614.3	0.7	**46.9010**	0.972	2.1	ug/L	24	Standard
	Ce	140	1265.1	98.5				ug/L	25	Standard
>	Tb	159	1064058.1	1.0				ug/L	939701	Standard
	Ho	165	88.3	85.2				ug/L	10	Standard
	Tl	203	475263.7	0.7	**51.4258**	1.211	2.4	ug/L	4	Standard
	Tl	205	438160.3	0.4	**54.6297**	1.400	2.6	ug/L	2	Standard
	Pb	206	306629.0	0.6	**51.1326**	1.396	2.7	ug/L	240	Standard
	Pb	207	272793.9	0.3	**51.2040**	1.495	2.9	ug/L	198	Standard
	Pb	208	1100211.2	0.6	**52.2716**	1.709	3.3	ug/L	883	Standard
	U	238	414469.5	0.5	**53.7134**	1.693	3.2	ug/L	3	Standard
>	Bi	209	587705.0	2.9				ug/L	523984	Standard

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Na	23	3.3	173.2	**35.5299**	61.531	173.2	mg/L	0	Standard
Mg	24	4809.1	8.0	**5.4678**	0.353	6.5	mg/L	37	Standard
K	39	2090.1	1.6	**4.0082**	0.167	4.2	mg/L	38	Standard
Ca	43	111.7	10.3	**3.7837**	0.862	22.8	mg/L	10	Standard
Fe	54	7082.4	2.6	**5.2191**	0.217	4.1	mg/L	179	Standard
Fe	57	2040.1	4.3	**5.1108**	0.267	5.2	mg/L	335	Standard
Sc-1	45	68447.7	3.2				mg/L	61029	Standard
Cl	35	25830.7	1.4				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	2190.2	6.5				ug/L	1547	Standard
P	31	18406.2	0.9				ug/L	15286	Standard
S	34	1965.1	6.7				ug/L	1572	Standard
Sr	88	71.7	21.3				ug/L	73	Standard
C	12	103.3	29.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	152.5	102.6				mg/L	6	Standard
Ho-1	165	88.3	85.2				mg/L	10	Standard
Er	166	86.7	74.2				mg/L	13	Standard
I	127	2766.9	21.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	103.817		
Al	27	89.013		
Sc	45			
Ti	47	106.205		
V	51	110.094		
Cr	52	104.882		
Cr	53			
Mn	55	112.401		
Co	59	118.124		
Ni	60	104.355		
Cu	65	104.741		
Zn	66	105.936		
Ge	72		109.004	
As	75	104.876		
Se	82	109.798		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	102.479		
Ag	107	99.972		
Cd	111	98.481		
Cd	114			
In	115		116.255	
Sn	118	99.577		
Sb	123	97.186		
Ba	135	93.802		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.852		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.543		
U	238	107.427		
Bi	209		112.161	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	
QC Std 6	V	51	
QC Std 6	Mn	55	

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QC Std 6	Co	59

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 16:24:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	100067.7	1.3				ug/L	74699	Standard
	Be	9	36.7	7.9	**0.0387**	0.002	5.2	ug/L	8	Standard
	Al	27	10153.6	30.4	**0.0381**	0.015	39.5	ug/L	1493	Standard
	Sc	45	67434.8	2.7				ug/L	61029	Standard
	Ti	47	38.3	21.7	**-0.0212**	0.020	92.7	ug/L	35	Standard
	V	51	1502.7	1.2	**-0.0231**	0.006	25.9	ug/L	1435	Standard
	Cr	52	7451.2	2.4	**-0.1523**	0.012	7.6	ug/L	7635	Standard
	Cr	53	503.3	11.6	**0.1429**	0.063	44.4	ug/L	363	Standard
	Mn	55	3693.5	26.8	**0.3137**	0.134	42.8	ug/L	747	Standard
	Co	59	358.3	10.7	**0.0099**	0.006	62.4	ug/L	234	Standard
	Ni	60	209.7	4.9	**-0.0268**	0.006	22.7	ug/L	215	Standard
	Cu	65	198.7	7.2	**-0.0110**	0.009	80.7	ug/L	104	Standard
	Zn	66	532.3	5.7	**-0.0316**	0.034	106.3	ug/L	363	Standard
>	Ge	72	571298.3	2.3				ug/L	495142	Standard
	As	75	-12.4	42.9	**0.0499**	0.004	8.8	ug/L	-50	Standard
	Se	82	23.5	9.9	**0.0476**	0.021	43.8	ug/L	14	Standard
	Se-1	77	58.7	7.7	**0.0749**	0.069	91.8	ug/L	42	Standard
>	Ga	71	75.0	26.7				mg/L	42	Standard
	Rb	85	36.7	55.1				ug/L	17	Standard
	Y	89	500557.3	2.5				ug/L	417098	Standard
>	Rh	103	30.0	44.1				ug/L	13	Standard
	Mo	98	301.0	26.9	**0.0924**	0.026	27.9	ug/L	11	Standard
	Ag	107	165.0	21.0	**0.0091**	0.004	49.2	ug/L	68	Standard
	Cd	111	19.8	28.3	**0.0003**	0.002	699.6	mg/L	2	Standard
	Cd	114	46.5	85.8	**0.0058**	0.007	116.4	ug/L	12	Standard
>	In	115	675355.4	0.8				ug/L	587441	Standard
	Sn	118	876.7	18.6	**0.0359**	0.025	69.7	ug/L	497	Standard
	Sb	123	599.5	22.8	**0.1076**	0.026	24.3	ug/L	78	Standard
	Ba	135	42.7	23.9	**0.0021**	0.004	201.6	ug/L	24	Standard
	Ce	140	140.0	34.4				ug/L	25	Standard
>	Tb	159	1044716.9	1.2				ug/L	939701	Standard
	Ho	165	20.0	50.0				ug/L	10	Standard
	Tl	203	103.0	21.9	**0.0094**	0.003	27.0	ug/L	4	Standard
	Tl	205	70.0	58.5	**0.0089**	0.005	57.1	ug/L	2	Standard
	Pb	206	338.7	4.4	**-0.0148**	0.002	16.0	ug/L	240	Standard
	Pb	207	277.7	9.1	**-0.0179**	0.005	28.1	ug/L	198	Standard
	Pb	208	1213.0	9.6	**-0.0165**	0.006	36.1	ug/L	883	Standard
	U	238	62.0	33.9	**0.0036**	0.003	76.1	ug/L	3	Standard
>	Bi	209	588682.5	1.2				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.0278**	29.484	173.2	mg/L	0	Standard
Mg	24	56.7	20.4	**0.0014**	0.015	1120.4	mg/L	37	Standard
K	39	36.7	28.4	**-0.0407**	0.021	51.2	mg/L	38	Standard
Ca	43	26.7	28.6	**-1.0029**	0.415	41.4	mg/L	10	Standard
Fe	54	187.4	12.0	**0.0055**	0.017	304.1	mg/L	179	Standard
Fe	57	261.7	6.1	**-0.2681**	0.071	26.5	mg/L	335	Standard
Sc-1	45	67434.8	2.7				mg/L	61029	Standard
Cl	35	26219.3	0.7				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	2243.5	3.0				ug/L	1547	Standard
P	31	19277.3	3.9				ug/L	15286	Standard
S	34	2016.8	11.3				ug/L	1572	Standard
Sr	88	70.0	35.7				ug/L	73	Standard
C	12	120.0	25.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	49.4	87.7				mg/L	6	Standard
Ho-1	165	20.0	50.0				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	2125.2	22.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		115.381	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.966
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		112.347
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606124701SDL WG574688-02
Sample Date/Time: Wednesday, June 29, 2016 16:27:13
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	105717.5	0.5				ug/L	74699	Standard
	Be	9	553.3	1.4	**0.4517**	0.004	0.8	ug/L	8	Standard
	Al	27	5662006.5	2.5	**27.2120**	0.787	2.9	ug/L	1493	Standard
	Sc	45	72131.5	3.8				ug/L	61029	Standard
	Ti	47	604.0	7.1	**1.2783**	0.109	8.5	ug/L	35	Standard
	V	51	3941.0	1.4	**0.2585**	0.002	0.9	ug/L	1435	Standard
	Cr	52	12715.3	2.3	**0.4691**	0.023	4.9	ug/L	7635	Standard
	Cr	53	1340.1	9.1	**0.9313**	0.103	11.1	ug/L	363	Standard
	Mn	55	2452895.1	0.8	**306.4368**	3.099	1.0	ug/L	747	Standard
	Co	59	67057.1	0.2	**8.7998**	0.112	1.3	ug/L	234	Standard
	Ni	60	46732.3	0.4	**21.5970**	0.233	1.1	ug/L	215	Standard
	Cu	65	904.0	6.3	**0.3188**	0.021	6.7	ug/L	104	Standard
	Zn	66	62660.6	1.1	**49.4618**	0.122	0.2	ug/L	363	Standard
>	**Ge**	72	569030.6	1.4				ug/L	495142	Standard
	As	75	59.1	19.2	**0.1055**	0.009	8.4	ug/L	-50	Standard
	Se	82	34.4	3.8	**0.1350**	0.014	10.1	ug/L	14	Standard
	Se-1	77	82.7	11.5	**0.3621**	0.106	29.4	ug/L	42	Standard
>	**Ga**	71	288.3	19.2				mg/L	42	Standard
	Rb	85	7325.1	4.9				ug/L	17	Standard
	Y	89	616528.9	0.8				ug/L	417098	Standard
>	**Rh**	103	13.3	78.1				ug/L	13	Standard
	Mo	98	112.4	8.7	**0.0298**	0.003	9.5	ug/L	11	Standard
	Ag	107	122.3	20.4	**0.0029**	0.003	108.6	ug/L	68	Standard
	Cd	111	198.8	14.6	**0.0723**	0.012	16.2	mg/L	2	Standard
	Cd	114	516.3	5.9	**0.0829**	0.006	6.9	ug/L	12	Standard
>	**In**	115	696026.2	0.9				ug/L	587441	Standard
	Sn	118	760.0	4.7	**0.0151**	0.006	37.2	ug/L	497	Standard
	Sb	123	350.2	21.1	**0.0592**	0.014	23.4	ug/L	78	Standard
	Ba	135	775.0	6.3	**0.3035**	0.019	6.3	ug/L	24	Standard
	Ce	140	119180.2	0.3				ug/L	25	Standard
>	**Tb**	159	1103880.2	1.1				ug/L	939701	Standard
	Ho	165	9261.2	2.5				ug/L	10	Standard
	Tl	203	155.7	9.5	**0.0145**	0.001	9.9	ug/L	4	Standard
	Tl	205	156.7	24.4	**0.0191**	0.005	23.7	ug/L	2	Standard
	Pb	206	668.3	5.9	**0.0368**	0.005	14.8	ug/L	240	Standard
	Pb	207	530.0	3.8	**0.0264**	0.004	13.6	ug/L	198	Standard
	Pb	208	2281.7	2.6	**0.0309**	0.002	6.9	ug/L	883	Standard
	U	238	1160.7	2.8	**0.1411**	0.004	2.6	ug/L	3	Standard
>	**Bi**	209	607087.1	0.9				ug/L	523984	Standard

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Na	23	1.7	173.2	**16.5008**	28.572	173.2	mg/L	0	Standard
Mg	24	3728.8	3.6	**4.0090**	0.135	3.4	mg/L	37	Standard
K	39	85.0	42.4	**0.0464**	0.073	156.7	mg/L	38	Standard
Ca	43	183.3	11.4	**7.2814**	1.162	16.0	mg/L	10	Standard
Fe	54	8713.3	2.8	**6.1146**	0.148	2.4	mg/L	179	Standard
Fe	57	2506.9	1.7	**6.1424**	0.321	5.2	mg/L	335	Standard
> **Sc-1**	45	72131.5	3.8				mg/L	61029	Standard
Cl	35	26208.6	1.1				ug/L	20195	Standard
Kr	83	2.7	21.7				ug/L	4	Standard
Br	81	3227.0	4.8				ug/L	1547	Standard
P	31	20363.7	0.5				ug/L	15286	Standard
S	34	1863.4	4.5				ug/L	1572	Standard
Sr	88	105.0	21.8				ug/L	73	Standard
C	12	56.7	36.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	14855.4	4.1				mg/L	6	Standard
Ho-1	165	9261.2	2.5				mg/L	10	Standard
Er	166	8048.8	4.7				mg/L	13	Standard
I	127	5796.1	1.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		141.525	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.923	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	118.484
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	115.860
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606124701SDL WG574688-02
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Method 6020 - Summary Report

Sample ID: L1606126504
Sample Date/Time: Wednesday, June 29, 2016 16:30:25
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	101552.6	1.9				ug/L	74699	Standard
	Be	9	25.0	72.1	**0.0287**	0.016	54.3	ug/L	8	Standard
	Al	27	16250197.0	1.8	**81.3578**	2.887	3.5	ug/L	1493	Standard
	Sc	45	67044.7	1.9				ug/L	61029	Standard
	Ti	47	394.3	10.9	**0.8437**	0.094	11.2	ug/L	35	Standard
	V	51	39093.2	1.3	**4.5488**	0.169	3.7	ug/L	1435	Standard
	Cr	52	19068.3	2.3	**1.3348**	0.101	7.6	ug/L	7635	Standard
	Cr	53	5326.0	20.8	**4.9620**	1.165	23.5	ug/L	363	Standard
	Mn	55	6239.0	2.5	**0.6731**	0.027	4.0	ug/L	747	Standard
	Co	59	851.0	2.5	**0.0808**	0.004	4.5	ug/L	234	Standard
	Ni	60	1951.8	2.1	**0.8314**	0.029	3.5	ug/L	215	Standard
	Cu	65	1321.1	4.3	**0.5464**	0.014	2.5	ug/L	104	Standard
	Zn	66	5985.8	0.6	**4.5673**	0.118	2.6	ug/L	363	Standard
>	**Ge**	72	540512.2	2.5				ug/L	495142	Standard
	As	75	1446.2	5.5	**1.2419**	0.041	3.3	ug/L	-50	Standard
	Se	82	841.6	2.6	**6.8893**	0.246	3.6	ug/L	14	Standard
	Se-1	77	609.0	15.5	**7.0254**	1.243	17.7	ug/L	42	Standard
>	**Ga**	71	105.0	12.6				mg/L	42	Standard
	Rb	85	1541.7	7.2				ug/L	17	Standard
	Y	89	489017.5	2.4				ug/L	417098	Standard
>	**Rh**	103	70.0	18.9				ug/L	13	Standard
	Mo	98	501.8	4.3	**0.1636**	0.005	2.9	ug/L	11	Standard
	Ag	107	97.0	7.4	**0.0005**	0.001	200.8	ug/L	68	Standard
	Cd	111	26.4	23.0	**0.0035**	0.003	79.3	mg/L	2	Standard
	Cd	114	74.1	18.4	**0.0109**	0.002	21.9	ug/L	12	Standard
>	**In**	115	652860.7	1.6				ug/L	587441	Standard
	Sn	118	840.0	9.7	**0.0347**	0.012	35.4	ug/L	497	Standard
	Sb	123	289.8	10.9	**0.0517**	0.007	12.7	ug/L	78	Standard
	Ba	135	17710.3	0.6	**7.7715**	0.161	2.1	ug/L	24	Standard
	Ce	140	1525.1	0.6				ug/L	25	Standard
>	**Tb**	159	1031518.0	1.9				ug/L	939701	Standard
	Ho	165	43.3	24.0				ug/L	10	Standard
	Tl	203	163.3	10.6	**0.0174**	0.002	9.6	ug/L	4	Standard
	Tl	205	133.3	16.9	**0.0182**	0.003	18.7	ug/L	2	Standard
	Pb	206	441.3	2.3	**0.0087**	0.001	8.9	ug/L	240	Standard
	Pb	207	362.0	4.8	**0.0037**	0.003	70.2	ug/L	198	Standard
	Pb	208	1549.4	2.6	**0.0058**	0.001	11.8	ug/L	883	Standard
	U	238	23538.3	0.9	**3.3015**	0.086	2.6	ug/L	3	Standard
>	**Bi**	209	542188.4	2.1				ug/L	523984	Standard

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Na	23	3.3	173.2	**35.7447**	61.903	173.2	mg/L	0	Standard
Mg	24	119069.4	0.9	**139.8814**	3.117	2.2	mg/L	37	Standard
K	39	143.3	11.2	**0.1739**	0.028	15.9	mg/L	38	Standard
Ca	43	463.3	1.6	**24.1242**	0.657	2.7	mg/L	10	Standard
Fe	54	197.6	4.4	**0.0142**	0.006	45.1	mg/L	179	Standard
Fe	57	435.0	13.1	**0.2738**	0.196	71.7	mg/L	335	Standard
> **Sc-1**	45	67044.7	1.9				mg/L	61029	Standard
Cl	35	31470.7	2.7				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	73323.9	4.5				ug/L	1547	Standard
P	31	23608.4	2.5				ug/L	15286	Standard
S	34	1800.1	6.6				ug/L	1572	Standard
Sr	88	293.3	6.9				ug/L	73	Standard
C	12	193.3	41.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	86.5	19.9				mg/L	6	Standard
Ho-1	165	43.3	24.0				mg/L	10	Standard
Er	166	73.3	34.3				mg/L	13	Standard
I	127	54762.3	5.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		135.949	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.163	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	111.136
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.474
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606126505
Sample Date/Time: Wednesday, June 29, 2016 16:33:36
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	99450.4	1.4				ug/L	74699	Standard
	Be	9	58.3	30.1	**0.0575**	0.016	27.1	ug/L	8	Standard
	Al	27	32118811.5	1.4	**164.1461**	0.108	0.1	ug/L	1493	Standard
	Sc	45	70749.8	1.3				ug/L	61029	Standard
	Ti	47	642.0	2.2	**1.4252**	0.030	2.1	ug/L	35	Standard
	V	51	8228.7	11.8	**0.7915**	0.119	15.1	ug/L	1435	Standard
	Cr	52	11308.2	2.8	**0.3584**	0.044	12.4	ug/L	7635	Standard
	Cr	53	3712.1	10.4	**3.3091**	0.391	11.8	ug/L	363	Standard
	Mn	55	3368829.0	1.1	**438.1329**	6.772	1.5	ug/L	747	Standard
	Co	59	3400.7	28.1	**0.4294**	0.132	30.8	ug/L	234	Standard
	Ni	60	4538.7	3.1	**2.0720**	0.077	3.7	ug/L	215	Standard
	Cu	65	1589.1	4.3	**0.6697**	0.036	5.3	ug/L	104	Standard
	Zn	66	6182.6	5.7	**4.6729**	0.311	6.7	ug/L	363	Standard
>	**Ge**	72	546665.5	0.5				ug/L	495142	Standard
	As	75	6156.5	0.5	**5.0379**	0.006	0.1	ug/L	-50	Standard
	Se	82	164.0	1.8	**1.2151**	0.026	2.2	ug/L	14	Standard
	Se-1	77	258.7	9.7	**2.5862**	0.322	12.5	ug/L	42	Standard
>	**Ga**	71	188.3	13.1				mg/L	42	Standard
	Rb	85	1378.4	10.6				ug/L	17	Standard
	Y	89	484009.6	2.1				ug/L	417098	Standard
>	**Rh**	103	118.3	6.5				ug/L	13	Standard
	Mo	98	286.3	31.1	**0.0925**	0.030	32.6	ug/L	11	Standard
	Ag	107	183.3	43.5	**0.0128**	0.011	86.7	ug/L	68	Standard
	Cd	111	248.2	17.8	**0.1006**	0.018	18.1	mg/L	2	Standard
	Cd	114	590.9	17.2	**0.1032**	0.017	16.3	ug/L	12	Standard
>	**In**	115	642069.8	1.9				ug/L	587441	Standard
	Sn	118	836.7	5.6	**0.0365**	0.010	26.8	ug/L	497	Standard
	Sb	123	288.3	29.8	**0.0524**	0.017	32.5	ug/L	78	Standard
	Ba	135	131296.8	1.0	**58.6819**	0.595	1.0	ug/L	24	Standard
	Ce	140	6513.1	10.5				ug/L	25	Standard
>	**Tb**	159	1012113.9	1.4				ug/L	939701	Standard
	Ho	165	216.7	7.1				ug/L	10	Standard
	Tl	203	185.3	61.4	**0.0202**	0.013	66.8	ug/L	4	Standard
	Tl	205	276.7	88.2	**0.0379**	0.033	87.8	ug/L	2	Standard
	Pb	206	891.4	31.8	**0.0916**	0.052	56.6	ug/L	240	Standard
	Pb	207	748.7	30.8	**0.0839**	0.048	56.6	ug/L	198	Standard
	Pb	208	3050.1	30.7	**0.0846**	0.049	57.6	ug/L	883	Standard
	U	238	21997.6	2.6	**3.1135**	0.091	2.9	ug/L	3	Standard
>	**Bi**	209	537104.2	0.4				ug/L	523984	Standard

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Na	23	13.3	57.3	**132.8617**	77.017	58.0	mg/L	0	Standard
Mg	24	104917.1	1.8	**116.7540**	0.597	0.5	mg/L	37	Standard
K	39	116.7	8.9	**0.1082**	0.018	16.4	mg/L	38	Standard
Ca	43	916.7	6.0	**47.4532**	3.610	7.6	mg/L	10	Standard
Fe	54	3013.9	2.4	**2.0666**	0.083	4.0	mg/L	179	Standard
Fe	57	1381.7	4.1	**2.9770**	0.162	5.4	mg/L	335	Standard
Sc-1	45	70749.8	1.3				mg/L	61029	Standard
Cl	35	30215.4	1.0				ug/L	20195	Standard
Kr	83	1.3	114.6				ug/L	4	Standard
Br	81	35768.9	2.6				ug/L	1547	Standard
P	31	25429.7	2.5				ug/L	15286	Standard
S	34	2313.5	0.3				ug/L	1572	Standard
Sr	88	551.7	8.2				ug/L	73	Standard
C	12	433.3	25.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	3	Standard
Dy	164	279.9	12.3				mg/L	6	Standard
Ho-1	165	216.7	7.1				mg/L	10	Standard
Er	166	280.0	18.9				mg/L	13	Standard
I	127	794211.5	6.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		133.135	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.406	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	109.299
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.504
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606126506
Sample Date/Time: Wednesday, June 29, 2016 16:36:48
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	100252.3	1.1				ug/L	74699	Standard
	Be	9	26.7	39.0	**0.0303**	0.009	29.8	ug/L	8	Standard
	Al	27	69444.0	4.9	**0.3387**	0.017	5.1	ug/L	1493	Standard
	Sc	45	71205.3	1.8				ug/L	61029	Standard
	Ti	47	113.0	20.9	**0.1414**	0.055	38.5	ug/L	35	Standard
	V	51	2901.2	2.9	**0.1267**	0.013	10.0	ug/L	1435	Standard
	Cr	52	23756.9	1.1	**1.6651**	0.003	0.2	ug/L	7635	Standard
	Cr	53	2710.2	4.1	**2.1308**	0.127	5.9	ug/L	363	Standard
	Mn	55	7460.8	10.3	**0.7511**	0.098	13.0	ug/L	747	Standard
	Co	59	456.0	8.6	**0.0207**	0.006	26.8	ug/L	234	Standard
	Ni	60	2497.2	2.2	**0.9949**	0.023	2.3	ug/L	215	Standard
	Cu	65	984.0	1.2	**0.3398**	0.007	2.0	ug/L	104	Standard
	Zn	66	8303.3	0.9	**5.9218**	0.058	1.0	ug/L	363	Standard
>	**Ge**	72	590298.4	1.1				ug/L	495142	Standard
	As	75	7.9	237.8	**0.0655**	0.014	21.6	ug/L	-50	Standard
	Se	82	27.7	14.2	**0.0742**	0.032	43.2	ug/L	14	Standard
	Se-1	77	72.3	15.2	**0.2091**	0.134	63.9	ug/L	42	Standard
>	**Ga**	71	91.7	20.7				mg/L	42	Standard
	Rb	85	308.3	4.1				ug/L	17	Standard
	Y	89	498995.2	1.7				ug/L	417098	Standard
>	**Rh**	103	21.7	48.0				ug/L	13	Standard
	Mo	98	716.7	9.5	**0.2259**	0.023	10.1	ug/L	11	Standard
	Ag	107	155.3	16.4	**0.0076**	0.003	44.6	ug/L	68	Standard
	Cd	111	44.4	12.9	**0.0104**	0.002	21.8	mg/L	2	Standard
	Cd	114	117.5	18.7	**0.0177**	0.004	21.5	ug/L	12	Standard
>	**In**	115	682064.0	0.6				ug/L	587441	Standard
	Sn	118	4689.1	2.4	**0.5966**	0.013	2.3	ug/L	497	Standard
	Sb	123	228.7	11.3	**0.0380**	0.005	12.5	ug/L	78	Standard
	Ba	135	1034.0	4.7	**0.4191**	0.020	4.8	ug/L	24	Standard
	Ce	140	486.7	14.8				ug/L	25	Standard
>	**Tb**	159	1056147.0	0.9				ug/L	939701	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	43.7	26.0	**0.0029**	0.001	43.8	ug/L	4	Standard
	Tl	205	50.0	26.5	**0.0063**	0.002	26.5	ug/L	2	Standard
	Pb	206	665.7	3.1	**0.0376**	0.003	7.4	ug/L	240	Standard
	Pb	207	542.7	5.2	**0.0299**	0.006	20.6	ug/L	198	Standard
	Pb	208	2227.4	4.5	**0.0297**	0.006	20.4	ug/L	883	Standard
	U	238	38.7	20.9	**0.0005**	0.001	221.1	ug/L	3	Standard
>	**Bi**	209	599996.8	1.5				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	216.7	5.8	**0.1745**	0.010	5.5	mg/L	37	Standard
K	39	46.7	49.5	**-0.0257**	0.044	170.8	mg/L	38	Standard
Ca	43	30.0	16.7	**-0.8971**	0.290	32.3	mg/L	10	Standard
Fe	54	200.7	16.8	**0.0076**	0.025	326.7	mg/L	179	Standard
Fe	57	248.3	11.1	**-0.3516**	0.067	19.2	mg/L	335	Standard
> **Sc-1**	45	71205.3	1.8				mg/L	61029	Standard
Cl	35	31458.6	1.1				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	3110.3	10.8				ug/L	1547	Standard
P	31	21037.9	1.6				ug/L	15286	Standard
S	34	2263.5	3.0				ug/L	1572	Standard
Sr	88	58.3	27.6				ug/L	73	Standard
C	12	113.3	13.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	38.9	27.0				mg/L	6	Standard
Ho-1	165	8.3	69.3				mg/L	10	Standard
Er	166	23.3	65.5				mg/L	13	Standard
I	127	20210.2	61.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		134.209	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		119.218	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		116.108
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		114.507
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606126601
Sample Date/Time: Wednesday, June 29, 2016 16:39:59
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	101321.2	3.1				ug/L	74699	Standard
	Be	9	18.3	56.8	**0.0228**	0.008	36.0	ug/L	8	Standard
	Al	27	44431569.1	0.7	**222.9926**	5.415	2.4	ug/L	1493	Standard
	Sc	45	71310.8	2.2				ug/L	61029	Standard
	Ti	47	275.3	6.3	**0.5272**	0.047	8.9	ug/L	35	Standard
	V	51	27907.2	1.9	**3.0387**	0.030	1.0	ug/L	1435	Standard
	Cr	52	13580.1	0.8	**0.5803**	0.015	2.6	ug/L	7635	Standard
	Cr	53	2821.9	2.8	**2.3430**	0.081	3.4	ug/L	363	Standard
	Mn	55	153037.1	1.2	**19.0926**	0.078	0.4	ug/L	747	Standard
	Co	59	1012.0	1.5	**0.0969**	0.001	1.5	ug/L	234	Standard
	Ni	60	4370.3	2.4	**1.9194**	0.048	2.5	ug/L	215	Standard
	Cu	65	751.7	5.3	**0.2499**	0.020	8.0	ug/L	104	Standard
	Zn	66	3518.1	1.4	**2.3650**	0.050	2.1	ug/L	363	Standard
>	**Ge**	72	565652.8	1.1				ug/L	495142	Standard
	As	75	1269.0	4.3	**1.0512**	0.035	3.4	ug/L	-50	Standard
	Se	82	382.5	3.3	**2.9130**	0.125	4.3	ug/L	14	Standard
	Se-1	77	193.3	14.8	**1.6975**	0.369	21.7	ug/L	42	Standard
>	**Ga**	71	66.7	18.9				mg/L	42	Standard
	Rb	85	2323.5	7.7				ug/L	17	Standard
	Y	89	480038.2	1.2				ug/L	417098	Standard
>	**Rh**	103	150.0	3.3				ug/L	13	Standard
	Mo	98	638.7	4.4	**0.2084**	0.010	5.0	ug/L	11	Standard
	Ag	107	92.0	14.1	**-0.0003**	0.002	569.4	ug/L	68	Standard
	Cd	111	195.2	3.6	**0.0755**	0.003	3.5	mg/L	2	Standard
	Cd	114	469.8	19.5	**0.0797**	0.016	19.7	ug/L	12	Standard
>	**In**	115	657497.5	0.6				ug/L	587441	Standard
	Sn	118	753.4	8.5	**0.0205**	0.010	48.9	ug/L	497	Standard
	Sb	123	222.8	13.6	**0.0384**	0.006	15.3	ug/L	78	Standard
	Ba	135	100054.6	0.7	**43.6617**	0.503	1.2	ug/L	24	Standard
	Ce	140	173.3	6.0				ug/L	25	Standard
>	**Tb**	159	1045560.4	1.5				ug/L	939701	Standard
	Ho	165	40.0	25.0				ug/L	10	Standard
	Tl	203	129.3	1.6	**0.0127**	0.000	3.7	ug/L	4	Standard
	Tl	205	133.3	20.7	**0.0174**	0.003	20.0	ug/L	2	Standard
	Pb	206	412.3	3.7	**0.0001**	0.002	2456.7	ug/L	240	Standard
	Pb	207	343.7	8.9	**-0.0032**	0.005	165.7	ug/L	198	Standard
	Pb	208	1432.7	1.3	**-0.0035**	0.002	56.3	ug/L	883	Standard
	U	238	43636.7	0.7	**5.8505**	0.120	2.1	ug/L	3	Standard
>	**Bi**	209	567479.2	1.8				ug/L	523984	Standard

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Na	23	5.0	100.0	**48.6438**	48.507	99.7	mg/L	0	Standard
Mg	24	35550.0	1.9	**39.2140**	0.699	1.8	mg/L	37	Standard
K	39	165.0	24.1	**0.1975**	0.071	36.0	mg/L	38	Standard
Ca	43	596.7	5.4	**29.7553**	2.186	7.3	mg/L	10	Standard
Fe	54	190.1	10.6	**-0.0004**	0.014	3403.7	mg/L	179	Standard
Fe	57	555.0	7.7	**0.5391**	0.093	17.2	mg/L	335	Standard
> **Sc-1**	45	71310.8	2.2				mg/L	61029	Standard
Cl	35	33374.1	0.9				ug/L	20195	Standard
Kr	83	2.0	132.3				ug/L	4	Standard
Br	81	77209.6	1.2				ug/L	1547	Standard
P	31	24828.7	1.5				ug/L	15286	Standard
S	34	2263.5	4.7				ug/L	1572	Standard
Sr	88	591.7	14.4				ug/L	73	Standard
C	12	253.3	22.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	25.0				mg/L	3	Standard
Dy	164	40.1	59.8				mg/L	6	Standard
Ho-1	165	40.0	25.0				mg/L	10	Standard
Er	166	66.7	37.7				mg/L	13	Standard
I	127	2058609.0	7.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		135.640	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.240	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.926
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.301
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606126901
Sample Date/Time: Wednesday, June 29, 2016 16:43:10
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	97179.0	1.2				ug/L	74699	Standard
	Be	9	23.3	44.6	**0.0281**	0.009	33.4	ug/L	8	Standard
	Al	27	25054309.4	1.7	**131.0332**	1.604	1.2	ug/L	1493	Standard
	Sc	45	69363.5	2.7				ug/L	61029	Standard
	Ti	47	323.3	2.8	**0.6992**	0.021	2.9	ug/L	35	Standard
	V	51	12024.0	2.6	**1.3128**	0.037	2.9	ug/L	1435	Standard
	Cr	52	11840.6	1.6	**0.4900**	0.025	5.0	ug/L	7635	Standard
	Cr	53	2901.9	3.9	**2.6451**	0.119	4.5	ug/L	363	Standard
	Mn	55	490032.6	0.8	**66.5395**	0.816	1.2	ug/L	747	Standard
	Co	59	931.7	2.1	**0.0964**	0.003	3.3	ug/L	234	Standard
	Ni	60	2217.5	3.2	**0.9981**	0.030	3.0	ug/L	215	Standard
	Cu	65	599.0	3.0	**0.2013**	0.011	5.4	ug/L	104	Standard
	Zn	66	4806.1	1.2	**3.7141**	0.039	1.0	ug/L	363	Standard
>	**Ge**	72	522601.4	0.6				ug/L	495142	Standard
	As	75	2361.3	3.3	**2.0571**	0.073	3.5	ug/L	-50	Standard
	Se	82	593.9	4.2	**4.9896**	0.230	4.6	ug/L	14	Standard
	Se-1	77	179.7	2.8	**1.7086**	0.076	4.5	ug/L	42	Standard
>	**Ga**	71	105.0	9.5				mg/L	42	Standard
	Rb	85	2805.3	2.5				ug/L	17	Standard
	Y	89	474068.5	3.1				ug/L	417098	Standard
>	**Rh**	103	81.7	12.7				ug/L	13	Standard
	Mo	98	305.2	1.9	**0.0985**	0.004	4.4	ug/L	11	Standard
	Ag	107	99.7	12.7	**0.0010**	0.002	153.4	ug/L	68	Standard
	Cd	111	19.2	16.0	**0.0004**	0.001	278.0	mg/L	2	Standard
	Cd	114	49.5	42.7	**0.0067**	0.004	59.0	ug/L	12	Standard
>	**In**	115	645532.6	2.3				ug/L	587441	Standard
	Sn	118	888.4	9.9	**0.0435**	0.010	24.0	ug/L	497	Standard
	Sb	123	240.8	4.4	**0.0427**	0.002	4.3	ug/L	78	Standard
	Ba	135	155622.1	0.5	**69.2020**	1.756	2.5	ug/L	24	Standard
	Ce	140	928.4	7.9				ug/L	25	Standard
>	**Tb**	159	1004174.2	1.0				ug/L	939701	Standard
	Ho	165	23.3	32.7				ug/L	10	Standard
	Tl	203	115.7	10.5	**0.0121**	0.001	11.5	ug/L	4	Standard
	Tl	205	128.3	22.2	**0.0179**	0.004	22.0	ug/L	2	Standard
	Pb	206	395.0	0.9	**0.0016**	0.001	57.1	ug/L	240	Standard
	Pb	207	323.3	6.0	**-0.0029**	0.004	138.0	ug/L	198	Standard
	Pb	208	1415.7	2.0	**0.0002**	0.001	432.7	ug/L	883	Standard
	U	238	7265.7	2.0	**1.0348**	0.023	2.2	ug/L	3	Standard
>	**Bi**	209	532226.3	0.6				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.4177**	30.160	173.2	mg/L	0	Standard
Mg	24	119202.1	1.4	**135.3768**	3.695	2.7	mg/L	37	Standard
K	39	220.0	8.2	**0.3143**	0.042	13.4	mg/L	38	Standard
Ca	43	398.3	4.4	**19.6130**	0.698	3.6	mg/L	10	Standard
Fe	54	252.1	18.1	**0.0493**	0.029	59.6	mg/L	179	Standard
Fe	57	418.3	9.7	**0.1785**	0.138	77.4	mg/L	335	Standard
Sc-1	45	69363.5	2.7				mg/L	61029	Standard
Cl	35	32454.7	1.8				ug/L	20195	Standard
Kr	83	1.0	173.2				ug/L	4	Standard
Br	81	137582.4	3.7				ug/L	1547	Standard
P	31	24828.7	1.5				ug/L	15286	Standard
S	34	2306.8	3.7				ug/L	1572	Standard
Sr	88	291.7	6.0				ug/L	73	Standard
C	12	323.3	19.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	15.2	73.1				mg/L	6	Standard
Ho-1	165	23.3	32.7				mg/L	10	Standard
Er	166	30.0	33.3				mg/L	13	Standard
I	127	310633.7	2.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		130.094	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		105.546	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.889
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.573
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606127201
Sample Date/Time: Wednesday, June 29, 2016 16:46:22
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	94337.9	2.3				ug/L	74699	Standard
	Be	9	23.3	53.9	**0.0288**	0.012	40.8	ug/L	8	Standard
	Al	27	2978340.1	2.2	**16.0395**	0.522	3.3	ug/L	1493	Standard
	Sc	45	67137.0	4.7				ug/L	61029	Standard
	Ti	47	236.7	18.3	**0.4520**	0.099	21.9	ug/L	35	Standard
	V	51	33734.3	0.8	**3.8201**	0.030	0.8	ug/L	1435	Standard
	Cr	52	13200.4	3.0	**0.5779**	0.062	10.7	ug/L	7635	Standard
	Cr	53	1396.7	5.5	**1.0289**	0.077	7.5	ug/L	363	Standard
	Mn	55	5810.0	55.0	**0.6034**	0.416	68.9	ug/L	747	Standard
	Co	59	597.0	23.2	**0.0441**	0.019	43.4	ug/L	234	Standard
	Ni	60	839.7	12.2	**0.2798**	0.055	19.7	ug/L	215	Standard
	Cu	65	499.7	4.1	**0.1378**	0.013	9.3	ug/L	104	Standard
	Zn	66	1881.8	10.3	**1.0958**	0.181	16.5	ug/L	363	Standard
>	**Ge**	72	550779.1	1.5				ug/L	495142	Standard
	As	75	823.5	3.7	**0.7205**	0.021	2.9	ug/L	-50	Standard
	Se	82	534.3	3.8	**4.2403**	0.211	5.0	ug/L	14	Standard
	Se-1	77	394.7	5.2	**4.2338**	0.183	4.3	ug/L	42	Standard
>	**Ga**	71	76.7	13.6				mg/L	42	Standard
	Rb	85	1120.0	6.4				ug/L	17	Standard
	Y	89	478775.5	2.0				ug/L	417098	Standard
>	**Rh**	103	33.3	52.7				ug/L	13	Standard
	Mo	98	1510.8	4.0	**0.5152**	0.028	5.4	ug/L	11	Standard
	Ag	107	155.0	42.6	**0.0091**	0.010	106.9	ug/L	68	Standard
	Cd	111	66.6	64.6	**0.0216**	0.019	89.7	mg/L	2	Standard
	Cd	114	188.5	50.4	**0.0319**	0.018	55.0	ug/L	12	Standard
>	**In**	115	639482.4	2.0				ug/L	587441	Standard
	Sn	118	738.4	13.9	**0.0215**	0.017	79.5	ug/L	497	Standard
	Sb	123	301.8	22.4	**0.0554**	0.014	26.0	ug/L	78	Standard
	Ba	135	10964.6	1.7	**4.9054**	0.035	0.7	ug/L	24	Standard
	Ce	140	728.4	65.5				ug/L	25	Standard
>	**Tb**	159	995838.4	2.1				ug/L	939701	Standard
	Ho	165	55.0	78.7				ug/L	10	Standard
	Tl	203	165.3	64.1	**0.0175**	0.012	69.7	ug/L	4	Standard
	Tl	205	88.3	34.1	**0.0121**	0.004	34.3	ug/L	2	Standard
	Pb	206	371.3	17.5	**-0.0043**	0.012	275.3	ug/L	240	Standard
	Pb	207	297.3	13.9	**-0.0098**	0.008	82.9	ug/L	198	Standard
	Pb	208	1253.7	10.6	**-0.0098**	0.007	68.1	ug/L	883	Standard
	U	238	7715.3	1.4	**1.0741**	0.027	2.5	ug/L	3	Standard
>	**Bi**	209	544657.1	1.1				ug/L	523984	Standard

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Na	23	8.3	34.6	**87.3928**	30.523	34.9	mg/L	0	Standard
Mg	24	56818.0	2.0	**66.6625**	1.829	2.7	mg/L	37	Standard
K	39	118.3	28.8	**0.1220**	0.059	48.6	mg/L	38	Standard
Ca	43	173.3	14.2	**7.4463**	1.537	20.6	mg/L	10	Standard
Fe	54	200.1	8.9	**0.0164**	0.019	116.3	mg/L	179	Standard
Fe	57	341.7	12.8	**-0.0156**	0.156	997.8	mg/L	335	Standard
> **Sc-1**	45	67137.0	4.7				mg/L	61029	Standard
Cl	35	31870.8	2.6				ug/L	20195	Standard
Kr	83	0.7	173.2				ug/L	4	Standard
Br	81	13232.4	3.4				ug/L	1547	Standard
P	31	22137.8	2.1				ug/L	15286	Standard
S	34	2160.2	8.0				ug/L	1572	Standard
Sr	88	146.7	24.2				ug/L	73	Standard
C	12	170.0	10.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	64.3	100.4				mg/L	6	Standard
Ho-1	165	55.0	78.7				mg/L	10	Standard
Er	166	50.0	60.0				mg/L	13	Standard
I	127	62898.8	4.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		126.291	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.237	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.859
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.945
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606127202
Sample Date/Time: Wednesday, June 29, 2016 16:49:33
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	98788.0	4.1				ug/L	74699	Standard
	Be	9	13.3	57.3	**0.0192**	0.007	36.1	ug/L	8	Standard
	Al	27	43121483.9	2.2	**221.9923**	5.444	2.5	ug/L	1493	Standard
	Sc	45	66930.9	3.1				ug/L	61029	Standard
	Ti	47	1039.7	26.4	**2.4141**	0.661	27.4	ug/L	35	Standard
	V	51	49957.2	0.9	**5.8910**	0.067	1.1	ug/L	1435	Standard
	Cr	52	18344.1	1.8	**1.2538**	0.038	3.0	ug/L	7635	Standard
	Cr	53	24960.6	4.5	**24.5202**	1.080	4.4	ug/L	363	Standard
	Mn	55	17873.9	4.1	**2.2143**	0.103	4.7	ug/L	747	Standard
	Co	59	1405.4	6.7	**0.1586**	0.013	8.4	ug/L	234	Standard
	Ni	60	3876.2	1.9	**1.7810**	0.032	1.8	ug/L	215	Standard
	Cu	65	1407.4	2.7	**0.5921**	0.020	3.4	ug/L	104	Standard
	Zn	66	4623.4	0.6	**3.4401**	0.014	0.4	ug/L	363	Standard
>	**Ge**	72	538103.3	0.3				ug/L	495142	Standard
	As	75	2665.5	0.4	**2.2493**	0.008	0.3	ug/L	-50	Standard
	Se	82	859.9	5.4	**7.0717**	0.401	5.7	ug/L	14	Standard
	Se-1	77	1900.1	5.6	**23.3152**	1.302	5.6	ug/L	42	Standard
>	**Ga**	71	205.0	14.8				mg/L	42	Standard
	Rb	85	12111.5	1.9				ug/L	17	Standard
	Y	89	447538.5	3.5				ug/L	417098	Standard
>	**Rh**	103	186.7	5.6				ug/L	13	Standard
	Mo	98	4087.3	1.0	**1.4942**	0.026	1.7	ug/L	11	Standard
	Ag	107	258.7	10.6	**0.0259**	0.004	14.5	ug/L	68	Standard
	Cd	111	70.2	15.3	**0.0250**	0.005	21.6	mg/L	2	Standard
	Cd	114	224.5	9.2	**0.0407**	0.004	8.7	ug/L	12	Standard
>	**In**	115	600654.0	1.1				ug/L	587441	Standard
	Sn	118	765.0	14.6	**0.0335**	0.020	60.1	ug/L	497	Standard
	Sb	123	166.1	4.9	**0.0306**	0.002	5.1	ug/L	78	Standard
	Ba	135	52090.1	1.0	**24.8744**	0.038	0.2	ug/L	24	Standard
	Ce	140	4474.0	3.6				ug/L	25	Standard
>	**Tb**	159	974974.5	0.9				ug/L	939701	Standard
	Ho	165	80.0	27.2				ug/L	10	Standard
	Tl	203	82.0	10.0	**0.0082**	0.001	13.1	ug/L	4	Standard
	Tl	205	63.3	43.5	**0.0090**	0.004	42.2	ug/L	2	Standard
	Pb	206	1123.7	3.1	**0.1383**	0.006	4.7	ug/L	240	Standard
	Pb	207	914.0	2.3	**0.1218**	0.004	3.1	ug/L	198	Standard
	Pb	208	3779.9	2.5	**0.1267**	0.006	5.0	ug/L	883	Standard
	U	238	23648.8	1.1	**3.4170**	0.057	1.7	ug/L	3	Standard
>	**Bi**	209	526202.0	0.7				ug/L	523984	Standard

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Na	23	5.0	100.0	**53.6294**	53.947	100.6	mg/L	0	Standard
Mg	24	113104.0	1.5	**133.1465**	4.642	3.5	mg/L	37	Standard
K	39	478.3	11.2	**0.8485**	0.082	9.7	mg/L	38	Standard
Ca	43	695.0	6.9	**37.5535**	3.460	9.2	mg/L	10	Standard
Fe	54	250.5	4.6	**0.0553**	0.004	6.4	mg/L	179	Standard
Fe	57	631.7	3.6	**0.8833**	0.015	1.7	mg/L	335	Standard
> **Sc-1**	45	66930.9	3.1				mg/L	61029	Standard
Cl	35	32927.1	2.7				ug/L	20195	Standard
Kr	83	2.7	57.3				ug/L	4	Standard
Br	81	41968.1	3.2				ug/L	1547	Standard
P	31	23413.1	2.8				ug/L	15286	Standard
S	34	2041.8	4.5				ug/L	1572	Standard
Sr	88	750.0	13.9				ug/L	73	Standard
C	12	126.7	19.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	103.6	24.2				mg/L	6	Standard
Ho-1	165	80.0	27.2				mg/L	10	Standard
Er	166	63.3	32.9				mg/L	13	Standard
I	127	36619.2	2.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.248	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.676	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.249
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.423
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606127901
Sample Date/Time: Wednesday, June 29, 2016 16:52:45
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	94669.8	0.8				ug/L	74699	Standard
	Be	9	153.3	14.7	**0.1451**	0.021	14.4	ug/L	8	Standard
	Al	27	36828943.8	1.6	**197.7220**	2.539	1.3	ug/L	1493	Standard
	Sc	45	72494.8	2.9				ug/L	61029	Standard
	Ti	47	9823.2	1.5	**22.6070**	0.583	2.6	ug/L	35	Standard
	V	51	40160.9	1.2	**4.4642**	0.016	0.4	ug/L	1435	Standard
	Cr	52	82051.3	1.3	**8.6794**	0.190	2.2	ug/L	7635	Standard
	Cr	53	10588.7	4.0	**9.7108**	0.425	4.4	ug/L	363	Standard
	Mn	55	3156665.4	1.9	**397.2480**	11.605	2.9	ug/L	747	Standard
	Co	59	13202.1	1.7	**1.7150**	0.048	2.8	ug/L	234	Standard
	Ni	60	14584.3	1.0	**6.7029**	0.116	1.7	ug/L	215	Standard
	Cu	65	6796.9	2.1	**3.0972**	0.099	3.2	ug/L	104	Standard
	Zn	66	29601.9	0.7	**23.2962**	0.407	1.7	ug/L	363	Standard
>	**Ge**	72	565029.1	1.1				ug/L	495142	Standard
	As	75	1169.4	2.0	**0.9746**	0.024	2.5	ug/L	-50	Standard
	Se	82	54.4	2.8	**0.2964**	0.014	4.6	ug/L	14	Standard
	Se-1	77	95.3	8.8	**0.5209**	0.088	16.8	ug/L	42	Standard
>	**Ga**	71	2745.3	10.7				mg/L	42	Standard
	Rb	85	40779.8	2.2				ug/L	17	Standard
	Y	89	501434.2	0.6				ug/L	417098	Standard
>	**Rh**	103	116.7	40.7				ug/L	13	Standard
	Mo	98	6510.4	0.7	**2.1843**	0.030	1.4	ug/L	11	Standard
	Ag	107	146.0	1.2	**0.0072**	0.000	3.6	ug/L	68	Standard
	Cd	111	54.1	19.4	**0.0153**	0.004	28.2	mg/L	2	Standard
	Cd	114	169.8	20.2	**0.0276**	0.006	22.4	ug/L	12	Standard
>	**In**	115	655252.5	1.2				ug/L	587441	Standard
	Sn	118	1435.1	4.4	**0.1255**	0.007	5.6	ug/L	497	Standard
	Sb	123	419.8	7.1	**0.0764**	0.005	6.8	ug/L	78	Standard
	Ba	135	167537.6	1.4	**73.3690**	0.619	0.8	ug/L	24	Standard
	Ce	140	144147.5	0.8				ug/L	25	Standard
>	**Tb**	159	1041877.9	1.3				ug/L	939701	Standard
	Ho	165	2731.9	2.9				ug/L	10	Standard
	Tl	203	237.3	5.5	**0.0244**	0.001	5.3	ug/L	4	Standard
	Tl	205	228.3	8.3	**0.0292**	0.002	8.4	ug/L	2	Standard
	Pb	206	7357.1	0.9	**1.1818**	0.018	1.5	ug/L	240	Standard
	Pb	207	5920.5	2.7	**1.0648**	0.026	2.5	ug/L	198	Standard
	Pb	208	25273.6	1.1	**1.1521**	0.016	1.4	ug/L	883	Standard
	U	238	16614.4	0.8	**2.1915**	0.022	1.0	ug/L	3	Standard
>	**Bi**	209	575969.2	0.6				ug/L	523984	Standard

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Na	23	3.3	86.6	**32.3968**	28.087	86.7	mg/L	0	Standard
Mg	24	3568.8	4.7	**3.8119**	0.091	2.4	mg/L	37	Standard
K	39	285.0	24.6	**0.4167**	0.132	31.6	mg/L	38	Standard
Ca	43	908.4	6.1	**45.7783**	2.516	5.5	mg/L	10	Standard
Fe	54	3605.6	1.3	**2.4364**	0.072	2.9	mg/L	179	Standard
Fe	57	1446.7	0.5	**3.0674**	0.109	3.5	mg/L	335	Standard
Sc-1	45	72494.8	2.9				mg/L	61029	Standard
Cl	35	31293.6	1.2				ug/L	20195	Standard
Kr	83	2.3	49.5				ug/L	4	Standard
Br	81	8015.5	4.3				ug/L	1547	Standard
P	31	26808.7	3.1				ug/L	15286	Standard
S	34	2353.5	0.9				ug/L	1572	Standard
Sr	88	506.7	5.4				ug/L	73	Standard
C	12	183.3	20.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	3	Standard
Dy	164	4522.3	4.2				mg/L	6	Standard
Ho-1	165	2731.9	2.9				mg/L	10	Standard
Er	166	2333.5	8.8				mg/L	13	Standard
I	127	38263.4	7.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		126.735	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		114.114	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	111.544
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	109.921
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606127901
Sample Date/Time: Wednesday, June 29, 2016 16:55:56
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	94757.1	0.6				ug/L	74699	Standard
	Be	9	16.7	34.6	**0.0226**	0.005	23.2	ug/L	8	Standard
	Al	27	809583.1	0.4	**4.3294**	0.010	0.2	ug/L	1493	Standard
	Sc	45	70063.3	2.2				ug/L	61029	Standard
	Ti	47	239.7	2.8	**0.4418**	0.016	3.7	ug/L	35	Standard
	V	51	2635.2	3.3	**0.1083**	0.010	9.6	ug/L	1435	Standard
	Cr	52	10594.0	0.1	**0.2214**	0.004	1.7	ug/L	7635	Standard
	Cr	53	1061.7	10.6	**0.6708**	0.107	16.0	ug/L	363	Standard
	Mn	55	69843.0	1.9	**8.5894**	0.152	1.8	ug/L	747	Standard
	Co	59	472.7	1.3	**0.0251**	0.001	3.3	ug/L	234	Standard
	Ni	60	497.3	0.6	**0.1075**	0.002	1.4	ug/L	215	Standard
	Cu	65	314.7	2.4	**0.0436**	0.003	7.6	ug/L	104	Standard
	Zn	66	3346.7	3.2	**2.2142**	0.089	4.0	ug/L	363	Standard
>	**Ge**	72	568460.2	0.3				ug/L	495142	Standard
	As	75	-20.7	45.1	**0.0435**	0.007	16.6	ug/L	-50	Standard
	Se	82	18.3	17.6	**0.0072**	0.025	350.3	ug/L	14	Standard
	Se-1	77	58.0	6.2	**0.0694**	0.043	62.2	ug/L	42	Standard
>	**Ga**	71	123.3	16.9				mg/L	42	Standard
	Rb	85	875.0	6.6				ug/L	17	Standard
	Y	89	490331.7	1.2				ug/L	417098	Standard
>	**Rh**	103	16.7	45.8				ug/L	13	Standard
	Mo	98	175.2	3.1	**0.0513**	0.001	2.5	ug/L	11	Standard
	Ag	107	187.0	5.8	**0.0120**	0.001	10.3	ug/L	68	Standard
	Cd	111	8.4	36.2	**-0.0044**	0.001	27.6	mg/L	2	Standard
	Cd	114	20.0	63.9	**0.0013**	0.002	167.4	ug/L	12	Standard
>	**In**	115	676596.2	0.9				ug/L	587441	Standard
	Sn	118	621.7	13.0	**-0.0023**	0.012	549.8	ug/L	497	Standard
	Sb	123	148.0	17.5	**0.0233**	0.005	19.5	ug/L	78	Standard
	Ba	135	3597.4	2.3	**1.5099**	0.025	1.6	ug/L	24	Standard
	Ce	140	3133.7	5.7				ug/L	25	Standard
>	**Tb**	159	1053037.0	0.7				ug/L	939701	Standard
	Ho	165	73.3	37.6				ug/L	10	Standard
	Tl	203	38.7	9.8	**0.0024**	0.000	14.0	ug/L	4	Standard
	Tl	205	30.0	57.7	**0.0039**	0.002	55.8	ug/L	2	Standard
	Pb	206	500.3	0.4	**0.0113**	0.001	11.7	ug/L	240	Standard
	Pb	207	394.7	10.5	**0.0033**	0.008	256.3	ug/L	198	Standard
	Pb	208	1728.4	3.9	**0.0071**	0.003	37.0	ug/L	883	Standard
	U	238	362.3	7.5	**0.0420**	0.004	8.9	ug/L	3	Standard
>	**Bi**	209	594905.3	1.7				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.1214**	29.647	173.2	mg/L	0	Standard
Mg	24	156.7	18.1	**0.1107**	0.028	25.7	mg/L	37	Standard
K	39	30.0	60.1	**-0.0567**	0.034	59.1	mg/L	38	Standard
Ca	43	53.3	5.4	**0.4139**	0.213	51.5	mg/L	10	Standard
Fe	54	254.1	20.9	**0.0493**	0.038	78.1	mg/L	179	Standard
Fe	57	286.7	7.0	**-0.2249**	0.071	31.4	mg/L	335	Standard
> **Sc-1**	45	70063.3	2.2				mg/L	61029	Standard
Cl	35	33357.3	0.7				ug/L	20195	Standard
Kr	83	2.3	89.2				ug/L	4	Standard
Br	81	2703.6	11.1				ug/L	1547	Standard
P	31	21573.7	6.4				ug/L	15286	Standard
S	34	2518.5	1.8				ug/L	1572	Standard
Sr	88	90.0	20.0				ug/L	73	Standard
C	12	76.7	7.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	3	Standard
Dy	164	206.2	21.0				mg/L	6	Standard
Ho-1	165	73.3	37.6				mg/L	10	Standard
Er	166	80.0	12.5				mg/L	13	Standard
I	127	6318.0	20.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		126.852	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.807	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	115.177
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	113.535
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 16:59:09
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92097.4	0.2				ug/L	74699	Standard
	Be	9	59332.7	2.3	**54.6708**	1.340	2.5	ug/L	8	Standard
	Al	27	8920018.4	1.0	**49.2175**	0.589	1.2	ug/L	1493	Standard
	Sc	45	68374.0	2.7				ug/L	61029	Standard
	Ti	47	44746.6	0.7	**103.2626**	1.432	1.4	ug/L	35	Standard
	V	51	467593.6	0.9	**54.0107**	0.396	0.7	ug/L	1435	Standard
	Cr	52	444978.1	1.4	**51.5506**	1.111	2.2	ug/L	7635	Standard
	Cr	53	54491.2	2.0	**51.2973**	1.411	2.7	ug/L	363	Standard
	Mn	55	420710.6	2.8	**52.7641**	1.799	3.4	ug/L	747	Standard
	Co	59	425350.8	2.7	**56.3649**	1.831	3.2	ug/L	234	Standard
	Ni	60	109363.3	1.2	**51.0215**	0.971	1.9	ug/L	215	Standard
	Cu	65	108714.3	1.3	**51.0413**	1.018	2.0	ug/L	104	Standard
	Zn	66	63872.0	1.2	**50.7455**	1.020	2.0	ug/L	363	Standard
>	**Ge**	72	565538.7	0.9				ug/L	495142	Standard
	As	75	65590.6	1.0	**51.3298**	0.623	1.2	ug/L	-50	Standard
	Se	82	6676.5	1.4	**53.1245**	0.865	1.6	ug/L	14	Standard
	Se-1	77	4570.7	2.8	**54.1793**	1.989	3.7	ug/L	42	Standard
>	**Ga**	71	90.0	25.5				mg/L	42	Standard
	Rb	85	980.0	1.8				ug/L	17	Standard
	Y	89	481101.3	1.3				ug/L	417098	Standard
>	**Rh**	103	36.7	20.8				ug/L	13	Standard
	Mo	98	317636.1	2.3	**106.0178**	2.920	2.8	ug/L	11	Standard
	Ag	107	377887.3	1.0	**51.5689**	0.593	1.2	ug/L	68	Standard
	Cd	111	119799.3	1.9	**50.9674**	1.189	2.3	mg/L	2	Standard
	Cd	114	291345.5	1.8	**50.5384**	1.150	2.3	ug/L	12	Standard
>	**In**	115	660345.6	0.5				ug/L	587441	Standard
	Sn	118	333887.3	1.0	**50.7546**	0.756	1.5	ug/L	497	Standard
	Sb	123	263770.3	1.5	**50.2579**	0.987	2.0	ug/L	78	Standard
	Ba	135	110751.0	1.4	**48.1238**	0.926	1.9	ug/L	24	Standard
	Ce	140	100.0	13.2				ug/L	25	Standard
>	**Tb**	159	1027328.3	1.0				ug/L	939701	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	469667.3	0.3	**51.2282**	0.784	1.5	ug/L	4	Standard
	Tl	205	432915.4	1.7	**54.4135**	1.621	3.0	ug/L	2	Standard
	Pb	206	304012.7	1.3	**51.1045**	1.311	2.6	ug/L	240	Standard
	Pb	207	269196.3	1.3	**50.9328**	1.301	2.6	ug/L	198	Standard
	Pb	208	1105976.1	1.5	**52.9652**	1.506	2.8	ug/L	883	Standard
	U	238	408284.4	0.8	**53.3305**	1.093	2.0	ug/L	3	Standard
>	**Bi**	209	582837.4	1.3				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4664.1	3.2	**5.3139**	0.299	5.6	mg/L	37	Standard
K	39	2066.8	2.7	**3.9658**	0.176	4.4	mg/L	38	Standard
Ca	43	83.3	3.5	**2.1752**	0.111	5.1	mg/L	10	Standard
Fe	54	7259.4	3.7	**5.3547**	0.102	1.9	mg/L	179	Standard
Fe	57	2016.8	2.5	**5.0496**	0.304	6.0	mg/L	335	Standard
Sc-1	45	68374.0	2.7				mg/L	61029	Standard
Cl	35	31290.3	2.5				ug/L	20195	Standard
Kr	83	2.3	65.5				ug/L	4	Standard
Br	81	2203.5	6.4				ug/L	1547	Standard
P	31	22518.4	0.7				ug/L	15286	Standard
S	34	2795.3	6.4				ug/L	1572	Standard
Sr	88	58.3	13.1				ug/L	73	Standard
C	12	70.0	37.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	25.1	45.0				mg/L	6	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	33.3	34.6				mg/L	13	Standard
I	127	4404.0	17.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	109.342		
Al	27	98.435		
Sc	45			
Ti	47	103.263		
V	51	108.021		
Cr	52	103.101		
Cr	53			
Mn	55	105.528		
Co	59	112.730		
Ni	60	102.043		
Cu	65	102.083		
Zn	66	101.491		
Ge	72		114.217	
As	75	102.660		
Se	82	106.249		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	106.018		
Ag	107	103.138		
Cd	111	101.935		
Cd	114			
In	115		112.411	
Sn	118	101.509		
Sb	123	100.516		
Ba	135	96.248		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.456		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.930		
U	238	106.661		
Bi	209		111.232	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Co	59	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 17:02:20
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92622.3	1.7				ug/L	74699	Standard
	Be	9	38.3	64.3	**0.0426**	0.023	52.8	ug/L	8	Standard
	Al	27	23370.4	151.2	**0.1159**	0.196	168.9	ug/L	1493	Standard
	Sc	45	68951.6	1.3				ug/L	61029	Standard
	Ti	47	40.3	21.1	**-0.0139**	0.019	138.6	ug/L	35	Standard
	V	51	1665.7	22.9	**0.0015**	0.044	2840.4	ug/L	1435	Standard
	Cr	52	7712.6	2.1	**-0.0923**	0.036	39.5	ug/L	7635	Standard
	Cr	53	583.3	10.9	**0.2339**	0.049	21.0	ug/L	363	Standard
	Mn	55	4624.3	138.3	**0.4433**	0.816	184.2	ug/L	747	Standard
	Co	59	398.3	65.9	**0.0165**	0.035	212.9	ug/L	234	Standard
	Ni	60	246.3	49.7	**-0.0062**	0.058	932.9	ug/L	215	Standard
	Cu	65	154.7	27.9	**-0.0294**	0.020	68.5	ug/L	104	Standard
	Zn	66	470.3	19.7	**-0.0693**	0.075	107.9	ug/L	363	Standard
>	**Ge**	72	553538.3	2.4				ug/L	495142	Standard
	As	75	-38.0	63.4	**0.0295**	0.019	62.8	ug/L	-50	Standard
	Se	82	20.6	12.7	**0.0307**	0.026	83.7	ug/L	14	Standard
	Se-1	77	63.0	12.0	**0.1490**	0.085	57.3	ug/L	42	Standard
>	**Ga**	71	71.7	14.5				mg/L	42	Standard
	Rb	85	25.0	0.0				ug/L	17	Standard
	Y	89	484828.2	0.4				ug/L	417098	Standard
>	**Rh**	103	11.7	65.5				ug/L	13	Standard
	Mo	98	326.7	26.1	**0.0989**	0.027	26.9	ug/L	11	Standard
	Ag	107	215.0	76.0	**0.0152**	0.021	139.6	ug/L	68	Standard
	Cd	111	16.1	49.4	**-0.0013**	0.003	242.1	mg/L	2	Standard
	Cd	114	45.0	78.6	**0.0054**	0.006	109.2	ug/L	12	Standard
>	**In**	115	687277.7	0.8				ug/L	587441	Standard
	Sn	118	931.7	18.6	**0.0418**	0.027	63.5	ug/L	497	Standard
	Sb	123	489.1	40.1	**0.0853**	0.036	41.8	ug/L	78	Standard
	Ba	135	52.0	47.0	**0.0057**	0.010	177.6	ug/L	24	Standard
	Ce	140	81.7	78.0				ug/L	25	Standard
>	**Tb**	159	1059717.9	1.6				ug/L	939701	Standard
	Ho	165	6.7	86.6				ug/L	10	Standard
	Tl	203	97.3	80.9	**0.0086**	0.008	97.3	ug/L	4	Standard
	Tl	205	126.7	77.5	**0.0158**	0.012	76.4	ug/L	2	Standard
	Pb	206	434.7	47.9	**0.0006**	0.034	5998.1	ug/L	240	Standard
	Pb	207	327.7	41.4	**-0.0091**	0.025	275.6	ug/L	198	Standard
	Pb	208	1259.4	26.8	**-0.0148**	0.016	107.4	ug/L	883	Standard
	U	238	94.7	104.8	**0.0077**	0.013	165.1	ug/L	3	Standard
>	**Bi**	209	593862.7	2.1				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	88.3	93.4	**0.0352**	0.093	262.9	mg/L	37	Standard
K	39	41.7	30.2	**-0.0325**	0.025	77.1	mg/L	38	Standard
Ca	43	21.7	58.1	**-1.3088**	0.708	54.1	mg/L	10	Standard
Fe	54	169.3	10.4	**-0.0113**	0.012	105.6	mg/L	179	Standard
Fe	57	255.0	7.1	**-0.3067**	0.061	20.0	mg/L	335	Standard
> **Sc-1**	45	68951.6	1.3				mg/L	61029	Standard
Cl	35	30862.1	1.0				ug/L	20195	Standard
Kr	83	3.7	31.5				ug/L	4	Standard
Br	81	2130.2	6.5				ug/L	1547	Standard
P	31	22533.4	1.3				ug/L	15286	Standard
S	34	2576.9	2.2				ug/L	1572	Standard
Sr	88	61.7	20.4				ug/L	73	Standard
C	12	70.0	62.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	15.1	95.9				mg/L	6	Standard
Ho-1	165	6.7	86.6				mg/L	10	Standard
Er	166	33.3	69.3				mg/L	13	Standard
I	127	3348.7	10.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.794	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		116.995
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		113.336
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606127902 WG574001-03
Sample Date/Time: Wednesday, June 29, 2016 17:05:33
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	97844.9	1.2				ug/L	74699	Standard
	Be	9	628.3	5.4	**0.5525**	0.030	5.3	ug/L	8	Standard
	Al	27	67592650.7	0.8	**351.1766**	6.777	1.9	ug/L	1493	Standard
	Sc	45	76196.2	3.2				ug/L	61029	Standard
	Ti	47	35031.5	1.8	**85.4603**	1.454	1.7	ug/L	35	Standard
	V	51	127107.8	0.4	**15.3856**	0.087	0.6	ug/L	1435	Standard
	Cr	52	144594.0	0.9	**17.0395**	0.185	1.1	ug/L	7635	Standard
	Cr	53	17708.7	3.4	**17.4084**	0.576	3.3	ug/L	363	Standard
	Mn	55	9638149.6	0.5	**1281.4698**	6.113	0.5	ug/L	747	Standard
	Co	59	44221.4	1.1	**6.1626**	0.079	1.3	ug/L	234	Standard
	Ni	60	29440.2	0.7	**14.4336**	0.102	0.7	ug/L	215	Standard
	Cu	65	18715.2	1.1	**9.2058**	0.118	1.3	ug/L	104	Standard
	Zn	66	49911.7	1.0	**41.8483**	0.443	1.1	ug/L	363	Standard
>	**Ge**	72	534821.8	0.2				ug/L	495142	Standard
	As	75	5363.3	0.7	**4.4926**	0.039	0.9	ug/L	-50	Standard
	Se	82	81.7	4.2	**0.5509**	0.030	5.5	ug/L	14	Standard
	Se-1	77	90.0	5.1	**0.5184**	0.056	10.8	ug/L	42	Standard
>	**Ga**	71	10246.8	1.6				mg/L	42	Standard
	Rb	85	128176.6	1.2				ug/L	17	Standard
	Y	89	611826.2	1.2				ug/L	417098	Standard
>	**Rh**	103	203.3	5.1				ug/L	13	Standard
	Mo	98	8459.2	1.1	**2.8837**	0.063	2.2	ug/L	11	Standard
	Ag	107	335.7	32.7	**0.0339**	0.015	43.7	ug/L	68	Standard
	Cd	111	167.4	13.2	**0.0649**	0.009	13.6	mg/L	2	Standard
	Cd	114	471.4	29.4	**0.0814**	0.024	29.1	ug/L	12	Standard
>	**In**	115	645352.1	1.1				ug/L	587441	Standard
	Sn	118	2433.5	1.0	**0.2845**	0.006	2.0	ug/L	497	Standard
	Sb	123	747.2	5.1	**0.1415**	0.006	4.4	ug/L	78	Standard
	Ba	135	186708.8	1.1	**83.0208**	0.490	0.6	ug/L	24	Standard
	Ce	140	555105.9	0.4				ug/L	25	Standard
>	**Tb**	159	1017797.9	1.6				ug/L	939701	Standard
	Ho	165	10682.1	1.8				ug/L	10	Standard
	Tl	203	801.4	12.7	**0.0906**	0.011	12.4	ug/L	4	Standard
	Tl	205	726.7	5.1	**0.0967**	0.005	5.6	ug/L	2	Standard
	Pb	206	28687.5	0.5	**5.0315**	0.023	0.5	ug/L	240	Standard
	Pb	207	23046.8	1.0	**4.5438**	0.005	0.1	ug/L	198	Standard
	Pb	208	100519.8	0.6	**5.0199**	0.074	1.5	ug/L	883	Standard
	U	238	32058.9	0.6	**4.4211**	0.050	1.1	ug/L	3	Standard
>	**Bi**	209	551473.5	0.9				ug/L	523984	Standard

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Na	23	16.7	17.3	**153.4719**	22.118	14.4	mg/L	0	Standard
Mg	24	8050.5	4.4	**8.2571**	0.176	2.1	mg/L	37	Standard
K	39	990.0	1.3	**1.6393**	0.041	2.5	mg/L	38	Standard
Ca	43	1383.4	8.1	**67.3924**	3.470	5.1	mg/L	10	Standard
Fe	54	12019.5	0.9	**8.0301**	0.303	3.8	mg/L	179	Standard
Fe	57	3888.8	1.5	**9.5221**	0.470	4.9	mg/L	335	Standard
Sc-1	45	76196.2	3.2				mg/L	61029	Standard
Cl	35	38282.3	2.8				ug/L	20195	Standard
Kr	83	1.7	124.9				ug/L	4	Standard
Br	81	9239.5	4.1				ug/L	1547	Standard
P	31	33428.5	3.8				ug/L	15286	Standard
S	34	2046.8	10.4				ug/L	1572	Standard
Sr	88	885.0	8.4				ug/L	73	Standard
C	12	223.3	22.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	3	Standard
Dy	164	18454.9	2.8				mg/L	6	Standard
Ho-1	165	10682.1	1.8				mg/L	10	Standard
Er	166	9956.6	4.7				mg/L	13	Standard
I	127	65381.5	9.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		130.986	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		108.014	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.858
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.246
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606127902 WG574001-03
Sample Date/Time: Wednesday, June 29, 2016 17:08:45
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	97333.3	1.1				ug/L	74699	Standard
	Be	9	23.3	32.7	**0.0279**	0.007	23.3	ug/L	8	Standard
	Al	27	1471688.9	2.0	**7.6717**	0.099	1.3	ug/L	1493	Standard
	Sc	45	68584.9	0.8				ug/L	61029	Standard
	Ti	47	736.0	3.1	**1.5714**	0.076	4.9	ug/L	35	Standard
	V	51	4360.2	2.0	**0.3040**	0.018	5.9	ug/L	1435	Standard
	Cr	52	10891.2	1.4	**0.2475**	0.011	4.5	ug/L	7635	Standard
	Cr	53	901.7	3.1	**0.5139**	0.018	3.4	ug/L	363	Standard
	Mn	55	209342.7	1.0	**25.8667**	0.657	2.5	ug/L	747	Standard
	Co	59	1184.0	8.5	**0.1180**	0.016	13.3	ug/L	234	Standard
	Ni	60	823.4	2.4	**0.2566**	0.015	5.7	ug/L	215	Standard
	Cu	65	604.0	5.8	**0.1771**	0.017	9.7	ug/L	104	Standard
	Zn	66	3536.4	2.1	**2.3459**	0.038	1.6	ug/L	363	Standard
>	**Ge**	72	572433.6	1.6				ug/L	495142	Standard
	As	75	56.5	19.8	**0.1032**	0.008	8.2	ug/L	-50	Standard
	Se	82	22.7	8.9	**0.0409**	0.015	36.5	ug/L	14	Standard
	Se-1	77	56.3	3.7	**0.0451**	0.032	71.6	ug/L	42	Standard
>	**Ga**	71	286.7	20.8				mg/L	42	Standard
	Rb	85	2816.9	8.1				ug/L	17	Standard
	Y	89	483993.7	0.1				ug/L	417098	Standard
>	**Rh**	103	11.7	65.5				ug/L	13	Standard
	Mo	98	255.8	9.6	**0.0784**	0.008	10.6	ug/L	11	Standard
	Ag	107	215.7	39.7	**0.0161**	0.012	72.2	ug/L	68	Standard
	Cd	111	33.2	125.7	**0.0061**	0.018	290.4	mg/L	2	Standard
	Cd	114	83.8	140.0	**0.0123**	0.020	164.2	ug/L	12	Standard
>	**In**	115	670122.5	0.4				ug/L	587441	Standard
	Sn	118	730.0	9.6	**0.0149**	0.011	73.4	ug/L	497	Standard
	Sb	123	198.5	22.7	**0.0331**	0.009	26.1	ug/L	78	Standard
	Ba	135	4104.6	4.5	**1.7422**	0.086	5.0	ug/L	24	Standard
	Ce	140	11919.7	3.4				ug/L	25	Standard
>	**Tb**	159	1040073.5	0.3				ug/L	939701	Standard
	Ho	165	248.3	25.2				ug/L	10	Standard
	Tl	203	119.3	122.5	**0.0111**	0.016	142.6	ug/L	4	Standard
	Tl	205	45.0	44.4	**0.0058**	0.003	43.8	ug/L	2	Standard
	Pb	206	1027.4	11.1	**0.0985**	0.020	20.7	ug/L	240	Standard
	Pb	207	828.0	1.8	**0.0839**	0.004	4.9	ug/L	198	Standard
	Pb	208	3389.1	2.4	**0.0853**	0.005	6.3	ug/L	883	Standard
	U	238	690.0	3.8	**0.0840**	0.004	4.3	ug/L	3	Standard
>	**Bi**	209	594228.5	1.0				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	215.0	6.2	**0.1819**	0.016	8.8	mg/L	37	Standard
K	39	53.3	14.3	**-0.0093**	0.014	153.2	mg/L	38	Standard
Ca	43	48.3	15.8	**0.1914**	0.411	214.9	mg/L	10	Standard
Fe	54	443.5	15.8	**0.1966**	0.055	28.1	mg/L	179	Standard
Fe	57	323.3	11.7	**-0.0960**	0.118	122.9	mg/L	335	Standard
> **Sc-1**	45	68584.9	0.8				mg/L	61029	Standard
Cl	35	29711.8	0.5				ug/L	20195	Standard
Kr	83	0.7	173.2				ug/L	4	Standard
Br	81	2166.8	7.4				ug/L	1547	Standard
P	31	19419.1	3.8				ug/L	15286	Standard
S	34	2206.8	3.0				ug/L	1572	Standard
Sr	88	96.7	19.6				ug/L	73	Standard
C	12	46.7	49.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	390.3	4.3				mg/L	6	Standard
Ho-1	165	248.3	25.2				mg/L	10	Standard
Er	166	203.3	36.3				mg/L	13	Standard
I	127	5617.8	25.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		130.301	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		115.610	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.075
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		113.406
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606127903S WG574001-09
Sample Date/Time: Wednesday, June 29, 2016 17:11:56
Number of Replicates: 3
Autosampler Position: 227
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	103734.0	1.8				ug/L	74699	Standard
	Be	9	62659.4	2.5	**51.2580**	0.858	1.7	ug/L	8	Standard
	Al	27	65559814.6	2.9	**321.3254**	12.360	3.8	ug/L	1493	Standard
	Sc	45	78765.9	1.8				ug/L	61029	Standard
	Ti	47	33652.0	1.4	**81.0287**	2.211	2.7	ug/L	35	Standard
	V	51	549023.7	0.9	**66.2300**	1.368	2.1	ug/L	1435	Standard
	Cr	52	510507.6	0.8	**61.9303**	1.817	2.9	ug/L	7635	Standard
	Cr	53	62490.3	1.3	**61.4602**	1.770	2.9	ug/L	363	Standard
	Mn	55	9311676.0	0.4	**1221.9970**	25.998	2.1	ug/L	747	Standard
	Co	59	420012.9	0.8	**58.0870**	1.492	2.6	ug/L	234	Standard
	Ni	60	121605.8	1.9	**59.2404**	2.250	3.8	ug/L	215	Standard
	Cu	65	110409.9	1.5	**54.1128**	1.822	3.4	ug/L	104	Standard
	Zn	66	101498.2	0.9	**84.4641**	2.491	2.9	ug/L	363	Standard
>	**Ge**	72	542031.1	2.4				ug/L	495142	Standard
	As	75	66455.1	1.4	**54.2648**	0.548	1.0	ug/L	-50	Standard
	Se	82	6239.8	1.8	**51.8120**	1.305	2.5	ug/L	14	Standard
	Se-1	77	4136.2	2.8	**51.1231**	1.591	3.1	ug/L	42	Standard
>	**Ga**	71	10863.9	0.3				mg/L	42	Standard
	Rb	85	119392.1	2.4				ug/L	17	Standard
	Y	89	586391.1	1.2				ug/L	417098	Standard
>	**Rh**	103	175.0	15.1				ug/L	13	Standard
	Mo	98	5740.7	2.3	**1.9719**	0.058	3.0	ug/L	11	Standard
	Ag	107	333249.6	2.0	**46.9378**	1.203	2.6	ug/L	68	Standard
	Cd	111	109090.4	0.8	**47.8987**	0.737	1.5	mg/L	2	Standard
	Cd	114	263561.8	0.5	**47.1881**	0.999	2.1	ug/L	12	Standard
>	**In**	115	639905.2	1.9				ug/L	587441	Standard
	Sn	118	1925.1	5.8	**0.2078**	0.017	8.3	ug/L	497	Standard
	Sb	123	124661.9	1.5	**24.5159**	0.713	2.9	ug/L	78	Standard
	Ba	135	268706.4	1.4	**120.5245**	2.161	1.8	ug/L	24	Standard
	Ce	140	538323.1	0.7				ug/L	25	Standard
>	**Tb**	159	1045169.0	2.0				ug/L	939701	Standard
	Ho	165	11317.6	5.4				ug/L	10	Standard
	Tl	203	438870.4	1.4	**49.1992**	0.166	0.3	ug/L	4	Standard
	Tl	205	398898.5	1.5	**51.5243**	0.281	0.5	ug/L	2	Standard
	Pb	206	314887.1	0.5	**54.4073**	0.494	0.9	ug/L	240	Standard
	Pb	207	267442.5	0.8	**52.0088**	0.664	1.3	ug/L	198	Standard
	Pb	208	1101699.4	1.8	**54.2208**	0.536	1.0	ug/L	883	Standard
	U	238	415059.0	1.7	**55.7208**	0.743	1.3	ug/L	3	Standard
>	**Bi**	209	566992.1	1.1				ug/L	523984	Standard

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Na	23	8.3	69.3	**74.8950**	52.957	70.7	mg/L	0	Standard
Mg	24	7490.2	5.9	**7.4319**	0.549	7.4	mg/L	37	Standard
K	39	995.0	6.5	**1.5912**	0.134	8.4	mg/L	38	Standard
Ca	43	1293.4	1.8	**60.7979**	1.957	3.2	mg/L	10	Standard
Fe	54	10550.1	1.1	**6.7940**	0.164	2.4	mg/L	179	Standard
Fe	57	3448.7	1.2	**8.0106**	0.227	2.8	mg/L	335	Standard
> **Sc-1**	45	78765.9	1.8				mg/L	61029	Standard
Cl	35	36168.5	1.3				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	7995.5	8.9				ug/L	1547	Standard
P	31	34405.7	2.4				ug/L	15286	Standard
S	34	1880.1	7.8				ug/L	1572	Standard
Sr	88	881.7	7.6				ug/L	73	Standard
C	12	140.0	46.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	3	Standard
Dy	164	18849.9	4.6				mg/L	6	Standard
Ho-1	165	11317.6	5.4				mg/L	10	Standard
Er	166	9863.2	2.6				mg/L	13	Standard
I	127	61177.5	10.8				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		138.870	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		109.470	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.931
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.208
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606127903S WG574001-09
Sample Date/Time: Wednesday, June 29, 2016 17:15:08
Number of Replicates: 3
Autosampler Position: 228
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	100014.2	2.8				ug/L	74699	Standard
	Be	9	1316.7	11.4	**1.1231**	0.100	8.9	ug/L	8	Standard
	Al	27	1420391.6	2.6	**7.2057**	0.041	0.6	ug/L	1493	Standard
	Sc	45	65355.8	3.5				ug/L	61029	Standard
	Ti	47	751.7	2.2	**1.7435**	0.043	2.4	ug/L	35	Standard
	V	51	12553.2	2.5	**1.3568**	0.030	2.2	ug/L	1435	Standard
	Cr	52	18458.6	1.1	**1.3028**	0.035	2.7	ug/L	7635	Standard
	Cr	53	1771.8	3.3	**1.4619**	0.098	6.7	ug/L	363	Standard
	Mn	55	203580.1	1.5	**27.1635**	0.320	1.2	ug/L	747	Standard
	Co	59	9135.1	1.0	**1.2550**	0.021	1.7	ug/L	234	Standard
	Ni	60	2779.3	1.4	**1.2628**	0.031	2.5	ug/L	215	Standard
	Cu	65	2563.2	1.7	**1.1828**	0.027	2.3	ug/L	104	Standard
	Zn	66	4447.0	0.1	**3.3488**	0.082	2.5	ug/L	363	Standard
>	**Ge**	72	530183.0	2.3				ug/L	495142	Standard
	As	75	1256.2	4.8	**1.1077**	0.065	5.9	ug/L	-50	Standard
	Se	82	144.5	11.0	**1.0936**	0.160	14.6	ug/L	14	Standard
	Se-1	77	149.3	5.6	**1.2873**	0.101	7.8	ug/L	42	Standard
>	**Ga**	71	291.7	12.0				mg/L	42	Standard
	Rb	85	2473.5	8.7				ug/L	17	Standard
	Y	89	480063.9	1.1				ug/L	417098	Standard
>	**Rh**	103	18.3	15.7				ug/L	13	Standard
	Mo	98	168.4	5.0	**0.0496**	0.003	5.9	ug/L	11	Standard
	Ag	107	7406.8	1.4	**0.9815**	0.012	1.2	ug/L	68	Standard
	Cd	111	2324.9	2.0	**0.9649**	0.013	1.3	mg/L	2	Standard
	Cd	114	5499.5	2.5	**0.9362**	0.028	2.9	ug/L	12	Standard
>	**In**	115	671407.0	1.0				ug/L	587441	Standard
	Sn	118	800.0	6.0	**0.0251**	0.007	29.1	ug/L	497	Standard
	Sb	123	3310.0	4.5	**0.6160**	0.025	4.0	ug/L	78	Standard
	Ba	135	5738.4	0.8	**2.4371**	0.009	0.4	ug/L	24	Standard
	Ce	140	11352.6	1.4				ug/L	25	Standard
>	**Tb**	159	1030086.3	0.3				ug/L	939701	Standard
	Ho	165	295.0	7.8				ug/L	10	Standard
	Tl	203	9225.5	0.2	**0.9995**	0.013	1.3	ug/L	4	Standard
	Tl	205	8459.0	5.0	**1.0575**	0.041	3.9	ug/L	2	Standard
	Pb	206	6958.9	0.8	**1.0943**	0.025	2.3	ug/L	240	Standard
	Pb	207	5899.8	0.2	**1.0421**	0.014	1.4	ug/L	198	Standard
	Pb	208	25022.5	1.7	**1.1197**	0.025	2.3	ug/L	883	Standard
	U	238	8748.9	2.2	**1.1326**	0.025	2.2	ug/L	3	Standard
>	**Bi**	209	585775.3	1.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	185.0	5.4	**0.1579**	0.009	5.9	mg/L	37	Standard
K	39	46.7	32.7	**-0.0170**	0.035	202.9	mg/L	38	Standard
Ca	43	53.3	5.4	**0.6286**	0.271	43.1	mg/L	10	Standard
Fe	54	400.2	11.9	**0.1796**	0.048	26.7	mg/L	179	Standard
Fe	57	335.0	9.8	**-0.0119**	0.080	674.7	mg/L	335	Standard
> **Sc-1**	45	65355.8	3.5				mg/L	61029	Standard
Cl	35	29320.3	1.0				ug/L	20195	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	2030.1	9.5				ug/L	1547	Standard
P	31	19806.3	2.6				ug/L	15286	Standard
S	34	2145.2	0.2				ug/L	1572	Standard
Sr	88	86.7	23.3				ug/L	73	Standard
C	12	80.0	66.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	379.6	21.3				mg/L	6	Standard
Ho-1	165	295.0	7.8				mg/L	10	Standard
Er	166	216.7	11.6				mg/L	13	Standard
I	127	5157.6	28.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		133.890	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.077	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.294
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		111.792
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606127904SD WG574001-10
Sample Date/Time: Wednesday, June 29, 2016 17:18:19
Number of Replicates: 3
Autosampler Position: 229
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	100168.4	0.8				ug/L	74699	Standard
	Be	9	61913.0	2.3	**52.4502**	1.133	2.2	ug/L	8	Standard
	Al	27	66193036.9	1.4	**335.9039**	6.576	2.0	ug/L	1493	Standard
	Sc	45	75343.6	2.4				ug/L	61029	Standard
	Ti	47	40945.9	1.4	**103.9053**	1.926	1.9	ug/L	35	Standard
	V	51	552663.1	1.5	**70.2550**	1.056	1.5	ug/L	1435	Standard
	Cr	52	495290.7	1.7	**63.3235**	1.419	2.2	ug/L	7635	Standard
	Cr	53	60987.5	1.0	**63.2038**	0.948	1.5	ug/L	363	Standard
	Mn	55	9453870.8	1.1	**1307.2105**	20.907	1.6	ug/L	747	Standard
	Co	59	421300.3	0.1	**61.3867**	0.363	0.6	ug/L	234	Standard
	Ni	60	119269.8	2.5	**61.2106**	1.745	2.9	ug/L	215	Standard
	Cu	65	106997.2	1.7	**55.2474**	1.210	2.2	ug/L	104	Standard
	Zn	66	101243.5	1.4	**88.7847**	1.659	1.9	ug/L	363	Standard
>	**Ge**	72	514295.3	0.5				ug/L	495142	Standard
	As	75	64887.3	0.7	**55.8337**	0.652	1.2	ug/L	-50	Standard
	Se	82	6128.3	0.4	**53.6210**	0.432	0.8	ug/L	14	Standard
	Se-1	77	4025.2	1.7	**52.4403**	1.142	2.2	ug/L	42	Standard
>	**Ga**	71	13474.3	0.3				mg/L	42	Standard
	Rb	85	148814.4	3.2				ug/L	17	Standard
	Y	89	590511.6	1.2				ug/L	417098	Standard
>	**Rh**	103	170.0	19.3				ug/L	13	Standard
	Mo	98	5249.8	1.8	**1.8847**	0.047	2.5	ug/L	11	Standard
	Ag	107	319729.4	0.9	**47.0680**	0.306	0.7	ug/L	68	Standard
	Cd	111	105379.0	1.4	**48.3587**	0.323	0.7	mg/L	2	Standard
	Cd	114	254720.6	1.7	**47.6605**	0.543	1.1	ug/L	12	Standard
>	**In**	115	612131.8	1.0				ug/L	587441	Standard
	Sn	118	2201.8	4.9	**0.2670**	0.017	6.2	ug/L	497	Standard
	Sb	123	135513.9	0.7	**27.8528**	0.396	1.4	ug/L	78	Standard
	Ba	135	276700.5	0.9	**129.7213**	0.066	0.1	ug/L	24	Standard
	Ce	140	594096.9	1.6				ug/L	25	Standard
>	**Tb**	159	982831.9	0.9				ug/L	939701	Standard
	Ho	165	12233.3	1.6				ug/L	10	Standard
	Tl	203	424338.5	0.5	**50.3728**	0.553	1.1	ug/L	4	Standard
	Tl	205	393687.9	2.5	**53.8449**	1.302	2.4	ug/L	2	Standard
	Pb	206	310823.5	0.5	**56.8661**	0.171	0.3	ug/L	240	Standard
	Pb	207	265328.4	0.5	**54.6347**	0.327	0.6	ug/L	198	Standard
	Pb	208	1090751.7	0.6	**56.8486**	0.519	0.9	ug/L	883	Standard
	U	238	409441.4	1.4	**58.2033**	0.887	1.5	ug/L	3	Standard
>	**Bi**	209	535481.7	0.7				ug/L	523984	Standard

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Na	23	6.7	86.6	**61.5240**	53.288	86.6	mg/L	0	Standard
Mg	24	7358.5	1.6	**7.6312**	0.188	2.5	mg/L	37	Standard
K	39	1028.4	3.5	**1.7267**	0.031	1.8	mg/L	38	Standard
Ca	43	1340.1	2.9	**66.0398**	1.115	1.7	mg/L	10	Standard
Fe	54	11628.0	2.4	**7.8474**	0.058	0.7	mg/L	179	Standard
Fe	57	3898.8	5.2	**9.6559**	0.353	3.7	mg/L	335	Standard
Sc-1	45	75343.6	2.4				mg/L	61029	Standard
Cl	35	34624.2	2.4				ug/L	20195	Standard
Kr	83	1.7	34.6				ug/L	4	Standard
Br	81	10260.1	1.8				ug/L	1547	Standard
P	31	37270.8	0.5				ug/L	15286	Standard
S	34	1845.1	3.3				ug/L	1572	Standard
Sr	88	923.4	9.7				ug/L	73	Standard
C	12	203.3	29.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	3	Standard
Dy	164	20358.1	1.7				mg/L	6	Standard
Ho-1	165	12233.3	1.6				mg/L	10	Standard
Er	166	11334.2	2.0				mg/L	13	Standard
I	127	62766.8	7.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		134.096	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.868	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.203
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.194
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ti 47 Upper, S, EEE	Ti	47	

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Mn 55 Upper, S, EEE	Mn	55
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606127904SD WG574001-10
Sample Date/Time: Wednesday, June 29, 2016 17:21:31
Number of Replicates: 3
Autosampler Position: 230
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	96610.6	3.3				ug/L	74699	Standard
	Be	9	1288.4	4.7	**1.1394**	0.049	4.3	ug/L	8	Standard
	Al	27	1461113.0	0.9	**7.6780**	0.187	2.4	ug/L	1493	Standard
	Sc	45	62711.5	6.5				ug/L	61029	Standard
	Ti	47	920.7	1.4	**2.1467**	0.013	0.6	ug/L	35	Standard
	V	51	13378.9	3.6	**1.4502**	0.085	5.9	ug/L	1435	Standard
	Cr	52	18691.9	1.7	**1.3185**	0.044	3.3	ug/L	7635	Standard
	Cr	53	1716.8	3.7	**1.3959**	0.091	6.5	ug/L	363	Standard
	Mn	55	207917.4	1.7	**27.5865**	0.619	2.2	ug/L	747	Standard
	Co	59	9044.0	2.3	**1.2346**	0.031	2.5	ug/L	234	Standard
	Ni	60	2824.3	2.7	**1.2771**	0.044	3.5	ug/L	215	Standard
	Cu	65	2601.9	3.8	**1.1945**	0.050	4.2	ug/L	104	Standard
	Zn	66	4831.1	2.2	**3.6537**	0.142	3.9	ug/L	363	Standard
>	**Ge**	72	533228.6	1.6				ug/L	495142	Standard
	As	75	1337.8	3.9	**1.1692**	0.061	5.2	ug/L	-50	Standard
	Se	82	140.1	2.8	**1.0475**	0.027	2.6	ug/L	14	Standard
	Se-1	77	133.7	3.0	**1.0773**	0.056	5.2	ug/L	42	Standard
>	**Ga**	71	393.3	11.4				mg/L	42	Standard
	Rb	85	3227.0	1.4				ug/L	17	Standard
	Y	89	450037.4	1.9				ug/L	417098	Standard
>	**Rh**	103	18.3	87.7				ug/L	13	Standard
	Mo	98	147.9	13.7	**0.0463**	0.009	18.8	ug/L	11	Standard
	Ag	107	7379.1	1.6	**1.0451**	0.031	3.0	ug/L	68	Standard
	Cd	111	2296.2	2.5	**1.0190**	0.058	5.7	mg/L	2	Standard
	Cd	114	5492.1	3.4	**0.9981**	0.024	2.4	ug/L	12	Standard
>	**In**	115	629018.5	3.2				ug/L	587441	Standard
	Sn	118	580.0	12.2	**-0.0020**	0.010	499.8	ug/L	497	Standard
	Sb	123	3693.7	7.1	**0.7349**	0.053	7.2	ug/L	78	Standard
	Ba	135	5980.2	1.6	**2.7136**	0.046	1.7	ug/L	24	Standard
	Ce	140	12665.3	1.3				ug/L	25	Standard
>	**Tb**	159	1007879.7	3.3				ug/L	939701	Standard
	Ho	165	265.0	7.5				ug/L	10	Standard
	Tl	203	9323.2	2.1	**1.0256**	0.019	1.8	ug/L	4	Standard
	Tl	205	8567.4	1.0	**1.0883**	0.033	3.0	ug/L	2	Standard
	Pb	206	7313.4	2.1	**1.1727**	0.042	3.6	ug/L	240	Standard
	Pb	207	6050.9	2.1	**1.0885**	0.043	4.0	ug/L	198	Standard
	Pb	208	24824.3	2.0	**1.1284**	0.015	1.4	ug/L	883	Standard
	U	238	8436.0	2.0	**1.1088**	0.013	1.2	ug/L	3	Standard
>	**Bi**	209	577014.5	3.2				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	200.0	10.9	**0.1869**	0.033	17.5	mg/L	37	Standard
K	39	61.7	46.1	**0.0210**	0.066	315.1	mg/L	38	Standard
Ca	43	46.7	12.4	**0.3502**	0.375	107.1	mg/L	10	Standard
Fe	54	378.5	13.7	**0.1751**	0.049	28.1	mg/L	179	Standard
Fe	57	365.0	16.4	**0.1419**	0.250	175.9	mg/L	335	Standard
> **Sc-1**	45	62711.5	6.5				mg/L	61029	Standard
Cl	35	27760.1	3.1				ug/L	20195	Standard
Kr	83	3.3	45.8				ug/L	4	Standard
Br	81	2080.1	7.5				ug/L	1547	Standard
P	31	18322.7	2.7				ug/L	15286	Standard
S	34	1913.5	2.4				ug/L	1572	Standard
Sr	88	98.3	10.6				ug/L	73	Standard
C	12	103.3	31.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	615.8	1.7				mg/L	6	Standard
Ho-1	165	265.0	7.5				mg/L	10	Standard
Er	166	296.7	10.3				mg/L	13	Standard
I	127	5109.3	32.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.334	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.692	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.078
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.121
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606127905
Sample Date/Time: Wednesday, June 29, 2016 17:24:42
Number of Replicates: 3
Autosampler Position: 231
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	98923.6	1.9				ug/L	74699	Standard
	Be	9	425.0	5.1	**0.3722**	0.020	5.4	ug/L	8	Standard
	Al	27	40729181.9	0.9	**209.2967**	3.040	1.5	ug/L	1493	Standard
	Sc	45	74965.2	4.5				ug/L	61029	Standard
	Ti	47	31002.7	2.7	**78.7018**	1.731	2.2	ug/L	35	Standard
	V	51	100570.7	0.4	**12.6354**	0.094	0.7	ug/L	1435	Standard
	Cr	52	71317.5	0.6	**8.2486**	0.021	0.3	ug/L	7635	Standard
	Cr	53	8882.6	3.6	**8.9299**	0.295	3.3	ug/L	363	Standard
	Mn	55	1183907.3	1.1	**163.7014**	1.986	1.2	ug/L	747	Standard
	Co	59	16826.7	0.9	**2.4180**	0.026	1.1	ug/L	234	Standard
	Ni	60	14706.8	1.9	**7.4444**	0.110	1.5	ug/L	215	Standard
	Cu	65	7822.7	1.1	**3.9461**	0.031	0.8	ug/L	104	Standard
	Zn	66	28811.4	1.3	**24.9594**	0.201	0.8	ug/L	363	Standard
>	**Ge**	72	513872.0	0.5				ug/L	495142	Standard
	As	75	2302.8	2.2	**2.0406**	0.054	2.6	ug/L	-50	Standard
	Se	82	647.6	3.3	**5.5477**	0.199	3.6	ug/L	14	Standard
	Se-1	77	492.7	1.9	**5.8772**	0.106	1.8	ug/L	42	Standard
>	**Ga**	71	9201.1	2.2				mg/L	42	Standard
	Rb	85	118130.4	0.8				ug/L	17	Standard
	Y	89	544220.1	0.8				ug/L	417098	Standard
>	**Rh**	103	83.3	19.3				ug/L	13	Standard
	Mo	98	4972.1	0.8	**1.6995**	0.011	0.6	ug/L	11	Standard
	Ag	107	221.0	6.7	**0.0181**	0.002	11.5	ug/L	68	Standard
	Cd	111	99.4	11.4	**0.0355**	0.005	13.9	mg/L	2	Standard
	Cd	114	258.8	15.4	**0.0440**	0.007	16.4	ug/L	12	Standard
>	**In**	115	642627.7	0.7				ug/L	587441	Standard
	Sn	118	4954.1	4.3	**0.6806**	0.035	5.1	ug/L	497	Standard
	Sb	123	697.4	10.3	**0.1324**	0.015	11.0	ug/L	78	Standard
	Ba	135	175907.0	0.9	**78.5481**	0.493	0.6	ug/L	24	Standard
	Ce	140	308696.3	0.2				ug/L	25	Standard
>	**Tb**	159	1018138.8	1.9				ug/L	939701	Standard
	Ho	165	5902.8	0.8				ug/L	10	Standard
	Tl	203	694.0	1.8	**0.0782**	0.000	0.4	ug/L	4	Standard
	Tl	205	615.0	15.7	**0.0817**	0.011	14.1	ug/L	2	Standard
	Pb	206	15714.8	1.1	**2.7233**	0.017	0.6	ug/L	240	Standard
	Pb	207	12858.1	1.8	**2.5034**	0.026	1.0	ug/L	198	Standard
	Pb	208	54664.4	0.6	**2.6954**	0.031	1.2	ug/L	883	Standard
	U	238	8998.7	0.4	**1.2376**	0.021	1.7	ug/L	3	Standard
>	**Bi**	209	551643.9	1.7				ug/L	523984	Standard

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Na	23	5.0	100.0	**46.3980**	45.060	97.1	mg/L	0	Standard
Mg	24	7338.4	2.5	**7.6542**	0.303	4.0	mg/L	37	Standard
K	39	668.3	6.0	**1.0889**	0.064	5.9	mg/L	38	Standard
Ca	43	676.7	13.4	**32.4506**	6.121	18.9	mg/L	10	Standard
Fe	54	6512.7	2.4	**4.3601**	0.118	2.7	mg/L	179	Standard
Fe	57	2150.2	3.4	**4.8854**	0.383	7.8	mg/L	335	Standard
Sc-1	45	74965.2	4.5				mg/L	61029	Standard
Cl	35	28544.2	1.7				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	11494.4	5.7				ug/L	1547	Standard
P	31	34679.6	1.6				ug/L	15286	Standard
S	34	2073.5	2.2				ug/L	1572	Standard
Sr	88	356.7	8.9				ug/L	73	Standard
C	12	163.3	55.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	3	Standard
Dy	164	9835.4	4.4				mg/L	6	Standard
Ho-1	165	5902.8	0.8				mg/L	10	Standard
Er	166	5037.5	9.2				mg/L	13	Standard
I	127	62917.2	4.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		132.430	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.783	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	109.394
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	105.279
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606127905
Sample Date/Time: Wednesday, June 29, 2016 17:27:54
Number of Replicates: 3
Autosampler Position: 232
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	95902.7	2.3				ug/L	74699	Standard
	Be	9	26.7	54.1	**0.0312**	0.013	41.0	ug/L	8	Standard
	Al	27	866639.8	0.6	**4.5819**	0.130	2.8	ug/L	1493	Standard
	Sc	45	64717.9	1.3				ug/L	61029	Standard
	Ti	47	665.3	5.2	**1.4927**	0.099	6.6	ug/L	35	Standard
	V	51	3898.6	6.9	**0.2752**	0.030	11.1	ug/L	1435	Standard
	Cr	52	9682.4	1.6	**0.1679**	0.023	13.9	ug/L	7635	Standard
	Cr	53	670.0	10.3	**0.3316**	0.072	21.7	ug/L	363	Standard
	Mn	55	29584.3	8.9	**3.7268**	0.331	8.9	ug/L	747	Standard
	Co	59	652.3	12.4	**0.0528**	0.011	20.6	ug/L	234	Standard
	Ni	60	547.0	3.7	**0.1426**	0.010	7.1	ug/L	215	Standard
	Cu	65	341.3	5.6	**0.0636**	0.011	17.0	ug/L	104	Standard
	Zn	66	2764.3	3.0	**1.8532**	0.047	2.5	ug/L	363	Standard
>	**Ge**	72	542890.6	1.0				ug/L	495142	Standard
	As	75	11.1	320.4	**0.0688**	0.029	42.5	ug/L	-50	Standard
	Se	82	31.5	11.6	**0.1237**	0.032	26.0	ug/L	14	Standard
	Se-1	77	57.7	24.7	**0.0971**	0.173	178.1	ug/L	42	Standard
>	**Ga**	71	253.3	16.8				mg/L	42	Standard
	Rb	85	2388.5	2.4				ug/L	17	Standard
	Y	89	480185.0	1.7				ug/L	417098	Standard
>	**Rh**	103	16.7	34.6				ug/L	13	Standard
	Mo	98	144.5	13.4	**0.0432**	0.007	17.2	ug/L	11	Standard
	Ag	107	273.0	44.6	**0.0250**	0.018	70.2	ug/L	68	Standard
	Cd	111	17.1	70.4	**-0.0005**	0.005	1058.7	mg/L	2	Standard
	Cd	114	57.8	101.1	**0.0081**	0.010	129.1	ug/L	12	Standard
>	**In**	115	652419.9	1.9				ug/L	587441	Standard
	Sn	118	705.0	11.1	**0.0141**	0.014	98.8	ug/L	497	Standard
	Sb	123	247.5	32.3	**0.0437**	0.016	37.3	ug/L	78	Standard
	Ba	135	3842.5	3.8	**1.6750**	0.079	4.7	ug/L	24	Standard
	Ce	140	6778.2	3.5				ug/L	25	Standard
>	**Tb**	159	1017174.6	0.9				ug/L	939701	Standard
	Ho	165	125.0	20.8				ug/L	10	Standard
	Tl	203	149.7	88.3	**0.0148**	0.015	98.5	ug/L	4	Standard
	Tl	205	133.3	80.1	**0.0172**	0.014	79.0	ug/L	2	Standard
	Pb	206	748.0	16.8	**0.0568**	0.021	37.3	ug/L	240	Standard
	Pb	207	613.7	10.2	**0.0482**	0.012	24.5	ug/L	198	Standard
	Pb	208	2588.8	11.0	**0.0521**	0.014	26.1	ug/L	883	Standard
	U	238	255.3	28.9	**0.0295**	0.010	33.0	ug/L	3	Standard
>	**Bi**	209	573070.1	0.3				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.8927**	30.982	173.2	mg/L	0	Standard
Mg	24	208.3	5.5	**0.1886**	0.017	8.9	mg/L	37	Standard
K	39	35.0	14.3	**-0.0411**	0.011	27.7	mg/L	38	Standard
Ca	43	31.7	18.2	**-0.6344**	0.363	57.2	mg/L	10	Standard
Fe	54	281.0	17.0	**0.0865**	0.040	45.9	mg/L	179	Standard
Fe	57	258.3	4.5	**-0.2461**	0.039	15.8	mg/L	335	Standard
> **Sc-1**	45	64717.9	1.3				mg/L	61029	Standard
Cl	35	29516.1	1.1				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	2206.8	1.5				ug/L	1547	Standard
P	31	18893.4	3.4				ug/L	15286	Standard
S	34	2140.2	7.5				ug/L	1572	Standard
Sr	88	85.0	23.5				ug/L	73	Standard
C	12	63.3	39.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	226.9	17.7				mg/L	6	Standard
Ho-1	165	125.0	20.8				mg/L	10	Standard
Er	166	133.3	38.5				mg/L	13	Standard
I	127	4113.9	27.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.386	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.643	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.061
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.368
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606128101
Sample Date/Time: Wednesday, June 29, 2016 17:31:05
Number of Replicates: 3
Autosampler Position: 233
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	95248.6	2.8				ug/L	74699	Standard
	Be	9	20.0	25.0	**0.0254**	0.004	15.8	ug/L	8	Standard
	Al	27	13040665.4	1.7	**69.5953**	1.139	1.6	ug/L	1493	Standard
	Sc	45	60164.2	2.0				ug/L	61029	Standard
	Ti	47	192.7	16.8	**0.4120**	0.087	21.1	ug/L	35	Standard
	V	51	8357.2	4.3	**0.9387**	0.048	5.1	ug/L	1435	Standard
	Cr	52	21860.8	2.2	**2.0003**	0.082	4.1	ug/L	7635	Standard
	Cr	53	28106.1	2.4	**30.8448**	0.828	2.7	ug/L	363	Standard
	Mn	55	35106.1	13.3	**5.0193**	0.674	13.4	ug/L	747	Standard
	Co	59	6553.8	6.0	**0.9799**	0.056	5.7	ug/L	234	Standard
	Ni	60	21271.9	1.7	**11.5228**	0.221	1.9	ug/L	215	Standard
	Cu	65	394730.4	1.5	**217.3087**	4.048	1.9	ug/L	104	Standard
	Zn	66	2800.3	3.3	**2.1735**	0.095	4.3	ug/L	363	Standard
>	**Ge**	72	483031.9	0.6				ug/L	495142	Standard
	As	75	2746.8	5.9	**2.5735**	0.152	5.9	ug/L	-50	Standard
	Se	82	892.7	0.7	**8.1998**	0.096	1.2	ug/L	14	Standard
	Se-1	77	2323.2	2.5	**31.9871**	0.998	3.1	ug/L	42	Standard
>	**Ga**	71	476.7	6.4				mg/L	42	Standard
	Rb	85	346107.5	1.7				ug/L	17	Standard
	Y	89	415017.7	1.3				ug/L	417098	Standard
>	**Rh**	103	195.0	26.0				ug/L	13	Standard
	Mo	98	2991.9	3.1	**1.1870**	0.038	3.2	ug/L	11	Standard
	Ag	107	283.3	10.3	**0.0333**	0.004	13.4	ug/L	68	Standard
	Cd	111	47.5	106.4	**0.0162**	0.025	157.7	mg/L	2	Standard
	Cd	114	106.7	47.6	**0.0200**	0.010	52.0	ug/L	12	Standard
>	**In**	115	552878.2	0.7				ug/L	587441	Standard
	Sn	118	3292.0	3.2	**0.5041**	0.021	4.2	ug/L	497	Standard
	Sb	123	2817.9	0.9	**0.6371**	0.010	1.5	ug/L	78	Standard
	Ba	135	115236.2	0.6	**59.8088**	0.708	1.2	ug/L	24	Standard
	Ce	140	265.0	80.7				ug/L	25	Standard
>	**Tb**	159	913633.5	1.5				ug/L	939701	Standard
	Ho	165	16.7	45.8				ug/L	10	Standard
	Tl	203	132.0	58.6	**0.0163**	0.011	65.5	ug/L	4	Standard
	Tl	205	136.7	39.5	**0.0217**	0.009	39.6	ug/L	2	Standard
	Pb	206	460.3	26.2	**0.0258**	0.026	100.0	ug/L	240	Standard
	Pb	207	366.3	38.5	**0.0169**	0.034	199.7	ug/L	198	Standard
	Pb	208	1427.4	18.1	**0.0116**	0.016	136.8	ug/L	883	Standard
	U	238	88.7	86.2	**0.0101**	0.013	124.4	ug/L	3	Standard
>	**Bi**	209	465790.3	0.8				ug/L	523984	Standard

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Na	23	8.3	69.3	**97.9562**	69.038	70.5	mg/L	0	Standard
Mg	24	359246.1	3.7	**470.2454**	9.358	2.0	mg/L	37	Standard
K	39	24917.1	2.4	**55.7677**	1.861	3.3	mg/L	38	Standard
Ca	43	1330.1	6.9	**82.7516**	6.716	8.1	mg/L	10	Standard
Fe	54	200.7	20.7	**0.0339**	0.032	94.4	mg/L	179	Standard
Fe	57	1015.0	10.0	**2.4309**	0.415	17.1	mg/L	335	Standard
> **Sc-1**	45	60164.2	2.0				mg/L	61029	Standard
Cl	35	38169.4	0.5				ug/L	20195	Standard
Kr	83	1.0	0.0				ug/L	4	Standard
Br	81	223802.3	3.7				ug/L	1547	Standard
P	31	18462.9	1.8				ug/L	15286	Standard
S	34	2156.8	3.7				ug/L	1572	Standard
Sr	88	483.3	16.2				ug/L	73	Standard
C	12	163.3	15.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	24.7				mg/L	3	Standard
Dy	164	32.2	122.0				mg/L	6	Standard
Ho-1	165	16.7	45.8				mg/L	10	Standard
Er	166	23.3	99.0				mg/L	13	Standard
I	127	949274.2	9.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		127.510	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.554	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.116
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		88.894
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 17:34:19
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	89879.3	3.0				ug/L	74699	Standard
	Be	9	54419.2	2.1	**51.4171**	2.152	4.2	ug/L	8	Standard
	Al	27	8256861.3	1.5	**46.7135**	1.756	3.8	ug/L	1493	Standard
	Sc	45	65086.2	2.0				ug/L	61029	Standard
	Ti	47	41554.9	1.2	**98.5544**	1.167	1.2	ug/L	35	Standard
	V	51	424002.3	1.3	**50.3253**	0.743	1.5	ug/L	1435	Standard
	Cr	52	412948.6	1.6	**49.1234**	1.130	2.3	ug/L	7635	Standard
	Cr	53	52872.1	1.4	**51.1473**	0.096	0.2	ug/L	363	Standard
	Mn	55	374015.3	1.0	**48.1957**	0.700	1.5	ug/L	747	Standard
	Co	59	377049.8	1.0	**51.3472**	0.802	1.6	ug/L	234	Standard
	Ni	60	101943.5	0.6	**48.8763**	0.675	1.4	ug/L	215	Standard
	Cu	65	101706.9	0.4	**49.0730**	0.490	1.0	ug/L	104	Standard
	Zn	66	60100.6	1.2	**49.0556**	0.165	0.3	ug/L	363	Standard
>	Ge	72	550256.1	1.3				ug/L	495142	Standard
	As	75	60702.3	2.0	**48.8234**	0.606	1.2	ug/L	-50	Standard
	Se	82	6059.9	1.5	**49.5453**	0.269	0.5	ug/L	14	Standard
	Se-1	77	4264.3	0.7	**51.9185**	0.539	1.0	ug/L	42	Standard
>	Ga	71	80.0	16.5				mg/L	42	Standard
	Rb	85	943.4	9.9				ug/L	17	Standard
	Y	89	456697.4	1.9				ug/L	417098	Standard
>	Rh	103	31.7	32.9				ug/L	13	Standard
	Mo	98	286840.3	1.0	**98.7855**	2.014	2.0	ug/L	11	Standard
	Ag	107	350242.5	1.1	**49.3132**	0.224	0.5	ug/L	68	Standard
	Cd	111	110565.3	0.7	**48.5306**	0.244	0.5	mg/L	2	Standard
	Cd	114	270182.5	3.7	**48.3546**	1.830	3.8	ug/L	12	Standard
>	In	115	640022.5	1.2				ug/L	587441	Standard
	Sn	118	309740.9	1.1	**48.5773**	0.779	1.6	ug/L	497	Standard
	Sb	123	247251.7	1.0	**48.6061**	0.525	1.1	ug/L	78	Standard
	Ba	135	103942.0	1.5	**46.5980**	0.695	1.5	ug/L	24	Standard
	Ce	140	81.7	18.7				ug/L	25	Standard
>	Tb	159	1011086.0	0.8				ug/L	939701	Standard
	Ho	165	13.3	94.4				ug/L	10	Standard
	Tl	203	438780.7	1.5	**49.1134**	0.474	1.0	ug/L	4	Standard
	Tl	205	398617.2	2.3	**51.4045**	0.522	1.0	ug/L	2	Standard
	Pb	206	284136.3	1.1	**49.0127**	0.824	1.7	ug/L	240	Standard
	Pb	207	252190.2	0.9	**48.9661**	0.976	2.0	ug/L	198	Standard
	Pb	208	1023481.0	1.1	**50.2926**	0.682	1.4	ug/L	883	Standard
	U	238	380510.7	2.1	**50.9985**	0.305	0.6	ug/L	3	Standard
>	Bi	209	567945.0	2.2				ug/L	523984	Standard

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Na	23	1.7	173.2	**18.3524**	31.779	173.2	mg/L	0	Standard
Mg	24	4450.7	2.4	**5.3249**	0.232	4.3	mg/L	37	Standard
K	39	2040.1	4.0	**4.1161**	0.223	5.4	mg/L	38	Standard
Ca	43	101.7	19.9	**3.5019**	1.219	34.8	mg/L	10	Standard
Fe	54	6522.9	1.9	**5.0481**	0.108	2.1	mg/L	179	Standard
Fe	57	1916.8	5.3	**5.0325**	0.229	4.6	mg/L	335	Standard
Sc-1	45	65086.2	2.0				mg/L	61029	Standard
Cl	35	28870.1	1.5				ug/L	20195	Standard
Kr	83	2.7	43.3				ug/L	4	Standard
Br	81	3490.4	22.1				ug/L	1547	Standard
P	31	20260.2	3.0				ug/L	15286	Standard
S	34	2420.2	2.6				ug/L	1572	Standard
Sr	88	90.0	19.2				ug/L	73	Standard
C	12	86.7	6.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	9.5	5.0				mg/L	6	Standard
Ho-1	165	13.3	94.4				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	23970.8	64.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.834		
Al	27	93.427		
Sc	45			
Ti	47	98.554		
V	51	100.651		
Cr	52	98.247		
Cr	53			
Mn	55	96.391		
Co	59	102.694		
Ni	60	97.753		
Cu	65	98.146		
Zn	66	98.111		
Ge	72		111.131	
As	75	97.647		
Se	82	99.091		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.786		
Ag	107	98.626		
Cd	111	97.061		
Cd	114			
> In	115			108.951
Sn	118	97.155		
Sb	123	97.212		
Ba	135	93.196		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.227		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.585		
U	238	101.997		
> Bi	209			108.390
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 17:37:30
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90192.8	3.2				ug/L	74699	Standard
	Be	9	55.0	102.4	**0.0584**	0.051	86.9	ug/L	8	Standard
	Al	27	41697.2	123.7	**0.2160**	0.280	129.5	ug/L	1493	Standard
	Sc	45	66865.6	0.3				ug/L	61029	Standard
	Ti	47	70.3	63.0	**0.0618**	0.107	173.0	ug/L	35	Standard
	V	51	1545.5	1.7	**-0.0068**	0.004	62.6	ug/L	1435	Standard
	Cr	52	7551.9	5.0	**-0.0837**	0.044	52.6	ug/L	7635	Standard
	Cr	53	1056.7	15.9	**0.7243**	0.162	22.4	ug/L	363	Standard
	Mn	55	2100.5	33.7	**0.1299**	0.092	71.2	ug/L	747	Standard
	Co	59	307.3	14.8	**0.0056**	0.006	108.6	ug/L	234	Standard
	Ni	60	288.7	41.6	**0.0182**	0.059	321.7	ug/L	215	Standard
	Cu	65	326.7	64.3	**0.0580**	0.103	178.3	ug/L	104	Standard
	Zn	66	465.0	14.2	**-0.0620**	0.054	86.6	ug/L	363	Standard
>	**Ge**	72	536712.4	0.6				ug/L	495142	Standard
	As	75	-14.2	293.5	**0.0478**	0.034	71.9	ug/L	-50	Standard
	Se	82	26.6	3.7	**0.0859**	0.008	9.9	ug/L	14	Standard
	Se-1	77	71.3	25.4	**0.2781**	0.225	81.0	ug/L	42	Standard
>	**Ga**	71	51.7	22.3				mg/L	42	Standard
	Rb	85	111.7	73.6				ug/L	17	Standard
	Y	89	476031.3	1.1				ug/L	417098	Standard
>	**Rh**	103	26.7	47.2				ug/L	13	Standard
	Mo	98	310.3	31.4	**0.0963**	0.033	33.9	ug/L	11	Standard
	Ag	107	196.3	41.5	**0.0135**	0.011	82.4	ug/L	68	Standard
	Cd	111	44.4	76.9	**0.0108**	0.014	134.5	mg/L	2	Standard
	Cd	114	106.2	73.2	**0.0161**	0.013	83.2	ug/L	12	Standard
>	**In**	115	671001.8	0.7				ug/L	587441	Standard
	Sn	118	950.0	11.1	**0.0476**	0.015	31.2	ug/L	497	Standard
	Sb	123	463.6	17.0	**0.0827**	0.014	17.2	ug/L	78	Standard
	Ba	135	113.3	53.3	**0.0326**	0.026	80.4	ug/L	24	Standard
	Ce	140	100.0	52.9				ug/L	25	Standard
>	**Tb**	159	1042844.6	0.4				ug/L	939701	Standard
	Ho	165	21.7	53.3				ug/L	10	Standard
	Tl	203	169.7	59.1	**0.0166**	0.011	64.7	ug/L	4	Standard
	Tl	205	136.7	25.7	**0.0173**	0.004	24.8	ug/L	2	Standard
	Pb	206	350.0	21.1	**-0.0125**	0.012	95.5	ug/L	240	Standard
	Pb	207	292.7	21.7	**-0.0148**	0.012	78.6	ug/L	198	Standard
	Pb	208	1272.0	10.4	**-0.0133**	0.006	44.8	ug/L	883	Standard
	U	238	124.3	70.3	**0.0117**	0.011	96.0	ug/L	3	Standard
>	**Bi**	209	584508.5	0.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	165.0	89.4	**0.1290**	0.173	134.2	mg/L	37	Standard
K	39	35.0	14.3	**-0.0435**	0.010	22.9	mg/L	38	Standard
Ca	43	33.3	22.9	**-0.6014**	0.442	73.5	mg/L	10	Standard
Fe	54	222.3	16.4	**0.0337**	0.028	82.1	mg/L	179	Standard
Fe	57	293.3	1.0	**-0.1642**	0.011	6.9	mg/L	335	Standard
> **Sc-1**	45	66865.6	0.3				mg/L	61029	Standard
Cl	35	28993.0	1.1				ug/L	20195	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	2536.9	15.9				ug/L	1547	Standard
P	31	21593.7	3.8				ug/L	15286	Standard
S	34	2441.9	4.5				ug/L	1572	Standard
Sr	88	71.7	39.7				ug/L	73	Standard
C	12	43.3	53.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	2.2	286.4				mg/L	6	Standard
Ho-1	165	21.7	53.3				mg/L	10	Standard
Er	166	23.3	65.5				mg/L	13	Standard
I	127	6326.4	22.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.396	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.225
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		111.551
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129403
Sample Date/Time: Wednesday, June 29, 2016 17:40:43
Number of Replicates: 3
Autosampler Position: 234
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	91138.4	2.1				ug/L	74699	Standard
	Be	9	18.3	31.5	**0.0246**	0.005	20.1	ug/L	8	Standard
	Al	27	19782.9	2.5	**0.0970**	0.003	3.0	ug/L	1493	Standard
	Sc	45	69032.0	3.0				ug/L	61029	Standard
	Ti	47	54.0	3.2	**0.0194**	0.002	12.6	ug/L	35	Standard
	V	51	1966.3	6.5	**0.0390**	0.011	28.1	ug/L	1435	Standard
	Cr	52	10805.9	1.1	**0.2915**	0.043	14.7	ug/L	7635	Standard
	Cr	53	2143.5	1.8	**1.7623**	0.077	4.4	ug/L	363	Standard
	Mn	55	3844.5	2.2	**0.3500**	0.018	5.0	ug/L	747	Standard
	Co	59	327.3	8.7	**0.0074**	0.003	41.0	ug/L	234	Standard
	Ni	60	356.0	5.4	**0.0475**	0.008	16.5	ug/L	215	Standard
	Cu	65	696.0	2.6	**0.2337**	0.014	6.0	ug/L	104	Standard
	Zn	66	2205.8	3.0	**1.3661**	0.024	1.8	ug/L	363	Standard
>	**Ge**	72	549152.6	2.2				ug/L	495142	Standard
	As	75	-29.6	63.4	**0.0356**	0.015	42.9	ug/L	-50	Standard
	Se	82	23.9	20.2	**0.0586**	0.040	68.9	ug/L	14	Standard
	Se-1	77	94.7	7.0	**0.5478**	0.105	19.2	ug/L	42	Standard
>	**Ga**	71	51.7	14.8				mg/L	42	Standard
	Rb	85	138.3	25.6				ug/L	17	Standard
	Y	89	465979.4	3.6				ug/L	417098	Standard
>	**Rh**	103	13.3	21.7				ug/L	13	Standard
	Mo	98	5139.1	1.4	**1.7220**	0.056	3.3	ug/L	11	Standard
	Ag	107	110.0	6.9	**0.0022**	0.001	48.4	ug/L	68	Standard
	Cd	111	15.0	26.6	**-0.0015**	0.002	117.9	mg/L	2	Standard
	Cd	114	55.2	20.3	**0.0075**	0.002	25.2	ug/L	12	Standard
>	**In**	115	655841.8	1.8				ug/L	587441	Standard
	Sn	118	1048.4	10.6	**0.0659**	0.015	22.6	ug/L	497	Standard
	Sb	123	219.8	14.7	**0.0379**	0.005	14.5	ug/L	78	Standard
	Ba	135	307.7	5.8	**0.1187**	0.008	7.0	ug/L	24	Standard
	Ce	140	120.0	27.3				ug/L	25	Standard
>	**Tb**	159	1025647.2	2.3				ug/L	939701	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	102.7	26.3	**0.0095**	0.003	29.3	ug/L	4	Standard
	Tl	205	93.3	17.2	**0.0120**	0.002	17.6	ug/L	2	Standard
	Pb	206	348.0	5.5	**-0.0123**	0.003	25.6	ug/L	240	Standard
	Pb	207	291.0	7.0	**-0.0146**	0.003	21.1	ug/L	198	Standard
	Pb	208	1220.0	1.5	**-0.0152**	0.002	10.4	ug/L	883	Standard
	U	238	43.7	3.5	**0.0013**	0.000	20.2	ug/L	3	Standard
>	**Bi**	209	579311.4	1.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	70.0	14.3	**0.0151**	0.014	91.8	mg/L	37	Standard
K	39	41.7	36.7	**-0.0323**	0.032	98.5	mg/L	38	Standard
Ca	43	23.3	24.7	**-1.2220**	0.307	25.1	mg/L	10	Standard
Fe	54	180.7	18.1	**-0.0033**	0.021	642.1	mg/L	179	Standard
Fe	57	228.3	18.9	**-0.3899**	0.112	28.8	mg/L	335	Standard
Sc-1	45	69032.0	3.0				mg/L	61029	Standard
Cl	35	29393.1	0.1				ug/L	20195	Standard
Kr	83	3.7	41.7				ug/L	4	Standard
Br	81	2280.2	16.1				ug/L	1547	Standard
P	31	20889.4	5.8				ug/L	15286	Standard
S	34	2440.2	2.2				ug/L	1572	Standard
Sr	88	78.3	9.8				ug/L	73	Standard
C	12	90.0	19.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	5.2	126.6				mg/L	6	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	30.0	66.7				mg/L	13	Standard
I	127	4447.3	11.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		122.008	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		110.908	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.644
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.559
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606129403
Sample Date/Time: Wednesday, June 29, 2016 17:43:55
Number of Replicates: 3
Autosampler Position: 235
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89753.4	1.3				ug/L	74699	Standard
	Be	9	13.3	43.3	**0.0203**	0.006	27.7	ug/L	8	Standard
	Al	27	7761551.3	2.6	**43.9444**	1.176	2.7	ug/L	1493	Standard
	Sc	45	64855.2	1.4				ug/L	61029	Standard
	Ti	47	206.0	13.1	**0.3915**	0.063	16.1	ug/L	35	Standard
	V	51	6651.8	1.7	**0.6159**	0.016	2.5	ug/L	1435	Standard
	Cr	52	10534.3	3.3	**0.2860**	0.045	15.8	ug/L	7635	Standard
	Cr	53	2358.5	8.3	**2.0219**	0.206	10.2	ug/L	363	Standard
	Mn	55	48108.9	1.2	**6.2182**	0.039	0.6	ug/L	747	Standard
	Co	59	779.0	1.7	**0.0714**	0.002	2.2	ug/L	234	Standard
	Ni	60	2066.1	2.9	**0.8928**	0.027	3.0	ug/L	215	Standard
	Cu	65	1897.5	0.8	**0.8356**	0.011	1.4	ug/L	104	Standard
	Zn	66	4161.9	4.0	**3.0555**	0.122	4.0	ug/L	363	Standard
>	**Ge**	72	537411.3	0.6				ug/L	495142	Standard
	As	75	1930.1	2.9	**1.6472**	0.048	2.9	ug/L	-50	Standard
	Se	82	65.9	12.2	**0.4151**	0.071	17.1	ug/L	14	Standard
	Se-1	77	143.0	7.4	**1.1820**	0.141	12.0	ug/L	42	Standard
>	**Ga**	71	281.7	11.8				mg/L	42	Standard
	Rb	85	9322.9	0.6				ug/L	17	Standard
	Y	89	483828.6	0.3				ug/L	417098	Standard
>	**Rh**	103	65.0	35.3				ug/L	13	Standard
	Mo	98	2420.2	2.2	**0.8025**	0.008	1.0	ug/L	11	Standard
	Ag	107	86.7	9.0	**-0.0011**	0.001	98.3	ug/L	68	Standard
	Cd	111	21.1	19.4	**0.0011**	0.002	172.0	mg/L	2	Standard
	Cd	114	57.2	8.0	**0.0078**	0.001	8.8	ug/L	12	Standard
>	**In**	115	659947.0	1.4				ug/L	587441	Standard
	Sn	118	1036.7	2.5	**0.0632**	0.002	2.8	ug/L	497	Standard
	Sb	123	514.2	4.3	**0.0939**	0.005	5.0	ug/L	78	Standard
	Ba	135	42292.6	1.8	**18.3786**	0.354	1.9	ug/L	24	Standard
	Ce	140	906.7	5.0				ug/L	25	Standard
>	**Tb**	159	1004743.5	1.0				ug/L	939701	Standard
	Ho	165	30.0	33.3				ug/L	10	Standard
	Tl	203	321.7	3.2	**0.0348**	0.001	3.5	ug/L	4	Standard
	Tl	205	263.3	19.0	**0.0346**	0.006	17.3	ug/L	2	Standard
	Pb	206	528.0	6.8	**0.0212**	0.005	24.5	ug/L	240	Standard
	Pb	207	478.3	8.2	**0.0244**	0.009	35.8	ug/L	198	Standard
	Pb	208	1973.7	3.1	**0.0244**	0.005	18.6	ug/L	883	Standard
	U	238	903.7	2.1	**0.1184**	0.002	1.8	ug/L	3	Standard
>	**Bi**	209	560080.8	1.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	9985.0	3.9	**12.0618**	0.357	3.0	mg/L	37	Standard
K	39	420.0	7.4	**0.7593**	0.061	8.1	mg/L	38	Standard
Ca	43	263.3	2.9	**13.1350**	0.654	5.0	mg/L	10	Standard
Fe	54	210.7	11.6	**0.0297**	0.017	57.3	mg/L	179	Standard
Fe	57	393.3	9.5	**0.1838**	0.119	64.8	mg/L	335	Standard
> **Sc-1**	45	64855.2	1.4				mg/L	61029	Standard
Cl	35	32877.0	2.8				ug/L	20195	Standard
Kr	83	0.7	86.6				ug/L	4	Standard
Br	81	8902.6	4.1				ug/L	1547	Standard
P	31	19829.6	4.1				ug/L	15286	Standard
S	34	2240.2	4.2				ug/L	1572	Standard
Sr	88	221.7	14.7				ug/L	73	Standard
C	12	126.7	4.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	64.1	36.5				mg/L	6	Standard
Ho-1	165	30.0	33.3				mg/L	10	Standard
Er	166	53.3	21.7				mg/L	13	Standard
I	127	24610.0	6.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		120.154	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.537	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.343
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.889
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606129601
Sample Date/Time: Wednesday, June 29, 2016 17:47:06
Number of Replicates: 3
Autosampler Position: 236
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89414.7	0.8				ug/L	74699	Standard
	Be	9	18.3	41.7	**0.0250**	0.007	28.7	ug/L	8	Standard
	Al	27	159581.9	4.0	**0.8936**	0.029	3.3	ug/L	1493	Standard
	Sc	45	67088.2	1.1				ug/L	61029	Standard
	Ti	47	35.7	1.6	**-0.0268**	0.002	7.8	ug/L	35	Standard
	V	51	2172.9	6.2	**0.0559**	0.017	29.8	ug/L	1435	Standard
	Cr	52	9358.6	1.2	**0.0800**	0.026	32.1	ug/L	7635	Standard
	Cr	53	761.7	7.6	**0.3908**	0.063	16.2	ug/L	363	Standard
	Mn	55	2132.8	0.4	**0.1197**	0.005	4.4	ug/L	747	Standard
	Co	59	232.7	3.6	**-0.0065**	0.001	22.5	ug/L	234	Standard
	Ni	60	263.3	7.3	**-0.0009**	0.011	1213.2	ug/L	215	Standard
	Cu	65	215.7	8.8	**-0.0024**	0.009	395.1	ug/L	104	Standard
	Zn	66	2535.5	4.0	**1.5735**	0.060	3.8	ug/L	363	Standard
>	**Ge**	72	566628.0	1.5				ug/L	495142	Standard
	As	75	0.7	2838.5	**0.0602**	0.015	24.5	ug/L	-50	Standard
	Se	82	16.5	13.6	**-0.0062**	0.020	325.1	ug/L	14	Standard
	Se-1	77	57.7	30.4	**0.0671**	0.205	305.9	ug/L	42	Standard
>	**Ga**	71	65.0	35.3				mg/L	42	Standard
	Rb	85	218.3	8.7				ug/L	17	Standard
	Y	89	474347.0	1.6				ug/L	417098	Standard
>	**Rh**	103	16.7	45.8				ug/L	13	Standard
	Mo	98	108.8	9.6	**0.0309**	0.003	10.7	ug/L	11	Standard
	Ag	107	170.0	11.0	**0.0105**	0.003	26.1	ug/L	68	Standard
	Cd	111	6.5	32.0	**-0.0051**	0.001	17.0	mg/L	2	Standard
	Cd	114	10.6	76.1	**-0.0002**	0.001	576.3	ug/L	12	Standard
>	**In**	115	655393.1	1.0				ug/L	587441	Standard
	Sn	118	536.7	6.3	**-0.0123**	0.006	49.5	ug/L	497	Standard
	Sb	123	179.2	10.0	**0.0302**	0.004	12.2	ug/L	78	Standard
	Ba	135	901.0	1.9	**0.3786**	0.012	3.1	ug/L	24	Standard
	Ce	140	38.3	52.7				ug/L	25	Standard
>	**Tb**	159	1019773.4	1.2				ug/L	939701	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	34.7	13.6	**0.0021**	0.001	27.9	ug/L	4	Standard
	Tl	205	33.3	52.7	**0.0044**	0.002	51.3	ug/L	2	Standard
	Pb	206	333.0	5.0	**-0.0144**	0.003	23.5	ug/L	240	Standard
	Pb	207	282.3	6.2	**-0.0157**	0.004	25.6	ug/L	198	Standard
	Pb	208	1187.0	2.0	**-0.0164**	0.002	10.6	ug/L	883	Standard
	U	238	27.0	25.9	**-0.0009**	0.001	108.4	ug/L	3	Standard
>	**Bi**	209	574894.3	1.4				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.3542**	30.050	173.2	mg/L	0	Standard
Mg	24	255.0	18.0	**0.2345**	0.054	23.2	mg/L	37	Standard
K	39	41.7	36.7	**-0.0306**	0.030	98.0	mg/L	38	Standard
Ca	43	31.7	18.2	**-0.7022**	0.343	48.8	mg/L	10	Standard
Fe	54	182.6	4.3	**0.0025**	0.004	177.8	mg/L	179	Standard
Fe	57	238.3	19.9	**-0.3363**	0.155	46.0	mg/L	335	Standard
Sc-1	45	67088.2	1.1				mg/L	61029	Standard
Cl	35	32679.2	0.8				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	2083.5	4.4				ug/L	1547	Standard
P	31	19699.5	2.2				ug/L	15286	Standard
S	34	2248.5	3.2				ug/L	1572	Standard
Sr	88	70.0	56.7				ug/L	73	Standard
C	12	60.0	76.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	42.4	37.5				mg/L	6	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	20.0	86.6				mg/L	13	Standard
I	127	3452.1	27.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		119.700	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		114.437	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.567
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.716
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Wednesday, June 29, 2016 17:50:19
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	88962.1	0.9				ug/L	74699	Standard
	Be	9	13.3	43.3	**0.0204**	0.006	27.5	ug/L	8	Standard
	Al	27	8687475.6	2.0	**49.6312**	1.401	2.8	ug/L	1493	Standard
	Sc	45	67439.8	1.2				ug/L	61029	Standard
	Ti	47	49495.1	1.8	**118.6714**	2.776	2.3	ug/L	35	Standard
	V	51	2497.1	11.5	**0.1050**	0.033	31.3	ug/L	1435	Standard
	Cr	52	8893.6	0.7	**0.0677**	0.012	17.4	ug/L	7635	Standard
	Cr	53	8300.6	3.8	**7.8359**	0.175	2.2	ug/L	363	Standard
	Mn	55	1506.4	1.9	**0.0487**	0.003	6.1	ug/L	747	Standard
	Co	59	411.3	2.2	**0.0194**	0.002	11.4	ug/L	234	Standard
	Ni	60	986.0	7.4	**0.3548**	0.029	8.2	ug/L	215	Standard
	Cu	65	754.7	3.5	**0.2650**	0.009	3.4	ug/L	104	Standard
	Zn	66	1997.5	3.6	**1.2085**	0.053	4.4	ug/L	363	Standard
>	Ge	72	544457.7	1.7				ug/L	495142	Standard
	As	75	-43.8	164.6	**0.0238**	0.058	245.3	ug/L	-50	Standard
	Se	82	18.8	19.8	**0.0181**	0.034	186.0	ug/L	14	Standard
	Se-1	77	455.0	4.4	**5.0437**	0.245	4.9	ug/L	42	Standard
>	Ga	71	186.7	17.4				mg/L	42	Standard
	Rb	85	1130.0	9.7				ug/L	17	Standard
	Y	89	464215.3	1.7				ug/L	417098	Standard
>	Rh	103	10.0	100.0				ug/L	13	Standard
	Mo	98	300673.2	0.9	**102.5347**	1.457	1.4	ug/L	11	Standard
	Ag	107	252.3	6.3	**0.0223**	0.003	12.6	ug/L	68	Standard
	Cd	111	-194.8	14.0	**-0.0926**	0.012	12.9	mg/L	2	Standard
	Cd	114	577.1	3.2	**0.1002**	0.004	4.2	ug/L	12	Standard
>	In	115	646355.5	1.8				ug/L	587441	Standard
	Sn	118	791.7	5.4	**0.0285**	0.006	21.5	ug/L	497	Standard
	Sb	123	195.6	12.5	**0.0338**	0.004	11.9	ug/L	78	Standard
	Ba	135	712.0	4.0	**0.3001**	0.008	2.7	ug/L	24	Standard
	Ce	140	246.7	7.1				ug/L	25	Standard
>	Tb	159	1024202.6	1.1				ug/L	939701	Standard
	Ho	165	23.3	61.9				ug/L	10	Standard
	Tl	203	122.3	9.8	**0.0119**	0.001	11.8	ug/L	4	Standard
	Tl	205	90.0	11.1	**0.0118**	0.001	10.5	ug/L	2	Standard
	Pb	206	533.7	2.0	**0.0208**	0.002	10.5	ug/L	240	Standard
	Pb	207	414.7	3.2	**0.0105**	0.002	21.4	ug/L	198	Standard
	Pb	208	1800.4	3.2	**0.0144**	0.003	21.4	ug/L	883	Standard
	U	238	18.7	20.3	**-0.0019**	0.001	26.8	ug/L	3	Standard
>	Bi	209	568876.5	0.5				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	11507.7	5.3	**13.3841**	0.868	6.5	mg/L	37	Standard
K	39	2163.5	5.0	**4.2129**	0.203	4.8	mg/L	38	Standard
Ca	43	273.3	20.1	**13.1286**	3.349	25.5	mg/L	10	Standard
Fe	54	17120.6	2.5	**12.9991**	0.385	3.0	mg/L	179	Standard
Fe	57	4470.7	3.8	**12.6745**	0.387	3.1	mg/L	335	Standard
> **Sc-1**	45	67439.8	1.2				mg/L	61029	Standard
Cl	35	28777.3	2.0				ug/L	20195	Standard
Kr	83	1.7	91.7				ug/L	4	Standard
Br	81	2086.8	10.9				ug/L	1547	Standard
P	31	20233.5	1.2				ug/L	15286	Standard
S	34	2398.5	7.6				ug/L	1572	Standard
Sr	88	63.3	35.6				ug/L	73	Standard
C	12	173.3	8.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	80.0	69.6				mg/L	3	Standard
Dy	164	11.6	52.9				mg/L	6	Standard
Ho-1	165	23.3	61.9				mg/L	10	Standard
Er	166	36.7	56.8				mg/L	13	Standard
I	127	2830.3	21.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27	0.993		
Sc	45			
Ti	47	118.671		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.960	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 4
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Rb	85			
Y	89			
Rh	103			
Mo	98	102.535		
Ag	107			
Cd	111			
Cd	114			
In	115			110.029
Sn	118			
Sb	123			
Ba	135			
Ce	140			
Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
Bi	209			108.567
Na	23	0.040		
Mg	24	267.683		
K	39	84.259		
Ca	43	87.524		
Fe	54	103.992		
Fe	57	101.396		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	

Sample ID: QC Std 4
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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Wednesday, June 29, 2016 17:53:31
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88668.7	1.6				ug/L	74699	Standard
	Be	9	115505.6	3.3	**110.5278**	2.817	2.5	ug/L	8	Standard
	Al	27	8938177.8	2.5	**51.2202**	0.471	0.9	ug/L	1493	Standard
	Sc	45	65087.9	3.1				ug/L	61029	Standard
	Ti	47	50197.4	1.2	**122.5394**	1.491	1.2	ug/L	35	Standard
	V	51	859522.7	1.3	**105.1949**	1.380	1.3	ug/L	1435	Standard
	Cr	52	831098.2	2.0	**102.8267**	1.943	1.9	ug/L	7635	Standard
	Cr	53	106911.0	2.3	**106.7884**	2.096	2.0	ug/L	363	Standard
	Mn	55	780341.4	1.6	**103.6433**	1.453	1.4	ug/L	747	Standard
	Co	59	785536.0	0.5	**110.1234**	0.547	0.5	ug/L	234	Standard
	Ni	60	203753.2	2.0	**100.6522**	1.808	1.8	ug/L	215	Standard
	Cu	65	201732.1	0.8	**100.2703**	0.833	0.8	ug/L	104	Standard
	Zn	66	122540.9	0.7	**103.4323**	0.376	0.4	ug/L	363	Standard
>	**Ge**	72	534677.6	0.4				ug/L	495142	Standard
	As	75	124456.8	0.2	**102.9556**	0.389	0.4	ug/L	-50	Standard
	Se	82	12596.7	0.4	**106.1488**	0.433	0.4	ug/L	14	Standard
	Se-1	77	8794.6	0.8	**110.8893**	1.382	1.2	ug/L	42	Standard
>	**Ga**	71	163.3	10.8				mg/L	42	Standard
	Rb	85	966.7	4.8				ug/L	17	Standard
	Y	89	476525.6	1.7				ug/L	417098	Standard
>	**Rh**	103	56.7	53.9				ug/L	13	Standard
	Mo	98	309227.9	0.6	**104.8818**	1.132	1.1	ug/L	11	Standard
	Ag	107	592523.9	2.1	**82.1821**	1.932	2.4	ug/L	68	Standard
	Cd	111	228625.7	1.0	**98.8467**	0.904	0.9	mg/L	2	Standard
	Cd	114	551600.1	1.5	**97.2335**	1.523	1.6	ug/L	12	Standard
>	**In**	115	649797.8	0.6				ug/L	587441	Standard
	Sn	118	1576.7	4.2	**0.1493**	0.011	7.5	ug/L	497	Standard
	Sb	123	495027.3	1.9	**95.8585**	2.358	2.5	ug/L	78	Standard
	Ba	135	210763.3	1.3	**93.0830**	1.687	1.8	ug/L	24	Standard
	Ce	140	70.0	24.7				ug/L	25	Standard
>	**Tb**	159	1005734.4	0.5				ug/L	939701	Standard
	Ho	165	11.7	49.5				ug/L	10	Standard
	Tl	203	893894.1	1.2	**101.2389**	0.317	0.3	ug/L	4	Standard
	Tl	205	815034.2	0.6	**106.3608**	0.654	0.6	ug/L	2	Standard
	Pb	206	583528.7	0.9	**101.9143**	0.243	0.2	ug/L	240	Standard
	Pb	207	499626.1	1.2	**98.2110**	0.372	0.4	ug/L	198	Standard
	Pb	208	2105185.2	0.8	**104.7451**	0.431	0.4	ug/L	883	Standard
	U	238	779429.7	1.7	**105.7078**	0.634	0.6	ug/L	3	Standard
>	**Bi**	209	561247.5	1.2				ug/L	523984	Standard

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Na	23	1.7	173.2	**18.1880**	31.494	173.2	mg/L	0	Standard
Mg	24	12009.8	3.1	**14.4710**	0.020	0.1	mg/L	37	Standard
K	39	2150.2	4.2	**4.3456**	0.256	5.9	mg/L	38	Standard
Ca	43	251.7	12.1	**12.4083**	2.087	16.8	mg/L	10	Standard
Fe	54	17836.2	2.6	**14.0504**	0.592	4.2	mg/L	179	Standard
Fe	57	4537.3	4.4	**13.3981**	0.845	6.3	mg/L	335	Standard
Sc-1	45	65087.9	3.1				mg/L	61029	Standard
Cl	35	27559.7	2.9				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	1986.8	4.8				ug/L	1547	Standard
P	31	19052.0	2.9				ug/L	15286	Standard
S	34	2286.8	6.3				ug/L	1572	Standard
Sr	88	50.0	10.0				ug/L	73	Standard
C	12	120.0	54.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	3	Standard
Dy	164	6.0	200.7				mg/L	6	Standard
Ho-1	165	11.7	49.5				mg/L	10	Standard
Er	166	13.3	86.6				mg/L	13	Standard
I	127	2065.1	25.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	110.528		
Al	27	1.024		
Sc	45			
Ti	47	122.539		
V	51	105.195		
Cr	52	102.827		
Cr	53			
Mn	55	103.643		
Co	59	110.123		
Ni	60	100.652		
Cu	65	100.270		
Zn	66	103.432		
Ge	72		107.985	
As	75	102.956		
Se	82	106.149		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	104.882		
Ag	107	82.182		
Cd	111	98.847		
Cd	114			
> In	115		110.615	
Sn	118			
Sb	123	95.858		
Ba	135	93.083		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.239		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.745		
U	238	105.708		
> Bi	209		107.111	
Na	23	145.504		
Mg	24	289.419		
K	39	86.911		
Ca	43	82.722		
Fe	54	112.403		
Fe	57	107.185		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Ti	47	
QC Std 5	Na	23	

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QC Std 5	Mg	24

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 17:56:44
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	88001.7	3.8				ug/L	74699	Standard
	Be	9	58491.1	3.4	**56.4121**	0.807	1.4	ug/L	8	Standard
	Al	27	8741223.1	1.9	**50.5126**	1.685	3.3	ug/L	1493	Standard
	Sc	45	66566.0	2.9				ug/L	61029	Standard
	Ti	47	44065.3	0.6	**105.8464**	2.393	2.3	ug/L	35	Standard
	V	51	439728.9	0.9	**52.8674**	1.388	2.6	ug/L	1435	Standard
	Cr	52	434693.1	0.1	**52.4281**	0.919	1.8	ug/L	7635	Standard
	Cr	53	53735.1	1.4	**52.6541**	1.206	2.3	ug/L	363	Standard
	Mn	55	394255.2	1.0	**51.4522**	0.719	1.4	ug/L	747	Standard
	Co	59	403494.7	0.9	**55.6456**	1.136	2.0	ug/L	234	Standard
	Ni	60	106493.3	0.2	**51.7076**	0.770	1.5	ug/L	215	Standard
	Cu	65	105229.8	0.3	**51.4208**	1.011	2.0	ug/L	104	Standard
	Zn	66	61955.4	1.5	**51.2322**	1.156	2.3	ug/L	363	Standard
>	Ge	72	543443.2	1.7				ug/L	495142	Standard
	As	75	62757.8	1.3	**51.1208**	1.290	2.5	ug/L	-50	Standard
	Se	82	6411.0	0.6	**53.0945**	1.065	2.0	ug/L	14	Standard
	Se-1	77	4401.6	1.7	**54.2995**	1.443	2.7	ug/L	42	Standard
>	Ga	71	61.7	12.4				mg/L	42	Standard
	Rb	85	943.4	4.4				ug/L	17	Standard
	Y	89	472814.1	2.0				ug/L	417098	Standard
>	Rh	103	31.7	36.5				ug/L	13	Standard
	Mo	98	301859.8	0.5	**101.5547**	1.508	1.5	ug/L	11	Standard
	Ag	107	366041.5	1.2	**50.3642**	1.561	3.1	ug/L	68	Standard
	Cd	111	117544.4	1.3	**50.4048**	0.748	1.5	mg/L	2	Standard
	Cd	114	286950.2	2.0	**50.1688**	0.955	1.9	ug/L	12	Standard
>	In	115	655193.6	1.9				ug/L	587441	Standard
	Sn	118	333959.0	1.2	**51.1818**	1.510	3.0	ug/L	497	Standard
	Sb	123	261510.0	1.1	**50.2357**	1.515	3.0	ug/L	78	Standard
	Ba	135	110572.3	0.3	**48.4318**	0.852	1.8	ug/L	24	Standard
	Ce	140	81.7	46.0				ug/L	25	Standard
>	Tb	159	1009652.9	1.9				ug/L	939701	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	466012.5	0.6	**52.5145**	1.216	2.3	ug/L	4	Standard
	Tl	205	428260.1	0.9	**55.6109**	1.642	3.0	ug/L	2	Standard
	Pb	206	294247.5	0.8	**51.0977**	1.194	2.3	ug/L	240	Standard
	Pb	207	260542.8	0.7	**50.9223**	1.007	2.0	ug/L	198	Standard
	Pb	208	1081629.9	0.8	**53.5152**	1.532	2.9	ug/L	883	Standard
	U	238	403586.7	0.9	**54.4635**	1.402	2.6	ug/L	3	Standard
>	Bi	209	564239.9	2.1				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4549.0	2.0	**5.3196**	0.066	1.2	mg/L	37	Standard
K	39	2091.8	2.6	**4.1250**	0.021	0.5	mg/L	38	Standard
Ca	43	106.7	9.8	**3.6589**	0.645	17.6	mg/L	10	Standard
Fe	54	6853.2	4.1	**5.1952**	0.357	6.9	mg/L	179	Standard
Fe	57	1901.8	4.2	**4.8507**	0.081	1.7	mg/L	335	Standard
> **Sc-1**	45	66566.0	2.9				mg/L	61029	Standard
Cl	35	28481.4	2.6				ug/L	20195	Standard
Kr	83	3.3	75.5				ug/L	4	Standard
Br	81	1840.1	18.3				ug/L	1547	Standard
P	31	20427.1	5.4				ug/L	15286	Standard
S	34	2438.5	6.3				ug/L	1572	Standard
Sr	88	80.0	32.5				ug/L	73	Standard
C	12	76.7	7.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	3	Standard
Dy	164	6.5	86.7				mg/L	6	Standard
Ho-1	165	8.3	34.6				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	2150.2	26.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	112.824		
Al	27	101.025		
Sc	45			
Ti	47	105.846		
V	51	105.735		
Cr	52	104.856		
Cr	53			
Mn	55	102.904		
Co	59	111.291		
Ni	60	103.415		
Cu	65	102.842		
Zn	66	102.464		
> Ge	72		109.755	
As	75	102.242		
Se	82	106.189		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.555		
Ag	107	100.728		
Cd	111	100.810		
Cd	114			
In	115		111.533	
Sn	118	102.364		
Sb	123	100.471		
Ba	135	96.864		
Ce	140			
Tb	159			
Ho	165			
Tl	203	105.029		
Tl	205			
Pb	206			
Pb	207			
Pb	208	107.030		
U	238	108.927		
Bi	209		107.683	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Co	59	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 17:59:55
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86353.7	1.4				ug/L	74699	Standard
	Be	9	83.3	67.4	**0.0891**	0.054	60.5	ug/L	8	Standard
	Al	27	42873.5	92.7	**0.2376**	0.231	97.1	ug/L	1493	Standard
	Sc	45	65305.4	1.2				ug/L	61029	Standard
	Ti	47	79.7	51.6	**0.0788**	0.097	123.4	ug/L	35	Standard
	V	51	1461.2	4.4	**-0.0225**	0.008	34.9	ug/L	1435	Standard
	Cr	52	7626.9	6.9	**-0.1029**	0.066	64.1	ug/L	7635	Standard
	Cr	53	760.0	14.8	**0.4057**	0.109	26.8	ug/L	363	Standard
	Mn	55	4546.9	137.2	**0.4388**	0.807	183.9	ug/L	747	Standard
	Co	59	626.0	93.3	**0.0478**	0.080	167.0	ug/L	234	Standard
	Ni	60	409.0	51.9	**0.0715**	0.102	142.7	ug/L	215	Standard
	Cu	65	272.7	44.7	**0.0274**	0.059	215.3	ug/L	104	Standard
	Zn	66	514.0	23.7	**-0.0335**	0.100	300.2	ug/L	363	Standard
>	**Ge**	72	553485.6	1.3				ug/L	495142	Standard
	As	75	-6.7	474.8	**0.0545**	0.025	45.9	ug/L	-50	Standard
	Se	82	20.4	10.3	**0.0278**	0.015	55.0	ug/L	14	Standard
	Se-1	77	66.3	4.4	**0.1906**	0.046	24.0	ug/L	42	Standard
>	**Ga**	71	50.0	10.0				mg/L	42	Standard
	Rb	85	45.0	48.4				ug/L	17	Standard
	Y	89	474090.9	1.7				ug/L	417098	Standard
>	**Rh**	103	18.3	41.7				ug/L	13	Standard
	Mo	98	533.3	54.8	**0.1739**	0.097	56.0	ug/L	11	Standard
	Ag	107	205.7	25.6	**0.0154**	0.007	45.9	ug/L	68	Standard
	Cd	111	43.3	79.3	**0.0106**	0.015	137.7	mg/L	2	Standard
	Cd	114	160.8	66.0	**0.0260**	0.018	70.8	ug/L	12	Standard
>	**In**	115	653140.9	0.6				ug/L	587441	Standard
	Sn	118	840.0	19.7	**0.0347**	0.026	74.7	ug/L	497	Standard
	Sb	123	1054.2	24.1	**0.1991**	0.050	25.2	ug/L	78	Standard
	Ba	135	82.0	54.8	**0.0199**	0.020	97.9	ug/L	24	Standard
	Ce	140	78.3	62.0				ug/L	25	Standard
>	**Tb**	159	1021325.7	0.5				ug/L	939701	Standard
	Ho	165	20.0	66.1				ug/L	10	Standard
	Tl	203	163.0	50.8	**0.0163**	0.009	56.1	ug/L	4	Standard
	Tl	205	543.4	156.5	**0.0696**	0.109	156.0	ug/L	2	Standard
	Pb	206	336.7	16.7	**-0.0136**	0.010	70.5	ug/L	240	Standard
	Pb	207	309.7	12.8	**-0.0104**	0.008	73.2	ug/L	198	Standard
	Pb	208	2162.1	83.2	**0.0313**	0.088	280.1	ug/L	883	Standard
	U	238	524.4	153.4	**0.0652**	0.107	163.8	ug/L	3	Standard
>	**Bi**	209	573163.8	0.1				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.8448**	30.899	173.2	mg/L	0	Standard
Mg	24	123.3	127.6	**0.0829**	0.188	227.1	mg/L	37	Standard
K	39	30.0	66.7	**-0.0524**	0.041	77.8	mg/L	38	Standard
Ca	43	21.7	35.3	**-1.2409**	0.467	37.7	mg/L	10	Standard
Fe	54	185.6	27.6	**0.0086**	0.039	460.9	mg/L	179	Standard
Fe	57	268.3	10.3	**-0.2224**	0.079	35.7	mg/L	335	Standard
Sc-1	45	65305.4	1.2				mg/L	61029	Standard
Cl	35	28806.0	1.7				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	1900.1	3.3				ug/L	1547	Standard
P	31	20240.2	2.7				ug/L	15286	Standard
S	34	2435.2	7.1				ug/L	1572	Standard
Sr	88	65.0	20.4				ug/L	73	Standard
C	12	60.0					mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	25.5	84.0				mg/L	6	Standard
Ho-1	165	20.0	66.1				mg/L	10	Standard
Er	166	23.3	65.5				mg/L	13	Standard
I	127	1926.8	28.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		111.783	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.184
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.386
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Mn	55	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Wednesday, June 29, 2016 18:03:08
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84590.6	2.3				ug/L	74699	Standard
	Be	9	260.0	12.0	**0.2687**	0.034	12.7	ug/L	8	Standard
	Al	27	3603.8	43.5	**0.0082**	0.009	110.1	ug/L	1493	Standard
	Sc	45	65034.3	0.9				ug/L	61029	Standard
	Ti	47	43.7	32.9	**-0.0008**	0.035	4199.9	ug/L	35	Standard
	V	51	4694.6	2.2	**0.3894**	0.008	2.0	ug/L	1435	Standard
	Cr	52	14076.2	0.6	**0.7639**	0.008	1.0	ug/L	7635	Standard
	Cr	53	1435.1	6.7	**1.1315**	0.098	8.6	ug/L	363	Standard
	Mn	55	4379.0	3.5	**0.4438**	0.017	3.9	ug/L	747	Standard
	Co	59	3208.0	4.2	**0.4198**	0.015	3.5	ug/L	234	Standard
	Ni	60	3464.1	1.9	**1.6175**	0.036	2.2	ug/L	215	Standard
	Cu	65	1802.1	7.0	**0.8073**	0.055	6.8	ug/L	104	Standard
	Zn	66	8137.9	1.9	**6.5566**	0.074	1.1	ug/L	363	Standard
>	**Ge**	72	526101.8	0.9				ug/L	495142	Standard
	As	75	520.8	10.5	**0.4970**	0.042	8.4	ug/L	-50	Standard
	Se	82	68.5	3.0	**0.4490**	0.013	3.0	ug/L	14	Standard
	Se-1	77	97.0	14.4	**0.6266**	0.169	26.9	ug/L	42	Standard
>	**Ga**	71	35.0	42.9				mg/L	42	Standard
	Rb	85	53.3	5.4				ug/L	17	Standard
	Y	89	462050.3	3.1				ug/L	417098	Standard
>	**Rh**	103	11.7	24.7				ug/L	13	Standard
	Mo	98	178.6	39.2	**0.0548**	0.024	44.0	ug/L	11	Standard
	Ag	107	2989.6	2.3	**0.4006**	0.011	2.7	ug/L	68	Standard
	Cd	111	543.3	9.6	**0.2264**	0.024	10.6	mg/L	2	Standard
	Cd	114	1493.6	11.4	**0.2605**	0.031	12.1	ug/L	12	Standard
>	**In**	115	651766.1	0.6				ug/L	587441	Standard
	Sn	118	551.7	10.5	**-0.0096**	0.009	97.6	ug/L	497	Standard
	Sb	123	2328.3	1.4	**0.4453**	0.009	1.9	ug/L	78	Standard
	Ba	135	1600.4	3.6	**0.6889**	0.030	4.3	ug/L	24	Standard
	Ce	140	6.7	86.6				ug/L	25	Standard
>	**Tb**	159	1010895.5	0.8				ug/L	939701	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	860.7	17.5	**0.0936**	0.016	16.7	ug/L	4	Standard
	Tl	205	718.4	10.6	**0.0918**	0.008	8.5	ug/L	2	Standard
	Pb	206	1533.1	9.5	**0.1909**	0.020	10.6	ug/L	240	Standard
	Pb	207	1247.1	5.1	**0.1700**	0.007	4.3	ug/L	198	Standard
	Pb	208	5357.0	3.3	**0.1870**	0.005	2.6	ug/L	883	Standard
	U	238	3040.0	2.0	**0.3994**	0.014	3.4	ug/L	3	Standard
>	**Bi**	209	573346.3	2.5				ug/L	523984	Standard

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Na	23	1.7	173.2	**18.2178**	31.546	173.2	mg/L	0	Standard
Mg	24	50.0	50.0	**-0.0044**	0.031	706.6	mg/L	37	Standard
K	39	35.0	24.7	**-0.0415**	0.018	44.0	mg/L	38	Standard
Ca	43	26.7	43.3	**-0.9446**	0.676	71.5	mg/L	10	Standard
Fe	54	105.0	32.5	**-0.0546**	0.028	51.3	mg/L	179	Standard
Fe	57	230.0	24.7	**-0.3395**	0.189	55.5	mg/L	335	Standard
Sc-1	45	65034.3	0.9				mg/L	61029	Standard
Cl	35	27747.4	0.7				ug/L	20195	Standard
Kr	83	1.0	0.0				ug/L	4	Standard
Br	81	1776.8	9.7				ug/L	1547	Standard
P	31	14345.1	1.0				ug/L	15286	Standard
S	34	2316.8	2.0				ug/L	1572	Standard
Sr	88	78.3	41.5				ug/L	73	Standard
C	12	70.0	28.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	6.0	100.4				mg/L	6	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	1788.4	30.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	134.333		
Al	27			
Sc	45			
Ti	47			
V	51	97.347		
Cr	52	95.485		
Cr	53			
Mn	55	88.762		
Co	59	104.961		
Ni	60	101.093		
Cu	65	100.908		
Zn	66	104.906		
Ge	72		106.253	
As	75	124.241		
Se	82	112.254		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	100.142		
Cd	111	94.325		
Cd	114			
> In	115			110.950
Sn	118			
Sb	123	111.327		
Ba	135	91.848		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	116.967		
Tl	205			
Pb	206			
Pb	207			
Pb	208	93.500		
U	238	99.844		
> Bi	209			109.420
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 8	Be	9	

Sample ID: QC Std 8
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Method 6020 - Summary Report

Sample ID: PBS M9 WG574192-02
Sample Date/Time: Wednesday, June 29, 2016 18:06:21
Number of Replicates: 3
Autosampler Position: 237
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84464.8	1.8				ug/L	74699	Standard
	Be	9	13.3	94.4	**0.0212**	0.013	60.4	ug/L	8	Standard
	Al	27	11484.4	1.6	**0.0557**	0.001	1.2	ug/L	1493	Standard
	Sc	45	65588.4	2.6				ug/L	61029	Standard
	Ti	47	51.3	20.8	**0.0150**	0.026	174.5	ug/L	35	Standard
	V	51	1499.5	1.3	**-0.0137**	0.003	18.5	ug/L	1435	Standard
	Cr	52	8909.3	1.2	**0.0773**	0.005	6.6	ug/L	7635	Standard
	Cr	53	853.4	5.0	**0.5155**	0.034	6.6	ug/L	363	Standard
	Mn	55	1324.4	4.8	**0.0262**	0.011	41.6	ug/L	747	Standard
	Co	59	237.0	9.4	**-0.0044**	0.004	80.7	ug/L	234	Standard
	Ni	60	317.3	8.0	**0.0315**	0.014	46.0	ug/L	215	Standard
	Cu	65	277.0	2.0	**0.0327**	0.005	14.4	ug/L	104	Standard
	Zn	66	2117.5	3.0	**1.3211**	0.055	4.2	ug/L	363	Standard
>	**Ge**	72	540634.9	1.6				ug/L	495142	Standard
	As	75	-19.3	191.5	**0.0441**	0.030	68.3	ug/L	-50	Standard
	Se	82	22.9	30.4	**0.0532**	0.060	113.4	ug/L	14	Standard
	Se-1	77	66.3	3.1	**0.2096**	0.028	13.1	ug/L	42	Standard
>	**Ga**	71	40.0	45.1				mg/L	42	Standard
	Rb	85	45.0	40.1				ug/L	17	Standard
	Y	89	495113.6	1.2				ug/L	417098	Standard
>	**Rh**	103	20.0	50.0				ug/L	13	Standard
	Mo	98	103.4	4.5	**0.0285**	0.002	7.3	ug/L	11	Standard
	Ag	107	105.3	22.1	**0.0013**	0.003	227.8	ug/L	68	Standard
	Cd	111	14.8	35.7	**-0.0017**	0.002	127.2	mg/L	2	Standard
	Cd	114	30.3	51.7	**0.0031**	0.003	86.4	ug/L	12	Standard
>	**In**	115	666604.9	1.7				ug/L	587441	Standard
	Sn	118	860.0	2.1	**0.0351**	0.004	11.7	ug/L	497	Standard
	Sb	123	400.3	27.4	**0.0716**	0.022	30.7	ug/L	78	Standard
	Ba	135	277.0	2.3	**0.1032**	0.001	0.8	ug/L	24	Standard
	Ce	140	75.0	20.0				ug/L	25	Standard
>	**Tb**	159	1002064.8	2.5				ug/L	939701	Standard
	Ho	165	13.3	21.7				ug/L	10	Standard
	Tl	203	23.7	14.8	**0.0009**	0.000	40.1	ug/L	4	Standard
	Tl	205	18.3	56.8	**0.0026**	0.001	51.0	ug/L	2	Standard
	Pb	206	383.3	7.2	**-0.0041**	0.004	93.5	ug/L	240	Standard
	Pb	207	304.7	4.5	**-0.0100**	0.002	23.2	ug/L	198	Standard
	Pb	208	1385.4	1.0	**-0.0050**	0.001	21.8	ug/L	883	Standard
	U	238	16.0	18.8	**-0.0023**	0.000	16.8	ug/L	3	Standard
>	**Bi**	209	560531.0	1.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	51.7	11.2	**-0.0029**	0.008	286.8	mg/L	37	Standard
K	39	28.3	27.0	**-0.0560**	0.015	26.7	mg/L	38	Standard
Ca	43	25.0	34.6	**-1.0611**	0.483	45.5	mg/L	10	Standard
Fe	54	209.4	8.6	**0.0268**	0.012	44.3	mg/L	179	Standard
Fe	57	206.7	9.2	**-0.4211**	0.048	11.4	mg/L	335	Standard
> **Sc-1**	45	65588.4	2.6				mg/L	61029	Standard
Cl	35	29295.6	1.0				ug/L	20195	Standard
Kr	83	1.7	91.7				ug/L	4	Standard
Br	81	3250.3	3.7				ug/L	1547	Standard
P	31	19926.4	1.7				ug/L	15286	Standard
S	34	2431.9	7.4				ug/L	1572	Standard
Sr	88	63.3	32.9				ug/L	73	Standard
C	12	60.0	16.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	23.2	64.8				mg/L	6	Standard
Ho-1	165	13.3	21.7				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	1665.1	25.5				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		113.074	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		109.188	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.476
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.975
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: LCSS M9 WG574192-03
Sample Date/Time: Wednesday, June 29, 2016 18:09:32
Number of Replicates: 3
Autosampler Position: 238
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83350.4	2.2				ug/L	74699	Standard
	Be	9	28323.1	1.8	**28.8492**	0.865	3.0	ug/L	8	Standard
	Al	27	10196.8	1.6	**0.0488**	0.002	4.6	ug/L	1493	Standard
	Sc	45	65183.2	0.6				ug/L	61029	Standard
	Ti	47	95.7	13.6	**0.1113**	0.027	24.3	ug/L	35	Standard
	V	51	224256.1	0.6	**25.7588**	0.522	2.0	ug/L	1435	Standard
	Cr	52	224696.6	1.0	**25.4792**	0.636	2.5	ug/L	7635	Standard
	Cr	53	27321.3	1.7	**25.5112**	0.743	2.9	ug/L	363	Standard
	Mn	55	202745.7	1.5	**25.3082**	0.750	3.0	ug/L	747	Standard
	Co	59	203564.8	2.3	**26.9126**	1.011	3.8	ug/L	234	Standard
	Ni	60	54379.7	0.7	**25.2634**	0.489	1.9	ug/L	215	Standard
	Cu	65	53975.6	1.0	**25.2465**	0.617	2.4	ug/L	104	Standard
	Zn	66	33582.8	1.1	**26.4199**	0.666	2.5	ug/L	363	Standard
>	**Ge**	72	566570.7	1.5				ug/L	495142	Standard
	As	75	31915.6	1.0	**24.9643**	0.450	1.8	ug/L	-50	Standard
	Se	82	3210.1	2.6	**25.4315**	0.960	3.8	ug/L	14	Standard
	Se-1	77	2232.8	4.1	**26.1060**	1.397	5.4	ug/L	42	Standard
>	**Ga**	71	91.7	13.7				mg/L	42	Standard
	Rb	85	96.7	31.2				ug/L	17	Standard
	Y	89	463441.3	2.1				ug/L	417098	Standard
>	**Rh**	103	25.0	40.0				ug/L	13	Standard
	Mo	98	76.3	5.4	**0.0207**	0.001	6.1	ug/L	11	Standard
	Ag	107	186996.6	1.0	**26.4732**	0.339	1.3	ug/L	68	Standard
	Cd	111	58916.9	1.6	**26.0048**	0.541	2.1	mg/L	2	Standard
	Cd	114	141808.0	1.8	**25.5238**	0.616	2.4	ug/L	12	Standard
>	**In**	115	636399.6	0.6				ug/L	587441	Standard
	Sn	118	665.0	9.8	**0.0103**	0.010	94.1	ug/L	497	Standard
	Sb	123	127977.1	1.2	**25.3000**	0.453	1.8	ug/L	78	Standard
	Ba	135	55490.8	0.9	**25.0111**	0.350	1.4	ug/L	24	Standard
	Ce	140	61.7	36.6				ug/L	25	Standard
>	**Tb**	159	977939.2	1.1				ug/L	939701	Standard
	Ho	165	5.0	100.0				ug/L	10	Standard
	Tl	203	232757.9	0.8	**26.2994**	0.658	2.5	ug/L	4	Standard
	Tl	205	213539.2	0.1	**27.8001**	0.582	2.1	ug/L	2	Standard
	Pb	206	150898.4	0.7	**26.2407**	0.649	2.5	ug/L	240	Standard
	Pb	207	129115.2	1.2	**25.2720**	0.800	3.2	ug/L	198	Standard
	Pb	208	547777.7	0.6	**27.1359**	0.615	2.3	ug/L	883	Standard
	U	238	197609.3	0.3	**26.7341**	0.481	1.8	ug/L	3	Standard
>	**Bi**	209	562718.9	2.0				ug/L	523984	Standard

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Na	23	3.3	86.6	**35.9815**	31.158	86.6	mg/L	0	Standard
Mg	24	53.3	23.6	**-0.0007**	0.015	2138.9	mg/L	37	Standard
K	39	36.7	90.8	**-0.0380**	0.070	183.0	mg/L	38	Standard
Ca	43	26.7	28.6	**-0.9444**	0.462	48.9	mg/L	10	Standard
Fe	54	149.2	16.7	**-0.0198**	0.020	102.0	mg/L	179	Standard
Fe	57	258.3	10.7	**-0.2518**	0.092	36.6	mg/L	335	Standard
> **Sc-1**	45	65183.2	0.6				mg/L	61029	Standard
Cl	35	28068.6	2.1				ug/L	20195	Standard
Kr	83	2.0	0.0				ug/L	4	Standard
Br	81	1853.4	3.5				ug/L	1547	Standard
P	31	20221.8	1.7				ug/L	15286	Standard
S	34	2256.8	4.8				ug/L	1572	Standard
Sr	88	75.0	24.0				ug/L	73	Standard
C	12	113.3	53.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	2.9	203.0				mg/L	6	Standard
Ho-1	165	5.0	100.0				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	1621.8	26.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.582	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.426	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.334
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.392
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSS M9 WG574192-03
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Method 6020 - Summary Report

Sample ID: L1606120601 WG574192-01
Sample Date/Time: Wednesday, June 29, 2016 18:12:44
Number of Replicates: 3
Autosampler Position: 239
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89463.4	1.2				ug/L	74699	Standard
	Be	9	386.7	13.6	**0.3740**	0.046	12.2	ug/L	8	Standard
	Al	27	7605562.2	1.6	**43.1976**	0.340	0.8	ug/L	1493	Standard
	Sc	45	72243.5	1.6				ug/L	61029	Standard
	Ti	47	9362.6	0.8	**21.8169**	0.679	3.1	ug/L	35	Standard
	V	51	123334.5	1.4	**14.2946**	0.165	1.2	ug/L	1435	Standard
	Cr	52	107034.1	1.6	**11.7966**	0.478	4.1	ug/L	7635	Standard
	Cr	53	12683.6	2.9	**11.8556**	0.642	5.4	ug/L	363	Standard
	Mn	55	2726083.5	2.1	**347.2409**	2.026	0.6	ug/L	747	Standard
	Co	59	29531.4	3.0	**3.9299**	0.043	1.1	ug/L	234	Standard
	Ni	60	23196.4	0.4	**10.8725**	0.312	2.9	ug/L	215	Standard
	Cu	65	77156.3	0.7	**36.6848**	0.692	1.9	ug/L	104	Standard
	Zn	66	748003.6	1.6	**607.1548**	7.539	1.2	ug/L	363	Standard
>	**Ge**	72	558122.4	2.5				ug/L	495142	Standard
	As	75	3312.8	2.4	**2.6835**	0.016	0.6	ug/L	-50	Standard
	Se	82	112.5	6.7	**0.7726**	0.083	10.8	ug/L	14	Standard
	Se-1	77	130.7	4.7	**0.9656**	0.087	9.0	ug/L	42	Standard
>	**Ga**	71	7793.7	3.0				mg/L	42	Standard
	Rb	85	97459.1	1.1				ug/L	17	Standard
	Y	89	585281.5	2.1				ug/L	417098	Standard
>	**Rh**	103	56.7	13.5				ug/L	13	Standard
	Mo	98	1826.8	4.5	**0.5887**	0.034	5.8	ug/L	11	Standard
	Ag	107	1189.0	7.2	**0.1453**	0.012	8.4	ug/L	68	Standard
	Cd	111	5739.0	1.3	**2.3714**	0.004	0.2	mg/L	2	Standard
	Cd	114	13674.5	3.2	**2.3090**	0.056	2.4	ug/L	12	Standard
>	**In**	115	677670.9	1.2				ug/L	587441	Standard
	Sn	118	2238.5	6.9	**0.2377**	0.027	11.3	ug/L	497	Standard
	Sb	123	1060.8	22.9	**0.1924**	0.043	22.3	ug/L	78	Standard
	Ba	135	275486.3	0.7	**116.6679**	1.279	1.1	ug/L	24	Standard
	Ce	140	521396.3	0.5				ug/L	25	Standard
>	**Tb**	159	1067665.8	1.0				ug/L	939701	Standard
	Ho	165	8012.1	4.7				ug/L	10	Standard
	Tl	203	658.7	5.9	**0.0698**	0.004	5.8	ug/L	4	Standard
	Tl	205	588.3	7.1	**0.0738**	0.005	7.2	ug/L	2	Standard
	Pb	206	280687.1	0.1	**46.9821**	0.294	0.6	ug/L	240	Standard
	Pb	207	217657.6	0.6	**40.9978**	0.453	1.1	ug/L	198	Standard
	Pb	208	937818.9	1.0	**44.7144**	0.652	1.5	ug/L	883	Standard
	U	238	5450.3	0.5	**0.7046**	0.003	0.4	ug/L	3	Standard
>	**Bi**	209	585148.7	0.6				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	733.4	5.7	**0.7343**	0.035	4.8	mg/L	37	Standard
K	39	401.7	1.9	**0.6360**	0.019	3.0	mg/L	38	Standard
Ca	43	643.3	17.5	**31.7962**	5.845	18.4	mg/L	10	Standard
Fe	54	8818.1	2.4	**6.1777**	0.130	2.1	mg/L	179	Standard
Fe	57	2673.6	4.7	**6.5999**	0.243	3.7	mg/L	335	Standard
> **Sc-1**	45	72243.5	1.6				mg/L	61029	Standard
Cl	35	29798.6	1.4				ug/L	20195	Standard
Kr	83	0.7	86.6				ug/L	4	Standard
Br	81	3707.1	5.8				ug/L	1547	Standard
P	31	20168.4	2.0				ug/L	15286	Standard
S	34	2373.5	6.9				ug/L	1572	Standard
Sr	88	256.7	13.8				ug/L	73	Standard
C	12	350.0	7.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	130.0	53.3				mg/L	3	Standard
Dy	164	13278.3	0.5				mg/L	6	Standard
Ho-1	165	8012.1	4.7				mg/L	10	Standard
Er	166	7608.6	3.8				mg/L	13	Standard
I	127	89948.0	2.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.765	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		112.720	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		115.360
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		111.673
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606120601 WG574192-01
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Method 6020 - Summary Report

Sample ID: L1606120602
Sample Date/Time: Wednesday, June 29, 2016 18:15:55
Number of Replicates: 3
Autosampler Position: 240
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88784.4	1.1				ug/L	74699	Standard
	Be	9	281.7	5.7	**0.2767**	0.013	4.7	ug/L	8	Standard
	Al	27	7005404.7	2.4	**40.0898**	0.625	1.6	ug/L	1493	Standard
	Sc	45	70594.2	3.3				ug/L	61029	Standard
	Ti	47	10155.7	1.6	**24.3492**	0.468	1.9	ug/L	35	Standard
	V	51	153110.0	0.2	**18.3086**	0.101	0.6	ug/L	1435	Standard
	Cr	52	102957.6	0.7	**11.6568**	0.092	0.8	ug/L	7635	Standard
	Cr	53	11732.9	3.0	**11.2567**	0.305	2.7	ug/L	363	Standard
	Mn	55	2052735.8	1.1	**268.9604**	2.146	0.8	ug/L	747	Standard
	Co	59	33492.3	1.4	**4.5921**	0.057	1.2	ug/L	234	Standard
	Ni	60	26642.1	0.7	**12.8642**	0.053	0.4	ug/L	215	Standard
	Cu	65	40463.3	0.7	**19.7403**	0.183	0.9	ug/L	104	Standard
	Zn	66	608360.3	0.1	**507.8962**	1.599	0.3	ug/L	363	Standard
>	**Ge**	72	542468.6	0.4				ug/L	495142	Standard
	As	75	4231.0	2.7	**3.5076**	0.102	2.9	ug/L	-50	Standard
	Se	82	256.2	4.5	**1.9932**	0.099	5.0	ug/L	14	Standard
	Se-1	77	208.7	7.7	**1.9860**	0.210	10.6	ug/L	42	Standard
>	**Ga**	71	5872.8	1.9				mg/L	42	Standard
	Rb	85	68412.5	1.5				ug/L	17	Standard
	Y	89	570393.2	0.3				ug/L	417098	Standard
>	**Rh**	103	206.7	25.4				ug/L	13	Standard
	Mo	98	11374.8	0.4	**3.8637**	0.075	1.9	ug/L	11	Standard
	Ag	107	1353.7	2.3	**0.1754**	0.001	0.8	ug/L	68	Standard
	Cd	111	5491.2	1.2	**2.3732**	0.046	1.9	mg/L	2	Standard
	Cd	114	13400.9	1.9	**2.3668**	0.045	1.9	ug/L	12	Standard
>	**In**	115	648040.3	1.6				ug/L	587441	Standard
	Sn	118	1990.1	9.0	**0.2145**	0.033	15.4	ug/L	497	Standard
	Sb	123	589.0	13.2	**0.1100**	0.013	12.1	ug/L	78	Standard
	Ba	135	226861.9	1.0	**100.4795**	2.067	2.1	ug/L	24	Standard
	Ce	140	495305.9	0.7				ug/L	25	Standard
>	**Tb**	159	1028084.3	0.7				ug/L	939701	Standard
	Ho	165	7586.9	1.7				ug/L	10	Standard
	Tl	203	574.7	1.8	**0.0640**	0.002	2.9	ug/L	4	Standard
	Tl	205	501.7	7.3	**0.0663**	0.004	6.1	ug/L	2	Standard
	Pb	206	2490204.6	1.0	**439.6443**	9.561	2.2	ug/L	240	Standard
	Pb	207	1941338.7	1.0	**385.7578**	8.533	2.2	ug/L	198	Standard
	Pb	208	8788859.7	0.3	**442.0013**	4.418	1.0	ug/L	883	Standard
	U	238	27264.2	0.8	**3.7315**	0.055	1.5	ug/L	3	Standard
>	**Bi**	209	555601.8	1.3				ug/L	523984	Standard

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Na	23	15.0	66.7	**151.5495**	103.438	68.3	mg/L	0	Standard
Mg	24	875.0	7.4	**0.9112**	0.062	6.8	mg/L	37	Standard
K	39	308.3	17.3	**0.4774**	0.118	24.7	mg/L	38	Standard
Ca	43	2528.5	1.9	**135.7080**	7.063	5.2	mg/L	10	Standard
Fe	54	8423.7	4.4	**6.0457**	0.457	7.6	mg/L	179	Standard
Fe	57	3312.0	6.3	**8.6682**	0.763	8.8	mg/L	335	Standard
> **Sc-1**	45	70594.2	3.3				mg/L	61029	Standard
Cl	35	33743.5	0.4				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	4283.9	2.2				ug/L	1547	Standard
P	31	21890.8	1.3				ug/L	15286	Standard
S	34	2663.6	6.3				ug/L	1572	Standard
Sr	88	533.3	8.7				ug/L	73	Standard
C	12	600.0	5.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	100.0	26.5				mg/L	3	Standard
Dy	164	11590.5	1.3				mg/L	6	Standard
Ho-1	165	7586.9	1.7				mg/L	10	Standard
Er	166	6698.1	4.4				mg/L	13	Standard
I	127	108507.7	4.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.857	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.558	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	110.316
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	106.034
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1606120603S WG574192-04
Sample Date/Time: Wednesday, June 29, 2016 18:19:07
Number of Replicates: 3
Autosampler Position: 241
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86561.6	0.8				ug/L	74699	Standard
	Be	9	28455.1	4.4	**27.8947**	1.031	3.7	ug/L	8	Standard
	Al	27	11326081.2	0.4	**66.4980**	0.812	1.2	ug/L	1493	Standard
	Sc	45	74033.8	1.5				ug/L	61029	Standard
	Ti	47	13830.6	1.3	**31.7218**	0.771	2.4	ug/L	35	Standard
	V	51	404083.1	0.7	**46.4723**	0.823	1.8	ug/L	1435	Standard
	Cr	52	396378.6	0.5	**45.6257**	0.448	1.0	ug/L	7635	Standard
	Cr	53	48917.2	0.9	**45.8335**	0.539	1.2	ug/L	363	Standard
	Mn	55	3610519.8	1.3	**452.1326**	4.314	1.0	ug/L	747	Standard
	Co	59	243070.7	1.0	**32.0670**	0.356	1.1	ug/L	234	Standard
	Ni	60	87954.6	1.3	**40.8489**	0.598	1.5	ug/L	215	Standard
	Cu	65	138890.7	1.2	**64.9805**	0.614	0.9	ug/L	104	Standard
	Zn	66	982893.1	0.9	**784.3980**	13.633	1.7	ug/L	363	Standard
>	**Ge**	72	567734.3	1.2				ug/L	495142	Standard
	As	75	35264.6	1.3	**27.5210**	0.578	2.1	ug/L	-50	Standard
	Se	82	3103.1	1.8	**24.5237**	0.601	2.4	ug/L	14	Standard
	Se-1	77	2151.2	2.8	**25.0663**	0.745	3.0	ug/L	42	Standard
>	**Ga**	71	14508.6	3.6				mg/L	42	Standard
	Rb	85	180073.9	1.5				ug/L	17	Standard
	Y	89	616764.0	1.9				ug/L	417098	Standard
>	**Rh**	103	85.0	11.8				ug/L	13	Standard
	Mo	98	3441.4	2.1	**1.1615**	0.033	2.8	ug/L	11	Standard
	Ag	107	170180.4	0.7	**23.5897**	0.078	0.3	ug/L	68	Standard
	Cd	111	63817.8	1.8	**27.5852**	0.736	2.7	mg/L	2	Standard
	Cd	114	155790.6	2.3	**27.4604**	0.877	3.2	ug/L	12	Standard
>	**In**	115	649912.7	0.9				ug/L	587441	Standard
	Sn	118	2755.3	3.8	**0.3317**	0.018	5.5	ug/L	497	Standard
	Sb	123	11515.0	1.7	**2.2251**	0.028	1.3	ug/L	78	Standard
	Ba	135	420339.6	0.5	**185.6246**	2.179	1.2	ug/L	24	Standard
	Ce	140	771001.7	1.2				ug/L	25	Standard
>	**Tb**	159	1033151.8	0.5				ug/L	939701	Standard
	Ho	165	11344.2	1.5				ug/L	10	Standard
	Tl	203	220759.0	0.5	**24.6088**	0.113	0.5	ug/L	4	Standard
	Tl	205	203485.6	0.4	**26.1371**	0.140	0.5	ug/L	2	Standard
	Pb	206	518067.3	0.6	**89.0511**	0.447	0.5	ug/L	240	Standard
	Pb	207	415032.4	0.7	**80.2896**	0.537	0.7	ug/L	198	Standard
	Pb	208	1813547.0	1.2	**88.8061**	1.200	1.4	ug/L	883	Standard
	U	238	196913.8	1.4	**26.2850**	0.405	1.5	ug/L	3	Standard
>	**Bi**	209	570191.4	0.2				ug/L	523984	Standard

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Na	23	6.7	43.3	**63.0881**	26.284	41.7	mg/L	0	Standard
Mg	24	761.7	8.6	**0.7448**	0.057	7.6	mg/L	37	Standard
K	39	698.3	9.3	**1.1574**	0.103	8.9	mg/L	38	Standard
Ca	43	761.7	2.5	**37.1357**	0.619	1.7	mg/L	10	Standard
Fe	54	13661.1	2.3	**9.4129**	0.352	3.7	mg/L	179	Standard
Fe	57	3945.5	4.9	**9.9839**	0.617	6.2	mg/L	335	Standard
> **Sc-1**	45	74033.8	1.5				mg/L	61029	Standard
Cl	35	29672.4	3.3				ug/L	20195	Standard
Kr	83	0.7	86.6				ug/L	4	Standard
Br	81	5120.9	2.8				ug/L	1547	Standard
P	31	21184.8	2.3				ug/L	15286	Standard
S	34	2585.2	3.6				ug/L	1572	Standard
Sr	88	278.3	7.3				ug/L	73	Standard
C	12	453.3	23.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	180.0	28.9				mg/L	3	Standard
Dy	164	18295.9	3.4				mg/L	6	Standard
Ho-1	165	11344.2	1.5				mg/L	10	Standard
Er	166	10350.2	2.2				mg/L	13	Standard
I	127	155575.8	4.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.881	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.661	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.635
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.818
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606120604SD WG574192-05
Sample Date/Time: Wednesday, June 29, 2016 18:22:18
Number of Replicates: 3
Autosampler Position: 242
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88318.4	2.5				ug/L	74699	Standard
	Be	9	28910.9	0.8	**27.7911**	0.552	2.0	ug/L	8	Standard
	Al	27	11678142.6	0.8	**67.2186**	1.350	2.0	ug/L	1493	Standard
	Sc	45	75929.8	1.2				ug/L	61029	Standard
	Ti	47	15202.6	0.9	**34.3685**	0.367	1.1	ug/L	35	Standard
	V	51	408247.6	0.9	**46.2682**	0.632	1.4	ug/L	1435	Standard
	Cr	52	411599.1	1.0	**46.7151**	0.586	1.3	ug/L	7635	Standard
	Cr	53	50226.5	2.4	**46.3783**	0.843	1.8	ug/L	363	Standard
	Mn	55	4064951.2	0.1	**501.7134**	5.151	1.0	ug/L	747	Standard
	Co	59	242783.8	0.7	**31.5662**	0.473	1.5	ug/L	234	Standard
	Ni	60	92537.7	0.8	**42.3583**	0.203	0.5	ug/L	215	Standard
	Cu	65	135365.1	1.4	**62.4070**	0.241	0.4	ug/L	104	Standard
	Zn	66	1025151.4	1.0	**806.2133**	6.015	0.7	ug/L	363	Standard
>	**Ge**	72	576071.4	1.0				ug/L	495142	Standard
	As	75	35892.9	0.1	**27.6040**	0.298	1.1	ug/L	-50	Standard
	Se	82	2975.5	0.8	**23.1647**	0.155	0.7	ug/L	14	Standard
	Se-1	77	2118.1	0.7	**24.3051**	0.149	0.6	ug/L	42	Standard
>	**Ga**	71	16053.5	1.5				mg/L	42	Standard
	Rb	85	192660.5	0.7				ug/L	17	Standard
	Y	89	633758.5	0.9				ug/L	417098	Standard
>	**Rh**	103	91.7	22.7				ug/L	13	Standard
	Mo	98	2104.9	2.7	**0.6926**	0.023	3.3	ug/L	11	Standard
	Ag	107	176068.8	0.4	**23.8725**	0.248	1.0	ug/L	68	Standard
	Cd	111	64701.8	0.7	**27.3512**	0.177	0.6	mg/L	2	Standard
	Cd	114	157399.0	1.1	**27.1310**	0.176	0.6	ug/L	12	Standard
>	**In**	115	664480.0	1.2				ug/L	587441	Standard
	Sn	118	2676.9	2.8	**0.3105**	0.015	4.8	ug/L	497	Standard
	Sb	123	10363.1	2.2	**1.9584**	0.055	2.8	ug/L	78	Standard
	Ba	135	439420.6	0.3	**189.8023**	2.264	1.2	ug/L	24	Standard
	Ce	140	842883.5	1.0				ug/L	25	Standard
>	**Tb**	159	1049787.1	1.3				ug/L	939701	Standard
	Ho	165	12211.6	1.7				ug/L	10	Standard
	Tl	203	222058.4	0.3	**24.4396**	0.316	1.3	ug/L	4	Standard
	Tl	205	202828.8	1.6	**25.7185**	0.095	0.4	ug/L	2	Standard
	Pb	206	574235.7	0.3	**97.4667**	1.839	1.9	ug/L	240	Standard
	Pb	207	457211.7	0.6	**87.3408**	1.861	2.1	ug/L	198	Standard
	Pb	208	1979847.3	0.4	**95.7233**	1.171	1.2	ug/L	883	Standard
	U	238	197274.4	0.9	**26.0018**	0.641	2.5	ug/L	3	Standard
>	**Bi**	209	577596.9	1.6				ug/L	523984	Standard

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Na	23	5.0	0.0	**46.3267**	0.533	1.2	mg/L	0	Standard
Mg	24	961.7	5.5	**0.9325**	0.047	5.0	mg/L	37	Standard
K	39	738.4	15.4	**1.1991**	0.216	18.0	mg/L	38	Standard
Ca	43	858.4	11.4	**41.0973**	5.443	13.2	mg/L	10	Standard
Fe	54	16143.5	2.3	**10.8618**	0.122	1.1	mg/L	179	Standard
Fe	57	4519.0	2.4	**11.2744**	0.427	3.8	mg/L	335	Standard
> **Sc-1**	45	75929.8	1.2				mg/L	61029	Standard
Cl	35	29136.0	1.4				ug/L	20195	Standard
Kr	83	1.0	0.0				ug/L	4	Standard
Br	81	5384.3	8.1				ug/L	1547	Standard
P	31	20994.5	3.6				ug/L	15286	Standard
S	34	2526.9	1.1				ug/L	1572	Standard
Sr	88	265.0	8.2				ug/L	73	Standard
C	12	466.7	15.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	193.3	16.6				mg/L	3	Standard
Dy	164	19678.1	2.3				mg/L	6	Standard
Ho-1	165	12211.6	1.7				mg/L	10	Standard
Er	166	11454.3	2.8				mg/L	13	Standard
I	127	133210.9	5.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.233	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		116.345	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.114
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.232
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606120604SD WG574192-05
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Method 6020 - Summary Report

Sample ID: L1606120605
Sample Date/Time: Wednesday, June 29, 2016 18:25:30
Number of Replicates: 3
Autosampler Position: 243
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90694.1	2.2				ug/L	74699	Standard
	Be	9	526.7	6.5	**0.5004**	0.031	6.1	ug/L	8	Standard
	Al	27	8237088.6	1.8	**46.1607**	0.953	2.1	ug/L	1493	Standard
	Sc	45	76241.4	2.3				ug/L	61029	Standard
	Ti	47	9939.3	1.0	**23.0163**	0.554	2.4	ug/L	35	Standard
	V	51	146708.3	2.5	**16.9369**	0.672	4.0	ug/L	1435	Standard
	Cr	52	214286.2	1.5	**24.4749**	0.700	2.9	ug/L	7635	Standard
	Cr	53	25651.7	1.8	**24.1415**	0.427	1.8	ug/L	363	Standard
	Mn	55	2369893.5	2.4	**300.0787**	12.076	4.0	ug/L	747	Standard
	Co	59	42091.1	2.2	**5.5844**	0.210	3.8	ug/L	234	Standard
	Ni	60	29674.7	1.4	**13.8532**	0.382	2.8	ug/L	215	Standard
	Cu	65	80108.6	1.5	**37.8555**	1.188	3.1	ug/L	104	Standard
	Zn	66	402296.4	1.3	**324.3434**	9.485	2.9	ug/L	363	Standard
>	**Ge**	72	561626.1	1.7				ug/L	495142	Standard
	As	75	4613.8	0.6	**3.6915**	0.048	1.3	ug/L	-50	Standard
	Se	82	73.3	11.4	**0.4501**	0.057	12.7	ug/L	14	Standard
	Se-1	77	107.3	9.4	**0.6736**	0.125	18.5	ug/L	42	Standard
>	**Ga**	71	10595.4	4.5				mg/L	42	Standard
	Rb	85	117987.7	1.5				ug/L	17	Standard
	Y	89	650208.5	0.3				ug/L	417098	Standard
>	**Rh**	103	85.0	38.6				ug/L	13	Standard
	Mo	98	1074.4	2.1	**0.3404**	0.008	2.3	ug/L	11	Standard
	Ag	107	1521.7	2.8	**0.1876**	0.005	2.8	ug/L	68	Standard
	Cd	111	14943.9	2.9	**6.1278**	0.124	2.0	mg/L	2	Standard
	Cd	114	36335.4	1.3	**6.0807**	0.042	0.7	ug/L	12	Standard
>	**In**	115	684218.1	1.0				ug/L	587441	Standard
	Sn	118	4600.7	0.6	**0.5815**	0.007	1.3	ug/L	497	Standard
	Sb	123	346.8	6.2	**0.0596**	0.003	5.7	ug/L	78	Standard
	Ba	135	305952.3	0.8	**128.3272**	1.108	0.9	ug/L	24	Standard
	Ce	140	926252.0	0.8				ug/L	25	Standard
>	**Tb**	159	1067500.9	0.3				ug/L	939701	Standard
	Ho	165	12695.3	1.4				ug/L	10	Standard
	Tl	203	780.0	9.1	**0.0850**	0.009	10.5	ug/L	4	Standard
	Tl	205	700.0	0.7	**0.0898**	0.001	1.1	ug/L	2	Standard
	Pb	206	317389.9	0.7	**54.3657**	1.082	2.0	ug/L	240	Standard
	Pb	207	249270.6	1.1	**48.0507**	1.100	2.3	ug/L	198	Standard
	Pb	208	1104553.9	2.1	**53.8955**	1.488	2.8	ug/L	883	Standard
	U	238	5524.0	2.1	**0.7309**	0.022	3.0	ug/L	3	Standard
>	**Bi**	209	572007.3	1.4				ug/L	523984	Standard

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Na	23	8.3	34.6	**77.0658**	27.245	35.4	mg/L	0	Standard
Mg	24	545.0	4.9	**0.4986**	0.038	7.7	mg/L	37	Standard
K	39	528.3	15.8	**0.8195**	0.134	16.4	mg/L	38	Standard
Ca	43	966.7	6.0	**46.3930**	3.592	7.7	mg/L	10	Standard
Fe	54	12851.8	4.3	**8.5861**	0.399	4.6	mg/L	179	Standard
Fe	57	3822.2	7.3	**9.3402**	1.007	10.8	mg/L	335	Standard
Sc-1	45	76241.4	2.3				mg/L	61029	Standard
Cl	35	29717.8	2.2				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	3207.0	9.1				ug/L	1547	Standard
P	31	20467.1	0.8				ug/L	15286	Standard
S	34	2505.2	3.0				ug/L	1572	Standard
Sr	88	263.3	8.6				ug/L	73	Standard
C	12	196.7	5.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	123.3	46.8				mg/L	3	Standard
Dy	164	19864.2	0.8				mg/L	6	Standard
Ho-1	165	12695.3	1.4				mg/L	10	Standard
Er	166	11821.3	4.6				mg/L	13	Standard
I	127	41200.9	0.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		121.413	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		113.427	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		116.474
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.165
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606120605PS WG574690-01
Sample Date/Time: Wednesday, June 29, 2016 18:28:41
Number of Replicates: 3
Autosampler Position: 244
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85371.5	1.3				ug/L	74699	Standard
	Be	9	57838.5	0.7	**57.4989**	0.995	1.7	ug/L	8	Standard
	Al	27	8190235.3	0.9	**48.7593**	1.052	2.2	ug/L	1493	Standard
	Sc	45	74174.5	1.1				ug/L	61029	Standard
	Ti	47	9905.9	1.1	**22.7993**	0.140	0.6	ug/L	35	Standard
	V	51	615589.0	1.1	**71.2575**	1.604	2.3	ug/L	1435	Standard
	Cr	52	662720.1	2.0	**77.3523**	0.990	1.3	ug/L	7635	Standard
	Cr	53	81212.1	1.6	**76.6855**	0.228	0.3	ug/L	363	Standard
	Mn	55	2850355.8	1.2	**358.7372**	7.553	2.1	ug/L	747	Standard
	Co	59	453959.9	1.8	**60.2304**	1.747	2.9	ug/L	234	Standard
	Ni	60	139316.4	1.9	**65.0924**	0.607	0.9	ug/L	215	Standard
	Cu	65	189057.7	1.5	**88.9267**	0.405	0.5	ug/L	104	Standard
	Zn	66	476114.4	1.0	**381.6097**	5.307	1.4	ug/L	363	Standard
>	**Ge**	72	564919.1	1.3				ug/L	495142	Standard
	As	75	71672.0	0.5	**56.1469**	0.522	0.9	ug/L	-50	Standard
	Se	82	6681.0	0.4	**53.2203**	0.482	0.9	ug/L	14	Standard
	Se-1	77	4575.0	1.8	**54.2855**	1.161	2.1	ug/L	42	Standard
>	**Ga**	71	10925.6	2.3				mg/L	42	Standard
	Rb	85	119128.2	1.4				ug/L	17	Standard
	Y	89	658944.3	2.5				ug/L	417098	Standard
>	**Rh**	103	98.3	24.0				ug/L	13	Standard
	Mo	98	1073.3	2.3	**0.3534**	0.015	4.1	ug/L	11	Standard
	Ag	107	364831.9	0.7	**49.9049**	1.416	2.8	ug/L	68	Standard
	Cd	111	132655.1	1.4	**56.5569**	1.029	1.8	mg/L	2	Standard
	Cd	114	321468.3	0.7	**55.8946**	1.680	3.0	ug/L	12	Standard
>	**In**	115	659074.5	2.5				ug/L	587441	Standard
	Sn	118	1318.4	1.7	**0.1066**	0.008	7.5	ug/L	497	Standard
	Sb	123	258576.1	0.4	**49.3799**	1.200	2.4	ug/L	78	Standard
	Ba	135	409891.1	0.5	**178.5483**	4.068	2.3	ug/L	24	Standard
	Ce	140	929186.0	0.4				ug/L	25	Standard
>	**Tb**	159	1023915.1	1.8				ug/L	939701	Standard
	Ho	165	12935.5	3.1				ug/L	10	Standard
	Tl	203	455240.8	0.8	**52.4471**	0.837	1.6	ug/L	4	Standard
	Tl	205	420642.4	0.2	**55.8346**	0.392	0.7	ug/L	2	Standard
	Pb	206	614831.5	0.9	**109.2366**	1.843	1.7	ug/L	240	Standard
	Pb	207	503849.3	0.9	**100.7500**	1.617	1.6	ug/L	198	Standard
	Pb	208	2170185.0	1.2	**109.8441**	2.227	2.0	ug/L	883	Standard
	U	238	393858.5	1.0	**54.3381**	1.023	1.9	ug/L	3	Standard
>	**Bi**	209	551780.7	0.8				ug/L	523984	Standard

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Na	23	10.0	86.6	**95.2332**	83.153	87.3	mg/L	0	Standard
Mg	24	453.3	5.6	**0.4164**	0.027	6.4	mg/L	37	Standard
K	39	480.0	7.5	**0.7589**	0.067	8.8	mg/L	38	Standard
Ca	43	940.0	10.6	**46.3668**	5.650	12.2	mg/L	10	Standard
Fe	54	12349.5	1.2	**8.4763**	0.023	0.3	mg/L	179	Standard
Fe	57	3702.1	2.7	**9.2777**	0.167	1.8	mg/L	335	Standard
Sc-1	45	74174.5	1.1				mg/L	61029	Standard
Cl	35	30087.8	0.9				ug/L	20195	Standard
Kr	83	2.7	43.3				ug/L	4	Standard
Br	81	3260.4	2.1				ug/L	1547	Standard
P	31	20787.6	1.7				ug/L	15286	Standard
S	34	2500.2	2.8				ug/L	1572	Standard
Sr	88	245.0	12.4				ug/L	73	Standard
C	12	160.0	54.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	103.3	22.3				mg/L	3	Standard
Dy	164	20338.3	3.5				mg/L	6	Standard
Ho-1	165	12935.5	3.1				mg/L	10	Standard
Er	166	11817.9	3.9				mg/L	13	Standard
I	127	39775.5	3.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		114.288	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		114.092	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	112.194
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	105.305
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1606120605SDL WG574690-02
Sample Date/Time: Wednesday, June 29, 2016 18:31:53
Number of Replicates: 3
Autosampler Position: 245
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84476.5	1.1				ug/L	74699	Standard
	Be	9	178.3	18.7	**0.1869**	0.035	18.6	ug/L	8	Standard
	Al	27	1736036.7	3.1	**10.4319**	0.283	2.7	ug/L	1493	Standard
	Sc	45	72059.3	1.7				ug/L	61029	Standard
	Ti	47	2123.5	6.6	**4.6249**	0.308	6.7	ug/L	35	Standard
	V	51	32734.7	3.8	**3.4666**	0.135	3.9	ug/L	1435	Standard
	Cr	52	51911.1	1.7	**4.8949**	0.101	2.1	ug/L	7635	Standard
	Cr	53	5774.4	3.1	**4.9492**	0.156	3.2	ug/L	363	Standard
	Mn	55	492914.2	2.0	**59.6732**	1.219	2.0	ug/L	747	Standard
	Co	59	9193.8	6.0	**1.1391**	0.070	6.1	ug/L	234	Standard
	Ni	60	6665.5	3.0	**2.8840**	0.083	2.9	ug/L	215	Standard
	Cu	65	17774.1	0.7	**7.9654**	0.025	0.3	ug/L	104	Standard
	Zn	66	87339.7	0.8	**67.1049**	0.286	0.4	ug/L	363	Standard
>	**Ge**	72	585998.9	0.5				ug/L	495142	Standard
	As	75	970.2	5.1	**0.7914**	0.035	4.4	ug/L	-50	Standard
	Se	82	25.1	35.6	**0.0547**	0.068	124.2	ug/L	14	Standard
	Se-1	77	82.0	5.6	**0.3262**	0.050	15.4	ug/L	42	Standard
>	**Ga**	71	2373.5	5.4				mg/L	42	Standard
	Rb	85	23598.4	1.4				ug/L	17	Standard
	Y	89	515408.4	0.8				ug/L	417098	Standard
>	**Rh**	103	21.7	35.3				ug/L	13	Standard
	Mo	98	369.9	37.1	**0.1174**	0.046	39.0	ug/L	11	Standard
	Ag	107	699.0	38.5	**0.0822**	0.037	44.7	ug/L	68	Standard
	Cd	111	3080.1	3.0	**1.2985**	0.040	3.1	mg/L	2	Standard
	Cd	114	7389.1	5.7	**1.2756**	0.072	5.6	ug/L	12	Standard
>	**In**	115	662403.8	0.2				ug/L	587441	Standard
	Sn	118	660.0	13.5	**0.0055**	0.013	245.5	ug/L	497	Standard
	Sb	123	2141.2	12.8	**0.4025**	0.052	13.0	ug/L	78	Standard
	Ba	135	63716.0	0.4	**27.5914**	0.127	0.5	ug/L	24	Standard
	Ce	140	193219.3	1.3				ug/L	25	Standard
>	**Tb**	159	1027182.9	1.4				ug/L	939701	Standard
	Ho	165	2611.9	6.2				ug/L	10	Standard
	Tl	203	353.7	43.7	**0.0374**	0.017	46.4	ug/L	4	Standard
	Tl	205	421.7	67.1	**0.0541**	0.036	67.5	ug/L	2	Standard
	Pb	206	67035.7	2.8	**11.3788**	0.381	3.4	ug/L	240	Standard
	Pb	207	53097.6	2.6	**10.1377**	0.324	3.2	ug/L	198	Standard
	Pb	208	229986.8	1.7	**11.1165**	0.256	2.3	ug/L	883	Standard
	U	238	1351.4	18.8	**0.1748**	0.035	19.9	ug/L	3	Standard
>	**Bi**	209	574350.4	0.6				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	130.0	13.3	**0.0772**	0.020	26.0	mg/L	37	Standard
K	39	128.3	6.0	**0.1263**	0.018	14.2	mg/L	38	Standard
Ca	43	216.7	23.7	**9.0911**	2.889	31.8	mg/L	10	Standard
Fe	54	2661.6	0.9	**1.7733**	0.039	2.2	mg/L	179	Standard
Fe	57	965.0	5.3	**1.7027**	0.101	5.9	mg/L	335	Standard
> **Sc-1**	45	72059.3	1.7				mg/L	61029	Standard
Cl	35	30260.9	1.5				ug/L	20195	Standard
Kr	83	0.3	173.2				ug/L	4	Standard
Br	81	2210.2	10.2				ug/L	1547	Standard
P	31	20780.9	2.4				ug/L	15286	Standard
S	34	2430.2	2.3				ug/L	1572	Standard
Sr	88	83.3	13.9				ug/L	73	Standard
C	12	56.7	40.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	17.3				mg/L	3	Standard
Dy	164	4484.9	5.6				mg/L	6	Standard
Ho-1	165	2611.9	6.2				mg/L	10	Standard
Er	166	2556.9	13.6				mg/L	13	Standard
I	127	10483.6	6.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.090	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		118.350	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.761
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.612
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606120605SDL WG574690-02
Sample Date/Time: Wednesday, June 29, 2016 18:35:04
Number of Replicates: 3
Autosampler Position: 246
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83239.9	3.6				ug/L	74699	Standard
	Be	9	38.3	32.8	**0.0467**	0.013	27.9	ug/L	8	Standard
	Al	27	353337.7	1.0	**2.1460**	0.078	3.6	ug/L	1493	Standard
	Sc	45	70061.7	2.7				ug/L	61029	Standard
	Ti	47	444.3	5.4	**0.9019**	0.065	7.2	ug/L	35	Standard
	V	51	7638.3	1.2	**0.6761**	0.009	1.3	ug/L	1435	Standard
	Cr	52	17382.6	1.1	**0.9981**	0.034	3.5	ug/L	7635	Standard
	Cr	53	1533.4	2.6	**1.0999**	0.009	0.8	ug/L	363	Standard
	Mn	55	100723.4	1.5	**12.3208**	0.101	0.8	ug/L	747	Standard
	Co	59	1988.5	0.8	**0.2223**	0.008	3.5	ug/L	234	Standard
	Ni	60	1493.7	0.8	**0.5638**	0.012	2.1	ug/L	215	Standard
	Cu	65	3674.4	3.3	**1.5981**	0.060	3.8	ug/L	104	Standard
	Zn	66	19238.9	1.8	**14.7255**	0.173	1.2	ug/L	363	Standard
>	**Ge**	72	574541.2	2.2				ug/L	495142	Standard
	As	75	156.2	2.1	**0.1799**	0.005	2.7	ug/L	-50	Standard
	Se	82	23.9	29.5	**0.0491**	0.053	108.8	ug/L	14	Standard
	Se-1	77	58.0	21.2	**0.0603**	0.130	215.1	ug/L	42	Standard
>	**Ga**	71	518.3	4.3				mg/L	42	Standard
	Rb	85	4807.4	2.9				ug/L	17	Standard
	Y	89	501442.7	1.9				ug/L	417098	Standard
>	**Rh**	103	25.0	20.0				ug/L	13	Standard
	Mo	98	84.6	15.3	**0.0217**	0.004	18.8	ug/L	11	Standard
	Ag	107	254.3	9.6	**0.0208**	0.003	15.4	ug/L	68	Standard
	Cd	111	620.8	2.0	**0.2487**	0.004	1.5	mg/L	2	Standard
	Cd	114	1552.7	9.2	**0.2596**	0.025	9.8	ug/L	12	Standard
>	**In**	115	679737.8	0.5				ug/L	587441	Standard
	Sn	118	525.0	13.7	**-0.0171**	0.010	60.3	ug/L	497	Standard
	Sb	123	593.1	26.9	**0.1056**	0.030	28.3	ug/L	78	Standard
	Ba	135	12802.7	1.3	**5.3901**	0.099	1.8	ug/L	24	Standard
	Ce	140	39412.9	3.5				ug/L	25	Standard
>	**Tb**	159	1032176.9	1.0				ug/L	939701	Standard
	Ho	165	550.0	19.7				ug/L	10	Standard
	Tl	203	66.7	15.4	**0.0056**	0.001	20.8	ug/L	4	Standard
	Tl	205	78.3	41.0	**0.0102**	0.004	40.5	ug/L	2	Standard
	Pb	206	13522.4	0.6	**2.2309**	0.023	1.0	ug/L	240	Standard
	Pb	207	10801.2	2.0	**1.9994**	0.022	1.1	ug/L	198	Standard
	Pb	208	47468.1	0.8	**2.2283**	0.042	1.9	ug/L	883	Standard
	U	238	258.3	8.4	**0.0297**	0.002	8.2	ug/L	3	Standard
>	**Bi**	209	576211.7	1.3				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	46.7	16.4	**-0.0125**	0.009	74.1	mg/L	37	Standard
K	39	58.3	35.7	**-0.0022**	0.039	1787.9	mg/L	38	Standard
Ca	43	95.0	32.0	**2.7333**	1.777	65.0	mg/L	10	Standard
Fe	54	697.3	2.7	**0.3769**	0.020	5.3	mg/L	179	Standard
Fe	57	380.0	7.9	**0.0519**	0.104	201.0	mg/L	335	Standard
Sc-1	45	70061.7	2.7				mg/L	61029	Standard
Cl	35	30787.9	1.4				ug/L	20195	Standard
Kr	83	2.3	107.9				ug/L	4	Standard
Br	81	2130.1	1.6				ug/L	1547	Standard
P	31	20966.2	4.2				ug/L	15286	Standard
S	34	2485.2	3.8				ug/L	1572	Standard
Sr	88	90.0	33.3				ug/L	73	Standard
C	12	40.0	66.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	3	Standard
Dy	164	970.4	12.1				mg/L	6	Standard
Ho-1	165	550.0	19.7				mg/L	10	Standard
Er	166	480.0	14.6				mg/L	13	Standard
I	127	3620.4	13.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.434	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		116.036	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		115.712
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.967
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 18:38:18
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	82768.9	2.2				ug/L	74699	Standard
	Be	9	55586.8	2.9	**56.9851**	0.437	0.8	ug/L	8	Standard
	Al	27	8619622.5	1.7	**52.9268**	0.666	1.3	ug/L	1493	Standard
	Sc	45	69535.9	1.6				ug/L	61029	Standard
	Ti	47	45959.0	2.5	**108.3957**	2.700	2.5	ug/L	35	Standard
	V	51	452339.2	1.9	**53.3985**	1.095	2.1	ug/L	1435	Standard
	Cr	52	452917.5	1.6	**53.6621**	0.813	1.5	ug/L	7635	Standard
	Cr	53	54972.9	2.4	**52.8966**	1.385	2.6	ug/L	363	Standard
	Mn	55	414134.0	1.2	**53.0785**	0.725	1.4	ug/L	747	Standard
	Co	59	411024.9	0.5	**55.6590**	0.257	0.5	ug/L	234	Standard
	Ni	60	111206.0	1.9	**53.0242**	0.984	1.9	ug/L	215	Standard
	Cu	65	110023.1	1.1	**52.7940**	0.716	1.4	ug/L	104	Standard
	Zn	66	64745.4	0.8	**52.5833**	0.259	0.5	ug/L	363	Standard
>	Ge	72	553341.4	0.3				ug/L	495142	Standard
	As	75	65551.1	0.4	**52.4265**	0.227	0.4	ug/L	-50	Standard
	Se	82	6664.4	1.0	**54.1963**	0.405	0.7	ug/L	14	Standard
	Se-1	77	4501.0	1.7	**54.5222**	0.959	1.8	ug/L	42	Standard
>	Ga	71	63.3	38.9				mg/L	42	Standard
	Rb	85	948.4	4.5				ug/L	17	Standard
	Y	89	490323.1	1.2				ug/L	417098	Standard
>	Rh	103	18.3	41.7				ug/L	13	Standard
	Mo	98	304786.5	0.3	**99.6729**	0.315	0.3	ug/L	11	Standard
	Ag	107	371315.6	1.3	**49.6520**	0.733	1.5	ug/L	68	Standard
	Cd	111	119443.2	1.0	**49.7891**	0.404	0.8	mg/L	2	Standard
	Cd	114	290803.0	0.5	**49.4253**	0.213	0.4	ug/L	12	Standard
>	In	115	673907.8	0.2				ug/L	587441	Standard
	Sn	118	339134.4	2.1	**50.5123**	1.079	2.1	ug/L	497	Standard
	Sb	123	262026.6	0.8	**48.9184**	0.455	0.9	ug/L	78	Standard
	Ba	135	111822.5	0.7	**47.6088**	0.434	0.9	ug/L	24	Standard
	Ce	140	206.7	14.6				ug/L	25	Standard
>	Tb	159	1024624.4	0.5				ug/L	939701	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	457896.5	0.3	**51.5737**	0.953	1.8	ug/L	4	Standard
	Tl	205	420019.2	1.0	**54.5041**	0.795	1.5	ug/L	2	Standard
	Pb	206	290158.6	1.2	**50.3552**	0.541	1.1	ug/L	240	Standard
	Pb	207	256755.7	1.2	**50.1530**	0.630	1.3	ug/L	198	Standard
	Pb	208	1071548.3	0.3	**52.9883**	1.261	2.4	ug/L	883	Standard
	U	238	389229.1	0.1	**52.5000**	1.135	2.2	ug/L	3	Standard
>	Bi	209	564495.9	2.1				ug/L	523984	Standard

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Na	23	1.7	173.2	**16.7614**	29.023	173.2	mg/L	0	Standard
Mg	24	4642.4	0.2	**5.1955**	0.100	1.9	mg/L	37	Standard
K	39	2168.5	2.0	**4.0939**	0.144	3.5	mg/L	38	Standard
Ca	43	86.7	35.3	**2.2659**	1.624	71.7	mg/L	10	Standard
Fe	54	7113.4	2.2	**5.1545**	0.030	0.6	mg/L	179	Standard
Fe	57	2041.8	2.3	**5.0193**	0.241	4.8	mg/L	335	Standard
> **Sc-1**	45	69535.9	1.6				mg/L	61029	Standard
Cl	35	30041.8	1.0				ug/L	20195	Standard
Kr	83	1.3	86.6				ug/L	4	Standard
Br	81	1843.4	4.1				ug/L	1547	Standard
P	31	21683.8	2.5				ug/L	15286	Standard
S	34	2823.6	5.0				ug/L	1572	Standard
Sr	88	53.3	39.0				ug/L	73	Standard
C	12	53.3	78.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	12.9	179.7				mg/L	6	Standard
Ho-1	165	8.3	34.6				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	2093.5	24.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	113.970		
Al	27	105.854		
Sc	45			
Ti	47	108.396		
V	51	106.797		
Cr	52	107.324		
Cr	53			
Mn	55	106.157		
Co	59	111.318		
Ni	60	106.048		
Cu	65	105.588		
Zn	66	105.167		
> Ge	72		111.754	
As	75	104.853		
Se	82	108.393		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	99.673		
Ag	107	99.304		
Cd	111	99.578		
Cd	114			
In	115		114.719	
Sn	118	101.025		
Sb	123	97.837		
Ba	135	95.218		
Ce	140			
Tb	159			
Ho	165			
Tl	203	103.147		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.977		
U	238	105.000		
Bi	209		107.731	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Co	59	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 18:41:29
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83048.8	2.8				ug/L	74699	Standard
	Be	9	23.3	68.9	**0.0313**	0.016	52.2	ug/L	8	Standard
	Al	27	3078.7	25.1	**0.0054**	0.004	78.6	ug/L	1493	Standard
	Sc	45	71367.7	1.6				ug/L	61029	Standard
	Ti	47	35.3	33.5	**-0.0277**	0.025	91.3	ug/L	35	Standard
	V	51	1419.9	5.2	**-0.0309**	0.006	18.5	ug/L	1435	Standard
	Cr	52	7844.0	0.2	**-0.0958**	0.021	21.7	ug/L	7635	Standard
	Cr	53	443.3	5.7	**0.0910**	0.034	37.3	ug/L	363	Standard
	Mn	55	990.7	12.0	**-0.0236**	0.012	50.6	ug/L	747	Standard
	Co	59	281.0	9.0	**-0.0000**	0.003	39793.0	ug/L	234	Standard
	Ni	60	196.7	7.3	**-0.0319**	0.005	14.4	ug/L	215	Standard
	Cu	65	145.3	12.4	**-0.0353**	0.007	21.2	ug/L	104	Standard
	Zn	66	464.0	9.4	**-0.0826**	0.026	32.0	ug/L	363	Standard
>	**Ge**	72	564975.6	2.4				ug/L	495142	Standard
	As	75	-39.3	63.0	**0.0286**	0.020	68.3	ug/L	-50	Standard
	Se	82	26.6	20.4	**0.0737**	0.038	51.8	ug/L	14	Standard
	Se-1	77	58.7	15.8	**0.0805**	0.100	124.7	ug/L	42	Standard
>	**Ga**	71	41.7	25.0				mg/L	42	Standard
	Rb	85	35.0	75.6				ug/L	17	Standard
	Y	89	486175.7	0.9				ug/L	417098	Standard
>	**Rh**	103	21.7	58.1				ug/L	13	Standard
	Mo	98	275.2	23.2	**0.0821**	0.020	24.6	ug/L	11	Standard
	Ag	107	144.3	16.7	**0.0059**	0.003	51.4	ug/L	68	Standard
	Cd	111	18.2	29.8	**-0.0005**	0.002	416.8	mg/L	2	Standard
	Cd	114	40.0	61.5	**0.0045**	0.004	89.7	ug/L	12	Standard
>	**In**	115	690622.1	0.6				ug/L	587441	Standard
	Sn	118	806.7	10.4	**0.0228**	0.013	56.6	ug/L	497	Standard
	Sb	123	553.4	29.9	**0.0967**	0.030	31.3	ug/L	78	Standard
	Ba	135	70.0	42.9	**0.0130**	0.012	94.6	ug/L	24	Standard
	Ce	140	61.7	54.0				ug/L	25	Standard
>	**Tb**	159	1047202.6	1.6				ug/L	939701	Standard
	Ho	165	16.7	34.6				ug/L	10	Standard
	Tl	203	75.3	48.5	**0.0063**	0.004	58.9	ug/L	4	Standard
	Tl	205	73.3	27.6	**0.0093**	0.002	26.3	ug/L	2	Standard
	Pb	206	333.0	14.3	**-0.0156**	0.007	42.7	ug/L	240	Standard
	Pb	207	293.0	14.2	**-0.0150**	0.006	43.1	ug/L	198	Standard
	Pb	208	1234.7	14.5	**-0.0154**	0.007	47.2	ug/L	883	Standard
	U	238	61.3	33.0	**0.0035**	0.002	69.2	ug/L	3	Standard
>	**Bi**	209	587080.9	2.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	38.3	15.1	**-0.0227**	0.007	30.4	mg/L	37	Standard
K	39	33.3	22.9	**-0.0512**	0.014	27.0	mg/L	38	Standard
Ca	43	28.3	50.9	**-0.9868**	0.802	81.3	mg/L	10	Standard
Fe	54	132.7	11.9	**-0.0421**	0.011	25.9	mg/L	179	Standard
Fe	57	280.0	10.7	**-0.2593**	0.100	38.4	mg/L	335	Standard
Sc-1	45	71367.7	1.6				mg/L	61029	Standard
Cl	35	29768.6	1.4				ug/L	20195	Standard
Kr	83	1.3	173.2				ug/L	4	Standard
Br	81	2106.8	7.7				ug/L	1547	Standard
P	31	21775.6	2.2				ug/L	15286	Standard
S	34	2523.5	3.0				ug/L	1572	Standard
Sr	88	70.0	49.5				ug/L	73	Standard
C	12	66.7	48.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	19.2	48.3				mg/L	6	Standard
Ho-1	165	16.7	34.6				mg/L	10	Standard
Er	166	16.7	91.7				mg/L	13	Standard
I	127	1905.1	33.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		114.104	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		117.564
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		112.042
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606120701
Sample Date/Time: Wednesday, June 29, 2016 18:44:42
Number of Replicates: 3
Autosampler Position: 247
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82529.2	0.7				ug/L	74699	Standard
	Be	9	748.4	11.5	**0.7773**	0.092	11.9	ug/L	8	Standard
	Al	27	5186124.5	1.1	**31.9282**	0.368	1.2	ug/L	1493	Standard
	Sc	45	73214.8	0.3				ug/L	61029	Standard
	Ti	47	12465.8	1.5	**28.7779**	0.271	0.9	ug/L	35	Standard
	V	51	254152.3	1.7	**29.3595**	0.344	1.2	ug/L	1435	Standard
	Cr	52	145419.2	1.0	**16.2106**	0.127	0.8	ug/L	7635	Standard
	Cr	53	17483.4	2.8	**16.2818**	0.208	1.3	ug/L	363	Standard
	Mn	55	3993207.5	1.0	**503.6001**	3.344	0.7	ug/L	747	Standard
	Co	59	68748.0	1.0	**9.1067**	0.083	0.9	ug/L	234	Standard
	Ni	60	27938.1	3.3	**12.9787**	0.214	1.6	ug/L	215	Standard
	Cu	65	24664.7	1.5	**11.5352**	0.050	0.4	ug/L	104	Standard
	Zn	66	148101.8	1.7	**118.6204**	0.288	0.2	ug/L	363	Standard
>	**Ge**	72	563786.2	1.7				ug/L	495142	Standard
	As	75	6453.5	1.8	**5.1196**	0.031	0.6	ug/L	-50	Standard
	Se	82	62.5	2.1	**0.3624**	0.012	3.2	ug/L	14	Standard
	Se-1	77	114.0	16.7	**0.7504**	0.247	32.9	ug/L	42	Standard
>	**Ga**	71	11409.3	2.4				mg/L	42	Standard
	Rb	85	132848.2	0.6				ug/L	17	Standard
	Y	89	719521.7	0.4				ug/L	417098	Standard
>	**Rh**	103	43.3	43.7				ug/L	13	Standard
	Mo	98	809.7	3.4	**0.2640**	0.011	4.2	ug/L	11	Standard
	Ag	107	5298.9	1.5	**0.7088**	0.004	0.5	ug/L	68	Standard
	Cd	111	3980.4	2.6	**1.6822**	0.055	3.3	mg/L	2	Standard
	Cd	114	9713.7	1.4	**1.6793**	0.030	1.8	ug/L	12	Standard
>	**In**	115	661793.4	1.1				ug/L	587441	Standard
	Sn	118	911.7	2.8	**0.0439**	0.005	10.9	ug/L	497	Standard
	Sb	123	350.1	17.1	**0.0624**	0.012	19.0	ug/L	78	Standard
	Ba	135	341983.5	0.6	**148.3035**	0.748	0.5	ug/L	24	Standard
	Ce	140	2710163.1	0.4				ug/L	25	Standard
>	**Tb**	159	1034801.7	0.1				ug/L	939701	Standard
	Ho	165	19319.0	1.7				ug/L	10	Standard
	Tl	203	872.7	2.5	**0.0967**	0.002	2.5	ug/L	4	Standard
	Tl	205	843.4	5.5	**0.1098**	0.006	5.6	ug/L	2	Standard
	Pb	206	283131.4	1.0	**49.2257**	0.472	1.0	ug/L	240	Standard
	Pb	207	230315.5	1.3	**45.0642**	0.519	1.2	ug/L	198	Standard
	Pb	208	999318.0	0.9	**49.4947**	0.507	1.0	ug/L	883	Standard
	U	238	4899.8	1.7	**0.6576**	0.010	1.6	ug/L	3	Standard
>	**Bi**	209	563366.5	0.2				ug/L	523984	Standard

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Na	23	5.0	0.0	**48.0405**	0.159	0.3	mg/L	0	Standard
Mg	24	875.0	7.7	**0.8766**	0.075	8.6	mg/L	37	Standard
K	39	536.7	5.1	**0.8747**	0.054	6.2	mg/L	38	Standard
Ca	43	571.7	16.7	**27.5670**	4.925	17.9	mg/L	10	Standard
Fe	54	14788.8	1.9	**10.3138**	0.228	2.2	mg/L	179	Standard
Fe	57	4073.9	8.9	**10.4697**	1.059	10.1	mg/L	335	Standard
> **Sc-1**	45	73214.8	0.3				mg/L	61029	Standard
Cl	35	28264.3	0.5				ug/L	20195	Standard
Kr	83	2.0	0.0				ug/L	4	Standard
Br	81	3023.6	7.8				ug/L	1547	Standard
P	31	20599.0	2.2				ug/L	15286	Standard
S	34	2595.2	1.7				ug/L	1572	Standard
Sr	88	203.3	16.4				ug/L	73	Standard
C	12	130.0	40.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	150.0	43.7				mg/L	3	Standard
Dy	164	31532.4	1.2				mg/L	6	Standard
Ho-1	165	19319.0	1.7				mg/L	10	Standard
Er	166	17720.4	2.1				mg/L	13	Standard
I	127	25842.0	0.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.483	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		113.863	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	112.657	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	107.516	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606120702
Sample Date/Time: Wednesday, June 29, 2016 18:47:54
Number of Replicates: 3
Autosampler Position: 248
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85381.8	3.5				ug/L	74699	Standard
	Be	9	623.3	3.3	**0.6272**	0.018	2.8	ug/L	8	Standard
	Al	27	4620203.8	1.9	**27.5041**	0.647	2.4	ug/L	1493	Standard
	Sc	45	75576.5	3.2				ug/L	61029	Standard
	Ti	47	6206.6	0.5	**14.3105**	0.192	1.3	ug/L	35	Standard
	V	51	134133.3	1.8	**15.4410**	0.153	1.0	ug/L	1435	Standard
	Cr	52	96500.3	0.7	**10.4416**	0.108	1.0	ug/L	7635	Standard
	Cr	53	11224.2	2.7	**10.3669**	0.448	4.3	ug/L	363	Standard
	Mn	55	3577332.4	1.7	**452.2740**	8.609	1.9	ug/L	747	Standard
	Co	59	47345.9	1.4	**6.2757**	0.086	1.4	ug/L	234	Standard
	Ni	60	24689.4	1.0	**11.4869**	0.101	0.9	ug/L	215	Standard
	Cu	65	29948.9	2.1	**14.0640**	0.244	1.7	ug/L	104	Standard
	Zn	66	164514.2	1.7	**132.1464**	1.033	0.8	ug/L	363	Standard
>	**Ge**	72	562390.3	1.6				ug/L	495142	Standard
	As	75	2776.0	3.7	**2.2412**	0.056	2.5	ug/L	-50	Standard
	Se	82	106.3	15.9	**0.7139**	0.124	17.3	ug/L	14	Standard
	Se-1	77	132.3	11.0	**0.9743**	0.190	19.5	ug/L	42	Standard
>	**Ga**	71	12940.5	1.1				mg/L	42	Standard
	Rb	85	250383.8	1.2				ug/L	17	Standard
	Y	89	695657.2	0.8				ug/L	417098	Standard
>	**Rh**	103	35.0	62.3				ug/L	13	Standard
	Mo	98	1645.8	3.3	**0.5188**	0.023	4.4	ug/L	11	Standard
	Ag	107	671.7	7.7	**0.0746**	0.007	9.4	ug/L	68	Standard
	Cd	111	2017.5	2.8	**0.8116**	0.028	3.5	mg/L	2	Standard
	Cd	114	4822.6	1.0	**0.7964**	0.005	0.7	ug/L	12	Standard
>	**In**	115	691832.3	1.1				ug/L	587441	Standard
	Sn	118	616.7	6.1	**-0.0050**	0.006	126.3	ug/L	497	Standard
	Sb	123	493.2	8.1	**0.0855**	0.008	9.1	ug/L	78	Standard
	Ba	135	281871.8	0.7	**116.9321**	1.732	1.5	ug/L	24	Standard
	Ce	140	1017603.0	1.2				ug/L	25	Standard
>	**Tb**	159	1062512.9	1.9				ug/L	939701	Standard
	Ho	165	14416.9	1.8				ug/L	10	Standard
	Tl	203	1059.0	3.0	**0.1166**	0.005	4.1	ug/L	4	Standard
	Tl	205	896.7	14.9	**0.1158**	0.019	16.8	ug/L	2	Standard
	Pb	206	100858.6	1.2	**17.3191**	0.532	3.1	ug/L	240	Standard
	Pb	207	81475.8	1.0	**15.7413**	0.458	2.9	ug/L	198	Standard
	Pb	208	356757.6	0.9	**17.4487**	0.446	2.6	ug/L	883	Standard
	U	238	6683.8	3.5	**0.8902**	0.048	5.4	ug/L	3	Standard
>	**Bi**	209	569106.4	1.9				ug/L	523984	Standard

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Na	23	3.3	86.6	**31.5301**	27.313	86.6	mg/L	0	Standard
Mg	24	745.0	7.0	**0.7121**	0.061	8.5	mg/L	37	Standard
K	39	773.4	6.0	**1.2683**	0.120	9.5	mg/L	38	Standard
Ca	43	171.7	3.4	**6.2441**	0.546	8.7	mg/L	10	Standard
Fe	54	10724.1	1.5	**7.2104**	0.318	4.4	mg/L	179	Standard
Fe	57	2831.9	1.0	**6.7023**	0.187	2.8	mg/L	335	Standard
> **Sc-1**	45	75576.5	3.2				mg/L	61029	Standard
Cl	35	27596.4	1.5				ug/L	20195	Standard
Kr	83	4.0	66.1				ug/L	4	Standard
Br	81	8432.3	2.7				ug/L	1547	Standard
P	31	20674.1	3.5				ug/L	15286	Standard
S	34	2360.2	7.8				ug/L	1572	Standard
Sr	88	120.0	18.2				ug/L	73	Standard
C	12	350.0	15.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	106.7	43.3				mg/L	3	Standard
Dy	164	23142.4	1.5				mg/L	6	Standard
Ho-1	165	14416.9	1.8				mg/L	10	Standard
Er	166	13422.6	4.3				mg/L	13	Standard
I	127	174464.7	3.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.301	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		113.582	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	117.770
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	108.611
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606120801
Sample Date/Time: Wednesday, June 29, 2016 18:51:05
Number of Replicates: 3
Autosampler Position: 249
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83030.4	3.3				ug/L	74699	Standard
	Be	9	1115.0	11.0	**1.1453**	0.091	8.0	ug/L	8	Standard
	Al	27	17314833.4	0.9	**106.0421**	2.666	2.5	ug/L	1493	Standard
	Sc	45	77183.1	5.1				ug/L	61029	Standard
	Ti	47	40548.2	1.5	**95.7436**	2.793	2.9	ug/L	35	Standard
	V	51	251782.0	1.4	**29.6946**	1.634	5.5	ug/L	1435	Standard
	Cr	52	243737.7	2.0	**28.4388**	0.710	2.5	ug/L	7635	Standard
	Cr	53	29872.8	2.3	**28.6239**	0.690	2.4	ug/L	363	Standard
	Mn	55	3685844.9	1.5	**474.5740**	27.736	5.8	ug/L	747	Standard
	Co	59	66271.6	1.6	**8.9620**	0.528	5.9	ug/L	234	Standard
	Ni	60	46026.2	2.6	**21.8948**	0.433	2.0	ug/L	215	Standard
	Cu	65	42002.8	1.5	**20.1164**	0.608	3.0	ug/L	104	Standard
	Zn	66	111824.0	2.6	**91.2379**	1.710	1.9	ug/L	363	Standard
>	**Ge**	72	553103.7	4.4				ug/L	495142	Standard
	As	75	5557.5	3.1	**4.5033**	0.093	2.1	ug/L	-50	Standard
	Se	82	102.2	5.1	**0.6977**	0.072	10.3	ug/L	14	Standard
	Se-1	77	134.3	12.1	**1.0314**	0.270	26.2	ug/L	42	Standard
>	**Ga**	71	24266.1	1.0				mg/L	42	Standard
	Rb	85	181545.0	2.7				ug/L	17	Standard
	Y	89	698995.8	3.0				ug/L	417098	Standard
>	**Rh**	103	88.3	6.5				ug/L	13	Standard
	Mo	98	2397.1	2.7	**0.8492**	0.049	5.8	ug/L	11	Standard
	Ag	107	1012.7	3.0	**0.1348**	0.009	6.5	ug/L	68	Standard
	Cd	111	911.2	3.1	**0.4060**	0.012	2.9	mg/L	2	Standard
	Cd	114	2080.2	4.3	**0.3830**	0.011	2.9	ug/L	12	Standard
>	**In**	115	618664.5	3.1				ug/L	587441	Standard
	Sn	118	1240.1	3.1	**0.1071**	0.013	12.0	ug/L	497	Standard
	Sb	123	1640.7	2.7	**0.3299**	0.019	5.8	ug/L	78	Standard
	Ba	135	534847.9	1.0	**248.3132**	9.882	4.0	ug/L	24	Standard
	Ce	140	1227932.9	1.4				ug/L	25	Standard
>	**Tb**	159	991058.9	3.3				ug/L	939701	Standard
	Ho	165	19152.1	0.5				ug/L	10	Standard
	Tl	203	1084.7	2.8	**0.1294**	0.004	2.8	ug/L	4	Standard
	Tl	205	976.7	6.4	**0.1361**	0.004	2.8	ug/L	2	Standard
	Pb	206	122644.8	1.6	**22.8364**	1.340	5.9	ug/L	240	Standard
	Pb	207	98294.5	1.0	**20.5914**	1.111	5.4	ug/L	198	Standard
	Pb	208	423360.3	0.4	**22.4444**	1.000	4.5	ug/L	883	Standard
	U	238	7556.2	1.8	**1.0902**	0.045	4.1	ug/L	3	Standard
>	**Bi**	209	526041.8	4.3				ug/L	523984	Standard

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Na	23	10.0	50.0	**92.8331**	50.540	54.4	mg/L	0	Standard
Mg	24	373.3	13.0	**0.3164**	0.050	15.9	mg/L	37	Standard
K	39	846.7	3.0	**1.3673**	0.064	4.7	mg/L	38	Standard
Ca	43	1881.8	8.7	**91.3781**	4.657	5.1	mg/L	10	Standard
Fe	54	16605.4	3.8	**11.0236**	0.942	8.5	mg/L	179	Standard
Fe	57	5247.6	6.9	**13.0290**	0.645	4.9	mg/L	335	Standard
> **Sc-1**	45	77183.1	5.1				mg/L	61029	Standard
Cl	35	28165.5	0.9				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	3540.4	14.7				ug/L	1547	Standard
P	31	23239.5	5.6				ug/L	15286	Standard
S	34	2426.9	3.5				ug/L	1572	Standard
Sr	88	415.0	11.5				ug/L	73	Standard
C	12	173.3	6.7				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	66.7	60.6				mg/L	3	Standard
Dy	164	30988.1	3.0				mg/L	6	Standard
Ho-1	165	19152.1	0.5				mg/L	10	Standard
Er	166	17717.0	2.5				mg/L	13	Standard
I	127	27493.3	1.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.154	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.706	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.315
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.393
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606120802
Sample Date/Time: Wednesday, June 29, 2016 18:54:17
Number of Replicates: 3
Autosampler Position: 250
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88923.6	2.8				ug/L	74699	Standard
	Be	9	661.7	11.4	**0.6387**	0.067	10.5	ug/L	8	Standard
	Al	27	15492795.6	1.0	**88.5762**	1.812	2.0	ug/L	1493	Standard
	Sc	45	80386.0	1.0				ug/L	61029	Standard
	Ti	47	20524.2	1.6	**45.7756**	1.470	3.2	ug/L	35	Standard
	V	51	220306.5	1.3	**24.5176**	0.534	2.2	ug/L	1435	Standard
	Cr	52	643370.5	1.6	**72.5457**	2.733	3.8	ug/L	7635	Standard
	Cr	53	78035.6	3.0	**71.2237**	3.200	4.5	ug/L	363	Standard
	Mn	55	3332205.3	1.0	**405.3306**	7.931	2.0	ug/L	747	Standard
	Co	59	49008.5	0.3	**6.2510**	0.159	2.5	ug/L	234	Standard
	Ni	60	36936.6	2.2	**16.5952**	0.689	4.2	ug/L	215	Standard
	Cu	65	48506.2	1.8	**21.9786**	0.680	3.1	ug/L	104	Standard
	Zn	66	431997.7	0.4	**334.6356**	8.273	2.5	ug/L	363	Standard
>	**Ge**	72	584593.6	2.3				ug/L	495142	Standard
	As	75	4706.8	0.7	**3.6196**	0.063	1.8	ug/L	-50	Standard
	Se	82	170.0	3.4	**1.1737**	0.017	1.5	ug/L	14	Standard
	Se-1	77	180.7	11.7	**1.4743**	0.259	17.6	ug/L	42	Standard
>	**Ga**	71	19881.4	1.3				mg/L	42	Standard
	Rb	85	200103.0	1.8				ug/L	17	Standard
	Y	89	657665.4	0.6				ug/L	417098	Standard
>	**Rh**	103	171.7	7.3				ug/L	13	Standard
	Mo	98	1216.9	1.5	**0.3934**	0.011	2.8	ug/L	11	Standard
	Ag	107	1006.0	3.7	**0.1221**	0.007	5.4	ug/L	68	Standard
	Cd	111	4519.9	2.1	**1.8818**	0.049	2.6	mg/L	2	Standard
	Cd	114	11256.2	1.6	**1.9163**	0.030	1.6	ug/L	12	Standard
>	**In**	115	672127.4	1.5				ug/L	587441	Standard
	Sn	118	1105.0	15.3	**0.0707**	0.026	36.7	ug/L	497	Standard
	Sb	123	229.1	10.3	**0.0387**	0.005	12.5	ug/L	78	Standard
	Ba	135	361495.2	1.1	**154.3886**	3.928	2.5	ug/L	24	Standard
	Ce	140	936346.8	0.9				ug/L	25	Standard
>	**Tb**	159	1070983.4	3.2				ug/L	939701	Standard
	Ho	165	13711.2	2.1				ug/L	10	Standard
	Tl	203	1023.7	3.8	**0.1103**	0.006	5.8	ug/L	4	Standard
	Tl	205	995.0	4.8	**0.1256**	0.007	5.2	ug/L	2	Standard
	Pb	206	1451242.4	0.5	**244.9779**	5.608	2.3	ug/L	240	Standard
	Pb	207	1189055.7	0.7	**225.9168**	5.756	2.5	ug/L	198	Standard
	Pb	208	5216722.9	1.2	**250.8847**	7.037	2.8	ug/L	883	Standard
	U	238	9013.7	1.2	**1.1768**	0.034	2.9	ug/L	3	Standard
>	**Bi**	209	581076.6	1.9				ug/L	523984	Standard

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Na	23	6.7	173.2	**57.8631**	100.213	173.2	mg/L	0	Standard
Mg	24	553.3	14.7	**0.4776**	0.083	17.4	mg/L	37	Standard
K	39	1005.0	9.9	**1.5724**	0.167	10.6	mg/L	38	Standard
Ca	43	1240.1	6.3	**56.9237**	3.160	5.6	mg/L	10	Standard
Fe	54	17498.7	0.5	**11.1262**	0.159	1.4	mg/L	179	Standard
Fe	57	5124.2	2.5	**12.1481**	0.285	2.3	mg/L	335	Standard
Sc-1	45	80386.0	1.0				mg/L	61029	Standard
Cl	35	28790.7	0.3				ug/L	20195	Standard
Kr	83	3.0	33.3				ug/L	4	Standard
Br	81	8875.9	6.3				ug/L	1547	Standard
P	31	20292.0	8.4				ug/L	15286	Standard
S	34	2478.5	4.1				ug/L	1572	Standard
Sr	88	438.3	2.4				ug/L	73	Standard
C	12	323.3	22.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	136.7	34.6				mg/L	3	Standard
Dy	164	22618.6	1.5				mg/L	6	Standard
Ho-1	165	13711.2	2.1				mg/L	10	Standard
Er	166	12578.6	1.5				mg/L	13	Standard
I	127	73652.8	8.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		119.043	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		118.066	
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	114.416
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	110.896
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

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Sample ID: L1606129101
Sample Date/Time: Wednesday, June 29, 2016 18:57:28
Number of Replicates: 3
Autosampler Position: 251
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89580.8	1.7				ug/L	74699	Standard
	Be	9	360.0	14.7	**0.3489**	0.053	15.3	ug/L	8	Standard
	Al	27	3187676.8	1.0	**18.0772**	0.341	1.9	ug/L	1493	Standard
	Sc	45	73445.9	1.6				ug/L	61029	Standard
	Ti	47	23807.7	6.7	**54.3513**	2.712	5.0	ug/L	35	Standard
	V	51	62405.7	2.9	**6.9715**	0.072	1.0	ug/L	1435	Standard
	Cr	52	100378.5	1.9	**10.7261**	0.052	0.5	ug/L	7635	Standard
	Cr	53	11571.1	3.7	**10.5314**	0.357	3.4	ug/L	363	Standard
	Mn	55	3995310.3	0.7	**497.7426**	6.886	1.4	ug/L	747	Standard
	Co	59	12689.3	1.5	**1.6298**	0.018	1.1	ug/L	234	Standard
	Ni	60	15702.5	1.8	**7.1516**	0.026	0.4	ug/L	215	Standard
	Cu	65	1030601.6	2.5	**480.2115**	2.610	0.5	ug/L	104	Standard
	Zn	66	647092.9	2.6	**513.3926**	3.363	0.7	ug/L	363	Standard
>	**Ge**	72	570780.0	2.0				ug/L	495142	Standard
	As	75	23305.2	1.3	**18.1104**	0.138	0.8	ug/L	-50	Standard
	Se	82	481.4	2.5	**3.6678**	0.121	3.3	ug/L	14	Standard
	Se-1	77	377.3	9.1	**3.8600**	0.402	10.4	ug/L	42	Standard
>	**Ga**	71	43582.7	4.5				mg/L	42	Standard
	Rb	85	26201.0	3.0				ug/L	17	Standard
	Y	89	551000.5	1.0				ug/L	417098	Standard
>	**Rh**	103	178.3	18.7				ug/L	13	Standard
	Mo	98	21134.4	1.3	**6.6476**	0.191	2.9	ug/L	11	Standard
	Ag	107	15204.6	2.3	**1.9441**	0.032	1.6	ug/L	68	Standard
	Cd	111	1466.1	5.3	**0.5801**	0.025	4.4	mg/L	2	Standard
	Cd	114	3712.7	3.5	**0.6050**	0.007	1.1	ug/L	12	Standard
>	**In**	115	700391.9	2.5				ug/L	587441	Standard
	Sn	118	18187.6	2.5	**2.5189**	0.131	5.2	ug/L	497	Standard
	Sb	123	7709.0	2.8	**1.3807**	0.022	1.6	ug/L	78	Standard
	Ba	135	971846.2	1.7	**398.2918**	4.112	1.0	ug/L	24	Standard
	Ce	140	138638.2	1.7				ug/L	25	Standard
>	**Tb**	159	1070571.9	3.6				ug/L	939701	Standard
	Ho	165	2720.2	8.8				ug/L	10	Standard
	Tl	203	657.3	30.6	**0.0422**	0.014	32.0	ug/L	4	Standard
	Tl	205	563.3	26.0	**0.0436**	0.011	26.1	ug/L	2	Standard
	Pb	206	89328.6	2.2	**9.1434**	0.147	1.6	ug/L	240	Standard
	Pb	207	72922.4	1.4	**8.3969**	0.107	1.3	ug/L	198	Standard
	Pb	208	316979.9	0.6	**9.2432**	0.217	2.4	ug/L	883	Standard
	U	238	78871.8	1.7	**6.3120**	0.222	3.5	ug/L	3	Standard
>	**Bi**	209	950965.0	2.0				ug/L	523984	Standard

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Na	23	5.0	173.2	**48.7719**	84.467	173.2	mg/L	0	Standard
Mg	24	613.3	9.8	**0.5934**	0.073	12.3	mg/L	37	Standard
K	39	323.3	7.3	**0.4798**	0.044	9.2	mg/L	38	Standard
Ca	43	198.3	14.8	**7.8949**	1.614	20.4	mg/L	10	Standard
Fe	54	8830.8	5.5	**6.0856**	0.392	6.4	mg/L	179	Standard
Fe	57	2530.2	2.9	**6.0730**	0.228	3.8	mg/L	335	Standard
Sc-1	45	73445.9	1.6				mg/L	61029	Standard
Cl	35	25952.9	0.3				ug/L	20195	Standard
Kr	83	2.0	100.0				ug/L	4	Standard
Br	81	8005.5	5.5				ug/L	1547	Standard
P	31	19060.3	1.8				ug/L	15286	Standard
S	34	1756.8	1.0				ug/L	1572	Standard
Sr	88	518.3	2.8				ug/L	73	Standard
C	12	1226.7	9.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1270.1	11.0				mg/L	3	Standard
Dy	164	4157.3	8.4				mg/L	6	Standard
Ho-1	165	2720.2	8.8				mg/L	10	Standard
Er	166	2643.6	8.4				mg/L	13	Standard
I	127	191520.8	4.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		119.923	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		115.276	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	119.228
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	181.487
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Cu 65 Upper, S, EEE	Cu	65	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135	
Bi 209 Int Std for sample	Bi	209	Rerun sample

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606138101
Sample Date/Time: Wednesday, June 29, 2016 19:00:40
Number of Replicates: 3
Autosampler Position: 252
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	96098.8	1.2				ug/L	74699	Standard
	Be	9	1650.1	8.9	**1.4642**	0.124	8.5	ug/L	8	Standard
	Al	27	23502208.7	0.7	**124.3024**	1.056	0.8	ug/L	1493	Standard
	Sc	45	81510.4	1.4				ug/L	61029	Standard
	Ti	47	9357.2	0.5	**21.1737**	0.376	1.8	ug/L	35	Standard
	V	51	257600.4	1.3	**29.2098**	0.781	2.7	ug/L	1435	Standard
	Cr	52	224787.2	0.6	**25.1231**	0.400	1.6	ug/L	7635	Standard
	Cr	53	27600.1	3.0	**25.4059**	0.410	1.6	ug/L	363	Standard
	Mn	55	5543699.6	0.4	**686.2289**	8.924	1.3	ug/L	747	Standard
	Co	59	117640.6	0.9	**15.3216**	0.399	2.6	ug/L	234	Standard
	Ni	60	64249.3	0.8	**29.4562**	0.340	1.2	ug/L	215	Standard
	Cu	65	57365.7	1.4	**26.4629**	0.232	0.9	ug/L	104	Standard
	Zn	66	103406.0	1.2	**81.1457**	1.055	1.3	ug/L	363	Standard
>	**Ge**	72	574477.7	1.7				ug/L	495142	Standard
	As	75	12246.4	0.5	**9.4841**	0.110	1.2	ug/L	-50	Standard
	Se	82	125.1	3.5	**0.8446**	0.024	2.8	ug/L	14	Standard
	Se-1	77	164.3	2.5	**1.3176**	0.070	5.3	ug/L	42	Standard
>	**Ga**	71	29587.2	2.2				mg/L	42	Standard
	Rb	85	313937.1	2.6				ug/L	17	Standard
	Y	89	822636.0	0.8				ug/L	417098	Standard
>	**Rh**	103	38.3	49.4				ug/L	13	Standard
	Mo	98	757.2	4.8	**0.2454**	0.010	4.2	ug/L	11	Standard
	Ag	107	953.4	1.4	**0.1164**	0.003	2.3	ug/L	68	Standard
	Cd	111	1588.5	0.6	**0.6638**	0.009	1.4	mg/L	2	Standard
	Cd	114	3783.2	0.8	**0.6501**	0.009	1.4	ug/L	12	Standard
>	**In**	115	664448.0	1.0				ug/L	587441	Standard
	Sn	118	643.3	5.2	**0.0026**	0.004	152.2	ug/L	497	Standard
	Sb	123	269.8	13.5	**0.0469**	0.007	15.6	ug/L	78	Standard
	Ba	135	662128.9	0.5	**286.0118**	2.987	1.0	ug/L	24	Standard
	Ce	140	1687892.1	1.1				ug/L	25	Standard
>	**Tb**	159	1062435.8	0.8				ug/L	939701	Standard
	Ho	165	27182.7	2.2				ug/L	10	Standard
	Tl	203	1364.1	4.3	**0.1521**	0.007	4.3	ug/L	4	Standard
	Tl	205	1335.1	6.0	**0.1737**	0.010	5.7	ug/L	2	Standard
	Pb	206	284182.0	0.3	**49.3998**	0.214	0.4	ug/L	240	Standard
	Pb	207	234533.7	1.0	**45.8828**	0.448	1.0	ug/L	198	Standard
	Pb	208	1023299.4	0.1	**50.6751**	0.295	0.6	ug/L	883	Standard
	U	238	6312.3	2.1	**0.8483**	0.014	1.7	ug/L	3	Standard
>	**Bi**	209	563477.4	0.7				ug/L	523984	Standard

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Na	23	3.3	86.6	**28.8214**	24.963	86.6	mg/L	0	Standard
Mg	24	151.7	18.2	**0.0816**	0.027	33.5	mg/L	37	Standard
K	39	1206.7	9.1	**1.8839**	0.198	10.5	mg/L	38	Standard
Ca	43	230.0	38.1	**8.3188**	4.002	48.1	mg/L	10	Standard
Fe	54	27991.0	1.6	**17.6350**	0.523	3.0	mg/L	179	Standard
Fe	57	7366.8	1.7	**17.6771**	0.511	2.9	mg/L	335	Standard
Sc-1	45	81510.4	1.4				mg/L	61029	Standard
Cl	35	28359.2	2.3				ug/L	20195	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	4510.7	3.7				ug/L	1547	Standard
P	31	20567.3	1.1				ug/L	15286	Standard
S	34	2398.5	2.1				ug/L	1572	Standard
Sr	88	138.3	12.7				ug/L	73	Standard
C	12	220.0	4.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	113.3	35.7				mg/L	3	Standard
Dy	164	44981.5	2.0				mg/L	6	Standard
Ho-1	165	27182.7	2.2				mg/L	10	Standard
Er	166	24606.7	4.9				mg/L	13	Standard
I	127	24668.4	3.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		128.648	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		116.023	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	113.109
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	107.537
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606138101
Sample Date/Time: Wednesday, June 29, 2016 19:03:51
Number of Replicates: 3
Autosampler Position: 253
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89738.3	1.4				ug/L	74699	Standard
	Be	9	41.7	6.9	**0.0470**	0.003	6.5	ug/L	8	Standard
	Al	27	505536.2	3.8	**2.8498**	0.087	3.1	ug/L	1493	Standard
	Sc	45	72476.3	1.0				ug/L	61029	Standard
	Ti	47	238.7	3.3	**0.4178**	0.015	3.5	ug/L	35	Standard
	V	51	6994.4	2.1	**0.5793**	0.021	3.7	ug/L	1435	Standard
	Cr	52	13067.6	0.8	**0.4515**	0.011	2.5	ug/L	7635	Standard
	Cr	53	1060.0	5.3	**0.6298**	0.052	8.3	ug/L	363	Standard
	Mn	55	117506.1	2.5	**13.9721**	0.301	2.2	ug/L	747	Standard
	Co	59	2633.2	1.9	**0.2964**	0.006	2.1	ug/L	234	Standard
	Ni	60	1579.1	3.6	**0.5819**	0.030	5.1	ug/L	215	Standard
	Cu	65	1415.4	1.9	**0.5327**	0.017	3.2	ug/L	104	Standard
	Zn	66	4415.0	0.5	**2.9272**	0.025	0.9	ug/L	363	Standard
>	**Ge**	72	591804.3	0.7				ug/L	495142	Standard
	As	75	188.6	12.3	**0.2004**	0.017	8.4	ug/L	-50	Standard
	Se	82	17.7	38.3	**-0.0030**	0.051	1669.1	ug/L	14	Standard
	Se-1	77	53.3	24.5	**-0.0120**	0.145	1206.4	ug/L	42	Standard
>	**Ga**	71	651.7	3.8				mg/L	42	Standard
	Rb	85	6646.5	2.9				ug/L	17	Standard
	Y	89	496582.4	1.4				ug/L	417098	Standard
>	**Rh**	103	10.0	86.6				ug/L	13	Standard
	Mo	98	63.7	13.0	**0.0149**	0.003	17.4	ug/L	11	Standard
	Ag	107	138.0	7.0	**0.0054**	0.001	21.7	ug/L	68	Standard
	Cd	111	41.6	25.2	**0.0093**	0.004	47.8	mg/L	2	Standard
	Cd	114	78.4	6.5	**0.0111**	0.001	8.0	ug/L	12	Standard
>	**In**	115	680653.4	0.9				ug/L	587441	Standard
	Sn	118	558.3	7.0	**-0.0122**	0.005	43.2	ug/L	497	Standard
	Sb	123	143.1	16.8	**0.0222**	0.004	19.8	ug/L	78	Standard
	Ba	135	14129.9	0.6	**5.9423**	0.035	0.6	ug/L	24	Standard
	Ce	140	36747.8	1.4				ug/L	25	Standard
>	**Tb**	159	1046560.0	0.5				ug/L	939701	Standard
	Ho	165	620.0	6.6				ug/L	10	Standard
	Tl	203	40.7	9.9	**0.0027**	0.000	16.9	ug/L	4	Standard
	Tl	205	38.3	19.9	**0.0050**	0.001	18.8	ug/L	2	Standard
	Pb	206	6390.7	0.3	**1.0069**	0.002	0.2	ug/L	240	Standard
	Pb	207	5305.6	1.7	**0.9374**	0.017	1.8	ug/L	198	Standard
	Pb	208	22358.8	1.4	**1.0005**	0.020	2.0	ug/L	883	Standard
	U	238	147.3	10.0	**0.0149**	0.002	12.5	ug/L	3	Standard
>	**Bi**	209	581458.5	0.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	36.7	41.7	**-0.0251**	0.017	67.5	mg/L	37	Standard
K	39	73.3	27.6	**0.0225**	0.038	170.4	mg/L	38	Standard
Ca	43	25.0	40.0	**-1.1927**	0.538	45.1	mg/L	10	Standard
Fe	54	777.1	4.9	**0.4166**	0.030	7.2	mg/L	179	Standard
Fe	57	423.3	1.8	**0.1373**	0.012	9.1	mg/L	335	Standard
> **Sc-1**	45	72476.3	1.0				mg/L	61029	Standard
Cl	35	26907.2	2.4				ug/L	20195	Standard
Kr	83	1.7	124.9				ug/L	4	Standard
Br	81	2140.2	2.1				ug/L	1547	Standard
P	31	19854.7	4.5				ug/L	15286	Standard
S	34	2031.8	8.8				ug/L	1572	Standard
Sr	88	61.7	24.8				ug/L	73	Standard
C	12	66.7	82.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	1031.0	18.9				mg/L	6	Standard
Ho-1	165	620.0	6.6				mg/L	10	Standard
Er	166	536.7	12.4				mg/L	13	Standard
I	127	3175.3	27.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		120.134	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		119.522	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		115.868
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.969
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606138102
Sample Date/Time: Wednesday, June 29, 2016 19:07:03
Number of Replicates: 3
Autosampler Position: 254
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	93009.7	1.6				ug/L	74699	Standard
	Be	9	1248.4	3.0	**1.1470**	0.051	4.5	ug/L	8	Standard
	Al	27	40124336.3	0.4	**219.2936**	2.793	1.3	ug/L	1493	Standard
	Sc	45	83437.5	1.7				ug/L	61029	Standard
	Ti	47	9733.8	0.5	**22.4436**	0.290	1.3	ug/L	35	Standard
	V	51	219254.4	2.3	**25.2954**	0.490	1.9	ug/L	1435	Standard
	Cr	52	167385.2	0.7	**18.8093**	0.105	0.6	ug/L	7635	Standard
	Cr	53	20240.2	3.5	**18.8976**	0.529	2.8	ug/L	363	Standard
	Mn	55	6543259.4	1.4	**825.1579**	15.855	1.9	ug/L	747	Standard
	Co	59	86492.3	2.3	**11.4640**	0.252	2.2	ug/L	234	Standard
	Ni	60	58233.4	1.3	**27.1864**	0.121	0.4	ug/L	215	Standard
	Cu	65	35144.1	1.8	**16.4764**	0.210	1.3	ug/L	104	Standard
	Zn	66	61921.6	1.7	**49.3206**	0.509	1.0	ug/L	363	Standard
>	**Ge**	72	563884.1	0.9				ug/L	495142	Standard
	As	75	5876.5	0.9	**4.6669**	0.080	1.7	ug/L	-50	Standard
	Se	82	62.7	20.2	**0.3638**	0.101	27.7	ug/L	14	Standard
	Se-1	77	116.3	8.0	**0.7757**	0.099	12.7	ug/L	42	Standard
>	**Ga**	71	24224.4	1.6				mg/L	42	Standard
	Rb	85	231886.4	1.9				ug/L	17	Standard
	Y	89	788603.8	0.2				ug/L	417098	Standard
>	**Rh**	103	76.7	50.7				ug/L	13	Standard
	Mo	98	590.2	6.7	**0.1909**	0.011	6.0	ug/L	11	Standard
	Ag	107	590.3	14.1	**0.0675**	0.010	15.2	ug/L	68	Standard
	Cd	111	402.0	10.7	**0.1627**	0.016	9.9	mg/L	2	Standard
	Cd	114	896.6	5.0	**0.1531**	0.007	4.5	ug/L	12	Standard
>	**In**	115	661468.7	1.5				ug/L	587441	Standard
	Sn	118	563.3	17.0	**-0.0090**	0.016	173.2	ug/L	497	Standard
	Sb	123	168.4	11.6	**0.0279**	0.004	15.0	ug/L	78	Standard
	Ba	135	766980.0	0.9	**332.7995**	3.011	0.9	ug/L	24	Standard
	Ce	140	1513996.2	0.9				ug/L	25	Standard
>	**Tb**	159	1057537.7	1.8				ug/L	939701	Standard
	Ho	165	25513.1	1.6				ug/L	10	Standard
	Tl	203	1321.7	3.8	**0.1489**	0.005	3.2	ug/L	4	Standard
	Tl	205	1201.7	6.5	**0.1579**	0.009	5.7	ug/L	2	Standard
	Pb	206	69846.7	2.1	**12.2126**	0.140	1.1	ug/L	240	Standard
	Pb	207	56032.1	2.8	**11.0205**	0.188	1.7	ug/L	198	Standard
	Pb	208	243026.5	0.6	**12.1032**	0.059	0.5	ug/L	883	Standard
	U	238	7981.8	0.7	**1.0851**	0.004	0.3	ug/L	3	Standard
>	**Bi**	209	557709.9	1.1				ug/L	523984	Standard

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Na	23	6.7	86.6	**56.4197**	48.874	86.6	mg/L	0	Standard
Mg	24	238.3	32.7	**0.1607**	0.077	48.1	mg/L	37	Standard
K	39	688.3	8.8	**0.9980**	0.083	8.3	mg/L	38	Standard
Ca	43	911.7	12.3	**39.6249**	5.390	13.6	mg/L	10	Standard
Fe	54	20800.6	0.9	**12.7625**	0.173	1.4	mg/L	179	Standard
Fe	57	6012.9	2.1	**13.8749**	0.248	1.8	mg/L	335	Standard
Sc-1	45	83437.5	1.7				mg/L	61029	Standard
Cl	35	29332.4	1.9				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	2603.6	11.5				ug/L	1547	Standard
P	31	21632.1	2.1				ug/L	15286	Standard
S	34	2746.9	3.7				ug/L	1572	Standard
Sr	88	253.3	10.9				ug/L	73	Standard
C	12	116.7	27.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	45.8				mg/L	3	Standard
Dy	164	42471.8	1.0				mg/L	6	Standard
Ho-1	165	25513.1	1.6				mg/L	10	Standard
Er	166	22212.9	0.4				mg/L	13	Standard
I	127	23259.5	0.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		124.513	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		113.883	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	112.602
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	106.436
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606138102
Sample Date/Time: Wednesday, June 29, 2016 19:10:14
Number of Replicates: 3
Autosampler Position: 255
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85837.5	1.0				ug/L	74699	Standard
	Be	9	38.3	19.9	**0.0455**	0.007	16.1	ug/L	8	Standard
	Al	27	829500.0	3.1	**4.8979**	0.105	2.1	ug/L	1493	Standard
	Sc	45	72806.2	1.9				ug/L	61029	Standard
	Ti	47	228.0	6.2	**0.3999**	0.033	8.1	ug/L	35	Standard
	V	51	5937.2	2.5	**0.4694**	0.017	3.6	ug/L	1435	Standard
	Cr	52	11356.6	1.4	**0.2725**	0.020	7.2	ug/L	7635	Standard
	Cr	53	790.0	13.9	**0.3928**	0.096	24.5	ug/L	363	Standard
	Mn	55	140399.5	1.1	**16.9108**	0.252	1.5	ug/L	747	Standard
	Co	59	1986.1	4.2	**0.2171**	0.011	4.8	ug/L	234	Standard
	Ni	60	1398.7	1.4	**0.5081**	0.009	1.8	ug/L	215	Standard
	Cu	65	887.4	6.1	**0.2997**	0.027	8.9	ug/L	104	Standard
	Zn	66	3530.4	0.8	**2.2796**	0.035	1.5	ug/L	363	Standard
>	**Ge**	72	585343.3	0.6				ug/L	495142	Standard
	As	75	60.2	40.7	**0.1052**	0.019	17.9	ug/L	-50	Standard
	Se	82	19.5	23.7	**0.0127**	0.037	290.2	ug/L	14	Standard
	Se-1	77	54.0	19.3	**0.0032**	0.122	3775.1	ug/L	42	Standard
>	**Ga**	71	611.7	10.2				mg/L	42	Standard
	Rb	85	4939.1	4.6				ug/L	17	Standard
	Y	89	509652.0	1.0				ug/L	417098	Standard
>	**Rh**	103	5.0	100.0				ug/L	13	Standard
	Mo	98	44.1	7.7	**0.0084**	0.001	14.8	ug/L	11	Standard
	Ag	107	136.0	8.3	**0.0049**	0.002	33.6	ug/L	68	Standard
	Cd	111	13.6	15.2	**-0.0024**	0.001	32.7	mg/L	2	Standard
	Cd	114	34.6	39.9	**0.0036**	0.002	62.3	ug/L	12	Standard
>	**In**	115	689569.5	1.2				ug/L	587441	Standard
	Sn	118	635.0	8.5	**-0.0021**	0.008	369.1	ug/L	497	Standard
	Sb	123	120.9	7.4	**0.0179**	0.002	10.7	ug/L	78	Standard
	Ba	135	16312.1	1.7	**6.7731**	0.043	0.6	ug/L	24	Standard
	Ce	140	31461.0	1.2				ug/L	25	Standard
>	**Tb**	159	1048084.0	0.7				ug/L	939701	Standard
	Ho	165	503.3	20.9				ug/L	10	Standard
	Tl	203	28.0	9.4	**0.0013**	0.000	21.0	ug/L	4	Standard
	Tl	205	13.3	21.7	**0.0019**	0.000	19.6	ug/L	2	Standard
	Pb	206	1789.4	1.9	**0.2333**	0.006	2.6	ug/L	240	Standard
	Pb	207	1416.1	2.7	**0.2012**	0.009	4.3	ug/L	198	Standard
	Pb	208	6428.2	1.8	**0.2375**	0.004	1.7	ug/L	883	Standard
	U	238	157.3	5.4	**0.0164**	0.001	7.5	ug/L	3	Standard
>	**Bi**	209	576421.5	0.5				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	65.0	13.3	**0.0052**	0.008	161.5	mg/L	37	Standard
K	39	56.7	10.2	**-0.0092**	0.009	98.8	mg/L	38	Standard
Ca	43	46.7	16.4	**-0.0469**	0.452	963.7	mg/L	10	Standard
Fe	54	615.5	5.2	**0.2993**	0.025	8.2	mg/L	179	Standard
Fe	57	410.0	10.0	**0.0928**	0.096	103.4	mg/L	335	Standard
Sc-1	45	72806.2	1.9				mg/L	61029	Standard
Cl	35	29355.1	3.4				ug/L	20195	Standard
Kr	83	2.3	24.7				ug/L	4	Standard
Br	81	1910.1	15.3				ug/L	1547	Standard
P	31	20493.9	2.3				ug/L	15286	Standard
S	34	2463.5	6.9				ug/L	1572	Standard
Sr	88	83.3	42.1				ug/L	73	Standard
C	12	50.0	34.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	991.0	1.5				mg/L	6	Standard
Ho-1	165	503.3	20.9				mg/L	10	Standard
Er	166	466.7	4.5				mg/L	13	Standard
I	127	2401.9	23.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.911	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		118.217	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		117.385
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.007
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 19:13:27
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83999.1	3.6				ug/L	74699	Standard
	Be	9	57157.7	3.6	**57.7443**	0.451	0.8	ug/L	8	Standard
	Al	27	8858742.4	2.0	**53.6133**	0.921	1.7	ug/L	1493	Standard
	Sc	45	70122.0	3.5				ug/L	61029	Standard
	Ti	47	47445.5	0.9	**109.3528**	3.353	3.1	ug/L	35	Standard
	V	51	471838.1	3.0	**54.4025**	0.466	0.9	ug/L	1435	Standard
	Cr	52	466548.5	1.7	**54.0130**	1.261	2.3	ug/L	7635	Standard
	Cr	53	57204.5	1.8	**53.7881**	1.637	3.0	ug/L	363	Standard
	Mn	55	422873.4	1.8	**52.9497**	1.131	2.1	ug/L	747	Standard
	Co	59	420575.5	1.8	**55.6399**	1.134	2.0	ug/L	234	Standard
	Ni	60	114954.2	1.8	**53.5507**	1.121	2.1	ug/L	215	Standard
	Cu	65	113826.7	2.0	**53.3592**	1.065	2.0	ug/L	104	Standard
	Zn	66	66150.5	1.8	**52.4882**	1.217	2.3	ug/L	363	Standard
>	Ge	72	566689.7	3.9				ug/L	495142	Standard
	As	75	66474.1	0.9	**51.9549**	1.668	3.2	ug/L	-50	Standard
	Se	82	6669.2	0.5	**53.0020**	1.808	3.4	ug/L	14	Standard
	Se-1	77	4569.4	1.3	**54.0883**	1.963	3.6	ug/L	42	Standard
>	Ga	71	60.0	25.0				mg/L	42	Standard
	Rb	85	973.4	4.9				ug/L	17	Standard
	Y	89	482055.4	0.8				ug/L	417098	Standard
>	Rh	103	21.7	35.3				ug/L	13	Standard
	Mo	98	311127.6	1.9	**101.8685**	1.475	1.4	ug/L	11	Standard
	Ag	107	381455.1	1.8	**51.0679**	0.625	1.2	ug/L	68	Standard
	Cd	111	122240.5	1.1	**51.0178**	0.254	0.5	mg/L	2	Standard
	Cd	114	297421.0	1.0	**50.6157**	0.803	1.6	ug/L	12	Standard
>	In	115	673075.7	0.6				ug/L	587441	Standard
	Sn	118	341770.5	1.5	**50.9666**	0.480	0.9	ug/L	497	Standard
	Sb	123	266115.5	1.9	**49.7407**	0.724	1.5	ug/L	78	Standard
	Ba	135	114468.8	0.7	**48.7952**	0.078	0.2	ug/L	24	Standard
	Ce	140	298.3	40.9				ug/L	25	Standard
>	Tb	159	1044481.4	1.5				ug/L	939701	Standard
	Ho	165	18.3	83.3				ug/L	10	Standard
	Tl	203	467319.7	1.5	**52.0663**	0.128	0.2	ug/L	4	Standard
	Tl	205	421316.6	1.5	**54.0865**	0.384	0.7	ug/L	2	Standard
	Pb	206	294059.2	2.1	**50.4836**	0.259	0.5	ug/L	240	Standard
	Pb	207	260305.8	2.4	**50.2976**	0.406	0.8	ug/L	198	Standard
	Pb	208	1086866.5	0.8	**53.1659**	0.550	1.0	ug/L	883	Standard
	U	238	395799.2	0.7	**52.8135**	0.760	1.4	ug/L	3	Standard
>	Bi	209	570529.8	1.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4777.4	3.9	**5.3091**	0.347	6.5	mg/L	37	Standard
K	39	2250.2	3.7	**4.2173**	0.198	4.7	mg/L	38	Standard
Ca	43	128.3	12.5	**4.5532**	1.080	23.7	mg/L	10	Standard
Fe	54	7377.7	1.8	**5.3086**	0.144	2.7	mg/L	179	Standard
Fe	57	2055.1	1.5	**5.0082**	0.127	2.5	mg/L	335	Standard
> **Sc-1**	45	70122.0	3.5				mg/L	61029	Standard
Cl	35	30001.0	0.9				ug/L	20195	Standard
Kr	83	1.7	91.7				ug/L	4	Standard
Br	81	2183.5	6.8				ug/L	1547	Standard
P	31	22995.8	1.5				ug/L	15286	Standard
S	34	2830.3	2.9				ug/L	1572	Standard
Sr	88	66.7	24.1				ug/L	73	Standard
C	12	80.0	50.0				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	9.0	108.0				mg/L	6	Standard
Ho-1	165	18.3	83.3				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	1968.5	24.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	115.489		
Al	27	107.227		
Sc	45			
Ti	47	109.353		
V	51	108.805		
Cr	52	108.026		
Cr	53			
Mn	55	105.899		
Co	59	111.280		
Ni	60	107.101		
Cu	65	106.718		
Zn	66	104.976		
> Ge	72		114.450	
As	75	103.910		
Se	82	106.004		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.868		
Ag	107	102.136		
Cd	111	102.036		
Cd	114			
In	115		114.578	
Sn	118	101.933		
Sb	123	99.481		
Ba	135	97.590		
Ce	140			
Tb	159			
Ho	165			
Tl	203	104.133		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.332		
U	238	105.627		
Bi	209		108.883	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Co	59	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 19:16:39
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83692.3	2.8				ug/L	74699	Standard
	Be	9	18.3	15.7	**0.0263**	0.003	12.9	ug/L	8	Standard
	Al	27	3213.7	25.4	**0.0061**	0.004	71.9	ug/L	1493	Standard
	Sc	45	70726.5	3.0				ug/L	61029	Standard
	Ti	47	41.0	12.2	**-0.0158**	0.012	73.1	ug/L	35	Standard
	V	51	1525.1	1.9	**-0.0214**	0.005	22.4	ug/L	1435	Standard
	Cr	52	7659.9	0.9	**-0.1324**	0.015	11.0	ug/L	7635	Standard
	Cr	53	410.0	16.0	**0.0526**	0.061	116.5	ug/L	363	Standard
	Mn	55	997.7	7.3	**-0.0244**	0.010	41.0	ug/L	747	Standard
	Co	59	260.3	1.6	**-0.0033**	0.000	10.0	ug/L	234	Standard
	Ni	60	195.0	3.6	**-0.0341**	0.004	11.2	ug/L	215	Standard
	Cu	65	140.7	10.7	**-0.0385**	0.007	19.0	ug/L	104	Standard
	Zn	66	386.7	3.7	**-0.1493**	0.008	5.7	ug/L	363	Standard
>	**Ge**	72	574185.4	0.9				ug/L	495142	Standard
	As	75	-49.3	11.6	**0.0216**	0.004	19.9	ug/L	-50	Standard
	Se	82	18.5	26.4	**0.0072**	0.039	544.3	ug/L	14	Standard
	Se-1	77	51.3	18.1	**-0.0155**	0.115	739.5	ug/L	42	Standard
>	**Ga**	71	41.7	30.2				mg/L	42	Standard
	Rb	85	33.3	22.9				ug/L	17	Standard
	Y	89	508899.9	2.4				ug/L	417098	Standard
>	**Rh**	103	10.0	50.0				ug/L	13	Standard
	Mo	98	287.2	24.5	**0.0857**	0.020	22.8	ug/L	11	Standard
	Ag	107	140.0	24.8	**0.0054**	0.004	76.0	ug/L	68	Standard
	Cd	111	18.8	30.5	**-0.0003**	0.002	828.9	mg/L	2	Standard
	Cd	114	42.6	5.3	**0.0050**	0.000	2.5	ug/L	12	Standard
>	**In**	115	688571.2	3.6				ug/L	587441	Standard
	Sn	118	896.7	13.9	**0.0365**	0.020	55.6	ug/L	497	Standard
	Sb	123	419.7	28.4	**0.0731**	0.025	33.8	ug/L	78	Standard
	Ba	135	58.0	33.3	**0.0081**	0.008	93.7	ug/L	24	Standard
	Ce	140	43.3	17.6				ug/L	25	Standard
>	**Tb**	159	1032903.3	2.1				ug/L	939701	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	69.3	37.1	**0.0059**	0.003	47.0	ug/L	4	Standard
	Tl	205	78.3	57.2	**0.0101**	0.006	55.2	ug/L	2	Standard
	Pb	206	303.3	6.2	**-0.0195**	0.003	14.1	ug/L	240	Standard
	Pb	207	260.7	8.9	**-0.0200**	0.005	24.1	ug/L	198	Standard
	Pb	208	1157.4	6.9	**-0.0179**	0.003	17.6	ug/L	883	Standard
	U	238	52.0	46.8	**0.0024**	0.003	129.1	ug/L	3	Standard
>	**Bi**	209	575232.2	1.3				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	36.7	28.4	**-0.0241**	0.012	50.4	mg/L	37	Standard
K	39	50.0	26.5	**-0.0190**	0.023	121.8	mg/L	38	Standard
Ca	43	26.7	39.0	**-1.0625**	0.584	55.0	mg/L	10	Standard
Fe	54	147.5	7.0	**-0.0305**	0.005	15.7	mg/L	179	Standard
Fe	57	216.7	8.1	**-0.4394**	0.033	7.6	mg/L	335	Standard
Sc-1	45	70726.5	3.0				mg/L	61029	Standard
Cl	35	29273.6	1.2				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	2073.5	10.2				ug/L	1547	Standard
P	31	23289.7	10.5				ug/L	15286	Standard
S	34	2535.2	3.8				ug/L	1572	Standard
Sr	88	68.3	37.5				ug/L	73	Standard
C	12	66.7	22.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	16.3	126.2				mg/L	6	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	1766.8	31.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		115.964	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		117.215
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.780
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Wednesday, June 29, 2016 19:18:56
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Method 6020 - Summary Report

Sample ID: L1606138103
Sample Date/Time: Wednesday, June 29, 2016 19:19:52
Number of Replicates: 3
Autosampler Position: 256
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88921.9	2.3				ug/L	74699	Standard
	Be	9	1191.7	0.9	**1.1451**	0.025	2.2	ug/L	8	Standard
	Al	27	19716870.1	2.2	**112.7701**	5.073	4.5	ug/L	1493	Standard
	Sc	45	82006.5	3.2				ug/L	61029	Standard
	Ti	47	8807.2	1.6	**20.0178**	0.269	1.3	ug/L	35	Standard
	V	51	208539.0	1.3	**23.7197**	0.153	0.6	ug/L	1435	Standard
	Cr	52	166877.0	1.1	**18.4795**	0.081	0.4	ug/L	7635	Standard
	Cr	53	19956.5	0.7	**18.3731**	0.126	0.7	ug/L	363	Standard
	Mn	55	4948296.7	1.6	**615.4227**	6.037	1.0	ug/L	747	Standard
	Co	59	82754.8	2.1	**10.8165**	0.154	1.4	ug/L	234	Standard
	Ni	60	51698.7	0.5	**23.7942**	0.298	1.3	ug/L	215	Standard
	Cu	65	48855.0	1.6	**22.6321**	0.340	1.5	ug/L	104	Standard
	Zn	66	105467.2	1.2	**83.1726**	0.384	0.5	ug/L	363	Standard
>	**Ge**	72	571655.8	0.7				ug/L	495142	Standard
	As	75	9636.9	0.9	**7.5116**	0.042	0.6	ug/L	-50	Standard
	Se	82	70.5	8.3	**0.4184**	0.042	10.1	ug/L	14	Standard
	Se-1	77	129.0	9.9	**0.9077**	0.153	16.9	ug/L	42	Standard
>	**Ga**	71	22341.5	2.4				mg/L	42	Standard
	Rb	85	210691.8	1.9				ug/L	17	Standard
	Y	89	776017.6	0.9				ug/L	417098	Standard
>	**Rh**	103	61.7	24.8				ug/L	13	Standard
	Mo	98	1324.4	9.6	**0.4208**	0.045	10.6	ug/L	11	Standard
	Ag	107	918.4	2.4	**0.1080**	0.004	3.7	ug/L	68	Standard
	Cd	111	891.1	4.2	**0.3578**	0.020	5.5	mg/L	2	Standard
	Cd	114	2180.6	6.0	**0.3625**	0.017	4.8	ug/L	12	Standard
>	**In**	115	684819.6	1.2				ug/L	587441	Standard
	Sn	118	1785.1	3.5	**0.1674**	0.006	3.8	ug/L	497	Standard
	Sb	123	354.4	3.1	**0.0609**	0.003	4.6	ug/L	78	Standard
	Ba	135	461342.5	1.4	**193.3434**	2.631	1.4	ug/L	24	Standard
	Ce	140	1368480.3	1.7				ug/L	25	Standard
>	**Tb**	159	1075718.6	2.2				ug/L	939701	Standard
	Ho	165	22026.0	1.7				ug/L	10	Standard
	Tl	203	1135.0	2.0	**0.1247**	0.001	0.6	ug/L	4	Standard
	Tl	205	1093.4	11.6	**0.1404**	0.014	10.2	ug/L	2	Standard
	Pb	206	147882.6	1.3	**25.3549**	0.415	1.6	ug/L	240	Standard
	Pb	207	119862.3	0.6	**23.1268**	0.424	1.8	ug/L	198	Standard
	Pb	208	520445.5	2.0	**25.4242**	0.898	3.5	ug/L	883	Standard
	U	238	4663.1	0.9	**0.6178**	0.006	0.9	ug/L	3	Standard
>	**Bi**	209	570570.9	1.5				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	126.7	27.7	**0.0563**	0.032	56.3	mg/L	37	Standard
K	39	878.4	3.1	**1.3326**	0.091	6.9	mg/L	38	Standard
Ca	43	426.7	4.7	**17.5293**	0.460	2.6	mg/L	10	Standard
Fe	54	21094.2	3.4	**13.1896**	0.865	6.6	mg/L	179	Standard
Fe	57	5826.1	1.4	**13.6721**	0.491	3.6	mg/L	335	Standard
Sc-1	45	82006.5	3.2				mg/L	61029	Standard
Cl	35	28772.6	2.0				ug/L	20195	Standard
Kr	83	3.0	66.7				ug/L	4	Standard
Br	81	3580.4	3.6				ug/L	1547	Standard
P	31	21750.6	1.3				ug/L	15286	Standard
S	34	2703.6	0.6				ug/L	1572	Standard
Sr	88	178.3	13.8				ug/L	73	Standard
C	12	233.3	9.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	96.7	36.3				mg/L	3	Standard
Dy	164	37298.5	1.0				mg/L	6	Standard
Ho-1	165	22026.0	1.7				mg/L	10	Standard
Er	166	20383.7	1.3				mg/L	13	Standard
I	127	19701.1	3.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.041	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		115.453	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	116.577
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	108.891
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606138103
Sample Date/Time: Wednesday, June 29, 2016 19:23:03
Number of Replicates: 3
Autosampler Position: 257
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82351.7	3.3				ug/L	74699	Standard
	Be	9	43.3	24.0	**0.0523**	0.011	20.3	ug/L	8	Standard
	Al	27	430174.7	3.0	**2.6419**	0.016	0.6	ug/L	1493	Standard
	Sc	45	73040.6	1.2				ug/L	61029	Standard
	Ti	47	215.7	6.2	**0.3839**	0.033	8.6	ug/L	35	Standard
	V	51	5937.3	2.7	**0.4853**	0.017	3.5	ug/L	1435	Standard
	Cr	52	11052.0	1.3	**0.2679**	0.017	6.2	ug/L	7635	Standard
	Cr	53	723.4	5.6	**0.3480**	0.038	11.0	ug/L	363	Standard
	Mn	55	109527.8	0.6	**13.4774**	0.102	0.8	ug/L	747	Standard
	Co	59	1998.1	1.8	**0.2248**	0.006	2.5	ug/L	234	Standard
	Ni	60	1283.7	2.7	**0.4700**	0.016	3.4	ug/L	215	Standard
	Cu	65	1177.7	1.9	**0.4444**	0.009	2.1	ug/L	104	Standard
	Zn	66	4258.3	1.3	**2.9218**	0.029	1.0	ug/L	363	Standard
>	**Ge**	72	571680.5	0.6				ug/L	495142	Standard
	As	75	130.4	5.6	**0.1604**	0.006	3.7	ug/L	-50	Standard
	Se	82	14.1	16.1	**-0.0268**	0.018	65.5	ug/L	14	Standard
	Se-1	77	58.0	6.9	**0.0653**	0.044	66.8	ug/L	42	Standard
>	**Ga**	71	521.7	4.0				mg/L	42	Standard
	Rb	85	4554.0	2.0				ug/L	17	Standard
	Y	89	512515.9	2.6				ug/L	417098	Standard
>	**Rh**	103	11.7	24.7				ug/L	13	Standard
	Mo	98	90.4	4.4	**0.0229**	0.001	6.5	ug/L	11	Standard
	Ag	107	144.3	4.6	**0.0058**	0.001	16.1	ug/L	68	Standard
	Cd	111	21.8	34.6	**0.0009**	0.003	335.6	mg/L	2	Standard
	Cd	114	67.8	46.0	**0.0090**	0.005	55.6	ug/L	12	Standard
>	**In**	115	696556.9	1.5				ug/L	587441	Standard
	Sn	118	640.0	3.6	**-0.0023**	0.005	204.9	ug/L	497	Standard
	Sb	123	182.0	15.1	**0.0287**	0.006	19.2	ug/L	78	Standard
	Ba	135	9992.3	2.7	**4.1009**	0.069	1.7	ug/L	24	Standard
	Ce	140	29587.2	2.0				ug/L	25	Standard
>	**Tb**	159	1058949.6	2.5				ug/L	939701	Standard
	Ho	165	493.3	6.5				ug/L	10	Standard
	Tl	203	41.7	21.8	**0.0028**	0.001	37.1	ug/L	4	Standard
	Tl	205	43.3	54.5	**0.0057**	0.003	52.4	ug/L	2	Standard
	Pb	206	3583.8	1.2	**0.5358**	0.012	2.2	ug/L	240	Standard
	Pb	207	2855.9	1.4	**0.4744**	0.011	2.4	ug/L	198	Standard
	Pb	208	12510.0	0.4	**0.5295**	0.006	1.1	ug/L	883	Standard
	U	238	110.3	6.2	**0.0101**	0.001	8.0	ug/L	3	Standard
>	**Bi**	209	579224.4	1.1				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	51.7	29.6	**-0.0092**	0.017	184.4	mg/L	37	Standard
K	39	41.7	61.6	**-0.0375**	0.047	124.3	mg/L	38	Standard
Ca	43	26.7	10.8	**-1.1162**	0.146	13.1	mg/L	10	Standard
Fe	54	584.0	15.6	**0.2752**	0.062	22.7	mg/L	179	Standard
Fe	57	388.3	5.2	**0.0289**	0.063	219.5	mg/L	335	Standard
> **Sc-1**	45	73040.6	1.2				mg/L	61029	Standard
Cl	35	28933.6	1.8				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	2263.5	5.9				ug/L	1547	Standard
P	31	20116.7	3.4				ug/L	15286	Standard
S	34	2530.2	7.0				ug/L	1572	Standard
Sr	88	75.0	23.1				ug/L	73	Standard
C	12	66.7	56.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	963.7	4.1				mg/L	6	Standard
Ho-1	165	493.3	6.5				mg/L	10	Standard
Er	166	410.0	6.5				mg/L	13	Standard
I	127	2373.5	31.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.245	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		115.458	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		118.575
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.542
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606138104
Sample Date/Time: Wednesday, June 29, 2016 19:26:15
Number of Replicates: 3
Autosampler Position: 258
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85261.0	2.3				ug/L	74699	Standard
	Be	9	1065.0	16.2	**1.0661**	0.158	14.8	ug/L	8	Standard
	Al	27	15142099.3	1.2	**90.2750**	1.228	1.4	ug/L	1493	Standard
	Sc	45	77933.3	2.2				ug/L	61029	Standard
	Ti	47	7118.0	1.5	**16.2707**	0.118	0.7	ug/L	35	Standard
	V	51	161044.2	0.8	**18.4034**	0.196	1.1	ug/L	1435	Standard
	Cr	52	146045.2	0.2	**16.1669**	0.325	2.0	ug/L	7635	Standard
	Cr	53	17793.8	1.2	**16.4664**	0.462	2.8	ug/L	363	Standard
	Mn	55	4299510.8	1.0	**538.5113**	8.104	1.5	ug/L	747	Standard
	Co	59	67815.8	1.0	**8.9211**	0.182	2.0	ug/L	234	Standard
	Ni	60	46536.4	1.1	**21.5551**	0.152	0.7	ug/L	215	Standard
	Cu	65	28919.6	1.2	**13.4506**	0.294	2.2	ug/L	104	Standard
	Zn	66	52781.1	1.6	**41.6917**	0.739	1.8	ug/L	363	Standard
>	**Ge**	72	567729.5	1.7				ug/L	495142	Standard
	As	75	4550.5	2.3	**3.6043**	0.141	3.9	ug/L	-50	Standard
	Se	82	43.5	41.5	**0.2091**	0.148	70.8	ug/L	14	Standard
	Se-1	77	118.3	4.0	**0.7906**	0.045	5.7	ug/L	42	Standard
>	**Ga**	71	21335.0	2.6				mg/L	42	Standard
	Rb	85	199689.0	1.1				ug/L	17	Standard
	Y	89	717025.3	1.7				ug/L	417098	Standard
>	**Rh**	103	53.3	39.0				ug/L	13	Standard
	Mo	98	750.2	3.3	**0.2455**	0.003	1.3	ug/L	11	Standard
	Ag	107	572.7	8.1	**0.0655**	0.005	7.5	ug/L	68	Standard
	Cd	111	313.3	5.6	**0.1259**	0.007	5.6	mg/L	2	Standard
	Cd	114	729.6	4.4	**0.1250**	0.007	5.3	ug/L	12	Standard
>	**In**	115	657920.1	2.1				ug/L	587441	Standard
	Sn	118	513.3	6.6	**-0.0162**	0.005	32.2	ug/L	497	Standard
	Sb	123	156.7	10.3	**0.0258**	0.004	14.3	ug/L	78	Standard
	Ba	135	278778.0	0.4	**121.6374**	2.867	2.4	ug/L	24	Standard
	Ce	140	1205012.6	0.9				ug/L	25	Standard
>	**Tb**	159	1028655.6	1.0				ug/L	939701	Standard
	Ho	165	19245.5	0.5				ug/L	10	Standard
	Tl	203	1022.7	4.2	**0.1168**	0.004	3.6	ug/L	4	Standard
	Tl	205	930.0	6.2	**0.1244**	0.008	6.1	ug/L	2	Standard
	Pb	206	75172.7	1.1	**13.3810**	0.239	1.8	ug/L	240	Standard
	Pb	207	60753.2	0.6	**12.1662**	0.152	1.3	ug/L	198	Standard
	Pb	208	268421.8	0.9	**13.6089**	0.053	0.4	ug/L	883	Standard
	U	238	4956.8	1.6	**0.6840**	0.014	2.1	ug/L	3	Standard
>	**Bi**	209	548179.9	0.7				ug/L	523984	Standard

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Na	23	3.3	173.2	**29.7760**	51.565	173.2	mg/L	0	Standard
Mg	24	116.7	8.9	**0.0527**	0.008	15.2	mg/L	37	Standard
K	39	606.7	4.1	**0.9368**	0.065	7.0	mg/L	38	Standard
Ca	43	223.3	26.5	**8.5548**	3.074	35.9	mg/L	10	Standard
Fe	54	18758.0	3.4	**12.3136**	0.167	1.4	mg/L	179	Standard
Fe	57	5059.2	5.4	**12.3881**	0.534	4.3	mg/L	335	Standard
Sc-1	45	77933.3	2.2				mg/L	61029	Standard
Cl	35	27511.6	2.5				ug/L	20195	Standard
Kr	83	4.0	50.0				ug/L	4	Standard
Br	81	2450.2	6.4				ug/L	1547	Standard
P	31	19838.0	2.4				ug/L	15286	Standard
S	34	2438.5	4.0				ug/L	1572	Standard
Sr	88	130.0	10.2				ug/L	73	Standard
C	12	76.7	41.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	124.9				mg/L	3	Standard
Dy	164	31319.3	1.6				mg/L	6	Standard
Ho-1	165	19245.5	0.5				mg/L	10	Standard
Er	166	17009.5	2.0				mg/L	13	Standard
I	127	14255.0	0.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		114.140	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		114.660	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.998
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.618
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606138104
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Method 6020 - Summary Report

Sample ID: L1606138104
Sample Date/Time: Wednesday, June 29, 2016 19:29:26
Number of Replicates: 3
Autosampler Position: 259
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81019.4	0.7				ug/L	74699	Standard
	Be	9	41.7	18.3	**0.0512**	0.008	15.3	ug/L	8	Standard
	Al	27	329954.8	1.9	**2.0568**	0.044	2.2	ug/L	1493	Standard
	Sc	45	70853.8	4.4				ug/L	61029	Standard
	Ti	47	170.0	4.8	**0.2650**	0.022	8.2	ug/L	35	Standard
	V	51	4919.9	1.5	**0.3475**	0.009	2.6	ug/L	1435	Standard
	Cr	52	11144.8	0.5	**0.2299**	0.010	4.3	ug/L	7635	Standard
	Cr	53	798.4	9.1	**0.3907**	0.073	18.6	ug/L	363	Standard
	Mn	55	93006.7	2.2	**10.9903**	0.351	3.2	ug/L	747	Standard
	Co	59	1669.1	4.9	**0.1734**	0.010	5.5	ug/L	234	Standard
	Ni	60	1239.4	3.4	**0.4280**	0.019	4.5	ug/L	215	Standard
	Cu	65	783.4	0.7	**0.2472**	0.006	2.3	ug/L	104	Standard
	Zn	66	3223.7	4.0	**2.0065**	0.120	6.0	ug/L	363	Standard
>	**Ge**	72	593953.7	1.0				ug/L	495142	Standard
	As	75	25.6	116.2	**0.0786**	0.022	28.0	ug/L	-50	Standard
	Se	82	15.5	11.3	**-0.0201**	0.014	71.9	ug/L	14	Standard
	Se-1	77	55.7	3.7	**0.0130**	0.019	145.3	ug/L	42	Standard
>	**Ga**	71	496.7	9.6				mg/L	42	Standard
	Rb	85	4318.9	1.6				ug/L	17	Standard
	Y	89	493099.4	1.2				ug/L	417098	Standard
>	**Rh**	103	8.3	91.7				ug/L	13	Standard
	Mo	98	63.8	10.3	**0.0154**	0.002	13.8	ug/L	11	Standard
	Ag	107	130.3	15.7	**0.0047**	0.003	56.8	ug/L	68	Standard
	Cd	111	7.2	21.0	**-0.0049**	0.001	12.8	mg/L	2	Standard
	Cd	114	27.0	44.7	**0.0025**	0.002	80.8	ug/L	12	Standard
>	**In**	115	665068.2	0.5				ug/L	587441	Standard
	Sn	118	545.0	15.7	**-0.0123**	0.013	107.4	ug/L	497	Standard
	Sb	123	150.6	9.1	**0.0243**	0.003	11.0	ug/L	78	Standard
	Ba	135	6015.5	0.5	**2.5800**	0.016	0.6	ug/L	24	Standard
	Ce	140	25678.4	3.6				ug/L	25	Standard
>	**Tb**	159	1023204.1	0.9				ug/L	939701	Standard
	Ho	165	420.0	5.5				ug/L	10	Standard
	Tl	203	37.3	22.8	**0.0024**	0.001	40.1	ug/L	4	Standard
	Tl	205	30.0	50.0	**0.0040**	0.002	46.9	ug/L	2	Standard
	Pb	206	1995.8	4.0	**0.2734**	0.016	6.0	ug/L	240	Standard
	Pb	207	1576.4	5.4	**0.2364**	0.019	8.0	ug/L	198	Standard
	Pb	208	6805.9	1.7	**0.2606**	0.003	1.1	ug/L	883	Standard
	U	238	99.3	2.5	**0.0089**	0.000	2.4	ug/L	3	Standard
>	**Bi**	209	568219.3	0.9				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	30.0	66.7	**-0.0312**	0.023	74.2	mg/L	37	Standard
K	39	65.0	30.8	**0.0108**	0.043	395.4	mg/L	38	Standard
Ca	43	20.0	0.0	**-1.4338**	0.047	3.3	mg/L	10	Standard
Fe	54	499.3	4.0	**0.2265**	0.010	4.2	mg/L	179	Standard
Fe	57	346.7	6.8	**-0.0592**	0.056	94.8	mg/L	335	Standard
> **Sc-1**	45	70853.8	4.4				mg/L	61029	Standard
Cl	35	26917.9	3.4				ug/L	20195	Standard
Kr	83	2.0	0.0				ug/L	4	Standard
Br	81	1996.8	2.8				ug/L	1547	Standard
P	31	19530.9	2.5				ug/L	15286	Standard
S	34	2235.2	2.4				ug/L	1572	Standard
Sr	88	70.0	18.9				ug/L	73	Standard
C	12	83.3	38.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	818.0	9.1				mg/L	6	Standard
Ho-1	165	420.0	5.5				mg/L	10	Standard
Er	166	390.0	11.8				mg/L	13	Standard
I	127	1930.1	32.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.461	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		119.956	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.214
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.442
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606138105
Sample Date/Time: Wednesday, June 29, 2016 19:32:37
Number of Replicates: 3
Autosampler Position: 260
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86630.3	1.6				ug/L	74699	Standard
	Be	9	1345.1	15.8	**1.3230**	0.188	14.2	ug/L	8	Standard
	Al	27	25518871.0	0.5	**149.7364**	2.025	1.4	ug/L	1493	Standard
	Sc	45	82793.9	1.1				ug/L	61029	Standard
	Ti	47	9047.0	1.1	**21.0343**	0.216	1.0	ug/L	35	Standard
	V	51	241144.8	2.1	**28.0828**	0.136	0.5	ug/L	1435	Standard
	Cr	52	185820.6	3.2	**21.1812**	0.417	2.0	ug/L	7635	Standard
	Cr	53	22667.0	3.7	**21.3886**	0.515	2.4	ug/L	363	Standard
	Mn	55	5666490.2	1.7	**720.7034**	2.244	0.3	ug/L	747	Standard
	Co	59	89984.1	1.6	**12.0322**	0.097	0.8	ug/L	234	Standard
	Ni	60	57928.9	2.2	**27.2782**	0.178	0.7	ug/L	215	Standard
	Cu	65	41127.1	3.0	**19.4650**	0.281	1.4	ug/L	104	Standard
	Zn	66	70831.6	3.1	**56.9699**	0.880	1.5	ug/L	363	Standard
>	**Ge**	72	559032.2	1.6				ug/L	495142	Standard
	As	75	9088.7	3.2	**7.2452**	0.123	1.7	ug/L	-50	Standard
	Se	82	66.3	23.6	**0.3960**	0.117	29.7	ug/L	14	Standard
	Se-1	77	130.0	4.3	**0.9538**	0.045	4.7	ug/L	42	Standard
>	**Ga**	71	25715.1	2.4				mg/L	42	Standard
	Rb	85	243499.9	2.1				ug/L	17	Standard
	Y	89	766854.2	0.5				ug/L	417098	Standard
>	**Rh**	103	51.7	5.6				ug/L	13	Standard
	Mo	98	760.8	5.6	**0.2496**	0.019	7.7	ug/L	11	Standard
	Ag	107	727.0	8.3	**0.0869**	0.010	11.3	ug/L	68	Standard
	Cd	111	420.9	5.2	**0.1721**	0.013	7.6	mg/L	2	Standard
	Cd	114	1021.1	15.6	**0.1761**	0.030	17.3	ug/L	12	Standard
>	**In**	115	657583.1	2.2				ug/L	587441	Standard
	Sn	118	706.7	9.4	**0.0135**	0.012	91.4	ug/L	497	Standard
	Sb	123	160.0	3.9	**0.0265**	0.002	7.0	ug/L	78	Standard
	Ba	135	489546.4	1.0	**213.7510**	6.703	3.1	ug/L	24	Standard
	Ce	140	1473172.3	0.9				ug/L	25	Standard
>	**Tb**	159	1043758.3	1.4				ug/L	939701	Standard
	Ho	165	23187.7	0.9				ug/L	10	Standard
	Tl	203	1287.4	7.3	**0.1458**	0.012	8.5	ug/L	4	Standard
	Tl	205	1168.4	5.5	**0.1545**	0.010	6.8	ug/L	2	Standard
	Pb	206	110607.4	2.3	**19.4839**	0.695	3.6	ug/L	240	Standard
	Pb	207	89635.8	2.2	**17.7667**	0.631	3.6	ug/L	198	Standard
	Pb	208	392577.0	0.9	**19.6965**	0.434	2.2	ug/L	883	Standard
	U	238	8119.8	0.8	**1.1095**	0.020	1.8	ug/L	3	Standard
>	**Bi**	209	554986.0	1.4				ug/L	523984	Standard

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Na	23	5.0	100.0	**42.5482**	42.299	99.4	mg/L	0	Standard
Mg	24	165.0	16.0	**0.0921**	0.027	29.3	mg/L	37	Standard
K	39	870.0	2.5	**1.3032**	0.021	1.6	mg/L	38	Standard
Ca	43	623.3	6.5	**26.5121**	2.122	8.0	mg/L	10	Standard
Fe	54	24836.5	3.4	**15.3836**	0.500	3.3	mg/L	179	Standard
Fe	57	6766.5	3.6	**15.8771**	0.513	3.2	mg/L	335	Standard
Sc-1	45	82793.9	1.1				mg/L	61029	Standard
Cl	35	27591.1	0.8				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	2510.2	7.0				ug/L	1547	Standard
P	31	20592.3	2.0				ug/L	15286	Standard
S	34	2640.2	1.7				ug/L	1572	Standard
Sr	88	220.0	6.0				ug/L	73	Standard
C	12	86.7	24.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	44.6				mg/L	3	Standard
Dy	164	40115.6	1.1				mg/L	6	Standard
Ho-1	165	23187.7	0.9				mg/L	10	Standard
Er	166	21645.5	1.0				mg/L	13	Standard
I	127	13629.5	5.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		115.973	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		112.903	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.940
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.916
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606138105
Sample Date/Time: Wednesday, June 29, 2016 19:35:50
Number of Replicates: 3
Autosampler Position: 401
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81775.3	3.6				ug/L	74699	Standard
	Be	9	45.0	11.1	**0.0544**	0.006	11.5	ug/L	8	Standard
	Al	27	547945.2	2.8	**3.3933**	0.048	1.4	ug/L	1493	Standard
	Sc	45	73444.3	1.5				ug/L	61029	Standard
	Ti	47	212.7	8.9	**0.3795**	0.037	9.9	ug/L	35	Standard
	V	51	6482.3	2.1	**0.5523**	0.015	2.6	ug/L	1435	Standard
	Cr	52	11556.7	2.9	**0.3347**	0.014	4.0	ug/L	7635	Standard
	Cr	53	865.0	10.6	**0.4848**	0.072	14.9	ug/L	363	Standard
	Mn	55	123099.8	1.9	**15.2575**	0.218	1.4	ug/L	747	Standard
	Co	59	2101.5	1.5	**0.2401**	0.008	3.5	ug/L	234	Standard
	Ni	60	1463.7	4.5	**0.5572**	0.024	4.3	ug/L	215	Standard
	Cu	65	1004.0	2.5	**0.3664**	0.012	3.3	ug/L	104	Standard
	Zn	66	6132.9	2.2	**4.4370**	0.037	0.8	ug/L	363	Standard
>	**Ge**	72	568314.4	1.9				ug/L	495142	Standard
	As	75	135.4	21.1	**0.1651**	0.024	14.5	ug/L	-50	Standard
	Se	82	20.1	25.4	**0.0217**	0.043	197.6	ug/L	14	Standard
	Se-1	77	47.3	2.4	**-0.0575**	0.019	32.3	ug/L	42	Standard
>	**Ga**	71	615.0	5.6				mg/L	42	Standard
	Rb	85	5134.2	2.0				ug/L	17	Standard
	Y	89	506159.2	1.9				ug/L	417098	Standard
>	**Rh**	103	11.7	107.9				ug/L	13	Standard
	Mo	98	50.7	18.0	**0.0105**	0.003	28.3	ug/L	11	Standard
	Ag	107	125.7	10.6	**0.0035**	0.002	48.0	ug/L	68	Standard
	Cd	111	10.9	48.5	**-0.0035**	0.002	62.7	mg/L	2	Standard
	Cd	114	42.4	34.4	**0.0049**	0.002	48.6	ug/L	12	Standard
>	**In**	115	689821.8	0.4				ug/L	587441	Standard
	Sn	118	595.0	5.8	**-0.0080**	0.005	59.8	ug/L	497	Standard
	Sb	123	118.9	14.7	**0.0175**	0.003	18.8	ug/L	78	Standard
	Ba	135	10423.6	1.2	**4.3208**	0.035	0.8	ug/L	24	Standard
	Ce	140	31651.4	0.9				ug/L	25	Standard
>	**Tb**	159	1043112.5	1.4				ug/L	939701	Standard
	Ho	165	500.0	7.2				ug/L	10	Standard
	Tl	203	34.0	12.8	**0.0020**	0.000	23.2	ug/L	4	Standard
	Tl	205	20.0	66.1	**0.0027**	0.002	61.7	ug/L	2	Standard
	Pb	206	2645.2	1.4	**0.3784**	0.005	1.3	ug/L	240	Standard
	Pb	207	2160.5	2.6	**0.3433**	0.011	3.1	ug/L	198	Standard
	Pb	208	9496.8	0.4	**0.3858**	0.004	1.1	ug/L	883	Standard
	U	238	183.7	2.7	**0.0198**	0.001	4.5	ug/L	3	Standard
>	**Bi**	209	577076.9	1.0				ug/L	523984	Standard

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Na	23	1.7	173.2	**15.9398**	27.600	173.2	mg/L	0	Standard
Mg	24	31.7	39.7	**-0.0310**	0.014	45.0	mg/L	37	Standard
K	39	75.0	17.6	**0.0236**	0.024	101.0	mg/L	38	Standard
Ca	43	45.0	44.4	**-0.1502**	1.087	724.0	mg/L	10	Standard
Fe	54	679.1	0.8	**0.3402**	0.010	2.9	mg/L	179	Standard
Fe	57	390.0	9.7	**0.0271**	0.102	376.6	mg/L	335	Standard
Sc-1	45	73444.3	1.5				mg/L	61029	Standard
Cl	35	27695.3	0.4				ug/L	20195	Standard
Kr	83	1.3	114.6				ug/L	4	Standard
Br	81	2046.8	15.0				ug/L	1547	Standard
P	31	20195.1	3.7				ug/L	15286	Standard
S	34	2511.9	7.3				ug/L	1572	Standard
Sr	88	68.3	42.9				ug/L	73	Standard
C	12	50.0	40.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	3	Standard
Dy	164	1042.0	9.5				mg/L	6	Standard
Ho-1	165	500.0	7.2				mg/L	10	Standard
Er	166	446.7	15.2				mg/L	13	Standard
I	127	1841.8	32.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		109.473	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		114.778	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		117.428
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.132
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606138107
Sample Date/Time: Wednesday, June 29, 2016 19:39:01
Number of Replicates: 3
Autosampler Position: 402
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84183.2	0.7				ug/L	74699	Standard
	Be	9	1125.0	5.6	**1.1418**	0.071	6.2	ug/L	8	Standard
	Al	27	16362118.1	1.0	**98.7783**	0.357	0.4	ug/L	1493	Standard
	Sc	45	80079.5	2.6				ug/L	61029	Standard
	Ti	47	5684.7	1.2	**13.0248**	0.178	1.4	ug/L	35	Standard
	V	51	193164.5	0.6	**22.2022**	0.395	1.8	ug/L	1435	Standard
	Cr	52	144926.2	1.3	**16.0993**	0.107	0.7	ug/L	7635	Standard
	Cr	53	17089.6	2.1	**15.8598**	0.165	1.0	ug/L	363	Standard
	Mn	55	4945150.4	1.2	**621.8545**	12.591	2.0	ug/L	747	Standard
	Co	59	79442.1	0.4	**10.4972**	0.101	1.0	ug/L	234	Standard
	Ni	60	48759.0	0.6	**22.6802**	0.156	0.7	ug/L	215	Standard
	Cu	65	44548.4	1.0	**20.8546**	0.085	0.4	ug/L	104	Standard
	Zn	66	116987.3	1.0	**93.3289**	1.249	1.3	ug/L	363	Standard
>	**Ge**	72	565487.8	1.3				ug/L	495142	Standard
	As	75	12786.6	1.5	**10.0557**	0.155	1.5	ug/L	-50	Standard
	Se	82	93.9	6.5	**0.6112**	0.058	9.6	ug/L	14	Standard
	Se-1	77	134.7	12.3	**0.9941**	0.220	22.1	ug/L	42	Standard
>	**Ga**	71	20750.9	1.1				mg/L	42	Standard
	Rb	85	229576.4	1.2				ug/L	17	Standard
	Y	89	760564.3	0.9				ug/L	417098	Standard
>	**Rh**	103	26.7	39.0				ug/L	13	Standard
	Mo	98	714.7	6.9	**0.2279**	0.017	7.3	ug/L	11	Standard
	Ag	107	706.7	2.8	**0.0816**	0.003	4.3	ug/L	68	Standard
	Cd	111	991.8	3.3	**0.4053**	0.015	3.7	mg/L	2	Standard
	Cd	114	2256.1	2.3	**0.3810**	0.005	1.2	ug/L	12	Standard
>	**In**	115	674434.0	1.0				ug/L	587441	Standard
	Sn	118	836.7	10.4	**0.0300**	0.012	41.1	ug/L	497	Standard
	Sb	123	542.0	6.0	**0.0969**	0.005	5.6	ug/L	78	Standard
	Ba	135	363437.5	1.5	**154.6607**	2.916	1.9	ug/L	24	Standard
	Ce	140	1323769.8	0.4				ug/L	25	Standard
>	**Tb**	159	1046974.9	0.8				ug/L	939701	Standard
	Ho	165	21420.1	0.8				ug/L	10	Standard
	Tl	203	1015.7	4.2	**0.1138**	0.005	4.5	ug/L	4	Standard
	Tl	205	906.7	2.2	**0.1191**	0.002	2.0	ug/L	2	Standard
	Pb	206	225485.9	0.9	**39.5300**	0.272	0.7	ug/L	240	Standard
	Pb	207	184080.5	0.2	**36.3178**	0.069	0.2	ug/L	198	Standard
	Pb	208	811320.1	0.8	**40.5199**	0.434	1.1	ug/L	883	Standard
	U	238	5280.9	2.0	**0.7154**	0.017	2.3	ug/L	3	Standard
>	**Bi**	209	558508.9	0.3				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	105.0	49.7	**0.0390**	0.054	139.2	mg/L	37	Standard
K	39	875.0	3.0	**1.3597**	0.017	1.3	mg/L	38	Standard
Ca	43	123.3	10.2	**3.4107**	0.543	15.9	mg/L	10	Standard
Fe	54	18540.3	2.4	**11.8486**	0.489	4.1	mg/L	179	Standard
Fe	57	5050.8	2.1	**12.0198**	0.614	5.1	mg/L	335	Standard
> **Sc-1**	45	80079.5	2.6				mg/L	61029	Standard
Cl	35	26211.3	2.3				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	4010.5	1.9				ug/L	1547	Standard
P	31	18821.7	2.8				ug/L	15286	Standard
S	34	2180.2	5.1				ug/L	1572	Standard
Sr	88	100.0	25.0				ug/L	73	Standard
C	12	166.7	30.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	70.0	28.6				mg/L	3	Standard
Dy	164	35314.8	2.4				mg/L	6	Standard
Ho-1	165	21420.1	0.8				mg/L	10	Standard
Er	166	18965.2	4.5				mg/L	13	Standard
I	127	21211.5	3.4				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		112.697	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		114.207	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.809
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.589
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606138107
Sample Date/Time: Wednesday, June 29, 2016 19:42:13
Number of Replicates: 3
Autosampler Position: 403
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79962.1	1.1				ug/L	74699	Standard
	Be	9	35.0	37.8	**0.0449**	0.015	32.4	ug/L	8	Standard
	Al	27	348986.4	2.3	**2.2050**	0.043	1.9	ug/L	1493	Standard
	Sc	45	69050.4	2.1				ug/L	61029	Standard
	Ti	47	147.7	4.0	**0.2190**	0.009	4.2	ug/L	35	Standard
	V	51	5537.0	5.1	**0.4222**	0.040	9.5	ug/L	1435	Standard
	Cr	52	11219.2	0.9	**0.2513**	0.015	5.8	ug/L	7635	Standard
	Cr	53	801.7	3.8	**0.4006**	0.025	6.2	ug/L	363	Standard
	Mn	55	101661.8	3.0	**12.1540**	0.524	4.3	ug/L	747	Standard
	Co	59	1813.1	5.5	**0.1941**	0.015	7.9	ug/L	234	Standard
	Ni	60	1251.7	0.2	**0.4392**	0.009	2.1	ug/L	215	Standard
	Cu	65	1098.7	4.3	**0.3937**	0.026	6.7	ug/L	104	Standard
	Zn	66	4663.4	1.9	**3.1415**	0.081	2.6	ug/L	363	Standard
>	**Ge**	72	587910.1	1.4				ug/L	495142	Standard
	As	75	208.3	5.8	**0.2162**	0.008	3.9	ug/L	-50	Standard
	Se	82	14.6	52.1	**-0.0264**	0.056	213.9	ug/L	14	Standard
	Se-1	77	58.3	15.6	**0.0509**	0.111	217.0	ug/L	42	Standard
>	**Ga**	71	483.3	11.4				mg/L	42	Standard
	Rb	85	4672.4	3.2				ug/L	17	Standard
	Y	89	494582.5	2.5				ug/L	417098	Standard
>	**Rh**	103	10.0	50.0				ug/L	13	Standard
	Mo	98	50.9	2.1	**0.0113**	0.001	5.2	ug/L	11	Standard
	Ag	107	137.0	5.3	**0.0059**	0.001	14.4	ug/L	68	Standard
	Cd	111	22.2	22.2	**0.0016**	0.002	123.1	mg/L	2	Standard
	Cd	114	55.9	25.6	**0.0077**	0.003	34.0	ug/L	12	Standard
>	**In**	115	657881.3	1.7				ug/L	587441	Standard
	Sn	118	586.7	15.6	**-0.0052**	0.012	239.2	ug/L	497	Standard
	Sb	123	130.5	4.0	**0.0208**	0.001	5.8	ug/L	78	Standard
	Ba	135	7584.6	1.4	**3.2933**	0.054	1.6	ug/L	24	Standard
	Ce	140	27601.8	1.0				ug/L	25	Standard
>	**Tb**	159	1004279.0	0.4				ug/L	939701	Standard
	Ho	165	470.0	12.8				ug/L	10	Standard
	Tl	203	31.3	21.7	**0.0018**	0.001	42.5	ug/L	4	Standard
	Tl	205	38.3	39.8	**0.0052**	0.002	37.2	ug/L	2	Standard
	Pb	206	5039.5	2.9	**0.8074**	0.036	4.5	ug/L	240	Standard
	Pb	207	4082.6	3.5	**0.7312**	0.039	5.3	ug/L	198	Standard
	Pb	208	17367.6	1.6	**0.7884**	0.025	3.2	ug/L	883	Standard
	U	238	118.3	14.2	**0.0116**	0.002	21.2	ug/L	3	Standard
>	**Bi**	209	562827.5	1.3				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	41.7	6.9	**-0.0175**	0.004	24.7	mg/L	37	Standard
K	39	65.0	46.8	**0.0126**	0.058	464.1	mg/L	38	Standard
Ca	43	20.0	66.1	**-1.4118**	0.719	50.9	mg/L	10	Standard
Fe	54	548.6	17.9	**0.2728**	0.072	26.3	mg/L	179	Standard
Fe	57	318.3	8.7	**-0.1165**	0.103	88.6	mg/L	335	Standard
> **Sc-1**	45	69050.4	2.1				mg/L	61029	Standard
Cl	35	24683.4	2.1				ug/L	20195	Standard
Kr	83	3.0	33.3				ug/L	4	Standard
Br	81	2036.8	6.4				ug/L	1547	Standard
P	31	17868.9	0.9				ug/L	15286	Standard
S	34	1880.1	5.1				ug/L	1572	Standard
Sr	88	70.0	32.7				ug/L	73	Standard
C	12	63.3	32.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	851.3	21.1				mg/L	6	Standard
Ho-1	165	470.0	12.8				mg/L	10	Standard
Er	166	460.0	19.0				mg/L	13	Standard
I	127	2083.5	32.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.046	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		118.736	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	111.991	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	107.413	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606138402
Sample Date/Time: Wednesday, June 29, 2016 19:45:24
Number of Replicates: 3
Autosampler Position: 404
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78829.6	2.0				ug/L	74699	Standard
	Be	9	476.7	4.8	**0.5211**	0.034	6.6	ug/L	8	Standard
	Al	27	790696.4	0.9	**5.0858**	0.055	1.1	ug/L	1493	Standard
	Sc	45	79546.6	1.7				ug/L	61029	Standard
	Ti	47	5657.7	0.8	**12.8152**	0.349	2.7	ug/L	35	Standard
	V	51	106854.5	1.6	**12.0511**	0.193	1.6	ug/L	1435	Standard
	Cr	52	263051.4	1.4	**29.7045**	0.729	2.5	ug/L	7635	Standard
	Cr	53	32229.3	4.0	**29.8443**	0.696	2.3	ug/L	363	Standard
	Mn	55	1259215.6	0.6	**156.4341**	3.728	2.4	ug/L	747	Standard
	Co	59	45647.0	0.6	**5.9475**	0.157	2.6	ug/L	234	Standard
	Ni	60	134444.3	1.6	**62.0317**	0.857	1.4	ug/L	215	Standard
	Cu	65	50137.5	0.5	**23.2180**	0.523	2.3	ug/L	104	Standard
	Zn	66	191528.7	0.9	**151.3328**	2.746	1.8	ug/L	363	Standard
>	**Ge**	72	572152.6	2.7				ug/L	495142	Standard
	As	75	5700.3	1.6	**4.4645**	0.048	1.1	ug/L	-50	Standard
	Se	82	330.0	4.2	**2.4632**	0.049	2.0	ug/L	14	Standard
	Se-1	77	314.7	3.0	**3.1071**	0.115	3.7	ug/L	42	Standard
>	**Ga**	71	3685.4	1.6				mg/L	42	Standard
	Rb	85	41053.9	1.7				ug/L	17	Standard
	Y	89	1388727.0	1.6				ug/L	417098	Standard
>	**Rh**	103	25.0	0.0				ug/L	13	Standard
	Mo	98	3897.2	2.0	**1.2782**	0.019	1.5	ug/L	11	Standard
	Ag	107	551.3	5.8	**0.0614**	0.003	5.7	ug/L	68	Standard
	Cd	111	1240.5	0.7	**0.5131**	0.007	1.4	mg/L	2	Standard
	Cd	114	2915.5	4.4	**0.4970**	0.020	4.1	ug/L	12	Standard
>	**In**	115	669008.5	1.2				ug/L	587441	Standard
	Sn	118	676.7	8.2	**0.0070**	0.008	114.7	ug/L	497	Standard
	Sb	123	186.6	3.8	**0.0309**	0.001	3.8	ug/L	78	Standard
	Ba	135	221251.7	0.3	**94.9139**	1.345	1.4	ug/L	24	Standard
	Ce	140	471655.7	0.9				ug/L	25	Standard
>	**Tb**	159	1067869.0	0.9				ug/L	939701	Standard
	Ho	165	47698.3	1.5				ug/L	10	Standard
	Tl	203	1397.7	2.5	**0.1543**	0.005	3.4	ug/L	4	Standard
	Tl	205	1176.7	6.0	**0.1515**	0.008	5.0	ug/L	2	Standard
	Pb	206	21429.5	1.2	**3.6210**	0.069	1.9	ug/L	240	Standard
	Pb	207	15728.2	0.6	**2.9798**	0.021	0.7	ug/L	198	Standard
	Pb	208	70387.8	1.2	**3.3811**	0.084	2.5	ug/L	883	Standard
	U	238	18087.1	1.2	**2.4141**	0.054	2.2	ug/L	3	Standard
>	**Bi**	209	569388.1	1.3				ug/L	523984	Standard

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Na	23	5.0	173.2	**43.9188**	76.061	173.2	mg/L	0	Standard
Mg	24	210.0	6.3	**0.1429**	0.013	9.0	mg/L	37	Standard
K	39	275.0	8.3	**0.3521**	0.037	10.4	mg/L	38	Standard
Ca	43	148.3	19.8	**4.6742**	1.471	31.5	mg/L	10	Standard
Fe	54	12478.7	2.5	**7.9817**	0.313	3.9	mg/L	179	Standard
Fe	57	3430.4	4.1	**7.8688**	0.221	2.8	mg/L	335	Standard
> **Sc-1**	45	79546.6	1.7				mg/L	61029	Standard
Cl	35	26111.8	0.7				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	2043.5	3.5				ug/L	1547	Standard
P	31	19195.5	2.0				ug/L	15286	Standard
S	34	2368.5	5.4				ug/L	1572	Standard
Sr	88	153.3	13.2				ug/L	73	Standard
C	12	70.0	14.3				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	140.0	18.9				mg/L	3	Standard
Dy	164	65719.4	1.8				mg/L	6	Standard
Ho-1	165	47698.3	1.5				mg/L	10	Standard
Er	166	45979.7	1.2				mg/L	13	Standard
I	127	5242.6	1.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.530	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		115.553	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	113.885
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	108.665
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606138404
Sample Date/Time: Wednesday, June 29, 2016 19:48:35
Number of Replicates: 3
Autosampler Position: 405
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80955.8	1.9				ug/L	74699	Standard
	Be	9	880.0	13.6	**0.9302**	0.126	13.6	ug/L	8	Standard
	Al	27	4591606.5	1.6	**28.8172**	0.235	0.8	ug/L	1493	Standard
	Sc	45	81773.4	1.2				ug/L	61029	Standard
	Ti	47	8450.7	1.8	**19.2499**	0.245	1.3	ug/L	35	Standard
	V	51	185955.1	1.6	**21.1827**	0.308	1.5	ug/L	1435	Standard
	Cr	52	431888.4	0.7	**49.5778**	0.407	0.8	ug/L	7635	Standard
	Cr	53	54036.2	1.9	**50.4433**	1.377	2.7	ug/L	363	Standard
	Mn	55	1979621.7	0.4	**246.7487**	3.142	1.3	ug/L	747	Standard
	Co	59	89211.3	2.3	**11.6929**	0.262	2.2	ug/L	234	Standard
	Ni	60	241828.7	1.1	**112.0223**	0.265	0.2	ug/L	215	Standard
	Cu	65	79842.9	1.5	**37.1424**	0.248	0.7	ug/L	104	Standard
	Zn	66	363879.1	1.7	**288.7674**	1.874	0.6	ug/L	363	Standard
>	**Ge**	72	570278.1	1.3				ug/L	495142	Standard
	As	75	11266.0	1.4	**8.7923**	0.037	0.4	ug/L	-50	Standard
	Se	82	562.8	1.7	**4.3149**	0.122	2.8	ug/L	14	Standard
	Se-1	77	468.7	10.3	**4.9506**	0.587	11.9	ug/L	42	Standard
>	**Ga**	71	6996.6	2.8				mg/L	42	Standard
	Rb	85	75201.3	3.4				ug/L	17	Standard
	Y	89	1637404.7	1.2				ug/L	417098	Standard
>	**Rh**	103	40.0	12.5				ug/L	13	Standard
	Mo	98	6065.7	2.4	**2.0076**	0.060	3.0	ug/L	11	Standard
	Ag	107	921.4	1.6	**0.1122**	0.003	2.7	ug/L	68	Standard
	Cd	111	1933.3	0.9	**0.8101**	0.015	1.9	mg/L	2	Standard
	Cd	114	4671.7	0.8	**0.8037**	0.006	0.7	ug/L	12	Standard
>	**In**	115	664089.4	1.0				ug/L	587441	Standard
	Sn	118	708.3	7.1	**0.0125**	0.007	53.2	ug/L	497	Standard
	Sb	123	171.2	9.0	**0.0282**	0.003	10.1	ug/L	78	Standard
	Ba	135	217409.8	1.0	**93.9488**	0.914	1.0	ug/L	24	Standard
	Ce	140	744689.2	0.9				ug/L	25	Standard
>	**Tb**	159	1077211.2	1.7				ug/L	939701	Standard
	Ho	165	62662.7	1.1				ug/L	10	Standard
	Tl	203	2865.3	1.3	**0.3204**	0.004	1.2	ug/L	4	Standard
	Tl	205	2535.2	5.2	**0.3286**	0.016	4.9	ug/L	2	Standard
	Pb	206	40598.7	0.9	**6.9743**	0.127	1.8	ug/L	240	Standard
	Pb	207	29975.3	2.2	**5.7854**	0.186	3.2	ug/L	198	Standard
	Pb	208	132785.8	0.6	**6.4904**	0.091	1.4	ug/L	883	Standard
	U	238	27584.4	0.2	**3.7106**	0.059	1.6	ug/L	3	Standard
>	**Bi**	209	565317.9	1.5				ug/L	523984	Standard

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Na	23	1.7	173.2	**14.1527**	24.505	173.1	mg/L	0	Standard
Mg	24	243.3	11.7	**0.1691**	0.025	14.5	mg/L	37	Standard
K	39	461.7	5.5	**0.6478**	0.049	7.5	mg/L	38	Standard
Ca	43	205.0	4.9	**7.1444**	0.559	7.8	mg/L	10	Standard
Fe	54	23854.6	1.3	**14.9557**	0.059	0.4	mg/L	179	Standard
Fe	57	6316.3	1.9	**14.9472**	0.123	0.8	mg/L	335	Standard
> **Sc-1**	45	81773.4	1.2				mg/L	61029	Standard
Cl	35	26395.0	1.0				ug/L	20195	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	8435.7	8.5				ug/L	1547	Standard
P	31	20819.3	1.9				ug/L	15286	Standard
S	34	2495.2	1.6				ug/L	1572	Standard
Sr	88	186.7	12.1				ug/L	73	Standard
C	12	26.7	21.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	520.0	8.4				mg/L	3	Standard
Dy	164	85733.4	1.4				mg/L	6	Standard
Ho-1	165	62662.7	1.1				mg/L	10	Standard
Er	166	61347.3	2.7				mg/L	13	Standard
I	127	12962.2	2.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.376	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		115.175	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	113.048
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	107.888
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 19:51:49
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79632.1	2.5				ug/L	74699	Standard
	Be	9	53037.7	1.9	**56.5448**	1.909	3.4	ug/L	8	Standard
	Al	27	8288547.2	1.5	**52.9043**	0.899	1.7	ug/L	1493	Standard
	Sc	45	68251.7	0.4				ug/L	61029	Standard
	Ti	47	44871.7	1.2	**102.9405**	2.024	2.0	ug/L	35	Standard
	V	51	450952.2	1.7	**51.7787**	1.350	2.6	ug/L	1435	Standard
	Cr	52	441674.6	0.8	**50.8503**	0.824	1.6	ug/L	7635	Standard
	Cr	53	54163.4	3.4	**50.6767**	1.716	3.4	ug/L	363	Standard
	Mn	55	408648.7	3.2	**50.9466**	2.025	4.0	ug/L	747	Standard
	Co	59	404996.9	2.1	**53.3495**	1.595	3.0	ug/L	234	Standard
	Ni	60	109209.9	1.2	**50.6487**	1.081	2.1	ug/L	215	Standard
	Cu	65	108068.7	1.0	**50.4372**	0.990	2.0	ug/L	104	Standard
	Zn	66	63914.2	1.2	**50.4711**	0.538	1.1	ug/L	363	Standard
>	Ge	72	568913.3	1.0				ug/L	495142	Standard
	As	75	64596.5	1.7	**50.2573**	1.198	2.4	ug/L	-50	Standard
	Se	82	6434.6	2.8	**50.8949**	1.678	3.3	ug/L	14	Standard
	Se-1	77	4404.6	0.9	**51.8699**	0.916	1.8	ug/L	42	Standard
>	Ga	71	81.7	19.7				mg/L	42	Standard
	Rb	85	868.4	8.5				ug/L	17	Standard
	Y	89	484608.1	0.7				ug/L	417098	Standard
>	Rh	103	25.0	40.0				ug/L	13	Standard
	Mo	98	300990.3	2.1	**101.3882**	1.976	1.9	ug/L	11	Standard
	Ag	107	359716.1	0.6	**49.5455**	0.289	0.6	ug/L	68	Standard
	Cd	111	115140.5	0.5	**49.4382**	0.205	0.4	mg/L	2	Standard
	Cd	114	277323.3	2.2	**48.5511**	1.074	2.2	ug/L	12	Standard
>	In	115	654244.8	0.1				ug/L	587441	Standard
	Sn	118	326410.3	0.9	**50.0768**	0.438	0.9	ug/L	497	Standard
	Sb	123	257734.5	0.6	**49.5626**	0.244	0.5	ug/L	78	Standard
	Ba	135	107937.1	0.2	**47.3350**	0.075	0.2	ug/L	24	Standard
	Ce	140	156.7	33.8				ug/L	25	Standard
>	Tb	159	993573.1	1.0				ug/L	939701	Standard
	Ho	165	18.3	41.7				ug/L	10	Standard
	Tl	203	442343.3	0.6	**51.3703**	0.497	1.0	ug/L	4	Standard
	Tl	205	397679.6	3.2	**53.2177**	1.929	3.6	ug/L	2	Standard
	Pb	206	282572.7	0.8	**50.5712**	0.781	1.5	ug/L	240	Standard
	Pb	207	252130.0	1.0	**50.7898**	0.969	1.9	ug/L	198	Standard
	Pb	208	1034503.8	1.3	**52.7468**	1.180	2.2	ug/L	883	Standard
	U	238	372072.1	1.5	**51.7486**	1.271	2.5	ug/L	3	Standard
>	Bi	209	547364.2	0.9				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.1101**	29.627	173.2	mg/L	0	Standard
Mg	24	4437.3	1.9	**5.0568**	0.105	2.1	mg/L	37	Standard
K	39	2166.8	4.9	**4.1677**	0.193	4.6	mg/L	38	Standard
Ca	43	105.0	40.7	**3.4097**	2.426	71.2	mg/L	10	Standard
Fe	54	6964.2	0.4	**5.1415**	0.037	0.7	mg/L	179	Standard
Fe	57	2053.5	5.5	**5.1659**	0.318	6.1	mg/L	335	Standard
> **Sc-1**	45	68251.7	0.4				mg/L	61029	Standard
Cl	35	27215.8	2.7				ug/L	20195	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	1920.1	6.9				ug/L	1547	Standard
P	31	20039.9	1.0				ug/L	15286	Standard
S	34	2546.9	7.4				ug/L	1572	Standard
Sr	88	71.7	29.0				ug/L	73	Standard
C	12	70.0	24.7				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	11.7	100.8				mg/L	6	Standard
Ho-1	165	18.3	41.7				mg/L	10	Standard
Er	166	33.3	34.6				mg/L	13	Standard
I	127	1696.8	22.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	113.090		
Al	27	105.809		
Sc	45			
Ti	47	102.941		
V	51	103.557		
Cr	52	101.701		
Cr	53			
Mn	55	101.893		
Co	59	106.699		
Ni	60	101.297		
Cu	65	100.874		
Zn	66	100.942		
> Ge	72		114.899	
As	75	100.515		
Se	82	101.790		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.388		
Ag	107	99.091		
Cd	111	98.876		
Cd	114			
In	115		111.372	
Sn	118	100.154		
Sb	123	99.125		
Ba	135	94.670		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.741		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.494		
U	238	103.497		
Bi	209		104.462	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 19:55:00
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78377.2	0.9				ug/L	74699	Standard
	Be	9	16.7	17.3	**0.0256**	0.003	11.6	ug/L	8	Standard
	Al	27	3955.5	8.5	**0.0123**	0.002	16.7	ug/L	1493	Standard
	Sc	45	70123.6	2.1				ug/L	61029	Standard
	Ti	47	44.3	19.2	**-0.0067**	0.022	331.3	ug/L	35	Standard
	V	51	1494.9	5.1	**-0.0231**	0.005	19.5	ug/L	1435	Standard
	Cr	52	7869.7	1.7	**-0.0976**	0.038	39.0	ug/L	7635	Standard
	Cr	53	438.3	4.0	**0.0839**	0.027	31.8	ug/L	363	Standard
	Mn	55	1323.4	11.3	**0.0175**	0.017	96.4	ug/L	747	Standard
	Co	59	292.0	15.1	**0.0012**	0.005	416.2	ug/L	234	Standard
	Ni	60	231.7	5.0	**-0.0160**	0.006	40.4	ug/L	215	Standard
	Cu	65	142.7	7.1	**-0.0369**	0.003	9.0	ug/L	104	Standard
	Zn	66	477.7	7.4	**-0.0736**	0.020	26.8	ug/L	363	Standard
>	**Ge**	72	568079.4	2.5				ug/L	495142	Standard
	As	75	-36.3	34.6	**0.0313**	0.010	31.8	ug/L	-50	Standard
	Se	82	17.1	26.2	**-0.0026**	0.033	1282.0	ug/L	14	Standard
	Se-1	77	54.3	9.3	**0.0268**	0.068	253.5	ug/L	42	Standard
>	**Ga**	71	40.0	12.5				mg/L	42	Standard
	Rb	85	38.3	19.9				ug/L	17	Standard
	Y	89	483139.1	0.9				ug/L	417098	Standard
>	**Rh**	103	11.7	99.0				ug/L	13	Standard
	Mo	98	291.7	36.0	**0.0908**	0.037	40.3	ug/L	11	Standard
	Ag	107	161.3	21.3	**0.0089**	0.005	57.1	ug/L	68	Standard
	Cd	111	21.8	28.2	**0.0012**	0.002	201.3	mg/L	2	Standard
	Cd	114	48.0	10.4	**0.0061**	0.001	15.7	ug/L	12	Standard
>	**In**	115	669206.2	1.8				ug/L	587441	Standard
	Sn	118	881.7	18.2	**0.0375**	0.022	58.1	ug/L	497	Standard
	Sb	123	447.3	19.7	**0.0797**	0.015	18.9	ug/L	78	Standard
	Ba	135	111.0	14.0	**0.0316**	0.007	21.6	ug/L	24	Standard
	Ce	140	185.0	42.5				ug/L	25	Standard
>	**Tb**	159	1027080.2	0.9				ug/L	939701	Standard
	Ho	165	28.3	10.2				ug/L	10	Standard
	Tl	203	102.0	27.3	**0.0095**	0.003	32.1	ug/L	4	Standard
	Tl	205	76.7	13.6	**0.0100**	0.001	13.1	ug/L	2	Standard
	Pb	206	326.3	10.0	**-0.0155**	0.005	35.3	ug/L	240	Standard
	Pb	207	292.3	4.6	**-0.0139**	0.002	17.4	ug/L	198	Standard
	Pb	208	1226.7	4.7	**-0.0145**	0.003	18.0	ug/L	883	Standard
	U	238	78.7	31.6	**0.0060**	0.003	54.4	ug/L	3	Standard
>	**Bi**	209	574845.6	0.5				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	46.7	34.4	**-0.0124**	0.019	155.4	mg/L	37	Standard
K	39	46.7	44.6	**-0.0238**	0.042	178.2	mg/L	38	Standard
Ca	43	26.7	57.3	**-1.0457**	0.868	83.0	mg/L	10	Standard
Fe	54	161.1	25.9	**-0.0190**	0.033	173.6	mg/L	179	Standard
Fe	57	251.7	19.3	**-0.3314**	0.129	38.8	mg/L	335	Standard
Sc-1	45	70123.6	2.1				mg/L	61029	Standard
Cl	35	27868.9	0.6				ug/L	20195	Standard
Kr	83	0.7	86.6				ug/L	4	Standard
Br	81	2040.1	1.8				ug/L	1547	Standard
P	31	20417.1	4.9				ug/L	15286	Standard
S	34	2425.2	3.5				ug/L	1572	Standard
Sr	88	45.0	40.1				ug/L	73	Standard
C	12	50.0	52.9				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	11.9	129.9				mg/L	6	Standard
Ho-1	165	28.3	10.2				mg/L	10	Standard
Er	166	30.0	57.7				mg/L	13	Standard
I	127	1460.1	42.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		114.731	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.919
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.707
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Wednesday, June 29, 2016 19:57:17
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Method 6020 - Summary Report

Sample ID: L1606138406
Sample Date/Time: Wednesday, June 29, 2016 19:58:13
Number of Replicates: 3
Autosampler Position: 406
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77039.0	4.7				ug/L	74699	Standard
	Be	9	588.3	14.0	**0.6548**	0.074	11.3	ug/L	8	Standard
	Al	27	832772.7	0.7	**5.4883**	0.227	4.1	ug/L	1493	Standard
	Sc	45	75047.3	4.1				ug/L	61029	Standard
	Ti	47	6368.7	0.7	**14.6522**	0.311	2.1	ug/L	35	Standard
	V	51	122665.5	0.9	**14.0720**	0.287	2.0	ug/L	1435	Standard
	Cr	52	293324.5	0.5	**33.7422**	0.348	1.0	ug/L	7635	Standard
	Cr	53	35827.3	1.9	**33.7165**	0.271	0.8	ug/L	363	Standard
	Mn	55	1790039.2	2.5	**225.6481**	2.955	1.3	ug/L	747	Standard
	Co	59	59513.4	2.6	**7.8774**	0.097	1.2	ug/L	234	Standard
	Ni	60	162230.6	1.1	**75.9835**	0.734	1.0	ug/L	215	Standard
	Cu	65	58756.0	0.7	**27.6257**	0.286	1.0	ug/L	104	Standard
	Zn	66	213240.6	1.5	**171.0057**	1.221	0.7	ug/L	363	Standard
>	**Ge**	72	563753.3	1.5				ug/L	495142	Standard
	As	75	6354.9	1.3	**5.0439**	0.138	2.7	ug/L	-50	Standard
	Se	82	268.5	3.3	**2.0114**	0.102	5.1	ug/L	14	Standard
	Se-1	77	256.0	4.1	**2.4577**	0.168	6.8	ug/L	42	Standard
>	**Ga**	71	4010.5	2.8				mg/L	42	Standard
	Rb	85	39651.9	3.3				ug/L	17	Standard
	Y	89	1622063.0	2.1				ug/L	417098	Standard
>	**Rh**	103	33.3	8.7				ug/L	13	Standard
	Mo	98	4372.5	0.7	**1.4952**	0.034	2.3	ug/L	11	Standard
	Ag	107	608.3	2.2	**0.0725**	0.003	3.7	ug/L	68	Standard
	Cd	111	1369.4	3.4	**0.5916**	0.033	5.6	mg/L	2	Standard
	Cd	114	3220.4	7.1	**0.5731**	0.054	9.4	ug/L	12	Standard
>	**In**	115	642314.3	2.8				ug/L	587441	Standard
	Sn	118	866.7	3.3	**0.0411**	0.007	16.9	ug/L	497	Standard
	Sb	123	475.1	9.4	**0.0890**	0.010	11.7	ug/L	78	Standard
	Ba	135	210364.7	1.0	**94.0146**	1.722	1.8	ug/L	24	Standard
	Ce	140	620778.1	1.3				ug/L	25	Standard
>	**Tb**	159	1035282.0	2.1				ug/L	939701	Standard
	Ho	165	58499.4	0.8				ug/L	10	Standard
	Tl	203	1670.8	3.4	**0.1930**	0.007	3.5	ug/L	4	Standard
	Tl	205	1583.4	5.7	**0.2129**	0.013	6.3	ug/L	2	Standard
	Pb	206	23886.1	1.1	**4.2252**	0.039	0.9	ug/L	240	Standard
	Pb	207	17508.1	0.9	**3.4746**	0.041	1.2	ug/L	198	Standard
	Pb	208	79776.0	1.1	**4.0140**	0.064	1.6	ug/L	883	Standard
	U	238	22400.5	0.6	**3.1225**	0.026	0.8	ug/L	3	Standard
>	**Bi**	209	545342.1	0.8				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	190.0	5.3	**0.1344**	0.009	6.3	mg/L	37	Standard
K	39	241.7	12.5	**0.3203**	0.051	16.0	mg/L	38	Standard
Ca	43	168.3	3.4	**6.1267**	0.214	3.5	mg/L	10	Standard
Fe	54	12517.1	3.0	**8.4992**	0.364	4.3	mg/L	179	Standard
Fe	57	3428.7	4.4	**8.4118**	0.531	6.3	mg/L	335	Standard
> **Sc-1**	45	75047.3	4.1				mg/L	61029	Standard
Cl	35	26434.4	2.8				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	2270.2	3.9				ug/L	1547	Standard
P	31	19440.8	0.5				ug/L	15286	Standard
S	34	2256.8	6.7				ug/L	1572	Standard
Sr	88	170.0	33.4				ug/L	73	Standard
C	12	76.7	54.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	300.0	18.6				mg/L	3	Standard
Dy	164	81135.2	0.1				mg/L	6	Standard
Ho-1	165	58499.4	0.8				mg/L	10	Standard
Er	166	56983.6	0.5				mg/L	13	Standard
I	127	5462.7	4.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.133	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		113.857	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	109.341
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	104.076
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1606138408
Sample Date/Time: Wednesday, June 29, 2016 20:01:24
Number of Replicates: 3
Autosampler Position: 407
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79667.3	1.9				ug/L	74699	Standard
	Be	9	540.0	10.4	**0.5836**	0.070	11.9	ug/L	8	Standard
	Al	27	892686.6	1.0	**5.6842**	0.164	2.9	ug/L	1493	Standard
	Sc	45	78111.0	3.7				ug/L	61029	Standard
	Ti	47	6171.3	0.9	**13.8487**	0.141	1.0	ug/L	35	Standard
	V	51	131186.8	0.8	**14.6946**	0.149	1.0	ug/L	1435	Standard
	Cr	52	291322.4	2.4	**32.6724**	0.743	2.3	ug/L	7635	Standard
	Cr	53	35120.7	4.3	**32.2467**	1.471	4.6	ug/L	363	Standard
	Mn	55	2233691.8	2.2	**274.8758**	6.127	2.2	ug/L	747	Standard
	Co	59	65245.2	1.7	**8.4325**	0.147	1.7	ug/L	234	Standard
	Ni	60	190260.1	2.2	**86.9887**	2.023	2.3	ug/L	215	Standard
	Cu	65	66483.6	1.3	**30.5171**	0.399	1.3	ug/L	104	Standard
	Zn	66	187493.0	1.2	**146.6893**	2.307	1.6	ug/L	363	Standard
>	**Ge**	72	577612.7	0.6				ug/L	495142	Standard
	As	75	6445.8	1.9	**4.9929**	0.116	2.3	ug/L	-50	Standard
	Se	82	222.3	2.5	**1.5982**	0.037	2.3	ug/L	14	Standard
	Se-1	77	243.0	1.1	**2.2298**	0.039	1.8	ug/L	42	Standard
>	**Ga**	71	4360.6	1.0				mg/L	42	Standard
	Rb	85	41170.9	1.0				ug/L	17	Standard
	Y	89	1636669.5	0.9				ug/L	417098	Standard
>	**Rh**	103	33.3	22.9				ug/L	13	Standard
	Mo	98	4750.5	1.5	**1.5922**	0.009	0.6	ug/L	11	Standard
	Ag	107	651.7	5.1	**0.0767**	0.003	4.5	ug/L	68	Standard
	Cd	111	1476.5	1.8	**0.6252**	0.009	1.4	mg/L	2	Standard
	Cd	114	3537.9	6.1	**0.6161**	0.029	4.7	ug/L	12	Standard
>	**In**	115	655238.7	1.5				ug/L	587441	Standard
	Sn	118	965.0	3.4	**0.0534**	0.004	7.7	ug/L	497	Standard
	Sb	123	268.7	11.3	**0.0474**	0.005	10.8	ug/L	78	Standard
	Ba	135	196413.8	1.6	**86.0176**	0.137	0.2	ug/L	24	Standard
	Ce	140	596487.3	1.9				ug/L	25	Standard
>	**Tb**	159	1073225.5	1.0				ug/L	939701	Standard
	Ho	165	61178.3	1.7				ug/L	10	Standard
	Tl	203	2456.5	1.8	**0.2718**	0.001	0.3	ug/L	4	Standard
	Tl	205	2150.2	4.8	**0.2763**	0.017	6.1	ug/L	2	Standard
	Pb	206	24200.3	1.9	**4.0880**	0.010	0.3	ug/L	240	Standard
	Pb	207	17656.3	0.7	**3.3464**	0.078	2.3	ug/L	198	Standard
	Pb	208	79187.0	3.1	**3.8025**	0.046	1.2	ug/L	883	Standard
	U	238	22940.4	1.4	**3.0557**	0.038	1.2	ug/L	3	Standard
>	**Bi**	209	570736.3	2.0				ug/L	523984	Standard

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Na	23	3.3	173.2	**28.7877**	49.853	173.2	mg/L	0	Standard
Mg	24	161.7	15.3	**0.0975**	0.019	19.1	mg/L	37	Standard
K	39	273.3	12.8	**0.3583**	0.064	17.7	mg/L	38	Standard
Ca	43	191.7	9.9	**6.9329**	0.825	11.9	mg/L	10	Standard
Fe	54	12889.7	4.6	**8.4015**	0.298	3.5	mg/L	179	Standard
Fe	57	3420.4	5.7	**8.0292**	0.829	10.3	mg/L	335	Standard
> **Sc-1**	45	78111.0	3.7				mg/L	61029	Standard
Cl	35	25108.8	1.1				ug/L	20195	Standard
Kr	83	1.0	173.2				ug/L	4	Standard
Br	81	1990.1	4.1				ug/L	1547	Standard
P	31	18960.2	2.1				ug/L	15286	Standard
S	34	2216.8	7.1				ug/L	1572	Standard
Sr	88	153.3	28.5				ug/L	73	Standard
C	12	110.0	9.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	313.3	12.9				mg/L	3	Standard
Dy	164	83986.8	2.5				mg/L	6	Standard
Ho-1	165	61178.3	1.7				mg/L	10	Standard
Er	166	57776.6	0.9				mg/L	13	Standard
I	127	4875.8	1.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.651	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		116.656	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	111.541
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	108.922
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1606138410
Sample Date/Time: Wednesday, June 29, 2016 20:04:36
Number of Replicates: 3
Autosampler Position: 408
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82222.6	2.1				ug/L	74699	Standard
	Be	9	466.7	0.6	**0.4893**	0.010	2.0	ug/L	8	Standard
	Al	27	798979.6	1.9	**4.9264**	0.080	1.6	ug/L	1493	Standard
	Sc	45	79640.5	1.7				ug/L	61029	Standard
	Ti	47	5792.4	2.5	**13.1770**	0.593	4.5	ug/L	35	Standard
	V	51	95139.7	1.4	**10.7518**	0.246	2.3	ug/L	1435	Standard
	Cr	52	279542.5	2.0	**31.7533**	0.664	2.1	ug/L	7635	Standard
	Cr	53	34038.2	1.3	**31.6794**	0.880	2.8	ug/L	363	Standard
	Mn	55	1053790.0	0.3	**131.3975**	3.080	2.3	ug/L	747	Standard
	Co	59	35027.1	0.6	**4.5723**	0.080	1.8	ug/L	234	Standard
	Ni	60	156240.8	1.2	**72.3985**	1.638	2.3	ug/L	215	Standard
	Cu	65	48550.0	0.3	**22.5657**	0.405	1.8	ug/L	104	Standard
	Zn	66	257712.2	0.3	**204.5897**	4.503	2.2	ug/L	363	Standard
>	**Ge**	72	569889.2	2.0				ug/L	495142	Standard
	As	75	6132.6	2.6	**4.8186**	0.190	4.0	ug/L	-50	Standard
	Se	82	361.1	9.2	**2.7244**	0.314	11.5	ug/L	14	Standard
	Se-1	77	331.7	7.4	**3.3212**	0.233	7.0	ug/L	42	Standard
>	**Ga**	71	4152.2	2.1				mg/L	42	Standard
	Rb	85	52623.0	3.5				ug/L	17	Standard
	Y	89	1425089.1	0.3				ug/L	417098	Standard
>	**Rh**	103	33.3	8.7				ug/L	13	Standard
	Mo	98	3927.9	0.3	**1.2648**	0.018	1.4	ug/L	11	Standard
	Ag	107	467.0	2.9	**0.0489**	0.003	5.2	ug/L	68	Standard
	Cd	111	1169.0	3.4	**0.4740**	0.011	2.3	mg/L	2	Standard
	Cd	114	2891.7	1.0	**0.4840**	0.007	1.5	ug/L	12	Standard
>	**In**	115	681463.1	1.2				ug/L	587441	Standard
	Sn	118	755.0	5.0	**0.0168**	0.007	41.1	ug/L	497	Standard
	Sb	123	219.3	13.0	**0.0363**	0.005	13.2	ug/L	78	Standard
	Ba	135	73803.3	1.7	**31.0670**	0.270	0.9	ug/L	24	Standard
	Ce	140	554709.1	1.1				ug/L	25	Standard
>	**Tb**	159	1094015.2	1.4				ug/L	939701	Standard
	Ho	165	50373.6	1.6				ug/L	10	Standard
	Tl	203	1120.7	1.3	**0.1214**	0.002	2.0	ug/L	4	Standard
	Tl	205	941.7	7.2	**0.1194**	0.008	6.7	ug/L	2	Standard
	Pb	206	24028.0	1.2	**4.0020**	0.045	1.1	ug/L	240	Standard
	Pb	207	17504.4	0.3	**3.2701**	0.054	1.6	ug/L	198	Standard
	Pb	208	78967.6	0.8	**3.7402**	0.091	2.4	ug/L	883	Standard
	U	238	25248.7	0.7	**3.3178**	0.077	2.3	ug/L	3	Standard
>	**Bi**	209	578682.9	1.6				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	188.3	33.0	**0.1211**	0.061	50.1	mg/L	37	Standard
K	39	248.3	3.1	**0.3067**	0.020	6.4	mg/L	38	Standard
Ca	43	173.3	7.3	**5.8747**	0.743	12.6	mg/L	10	Standard
Fe	54	14056.9	1.9	**8.9942**	0.034	0.4	mg/L	179	Standard
Fe	57	3822.2	6.9	**8.8892**	0.835	9.4	mg/L	335	Standard
Sc-1	45	79640.5	1.7				mg/L	61029	Standard
Cl	35	25424.6	1.4				ug/L	20195	Standard
Kr	83	1.3	114.6				ug/L	4	Standard
Br	81	2053.5	6.1				ug/L	1547	Standard
P	31	20016.5	1.3				ug/L	15286	Standard
S	34	2301.8	5.1				ug/L	1572	Standard
Sr	88	141.7	32.0				ug/L	73	Standard
C	12	56.7	36.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	133.3	11.5				mg/L	3	Standard
Dy	164	72545.2	2.7				mg/L	6	Standard
Ho-1	165	50373.6	1.6				mg/L	10	Standard
Er	166	47160.0	0.9				mg/L	13	Standard
I	127	6799.9	2.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		110.072	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		115.096	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		116.005
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.439
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1606138410
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Method 6020 - Summary Report

Sample ID: L1606138412
Sample Date/Time: Wednesday, June 29, 2016 20:07:47
Number of Replicates: 3
Autosampler Position: 409
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81391.5	3.4				ug/L	74699	Standard
	Be	9	565.0	6.9	**0.5962**	0.020	3.4	ug/L	8	Standard
	Al	27	802320.4	2.6	**4.9984**	0.082	1.6	ug/L	1493	Standard
	Sc	45	77871.4	3.1				ug/L	61029	Standard
	Ti	47	8431.3	2.1	**19.3525**	0.252	1.3	ug/L	35	Standard
	V	51	136034.9	0.6	**15.5641**	0.178	1.1	ug/L	1435	Standard
	Cr	52	292890.6	0.7	**33.5584**	0.660	2.0	ug/L	7635	Standard
	Cr	53	35682.0	1.9	**33.4491**	0.599	1.8	ug/L	363	Standard
	Mn	55	2260782.0	0.5	**283.9966**	5.862	2.1	ug/L	747	Standard
	Co	59	82153.8	0.1	**10.8487**	0.184	1.7	ug/L	234	Standard
	Ni	60	172794.1	1.0	**80.6313**	1.536	1.9	ug/L	215	Standard
	Cu	65	63565.7	0.4	**29.7801**	0.432	1.5	ug/L	104	Standard
	Zn	66	251019.4	0.8	**200.6145**	2.591	1.3	ug/L	363	Standard
>	**Ge**	72	565970.9	1.7				ug/L	495142	Standard
	As	75	7636.9	2.3	**6.0250**	0.142	2.4	ug/L	-50	Standard
	Se	82	426.3	0.8	**3.2611**	0.084	2.6	ug/L	14	Standard
	Se-1	77	381.7	1.3	**3.9506**	0.115	2.9	ug/L	42	Standard
>	**Ga**	71	4992.5	2.6				mg/L	42	Standard
	Rb	85	46121.8	0.5				ug/L	17	Standard
	Y	89	1754842.6	1.7				ug/L	417098	Standard
>	**Rh**	103	43.3	35.3				ug/L	13	Standard
	Mo	98	5382.6	1.1	**1.7465**	0.044	2.5	ug/L	11	Standard
	Ag	107	637.3	4.9	**0.0719**	0.004	5.2	ug/L	68	Standard
	Cd	111	1430.5	6.2	**0.5853**	0.028	4.9	mg/L	2	Standard
	Cd	114	3407.8	7.3	**0.5746**	0.047	8.2	ug/L	12	Standard
>	**In**	115	677210.7	1.5				ug/L	587441	Standard
	Sn	118	780.0	4.5	**0.0212**	0.006	30.1	ug/L	497	Standard
	Sb	123	243.4	9.9	**0.0411**	0.005	12.6	ug/L	78	Standard
	Ba	135	199262.8	0.6	**84.4450**	1.189	1.4	ug/L	24	Standard
	Ce	140	678125.1	0.7				ug/L	25	Standard
>	**Tb**	159	1071624.9	1.1				ug/L	939701	Standard
	Ho	165	67051.4	0.5				ug/L	10	Standard
	Tl	203	1859.8	4.4	**0.2096**	0.007	3.5	ug/L	4	Standard
	Tl	205	1828.4	5.2	**0.2396**	0.011	4.7	ug/L	2	Standard
	Pb	206	33182.6	0.6	**5.7494**	0.057	1.0	ug/L	240	Standard
	Pb	207	24419.7	0.3	**4.7511**	0.035	0.7	ug/L	198	Standard
	Pb	208	111320.6	0.3	**5.4889**	0.050	0.9	ug/L	883	Standard
	U	238	25349.9	1.3	**3.4462**	0.014	0.4	ug/L	3	Standard
>	**Bi**	209	559224.1	1.0				ug/L	523984	Standard

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Na	23	3.3	86.6	**30.2574**	26.235	86.7	mg/L	0	Standard
Mg	24	168.3	9.1	**0.1052**	0.014	12.9	mg/L	37	Standard
K	39	280.0	6.4	**0.3709**	0.027	7.3	mg/L	38	Standard
Ca	43	176.7	27.2	**6.2736**	2.632	42.0	mg/L	10	Standard
Fe	54	15625.1	2.7	**10.2448**	0.046	0.4	mg/L	179	Standard
Fe	57	4357.3	3.7	**10.5343**	0.341	3.2	mg/L	335	Standard
> **Sc-1**	45	77871.4	3.1				mg/L	61029	Standard
Cl	35	26050.4	2.2				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	2310.2	5.7				ug/L	1547	Standard
P	31	19966.5	2.1				ug/L	15286	Standard
S	34	2301.8	1.2				ug/L	1572	Standard
Sr	88	181.7	8.4				ug/L	73	Standard
C	12	60.0	66.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	466.7	15.8				mg/L	3	Standard
Dy	164	94635.2	0.7				mg/L	6	Standard
Ho-1	165	67051.4	0.5				mg/L	10	Standard
Er	166	62943.8	1.5				mg/L	13	Standard
I	127	6689.8	6.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.960	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.305	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	115.281
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	106.725
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 20:11:01
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	78720.7	2.9				ug/L	74699	Standard
	Be	9	53925.8	1.9	**58.1477**	1.206	2.1	ug/L	8	Standard
	Al	27	8443805.5	1.2	**54.5410**	1.847	3.4	ug/L	1493	Standard
	Sc	45	68074.4	3.5				ug/L	61029	Standard
	Ti	47	45146.2	1.1	**105.2966**	1.372	1.3	ug/L	35	Standard
	V	51	452407.6	0.9	**52.8112**	0.533	1.0	ug/L	1435	Standard
	Cr	52	439865.6	0.2	**51.4989**	0.494	1.0	ug/L	7635	Standard
	Cr	53	55131.8	1.5	**52.4610**	1.191	2.3	ug/L	363	Standard
	Mn	55	411766.6	1.7	**52.1886**	1.083	2.1	ug/L	747	Standard
	Co	59	411137.6	1.8	**55.0576**	1.090	2.0	ug/L	234	Standard
	Ni	60	108563.6	1.0	**51.1869**	0.633	1.2	ug/L	215	Standard
	Cu	65	108514.2	0.8	**51.4879**	0.273	0.5	ug/L	104	Standard
	Zn	66	63813.1	1.5	**51.2390**	0.656	1.3	ug/L	363	Standard
>	Ge	72	559563.9	0.9				ug/L	495142	Standard
	As	75	65025.3	0.7	**51.4299**	0.351	0.7	ug/L	-50	Standard
	Se	82	6607.2	0.8	**53.1327**	0.267	0.5	ug/L	14	Standard
	Se-1	77	4509.3	0.5	**54.0117**	0.383	0.7	ug/L	42	Standard
>	Ga	71	68.3	11.2				mg/L	42	Standard
	Rb	85	971.7	11.9				ug/L	17	Standard
	Y	89	484276.8	2.3				ug/L	417098	Standard
>	Rh	103	33.3	52.7				ug/L	13	Standard
	Mo	98	305352.5	1.7	**102.8803**	2.601	2.5	ug/L	11	Standard
	Ag	107	366186.0	1.2	**50.4411**	0.533	1.1	ug/L	68	Standard
	Cd	111	118185.8	1.5	**50.7502**	0.681	1.3	mg/L	2	Standard
	Cd	114	288421.2	1.0	**50.5001**	0.711	1.4	ug/L	12	Standard
>	In	115	654225.0	1.4				ug/L	587441	Standard
	Sn	118	325668.1	1.2	**49.9654**	0.174	0.3	ug/L	497	Standard
	Sb	123	260726.4	2.1	**50.1401**	0.797	1.6	ug/L	78	Standard
	Ba	135	109583.9	1.3	**48.0616**	0.591	1.2	ug/L	24	Standard
	Ce	140	191.7	20.9				ug/L	25	Standard
>	Tb	159	983539.2	1.4				ug/L	939701	Standard
	Ho	165	21.7	13.3				ug/L	10	Standard
	Tl	203	449254.6	0.7	**52.6820**	0.493	0.9	ug/L	4	Standard
	Tl	205	410287.0	1.8	**55.4353**	1.032	1.9	ug/L	2	Standard
	Pb	206	287176.7	1.5	**51.8952**	0.724	1.4	ug/L	240	Standard
	Pb	207	254226.6	1.1	**51.7082**	0.492	1.0	ug/L	198	Standard
	Pb	208	1062593.6	0.7	**54.7051**	0.438	0.8	ug/L	883	Standard
	U	238	383746.1	0.8	**53.8863**	0.314	0.6	ug/L	3	Standard
>	Bi	209	542059.3	0.3				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.9421**	31.068	173.2	mg/L	0	Standard
Mg	24	4572.4	3.8	**5.2291**	0.219	4.2	mg/L	37	Standard
K	39	2235.2	5.1	**4.3138**	0.121	2.8	mg/L	38	Standard
Ca	43	108.3	35.8	**3.6601**	2.380	65.0	mg/L	10	Standard
Fe	54	7126.2	2.9	**5.2851**	0.313	5.9	mg/L	179	Standard
Fe	57	2081.8	4.0	**5.2741**	0.321	6.1	mg/L	335	Standard
Sc-1	45	68074.4	3.5				mg/L	61029	Standard
Cl	35	27726.7	0.9				ug/L	20195	Standard
Kr	83	0.7	86.6				ug/L	4	Standard
Br	81	1910.1	6.0				ug/L	1547	Standard
P	31	20502.2	2.0				ug/L	15286	Standard
S	34	2426.9	4.0				ug/L	1572	Standard
Sr	88	50.0	26.5				ug/L	73	Standard
C	12	73.3	20.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	15.9	37.3				mg/L	6	Standard
Ho-1	165	21.7	13.3				mg/L	10	Standard
Er	166	16.7	34.6				mg/L	13	Standard
I	127	1525.1	31.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	116.295		
Al	27	109.082		
Sc	45			
Ti	47	105.297		
V	51	105.622		
Cr	52	102.998		
Cr	53			
Mn	55	104.377		
Co	59	110.115		
Ni	60	102.374		
Cu	65	102.976		
Zn	66	102.478		
Ge	72		113.011	
As	75	102.860		
Se	82	106.265		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	102.880		
Ag	107	100.882		
Cd	111	101.500		
Cd	114			
In	115		111.369	
Sn	118	99.931		
Sb	123	100.280		
Ba	135	96.123		
Ce	140			
Tb	159			
Ho	165			
Tl	203	105.364		
Tl	205			
Pb	206			
Pb	207			
Pb	208	109.410		
U	238	107.773		
Bi	209		103.450	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Co	59	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 20:14:12
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79194.8	0.3				ug/L	74699	Standard
	Be	9	31.7	9.1	**0.0415**	0.003	7.4	ug/L	8	Standard
	Al	27	5331.0	39.7	**0.0208**	0.013	64.7	ug/L	1493	Standard
	Sc	45	70443.5	2.7				ug/L	61029	Standard
	Ti	47	45.0	15.6	**-0.0077**	0.016	206.1	ug/L	35	Standard
	V	51	1613.4	5.4	**-0.0133**	0.013	95.3	ug/L	1435	Standard
	Cr	52	7981.4	3.6	**-0.1047**	0.047	45.2	ug/L	7635	Standard
	Cr	53	418.3	25.3	**0.0570**	0.103	180.4	ug/L	363	Standard
	Mn	55	1741.1	30.3	**0.0658**	0.068	103.0	ug/L	747	Standard
	Co	59	378.7	17.0	**0.0117**	0.009	74.2	ug/L	234	Standard
	Ni	60	306.7	29.3	**0.0162**	0.043	265.9	ug/L	215	Standard
	Cu	65	193.0	22.7	**-0.0150**	0.021	143.0	ug/L	104	Standard
	Zn	66	576.0	19.1	**-0.0039**	0.093	2387.7	ug/L	363	Standard
>	**Ge**	72	580508.2	1.5				ug/L	495142	Standard
	As	75	-17.3	276.0	**0.0468**	0.036	77.6	ug/L	-50	Standard
	Se	82	19.7	47.6	**0.0162**	0.076	468.0	ug/L	14	Standard
	Se-1	77	62.3	8.8	**0.1062**	0.073	68.4	ug/L	42	Standard
>	**Ga**	71	43.3	24.0				mg/L	42	Standard
	Rb	85	53.3	27.1				ug/L	17	Standard
	Y	89	466004.6	0.7				ug/L	417098	Standard
>	**Rh**	103	18.3	41.7				ug/L	13	Standard
	Mo	98	326.5	17.1	**0.1045**	0.019	18.6	ug/L	11	Standard
	Ag	107	195.7	20.5	**0.0141**	0.005	38.2	ug/L	68	Standard
	Cd	111	49.8	49.3	**0.0134**	0.010	76.8	mg/L	2	Standard
	Cd	114	97.6	30.0	**0.0150**	0.005	33.6	ug/L	12	Standard
>	**In**	115	653349.0	0.9				ug/L	587441	Standard
	Sn	118	958.4	16.5	**0.0527**	0.023	43.7	ug/L	497	Standard
	Sb	123	468.2	24.3	**0.0858**	0.021	24.7	ug/L	78	Standard
	Ba	135	169.0	53.9	**0.0580**	0.039	67.5	ug/L	24	Standard
	Ce	140	383.3	72.7				ug/L	25	Standard
>	**Tb**	159	1008003.3	2.5				ug/L	939701	Standard
	Ho	165	33.3	56.8				ug/L	10	Standard
	Tl	203	138.0	27.1	**0.0136**	0.004	29.9	ug/L	4	Standard
	Tl	205	128.3	47.6	**0.0167**	0.008	47.6	ug/L	2	Standard
	Pb	206	364.7	12.5	**-0.0084**	0.008	93.5	ug/L	240	Standard
	Pb	207	321.7	11.0	**-0.0076**	0.006	84.7	ug/L	198	Standard
	Pb	208	1298.7	10.5	**-0.0103**	0.007	67.0	ug/L	883	Standard
	U	238	121.3	35.3	**0.0118**	0.006	48.9	ug/L	3	Standard
>	**Bi**	209	569222.6	0.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	31.7	50.8	**-0.0295**	0.019	63.3	mg/L	37	Standard
K	39	58.3	13.1	**-0.0021**	0.017	817.3	mg/L	38	Standard
Ca	43	26.7	28.6	**-1.0586**	0.442	41.7	mg/L	10	Standard
Fe	54	154.2	11.8	**-0.0252**	0.011	43.9	mg/L	179	Standard
Fe	57	258.3	4.9	**-0.3125**	0.056	18.0	mg/L	335	Standard
Sc-1	45	70443.5	2.7				mg/L	61029	Standard
Cl	35	27476.9	1.3				ug/L	20195	Standard
Kr	83	1.3	86.6				ug/L	4	Standard
Br	81	1946.8	3.9				ug/L	1547	Standard
P	31	20592.3	4.9				ug/L	15286	Standard
S	34	2348.5	2.8				ug/L	1572	Standard
Sr	88	75.0	46.7				ug/L	73	Standard
C	12	43.3	13.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	74.1	39.2				mg/L	6	Standard
Ho-1	165	33.3	56.8				mg/L	10	Standard
Er	166	53.3	71.0				mg/L	13	Standard
I	127	1293.4	30.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		117.241	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.219
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.633
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW 43 WG573291-03
Sample Date/Time: Wednesday, June 29, 2016 20:17:26
Number of Replicates: 3
Autosampler Position: 410
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78266.6	1.0				ug/L	74699	Standard
	Be	9	21.7	58.1	**0.0312**	0.014	44.4	ug/L	8	Standard
	Al	27	32901.2	14.4	**0.2003**	0.031	15.3	ug/L	1493	Standard
	Sc	45	68990.1	1.1				ug/L	61029	Standard
	Ti	47	59.7	25.6	**0.0271**	0.036	131.8	ug/L	35	Standard
	V	51	1740.6	13.9	**0.0036**	0.029	816.2	ug/L	1435	Standard
	Cr	52	10743.1	2.3	**0.2282**	0.033	14.5	ug/L	7635	Standard
	Cr	53	856.7	10.0	**0.4710**	0.086	18.2	ug/L	363	Standard
	Mn	55	4965.9	44.9	**0.4694**	0.280	59.7	ug/L	747	Standard
	Co	59	438.7	27.8	**0.0202**	0.016	81.0	ug/L	234	Standard
	Ni	60	464.7	17.9	**0.0906**	0.040	44.1	ug/L	215	Standard
	Cu	65	288.0	10.4	**0.0300**	0.015	49.7	ug/L	104	Standard
	Zn	66	2615.6	1.4	**1.6135**	0.041	2.5	ug/L	363	Standard
>	**Ge**	72	573366.1	0.8				ug/L	495142	Standard
	As	75	-37.9	81.3	**0.0303**	0.024	78.8	ug/L	-50	Standard
	Se	82	11.3	32.8	**-0.0488**	0.029	60.5	ug/L	14	Standard
	Se-1	77	61.0	9.1	**0.0990**	0.067	67.3	ug/L	42	Standard
>	**Ga**	71	31.7	9.1				mg/L	42	Standard
	Rb	85	100.0	26.5				ug/L	17	Standard
	Y	89	479627.1	2.2				ug/L	417098	Standard
>	**Rh**	103	1.7	173.2				ug/L	13	Standard
	Mo	98	155.9	47.8	**0.0477**	0.025	52.9	ug/L	11	Standard
	Ag	107	191.7	76.1	**0.0140**	0.020	145.7	ug/L	68	Standard
	Cd	111	21.5	58.8	**0.0014**	0.005	377.2	mg/L	2	Standard
	Cd	114	53.4	80.4	**0.0074**	0.008	102.3	ug/L	12	Standard
>	**In**	115	641242.2	1.6				ug/L	587441	Standard
	Sn	118	930.0	4.7	**0.0512**	0.008	15.1	ug/L	497	Standard
	Sb	123	286.5	19.6	**0.0520**	0.011	21.3	ug/L	78	Standard
	Ba	135	402.7	93.5	**0.1636**	0.167	102.4	ug/L	24	Standard
	Ce	140	951.7	120.0				ug/L	25	Standard
>	**Tb**	159	992014.1	1.0				ug/L	939701	Standard
	Ho	165	68.3	105.1				ug/L	10	Standard
	Tl	203	138.0	108.8	**0.0140**	0.017	122.9	ug/L	4	Standard
	Tl	205	136.7	67.7	**0.0182**	0.012	67.1	ug/L	2	Standard
	Pb	206	481.7	43.4	**0.0137**	0.037	272.5	ug/L	240	Standard
	Pb	207	395.0	43.8	**0.0084**	0.035	416.2	ug/L	198	Standard
	Pb	208	1692.0	26.2	**0.0108**	0.023	209.9	ug/L	883	Standard
	U	238	120.3	76.5	**0.0121**	0.013	104.7	ug/L	3	Standard
>	**Bi**	209	557465.1	0.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	46.7	43.3	**-0.0120**	0.023	188.7	mg/L	37	Standard
K	39	41.7	73.3	**-0.0331**	0.059	178.0	mg/L	38	Standard
Ca	43	16.7	45.8	**-1.5897**	0.437	27.5	mg/L	10	Standard
Fe	54	190.8	15.9	**0.0047**	0.022	466.7	mg/L	179	Standard
Fe	57	281.7	18.5	**-0.2277**	0.154	67.5	mg/L	335	Standard
> **Sc-1**	45	68990.1	1.1				mg/L	61029	Standard
Cl	35	27241.8	2.0				ug/L	20195	Standard
Kr	83	3.3	34.6				ug/L	4	Standard
Br	81	1960.1	2.7				ug/L	1547	Standard
P	31	19042.0	2.0				ug/L	15286	Standard
S	34	2271.8	2.5				ug/L	1572	Standard
Sr	88	70.0	14.3				ug/L	73	Standard
C	12	93.3	12.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	57.4	72.5				mg/L	6	Standard
Ho-1	165	68.3	105.1				mg/L	10	Standard
Er	166	53.3	75.8				mg/L	13	Standard
I	127	1241.7	37.7				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		104.776	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		115.798	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.159
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.390
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 43 WG573291-04
Sample Date/Time: Wednesday, June 29, 2016 20:20:37
Number of Replicates: 3
Autosampler Position: 411
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79286.9	1.2				ug/L	74699	Standard
	Be	9	55518.2	1.7	**59.4178**	0.565	1.0	ug/L	8	Standard
	Al	27	18234.3	3.1	**0.1035**	0.005	4.4	ug/L	1493	Standard
	Sc	45	71925.5	3.7				ug/L	61029	Standard
	Ti	47	66.7	12.9	**0.0416**	0.023	54.2	ug/L	35	Standard
	V	51	464385.2	1.4	**52.3659**	1.151	2.2	ug/L	1435	Standard
	Cr	52	468709.1	0.6	**53.0500**	1.578	3.0	ug/L	7635	Standard
	Cr	53	57400.2	0.6	**52.7689**	1.471	2.8	ug/L	363	Standard
	Mn	55	425738.4	0.7	**52.1249**	1.035	2.0	ug/L	747	Standard
	Co	59	411335.9	1.2	**53.2163**	1.483	2.8	ug/L	234	Standard
	Ni	60	114540.7	1.0	**52.1842**	1.705	3.3	ug/L	215	Standard
	Cu	65	115424.0	0.4	**52.9151**	1.312	2.5	ug/L	104	Standard
	Zn	66	68318.0	0.2	**53.0163**	1.377	2.6	ug/L	363	Standard
>	Ge	72	579422.8	2.7				ug/L	495142	Standard
	As	75	63888.1	1.5	**48.8227**	1.412	2.9	ug/L	-50	Standard
	Se	82	6548.4	1.5	**50.8872**	2.152	4.2	ug/L	14	Standard
	Se-1	77	4570.0	2.1	**52.8570**	0.847	1.6	ug/L	42	Standard
>	Ga	71	68.3	27.7				mg/L	42	Standard
	Rb	85	96.7	7.9				ug/L	17	Standard
	Y	89	471340.1	1.5				ug/L	417098	Standard
>	Rh	103	33.3	52.7				ug/L	13	Standard
	Mo	98	1844.9	1.6	**0.6204**	0.021	3.4	ug/L	11	Standard
	Ag	107	386699.9	0.4	**53.6468**	1.108	2.1	ug/L	68	Standard
	Cd	111	120754.4	0.7	**52.2256**	1.320	2.5	mg/L	2	Standard
	Cd	114	290744.9	1.2	**51.2713**	1.454	2.8	ug/L	12	Standard
>	In	115	649724.4	1.8				ug/L	587441	Standard
	Sn	118	890.0	5.4	**0.0430**	0.007	15.1	ug/L	497	Standard
	Sb	123	259622.2	1.1	**50.2896**	1.419	2.8	ug/L	78	Standard
	Ba	135	113320.2	1.2	**50.0586**	1.415	2.8	ug/L	24	Standard
	Ce	140	216.7	24.0				ug/L	25	Standard
>	Tb	159	1024515.0	4.0				ug/L	939701	Standard
	Ho	165	13.3	57.3				ug/L	10	Standard
	Tl	203	467714.3	0.2	**50.8953**	1.428	2.8	ug/L	4	Standard
	Tl	205	419104.4	1.0	**52.5470**	1.541	2.9	ug/L	2	Standard
	Pb	206	302725.5	0.9	**50.7682**	1.716	3.4	ug/L	240	Standard
	Pb	207	257785.2	0.8	**48.6571**	1.672	3.4	ug/L	198	Standard
	Pb	208	1092150.5	0.9	**52.1642**	0.990	1.9	ug/L	883	Standard
	U	238	389261.3	0.3	**50.7252**	1.507	3.0	ug/L	3	Standard
>	Bi	209	584427.6	2.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	56.7	20.4	**-0.0027**	0.015	535.8	mg/L	37	Standard
K	39	35.0	42.9	**-0.0491**	0.026	52.4	mg/L	38	Standard
Ca	43	18.3	15.7	**-1.5405**	0.154	10.0	mg/L	10	Standard
Fe	54	173.6	39.1	**-0.0145**	0.044	301.9	mg/L	179	Standard
Fe	57	231.7	7.6	**-0.4064**	0.037	9.2	mg/L	335	Standard
> **Sc-1**	45	71925.5	3.7				mg/L	61029	Standard
Cl	35	25598.9	2.5				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	1866.8	9.1				ug/L	1547	Standard
P	31	19263.9	1.4				ug/L	15286	Standard
S	34	2041.8	5.6				ug/L	1572	Standard
Sr	88	55.0	27.3				ug/L	73	Standard
C	12	76.7	37.7				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	3	Standard
Dy	164	19.2	93.9				mg/L	6	Standard
Ho-1	165	13.3	57.3				mg/L	10	Standard
Er	166	16.7	124.9				mg/L	13	Standard
I	127	1405.1	22.0				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		106.142	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		117.021	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.602
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		111.535
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 43 WG573291-04
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Method 6020 - Summary Report

Sample ID: L1606097401 WG573291-01
Sample Date/Time: Wednesday, June 29, 2016 20:23:48
Number of Replicates: 3
Autosampler Position: 412
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81548.9	1.6				ug/L	74699	Standard
	Be	9	36.7	15.7	**0.0457**	0.006	12.1	ug/L	8	Standard
	Al	27	11596363.1	1.3	**72.2698**	0.564	0.8	ug/L	1493	Standard
	Sc	45	73884.7	1.3				ug/L	61029	Standard
	Ti	47	344.7	7.0	**0.7127**	0.059	8.2	ug/L	35	Standard
	V	51	2330.4	3.5	**0.0834**	0.015	17.8	ug/L	1435	Standard
	Cr	52	13306.8	2.8	**0.5995**	0.076	12.7	ug/L	7635	Standard
	Cr	53	1323.4	7.3	**0.9647**	0.110	11.4	ug/L	363	Standard
	Mn	55	1766896.9	0.7	**229.1909**	3.866	1.7	ug/L	747	Standard
	Co	59	11800.3	0.6	**1.5775**	0.021	1.4	ug/L	234	Standard
	Ni	60	3337.7	1.4	**1.4870**	0.026	1.7	ug/L	215	Standard
	Cu	65	729.0	2.5	**0.2502**	0.002	1.0	ug/L	104	Standard
	Zn	66	5843.1	1.1	**4.3791**	0.046	1.0	ug/L	363	Standard
>	**Ge**	72	548022.2	2.0				ug/L	495142	Standard
	As	75	368.2	8.1	**0.3569**	0.029	8.2	ug/L	-50	Standard
	Se	82	62.0	10.3	**0.3726**	0.060	16.1	ug/L	14	Standard
	Se-1	77	77.3	2.7	**0.3344**	0.023	6.7	ug/L	42	Standard
>	**Ga**	71	126.7	17.8				mg/L	42	Standard
	Rb	85	31524.4	1.4				ug/L	17	Standard
	Y	89	492847.4	3.2				ug/L	417098	Standard
>	**Rh**	103	60.0	14.4				ug/L	13	Standard
	Mo	98	169.7	8.5	**0.0488**	0.006	11.4	ug/L	11	Standard
	Ag	107	132.7	27.4	**0.0046**	0.005	112.7	ug/L	68	Standard
	Cd	111	39.0	30.5	**0.0081**	0.005	64.3	mg/L	2	Standard
	Cd	114	83.8	14.7	**0.0119**	0.002	19.5	ug/L	12	Standard
>	**In**	115	686408.4	2.0				ug/L	587441	Standard
	Sn	118	1350.1	6.2	**0.1033**	0.015	14.9	ug/L	497	Standard
	Sb	123	1853.5	25.3	**0.3348**	0.082	24.4	ug/L	78	Standard
	Ba	135	131659.9	0.9	**55.0560**	1.555	2.8	ug/L	24	Standard
	Ce	140	2260.2	0.8				ug/L	25	Standard
>	**Tb**	159	1046624.7	1.4				ug/L	939701	Standard
	Ho	165	75.0	29.1				ug/L	10	Standard
	Tl	203	216.3	9.4	**0.0226**	0.002	8.3	ug/L	4	Standard
	Tl	205	203.3	8.6	**0.0265**	0.002	7.2	ug/L	2	Standard
	Pb	206	535.3	4.4	**0.0217**	0.002	11.2	ug/L	240	Standard
	Pb	207	421.7	4.6	**0.0124**	0.003	25.0	ug/L	198	Standard
	Pb	208	1891.4	2.2	**0.0194**	0.001	4.1	ug/L	883	Standard
	U	238	92.7	15.8	**0.0080**	0.002	21.9	ug/L	3	Standard
>	**Bi**	209	565094.9	1.8				ug/L	523984	Standard

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Na	23	1.7	173.2	**16.0814**	27.845	173.2	mg/L	0	Standard
Mg	24	5874.5	4.9	**6.2016**	0.379	6.1	mg/L	37	Standard
K	39	696.7	5.3	**1.1574**	0.052	4.5	mg/L	38	Standard
Ca	43	108.3	19.2	**3.1206**	1.021	32.7	mg/L	10	Standard
Fe	54	752.2	10.4	**0.3885**	0.054	13.9	mg/L	179	Standard
Fe	57	410.0	11.6	**0.0774**	0.139	179.8	mg/L	335	Standard
Sc-1	45	73884.7	1.3				mg/L	61029	Standard
Cl	35	27603.8	2.8				ug/L	20195	Standard
Kr	83	3.0	66.7				ug/L	4	Standard
Br	81	11711.2	8.2				ug/L	1547	Standard
P	31	22032.7	3.4				ug/L	15286	Standard
S	34	2200.2	1.4				ug/L	1572	Standard
Sr	88	218.3	6.6				ug/L	73	Standard
C	12	103.3	43.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	96.2	10.7				mg/L	6	Standard
Ho-1	165	75.0	29.1				mg/L	10	Standard
Er	166	80.0	33.1				mg/L	13	Standard
I	127	173019.2	10.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		109.170	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		110.680	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		116.847
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.846
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606097401 WG573291-01
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Method 6020 - Summary Report

Sample ID: L1606097409S WG573291-05
Sample Date/Time: Wednesday, June 29, 2016 20:27:00
Number of Replicates: 3
Autosampler Position: 413
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77620.1	3.1				ug/L	74699	Standard
	Be	9	53947.6	2.9	**58.9852**	0.884	1.5	ug/L	8	Standard
	Al	27	10156417.9	2.3	**66.5068**	0.592	0.9	ug/L	1493	Standard
	Sc	45	69663.2	3.3				ug/L	61029	Standard
	Ti	47	217.3	7.1	**0.4124**	0.032	7.7	ug/L	35	Standard
	V	51	458159.6	2.1	**55.0030**	1.779	3.2	ug/L	1435	Standard
	Cr	52	452840.8	0.8	**54.5717**	1.179	2.2	ug/L	7635	Standard
	Cr	53	56488.5	2.6	**55.2901**	2.221	4.0	ug/L	363	Standard
	Mn	55	2082250.4	1.8	**271.9842**	8.205	3.0	ug/L	747	Standard
	Co	59	416796.8	1.5	**57.3937**	1.632	2.8	ug/L	234	Standard
	Ni	60	112326.5	0.8	**54.4621**	1.176	2.2	ug/L	215	Standard
	Cu	65	110417.6	0.6	**53.8701**	0.759	1.4	ug/L	104	Standard
	Zn	66	70959.5	1.2	**58.6468**	1.068	1.8	ug/L	363	Standard
>	Ge	72	544304.5	1.4				ug/L	495142	Standard
	As	75	66583.4	2.1	**54.1492**	1.789	3.3	ug/L	-50	Standard
	Se	82	6605.0	1.3	**54.6200**	1.423	2.6	ug/L	14	Standard
	Se-1	77	4636.4	0.8	**57.1316**	0.988	1.7	ug/L	42	Standard
>	Ga	71	90.0	19.2				mg/L	42	Standard
	Rb	85	30654.3	2.7				ug/L	17	Standard
	Y	89	497057.5	2.9				ug/L	417098	Standard
>	Rh	103	38.3	52.7				ug/L	13	Standard
	Mo	98	163.0	7.4	**0.0487**	0.002	4.2	ug/L	11	Standard
	Ag	107	371099.4	2.0	**50.7567**	1.341	2.6	ug/L	68	Standard
	Cd	111	118377.9	2.8	**50.4636**	1.124	2.2	mg/L	2	Standard
	Cd	114	281427.9	1.4	**48.9324**	1.490	3.0	ug/L	12	Standard
>	In	115	659308.0	4.2				ug/L	587441	Standard
	Sn	118	1090.0	7.1	**0.0721**	0.019	25.7	ug/L	497	Standard
	Sb	123	259620.0	1.8	**49.5761**	1.212	2.4	ug/L	78	Standard
	Ba	135	232712.5	1.7	**101.3728**	3.182	3.1	ug/L	24	Standard
	Ce	140	941.7	8.0				ug/L	25	Standard
>	Tb	159	982549.7	3.5				ug/L	939701	Standard
	Ho	165	31.7	24.1				ug/L	10	Standard
	Tl	203	453507.3	1.5	**53.4353**	0.634	1.2	ug/L	4	Standard
	Tl	205	415041.8	2.5	**56.3402**	0.862	1.5	ug/L	2	Standard
	Pb	206	296774.5	1.1	**53.8916**	0.589	1.1	ug/L	240	Standard
	Pb	207	252251.9	1.7	**51.5506**	0.378	0.7	ug/L	198	Standard
	Pb	208	1071354.8	2.3	**55.4200**	1.065	1.9	ug/L	883	Standard
	U	238	381907.7	2.6	**53.8787**	0.717	1.3	ug/L	3	Standard
>	Bi	209	539522.1	2.0				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.4920**	30.288	173.2	mg/L	0	Standard
Mg	24	5339.3	3.4	**5.9734**	0.106	1.8	mg/L	37	Standard
K	39	681.7	10.6	**1.2038**	0.100	8.3	mg/L	38	Standard
Ca	43	128.3	25.3	**4.6217**	2.038	44.1	mg/L	10	Standard
Fe	54	542.4	5.6	**0.2649**	0.028	10.4	mg/L	179	Standard
Fe	57	371.7	15.7	**0.0334**	0.176	526.0	mg/L	335	Standard
Sc-1	45	69663.2	3.3				mg/L	61029	Standard
Cl	35	28661.1	2.0				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	10680.4	5.1				ug/L	1547	Standard
P	31	21703.9	3.0				ug/L	15286	Standard
S	34	2123.5	4.7				ug/L	1572	Standard
Sr	88	153.3	22.2				ug/L	73	Standard
C	12	123.3	28.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	57.6	48.4				mg/L	6	Standard
Ho-1	165	31.7	24.1				mg/L	10	Standard
Er	166	50.0	91.7				mg/L	13	Standard
I	127	154285.8	7.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		103.911	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		109.929	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.234
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.965
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606097411SD WG573291-06
Sample Date/Time: Wednesday, June 29, 2016 20:30:11
Number of Replicates: 3
Autosampler Position: 414
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77405.6	1.5				ug/L	74699	Standard
	Be	9	55655.4	2.7	**61.0164**	1.576	2.6	ug/L	8	Standard
	Al	27	12086433.4	1.6	**79.3694**	1.985	2.5	ug/L	1493	Standard
	Sc	45	69212.8	2.6				ug/L	61029	Standard
	Ti	47	325.0	3.5	**0.6412**	0.031	4.8	ug/L	35	Standard
	V	51	466207.8	0.7	**53.8111**	1.021	1.9	ug/L	1435	Standard
	Cr	52	460631.7	1.4	**53.3535**	1.026	1.9	ug/L	7635	Standard
	Cr	53	56936.8	2.6	**53.5625**	1.349	2.5	ug/L	363	Standard
	Mn	55	2273187.5	1.8	**285.5286**	8.405	2.9	ug/L	747	Standard
	Co	59	417957.8	1.5	**55.3411**	1.481	2.7	ug/L	234	Standard
	Ni	60	114539.0	0.3	**53.3968**	0.715	1.3	ug/L	215	Standard
	Cu	65	111050.1	0.5	**52.0971**	0.842	1.6	ug/L	104	Standard
	Zn	66	69817.2	1.2	**55.4674**	1.299	2.3	ug/L	363	Standard
>	**Ge**	72	566018.8	1.2				ug/L	495142	Standard
	As	75	67402.1	1.8	**52.7097**	1.486	2.8	ug/L	-50	Standard
	Se	82	6620.3	2.0	**52.6418**	1.659	3.2	ug/L	14	Standard
	Se-1	77	4557.0	3.8	**53.9777**	2.700	5.0	ug/L	42	Standard
>	**Ga**	71	128.3	43.8				mg/L	42	Standard
	Rb	85	32409.6	0.5				ug/L	17	Standard
	Y	89	470382.0	1.0				ug/L	417098	Standard
>	**Rh**	103	61.7	24.8				ug/L	13	Standard
	Mo	98	196.1	5.9	**0.0618**	0.004	5.9	ug/L	11	Standard
	Ag	107	374581.1	0.3	**52.7275**	0.291	0.6	ug/L	68	Standard
	Cd	111	118658.6	1.5	**52.0656**	0.397	0.8	mg/L	2	Standard
	Cd	114	286274.0	2.6	**51.2138**	0.959	1.9	ug/L	12	Standard
>	**In**	115	640194.5	0.7				ug/L	587441	Standard
	Sn	118	1251.7	9.2	**0.1018**	0.017	16.3	ug/L	497	Standard
	Sb	123	263336.7	0.4	**51.7531**	0.327	0.6	ug/L	78	Standard
	Ba	135	250997.3	0.8	**112.5129**	0.934	0.8	ug/L	24	Standard
	Ce	140	2000.1	6.5				ug/L	25	Standard
>	**Tb**	159	984120.1	1.6				ug/L	939701	Standard
	Ho	165	48.3	11.9				ug/L	10	Standard
	Tl	203	459854.1	0.1	**53.6772**	0.823	1.5	ug/L	4	Standard
	Tl	205	414544.5	0.5	**55.7557**	1.089	2.0	ug/L	2	Standard
	Pb	206	298100.5	1.1	**53.6266**	1.109	2.1	ug/L	240	Standard
	Pb	207	253941.0	0.3	**51.4145**	0.875	1.7	ug/L	198	Standard
	Pb	208	1061848.2	0.5	**54.4146**	0.782	1.4	ug/L	883	Standard
	U	238	385197.1	0.6	**53.8449**	1.070	2.0	ug/L	3	Standard
>	**Bi**	209	544631.3	1.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	5929.5	2.1	**6.6847**	0.075	1.1	mg/L	37	Standard
K	39	801.7	4.2	**1.4479**	0.027	1.8	mg/L	38	Standard
Ca	43	125.0	31.2	**4.4423**	2.177	49.0	mg/L	10	Standard
Fe	54	841.7	6.4	**0.4916**	0.050	10.2	mg/L	179	Standard
Fe	57	441.7	5.4	**0.2489**	0.040	15.9	mg/L	335	Standard
> **Sc-1**	45	69212.8	2.6				mg/L	61029	Standard
Cl	35	28869.5	0.9				ug/L	20195	Standard
Kr	83	3.7	56.8				ug/L	4	Standard
Br	81	12511.8	0.5				ug/L	1547	Standard
P	31	22511.8	6.4				ug/L	15286	Standard
S	34	2320.2	4.3				ug/L	1572	Standard
Sr	88	170.0	8.8				ug/L	73	Standard
C	12	80.0	25.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	3	Standard
Dy	164	93.8	22.7				mg/L	6	Standard
Ho-1	165	48.3	11.9				mg/L	10	Standard
Er	166	60.0	57.7				mg/L	13	Standard
I	127	186712.7	7.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.624	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.314	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.980
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.940
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606097411SD WG573291-06
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Method 6020 - Summary Report

Sample ID: L1606097401PS WG573790-03
Sample Date/Time: Wednesday, June 29, 2016 20:33:23
Number of Replicates: 3
Autosampler Position: 415
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77767.4	1.4				ug/L	74699	Standard
	Be	9	54620.0	3.0	**59.5914**	1.002	1.7	ug/L	8	Standard
	Al	27	11452990.5	1.0	**74.8575**	1.594	2.1	ug/L	1493	Standard
	Sc	45	70666.1	1.7				ug/L	61029	Standard
	Ti	47	337.7	3.5	**0.6996**	0.031	4.4	ug/L	35	Standard
	V	51	448357.3	1.6	**53.6764**	0.056	0.1	ug/L	1435	Standard
	Cr	52	455460.2	1.4	**54.7521**	0.846	1.5	ug/L	7635	Standard
	Cr	53	57375.1	1.7	**56.0052**	0.200	0.4	ug/L	363	Standard
	Mn	55	2154709.7	0.5	**280.7294**	3.122	1.1	ug/L	747	Standard
	Co	59	404569.2	0.4	**55.5661**	0.653	1.2	ug/L	234	Standard
	Ni	60	112633.8	1.0	**54.4757**	0.921	1.7	ug/L	215	Standard
	Cu	65	109355.9	1.1	**53.2239**	1.011	1.9	ug/L	104	Standard
	Zn	66	70498.3	1.6	**58.1166**	0.789	1.4	ug/L	363	Standard
>	**Ge**	72	545627.2	1.6				ug/L	495142	Standard
	As	75	64850.8	0.9	**52.6029**	0.345	0.7	ug/L	-50	Standard
	Se	82	6485.5	1.8	**53.4847**	0.149	0.3	ug/L	14	Standard
	Se-1	77	4411.0	1.9	**54.1848**	0.787	1.5	ug/L	42	Standard
>	**Ga**	71	161.7	1.8				mg/L	42	Standard
	Rb	85	30524.1	1.7				ug/L	17	Standard
	Y	89	474875.4	0.7				ug/L	417098	Standard
>	**Rh**	103	60.0	16.7				ug/L	13	Standard
	Mo	98	163.5	8.5	**0.0491**	0.004	8.3	ug/L	11	Standard
	Ag	107	365805.1	1.5	**50.1795**	1.312	2.6	ug/L	68	Standard
	Cd	111	117534.8	0.9	**50.2525**	0.249	0.5	mg/L	2	Standard
	Cd	114	285376.1	1.5	**49.7475**	0.497	1.0	ug/L	12	Standard
>	**In**	115	657058.7	1.4				ug/L	587441	Standard
	Sn	118	1523.4	8.4	**0.1383**	0.017	12.1	ug/L	497	Standard
	Sb	123	259036.8	1.0	**49.6101**	1.139	2.3	ug/L	78	Standard
	Ba	135	239792.4	1.1	**104.7386**	1.629	1.6	ug/L	24	Standard
	Ce	140	2208.5	2.2				ug/L	25	Standard
>	**Tb**	159	1019758.9	1.4				ug/L	939701	Standard
	Ho	165	71.7	21.3				ug/L	10	Standard
	Tl	203	456925.9	1.0	**51.8248**	0.434	0.8	ug/L	4	Standard
	Tl	205	410087.8	1.3	**53.5969**	1.082	2.0	ug/L	2	Standard
	Pb	206	289464.5	1.3	**50.5998**	1.170	2.3	ug/L	240	Standard
	Pb	207	248071.4	0.9	**48.8073**	1.130	2.3	ug/L	198	Standard
	Pb	208	1050860.8	0.8	**52.3325**	1.144	2.2	ug/L	883	Standard
	U	238	380364.0	0.7	**51.6678**	1.019	2.0	ug/L	3	Standard
>	**Bi**	209	560465.1	1.6				ug/L	523984	Standard

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Na	23	1.7	173.2	**16.2901**	28.207	173.2	mg/L	0	Standard
Mg	24	5812.8	3.2	**6.4153**	0.191	3.0	mg/L	37	Standard
K	39	706.7	5.8	**1.2347**	0.072	5.8	mg/L	38	Standard
Ca	43	108.3	32.4	**3.3848**	1.922	56.8	mg/L	10	Standard
Fe	54	723.0	16.6	**0.3920**	0.096	24.5	mg/L	179	Standard
Fe	57	435.0	5.7	**0.2027**	0.073	35.8	mg/L	335	Standard
> **Sc-1**	45	70666.1	1.7				mg/L	61029	Standard
Cl	35	28625.7	0.6				ug/L	20195	Standard
Kr	83	1.7	34.6				ug/L	4	Standard
Br	81	11964.7	4.0				ug/L	1547	Standard
P	31	22167.9	1.3				ug/L	15286	Standard
S	34	2268.5	2.8				ug/L	1572	Standard
Sr	88	201.7	11.5				ug/L	73	Standard
C	12	93.3	34.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	3	Standard
Dy	164	120.1	22.8				mg/L	6	Standard
Ho-1	165	71.7	21.3				mg/L	10	Standard
Er	166	66.7	60.6				mg/L	13	Standard
I	127	179600.9	7.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.108	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.196	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.851
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.962
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606097401PS WG573790-03
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Method 6020 - Summary Report

Sample ID: L1606097401SDL WG573790-04
Sample Date/Time: Wednesday, June 29, 2016 20:36:34
Number of Replicates: 3
Autosampler Position: 416
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77070.7	3.6				ug/L	74699	Standard
	Be	9	45.0	33.3	**0.0568**	0.015	26.1	ug/L	8	Standard
	Al	27	2260304.8	1.2	**14.9037**	0.448	3.0	ug/L	1493	Standard
	Sc	45	68278.6	3.1				ug/L	61029	Standard
	Ti	47	83.0	9.9	**0.0892**	0.019	21.8	ug/L	35	Standard
	V	51	2192.5	3.4	**0.0673**	0.008	12.3	ug/L	1435	Standard
	Cr	52	10144.1	1.9	**0.2156**	0.020	9.5	ug/L	7635	Standard
	Cr	53	686.7	4.8	**0.3429**	0.034	10.1	ug/L	363	Standard
	Mn	55	355711.8	1.3	**46.1130**	0.456	1.0	ug/L	747	Standard
	Co	59	2492.2	1.8	**0.3045**	0.007	2.2	ug/L	234	Standard
	Ni	60	828.7	2.9	**0.2769**	0.011	3.8	ug/L	215	Standard
	Cu	65	280.0	0.7	**0.0325**	0.001	2.6	ug/L	104	Standard
	Zn	66	2517.5	2.7	**1.6325**	0.059	3.6	ug/L	363	Standard
>	**Ge**	72	546825.8	0.3				ug/L	495142	Standard
	As	75	65.5	45.7	**0.1126**	0.024	21.6	ug/L	-50	Standard
	Se	82	28.6	15.9	**0.0977**	0.038	38.5	ug/L	14	Standard
	Se-1	77	61.3	12.0	**0.1380**	0.090	65.2	ug/L	42	Standard
>	**Ga**	71	98.3	5.9				mg/L	42	Standard
	Rb	85	6301.3	2.8				ug/L	17	Standard
	Y	89	489576.3	2.2				ug/L	417098	Standard
>	**Rh**	103	21.7	48.0				ug/L	13	Standard
	Mo	98	47.0	21.8	**0.0100**	0.004	35.1	ug/L	11	Standard
	Ag	107	179.0	15.1	**0.0115**	0.004	30.5	ug/L	68	Standard
	Cd	111	35.6	11.4	**0.0072**	0.002	22.2	mg/L	2	Standard
	Cd	114	102.0	28.8	**0.0155**	0.005	31.8	ug/L	12	Standard
>	**In**	115	661161.0	0.8				ug/L	587441	Standard
	Sn	118	795.0	15.7	**0.0261**	0.018	68.8	ug/L	497	Standard
	Sb	123	2322.3	23.7	**0.4382**	0.107	24.4	ug/L	78	Standard
	Ba	135	26230.7	1.3	**11.3705**	0.051	0.4	ug/L	24	Standard
	Ce	140	480.0	13.3				ug/L	25	Standard
>	**Tb**	159	1000122.3	1.4				ug/L	939701	Standard
	Ho	165	26.7	10.8				ug/L	10	Standard
	Tl	203	156.0	22.9	**0.0163**	0.004	24.4	ug/L	4	Standard
	Tl	205	150.0	15.3	**0.0202**	0.003	14.3	ug/L	2	Standard
	Pb	206	403.0	8.6	**0.0007**	0.006	871.4	ug/L	240	Standard
	Pb	207	342.3	5.9	**-0.0013**	0.004	288.2	ug/L	198	Standard
	Pb	208	1497.0	5.1	**0.0020**	0.004	181.5	ug/L	883	Standard
	U	238	114.0	13.2	**0.0113**	0.002	17.4	ug/L	3	Standard
>	**Bi**	209	549941.1	1.0				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	1213.4	3.4	**1.3365**	0.084	6.3	mg/L	37	Standard
K	39	180.0	11.1	**0.2425**	0.050	20.5	mg/L	38	Standard
Ca	43	46.7	22.3	**0.1064**	0.547	514.2	mg/L	10	Standard
Fe	54	286.0	10.0	**0.0782**	0.017	21.6	mg/L	179	Standard
Fe	57	306.7	10.9	**-0.1437**	0.079	55.0	mg/L	335	Standard
> **Sc-1**	45	68278.6	3.1				mg/L	61029	Standard
Cl	35	28506.1	0.3				ug/L	20195	Standard
Kr	83	1.7	34.6				ug/L	4	Standard
Br	81	3947.2	6.9				ug/L	1547	Standard
P	31	19479.2	3.3				ug/L	15286	Standard
S	34	2088.5	5.3				ug/L	1572	Standard
Sr	88	101.7	24.8				ug/L	73	Standard
C	12	60.0	60.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	52.5	9.9				mg/L	6	Standard
Ho-1	165	26.7	10.8				mg/L	10	Standard
Er	166	16.7	69.3				mg/L	13	Standard
I	127	39316.0	2.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.175	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.438	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.549
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.954
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606097401SDL WG573790-04
Sample Date/Time: Wednesday, June 29, 2016 20:39:46
Number of Replicates: 3
Autosampler Position: 417
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76547.9	2.1				ug/L	74699	Standard
	Be	9	28.3	27.0	**0.0389**	0.008	20.5	ug/L	8	Standard
	Al	27	465099.1	0.7	**3.0756**	0.044	1.4	ug/L	1493	Standard
	Sc	45	68169.7	0.9				ug/L	61029	Standard
	Ti	47	36.7	6.9	**-0.0243**	0.006	24.2	ug/L	35	Standard
	V	51	2063.3	3.2	**0.0438**	0.007	16.8	ug/L	1435	Standard
	Cr	52	9662.1	0.8	**0.1188**	0.007	6.3	ug/L	7635	Standard
	Cr	53	523.3	10.2	**0.1664**	0.051	30.7	ug/L	363	Standard
	Mn	55	72938.2	2.1	**9.0325**	0.175	1.9	ug/L	747	Standard
	Co	59	731.7	15.3	**0.0598**	0.015	24.7	ug/L	234	Standard
	Ni	60	309.0	4.2	**0.0207**	0.006	30.5	ug/L	215	Standard
	Cu	65	310.7	4.3	**0.0426**	0.006	14.7	ug/L	104	Standard
	Zn	66	2601.2	2.1	**1.6324**	0.044	2.7	ug/L	363	Standard
>	**Ge**	72	565002.4	0.2				ug/L	495142	Standard
	As	75	-33.8	92.8	**0.0331**	0.025	74.3	ug/L	-50	Standard
	Se	82	20.9	22.0	**0.0285**	0.036	128.0	ug/L	14	Standard
	Se-1	77	57.7	17.5	**0.0697**	0.122	174.5	ug/L	42	Standard
>	**Ga**	71	58.3	9.9				mg/L	42	Standard
	Rb	85	1335.1	7.2				ug/L	17	Standard
	Y	89	490772.8	1.5				ug/L	417098	Standard
>	**Rh**	103	15.0	57.7				ug/L	13	Standard
	Mo	98	24.2	10.4	**0.0025**	0.001	32.4	ug/L	11	Standard
	Ag	107	143.3	39.3	**0.0071**	0.008	112.3	ug/L	68	Standard
	Cd	111	11.6	65.7	**-0.0029**	0.003	116.5	mg/L	2	Standard
	Cd	114	25.4	61.7	**0.0024**	0.003	115.9	ug/L	12	Standard
>	**In**	115	647709.2	0.5				ug/L	587441	Standard
	Sn	118	543.3	5.3	**-0.0103**	0.004	42.8	ug/L	497	Standard
	Sb	123	784.5	24.6	**0.1481**	0.037	24.8	ug/L	78	Standard
	Ba	135	5327.9	0.7	**2.3449**	0.015	0.6	ug/L	24	Standard
	Ce	140	110.0	7.9				ug/L	25	Standard
>	**Tb**	159	986009.2	0.5				ug/L	939701	Standard
	Ho	165	10.0	100.0				ug/L	10	Standard
	Tl	203	50.7	34.9	**0.0041**	0.002	51.6	ug/L	4	Standard
	Tl	205	46.7	71.3	**0.0064**	0.005	70.3	ug/L	2	Standard
	Pb	206	376.3	19.7	**-0.0043**	0.014	323.1	ug/L	240	Standard
	Pb	207	290.7	20.1	**-0.0119**	0.012	103.4	ug/L	198	Standard
	Pb	208	1284.0	11.0	**-0.0091**	0.008	86.4	ug/L	883	Standard
	U	238	44.0	79.9	**0.0017**	0.005	294.8	ug/L	3	Standard
>	**Bi**	209	552760.9	1.2				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	246.7	9.1	**0.2201**	0.028	12.6	mg/L	37	Standard
K	39	50.0	40.0	**-0.0154**	0.039	250.4	mg/L	38	Standard
Ca	43	20.0	43.3	**-1.3952**	0.477	34.2	mg/L	10	Standard
Fe	54	182.5	25.5	**0.0004**	0.036	9653.1	mg/L	179	Standard
Fe	57	256.7	8.8	**-0.2933**	0.068	23.1	mg/L	335	Standard
Sc-1	45	68169.7	0.9				mg/L	61029	Standard
Cl	35	28987.0	1.4				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	2360.2	9.1				ug/L	1547	Standard
P	31	19090.4	2.0				ug/L	15286	Standard
S	34	2190.2	0.6				ug/L	1572	Standard
Sr	88	73.3	27.6				ug/L	73	Standard
C	12	46.7	44.6				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	22.7	102.4				mg/L	6	Standard
Ho-1	165	10.0	100.0				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	10453.6	7.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.475	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.109	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	110.259
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	105.492
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 20:42:59
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73968.6	3.7				ug/L	74699	Standard
	Be	9	51786.8	4.7	**59.3953**	0.618	1.0	ug/L	8	Standard
	Al	27	8138418.2	2.1	**55.9353**	1.016	1.8	ug/L	1493	Standard
	Sc	45	66422.0	2.7				ug/L	61029	Standard
	Ti	47	44367.5	1.4	**105.9251**	2.261	2.1	ug/L	35	Standard
	V	51	448161.7	0.9	**53.5504**	0.563	1.1	ug/L	1435	Standard
	Cr	52	438098.2	0.5	**52.5206**	0.674	1.3	ug/L	7635	Standard
	Cr	53	53648.2	1.8	**52.2574**	1.658	3.2	ug/L	363	Standard
	Mn	55	415062.2	0.8	**53.8560**	1.244	2.3	ug/L	747	Standard
	Co	59	407202.7	0.3	**55.8201**	1.033	1.9	ug/L	234	Standard
	Ni	60	107214.7	0.8	**51.7442**	0.748	1.4	ug/L	215	Standard
	Cu	65	106835.8	1.9	**51.8884**	1.090	2.1	ug/L	104	Standard
	Zn	66	63121.9	0.7	**51.8882**	0.831	1.6	ug/L	363	Standard
>	Ge	72	546729.2	1.7				ug/L	495142	Standard
	As	75	63950.8	1.3	**51.7792**	1.311	2.5	ug/L	-50	Standard
	Se	82	6522.2	2.4	**53.7001**	1.978	3.7	ug/L	14	Standard
	Se-1	77	4462.7	1.0	**54.7224**	0.944	1.7	ug/L	42	Standard
>	Ga	71	48.3	11.9				mg/L	42	Standard
	Rb	85	921.7	10.0				ug/L	17	Standard
	Y	89	469877.0	1.2				ug/L	417098	Standard
>	Rh	103	31.7	45.6				ug/L	13	Standard
	Mo	98	306064.1	0.6	**105.7488**	1.650	1.6	ug/L	11	Standard
	Ag	107	358011.4	0.7	**50.5757**	0.461	0.9	ug/L	68	Standard
	Cd	111	116953.2	1.0	**51.5035**	0.389	0.8	mg/L	2	Standard
	Cd	114	288128.0	0.1	**51.7395**	0.785	1.5	ug/L	12	Standard
>	In	115	637946.0	1.6				ug/L	587441	Standard
	Sn	118	327214.8	2.0	**51.4831**	0.238	0.5	ug/L	497	Standard
	Sb	123	254525.5	0.5	**50.2034**	0.722	1.4	ug/L	78	Standard
	Ba	135	108828.5	1.0	**48.9489**	0.332	0.7	ug/L	24	Standard
	Ce	140	90.0	29.4				ug/L	25	Standard
>	Tb	159	958314.6	1.8				ug/L	939701	Standard
	Ho	165	11.7	49.5				ug/L	10	Standard
	Tl	203	447416.0	0.6	**53.4811**	1.019	1.9	ug/L	4	Standard
	Tl	205	409322.9	1.6	**56.3810**	1.712	3.0	ug/L	2	Standard
	Pb	206	283417.6	0.7	**52.2045**	0.689	1.3	ug/L	240	Standard
	Pb	207	252263.1	0.7	**52.2984**	0.513	1.0	ug/L	198	Standard
	Pb	208	1062273.6	1.1	**55.7538**	1.546	2.8	ug/L	883	Standard
	U	238	385444.7	0.9	**55.1725**	1.082	2.0	ug/L	3	Standard
>	Bi	209	531871.1	1.6				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4377.3	2.2	**5.1285**	0.149	2.9	mg/L	37	Standard
K	39	2180.2	1.8	**4.3148**	0.109	2.5	mg/L	38	Standard
Ca	43	118.3	10.6	**4.3366**	0.588	13.6	mg/L	10	Standard
Fe	54	6990.5	4.3	**5.3088**	0.233	4.4	mg/L	179	Standard
Fe	57	2083.5	2.8	**5.4386**	0.352	6.5	mg/L	335	Standard
> **Sc-1**	45	66422.0	2.7				mg/L	61029	Standard
Cl	35	29309.7	0.2				ug/L	20195	Standard
Kr	83	2.3	24.7				ug/L	4	Standard
Br	81	2156.8	3.9				ug/L	1547	Standard
P	31	21223.2	2.6				ug/L	15286	Standard
S	34	2665.2	2.0				ug/L	1572	Standard
Sr	88	71.7	8.1				ug/L	73	Standard
C	12	56.7	40.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	19.8	1.4				mg/L	6	Standard
Ho-1	165	11.7	49.5				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	2623.6	23.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	118.791		
Al	27	111.871		
Sc	45			
Ti	47	105.925		
V	51	107.101		
Cr	52	105.041		
Cr	53			
Mn	55	107.712		
Co	59	111.640		
Ni	60	103.488		
Cu	65	103.777		
Zn	66	103.776		
> Ge	72		110.419	
As	75	103.558		
Se	82	107.400		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	105.749		
Ag	107	101.151		
Cd	111	103.007		
Cd	114			
In	115		108.597	
Sn	118	102.966		
Sb	123	100.407		
Ba	135	97.898		
Ce	140			
Tb	159			
Ho	165			
Tl	203	106.962		
Tl	205			
Pb	206			
Pb	207			
Pb	208	111.508		
U	238	110.345		
Bi	209		101.505	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	
QC Std 6	Co	59	

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QC Std 6	Pb	208
QC Std 6	U	238

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 20:46:11
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75383.8	1.3				ug/L	74699	Standard
	Be	9	28.3	20.4	**0.0395**	0.006	15.9	ug/L	8	Standard
	Al	27	2638.6	20.0	**0.0044**	0.003	78.6	ug/L	1493	Standard
	Sc	45	68713.9	3.5				ug/L	61029	Standard
	Ti	47	37.7	13.4	**-0.0232**	0.011	49.4	ug/L	35	Standard
	V	51	1533.2	3.6	**-0.0202**	0.008	41.3	ug/L	1435	Standard
	Cr	52	7879.4	2.2	**-0.1054**	0.029	27.9	ug/L	7635	Standard
	Cr	53	448.3	16.3	**0.0885**	0.063	71.1	ug/L	363	Standard
	Mn	55	901.4	5.8	**-0.0363**	0.007	18.9	ug/L	747	Standard
	Co	59	283.3	10.0	**-0.0002**	0.004	1542.3	ug/L	234	Standard
	Ni	60	186.3	2.6	**-0.0379**	0.003	8.3	ug/L	215	Standard
	Cu	65	132.7	3.4	**-0.0421**	0.001	3.4	ug/L	104	Standard
	Zn	66	415.3	5.4	**-0.1263**	0.014	10.9	ug/L	363	Standard
>	**Ge**	72	573402.3	1.2				ug/L	495142	Standard
	As	75	-34.2	13.3	**0.0332**	0.003	10.5	ug/L	-50	Standard
	Se	82	17.2	23.7	**-0.0025**	0.031	1279.2	ug/L	14	Standard
	Se-1	77	54.3	12.3	**0.0204**	0.082	402.5	ug/L	42	Standard
>	**Ga**	71	35.0	37.8				mg/L	42	Standard
	Rb	85	30.0	28.9				ug/L	17	Standard
	Y	89	465691.4	1.8				ug/L	417098	Standard
>	**Rh**	103	6.7	43.3				ug/L	13	Standard
	Mo	98	268.8	25.2	**0.0874**	0.025	29.0	ug/L	11	Standard
	Ag	107	132.7	5.0	**0.0058**	0.001	22.7	ug/L	68	Standard
	Cd	111	15.2	35.4	**-0.0012**	0.003	209.6	mg/L	2	Standard
	Cd	114	58.4	20.0	**0.0084**	0.002	23.7	ug/L	12	Standard
>	**In**	115	638175.3	2.2				ug/L	587441	Standard
	Sn	118	866.7	15.8	**0.0416**	0.019	45.6	ug/L	497	Standard
	Sb	123	616.5	30.1	**0.1169**	0.034	29.1	ug/L	78	Standard
	Ba	135	50.7	18.3	**0.0068**	0.005	67.0	ug/L	24	Standard
	Ce	140	28.3	27.0				ug/L	25	Standard
>	**Tb**	159	990005.2	3.0				ug/L	939701	Standard
	Ho	165	6.7	86.6				ug/L	10	Standard
	Tl	203	92.0	24.5	**0.0086**	0.003	32.5	ug/L	4	Standard
	Tl	205	76.7	43.4	**0.0102**	0.005	44.4	ug/L	2	Standard
	Pb	206	305.7	10.6	**-0.0179**	0.007	38.8	ug/L	240	Standard
	Pb	207	274.7	5.9	**-0.0162**	0.004	23.3	ug/L	198	Standard
	Pb	208	1058.7	7.3	**-0.0216**	0.005	23.5	ug/L	883	Standard
	U	238	60.3	25.7	**0.0037**	0.002	61.2	ug/L	3	Standard
>	**Bi**	209	564302.2	2.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	35.0	37.8	**-0.0253**	0.014	54.1	mg/L	37	Standard
K	39	45.0	19.2	**-0.0261**	0.014	54.4	mg/L	38	Standard
Ca	43	26.7	39.0	**-1.0220**	0.608	59.5	mg/L	10	Standard
Fe	54	162.5	17.8	**-0.0163**	0.018	110.8	mg/L	179	Standard
Fe	57	258.3	8.1	**-0.2948**	0.047	15.9	mg/L	335	Standard
Sc-1	45	68713.9	3.5				mg/L	61029	Standard
Cl	35	28935.6	0.2				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	1740.1	12.2				ug/L	1547	Standard
P	31	21446.8	2.8				ug/L	15286	Standard
S	34	2463.5	5.1				ug/L	1572	Standard
Sr	88	71.7	17.6				ug/L	73	Standard
C	12	43.3	13.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	12.9	115.2				mg/L	6	Standard
Ho-1	165	6.7	86.6				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	2023.5	28.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		115.806	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	108.636
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	107.694
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Tuesday, July 05, 2016 09:04:54

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	6.975	1321	2024	0.708	
Mg	23.985	23.975	4501	2020	0.692	
Co	58.933	58.925	11690	2022	0.690	
In	114.904	114.925	22863	2028	0.687	
U	238.050	238.075	47461	2043	0.681	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	4.916
5.575	6.266
5.625	2.810
5.675	3.120
5.725	3.210
5.775	1.700
5.825	3.914
5.875	4.024
5.925	2.609
5.975	1.860
6.025	2.733
6.075	1.681
6.125	3.202
6.175	4.353
6.225	8.355
6.275	67.748
6.325	136.931
6.375	108.327
6.425	81.650
6.475	34.993
6.525	7.996
6.575	6.006
6.625	4.810
6.675	2.293
6.725	1.911
6.775	1.582
6.825	2.290

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6.875	1.932
6.925	2.048
6.975	1.464
7.025	2.377
7.075	1.360
7.125	1.136
7.175	1.498
7.225	2.429
7.275	4.978
7.325	12.811
7.375	50.000
7.425	43.853
7.475	59.266
7.525	60.858
7.575	71.261
7.625	59.266
7.675	37.268
7.725	71.261
7.775	61.237
7.825	46.481
7.875	119.523
7.925	70.711
7.975	63.888
8.025	141.421
8.075	70.711
8.125	104.583
8.175	59.266
8.225	37.268
8.275	39.123
8.325	20.328
8.375	70.711
8.425	72.436
8.475	37.268
22.525	223.607
22.575	67.420
22.625	59.894
22.675	54.149
22.725	52.322
22.775	28.395
22.825	9.448
22.875	13.869
22.925	29.601
22.975	15.049
23.025	24.549
23.075	52.605
23.125	27.664
23.175	25.514

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23.225	34.035
23.275	38.083
23.325	53.452
23.375	19.218
23.425	19.357
23.475	24.628
23.525	2.185
23.575	1.481
23.625	1.660
23.675	1.271
23.725	1.432
23.775	1.289
23.825	0.651
23.875	1.352
23.925	1.696
23.975	2.349
24.025	2.044
24.075	1.668
24.125	1.409
24.175	1.436
24.225	1.673
24.275	2.430
24.325	13.116
24.375	42.127
24.425	47.222
24.475	3.626
24.525	3.161
24.575	4.479
24.625	0.720
24.675	2.084
24.725	1.446
24.775	0.782
24.825	1.059
24.875	0.986
24.925	1.507
24.975	1.323
25.025	0.995
25.075	1.253
25.125	1.235
25.175	0.877
25.225	3.966
25.275	6.789
25.325	68.148
25.375	62.630
25.425	18.054
25.475	22.592
57.525	8.108

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57.575	5.819
57.625	3.555
57.675	1.890
57.725	0.683
57.775	1.819
57.825	0.687
57.875	2.247
57.925	1.417
57.975	0.754
58.025	1.690
58.075	1.590
58.125	2.082
58.175	1.933
58.225	2.633
58.275	11.735
58.325	28.571
58.375	45.644
58.425	13.451
58.475	8.093
58.525	7.046
58.575	2.359
58.625	1.975
58.675	1.980
58.725	2.667
58.775	1.582
58.825	1.860
58.875	1.841
58.925	1.155
58.975	1.132
59.025	2.557
59.075	1.177
59.125	2.415
59.175	1.508
59.225	2.089
59.275	23.436
59.325	97.183
59.375	43.241
59.425	44.628
59.475	17.563
59.525	9.370
59.575	3.904
59.625	4.547
59.675	4.189
59.725	1.832
59.775	1.847
59.825	3.828
59.875	2.178

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59.925	2.815
59.975	2.630
60.025	3.394
60.075	2.243
60.125	2.466
60.175	2.169
60.225	6.650
60.275	28.144
60.325	47.507
60.375	26.307
60.425	117.656
60.475	54.294
113.525	7.903
113.575	5.232
113.625	3.878
113.675	1.766
113.725	3.345
113.775	1.670
113.825	2.803
113.875	1.444
113.925	2.208
113.975	1.811
114.025	2.067
114.075	3.273
114.125	1.543
114.175	2.410
114.225	3.081
114.275	5.715
114.325	11.478
114.375	31.623
114.425	20.012
114.475	14.173
114.525	2.838
114.575	2.225
114.625	2.421
114.675	2.092
114.725	1.273
114.775	1.395
114.825	1.091
114.875	1.993
114.925	1.636
114.975	1.467
115.025	2.093
115.075	0.811
115.125	1.853
115.175	2.044
115.225	2.848

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115.275	5.340
115.325	14.538
115.375	66.144
115.425	53.926
115.475	49.311
115.525	13.098
115.575	6.772
115.625	6.176
115.675	6.649
115.725	2.929
115.775	2.384
115.825	1.377
115.875	2.818
115.925	2.791
115.975	4.600
116.025	1.704
116.075	3.015
116.125	5.054
116.175	3.417
116.225	10.059
116.275	14.933
116.325	39.316
116.375	80.889
116.425	63.738
116.475	62.828
236.525	223.607
236.575	24.686
236.625	26.702
236.675	26.438
236.725	35.460
236.775	14.582
236.825	54.128
236.875	30.292
236.925	43.971
236.975	45.138
237.025	21.123
237.075	22.356
237.125	16.110
237.175	24.491
237.225	31.558
237.275	15.972
237.325	39.891
237.375	21.066
237.425	11.877
237.475	32.439
237.525	35.561
237.575	11.436

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237.625	7.182
237.675	3.176
237.725	2.457
237.775	0.976
237.825	2.661
237.875	0.713
237.925	0.911
237.975	1.333
238.025	0.816
238.075	1.224
238.125	0.903
238.175	1.478
238.225	1.941
238.275	0.792
238.325	1.379
238.375	3.447
238.425	0.475
238.475	3.931
238.525	11.732
238.575	20.719
238.625	22.306
238.675	43.706
238.725	36.490
238.775	23.923
238.825	31.545
238.875	16.330
238.925	42.133
238.975	30.764
239.025	25.693
239.075	19.543
239.125	24.601
239.175	37.268
239.225	6.428
239.275	13.608
239.325	25.529
239.375	23.967
239.425	42.822
239.475	26.438

Approved: July 06, 2016

SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 7/5/2016 9:09:35 AM
End Time: 7/5/2016 9:11:50 AM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 5395.56
        Obtained Intensity (Mg 23.985): 243827.68
        Obtained Intensity (In 114.904): 70583.16
        Obtained Intensity (U 238.05): 142756.33
        Obtained Intensity (Bkgd 220): 0.20
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.020 (=4055.54 / 204395.37)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.011 (=2346.65 / 204395.37)
```


Approved: July 06, 2016

SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 7/5/2016 9:09:35 AM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 5395.56
                Obtained Intensity (Mg 23.985): 243827.68
                Obtained Intensity (In 114.904): 70583.16
                Obtained Intensity (U 238.05): 142756.33
                Obtained Intensity (Bkgd 220): 0.20
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.020 (=4055.54 / 204395.37)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.011 (=2346.65 / 204395.37)
[Passed]  Optimum value(s): N/A

End Time: 7/5/2016 9:11:50 AM
```


Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Tuesday, July 05, 2016 09:23:52
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59516.7	3.0				ug/L		Standard
	Be	9	10.0	50.0				ug/L		Standard
	Al	27	1871.8	6.0				ug/L		Standard
	Sc	45	26715.2	1.7				ug/L		Standard
	Ti	47	53.7	10.6				ug/L		Standard
	V	51	1419.3	5.4				ug/L		Standard
	Cr	52	7059.3	2.4				ug/L		Standard
	Cr	53	398.3	5.9				ug/L		Standard
	Mn	55	824.4	4.6				ug/L		Standard
	Co	59	166.7	12.5				ug/L		Standard
	Ni	60	391.3	3.3				ug/L		Standard
	Cu	65	147.0	7.8				ug/L		Standard
	Zn	66	183.7	12.0				ug/L		Standard
>	Ge	72	422997.6	2.0				ug/L		Standard
	As	75	-58.4	17.2				ug/L		Standard
	Se	82	14.9	7.9				ug/L		Standard
	Se-1	77	57.7	18.5				ug/L		Standard
>	Ga	71	113.3	5.1				mg/L		Standard
	Rb	85	26.7	21.7				ug/L		Standard
	Y	89	383780.2	1.3				ug/L		Standard
>	Rh	103	18.3	41.7				ug/L		Standard
	Mo	98	30.6	11.5				ug/L		Standard
	Ag	107	83.7	25.8				ug/L		Standard
	Cd	111	3.9	25.5				mg/L		Standard
	Cd	114	15.3	95.4				ug/L		Standard
>	In	115	515399.7	1.8				ug/L		Standard
	Sn	118	1043.4	21.4				ug/L		Standard
	Sb	123	226.5	22.8				ug/L		Standard
	Ba	135	30.7	16.1				ug/L		Standard
	Ce	140	120.0	28.9				ug/L		Standard
>	Tb	159	785817.3	2.8				ug/L		Standard
	Ho	165	6.7	86.6				ug/L		Standard
	Tl	203	5.7	53.9				ug/L		Standard
	Tl	205	8.3	69.3				ug/L		Standard
	Pb	206	200.7	7.0				ug/L		Standard
	Pb	207	176.7	10.5				ug/L		Standard
	Pb	208	721.7	1.4				ug/L		Standard
	U	238	7.7	74.2				ug/L		Standard
>	Bi	209	444562.8	2.6				ug/L		Standard

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	Na	23	0.0		mg/L	Standard
	Mg	24	38.3	32.8	mg/L	Standard
	K	39	33.3	77.0	mg/L	Standard
	Ca	43	48.3	26.0	mg/L	Standard
	Fe	54	130.9	15.4	mg/L	Standard
	Fe	57	153.3	25.3	mg/L	Standard
>	**Sc-1**	45	26715.2	1.7	mg/L	Standard
	Cl	35	102686.2	2.0	ug/L	Standard
	Kr	83	1.7	91.7	ug/L	Standard
	Br	81	1896.8	8.1	ug/L	Standard
	P	31	18491.3	3.9	ug/L	Standard
	S	34	3733.8	4.4	ug/L	Standard
	Sr	88	46.7	22.3	ug/L	Standard
	C	12	63.3	18.2	mg/L	Standard
	N	14	0.0		mg/L	Standard
	Hg	202	23.3	89.2	mg/L	Standard
	Dy	164	22.7	67.5	mg/L	Standard
	Ho-1	165	6.7	86.6	mg/L	Standard
	Er	166	13.3	43.3	mg/L	Standard
	I	127	12398.4	3.2	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: Blank
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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Blank
Report Date/Time: Tuesday, July 05, 2016 09:26:09
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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Tuesday, July 05, 2016 09:27:04
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59608.8	3.4				ug/L	59517	Standard
	Be	9	11.7	99.0				ug/L	10	Standard
	Al	27	1765.1	2.2				ug/L	1872	Standard
	Sc	45	26738.6	3.0				ug/L	26715	Standard
	Ti	47	56.0	10.9				ug/L	54	Standard
	V	51	1412.8	3.0				ug/L	1419	Standard
	Cr	52	6923.2	1.6				ug/L	7059	Standard
	Cr	53	398.3	10.8				ug/L	398	Standard
	Mn	55	831.4	1.9				ug/L	824	Standard
	Co	59	156.3	6.7				ug/L	167	Standard
	Ni	60	385.3	6.4				ug/L	391	Standard
	Cu	65	141.0	6.8				ug/L	147	Standard
	Zn	66	188.3	20.5				ug/L	184	Standard
>	**Ge**	72	430414.5	1.6				ug/L	422998	Standard
	As	75	-83.8	26.9				ug/L	-58	Standard
	Se	82	11.6	23.6				ug/L	15	Standard
	Se-1	77	58.3	8.8				ug/L	58	Standard
>	**Ga**	71	106.7	5.4				mg/L	113	Standard
	Rb	85	20.0	43.3				ug/L	27	Standard
	Y	89	380199.7	3.4				ug/L	383780	Standard
>	**Rh**	103	21.7	35.3				ug/L	18	Standard
	Mo	98	21.9	39.1				ug/L	31	Standard
	Ag	107	67.3	14.3				ug/L	84	Standard
	Cd	111	3.0	67.2				mg/L	4	Standard
	Cd	114	12.1	77.3				ug/L	15	Standard
>	**In**	115	507604.1	0.9				ug/L	515400	Standard
	Sn	118	1040.0	33.5				ug/L	1043	Standard
	Sb	123	109.1	24.9				ug/L	227	Standard
	Ba	135	34.0	11.8				ug/L	31	Standard
	Ce	140	93.3	17.2				ug/L	120	Standard
>	**Tb**	159	780753.8	1.6				ug/L	785817	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	4.3	13.3				ug/L	6	Standard
	Tl	205	5.0	100.0				ug/L	8	Standard
	Pb	206	190.3	10.9				ug/L	201	Standard
	Pb	207	165.3	4.7				ug/L	177	Standard
	Pb	208	731.3	6.4				ug/L	722	Standard
	U	238	4.3	93.3				ug/L	8	Standard
>	**Bi**	209	442740.5	1.3				ug/L	444563	Standard

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Na	23	1.7	173.2	mg/L	0	Standard
Mg	24	41.7	36.7	mg/L	38	Standard
K	39	20.0	43.3	mg/L	33	Standard
Ca	43	45.0	22.2	mg/L	48	Standard
Fe	54	134.3	13.6	mg/L	131	Standard
Fe	57	140.0	27.9	mg/L	153	Standard
> **Sc-1**	45	26738.6	3.0	mg/L	26715	Standard
Cl	35	100953.2	1.4	ug/L	102686	Standard
Kr	83	3.0	33.3	ug/L	2	Standard
Br	81	1896.8	10.3	ug/L	1897	Standard
P	31	18573.1	4.4	ug/L	18491	Standard
S	34	3695.5	3.9	ug/L	3734	Standard
Sr	88	35.0	37.8	ug/L	47	Standard
C	12	80.0	33.1	mg/L	63	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	33.3	45.8	mg/L	23	Standard
Dy	164	5.7	101.5	mg/L	23	Standard
Ho-1	165	5.0	100.0	mg/L	7	Standard
Er	166	20.0	50.0	mg/L	13	Standard
I	127	12588.6	2.6	mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85
Y	89
> Rh	103
Mo	98
Ag	107
Cd	111
Cd	114
> In	115
Sn	118
Sb	123
Ba	135
Ce	140
> Tb	159
Ho	165
Tl	203
Tl	205
Pb	206
Pb	207
Pb	208
U	238
> Bi	209
Na	23
Mg	24
K	39
Ca	43
Fe	54
Fe	57
> Sc-1	45
Cl	35
Kr	83
Br	81
P	31
S	34
Sr	88
C	12
N	14
Hg	202
Dy	164
Ho-1	165
Er	166
I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Tuesday, July 05, 2016 09:30:15
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60323.2	1.6				ug/L	59517	Standard
	Be	9	71.7	28.2				ug/L	10	Standard
	Al	27	9626.4	1.5				ug/L	1872	Standard
	Sc	45	27469.9	2.0				ug/L	26715	Standard
	Ti	47	85.3	2.4				ug/L	54	Standard
	V	51	1714.1	1.7				ug/L	1419	Standard
	Cr	52	7550.9	1.7				ug/L	7059	Standard
	Cr	53	423.3	16.8				ug/L	398	Standard
	Mn	55	1185.4	1.3				ug/L	824	Standard
	Co	59	528.0	1.7				ug/L	167	Standard
	Ni	60	484.0	2.5				ug/L	391	Standard
	Cu	65	250.7	2.8				ug/L	147	Standard
	Zn	66	239.0	6.2				ug/L	184	Standard
>	Ge	72	437972.2	1.6				ug/L	422998	Standard
	As	75	-2.1	857.6				ug/L	-58	Standard
	Se	82	31.1	5.9				ug/L	15	Standard
	Se-1	77	56.3	13.4				ug/L	58	Standard
>	Ga	71	63.3	27.7				mg/L	113	Standard
	Rb	85	15.0	66.7				ug/L	27	Standard
	Y	89	387008.6	2.3				ug/L	383780	Standard
>	Rh	103	20.0	25.0				ug/L	18	Standard
	Mo	98	291.7	4.3				ug/L	31	Standard
	Ag	107	421.0	6.2				ug/L	84	Standard
	Cd	111	116.1	3.2				mg/L	4	Standard
	Cd	114	283.7	10.5				ug/L	15	Standard
>	In	115	519547.9	2.4				ug/L	515400	Standard
	Sn	118	1351.7	28.3				ug/L	1043	Standard
	Sb	123	306.2	6.2				ug/L	227	Standard
	Ba	135	149.3	0.4				ug/L	31	Standard
	Ce	140	90.0	34.7				ug/L	120	Standard
>	Tb	159	809068.9	3.1				ug/L	785817	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	436.3	1.5				ug/L	6	Standard
	Tl	205	401.7	14.9				ug/L	8	Standard
	Pb	206	484.0	2.3				ug/L	201	Standard
	Pb	207	448.3	6.0				ug/L	177	Standard
	Pb	208	1813.0	1.7				ug/L	722	Standard
	U	238	366.7	3.7				ug/L	8	Standard
>	Bi	209	452738.0	3.1				ug/L	444563	Standard

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	Na	23	0.0		mg/L	0	Standard
	Mg	24	31.7	71.2	mg/L	38	Standard
	K	39	31.7	32.9	mg/L	33	Standard
	Ca	43	38.3	54.3	mg/L	48	Standard
	Fe	54	154.4	34.0	mg/L	131	Standard
	Fe	57	161.7	7.1	mg/L	153	Standard
>	**Sc-1**	45	27469.9	2.0	mg/L	26715	Standard
	Cl	35	102529.8	1.1	ug/L	102686	Standard
	Kr	83	2.0	86.6	ug/L	2	Standard
	Br	81	2006.8	8.1	ug/L	1897	Standard
	P	31	18007.4	3.0	ug/L	18491	Standard
	S	34	3722.1	4.1	ug/L	3734	Standard
	Sr	88	36.7	34.3	ug/L	47	Standard
	C	12	66.7	31.2	mg/L	63	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	20.0	50.0	mg/L	23	Standard
	Dy	164	16.3	72.3	mg/L	23	Standard
	Ho-1	165	6.7	114.6	mg/L	7	Standard
	Er	166	6.7	86.6	mg/L	13	Standard
	I	127	12276.6	1.8	mg/L	12398	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Tuesday, July 05, 2016 09:33:27
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	57281.5	3.4				ug/L	59517	Standard
	Be	9	42113.5	3.7	**50.0000**	0.890	1.8	ug/L	10	Standard
	Al	27	7411475.5	3.0	**50.0000**	0.930	1.9	ug/L	1872	Standard
	Sc	45	26479.8	2.2				ug/L	26715	Standard
	Ti	47	23890.5	1.1	**100.0000**	1.454	1.5	ug/L	54	Standard
	V	51	367062.7	0.8	**50.0000**	0.623	1.2	ug/L	1419	Standard
	Cr	52	367921.4	0.8	**50.0000**	0.612	1.2	ug/L	7059	Standard
	Cr	53	45347.8	2.4	**50.0000**	1.443	2.9	ug/L	398	Standard
	Mn	55	322217.3	2.0	**50.0000**	1.201	2.4	ug/L	824	Standard
	Co	59	345404.6	2.7	**50.0000**	1.575	3.2	ug/L	167	Standard
	Ni	60	95595.3	0.9	**50.0000**	0.634	1.3	ug/L	391	Standard
	Cu	65	95818.0	0.3	**50.0000**	0.238	0.5	ug/L	147	Standard
	Zn	66	56390.7	0.6	**50.0000**	0.243	0.5	ug/L	184	Standard
>	Ge	72	424214.4	0.4				ug/L	422998	Standard
	As	75	57453.1	0.7	**50.0000**	0.400	0.8	ug/L	-58	Standard
	Se	82	5987.9	1.8	**50.0000**	0.997	2.0	ug/L	15	Standard
	Se-1	77	3928.8	1.0	**50.0000**	0.491	1.0	ug/L	58	Standard
>	Ga	71	106.7	18.9				mg/L	113	Standard
	Rb	85	830.0	5.8				ug/L	27	Standard
	Y	89	376829.6	1.9				ug/L	383780	Standard
>	Rh	103	41.7	50.0				ug/L	18	Standard
	Mo	98	260891.0	0.5	**100.0000**	0.431	0.4	ug/L	31	Standard
	Ag	107	336697.0	1.4	**50.0000**	0.799	1.6	ug/L	84	Standard
	Cd	111	106142.8	0.9	**50.0000**	0.551	1.1	mg/L	4	Standard
	Cd	114	257891.1	2.0	**50.0000**	1.111	2.2	ug/L	15	Standard
>	In	115	505888.2	0.3				ug/L	515400	Standard
	Sn	118	283890.2	1.3	**50.0000**	0.797	1.6	ug/L	1043	Standard
	Sb	123	221275.8	2.3	**50.0000**	1.243	2.5	ug/L	227	Standard
	Ba	135	99917.1	1.9	**50.0000**	0.986	2.0	ug/L	31	Standard
	Ce	140	75.0	11.5				ug/L	120	Standard
>	Tb	159	787467.6	1.4				ug/L	785817	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	403541.2	1.3	**50.0000**	0.368	0.7	ug/L	6	Standard
	Tl	205	348997.5	1.4	**50.0000**	0.411	0.8	ug/L	8	Standard
	Pb	206	249753.6	0.4	**50.0000**	0.480	1.0	ug/L	201	Standard
	Pb	207	226687.6	0.5	**50.0000**	0.605	1.2	ug/L	177	Standard
	Pb	208	907607.7	0.4	**50.0000**	0.234	0.5	ug/L	722	Standard
	U	238	342418.7	0.3	**50.0000**	0.445	0.9	ug/L	8	Standard
>	Bi	209	443560.9	0.8				ug/L	444563	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	4067.2	1.5	**5.0000**	0.180	3.6	mg/L	38	Standard
K	39	1208.4	5.6	**5.0000**	0.216	4.3	mg/L	33	Standard
Ca	43	65.0	13.3	**5.0000**	1.694	33.9	mg/L	48	Standard
Fe	54	6344.5	2.9	**5.0000**	0.255	5.1	mg/L	131	Standard
Fe	57	1803.4	5.9	**5.0000**	0.400	8.0	mg/L	153	Standard
> **Sc-1**	45	26479.8	2.2				mg/L	26715	Standard
Cl	35	106266.8	1.7				ug/L	102686	Standard
Kr	83	3.0	0.0				ug/L	2	Standard
Br	81	1793.4	10.4				ug/L	1897	Standard
P	31	20133.4	2.6				ug/L	18491	Standard
S	34	4464.0	2.3				ug/L	3734	Standard
Sr	88	53.3	30.1				ug/L	47	Standard
C	12	56.7	10.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	3.0	201.4				mg/L	23	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	13	Standard
I	127	20156.7	3.1				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Tuesday, July 05, 2016 09:36:38
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	57177.7	2.3				ug/L	59517	Standard
	Be	9	83060.5	2.4	**99.4055**	0.082	0.1	ug/L	10	Standard
	Al	27	14427511.1	3.4	**98.7777**	5.601	5.7	ug/L	1872	Standard
	Sc	45	26401.3	1.0				ug/L	26715	Standard
	Ti	47	47521.1	2.0	**200.1084**	5.056	2.5	ug/L	54	Standard
	V	51	713200.7	1.1	**98.9035**	1.288	1.3	ug/L	1419	Standard
	Cr	52	707310.9	1.3	**98.7506**	1.789	1.8	ug/L	7059	Standard
	Cr	53	88258.2	3.7	**99.1029**	4.182	4.2	ug/L	398	Standard
	Mn	55	623978.6	0.6	**98.7110**	0.856	0.9	ug/L	824	Standard
	Co	59	668953.9	1.1	**98.6636**	0.987	1.0	ug/L	167	Standard
	Ni	60	184177.7	1.1	**98.4903**	1.424	1.4	ug/L	391	Standard
	Cu	65	184335.6	1.0	**98.3606**	1.396	1.4	ug/L	147	Standard
	Zn	66	108556.5	1.3	**98.4331**	1.767	1.8	ug/L	184	Standard
>	Ge	72	421989.5	0.5				ug/L	422998	Standard
	As	75	111881.9	1.6	**98.9050**	1.625	1.6	ug/L	-58	Standard
	Se	82	11551.8	0.8	**98.5578**	0.398	0.4	ug/L	15	Standard
	Se-1	77	7465.5	2.6	**98.0156**	2.561	2.6	ug/L	58	Standard
>	Ga	71	106.7	9.8				mg/L	113	Standard
	Rb	85	1656.8	1.9				ug/L	27	Standard
	Y	89	377045.5	0.7				ug/L	383780	Standard
>	Rh	103	60.0	30.0				ug/L	18	Standard
	Mo	98	516282.8	1.1	**200.0976**	4.353	2.2	ug/L	31	Standard
	Ag	107	642362.7	1.8	**98.2175**	1.938	2.0	ug/L	84	Standard
	Cd	111	203500.3	0.9	**98.4606**	1.356	1.4	mg/L	4	Standard
	Cd	114	493153.4	2.5	**98.3306**	2.664	2.7	ug/L	15	Standard
>	In	115	500187.8	1.5				ug/L	515400	Standard
	Sn	118	565406.4	0.3	**100.4534**	1.261	1.3	ug/L	1043	Standard
	Sb	123	451037.5	1.1	**101.5325**	2.258	2.2	ug/L	227	Standard
	Ba	135	192700.4	0.7	**98.7674**	1.578	1.6	ug/L	31	Standard
	Ce	140	151.7	19.0				ug/L	120	Standard
>	Tb	159	778055.5	0.3				ug/L	785817	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	777662.3	0.5	**98.8652**	1.045	1.1	ug/L	6	Standard
	Tl	205	682449.5	1.4	**99.5981**	1.807	1.8	ug/L	8	Standard
	Pb	206	486716.7	1.0	**99.4428**	1.465	1.5	ug/L	201	Standard
	Pb	207	438279.6	1.0	**99.0466**	1.369	1.4	ug/L	177	Standard
	Pb	208	1766496.8	0.2	**99.3804**	0.506	0.5	ug/L	722	Standard
	U	238	675732.3	0.9	**100.0490**	1.332	1.3	ug/L	8	Standard
>	Bi	209	437245.8	0.6				ug/L	444563	Standard

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Na	23	1.7	173.2	**19.9850**	34.606	173.2	mg/L	0	Standard
Mg	24	7703.6	2.1	**9.7561**	0.217	2.2	mg/L	38	Standard
K	39	2193.5	1.4	**9.5883**	0.205	2.1	mg/L	33	Standard
Ca	43	106.7	17.7	**11.0903**	2.878	26.0	mg/L	48	Standard
Fe	54	12288.8	3.6	**9.9066**	0.331	3.3	mg/L	131	Standard
Fe	57	3242.0	5.1	**9.6801**	0.435	4.5	mg/L	153	Standard
Sc-1	45	26401.3	1.0				mg/L	26715	Standard
Cl	35	104664.3	1.8				ug/L	102686	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	1870.1	15.3				ug/L	1897	Standard
P	31	20584.0	1.0				ug/L	18491	Standard
S	34	4714.1	1.1				ug/L	3734	Standard
Sr	88	46.7	34.4				ug/L	47	Standard
C	12	53.3	65.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	23	Standard
Dy	164	6.0	187.1				mg/L	23	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	13	Standard
I	127	2513.5	5.2				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998
Corr. Coef.	Ca	43	Correlation coefficient < 0.998

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Tuesday, July 05, 2016 09:39:52
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	53835.5	1.3				ug/L	59517	Standard
	Be	9	41558.6	3.6	**52.8023**	1.315	2.5	ug/L	10	Standard
	Al	27	7307731.0	1.7	**53.0856**	0.399	0.8	ug/L	1872	Standard
	Sc	45	25019.0	1.3				ug/L	26715	Standard
	Ti	47	23741.9	0.8	**105.4666**	0.518	0.5	ug/L	54	Standard
	V	51	361047.7	1.2	**52.7948**	0.251	0.5	ug/L	1419	Standard
	Cr	52	363213.6	1.6	**53.1053**	0.333	0.6	ug/L	7059	Standard
	Cr	53	44986.7	2.2	**53.1545**	1.109	2.1	ug/L	398	Standard
	Mn	55	313201.8	0.7	**52.2689**	0.422	0.8	ug/L	824	Standard
	Co	59	335791.2	0.4	**52.2971**	0.377	0.7	ug/L	167	Standard
	Ni	60	94287.8	0.7	**53.1623**	0.658	1.2	ug/L	391	Standard
	Cu	65	93679.1	0.8	**52.7602**	0.861	1.6	ug/L	147	Standard
	Zn	66	56044.1	0.6	**53.6021**	0.933	1.7	ug/L	184	Standard
>	Ge	72	399555.8	1.1				ug/L	422998	Standard
	As	75	55787.2	0.6	**52.1110**	0.279	0.5	ug/L	-58	Standard
	Se	82	5765.3	1.8	**51.8507**	0.353	0.7	ug/L	15	Standard
	Se-1	77	3764.5	1.9	**51.8829**	0.395	0.8	ug/L	58	Standard
>	Ga	71	83.3	6.9				mg/L	113	Standard
	Rb	85	805.0	6.3				ug/L	27	Standard
	Y	89	346814.9	1.4				ug/L	383780	Standard
>	Rh	103	33.3	45.8				ug/L	18	Standard
	Mo	98	255667.8	1.2	**103.8817**	3.429	3.3	ug/L	31	Standard
	Ag	107	326245.9	1.0	**52.2934**	1.513	2.9	ug/L	84	Standard
	Cd	111	104309.3	0.8	**52.9007**	0.886	1.7	mg/L	4	Standard
	Cd	114	252291.0	1.4	**52.7265**	0.923	1.8	ug/L	15	Standard
>	In	115	477243.7	2.4				ug/L	515400	Standard
	Sn	118	285175.5	1.0	**53.0339**	1.593	3.0	ug/L	1043	Standard
	Sb	123	227297.1	0.9	**53.6358**	1.767	3.3	ug/L	227	Standard
	Ba	135	97510.4	0.5	**52.3806**	1.184	2.3	ug/L	31	Standard
	Ce	140	70.0	25.8				ug/L	120	Standard
>	Tb	159	738225.1	1.8				ug/L	785817	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	396474.4	1.1	**52.8617**	0.678	1.3	ug/L	6	Standard
	Tl	205	345053.4	1.1	**52.8086**	0.248	0.5	ug/L	8	Standard
	Pb	206	245442.3	1.4	**52.5746**	1.060	2.0	ug/L	201	Standard
	Pb	207	222933.5	0.8	**52.8178**	0.762	1.4	ug/L	177	Standard
	Pb	208	899249.4	0.4	**53.0368**	0.329	0.6	ug/L	722	Standard
	U	238	340452.5	0.4	**52.8663**	0.560	1.1	ug/L	8	Standard
>	Bi	209	416909.4	1.0				ug/L	444563	Standard

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Na	23	3.3	86.6	**41.6409**	36.067	86.6	mg/L	0	Standard
Mg	24	4005.5	5.7	**5.3372**	0.289	5.4	mg/L	38	Standard
K	39	1045.0	2.9	**4.7561**	0.149	3.1	mg/L	33	Standard
Ca	43	70.0	14.3	**5.8755**	1.572	26.8	mg/L	48	Standard
Fe	54	6522.2	2.4	**5.4988**	0.200	3.6	mg/L	131	Standard
Fe	57	1745.1	3.0	**5.2936**	0.243	4.6	mg/L	153	Standard
> **Sc-1**	45	25019.0	1.3				mg/L	26715	Standard
Cl	35	101421.7	1.2				ug/L	102686	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	1796.8	11.2				ug/L	1897	Standard
P	31	20091.6	1.5				ug/L	18491	Standard
S	34	4492.3	1.8				ug/L	3734	Standard
Sr	88	45.0	19.2				ug/L	47	Standard
C	12	46.7	75.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	5.7	94.7				mg/L	23	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	13	Standard
I	127	16966.2	1.4				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	105.605		
Al	27	106.171		
Sc	45			
Ti	47	105.467		
V	51	105.590		
Cr	52	106.211		
Cr	53			
Mn	55	104.538		
Co	59	104.594		
Ni	60	106.325		
Cu	65	105.520		
Zn	66	107.204		
> Ge	72		94.458	
As	75	104.222		
Se	82	103.701		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	103.882		
Ag	107	104.587		
Cd	111	105.801		
Cd	114			
> In	115		92.597	
Sn	118	106.068		
Sb	123	107.272		
Ba	135	104.761		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	105.723		
Tl	205			
Pb	206	105.149		
Pb	207	105.636		
Pb	208	106.074		
U	238	105.733		
> Bi	209		93.780	
Na	23	832.818		
Mg	24	106.744		
K	39	95.121		
Ca	43	117.511		
Fe	54	109.976		
Fe	57	105.873		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Tuesday, July 05, 2016 09:43:05
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	56789.7	3.8				ug/L	59517	Standard
	Be	9	30.0	88.2	**0.0057**	0.034	592.0	ug/L	10	Standard
	Al	27	4072.2	25.4	**0.0156**	0.007	44.7	ug/L	1872	Standard
	Sc	45	26544.9	1.0				ug/L	26715	Standard
	Ti	47	56.0	5.4	**-0.0095**	0.012	131.0	ug/L	54	Standard
	V	51	1171.6	3.3	**-0.0159**	0.006	36.7	ug/L	1419	Standard
	Cr	52	6250.0	0.8	**-0.0905**	0.015	16.3	ug/L	7059	Standard
	Cr	53	385.0	13.7	**0.0257**	0.057	222.8	ug/L	398	Standard
	Mn	55	2770.3	4.9	**0.3100**	0.021	6.9	ug/L	824	Standard
	Co	59	278.3	16.3	**0.0162**	0.007	42.4	ug/L	167	Standard
	Ni	60	392.3	4.9	**0.0114**	0.011	92.8	ug/L	391	Standard
	Cu	65	169.0	8.4	**0.0117**	0.008	68.8	ug/L	147	Standard
	Zn	66	12934.5	0.1	**11.6450**	0.106	0.9	ug/L	184	Standard
>	Ge	72	419946.1	0.8				ug/L	422998	Standard
	As	75	-19.0	138.3	**0.0348**	0.023	67.0	ug/L	-58	Standard
	Se	82	20.1	22.5	**-0.0330**	0.040	122.3	ug/L	15	Standard
	Se-1	77	54.7	17.6	**0.0573**	0.124	216.2	ug/L	58	Standard
>	Ga	71	73.3	10.4				mg/L	113	Standard
	Rb	85	16.7	17.3				ug/L	27	Standard
	Y	89	372487.8	2.2				ug/L	383780	Standard
>	Rh	103	16.7	96.4				ug/L	18	Standard
	Mo	98	327.7	10.6	**0.1179**	0.015	12.4	ug/L	31	Standard
	Ag	107	169.7	22.8	**0.0139**	0.006	43.9	ug/L	84	Standard
	Cd	111	29.4	39.1	**0.0101**	0.006	55.8	mg/L	4	Standard
	Cd	114	75.2	27.2	**0.0104**	0.004	39.7	ug/L	15	Standard
>	In	115	501312.6	1.2				ug/L	515400	Standard
	Sn	118	1608.4	30.0	**0.1044**	0.084	80.4	ug/L	1043	Standard
	Sb	123	948.7	24.4	**0.1968**	0.052	26.4	ug/L	227	Standard
	Ba	135	97.7	19.3	**0.0263**	0.010	38.8	ug/L	31	Standard
	Ce	140	30.0	16.7				ug/L	120	Standard
>	Tb	159	766439.3	3.0				ug/L	785817	Standard
	Ho	165	1.7	173.2				ug/L	7	Standard
	Tl	203	130.3	29.7	**0.0128**	0.005	39.8	ug/L	6	Standard
	Tl	205	98.3	56.2	**0.0075**	0.008	109.1	ug/L	8	Standard
	Pb	206	365.3	8.6	**0.0283**	0.008	26.9	ug/L	201	Standard
	Pb	207	309.0	15.5	**0.0213**	0.012	55.8	ug/L	177	Standard
	Pb	208	1295.7	7.5	**0.0236**	0.007	28.3	ug/L	722	Standard
	U	238	108.0	28.7	**0.0134**	0.005	35.7	ug/L	8	Standard
>	Bi	209	442314.8	1.9				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	23.3	53.9	**-0.0040**	0.016	402.6	mg/L	38	Standard
K	39	36.7	7.9	**0.0323**	0.013	39.7	mg/L	33	Standard
Ca	43	40.0	33.1	**0.4592**	2.104	458.2	mg/L	48	Standard
Fe	54	162.7	1.8	**0.0154**	0.001	9.5	mg/L	131	Standard
Fe	57	140.0	18.9	**-0.0460**	0.079	170.9	mg/L	153	Standard
Sc-1	45	26544.9	1.0				mg/L	26715	Standard
Cl	35	101376.8	2.0				ug/L	102686	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1840.1	4.8				ug/L	1897	Standard
P	31	19113.7	2.8				ug/L	18491	Standard
S	34	4273.9	2.9				ug/L	3734	Standard
Sr	88	53.3	51.6				ug/L	47	Standard
C	12	53.3	21.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	23	Standard
Dy	164	6.3	93.2				mg/L	23	Standard
Ho-1	165	1.7	173.2				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	11554.4	2.8				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.279	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	97.267	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.494	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Zn	66	
QC Std 2	Ca	43	

Sample ID: QC Std 2
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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Tuesday, July 05, 2016 09:46:18
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	54322.3	4.4				ug/L	59517	Standard
	Be	9	135.0	16.1	**0.1399**	0.033	23.7	ug/L	10	Standard
	Al	27	1825.1	5.2	**0.0007**	0.001	96.2	ug/L	1872	Standard
	Sc	45	25576.6	3.2				ug/L	26715	Standard
	Ti	47	54.0		**-0.0134**	0.004	31.4	ug/L	54	Standard
	V	51	3677.6	2.6	**0.3442**	0.009	2.5	ug/L	1419	Standard
	Cr	52	11611.8	1.6	**0.7019**	0.005	0.7	ug/L	7059	Standard
	Cr	53	1015.0	5.3	**0.7630**	0.070	9.2	ug/L	398	Standard
	Mn	55	3542.4	1.4	**0.4443**	0.018	4.0	ug/L	824	Standard
	Co	59	2671.6	0.4	**0.3789**	0.007	1.9	ug/L	167	Standard
	Ni	60	3156.7	2.5	**1.5345**	0.073	4.7	ug/L	391	Standard
	Cu	65	1505.7	2.6	**0.7455**	0.036	4.8	ug/L	147	Standard
	Zn	66	7058.0	1.6	**6.4127**	0.220	3.4	ug/L	184	Standard
>	Ge	72	411736.9	1.8				ug/L	422998	Standard
	As	75	374.7	7.0	**0.3910**	0.024	6.1	ug/L	-58	Standard
	Se	82	56.6	11.5	**0.2895**	0.047	16.4	ug/L	15	Standard
	Se-1	77	76.7	8.7	**0.3701**	0.085	23.1	ug/L	58	Standard
>	Ga	71	63.3	31.9				mg/L	113	Standard
	Rb	85	23.3	53.9				ug/L	27	Standard
	Y	89	359086.1	1.7				ug/L	383780	Standard
>	Rh	103	23.3	32.7				ug/L	18	Standard
	Mo	98	119.6	23.9	**0.0392**	0.011	28.9	ug/L	31	Standard
	Ag	107	2559.5	2.0	**0.3941**	0.005	1.3	ug/L	84	Standard
	Cd	111	480.1	3.9	**0.2368**	0.004	1.9	mg/L	4	Standard
	Cd	114	1176.2	1.3	**0.2388**	0.002	0.9	ug/L	15	Standard
>	In	115	482062.0	2.1				ug/L	515400	Standard
	Sn	118	1013.4	35.3	**0.0066**	0.068	1039.3	ug/L	1043	Standard
	Sb	123	1750.5	1.7	**0.3926**	0.006	1.5	ug/L	227	Standard
	Ba	135	1380.7	4.6	**0.7107**	0.031	4.4	ug/L	31	Standard
	Ce	140	10.0					ug/L	120	Standard
>	Tb	159	750015.0	1.7				ug/L	785817	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	633.0	3.0	**0.0778**	0.004	4.6	ug/L	6	Standard
	Tl	205	506.7	19.9	**0.0679**	0.014	20.8	ug/L	8	Standard
	Pb	206	1185.4	4.9	**0.1994**	0.013	6.7	ug/L	201	Standard
	Pb	207	1006.4	3.4	**0.1822**	0.011	6.3	ug/L	177	Standard
	Pb	208	4150.2	2.4	**0.1875**	0.002	0.9	ug/L	722	Standard
	U	238	2538.5	1.5	**0.3776**	0.011	3.0	ug/L	8	Standard
>	Bi	209	432540.0	1.8				ug/L	444563	Standard

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Na	23	1.7	173.2	**19.7989**	34.284	173.2	mg/L	0	Standard
Mg	24	25.0	34.6	**-0.0006**	0.012	1975.3	mg/L	38	Standard
K	39	28.3	10.2	**0.0001**	0.010	8097.2	mg/L	33	Standard
Ca	43	40.0	25.0	**0.6800**	1.556	228.8	mg/L	48	Standard
Fe	54	117.2	44.0	**-0.0169**	0.047	277.9	mg/L	131	Standard
Fe	57	171.7	7.3	**0.0745**	0.055	73.8	mg/L	153	Standard
Sc-1	45	25576.6	3.2				mg/L	26715	Standard
Cl	35	98276.4	0.6				ug/L	102686	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	1690.1	6.4				ug/L	1897	Standard
P	31	13502.7	0.8				ug/L	18491	Standard
S	34	4085.6	1.8				ug/L	3734	Standard
Sr	88	66.7	26.3				ug/L	47	Standard
C	12	76.7	41.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	23	Standard
Dy	164	5.7	202.4				mg/L	23	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	1623.4	6.5				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	69.930		
Al	27	0.072		
Sc	45			
Ti	47			
V	51	86.043		
Cr	52	87.740		
Cr	53			
Mn	55	88.869		
Co	59	94.737		
Ni	60	95.908		
Cu	65	93.188		
Zn	66	102.603		
Ge	72		97.338	
As	75	97.743		
Se	82	72.386		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	98.529		
Cd	111	98.678		
Cd	114			
> In	115			93.532
Sn	118			
Sb	123	98.139		
Ba	135	94.758		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	97.225		
Tl	205			
Pb	206			
Pb	207			
Pb	208	93.760		
U	238	94.395		
> Bi	209			97.296
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Be	9	
QC Std 3	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Tuesday, July 05, 2016 09:50:16
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58169.8	2.1				ug/L	59517	Standard
	Be	9	41368.1	1.5	**48.6540**	0.517	1.1	ug/L	10	Standard
	Al	27	7290991.8	1.0	**49.0258**	0.636	1.3	ug/L	1872	Standard
	Sc	45	27236.1	0.9				ug/L	26715	Standard
	Ti	47	24092.5	1.0	**97.0294**	0.687	0.7	ug/L	54	Standard
	V	51	363336.2	1.3	**48.1642**	0.610	1.3	ug/L	1419	Standard
	Cr	52	362571.6	0.5	**47.9815**	0.112	0.2	ug/L	7059	Standard
	Cr	53	45230.8	1.6	**48.4251**	0.571	1.2	ug/L	398	Standard
	Mn	55	318203.0	1.3	**48.1419**	0.321	0.7	ug/L	824	Standard
	Co	59	342610.9	1.0	**48.3824**	0.165	0.3	ug/L	167	Standard
	Ni	60	93896.7	0.3	**47.9869**	0.223	0.5	ug/L	391	Standard
	Cu	65	94104.0	0.8	**48.0490**	0.164	0.3	ug/L	147	Standard
	Zn	66	55724.3	0.3	**48.3106**	0.453	0.9	ug/L	184	Standard
>	**Ge**	72	440608.2	0.7				ug/L	422998	Standard
	As	75	56127.2	1.3	**47.5458**	0.447	0.9	ug/L	-58	Standard
	Se	82	5821.4	0.5	**47.4627**	0.137	0.3	ug/L	15	Standard
	Se-1	77	3826.5	3.3	**47.7694**	1.288	2.7	ug/L	58	Standard
>	**Ga**	71	96.7	16.6				mg/L	113	Standard
	Rb	85	805.0	10.8				ug/L	27	Standard
	Y	89	385514.8	0.9				ug/L	383780	Standard
>	**Rh**	103	40.0	12.5				ug/L	18	Standard
	Mo	98	257542.0	0.9	**95.7910**	0.867	0.9	ug/L	31	Standard
	Ag	107	326830.8	0.5	**47.9581**	0.259	0.5	ug/L	84	Standard
	Cd	111	103201.3	0.9	**47.9228**	0.449	0.9	mg/L	4	Standard
	Cd	114	256440.4	0.5	**49.0734**	0.209	0.4	ug/L	15	Standard
>	**In**	115	521082.8	0.1				ug/L	515400	Standard
	Sn	118	282756.0	1.5	**48.1210**	0.666	1.4	ug/L	1043	Standard
	Sb	123	227361.0	1.0	**49.1107**	0.551	1.1	ug/L	227	Standard
	Ba	135	97385.0	0.8	**47.8931**	0.346	0.7	ug/L	31	Standard
	Ce	140	93.3	13.5				ug/L	120	Standard
>	**Tb**	159	801308.4	1.6				ug/L	785817	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	395362.2	0.5	**48.0233**	0.556	1.2	ug/L	6	Standard
	Tl	205	344540.9	1.9	**48.0428**	1.206	2.5	ug/L	8	Standard
	Pb	206	246479.1	0.9	**48.0951**	0.873	1.8	ug/L	201	Standard
	Pb	207	223686.9	1.1	**48.2810**	1.143	2.4	ug/L	177	Standard
	Pb	208	894445.5	0.5	**48.0575**	0.742	1.5	ug/L	722	Standard
	U	238	335748.7	0.7	**47.4954**	0.465	1.0	ug/L	8	Standard
>	**Bi**	209	457654.3	1.5				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	3785.5	3.0	**4.6294**	0.144	3.1	mg/L	38	Standard
K	39	1143.4	3.2	**4.7796**	0.115	2.4	mg/L	33	Standard
Ca	43	73.3	10.4	**5.4487**	1.278	23.5	mg/L	48	Standard
Fe	54	6420.9	3.1	**4.9595**	0.123	2.5	mg/L	131	Standard
Fe	57	1733.4	5.4	**4.7880**	0.327	6.8	mg/L	153	Standard
Sc-1	45	27236.1	0.9				mg/L	26715	Standard
Cl	35	104987.2	0.9				ug/L	102686	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	1720.1	6.9				ug/L	1897	Standard
P	31	20764.2	1.5				ug/L	18491	Standard
S	34	4507.3	5.1				ug/L	3734	Standard
Sr	88	68.3	15.2				ug/L	47	Standard
C	12	60.0	33.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	23	Standard
Dy	164	2.7	204.8				mg/L	23	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	13	Standard
I	127	18129.2	1.8				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	97.308		
Al	27	98.052		
Sc	45			
Ti	47	97.029		
V	51	96.328		
Cr	52	95.963		
Cr	53			
Mn	55	96.284		
Co	59	96.765		
Ni	60	95.974		
Cu	65	96.098		
Zn	66	96.621		
Ge	72		104.163	
As	75	95.092		
Se	82	94.925		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	95.791		
Ag	107	95.916		
Cd	111	95.846		
Cd	114			
> In	115			101.103
Sn	118	96.242		
Sb	123	98.221		
Ba	135	95.786		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	96.047		
Tl	205			
Pb	206	96.190		
Pb	207	96.562		
Pb	208	96.115		
U	238	94.991		
> Bi	209			102.945
Na	23	0.100		
Mg	24	92.588		
K	39	95.592		
Ca	43	108.974		
Fe	54	99.191		
Fe	57	95.761		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Tuesday, July 05, 2016 09:53:29
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59412.9	1.2				ug/L	59517	Standard
	Be	9	20.0	25.0	**-0.0081**	0.006	68.9	ug/L	10	Standard
	Al	27	2121.8	7.7	**0.0015**	0.001	60.2	ug/L	1872	Standard
	Sc	45	28268.0	1.9				ug/L	26715	Standard
	Ti	47	48.3	20.7	**-0.0579**	0.042	71.8	ug/L	54	Standard
	V	51	1136.5	4.4	**-0.0333**	0.007	20.2	ug/L	1419	Standard
	Cr	52	6308.6	1.2	**-0.1530**	0.019	12.3	ug/L	7059	Standard
	Cr	53	343.3	8.0	**-0.0523**	0.026	48.8	ug/L	398	Standard
	Mn	55	813.0	4.5	**-0.0118**	0.005	39.4	ug/L	824	Standard
	Co	59	237.3	8.5	**0.0073**	0.003	35.7	ug/L	167	Standard
	Ni	60	355.7	3.7	**-0.0236**	0.005	21.0	ug/L	391	Standard
	Cu	65	128.0	8.9	**-0.0157**	0.007	42.7	ug/L	147	Standard
	Zn	66	246.7	1.0	**0.0480**	0.006	11.5	ug/L	184	Standard
>	**Ge**	72	456136.8	1.7				ug/L	422998	Standard
	As	75	-59.5	37.3	**0.0031**	0.018	584.9	ug/L	-58	Standard
	Se	82	16.8	17.9	**-0.0733**	0.024	32.6	ug/L	15	Standard
	Se-1	77	52.7	26.9	**-0.0225**	0.185	821.1	ug/L	58	Standard
>	**Ga**	71	86.7	16.7				mg/L	113	Standard
	Rb	85	21.7	26.6				ug/L	27	Standard
	Y	89	400244.6	1.1				ug/L	383780	Standard
>	**Rh**	103	33.3	31.2				ug/L	18	Standard
	Mo	98	228.4	8.4	**0.0733**	0.009	11.9	ug/L	31	Standard
	Ag	107	125.0	9.2	**0.0057**	0.001	22.2	ug/L	84	Standard
	Cd	111	13.3	49.0	**0.0018**	0.003	158.0	mg/L	4	Standard
	Cd	114	43.3	20.3	**0.0035**	0.002	53.2	ug/L	15	Standard
>	**In**	115	539308.9	3.0				ug/L	515400	Standard
	Sn	118	1368.4	33.9	**0.0448**	0.074	166.2	ug/L	1043	Standard
	Sb	123	874.6	30.5	**0.1667**	0.057	34.0	ug/L	227	Standard
	Ba	135	48.0	24.0	**-0.0010**	0.005	512.8	ug/L	31	Standard
	Ce	140	23.3	24.7				ug/L	120	Standard
>	**Tb**	159	818055.2	1.1				ug/L	785817	Standard
	Ho	165	3.3	173.2				ug/L	7	Standard
	Tl	203	69.0	24.1	**0.0045**	0.002	42.7	ug/L	6	Standard
	Tl	205	78.3	3.7	**0.0038**	0.000	10.6	ug/L	8	Standard
	Pb	206	261.0	2.0	**0.0038**	0.001	27.1	ug/L	201	Standard
	Pb	207	226.0	8.6	**-0.0006**	0.004	641.6	ug/L	177	Standard
	Pb	208	908.7	7.8	**-0.0013**	0.003	268.8	ug/L	722	Standard
	U	238	59.7	23.5	**0.0057**	0.002	33.6	ug/L	8	Standard
>	**Bi**	209	472449.6	0.6				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	48.3	41.8	**0.0240**	0.025	103.6	mg/L	38	Standard
K	39	30.0	44.1	**-0.0053**	0.055	1036.6	mg/L	33	Standard
Ca	43	26.7	39.0	**-1.8930**	1.609	85.0	mg/L	48	Standard
Fe	54	145.8	1.7	**-0.0055**	0.000	4.8	mg/L	131	Standard
Fe	57	115.0	11.5	**-0.1455**	0.035	23.7	mg/L	153	Standard
> **Sc-1**	45	28268.0	1.9				mg/L	26715	Standard
Cl	35	105093.2	1.1				ug/L	102686	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	1796.8	3.9				ug/L	1897	Standard
P	31	20867.7	1.2				ug/L	18491	Standard
S	34	4170.6	0.8				ug/L	3734	Standard
Sr	88	55.0	47.2				ug/L	47	Standard
C	12	50.0	40.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	23	Standard
Dy	164	6.3	173.2				mg/L	23	Standard
Ho-1	165	3.3	173.2				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	13	Standard
I	127	12480.1	2.6				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.834	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.639
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.273
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Ca	43	
QC Std 2	Fe	57	

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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Tuesday, July 05, 2016 09:56:42
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57425.3	1.0				ug/L	59517	Standard
	Be	9	171.7	14.4	**0.1737**	0.031	17.8	ug/L	10	Standard
	Al	27	1671.8	5.4	**-0.0010**	0.001	48.6	ug/L	1872	Standard
	Sc	45	27112.6	0.1				ug/L	26715	Standard
	Ti	47	37.3	13.7	**-0.0946**	0.023	24.4	ug/L	54	Standard
	V	51	3759.7	2.7	**0.3249**	0.017	5.4	ug/L	1419	Standard
	Cr	52	11667.8	2.0	**0.6122**	0.040	6.6	ug/L	7059	Standard
	Cr	53	990.0	3.0	**0.6672**	0.029	4.4	ug/L	398	Standard
	Mn	55	3647.8	3.0	**0.4270**	0.022	5.2	ug/L	824	Standard
	Co	59	2727.9	0.6	**0.3635**	0.006	1.7	ug/L	167	Standard
	Ni	60	3080.3	0.9	**1.3935**	0.015	1.1	ug/L	391	Standard
	Cu	65	1549.1	0.7	**0.7196**	0.012	1.6	ug/L	147	Standard
	Zn	66	7437.5	2.3	**6.3635**	0.253	4.0	ug/L	184	Standard
>	**Ge**	72	437157.7	1.7				ug/L	422998	Standard
	As	75	339.2	5.7	**0.3409**	0.013	3.8	ug/L	-58	Standard
	Se	82	54.1	10.9	**0.2403**	0.041	17.2	ug/L	15	Standard
	Se-1	77	89.3	5.2	**0.4718**	0.063	13.4	ug/L	58	Standard
>	**Ga**	71	75.0	50.3				mg/L	113	Standard
	Rb	85	26.7	47.2				ug/L	27	Standard
	Y	89	385694.7	1.5				ug/L	383780	Standard
>	**Rh**	103	21.7	13.3				ug/L	18	Standard
	Mo	98	78.3	0.7	**0.0204**	0.000	1.9	ug/L	31	Standard
	Ag	107	2513.9	3.9	**0.3598**	0.013	3.6	ug/L	84	Standard
	Cd	111	481.5	2.2	**0.2212**	0.006	2.8	mg/L	4	Standard
	Cd	114	1238.9	8.8	**0.2343**	0.020	8.3	ug/L	15	Standard
>	**In**	115	517133.7	0.6				ug/L	515400	Standard
	Sn	118	976.7	49.7	**-0.0132**	0.082	623.9	ug/L	1043	Standard
	Sb	123	1749.4	2.7	**0.3645**	0.008	2.2	ug/L	227	Standard
	Ba	135	1392.1	0.8	**0.6665**	0.005	0.7	ug/L	31	Standard
	Ce	140	8.3	34.6				ug/L	120	Standard
>	**Tb**	159	792688.6	1.9				ug/L	785817	Standard
	Ho	165	6.7	173.2				ug/L	7	Standard
	Tl	203	607.3	6.1	**0.0696**	0.005	7.2	ug/L	6	Standard
	Tl	205	523.3	13.0	**0.0656**	0.009	13.3	ug/L	8	Standard
	Pb	206	1216.0	1.0	**0.1901**	0.001	0.3	ug/L	201	Standard
	Pb	207	968.4	6.5	**0.1597**	0.013	8.4	ug/L	177	Standard
	Pb	208	4236.9	1.2	**0.1776**	0.005	3.1	ug/L	722	Standard
	U	238	2521.2	2.7	**0.3516**	0.013	3.6	ug/L	8	Standard
>	**Bi**	209	461086.3	1.2				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	28.3	20.4	**0.0014**	0.007	496.5	mg/L	38	Standard
K	39	25.0	40.0	**-0.0214**	0.043	200.9	mg/L	33	Standard
Ca	43	43.3	17.6	**0.8409**	1.190	141.6	mg/L	48	Standard
Fe	54	94.1	29.6	**-0.0419**	0.022	52.6	mg/L	131	Standard
Fe	57	151.7	13.3	**-0.0190**	0.061	320.9	mg/L	153	Standard
Sc-1	45	27112.6	0.1				mg/L	26715	Standard
Cl	35	101496.2	0.7				ug/L	102686	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1850.1	6.5				ug/L	1897	Standard
P	31	14078.2	0.9				ug/L	18491	Standard
S	34	4153.9	5.8				ug/L	3734	Standard
Sr	88	56.7	27.0				ug/L	47	Standard
C	12	53.3	43.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	23	Standard
Dy	164	6.3	99.7				mg/L	23	Standard
Ho-1	165	6.7	173.2				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	13	Standard
I	127	1555.1	12.5				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	86.835		
Al	27	-0.105		
Sc	45			
Ti	47			
V	51	81.222		
Cr	52	76.528		
Cr	53			
Mn	55	85.397		
Co	59	90.866		
Ni	60	87.096		
Cu	65	89.951		
Zn	66	101.816		
Ge	72		103.348	
As	75	85.222		
Se	82	60.067		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	89.940		
Cd	111	92.173		
Cd	114			
> In	115			100.336
Sn	118			
Sb	123	91.126		
Ba	135	88.861		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	87.048		
Tl	205			
Pb	206			
Pb	207			
Pb	208	88.795		
U	238	87.897		
> Bi	209			103.717
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	
QC Std 3	Se	82	

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Tuesday, July 05, 2016 09:59:58
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	58373.9	2.3				ug/L	59517	Standard
	Be	9	16.7	34.6	**-0.0116**	0.007	57.1	ug/L	10	Standard
	Al	27	7244731.4	2.0	**48.5385**	0.251	0.5	ug/L	1872	Standard
	Sc	45	27491.6	2.6				ug/L	26715	Standard
	Ti	47	26462.4	1.5	**106.6713**	1.834	1.7	ug/L	54	Standard
	V	51	1512.6	18.0	**0.0220**	0.037	166.8	ug/L	1419	Standard
	Cr	52	7779.3	1.8	**0.0752**	0.021	28.0	ug/L	7059	Standard
	Cr	53	3347.0	3.9	**3.2061**	0.142	4.4	ug/L	398	Standard
	Mn	55	2353.2	59.7	**0.2265**	0.214	94.5	ug/L	824	Standard
	Co	59	391.7	3.0	**0.0303**	0.002	5.2	ug/L	167	Standard
	Ni	60	1062.7	4.3	**0.3458**	0.022	6.4	ug/L	391	Standard
	Cu	65	758.4	1.9	**0.3091**	0.008	2.6	ug/L	147	Standard
	Zn	66	1411.1	5.3	**1.0687**	0.063	5.9	ug/L	184	Standard
>	Ge	72	440319.5	0.2				ug/L	422998	Standard
	As	75	-70.0	30.8	**-0.0077**	0.018	238.3	ug/L	-58	Standard
	Se	82	13.4	27.6	**-0.0963**	0.031	31.8	ug/L	15	Standard
	Se-1	77	311.3	6.7	**3.2753**	0.257	7.8	ug/L	58	Standard
>	Ga	71	173.3	16.9				mg/L	113	Standard
	Rb	85	1570.1	11.6				ug/L	27	Standard
	Y	89	383720.2	1.1				ug/L	383780	Standard
>	Rh	103	15.0	57.7				ug/L	18	Standard
	Mo	98	259304.7	1.5	**96.9732**	2.021	2.1	ug/L	31	Standard
	Ag	107	298.3	7.6	**0.0320**	0.004	11.1	ug/L	84	Standard
	Cd	111	-198.8	8.2	**-0.0970**	0.008	8.4	mg/L	4	Standard
	Cd	114	476.2	6.6	**0.0871**	0.006	6.8	ug/L	15	Standard
>	In	115	518299.5	0.7				ug/L	515400	Standard
	Sn	118	1570.1	18.5	**0.0885**	0.048	54.2	ug/L	1043	Standard
	Sb	123	688.1	37.0	**0.1329**	0.054	40.8	ug/L	227	Standard
	Ba	135	1511.7	5.2	**0.7243**	0.044	6.1	ug/L	31	Standard
	Ce	140	441.7	2.4				ug/L	120	Standard
>	Tb	159	798601.3	0.6				ug/L	785817	Standard
	Ho	165	18.3	68.6				ug/L	7	Standard
	Tl	203	124.7	7.6	**0.0119**	0.001	10.4	ug/L	6	Standard
	Tl	205	96.7	29.9	**0.0070**	0.004	60.2	ug/L	8	Standard
	Pb	206	820.0	2.3	**0.1182**	0.005	4.3	ug/L	201	Standard
	Pb	207	695.3	3.3	**0.1057**	0.006	5.6	ug/L	177	Standard
	Pb	208	2917.4	0.3	**0.1118**	0.001	0.9	ug/L	722	Standard
	U	238	38.0	26.7	**0.0030**	0.001	47.3	ug/L	8	Standard
>	Bi	209	447566.5	0.9				ug/L	444563	Standard

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Na	23	5.0	100.0	**57.7254**	58.680	101.7	mg/L	0	Standard
Mg	24	9931.6	2.3	**12.0868**	0.062	0.5	mg/L	38	Standard
K	39	1073.4	8.0	**4.4334**	0.273	6.2	mg/L	33	Standard
Ca	43	115.0	28.5	**11.7193**	4.981	42.5	mg/L	48	Standard
Fe	54	15793.8	2.5	**12.2551**	0.022	0.2	mg/L	131	Standard
Fe	57	4364.0	4.8	**12.6536**	0.356	2.8	mg/L	153	Standard
Sc-1	45	27491.6	2.6				mg/L	26715	Standard
Cl	35	106721.4	2.5				ug/L	102686	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	2000.1	10.4				ug/L	1897	Standard
P	31	19956.5	2.7				ug/L	18491	Standard
S	34	3973.9	6.5				ug/L	3734	Standard
Sr	88	75.0	13.3				ug/L	47	Standard
C	12	136.7	4.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	80.0	0.0				mg/L	23	Standard
Dy	164	14.8	39.1				mg/L	23	Standard
Ho-1	165	18.3	68.6				mg/L	7	Standard
Er	166	40.0					mg/L	13	Standard
I	127	2396.9	6.0				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27	0.971		
Sc	45			
Ti	47	106.671		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		104.095	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	96.973		
Ag	107			
Cd	111			
Cd	114			
> In	115			100.563
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209			100.676
Na	23	461.803		
Mg	24	241.737		
K	39	88.667		
Ca	43	78.129		
Fe	54	98.041		
Fe	57	101.229		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Ba	135	
QC Std 4	Na	23	

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QC Std 4	Mg	24
QC Std 4	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Tuesday, July 05, 2016 10:03:17
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	58993.0	1.3				ug/L	59517	Standard
	Be	9	85001.2	1.9	**98.6019**	1.685	1.7	ug/L	10	Standard
	Al	27	6321358.0	0.5	**41.9099**	0.712	1.7	ug/L	1872	Standard
	Sc	45	26818.7	3.0				ug/L	26715	Standard
	Ti	47	22236.0	1.7	**88.9928**	1.339	1.5	ug/L	54	Standard
	V	51	726317.3	0.4	**95.8788**	0.488	0.5	ug/L	1419	Standard
	Cr	52	712141.9	0.8	**94.6051**	0.860	0.9	ug/L	7059	Standard
	Cr	53	90801.3	1.1	**97.0401**	1.065	1.1	ug/L	398	Standard
	Mn	55	638561.6	0.4	**96.1618**	0.252	0.3	ug/L	824	Standard
	Co	59	676060.4	0.2	**94.9228**	0.023	0.0	ug/L	167	Standard
	Ni	60	185772.6	0.1	**94.5619**	0.177	0.2	ug/L	391	Standard
	Cu	65	186681.3	0.3	**94.8225**	0.204	0.2	ug/L	147	Standard
	Zn	66	113558.3	0.9	**98.0179**	0.939	1.0	ug/L	184	Standard
>	Ge	72	443273.1	0.2				ug/L	422998	Standard
	As	75	116279.2	0.3	**97.8554**	0.264	0.3	ug/L	-58	Standard
	Se	82	11822.1	0.5	**96.0160**	0.269	0.3	ug/L	15	Standard
	Se-1	77	8046.5	0.6	**100.5862**	0.536	0.5	ug/L	58	Standard
>	Ga	71	176.7	16.3				mg/L	113	Standard
	Rb	85	743.4	11.5				ug/L	27	Standard
	Y	89	387252.6	1.9				ug/L	383780	Standard
>	Rh	103	36.7	43.8				ug/L	18	Standard
	Mo	98	221408.4	1.2	**82.1531**	1.082	1.3	ug/L	31	Standard
	Ag	107	569943.8	0.4	**83.4398**	0.317	0.4	ug/L	84	Standard
	Cd	111	208059.9	0.8	**96.3891**	1.070	1.1	mg/L	4	Standard
	Cd	114	504841.5	1.1	**96.3794**	0.834	0.9	ug/L	15	Standard
>	In	115	522337.6	0.3				ug/L	515400	Standard
	Sn	118	1488.4	20.9	**0.0727**	0.053	72.5	ug/L	1043	Standard
	Sb	123	445991.9	2.4	**96.1170**	2.148	2.2	ug/L	227	Standard
	Ba	135	192476.2	0.4	**94.4542**	0.161	0.2	ug/L	31	Standard
	Ce	140	63.3	29.9				ug/L	120	Standard
>	Tb	159	807206.6	0.7				ug/L	785817	Standard
	Ho	165	13.3	21.7				ug/L	7	Standard
	Tl	203	799136.9	1.1	**95.7679**	0.378	0.4	ug/L	6	Standard
	Tl	205	701248.1	0.9	**96.4717**	0.388	0.4	ug/L	8	Standard
	Pb	206	509858.8	0.7	**98.2043**	1.552	1.6	ug/L	201	Standard
	Pb	207	446077.7	0.5	**95.0325**	1.252	1.3	ug/L	177	Standard
	Pb	208	1809334.4	0.4	**95.9604**	1.210	1.3	ug/L	722	Standard
	U	238	675199.0	0.6	**94.2439**	1.346	1.4	ug/L	8	Standard
>	Bi	209	463829.2	0.9				ug/L	444563	Standard

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Na	23	8.3	34.6	**97.7411**	35.296	36.1	mg/L	0	Standard
Mg	24	8068.8	2.4	**10.0676**	0.439	4.4	mg/L	38	Standard
K	39	913.4	6.3	**3.8609**	0.369	9.6	mg/L	33	Standard
Ca	43	135.0	3.7	**15.3007**	1.074	7.0	mg/L	48	Standard
Fe	54	13362.2	3.2	**10.6210**	0.522	4.9	mg/L	131	Standard
Fe	57	3627.1	4.9	**10.7240**	0.749	7.0	mg/L	153	Standard
> **Sc-1**	45	26818.7	3.0				mg/L	26715	Standard
Cl	35	104227.4	2.6				ug/L	102686	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1820.1	4.5				ug/L	1897	Standard
P	31	17890.6	5.0				ug/L	18491	Standard
S	34	3797.1	2.3				ug/L	3734	Standard
Sr	88	56.7	31.0				ug/L	47	Standard
C	12	103.3	40.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	23	Standard
Dy	164	16.3	36.2				mg/L	23	Standard
Ho-1	165	13.3	21.7				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	9746.5	1.1				mg/L	12398	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	98.602		
	Al	27	0.838		
	Sc	45			
	Ti	47	88.993		
	V	51	95.879		
	Cr	52	94.605		
	Cr	53			
	Mn	55	96.162		
	Co	59	94.923		
	Ni	60	94.562		
	Cu	65	94.823		
	Zn	66	98.018		
>	Ge	72		104.793	
	As	75	97.855		
	Se	82	96.016		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	82.153		
Ag	107	83.440		
Cd	111	96.389		
Cd	114			
> In	115		101.346	
Sn	118			
Sb	123	96.117		
Ba	135	94.454		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	95.768		
Tl	205			
Pb	206			
Pb	207			
Pb	208	95.960		
U	238	94.244		
> Bi	209		104.334	
Na	23	781.929		
Mg	24	201.352		
K	39	77.218		
Ca	43	102.004		
Fe	54	84.968		
Fe	57	85.792		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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QC Std 5	K	39

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, July 05, 2016 10:06:30
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59831.3	2.1				ug/L	59517	Standard
	Be	9	43026.0	1.6	**49.2010**	0.807	1.6	ug/L	10	Standard
	Al	27	7352971.0	1.7	**48.0862**	1.810	3.8	ug/L	1872	Standard
	Sc	45	26534.9	2.7				ug/L	26715	Standard
	Ti	47	23836.7	1.1	**98.5966**	2.873	2.9	ug/L	54	Standard
	V	51	365784.8	1.3	**49.8014**	1.375	2.8	ug/L	1419	Standard
	Cr	52	363613.1	1.2	**49.4443**	1.281	2.6	ug/L	7059	Standard
	Cr	53	45628.6	1.6	**50.1882**	1.671	3.3	ug/L	398	Standard
	Mn	55	316216.3	1.1	**49.1365**	1.378	2.8	ug/L	824	Standard
	Co	59	343483.3	1.1	**49.8130**	1.198	2.4	ug/L	167	Standard
	Ni	60	94484.0	0.6	**49.5915**	1.019	2.1	ug/L	391	Standard
	Cu	65	93736.1	0.4	**49.1473**	0.729	1.5	ug/L	147	Standard
	Zn	66	55817.0	1.0	**49.6877**	0.390	0.8	ug/L	184	Standard
>	Ge	72	429169.2	1.8				ug/L	422998	Standard
	As	75	55939.1	0.5	**48.6605**	1.008	2.1	ug/L	-58	Standard
	Se	82	5820.2	1.0	**48.7343**	1.077	2.2	ug/L	15	Standard
	Se-1	77	3847.5	1.4	**49.3499**	1.185	2.4	ug/L	58	Standard
>	Ga	71	81.7	19.7				mg/L	113	Standard
	Rb	85	806.7	1.3				ug/L	27	Standard
	Y	89	373583.7	1.6				ug/L	383780	Standard
>	Rh	103	21.7	35.3				ug/L	18	Standard
	Mo	98	257231.3	1.0	**97.8031**	2.633	2.7	ug/L	31	Standard
	Ag	107	329273.0	1.1	**49.3919**	1.374	2.8	ug/L	84	Standard
	Cd	111	104357.1	0.5	**49.5334**	1.014	2.0	mg/L	4	Standard
	Cd	114	256663.0	0.5	**50.2059**	1.112	2.2	ug/L	15	Standard
>	In	115	509906.4	1.8				ug/L	515400	Standard
	Sn	118	281156.4	0.7	**48.9072**	0.530	1.1	ug/L	1043	Standard
	Sb	123	235448.6	1.7	**51.9870**	1.471	2.8	ug/L	227	Standard
	Ba	135	97479.2	0.7	**49.0045**	1.165	2.4	ug/L	31	Standard
	Ce	140	83.3	25.0				ug/L	120	Standard
>	Tb	159	786134.9	1.0				ug/L	785817	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	401970.1	0.5	**50.0255**	0.983	2.0	ug/L	6	Standard
	Tl	205	351161.4	1.1	**50.1638**	0.887	1.8	ug/L	8	Standard
	Pb	206	252778.5	0.6	**50.5367**	1.059	2.1	ug/L	201	Standard
	Pb	207	228467.0	0.4	**50.5201**	0.932	1.8	ug/L	177	Standard
	Pb	208	912205.7	0.8	**50.2139**	0.866	1.7	ug/L	722	Standard
	U	238	344223.3	0.4	**49.8915**	0.966	1.9	ug/L	8	Standard
>	Bi	209	446729.0	1.8				ug/L	444563	Standard

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Na	23	1.7	173.2	**19.5061**	33.777	173.2	mg/L	0	Standard
Mg	24	3785.5	6.4	**4.7554**	0.343	7.2	mg/L	38	Standard
K	39	1055.0	7.5	**4.5194**	0.293	6.5	mg/L	33	Standard
Ca	43	73.3	14.2	**5.7764**	1.991	34.5	mg/L	48	Standard
Fe	54	6345.3	4.0	**5.0384**	0.324	6.4	mg/L	131	Standard
Fe	57	1775.1	7.3	**5.0532**	0.317	6.3	mg/L	153	Standard
Sc-1	45	26534.9	2.7				mg/L	26715	Standard
Cl	35	105006.0	1.0				ug/L	102686	Standard
Kr	83	3.0	57.7				ug/L	2	Standard
Br	81	1946.8	18.0				ug/L	1897	Standard
P	31	19901.4	4.7				ug/L	18491	Standard
S	34	4455.7	5.1				ug/L	3734	Standard
Sr	88	60.0	28.9				ug/L	47	Standard
C	12	70.0	28.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	57.3				mg/L	23	Standard
Dy	164	8.9	8.2				mg/L	23	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	23.3	65.5				mg/L	13	Standard
I	127	17641.9	1.6				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	98.402		
Al	27	96.172		
Sc	45			
Ti	47	98.597		
V	51	99.603		
Cr	52	98.889		
Cr	53			
Mn	55	98.273		
Co	59	99.626		
Ni	60	99.183		
Cu	65	98.295		
Zn	66	99.375		
Ge	72		101.459	
As	75	97.321		
Se	82	97.469		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	97.803		
Ag	107	98.784		
Cd	111	99.067		
Cd	114			
In	115			98.934
Sn	118	97.814		
Sb	123	103.974		
Ba	135	98.009		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.051		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.428		
U	238	99.783		
Bi	209			100.487
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, July 05, 2016 10:09:41
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62071.9	1.7				ug/L	59517	Standard
	Be	9	35.0	51.5	**0.0075**	0.020	267.5	ug/L	10	Standard
	Al	27	2741.9	25.6	**0.0048**	0.004	85.5	ug/L	1872	Standard
	Sc	45	27962.5	1.7				ug/L	26715	Standard
	Ti	47	42.3	20.6	**-0.0795**	0.031	39.5	ug/L	54	Standard
	V	51	1176.3	5.4	**-0.0258**	0.011	44.1	ug/L	1419	Standard
	Cr	52	6381.0	4.6	**-0.1306**	0.051	39.1	ug/L	7059	Standard
	Cr	53	451.7	12.2	**0.0676**	0.052	77.5	ug/L	398	Standard
	Mn	55	787.0	8.0	**-0.0137**	0.012	85.3	ug/L	824	Standard
	Co	59	275.7	10.8	**0.0132**	0.005	37.0	ug/L	167	Standard
	Ni	60	330.7	7.5	**-0.0333**	0.015	45.2	ug/L	391	Standard
	Cu	65	144.0	10.8	**-0.0068**	0.008	120.9	ug/L	147	Standard
	Zn	66	236.7	2.7	**0.0425**	0.003	6.1	ug/L	184	Standard
>	**Ge**	72	449380.2	2.1				ug/L	422998	Standard
	As	75	-11.5	135.8	**0.0423**	0.013	30.5	ug/L	-58	Standard
	Se	82	19.1	0.9	**-0.0525**	0.004	7.6	ug/L	15	Standard
	Se-1	77	63.7	8.7	**0.1212**	0.053	43.4	ug/L	58	Standard
>	**Ga**	71	75.0	17.6				mg/L	113	Standard
	Rb	85	21.7	48.0				ug/L	27	Standard
	Y	89	395093.7	1.1				ug/L	383780	Standard
>	**Rh**	103	18.3	15.7				ug/L	18	Standard
	Mo	98	300.7	7.3	**0.1000**	0.009	8.7	ug/L	31	Standard
	Ag	107	169.0	33.1	**0.0122**	0.008	67.3	ug/L	84	Standard
	Cd	111	19.2	19.5	**0.0045**	0.002	38.8	mg/L	4	Standard
	Cd	114	50.2	53.0	**0.0048**	0.005	104.8	ug/L	15	Standard
>	**In**	115	535175.7	0.7				ug/L	515400	Standard
	Sn	118	1420.1	24.7	**0.0550**	0.057	103.3	ug/L	1043	Standard
	Sb	123	1609.3	30.2	**0.3217**	0.100	31.0	ug/L	227	Standard
	Ba	135	59.3	37.5	**0.0048**	0.011	229.7	ug/L	31	Standard
	Ce	140	16.7	34.6				ug/L	120	Standard
>	**Tb**	159	823938.4	1.2				ug/L	785817	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	100.0	27.0	**0.0082**	0.003	40.2	ug/L	6	Standard
	Tl	205	80.0	33.1	**0.0040**	0.004	89.7	ug/L	8	Standard
	Pb	206	276.7	12.2	**0.0068**	0.007	100.8	ug/L	201	Standard
	Pb	207	246.3	11.5	**0.0037**	0.006	173.1	ug/L	177	Standard
	Pb	208	996.0	14.6	**0.0033**	0.008	242.0	ug/L	722	Standard
	U	238	87.3	28.4	**0.0095**	0.004	37.1	ug/L	8	Standard
>	**Bi**	209	472387.3	0.9				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	36.7	64.4	**0.0106**	0.029	269.8	mg/L	38	Standard
K	39	26.7	65.8	**-0.0169**	0.075	445.3	mg/L	33	Standard
Ca	43	41.7	38.6	**0.4058**	2.515	619.8	mg/L	48	Standard
Fe	54	174.3	5.6	**0.0177**	0.009	50.0	mg/L	131	Standard
Fe	57	146.7	18.8	**-0.0473**	0.086	181.6	mg/L	153	Standard
> **Sc-1**	45	27962.5	1.7				mg/L	26715	Standard
Cl	35	108546.2	2.2				ug/L	102686	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1846.8	4.6				ug/L	1897	Standard
P	31	19873.0	3.3				ug/L	18491	Standard
S	34	4410.6	6.9				ug/L	3734	Standard
Sr	88	48.3	26.0				ug/L	47	Standard
C	12	56.7	27.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	23	Standard
Dy	164	13.2	44.9				mg/L	23	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	12096.5	1.7				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.237	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.837	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	106.259	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

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Method 6020 - Summary Report

Sample ID: PBS H4 WG574663-02
Sample Date/Time: Tuesday, July 05, 2016 10:15:30
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65491.6	6.6				ug/L	59517	Standard
	Be	9	23.3	61.9	**-0.0073**	0.013	179.3	ug/L	10	Standard
	Al	27	9262.8	2.6	**0.0430**	0.002	5.0	ug/L	1872	Standard
	Sc	45	24905.5	0.4				ug/L	26715	Standard
	Ti	47	53.3	7.8	**-0.0067**	0.012	180.4	ug/L	54	Standard
	V	51	11580.0	21.4	**1.5451**	0.402	26.0	ug/L	1419	Standard
	Cr	52	18550.7	4.4	**1.8221**	0.199	10.9	ug/L	7059	Standard
	Cr	53	97195.7	8.9	**116.9078**	13.389	11.5	ug/L	398	Standard
	Mn	55	1234.7	4.6	**0.0783**	0.015	19.1	ug/L	824	Standard
	Co	59	246.7	10.0	**0.0138**	0.003	20.5	ug/L	167	Standard
	Ni	60	434.0	10.2	**0.0483**	0.018	37.4	ug/L	391	Standard
	Cu	65	264.0	13.4	**0.0713**	0.016	22.6	ug/L	147	Standard
	Zn	66	1357.1	2.0	**1.1577**	0.014	1.2	ug/L	184	Standard
>	**Ge**	72	394957.5	2.8				ug/L	422998	Standard
	As	75	-546.0	81.6	**-0.4703**	0.431	91.6	ug/L	-58	Standard
	Se	82	15.8	32.0	**-0.0604**	0.050	82.1	ug/L	15	Standard
	Se-1	77	8179.9	4.9	**115.0215**	8.790	7.6	ug/L	58	Standard
>	**Ga**	71	223.3	20.1				mg/L	113	Standard
	Rb	85	35.0	49.5				ug/L	27	Standard
	Y	89	345203.4	1.0				ug/L	383780	Standard
>	**Rh**	103	43.3	24.0				ug/L	18	Standard
	Mo	98	105.6	9.9	**0.0361**	0.005	12.5	ug/L	31	Standard
	Ag	107	267.0	48.1	**0.0327**	0.021	63.5	ug/L	84	Standard
	Cd	111	26.4	86.0	**0.0098**	0.012	120.1	mg/L	4	Standard
	Cd	114	74.6	104.8	**0.0116**	0.017	144.1	ug/L	15	Standard
>	**In**	115	454743.1	1.5				ug/L	515400	Standard
	Sn	118	1131.7	22.3	**0.0409**	0.052	125.9	ug/L	1043	Standard
	Sb	123	654.9	20.0	**0.1461**	0.034	23.5	ug/L	227	Standard
	Ba	135	108.3	26.2	**0.0372**	0.015	40.4	ug/L	31	Standard
	Ce	140	33.3	31.2				ug/L	120	Standard
>	**Tb**	159	780570.0	1.6				ug/L	785817	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	134.0	57.5	**0.0133**	0.009	69.9	ug/L	6	Standard
	Tl	205	101.7	22.7	**0.0080**	0.003	40.1	ug/L	8	Standard
	Pb	206	393.0	10.4	**0.0347**	0.006	18.5	ug/L	201	Standard
	Pb	207	345.0	7.6	**0.0301**	0.004	13.7	ug/L	177	Standard
	Pb	208	1343.4	6.1	**0.0270**	0.003	10.4	ug/L	722	Standard
	U	238	18.7	52.6	**0.0003**	0.001	518.1	ug/L	8	Standard
>	**Bi**	209	437101.4	2.3				ug/L	444563	Standard

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Na	23	1.7	173.2	**20.8779**	36.153	173.2	mg/L	0	Standard
Mg	24	110.0	27.6	**0.1144**	0.040	35.4	mg/L	38	Standard
K	39	45.0	40.1	**0.0823**	0.086	104.1	mg/L	33	Standard
Ca	43	33.3	17.3	**-0.2499**	0.998	399.5	mg/L	48	Standard
Fe	54	118.6	27.5	**-0.0140**	0.029	204.1	mg/L	131	Standard
Fe	57	198.3	7.3	**0.1771**	0.046	26.0	mg/L	153	Standard
> **Sc-1**	45	24905.5	0.4				mg/L	26715	Standard
Cl	35	97454.4	0.7				ug/L	102686	Standard
Kr	83	2.3	99.0				ug/L	2	Standard
Br	81	1743.4	11.3				ug/L	1897	Standard
P	31	13639.5	3.1				ug/L	18491	Standard
S	34	4730.7	2.7				ug/L	3734	Standard
Sr	88	56.7	43.5				ug/L	47	Standard
C	12	106.7	42.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	22.7	48.4				mg/L	23	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	13	Standard
I	127	28009.2	1.2				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.039	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.371	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	88.231	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.322	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 53 Upper, S, EEE	Cr	53	
As 75 Lower	As	75	
Se-1 77 Upper, S, EEE	Se-1	77	

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Method 6020 - Summary Report

Sample ID: LCSS H4 WG574663-03
Sample Date/Time: Tuesday, July 05, 2016 10:18:41
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89097.9	0.4				ug/L	59517	Standard
	Be	9	24382.9	0.9	**18.7020**	0.205	1.1	ug/L	10	Standard
	Al	27	19215.5	6.6	**0.0719**	0.005	7.4	ug/L	1872	Standard
	Sc	45	28077.7	3.6				ug/L	26715	Standard
	Ti	47	145.3	57.1	**0.3700**	0.343	92.8	ug/L	54	Standard
	V	51	212579.4	2.3	**29.6977**	1.062	3.6	ug/L	1419	Standard
	Cr	52	232740.8	1.5	**32.2112**	0.384	1.2	ug/L	7059	Standard
	Cr	53	248774.5	1.9	**283.2488**	5.159	1.8	ug/L	398	Standard
	Mn	55	174578.1	1.0	**27.8390**	0.323	1.2	ug/L	824	Standard
	Co	59	176300.5	0.7	**26.2811**	0.174	0.7	ug/L	167	Standard
	Ni	60	50092.7	0.4	**26.9485**	0.274	1.0	ug/L	391	Standard
	Cu	65	49677.3	1.4	**26.7504**	0.101	0.4	ug/L	147	Standard
	Zn	66	29338.0	0.9	**26.7882**	0.120	0.4	ug/L	184	Standard
>	**Ge**	72	417245.0	1.3				ug/L	422998	Standard
	As	75	27983.7	1.6	**25.0585**	0.389	1.6	ug/L	-58	Standard
	Se	82	2946.4	0.9	**25.2742**	0.435	1.7	ug/L	15	Standard
	Se-1	77	22278.7	1.2	**297.1877**	3.709	1.2	ug/L	58	Standard
>	**Ga**	71	496.7	11.8				mg/L	113	Standard
	Rb	85	156.7	9.2				ug/L	27	Standard
	Y	89	374825.2	1.4				ug/L	383780	Standard
>	**Rh**	103	63.3	39.7				ug/L	18	Standard
	Mo	98	1114.0	2.7	**0.4346**	0.005	1.1	ug/L	31	Standard
	Ag	107	170515.1	0.3	**26.7795**	0.381	1.4	ug/L	84	Standard
	Cd	111	51574.1	1.2	**25.6346**	0.385	1.5	mg/L	4	Standard
	Cd	114	125467.5	1.3	**25.6992**	0.368	1.4	ug/L	15	Standard
>	**In**	115	486841.8	1.7				ug/L	515400	Standard
	Sn	118	1626.8	27.1	**0.1157**	0.076	65.3	ug/L	1043	Standard
	Sb	123	109667.4	0.5	**25.3502**	0.343	1.4	ug/L	227	Standard
	Ba	135	52113.8	0.4	**27.4265**	0.446	1.6	ug/L	31	Standard
	Ce	140	126.7	16.4				ug/L	120	Standard
>	**Tb**	159	858869.4	0.8				ug/L	785817	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	211401.4	1.2	**24.7568**	0.524	2.1	ug/L	6	Standard
	Tl	205	170864.7	0.8	**22.9661**	0.319	1.4	ug/L	8	Standard
	Pb	206	143557.2	0.8	**26.9866**	0.422	1.6	ug/L	201	Standard
	Pb	207	123747.0	1.0	**25.7254**	0.260	1.0	ug/L	177	Standard
	Pb	208	456532.1	0.8	**23.6244**	0.409	1.7	ug/L	722	Standard
	U	238	172264.4	0.6	**23.4936**	0.257	1.1	ug/L	8	Standard
>	**Bi**	209	474657.3	0.9				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	180.0	21.0	**0.1822**	0.050	27.7	mg/L	38	Standard
K	39	40.0	33.1	**0.0364**	0.051	141.0	mg/L	33	Standard
Ca	43	40.0	25.0	**0.1510**	1.720	1138.4	mg/L	48	Standard
Fe	54	176.5	29.4	**0.0183**	0.038	205.6	mg/L	131	Standard
Fe	57	171.7	8.9	**0.0243**	0.045	185.8	mg/L	153	Standard
> **Sc-1**	45	28077.7	3.6				mg/L	26715	Standard
Cl	35	107579.9	0.5				ug/L	102686	Standard
Kr	83	2.3	99.0				ug/L	2	Standard
Br	81	1966.8	7.4				ug/L	1897	Standard
P	31	24441.4	1.4				ug/L	18491	Standard
S	34	5606.0	4.1				ug/L	3734	Standard
Sr	88	85.0	15.6				ug/L	47	Standard
C	12	93.3	52.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	23	Standard
Dy	164	25.4	55.4				mg/L	23	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	26.7	94.4				mg/L	13	Standard
I	127	15756.5	2.7				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		149.702	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.640	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	94.459	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	106.769	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cr 53 Upper, S, EEE	Cr	53	
Se-1 77 Upper, S, EEE	Se-1	77	

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Method 6020 - Summary Report

Sample ID: L1606145106 WG574663-01
Sample Date/Time: Tuesday, July 05, 2016 10:21:52
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84418.1	3.8				ug/L	59517	Standard
	Be	9	1016.7	0.6	**0.7941**	0.034	4.3	ug/L	10	Standard
	Al	27	3563578.5	0.9	**16.5127**	0.485	2.9	ug/L	1872	Standard
	Sc	45	35351.2	2.6				ug/L	26715	Standard
	Ti	47	21288.6	2.1	**83.6919**	1.223	1.5	ug/L	54	Standard
	V	51	514875.3	0.7	**66.7274**	1.014	1.5	ug/L	1419	Standard
	Cr	52	156424.1	1.5	**19.6513**	0.300	1.5	ug/L	7059	Standard
	Cr	53	138593.1	3.1	**145.7297**	4.567	3.1	ug/L	398	Standard
	Mn	55	1832238.2	1.2	**271.3443**	4.602	1.7	ug/L	824	Standard
	Co	59	25524.2	1.7	**3.4972**	0.081	2.3	ug/L	167	Standard
	Ni	60	42103.8	1.2	**20.9006**	0.103	0.5	ug/L	391	Standard
	Cu	65	102546.6	1.4	**51.1390**	0.631	1.2	ug/L	147	Standard
	Zn	66	89291.0	1.4	**75.6836**	0.517	0.7	ug/L	184	Standard
>	**Ge**	72	451173.5	0.8				ug/L	422998	Standard
	As	75	16334.4	0.4	**13.5506**	0.097	0.7	ug/L	-58	Standard
	Se	82	503.0	2.3	**3.8161**	0.087	2.3	ug/L	15	Standard
	Se-1	77	10945.0	5.9	**134.6658**	8.375	6.2	ug/L	58	Standard
>	**Ga**	71	11064.0	1.9				mg/L	113	Standard
	Rb	85	36604.2	2.2				ug/L	27	Standard
	Y	89	859178.3	2.1				ug/L	383780	Standard
>	**Rh**	103	75.0	11.5				ug/L	18	Standard
	Mo	98	11321.5	2.3	**4.2188**	0.152	3.6	ug/L	31	Standard
	Ag	107	875.0	4.4	**0.1169**	0.006	4.9	ug/L	84	Standard
	Cd	111	4512.3	2.4	**2.0988**	0.038	1.8	mg/L	4	Standard
	Cd	114	11115.0	3.9	**2.1311**	0.107	5.0	ug/L	15	Standard
>	**In**	115	519235.1	1.6				ug/L	515400	Standard
	Sn	118	6929.9	4.0	**1.0075**	0.060	5.9	ug/L	1043	Standard
	Sb	123	4873.8	13.1	**1.0406**	0.140	13.5	ug/L	227	Standard
	Ba	135	276651.4	2.3	**136.6046**	3.722	2.7	ug/L	31	Standard
	Ce	140	1457468.2	2.4				ug/L	120	Standard
>	**Tb**	159	896312.5	0.8				ug/L	785817	Standard
	Ho	165	34457.5	1.6				ug/L	7	Standard
	Tl	203	1627.4	1.2	**0.1812**	0.001	0.3	ug/L	6	Standard
	Tl	205	1371.7	7.8	**0.1721**	0.016	9.1	ug/L	8	Standard
	Pb	206	182170.6	0.3	**33.2179**	0.218	0.7	ug/L	201	Standard
	Pb	207	150468.5	0.3	**30.3435**	0.324	1.1	ug/L	177	Standard
	Pb	208	590890.8	1.2	**29.6618**	0.348	1.2	ug/L	722	Standard
	U	238	21543.6	1.1	**2.8472**	0.058	2.0	ug/L	8	Standard
>	**Bi**	209	489471.3	0.9				ug/L	444563	Standard

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Na	23	3.3	86.6	**29.9651**	25.947	86.6	mg/L	0	Standard
Mg	24	515.0	3.5	**0.4556**	0.029	6.3	mg/L	38	Standard
K	39	155.0	11.6	**0.3827**	0.046	11.9	mg/L	33	Standard
Ca	43	225.0	7.7	**20.9177**	2.599	12.4	mg/L	48	Standard
Fe	54	21358.0	2.6	**12.9039**	0.625	4.8	mg/L	131	Standard
Fe	57	5671.1	3.2	**12.8045**	0.603	4.7	mg/L	153	Standard
Sc-1	45	35351.2	2.6				mg/L	26715	Standard
Cl	35	120813.8	1.3				ug/L	102686	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	5834.5	10.0				ug/L	1897	Standard
P	31	21410.1	2.6				ug/L	18491	Standard
S	34	5474.3	2.0				ug/L	3734	Standard
Sr	88	166.7	9.2				ug/L	47	Standard
C	12	1330.1	1.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	456.7	16.1				mg/L	23	Standard
Dy	164	52163.9	2.2				mg/L	23	Standard
Ho-1	165	34457.5	1.6				mg/L	7	Standard
Er	166	33219.7	1.7				mg/L	13	Standard
I	127	71483.4	4.2				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		141.839	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.661	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.744
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.102
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

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Se-1 77 Upper, S, EEE	Se-1	77
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606145109S WG574663-04
Sample Date/Time: Tuesday, July 05, 2016 10:25:04
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	91812.3	0.3				ug/L	59517	Standard
	Be	9	25788.6	3.5	19.1948	0.629	3.3	ug/L	10	Standard
	Al	27	3689674.2	1.8	15.7082	0.304	1.9	ug/L	1872	Standard
	Sc	45	36654.3	1.2				ug/L	26715	Standard
	Ti	47	24746.9	1.9	95.2339	5.236	5.5	ug/L	54	Standard
	V	51	715478.9	2.3	90.7635	4.466	4.9	ug/L	1419	Standard
	Cr	52	364867.0	2.4	46.1080	2.802	6.1	ug/L	7059	Standard
	Cr	53	188822.7	1.2	194.3702	9.132	4.7	ug/L	398	Standard
	Mn	55	1803183.7	0.9	261.2009	11.281	4.3	ug/L	824	Standard
	Co	59	203800.3	1.3	27.4874	1.345	4.9	ug/L	167	Standard
	Ni	60	94872.8	0.3	46.3061	1.796	3.9	ug/L	391	Standard
	Cu	65	156908.3	1.1	76.5505	1.942	2.5	ug/L	147	Standard
	Zn	66	122522.4	0.6	101.6191	3.306	3.3	ug/L	184	Standard
>	Ge	72	461699.8	3.6				ug/L	422998	Standard
	As	75	44548.3	1.1	36.0611	1.478	4.1	ug/L	-58	Standard
	Se	82	3806.4	2.0	29.5786	1.649	5.6	ug/L	15	Standard
	Se-1	77	15638.4	1.1	188.4429	7.560	4.0	ug/L	58	Standard
>	Ga	71	12923.8	3.5				mg/L	113	Standard
	Rb	85	41130.8	2.5				ug/L	27	Standard
	Y	89	883461.3	1.6				ug/L	383780	Standard
>	Rh	103	81.7	36.9				ug/L	18	Standard
	Mo	98	11119.1	1.0	4.0936	0.201	4.9	ug/L	31	Standard
	Ag	107	169437.6	1.6	24.6587	1.344	5.5	ug/L	84	Standard
	Cd	111	57906.2	2.1	26.6733	1.497	5.6	mg/L	4	Standard
	Cd	114	139942.6	2.0	26.5678	1.569	5.9	ug/L	15	Standard
>	In	115	526017.9	3.9				ug/L	515400	Standard
	Sn	118	7243.4	3.7	1.0452	0.032	3.1	ug/L	1043	Standard
	Sb	123	117714.8	1.6	25.2129	1.285	5.1	ug/L	227	Standard
	Ba	135	327366.2	0.8	159.7393	7.528	4.7	ug/L	31	Standard
	Ce	140	1537481.7	1.2				ug/L	120	Standard
>	Tb	159	931910.0	4.2				ug/L	785817	Standard
	Ho	165	36582.4	1.2				ug/L	7	Standard
	Tl	203	213475.7	0.7	23.8226	1.044	4.4	ug/L	6	Standard
	Tl	205	175419.7	0.7	22.4638	0.769	3.4	ug/L	8	Standard
	Pb	206	334845.6	1.3	60.0496	2.994	5.0	ug/L	201	Standard
	Pb	207	283040.3	0.6	56.1331	2.483	4.4	ug/L	177	Standard
	Pb	208	1085063.5	0.5	53.5671	2.289	4.3	ug/L	722	Standard
	U	238	197136.0	1.2	25.6127	0.785	3.1	ug/L	8	Standard
>	Bi	209	498598.6	3.8				ug/L	444563	Standard

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Na	23	3.3	86.6	**28.6197**	24.784	86.6	mg/L	0	Standard
Mg	24	646.7	16.9	**0.5579**	0.096	17.3	mg/L	38	Standard
K	39	175.0	20.0	**0.4284**	0.106	24.7	mg/L	33	Standard
Ca	43	210.0	17.2	**18.2405**	4.420	24.2	mg/L	48	Standard
Fe	54	20289.2	3.6	**11.8012**	0.292	2.5	mg/L	131	Standard
Fe	57	5335.9	2.2	**11.5671**	0.115	1.0	mg/L	153	Standard
> **Sc-1**	45	36654.3	1.2				mg/L	26715	Standard
Cl	35	125111.1	0.6				ug/L	102686	Standard
Kr	83	2.7	43.3				ug/L	2	Standard
Br	81	6341.3	3.8				ug/L	1897	Standard
P	31	21325.0	1.2				ug/L	18491	Standard
S	34	5641.1	1.7				ug/L	3734	Standard
Sr	88	180.0	12.1				ug/L	47	Standard
C	12	1503.4	2.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	426.7	15.6				mg/L	23	Standard
Dy	164	55395.5	2.5				mg/L	23	Standard
Ho-1	165	36582.4	1.2				mg/L	7	Standard
Er	166	35110.6	0.4				mg/L	13	Standard
I	127	69658.4	5.3				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		154.263	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.150	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.060
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		112.155
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

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Zn 66 Upper, S, EEE	Zn	66
Se-1 77 Upper, S, EEE	Se-1	77
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606145110SD WG574663-05
Sample Date/Time: Tuesday, July 05, 2016 10:28:15
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92567.3	4.4				ug/L	59517	Standard
	Be	9	27448.2	1.3	**20.2975**	1.096	5.4	ug/L	10	Standard
	Al	27	3947408.5	1.4	**16.6926**	0.844	5.1	ug/L	1872	Standard
	Sc	45	37227.4	2.9				ug/L	26715	Standard
	Ti	47	22470.7	1.4	**85.5564**	0.807	0.9	ug/L	54	Standard
	V	51	787499.3	2.0	**98.9258**	2.683	2.7	ug/L	1419	Standard
	Cr	52	377991.5	1.4	**47.2948**	0.737	1.6	ug/L	7059	Standard
	Cr	53	186356.2	2.4	**189.9303**	6.848	3.6	ug/L	398	Standard
	Mn	55	2224101.6	2.0	**318.9399**	2.166	0.7	ug/L	824	Standard
	Co	59	213001.6	2.9	**28.4300**	0.204	0.7	ug/L	167	Standard
	Ni	60	102452.9	1.6	**49.5228**	0.586	1.2	ug/L	391	Standard
	Cu	65	168431.6	2.1	**81.3787**	0.641	0.8	ug/L	147	Standard
	Zn	66	130918.9	1.6	**107.5275**	0.961	0.9	ug/L	184	Standard
>	**Ge**	72	465960.3	2.2				ug/L	422998	Standard
	As	75	50506.2	2.6	**40.4629**	0.279	0.7	ug/L	-58	Standard
	Se	82	3972.9	1.3	**30.5627**	0.577	1.9	ug/L	15	Standard
	Se-1	77	15238.3	0.9	**181.8181**	4.788	2.6	ug/L	58	Standard
>	**Ga**	71	12636.9	5.1				mg/L	113	Standard
	Rb	85	34183.6	3.8				ug/L	27	Standard
	Y	89	934981.2	1.9				ug/L	383780	Standard
>	**Rh**	103	91.7	39.5				ug/L	18	Standard
	Mo	98	12089.5	2.1	**4.3684**	0.052	1.2	ug/L	31	Standard
	Ag	107	177713.5	0.9	**25.3798**	0.139	0.5	ug/L	84	Standard
	Cd	111	59831.1	3.0	**27.0406**	0.556	2.1	mg/L	4	Standard
	Cd	114	145986.8	3.5	**27.1872**	0.590	2.2	ug/L	15	Standard
>	**In**	115	535307.0	1.4				ug/L	515400	Standard
	Sn	118	7665.3	2.9	**1.0941**	0.052	4.8	ug/L	1043	Standard
	Sb	123	122141.1	0.8	**25.6760**	0.292	1.1	ug/L	227	Standard
	Ba	135	357831.6	1.4	**171.3677**	1.173	0.7	ug/L	31	Standard
	Ce	140	1664011.1	2.6				ug/L	120	Standard
>	**Tb**	159	942853.7	0.8				ug/L	785817	Standard
	Ho	165	39693.6	2.5				ug/L	7	Standard
	Tl	203	219374.2	1.1	**24.1748**	0.193	0.8	ug/L	6	Standard
	Tl	205	181310.6	2.9	**22.9312**	0.490	2.1	ug/L	8	Standard
	Pb	206	361102.5	1.7	**63.9442**	1.161	1.8	ug/L	201	Standard
	Pb	207	305063.7	1.7	**59.7456**	0.803	1.3	ug/L	177	Standard
	Pb	208	1165074.5	1.1	**56.8063**	0.948	1.7	ug/L	722	Standard
	U	238	205870.2	2.0	**26.4212**	0.390	1.5	ug/L	8	Standard
>	**Bi**	209	504359.6	1.0				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	641.7	11.4	**0.5457**	0.076	14.0	mg/L	38	Standard
K	39	143.3	14.1	**0.3220**	0.071	22.1	mg/L	33	Standard
Ca	43	233.3	16.2	**20.4787**	4.301	21.0	mg/L	48	Standard
Fe	54	23912.6	2.6	**13.7191**	0.336	2.5	mg/L	131	Standard
Fe	57	6194.6	4.8	**13.2925**	0.564	4.2	mg/L	153	Standard
> **Sc-1**	45	37227.4	2.9				mg/L	26715	Standard
Cl	35	124605.9	2.8				ug/L	102686	Standard
Kr	83	3.3	91.7				ug/L	2	Standard
Br	81	5787.8	8.8				ug/L	1897	Standard
P	31	22254.7	1.1				ug/L	18491	Standard
S	34	5691.1	4.1				ug/L	3734	Standard
Sr	88	145.0	18.2				ug/L	47	Standard
C	12	1630.1	3.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	570.0	14.4				mg/L	23	Standard
Dy	164	60514.1	3.8				mg/L	23	Standard
Ho-1	165	39693.6	2.5				mg/L	7	Standard
Er	166	38986.8	3.0				mg/L	13	Standard
I	127	74084.4	5.7				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		155.531	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.157	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.862
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		113.451
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

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Zn 66 Upper, S, EEE	Zn	66
Se-1 77 Upper, S, EEE	Se-1	77
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606145101
Sample Date/Time: Tuesday, July 05, 2016 10:31:27
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	96300.3	3.4				ug/L	59517	Standard
	Be	9	420.0	9.7	**0.2670**	0.019	7.0	ug/L	10	Standard
	Al	27	2367758.4	2.6	**9.6073**	0.083	0.9	ug/L	1872	Standard
	Sc	45	34126.7	0.7				ug/L	26715	Standard
	Ti	47	24224.4	0.8	**90.6734**	1.027	1.1	ug/L	54	Standard
	V	51	134625.6	3.4	**16.4696**	0.495	3.0	ug/L	1419	Standard
	Cr	52	100176.0	5.2	**11.5973**	0.644	5.5	ug/L	7059	Standard
	Cr	53	218029.7	14.7	**218.3883**	31.900	14.6	ug/L	398	Standard
	Mn	55	1246069.6	1.4	**175.6002**	3.333	1.9	ug/L	824	Standard
	Co	59	19635.0	1.5	**2.5539**	0.052	2.0	ug/L	167	Standard
	Ni	60	16067.5	1.5	**7.4648**	0.122	1.6	ug/L	391	Standard
	Cu	65	20297.6	1.6	**9.5712**	0.209	2.2	ug/L	147	Standard
	Zn	66	90111.9	1.7	**72.7009**	1.609	2.2	ug/L	184	Standard
>	**Ge**	72	474008.2	0.5				ug/L	422998	Standard
	As	75	10729.1	3.7	**8.4913**	0.334	3.9	ug/L	-58	Standard
	Se	82	74.1	24.9	**0.3575**	0.139	39.0	ug/L	15	Standard
	Se-1	77	15628.8	13.6	**183.2190**	24.701	13.5	ug/L	58	Standard
>	**Ga**	71	9844.9	2.3				mg/L	113	Standard
	Rb	85	75058.9	2.6				ug/L	27	Standard
	Y	89	496613.8	1.6				ug/L	383780	Standard
>	**Rh**	103	38.3	7.5				ug/L	18	Standard
	Mo	98	2422.5	2.0	**0.8423**	0.021	2.5	ug/L	31	Standard
	Ag	107	431.0	5.5	**0.0478**	0.004	7.4	ug/L	84	Standard
	Cd	111	826.3	3.8	**0.3584**	0.015	4.2	mg/L	4	Standard
	Cd	114	2066.0	2.3	**0.3689**	0.010	2.7	ug/L	15	Standard
>	**In**	115	551668.5	0.5				ug/L	515400	Standard
	Sn	118	6988.3	4.5	**0.9465**	0.045	4.8	ug/L	1043	Standard
	Sb	123	2722.2	8.4	**0.5392**	0.045	8.3	ug/L	227	Standard
	Ba	135	112861.5	0.6	**52.4311**	0.519	1.0	ug/L	31	Standard
	Ce	140	740222.4	0.5				ug/L	120	Standard
>	**Tb**	159	940061.7	0.9				ug/L	785817	Standard
	Ho	165	5439.3	2.8				ug/L	7	Standard
	Tl	203	855.0	6.5	**0.0902**	0.006	6.2	ug/L	6	Standard
	Tl	205	756.7	7.3	**0.0885**	0.006	7.2	ug/L	8	Standard
	Pb	206	282348.8	0.2	**49.7501**	0.303	0.6	ug/L	201	Standard
	Pb	207	237157.4	0.8	**46.2181**	0.627	1.4	ug/L	177	Standard
	Pb	208	908660.4	1.0	**44.0818**	0.650	1.5	ug/L	722	Standard
	U	238	4636.0	1.4	**0.5898**	0.010	1.7	ug/L	8	Standard
>	**Bi**	209	506760.7	0.6				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	138.3	17.1	**0.1024**	0.024	23.2	mg/L	38	Standard
K	39	191.7	24.1	**0.5278**	0.160	30.2	mg/L	33	Standard
Ca	43	85.0	15.6	**4.5864**	1.562	34.1	mg/L	48	Standard
Fe	54	11199.1	3.0	**6.9495**	0.163	2.4	mg/L	131	Standard
Fe	57	3090.3	4.2	**7.0129**	0.282	4.0	mg/L	153	Standard
Sc-1	45	34126.7	0.7				mg/L	26715	Standard
Cl	35	119518.9	0.7				ug/L	102686	Standard
Kr	83	2.7	86.6				ug/L	2	Standard
Br	81	2663.6	2.8				ug/L	1897	Standard
P	31	22528.4	3.2				ug/L	18491	Standard
S	34	6091.2	2.3				ug/L	3734	Standard
Sr	88	101.7	67.9				ug/L	47	Standard
C	12	383.3	9.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	170.0	10.2				mg/L	23	Standard
Dy	164	9346.6	4.0				mg/L	23	Standard
Ho-1	165	5439.3	2.8				mg/L	7	Standard
Er	166	5214.2	8.3				mg/L	13	Standard
I	127	32424.7	3.2				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		161.804	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		112.059	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.037
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		113.991
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

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Se-1 77 Upper, S, EEE Se-1 77

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Method 6020 - Summary Report

Sample ID: L1606145102
Sample Date/Time: Tuesday, July 05, 2016 10:34:38
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	95455.0	3.3				ug/L	59517	Standard
	Be	9	488.3	3.1	**0.3196**	0.023	7.1	ug/L	10	Standard
	Al	27	6729800.5	2.4	**27.5831**	0.993	3.6	ug/L	1872	Standard
	Sc	45	34343.9	3.1				ug/L	26715	Standard
	Ti	47	29782.6	2.0	**108.4368**	3.647	3.4	ug/L	54	Standard
	V	51	174788.9	3.0	**20.8308**	0.425	2.0	ug/L	1419	Standard
	Cr	52	146605.1	2.1	**16.9125**	0.463	2.7	ug/L	7059	Standard
	Cr	53	152022.1	9.9	**147.9448**	15.301	10.3	ug/L	398	Standard
	Mn	55	3975518.2	1.1	**544.8987**	11.406	2.1	ug/L	824	Standard
	Co	59	48242.3	0.2	**6.1346**	0.107	1.7	ug/L	167	Standard
	Ni	60	31076.2	1.0	**14.2120**	0.312	2.2	ug/L	391	Standard
	Cu	65	69088.5	0.2	**31.8512**	0.503	1.6	ug/L	147	Standard
	Zn	66	196946.8	0.4	**154.6413**	2.812	1.8	ug/L	184	Standard
>	**Ge**	72	487665.0	1.6				ug/L	422998	Standard
	As	75	10052.7	3.3	**7.7360**	0.126	1.6	ug/L	-58	Standard
	Se	82	100.5	8.6	**0.5373**	0.060	11.1	ug/L	15	Standard
	Se-1	77	12181.3	9.4	**138.6940**	13.419	9.7	ug/L	58	Standard
>	**Ga**	71	13002.2	3.0				mg/L	113	Standard
	Rb	85	139400.1	1.8				ug/L	27	Standard
	Y	89	543498.9	1.3				ug/L	383780	Standard
>	**Rh**	103	58.3	39.6				ug/L	18	Standard
	Mo	98	7908.6	2.5	**2.7773**	0.110	4.0	ug/L	31	Standard
	Ag	107	560.7	7.4	**0.0660**	0.006	9.8	ug/L	84	Standard
	Cd	111	885.6	4.5	**0.3854**	0.020	5.2	mg/L	4	Standard
	Cd	114	2255.4	2.1	**0.4043**	0.015	3.8	ug/L	15	Standard
>	**In**	115	550414.6	1.7				ug/L	515400	Standard
	Sn	118	10740.5	2.1	**1.5560**	0.019	1.2	ug/L	1043	Standard
	Sb	123	3508.6	7.0	**0.7010**	0.040	5.6	ug/L	227	Standard
	Ba	135	233884.5	1.0	**108.9317**	0.716	0.7	ug/L	31	Standard
	Ce	140	773942.7	0.2				ug/L	120	Standard
>	**Tb**	159	936947.5	1.0				ug/L	785817	Standard
	Ho	165	8690.8	1.9				ug/L	7	Standard
	Tl	203	1666.8	1.8	**0.1776**	0.007	3.7	ug/L	6	Standard
	Tl	205	1376.7	2.2	**0.1650**	0.005	3.0	ug/L	8	Standard
	Pb	206	174591.5	0.7	**30.4684**	0.696	2.3	ug/L	201	Standard
	Pb	207	143512.1	0.5	**27.6966**	0.652	2.4	ug/L	177	Standard
	Pb	208	564015.7	0.3	**27.0940**	0.434	1.6	ug/L	722	Standard
	U	238	10234.5	2.1	**1.2931**	0.032	2.5	ug/L	8	Standard
>	**Bi**	209	511498.1	1.9				ug/L	444563	Standard

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Na	23	3.3	86.6	**30.4304**	26.386	86.7	mg/L	0	Standard
Mg	24	231.7	12.6	**0.1933**	0.035	18.1	mg/L	38	Standard
K	39	413.3	26.3	**1.2849**	0.411	32.0	mg/L	33	Standard
Ca	43	188.3	14.6	**17.1374**	2.792	16.3	mg/L	48	Standard
Fe	54	21089.1	1.4	**13.1129**	0.341	2.6	mg/L	131	Standard
Fe	57	5754.4	1.9	**13.4013**	0.686	5.1	mg/L	153	Standard
Sc-1	45	34343.9	3.1				mg/L	26715	Standard
Cl	35	127275.9	2.5				ug/L	102686	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	3720.5	3.8				ug/L	1897	Standard
P	31	23304.6	0.3				ug/L	18491	Standard
S	34	6324.7	3.4				ug/L	3734	Standard
Sr	88	123.3	18.7				ug/L	47	Standard
C	12	446.7	26.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	176.7	14.2				mg/L	23	Standard
Dy	164	15071.2	2.7				mg/L	23	Standard
Ho-1	165	8690.8	1.9				mg/L	7	Standard
Er	166	8282.3	3.5				mg/L	13	Standard
I	127	47730.2	4.6				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		160.383	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		115.288	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.794
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		115.056
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
Cr 53 Upper, S, EEE	Cr	53	

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Mn 55 Upper, S, EEE	Mn	55
Zn 66 Upper, S, EEE	Zn	66
Se-1 77 Upper, S, EEE	Se-1	77
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606145102PS WG575049-01
Sample Date/Time: Tuesday, July 05, 2016 10:37:50
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92486.5	2.1				ug/L	59517	Standard
	Be	9	54039.6	2.5	**39.9902**	1.823	4.6	ug/L	10	Standard
	Al	27	6702719.9	3.6	**28.3315**	0.431	1.5	ug/L	1872	Standard
	Sc	45	33709.2	4.7				ug/L	26715	Standard
	Ti	47	29540.8	1.2	**111.4556**	1.217	1.1	ug/L	54	Standard
	V	51	606531.6	1.7	**75.3912**	0.314	0.4	ug/L	1419	Standard
	Cr	52	567176.4	1.3	**70.7450**	0.671	0.9	ug/L	7059	Standard
	Cr	53	188806.4	3.0	**190.4660**	3.113	1.6	ug/L	398	Standard
	Mn	55	4291846.8	1.5	**609.6425**	8.461	1.4	ug/L	824	Standard
	Co	59	434604.6	0.9	**57.4977**	1.668	2.9	ug/L	167	Standard
	Ni	60	139210.3	1.0	**66.7060**	0.799	1.2	ug/L	391	Standard
	Cu	65	178227.9	1.0	**85.2934**	1.566	1.8	ug/L	147	Standard
	Zn	66	258120.8	0.5	**210.1308**	4.737	2.3	ug/L	184	Standard
>	**Ge**	72	470547.5	2.2				ug/L	422998	Standard
	As	75	75543.5	1.9	**59.9211**	1.340	2.2	ug/L	-58	Standard
	Se	82	6892.2	1.4	**52.6663**	1.888	3.6	ug/L	15	Standard
	Se-1	77	15541.0	0.3	**183.6099**	3.476	1.9	ug/L	58	Standard
>	**Ga**	71	13265.8	1.7				mg/L	113	Standard
	Rb	85	137203.4	0.8				ug/L	27	Standard
	Y	89	529720.9	2.4				ug/L	383780	Standard
>	**Rh**	103	63.3	25.4				ug/L	18	Standard
	Mo	98	7951.5	2.9	**2.8798**	0.055	1.9	ug/L	31	Standard
	Ag	107	369070.7	0.4	**52.9279**	2.054	3.9	ug/L	84	Standard
	Cd	111	116570.1	1.0	**52.8942**	1.790	3.4	mg/L	4	Standard
	Cd	114	281010.1	0.2	**52.5513**	1.895	3.6	ug/L	15	Standard
>	**In**	115	533710.9	3.8				ug/L	515400	Standard
	Sn	118	10321.9	4.2	**1.5405**	0.022	1.5	ug/L	1043	Standard
	Sb	123	239957.0	1.1	**50.6654**	2.386	4.7	ug/L	227	Standard
	Ba	135	339166.4	0.2	**163.0629**	6.024	3.7	ug/L	31	Standard
	Ce	140	757093.0	0.6				ug/L	120	Standard
>	**Tb**	159	918140.9	2.3				ug/L	785817	Standard
	Ho	165	8654.1	3.7				ug/L	7	Standard
	Tl	203	466157.4	0.4	**51.0161**	1.276	2.5	ug/L	6	Standard
	Tl	205	384400.8	1.5	**48.2945**	1.556	3.2	ug/L	8	Standard
	Pb	206	473813.5	0.3	**83.3316**	2.208	2.6	ug/L	201	Standard
	Pb	207	406320.4	0.2	**79.0456**	2.340	3.0	ug/L	177	Standard
	Pb	208	1553678.1	1.6	**75.2238**	1.416	1.9	ug/L	722	Standard
	U	238	393828.7	1.0	**50.1983**	1.449	2.9	ug/L	8	Standard
>	**Bi**	209	508141.7	3.0				ug/L	444563	Standard

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Na	23	3.3	86.6	**31.0869**	27.005	86.9	mg/L	0	Standard
Mg	24	198.3	18.6	**0.1637**	0.035	21.4	mg/L	38	Standard
K	39	406.7	10.5	**1.2854**	0.179	13.9	mg/L	33	Standard
Ca	43	155.0	8.5	**13.4861**	1.915	14.2	mg/L	48	Standard
Fe	54	21393.9	2.9	**13.5718**	0.780	5.7	mg/L	131	Standard
Fe	57	5667.7	4.9	**13.4360**	0.276	2.1	mg/L	153	Standard
> **Sc-1**	45	33709.2	4.7				mg/L	26715	Standard
Cl	35	122143.7	1.1				ug/L	102686	Standard
Kr	83	2.7	108.3				ug/L	2	Standard
Br	81	3353.7	7.7				ug/L	1897	Standard
P	31	23266.2	1.4				ug/L	18491	Standard
S	34	5949.5	2.7				ug/L	3734	Standard
Sr	88	78.3	36.9				ug/L	47	Standard
C	12	416.7	6.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	156.7	3.7				mg/L	23	Standard
Dy	164	14716.3	3.4				mg/L	23	Standard
Ho-1	165	8654.1	3.7				mg/L	7	Standard
Er	166	7888.7	4.0				mg/L	13	Standard
I	127	47038.1	6.2				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		155.396	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.241	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.553	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	114.301	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
Cr 53 Upper, S, EEE	Cr	53	

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Mn 55 Upper, S, EEE	Mn	55
Zn 66 Upper, S, EEE	Zn	66
Se-1 77 Upper, S, EEE	Se-1	77
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606145102SDL WG575049-02
Sample Date/Time: Tuesday, July 05, 2016 10:41:01
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	57964.0	0.6				ug/L	59517	Standard
	Be	9	111.7	2.6	**0.1008**	0.003	2.9	ug/L	10	Standard
	Al	27	1095254.7	1.1	**7.3789**	0.033	0.5	ug/L	1872	Standard
	Sc	45	28546.9	1.5				ug/L	26715	Standard
	Ti	47	5496.3	1.3	**22.0763**	0.684	3.1	ug/L	54	Standard
	V	51	31405.8	2.5	**4.0242**	0.171	4.3	ug/L	1419	Standard
	Cr	52	30164.7	1.1	**3.1202**	0.057	1.8	ug/L	7059	Standard
	Cr	53	40515.8	1.3	**43.5878**	1.037	2.4	ug/L	398	Standard
	Mn	55	729144.7	0.3	**111.1254**	2.253	2.0	ug/L	824	Standard
	Co	59	8726.8	1.1	**1.2153**	0.041	3.4	ug/L	167	Standard
	Ni	60	6092.9	0.9	**2.9447**	0.045	1.5	ug/L	391	Standard
	Cu	65	13417.3	0.9	**6.8221**	0.107	1.6	ug/L	147	Standard
	Zn	66	41065.9	1.2	**35.7658**	0.867	2.4	ug/L	184	Standard
>	Ge	72	438215.2	2.3				ug/L	422998	Standard
	As	75	1917.2	6.6	**1.6850**	0.145	8.6	ug/L	-58	Standard
	Se	82	32.6	6.4	**0.0620**	0.014	22.6	ug/L	15	Standard
	Se-1	77	2564.6	2.2	**31.9793**	0.528	1.7	ug/L	58	Standard
>	Ga	71	2510.2	5.3				mg/L	113	Standard
	Rb	85	24840.3	1.6				ug/L	27	Standard
	Y	89	392893.1	1.7				ug/L	383780	Standard
>	Rh	103	16.7	75.5				ug/L	18	Standard
	Mo	98	1401.8	4.4	**0.5331**	0.032	5.9	ug/L	31	Standard
	Ag	107	213.7	10.6	**0.0206**	0.003	15.1	ug/L	84	Standard
	Cd	111	183.9	9.9	**0.0845**	0.008	9.5	mg/L	4	Standard
	Cd	114	476.8	11.7	**0.0901**	0.010	10.7	ug/L	15	Standard
>	In	115	501582.7	1.5				ug/L	515400	Standard
	Sn	118	2480.2	11.4	**0.2597**	0.056	21.6	ug/L	1043	Standard
	Sb	123	2141.9	24.9	**0.4649**	0.123	26.4	ug/L	227	Standard
	Ba	135	42972.9	0.5	**21.9469**	0.425	1.9	ug/L	31	Standard
	Ce	140	142041.1	0.9				ug/L	120	Standard
>	Tb	159	806653.6	1.4				ug/L	785817	Standard
	Ho	165	1461.7	2.6				ug/L	7	Standard
	Tl	203	382.7	6.2	**0.0423**	0.003	6.3	ug/L	6	Standard
	Tl	205	305.0	24.1	**0.0352**	0.010	27.4	ug/L	8	Standard
	Pb	206	31166.7	1.0	**5.9721**	0.086	1.4	ug/L	201	Standard
	Pb	207	25233.3	0.5	**5.3414**	0.081	1.5	ug/L	177	Standard
	Pb	208	105054.1	1.2	**5.5370**	0.086	1.5	ug/L	722	Standard
	U	238	1882.1	5.1	**0.2607**	0.013	4.9	ug/L	8	Standard
>	Bi	209	462925.1	1.5				ug/L	444563	Standard

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Na	23	3.3	86.6	**36.5066**	31.621	86.6	mg/L	0	Standard
Mg	24	40.0	45.1	**0.0136**	0.022	160.1	mg/L	38	Standard
K	39	98.3	19.3	**0.2737**	0.078	28.6	mg/L	33	Standard
Ca	43	73.3	10.4	**4.9246**	1.170	23.8	mg/L	48	Standard
Fe	54	3790.7	3.4	**2.7433**	0.104	3.8	mg/L	131	Standard
Fe	57	1205.0	3.0	**3.0135**	0.147	4.9	mg/L	153	Standard
> **Sc-1**	45	28546.9	1.5				mg/L	26715	Standard
Cl	35	102927.1	0.4				ug/L	102686	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1773.4	4.3				ug/L	1897	Standard
P	31	8959.3	0.9				ug/L	18491	Standard
S	34	4902.5	3.1				ug/L	3734	Standard
Sr	88	51.7	24.4				ug/L	47	Standard
C	12	66.7	31.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	25.0				mg/L	23	Standard
Dy	164	2723.5	4.1				mg/L	23	Standard
Ho-1	165	1461.7	2.6				mg/L	7	Standard
Er	166	1393.4	9.5				mg/L	13	Standard
I	127	36296.8	0.9				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.391	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.598	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	97.319	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	104.130	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606145102SDL WG575049-02
Sample Date/Time: Tuesday, July 05, 2016 10:44:13
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	49243.3	3.3				ug/L	59517	Standard
	Be	9	26.7	39.0	**0.0058**	0.014	237.4	ug/L	10	Standard
	Al	27	212721.3	1.3	**1.6783**	0.042	2.5	ug/L	1872	Standard
	Sc	45	27433.2	2.0				ug/L	26715	Standard
	Ti	47	1107.7	3.1	**4.2771**	0.178	4.2	ug/L	54	Standard
	V	51	7348.6	1.8	**0.8095**	0.030	3.7	ug/L	1419	Standard
	Cr	52	10131.1	1.7	**0.4074**	0.025	6.1	ug/L	7059	Standard
	Cr	53	15222.6	3.6	**16.2080**	0.438	2.7	ug/L	398	Standard
	Mn	55	145385.2	0.9	**22.1749**	0.340	1.5	ug/L	824	Standard
	Co	59	1900.8	1.5	**0.2465**	0.003	1.3	ug/L	167	Standard
	Ni	60	1466.7	0.8	**0.5613**	0.007	1.2	ug/L	391	Standard
	Cu	65	2781.6	1.2	**1.3599**	0.036	2.7	ug/L	147	Standard
	Zn	66	9116.1	1.1	**7.8588**	0.045	0.6	ug/L	184	Standard
>	Ge	72	435735.1	1.6				ug/L	422998	Standard
	As	75	307.5	38.6	**0.3158**	0.105	33.4	ug/L	-58	Standard
	Se	82	18.6	74.4	**-0.0509**	0.117	229.4	ug/L	15	Standard
	Se-1	77	847.4	3.1	**10.1822**	0.435	4.3	ug/L	58	Standard
>	Ga	71	563.3	8.2				mg/L	113	Standard
	Rb	85	5184.2	0.5				ug/L	27	Standard
	Y	89	384411.6	4.5				ug/L	383780	Standard
>	Rh	103	16.7	45.8				ug/L	18	Standard
	Mo	98	334.4	9.1	**0.1194**	0.009	7.2	ug/L	31	Standard
	Ag	107	118.0	13.2	**0.0059**	0.003	44.4	ug/L	84	Standard
	Cd	111	48.7	10.3	**0.0193**	0.003	15.4	mg/L	4	Standard
	Cd	114	106.3	20.1	**0.0164**	0.004	25.0	ug/L	15	Standard
>	In	115	504541.4	2.8				ug/L	515400	Standard
	Sn	118	885.0	33.3	**-0.0256**	0.047	184.8	ug/L	1043	Standard
	Sb	123	1059.7	23.7	**0.2192**	0.050	22.7	ug/L	227	Standard
	Ba	135	8479.0	0.7	**4.2871**	0.116	2.7	ug/L	31	Standard
	Ce	140	27329.6	0.4				ug/L	120	Standard
>	Tb	159	780954.8	2.4				ug/L	785817	Standard
	Ho	165	301.7	20.5				ug/L	7	Standard
	Tl	203	128.7	11.8	**0.0125**	0.002	16.3	ug/L	6	Standard
	Tl	205	91.7	30.0	**0.0064**	0.004	63.8	ug/L	8	Standard
	Pb	206	6174.9	1.4	**1.1929**	0.007	0.6	ug/L	201	Standard
	Pb	207	5019.5	1.1	**1.0657**	0.013	1.2	ug/L	177	Standard
	Pb	208	21403.9	1.3	**1.1335**	0.003	0.3	ug/L	722	Standard
	U	238	365.7	5.3	**0.0506**	0.003	5.0	ug/L	8	Standard
>	Bi	209	445597.3	1.1				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	31.7	18.2	**0.0051**	0.007	142.5	mg/L	38	Standard
K	39	48.3	15.8	**0.0770**	0.034	44.2	mg/L	33	Standard
Ca	43	46.7	34.4	**1.2487**	2.341	187.5	mg/L	48	Standard
Fe	54	833.8	6.6	**0.5377**	0.035	6.5	mg/L	131	Standard
Fe	57	361.7	13.3	**0.6103**	0.152	25.0	mg/L	153	Standard
> **Sc-1**	45	27433.2	2.0				mg/L	26715	Standard
Cl	35	99619.1	1.7				ug/L	102686	Standard
Kr	83	3.0	115.5				ug/L	2	Standard
Br	81	1573.4	5.8				ug/L	1897	Standard
P	31	6636.5	4.3				ug/L	18491	Standard
S	34	4434.0	1.9				ug/L	3734	Standard
Sr	88	80.0	16.5				ug/L	47	Standard
C	12	73.3	20.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	114.6				mg/L	23	Standard
Dy	164	495.0	12.2				mg/L	23	Standard
Ho-1	165	301.7	20.5				mg/L	7	Standard
Er	166	313.3	4.9				mg/L	13	Standard
I	127	34170.2	2.9				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		82.739	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.011	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.893
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.233
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, July 05, 2016 10:47:26
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51443.9	2.3				ug/L	59517	Standard
	Be	9	39172.3	3.7	**52.1373**	3.047	5.8	ug/L	10	Standard
	Al	27	7091306.9	1.3	**53.9261**	1.288	2.4	ug/L	1872	Standard
	Sc	45	29433.6	6.4				ug/L	26715	Standard
	Ti	47	25883.1	1.7	**99.6649**	1.934	1.9	ug/L	54	Standard
	V	51	378476.2	1.5	**47.9762**	1.568	3.3	ug/L	1419	Standard
	Cr	52	388291.0	1.7	**49.1588**	1.543	3.1	ug/L	7059	Standard
	Cr	53	51136.2	2.2	**52.3946**	2.154	4.1	ug/L	398	Standard
	Mn	55	339015.4	1.1	**49.0540**	1.615	3.3	ug/L	824	Standard
	Co	59	351131.2	0.8	**47.4186**	1.464	3.1	ug/L	167	Standard
	Ni	60	101735.2	1.9	**49.7282**	1.809	3.6	ug/L	391	Standard
	Cu	65	100071.5	2.1	**48.8595**	1.575	3.2	ug/L	147	Standard
	Zn	66	58828.3	1.8	**48.7660**	1.404	2.9	ug/L	184	Standard
>	**Ge**	72	461081.6	3.6				ug/L	422998	Standard
	As	75	58960.5	1.4	**47.7594**	1.382	2.9	ug/L	-58	Standard
	Se	82	5982.2	1.4	**46.6329**	1.288	2.8	ug/L	15	Standard
	Se-1	77	4323.3	1.9	**51.6659**	1.569	3.0	ug/L	58	Standard
>	**Ga**	71	116.7	13.1				mg/L	113	Standard
	Rb	85	950.0	7.1				ug/L	27	Standard
	Y	89	397802.5	3.0				ug/L	383780	Standard
>	**Rh**	103	41.7	25.0				ug/L	18	Standard
	Mo	98	260548.4	1.4	**95.0668**	1.820	1.9	ug/L	31	Standard
	Ag	107	334433.8	1.0	**48.1515**	1.472	3.1	ug/L	84	Standard
	Cd	111	106832.0	0.8	**48.6756**	1.420	2.9	mg/L	4	Standard
	Cd	114	266119.3	1.2	**49.9600**	1.063	2.1	ug/L	15	Standard
>	**In**	115	531351.4	2.8				ug/L	515400	Standard
	Sn	118	290753.5	1.2	**48.5577**	1.676	3.5	ug/L	1043	Standard
	Sb	123	235402.2	0.6	**49.8905**	1.407	2.8	ug/L	227	Standard
	Ba	135	99526.5	0.7	**48.0193**	1.003	2.1	ug/L	31	Standard
	Ce	140	1210.1	40.8				ug/L	120	Standard
>	**Tb**	159	803321.7	2.7				ug/L	785817	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	401152.8	0.4	**48.9599**	1.820	3.7	ug/L	6	Standard
	Tl	205	347377.0	0.4	**48.6673**	1.791	3.7	ug/L	8	Standard
	Pb	206	247960.2	0.4	**48.6117**	1.723	3.5	ug/L	201	Standard
	Pb	207	226113.7	0.4	**49.0328**	1.786	3.6	ug/L	177	Standard
	Pb	208	918814.9	0.9	**49.6084**	2.095	4.2	ug/L	722	Standard
	U	238	341289.7	0.5	**48.5107**	1.791	3.7	ug/L	8	Standard
>	**Bi**	209	455797.4	3.3				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	3965.5	1.6	**4.4967**	0.254	5.6	mg/L	38	Standard
K	39	1118.4	8.8	**4.3111**	0.182	4.2	mg/L	33	Standard
Ca	43	58.3	48.7	**2.3697**	3.619	152.7	mg/L	48	Standard
Fe	54	6650.7	1.6	**4.7651**	0.377	7.9	mg/L	131	Standard
Fe	57	1871.8	6.0	**4.7828**	0.034	0.7	mg/L	153	Standard
Sc-1	45	29433.6	6.4				mg/L	26715	Standard
Cl	35	115258.8	1.3				ug/L	102686	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	1830.1	3.9				ug/L	1897	Standard
P	31	20310.3	0.3				ug/L	18491	Standard
S	34	5012.5	2.8				ug/L	3734	Standard
Sr	88	66.7	15.6				ug/L	47	Standard
C	12	40.0	43.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	23	Standard
Dy	164	19.2	47.1				mg/L	23	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	16.7	124.9				mg/L	13	Standard
I	127	17883.9	1.0				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	104.275		
Al	27	107.852		
Sc	45			
Ti	47	99.665		
V	51	95.952		
Cr	52	98.318		
Cr	53			
Mn	55	98.108		
Co	59	94.837		
Ni	60	99.456		
Cu	65	97.719		
Zn	66	97.532		
Ge	72		109.003	
As	75	95.519		
Se	82	93.266		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	95.067		
Ag	107	96.303		
Cd	111	97.351		
Cd	114			
> In	115			103.095
Sn	118	97.115		
Sb	123	99.781		
Ba	135	96.039		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	97.920		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.217		
U	238	97.021		
> Bi	209			102.527
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, July 05, 2016 10:50:37
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52763.4	0.9				ug/L	59517	Standard
	Be	9	23.3	32.7	**-0.0008**	0.010	1314.7	ug/L	10	Standard
	Al	27	2333.5	18.2	**0.0049**	0.003	66.6	ug/L	1872	Standard
	Sc	45	28528.5	2.4				ug/L	26715	Standard
	Ti	47	36.7	23.8	**-0.1009**	0.036	35.4	ug/L	54	Standard
	V	51	1557.6	15.5	**0.0243**	0.029	119.3	ug/L	1419	Standard
	Cr	52	6897.2	1.6	**-0.0594**	0.009	15.4	ug/L	7059	Standard
	Cr	53	3362.0	2.2	**3.1623**	0.052	1.6	ug/L	398	Standard
	Mn	55	915.7	8.9	**0.0057**	0.010	183.1	ug/L	824	Standard
	Co	59	250.7	19.1	**0.0098**	0.006	65.3	ug/L	167	Standard
	Ni	60	310.0	6.8	**-0.0432**	0.013	29.5	ug/L	391	Standard
	Cu	65	150.0	9.3	**-0.0036**	0.006	170.0	ug/L	147	Standard
	Zn	66	266.0	3.4	**0.0684**	0.006	9.3	ug/L	184	Standard
>	**Ge**	72	447686.1	1.3				ug/L	422998	Standard
	As	75	-73.6	46.7	**-0.0095**	0.028	297.5	ug/L	-58	Standard
	Se	82	14.3	31.0	**-0.0912**	0.035	38.2	ug/L	15	Standard
	Se-1	77	251.3	11.2	**2.4627**	0.338	13.7	ug/L	58	Standard
>	**Ga**	71	81.7	9.4				mg/L	113	Standard
	Rb	85	30.0	33.3				ug/L	27	Standard
	Y	89	389776.6	0.4				ug/L	383780	Standard
>	**Rh**	103	15.0	33.3				ug/L	18	Standard
	Mo	98	215.1	11.9	**0.0702**	0.008	11.1	ug/L	31	Standard
	Ag	107	131.7	9.6	**0.0071**	0.002	22.0	ug/L	84	Standard
	Cd	111	19.9	27.5	**0.0050**	0.002	46.8	mg/L	4	Standard
	Cd	114	56.2	23.6	**0.0061**	0.002	38.5	ug/L	15	Standard
>	**In**	115	526258.8	2.4				ug/L	515400	Standard
	Sn	118	1383.4	28.2	**0.0542**	0.072	133.2	ug/L	1043	Standard
	Sb	123	1040.9	27.2	**0.2074**	0.065	31.6	ug/L	227	Standard
	Ba	135	56.7	43.3	**0.0037**	0.011	305.2	ug/L	31	Standard
	Ce	140	378.3	12.3				ug/L	120	Standard
>	**Tb**	159	796142.1	1.4				ug/L	785817	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	119.0	10.2	**0.0108**	0.001	13.7	ug/L	6	Standard
	Tl	205	113.3	12.7	**0.0090**	0.002	20.6	ug/L	8	Standard
	Pb	206	279.3	17.7	**0.0088**	0.009	102.9	ug/L	201	Standard
	Pb	207	222.7	25.2	**0.0001**	0.012	15025.6	ug/L	177	Standard
	Pb	208	993.7	11.3	**0.0047**	0.006	116.9	ug/L	722	Standard
	U	238	65.3	18.5	**0.0067**	0.002	24.2	ug/L	8	Standard
>	**Bi**	209	458480.9	1.1				ug/L	444563	Standard

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Na	23	1.7	173.2	**17.8060**	30.832	173.2	mg/L	0	Standard
Mg	24	28.3	10.2	**-0.0003**	0.003	905.5	mg/L	38	Standard
K	39	18.3	15.7	**-0.0541**	0.011	21.2	mg/L	33	Standard
Ca	43	31.7	9.1	**-1.2176**	0.312	25.6	mg/L	48	Standard
Fe	54	164.2	17.0	**0.0077**	0.023	303.7	mg/L	131	Standard
Fe	57	215.0	6.2	**0.1423**	0.047	33.2	mg/L	153	Standard
> **Sc-1**	45	28528.5	2.4				mg/L	26715	Standard
Cl	35	113758.1	0.6				ug/L	102686	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1780.1	3.7				ug/L	1897	Standard
P	31	19746.2	1.4				ug/L	18491	Standard
S	34	4789.1	3.4				ug/L	3734	Standard
Sr	88	75.0	23.1				ug/L	47	Standard
C	12	56.7	44.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	23	Standard
Dy	164	9.0	9.2				mg/L	23	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	13	Standard
I	127	11247.5	2.2				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.837	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.107
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.131
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

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Method 6020 - Summary Report

Sample ID: L1606145103
Sample Date/Time: Tuesday, July 05, 2016 10:53:50
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	96135.7	0.5				ug/L	59517	Standard
	Be	9	441.7	15.3	**0.2835**	0.050	17.5	ug/L	10	Standard
	Al	27	1899414.0	2.6	**7.7171**	0.235	3.0	ug/L	1872	Standard
	Sc	45	31502.7	2.3				ug/L	26715	Standard
	Ti	47	25531.2	2.1	**98.1864**	1.662	1.7	ug/L	54	Standard
	V	51	134345.2	6.2	**16.8817**	0.847	5.0	ug/L	1419	Standard
	Cr	52	120049.7	5.6	**14.4950**	0.617	4.3	ug/L	7059	Standard
	Cr	53	180887.5	11.3	**185.8515**	17.788	9.6	ug/L	398	Standard
	Mn	55	1694571.4	1.2	**245.3954**	5.740	2.3	ug/L	824	Standard
	Co	59	21225.2	1.9	**2.8384**	0.001	0.0	ug/L	167	Standard
	Ni	60	17246.1	2.6	**8.2498**	0.065	0.8	ug/L	391	Standard
	Cu	65	22767.1	1.8	**11.0388**	0.017	0.2	ug/L	147	Standard
	Zn	66	119572.4	2.0	**99.1503**	1.607	1.6	ug/L	184	Standard
>	**Ge**	72	461460.7	1.9				ug/L	422998	Standard
	As	75	5444.8	8.1	**4.4484**	0.294	6.6	ug/L	-58	Standard
	Se	82	77.6	3.9	**0.4009**	0.019	4.7	ug/L	15	Standard
	Se-1	77	15105.3	13.8	**181.6526**	21.923	12.1	ug/L	58	Standard
>	**Ga**	71	10466.9	3.1				mg/L	113	Standard
	Rb	85	79449.5	2.0				ug/L	27	Standard
	Y	89	453913.1	1.4				ug/L	383780	Standard
>	**Rh**	103	45.0	48.4				ug/L	18	Standard
	Mo	98	4163.6	3.0	**1.5365**	0.022	1.4	ug/L	31	Standard
	Ag	107	565.7	36.6	**0.0706**	0.029	40.7	ug/L	84	Standard
	Cd	111	905.2	6.7	**0.4152**	0.022	5.2	mg/L	4	Standard
	Cd	114	2285.7	5.6	**0.4318**	0.017	4.0	ug/L	15	Standard
>	**In**	115	522134.8	1.7				ug/L	515400	Standard
	Sn	118	11225.8	3.7	**1.7327**	0.054	3.1	ug/L	1043	Standard
	Sb	123	3009.2	12.2	**0.6318**	0.069	10.9	ug/L	227	Standard
	Ba	135	100468.8	2.1	**49.3104**	0.570	1.2	ug/L	31	Standard
	Ce	140	633585.7	1.9				ug/L	120	Standard
>	**Tb**	159	901421.0	1.9				ug/L	785817	Standard
	Ho	165	4162.2	5.6				ug/L	7	Standard
	Tl	203	1260.4	18.2	**0.1368**	0.025	18.0	ug/L	6	Standard
	Tl	205	1115.0	20.8	**0.1358**	0.029	21.0	ug/L	8	Standard
	Pb	206	328394.9	1.1	**58.8063**	0.550	0.9	ug/L	201	Standard
	Pb	207	271769.4	2.1	**53.8221**	0.890	1.7	ug/L	177	Standard
	Pb	208	1036625.3	1.0	**51.1073**	0.173	0.3	ug/L	722	Standard
	U	238	4954.8	7.4	**0.6405**	0.043	6.8	ug/L	8	Standard
>	**Bi**	209	498699.5	0.7				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	125.0	10.6	**0.0998**	0.017	17.3	mg/L	38	Standard
K	39	251.7	8.0	**0.8046**	0.062	7.7	mg/L	33	Standard
Ca	43	71.7	26.4	**3.6957**	2.561	69.3	mg/L	48	Standard
Fe	54	13368.3	3.5	**9.0209**	0.197	2.2	mg/L	131	Standard
Fe	57	3707.1	6.7	**9.2583**	0.592	6.4	mg/L	153	Standard
> **Sc-1**	45	31502.7	2.3				mg/L	26715	Standard
Cl	35	112834.0	1.9				ug/L	102686	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	2756.9	3.6				ug/L	1897	Standard
P	31	21984.3	2.1				ug/L	18491	Standard
S	34	5467.7	1.7				ug/L	3734	Standard
Sr	88	96.7	3.0				ug/L	47	Standard
C	12	416.7	23.1				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	136.7	27.7				mg/L	23	Standard
Dy	164	7702.9	4.4				mg/L	23	Standard
Ho-1	165	4162.2	5.6				mg/L	7	Standard
Er	166	4157.2	5.4				mg/L	13	Standard
I	127	34517.7	6.7				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		161.527	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.093	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.307
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		112.178
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

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Se-1 77 Upper, S, EEE Se-1 77

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Method 6020 - Summary Report

Sample ID: L1606145104
Sample Date/Time: Tuesday, July 05, 2016 10:57:02
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	91292.6	2.2				ug/L	59517	Standard
	Be	9	395.0	1.3	**0.2652**	0.010	3.9	ug/L	10	Standard
	Al	27	9819055.1	1.7	**42.0648**	0.383	0.9	ug/L	1872	Standard
	Sc	45	32252.6	1.6				ug/L	26715	Standard
	Ti	47	24196.3	0.3	**91.9481**	1.097	1.2	ug/L	54	Standard
	V	51	123723.8	2.5	**15.3573**	0.518	3.4	ug/L	1419	Standard
	Cr	52	104402.9	2.1	**12.3305**	0.473	3.8	ug/L	7059	Standard
	Cr	53	109957.5	19.5	**111.8418**	23.600	21.1	ug/L	398	Standard
	Mn	55	1745235.6	1.8	**249.6939**	1.366	0.5	ug/L	824	Standard
	Co	59	28619.0	1.2	**3.7905**	0.016	0.4	ug/L	167	Standard
	Ni	60	20456.1	0.9	**9.7078**	0.231	2.4	ug/L	391	Standard
	Cu	65	24146.9	2.2	**11.5780**	0.428	3.7	ug/L	147	Standard
	Zn	66	125347.7	0.8	**102.7332**	2.027	2.0	ug/L	184	Standard
>	**Ge**	72	466950.8	1.4				ug/L	422998	Standard
	As	75	5697.4	7.9	**4.5993**	0.326	7.1	ug/L	-58	Standard
	Se	82	78.7	8.4	**0.4018**	0.048	11.8	ug/L	15	Standard
	Se-1	77	9103.1	13.7	**108.2312**	16.582	15.3	ug/L	58	Standard
>	**Ga**	71	9131.1	1.4				mg/L	113	Standard
	Rb	85	76169.3	1.3				ug/L	27	Standard
	Y	89	475112.5	1.9				ug/L	383780	Standard
>	**Rh**	103	20.0	25.0				ug/L	18	Standard
	Mo	98	5031.6	1.4	**1.8226**	0.023	1.3	ug/L	31	Standard
	Ag	107	458.7	20.3	**0.0539**	0.013	25.0	ug/L	84	Standard
	Cd	111	769.3	2.5	**0.3456**	0.014	4.0	mg/L	4	Standard
	Cd	114	1978.5	10.3	**0.3661**	0.041	11.1	ug/L	15	Standard
>	**In**	115	532524.4	1.6				ug/L	515400	Standard
	Sn	118	8263.9	7.0	**1.1996**	0.075	6.2	ug/L	1043	Standard
	Sb	123	2736.8	8.9	**0.5620**	0.046	8.1	ug/L	227	Standard
	Ba	135	96479.9	0.9	**46.4314**	0.314	0.7	ug/L	31	Standard
	Ce	140	630403.5	2.4				ug/L	120	Standard
>	**Tb**	159	908285.0	0.8				ug/L	785817	Standard
	Ho	165	5554.4	1.9				ug/L	7	Standard
	Tl	203	1548.1	7.1	**0.1672**	0.009	5.6	ug/L	6	Standard
	Tl	205	1266.7	3.2	**0.1537**	0.003	1.9	ug/L	8	Standard
	Pb	206	242583.9	0.2	**43.0094**	0.811	1.9	ug/L	201	Standard
	Pb	207	201849.3	0.6	**39.5807**	0.878	2.2	ug/L	177	Standard
	Pb	208	795835.1	0.9	**38.8431**	0.400	1.0	ug/L	722	Standard
	U	238	5579.0	1.8	**0.7146**	0.002	0.3	ug/L	8	Standard
>	**Bi**	209	503660.9	1.9				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	111.7	18.1	**0.0826**	0.022	26.5	mg/L	38	Standard
K	39	205.0	10.6	**0.6134**	0.067	10.9	mg/L	33	Standard
Ca	43	158.3	25.3	**14.7113**	4.889	33.2	mg/L	48	Standard
Fe	54	14301.5	1.7	**9.4348**	0.276	2.9	mg/L	131	Standard
Fe	57	4067.2	3.4	**9.9615**	0.502	5.0	mg/L	153	Standard
Sc-1	45	32252.6	1.6				mg/L	26715	Standard
Cl	35	125056.7	0.7				ug/L	102686	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	2540.2	11.1				ug/L	1897	Standard
P	31	21291.6	1.9				ug/L	18491	Standard
S	34	5712.7	2.7				ug/L	3734	Standard
Sr	88	96.7	7.9				ug/L	47	Standard
C	12	350.0	10.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	123.3	54.0				mg/L	23	Standard
Dy	164	9524.0	2.9				mg/L	23	Standard
Ho-1	165	5554.4	1.9				mg/L	7	Standard
Er	166	5130.9	3.9				mg/L	13	Standard
I	127	29181.4	3.9				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		153.390	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.391	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.323
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		113.294
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

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Zn 66 Upper, S, EEE	Zn	66
Se-1 77 Upper, S, EEE	Se-1	77

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Method 6020 - Summary Report

Sample ID: L1606145105
Sample Date/Time: Tuesday, July 05, 2016 11:00:13
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	108631.5	1.8				ug/L	59517	Standard
	Be	9	5212.6	1.8	**3.2539**	0.069	2.1	ug/L	10	Standard
	Al	27	3122829.6	1.3	**11.2336**	0.101	0.9	ug/L	1872	Standard
	Sc	45	39190.6	1.9				ug/L	26715	Standard
	Ti	47	137469.5	1.0	**500.3092**	6.619	1.3	ug/L	54	Standard
	V	51	366725.2	5.0	**43.8169**	2.017	4.6	ug/L	1419	Standard
	Cr	52	689707.4	1.9	**83.0086**	1.642	2.0	ug/L	7059	Standard
	Cr	53	253610.4	10.0	**246.6117**	25.946	10.5	ug/L	398	Standard
	Mn	55	865524.6	0.8	**118.2866**	1.664	1.4	ug/L	824	Standard
	Co	59	64362.7	0.2	**8.1759**	0.061	0.7	ug/L	167	Standard
	Ni	60	60072.2	0.5	**27.6005**	0.122	0.4	ug/L	391	Standard
	Cu	65	69465.5	0.6	**31.9592**	0.188	0.6	ug/L	147	Standard
	Zn	66	222603.4	0.9	**174.4424**	1.635	0.9	ug/L	184	Standard
>	Ge	72	488604.3	0.9				ug/L	422998	Standard
	As	75	19640.7	4.5	**15.0437**	0.806	5.4	ug/L	-58	Standard
	Se	82	157.4	9.5	**0.9557**	0.102	10.6	ug/L	15	Standard
	Se-1	77	19281.7	11.6	**219.5886**	27.202	12.4	ug/L	58	Standard
>	Ga	71	30325.3	1.1				mg/L	113	Standard
	Rb	85	276639.3	0.4				ug/L	27	Standard
	Y	89	687710.0	0.9				ug/L	383780	Standard
>	Rh	103	48.3	11.9				ug/L	18	Standard
	Mo	98	11816.3	1.1	**4.2765**	0.072	1.7	ug/L	31	Standard
	Ag	107	1411.4	4.5	**0.1899**	0.008	4.0	ug/L	84	Standard
	Cd	111	1971.0	1.8	**0.8883**	0.019	2.1	mg/L	4	Standard
	Cd	114	4664.8	1.8	**0.8659**	0.021	2.5	ug/L	15	Standard
>	In	115	534504.1	1.2				ug/L	515400	Standard
	Sn	118	9728.1	2.5	**1.4395**	0.057	3.9	ug/L	1043	Standard
	Sb	123	5858.1	3.7	**1.2180**	0.055	4.5	ug/L	227	Standard
	Ba	135	343595.4	0.9	**164.8188**	3.343	2.0	ug/L	31	Standard
	Ce	140	904246.5	1.5				ug/L	120	Standard
>	Tb	159	929077.6	1.4				ug/L	785817	Standard
	Ho	165	20382.0	1.9				ug/L	7	Standard
	Tl	203	8751.5	1.5	**0.9686**	0.028	2.9	ug/L	6	Standard
	Tl	205	7040.0	1.3	**0.8909**	0.012	1.3	ug/L	8	Standard
	Pb	206	269096.1	1.0	**48.0135**	0.893	1.9	ug/L	201	Standard
	Pb	207	224906.7	1.1	**44.3862**	1.110	2.5	ug/L	177	Standard
	Pb	208	846557.7	1.0	**41.5955**	1.382	3.3	ug/L	722	Standard
	U	238	16518.0	1.0	**2.1348**	0.065	3.0	ug/L	8	Standard
>	Bi	209	500556.2	2.5				ug/L	444563	Standard

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Na	23	1.7	173.2	**13.2844**	23.001	173.1	mg/L	0	Standard
Mg	24	855.0	4.6	**0.6981**	0.024	3.5	mg/L	38	Standard
K	39	1165.0	4.5	**3.3481**	0.167	5.0	mg/L	33	Standard
Ca	43	118.3	2.4	**6.8217**	0.520	7.6	mg/L	48	Standard
Fe	54	77319.8	1.6	**42.3823**	1.246	2.9	mg/L	131	Standard
Fe	57	19831.3	1.4	**41.4206**	1.327	3.2	mg/L	153	Standard
Sc-1	45	39190.6	1.9				mg/L	26715	Standard
Cl	35	125192.6	2.4				ug/L	102686	Standard
Kr	83	2.3	89.2				ug/L	2	Standard
Br	81	3120.3	1.7				ug/L	1897	Standard
P	31	27561.7	1.5				ug/L	18491	Standard
S	34	6189.6	2.3				ug/L	3734	Standard
Sr	88	120.0	20.8				ug/L	47	Standard
C	12	446.7	27.6				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	183.3	22.0				mg/L	23	Standard
Dy	164	32276.2	0.2				mg/L	23	Standard
Ho-1	165	20382.0	1.9				mg/L	7	Standard
Er	166	19766.2	2.6				mg/L	13	Standard
I	127	39155.6	4.6				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		182.523	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		115.510	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.707
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	112.595
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
Cr 53 Upper, S, EEE	Cr	53	

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Mn 55 Upper, S, EEE	Mn	55
Zn 66 Upper, S, EEE	Zn	66
Se-1 77 Upper, S, EEE	Se-1	77
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606145107
Sample Date/Time: Tuesday, July 05, 2016 11:03:24
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	109709.1	1.5				ug/L	59517	Standard
	Be	9	3635.4	4.4	**2.2384**	0.131	5.8	ug/L	10	Standard
	Al	27	7905627.2	2.0	**28.1821**	0.827	2.9	ug/L	1872	Standard
	Sc	45	37616.6	1.4				ug/L	26715	Standard
	Ti	47	69388.6	1.8	**240.1521**	3.763	1.6	ug/L	54	Standard
	V	51	342535.6	1.2	**38.9308**	0.728	1.9	ug/L	1419	Standard
	Cr	52	390616.2	0.7	**44.2829**	0.338	0.8	ug/L	7059	Standard
	Cr	53	194072.8	8.7	**179.4677**	16.874	9.4	ug/L	398	Standard
	Mn	55	1910553.9	1.2	**248.5998**	4.612	1.9	ug/L	824	Standard
	Co	59	51087.0	1.5	**6.1690**	0.115	1.9	ug/L	167	Standard
	Ni	60	52765.4	1.2	**23.0352**	0.256	1.1	ug/L	391	Standard
	Cu	65	52726.9	0.4	**23.0606**	0.120	0.5	ug/L	147	Standard
	Zn	66	190722.6	1.0	**142.1825**	0.962	0.7	ug/L	184	Standard
>	**Ge**	72	513489.2	0.8				ug/L	422998	Standard
	As	75	71231.2	0.5	**51.7747**	0.529	1.0	ug/L	-58	Standard
	Se	82	249.5	6.5	**1.5478**	0.127	8.2	ug/L	15	Standard
	Se-1	77	16454.6	7.9	**178.1501**	15.353	8.6	ug/L	58	Standard
>	**Ga**	71	24666.7	1.8				mg/L	113	Standard
	Rb	85	164243.8	1.0				ug/L	27	Standard
	Y	89	634729.6	2.2				ug/L	383780	Standard
>	**Rh**	103	63.3	18.2				ug/L	18	Standard
	Mo	98	18846.0	0.8	**6.4893**	0.189	2.9	ug/L	31	Standard
	Ag	107	937.0	2.7	**0.1155**	0.004	3.8	ug/L	84	Standard
	Cd	111	4443.5	1.2	**1.9084**	0.039	2.0	mg/L	4	Standard
	Cd	114	10909.6	4.9	**1.9304**	0.098	5.1	ug/L	15	Standard
>	**In**	115	562417.7	2.6				ug/L	515400	Standard
	Sn	118	8864.3	5.2	**1.2219**	0.059	4.9	ug/L	1043	Standard
	Sb	123	9482.0	2.9	**1.8820**	0.030	1.6	ug/L	227	Standard
	Ba	135	193348.9	0.6	**88.1570**	2.232	2.5	ug/L	31	Standard
	Ce	140	806506.2	0.9				ug/L	120	Standard
>	**Tb**	159	968120.2	0.9				ug/L	785817	Standard
	Ho	165	15471.2	1.3				ug/L	7	Standard
	Tl	203	20732.5	0.4	**2.2137**	0.018	0.8	ug/L	6	Standard
	Tl	205	17249.8	1.3	**2.1112**	0.041	1.9	ug/L	8	Standard
	Pb	206	299572.9	0.3	**51.4663**	0.481	0.9	ug/L	201	Standard
	Pb	207	250580.1	0.2	**47.6121**	0.366	0.8	ug/L	177	Standard
	Pb	208	967157.6	0.8	**45.7453**	0.329	0.7	ug/L	722	Standard
	U	238	14798.9	1.7	**1.8407**	0.030	1.6	ug/L	8	Standard
>	**Bi**	209	519770.6	0.7				ug/L	444563	Standard

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Na	23	1.7	173.2	**13.9090**	24.082	173.1	mg/L	0	Standard
Mg	24	353.3	20.5	**0.2817**	0.067	23.7	mg/L	38	Standard
K	39	568.3	15.8	**1.6404**	0.302	18.4	mg/L	33	Standard
Ca	43	153.3	18.5	**11.2881**	3.405	30.2	mg/L	48	Standard
Fe	54	42628.9	0.4	**24.2898**	0.303	1.2	mg/L	131	Standard
Fe	57	10755.5	0.6	**23.1886**	0.357	1.5	mg/L	153	Standard
Sc-1	45	37616.6	1.4				mg/L	26715	Standard
Cl	35	132874.8	0.7				ug/L	102686	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	2566.9	8.8				ug/L	1897	Standard
P	31	28668.8	3.4				ug/L	18491	Standard
S	34	6544.7	2.9				ug/L	3734	Standard
Sr	88	140.0	9.4				ug/L	47	Standard
C	12	416.7	10.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	306.7	21.0				mg/L	23	Standard
Dy	164	23970.0	2.2				mg/L	23	Standard
Ho-1	165	15471.2	1.3				mg/L	7	Standard
Er	166	14964.1	1.6				mg/L	13	Standard
I	127	23219.5	5.4				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		184.333	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		121.393	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.123
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		116.917
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
Cr 53 Upper, S, EEE	Cr	53	

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Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ge 72 Int Std for sample	Ge	72	Rerun sample
Se-1 77 Upper, S, EEE	Se-1	77	

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Method 6020 - Summary Report

Sample ID: L1606145108
Sample Date/Time: Tuesday, July 05, 2016 11:06:36
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	115300.4	0.2				ug/L	59517	Standard
	Be	9	6846.5	2.1	**4.0334**	0.075	1.9	ug/L	10	Standard
	Al	27	8044256.6	3.1	**27.2779**	0.787	2.9	ug/L	1872	Standard
	Sc	45	43786.5	0.7				ug/L	26715	Standard
	Ti	47	177713.0	1.7	**608.3997**	18.233	3.0	ug/L	54	Standard
	V	51	562128.8	0.9	**63.2529**	0.893	1.4	ug/L	1419	Standard
	Cr	52	668635.3	1.5	**75.5984**	1.722	2.3	ug/L	7059	Standard
	Cr	53	233924.5	2.8	**213.7912**	6.209	2.9	ug/L	398	Standard
	Mn	55	1784049.0	0.8	**229.4141**	3.151	1.4	ug/L	824	Standard
	Co	59	94382.8	1.3	**11.2859**	0.270	2.4	ug/L	167	Standard
	Ni	60	90035.4	0.6	**38.9880**	0.661	1.7	ug/L	391	Standard
	Cu	65	75578.4	1.1	**32.7069**	0.789	2.4	ug/L	147	Standard
	Zn	66	263196.7	0.4	**193.9978**	2.967	1.5	ug/L	184	Standard
>	Ge	72	519575.6	1.4				ug/L	422998	Standard
	As	75	71823.8	0.7	**51.6006**	0.994	1.9	ug/L	-58	Standard
	Se	82	246.5	4.2	**1.5052**	0.047	3.1	ug/L	15	Standard
	Se-1	77	19182.2	5.3	**205.2715**	10.844	5.3	ug/L	58	Standard
>	Ga	71	40878.4	0.4				mg/L	113	Standard
	Rb	85	376160.7	0.9				ug/L	27	Standard
	Y	89	769310.7	0.4				ug/L	383780	Standard
>	Rh	103	66.7	15.6				ug/L	18	Standard
	Mo	98	18968.5	1.1	**6.5743**	0.126	1.9	ug/L	31	Standard
	Ag	107	1476.7	1.7	**0.1902**	0.005	2.7	ug/L	84	Standard
	Cd	111	4714.0	0.8	**2.0384**	0.033	1.6	mg/L	4	Standard
	Cd	114	11218.9	3.2	**1.9988**	0.074	3.7	ug/L	15	Standard
>	In	115	558549.2	0.9				ug/L	515400	Standard
	Sn	118	11075.7	4.1	**1.5838**	0.058	3.7	ug/L	1043	Standard
	Sb	123	9782.9	0.8	**1.9557**	0.004	0.2	ug/L	227	Standard
	Ba	135	356713.7	1.4	**163.7164**	1.201	0.7	ug/L	31	Standard
	Ce	140	1269887.9	0.3				ug/L	120	Standard
>	Tb	159	974069.9	0.7				ug/L	785817	Standard
	Ho	165	26974.0	1.7				ug/L	7	Standard
	Tl	203	25905.1	1.0	**2.7627**	0.008	0.3	ug/L	6	Standard
	Tl	205	21091.3	2.3	**2.5788**	0.054	2.1	ug/L	8	Standard
	Pb	206	399454.5	0.5	**68.5395**	0.825	1.2	ug/L	201	Standard
	Pb	207	334755.6	0.1	**63.5277**	0.561	0.9	ug/L	177	Standard
	Pb	208	1275635.6	0.2	**60.2624**	0.374	0.6	ug/L	722	Standard
	U	238	26668.1	0.9	**3.3141**	0.030	0.9	ug/L	8	Standard
>	Bi	209	520549.4	0.8				ug/L	444563	Standard

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Na	23	1.7	173.2	**11.9257**	20.647	173.1	mg/L	0	Standard
Mg	24	778.4	9.2	**0.5628**	0.056	10.0	mg/L	38	Standard
K	39	1511.7	6.0	**3.9097**	0.271	6.9	mg/L	33	Standard
Ca	43	190.0	22.9	**12.3692**	4.209	34.0	mg/L	48	Standard
Fe	54	91363.6	2.2	**44.8185**	1.085	2.4	mg/L	131	Standard
Fe	57	24494.8	2.4	**45.8301**	1.415	3.1	mg/L	153	Standard
Sc-1	45	43786.5	0.7				mg/L	26715	Standard
Cl	35	129997.3	0.9				ug/L	102686	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2873.6	6.2				ug/L	1897	Standard
P	31	27894.0	1.7				ug/L	18491	Standard
S	34	6764.8	2.2				ug/L	3734	Standard
Sr	88	176.7	8.6				ug/L	47	Standard
C	12	480.0	3.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	253.3	11.4				mg/L	23	Standard
Dy	164	41874.4	2.0				mg/L	23	Standard
Ho-1	165	26974.0	1.7				mg/L	7	Standard
Er	166	26029.0	1.2				mg/L	13	Standard
I	127	24075.8	5.6				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		193.728	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		122.832	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	108.372
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	117.092
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
Cr 53 Upper, S, EEE	Cr	53	

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Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ge 72 Int Std for sample	Ge	72	Rerun sample
Se-1 77 Upper, S, EEE	Se-1	77	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144503
Sample Date/Time: Tuesday, July 05, 2016 11:09:48
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	58967.9	1.9				ug/L	59517	Standard
	Be	9	735.0	5.3	**0.8229**	0.062	7.6	ug/L	10	Standard
	Al	27	8232717.6	1.5	**54.6151**	1.353	2.5	ug/L	1872	Standard
	Sc	45	35428.0	1.7				ug/L	26715	Standard
	Ti	47	5309.9	4.9	**19.4712**	0.822	4.2	ug/L	54	Standard
	V	51	177759.2	1.9	**21.5762**	0.278	1.3	ug/L	1419	Standard
	Cr	52	136308.2	1.7	**15.9537**	0.088	0.6	ug/L	7059	Standard
	Cr	53	31922.0	7.2	**31.2822**	2.011	6.4	ug/L	398	Standard
	Mn	55	3732711.4	1.4	**520.8023**	7.726	1.5	ug/L	824	Standard
	Co	59	63826.5	0.6	**8.2713**	0.128	1.5	ug/L	167	Standard
	Ni	60	35407.0	2.7	**16.5140**	0.389	2.4	ug/L	391	Standard
	Cu	65	27552.0	1.2	**12.8834**	0.152	1.2	ug/L	147	Standard
	Zn	66	68317.0	1.3	**54.5023**	0.739	1.4	ug/L	184	Standard
>	Ge	72	478996.0	1.2				ug/L	422998	Standard
	As	75	5507.3	2.6	**4.3379**	0.061	1.4	ug/L	-58	Standard
	Se	82	121.2	14.5	**0.7065**	0.126	17.8	ug/L	15	Standard
	Se-1	77	1211.4	12.1	**13.4294**	1.589	11.8	ug/L	58	Standard
>	Ga	71	17138.0	3.8				mg/L	113	Standard
	Rb	85	215157.6	2.6				ug/L	27	Standard
	Y	89	624025.0	0.8				ug/L	383780	Standard
>	Rh	103	36.7	7.9				ug/L	18	Standard
	Mo	98	1681.9	2.9	**0.5857**	0.019	3.2	ug/L	31	Standard
	Ag	107	636.7	2.8	**0.0768**	0.003	3.9	ug/L	84	Standard
	Cd	111	2696.7	0.8	**1.1861**	0.014	1.2	mg/L	4	Standard
	Cd	114	6661.2	1.4	**1.2069**	0.011	0.9	ug/L	15	Standard
>	In	115	548315.1	0.7				ug/L	515400	Standard
	Sn	118	1376.7	21.9	**0.0427**	0.050	117.8	ug/L	1043	Standard
	Sb	123	763.4	20.5	**0.1405**	0.033	23.4	ug/L	227	Standard
	Ba	135	486005.6	0.2	**227.2373**	1.036	0.5	ug/L	31	Standard
	Ce	140	1188503.1	0.8				ug/L	120	Standard
>	Tb	159	857273.9	0.6				ug/L	785817	Standard
	Ho	165	16704.2	0.6				ug/L	7	Standard
	Tl	203	934.4	4.2	**0.1071**	0.005	4.5	ug/L	6	Standard
	Tl	205	773.4	8.3	**0.0984**	0.009	8.7	ug/L	8	Standard
	Pb	206	181321.2	0.4	**34.4939**	0.134	0.4	ug/L	201	Standard
	Pb	207	149581.4	0.5	**31.4697**	0.185	0.6	ug/L	177	Standard
	Pb	208	642010.8	0.6	**33.6279**	0.141	0.4	ug/L	722	Standard
	U	238	4887.1	1.4	**0.6719**	0.010	1.4	ug/L	8	Standard
>	Bi	209	469171.3	0.1				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	676.7	5.7	**0.6075**	0.045	7.3	mg/L	38	Standard
K	39	433.3	12.0	**1.3035**	0.195	15.0	mg/L	33	Standard
Ca	43	71.7	28.2	**2.6014**	2.240	86.1	mg/L	48	Standard
Fe	54	18412.4	3.1	**11.0733**	0.150	1.4	mg/L	131	Standard
Fe	57	4905.8	1.8	**10.9803**	0.097	0.9	mg/L	153	Standard
Sc-1	45	35428.0	1.7				mg/L	26715	Standard
Cl	35	115274.9	1.1				ug/L	102686	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	11237.5	4.2				ug/L	1897	Standard
P	31	20882.7	1.3				ug/L	18491	Standard
S	34	4217.3	1.1				ug/L	3734	Standard
Sr	88	130.0	43.3				ug/L	47	Standard
C	12	230.0	19.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	103.3	20.1				mg/L	23	Standard
Dy	164	28748.7	1.3				mg/L	23	Standard
Ho-1	165	16704.2	0.6				mg/L	7	Standard
Er	166	15588.0	1.5				mg/L	13	Standard
I	127	43800.0	5.4				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		99.078	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		113.238	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.386
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.535
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144507
Sample Date/Time: Tuesday, July 05, 2016 11:12:59
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61389.1	1.3				ug/L	59517	Standard
	Be	9	801.7	3.5	**0.8629**	0.035	4.1	ug/L	10	Standard
	Al	27	16239193.8	1.3	**103.4670**	0.803	0.8	ug/L	1872	Standard
	Sc	45	33152.9	3.9				ug/L	26715	Standard
	Ti	47	3309.7	4.9	**12.7358**	0.436	3.4	ug/L	54	Standard
	V	51	154376.9	1.5	**19.7873**	0.570	2.9	ug/L	1419	Standard
	Cr	52	182451.6	0.6	**22.9734**	0.662	2.9	ug/L	7059	Standard
	Cr	53	30803.0	5.1	**31.9028**	1.278	4.0	ug/L	398	Standard
	Mn	55	3250036.0	0.9	**479.1339**	10.524	2.2	ug/L	824	Standard
	Co	59	64709.9	0.9	**8.8615**	0.150	1.7	ug/L	167	Standard
	Ni	60	45396.2	0.8	**22.4433**	0.365	1.6	ug/L	391	Standard
	Cu	65	45400.6	1.0	**22.4890**	0.351	1.6	ug/L	147	Standard
	Zn	66	103172.4	0.9	**87.0675**	1.942	2.2	ug/L	184	Standard
>	**Ge**	72	453421.2	2.2				ug/L	422998	Standard
	As	75	13039.3	1.1	**10.7771**	0.263	2.4	ug/L	-58	Standard
	Se	82	76.6	11.2	**0.4031**	0.068	16.8	ug/L	15	Standard
	Se-1	77	615.7	11.8	**6.9006**	0.798	11.6	ug/L	58	Standard
>	**Ga**	71	18160.9	1.8				mg/L	113	Standard
	Rb	85	189390.0	2.2				ug/L	27	Standard
	Y	89	636710.9	1.2				ug/L	383780	Standard
>	**Rh**	103	33.3	37.7				ug/L	18	Standard
	Mo	98	518.6	4.6	**0.1814**	0.008	4.7	ug/L	31	Standard
	Ag	107	598.0	13.5	**0.0746**	0.012	15.4	ug/L	84	Standard
	Cd	111	1869.2	2.7	**0.8523**	0.022	2.6	mg/L	4	Standard
	Cd	114	4708.0	1.7	**0.8844**	0.008	0.9	ug/L	15	Standard
>	**In**	115	528155.1	0.8				ug/L	515400	Standard
	Sn	118	1220.1	19.5	**0.0245**	0.039	159.2	ug/L	1043	Standard
	Sb	123	1538.9	3.7	**0.3117**	0.012	3.7	ug/L	227	Standard
	Ba	135	375687.6	0.3	**182.3635**	1.875	1.0	ug/L	31	Standard
	Ce	140	1225726.9	0.7				ug/L	120	Standard
>	**Tb**	159	833959.3	0.9				ug/L	785817	Standard
	Ho	165	19961.5	2.9				ug/L	7	Standard
	Tl	203	1398.7	7.3	**0.1660**	0.011	6.5	ug/L	6	Standard
	Tl	205	1258.4	2.0	**0.1685**	0.005	3.1	ug/L	8	Standard
	Pb	206	525459.7	0.9	**102.4626**	1.464	1.4	ug/L	201	Standard
	Pb	207	445735.9	0.6	**96.1318**	0.540	0.6	ug/L	177	Standard
	Pb	208	1863328.7	0.5	**100.0487**	1.095	1.1	ug/L	722	Standard
	U	238	3947.2	5.3	**0.5551**	0.024	4.4	ug/L	8	Standard
>	**Bi**	209	458154.8	1.0				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	113.3	12.7	**0.0814**	0.018	22.3	mg/L	38	Standard
K	39	460.0	10.0	**1.4976**	0.203	13.6	mg/L	33	Standard
Ca	43	71.7	29.0	**3.1501**	2.246	71.3	mg/L	48	Standard
Fe	54	16348.2	2.7	**10.5068**	0.225	2.1	mg/L	131	Standard
Fe	57	4519.0	5.9	**10.7959**	0.248	2.3	mg/L	153	Standard
Sc-1	45	33152.9	3.9				mg/L	26715	Standard
Cl	35	115120.4	1.5				ug/L	102686	Standard
Kr	83	3.3	45.8				ug/L	2	Standard
Br	81	3303.7	5.2				ug/L	1897	Standard
P	31	19818.0	2.4				ug/L	18491	Standard
S	34	4165.6	2.5				ug/L	3734	Standard
Sr	88	96.7	35.2				ug/L	47	Standard
C	12	176.7	16.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	163.3	19.7				mg/L	23	Standard
Dy	164	34130.8	0.6				mg/L	23	Standard
Ho-1	165	19961.5	2.9				mg/L	7	Standard
Er	166	17316.6	3.2				mg/L	13	Standard
I	127	24820.3	3.3				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.146	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.192	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.475
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.057
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Pb 206 Upper, S, EEE	Pb	206
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1606144508
Sample Date/Time: Tuesday, July 05, 2016 11:16:11
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64903.7	0.9				ug/L	59517	Standard
	Be	9	825.0	11.8	**0.8387**	0.099	11.8	ug/L	10	Standard
	Al	27	23443690.4	1.1	**141.2975**	2.619	1.9	ug/L	1872	Standard
	Sc	45	34385.7	2.0				ug/L	26715	Standard
	Ti	47	4006.5	1.7	**14.9742**	0.331	2.2	ug/L	54	Standard
	V	51	161428.6	1.6	**20.0296**	0.394	2.0	ug/L	1419	Standard
	Cr	52	127935.9	0.6	**15.2771**	0.113	0.7	ug/L	7059	Standard
	Cr	53	19500.9	1.4	**19.4010**	0.396	2.0	ug/L	398	Standard
	Mn	55	3729725.9	0.2	**532.2377**	3.503	0.7	ug/L	824	Standard
	Co	59	67689.2	0.4	**8.9734**	0.082	0.9	ug/L	167	Standard
	Ni	60	45008.4	0.7	**21.5312**	0.145	0.7	ug/L	391	Standard
	Cu	65	24847.7	1.2	**11.8778**	0.197	1.7	ug/L	147	Standard
	Zn	66	45863.0	0.8	**37.3734**	0.528	1.4	ug/L	184	Standard
>	**Ge**	72	468315.2	0.6				ug/L	422998	Standard
	As	75	4552.8	1.0	**3.6764**	0.042	1.1	ug/L	-58	Standard
	Se	82	52.7	20.8	**0.1995**	0.082	41.3	ug/L	15	Standard
	Se-1	77	367.7	2.8	**3.7114**	0.142	3.8	ug/L	58	Standard
>	**Ga**	71	18396.2	3.7				mg/L	113	Standard
	Rb	85	184872.8	1.2				ug/L	27	Standard
	Y	89	657495.0	1.5				ug/L	383780	Standard
>	**Rh**	103	23.3	107.9				ug/L	18	Standard
	Mo	98	421.2	2.4	**0.1440**	0.004	2.8	ug/L	31	Standard
	Ag	107	473.7	4.3	**0.0559**	0.004	7.1	ug/L	84	Standard
	Cd	111	178.9	4.3	**0.0769**	0.004	5.1	mg/L	4	Standard
	Cd	114	422.3	1.9	**0.0743**	0.003	3.6	ug/L	15	Standard
>	**In**	115	534021.2	1.6				ug/L	515400	Standard
	Sn	118	1095.0	20.4	**0.0013**	0.035	2649.2	ug/L	1043	Standard
	Sb	123	466.4	31.4	**0.0817**	0.030	36.1	ug/L	227	Standard
	Ba	135	398222.1	0.7	**191.1971**	2.894	1.5	ug/L	31	Standard
	Ce	140	1354005.7	1.4				ug/L	120	Standard
>	**Tb**	159	854017.5	2.4				ug/L	785817	Standard
	Ho	165	21572.0	2.2				ug/L	7	Standard
	Tl	203	941.4	4.7	**0.1100**	0.008	7.0	ug/L	6	Standard
	Tl	205	776.7	3.5	**0.1008**	0.006	5.9	ug/L	8	Standard
	Pb	206	58153.4	1.0	**11.2275**	0.288	2.6	ug/L	201	Standard
	Pb	207	47609.7	0.2	**10.1602**	0.203	2.0	ug/L	177	Standard
	Pb	208	201890.5	1.1	**10.7270**	0.171	1.6	ug/L	722	Standard
	U	238	3940.5	1.1	**0.5508**	0.015	2.6	ug/L	8	Standard
>	**Bi**	209	461184.9	2.1				ug/L	444563	Standard

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Na	23	1.7	173.2	**15.5379**	26.904	173.1	mg/L	0	Standard
Mg	24	121.7	4.7	**0.0850**	0.003	3.8	mg/L	38	Standard
K	39	315.0	16.5	**0.9413**	0.167	17.7	mg/L	33	Standard
Ca	43	193.3	4.0	**17.7553**	0.524	3.0	mg/L	48	Standard
Fe	54	18303.5	2.1	**11.3469**	0.178	1.6	mg/L	131	Standard
Fe	57	4834.1	0.4	**11.1587**	0.275	2.5	mg/L	153	Standard
Sc-1	45	34385.7	2.0				mg/L	26715	Standard
Cl	35	119520.9	0.7				ug/L	102686	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2616.9	5.8				ug/L	1897	Standard
P	31	20876.0	2.0				ug/L	18491	Standard
S	34	4800.8	3.6				ug/L	3734	Standard
Sr	88	108.3	17.5				ug/L	47	Standard
C	12	63.3	36.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	57.7				mg/L	23	Standard
Dy	164	36615.9	1.3				mg/L	23	Standard
Ho-1	165	21572.0	2.2				mg/L	7	Standard
Er	166	18658.1	0.8				mg/L	13	Standard
I	127	15055.8	3.2				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.051	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.713	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.613
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.739
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144509
Sample Date/Time: Tuesday, July 05, 2016 11:19:22
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65787.5	0.7				ug/L	59517	Standard
	Be	9	766.7	15.6	**0.7672**	0.129	16.8	ug/L	10	Standard
	Al	27	21794353.3	0.8	**129.5855**	1.775	1.4	ug/L	1872	Standard
	Sc	45	34634.5	1.6				ug/L	26715	Standard
	Ti	47	3670.1	1.4	**13.7771**	0.357	2.6	ug/L	54	Standard
	V	51	118166.5	2.8	**14.6961**	0.323	2.2	ug/L	1419	Standard
	Cr	52	108824.5	1.7	**12.9319**	0.457	3.5	ug/L	7059	Standard
	Cr	53	15558.0	2.2	**15.4900**	0.610	3.9	ug/L	398	Standard
	Mn	55	2951295.7	0.2	**423.5613**	6.271	1.5	ug/L	824	Standard
	Co	59	53986.3	0.5	**7.1934**	0.139	1.9	ug/L	167	Standard
	Ni	60	38514.6	0.8	**18.5039**	0.332	1.8	ug/L	391	Standard
	Cu	65	19658.7	0.7	**9.4358**	0.198	2.1	ug/L	147	Standard
	Zn	66	37941.1	1.0	**31.0660**	0.222	0.7	ug/L	184	Standard
>	Ge	72	465689.2	1.7				ug/L	422998	Standard
	As	75	2790.3	2.8	**2.2853**	0.026	1.1	ug/L	-58	Standard
	Se	82	47.9	14.3	**0.1646**	0.047	28.5	ug/L	15	Standard
	Se-1	77	281.7	4.7	**2.7044**	0.105	3.9	ug/L	58	Standard
>	Ga	71	15155.9	4.1				mg/L	113	Standard
	Rb	85	146035.6	2.2				ug/L	27	Standard
	Y	89	640430.1	0.5				ug/L	383780	Standard
>	Rh	103	13.3	114.6				ug/L	18	Standard
	Mo	98	435.9	5.3	**0.1454**	0.008	5.4	ug/L	31	Standard
	Ag	107	423.3	4.0	**0.0472**	0.003	6.1	ug/L	84	Standard
	Cd	111	141.5	5.8	**0.0584**	0.003	5.5	mg/L	4	Standard
	Cd	114	357.3	12.2	**0.0605**	0.008	12.7	ug/L	15	Standard
>	In	115	547325.2	0.9				ug/L	515400	Standard
	Sn	118	1031.7	23.6	**-0.0131**	0.040	306.0	ug/L	1043	Standard
	Sb	123	468.3	21.2	**0.0800**	0.020	25.5	ug/L	227	Standard
	Ba	135	313028.8	1.1	**146.6280**	2.686	1.8	ug/L	31	Standard
	Ce	140	1077990.0	0.6				ug/L	120	Standard
>	Tb	159	866335.0	0.7				ug/L	785817	Standard
	Ho	165	18498.0	3.4				ug/L	7	Standard
	Tl	203	739.0	2.9	**0.0840**	0.002	2.3	ug/L	6	Standard
	Tl	205	630.0	4.4	**0.0789**	0.003	4.2	ug/L	8	Standard
	Pb	206	48931.2	1.6	**9.2769**	0.123	1.3	ug/L	201	Standard
	Pb	207	40058.9	0.6	**8.3945**	0.072	0.9	ug/L	177	Standard
	Pb	208	170404.7	0.4	**8.8920**	0.075	0.8	ug/L	722	Standard
	U	238	3169.3	0.8	**0.4349**	0.007	1.5	ug/L	8	Standard
>	Bi	209	469087.4	0.9				ug/L	444563	Standard

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Na	23	1.7	173.2	**14.8872**	25.777	173.1	mg/L	0	Standard
Mg	24	100.0	8.7	**0.0633**	0.010	15.8	mg/L	38	Standard
K	39	288.3	8.9	**0.8451**	0.097	11.5	mg/L	33	Standard
Ca	43	228.3	7.0	**21.8553**	2.204	10.1	mg/L	48	Standard
Fe	54	12940.1	2.9	**7.9291**	0.195	2.5	mg/L	131	Standard
Fe	57	3518.7	6.8	**7.9289**	0.582	7.3	mg/L	153	Standard
Sc-1	45	34634.5	1.6				mg/L	26715	Standard
Cl	35	121307.7	0.9				ug/L	102686	Standard
Kr	83	2.3	107.9				ug/L	2	Standard
Br	81	2903.6	6.8				ug/L	1897	Standard
P	31	22823.9	6.4				ug/L	18491	Standard
S	34	4914.1	1.7				ug/L	3734	Standard
Sr	88	120.0	4.2				ug/L	47	Standard
C	12	103.3	20.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	53.3	10.8				mg/L	23	Standard
Dy	164	30605.6	2.0				mg/L	23	Standard
Ho-1	165	18498.0	3.4				mg/L	7	Standard
Er	166	16288.8	5.4				mg/L	13	Standard
I	127	15886.7	2.1				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		110.536	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		110.093	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.194
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.517
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144510
Sample Date/Time: Tuesday, July 05, 2016 11:22:34
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67285.8	1.4				ug/L	59517	Standard
	Be	9	843.4	7.9	**0.8264**	0.056	6.8	ug/L	10	Standard
	Al	27	10707433.3	0.6	**62.2417**	0.536	0.9	ug/L	1872	Standard
	Sc	45	34009.8	1.5				ug/L	26715	Standard
	Ti	47	1897.1	4.0	**6.8476**	0.267	3.9	ug/L	54	Standard
	V	51	117452.5	1.9	**14.2941**	0.209	1.5	ug/L	1419	Standard
	Cr	52	118454.6	1.4	**13.8375**	0.081	0.6	ug/L	7059	Standard
	Cr	53	17269.8	2.1	**16.8637**	0.557	3.3	ug/L	398	Standard
	Mn	55	2195267.9	0.8	**308.3614**	5.595	1.8	ug/L	824	Standard
	Co	59	52932.6	0.2	**6.9030**	0.145	2.1	ug/L	167	Standard
	Ni	60	34129.4	1.7	**16.0212**	0.170	1.1	ug/L	391	Standard
	Cu	65	23297.6	1.1	**10.9570**	0.125	1.1	ug/L	147	Standard
	Zn	66	52962.1	1.1	**42.5081**	0.637	1.5	ug/L	184	Standard
>	Ge	72	475774.6	2.0				ug/L	422998	Standard
	As	75	5685.9	1.4	**4.5079**	0.046	1.0	ug/L	-58	Standard
	Se	82	64.1	10.5	**0.2807**	0.056	19.9	ug/L	15	Standard
	Se-1	77	294.7	9.5	**2.7856**	0.306	11.0	ug/L	58	Standard
>	Ga	71	14221.7	0.8				mg/L	113	Standard
	Rb	85	144167.6	0.3				ug/L	27	Standard
	Y	89	628491.7	3.5				ug/L	383780	Standard
>	Rh	103	33.3	17.3				ug/L	18	Standard
	Mo	98	776.2	4.0	**0.2609**	0.006	2.5	ug/L	31	Standard
	Ag	107	453.7	0.9	**0.0503**	0.001	1.9	ug/L	84	Standard
	Cd	111	445.2	5.4	**0.1890**	0.006	3.4	mg/L	4	Standard
	Cd	114	1054.3	3.5	**0.1840**	0.003	1.4	ug/L	15	Standard
>	In	115	557481.8	2.3				ug/L	515400	Standard
	Sn	118	1206.7	15.4	**0.0122**	0.034	277.1	ug/L	1043	Standard
	Sb	123	933.4	7.3	**0.1724**	0.018	10.2	ug/L	227	Standard
	Ba	135	291889.8	0.6	**134.2623**	2.822	2.1	ug/L	31	Standard
	Ce	140	1070488.0	1.6				ug/L	120	Standard
>	Tb	159	874195.5	1.1				ug/L	785817	Standard
	Ho	165	17550.2	0.3				ug/L	7	Standard
	Tl	203	711.0	2.4	**0.0784**	0.001	1.7	ug/L	6	Standard
	Tl	205	633.3	4.3	**0.0771**	0.003	4.1	ug/L	8	Standard
	Pb	206	222719.4	0.9	**41.2710**	0.449	1.1	ug/L	201	Standard
	Pb	207	185657.2	0.3	**38.0499**	0.491	1.3	ug/L	177	Standard
	Pb	208	785337.8	0.7	**40.0697**	0.390	1.0	ug/L	722	Standard
	U	238	3434.4	1.7	**0.4590**	0.005	1.1	ug/L	8	Standard
>	Bi	209	481789.4	1.1				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	61.7	24.8	**0.0271**	0.015	54.1	mg/L	38	Standard
K	39	261.7	14.3	**0.7713**	0.137	17.8	mg/L	33	Standard
Ca	43	70.0	37.8	**2.8074**	3.379	120.4	mg/L	48	Standard
Fe	54	12695.2	1.8	**7.9239**	0.243	3.1	mg/L	131	Standard
Fe	57	3348.7	2.0	**7.6685**	0.126	1.6	mg/L	153	Standard
> **Sc-1**	45	34009.8	1.5				mg/L	26715	Standard
Cl	35	112652.2	3.4				ug/L	102686	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	3233.7	0.9				ug/L	1897	Standard
P	31	19951.5	2.1				ug/L	18491	Standard
S	34	4202.3	4.9				ug/L	3734	Standard
Sr	88	98.3	19.3				ug/L	47	Standard
C	12	130.0	38.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	106.7	23.6				mg/L	23	Standard
Dy	164	30540.8	1.1				mg/L	23	Standard
Ho-1	165	17550.2	0.3				mg/L	7	Standard
Er	166	16245.4	1.0				mg/L	13	Standard
I	127	22099.4	2.8				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.054	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		112.477	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.165
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.374
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144510
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, July 05, 2016 11:25:46
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	62194.1	1.8				ug/L	59517	Standard
	Be	9	43385.4	0.9	**47.7293**	0.929	1.9	ug/L	10	Standard
	Al	27	7477094.9	1.1	**47.0246**	0.891	1.9	ug/L	1872	Standard
	Sc	45	29181.4	0.5				ug/L	26715	Standard
	Ti	47	25259.4	0.6	**96.0196**	0.868	0.9	ug/L	54	Standard
	V	51	376869.1	1.4	**47.1482**	0.392	0.8	ug/L	1419	Standard
	Cr	52	384616.4	0.9	**48.0425**	0.261	0.5	ug/L	7059	Standard
	Cr	53	49186.4	1.2	**49.7150**	0.294	0.6	ug/L	398	Standard
	Mn	55	329550.8	1.8	**47.0561**	0.547	1.2	ug/L	824	Standard
	Co	59	355041.7	2.0	**47.3232**	0.832	1.8	ug/L	167	Standard
	Ni	60	99023.6	1.6	**47.7629**	0.456	1.0	ug/L	391	Standard
	Cu	65	98958.8	1.7	**47.6895**	0.531	1.1	ug/L	147	Standard
	Zn	66	57970.7	1.3	**47.4325**	0.569	1.2	ug/L	184	Standard
>	Ge	72	466810.9	0.7				ug/L	422998	Standard
	As	75	58770.3	0.9	**46.9912**	0.219	0.5	ug/L	-58	Standard
	Se	82	6074.8	1.7	**46.7458**	0.794	1.7	ug/L	15	Standard
	Se-1	77	4177.6	1.2	**49.2498**	0.363	0.7	ug/L	58	Standard
>	Ga	71	68.3	22.4				mg/L	113	Standard
	Rb	85	1025.0	3.4				ug/L	27	Standard
	Y	89	407133.1	2.5				ug/L	383780	Standard
>	Rh	103	30.0	50.0				ug/L	18	Standard
	Mo	98	261587.0	1.0	**93.3540**	0.443	0.5	ug/L	31	Standard
	Ag	107	336725.6	1.2	**47.4083**	0.372	0.8	ug/L	84	Standard
	Cd	111	107984.0	1.0	**48.1146**	0.618	1.3	mg/L	4	Standard
	Cd	114	261565.4	1.4	**48.0258**	0.382	0.8	ug/L	15	Standard
>	In	115	543076.2	0.7				ug/L	515400	Standard
	Sn	118	288798.7	1.9	**47.1544**	0.692	1.5	ug/L	1043	Standard
	Sb	123	237278.6	1.2	**49.1762**	0.361	0.7	ug/L	227	Standard
	Ba	135	100307.0	1.3	**47.3315**	0.378	0.8	ug/L	31	Standard
	Ce	140	1143.4	23.0				ug/L	120	Standard
>	Tb	159	834060.6	0.6				ug/L	785817	Standard
	Ho	165	38.3	66.9				ug/L	7	Standard
	Tl	203	401949.2	0.6	**47.6074**	0.186	0.4	ug/L	6	Standard
	Tl	205	352686.4	1.3	**47.9509**	0.567	1.2	ug/L	8	Standard
	Pb	206	252819.9	0.4	**48.1023**	0.359	0.7	ug/L	201	Standard
	Pb	207	231007.5	1.0	**48.6132**	0.251	0.5	ug/L	177	Standard
	Pb	208	933186.5	0.6	**48.8922**	0.682	1.4	ug/L	722	Standard
	U	238	345826.5	1.6	**47.7023**	0.615	1.3	ug/L	8	Standard
>	Bi	209	469300.9	0.9				ug/L	444563	Standard

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Na	23	1.7	173.2	**17.8640**	30.933	173.2	mg/L	0	Standard
Mg	24	4187.2	5.4	**4.7809**	0.274	5.7	mg/L	38	Standard
K	39	1096.7	4.6	**4.2663**	0.210	4.9	mg/L	33	Standard
Ca	43	81.7	15.4	**5.8840**	1.786	30.3	mg/L	48	Standard
Fe	54	6549.3	3.2	**4.7166**	0.160	3.4	mg/L	131	Standard
Fe	57	1873.4	8.2	**4.8332**	0.452	9.4	mg/L	153	Standard
> **Sc-1**	45	29181.4	0.5				mg/L	26715	Standard
Cl	35	119636.5	1.3				ug/L	102686	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1663.4	6.0				ug/L	1897	Standard
P	31	21340.0	3.4				ug/L	18491	Standard
S	34	4732.4	6.1				ug/L	3734	Standard
Sr	88	73.3	15.7				ug/L	47	Standard
C	12	30.0	88.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	0.0				mg/L	23	Standard
Dy	164	62.1	82.6				mg/L	23	Standard
Ho-1	165	38.3	66.9				mg/L	7	Standard
Er	166	26.7	21.7				mg/L	13	Standard
I	127	16135.3	1.1				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	95.459		
Al	27	94.049		
Sc	45			
Ti	47	96.020		
V	51	94.296		
Cr	52	96.085		
Cr	53			
Mn	55	94.112		
Co	59	94.646		
Ni	60	95.526		
Cu	65	95.379		
Zn	66	94.865		
> Ge	72		110.358	
As	75	93.982		
Se	82	93.492		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	93.354		
Ag	107	94.817		
Cd	111	96.229		
Cd	114			
> In	115			105.370
Sn	118	94.309		
Sb	123	98.352		
Ba	135	94.663		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	95.215		
Tl	205			
Pb	206			
Pb	207			
Pb	208	97.784		
U	238	95.405		
> Bi	209			105.565
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, July 05, 2016 11:28:57
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63732.2	2.7				ug/L	59517	Standard
	Be	9	26.7	88.6	**-0.0024**	0.025	1040.4	ug/L	10	Standard
	Al	27	2688.6	20.4	**0.0040**	0.003	74.8	ug/L	1872	Standard
	Sc	45	29386.8	0.7				ug/L	26715	Standard
	Ti	47	34.3	8.9	**-0.1156**	0.010	8.7	ug/L	54	Standard
	V	51	1576.2	14.1	**0.0190**	0.026	137.2	ug/L	1419	Standard
	Cr	52	6976.9	2.0	**-0.0841**	0.007	8.6	ug/L	7059	Standard
	Cr	53	2505.2	1.2	**2.1511**	0.054	2.5	ug/L	398	Standard
	Mn	55	857.4	8.3	**-0.0078**	0.010	125.2	ug/L	824	Standard
	Co	59	217.3	4.9	**0.0040**	0.002	39.4	ug/L	167	Standard
	Ni	60	264.3	5.7	**-0.0714**	0.008	11.4	ug/L	391	Standard
	Cu	65	128.7	12.6	**-0.0167**	0.008	46.4	ug/L	147	Standard
	Zn	66	266.3	2.6	**0.0601**	0.007	11.2	ug/L	184	Standard
>	**Ge**	72	465388.3	1.2				ug/L	422998	Standard
	As	75	-51.1	37.1	**0.0106**	0.015	145.5	ug/L	-58	Standard
	Se	82	22.1	29.5	**-0.0350**	0.049	139.9	ug/L	15	Standard
	Se-1	77	178.7	5.4	**1.4737**	0.126	8.6	ug/L	58	Standard
>	**Ga**	71	40.0	50.0				mg/L	113	Standard
	Rb	85	43.3	52.0				ug/L	27	Standard
	Y	89	408149.9	1.3				ug/L	383780	Standard
>	**Rh**	103	11.7	24.7				ug/L	18	Standard
	Mo	98	203.4	7.9	**0.0631**	0.006	9.3	ug/L	31	Standard
	Ag	107	114.7	16.5	**0.0040**	0.003	64.7	ug/L	84	Standard
	Cd	111	14.6	11.7	**0.0023**	0.001	32.8	mg/L	4	Standard
	Cd	114	40.7	36.1	**0.0028**	0.003	94.1	ug/L	15	Standard
>	**In**	115	547595.3	0.4				ug/L	515400	Standard
	Sn	118	1465.1	25.8	**0.0571**	0.061	106.2	ug/L	1043	Standard
	Sb	123	769.9	30.2	**0.1419**	0.048	33.5	ug/L	227	Standard
	Ba	135	72.0	30.3	**0.0100**	0.010	102.5	ug/L	31	Standard
	Ce	140	465.0	17.8				ug/L	120	Standard
>	**Tb**	159	844940.1	1.4				ug/L	785817	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	76.7	27.6	**0.0053**	0.002	47.5	ug/L	6	Standard
	Tl	205	68.3	48.7	**0.0023**	0.004	192.3	ug/L	8	Standard
	Pb	206	292.0	9.4	**0.0086**	0.005	60.7	ug/L	201	Standard
	Pb	207	248.7	4.3	**0.0032**	0.003	80.4	ug/L	177	Standard
	Pb	208	1010.7	9.0	**0.0031**	0.005	162.3	ug/L	722	Standard
	U	238	53.7	17.2	**0.0047**	0.001	26.0	ug/L	8	Standard
>	**Bi**	209	481410.0	0.8				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	35.0	62.3	**0.0064**	0.025	389.8	mg/L	38	Standard
K	39	21.7	35.3	**-0.0431**	0.030	69.7	mg/L	33	Standard
Ca	43	46.7	16.4	**0.7976**	1.093	137.1	mg/L	48	Standard
Fe	54	162.7	14.3	**0.0027**	0.018	653.5	mg/L	131	Standard
Fe	57	175.0	12.5	**0.0107**	0.058	546.2	mg/L	153	Standard
> **Sc-1**	45	29386.8	0.7				mg/L	26715	Standard
Cl	35	118618.5	0.7				ug/L	102686	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1786.8	0.6				ug/L	1897	Standard
P	31	20450.5	2.2				ug/L	18491	Standard
S	34	4707.4	8.1				ug/L	3734	Standard
Sr	88	51.7	14.8				ug/L	47	Standard
C	12	60.0	44.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	57.3				mg/L	23	Standard
Dy	164	35.4	117.1				mg/L	23	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	26.7	86.6				mg/L	13	Standard
I	127	10532.0	3.8				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.022	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.247
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.288
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606144511
Sample Date/Time: Tuesday, July 05, 2016 11:32:10
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71021.2	3.7				ug/L	59517	Standard
	Be	9	871.7	8.6	**0.8097**	0.079	9.7	ug/L	10	Standard
	Al	27	12365222.8	2.8	**68.1084**	0.606	0.9	ug/L	1872	Standard
	Sc	45	34019.8	2.2				ug/L	26715	Standard
	Ti	47	2851.9	2.3	**10.3787**	0.373	3.6	ug/L	54	Standard
	V	51	136898.6	0.8	**16.6248**	0.202	1.2	ug/L	1419	Standard
	Cr	52	136908.1	0.6	**16.0816**	0.420	2.6	ug/L	7059	Standard
	Cr	53	18659.8	2.6	**18.1733**	0.240	1.3	ug/L	398	Standard
	Mn	55	3135205.7	0.4	**438.7022**	7.424	1.7	ug/L	824	Standard
	Co	59	69995.3	0.7	**9.0990**	0.118	1.3	ug/L	167	Standard
	Ni	60	42554.0	1.2	**19.9463**	0.236	1.2	ug/L	391	Standard
	Cu	65	26902.5	1.3	**12.6149**	0.241	1.9	ug/L	147	Standard
	Zn	66	77600.9	1.5	**62.1081**	0.974	1.6	ug/L	184	Standard
>	**Ge**	72	477668.6	2.0				ug/L	422998	Standard
	As	75	5139.4	0.7	**4.0643**	0.087	2.1	ug/L	-58	Standard
	Se	82	62.8	26.5	**0.2674**	0.120	44.8	ug/L	15	Standard
	Se-1	77	243.3	4.2	**2.1725**	0.065	3.0	ug/L	58	Standard
>	**Ga**	71	19127.1	0.7				mg/L	113	Standard
	Rb	85	198995.0	1.0				ug/L	27	Standard
	Y	89	649207.2	0.7				ug/L	383780	Standard
>	**Rh**	103	41.7	36.7				ug/L	18	Standard
	Mo	98	449.9	10.5	**0.1460**	0.016	10.7	ug/L	31	Standard
	Ag	107	632.0	3.3	**0.0739**	0.003	3.9	ug/L	84	Standard
	Cd	111	1171.9	1.1	**0.4997**	0.007	1.4	mg/L	4	Standard
	Cd	114	2756.6	4.8	**0.4838**	0.022	4.6	ug/L	15	Standard
>	**In**	115	562900.2	0.4				ug/L	515400	Standard
	Sn	118	1318.4	30.9	**0.0274**	0.064	232.7	ug/L	1043	Standard
	Sb	123	667.8	32.9	**0.1172**	0.044	37.3	ug/L	227	Standard
	Ba	135	585914.6	0.3	**266.8564**	1.879	0.7	ug/L	31	Standard
	Ce	140	1276381.6	0.5				ug/L	120	Standard
>	**Tb**	159	888751.2	0.9				ug/L	785817	Standard
	Ho	165	19744.5	3.6				ug/L	7	Standard
	Tl	203	1090.7	3.8	**0.1214**	0.004	3.5	ug/L	6	Standard
	Tl	205	1000.0	10.3	**0.1248**	0.014	10.9	ug/L	8	Standard
	Pb	206	500976.8	0.6	**92.3093**	1.215	1.3	ug/L	201	Standard
	Pb	207	419232.3	0.8	**85.4378**	0.957	1.1	ug/L	177	Standard
	Pb	208	1756286.6	0.3	**89.1076**	0.893	1.0	ug/L	722	Standard
	U	238	4139.9	1.2	**0.5503**	0.004	0.7	ug/L	8	Standard
>	**Bi**	209	484824.6	0.8				ug/L	444563	Standard

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Na	23	6.7	114.6	**60.6851**	68.539	112.9	mg/L	0	Standard
Mg	24	133.3	31.2	**0.0981**	0.042	42.4	mg/L	38	Standard
K	39	321.7	9.1	**0.9771**	0.107	10.9	mg/L	33	Standard
Ca	43	76.7	16.4	**3.5760**	1.345	37.6	mg/L	48	Standard
Fe	54	18043.1	2.5	**11.3093**	0.428	3.8	mg/L	131	Standard
Fe	57	4782.4	4.7	**11.1647**	0.761	6.8	mg/L	153	Standard
> **Sc-1**	45	34019.8	2.2				mg/L	26715	Standard
Cl	35	111550.6	1.9				ug/L	102686	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	3117.0	6.2				ug/L	1897	Standard
P	31	19804.6	0.2				ug/L	18491	Standard
S	34	4103.9	4.3				ug/L	3734	Standard
Sr	88	130.0	6.7				ug/L	47	Standard
C	12	120.0	16.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	60.0	28.9				mg/L	23	Standard
Dy	164	33281.5	0.5				mg/L	23	Standard
Ho-1	165	19744.5	3.6				mg/L	7	Standard
Er	166	18307.7	1.1				mg/L	13	Standard
I	127	22428.3	4.6				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.330	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		112.925	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.216
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.057
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144512
Sample Date/Time: Tuesday, July 05, 2016 11:35:21
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	71958.9	2.4				ug/L	59517	Standard
	Be	9	838.4	13.6	**0.7678**	0.123	16.0	ug/L	10	Standard
	Al	27	17699628.7	1.5	**96.2224**	1.478	1.5	ug/L	1872	Standard
	Sc	45	34681.3	2.5				ug/L	26715	Standard
	Ti	47	2998.3	2.5	**10.8517**	0.290	2.7	ug/L	54	Standard
	V	51	152944.2	1.3	**18.4758**	0.186	1.0	ug/L	1419	Standard
	Cr	52	107693.1	0.8	**12.3552**	0.145	1.2	ug/L	7059	Standard
	Cr	53	15069.2	1.0	**14.5056**	0.122	0.8	ug/L	398	Standard
	Mn	55	2049605.2	0.5	**284.9255**	0.634	0.2	ug/L	824	Standard
	Co	59	61986.5	0.5	**8.0040**	0.033	0.4	ug/L	167	Standard
	Ni	60	40334.6	0.6	**18.7759**	0.110	0.6	ug/L	391	Standard
	Cu	65	23405.4	0.8	**10.8951**	0.130	1.2	ug/L	147	Standard
	Zn	66	41678.2	0.7	**33.0739**	0.237	0.7	ug/L	184	Standard
>	Ge	72	480619.9	0.4				ug/L	422998	Standard
	As	75	4243.8	1.5	**3.3439**	0.060	1.8	ug/L	-58	Standard
	Se	82	52.0	15.0	**0.1844**	0.060	32.5	ug/L	15	Standard
	Se-1	77	217.0	7.2	**1.8498**	0.173	9.3	ug/L	58	Standard
>	Ga	71	16040.2	1.7				mg/L	113	Standard
	Rb	85	153835.4	1.2				ug/L	27	Standard
	Y	89	653034.0	1.2				ug/L	383780	Standard
>	Rh	103	31.7	9.1				ug/L	18	Standard
	Mo	98	421.3	2.5	**0.1368**	0.005	3.9	ug/L	31	Standard
	Ag	107	442.0	6.1	**0.0483**	0.003	6.0	ug/L	84	Standard
	Cd	111	237.2	8.6	**0.0982**	0.008	7.9	mg/L	4	Standard
	Cd	114	490.5	1.5	**0.0827**	0.002	2.6	ug/L	15	Standard
>	In	115	560411.2	1.6				ug/L	515400	Standard
	Sn	118	975.0	33.7	**-0.0256**	0.054	212.3	ug/L	1043	Standard
	Sb	123	548.8	20.4	**0.0941**	0.024	25.1	ug/L	227	Standard
	Ba	135	225197.1	1.5	**103.0102**	1.156	1.1	ug/L	31	Standard
	Ce	140	1202275.9	0.9				ug/L	120	Standard
>	Tb	159	880063.7	3.4				ug/L	785817	Standard
	Ho	165	19287.3	1.8				ug/L	7	Standard
	Tl	203	813.0	1.7	**0.0888**	0.002	2.7	ug/L	6	Standard
	Tl	205	713.4	9.0	**0.0863**	0.009	9.9	ug/L	8	Standard
	Pb	206	102726.4	1.2	**18.7176**	0.074	0.4	ug/L	201	Standard
	Pb	207	86210.6	1.8	**17.3695**	0.202	1.2	ug/L	177	Standard
	Pb	208	361707.3	1.0	**18.1456**	0.252	1.4	ug/L	722	Standard
	U	238	4018.9	1.5	**0.5293**	0.011	2.0	ug/L	8	Standard
>	Bi	209	489289.8	0.8				ug/L	444563	Standard

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Na	23	1.7	173.2	**14.6402**	25.349	173.1	mg/L	0	Standard
Mg	24	108.3	14.1	**0.0713**	0.017	23.1	mg/L	38	Standard
K	39	311.7	16.1	**0.9211**	0.163	17.7	mg/L	33	Standard
Ca	43	93.3	17.2	**5.4689**	2.175	39.8	mg/L	48	Standard
Fe	54	14438.9	2.6	**8.8562**	0.446	5.0	mg/L	131	Standard
Fe	57	3728.8	4.6	**8.4284**	0.631	7.5	mg/L	153	Standard
> **Sc-1**	45	34681.3	2.5				mg/L	26715	Standard
Cl	35	113693.7	1.3				ug/L	102686	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	2510.2	3.5				ug/L	1897	Standard
P	31	19771.2	2.0				ug/L	18491	Standard
S	34	4267.3	5.1				ug/L	3734	Standard
Sr	88	83.3	61.6				ug/L	47	Standard
C	12	126.7	45.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	43.3	48.0				mg/L	23	Standard
Dy	164	32527.2	3.4				mg/L	23	Standard
Ho-1	165	19287.3	1.8				mg/L	7	Standard
Er	166	17176.4	4.0				mg/L	13	Standard
I	127	11282.5	1.3				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		120.905	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		113.622	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.733
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.061
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606145101
Sample Date/Time: Tuesday, July 05, 2016 11:38:33
Number of Replicates: 3
Autosampler Position: 227
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63086.2	3.9				ug/L	59517	Standard
	Be	9	48.3	58.8	**0.0207**	0.028	137.5	ug/L	10	Standard
	Al	27	187174.4	2.2	**1.1487**	0.023	2.0	ug/L	1872	Standard
	Sc	45	27850.6	4.7				ug/L	26715	Standard
	Ti	47	1001.4	3.2	**3.7116**	0.114	3.1	ug/L	54	Standard
	V	51	8090.4	4.8	**0.8746**	0.054	6.2	ug/L	1419	Standard
	Cr	52	11362.3	1.1	**0.5262**	0.019	3.6	ug/L	7059	Standard
	Cr	53	3108.7	1.2	**2.8761**	0.047	1.6	ug/L	398	Standard
	Mn	55	100253.9	1.0	**14.7608**	0.214	1.5	ug/L	824	Standard
	Co	59	1542.4	2.3	**0.1883**	0.004	2.2	ug/L	167	Standard
	Ni	60	1461.7	3.0	**0.5345**	0.020	3.7	ug/L	391	Standard
	Cu	65	1964.5	1.4	**0.9047**	0.018	2.0	ug/L	147	Standard
	Zn	66	8628.5	2.2	**7.1884**	0.148	2.1	ug/L	184	Standard
>	**Ge**	72	450022.4	0.4				ug/L	422998	Standard
	As	75	1048.0	2.6	**0.9200**	0.025	2.7	ug/L	-58	Standard
	Se	82	19.3	39.7	**-0.0513**	0.062	119.9	ug/L	15	Standard
	Se-1	77	150.3	2.5	**1.1949**	0.040	3.4	ug/L	58	Standard
>	**Ga**	71	646.7	5.1				mg/L	113	Standard
	Rb	85	4570.7	3.6				ug/L	27	Standard
	Y	89	391279.7	0.8				ug/L	383780	Standard
>	**Rh**	103	1.7	173.2				ug/L	18	Standard
	Mo	98	193.8	15.4	**0.0628**	0.012	18.9	ug/L	31	Standard
	Ag	107	106.3	6.0	**0.0035**	0.001	30.1	ug/L	84	Standard
	Cd	111	83.3	6.9	**0.0343**	0.002	6.3	mg/L	4	Standard
	Cd	114	206.4	14.3	**0.0347**	0.006	17.6	ug/L	15	Standard
>	**In**	115	524420.4	1.4				ug/L	515400	Standard
	Sn	118	508.3	21.2	**-0.0945**	0.019	20.6	ug/L	1043	Standard
	Sb	123	392.1	21.6	**0.0680**	0.019	28.3	ug/L	227	Standard
	Ba	135	9400.9	1.4	**4.5731**	0.093	2.0	ug/L	31	Standard
	Ce	140	55810.9	1.2				ug/L	120	Standard
>	**Tb**	159	818644.4	1.6				ug/L	785817	Standard
	Ho	165	396.7	1.5				ug/L	7	Standard
	Tl	203	74.0	20.2	**0.0052**	0.002	32.8	ug/L	6	Standard
	Tl	205	78.3	13.3	**0.0039**	0.001	34.4	ug/L	8	Standard
	Pb	206	23804.4	0.6	**4.5052**	0.016	0.3	ug/L	201	Standard
	Pb	207	19941.1	0.2	**4.1691**	0.037	0.9	ug/L	177	Standard
	Pb	208	83297.6	0.7	**4.3367**	0.052	1.2	ug/L	722	Standard
	U	238	385.3	3.7	**0.0509**	0.002	4.1	ug/L	8	Standard
>	**Bi**	209	467495.4	0.9				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	41.7	56.7	**0.0172**	0.029	170.4	mg/L	38	Standard
K	39	41.7	30.2	**0.0444**	0.045	101.3	mg/L	33	Standard
Ca	43	20.0	50.0	**-2.8724**	1.432	49.8	mg/L	48	Standard
Fe	54	717.3	6.4	**0.4381**	0.026	5.9	mg/L	131	Standard
Fe	57	350.0	22.0	**0.5664**	0.274	48.3	mg/L	153	Standard
> **Sc-1**	45	27850.6	4.7				mg/L	26715	Standard
Cl	35	101597.5	0.2				ug/L	102686	Standard
Kr	83	3.7	56.8				ug/L	2	Standard
Br	81	1566.7	0.7				ug/L	1897	Standard
P	31	7351.8	5.4				ug/L	18491	Standard
S	34	3560.4	3.1				ug/L	3734	Standard
Sr	88	83.3	54.1				ug/L	47	Standard
C	12	73.3	15.7				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	30.0	33.3				mg/L	23	Standard
Dy	164	819.3	12.4				mg/L	23	Standard
Ho-1	165	396.7	1.5				mg/L	7	Standard
Er	166	433.3	1.3				mg/L	13	Standard
I	127	25947.2	1.1				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.997	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.389	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.750
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.158
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606145102
Sample Date/Time: Tuesday, July 05, 2016 11:41:44
Number of Replicates: 3
Autosampler Position: 228
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61941.5	4.6				ug/L	59517	Standard
	Be	9	58.3	9.9	**0.0335**	0.008	23.1	ug/L	10	Standard
	Al	27	397101.0	1.9	**2.4976**	0.075	3.0	ug/L	1872	Standard
	Sc	45	27464.9	1.3				ug/L	26715	Standard
	Ti	47	1832.8	2.5	**7.0385**	0.120	1.7	ug/L	54	Standard
	V	51	14851.8	2.2	**1.7665**	0.058	3.3	ug/L	1419	Standard
	Cr	52	16937.1	0.9	**1.2760**	0.042	3.3	ug/L	7059	Standard
	Cr	53	3678.8	5.9	**3.5022**	0.267	7.6	ug/L	398	Standard
	Mn	55	333369.6	0.1	**49.6668**	0.486	1.0	ug/L	824	Standard
	Co	59	4435.3	0.3	**0.5920**	0.006	1.0	ug/L	167	Standard
	Ni	60	2891.6	2.6	**1.2612**	0.037	2.9	ug/L	391	Standard
	Cu	65	5814.1	0.3	**2.8489**	0.035	1.2	ug/L	147	Standard
	Zn	66	20833.6	1.1	**17.6837**	0.331	1.9	ug/L	184	Standard
>	**Ge**	72	447514.4	1.0				ug/L	422998	Standard
	As	75	928.7	4.0	**0.8257**	0.039	4.7	ug/L	-58	Standard
	Se	82	23.8	9.6	**-0.0141**	0.020	145.1	ug/L	15	Standard
	Se-1	77	153.3	7.5	**1.2422**	0.127	10.2	ug/L	58	Standard
>	**Ga**	71	1306.7	7.7				mg/L	113	Standard
	Rb	85	13222.4	2.0				ug/L	27	Standard
	Y	89	388639.7	0.5				ug/L	383780	Standard
>	**Rh**	103	13.3	78.1				ug/L	18	Standard
	Mo	98	448.8	3.5	**0.1576**	0.004	2.6	ug/L	31	Standard
	Ag	107	124.3	5.2	**0.0062**	0.001	18.2	ug/L	84	Standard
	Cd	111	98.1	12.8	**0.0413**	0.006	13.6	mg/L	4	Standard
	Cd	114	206.1	2.6	**0.0348**	0.001	4.0	ug/L	15	Standard
>	**In**	115	522465.9	1.3				ug/L	515400	Standard
	Sn	118	518.3	40.3	**-0.0928**	0.035	37.3	ug/L	1043	Standard
	Sb	123	307.8	24.2	**0.0500**	0.016	31.6	ug/L	227	Standard
	Ba	135	21685.8	0.0	**10.6194**	0.135	1.3	ug/L	31	Standard
	Ce	140	63251.8	1.4				ug/L	120	Standard
>	**Tb**	159	805776.3	2.0				ug/L	785817	Standard
	Ho	165	756.7	9.4				ug/L	7	Standard
	Tl	203	171.7	5.0	**0.0170**	0.001	7.0	ug/L	6	Standard
	Tl	205	131.7	12.2	**0.0113**	0.002	20.2	ug/L	8	Standard
	Pb	206	15597.4	1.2	**2.9590**	0.060	2.0	ug/L	201	Standard
	Pb	207	12686.3	1.2	**2.6552**	0.046	1.7	ug/L	177	Standard
	Pb	208	54000.2	0.6	**2.8156**	0.019	0.7	ug/L	722	Standard
	U	238	900.4	1.8	**0.1232**	0.003	2.7	ug/L	8	Standard
>	**Bi**	209	463997.6	0.9				ug/L	444563	Standard

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Na	23	3.3	86.6	**37.9829**	32.899	86.6	mg/L	0	Standard
Mg	24	41.7	36.7	**0.0174**	0.019	110.5	mg/L	38	Standard
K	39	38.3	61.6	**0.0342**	0.101	294.9	mg/L	33	Standard
Ca	43	43.3	35.3	**0.7488**	2.326	310.6	mg/L	48	Standard
Fe	54	1680.0	5.2	**1.2006**	0.065	5.4	mg/L	131	Standard
Fe	57	590.0	9.0	**1.2966**	0.165	12.8	mg/L	153	Standard
> **Sc-1**	45	27464.9	1.3				mg/L	26715	Standard
Cl	35	103666.1	1.2				ug/L	102686	Standard
Kr	83	3.3	45.8				ug/L	2	Standard
Br	81	1920.1	6.8				ug/L	1897	Standard
P	31	7571.9	4.4				ug/L	18491	Standard
S	34	3707.1	3.8				ug/L	3734	Standard
Sr	88	76.7	43.4				ug/L	47	Standard
C	12	83.3	61.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	23	Standard
Dy	164	1215.4	9.0				mg/L	23	Standard
Ho-1	165	756.7	9.4				mg/L	7	Standard
Er	166	723.4	7.6				mg/L	13	Standard
I	127	26428.0	1.1				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.074	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.796	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.371
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.372
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606145102PS WG575057-01
Sample Date/Time: Tuesday, July 05, 2016 11:44:55
Number of Replicates: 3
Autosampler Position: 229
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	62697.9	4.2				ug/L	59517	Standard
	Be	9	44294.7	3.5	**48.3430**	1.008	2.1	ug/L	10	Standard
	Al	27	380968.8	3.5	**2.3649**	0.024	1.0	ug/L	1872	Standard
	Sc	45	27576.7	2.5				ug/L	26715	Standard
	Ti	47	1757.8	3.6	**6.6590**	0.216	3.3	ug/L	54	Standard
	V	51	369561.9	0.1	**47.6704**	0.227	0.5	ug/L	1419	Standard
	Cr	52	375004.1	0.6	**48.2990**	0.392	0.8	ug/L	7059	Standard
	Cr	53	47950.8	1.0	**49.9721**	0.632	1.3	ug/L	398	Standard
	Mn	55	624219.2	1.1	**92.0208**	0.683	0.7	ug/L	824	Standard
	Co	59	331225.4	0.7	**45.5157**	0.136	0.3	ug/L	167	Standard
	Ni	60	98193.5	1.1	**48.8356**	0.402	0.8	ug/L	391	Standard
	Cu	65	103660.4	1.5	**51.5103**	0.662	1.3	ug/L	147	Standard
	Zn	66	82546.9	0.1	**69.7085**	0.295	0.4	ug/L	184	Standard
>	Ge	72	452783.9	0.5				ug/L	422998	Standard
	As	75	61959.6	0.0	**51.0727**	0.255	0.5	ug/L	-58	Standard
	Se	82	6718.1	0.6	**53.3265**	0.486	0.9	ug/L	15	Standard
	Se-1	77	4447.3	1.5	**54.1235**	1.057	2.0	ug/L	58	Standard
>	Ga	71	1278.4	1.3				mg/L	113	Standard
	Rb	85	12908.8	1.4				ug/L	27	Standard
	Y	89	401631.9	0.4				ug/L	383780	Standard
>	Rh	103	31.7	50.8				ug/L	18	Standard
	Mo	98	450.5	1.2	**0.1549**	0.001	1.0	ug/L	31	Standard
	Ag	107	331680.1	0.3	**47.5704**	0.222	0.5	ug/L	84	Standard
	Cd	111	108869.6	0.6	**49.4140**	0.475	1.0	mg/L	4	Standard
	Cd	114	263950.9	0.6	**49.3701**	0.312	0.6	ug/L	15	Standard
>	In	115	533128.8	0.5				ug/L	515400	Standard
	Sn	118	636.7	25.1	**-0.0747**	0.026	35.4	ug/L	1043	Standard
	Sb	123	196248.0	6.3	**41.4359**	2.744	6.6	ug/L	227	Standard
	Ba	135	117350.4	0.6	**56.4148**	0.661	1.2	ug/L	31	Standard
	Ce	140	61538.1	0.5				ug/L	120	Standard
>	Tb	159	822948.5	0.5				ug/L	785817	Standard
	Ho	165	756.7	6.0				ug/L	7	Standard
	Tl	203	396729.2	0.3	**46.1565**	0.208	0.4	ug/L	6	Standard
	Tl	205	348011.4	0.7	**46.4767**	0.241	0.5	ug/L	8	Standard
	Pb	206	267711.4	0.3	**50.0339**	0.138	0.3	ug/L	201	Standard
	Pb	207	232867.9	0.4	**48.1364**	0.017	0.0	ug/L	177	Standard
	Pb	208	960047.3	0.6	**49.4056**	0.263	0.5	ug/L	722	Standard
	U	238	326850.5	0.2	**44.2871**	0.244	0.6	ug/L	8	Standard
>	Bi	209	477758.5	0.4				ug/L	444563	Standard

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Na	23	1.7	173.2	**18.9251**	32.771	173.2	mg/L	0	Standard
Mg	24	38.3	27.2	**0.0131**	0.013	98.6	mg/L	38	Standard
K	39	41.7	18.3	**0.0472**	0.029	62.1	mg/L	33	Standard
Ca	43	43.3	40.5	**0.7741**	2.837	366.4	mg/L	48	Standard
Fe	54	1650.4	2.6	**1.1722**	0.005	0.4	mg/L	131	Standard
Fe	57	556.7	10.4	**1.1920**	0.207	17.4	mg/L	153	Standard
> **Sc-1**	45	27576.7	2.5				mg/L	26715	Standard
Cl	35	103188.9	0.2				ug/L	102686	Standard
Kr	83	2.3	89.2				ug/L	2	Standard
Br	81	1846.8	10.9				ug/L	1897	Standard
P	31	7151.7	0.7				ug/L	18491	Standard
S	34	3632.1	3.8				ug/L	3734	Standard
Sr	88	60.0	30.0				ug/L	47	Standard
C	12	90.0	66.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	49.5				mg/L	23	Standard
Dy	164	1235.3	9.5				mg/L	23	Standard
Ho-1	165	756.7	6.0				mg/L	7	Standard
Er	166	656.7	24.8				mg/L	13	Standard
I	127	26660.1	0.7				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.345	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.042	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.440
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.467
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606145102SDL WG575057-02
Sample Date/Time: Tuesday, July 05, 2016 11:48:07
Number of Replicates: 3
Autosampler Position: 230
Sample Description: ~~10~~ 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54039.6	3.1				ug/L	59517	Standard
	Be	9	48.3	58.8	**0.0295**	0.034	115.5	ug/L	10	Standard
	Al	27	89003.2	15.7	**0.6307**	0.086	13.6	ug/L	1872	Standard
	Sc	45	23686.8	0.3				ug/L	26715	Standard
	Ti	47	378.0	5.6	**1.4703**	0.090	6.2	ug/L	54	Standard
	V	51	4224.3	4.5	**0.4528**	0.023	5.1	ug/L	1419	Standard
	Cr	52	7865.0	4.3	**0.2187**	0.042	19.2	ug/L	7059	Standard
	Cr	53	2401.9	6.7	**2.5065**	0.166	6.6	ug/L	398	Standard
	Mn	55	67918.0	3.7	**11.4603**	0.319	2.8	ug/L	824	Standard
	Co	59	1167.7	13.0	**0.1604**	0.022	13.8	ug/L	167	Standard
	Ni	60	836.0	11.2	**0.2826**	0.050	17.8	ug/L	391	Standard
	Cu	65	1282.4	2.5	**0.6589**	0.017	2.6	ug/L	147	Standard
	Zn	66	5007.5	2.9	**4.7407**	0.108	2.3	ug/L	184	Standard
>	**Ge**	72	391606.9	1.0				ug/L	422998	Standard
	As	75	174.6	23.0	**0.2178**	0.037	17.2	ug/L	-58	Standard
	Se	82	20.5	32.2	**-0.0173**	0.060	344.9	ug/L	15	Standard
	Se-1	77	133.3	1.9	**1.2312**	0.056	4.5	ug/L	58	Standard
>	**Ga**	71	268.3	15.1				mg/L	113	Standard
	Rb	85	2626.9	3.6				ug/L	27	Standard
	Y	89	337426.2	1.1				ug/L	383780	Standard
>	**Rh**	103	15.0	66.7				ug/L	18	Standard
	Mo	98	156.5	9.3	**0.0577**	0.006	10.6	ug/L	31	Standard
	Ag	107	191.0	71.7	**0.0200**	0.023	113.4	ug/L	84	Standard
	Cd	111	50.3	69.4	**0.0225**	0.018	81.1	mg/L	4	Standard
	Cd	114	171.3	36.7	**0.0329**	0.013	40.7	ug/L	15	Standard
>	**In**	115	455091.8	1.2				ug/L	515400	Standard
	Sn	118	385.0	19.7	**-0.1055**	0.016	14.9	ug/L	1043	Standard
	Sb	123	2217.5	20.0	**0.5330**	0.115	21.6	ug/L	227	Standard
	Ba	135	4570.0	8.0	**2.5499**	0.181	7.1	ug/L	31	Standard
	Ce	140	13090.7	6.8				ug/L	120	Standard
>	**Tb**	159	708958.3	1.6				ug/L	785817	Standard
	Ho	165	178.3	12.6				ug/L	7	Standard
	Tl	203	212.3	44.0	**0.0250**	0.012	49.8	ug/L	6	Standard
	Tl	205	268.3	50.7	**0.0348**	0.021	60.0	ug/L	8	Standard
	Pb	206	3361.7	9.7	**0.6843**	0.068	10.0	ug/L	201	Standard
	Pb	207	2820.3	6.6	**0.6295**	0.043	6.8	ug/L	177	Standard
	Pb	208	12064.2	11.5	**0.6727**	0.080	12.0	ug/L	722	Standard
	U	238	331.0	42.4	**0.0495**	0.022	44.0	ug/L	8	Standard
>	**Bi**	209	411532.0	0.4				ug/L	444563	Standard

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Na	23	1.7	173.2	**21.9603**	38.028	173.2	mg/L	0	Standard
Mg	24	35.0	65.5	**0.0159**	0.032	203.8	mg/L	38	Standard
K	39	50.0	40.0	**0.1177**	0.099	84.4	mg/L	33	Standard
Ca	43	31.7	50.8	**-0.2632**	2.835	1077.0	mg/L	48	Standard
Fe	54	367.4	21.7	**0.2172**	0.072	32.9	mg/L	131	Standard
Fe	57	280.0	18.8	**0.4969**	0.187	37.7	mg/L	153	Standard
> **Sc-1**	45	23686.8	0.3				mg/L	26715	Standard
Cl	35	99858.7	1.1				ug/L	102686	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1640.1	12.5				ug/L	1897	Standard
P	31	5642.7	5.7				ug/L	18491	Standard
S	34	3278.7	2.2				ug/L	3734	Standard
Sr	88	75.0	11.5				ug/L	47	Standard
C	12	36.7	15.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	23	Standard
Dy	164	282.5	17.5				mg/L	23	Standard
Ho-1	165	178.3	12.6				mg/L	7	Standard
Er	166	156.7	35.2				mg/L	13	Standard
I	127	28024.2	2.4				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.797	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.579	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		88.299
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.570
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606145103
Sample Date/Time: Tuesday, July 05, 2016 11:51:18
Number of Replicates: 3
Autosampler Position: 231
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	58994.6	1.3				ug/L	59517	Standard
	Be	9	38.3	37.7	**0.0135**	0.017	129.1	ug/L	10	Standard
	Al	27	155374.4	1.4	**1.0179**	0.018	1.7	ug/L	1872	Standard
	Sc	45	25635.0	4.0				ug/L	26715	Standard
	Ti	47	1269.4	0.7	**5.1547**	0.113	2.2	ug/L	54	Standard
	V	51	9899.5	0.9	**1.2086**	0.027	2.2	ug/L	1419	Standard
	Cr	52	12883.1	0.5	**0.8572**	0.024	2.9	ug/L	7059	Standard
	Cr	53	2881.9	5.1	**2.8672**	0.116	4.0	ug/L	398	Standard
	Mn	55	158042.5	3.0	**25.1279**	0.371	1.5	ug/L	824	Standard
	Co	59	1946.5	3.1	**0.2647**	0.005	2.0	ug/L	167	Standard
	Ni	60	1707.1	5.4	**0.7229**	0.038	5.3	ug/L	391	Standard
	Cu	65	2308.8	1.9	**1.1652**	0.014	1.2	ug/L	147	Standard
	Zn	66	13053.3	0.7	**11.8043**	0.102	0.9	ug/L	184	Standard
>	Ge	72	418173.0	1.6				ug/L	422998	Standard
	As	75	531.5	13.1	**0.5253**	0.059	11.1	ug/L	-58	Standard
	Se	82	22.2	54.0	**-0.0153**	0.101	659.9	ug/L	15	Standard
	Se-1	77	136.3	5.9	**1.1512**	0.127	11.0	ug/L	58	Standard
>	Ga	71	790.0	11.2				mg/L	113	Standard
	Rb	85	6226.3	6.4				ug/L	27	Standard
	Y	89	366669.1	1.2				ug/L	383780	Standard
>	Rh	103	28.3	36.7				ug/L	18	Standard
	Mo	98	322.8	6.1	**0.1172**	0.008	6.8	ug/L	31	Standard
	Ag	107	106.3	3.9	**0.0044**	0.001	11.5	ug/L	84	Standard
	Cd	111	101.0	5.1	**0.0452**	0.002	4.9	mg/L	4	Standard
	Cd	114	217.0	6.1	**0.0390**	0.002	5.6	ug/L	15	Standard
>	In	115	496031.9	1.1				ug/L	515400	Standard
	Sn	118	485.0	36.9	**-0.0941**	0.031	33.0	ug/L	1043	Standard
	Sb	123	1006.7	28.3	**0.2117**	0.062	29.3	ug/L	227	Standard
	Ba	135	10215.4	2.6	**5.2559**	0.079	1.5	ug/L	31	Standard
	Ce	140	49659.6	2.7				ug/L	120	Standard
>	Tb	159	759583.5	0.8				ug/L	785817	Standard
	Ho	165	383.3	14.1				ug/L	7	Standard
	Tl	203	121.0	13.0	**0.0117**	0.002	16.0	ug/L	6	Standard
	Tl	205	131.7	7.9	**0.0123**	0.002	12.8	ug/L	8	Standard
	Pb	206	31584.6	1.8	**6.3716**	0.110	1.7	ug/L	201	Standard
	Pb	207	26494.8	0.6	**5.9067**	0.071	1.2	ug/L	177	Standard
	Pb	208	110332.0	2.1	**6.1238**	0.088	1.4	ug/L	722	Standard
	U	238	469.3	1.2	**0.0666**	0.001	1.3	ug/L	8	Standard
>	Bi	209	439883.7	0.8				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	30.0	72.6	**0.0064**	0.030	478.1	mg/L	38	Standard
K	39	40.0	37.5	**0.0525**	0.064	121.8	mg/L	33	Standard
Ca	43	33.3	34.6	**-0.3638**	2.049	563.3	mg/L	48	Standard
Fe	54	1092.3	3.6	**0.8011**	0.010	1.2	mg/L	131	Standard
Fe	57	438.3	6.9	**0.9374**	0.154	16.4	mg/L	153	Standard
> **Sc-1**	45	25635.0	4.0				mg/L	26715	Standard
Cl	35	101103.6	1.2				ug/L	102686	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	1673.4	12.5				ug/L	1897	Standard
P	31	7090.0	4.6				ug/L	18491	Standard
S	34	3425.4	0.4				ug/L	3734	Standard
Sr	88	58.3	27.6				ug/L	47	Standard
C	12	70.0	62.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	100.0				mg/L	23	Standard
Dy	164	602.6	18.5				mg/L	23	Standard
Ho-1	165	383.3	14.1				mg/L	7	Standard
Er	166	363.3	8.4				mg/L	13	Standard
I	127	30303.6	1.9				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.123	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.859	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.242
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.947
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606145104
Sample Date/Time: Tuesday, July 05, 2016 11:54:30
Number of Replicates: 3
Autosampler Position: 232
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59640.5	2.3				ug/L	59517	Standard
	Be	9	51.7	14.8	**0.0282**	0.009	32.9	ug/L	10	Standard
	Al	27	651313.8	1.1	**4.2602**	0.050	1.2	ug/L	1872	Standard
	Sc	45	27301.3	2.9				ug/L	26715	Standard
	Ti	47	1316.1	3.5	**5.0645**	0.163	3.2	ug/L	54	Standard
	V	51	8314.8	1.0	**0.9265**	0.012	1.3	ug/L	1419	Standard
	Cr	52	12316.3	0.6	**0.6864**	0.002	0.3	ug/L	7059	Standard
	Cr	53	2606.9	2.8	**2.4032**	0.063	2.6	ug/L	398	Standard
	Mn	55	151787.5	0.5	**22.8881**	0.145	0.6	ug/L	824	Standard
	Co	59	2591.6	1.2	**0.3410**	0.005	1.4	ug/L	167	Standard
	Ni	60	1900.5	2.9	**0.7750**	0.023	3.0	ug/L	391	Standard
	Cu	65	2716.6	1.1	**1.3098**	0.008	0.6	ug/L	147	Standard
	Zn	66	12752.4	1.0	**10.9286**	0.144	1.3	ug/L	184	Standard
>	Ge	72	440774.5	0.5				ug/L	422998	Standard
	As	75	461.4	9.2	**0.4420**	0.038	8.6	ug/L	-58	Standard
	Se	82	21.9	26.2	**-0.0264**	0.048	180.8	ug/L	15	Standard
	Se-1	77	123.7	10.6	**0.8972**	0.173	19.2	ug/L	58	Standard
>	Ga	71	743.4	6.6				mg/L	113	Standard
	Rb	85	5377.6	4.8				ug/L	27	Standard
	Y	89	383304.5	0.0				ug/L	383780	Standard
>	Rh	103	15.0	57.7				ug/L	18	Standard
	Mo	98	416.2	6.8	**0.1460**	0.012	8.5	ug/L	31	Standard
	Ag	107	96.0	9.5	**0.0021**	0.001	69.4	ug/L	84	Standard
	Cd	111	76.9	16.8	**0.0316**	0.006	19.0	mg/L	4	Standard
	Cd	114	202.2	26.9	**0.0341**	0.010	30.5	ug/L	15	Standard
>	In	115	521154.6	1.3				ug/L	515400	Standard
	Sn	118	476.7	10.6	**-0.0995**	0.010	9.8	ug/L	1043	Standard
	Sb	123	713.8	30.5	**0.1382**	0.049	35.3	ug/L	227	Standard
	Ba	135	9897.2	1.6	**4.8465**	0.129	2.7	ug/L	31	Standard
	Ce	140	49096.1	2.3				ug/L	120	Standard
>	Tb	159	791948.4	0.3				ug/L	785817	Standard
	Ho	165	413.3	12.2				ug/L	7	Standard
	Tl	203	144.0	10.8	**0.0137**	0.002	14.1	ug/L	6	Standard
	Tl	205	81.7	40.8	**0.0045**	0.005	102.1	ug/L	8	Standard
	Pb	206	24670.1	1.4	**4.7209**	0.060	1.3	ug/L	201	Standard
	Pb	207	20384.7	1.5	**4.3087**	0.070	1.6	ug/L	177	Standard
	Pb	208	86971.8	0.8	**4.5787**	0.029	0.6	ug/L	722	Standard
	U	238	541.0	5.2	**0.0732**	0.004	5.7	ug/L	8	Standard
>	Bi	209	462557.2	0.3				ug/L	444563	Standard

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	Na	23	0.0		**0.0050**			mg/L	0	Standard
	Mg	24	28.3	97.2	**0.0015**	0.034	2280.0	mg/L	38	Standard
	K	39	41.7	25.0	**0.0492**	0.045	91.0	mg/L	33	Standard
	Ca	43	28.3	10.2	**-1.5191**	0.388	25.5	mg/L	48	Standard
	Fe	54	952.3	2.4	**0.6352**	0.036	5.6	mg/L	131	Standard
	Fe	57	405.0	3.3	**0.7465**	0.048	6.5	mg/L	153	Standard
>	**Sc-1**	45	27301.3	2.9				mg/L	26715	Standard
	Cl	35	106909.4	2.8				ug/L	102686	Standard
	Kr	83	2.7	78.1				ug/L	2	Standard
	Br	81	1606.8	7.6				ug/L	1897	Standard
	P	31	7366.8	2.0				ug/L	18491	Standard
	S	34	3655.4	3.4				ug/L	3734	Standard
	Sr	88	70.0	21.4				ug/L	47	Standard
	C	12	70.0	37.8				mg/L	63	Standard
	N	14	3.3	173.2				mg/L	0	Standard
	Hg	202	13.3	43.3				mg/L	23	Standard
	Dy	164	731.8	10.6				mg/L	23	Standard
	Ho-1	165	413.3	12.2				mg/L	7	Standard
	Er	166	450.0	12.4				mg/L	13	Standard
	I	127	29051.2	0.4				mg/L	12398	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		100.208	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		104.203	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.117
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.048
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606145105
Sample Date/Time: Tuesday, July 05, 2016 11:57:41
Number of Replicates: 3
Autosampler Position: 233
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58588.2	3.7				ug/L	59517	Standard
	Be	9	116.7	31.0	**0.1053**	0.042	40.2	ug/L	10	Standard
	Al	27	92826.9	1.9	**0.6081**	0.031	5.1	ug/L	1872	Standard
	Sc	45	26227.7	1.7				ug/L	26715	Standard
	Ti	47	3936.5	2.1	**16.3111**	0.457	2.8	ug/L	54	Standard
	V	51	10928.0	1.0	**1.3351**	0.013	1.0	ug/L	1419	Standard
	Cr	52	17058.9	1.2	**1.4233**	0.022	1.6	ug/L	7059	Standard
	Cr	53	3093.7	6.6	**3.0693**	0.235	7.6	ug/L	398	Standard
	Mn	55	27000.7	1.1	**4.1360**	0.069	1.7	ug/L	824	Standard
	Co	59	1487.4	1.9	**0.1938**	0.005	2.4	ug/L	167	Standard
	Ni	60	1703.4	3.2	**0.7106**	0.025	3.5	ug/L	391	Standard
	Cu	65	2105.5	2.7	**1.0428**	0.036	3.5	ug/L	147	Standard
	Zn	66	8804.9	1.4	**7.8184**	0.158	2.0	ug/L	184	Standard
>	**Ge**	72	423003.0	0.7				ug/L	422998	Standard
	As	75	1338.6	0.3	**1.2315**	0.007	0.6	ug/L	-58	Standard
	Se	82	21.3	5.1	**-0.0243**	0.011	43.4	ug/L	15	Standard
	Se-1	77	132.3	4.8	**1.0768**	0.084	7.8	ug/L	58	Standard
>	**Ga**	71	1020.0	4.5				mg/L	113	Standard
	Rb	85	5507.7	0.7				ug/L	27	Standard
	Y	89	373045.0	0.6				ug/L	383780	Standard
>	**Rh**	103	11.7	137.8				ug/L	18	Standard
	Mo	98	262.3	6.0	**0.0924**	0.006	6.9	ug/L	31	Standard
	Ag	107	109.7	1.4	**0.0047**	0.000	6.0	ug/L	84	Standard
	Cd	111	109.5	5.6	**0.0487**	0.003	5.7	mg/L	4	Standard
	Cd	114	282.5	31.4	**0.0516**	0.018	34.4	ug/L	15	Standard
>	**In**	115	501649.9	0.3				ug/L	515400	Standard
	Sn	118	526.7	18.7	**-0.0875**	0.018	20.2	ug/L	1043	Standard
	Sb	123	586.8	28.7	**0.1154**	0.038	32.8	ug/L	227	Standard
	Ba	135	9884.6	1.2	**5.0283**	0.069	1.4	ug/L	31	Standard
	Ce	140	26367.9	3.0				ug/L	120	Standard
>	**Tb**	159	777177.3	0.4				ug/L	785817	Standard
	Ho	165	535.0	9.5				ug/L	7	Standard
	Tl	203	451.3	3.8	**0.0526**	0.002	3.9	ug/L	6	Standard
	Tl	205	398.3	22.1	**0.0502**	0.012	24.8	ug/L	8	Standard
	Pb	206	14523.0	1.7	**2.8646**	0.053	1.9	ug/L	201	Standard
	Pb	207	12095.5	2.0	**2.6327**	0.025	0.9	ug/L	177	Standard
	Pb	208	50729.4	1.8	**2.7505**	0.048	1.8	ug/L	722	Standard
	U	238	404.3	2.6	**0.0562**	0.001	2.3	ug/L	8	Standard
>	**Bi**	209	446032.8	1.0				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	43.3	29.0	**0.0218**	0.016	73.7	mg/L	38	Standard
K	39	43.3	46.6	**0.0650**	0.094	144.6	mg/L	33	Standard
Ca	43	41.7	48.5	**0.7656**	3.153	411.9	mg/L	48	Standard
Fe	54	1227.0	6.0	**0.8915**	0.073	8.2	mg/L	131	Standard
Fe	57	510.0	2.9	**1.1274**	0.028	2.4	mg/L	153	Standard
> **Sc-1**	45	26227.7	1.7				mg/L	26715	Standard
Cl	35	106266.0	1.0				ug/L	102686	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1563.4	5.4				ug/L	1897	Standard
P	31	7021.6	1.0				ug/L	18491	Standard
S	34	3633.8	1.6				ug/L	3734	Standard
Sr	88	80.0	16.5				ug/L	47	Standard
C	12	60.0	28.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	23	Standard
Dy	164	911.9	3.4				mg/L	23	Standard
Ho-1	165	535.0	9.5				mg/L	7	Standard
Er	166	516.7	15.8				mg/L	13	Standard
I	127	29779.2	1.7				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.440	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.001	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.332
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.331
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606145105
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Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606145106 WG574521-02
Sample Date/Time: Tuesday, July 05, 2016 12:00:52
Number of Replicates: 3
Autosampler Position: 234
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	58452.6	3.5				ug/L	59517	Standard
	Be	9	111.7	38.1	**0.1002**	0.053	52.4	ug/L	10	Standard
	Al	27	318919.9	0.7	**2.1238**	0.084	4.0	ug/L	1872	Standard
	Sc	45	25932.2	2.7				ug/L	26715	Standard
	Ti	47	2048.1	2.1	**8.3389**	0.301	3.6	ug/L	54	Standard
	V	51	42887.2	0.5	**5.7438**	0.096	1.7	ug/L	1419	Standard
	Cr	52	18270.0	1.2	**1.5847**	0.044	2.8	ug/L	7059	Standard
	Cr	53	3193.7	2.4	**3.1683**	0.035	1.1	ug/L	398	Standard
	Mn	55	163898.4	0.6	**25.6789**	0.411	1.6	ug/L	824	Standard
	Co	59	2641.9	0.7	**0.3624**	0.009	2.3	ug/L	167	Standard
	Ni	60	4286.3	1.6	**2.0837**	0.070	3.4	ug/L	391	Standard
	Cu	65	9810.8	2.0	**5.1286**	0.077	1.5	ug/L	147	Standard
	Zn	66	10912.9	1.2	**9.6933**	0.179	1.9	ug/L	184	Standard
>	Ge	72	424537.0	1.5				ug/L	422998	Standard
	As	75	1501.2	0.8	**1.3704**	0.029	2.1	ug/L	-58	Standard
	Se	82	59.7	8.9	**0.3007**	0.039	12.8	ug/L	15	Standard
	Se-1	77	144.7	3.1	**1.2324**	0.051	4.1	ug/L	58	Standard
>	Ga	71	1151.7	10.0				mg/L	113	Standard
	Rb	85	4672.4	3.9				ug/L	27	Standard
	Y	89	398677.4	1.0				ug/L	383780	Standard
>	Rh	103	15.0	57.7				ug/L	18	Standard
	Mo	98	790.9	3.3	**0.2985**	0.008	2.7	ug/L	31	Standard
	Ag	107	125.7	19.7	**0.0073**	0.004	55.8	ug/L	84	Standard
	Cd	111	462.9	4.3	**0.2204**	0.007	3.2	mg/L	4	Standard
	Cd	114	1087.2	1.9	**0.2129**	0.007	3.2	ug/L	15	Standard
>	In	115	498713.7	1.6				ug/L	515400	Standard
	Sn	118	418.3	38.7	**-0.1061**	0.029	27.6	ug/L	1043	Standard
	Sb	123	472.2	20.4	**0.0905**	0.023	25.5	ug/L	227	Standard
	Ba	135	25027.3	1.0	**12.8465**	0.328	2.6	ug/L	31	Standard
	Ce	140	130403.8	0.7				ug/L	120	Standard
>	Tb	159	771205.1	1.2				ug/L	785817	Standard
	Ho	165	3028.6	4.1				ug/L	7	Standard
	Tl	203	207.7	5.7	**0.0222**	0.002	8.0	ug/L	6	Standard
	Tl	205	175.0	8.6	**0.0181**	0.002	10.2	ug/L	8	Standard
	Pb	206	15751.2	1.0	**3.0986**	0.069	2.2	ug/L	201	Standard
	Pb	207	12955.9	1.0	**2.8124**	0.021	0.8	ug/L	177	Standard
	Pb	208	54935.0	0.7	**2.9710**	0.057	1.9	ug/L	722	Standard
	U	238	1866.8	0.6	**0.2674**	0.002	0.6	ug/L	8	Standard
>	Bi	209	447795.4	1.2				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	55.0	45.5	**0.0381**	0.034	90.2	mg/L	38	Standard
K	39	46.7	6.2	**0.0812**	0.011	13.6	mg/L	33	Standard
Ca	43	58.3	44.0	**3.5989**	4.167	115.8	mg/L	48	Standard
Fe	54	1895.3	8.2	**1.4582**	0.136	9.3	mg/L	131	Standard
Fe	57	635.0	15.0	**1.5414**	0.262	17.0	mg/L	153	Standard
> **Sc-1**	45	25932.2	2.7				mg/L	26715	Standard
Cl	35	108583.1	2.1				ug/L	102686	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1816.8	6.6				ug/L	1897	Standard
P	31	6998.3	6.1				ug/L	18491	Standard
S	34	3810.5	8.5				ug/L	3734	Standard
Sr	88	85.0	31.1				ug/L	47	Standard
C	12	120.0	14.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	69.3				mg/L	23	Standard
Dy	164	4605.9	7.9				mg/L	23	Standard
Ho-1	165	3028.6	4.1				mg/L	7	Standard
Er	166	2883.6	1.7				mg/L	13	Standard
I	127	29842.7	3.4				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.212	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.364	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85	
Y	89	
> Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
> In	115	96.763
Sn	118	
Sb	123	
Ba	135	
Ce	140	
> Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
> Bi	209	100.727
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
> Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, July 05, 2016 12:04:06
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60838.6	1.2				ug/L	59517	Standard
	Be	9	44458.5	3.7	**50.0051**	2.323	4.6	ug/L	10	Standard
	Al	27	7478556.5	0.9	**48.0750**	0.433	0.9	ug/L	1872	Standard
	Sc	45	27386.4	1.8				ug/L	26715	Standard
	Ti	47	24816.6	1.5	**98.0648**	2.630	2.7	ug/L	54	Standard
	V	51	373142.7	0.9	**48.5325**	1.162	2.4	ug/L	1419	Standard
	Cr	52	381682.9	1.3	**49.5899**	1.284	2.6	ug/L	7059	Standard
	Cr	53	47979.2	0.5	**50.4138**	0.911	1.8	ug/L	398	Standard
	Mn	55	322593.6	1.6	**47.8905**	1.516	3.2	ug/L	824	Standard
	Co	59	347219.3	0.9	**48.1099**	1.187	2.5	ug/L	167	Standard
	Ni	60	99038.0	0.9	**49.6579**	0.386	0.8	ug/L	391	Standard
	Cu	65	98421.7	1.1	**49.3072**	1.146	2.3	ug/L	147	Standard
	Zn	66	57845.9	1.6	**49.2090**	1.532	3.1	ug/L	184	Standard
>	Ge	72	449181.6	1.5				ug/L	422998	Standard
	As	75	58659.0	1.3	**48.7545**	1.341	2.8	ug/L	-58	Standard
	Se	82	6000.6	1.4	**48.0056**	1.419	3.0	ug/L	15	Standard
	Se-1	77	3982.5	2.4	**48.8000**	1.663	3.4	ug/L	58	Standard
>	Ga	71	66.7	30.3				mg/L	113	Standard
	Rb	85	848.4	4.3				ug/L	27	Standard
	Y	89	388308.0	0.4				ug/L	383780	Standard
>	Rh	103	30.0	44.1				ug/L	18	Standard
	Mo	98	262276.3	0.9	**97.3335**	1.845	1.9	ug/L	31	Standard
	Ag	107	337726.1	1.6	**49.4532**	1.538	3.1	ug/L	84	Standard
	Cd	111	106537.8	1.8	**49.3683**	1.580	3.2	mg/L	4	Standard
	Cd	114	262775.5	1.0	**50.1687**	0.512	1.0	ug/L	15	Standard
>	In	115	522341.5	1.5				ug/L	515400	Standard
	Sn	118	289720.6	1.1	**49.2050**	1.308	2.7	ug/L	1043	Standard
	Sb	123	236187.5	1.8	**50.9109**	1.664	3.3	ug/L	227	Standard
	Ba	135	100057.6	0.8	**49.0989**	0.970	2.0	ug/L	31	Standard
	Ce	140	940.0	28.0				ug/L	120	Standard
>	Tb	159	807561.5	2.6				ug/L	785817	Standard
	Ho	165	11.7	89.2				ug/L	7	Standard
	Tl	203	403024.9	0.6	**49.1853**	1.084	2.2	ug/L	6	Standard
	Tl	205	356934.0	1.2	**50.0059**	1.362	2.7	ug/L	8	Standard
	Pb	206	253041.9	0.6	**49.6088**	1.160	2.3	ug/L	201	Standard
	Pb	207	229060.5	0.3	**49.6682**	0.925	1.9	ug/L	177	Standard
	Pb	208	939880.6	0.5	**50.7375**	1.077	2.1	ug/L	722	Standard
	U	238	345721.3	0.9	**49.1404**	1.276	2.6	ug/L	8	Standard
>	Bi	209	455564.3	1.7				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	3965.5	5.0	**4.8257**	0.272	5.6	mg/L	38	Standard
K	39	1005.0	6.7	**4.1666**	0.359	8.6	mg/L	33	Standard
Ca	43	63.3	9.1	**3.8479**	0.938	24.4	mg/L	48	Standard
Fe	54	6135.9	3.5	**4.7078**	0.127	2.7	mg/L	131	Standard
Fe	57	1786.8	2.7	**4.9214**	0.241	4.9	mg/L	153	Standard
> **Sc-1**	45	27386.4	1.8				mg/L	26715	Standard
Cl	35	124070.0	1.6				ug/L	102686	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	1790.1	12.7				ug/L	1897	Standard
P	31	20143.4	2.1				ug/L	18491	Standard
S	34	4897.5	4.4				ug/L	3734	Standard
Sr	88	80.0	21.7				ug/L	47	Standard
C	12	53.3	60.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	23	Standard
Dy	164	15.7	36.8				mg/L	23	Standard
Ho-1	165	11.7	89.2				mg/L	7	Standard
Er	166	20.0	0.0				mg/L	13	Standard
I	127	15040.8	3.6				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	100.010		
Al	27	96.150		
Sc	45			
Ti	47	98.065		
V	51	97.065		
Cr	52	99.180		
Cr	53			
Mn	55	95.781		
Co	59	96.220		
Ni	60	99.316		
Cu	65	98.614		
Zn	66	98.418		
> Ge	72		106.190	
As	75	97.509		
Se	82	96.011		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
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Rb	85			
Y	89			
Rh	103			
Mo	98	97.333		
Ag	107	98.906		
Cd	111	98.737		
Cd	114			
In	115			101.347
Sn	118	98.410		
Sb	123	101.822		
Ba	135	98.198		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.371		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.475		
U	238	98.281		
Bi	209			102.475
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, July 05, 2016 12:07:17
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	61857.7	0.8				ug/L	59517	Standard
	Be	9	23.3	32.7	**-0.0053**	0.008	157.3	ug/L	10	Standard
	Al	27	2840.3	34.2	**0.0055**	0.006	108.9	ug/L	1872	Standard
	Sc	45	27840.6	2.2				ug/L	26715	Standard
	Ti	47	28.3	35.5	**-0.1363**	0.042	30.8	ug/L	54	Standard
	V	51	1397.2	2.3	**-0.0010**	0.005	459.1	ug/L	1419	Standard
	Cr	52	6780.5	1.1	**-0.0969**	0.030	31.3	ug/L	7059	Standard
	Cr	53	1530.1	2.9	**1.1752**	0.029	2.5	ug/L	398	Standard
	Mn	55	835.7	22.7	**-0.0088**	0.031	346.9	ug/L	824	Standard
	Co	59	241.0	5.7	**0.0076**	0.003	35.3	ug/L	167	Standard
	Ni	60	285.7	9.1	**-0.0592**	0.012	21.0	ug/L	391	Standard
	Cu	65	133.3	2.2	**-0.0136**	0.002	16.8	ug/L	147	Standard
	Zn	66	252.0	10.0	**0.0514**	0.026	50.7	ug/L	184	Standard
>	Ge	72	459148.3	2.5				ug/L	422998	Standard
	As	75	-67.2	62.8	**-0.0030**	0.034	1129.6	ug/L	-58	Standard
	Se	82	15.4	38.4	**-0.0850**	0.045	52.5	ug/L	15	Standard
	Se-1	77	99.7	5.5	**0.5426**	0.061	11.3	ug/L	58	Standard
>	Ga	71	61.7	33.8				mg/L	113	Standard
	Rb	85	38.3	32.8				ug/L	27	Standard
	Y	89	400704.7	0.8				ug/L	383780	Standard
>	Rh	103	5.0	0.0				ug/L	18	Standard
	Mo	98	193.4	7.3	**0.0598**	0.006	10.8	ug/L	31	Standard
	Ag	107	117.3	17.2	**0.0045**	0.003	70.6	ug/L	84	Standard
	Cd	111	16.0	42.5	**0.0030**	0.003	106.1	mg/L	4	Standard
	Cd	114	42.8	62.4	**0.0033**	0.005	152.1	ug/L	15	Standard
>	In	115	546361.8	2.1				ug/L	515400	Standard
	Sn	118	1136.7	26.0	**0.0036**	0.044	1221.9	ug/L	1043	Standard
	Sb	123	943.1	28.8	**0.1773**	0.052	29.4	ug/L	227	Standard
	Ba	135	71.7	32.3	**0.0101**	0.012	115.1	ug/L	31	Standard
	Ce	140	466.7	35.0				ug/L	120	Standard
>	Tb	159	826410.9	2.5				ug/L	785817	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	76.3	25.3	**0.0054**	0.003	46.7	ug/L	6	Standard
	Tl	205	55.0	15.7	**0.0006**	0.001	215.3	ug/L	8	Standard
	Pb	206	285.0	11.5	**0.0082**	0.008	92.1	ug/L	201	Standard
	Pb	207	244.3	6.4	**0.0031**	0.005	146.8	ug/L	177	Standard
	Pb	208	1017.7	17.3	**0.0044**	0.011	242.9	ug/L	722	Standard
	U	238	60.3	24.4	**0.0058**	0.002	38.8	ug/L	8	Standard
>	Bi	209	474436.7	2.5				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	23.3	44.6	**-0.0056**	0.012	214.0	mg/L	38	Standard
K	39	30.0	76.4	**-0.0044**	0.094	2156.6	mg/L	33	Standard
Ca	43	30.0	28.9	**-1.3278**	1.429	107.6	mg/L	48	Standard
Fe	54	129.2	16.9	**-0.0167**	0.016	96.0	mg/L	131	Standard
Fe	57	226.7	12.5	**0.1931**	0.097	50.1	mg/L	153	Standard
Sc-1	45	27840.6	2.2				mg/L	26715	Standard
Cl	35	120675.4	1.5				ug/L	102686	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	1633.4	7.0				ug/L	1897	Standard
P	31	20031.6	3.6				ug/L	18491	Standard
S	34	4719.1	2.8				ug/L	3734	Standard
Sr	88	66.7	37.0				ug/L	47	Standard
C	12	66.7	31.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	23	Standard
Dy	164	22.9	91.6				mg/L	23	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	9609.7	3.4				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		108.546	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.007
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.720
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606145107
Sample Date/Time: Tuesday, July 05, 2016 12:10:30
Number of Replicates: 3
Autosampler Position: 235
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59463.2	2.0				ug/L	59517	Standard
	Be	9	271.7	10.1	**0.2818**	0.034	12.0	ug/L	10	Standard
	Al	27	563585.4	1.6	**3.6964**	0.112	3.0	ug/L	1872	Standard
	Sc	45	25695.1	4.1				ug/L	26715	Standard
	Ti	47	9216.8	0.7	**38.2822**	0.331	0.9	ug/L	54	Standard
	V	51	30052.2	0.8	**3.9605**	0.059	1.5	ug/L	1419	Standard
	Cr	52	32999.6	0.8	**3.6372**	0.036	1.0	ug/L	7059	Standard
	Cr	53	5007.5	5.3	**5.1872**	0.291	5.6	ug/L	398	Standard
	Mn	55	126812.5	1.1	**19.7882**	0.336	1.7	ug/L	824	Standard
	Co	59	4650.7	2.1	**0.6552**	0.013	2.0	ug/L	167	Standard
	Ni	60	4558.7	2.3	**2.2223**	0.061	2.8	ug/L	391	Standard
	Cu	65	5570.0	2.4	**2.8700**	0.046	1.6	ug/L	147	Standard
	Zn	66	19959.8	1.3	**17.8147**	0.249	1.4	ug/L	184	Standard
>	**Ge**	72	425585.2	0.8				ug/L	422998	Standard
	As	75	6588.1	2.5	**5.8230**	0.127	2.2	ug/L	-58	Standard
	Se	82	41.3	9.5	**0.1439**	0.033	22.7	ug/L	15	Standard
	Se-1	77	123.7	16.8	**0.9511**	0.259	27.2	ug/L	58	Standard
>	**Ga**	71	2348.5	2.9				mg/L	113	Standard
	Rb	85	18669.8	1.9				ug/L	27	Standard
	Y	89	385954.3	1.2				ug/L	383780	Standard
>	**Rh**	103	13.3	57.3				ug/L	18	Standard
	Mo	98	1308.2	3.9	**0.5002**	0.028	5.6	ug/L	31	Standard
	Ag	107	158.0	10.6	**0.0123**	0.003	23.1	ug/L	84	Standard
	Cd	111	419.5	1.3	**0.1996**	0.006	3.1	mg/L	4	Standard
	Cd	114	991.1	7.1	**0.1939**	0.017	8.5	ug/L	15	Standard
>	**In**	115	498311.6	1.9				ug/L	515400	Standard
	Sn	118	643.3	30.4	**-0.0660**	0.035	53.4	ug/L	1043	Standard
	Sb	123	717.3	29.3	**0.1456**	0.047	32.4	ug/L	227	Standard
	Ba	135	21850.8	2.4	**11.2195**	0.221	2.0	ug/L	31	Standard
	Ce	140	70835.2	0.9				ug/L	120	Standard
>	**Tb**	159	773727.5	1.8				ug/L	785817	Standard
	Ho	165	1485.1	8.6				ug/L	7	Standard
	Tl	203	2063.5	3.9	**0.2523**	0.006	2.2	ug/L	6	Standard
	Tl	205	1733.4	7.2	**0.2399**	0.013	5.6	ug/L	8	Standard
	Pb	206	29512.4	0.5	**5.8409**	0.134	2.3	ug/L	201	Standard
	Pb	207	24603.3	0.8	**5.3801**	0.114	2.1	ug/L	177	Standard
	Pb	208	103716.4	1.5	**5.6481**	0.155	2.8	ug/L	722	Standard
	U	238	1387.7	4.4	**0.1979**	0.007	3.5	ug/L	8	Standard
>	**Bi**	209	448200.2	2.0				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	50.0	10.0	**0.0319**	0.009	27.3	mg/L	38	Standard
K	39	66.7	8.7	**0.1752**	0.038	21.6	mg/L	33	Standard
Ca	43	35.0	51.5	**-0.1982**	2.805	1415.4	mg/L	48	Standard
Fe	54	4006.8	3.7	**3.2418**	0.015	0.5	mg/L	131	Standard
Fe	57	1298.4	5.5	**3.7102**	0.376	10.1	mg/L	153	Standard
> **Sc-1**	45	25695.1	4.1				mg/L	26715	Standard
Cl	35	106066.0	0.7				ug/L	102686	Standard
Kr	83	2.0	132.3				ug/L	2	Standard
Br	81	1646.8	11.5				ug/L	1897	Standard
P	31	7333.4	1.7				ug/L	18491	Standard
S	34	4165.6	0.6				ug/L	3734	Standard
Sr	88	95.0	29.3				ug/L	47	Standard
C	12	50.0	105.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	23	Standard
Dy	164	2350.0	8.7				mg/L	23	Standard
Ho-1	165	1485.1	8.6				mg/L	7	Standard
Er	166	1396.7	6.1				mg/L	13	Standard
I	127	27097.6	2.5				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.910	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.612	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.684
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.818
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606145108
Sample Date/Time: Tuesday, July 05, 2016 12:13:42
Number of Replicates: 3
Autosampler Position: 236
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56130.6	4.3				ug/L	59517	Standard
	Be	9	390.0	2.6	**0.4454**	0.033	7.3	ug/L	10	Standard
	Al	27	714616.0	1.9	**4.9765**	0.305	6.1	ug/L	1872	Standard
	Sc	45	24990.6	1.8				ug/L	26715	Standard
	Ti	47	10313.5	2.7	**44.3310**	0.816	1.8	ug/L	54	Standard
	V	51	31216.7	3.2	**4.2666**	0.094	2.2	ug/L	1419	Standard
	Cr	52	51017.4	1.8	**6.3994**	0.132	2.1	ug/L	7059	Standard
	Cr	53	7175.0	5.9	**7.8784**	0.311	4.0	ug/L	398	Standard
	Mn	55	144939.4	1.4	**23.4138**	0.562	2.4	ug/L	824	Standard
	Co	59	5125.2	1.4	**0.7502**	0.006	0.8	ug/L	167	Standard
	Ni	60	5278.3	2.9	**2.6996**	0.049	1.8	ug/L	391	Standard
	Cu	65	5093.2	3.7	**2.7090**	0.062	2.3	ug/L	147	Standard
	Zn	66	20594.0	1.5	**19.0178**	0.238	1.3	ug/L	184	Standard
>	**Ge**	72	411597.6	2.1				ug/L	422998	Standard
	As	75	6186.0	2.4	**5.6554**	0.089	1.6	ug/L	-58	Standard
	Se	82	33.8	9.8	**0.0904**	0.033	36.9	ug/L	15	Standard
	Se-1	77	117.7	7.9	**0.9285**	0.158	17.0	ug/L	58	Standard
>	**Ga**	71	2496.9	1.1				mg/L	113	Standard
	Rb	85	21094.7	1.3				ug/L	27	Standard
	Y	89	375854.5	2.2				ug/L	383780	Standard
>	**Rh**	103	15.0	57.7				ug/L	18	Standard
	Mo	98	1308.0	3.2	**0.5065**	0.011	2.2	ug/L	31	Standard
	Ag	107	178.3	7.1	**0.0157**	0.002	11.1	ug/L	84	Standard
	Cd	111	460.5	9.7	**0.2223**	0.019	8.6	mg/L	4	Standard
	Cd	114	1153.3	11.3	**0.2291**	0.024	10.6	ug/L	15	Standard
>	**In**	115	491828.9	1.4				ug/L	515400	Standard
	Sn	118	501.7	18.7	**-0.0903**	0.016	17.3	ug/L	1043	Standard
	Sb	123	553.0	26.0	**0.1100**	0.031	28.5	ug/L	227	Standard
	Ba	135	25357.2	2.2	**13.1943**	0.148	1.1	ug/L	31	Standard
	Ce	140	83605.1	1.4				ug/L	120	Standard
>	**Tb**	159	755464.3	0.3				ug/L	785817	Standard
	Ho	165	1738.4	1.8				ug/L	7	Standard
	Tl	203	2133.2	1.5	**0.2671**	0.002	0.9	ug/L	6	Standard
	Tl	205	1770.1	6.4	**0.2511**	0.016	6.3	ug/L	8	Standard
	Pb	206	27937.7	1.6	**5.6556**	0.062	1.1	ug/L	201	Standard
	Pb	207	23353.0	1.5	**5.2233**	0.017	0.3	ug/L	177	Standard
	Pb	208	97617.9	2.7	**5.4374**	0.163	3.0	ug/L	722	Standard
	U	238	1483.4	1.0	**0.2168**	0.005	2.4	ug/L	8	Standard
>	**Bi**	209	437967.3	1.5				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	60.0	14.4	**0.0469**	0.012	24.6	mg/L	38	Standard
K	39	86.7	13.3	**0.2770**	0.061	22.1	mg/L	33	Standard
Ca	43	38.3	19.9	**0.5772**	1.345	233.0	mg/L	48	Standard
Fe	54	4538.8	2.5	**3.7943**	0.055	1.4	mg/L	131	Standard
Fe	57	1466.7	10.1	**4.3719**	0.419	9.6	mg/L	153	Standard
Sc-1	45	24990.6	1.8				mg/L	26715	Standard
Cl	35	105965.3	1.5				ug/L	102686	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	1653.4	9.8				ug/L	1897	Standard
P	31	7376.8	0.4				ug/L	18491	Standard
S	34	4207.3	3.6				ug/L	3734	Standard
Sr	88	85.0	29.4				ug/L	47	Standard
C	12	80.0	12.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	23	Standard
Dy	164	2392.9	8.1				mg/L	23	Standard
Ho-1	165	1738.4	1.8				mg/L	7	Standard
Er	166	1543.4	17.7				mg/L	13	Standard
I	127	28022.6	5.3				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		94.311	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.305	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.427
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.516
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606145109S WG574521-07
Sample Date/Time: Tuesday, July 05, 2016 12:16:54
Number of Replicates: 3
Autosampler Position: 237
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56190.8	4.9				ug/L	59517	Standard
	Be	9	2413.5	4.5	**2.9148**	0.218	7.5	ug/L	10	Standard
	Al	27	371125.2	2.4	**2.5768**	0.177	6.9	ug/L	1872	Standard
	Sc	45	26199.3	1.2				ug/L	26715	Standard
	Ti	47	2656.2	3.1	**10.9848**	0.609	5.5	ug/L	54	Standard
	V	51	72353.8	1.8	**9.9011**	0.444	4.5	ug/L	1419	Standard
	Cr	52	39238.4	2.3	**4.5718**	0.251	5.5	ug/L	7059	Standard
	Cr	53	5817.8	5.6	**6.1713**	0.535	8.7	ug/L	398	Standard
	Mn	55	194686.5	0.9	**30.7906**	1.037	3.4	ug/L	824	Standard
	Co	59	20292.2	0.6	**2.9764**	0.090	3.0	ug/L	167	Standard
	Ni	60	10310.8	3.5	**5.3414**	0.313	5.9	ug/L	391	Standard
	Cu	65	16805.3	3.2	**8.9219**	0.495	5.5	ug/L	147	Standard
	Zn	66	16269.4	2.6	**14.6606**	0.774	5.3	ug/L	184	Standard
>	**Ge**	72	421107.8	2.7				ug/L	422998	Standard
	As	75	4858.7	2.3	**4.3571**	0.207	4.7	ug/L	-58	Standard
	Se	82	413.1	4.8	**3.3379**	0.258	7.7	ug/L	15	Standard
	Se-1	77	370.0	5.4	**4.2398**	0.392	9.3	ug/L	58	Standard
>	**Ga**	71	1511.7	8.6				mg/L	113	Standard
	Rb	85	5796.1	4.4				ug/L	27	Standard
	Y	89	409247.1	1.2				ug/L	383780	Standard
>	**Rh**	103	13.3	21.7				ug/L	18	Standard
	Mo	98	1013.4	3.4	**0.3905**	0.021	5.5	ug/L	31	Standard
	Ag	107	16993.5	2.1	**2.6302**	0.114	4.3	ug/L	84	Standard
	Cd	111	6180.4	3.0	**3.0365**	0.151	5.0	mg/L	4	Standard
	Cd	114	14740.9	0.9	**2.9837**	0.103	3.4	ug/L	15	Standard
>	**In**	115	492243.2	2.7				ug/L	515400	Standard
	Sn	118	545.0	27.7	**-0.0819**	0.030	36.9	ug/L	1043	Standard
	Sb	123	1618.1	8.4	**0.3542**	0.036	10.2	ug/L	227	Standard
	Ba	135	34944.9	1.6	**18.1908**	0.739	4.1	ug/L	31	Standard
	Ce	140	160735.2	2.9				ug/L	120	Standard
>	**Tb**	159	765593.4	3.7				ug/L	785817	Standard
	Ho	165	3587.1	5.4				ug/L	7	Standard
	Tl	203	20903.4	1.2	**2.6653**	0.086	3.2	ug/L	6	Standard
	Tl	205	17982.3	0.6	**2.6285**	0.058	2.2	ug/L	8	Standard
	Pb	206	32329.5	2.4	**6.5920**	0.298	4.5	ug/L	201	Standard
	Pb	207	27598.8	3.1	**6.2208**	0.340	5.5	ug/L	177	Standard
	Pb	208	115863.4	1.6	**6.5015**	0.254	3.9	ug/L	722	Standard
	U	238	19080.3	2.2	**2.8353**	0.131	4.6	ug/L	8	Standard
>	**Bi**	209	435586.5	2.4				ug/L	444563	Standard

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Na	23	1.7	173.2	**19.6496**	34.025	173.2	mg/L	0	Standard
Mg	24	65.0	35.3	**0.0496**	0.029	59.3	mg/L	38	Standard
K	39	51.7	31.1	**0.1009**	0.069	68.2	mg/L	33	Standard
Ca	43	33.3	37.7	**-0.5368**	2.007	373.9	mg/L	48	Standard
Fe	54	2186.8	2.4	**1.6814**	0.065	3.9	mg/L	131	Standard
Fe	57	733.4	12.3	**1.8375**	0.311	16.9	mg/L	153	Standard
> **Sc-1**	45	26199.3	1.2				mg/L	26715	Standard
Cl	35	108414.5	1.1				ug/L	102686	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	2523.5	7.7				ug/L	1897	Standard
P	31	7423.5	1.0				ug/L	18491	Standard
S	34	4045.5	5.1				ug/L	3734	Standard
Sr	88	93.3	15.5				ug/L	47	Standard
C	12	136.7	8.4				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	43.3	35.3				mg/L	23	Standard
Dy	164	5441.4	1.3				mg/L	23	Standard
Ho-1	165	3587.1	5.4				mg/L	7	Standard
Er	166	3540.4	2.6				mg/L	13	Standard
I	127	33304.9	1.8				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.412	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.553	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.507
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.981
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606145110SD WG574521-08
Sample Date/Time: Tuesday, July 05, 2016 12:20:05
Number of Replicates: 3
Autosampler Position: 238
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	54180.1	3.9				ug/L	59517	Standard
	Be	9	2170.2	6.2	**2.7136**	0.200	7.4	ug/L	10	Standard
	Al	27	298363.5	2.5	**2.1427**	0.042	2.0	ug/L	1872	Standard
	Sc	45	25074.1	0.3				ug/L	26715	Standard
	Ti	47	1478.7	2.7	**6.1802**	0.101	1.6	ug/L	54	Standard
	V	51	60367.5	1.2	**8.4684**	0.144	1.7	ug/L	1419	Standard
	Cr	52	33902.9	0.8	**3.9533**	0.111	2.8	ug/L	7059	Standard
	Cr	53	5007.5	1.8	**5.4111**	0.136	2.5	ug/L	398	Standard
	Mn	55	162958.4	1.0	**26.4853**	0.261	1.0	ug/L	824	Standard
	Co	59	18000.0	1.4	**2.7132**	0.050	1.8	ug/L	167	Standard
	Ni	60	8905.3	1.3	**4.7202**	0.058	1.2	ug/L	391	Standard
	Cu	65	14460.9	1.0	**7.8846**	0.181	2.3	ug/L	147	Standard
	Zn	66	12677.6	1.2	**11.7127**	0.193	1.6	ug/L	184	Standard
>	Ge	72	409283.0	1.5				ug/L	422998	Standard
	As	75	3802.4	1.1	**3.5163**	0.084	2.4	ug/L	-58	Standard
	Se	82	363.9	1.2	**3.0022**	0.084	2.8	ug/L	15	Standard
	Se-1	77	342.0	2.1	**3.9927**	0.069	1.7	ug/L	58	Standard
>	Ga	71	1035.0	4.6				mg/L	113	Standard
	Rb	85	2341.8	7.3				ug/L	27	Standard
	Y	89	387313.8	1.7				ug/L	383780	Standard
>	Rh	103	11.7	24.7				ug/L	18	Standard
	Mo	98	998.1	4.5	**0.3934**	0.015	3.9	ug/L	31	Standard
	Ag	107	14925.7	0.6	**2.3624**	0.029	1.2	ug/L	84	Standard
	Cd	111	5660.9	2.7	**2.8461**	0.121	4.3	mg/L	4	Standard
	Cd	114	13763.6	2.5	**2.8510**	0.106	3.7	ug/L	15	Standard
>	In	115	480835.3	1.7				ug/L	515400	Standard
	Sn	118	533.3	22.2	**-0.0824**	0.020	24.5	ug/L	1043	Standard
	Sb	123	3307.7	1.1	**0.7582**	0.005	0.6	ug/L	227	Standard
	Ba	135	29372.8	0.5	**15.6422**	0.331	2.1	ug/L	31	Standard
	Ce	140	135459.5	0.9				ug/L	120	Standard
>	Tb	159	748567.3	2.0				ug/L	785817	Standard
	Ho	165	3172.0	2.9				ug/L	7	Standard
	Tl	203	18739.2	0.5	**2.4241**	0.040	1.7	ug/L	6	Standard
	Tl	205	16330.5	1.2	**2.4221**	0.055	2.3	ug/L	8	Standard
	Pb	206	29114.6	1.1	**6.0183**	0.074	1.2	ug/L	201	Standard
	Pb	207	24724.2	0.6	**5.6484**	0.087	1.5	ug/L	177	Standard
	Pb	208	103982.3	1.0	**5.9154**	0.098	1.6	ug/L	722	Standard
	U	238	17333.6	0.9	**2.6126**	0.027	1.0	ug/L	8	Standard
>	Bi	209	429156.7	1.9				ug/L	444563	Standard

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Na	23	1.7	173.2	**20.8696**	36.139	173.2	mg/L	0	Standard
Mg	24	55.0	68.6	**0.0400**	0.051	126.7	mg/L	38	Standard
K	39	21.7	58.1	**-0.0281**	0.059	208.8	mg/L	33	Standard
Ca	43	45.0	33.3	**1.6609**	2.492	150.0	mg/L	48	Standard
Fe	54	1724.9	4.1	**1.3647**	0.058	4.3	mg/L	131	Standard
Fe	57	648.3	11.4	**1.6582**	0.244	14.7	mg/L	153	Standard
> **Sc-1**	45	25074.1	0.3				mg/L	26715	Standard
Cl	35	110353.2	2.0				ug/L	102686	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	2023.5	8.7				ug/L	1897	Standard
P	31	7188.4	0.9				ug/L	18491	Standard
S	34	4012.2	5.7				ug/L	3734	Standard
Sr	88	96.7	10.8				ug/L	47	Standard
C	12	146.7	19.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	53.3	39.0				mg/L	23	Standard
Dy	164	4874.9	7.0				mg/L	23	Standard
Ho-1	165	3172.0	2.9				mg/L	7	Standard
Er	166	3047.0	8.4				mg/L	13	Standard
I	127	30377.1	0.5				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.033	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.758	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.294
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.535
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606145110SD WG574521-08
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, July 05, 2016 12:23:18
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	61936.3	1.0				ug/L	59517	Standard
	Be	9	44060.7	4.1	**48.6681**	2.073	4.3	ug/L	10	Standard
	Al	27	7421017.2	0.9	**46.8624**	0.837	1.8	ug/L	1872	Standard
	Sc	45	27840.6	0.8				ug/L	26715	Standard
	Ti	47	24780.2	1.3	**94.1129**	1.402	1.5	ug/L	54	Standard
	V	51	374015.7	2.5	**46.7546**	1.361	2.9	ug/L	1419	Standard
	Cr	52	381449.2	1.0	**47.5991**	0.617	1.3	ug/L	7059	Standard
	Cr	53	48109.6	1.3	**48.5792**	0.817	1.7	ug/L	398	Standard
	Mn	55	323449.1	1.4	**46.1470**	0.763	1.7	ug/L	824	Standard
	Co	59	353958.9	1.7	**47.1411**	0.942	2.0	ug/L	167	Standard
	Ni	60	99916.4	1.4	**48.1579**	0.828	1.7	ug/L	391	Standard
	Cu	65	98273.1	2.2	**47.3222**	1.174	2.5	ug/L	147	Standard
	Zn	66	58263.5	2.1	**47.6343**	1.129	2.4	ug/L	184	Standard
>	Ge	72	467206.7	0.4				ug/L	422998	Standard
	As	75	58897.6	1.9	**47.0555**	1.055	2.2	ug/L	-58	Standard
	Se	82	6005.7	2.7	**46.1739**	1.361	2.9	ug/L	15	Standard
	Se-1	77	4137.9	0.2	**48.7349**	0.165	0.3	ug/L	58	Standard
>	Ga	71	86.7	12.0				mg/L	113	Standard
	Rb	85	898.4	11.7				ug/L	27	Standard
	Y	89	406260.6	1.7				ug/L	383780	Standard
>	Rh	103	20.0	25.0				ug/L	18	Standard
	Mo	98	265996.1	0.8	**93.3198**	1.560	1.7	ug/L	31	Standard
	Ag	107	339646.5	1.4	**47.0210**	1.585	3.4	ug/L	84	Standard
	Cd	111	108529.1	1.3	**47.5497**	1.671	3.5	mg/L	4	Standard
	Cd	114	269565.9	1.7	**48.6723**	1.830	3.8	ug/L	15	Standard
>	In	115	552561.7	2.2				ug/L	515400	Standard
	Sn	118	291910.6	1.5	**46.8625**	1.419	3.0	ug/L	1043	Standard
	Sb	123	238681.8	1.8	**48.6440**	1.842	3.8	ug/L	227	Standard
	Ba	135	100767.3	0.6	**46.7520**	1.319	2.8	ug/L	31	Standard
	Ce	140	696.7	32.8				ug/L	120	Standard
>	Tb	159	836664.0	1.8				ug/L	785817	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	408219.9	0.5	**47.9579**	0.937	2.0	ug/L	6	Standard
	Tl	205	353779.4	0.6	**47.7113**	1.066	2.2	ug/L	8	Standard
	Pb	206	254575.9	0.6	**48.0435**	1.017	2.1	ug/L	201	Standard
	Pb	207	231354.7	0.8	**48.2933**	1.083	2.2	ug/L	177	Standard
	Pb	208	942309.5	0.6	**48.9650**	0.796	1.6	ug/L	722	Standard
	U	238	347285.7	0.5	**47.5170**	0.991	2.1	ug/L	8	Standard
>	Bi	209	473225.0	1.6				ug/L	444563	Standard

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Na	23	3.3	173.2	**37.3364**	64.660	173.2	mg/L	0	Standard
Mg	24	3865.5	1.1	**4.6244**	0.043	0.9	mg/L	38	Standard
K	39	880.0	4.1	**3.5668**	0.125	3.5	mg/L	33	Standard
Ca	43	60.0	38.2	**3.1652**	3.408	107.7	mg/L	48	Standard
Fe	54	6324.7	4.0	**4.7753**	0.185	3.9	mg/L	131	Standard
Fe	57	1893.5	4.7	**5.1469**	0.235	4.6	mg/L	153	Standard
Sc-1	45	27840.6	0.8				mg/L	26715	Standard
Cl	35	126370.8	0.7				ug/L	102686	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	1893.5	8.0				ug/L	1897	Standard
P	31	21593.7	1.8				ug/L	18491	Standard
S	34	4702.4	6.9				ug/L	3734	Standard
Sr	88	61.7	20.4				ug/L	47	Standard
C	12	43.3	66.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	23	Standard
Dy	164	19.4	1.4				mg/L	23	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	14653.8	2.4				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	97.336		
Al	27	93.725		
Sc	45			
Ti	47	94.113		
V	51	93.509		
Cr	52	95.198		
Cr	53			
Mn	55	92.294		
Co	59	94.282		
Ni	60	96.316		
Cu	65	94.644		
Zn	66	95.269		
Ge	72		110.451	
As	75	94.111		
Se	82	92.348		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
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Rb	85			
Y	89			
> Rh	103			
Mo	98	93.320		
Ag	107	94.042		
Cd	111	95.099		
Cd	114			
> In	115			107.210
Sn	118	93.725		
Sb	123	97.288		
Ba	135	93.504		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	95.916		
Tl	205			
Pb	206			
Pb	207			
Pb	208	97.930		
U	238	95.034		
> Bi	209			106.447
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, July 05, 2016 12:26:29
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63303.6	1.3				ug/L	59517	Standard
	Be	9	18.3	31.5	**-0.0113**	0.006	52.7	ug/L	10	Standard
	Al	27	2235.2	14.5	**0.0014**	0.002	134.0	ug/L	1872	Standard
	Sc	45	28122.8	2.8				ug/L	26715	Standard
	Ti	47	35.3	21.2	**-0.1115**	0.029	25.7	ug/L	54	Standard
	V	51	1439.5	6.3	**0.0020**	0.010	505.5	ug/L	1419	Standard
	Cr	52	6652.8	0.6	**-0.1246**	0.005	3.6	ug/L	7059	Standard
	Cr	53	1205.0	5.1	**0.8226**	0.054	6.5	ug/L	398	Standard
	Mn	55	652.7	4.2	**-0.0371**	0.004	11.7	ug/L	824	Standard
	Co	59	238.3	13.0	**0.0068**	0.004	58.9	ug/L	167	Standard
	Ni	60	288.0	2.5	**-0.0598**	0.004	7.2	ug/L	391	Standard
	Cu	65	129.3	6.7	**-0.0163**	0.004	26.3	ug/L	147	Standard
	Zn	66	468.0	81.2	**0.2258**	0.312	138.0	ug/L	184	Standard
>	**Ge**	72	464917.0	0.8				ug/L	422998	Standard
	As	75	-45.4	55.4	**0.0153**	0.020	130.4	ug/L	-58	Standard
	Se	82	16.5	14.7	**-0.0781**	0.020	25.1	ug/L	15	Standard
	Se-1	77	95.3	12.3	**0.4748**	0.132	27.9	ug/L	58	Standard
>	**Ga**	71	45.0	11.1				mg/L	113	Standard
	Rb	85	6.7	114.6				ug/L	27	Standard
	Y	89	398203.8	1.4				ug/L	383780	Standard
>	**Rh**	103	16.7	75.5				ug/L	18	Standard
	Mo	98	228.0	6.8	**0.0700**	0.006	7.9	ug/L	31	Standard
	Ag	107	151.7	7.6	**0.0087**	0.001	16.7	ug/L	84	Standard
	Cd	111	23.3	21.2	**0.0059**	0.002	35.0	mg/L	4	Standard
	Cd	114	47.2	54.5	**0.0038**	0.005	118.3	ug/L	15	Standard
>	**In**	115	560315.0	0.7				ug/L	515400	Standard
	Sn	118	1160.0	23.8	**0.0035**	0.045	1275.6	ug/L	1043	Standard
	Sb	123	862.8	32.5	**0.1573**	0.057	36.4	ug/L	227	Standard
	Ba	135	48.3	39.2	**-0.0016**	0.009	518.6	ug/L	31	Standard
	Ce	140	270.0	27.3				ug/L	120	Standard
>	**Tb**	159	838378.6	1.5				ug/L	785817	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	88.7	16.3	**0.0066**	0.002	26.0	ug/L	6	Standard
	Tl	205	103.3	19.6	**0.0069**	0.003	39.7	ug/L	8	Standard
	Pb	206	274.3	2.4	**0.0053**	0.002	28.7	ug/L	201	Standard
	Pb	207	254.3	11.1	**0.0042**	0.006	142.5	ug/L	177	Standard
	Pb	208	1025.0	7.9	**0.0037**	0.004	117.5	ug/L	722	Standard
	U	238	84.0	17.2	**0.0088**	0.002	22.6	ug/L	8	Standard
>	**Bi**	209	482466.6	0.6				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	31.7	39.7	**0.0042**	0.015	355.9	mg/L	38	Standard
K	39	13.3	21.7	**-0.0736**	0.013	17.7	mg/L	33	Standard
Ca	43	35.0	37.8	**-0.6810**	1.859	273.0	mg/L	48	Standard
Fe	54	177.9	22.8	**0.0196**	0.030	154.7	mg/L	131	Standard
Fe	57	193.3	5.4	**0.0870**	0.025	28.9	mg/L	153	Standard
Sc-1	45	28122.8	2.8				mg/L	26715	Standard
Cl	35	120247.5	2.4				ug/L	102686	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1830.1	19.2				ug/L	1897	Standard
P	31	19964.8	2.8				ug/L	18491	Standard
S	34	4852.4	0.8				ug/L	3734	Standard
Sr	88	66.7	26.3				ug/L	47	Standard
C	12	46.7	24.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	23	Standard
Dy	164	12.1	46.8				mg/L	23	Standard
Ho-1	165	8.3	69.3				mg/L	7	Standard
Er	166	26.7	21.7				mg/L	13	Standard
I	127	9206.1	5.5				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		109.910	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.715
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.526
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW 47 WG574664-02
Sample Date/Time: Tuesday, July 05, 2016 12:29:42
Number of Replicates: 3
Autosampler Position: 239
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59871.5	4.0				ug/L	59517	Standard
	Be	9	6.7	43.3	**-0.0234**	0.004	15.2	ug/L	10	Standard
	Al	27	12456.8	2.4	**0.0691**	0.005	6.6	ug/L	1872	Standard
	Sc	45	27523.3	1.6				ug/L	26715	Standard
	Ti	47	32.3	13.9	**-0.1197**	0.014	12.0	ug/L	54	Standard
	V	51	1305.7	3.6	**-0.0099**	0.010	97.1	ug/L	1419	Standard
	Cr	52	6140.6	3.6	**-0.1672**	0.039	23.5	ug/L	7059	Standard
	Cr	53	1243.4	4.3	**0.8981**	0.022	2.5	ug/L	398	Standard
	Mn	55	617.3	2.7	**-0.0396**	0.005	12.1	ug/L	824	Standard
	Co	59	190.3	8.7	**0.0011**	0.002	157.0	ug/L	167	Standard
	Ni	60	299.7	5.8	**-0.0500**	0.005	10.2	ug/L	391	Standard
	Cu	65	104.3	13.0	**-0.0271**	0.005	19.7	ug/L	147	Standard
	Zn	66	938.4	4.5	**0.6361**	0.020	3.2	ug/L	184	Standard
>	**Ge**	72	452000.7	2.7				ug/L	422998	Standard
	As	75	-37.9	44.5	**0.0202**	0.014	71.0	ug/L	-58	Standard
	Se	82	21.4	23.5	**-0.0353**	0.038	107.7	ug/L	15	Standard
	Se-1	77	95.0	8.2	**0.5057**	0.120	23.7	ug/L	58	Standard
>	**Ga**	71	61.7	55.2				mg/L	113	Standard
	Rb	85	61.7	63.0				ug/L	27	Standard
	Y	89	383844.6	4.6				ug/L	383780	Standard
>	**Rh**	103	16.7	62.4				ug/L	18	Standard
	Mo	98	58.1	14.0	**0.0123**	0.003	24.7	ug/L	31	Standard
	Ag	107	98.7	12.2	**0.0022**	0.001	67.2	ug/L	84	Standard
	Cd	111	6.2	18.7	**-0.0013**	0.000	37.2	mg/L	4	Standard
	Cd	114	12.2	59.3	**-0.0023**	0.001	58.0	ug/L	15	Standard
>	**In**	115	530438.2	1.8				ug/L	515400	Standard
	Sn	118	538.3	32.7	**-0.0902**	0.031	34.7	ug/L	1043	Standard
	Sb	123	351.2	29.3	**0.0584**	0.023	39.1	ug/L	227	Standard
	Ba	135	46.7	10.8	**-0.0012**	0.003	218.5	ug/L	31	Standard
	Ce	140	28.3	27.0				ug/L	120	Standard
>	**Tb**	159	800722.5	2.4				ug/L	785817	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	29.3	16.1	**-0.0001**	0.001	445.6	ug/L	6	Standard
	Tl	205	23.3	12.4	**-0.0036**	0.000	12.1	ug/L	8	Standard
	Pb	206	240.3	5.2	**0.0004**	0.002	629.1	ug/L	201	Standard
	Pb	207	208.0	3.0	**-0.0039**	0.002	44.8	ug/L	177	Standard
	Pb	208	841.7	5.2	**-0.0043**	0.002	44.4	ug/L	722	Standard
	U	238	14.0	68.9	**-0.0006**	0.001	234.7	ug/L	8	Standard
>	**Bi**	209	467504.2	1.5				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	53.3	39.0	**0.0315**	0.026	81.1	mg/L	38	Standard
K	39	35.0	14.3	**0.0193**	0.019	100.6	mg/L	33	Standard
Ca	43	35.0	62.3	**-0.5485**	3.269	595.9	mg/L	48	Standard
Fe	54	71.0	17.5	**-0.0609**	0.011	17.4	mg/L	131	Standard
Fe	57	210.0	20.8	**0.1492**	0.127	85.3	mg/L	153	Standard
Sc-1	45	27523.3	1.6				mg/L	26715	Standard
Cl	35	115000.8	0.9				ug/L	102686	Standard
Kr	83	3.3	17.3				ug/L	2	Standard
Br	81	1716.8	6.3				ug/L	1897	Standard
P	31	10060.0	0.4				ug/L	18491	Standard
S	34	4250.6	0.2				ug/L	3734	Standard
Sr	88	78.3	35.2				ug/L	47	Standard
C	12	50.0	60.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	23	Standard
Dy	164	16.5	34.2				mg/L	23	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	30261.9	2.1				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.596	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.857	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.918
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.160
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 47 WG574664-03
Sample Date/Time: Tuesday, July 05, 2016 12:32:54
Number of Replicates: 3
Autosampler Position: 240
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65246.9	2.0				ug/L	59517	Standard
	Be	9	46762.1	3.0	**49.0452**	1.926	3.9	ug/L	10	Standard
	Al	27	44563.8	0.6	**0.2548**	0.006	2.5	ug/L	1872	Standard
	Sc	45	30629.3	1.5				ug/L	26715	Standard
	Ti	47	44.3	11.4	**-0.0870**	0.018	21.0	ug/L	54	Standard
	V	51	398706.7	0.9	**47.1611**	0.503	1.1	ug/L	1419	Standard
	Cr	52	402929.8	0.7	**47.5752**	0.314	0.7	ug/L	7059	Standard
	Cr	53	50942.2	2.0	**48.6729**	0.969	2.0	ug/L	398	Standard
	Mn	55	340311.5	1.3	**45.9416**	0.689	1.5	ug/L	824	Standard
	Co	59	368600.5	1.2	**46.4505**	0.590	1.3	ug/L	167	Standard
	Ni	60	105667.5	0.5	**48.1911**	0.349	0.7	ug/L	391	Standard
	Cu	65	105736.0	0.1	**48.1783**	0.085	0.2	ug/L	147	Standard
	Zn	66	62571.9	0.2	**48.4073**	0.147	0.3	ug/L	184	Standard
>	**Ge**	72	493746.6	0.2				ug/L	422998	Standard
	As	75	59667.0	0.6	**45.1083**	0.343	0.8	ug/L	-58	Standard
	Se	82	6250.7	2.7	**45.4697**	1.307	2.9	ug/L	15	Standard
	Se-1	77	4227.3	3.1	**47.0907**	1.560	3.3	ug/L	58	Standard
>	**Ga**	71	66.7	31.2				mg/L	113	Standard
	Rb	85	78.3	22.4				ug/L	27	Standard
	Y	89	424353.4	1.9				ug/L	383780	Standard
>	**Rh**	103	36.7	28.4				ug/L	18	Standard
	Mo	98	134.7	32.1	**0.0357**	0.014	39.5	ug/L	31	Standard
	Ag	107	360462.2	0.7	**47.1341**	0.722	1.5	ug/L	84	Standard
	Cd	111	113353.9	0.4	**46.9047**	0.457	1.0	mg/L	4	Standard
	Cd	114	279249.8	1.2	**47.6153**	0.234	0.5	ug/L	15	Standard
>	**In**	115	584793.6	0.8				ug/L	515400	Standard
	Sn	118	960.0	13.6	**-0.0349**	0.019	53.8	ug/L	1043	Standard
	Sb	123	237563.0	2.7	**45.7303**	1.578	3.4	ug/L	227	Standard
	Ba	135	104306.2	0.9	**45.7095**	0.565	1.2	ug/L	31	Standard
	Ce	140	296.7	4.2				ug/L	120	Standard
>	**Tb**	159	866062.9	1.5				ug/L	785817	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	425365.2	0.8	**46.8787**	0.704	1.5	ug/L	6	Standard
	Tl	205	372084.4	1.9	**47.0695**	0.914	1.9	ug/L	8	Standard
	Pb	206	272101.6	0.2	**48.1711**	0.565	1.2	ug/L	201	Standard
	Pb	207	237609.6	0.1	**46.5246**	0.434	0.9	ug/L	177	Standard
	Pb	208	985435.4	0.3	**48.0373**	0.629	1.3	ug/L	722	Standard
	U	238	354468.6	0.9	**45.4982**	0.828	1.8	ug/L	8	Standard
>	**Bi**	209	504390.3	1.0				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	61.7	23.4	**0.0338**	0.015	44.2	mg/L	38	Standard
K	39	23.3	24.7	**-0.0399**	0.024	59.1	mg/L	33	Standard
Ca	43	16.7	17.3	**-3.5928**	0.386	10.8	mg/L	48	Standard
Fe	54	151.8	6.9	**-0.0099**	0.006	58.6	mg/L	131	Standard
Fe	57	213.3	7.5	**0.0947**	0.045	47.9	mg/L	153	Standard
Sc-1	45	30629.3	1.5				mg/L	26715	Standard
Cl	35	120894.8	3.6				ug/L	102686	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	2070.1	13.4				ug/L	1897	Standard
P	31	20357.0	2.5				ug/L	18491	Standard
S	34	4440.7	0.6				ug/L	3734	Standard
Sr	88	60.0	30.0				ug/L	47	Standard
C	12	76.7	52.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	23	Standard
Dy	164	9.5	100.0				mg/L	23	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	13719.5	2.2				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		109.628	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		116.726	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.464
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		113.458
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 47 WG574664-03
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Method 6020 - Summary Report

Sample ID: L1606154801 WG574664-01
Sample Date/Time: Tuesday, July 05, 2016 12:36:05
Number of Replicates: 3
Autosampler Position: 241
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	101093.0	3.4				ug/L	59517	Standard
	Be	9	26.7	47.2	**-0.0129**	0.009	69.7	ug/L	10	Standard
	Al	27	15764897.5	3.2	**60.9930**	0.494	0.8	ug/L	1872	Standard
	Sc	45	25396.3	0.5				ug/L	26715	Standard
	Ti	47	381.0	19.5	**1.4374**	0.310	21.6	ug/L	54	Standard
	V	51	10322.0	23.0	**1.3240**	0.330	24.9	ug/L	1419	Standard
	Cr	52	36599.2	1.9	**4.4410**	0.074	1.7	ug/L	7059	Standard
	Cr	53	7855.4	8.4	**8.8922**	0.858	9.6	ug/L	398	Standard
	Mn	55	58243.1	3.0	**9.5536**	0.209	2.2	ug/L	824	Standard
	Co	59	136740.3	0.6	**21.1553**	0.343	1.6	ug/L	167	Standard
	Ni	60	17985.7	2.0	**9.9179**	0.207	2.1	ug/L	391	Standard
	Cu	65	22289.7	4.5	**12.4217**	0.684	5.5	ug/L	147	Standard
	Zn	66	13262.5	12.7	**12.4971**	1.725	13.8	ug/L	184	Standard
>	Ge	72	401960.2	1.1				ug/L	422998	Standard
	As	75	3907.1	11.9	**3.6786**	0.462	12.6	ug/L	-58	Standard
	Se	82	615.4	34.1	**5.3299**	1.924	36.1	ug/L	15	Standard
	Se-1	77	661.0	2.3	**8.5068**	0.302	3.5	ug/L	58	Standard
>	Ga	71	613.3	13.7				mg/L	113	Standard
	Rb	85	101468.6	0.2				ug/L	27	Standard
	Y	89	358743.7	2.3				ug/L	383780	Standard
>	Rh	103	656.7	8.9				ug/L	18	Standard
	Mo	98	621498.0	0.6	**252.9469**	1.767	0.7	ug/L	31	Standard
	Ag	107	884.0	1.7	**0.1300**	0.001	1.1	ug/L	84	Standard
	Cd	111	-527.1	11.1	**-0.2720**	0.031	11.2	mg/L	4	Standard
	Cd	114	1047.3	9.2	**0.2148**	0.021	9.8	ug/L	15	Standard
>	In	115	476239.8	0.7				ug/L	515400	Standard
	Sn	118	1531.7	13.3	**0.1054**	0.039	36.6	ug/L	1043	Standard
	Sb	123	4658.8	15.4	**1.0855**	0.172	15.9	ug/L	227	Standard
	Ba	135	48256.7	1.3	**25.9565**	0.334	1.3	ug/L	31	Standard
	Ce	140	1745.1	3.3				ug/L	120	Standard
>	Tb	159	757695.3	0.6				ug/L	785817	Standard
	Ho	165	68.3	15.2				ug/L	7	Standard
	Tl	203	1028.7	11.8	**0.1420**	0.019	13.5	ug/L	6	Standard
	Tl	205	291.7	15.6	**0.0405**	0.007	16.3	ug/L	8	Standard
	Pb	206	906.0	6.6	**0.1605**	0.016	10.3	ug/L	201	Standard
	Pb	207	745.0	1.5	**0.1394**	0.005	3.8	ug/L	177	Standard
	Pb	208	3119.1	1.8	**0.1466**	0.007	4.5	ug/L	722	Standard
	U	238	2596.2	1.6	**0.4249**	0.005	1.2	ug/L	8	Standard
>	Bi	209	393304.8	1.6				ug/L	444563	Standard

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Na	23	10.0	86.6	**123.4506**	106.909	86.6	mg/L	0	Standard
Mg	24	794897.3	1.3	**1050.0047**	9.072	0.9	mg/L	38	Standard
K	39	486.7	3.6	**2.1119**	0.082	3.9	mg/L	33	Standard
Ca	43	845.0	8.8	**134.0603**	12.912	9.6	mg/L	48	Standard
Fe	54	201.7	10.6	**0.0544**	0.017	32.1	mg/L	131	Standard
Fe	57	1541.7	1.1	**4.5430**	0.038	0.8	mg/L	153	Standard
> **Sc-1**	45	25396.3	0.5				mg/L	26715	Standard
Cl	35	1547201.8	0.4				ug/L	102686	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	45893.0	7.7				ug/L	1897	Standard
P	31	19874.7	3.1				ug/L	18491	Standard
S	34	5197.6	3.2				ug/L	3734	Standard
Sr	88	513.3	8.1				ug/L	47	Standard
C	12	96.7	15.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46210.2	25.9				mg/L	23	Standard
Dy	164	93.3	34.8				mg/L	23	Standard
Ho-1	165	68.3	15.2				mg/L	7	Standard
Er	166	70.0	24.7				mg/L	13	Standard
I	127	59535.4	6.6				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		169.857	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.027	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		92.402
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		88.470
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

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Method 6020 - Summary Report

Sample ID: L1606154801DP WG574664-04
Sample Date/Time: Tuesday, July 05, 2016 12:39:17
Number of Replicates: 3
Autosampler Position: 242
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	113646.3	1.1				ug/L	59517	Standard
	Be	9	73.3	21.9	**0.0130**	0.009	72.0	ug/L	10	Standard
	Al	27	16000625.5	0.8	**55.0654**	0.525	1.0	ug/L	1872	Standard
	Sc	45	24182.6	2.6				ug/L	26715	Standard
	Ti	47	560.7	7.5	**2.2995**	0.168	7.3	ug/L	54	Standard
	V	51	15106.8	13.4	**2.0795**	0.267	12.8	ug/L	1419	Standard
	Cr	52	38429.7	1.5	**4.8626**	0.015	0.3	ug/L	7059	Standard
	Cr	53	8911.0	2.9	**10.4190**	0.432	4.1	ug/L	398	Standard
	Mn	55	61843.0	1.0	**10.4267**	0.151	1.4	ug/L	824	Standard
	Co	59	340977.8	1.2	**54.1889**	0.851	1.6	ug/L	167	Standard
	Ni	60	32125.4	0.3	**18.3525**	0.263	1.4	ug/L	391	Standard
	Cu	65	28023.2	0.4	**16.0507**	0.347	2.2	ug/L	147	Standard
	Zn	66	13078.0	7.1	**12.6508**	1.091	8.6	ug/L	184	Standard
>	Ge	72	391600.0	1.7				ug/L	422998	Standard
	As	75	4186.1	5.3	**4.0399**	0.266	6.6	ug/L	-58	Standard
	Se	82	743.1	17.4	**6.6507**	1.262	19.0	ug/L	15	Standard
	Se-1	77	647.3	3.5	**8.5526**	0.282	3.3	ug/L	58	Standard
>	Ga	71	713.4	7.1				mg/L	113	Standard
	Rb	85	98066.3	0.1				ug/L	27	Standard
	Y	89	355920.6	1.2				ug/L	383780	Standard
>	Rh	103	706.7	20.3				ug/L	18	Standard
	Mo	98	605173.1	0.9	**249.3210**	4.261	1.7	ug/L	31	Standard
	Ag	107	922.0	2.0	**0.1379**	0.002	1.4	ug/L	84	Standard
	Cd	111	-513.5	4.0	**-0.2683**	0.013	5.0	mg/L	4	Standard
	Cd	114	1053.3	11.4	**0.2185**	0.023	10.5	ug/L	15	Standard
>	In	115	470518.6	1.1				ug/L	515400	Standard
	Sn	118	1743.4	5.4	**0.1488**	0.017	11.1	ug/L	1043	Standard
	Sb	123	3149.4	11.6	**0.7376**	0.091	12.3	ug/L	227	Standard
	Ba	135	46884.4	0.1	**25.5264**	0.286	1.1	ug/L	31	Standard
	Ce	140	2751.9	1.6				ug/L	120	Standard
>	Tb	159	758916.3	0.9				ug/L	785817	Standard
	Ho	165	100.0	5.0				ug/L	7	Standard
	Tl	203	1257.7	15.9	**0.1725**	0.027	15.8	ug/L	6	Standard
	Tl	205	273.3	27.5	**0.0371**	0.012	31.8	ug/L	8	Standard
	Pb	206	1051.4	4.3	**0.1911**	0.009	4.7	ug/L	201	Standard
	Pb	207	950.4	5.3	**0.1887**	0.011	5.8	ug/L	177	Standard
	Pb	208	3820.2	5.4	**0.1882**	0.012	6.4	ug/L	722	Standard
	U	238	2666.6	2.8	**0.4324**	0.012	2.9	ug/L	8	Standard
>	Bi	209	396942.2	0.7				ug/L	444563	Standard

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Na	23	6.7	114.6	**88.0568**	101.921	115.7	mg/L	0	Standard
Mg	24	775596.7	0.9	**1076.2922**	19.585	1.8	mg/L	38	Standard
K	39	433.3	10.7	**1.9713**	0.282	14.3	mg/L	33	Standard
Ca	43	708.4	11.0	**117.4999**	16.145	13.7	mg/L	48	Standard
Fe	54	237.2	11.0	**0.0944**	0.019	19.7	mg/L	131	Standard
Fe	57	1321.7	5.5	**4.0486**	0.368	9.1	mg/L	153	Standard
> **Sc-1**	45	24182.6	2.6				mg/L	26715	Standard
Cl	35	1531298.9	0.8				ug/L	102686	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	46671.8	3.8				ug/L	1897	Standard
P	31	20070.0	0.6				ug/L	18491	Standard
S	34	5085.9	3.4				ug/L	3734	Standard
Sr	88	515.0	7.6				ug/L	47	Standard
C	12	153.3	27.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	66265.0	19.8				mg/L	23	Standard
Dy	164	121.9	5.9				mg/L	23	Standard
Ho-1	165	100.0	5.0				mg/L	7	Standard
Er	166	100.0	43.6				mg/L	13	Standard
I	127	68625.3	4.9				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		190.949	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.577	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.292
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		89.288
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

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Method 6020 - Summary Report

Sample ID: L1606154801S WG574664-05
Sample Date/Time: Tuesday, July 05, 2016 12:42:28
Number of Replicates: 3
Autosampler Position: 243
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	116707.8	1.1				ug/L	59517	Standard
	Be	9	50965.6	1.7	**29.8663**	0.769	2.6	ug/L	10	Standard
	Al	27	15490286.1	0.0	**51.9116**	0.578	1.1	ug/L	1872	Standard
	Sc	45	24122.5	2.1				ug/L	26715	Standard
	Ti	47	503.7	8.7	**2.0531**	0.202	9.8	ug/L	54	Standard
	V	51	264089.1	9.6	**39.5573**	3.828	9.7	ug/L	1419	Standard
	Cr	52	321372.3	0.9	**48.0974**	0.649	1.3	ug/L	7059	Standard
	Cr	53	44567.1	1.6	**54.0080**	1.083	2.0	ug/L	398	Standard
	Mn	55	306277.3	0.3	**52.4137**	0.237	0.5	ug/L	824	Standard
	Co	59	412199.1	0.3	**65.8367**	0.494	0.8	ug/L	167	Standard
	Ni	60	87046.7	0.5	**50.3165**	0.467	0.9	ug/L	391	Standard
	Cu	65	89984.8	0.7	**51.9651**	0.579	1.1	ug/L	147	Standard
	Zn	66	55356.0	1.9	**54.2884**	1.071	2.0	ug/L	184	Standard
>	Ge	72	389631.6	0.5				ug/L	422998	Standard
	As	75	55664.6	1.5	**53.3160**	0.533	1.0	ug/L	-58	Standard
	Se	82	6792.9	0.9	**62.6953**	0.620	1.0	ug/L	15	Standard
	Se-1	77	4453.3	0.6	**63.0867**	0.370	0.6	ug/L	58	Standard
>	Ga	71	578.3	9.6				mg/L	113	Standard
	Rb	85	93138.7	0.8				ug/L	27	Standard
	Y	89	353658.3	0.8				ug/L	383780	Standard
>	Rh	103	646.7	11.8				ug/L	18	Standard
	Mo	98	591259.3	0.8	**247.2748**	1.666	0.7	ug/L	31	Standard
	Ag	107	251673.7	0.4	**41.5216**	0.382	0.9	ug/L	84	Standard
	Cd	111	80293.8	0.5	**41.9213**	0.152	0.4	mg/L	4	Standard
	Cd	114	198936.8	0.8	**42.8027**	0.248	0.6	ug/L	15	Standard
>	In	115	463458.6	0.8				ug/L	515400	Standard
	Sn	118	1916.8	9.3	**0.1874**	0.037	19.8	ug/L	1043	Standard
	Sb	123	203709.3	0.1	**49.4745**	0.367	0.7	ug/L	227	Standard
	Ba	135	122179.0	0.4	**67.5697**	0.471	0.7	ug/L	31	Standard
	Ce	140	1566.7	4.3				ug/L	120	Standard
>	Tb	159	758591.8	0.5				ug/L	785817	Standard
	Ho	165	71.7	20.1				ug/L	7	Standard
	Tl	203	331241.5	0.8	**45.9568**	0.295	0.6	ug/L	6	Standard
	Tl	205	298590.3	1.0	**47.5536**	0.271	0.6	ug/L	8	Standard
	Pb	206	217722.5	0.4	**48.5241**	0.010	0.0	ug/L	201	Standard
	Pb	207	190227.0	0.2	**46.8923**	0.200	0.4	ug/L	177	Standard
	Pb	208	759297.7	0.5	**46.5949**	0.059	0.1	ug/L	722	Standard
	U	238	312651.3	0.9	**50.5186**	0.212	0.4	ug/L	8	Standard
>	Bi	209	400624.5	0.4				ug/L	444563	Standard

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Na	23	6.7	114.6	**87.8877**	101.502	115.5	mg/L	0	Standard
Mg	24	763834.5	1.5	**1062.3626**	6.626	0.6	mg/L	38	Standard
K	39	460.0	1.1	**2.1017**	0.064	3.1	mg/L	33	Standard
Ca	43	625.0	15.2	**103.1755**	17.328	16.8	mg/L	48	Standard
Fe	54	188.7	2.0	**0.0520**	0.007	13.3	mg/L	131	Standard
Fe	57	1280.1	7.2	**3.9109**	0.309	7.9	mg/L	153	Standard
> **Sc-1**	45	24122.5	2.1				mg/L	26715	Standard
Cl	35	1497815.5	0.7				ug/L	102686	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	44792.9	4.5				ug/L	1897	Standard
P	31	19801.3	1.6				ug/L	18491	Standard
S	34	4824.1	1.5				ug/L	3734	Standard
Sr	88	493.3	8.6				ug/L	47	Standard
C	12	156.7	26.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	76863.2	12.6				mg/L	23	Standard
Dy	164	101.1	6.4				mg/L	23	Standard
Ho-1	165	71.7	20.1				mg/L	7	Standard
Er	166	46.7	32.7				mg/L	13	Standard
I	127	60604.4	4.3				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		196.092	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.112	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.922
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.117
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	

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Method 6020 - Summary Report

Sample ID: L1606154801SD WG574664-06
Sample Date/Time: Tuesday, July 05, 2016 12:45:40
Number of Replicates: 3
Autosampler Position: 244
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	122152.2	1.5				ug/L	59517	Standard
	Be	9	51898.7	0.6	**29.0575**	0.595	2.0	ug/L	10	Standard
	Al	27	16686740.4	1.6	**53.4391**	1.567	2.9	ug/L	1872	Standard
	Sc	45	23726.9	3.5				ug/L	26715	Standard
	Ti	47	565.7	5.9	**2.4006**	0.209	8.7	ug/L	54	Standard
	V	51	296548.7	6.0	**45.5396**	3.320	7.3	ug/L	1419	Standard
	Cr	52	322327.4	1.1	**49.4402**	1.655	3.3	ug/L	7059	Standard
	Cr	53	45294.3	1.2	**56.2307**	1.347	2.4	ug/L	398	Standard
	Mn	55	310626.6	0.8	**54.4552**	1.631	3.0	ug/L	824	Standard
	Co	59	478283.3	1.5	**78.2582**	2.794	3.6	ug/L	167	Standard
	Ni	60	91943.1	1.0	**54.4538**	1.640	3.0	ug/L	391	Standard
	Cu	65	92185.6	0.4	**54.5243**	1.036	1.9	ug/L	147	Standard
	Zn	66	55221.5	1.6	**55.4643**	1.194	2.2	ug/L	184	Standard
>	Ge	72	380545.0	2.2				ug/L	422998	Standard
	As	75	56235.1	1.8	**55.1770**	2.076	3.8	ug/L	-58	Standard
	Se	82	6923.0	3.5	**65.4542**	2.855	4.4	ug/L	15	Standard
	Se-1	77	4510.0	1.2	**65.4697**	2.137	3.3	ug/L	58	Standard
>	Ga	71	618.3	3.4				mg/L	113	Standard
	Rb	85	97715.8	1.0				ug/L	27	Standard
	Y	89	348410.1	2.4				ug/L	383780	Standard
>	Rh	103	666.7	8.0				ug/L	18	Standard
	Mo	98	625221.6	1.9	**264.9901**	14.826	5.6	ug/L	31	Standard
	Ag	107	252716.6	0.8	**42.2386**	1.811	4.3	ug/L	84	Standard
	Cd	111	80758.9	1.2	**42.7174**	1.910	4.5	mg/L	4	Standard
	Cd	114	197407.2	2.0	**43.0463**	2.498	5.8	ug/L	15	Standard
>	In	115	457937.1	3.7				ug/L	515400	Standard
	Sn	118	1918.5	14.0	**0.1922**	0.052	26.9	ug/L	1043	Standard
	Sb	123	203577.0	1.4	**50.0969**	2.489	5.0	ug/L	227	Standard
	Ba	135	126982.0	1.8	**71.1666**	3.910	5.5	ug/L	31	Standard
	Ce	140	1641.8	1.4				ug/L	120	Standard
>	Tb	159	755317.6	2.5				ug/L	785817	Standard
	Ho	165	110.0	53.6				ug/L	7	Standard
	Tl	203	336457.4	1.2	**47.2137**	1.841	3.9	ug/L	6	Standard
	Tl	205	298957.7	1.5	**48.1551**	1.853	3.8	ug/L	8	Standard
	Pb	206	219760.4	1.1	**49.5387**	1.921	3.9	ug/L	201	Standard
	Pb	207	191583.1	1.3	**47.7674**	1.919	4.0	ug/L	177	Standard
	Pb	208	761373.0	0.7	**47.2534**	1.642	3.5	ug/L	722	Standard
	U	238	315757.2	1.1	**51.6027**	1.944	3.8	ug/L	8	Standard
>	Bi	209	396378.3	2.7				ug/L	444563	Standard

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Na	23	10.0	132.3	**136.1000**	182.647	134.2	mg/L	0	Standard
Mg	24	814161.4	0.9	**1152.3511**	51.439	4.5	mg/L	38	Standard
K	39	431.7	3.5	**2.0016**	0.143	7.1	mg/L	33	Standard
Ca	43	766.7	15.3	**130.2299**	22.306	17.1	mg/L	48	Standard
Fe	54	171.0	18.0	**0.0387**	0.028	71.6	mg/L	131	Standard
Fe	57	1328.4	4.5	**4.1581**	0.310	7.5	mg/L	153	Standard
> **Sc-1**	45	23726.9	3.5				mg/L	26715	Standard
Cl	35	1551098.4	1.3				ug/L	102686	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	43194.9	4.1				ug/L	1897	Standard
P	31	19153.8	1.7				ug/L	18491	Standard
S	34	5039.2	3.1				ug/L	3734	Standard
Sr	88	543.3	13.1				ug/L	47	Standard
C	12	126.7	19.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	90117.9	6.4				mg/L	23	Standard
Dy	164	93.5	37.6				mg/L	23	Standard
Ho-1	165	110.0	53.6				mg/L	7	Standard
Er	166	66.7	8.7				mg/L	13	Standard
I	127	71170.4	5.4				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		205.240	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		89.964	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		88.851
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		89.161
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	

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Method 6020 - Summary Report

Sample ID: L1606154401
Sample Date/Time: Tuesday, July 05, 2016 12:48:51
Number of Replicates: 3
Autosampler Position: 245
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90670.5	1.7				ug/L	59517	Standard
	Be	9	36.7	20.8	**-0.0034**	0.006	178.5	ug/L	10	Standard
	Al	27	4021825.0	0.9	**17.3406**	0.175	1.0	ug/L	1872	Standard
	Sc	45	26107.5	3.4				ug/L	26715	Standard
	Ti	47	108.3	9.8	**0.1931**	0.044	22.8	ug/L	54	Standard
	V	51	9044.3	32.6	**1.0310**	0.396	38.4	ug/L	1419	Standard
	Cr	52	9139.4	0.7	**0.2648**	0.012	4.7	ug/L	7059	Standard
	Cr	53	2621.9	2.5	**2.4360**	0.074	3.1	ug/L	398	Standard
	Mn	55	3405.7	1.5	**0.3885**	0.006	1.5	ug/L	824	Standard
	Co	59	2467.9	1.7	**0.3255**	0.005	1.7	ug/L	167	Standard
	Ni	60	1846.4	0.9	**0.7528**	0.011	1.4	ug/L	391	Standard
	Cu	65	4850.5	26.2	**2.4140**	0.646	26.7	ug/L	147	Standard
	Zn	66	6624.2	29.1	**5.6308**	1.668	29.6	ug/L	184	Standard
>	**Ge**	72	438247.4	0.3				ug/L	422998	Standard
	As	75	1127.8	58.8	**1.0103**	0.561	55.5	ug/L	-58	Standard
	Se	82	480.8	57.1	**3.7490**	2.247	59.9	ug/L	15	Standard
	Se-1	77	214.3	4.7	**2.0595**	0.119	5.8	ug/L	58	Standard
>	**Ga**	71	75.0	37.1				mg/L	113	Standard
	Rb	85	430.0	17.2				ug/L	27	Standard
	Y	89	391064.5	2.5				ug/L	383780	Standard
>	**Rh**	103	323.3	25.6				ug/L	18	Standard
	Mo	98	12371.3	1.5	**4.4046**	0.072	1.6	ug/L	31	Standard
	Ag	107	143.0	9.6	**0.0081**	0.002	23.9	ug/L	84	Standard
	Cd	111	15.1	60.8	**0.0026**	0.004	157.5	mg/L	4	Standard
	Cd	114	56.1	20.0	**0.0057**	0.002	34.5	ug/L	15	Standard
>	**In**	115	543338.8	0.8				ug/L	515400	Standard
	Sn	118	891.7	19.5	**-0.0348**	0.029	84.1	ug/L	1043	Standard
	Sb	123	795.2	10.6	**0.1485**	0.018	12.1	ug/L	227	Standard
	Ba	135	41945.3	1.6	**19.7692**	0.234	1.2	ug/L	31	Standard
	Ce	140	113.3	28.4				ug/L	120	Standard
>	**Tb**	159	861658.0	1.4				ug/L	785817	Standard
	Ho	165	20.0	75.0				ug/L	7	Standard
	Tl	203	195.0	5.7	**0.0181**	0.001	6.8	ug/L	6	Standard
	Tl	205	120.0	16.7	**0.0085**	0.003	30.2	ug/L	8	Standard
	Pb	206	455.3	1.9	**0.0358**	0.002	4.2	ug/L	201	Standard
	Pb	207	407.7	8.1	**0.0327**	0.006	19.9	ug/L	177	Standard
	Pb	208	1585.4	4.2	**0.0294**	0.003	11.1	ug/L	722	Standard
	U	238	411.0	11.4	**0.0507**	0.006	11.8	ug/L	8	Standard
>	**Bi**	209	500271.5	0.2				ug/L	444563	Standard

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Na	23	3.3	173.2	**41.2794**	71.489	173.2	mg/L	0	Standard
Mg	24	6431.4	3.4	**8.2432**	0.558	6.8	mg/L	38	Standard
K	39	113.3	18.4	**0.3809**	0.109	28.7	mg/L	33	Standard
Ca	43	90.0	19.2	**8.6207**	2.810	32.6	mg/L	48	Standard
Fe	54	139.0	17.9	**-0.0021**	0.020	937.9	mg/L	131	Standard
Fe	57	250.0	9.2	**0.3117**	0.085	27.2	mg/L	153	Standard
> **Sc-1**	45	26107.5	3.4				mg/L	26715	Standard
Cl	35	138579.6	1.4				ug/L	102686	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	5831.1	7.6				ug/L	1897	Standard
P	31	20567.3	5.0				ug/L	18491	Standard
S	34	3718.8	6.3				ug/L	3734	Standard
Sr	88	120.0	12.5				ug/L	47	Standard
C	12	116.7	32.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	5931.2	20.4				mg/L	23	Standard
Dy	164	22.5	68.3				mg/L	23	Standard
Ho-1	165	20.0	75.0				mg/L	7	Standard
Er	166	16.7	91.7				mg/L	13	Standard
I	127	18529.7	1.6				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		152.345	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.605	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.421
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		112.531
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606154401PS WG575052-01
Sample Date/Time: Tuesday, July 05, 2016 12:52:03
Number of Replicates: 3
Autosampler Position: 246
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86030.2	0.5				ug/L	59517	Standard
	Be	9	58365.6	2.6	**46.4067**	1.086	2.3	ug/L	10	Standard
	Al	27	3923361.4	2.2	**17.8260**	0.316	1.8	ug/L	1872	Standard
	Sc	45	25120.8	2.2				ug/L	26715	Standard
	Ti	47	105.0	15.0	**0.1838**	0.061	33.3	ug/L	54	Standard
	V	51	364478.3	1.0	**49.1167**	0.604	1.2	ug/L	1419	Standard
	Cr	52	346577.6	1.1	**46.5983**	0.941	2.0	ug/L	7059	Standard
	Cr	53	44667.4	1.1	**48.6182**	0.977	2.0	ug/L	398	Standard
	Mn	55	305672.6	1.4	**47.0073**	0.627	1.3	ug/L	824	Standard
	Co	59	355593.4	1.7	**51.0531**	1.308	2.6	ug/L	167	Standard
	Ni	60	90913.3	1.2	**47.2298**	0.999	2.1	ug/L	391	Standard
	Cu	65	92601.8	1.7	**48.0687**	1.246	2.6	ug/L	147	Standard
	Zn	66	61772.4	1.7	**54.4625**	1.414	2.6	ug/L	184	Standard
>	**Ge**	72	433466.4	0.9				ug/L	422998	Standard
	As	75	55589.3	0.5	**47.8699**	0.626	1.3	ug/L	-58	Standard
	Se	82	6045.2	1.2	**50.1105**	0.516	1.0	ug/L	15	Standard
	Se-1	77	3871.5	2.0	**49.1602**	1.448	2.9	ug/L	58	Standard
>	**Ga**	71	60.0	38.2				mg/L	113	Standard
	Rb	85	441.7	4.7				ug/L	27	Standard
	Y	89	381599.3	1.0				ug/L	383780	Standard
>	**Rh**	103	140.0	19.9				ug/L	18	Standard
	Mo	98	11472.0	0.5	**4.2015**	0.019	0.5	ug/L	31	Standard
	Ag	107	323477.3	0.3	**46.8334**	0.353	0.8	ug/L	84	Standard
	Cd	111	103414.0	0.8	**47.3820**	0.524	1.1	mg/L	4	Standard
	Cd	114	254980.1	1.1	**48.1452**	0.744	1.5	ug/L	15	Standard
>	**In**	115	528128.6	0.4				ug/L	515400	Standard
	Sn	118	1173.4	17.6	**0.0167**	0.034	203.4	ug/L	1043	Standard
	Sb	123	225967.1	2.8	**48.1617**	1.533	3.2	ug/L	227	Standard
	Ba	135	136334.0	0.7	**66.1637**	0.578	0.9	ug/L	31	Standard
	Ce	140	165.0	21.2				ug/L	120	Standard
>	**Tb**	159	829145.3	1.4				ug/L	785817	Standard
	Ho	165	15.0	0.0				ug/L	7	Standard
	Tl	203	418729.5	0.3	**47.6494**	0.152	0.3	ug/L	6	Standard
	Tl	205	380867.8	0.9	**49.7515**	0.379	0.8	ug/L	8	Standard
	Pb	206	275400.8	0.6	**50.3450**	0.450	0.9	ug/L	201	Standard
	Pb	207	238374.2	0.4	**48.1962**	0.217	0.4	ug/L	177	Standard
	Pb	208	975428.0	0.6	**49.0976**	0.164	0.3	ug/L	722	Standard
	U	238	373390.3	0.4	**49.4854**	0.229	0.5	ug/L	8	Standard
>	**Bi**	209	488451.8	0.3				ug/L	444563	Standard

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Na	23	6.7	114.6	**82.3857**	94.821	115.1	mg/L	0	Standard
Mg	24	6061.2	4.6	**8.0591**	0.240	3.0	mg/L	38	Standard
K	39	85.0	44.4	**0.2685**	0.184	68.7	mg/L	33	Standard
Ca	43	78.3	16.1	**7.2488**	2.220	30.6	mg/L	48	Standard
Fe	54	132.0	13.6	**-0.0034**	0.016	469.3	mg/L	131	Standard
Fe	57	340.0	15.6	**0.6409**	0.199	31.0	mg/L	153	Standard
> **Sc-1**	45	25120.8	2.2				mg/L	26715	Standard
Cl	35	145839.9	0.3				ug/L	102686	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	5150.9	4.2				ug/L	1897	Standard
P	31	20655.7	1.3				ug/L	18491	Standard
S	34	4023.9	6.4				ug/L	3734	Standard
Sr	88	110.0	19.8				ug/L	47	Standard
C	12	100.0	36.1				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	4133.9	13.4				mg/L	23	Standard
Dy	164	18.9	93.2				mg/L	23	Standard
Ho-1	165	15.0	0.0				mg/L	7	Standard
Er	166	23.3	49.5				mg/L	13	Standard
I	127	16777.6	3.7				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		144.548	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.475	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.470
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.872
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606154401SDL WG575052-02
Sample Date/Time: Tuesday, July 05, 2016 12:55:14
Number of Replicates: 3
Autosampler Position: 247
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79811.4	2.0				ug/L	59517	Standard
	Be	9	40.0	97.6	**0.0028**	0.032	1166.4	ug/L	10	Standard
	Al	27	733638.6	0.6	**3.5840**	0.051	1.4	ug/L	1872	Standard
	Sc	45	23543.3	2.5				ug/L	26715	Standard
	Ti	47	40.3	25.8	**-0.0711**	0.047	66.5	ug/L	54	Standard
	V	51	2186.5	6.0	**0.1337**	0.016	11.8	ug/L	1419	Standard
	Cr	52	6597.4	1.0	**-0.0166**	0.013	80.4	ug/L	7059	Standard
	Cr	53	1415.1	5.2	**1.2358**	0.102	8.3	ug/L	398	Standard
	Mn	55	975.0	7.3	**0.0284**	0.013	47.2	ug/L	824	Standard
	Co	59	638.7	7.9	**0.0722**	0.009	12.1	ug/L	167	Standard
	Ni	60	917.7	5.8	**0.3075**	0.034	11.2	ug/L	391	Standard
	Cu	65	969.7	6.6	**0.4553**	0.041	9.0	ug/L	147	Standard
	Zn	66	1592.1	3.3	**1.3324**	0.065	4.9	ug/L	184	Standard
>	**Ge**	72	409160.1	1.1				ug/L	422998	Standard
	As	75	68.9	55.0	**0.1147**	0.035	30.8	ug/L	-58	Standard
	Se	82	44.9	21.5	**0.1905**	0.090	47.0	ug/L	15	Standard
	Se-1	77	107.3	7.0	**0.7955**	0.113	14.2	ug/L	58	Standard
>	**Ga**	71	30.0	44.1				mg/L	113	Standard
	Rb	85	108.3	10.7				ug/L	27	Standard
	Y	89	350663.1	0.2				ug/L	383780	Standard
>	**Rh**	103	61.7	40.8				ug/L	18	Standard
	Mo	98	2316.8	3.2	**0.8917**	0.034	3.9	ug/L	31	Standard
	Ag	107	167.0	21.8	**0.0137**	0.006	45.3	ug/L	84	Standard
	Cd	111	24.9	77.2	**0.0081**	0.010	119.9	mg/L	4	Standard
	Cd	114	73.7	46.5	**0.0103**	0.007	70.0	ug/L	15	Standard
>	**In**	115	498759.0	2.2				ug/L	515400	Standard
	Sn	118	483.3	15.5	**-0.0948**	0.012	13.1	ug/L	1043	Standard
	Sb	123	1238.3	26.3	**0.2623**	0.068	26.1	ug/L	227	Standard
	Ba	135	7724.6	0.8	**3.9482**	0.076	1.9	ug/L	31	Standard
	Ce	140	31.7	24.1				ug/L	120	Standard
>	**Tb**	159	788075.4	1.1				ug/L	785817	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	189.0	31.4	**0.0189**	0.007	38.1	ug/L	6	Standard
	Tl	205	121.7	80.8	**0.0099**	0.014	137.0	ug/L	8	Standard
	Pb	206	461.7	11.6	**0.0428**	0.011	25.4	ug/L	201	Standard
	Pb	207	380.0	14.0	**0.0326**	0.012	36.1	ug/L	177	Standard
	Pb	208	1523.0	9.2	**0.0317**	0.008	24.8	ug/L	722	Standard
	U	238	164.7	24.9	**0.0204**	0.006	28.7	ug/L	8	Standard
>	**Bi**	209	467061.6	0.8				ug/L	444563	Standard

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Na	23	1.7	173.2	**22.5739**	39.091	173.2	mg/L	0	Standard
Mg	24	1246.7	8.3	**1.7417**	0.117	6.7	mg/L	38	Standard
K	39	31.7	32.9	**0.0280**	0.052	185.8	mg/L	33	Standard
Ca	43	30.0	28.9	**-0.5449**	1.396	256.2	mg/L	48	Standard
Fe	54	82.8	38.8	**-0.0413**	0.028	66.8	mg/L	131	Standard
Fe	57	196.7	35.3	**0.2095**	0.246	117.6	mg/L	153	Standard
Sc-1	45	23543.3	2.5				mg/L	26715	Standard
Cl	35	142093.4	2.1				ug/L	102686	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	2240.2	6.7				ug/L	1897	Standard
P	31	9116.1	3.2				ug/L	18491	Standard
S	34	4057.2	6.7				ug/L	3734	Standard
Sr	88	53.3	27.1				ug/L	47	Standard
C	12	63.3	18.2				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3803.8	30.2				mg/L	23	Standard
Dy	164	9.2	108.7				mg/L	23	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	13	Standard
I	127	27015.7	0.7				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		134.099	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.729	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.771
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.061
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606154401SDL WG575052-02
Sample Date/Time: Tuesday, July 05, 2016 12:58:26
Number of Replicates: 3
Autosampler Position: 248
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75494.3	1.1				ug/L	59517	Standard
	Be	9	38.3	79.7	**0.0035**	0.028	781.9	ug/L	10	Standard
	Al	27	147949.4	3.4	**0.7542**	0.025	3.3	ug/L	1872	Standard
	Sc	45	23154.4	2.4				ug/L	26715	Standard
	Ti	47	28.7	22.4	**-0.1170**	0.032	27.4	ug/L	54	Standard
	V	51	1805.3	13.6	**0.0886**	0.031	35.2	ug/L	1419	Standard
	Cr	52	6163.6	0.9	**-0.0457**	0.012	25.4	ug/L	7059	Standard
	Cr	53	1195.0	9.3	**1.0338**	0.161	15.5	ug/L	398	Standard
	Mn	55	485.0	20.9	**-0.0489**	0.016	32.9	ug/L	824	Standard
	Co	59	366.0	37.3	**0.0326**	0.021	64.4	ug/L	167	Standard
	Ni	60	673.0	11.5	**0.1859**	0.041	22.0	ug/L	391	Standard
	Cu	65	465.0	8.8	**0.1870**	0.026	14.0	ug/L	147	Standard
	Zn	66	1105.0	7.2	**0.9156**	0.088	9.6	ug/L	184	Standard
>	**Ge**	72	394250.9	2.1				ug/L	422998	Standard
	As	75	22.2	278.3	**0.0723**	0.058	80.5	ug/L	-58	Standard
	Se	82	35.8	27.5	**0.1213**	0.087	71.4	ug/L	15	Standard
	Se-1	77	94.7	14.3	**0.6689**	0.165	24.7	ug/L	58	Standard
>	**Ga**	71	23.3	86.6				mg/L	113	Standard
	Rb	85	58.3	38.7				ug/L	27	Standard
	Y	89	342667.4	1.9				ug/L	383780	Standard
>	**Rh**	103	35.0	14.3				ug/L	18	Standard
	Mo	98	955.5	24.7	**0.3700**	0.087	23.4	ug/L	31	Standard
	Ag	107	160.0	56.1	**0.0130**	0.014	106.3	ug/L	84	Standard
	Cd	111	28.0	106.2	**0.0097**	0.015	151.2	mg/L	4	Standard
	Cd	114	56.0	87.6	**0.0068**	0.010	146.5	ug/L	15	Standard
>	**In**	115	487131.3	2.6				ug/L	515400	Standard
	Sn	118	335.0	34.2	**-0.1200**	0.019	16.2	ug/L	1043	Standard
	Sb	123	368.8	24.2	**0.0686**	0.019	27.8	ug/L	227	Standard
	Ba	135	1513.1	3.5	**0.7726**	0.017	2.2	ug/L	31	Standard
	Ce	140	15.0	66.7				ug/L	120	Standard
>	**Tb**	159	759939.4	2.6				ug/L	785817	Standard
	Ho	165	1.7	173.2				ug/L	7	Standard
	Tl	203	194.0	52.9	**0.0200**	0.012	62.3	ug/L	6	Standard
	Tl	205	130.0	103.4	**0.0113**	0.019	165.4	ug/L	8	Standard
	Pb	206	305.7	21.0	**0.0140**	0.012	86.0	ug/L	201	Standard
	Pb	207	258.0	26.9	**0.0078**	0.015	189.9	ug/L	177	Standard
	Pb	208	1034.3	21.9	**0.0070**	0.012	171.8	ug/L	722	Standard
	U	238	97.7	93.2	**0.0113**	0.013	114.0	ug/L	8	Standard
>	**Bi**	209	457866.6	2.8				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	410.0	52.5	**0.5590**	0.311	55.6	mg/L	38	Standard
K	39	25.0	34.6	**-0.0036**	0.040	1131.6	mg/L	33	Standard
Ca	43	28.3	10.2	**-0.7395**	0.441	59.6	mg/L	48	Standard
Fe	54	46.1	34.9	**-0.0736**	0.016	21.6	mg/L	131	Standard
Fe	57	203.3	16.4	**0.2438**	0.108	44.5	mg/L	153	Standard
> **Sc-1**	45	23154.4	2.4				mg/L	26715	Standard
Cl	35	144656.0	1.2				ug/L	102686	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	1726.8	11.0				ug/L	1897	Standard
P	31	6544.7	3.7				ug/L	18491	Standard
S	34	4280.6	2.1				ug/L	3734	Standard
Sr	88	70.0	24.7				ug/L	47	Standard
C	12	23.3	24.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3640.5	36.6				mg/L	23	Standard
Dy	164	23.0	67.5				mg/L	23	Standard
Ho-1	165	1.7	173.2				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	29403.5	1.3				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		126.845	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.204	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85	
Y	89	
> Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
> In	115	94.515
Sn	118	
Sb	123	
Ba	135	
Ce	140	
> Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
> Bi	209	102.993
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
> Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, July 05, 2016 13:01:39
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79100.9	0.3				ug/L	59517	Standard
	Be	9	53082.8	1.6	**45.9058**	0.778	1.7	ug/L	10	Standard
	Al	27	7776884.1	1.6	**38.4468**	0.629	1.6	ug/L	1872	Standard
	Sc	45	24795.3	2.1				ug/L	26715	Standard
	Ti	47	21780.3	1.6	**90.8533**	1.880	2.1	ug/L	54	Standard
	V	51	350042.4	1.4	**48.0675**	0.901	1.9	ug/L	1419	Standard
	Cr	52	336005.0	0.8	**46.0237**	0.722	1.6	ug/L	7059	Standard
	Cr	53	41889.5	0.7	**46.4425**	0.618	1.3	ug/L	398	Standard
	Mn	55	287933.2	0.4	**45.1191**	0.495	1.1	ug/L	824	Standard
	Co	59	341033.7	0.1	**49.8891**	0.336	0.7	ug/L	167	Standard
	Ni	60	87343.1	1.5	**46.2347**	1.048	2.3	ug/L	391	Standard
	Cu	65	87383.3	0.7	**46.2168**	0.641	1.4	ug/L	147	Standard
	Zn	66	53405.6	0.4	**47.9592**	0.504	1.1	ug/L	184	Standard
>	**Ge**	72	425361.7	0.7				ug/L	422998	Standard
	As	75	53628.6	0.7	**47.0620**	0.670	1.4	ug/L	-58	Standard
	Se	82	5718.9	1.3	**48.3057**	1.008	2.1	ug/L	15	Standard
	Se-1	77	3793.8	2.4	**49.0874**	1.418	2.9	ug/L	58	Standard
>	**Ga**	71	58.3	26.2				mg/L	113	Standard
	Rb	85	806.7	5.8				ug/L	27	Standard
	Y	89	373675.3	0.8				ug/L	383780	Standard
>	**Rh**	103	38.3	41.9				ug/L	18	Standard
	Mo	98	260085.3	0.6	**96.0295**	1.236	1.3	ug/L	31	Standard
	Ag	107	324543.7	0.5	**47.2727**	0.388	0.8	ug/L	84	Standard
	Cd	111	100926.0	1.9	**46.5169**	0.402	0.9	mg/L	4	Standard
	Cd	114	250750.0	0.6	**47.6316**	0.267	0.6	ug/L	15	Standard
>	**In**	115	524964.9	1.1				ug/L	515400	Standard
	Sn	118	280046.9	3.8	**47.2954**	1.290	2.7	ug/L	1043	Standard
	Sb	123	227427.1	0.8	**48.7626**	0.250	0.5	ug/L	227	Standard
	Ba	135	93619.7	0.9	**45.7028**	0.535	1.2	ug/L	31	Standard
	Ce	140	83.3	21.1				ug/L	120	Standard
>	**Tb**	159	817284.5	1.4				ug/L	785817	Standard
	Ho	165	1.7	173.2				ug/L	7	Standard
	Tl	203	410838.3	0.5	**47.6298**	0.679	1.4	ug/L	6	Standard
	Tl	205	361524.9	1.8	**48.1144**	1.233	2.6	ug/L	8	Standard
	Pb	206	259235.6	0.4	**48.2758**	0.391	0.8	ug/L	201	Standard
	Pb	207	234786.1	0.4	**48.3622**	0.605	1.3	ug/L	177	Standard
	Pb	208	945450.8	0.8	**48.4835**	0.835	1.7	ug/L	722	Standard
	U	238	365383.7	1.4	**49.3375**	1.181	2.4	ug/L	8	Standard
>	**Bi**	209	479486.6	1.0				ug/L	444563	Standard

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Na	23	3.3	86.6	**41.6819**	36.101	86.6	mg/L	0	Standard
Mg	24	4162.2	3.0	**5.5976**	0.090	1.6	mg/L	38	Standard
K	39	773.4	1.6	**3.5190**	0.068	1.9	mg/L	33	Standard
Ca	43	50.0	26.5	**2.5798**	2.153	83.5	mg/L	48	Standard
Fe	54	5941.7	2.5	**5.0456**	0.187	3.7	mg/L	131	Standard
Fe	57	1678.4	4.5	**5.1262**	0.366	7.1	mg/L	153	Standard
Sc-1	45	24795.3	2.1				mg/L	26715	Standard
Cl	35	133808.6	5.2				ug/L	102686	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	1796.8	13.9				ug/L	1897	Standard
P	31	21567.0	3.7				ug/L	18491	Standard
S	34	4557.4	5.9				ug/L	3734	Standard
Sr	88	60.0	14.4				ug/L	47	Standard
C	12	56.7	10.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1123.4	37.7				mg/L	23	Standard
Dy	164	12.5	127.7				mg/L	23	Standard
Ho-1	165	1.7	173.2				mg/L	7	Standard
Er	166	16.7	91.7				mg/L	13	Standard
I	127	12318.3	1.9				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	91.812		
Al	27	76.894		
Sc	45			
Ti	47	90.853		
V	51	96.135		
Cr	52	92.047		
Cr	53			
Mn	55	90.238		
Co	59	99.778		
Ni	60	92.469		
Cu	65	92.434		
Zn	66	95.918		
Ge	72		100.559	
As	75	94.124		
Se	82	96.611		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	96.030		
Ag	107	94.545		
Cd	111	93.034		
Cd	114			
> In	115		101.856	
Sn	118	94.591		
Sb	123	97.525		
Ba	135	91.406		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	95.260		
Tl	205			
Pb	206			
Pb	207			
Pb	208	96.967		
U	238	98.675		
> Bi	209		107.856	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, July 05, 2016 13:04:50
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73476.2	3.2				ug/L	59517	Standard
	Be	9	38.3	27.2	**0.0044**	0.009	192.4	ug/L	10	Standard
	Al	27	2978.7	35.1	**0.0033**	0.005	151.0	ug/L	1872	Standard
	Sc	45	23760.3	3.5				ug/L	26715	Standard
	Ti	47	33.7	15.0	**-0.0998**	0.021	21.5	ug/L	54	Standard
	V	51	1936.0	11.0	**0.0993**	0.031	31.7	ug/L	1419	Standard
	Cr	52	5778.4	3.7	**-0.1320**	0.028	20.9	ug/L	7059	Standard
	Cr	53	1023.4	4.4	**0.7850**	0.051	6.4	ug/L	398	Standard
	Mn	55	561.7	13.1	**-0.0388**	0.012	30.4	ug/L	824	Standard
	Co	59	266.0	11.8	**0.0156**	0.005	29.8	ug/L	167	Standard
	Ni	60	571.3	1.9	**0.1173**	0.005	4.5	ug/L	391	Standard
	Cu	65	303.7	10.6	**0.0890**	0.018	19.8	ug/L	147	Standard
	Zn	66	348.3	6.9	**0.1684**	0.022	12.8	ug/L	184	Standard
>	Ge	72	407314.3	0.5				ug/L	422998	Standard
	As	75	-13.9	114.2	**0.0389**	0.014	37.2	ug/L	-58	Standard
	Se	82	26.4	27.2	**0.0277**	0.063	225.5	ug/L	15	Standard
	Se-1	77	74.7	21.2	**0.3546**	0.220	62.0	ug/L	58	Standard
>	Ga	71	35.0	51.5				mg/L	113	Standard
	Rb	85	28.3	40.8				ug/L	27	Standard
	Y	89	353296.6	0.4				ug/L	383780	Standard
>	Rh	103	30.0	0.0				ug/L	18	Standard
	Mo	98	367.3	3.5	**0.1333**	0.006	4.5	ug/L	31	Standard
	Ag	107	140.3	15.9	**0.0094**	0.003	32.7	ug/L	84	Standard
	Cd	111	16.0	74.4	**0.0036**	0.006	158.2	mg/L	4	Standard
	Cd	114	60.5	50.3	**0.0074**	0.006	79.6	ug/L	15	Standard
>	In	115	500724.6	1.5				ug/L	515400	Standard
	Sn	118	1160.0	31.9	**0.0260**	0.068	263.4	ug/L	1043	Standard
	Sb	123	1100.6	32.9	**0.2320**	0.085	36.6	ug/L	227	Standard
	Ba	135	47.3	32.8	**0.0004**	0.008	1710.6	ug/L	31	Standard
	Ce	140	15.0	57.7				ug/L	120	Standard
>	Tb	159	776939.6	0.9				ug/L	785817	Standard
	Ho	165	3.3	173.2				ug/L	7	Standard
	Tl	203	121.0	28.1	**0.0110**	0.004	34.8	ug/L	6	Standard
	Tl	205	80.0	34.8	**0.0043**	0.004	84.3	ug/L	8	Standard
	Pb	206	290.3	15.2	**0.0108**	0.007	67.0	ug/L	201	Standard
	Pb	207	254.3	20.0	**0.0067**	0.010	144.2	ug/L	177	Standard
	Pb	208	1035.3	12.9	**0.0067**	0.006	86.9	ug/L	722	Standard
	U	238	85.0	46.9	**0.0094**	0.005	56.1	ug/L	8	Standard
>	Bi	209	459819.3	2.2				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	95.0	22.9	**0.1013**	0.036	35.6	mg/L	38	Standard
K	39	26.7	10.8	**0.0019**	0.012	627.7	mg/L	33	Standard
Ca	43	16.7	45.8	**-2.8974**	1.474	50.9	mg/L	48	Standard
Fe	54	147.8	10.4	**0.0178**	0.019	104.5	mg/L	131	Standard
Fe	57	160.0	6.3	**0.0758**	0.038	50.1	mg/L	153	Standard
Sc-1	45	23760.3	3.5				mg/L	26715	Standard
Cl	35	130478.1	0.7				ug/L	102686	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	1590.1	8.6				ug/L	1897	Standard
P	31	20639.0	1.4				ug/L	18491	Standard
S	34	4565.7	0.8				ug/L	3734	Standard
Sr	88	60.0	36.3				ug/L	47	Standard
C	12	63.3	39.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	736.7	39.7				mg/L	23	Standard
Dy	164	6.0	200.9				mg/L	23	Standard
Ho-1	165	3.3	173.2				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	8025.5	3.0				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.292	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	97.153	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	103.432	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

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Method 6020 - Summary Report

Sample ID: L1606154601
Sample Date/Time: Tuesday, July 05, 2016 13:08:02
Number of Replicates: 3
Autosampler Position: 249
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76633.4	2.9				ug/L	59517	Standard
	Be	9	51.7	73.3	**0.0146**	0.032	221.6	ug/L	10	Standard
	Al	27	4801288.0	0.9	**24.5119**	0.840	3.4	ug/L	1872	Standard
	Sc	45	25142.5	0.5				ug/L	26715	Standard
	Ti	47	88.3	3.3	**0.1296**	0.017	13.0	ug/L	54	Standard
	V	51	3152.4	20.1	**0.2626**	0.084	32.1	ug/L	1419	Standard
	Cr	52	8822.9	2.9	**0.2812**	0.050	17.7	ug/L	7059	Standard
	Cr	53	2911.9	11.2	**2.9080**	0.387	13.3	ug/L	398	Standard
	Mn	55	7676.6	3.0	**1.0977**	0.039	3.6	ug/L	824	Standard
	Co	59	1498.1	11.5	**0.1982**	0.024	12.3	ug/L	167	Standard
	Ni	60	1773.4	2.9	**0.7606**	0.040	5.3	ug/L	391	Standard
	Cu	65	1483.1	0.7	**0.7212**	0.013	1.8	ug/L	147	Standard
	Zn	66	9710.4	0.6	**8.7523**	0.190	2.2	ug/L	184	Standard
>	**Ge**	72	417698.7	2.0				ug/L	422998	Standard
	As	75	252.0	24.1	**0.2771**	0.058	20.8	ug/L	-58	Standard
	Se	82	52.8	8.7	**0.2502**	0.042	16.9	ug/L	15	Standard
	Se-1	77	177.3	7.7	**1.6991**	0.158	9.3	ug/L	58	Standard
>	**Ga**	71	40.0	25.0				mg/L	113	Standard
	Rb	85	655.0	12.3				ug/L	27	Standard
	Y	89	366708.6	1.5				ug/L	383780	Standard
>	**Rh**	103	36.7	20.8				ug/L	18	Standard
	Mo	98	12925.5	2.6	**4.9040**	0.232	4.7	ug/L	31	Standard
	Ag	107	293.3	64.0	**0.0318**	0.028	86.5	ug/L	84	Standard
	Cd	111	132.8	40.1	**0.0587**	0.025	41.9	mg/L	4	Standard
	Cd	114	314.4	26.2	**0.0569**	0.016	28.0	ug/L	15	Standard
>	**In**	115	510317.3	2.5				ug/L	515400	Standard
	Sn	118	1015.0	18.0	**-0.0041**	0.030	723.1	ug/L	1043	Standard
	Sb	123	2630.6	3.5	**0.5644**	0.029	5.1	ug/L	227	Standard
	Ba	135	60571.5	0.8	**30.4202**	0.739	2.4	ug/L	31	Standard
	Ce	140	281.7	9.8				ug/L	120	Standard
>	**Tb**	159	788203.9	3.3				ug/L	785817	Standard
	Ho	165	31.7	18.2				ug/L	7	Standard
	Tl	203	326.7	70.1	**0.0353**	0.027	76.3	ug/L	6	Standard
	Tl	205	215.0	66.6	**0.0226**	0.019	85.5	ug/L	8	Standard
	Pb	206	634.0	19.9	**0.0763**	0.024	31.2	ug/L	201	Standard
	Pb	207	523.7	22.6	**0.0634**	0.025	38.7	ug/L	177	Standard
	Pb	208	2154.7	16.6	**0.0654**	0.018	28.1	ug/L	722	Standard
	U	238	1239.1	9.0	**0.1700**	0.015	8.6	ug/L	8	Standard
>	**Bi**	209	464962.6	1.4				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	9416.3	3.0	**12.5299**	0.322	2.6	mg/L	38	Standard
K	39	111.7	5.2	**0.3901**	0.024	6.3	mg/L	33	Standard
Ca	43	138.3	17.1	**17.2656**	4.064	23.5	mg/L	48	Standard
Fe	54	158.7	16.8	**0.0194**	0.024	121.5	mg/L	131	Standard
Fe	57	328.3	15.6	**0.5985**	0.164	27.4	mg/L	153	Standard
Sc-1	45	25142.5	0.5				mg/L	26715	Standard
Cl	35	142763.5	0.7				ug/L	102686	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	7081.7	6.3				ug/L	1897	Standard
P	31	22705.3	1.9				ug/L	18491	Standard
S	34	4310.6	1.6				ug/L	3734	Standard
Sr	88	140.0	6.2				ug/L	47	Standard
C	12	100.0	26.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	2320.2	15.4				mg/L	23	Standard
Dy	164	15.1	74.9				mg/L	23	Standard
Ho-1	165	31.7	18.2				mg/L	7	Standard
Er	166	33.3	34.6				mg/L	13	Standard
I	127	19487.5	5.3				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		128.759	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.747	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.014
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.589
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606154701
Sample Date/Time: Tuesday, July 05, 2016 13:11:14
Number of Replicates: 3
Autosampler Position: 250
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78243.2	0.5				ug/L	59517	Standard
	Be	9	50.0	36.1	**0.0127**	0.016	126.0	ug/L	10	Standard
	Al	27	5391131.7	2.6	**26.9386**	0.570	2.1	ug/L	1872	Standard
	Sc	45	25486.4	2.9				ug/L	26715	Standard
	Ti	47	82.3	12.3	**0.0906**	0.041	44.9	ug/L	54	Standard
	V	51	2761.0	25.3	**0.1931**	0.093	48.0	ug/L	1419	Standard
	Cr	52	9238.5	1.9	**0.2903**	0.032	10.9	ug/L	7059	Standard
	Cr	53	3508.7	3.0	**3.4355**	0.137	4.0	ug/L	398	Standard
	Mn	55	3629.1	6.6	**0.4278**	0.036	8.5	ug/L	824	Standard
	Co	59	6301.6	5.0	**0.8788**	0.048	5.4	ug/L	167	Standard
	Ni	60	1731.8	2.3	**0.7022**	0.020	2.8	ug/L	391	Standard
	Cu	65	1675.8	3.0	**0.7910**	0.032	4.0	ug/L	147	Standard
	Zn	66	4565.4	1.4	**3.8716**	0.092	2.4	ug/L	184	Standard
>	**Ge**	72	434104.2	0.9				ug/L	422998	Standard
	As	75	198.1	13.9	**0.2219**	0.024	10.9	ug/L	-58	Standard
	Se	82	56.5	17.3	**0.2629**	0.078	29.8	ug/L	15	Standard
	Se-1	77	192.0	6.3	**1.7993**	0.166	9.2	ug/L	58	Standard
>	**Ga**	71	48.3	52.1				mg/L	113	Standard
	Rb	85	731.7	9.9				ug/L	27	Standard
	Y	89	373744.2	1.6				ug/L	383780	Standard
>	**Rh**	103	40.0	33.1				ug/L	18	Standard
	Mo	98	18608.8	1.1	**6.8320**	0.046	0.7	ug/L	31	Standard
	Ag	107	165.3	87.3	**0.0119**	0.021	173.9	ug/L	84	Standard
	Cd	111	69.6	54.4	**0.0277**	0.017	61.5	mg/L	4	Standard
	Cd	114	237.0	44.5	**0.0402**	0.020	49.0	ug/L	15	Standard
>	**In**	115	527257.4	0.8				ug/L	515400	Standard
	Sn	118	918.4	24.6	**-0.0261**	0.037	140.8	ug/L	1043	Standard
	Sb	123	1250.0	19.1	**0.2503**	0.049	19.4	ug/L	227	Standard
	Ba	135	67353.4	0.7	**32.7313**	0.509	1.6	ug/L	31	Standard
	Ce	140	241.7	8.4				ug/L	120	Standard
>	**Tb**	159	802121.7	1.2				ug/L	785817	Standard
	Ho	165	13.3	21.7				ug/L	7	Standard
	Tl	203	184.7	77.1	**0.0179**	0.016	91.7	ug/L	6	Standard
	Tl	205	155.0	120.4	**0.0139**	0.025	178.5	ug/L	8	Standard
	Pb	206	785.0	13.7	**0.1021**	0.019	18.8	ug/L	201	Standard
	Pb	207	651.3	22.7	**0.0875**	0.029	33.6	ug/L	177	Standard
	Pb	208	2644.4	18.4	**0.0883**	0.024	27.3	ug/L	722	Standard
	U	238	1363.4	14.9	**0.1833**	0.027	14.5	ug/L	8	Standard
>	**Bi**	209	474894.4	1.4				ug/L	444563	Standard

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Na	23	10.0	86.6	**122.3030**	104.935	85.8	mg/L	0	Standard
Mg	24	8729.2	4.3	**11.4650**	0.629	5.5	mg/L	38	Standard
K	39	113.3	29.4	**0.3912**	0.152	38.8	mg/L	33	Standard
Ca	43	133.3	9.4	**16.0891**	1.458	9.1	mg/L	48	Standard
Fe	54	140.8	11.4	**0.0024**	0.013	551.1	mg/L	131	Standard
Fe	57	268.3	23.1	**0.3874**	0.183	47.2	mg/L	153	Standard
> **Sc-1**	45	25486.4	2.9				mg/L	26715	Standard
Cl	35	148684.1	1.4				ug/L	102686	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	6984.9	3.6				ug/L	1897	Standard
P	31	23055.9	2.4				ug/L	18491	Standard
S	34	4565.7	2.8				ug/L	3734	Standard
Sr	88	121.7	15.6				ug/L	47	Standard
C	12	116.7	17.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1940.1	9.4				mg/L	23	Standard
Dy	164	15.7	31.5				mg/L	23	Standard
Ho-1	165	13.3	21.7				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	13	Standard
I	127	20236.9	5.4				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		131.464	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.626	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.301
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.823
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606131302
Sample Date/Time: Tuesday, July 05, 2016 13:14:25
Number of Replicates: 3
Autosampler Position: 251
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78667.0	0.6				ug/L	59517	Standard
	Be	9	35.0	37.8	**-0.0006**	0.012	1899.5	ug/L	10	Standard
	Al	27	36159.8	4.3	**0.1674**	0.009	5.2	ug/L	1872	Standard
	Sc	45	27211.1	1.2				ug/L	26715	Standard
	Ti	47	472.7	9.7	**1.7540**	0.219	12.5	ug/L	54	Standard
	V	51	145888.9	1.0	**20.1543**	0.251	1.2	ug/L	1419	Standard
	Cr	52	12885.8	0.9	**0.8469**	0.042	5.0	ug/L	7059	Standard
	Cr	53	3248.7	3.1	**3.2654**	0.167	5.1	ug/L	398	Standard
	Mn	55	5070.5	1.0	**0.6749**	0.012	1.8	ug/L	824	Standard
	Co	59	632.7	3.0	**0.0686**	0.004	6.0	ug/L	167	Standard
	Ni	60	1301.1	2.8	**0.4997**	0.028	5.6	ug/L	391	Standard
	Cu	65	3966.2	1.5	**2.0457**	0.008	0.4	ug/L	147	Standard
	Zn	66	2060.5	2.6	**1.7177**	0.027	1.5	ug/L	184	Standard
>	**Ge**	72	420648.3	1.4				ug/L	422998	Standard
	As	75	21444.8	0.3	**19.0612**	0.212	1.1	ug/L	-58	Standard
	Se	82	174.7	4.7	**1.2920**	0.051	3.9	ug/L	15	Standard
	Se-1	77	229.0	3.4	**2.3694**	0.135	5.7	ug/L	58	Standard
>	**Ga**	71	16232.0	1.5				mg/L	113	Standard
	Rb	85	3548.7	6.1				ug/L	27	Standard
	Y	89	375171.2	2.2				ug/L	383780	Standard
>	**Rh**	103	30.0	16.7				ug/L	18	Standard
	Mo	98	25927.7	0.5	**9.8421**	0.165	1.7	ug/L	31	Standard
	Ag	107	95.3	9.7	**0.0023**	0.001	63.6	ug/L	84	Standard
	Cd	111	23.4	17.8	**0.0070**	0.002	29.7	mg/L	4	Standard
	Cd	114	142.6	6.9	**0.0233**	0.002	7.5	ug/L	15	Standard
>	**In**	115	510225.5	1.2				ug/L	515400	Standard
	Sn	118	1641.8	4.5	**0.1054**	0.010	9.3	ug/L	1043	Standard
	Sb	123	3275.0	3.6	**0.7064**	0.029	4.1	ug/L	227	Standard
	Ba	135	8027.5	0.5	**4.0105**	0.044	1.1	ug/L	31	Standard
	Ce	140	2166.8	4.9				ug/L	120	Standard
>	**Tb**	159	797509.3	1.3				ug/L	785817	Standard
	Ho	165	66.7	8.7				ug/L	7	Standard
	Tl	203	77.0	11.9	**0.0058**	0.001	18.2	ug/L	6	Standard
	Tl	205	58.3	47.2	**0.0014**	0.004	278.3	ug/L	8	Standard
	Pb	206	883.0	3.0	**0.1277**	0.004	2.8	ug/L	201	Standard
	Pb	207	733.0	5.0	**0.1113**	0.008	7.5	ug/L	177	Standard
	Pb	208	3026.8	1.0	**0.1150**	0.003	2.7	ug/L	722	Standard
	U	238	159.3	21.7	**0.0202**	0.005	25.5	ug/L	8	Standard
>	**Bi**	209	455391.3	1.0				ug/L	444563	Standard

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Na	23	1.7	173.2	**19.0149**	32.926	173.2	mg/L	0	Standard
Mg	24	73444.3	1.9	**90.5378**	2.813	3.1	mg/L	38	Standard
K	39	73.3	3.9	**0.1860**	0.015	8.0	mg/L	33	Standard
Ca	43	38.3	27.2	**0.0423**	1.593	3766.8	mg/L	48	Standard
Fe	54	185.4	5.4	**0.0301**	0.006	20.8	mg/L	131	Standard
Fe	57	218.3	22.0	**0.1819**	0.143	78.7	mg/L	153	Standard
> **Sc-1**	45	27211.1	1.2				mg/L	26715	Standard
Cl	35	152609.5	1.6				ug/L	102686	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	11000.7	9.0				ug/L	1897	Standard
P	31	36507.3	4.1				ug/L	18491	Standard
S	34	4153.9	4.8				ug/L	3734	Standard
Sr	88	108.3	27.0				ug/L	47	Standard
C	12	80.0	21.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	543.3	16.6				mg/L	23	Standard
Dy	164	90.3	46.3				mg/L	23	Standard
Ho-1	165	66.7	8.7				mg/L	7	Standard
Er	166	63.3	65.7				mg/L	13	Standard
I	127	28625.4	5.3				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.176	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.445	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.996
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.436
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606131303
Sample Date/Time: Tuesday, July 05, 2016 13:17:37
Number of Replicates: 3
Autosampler Position: 252
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	78167.8	1.6				ug/L	59517	Standard
	Be	9	35.0	24.7	**-0.0004**	0.008	2008.5	ug/L	10	Standard
	Al	27	16235.4	1.0	**0.0688**	0.001	1.7	ug/L	1872	Standard
	Sc	45	27434.8	1.4				ug/L	26715	Standard
	Ti	47	395.7	6.7	**1.4092**	0.110	7.8	ug/L	54	Standard
	V	51	139325.4	0.9	**19.0364**	0.145	0.8	ug/L	1419	Standard
	Cr	52	12138.9	1.6	**0.7232**	0.035	4.9	ug/L	7059	Standard
	Cr	53	2491.9	5.2	**2.3788**	0.146	6.1	ug/L	398	Standard
	Mn	55	3284.4	1.9	**0.3856**	0.013	3.3	ug/L	824	Standard
	Co	59	690.7	4.5	**0.0761**	0.004	5.9	ug/L	167	Standard
	Ni	60	1085.7	6.3	**0.3779**	0.041	10.7	ug/L	391	Standard
	Cu	65	3931.5	0.4	**2.0053**	0.021	1.1	ug/L	147	Standard
	Zn	66	1651.8	2.4	**1.3298**	0.027	2.0	ug/L	184	Standard
>	Ge	72	425061.1	0.7				ug/L	422998	Standard
	As	75	21504.8	1.3	**18.9163**	0.369	2.0	ug/L	-58	Standard
	Se	82	137.9	4.7	**0.9642**	0.058	6.0	ug/L	15	Standard
	Se-1	77	171.0	6.6	**1.5763**	0.162	10.3	ug/L	58	Standard
>	Ga	71	12828.8	2.6				mg/L	113	Standard
	Rb	85	2203.5	2.3				ug/L	27	Standard
	Y	89	365644.8	1.2				ug/L	383780	Standard
>	Rh	103	28.3	44.4				ug/L	18	Standard
	Mo	98	20240.4	0.6	**7.7133**	0.083	1.1	ug/L	31	Standard
	Ag	107	72.0	10.8	**-0.0011**	0.001	109.4	ug/L	84	Standard
	Cd	111	6.6	55.7	**-0.0010**	0.002	170.0	mg/L	4	Standard
	Cd	114	96.5	8.5	**0.0144**	0.002	10.8	ug/L	15	Standard
>	In	115	508063.2	0.7				ug/L	515400	Standard
	Sn	118	3423.7	2.5	**0.4189**	0.012	2.9	ug/L	1043	Standard
	Sb	123	3621.5	1.2	**0.7862**	0.008	1.1	ug/L	227	Standard
	Ba	135	4657.7	1.4	**2.3270**	0.048	2.1	ug/L	31	Standard
	Ce	140	840.0	12.5				ug/L	120	Standard
>	Tb	159	802833.7	0.9				ug/L	785817	Standard
	Ho	165	30.0	60.1				ug/L	7	Standard
	Tl	203	41.7	32.6	**0.0015**	0.002	111.7	ug/L	6	Standard
	Tl	205	36.7	20.8	**-0.0017**	0.001	67.0	ug/L	8	Standard
	Pb	206	598.7	7.1	**0.0716**	0.007	10.0	ug/L	201	Standard
	Pb	207	523.3	5.0	**0.0655**	0.006	8.4	ug/L	177	Standard
	Pb	208	2103.4	1.4	**0.0649**	0.001	1.4	ug/L	722	Standard
	U	238	85.0	3.5	**0.0096**	0.000	4.6	ug/L	8	Standard
>	Bi	209	456285.7	1.1				ug/L	444563	Standard

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Na	23	1.7	173.2	**18.9113**	32.747	173.2	mg/L	0	Standard
Mg	24	70085.1	1.9	**85.6658**	0.604	0.7	mg/L	38	Standard
K	39	48.3	15.8	**0.0768**	0.033	42.4	mg/L	33	Standard
Ca	43	20.0	25.0	**-2.8154**	0.755	26.8	mg/L	48	Standard
Fe	54	179.1	7.3	**0.0240**	0.011	44.6	mg/L	131	Standard
Fe	57	178.3	12.6	**0.0561**	0.067	120.0	mg/L	153	Standard
Sc-1	45	27434.8	1.4				mg/L	26715	Standard
Cl	35	151459.3	0.7				ug/L	102686	Standard
Kr	83	0.0					ug/L	2	Standard
Br	81	7481.8	1.3				ug/L	1897	Standard
P	31	34716.4	2.8				ug/L	18491	Standard
S	34	4028.9	2.6				ug/L	3734	Standard
Sr	88	91.7	20.7				ug/L	47	Standard
C	12	130.0	33.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	480.0	15.0				mg/L	23	Standard
Dy	164	31.9	67.5				mg/L	23	Standard
Ho-1	165	30.0	60.1				mg/L	7	Standard
Er	166	30.0	66.7				mg/L	13	Standard
I	127	24636.7	4.9				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		131.338	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.488	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.577
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.637
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, July 05, 2016 13:20:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77279.9	1.5				ug/L	59517	Standard
	Be	9	53777.0	3.0	**47.5968**	0.851	1.8	ug/L	10	Standard
	Al	27	7708258.9	1.1	**39.0068**	0.154	0.4	ug/L	1872	Standard
	Sc	45	24800.3	1.9				ug/L	26715	Standard
	Ti	47	22227.6	0.6	**92.0240**	0.601	0.7	ug/L	54	Standard
	V	51	351889.5	1.4	**47.9563**	0.611	1.3	ug/L	1419	Standard
	Cr	52	342816.9	0.2	**46.6156**	0.227	0.5	ug/L	7059	Standard
	Cr	53	43276.7	1.2	**47.6302**	0.591	1.2	ug/L	398	Standard
	Mn	55	294860.0	1.7	**45.8586**	0.698	1.5	ug/L	824	Standard
	Co	59	347316.5	0.9	**50.4274**	0.375	0.7	ug/L	167	Standard
	Ni	60	89058.0	1.2	**46.7900**	0.788	1.7	ug/L	391	Standard
	Cu	65	88901.1	0.5	**46.6679**	0.492	1.1	ug/L	147	Standard
	Zn	66	54606.2	0.6	**48.6722**	0.419	0.9	ug/L	184	Standard
>	Ge	72	428562.2	0.5				ug/L	422998	Standard
	As	75	54688.5	0.1	**47.6305**	0.211	0.4	ug/L	-58	Standard
	Se	82	5723.2	1.1	**47.9774**	0.742	1.5	ug/L	15	Standard
	Se-1	77	3837.2	0.2	**49.2755**	0.166	0.3	ug/L	58	Standard
>	Ga	71	53.3	19.5				mg/L	113	Standard
	Rb	85	731.7	8.7				ug/L	27	Standard
	Y	89	372760.3	1.4				ug/L	383780	Standard
>	Rh	103	35.0	62.3				ug/L	18	Standard
	Mo	98	263563.3	0.7	**98.6156**	1.700	1.7	ug/L	31	Standard
	Ag	107	327977.8	0.4	**48.4125**	0.670	1.4	ug/L	84	Standard
	Cd	111	102274.1	1.0	**47.7734**	0.685	1.4	mg/L	4	Standard
	Cd	114	251291.9	0.8	**48.3732**	0.660	1.4	ug/L	15	Standard
>	In	115	518052.7	1.0				ug/L	515400	Standard
	Sn	118	288284.1	2.0	**49.3576**	1.118	2.3	ug/L	1043	Standard
	Sb	123	230660.4	0.9	**50.1205**	0.888	1.8	ug/L	227	Standard
	Ba	135	94724.2	0.5	**46.8615**	0.694	1.5	ug/L	31	Standard
	Ce	140	80.0	27.2				ug/L	120	Standard
>	Tb	159	799343.7	1.2				ug/L	785817	Standard
	Ho	165	8.3	124.9				ug/L	7	Standard
	Tl	203	411834.4	0.5	**48.5837**	0.788	1.6	ug/L	6	Standard
	Tl	205	366998.2	0.5	**49.7011**	1.033	2.1	ug/L	8	Standard
	Pb	206	261625.5	0.2	**49.5786**	0.671	1.4	ug/L	201	Standard
	Pb	207	236614.4	1.1	**49.5960**	0.918	1.9	ug/L	177	Standard
	Pb	208	951807.7	0.8	**49.6651**	0.691	1.4	ug/L	722	Standard
	U	238	367873.3	1.0	**50.5477**	1.302	2.6	ug/L	8	Standard
>	Bi	209	471246.4	1.6				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4195.6	3.3	**5.6446**	0.262	4.6	mg/L	38	Standard
K	39	825.0	5.0	**3.7638**	0.250	6.7	mg/L	33	Standard
Ca	43	60.0	44.1	**4.2384**	4.339	102.4	mg/L	48	Standard
Fe	54	6081.6	5.0	**5.1678**	0.344	6.6	mg/L	131	Standard
Fe	57	1670.1	7.4	**5.0981**	0.510	10.0	mg/L	153	Standard
Sc-1	45	24800.3	1.9				mg/L	26715	Standard
Cl	35	131008.1	2.1				ug/L	102686	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	1596.8	13.5				ug/L	1897	Standard
P	31	21889.1	1.3				ug/L	18491	Standard
S	34	4429.0	2.1				ug/L	3734	Standard
Sr	88	70.0	31.1				ug/L	47	Standard
C	12	56.7	53.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	360.0	57.7				mg/L	23	Standard
Dy	164	16.3	67.3				mg/L	23	Standard
Ho-1	165	8.3	124.9				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	13	Standard
I	127	11344.2	0.7				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	95.194		
Al	27	78.014		
Sc	45			
Ti	47	92.024		
V	51	95.913		
Cr	52	93.231		
Cr	53			
Mn	55	91.717		
Co	59	100.855		
Ni	60	93.580		
Cu	65	93.336		
Zn	66	97.344		
Ge	72		101.316	
As	75	95.261		
Se	82	95.955		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.616		
Ag	107	96.825		
Cd	111	95.547		
Cd	114			
> In	115			100.515
Sn	118	98.715		
Sb	123	100.241		
Ba	135	93.723		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	97.167		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.330		
U	238	101.095		
> Bi	209			106.002
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, July 05, 2016 13:24:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77248.1	0.5				ug/L	59517	Standard
	Be	9	35.0	65.5	**-0.0001**	0.020	15219.5	ug/L	10	Standard
	Al	27	2498.5	19.2	**0.0002**	0.002	1111.1	ug/L	1872	Standard
	Sc	45	25149.2	1.9				ug/L	26715	Standard
	Ti	47	32.7	26.4	**-0.1113**	0.034	30.6	ug/L	54	Standard
	V	51	1540.0	3.7	**0.0313**	0.006	20.6	ug/L	1419	Standard
	Cr	52	5901.1	0.9	**-0.1562**	0.006	4.2	ug/L	7059	Standard
	Cr	53	921.7	8.2	**0.6137**	0.086	14.0	ug/L	398	Standard
	Mn	55	561.3	6.2	**-0.0433**	0.007	15.6	ug/L	824	Standard
	Co	59	212.0	8.6	**0.0057**	0.002	43.4	ug/L	167	Standard
	Ni	60	468.7	2.1	**0.0477**	0.008	17.4	ug/L	391	Standard
	Cu	65	208.0	5.0	**0.0305**	0.007	22.9	ug/L	147	Standard
	Zn	66	235.7	15.1	**0.0518**	0.034	65.7	ug/L	184	Standard
>	Ge	72	428296.6	1.5				ug/L	422998	Standard
	As	75	-36.4	108.4	**0.0197**	0.035	177.8	ug/L	-58	Standard
	Se	82	19.0	50.5	**-0.0463**	0.080	171.6	ug/L	15	Standard
	Se-1	77	74.7	5.4	**0.3048**	0.067	22.0	ug/L	58	Standard
>	Ga	71	30.0	72.6				mg/L	113	Standard
	Rb	85	25.0	20.0				ug/L	27	Standard
	Y	89	374392.9	1.2				ug/L	383780	Standard
>	Rh	103	10.0	50.0				ug/L	18	Standard
	Mo	98	261.5	7.1	**0.0873**	0.006	6.5	ug/L	31	Standard
	Ag	107	126.7	16.6	**0.0064**	0.003	44.8	ug/L	84	Standard
	Cd	111	16.2	39.1	**0.0033**	0.003	85.0	mg/L	4	Standard
	Cd	114	52.9	33.8	**0.0054**	0.003	61.0	ug/L	15	Standard
>	In	115	526400.0	1.5				ug/L	515400	Standard
	Sn	118	1133.4	25.4	**0.0103**	0.046	446.2	ug/L	1043	Standard
	Sb	123	778.2	35.3	**0.1496**	0.057	37.8	ug/L	227	Standard
	Ba	135	42.7	38.1	**-0.0029**	0.008	281.0	ug/L	31	Standard
	Ce	140	18.3	15.7				ug/L	120	Standard
>	Tb	159	808183.5	1.4				ug/L	785817	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	94.0	21.3	**0.0072**	0.002	31.6	ug/L	6	Standard
	Tl	205	66.7	58.3	**0.0020**	0.005	250.8	ug/L	8	Standard
	Pb	206	301.3	10.9	**0.0104**	0.006	59.0	ug/L	201	Standard
	Pb	207	248.0	9.5	**0.0030**	0.005	154.8	ug/L	177	Standard
	Pb	208	1028.3	9.2	**0.0040**	0.005	118.6	ug/L	722	Standard
	U	238	79.3	13.9	**0.0082**	0.001	17.8	ug/L	8	Standard
>	Bi	209	481290.0	0.3				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	48.3	41.8	**0.0306**	0.026	83.9	mg/L	38	Standard
K	39	21.7	70.5	**-0.0287**	0.071	248.9	mg/L	33	Standard
Ca	43	35.0	65.5	**-0.0715**	3.697	5169.8	mg/L	48	Standard
Fe	54	137.5	14.0	**0.0010**	0.014	1468.5	mg/L	131	Standard
Fe	57	171.7	6.1	**0.0836**	0.044	53.0	mg/L	153	Standard
Sc-1	45	25149.2	1.9				mg/L	26715	Standard
Cl	35	131293.1	0.9				ug/L	102686	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	1543.4	4.7				ug/L	1897	Standard
P	31	20780.9	1.4				ug/L	18491	Standard
S	34	4420.6	1.7				ug/L	3734	Standard
Sr	88	56.7	18.4				ug/L	47	Standard
C	12	53.3	60.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	326.7	35.9				mg/L	23	Standard
Dy	164	9.5	177.6				mg/L	23	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	7296.8	2.1				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.253	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.134
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.261
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW A3 WG574733-02
Sample Date/Time: Tuesday, July 05, 2016 13:27:14
Number of Replicates: 3
Autosampler Position: 253
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72265.4	3.1				ug/L	59517	Standard
	Be	9	28.3	36.7	**-0.0041**	0.010	248.9	ug/L	10	Standard
	Al	27	4012.2	3.3	**0.0093**	0.000	0.4	ug/L	1872	Standard
	Sc	45	23902.2	1.4				ug/L	26715	Standard
	Ti	47	27.3	23.8	**-0.1266**	0.028	22.4	ug/L	54	Standard
	V	51	1207.2	8.4	**-0.0047**	0.013	269.8	ug/L	1419	Standard
	Cr	52	5280.9	1.4	**-0.1997**	0.013	6.4	ug/L	7059	Standard
	Cr	53	853.4	7.8	**0.5926**	0.073	12.3	ug/L	398	Standard
	Mn	55	536.7	2.0	**-0.0423**	0.001	3.3	ug/L	824	Standard
	Co	59	197.0	2.2	**0.0052**	0.000	5.5	ug/L	167	Standard
	Ni	60	507.0	6.1	**0.0834**	0.017	20.0	ug/L	391	Standard
	Cu	65	155.7	8.0	**0.0077**	0.008	105.4	ug/L	147	Standard
	Zn	66	897.0	2.3	**0.6902**	0.025	3.6	ug/L	184	Standard
>	**Ge**	72	404765.5	1.3				ug/L	422998	Standard
	As	75	-16.9	74.1	**0.0360**	0.012	32.7	ug/L	-58	Standard
	Se	82	14.0	26.9	**-0.0814**	0.033	41.0	ug/L	15	Standard
	Se-1	77	67.7	13.7	**0.2653**	0.141	53.0	ug/L	58	Standard
>	**Ga**	71	36.7	43.8				mg/L	113	Standard
	Rb	85	33.3	45.8				ug/L	27	Standard
	Y	89	352186.3	2.7				ug/L	383780	Standard
>	**Rh**	103	16.7	69.3				ug/L	18	Standard
	Mo	98	126.8	14.3	**0.0405**	0.007	18.0	ug/L	31	Standard
	Ag	107	93.7	15.2	**0.0024**	0.002	93.9	ug/L	84	Standard
	Cd	111	8.8	22.6	**0.0001**	0.001	723.6	mg/L	4	Standard
	Cd	114	24.1	3.4	**0.0003**	0.000	72.3	ug/L	15	Standard
>	**In**	115	497809.9	0.7				ug/L	515400	Standard
	Sn	118	591.7	27.6	**-0.0751**	0.030	39.4	ug/L	1043	Standard
	Sb	123	272.2	30.3	**0.0453**	0.019	41.7	ug/L	227	Standard
	Ba	135	35.7	16.4	**-0.0053**	0.003	58.6	ug/L	31	Standard
	Ce	140	28.3	44.4				ug/L	120	Standard
>	**Tb**	159	770709.7	0.8				ug/L	785817	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	38.3	12.3	**0.0010**	0.001	57.0	ug/L	6	Standard
	Tl	205	33.3	22.9	**-0.0022**	0.001	47.3	ug/L	8	Standard
	Pb	206	247.0	1.1	**0.0023**	0.000	16.6	ug/L	201	Standard
	Pb	207	214.7	5.4	**-0.0019**	0.002	126.0	ug/L	177	Standard
	Pb	208	845.0	2.2	**-0.0035**	0.001	28.3	ug/L	722	Standard
	U	238	21.7	2.7	**0.0006**	0.000	16.5	ug/L	8	Standard
>	**Bi**	209	461147.0	0.7				ug/L	444563	Standard

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Na	23	1.7	173.2	**22.1611**	38.375	173.2	mg/L	0	Standard
Mg	24	51.7	43.6	**0.0390**	0.032	81.4	mg/L	38	Standard
K	39	18.3	56.8	**-0.0397**	0.051	127.4	mg/L	33	Standard
Ca	43	18.3	31.5	**-2.6620**	0.974	36.6	mg/L	48	Standard
Fe	54	59.4	36.8	**-0.0629**	0.020	32.0	mg/L	131	Standard
Fe	57	215.0	20.3	**0.2616**	0.143	54.5	mg/L	153	Standard
> **Sc-1**	45	23902.2	1.4				mg/L	26715	Standard
Cl	35	126188.0	1.4				ug/L	102686	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	1403.4	7.9				ug/L	1897	Standard
P	31	10745.5	1.7				ug/L	18491	Standard
S	34	4509.0	5.4				ug/L	3734	Standard
Sr	88	73.3	23.9				ug/L	47	Standard
C	12	60.0	16.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	286.7	27.1				mg/L	23	Standard
Dy	164	13.3	43.3				mg/L	23	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	0.0					mg/L	13	Standard
I	127	24391.3	3.3				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		121.420	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.690	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.587
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.730
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: PBW A3 WG574733-02
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Method 6020 - Summary Report

Sample ID: LCSW A3 WG574733-03
Sample Date/Time: Tuesday, July 05, 2016 13:30:26
Number of Replicates: 3
Autosampler Position: 254
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75253.1	1.1				ug/L	59517	Standard
	Be	9	52465.7	0.9	**47.6942**	0.407	0.9	ug/L	10	Standard
	Al	27	19457.6	13.1	**0.0887**	0.013	14.8	ug/L	1872	Standard
	Sc	45	26219.3	0.7				ug/L	26715	Standard
	Ti	47	42.3	8.3	**-0.0755**	0.015	19.6	ug/L	54	Standard
	V	51	347185.9	1.1	**46.0879**	0.577	1.3	ug/L	1419	Standard
	Cr	52	344813.3	1.5	**45.6555**	0.590	1.3	ug/L	7059	Standard
	Cr	53	42641.6	1.5	**45.7019**	0.578	1.3	ug/L	398	Standard
	Mn	55	291641.8	0.8	**44.1834**	0.386	0.9	ug/L	824	Standard
	Co	59	337541.5	0.6	**47.7421**	0.301	0.6	ug/L	167	Standard
	Ni	60	89955.9	0.4	**46.0367**	0.248	0.5	ug/L	391	Standard
	Cu	65	90196.7	0.6	**46.1235**	0.303	0.7	ug/L	147	Standard
	Zn	66	54716.3	1.1	**47.5069**	0.557	1.2	ug/L	184	Standard
>	**Ge**	72	439917.4	0.4				ug/L	422998	Standard
	As	75	54401.3	0.8	**46.1577**	0.219	0.5	ug/L	-58	Standard
	Se	82	5653.7	1.8	**46.1601**	0.747	1.6	ug/L	15	Standard
	Se-1	77	3791.8	1.1	**47.4122**	0.680	1.4	ug/L	58	Standard
>	**Ga**	71	46.7	27.0				mg/L	113	Standard
	Rb	85	58.3	17.8				ug/L	27	Standard
	Y	89	386389.0	1.7				ug/L	383780	Standard
>	**Rh**	103	36.7	7.9				ug/L	18	Standard
	Mo	98	233.4	25.1	**0.0751**	0.021	28.0	ug/L	31	Standard
	Ag	107	328195.8	0.3	**46.6035**	0.407	0.9	ug/L	84	Standard
	Cd	111	101238.3	1.6	**45.4924**	0.734	1.6	mg/L	4	Standard
	Cd	114	246610.1	0.9	**45.6678**	0.398	0.9	ug/L	15	Standard
>	**In**	115	538481.9	0.6				ug/L	515400	Standard
	Sn	118	1036.7	17.8	**-0.0095**	0.031	328.0	ug/L	1043	Standard
	Sb	123	220923.7	2.5	**46.1783**	1.215	2.6	ug/L	227	Standard
	Ba	135	93612.6	0.7	**44.5490**	0.173	0.4	ug/L	31	Standard
	Ce	140	61.7	38.3				ug/L	120	Standard
>	**Tb**	159	815528.9	0.9				ug/L	785817	Standard
	Ho	165	16.7	17.3				ug/L	7	Standard
	Tl	203	406531.5	0.8	**46.1202**	0.317	0.7	ug/L	6	Standard
	Tl	205	360394.5	1.1	**46.9336**	0.473	1.0	ug/L	8	Standard
	Pb	206	262399.8	0.8	**47.8193**	0.324	0.7	ug/L	201	Standard
	Pb	207	229918.1	0.8	**46.3432**	0.384	0.8	ug/L	177	Standard
	Pb	208	946627.3	0.3	**47.5019**	0.176	0.4	ug/L	722	Standard
	U	238	352757.6	0.5	**46.6085**	0.236	0.5	ug/L	8	Standard
>	**Bi**	209	489940.7	0.1				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	128.3	56.2	**0.1310**	0.093	71.1	mg/L	38	Standard
K	39	8.3	91.7	**-0.0919**	0.034	37.2	mg/L	33	Standard
Ca	43	18.3	83.3	**-2.9311**	2.464	84.1	mg/L	48	Standard
Fe	54	119.4	11.4	**-0.0185**	0.011	61.6	mg/L	131	Standard
Fe	57	161.7	9.4	**0.0286**	0.051	179.9	mg/L	153	Standard
Sc-1	45	26219.3	0.7				mg/L	26715	Standard
Cl	35	136075.7	1.0				ug/L	102686	Standard
Kr	83	2.7	94.4				ug/L	2	Standard
Br	81	1740.1	13.0				ug/L	1897	Standard
P	31	21206.5	1.7				ug/L	18491	Standard
S	34	4559.0	4.6				ug/L	3734	Standard
Sr	88	63.3	12.1				ug/L	47	Standard
C	12	106.7	30.1				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	373.3	30.9				mg/L	23	Standard
Dy	164	9.4	3.0				mg/L	23	Standard
Ho-1	165	16.7	17.3				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	12173.2	2.5				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		126.440	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.000	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.478
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.207
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: LCSW A3 WG574733-03
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Method 6020 - Summary Report

Sample ID: L1606155606 WG574733-01
Sample Date/Time: Tuesday, July 05, 2016 13:33:37
Number of Replicates: 3
Autosampler Position: 255
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76619.9	1.8				ug/L	59517	Standard
	Be	9	18.3	31.5	**-0.0148**	0.005	32.8	ug/L	10	Standard
	Al	27	3910896.6	0.4	**19.9576**	0.286	1.4	ug/L	1872	Standard
	Sc	45	26187.6	1.6				ug/L	26715	Standard
	Ti	47	216.7	3.9	**0.6322**	0.037	5.9	ug/L	54	Standard
	V	51	2156.8	18.0	**0.1088**	0.051	47.3	ug/L	1419	Standard
	Cr	52	8854.9	1.9	**0.2252**	0.017	7.6	ug/L	7059	Standard
	Cr	53	3685.4	6.8	**3.5869**	0.261	7.3	ug/L	398	Standard
	Mn	55	188641.4	2.2	**28.6195**	0.584	2.0	ug/L	824	Standard
	Co	59	891.4	6.8	**0.1015**	0.009	8.8	ug/L	167	Standard
	Ni	60	1898.1	3.8	**0.7786**	0.032	4.1	ug/L	391	Standard
	Cu	65	5241.9	1.3	**2.6142**	0.027	1.0	ug/L	147	Standard
	Zn	66	15313.7	1.4	**13.2221**	0.195	1.5	ug/L	184	Standard
>	**Ge**	72	438583.0	0.6				ug/L	422998	Standard
	As	75	190.6	13.9	**0.2138**	0.023	10.9	ug/L	-58	Standard
	Se	82	59.3	14.4	**0.2816**	0.072	25.7	ug/L	15	Standard
	Se-1	77	189.0	1.4	**1.7354**	0.021	1.2	ug/L	58	Standard
>	**Ga**	71	75.0	6.7				mg/L	113	Standard
	Rb	85	20624.0	2.3				ug/L	27	Standard
	Y	89	378479.1	0.9				ug/L	383780	Standard
>	**Rh**	103	45.0	22.2				ug/L	18	Standard
	Mo	98	258.8	6.7	**0.0864**	0.007	7.7	ug/L	31	Standard
	Ag	107	231.0	8.2	**0.0216**	0.003	13.8	ug/L	84	Standard
	Cd	111	26.2	5.8	**0.0079**	0.001	7.7	mg/L	4	Standard
	Cd	114	86.1	15.5	**0.0117**	0.002	20.0	ug/L	15	Standard
>	**In**	115	525997.4	1.0				ug/L	515400	Standard
	Sn	118	1326.7	8.1	**0.0437**	0.020	44.8	ug/L	1043	Standard
	Sb	123	2784.8	25.2	**0.5796**	0.150	25.9	ug/L	227	Standard
	Ba	135	38616.5	0.6	**18.8006**	0.193	1.0	ug/L	31	Standard
	Ce	140	261.7	12.3				ug/L	120	Standard
>	**Tb**	159	806665.6	0.7				ug/L	785817	Standard
	Ho	165	35.0	57.1				ug/L	7	Standard
	Tl	203	190.3	8.2	**0.0185**	0.002	10.3	ug/L	6	Standard
	Tl	205	181.7	16.1	**0.0174**	0.004	22.6	ug/L	8	Standard
	Pb	206	1160.7	2.5	**0.1708**	0.004	2.4	ug/L	201	Standard
	Pb	207	969.4	2.3	**0.1520**	0.004	2.8	ug/L	177	Standard
	Pb	208	4053.9	2.2	**0.1595**	0.003	2.0	ug/L	722	Standard
	U	238	140.0	14.3	**0.0164**	0.003	16.0	ug/L	8	Standard
>	**Bi**	209	479439.2	0.6				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	12810.4	0.3	**16.3809**	0.300	1.8	mg/L	38	Standard
K	39	416.7	14.1	**1.7325**	0.269	15.5	mg/L	33	Standard
Ca	43	133.3	18.9	**15.4999**	3.812	24.6	mg/L	48	Standard
Fe	54	182.3	5.9	**0.0333**	0.008	24.2	mg/L	131	Standard
Fe	57	325.0	8.0	**0.5460**	0.093	17.0	mg/L	153	Standard
> **Sc-1**	45	26187.6	1.6				mg/L	26715	Standard
Cl	35	143270.9	0.6				ug/L	102686	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	9549.7	3.1				ug/L	1897	Standard
P	31	23338.0	0.5				ug/L	18491	Standard
S	34	4283.9	1.4				ug/L	3734	Standard
Sr	88	161.7	12.5				ug/L	47	Standard
C	12	90.0	40.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	350.0	28.6				mg/L	23	Standard
Dy	164	44.8	33.5				mg/L	23	Standard
Ho-1	165	35.0	57.1				mg/L	7	Standard
Er	166	40.0	50.0				mg/L	13	Standard
I	127	21006.2	2.3				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.737	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.685	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.056
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.845
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606155606DP WG574733-04
Sample Date/Time: Tuesday, July 05, 2016 13:36:49
Number of Replicates: 3
Autosampler Position: 256
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75933.1	1.2				ug/L	59517	Standard
	Be	9	35.0	37.8	**0.0004**	0.012	3160.2	ug/L	10	Standard
	Al	27	4030525.5	1.9	**20.7518**	0.376	1.8	ug/L	1872	Standard
	Sc	45	26191.0	3.1				ug/L	26715	Standard
	Ti	47	223.3	0.9	**0.6703**	0.011	1.7	ug/L	54	Standard
	V	51	2211.3	10.7	**0.1197**	0.030	25.3	ug/L	1419	Standard
	Cr	52	9125.1	1.2	**0.2772**	0.021	7.5	ug/L	7059	Standard
	Cr	53	3940.5	0.6	**3.9170**	0.052	1.3	ug/L	398	Standard
	Mn	55	191919.3	1.3	**29.4820**	0.525	1.8	ug/L	824	Standard
	Co	59	912.7	3.8	**0.1061**	0.005	4.7	ug/L	167	Standard
	Ni	60	1899.1	0.3	**0.7913**	0.007	0.9	ug/L	391	Standard
	Cu	65	5124.5	0.7	**2.5866**	0.042	1.6	ug/L	147	Standard
	Zn	66	14606.7	1.3	**12.7631**	0.293	2.3	ug/L	184	Standard
>	**Ge**	72	433247.6	1.0				ug/L	422998	Standard
	As	75	222.2	17.0	**0.2430**	0.034	14.0	ug/L	-58	Standard
	Se	82	57.5	11.7	**0.2732**	0.056	20.6	ug/L	15	Standard
	Se-1	77	192.0	7.7	**1.8033**	0.182	10.1	ug/L	58	Standard
>	**Ga**	71	51.7	39.1				mg/L	113	Standard
	Rb	85	21695.5	0.6				ug/L	27	Standard
	Y	89	374664.2	2.4				ug/L	383780	Standard
>	**Rh**	103	30.0	50.0				ug/L	18	Standard
	Mo	98	172.6	20.9	**0.0554**	0.015	26.4	ug/L	31	Standard
	Ag	107	158.7	6.7	**0.0113**	0.002	16.0	ug/L	84	Standard
	Cd	111	22.3	2.5	**0.0062**	0.001	8.3	mg/L	4	Standard
	Cd	114	38.0	66.0	**0.0027**	0.005	179.1	ug/L	15	Standard
>	**In**	115	521684.0	2.5				ug/L	515400	Standard
	Sn	118	1256.7	9.1	**0.0339**	0.025	72.5	ug/L	1043	Standard
	Sb	123	1042.2	23.3	**0.2095**	0.057	27.4	ug/L	227	Standard
	Ba	135	40481.0	0.1	**19.8796**	0.481	2.4	ug/L	31	Standard
	Ce	140	203.3	13.5				ug/L	120	Standard
>	**Tb**	159	813776.6	1.4				ug/L	785817	Standard
	Ho	165	30.0	28.9				ug/L	7	Standard
	Tl	203	111.3	20.0	**0.0094**	0.003	27.1	ug/L	6	Standard
	Tl	205	95.0	18.2	**0.0060**	0.002	36.8	ug/L	8	Standard
	Pb	206	1017.0	5.1	**0.1458**	0.008	5.3	ug/L	201	Standard
	Pb	207	878.7	4.6	**0.1351**	0.010	7.2	ug/L	177	Standard
	Pb	208	3806.5	1.6	**0.1487**	0.002	1.3	ug/L	722	Standard
	U	238	103.0	16.6	**0.0116**	0.002	19.0	ug/L	8	Standard
>	**Bi**	209	474764.8	1.2				ug/L	444563	Standard

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Na	23	5.0	100.0	**58.6080**	57.735	98.5	mg/L	0	Standard
Mg	24	13511.0	1.2	**17.2878**	0.715	4.1	mg/L	38	Standard
K	39	463.3	5.3	**1.9393**	0.076	3.9	mg/L	33	Standard
Ca	43	138.3	5.5	**16.3195**	0.701	4.3	mg/L	48	Standard
Fe	54	209.1	15.1	**0.0554**	0.027	48.7	mg/L	131	Standard
Fe	57	301.7	11.3	**0.4732**	0.127	26.9	mg/L	153	Standard
> **Sc-1**	45	26191.0	3.1				mg/L	26715	Standard
Cl	35	146984.2	1.1				ug/L	102686	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	9146.1	7.4				ug/L	1897	Standard
P	31	24466.4	0.2				ug/L	18491	Standard
S	34	4520.7	2.5				ug/L	3734	Standard
Sr	88	166.7	4.6				ug/L	47	Standard
C	12	113.3	31.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	370.0	37.5				mg/L	23	Standard
Dy	164	36.2	42.2				mg/L	23	Standard
Ho-1	165	30.0	28.9				mg/L	7	Standard
Er	166	10.0					mg/L	13	Standard
I	127	21368.4	3.5				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		127.583	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.423	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.219
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.794
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606155606S WG574733-05
Sample Date/Time: Tuesday, July 05, 2016 13:40:00
Number of Replicates: 3
Autosampler Position: 257
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75055.5	1.7				ug/L	59517	Standard
	Be	9	51427.1	1.3	**46.8865**	1.403	3.0	ug/L	10	Standard
	Al	27	3867228.5	0.6	**20.1455**	0.239	1.2	ug/L	1872	Standard
	Sc	45	25756.9	0.4				ug/L	26715	Standard
	Ti	47	229.7	13.8	**0.7070**	0.125	17.7	ug/L	54	Standard
	V	51	342494.9	0.4	**46.7262**	0.577	1.2	ug/L	1419	Standard
	Cr	52	335758.4	1.1	**45.6872**	0.479	1.0	ug/L	7059	Standard
	Cr	53	44709.2	1.8	**49.2730**	0.606	1.2	ug/L	398	Standard
	Mn	55	465754.2	1.2	**72.6026**	1.516	2.1	ug/L	824	Standard
	Co	59	330302.5	0.6	**48.0126**	0.688	1.4	ug/L	167	Standard
	Ni	60	87200.9	0.9	**45.8624**	0.759	1.7	ug/L	391	Standard
	Cu	65	90478.0	0.4	**47.5490**	0.240	0.5	ug/L	147	Standard
	Zn	66	65640.9	0.8	**58.6059**	0.684	1.2	ug/L	184	Standard
>	Ge	72	428091.7	0.9				ug/L	422998	Standard
	As	75	54750.9	0.8	**47.7393**	0.622	1.3	ug/L	-58	Standard
	Se	82	5672.5	0.9	**47.6028**	0.560	1.2	ug/L	15	Standard
	Se-1	77	3846.5	0.9	**49.4522**	0.346	0.7	ug/L	58	Standard
>	Ga	71	90.0	9.6				mg/L	113	Standard
	Rb	85	20437.1	1.6				ug/L	27	Standard
	Y	89	377705.9	1.8				ug/L	383780	Standard
>	Rh	103	50.0	34.6				ug/L	18	Standard
	Mo	98	196.9	21.6	**0.0640**	0.017	26.4	ug/L	31	Standard
	Ag	107	310531.6	0.4	**45.2367**	1.075	2.4	ug/L	84	Standard
	Cd	111	98557.9	1.3	**45.4258**	0.329	0.7	mg/L	4	Standard
	Cd	114	236318.7	1.7	**44.8838**	0.149	0.3	ug/L	15	Standard
>	In	115	525039.2	2.0				ug/L	515400	Standard
	Sn	118	1146.7	23.4	**0.0141**	0.049	351.3	ug/L	1043	Standard
	Sb	123	218019.3	1.5	**46.7404**	0.319	0.7	ug/L	227	Standard
	Ba	135	129898.5	0.9	**63.4192**	0.714	1.1	ug/L	31	Standard
	Ce	140	213.3	10.6				ug/L	120	Standard
>	Tb	159	817213.0	1.0				ug/L	785817	Standard
	Ho	165	41.7	48.5				ug/L	7	Standard
	Tl	203	395148.4	0.1	**46.2564**	0.513	1.1	ug/L	6	Standard
	Tl	205	352198.1	0.4	**47.3280**	0.693	1.5	ug/L	8	Standard
	Pb	206	255969.8	0.5	**48.1345**	0.718	1.5	ug/L	201	Standard
	Pb	207	224158.3	0.2	**46.6218**	0.613	1.3	ug/L	177	Standard
	Pb	208	922656.6	1.4	**47.7783**	1.195	2.5	ug/L	722	Standard
	U	238	350569.7	1.3	**47.7978**	1.075	2.2	ug/L	8	Standard
>	Bi	209	474862.1	1.1				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	12988.9	3.1	**16.8862**	0.587	3.5	mg/L	38	Standard
K	39	443.3	11.8	**1.8832**	0.231	12.3	mg/L	33	Standard
Ca	43	115.0	15.7	**12.8997**	3.006	23.3	mg/L	48	Standard
Fe	54	209.4	20.6	**0.0585**	0.036	62.3	mg/L	131	Standard
Fe	57	328.3	11.2	**0.5732**	0.119	20.8	mg/L	153	Standard
Sc-1	45	25756.9	0.4				mg/L	26715	Standard
Cl	35	147627.8	0.9				ug/L	102686	Standard
Kr	83	2.0	132.3				ug/L	2	Standard
Br	81	8559.1	5.5				ug/L	1897	Standard
P	31	24342.9	2.3				ug/L	18491	Standard
S	34	4492.3	1.5				ug/L	3734	Standard
Sr	88	155.0	11.2				ug/L	47	Standard
C	12	103.3	20.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	356.7	17.1				mg/L	23	Standard
Dy	164	40.8	23.2				mg/L	23	Standard
Ho-1	165	41.7	48.5				mg/L	7	Standard
Er	166	53.3	103.3				mg/L	13	Standard
I	127	20824.3	1.7				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		126.108	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.204	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.870
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.816
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606155606SD WG574733-06
Sample Date/Time: Tuesday, July 05, 2016 13:43:12
Number of Replicates: 3
Autosampler Position: 258
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75425.6	1.6				ug/L	59517	Standard
	Be	9	52229.9	0.7	**47.3741**	0.466	1.0	ug/L	10	Standard
	Al	27	3941314.0	0.6	**20.4304**	0.209	1.0	ug/L	1872	Standard
	Sc	45	26341.2	2.2				ug/L	26715	Standard
	Ti	47	227.0	11.1	**0.6980**	0.102	14.6	ug/L	54	Standard
	V	51	338759.1	0.8	**46.2904**	0.608	1.3	ug/L	1419	Standard
	Cr	52	337347.3	1.4	**45.9861**	0.730	1.6	ug/L	7059	Standard
	Cr	53	44196.1	2.1	**48.7900**	1.277	2.6	ug/L	398	Standard
	Mn	55	470097.8	1.0	**73.3990**	1.224	1.7	ug/L	824	Standard
	Co	59	332055.0	0.9	**48.3460**	0.680	1.4	ug/L	167	Standard
	Ni	60	87689.4	0.9	**46.1956**	0.660	1.4	ug/L	391	Standard
	Cu	65	91602.1	0.1	**48.2208**	0.386	0.8	ug/L	147	Standard
	Zn	66	66594.0	0.5	**59.5555**	0.165	0.3	ug/L	184	Standard
>	Ge	72	427385.4	0.7				ug/L	422998	Standard
	As	75	55710.5	0.4	**48.6539**	0.402	0.8	ug/L	-58	Standard
	Se	82	5710.0	0.6	**47.9965**	0.138	0.3	ug/L	15	Standard
	Se-1	77	3844.5	1.2	**49.5126**	0.967	2.0	ug/L	58	Standard
>	Ga	71	86.7	33.3				mg/L	113	Standard
	Rb	85	20790.9	1.5				ug/L	27	Standard
	Y	89	372329.3	0.5				ug/L	383780	Standard
>	Rh	103	38.3	49.4				ug/L	18	Standard
	Mo	98	161.9	10.8	**0.0517**	0.007	13.3	ug/L	31	Standard
	Ag	107	311512.2	1.5	**45.9589**	0.594	1.3	ug/L	84	Standard
	Cd	111	97931.9	1.3	**45.7253**	0.707	1.5	mg/L	4	Standard
	Cd	114	239848.4	1.3	**46.1512**	0.820	1.8	ug/L	15	Standard
>	In	115	518257.6	0.7				ug/L	515400	Standard
	Sn	118	1211.7	13.0	**0.0273**	0.028	102.7	ug/L	1043	Standard
	Sb	123	223032.8	2.0	**48.4363**	0.778	1.6	ug/L	227	Standard
	Ba	135	130867.1	1.2	**64.7237**	1.155	1.8	ug/L	31	Standard
	Ce	140	210.0	8.6				ug/L	120	Standard
>	Tb	159	810581.7	0.8				ug/L	785817	Standard
	Ho	165	33.3	31.2				ug/L	7	Standard
	Tl	203	395593.1	0.1	**46.4862**	0.433	0.9	ug/L	6	Standard
	Tl	205	350046.0	1.0	**47.2197**	0.799	1.7	ug/L	8	Standard
	Pb	206	257494.3	0.7	**48.6056**	0.475	1.0	ug/L	201	Standard
	Pb	207	224688.5	1.1	**46.9098**	0.560	1.2	ug/L	177	Standard
	Pb	208	927682.5	0.4	**48.2177**	0.395	0.8	ug/L	722	Standard
	U	238	351394.1	0.5	**48.0896**	0.352	0.7	ug/L	8	Standard
>	Bi	209	473032.2	0.8				ug/L	444563	Standard

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Na	23	3.3	86.6	**40.0618**	34.696	86.6	mg/L	0	Standard
Mg	24	13270.8	0.6	**16.8737**	0.385	2.3	mg/L	38	Standard
K	39	443.3	4.3	**1.8399**	0.099	5.4	mg/L	33	Standard
Ca	43	145.0	24.1	**17.2615**	5.557	32.2	mg/L	48	Standard
Fe	54	189.1	12.3	**0.0380**	0.019	49.4	mg/L	131	Standard
Fe	57	331.7	11.3	**0.5606**	0.120	21.4	mg/L	153	Standard
> **Sc-1**	45	26341.2	2.2				mg/L	26715	Standard
Cl	35	145578.7	0.6				ug/L	102686	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	9316.2	7.5				ug/L	1897	Standard
P	31	23783.7	1.2				ug/L	18491	Standard
S	34	4490.7	1.7				ug/L	3734	Standard
Sr	88	178.3	10.6				ug/L	47	Standard
C	12	130.0	15.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	270.0	22.5				mg/L	23	Standard
Dy	164	65.4	24.2				mg/L	23	Standard
Ho-1	165	33.3	31.2				mg/L	7	Standard
Er	166	26.7	43.3				mg/L	13	Standard
I	127	20488.9	4.2				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		126.730	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.037	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.554
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.404
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: L1606155606SD WG574733-06
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Method 6020 - Summary Report

Sample ID: L1606164401
Sample Date/Time: Tuesday, July 05, 2016 13:46:23
Number of Replicates: 3
Autosampler Position: 259
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76616.6	1.4				ug/L	59517	Standard
	Be	9	48.3	15.8	**0.0121**	0.007	55.5	ug/L	10	Standard
	Al	27	5829715.8	1.0	**29.7579**	0.675	2.3	ug/L	1872	Standard
	Sc	45	25778.6	2.5				ug/L	26715	Standard
	Ti	47	312.0	19.2	**1.0256**	0.243	23.7	ug/L	54	Standard
	V	51	6216.1	0.7	**0.6560**	0.005	0.8	ug/L	1419	Standard
	Cr	52	9024.0	0.2	**0.2548**	0.007	2.7	ug/L	7059	Standard
	Cr	53	2746.9	3.1	**2.5854**	0.085	3.3	ug/L	398	Standard
	Mn	55	59663.6	0.9	**9.0117**	0.099	1.1	ug/L	824	Standard
	Co	59	827.7	4.2	**0.0930**	0.004	4.7	ug/L	167	Standard
	Ni	60	1883.5	2.6	**0.7763**	0.020	2.6	ug/L	391	Standard
	Cu	65	1566.1	3.7	**0.7300**	0.031	4.3	ug/L	147	Standard
	Zn	66	3020.3	2.5	**2.4939**	0.051	2.0	ug/L	184	Standard
>	**Ge**	72	436222.3	0.6				ug/L	422998	Standard
	As	75	1773.0	1.9	**1.5670**	0.022	1.4	ug/L	-58	Standard
	Se	82	71.3	12.9	**0.3841**	0.080	20.9	ug/L	15	Standard
	Se-1	77	170.7	3.2	**1.5138**	0.060	3.9	ug/L	58	Standard
>	**Ga**	71	300.0	5.8				mg/L	113	Standard
	Rb	85	8899.3	2.8				ug/L	27	Standard
	Y	89	377425.4	1.5				ug/L	383780	Standard
>	**Rh**	103	51.7	34.0				ug/L	18	Standard
	Mo	98	1955.3	0.8	**0.7051**	0.003	0.4	ug/L	31	Standard
	Ag	107	180.0	28.9	**0.0139**	0.007	53.4	ug/L	84	Standard
	Cd	111	36.5	64.6	**0.0125**	0.011	85.8	mg/L	4	Standard
	Cd	114	100.6	38.0	**0.0143**	0.007	49.9	ug/L	15	Standard
>	**In**	115	530790.9	1.2				ug/L	515400	Standard
	Sn	118	785.0	19.4	**-0.0491**	0.027	55.5	ug/L	1043	Standard
	Sb	123	2988.8	25.6	**0.6184**	0.167	27.0	ug/L	227	Standard
	Ba	135	37944.8	0.3	**18.3068**	0.216	1.2	ug/L	31	Standard
	Ce	140	2498.5	3.6				ug/L	120	Standard
>	**Tb**	159	810955.6	2.0				ug/L	785817	Standard
	Ho	165	63.3	4.6				ug/L	7	Standard
	Tl	203	358.0	16.7	**0.0379**	0.007	18.5	ug/L	6	Standard
	Tl	205	328.3	7.7	**0.0369**	0.003	9.1	ug/L	8	Standard
	Pb	206	741.0	8.2	**0.0926**	0.011	12.3	ug/L	201	Standard
	Pb	207	623.7	8.6	**0.0807**	0.011	13.4	ug/L	177	Standard
	Pb	208	2525.4	7.7	**0.0811**	0.010	12.2	ug/L	722	Standard
	U	238	728.7	3.0	**0.0959**	0.003	3.0	ug/L	8	Standard
>	**Bi**	209	479285.7	0.6				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	7551.9	2.4	**9.7998**	0.390	4.0	mg/L	38	Standard
K	39	140.0	24.7	**0.5081**	0.168	33.0	mg/L	33	Standard
Ca	43	110.0	18.2	**12.0854**	3.380	28.0	mg/L	48	Standard
Fe	54	250.8	20.1	**0.0937**	0.048	50.9	mg/L	131	Standard
Fe	57	298.3	17.2	**0.4766**	0.167	34.9	mg/L	153	Standard
Sc-1	45	25778.6	2.5				mg/L	26715	Standard
Cl	35	161383.6	0.5				ug/L	102686	Standard
Kr	83	1.7	124.9				ug/L	2	Standard
Br	81	9316.2	3.5				ug/L	1897	Standard
P	31	21900.8	2.3				ug/L	18491	Standard
S	34	4459.0	2.4				ug/L	3734	Standard
Sr	88	183.3	4.2				ug/L	47	Standard
C	12	60.0	76.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	193.3	57.0				mg/L	23	Standard
Dy	164	98.1	6.4				mg/L	23	Standard
Ho-1	165	63.3	4.6				mg/L	7	Standard
Er	166	110.0	15.7				mg/L	13	Standard
I	127	26261.1	7.1				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.731	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.126	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.986
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.811
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606164401PS WG575054-01
Sample Date/Time: Tuesday, July 05, 2016 13:49:35
Number of Replicates: 3
Autosampler Position: 260
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74516.1	1.5				ug/L	59517	Standard
	Be	9	52569.4	1.7	**48.2676**	1.145	2.4	ug/L	10	Standard
	Al	27	5749522.0	1.3	**30.1713**	0.276	0.9	ug/L	1872	Standard
	Sc	45	26155.9	1.0				ug/L	26715	Standard
	Ti	47	312.7	6.8	**1.0288**	0.086	8.4	ug/L	54	Standard
	V	51	357064.7	0.4	**47.8252**	0.554	1.2	ug/L	1419	Standard
	Cr	52	349180.8	0.4	**46.6641**	0.365	0.8	ug/L	7059	Standard
	Cr	53	44301.3	1.5	**47.9175**	0.409	0.9	ug/L	398	Standard
	Mn	55	351316.0	0.6	**53.7226**	0.574	1.1	ug/L	824	Standard
	Co	59	337927.7	0.8	**48.2184**	0.424	0.9	ug/L	167	Standard
	Ni	60	89777.9	0.5	**46.3520**	0.323	0.7	ug/L	391	Standard
	Cu	65	90155.1	1.1	**46.5092**	0.540	1.2	ug/L	147	Standard
	Zn	66	57145.9	1.6	**50.0611**	0.688	1.4	ug/L	184	Standard
>	Ge	72	436081.8	0.8				ug/L	422998	Standard
	As	75	56601.2	0.3	**48.4476**	0.544	1.1	ug/L	-58	Standard
	Se	82	5814.0	0.2	**47.8968**	0.298	0.6	ug/L	15	Standard
	Se-1	77	3881.8	2.4	**48.9914**	1.474	3.0	ug/L	58	Standard
>	Ga	71	301.7	9.7				mg/L	113	Standard
	Rb	85	9021.0	2.0				ug/L	27	Standard
	Y	89	372541.7	1.5				ug/L	383780	Standard
>	Rh	103	61.7	32.8				ug/L	18	Standard
	Mo	98	2021.6	2.3	**0.7260**	0.017	2.3	ug/L	31	Standard
	Ag	107	320775.0	0.2	**46.0038**	0.388	0.8	ug/L	84	Standard
	Cd	111	102438.4	0.6	**46.4916**	0.431	0.9	mg/L	4	Standard
	Cd	114	249134.9	1.6	**46.5943**	0.639	1.4	ug/L	15	Standard
>	In	115	533169.9	0.8				ug/L	515400	Standard
	Sn	118	1023.4	15.4	**-0.0102**	0.025	244.2	ug/L	1043	Standard
	Sb	123	226043.3	1.8	**47.7236**	1.168	2.4	ug/L	227	Standard
	Ba	135	131818.6	0.9	**63.3696**	0.912	1.4	ug/L	31	Standard
	Ce	140	3230.4	36.1				ug/L	120	Standard
>	Tb	159	819316.9	1.4				ug/L	785817	Standard
	Ho	165	58.3	24.7				ug/L	7	Standard
	Tl	203	408530.0	0.2	**47.3939**	0.288	0.6	ug/L	6	Standard
	Tl	205	362908.7	1.4	**48.3261**	0.425	0.9	ug/L	8	Standard
	Pb	206	265717.8	0.6	**49.5188**	0.296	0.6	ug/L	201	Standard
	Pb	207	231564.8	0.1	**47.7312**	0.412	0.9	ug/L	177	Standard
	Pb	208	954451.3	0.7	**48.9780**	0.546	1.1	ug/L	722	Standard
	U	238	362163.7	0.8	**48.9344**	0.751	1.5	ug/L	8	Standard
>	Bi	209	479135.9	0.8				ug/L	444563	Standard

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Na	23	1.7	173.2	**20.1707**	34.928	173.2	mg/L	0	Standard
Mg	24	7863.7	3.4	**10.0541**	0.387	3.9	mg/L	38	Standard
K	39	158.3	10.2	**0.5788**	0.073	12.7	mg/L	33	Standard
Ca	43	93.3	16.4	**9.1144**	2.369	26.0	mg/L	48	Standard
Fe	54	232.2	13.8	**0.0746**	0.027	36.1	mg/L	131	Standard
Fe	57	300.0	1.7	**0.4675**	0.020	4.2	mg/L	153	Standard
Sc-1	45	26155.9	1.0				mg/L	26715	Standard
Cl	35	164562.9	0.4				ug/L	102686	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	9466.3	3.3				ug/L	1897	Standard
P	31	22162.9	1.5				ug/L	18491	Standard
S	34	4625.7	2.3				ug/L	3734	Standard
Sr	88	186.7	19.0				ug/L	47	Standard
C	12	110.0	9.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	150.0	34.6				mg/L	23	Standard
Dy	164	139.7	33.2				mg/L	23	Standard
Ho-1	165	58.3	24.7				mg/L	7	Standard
Er	166	76.7	41.9				mg/L	13	Standard
I	127	26352.9	4.0				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		125.202	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.093	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.448
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.777
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: L1606164401PS WG575054-01
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Method 6020 - Summary Report

Sample ID: L1606164401SDL WG575054-02
Sample Date/Time: Tuesday, July 05, 2016 13:52:46
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68968.5	4.9				ug/L	59517	Standard
	Be	9	33.3	37.7	**0.0022**	0.014	615.4	ug/L	10	Standard
	Al	27	1114648.2	0.5	**6.3195**	0.306	4.8	ug/L	1872	Standard
	Sc	45	22653.6	4.2				ug/L	26715	Standard
	Ti	47	78.0	25.0	**0.0994**	0.094	94.4	ug/L	54	Standard
	V	51	2308.2	5.7	**0.1572**	0.026	16.4	ug/L	1419	Standard
	Cr	52	6212.9	0.3	**-0.0570**	0.021	37.5	ug/L	7059	Standard
	Cr	53	1163.4	5.9	**0.9668**	0.109	11.3	ug/L	398	Standard
	Mn	55	11627.5	1.5	**1.8009**	0.012	0.7	ug/L	824	Standard
	Co	59	335.3	3.5	**0.0268**	0.003	9.8	ug/L	167	Standard
	Ni	60	706.3	3.8	**0.1971**	0.014	7.3	ug/L	391	Standard
	Cu	65	564.7	7.5	**0.2374**	0.026	10.9	ug/L	147	Standard
	Zn	66	1475.4	2.7	**1.2466**	0.053	4.3	ug/L	184	Standard
>	**Ge**	72	402341.3	2.0				ug/L	422998	Standard
	As	75	346.7	7.2	**0.3728**	0.020	5.4	ug/L	-58	Standard
	Se	82	30.8	16.5	**0.0704**	0.049	69.7	ug/L	15	Standard
	Se-1	77	80.0	11.5	**0.4427**	0.150	33.9	ug/L	58	Standard
>	**Ga**	71	76.7	16.4				mg/L	113	Standard
	Rb	85	1805.1	3.4				ug/L	27	Standard
	Y	89	343575.6	3.9				ug/L	383780	Standard
>	**Rh**	103	18.3	56.8				ug/L	18	Standard
	Mo	98	390.6	5.7	**0.1463**	0.012	8.5	ug/L	31	Standard
	Ag	107	130.3	10.0	**0.0085**	0.003	29.8	ug/L	84	Standard
	Cd	111	14.9	21.8	**0.0032**	0.001	45.3	mg/L	4	Standard
	Cd	114	66.1	51.2	**0.0089**	0.007	75.4	ug/L	15	Standard
>	**In**	115	488341.3	2.3				ug/L	515400	Standard
	Sn	118	456.7	15.4	**-0.0975**	0.015	15.1	ug/L	1043	Standard
	Sb	123	1419.7	28.0	**0.3122**	0.098	31.4	ug/L	227	Standard
	Ba	135	7415.1	1.3	**3.8708**	0.105	2.7	ug/L	31	Standard
	Ce	140	438.3	21.2				ug/L	120	Standard
>	**Tb**	159	753437.8	2.2				ug/L	785817	Standard
	Ho	165	16.7	34.6				ug/L	7	Standard
	Tl	203	164.7	10.7	**0.0165**	0.002	14.7	ug/L	6	Standard
	Tl	205	158.3	19.3	**0.0154**	0.004	27.8	ug/L	8	Standard
	Pb	206	707.3	2.3	**0.0931**	0.004	4.1	ug/L	201	Standard
	Pb	207	608.3	6.5	**0.0840**	0.009	11.1	ug/L	177	Standard
	Pb	208	2434.7	3.4	**0.0828**	0.004	5.2	ug/L	722	Standard
	U	238	168.7	13.2	**0.0215**	0.003	16.2	ug/L	8	Standard
>	**Bi**	209	456099.5	1.6				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	1440.1	3.2	**2.1032**	0.153	7.3	mg/L	38	Standard
K	39	50.0	45.8	**0.1317**	0.124	94.3	mg/L	33	Standard
Ca	43	25.0	20.0	**-1.2510**	0.805	64.3	mg/L	48	Standard
Fe	54	91.1	22.5	**-0.0294**	0.023	77.1	mg/L	131	Standard
Fe	57	236.7	18.0	**0.3852**	0.170	44.1	mg/L	153	Standard
> **Sc-1**	45	22653.6	4.2				mg/L	26715	Standard
Cl	35	143186.7	0.5				ug/L	102686	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	3040.3	5.4				ug/L	1897	Standard
P	31	9531.3	3.5				ug/L	18491	Standard
S	34	4564.0	1.2				ug/L	3734	Standard
Sr	88	95.0	38.0				ug/L	47	Standard
C	12	70.0	14.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	210.0	90.9				mg/L	23	Standard
Dy	164	41.7	61.5				mg/L	23	Standard
Ho-1	165	16.7	34.6				mg/L	7	Standard
Er	166	33.3	34.6				mg/L	13	Standard
I	127	24177.6	2.7				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.881	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.117	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.750
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.595
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606164401SDL WG575054-02
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Method 6020 - Summary Report

Sample ID: L1606144507
Sample Date/Time: Tuesday, July 05, 2016 13:57:19
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63521.5	6.2				ug/L	59517	Standard
	Be	9	121.7	36.8	**0.0989**	0.044	44.5	ug/L	10	Standard
	Al	27	1470998.0	0.4	**9.0695**	0.565	6.2	ug/L	1872	Standard
	Sc	45	21784.0	2.8				ug/L	26715	Standard
	Ti	47	269.0	3.9	**1.0072**	0.056	5.6	ug/L	54	Standard
	V	51	12908.8	1.8	**1.8031**	0.024	1.3	ug/L	1419	Standard
	Cr	52	18170.6	1.7	**1.8560**	0.032	1.7	ug/L	7059	Standard
	Cr	53	2371.9	2.8	**2.5458**	0.078	3.1	ug/L	398	Standard
	Mn	55	243743.4	0.9	**42.5527**	0.134	0.3	ug/L	824	Standard
	Co	59	5371.6	1.2	**0.8510**	0.007	0.8	ug/L	167	Standard
	Ni	60	3932.5	1.1	**2.1296**	0.020	0.9	ug/L	391	Standard
	Cu	65	4206.6	2.2	**2.4046**	0.064	2.7	ug/L	147	Standard
	Zn	66	10256.5	1.5	**10.1390**	0.214	2.1	ug/L	184	Standard
>	**Ge**	72	381705.7	0.6				ug/L	422998	Standard
	As	75	1072.0	0.6	**1.0988**	0.010	0.9	ug/L	-58	Standard
	Se	82	18.4	14.1	**-0.0324**	0.024	73.1	ug/L	15	Standard
	Se-1	77	64.3	9.5	**0.2719**	0.091	33.5	ug/L	58	Standard
>	**Ga**	71	1465.1	2.7				mg/L	113	Standard
	Rb	85	14720.5	3.8				ug/L	27	Standard
	Y	89	341301.8	1.4				ug/L	383780	Standard
>	**Rh**	103	8.3	91.7				ug/L	18	Standard
	Mo	98	126.5	26.8	**0.0443**	0.014	32.5	ug/L	31	Standard
	Ag	107	192.7	28.1	**0.0200**	0.009	43.7	ug/L	84	Standard
	Cd	111	199.8	13.5	**0.1008**	0.013	13.2	mg/L	4	Standard
	Cd	114	462.8	4.8	**0.0956**	0.004	4.5	ug/L	15	Standard
>	**In**	115	460541.5	0.9				ug/L	515400	Standard
	Sn	118	393.3	37.6	**-0.1049**	0.029	27.2	ug/L	1043	Standard
	Sb	123	768.9	15.0	**0.1717**	0.029	16.8	ug/L	227	Standard
	Ba	135	30655.0	0.9	**17.0437**	0.237	1.4	ug/L	31	Standard
	Ce	140	100441.8	0.3				ug/L	120	Standard
>	**Tb**	159	713512.5	1.9				ug/L	785817	Standard
	Ho	165	1641.8	4.9				ug/L	7	Standard
	Tl	203	255.0	31.6	**0.0288**	0.010	33.3	ug/L	6	Standard
	Tl	205	215.0	25.9	**0.0247**	0.008	32.9	ug/L	8	Standard
	Pb	206	47750.5	0.9	**9.7593**	0.090	0.9	ug/L	201	Standard
	Pb	207	40492.7	0.4	**9.1496**	0.125	1.4	ug/L	177	Standard
	Pb	208	169051.4	0.1	**9.5110**	0.155	1.6	ug/L	722	Standard
	U	238	456.7	13.8	**0.0653**	0.008	12.5	ug/L	8	Standard
>	**Bi**	209	435291.5	1.8				ug/L	444563	Standard

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Na	23	1.7	173.2	**23.9102**	41.405	173.2	mg/L	0	Standard
Mg	24	50.0	65.6	**0.0425**	0.049	114.5	mg/L	38	Standard
K	39	58.3	17.8	**0.1831**	0.047	25.8	mg/L	33	Standard
Ca	43	36.7	15.7	**1.2184**	1.271	104.3	mg/L	48	Standard
Fe	54	1380.0	4.8	**1.2483**	0.076	6.1	mg/L	131	Standard
Fe	57	561.7	6.7	**1.6561**	0.203	12.3	mg/L	153	Standard
> **Sc-1**	45	21784.0	2.8				mg/L	26715	Standard
Cl	35	131328.1	1.7				ug/L	102686	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1660.1	10.6				ug/L	1897	Standard
P	31	7797.0	2.3				ug/L	18491	Standard
S	34	4805.8	1.6				ug/L	3734	Standard
Sr	88	70.0	18.9				ug/L	47	Standard
C	12	80.0	25.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	336.7	14.0				mg/L	23	Standard
Dy	164	2717.3	1.8				mg/L	23	Standard
Ho-1	165	1641.8	4.9				mg/L	7	Standard
Er	166	1453.4	5.8				mg/L	13	Standard
I	127	32399.6	1.5				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.729	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.238	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.356
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.915
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, July 05, 2016 14:00:31
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67757.9	1.8				ug/L	59517	Standard
	Be	9	51348.6	3.3	**51.8648**	2.335	4.5	ug/L	10	Standard
	Al	27	7621998.1	2.1	**44.0094**	1.636	3.7	ug/L	1872	Standard
	Sc	45	24693.5	3.6				ug/L	26715	Standard
	Ti	47	23062.5	2.0	**99.1503**	4.254	4.3	ug/L	54	Standard
	V	51	355505.6	0.6	**50.3020**	1.544	3.1	ug/L	1419	Standard
	Cr	52	353114.3	1.0	**49.9109**	1.659	3.3	ug/L	7059	Standard
	Cr	53	43550.9	2.2	**49.7846**	2.242	4.5	ug/L	398	Standard
	Mn	55	297019.5	0.9	**47.9583**	1.466	3.1	ug/L	824	Standard
	Co	59	345904.2	0.4	**52.1299**	1.326	2.5	ug/L	167	Standard
	Ni	60	91689.3	0.5	**50.0161**	1.492	3.0	ug/L	391	Standard
	Cu	65	91403.5	0.7	**49.8114**	1.544	3.1	ug/L	147	Standard
	Zn	66	56107.0	0.8	**51.9208**	1.537	3.0	ug/L	184	Standard
>	**Ge**	72	413059.9	2.5				ug/L	422998	Standard
	As	75	55612.3	0.5	**50.2736**	1.464	2.9	ug/L	-58	Standard
	Se	82	5824.0	1.0	**50.6914**	1.693	3.3	ug/L	15	Standard
	Se-1	77	3883.8	1.3	**51.8087**	1.837	3.5	ug/L	58	Standard
>	**Ga**	71	53.3	43.3				mg/L	113	Standard
	Rb	85	813.4	9.8				ug/L	27	Standard
	Y	89	358489.2	3.2				ug/L	383780	Standard
>	**Rh**	103	21.7	13.3				ug/L	18	Standard
	Mo	98	263577.3	0.3	**101.3483**	2.301	2.3	ug/L	31	Standard
	Ag	107	331634.8	0.2	**50.3100**	1.279	2.5	ug/L	84	Standard
	Cd	111	104385.1	1.2	**50.1206**	1.775	3.5	mg/L	4	Standard
	Cd	114	255614.1	1.7	**50.5557**	0.378	0.7	ug/L	15	Standard
>	**In**	115	504233.8	2.4				ug/L	515400	Standard
	Sn	118	291319.5	1.7	**51.2599**	1.107	2.2	ug/L	1043	Standard
	Sb	123	235740.2	0.6	**52.6475**	1.543	2.9	ug/L	227	Standard
	Ba	135	96626.9	2.0	**49.1379**	1.968	4.0	ug/L	31	Standard
	Ce	140	161.7	26.3				ug/L	120	Standard
>	**Tb**	159	769316.8	2.5				ug/L	785817	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	415299.7	1.0	**51.2811**	1.884	3.7	ug/L	6	Standard
	Tl	205	365223.5	1.7	**51.7541**	1.379	2.7	ug/L	8	Standard
	Pb	206	258799.9	0.5	**51.3320**	1.634	3.2	ug/L	201	Standard
	Pb	207	236247.6	0.6	**51.8281**	1.569	3.0	ug/L	177	Standard
	Pb	208	967184.3	0.3	**52.8180**	1.304	2.5	ug/L	722	Standard
	U	238	366702.8	1.0	**52.7295**	1.699	3.2	ug/L	8	Standard
>	**Bi**	209	450443.1	2.7				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4182.2	3.8	**5.6572**	0.390	6.9	mg/L	38	Standard
K	39	761.7	2.3	**3.4796**	0.082	2.3	mg/L	33	Standard
Ca	43	70.0	14.3	**6.0874**	2.097	34.5	mg/L	48	Standard
Fe	54	5966.7	0.5	**5.0917**	0.206	4.0	mg/L	131	Standard
Fe	57	1856.8	9.4	**5.7502**	0.680	11.8	mg/L	153	Standard
Sc-1	45	24693.5	3.6				mg/L	26715	Standard
Cl	35	138849.4	1.1				ug/L	102686	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1746.8	4.1				ug/L	1897	Standard
P	31	23454.8	4.5				ug/L	18491	Standard
S	34	5267.6	3.3				ug/L	3734	Standard
Sr	88	63.3	22.8				ug/L	47	Standard
C	12	70.0	51.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	256.7	34.0				mg/L	23	Standard
Dy	164	6.2	193.7				mg/L	23	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	10.0	173.2				mg/L	13	Standard
I	127	10712.1	1.4				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	103.730		
Al	27	88.019		
Sc	45			
Ti	47	99.150		
V	51	100.604		
Cr	52	99.822		
Cr	53			
Mn	55	95.917		
Co	59	104.260		
Ni	60	100.032		
Cu	65	99.623		
Zn	66	103.842		
Ge	72		97.651	
As	75	100.547		
Se	82	101.383		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	101.348		
Ag	107	100.620		
Cd	111	100.241		
Cd	114			
> In	115		97.834	
Sn	118	102.520		
Sb	123	105.295		
Ba	135	98.276		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	102.562		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.636		
U	238	105.459		
> Bi	209		101.323	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, July 05, 2016 14:03:43
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71836.6	1.0				ug/L	59517	Standard
	Be	9	46.7	22.3	**0.0134**	0.010	75.4	ug/L	10	Standard
	Al	27	2153.5	20.6	**-0.0007**	0.002	324.8	ug/L	1872	Standard
	Sc	45	25955.5	0.7				ug/L	26715	Standard
	Ti	47	27.7	23.0	**-0.1334**	0.026	19.8	ug/L	54	Standard
	V	51	1210.6	12.8	**-0.0160**	0.022	135.1	ug/L	1419	Standard
	Cr	52	5807.4	1.9	**-0.1804**	0.015	8.3	ug/L	7059	Standard
	Cr	53	761.7	13.4	**0.4244**	0.115	27.1	ug/L	398	Standard
	Mn	55	578.3	11.2	**-0.0420**	0.010	23.1	ug/L	824	Standard
	Co	59	244.3	10.9	**0.0099**	0.004	38.7	ug/L	167	Standard
	Ni	60	364.7	7.3	**-0.0100**	0.013	131.6	ug/L	391	Standard
	Cu	65	151.0	10.7	**-0.0007**	0.008	1210.2	ug/L	147	Standard
	Zn	66	189.7	4.4	**0.0081**	0.008	98.9	ug/L	184	Standard
>	**Ge**	72	434316.3	0.4				ug/L	422998	Standard
	As	75	-29.8	33.5	**0.0260**	0.009	33.1	ug/L	-58	Standard
	Se	82	20.7	31.3	**-0.0341**	0.053	155.5	ug/L	15	Standard
	Se-1	77	71.0	2.8	**0.2436**	0.029	11.7	ug/L	58	Standard
>	**Ga**	71	45.0	80.1				mg/L	113	Standard
	Rb	85	25.0	52.9				ug/L	27	Standard
	Y	89	376507.9	2.8				ug/L	383780	Standard
>	**Rh**	103	18.3	41.7				ug/L	18	Standard
	Mo	98	217.2	16.7	**0.0705**	0.013	18.2	ug/L	31	Standard
	Ag	107	117.3	9.2	**0.0049**	0.001	30.0	ug/L	84	Standard
	Cd	111	17.6	50.3	**0.0039**	0.004	102.1	mg/L	4	Standard
	Cd	114	44.4	68.4	**0.0038**	0.006	150.0	ug/L	15	Standard
>	**In**	115	529709.6	0.9				ug/L	515400	Standard
	Sn	118	1080.0	18.1	**0.0007**	0.034	4714.7	ug/L	1043	Standard
	Sb	123	1033.2	31.3	**0.2037**	0.071	34.6	ug/L	227	Standard
	Ba	135	53.0	25.5	**0.0019**	0.006	334.1	ug/L	31	Standard
	Ce	140	48.3	11.9				ug/L	120	Standard
>	**Tb**	159	798188.7	0.6				ug/L	785817	Standard
	Ho	165	5.0	0.0				ug/L	7	Standard
	Tl	203	79.7	28.0	**0.0056**	0.003	45.6	ug/L	6	Standard
	Tl	205	76.7	13.6	**0.0034**	0.001	40.7	ug/L	8	Standard
	Pb	206	285.7	1.7	**0.0077**	0.001	12.5	ug/L	201	Standard
	Pb	207	242.0	1.1	**0.0021**	0.001	31.2	ug/L	177	Standard
	Pb	208	1060.7	2.4	**0.0059**	0.001	22.6	ug/L	722	Standard
	U	238	68.7	20.4	**0.0068**	0.002	27.7	ug/L	8	Standard
>	**Bi**	209	479070.9	0.2				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	41.7	6.9	**0.0202**	0.003	16.8	mg/L	38	Standard
K	39	11.7	137.8	**-0.0766**	0.072	94.6	mg/L	33	Standard
Ca	43	13.3	21.7	**-3.7180**	0.479	12.9	mg/L	48	Standard
Fe	54	152.6	10.5	**0.0100**	0.013	134.0	mg/L	131	Standard
Fe	57	200.0	9.0	**0.1557**	0.056	35.9	mg/L	153	Standard
> **Sc-1**	45	25955.5	0.7				mg/L	26715	Standard
Cl	35	136482.8	1.9				ug/L	102686	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1623.4	10.6				ug/L	1897	Standard
P	31	21728.9	1.3				ug/L	18491	Standard
S	34	4927.5	1.5				ug/L	3734	Standard
Sr	88	68.3	11.2				ug/L	47	Standard
C	12	50.0	34.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	213.3	15.1				mg/L	23	Standard
Dy	164	6.2	106.7				mg/L	23	Standard
Ho-1	165	5.0	0.0				mg/L	7	Standard
Er	166	10.0	173.2				mg/L	13	Standard
I	127	6891.6	4.1				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.676	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.776
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.762
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

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Method 6020 - Summary Report

Sample ID: L1606155901
Sample Date/Time: Tuesday, July 05, 2016 14:06:55
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69152.5	1.4				ug/L	59517	Standard
	Be	9	35.0	37.8	**0.0037**	0.014	373.5	ug/L	10	Standard
	Al	27	25728276.7	1.4	**145.5486**	3.106	2.1	ug/L	1872	Standard
	Sc	45	24993.9	2.0				ug/L	26715	Standard
	Ti	47	585.3	2.4	**2.4081**	0.073	3.0	ug/L	54	Standard
	V	51	4262.4	6.2	**0.4577**	0.042	9.1	ug/L	1419	Standard
	Cr	52	16617.4	1.7	**1.5442**	0.032	2.1	ug/L	7059	Standard
	Cr	53	23595.0	1.5	**28.2058**	0.479	1.7	ug/L	398	Standard
	Mn	55	108515.6	1.5	**18.3599**	0.187	1.0	ug/L	824	Standard
	Co	59	4934.1	0.6	**0.7580**	0.001	0.1	ug/L	167	Standard
	Ni	60	3810.8	1.0	**1.9968**	0.026	1.3	ug/L	391	Standard
	Cu	65	1518.4	4.5	**0.7931**	0.036	4.5	ug/L	147	Standard
	Zn	66	6691.1	2.1	**6.3780**	0.160	2.5	ug/L	184	Standard
>	**Ge**	72	392270.4	0.5				ug/L	422998	Standard
	As	75	1410.9	7.8	**1.3924**	0.100	7.2	ug/L	-58	Standard
	Se	82	508.7	5.2	**4.4716**	0.223	5.0	ug/L	15	Standard
	Se-1	77	1330.7	5.7	**18.2515**	1.007	5.5	ug/L	58	Standard
>	**Ga**	71	71.7	22.4				mg/L	113	Standard
	Rb	85	8397.3	3.9				ug/L	27	Standard
	Y	89	345517.4	1.4				ug/L	383780	Standard
>	**Rh**	103	125.0	18.3				ug/L	18	Standard
	Mo	98	615.7	4.2	**0.2461**	0.011	4.6	ug/L	31	Standard
	Ag	107	206.7	16.9	**0.0218**	0.006	26.8	ug/L	84	Standard
	Cd	111	98.2	35.6	**0.0467**	0.018	39.0	mg/L	4	Standard
	Cd	114	249.7	37.3	**0.0487**	0.020	41.1	ug/L	15	Standard
>	**In**	115	468026.2	0.4				ug/L	515400	Standard
	Sn	118	941.7	10.8	**-0.0019**	0.019	1023.1	ug/L	1043	Standard
	Sb	123	955.3	16.3	**0.2134**	0.037	17.1	ug/L	227	Standard
	Ba	135	200669.6	1.1	**109.9045**	0.869	0.8	ug/L	31	Standard
	Ce	140	528.3	2.4				ug/L	120	Standard
>	**Tb**	159	739969.2	1.4				ug/L	785817	Standard
	Ho	165	36.7	28.4				ug/L	7	Standard
	Tl	203	280.0	32.2	**0.0340**	0.012	36.1	ug/L	6	Standard
	Tl	205	216.7	36.8	**0.0266**	0.012	46.7	ug/L	8	Standard
	Pb	206	383.0	15.8	**0.0371**	0.013	35.9	ug/L	201	Standard
	Pb	207	328.0	22.5	**0.0305**	0.018	59.2	ug/L	177	Standard
	Pb	208	1357.0	13.0	**0.0321**	0.011	33.7	ug/L	722	Standard
	U	238	2170.5	4.0	**0.3367**	0.014	4.1	ug/L	8	Standard
>	**Bi**	209	414234.4	0.8				ug/L	444563	Standard

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Na	23	8.3	91.7	**105.6065**	96.932	91.8	mg/L	0	Standard
Mg	24	128699.3	1.1	**172.7681**	4.384	2.5	mg/L	38	Standard
K	39	120.0	15.0	**0.4333**	0.094	21.6	mg/L	33	Standard
Ca	43	103.3	11.2	**11.4920**	1.767	15.4	mg/L	48	Standard
Fe	54	201.1	5.1	**0.0568**	0.012	20.6	mg/L	131	Standard
Fe	57	388.3	12.4	**0.8024**	0.134	16.7	mg/L	153	Standard
> **Sc-1**	45	24993.9	2.0				mg/L	26715	Standard
Cl	35	156183.5	0.7				ug/L	102686	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	111086.0	3.4				ug/L	1897	Standard
P	31	29116.3	0.5				ug/L	18491	Standard
S	34	4552.4	4.6				ug/L	3734	Standard
Sr	88	473.3	11.6				ug/L	47	Standard
C	12	170.0	5.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	180.0	9.6				mg/L	23	Standard
Dy	164	31.3	16.7				mg/L	23	Standard
Ho-1	165	36.7	28.4				mg/L	7	Standard
Er	166	43.3	66.6				mg/L	13	Standard
I	127	686659.7	8.5				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.190	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.736	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	90.808
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.178
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606155902
Sample Date/Time: Tuesday, July 05, 2016 14:10:21
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65948.2	1.4				ug/L	59517	Standard
	Be	9	33.3	22.9	**0.0036**	0.008	234.8	ug/L	10	Standard
	Al	27	27594479.1	0.9	**163.6877**	2.708	1.7	ug/L	1872	Standard
	Sc	45	23224.5	2.0				ug/L	26715	Standard
	Ti	47	589.7	4.0	**2.6594**	0.193	7.3	ug/L	54	Standard
	V	51	3235.5	10.0	**0.3447**	0.039	11.4	ug/L	1419	Standard
	Cr	52	17007.2	1.2	**1.8254**	0.090	4.9	ug/L	7059	Standard
	Cr	53	22389.9	2.8	**29.0652**	0.336	1.2	ug/L	398	Standard
	Mn	55	109150.1	1.1	**20.0703**	0.692	3.4	ug/L	824	Standard
	Co	59	4624.7	1.5	**0.7722**	0.034	4.4	ug/L	167	Standard
	Ni	60	4113.9	2.4	**2.3744**	0.038	1.6	ug/L	391	Standard
	Cu	65	1490.4	2.1	**0.8506**	0.023	2.7	ug/L	147	Standard
	Zn	66	7051.3	2.7	**7.3203**	0.209	2.9	ug/L	184	Standard
>	**Ge**	72	361388.9	2.8				ug/L	422998	Standard
	As	75	1420.7	7.1	**1.5162**	0.064	4.2	ug/L	-58	Standard
	Se	82	556.6	4.2	**5.3493**	0.116	2.2	ug/L	15	Standard
	Se-1	77	1390.1	3.9	**20.7870**	0.582	2.8	ug/L	58	Standard
>	**Ga**	71	75.0	20.0				mg/L	113	Standard
	Rb	85	8187.2	1.9				ug/L	27	Standard
	Y	89	316357.0	2.9				ug/L	383780	Standard
>	**Rh**	103	118.3	2.4				ug/L	18	Standard
	Mo	98	586.8	1.7	**0.2579**	0.007	2.6	ug/L	31	Standard
	Ag	107	84.7	13.0	**0.0032**	0.002	50.9	ug/L	84	Standard
	Cd	111	51.3	14.8	**0.0250**	0.004	17.5	mg/L	4	Standard
	Cd	114	127.1	20.3	**0.0251**	0.005	21.3	ug/L	15	Standard
>	**In**	115	426472.6	2.7				ug/L	515400	Standard
	Sn	118	915.0	16.4	**0.0100**	0.030	304.1	ug/L	1043	Standard
	Sb	123	844.7	13.5	**0.2063**	0.025	12.3	ug/L	227	Standard
	Ba	135	210070.3	0.6	**126.3213**	2.993	2.4	ug/L	31	Standard
	Ce	140	528.3	3.9				ug/L	120	Standard
>	**Tb**	159	678013.8	3.6				ug/L	785817	Standard
	Ho	165	20.0	25.0				ug/L	7	Standard
	Tl	203	140.3	15.1	**0.0171**	0.003	19.3	ug/L	6	Standard
	Tl	205	135.0	19.2	**0.0160**	0.004	25.8	ug/L	8	Standard
	Pb	206	387.3	1.1	**0.0461**	0.004	8.7	ug/L	201	Standard
	Pb	207	344.0	3.0	**0.0421**	0.003	7.4	ug/L	177	Standard
	Pb	208	1451.0	3.3	**0.0459**	0.001	2.2	ug/L	722	Standard
	U	238	2000.8	2.1	**0.3406**	0.016	4.6	ug/L	8	Standard
>	**Bi**	209	377919.6	3.2				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	130274.4	1.0	**188.1859**	2.827	1.5	mg/L	38	Standard
K	39	105.0	29.0	**0.3981**	0.147	37.0	mg/L	33	Standard
Ca	43	115.0	21.7	**14.8858**	4.110	27.6	mg/L	48	Standard
Fe	54	191.0	13.9	**0.0608**	0.028	45.8	mg/L	131	Standard
Fe	57	336.7	13.0	**0.7202**	0.179	24.8	mg/L	153	Standard
> **Sc-1**	45	23224.5	2.0				mg/L	26715	Standard
Cl	35	165841.4	1.0				ug/L	102686	Standard
Kr	83	2.7	43.3				ug/L	2	Standard
Br	81	113315.8	3.6				ug/L	1897	Standard
P	31	29363.4	1.0				ug/L	18491	Standard
S	34	4409.0	4.5				ug/L	3734	Standard
Sr	88	501.7	5.5				ug/L	47	Standard
C	12	256.7	11.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	193.3	19.6				mg/L	23	Standard
Dy	164	28.1	96.5				mg/L	23	Standard
Ho-1	165	20.0	25.0				mg/L	7	Standard
Er	166	40.0	66.1				mg/L	13	Standard
I	127	768006.2	8.1				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.806	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		85.435	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		82.746
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		85.009
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

L1606158103

Sample ID: ~~L1606155903~~
Sample Date/Time: Tuesday, July 05, 2016 14:13:32
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	71806.4	0.5				ug/L	59517	Standard
	Be	9	50.0	60.8	**0.0165**	0.029	174.7	ug/L	10	Standard
	Al	27	26576213.3	1.4	**144.7656**	1.889	1.3	ug/L	1872	Standard
	Sc	45	25124.1	1.3				ug/L	26715	Standard
	Ti	47	1745.1	2.7	**7.3312**	0.182	2.5	ug/L	54	Standard
	V	51	-1776327.5	52.9	**-254.7063**	134.752	52.9	ug/L	1419	Standard
	Cr	52	264630891.2	0.6	**38432.6999**	541.921	1.4	ug/L	7059	Standard
	Cr	53	33210973.0	1.3	**38565.6449**	357.942	0.9	ug/L	398	Standard
	Mn	55	264561.8	0.7	**43.0373**	0.299	0.7	ug/L	824	Standard
	Co	59	6367.3	2.5	**0.9426**	0.029	3.1	ug/L	167	Standard
	Ni	60	50565.6	0.1	**27.7107**	0.311	1.1	ug/L	391	Standard
	Cu	65	840469.7	1.4	**462.2125**	3.015	0.7	ug/L	147	Standard
	Zn	66	22859.9	1.2	**21.2260**	0.281	1.3	ug/L	184	Standard
>	Ge	72	409676.7	1.0				ug/L	422998	Standard
	As	75	1419.1	3.3	**1.3431**	0.037	2.7	ug/L	-58	Standard
	Se	82	101.4	7.3	**0.6865**	0.056	8.2	ug/L	15	Standard
	Se-1	77	112.0	24.7	**0.8592**	0.391	45.5	ug/L	58	Standard
>	Ga	71	543.3	5.1				mg/L	113	Standard
	Rb	85	4007.2	1.8				ug/L	27	Standard
	Y	89	357481.5	0.8				ug/L	383780	Standard
>	Rh	103	126.7	31.9				ug/L	18	Standard
	Mo	98	11690.1	0.9	**4.6141**	0.034	0.7	ug/L	31	Standard
	Ag	107	9762.5	2.0	**1.5114**	0.033	2.2	ug/L	84	Standard
	Cd	111	69.0	6.7	**0.0299**	0.002	8.3	mg/L	4	Standard
	Cd	114	641.2	13.3	**0.1258**	0.017	13.3	ug/L	15	Standard
>	In	115	490142.9	0.6				ug/L	515400	Standard
	Sn	118	124543.2	1.7	**22.4367**	0.286	1.3	ug/L	1043	Standard
	Sb	123	11809.4	1.6	**2.6965**	0.048	1.8	ug/L	227	Standard
	Ba	135	11034.4	1.4	**5.7482**	0.062	1.1	ug/L	31	Standard
	Ce	140	6016.2	0.3				ug/L	120	Standard
>	Tb	159	765597.8	1.2				ug/L	785817	Standard
	Ho	165	326.7	17.7				ug/L	7	Standard
	Tl	203	84.0	9.0	**0.0071**	0.001	14.3	ug/L	6	Standard
	Tl	205	73.3	10.4	**0.0039**	0.001	30.4	ug/L	8	Standard
	Pb	206	33541.4	1.6	**6.8138**	0.052	0.8	ug/L	201	Standard
	Pb	207	27830.9	0.6	**6.2481**	0.026	0.4	ug/L	177	Standard
	Pb	208	117846.9	1.0	**6.5882**	0.030	0.5	ug/L	722	Standard
	U	238	4204.6	1.3	**0.6204**	0.008	1.2	ug/L	8	Standard
>	Bi	209	436998.4	1.0				ug/L	444563	Standard

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Na	23	8.3	91.7	**104.5310**	96.313	92.1	mg/L	0	Standard
Mg	24	46086.7	0.2	**61.5134**	0.792	1.3	mg/L	38	Standard
K	39	61.7	16.9	**0.1579**	0.049	30.9	mg/L	33	Standard
Ca	43	483.3	23.8	**75.0512**	19.366	25.8	mg/L	48	Standard
Fe	54	-1449.8	25.4	**-1.3619**	0.333	24.5	mg/L	131	Standard
Fe	57	1263.4	1.2	**3.6805**	0.029	0.8	mg/L	153	Standard
> **Sc-1**	45	25124.1	1.3				mg/L	26715	Standard
Cl	35	342766.6	0.7				ug/L	102686	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	6001.2	6.4				ug/L	1897	Standard
P	31	24015.7	1.6				ug/L	18491	Standard
S	34	4530.7	3.1				ug/L	3734	Standard
Sr	88	140.0	21.4				ug/L	47	Standard
C	12	113.3	35.7				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	196.7	30.6				mg/L	23	Standard
Dy	164	442.1	6.8				mg/L	23	Standard
Ho-1	165	326.7	17.7				mg/L	7	Standard
Er	166	303.3	10.1				mg/L	13	Standard
I	127	31388.2	33.2				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		120.649	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.851	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.100
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.298
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
V 51 Lower	V	51	

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Cr 52 Upper, S, EEE	Cr	52
Cr 53 Upper, S, EEE	Cr	53
Cu 65 Upper, S, EEE	Cu	65

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Method 6020 - Summary Report

Sample ID: L1606154801 WG574664-01
Sample Date/Time: Tuesday, July 05, 2016 14:16:44
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83281.6	1.8				ug/L	59517	Standard
	Be	9	25.0	40.0	**-0.0105**	0.009	81.8	ug/L	10	Standard
	Al	27	7750906.6	1.0	**36.4007**	0.686	1.9	ug/L	1872	Standard
	Sc	45	20311.9	3.0				ug/L	26715	Standard
	Ti	47	229.7	16.0	**0.9694**	0.199	20.6	ug/L	54	Standard
	V	51	6202.5	18.9	**0.9031**	0.209	23.2	ug/L	1419	Standard
	Cr	52	72474.0	25.9	**11.8631**	3.391	28.6	ug/L	7059	Standard
	Cr	53	11486.1	20.4	**15.8580**	3.392	21.4	ug/L	398	Standard
	Mn	55	26390.0	1.3	**5.1174**	0.054	1.1	ug/L	824	Standard
	Co	59	63990.9	1.3	**11.8276**	0.152	1.3	ug/L	167	Standard
	Ni	60	8613.8	0.4	**5.5952**	0.050	0.9	ug/L	391	Standard
	Cu	65	13023.9	4.2	**8.6527**	0.352	4.1	ug/L	147	Standard
	Zn	66	6543.1	7.1	**7.2997**	0.497	6.8	ug/L	184	Standard
>	**Ge**	72	336103.7	0.5				ug/L	422998	Standard
	As	75	1894.0	10.7	**2.1520**	0.215	10.0	ug/L	-58	Standard
	Se	82	286.9	29.1	**2.8708**	0.881	30.7	ug/L	15	Standard
	Se-1	77	403.0	4.1	**6.0192**	0.246	4.1	ug/L	58	Standard
>	**Ga**	71	310.0	5.6				mg/L	113	Standard
	Rb	85	49081.0	0.2				ug/L	27	Standard
	Y	89	299105.5	1.4				ug/L	383780	Standard
>	**Rh**	103	363.3	36.0				ug/L	18	Standard
	Mo	98	293013.9	0.9	**139.9675**	3.552	2.5	ug/L	31	Standard
	Ag	107	495.3	4.4	**0.0814**	0.006	7.0	ug/L	84	Standard
	Cd	111	-233.9	5.3	**-0.1436**	0.007	4.9	mg/L	4	Standard
	Cd	114	514.1	1.8	**0.1218**	0.003	2.4	ug/L	15	Standard
>	**In**	115	405881.5	2.1				ug/L	515400	Standard
	Sn	118	1088.4	14.0	**0.0574**	0.028	49.2	ug/L	1043	Standard
	Sb	123	1450.9	7.9	**0.3859**	0.025	6.5	ug/L	227	Standard
	Ba	135	23480.5	0.8	**14.8140**	0.392	2.6	ug/L	31	Standard
	Ce	140	796.7	14.3				ug/L	120	Standard
>	**Tb**	159	661959.9	1.5				ug/L	785817	Standard
	Ho	165	30.0	66.7				ug/L	7	Standard
	Tl	203	548.0	16.0	**0.0810**	0.014	17.3	ug/L	6	Standard
	Tl	205	138.3	2.1	**0.0177**	0.001	4.8	ug/L	8	Standard
	Pb	206	636.7	3.6	**0.1125**	0.006	5.6	ug/L	201	Standard
	Pb	207	559.7	10.1	**0.1059**	0.017	16.0	ug/L	177	Standard
	Pb	208	2260.4	0.3	**0.1059**	0.002	2.2	ug/L	722	Standard
	U	238	1336.4	2.7	**0.2378**	0.007	3.1	ug/L	8	Standard
>	**Bi**	209	360105.3	1.5				ug/L	444563	Standard

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Na	23	6.7	86.6	**101.3670**	87.825	86.6	mg/L	0	Standard
Mg	24	390484.5	0.4	**645.3542**	21.753	3.4	mg/L	38	Standard
K	39	231.7	7.6	**1.2034**	0.061	5.1	mg/L	33	Standard
Ca	43	468.3	10.8	**91.3126**	12.977	14.2	mg/L	48	Standard
Fe	54	115.2	39.8	**0.0064**	0.052	815.4	mg/L	131	Standard
Fe	57	816.7	5.1	**2.8486**	0.210	7.4	mg/L	153	Standard
> **Sc-1**	45	20311.9	3.0				mg/L	26715	Standard
Cl	35	869294.9	0.5				ug/L	102686	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	21425.2	8.3				ug/L	1897	Standard
P	31	14375.2	5.7				ug/L	18491	Standard
S	34	4839.1	4.4				ug/L	3734	Standard
Sr	88	273.3	14.7				ug/L	47	Standard
C	12	86.7	35.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	25552.2	21.2				mg/L	23	Standard
Dy	164	28.2	97.0				mg/L	23	Standard
Ho-1	165	30.0	66.7				mg/L	7	Standard
Er	166	36.7	78.7				mg/L	13	Standard
I	127	49557.7	5.1				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		139.930	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		79.458	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	78.751	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	81.002	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

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Method 6020 - Summary Report

Sample ID: L1606154801DP WG574664-04
Sample Date/Time: Tuesday, July 05, 2016 14:19:55
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	89693.1	2.1				ug/L	59517	Standard
	Be	9	25.0	52.9	**-0.0121**	0.010	81.7	ug/L	10	Standard
	Al	27	7455350.5	0.8	**32.5098**	0.583	1.8	ug/L	1872	Standard
	Sc	45	21144.8	2.9				ug/L	26715	Standard
	Ti	47	346.7	11.1	**1.4463**	0.198	13.7	ug/L	54	Standard
	V	51	8769.1	5.8	**1.2306**	0.062	5.0	ug/L	1419	Standard
	Cr	52	46977.1	18.7	**6.6829**	1.347	20.2	ug/L	7059	Standard
	Cr	53	7948.8	12.9	**9.9577**	1.233	12.4	ug/L	398	Standard
	Mn	55	28821.4	0.6	**5.1560**	0.083	1.6	ug/L	824	Standard
	Co	59	162210.1	1.1	**27.6895**	0.647	2.3	ug/L	167	Standard
	Ni	60	15845.9	1.1	**9.6320**	0.098	1.0	ug/L	391	Standard
	Cu	65	16409.5	0.9	**10.0681**	0.102	1.0	ug/L	147	Standard
	Zn	66	7567.9	4.9	**7.7999**	0.411	5.3	ug/L	184	Standard
>	Ge	72	364441.8	1.4				ug/L	422998	Standard
	As	75	2146.6	5.6	**2.2471**	0.101	4.5	ug/L	-58	Standard
	Se	82	414.0	12.2	**3.8910**	0.484	12.4	ug/L	15	Standard
	Se-1	77	413.7	7.8	**5.6664**	0.550	9.7	ug/L	58	Standard
>	Ga	71	306.7	17.4				mg/L	113	Standard
	Rb	85	48530.9	0.8				ug/L	27	Standard
	Y	89	321692.6	0.8				ug/L	383780	Standard
>	Rh	103	465.0	3.9				ug/L	18	Standard
	Mo	98	291110.2	0.5	**127.5407**	2.485	1.9	ug/L	31	Standard
	Ag	107	485.7	3.2	**0.0720**	0.003	3.7	ug/L	84	Standard
	Cd	111	-221.9	5.6	**-0.1256**	0.009	7.2	mg/L	4	Standard
	Cd	114	464.0	6.6	**0.0999**	0.005	4.6	ug/L	15	Standard
>	In	115	442515.5	2.3				ug/L	515400	Standard
	Sn	118	1033.4	2.7	**0.0270**	0.009	31.6	ug/L	1043	Standard
	Sb	123	1426.2	8.3	**0.3465**	0.028	8.1	ug/L	227	Standard
	Ba	135	23305.6	1.0	**13.4851**	0.382	2.8	ug/L	31	Standard
	Ce	140	1306.7	1.2				ug/L	120	Standard
>	Tb	159	710759.8	1.6				ug/L	785817	Standard
	Ho	165	30.0	44.1				ug/L	7	Standard
	Tl	203	693.3	13.4	**0.0954**	0.014	14.6	ug/L	6	Standard
	Tl	205	138.3	38.0	**0.0158**	0.008	52.0	ug/L	8	Standard
	Pb	206	688.0	6.6	**0.1122**	0.008	7.0	ug/L	201	Standard
	Pb	207	586.0	3.9	**0.1009**	0.007	6.8	ug/L	177	Standard
	Pb	208	2451.7	6.4	**0.1063**	0.008	7.2	ug/L	722	Standard
	U	238	1331.4	3.0	**0.2188**	0.003	1.6	ug/L	8	Standard
>	Bi	209	389435.9	1.8				ug/L	444563	Standard

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Na	23	5.0	0.0	**74.0550**	2.145	2.9	mg/L	0	Standard
Mg	24	379270.0	0.6	**602.0001**	14.280	2.4	mg/L	38	Standard
K	39	236.7	10.6	**1.1780**	0.106	9.0	mg/L	33	Standard
Ca	43	438.3	4.6	**81.4025**	6.382	7.8	mg/L	48	Standard
Fe	54	162.5	9.6	**0.0487**	0.012	24.6	mg/L	131	Standard
Fe	57	775.0	6.2	**2.5561**	0.252	9.9	mg/L	153	Standard
> **Sc-1**	45	21144.8	2.9				mg/L	26715	Standard
Cl	35	853806.1	2.0				ug/L	102686	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	22964.1	2.5				ug/L	1897	Standard
P	31	14385.2	3.2				ug/L	18491	Standard
S	34	5045.8	6.0				ug/L	3734	Standard
Sr	88	225.0	12.4				ug/L	47	Standard
C	12	110.0	24.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36751.8	14.9				mg/L	23	Standard
Dy	164	36.5	49.4				mg/L	23	Standard
Ho-1	165	30.0	44.1				mg/L	7	Standard
Er	166	73.3	20.8				mg/L	13	Standard
I	127	52000.9	4.2				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		150.702	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		86.157	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	85.859	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	87.600	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

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Method 6020 - Summary Report

Sample ID: L1606154801S WG574664-05
Sample Date/Time: Tuesday, July 05, 2016 14:23:14
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	87696.4	0.3				ug/L	59517	Standard
	Be	9	24077.5	2.7	**18.7634**	0.550	2.9	ug/L	10	Standard
	Al	27	7241422.2	0.8	**32.2890**	0.336	1.0	ug/L	1872	Standard
	Sc	45	21054.6	1.4				ug/L	26715	Standard
	Ti	47	297.3	4.0	**1.2366**	0.049	3.9	ug/L	54	Standard
	V	51	130851.6	6.6	**21.3465**	1.646	7.7	ug/L	1419	Standard
	Cr	52	170369.6	4.9	**27.4433**	1.005	3.7	ug/L	7059	Standard
	Cr	53	23585.1	5.9	**31.0408**	1.267	4.1	ug/L	398	Standard
	Mn	55	143381.2	0.5	**26.7541**	0.543	2.0	ug/L	824	Standard
	Co	59	192178.1	0.7	**33.5376**	0.823	2.5	ug/L	167	Standard
	Ni	60	42994.2	0.7	**27.0683**	0.386	1.4	ug/L	391	Standard
	Cu	65	46793.5	0.2	**29.5008**	0.627	2.1	ug/L	147	Standard
	Zn	66	29200.1	0.7	**31.2325**	0.712	2.3	ug/L	184	Standard
>	Ge	72	356577.4	2.0				ug/L	422998	Standard
	As	75	27113.4	1.0	**28.4055**	0.299	1.1	ug/L	-58	Standard
	Se	82	3200.3	3.5	**32.1793**	1.171	3.6	ug/L	15	Standard
	Se-1	77	2150.5	1.4	**32.9868**	1.116	3.4	ug/L	58	Standard
>	Ga	71	283.3	7.1				mg/L	113	Standard
	Rb	85	46322.4	1.4				ug/L	27	Standard
	Y	89	314897.4	1.4				ug/L	383780	Standard
>	Rh	103	550.0	19.7				ug/L	18	Standard
	Mo	98	279130.2	0.5	**127.9643**	2.057	1.6	ug/L	31	Standard
	Ag	107	125206.9	0.4	**22.6375**	0.283	1.3	ug/L	84	Standard
	Cd	111	41117.4	0.4	**23.5307**	0.349	1.5	mg/L	4	Standard
	Cd	114	101866.9	1.3	**24.0265**	0.627	2.6	ug/L	15	Standard
>	In	115	422837.3	1.4				ug/L	515400	Standard
	Sn	118	1103.4	11.0	**0.0514**	0.027	52.0	ug/L	1043	Standard
	Sb	123	101851.3	1.0	**27.1061**	0.249	0.9	ug/L	227	Standard
	Ba	135	60983.8	0.3	**36.9596**	0.546	1.5	ug/L	31	Standard
	Ce	140	868.4	5.5				ug/L	120	Standard
>	Tb	159	682088.8	0.6				ug/L	785817	Standard
	Ho	165	46.7	34.4				ug/L	7	Standard
	Tl	203	166181.0	0.6	**24.3358**	0.469	1.9	ug/L	6	Standard
	Tl	205	148186.1	0.5	**24.9075**	0.349	1.4	ug/L	8	Standard
	Pb	206	109184.3	0.4	**25.6628**	0.261	1.0	ug/L	201	Standard
	Pb	207	95337.7	0.4	**24.7829**	0.298	1.2	ug/L	177	Standard
	Pb	208	392568.3	0.7	**25.4043**	0.211	0.8	ug/L	722	Standard
	U	238	155815.1	1.0	**26.5729**	0.362	1.4	ug/L	8	Standard
>	Bi	209	379600.0	1.4				ug/L	444563	Standard

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Na	23	5.0	173.2	**74.1008**	128.338	173.2	mg/L	0	Standard
Mg	24	362752.8	0.6	**578.0832**	11.244	1.9	mg/L	38	Standard
K	39	233.3	8.9	**1.1674**	0.125	10.7	mg/L	33	Standard
Ca	43	393.3	12.2	**72.7672**	10.713	14.7	mg/L	48	Standard
Fe	54	140.7	14.5	**0.0272**	0.020	73.2	mg/L	131	Standard
Fe	57	716.7	5.1	**2.3348**	0.114	4.9	mg/L	153	Standard
> **Sc-1**	45	21054.6	1.4				mg/L	26715	Standard
Cl	35	836041.0	1.3				ug/L	102686	Standard
Kr	83	4.0	0.0				ug/L	2	Standard
Br	81	21555.4	7.5				ug/L	1897	Standard
P	31	14208.3	1.4				ug/L	18491	Standard
S	34	4980.8	2.5				ug/L	3734	Standard
Sr	88	248.3	9.1				ug/L	47	Standard
C	12	93.3	53.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40180.2	10.2				mg/L	23	Standard
Dy	164	54.8	63.6				mg/L	23	Standard
Ho-1	165	46.7	34.4				mg/L	7	Standard
Er	166	40.0	25.0				mg/L	13	Standard
I	127	46476.2	3.6				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		147.347	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		84.298	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		82.041
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		85.387
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	

Sample ID: L1606154801S WG574664-05
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Method 6020 - Summary Report

Sample ID: L1606154801SD WG574664-06
Sample Date/Time: Tuesday, July 05, 2016 14:26:26
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	91103.2	2.8				ug/L	59517	Standard
	Be	9	25499.8	2.3	**19.1379**	0.674	3.5	ug/L	10	Standard
	Al	27	7742757.6	0.9	**33.2546**	1.157	3.5	ug/L	1872	Standard
	Sc	45	21460.2	1.2				ug/L	26715	Standard
	Ti	47	331.0	15.2	**1.3877**	0.195	14.0	ug/L	54	Standard
	V	51	139107.1	5.3	**22.5506**	1.837	8.1	ug/L	1419	Standard
	Cr	52	166529.7	1.6	**26.6216**	1.309	4.9	ug/L	7059	Standard
	Cr	53	23087.6	2.4	**30.1899**	1.702	5.6	ug/L	398	Standard
	Mn	55	145292.1	1.7	**26.9230**	1.329	4.9	ug/L	824	Standard
	Co	59	227835.2	1.8	**39.4869**	1.982	5.0	ug/L	167	Standard
	Ni	60	45936.2	0.5	**28.7238**	0.980	3.4	ug/L	391	Standard
	Cu	65	48966.0	1.0	**30.6540**	1.320	4.3	ug/L	147	Standard
	Zn	66	30397.1	1.3	**32.2832**	1.299	4.0	ug/L	184	Standard
>	**Ge**	72	359374.4	3.3				ug/L	422998	Standard
	As	75	27838.9	1.7	**28.9606**	1.284	4.4	ug/L	-58	Standard
	Se	82	3279.4	1.6	**32.7375**	1.067	3.3	ug/L	15	Standard
	Se-1	77	2203.8	2.7	**33.5782**	1.904	5.7	ug/L	58	Standard
>	**Ga**	71	300.0	8.7				mg/L	113	Standard
	Rb	85	48029.4	1.6				ug/L	27	Standard
	Y	89	318018.3	4.2				ug/L	383780	Standard
>	**Rh**	103	636.7	14.1				ug/L	18	Standard
	Mo	98	297904.0	0.4	**133.2901**	3.714	2.8	ug/L	31	Standard
	Ag	107	128413.2	0.5	**22.6633**	0.784	3.5	ug/L	84	Standard
	Cd	111	41733.4	1.6	**23.3149**	0.960	4.1	mg/L	4	Standard
	Cd	114	103202.4	2.1	**23.7659**	1.213	5.1	ug/L	15	Standard
>	**In**	115	433445.5	3.3				ug/L	515400	Standard
	Sn	118	986.7	7.8	**0.0215**	0.009	41.8	ug/L	1043	Standard
	Sb	123	103107.3	0.2	**26.7856**	0.865	3.2	ug/L	227	Standard
	Ba	135	62842.7	1.1	**37.1803**	1.470	4.0	ug/L	31	Standard
	Ce	140	863.4	16.9				ug/L	120	Standard
>	**Tb**	159	706354.6	3.8				ug/L	785817	Standard
	Ho	165	35.0	24.7				ug/L	7	Standard
	Tl	203	169682.2	0.8	**24.3222**	0.911	3.7	ug/L	6	Standard
	Tl	205	149206.1	1.0	**24.5460**	0.800	3.3	ug/L	8	Standard
	Pb	206	110798.6	0.1	**25.4909**	0.866	3.4	ug/L	201	Standard
	Pb	207	96425.9	0.3	**24.5359**	0.891	3.6	ug/L	177	Standard
	Pb	208	392591.1	0.7	**24.8716**	1.012	4.1	ug/L	722	Standard
	U	238	157236.4	1.1	**26.2538**	1.155	4.4	ug/L	8	Standard
>	**Bi**	209	388072.5	3.5				ug/L	444563	Standard

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Na	23	3.3	173.2	**47.9694**	83.077	173.2	mg/L	0	Standard
Mg	24	388282.8	1.3	**607.0626**	13.373	2.2	mg/L	38	Standard
K	39	205.0	11.2	**0.9886**	0.133	13.5	mg/L	33	Standard
Ca	43	441.7	6.4	**80.7027**	6.473	8.0	mg/L	48	Standard
Fe	54	108.3	54.5	**-0.0078**	0.060	768.0	mg/L	131	Standard
Fe	57	811.7	8.1	**2.6491**	0.259	9.8	mg/L	153	Standard
> **Sc-1**	45	21460.2	1.2				mg/L	26715	Standard
Cl	35	868495.4	0.4				ug/L	102686	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	20861.0	4.6				ug/L	1897	Standard
P	31	14647.1	4.7				ug/L	18491	Standard
S	34	4709.1	2.5				ug/L	3734	Standard
Sr	88	251.7	17.8				ug/L	47	Standard
C	12	90.0	50.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	47635.1	7.9				mg/L	23	Standard
Dy	164	47.6	73.7				mg/L	23	Standard
Ho-1	165	35.0	24.7				mg/L	7	Standard
Er	166	50.0	52.9				mg/L	13	Standard
I	127	51621.5	8.5				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		153.072	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		84.959	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		84.099
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.293
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	

Sample ID: L1606154801SD WG574664-06
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, July 05, 2016 14:29:39
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79525.0	3.5				ug/L	59517	Standard
	Be	9	57321.6	3.5	**49.3141**	0.945	1.9	ug/L	10	Standard
	Al	27	7808418.4	1.8	**38.4119**	0.675	1.8	ug/L	1872	Standard
	Sc	45	24626.7	0.5				ug/L	26715	Standard
	Ti	47	22257.0	0.6	**92.8520**	0.781	0.8	ug/L	54	Standard
	V	51	353921.2	1.3	**48.6021**	0.168	0.3	ug/L	1419	Standard
	Cr	52	353541.3	4.5	**48.4659**	1.764	3.6	ug/L	7059	Standard
	Cr	53	43793.3	5.6	**48.5585**	2.235	4.6	ug/L	398	Standard
	Mn	55	287933.0	1.8	**45.1192**	0.533	1.2	ug/L	824	Standard
	Co	59	342819.5	1.5	**50.1520**	0.433	0.9	ug/L	167	Standard
	Ni	60	88764.6	1.9	**46.9876**	0.585	1.2	ug/L	391	Standard
	Cu	65	91271.5	1.8	**48.2754**	0.384	0.8	ug/L	147	Standard
	Zn	66	56746.1	3.0	**50.9644**	1.019	2.0	ug/L	184	Standard
>	Ge	72	425325.5	1.0				ug/L	422998	Standard
	As	75	55312.3	2.3	**48.5350**	0.660	1.4	ug/L	-58	Standard
	Se	82	6135.7	4.0	**51.8359**	1.777	3.4	ug/L	15	Standard
	Se-1	77	3848.8	2.4	**49.8080**	1.094	2.2	ug/L	58	Standard
>	Ga	71	76.7	21.0				mg/L	113	Standard
	Rb	85	1226.7	7.4				ug/L	27	Standard
	Y	89	372119.8	1.5				ug/L	383780	Standard
>	Rh	103	301.7	36.8				ug/L	18	Standard
	Mo	98	268418.6	2.2	**99.5612**	1.628	1.6	ug/L	31	Standard
	Ag	107	328314.8	0.9	**48.0586**	1.406	2.9	ug/L	84	Standard
	Cd	111	102079.2	0.7	**47.2767**	0.709	1.5	mg/L	4	Standard
	Cd	114	251185.3	0.7	**47.9444**	0.987	2.1	ug/L	15	Standard
>	In	115	522576.0	2.2				ug/L	515400	Standard
	Sn	118	282525.7	2.3	**47.9450**	0.403	0.8	ug/L	1043	Standard
	Sb	123	232623.8	1.1	**50.1123**	0.569	1.1	ug/L	227	Standard
	Ba	135	94708.1	0.5	**46.4551**	0.808	1.7	ug/L	31	Standard
	Ce	140	126.7	16.0				ug/L	120	Standard
>	Tb	159	805972.4	1.0				ug/L	785817	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	412366.6	0.5	**47.7977**	0.362	0.8	ug/L	6	Standard
	Tl	205	367031.1	1.3	**48.8343**	0.521	1.1	ug/L	8	Standard
	Pb	206	262093.2	0.9	**48.8018**	0.632	1.3	ug/L	201	Standard
	Pb	207	238051.9	1.0	**49.0282**	0.739	1.5	ug/L	177	Standard
	Pb	208	966231.5	0.7	**49.5396**	0.425	0.9	ug/L	722	Standard
	U	238	372626.1	0.2	**50.3023**	0.329	0.7	ug/L	8	Standard
>	Bi	209	479544.7	0.5				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4445.7	8.8	**6.0230**	0.535	8.9	mg/L	38	Standard
K	39	686.7	16.2	**3.1328**	0.538	17.2	mg/L	33	Standard
Ca	43	48.3	6.0	**2.3726**	0.500	21.1	mg/L	48	Standard
Fe	54	5897.4	1.5	**5.0404**	0.093	1.9	mg/L	131	Standard
Fe	57	1736.8	2.3	**5.3560**	0.152	2.8	mg/L	153	Standard
> **Sc-1**	45	24626.7	0.5				mg/L	26715	Standard
Cl	35	129361.0	3.3				ug/L	102686	Standard
Kr	83	2.7	94.4				ug/L	2	Standard
Br	81	2606.9	21.1				ug/L	1897	Standard
P	31	22595.2	2.8				ug/L	18491	Standard
S	34	4407.3	2.4				ug/L	3734	Standard
Sr	88	76.7	13.6				ug/L	47	Standard
C	12	60.0	33.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	2756.9	22.5				mg/L	23	Standard
Dy	164	6.5	179.6				mg/L	23	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	10975.7	7.1				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	98.628		
Al	27	76.824		
Sc	45			
Ti	47	92.852		
V	51	97.204		
Cr	52	96.932		
Cr	53			
Mn	55	90.238		
Co	59	100.304		
Ni	60	93.975		
Cu	65	96.551		
Zn	66	101.929		
> Ge	72		100.550	
As	75	97.070		
Se	82	103.672		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	99.561		
Ag	107	96.117		
Cd	111	94.553		
Cd	114			
> In	115		101.392	
Sn	118	95.890		
Sb	123	100.225		
Ba	135	92.910		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	95.595		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.079		
U	238	100.605		
> Bi	209		107.869	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, July 05, 2016 14:32:51
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76152.6	1.3				ug/L	59517	Standard
	Be	9	33.3	31.2	**-0.0011**	0.009	833.8	ug/L	10	Standard
	Al	27	5467.9	66.7	**0.0158**	0.019	121.0	ug/L	1872	Standard
	Sc	45	24304.5	1.8				ug/L	26715	Standard
	Ti	47	46.7	18.2	**-0.0466**	0.039	82.7	ug/L	54	Standard
	V	51	2531.1	22.8	**0.1781**	0.083	46.6	ug/L	1419	Standard
	Cr	52	8329.7	20.4	**0.2150**	0.229	106.7	ug/L	7059	Standard
	Cr	53	1173.4	20.1	**0.9319**	0.259	27.7	ug/L	398	Standard
	Mn	55	582.0	4.1	**-0.0373**	0.005	13.2	ug/L	824	Standard
	Co	59	300.3	24.3	**0.0199**	0.011	52.9	ug/L	167	Standard
	Ni	60	463.7	10.6	**0.0524**	0.025	48.4	ug/L	391	Standard
	Cu	65	862.4	8.7	**0.3884**	0.036	9.1	ug/L	147	Standard
	Zn	66	823.7	10.0	**0.5999**	0.068	11.3	ug/L	184	Standard
>	**Ge**	72	415641.0	2.6				ug/L	422998	Standard
	As	75	163.1	21.1	**0.1982**	0.032	16.1	ug/L	-58	Standard
	Se	82	102.2	24.2	**0.6817**	0.213	31.2	ug/L	15	Standard
	Se-1	77	83.7	2.8	**0.4553**	0.054	11.9	ug/L	58	Standard
>	**Ga**	71	35.0	28.6				mg/L	113	Standard
	Rb	85	220.0	13.6				ug/L	27	Standard
	Y	89	364078.2	1.7				ug/L	383780	Standard
>	**Rh**	103	136.7	10.6				ug/L	18	Standard
	Mo	98	565.4	30.6	**0.2032**	0.063	31.1	ug/L	31	Standard
	Ag	107	191.7	31.0	**0.0163**	0.008	51.2	ug/L	84	Standard
	Cd	111	27.3	80.4	**0.0086**	0.010	116.9	mg/L	4	Standard
	Cd	114	71.8	55.7	**0.0093**	0.007	80.9	ug/L	15	Standard
>	**In**	115	516122.7	2.2				ug/L	515400	Standard
	Sn	118	1298.4	26.1	**0.0429**	0.057	133.8	ug/L	1043	Standard
	Sb	123	792.5	38.0	**0.1564**	0.065	41.2	ug/L	227	Standard
	Ba	135	76.0	40.3	**0.0138**	0.014	104.8	ug/L	31	Standard
	Ce	140	15.0	0.0				ug/L	120	Standard
>	**Tb**	159	791960.1	1.5				ug/L	785817	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	161.3	44.6	**0.0152**	0.008	53.5	ug/L	6	Standard
	Tl	205	133.3	45.2	**0.0111**	0.008	71.6	ug/L	8	Standard
	Pb	206	361.3	14.6	**0.0223**	0.009	39.9	ug/L	201	Standard
	Pb	207	278.7	10.9	**0.0100**	0.006	55.9	ug/L	177	Standard
	Pb	208	1253.7	9.8	**0.0163**	0.005	33.5	ug/L	722	Standard
	U	238	130.0	40.7	**0.0152**	0.007	45.7	ug/L	8	Standard
>	**Bi**	209	475380.7	1.7				ug/L	444563	Standard

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Na	23	1.7	173.2	**21.3179**	36.915	173.2	mg/L	0	Standard
Mg	24	191.7	54.7	**0.2327**	0.151	64.8	mg/L	38	Standard
K	39	15.0	33.3	**-0.0573**	0.023	40.0	mg/L	33	Standard
Ca	43	21.7	58.1	**-2.1294**	2.161	101.5	mg/L	48	Standard
Fe	54	130.7	28.9	**-0.0010**	0.032	3090.5	mg/L	131	Standard
Fe	57	196.7	12.8	**0.1886**	0.095	50.3	mg/L	153	Standard
Sc-1	45	24304.5	1.8				mg/L	26715	Standard
Cl	35	131261.5	0.2				ug/L	102686	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1913.5	9.2				ug/L	1897	Standard
P	31	22438.3	4.7				ug/L	18491	Standard
S	34	4360.6	2.2				ug/L	3734	Standard
Sr	88	56.7	18.4				ug/L	47	Standard
C	12	83.3	36.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1346.7	23.8				mg/L	23	Standard
Dy	164	-1.3	78.1				mg/L	23	Standard
Ho-1	165	8.3	69.3				mg/L	7	Standard
Er	166	26.7	78.1				mg/L	13	Standard
I	127	6931.6	4.7				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.261	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.140
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.932
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Se	82	

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Tuesday, July 05, 2016 14:36:03
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74315.2	3.0				ug/L	59517	Standard
	Be	9	215.0	8.4	**0.1672**	0.020	12.0	ug/L	10	Standard
	Al	27	1745.1	13.4	**-0.0033**	0.001	31.3	ug/L	1872	Standard
	Sc	45	23546.6	1.1				ug/L	26715	Standard
	Ti	47	37.0	2.7	**-0.0863**	0.005	5.9	ug/L	54	Standard
	V	51	4025.5	6.4	**0.3960**	0.043	10.9	ug/L	1419	Standard
	Cr	52	11308.2	1.5	**0.6638**	0.031	4.6	ug/L	7059	Standard
	Cr	53	1508.4	9.6	**1.3386**	0.165	12.3	ug/L	398	Standard
	Mn	55	3025.0	1.9	**0.3618**	0.005	1.4	ug/L	824	Standard
	Co	59	2572.2	0.3	**0.3652**	0.003	0.9	ug/L	167	Standard
	Ni	60	2970.6	2.0	**1.4374**	0.041	2.9	ug/L	391	Standard
	Cu	65	1850.8	2.8	**0.9374**	0.027	2.9	ug/L	147	Standard
	Zn	66	7135.3	1.0	**6.5052**	0.008	0.1	ug/L	184	Standard
>	**Ge**	72	410313.7	1.1				ug/L	422998	Standard
	As	75	466.6	14.5	**0.4752**	0.058	12.2	ug/L	-58	Standard
	Se	82	105.2	9.3	**0.7183**	0.079	11.0	ug/L	15	Standard
	Se-1	77	97.7	14.5	**0.6609**	0.208	31.5	ug/L	58	Standard
>	**Ga**	71	31.7	32.9				mg/L	113	Standard
	Rb	85	158.3	16.2				ug/L	27	Standard
	Y	89	349258.4	1.4				ug/L	383780	Standard
>	**Rh**	103	110.0	34.3				ug/L	18	Standard
	Mo	98	228.8	17.6	**0.0796**	0.017	20.9	ug/L	31	Standard
	Ag	107	2424.9	2.0	**0.3575**	0.004	1.0	ug/L	84	Standard
	Cd	111	449.3	4.2	**0.2126**	0.012	5.5	mg/L	4	Standard
	Cd	114	1010.5	11.1	**0.1964**	0.025	12.6	ug/L	15	Standard
>	**In**	115	501932.9	1.4				ug/L	515400	Standard
	Sn	118	603.3	18.3	**-0.0738**	0.021	28.7	ug/L	1043	Standard
	Sb	123	1708.8	1.7	**0.3670**	0.007	1.8	ug/L	227	Standard
	Ba	135	1277.1	1.4	**0.6286**	0.002	0.3	ug/L	31	Standard
	Ce	140	15.0	33.3				ug/L	120	Standard
>	**Tb**	159	776264.7	0.9				ug/L	785817	Standard
	Ho	165	8.3	124.9				ug/L	7	Standard
	Tl	203	657.7	1.9	**0.0750**	0.001	1.6	ug/L	6	Standard
	Tl	205	641.7	10.8	**0.0813**	0.010	12.7	ug/L	8	Standard
	Pb	206	1266.1	0.6	**0.1977**	0.002	0.9	ug/L	201	Standard
	Pb	207	1032.4	1.5	**0.1715**	0.002	1.4	ug/L	177	Standard
	Pb	208	4357.9	1.4	**0.1820**	0.002	1.3	ug/L	722	Standard
	U	238	2722.2	1.9	**0.3764**	0.010	2.6	ug/L	8	Standard
>	**Bi**	209	465192.1	0.9				ug/L	444563	Standard

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Na	23	3.3	173.2	**44.6113**	77.260	173.2	mg/L	0	Standard
Mg	24	106.7	10.8	**0.1182**	0.015	12.4	mg/L	38	Standard
K	39	21.7	35.3	**-0.0214**	0.039	181.2	mg/L	33	Standard
Ca	43	21.7	53.3	**-2.0263**	2.004	98.9	mg/L	48	Standard
Fe	54	105.6	37.0	**-0.0199**	0.036	181.9	mg/L	131	Standard
Fe	57	176.7	14.2	**0.1386**	0.083	59.8	mg/L	153	Standard
Sc-1	45	23546.6	1.1				mg/L	26715	Standard
Cl	35	130681.2	0.6				ug/L	102686	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1653.4	6.3				ug/L	1897	Standard
P	31	15352.8	2.1				ug/L	18491	Standard
S	34	4439.0	2.4				ug/L	3734	Standard
Sr	88	55.0	18.2				ug/L	47	Standard
C	12	66.7	22.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	913.4	10.5				mg/L	23	Standard
Dy	164	6.3	86.6				mg/L	23	Standard
Ho-1	165	8.3	124.9				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	1548.4	13.0				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	83.607		
Al	27			
Sc	45			
Ti	47			
V	51	99.008		
Cr	52	82.978		
Cr	53			
Mn	55	72.361		
Co	59	91.304		
Ni	60	89.836		
Cu	65	117.179		
Zn	66	104.082		
Ge	72		97.001	
As	75	118.806		
Se	82	179.568		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	89.370		
Cd	111	88.567		
Cd	114			
> In	115			97.387
Sn	118			
Sb	123	91.745		
Ba	135	83.815		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	93.725		
Tl	205			
Pb	206			
Pb	207			
Pb	208	90.976		
U	238	94.102		
> Bi	209			104.640
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 8	Se	82	

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Method 6020 - Summary Report

Sample ID: PBW 53 WG573653-03
Sample Date/Time: Tuesday, July 05, 2016 14:39:43
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76442.4	1.5				ug/L	59517	Standard
	Be	9	16.7	75.5	**-0.0162**	0.011	68.3	ug/L	10	Standard
	Al	27	12373.4	6.5	**0.0509**	0.003	6.9	ug/L	1872	Standard
	Sc	45	25174.3	4.4				ug/L	26715	Standard
	Ti	47	35.0	31.4	**-0.0989**	0.045	45.4	ug/L	54	Standard
	V	51	1730.7	12.7	**0.0619**	0.028	45.5	ug/L	1419	Standard
	Cr	52	8813.2	0.8	**0.2722**	0.025	9.1	ug/L	7059	Standard
	Cr	53	1045.0	7.5	**0.7739**	0.102	13.2	ug/L	398	Standard
	Mn	55	1606.8	2.6	**0.1246**	0.004	3.3	ug/L	824	Standard
	Co	59	195.3	3.9	**0.0039**	0.001	29.7	ug/L	167	Standard
	Ni	60	543.7	0.1	**0.0928**	0.004	3.8	ug/L	391	Standard
	Cu	65	541.0	5.0	**0.2113**	0.018	8.5	ug/L	147	Standard
	Zn	66	1323.7	0.4	**1.0482**	0.009	0.9	ug/L	184	Standard
>	**Ge**	72	420130.0	1.2				ug/L	422998	Standard
	As	75	18.1	85.9	**0.0676**	0.014	20.3	ug/L	-58	Standard
	Se	82	46.9	11.7	**0.1970**	0.046	23.2	ug/L	15	Standard
	Se-1	77	60.0	14.5	**0.1283**	0.115	89.8	ug/L	58	Standard
>	**Ga**	71	35.0	49.5				mg/L	113	Standard
	Rb	85	130.0	7.7				ug/L	27	Standard
	Y	89	363841.0	3.1				ug/L	383780	Standard
>	**Rh**	103	61.7	12.4				ug/L	18	Standard
	Mo	98	187.6	30.5	**0.0609**	0.021	34.3	ug/L	31	Standard
	Ag	107	79.0	19.1	**-0.0004**	0.002	547.7	ug/L	84	Standard
	Cd	111	5.4	56.3	**-0.0017**	0.001	84.5	mg/L	4	Standard
	Cd	114	4.8	258.1	**-0.0036**	0.002	64.8	ug/L	15	Standard
>	**In**	115	520366.8	0.7				ug/L	515400	Standard
	Sn	118	940.0	20.1	**-0.0203**	0.031	153.6	ug/L	1043	Standard
	Sb	123	324.4	36.2	**0.0537**	0.025	46.4	ug/L	227	Standard
	Ba	135	58.0	1.7	**0.0049**	0.000	7.6	ug/L	31	Standard
	Ce	140	55.0	32.8				ug/L	120	Standard
>	**Tb**	159	798503.8	1.5				ug/L	785817	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	25.0	13.9	**-0.0007**	0.000	59.8	ug/L	6	Standard
	Tl	205	15.0	33.3	**-0.0048**	0.001	14.5	ug/L	8	Standard
	Pb	206	248.7	10.1	**0.0010**	0.005	480.6	ug/L	201	Standard
	Pb	207	220.7	7.4	**-0.0022**	0.003	128.7	ug/L	177	Standard
	Pb	208	923.0	3.6	**-0.0010**	0.001	125.5	ug/L	722	Standard
	U	238	10.0	36.1	**-0.0011**	0.000	42.5	ug/L	8	Standard
>	**Bi**	209	477056.6	1.3				ug/L	444563	Standard

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Na	23	3.3	86.6	**40.5359**	35.121	86.6	mg/L	0	Standard
Mg	24	58.3	9.9	**0.0442**	0.008	18.3	mg/L	38	Standard
K	39	25.0	20.0	**-0.0137**	0.018	132.9	mg/L	33	Standard
Ca	43	23.3	32.7	**-2.0048**	1.190	59.4	mg/L	48	Standard
Fe	54	160.7	23.4	**0.0209**	0.031	150.6	mg/L	131	Standard
Fe	57	170.0	7.8	**0.0774**	0.044	56.4	mg/L	153	Standard
> **Sc-1**	45	25174.3	4.4				mg/L	26715	Standard
Cl	35	139834.3	0.3				ug/L	102686	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1790.1	3.4				ug/L	1897	Standard
P	31	22082.7	1.5				ug/L	18491	Standard
S	34	4349.0	3.5				ug/L	3734	Standard
Sr	88	50.0	43.6				ug/L	47	Standard
C	12	106.7	32.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	800.0	21.9				mg/L	23	Standard
Dy	164	16.2	71.3				mg/L	23	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	10.0					mg/L	13	Standard
I	127	1423.4	5.6				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.438	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.322	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.964
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.309
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: PBW 53 WG573653-03
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Method 6020 - Summary Report

Sample ID: LCSW 53 WG573653-04
Sample Date/Time: Tuesday, July 05, 2016 14:42:54
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72829.7	2.3				ug/L	59517	Standard
	Be	9	53064.5	2.0	**49.8504**	0.844	1.7	ug/L	10	Standard
	Al	27	14845.6	3.4	**0.0673**	0.001	1.2	ug/L	1872	Standard
	Sc	45	24080.8	2.1				ug/L	26715	Standard
	Ti	47	34.3	1.7	**-0.0989**	0.007	6.6	ug/L	54	Standard
	V	51	334119.1	0.3	**47.2395**	1.450	3.1	ug/L	1419	Standard
	Cr	52	330681.3	1.7	**46.6350**	0.640	1.4	ug/L	7059	Standard
	Cr	53	41714.1	3.7	**47.6059**	1.259	2.6	ug/L	398	Standard
	Mn	55	282840.6	0.6	**45.6343**	1.181	2.6	ug/L	824	Standard
	Co	59	329662.8	0.4	**49.6576**	1.475	3.0	ug/L	167	Standard
	Ni	60	86597.5	2.1	**47.1845**	0.708	1.5	ug/L	391	Standard
	Cu	65	88615.7	1.0	**48.2528**	0.945	2.0	ug/L	147	Standard
	Zn	66	53747.5	1.3	**49.6950**	1.077	2.2	ug/L	184	Standard
>	Ge	72	413319.8	2.9				ug/L	422998	Standard
	As	75	53948.1	0.7	**48.7473**	1.611	3.3	ug/L	-58	Standard
	Se	82	5640.8	0.3	**49.0638**	1.606	3.3	ug/L	15	Standard
	Se-1	77	3669.1	1.2	**48.8845**	1.884	3.9	ug/L	58	Standard
>	Ga	71	38.3	65.7				mg/L	113	Standard
	Rb	85	106.7	35.2				ug/L	27	Standard
	Y	89	356854.9	2.3				ug/L	383780	Standard
>	Rh	103	66.7	21.7				ug/L	18	Standard
	Mo	98	173.8	21.3	**0.0579**	0.015	26.4	ug/L	31	Standard
	Ag	107	316041.4	1.1	**47.8345**	0.814	1.7	ug/L	84	Standard
	Cd	111	99255.7	1.1	**47.5492**	1.318	2.8	mg/L	4	Standard
	Cd	114	241340.9	2.2	**47.6278**	0.203	0.4	ug/L	15	Standard
>	In	115	505261.0	1.8				ug/L	515400	Standard
	Sn	118	1008.4	8.8	**-0.0031**	0.018	584.8	ug/L	1043	Standard
	Sb	123	229069.4	0.3	**51.0387**	0.792	1.6	ug/L	227	Standard
	Ba	135	91766.4	0.6	**46.5491**	0.537	1.2	ug/L	31	Standard
	Ce	140	66.7	17.3				ug/L	120	Standard
>	Tb	159	766383.9	1.1				ug/L	785817	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	398909.4	0.4	**48.5022**	1.142	2.4	ug/L	6	Standard
	Tl	205	355362.8	1.2	**49.6047**	1.609	3.2	ug/L	8	Standard
	Pb	206	258456.8	0.1	**50.4839**	1.287	2.5	ug/L	201	Standard
	Pb	207	224639.8	0.8	**48.5274**	1.058	2.2	ug/L	177	Standard
	Pb	208	940715.8	0.3	**50.5991**	1.458	2.9	ug/L	722	Standard
	U	238	349408.0	0.7	**49.4858**	1.628	3.3	ug/L	8	Standard
>	Bi	209	457338.7	2.7				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	75.0	48.1	**0.0704**	0.049	69.3	mg/L	38	Standard
K	39	11.7	89.2	**-0.0719**	0.051	71.2	mg/L	33	Standard
Ca	43	26.7	28.6	**-1.2202**	1.363	111.7	mg/L	48	Standard
Fe	54	132.6	9.0	**0.0021**	0.013	598.4	mg/L	131	Standard
Fe	57	206.7	20.6	**0.2294**	0.154	67.1	mg/L	153	Standard
> **Sc-1**	45	24080.8	2.1				mg/L	26715	Standard
Cl	35	141591.2	0.9				ug/L	102686	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	11694.5	4.2				ug/L	1897	Standard
P	31	22062.7	2.5				ug/L	18491	Standard
S	34	4484.0	4.9				ug/L	3734	Standard
Sr	88	63.3	18.2				ug/L	47	Standard
C	12	136.7	53.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	603.3	23.7				mg/L	23	Standard
Dy	164	6.2	186.6				mg/L	23	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	10.0					mg/L	13	Standard
I	127	1251.7	15.6				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		122.368	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.712	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85	
Y	89	
> Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
> In	115	98.033
Sn	118	
Sb	123	
Ba	135	
Ce	140	
> Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
> Bi	209	102.874
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
> Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

WG573653-01

Sample ID: L1606076404 ~~WG574653-01~~
Sample Date/Time: Tuesday, July 05, 2016 14:46:06
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	71175.2	2.2				ug/L	59517	Standard
	Be	9	36.7	39.4	**0.0044**	0.014	331.6	ug/L	10	Standard
	Al	27	9937898.1	2.0	**54.6258**	1.733	3.2	ug/L	1872	Standard
	Sc	45	23775.3	2.7				ug/L	26715	Standard
	Ti	47	166.3	8.3	**0.5006**	0.048	9.6	ug/L	54	Standard
	V	51	1882.8	13.9	**0.0991**	0.032	32.4	ug/L	1419	Standard
	Cr	52	35548.7	3.2	**4.3758**	0.322	7.4	ug/L	7059	Standard
	Cr	53	6499.7	7.7	**7.4015**	0.475	6.4	ug/L	398	Standard
	Mn	55	266982.5	1.1	**45.0127**	1.877	4.2	ug/L	824	Standard
	Co	59	781.0	13.6	**0.0981**	0.019	19.8	ug/L	167	Standard
	Ni	60	3495.7	3.5	**1.7995**	0.104	5.8	ug/L	391	Standard
	Cu	65	14960.7	1.1	**8.4462**	0.235	2.8	ug/L	147	Standard
	Zn	66	2194.8	1.1	**1.9680**	0.073	3.7	ug/L	184	Standard
>	Ge	72	395669.8	3.2				ug/L	422998	Standard
	As	75	69.8	59.7	**0.1180**	0.041	34.6	ug/L	-58	Standard
	Se	82	46.6	21.3	**0.2194**	0.097	44.0	ug/L	15	Standard
	Se-1	77	216.0	2.8	**2.3797**	0.155	6.5	ug/L	58	Standard
>	Ga	71	93.3	56.3				mg/L	113	Standard
	Rb	85	37090.3	0.2				ug/L	27	Standard
	Y	89	345634.2	4.3				ug/L	383780	Standard
>	Rh	103	76.7	21.0				ug/L	18	Standard
	Mo	98	787.9	7.0	**0.3042**	0.016	5.4	ug/L	31	Standard
	Ag	107	199.7	13.1	**0.0194**	0.004	23.1	ug/L	84	Standard
	Cd	111	100.3	8.1	**0.0457**	0.005	10.9	mg/L	4	Standard
	Cd	114	241.7	25.5	**0.0450**	0.013	29.5	ug/L	15	Standard
>	In	115	487563.5	2.8				ug/L	515400	Standard
	Sn	118	1178.4	13.9	**0.0337**	0.024	70.2	ug/L	1043	Standard
	Sb	123	5253.1	1.1	**1.1973**	0.031	2.6	ug/L	227	Standard
	Ba	135	7746.6	1.1	**4.0530**	0.159	3.9	ug/L	31	Standard
	Ce	140	1191.7	8.6				ug/L	120	Standard
>	Tb	159	749213.7	3.0				ug/L	785817	Standard
	Ho	165	38.3	30.1				ug/L	7	Standard
	Tl	203	379.0	14.2	**0.0445**	0.006	12.8	ug/L	6	Standard
	Tl	205	358.3	13.4	**0.0454**	0.006	13.2	ug/L	8	Standard
	Pb	206	5479.7	1.4	**1.0749**	0.033	3.1	ug/L	201	Standard
	Pb	207	4664.4	2.0	**1.0070**	0.034	3.3	ug/L	177	Standard
	Pb	208	19759.1	0.8	**1.0639**	0.029	2.7	ug/L	722	Standard
	U	238	379.7	9.2	**0.0538**	0.006	11.7	ug/L	8	Standard
>	Bi	209	437249.1	2.2				ug/L	444563	Standard

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Na	23	3.3	86.6	**44.5737**	38.598	86.6	mg/L	0	Standard
Mg	24	12962.2	1.2	**18.2672**	0.606	3.3	mg/L	38	Standard
K	39	340.0	21.4	**1.5497**	0.396	25.6	mg/L	33	Standard
Ca	43	135.0	31.6	**18.1347**	8.105	44.7	mg/L	48	Standard
Fe	54	385.1	8.8	**0.2321**	0.028	12.2	mg/L	131	Standard
Fe	57	338.3	9.8	**0.6978**	0.137	19.7	mg/L	153	Standard
> **Sc-1**	45	23775.3	2.7				mg/L	26715	Standard
Cl	35	142774.3	1.4				ug/L	102686	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	4300.6	3.7				ug/L	1897	Standard
P	31	24379.6	2.3				ug/L	18491	Standard
S	34	4440.7	2.9				ug/L	3734	Standard
Sr	88	188.3	8.1				ug/L	47	Standard
C	12	80.0	66.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	553.3	34.1				mg/L	23	Standard
Dy	164	50.9	25.1				mg/L	23	Standard
Ho-1	165	38.3	30.1				mg/L	7	Standard
Er	166	50.0	52.9				mg/L	13	Standard
I	127	7683.6	8.8				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.588	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.540	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.599
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.355
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

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Sample ID: L1606076405S ~~WG574653-05~~
Sample Date/Time: Tuesday, July 05, 2016 14:49:17
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73881.4	1.3				ug/L	59517	Standard
	Be	9	53541.1	1.4	**49.5748**	0.021	0.0	ug/L	10	Standard
	Al	27	10370691.0	1.2	**54.8997**	0.606	1.1	ug/L	1872	Standard
	Sc	45	25097.4	2.9				ug/L	26715	Standard
	Ti	47	244.3	3.0	**0.7819**	0.043	5.5	ug/L	54	Standard
	V	51	342336.0	1.4	**47.2980**	0.354	0.7	ug/L	1419	Standard
	Cr	52	363457.3	1.0	**50.1799**	0.239	0.5	ug/L	7059	Standard
	Cr	53	47628.1	2.1	**53.1892**	0.608	1.1	ug/L	398	Standard
	Mn	55	553579.9	1.3	**87.4205**	1.900	2.2	ug/L	824	Standard
	Co	59	324099.8	0.8	**47.7087**	0.324	0.7	ug/L	167	Standard
	Ni	60	89126.7	1.5	**47.4737**	0.160	0.3	ug/L	391	Standard
	Cu	65	86471.1	1.1	**46.0190**	0.284	0.6	ug/L	147	Standard
	Zn	66	55202.1	1.8	**49.8874**	0.669	1.3	ug/L	184	Standard
>	**Ge**	72	422715.6	1.4				ug/L	422998	Standard
	As	75	54996.5	1.0	**48.5632**	0.588	1.2	ug/L	-58	Standard
	Se	82	5622.0	1.3	**47.7779**	0.096	0.2	ug/L	15	Standard
	Se-1	77	3853.5	1.2	**50.1920**	1.229	2.4	ug/L	58	Standard
>	**Ga**	71	125.0	6.9				mg/L	113	Standard
	Rb	85	37045.2	1.5				ug/L	27	Standard
	Y	89	366083.7	1.4				ug/L	383780	Standard
>	**Rh**	103	96.7	16.6				ug/L	18	Standard
	Mo	98	835.9	10.7	**0.3060**	0.034	11.0	ug/L	31	Standard
	Ag	107	312322.9	0.6	**46.4163**	0.489	1.1	ug/L	84	Standard
	Cd	111	99306.9	1.0	**46.7049**	0.565	1.2	mg/L	4	Standard
	Cd	114	241612.4	1.4	**46.8293**	0.864	1.8	ug/L	15	Standard
>	**In**	115	514506.0	0.5				ug/L	515400	Standard
	Sn	118	1226.7	11.9	**0.0313**	0.025	79.8	ug/L	1043	Standard
	Sb	123	223567.3	2.4	**48.9114**	1.349	2.8	ug/L	227	Standard
	Ba	135	98832.3	0.8	**49.2280**	0.444	0.9	ug/L	31	Standard
	Ce	140	1928.5	4.2				ug/L	120	Standard
>	**Tb**	159	776966.1	1.0				ug/L	785817	Standard
	Ho	165	70.0	12.4				ug/L	7	Standard
	Tl	203	392749.9	0.4	**47.3414**	0.101	0.2	ug/L	6	Standard
	Tl	205	347331.5	1.4	**48.0611**	0.828	1.7	ug/L	8	Standard
	Pb	206	260197.9	1.5	**50.3854**	0.903	1.8	ug/L	201	Standard
	Pb	207	225756.5	0.7	**48.3511**	0.498	1.0	ug/L	177	Standard
	Pb	208	938620.3	0.3	**50.0460**	0.143	0.3	ug/L	722	Standard
	U	238	348413.4	1.2	**48.9126**	0.702	1.4	ug/L	8	Standard
>	**Bi**	209	461125.6	0.4				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	13434.3	2.0	**17.9314**	0.499	2.8	mg/L	38	Standard
K	39	326.7	6.2	**1.3942**	0.114	8.2	mg/L	33	Standard
Ca	43	105.0	17.2	**11.7541**	3.389	28.8	mg/L	48	Standard
Fe	54	417.7	13.6	**0.2417**	0.046	19.2	mg/L	131	Standard
Fe	57	368.3	18.4	**0.7302**	0.202	27.7	mg/L	153	Standard
> **Sc-1**	45	25097.4	2.9				mg/L	26715	Standard
Cl	35	147257.0	2.0				ug/L	102686	Standard
Kr	83	0.0					ug/L	2	Standard
Br	81	3960.5	7.9				ug/L	1897	Standard
P	31	24618.3	1.2				ug/L	18491	Standard
S	34	4632.4	3.9				ug/L	3734	Standard
Sr	88	208.3	7.7				ug/L	47	Standard
C	12	96.7	46.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	510.0	32.6				mg/L	23	Standard
Dy	164	67.3	1.1				mg/L	23	Standard
Ho-1	165	70.0	12.4				mg/L	7	Standard
Er	166	56.7	27.0				mg/L	13	Standard
I	127	9292.9	9.5				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.135	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.933	
As	75			
Se	82			
Se-1	77			
> Ga	71	WG573653-05		

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.827
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.726
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Sample ID: L1606076405S ~~WG574653-05~~
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Method 6020 - Summary Report

WG573653-06

Sample ID: L1606076406SD ~~WG574653-06~~
Sample Date/Time: Tuesday, July 05, 2016 14:52:29
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74422.3	1.0				ug/L	59517	Standard
	Be	9	52612.9	1.7	**48.3617**	0.773	1.6	ug/L	10	Standard
	Al	27	10662289.8	0.4	**56.0355**	0.765	1.4	ug/L	1872	Standard
	Sc	45	25504.8	1.2				ug/L	26715	Standard
	Ti	47	389.3	8.0	**1.3782**	0.122	8.8	ug/L	54	Standard
	V	51	346003.7	0.8	**47.4205**	0.652	1.4	ug/L	1419	Standard
	Cr	52	364419.8	0.4	**49.9003**	0.476	1.0	ug/L	7059	Standard
	Cr	53	47999.3	1.3	**53.1770**	1.086	2.0	ug/L	398	Standard
	Mn	55	562585.1	0.6	**88.1177**	1.317	1.5	ug/L	824	Standard
	Co	59	325705.1	1.0	**47.5580**	0.821	1.7	ug/L	167	Standard
	Ni	60	87862.4	0.9	**46.4170**	0.147	0.3	ug/L	391	Standard
	Cu	65	85392.0	1.1	**45.0775**	0.826	1.8	ug/L	147	Standard
	Zn	66	54460.0	1.5	**48.8181**	0.992	2.0	ug/L	184	Standard
>	Ge	72	426170.4	0.9				ug/L	422998	Standard
	As	75	54500.5	0.6	**47.7351**	0.547	1.1	ug/L	-58	Standard
	Se	82	5586.5	0.8	**47.0924**	0.760	1.6	ug/L	15	Standard
	Se-1	77	3874.5	1.2	**50.0457**	0.647	1.3	ug/L	58	Standard
>	Ga	71	120.0	7.2				mg/L	113	Standard
	Rb	85	39546.5	1.2				ug/L	27	Standard
	Y	89	373355.3	2.1				ug/L	383780	Standard
>	Rh	103	73.3	23.9				ug/L	18	Standard
	Mo	98	795.8	3.3	**0.2868**	0.005	1.9	ug/L	31	Standard
	Ag	107	309917.0	0.9	**45.4478**	1.091	2.4	ug/L	84	Standard
	Cd	111	98925.2	0.6	**45.9045**	0.713	1.6	mg/L	4	Standard
	Cd	114	241997.9	0.2	**46.2774**	0.724	1.6	ug/L	15	Standard
>	In	115	521524.2	1.5				ug/L	515400	Standard
	Sn	118	1111.7	12.6	**0.0086**	0.021	246.7	ug/L	1043	Standard
	Sb	123	225106.8	1.5	**48.5953**	1.404	2.9	ug/L	227	Standard
	Ba	135	98668.6	0.2	**48.4902**	0.643	1.3	ug/L	31	Standard
	Ce	140	2568.6	4.2				ug/L	120	Standard
>	Tb	159	797441.7	1.0				ug/L	785817	Standard
	Ho	165	75.0	20.0				ug/L	7	Standard
	Tl	203	390077.0	0.7	**46.6876**	0.512	1.1	ug/L	6	Standard
	Tl	205	343975.9	0.9	**47.2579**	0.323	0.7	ug/L	8	Standard
	Pb	206	258001.2	0.8	**49.6043**	0.401	0.8	ug/L	201	Standard
	Pb	207	225133.4	0.9	**47.8742**	0.235	0.5	ug/L	177	Standard
	Pb	208	933282.1	0.3	**49.4092**	0.309	0.6	ug/L	722	Standard
	U	238	345766.6	0.7	**48.1960**	0.247	0.5	ug/L	8	Standard
>	Bi	209	464412.0	0.4				ug/L	444563	Standard

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Na	23	5.0	100.0	**61.8389**	62.186	100.6	mg/L	0	Standard
Mg	24	13541.0	1.0	**17.7808**	0.362	2.0	mg/L	38	Standard
K	39	336.7	13.7	**1.4163**	0.231	16.3	mg/L	33	Standard
Ca	43	163.3	12.4	**21.0248**	3.038	14.4	mg/L	48	Standard
Fe	54	331.1	16.3	**0.1634**	0.049	30.1	mg/L	131	Standard
Fe	57	365.0	10.9	**0.7037**	0.144	20.4	mg/L	153	Standard
> **Sc-1**	45	25504.8	1.2				mg/L	26715	Standard
Cl	35	148112.6	1.9				ug/L	102686	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	4067.2	10.6				ug/L	1897	Standard
P	31	25134.2	3.5				ug/L	18491	Standard
S	34	4587.4	0.7				ug/L	3734	Standard
Sr	88	206.7	17.0				ug/L	47	Standard
C	12	126.7	12.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	463.3	40.4				mg/L	23	Standard
Dy	164	95.7	47.7				mg/L	23	Standard
Ho-1	165	75.0	20.0				mg/L	7	Standard
Er	166	90.0	19.2				mg/L	13	Standard
I	127	8594.1	8.4				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		125.044	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.750	
As	75			
Se	82			
Se-1	77			
> Ga	71			

WG573653-06

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.188
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.465
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

WG573653-06

Sample ID: L1606076406SD ~~**WG574653-06**~~
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Method 6020 - Summary Report

Sample ID: L1606084001
Sample Date/Time: Tuesday, July 05, 2016 14:55:58
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73804.4	3.3				ug/L	59517	Standard
	Be	9	80.0	70.4	**0.0442**	0.056	125.5	ug/L	10	Standard
	Al	27	8489555.7	0.5	**45.0129**	1.328	2.9	ug/L	1872	Standard
	Sc	45	25484.8	3.6				ug/L	26715	Standard
	Ti	47	154.3	2.6	**0.3865**	0.027	7.1	ug/L	54	Standard
	V	51	2503.4	14.7	**0.1596**	0.056	35.1	ug/L	1419	Standard
	Cr	52	10775.9	12.7	**0.5041**	0.212	42.1	ug/L	7059	Standard
	Cr	53	2146.8	9.6	**1.9471**	0.267	13.7	ug/L	398	Standard
	Mn	55	2369263.0	1.3	**364.9819**	1.892	0.5	ug/L	824	Standard
	Co	59	4486.3	4.7	**0.6192**	0.041	6.6	ug/L	167	Standard
	Ni	60	2284.5	7.7	**0.9922**	0.111	11.2	ug/L	391	Standard
	Cu	65	1142.7	11.3	**0.5155**	0.078	15.1	ug/L	147	Standard
	Zn	66	2986.6	2.5	**2.4804**	0.106	4.3	ug/L	184	Standard
>	**Ge**	72	433785.6	1.8				ug/L	422998	Standard
	As	75	177.5	55.8	**0.2052**	0.088	43.1	ug/L	-58	Standard
	Se	82	46.2	24.6	**0.1793**	0.102	56.7	ug/L	15	Standard
	Se-1	77	121.0	11.9	**0.8887**	0.199	22.3	ug/L	58	Standard
>	**Ga**	71	143.3	5.3				mg/L	113	Standard
	Rb	85	2161.8	5.7				ug/L	27	Standard
	Y	89	373866.2	2.2				ug/L	383780	Standard
>	**Rh**	103	56.7	10.2				ug/L	18	Standard
	Mo	98	462.6	27.9	**0.1609**	0.052	32.3	ug/L	31	Standard
	Ag	107	302.3	82.4	**0.0322**	0.038	116.5	ug/L	84	Standard
	Cd	111	832.1	12.7	**0.3763**	0.058	15.4	mg/L	4	Standard
	Cd	114	1975.9	10.1	**0.3675**	0.046	12.4	ug/L	15	Standard
>	**In**	115	530560.2	2.4				ug/L	515400	Standard
	Sn	118	966.7	7.2	**-0.0185**	0.016	85.4	ug/L	1043	Standard
	Sb	123	2536.3	36.0	**0.5250**	0.208	39.6	ug/L	227	Standard
	Ba	135	26459.8	1.1	**12.7704**	0.461	3.6	ug/L	31	Standard
	Ce	140	1171.7	2.6				ug/L	120	Standard
>	**Tb**	159	799320.6	1.1				ug/L	785817	Standard
	Ho	165	61.7	33.8				ug/L	7	Standard
	Tl	203	488.7	74.2	**0.0546**	0.044	81.3	ug/L	6	Standard
	Tl	205	371.7	59.2	**0.0439**	0.031	70.8	ug/L	8	Standard
	Pb	206	560.0	30.2	**0.0611**	0.035	56.5	ug/L	201	Standard
	Pb	207	476.0	31.8	**0.0524**	0.034	65.1	ug/L	177	Standard
	Pb	208	1881.4	22.6	**0.0500**	0.024	48.8	ug/L	722	Standard
	U	238	1450.1	13.8	**0.1971**	0.032	16.1	ug/L	8	Standard
>	**Bi**	209	471326.7	1.9				ug/L	444563	Standard

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Na	23	5.0	173.2	**63.8783**	110.632	173.2	mg/L	0	Standard
Mg	24	1873.4	9.6	**2.4401**	0.325	13.3	mg/L	38	Standard
K	39	73.3	20.8	**0.2067**	0.063	30.6	mg/L	33	Standard
Ca	43	151.7	6.9	**19.1813**	2.267	11.8	mg/L	48	Standard
Fe	54	293.7	10.3	**0.1320**	0.029	22.2	mg/L	131	Standard
Fe	57	395.0	7.9	**0.8043**	0.144	17.9	mg/L	153	Standard
Sc-1	45	25484.8	3.6				mg/L	26715	Standard
Cl	35	149788.9	1.6				ug/L	102686	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	5010.8	5.4				ug/L	1897	Standard
P	31	24675.1	3.6				ug/L	18491	Standard
S	34	4759.1	2.6				ug/L	3734	Standard
Sr	88	280.0	6.4				ug/L	47	Standard
C	12	90.0	19.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	453.3	42.6				mg/L	23	Standard
Dy	164	83.3	46.7				mg/L	23	Standard
Ho-1	165	61.7	33.8				mg/L	7	Standard
Er	166	70.0	49.5				mg/L	13	Standard
I	127	21228.3	9.5				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.006	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.550	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.941
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.020
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606084002
Sample Date/Time: Tuesday, July 05, 2016 14:59:09
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73534.7	2.3				ug/L	59517	Standard
	Be	9	46.7	34.4	**0.0121**	0.014	114.1	ug/L	10	Standard
	Al	27	8187725.8	1.3	**43.5592**	1.194	2.7	ug/L	1872	Standard
	Sc	45	26271.1	1.2				ug/L	26715	Standard
	Ti	47	223.0	9.7	**0.6706**	0.091	13.5	ug/L	54	Standard
	V	51	2966.2	2.7	**0.2226**	0.011	5.0	ug/L	1419	Standard
	Cr	52	8960.6	1.5	**0.2566**	0.021	8.3	ug/L	7059	Standard
	Cr	53	1191.7	1.3	**0.9006**	0.016	1.8	ug/L	398	Standard
	Mn	55	1837757.3	1.3	**283.8849**	2.469	0.9	ug/L	824	Standard
	Co	59	1825.8	3.8	**0.2377**	0.011	4.5	ug/L	167	Standard
	Ni	60	2559.2	4.9	**1.1382**	0.069	6.0	ug/L	391	Standard
	Cu	65	589.3	6.4	**0.2281**	0.021	9.1	ug/L	147	Standard
	Zn	66	2365.2	3.8	**1.9364**	0.080	4.1	ug/L	184	Standard
>	**Ge**	72	432512.8	0.4				ug/L	422998	Standard
	As	75	2595.3	0.9	**2.2889**	0.011	0.5	ug/L	-58	Standard
	Se	82	30.9	13.8	**0.0514**	0.036	70.4	ug/L	15	Standard
	Se-1	77	85.0	16.2	**0.4275**	0.174	40.6	ug/L	58	Standard
>	**Ga**	71	93.3	34.9				mg/L	113	Standard
	Rb	85	13424.3	2.4				ug/L	27	Standard
	Y	89	376160.8	1.1				ug/L	383780	Standard
>	**Rh**	103	116.7	28.5				ug/L	18	Standard
	Mo	98	1567.8	2.8	**0.5699**	0.022	3.9	ug/L	31	Standard
	Ag	107	212.7	2.9	**0.0190**	0.001	5.1	ug/L	84	Standard
	Cd	111	289.9	4.8	**0.1295**	0.006	4.7	mg/L	4	Standard
	Cd	114	700.0	14.3	**0.1283**	0.018	14.1	ug/L	15	Standard
>	**In**	115	525136.6	1.0				ug/L	515400	Standard
	Sn	118	931.7	13.7	**-0.0229**	0.023	100.6	ug/L	1043	Standard
	Sb	123	986.6	31.1	**0.1955**	0.068	34.5	ug/L	227	Standard
	Ba	135	86104.0	0.8	**42.0207**	0.751	1.8	ug/L	31	Standard
	Ce	140	2473.5	0.8				ug/L	120	Standard
>	**Tb**	159	801459.3	0.2				ug/L	785817	Standard
	Ho	165	165.0	12.1				ug/L	7	Standard
	Tl	203	164.3	6.7	**0.0162**	0.001	7.5	ug/L	6	Standard
	Tl	205	141.7	21.3	**0.0128**	0.004	33.3	ug/L	8	Standard
	Pb	206	448.7	6.8	**0.0413**	0.006	13.9	ug/L	201	Standard
	Pb	207	369.3	9.5	**0.0312**	0.007	23.9	ug/L	177	Standard
	Pb	208	1619.7	1.2	**0.0378**	0.001	3.4	ug/L	722	Standard
	U	238	195.3	3.3	**0.0249**	0.001	4.0	ug/L	8	Standard
>	**Bi**	209	461393.3	0.6				ug/L	444563	Standard

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Na	23	5.0	0.0	**59.5775**	0.717	1.2	mg/L	0	Standard
Mg	24	1966.8	4.0	**2.4790**	0.126	5.1	mg/L	38	Standard
K	39	335.0	10.4	**1.3626**	0.163	12.0	mg/L	33	Standard
Ca	43	360.0	9.7	**51.6989**	4.886	9.4	mg/L	48	Standard
Fe	54	24851.2	4.1	**20.2624**	1.076	5.3	mg/L	131	Standard
Fe	57	6913.2	4.3	**21.2950**	0.672	3.2	mg/L	153	Standard
Sc-1	45	26271.1	1.2				mg/L	26715	Standard
Cl	35	135831.0	2.2				ug/L	102686	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	3930.5	0.7				ug/L	1897	Standard
P	31	29929.5	1.3				ug/L	18491	Standard
S	34	5092.5	5.4				ug/L	3734	Standard
Sr	88	550.0	1.8				ug/L	47	Standard
C	12	170.0	15.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	310.0	12.9				mg/L	23	Standard
Dy	164	189.5	9.1				mg/L	23	Standard
Ho-1	165	165.0	12.1				mg/L	7	Standard
Er	166	150.0	26.7				mg/L	13	Standard
I	127	27391.6	9.5				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.553	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.249	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.889
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.786
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606084002
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Method 6020 - Summary Report

Sample ID: L1606084002PS WG574236-03
Sample Date/Time: Tuesday, July 05, 2016 15:02:21
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	71215.3	1.4				ug/L	59517	Standard
	Be	9	53419.0	1.9	**51.3238**	1.363	2.7	ug/L	10	Standard
	Al	27	8290601.7	0.9	**45.5292**	0.318	0.7	ug/L	1872	Standard
	Sc	45	26044.0	1.5				ug/L	26715	Standard
	Ti	47	229.0	3.5	**0.6998**	0.026	3.7	ug/L	54	Standard
	V	51	363098.5	0.9	**49.2882**	0.825	1.7	ug/L	1419	Standard
	Cr	52	354517.3	1.6	**48.0396**	1.076	2.2	ug/L	7059	Standard
	Cr	53	44481.9	1.3	**48.7680**	1.031	2.1	ug/L	398	Standard
	Mn	55	2103514.7	1.3	**326.6363**	6.876	2.1	ug/L	824	Standard
	Co	59	342433.5	0.8	**49.5153**	0.729	1.5	ug/L	167	Standard
	Ni	60	92183.3	1.2	**48.2373**	0.753	1.6	ug/L	391	Standard
	Cu	65	90169.9	2.3	**47.1410**	1.279	2.7	ug/L	147	Standard
	Zn	66	57443.7	1.3	**50.9979**	0.828	1.6	ug/L	184	Standard
>	Ge	72	430347.2	0.8				ug/L	422998	Standard
	As	75	60006.0	1.2	**52.0449**	1.032	2.0	ug/L	-58	Standard
	Se	82	5966.5	2.0	**49.8222**	1.418	2.8	ug/L	15	Standard
	Se-1	77	3969.5	1.8	**50.7854**	0.990	1.9	ug/L	58	Standard
>	Ga	71	108.3	17.5				mg/L	113	Standard
	Rb	85	13110.7	1.4				ug/L	27	Standard
	Y	89	368244.6	2.4				ug/L	383780	Standard
>	Rh	103	140.0	27.9				ug/L	18	Standard
	Mo	98	1562.2	4.4	**0.5743**	0.030	5.2	ug/L	31	Standard
	Ag	107	322969.4	1.0	**47.5591**	1.199	2.5	ug/L	84	Standard
	Cd	111	105328.1	0.5	**49.0777**	0.715	1.5	mg/L	4	Standard
	Cd	114	259310.4	0.4	**49.7961**	1.008	2.0	ug/L	15	Standard
>	In	115	519403.4	1.9				ug/L	515400	Standard
	Sn	118	1065.0	7.2	**0.0017**	0.014	864.7	ug/L	1043	Standard
	Sb	123	226012.3	1.8	**48.9921**	1.467	3.0	ug/L	227	Standard
	Ba	135	180354.7	0.4	**89.0278**	1.833	2.1	ug/L	31	Standard
	Ce	140	2526.9	1.2				ug/L	120	Standard
>	Tb	159	786353.1	1.7				ug/L	785817	Standard
	Ho	165	170.0	5.9				ug/L	7	Standard
	Tl	203	409495.4	0.7	**49.2029**	1.011	2.1	ug/L	6	Standard
	Tl	205	365021.3	0.2	**50.3454**	0.883	1.8	ug/L	8	Standard
	Pb	206	262864.3	0.2	**50.7361**	0.790	1.6	ug/L	201	Standard
	Pb	207	230244.9	0.2	**49.1550**	0.951	1.9	ug/L	177	Standard
	Pb	208	959277.6	0.6	**50.9866**	1.127	2.2	ug/L	722	Standard
	U	238	361444.1	0.4	**50.5801**	1.062	2.1	ug/L	8	Standard
>	Bi	209	462702.5	1.8				ug/L	444563	Standard

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Na	23	3.3	86.6	**40.2572**	34.868	86.6	mg/L	0	Standard
Mg	24	1976.8	6.8	**2.5149**	0.213	8.5	mg/L	38	Standard
K	39	321.7	3.2	**1.3157**	0.065	4.9	mg/L	33	Standard
Ca	43	363.3	14.1	**52.8359**	8.792	16.6	mg/L	48	Standard
Fe	54	24940.0	2.8	**20.5071**	0.609	3.0	mg/L	131	Standard
Fe	57	7271.7	1.5	**22.6330**	0.470	2.1	mg/L	153	Standard
Sc-1	45	26044.0	1.5				mg/L	26715	Standard
Cl	35	132076.5	0.5				ug/L	102686	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	3577.1	8.2				ug/L	1897	Standard
P	31	28488.4	1.2				ug/L	18491	Standard
S	34	4909.1	3.3				ug/L	3734	Standard
Sr	88	605.0	5.0				ug/L	47	Standard
C	12	166.7	21.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	306.7	6.8				mg/L	23	Standard
Dy	164	181.1	23.8				mg/L	23	Standard
Ho-1	165	170.0	5.9				mg/L	7	Standard
Er	166	186.7	20.3				mg/L	13	Standard
I	127	27692.1	9.6				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		119.656	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.738	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.777
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.080
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606084002SDL WG574236-04
Sample Date/Time: Tuesday, July 05, 2016 15:05:32
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66808.8	4.3				ug/L	59517	Standard
	Be	9	20.0	66.1	**-0.0105**	0.014	131.7	ug/L	10	Standard
	Al	27	1604187.7	2.3	**9.3858**	0.195	2.1	ug/L	1872	Standard
	Sc	45	23339.6	2.1				ug/L	26715	Standard
	Ti	47	54.3	22.5	**-0.0080**	0.052	642.7	ug/L	54	Standard
	V	51	1357.6	7.8	**0.0174**	0.015	86.9	ug/L	1419	Standard
	Cr	52	4989.2	2.0	**-0.2418**	0.005	2.2	ug/L	7059	Standard
	Cr	53	575.0	11.8	**0.2660**	0.075	28.0	ug/L	398	Standard
	Mn	55	348087.7	0.3	**57.4299**	0.924	1.6	ug/L	824	Standard
	Co	59	538.0	7.7	**0.0578**	0.006	10.1	ug/L	167	Standard
	Ni	60	688.0	2.4	**0.1850**	0.010	5.3	ug/L	391	Standard
	Cu	65	448.3	7.8	**0.1710**	0.022	12.8	ug/L	147	Standard
	Zn	66	1052.7	2.4	**0.8387**	0.027	3.2	ug/L	184	Standard
>	**Ge**	72	404283.3	1.3				ug/L	422998	Standard
	As	75	518.8	4.7	**0.5303**	0.028	5.4	ug/L	-58	Standard
	Se	82	24.9	27.5	**0.0169**	0.064	378.2	ug/L	15	Standard
	Se-1	77	56.3	10.7	**0.1083**	0.073	67.6	ug/L	58	Standard
>	**Ga**	71	40.0	12.5				mg/L	113	Standard
	Rb	85	2571.9	9.6				ug/L	27	Standard
	Y	89	339736.3	2.3				ug/L	383780	Standard
>	**Rh**	103	43.3	24.0				ug/L	18	Standard
	Mo	98	363.2	6.5	**0.1354**	0.010	7.3	ug/L	31	Standard
	Ag	107	180.0	28.9	**0.0163**	0.008	50.9	ug/L	84	Standard
	Cd	111	92.3	46.9	**0.0417**	0.022	51.9	mg/L	4	Standard
	Cd	114	221.2	39.2	**0.0406**	0.018	43.6	ug/L	15	Standard
>	**In**	115	487819.8	1.2				ug/L	515400	Standard
	Sn	118	451.7	15.1	**-0.0985**	0.013	13.5	ug/L	1043	Standard
	Sb	123	1293.7	23.2	**0.2823**	0.070	24.8	ug/L	227	Standard
	Ba	135	16562.4	0.8	**8.6817**	0.068	0.8	ug/L	31	Standard
	Ce	140	460.0	7.6				ug/L	120	Standard
>	**Tb**	159	753284.7	2.7				ug/L	785817	Standard
	Ho	165	40.0	25.0				ug/L	7	Standard
	Tl	203	154.7	59.6	**0.0156**	0.012	74.3	ug/L	6	Standard
	Tl	205	111.7	66.0	**0.0091**	0.011	116.4	ug/L	8	Standard
	Pb	206	331.7	18.9	**0.0205**	0.013	61.2	ug/L	201	Standard
	Pb	207	280.0	20.4	**0.0139**	0.013	95.3	ug/L	177	Standard
	Pb	208	1183.4	17.4	**0.0163**	0.012	71.9	ug/L	722	Standard
	U	238	105.7	45.2	**0.0128**	0.007	54.6	ug/L	8	Standard
>	**Bi**	209	448863.0	1.5				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	368.3	12.9	**0.4967**	0.077	15.6	mg/L	38	Standard
K	39	110.0	18.2	**0.4234**	0.112	26.4	mg/L	33	Standard
Ca	43	85.0	15.6	**9.4329**	2.342	24.8	mg/L	48	Standard
Fe	54	4825.2	4.1	**4.3363**	0.190	4.4	mg/L	131	Standard
Fe	57	1545.1	3.4	**4.9980**	0.164	3.3	mg/L	153	Standard
> **Sc-1**	45	23339.6	2.1				mg/L	26715	Standard
Cl	35	122729.7	0.7				ug/L	102686	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1810.1	1.9				ug/L	1897	Standard
P	31	11342.6	3.4				ug/L	18491	Standard
S	34	4615.7	4.3				ug/L	3734	Standard
Sr	88	140.0	14.3				ug/L	47	Standard
C	12	116.7	32.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	780.0	17.3				mg/L	23	Standard
Dy	164	47.9	23.5				mg/L	23	Standard
Ho-1	165	40.0	25.0				mg/L	7	Standard
Er	166	43.3	74.2				mg/L	13	Standard
I	127	29927.9	1.5				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.252	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.576	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.649
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.967
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606158103
Sample Date/Time: Tuesday, July 05, 2016 15:08:43
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1000
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	70716.3	0.9				ug/L	59517	Standard
	Be	9	58.3	55.1	**0.0253**	0.031	122.6	ug/L	10	Standard
	Al	27	42897.4	41.1	**0.2249**	0.097	43.3	ug/L	1872	Standard
	Sc	45	25408.0	2.7				ug/L	26715	Standard
	Ti	47	31.0	5.6	**-0.1208**	0.008	6.5	ug/L	54	Standard
	V	51	-179.8	554.2	**-0.2029**	0.134	65.8	ug/L	1419	Standard
	Cr	52	298992.0	7.5	**39.6203**	2.659	6.7	ug/L	7059	Standard
	Cr	53	36901.6	5.6	**39.6589**	1.862	4.7	ug/L	398	Standard
	Mn	55	2327.8	3.5	**0.2242**	0.010	4.4	ug/L	824	Standard
	Co	59	223.0	13.1	**0.0066**	0.004	58.2	ug/L	167	Standard
	Ni	60	517.0	20.7	**0.0667**	0.052	78.5	ug/L	391	Standard
	Cu	65	1519.7	11.4	**0.7024**	0.082	11.6	ug/L	147	Standard
	Zn	66	2715.9	2.3	**2.2168**	0.034	1.5	ug/L	184	Standard
>	Ge	72	437998.6	0.9				ug/L	422998	Standard
	As	75	-10.3	656.9	**0.0426**	0.057	134.8	ug/L	-58	Standard
	Se	82	18.7	46.7	**-0.0523**	0.071	135.8	ug/L	15	Standard
	Se-1	77	64.0	21.5	**0.1460**	0.170	116.4	ug/L	58	Standard
>	Ga	71	38.3	41.9				mg/L	113	Standard
	Rb	85	78.3	31.5				ug/L	27	Standard
	Y	89	376340.8	1.8				ug/L	383780	Standard
>	Rh	103	21.7	13.3				ug/L	18	Standard
	Mo	98	88.2	43.9	**0.0229**	0.014	59.7	ug/L	31	Standard
	Ag	107	150.7	39.4	**0.0095**	0.008	86.9	ug/L	84	Standard
	Cd	111	24.1	73.8	**0.0067**	0.008	117.6	mg/L	4	Standard
	Cd	114	79.2	86.7	**0.0101**	0.013	124.4	ug/L	15	Standard
>	In	115	535108.9	1.3				ug/L	515400	Standard
	Sn	118	960.0	15.3	**-0.0214**	0.023	107.5	ug/L	1043	Standard
	Sb	123	1408.8	30.3	**0.2794**	0.087	31.1	ug/L	227	Standard
	Ba	135	138.7	37.3	**0.0427**	0.025	57.5	ug/L	31	Standard
	Ce	140	55.0	9.1				ug/L	120	Standard
>	Tb	159	802622.4	1.3				ug/L	785817	Standard
	Ho	165	13.3	43.3				ug/L	7	Standard
	Tl	203	84.7	82.8	**0.0063**	0.008	129.4	ug/L	6	Standard
	Tl	205	46.7	64.6	**-0.0005**	0.004	815.4	ug/L	8	Standard
	Pb	206	348.3	8.2	**0.0203**	0.005	25.5	ug/L	201	Standard
	Pb	207	305.0	8.1	**0.0159**	0.005	31.7	ug/L	177	Standard
	Pb	208	1252.4	9.7	**0.0166**	0.006	36.9	ug/L	722	Standard
	U	238	44.7	78.3	**0.0036**	0.005	131.3	ug/L	8	Standard
>	Bi	209	472703.3	0.4				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	110.0	15.7	**0.1114**	0.020	18.4	mg/L	38	Standard
K	39	20.0	43.3	**-0.0370**	0.041	109.8	mg/L	33	Standard
Ca	43	26.7	54.1	**-1.4746**	2.376	161.1	mg/L	48	Standard
Fe	54	138.7	32.3	**0.0017**	0.041	2400.4	mg/L	131	Standard
Fe	57	200.0	22.2	**0.1699**	0.147	86.6	mg/L	153	Standard
Sc-1	45	25408.0	2.7				mg/L	26715	Standard
Cl	35	133606.5	0.4				ug/L	102686	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1703.4	11.0				ug/L	1897	Standard
P	31	22500.0	2.5				ug/L	18491	Standard
S	34	4699.1	3.4				ug/L	3734	Standard
Sr	88	73.3	15.7				ug/L	47	Standard
C	12	73.3	47.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	343.3	20.7				mg/L	23	Standard
Dy	164	6.2	186.8				mg/L	23	Standard
Ho-1	165	13.3	43.3				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	10947.3	2.8				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		118.818	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.546	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.824
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.330
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, July 05, 2016 15:11:57
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	70125.3	1.4				ug/L	59517	Standard
	Be	9	50979.0	1.1	**49.7422**	1.221	2.5	ug/L	10	Standard
	Al	27	7402692.3	0.9	**41.2860**	0.584	1.4	ug/L	1872	Standard
	Sc	45	25895.4	1.7				ug/L	26715	Standard
	Ti	47	22492.7	1.0	**90.6468**	2.240	2.5	ug/L	54	Standard
	V	51	346331.1	1.1	**45.9316**	0.454	1.0	ug/L	1419	Standard
	Cr	52	345071.9	0.3	**45.6548**	0.872	1.9	ug/L	7059	Standard
	Cr	53	42666.7	3.5	**45.7103**	2.374	5.2	ug/L	398	Standard
	Mn	55	292380.5	0.4	**44.2590**	0.710	1.6	ug/L	824	Standard
	Co	59	335216.6	1.1	**47.3692**	0.361	0.8	ug/L	167	Standard
	Ni	60	90320.1	1.0	**46.1899**	1.153	2.5	ug/L	391	Standard
	Cu	65	91027.6	0.6	**46.5142**	1.042	2.2	ug/L	147	Standard
	Zn	66	55299.7	0.5	**47.9761**	0.845	1.8	ug/L	184	Standard
>	Ge	72	440353.6	1.7				ug/L	422998	Standard
	As	75	55509.2	0.2	**47.0595**	0.806	1.7	ug/L	-58	Standard
	Se	82	5709.7	0.9	**46.5853**	1.035	2.2	ug/L	15	Standard
	Se-1	77	3754.1	1.0	**46.8933**	0.806	1.7	ug/L	58	Standard
>	Ga	71	41.7	6.9				mg/L	113	Standard
	Rb	85	823.4	11.7				ug/L	27	Standard
	Y	89	378666.9	0.7				ug/L	383780	Standard
>	Rh	103	30.0	28.9				ug/L	18	Standard
	Mo	98	259050.1	0.8	**94.9592**	0.317	0.3	ug/L	31	Standard
	Ag	107	322011.3	0.7	**46.5677**	0.155	0.3	ug/L	84	Standard
	Cd	111	102107.2	0.2	**46.7310**	0.360	0.8	mg/L	4	Standard
	Cd	114	246801.9	1.7	**46.5443**	0.480	1.0	ug/L	15	Standard
>	In	115	528722.8	0.7				ug/L	515400	Standard
	Sn	118	280329.7	1.1	**47.0151**	0.442	0.9	ug/L	1043	Standard
	Sb	123	231421.3	0.7	**49.2655**	0.224	0.5	ug/L	227	Standard
	Ba	135	93945.7	0.2	**45.5349**	0.382	0.8	ug/L	31	Standard
	Ce	140	63.3	4.6				ug/L	120	Standard
>	Tb	159	806908.6	1.0				ug/L	785817	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	399831.4	0.8	**47.4349**	0.148	0.3	ug/L	6	Standard
	Tl	205	357473.0	0.8	**48.6872**	0.827	1.7	ug/L	8	Standard
	Pb	206	250546.9	0.5	**47.7504**	0.571	1.2	ug/L	201	Standard
	Pb	207	228022.7	0.4	**48.0667**	0.391	0.8	ug/L	177	Standard
	Pb	208	940296.6	0.4	**49.3466**	0.540	1.1	ug/L	722	Standard
	U	238	357474.6	0.7	**49.3966**	0.801	1.6	ug/L	8	Standard
>	Bi	209	468519.3	1.0				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4000.5	4.9	**5.1488**	0.225	4.4	mg/L	38	Standard
K	39	763.4	3.4	**3.3202**	0.175	5.3	mg/L	33	Standard
Ca	43	86.7	23.3	**8.1704**	3.118	38.2	mg/L	48	Standard
Fe	54	5999.9	2.0	**4.8749**	0.179	3.7	mg/L	131	Standard
Fe	57	1865.1	7.1	**5.4851**	0.515	9.4	mg/L	153	Standard
Sc-1	45	25895.4	1.7				mg/L	26715	Standard
Cl	35	131320.0	0.9				ug/L	102686	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	1483.4	3.0				ug/L	1897	Standard
P	31	23344.6	1.7				ug/L	18491	Standard
S	34	4880.8	4.3				ug/L	3734	Standard
Sr	88	65.0	26.6				ug/L	47	Standard
C	12	53.3	28.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	246.7	18.3				mg/L	23	Standard
Dy	164	12.7	124.5				mg/L	23	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	13	Standard
I	127	8469.0	2.4				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	99.484		
Al	27	82.572		
Sc	45			
Ti	47	90.647		
V	51	91.863		
Cr	52	91.310		
Cr	53			
Mn	55	88.518		
Co	59	94.738		
Ni	60	92.380		
Cu	65	93.028		
Zn	66	95.952		
Ge	72		104.103	
As	75	94.119		
Se	82	93.171		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	94.959		
Ag	107	93.135		
Cd	111	93.462		
Cd	114			
> In	115			102.585
Sn	118	94.030		
Sb	123	98.531		
Ba	135	91.070		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	94.870		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.693		
U	238	98.793		
> Bi	209			105.389
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	
QC Std 6	Mn	55	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, July 05, 2016 15:15:17
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68916.4	0.8				ug/L	59517	Standard
	Be	9	40.0	50.0	**0.0086**	0.020	229.1	ug/L	10	Standard
	Al	27	3637.2	54.9	**0.0082**	0.011	136.9	ug/L	1872	Standard
	Sc	45	24850.4	4.6				ug/L	26715	Standard
	Ti	47	27.3	21.4	**-0.1319**	0.022	16.8	ug/L	54	Standard
	V	51	1207.5	6.4	**-0.0116**	0.014	116.9	ug/L	1419	Standard
	Cr	52	5805.8	3.0	**-0.1575**	0.037	23.8	ug/L	7059	Standard
	Cr	53	606.7	8.8	**0.2731**	0.055	20.3	ug/L	398	Standard
	Mn	55	828.0	30.5	**0.0006**	0.042	7136.5	ug/L	824	Standard
	Co	59	262.3	35.1	**0.0137**	0.014	102.8	ug/L	167	Standard
	Ni	60	336.0	4.2	**-0.0198**	0.011	55.4	ug/L	391	Standard
	Cu	65	176.3	6.5	**0.0151**	0.005	36.3	ug/L	147	Standard
	Zn	66	233.3	17.5	**0.0527**	0.039	74.1	ug/L	184	Standard
>	Ge	72	422253.9	2.0				ug/L	422998	Standard
	As	75	-8.3	378.0	**0.0446**	0.028	61.7	ug/L	-58	Standard
	Se	82	22.4	43.9	**-0.0138**	0.087	629.8	ug/L	15	Standard
	Se-1	77	55.7	13.5	**0.0684**	0.112	163.8	ug/L	58	Standard
>	Ga	71	31.7	48.2				mg/L	113	Standard
	Rb	85	25.0	20.0				ug/L	27	Standard
	Y	89	370201.5	0.8				ug/L	383780	Standard
>	Rh	103	16.7	34.6				ug/L	18	Standard
	Mo	98	215.7	29.8	**0.0705**	0.024	33.7	ug/L	31	Standard
	Ag	107	168.0	31.5	**0.0124**	0.008	62.4	ug/L	84	Standard
	Cd	111	33.6	82.0	**0.0113**	0.013	112.0	mg/L	4	Standard
	Cd	114	74.8	40.4	**0.0096**	0.006	59.9	ug/L	15	Standard
>	In	115	526419.5	0.3				ug/L	515400	Standard
	Sn	118	1126.7	24.4	**0.0095**	0.046	484.9	ug/L	1043	Standard
	Sb	123	894.6	29.9	**0.1749**	0.057	32.5	ug/L	227	Standard
	Ba	135	65.3	53.5	**0.0081**	0.017	210.3	ug/L	31	Standard
	Ce	140	20.0	43.3				ug/L	120	Standard
>	Tb	159	785550.2	0.8				ug/L	785817	Standard
	Ho	165	10.0	100.0				ug/L	7	Standard
	Tl	203	138.0	55.1	**0.0128**	0.009	70.0	ug/L	6	Standard
	Tl	205	120.0	58.8	**0.0096**	0.010	99.6	ug/L	8	Standard
	Pb	206	300.7	15.7	**0.0120**	0.009	74.4	ug/L	201	Standard
	Pb	207	261.3	11.7	**0.0074**	0.006	86.9	ug/L	177	Standard
	Pb	208	1162.7	18.1	**0.0127**	0.011	86.7	ug/L	722	Standard
	U	238	113.7	44.6	**0.0133**	0.007	52.6	ug/L	8	Standard
>	Bi	209	467045.2	1.0				ug/L	444563	Standard

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Na	23	1.7	173.2	**20.0774**	34.766	173.2	mg/L	0	Standard
Mg	24	63.3	59.8	**0.0505**	0.049	96.0	mg/L	38	Standard
K	39	25.0	20.0	**-0.0107**	0.029	271.0	mg/L	33	Standard
Ca	43	30.0	44.1	**-0.8471**	2.017	238.1	mg/L	48	Standard
Fe	54	124.4	10.8	**-0.0084**	0.016	194.3	mg/L	131	Standard
Fe	57	228.3	23.4	**0.2797**	0.180	64.5	mg/L	153	Standard
Sc-1	45	24850.4	4.6				mg/L	26715	Standard
Cl	35	129750.5	0.7				ug/L	102686	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	1493.4	8.4				ug/L	1897	Standard
P	31	22802.2	2.4				ug/L	18491	Standard
S	34	4805.8	1.6				ug/L	3734	Standard
Sr	88	70.0	12.4				ug/L	47	Standard
C	12	53.3	39.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	253.3	12.1				mg/L	23	Standard
Dy	164	9.7	105.8				mg/L	23	Standard
Ho-1	165	10.0	100.0				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	6014.5	0.8				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.824	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.138
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.057
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606084003
Sample Date/Time: Tuesday, July 05, 2016 15:18:39
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69247.9	1.9				ug/L	59517	Standard
	Be	9	28.3	20.4	**-0.0031**	0.005	168.6	ug/L	10	Standard
	Al	27	7792341.0	1.8	**44.0069**	0.228	0.5	ug/L	1872	Standard
	Sc	45	26012.3	1.7				ug/L	26715	Standard
	Ti	47	226.0	4.2	**0.6862**	0.036	5.2	ug/L	54	Standard
	V	51	2895.4	4.8	**0.2146**	0.022	10.4	ug/L	1419	Standard
	Cr	52	8614.8	1.1	**0.2135**	0.004	2.0	ug/L	7059	Standard
	Cr	53	988.4	7.9	**0.6804**	0.071	10.5	ug/L	398	Standard
	Mn	55	1737468.5	0.6	**269.4090**	2.046	0.8	ug/L	824	Standard
	Co	59	1656.8	4.1	**0.2143**	0.010	4.6	ug/L	167	Standard
	Ni	60	2359.2	2.3	**1.0380**	0.020	1.9	ug/L	391	Standard
	Cu	65	1053.7	4.4	**0.4719**	0.019	4.0	ug/L	147	Standard
	Zn	66	2213.2	1.3	**1.8091**	0.029	1.6	ug/L	184	Standard
>	**Ge**	72	430908.3	1.3				ug/L	422998	Standard
	As	75	2580.9	3.2	**2.2846**	0.061	2.7	ug/L	-58	Standard
	Se	82	39.1	25.3	**0.1208**	0.079	65.8	ug/L	15	Standard
	Se-1	77	65.0	23.2	**0.1716**	0.184	107.5	ug/L	58	Standard
>	**Ga**	71	81.7	23.2				mg/L	113	Standard
	Rb	85	11964.7	1.9				ug/L	27	Standard
	Y	89	378115.5	1.4				ug/L	383780	Standard
>	**Rh**	103	136.7	30.7				ug/L	18	Standard
	Mo	98	1610.9	0.7	**0.5957**	0.008	1.3	ug/L	31	Standard
	Ag	107	128.7	13.7	**0.0071**	0.003	37.9	ug/L	84	Standard
	Cd	111	323.8	10.4	**0.1475**	0.015	10.0	mg/L	4	Standard
	Cd	114	833.9	5.6	**0.1564**	0.008	5.2	ug/L	15	Standard
>	**In**	115	516455.5	0.6				ug/L	515400	Standard
	Sn	118	975.0	23.9	**-0.0131**	0.039	300.1	ug/L	1043	Standard
	Sb	123	687.7	30.0	**0.1335**	0.044	33.2	ug/L	227	Standard
	Ba	135	84784.2	0.9	**42.0673**	0.326	0.8	ug/L	31	Standard
	Ce	140	2595.2	2.9				ug/L	120	Standard
>	**Tb**	159	790454.6	1.1				ug/L	785817	Standard
	Ho	165	141.7	2.0				ug/L	7	Standard
	Tl	203	65.7	35.1	**0.0044**	0.003	61.5	ug/L	6	Standard
	Tl	205	60.0	16.7	**0.0017**	0.001	85.7	ug/L	8	Standard
	Pb	206	344.3	0.4	**0.0224**	0.001	3.0	ug/L	201	Standard
	Pb	207	279.0	2.2	**0.0130**	0.001	11.1	ug/L	177	Standard
	Pb	208	1154.0	7.8	**0.0141**	0.004	29.0	ug/L	722	Standard
	U	238	98.7	20.1	**0.0116**	0.003	23.0	ug/L	8	Standard
>	**Bi**	209	452902.8	1.4				ug/L	444563	Standard

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Na	23	13.3	78.1	**161.7099**	128.098	79.2	mg/L	0	Standard
Mg	24	2013.5	4.3	**2.5629**	0.091	3.5	mg/L	38	Standard
K	39	326.7	21.4	**1.3363**	0.291	21.8	mg/L	33	Standard
Ca	43	328.3	5.3	**47.1714**	1.997	4.2	mg/L	48	Standard
Fe	54	23350.4	3.1	**19.2109**	0.275	1.4	mg/L	131	Standard
Fe	57	6899.9	3.9	**21.4874**	1.207	5.6	mg/L	153	Standard
> **Sc-1**	45	26012.3	1.7				mg/L	26715	Standard
Cl	35	129356.5	0.8				ug/L	102686	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	4580.7	5.6				ug/L	1897	Standard
P	31	27484.9	1.2				ug/L	18491	Standard
S	34	4719.1	2.4				ug/L	3734	Standard
Sr	88	548.3	5.6				ug/L	47	Standard
C	12	146.7	3.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	253.3	18.7				mg/L	23	Standard
Dy	164	220.9	13.5				mg/L	23	Standard
Ho-1	165	141.7	2.0				mg/L	7	Standard
Er	166	190.0	5.3				mg/L	13	Standard
I	127	24882.2	8.0				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.350	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.870	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.205
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.876
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606084004
Sample Date/Time: Tuesday, July 05, 2016 15:21:50
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70614.2	2.1				ug/L	59517	Standard
	Be	9	28.3	53.9	**-0.0038**	0.014	368.5	ug/L	10	Standard
	Al	27	7900249.7	1.1	**43.7608**	0.720	1.6	ug/L	1872	Standard
	Sc	45	26782.0	0.8				ug/L	26715	Standard
	Ti	47	3588.1	0.4	**14.1935**	0.090	0.6	ug/L	54	Standard
	V	51	6693.1	2.6	**0.7082**	0.020	2.9	ug/L	1419	Standard
	Cr	52	12111.5	1.4	**0.6541**	0.018	2.8	ug/L	7059	Standard
	Cr	53	1506.7	2.0	**1.2114**	0.035	2.9	ug/L	398	Standard
	Mn	55	17581452.8	0.3	**2658.4373**	3.806	0.1	ug/L	824	Standard
	Co	59	4243.6	2.2	**0.5726**	0.015	2.7	ug/L	167	Standard
	Ni	60	2745.6	2.2	**1.2045**	0.027	2.2	ug/L	391	Standard
	Cu	65	1202.7	3.6	**0.5341**	0.024	4.6	ug/L	147	Standard
	Zn	66	3754.1	1.6	**3.0952**	0.039	1.2	ug/L	184	Standard
>	**Ge**	72	442050.2	0.4				ug/L	422998	Standard
	As	75	2909.7	3.0	**2.5057**	0.070	2.8	ug/L	-58	Standard
	Se	82	31.9	12.9	**0.0539**	0.033	60.5	ug/L	15	Standard
	Se-1	77	67.7	16.6	**0.1852**	0.138	74.8	ug/L	58	Standard
>	**Ga**	71	776.7	3.0				mg/L	113	Standard
	Rb	85	9377.9	1.3				ug/L	27	Standard
	Y	89	383556.3	1.3				ug/L	383780	Standard
>	**Rh**	103	100.0	32.8				ug/L	18	Standard
	Mo	98	672.2	2.0	**0.2388**	0.005	2.0	ug/L	31	Standard
	Ag	107	98.7	10.8	**0.0024**	0.002	64.7	ug/L	84	Standard
	Cd	111	30.8	23.2	**0.0100**	0.003	33.1	mg/L	4	Standard
	Cd	114	108.3	7.7	**0.0160**	0.002	9.5	ug/L	15	Standard
>	**In**	115	525957.1	0.3				ug/L	515400	Standard
	Sn	118	935.0	11.2	**-0.0227**	0.018	80.5	ug/L	1043	Standard
	Sb	123	434.5	28.0	**0.0767**	0.026	34.3	ug/L	227	Standard
	Ba	135	66229.1	0.7	**32.2618**	0.264	0.8	ug/L	31	Standard
	Ce	140	20473.8	2.0				ug/L	120	Standard
>	**Tb**	159	804202.4	0.2				ug/L	785817	Standard
	Ho	165	543.3	11.0				ug/L	7	Standard
	Tl	203	78.0	6.8	**0.0057**	0.001	10.8	ug/L	6	Standard
	Tl	205	91.7	22.0	**0.0058**	0.003	46.8	ug/L	8	Standard
	Pb	206	1137.0	4.5	**0.1729**	0.009	5.0	ug/L	201	Standard
	Pb	207	964.7	6.0	**0.1571**	0.012	7.6	ug/L	177	Standard
	Pb	208	4026.9	0.3	**0.1645**	0.002	1.1	ug/L	722	Standard
	U	238	170.0	1.6	**0.0212**	0.000	2.2	ug/L	8	Standard
>	**Bi**	209	465104.5	0.5				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	2243.5	4.3	**2.7768**	0.124	4.5	mg/L	38	Standard
K	39	158.3	20.5	**0.5629**	0.147	26.2	mg/L	33	Standard
Ca	43	271.7	10.5	**36.7513**	4.176	11.4	mg/L	48	Standard
Fe	54	8004.2	3.6	**6.3207**	0.284	4.5	mg/L	131	Standard
Fe	57	2493.5	2.3	**7.2247**	0.163	2.2	mg/L	153	Standard
> **Sc-1**	45	26782.0	0.8				mg/L	26715	Standard
Cl	35	130933.3	0.6				ug/L	102686	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	3853.8	3.7				ug/L	1897	Standard
P	31	27030.8	4.1				ug/L	18491	Standard
S	34	4770.8	5.3				ug/L	3734	Standard
Sr	88	390.0	11.0				ug/L	47	Standard
C	12	123.3	23.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	210.0	21.8				mg/L	23	Standard
Dy	164	725.6	12.5				mg/L	23	Standard
Ho-1	165	543.3	11.0				mg/L	7	Standard
Er	166	440.0	4.5				mg/L	13	Standard
I	127	39830.8	7.8				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.646	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.504	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.048
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.621
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606084005
Sample Date/Time: Tuesday, July 05, 2016 15:25:02
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70286.1	3.0				ug/L	59517	Standard
	Be	9	30.0	44.1	**-0.0016**	0.014	836.8	ug/L	10	Standard
	Al	27	6569109.5	0.8	**36.5651**	0.868	2.4	ug/L	1872	Standard
	Sc	45	26915.6	1.1				ug/L	26715	Standard
	Ti	47	139.7	5.0	**0.3210**	0.027	8.4	ug/L	54	Standard
	V	51	3378.0	7.5	**0.2731**	0.032	11.7	ug/L	1419	Standard
	Cr	52	8922.3	0.6	**0.2372**	0.012	5.1	ug/L	7059	Standard
	Cr	53	1061.7	6.3	**0.7437**	0.063	8.5	ug/L	398	Standard
	Mn	55	16201115.9	0.2	**2474.9371**	27.874	1.1	ug/L	824	Standard
	Co	59	2782.6	0.9	**0.3708**	0.005	1.3	ug/L	167	Standard
	Ni	60	2064.5	2.0	**0.8669**	0.011	1.2	ug/L	391	Standard
	Cu	65	433.7	4.5	**0.1443**	0.008	5.5	ug/L	147	Standard
	Zn	66	3295.0	0.3	**2.7268**	0.037	1.4	ug/L	184	Standard
>	**Ge**	72	437575.4	1.0				ug/L	422998	Standard
	As	75	746.7	2.2	**0.6879**	0.008	1.1	ug/L	-58	Standard
	Se	82	29.8	30.3	**0.0401**	0.076	189.0	ug/L	15	Standard
	Se-1	77	74.7	7.6	**0.2837**	0.076	26.7	ug/L	58	Standard
>	**Ga**	71	300.0	28.9				mg/L	113	Standard
	Rb	85	2610.2	6.0				ug/L	27	Standard
	Y	89	380521.2	1.3				ug/L	383780	Standard
>	**Rh**	103	110.0	12.0				ug/L	18	Standard
	Mo	98	5055.0	0.1	**1.8310**	0.027	1.5	ug/L	31	Standard
	Ag	107	74.3	20.4	**-0.0013**	0.002	162.1	ug/L	84	Standard
	Cd	111	555.1	3.4	**0.2481**	0.011	4.3	mg/L	4	Standard
	Cd	114	1406.2	2.6	**0.2588**	0.008	2.9	ug/L	15	Standard
>	**In**	115	532594.0	1.4				ug/L	515400	Standard
	Sn	118	826.7	16.3	**-0.0426**	0.024	57.6	ug/L	1043	Standard
	Sb	123	364.4	31.1	**0.0609**	0.025	41.2	ug/L	227	Standard
	Ba	135	116980.9	0.0	**56.2986**	0.772	1.4	ug/L	31	Standard
	Ce	140	12707.0	1.3				ug/L	120	Standard
>	**Tb**	159	802921.4	1.4				ug/L	785817	Standard
	Ho	165	365.0	9.0				ug/L	7	Standard
	Tl	203	37.7	17.7	**0.0009**	0.001	95.5	ug/L	6	Standard
	Tl	205	26.7	10.8	**-0.0031**	0.000	10.8	ug/L	8	Standard
	Pb	206	340.7	7.0	**0.0197**	0.004	19.1	ug/L	201	Standard
	Pb	207	291.3	7.6	**0.0138**	0.004	28.6	ug/L	177	Standard
	Pb	208	1299.7	4.4	**0.0200**	0.004	19.8	ug/L	722	Standard
	U	238	543.3	5.1	**0.0730**	0.005	6.9	ug/L	8	Standard
>	**Bi**	209	466590.6	1.6				ug/L	444563	Standard

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Na	23	5.0	173.2	**58.2683**	100.915	173.2	mg/L	0	Standard
Mg	24	1950.1	5.9	**2.3964**	0.121	5.0	mg/L	38	Standard
K	39	181.7	15.2	**0.6596**	0.113	17.2	mg/L	33	Standard
Ca	43	243.3	5.9	**32.1489**	2.613	8.1	mg/L	48	Standard
Fe	54	4522.9	3.3	**3.5015**	0.081	2.3	mg/L	131	Standard
Fe	57	1733.4	8.9	**4.8519**	0.520	10.7	mg/L	153	Standard
Sc-1	45	26915.6	1.1				mg/L	26715	Standard
Cl	35	133931.4	0.9				ug/L	102686	Standard
Kr	83	3.7	126.0				ug/L	2	Standard
Br	81	3950.5	9.9				ug/L	1897	Standard
P	31	25736.8	2.5				ug/L	18491	Standard
S	34	4660.7	4.2				ug/L	3734	Standard
Sr	88	356.7	5.8				ug/L	47	Standard
C	12	186.7	27.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	260.0	19.2				mg/L	23	Standard
Dy	164	469.1	7.4				mg/L	23	Standard
Ho-1	165	365.0	9.0				mg/L	7	Standard
Er	166	366.7	32.5				mg/L	13	Standard
I	127	41420.1	8.3				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.095	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.446	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.336
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.955
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606084006
Sample Date/Time: Tuesday, July 05, 2016 15:28:13
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70401.6	2.0				ug/L	59517	Standard
	Be	9	25.0	40.0	**-0.0067**	0.010	147.7	ug/L	10	Standard
	Al	27	21602.2	11.4	**0.1076**	0.014	12.9	ug/L	1872	Standard
	Sc	45	25968.9	1.1				ug/L	26715	Standard
	Ti	47	31.7	20.3	**-0.1203**	0.027	22.6	ug/L	54	Standard
	V	51	1430.8	4.7	**0.0086**	0.008	94.6	ug/L	1419	Standard
	Cr	52	8858.9	1.9	**0.2055**	0.010	4.9	ug/L	7059	Standard
	Cr	53	940.0	6.7	**0.5925**	0.070	11.8	ug/L	398	Standard
	Mn	55	8257.4	30.8	**1.1051**	0.374	33.9	ug/L	824	Standard
	Co	59	246.0	6.3	**0.0092**	0.002	18.9	ug/L	167	Standard
	Ni	60	727.4	1.9	**0.1689**	0.011	6.7	ug/L	391	Standard
	Cu	65	1591.4	1.5	**0.7251**	0.022	3.0	ug/L	147	Standard
	Zn	66	1719.8	6.8	**1.3179**	0.091	6.9	ug/L	184	Standard
>	**Ge**	72	446069.6	1.2				ug/L	422998	Standard
	As	75	-39.0	55.1	**0.0191**	0.018	92.9	ug/L	-58	Standard
	Se	82	16.3	19.7	**-0.0737**	0.028	37.6	ug/L	15	Standard
	Se-1	77	61.3	7.5	**0.0990**	0.064	65.1	ug/L	58	Standard
>	**Ga**	71	135.0	22.5				mg/L	113	Standard
	Rb	85	96.7	10.8				ug/L	27	Standard
	Y	89	383121.3	2.0				ug/L	383780	Standard
>	**Rh**	103	16.7	62.4				ug/L	18	Standard
	Mo	98	77.2	18.7	**0.0188**	0.005	26.5	ug/L	31	Standard
	Ag	107	83.3	34.0	**-0.0002**	0.004	2335.8	ug/L	84	Standard
	Cd	111	259.5	2.9	**0.1125**	0.004	3.8	mg/L	4	Standard
	Cd	114	596.2	8.2	**0.1058**	0.009	8.8	ug/L	15	Standard
>	**In**	115	538732.9	1.0				ug/L	515400	Standard
	Sn	118	1510.1	10.0	**0.0684**	0.023	33.5	ug/L	1043	Standard
	Sb	123	258.8	32.4	**0.0376**	0.017	45.6	ug/L	227	Standard
	Ba	135	293.7	18.7	**0.1160**	0.026	22.2	ug/L	31	Standard
	Ce	140	73.3	7.9				ug/L	120	Standard
>	**Tb**	159	804262.2	1.2				ug/L	785817	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	34.7	80.2	**0.0004**	0.003	724.0	ug/L	6	Standard
	Tl	205	16.7	91.7	**-0.0045**	0.002	45.4	ug/L	8	Standard
	Pb	206	336.7	4.0	**0.0179**	0.002	13.4	ug/L	201	Standard
	Pb	207	284.7	0.9	**0.0115**	0.001	5.4	ug/L	177	Standard
	Pb	208	1203.0	4.0	**0.0139**	0.002	15.2	ug/L	722	Standard
	U	238	23.7	85.0	**0.0007**	0.003	365.8	ug/L	8	Standard
>	**Bi**	209	473887.9	0.7				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	95.0	39.7	**0.0892**	0.049	55.4	mg/L	38	Standard
K	39	23.3	53.9	**-0.0238**	0.057	240.4	mg/L	33	Standard
Ca	43	23.3	53.9	**-2.1117**	2.005	94.9	mg/L	48	Standard
Fe	54	145.8	10.7	**0.0042**	0.012	280.5	mg/L	131	Standard
Fe	57	218.3	14.9	**0.2133**	0.097	45.4	mg/L	153	Standard
Sc-1	45	25968.9	1.1				mg/L	26715	Standard
Cl	35	135407.1	0.9				ug/L	102686	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1873.4	7.1				ug/L	1897	Standard
P	31	21912.5	0.9				ug/L	18491	Standard
S	34	4872.5	4.0				ug/L	3734	Standard
Sr	88	70.0	32.7				ug/L	47	Standard
C	12	116.7	17.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	216.7	31.4				mg/L	23	Standard
Dy	164	6.2	180.0				mg/L	23	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	2120.2	35.5				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.289	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.454	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.527
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.596
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129101
Sample Date/Time: Tuesday, July 05, 2016 15:31:25
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63646.8	2.2				ug/L	59517	Standard
	Be	9	31.7	92.5	**0.0033**	0.032	967.2	ug/L	10	Standard
	Al	27	53765.7	18.2	**0.3187**	0.066	20.7	ug/L	1872	Standard
	Sc	45	23524.9	1.7				ug/L	26715	Standard
	Ti	47	234.3	6.9	**0.7824**	0.083	10.6	ug/L	54	Standard
	V	51	1949.8	10.5	**0.1024**	0.026	25.5	ug/L	1419	Standard
	Cr	52	10261.1	75.5	**0.5220**	1.113	213.3	ug/L	7059	Standard
	Cr	53	1066.7	79.4	**0.8346**	0.975	116.8	ug/L	398	Standard
	Mn	55	53661.3	8.2	**8.7139**	0.625	7.2	ug/L	824	Standard
	Co	59	439.0	33.5	**0.0422**	0.022	51.5	ug/L	167	Standard
	Ni	60	538.0	10.7	**0.1001**	0.029	29.0	ug/L	391	Standard
	Cu	65	15148.9	1.4	**8.3430**	0.087	1.0	ug/L	147	Standard
	Zn	66	13656.5	1.9	**12.7517**	0.091	0.7	ug/L	184	Standard
>	**Ge**	72	405337.8	1.2				ug/L	422998	Standard
	As	75	337.3	12.8	**0.3616**	0.036	10.0	ug/L	-58	Standard
	Se	82	29.0	4.3	**0.0519**	0.011	20.6	ug/L	15	Standard
	Se-1	77	61.0	7.5	**0.1717**	0.073	42.5	ug/L	58	Standard
>	**Ga**	71	693.3	3.0				mg/L	113	Standard
	Rb	85	351.7	7.0				ug/L	27	Standard
	Y	89	343360.2	2.5				ug/L	383780	Standard
>	**Rh**	103	25.0	20.0				ug/L	18	Standard
	Mo	98	611.6	24.4	**0.2333**	0.057	24.2	ug/L	31	Standard
	Ag	107	355.0	24.2	**0.0435**	0.013	29.3	ug/L	84	Standard
	Cd	111	43.6	63.8	**0.0173**	0.013	77.4	mg/L	4	Standard
	Cd	114	117.6	87.5	**0.0193**	0.021	106.7	ug/L	15	Standard
>	**In**	115	488694.8	1.2				ug/L	515400	Standard
	Sn	118	585.0	18.2	**-0.0745**	0.018	24.5	ug/L	1043	Standard
	Sb	123	331.5	27.2	**0.0599**	0.020	33.1	ug/L	227	Standard
	Ba	135	12675.3	3.7	**6.6286**	0.314	4.7	ug/L	31	Standard
	Ce	140	686.7	53.3				ug/L	120	Standard
>	**Tb**	159	741586.5	0.0				ug/L	785817	Standard
	Ho	165	18.3	103.3				ug/L	7	Standard
	Tl	203	137.7	85.0	**0.0135**	0.014	107.5	ug/L	6	Standard
	Tl	205	135.0	128.3	**0.0124**	0.025	198.2	ug/L	8	Standard
	Pb	206	1043.7	6.2	**0.1627**	0.013	8.1	ug/L	201	Standard
	Pb	207	867.0	9.5	**0.1435**	0.019	13.1	ug/L	177	Standard
	Pb	208	3832.5	8.9	**0.1619**	0.019	11.5	ug/L	722	Standard
	U	238	1146.4	14.2	**0.1631**	0.023	14.2	ug/L	8	Standard
>	**Bi**	209	448001.8	0.3				ug/L	444563	Standard

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Na	23	1.7	173.2	**22.1470**	38.351	173.2	mg/L	0	Standard
Mg	24	111.7	116.1	**0.1252**	0.185	147.5	mg/L	38	Standard
K	39	11.7	24.7	**-0.0711**	0.015	21.6	mg/L	33	Standard
Ca	43	41.7	48.5	**1.5351**	3.480	226.7	mg/L	48	Standard
Fe	54	160.5	34.6	**0.0310**	0.053	172.5	mg/L	131	Standard
Fe	57	231.7	10.6	**0.3333**	0.088	26.3	mg/L	153	Standard
> **Sc-1**	45	23524.9	1.7				mg/L	26715	Standard
Cl	35	122569.1	0.7				ug/L	102686	Standard
Kr	83	2.7	142.0				ug/L	2	Standard
Br	81	1326.7	5.8				ug/L	1897	Standard
P	31	7213.4	2.6				ug/L	18491	Standard
S	34	4440.7	3.2				ug/L	3734	Standard
Sr	88	78.3	20.5				ug/L	47	Standard
C	12	83.3	61.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	2456.9	31.3				mg/L	23	Standard
Dy	164	58.4	59.1				mg/L	23	Standard
Ho-1	165	18.3	103.3				mg/L	7	Standard
Er	166	33.3	17.3				mg/L	13	Standard
I	127	28306.4	1.3				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.939	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.825	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.819
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.774
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606153304
Sample Date/Time: Tuesday, July 05, 2016 15:34:36
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68338.8	1.8				ug/L	59517	Standard
	Be	9	16.7	45.8	**-0.0143**	0.008	55.4	ug/L	10	Standard
	Al	27	13387.6	4.3	**0.0642**	0.002	3.8	ug/L	1872	Standard
	Sc	45	26509.8	1.2				ug/L	26715	Standard
	Ti	47	30.0	3.3	**-0.1250**	0.003	2.1	ug/L	54	Standard
	V	51	1501.4	7.0	**0.0215**	0.016	76.2	ug/L	1419	Standard
	Cr	52	8561.1	5.0	**0.1856**	0.045	24.1	ug/L	7059	Standard
	Cr	53	915.0	8.8	**0.5828**	0.088	15.0	ug/L	398	Standard
	Mn	55	1949.1	22.8	**0.1657**	0.064	38.5	ug/L	824	Standard
	Co	59	193.0	13.3	**0.0023**	0.003	148.5	ug/L	167	Standard
	Ni	60	1444.4	2.9	**0.5451**	0.015	2.7	ug/L	391	Standard
	Cu	65	371.0	2.8	**0.1117**	0.006	5.8	ug/L	147	Standard
	Zn	66	1649.1	1.1	**1.2825**	0.023	1.8	ug/L	184	Standard
>	**Ge**	72	438377.0	1.3				ug/L	422998	Standard
	As	75	-56.5	47.5	**0.0034**	0.023	673.7	ug/L	-58	Standard
	Se	82	15.5	15.8	**-0.0783**	0.020	25.2	ug/L	15	Standard
	Se-1	77	63.0	11.4	**0.1340**	0.099	74.2	ug/L	58	Standard
>	**Ga**	71	81.7	24.7				mg/L	113	Standard
	Rb	85	88.3	27.9				ug/L	27	Standard
	Y	89	382120.6	1.2				ug/L	383780	Standard
>	**Rh**	103	26.7	47.2				ug/L	18	Standard
	Mo	98	81.3	27.8	**0.0205**	0.008	40.0	ug/L	31	Standard
	Ag	107	89.0	11.8	**0.0007**	0.001	206.9	ug/L	84	Standard
	Cd	111	7.5	28.1	**-0.0008**	0.001	123.7	mg/L	4	Standard
	Cd	114	62.5	54.3	**0.0071**	0.006	89.4	ug/L	15	Standard
>	**In**	115	536240.2	0.5				ug/L	515400	Standard
	Sn	118	7298.4	3.2	**1.0305**	0.033	3.2	ug/L	1043	Standard
	Sb	123	205.7	19.4	**0.0269**	0.009	32.0	ug/L	227	Standard
	Ba	135	278.0	9.1	**0.1092**	0.011	10.5	ug/L	31	Standard
	Ce	140	103.3	19.6				ug/L	120	Standard
>	**Tb**	159	799407.5	1.8				ug/L	785817	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	20.0	13.2	**-0.0013**	0.000	22.2	ug/L	6	Standard
	Tl	205	20.0	90.1	**-0.0041**	0.002	58.3	ug/L	8	Standard
	Pb	206	285.3	5.7	**0.0086**	0.004	44.0	ug/L	201	Standard
	Pb	207	251.0	5.0	**0.0048**	0.002	42.1	ug/L	177	Standard
	Pb	208	1059.3	2.8	**0.0067**	0.002	25.0	ug/L	722	Standard
	U	238	33.3	25.9	**0.0021**	0.001	58.5	ug/L	8	Standard
>	**Bi**	209	471120.6	1.4				ug/L	444563	Standard

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Na	23	1.7	173.2	**19.6052**	33.949	173.2	mg/L	0	Standard
Mg	24	66.7	41.3	**0.0505**	0.034	67.3	mg/L	38	Standard
K	39	15.0	66.7	**-0.0630**	0.044	69.8	mg/L	33	Standard
Ca	43	16.7	45.8	**-3.2400**	1.191	36.8	mg/L	48	Standard
Fe	54	124.0	37.0	**-0.0161**	0.037	227.1	mg/L	131	Standard
Fe	57	211.7	21.9	**0.1796**	0.150	83.4	mg/L	153	Standard
Sc-1	45	26509.8	1.2				mg/L	26715	Standard
Cl	35	137357.1	0.3				ug/L	102686	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1750.1	2.1				ug/L	1897	Standard
P	31	22443.3	1.3				ug/L	18491	Standard
S	34	4854.1	1.4				ug/L	3734	Standard
Sr	88	71.7	24.5				ug/L	47	Standard
C	12	83.3	70.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	353.3	41.2				mg/L	23	Standard
Dy	164	9.4	177.7				mg/L	23	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	8485.7	3.4				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		114.823	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.636	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.044
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.974
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606153305
Sample Date/Time: Tuesday, July 05, 2016 15:37:48
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67992.2	1.8				ug/L	59517	Standard
	Be	9	23.3	12.4	**-0.0076**	0.003	38.2	ug/L	10	Standard
	Al	27	13816.3	0.4	**0.0671**	0.001	1.8	ug/L	1872	Standard
	Sc	45	25523.1	1.7				ug/L	26715	Standard
	Ti	47	41.7	6.0	**-0.0740**	0.010	13.0	ug/L	54	Standard
	V	51	2533.9	9.6	**0.1670**	0.034	20.3	ug/L	1419	Standard
	Cr	52	21672.5	1.2	**2.0303**	0.043	2.1	ug/L	7059	Standard
	Cr	53	2710.2	5.1	**2.5964**	0.167	6.4	ug/L	398	Standard
	Mn	55	9948.3	0.6	**1.4195**	0.017	1.2	ug/L	824	Standard
	Co	59	565.7	7.5	**0.0570**	0.007	11.4	ug/L	167	Standard
	Ni	60	801.7	8.2	**0.2227**	0.032	14.5	ug/L	391	Standard
	Cu	65	474.0	5.3	**0.1700**	0.012	7.0	ug/L	147	Standard
	Zn	66	1631.1	7.0	**1.2979**	0.099	7.6	ug/L	184	Standard
>	**Ge**	72	428907.1	0.5				ug/L	422998	Standard
	As	75	-61.8	29.3	**-0.0020**	0.016	777.3	ug/L	-58	Standard
	Se	82	14.7	57.8	**-0.0823**	0.072	87.6	ug/L	15	Standard
	Se-1	77	60.3	4.2	**0.1162**	0.030	25.5	ug/L	58	Standard
>	**Ga**	71	110.0	25.3				mg/L	113	Standard
	Rb	85	223.3	8.5				ug/L	27	Standard
	Y	89	374882.7	2.3				ug/L	383780	Standard
>	**Rh**	103	20.0	0.0				ug/L	18	Standard
	Mo	98	2832.6	0.8	**1.0442**	0.014	1.3	ug/L	31	Standard
	Ag	107	68.7	18.8	**-0.0019**	0.002	101.5	ug/L	84	Standard
	Cd	111	2.9	213.3	**-0.0028**	0.003	104.2	mg/L	4	Standard
	Cd	114	29.8	49.4	**0.0011**	0.003	249.1	ug/L	15	Standard
>	**In**	115	521375.8	0.5				ug/L	515400	Standard
	Sn	118	815.0	13.4	**-0.0418**	0.019	45.5	ug/L	1043	Standard
	Sb	123	182.8	19.5	**0.0232**	0.008	34.0	ug/L	227	Standard
	Ba	135	402.7	3.8	**0.1743**	0.008	4.5	ug/L	31	Standard
	Ce	140	413.3	11.2				ug/L	120	Standard
>	**Tb**	159	790305.3	1.5				ug/L	785817	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	14.0	51.5	**-0.0019**	0.001	43.7	ug/L	6	Standard
	Tl	205	11.7	49.5	**-0.0052**	0.001	15.3	ug/L	8	Standard
	Pb	206	310.3	6.5	**0.0139**	0.004	30.2	ug/L	201	Standard
	Pb	207	273.0	2.6	**0.0100**	0.002	18.6	ug/L	177	Standard
	Pb	208	1141.0	3.2	**0.0116**	0.002	14.2	ug/L	722	Standard
	U	238	14.3	33.0	**-0.0005**	0.001	133.0	ug/L	8	Standard
>	**Bi**	209	466384.0	0.6				ug/L	444563	Standard

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Na	23	1.7	173.2	**20.0658**	34.746	173.2	mg/L	0	Standard
Mg	24	95.0	22.9	**0.0910**	0.026	29.0	mg/L	38	Standard
K	39	15.0	100.0	**-0.0608**	0.069	113.6	mg/L	33	Standard
Ca	43	28.3	53.9	**-1.2399**	2.424	195.5	mg/L	48	Standard
Fe	54	256.6	6.1	**0.1001**	0.016	16.3	mg/L	131	Standard
Fe	57	175.0	5.7	**0.0855**	0.031	36.3	mg/L	153	Standard
Sc-1	45	25523.1	1.7				mg/L	26715	Standard
Cl	35	135224.2	1.5				ug/L	102686	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1630.1	6.5				ug/L	1897	Standard
P	31	20115.0	2.0				ug/L	18491	Standard
S	34	4715.7	4.1				ug/L	3734	Standard
Sr	88	66.7	15.6				ug/L	47	Standard
C	12	106.7	37.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	320.0	9.4				mg/L	23	Standard
Dy	164	9.2	3.0				mg/L	23	Standard
Ho-1	165	8.3	69.3				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	13	Standard
I	127	10665.4	1.4				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		114.241	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.397	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.160
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.908
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, July 05, 2016 15:41:00
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	66612.8	0.6				ug/L	59517	Standard
	Be	9	47027.9	1.9	**48.2937**	0.785	1.6	ug/L	10	Standard
	Al	27	7224641.6	1.3	**42.4166**	0.805	1.9	ug/L	1872	Standard
	Sc	45	25438.0	1.1				ug/L	26715	Standard
	Ti	47	22557.1	0.8	**92.8260**	0.965	1.0	ug/L	54	Standard
	V	51	343145.2	0.7	**46.4771**	0.395	0.8	ug/L	1419	Standard
	Cr	52	343399.3	0.6	**46.4071**	0.117	0.3	ug/L	7059	Standard
	Cr	53	43268.4	1.2	**47.3313**	0.706	1.5	ug/L	398	Standard
	Mn	55	292389.5	1.1	**45.1968**	0.164	0.4	ug/L	824	Standard
	Co	59	332481.0	1.2	**47.9792**	0.357	0.7	ug/L	167	Standard
	Ni	60	89376.5	1.1	**46.6712**	0.595	1.3	ug/L	391	Standard
	Cu	65	90279.8	0.5	**47.1054**	0.468	1.0	ug/L	147	Standard
	Zn	66	56672.8	2.1	**50.2127**	1.032	2.1	ug/L	184	Standard
>	Ge	72	431174.9	0.7				ug/L	422998	Standard
	As	75	54582.7	1.1	**47.2491**	0.210	0.4	ug/L	-58	Standard
	Se	82	5648.3	1.5	**47.0559**	0.531	1.1	ug/L	15	Standard
	Se-1	77	3791.5	1.9	**48.3787**	0.566	1.2	ug/L	58	Standard
>	Ga	71	81.7	33.7				mg/L	113	Standard
	Rb	85	771.7	8.3				ug/L	27	Standard
	Y	89	373080.9	0.8				ug/L	383780	Standard
>	Rh	103	35.0	24.7				ug/L	18	Standard
	Mo	98	256854.6	1.1	**96.3048**	0.483	0.5	ug/L	31	Standard
	Ag	107	320474.0	1.1	**47.4109**	1.019	2.1	ug/L	84	Standard
	Cd	111	100999.2	0.4	**47.2807**	0.448	0.9	mg/L	4	Standard
	Cd	114	248889.9	0.7	**48.0148**	0.518	1.1	ug/L	15	Standard
>	In	115	516921.0	1.1				ug/L	515400	Standard
	Sn	118	279374.0	1.0	**47.9286**	0.272	0.6	ug/L	1043	Standard
	Sb	123	226360.5	0.9	**49.2887**	0.151	0.3	ug/L	227	Standard
	Ba	135	93112.2	0.4	**46.1644**	0.641	1.4	ug/L	31	Standard
	Ce	140	76.7	44.4				ug/L	120	Standard
>	Tb	159	786336.0	0.8				ug/L	785817	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	391848.1	0.5	**47.7503**	0.180	0.4	ug/L	6	Standard
	Tl	205	348079.7	0.7	**48.6909**	0.352	0.7	ug/L	8	Standard
	Pb	206	248393.6	0.5	**48.6247**	0.453	0.9	ug/L	201	Standard
	Pb	207	224648.2	0.4	**48.6429**	0.648	1.3	ug/L	177	Standard
	Pb	208	924846.1	0.3	**49.8525**	0.347	0.7	ug/L	722	Standard
	U	238	346936.1	0.2	**49.2388**	0.382	0.8	ug/L	8	Standard
>	Bi	209	456136.9	0.9				ug/L	444563	Standard

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Na	23	3.3	86.6	**40.7875**	35.320	86.6	mg/L	0	Standard
Mg	24	3838.8	1.5	**5.0299**	0.116	2.3	mg/L	38	Standard
K	39	721.7	0.8	**3.1887**	0.017	0.5	mg/L	33	Standard
Ca	43	56.7	39.8	**3.5037**	3.811	108.8	mg/L	48	Standard
Fe	54	5972.1	4.4	**4.9384**	0.195	3.9	mg/L	131	Standard
Fe	57	1740.1	6.5	**5.1809**	0.376	7.3	mg/L	153	Standard
Sc-1	45	25438.0	1.1				mg/L	26715	Standard
Cl	35	131973.0	1.7				ug/L	102686	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	1536.7	8.4				ug/L	1897	Standard
P	31	23600.0	3.7				ug/L	18491	Standard
S	34	4877.5	0.6				ug/L	3734	Standard
Sr	88	75.0	52.1				ug/L	47	Standard
C	12	76.7	58.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	216.7	29.7				mg/L	23	Standard
Dy	164	16.0	65.1				mg/L	23	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	13.3	173.2				mg/L	13	Standard
I	127	7593.6	1.4				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	96.587		
Al	27	84.833		
Sc	45			
Ti	47	92.826		
V	51	92.954		
Cr	52	92.814		
Cr	53			
Mn	55	90.394		
Co	59	95.958		
Ni	60	93.342		
Cu	65	94.211		
Zn	66	100.425		
Ge	72		101.933	
As	75	94.498		
Se	82	94.112		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	96.305		
Ag	107	94.822		
Cd	111	94.561		
Cd	114			
> In	115			100.295
Sn	118	95.857		
Sb	123	98.577		
Ba	135	92.329		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	95.501		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.705		
U	238	98.478		
> Bi	209			102.603
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, July 05, 2016 15:44:11
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66241.2	1.7				ug/L	59517	Standard
	Be	9	16.7	45.8	**-0.0139**	0.008	56.7	ug/L	10	Standard
	Al	27	2862.0	33.8	**0.0045**	0.006	132.7	ug/L	1872	Standard
	Sc	45	25524.8	0.9				ug/L	26715	Standard
	Ti	47	30.0	24.0	**-0.1211**	0.030	24.4	ug/L	54	Standard
	V	51	1178.3	2.6	**-0.0166**	0.006	34.9	ug/L	1419	Standard
	Cr	52	5714.4	2.7	**-0.1751**	0.014	7.8	ug/L	7059	Standard
	Cr	53	581.7	4.4	**0.2417**	0.027	11.0	ug/L	398	Standard
	Mn	55	1101.7	4.5	**0.0426**	0.009	20.8	ug/L	824	Standard
	Co	59	236.7	6.2	**0.0096**	0.002	21.3	ug/L	167	Standard
	Ni	60	318.3	8.3	**-0.0302**	0.016	52.4	ug/L	391	Standard
	Cu	65	160.0	11.0	**0.0059**	0.009	148.5	ug/L	147	Standard
	Zn	66	532.0	6.3	**0.3210**	0.029	9.1	ug/L	184	Standard
>	**Ge**	72	424434.4	1.0				ug/L	422998	Standard
	As	75	-74.8	24.5	**-0.0142**	0.017	118.8	ug/L	-58	Standard
	Se	82	9.6	69.2	**-0.1245**	0.056	45.1	ug/L	15	Standard
	Se-1	77	54.3	15.3	**0.0461**	0.112	243.8	ug/L	58	Standard
>	**Ga**	71	76.7	32.2				mg/L	113	Standard
	Rb	85	20.0	90.1				ug/L	27	Standard
	Y	89	366092.8	2.0				ug/L	383780	Standard
>	**Rh**	103	21.7	70.5				ug/L	18	Standard
	Mo	98	225.0	12.4	**0.0755**	0.010	13.1	ug/L	31	Standard
	Ag	107	140.3	21.2	**0.0087**	0.004	46.8	ug/L	84	Standard
	Cd	111	22.3	29.9	**0.0063**	0.003	47.6	mg/L	4	Standard
	Cd	114	37.8	50.4	**0.0027**	0.004	134.7	ug/L	15	Standard
>	**In**	115	516750.7	1.4				ug/L	515400	Standard
	Sn	118	1075.0	19.1	**0.0045**	0.037	826.3	ug/L	1043	Standard
	Sb	123	779.4	29.5	**0.1538**	0.051	33.4	ug/L	227	Standard
	Ba	135	49.7	13.4	**0.0009**	0.003	335.6	ug/L	31	Standard
	Ce	140	25.0	52.9				ug/L	120	Standard
>	**Tb**	159	780351.8	1.9				ug/L	785817	Standard
	Ho	165	15.0	145.3				ug/L	7	Standard
	Tl	203	118.3	22.8	**0.0107**	0.003	29.6	ug/L	6	Standard
	Tl	205	88.3	19.9	**0.0055**	0.003	46.5	ug/L	8	Standard
	Pb	206	302.7	10.8	**0.0132**	0.006	48.9	ug/L	201	Standard
	Pb	207	248.0	10.9	**0.0053**	0.005	103.1	ug/L	177	Standard
	Pb	208	1038.0	6.8	**0.0069**	0.003	49.2	ug/L	722	Standard
	U	238	74.3	14.1	**0.0080**	0.001	17.5	ug/L	8	Standard
>	**Bi**	209	460561.8	1.0				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	28.3	27.0	**0.0037**	0.010	281.1	mg/L	38	Standard
K	39	18.3	103.3	**-0.0452**	0.087	192.7	mg/L	33	Standard
Ca	43	20.0	66.1	**-2.5745**	2.208	85.8	mg/L	48	Standard
Fe	54	127.5	15.7	**-0.0091**	0.016	177.1	mg/L	131	Standard
Fe	57	208.3	16.0	**0.1930**	0.102	52.6	mg/L	153	Standard
> **Sc-1**	45	25524.8	0.9				mg/L	26715	Standard
Cl	35	132498.8	0.7				ug/L	102686	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	1603.4	10.0				ug/L	1897	Standard
P	31	22954.1	3.7				ug/L	18491	Standard
S	34	5014.2	3.3				ug/L	3734	Standard
Sr	88	90.0	14.7				ug/L	47	Standard
C	12	100.0	26.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	230.0	37.1				mg/L	23	Standard
Dy	164	-0.5	100.0				mg/L	23	Standard
Ho-1	165	15.0	145.3				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	5571.0	2.6				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.340	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.262
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.599
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW 7 WG573548-02
Sample Date/Time: Tuesday, July 05, 2016 15:49:36
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66520.7	1.8				ug/L	59517	Standard
	Be	9	35.0	37.8	**0.0051**	0.014	282.2	ug/L	10	Standard
	Al	27	83491.2	3.1	**0.4785**	0.007	1.4	ug/L	1872	Standard
	Sc	45	25349.5	4.3				ug/L	26715	Standard
	Ti	47	40.7	18.6	**-0.0785**	0.030	38.7	ug/L	54	Standard
	V	51	1518.1	5.9	**0.0280**	0.016	58.4	ug/L	1419	Standard
	Cr	52	8198.9	0.7	**0.1598**	0.031	19.2	ug/L	7059	Standard
	Cr	53	878.4	8.5	**0.5622**	0.075	13.4	ug/L	398	Standard
	Mn	55	6629.1	1.1	**0.9008**	0.029	3.2	ug/L	824	Standard
	Co	59	333.3	4.7	**0.0233**	0.003	13.8	ug/L	167	Standard
	Ni	60	463.0	4.0	**0.0438**	0.005	11.7	ug/L	391	Standard
	Cu	65	222.3	11.3	**0.0375**	0.012	32.4	ug/L	147	Standard
	Zn	66	1679.4	1.1	**1.3390**	0.017	1.2	ug/L	184	Standard
>	**Ge**	72	429615.7	2.1				ug/L	422998	Standard
	As	75	75.3	27.3	**0.1171**	0.018	15.7	ug/L	-58	Standard
	Se	82	62.8	4.4	**0.3213**	0.020	6.3	ug/L	15	Standard
	Se-1	77	62.3	20.6	**0.1414**	0.170	120.1	ug/L	58	Standard
>	**Ga**	71	110.0	7.9				mg/L	113	Standard
	Rb	85	413.3	3.5				ug/L	27	Standard
	Y	89	371011.7	3.0				ug/L	383780	Standard
>	**Rh**	103	18.3	15.7				ug/L	18	Standard
	Mo	98	91.8	10.0	**0.0255**	0.003	12.8	ug/L	31	Standard
	Ag	107	1551.1	3.1	**0.2173**	0.003	1.5	ug/L	84	Standard
	Cd	111	16.8	23.7	**0.0038**	0.002	52.5	mg/L	4	Standard
	Cd	114	43.3	33.7	**0.0038**	0.003	72.1	ug/L	15	Standard
>	**In**	115	517301.5	1.9				ug/L	515400	Standard
	Sn	118	1058.4	22.3	**0.0017**	0.044	2609.6	ug/L	1043	Standard
	Sb	123	452.9	29.0	**0.0826**	0.030	36.6	ug/L	227	Standard
	Ba	135	919.7	1.1	**0.4322**	0.006	1.3	ug/L	31	Standard
	Ce	140	1653.4	5.7				ug/L	120	Standard
>	**Tb**	159	778038.6	1.4				ug/L	785817	Standard
	Ho	165	26.7	71.0				ug/L	7	Standard
	Tl	203	82.3	7.9	**0.0063**	0.001	11.8	ug/L	6	Standard
	Tl	205	70.0	25.8	**0.0030**	0.003	91.2	ug/L	8	Standard
	Pb	206	349.0	7.1	**0.0222**	0.004	16.3	ug/L	201	Standard
	Pb	207	297.3	4.5	**0.0160**	0.002	10.6	ug/L	177	Standard
	Pb	208	1239.0	4.7	**0.0177**	0.003	15.2	ug/L	722	Standard
	U	238	50.0	3.5	**0.0046**	0.000	3.9	ug/L	8	Standard
>	**Bi**	209	460253.9	1.9				ug/L	444563	Standard

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Na	23	1.7	173.2	**21.6141**	37.428	173.2	mg/L	0	Standard
Mg	24	95.0	19.0	**0.0926**	0.027	29.6	mg/L	38	Standard
K	39	36.7	55.1	**0.0427**	0.103	240.5	mg/L	33	Standard
Ca	43	21.7	66.6	**-2.3492**	2.304	98.1	mg/L	48	Standard
Fe	54	199.1	26.1	**0.0518**	0.038	74.1	mg/L	131	Standard
Fe	57	246.7	12.4	**0.3218**	0.069	21.4	mg/L	153	Standard
Sc-1	45	25349.5	4.3				mg/L	26715	Standard
Cl	35	134121.8	1.5				ug/L	102686	Standard
Kr	83	2.3	99.0				ug/L	2	Standard
Br	81	12398.4	1.8				ug/L	1897	Standard
P	31	21764.0	1.9				ug/L	18491	Standard
S	34	4890.8	6.1				ug/L	3734	Standard
Sr	88	91.7	13.7				ug/L	47	Standard
C	12	113.3	39.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	316.7	49.1				mg/L	23	Standard
Dy	164	48.9	39.4				mg/L	23	Standard
Ho-1	165	26.7	71.0				mg/L	7	Standard
Er	166	23.3	65.5				mg/L	13	Standard
I	127	1676.8	3.0				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.768	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.565	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.369
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.530
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 7 WG573548-03
Sample Date/Time: Tuesday, July 05, 2016 15:52:47
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66939.3	3.6				ug/L	59517	Standard
	Be	9	47303.7	1.2	**48.3743**	1.434	3.0	ug/L	10	Standard
	Al	27	94049.3	0.5	**0.5377**	0.021	4.0	ug/L	1872	Standard
	Sc	45	25830.3	3.0				ug/L	26715	Standard
	Ti	47	43.0	14.0	**-0.0737**	0.023	30.7	ug/L	54	Standard
	V	51	334038.7	0.8	**44.1681**	0.214	0.5	ug/L	1419	Standard
	Cr	52	339444.4	0.8	**44.7579**	0.242	0.5	ug/L	7059	Standard
	Cr	53	41866.1	1.5	**44.6918**	0.280	0.6	ug/L	398	Standard
	Mn	55	301848.9	1.0	**45.5609**	0.065	0.1	ug/L	824	Standard
	Co	59	325072.3	0.9	**45.8043**	0.279	0.6	ug/L	167	Standard
	Ni	60	88336.8	1.2	**45.0331**	0.390	0.9	ug/L	391	Standard
	Cu	65	89193.5	1.7	**45.4348**	0.387	0.9	ug/L	147	Standard
	Zn	66	55448.6	0.6	**47.9634**	0.234	0.5	ug/L	184	Standard
>	**Ge**	72	441584.5	1.0				ug/L	422998	Standard
	As	75	51258.2	0.9	**43.3308**	0.179	0.4	ug/L	-58	Standard
	Se	82	5509.4	0.5	**44.8099**	0.412	0.9	ug/L	15	Standard
	Se-1	77	3718.5	1.1	**46.3036**	0.442	1.0	ug/L	58	Standard
>	**Ga**	71	326.7	20.7				mg/L	113	Standard
	Rb	85	1798.4	1.0				ug/L	27	Standard
	Y	89	372589.6	1.6				ug/L	383780	Standard
>	**Rh**	103	30.0	28.9				ug/L	18	Standard
	Mo	98	247.5	18.2	**0.0817**	0.017	20.8	ug/L	31	Standard
	Ag	107	316350.4	1.1	**45.6551**	0.065	0.1	ug/L	84	Standard
	Cd	111	98239.1	0.9	**44.8706**	0.620	1.4	mg/L	4	Standard
	Cd	114	238884.8	1.7	**44.9622**	0.690	1.5	ug/L	15	Standard
>	**In**	115	529809.0	1.2				ug/L	515400	Standard
	Sn	118	1033.4	7.9	**-0.0073**	0.015	205.1	ug/L	1043	Standard
	Sb	123	212668.3	2.9	**45.1746**	0.929	2.1	ug/L	227	Standard
	Ba	135	91872.7	0.6	**44.4394**	0.422	0.9	ug/L	31	Standard
	Ce	140	3028.6	4.2				ug/L	120	Standard
>	**Tb**	159	801904.5	0.8				ug/L	785817	Standard
	Ho	165	90.0	9.6				ug/L	7	Standard
	Tl	203	385483.2	0.5	**45.5864**	0.643	1.4	ug/L	6	Standard
	Tl	205	339301.2	1.8	**46.0624**	1.204	2.6	ug/L	8	Standard
	Pb	206	248831.3	0.5	**47.2664**	0.351	0.7	ug/L	201	Standard
	Pb	207	217162.3	0.8	**45.6250**	0.503	1.1	ug/L	177	Standard
	Pb	208	916373.1	0.8	**47.9305**	0.352	0.7	ug/L	722	Standard
	U	238	334714.4	0.2	**46.0987**	0.553	1.2	ug/L	8	Standard
>	**Bi**	209	470065.0	1.2				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	50.0	10.0	**0.0312**	0.005	16.0	mg/L	38	Standard
K	39	21.7	96.1	**-0.0329**	0.090	273.5	mg/L	33	Standard
Ca	43	30.0	28.9	**-1.0058**	1.366	135.9	mg/L	48	Standard
Fe	54	476.7	12.4	**0.2807**	0.046	16.5	mg/L	131	Standard
Fe	57	286.7	8.6	**0.4380**	0.096	22.0	mg/L	153	Standard
Sc-1	45	25830.3	3.0				mg/L	26715	Standard
Cl	35	132039.6	1.5				ug/L	102686	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	1736.8	5.3				ug/L	1897	Standard
P	31	22071.1	2.5				ug/L	18491	Standard
S	34	4849.1	2.6				ug/L	3734	Standard
Sr	88	56.7	10.2				ug/L	47	Standard
C	12	96.7	11.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	143.3	26.4				mg/L	23	Standard
Dy	164	148.4	29.4				mg/L	23	Standard
Ho-1	165	90.0	9.6				mg/L	7	Standard
Er	166	103.3	29.6				mg/L	13	Standard
I	127	1288.4	3.9				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.471	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.394	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85	
Y	89	
> Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
> In	115	102.796
Sn	118	
Sb	123	
Ba	135	
Ce	140	
> Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
> Bi	209	105.736
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
> Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 7 WG573548-03
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Method 6020 - Summary Report

Sample ID: L1606098623 WG573548-01
Sample Date/Time: Tuesday, July 05, 2016 15:55:59
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64507.0	1.2				ug/L	59517	Standard
	Be	9	130.0	33.5	**0.1065**	0.045	41.8	ug/L	10	Standard
	Al	27	46753398.1	1.5	**283.5010**	1.990	0.7	ug/L	1872	Standard
	Sc	45	22501.7	3.6				ug/L	26715	Standard
	Ti	47	145.0	5.9	**0.4122**	0.025	6.0	ug/L	54	Standard
	V	51	2185.8	4.1	**0.1481**	0.012	8.2	ug/L	1419	Standard
	Cr	52	9841.9	1.0	**0.5214**	0.050	9.5	ug/L	7059	Standard
	Cr	53	2008.5	6.8	**2.0356**	0.228	11.2	ug/L	398	Standard
	Mn	55	1168222.5	0.9	**199.5253**	4.799	2.4	ug/L	824	Standard
	Co	59	1797.4	1.6	**0.2610**	0.006	2.4	ug/L	167	Standard
	Ni	60	5305.6	3.5	**2.8679**	0.145	5.1	ug/L	391	Standard
	Cu	65	18589.7	0.9	**10.6304**	0.172	1.6	ug/L	147	Standard
	Zn	66	6211.3	1.6	**5.9256**	0.084	1.4	ug/L	184	Standard
>	**Ge**	72	391261.0	2.5				ug/L	422998	Standard
	As	75	663.9	7.9	**0.6853**	0.065	9.4	ug/L	-58	Standard
	Se	82	380.5	2.6	**3.3056**	0.175	5.3	ug/L	15	Standard
	Se-1	77	195.3	7.3	**2.1205**	0.269	12.7	ug/L	58	Standard
>	**Ga**	71	96.7	10.8				mg/L	113	Standard
	Rb	85	4460.7	3.6				ug/L	27	Standard
	Y	89	337387.4	1.7				ug/L	383780	Standard
>	**Rh**	103	313.3	9.6				ug/L	18	Standard
	Mo	98	932.7	3.1	**0.3798**	0.008	2.2	ug/L	31	Standard
	Ag	107	151.3	12.4	**0.0129**	0.003	25.3	ug/L	84	Standard
	Cd	111	75.7	7.3	**0.0353**	0.003	9.4	mg/L	4	Standard
	Cd	114	208.2	17.4	**0.0401**	0.008	20.3	ug/L	15	Standard
>	**In**	115	465057.5	1.3				ug/L	515400	Standard
	Sn	118	1186.7	1.4	**0.0462**	0.005	10.7	ug/L	1043	Standard
	Sb	123	2824.5	30.0	**0.6673**	0.205	30.8	ug/L	227	Standard
	Ba	135	19611.7	0.2	**10.7896**	0.131	1.2	ug/L	31	Standard
	Ce	140	1303.4	1.5				ug/L	120	Standard
>	**Tb**	159	715621.9	1.4				ug/L	785817	Standard
	Ho	165	60.0	44.1				ug/L	7	Standard
	Tl	203	189.7	9.3	**0.0223**	0.002	10.3	ug/L	6	Standard
	Tl	205	168.3	27.4	**0.0196**	0.007	37.0	ug/L	8	Standard
	Pb	206	558.7	0.5	**0.0773**	0.001	1.6	ug/L	201	Standard
	Pb	207	465.7	1.6	**0.0654**	0.002	3.5	ug/L	177	Standard
	Pb	208	1977.1	3.1	**0.0711**	0.004	5.3	ug/L	722	Standard
	U	238	25920.5	0.4	**4.1254**	0.038	0.9	ug/L	8	Standard
>	**Bi**	209	406538.7	1.2				ug/L	444563	Standard

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Na	23	20.0	0.0	**278.4268**	10.150	3.6	mg/L	0	Standard
Mg	24	22616.9	0.5	**33.7129**	1.105	3.3	mg/L	38	Standard
K	39	421.7	4.2	**2.0625**	0.056	2.7	mg/L	33	Standard
Ca	43	666.7	3.8	**118.8974**	8.912	7.5	mg/L	48	Standard
Fe	54	140.8	16.2	**0.0182**	0.022	120.2	mg/L	131	Standard
Fe	57	908.4	6.8	**2.8572**	0.123	4.3	mg/L	153	Standard
> **Sc-1**	45	22501.7	3.6				mg/L	26715	Standard
Cl	35	396084.6	0.9				ug/L	102686	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	55545.0	2.3				ug/L	1897	Standard
P	31	21932.5	3.3				ug/L	18491	Standard
S	34	4782.4	3.3				ug/L	3734	Standard
Sr	88	1156.7	3.6				ug/L	47	Standard
C	12	143.3	24.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	156.7	36.3				mg/L	23	Standard
Dy	164	54.6	44.2				mg/L	23	Standard
Ho-1	165	60.0	44.1				mg/L	7	Standard
Er	166	43.3	74.2				mg/L	13	Standard
I	127	141237.3	7.0				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.385	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.497	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	90.232	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	91.447	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606098635S WG573548-04
Sample Date/Time: Tuesday, July 05, 2016 15:59:10
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	66865.7	3.6				ug/L	59517	Standard
	Be	9	47830.4	0.7	**48.9838**	2.121	4.3	ug/L	10	Standard
	Al	27	50036532.6	1.5	**293.0611**	14.824	5.1	ug/L	1872	Standard
	Sc	45	22905.6	0.4				ug/L	26715	Standard
	Ti	47	171.0	12.7	**0.5413**	0.096	17.7	ug/L	54	Standard
	V	51	322182.3	1.0	**48.7713**	0.958	2.0	ug/L	1419	Standard
	Cr	52	321498.9	0.8	**48.6111**	1.781	3.7	ug/L	7059	Standard
	Cr	53	41528.5	2.5	**50.8018**	1.999	3.9	ug/L	398	Standard
	Mn	55	1448076.7	1.1	**250.8257**	9.931	4.0	ug/L	824	Standard
	Co	59	302580.5	0.6	**48.8078**	1.668	3.4	ug/L	167	Standard
	Ni	60	85959.8	0.7	**50.1882**	1.780	3.5	ug/L	391	Standard
	Cu	65	105187.2	0.8	**61.3638**	1.877	3.1	ug/L	147	Standard
	Zn	66	56481.1	0.6	**55.9522**	1.833	3.3	ug/L	184	Standard
>	Ge	72	385990.6	2.8				ug/L	422998	Standard
	As	75	53914.3	0.4	**52.1536**	1.300	2.5	ug/L	-58	Standard
	Se	82	5952.3	1.2	**55.4528**	1.278	2.3	ug/L	15	Standard
	Se-1	77	3836.5	1.9	**54.8004**	1.761	3.2	ug/L	58	Standard
>	Ga	71	111.7	14.4				mg/L	113	Standard
	Rb	85	4890.8	6.3				ug/L	27	Standard
	Y	89	336399.3	5.0				ug/L	383780	Standard
>	Rh	103	290.0	13.7				ug/L	18	Standard
	Mo	98	1148.2	1.1	**0.4717**	0.010	2.0	ug/L	31	Standard
	Ag	107	104643.1	0.3	**17.2764**	0.511	3.0	ug/L	84	Standard
	Cd	111	92696.7	1.3	**48.4627**	1.970	4.1	mg/L	4	Standard
	Cd	114	222801.9	2.2	**48.0113**	2.405	5.0	ug/L	15	Standard
>	In	115	463176.5	2.8				ug/L	515400	Standard
	Sn	118	1443.4	8.7	**0.0961**	0.017	17.5	ug/L	1043	Standard
	Sb	123	218741.2	0.3	**53.1869**	1.624	3.1	ug/L	227	Standard
	Ba	135	108485.0	0.5	**60.0641**	1.936	3.2	ug/L	31	Standard
	Ce	140	1400.1	20.5				ug/L	120	Standard
>	Tb	159	729794.0	2.1				ug/L	785817	Standard
	Ho	165	58.3	27.6				ug/L	7	Standard
	Tl	203	362012.1	0.6	**49.9147**	1.833	3.7	ug/L	6	Standard
	Tl	205	320443.3	0.9	**50.7233**	2.080	4.1	ug/L	8	Standard
	Pb	206	232238.3	0.4	**51.4361**	1.667	3.2	ug/L	201	Standard
	Pb	207	202991.1	0.6	**49.7280**	1.710	3.4	ug/L	177	Standard
	Pb	208	841514.2	0.1	**51.3205**	1.666	3.2	ug/L	722	Standard
	U	238	347348.8	0.7	**55.7704**	1.724	3.1	ug/L	8	Standard
>	Bi	209	403438.1	3.2				ug/L	444563	Standard

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Na	23	11.7	65.5	**159.4947**	104.754	65.7	mg/L	0	Standard
Mg	24	24434.7	2.0	**35.7535**	0.630	1.8	mg/L	38	Standard
K	39	436.7	14.6	**2.0995**	0.316	15.1	mg/L	33	Standard
Ca	43	651.7	8.6	**113.7501**	10.355	9.1	mg/L	48	Standard
Fe	54	184.9	18.7	**0.0572**	0.032	55.7	mg/L	131	Standard
Fe	57	1000.0	10.1	**3.1327**	0.378	12.1	mg/L	153	Standard
> **Sc-1**	45	22905.6	0.4				mg/L	26715	Standard
Cl	35	414775.3	0.4				ug/L	102686	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	57619.4	1.5				ug/L	1897	Standard
P	31	20834.3	0.8				ug/L	18491	Standard
S	34	4487.3	6.5				ug/L	3734	Standard
Sr	88	1356.7	8.5				ug/L	47	Standard
C	12	146.7	32.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	110.0	18.2				mg/L	23	Standard
Dy	164	64.0	16.6				mg/L	23	Standard
Ho-1	165	58.3	27.6				mg/L	7	Standard
Er	166	56.7	56.7				mg/L	13	Standard
I	127	153107.0	3.6				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.348	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		91.251	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.867
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.749
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606098637SD WG573548-05
Sample Date/Time: Tuesday, July 05, 2016 16:02:21
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	71356.0	1.0				ug/L	59517	Standard
	Be	9	50422.1	1.6	**48.3366**	0.286	0.6	ug/L	10	Standard
	Al	27	51068324.9	1.0	**279.9532**	2.318	0.8	ug/L	1872	Standard
	Sc	45	24501.5	3.0				ug/L	26715	Standard
	Ti	47	154.0	11.8	**0.4168**	0.070	16.8	ug/L	54	Standard
	V	51	329538.6	1.2	**46.6549**	0.245	0.5	ug/L	1419	Standard
	Cr	52	325873.0	0.9	**46.0287**	0.739	1.6	ug/L	7059	Standard
	Cr	53	40652.8	2.7	**46.4722**	1.035	2.2	ug/L	398	Standard
	Mn	55	1473143.8	0.7	**238.6115**	3.538	1.5	ug/L	824	Standard
	Co	59	313293.6	0.3	**47.2618**	0.598	1.3	ug/L	167	Standard
	Ni	60	88507.1	1.2	**48.3155**	0.248	0.5	ug/L	391	Standard
	Cu	65	90758.4	1.3	**49.5010**	0.299	0.6	ug/L	147	Standard
	Zn	66	53901.0	0.9	**49.9197**	0.463	0.9	ug/L	184	Standard
>	Ge	72	412512.9	1.5				ug/L	422998	Standard
	As	75	55770.4	0.7	**50.4628**	0.426	0.8	ug/L	-58	Standard
	Se	82	6139.8	1.0	**53.4965**	0.426	0.8	ug/L	15	Standard
	Se-1	77	3955.5	0.8	**52.8292**	1.121	2.1	ug/L	58	Standard
>	Ga	71	80.0	41.0				mg/L	113	Standard
	Rb	85	4982.5	1.1				ug/L	27	Standard
	Y	89	349323.8	2.1				ug/L	383780	Standard
>	Rh	103	330.0	9.9				ug/L	18	Standard
	Mo	98	844.2	4.7	**0.3278**	0.014	4.4	ug/L	31	Standard
	Ag	107	99314.8	0.3	**15.6219**	0.112	0.7	ug/L	84	Standard
	Cd	111	94366.8	0.3	**46.9980**	0.290	0.6	mg/L	4	Standard
	Cd	114	228866.6	1.0	**46.9717**	0.363	0.8	ug/L	15	Standard
>	In	115	485865.2	0.8				ug/L	515400	Standard
	Sn	118	1226.7	11.8	**0.0439**	0.027	62.4	ug/L	1043	Standard
	Sb	123	222948.4	0.5	**51.6510**	0.492	1.0	ug/L	227	Standard
	Ba	135	108277.2	0.9	**57.1144**	0.060	0.1	ug/L	31	Standard
	Ce	140	1090.0	1.6				ug/L	120	Standard
>	Tb	159	754184.5	1.2				ug/L	785817	Standard
	Ho	165	55.0	18.2				ug/L	7	Standard
	Tl	203	367763.1	0.5	**48.2429**	0.854	1.8	ug/L	6	Standard
	Tl	205	323449.4	0.4	**48.7027**	0.519	1.1	ug/L	8	Standard
	Pb	206	237226.4	0.3	**49.9879**	0.602	1.2	ug/L	201	Standard
	Pb	207	205652.0	0.6	**47.9284**	0.487	1.0	ug/L	177	Standard
	Pb	208	853109.7	0.5	**49.5009**	0.818	1.7	ug/L	722	Standard
	U	238	355118.6	0.8	**54.2491**	0.508	0.9	ug/L	8	Standard
>	Bi	209	423788.7	1.4				ug/L	444563	Standard

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Na	23	18.3	68.6	**231.3341**	154.328	66.7	mg/L	0	Standard
Mg	24	24386.3	1.2	**33.3849**	1.379	4.1	mg/L	38	Standard
K	39	456.7	5.4	**2.0496**	0.060	2.9	mg/L	33	Standard
Ca	43	691.7	8.5	**112.7698**	8.639	7.7	mg/L	48	Standard
Fe	54	153.3	27.4	**0.0175**	0.033	186.8	mg/L	131	Standard
Fe	57	915.0	3.6	**2.6129**	0.190	7.3	mg/L	153	Standard
Sc-1	45	24501.5	3.0				mg/L	26715	Standard
Cl	35	430316.2	1.1				ug/L	102686	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	60319.9	2.4				ug/L	1897	Standard
P	31	20186.8	3.2				ug/L	18491	Standard
S	34	4342.3	4.0				ug/L	3734	Standard
Sr	88	1325.1	8.4				ug/L	47	Standard
C	12	143.3	10.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	150.0	52.1				mg/L	23	Standard
Dy	164	90.6	7.2				mg/L	23	Standard
Ho-1	165	55.0	18.2				mg/L	7	Standard
Er	166	56.7	36.7				mg/L	13	Standard
I	127	152569.8	3.2				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.892	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.521	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.270
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.327
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606102602
Sample Date/Time: Tuesday, July 05, 2016 16:05:33
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 20
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66033.7	3.5				ug/L	59517	Standard
	Be	9	66.7	21.7	**0.0384**	0.017	44.2	ug/L	10	Standard
	Al	27	4008822.4	1.5	**23.7468**	0.503	2.1	ug/L	1872	Standard
	Sc	45	21772.3	2.4				ug/L	26715	Standard
	Ti	47	32.3	9.9	**-0.0977**	0.014	14.1	ug/L	54	Standard
	V	51	-3776.6	52.8	**-0.7532**	0.300	39.9	ug/L	1419	Standard
	Cr	52	642309.0	0.2	**98.0945**	1.349	1.4	ug/L	7059	Standard
	Cr	53	81532.1	1.2	**100.1374**	0.488	0.5	ug/L	398	Standard
	Mn	55	361428.3	1.1	**62.4970**	0.126	0.2	ug/L	824	Standard
	Co	59	44138.9	2.1	**7.0985**	0.155	2.2	ug/L	167	Standard
	Ni	60	487701.1	1.6	**285.7153**	7.502	2.6	ug/L	391	Standard
	Cu	65	28478.7	1.9	**16.5593**	0.434	2.6	ug/L	147	Standard
	Zn	66	4753.1	0.8	**4.5628**	0.041	0.9	ug/L	184	Standard
>	**Ge**	72	385765.0	1.3				ug/L	422998	Standard
	As	75	163.7	35.9	**0.2094**	0.055	26.4	ug/L	-58	Standard
	Se	82	110.6	7.8	**0.8278**	0.071	8.6	ug/L	15	Standard
	Se-1	77	220.0	15.3	**2.5168**	0.524	20.8	ug/L	58	Standard
>	**Ga**	71	53.3	5.4				mg/L	113	Standard
	Rb	85	695.0	7.6				ug/L	27	Standard
	Y	89	324960.6	2.2				ug/L	383780	Standard
>	**Rh**	103	35.0	65.5				ug/L	18	Standard
	Mo	98	2519.5	1.4	**1.0464**	0.012	1.1	ug/L	31	Standard
	Ag	107	132.0	8.7	**0.0098**	0.002	20.3	ug/L	84	Standard
	Cd	111	262.2	2.7	**0.1330**	0.004	2.8	mg/L	4	Standard
	Cd	114	640.1	4.9	**0.1334**	0.007	5.3	ug/L	15	Standard
>	**In**	115	462724.9	0.4				ug/L	515400	Standard
	Sn	118	493.3	5.2	**-0.0861**	0.005	5.7	ug/L	1043	Standard
	Sb	123	345.5	14.6	**0.0677**	0.012	18.3	ug/L	227	Standard
	Ba	135	6152.9	1.0	**3.3855**	0.019	0.6	ug/L	31	Standard
	Ce	140	3777.1	15.0				ug/L	120	Standard
>	**Tb**	159	712525.9	1.4				ug/L	785817	Standard
	Ho	165	196.7	42.6				ug/L	7	Standard
	Tl	203	134.0	21.6	**0.0142**	0.004	27.8	ug/L	6	Standard
	Tl	205	110.0	16.4	**0.0100**	0.003	28.6	ug/L	8	Standard
	Pb	206	338.3	9.9	**0.0266**	0.008	28.6	ug/L	201	Standard
	Pb	207	277.7	6.3	**0.0176**	0.005	26.5	ug/L	177	Standard
	Pb	208	1090.7	6.1	**0.0154**	0.004	25.7	ug/L	722	Standard
	U	238	255.0	12.2	**0.0369**	0.005	12.9	ug/L	8	Standard
>	**Bi**	209	419164.2	0.8				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	8624.1	3.0	**13.2539**	0.102	0.8	mg/L	38	Standard
K	39	58.3	17.8	**0.1850**	0.063	34.2	mg/L	33	Standard
Ca	43	46.7	22.3	**3.1609**	2.157	68.2	mg/L	48	Standard
Fe	54	466.1	4.8	**0.3444**	0.016	4.7	mg/L	131	Standard
Fe	57	350.0	12.2	**0.8500**	0.177	20.8	mg/L	153	Standard
Sc-1	45	21772.3	2.4				mg/L	26715	Standard
Cl	35	140039.0	1.6				ug/L	102686	Standard
Kr	83	4.0	25.0				ug/L	2	Standard
Br	81	16989.5	2.8				ug/L	1897	Standard
P	31	7613.6	3.5				ug/L	18491	Standard
S	34	4200.6	4.5				ug/L	3734	Standard
Sr	88	143.3	10.1				ug/L	47	Standard
C	12	60.0	57.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	556.7	2.7				mg/L	23	Standard
Dy	164	240.9	67.5				mg/L	23	Standard
Ho-1	165	196.7	42.6				mg/L	7	Standard
Er	166	190.0	29.3				mg/L	13	Standard
I	127	39920.9	1.1				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		110.950	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		91.198	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	89.780	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	94.287	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Lower	V	51	
Cr 53 Upper, S, EEE	Cr	53	
Ni 60 Upper, S, EEE	Ni	60	

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Method 6020 - Summary Report

Sample ID: L1606102602
Sample Date/Time: Tuesday, July 05, 2016 16:08:45
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 200
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64041.7	1.5				ug/L	59517	Standard
	Be	9	43.3	40.5	**0.0154**	0.019	126.2	ug/L	10	Standard
	Al	27	443970.0	1.5	**2.7002**	0.082	3.0	ug/L	1872	Standard
	Sc	45	22515.1	1.8				ug/L	26715	Standard
	Ti	47	22.7	2.5	**-0.1447**	0.002	1.1	ug/L	54	Standard
	V	51	1583.5	10.0	**0.0555**	0.021	38.3	ug/L	1419	Standard
	Cr	52	48688.3	17.2	**6.3685**	1.341	21.1	ug/L	7059	Standard
	Cr	53	6294.7	18.6	**7.1832**	1.494	20.8	ug/L	398	Standard
	Mn	55	37613.6	1.2	**6.2359**	0.021	0.3	ug/L	824	Standard
	Co	59	4677.4	1.5	**0.7123**	0.004	0.5	ug/L	167	Standard
	Ni	60	50400.7	1.1	**28.6604**	0.390	1.4	ug/L	391	Standard
	Cu	65	2432.2	9.3	**1.3098**	0.144	11.0	ug/L	147	Standard
	Zn	66	986.0	1.1	**0.7977**	0.018	2.3	ug/L	184	Standard
>	**Ge**	72	394895.6	1.1				ug/L	422998	Standard
	As	75	-14.8	96.6	**0.0378**	0.013	35.5	ug/L	-58	Standard
	Se	82	28.6	14.9	**0.0551**	0.038	68.3	ug/L	15	Standard
	Se-1	77	76.7	18.3	**0.4146**	0.197	47.4	ug/L	58	Standard
>	**Ga**	71	35.0	28.6				mg/L	113	Standard
	Rb	85	111.7	24.7				ug/L	27	Standard
	Y	89	330463.8	1.5				ug/L	383780	Standard
>	**Rh**	103	16.7	17.3				ug/L	18	Standard
	Mo	98	511.2	19.9	**0.1998**	0.042	21.1	ug/L	31	Standard
	Ag	107	141.0	44.2	**0.0107**	0.010	93.0	ug/L	84	Standard
	Cd	111	99.4	68.1	**0.0464**	0.034	73.8	mg/L	4	Standard
	Cd	114	247.9	77.2	**0.0474**	0.040	84.2	ug/L	15	Standard
>	**In**	115	475028.5	0.5				ug/L	515400	Standard
	Sn	118	263.3	4.8	**-0.1316**	0.003	1.9	ug/L	1043	Standard
	Sb	123	395.5	36.7	**0.0774**	0.035	44.6	ug/L	227	Standard
	Ba	135	375.0	20.7	**0.1786**	0.041	22.9	ug/L	31	Standard
	Ce	140	181.7	35.1				ug/L	120	Standard
>	**Tb**	159	723676.4	0.7				ug/L	785817	Standard
	Ho	165	25.0	34.6				ug/L	7	Standard
	Tl	203	280.7	56.3	**0.0323**	0.020	62.4	ug/L	6	Standard
	Tl	205	146.7	44.4	**0.0148**	0.010	65.8	ug/L	8	Standard
	Pb	206	315.0	18.2	**0.0192**	0.012	63.2	ug/L	201	Standard
	Pb	207	261.3	16.1	**0.0115**	0.010	85.1	ug/L	177	Standard
	Pb	208	1032.3	20.7	**0.0098**	0.012	126.8	ug/L	722	Standard
	U	238	118.0	56.9	**0.0151**	0.010	66.7	ug/L	8	Standard
>	**Bi**	209	435214.7	0.9				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	850.0	0.0	**1.2332**	0.023	1.8	mg/L	38	Standard
K	39	28.3	36.7	**0.0186**	0.057	307.5	mg/L	33	Standard
Ca	43	33.3	45.8	**0.3337**	2.785	834.6	mg/L	48	Standard
Fe	54	57.2	5.8	**-0.0618**	0.004	6.8	mg/L	131	Standard
Fe	57	251.7	29.9	**0.4438**	0.276	62.2	mg/L	153	Standard
> **Sc-1**	45	22515.1	1.8				mg/L	26715	Standard
Cl	35	146273.5	1.8				ug/L	102686	Standard
Kr	83	3.0	57.7				ug/L	2	Standard
Br	81	3323.7	2.4				ug/L	1897	Standard
P	31	6721.5	2.7				ug/L	18491	Standard
S	34	4434.0	3.9				ug/L	3734	Standard
Sr	88	66.7	15.6				ug/L	47	Standard
C	12	60.0	16.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3310.4	10.8				mg/L	23	Standard
Dy	164	45.9	32.7				mg/L	23	Standard
Ho-1	165	25.0	34.6				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	13	Standard
I	127	31768.3	1.3				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.603	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.356	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		92.167
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.897
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606102604
Sample Date/Time: Tuesday, July 05, 2016 16:11:56
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66130.7	1.1				ug/L	59517	Standard
	Be	9	61.7	28.5	**0.0327**	0.018	54.9	ug/L	10	Standard
	Al	27	5956114.8	1.1	**35.2197**	0.270	0.8	ug/L	1872	Standard
	Sc	45	26690.2	3.8				ug/L	26715	Standard
	Ti	47	1240.7	3.2	**5.4190**	0.255	4.7	ug/L	54	Standard
	V	51	6991.8	13.2	**0.8712**	0.124	14.2	ug/L	1419	Standard
	Cr	52	16728.6	4.5	**1.5782**	0.125	7.9	ug/L	7059	Standard
	Cr	53	15167.6	1.7	**18.1041**	0.174	1.0	ug/L	398	Standard
	Mn	55	100787.5	0.9	**17.1593**	0.420	2.4	ug/L	824	Standard
	Co	59	4720.7	2.4	**0.7292**	0.026	3.5	ug/L	167	Standard
	Ni	60	5679.4	2.0	**3.0962**	0.113	3.7	ug/L	391	Standard
	Cu	65	1677.1	2.5	**0.8910**	0.037	4.1	ug/L	147	Standard
	Zn	66	5144.2	1.4	**4.8991**	0.015	0.3	ug/L	184	Standard
>	**Ge**	72	389749.5	1.7				ug/L	422998	Standard
	As	75	407.1	24.2	**0.4407**	0.091	20.6	ug/L	-58	Standard
	Se	82	166.3	20.5	**1.3328**	0.309	23.2	ug/L	15	Standard
	Se-1	77	630.0	2.9	**8.3517**	0.375	4.5	ug/L	58	Standard
>	**Ga**	71	298.3	6.8				mg/L	113	Standard
	Rb	85	7621.9	1.5				ug/L	27	Standard
	Y	89	338156.0	1.8				ug/L	383780	Standard
>	**Rh**	103	45.0	40.1				ug/L	18	Standard
	Mo	98	168.0	7.6	**0.0614**	0.005	8.1	ug/L	31	Standard
	Ag	107	103.3	3.7	**0.0051**	0.000	3.3	ug/L	84	Standard
	Cd	111	321.4	1.7	**0.1639**	0.005	3.3	mg/L	4	Standard
	Cd	114	741.6	11.8	**0.1549**	0.016	10.2	ug/L	15	Standard
>	**In**	115	463189.5	2.7				ug/L	515400	Standard
	Sn	118	1806.8	7.3	**0.1666**	0.030	17.9	ug/L	1043	Standard
	Sb	123	663.4	9.2	**0.1452**	0.018	12.3	ug/L	227	Standard
	Ba	135	229221.6	0.2	**126.9270**	3.740	2.9	ug/L	31	Standard
	Ce	140	43881.8	1.4				ug/L	120	Standard
>	**Tb**	159	709647.9	1.6				ug/L	785817	Standard
	Ho	165	620.0	8.7				ug/L	7	Standard
	Tl	203	160.0	5.0	**0.0182**	0.001	5.4	ug/L	6	Standard
	Tl	205	143.3	16.5	**0.0156**	0.003	21.6	ug/L	8	Standard
	Pb	206	2013.5	0.7	**0.3952**	0.004	1.0	ug/L	201	Standard
	Pb	207	1666.4	0.5	**0.3557**	0.007	2.1	ug/L	177	Standard
	Pb	208	7287.0	0.9	**0.3907**	0.008	2.0	ug/L	722	Standard
	U	238	308.0	11.6	**0.0464**	0.006	13.5	ug/L	8	Standard
>	**Bi**	209	408252.0	1.4				ug/L	444563	Standard

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Na	23	3.3	173.2	**37.4640**	64.881	173.2	mg/L	0	Standard
Mg	24	42477.8	1.0	**53.4216**	2.479	4.6	mg/L	38	Standard
K	39	40.0	54.5	**0.0485**	0.100	206.2	mg/L	33	Standard
Ca	43	45.0	29.4	**1.1659**	1.791	153.7	mg/L	48	Standard
Fe	54	543.5	5.5	**0.3219**	0.020	6.1	mg/L	131	Standard
Fe	57	361.7	13.1	**0.6420**	0.168	26.2	mg/L	153	Standard
> **Sc-1**	45	26690.2	3.8				mg/L	26715	Standard
Cl	35	139131.8	3.6				ug/L	102686	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	33988.2	7.1				ug/L	1897	Standard
P	31	39982.7	0.5				ug/L	18491	Standard
S	34	4414.0	7.1				ug/L	3734	Standard
Sr	88	255.0	9.0				ug/L	47	Standard
C	12	93.3	43.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	536.7	23.6				mg/L	23	Standard
Dy	164	1078.1	6.0				mg/L	23	Standard
Ho-1	165	620.0	8.7				mg/L	7	Standard
Er	166	596.7	16.1				mg/L	13	Standard
I	127	84655.1	7.9				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.113	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.140	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.870
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.832
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606102604
Sample Date/Time: Tuesday, July 05, 2016 16:15:08
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 20
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63747.2	2.0				ug/L	59517	Standard
	Be	9	31.7	18.2	**0.0028**	0.006	201.6	ug/L	10	Standard
	Al	27	291714.1	2.3	**1.7780**	0.048	2.7	ug/L	1872	Standard
	Sc	45	22303.1	4.0				ug/L	26715	Standard
	Ti	47	74.7	12.7	**0.0943**	0.053	56.5	ug/L	54	Standard
	V	51	1656.0	2.6	**0.0692**	0.010	14.2	ug/L	1419	Standard
	Cr	52	5616.4	0.9	**-0.1201**	0.032	26.4	ug/L	7059	Standard
	Cr	53	1373.4	4.6	**1.2616**	0.024	1.9	ug/L	398	Standard
	Mn	55	6195.0	14.8	**0.9314**	0.177	19.0	ug/L	824	Standard
	Co	59	419.0	15.9	**0.0419**	0.012	28.9	ug/L	167	Standard
	Ni	60	546.0	6.9	**0.1166**	0.029	24.7	ug/L	391	Standard
	Cu	65	616.7	4.5	**0.2768**	0.017	6.1	ug/L	147	Standard
	Zn	66	1198.4	4.3	**1.0177**	0.081	8.0	ug/L	184	Standard
>	**Ge**	72	390719.3	3.3				ug/L	422998	Standard
	As	75	-13.0	324.5	**0.0389**	0.041	106.0	ug/L	-58	Standard
	Se	82	21.2	30.5	**-0.0094**	0.063	670.1	ug/L	15	Standard
	Se-1	77	90.7	12.7	**0.6238**	0.127	20.3	ug/L	58	Standard
>	**Ga**	71	45.0	33.3				mg/L	113	Standard
	Rb	85	346.7	20.3				ug/L	27	Standard
	Y	89	327118.5	3.8				ug/L	383780	Standard
>	**Rh**	103	31.7	36.5				ug/L	18	Standard
	Mo	98	103.9	28.7	**0.0337**	0.011	32.4	ug/L	31	Standard
	Ag	107	92.3	40.0	**0.0031**	0.006	204.7	ug/L	84	Standard
	Cd	111	35.5	42.9	**0.0143**	0.008	58.5	mg/L	4	Standard
	Cd	114	90.5	47.3	**0.0148**	0.010	65.0	ug/L	15	Standard
>	**In**	115	469756.9	3.0				ug/L	515400	Standard
	Sn	118	415.0	9.6	**-0.1023**	0.007	7.3	ug/L	1043	Standard
	Sb	123	153.0	15.0	**0.0204**	0.006	30.0	ug/L	227	Standard
	Ba	135	10774.8	0.8	**5.8615**	0.217	3.7	ug/L	31	Standard
	Ce	140	1340.1	34.4				ug/L	120	Standard
>	**Tb**	159	715229.2	2.9				ug/L	785817	Standard
	Ho	165	20.0	25.0				ug/L	7	Standard
	Tl	203	97.3	60.4	**0.0090**	0.008	88.2	ug/L	6	Standard
	Tl	205	80.0	66.1	**0.0052**	0.008	159.1	ug/L	8	Standard
	Pb	206	354.7	11.1	**0.0278**	0.010	36.3	ug/L	201	Standard
	Pb	207	263.0	16.5	**0.0124**	0.012	94.3	ug/L	177	Standard
	Pb	208	1164.4	9.7	**0.0177**	0.008	46.7	ug/L	722	Standard
	U	238	61.7	78.3	**0.0069**	0.008	109.9	ug/L	8	Standard
>	**Bi**	209	433127.0	3.1				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	1996.8	6.0	**2.9779**	0.300	10.1	mg/L	38	Standard
K	39	18.3	41.7	**-0.0320**	0.044	136.0	mg/L	33	Standard
Ca	43	16.7	34.6	**-2.7351**	1.098	40.1	mg/L	48	Standard
Fe	54	67.8	22.6	**-0.0508**	0.017	33.3	mg/L	131	Standard
Fe	57	225.0	8.0	**0.3522**	0.035	9.8	mg/L	153	Standard
> **Sc-1**	45	22303.1	4.0				mg/L	26715	Standard
Cl	35	130242.2	2.0				ug/L	102686	Standard
Kr	83	4.7	44.6				ug/L	2	Standard
Br	81	3250.3	4.6				ug/L	1897	Standard
P	31	8779.2	6.2				ug/L	18491	Standard
S	34	4113.9	2.4				ug/L	3734	Standard
Sr	88	91.7	27.5				ug/L	47	Standard
C	12	60.0	60.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	253.3	35.6				mg/L	23	Standard
Dy	164	21.9	94.6				mg/L	23	Standard
Ho-1	165	20.0	25.0				mg/L	7	Standard
Er	166	30.0	33.3				mg/L	13	Standard
I	127	33014.3	1.3				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.108	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.369	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.144
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.428
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, July 05, 2016 16:18:20
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67744.5	2.5				ug/L	59517	Standard
	Be	9	49067.7	2.3	**49.5502**	0.264	0.5	ug/L	10	Standard
	Al	27	7373446.9	3.1	**42.5611**	0.476	1.1	ug/L	1872	Standard
	Sc	45	24488.1	1.8				ug/L	26715	Standard
	Ti	47	22651.6	1.1	**93.9908**	0.450	0.5	ug/L	54	Standard
	V	51	344298.9	0.7	**47.0256**	0.567	1.2	ug/L	1419	Standard
	Cr	52	347287.7	1.2	**47.3420**	0.247	0.5	ug/L	7059	Standard
	Cr	53	43687.9	1.6	**48.1936**	0.604	1.3	ug/L	398	Standard
	Mn	55	297238.3	0.6	**46.3340**	0.107	0.2	ug/L	824	Standard
	Co	59	337254.2	0.4	**49.0780**	0.593	1.2	ug/L	167	Standard
	Ni	60	89551.9	0.8	**47.1539**	0.285	0.6	ug/L	391	Standard
	Cu	65	90767.4	0.8	**47.7569**	0.674	1.4	ug/L	147	Standard
	Zn	66	54920.7	0.7	**49.0639**	0.544	1.1	ug/L	184	Standard
>	Ge	72	427609.3	0.8				ug/L	422998	Standard
	As	75	54895.2	0.5	**47.9182**	0.487	1.0	ug/L	-58	Standard
	Se	82	5726.1	0.9	**48.1115**	0.814	1.7	ug/L	15	Standard
	Se-1	77	3820.8	2.4	**49.1811**	1.559	3.2	ug/L	58	Standard
>	Ga	71	70.0	18.9				mg/L	113	Standard
	Rb	85	800.0	18.0				ug/L	27	Standard
	Y	89	375282.4	0.1				ug/L	383780	Standard
>	Rh	103	25.0	60.0				ug/L	18	Standard
	Mo	98	257719.3	0.1	**96.0927**	1.387	1.4	ug/L	31	Standard
	Ag	107	317574.0	0.5	**46.7127**	0.553	1.2	ug/L	84	Standard
	Cd	111	101271.0	0.8	**47.1388**	0.382	0.8	mg/L	4	Standard
	Cd	114	244235.4	1.7	**46.8529**	1.053	2.2	ug/L	15	Standard
>	In	115	519870.6	1.4				ug/L	515400	Standard
	Sn	118	281434.6	3.0	**48.0049**	1.121	2.3	ug/L	1043	Standard
	Sb	123	220403.7	2.2	**47.7185**	0.836	1.8	ug/L	227	Standard
	Ba	135	92504.5	0.4	**45.6023**	0.471	1.0	ug/L	31	Standard
	Ce	140	120.0	19.1				ug/L	120	Standard
>	Tb	159	785067.8	0.8				ug/L	785817	Standard
	Ho	165	13.3	57.3				ug/L	7	Standard
	Tl	203	392463.6	0.3	**47.8637**	0.139	0.3	ug/L	6	Standard
	Tl	205	349858.2	0.6	**48.9789**	0.320	0.7	ug/L	8	Standard
	Pb	206	248380.0	0.3	**48.6600**	0.180	0.4	ug/L	201	Standard
	Pb	207	225105.3	0.8	**48.7784**	0.387	0.8	ug/L	177	Standard
	Pb	208	936532.7	0.7	**50.5228**	0.354	0.7	ug/L	722	Standard
	U	238	350081.9	0.0	**49.7240**	0.009	0.0	ug/L	8	Standard
>	Bi	209	455760.8	0.0				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4013.9	1.6	**5.4660**	0.090	1.6	mg/L	38	Standard
K	39	725.0	11.5	**3.3342**	0.408	12.2	mg/L	33	Standard
Ca	43	46.7	24.7	**2.1540**	2.119	98.4	mg/L	48	Standard
Fe	54	6016.2	4.0	**5.1744**	0.205	4.0	mg/L	131	Standard
Fe	57	1795.1	4.0	**5.5862**	0.232	4.2	mg/L	153	Standard
> **Sc-1**	45	24488.1	1.8				mg/L	26715	Standard
Cl	35	141990.3	1.6				ug/L	102686	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	2076.8	5.5				ug/L	1897	Standard
P	31	23853.8	1.3				ug/L	18491	Standard
S	34	4897.5	3.2				ug/L	3734	Standard
Sr	88	58.3	21.6				ug/L	47	Standard
C	12	66.7	31.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	286.7	54.5				mg/L	23	Standard
Dy	164	12.9	122.5				mg/L	23	Standard
Ho-1	165	13.3	57.3				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	11285.9	2.7				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	99.100		
Al	27	85.122		
Sc	45			
Ti	47	93.991		
V	51	94.051		
Cr	52	94.684		
Cr	53			
Mn	55	92.668		
Co	59	98.156		
Ni	60	94.308		
Cu	65	95.514		
Zn	66	98.128		
> Ge	72		101.090	
As	75	95.836		
Se	82	96.223		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	96.093		
Ag	107	93.425		
Cd	111	94.278		
Cd	114			
> In	115		100.867	
Sn	118	96.010		
Sb	123	95.437		
Ba	135	91.205		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	95.727		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.046		
U	238	99.448		
> Bi	209		102.519	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, July 05, 2016 16:21:32
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67135.1	1.2				ug/L	59517	Standard
	Be	9	40.0	57.3	**0.0095**	0.023	239.5	ug/L	10	Standard
	Al	27	2406.9	12.7	**0.0016**	0.002	102.7	ug/L	1872	Standard
	Sc	45	24908.8	1.6				ug/L	26715	Standard
	Ti	47	29.3	15.7	**-0.1247**	0.018	14.6	ug/L	54	Standard
	V	51	1334.0	1.6	**0.0037**	0.004	108.9	ug/L	1419	Standard
	Cr	52	6094.6	2.0	**-0.1271**	0.014	10.9	ug/L	7059	Standard
	Cr	53	643.3	2.5	**0.3065**	0.028	9.3	ug/L	398	Standard
	Mn	55	687.0	4.0	**-0.0234**	0.006	25.1	ug/L	824	Standard
	Co	59	237.7	4.3	**0.0096**	0.002	20.6	ug/L	167	Standard
	Ni	60	272.7	7.4	**-0.0554**	0.012	22.0	ug/L	391	Standard
	Cu	65	495.0	3.9	**0.1822**	0.014	7.6	ug/L	147	Standard
	Zn	66	213.7	6.5	**0.0324**	0.013	40.0	ug/L	184	Standard
>	**Ge**	72	427179.7	1.5				ug/L	422998	Standard
	As	75	-16.7	194.6	**0.0368**	0.028	77.0	ug/L	-58	Standard
	Se	82	21.2	29.1	**-0.0277**	0.049	178.2	ug/L	15	Standard
	Se-1	77	54.3	18.2	**0.0425**	0.138	325.5	ug/L	58	Standard
>	**Ga**	71	55.0	55.3				mg/L	113	Standard
	Rb	85	18.3	41.7				ug/L	27	Standard
	Y	89	369586.9	1.0				ug/L	383780	Standard
>	**Rh**	103	15.0	33.3				ug/L	18	Standard
	Mo	98	218.9	6.8	**0.0734**	0.007	9.6	ug/L	31	Standard
	Ag	107	134.0	7.8	**0.0079**	0.002	23.7	ug/L	84	Standard
	Cd	111	18.3	20.6	**0.0045**	0.002	42.4	mg/L	4	Standard
	Cd	114	61.1	50.4	**0.0073**	0.006	84.0	ug/L	15	Standard
>	**In**	115	516030.8	1.8				ug/L	515400	Standard
	Sn	118	1138.4	19.2	**0.0150**	0.034	226.4	ug/L	1043	Standard
	Sb	123	854.2	33.4	**0.1694**	0.059	35.1	ug/L	227	Standard
	Ba	135	54.0	20.0	**0.0031**	0.006	180.9	ug/L	31	Standard
	Ce	140	28.3	10.2				ug/L	120	Standard
>	**Tb**	159	770282.2	1.9				ug/L	785817	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	98.7	5.6	**0.0083**	0.001	6.8	ug/L	6	Standard
	Tl	205	111.7	23.0	**0.0087**	0.004	41.5	ug/L	8	Standard
	Pb	206	272.0	6.5	**0.0071**	0.004	50.7	ug/L	201	Standard
	Pb	207	240.3	15.7	**0.0036**	0.008	224.8	ug/L	177	Standard
	Pb	208	1043.7	6.6	**0.0071**	0.004	52.3	ug/L	722	Standard
	U	238	95.3	16.1	**0.0109**	0.002	19.8	ug/L	8	Standard
>	**Bi**	209	461261.7	1.0				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	56.7	18.4	**0.0427**	0.014	32.4	mg/L	38	Standard
K	39	11.7	65.5	**-0.0748**	0.035	46.5	mg/L	33	Standard
Ca	43	15.0	33.3	**-3.3400**	0.874	26.2	mg/L	48	Standard
Fe	54	142.7	7.7	**0.0068**	0.011	160.1	mg/L	131	Standard
Fe	57	196.7	1.5	**0.1717**	0.017	10.1	mg/L	153	Standard
Sc-1	45	24908.8	1.6				mg/L	26715	Standard
Cl	35	140717.8	1.1				ug/L	102686	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	1590.1	7.7				ug/L	1897	Standard
P	31	22909.0	1.2				ug/L	18491	Standard
S	34	4957.5	3.4				ug/L	3734	Standard
Sr	88	60.0	28.9				ug/L	47	Standard
C	12	40.0	25.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	226.7	38.0				mg/L	23	Standard
Dy	164	9.2	113.9				mg/L	23	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	13	Standard
I	127	7967.1	1.4				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.989	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.122
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.756
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606102606
Sample Date/Time: Tuesday, July 05, 2016 16:30:34
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74363.7	1.6				ug/L	59517	Standard
	Be	9	150.0	18.6	**0.1068**	0.024	22.9	ug/L	10	Standard
	Al	27	4154249.6	1.3	**21.8438**	0.451	2.1	ug/L	1872	Standard
	Sc	45	28810.7	2.1				ug/L	26715	Standard
	Ti	47	3698.1	3.0	**15.6431**	0.318	2.0	ug/L	54	Standard
	V	51	26578.3	2.3	**3.5840**	0.050	1.4	ug/L	1419	Standard
	Cr	52	34515.9	1.0	**3.9850**	0.091	2.3	ug/L	7059	Standard
	Cr	53	19344.0	2.8	**21.8249**	0.842	3.9	ug/L	398	Standard
	Mn	55	387642.6	0.5	**62.4660**	0.870	1.4	ug/L	824	Standard
	Co	59	40237.0	0.1	**6.0262**	0.063	1.0	ug/L	167	Standard
	Ni	60	48394.8	0.7	**26.2341**	0.244	0.9	ug/L	391	Standard
	Cu	65	3555.4	0.7	**1.8563**	0.006	0.3	ug/L	147	Standard
	Zn	66	26025.0	0.5	**23.9339**	0.205	0.9	ug/L	184	Standard
>	**Ge**	72	413981.7	1.0				ug/L	422998	Standard
	As	75	1371.7	3.1	**1.2870**	0.034	2.7	ug/L	-58	Standard
	Se	82	306.8	5.3	**2.4691**	0.166	6.7	ug/L	15	Standard
	Se-1	77	865.7	2.5	**10.9986**	0.397	3.6	ug/L	58	Standard
>	**Ga**	71	1628.4	10.8				mg/L	113	Standard
	Rb	85	24080.8	2.1				ug/L	27	Standard
	Y	89	370747.4	2.1				ug/L	383780	Standard
>	**Rh**	103	50.0	17.3				ug/L	18	Standard
	Mo	98	2448.1	0.5	**0.9701**	0.005	0.5	ug/L	31	Standard
	Ag	107	221.0	4.1	**0.0229**	0.001	6.5	ug/L	84	Standard
	Cd	111	179.4	8.7	**0.0855**	0.008	9.9	mg/L	4	Standard
	Cd	114	453.9	24.6	**0.0890**	0.024	26.7	ug/L	15	Standard
>	**In**	115	484695.2	0.9				ug/L	515400	Standard
	Sn	118	1531.7	4.7	**0.1003**	0.011	11.3	ug/L	1043	Standard
	Sb	123	878.4	23.3	**0.1875**	0.046	24.7	ug/L	227	Standard
	Ba	135	32213.5	1.1	**17.0174**	0.241	1.4	ug/L	31	Standard
	Ce	140	71206.9	1.2				ug/L	120	Standard
>	**Tb**	159	757690.0	0.5				ug/L	785817	Standard
	Ho	165	1326.7	6.7				ug/L	7	Standard
	Tl	203	283.0	13.2	**0.0335**	0.005	16.3	ug/L	6	Standard
	Tl	205	215.0	16.3	**0.0255**	0.005	19.9	ug/L	8	Standard
	Pb	206	3258.7	0.7	**0.6413**	0.013	2.1	ug/L	201	Standard
	Pb	207	2668.9	0.7	**0.5743**	0.009	1.6	ug/L	177	Standard
	Pb	208	11405.4	0.2	**0.6134**	0.011	1.7	ug/L	722	Standard
	U	238	733.4	4.4	**0.1095**	0.006	5.5	ug/L	8	Standard
>	**Bi**	209	424084.4	1.7				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	91872.8	2.6	**107.0182**	5.008	4.7	mg/L	38	Standard
K	39	105.0	24.7	**0.2958**	0.099	33.4	mg/L	33	Standard
Ca	43	33.3	56.8	**-1.0499**	2.645	251.9	mg/L	48	Standard
Fe	54	1318.5	5.4	**0.8699**	0.071	8.2	mg/L	131	Standard
Fe	57	525.0	5.8	**1.0269**	0.094	9.2	mg/L	153	Standard
> **Sc-1**	45	28810.7	2.1				mg/L	26715	Standard
Cl	35	165770.7	1.7				ug/L	102686	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	44652.5	4.6				ug/L	1897	Standard
P	31	44054.0	3.3				ug/L	18491	Standard
S	34	4137.2	4.9				ug/L	3734	Standard
Sr	88	138.3	29.4				ug/L	47	Standard
C	12	130.0	42.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	230.0	45.4				mg/L	23	Standard
Dy	164	1852.6	11.5				mg/L	23	Standard
Ho-1	165	1326.7	6.7				mg/L	7	Standard
Er	166	1410.1	5.1				mg/L	13	Standard
I	127	3057873.8	7.7				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.946	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.869	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.043
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.394
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606102607
Sample Date/Time: Tuesday, July 05, 2016 16:34:40
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68266.8	2.4				ug/L	59517	Standard
	Be	9	63.3	52.6	**0.0324**	0.034	104.1	ug/L	10	Standard
	Al	27	2930466.5	2.0	**16.7807**	0.104	0.6	ug/L	1872	Standard
	Sc	45	25488.1	1.9				ug/L	26715	Standard
	Ti	47	1257.1	6.0	**5.0393**	0.338	6.7	ug/L	54	Standard
	V	51	7294.0	1.6	**0.8311**	0.016	1.9	ug/L	1419	Standard
	Cr	52	11120.1	2.2	**0.5877**	0.043	7.3	ug/L	7059	Standard
	Cr	53	1945.1	5.6	**1.7771**	0.133	7.5	ug/L	398	Standard
	Mn	55	35777.2	0.6	**5.5211**	0.049	0.9	ug/L	824	Standard
	Co	59	6971.3	0.5	**1.0006**	0.004	0.4	ug/L	167	Standard
	Ni	60	2202.2	2.4	**0.9771**	0.035	3.6	ug/L	391	Standard
	Cu	65	1306.4	1.5	**0.6167**	0.012	2.0	ug/L	147	Standard
	Zn	66	3961.5	0.9	**3.4287**	0.022	0.7	ug/L	184	Standard
>	**Ge**	72	423130.4	0.5				ug/L	422998	Standard
	As	75	262.4	3.0	**0.2829**	0.008	2.9	ug/L	-58	Standard
	Se	82	109.1	5.4	**0.7244**	0.050	7.0	ug/L	15	Standard
	Se-1	77	155.0	3.6	**1.3748**	0.064	4.6	ug/L	58	Standard
>	**Ga**	71	630.0	5.2				mg/L	113	Standard
	Rb	85	9908.2	3.8				ug/L	27	Standard
	Y	89	382429.5	2.3				ug/L	383780	Standard
>	**Rh**	103	40.0	33.1				ug/L	18	Standard
	Mo	98	479.3	3.9	**0.1722**	0.007	3.9	ug/L	31	Standard
	Ag	107	89.7	8.7	**0.0014**	0.001	78.9	ug/L	84	Standard
	Cd	111	116.2	14.2	**0.0507**	0.008	16.1	mg/L	4	Standard
	Cd	114	283.8	13.5	**0.0506**	0.007	14.1	ug/L	15	Standard
>	**In**	115	512796.7	0.8				ug/L	515400	Standard
	Sn	118	1660.1	1.8	**0.1072**	0.003	2.8	ug/L	1043	Standard
	Sb	123	701.1	18.3	**0.1377**	0.029	21.1	ug/L	227	Standard
	Ba	135	99318.1	0.9	**49.6340**	0.204	0.4	ug/L	31	Standard
	Ce	140	55534.9	1.9				ug/L	120	Standard
>	**Tb**	159	769952.4	1.4				ug/L	785817	Standard
	Ho	165	1206.7	8.3				ug/L	7	Standard
	Tl	203	109.7	12.8	**0.0098**	0.002	17.6	ug/L	6	Standard
	Tl	205	73.3	14.2	**0.0035**	0.001	41.1	ug/L	8	Standard
	Pb	206	2462.2	1.6	**0.4389**	0.009	2.0	ug/L	201	Standard
	Pb	207	1933.8	1.6	**0.3730**	0.008	2.1	ug/L	177	Standard
	Pb	208	8386.2	1.2	**0.4058**	0.007	1.6	ug/L	722	Standard
	U	238	575.3	1.1	**0.0795**	0.001	0.9	ug/L	8	Standard
>	**Bi**	209	454222.6	0.3				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	7945.4	2.8	**10.4234**	0.091	0.9	mg/L	38	Standard
K	39	66.7	8.7	**0.1770**	0.031	17.6	mg/L	33	Standard
Ca	43	31.7	39.7	**-0.6281**	2.185	347.9	mg/L	48	Standard
Fe	54	644.1	11.8	**0.4285**	0.073	17.1	mg/L	131	Standard
Fe	57	375.0	12.7	**0.7346**	0.136	18.5	mg/L	153	Standard
> **Sc-1**	45	25488.1	1.9				mg/L	26715	Standard
Cl	35	129104.4	0.9				ug/L	102686	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	3330.4	3.4				ug/L	1897	Standard
P	31	23366.3	1.9				ug/L	18491	Standard
S	34	3877.2	5.1				ug/L	3734	Standard
Sr	88	161.7	30.4				ug/L	47	Standard
C	12	123.3	41.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	116.7	35.7				mg/L	23	Standard
Dy	164	1896.0	6.7				mg/L	23	Standard
Ho-1	165	1206.7	8.3				mg/L	7	Standard
Er	166	1130.0	14.6				mg/L	13	Standard
I	127	82785.0	8.7				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.702	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.031	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.495	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	102.173	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606102607PS WG574572-03
Sample Date/Time: Tuesday, July 05, 2016 16:37:51
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	69227.8	0.6				ug/L	59517	Standard
	Be	9	49726.5	1.1	**49.1370**	0.352	0.7	ug/L	10	Standard
	Al	27	2873878.5	1.0	**16.2277**	0.259	1.6	ug/L	1872	Standard
	Sc	45	24993.9	1.8				ug/L	26715	Standard
	Ti	47	1335.7	1.8	**5.3372**	0.204	3.8	ug/L	54	Standard
	V	51	348953.5	0.9	**47.8884**	1.383	2.9	ug/L	1419	Standard
	Cr	52	346150.6	0.7	**47.4076**	1.034	2.2	ug/L	7059	Standard
	Cr	53	44179.4	3.2	**48.9894**	2.582	5.3	ug/L	398	Standard
	Mn	55	331330.4	0.8	**51.9089**	1.505	2.9	ug/L	824	Standard
	Co	59	335823.3	1.8	**49.1046**	1.851	3.8	ug/L	167	Standard
	Ni	60	90637.6	0.4	**47.9523**	1.179	2.5	ug/L	391	Standard
	Cu	65	91750.3	0.7	**48.4945**	0.941	1.9	ug/L	147	Standard
	Zn	66	58861.8	0.1	**52.8388**	1.118	2.1	ug/L	184	Standard
>	Ge	72	425755.9	2.1				ug/L	422998	Standard
	As	75	55535.3	0.4	**48.6965**	0.863	1.8	ug/L	-58	Standard
	Se	82	5786.5	1.8	**48.8455**	1.453	3.0	ug/L	15	Standard
	Se-1	77	3933.5	1.8	**50.8739**	0.923	1.8	ug/L	58	Standard
>	Ga	71	585.0	3.4				mg/L	113	Standard
	Rb	85	10123.4	1.5				ug/L	27	Standard
	Y	89	374806.0	0.6				ug/L	383780	Standard
>	Rh	103	48.3	15.8				ug/L	18	Standard
	Mo	98	462.5	8.0	**0.1682**	0.016	9.6	ug/L	31	Standard
	Ag	107	312584.6	0.9	**47.1836**	0.858	1.8	ug/L	84	Standard
	Cd	111	100998.9	0.1	**48.2434**	0.483	1.0	mg/L	4	Standard
	Cd	114	246161.8	2.0	**48.4514**	0.702	1.4	ug/L	15	Standard
>	In	115	506609.9	1.1				ug/L	515400	Standard
	Sn	118	2041.8	4.6	**0.1777**	0.013	7.2	ug/L	1043	Standard
	Sb	123	215448.5	3.5	**47.8823**	2.207	4.6	ug/L	227	Standard
	Ba	135	189283.4	0.8	**95.7834**	1.705	1.8	ug/L	31	Standard
	Ce	140	55208.8	1.7				ug/L	120	Standard
>	Tb	159	779660.2	0.5				ug/L	785817	Standard
	Ho	165	1243.4	8.2				ug/L	7	Standard
	Tl	203	392705.8	0.4	**47.8220**	0.152	0.3	ug/L	6	Standard
	Tl	205	346945.8	0.8	**48.4993**	0.446	0.9	ug/L	8	Standard
	Pb	206	256971.8	0.2	**50.2701**	0.195	0.4	ug/L	201	Standard
	Pb	207	223445.9	0.1	**48.3466**	0.160	0.3	ug/L	177	Standard
	Pb	208	929479.1	0.4	**50.0670**	0.111	0.2	ug/L	722	Standard
	U	238	342768.2	0.4	**48.6127**	0.085	0.2	ug/L	8	Standard
>	Bi	209	456439.8	0.2				ug/L	444563	Standard

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Na	23	1.7	173.2	**21.3266**	36.930	173.2	mg/L	0	Standard
Mg	24	7968.8	0.8	**10.6659**	0.274	2.6	mg/L	38	Standard
K	39	56.7	13.5	**0.1356**	0.032	23.7	mg/L	33	Standard
Ca	43	55.0	32.8	**3.3469**	2.908	86.9	mg/L	48	Standard
Fe	54	665.1	11.4	**0.4572**	0.073	16.0	mg/L	131	Standard
Fe	57	348.3	18.1	**0.6715**	0.204	30.4	mg/L	153	Standard
> **Sc-1**	45	24993.9	1.8				mg/L	26715	Standard
Cl	35	128485.8	0.8				ug/L	102686	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	3127.0	1.8				ug/L	1897	Standard
P	31	23651.8	1.8				ug/L	18491	Standard
S	34	3930.5	2.8				ug/L	3734	Standard
Sr	88	155.0	14.1				ug/L	47	Standard
C	12	130.0	20.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	146.7	51.2				mg/L	23	Standard
Dy	164	1925.4	9.6				mg/L	23	Standard
Ho-1	165	1243.4	8.2				mg/L	7	Standard
Er	166	1143.4	19.4				mg/L	13	Standard
I	127	63996.6	2.1				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.317	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.652	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.295
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.672
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606102607SDL WG574572-04
Sample Date/Time: Tuesday, July 05, 2016 16:41:03
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60370.2	4.6				ug/L	59517	Standard
	Be	9	50.0	26.5	**0.0259**	0.017	65.9	ug/L	10	Standard
	Al	27	564742.7	0.8	**3.6512**	0.143	3.9	ug/L	1872	Standard
	Sc	45	21306.6	3.3				ug/L	26715	Standard
	Ti	47	257.3	11.6	**0.9663**	0.163	16.9	ug/L	54	Standard
	V	51	2385.0	5.6	**0.1906**	0.024	12.4	ug/L	1419	Standard
	Cr	52	5925.8	2.9	**-0.0430**	0.042	98.8	ug/L	7059	Standard
	Cr	53	776.7	6.5	**0.5680**	0.080	14.1	ug/L	398	Standard
	Mn	55	7209.7	5.9	**1.1444**	0.088	7.7	ug/L	824	Standard
	Co	59	1479.1	3.6	**0.2184**	0.006	2.9	ug/L	167	Standard
	Ni	60	619.3	5.2	**0.1705**	0.018	10.3	ug/L	391	Standard
	Cu	65	407.7	4.8	**0.1641**	0.014	8.3	ug/L	147	Standard
	Zn	66	1500.4	1.7	**1.3616**	0.006	0.4	ug/L	184	Standard
>	**Ge**	72	378082.1	2.1				ug/L	422998	Standard
	As	75	16.9	56.7	**0.0684**	0.010	14.2	ug/L	-58	Standard
	Se	82	30.9	12.4	**0.0892**	0.038	42.2	ug/L	15	Standard
	Se-1	77	77.0	16.3	**0.4701**	0.204	43.3	ug/L	58	Standard
>	**Ga**	71	160.0	18.8				mg/L	113	Standard
	Rb	85	1916.8	2.0				ug/L	27	Standard
	Y	89	324870.0	1.8				ug/L	383780	Standard
>	**Rh**	103	23.3	65.5				ug/L	18	Standard
	Mo	98	134.3	6.7	**0.0491**	0.005	9.8	ug/L	31	Standard
	Ag	107	162.0	36.9	**0.0156**	0.010	66.0	ug/L	84	Standard
	Cd	111	48.8	35.0	**0.0221**	0.009	41.7	mg/L	4	Standard
	Cd	114	91.0	34.4	**0.0156**	0.007	44.1	ug/L	15	Standard
>	**In**	115	449365.4	1.6				ug/L	515400	Standard
	Sn	118	585.0	7.3	**-0.0650**	0.009	13.9	ug/L	1043	Standard
	Sb	123	1421.5	27.7	**0.3409**	0.103	30.3	ug/L	227	Standard
	Ba	135	19042.0	0.8	**10.8436**	0.250	2.3	ug/L	31	Standard
	Ce	140	10421.9	2.4				ug/L	120	Standard
>	**Tb**	159	686168.7	1.5				ug/L	785817	Standard
	Ho	165	228.3	2.5				ug/L	7	Standard
	Tl	203	166.3	55.1	**0.0188**	0.012	66.0	ug/L	6	Standard
	Tl	205	91.7	22.7	**0.0074**	0.003	46.0	ug/L	8	Standard
	Pb	206	682.3	7.4	**0.1022**	0.011	11.1	ug/L	201	Standard
	Pb	207	581.7	11.0	**0.0914**	0.015	16.8	ug/L	177	Standard
	Pb	208	2389.1	3.4	**0.0939**	0.005	5.3	ug/L	722	Standard
	U	238	170.3	14.0	**0.0243**	0.004	16.4	ug/L	8	Standard
>	**Bi**	209	412736.9	1.8				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	1556.7	2.3	**2.4204**	0.133	5.5	mg/L	38	Standard
K	39	31.7	18.2	**0.0451**	0.035	77.8	mg/L	33	Standard
Ca	43	40.0	21.7	**2.0573**	2.006	97.5	mg/L	48	Standard
Fe	54	167.3	15.2	**0.0532**	0.031	59.0	mg/L	131	Standard
Fe	57	253.3	2.3	**0.5027**	0.030	6.0	mg/L	153	Standard
Sc-1	45	21306.6	3.3				mg/L	26715	Standard
Cl	35	121441.5	1.9				ug/L	102686	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1806.8	1.2				ug/L	1897	Standard
P	31	9739.8	1.6				ug/L	18491	Standard
S	34	4012.2	4.8				ug/L	3734	Standard
Sr	88	75.0	43.7				ug/L	47	Standard
C	12	66.7	22.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	43.8				mg/L	23	Standard
Dy	164	428.7	10.7				mg/L	23	Standard
Ho-1	165	228.3	2.5				mg/L	7	Standard
Er	166	236.7	20.8				mg/L	13	Standard
I	127	36522.3	2.3				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.434	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		89.382	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		87.188
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.841
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606102607SDL WG574572-04
Sample Date/Time: Tuesday, July 05, 2016 16:44:14
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56547.3	7.0				ug/L	59517	Standard
	Be	9	15.0	33.3	**-0.0130**	0.005	41.0	ug/L	10	Standard
	Al	27	111715.5	2.1	**0.7629**	0.057	7.5	ug/L	1872	Standard
	Sc	45	20160.1	4.7				ug/L	26715	Standard
	Ti	47	65.3	24.4	**0.0852**	0.091	106.9	ug/L	54	Standard
	V	51	1365.5	3.7	**0.0478**	0.010	20.2	ug/L	1419	Standard
	Cr	52	4827.1	1.9	**-0.1600**	0.053	33.3	ug/L	7059	Standard
	Cr	53	535.0	1.9	**0.3121**	0.020	6.5	ug/L	398	Standard
	Mn	55	1722.8	3.0	**0.1961**	0.019	9.7	ug/L	824	Standard
	Co	59	424.0	3.6	**0.0499**	0.004	7.4	ug/L	167	Standard
	Ni	60	336.7	8.6	**0.0157**	0.009	57.2	ug/L	391	Standard
	Cu	65	207.3	6.4	**0.0535**	0.007	12.3	ug/L	147	Standard
	Zn	66	822.4	1.2	**0.7360**	0.052	7.1	ug/L	184	Standard
>	**Ge**	72	352653.2	4.6				ug/L	422998	Standard
	As	75	-30.3	68.6	**0.0188**	0.024	126.1	ug/L	-58	Standard
	Se	82	16.8	10.3	**-0.0350**	0.010	28.8	ug/L	15	Standard
	Se-1	77	61.7	17.3	**0.3116**	0.196	62.8	ug/L	58	Standard
>	**Ga**	71	46.7	24.7				mg/L	113	Standard
	Rb	85	406.7	3.1				ug/L	27	Standard
	Y	89	303018.9	6.7				ug/L	383780	Standard
>	**Rh**	103	11.7	65.5				ug/L	18	Standard
	Mo	98	139.5	43.4	**0.0551**	0.029	53.0	ug/L	31	Standard
	Ag	107	76.3	8.7	**0.0017**	0.001	71.6	ug/L	84	Standard
	Cd	111	7.1	58.3	**-0.0002**	0.002	1385.8	mg/L	4	Standard
	Cd	114	27.8	46.5	**0.0019**	0.003	155.3	ug/L	15	Standard
>	**In**	115	426532.5	3.1				ug/L	515400	Standard
	Sn	118	266.7	16.8	**-0.1251**	0.011	8.6	ug/L	1043	Standard
	Sb	123	341.8	4.3	**0.0739**	0.001	1.6	ug/L	227	Standard
	Ba	135	3516.4	4.1	**2.0897**	0.030	1.4	ug/L	31	Standard
	Ce	140	1066.7	53.9				ug/L	120	Standard
>	**Tb**	159	653783.4	4.3				ug/L	785817	Standard
	Ho	165	25.0	20.0				ug/L	7	Standard
	Tl	203	39.3	19.7	**0.0019**	0.001	45.6	ug/L	6	Standard
	Tl	205	36.7	15.7	**-0.0008**	0.001	138.7	ug/L	8	Standard
	Pb	206	271.7	5.8	**0.0161**	0.001	6.5	ug/L	201	Standard
	Pb	207	202.7	2.8	**0.0030**	0.001	29.9	ug/L	177	Standard
	Pb	208	920.7	8.2	**0.0089**	0.002	26.6	ug/L	722	Standard
	U	238	28.7	21.0	**0.0022**	0.001	40.1	ug/L	8	Standard
>	**Bi**	209	393512.4	4.1				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	365.0	6.0	**0.5755**	0.060	10.4	mg/L	38	Standard
K	39	8.3	91.7	**-0.0803**	0.046	57.4	mg/L	33	Standard
Ca	43	28.3	27.0	**0.0860**	1.855	2156.4	mg/L	48	Standard
Fe	54	52.4	29.2	**-0.0604**	0.017	27.8	mg/L	131	Standard
Fe	57	250.0	6.0	**0.5471**	0.100	18.3	mg/L	153	Standard
> **Sc-1**	45	20160.1	4.7				mg/L	26715	Standard
Cl	35	121018.0	0.5				ug/L	102686	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	1350.1	3.0				ug/L	1897	Standard
P	31	6893.2	5.4				ug/L	18491	Standard
S	34	4118.9	1.6				ug/L	3734	Standard
Sr	88	85.0	11.8				ug/L	47	Standard
C	12	46.7	65.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	313.3	25.6				mg/L	23	Standard
Dy	164	15.4	39.2				mg/L	23	Standard
Ho-1	165	25.0	20.0				mg/L	7	Standard
Er	166	26.7	94.4				mg/L	13	Standard
I	127	31698.1	1.1				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.011	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		83.370	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		82.758
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		88.517
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, July 05, 2016 16:47:27
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63287.0	4.1				ug/L	59517	Standard
	Be	9	48781.8	2.6	**52.8292**	3.590	6.8	ug/L	10	Standard
	Al	27	7278196.0	0.1	**45.0246**	1.857	4.1	ug/L	1872	Standard
	Sc	45	24029.0	2.1				ug/L	26715	Standard
	Ti	47	22471.3	1.2	**96.8775**	3.777	3.9	ug/L	54	Standard
	V	51	343885.5	0.1	**48.7956**	1.633	3.3	ug/L	1419	Standard
	Cr	52	347192.2	0.5	**49.2101**	1.958	4.0	ug/L	7059	Standard
	Cr	53	43056.1	1.0	**49.3458**	1.557	3.2	ug/L	398	Standard
	Mn	55	298346.7	0.4	**48.3205**	1.813	3.8	ug/L	824	Standard
	Co	59	332601.8	1.0	**50.2799**	1.902	3.8	ug/L	167	Standard
	Ni	60	89484.2	2.0	**48.9766**	2.689	5.5	ug/L	391	Standard
	Cu	65	89926.8	0.9	**49.1562**	1.980	4.0	ug/L	147	Standard
	Zn	66	54907.3	0.6	**50.9634**	1.929	3.8	ug/L	184	Standard
>	Ge	72	411946.4	3.4				ug/L	422998	Standard
	As	75	55039.6	0.9	**49.9150**	2.169	4.3	ug/L	-58	Standard
	Se	82	5623.8	1.7	**49.1008**	2.424	4.9	ug/L	15	Standard
	Se-1	77	3806.8	2.9	**50.9513**	3.264	6.4	ug/L	58	Standard
>	Ga	71	71.7	17.6				mg/L	113	Standard
	Rb	85	785.0	8.0				ug/L	27	Standard
	Y	89	353808.2	3.5				ug/L	383780	Standard
>	Rh	103	20.0	50.0				ug/L	18	Standard
	Mo	98	258507.7	1.3	**100.9509**	4.847	4.8	ug/L	31	Standard
	Ag	107	319526.0	1.2	**49.2298**	2.422	4.9	ug/L	84	Standard
	Cd	111	101828.4	1.4	**49.6336**	1.940	3.9	mg/L	4	Standard
	Cd	114	249891.2	2.0	**50.1890**	1.846	3.7	ug/L	15	Standard
>	In	115	496896.1	3.8				ug/L	515400	Standard
	Sn	118	280043.8	2.6	**50.0406**	2.457	4.9	ug/L	1043	Standard
	Sb	123	227476.6	1.6	**51.5870**	2.445	4.7	ug/L	227	Standard
	Ba	135	92947.2	1.1	**47.9711**	1.382	2.9	ug/L	31	Standard
	Ce	140	175.0	25.7				ug/L	120	Standard
>	Tb	159	750029.8	4.4				ug/L	785817	Standard
	Ho	165	13.3	43.3				ug/L	7	Standard
	Tl	203	396270.0	0.8	**50.0251**	1.865	3.7	ug/L	6	Standard
	Tl	205	347977.3	0.7	**50.4288**	1.971	3.9	ug/L	8	Standard
	Pb	206	248623.0	0.8	**50.4233**	2.033	4.0	ug/L	201	Standard
	Pb	207	225206.7	0.4	**50.5142**	1.798	3.6	ug/L	177	Standard
	Pb	208	933140.7	0.3	**52.1017**	1.582	3.0	ug/L	722	Standard
	U	238	348929.5	0.5	**51.2907**	1.413	2.8	ug/L	8	Standard
>	Bi	209	440643.5	3.2				ug/L	444563	Standard

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Na	23	1.7	173.2	**21.8635**	37.860	173.2	mg/L	0	Standard
Mg	24	4025.5	5.3	**5.5921**	0.407	7.3	mg/L	38	Standard
K	39	720.0	6.4	**3.3763**	0.241	7.1	mg/L	33	Standard
Ca	43	58.3	35.7	**4.2871**	3.478	81.1	mg/L	48	Standard
Fe	54	5961.1	1.1	**5.2279**	0.165	3.2	mg/L	131	Standard
Fe	57	1791.8	8.6	**5.6971**	0.630	11.1	mg/L	153	Standard
> **Sc-1**	45	24029.0	2.1				mg/L	26715	Standard
Cl	35	133996.6	0.1				ug/L	102686	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	1503.4	6.7				ug/L	1897	Standard
P	31	23019.1	1.4				ug/L	18491	Standard
S	34	4850.8	4.7				ug/L	3734	Standard
Sr	88	58.3	13.1				ug/L	47	Standard
C	12	76.7	58.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	180.0	20.0				mg/L	23	Standard
Dy	164	3.0	187.1				mg/L	23	Standard
Ho-1	165	13.3	43.3				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	13045.6	2.8				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	105.658		
Al	27	90.049		
Sc	45			
Ti	47	96.878		
V	51	97.591		
Cr	52	98.420		
Cr	53			
Mn	55	96.641		
Co	59	100.560		
Ni	60	97.953		
Cu	65	98.312		
Zn	66	101.927		
> Ge	72		97.387	
As	75	99.830		
Se	82	98.202		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	100.951		
Ag	107	98.460		
Cd	111	99.267		
Cd	114			
> In	115			96.410
Sn	118	100.081		
Sb	123	103.174		
Ba	135	95.942		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.050		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.203		
U	238	102.581		
> Bi	209			99.118
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, July 05, 2016 16:50:39
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65914.7	0.7				ug/L	59517	Standard
	Be	9	38.3	32.8	**0.0087**	0.013	152.0	ug/L	10	Standard
	Al	27	2835.3	23.2	**0.0044**	0.004	89.6	ug/L	1872	Standard
	Sc	45	24731.8	1.2				ug/L	26715	Standard
	Ti	47	27.7	11.0	**-0.1319**	0.013	9.8	ug/L	54	Standard
	V	51	1248.8	0.4	**-0.0087**	0.003	38.6	ug/L	1419	Standard
	Cr	52	5910.5	0.3	**-0.1558**	0.017	11.2	ug/L	7059	Standard
	Cr	53	631.7	10.0	**0.2910**	0.077	26.5	ug/L	398	Standard
	Mn	55	659.7	8.9	**-0.0280**	0.011	39.3	ug/L	824	Standard
	Co	59	272.0	12.1	**0.0145**	0.005	37.1	ug/L	167	Standard
	Ni	60	249.7	0.2	**-0.0682**	0.003	4.1	ug/L	391	Standard
	Cu	65	210.3	2.0	**0.0316**	0.004	13.7	ug/L	147	Standard
	Zn	66	193.3	14.0	**0.0138**	0.028	200.2	ug/L	184	Standard
>	**Ge**	72	428861.8	1.9				ug/L	422998	Standard
	As	75	-18.7	111.8	**0.0354**	0.018	51.1	ug/L	-58	Standard
	Se	82	15.9	37.8	**-0.0719**	0.053	74.2	ug/L	15	Standard
	Se-1	77	57.3	11.6	**0.0768**	0.077	100.0	ug/L	58	Standard
>	**Ga**	71	48.3	15.8				mg/L	113	Standard
	Rb	85	23.3	53.9				ug/L	27	Standard
	Y	89	372049.4	1.0				ug/L	383780	Standard
>	**Rh**	103	16.7	75.5				ug/L	18	Standard
	Mo	98	242.3	21.6	**0.0825**	0.020	24.1	ug/L	31	Standard
	Ag	107	146.0	18.2	**0.0097**	0.004	40.5	ug/L	84	Standard
	Cd	111	26.6	26.1	**0.0084**	0.003	38.7	mg/L	4	Standard
	Cd	114	52.6	36.2	**0.0056**	0.004	64.6	ug/L	15	Standard
>	**In**	115	513746.8	0.8				ug/L	515400	Standard
	Sn	118	1021.7	21.3	**-0.0038**	0.039	1011.7	ug/L	1043	Standard
	Sb	123	1064.8	34.4	**0.2172**	0.081	37.2	ug/L	227	Standard
	Ba	135	59.3	30.0	**0.0059**	0.009	151.1	ug/L	31	Standard
	Ce	140	81.7	24.7				ug/L	120	Standard
>	**Tb**	159	775896.6	1.5				ug/L	785817	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	132.7	19.5	**0.0124**	0.003	26.1	ug/L	6	Standard
	Tl	205	108.3	7.1	**0.0082**	0.001	15.1	ug/L	8	Standard
	Pb	206	293.7	12.4	**0.0114**	0.007	61.5	ug/L	201	Standard
	Pb	207	276.7	8.3	**0.0115**	0.005	46.6	ug/L	177	Standard
	Pb	208	1088.7	6.3	**0.0096**	0.004	42.9	ug/L	722	Standard
	U	238	112.3	34.8	**0.0133**	0.006	41.5	ug/L	8	Standard
>	**Bi**	209	460888.6	1.3				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	53.3	27.1	**0.0386**	0.019	48.8	mg/L	38	Standard
K	39	15.0	66.7	**-0.0580**	0.048	83.2	mg/L	33	Standard
Ca	43	25.0	40.0	**-1.6427**	1.653	100.6	mg/L	48	Standard
Fe	54	144.3	33.4	**0.0093**	0.043	465.5	mg/L	131	Standard
Fe	57	231.7	11.9	**0.2932**	0.089	30.4	mg/L	153	Standard
Sc-1	45	24731.8	1.2				mg/L	26715	Standard
Cl	35	135156.2	0.8				ug/L	102686	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1553.4	2.4				ug/L	1897	Standard
P	31	21515.3	1.8				ug/L	18491	Standard
S	34	4654.0	3.4				ug/L	3734	Standard
Sr	88	70.0	25.8				ug/L	47	Standard
C	12	36.7	41.7				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	156.7	43.4				mg/L	23	Standard
Dy	164	15.2	98.4				mg/L	23	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	30.0	66.7				mg/L	13	Standard
I	127	9586.4	1.4				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.386	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.679
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.672
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

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Method 6020 - Summary Report

Sample ID: PBS M8 WG575144-02
Sample Date/Time: Tuesday, July 05, 2016 16:53:52
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65518.1	3.1				ug/L	59517	Standard
	Be	9	23.3	53.9	**-0.0065**	0.014	211.9	ug/L	10	Standard
	Al	27	11077.4	4.9	**0.0538**	0.005	8.4	ug/L	1872	Standard
	Sc	45	25219.3	2.5				ug/L	26715	Standard
	Ti	47	23.7	21.7	**-0.1471**	0.020	13.9	ug/L	54	Standard
	V	51	1197.4	5.8	**-0.0128**	0.012	94.4	ug/L	1419	Standard
	Cr	52	7436.2	2.1	**0.0733**	0.014	19.7	ug/L	7059	Standard
	Cr	53	711.7	8.8	**0.3926**	0.066	16.7	ug/L	398	Standard
	Mn	55	742.7	3.3	**-0.0132**	0.006	46.4	ug/L	824	Standard
	Co	59	218.7	17.9	**0.0073**	0.006	88.4	ug/L	167	Standard
	Ni	60	328.0	8.0	**-0.0237**	0.018	74.1	ug/L	391	Standard
	Cu	65	140.0	25.1	**-0.0044**	0.018	407.1	ug/L	147	Standard
	Zn	66	1200.4	2.3	**0.9322**	0.041	4.4	ug/L	184	Standard
>	**Ge**	72	421648.6	1.9				ug/L	422998	Standard
	As	75	-31.3	123.5	**0.0244**	0.034	138.5	ug/L	-58	Standard
	Se	82	10.9	56.6	**-0.1120**	0.055	49.2	ug/L	15	Standard
	Se-1	77	49.7	13.7	**-0.0104**	0.098	936.8	ug/L	58	Standard
>	**Ga**	71	58.3	35.7				mg/L	113	Standard
	Rb	85	110.0	34.3				ug/L	27	Standard
	Y	89	363229.8	1.7				ug/L	383780	Standard
>	**Rh**	103	8.3	91.7				ug/L	18	Standard
	Mo	98	78.7	32.3	**0.0208**	0.010	48.2	ug/L	31	Standard
	Ag	107	78.3	13.3	**-0.0004**	0.001	409.2	ug/L	84	Standard
	Cd	111	6.9	38.3	**-0.0009**	0.001	143.9	mg/L	4	Standard
	Cd	114	11.3	212.6	**-0.0023**	0.005	200.6	ug/L	15	Standard
>	**In**	115	514924.6	1.4				ug/L	515400	Standard
	Sn	118	698.3	13.7	**-0.0601**	0.018	29.9	ug/L	1043	Standard
	Sb	123	612.8	29.7	**0.1179**	0.041	34.8	ug/L	227	Standard
	Ba	135	106.3	11.5	**0.0293**	0.007	23.1	ug/L	31	Standard
	Ce	140	108.3	25.4				ug/L	120	Standard
>	**Tb**	159	777244.7	1.5				ug/L	785817	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	29.0	22.6	**-0.0000**	0.001	1910.2	ug/L	6	Standard
	Tl	205	33.3	31.2	**-0.0021**	0.001	65.9	ug/L	8	Standard
	Pb	206	270.3	6.9	**0.0078**	0.004	57.0	ug/L	201	Standard
	Pb	207	230.3	2.2	**0.0024**	0.000	12.4	ug/L	177	Standard
	Pb	208	951.3	7.8	**0.0032**	0.005	153.6	ug/L	722	Standard
	U	238	31.7	35.5	**0.0021**	0.002	81.6	ug/L	8	Standard
>	**Bi**	209	452794.0	1.7				ug/L	444563	Standard

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Na	23	1.7	173.2	**20.9409**	36.262	173.2	mg/L	0	Standard
Mg	24	55.0	50.6	**0.0395**	0.037	94.8	mg/L	38	Standard
K	39	21.7	48.0	**-0.0280**	0.050	178.6	mg/L	33	Standard
Ca	43	23.3	53.9	**-2.0181**	2.011	99.7	mg/L	48	Standard
Fe	54	116.0	35.2	**-0.0180**	0.032	179.4	mg/L	131	Standard
Fe	57	183.3	20.8	**0.1202**	0.129	107.4	mg/L	153	Standard
> **Sc-1**	45	25219.3	2.5				mg/L	26715	Standard
Cl	35	133506.3	0.9				ug/L	102686	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	1620.1	10.4				ug/L	1897	Standard
P	31	20794.3	2.4				ug/L	18491	Standard
S	34	4577.4	1.9				ug/L	3734	Standard
Sr	88	86.7	21.8				ug/L	47	Standard
C	12	60.0	28.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	140.0	44.6				mg/L	23	Standard
Dy	164	2.9	187.9				mg/L	23	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	7161.7	2.5				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.084	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.681	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.908	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	101.852	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSS M8 WG575144-03
Sample Date/Time: Tuesday, July 05, 2016 16:57:03
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67019.6	2.0				ug/L	59517	Standard
	Be	9	22960.7	1.4	**23.4223**	0.188	0.8	ug/L	10	Standard
	Al	27	9476.3	1.7	**0.0429**	0.001	3.2	ug/L	1872	Standard
	Sc	45	24710.1	2.4				ug/L	26715	Standard
	Ti	47	31.7	15.9	**-0.1153**	0.020	17.3	ug/L	54	Standard
	V	51	165986.6	0.4	**22.5472**	0.179	0.8	ug/L	1419	Standard
	Cr	52	169421.0	0.7	**22.5660**	0.341	1.5	ug/L	7059	Standard
	Cr	53	21138.1	1.6	**23.0772**	0.511	2.2	ug/L	398	Standard
	Mn	55	144135.4	0.7	**22.3703**	0.102	0.5	ug/L	824	Standard
	Co	59	158965.6	0.5	**23.0878**	0.146	0.6	ug/L	167	Standard
	Ni	60	44010.5	2.0	**23.0414**	0.475	2.1	ug/L	391	Standard
	Cu	65	43762.8	0.4	**22.9540**	0.313	1.4	ug/L	147	Standard
	Zn	66	27478.6	0.9	**24.4347**	0.181	0.7	ug/L	184	Standard
>	**Ge**	72	428192.7	1.1				ug/L	422998	Standard
	As	75	26501.3	1.6	**23.1266**	0.177	0.8	ug/L	-58	Standard
	Se	82	2682.5	1.2	**22.3960**	0.051	0.2	ug/L	15	Standard
	Se-1	77	1800.4	1.8	**22.7847**	0.209	0.9	ug/L	58	Standard
>	**Ga**	71	60.0	22.0				mg/L	113	Standard
	Rb	85	65.0	40.7				ug/L	27	Standard
	Y	89	369502.0	1.6				ug/L	383780	Standard
>	**Rh**	103	25.0	52.9				ug/L	18	Standard
	Mo	98	69.8	12.3	**0.0173**	0.003	18.7	ug/L	31	Standard
	Ag	107	154053.3	1.2	**22.8133**	0.290	1.3	ug/L	84	Standard
	Cd	111	48479.3	0.6	**22.7239**	0.277	1.2	mg/L	4	Standard
	Cd	114	118015.3	0.3	**22.7955**	0.096	0.4	ug/L	15	Standard
>	**In**	115	516201.3	0.7				ug/L	515400	Standard
	Sn	118	660.0	18.2	**-0.0671**	0.021	31.9	ug/L	1043	Standard
	Sb	123	110745.6	0.8	**24.1395**	0.177	0.7	ug/L	227	Standard
	Ba	135	44449.4	0.6	**22.0541**	0.063	0.3	ug/L	31	Standard
	Ce	140	85.0	17.6				ug/L	120	Standard
>	**Tb**	159	778858.9	0.6				ug/L	785817	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	188466.3	0.8	**22.7800**	0.280	1.2	ug/L	6	Standard
	Tl	205	167949.1	1.2	**23.3039**	0.570	2.4	ug/L	8	Standard
	Pb	206	123211.0	0.8	**23.9062**	0.621	2.6	ug/L	201	Standard
	Pb	207	107007.5	0.0	**22.9597**	0.441	1.9	ug/L	177	Standard
	Pb	208	448701.7	0.5	**23.9681**	0.403	1.7	ug/L	722	Standard
	U	238	163510.2	0.7	**23.0183**	0.313	1.4	ug/L	8	Standard
>	**Bi**	209	459892.6	2.0				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	41.7	6.9	**0.0229**	0.003	13.2	mg/L	38	Standard
K	39	30.0	44.1	**0.0122**	0.060	491.3	mg/L	33	Standard
Ca	43	25.0	40.0	**-1.6431**	1.650	100.4	mg/L	48	Standard
Fe	54	141.4	12.1	**0.0065**	0.014	209.6	mg/L	131	Standard
Fe	57	195.0	20.5	**0.1708**	0.129	75.3	mg/L	153	Standard
> **Sc-1**	45	24710.1	2.4				mg/L	26715	Standard
Cl	35	133297.9	1.3				ug/L	102686	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1546.7	16.5				ug/L	1897	Standard
P	31	20772.6	2.1				ug/L	18491	Standard
S	34	4287.3	4.1				ug/L	3734	Standard
Sr	88	66.7	34.6				ug/L	47	Standard
C	12	50.0	52.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	153.3	26.4				mg/L	23	Standard
Dy	164	6.0	93.6				mg/L	23	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	6786.5	2.3				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.606	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.228	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.156
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.448
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1607008801 WG575144-01
Sample Date/Time: Tuesday, July 05, 2016 17:00:15
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67310.9	2.5				ug/L	59517	Standard
	Be	9	131.7	19.1	**0.1030**	0.027	26.7	ug/L	10	Standard
	Al	27	375349.3	0.9	**2.1695**	0.034	1.6	ug/L	1872	Standard
	Sc	45	25337.9	3.4				ug/L	26715	Standard
	Ti	47	9964.6	1.4	**40.6386**	0.350	0.9	ug/L	54	Standard
	V	51	32593.8	0.9	**4.2277**	0.042	1.0	ug/L	1419	Standard
	Cr	52	25304.1	1.1	**2.4968**	0.083	3.3	ug/L	7059	Standard
	Cr	53	2950.3	5.7	**2.8269**	0.182	6.5	ug/L	398	Standard
	Mn	55	48918.5	0.6	**7.4115**	0.117	1.6	ug/L	824	Standard
	Co	59	7642.3	1.7	**1.0723**	0.025	2.3	ug/L	167	Standard
	Ni	60	4560.4	1.0	**2.1785**	0.036	1.7	ug/L	391	Standard
	Cu	65	2696.6	2.0	**1.3223**	0.008	0.6	ug/L	147	Standard
	Zn	66	11632.5	1.2	**10.1246**	0.274	2.7	ug/L	184	Standard
>	**Ge**	72	433600.8	1.6				ug/L	422998	Standard
	As	75	1058.1	3.7	**0.9615**	0.031	3.2	ug/L	-58	Standard
	Se	82	26.7	13.0	**0.0166**	0.031	187.3	ug/L	15	Standard
	Se-1	77	78.0	23.1	**0.3375**	0.245	72.5	ug/L	58	Standard
>	**Ga**	71	4562.4	1.3				mg/L	113	Standard
	Rb	85	15681.4	2.0				ug/L	27	Standard
	Y	89	382488.4	2.8				ug/L	383780	Standard
>	**Rh**	103	5.0	100.0				ug/L	18	Standard
	Mo	98	1999.8	0.9	**0.7407**	0.011	1.5	ug/L	31	Standard
	Ag	107	167.0	21.4	**0.0127**	0.005	42.5	ug/L	84	Standard
	Cd	111	110.1	9.2	**0.0474**	0.005	10.7	mg/L	4	Standard
	Cd	114	311.0	33.0	**0.0555**	0.020	36.3	ug/L	15	Standard
>	**In**	115	517152.4	0.7				ug/L	515400	Standard
	Sn	118	460.0	11.5	**-0.1017**	0.010	9.5	ug/L	1043	Standard
	Sb	123	813.1	35.5	**0.1610**	0.064	39.8	ug/L	227	Standard
	Ba	135	25995.0	1.5	**12.8647**	0.238	1.9	ug/L	31	Standard
	Ce	140	283703.3	0.9				ug/L	120	Standard
>	**Tb**	159	787236.7	1.6				ug/L	785817	Standard
	Ho	165	1310.1	5.3				ug/L	7	Standard
	Tl	203	371.3	24.4	**0.0416**	0.012	27.9	ug/L	6	Standard
	Tl	205	301.7	10.1	**0.0353**	0.005	13.5	ug/L	8	Standard
	Pb	206	11962.4	0.8	**2.2894**	0.024	1.1	ug/L	201	Standard
	Pb	207	9702.1	0.7	**2.0468**	0.014	0.7	ug/L	177	Standard
	Pb	208	42264.2	0.7	**2.2231**	0.019	0.9	ug/L	722	Standard
	U	238	1081.7	4.4	**0.1505**	0.008	5.6	ug/L	8	Standard
>	**Bi**	209	457892.2	1.2				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	70.0	35.7	**0.0594**	0.034	56.9	mg/L	38	Standard
K	39	40.0	69.6	**0.0540**	0.123	227.6	mg/L	33	Standard
Ca	43	26.7	65.8	**-1.4815**	2.794	188.6	mg/L	48	Standard
Fe	54	2357.7	4.2	**1.8902**	0.143	7.6	mg/L	131	Standard
Fe	57	785.0	8.3	**2.0895**	0.302	14.4	mg/L	153	Standard
> **Sc-1**	45	25337.9	3.4				mg/L	26715	Standard
Cl	35	125408.3	1.9				ug/L	102686	Standard
Kr	83	3.0	57.7				ug/L	2	Standard
Br	81	1916.8	9.5				ug/L	1897	Standard
P	31	20230.2	4.4				ug/L	18491	Standard
S	34	4068.9	1.2				ug/L	3734	Standard
Sr	88	98.3	19.3				ug/L	47	Standard
C	12	130.0	23.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	166.7	28.4				mg/L	23	Standard
Dy	164	2356.0	6.0				mg/L	23	Standard
Ho-1	165	1310.1	5.3				mg/L	7	Standard
Er	166	1410.1	5.6				mg/L	13	Standard
I	127	11649.5	1.5				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.096	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.507	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.340
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.998
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1607008801S WG575144-04
Sample Date/Time: Tuesday, July 05, 2016 17:03:26
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67900.2	2.5				ug/L	59517	Standard
	Be	9	23598.4	3.2	**23.7729**	1.126	4.7	ug/L	10	Standard
	Al	27	386567.9	1.1	**2.2152**	0.035	1.6	ug/L	1872	Standard
	Sc	45	25246.0	2.8				ug/L	26715	Standard
	Ti	47	10490.6	0.5	**43.2293**	0.194	0.4	ug/L	54	Standard
	V	51	195273.1	1.9	**26.4898**	0.604	2.3	ug/L	1419	Standard
	Cr	52	191879.4	0.6	**25.6178**	0.243	0.9	ug/L	7059	Standard
	Cr	53	23802.0	2.0	**25.9713**	0.741	2.9	ug/L	398	Standard
	Mn	55	188070.4	0.3	**29.1550**	0.200	0.7	ug/L	824	Standard
	Co	59	164776.6	1.6	**23.8701**	0.201	0.8	ug/L	167	Standard
	Ni	60	47687.6	0.8	**24.9203**	0.379	1.5	ug/L	391	Standard
	Cu	65	46834.9	0.9	**24.5076**	0.336	1.4	ug/L	147	Standard
	Zn	66	41388.5	1.2	**36.7899**	0.364	1.0	ug/L	184	Standard
>	**Ge**	72	429279.9	0.8				ug/L	422998	Standard
	As	75	26335.6	0.8	**22.9250**	0.011	0.0	ug/L	-58	Standard
	Se	82	2664.3	1.5	**22.1851**	0.164	0.7	ug/L	15	Standard
	Se-1	77	1834.8	3.4	**23.1768**	0.964	4.2	ug/L	58	Standard
>	**Ga**	71	5252.6	1.9				mg/L	113	Standard
	Rb	85	16167.0	3.4				ug/L	27	Standard
	Y	89	379736.3	2.3				ug/L	383780	Standard
>	**Rh**	103	6.7	43.3				ug/L	18	Standard
	Mo	98	2166.1	1.4	**0.7947**	0.004	0.5	ug/L	31	Standard
	Ag	107	150726.7	0.7	**22.0545**	0.322	1.5	ug/L	84	Standard
	Cd	111	48574.9	0.7	**22.4967**	0.303	1.3	mg/L	4	Standard
	Cd	114	118872.5	0.9	**22.6871**	0.276	1.2	ug/L	15	Standard
>	**In**	115	522451.8	1.0				ug/L	515400	Standard
	Sn	118	515.0	16.8	**-0.0931**	0.016	16.7	ug/L	1043	Standard
	Sb	123	70679.7	3.1	**15.2136**	0.327	2.1	ug/L	227	Standard
	Ba	135	71414.2	0.2	**35.0249**	0.350	1.0	ug/L	31	Standard
	Ce	140	285982.4	1.5				ug/L	120	Standard
>	**Tb**	159	793691.4	0.6				ug/L	785817	Standard
	Ho	165	1121.7	2.7				ug/L	7	Standard
	Tl	203	189225.4	1.1	**22.7266**	0.429	1.9	ug/L	6	Standard
	Tl	205	167950.7	0.6	**23.1524**	0.275	1.2	ug/L	8	Standard
	Pb	206	133524.8	0.5	**25.7408**	0.300	1.2	ug/L	201	Standard
	Pb	207	115432.7	0.6	**24.6105**	0.305	1.2	ug/L	177	Standard
	Pb	208	483051.9	0.5	**25.6402**	0.314	1.2	ug/L	722	Standard
	U	238	163793.9	0.6	**22.9102**	0.219	1.0	ug/L	8	Standard
>	**Bi**	209	462801.0	0.8				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	65.0	23.1	**0.0529**	0.021	40.2	mg/L	38	Standard
K	39	41.7	36.7	**0.0626**	0.066	105.5	mg/L	33	Standard
Ca	43	40.0	12.5	**0.7911**	0.931	117.7	mg/L	48	Standard
Fe	54	2118.1	2.6	**1.6910**	0.069	4.1	mg/L	131	Standard
Fe	57	758.4	2.1	**2.0051**	0.051	2.5	mg/L	153	Standard
Sc-1	45	25246.0	2.8				mg/L	26715	Standard
Cl	35	122934.7	0.6				ug/L	102686	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	1963.5	6.1				ug/L	1897	Standard
P	31	19874.7	2.0				ug/L	18491	Standard
S	34	3900.5	3.9				ug/L	3734	Standard
Sr	88	68.3	51.4				ug/L	47	Standard
C	12	86.7	13.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	93.3	50.6				mg/L	23	Standard
Dy	164	2165.6	10.4				mg/L	23	Standard
Ho-1	165	1121.7	2.7				mg/L	7	Standard
Er	166	1000.0	13.5				mg/L	13	Standard
I	127	11070.7	1.8				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.086	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.485	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.368
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.103
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1607008801SD WG575144-05
Sample Date/Time: Tuesday, July 05, 2016 17:06:38
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67953.8	3.2				ug/L	59517	Standard
	Be	9	23817.0	1.9	**23.9672**	0.355	1.5	ug/L	10	Standard
	Al	27	375808.6	0.5	**2.1522**	0.059	2.8	ug/L	1872	Standard
	Sc	45	26107.5	1.1				ug/L	26715	Standard
	Ti	47	11505.7	1.3	**47.2005**	0.731	1.5	ug/L	54	Standard
	V	51	194202.3	1.0	**26.2104**	0.232	0.9	ug/L	1419	Standard
	Cr	52	188631.9	0.1	**25.0377**	0.152	0.6	ug/L	7059	Standard
	Cr	53	23007.5	0.9	**24.9605**	0.144	0.6	ug/L	398	Standard
	Mn	55	184295.1	0.6	**28.4240**	0.088	0.3	ug/L	824	Standard
	Co	59	164370.8	1.0	**23.6938**	0.120	0.5	ug/L	167	Standard
	Ni	60	47214.1	0.6	**24.5466**	0.269	1.1	ug/L	391	Standard
	Cu	65	46768.7	0.3	**24.3505**	0.181	0.7	ug/L	147	Standard
	Zn	66	41604.0	0.5	**36.7989**	0.296	0.8	ug/L	184	Standard
>	Ge	72	431415.1	0.5				ug/L	422998	Standard
	As	75	26112.6	0.8	**22.6193**	0.206	0.9	ug/L	-58	Standard
	Se	82	2724.5	1.2	**22.5786**	0.229	1.0	ug/L	15	Standard
	Se-1	77	1810.4	4.2	**22.7372**	0.873	3.8	ug/L	58	Standard
>	Ga	71	5085.9	1.0				mg/L	113	Standard
	Rb	85	16475.6	2.2				ug/L	27	Standard
	Y	89	387347.8	1.5				ug/L	383780	Standard
>	Rh	103	25.0	0.0				ug/L	18	Standard
	Mo	98	2103.2	1.3	**0.7774**	0.012	1.6	ug/L	31	Standard
	Ag	107	150901.4	0.9	**22.2475**	0.240	1.1	ug/L	84	Standard
	Cd	111	48577.7	0.6	**22.6687**	0.192	0.8	mg/L	4	Standard
	Cd	114	117980.0	2.6	**22.6882**	0.607	2.7	ug/L	15	Standard
>	In	115	518488.0	0.3				ug/L	515400	Standard
	Sn	118	478.3	28.3	**-0.0988**	0.023	23.5	ug/L	1043	Standard
	Sb	123	71145.8	2.8	**15.4336**	0.446	2.9	ug/L	227	Standard
	Ba	135	70389.1	1.4	**34.7845**	0.566	1.6	ug/L	31	Standard
	Ce	140	262343.7	1.6				ug/L	120	Standard
>	Tb	159	789356.9	0.6				ug/L	785817	Standard
	Ho	165	1166.7	0.7				ug/L	7	Standard
	Tl	203	189224.6	0.4	**22.7097**	0.032	0.1	ug/L	6	Standard
	Tl	205	164722.3	1.3	**22.6908**	0.201	0.9	ug/L	8	Standard
	Pb	206	131539.6	0.9	**25.3392**	0.116	0.5	ug/L	201	Standard
	Pb	207	113870.3	0.1	**24.2600**	0.134	0.6	ug/L	177	Standard
	Pb	208	482782.8	0.1	**25.6082**	0.147	0.6	ug/L	722	Standard
	U	238	163029.8	0.7	**22.7879**	0.180	0.8	ug/L	8	Standard
>	Bi	209	463100.5	0.5				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	66.7	28.4	**0.0519**	0.024	45.5	mg/L	38	Standard
K	39	40.0	25.0	**0.0499**	0.044	88.6	mg/L	33	Standard
Ca	43	26.7	10.8	**-1.5859**	0.451	28.5	mg/L	48	Standard
Fe	54	2238.1	5.0	**1.7302**	0.111	6.4	mg/L	131	Standard
Fe	57	738.4	5.5	**1.8600**	0.154	8.3	mg/L	153	Standard
> **Sc-1**	45	26107.5	1.1				mg/L	26715	Standard
Cl	35	121406.5	0.8				ug/L	102686	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	2096.8	4.3				ug/L	1897	Standard
P	31	20266.9	3.5				ug/L	18491	Standard
S	34	3825.5	5.5				ug/L	3734	Standard
Sr	88	81.7	7.1				ug/L	47	Standard
C	12	116.7	27.6				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	126.7	38.9				mg/L	23	Standard
Dy	164	2141.6	3.5				mg/L	23	Standard
Ho-1	165	1166.7	0.7				mg/L	7	Standard
Er	166	1083.4	3.7				mg/L	13	Standard
I	127	11385.9	3.1				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.176	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.990	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.599
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.170
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1607008801PS WG575217-01
Sample Date/Time: Tuesday, July 05, 2016 17:09:49
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66924.2	2.1				ug/L	59517	Standard
	Be	9	47544.5	1.8	**48.6090**	1.112	2.3	ug/L	10	Standard
	Al	27	375557.5	0.1	**2.1834**	0.049	2.2	ug/L	1872	Standard
	Sc	45	25059.0	1.0				ug/L	26715	Standard
	Ti	47	9859.9	1.6	**41.0316**	0.232	0.6	ug/L	54	Standard
	V	51	374261.9	0.8	**51.4579**	0.501	1.0	ug/L	1419	Standard
	Cr	52	362966.8	0.1	**49.8478**	0.592	1.2	ug/L	7059	Standard
	Cr	53	45073.7	3.2	**50.0659**	2.091	4.2	ug/L	398	Standard
	Mn	55	345797.4	1.1	**54.2684**	0.634	1.2	ug/L	824	Standard
	Co	59	335496.8	1.2	**49.1282**	0.402	0.8	ug/L	167	Standard
	Ni	60	93581.5	0.7	**49.6018**	0.760	1.5	ug/L	391	Standard
	Cu	65	94299.5	0.6	**49.9328**	0.567	1.1	ug/L	147	Standard
	Zn	66	65654.6	0.6	**59.0561**	0.402	0.7	ug/L	184	Standard
>	**Ge**	72	424923.9	1.1				ug/L	422998	Standard
	As	75	56769.3	0.3	**49.8677**	0.682	1.4	ug/L	-58	Standard
	Se	82	5666.9	1.1	**47.9122**	0.605	1.3	ug/L	15	Standard
	Se-1	77	3810.8	3.1	**49.3651**	1.822	3.7	ug/L	58	Standard
>	**Ga**	71	4452.3	0.5				mg/L	113	Standard
	Rb	85	15718.1	1.4				ug/L	27	Standard
	Y	89	376977.6	1.3				ug/L	383780	Standard
>	**Rh**	103	20.0	66.1				ug/L	18	Standard
	Mo	98	1951.5	0.7	**0.7343**	0.007	1.0	ug/L	31	Standard
	Ag	107	318051.3	0.7	**47.7822**	0.378	0.8	ug/L	84	Standard
	Cd	111	102330.9	0.5	**48.6530**	0.587	1.2	mg/L	4	Standard
	Cd	114	250237.0	1.7	**49.0273**	0.781	1.6	ug/L	15	Standard
>	**In**	115	508965.4	0.9				ug/L	515400	Standard
	Sn	118	615.0	17.4	**-0.0733**	0.019	26.3	ug/L	1043	Standard
	Sb	123	219849.4	2.2	**48.6193**	1.054	2.2	ug/L	227	Standard
	Ba	135	118070.6	0.4	**59.4569**	0.446	0.7	ug/L	31	Standard
	Ce	140	282681.0	0.8				ug/L	120	Standard
>	**Tb**	159	771843.4	1.4				ug/L	785817	Standard
	Ho	165	1366.7	5.6				ug/L	7	Standard
	Tl	203	399064.4	0.4	**48.6784**	0.624	1.3	ug/L	6	Standard
	Tl	205	348671.6	1.2	**48.8205**	0.637	1.3	ug/L	8	Standard
	Pb	206	267317.2	0.4	**52.3821**	0.425	0.8	ug/L	201	Standard
	Pb	207	231516.4	0.6	**50.1769**	0.399	0.8	ug/L	177	Standard
	Pb	208	962927.7	0.5	**51.9582**	0.676	1.3	ug/L	722	Standard
	U	238	341935.3	0.4	**48.5749**	0.372	0.8	ug/L	8	Standard
>	**Bi**	209	455704.5	0.9				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	65.0	40.0	**0.0536**	0.036	66.8	mg/L	38	Standard
K	39	23.3	32.7	**-0.0202**	0.036	180.8	mg/L	33	Standard
Ca	43	16.7	17.3	**-3.0801**	0.515	16.7	mg/L	48	Standard
Fe	54	2332.3	7.8	**1.8882**	0.165	8.7	mg/L	131	Standard
Fe	57	813.4	10.4	**2.2062**	0.300	13.6	mg/L	153	Standard
> **Sc-1**	45	25059.0	1.0				mg/L	26715	Standard
Cl	35	118448.5	0.5				ug/L	102686	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1940.1	3.6				ug/L	1897	Standard
P	31	19035.3	1.5				ug/L	18491	Standard
S	34	3733.8	1.7				ug/L	3734	Standard
Sr	88	60.0	43.3				ug/L	47	Standard
C	12	100.0	43.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	133.3	22.9				mg/L	23	Standard
Dy	164	2332.4	13.7				mg/L	23	Standard
Ho-1	165	1366.7	5.6				mg/L	7	Standard
Er	166	1206.7	2.7				mg/L	13	Standard
I	127	10098.4	4.9				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.446	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.455	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85	
Y	89	
> Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
> In	115	98.752
Sn	118	
Sb	123	
Ba	135	
Ce	140	
> Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
> Bi	209	102.506
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
> Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1607008801PS WG575217-01
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Method 6020 - Summary Report

Sample ID: L1607008801SDL WG575217-02
Sample Date/Time: Tuesday, July 05, 2016 17:13:01
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61872.8	2.7				ug/L	59517	Standard
	Be	9	61.7	24.8	**0.0373**	0.018	48.3	ug/L	10	Standard
	Al	27	69700.0	2.5	**0.4282**	0.002	0.4	ug/L	1872	Standard
	Sc	45	22605.2	5.3				ug/L	26715	Standard
	Ti	47	1817.4	2.0	**7.9224**	0.182	2.3	ug/L	54	Standard
	V	51	6918.1	1.2	**0.8455**	0.030	3.5	ug/L	1419	Standard
	Cr	52	8074.5	1.0	**0.2382**	0.045	18.8	ug/L	7059	Standard
	Cr	53	858.4	9.0	**0.6205**	0.075	12.1	ug/L	398	Standard
	Mn	55	9521.7	1.0	**1.4775**	0.047	3.2	ug/L	824	Standard
	Co	59	1614.8	4.6	**0.2290**	0.014	6.3	ug/L	167	Standard
	Ni	60	1275.4	1.9	**0.5288**	0.019	3.6	ug/L	391	Standard
	Cu	65	932.0	3.2	**0.4520**	0.029	6.4	ug/L	147	Standard
	Zn	66	3304.4	1.7	**3.0401**	0.050	1.6	ug/L	184	Standard
>	**Ge**	72	395937.7	3.2				ug/L	422998	Standard
	As	75	207.3	9.2	**0.2473**	0.024	9.7	ug/L	-58	Standard
	Se	82	16.6	31.9	**-0.0535**	0.052	96.7	ug/L	15	Standard
	Se-1	77	51.0	8.5	**0.0502**	0.059	116.7	ug/L	58	Standard
>	**Ga**	71	915.0	10.4				mg/L	113	Standard
	Rb	85	2967.0	4.3				ug/L	27	Standard
	Y	89	335150.0	3.0				ug/L	383780	Standard
>	**Rh**	103	16.7	34.6				ug/L	18	Standard
	Mo	98	389.4	4.8	**0.1504**	0.012	8.2	ug/L	31	Standard
	Ag	107	147.3	15.7	**0.0118**	0.004	36.3	ug/L	84	Standard
	Cd	111	44.9	14.5	**0.0188**	0.004	18.8	mg/L	4	Standard
	Cd	114	132.8	26.4	**0.0234**	0.008	33.8	ug/L	15	Standard
>	**In**	115	474581.2	3.5				ug/L	515400	Standard
	Sn	118	268.3	27.7	**-0.1309**	0.012	9.2	ug/L	1043	Standard
	Sb	123	1446.5	29.5	**0.3252**	0.091	28.1	ug/L	227	Standard
	Ba	135	4908.8	1.9	**2.6296**	0.068	2.6	ug/L	31	Standard
	Ce	140	54332.3	1.5				ug/L	120	Standard
>	**Tb**	159	723981.1	3.2				ug/L	785817	Standard
	Ho	165	258.3	3.0				ug/L	7	Standard
	Tl	203	152.7	7.7	**0.0160**	0.002	11.8	ug/L	6	Standard
	Tl	205	131.7	12.2	**0.0127**	0.003	21.2	ug/L	8	Standard
	Pb	206	2548.9	2.0	**0.4810**	0.022	4.5	ug/L	201	Standard
	Pb	207	2040.1	1.1	**0.4182**	0.015	3.5	ug/L	177	Standard
	Pb	208	8741.0	0.2	**0.4485**	0.010	2.3	ug/L	722	Standard
	U	238	256.7	6.2	**0.0359**	0.003	8.5	ug/L	8	Standard
>	**Bi**	209	432872.6	2.2				ug/L	444563	Standard

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Na	23	1.7	173.2	**23.3844**	40.494	173.2	mg/L	0	Standard
Mg	24	51.7	39.1	**0.0422**	0.025	60.3	mg/L	38	Standard
K	39	13.3	114.6	**-0.0588**	0.083	141.8	mg/L	33	Standard
Ca	43	33.3	8.7	**0.3174**	0.379	119.3	mg/L	48	Standard
Fe	54	472.6	8.8	**0.3356**	0.062	18.4	mg/L	131	Standard
Fe	57	351.7	9.1	**0.8117**	0.176	21.7	mg/L	153	Standard
> **Sc-1**	45	22605.2	5.3				mg/L	26715	Standard
Cl	35	111390.7	1.3				ug/L	102686	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1400.1	10.1				ug/L	1897	Standard
P	31	8570.8	0.9				ug/L	18491	Standard
S	34	3565.4	2.5				ug/L	3734	Standard
Sr	88	68.3	23.5				ug/L	47	Standard
C	12	60.0	60.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	65.5				mg/L	23	Standard
Dy	164	412.2	14.0				mg/L	23	Standard
Ho-1	165	258.3	3.0				mg/L	7	Standard
Er	166	233.3	23.6				mg/L	13	Standard
I	127	22758.8	2.5				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.959	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.603	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		92.080
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.370
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1607008801SDL WG575217-02
Sample Date/Time: Tuesday, July 05, 2016 17:16:12
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61777.5	4.3				ug/L	59517	Standard
	Be	9	15.0	33.3	**-0.0143**	0.006	42.8	ug/L	10	Standard
	Al	27	14712.1	2.1	**0.0809**	0.006	7.1	ug/L	1872	Standard
	Sc	45	23034.2	0.6				ug/L	26715	Standard
	Ti	47	390.7	7.3	**1.4801**	0.132	8.9	ug/L	54	Standard
	V	51	2233.4	1.4	**0.1459**	0.006	4.4	ug/L	1419	Standard
	Cr	52	5208.9	3.3	**-0.2062**	0.022	10.6	ug/L	7059	Standard
	Cr	53	446.7	19.0	**0.1176**	0.100	85.4	ug/L	398	Standard
	Mn	55	2151.2	2.4	**0.2262**	0.008	3.7	ug/L	824	Standard
	Co	59	485.0	3.8	**0.0499**	0.002	4.7	ug/L	167	Standard
	Ni	60	438.3	3.2	**0.0464**	0.008	18.0	ug/L	391	Standard
	Cu	65	377.7	1.6	**0.1324**	0.004	2.8	ug/L	147	Standard
	Zn	66	1272.7	1.9	**1.0524**	0.024	2.3	ug/L	184	Standard
>	**Ge**	72	402537.9	0.6				ug/L	422998	Standard
	As	75	17.7	149.3	**0.0680**	0.024	35.9	ug/L	-58	Standard
	Se	82	15.7	64.9	**-0.0656**	0.090	137.7	ug/L	15	Standard
	Se-1	77	48.3	11.4	**0.0017**	0.080	4630.2	ug/L	58	Standard
>	**Ga**	71	176.7	30.0				mg/L	113	Standard
	Rb	85	591.7	2.7				ug/L	27	Standard
	Y	89	340797.4	1.6				ug/L	383780	Standard
>	**Rh**	103	8.3	34.6				ug/L	18	Standard
	Mo	98	159.5	35.2	**0.0550**	0.022	39.5	ug/L	31	Standard
	Ag	107	110.3	21.5	**0.0055**	0.004	64.5	ug/L	84	Standard
	Cd	111	18.7	43.6	**0.0052**	0.004	76.8	mg/L	4	Standard
	Cd	114	31.4	60.6	**0.0019**	0.004	204.4	ug/L	15	Standard
>	**In**	115	481776.6	1.5				ug/L	515400	Standard
	Sn	118	258.3	27.8	**-0.1333**	0.013	9.5	ug/L	1043	Standard
	Sb	123	416.5	8.3	**0.0809**	0.007	8.3	ug/L	227	Standard
	Ba	135	978.0	2.5	**0.4970**	0.020	4.1	ug/L	31	Standard
	Ce	140	7280.1	16.0				ug/L	120	Standard
>	**Tb**	159	732273.7	0.9				ug/L	785817	Standard
	Ho	165	26.7	75.8				ug/L	7	Standard
	Tl	203	72.7	33.6	**0.0055**	0.003	55.9	ug/L	6	Standard
	Tl	205	95.0	41.1	**0.0069**	0.006	81.6	ug/L	8	Standard
	Pb	206	575.0	2.8	**0.0706**	0.003	4.1	ug/L	201	Standard
	Pb	207	489.3	6.7	**0.0615**	0.008	12.5	ug/L	177	Standard
	Pb	208	2190.1	2.0	**0.0732**	0.002	3.1	ug/L	722	Standard
	U	238	88.0	45.4	**0.0104**	0.006	55.9	ug/L	8	Standard
>	**Bi**	209	442463.3	0.3				ug/L	444563	Standard

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Na	23	1.7	173.2	**22.5251**	39.006	173.2	mg/L	0	Standard
Mg	24	21.7	53.3	**-0.0020**	0.017	848.2	mg/L	38	Standard
K	39	20.0	50.0	**-0.0278**	0.050	181.1	mg/L	33	Standard
Ca	43	26.7	47.2	**-1.0170**	2.274	223.6	mg/L	48	Standard
Fe	54	134.2	30.2	**0.0088**	0.037	425.4	mg/L	131	Standard
Fe	57	241.7	10.2	**0.3868**	0.094	24.2	mg/L	153	Standard
Sc-1	45	23034.2	0.6				mg/L	26715	Standard
Cl	35	111809.7	1.3				ug/L	102686	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1356.7	8.6				ug/L	1897	Standard
P	31	6941.6	0.8				ug/L	18491	Standard
S	34	3845.5	0.9				ug/L	3734	Standard
Sr	88	81.7	9.4				ug/L	47	Standard
C	12	53.3	43.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	206.7	39.1				mg/L	23	Standard
Dy	164	61.1	52.0				mg/L	23	Standard
Ho-1	165	26.7	75.8				mg/L	7	Standard
Er	166	46.7	49.5				mg/L	13	Standard
I	127	25935.5	2.7				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.799	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.163	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.476
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.528
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1607008801SDL WG575217-02
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, July 05, 2016 17:19:25
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	62095.4	2.4				ug/L	59517	Standard
	Be	9	46370.9	0.1	**51.1063**	1.236	2.4	ug/L	10	Standard
	Al	27	7148391.3	1.7	**45.0289**	0.823	1.8	ug/L	1872	Standard
	Sc	45	24504.8	2.0				ug/L	26715	Standard
	Ti	47	22243.7	1.4	**93.0810**	1.634	1.8	ug/L	54	Standard
	V	51	340029.4	1.1	**46.8315**	0.428	0.9	ug/L	1419	Standard
	Cr	52	343246.8	1.1	**47.1844**	0.521	1.1	ug/L	7059	Standard
	Cr	53	43052.8	1.0	**47.8948**	0.756	1.6	ug/L	398	Standard
	Mn	55	293652.7	0.6	**46.1607**	0.144	0.3	ug/L	824	Standard
	Co	59	329691.0	0.2	**48.3808**	0.427	0.9	ug/L	167	Standard
	Ni	60	89203.2	0.9	**47.3700**	0.697	1.5	ug/L	391	Standard
	Cu	65	89349.4	0.8	**47.4037**	0.110	0.2	ug/L	147	Standard
	Zn	66	54487.5	0.6	**49.0869**	0.429	0.9	ug/L	184	Standard
>	Ge	72	424032.9	0.8				ug/L	422998	Standard
	As	75	54417.2	0.7	**47.9003**	0.344	0.7	ug/L	-58	Standard
	Se	82	5621.3	2.2	**47.6193**	0.673	1.4	ug/L	15	Standard
	Se-1	77	3798.5	1.1	**49.2988**	0.147	0.3	ug/L	58	Standard
>	Ga	71	45.0	29.4				mg/L	113	Standard
	Rb	85	835.0	4.1				ug/L	27	Standard
	Y	89	362071.8	0.3				ug/L	383780	Standard
>	Rh	103	43.3	29.0				ug/L	18	Standard
	Mo	98	255133.2	1.0	**97.7947**	1.272	1.3	ug/L	31	Standard
	Ag	107	314462.5	0.7	**47.5514**	0.161	0.3	ug/L	84	Standard
	Cd	111	100786.0	1.1	**48.2291**	0.373	0.8	mg/L	4	Standard
	Cd	114	247586.3	1.0	**48.8252**	0.423	0.9	ug/L	15	Standard
>	In	115	505645.9	0.3				ug/L	515400	Standard
	Sn	118	277679.9	0.9	**48.7028**	0.449	0.9	ug/L	1043	Standard
	Sb	123	222886.4	1.7	**49.6126**	0.703	1.4	ug/L	227	Standard
	Ba	135	92084.3	0.1	**46.6687**	0.110	0.2	ug/L	31	Standard
	Ce	140	431.7	14.7				ug/L	120	Standard
>	Tb	159	768951.5	0.5				ug/L	785817	Standard
	Ho	165	13.3	43.3				ug/L	7	Standard
	Tl	203	386576.1	0.1	**48.4098**	0.128	0.3	ug/L	6	Standard
	Tl	205	344959.7	1.2	**49.5883**	0.630	1.3	ug/L	8	Standard
	Pb	206	243178.4	1.0	**48.9194**	0.603	1.2	ug/L	201	Standard
	Pb	207	221326.1	0.3	**49.2460**	0.265	0.5	ug/L	177	Standard
	Pb	208	916317.1	0.5	**50.7581**	0.358	0.7	ug/L	722	Standard
	U	238	344164.5	1.0	**50.1951**	0.638	1.3	ug/L	8	Standard
>	Bi	209	443861.9	0.3				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	3800.5	2.3	**5.1723**	0.216	4.2	mg/L	38	Standard
K	39	755.0	2.3	**3.4760**	0.150	4.3	mg/L	33	Standard
Ca	43	56.7	13.5	**3.8403**	1.271	33.1	mg/L	48	Standard
Fe	54	5869.6	1.5	**5.0426**	0.108	2.1	mg/L	131	Standard
Fe	57	1800.1	7.3	**5.6048**	0.548	9.8	mg/L	153	Standard
Sc-1	45	24504.8	2.0				mg/L	26715	Standard
Cl	35	131374.5	1.1				ug/L	102686	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1550.1	4.5				ug/L	1897	Standard
P	31	22149.5	0.6				ug/L	18491	Standard
S	34	5015.8	5.8				ug/L	3734	Standard
Sr	88	85.0	31.1				ug/L	47	Standard
C	12	53.3	60.3				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	150.0	13.3				mg/L	23	Standard
Dy	164	2.7	204.0				mg/L	23	Standard
Ho-1	165	13.3	43.3				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	9831.5	4.8				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.213		
Al	27	90.058		
Sc	45			
Ti	47	93.081		
V	51	93.663		
Cr	52	94.369		
Cr	53			
Mn	55	92.321		
Co	59	96.762		
Ni	60	94.740		
Cu	65	94.807		
Zn	66	98.174		
Ge	72		100.245	
As	75	95.801		
Se	82	95.239		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
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Rb	85		
Y	89		
Rh	103		
Mo	98	97.795	
Ag	107	95.103	
Cd	111	96.458	
Cd	114		
In	115		98.108
Sn	118	97.406	
Sb	123	99.225	
Ba	135	93.337	
Ce	140		
Tb	159		
Ho	165		
Tl	203	96.820	
Tl	205		
Pb	206		
Pb	207		
Pb	208	101.516	
U	238	100.390	
Bi	209		99.842
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Tuesday, July 05, 2016 17:21:42
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, July 05, 2016 17:22:36
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62637.5	0.8				ug/L	59517	Standard
	Be	9	43.3	69.6	**0.0163**	0.033	202.1	ug/L	10	Standard
	Al	27	3467.3	85.0	**0.0092**	0.018	199.5	ug/L	1872	Standard
	Sc	45	24937.2	1.1				ug/L	26715	Standard
	Ti	47	29.0	28.2	**-0.1258**	0.033	26.5	ug/L	54	Standard
	V	51	1260.1	24.9	**-0.0062**	0.042	669.0	ug/L	1419	Standard
	Cr	52	5772.8	1.0	**-0.1696**	0.011	6.4	ug/L	7059	Standard
	Cr	53	555.0	11.3	**0.2093**	0.065	31.1	ug/L	398	Standard
	Mn	55	769.7	36.2	**-0.0104**	0.043	409.3	ug/L	824	Standard
	Co	59	366.0	54.4	**0.0283**	0.029	101.1	ug/L	167	Standard
	Ni	60	292.7	17.8	**-0.0446**	0.026	59.0	ug/L	391	Standard
	Cu	65	178.7	20.0	**0.0154**	0.018	117.7	ug/L	147	Standard
	Zn	66	212.3	23.3	**0.0316**	0.043	135.9	ug/L	184	Standard
>	**Ge**	72	425929.7	0.8				ug/L	422998	Standard
	As	75	24.8	383.5	**0.0729**	0.083	113.6	ug/L	-58	Standard
	Se	82	20.8	68.3	**-0.0307**	0.119	388.0	ug/L	15	Standard
	Se-1	77	56.3	22.2	**0.0687**	0.159	231.8	ug/L	58	Standard
>	**Ga**	71	40.0	43.3				mg/L	113	Standard
	Rb	85	45.0	22.2				ug/L	27	Standard
	Y	89	359083.6	0.4				ug/L	383780	Standard
>	**Rh**	103	13.3	21.7				ug/L	18	Standard
	Mo	98	237.7	33.6	**0.0814**	0.030	36.9	ug/L	31	Standard
	Ag	107	280.3	90.8	**0.0300**	0.038	126.7	ug/L	84	Standard
	Cd	111	74.6	132.2	**0.0311**	0.047	149.5	mg/L	4	Standard
	Cd	114	186.0	137.3	**0.0317**	0.050	156.9	ug/L	15	Standard
>	**In**	115	509942.2	0.6				ug/L	515400	Standard
	Sn	118	956.7	34.3	**-0.0142**	0.057	399.4	ug/L	1043	Standard
	Sb	123	1103.5	36.2	**0.2270**	0.087	38.4	ug/L	227	Standard
	Ba	135	129.7	102.5	**0.0413**	0.066	160.9	ug/L	31	Standard
	Ce	140	288.3	78.0				ug/L	120	Standard
>	**Tb**	159	765571.5	1.7				ug/L	785817	Standard
	Ho	165	13.3	142.0				ug/L	7	Standard
	Tl	203	285.3	115.3	**0.0311**	0.040	127.7	ug/L	6	Standard
	Tl	205	171.7	80.2	**0.0172**	0.019	110.3	ug/L	8	Standard
	Pb	206	387.0	51.8	**0.0305**	0.038	126.3	ug/L	201	Standard
	Pb	207	332.0	48.8	**0.0243**	0.034	141.6	ug/L	177	Standard
	Pb	208	1293.0	41.1	**0.0214**	0.028	130.6	ug/L	722	Standard
	U	238	159.0	87.9	**0.0201**	0.020	97.6	ug/L	8	Standard
>	**Bi**	209	453389.3	1.0				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	28.3	97.2	**0.0045**	0.037	822.2	mg/L	38	Standard
K	39	13.3	86.6	**-0.0670**	0.054	80.4	mg/L	33	Standard
Ca	43	18.3	15.7	**-2.7853**	0.515	18.5	mg/L	48	Standard
Fe	54	140.6	13.9	**0.0048**	0.016	341.7	mg/L	131	Standard
Fe	57	226.7	12.1	**0.2704**	0.091	33.8	mg/L	153	Standard
Sc-1	45	24937.2	1.1				mg/L	26715	Standard
Cl	35	127732.2	1.0				ug/L	102686	Standard
Kr	83	2.7	114.6				ug/L	2	Standard
Br	81	1460.1	2.4				ug/L	1897	Standard
P	31	20876.0	3.4				ug/L	18491	Standard
S	34	4664.1	6.1				ug/L	3734	Standard
Sr	88	63.3	16.4				ug/L	47	Standard
C	12	70.0	37.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	153.3	49.8				mg/L	23	Standard
Dy	164	2.5	205.9				mg/L	23	Standard
Ho-1	165	13.3	142.0				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	13	Standard
I	127	7196.7	6.4				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.693	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.941	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	101.985	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

Sample ID: QC Std 7
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Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: PBW 32 WG573662-03
Sample Date/Time: Tuesday, July 05, 2016 17:25:49
Number of Replicates: 3
Autosampler Position: 227
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63124.6	0.9				ug/L	59517	Standard
	Be	9	35.0	0.0	**0.0068**	0.000	4.7	ug/L	10	Standard
	Al	27	11134.1	3.7	**0.0566**	0.002	4.0	ug/L	1872	Standard
	Sc	45	24993.9	3.4				ug/L	26715	Standard
	Ti	47	27.0	9.8	**-0.1314**	0.012	9.0	ug/L	54	Standard
	V	51	1235.6	12.4	**-0.0056**	0.020	364.6	ug/L	1419	Standard
	Cr	52	8428.7	1.3	**0.2284**	0.013	5.8	ug/L	7059	Standard
	Cr	53	898.4	5.3	**0.6160**	0.047	7.6	ug/L	398	Standard
	Mn	55	10099.4	1.8	**1.4904**	0.027	1.8	ug/L	824	Standard
	Co	59	374.7	13.2	**0.0309**	0.007	23.0	ug/L	167	Standard
	Ni	60	524.0	3.2	**0.0847**	0.008	9.3	ug/L	391	Standard
	Cu	65	722.4	1.3	**0.3119**	0.002	0.6	ug/L	147	Standard
	Zn	66	36483.2	1.4	**33.4231**	0.705	2.1	ug/L	184	Standard
>	**Ge**	72	416378.9	0.8				ug/L	422998	Standard
	As	75	-4.3	123.2	**0.0478**	0.005	9.8	ug/L	-58	Standard
	Se	82	12.8	22.7	**-0.0953**	0.025	25.9	ug/L	15	Standard
	Se-1	77	50.3	13.5	**0.0058**	0.089	1538.2	ug/L	58	Standard
>	**Ga**	71	28.3	44.4				mg/L	113	Standard
	Rb	85	31.7	36.5				ug/L	27	Standard
	Y	89	362712.1	1.1				ug/L	383780	Standard
>	**Rh**	103	8.3	34.6				ug/L	18	Standard
	Mo	98	80.4	34.3	**0.0216**	0.011	49.5	ug/L	31	Standard
	Ag	107	185.3	24.7	**0.0158**	0.007	44.8	ug/L	84	Standard
	Cd	111	24.2	70.6	**0.0073**	0.008	111.4	mg/L	4	Standard
	Cd	114	49.7	138.9	**0.0052**	0.014	262.0	ug/L	15	Standard
>	**In**	115	511336.7	0.9				ug/L	515400	Standard
	Sn	118	881.7	13.9	**-0.0273**	0.023	82.7	ug/L	1043	Standard
	Sb	123	605.3	34.3	**0.1172**	0.047	39.8	ug/L	227	Standard
	Ba	135	128.0	25.3	**0.0406**	0.017	41.4	ug/L	31	Standard
	Ce	140	170.0	33.9				ug/L	120	Standard
>	**Tb**	159	761463.3	1.1				ug/L	785817	Standard
	Ho	165	18.3	56.8				ug/L	7	Standard
	Tl	203	76.3	89.9	**0.0057**	0.008	145.9	ug/L	6	Standard
	Tl	205	68.3	85.7	**0.0028**	0.008	291.1	ug/L	8	Standard
	Pb	206	283.3	14.5	**0.0103**	0.008	76.7	ug/L	201	Standard
	Pb	207	264.0	23.0	**0.0097**	0.013	134.6	ug/L	177	Standard
	Pb	208	1047.3	13.7	**0.0083**	0.008	91.9	ug/L	722	Standard
	U	238	65.3	87.7	**0.0068**	0.008	119.0	ug/L	8	Standard
>	**Bi**	209	453127.9	0.3				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	43.3	35.3	**0.0244**	0.020	80.1	mg/L	38	Standard
K	39	21.7	26.6	**-0.0276**	0.028	103.3	mg/L	33	Standard
Ca	43	20.0	25.0	**-2.4970**	0.950	38.1	mg/L	48	Standard
Fe	54	184.5	13.6	**0.0430**	0.027	63.0	mg/L	131	Standard
Fe	57	220.0	2.3	**0.2475**	0.040	16.3	mg/L	153	Standard
> **Sc-1**	45	24993.9	3.4				mg/L	26715	Standard
Cl	35	127699.9	0.6				ug/L	102686	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	1566.7	3.2				ug/L	1897	Standard
P	31	20333.6	2.8				ug/L	18491	Standard
S	34	4599.0	2.0				ug/L	3734	Standard
Sr	88	91.7	11.4				ug/L	47	Standard
C	12	60.0	16.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	83.3	6.9				mg/L	23	Standard
Dy	164	5.4	102.4				mg/L	23	Standard
Ho-1	165	18.3	56.8				mg/L	7	Standard
Er	166	26.7	43.3				mg/L	13	Standard
I	127	1263.4	10.1				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.062	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.435	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.212	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	101.927	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 32 WG573662-03
Report Date/Time: Tuesday, July 05, 2016 17:28:06
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Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: LCSW 32 WG573662-04
Sample Date/Time: Tuesday, July 05, 2016 17:29:01
Number of Replicates: 3
Autosampler Position: 228
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64195.7	1.5				ug/L	59517	Standard
	Be	9	45775.7	2.6	**48.7754**	0.685	1.4	ug/L	10	Standard
	Al	27	10818.9	3.4	**0.0535**	0.001	2.3	ug/L	1872	Standard
	Sc	45	24802.0	4.1				ug/L	26715	Standard
	Ti	47	29.7	13.6	**-0.1227**	0.018	15.0	ug/L	54	Standard
	V	51	331905.5	1.2	**45.5096**	0.047	0.1	ug/L	1419	Standard
	Cr	52	339438.2	0.7	**46.4495**	0.807	1.7	ug/L	7059	Standard
	Cr	53	42579.8	2.7	**47.1689**	1.819	3.9	ug/L	398	Standard
	Mn	55	298410.5	1.0	**46.7098**	0.548	1.2	ug/L	824	Standard
	Co	59	321381.0	1.3	**46.9595**	0.836	1.8	ug/L	167	Standard
	Ni	60	87595.1	0.3	**46.3125**	0.637	1.4	ug/L	391	Standard
	Cu	65	88454.5	0.4	**46.7313**	0.776	1.7	ug/L	147	Standard
	Zn	66	53588.3	1.1	**48.0725**	1.129	2.3	ug/L	184	Standard
>	Ge	72	425875.9	1.3				ug/L	422998	Standard
	As	75	51384.9	0.3	**45.0413**	0.434	1.0	ug/L	-58	Standard
	Se	82	5484.1	1.2	**46.2630**	1.150	2.5	ug/L	15	Standard
	Se-1	77	3598.8	2.7	**46.4832**	1.845	4.0	ug/L	58	Standard
>	Ga	71	40.0	21.7				mg/L	113	Standard
	Rb	85	36.7	15.7				ug/L	27	Standard
	Y	89	359186.1	0.8				ug/L	383780	Standard
>	Rh	103	31.7	18.2				ug/L	18	Standard
	Mo	98	60.3	6.9	**0.0137**	0.002	12.4	ug/L	31	Standard
	Ag	107	309984.9	0.6	**45.8602**	0.513	1.1	ug/L	84	Standard
	Cd	111	98309.5	1.3	**46.0267**	0.742	1.6	mg/L	4	Standard
	Cd	114	241300.7	0.5	**46.5552**	0.311	0.7	ug/L	15	Standard
>	In	115	516853.3	0.8				ug/L	515400	Standard
	Sn	118	843.4	21.1	**-0.0359**	0.029	81.9	ug/L	1043	Standard
	Sb	123	210568.7	1.3	**45.8592**	0.951	2.1	ug/L	227	Standard
	Ba	135	90287.9	0.7	**44.7660**	0.344	0.8	ug/L	31	Standard
	Ce	140	93.3	34.4				ug/L	120	Standard
>	Tb	159	767230.4	1.1				ug/L	785817	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	381970.3	0.7	**46.8534**	0.212	0.5	ug/L	6	Standard
	Tl	205	332986.0	0.4	**46.8871**	0.316	0.7	ug/L	8	Standard
	Pb	206	246905.5	0.4	**48.6517**	0.275	0.6	ug/L	201	Standard
	Pb	207	214932.1	0.8	**46.8428**	0.498	1.1	ug/L	177	Standard
	Pb	208	902420.3	0.3	**48.9635**	0.296	0.6	ug/L	722	Standard
	U	238	330256.2	0.7	**47.1808**	0.499	1.1	ug/L	8	Standard
>	Bi	209	453143.2	0.7				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	48.3	6.0	**0.0319**	0.006	19.8	mg/L	38	Standard
K	39	26.7	65.8	**-0.0024**	0.084	3460.4	mg/L	33	Standard
Ca	43	36.7	47.9	**0.3895**	3.200	821.6	mg/L	48	Standard
Fe	54	144.5	22.4	**0.0093**	0.031	330.1	mg/L	131	Standard
Fe	57	230.0	4.3	**0.2860**	0.033	11.4	mg/L	153	Standard
> **Sc-1**	45	24802.0	4.1				mg/L	26715	Standard
Cl	35	127182.9	1.2				ug/L	102686	Standard
Kr	83	2.7	86.6				ug/L	2	Standard
Br	81	1456.7	10.1				ug/L	1897	Standard
P	31	20180.1	0.5				ug/L	18491	Standard
S	34	4512.3	3.8				ug/L	3734	Standard
Sr	88	91.7	13.7				ug/L	47	Standard
C	12	70.0	24.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	70.0	37.8				mg/L	23	Standard
Dy	164	22.7	22.4				mg/L	23	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	1176.7	10.2				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.862	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.680	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.282
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.930
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 32 WG573662-04
Report Date/Time: Tuesday, July 05, 2016 17:31:18
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Method 6020 - Summary Report

Sample ID: L1606090701
Sample Date/Time: Tuesday, July 05, 2016 17:32:12
Number of Replicates: 3
Autosampler Position: 229
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57769.9	1.7				ug/L	59517	Standard
	Be	9	38.3	19.9	**0.0144**	0.010	67.7	ug/L	10	Standard
	Al	27	20697.5	0.6	**0.1278**	0.003	2.4	ug/L	1872	Standard
	Sc	45	21345.0	3.7				ug/L	26715	Standard
	Ti	47	1803.1	1.9	**8.2825**	0.389	4.7	ug/L	54	Standard
	V	51	23407.0	1.8	**3.4676**	0.097	2.8	ug/L	1419	Standard
	Cr	52	10794.2	3.5	**0.7318**	0.098	13.4	ug/L	7059	Standard
	Cr	53	1460.1	1.7	**1.4355**	0.019	1.3	ug/L	398	Standard
	Mn	55	787.0	4.9	**0.0089**	0.009	100.8	ug/L	824	Standard
	Co	59	854.4	4.4	**0.1164**	0.010	8.5	ug/L	167	Standard
	Ni	60	3388.4	1.9	**1.8368**	0.073	4.0	ug/L	391	Standard
	Cu	65	302.0	7.2	**0.1016**	0.008	8.2	ug/L	147	Standard
	Zn	66	1436.1	0.7	**1.3036**	0.040	3.0	ug/L	184	Standard
>	**Ge**	72	376385.0	2.6				ug/L	422998	Standard
	As	75	33062.1	0.7	**32.8186**	0.947	2.9	ug/L	-58	Standard
	Se	82	22.0	45.1	**0.0035**	0.092	2595.5	ug/L	15	Standard
	Se-1	77	64.7	10.1	**0.2910**	0.106	36.3	ug/L	58	Standard
>	**Ga**	71	78.3	3.7				mg/L	113	Standard
	Rb	85	93.3	20.3				ug/L	27	Standard
	Y	89	319642.0	1.5				ug/L	383780	Standard
>	**Rh**	103	33.3	8.7				ug/L	18	Standard
	Mo	98	1062.0	7.8	**0.4504**	0.026	5.8	ug/L	31	Standard
	Ag	107	175.0	20.8	**0.0179**	0.006	33.8	ug/L	84	Standard
	Cd	111	23.5	19.9	**0.0086**	0.003	31.6	mg/L	4	Standard
	Cd	114	55.1	47.8	**0.0078**	0.006	78.8	ug/L	15	Standard
>	**In**	115	447820.8	2.2				ug/L	515400	Standard
	Sn	118	866.7	5.2	**-0.0085**	0.013	151.4	ug/L	1043	Standard
	Sb	123	2790.3	2.5	**0.6857**	0.033	4.8	ug/L	227	Standard
	Ba	135	2815.9	5.2	**1.5902**	0.118	7.4	ug/L	31	Standard
	Ce	140	420.0	67.0				ug/L	120	Standard
>	**Tb**	159	691896.4	1.7				ug/L	785817	Standard
	Ho	165	31.7	50.8				ug/L	7	Standard
	Tl	203	158.3	25.4	**0.0183**	0.006	31.4	ug/L	6	Standard
	Tl	205	131.7	9.6	**0.0141**	0.002	17.5	ug/L	8	Standard
	Pb	206	279.0	15.1	**0.0164**	0.011	65.2	ug/L	201	Standard
	Pb	207	227.0	8.8	**0.0077**	0.004	54.8	ug/L	177	Standard
	Pb	208	952.7	9.0	**0.0096**	0.007	67.9	ug/L	722	Standard
	U	238	3270.4	7.8	**0.5233**	0.053	10.1	ug/L	8	Standard
>	**Bi**	209	403265.3	2.3				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	36111.3	2.4	**56.8068**	3.427	6.0	mg/L	38	Standard
K	39	30.0	50.0	**0.0350**	0.080	228.5	mg/L	33	Standard
Ca	43	31.7	18.2	**0.3807**	1.281	336.4	mg/L	48	Standard
Fe	54	60.6	18.6	**-0.0553**	0.012	22.0	mg/L	131	Standard
Fe	57	218.3	5.8	**0.3658**	0.063	17.3	mg/L	153	Standard
> **Sc-1**	45	21345.0	3.7				mg/L	26715	Standard
Cl	35	116735.4	1.6				ug/L	102686	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	1833.4	6.0				ug/L	1897	Standard
P	31	6746.5	1.5				ug/L	18491	Standard
S	34	4118.9	3.4				ug/L	3734	Standard
Sr	88	51.7	20.1				ug/L	47	Standard
C	12	56.7	36.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	303.3	13.3				mg/L	23	Standard
Dy	164	40.9	74.5				mg/L	23	Standard
Ho-1	165	31.7	50.8				mg/L	7	Standard
Er	166	50.0	69.3				mg/L	13	Standard
I	127	24933.8	3.1				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.065	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		88.980	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		86.888
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.711
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606090702
Sample Date/Time: Tuesday, July 05, 2016 17:35:23
Number of Replicates: 3
Autosampler Position: 230
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	57935.7	3.8				ug/L	59517	Standard
	Be	9	33.3	48.2	**0.0081**	0.019	227.5	ug/L	10	Standard
	Al	27	11662.8	3.9	**0.0663**	0.000	0.2	ug/L	1872	Standard
	Sc	45	22101.1	2.7				ug/L	26715	Standard
	Ti	47	1254.4	1.2	**5.5089**	0.110	2.0	ug/L	54	Standard
	V	51	25065.3	2.1	**3.6104**	0.088	2.4	ug/L	1419	Standard
	Cr	52	9503.6	2.9	**0.4823**	0.047	9.7	ug/L	7059	Standard
	Cr	53	1281.7	7.0	**1.1627**	0.118	10.2	ug/L	398	Standard
	Mn	55	780.0	10.5	**0.0036**	0.015	422.4	ug/L	824	Standard
	Co	59	866.7	7.1	**0.1141**	0.011	9.5	ug/L	167	Standard
	Ni	60	3773.8	0.5	**2.0008**	0.014	0.7	ug/L	391	Standard
	Cu	65	272.0	10.5	**0.0792**	0.018	22.6	ug/L	147	Standard
	Zn	66	1350.4	3.6	**1.1757**	0.058	4.9	ug/L	184	Standard
>	Ge	72	387753.6	0.9				ug/L	422998	Standard
	As	75	33881.7	0.7	**32.6308**	0.063	0.2	ug/L	-58	Standard
	Se	82	26.4	31.1	**0.0403**	0.078	193.8	ug/L	15	Standard
	Se-1	77	63.7	5.5	**0.2475**	0.050	20.3	ug/L	58	Standard
>	Ga	71	68.3	4.2				mg/L	113	Standard
	Rb	85	131.7	36.5				ug/L	27	Standard
	Y	89	326299.5	0.2				ug/L	383780	Standard
>	Rh	103	51.7	14.8				ug/L	18	Standard
	Mo	98	1030.1	4.7	**0.4292**	0.023	5.3	ug/L	31	Standard
	Ag	107	112.0	9.1	**0.0068**	0.002	23.8	ug/L	84	Standard
	Cd	111	12.8	29.4	**0.0027**	0.002	75.7	mg/L	4	Standard
	Cd	114	24.6	53.0	**0.0008**	0.003	353.3	ug/L	15	Standard
>	In	115	455824.5	0.5				ug/L	515400	Standard
	Sn	118	948.4	8.5	**0.0043**	0.016	379.8	ug/L	1043	Standard
	Sb	123	2750.6	6.3	**0.6631**	0.043	6.5	ug/L	227	Standard
	Ba	135	2248.5	3.2	**1.2411**	0.042	3.4	ug/L	31	Standard
	Ce	140	243.3	62.2				ug/L	120	Standard
>	Tb	159	712509.2	1.0				ug/L	785817	Standard
	Ho	165	20.0	25.0				ug/L	7	Standard
	Tl	203	63.0	9.7	**0.0049**	0.001	16.1	ug/L	6	Standard
	Tl	205	113.3	100.6	**0.0109**	0.018	164.5	ug/L	8	Standard
	Pb	206	227.3	4.8	**0.0039**	0.002	63.6	ug/L	201	Standard
	Pb	207	196.3	7.4	**-0.0007**	0.003	475.6	ug/L	177	Standard
	Pb	208	1004.7	31.2	**0.0116**	0.019	166.4	ug/L	722	Standard
	U	238	3174.7	8.3	**0.4976**	0.045	9.1	ug/L	8	Standard
>	Bi	209	411146.6	0.8				ug/L	444563	Standard

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Na	23	1.7	173.2	**24.2270**	41.954	173.2	mg/L	0	Standard
Mg	24	36445.5	2.0	**55.3026**	1.084	2.0	mg/L	38	Standard
K	39	25.0	34.6	**0.0023**	0.042	1798.5	mg/L	33	Standard
Ca	43	33.3	45.8	**0.4521**	2.901	641.6	mg/L	48	Standard
Fe	54	55.7	21.9	**-0.0622**	0.013	20.2	mg/L	131	Standard
Fe	57	226.7	16.6	**0.3648**	0.117	32.1	mg/L	153	Standard
Sc-1	45	22101.1	2.7				mg/L	26715	Standard
Cl	35	120330.0	1.1				ug/L	102686	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1793.4	11.6				ug/L	1897	Standard
P	31	6566.4	2.3				ug/L	18491	Standard
S	34	4022.2	2.1				ug/L	3734	Standard
Sr	88	60.0	8.3				ug/L	47	Standard
C	12	43.3	13.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	273.3	43.6				mg/L	23	Standard
Dy	164	32.5	36.0				mg/L	23	Standard
Ho-1	165	20.0	25.0				mg/L	7	Standard
Er	166	16.7	91.7				mg/L	13	Standard
I	127	25720.2	2.9				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		97.343	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		91.668	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		88.441
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.483
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606090704
Sample Date/Time: Tuesday, July 05, 2016 17:38:35
Number of Replicates: 3
Autosampler Position: 231
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66740.1	2.3				ug/L	59517	Standard
	Be	9	21.7	53.3	**-0.0087**	0.012	143.3	ug/L	10	Standard
	Al	27	42354058.2	1.4	**248.2754**	3.051	1.2	ug/L	1872	Standard
	Sc	45	25443.0	0.8				ug/L	26715	Standard
	Ti	47	476.0	2.4	**1.8230**	0.025	1.4	ug/L	54	Standard
	V	51	3408.7	11.2	**0.3087**	0.050	16.1	ug/L	1419	Standard
	Cr	52	11205.1	1.3	**0.6536**	0.019	2.9	ug/L	7059	Standard
	Cr	53	12795.4	7.7	**14.4733**	1.212	8.4	ug/L	398	Standard
	Mn	55	387539.1	0.7	**63.2030**	1.504	2.4	ug/L	824	Standard
	Co	59	1821.1	1.1	**0.2521**	0.006	2.2	ug/L	167	Standard
	Ni	60	3573.4	2.2	**1.7758**	0.074	4.2	ug/L	391	Standard
	Cu	65	1397.7	2.5	**0.6911**	0.029	4.2	ug/L	147	Standard
	Zn	66	3017.3	0.5	**2.6674**	0.036	1.3	ug/L	184	Standard
>	**Ge**	72	409126.8	1.7				ug/L	422998	Standard
	As	75	3602.3	2.7	**3.3345**	0.068	2.0	ug/L	-58	Standard
	Se	82	141.5	13.8	**1.0406**	0.156	15.0	ug/L	15	Standard
	Se-1	77	913.0	8.0	**11.7792**	0.953	8.1	ug/L	58	Standard
>	**Ga**	71	196.7	10.6				mg/L	113	Standard
	Rb	85	9236.1	2.3				ug/L	27	Standard
	Y	89	354002.8	0.6				ug/L	383780	Standard
>	**Rh**	103	433.3	7.4				ug/L	18	Standard
	Mo	98	1196.3	2.6	**0.4658**	0.010	2.1	ug/L	31	Standard
	Ag	107	96.3	4.8	**0.0031**	0.001	22.3	ug/L	84	Standard
	Cd	111	14.2	28.3	**0.0029**	0.002	68.9	mg/L	4	Standard
	Cd	114	55.1	62.3	**0.0067**	0.007	104.0	ug/L	15	Standard
>	**In**	115	488398.9	0.5				ug/L	515400	Standard
	Sn	118	1423.4	11.8	**0.0784**	0.030	38.4	ug/L	1043	Standard
	Sb	123	645.9	20.0	**0.1325**	0.029	22.0	ug/L	227	Standard
	Ba	135	45878.7	0.5	**24.0617**	0.235	1.0	ug/L	31	Standard
	Ce	140	3393.7	0.9				ug/L	120	Standard
>	**Tb**	159	754882.9	1.7				ug/L	785817	Standard
	Ho	165	111.7	17.0				ug/L	7	Standard
	Tl	203	129.0	6.2	**0.0134**	0.001	7.2	ug/L	6	Standard
	Tl	205	111.7	22.1	**0.0101**	0.004	35.5	ug/L	8	Standard
	Pb	206	1191.4	2.9	**0.2074**	0.009	4.4	ug/L	201	Standard
	Pb	207	947.7	3.6	**0.1746**	0.008	4.4	ug/L	177	Standard
	Pb	208	4202.6	2.0	**0.1971**	0.004	1.8	ug/L	722	Standard
	U	238	9029.0	2.0	**1.3860**	0.032	2.3	ug/L	8	Standard
>	**Bi**	209	421013.1	0.8				ug/L	444563	Standard

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Na	23	5.0	100.0	**61.4567**	61.162	99.5	mg/L	0	Standard
Mg	24	46925.9	1.2	**61.8476**	1.169	1.9	mg/L	38	Standard
K	39	251.7	10.9	**1.0277**	0.129	12.5	mg/L	33	Standard
Ca	43	420.0	12.6	**63.5091**	8.465	13.3	mg/L	48	Standard
Fe	54	673.5	4.8	**0.4533**	0.024	5.2	mg/L	131	Standard
Fe	57	813.4	9.0	**2.1634**	0.224	10.4	mg/L	153	Standard
Sc-1	45	25443.0	0.8				mg/L	26715	Standard
Cl	35	185184.2	0.7				ug/L	102686	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	29856.1	5.0				ug/L	1897	Standard
P	31	24117.5	1.5				ug/L	18491	Standard
S	34	4847.4	5.2				ug/L	3734	Standard
Sr	88	1728.4	3.0				ug/L	47	Standard
C	12	90.0	19.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	163.3	44.3				mg/L	23	Standard
Dy	164	123.6	20.8				mg/L	23	Standard
Ho-1	165	111.7	17.0				mg/L	7	Standard
Er	166	133.3	18.9				mg/L	13	Standard
I	127	303849.2	8.5				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		112.137	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.721	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.761
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.703
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606090705
Sample Date/Time: Tuesday, July 05, 2016 17:41:47
Number of Replicates: 3
Autosampler Position: 232
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69827.3	3.2				ug/L	59517	Standard
	Be	9	13.3	57.3	**-0.0179**	0.008	42.5	ug/L	10	Standard
	Al	27	45523796.3	0.9	**255.2109**	9.545	3.7	ug/L	1872	Standard
	Sc	45	26135.9	2.4				ug/L	26715	Standard
	Ti	47	121.0	9.2	**0.2692**	0.046	16.9	ug/L	54	Standard
	V	51	2836.0	15.9	**0.2192**	0.064	29.3	ug/L	1419	Standard
	Cr	52	10432.3	1.2	**0.5120**	0.029	5.6	ug/L	7059	Standard
	Cr	53	14708.8	3.2	**16.3699**	0.727	4.4	ug/L	398	Standard
	Mn	55	399226.3	0.6	**63.8474**	0.930	1.5	ug/L	824	Standard
	Co	59	1635.8	5.8	**0.2190**	0.014	6.2	ug/L	167	Standard
	Ni	60	3580.1	1.6	**1.7411**	0.051	2.9	ug/L	391	Standard
	Cu	65	913.7	3.4	**0.4145**	0.015	3.6	ug/L	147	Standard
	Zn	66	2237.8	1.8	**1.8970**	0.060	3.2	ug/L	184	Standard
>	**Ge**	72	417153.8	1.2				ug/L	422998	Standard
	As	75	3875.2	1.9	**3.5156**	0.084	2.4	ug/L	-58	Standard
	Se	82	175.4	7.4	**1.3099**	0.094	7.2	ug/L	15	Standard
	Se-1	77	1060.4	3.8	**13.5157**	0.689	5.1	ug/L	58	Standard
>	**Ga**	71	66.7	15.6				mg/L	113	Standard
	Rb	85	7635.3	6.8				ug/L	27	Standard
	Y	89	356655.2	2.2				ug/L	383780	Standard
>	**Rh**	103	468.3	11.4				ug/L	18	Standard
	Mo	98	1226.5	2.4	**0.4726**	0.016	3.5	ug/L	31	Standard
	Ag	107	83.3	12.8	**0.0009**	0.002	199.7	ug/L	84	Standard
	Cd	111	10.8	31.9	**0.0012**	0.002	148.7	mg/L	4	Standard
	Cd	114	10.2	131.7	**-0.0025**	0.003	111.9	ug/L	15	Standard
>	**In**	115	493822.7	1.6				ug/L	515400	Standard
	Sn	118	800.0	16.7	**-0.0365**	0.026	70.2	ug/L	1043	Standard
	Sb	123	505.4	22.7	**0.0991**	0.027	27.5	ug/L	227	Standard
	Ba	135	48002.6	0.8	**24.9029**	0.402	1.6	ug/L	31	Standard
	Ce	140	150.0	6.7				ug/L	120	Standard
>	**Tb**	159	762436.1	1.3				ug/L	785817	Standard
	Ho	165	51.7	14.8				ug/L	7	Standard
	Tl	203	65.7	11.4	**0.0049**	0.001	20.8	ug/L	6	Standard
	Tl	205	65.0	27.7	**0.0029**	0.003	95.9	ug/L	8	Standard
	Pb	206	283.3	7.8	**0.0133**	0.004	31.8	ug/L	201	Standard
	Pb	207	219.7	8.5	**0.0026**	0.005	177.1	ug/L	177	Standard
	Pb	208	985.3	2.8	**0.0078**	0.002	25.6	ug/L	722	Standard
	U	238	9272.5	1.2	**1.3933**	0.027	1.9	ug/L	8	Standard
>	**Bi**	209	430095.2	0.7				ug/L	444563	Standard

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Na	23	3.3	86.6	**40.4522**	35.031	86.6	mg/L	0	Standard
Mg	24	51149.6	2.3	**65.6709**	3.020	4.6	mg/L	38	Standard
K	39	313.3	4.0	**1.2730**	0.052	4.1	mg/L	33	Standard
Ca	43	416.7	3.7	**61.2077**	3.801	6.2	mg/L	48	Standard
Fe	54	621.9	9.1	**0.3959**	0.047	11.9	mg/L	131	Standard
Fe	57	768.4	7.8	**1.9494**	0.130	6.7	mg/L	153	Standard
> **Sc-1**	45	26135.9	2.4				mg/L	26715	Standard
Cl	35	194040.7	0.8				ug/L	102686	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	38188.1	3.1				ug/L	1897	Standard
P	31	24469.7	2.0				ug/L	18491	Standard
S	34	4885.8	1.1				ug/L	3734	Standard
Sr	88	1780.1	2.1				ug/L	47	Standard
C	12	100.0	26.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	120.0	60.1				mg/L	23	Standard
Dy	164	30.5	19.0				mg/L	23	Standard
Ho-1	165	51.7	14.8				mg/L	7	Standard
Er	166	60.0	16.7				mg/L	13	Standard
I	127	369484.6	7.7				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.324	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.618	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.814
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.746
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606090707
Sample Date/Time: Tuesday, July 05, 2016 17:44:58
Number of Replicates: 3
Autosampler Position: 233
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69147.5	2.8				ug/L	59517	Standard
	Be	9	21.7	74.2	**-0.0095**	0.016	173.0	ug/L	10	Standard
	Al	27	4929369.2	1.5	**27.8804**	0.372	1.3	ug/L	1872	Standard
	Sc	45	24564.9	2.8				ug/L	26715	Standard
	Ti	47	182.3	5.4	**0.5539**	0.036	6.5	ug/L	54	Standard
	V	51	4368.3	21.7	**0.4531**	0.138	30.5	ug/L	1419	Standard
	Cr	52	11867.3	3.0	**0.7670**	0.038	4.9	ug/L	7059	Standard
	Cr	53	26429.7	2.1	**30.6342**	0.686	2.2	ug/L	398	Standard
	Mn	55	44815.9	0.9	**7.2652**	0.042	0.6	ug/L	824	Standard
	Co	59	1280.1	2.7	**0.1717**	0.006	3.6	ug/L	167	Standard
	Ni	60	1392.7	1.4	**0.5778**	0.019	3.3	ug/L	391	Standard
	Cu	65	1098.0	10.4	**0.5322**	0.067	12.6	ug/L	147	Standard
	Zn	66	2737.6	5.3	**2.4321**	0.166	6.8	ug/L	184	Standard
>	**Ge**	72	405041.7	1.2				ug/L	422998	Standard
	As	75	319099.3	0.3	**293.8120**	3.818	1.3	ug/L	-58	Standard
	Se	82	161.5	5.4	**1.2324**	0.061	5.0	ug/L	15	Standard
	Se-1	77	1849.1	1.7	**24.8015**	0.675	2.7	ug/L	58	Standard
>	**Ga**	71	86.7	14.5				mg/L	113	Standard
	Rb	85	1268.4	7.1				ug/L	27	Standard
	Y	89	349244.5	1.1				ug/L	383780	Standard
>	**Rh**	103	185.0	21.1				ug/L	18	Standard
	Mo	98	3348.0	3.5	**1.3692**	0.064	4.7	ug/L	31	Standard
	Ag	107	87.7	13.0	**0.0023**	0.002	86.5	ug/L	84	Standard
	Cd	111	14.7	28.5	**0.0034**	0.002	60.8	mg/L	4	Standard
	Cd	114	52.5	42.5	**0.0066**	0.005	73.7	ug/L	15	Standard
>	**In**	115	471060.8	1.3				ug/L	515400	Standard
	Sn	118	1895.1	10.6	**0.1770**	0.035	19.7	ug/L	1043	Standard
	Sb	123	513.5	19.3	**0.1064**	0.023	22.0	ug/L	227	Standard
	Ba	135	52851.4	0.5	**28.7452**	0.330	1.1	ug/L	31	Standard
	Ce	140	1061.7	3.3				ug/L	120	Standard
>	**Tb**	159	744855.4	1.5				ug/L	785817	Standard
	Ho	165	55.0	47.2				ug/L	7	Standard
	Tl	203	52.3	23.1	**0.0034**	0.002	48.0	ug/L	6	Standard
	Tl	205	50.0	17.3	**0.0009**	0.001	156.5	ug/L	8	Standard
	Pb	206	1679.4	2.6	**0.3153**	0.008	2.6	ug/L	201	Standard
	Pb	207	1442.1	1.2	**0.2949**	0.005	1.6	ug/L	177	Standard
	Pb	208	6023.8	1.8	**0.3079**	0.010	3.3	ug/L	722	Standard
	U	238	444.3	2.3	**0.0667**	0.001	1.2	ug/L	8	Standard
>	**Bi**	209	415883.2	1.1				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	211479.1	1.0	**288.9459**	9.015	3.1	mg/L	38	Standard
K	39	168.3	38.3	**0.6693**	0.296	44.2	mg/L	33	Standard
Ca	43	36.7	68.6	**0.4729**	4.479	947.2	mg/L	48	Standard
Fe	54	215.4	15.6	**0.0728**	0.034	46.8	mg/L	131	Standard
Fe	57	293.3	6.0	**0.5068**	0.062	12.2	mg/L	153	Standard
> **Sc-1**	45	24564.9	2.8				mg/L	26715	Standard
Cl	35	199341.0	1.6				ug/L	102686	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	35354.6	3.2				ug/L	1897	Standard
P	31	22533.4	0.3				ug/L	18491	Standard
S	34	4607.4	3.9				ug/L	3734	Standard
Sr	88	411.7	4.6				ug/L	47	Standard
C	12	76.7	41.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	130.0	76.9				mg/L	23	Standard
Dy	164	82.4	36.1				mg/L	23	Standard
Ho-1	165	55.0	47.2				mg/L	7	Standard
Er	166	90.0	19.2				mg/L	13	Standard
I	127	249295.2	6.7				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.182	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.755	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.397
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.549
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
As 75 Upper, S, EEE	As	75	

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Method 6020 - Summary Report

Sample ID: L1606090707PS WG574822-01
Sample Date/Time: Tuesday, July 05, 2016 17:48:10
Number of Replicates: 3
Autosampler Position: 234
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68404.1	2.8				ug/L	59517	Standard
	Be	9	46041.5	2.6	**46.0440**	0.140	0.3	ug/L	10	Standard
	Al	27	4971741.2	1.4	**28.4276**	0.533	1.9	ug/L	1872	Standard
	Sc	45	24398.0	0.9				ug/L	26715	Standard
	Ti	47	193.0	7.5	**0.6101**	0.072	11.7	ug/L	54	Standard
	V	51	335621.5	0.4	**48.9033**	0.547	1.1	ug/L	1419	Standard
	Cr	52	331382.7	0.5	**48.2066**	0.633	1.3	ug/L	7059	Standard
	Cr	53	62863.5	0.8	**74.1947**	1.085	1.5	ug/L	398	Standard
	Mn	55	325320.2	0.7	**54.1175**	0.833	1.5	ug/L	824	Standard
	Co	59	307783.4	0.4	**47.7741**	0.579	1.2	ug/L	167	Standard
	Ni	60	82859.3	0.3	**46.5378**	0.528	1.1	ug/L	391	Standard
	Cu	65	83223.9	0.8	**46.7025**	0.311	0.7	ug/L	147	Standard
	Zn	66	53630.4	0.9	**51.1142**	0.918	1.8	ug/L	184	Standard
>	Ge	72	400890.2	0.9				ug/L	422998	Standard
	As	75	370881.7	0.0	**345.0018**	2.946	0.9	ug/L	-58	Standard
	Se	82	5342.2	0.1	**47.8745**	0.458	1.0	ug/L	15	Standard
	Se-1	77	5234.6	0.4	**72.1700**	0.711	1.0	ug/L	58	Standard
>	Ga	71	70.0	37.1				mg/L	113	Standard
	Rb	85	1365.1	5.5				ug/L	27	Standard
	Y	89	346038.7	0.8				ug/L	383780	Standard
>	Rh	103	180.0	10.0				ug/L	18	Standard
	Mo	98	3359.2	1.2	**1.3805**	0.020	1.4	ug/L	31	Standard
	Ag	107	270709.1	0.9	**44.1668**	0.504	1.1	ug/L	84	Standard
	Cd	111	93244.7	0.3	**48.1468**	0.718	1.5	mg/L	4	Standard
	Cd	114	226573.3	0.7	**48.2085**	0.286	0.6	ug/L	15	Standard
>	In	115	468674.8	1.2				ug/L	515400	Standard
	Sn	118	1825.1	9.1	**0.1656**	0.029	17.7	ug/L	1043	Standard
	Sb	123	204162.4	2.0	**49.0376**	1.260	2.6	ug/L	227	Standard
	Ba	135	137435.2	0.4	**75.1669**	0.695	0.9	ug/L	31	Standard
	Ce	140	1030.0	5.1				ug/L	120	Standard
>	Tb	159	739655.5	1.2				ug/L	785817	Standard
	Ho	165	55.0	39.6				ug/L	7	Standard
	Tl	203	360735.5	0.5	**48.7186**	0.226	0.5	ug/L	6	Standard
	Tl	205	315732.4	0.4	**48.9496**	0.505	1.0	ug/L	8	Standard
	Pb	206	236175.2	0.6	**51.2399**	0.246	0.5	ug/L	201	Standard
	Pb	207	206500.0	0.4	**49.5554**	0.667	1.3	ug/L	177	Standard
	Pb	208	855893.0	0.3	**51.1339**	0.635	1.2	ug/L	722	Standard
	U	238	329007.8	0.5	**51.7512**	0.629	1.2	ug/L	8	Standard
>	Bi	209	411577.2	1.0				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	211561.8	0.6	**290.8905**	2.789	1.0	mg/L	38	Standard
K	39	146.7	10.4	**0.5734**	0.067	11.7	mg/L	33	Standard
Ca	43	46.7	16.4	**2.1554**	1.247	57.9	mg/L	48	Standard
Fe	54	196.9	20.7	**0.0574**	0.038	65.6	mg/L	131	Standard
Fe	57	315.0	5.5	**0.5870**	0.066	11.3	mg/L	153	Standard
> **Sc-1**	45	24398.0	0.9				mg/L	26715	Standard
Cl	35	197297.6	0.7				ug/L	102686	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	35093.9	0.5				ug/L	1897	Standard
P	31	23279.5	2.5				ug/L	18491	Standard
S	34	4770.8	1.3				ug/L	3734	Standard
Sr	88	465.0	2.8				ug/L	47	Standard
C	12	90.0	44.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	86.7	24.0				mg/L	23	Standard
Dy	164	33.8	86.8				mg/L	23	Standard
Ho-1	165	55.0	39.6				mg/L	7	Standard
Er	166	60.0	60.1				mg/L	13	Standard
I	127	246653.3	8.1				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.933	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.774	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	90.934
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	92.580
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
As 75 Upper, S, EEE	As	75	

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Method 6020 - Summary Report

Sample ID: L1606090707SDL WG574822-02
Sample Date/Time: Tuesday, July 05, 2016 17:51:21
Number of Replicates: 3
Autosampler Position: 235
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63348.8	1.6				ug/L	59517	Standard
	Be	9	23.3	32.7	**-0.0059**	0.008	135.6	ug/L	10	Standard
	Al	27	998974.5	1.8	**6.1561**	0.023	0.4	ug/L	1872	Standard
	Sc	45	23137.7	2.3				ug/L	26715	Standard
	Ti	47	56.3	8.4	**0.0040**	0.021	521.8	ug/L	54	Standard
	V	51	2154.3	16.6	**0.1368**	0.055	40.1	ug/L	1419	Standard
	Cr	52	7061.3	2.0	**0.0753**	0.029	38.0	ug/L	7059	Standard
	Cr	53	6126.2	3.5	**6.8813**	0.216	3.1	ug/L	398	Standard
	Mn	55	9134.1	2.5	**1.3969**	0.047	3.3	ug/L	824	Standard
	Co	59	486.7	16.7	**0.0508**	0.013	26.2	ug/L	167	Standard
	Ni	60	512.0	5.6	**0.0899**	0.018	19.5	ug/L	391	Standard
	Cu	65	450.3	7.5	**0.1750**	0.020	11.5	ug/L	147	Standard
	Zn	66	1233.4	1.3	**1.0235**	0.021	2.1	ug/L	184	Standard
>	**Ge**	72	399665.1	0.8				ug/L	422998	Standard
	As	75	66032.6	0.5	**61.6563**	0.747	1.2	ug/L	-58	Standard
	Se	82	50.5	4.2	**0.2500**	0.022	9.0	ug/L	15	Standard
	Se-1	77	469.7	3.8	**5.8880**	0.288	4.9	ug/L	58	Standard
>	**Ga**	71	45.0	11.1				mg/L	113	Standard
	Rb	85	300.0	6.7				ug/L	27	Standard
	Y	89	335354.7	1.8				ug/L	383780	Standard
>	**Rh**	103	95.0	22.9				ug/L	18	Standard
	Mo	98	679.6	3.8	**0.2716**	0.010	3.7	ug/L	31	Standard
	Ag	107	190.0	66.1	**0.0189**	0.020	107.4	ug/L	84	Standard
	Cd	111	47.1	108.4	**0.0201**	0.026	130.4	mg/L	4	Standard
	Cd	114	124.7	113.2	**0.0218**	0.030	136.5	ug/L	15	Standard
>	**In**	115	469611.4	0.3				ug/L	515400	Standard
	Sn	118	508.3	4.4	**-0.0846**	0.005	5.4	ug/L	1043	Standard
	Sb	123	1516.3	19.0	**0.3474**	0.070	20.2	ug/L	227	Standard
	Ba	135	10544.7	2.2	**5.7331**	0.109	1.9	ug/L	31	Standard
	Ce	140	245.0	14.7				ug/L	120	Standard
>	**Tb**	159	720920.2	2.1				ug/L	785817	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	194.0	83.6	**0.0219**	0.021	97.0	ug/L	6	Standard
	Tl	205	170.0	64.1	**0.0189**	0.016	86.6	ug/L	8	Standard
	Pb	206	619.0	15.5	**0.0857**	0.020	22.9	ug/L	201	Standard
	Pb	207	525.3	17.4	**0.0754**	0.021	27.7	ug/L	177	Standard
	Pb	208	2159.7	15.9	**0.0776**	0.019	25.0	ug/L	722	Standard
	U	238	198.7	52.6	**0.0280**	0.016	56.8	ug/L	8	Standard
>	**Bi**	209	421060.6	1.2				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	40911.9	3.5	**59.3310**	3.255	5.5	mg/L	38	Standard
K	39	31.7	24.1	**0.0305**	0.036	117.4	mg/L	33	Standard
Ca	43	16.7	96.4	**-2.8855**	2.829	98.0	mg/L	48	Standard
Fe	54	80.9	14.2	**-0.0412**	0.012	29.9	mg/L	131	Standard
Fe	57	256.7	12.7	**0.4375**	0.130	29.7	mg/L	153	Standard
> **Sc-1**	45	23137.7	2.3				mg/L	26715	Standard
Cl	35	151958.3	1.0				ug/L	102686	Standard
Kr	83	2.7	94.4				ug/L	2	Standard
Br	81	7942.1	3.4				ug/L	1897	Standard
P	31	10213.4	2.1				ug/L	18491	Standard
S	34	4539.0	8.1				ug/L	3734	Standard
Sr	88	150.0	11.5				ug/L	47	Standard
C	12	46.7	75.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	17.3				mg/L	23	Standard
Dy	164	21.9	30.9				mg/L	23	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	30.0	115.5				mg/L	13	Standard
I	127	74052.3	2.4				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.439	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.484	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.116
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.713
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606090707SDL WG574822-02
Sample Date/Time: Tuesday, July 05, 2016 17:54:33
Number of Replicates: 3
Autosampler Position: 236
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61308.9	3.1				ug/L	59517	Standard
	Be	9	11.7	24.7	**-0.0180**	0.004	19.5	ug/L	10	Standard
	Al	27	199741.3	0.7	**1.2630**	0.047	3.7	ug/L	1872	Standard
	Sc	45	23279.5	1.9				ug/L	26715	Standard
	Ti	47	30.3	9.5	**-0.1126**	0.012	10.9	ug/L	54	Standard
	V	51	1527.8	19.5	**0.0437**	0.046	105.1	ug/L	1419	Standard
	Cr	52	6258.6	1.1	**-0.0498**	0.012	23.5	ug/L	7059	Standard
	Cr	53	1985.1	3.9	**1.9394**	0.112	5.8	ug/L	398	Standard
	Mn	55	2073.1	4.0	**0.2138**	0.016	7.7	ug/L	824	Standard
	Co	59	250.3	5.3	**0.0137**	0.002	11.9	ug/L	167	Standard
	Ni	60	300.3	4.1	**-0.0309**	0.007	21.4	ug/L	391	Standard
	Cu	65	206.0	4.8	**0.0365**	0.006	17.1	ug/L	147	Standard
	Zn	66	851.0	0.4	**0.6520**	0.012	1.8	ug/L	184	Standard
>	**Ge**	72	402053.4	1.2				ug/L	422998	Standard
	As	75	13254.1	1.2	**12.3428**	0.020	0.2	ug/L	-58	Standard
	Se	82	24.0	26.8	**0.0086**	0.055	636.7	ug/L	15	Standard
	Se-1	77	151.0	8.5	**1.4283**	0.202	14.1	ug/L	58	Standard
>	**Ga**	71	53.3	37.9				mg/L	113	Standard
	Rb	85	71.7	39.7				ug/L	27	Standard
	Y	89	339468.0	1.5				ug/L	383780	Standard
>	**Rh**	103	61.7	12.4				ug/L	18	Standard
	Mo	98	180.5	19.5	**0.0649**	0.014	22.2	ug/L	31	Standard
	Ag	107	76.3	16.2	**0.0004**	0.002	631.5	ug/L	84	Standard
	Cd	111	6.6	54.1	**-0.0007**	0.002	263.1	mg/L	4	Standard
	Cd	114	11.7	94.5	**-0.0021**	0.002	115.5	ug/L	15	Standard
>	**In**	115	473911.9	1.8				ug/L	515400	Standard
	Sn	118	246.7	10.2	**-0.1347**	0.004	3.0	ug/L	1043	Standard
	Sb	123	425.8	7.9	**0.0849**	0.010	11.4	ug/L	227	Standard
	Ba	135	2056.1	4.9	**1.0893**	0.068	6.3	ug/L	31	Standard
	Ce	140	28.3	50.9				ug/L	120	Standard
>	**Tb**	159	720634.0	1.1				ug/L	785817	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	75.3	25.0	**0.0061**	0.002	40.1	ug/L	6	Standard
	Tl	205	56.7	5.1	**0.0016**	0.001	32.0	ug/L	8	Standard
	Pb	206	270.3	10.2	**0.0102**	0.005	49.3	ug/L	201	Standard
	Pb	207	232.3	11.0	**0.0051**	0.005	102.2	ug/L	177	Standard
	Pb	208	984.0	1.6	**0.0074**	0.001	19.1	ug/L	722	Standard
	U	238	35.3	11.4	**0.0028**	0.001	19.6	ug/L	8	Standard
>	**Bi**	209	432839.3	1.1				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	8197.2	2.0	**11.7815**	0.277	2.4	mg/L	38	Standard
K	39	28.3	36.7	**0.0125**	0.049	394.6	mg/L	33	Standard
Ca	43	16.7	45.8	**-2.8562**	1.419	49.7	mg/L	48	Standard
Fe	54	51.1	37.0	**-0.0691**	0.018	26.4	mg/L	131	Standard
Fe	57	221.7	11.1	**0.3068**	0.095	30.9	mg/L	153	Standard
> **Sc-1**	45	23279.5	1.9				mg/L	26715	Standard
Cl	35	146752.7	1.2				ug/L	102686	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	2770.3	4.4				ug/L	1897	Standard
P	31	7563.6	4.2				ug/L	18491	Standard
S	34	4602.4	3.6				ug/L	3734	Standard
Sr	88	100.0	5.0				ug/L	47	Standard
C	12	56.7	53.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	203.3	49.3				mg/L	23	Standard
Dy	164	13.0	43.3				mg/L	23	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	35114.0	0.7				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.011	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.049	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.950
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.363
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, July 05, 2016 17:57:46
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63117.9	3.2				ug/L	59517	Standard
	Be	9	46683.5	1.4	**50.6190**	1.097	2.2	ug/L	10	Standard
	Al	27	7160552.7	2.5	**44.3715**	0.291	0.7	ug/L	1872	Standard
	Sc	45	24508.1	2.7				ug/L	26715	Standard
	Ti	47	22098.8	1.9	**92.5132**	0.678	0.7	ug/L	54	Standard
	V	51	339356.4	1.2	**46.7732**	1.165	2.5	ug/L	1419	Standard
	Cr	52	344605.2	1.3	**47.4001**	0.157	0.3	ug/L	7059	Standard
	Cr	53	43273.4	2.1	**48.1663**	0.868	1.8	ug/L	398	Standard
	Mn	55	296190.0	0.4	**46.5915**	0.743	1.6	ug/L	824	Standard
	Co	59	327302.3	1.0	**48.0612**	0.953	2.0	ug/L	167	Standard
	Ni	60	89111.6	1.3	**47.3434**	0.009	0.0	ug/L	391	Standard
	Cu	65	88837.7	0.7	**47.1597**	0.311	0.7	ug/L	147	Standard
	Zn	66	54603.5	0.2	**49.2215**	0.559	1.1	ug/L	184	Standard
>	Ge	72	423805.7	1.3				ug/L	422998	Standard
	As	75	53686.8	1.5	**47.2833**	0.469	1.0	ug/L	-58	Standard
	Se	82	5576.1	1.7	**47.2621**	0.196	0.4	ug/L	15	Standard
	Se-1	77	3758.1	0.6	**48.8035**	0.942	1.9	ug/L	58	Standard
>	Ga	71	53.3	19.5				mg/L	113	Standard
	Rb	85	843.4	2.5				ug/L	27	Standard
	Y	89	365956.5	2.3				ug/L	383780	Standard
>	Rh	103	41.7	36.7				ug/L	18	Standard
	Mo	98	251963.5	0.7	**97.0892**	1.135	1.2	ug/L	31	Standard
	Ag	107	313139.5	0.6	**47.6064**	0.890	1.9	ug/L	84	Standard
	Cd	111	100206.1	1.4	**48.2024**	0.063	0.1	mg/L	4	Standard
	Cd	114	244727.9	0.6	**48.5218**	0.934	1.9	ug/L	15	Standard
>	In	115	503021.5	1.3				ug/L	515400	Standard
	Sn	118	273484.8	1.5	**48.2158**	0.480	1.0	ug/L	1043	Standard
	Sb	123	223791.9	1.0	**50.0766**	0.144	0.3	ug/L	227	Standard
	Ba	135	91512.2	0.6	**46.6249**	0.579	1.2	ug/L	31	Standard
	Ce	140	95.0	5.3				ug/L	120	Standard
>	Tb	159	758621.5	0.5				ug/L	785817	Standard
	Ho	165	10.0	100.0				ug/L	7	Standard
	Tl	203	390396.4	0.7	**48.5643**	0.147	0.3	ug/L	6	Standard
	Tl	205	343934.8	0.4	**49.1159**	0.600	1.2	ug/L	8	Standard
	Pb	206	246481.0	0.5	**49.2567**	0.483	1.0	ug/L	201	Standard
	Pb	207	222197.8	0.4	**49.1145**	0.538	1.1	ug/L	177	Standard
	Pb	208	924890.5	0.4	**50.8946**	0.342	0.7	ug/L	722	Standard
	U	238	345123.7	0.2	**50.0019**	0.286	0.6	ug/L	8	Standard
>	Bi	209	446823.0	0.8				ug/L	444563	Standard

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Na	23	3.3	173.2	**41.7844**	72.364	173.2	mg/L	0	Standard
Mg	24	3820.5	2.0	**5.1970**	0.057	1.1	mg/L	38	Standard
K	39	688.3	5.4	**3.1601**	0.266	8.4	mg/L	33	Standard
Ca	43	30.0	33.3	**-0.7268**	1.712	235.5	mg/L	48	Standard
Fe	54	5658.3	4.4	**4.8613**	0.350	7.2	mg/L	131	Standard
Fe	57	1785.1	3.2	**5.5483**	0.176	3.2	mg/L	153	Standard
> **Sc-1**	45	24508.1	2.7				mg/L	26715	Standard
Cl	35	140834.3	4.3				ug/L	102686	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1566.7	11.4				ug/L	1897	Standard
P	31	22929.0	0.4				ug/L	18491	Standard
S	34	4860.8	3.0				ug/L	3734	Standard
Sr	88	65.0	15.4				ug/L	47	Standard
C	12	86.7	35.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	133.3	35.4				mg/L	23	Standard
Dy	164	-0.3	173.2				mg/L	23	Standard
Ho-1	165	10.0	100.0				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	13	Standard
I	127	10655.4	5.1				mg/L	12398	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	101.238		
	Al	27	88.743		
	Sc	45			
	Ti	47	92.513		
	V	51	93.546		
	Cr	52	94.800		
	Cr	53			
	Mn	55	93.183		
	Co	59	96.122		
	Ni	60	94.687		
	Cu	65	94.319		
	Zn	66	98.443		
>	Ge	72		100.191	
	As	75	94.567		
	Se	82	94.524		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	97.089		
Ag	107	95.213		
Cd	111	96.405		
Cd	114			
In	115			97.598
Sn	118	96.432		
Sb	123	100.153		
Ba	135	93.250		
Ce	140			
Tb	159			
Ho	165			
Tl	203	97.129		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.789		
U	238	100.004		
Bi	209			100.508
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, July 05, 2016 18:00:57
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62329.6	1.5				ug/L	59517	Standard
	Be	9	33.3	31.2	**0.0056**	0.012	214.3	ug/L	10	Standard
	Al	27	5119.6	78.2	**0.0199**	0.026	129.3	ug/L	1872	Standard
	Sc	45	24099.2	2.0				ug/L	26715	Standard
	Ti	47	30.0	27.3	**-0.1181**	0.036	30.4	ug/L	54	Standard
	V	51	1183.2	1.3	**-0.0124**	0.003	24.0	ug/L	1419	Standard
	Cr	52	5876.5	2.5	**-0.1339**	0.029	21.7	ug/L	7059	Standard
	Cr	53	775.0	6.8	**0.4780**	0.069	14.5	ug/L	398	Standard
	Mn	55	597.3	4.6	**-0.0348**	0.004	12.1	ug/L	824	Standard
	Co	59	251.0	4.2	**0.0126**	0.002	14.7	ug/L	167	Standard
	Ni	60	262.7	5.8	**-0.0568**	0.009	16.4	ug/L	391	Standard
	Cu	65	168.0	13.8	**0.0121**	0.012	98.4	ug/L	147	Standard
	Zn	66	221.7	14.4	**0.0454**	0.031	67.5	ug/L	184	Standard
>	**Ge**	72	415302.5	1.0				ug/L	422998	Standard
	As	75	9.3	178.7	**0.0600**	0.015	25.0	ug/L	-58	Standard
	Se	82	19.1	28.9	**-0.0402**	0.046	115.1	ug/L	15	Standard
	Se-1	77	72.3	7.6	**0.3032**	0.074	24.4	ug/L	58	Standard
>	**Ga**	71	43.3	26.6				mg/L	113	Standard
	Rb	85	30.0	16.7				ug/L	27	Standard
	Y	89	358005.9	1.6				ug/L	383780	Standard
>	**Rh**	103	28.3	97.2				ug/L	18	Standard
	Mo	98	182.0	19.8	**0.0611**	0.014	22.8	ug/L	31	Standard
	Ag	107	137.7	3.4	**0.0089**	0.001	8.0	ug/L	84	Standard
	Cd	111	16.7	26.2	**0.0039**	0.002	54.2	mg/L	4	Standard
	Cd	114	71.1	22.2	**0.0095**	0.003	32.9	ug/L	15	Standard
>	**In**	115	503658.2	0.1				ug/L	515400	Standard
	Sn	118	891.7	11.2	**-0.0234**	0.018	75.9	ug/L	1043	Standard
	Sb	123	1043.9	36.9	**0.2170**	0.086	39.7	ug/L	227	Standard
	Ba	135	48.0	18.2	**0.0007**	0.004	622.9	ug/L	31	Standard
	Ce	140	28.3	36.7				ug/L	120	Standard
>	**Tb**	159	755449.9	1.1				ug/L	785817	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	94.0	14.9	**0.0080**	0.002	21.1	ug/L	6	Standard
	Tl	205	80.0	41.0	**0.0046**	0.005	102.6	ug/L	8	Standard
	Pb	206	266.3	7.3	**0.0073**	0.004	53.2	ug/L	201	Standard
	Pb	207	229.3	8.7	**0.0025**	0.005	189.7	ug/L	177	Standard
	Pb	208	958.3	11.1	**0.0038**	0.006	149.2	ug/L	722	Standard
	U	238	77.0	19.2	**0.0086**	0.002	24.4	ug/L	8	Standard
>	**Bi**	209	450350.5	0.8				ug/L	444563	Standard

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Na	23	1.7	173.2	**21.1835**	36.682	173.2	mg/L	0	Standard
Mg	24	95.0	29.3	**0.0989**	0.040	40.8	mg/L	38	Standard
K	39	20.0	43.3	**-0.0326**	0.041	126.0	mg/L	33	Standard
Ca	43	11.7	49.5	**-3.8533**	0.988	25.6	mg/L	48	Standard
Fe	54	131.0	15.7	**0.0003**	0.016	5527.6	mg/L	131	Standard
Fe	57	225.0	7.7	**0.2918**	0.074	25.2	mg/L	153	Standard
Sc-1	45	24099.2	2.0				mg/L	26715	Standard
Cl	35	134288.5	0.9				ug/L	102686	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	1623.4	1.9				ug/L	1897	Standard
P	31	22054.4	2.1				ug/L	18491	Standard
S	34	4775.8	1.3				ug/L	3734	Standard
Sr	88	65.0	15.4				ug/L	47	Standard
C	12	33.3	45.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	123.3	52.1				mg/L	23	Standard
Dy	164	8.9	17.3				mg/L	23	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	23.3	137.8				mg/L	13	Standard
I	127	7573.6	0.6				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.181	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.722
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.302
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

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Method 6020 - Summary Report

L1606090708

Sample ID: L~~1606090707~~
Sample Date/Time: Tuesday, July 05, 2016 18:04:10
Number of Replicates: 3
Autosampler Position: 237
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67239.0	4.3				ug/L	59517	Standard
	Be	9	16.7	45.8	**-0.0141**	0.008	56.6	ug/L	10	Standard
	Al	27	5719380.4	0.8	**33.3082**	1.639	4.9	ug/L	1872	Standard
	Sc	45	24324.5	2.6				ug/L	26715	Standard
	Ti	47	149.7	7.3	**0.4409**	0.052	11.7	ug/L	54	Standard
	V	51	4220.3	6.2	**0.4595**	0.041	9.0	ug/L	1419	Standard
	Cr	52	10037.3	1.0	**0.5661**	0.017	3.0	ug/L	7059	Standard
	Cr	53	30113.2	1.6	**36.5837**	0.621	1.7	ug/L	398	Standard
	Mn	55	53293.2	0.4	**9.0681**	0.037	0.4	ug/L	824	Standard
	Co	59	588.3	2.8	**0.0695**	0.002	3.4	ug/L	167	Standard
	Ni	60	1390.4	3.2	**0.6119**	0.024	4.0	ug/L	391	Standard
	Cu	65	1413.7	4.0	**0.7436**	0.034	4.5	ug/L	147	Standard
	Zn	66	3768.5	1.2	**3.5701**	0.046	1.3	ug/L	184	Standard
>	Ge	72	387251.4	0.3				ug/L	422998	Standard
	As	75	393832.6	0.9	**379.2362**	4.326	1.1	ug/L	-58	Standard
	Se	82	138.0	0.5	**1.0798**	0.006	0.6	ug/L	15	Standard
	Se-1	77	2139.5	2.0	**30.1498**	0.643	2.1	ug/L	58	Standard
>	Ga	71	95.0	15.8				mg/L	113	Standard
	Rb	85	1216.7	3.0				ug/L	27	Standard
	Y	89	333310.3	1.7				ug/L	383780	Standard
>	Rh	103	290.0	30.3				ug/L	18	Standard
	Mo	98	4428.9	2.1	**1.8713**	0.044	2.3	ug/L	31	Standard
	Ag	107	102.3	13.6	**0.0051**	0.002	43.9	ug/L	84	Standard
	Cd	111	6.3	104.9	**-0.0008**	0.004	443.3	mg/L	4	Standard
	Cd	114	34.7	68.9	**0.0030**	0.005	173.1	ug/L	15	Standard
>	In	115	456609.6	0.7				ug/L	515400	Standard
	Sn	118	1253.4	7.8	**0.0634**	0.018	29.0	ug/L	1043	Standard
	Sb	123	871.5	24.0	**0.1984**	0.051	25.8	ug/L	227	Standard
	Ba	135	64217.1	1.0	**36.0347**	0.187	0.5	ug/L	31	Standard
	Ce	140	203.3	5.1				ug/L	120	Standard
>	Tb	159	723064.9	0.7				ug/L	785817	Standard
	Ho	165	50.0	17.3				ug/L	7	Standard
	Tl	203	57.7	11.5	**0.0044**	0.001	20.5	ug/L	6	Standard
	Tl	205	53.3	10.8	**0.0018**	0.001	54.3	ug/L	8	Standard
	Pb	206	306.0	4.4	**0.0231**	0.003	11.2	ug/L	201	Standard
	Pb	207	233.7	11.1	**0.0102**	0.007	67.1	ug/L	177	Standard
	Pb	208	1056.3	3.3	**0.0167**	0.002	11.2	ug/L	722	Standard
	U	238	625.3	4.6	**0.0992**	0.005	5.0	ug/L	8	Standard
>	Bi	209	398116.8	0.7				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	260998.9	0.7	**360.1093**	10.305	2.9	mg/L	38	Standard
K	39	191.7	26.4	**0.7934**	0.249	31.3	mg/L	33	Standard
Ca	43	38.3	32.8	**0.7298**	2.075	284.3	mg/L	48	Standard
Fe	54	117.7	23.5	**-0.0120**	0.027	224.5	mg/L	131	Standard
Fe	57	295.0	3.4	**0.5227**	0.053	10.2	mg/L	153	Standard
> **Sc-1**	45	24324.5	2.6				mg/L	26715	Standard
Cl	35	194002.8	0.2				ug/L	102686	Standard
Kr	83	3.0	0.0				ug/L	2	Standard
Br	81	42001.6	5.4				ug/L	1897	Standard
P	31	23348.0	3.5				ug/L	18491	Standard
S	34	4402.3	5.5				ug/L	3734	Standard
Sr	88	455.0	11.2				ug/L	47	Standard
C	12	103.3	39.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	66.7	45.8				mg/L	23	Standard
Dy	164	38.1	25.0				mg/L	23	Standard
Ho-1	165	50.0	17.3				mg/L	7	Standard
Er	166	40.0	25.0				mg/L	13	Standard
I	127	291166.9	8.3				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.975	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		91.549	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	88.593
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	89.552
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
As 75 Upper, S, EEE	As	75	

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Method 6020 - Summary Report

Sample ID: L1606090710
Sample Date/Time: Tuesday, July 05, 2016 18:07:21
Number of Replicates: 3
Autosampler Position: 238
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67299.2	2.7				ug/L	59517	Standard
	Be	9	26.7	47.2	**-0.0042**	0.012	285.5	ug/L	10	Standard
	Al	27	5083593.4	1.1	**29.5561**	1.107	3.7	ug/L	1872	Standard
	Sc	45	24010.7	2.4				ug/L	26715	Standard
	Ti	47	204.3	0.7	**0.6811**	0.011	1.6	ug/L	54	Standard
	V	51	3989.4	20.8	**0.4170**	0.120	28.7	ug/L	1419	Standard
	Cr	52	10710.8	1.7	**0.6504**	0.018	2.7	ug/L	7059	Standard
	Cr	53	23955.6	1.2	**28.6794**	0.407	1.4	ug/L	398	Standard
	Mn	55	46074.3	0.8	**7.7301**	0.047	0.6	ug/L	824	Standard
	Co	59	1410.1	1.1	**0.1990**	0.004	1.8	ug/L	167	Standard
	Ni	60	1463.1	2.6	**0.6447**	0.027	4.2	ug/L	391	Standard
	Cu	65	1378.1	4.2	**0.7136**	0.031	4.4	ug/L	147	Standard
	Zn	66	2849.6	3.9	**2.6286**	0.125	4.8	ug/L	184	Standard
>	Ge	72	391781.8	0.7				ug/L	422998	Standard
	As	75	328318.2	1.0	**312.5008**	2.671	0.9	ug/L	-58	Standard
	Se	82	96.8	11.9	**0.6851**	0.103	15.0	ug/L	15	Standard
	Se-1	77	1755.1	1.8	**24.3218**	0.552	2.3	ug/L	58	Standard
>	Ga	71	98.3	11.7				mg/L	113	Standard
	Rb	85	1366.7	5.6				ug/L	27	Standard
	Y	89	336962.4	0.4				ug/L	383780	Standard
>	Rh	103	265.0	19.7				ug/L	18	Standard
	Mo	98	3474.5	1.3	**1.4573**	0.032	2.2	ug/L	31	Standard
	Ag	107	72.3	8.8	**0.0001**	0.001	2080.1	ug/L	84	Standard
	Cd	111	20.1	12.7	**0.0064**	0.001	20.1	mg/L	4	Standard
	Cd	114	43.4	58.3	**0.0048**	0.005	112.7	ug/L	15	Standard
>	In	115	459404.3	1.3				ug/L	515400	Standard
	Sn	118	2235.2	1.2	**0.2522**	0.010	3.9	ug/L	1043	Standard
	Sb	123	686.3	23.4	**0.1519**	0.039	25.9	ug/L	227	Standard
	Ba	135	54708.6	0.4	**30.5128**	0.467	1.5	ug/L	31	Standard
	Ce	140	1123.4	4.1				ug/L	120	Standard
>	Tb	159	730198.7	0.8				ug/L	785817	Standard
	Ho	165	53.3	27.1				ug/L	7	Standard
	Tl	203	60.7	14.0	**0.0048**	0.001	24.0	ug/L	6	Standard
	Tl	205	41.7	6.9	**-0.0001**	0.000	334.4	ug/L	8	Standard
	Pb	206	1727.4	2.0	**0.3399**	0.010	2.9	ug/L	201	Standard
	Pb	207	1534.1	1.4	**0.3307**	0.003	1.0	ug/L	177	Standard
	Pb	208	6227.2	1.7	**0.3340**	0.007	2.2	ug/L	722	Standard
	U	238	440.7	4.2	**0.0687**	0.003	3.8	ug/L	8	Standard
>	Bi	209	400573.2	0.5				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	220653.8	2.0	**308.4937**	13.678	4.4	mg/L	38	Standard
K	39	146.7	5.2	**0.5853**	0.038	6.5	mg/L	33	Standard
Ca	43	38.3	30.1	**0.8023**	1.886	235.1	mg/L	48	Standard
Fe	54	146.4	13.2	**0.0148**	0.019	127.3	mg/L	131	Standard
Fe	57	313.3	12.1	**0.5965**	0.106	17.7	mg/L	153	Standard
Sc-1	45	24010.7	2.4				mg/L	26715	Standard
Cl	35	186928.1	0.8				ug/L	102686	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	34368.9	1.7				ug/L	1897	Standard
P	31	22778.8	1.4				ug/L	18491	Standard
S	34	4212.3	2.7				ug/L	3734	Standard
Sr	88	443.3	10.5				ug/L	47	Standard
C	12	93.3	43.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	76.7	30.1				mg/L	23	Standard
Dy	164	58.1	36.5				mg/L	23	Standard
Ho-1	165	53.3	27.1				mg/L	7	Standard
Er	166	40.0	66.1				mg/L	13	Standard
I	127	231105.0	6.0				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		113.076	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		92.620	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.136
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.105
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
As 75 Upper, S, EEE	As	75	

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Method 6020 - Summary Report

Sample ID: L1606090711
Sample Date/Time: Tuesday, July 05, 2016 18:10:33
Number of Replicates: 3
Autosampler Position: 239
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70267.6	0.8				ug/L	59517	Standard
	Be	9	30.0	72.6	**-0.0018**	0.021	1156.1	ug/L	10	Standard
	Al	27	5033279.2	1.3	**28.0102**	0.557	2.0	ug/L	1872	Standard
	Sc	45	24715.2	3.3				ug/L	26715	Standard
	Ti	47	130.0	10.9	**0.3209**	0.055	17.2	ug/L	54	Standard
	V	51	4084.8	10.9	**0.4091**	0.067	16.5	ug/L	1419	Standard
	Cr	52	10418.6	0.3	**0.5467**	0.021	3.8	ug/L	7059	Standard
	Cr	53	22381.5	3.2	**25.7401**	0.567	2.2	ug/L	398	Standard
	Mn	55	45023.5	1.1	**7.2627**	0.160	2.2	ug/L	824	Standard
	Co	59	517.7	3.5	**0.0541**	0.004	6.9	ug/L	167	Standard
	Ni	60	1301.7	1.9	**0.5233**	0.022	4.1	ug/L	391	Standard
	Cu	65	1101.4	6.7	**0.5303**	0.034	6.3	ug/L	147	Standard
	Zn	66	2855.3	3.5	**2.5280**	0.060	2.4	ug/L	184	Standard
>	**Ge**	72	407114.6	1.3				ug/L	422998	Standard
	As	75	334939.4	0.7	**306.8207**	3.703	1.2	ug/L	-58	Standard
	Se	82	106.2	5.6	**0.7350**	0.041	5.6	ug/L	15	Standard
	Se-1	77	1705.8	1.7	**22.7035**	0.319	1.4	ug/L	58	Standard
>	**Ga**	71	73.3	30.7				mg/L	113	Standard
	Rb	85	1170.0	1.7				ug/L	27	Standard
	Y	89	352104.8	2.9				ug/L	383780	Standard
>	**Rh**	103	331.7	6.3				ug/L	18	Standard
	Mo	98	3850.0	1.1	**1.5493**	0.050	3.2	ug/L	31	Standard
	Ag	107	78.7	2.9	**0.0006**	0.001	87.9	ug/L	84	Standard
	Cd	111	6.7	97.0	**-0.0007**	0.003	434.4	mg/L	4	Standard
	Cd	114	43.7	90.4	**0.0045**	0.008	179.3	ug/L	15	Standard
>	**In**	115	479131.2	2.1				ug/L	515400	Standard
	Sn	118	916.7	19.1	**-0.0111**	0.029	263.7	ug/L	1043	Standard
	Sb	123	564.0	19.9	**0.1158**	0.024	20.5	ug/L	227	Standard
	Ba	135	54109.8	0.9	**28.9365**	0.351	1.2	ug/L	31	Standard
	Ce	140	213.3	22.8				ug/L	120	Standard
>	**Tb**	159	756430.9	1.3				ug/L	785817	Standard
	Ho	165	50.0	20.0				ug/L	7	Standard
	Tl	203	49.7	46.1	**0.0030**	0.003	100.5	ug/L	6	Standard
	Tl	205	25.0	34.6	**-0.0030**	0.001	44.0	ug/L	8	Standard
	Pb	206	300.3	6.2	**0.0191**	0.005	24.1	ug/L	201	Standard
	Pb	207	268.0	5.3	**0.0159**	0.004	25.8	ug/L	177	Standard
	Pb	208	1062.7	2.5	**0.0144**	0.001	10.2	ug/L	722	Standard
	U	238	512.3	4.8	**0.0774**	0.004	5.5	ug/L	8	Standard
>	**Bi**	209	415264.5	1.1				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	224626.5	1.7	**304.9960**	5.955	2.0	mg/L	38	Standard
K	39	193.3	21.7	**0.7847**	0.191	24.4	mg/L	33	Standard
Ca	43	28.3	20.4	**-1.0499**	1.044	99.5	mg/L	48	Standard
Fe	54	136.8	17.8	**0.0023**	0.019	808.3	mg/L	131	Standard
Fe	57	281.7	24.9	**0.4629**	0.246	53.2	mg/L	153	Standard
> **Sc-1**	45	24715.2	3.3				mg/L	26715	Standard
Cl	35	193383.7	0.7				ug/L	102686	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	34659.7	5.5				ug/L	1897	Standard
P	31	23411.4	2.0				ug/L	18491	Standard
S	34	4459.0	3.7				ug/L	3734	Standard
Sr	88	401.7	12.7				ug/L	47	Standard
C	12	113.3	27.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	90.0	57.7				mg/L	23	Standard
Dy	164	17.4	153.3				mg/L	23	Standard
Ho-1	165	50.0	20.0				mg/L	7	Standard
Er	166	53.3	28.6				mg/L	13	Standard
I	127	232999.0	6.2				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.064	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.245	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		92.963
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.410
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
As 75 Upper, S, EEE	As	75	

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Method 6020 - Summary Report

Sample ID: L1606090712
Sample Date/Time: Tuesday, July 05, 2016 18:13:44
Number of Replicates: 3
Autosampler Position: 240
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63238.5	3.2				ug/L	59517	Standard
	Be	9	26.7	94.4	**-0.0025**	0.027	1073.9	ug/L	10	Standard
	Al	27	84947.4	9.9	**0.5135**	0.056	10.9	ug/L	1872	Standard
	Sc	45	22697.0	3.1				ug/L	26715	Standard
	Ti	47	2033.1	2.9	**8.7272**	0.217	2.5	ug/L	54	Standard
	V	51	13488.9	1.1	**1.7827**	0.019	1.1	ug/L	1419	Standard
	Cr	52	41660.6	2.8	**5.1741**	0.181	3.5	ug/L	7059	Standard
	Cr	53	6331.3	6.9	**7.0624**	0.490	6.9	ug/L	398	Standard
	Mn	55	2951.0	1.8	**0.3585**	0.011	3.1	ug/L	824	Standard
	Co	59	322.7	6.4	**0.0248**	0.003	12.7	ug/L	167	Standard
	Ni	60	936.7	9.3	**0.3256**	0.048	14.7	ug/L	391	Standard
	Cu	65	1687.8	5.8	**0.8647**	0.055	6.4	ug/L	147	Standard
	Zn	66	9445.3	0.9	**8.8222**	0.090	1.0	ug/L	184	Standard
>	**Ge**	72	403026.3	0.5				ug/L	422998	Standard
	As	75	318.3	24.8	**0.3461**	0.073	21.0	ug/L	-58	Standard
	Se	82	28.9	10.9	**0.0523**	0.029	56.3	ug/L	15	Standard
	Se-1	77	135.0	4.4	**1.2004**	0.091	7.5	ug/L	58	Standard
>	**Ga**	71	81.7	15.4				mg/L	113	Standard
	Rb	85	531.7	18.0				ug/L	27	Standard
	Y	89	340348.8	1.0				ug/L	383780	Standard
>	**Rh**	103	101.7	24.3				ug/L	18	Standard
	Mo	98	497.1	7.2	**0.1905**	0.013	6.6	ug/L	31	Standard
	Ag	107	83.0	5.3	**0.0011**	0.001	53.2	ug/L	84	Standard
	Cd	111	325.1	5.9	**0.1587**	0.009	5.8	mg/L	4	Standard
	Cd	114	797.0	2.5	**0.1600**	0.004	2.8	ug/L	15	Standard
>	**In**	115	482978.5	1.0				ug/L	515400	Standard
	Sn	118	2038.5	11.4	**0.1950**	0.047	23.9	ug/L	1043	Standard
	Sb	123	482.9	14.8	**0.0961**	0.016	16.4	ug/L	227	Standard
	Ba	135	3710.1	2.8	**1.9462**	0.072	3.7	ug/L	31	Standard
	Ce	140	615.0	71.1				ug/L	120	Standard
>	**Tb**	159	740198.1	0.6				ug/L	785817	Standard
	Ho	165	23.3	75.3				ug/L	7	Standard
	Tl	203	51.0	29.6	**0.0029**	0.002	66.2	ug/L	6	Standard
	Tl	205	116.7	95.3	**0.0103**	0.016	158.3	ug/L	8	Standard
	Pb	206	3480.1	14.2	**0.6667**	0.104	15.6	ug/L	201	Standard
	Pb	207	2878.6	13.1	**0.6038**	0.088	14.6	ug/L	177	Standard
	Pb	208	12402.0	11.7	**0.6503**	0.084	12.9	ug/L	722	Standard
	U	238	278.3	43.0	**0.0388**	0.018	45.8	ug/L	8	Standard
>	**Bi**	209	436815.6	0.5				ug/L	444563	Standard

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Na	23	3.3	86.6	**45.5578**	39.489	86.7	mg/L	0	Standard
Mg	24	12321.7	2.4	**18.1974**	0.929	5.1	mg/L	38	Standard
K	39	23.3	24.7	**-0.0096**	0.026	267.5	mg/L	33	Standard
Ca	43	30.0	33.3	**-0.3169**	1.903	600.4	mg/L	48	Standard
Fe	54	106.9	4.9	**-0.0152**	0.003	20.4	mg/L	131	Standard
Fe	57	280.0	8.2	**0.5414**	0.113	20.8	mg/L	153	Standard
> **Sc-1**	45	22697.0	3.1				mg/L	26715	Standard
Cl	35	138615.9	1.3				ug/L	102686	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	2493.5	1.7				ug/L	1897	Standard
P	31	7305.1	8.6				ug/L	18491	Standard
S	34	4395.6	6.8				ug/L	3734	Standard
Sr	88	101.7	11.4				ug/L	47	Standard
C	12	40.0	50.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	290.0	37.3				mg/L	23	Standard
Dy	164	17.6	53.2				mg/L	23	Standard
Ho-1	165	23.3	75.3				mg/L	7	Standard
Er	166	50.0	60.0				mg/L	13	Standard
I	127	28102.8	6.8				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.253	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.279	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.709
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.257
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606090713
Sample Date/Time: Tuesday, July 05, 2016 18:16:56
Number of Replicates: 3
Autosampler Position: 241
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63692.0	2.3				ug/L	59517	Standard
	Be	9	16.7	45.8	**-0.0131**	0.009	66.2	ug/L	10	Standard
	Al	27	63512.9	3.3	**0.3779**	0.021	5.4	ug/L	1872	Standard
	Sc	45	23316.3	2.3				ug/L	26715	Standard
	Ti	47	1763.1	3.0	**7.4050**	0.348	4.7	ug/L	54	Standard
	V	51	10942.6	1.2	**1.3852**	0.039	2.8	ug/L	1419	Standard
	Cr	52	36788.3	3.7	**4.3630**	0.257	5.9	ug/L	7059	Standard
	Cr	53	5257.6	5.5	**5.6928**	0.424	7.5	ug/L	398	Standard
	Mn	55	905.4	2.7	**0.0166**	0.003	17.2	ug/L	824	Standard
	Co	59	265.3	7.1	**0.0152**	0.002	15.0	ug/L	167	Standard
	Ni	60	786.4	3.8	**0.2337**	0.015	6.4	ug/L	391	Standard
	Cu	65	449.3	5.0	**0.1678**	0.010	6.0	ug/L	147	Standard
	Zn	66	4768.4	1.1	**4.2979**	0.118	2.8	ug/L	184	Standard
>	**Ge**	72	410100.1	1.5				ug/L	422998	Standard
	As	75	300.6	27.5	**0.3251**	0.075	23.1	ug/L	-58	Standard
	Se	82	27.2	16.1	**0.0338**	0.040	118.9	ug/L	15	Standard
	Se-1	77	104.0	5.8	**0.7466**	0.088	11.8	ug/L	58	Standard
>	**Ga**	71	73.3	30.7				mg/L	113	Standard
	Rb	85	363.3	2.1				ug/L	27	Standard
	Y	89	342635.3	2.1				ug/L	383780	Standard
>	**Rh**	103	60.0	14.4				ug/L	18	Standard
	Mo	98	714.6	1.9	**0.2792**	0.005	1.8	ug/L	31	Standard
	Ag	107	86.3	7.0	**0.0017**	0.001	64.3	ug/L	84	Standard
	Cd	111	179.7	8.0	**0.0862**	0.005	6.2	mg/L	4	Standard
	Cd	114	447.3	14.6	**0.0881**	0.012	13.9	ug/L	15	Standard
>	**In**	115	480876.1	2.3				ug/L	515400	Standard
	Sn	118	1780.1	8.5	**0.1491**	0.036	24.0	ug/L	1043	Standard
	Sb	123	429.3	5.9	**0.0842**	0.006	6.6	ug/L	227	Standard
	Ba	135	2750.9	5.5	**1.4440**	0.099	6.9	ug/L	31	Standard
	Ce	140	306.7	64.0				ug/L	120	Standard
>	**Tb**	159	736152.1	2.7				ug/L	785817	Standard
	Ho	165	16.7	91.7				ug/L	7	Standard
	Tl	203	46.3	25.9	**0.0024**	0.002	65.8	ug/L	6	Standard
	Tl	205	25.0	20.0	**-0.0031**	0.001	26.0	ug/L	8	Standard
	Pb	206	961.4	12.2	**0.1535**	0.027	17.3	ug/L	201	Standard
	Pb	207	823.4	16.4	**0.1406**	0.032	23.1	ug/L	177	Standard
	Pb	208	3480.2	12.8	**0.1497**	0.026	17.7	ug/L	722	Standard
	U	238	226.3	7.2	**0.0314**	0.002	5.7	ug/L	8	Standard
>	**Bi**	209	432100.7	2.0				ug/L	444563	Standard

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Na	23	1.7	173.2	**22.9114**	39.675	173.2	mg/L	0	Standard
Mg	24	11828.0	3.4	**16.9917**	0.734	4.3	mg/L	38	Standard
K	39	33.3	22.9	**0.0376**	0.036	96.5	mg/L	33	Standard
Ca	43	35.0	24.7	**0.4126**	1.454	352.4	mg/L	48	Standard
Fe	54	67.3	40.6	**-0.0548**	0.024	43.7	mg/L	131	Standard
Fe	57	220.0	17.8	**0.2995**	0.142	47.5	mg/L	153	Standard
> **Sc-1**	45	23316.3	2.3				mg/L	26715	Standard
Cl	35	140495.8	1.2				ug/L	102686	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	1980.1	5.3				ug/L	1897	Standard
P	31	7436.8	2.8				ug/L	18491	Standard
S	34	4455.7	4.8				ug/L	3734	Standard
Sr	88	81.7	46.4				ug/L	47	Standard
C	12	70.0	51.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	186.7	25.3				mg/L	23	Standard
Dy	164	28.6	125.8				mg/L	23	Standard
Ho-1	165	16.7	91.7				mg/L	7	Standard
Er	166	30.0	33.3				mg/L	13	Standard
I	127	24541.5	1.1				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.015	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.951	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.302
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.197
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606090714 WG573662-01
Sample Date/Time: Tuesday, July 05, 2016 18:20:08
Number of Replicates: 3
Autosampler Position: 242
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68117.8	1.2				ug/L	59517	Standard
	Be	9	38.3	30.1	**0.0074**	0.011	155.1	ug/L	10	Standard
	Al	27	7773933.4	0.6	**44.6356**	0.680	1.5	ug/L	1872	Standard
	Sc	45	25920.5	1.3				ug/L	26715	Standard
	Ti	47	2725.9	1.3	**11.3211**	0.026	0.2	ug/L	54	Standard
	V	51	13049.7	1.6	**1.6454**	0.011	0.6	ug/L	1419	Standard
	Cr	52	15423.2	1.5	**1.2132**	0.051	4.2	ug/L	7059	Standard
	Cr	53	11466.0	3.8	**12.6073**	0.674	5.3	ug/L	398	Standard
	Mn	55	148817.3	1.1	**23.6010**	0.445	1.9	ug/L	824	Standard
	Co	59	983.4	6.2	**0.1209**	0.008	6.9	ug/L	167	Standard
	Ni	60	2065.8	1.2	**0.9146**	0.028	3.0	ug/L	391	Standard
	Cu	65	1462.4	3.6	**0.7074**	0.038	5.4	ug/L	147	Standard
	Zn	66	5466.7	1.4	**4.8393**	0.137	2.8	ug/L	184	Standard
>	**Ge**	72	419221.5	1.4				ug/L	422998	Standard
	As	75	2367.5	3.7	**2.1581**	0.105	4.9	ug/L	-58	Standard
	Se	82	365.0	1.8	**2.9356**	0.093	3.2	ug/L	15	Standard
	Se-1	77	808.7	4.7	**10.0971**	0.640	6.3	ug/L	58	Standard
>	**Ga**	71	143.3	13.2				mg/L	113	Standard
	Rb	85	26175.9	2.0				ug/L	27	Standard
	Y	89	361671.1	1.2				ug/L	383780	Standard
>	**Rh**	103	213.3	9.8				ug/L	18	Standard
	Mo	98	1040.0	4.6	**0.4022**	0.024	5.8	ug/L	31	Standard
	Ag	107	158.3	53.1	**0.0127**	0.013	102.5	ug/L	84	Standard
	Cd	111	47.4	66.8	**0.0193**	0.016	80.6	mg/L	4	Standard
	Cd	114	94.9	51.5	**0.0147**	0.010	66.9	ug/L	15	Standard
>	**In**	115	490470.0	1.1				ug/L	515400	Standard
	Sn	118	1866.8	6.1	**0.1579**	0.022	13.7	ug/L	1043	Standard
	Sb	123	465.7	10.2	**0.0906**	0.012	12.8	ug/L	227	Standard
	Ba	135	30934.5	0.2	**16.1485**	0.163	1.0	ug/L	31	Standard
	Ce	140	4832.4	4.6				ug/L	120	Standard
>	**Tb**	159	770228.8	1.2				ug/L	785817	Standard
	Ho	165	340.0	11.1				ug/L	7	Standard
	Tl	203	175.0	65.7	**0.0191**	0.015	78.4	ug/L	6	Standard
	Tl	205	101.7	35.6	**0.0084**	0.005	65.0	ug/L	8	Standard
	Pb	206	695.3	7.7	**0.0994**	0.012	11.7	ug/L	201	Standard
	Pb	207	573.7	9.4	**0.0844**	0.013	15.2	ug/L	177	Standard
	Pb	208	2479.7	4.3	**0.0937**	0.007	7.0	ug/L	722	Standard
	U	238	2046.1	2.3	**0.3064**	0.008	2.7	ug/L	8	Standard
>	**Bi**	209	428883.1	0.4				ug/L	444563	Standard

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Na	23	1.7	173.2	**20.0465**	34.713	173.2	mg/L	0	Standard
Mg	24	150731.2	2.0	**195.0958**	5.652	2.9	mg/L	38	Standard
K	39	521.7	8.4	**2.2264**	0.228	10.2	mg/L	33	Standard
Ca	43	201.7	22.2	**26.8813**	7.548	28.1	mg/L	48	Standard
Fe	54	463.1	19.2	**0.2687**	0.079	29.3	mg/L	131	Standard
Fe	57	513.3	4.8	**1.1577**	0.089	7.7	mg/L	153	Standard
> **Sc-1**	45	25920.5	1.3				mg/L	26715	Standard
Cl	35	220699.3	1.5				ug/L	102686	Standard
Kr	83	3.7	78.7				ug/L	2	Standard
Br	81	80942.4	3.0				ug/L	1897	Standard
P	31	24807.0	1.4				ug/L	18491	Standard
S	34	4594.0	1.3				ug/L	3734	Standard
Sr	88	515.0	18.4				ug/L	47	Standard
C	12	103.3	29.6				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	240.0	34.1				mg/L	23	Standard
Dy	164	434.4	3.9				mg/L	23	Standard
Ho-1	165	340.0	11.1				mg/L	7	Standard
Er	166	326.7	20.8				mg/L	13	Standard
I	127	55068.4	5.5				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.451	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.107	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.163
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.473
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606090715 WG573662-02
Sample Date/Time: Tuesday, July 05, 2016 18:23:19
Number of Replicates: 3
Autosampler Position: 243
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	62893.7	2.9				ug/L	59517	Standard
	Be	9	43.3	65.6	**0.0165**	0.032	193.9	ug/L	10	Standard
	Al	27	7764915.7	0.6	**48.3070**	1.286	2.7	ug/L	1872	Standard
	Sc	45	23049.2	2.0				ug/L	26715	Standard
	Ti	47	1380.1	5.3	**6.3788**	0.344	5.4	ug/L	54	Standard
	V	51	9561.6	3.4	**1.3332**	0.047	3.5	ug/L	1419	Standard
	Cr	52	13671.5	1.3	**1.2192**	0.035	2.9	ug/L	7059	Standard
	Cr	53	11104.1	3.5	**13.8471**	0.533	3.8	ug/L	398	Standard
	Mn	55	154818.7	1.1	**27.7974**	0.262	0.9	ug/L	824	Standard
	Co	59	1321.1	4.1	**0.1969**	0.009	4.5	ug/L	167	Standard
	Ni	60	2095.5	0.6	**1.0789**	0.010	0.9	ug/L	391	Standard
	Cu	65	1348.1	2.0	**0.7408**	0.016	2.2	ug/L	147	Standard
	Zn	66	2589.9	1.5	**2.5192**	0.033	1.3	ug/L	184	Standard
>	Ge	72	370541.2	0.3				ug/L	422998	Standard
	As	75	1349.2	0.3	**1.4092**	0.001	0.1	ug/L	-58	Standard
	Se	82	110.8	0.9	**0.8724**	0.009	1.1	ug/L	15	Standard
	Se-1	77	791.0	3.7	**11.2401**	0.461	4.1	ug/L	58	Standard
>	Ga	71	231.7	13.2				mg/L	113	Standard
	Rb	85	26610.0	1.3				ug/L	27	Standard
	Y	89	324852.1	2.7				ug/L	383780	Standard
>	Rh	103	235.0	9.3				ug/L	18	Standard
	Mo	98	929.9	5.3	**0.4027**	0.019	4.8	ug/L	31	Standard
	Ag	107	84.0	6.6	**0.0027**	0.001	32.3	ug/L	84	Standard
	Cd	111	20.7	32.8	**0.0073**	0.004	50.2	mg/L	4	Standard
	Cd	114	77.8	39.6	**0.0132**	0.007	54.0	ug/L	15	Standard
>	In	115	437805.2	0.8				ug/L	515400	Standard
	Sn	118	3435.4	4.2	**0.5177**	0.035	6.7	ug/L	1043	Standard
	Sb	123	329.3	14.4	**0.0683**	0.012	17.8	ug/L	227	Standard
	Ba	135	33531.4	0.7	**19.6146**	0.255	1.3	ug/L	31	Standard
	Ce	140	5174.2	1.7				ug/L	120	Standard
>	Tb	159	678806.2	1.5				ug/L	785817	Standard
	Ho	165	218.3	12.6				ug/L	7	Standard
	Tl	203	93.7	15.3	**0.0100**	0.002	21.3	ug/L	6	Standard
	Tl	205	63.3	4.6	**0.0037**	0.000	12.8	ug/L	8	Standard
	Pb	206	1260.7	1.3	**0.2480**	0.004	1.6	ug/L	201	Standard
	Pb	207	1080.4	4.2	**0.2304**	0.012	5.2	ug/L	177	Standard
	Pb	208	4347.6	1.7	**0.2302**	0.005	2.1	ug/L	722	Standard
	U	238	1812.1	4.7	**0.3031**	0.013	4.3	ug/L	8	Standard
>	Bi	209	383815.0	0.6				ug/L	444563	Standard

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Na	23	3.3	86.6	**44.7605**	38.760	86.6	mg/L	0	Standard
Mg	24	148739.8	0.1	**216.5230**	4.668	2.2	mg/L	38	Standard
K	39	435.0	13.9	**2.0787**	0.309	14.9	mg/L	33	Standard
Ca	43	173.3	16.4	**25.7181**	4.889	19.0	mg/L	48	Standard
Fe	54	614.9	6.9	**0.4575**	0.029	6.4	mg/L	131	Standard
Fe	57	578.3	9.5	**1.5962**	0.211	13.2	mg/L	153	Standard
> **Sc-1**	45	23049.2	2.0				mg/L	26715	Standard
Cl	35	211979.3	0.8				ug/L	102686	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	23027.5	1.6				ug/L	1897	Standard
P	31	23838.7	0.4				ug/L	18491	Standard
S	34	4467.3	5.2				ug/L	3734	Standard
Sr	88	506.7	6.3				ug/L	47	Standard
C	12	196.7	2.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	130.0	33.5				mg/L	23	Standard
Dy	164	292.2	12.6				mg/L	23	Standard
Ho-1	165	218.3	12.6				mg/L	7	Standard
Er	166	233.3	10.8				mg/L	13	Standard
I	127	71416.9	7.5				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.674	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		87.599	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		84.945
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		86.335
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606090717S WG573662-05
Sample Date/Time: Tuesday, July 05, 2016 18:26:31
Number of Replicates: 3
Autosampler Position: 244
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65685.4	1.8				ug/L	59517	Standard
	Be	9	45745.6	1.1	**47.6572**	1.371	2.9	ug/L	10	Standard
	Al	27	7763081.9	0.3	**46.2285**	0.797	1.7	ug/L	1872	Standard
	Sc	45	24312.8	0.2				ug/L	26715	Standard
	Ti	47	2754.3	0.6	**12.3499**	0.110	0.9	ug/L	54	Standard
	V	51	324382.5	1.2	**48.7110**	0.820	1.7	ug/L	1419	Standard
	Cr	52	312869.8	1.1	**46.8766**	0.509	1.1	ug/L	7059	Standard
	Cr	53	48420.6	1.9	**58.8023**	0.431	0.7	ug/L	398	Standard
	Mn	55	402985.8	0.1	**69.1228**	0.882	1.3	ug/L	824	Standard
	Co	59	290157.0	0.6	**46.4134**	0.408	0.9	ug/L	167	Standard
	Ni	60	78888.9	1.3	**45.6559**	0.433	0.9	ug/L	391	Standard
	Cu	65	78244.2	0.9	**45.2550**	1.013	2.2	ug/L	147	Standard
	Zn	66	53158.1	0.3	**52.2171**	0.862	1.7	ug/L	184	Standard
>	**Ge**	72	389009.1	1.4				ug/L	422998	Standard
	As	75	52463.4	1.3	**50.3385**	0.704	1.4	ug/L	-58	Standard
	Se	82	5142.1	1.8	**47.4924**	1.207	2.5	ug/L	15	Standard
	Se-1	77	4003.2	1.0	**56.7356**	0.210	0.4	ug/L	58	Standard
>	**Ga**	71	168.3	14.7				mg/L	113	Standard
	Rb	85	25786.9	3.8				ug/L	27	Standard
	Y	89	342356.0	2.4				ug/L	383780	Standard
>	**Rh**	103	188.3	12.3				ug/L	18	Standard
	Mo	98	1045.0	0.8	**0.4334**	0.000	0.1	ug/L	31	Standard
	Ag	107	259545.8	0.4	**43.3405**	0.270	0.6	ug/L	84	Standard
	Cd	111	87021.7	0.4	**45.9883**	0.495	1.1	mg/L	4	Standard
	Cd	114	214931.2	0.6	**46.8064**	0.169	0.4	ug/L	15	Standard
>	**In**	115	457893.4	0.7				ug/L	515400	Standard
	Sn	118	1358.4	8.3	**0.0832**	0.024	28.4	ug/L	1043	Standard
	Sb	123	208052.1	0.3	**51.1441**	0.465	0.9	ug/L	227	Standard
	Ba	135	111802.6	0.4	**62.5820**	0.649	1.0	ug/L	31	Standard
	Ce	140	4974.1	1.2				ug/L	120	Standard
>	**Tb**	159	720382.7	1.8				ug/L	785817	Standard
	Ho	165	296.7	11.5				ug/L	7	Standard
	Tl	203	343964.9	0.7	**47.6207**	0.345	0.7	ug/L	6	Standard
	Tl	205	299008.4	0.9	**47.5219**	0.720	1.5	ug/L	8	Standard
	Pb	206	222730.8	0.3	**49.5402**	0.841	1.7	ug/L	201	Standard
	Pb	207	194939.4	0.4	**47.9568**	0.840	1.8	ug/L	177	Standard
	Pb	208	803962.3	0.1	**49.2372**	0.720	1.5	ug/L	722	Standard
	U	238	312487.5	0.4	**50.3907**	0.927	1.8	ug/L	8	Standard
>	**Bi**	209	401505.3	1.4				ug/L	444563	Standard

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Na	23	3.3	86.6	**42.8632**	37.116	86.6	mg/L	0	Standard
Mg	24	149319.0	1.6	**206.0045**	2.894	1.4	mg/L	38	Standard
K	39	510.0	18.7	**2.3246**	0.464	20.0	mg/L	33	Standard
Ca	43	156.7	3.7	**21.2153**	1.057	5.0	mg/L	48	Standard
Fe	54	455.9	12.6	**0.2872**	0.050	17.5	mg/L	131	Standard
Fe	57	520.0	12.6	**1.2882**	0.221	17.2	mg/L	153	Standard
> **Sc-1**	45	24312.8	0.2				mg/L	26715	Standard
Cl	35	216160.4	0.4				ug/L	102686	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	22039.4	3.7				ug/L	1897	Standard
P	31	24142.6	1.9				ug/L	18491	Standard
S	34	4497.3	4.7				ug/L	3734	Standard
Sr	88	463.3	2.7				ug/L	47	Standard
C	12	106.7	28.6				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	110.0	32.8				mg/L	23	Standard
Dy	164	373.4	25.9				mg/L	23	Standard
Ho-1	165	296.7	11.5				mg/L	7	Standard
Er	166	346.7	7.3				mg/L	13	Standard
I	127	50729.9	5.3				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.365	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		91.965	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		88.842
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.315
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606090718S WG573662-07
Sample Date/Time: Tuesday, July 05, 2016 18:29:42
Number of Replicates: 3
Autosampler Position: 245
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	69177.6	1.4				ug/L	59517	Standard
	Be	9	46929.3	4.5	**46.4221**	2.493	5.4	ug/L	10	Standard
	Al	27	8132613.2	0.6	**45.9815**	0.738	1.6	ug/L	1872	Standard
	Sc	45	24039.1	1.4				ug/L	26715	Standard
	Ti	47	1100.7	3.9	**4.6868**	0.124	2.7	ug/L	54	Standard
	V	51	321140.4	0.6	**47.2715**	0.789	1.7	ug/L	1419	Standard
	Cr	52	313450.5	0.4	**46.0266**	0.822	1.8	ug/L	7059	Standard
	Cr	53	48286.9	2.9	**57.4741**	1.166	2.0	ug/L	398	Standard
	Mn	55	415707.7	0.5	**69.9013**	0.681	1.0	ug/L	824	Standard
	Co	59	292191.2	0.3	**45.8225**	0.797	1.7	ug/L	167	Standard
	Ni	60	79278.5	0.4	**44.9811**	0.790	1.8	ug/L	391	Standard
	Cu	65	78440.2	0.4	**44.4704**	0.592	1.3	ug/L	147	Standard
	Zn	66	50291.7	0.5	**48.4148**	0.485	1.0	ug/L	184	Standard
>	Ge	72	396819.2	1.4				ug/L	422998	Standard
	As	75	52474.4	1.3	**49.3680**	1.339	2.7	ug/L	-58	Standard
	Se	82	5147.1	1.3	**46.6031**	1.240	2.7	ug/L	15	Standard
	Se-1	77	4142.9	1.3	**57.5687**	0.141	0.2	ug/L	58	Standard
>	Ga	71	98.3	19.3				mg/L	113	Standard
	Rb	85	27182.7	2.3				ug/L	27	Standard
	Y	89	344887.8	0.4				ug/L	383780	Standard
>	Rh	103	231.7	30.6				ug/L	18	Standard
	Mo	98	725.8	4.3	**0.2908**	0.012	4.2	ug/L	31	Standard
	Ag	107	250602.2	0.9	**40.8298**	0.351	0.9	ug/L	84	Standard
	Cd	111	87621.3	0.4	**45.1808**	0.496	1.1	mg/L	4	Standard
	Cd	114	215615.2	1.0	**45.8178**	0.736	1.6	ug/L	15	Standard
>	In	115	469314.1	1.5				ug/L	515400	Standard
	Sn	118	943.4	6.1	**-0.0021**	0.010	472.1	ug/L	1043	Standard
	Sb	123	209597.2	0.4	**50.2760**	0.863	1.7	ug/L	227	Standard
	Ba	135	113632.9	0.5	**62.0619**	0.667	1.1	ug/L	31	Standard
	Ce	140	2095.1	7.2				ug/L	120	Standard
>	Tb	159	737670.0	1.1				ug/L	785817	Standard
	Ho	165	161.7	35.2				ug/L	7	Standard
	Tl	203	343354.1	1.0	**46.2542**	0.768	1.7	ug/L	6	Standard
	Tl	205	303156.3	0.9	**46.8769**	0.412	0.9	ug/L	8	Standard
	Pb	206	224361.7	0.9	**48.5480**	0.157	0.3	ug/L	201	Standard
	Pb	207	195041.3	0.3	**46.6807**	0.408	0.9	ug/L	177	Standard
	Pb	208	807407.4	0.6	**48.1087**	0.463	1.0	ug/L	722	Standard
	U	238	313931.9	0.3	**49.2512**	0.346	0.7	ug/L	8	Standard
>	Bi	209	412635.9	0.8				ug/L	444563	Standard

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Na	23	5.0	173.2	**64.8458**	112.308	173.2	mg/L	0	Standard
Mg	24	154594.8	1.8	**215.7208**	2.637	1.2	mg/L	38	Standard
K	39	481.7	8.6	**2.2161**	0.232	10.5	mg/L	33	Standard
Ca	43	198.3	18.6	**28.8774**	6.993	24.2	mg/L	48	Standard
Fe	54	507.9	9.8	**0.3384**	0.044	12.9	mg/L	131	Standard
Fe	57	503.3	14.7	**1.2503**	0.243	19.4	mg/L	153	Standard
> **Sc-1**	45	24039.1	1.4				mg/L	26715	Standard
Cl	35	220684.2	0.3				ug/L	102686	Standard
Kr	83	2.7	108.3				ug/L	2	Standard
Br	81	23141.0	6.1				ug/L	1897	Standard
P	31	25581.6	4.5				ug/L	18491	Standard
S	34	4607.4	4.4				ug/L	3734	Standard
Sr	88	546.7	7.8				ug/L	47	Standard
C	12	136.7	16.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	100.0	62.5				mg/L	23	Standard
Dy	164	175.4	14.2				mg/L	23	Standard
Ho-1	165	161.7	35.2				mg/L	7	Standard
Er	166	166.7	3.5				mg/L	13	Standard
I	127	51280.2	6.5				mg/L	12398	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		116.232	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		93.811	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.058
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.818
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606090719SD WG573662-06
Sample Date/Time: Tuesday, July 05, 2016 18:32:54
Number of Replicates: 3
Autosampler Position: 246
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65362.4	1.8				ug/L	59517	Standard
	Be	9	46981.1	3.6	**49.1596**	0.915	1.9	ug/L	10	Standard
	Al	27	7677607.1	1.4	**45.9464**	1.074	2.3	ug/L	1872	Standard
	Sc	45	23398.1	3.0				ug/L	26715	Standard
	Ti	47	2684.9	1.4	**12.3400**	0.287	2.3	ug/L	54	Standard
	V	51	324120.2	1.0	**49.8902**	0.900	1.8	ug/L	1419	Standard
	Cr	52	314928.3	0.3	**48.3958**	0.760	1.6	ug/L	7059	Standard
	Cr	53	47469.3	1.6	**59.0887**	0.609	1.0	ug/L	398	Standard
	Mn	55	397979.9	0.7	**69.9725**	1.444	2.1	ug/L	824	Standard
	Co	59	287934.9	0.5	**47.2091**	0.739	1.6	ug/L	167	Standard
	Ni	60	78820.2	0.9	**46.7648**	0.988	2.1	ug/L	391	Standard
	Cu	65	78063.6	0.6	**46.2735**	0.643	1.4	ug/L	147	Standard
	Zn	66	52711.9	0.8	**53.0690**	0.655	1.2	ug/L	184	Standard
>	Ge	72	379551.5	1.4				ug/L	422998	Standard
	As	75	51651.5	1.3	**50.7912**	0.223	0.4	ug/L	-58	Standard
	Se	82	5118.6	1.5	**48.4495**	0.354	0.7	ug/L	15	Standard
	Se-1	77	4045.9	2.3	**58.7880**	0.674	1.1	ug/L	58	Standard
>	Ga	71	136.7	11.2				mg/L	113	Standard
	Rb	85	24873.7	0.1				ug/L	27	Standard
	Y	89	325494.9	1.9				ug/L	383780	Standard
>	Rh	103	265.0	14.7				ug/L	18	Standard
	Mo	98	1341.9	3.4	**0.5704**	0.028	4.9	ug/L	31	Standard
	Ag	107	259760.8	0.7	**44.2201**	0.291	0.7	ug/L	84	Standard
	Cd	111	87642.1	0.5	**47.2179**	0.615	1.3	mg/L	4	Standard
	Cd	114	214231.9	1.9	**47.5640**	1.042	2.2	ug/L	15	Standard
>	In	115	449175.0	1.4				ug/L	515400	Standard
	Sn	118	1286.7	0.6	**0.0741**	0.003	4.2	ug/L	1043	Standard
	Sb	123	207685.0	0.9	**52.0459**	0.454	0.9	ug/L	227	Standard
	Ba	135	111945.0	0.9	**63.8780**	0.307	0.5	ug/L	31	Standard
	Ce	140	4579.0	5.0				ug/L	120	Standard
>	Tb	159	706063.5	1.3				ug/L	785817	Standard
	Ho	165	243.3	8.3				ug/L	7	Standard
	Tl	203	343137.5	0.7	**48.5512**	0.333	0.7	ug/L	6	Standard
	Tl	205	301180.9	1.2	**48.9237**	1.076	2.2	ug/L	8	Standard
	Pb	206	224481.1	0.6	**51.0265**	0.632	1.2	ug/L	201	Standard
	Pb	207	194714.9	0.4	**48.9545**	0.677	1.4	ug/L	177	Standard
	Pb	208	810209.9	1.0	**50.7149**	1.053	2.1	ug/L	722	Standard
	U	238	314954.4	1.0	**51.9053**	1.030	2.0	ug/L	8	Standard
>	Bi	209	392857.5	1.3				ug/L	444563	Standard

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Na	23	1.7	173.2	**21.8773**	37.884	173.2	mg/L	0	Standard
Mg	24	148191.3	1.3	**212.6371**	9.409	4.4	mg/L	38	Standard
K	39	471.7	2.2	**2.2301**	0.102	4.6	mg/L	33	Standard
Ca	43	146.7	17.5	**20.5821**	5.462	26.5	mg/L	48	Standard
Fe	54	483.1	20.5	**0.3283**	0.091	27.7	mg/L	131	Standard
Fe	57	470.0	5.6	**1.1804**	0.068	5.7	mg/L	153	Standard
> **Sc-1**	45	23398.1	3.0				mg/L	26715	Standard
Cl	35	215013.0	1.0				ug/L	102686	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	21515.3	6.2				ug/L	1897	Standard
P	31	23848.8	2.0				ug/L	18491	Standard
S	34	4570.7	2.5				ug/L	3734	Standard
Sr	88	528.3	9.1				ug/L	47	Standard
C	12	160.0	22.5				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	70.0	51.5				mg/L	23	Standard
Dy	164	440.6	7.3				mg/L	23	Standard
Ho-1	165	243.3	8.3				mg/L	7	Standard
Er	166	266.7	13.2				mg/L	13	Standard
I	127	50484.2	6.4				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.822	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		89.729	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		87.151
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		88.369
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, July 05, 2016 18:36:07
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63164.8	2.2				ug/L	59517	Standard
	Be	9	49507.5	2.5	**53.6302**	1.436	2.7	ug/L	10	Standard
	Al	27	7385594.5	0.2	**45.7427**	1.103	2.4	ug/L	1872	Standard
	Sc	45	23012.5	2.5				ug/L	26715	Standard
	Ti	47	21953.2	0.9	**99.7998**	2.845	2.9	ug/L	54	Standard
	V	51	336016.3	0.5	**50.2733**	0.749	1.5	ug/L	1419	Standard
	Cr	52	339545.8	1.6	**50.7771**	1.837	3.6	ug/L	7059	Standard
	Cr	53	42141.9	2.6	**50.9574**	2.283	4.5	ug/L	398	Standard
	Mn	55	292841.4	1.1	**50.0057**	1.003	2.0	ug/L	824	Standard
	Co	59	328231.1	1.5	**52.3221**	1.722	3.3	ug/L	167	Standard
	Ni	60	88852.8	1.4	**51.2672**	1.623	3.2	ug/L	391	Standard
	Cu	65	88530.9	0.9	**51.0235**	1.317	2.6	ug/L	147	Standard
	Zn	66	54079.3	1.1	**52.9301**	1.480	2.8	ug/L	184	Standard
>	Ge	72	390515.5	2.0				ug/L	422998	Standard
	As	75	53554.9	1.6	**51.2063**	1.792	3.5	ug/L	-58	Standard
	Se	82	5569.3	0.3	**51.2611**	1.064	2.1	ug/L	15	Standard
	Se-1	77	3785.1	0.8	**53.4106**	1.070	2.0	ug/L	58	Standard
>	Ga	71	38.3	7.5				mg/L	113	Standard
	Rb	85	793.4	7.0				ug/L	27	Standard
	Y	89	339554.5	2.7				ug/L	383780	Standard
>	Rh	103	76.7	21.0				ug/L	18	Standard
	Mo	98	253287.4	1.3	**105.0170**	2.606	2.5	ug/L	31	Standard
	Ag	107	310815.0	0.4	**50.8376**	0.842	1.7	ug/L	84	Standard
	Cd	111	99324.7	1.3	**51.4144**	1.291	2.5	mg/L	4	Standard
	Cd	114	242796.1	2.4	**51.7992**	1.938	3.7	ug/L	15	Standard
>	In	115	467556.7	1.4				ug/L	515400	Standard
	Sn	118	269986.6	2.1	**51.2371**	1.812	3.5	ug/L	1043	Standard
	Sb	123	221627.3	1.4	**53.3618**	1.137	2.1	ug/L	227	Standard
	Ba	135	91273.8	0.3	**50.0354**	0.820	1.6	ug/L	31	Standard
	Ce	140	95.0	5.3				ug/L	120	Standard
>	Tb	159	724368.0	2.2				ug/L	785817	Standard
	Ho	165	1.7	173.2				ug/L	7	Standard
	Tl	203	390449.0	0.5	**52.0724**	1.455	2.8	ug/L	6	Standard
	Tl	205	347432.9	2.3	**53.1998**	2.291	4.3	ug/L	8	Standard
	Pb	206	248216.7	0.6	**53.1743**	1.094	2.1	ug/L	201	Standard
	Pb	207	226475.4	0.6	**53.6677**	1.356	2.5	ug/L	177	Standard
	Pb	208	925407.0	0.8	**54.5986**	1.691	3.1	ug/L	722	Standard
	U	238	350966.1	0.8	**54.5145**	1.642	3.0	ug/L	8	Standard
>	Bi	209	416954.8	2.3				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	3978.9	0.8	**5.7696**	0.167	2.9	mg/L	38	Standard
K	39	703.3	2.9	**3.4478**	0.174	5.1	mg/L	33	Standard
Ca	43	46.7	16.4	**2.6352**	1.274	48.4	mg/L	48	Standard
Fe	54	5751.7	3.1	**5.2664**	0.143	2.7	mg/L	131	Standard
Fe	57	1775.1	1.6	**5.9062**	0.214	3.6	mg/L	153	Standard
Sc-1	45	23012.5	2.5				mg/L	26715	Standard
Cl	35	131265.7	2.1				ug/L	102686	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	1803.4	13.8				ug/L	1897	Standard
P	31	22268.0	3.2				ug/L	18491	Standard
S	34	4509.0	3.4				ug/L	3734	Standard
Sr	88	68.3	15.2				ug/L	47	Standard
C	12	53.3	57.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	53.3	39.0				mg/L	23	Standard
Dy	164	6.3	86.9				mg/L	23	Standard
Ho-1	165	1.7	173.2				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	13	Standard
I	127	9496.3	9.9				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	107.260		
Al	27	91.485		
Sc	45			
Ti	47	99.800		
V	51	100.547		
Cr	52	101.554		
Cr	53			
Mn	55	100.011		
Co	59	104.644		
Ni	60	102.534		
Cu	65	102.047		
Zn	66	105.860		
Ge	72		92.321	
As	75	102.413		
Se	82	102.522		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	105.017		
Ag	107	101.675		
Cd	111	102.829		
Cd	114			
> In	115			90.717
Sn	118	102.474		
Sb	123	106.724		
Ba	135	100.071		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	104.145		
Tl	205			
Pb	206			
Pb	207			
Pb	208	109.197		
U	238	109.029		
> Bi	209			93.790
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, July 05, 2016 18:39:19
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63280.2	1.3				ug/L	59517	Standard
	Be	9	45.0	29.4	**0.0175**	0.014	80.4	ug/L	10	Standard
	Al	27	3657.2	66.8	**0.0101**	0.015	146.5	ug/L	1872	Standard
	Sc	45	22752.1	3.4				ug/L	26715	Standard
	Ti	47	27.3	23.8	**-0.1213**	0.029	24.0	ug/L	54	Standard
	V	51	1070.4	7.1	**-0.0173**	0.013	77.2	ug/L	1419	Standard
	Cr	52	5720.1	1.0	**-0.0973**	0.008	7.9	ug/L	7059	Standard
	Cr	53	768.4	15.5	**0.5324**	0.133	25.0	ug/L	398	Standard
	Mn	55	621.7	11.6	**-0.0237**	0.012	48.7	ug/L	824	Standard
	Co	59	261.3	23.8	**0.0169**	0.010	56.8	ug/L	167	Standard
	Ni	60	279.7	1.6	**-0.0366**	0.002	5.0	ug/L	391	Standard
	Cu	65	235.7	8.3	**0.0580**	0.010	16.4	ug/L	147	Standard
	Zn	66	254.3	7.6	**0.0922**	0.015	16.1	ug/L	184	Standard
>	Ge	72	387356.7	1.8				ug/L	422998	Standard
	As	75	-29.5	77.2	**0.0233**	0.022	92.9	ug/L	-58	Standard
	Se	82	20.0	13.1	**-0.0196**	0.028	142.8	ug/L	15	Standard
	Se-1	77	69.7	10.2	**0.3339**	0.085	25.4	ug/L	58	Standard
>	Ga	71	31.7	48.2				mg/L	113	Standard
	Rb	85	26.7	60.3				ug/L	27	Standard
	Y	89	332558.9	1.5				ug/L	383780	Standard
>	Rh	103	21.7	26.6				ug/L	18	Standard
	Mo	98	188.7	8.5	**0.0688**	0.007	9.8	ug/L	31	Standard
	Ag	107	138.7	25.3	**0.0106**	0.006	54.2	ug/L	84	Standard
	Cd	111	23.7	52.6	**0.0080**	0.006	79.3	mg/L	4	Standard
	Cd	114	69.4	82.7	**0.0101**	0.012	119.5	ug/L	15	Standard
>	In	115	470558.3	1.2				ug/L	515400	Standard
	Sn	118	953.4	23.2	**-0.0007**	0.041	5674.4	ug/L	1043	Standard
	Sb	123	763.8	34.6	**0.1664**	0.063	37.7	ug/L	227	Standard
	Ba	135	53.7	49.2	**0.0055**	0.014	259.6	ug/L	31	Standard
	Ce	140	21.7	58.1				ug/L	120	Standard
>	Tb	159	708664.5	1.9				ug/L	785817	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	105.7	17.8	**0.0102**	0.002	23.7	ug/L	6	Standard
	Tl	205	116.7	55.1	**0.0107**	0.010	89.0	ug/L	8	Standard
	Pb	206	262.3	14.3	**0.0097**	0.008	79.6	ug/L	201	Standard
	Pb	207	226.7	14.1	**0.0050**	0.007	147.4	ug/L	177	Standard
	Pb	208	1002.0	22.1	**0.0095**	0.013	131.9	ug/L	722	Standard
	U	238	118.3	58.6	**0.0156**	0.010	67.3	ug/L	8	Standard
>	Bi	209	423989.9	1.1				ug/L	444563	Standard

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Na	23	1.7	173.2	**22.5106**	38.981	173.2	mg/L	0	Standard
Mg	24	125.0	6.9	**0.1507**	0.011	7.3	mg/L	38	Standard
K	39	18.3	31.5	**-0.0343**	0.034	98.1	mg/L	33	Standard
Ca	43	16.7	69.3	**-2.7476**	2.287	83.2	mg/L	48	Standard
Fe	54	144.2	9.2	**0.0197**	0.008	41.4	mg/L	131	Standard
Fe	57	228.3	3.3	**0.3488**	0.008	2.4	mg/L	153	Standard
Sc-1	45	22752.1	3.4				mg/L	26715	Standard
Cl	35	129815.8	1.4				ug/L	102686	Standard
Kr	83	4.0	43.3				ug/L	2	Standard
Br	81	1593.4	12.2				ug/L	1897	Standard
P	31	21201.5	1.6				ug/L	18491	Standard
S	34	4475.7	4.5				ug/L	3734	Standard
Sr	88	58.3	13.1				ug/L	47	Standard
C	12	60.0	44.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	88.8				mg/L	23	Standard
Dy	164	9.7	108.3				mg/L	23	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	13	Standard
I	127	6646.5	3.4				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		91.574	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.300
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.372
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606090720SD WG573662-08
Sample Date/Time: Tuesday, July 05, 2016 18:42:32
Number of Replicates: 3
Autosampler Position: 247
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68070.9	1.3				ug/L	59517	Standard
	Be	9	44635.7	2.8	**44.8563**	1.247	2.8	ug/L	10	Standard
	Al	27	7670947.2	1.1	**44.0705**	0.255	0.6	ug/L	1872	Standard
	Sc	45	23900.5	2.3				ug/L	26715	Standard
	Ti	47	1211.4	1.4	**5.1641**	0.130	2.5	ug/L	54	Standard
	V	51	311777.4	1.2	**45.7046**	0.396	0.9	ug/L	1419	Standard
	Cr	52	305681.1	0.4	**44.6808**	0.463	1.0	ug/L	7059	Standard
	Cr	53	46023.1	0.9	**54.5605**	1.082	2.0	ug/L	398	Standard
	Mn	55	405260.2	1.6	**67.8694**	0.333	0.5	ug/L	824	Standard
	Co	59	284761.9	1.1	**44.4776**	0.097	0.2	ug/L	167	Standard
	Ni	60	77249.8	0.3	**43.6533**	0.664	1.5	ug/L	391	Standard
	Cu	65	76645.0	0.5	**43.2826**	0.644	1.5	ug/L	147	Standard
	Zn	66	49191.1	1.2	**47.1734**	1.144	2.4	ug/L	184	Standard
>	Ge	72	398357.6	1.3				ug/L	422998	Standard
	As	75	50828.8	0.2	**47.6289**	0.505	1.1	ug/L	-58	Standard
	Se	82	5048.4	1.2	**45.5197**	0.571	1.3	ug/L	15	Standard
	Se-1	77	3987.2	1.1	**55.1723**	1.228	2.2	ug/L	58	Standard
>	Ga	71	136.7	15.2				mg/L	113	Standard
	Rb	85	25374.6	1.9				ug/L	27	Standard
	Y	89	342654.1	3.4				ug/L	383780	Standard
>	Rh	103	195.0	5.1				ug/L	18	Standard
	Mo	98	798.4	5.9	**0.3219**	0.014	4.4	ug/L	31	Standard
	Ag	107	256606.1	0.5	**41.9609**	0.601	1.4	ug/L	84	Standard
	Cd	111	86461.2	0.3	**44.7429**	0.557	1.2	mg/L	4	Standard
	Cd	114	206117.6	0.7	**43.9573**	0.720	1.6	ug/L	15	Standard
>	In	115	467643.5	1.6				ug/L	515400	Standard
	Sn	118	1133.4	4.0	**0.0349**	0.012	33.5	ug/L	1043	Standard
	Sb	123	205271.1	0.5	**49.4120**	0.602	1.2	ug/L	227	Standard
	Ba	135	110586.4	0.1	**60.6176**	0.999	1.6	ug/L	31	Standard
	Ce	140	3960.5	5.8				ug/L	120	Standard
>	Tb	159	734857.3	0.6				ug/L	785817	Standard
	Ho	165	195.0	5.1				ug/L	7	Standard
	Tl	203	334400.3	0.4	**45.2344**	0.566	1.3	ug/L	6	Standard
	Tl	205	295733.4	1.0	**45.9174**	0.175	0.4	ug/L	8	Standard
	Pb	206	220983.5	0.1	**48.0173**	0.426	0.9	ug/L	201	Standard
	Pb	207	192607.8	0.5	**46.2897**	0.521	1.1	ug/L	177	Standard
	Pb	208	795444.4	0.5	**47.5930**	0.584	1.2	ug/L	722	Standard
	U	238	309842.7	0.1	**48.8117**	0.401	0.8	ug/L	8	Standard
>	Bi	209	410935.4	1.0				ug/L	444563	Standard

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Na	23	3.3	86.6	**43.3614**	37.569	86.6	mg/L	0	Standard
Mg	24	148395.0	1.7	**208.3279**	5.309	2.5	mg/L	38	Standard
K	39	498.3	6.1	**2.3096**	0.149	6.5	mg/L	33	Standard
Ca	43	143.3	38.4	**19.4664**	10.114	52.0	mg/L	48	Standard
Fe	54	545.3	8.7	**0.3750**	0.046	12.3	mg/L	131	Standard
Fe	57	513.3	5.4	**1.2978**	0.133	10.2	mg/L	153	Standard
Sc-1	45	23900.5	2.3				mg/L	26715	Standard
Cl	35	209656.6	0.4				ug/L	102686	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	23174.5	8.0				ug/L	1897	Standard
P	31	24750.2	4.7				ug/L	18491	Standard
S	34	4427.3	2.9				ug/L	3734	Standard
Sr	88	483.3	2.6				ug/L	47	Standard
C	12	110.0	24.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	27.0				mg/L	23	Standard
Dy	164	293.3	13.6				mg/L	23	Standard
Ho-1	165	195.0	5.1				mg/L	7	Standard
Er	166	210.0	12.6				mg/L	13	Standard
I	127	54247.3	7.6				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.373	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.175	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.734
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.436
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606090721
Sample Date/Time: Tuesday, July 05, 2016 18:45:43
Number of Replicates: 3
Autosampler Position: 248
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71160.1	1.1				ug/L	59517	Standard
	Be	9	28.3	50.9	**-0.0038**	0.014	368.2	ug/L	10	Standard
	Al	27	36542612.2	0.2	**200.8792**	1.721	0.9	ug/L	1872	Standard
	Sc	45	24958.9	2.6				ug/L	26715	Standard
	Ti	47	173.0	7.1	**0.5156**	0.069	13.5	ug/L	54	Standard
	V	51	2209.4	11.7	**0.1415**	0.043	30.3	ug/L	1419	Standard
	Cr	52	9652.7	1.6	**0.4449**	0.006	1.4	ug/L	7059	Standard
	Cr	53	7558.6	5.2	**8.4824**	0.292	3.4	ug/L	398	Standard
	Mn	55	91569.5	0.1	**15.0167**	0.323	2.2	ug/L	824	Standard
	Co	59	1483.4	7.0	**0.2037**	0.020	10.0	ug/L	167	Standard
	Ni	60	2273.5	0.7	**1.0722**	0.017	1.6	ug/L	391	Standard
	Cu	65	964.4	2.3	**0.4589**	0.023	5.0	ug/L	147	Standard
	Zn	66	20715.5	0.9	**19.4854**	0.304	1.6	ug/L	184	Standard
>	**Ge**	72	404195.4	2.0				ug/L	422998	Standard
	As	75	70264.9	0.5	**64.8847**	1.430	2.2	ug/L	-58	Standard
	Se	82	154.9	7.2	**1.1760**	0.076	6.4	ug/L	15	Standard
	Se-1	77	506.7	1.5	**6.3253**	0.144	2.3	ug/L	58	Standard
>	**Ga**	71	95.0	10.5				mg/L	113	Standard
	Rb	85	6216.3	1.4				ug/L	27	Standard
	Y	89	346807.1	2.2				ug/L	383780	Standard
>	**Rh**	103	461.7	8.8				ug/L	18	Standard
	Mo	98	2507.8	3.0	**1.0026**	0.042	4.2	ug/L	31	Standard
	Ag	107	119.7	22.9	**0.0071**	0.005	66.6	ug/L	84	Standard
	Cd	111	20.3	54.3	**0.0061**	0.006	92.3	mg/L	4	Standard
	Cd	114	53.3	40.9	**0.0065**	0.005	72.0	ug/L	15	Standard
>	**In**	115	480716.5	1.7				ug/L	515400	Standard
	Sn	118	870.0	9.0	**-0.0200**	0.012	59.5	ug/L	1043	Standard
	Sb	123	541.8	24.8	**0.1103**	0.030	27.2	ug/L	227	Standard
	Ba	135	34487.9	0.3	**18.3737**	0.272	1.5	ug/L	31	Standard
	Ce	140	468.3	10.7				ug/L	120	Standard
>	**Tb**	159	750745.5	2.8				ug/L	785817	Standard
	Ho	165	38.3	32.8				ug/L	7	Standard
	Tl	203	117.0	17.8	**0.0118**	0.003	27.0	ug/L	6	Standard
	Tl	205	113.3	20.4	**0.0103**	0.004	38.6	ug/L	8	Standard
	Pb	206	564.7	7.6	**0.0735**	0.012	16.8	ug/L	201	Standard
	Pb	207	444.0	9.2	**0.0557**	0.013	22.4	ug/L	177	Standard
	Pb	208	1939.7	4.2	**0.0640**	0.008	11.8	ug/L	722	Standard
	U	238	6045.9	1.3	**0.9199**	0.029	3.2	ug/L	8	Standard
>	**Bi**	209	424556.3	2.8				ug/L	444563	Standard

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Na	23	1.7	173.2	**21.5560**	37.327	173.2	mg/L	0	Standard
Mg	24	47763.5	1.7	**64.2167**	2.789	4.3	mg/L	38	Standard
K	39	311.7	19.3	**1.3364**	0.322	24.1	mg/L	33	Standard
Ca	43	233.3	11.8	**33.4007**	4.121	12.3	mg/L	48	Standard
Fe	54	1753.0	4.7	**1.3977**	0.110	7.8	mg/L	131	Standard
Fe	57	810.0	20.1	**2.2150**	0.618	27.9	mg/L	153	Standard
> **Sc-1**	45	24958.9	2.6				mg/L	26715	Standard
Cl	35	195031.9	0.5				ug/L	102686	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	31957.0	2.3				ug/L	1897	Standard
P	31	25276.1	4.4				ug/L	18491	Standard
S	34	4530.7	3.8				ug/L	3734	Standard
Sr	88	1910.1	3.9				ug/L	47	Standard
C	12	93.3	52.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	63.3	9.1				mg/L	23	Standard
Dy	164	40.0	82.1				mg/L	23	Standard
Ho-1	165	38.3	32.8				mg/L	7	Standard
Er	166	70.0	37.8				mg/L	13	Standard
I	127	252947.4	6.1				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.563	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.555	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.271
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.500
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606090722
Sample Date/Time: Tuesday, July 05, 2016 18:48:55
Number of Replicates: 3
Autosampler Position: 249
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71307.4	1.3				ug/L	59517	Standard
	Be	9	26.7	21.7	**-0.0056**	0.005	94.8	ug/L	10	Standard
	Al	27	37163342.1	0.9	**203.8654**	1.006	0.5	ug/L	1872	Standard
	Sc	45	24888.8	2.5				ug/L	26715	Standard
	Ti	47	152.0	4.0	**0.4222**	0.031	7.4	ug/L	54	Standard
	V	51	1996.4	7.1	**0.1099**	0.018	16.6	ug/L	1419	Standard
	Cr	52	8984.3	1.1	**0.3460**	0.006	1.8	ug/L	7059	Standard
	Cr	53	8148.9	4.6	**9.1814**	0.536	5.8	ug/L	398	Standard
	Mn	55	88370.0	0.6	**14.4795**	0.123	0.8	ug/L	824	Standard
	Co	59	1397.4	2.1	**0.1901**	0.003	1.7	ug/L	167	Standard
	Ni	60	2238.5	2.1	**1.0522**	0.037	3.5	ug/L	391	Standard
	Cu	65	912.7	3.7	**0.4297**	0.018	4.1	ug/L	147	Standard
	Zn	66	3137.3	0.7	**2.8147**	0.049	1.8	ug/L	184	Standard
>	**Ge**	72	404316.9	1.0				ug/L	422998	Standard
	As	75	76260.2	0.7	**70.3785**	0.703	1.0	ug/L	-58	Standard
	Se	82	160.2	7.2	**1.2237**	0.104	8.5	ug/L	15	Standard
	Se-1	77	506.7	2.7	**6.3235**	0.254	4.0	ug/L	58	Standard
>	**Ga**	71	41.7	18.3				mg/L	113	Standard
	Rb	85	5846.1	1.4				ug/L	27	Standard
	Y	89	344889.7	1.0				ug/L	383780	Standard
>	**Rh**	103	506.7	9.0				ug/L	18	Standard
	Mo	98	2572.5	2.6	**1.0319**	0.026	2.5	ug/L	31	Standard
	Ag	107	86.7	8.7	**0.0018**	0.001	66.0	ug/L	84	Standard
	Cd	111	8.9	39.3	**0.0004**	0.002	492.7	mg/L	4	Standard
	Cd	114	20.3	45.3	**-0.0003**	0.002	575.2	ug/L	15	Standard
>	**In**	115	479091.4	0.6				ug/L	515400	Standard
	Sn	118	733.4	2.8	**-0.0447**	0.004	9.2	ug/L	1043	Standard
	Sb	123	365.9	30.8	**0.0697**	0.027	38.5	ug/L	227	Standard
	Ba	135	34539.3	0.8	**18.4616**	0.260	1.4	ug/L	31	Standard
	Ce	140	165.0	16.9				ug/L	120	Standard
>	**Tb**	159	750465.6	0.9				ug/L	785817	Standard
	Ho	165	33.3	22.9				ug/L	7	Standard
	Tl	203	74.7	21.8	**0.0062**	0.002	34.0	ug/L	6	Standard
	Tl	205	58.3	50.2	**0.0021**	0.004	216.3	ug/L	8	Standard
	Pb	206	252.0	11.1	**0.0079**	0.006	70.3	ug/L	201	Standard
	Pb	207	231.7	2.8	**0.0065**	0.001	19.9	ug/L	177	Standard
	Pb	208	977.7	2.0	**0.0085**	0.001	11.4	ug/L	722	Standard
	U	238	5851.1	0.2	**0.8964**	0.006	0.6	ug/L	8	Standard
>	**Bi**	209	421392.1	0.8				ug/L	444563	Standard

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Na	23	5.0	173.2	**61.2492**	106.078	173.2	mg/L	0	Standard
Mg	24	48969.0	0.5	**66.0017**	1.683	2.5	mg/L	38	Standard
K	39	346.7	8.2	**1.4989**	0.113	7.6	mg/L	33	Standard
Ca	43	271.7	8.3	**39.9948**	3.190	8.0	mg/L	48	Standard
Fe	54	1775.5	5.6	**1.4201**	0.092	6.4	mg/L	131	Standard
Fe	57	1006.7	3.7	**2.8654**	0.040	1.4	mg/L	153	Standard
> **Sc-1**	45	24888.8	2.5				mg/L	26715	Standard
Cl	35	198974.0	0.3				ug/L	102686	Standard
Kr	83	3.3	34.6				ug/L	2	Standard
Br	81	34148.5	3.2				ug/L	1897	Standard
P	31	25691.8	2.1				ug/L	18491	Standard
S	34	4387.3	1.9				ug/L	3734	Standard
Sr	88	1986.8	2.9				ug/L	47	Standard
C	12	100.0	26.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	53.3	57.3				mg/L	23	Standard
Dy	164	67.6	42.3				mg/L	23	Standard
Ho-1	165	33.3	22.9				mg/L	7	Standard
Er	166	50.0	69.3				mg/L	13	Standard
I	127	264900.4	7.3				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.811	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.584	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		92.955
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.788
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606112801
Sample Date/Time: Tuesday, July 05, 2016 18:52:06
Number of Replicates: 3
Autosampler Position: 250
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68015.7	2.3				ug/L	59517	Standard
	Be	9	241.7	6.3	**0.2121**	0.014	6.5	ug/L	10	Standard
	Al	27	16250624.5	1.8	**93.4593**	1.014	1.1	ug/L	1872	Standard
	Sc	45	26524.9	1.2				ug/L	26715	Standard
	Ti	47	24427.3	1.0	**107.5447**	0.931	0.9	ug/L	54	Standard
	V	51	42915.2	0.4	**6.0611**	0.025	0.4	ug/L	1419	Standard
	Cr	52	31164.7	0.9	**3.6231**	0.036	1.0	ug/L	7059	Standard
	Cr	53	12400.1	2.5	**14.2227**	0.390	2.7	ug/L	398	Standard
	Mn	55	7470659.3	0.4	**1238.5359**	4.709	0.4	ug/L	824	Standard
	Co	59	24406.3	1.7	**3.7438**	0.071	1.9	ug/L	167	Standard
	Ni	60	8254.6	0.3	**4.4298**	0.026	0.6	ug/L	391	Standard
	Cu	65	10453.3	1.0	**5.7640**	0.068	1.2	ug/L	147	Standard
	Zn	66	24877.1	1.4	**23.4886**	0.319	1.4	ug/L	184	Standard
>	Ge	72	403151.8	0.3				ug/L	422998	Standard
	As	75	487.6	14.7	**0.5028**	0.068	13.4	ug/L	-58	Standard
	Se	82	61.5	13.5	**0.3444**	0.074	21.3	ug/L	15	Standard
	Se-1	77	681.7	2.9	**8.7640**	0.304	3.5	ug/L	58	Standard
>	Ga	71	4062.2	1.0				mg/L	113	Standard
	Rb	85	47561.2	0.3				ug/L	27	Standard
	Y	89	465027.3	1.1				ug/L	383780	Standard
>	Rh	103	60.0	22.0				ug/L	18	Standard
	Mo	98	302.6	6.5	**0.1133**	0.007	6.5	ug/L	31	Standard
	Ag	107	142.3	4.8	**0.0107**	0.001	10.9	ug/L	84	Standard
	Cd	111	280.5	5.1	**0.1373**	0.006	4.6	mg/L	4	Standard
	Cd	114	622.2	4.4	**0.1247**	0.006	4.5	ug/L	15	Standard
>	In	115	479859.4	0.6				ug/L	515400	Standard
	Sn	118	1473.4	6.6	**0.0923**	0.016	17.7	ug/L	1043	Standard
	Sb	123	765.9	10.9	**0.1633**	0.019	11.6	ug/L	227	Standard
	Ba	135	70429.6	0.4	**37.6079**	0.149	0.4	ug/L	31	Standard
	Ce	140	392211.6	0.5				ug/L	120	Standard
>	Tb	159	760784.6	0.7				ug/L	785817	Standard
	Ho	165	9402.9	3.3				ug/L	7	Standard
	Tl	203	291.3	9.0	**0.0345**	0.003	9.7	ug/L	6	Standard
	Tl	205	296.7	25.9	**0.0378**	0.012	31.0	ug/L	8	Standard
	Pb	206	10986.0	0.6	**2.2646**	0.019	0.8	ug/L	201	Standard
	Pb	207	9048.0	0.7	**2.0567**	0.018	0.9	ug/L	177	Standard
	Pb	208	39154.1	0.9	**2.2186**	0.021	0.9	ug/L	722	Standard
	U	238	2331.2	1.3	**0.3526**	0.004	1.1	ug/L	8	Standard
>	Bi	209	425015.3	0.3				ug/L	444563	Standard

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Na	23	5.0	0.0	**59.0072**	0.695	1.2	mg/L	0	Standard
Mg	24	55819.3	1.9	**70.5720**	1.519	2.2	mg/L	38	Standard
K	39	218.3	28.5	**0.8317**	0.263	31.6	mg/L	33	Standard
Ca	43	251.7	21.9	**34.0041**	8.657	25.5	mg/L	48	Standard
Fe	54	4025.9	0.5	**3.1521**	0.027	0.9	mg/L	131	Standard
Fe	57	1446.7	8.5	**4.0306**	0.343	8.5	mg/L	153	Standard
> **Sc-1**	45	26524.9	1.2				mg/L	26715	Standard
Cl	35	135407.8	1.7				ug/L	102686	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	7291.8	5.6				ug/L	1897	Standard
P	31	27661.9	0.5				ug/L	18491	Standard
S	34	4439.0	2.2				ug/L	3734	Standard
Sr	88	255.0	15.6				ug/L	47	Standard
C	12	126.7	9.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	83.3	42.1				mg/L	23	Standard
Dy	164	15387.7	3.0				mg/L	23	Standard
Ho-1	165	9402.9	3.3				mg/L	7	Standard
Er	166	8849.3	2.3				mg/L	13	Standard
I	127	21608.9	11.3				mg/L	12398	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		114.280	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.308	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	93.104	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	95.603	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606112802
Sample Date/Time: Tuesday, July 05, 2016 18:55:18
Number of Replicates: 3
Autosampler Position: 251
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68240.0	1.1				ug/L	59517	Standard
	Be	9	21.7	35.3	-0.0094	0.007	78.6	ug/L	10	Standard
	Al	27	7408111.1	0.8	42.4549	0.259	0.6	ug/L	1872	Standard
	Sc	45	26266.1	0.8				ug/L	26715	Standard
	Ti	47	479.7	3.8	1.7797	0.055	3.1	ug/L	54	Standard
	V	51	2433.4	7.8	0.1593	0.024	15.3	ug/L	1419	Standard
	Cr	52	8501.1	0.5	0.2254	0.020	8.7	ug/L	7059	Standard
	Cr	53	4055.5	3.2	4.1736	0.192	4.6	ug/L	398	Standard
	Mn	55	1501406.5	0.6	238.2521	2.091	0.9	ug/L	824	Standard
	Co	59	7927.1	2.8	1.1472	0.039	3.4	ug/L	167	Standard
	Ni	60	2686.6	2.2	1.2432	0.041	3.3	ug/L	391	Standard
	Cu	65	783.7	3.2	0.3404	0.009	2.8	ug/L	147	Standard
	Zn	66	3162.7	2.6	2.7203	0.108	4.0	ug/L	184	Standard
>	Ge	72	421028.4	1.2				ug/L	422998	Standard
	As	75	12481.7	0.7	11.1053	0.077	0.7	ug/L	-58	Standard
	Se	82	35.2	10.6	0.0951	0.030	32.0	ug/L	15	Standard
	Se-1	77	308.7	7.5	3.4236	0.351	10.3	ug/L	58	Standard
>	Ga	71	156.7	33.2				mg/L	113	Standard
	Rb	85	5334.3	1.7				ug/L	27	Standard
	Y	89	361612.7	0.3				ug/L	383780	Standard
>	Rh	103	58.3	57.1				ug/L	18	Standard
	Mo	98	826.5	5.4	0.3120	0.019	6.1	ug/L	31	Standard
	Ag	107	80.3	12.5	0.0003	0.002	492.8	ug/L	84	Standard
	Cd	111	60.9	8.4	0.0254	0.002	9.5	mg/L	4	Standard
	Cd	114	163.6	15.8	0.0281	0.005	17.9	ug/L	15	Standard
>	In	115	499243.7	0.5				ug/L	515400	Standard
	Sn	118	1045.0	10.7	0.0054	0.021	381.5	ug/L	1043	Standard
	Sb	123	15521.8	1.6	3.4843	0.059	1.7	ug/L	227	Standard
	Ba	135	24398.0	0.7	12.5061	0.040	0.3	ug/L	31	Standard
	Ce	140	9211.1	1.5				ug/L	120	Standard
>	Tb	159	767985.8	1.7				ug/L	785817	Standard
	Ho	165	330.0	19.3				ug/L	7	Standard
	Tl	203	58.0	17.0	0.0036	0.001	32.0	ug/L	6	Standard
	Tl	205	61.7	12.4	0.0021	0.001	56.8	ug/L	8	Standard
	Pb	206	10747.5	0.6	2.1142	0.030	1.4	ug/L	201	Standard
	Pb	207	9219.5	0.2	2.0013	0.017	0.9	ug/L	177	Standard
	Pb	208	38797.9	0.2	2.0983	0.023	1.1	ug/L	722	Standard
	U	238	311.7	5.6	0.0429	0.003	6.7	ug/L	8	Standard
>	Bi	209	444778.3	1.0				ug/L	444563	Standard

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Na	23	3.3	173.2	**39.6230**	68.620	173.2	mg/L	0	Standard
Mg	24	34125.1	2.6	**43.5611**	1.483	3.4	mg/L	38	Standard
K	39	163.3	12.7	**0.5983**	0.096	16.0	mg/L	33	Standard
Ca	43	173.3	18.5	**21.8511**	4.988	22.8	mg/L	48	Standard
Fe	54	10008.4	0.8	**8.0890**	0.065	0.8	mg/L	131	Standard
Fe	57	3087.0	6.0	**9.2440**	0.519	5.6	mg/L	153	Standard
> **Sc-1**	45	26266.1	0.8				mg/L	26715	Standard
Cl	35	131591.0	0.4				ug/L	102686	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	5994.5	1.8				ug/L	1897	Standard
P	31	26219.3	2.0				ug/L	18491	Standard
S	34	4602.4	1.0				ug/L	3734	Standard
Sr	88	248.3	5.1				ug/L	47	Standard
C	12	130.0	27.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	44.4				mg/L	23	Standard
Dy	164	456.6	10.5				mg/L	23	Standard
Ho-1	165	330.0	19.3				mg/L	7	Standard
Er	166	350.0	2.9				mg/L	13	Standard
I	127	22735.5	8.1				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.657	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.534	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.865
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.048
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606112803
Sample Date/Time: Tuesday, July 05, 2016 18:58:29
Number of Replicates: 3
Autosampler Position: 252
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68528.0	2.2				ug/L	59517	Standard
	Be	9	321.7	10.3	**0.2904**	0.035	12.2	ug/L	10	Standard
	Al	27	19903152.5	1.3	**113.6455**	3.379	3.0	ug/L	1872	Standard
	Sc	45	28241.3	0.8				ug/L	26715	Standard
	Ti	47	30121.6	0.6	**128.6471**	2.710	2.1	ug/L	54	Standard
	V	51	57400.5	0.7	**7.9142**	0.140	1.8	ug/L	1419	Standard
	Cr	52	38875.8	0.6	**4.5867**	0.059	1.3	ug/L	7059	Standard
	Cr	53	11669.5	3.2	**12.9462**	0.612	4.7	ug/L	398	Standard
	Mn	55	8135939.6	1.3	**1307.7631**	10.379	0.8	ug/L	824	Standard
	Co	59	31645.0	2.9	**4.7119**	0.066	1.4	ug/L	167	Standard
	Ni	60	10941.6	2.4	**5.7497**	0.100	1.7	ug/L	391	Standard
	Cu	65	13655.8	0.4	**7.3223**	0.112	1.5	ug/L	147	Standard
	Zn	66	30194.1	0.8	**27.6741**	0.634	2.3	ug/L	184	Standard
>	Ge	72	415828.7	1.5				ug/L	422998	Standard
	As	75	809.1	5.0	**0.7773**	0.042	5.4	ug/L	-58	Standard
	Se	82	70.0	15.0	**0.4017**	0.094	23.5	ug/L	15	Standard
	Se-1	77	628.0	6.5	**7.7625**	0.676	8.7	ug/L	58	Standard
>	Ga	71	5797.8	7.3				mg/L	113	Standard
	Rb	85	57738.2	1.7				ug/L	27	Standard
	Y	89	584342.2	1.8				ug/L	383780	Standard
>	Rh	103	120.0	15.0				ug/L	18	Standard
	Mo	98	321.6	9.3	**0.1184**	0.012	9.8	ug/L	31	Standard
	Ag	107	305.7	58.2	**0.0358**	0.028	77.6	ug/L	84	Standard
	Cd	111	358.8	24.6	**0.1733**	0.044	25.2	mg/L	4	Standard
	Cd	114	944.7	23.0	**0.1880**	0.044	23.5	ug/L	15	Standard
>	In	115	489340.1	1.0				ug/L	515400	Standard
	Sn	118	1626.8	4.7	**0.1151**	0.017	14.4	ug/L	1043	Standard
	Sb	123	1063.8	25.5	**0.2287**	0.064	27.9	ug/L	227	Standard
	Ba	135	77464.9	0.3	**40.5662**	0.270	0.7	ug/L	31	Standard
	Ce	140	757693.3	0.4				ug/L	120	Standard
>	Tb	159	783021.1	1.5				ug/L	785817	Standard
	Ho	165	19098.7	0.6				ug/L	7	Standard
	Tl	203	517.0	47.8	**0.0631**	0.031	49.4	ug/L	6	Standard
	Tl	205	406.7	27.3	**0.0535**	0.016	29.6	ug/L	8	Standard
	Pb	206	16177.0	0.2	**3.3219**	0.049	1.5	ug/L	201	Standard
	Pb	207	12986.9	0.6	**2.9424**	0.042	1.4	ug/L	177	Standard
	Pb	208	56433.3	0.9	**3.1860**	0.014	0.4	ug/L	722	Standard
	U	238	3349.4	3.8	**0.5024**	0.015	2.9	ug/L	8	Standard
>	Bi	209	429380.4	1.3				ug/L	444563	Standard

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Na	23	1.7	173.2	**18.3420**	31.761	173.2	mg/L	0	Standard
Mg	24	57947.3	1.9	**68.8027**	1.090	1.6	mg/L	38	Standard
K	39	223.3	3.4	**0.7958**	0.039	4.9	mg/L	33	Standard
Ca	43	290.0	15.0	**37.2732**	6.222	16.7	mg/L	48	Standard
Fe	54	5603.1	2.4	**4.1556**	0.079	1.9	mg/L	131	Standard
Fe	57	1868.4	2.9	**4.9955**	0.201	4.0	mg/L	153	Standard
Sc-1	45	28241.3	0.8				mg/L	26715	Standard
Cl	35	132011.3	1.3				ug/L	102686	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	6901.6	2.9				ug/L	1897	Standard
P	31	29086.2	0.9				ug/L	18491	Standard
S	34	4375.6	1.4				ug/L	3734	Standard
Sr	88	293.3	3.9				ug/L	47	Standard
C	12	110.0	56.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	53.3	28.6				mg/L	23	Standard
Dy	164	28579.5	0.6				mg/L	23	Standard
Ho-1	165	19098.7	0.6				mg/L	7	Standard
Er	166	17446.7	3.7				mg/L	13	Standard
I	127	19102.0	3.3				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.141	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.305	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.944
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.585
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606112804
Sample Date/Time: Tuesday, July 05, 2016 19:01:41
Number of Replicates: 3
Autosampler Position: 253
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	69114.0	1.3				ug/L	59517	Standard
	Be	9	26.7	21.7	**-0.0046**	0.006	129.3	ug/L	10	Standard
	Al	27	28505.6	16.0	**0.1489**	0.026	17.3	ug/L	1872	Standard
	Sc	45	25503.1	0.7				ug/L	26715	Standard
	Ti	47	47.3	26.8	**-0.0505**	0.053	104.7	ug/L	54	Standard
	V	51	1473.0	9.6	**0.0218**	0.020	92.8	ug/L	1419	Standard
	Cr	52	8660.8	1.7	**0.2246**	0.024	10.5	ug/L	7059	Standard
	Cr	53	1540.1	8.2	**1.2967**	0.136	10.5	ug/L	398	Standard
	Mn	55	4797.1	24.8	**0.6164**	0.186	30.2	ug/L	824	Standard
	Co	59	272.3	5.5	**0.0144**	0.002	16.4	ug/L	167	Standard
	Ni	60	550.0	5.3	**0.0899**	0.016	17.8	ug/L	391	Standard
	Cu	65	2261.8	2.2	**1.1086**	0.028	2.5	ug/L	147	Standard
	Zn	66	2892.3	1.0	**2.4234**	0.036	1.5	ug/L	184	Standard
>	Ge	72	429189.2	0.5				ug/L	422998	Standard
	As	75	-38.1	39.8	**0.0185**	0.013	72.1	ug/L	-58	Standard
	Se	82	17.0	3.5	**-0.0634**	0.005	7.3	ug/L	15	Standard
	Se-1	77	74.7	3.4	**0.3020**	0.029	9.6	ug/L	58	Standard
>	Ga	71	63.3	4.6				mg/L	113	Standard
	Rb	85	290.0	15.3				ug/L	27	Standard
	Y	89	370686.7	1.1				ug/L	383780	Standard
>	Rh	103	48.3	59.7				ug/L	18	Standard
	Mo	98	65.0	16.6	**0.0155**	0.004	27.6	ug/L	31	Standard
	Ag	107	103.0	10.8	**0.0033**	0.002	57.2	ug/L	84	Standard
	Cd	111	29.2	31.8	**0.0096**	0.004	46.4	mg/L	4	Standard
	Cd	114	71.3	32.2	**0.0092**	0.005	50.3	ug/L	15	Standard
>	In	115	517291.4	1.5				ug/L	515400	Standard
	Sn	118	1381.7	7.3	**0.0569**	0.019	33.6	ug/L	1043	Standard
	Sb	123	392.9	24.4	**0.0691**	0.020	29.3	ug/L	227	Standard
	Ba	135	412.3	5.8	**0.1808**	0.014	8.0	ug/L	31	Standard
	Ce	140	520.0	22.4				ug/L	120	Standard
>	Tb	159	776650.5	1.9				ug/L	785817	Standard
	Ho	165	23.3	53.9				ug/L	7	Standard
	Tl	203	53.7	43.2	**0.0029**	0.003	98.8	ug/L	6	Standard
	Tl	205	46.7	32.7	**-0.0003**	0.002	741.9	ug/L	8	Standard
	Pb	206	353.3	6.9	**0.0231**	0.005	21.3	ug/L	201	Standard
	Pb	207	294.3	12.0	**0.0154**	0.008	53.4	ug/L	177	Standard
	Pb	208	1221.0	6.6	**0.0167**	0.005	30.6	ug/L	722	Standard
	U	238	47.3	48.0	**0.0042**	0.003	77.9	ug/L	8	Standard
>	Bi	209	460262.0	1.3				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	195.0	14.3	**0.2231**	0.039	17.3	mg/L	38	Standard
K	39	15.0	33.3	**-0.0604**	0.023	38.7	mg/L	33	Standard
Ca	43	25.0	40.0	**-1.7526**	1.674	95.5	mg/L	48	Standard
Fe	54	132.6	45.1	**-0.0046**	0.050	1095.7	mg/L	131	Standard
Fe	57	215.0	12.3	**0.2155**	0.082	38.0	mg/L	153	Standard
> **Sc-1**	45	25503.1	0.7				mg/L	26715	Standard
Cl	35	131683.8	0.6				ug/L	102686	Standard
Kr	83	2.3	89.2				ug/L	2	Standard
Br	81	1790.1	11.3				ug/L	1897	Standard
P	31	20472.2	3.4				ug/L	18491	Standard
S	34	4570.7	2.6				ug/L	3734	Standard
Sr	88	90.0	33.8				ug/L	47	Standard
C	12	93.3	34.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	43.3	35.3				mg/L	23	Standard
Dy	164	21.3	76.5				mg/L	23	Standard
Ho-1	165	23.3	53.9				mg/L	7	Standard
Er	166	43.3	48.0				mg/L	13	Standard
I	127	2041.8	17.0				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.125	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.464	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.367
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.531
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606112804
Sample Date/Time: Tuesday, July 05, 2016 19:04:52
Number of Replicates: 3
Autosampler Position: 254
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63934.7	2.7				ug/L	59517	Standard
	Be	9	15.0	0.0	**-0.0150**	0.000	2.9	ug/L	10	Standard
	Al	27	1775.1	51.0	**-0.0017**	0.005	310.4	ug/L	1872	Standard
	Sc	45	23010.8	1.0				ug/L	26715	Standard
	Ti	47	14.0	50.0	**-0.1836**	0.032	17.3	ug/L	54	Standard
	V	51	1162.3	14.8	**-0.0068**	0.026	382.2	ug/L	1419	Standard
	Cr	52	4690.7	3.1	**-0.2691**	0.020	7.3	ug/L	7059	Standard
	Cr	53	615.0	4.9	**0.3311**	0.040	12.0	ug/L	398	Standard
	Mn	55	772.4	52.8	**-0.0000**	0.07(	195833.7	ug/L	824	Standard
	Co	59	170.3	9.5	**0.0018**	0.003	149.4	ug/L	167	Standard
	Ni	60	278.0	3.9	**-0.0406**	0.006	15.7	ug/L	391	Standard
	Cu	65	104.3	6.8	**-0.0194**	0.004	22.1	ug/L	147	Standard
	Zn	66	481.0	6.5	**0.3077**	0.031	10.0	ug/L	184	Standard
>	**Ge**	72	394759.5	0.6				ug/L	422998	Standard
	As	75	3.2	857.4	**0.0546**	0.026	46.9	ug/L	-58	Standard
	Se	82	21.0	26.1	**-0.0147**	0.049	331.2	ug/L	15	Standard
	Se-1	77	64.3	6.3	**0.2409**	0.061	25.2	ug/L	58	Standard
>	**Ga**	71	96.7	31.2				mg/L	113	Standard
	Rb	85	31.7	24.1				ug/L	27	Standard
	Y	89	335798.3	2.4				ug/L	383780	Standard
>	**Rh**	103	35.0	24.7				ug/L	18	Standard
	Mo	98	164.2	36.7	**0.0585**	0.024	40.9	ug/L	31	Standard
	Ag	107	73.7	2.1	**-0.0000**	0.000	1059.5	ug/L	84	Standard
	Cd	111	3.1	21.3	**-0.0026**	0.000	13.7	mg/L	4	Standard
	Cd	114	12.5	52.3	**-0.0019**	0.001	72.8	ug/L	15	Standard
>	**In**	115	470757.3	1.3				ug/L	515400	Standard
	Sn	118	156.7	27.1	**-0.1513**	0.008	5.5	ug/L	1043	Standard
	Sb	123	349.4	14.3	**0.0672**	0.012	17.2	ug/L	227	Standard
	Ba	135	13.3	88.8	**-0.0164**	0.007	39.8	ug/L	31	Standard
	Ce	140	31.7	105.1				ug/L	120	Standard
>	**Tb**	159	729419.5	1.0				ug/L	785817	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	39.7	46.6	**0.0014**	0.002	164.0	ug/L	6	Standard
	Tl	205	20.0	173.2	**-0.0039**	0.005	131.8	ug/L	8	Standard
	Pb	206	208.0	5.5	**-0.0030**	0.002	82.0	ug/L	201	Standard
	Pb	207	177.3	8.2	**-0.0077**	0.003	44.5	ug/L	177	Standard
	Pb	208	748.7	4.5	**-0.0064**	0.002	32.8	ug/L	722	Standard
	U	238	6.0	86.6	**-0.0016**	0.001	48.8	ug/L	8	Standard
>	**Bi**	209	436801.5	0.5				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	56.7	35.7	**0.0489**	0.029	59.1	mg/L	38	Standard
K	39	23.3	44.6	**-0.0103**	0.054	526.8	mg/L	33	Standard
Ca	43	26.7	28.6	**-1.0080**	1.384	137.3	mg/L	48	Standard
Fe	54	37.8	15.3	**-0.0812**	0.006	7.1	mg/L	131	Standard
Fe	57	225.0	17.6	**0.3278**	0.146	44.4	mg/L	153	Standard
Sc-1	45	23010.8	1.0				mg/L	26715	Standard
Cl	35	123854.2	1.5				ug/L	102686	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1296.7	11.8				ug/L	1897	Standard
P	31	6888.2	1.8				ug/L	18491	Standard
S	34	4277.3	2.3				ug/L	3734	Standard
Sr	88	73.3	21.9				ug/L	47	Standard
C	12	46.7	32.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1063.4	3.6				mg/L	23	Standard
Dy	164	6.2	100.1				mg/L	23	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	19397.4	2.3				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.423	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.324	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.338
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.254
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Tuesday, July 05, 2016 19:08:04
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62649.3	2.6				ug/L	59517	Standard
	Be	9	20.0	25.0	**-0.0092**	0.006	63.9	ug/L	10	Standard
	Al	27	6447867.3	0.7	**40.2630**	0.940	2.3	ug/L	1872	Standard
	Sc	45	22590.2	0.3				ug/L	26715	Standard
	Ti	47	21677.5	0.9	**98.1800**	0.535	0.5	ug/L	54	Standard
	V	51	1429.8	22.9	**0.0345**	0.049	142.3	ug/L	1419	Standard
	Cr	52	5089.5	3.7	**-0.2032**	0.026	12.8	ug/L	7059	Standard
	Cr	53	6709.8	4.8	**7.7359**	0.356	4.6	ug/L	398	Standard
	Mn	55	7902.7	1.4	**1.2173**	0.016	1.3	ug/L	824	Standard
	Co	59	309.3	4.4	**0.0241**	0.002	8.1	ug/L	167	Standard
	Ni	60	662.0	5.7	**0.1821**	0.020	10.9	ug/L	391	Standard
	Cu	65	523.3	6.4	**0.2220**	0.020	9.0	ug/L	147	Standard
	Zn	66	1658.1	0.9	**1.4626**	0.019	1.3	ug/L	184	Standard
>	**Ge**	72	391806.0	0.4				ug/L	422998	Standard
	As	75	-24.0	222.6	**0.0287**	0.051	177.9	ug/L	-58	Standard
	Se	82	17.8	12.8	**-0.0425**	0.021	49.7	ug/L	15	Standard
	Se-1	77	451.0	5.0	**5.7522**	0.309	5.4	ug/L	58	Standard
>	**Ga**	71	133.3	11.5				mg/L	113	Standard
	Rb	85	746.7	2.2				ug/L	27	Standard
	Y	89	333376.4	1.2				ug/L	383780	Standard
>	**Rh**	103	26.7	21.7				ug/L	18	Standard
	Mo	98	218836.0	1.1	**90.6622**	1.439	1.6	ug/L	31	Standard
	Ag	107	190.0	6.1	**0.0191**	0.002	10.2	ug/L	84	Standard
	Cd	111	-160.7	5.1	**-0.0872**	0.004	4.1	mg/L	4	Standard
	Cd	114	331.8	11.7	**0.0662**	0.009	13.5	ug/L	15	Standard
>	**In**	115	467852.6	1.1				ug/L	515400	Standard
	Sn	118	1175.0	6.8	**0.0427**	0.016	37.7	ug/L	1043	Standard
	Sb	123	358.8	35.0	**0.0698**	0.029	42.1	ug/L	227	Standard
	Ba	135	31.7	12.8	**-0.0064**	0.002	37.9	ug/L	31	Standard
	Ce	140	60.0	52.0				ug/L	120	Standard
>	**Tb**	159	726666.0	0.6				ug/L	785817	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	39.7	12.4	**0.0015**	0.001	41.6	ug/L	6	Standard
	Tl	205	38.3	27.2	**-0.0011**	0.002	142.5	ug/L	8	Standard
	Pb	206	290.0	7.5	**0.0148**	0.004	28.8	ug/L	201	Standard
	Pb	207	253.7	2.6	**0.0105**	0.001	13.8	ug/L	177	Standard
	Pb	208	1056.7	3.1	**0.0120**	0.002	17.3	ug/L	722	Standard
	U	238	6.0	28.9	**-0.0016**	0.000	16.8	ug/L	8	Standard
>	**Bi**	209	429462.8	0.4				ug/L	444563	Standard

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Na	23	1.7	173.2	**23.0482**	39.912	173.2	mg/L	0	Standard
Mg	24	8540.7	2.6	**12.6502**	0.326	2.6	mg/L	38	Standard
K	39	775.0	2.2	**3.8831**	0.097	2.5	mg/L	33	Standard
Ca	43	120.0	23.2	**16.4641**	5.240	31.8	mg/L	48	Standard
Fe	54	12711.2	1.6	**12.0006**	0.195	1.6	mg/L	131	Standard
Fe	57	3457.1	6.0	**12.1851**	0.743	6.1	mg/L	153	Standard
> **Sc-1**	45	22590.2	0.3				mg/L	26715	Standard
Cl	35	124086.1	1.3				ug/L	102686	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	1313.4	8.4				ug/L	1897	Standard
P	31	7560.2	1.0				ug/L	18491	Standard
S	34	4455.7	0.4				ug/L	3734	Standard
Sr	88	78.3	32.1				ug/L	47	Standard
C	12	103.3	20.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	106.7	14.3				mg/L	23	Standard
Dy	164	6.3	93.2				mg/L	23	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	4088.9	4.4				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27	0.805		
Sc	45			
Ti	47	98.180		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.626	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	90.662		
Ag	107			
Cd	111			
Cd	114			
In	115			90.775
Sn	118			
Sb	123			
Ba	135			
Ce	140			
Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
Bi	209			96.603
Na	23	184.386		
Mg	24	253.003		
K	39	77.663		
Ca	43	109.761		
Fe	54	96.004		
Fe	57	97.481		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Mn	55	
QC Std 4	Na	23	

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QC Std 4	Mg	24
QC Std 4	K	39

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Tuesday, July 05, 2016 19:11:16
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	66781.9	1.5				ug/L	59517	Standard
	Be	9	96788.2	0.6	**99.1852**	0.896	0.9	ug/L	10	Standard
	Al	27	6087601.8	0.4	**35.6495**	0.381	1.1	ug/L	1872	Standard
	Sc	45	25761.9	4.3				ug/L	26715	Standard
	Ti	47	20578.0	0.6	**86.6812**	0.985	1.1	ug/L	54	Standard
	V	51	663752.5	0.6	**92.2234**	1.571	1.7	ug/L	1419	Standard
	Cr	52	656459.3	0.8	**91.7617**	1.070	1.2	ug/L	7059	Standard
	Cr	53	90960.6	0.7	**102.3483**	1.843	1.8	ug/L	398	Standard
	Mn	55	575203.1	0.5	**91.1706**	1.400	1.5	ug/L	824	Standard
	Co	59	649137.5	0.6	**95.9364**	1.401	1.5	ug/L	167	Standard
	Ni	60	171928.5	1.8	**92.1002**	0.857	0.9	ug/L	391	Standard
	Cu	65	174197.1	1.5	**93.1219**	0.491	0.5	ug/L	147	Standard
	Zn	66	104952.6	0.4	**95.3496**	1.325	1.4	ug/L	184	Standard
>	Ge	72	421172.8	1.3				ug/L	422998	Standard
	As	75	104985.8	0.6	**93.0042**	1.677	1.8	ug/L	-58	Standard
	Se	82	10464.4	0.8	**89.4391**	0.554	0.6	ug/L	15	Standard
	Se-1	77	7323.1	2.6	**96.3501**	3.689	3.8	ug/L	58	Standard
>	Ga	71	220.0	2.3				mg/L	113	Standard
	Rb	85	788.4	7.6				ug/L	27	Standard
	Y	89	364912.4	1.1				ug/L	383780	Standard
>	Rh	103	51.7	14.8				ug/L	18	Standard
	Mo	98	204523.3	0.4	**78.2554**	1.061	1.4	ug/L	31	Standard
	Ag	107	190920.7	0.6	**28.8155**	0.424	1.5	ug/L	84	Standard
	Cd	111	192857.4	0.7	**92.1295**	0.954	1.0	mg/L	4	Standard
	Cd	114	468513.0	3.0	**92.2123**	1.399	1.5	ug/L	15	Standard
>	In	115	506590.5	1.5				ug/L	515400	Standard
	Sn	118	3117.0	7.7	**0.3672**	0.049	13.5	ug/L	1043	Standard
	Sb	123	452716.7	0.7	**100.6137**	1.365	1.4	ug/L	227	Standard
	Ba	135	180498.8	0.2	**91.3409**	1.194	1.3	ug/L	31	Standard
	Ce	140	1315.1	16.0				ug/L	120	Standard
>	Tb	159	773233.4	0.7				ug/L	785817	Standard
	Ho	165	35.0	14.3				ug/L	7	Standard
	Tl	203	753738.9	0.4	**93.9903**	1.085	1.2	ug/L	6	Standard
	Tl	205	669053.2	0.7	**95.7730**	1.154	1.2	ug/L	8	Standard
	Pb	206	478085.3	0.5	**95.8092**	1.331	1.4	ug/L	201	Standard
	Pb	207	435755.6	0.1	**96.5900**	0.980	1.0	ug/L	177	Standard
	Pb	208	1786672.4	0.6	**98.5957**	1.376	1.4	ug/L	722	Standard
	U	238	675880.2	0.5	**98.1538**	0.852	0.9	ug/L	8	Standard
>	Bi	209	445789.4	1.0				ug/L	444563	Standard

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Na	23	1.7	173.2	**20.4037**	35.332	173.2	mg/L	0	Standard
Mg	24	8377.3	2.2	**10.8826**	0.234	2.2	mg/L	38	Standard
K	39	633.3	9.5	**2.7468**	0.262	9.5	mg/L	33	Standard
Ca	43	100.0	18.0	**10.4483**	2.953	28.3	mg/L	48	Standard
Fe	54	11875.5	3.6	**9.8156**	0.327	3.3	mg/L	131	Standard
Fe	57	3413.7	1.5	**10.5047**	0.628	6.0	mg/L	153	Standard
Sc-1	45	25761.9	4.3				mg/L	26715	Standard
Cl	35	130231.6	2.7				ug/L	102686	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1666.8	3.0				ug/L	1897	Standard
P	31	32677.0	6.2				ug/L	18491	Standard
S	34	4260.6	2.0				ug/L	3734	Standard
Sr	88	73.3	15.7				ug/L	47	Standard
C	12	83.3	18.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	410.0	30.5				mg/L	23	Standard
Dy	164	28.2	1.0				mg/L	23	Standard
Ho-1	165	35.0	14.3				mg/L	7	Standard
Er	166	36.7	15.7				mg/L	13	Standard
I	127	1318.4	13.2				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	99.185		
Al	27	0.713		
Sc	45			
Ti	47	86.681		
V	51	92.223		
Cr	52	91.762		
Cr	53			
Mn	55	91.171		
Co	59	95.936		
Ni	60	92.100		
Cu	65	93.122		
Zn	66	95.350		
Ge	72		99.569	
As	75	93.004		
Se	82	89.439		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	78.255		
Ag	107	28.815		
Cd	111	92.130		
Cd	114			
> In	115		98.291	
Sn	118			
Sb	123	100.614		
Ba	135	91.341		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	93.990		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.596		
U	238	98.154		
> Bi	209		100.276	
Na	23	163.230		
Mg	24	217.651		
K	39	54.935		
Ca	43	69.655		
Fe	54	78.525		
Fe	57	84.038		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Mo	98	
QC Std 5	Ag	107	

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QC Std 5	Na	23
QC Std 5	Mg	24
QC Std 5	K	39
QC Std 5	Ca	43
QC Std 5	Fe	54

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, July 05, 2016 19:14:29
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65585.1	2.9				ug/L	59517	Standard
	Be	9	48611.2	1.9	**50.7190**	0.952	1.9	ug/L	10	Standard
	Al	27	7103206.4	1.2	**42.3704**	0.920	2.2	ug/L	1872	Standard
	Sc	45	24623.3	1.3				ug/L	26715	Standard
	Ti	47	21440.5	1.4	**92.8029**	1.249	1.3	ug/L	54	Standard
	V	51	331185.0	0.5	**47.1852**	0.301	0.6	ug/L	1419	Standard
	Cr	52	330677.2	0.1	**47.0179**	0.263	0.6	ug/L	7059	Standard
	Cr	53	41231.0	1.1	**47.4395**	0.345	0.7	ug/L	398	Standard
	Mn	55	285786.1	0.1	**46.4717**	0.205	0.4	ug/L	824	Standard
	Co	59	320440.7	0.3	**48.6411**	0.326	0.7	ug/L	167	Standard
	Ni	60	85861.9	0.5	**47.1614**	0.062	0.1	ug/L	391	Standard
	Cu	65	86497.9	0.9	**47.4711**	0.403	0.8	ug/L	147	Standard
	Zn	66	52695.5	1.2	**49.1046**	0.403	0.8	ug/L	184	Standard
>	Ge	72	409919.8	0.4				ug/L	422998	Standard
	As	75	52451.6	0.3	**47.7597**	0.306	0.6	ug/L	-58	Standard
	Se	82	5371.0	1.0	**47.0681**	0.632	1.3	ug/L	15	Standard
	Se-1	77	3641.1	3.7	**48.8770**	1.764	3.6	ug/L	58	Standard
>	Ga	71	45.0	11.1				mg/L	113	Standard
	Rb	85	798.4	10.3				ug/L	27	Standard
	Y	89	357605.3	2.0				ug/L	383780	Standard
>	Rh	103	23.3	44.6				ug/L	18	Standard
	Mo	98	248121.1	0.3	**96.9026**	1.567	1.6	ug/L	31	Standard
	Ag	107	306169.9	0.8	**47.1716**	0.681	1.4	ug/L	84	Standard
	Cd	111	97701.7	0.4	**47.6365**	0.626	1.3	mg/L	4	Standard
	Cd	114	241201.5	2.3	**48.4655**	1.356	2.8	ug/L	15	Standard
>	In	115	496333.9	1.4				ug/L	515400	Standard
	Sn	118	265572.4	0.9	**47.4577**	1.062	2.2	ug/L	1043	Standard
	Sb	123	220394.1	0.9	**49.9883**	1.030	2.1	ug/L	227	Standard
	Ba	135	89412.0	0.5	**46.1696**	0.647	1.4	ug/L	31	Standard
	Ce	140	110.0	4.5				ug/L	120	Standard
>	Tb	159	754917.1	0.8				ug/L	785817	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	381859.9	0.6	**48.4174**	0.314	0.6	ug/L	6	Standard
	Tl	205	340217.3	0.3	**49.5179**	0.112	0.2	ug/L	8	Standard
	Pb	206	241805.9	0.5	**49.2514**	0.319	0.6	ug/L	201	Standard
	Pb	207	220139.0	0.5	**49.5948**	0.295	0.6	ug/L	177	Standard
	Pb	208	903800.8	0.3	**50.6904**	0.067	0.1	ug/L	722	Standard
	U	238	341525.3	0.6	**50.4323**	0.287	0.6	ug/L	8	Standard
>	Bi	209	438377.7	0.2				ug/L	444563	Standard

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Na	23	1.7	173.2	**21.4716**	37.181	173.2	mg/L	0	Standard
Mg	24	3943.8	3.1	**5.3417**	0.235	4.4	mg/L	38	Standard
K	39	703.3	7.0	**3.2117**	0.238	7.4	mg/L	33	Standard
Ca	43	45.0	0.0	**1.8050**	0.097	5.4	mg/L	48	Standard
Fe	54	5628.8	2.7	**4.8063**	0.133	2.8	mg/L	131	Standard
Fe	57	1661.8	3.8	**5.1054**	0.243	4.8	mg/L	153	Standard
Sc-1	45	24623.3	1.3				mg/L	26715	Standard
Cl	35	124244.0	0.6				ug/L	102686	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	1410.1	1.2				ug/L	1897	Standard
P	31	20362.0	1.3				ug/L	18491	Standard
S	34	4645.7	6.6				ug/L	3734	Standard
Sr	88	91.7	19.2				ug/L	47	Standard
C	12	73.3	55.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	170.0	57.9				mg/L	23	Standard
Dy	164	20.0	50.0				mg/L	23	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	0.0					mg/L	13	Standard
I	127	7435.2	2.0				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	101.438		
Al	27	84.741		
Sc	45			
Ti	47	92.803		
V	51	94.370		
Cr	52	94.036		
Cr	53			
Mn	55	92.943		
Co	59	97.282		
Ni	60	94.323		
Cu	65	94.942		
Zn	66	98.209		
Ge	72		96.908	
As	75	95.519		
Se	82	94.136		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	96.903		
Ag	107	94.343		
Cd	111	95.273		
Cd	114			
In	115			96.301
Sn	118	94.915		
Sb	123	99.977		
Ba	135	92.339		
Ce	140			
Tb	159			
Ho	165			
Tl	203	96.835		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.381		
U	238	100.865		
Bi	209			98.609
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, July 05, 2016 19:17:40
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65871.2	1.2				ug/L	59517	Standard
	Be	9	46.7	40.6	**0.0174**	0.020	113.4	ug/L	10	Standard
	Al	27	3468.8	34.1	**0.0082**	0.007	88.5	ug/L	1872	Standard
	Sc	45	23605.0	0.8				ug/L	26715	Standard
	Ti	47	33.0	10.5	**-0.1031**	0.014	13.8	ug/L	54	Standard
	V	51	1146.1	4.6	**-0.0149**	0.008	55.4	ug/L	1419	Standard
	Cr	52	5409.0	2.2	**-0.1882**	0.024	12.6	ug/L	7059	Standard
	Cr	53	738.4	13.9	**0.4492**	0.116	25.8	ug/L	398	Standard
	Mn	55	821.0	29.6	**0.0036**	0.041	1148.9	ug/L	824	Standard
	Co	59	291.0	15.8	**0.0193**	0.007	38.2	ug/L	167	Standard
	Ni	60	301.3	3.8	**-0.0331**	0.007	21.0	ug/L	391	Standard
	Cu	65	158.3	8.1	**0.0083**	0.007	89.8	ug/L	147	Standard
	Zn	66	188.0	2.7	**0.0170**	0.003	19.6	ug/L	184	Standard
>	Ge	72	408542.9	0.8				ug/L	422998	Standard
	As	75	-3.5	976.9	**0.0483**	0.032	65.5	ug/L	-58	Standard
	Se	82	21.8	4.5	**-0.0138**	0.007	51.7	ug/L	15	Standard
	Se-1	77	69.7	3.6	**0.2829**	0.034	11.9	ug/L	58	Standard
>	Ga	71	51.7	20.1				mg/L	113	Standard
	Rb	85	25.0	40.0				ug/L	27	Standard
	Y	89	348274.1	0.8				ug/L	383780	Standard
>	Rh	103	18.3	103.3				ug/L	18	Standard
	Mo	98	289.8	9.2	**0.1053**	0.010	9.7	ug/L	31	Standard
	Ag	107	155.7	18.2	**0.0122**	0.004	35.3	ug/L	84	Standard
	Cd	111	41.8	64.1	**0.0164**	0.013	80.0	mg/L	4	Standard
	Cd	114	121.5	54.1	**0.0200**	0.013	66.1	ug/L	15	Standard
>	In	115	491491.7	0.7				ug/L	515400	Standard
	Sn	118	876.7	25.1	**-0.0221**	0.040	182.0	ug/L	1043	Standard
	Sb	123	777.9	36.7	**0.1619**	0.066	40.5	ug/L	227	Standard
	Ba	135	66.3	43.8	**0.0108**	0.015	138.6	ug/L	31	Standard
	Ce	140	48.3	39.2				ug/L	120	Standard
>	Tb	159	747711.3	1.0				ug/L	785817	Standard
	Ho	165	6.7	173.2				ug/L	7	Standard
	Tl	203	171.0	50.2	**0.0179**	0.011	60.5	ug/L	6	Standard
	Tl	205	121.7	52.8	**0.0108**	0.009	86.3	ug/L	8	Standard
	Pb	206	327.0	16.5	**0.0207**	0.011	53.5	ug/L	201	Standard
	Pb	207	276.7	11.6	**0.0141**	0.007	51.7	ug/L	177	Standard
	Pb	208	1094.0	10.3	**0.0124**	0.006	51.1	ug/L	722	Standard
	U	238	134.0	28.9	**0.0172**	0.006	33.3	ug/L	8	Standard
>	Bi	209	441238.6	0.2				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	53.3	5.4	**0.0422**	0.004	8.3	mg/L	38	Standard
K	39	8.3	124.9	**-0.0877**	0.052	59.4	mg/L	33	Standard
Ca	43	15.0	66.7	**-3.2158**	1.769	55.0	mg/L	48	Standard
Fe	54	152.8	10.0	**0.0229**	0.015	66.1	mg/L	131	Standard
Fe	57	245.0	2.0	**0.3773**	0.024	6.4	mg/L	153	Standard
Sc-1	45	23605.0	0.8				mg/L	26715	Standard
Cl	35	124785.1	1.1				ug/L	102686	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1483.4	5.7				ug/L	1897	Standard
P	31	20018.2	2.1				ug/L	18491	Standard
S	34	4625.7	1.5				ug/L	3734	Standard
Sr	88	66.7	22.9				ug/L	47	Standard
C	12	43.3	48.0				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	96.7	52.1				mg/L	23	Standard
Dy	164	2.4	278.0				mg/L	23	Standard
Ho-1	165	6.7	173.2				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	13	Standard
I	127	5481.0	1.9				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.583	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.361
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.252
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Tuesday, July 05, 2016 19:19:57
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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Tuesday, July 05, 2016 19:20:53
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63216.7	2.8				ug/L	59517	Standard
	Be	9	183.3	6.9	**0.1677**	0.018	10.8	ug/L	10	Standard
	Al	27	3557.2	59.8	**0.0097**	0.013	137.9	ug/L	1872	Standard
	Sc	45	22621.9	0.4				ug/L	26715	Standard
	Ti	47	22.7	22.2	**-0.1456**	0.022	15.1	ug/L	54	Standard
	V	51	3372.6	5.9	**0.3170**	0.033	10.6	ug/L	1419	Standard
	Cr	52	10014.6	0.7	**0.5196**	0.007	1.4	ug/L	7059	Standard
	Cr	53	1163.4	4.4	**0.9791**	0.063	6.4	ug/L	398	Standard
	Mn	55	3302.7	7.3	**0.4230**	0.037	8.6	ug/L	824	Standard
	Co	59	2480.5	2.5	**0.3626**	0.012	3.3	ug/L	167	Standard
	Ni	60	2675.2	4.1	**1.3188**	0.068	5.2	ug/L	391	Standard
	Cu	65	1339.7	3.5	**0.6788**	0.026	3.8	ug/L	147	Standard
	Zn	66	6392.7	1.3	**5.9911**	0.134	2.2	ug/L	184	Standard
>	Ge	72	398382.1	1.0				ug/L	422998	Standard
	As	75	341.1	11.2	**0.3708**	0.035	9.3	ug/L	-58	Standard
	Se	82	51.2	10.2	**0.2571**	0.046	18.0	ug/L	15	Standard
	Se-1	77	80.0	6.5	**0.4523**	0.084	18.5	ug/L	58	Standard
>	Ga	71	33.3	43.3				mg/L	113	Standard
	Rb	85	38.3	52.7				ug/L	27	Standard
	Y	89	340594.2	1.0				ug/L	383780	Standard
>	Rh	103	13.3	21.7				ug/L	18	Standard
	Mo	98	117.2	33.7	**0.0383**	0.016	41.1	ug/L	31	Standard
	Ag	107	2222.5	1.5	**0.3416**	0.003	1.0	ug/L	84	Standard
	Cd	111	435.1	2.1	**0.2149**	0.004	2.1	mg/L	4	Standard
	Cd	114	1047.1	6.2	**0.2126**	0.013	6.1	ug/L	15	Standard
>	In	115	480720.6	0.6				ug/L	515400	Standard
	Sn	118	481.7	23.5	**-0.0917**	0.021	23.4	ug/L	1043	Standard
	Sb	123	1650.0	2.2	**0.3701**	0.007	2.0	ug/L	227	Standard
	Ba	135	1222.0	2.7	**0.6281**	0.019	3.1	ug/L	31	Standard
	Ce	140	23.3	32.7				ug/L	120	Standard
>	Tb	159	736065.7	1.9				ug/L	785817	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	627.3	8.5	**0.0766**	0.007	8.9	ug/L	6	Standard
	Tl	205	526.7	9.9	**0.0705**	0.008	10.8	ug/L	8	Standard
	Pb	206	1182.0	1.4	**0.1974**	0.003	1.7	ug/L	201	Standard
	Pb	207	968.7	3.7	**0.1724**	0.008	4.8	ug/L	177	Standard
	Pb	208	4122.6	1.7	**0.1848**	0.004	2.1	ug/L	722	Standard
	U	238	2501.2	3.6	**0.3700**	0.014	3.7	ug/L	8	Standard
>	Bi	209	434742.2	0.1				ug/L	444563	Standard

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Na	23	1.7	173.2	**23.0840**	39.974	173.2	mg/L	0	Standard
Mg	24	60.0	25.0	**0.0554**	0.022	40.5	mg/L	38	Standard
K	39	20.0	43.3	**-0.0260**	0.045	171.5	mg/L	33	Standard
Ca	43	23.3	32.7	**-1.5449**	1.409	91.2	mg/L	48	Standard
Fe	54	102.3	12.2	**-0.0191**	0.012	64.3	mg/L	131	Standard
Fe	57	248.3	28.5	**0.4260**	0.255	59.8	mg/L	153	Standard
Sc-1	45	22621.9	0.4				mg/L	26715	Standard
Cl	35	122327.2	1.1				ug/L	102686	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	1383.4	13.4				ug/L	1897	Standard
P	31	14837.3	1.2				ug/L	18491	Standard
S	34	4564.0	3.3				ug/L	3734	Standard
Sr	88	71.7	4.0				ug/L	47	Standard
C	12	43.3	48.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	41.7				mg/L	23	Standard
Dy	164	6.3	93.2				mg/L	23	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	1116.7	16.6				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	83.854		
Al	27			
Sc	45			
Ti	47			
V	51	79.261		
Cr	52	64.956		
Cr	53			
Mn	55	84.607		
Co	59	90.651		
Ni	60	82.423		
Cu	65	84.851		
Zn	66	95.858		
Ge	72		94.181	
As	75	92.692		
Se	82	64.282		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	85.397		
Cd	111	89.545		
Cd	114			
> In	115			93.271
Sn	118			
Sb	123	92.522		
Ba	135	83.747		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	95.756		
Tl	205			
Pb	206			
Pb	207			
Pb	208	92.388		
U	238	92.495		
> Bi	209			97.791
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 8	Cr	52	
QC Std 8	Se	82	

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MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Wednesday, July 06, 2016 08:21:13

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1322	2024	0.699	
Mg	23.985	23.975	4499	2020	0.703	
Co	58.933	58.975	11698	2022	0.697	
In	114.904	114.925	22867	2028	0.681	
U	238.050	238.025	47456	2043	0.679	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	7.506
5.575	4.469
5.625	3.902
5.675	3.617
5.725	2.863
5.775	3.021
5.825	2.553
5.875	2.316
5.925	1.940
5.975	0.827
6.025	4.248
6.075	3.274
6.125	3.495
6.175	2.397
6.225	3.309
6.275	9.100
6.325	39.123
6.375	122.475
6.425	108.653
6.475	38.030
6.525	8.438
6.575	5.734
6.625	2.237
6.675	4.130
6.725	3.041
6.775	1.849
6.825	2.089

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6.875	1.604
6.925	1.546
6.975	1.019
7.025	1.680
7.075	1.373
7.125	1.509
7.175	0.253
7.225	2.144
7.275	3.742
7.325	4.451
7.375	14.816
7.425	136.931
7.475	70.711
7.525	81.441
7.575	136.931
7.625	70.711
7.675	63.888
7.725	136.931
7.775	81.441
7.825	0.000
7.875	106.863
7.925	91.287
7.975	149.071
8.025	94.786
8.075	94.786
8.125	69.722
8.175	91.287
8.225	71.261
8.275	149.071
8.325	94.786
8.375	69.722
8.425	83.853
8.475	91.287
22.525	55.902
22.575	66.667
22.625	43.241
22.675	34.247
22.725	34.468
22.775	17.538
22.825	28.037
22.875	26.503
22.925	31.944
22.975	34.035
23.025	38.640
23.075	42.482
23.125	22.745
23.175	17.030

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23.225	8.299
23.275	38.640
23.325	15.901
23.375	54.149
23.425	24.362
23.475	23.662
23.525	4.832
23.575	1.945
23.625	1.762
23.675	1.706
23.725	2.179
23.775	1.159
23.825	1.275
23.875	2.153
23.925	1.699
23.975	1.547
24.025	2.386
24.075	2.257
24.125	1.922
24.175	1.969
24.225	2.068
24.275	3.253
24.325	14.263
24.375	45.166
24.425	16.090
24.475	14.626
24.525	4.879
24.575	2.669
24.625	3.297
24.675	1.542
24.725	1.374
24.775	1.161
24.825	1.917
24.875	1.099
24.925	1.386
24.975	1.467
25.025	1.383
25.075	1.643
25.125	1.214
25.175	2.083
25.225	1.572
25.275	7.023
25.325	53.429
25.375	51.349
25.425	53.429
25.475	17.365
57.525	8.189

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57.575	5.482
57.625	1.288
57.675	3.060
57.725	2.372
57.775	3.546
57.825	3.557
57.875	0.921
57.925	1.535
57.975	2.136
58.025	1.988
58.075	2.269
58.125	1.198
58.175	2.819
58.225	1.616
58.275	11.771
58.325	55.902
58.375	50.000
58.425	33.756
58.475	10.537
58.525	1.691
58.575	3.576
58.625	2.704
58.675	2.648
58.725	2.851
58.775	2.040
58.825	2.525
58.875	1.600
58.925	1.367
58.975	1.255
59.025	1.984
59.075	0.805
59.125	1.290
59.175	2.562
59.225	1.649
59.275	23.116
59.325	64.359
59.375	149.071
59.425	44.605
59.475	17.497
59.525	17.371
59.575	9.220
59.625	5.948
59.675	4.790
59.725	1.831
59.775	1.473
59.825	2.719
59.875	2.952

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59.925	2.544
59.975	1.515
60.025	4.044
60.075	0.979
60.125	3.516
60.175	6.310
60.225	5.968
60.275	42.077
60.325	70.711
60.375	75.691
60.425	47.507
60.475	51.349
113.525	6.288
113.575	3.130
113.625	3.198
113.675	2.645
113.725	2.546
113.775	2.125
113.825	1.842
113.875	2.200
113.925	1.850
113.975	1.503
114.025	2.156
114.075	1.585
114.125	1.928
114.175	4.533
114.225	6.911
114.275	18.744
114.325	37.029
114.375	48.104
114.425	13.303
114.475	6.306
114.525	2.291
114.575	1.817
114.625	2.253
114.675	1.979
114.725	1.922
114.775	2.210
114.825	1.277
114.875	1.344
114.925	1.630
114.975	0.972
115.025	0.572
115.075	1.624
115.125	0.868
115.175	2.441
115.225	1.854

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115.275	5.953
115.325	30.901
115.375	61.237
115.425	59.266
115.475	15.759
115.525	11.392
115.575	9.132
115.625	8.051
115.675	3.987
115.725	6.967
115.775	3.133
115.825	4.834
115.875	2.873
115.925	2.983
115.975	3.736
116.025	2.700
116.075	2.834
116.125	4.969
116.175	5.942
116.225	7.717
116.275	28.287
116.325	58.630
116.375	22.822
116.425	67.748
116.475	37.268
236.525	
236.575	37.982
236.625	28.022
236.675	14.286
236.725	37.982
236.775	48.627
236.825	23.981
236.875	70.833
236.925	24.491
236.975	20.494
237.025	17.496
237.075	24.845
237.125	33.333
237.175	31.672
237.225	28.287
237.275	23.458
237.325	18.109
237.375	43.257
237.425	28.315
237.475	36.056
237.525	17.496
237.575	15.180

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237.625	5.747
237.675	2.292
237.725	2.524
237.775	2.139
237.825	1.921
237.875	1.117
237.925	1.502
237.975	1.060
238.025	0.360
238.075	1.407
238.125	0.752
238.175	1.378
238.225	1.386
238.275	0.645
238.325	2.690
238.375	2.608
238.425	2.380
238.475	12.679
238.525	20.738
238.575	36.422
238.625	37.611
238.675	26.517
238.725	10.002
238.775	24.499
238.825	17.876
238.875	26.770
238.925	25.620
238.975	15.408
239.025	16.767
239.075	18.744
239.125	33.378
239.175	26.504
239.225	37.982
239.275	41.406
239.325	24.686
239.375	10.756
239.425	28.748
239.475	26.770

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SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 7/6/2016 8:26:00 AM
End Time: 7/6/2016 8:28:13 AM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 5151.01
        Obtained Intensity (Mg 23.985): 336885.79
        Obtained Intensity (In 114.904): 62602.53
        Obtained Intensity (U 238.05): 130540.54
        Obtained Intensity (Bkgd 220): 0.20
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.019 (=3575.29 / 184430.85)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.011 (=2032.07 / 184430.85)
```

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SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 7/6/2016 8:26:00 AM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 5151.01
                Obtained Intensity (Mg 23.985): 336885.79
                Obtained Intensity (In 114.904): 62602.53
                Obtained Intensity (U 238.05): 130540.54
                Obtained Intensity (Bkgd 220): 0.20
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.019 (=3575.29 / 184430.85)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.011 (=2032.07 / 184430.85)
[Passed]  Optimum value(s): N/A

End Time: 7/6/2016 8:28:13 AM
```


Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Wednesday, July 06, 2016 09:04:52
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68501.2	1.5				ug/L		Standard
	Be	9	8.3	34.6				ug/L		Standard
	Al	27	1396.7	1.3				ug/L		Standard
	Sc	45	38814.7	3.0				ug/L		Standard
	Ti	47	35.7	18.2				ug/L		Standard
	V	51	1283.9	3.1				ug/L		Standard
	Cr	52	6502.7	0.5				ug/L		Standard
	Cr	53	491.7	16.7				ug/L		Standard
	Mn	55	840.7	3.2				ug/L		Standard
	Co	59	229.3	4.0				ug/L		Standard
	Ni	60	344.0	2.2				ug/L		Standard
	Cu	65	114.7	4.1				ug/L		Standard
	Zn	66	190.0	5.0				ug/L		Standard
>	**Ge**	72	409858.0	0.8				ug/L		Standard
	As	75	-22.4	191.8				ug/L		Standard
	Se	82	17.6	39.5				ug/L		Standard
	Se-1	77	49.7	13.7				ug/L		Standard
>	**Ga**	71	96.7	43.4				mg/L		Standard
	Rb	85	25.0	40.0				ug/L		Standard
	Y	89	376763.4	2.3				ug/L		Standard
>	**Rh**	103	20.0	0.0				ug/L		Standard
	Mo	98	51.1	11.8				ug/L		Standard
	Ag	107	76.3	9.8				ug/L		Standard
	Cd	111	5.9	58.3				mg/L		Standard
	Cd	114	18.3	38.1				ug/L		Standard
>	**In**	115	507260.6	2.6				ug/L		Standard
	Sn	118	683.3	6.6				ug/L		Standard
	Sb	123	446.3	31.9				ug/L		Standard
	Ba	135	28.0	28.6				ug/L		Standard
	Ce	140	33.3	45.8				ug/L		Standard
>	**Tb**	159	800802.7	2.0				ug/L		Standard
	Ho	165	10.0	86.6				ug/L		Standard
	Tl	203	13.0	26.6				ug/L		Standard
	Tl	205	13.3	43.3				ug/L		Standard
	Pb	206	226.0	4.2				ug/L		Standard
	Pb	207	204.3	0.3				ug/L		Standard
	Pb	208	851.7	6.8				ug/L		Standard
	U	238	13.0	63.0				ug/L		Standard
>	**Bi**	209	449044.0	1.5				ug/L		Standard

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Na	23	1.7	173.2	mg/L	Standard
Mg	24	58.3	9.9	mg/L	Standard
K	39	26.7	39.0	mg/L	Standard
Ca	43	20.0	66.1	mg/L	Standard
Fe	54	157.5	14.3	mg/L	Standard
Fe	57	266.7	9.2	mg/L	Standard
> **Sc-1**	45	38814.7	3.0	mg/L	Standard
Cl	35	57611.3	0.9	ug/L	Standard
Kr	83	2.0	50.0	ug/L	Standard
Br	81	1616.8	9.4	ug/L	Standard
P	31	19243.9	3.3	ug/L	Standard
S	34	3557.1	1.2	ug/L	Standard
Sr	88	65.0	20.4	ug/L	Standard
C	12	63.3	24.1	mg/L	Standard
N	14	0.0		mg/L	Standard
Hg	202	23.3	89.2	mg/L	Standard
Dy	164	12.7	43.5	mg/L	Standard
Ho-1	165	10.0	86.6	mg/L	Standard
Er	166	13.3	86.6	mg/L	Standard
I	127	9569.7	3.0	mg/L	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Wednesday, July 06, 2016 09:08:03
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69462.2	0.6				ug/L	68501	Standard
	Be	9	13.3	78.1				ug/L	8	Standard
	Al	27	1441.7	6.4				ug/L	1397	Standard
	Sc	45	39327.7	2.4				ug/L	38815	Standard
	Ti	47	37.3	15.2				ug/L	36	Standard
	V	51	1277.1	1.5				ug/L	1284	Standard
	Cr	52	6679.8	1.3				ug/L	6503	Standard
	Cr	53	478.3	7.9				ug/L	492	Standard
	Mn	55	811.7	3.1				ug/L	841	Standard
	Co	59	225.7	8.9				ug/L	229	Standard
	Ni	60	363.7	3.9				ug/L	344	Standard
	Cu	65	110.0	16.7				ug/L	115	Standard
	Zn	66	186.0	6.7				ug/L	190	Standard
>	**Ge**	72	427573.4	1.2				ug/L	409858	Standard
	As	75	-74.4	2.7				ug/L	-22	Standard
	Se	82	12.0	28.1				ug/L	18	Standard
	Se-1	77	50.7	10.9				ug/L	50	Standard
>	**Ga**	71	113.3	13.5				mg/L	97	Standard
	Rb	85	35.0	28.6				ug/L	25	Standard
	Y	89	359688.5	1.8				ug/L	376763	Standard
>	**Rh**	103	18.3	15.7				ug/L	20	Standard
	Mo	98	39.3	4.5				ug/L	51	Standard
	Ag	107	71.3	10.3				ug/L	76	Standard
	Cd	111	4.3	59.0				mg/L	6	Standard
	Cd	114	20.2	77.8				ug/L	18	Standard
>	**In**	115	495968.3	1.0				ug/L	507261	Standard
	Sn	118	615.0	19.2				ug/L	683	Standard
	Sb	123	280.4	35.1				ug/L	446	Standard
	Ba	135	25.7	17.6				ug/L	28	Standard
	Ce	140	23.3	68.9				ug/L	33	Standard
>	**Tb**	159	809139.9	1.5				ug/L	800803	Standard
	Ho	165	13.3	21.7				ug/L	10	Standard
	Tl	203	9.7	31.6				ug/L	13	Standard
	Tl	205	5.0	100.0				ug/L	13	Standard
	Pb	206	228.0	14.1				ug/L	226	Standard
	Pb	207	184.0	4.3				ug/L	204	Standard
	Pb	208	774.0	0.5				ug/L	852	Standard
	U	238	9.3	61.9				ug/L	13	Standard
>	**Bi**	209	461034.0	1.4				ug/L	449044	Standard

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	Na	23	0.0		mg/L	2	Standard
	Mg	24	38.3	7.5	mg/L	58	Standard
	K	39	38.3	30.1	mg/L	27	Standard
	Ca	43	35.0	37.8	mg/L	20	Standard
	Fe	54	132.7	18.5	mg/L	158	Standard
	Fe	57	250.0	9.2	mg/L	267	Standard
>	**Sc-1**	45	39327.7	2.4	mg/L	38815	Standard
	Cl	35	57177.7	0.6	ug/L	57611	Standard
	Kr	83	2.0	86.6	ug/L	2	Standard
	Br	81	1573.4	4.2	ug/L	1617	Standard
	P	31	19260.6	0.8	ug/L	19244	Standard
	S	34	3472.1	1.0	ug/L	3557	Standard
	Sr	88	65.0	38.5	ug/L	65	Standard
	C	12	76.7	30.1	mg/L	63	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	20.0	0.0	mg/L	23	Standard
	Dy	164	19.5	50.0	mg/L	13	Standard
	Ho-1	165	13.3	21.7	mg/L	10	Standard
	Er	166	10.0	100.0	mg/L	13	Standard
	I	127	9743.1	1.2	mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 1
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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Wednesday, July 06, 2016 09:11:15
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	69986.3	1.7				ug/L	68501	Standard
	Be	9	28.3	20.4				ug/L	8	Standard
	Al	27	2175.2	56.8				ug/L	1397	Standard
	Sc	45	40447.3	0.7				ug/L	38815	Standard
	Ti	47	43.0	44.9				ug/L	36	Standard
	V	51	1366.5	10.5				ug/L	1284	Standard
	Cr	52	6767.8	1.5				ug/L	6503	Standard
	Cr	53	401.7	17.9				ug/L	492	Standard
	Mn	55	892.4	9.9				ug/L	841	Standard
	Co	59	269.0	32.5				ug/L	229	Standard
	Ni	60	348.3	2.9				ug/L	344	Standard
	Cu	65	106.0	18.0				ug/L	115	Standard
	Zn	66	164.7	5.2				ug/L	190	Standard
>	Ge	72	409754.2	1.2				ug/L	409858	Standard
	As	75	-50.4	62.0				ug/L	-22	Standard
	Se	82	10.7	41.8				ug/L	18	Standard
	Se-1	77	55.7	4.5				ug/L	50	Standard
>	Ga	71	90.0	14.7				mg/L	97	Standard
	Rb	85	25.0	40.0				ug/L	25	Standard
	Y	89	368884.0	1.8				ug/L	376763	Standard
>	Rh	103	28.3	36.7				ug/L	20	Standard
	Mo	98	70.2	78.1				ug/L	51	Standard
	Ag	107	171.7	101.6				ug/L	76	Standard
	Cd	111	21.6	125.9				mg/L	6	Standard
	Cd	114	62.7	126.2				ug/L	18	Standard
>	In	115	517968.4	0.2				ug/L	507261	Standard
	Sn	118	895.0	18.8				ug/L	683	Standard
	Sb	123	308.2	14.0				ug/L	446	Standard
	Ba	135	66.7	99.4				ug/L	28	Standard
	Ce	140	60.0	88.2				ug/L	33	Standard
>	Tb	159	835902.7	0.3				ug/L	800803	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	133.7	156.4				ug/L	13	Standard
	Tl	205	51.7	114.6				ug/L	13	Standard
	Pb	206	275.3	38.0				ug/L	226	Standard
	Pb	207	236.3	37.0				ug/L	204	Standard
	Pb	208	923.0	26.3				ug/L	852	Standard
	U	238	51.0	124.2				ug/L	13	Standard
>	Bi	209	464909.5	1.4				ug/L	449044	Standard

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Na	23	1.7	173.2	mg/L	2	Standard
Mg	24	33.3	31.2	mg/L	58	Standard
K	39	38.3	52.7	mg/L	27	Standard
Ca	43	18.3	87.7	mg/L	20	Standard
Fe	54	155.9	10.5	mg/L	158	Standard
Fe	57	213.3	22.5	mg/L	267	Standard
Sc-1	45	40447.3	0.7	mg/L	38815	Standard
Cl	35	57383.8	0.6	ug/L	57611	Standard
Kr	83	4.0	25.0	ug/L	2	Standard
Br	81	1603.4	7.2	ug/L	1617	Standard
P	31	19110.4	2.4	ug/L	19244	Standard
S	34	3323.7	4.3	ug/L	3557	Standard
Sr	88	48.3	39.2	ug/L	65	Standard
C	12	66.7	56.8	mg/L	63	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	33.3	17.3	mg/L	23	Standard
Dy	164	19.5	53.7	mg/L	13	Standard
Ho-1	165	6.7	43.3	mg/L	10	Standard
Er	166	10.0	100.0	mg/L	13	Standard
I	127	9463.0	1.4	mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Wednesday, July 06, 2016 09:14:26
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65866.4	4.4				ug/L	68501	Standard
	Be	9	43758.1	2.1	**50.0000**	2.126	4.3	ug/L	8	Standard
	Al	27	6851690.7	2.5	**50.0000**	1.133	2.3	ug/L	1397	Standard
	Sc	45	38365.2	3.2				ug/L	38815	Standard
	Ti	47	33502.0	1.0	**100.0000**	2.335	2.3	ug/L	36	Standard
	V	51	354123.4	1.5	**50.0000**	0.807	1.6	ug/L	1284	Standard
	Cr	52	353474.9	1.0	**50.0000**	1.058	2.1	ug/L	6503	Standard
	Cr	53	43696.3	2.4	**50.0000**	1.919	3.8	ug/L	492	Standard
	Mn	55	312268.8	0.3	**50.0000**	0.524	1.0	ug/L	841	Standard
	Co	59	306115.4	0.4	**50.0000**	0.635	1.3	ug/L	229	Standard
	Ni	60	84632.4	1.9	**50.0000**	1.629	3.3	ug/L	344	Standard
	Cu	65	84106.2	1.3	**50.0000**	1.315	2.6	ug/L	115	Standard
	Zn	66	50654.5	0.9	**50.0000**	1.152	2.3	ug/L	190	Standard
>	**Ge**	72	412166.9	1.4				ug/L	409858	Standard
	As	75	52045.3	0.4	**50.0000**	0.886	1.8	ug/L	-22	Standard
	Se	82	5394.9	1.2	**50.0000**	0.077	0.2	ug/L	18	Standard
	Se-1	77	3526.7	2.1	**50.0000**	1.755	3.5	ug/L	50	Standard
>	**Ga**	71	143.3	16.1				mg/L	97	Standard
	Rb	85	768.4	16.3				ug/L	25	Standard
	Y	89	372269.2	3.3				ug/L	376763	Standard
>	**Rh**	103	36.7	43.8				ug/L	20	Standard
	Mo	98	230812.3	1.4	**100.0000**	1.677	1.7	ug/L	51	Standard
	Ag	107	300268.2	0.5	**50.0000**	0.604	1.2	ug/L	76	Standard
	Cd	111	97215.6	1.2	**50.0000**	0.313	0.6	mg/L	6	Standard
	Cd	114	238532.4	1.1	**50.0000**	0.702	1.4	ug/L	18	Standard
>	**In**	115	495991.8	1.6				ug/L	507261	Standard
	Sn	118	265345.1	0.9	**50.0000**	0.957	1.9	ug/L	683	Standard
	Sb	123	201515.8	1.9	**50.0000**	0.380	0.8	ug/L	446	Standard
	Ba	135	92475.7	0.4	**50.0000**	0.633	1.3	ug/L	28	Standard
	Ce	140	98.3	15.5				ug/L	33	Standard
>	**Tb**	159	786281.1	2.6				ug/L	800803	Standard
	Ho	165	3.3	86.6				ug/L	10	Standard
	Tl	203	380657.7	0.9	**50.0000**	0.500	1.0	ug/L	13	Standard
	Tl	205	330146.0	2.3	**50.0000**	0.875	1.7	ug/L	13	Standard
	Pb	206	242582.5	0.3	**50.0000**	0.221	0.4	ug/L	226	Standard
	Pb	207	220711.3	0.8	**50.0000**	0.034	0.1	ug/L	204	Standard
	Pb	208	894041.3	0.2	**50.0000**	0.321	0.6	ug/L	852	Standard
	U	238	326852.4	1.0	**50.0000**	0.354	0.7	ug/L	13	Standard
>	**Bi**	209	440295.0	0.7				ug/L	449044	Standard

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Na	23	3.3	173.2	**5.0000**	16.319	326.4	mg/L	2	Standard
Mg	24	3670.4	2.3	**5.0000**	0.168	3.4	mg/L	58	Standard
K	39	1323.4	3.2	**5.0000**	0.149	3.0	mg/L	27	Standard
Ca	43	88.3	11.8	**5.0000**	0.808	16.2	mg/L	20	Standard
Fe	54	6179.3	2.3	**5.0000**	0.141	2.8	mg/L	158	Standard
Fe	57	1725.1	6.9	**5.0000**	0.273	5.5	mg/L	267	Standard
> **Sc-1**	45	38365.2	3.2				mg/L	38815	Standard
Cl	35	58419.8	1.9				ug/L	57611	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	1690.1	3.1				ug/L	1617	Standard
P	31	20316.9	1.2				ug/L	19244	Standard
S	34	3730.5	4.5				ug/L	3557	Standard
Sr	88	81.7	19.7				ug/L	65	Standard
C	12	70.0	37.8				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	23	Standard
Dy	164	9.8	2.8				mg/L	13	Standard
Ho-1	165	3.3	86.6				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	17104.7	2.2				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 3
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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Wednesday, July 06, 2016 09:17:38
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	66884.0	0.1				ug/L	68501	Standard
	Be	9	88224.6	3.2	**99.5740**	3.306	3.3	ug/L	8	Standard
	Al	27	13788828.6	0.3	**99.4964**	0.194	0.2	ug/L	1397	Standard
	Sc	45	39158.9	0.7				ug/L	38815	Standard
	Ti	47	68919.1	0.6	**201.5379**	1.843	0.9	ug/L	36	Standard
	V	51	719296.6	1.5	**100.2019**	0.102	0.1	ug/L	1284	Standard
	Cr	52	705385.2	0.5	**99.7044**	1.740	1.7	ug/L	6503	Standard
	Cr	53	87203.6	1.1	**99.4514**	2.654	2.7	ug/L	492	Standard
	Mn	55	615004.9	1.8	**98.6300**	0.309	0.3	ug/L	841	Standard
	Co	59	609072.6	1.8	**99.0923**	0.921	0.9	ug/L	229	Standard
	Ni	60	170911.2	0.3	**99.9152**	1.711	1.7	ug/L	344	Standard
	Cu	65	170582.3	0.9	**100.0576**	0.984	1.0	ug/L	115	Standard
	Zn	66	103031.8	1.2	**100.2529**	1.311	1.3	ug/L	190	Standard
>	Ge	72	417484.4	1.5				ug/L	409858	Standard
	As	75	105421.3	1.9	**99.9351**	0.523	0.5	ug/L	-22	Standard
	Se	82	10609.1	1.1	**98.5413**	0.717	0.7	ug/L	18	Standard
	Se-1	77	7041.6	1.7	**99.6311**	0.902	0.9	ug/L	50	Standard
>	Ga	71	120.0	22.0				mg/L	97	Standard
	Rb	85	1431.7	9.1				ug/L	25	Standard
	Y	89	347235.8	1.1				ug/L	376763	Standard
>	Rh	103	50.0	40.0				ug/L	20	Standard
	Mo	98	472903.2	1.9	**204.0734**	7.868	3.9	ug/L	51	Standard
	Ag	107	609290.7	0.4	**101.5465**	1.842	1.8	ug/L	76	Standard
	Cd	111	190186.3	0.3	**99.7182**	2.132	2.1	mg/L	6	Standard
	Cd	114	463334.3	1.9	**99.3479**	0.949	1.0	ug/L	18	Standard
>	In	115	487825.7	2.0				ug/L	507261	Standard
	Sn	118	532387.4	0.9	**101.0517**	2.398	2.4	ug/L	683	Standard
	Sb	123	428675.4	0.6	**103.9403**	2.689	2.6	ug/L	446	Standard
	Ba	135	183999.9	1.0	**100.5640**	1.058	1.1	ug/L	28	Standard
	Ce	140	121.7	24.8				ug/L	33	Standard
>	Tb	159	797848.9	1.9				ug/L	800803	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	758741.0	0.7	**98.4092**	0.290	0.3	ug/L	13	Standard
	Tl	205	656065.4	1.0	**98.2593**	1.296	1.3	ug/L	13	Standard
	Pb	206	490776.8	0.9	**99.1731**	1.193	1.2	ug/L	226	Standard
	Pb	207	444826.7	1.6	**98.9819**	1.805	1.8	ug/L	204	Standard
	Pb	208	1755326.8	0.8	**97.6712**	0.884	0.9	ug/L	852	Standard
	U	238	658871.7	1.7	**98.9710**	1.946	2.0	ug/L	13	Standard
>	Bi	209	452838.5	0.5				ug/L	449044	Standard

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Na	23	1.7	173.2	**0.1636**	15.495	9469.0	mg/L	2	Standard
Mg	24	7491.9	4.0	**10.0159**	0.397	4.0	mg/L	58	Standard
K	39	2466.9	4.5	**9.6061**	0.448	4.7	mg/L	27	Standard
Ca	43	150.0	8.8	**9.5397**	1.008	10.6	mg/L	20	Standard
Fe	54	11922.4	5.3	**9.7701**	0.472	4.8	mg/L	158	Standard
Fe	57	3127.0	4.3	**9.6894**	0.495	5.1	mg/L	267	Standard
> **Sc-1**	45	39158.9	0.7				mg/L	38815	Standard
Cl	35	56905.3	1.1				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1556.7	6.9				ug/L	1617	Standard
P	31	20498.9	2.2				ug/L	19244	Standard
S	34	3742.1	6.2				ug/L	3557	Standard
Sr	88	81.7	19.7				ug/L	65	Standard
C	12	83.3	18.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	23	Standard
Dy	164	6.0	87.0				mg/L	13	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	1631.8	7.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Wednesday, July 06, 2016 09:20:51
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	66356.7	1.4				ug/L	68501	Standard
	Be	9	43475.6	2.2	**49.4638**	0.458	0.9	ug/L	8	Standard
	Al	27	7054643.4	2.9	**51.3289**	1.450	2.8	ug/L	1397	Standard
	Sc	45	38495.5	1.3				ug/L	38815	Standard
	Ti	47	34184.5	1.1	**99.3657**	1.944	2.0	ug/L	36	Standard
	V	51	366676.1	1.6	**50.7082**	0.578	1.1	ug/L	1284	Standard
	Cr	52	360229.4	1.7	**50.1586**	1.359	2.7	ug/L	6503	Standard
	Cr	53	44777.8	2.1	**50.5577**	1.541	3.0	ug/L	492	Standard
	Mn	55	318282.5	2.3	**50.7079**	1.592	3.1	ug/L	841	Standard
	Co	59	313631.6	2.7	**50.7369**	1.677	3.3	ug/L	229	Standard
	Ni	60	85664.2	1.3	**49.7047**	1.124	2.3	ug/L	344	Standard
	Cu	65	85779.5	0.3	**50.0130**	0.649	1.3	ug/L	115	Standard
	Zn	66	52022.2	0.4	**50.2627**	0.310	0.6	ug/L	190	Standard
>	Ge	72	419951.3	1.0				ug/L	409858	Standard
	As	75	53198.3	0.4	**50.1862**	0.299	0.6	ug/L	-22	Standard
	Se	82	5468.0	1.7	**50.4702**	1.293	2.6	ug/L	18	Standard
	Se-1	77	3629.1	2.1	**50.6717**	0.631	1.2	ug/L	50	Standard
>	Ga	71	115.0	15.1				mg/L	97	Standard
	Rb	85	778.4	9.3				ug/L	25	Standard
	Y	89	357538.5	1.7				ug/L	376763	Standard
>	Rh	103	33.3	22.9				ug/L	20	Standard
	Mo	98	239539.0	1.4	**103.1272**	1.538	1.5	ug/L	51	Standard
	Ag	107	306299.6	0.9	**50.9387**	0.703	1.4	ug/L	76	Standard
	Cd	111	97069.3	1.3	**50.7873**	0.404	0.8	mg/L	6	Standard
	Cd	114	234626.7	1.1	**50.2178**	0.829	1.6	ug/L	18	Standard
>	In	115	488900.7	0.6				ug/L	507261	Standard
	Sn	118	263207.0	1.9	**49.7800**	1.006	2.0	ug/L	683	Standard
	Sb	123	214060.8	1.6	**51.7618**	0.833	1.6	ug/L	446	Standard
	Ba	135	93668.6	0.5	**51.0843**	0.522	1.0	ug/L	28	Standard
	Ce	140	71.7	24.5				ug/L	33	Standard
>	Tb	159	790633.0	1.4				ug/L	800803	Standard
	Ho	165	10.0	132.3				ug/L	10	Standard
	Tl	203	386612.8	0.6	**50.2968**	0.791	1.6	ug/L	13	Standard
	Tl	205	338341.7	1.7	**50.8334**	1.347	2.7	ug/L	13	Standard
	Pb	206	249116.9	0.4	**50.4726**	0.709	1.4	ug/L	226	Standard
	Pb	207	225878.3	0.4	**50.3950**	0.604	1.2	ug/L	204	Standard
	Pb	208	910277.1	0.9	**50.7865**	0.810	1.6	ug/L	852	Standard
	U	238	332181.4	0.8	**50.0553**	1.080	2.2	ug/L	13	Standard
>	Bi	209	451671.8	1.3				ug/L	449044	Standard

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Na	23	1.7	173.2	**0.4126**	15.927	3859.7	mg/L	2	Standard
Mg	24	3910.5	3.2	**5.3019**	0.233	4.4	mg/L	58	Standard
K	39	1270.1	5.5	**4.9629**	0.272	5.5	mg/L	27	Standard
Ca	43	80.0	22.5	**4.5990**	1.376	29.9	mg/L	20	Standard
Fe	54	6189.1	5.7	**5.1014**	0.233	4.6	mg/L	158	Standard
Fe	57	1740.1	3.2	**5.1884**	0.136	2.6	mg/L	267	Standard
Sc-1	45	38495.5	1.3				mg/L	38815	Standard
Cl	35	57189.1	1.2				ug/L	57611	Standard
Kr	83	3.0	57.7				ug/L	2	Standard
Br	81	1483.4	3.7				ug/L	1617	Standard
P	31	20629.0	2.5				ug/L	19244	Standard
S	34	3698.8	3.4				ug/L	3557	Standard
Sr	88	71.7	10.7				ug/L	65	Standard
C	12	63.3	18.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	6.0	94.2				mg/L	13	Standard
Ho-1	165	10.0	132.3				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	16258.7	1.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	98.928		
Al	27	102.658		
Sc	45			
Ti	47	99.366		
V	51	101.416		
Cr	52	100.317		
Cr	53			
Mn	55	101.416		
Co	59	101.474		
Ni	60	99.409		
Cu	65	100.026		
Zn	66	100.525		
Ge	72		102.463	
As	75	100.372		
Se	82	100.940		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	103.127		
Ag	107	101.877		
Cd	111	101.575		
Cd	114			
> In	115		96.381	
Sn	118	99.560		
Sb	123	103.524		
Ba	135	102.169		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.594		
Tl	205			
Pb	206	100.945		
Pb	207	100.790		
Pb	208	101.573		
U	238	100.111		
> Bi	209		100.585	
Na	23	8.253		
Mg	24	106.038		
K	39	99.259		
Ca	43	91.981		
Fe	54	102.028		
Fe	57	103.769		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Wednesday, July 06, 2016 09:24:04
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67100.0	2.8				ug/L	68501	Standard
	Be	9	23.3	44.6	**0.0459**	0.012	26.8	ug/L	8	Standard
	Al	27	2183.5	5.5	**0.0508**	0.001	1.9	ug/L	1397	Standard
	Sc	45	38350.2	1.8				ug/L	38815	Standard
	Ti	47	45.0	10.2	**0.1079**	0.013	11.8	ug/L	36	Standard
	V	51	1197.9	4.5	**0.0284**	0.009	33.2	ug/L	1284	Standard
	Cr	52	6091.2	0.6	**-0.0369**	0.012	32.3	ug/L	6503	Standard
	Cr	53	483.3	2.6	**0.1526**	0.017	11.3	ug/L	492	Standard
	Mn	55	1339.7	3.7	**0.1261**	0.010	8.2	ug/L	841	Standard
	Co	59	302.7	6.8	**0.0563**	0.004	6.7	ug/L	229	Standard
	Ni	60	363.3	5.5	**0.0617**	0.010	16.0	ug/L	344	Standard
	Cu	65	140.0	3.7	**0.0715**	0.003	4.8	ug/L	115	Standard
	Zn	66	330.3	4.9	**0.2188**	0.020	8.9	ug/L	190	Standard
>	**Ge**	72	404498.0	1.0				ug/L	409858	Standard
	As	75	-54.7	81.6	**0.0457**	0.043	94.2	ug/L	-22	Standard
	Se	82	15.5	9.6	**0.0976**	0.016	16.1	ug/L	18	Standard
	Se-1	77	49.7	14.8	**-0.0288**	0.101	349.5	ug/L	50	Standard
>	**Ga**	71	81.7	23.2				mg/L	97	Standard
	Rb	85	16.7	45.8				ug/L	25	Standard
	Y	89	369622.9	1.1				ug/L	376763	Standard
>	**Rh**	103	16.7	62.4				ug/L	20	Standard
	Mo	98	227.3	14.0	**0.1640**	0.015	8.9	ug/L	51	Standard
	Ag	107	151.0	33.0	**0.0469**	0.008	17.6	ug/L	76	Standard
	Cd	111	28.2	76.8	**0.0534**	0.011	20.6	mg/L	6	Standard
	Cd	114	78.0	111.0	**0.0533**	0.018	33.5	ug/L	18	Standard
>	**In**	115	517958.4	1.8				ug/L	507261	Standard
	Sn	118	1193.4	27.5	**0.1041**	0.062	59.9	ug/L	683	Standard
	Sb	123	1119.5	34.5	**0.2362**	0.092	38.9	ug/L	446	Standard
	Ba	135	62.7	17.1	**0.0481**	0.006	12.7	ug/L	28	Standard
	Ce	140	18.3	31.5				ug/L	33	Standard
>	**Tb**	159	802322.5	1.8				ug/L	800803	Standard
	Ho	165	5.0	100.0				ug/L	10	Standard
	Tl	203	124.7	67.7	**0.0496**	0.011	22.5	ug/L	13	Standard
	Tl	205	53.3	42.3	**0.0506**	0.003	6.9	ug/L	13	Standard
	Pb	206	298.0	8.1	**0.0563**	0.006	10.3	ug/L	226	Standard
	Pb	207	230.3	14.6	**0.0502**	0.008	15.3	ug/L	204	Standard
	Pb	208	1030.3	4.7	**0.0574**	0.003	4.4	ug/L	852	Standard
	U	238	66.0	13.5	**0.0525**	0.001	2.7	ug/L	13	Standard
>	**Bi**	209	452580.9	1.6				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	51.7	20.1	**0.0326**	0.015	47.2	mg/L	58	Standard
K	39	26.7	28.6	**-0.0338**	0.033	97.4	mg/L	27	Standard
Ca	43	25.0	34.6	**0.5702**	0.676	118.6	mg/L	20	Standard
Fe	54	150.9	33.4	**0.0073**	0.041	560.9	mg/L	158	Standard
Fe	57	226.7	20.0	**0.0891**	0.161	181.3	mg/L	267	Standard
> **Sc-1**	45	38350.2	1.8				mg/L	38815	Standard
Cl	35	56957.5	0.7				ug/L	57611	Standard
Kr	83	2.7	94.4				ug/L	2	Standard
Br	81	1566.7	7.6				ug/L	1617	Standard
P	31	19928.1	2.3				ug/L	19244	Standard
S	34	3602.1	6.0				ug/L	3557	Standard
Sr	88	55.0	15.7				ug/L	65	Standard
C	12	60.0	28.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	49.5				mg/L	23	Standard
Dy	164	13.0	89.8				mg/L	13	Standard
Ho-1	165	5.0	100.0				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	9436.3	0.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.692	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	102.109
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.788
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Tl	203	
QC Std 2	Na	23	

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QC Std 2	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Wednesday, July 06, 2016 09:27:17
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65417.6	1.3				ug/L	68501	Standard
	Be	9	186.7	5.6	**0.2348**	0.012	5.3	ug/L	8	Standard
	Al	27	2355.2	45.5	**0.0524**	0.008	14.6	ug/L	1397	Standard
	Sc	45	37294.2	0.1				ug/L	38815	Standard
	Ti	47	42.7	24.1	**0.0989**	0.031	31.6	ug/L	36	Standard
	V	51	3828.2	3.6	**0.3978**	0.022	5.6	ug/L	1284	Standard
	Cr	52	11586.1	1.6	**0.7432**	0.033	4.5	ug/L	6503	Standard
	Cr	53	1166.7	5.5	**0.9370**	0.082	8.8	ug/L	492	Standard
	Mn	55	3627.4	3.0	**0.4950**	0.021	4.2	ug/L	841	Standard
	Co	59	2526.2	0.4	**0.4225**	0.004	0.8	ug/L	229	Standard
	Ni	60	2915.6	1.9	**1.5740**	0.024	1.5	ug/L	344	Standard
	Cu	65	1393.7	0.1	**0.8162**	0.004	0.5	ug/L	115	Standard
	Zn	66	6625.1	1.8	**6.4340**	0.109	1.7	ug/L	190	Standard
>	**Ge**	72	411474.6	0.6				ug/L	409858	Standard
	As	75	332.4	3.7	**0.4184**	0.013	3.2	ug/L	-22	Standard
	Se	82	50.5	10.9	**0.4250**	0.052	12.2	ug/L	18	Standard
	Se-1	77	77.0	7.2	**0.3547**	0.078	22.0	ug/L	50	Standard
>	**Ga**	71	86.7	29.0				mg/L	97	Standard
	Rb	85	31.7	24.1				ug/L	25	Standard
	Y	89	346988.1	2.4				ug/L	376763	Standard
>	**Rh**	103	26.7	10.8				ug/L	20	Standard
	Mo	98	119.3	16.3	**0.1236**	0.010	7.7	ug/L	51	Standard
	Ag	107	2405.2	1.0	**0.4282**	0.008	1.8	ug/L	76	Standard
	Cd	111	441.8	10.7	**0.2737**	0.030	10.8	mg/L	6	Standard
	Cd	114	1119.1	2.0	**0.2799**	0.008	2.7	ug/L	18	Standard
>	**In**	115	482554.7	1.9				ug/L	507261	Standard
	Sn	118	655.0	25.2	**0.0153**	0.029	191.7	ug/L	683	Standard
	Sb	123	1858.9	4.6	**0.4351**	0.013	3.0	ug/L	446	Standard
	Ba	135	1308.4	0.6	**0.7386**	0.014	1.9	ug/L	28	Standard
	Ce	140	8.3	69.3				ug/L	33	Standard
>	**Tb**	159	783468.8	1.6				ug/L	800803	Standard
	Ho	165	15.0	66.7				ug/L	10	Standard
	Tl	203	676.0	5.5	**0.1197**	0.006	5.2	ug/L	13	Standard
	Tl	205	601.7	15.4	**0.1314**	0.015	11.6	ug/L	13	Standard
	Pb	206	1247.7	7.0	**0.2445**	0.022	8.9	ug/L	226	Standard
	Pb	207	1033.4	4.7	**0.2255**	0.015	6.5	ug/L	204	Standard
	Pb	208	4382.9	3.6	**0.2404**	0.013	5.4	ug/L	852	Standard
	U	238	2536.5	4.5	**0.4179**	0.023	5.6	ug/L	13	Standard
>	**Bi**	209	459865.4	1.7				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	50.0	10.0	**0.0321**	0.007	21.9	mg/L	58	Standard
K	39	20.0	50.0	**-0.0588**	0.042	70.7	mg/L	27	Standard
Ca	43	26.7	10.8	**0.7405**	0.217	29.3	mg/L	20	Standard
Fe	54	103.7	16.3	**-0.0299**	0.015	49.0	mg/L	158	Standard
Fe	57	241.7	33.6	**0.1616**	0.283	174.8	mg/L	267	Standard
> **Sc-1**	45	37294.2	0.1				mg/L	38815	Standard
Cl	35	54505.2	0.8				ug/L	57611	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1563.4	7.1				ug/L	1617	Standard
P	31	13631.1	2.5				ug/L	19244	Standard
S	34	3488.7	2.2				ug/L	3557	Standard
Sr	88	75.0	23.1				ug/L	65	Standard
C	12	66.7	56.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	23	Standard
Dy	164	6.2	193.4				mg/L	13	Standard
Ho-1	165	15.0	66.7				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	1130.0	12.6				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	117.422		
Al	27	5.237		
Sc	45			
Ti	47			
V	51	99.451		
Cr	52	92.904		
Cr	53			
Mn	55	98.996		
Co	59	105.620		
Ni	60	98.374		
Cu	65	102.028		
Zn	66	102.944		
> Ge	72		100.394	
As	75	104.589		
Se	82	106.246		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	107.059		
Cd	111	114.057		
Cd	114			
> In	115			95.130
Sn	118			
Sb	123	108.770		
Ba	135	98.481		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	149.655		
Tl	205			
Pb	206			
Pb	207			
Pb	208	120.192		
U	238	104.477		
> Bi	209			102.410
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	
QC Std 3	Tl	203	

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Wednesday, July 06, 2016 09:30:29
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61360.7	2.7				ug/L	68501	Standard
	Be	9	15.0	0.0	**0.0379**	0.000	1.3	ug/L	8	Standard
	Al	27	6080942.0	0.8	**47.8630**	0.940	2.0	ug/L	1397	Standard
	Sc	45	35434.7	2.4				ug/L	38815	Standard
	Ti	47	33819.4	1.1	**108.9282**	1.555	1.4	ug/L	36	Standard
	V	51	1377.9	9.8	**0.0677**	0.022	32.9	ug/L	1284	Standard
	Cr	52	5607.7	0.5	**-0.0525**	0.010	18.8	ug/L	6503	Standard
	Cr	53	2843.6	7.6	**3.1694**	0.297	9.4	ug/L	492	Standard
	Mn	55	2265.8	2.0	**0.3048**	0.005	1.6	ug/L	841	Standard
	Co	59	371.0	7.9	**0.0720**	0.005	7.5	ug/L	229	Standard
	Ni	60	730.4	5.2	**0.3134**	0.028	9.0	ug/L	344	Standard
	Cu	65	524.3	4.8	**0.3256**	0.018	5.6	ug/L	115	Standard
	Zn	66	828.7	1.3	**0.7759**	0.017	2.1	ug/L	190	Standard
>	**Ge**	72	378975.5	0.8				ug/L	409858	Standard
	As	75	-44.0	48.2	**0.0530**	0.022	41.2	ug/L	-22	Standard
	Se	82	14.2	49.4	**0.0934**	0.070	75.2	ug/L	18	Standard
	Se-1	77	280.7	4.8	**3.6481**	0.177	4.9	ug/L	50	Standard
>	**Ga**	71	138.3	17.8				mg/L	97	Standard
	Rb	85	721.7	0.8				ug/L	25	Standard
	Y	89	331853.6	3.0				ug/L	376763	Standard
>	**Rh**	103	13.3	21.7				ug/L	20	Standard
	Mo	98	199402.1	1.4	**89.6813**	1.424	1.6	ug/L	51	Standard
	Ag	107	208.0	7.5	**0.0592**	0.003	4.4	ug/L	76	Standard
	Cd	111	-165.0	5.5	**-0.0508**	0.005	10.6	mg/L	6	Standard
	Cd	114	386.9	16.9	**0.1238**	0.015	11.9	ug/L	18	Standard
>	**In**	115	468051.7	0.5				ug/L	507261	Standard
	Sn	118	676.7	22.2	**0.0239**	0.030	124.4	ug/L	683	Standard
	Sb	123	1910.7	40.1	**0.4622**	0.193	41.7	ug/L	446	Standard
	Ba	135	45.0	14.6	**0.0414**	0.004	8.9	ug/L	28	Standard
	Ce	140	46.7	22.3				ug/L	33	Standard
>	**Tb**	159	757530.1	1.7				ug/L	800803	Standard
	Ho	165	6.7	114.6				ug/L	10	Standard
	Tl	203	92.7	26.0	**0.0459**	0.003	6.8	ug/L	13	Standard
	Tl	205	90.0	49.4	**0.0566**	0.007	12.3	ug/L	13	Standard
	Pb	206	335.3	13.1	**0.0669**	0.009	14.2	ug/L	226	Standard
	Pb	207	277.7	7.6	**0.0636**	0.005	8.5	ug/L	204	Standard
	Pb	208	1135.7	5.8	**0.0662**	0.004	6.7	ug/L	852	Standard
	U	238	21.0	79.3	**0.0459**	0.003	5.8	ug/L	13	Standard
>	**Bi**	209	432940.1	1.1				ug/L	449044	Standard

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Na	23	3.3	86.6	**10.8562**	17.008	156.7	mg/L	2	Standard
Mg	24	8482.4	1.3	**12.5439**	0.150	1.2	mg/L	58	Standard
K	39	1155.0	6.5	**4.9086**	0.447	9.1	mg/L	27	Standard
Ca	43	233.3	21.1	**17.2901**	3.698	21.4	mg/L	20	Standard
Fe	54	13645.3	0.6	**12.3970**	0.377	3.0	mg/L	158	Standard
Fe	57	3633.8	2.3	**12.6445**	0.637	5.0	mg/L	267	Standard
> **Sc-1**	45	35434.7	2.4				mg/L	38815	Standard
Cl	35	51675.3	0.7				ug/L	57611	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	1330.1	8.5				ug/L	1617	Standard
P	31	6708.2	2.1				ug/L	19244	Standard
S	34	3120.3	1.5				ug/L	3557	Standard
Sr	88	66.7	33.8				ug/L	65	Standard
C	12	96.7	26.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	66.1				mg/L	23	Standard
Dy	164	12.7	119.6				mg/L	13	Standard
Ho-1	165	6.7	114.6				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	5110.9	1.6				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27	0.957		
Sc	45			
Ti	47	108.928		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.465	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	89.681		
Ag	107			
Cd	111			
Cd	114			
> In	115			92.270
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209			96.414
Na	23	86.849		
Mg	24	250.878		
K	39	98.171		
Ca	43	115.267		
Fe	54	99.176		
Fe	57	101.156		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Mn	55	
QC Std 4	Sb	123	

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QC Std 4	Tl	203
QC Std 4	Mg	24

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Wednesday, July 06, 2016 09:33:40
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64567.3	2.5				ug/L	68501	Standard
	Be	9	91125.1	3.2	**106.5212**	0.809	0.8	ug/L	8	Standard
	Al	27	5841463.6	2.0	**43.6871**	0.390	0.9	ug/L	1397	Standard
	Sc	45	37758.7	1.0				ug/L	38815	Standard
	Ti	47	31558.5	0.9	**93.8751**	2.819	3.0	ug/L	36	Standard
	V	51	722341.4	0.7	**102.3673**	1.700	1.7	ug/L	1284	Standard
	Cr	52	704068.9	1.5	**101.2574**	3.373	3.3	ug/L	6503	Standard
	Cr	53	89332.6	1.3	**103.6555**	3.522	3.4	ug/L	492	Standard
	Mn	55	628105.6	1.2	**102.4937**	2.947	2.9	ug/L	841	Standard
	Co	59	608757.5	0.2	**100.7586**	2.068	2.1	ug/L	229	Standard
	Ni	60	168811.6	0.8	**100.3826**	2.213	2.2	ug/L	344	Standard
	Cu	65	170633.5	1.2	**101.8171**	2.544	2.5	ug/L	115	Standard
	Zn	66	104159.9	1.6	**103.1127**	3.201	3.1	ug/L	190	Standard
>	**Ge**	72	410487.5	2.1				ug/L	409858	Standard
	As	75	106667.7	1.2	**102.8884**	3.381	3.3	ug/L	-22	Standard
	Se	82	10891.4	0.5	**102.9229**	2.705	2.6	ug/L	18	Standard
	Se-1	77	7297.8	0.3	**105.0915**	2.607	2.5	ug/L	50	Standard
>	**Ga**	71	166.7	16.5				mg/L	97	Standard
	Rb	85	588.3	10.8				ug/L	25	Standard
	Y	89	358285.2	0.9				ug/L	376763	Standard
>	**Rh**	103	51.7	34.0				ug/L	20	Standard
	Mo	98	193849.3	1.5	**83.7046**	1.699	2.0	ug/L	51	Standard
	Ag	107	512024.5	0.8	**85.3915**	2.560	3.0	ug/L	76	Standard
	Cd	111	192888.4	1.5	**101.1583**	0.926	0.9	mg/L	6	Standard
	Cd	114	469964.6	2.8	**100.8180**	2.635	2.6	ug/L	18	Standard
>	**In**	115	487630.1	2.2				ug/L	507261	Standard
	Sn	118	1078.4	11.5	**0.0947**	0.021	22.4	ug/L	683	Standard
	Sb	123	417338.3	2.0	**101.2012**	0.566	0.6	ug/L	446	Standard
	Ba	135	184015.1	1.0	**100.6250**	1.956	1.9	ug/L	28	Standard
	Ce	140	75.0	30.6				ug/L	33	Standard
>	**Tb**	159	776420.3	0.7				ug/L	800803	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	765644.3	1.1	**101.4362**	1.960	1.9	ug/L	13	Standard
	Tl	205	667667.3	1.5	**102.1249**	0.931	0.9	ug/L	13	Standard
	Pb	206	500852.9	0.2	**103.3724**	0.899	0.9	ug/L	226	Standard
	Pb	207	436808.9	0.8	**99.2777**	1.432	1.4	ug/L	204	Standard
	Pb	208	1811126.3	0.8	**102.9331**	1.386	1.3	ug/L	852	Standard
	U	238	659589.2	0.9	**101.1936**	1.228	1.2	ug/L	13	Standard
>	**Bi**	209	443371.5	0.9				ug/L	449044	Standard

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Na	23	3.3	86.6	**10.0106**	16.275	162.6	mg/L	2	Standard
Mg	24	7865.4	1.0	**10.9091**	0.136	1.2	mg/L	58	Standard
K	39	1000.0	5.3	**3.9554**	0.187	4.7	mg/L	27	Standard
Ca	43	148.3	19.5	**9.8082**	2.124	21.7	mg/L	20	Standard
Fe	54	12345.4	1.8	**10.5037**	0.262	2.5	mg/L	158	Standard
Fe	57	3278.7	4.2	**10.5976**	0.579	5.5	mg/L	267	Standard
Sc-1	45	37758.7	1.0				mg/L	38815	Standard
Cl	35	56009.4	2.9				ug/L	57611	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	1560.1	10.6				ug/L	1617	Standard
P	31	17989.0	3.4				ug/L	19244	Standard
S	34	3142.0	3.8				ug/L	3557	Standard
Sr	88	61.7	30.7				ug/L	65	Standard
C	12	113.3	28.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0					mg/L	23	Standard
Dy	164	16.2	33.1				mg/L	13	Standard
Ho-1	165	8.3	69.3				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	8464.0	3.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	106.521		
Al	27	0.874		
Sc	45			
Ti	47	93.875		
V	51	102.367		
Cr	52	101.257		
Cr	53			
Mn	55	102.494		
Co	59	100.759		
Ni	60	100.383		
Cu	65	101.817		
Zn	66	103.113		
Ge	72		100.154	
As	75	102.888		
Se	82	102.923		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	83.705		
Ag	107	85.392		
Cd	111	101.158		
Cd	114			
In	115		96.130	
Sn	118			
Sb	123	101.201		
Ba	135	100.625		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.436		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.933		
U	238	101.194		
Bi	209		98.737	
Na	23	80.085		
Mg	24	218.182		
K	39	79.108		
Ca	43	65.388		
Fe	54	84.030		
Fe	57	84.781		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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QC Std 5	K	39
QC Std 5	Ca	43

Sample ID: QC Std 5
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 09:36:53
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	66505.7	2.0				ug/L	68501	Standard
	Be	9	44953.3	3.2	**51.0275**	0.926	1.8	ug/L	8	Standard
	Al	27	6996524.9	1.6	**50.7955**	0.749	1.5	ug/L	1397	Standard
	Sc	45	38022.7	1.7				ug/L	38815	Standard
	Ti	47	33782.0	1.4	**100.5626**	2.963	2.9	ug/L	36	Standard
	V	51	357671.8	0.9	**50.6587**	1.245	2.5	ug/L	1284	Standard
	Cr	52	354246.5	1.3	**50.5178**	1.460	2.9	ug/L	6503	Standard
	Cr	53	43226.6	2.1	**49.9696**	1.458	2.9	ug/L	492	Standard
	Mn	55	314552.6	0.4	**51.3140**	0.983	1.9	ug/L	841	Standard
	Co	59	307541.5	1.8	**50.9392**	1.094	2.1	ug/L	229	Standard
	Ni	60	84538.5	1.1	**50.2327**	1.339	2.7	ug/L	344	Standard
	Cu	65	84460.4	0.1	**50.4258**	0.835	1.7	ug/L	115	Standard
	Zn	66	51209.1	0.6	**50.6642**	0.504	1.0	ug/L	190	Standard
>	Ge	72	410145.3	1.6				ug/L	409858	Standard
	As	75	52298.5	0.3	**50.5211**	0.645	1.3	ug/L	-22	Standard
	Se	82	5387.6	0.7	**50.9166**	0.695	1.4	ug/L	18	Standard
	Se-1	77	3526.4	1.5	**50.4307**	1.547	3.1	ug/L	50	Standard
>	Ga	71	90.0	9.6				mg/L	97	Standard
	Rb	85	696.7	6.5				ug/L	25	Standard
	Y	89	365798.1	0.7				ug/L	376763	Standard
>	Rh	103	33.3	48.2				ug/L	20	Standard
	Mo	98	235366.3	0.5	**98.5044**	2.325	2.4	ug/L	51	Standard
	Ag	107	305020.7	0.3	**49.3129**	1.388	2.8	ug/L	76	Standard
	Cd	111	97013.5	1.7	**49.3321**	0.528	1.1	mg/L	6	Standard
	Cd	114	235858.1	1.3	**49.0627**	0.748	1.5	ug/L	18	Standard
>	In	115	503155.0	2.8				ug/L	507261	Standard
	Sn	118	267872.4	1.1	**49.2399**	0.827	1.7	ug/L	683	Standard
	Sb	123	217573.7	0.6	**51.1402**	1.098	2.1	ug/L	446	Standard
	Ba	135	92365.7	1.0	**48.9616**	0.896	1.8	ug/L	28	Standard
	Ce	140	65.0	48.0				ug/L	33	Standard
>	Tb	159	792588.9	2.6				ug/L	800803	Standard
	Ho	165	10.0					ug/L	10	Standard
	Tl	203	384594.0	0.3	**50.4727**	0.329	0.7	ug/L	13	Standard
	Tl	205	336187.3	0.9	**50.9472**	0.055	0.1	ug/L	13	Standard
	Pb	206	247875.6	0.9	**50.6606**	0.314	0.6	ug/L	226	Standard
	Pb	207	224269.3	0.7	**50.4752**	0.242	0.5	ug/L	204	Standard
	Pb	208	908021.7	0.7	**51.1061**	0.556	1.1	ug/L	852	Standard
	U	238	333822.0	1.2	**50.7390**	0.560	1.1	ug/L	13	Standard
>	Bi	209	447704.5	0.9				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	3780.5	3.8	**5.1881**	0.227	4.4	mg/L	58	Standard
K	39	1228.4	12.1	**4.8519**	0.530	10.9	mg/L	27	Standard
Ca	43	108.3	37.3	**6.7544**	2.939	43.5	mg/L	20	Standard
Fe	54	5918.1	5.4	**4.9348**	0.198	4.0	mg/L	158	Standard
Fe	57	1796.8	5.7	**5.4534**	0.272	5.0	mg/L	267	Standard
> **Sc-1**	45	38022.7	1.7				mg/L	38815	Standard
Cl	35	56907.4	1.6				ug/L	57611	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	1520.1	14.0				ug/L	1617	Standard
P	31	19652.7	3.0				ug/L	19244	Standard
S	34	3582.1	6.2				ug/L	3557	Standard
Sr	88	58.3	35.7				ug/L	65	Standard
C	12	83.3	48.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	2.5	222.5				mg/L	13	Standard
Ho-1	165	10.0					mg/L	10	Standard
Er	166	16.7	34.6				mg/L	13	Standard
I	127	16659.2	0.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	102.055		
Al	27	101.591		
Sc	45			
Ti	47	100.563		
V	51	101.317		
Cr	52	101.036		
Cr	53			
Mn	55	102.628		
Co	59	101.878		
Ni	60	100.465		
Cu	65	100.852		
Zn	66	101.328		
> Ge	72		100.070	
As	75	101.042		
Se	82	101.833		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	98.504		
Ag	107	98.626		
Cd	111	98.664		
Cd	114			
In	115			99.191
Sn	118	98.480		
Sb	123	102.280		
Ba	135	97.923		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.945		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.212		
U	238	101.478		
Bi	209			99.702
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 09:40:05
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66617.8	0.8				ug/L	68501	Standard
	Be	9	33.3	74.0	**0.0573**	0.028	48.9	ug/L	8	Standard
	Al	27	2161.8	25.3	**0.0507**	0.004	7.7	ug/L	1397	Standard
	Sc	45	38288.3	3.0				ug/L	38815	Standard
	Ti	47	35.7	16.4	**0.0742**	0.017	23.1	ug/L	36	Standard
	V	51	1261.9	1.4	**0.0280**	0.003	9.9	ug/L	1284	Standard
	Cr	52	6321.3	1.3	**-0.0523**	0.014	26.2	ug/L	6503	Standard
	Cr	53	518.3	8.0	**0.1616**	0.049	30.1	ug/L	492	Standard
	Mn	55	1281.1	5.7	**0.1051**	0.012	11.5	ug/L	841	Standard
	Co	59	281.7	13.9	**0.0503**	0.006	12.7	ug/L	229	Standard
	Ni	60	349.7	5.0	**0.0424**	0.011	25.7	ug/L	344	Standard
	Cu	65	134.3	2.3	**0.0637**	0.001	2.3	ug/L	115	Standard
	Zn	66	339.7	5.5	**0.2101**	0.019	9.0	ug/L	190	Standard
>	**Ge**	72	427105.9	0.4				ug/L	409858	Standard
	As	75	-33.1	67.2	**0.0683**	0.021	30.1	ug/L	-22	Standard
	Se	82	22.7	11.6	**0.1545**	0.025	15.9	ug/L	18	Standard
	Se-1	77	55.0	19.7	**0.0077**	0.152	1983.6	ug/L	50	Standard
>	**Ga**	71	78.3	13.3				mg/L	97	Standard
	Rb	85	18.3	103.3				ug/L	25	Standard
	Y	89	350460.3	0.9				ug/L	376763	Standard
>	**Rh**	103	20.0	50.0				ug/L	20	Standard
	Mo	98	275.0	5.1	**0.1892**	0.006	3.3	ug/L	51	Standard
	Ag	107	134.3	23.5	**0.0453**	0.005	11.8	ug/L	76	Standard
	Cd	111	12.2	37.2	**0.0457**	0.002	5.3	mg/L	6	Standard
	Cd	114	38.5	33.1	**0.0456**	0.003	6.2	ug/L	18	Standard
>	**In**	115	491789.1	1.5				ug/L	507261	Standard
	Sn	118	988.4	21.5	**0.0758**	0.037	48.9	ug/L	683	Standard
	Sb	123	1592.3	35.2	**0.3614**	0.130	35.9	ug/L	446	Standard
	Ba	135	53.3	21.9	**0.0447**	0.007	15.0	ug/L	28	Standard
	Ce	140	16.7	62.4				ug/L	33	Standard
>	**Tb**	159	781565.5	1.5				ug/L	800803	Standard
	Ho	165	10.0	100.0				ug/L	10	Standard
	Tl	203	98.7	20.5	**0.0461**	0.003	6.2	ug/L	13	Standard
	Tl	205	86.7	8.8	**0.0554**	0.001	2.4	ug/L	13	Standard
	Pb	206	292.7	16.7	**0.0548**	0.011	19.9	ug/L	226	Standard
	Pb	207	246.3	10.8	**0.0535**	0.007	12.6	ug/L	204	Standard
	Pb	208	1017.0	10.2	**0.0564**	0.007	11.9	ug/L	852	Standard
	U	238	61.7	31.6	**0.0519**	0.003	6.0	ug/L	13	Standard
>	**Bi**	209	455909.4	1.7				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	50.0	17.3	**0.0301**	0.010	32.4	mg/L	58	Standard
K	39	36.7	34.3	**0.0056**	0.047	830.8	mg/L	27	Standard
Ca	43	26.7	21.7	**0.6975**	0.476	68.2	mg/L	20	Standard
Fe	54	127.9	32.7	**-0.0110**	0.038	345.5	mg/L	158	Standard
Fe	57	243.3	9.7	**0.1461**	0.086	58.8	mg/L	267	Standard
> **Sc-1**	45	38288.3	3.0				mg/L	38815	Standard
Cl	35	57568.5	0.3				ug/L	57611	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	1590.1	4.4				ug/L	1617	Standard
P	31	19429.1	3.6				ug/L	19244	Standard
S	34	3620.4	4.4				ug/L	3557	Standard
Sr	88	75.0	29.1				ug/L	65	Standard
C	12	53.3	65.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	23	Standard
Dy	164	3.2	186.4				mg/L	13	Standard
Ho-1	165	10.0	100.0				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	9119.4	0.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.208	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.950
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.529
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	
QC Std 7	Tl	203	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW M1 WG574195-02
Sample Date/Time: Wednesday, July 06, 2016 09:43:17
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67511.8	3.1				ug/L	68501	Standard
	Be	9	25.0	34.6	**0.0476**	0.010	21.9	ug/L	8	Standard
	Al	27	5334.3	10.5	**0.0732**	0.004	5.8	ug/L	1397	Standard
	Sc	45	39065.3	1.5				ug/L	38815	Standard
	Ti	47	49.7	15.4	**0.1167**	0.022	18.5	ug/L	36	Standard
	V	51	1253.3	6.8	**0.0300**	0.013	44.6	ug/L	1284	Standard
	Cr	52	6631.5	2.9	**0.0081**	0.037	458.1	ug/L	6503	Standard
	Cr	53	545.0	6.4	**0.2024**	0.035	17.4	ug/L	492	Standard
	Mn	55	1151.7	3.0	**0.0881**	0.004	4.1	ug/L	841	Standard
	Co	59	268.0	15.0	**0.0489**	0.006	13.0	ug/L	229	Standard
	Ni	60	392.3	2.3	**0.0709**	0.007	9.6	ug/L	344	Standard
	Cu	65	185.3	9.7	**0.0949**	0.010	10.2	ug/L	115	Standard
	Zn	66	1260.4	3.9	**1.1090**	0.058	5.3	ug/L	190	Standard
>	**Ge**	72	419416.9	1.1				ug/L	409858	Standard
	As	75	-28.0	41.9	**0.0725**	0.011	14.9	ug/L	-22	Standard
	Se	82	14.4	17.6	**0.0816**	0.025	30.3	ug/L	18	Standard
	Se-1	77	63.0	6.3	**0.1348**	0.050	36.9	ug/L	50	Standard
>	**Ga**	71	83.3	12.5				mg/L	97	Standard
	Rb	85	50.0	26.5				ug/L	25	Standard
	Y	89	366616.6	3.0				ug/L	376763	Standard
>	**Rh**	103	25.0	0.0				ug/L	20	Standard
	Mo	98	259.4	6.9	**0.1805**	0.007	3.8	ug/L	51	Standard
	Ag	107	900.4	144.5	**0.1721**	0.216	125.8	ug/L	76	Standard
	Cd	111	19.2	57.3	**0.0491**	0.005	11.1	mg/L	6	Standard
	Cd	114	41.4	108.1	**0.0459**	0.009	20.2	ug/L	18	Standard
>	**In**	115	500661.9	2.1				ug/L	507261	Standard
	Sn	118	693.3	21.9	**0.0183**	0.028	154.4	ug/L	683	Standard
	Sb	123	868.0	28.9	**0.1846**	0.059	31.7	ug/L	446	Standard
	Ba	135	81.7	11.6	**0.0592**	0.004	7.1	ug/L	28	Standard
	Ce	140	48.3	31.6				ug/L	33	Standard
>	**Tb**	159	787550.5	1.0				ug/L	800803	Standard
	Ho	165	1.7	173.2				ug/L	10	Standard
	Tl	203	87.3	46.5	**0.0445**	0.005	11.5	ug/L	13	Standard
	Tl	205	70.0	57.1	**0.0529**	0.006	11.1	ug/L	13	Standard
	Pb	206	294.0	2.6	**0.0548**	0.001	2.1	ug/L	226	Standard
	Pb	207	248.3	8.8	**0.0536**	0.004	8.3	ug/L	204	Standard
	Pb	208	1043.0	5.5	**0.0576**	0.003	5.1	ug/L	852	Standard
	U	238	64.3	49.6	**0.0522**	0.005	9.0	ug/L	13	Standard
>	**Bi**	209	457274.9	0.7				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	38.3	54.3	**0.0135**	0.029	211.6	mg/L	58	Standard
K	39	30.0	28.9	**-0.0233**	0.032	138.1	mg/L	27	Standard
Ca	43	26.7	28.6	**0.6510**	0.565	86.9	mg/L	20	Standard
Fe	54	144.3	12.0	**-0.0003**	0.012	4299.2	mg/L	158	Standard
Fe	57	236.7	16.4	**0.1078**	0.137	126.8	mg/L	267	Standard
> **Sc-1**	45	39065.3	1.5				mg/L	38815	Standard
Cl	35	56649.7	2.0				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1773.4	8.5				ug/L	1617	Standard
P	31	19510.9	3.7				ug/L	19244	Standard
S	34	3373.7	3.5				ug/L	3557	Standard
Sr	88	70.0	37.8				ug/L	65	Standard
C	12	56.7	79.6				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	-0.5	173.2				mg/L	13	Standard
Ho-1	165	1.7	173.2				mg/L	10	Standard
Er	166	10.0	173.2				mg/L	13	Standard
I	127	1906.8	8.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.556	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.332	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.699	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	101.833	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW M1 WG574195-02
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Method 6020 - Summary Report

Sample ID: LCSW M1 WG574195-03
Sample Date/Time: Wednesday, July 06, 2016 09:46:29
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68496.1	0.5				ug/L	68501	Standard
	Be	9	24005.7	1.0	**26.4702**	0.318	1.2	ug/L	8	Standard
	Al	27	5384.3	9.0	**0.0730**	0.004	4.9	ug/L	1397	Standard
	Sc	45	39459.6	0.3				ug/L	38815	Standard
	Ti	47	44.3	22.8	**0.0982**	0.029	29.9	ug/L	36	Standard
	V	51	191587.8	2.1	**25.8119**	0.349	1.4	ug/L	1284	Standard
	Cr	52	195533.7	0.9	**26.1567**	0.385	1.5	ug/L	6503	Standard
	Cr	53	23463.2	1.3	**25.6742**	0.534	2.1	ug/L	492	Standard
	Mn	55	166985.2	1.0	**25.9384**	0.101	0.4	ug/L	841	Standard
	Co	59	161701.1	1.7	**25.5536**	0.326	1.3	ug/L	229	Standard
	Ni	60	46464.5	0.6	**26.2616**	0.311	1.2	ug/L	344	Standard
	Cu	65	46697.9	0.8	**26.5916**	0.321	1.2	ug/L	115	Standard
	Zn	66	30683.7	0.6	**28.9142**	0.287	1.0	ug/L	190	Standard
>	**Ge**	72	429866.2	0.7				ug/L	409858	Standard
	As	75	28274.1	0.3	**26.1056**	0.217	0.8	ug/L	-22	Standard
	Se	82	2809.8	1.6	**25.3083**	0.494	2.0	ug/L	18	Standard
	Se-1	77	1919.8	1.7	**25.8234**	0.529	2.0	ug/L	50	Standard
>	**Ga**	71	70.0	14.3				mg/L	97	Standard
	Rb	85	66.7	28.4				ug/L	25	Standard
	Y	89	355323.3	0.9				ug/L	376763	Standard
>	**Rh**	103	16.7	17.3				ug/L	20	Standard
	Mo	98	139.0	24.6	**0.1292**	0.014	10.9	ug/L	51	Standard
	Ag	107	166696.7	0.8	**26.7524**	0.342	1.3	ug/L	76	Standard
	Cd	111	50998.1	0.5	**25.7594**	0.240	0.9	mg/L	6	Standard
	Cd	114	124785.9	0.5	**25.7810**	0.268	1.0	ug/L	18	Standard
>	**In**	115	506853.5	1.3				ug/L	507261	Standard
	Sn	118	908.4	17.6	**0.0558**	0.028	49.9	ug/L	683	Standard
	Sb	123	116535.5	0.8	**27.1742**	0.404	1.5	ug/L	446	Standard
	Ba	135	49242.6	0.4	**25.9131**	0.241	0.9	ug/L	28	Standard
	Ce	140	70.0	56.7				ug/L	33	Standard
>	**Tb**	159	811640.4	1.1				ug/L	800803	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	206095.2	0.4	**25.6991**	0.189	0.7	ug/L	13	Standard
	Tl	205	179392.4	0.6	**25.8371**	0.331	1.3	ug/L	13	Standard
	Pb	206	136480.6	0.7	**26.4857**	0.287	1.1	ug/L	226	Standard
	Pb	207	117386.7	1.1	**25.0888**	0.493	2.0	ug/L	204	Standard
	Pb	208	482062.4	0.4	**25.7636**	0.312	1.2	ug/L	852	Standard
	U	238	172135.6	0.5	**24.8666**	0.302	1.2	ug/L	13	Standard
>	**Bi**	209	471496.3	1.1				ug/L	449044	Standard

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Na	23	1.7	173.2	**0.1364**	15.448	11323.2	mg/L	2	Standard
Mg	24	50.0	43.6	**0.0282**	0.029	102.6	mg/L	58	Standard
K	39	30.0	33.3	**-0.0243**	0.039	160.8	mg/L	27	Standard
Ca	43	30.0	57.7	**0.8667**	1.233	142.3	mg/L	20	Standard
Fe	54	161.8	19.7	**0.0131**	0.027	202.7	mg/L	158	Standard
Fe	57	228.3	11.2	**0.0717**	0.085	118.9	mg/L	267	Standard
> **Sc-1**	45	39459.6	0.3				mg/L	38815	Standard
Cl	35	56892.0	1.3				ug/L	57611	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	1570.1	5.4				ug/L	1617	Standard
P	31	19504.2	1.8				ug/L	19244	Standard
S	34	3253.7	4.3				ug/L	3557	Standard
Sr	88	65.0	7.7				ug/L	65	Standard
C	12	66.7	45.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	137.8				mg/L	23	Standard
Dy	164	6.0	187.0				mg/L	13	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	973.4	5.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.993	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.882	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.920
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.000
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129411 WG574195-01
Sample Date/Time: Wednesday, July 06, 2016 09:49:40
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72468.0	2.9				ug/L	68501	Standard
	Be	9	838.4	11.5	**0.8913**	0.077	8.6	ug/L	8	Standard
	Al	27	24118733.2	0.5	**160.6931**	4.688	2.9	ug/L	1397	Standard
	Sc	45	45896.2	4.1				ug/L	38815	Standard
	Ti	47	6542.7	1.3	**19.5752**	0.441	2.3	ug/L	36	Standard
	V	51	189622.3	0.5	**26.9564**	0.349	1.3	ug/L	1284	Standard
	Cr	52	105498.7	1.5	**14.4822**	0.146	1.0	ug/L	6503	Standard
	Cr	53	12621.9	2.1	**14.3841**	0.164	1.1	ug/L	492	Standard
	Mn	55	8444960.4	0.5	**1388.7517**	15.304	1.1	ug/L	841	Standard
	Co	59	76520.1	1.2	**12.7587**	0.215	1.7	ug/L	229	Standard
	Ni	60	41268.1	1.0	**24.5928**	0.389	1.6	ug/L	344	Standard
	Cu	65	22723.7	0.6	**13.6423**	0.169	1.2	ug/L	115	Standard
	Zn	66	39079.3	1.2	**38.8816**	0.541	1.4	ug/L	190	Standard
>	**Ge**	72	407547.5	1.1				ug/L	409858	Standard
	As	75	6744.2	1.2	**6.6419**	0.070	1.0	ug/L	-22	Standard
	Se	82	53.4	3.9	**0.4571**	0.019	4.2	ug/L	18	Standard
	Se-1	77	106.0	7.7	**0.7900**	0.135	17.1	ug/L	50	Standard
>	**Ga**	71	14186.6	1.1				mg/L	97	Standard
	Rb	85	143686.7	2.5				ug/L	25	Standard
	Y	89	592181.2	0.9				ug/L	376763	Standard
>	**Rh**	103	50.0	34.6				ug/L	20	Standard
	Mo	98	1134.4	17.7	**0.5416**	0.081	14.9	ug/L	51	Standard
	Ag	107	444.0	11.5	**0.0942**	0.008	8.1	ug/L	76	Standard
	Cd	111	281.0	4.9	**0.1809**	0.006	3.1	mg/L	6	Standard
	Cd	114	665.5	15.8	**0.1745**	0.021	12.1	ug/L	18	Standard
>	**In**	115	507307.4	1.0				ug/L	507261	Standard
	Sn	118	603.3	23.2	**0.0003**	0.027	9117.7	ug/L	683	Standard
	Sb	123	1266.0	41.2	**0.2753**	0.124	44.9	ug/L	446	Standard
	Ba	135	622999.9	1.6	**327.3489**	4.840	1.5	ug/L	28	Standard
	Ce	140	1075128.4	1.0				ug/L	33	Standard
>	**Tb**	159	829871.9	0.8				ug/L	800803	Standard
	Ho	165	19584.3	1.4				ug/L	10	Standard
	Tl	203	1193.7	2.0	**0.1895**	0.005	2.8	ug/L	13	Standard
	Tl	205	1121.7	20.4	**0.2119**	0.035	16.3	ug/L	13	Standard
	Pb	206	53355.4	0.7	**10.8718**	0.172	1.6	ug/L	226	Standard
	Pb	207	43593.3	0.4	**9.7833**	0.118	1.2	ug/L	204	Standard
	Pb	208	186716.4	1.0	**10.4802**	0.205	2.0	ug/L	852	Standard
	U	238	6176.3	2.7	**0.9782**	0.035	3.6	ug/L	13	Standard
>	**Bi**	209	448991.8	1.5				ug/L	449044	Standard

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Na	23	8.3	69.3	**29.4738**	26.013	88.3	mg/L	2	Standard
Mg	24	170.0	5.9	**0.1564**	0.012	7.9	mg/L	58	Standard
K	39	311.7	6.7	**0.9085**	0.040	4.4	mg/L	27	Standard
Ca	43	735.0	13.0	**44.1374**	7.681	17.4	mg/L	20	Standard
Fe	54	16726.8	2.4	**11.7320**	0.498	4.2	mg/L	158	Standard
Fe	57	4742.4	1.4	**12.7487**	0.502	3.9	mg/L	267	Standard
Sc-1	45	45896.2	4.1				mg/L	38815	Standard
Cl	35	60129.7	0.7				ug/L	57611	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	2350.2	1.5				ug/L	1617	Standard
P	31	19891.4	3.5				ug/L	19244	Standard
S	34	3662.1	0.8				ug/L	3557	Standard
Sr	88	230.0	11.3				ug/L	65	Standard
C	12	83.3	18.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	62.5				mg/L	23	Standard
Dy	164	32118.6	3.8				mg/L	13	Standard
Ho-1	165	19584.3	1.4				mg/L	10	Standard
Er	166	17687.0	1.6				mg/L	13	Standard
I	127	33436.9	4.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		105.791	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.436	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.009
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.988
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129412S WG574195-04
Sample Date/Time: Wednesday, July 06, 2016 09:52:52
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71379.5	2.4				ug/L	68501	Standard
	Be	9	24005.7	2.5	**25.4053**	0.572	2.3	ug/L	8	Standard
	Al	27	24844186.7	1.3	**167.9938**	2.966	1.8	ug/L	1397	Standard
	Sc	45	44933.2	1.9				ug/L	38815	Standard
	Ti	47	8623.8	2.1	**25.2583**	0.810	3.2	ug/L	36	Standard
	V	51	337850.6	1.6	**47.1062**	1.004	2.1	ug/L	1284	Standard
	Cr	52	288250.4	0.4	**40.2878**	0.627	1.6	ug/L	6503	Standard
	Cr	53	35092.3	2.3	**39.8625**	1.183	3.0	ug/L	492	Standard
	Mn	55	4458345.0	1.2	**717.4502**	15.793	2.2	ug/L	841	Standard
	Co	59	218275.5	1.1	**35.6060**	0.740	2.1	ug/L	229	Standard
	Ni	60	81696.3	0.6	**47.7891**	0.713	1.5	ug/L	344	Standard
	Cu	65	61917.9	0.2	**36.3980**	0.465	1.3	ug/L	115	Standard
	Zn	66	66485.2	0.4	**64.8054**	0.538	0.8	ug/L	190	Standard
>	**Ge**	72	416485.7	1.2				ug/L	409858	Standard
	As	75	29163.0	0.5	**27.7871**	0.422	1.5	ug/L	-22	Standard
	Se	82	2062.4	4.0	**19.1665**	0.962	5.0	ug/L	18	Standard
	Se-1	77	1420.7	4.7	**19.5403**	0.802	4.1	ug/L	50	Standard
>	**Ga**	71	16622.5	3.9				mg/L	97	Standard
	Rb	85	157231.7	1.2				ug/L	25	Standard
	Y	89	556704.4	1.6				ug/L	376763	Standard
>	**Rh**	103	53.3	19.5				ug/L	20	Standard
	Mo	98	5295.4	1.7	**2.3233**	0.055	2.4	ug/L	51	Standard
	Ag	107	149191.9	0.4	**24.5321**	0.145	0.6	ug/L	76	Standard
	Cd	111	48845.6	0.7	**25.2776**	0.073	0.3	mg/L	6	Standard
	Cd	114	119846.2	1.3	**25.3672**	0.198	0.8	ug/L	18	Standard
>	**In**	115	494691.5	0.7				ug/L	507261	Standard
	Sn	118	601.7	29.0	**0.0027**	0.033	1216.4	ug/L	683	Standard
	Sb	123	4145.4	11.6	**0.9712**	0.122	12.5	ug/L	446	Standard
	Ba	135	534743.0	0.7	**288.1358**	0.094	0.0	ug/L	28	Standard
	Ce	140	1105320.7	0.5				ug/L	33	Standard
>	**Tb**	159	810154.6	1.3				ug/L	800803	Standard
	Ho	165	17460.1	1.2				ug/L	10	Standard
	Tl	203	187358.6	0.3	**24.9354**	0.231	0.9	ug/L	13	Standard
	Tl	205	164522.0	1.9	**25.2874**	0.349	1.4	ug/L	13	Standard
	Pb	206	172133.7	1.2	**35.6536**	0.610	1.7	ug/L	226	Standard
	Pb	207	147229.9	0.8	**33.5805**	0.218	0.6	ug/L	204	Standard
	Pb	208	622593.9	0.8	**35.5101**	0.117	0.3	ug/L	852	Standard
	U	238	167263.3	1.4	**25.7841**	0.204	0.8	ug/L	13	Standard
>	**Bi**	209	441779.8	1.0				ug/L	449044	Standard

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Na	23	6.7	114.6	**23.0095**	36.857	160.2	mg/L	2	Standard
Mg	24	140.0	25.0	**0.1259**	0.044	35.0	mg/L	58	Standard
K	39	343.3	8.8	**1.0395**	0.083	8.0	mg/L	27	Standard
Ca	43	513.3	4.8	**30.9870**	1.755	5.7	mg/L	20	Standard
Fe	54	16123.8	3.0	**11.5373**	0.198	1.7	mg/L	158	Standard
Fe	57	4545.7	4.6	**12.4590**	0.686	5.5	mg/L	267	Standard
> **Sc-1**	45	44933.2	1.9				mg/L	38815	Standard
Cl	35	59329.3	1.7				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	2126.8	3.8				ug/L	1617	Standard
P	31	19344.0	2.4				ug/L	19244	Standard
S	34	3730.5	4.4				ug/L	3557	Standard
Sr	88	158.3	22.2				ug/L	65	Standard
C	12	136.7	23.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	65.5				mg/L	23	Standard
Dy	164	29079.7	2.5				mg/L	13	Standard
Ho-1	165	17460.1	1.2				mg/L	10	Standard
Er	166	15441.2	1.2				mg/L	13	Standard
I	127	29974.6	0.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.202	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.617	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129412S WG574195-04
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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.522
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.382
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129412S WG574195-04
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Method 6020 - Summary Report

Sample ID: L1606129413SD WG574195-05
Sample Date/Time: Wednesday, July 06, 2016 09:56:03
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72831.3	1.3				ug/L	68501	Standard
	Be	9	23353.0	2.6	**24.2164**	0.331	1.4	ug/L	8	Standard
	Al	27	26299464.7	0.5	**174.2675**	2.567	1.5	ug/L	1397	Standard
	Sc	45	46263.9	3.4				ug/L	38815	Standard
	Ti	47	9118.4	0.8	**26.3638**	0.080	0.3	ug/L	36	Standard
	V	51	363027.1	1.3	**49.9784**	0.413	0.8	ug/L	1284	Standard
	Cr	52	308874.7	0.7	**42.6748**	0.454	1.1	ug/L	6503	Standard
	Cr	53	37989.2	0.7	**42.6306**	0.345	0.8	ug/L	492	Standard
	Mn	55	3682118.5	0.5	**584.9336**	0.933	0.2	ug/L	841	Standard
	Co	59	209516.8	1.3	**33.7396**	0.279	0.8	ug/L	229	Standard
	Ni	60	82810.7	0.2	**47.8243**	0.234	0.5	ug/L	344	Standard
	Cu	65	66683.1	0.2	**38.7015**	0.257	0.7	ug/L	115	Standard
	Zn	66	72946.5	0.3	**70.2106**	0.380	0.5	ug/L	190	Standard
>	**Ge**	72	421818.9	0.5				ug/L	409858	Standard
	As	75	30008.5	1.5	**28.2255**	0.275	1.0	ug/L	-22	Standard
	Se	82	1989.7	3.1	**18.2473**	0.473	2.6	ug/L	18	Standard
	Se-1	77	1346.7	2.1	**18.2444**	0.457	2.5	ug/L	50	Standard
>	**Ga**	71	18431.2	0.1				mg/L	97	Standard
	Rb	85	169978.4	2.0				ug/L	25	Standard
	Y	89	579521.5	2.2				ug/L	376763	Standard
>	**Rh**	103	53.3	30.1				ug/L	20	Standard
	Mo	98	5343.2	0.9	**2.3481**	0.025	1.1	ug/L	51	Standard
	Ag	107	148415.0	0.2	**24.4547**	0.081	0.3	ug/L	76	Standard
	Cd	111	48146.0	0.3	**24.9682**	0.161	0.6	mg/L	6	Standard
	Cd	114	116774.8	0.1	**24.7701**	0.107	0.4	ug/L	18	Standard
>	**In**	115	493665.2	0.5				ug/L	507261	Standard
	Sn	118	630.0	13.5	**0.0081**	0.015	190.3	ug/L	683	Standard
	Sb	123	4401.6	9.3	**1.0338**	0.094	9.1	ug/L	446	Standard
	Ba	135	582527.1	0.9	**314.5430**	3.725	1.2	ug/L	28	Standard
	Ce	140	1171295.4	1.5				ug/L	33	Standard
>	**Tb**	159	825665.3	1.1				ug/L	800803	Standard
	Ho	165	18960.2	1.2				ug/L	10	Standard
	Tl	203	184321.0	0.4	**24.0012**	0.378	1.6	ug/L	13	Standard
	Tl	205	159170.0	0.3	**23.9407**	0.483	2.0	ug/L	13	Standard
	Pb	206	178149.6	0.4	**36.1008**	0.654	1.8	ug/L	226	Standard
	Pb	207	151969.3	0.3	**33.9143**	0.708	2.1	ug/L	204	Standard
	Pb	208	627878.2	0.8	**35.0419**	0.898	2.6	ug/L	852	Standard
	U	238	164029.8	0.8	**24.7449**	0.648	2.6	ug/L	13	Standard
>	**Bi**	209	451616.5	1.8				ug/L	449044	Standard

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Na	23	8.3	124.9	**28.5858**	46.635	163.1	mg/L	2	Standard
Mg	24	161.7	18.9	**0.1448**	0.030	20.8	mg/L	58	Standard
K	39	418.3	11.1	**1.2557**	0.123	9.8	mg/L	27	Standard
Ca	43	583.3	6.4	**34.3754**	3.109	9.0	mg/L	20	Standard
Fe	54	18610.4	2.0	**12.9636**	0.665	5.1	mg/L	158	Standard
Fe	57	4875.8	3.0	**13.0227**	0.874	6.7	mg/L	267	Standard
> **Sc-1**	45	46263.9	3.4				mg/L	38815	Standard
Cl	35	57891.1	0.8				ug/L	57611	Standard
Kr	83	1.0	173.2				ug/L	2	Standard
Br	81	3103.7	7.4				ug/L	1617	Standard
P	31	19415.8	3.3				ug/L	19244	Standard
S	34	3603.8	4.8				ug/L	3557	Standard
Sr	88	181.7	16.8				ug/L	65	Standard
C	12	60.0	28.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	17.3				mg/L	23	Standard
Dy	164	31854.1	2.7				mg/L	13	Standard
Ho-1	165	18960.2	1.2				mg/L	10	Standard
Er	166	17002.9	2.9				mg/L	13	Standard
I	127	35720.4	1.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.321	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.918	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.320
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.573
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129401
Sample Date/Time: Wednesday, July 06, 2016 09:59:15
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73682.1	1.2				ug/L	68501	Standard
	Be	9	1030.0	8.5	**1.0739**	0.077	7.2	ug/L	8	Standard
	Al	27	13290595.5	0.8	**87.0650**	1.191	1.4	ug/L	1397	Standard
	Sc	45	47437.5	0.7				ug/L	38815	Standard
	Ti	47	4990.5	1.4	**14.2485**	0.251	1.8	ug/L	36	Standard
	V	51	180397.8	1.0	**24.4727**	0.141	0.6	ug/L	1284	Standard
	Cr	52	242660.8	0.5	**32.9279**	0.475	1.4	ug/L	6503	Standard
	Cr	53	29079.5	1.0	**32.1489**	0.248	0.8	ug/L	492	Standard
	Mn	55	7362758.4	0.8	**1156.1744**	19.675	1.7	ug/L	841	Standard
	Co	59	69098.9	0.5	**11.0023**	0.167	1.5	ug/L	229	Standard
	Ni	60	43958.4	1.4	**25.0166**	0.492	2.0	ug/L	344	Standard
	Cu	65	51089.3	0.3	**29.3027**	0.329	1.1	ug/L	115	Standard
	Zn	66	60489.8	1.0	**57.5198**	0.337	0.6	ug/L	190	Standard
>	**Ge**	72	426820.6	1.3				ug/L	409858	Standard
	As	75	8341.5	1.9	**7.8256**	0.054	0.7	ug/L	-22	Standard
	Se	82	77.1	12.2	**0.6491**	0.084	12.9	ug/L	18	Standard
	Se-1	77	127.7	6.7	**1.0210**	0.110	10.8	ug/L	50	Standard
>	**Ga**	71	17471.7	2.2				mg/L	97	Standard
	Rb	85	185880.1	1.5				ug/L	25	Standard
	Y	89	588549.2	2.5				ug/L	376763	Standard
>	**Rh**	103	25.0	60.0				ug/L	20	Standard
	Mo	98	4483.5	0.1	**1.8887**	0.016	0.8	ug/L	51	Standard
	Ag	107	655.0	0.7	**0.1257**	0.000	0.4	ug/L	76	Standard
	Cd	111	833.4	2.1	**0.4499**	0.012	2.6	mg/L	6	Standard
	Cd	114	2033.9	4.6	**0.4472**	0.021	4.6	ug/L	18	Standard
>	**In**	115	518979.9	0.9				ug/L	507261	Standard
	Sn	118	1725.1	20.0	**0.1976**	0.059	30.0	ug/L	683	Standard
	Sb	123	1001.7	29.8	**0.2076**	0.067	32.1	ug/L	446	Standard
	Ba	135	421477.8	0.1	**216.4902**	1.764	0.8	ug/L	28	Standard
	Ce	140	1169592.3	1.9				ug/L	33	Standard
>	**Tb**	159	854236.8	1.4				ug/L	800803	Standard
	Ho	165	18486.3	1.1				ug/L	10	Standard
	Tl	203	1043.0	4.2	**0.1644**	0.005	3.0	ug/L	13	Standard
	Tl	205	993.4	12.3	**0.1868**	0.019	10.0	ug/L	13	Standard
	Pb	206	165846.1	0.2	**32.4826**	0.323	1.0	ug/L	226	Standard
	Pb	207	137795.4	0.8	**29.7211**	0.399	1.3	ug/L	204	Standard
	Pb	208	592158.9	0.5	**31.9408**	0.508	1.6	ug/L	852	Standard
	U	238	3515.1	1.0	**0.5542**	0.000	0.1	ug/L	13	Standard
>	**Bi**	209	467184.8	1.1				ug/L	449044	Standard

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Na	23	1.7	173.2	**-1.2863**	12.984	1009.4	mg/L	2	Standard
Mg	24	115.0	8.7	**0.0890**	0.011	11.8	mg/L	58	Standard
K	39	420.0	15.6	**1.2278**	0.210	17.1	mg/L	27	Standard
Ca	43	98.3	20.5	**4.5711**	1.181	25.8	mg/L	20	Standard
Fe	54	19064.5	0.9	**12.9379**	0.207	1.6	mg/L	158	Standard
Fe	57	5190.9	2.0	**13.5281**	0.322	2.4	mg/L	267	Standard
> **Sc-1**	45	47437.5	0.7				mg/L	38815	Standard
Cl	35	56647.7	0.4				ug/L	57611	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	2906.9	8.5				ug/L	1617	Standard
P	31	18855.1	1.9				ug/L	19244	Standard
S	34	3488.7	1.5				ug/L	3557	Standard
Sr	88	103.3	19.6				ug/L	65	Standard
C	12	170.0	5.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	47.9				mg/L	23	Standard
Dy	164	30420.1	1.6				mg/L	13	Standard
Ho-1	165	18486.3	1.1				mg/L	10	Standard
Er	166	16812.7	3.4				mg/L	13	Standard
I	127	22007.7	6.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.563	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.139	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.310
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.040
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129402
Sample Date/Time: Wednesday, July 06, 2016 10:02:26
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69770.3	2.7				ug/L	68501	Standard
	Be	9	603.3	12.4	**0.6715**	0.072	10.7	ug/L	8	Standard
	Al	27	18634515.4	2.1	**128.9831**	5.673	4.4	ug/L	1397	Standard
	Sc	45	45031.9	3.1				ug/L	38815	Standard
	Ti	47	5305.3	0.3	**15.4010**	0.263	1.7	ug/L	36	Standard
	V	51	102823.9	0.6	**14.1200**	0.158	1.1	ug/L	1284	Standard
	Cr	52	80459.1	0.7	**10.4790**	0.093	0.9	ug/L	6503	Standard
	Cr	53	9304.5	2.4	**10.1728**	0.095	0.9	ug/L	492	Standard
	Mn	55	3002380.4	1.6	**479.2805**	14.394	3.0	ug/L	841	Standard
	Co	59	39944.9	0.5	**6.4682**	0.131	2.0	ug/L	229	Standard
	Ni	60	26855.8	0.6	**15.4770**	0.252	1.6	ug/L	344	Standard
	Cu	65	17773.8	1.6	**10.3533**	0.060	0.6	ug/L	115	Standard
	Zn	66	28972.0	0.7	**27.9482**	0.257	0.9	ug/L	190	Standard
>	**Ge**	72	419879.9	1.5				ug/L	409858	Standard
	As	75	3489.5	3.3	**3.3844**	0.075	2.2	ug/L	-22	Standard
	Se	82	43.4	3.4	**0.3496**	0.009	2.6	ug/L	18	Standard
	Se-1	77	96.7	5.7	**0.6121**	0.093	15.2	ug/L	50	Standard
>	**Ga**	71	10525.3	2.1				mg/L	97	Standard
	Rb	85	104171.9	0.6				ug/L	25	Standard
	Y	89	559755.6	0.0				ug/L	376763	Standard
>	**Rh**	103	46.7	16.4				ug/L	20	Standard
	Mo	98	1814.3	7.2	**0.8132**	0.063	7.8	ug/L	51	Standard
	Ag	107	490.3	42.0	**0.1008**	0.034	33.4	ug/L	76	Standard
	Cd	111	197.3	46.2	**0.1377**	0.047	33.9	mg/L	6	Standard
	Cd	114	447.4	33.4	**0.1284**	0.032	24.5	ug/L	18	Standard
>	**In**	115	514913.6	1.5				ug/L	507261	Standard
	Sn	118	656.7	28.2	**0.0082**	0.034	417.1	ug/L	683	Standard
	Sb	123	698.8	47.6	**0.1409**	0.079	55.9	ug/L	446	Standard
	Ba	135	312392.7	0.7	**161.7435**	2.379	1.5	ug/L	28	Standard
	Ce	140	864888.3	1.5				ug/L	33	Standard
>	**Tb**	159	822173.2	1.2				ug/L	800803	Standard
	Ho	165	15349.4	4.8				ug/L	10	Standard
	Tl	203	741.0	39.5	**0.1305**	0.038	29.3	ug/L	13	Standard
	Tl	205	868.4	47.2	**0.1743**	0.063	36.1	ug/L	13	Standard
	Pb	206	39366.1	0.3	**8.0469**	0.057	0.7	ug/L	226	Standard
	Pb	207	31988.4	0.9	**7.2028**	0.097	1.4	ug/L	204	Standard
	Pb	208	138578.0	1.0	**7.8042**	0.123	1.6	ug/L	852	Standard
	U	238	3824.8	11.0	**0.6240**	0.067	10.7	ug/L	13	Standard
>	**Bi**	209	447448.6	0.5				ug/L	449044	Standard

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Na	23	3.3	86.6	**6.6902**	13.409	200.4	mg/L	2	Standard
Mg	24	141.7	7.3	**0.1271**	0.013	10.6	mg/L	58	Standard
K	39	201.7	9.4	**0.5528**	0.084	15.2	mg/L	27	Standard
Ca	43	420.0	10.9	**25.0115**	2.030	8.1	mg/L	20	Standard
Fe	54	10150.0	4.1	**7.2017**	0.124	1.7	mg/L	158	Standard
Fe	57	2942.0	5.9	**7.8182**	0.761	9.7	mg/L	267	Standard
Sc-1	45	45031.9	3.1				mg/L	38815	Standard
Cl	35	60466.4	1.3				ug/L	57611	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2043.5	15.4				ug/L	1617	Standard
P	31	20015.0	9.4				ug/L	19244	Standard
S	34	3783.8	2.4				ug/L	3557	Standard
Sr	88	133.3	23.8				ug/L	65	Standard
C	12	100.0	0.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	45.8				mg/L	23	Standard
Dy	164	25927.1	0.7				mg/L	13	Standard
Ho-1	165	15349.4	4.8				mg/L	10	Standard
Er	166	13699.5	2.6				mg/L	13	Standard
I	127	6994.9	3.2				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		101.853	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.445	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.509	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.645	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129402
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Method 6020 - Summary Report

Sample ID: L1606129402PS WG574825-01
Sample Date/Time: Wednesday, July 06, 2016 10:05:38
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68660.2	1.7				ug/L	68501	Standard
	Be	9	47238.5	1.5	**51.9624**	1.650	3.2	ug/L	8	Standard
	Al	27	17645053.8	2.0	**124.0488**	3.629	2.9	ug/L	1397	Standard
	Sc	45	44393.3	1.5				ug/L	38815	Standard
	Ti	47	5174.6	1.0	**14.5192**	0.263	1.8	ug/L	36	Standard
	V	51	480583.9	0.5	**64.3037**	0.719	1.1	ug/L	1284	Standard
	Cr	52	456632.8	0.9	**61.6831**	1.025	1.7	ug/L	6503	Standard
	Cr	53	55255.6	2.0	**60.4016**	1.686	2.8	ug/L	492	Standard
	Mn	55	3239150.0	0.5	**499.7629**	6.042	1.2	ug/L	841	Standard
	Co	59	358691.1	1.1	**56.0957**	0.252	0.4	ug/L	229	Standard
	Ni	60	116099.1	1.0	**65.1802**	1.162	1.8	ug/L	344	Standard
	Cu	65	107464.1	0.7	**60.5842**	0.821	1.4	ug/L	115	Standard
	Zn	66	84653.2	0.4	**79.1485**	0.728	0.9	ug/L	190	Standard
>	**Ge**	72	434325.4	0.8				ug/L	409858	Standard
	As	75	60813.5	1.2	**55.4628**	0.921	1.7	ug/L	-22	Standard
	Se	82	5759.0	0.5	**51.3914**	0.208	0.4	ug/L	18	Standard
	Se-1	77	3893.8	0.5	**52.6044**	0.696	1.3	ug/L	50	Standard
>	**Ga**	71	10653.7	2.6				mg/L	97	Standard
	Rb	85	102591.2	1.5				ug/L	25	Standard
	Y	89	535588.1	1.5				ug/L	376763	Standard
>	**Rh**	103	46.7	24.7				ug/L	20	Standard
	Mo	98	1766.5	0.3	**0.8230**	0.008	0.9	ug/L	51	Standard
	Ag	107	318491.4	0.7	**52.3682**	0.640	1.2	ug/L	76	Standard
	Cd	111	100179.3	1.3	**51.8239**	0.626	1.2	mg/L	6	Standard
	Cd	114	247094.5	1.7	**52.2845**	0.780	1.5	ug/L	18	Standard
>	**In**	115	494482.3	0.9				ug/L	507261	Standard
	Sn	118	673.3	10.2	**0.0160**	0.012	75.5	ug/L	683	Standard
	Sb	123	214161.7	2.5	**51.2081**	1.584	3.1	ug/L	446	Standard
	Ba	135	400257.7	1.2	**215.7761**	3.076	1.4	ug/L	28	Standard
	Ce	140	853144.8	1.8				ug/L	33	Standard
>	**Tb**	159	808923.6	1.5				ug/L	800803	Standard
	Ho	165	14924.0	2.3				ug/L	10	Standard
	Tl	203	396573.2	1.4	**51.2178**	0.222	0.4	ug/L	13	Standard
	Tl	205	350752.1	1.1	**52.3188**	1.052	2.0	ug/L	13	Standard
	Pb	206	298080.1	1.0	**59.9592**	0.559	0.9	ug/L	226	Standard
	Pb	207	257790.9	0.5	**57.1026**	0.285	0.5	ug/L	204	Standard
	Pb	208	1062037.4	0.6	**58.8278**	0.401	0.7	ug/L	852	Standard
	U	238	335964.8	1.0	**50.2574**	0.421	0.8	ug/L	13	Standard
>	**Bi**	209	454901.3	1.0				ug/L	449044	Standard

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Na	23	5.0	100.0	**14.9604**	23.882	159.6	mg/L	2	Standard
Mg	24	148.3	13.6	**0.1371**	0.022	16.1	mg/L	58	Standard
K	39	255.0	38.6	**0.7487**	0.347	46.4	mg/L	27	Standard
Ca	43	421.7	2.5	**25.5491**	1.057	4.1	mg/L	20	Standard
Fe	54	9962.2	2.1	**7.1713**	0.153	2.1	mg/L	158	Standard
Fe	57	2848.6	3.1	**7.6545**	0.361	4.7	mg/L	267	Standard
> **Sc-1**	45	44393.3	1.5				mg/L	38815	Standard
Cl	35	58795.9	1.0				ug/L	57611	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	1830.1	7.2				ug/L	1617	Standard
P	31	18659.8	0.5				ug/L	19244	Standard
S	34	3737.1	4.2				ug/L	3557	Standard
Sr	88	115.0	30.4				ug/L	65	Standard
C	12	86.7	13.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	41.7				mg/L	23	Standard
Dy	164	24731.8	2.8				mg/L	13	Standard
Ho-1	165	14924.0	2.3				mg/L	10	Standard
Er	166	13766.3	3.2				mg/L	13	Standard
I	127	6604.8	6.0				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		100.232	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		105.970	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.481
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.304
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129402SDL WG574825-02
Sample Date/Time: Wednesday, July 06, 2016 10:08:49
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65026.0	3.7				ug/L	68501	Standard
	Be	9	160.0	24.8	**0.2043**	0.040	19.8	ug/L	8	Standard
	Al	27	3521178.9	2.2	**26.1792**	0.963	3.7	ug/L	1397	Standard
	Sc	45	38574.1	2.0				ug/L	38815	Standard
	Ti	47	1016.4	1.0	**3.0526**	0.023	0.8	ug/L	36	Standard
	V	51	20323.7	1.2	**2.7944**	0.038	1.4	ug/L	1284	Standard
	Cr	52	19540.6	0.6	**1.9556**	0.065	3.3	ug/L	6503	Standard
	Cr	53	1953.5	10.5	**1.9018**	0.277	14.6	ug/L	492	Standard
	Mn	55	573279.4	0.2	**95.2960**	1.841	1.9	ug/L	841	Standard
	Co	59	7720.3	0.6	**1.3072**	0.015	1.2	ug/L	229	Standard
	Ni	60	5511.0	2.5	**3.1857**	0.068	2.1	ug/L	344	Standard
	Cu	65	3651.8	1.5	**2.2072**	0.064	2.9	ug/L	115	Standard
	Zn	66	6637.1	2.1	**6.5869**	0.147	2.2	ug/L	190	Standard
>	Ge	72	402861.2	1.7				ug/L	409858	Standard
	As	75	691.5	2.6	**0.7775**	0.011	1.5	ug/L	-22	Standard
	Se	82	21.3	32.8	**0.1535**	0.066	42.9	ug/L	18	Standard
	Se-1	77	58.7	8.6	**0.1073**	0.064	60.1	ug/L	50	Standard
>	Ga	71	2141.8	0.8				mg/L	97	Standard
	Rb	85	19642.7	1.5				ug/L	25	Standard
	Y	89	375531.6	2.2				ug/L	376763	Standard
>	Rh	103	20.0	25.0				ug/L	20	Standard
	Mo	98	350.4	1.1	**0.2239**	0.002	0.8	ug/L	51	Standard
	Ag	107	155.0	19.2	**0.0492**	0.005	10.4	ug/L	76	Standard
	Cd	111	46.6	26.2	**0.0640**	0.006	10.1	mg/L	6	Standard
	Cd	114	89.6	22.2	**0.0567**	0.004	7.4	ug/L	18	Standard
>	In	115	483847.7	1.6				ug/L	507261	Standard
	Sn	118	325.0	39.3	**-0.0480**	0.024	49.2	ug/L	683	Standard
	Sb	123	1870.5	35.4	**0.4352**	0.156	35.8	ug/L	446	Standard
	Ba	135	60714.1	0.5	**33.4657**	0.378	1.1	ug/L	28	Standard
	Ce	140	169920.8	0.4				ug/L	33	Standard
>	Tb	159	785790.2	0.6				ug/L	800803	Standard
	Ho	165	2823.6	6.7				ug/L	10	Standard
	Tl	203	203.3	12.3	**0.0597**	0.003	5.2	ug/L	13	Standard
	Tl	205	190.0	19.0	**0.0710**	0.005	7.5	ug/L	13	Standard
	Pb	206	7878.7	2.0	**1.5878**	0.016	1.0	ug/L	226	Standard
	Pb	207	6443.7	2.0	**1.4326**	0.025	1.7	ug/L	204	Standard
	Pb	208	27612.9	1.6	**1.5367**	0.039	2.5	ug/L	852	Standard
	U	238	730.4	5.8	**0.1523**	0.006	4.1	ug/L	13	Standard
>	Bi	209	452878.1	1.1				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	53.3	10.8	**0.0342**	0.007	20.3	mg/L	58	Standard
K	39	65.0	7.7	**0.1187**	0.015	12.9	mg/L	27	Standard
Ca	43	121.7	4.7	**7.6311**	0.513	6.7	mg/L	20	Standard
Fe	54	2015.2	1.4	**1.5775**	0.034	2.2	mg/L	158	Standard
Fe	57	840.0	8.3	**2.1509**	0.284	13.2	mg/L	267	Standard
> **Sc-1**	45	38574.1	2.0				mg/L	38815	Standard
Cl	35	56866.5	2.1				ug/L	57611	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	1540.1	7.2				ug/L	1617	Standard
P	31	8800.9	1.2				ug/L	19244	Standard
S	34	3415.4	3.3				ug/L	3557	Standard
Sr	88	70.0	37.8				ug/L	65	Standard
C	12	73.3	70.0				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	4905.3	1.6				mg/L	13	Standard
Ho-1	165	2823.6	6.7				mg/L	10	Standard
Er	166	2620.2	5.0				mg/L	13	Standard
I	127	8869.3	4.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.927	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.293	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.384
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.854
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129402SDL WG574825-02
Sample Date/Time: Wednesday, July 06, 2016 10:12:01
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60917.3	3.2				ug/L	68501	Standard
	Be	9	58.3	17.8	**0.0915**	0.011	11.6	ug/L	8	Standard
	Al	27	711598.7	3.1	**5.6709**	0.047	0.8	ug/L	1397	Standard
	Sc	45	36463.8	0.9				ug/L	38815	Standard
	Ti	47	207.0	2.6	**0.6014**	0.017	2.9	ug/L	36	Standard
	V	51	5032.5	7.0	**0.5856**	0.052	8.8	ug/L	1284	Standard
	Cr	52	8230.6	1.6	**0.2866**	0.019	6.7	ug/L	6503	Standard
	Cr	53	590.0	23.4	**0.2839**	0.167	58.7	ug/L	492	Standard
	Mn	55	118569.1	0.5	**19.6884**	0.105	0.5	ug/L	841	Standard
	Co	59	1799.1	8.5	**0.3097**	0.026	8.5	ug/L	229	Standard
	Ni	60	1413.4	3.6	**0.7024**	0.034	4.8	ug/L	344	Standard
	Cu	65	858.0	6.8	**0.5099**	0.037	7.2	ug/L	115	Standard
	Zn	66	1996.8	2.1	**1.9081**	0.036	1.9	ug/L	190	Standard
>	**Ge**	72	401660.3	0.4				ug/L	409858	Standard
	As	75	114.2	19.3	**0.2113**	0.021	10.0	ug/L	-22	Standard
	Se	82	11.3	54.8	**0.0580**	0.060	102.6	ug/L	18	Standard
	Se-1	77	52.0	8.8	**0.0116**	0.068	586.4	ug/L	50	Standard
>	**Ga**	71	495.0	9.0				mg/L	97	Standard
	Rb	85	3982.2	2.1				ug/L	25	Standard
	Y	89	350852.9	1.4				ug/L	376763	Standard
>	**Rh**	103	28.3	44.4				ug/L	20	Standard
	Mo	98	175.0	23.0	**0.1481**	0.018	11.8	ug/L	51	Standard
	Ag	107	212.7	91.3	**0.0591**	0.033	55.5	ug/L	76	Standard
	Cd	111	67.0	127.8	**0.0750**	0.045	60.7	mg/L	6	Standard
	Cd	114	161.8	141.0	**0.0726**	0.050	68.4	ug/L	18	Standard
>	**In**	115	480384.8	0.4				ug/L	507261	Standard
	Sn	118	306.7	18.0	**-0.0510**	0.011	20.7	ug/L	683	Standard
	Sb	123	1358.2	24.6	**0.3141**	0.083	26.4	ug/L	446	Standard
	Ba	135	12314.7	3.9	**6.8485**	0.262	3.8	ug/L	28	Standard
	Ce	140	33590.6	4.0				ug/L	33	Standard
>	**Tb**	159	756520.4	0.6				ug/L	800803	Standard
	Ho	165	583.3	9.4				ug/L	10	Standard
	Tl	203	223.0	115.4	**0.0635**	0.035	54.9	ug/L	13	Standard
	Tl	205	126.7	112.0	**0.0623**	0.022	35.6	ug/L	13	Standard
	Pb	206	1869.8	9.6	**0.3893**	0.039	10.0	ug/L	226	Standard
	Pb	207	1543.1	13.1	**0.3564**	0.048	13.4	ug/L	204	Standard
	Pb	208	6514.6	6.8	**0.3774**	0.027	7.0	ug/L	852	Standard
	U	238	235.7	51.0	**0.0795**	0.019	23.8	ug/L	13	Standard
>	**Bi**	209	435034.5	0.5				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	61.7	44.7	**0.0504**	0.039	77.8	mg/L	58	Standard
K	39	35.0	14.3	**0.0067**	0.022	320.5	mg/L	27	Standard
Ca	43	48.3	68.9	**2.4797**	2.619	105.6	mg/L	20	Standard
Fe	54	394.3	9.9	**0.2309**	0.032	13.9	mg/L	158	Standard
Fe	57	383.3	10.0	**0.6861**	0.149	21.7	mg/L	267	Standard
> **Sc-1**	45	36463.8	0.9				mg/L	38815	Standard
Cl	35	57415.9	1.8				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1380.1	8.4				ug/L	1617	Standard
P	31	6508.1	3.2				ug/L	19244	Standard
S	34	3533.7	5.2				ug/L	3557	Standard
Sr	88	55.0	48.1				ug/L	65	Standard
C	12	73.3	75.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	78.1				mg/L	23	Standard
Dy	164	906.6	11.9				mg/L	13	Standard
Ho-1	165	583.3	9.4				mg/L	10	Standard
Er	166	490.0	5.4				mg/L	13	Standard
I	127	9633.1	1.7				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		88.929	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.000	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.702
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.880
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129402SDL WG574825-02
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 10:15:14
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66001.9	3.1				ug/L	68501	Standard
	Be	9	45061.9	1.7	**51.5669**	1.142	2.2	ug/L	8	Standard
	Al	27	7134699.3	2.4	**52.2005**	1.042	2.0	ug/L	1397	Standard
	Sc	45	40683.0	4.5				ug/L	38815	Standard
	Ti	47	36220.6	2.3	**104.8904**	2.700	2.6	ug/L	36	Standard
	V	51	373417.3	1.4	**51.4577**	1.129	2.2	ug/L	1284	Standard
	Cr	52	378042.0	1.7	**52.4836**	1.277	2.4	ug/L	6503	Standard
	Cr	53	45578.5	1.0	**51.2685**	0.474	0.9	ug/L	492	Standard
	Mn	55	329890.2	1.6	**52.3621**	1.192	2.3	ug/L	841	Standard
	Co	59	319170.0	1.3	**51.4393**	1.091	2.1	ug/L	229	Standard
	Ni	60	89955.3	1.3	**52.0068**	1.073	2.1	ug/L	344	Standard
	Cu	65	89397.0	1.4	**51.9298**	1.024	2.0	ug/L	115	Standard
	Zn	66	53744.8	1.2	**51.7403**	0.925	1.8	ug/L	190	Standard
>	**Ge**	72	421512.3	0.8				ug/L	409858	Standard
	As	75	55019.2	1.7	**51.7131**	1.248	2.4	ug/L	-22	Standard
	Se	82	5625.3	2.5	**51.7261**	1.382	2.7	ug/L	18	Standard
	Se-1	77	3720.1	1.2	**51.7754**	1.031	2.0	ug/L	50	Standard
>	**Ga**	71	106.7	14.3				mg/L	97	Standard
	Rb	85	821.7	3.6				ug/L	25	Standard
	Y	89	380274.8	0.7				ug/L	376763	Standard
>	**Rh**	103	36.7	20.8				ug/L	20	Standard
	Mo	98	245508.8	0.8	**98.7047**	0.609	0.6	ug/L	51	Standard
	Ag	107	315964.3	0.6	**49.0682**	0.371	0.8	ug/L	76	Standard
	Cd	111	102381.2	0.8	**50.0236**	0.282	0.6	mg/L	6	Standard
	Cd	114	253936.6	1.4	**50.7540**	0.965	1.9	ug/L	18	Standard
>	**In**	115	523570.5	1.4				ug/L	507261	Standard
	Sn	118	272308.6	0.5	**48.0899**	0.442	0.9	ug/L	683	Standard
	Sb	123	220790.6	1.2	**49.8541**	0.372	0.7	ug/L	446	Standard
	Ba	135	96752.3	1.8	**49.2687**	0.234	0.5	ug/L	28	Standard
	Ce	140	778.4	25.9				ug/L	33	Standard
>	**Tb**	159	803102.2	1.8				ug/L	800803	Standard
	Ho	165	21.7	58.1				ug/L	10	Standard
	Tl	203	391560.5	1.3	**50.8731**	0.347	0.7	ug/L	13	Standard
	Tl	205	343478.2	1.0	**51.5364**	0.693	1.3	ug/L	13	Standard
	Pb	206	249862.7	0.4	**50.5602**	0.390	0.8	ug/L	226	Standard
	Pb	207	226415.5	0.5	**50.4529**	0.494	1.0	ug/L	204	Standard
	Pb	208	934421.6	0.6	**52.0705**	0.743	1.4	ug/L	852	Standard
	U	238	338848.7	1.0	**50.9911**	0.566	1.1	ug/L	13	Standard
>	**Bi**	209	452206.8	1.0				ug/L	449044	Standard

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Na	23	1.7	173.2	**0.2847**	15.705	5516.7	mg/L	2	Standard
Mg	24	3878.8	2.1	**4.9818**	0.327	6.6	mg/L	58	Standard
K	39	1331.7	2.5	**4.9336**	0.350	7.1	mg/L	27	Standard
Ca	43	86.7	8.8	**4.7338**	0.396	8.4	mg/L	20	Standard
Fe	54	6551.9	2.8	**5.1174**	0.223	4.4	mg/L	158	Standard
Fe	57	1748.4	4.5	**4.9031**	0.224	4.6	mg/L	267	Standard
> **Sc-1**	45	40683.0	4.5				mg/L	38815	Standard
Cl	35	64144.2	2.4				ug/L	57611	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1633.4	4.8				ug/L	1617	Standard
P	31	21161.4	1.7				ug/L	19244	Standard
S	34	4028.9	2.1				ug/L	3557	Standard
Sr	88	75.0	23.1				ug/L	65	Standard
C	12	90.0	38.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	43.3	35.3				mg/L	23	Standard
Dy	164	42.5	35.8				mg/L	13	Standard
Ho-1	165	21.7	58.1				mg/L	10	Standard
Er	166	16.7	34.6				mg/L	13	Standard
I	127	15686.5	2.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	103.134		
Al	27	104.401		
Sc	45			
Ti	47	104.890		
V	51	102.915		
Cr	52	104.967		
Cr	53			
Mn	55	104.724		
Co	59	102.879		
Ni	60	104.014		
Cu	65	103.860		
Zn	66	103.481		
> Ge	72		102.843	
As	75	103.426		
Se	82	103.452		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	98.705		
Ag	107	98.136		
Cd	111	100.047		
Cd	114			
In	115			103.215
Sn	118	96.180		
Sb	123	99.708		
Ba	135	98.537		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.746		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.141		
U	238	101.982		
Bi	209			100.704
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 10:18:25
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66092.2	0.5				ug/L	68501	Standard
	Be	9	33.3	22.9	**0.0575**	0.009	15.0	ug/L	8	Standard
	Al	27	2433.5	28.1	**0.0528**	0.005	9.3	ug/L	1397	Standard
	Sc	45	39765.5	3.8				ug/L	38815	Standard
	Ti	47	34.7	8.8	**0.0699**	0.009	12.3	ug/L	36	Standard
	V	51	1342.2	6.2	**0.0363**	0.010	27.6	ug/L	1284	Standard
	Cr	52	6819.5	0.7	**0.0038**	0.011	298.6	ug/L	6503	Standard
	Cr	53	426.7	10.6	**0.0524**	0.052	99.9	ug/L	492	Standard
	Mn	55	1487.4	7.9	**0.1343**	0.019	14.5	ug/L	841	Standard
	Co	59	248.0	8.5	**0.0444**	0.004	8.0	ug/L	229	Standard
	Ni	60	317.3	4.3	**0.0213**	0.006	29.2	ug/L	344	Standard
	Cu	65	131.3	6.7	**0.0610**	0.005	8.1	ug/L	115	Standard
	Zn	66	348.0	9.0	**0.2133**	0.030	14.1	ug/L	190	Standard
>	**Ge**	72	433193.0	0.8				ug/L	409858	Standard
	As	75	-15.4	176.5	**0.0847**	0.025	29.3	ug/L	-22	Standard
	Se	82	17.5	29.8	**0.1051**	0.046	43.4	ug/L	18	Standard
	Se-1	77	52.7	18.6	**-0.0360**	0.128	356.8	ug/L	50	Standard
>	**Ga**	71	76.7	26.4				mg/L	97	Standard
	Rb	85	38.3	15.1				ug/L	25	Standard
	Y	89	375706.7	1.5				ug/L	376763	Standard
>	**Rh**	103	21.7	74.2				ug/L	20	Standard
	Mo	98	180.5	2.9	**0.1457**	0.001	1.0	ug/L	51	Standard
	Ag	107	119.3	33.3	**0.0420**	0.006	14.5	ug/L	76	Standard
	Cd	111	16.0	65.5	**0.0473**	0.005	10.9	mg/L	6	Standard
	Cd	114	58.8	46.0	**0.0494**	0.006	11.4	ug/L	18	Standard
>	**In**	115	511865.2	1.0				ug/L	507261	Standard
	Sn	118	851.7	20.2	**0.0442**	0.032	71.8	ug/L	683	Standard
	Sb	123	1054.3	34.6	**0.2237**	0.086	38.5	ug/L	446	Standard
	Ba	135	65.3	36.7	**0.0497**	0.012	24.6	ug/L	28	Standard
	Ce	140	343.3	20.8				ug/L	33	Standard
>	**Tb**	159	792368.1	0.6				ug/L	800803	Standard
	Ho	165	18.3	41.7				ug/L	10	Standard
	Tl	203	67.3	29.7	**0.0420**	0.003	6.2	ug/L	13	Standard
	Tl	205	51.7	72.6	**0.0502**	0.006	11.1	ug/L	13	Standard
	Pb	206	273.7	16.0	**0.0508**	0.009	17.0	ug/L	226	Standard
	Pb	207	243.0	7.5	**0.0525**	0.004	7.6	ug/L	204	Standard
	Pb	208	1024.7	7.7	**0.0566**	0.004	7.7	ug/L	852	Standard
	U	238	59.3	29.6	**0.0515**	0.003	5.1	ug/L	13	Standard
>	**Bi**	209	456938.6	1.0				ug/L	449044	Standard

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Na	23	1.7	173.2	**0.4914**	16.063	3268.8	mg/L	2	Standard
Mg	24	36.7	83.3	**0.0111**	0.043	384.8	mg/L	58	Standard
K	39	38.3	45.8	**0.0058**	0.064	1099.0	mg/L	27	Standard
Ca	43	33.3	52.7	**1.0606**	1.177	111.0	mg/L	20	Standard
Fe	54	149.4	25.3	**0.0028**	0.036	1300.5	mg/L	158	Standard
Fe	57	260.0	19.5	**0.1697**	0.163	96.1	mg/L	267	Standard
> **Sc-1**	45	39765.5	3.8				mg/L	38815	Standard
Cl	35	61423.6	2.2				ug/L	57611	Standard
Kr	83	2.3	89.2				ug/L	2	Standard
Br	81	1656.8	1.9				ug/L	1617	Standard
P	31	19836.3	2.1				ug/L	19244	Standard
S	34	3835.5	3.2				ug/L	3557	Standard
Sr	88	55.0					ug/L	65	Standard
C	12	56.7	27.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	5.7	109.1				mg/L	13	Standard
Ho-1	165	18.3	41.7				mg/L	10	Standard
Er	166	20.0	86.6				mg/L	13	Standard
I	127	8767.5	0.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.693	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.908
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.758
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	
QC Std 7	Tl	203	

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Method 6020 - Summary Report

Sample ID: L1606129404
Sample Date/Time: Wednesday, July 06, 2016 10:21:39
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70980.9	1.6				ug/L	68501	Standard
	Be	9	941.7	5.0	**1.0213**	0.064	6.3	ug/L	8	Standard
	Al	27	15182692.6	1.8	**103.2556**	2.951	2.9	ug/L	1397	Standard
	Sc	45	45760.7	3.0				ug/L	38815	Standard
	Ti	47	5887.5	1.3	**16.7741**	0.207	1.2	ug/L	36	Standard
	V	51	191874.8	0.3	**25.9807**	0.495	1.9	ug/L	1284	Standard
	Cr	52	151639.7	0.5	**20.1776**	0.386	1.9	ug/L	6503	Standard
	Cr	53	18564.7	1.2	**20.3258**	0.407	2.0	ug/L	492	Standard
	Mn	55	4033113.1	0.2	**631.7956**	10.894	1.7	ug/L	841	Standard
	Co	59	68367.9	0.6	**10.8599**	0.118	1.1	ug/L	229	Standard
	Ni	60	42585.1	0.6	**24.1738**	0.459	1.9	ug/L	344	Standard
	Cu	65	33802.0	0.3	**19.3378**	0.287	1.5	ug/L	115	Standard
	Zn	66	65062.1	0.3	**61.7346**	0.851	1.4	ug/L	190	Standard
>	**Ge**	72	427844.3	1.7				ug/L	409858	Standard
	As	75	7611.4	0.2	**7.1339**	0.108	1.5	ug/L	-22	Standard
	Se	82	69.8	14.5	**0.5816**	0.088	15.2	ug/L	18	Standard
	Se-1	77	111.7	16.1	**0.7937**	0.244	30.7	ug/L	50	Standard
>	**Ga**	71	17678.6	1.8				mg/L	97	Standard
	Rb	85	180600.5	2.7				ug/L	25	Standard
	Y	89	603483.2	1.9				ug/L	376763	Standard
>	**Rh**	103	31.7	32.9				ug/L	20	Standard
	Mo	98	1109.1	5.0	**0.5244**	0.022	4.3	ug/L	51	Standard
	Ag	107	635.7	1.7	**0.1234**	0.001	1.2	ug/L	76	Standard
	Cd	111	1307.6	1.9	**0.6883**	0.013	1.9	mg/L	6	Standard
	Cd	114	3051.9	1.6	**0.6569**	0.010	1.6	ug/L	18	Standard
>	**In**	115	515076.3	0.5				ug/L	507261	Standard
	Sn	118	746.7	14.1	**0.0242**	0.019	77.4	ug/L	683	Standard
	Sb	123	1094.8	34.5	**0.2309**	0.086	37.3	ug/L	446	Standard
	Ba	135	326094.1	1.1	**168.7671**	2.405	1.4	ug/L	28	Standard
	Ce	140	1186847.0	1.3				ug/L	33	Standard
>	**Tb**	159	825489.7	1.2				ug/L	800803	Standard
	Ho	165	18656.5	3.3				ug/L	10	Standard
	Tl	203	872.0	1.0	**0.1461**	0.001	0.6	ug/L	13	Standard
	Tl	205	783.4	4.7	**0.1595**	0.006	3.6	ug/L	13	Standard
	Pb	206	246082.6	0.4	**49.5727**	0.064	0.1	ug/L	226	Standard
	Pb	207	207802.3	0.7	**46.0977**	0.241	0.5	ug/L	204	Standard
	Pb	208	892853.5	1.6	**49.5287**	0.671	1.4	ug/L	852	Standard
	U	238	3537.7	0.5	**0.5722**	0.004	0.7	ug/L	13	Standard
>	**Bi**	209	454213.0	0.3				ug/L	449044	Standard

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Na	23	1.7	173.2	**-0.8168**	13.797	1689.1	mg/L	2	Standard
Mg	24	141.7	12.4	**0.1247**	0.024	19.4	mg/L	58	Standard
K	39	438.3	2.4	**1.3406**	0.019	1.5	mg/L	27	Standard
Ca	43	261.7	16.7	**14.8449**	2.408	16.2	mg/L	20	Standard
Fe	54	19300.1	0.1	**13.5908**	0.404	3.0	mg/L	158	Standard
Fe	57	5104.2	4.4	**13.8164**	0.933	6.8	mg/L	267	Standard
> **Sc-1**	45	45760.7	3.0				mg/L	38815	Standard
Cl	35	60781.0	1.1				ug/L	57611	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	2653.6	2.2				ug/L	1617	Standard
P	31	19624.4	2.1				ug/L	19244	Standard
S	34	3567.1	3.8				ug/L	3557	Standard
Sr	88	95.0	13.9				ug/L	65	Standard
C	12	136.7	22.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	100.0	17.3				mg/L	23	Standard
Dy	164	32528.3	1.4				mg/L	13	Standard
Ho-1	165	18656.5	3.3				mg/L	10	Standard
Er	166	17363.3	1.1				mg/L	13	Standard
I	127	20472.2	3.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.620	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.388	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	101.541
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	101.151
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129405
Sample Date/Time: Wednesday, July 06, 2016 10:24:50
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68867.9	1.7				ug/L	68501	Standard
	Be	9	631.7	9.2	**0.7119**	0.067	9.4	ug/L	8	Standard
	Al	27	18119901.6	2.3	**126.9628**	0.897	0.7	ug/L	1397	Standard
	Sc	45	46202.0	1.4				ug/L	38815	Standard
	Ti	47	6581.8	1.2	**18.6554**	0.304	1.6	ug/L	36	Standard
	V	51	128283.2	1.6	**17.2275**	0.351	2.0	ug/L	1284	Standard
	Cr	52	95154.5	0.9	**12.2409**	0.037	0.3	ug/L	6503	Standard
	Cr	53	11357.6	3.5	**12.2012**	0.334	2.7	ug/L	492	Standard
	Mn	55	3063159.4	0.6	**477.2229**	6.179	1.3	ug/L	841	Standard
	Co	59	44098.7	0.3	**6.9692**	0.072	1.0	ug/L	229	Standard
	Ni	60	31534.8	0.9	**17.7609**	0.056	0.3	ug/L	344	Standard
	Cu	65	16659.5	1.2	**9.4718**	0.076	0.8	ug/L	115	Standard
	Zn	66	34055.9	1.4	**32.0827**	0.219	0.7	ug/L	190	Standard
>	**Ge**	72	430125.8	0.9				ug/L	409858	Standard
	As	75	4082.9	0.7	**3.8521**	0.034	0.9	ug/L	-22	Standard
	Se	82	46.9	20.6	**0.3716**	0.089	23.9	ug/L	18	Standard
	Se-1	77	94.3	6.8	**0.5461**	0.081	14.7	ug/L	50	Standard
>	**Ga**	71	12415.1	2.0				mg/L	97	Standard
	Rb	85	110669.4	0.7				ug/L	25	Standard
	Y	89	534317.2	1.1				ug/L	376763	Standard
>	**Rh**	103	28.3	20.4				ug/L	20	Standard
	Mo	98	6324.1	1.9	**2.7032**	0.069	2.5	ug/L	51	Standard
	Ag	107	374.3	9.7	**0.0832**	0.005	6.2	ug/L	76	Standard
	Cd	111	152.6	9.1	**0.1166**	0.008	6.6	mg/L	6	Standard
	Cd	114	371.0	12.0	**0.1141**	0.009	7.9	ug/L	18	Standard
>	**In**	115	505513.3	1.1				ug/L	507261	Standard
	Sn	118	583.3	10.5	**-0.0032**	0.010	309.7	ug/L	683	Standard
	Sb	123	794.6	40.7	**0.1651**	0.074	44.8	ug/L	446	Standard
	Ba	135	227039.1	0.3	**119.7363**	1.491	1.2	ug/L	28	Standard
	Ce	140	871470.1	0.3				ug/L	33	Standard
>	**Tb**	159	829470.2	0.6				ug/L	800803	Standard
	Ho	165	14672.1	2.6				ug/L	10	Standard
	Tl	203	639.7	8.1	**0.1153**	0.007	5.7	ug/L	13	Standard
	Tl	205	520.0	16.7	**0.1195**	0.013	10.6	ug/L	13	Standard
	Pb	206	39238.4	0.8	**7.8343**	0.052	0.7	ug/L	226	Standard
	Pb	207	31985.1	0.4	**7.0346**	0.037	0.5	ug/L	204	Standard
	Pb	208	135887.5	0.7	**7.4745**	0.031	0.4	ug/L	852	Standard
	U	238	3977.2	1.1	**0.6329**	0.006	1.0	ug/L	13	Standard
>	**Bi**	209	458083.0	0.3				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	258.3	7.8	**0.2554**	0.022	8.5	mg/L	58	Standard
K	39	331.7	6.3	**0.9690**	0.070	7.2	mg/L	27	Standard
Ca	43	426.7	10.5	**24.8165**	3.005	12.1	mg/L	20	Standard
Fe	54	13735.2	0.5	**9.5401**	0.174	1.8	mg/L	158	Standard
Fe	57	3647.1	3.0	**9.5698**	0.314	3.3	mg/L	267	Standard
> **Sc-1**	45	46202.0	1.4				mg/L	38815	Standard
Cl	35	61570.9	1.0				ug/L	57611	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	3077.0	3.1				ug/L	1617	Standard
P	31	19200.5	1.6				ug/L	19244	Standard
S	34	3863.8	5.2				ug/L	3557	Standard
Sr	88	136.7	36.8				ug/L	65	Standard
C	12	116.7	34.6				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	30.0	0.0				mg/L	23	Standard
Dy	164	25279.8	1.5				mg/L	13	Standard
Ho-1	165	14672.1	2.6				mg/L	10	Standard
Er	166	13549.4	4.5				mg/L	13	Standard
I	127	7708.6	5.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.535	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.945	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.656	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	102.013	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129406
Sample Date/Time: Wednesday, July 06, 2016 10:28:02
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73539.8	2.1				ug/L	68501	Standard
	Be	9	1236.7	9.5	**1.2875**	0.097	7.5	ug/L	8	Standard
	Al	27	19354398.4	0.5	**127.0365**	2.230	1.8	ug/L	1397	Standard
	Sc	45	49311.8	1.2				ug/L	38815	Standard
	Ti	47	6260.3	0.2	**17.8301**	0.279	1.6	ug/L	36	Standard
	V	51	197286.6	0.9	**26.7008**	0.334	1.3	ug/L	1284	Standard
	Cr	52	171609.2	1.4	**22.9421**	0.255	1.1	ug/L	6503	Standard
	Cr	53	21012.9	4.7	**23.0380**	0.738	3.2	ug/L	492	Standard
	Mn	55	5714579.9	0.8	**894.6958**	9.873	1.1	ug/L	841	Standard
	Co	59	85556.9	1.3	**13.5808**	0.106	0.8	ug/L	229	Standard
	Ni	60	55476.4	0.3	**31.5218**	0.503	1.6	ug/L	344	Standard
	Cu	65	46747.0	0.8	**26.7323**	0.179	0.7	ug/L	115	Standard
	Zn	66	113215.8	0.4	**107.4550**	1.729	1.6	ug/L	190	Standard
>	**Ge**	72	428063.9	1.5				ug/L	409858	Standard
	As	75	12392.8	0.8	**11.5468**	0.171	1.5	ug/L	-22	Standard
	Se	82	94.3	8.8	**0.8042**	0.088	10.9	ug/L	18	Standard
	Se-1	77	139.3	14.7	**1.1807**	0.309	26.2	ug/L	50	Standard
>	**Ga**	71	23456.5	4.0				mg/L	97	Standard
	Rb	85	264884.0	1.5				ug/L	25	Standard
	Y	89	662178.0	1.0				ug/L	376763	Standard
>	**Rh**	103	98.3	7.8				ug/L	20	Standard
	Mo	98	445.2	2.9	**0.2498**	0.006	2.6	ug/L	51	Standard
	Ag	107	3066.0	2.3	**0.4972**	0.011	2.2	ug/L	76	Standard
	Cd	111	1459.2	2.5	**0.7492**	0.021	2.8	mg/L	6	Standard
	Cd	114	3508.2	2.8	**0.7355**	0.025	3.4	ug/L	18	Standard
>	**In**	115	525518.1	1.1				ug/L	507261	Standard
	Sn	118	1388.4	7.6	**0.1349**	0.021	15.6	ug/L	683	Standard
	Sb	123	878.9	35.3	**0.1776**	0.071	39.9	ug/L	446	Standard
	Ba	135	561499.6	0.6	**284.8150**	1.354	0.5	ug/L	28	Standard
	Ce	140	1487894.8	1.2				ug/L	33	Standard
>	**Tb**	159	846767.6	0.8				ug/L	800803	Standard
	Ho	165	23945.6	0.4				ug/L	10	Standard
	Tl	203	1256.4	3.5	**0.1952**	0.004	2.0	ug/L	13	Standard
	Tl	205	1130.0	7.8	**0.2109**	0.017	8.2	ug/L	13	Standard
	Pb	206	1770271.4	0.4	**355.6542**	7.848	2.2	ug/L	226	Standard
	Pb	207	1435552.0	0.6	**317.5703**	6.461	2.0	ug/L	204	Standard
	Pb	208	6260085.1	0.5	**346.3567**	10.592	3.1	ug/L	852	Standard
	U	238	5247.9	0.1	**0.8260**	0.020	2.4	ug/L	13	Standard
>	**Bi**	209	455646.6	2.6				ug/L	449044	Standard

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Na	23	1.7	173.2	**-1.7220**	12.229	710.2	mg/L	2	Standard
Mg	24	143.3	14.5	**0.1144**	0.022	19.5	mg/L	58	Standard
K	39	646.7	10.5	**1.8867**	0.203	10.8	mg/L	27	Standard
Ca	43	151.7	18.2	**7.4176**	1.670	22.5	mg/L	20	Standard
Fe	54	24152.4	1.4	**15.7960**	0.407	2.6	mg/L	158	Standard
Fe	57	6299.6	1.7	**15.9098**	0.455	2.9	mg/L	267	Standard
> **Sc-1**	45	49311.8	1.2				mg/L	38815	Standard
Cl	35	60605.6	1.3				ug/L	57611	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	4874.1	2.4				ug/L	1617	Standard
P	31	19729.5	1.9				ug/L	19244	Standard
S	34	3847.2	5.9				ug/L	3557	Standard
Sr	88	80.0	31.3				ug/L	65	Standard
C	12	223.3	22.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	213.3	30.5				mg/L	23	Standard
Dy	164	39817.0	0.8				mg/L	13	Standard
Ho-1	165	23945.6	0.4				mg/L	10	Standard
Er	166	21181.5	1.1				mg/L	13	Standard
I	127	37849.0	6.6				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.355	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.442	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.599
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.470
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135
Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1606129407
Sample Date/Time: Wednesday, July 06, 2016 10:31:13
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73692.1	0.5				ug/L	68501	Standard
	Be	9	1216.7	6.2	**1.2655**	0.077	6.1	ug/L	8	Standard
	Al	27	21068113.9	0.7	**137.9685**	1.604	1.2	ug/L	1397	Standard
	Sc	45	49278.3	1.2				ug/L	38815	Standard
	Ti	47	4630.0	0.5	**12.8504**	0.202	1.6	ug/L	36	Standard
	V	51	168296.1	0.8	**22.1871**	0.442	2.0	ug/L	1284	Standard
	Cr	52	162616.0	0.1	**21.1287**	0.300	1.4	ug/L	6503	Standard
	Cr	53	19561.0	0.9	**20.8821**	0.318	1.5	ug/L	492	Standard
	Mn	55	3012326.9	1.2	**459.8828**	11.572	2.5	ug/L	841	Standard
	Co	59	80823.4	1.3	**12.5119**	0.282	2.3	ug/L	229	Standard
	Ni	60	54628.0	0.8	**30.2569**	0.181	0.6	ug/L	344	Standard
	Cu	65	31768.6	1.0	**17.7106**	0.287	1.6	ug/L	115	Standard
	Zn	66	64232.9	0.7	**59.3902**	0.606	1.0	ug/L	190	Standard
>	**Ge**	72	439001.8	1.3				ug/L	409858	Standard
	As	75	4630.0	1.3	**4.2692**	0.074	1.7	ug/L	-22	Standard
	Se	82	59.1	11.4	**0.4718**	0.064	13.6	ug/L	18	Standard
	Se-1	77	133.3	9.3	**1.0503**	0.190	18.1	ug/L	50	Standard
>	**Ga**	71	23105.9	1.6				mg/L	97	Standard
	Rb	85	235088.1	0.5				ug/L	25	Standard
	Y	89	638379.7	2.1				ug/L	376763	Standard
>	**Rh**	103	48.3	41.8				ug/L	20	Standard
	Mo	98	407.1	1.2	**0.2423**	0.006	2.4	ug/L	51	Standard
	Ag	107	561.3	1.7	**0.1141**	0.003	2.7	ug/L	76	Standard
	Cd	111	296.3	10.1	**0.1906**	0.019	9.8	mg/L	6	Standard
	Cd	114	649.1	7.9	**0.1726**	0.010	5.7	ug/L	18	Standard
>	**In**	115	501705.0	2.5				ug/L	507261	Standard
	Sn	118	5997.9	0.4	**0.9982**	0.028	2.8	ug/L	683	Standard
	Sb	123	662.1	37.4	**0.1367**	0.062	45.2	ug/L	446	Standard
	Ba	135	404621.6	0.5	**215.0734**	5.716	2.7	ug/L	28	Standard
	Ce	140	1501488.9	0.3				ug/L	33	Standard
>	**Tb**	159	823762.5	0.4				ug/L	800803	Standard
	Ho	165	22473.3	1.8				ug/L	10	Standard
	Tl	203	1153.0	0.6	**0.1835**	0.001	0.6	ug/L	13	Standard
	Tl	205	1021.7	4.8	**0.1961**	0.007	3.7	ug/L	13	Standard
	Pb	206	79343.2	0.5	**16.0985**	0.167	1.0	ug/L	226	Standard
	Pb	207	65263.3	1.2	**14.5843**	0.286	2.0	ug/L	204	Standard
	Pb	208	280672.4	0.9	**15.6850**	0.240	1.5	ug/L	852	Standard
	U	238	4937.1	2.5	**0.7871**	0.022	2.8	ug/L	13	Standard
>	**Bi**	209	450912.1	0.7				ug/L	449044	Standard

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Na	23	3.3	86.6	**5.5830**	12.443	222.9	mg/L	2	Standard
Mg	24	130.0	37.1	**0.1007**	0.053	53.0	mg/L	58	Standard
K	39	498.3	2.5	**1.4228**	0.024	1.7	mg/L	27	Standard
Ca	43	138.3	7.5	**6.6525**	0.690	10.4	mg/L	20	Standard
Fe	54	23569.3	0.6	**15.4199**	0.090	0.6	mg/L	158	Standard
Fe	57	6081.2	2.7	**15.3422**	0.389	2.5	mg/L	267	Standard
Sc-1	45	49278.3	1.2				mg/L	38815	Standard
Cl	35	59773.0	1.9				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	2826.9	2.9				ug/L	1617	Standard
P	31	19067.0	1.9				ug/L	19244	Standard
S	34	3487.1	4.7				ug/L	3557	Standard
Sr	88	111.7	27.4				ug/L	65	Standard
C	12	113.3	45.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	60.0	57.7				mg/L	23	Standard
Dy	164	38647.6	1.9				mg/L	13	Standard
Ho-1	165	22473.3	1.8				mg/L	10	Standard
Er	166	20056.6	4.5				mg/L	13	Standard
I	127	13512.7	2.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		107.578	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		107.111	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.905	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.416	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129407
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Method 6020 - Summary Report

Sample ID: L1606129408
Sample Date/Time: Wednesday, July 06, 2016 10:34:25
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70959.1	1.3				ug/L	68501	Standard
	Be	9	756.7	4.3	**0.8243**	0.033	4.1	ug/L	8	Standard
	Al	27	14159270.0	0.8	**96.3094**	0.910	0.9	ug/L	1397	Standard
	Sc	45	47111.5	0.8				ug/L	38815	Standard
	Ti	47	6499.7	0.7	**18.2590**	0.454	2.5	ug/L	36	Standard
	V	51	134886.9	0.7	**17.9581**	0.352	2.0	ug/L	1284	Standard
	Cr	52	147858.4	1.3	**19.3579**	0.550	2.8	ug/L	6503	Standard
	Cr	53	17798.8	1.6	**19.1853**	0.468	2.4	ug/L	492	Standard
	Mn	55	2435019.9	0.3	**375.9486**	6.829	1.8	ug/L	841	Standard
	Co	59	48552.7	1.1	**7.6035**	0.118	1.6	ug/L	229	Standard
	Ni	60	34586.8	1.2	**19.3198**	0.357	1.8	ug/L	344	Standard
	Cu	65	24621.3	1.1	**13.8825**	0.410	3.0	ug/L	115	Standard
	Zn	66	46239.5	1.2	**43.2092**	0.491	1.1	ug/L	190	Standard
>	**Ge**	72	434087.5	2.1				ug/L	409858	Standard
	As	75	9868.8	1.7	**9.0890**	0.151	1.7	ug/L	-22	Standard
	Se	82	49.3	2.7	**0.3894**	0.021	5.3	ug/L	18	Standard
	Se-1	77	92.0	6.5	**0.5020**	0.065	12.9	ug/L	50	Standard
>	**Ga**	71	15012.4	1.7				mg/L	97	Standard
	Rb	85	152672.0	0.8				ug/L	25	Standard
	Y	89	553523.8	1.3				ug/L	376763	Standard
>	**Rh**	103	20.0	66.1				ug/L	20	Standard
	Mo	98	1703.3	1.9	**0.7619**	0.024	3.2	ug/L	51	Standard
	Ag	107	394.7	6.0	**0.0849**	0.003	3.2	ug/L	76	Standard
	Cd	111	290.6	2.3	**0.1825**	0.006	3.1	mg/L	6	Standard
	Cd	114	764.2	6.2	**0.1912**	0.008	4.3	ug/L	18	Standard
>	**In**	115	519157.2	1.7				ug/L	507261	Standard
	Sn	118	405.0	28.2	**-0.0378**	0.021	54.3	ug/L	683	Standard
	Sb	123	529.8	35.5	**0.1001**	0.042	42.3	ug/L	446	Standard
	Ba	135	216547.7	1.4	**111.2307**	3.352	3.0	ug/L	28	Standard
	Ce	140	1039615.1	0.1				ug/L	33	Standard
>	**Tb**	159	843551.3	0.3				ug/L	800803	Standard
	Ho	165	16031.8	1.8				ug/L	10	Standard
	Tl	203	744.0	1.1	**0.1266**	0.003	2.1	ug/L	13	Standard
	Tl	205	701.7	2.9	**0.1441**	0.002	1.3	ug/L	13	Standard
	Pb	206	53258.1	0.9	**10.4016**	0.208	2.0	ug/L	226	Standard
	Pb	207	43508.7	1.3	**9.3600**	0.237	2.5	ug/L	204	Standard
	Pb	208	187957.8	0.8	**10.1115**	0.165	1.6	ug/L	852	Standard
	U	238	3675.4	2.9	**0.5763**	0.023	4.0	ug/L	13	Standard
>	**Bi**	209	468453.7	1.8				ug/L	449044	Standard

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Na	23	1.7	173.2	**-1.2267**	13.087	1066.9	mg/L	2	Standard
Mg	24	125.0	26.2	**0.1012**	0.037	36.5	mg/L	58	Standard
K	39	365.0	11.9	**1.0569**	0.141	13.3	mg/L	27	Standard
Ca	43	155.0	27.9	**8.0246**	2.680	33.4	mg/L	20	Standard
Fe	54	15935.4	1.6	**10.8701**	0.219	2.0	mg/L	158	Standard
Fe	57	4223.9	3.5	**10.9607**	0.389	3.5	mg/L	267	Standard
Sc-1	45	47111.5	0.8				mg/L	38815	Standard
Cl	35	59515.3	1.4				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	3090.3	5.6				ug/L	1617	Standard
P	31	18973.5	2.2				ug/L	19244	Standard
S	34	3442.1	0.9				ug/L	3557	Standard
Sr	88	105.0	20.8				ug/L	65	Standard
C	12	116.7	9.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	60.0	44.1				mg/L	23	Standard
Dy	164	26399.3	4.0				mg/L	13	Standard
Ho-1	165	16031.8	1.8				mg/L	10	Standard
Er	166	14089.9	1.7				mg/L	13	Standard
I	127	8477.4	2.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.588	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.912	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.345
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.322
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129409
Sample Date/Time: Wednesday, July 06, 2016 10:37:37
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69708.4	2.7				ug/L	68501	Standard
	Be	9	870.0	2.0	**0.9619**	0.032	3.4	ug/L	8	Standard
	Al	27	19202159.7	1.2	**132.9728**	2.381	1.8	ug/L	1397	Standard
	Sc	45	46678.5	2.3				ug/L	38815	Standard
	Ti	47	6642.5	1.4	**19.0258**	0.085	0.4	ug/L	36	Standard
	V	51	160686.5	0.8	**21.8455**	0.248	1.1	ug/L	1284	Standard
	Cr	52	156704.6	1.0	**20.9936**	0.232	1.1	ug/L	6503	Standard
	Cr	53	18536.3	2.0	**20.3975**	0.180	0.9	ug/L	492	Standard
	Mn	55	3756081.6	0.3	**591.4032**	6.380	1.1	ug/L	841	Standard
	Co	59	59706.1	0.8	**9.5336**	0.097	1.0	ug/L	229	Standard
	Ni	60	39640.8	2.1	**22.6045**	0.292	1.3	ug/L	344	Standard
	Cu	65	29127.6	0.6	**16.7474**	0.180	1.1	ug/L	115	Standard
	Zn	66	54582.1	0.6	**52.0381**	0.301	0.6	ug/L	190	Standard
>	**Ge**	72	425619.0	1.1				ug/L	409858	Standard
	As	75	6984.3	0.1	**6.5874**	0.071	1.1	ug/L	-22	Standard
	Se	82	63.7	16.3	**0.5290**	0.094	17.8	ug/L	18	Standard
	Se-1	77	105.3	9.4	**0.7132**	0.123	17.2	ug/L	50	Standard
>	**Ga**	71	16687.5	1.5				mg/L	97	Standard
	Rb	85	168766.4	0.6				ug/L	25	Standard
	Y	89	597263.8	1.9				ug/L	376763	Standard
>	**Rh**	103	46.7	27.0				ug/L	20	Standard
	Mo	98	1999.8	2.4	**0.8916**	0.023	2.6	ug/L	51	Standard
	Ag	107	515.7	0.2	**0.1048**	0.000	0.4	ug/L	76	Standard
	Cd	111	596.6	3.7	**0.3367**	0.013	3.9	mg/L	6	Standard
	Cd	114	1494.2	1.8	**0.3419**	0.007	2.1	ug/L	18	Standard
>	**In**	115	512996.6	0.7				ug/L	507261	Standard
	Sn	118	1833.4	8.5	**0.2212**	0.030	13.8	ug/L	683	Standard
	Sb	123	606.4	28.4	**0.1195**	0.040	33.7	ug/L	446	Standard
	Ba	135	423500.0	0.9	**220.0532**	0.580	0.3	ug/L	28	Standard
	Ce	140	1120040.8	0.8				ug/L	33	Standard
>	**Tb**	159	826961.8	2.3				ug/L	800803	Standard
	Ho	165	18092.5	3.7				ug/L	10	Standard
	Tl	203	838.7	4.6	**0.1446**	0.005	3.8	ug/L	13	Standard
	Tl	205	770.0	5.6	**0.1605**	0.007	4.1	ug/L	13	Standard
	Pb	206	100483.1	0.8	**20.7696**	0.061	0.3	ug/L	226	Standard
	Pb	207	83275.9	1.1	**18.9560**	0.043	0.2	ug/L	204	Standard
	Pb	208	356830.1	0.7	**20.3142**	0.281	1.4	ug/L	852	Standard
	U	238	4663.1	1.9	**0.7589**	0.013	1.7	ug/L	13	Standard
>	**Bi**	209	442634.9	1.0				ug/L	449044	Standard

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Na	23	3.3	173.2	**6.1400**	25.847	421.0	mg/L	2	Standard
Mg	24	140.0	22.3	**0.1197**	0.038	31.7	mg/L	58	Standard
K	39	373.3	22.8	**1.0948**	0.271	24.8	mg/L	27	Standard
Ca	43	445.0	10.0	**25.6355**	2.557	10.0	mg/L	20	Standard
Fe	54	17573.1	2.3	**12.1156**	0.397	3.3	mg/L	158	Standard
Fe	57	4757.4	2.3	**12.5607**	0.567	4.5	mg/L	267	Standard
Sc-1	45	46678.5	2.3				mg/L	38815	Standard
Cl	35	62395.6	1.3				ug/L	57611	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	3323.7	5.8				ug/L	1617	Standard
P	31	20153.4	2.6				ug/L	19244	Standard
S	34	3810.5	2.1				ug/L	3557	Standard
Sr	88	126.7	20.3				ug/L	65	Standard
C	12	123.3	16.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	70.0	28.6				mg/L	23	Standard
Dy	164	30012.3	1.2				mg/L	13	Standard
Ho-1	165	18092.5	3.7				mg/L	10	Standard
Er	166	16609.1	2.2				mg/L	13	Standard
I	127	29072.9	4.6				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		101.762	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.845	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.131	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.573	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129410
Sample Date/Time: Wednesday, July 06, 2016 10:40:48
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69616.3	2.3				ug/L	68501	Standard
	Be	9	961.7	5.5	**1.0616**	0.034	3.2	ug/L	8	Standard
	Al	27	18281916.3	1.2	**126.7524**	1.430	1.1	ug/L	1397	Standard
	Sc	45	47290.4	1.8				ug/L	38815	Standard
	Ti	47	6362.0	1.3	**17.8782**	0.265	1.5	ug/L	36	Standard
	V	51	159242.7	1.1	**21.2363**	0.280	1.3	ug/L	1284	Standard
	Cr	52	141025.6	0.9	**18.4273**	0.214	1.2	ug/L	6503	Standard
	Cr	53	17441.7	0.8	**18.8006**	0.170	0.9	ug/L	492	Standard
	Mn	55	3246732.0	1.4	**501.5321**	8.138	1.6	ug/L	841	Standard
	Co	59	62555.9	1.5	**9.8001**	0.170	1.7	ug/L	229	Standard
	Ni	60	41094.7	0.2	**22.9958**	0.072	0.3	ug/L	344	Standard
	Cu	65	31150.3	1.3	**17.5726**	0.242	1.4	ug/L	115	Standard
	Zn	66	58549.2	0.6	**54.7724**	0.308	0.6	ug/L	190	Standard
>	**Ge**	72	433790.5	0.2				ug/L	409858	Standard
	As	75	9785.0	0.1	**9.0175**	0.026	0.3	ug/L	-22	Standard
	Se	82	60.3	4.9	**0.4878**	0.025	5.2	ug/L	18	Standard
	Se-1	77	120.7	9.5	**0.8965**	0.155	17.3	ug/L	50	Standard
>	**Ga**	71	18277.7	3.5				mg/L	97	Standard
	Rb	85	196232.6	0.8				ug/L	25	Standard
	Y	89	583639.1	0.9				ug/L	376763	Standard
>	**Rh**	103	36.7	55.1				ug/L	20	Standard
	Mo	98	443.5	1.6	**0.2589**	0.003	1.4	ug/L	51	Standard
	Ag	107	462.0	1.3	**0.0985**	0.001	1.0	ug/L	76	Standard
	Cd	111	685.9	3.7	**0.3915**	0.015	3.9	mg/L	6	Standard
	Cd	114	1702.1	8.7	**0.3949**	0.033	8.5	ug/L	18	Standard
>	**In**	115	497941.4	0.7				ug/L	507261	Standard
	Sn	118	670.0	12.0	**0.0147**	0.016	107.7	ug/L	683	Standard
	Sb	123	469.6	32.9	**0.0912**	0.037	40.3	ug/L	446	Standard
	Ba	135	410847.6	0.8	**219.9427**	2.300	1.0	ug/L	28	Standard
	Ce	140	1208330.0	0.4				ug/L	33	Standard
>	**Tb**	159	813546.8	1.1				ug/L	800803	Standard
	Ho	165	18953.5	2.7				ug/L	10	Standard
	Tl	203	963.0	4.3	**0.1584**	0.004	2.8	ug/L	13	Standard
	Tl	205	828.4	3.8	**0.1667**	0.005	2.9	ug/L	13	Standard
	Pb	206	92666.8	0.3	**18.7524**	0.223	1.2	ug/L	226	Standard
	Pb	207	77103.7	0.6	**17.1840**	0.253	1.5	ug/L	204	Standard
	Pb	208	327107.5	0.6	**18.2311**	0.267	1.5	ug/L	852	Standard
	U	238	4511.0	0.2	**0.7210**	0.005	0.7	ug/L	13	Standard
>	**Bi**	209	452130.4	0.9				ug/L	449044	Standard

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Na	23	3.3	86.6	**6.0368**	12.838	212.7	mg/L	2	Standard
Mg	24	135.0	3.7	**0.1117**	0.006	5.2	mg/L	58	Standard
K	39	476.7	12.4	**1.4188**	0.205	14.4	mg/L	27	Standard
Ca	43	226.7	17.8	**12.2322**	2.188	17.9	mg/L	20	Standard
Fe	54	18678.3	2.4	**12.7127**	0.243	1.9	mg/L	158	Standard
Fe	57	4979.2	4.0	**12.9867**	0.314	2.4	mg/L	267	Standard
Sc-1	45	47290.4	1.8				mg/L	38815	Standard
Cl	35	60490.5	1.5				ug/L	57611	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	4444.0	5.0				ug/L	1617	Standard
P	31	19914.7	1.5				ug/L	19244	Standard
S	34	3688.8	4.4				ug/L	3557	Standard
Sr	88	118.3	10.6				ug/L	65	Standard
C	12	103.3	39.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	63.3	39.7				mg/L	23	Standard
Dy	164	30943.8	4.0				mg/L	13	Standard
Ho-1	165	18953.5	2.7				mg/L	10	Standard
Er	166	16829.3	3.2				mg/L	13	Standard
I	127	10401.9	3.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		101.628	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		105.839	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.163
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.687
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129410
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Method 6020 - Summary Report

Sample ID: L1606129414
Sample Date/Time: Wednesday, July 06, 2016 10:44:00
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71637.3	1.7				ug/L	68501	Standard
	Be	9	1021.7	6.3	**1.0968**	0.085	7.8	ug/L	8	Standard
	Al	27	18055854.1	2.0	**121.6784**	4.280	3.5	ug/L	1397	Standard
	Sc	45	48614.6	2.4				ug/L	38815	Standard
	Ti	47	6128.9	2.4	**17.3770**	0.672	3.9	ug/L	36	Standard
	V	51	159400.6	0.8	**21.4446**	0.369	1.7	ug/L	1284	Standard
	Cr	52	144599.1	0.6	**19.0917**	0.345	1.8	ug/L	6503	Standard
	Cr	53	16966.2	3.0	**18.4464**	0.876	4.7	ug/L	492	Standard
	Mn	55	4530173.8	0.5	**705.9322**	10.338	1.5	ug/L	841	Standard
	Co	59	69310.2	0.1	**10.9526**	0.185	1.7	ug/L	229	Standard
	Ni	60	46644.7	1.0	**26.3537**	0.542	2.1	ug/L	344	Standard
	Cu	65	36918.3	0.5	**21.0110**	0.308	1.5	ug/L	115	Standard
	Zn	66	85868.7	1.1	**81.0791**	0.514	0.6	ug/L	190	Standard
>	**Ge**	72	430095.7	1.6				ug/L	409858	Standard
	As	75	8396.3	0.2	**7.8187**	0.112	1.4	ug/L	-22	Standard
	Se	82	71.3	12.7	**0.5922**	0.083	13.9	ug/L	18	Standard
	Se-1	77	110.7	2.3	**0.7729**	0.049	6.4	ug/L	50	Standard
>	**Ga**	71	17934.0	4.5				mg/L	97	Standard
	Rb	85	189570.3	0.9				ug/L	25	Standard
	Y	89	609959.0	0.6				ug/L	376763	Standard
>	**Rh**	103	83.3	6.9				ug/L	20	Standard
	Mo	98	442.0	4.5	**0.2506**	0.007	2.9	ug/L	51	Standard
	Ag	107	670.0	5.1	**0.1281**	0.008	6.4	ug/L	76	Standard
	Cd	111	1213.9	1.2	**0.6372**	0.021	3.3	mg/L	6	Standard
	Cd	114	2971.9	12.0	**0.6347**	0.055	8.7	ug/L	18	Standard
>	**In**	115	519347.8	2.9				ug/L	507261	Standard
	Sn	118	811.7	22.8	**0.0342**	0.029	83.8	ug/L	683	Standard
	Sb	123	508.7	27.5	**0.0950**	0.029	30.5	ug/L	446	Standard
	Ba	135	407137.2	1.3	**209.0293**	3.304	1.6	ug/L	28	Standard
	Ce	140	1173511.2	0.8				ug/L	33	Standard
>	**Tb**	159	846889.3	0.9				ug/L	800803	Standard
	Ho	165	19894.7	3.2				ug/L	10	Standard
	Tl	203	874.7	4.5	**0.1445**	0.005	3.4	ug/L	13	Standard
	Tl	205	866.7	11.7	**0.1697**	0.015	8.7	ug/L	13	Standard
	Pb	206	768270.5	1.0	**152.1393**	1.787	1.2	ug/L	226	Standard
	Pb	207	586001.6	0.8	**127.7835**	1.154	0.9	ug/L	204	Standard
	Pb	208	2574173.5	0.5	**140.3658**	0.873	0.6	ug/L	852	Standard
	U	238	4434.3	1.5	**0.6951**	0.010	1.4	ug/L	13	Standard
>	**Bi**	209	462087.8	0.2				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	150.0	6.7	**0.1237**	0.009	7.3	mg/L	58	Standard
K	39	496.7	13.7	**1.4403**	0.227	15.8	mg/L	27	Standard
Ca	43	398.3	15.5	**21.8095**	3.086	14.2	mg/L	20	Standard
Fe	54	17527.3	1.2	**11.5979**	0.308	2.7	mg/L	158	Standard
Fe	57	4700.7	2.8	**11.8845**	0.644	5.4	mg/L	267	Standard
Sc-1	45	48614.6	2.4				mg/L	38815	Standard
Cl	35	61146.5	0.2				ug/L	57611	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	3377.0	5.9				ug/L	1617	Standard
P	31	19879.7	2.4				ug/L	19244	Standard
S	34	3838.8	2.6				ug/L	3557	Standard
Sr	88	200.0	11.5				ug/L	65	Standard
C	12	170.0	25.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	20.8				mg/L	23	Standard
Dy	164	32365.0	1.1				mg/L	13	Standard
Ho-1	165	19894.7	3.2				mg/L	10	Standard
Er	166	17843.8	2.1				mg/L	13	Standard
I	127	16912.8	4.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.578	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.938	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.383
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.905
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1606129415
Sample Date/Time: Wednesday, July 06, 2016 10:47:11
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69356.8	2.8				ug/L	68501	Standard
	Be	9	655.0	2.6	**0.7323**	0.009	1.2	ug/L	8	Standard
	Al	27	18722279.1	2.0	**130.2889**	1.214	0.9	ug/L	1397	Standard
	Sc	45	46070.0	2.2				ug/L	38815	Standard
	Ti	47	6073.9	1.6	**17.2616**	0.359	2.1	ug/L	36	Standard
	V	51	127231.3	0.8	**17.1322**	0.226	1.3	ug/L	1284	Standard
	Cr	52	102182.4	1.4	**13.2537**	0.247	1.9	ug/L	6503	Standard
	Cr	53	12315.0	1.3	**13.3055**	0.220	1.7	ug/L	492	Standard
	Mn	55	3021759.4	0.7	**472.0520**	3.826	0.8	ug/L	841	Standard
	Co	59	47565.2	1.0	**7.5376**	0.131	1.7	ug/L	229	Standard
	Ni	60	32362.9	1.1	**18.2823**	0.173	0.9	ug/L	344	Standard
	Cu	65	17677.0	0.6	**10.0795**	0.120	1.2	ug/L	115	Standard
	Zn	66	34602.8	0.5	**32.6930**	0.405	1.2	ug/L	190	Standard
>	**Ge**	72	428940.5	0.7				ug/L	409858	Standard
	As	75	3941.9	1.4	**3.7324**	0.045	1.2	ug/L	-22	Standard
	Se	82	46.5	7.4	**0.3694**	0.033	8.9	ug/L	18	Standard
	Se-1	77	100.3	7.0	**0.6338**	0.107	16.9	ug/L	50	Standard
>	**Ga**	71	13047.3	4.0				mg/L	97	Standard
	Rb	85	118624.5	2.9				ug/L	25	Standard
	Y	89	560951.0	2.5				ug/L	376763	Standard
>	**Rh**	103	48.3	6.0				ug/L	20	Standard
	Mo	98	828.1	2.5	**0.4116**	0.010	2.5	ug/L	51	Standard
	Ag	107	345.0	5.2	**0.0778**	0.003	3.9	ug/L	76	Standard
	Cd	111	144.7	12.8	**0.1116**	0.010	8.7	mg/L	6	Standard
	Cd	114	424.5	6.8	**0.1240**	0.007	5.5	ug/L	18	Standard
>	**In**	115	512359.1	1.3				ug/L	507261	Standard
	Sn	118	641.7	0.4	**0.0060**	0.002	32.8	ug/L	683	Standard
	Sb	123	464.7	24.6	**0.0871**	0.028	31.9	ug/L	446	Standard
	Ba	135	304537.9	0.9	**158.4527**	1.532	1.0	ug/L	28	Standard
	Ce	140	927061.5	1.4				ug/L	33	Standard
>	**Tb**	159	815658.1	0.5				ug/L	800803	Standard
	Ho	165	15122.5	1.3				ug/L	10	Standard
	Tl	203	665.3	5.7	**0.1217**	0.004	3.6	ug/L	13	Standard
	Tl	205	626.7	3.3	**0.1387**	0.004	2.8	ug/L	13	Standard
	Pb	206	41069.9	0.7	**8.5027**	0.083	1.0	ug/L	226	Standard
	Pb	207	33682.7	0.3	**7.6813**	0.070	0.9	ug/L	204	Standard
	Pb	208	146067.2	0.1	**8.3310**	0.095	1.1	ug/L	852	Standard
	U	238	3682.8	0.5	**0.6094**	0.005	0.7	ug/L	13	Standard
>	**Bi**	209	441819.7	1.2				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	121.7	9.5	**0.1005**	0.014	13.8	mg/L	58	Standard
K	39	275.0	20.0	**0.7805**	0.172	22.0	mg/L	27	Standard
Ca	43	448.3	8.4	**26.1815**	1.967	7.5	mg/L	20	Standard
Fe	54	13969.2	1.8	**9.7320**	0.102	1.0	mg/L	158	Standard
Fe	57	3810.5	1.6	**10.0601**	0.130	1.3	mg/L	267	Standard
Sc-1	45	46070.0	2.2				mg/L	38815	Standard
Cl	35	63382.3	0.4				ug/L	57611	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	2136.8	4.5				ug/L	1617	Standard
P	31	20200.1	2.8				ug/L	19244	Standard
S	34	3783.8	2.6				ug/L	3557	Standard
Sr	88	146.7	29.8				ug/L	65	Standard
C	12	96.7	11.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	43.3	35.3				mg/L	23	Standard
Dy	164	25849.2	4.7				mg/L	13	Standard
Ho-1	165	15122.5	1.3				mg/L	10	Standard
Er	166	13792.9	3.2				mg/L	13	Standard
I	127	16515.7	1.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.249	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.656	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.005	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.391	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606138108
Sample Date/Time: Wednesday, July 06, 2016 10:50:23
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72486.3	0.9				ug/L	68501	Standard
	Be	9	1533.4	3.3	**1.6163**	0.062	3.8	ug/L	8	Standard
	Al	27	25400427.9	2.0	**169.1086**	4.148	2.5	ug/L	1397	Standard
	Sc	45	51156.2	0.2				ug/L	38815	Standard
	Ti	47	8899.9	0.5	**24.3466**	0.343	1.4	ug/L	36	Standard
	V	51	344234.9	1.1	**44.8316**	0.962	2.1	ug/L	1284	Standard
	Cr	52	232795.5	0.9	**30.1671**	0.645	2.1	ug/L	6503	Standard
	Cr	53	28976.0	1.1	**30.6491**	0.369	1.2	ug/L	492	Standard
	Mn	55	7977455.3	1.5	**1199.3630**	32.576	2.7	ug/L	841	Standard
	Co	59	107887.7	3.2	**16.4465**	0.723	4.4	ug/L	229	Standard
	Ni	60	66407.2	1.3	**36.2534**	0.900	2.5	ug/L	344	Standard
	Cu	65	42270.9	0.8	**23.2092**	0.454	2.0	ug/L	115	Standard
	Zn	66	75366.6	0.5	**68.6374**	1.149	1.7	ug/L	190	Standard
>	**Ge**	72	445840.4	1.3				ug/L	409858	Standard
	As	75	12308.2	0.8	**11.0147**	0.102	0.9	ug/L	-22	Standard
	Se	82	70.7	6.0	**0.5638**	0.038	6.8	ug/L	18	Standard
	Se-1	77	145.0	4.8	**1.1765**	0.081	6.9	ug/L	50	Standard
>	**Ga**	71	31280.6	2.9				mg/L	97	Standard
	Rb	85	327883.6	1.5				ug/L	25	Standard
	Y	89	719377.2	0.7				ug/L	376763	Standard
>	**Rh**	103	35.0	0.0				ug/L	20	Standard
	Mo	98	765.6	2.9	**0.3992**	0.010	2.6	ug/L	51	Standard
	Ag	107	679.3	4.1	**0.1354**	0.005	3.6	ug/L	76	Standard
	Cd	111	351.6	7.7	**0.2222**	0.013	5.9	mg/L	6	Standard
	Cd	114	823.2	4.8	**0.2125**	0.009	4.1	ug/L	18	Standard
>	**In**	115	491492.2	0.5				ug/L	507261	Standard
	Sn	118	440.0	20.8	**-0.0272**	0.017	62.7	ug/L	683	Standard
	Sb	123	423.3	31.3	**0.0814**	0.031	38.5	ug/L	446	Standard
	Ba	135	714828.5	0.3	**387.6768**	1.440	0.4	ug/L	28	Standard
	Ce	140	1832498.4	0.5				ug/L	33	Standard
>	**Tb**	159	823866.0	2.2				ug/L	800803	Standard
	Ho	165	29406.8	0.1				ug/L	10	Standard
	Tl	203	1665.8	2.3	**0.2517**	0.010	3.8	ug/L	13	Standard
	Tl	205	1446.7	2.9	**0.2613**	0.003	1.1	ug/L	13	Standard
	Pb	206	93784.4	0.6	**19.1491**	0.463	2.4	ug/L	226	Standard
	Pb	207	76969.3	0.3	**17.3077**	0.404	2.3	ug/L	204	Standard
	Pb	208	332050.1	0.7	**18.6735**	0.512	2.7	ug/L	852	Standard
	U	238	6413.7	2.1	**1.0160**	0.040	3.9	ug/L	13	Standard
>	**Bi**	209	448223.1	2.1				ug/L	449044	Standard

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Na	23	3.3	86.6	**5.0083**	11.943	238.5	mg/L	2	Standard
Mg	24	171.7	13.1	**0.1380**	0.023	17.0	mg/L	58	Standard
K	39	886.7	6.3	**2.5401**	0.168	6.6	mg/L	27	Standard
Ca	43	226.7	5.6	**11.2306**	0.672	6.0	mg/L	20	Standard
Fe	54	40072.0	2.9	**25.3299**	0.732	2.9	mg/L	158	Standard
Fe	57	9864.9	1.0	**24.3568**	0.264	1.1	mg/L	267	Standard
> **Sc-1**	45	51156.2	0.2				mg/L	38815	Standard
Cl	35	59691.4	1.9				ug/L	57611	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	3077.0	6.1				ug/L	1617	Standard
P	31	20130.0	0.4				ug/L	19244	Standard
S	34	3668.8	1.0				ug/L	3557	Standard
Sr	88	105.0	8.2				ug/L	65	Standard
C	12	73.3	15.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	66.7	45.8				mg/L	23	Standard
Dy	164	48237.7	1.2				mg/L	13	Standard
Ho-1	165	29406.8	0.1				mg/L	10	Standard
Er	166	25948.9	3.5				mg/L	13	Standard
I	127	15698.1	2.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.818	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.779	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	96.891	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.817	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606138108
Report Date/Time: Wednesday, July 06, 2016 10:52:40
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 10:53:36
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64259.4	3.3				ug/L	68501	Standard
	Be	9	43841.7	3.1	**51.5527**	2.497	4.8	ug/L	8	Standard
	Al	27	6953353.2	1.9	**52.2651**	1.444	2.8	ug/L	1397	Standard
	Sc	45	39743.7	0.4				ug/L	38815	Standard
	Ti	47	35704.4	1.0	**101.8805**	1.285	1.3	ug/L	36	Standard
	V	51	371494.8	0.5	**50.4382**	0.543	1.1	ug/L	1284	Standard
	Cr	52	375402.7	0.3	**51.3335**	0.715	1.4	ug/L	6503	Standard
	Cr	53	45456.4	2.6	**50.3879**	1.853	3.7	ug/L	492	Standard
	Mn	55	334501.2	2.2	**52.3232**	1.695	3.2	ug/L	841	Standard
	Co	59	318609.4	1.7	**50.6018**	1.412	2.8	ug/L	229	Standard
	Ni	60	90509.5	0.4	**51.5582**	0.574	1.1	ug/L	344	Standard
	Cu	65	90191.6	0.5	**51.6222**	0.305	0.6	ug/L	115	Standard
	Zn	66	54118.1	0.1	**51.3362**	0.581	1.1	ug/L	190	Standard
>	Ge	72	427773.7	1.1				ug/L	409858	Standard
	As	75	55742.6	0.4	**51.6238**	0.555	1.1	ug/L	-22	Standard
	Se	82	5706.7	1.4	**51.7084**	0.981	1.9	ug/L	18	Standard
	Se-1	77	3670.4	2.7	**50.3081**	1.140	2.3	ug/L	50	Standard
>	Ga	71	88.3	17.3				mg/L	97	Standard
	Rb	85	1076.7	35.5				ug/L	25	Standard
	Y	89	377618.5	2.9				ug/L	376763	Standard
>	Rh	103	46.7	32.7				ug/L	20	Standard
	Mo	98	243549.3	0.8	**100.3006**	1.362	1.4	ug/L	51	Standard
	Ag	107	315759.3	0.5	**50.2284**	0.464	0.9	ug/L	76	Standard
	Cd	111	100684.0	1.0	**50.3922**	0.736	1.5	mg/L	6	Standard
	Cd	114	247087.6	1.9	**50.5807**	0.776	1.5	ug/L	18	Standard
>	In	115	511123.8	0.7				ug/L	507261	Standard
	Sn	118	271706.3	0.8	**49.1505**	0.193	0.4	ug/L	683	Standard
	Sb	123	219531.9	1.2	**50.7744**	0.262	0.5	ug/L	446	Standard
	Ba	135	95238.1	0.7	**49.6818**	0.458	0.9	ug/L	28	Standard
	Ce	140	2296.9	75.4				ug/L	33	Standard
>	Tb	159	795428.0	0.9				ug/L	800803	Standard
	Ho	165	46.7	80.4				ug/L	10	Standard
	Tl	203	386058.6	0.7	**50.5931**	0.842	1.7	ug/L	13	Standard
	Tl	205	345836.6	1.9	**52.3425**	1.620	3.1	ug/L	13	Standard
	Pb	206	245468.8	0.5	**50.0966**	0.548	1.1	ug/L	226	Standard
	Pb	207	223245.4	0.8	**50.1748**	0.874	1.7	ug/L	204	Standard
	Pb	208	926108.0	0.5	**52.0498**	0.851	1.6	ug/L	852	Standard
	U	238	330446.1	0.9	**50.1569**	0.936	1.9	ug/L	13	Standard
>	Bi	209	448378.0	1.2				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	3747.1	4.1	**4.9169**	0.220	4.5	mg/L	58	Standard
K	39	1196.7	2.7	**4.5173**	0.126	2.8	mg/L	27	Standard
Ca	43	96.7	16.6	**5.5890**	1.145	20.5	mg/L	20	Standard
Fe	54	6243.1	4.3	**4.9840**	0.237	4.8	mg/L	158	Standard
Fe	57	1828.4	4.2	**5.2938**	0.264	5.0	mg/L	267	Standard
Sc-1	45	39743.7	0.4				mg/L	38815	Standard
Cl	35	62133.8	0.9				ug/L	57611	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1636.8	2.5				ug/L	1617	Standard
P	31	20235.2	4.1				ug/L	19244	Standard
S	34	3792.1	1.3				ug/L	3557	Standard
Sr	88	61.7	33.8				ug/L	65	Standard
C	12	60.0	66.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	23	Standard
Dy	164	54.9	100.7				mg/L	13	Standard
Ho-1	165	46.7	80.4				mg/L	10	Standard
Er	166	36.7	31.5				mg/L	13	Standard
I	127	14628.7	3.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	103.105		
Al	27	104.530		
Sc	45			
Ti	47	101.880		
V	51	100.876		
Cr	52	102.667		
Cr	53			
Mn	55	104.646		
Co	59	101.204		
Ni	60	103.116		
Cu	65	103.244		
Zn	66	102.672		
Ge	72		104.371	
As	75	103.248		
Se	82	103.417		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	100.301		
Ag	107	100.457		
Cd	111	100.784		
Cd	114			
In	115			100.762
Sn	118	98.301		
Sb	123	101.549		
Ba	135	99.364		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.186		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.100		
U	238	100.314		
Bi	209			99.852
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 11:42:31
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68099.4	1.8				ug/L	68501	Standard
	Be	9	8.3	34.6	**0.0287**	0.003	11.1	ug/L	8	Standard
	Al	27	14163.5	24.2	**0.1355**	0.025	18.2	ug/L	1397	Standard
	Sc	45	44045.6	0.7				ug/L	38815	Standard
	Ti	47	40.3	21.7	**0.0838**	0.025	29.8	ug/L	36	Standard
	V	51	1647.2	9.4	**0.0730**	0.019	26.1	ug/L	1284	Standard
	Cr	52	8280.6	0.3	**0.1828**	0.011	5.9	ug/L	6503	Standard
	Cr	53	536.7	3.8	**0.1623**	0.024	15.0	ug/L	492	Standard
	Mn	55	3121.3	36.4	**0.3770**	0.169	44.9	ug/L	841	Standard
	Co	59	314.3	17.6	**0.0538**	0.008	15.3	ug/L	229	Standard
	Ni	60	2758.9	10.6	**1.3694**	0.170	12.4	ug/L	344	Standard
	Cu	65	169.0	22.3	**0.0803**	0.020	25.2	ug/L	115	Standard
	Zn	66	390.3	4.0	**0.2459**	0.012	4.8	ug/L	190	Standard
>	**Ge**	72	441689.0	0.7				ug/L	409858	Standard
	As	75	-29.8	41.1	**0.0722**	0.011	15.1	ug/L	-22	Standard
	Se	82	23.9	27.0	**0.1591**	0.058	36.6	ug/L	18	Standard
	Se-1	77	59.0	5.1	**0.0362**	0.043	119.3	ug/L	50	Standard
>	**Ga**	71	210.0	2.4				mg/L	97	Standard
	Rb	85	41.7	42.1				ug/L	25	Standard
	Y	89	382520.5	1.2				ug/L	376763	Standard
>	**Rh**	103	40.0	12.5				ug/L	20	Standard
	Mo	98	49.0	35.4	**0.0912**	0.007	7.5	ug/L	51	Standard
	Ag	107	101.7	48.1	**0.0389**	0.007	19.3	ug/L	76	Standard
	Cd	111	8.6	82.2	**0.0436**	0.003	7.9	mg/L	6	Standard
	Cd	114	29.0	107.5	**0.0431**	0.006	14.4	ug/L	18	Standard
>	**In**	115	523091.2	1.5				ug/L	507261	Standard
	Sn	118	720.0	15.6	**0.0173**	0.018	105.5	ug/L	683	Standard
	Sb	123	259.1	31.9	**0.0381**	0.018	47.4	ug/L	446	Standard
	Ba	135	102.7	54.1	**0.0679**	0.028	41.1	ug/L	28	Standard
	Ce	140	168.3	80.9				ug/L	33	Standard
>	**Tb**	159	833236.8	0.4				ug/L	800803	Standard
	Ho	165	16.7	96.4				ug/L	10	Standard
	Tl	203	41.3	123.5	**0.0386**	0.006	16.8	ug/L	13	Standard
	Tl	205	26.7	94.4	**0.0464**	0.004	7.9	ug/L	13	Standard
	Pb	206	344.3	44.0	**0.0642**	0.030	46.5	ug/L	226	Standard
	Pb	207	291.7	32.9	**0.0626**	0.021	33.1	ug/L	204	Standard
	Pb	208	1108.0	29.9	**0.0606**	0.018	29.5	ug/L	852	Standard
	U	238	20.0	103.3	**0.0456**	0.003	6.7	ug/L	13	Standard
>	**Bi**	209	461326.7	1.1				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	55.0	39.6	**0.0272**	0.026	94.5	mg/L	58	Standard
K	39	20.0	66.1	**-0.0714**	0.047	66.1	mg/L	27	Standard
Ca	43	36.7	15.7	**1.0732**	0.378	35.3	mg/L	20	Standard
Fe	54	157.3	15.0	**-0.0043**	0.017	399.4	mg/L	158	Standard
Fe	57	200.0	21.8	**-0.0897**	0.131	146.0	mg/L	267	Standard
Sc-1	45	44045.6	0.7				mg/L	38815	Standard
Cl	35	61661.9	0.1				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1826.8	9.6				ug/L	1617	Standard
P	31	18439.5	1.1				ug/L	19244	Standard
S	34	3442.1	6.8				ug/L	3557	Standard
Sr	88	61.7	32.8				ug/L	65	Standard
C	12	60.0	33.3				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	20.0	0.0				mg/L	23	Standard
Dy	164	15.9	77.1				mg/L	13	Standard
Ho-1	165	16.7	96.4				mg/L	10	Standard
Er	166	16.7	91.7				mg/L	13	Standard
I	127	7533.5	4.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		107.766	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.121
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.735
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Ni	60	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 11:45:47
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64830.1	1.9				ug/L	68501	Standard
	Be	9	46499.6	1.1	**54.1704**	1.537	2.8	ug/L	8	Standard
	Al	27	7388448.8	0.7	**55.0275**	0.812	1.5	ug/L	1397	Standard
	Sc	45	44033.9	0.5				ug/L	38815	Standard
	Ti	47	39812.6	1.5	**107.6904**	3.488	3.2	ug/L	36	Standard
	V	51	400075.3	1.3	**51.4790**	0.650	1.3	ug/L	1284	Standard
	Cr	52	408299.6	1.0	**52.9448**	1.233	2.3	ug/L	6503	Standard
	Cr	53	50147.9	1.3	**52.6875**	0.621	1.2	ug/L	492	Standard
	Mn	55	360204.4	0.5	**53.3920**	0.801	1.5	ug/L	841	Standard
	Co	59	341155.0	0.4	**51.3459**	0.958	1.9	ug/L	229	Standard
	Ni	60	97475.9	0.6	**52.6264**	0.719	1.4	ug/L	344	Standard
	Cu	65	95563.8	0.6	**51.8385**	0.701	1.4	ug/L	115	Standard
	Zn	66	56825.4	0.6	**51.0848**	0.696	1.4	ug/L	190	Standard
>	Ge	72	451415.0	1.8				ug/L	409858	Standard
	As	75	58322.2	1.2	**51.1856**	0.404	0.8	ug/L	-22	Standard
	Se	82	5813.6	0.9	**49.9195**	0.668	1.3	ug/L	18	Standard
	Se-1	77	3959.5	0.2	**51.4577**	0.905	1.8	ug/L	50	Standard
>	Ga	71	216.7	13.1				mg/L	97	Standard
	Rb	85	860.0	6.2				ug/L	25	Standard
	Y	89	386323.2	0.5				ug/L	376763	Standard
>	Rh	103	43.3	33.3				ug/L	20	Standard
	Mo	98	258715.6	0.8	**102.9203**	0.336	0.3	ug/L	51	Standard
	Ag	107	334664.2	1.1	**51.4249**	0.335	0.7	ug/L	76	Standard
	Cd	111	105295.3	0.9	**50.9078**	0.378	0.7	mg/L	6	Standard
	Cd	114	257697.7	1.4	**50.9614**	0.474	0.9	ug/L	18	Standard
>	In	115	529086.9	0.5				ug/L	507261	Standard
	Sn	118	288808.4	1.0	**50.4733**	0.434	0.9	ug/L	683	Standard
	Sb	123	231526.0	1.7	**51.7299**	0.605	1.2	ug/L	446	Standard
	Ba	135	102698.6	0.9	**51.7546**	0.698	1.3	ug/L	28	Standard
	Ce	140	91.7	31.0				ug/L	33	Standard
>	Tb	159	843940.5	0.4				ug/L	800803	Standard
	Ho	165	13.3	86.6				ug/L	10	Standard
	Tl	203	410176.2	0.9	**51.5014**	0.241	0.5	ug/L	13	Standard
	Tl	205	368257.4	1.7	**53.4038**	1.508	2.8	ug/L	13	Standard
	Pb	206	259254.8	1.4	**50.6945**	0.235	0.5	ug/L	226	Standard
	Pb	207	235956.1	0.7	**50.8112**	0.400	0.8	ug/L	204	Standard
	Pb	208	952282.8	0.7	**51.2827**	0.741	1.4	ug/L	852	Standard
	U	238	350690.0	0.2	**51.0014**	0.550	1.1	ug/L	13	Standard
>	Bi	209	467938.8	1.3				ug/L	449044	Standard

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Na	23	5.0	100.0	**15.2758**	24.130	158.0	mg/L	2	Standard
Mg	24	4247.3	2.7	**5.0303**	0.122	2.4	mg/L	58	Standard
K	39	1463.4	3.7	**5.0009**	0.207	4.1	mg/L	27	Standard
Ca	43	111.7	2.6	**5.8810**	0.155	2.6	mg/L	20	Standard
Fe	54	6589.6	4.9	**4.7411**	0.215	4.5	mg/L	158	Standard
Fe	57	2028.5	2.5	**5.3009**	0.131	2.5	mg/L	267	Standard
Sc-1	45	44033.9	0.5				mg/L	38815	Standard
Cl	35	63287.2	0.5				ug/L	57611	Standard
Kr	83	1.7	124.9				ug/L	2	Standard
Br	81	1883.5	7.5				ug/L	1617	Standard
P	31	20448.8	4.2				ug/L	19244	Standard
S	34	4120.6	1.7				ug/L	3557	Standard
Sr	88	73.3	33.6				ug/L	65	Standard
C	12	53.3	28.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	23	Standard
Dy	164	16.5	68.3				mg/L	13	Standard
Ho-1	165	13.3	86.6				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	13826.3	1.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	108.341		
Al	27	110.055		
Sc	45			
Ti	47	107.690		
V	51	102.958		
Cr	52	105.890		
Cr	53			
Mn	55	106.784		
Co	59	102.692		
Ni	60	105.253		
Cu	65	103.677		
Zn	66	102.170		
Ge	72		110.139	
As	75	102.371		
Se	82	99.839		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	102.920		
Ag	107	102.850		
Cd	111	101.816		
Cd	114			
In	115		104.303	
Sn	118	100.947		
Sb	123	103.460		
Ba	135	103.509		
Ce	140			
Tb	159			
Ho	165			
Tl	203	103.003		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.565		
U	238	102.003		
Bi	209		104.208	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 11:48:58
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64903.7	1.0				ug/L	68501	Standard
	Be	9	28.3	36.7	**0.0525**	0.012	23.6	ug/L	8	Standard
	Al	27	7001.6	13.5	**0.0871**	0.007	7.5	ug/L	1397	Standard
	Sc	45	43998.8	0.7				ug/L	38815	Standard
	Ti	47	51.7	3.0	**0.1132**	0.004	3.4	ug/L	36	Standard
	V	51	1411.2	9.5	**0.0396**	0.017	43.4	ug/L	1284	Standard
	Cr	52	7190.0	0.5	**0.0233**	0.007	30.8	ug/L	6503	Standard
	Cr	53	545.0	0.9	**0.1637**	0.005	3.0	ug/L	492	Standard
	Mn	55	1551.1	1.7	**0.1364**	0.003	2.3	ug/L	841	Standard
	Co	59	297.0	6.7	**0.0506**	0.003	5.9	ug/L	229	Standard
	Ni	60	2058.1	4.1	**0.9665**	0.043	4.5	ug/L	344	Standard
	Cu	65	146.0	7.2	**0.0666**	0.006	8.5	ug/L	115	Standard
	Zn	66	251.0	6.0	**0.1147**	0.013	11.2	ug/L	190	Standard
>	**Ge**	72	447411.5	0.4				ug/L	409858	Standard
	As	75	-12.9	47.7	**0.0875**	0.005	6.3	ug/L	-22	Standard
	Se	82	22.1	36.9	**0.1400**	0.070	50.1	ug/L	18	Standard
	Se-1	77	60.7	5.0	**0.0480**	0.038	78.8	ug/L	50	Standard
>	**Ga**	71	171.7	25.4				mg/L	97	Standard
	Rb	85	20.0	50.0				ug/L	25	Standard
	Y	89	382893.6	1.7				ug/L	376763	Standard
>	**Rh**	103	40.0	21.7				ug/L	20	Standard
	Mo	98	207.8	17.4	**0.1541**	0.014	8.9	ug/L	51	Standard
	Ag	107	130.0	34.3	**0.0430**	0.007	15.5	ug/L	76	Standard
	Cd	111	19.9	46.2	**0.0490**	0.004	8.9	mg/L	6	Standard
	Cd	114	48.1	27.0	**0.0469**	0.003	5.5	ug/L	18	Standard
>	**In**	115	529271.7	1.2				ug/L	507261	Standard
	Sn	118	1003.4	25.2	**0.0659**	0.046	69.3	ug/L	683	Standard
	Sb	123	765.7	27.3	**0.1510**	0.048	31.7	ug/L	446	Standard
	Ba	135	54.0	26.7	**0.0429**	0.007	16.7	ug/L	28	Standard
	Ce	140	33.3	37.7				ug/L	33	Standard
>	**Tb**	159	837656.9	1.4				ug/L	800803	Standard
	Ho	165	1.7	173.2				ug/L	10	Standard
	Tl	203	93.0	31.8	**0.0452**	0.004	8.2	ug/L	13	Standard
	Tl	205	85.0	27.0	**0.0550**	0.003	6.0	ug/L	13	Standard
	Pb	206	283.0	15.5	**0.0520**	0.008	16.1	ug/L	226	Standard
	Pb	207	240.7	10.4	**0.0514**	0.005	10.1	ug/L	204	Standard
	Pb	208	1007.7	11.0	**0.0550**	0.006	10.5	ug/L	852	Standard
	U	238	64.0	46.2	**0.0520**	0.004	8.3	ug/L	13	Standard
>	**Bi**	209	461835.8	0.6				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	35.0	28.6	**0.0035**	0.012	350.5	mg/L	58	Standard
K	39	30.0	50.0	**-0.0366**	0.052	142.4	mg/L	27	Standard
Ca	43	35.0	14.3	**0.9689**	0.334	34.4	mg/L	20	Standard
Fe	54	151.0	6.9	**-0.0087**	0.008	88.1	mg/L	158	Standard
Fe	57	270.0	6.7	**0.1168**	0.048	40.8	mg/L	267	Standard
Sc-1	45	43998.8	0.7				mg/L	38815	Standard
Cl	35	62661.3	0.2				ug/L	57611	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1796.8	4.9				ug/L	1617	Standard
P	31	19843.0	5.4				ug/L	19244	Standard
S	34	3858.8	4.3				ug/L	3557	Standard
Sr	88	63.3	31.9				ug/L	65	Standard
C	12	43.3	26.6				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	16.7	69.3				mg/L	23	Standard
Dy	164	16.3	36.2				mg/L	13	Standard
Ho-1	165	1.7	173.2				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	9319.5	2.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		109.163	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.339
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.849
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Ni	60	
QC Std 7	Tl	203	

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Method 6020 - Summary Report

Sample ID: L1606129411 WG574195-01
Sample Date/Time: Wednesday, July 06, 2016 11:53:43
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58019.3	3.2				ug/L	68501	Standard
	Be	9	35.0	24.7	**0.0649**	0.011	16.2	ug/L	8	Standard
	Al	27	474743.5	2.2	**3.9838**	0.068	1.7	ug/L	1397	Standard
	Sc	45	39008.5	1.4				ug/L	38815	Standard
	Ti	47	164.3	9.1	**0.4624**	0.049	10.7	ug/L	36	Standard
	V	51	4968.3	2.7	**0.5626**	0.026	4.5	ug/L	1284	Standard
	Cr	52	7215.1	1.3	**0.1154**	0.011	9.7	ug/L	6503	Standard
	Cr	53	503.3	9.5	**0.1691**	0.060	35.2	ug/L	492	Standard
	Mn	55	185079.6	0.7	**30.1945**	0.512	1.7	ug/L	841	Standard
	Co	59	1774.1	4.3	**0.2998**	0.016	5.2	ug/L	229	Standard
	Ni	60	2550.5	1.9	**1.3643**	0.017	1.2	ug/L	344	Standard
	Cu	65	594.7	3.1	**0.3424**	0.014	4.1	ug/L	115	Standard
	Zn	66	2211.8	2.7	**2.0827**	0.051	2.4	ug/L	190	Standard
>	**Ge**	72	409552.4	1.1				ug/L	409858	Standard
	As	75	79.4	41.0	**0.1757**	0.032	18.3	ug/L	-22	Standard
	Se	82	16.9	22.9	**0.1092**	0.038	34.9	ug/L	18	Standard
	Se-1	77	59.7	21.2	**0.1093**	0.192	175.9	ug/L	50	Standard
>	**Ga**	71	408.3	11.4				mg/L	97	Standard
	Rb	85	2811.9	1.6				ug/L	25	Standard
	Y	89	360686.6	1.5				ug/L	376763	Standard
>	**Rh**	103	21.7	13.3				ug/L	20	Standard
	Mo	98	190.8	18.3	**0.1553**	0.015	9.7	ug/L	51	Standard
	Ag	107	81.7	25.2	**0.0370**	0.004	9.9	ug/L	76	Standard
	Cd	111	12.4	33.2	**0.0460**	0.002	4.9	mg/L	6	Standard
	Cd	114	39.8	47.8	**0.0461**	0.004	9.2	ug/L	18	Standard
>	**In**	115	479231.5	1.3				ug/L	507261	Standard
	Sn	118	381.7	13.8	**-0.0364**	0.009	25.3	ug/L	683	Standard
	Sb	123	1280.6	34.2	**0.2949**	0.105	35.5	ug/L	446	Standard
	Ba	135	12423.8	2.1	**6.9252**	0.057	0.8	ug/L	28	Standard
	Ce	140	21718.9	2.2				ug/L	33	Standard
>	**Tb**	159	765153.7	1.5				ug/L	800803	Standard
	Ho	165	430.0	4.2				ug/L	10	Standard
	Tl	203	43.7	44.5	**0.0392**	0.003	6.6	ug/L	13	Standard
	Tl	205	68.3	70.3	**0.0531**	0.007	14.0	ug/L	13	Standard
	Pb	206	1332.4	11.7	**0.2741**	0.033	11.9	ug/L	226	Standard
	Pb	207	1104.4	15.9	**0.2528**	0.040	16.0	ug/L	204	Standard
	Pb	208	4566.3	9.0	**0.2626**	0.024	9.0	ug/L	852	Standard
	U	238	135.0	22.4	**0.0636**	0.005	7.4	ug/L	13	Standard
>	**Bi**	209	438315.9	0.2				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	45.0	55.6	**0.0225**	0.035	153.4	mg/L	58	Standard
K	39	30.0	16.7	**-0.0230**	0.018	79.7	mg/L	27	Standard
Ca	43	43.3	37.1	**1.8646**	1.188	63.7	mg/L	20	Standard
Fe	54	366.2	11.4	**0.1848**	0.036	19.3	mg/L	158	Standard
Fe	57	350.0	13.6	**0.4863**	0.168	34.5	mg/L	267	Standard
> **Sc-1**	45	39008.5	1.4				mg/L	38815	Standard
Cl	35	57580.6	2.7				ug/L	57611	Standard
Kr	83	2.7	43.3				ug/L	2	Standard
Br	81	1560.1	16.4				ug/L	1617	Standard
P	31	6503.1	5.8				ug/L	19244	Standard
S	34	3723.8	4.7				ug/L	3557	Standard
Sr	88	90.0	16.7				ug/L	65	Standard
C	12	56.7	27.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	114.6				mg/L	23	Standard
Dy	164	602.9	11.8				mg/L	13	Standard
Ho-1	165	430.0	4.2				mg/L	10	Standard
Er	166	356.7	8.6				mg/L	13	Standard
I	127	9731.5	3.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		84.698	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.925	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.474
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.611
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129411 WG574195-01
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Method 6020 - Summary Report

Sample ID: L1606129412S WG574195-04
Sample Date/Time: Wednesday, July 06, 2016 11:56:54
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57445.4	3.1				ug/L	68501	Standard
	Be	9	450.0	8.9	**0.6107**	0.050	8.2	ug/L	8	Standard
	Al	27	489039.7	3.5	**4.1454**	0.215	5.2	ug/L	1397	Standard
	Sc	45	38891.5	1.7				ug/L	38815	Standard
	Ti	47	205.7	0.7	**0.5755**	0.003	0.5	ug/L	36	Standard
	V	51	7736.8	1.4	**0.9385**	0.011	1.2	ug/L	1284	Standard
	Cr	52	11112.1	4.1	**0.6564**	0.067	10.2	ug/L	6503	Standard
	Cr	53	923.4	3.3	**0.6419**	0.036	5.7	ug/L	492	Standard
	Mn	55	94357.0	1.7	**15.0987**	0.276	1.8	ug/L	841	Standard
	Co	59	4340.3	0.5	**0.7138**	0.006	0.8	ug/L	229	Standard
	Ni	60	3373.7	0.8	**1.8234**	0.010	0.6	ug/L	344	Standard
	Cu	65	1478.4	3.3	**0.8566**	0.027	3.1	ug/L	115	Standard
	Zn	66	2772.6	3.5	**2.5958**	0.102	3.9	ug/L	190	Standard
>	**Ge**	72	416194.8	0.3				ug/L	409858	Standard
	As	75	581.8	5.1	**0.6516**	0.029	4.4	ug/L	-22	Standard
	Se	82	62.8	11.0	**0.5338**	0.065	12.3	ug/L	18	Standard
	Se-1	77	71.3	3.2	**0.2612**	0.036	13.7	ug/L	50	Standard
>	**Ga**	71	405.0	5.7				mg/L	97	Standard
	Rb	85	3103.7	2.6				ug/L	25	Standard
	Y	89	356798.1	1.9				ug/L	376763	Standard
>	**Rh**	103	36.7	15.7				ug/L	20	Standard
	Mo	98	194.5	26.1	**0.1553**	0.021	13.8	ug/L	51	Standard
	Ag	107	3072.6	2.0	**0.5346**	0.010	1.9	ug/L	76	Standard
	Cd	111	1016.1	1.3	**0.5714**	0.009	1.6	mg/L	6	Standard
	Cd	114	2471.5	5.7	**0.5668**	0.031	5.5	ug/L	18	Standard
>	**In**	115	488176.1	0.5				ug/L	507261	Standard
	Sn	118	325.0	24.2	**-0.0484**	0.015	30.2	ug/L	683	Standard
	Sb	123	885.7	32.9	**0.1941**	0.070	36.2	ug/L	446	Standard
	Ba	135	10791.5	1.6	**5.9077**	0.080	1.4	ug/L	28	Standard
	Ce	140	21298.3	1.1				ug/L	33	Standard
>	**Tb**	159	768109.5	1.5				ug/L	800803	Standard
	Ho	165	291.7	8.1				ug/L	10	Standard
	Tl	203	3662.1	2.8	**0.5212**	0.015	2.9	ug/L	13	Standard
	Tl	205	3343.7	5.7	**0.5567**	0.029	5.1	ug/L	13	Standard
	Pb	206	3389.4	1.8	**0.6996**	0.014	2.0	ug/L	226	Standard
	Pb	207	2918.9	3.2	**0.6662**	0.023	3.5	ug/L	204	Standard
	Pb	208	12527.7	1.1	**0.7162**	0.009	1.3	ug/L	852	Standard
	U	238	3021.3	1.0	**0.5086**	0.005	1.0	ug/L	13	Standard
>	**Bi**	209	440798.1	0.3				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	70.3	**0.0184**	0.041	222.1	mg/L	58	Standard
K	39	41.7	45.4	**0.0247**	0.077	313.0	mg/L	27	Standard
Ca	43	33.3	31.2	**1.1341**	0.714	62.9	mg/L	20	Standard
Fe	54	394.1	7.9	**0.2092**	0.029	13.7	mg/L	158	Standard
Fe	57	353.3	16.3	**0.5014**	0.206	41.2	mg/L	267	Standard
> **Sc-1**	45	38891.5	1.7				mg/L	38815	Standard
Cl	35	58025.6	2.4				ug/L	57611	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	1313.4	11.6				ug/L	1617	Standard
P	31	6468.0	2.6				ug/L	19244	Standard
S	34	3742.1	3.8				ug/L	3557	Standard
Sr	88	71.7	14.5				ug/L	65	Standard
C	12	23.3	24.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	124.9				mg/L	23	Standard
Dy	164	608.7	0.8				mg/L	13	Standard
Ho-1	165	291.7	8.1				mg/L	10	Standard
Er	166	306.7	8.2				mg/L	13	Standard
I	127	9468.0	2.0				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		83.860	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.546	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		96.238
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		98.164
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129413SD WG574195-05
Sample Date/Time: Wednesday, July 06, 2016 12:00:05
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56752.8	1.9				ug/L	68501	Standard
	Be	9	448.3	6.1	**0.6159**	0.040	6.5	ug/L	8	Standard
	Al	27	511667.1	1.4	**4.3864**	0.140	3.2	ug/L	1397	Standard
	Sc	45	38462.1	2.2				ug/L	38815	Standard
	Ti	47	206.3	7.1	**0.5882**	0.043	7.3	ug/L	36	Standard
	V	51	8013.4	0.7	**0.9972**	0.010	1.0	ug/L	1284	Standard
	Cr	52	11427.3	0.6	**0.7305**	0.007	0.9	ug/L	6503	Standard
	Cr	53	1048.4	8.9	**0.8067**	0.106	13.1	ug/L	492	Standard
	Mn	55	78050.9	0.3	**12.6966**	0.037	0.3	ug/L	841	Standard
	Co	59	4297.9	0.9	**0.7194**	0.005	0.7	ug/L	229	Standard
	Ni	60	3335.0	1.4	**1.8356**	0.029	1.6	ug/L	344	Standard
	Cu	65	1437.4	1.5	**0.8476**	0.012	1.4	ug/L	115	Standard
	Zn	66	2975.3	3.4	**2.8454**	0.097	3.4	ug/L	190	Standard
>	**Ge**	72	408909.0	0.3				ug/L	409858	Standard
	As	75	580.4	0.8	**0.6601**	0.006	0.8	ug/L	-22	Standard
	Se	82	59.9	9.3	**0.5172**	0.052	10.0	ug/L	18	Standard
	Se-1	77	83.7	8.4	**0.4588**	0.100	21.8	ug/L	50	Standard
>	**Ga**	71	438.3	8.7				mg/L	97	Standard
	Rb	85	3395.4	4.4				ug/L	25	Standard
	Y	89	352479.5	0.3				ug/L	376763	Standard
>	**Rh**	103	40.0	12.5				ug/L	20	Standard
	Mo	98	131.0	10.1	**0.1291**	0.006	4.7	ug/L	51	Standard
	Ag	107	2956.6	1.2	**0.5245**	0.006	1.1	ug/L	76	Standard
	Cd	111	1000.4	2.1	**0.5729**	0.006	1.1	mg/L	6	Standard
	Cd	114	2389.3	8.1	**0.5591**	0.050	9.0	ug/L	18	Standard
>	**In**	115	479271.2	1.6				ug/L	507261	Standard
	Sn	118	283.3	26.8	**-0.0552**	0.015	27.5	ug/L	683	Standard
	Sb	123	772.6	30.8	**0.1703**	0.059	34.7	ug/L	446	Standard
	Ba	135	11636.8	1.8	**6.4887**	0.171	2.6	ug/L	28	Standard
	Ce	140	22873.9	1.1				ug/L	33	Standard
>	**Tb**	159	762982.8	1.4				ug/L	800803	Standard
	Ho	165	351.7	3.0				ug/L	10	Standard
	Tl	203	3533.4	1.4	**0.5094**	0.008	1.6	ug/L	13	Standard
	Tl	205	3240.3	5.3	**0.5465**	0.026	4.8	ug/L	13	Standard
	Pb	206	3471.7	1.2	**0.7249**	0.002	0.3	ug/L	226	Standard
	Pb	207	2933.0	1.8	**0.6770**	0.010	1.4	ug/L	204	Standard
	Pb	208	12661.4	1.9	**0.7320**	0.010	1.4	ug/L	852	Standard
	U	238	3053.3	1.9	**0.5190**	0.011	2.2	ug/L	13	Standard
>	**Bi**	209	435840.4	0.9				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	50.0	17.3	**0.0299**	0.011	36.1	mg/L	58	Standard
K	39	56.7	31.0	**0.0855**	0.068	79.4	mg/L	27	Standard
Ca	43	58.3	21.6	**3.0174**	1.012	33.5	mg/L	20	Standard
Fe	54	355.6	17.8	**0.1811**	0.060	33.4	mg/L	158	Standard
Fe	57	335.0	21.7	**0.4491**	0.230	51.3	mg/L	267	Standard
Sc-1	45	38462.1	2.2				mg/L	38815	Standard
Cl	35	57937.9	1.3				ug/L	57611	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	1543.4	5.5				ug/L	1617	Standard
P	31	6171.3	2.7				ug/L	19244	Standard
S	34	3643.8	4.4				ug/L	3557	Standard
Sr	88	58.3	13.1				ug/L	65	Standard
C	12	30.0	33.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	23	Standard
Dy	164	619.5	6.4				mg/L	13	Standard
Ho-1	165	351.7	3.0				mg/L	10	Standard
Er	166	290.0	17.2				mg/L	13	Standard
I	127	9638.1	1.2				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		82.849	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.768	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.482
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.060
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129413SD WG574195-05
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Method 6020 - Summary Report

Sample ID: L1606129401
Sample Date/Time: Wednesday, July 06, 2016 12:03:17
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56856.6	3.5				ug/L	68501	Standard
	Be	9	21.7	48.0	**0.0483**	0.014	29.2	ug/L	8	Standard
	Al	27	253447.2	0.5	**2.1874**	0.075	3.4	ug/L	1397	Standard
	Sc	45	38660.9	1.6				ug/L	38815	Standard
	Ti	47	129.0	7.6	**0.3545**	0.029	8.3	ug/L	36	Standard
	V	51	4706.0	3.1	**0.5213**	0.027	5.2	ug/L	1284	Standard
	Cr	52	10002.3	1.0	**0.5122**	0.018	3.4	ug/L	6503	Standard
	Cr	53	778.4	3.5	**0.4845**	0.031	6.4	ug/L	492	Standard
	Mn	55	153072.8	1.4	**24.8062**	0.265	1.1	ug/L	841	Standard
	Co	59	1522.4	4.0	**0.2564**	0.008	3.2	ug/L	229	Standard
	Ni	60	2542.5	1.5	**1.3506**	0.013	0.9	ug/L	344	Standard
	Cu	65	1174.7	1.6	**0.6850**	0.006	0.8	ug/L	115	Standard
	Zn	66	2512.2	1.7	**2.3665**	0.048	2.0	ug/L	190	Standard
>	**Ge**	72	411973.4	1.0				ug/L	409858	Standard
	As	75	130.2	39.7	**0.2239**	0.050	22.2	ug/L	-22	Standard
	Se	82	17.1	59.3	**0.1098**	0.096	87.8	ug/L	18	Standard
	Se-1	77	59.0	1.7	**0.0935**	0.015	15.6	ug/L	50	Standard
>	**Ga**	71	395.0	12.7				mg/L	97	Standard
	Rb	85	3442.1	5.5				ug/L	25	Standard
	Y	89	354531.6	0.5				ug/L	376763	Standard
>	**Rh**	103	18.3	68.6				ug/L	20	Standard
	Mo	98	119.9	20.6	**0.1232**	0.011	8.9	ug/L	51	Standard
	Ag	107	69.3	12.1	**0.0346**	0.001	4.1	ug/L	76	Standard
	Cd	111	21.4	9.8	**0.0506**	0.001	2.0	mg/L	6	Standard
	Cd	114	57.3	13.3	**0.0496**	0.002	3.5	ug/L	18	Standard
>	**In**	115	488808.1	0.8				ug/L	507261	Standard
	Sn	118	286.7	31.3	**-0.0557**	0.017	30.8	ug/L	683	Standard
	Sb	123	646.7	31.9	**0.1363**	0.051	37.3	ug/L	446	Standard
	Ba	135	8374.3	0.1	**4.5823**	0.034	0.7	ug/L	28	Standard
	Ce	140	22243.0	1.7				ug/L	33	Standard
>	**Tb**	159	773372.9	1.1				ug/L	800803	Standard
	Ho	165	331.7	11.1				ug/L	10	Standard
	Tl	203	31.7	3.6	**0.0376**	0.000	0.5	ug/L	13	Standard
	Tl	205	13.3	43.3	**0.0446**	0.001	2.0	ug/L	13	Standard
	Pb	206	3214.7	0.3	**0.6685**	0.007	1.0	ug/L	226	Standard
	Pb	207	2629.9	4.6	**0.6047**	0.025	4.1	ug/L	204	Standard
	Pb	208	11610.4	0.6	**0.6689**	0.008	1.1	ug/L	852	Standard
	U	238	65.7	4.9	**0.0528**	0.000	0.8	ug/L	13	Standard
>	**Bi**	209	437427.3	0.7				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	29.0	**0.0205**	0.017	83.1	mg/L	58	Standard
K	39	40.0	50.0	**0.0176**	0.078	440.7	mg/L	27	Standard
Ca	43	40.0	25.0	**1.6363**	0.685	41.9	mg/L	20	Standard
Fe	54	384.1	18.3	**0.2031**	0.063	31.1	mg/L	158	Standard
Fe	57	356.7	5.7	**0.5190**	0.086	16.6	mg/L	267	Standard
> **Sc-1**	45	38660.9	1.6				mg/L	38815	Standard
Cl	35	57370.4	1.2				ug/L	57611	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1486.7	8.8				ug/L	1617	Standard
P	31	6338.0	0.8				ug/L	19244	Standard
S	34	3500.4	1.6				ug/L	3557	Standard
Sr	88	70.0	24.7				ug/L	65	Standard
C	12	20.0	50.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	69.3				mg/L	23	Standard
Dy	164	573.9	11.5				mg/L	13	Standard
Ho-1	165	331.7	11.1				mg/L	10	Standard
Er	166	266.7	19.2				mg/L	13	Standard
I	127	9404.6	2.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		83.001	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.516	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.362
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.413
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129401
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Method 6020 - Summary Report

Sample ID: L1606129402
Sample Date/Time: Wednesday, July 06, 2016 12:06:28
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55727.4	2.9				ug/L	68501	Standard
	Be	9	26.7	71.0	**0.0554**	0.025	45.6	ug/L	8	Standard
	Al	27	355208.9	0.6	**3.1116**	0.073	2.4	ug/L	1397	Standard
	Sc	45	38490.5	1.6				ug/L	38815	Standard
	Ti	47	137.0	7.2	**0.3805**	0.026	6.8	ug/L	36	Standard
	V	51	3181.2	2.4	**0.3083**	0.013	4.2	ug/L	1284	Standard
	Cr	52	7046.6	1.5	**0.0910**	0.007	8.1	ug/L	6503	Standard
	Cr	53	445.0	7.9	**0.1007**	0.038	37.9	ug/L	492	Standard
	Mn	55	62149.5	0.5	**10.0758**	0.126	1.3	ug/L	841	Standard
	Co	59	990.7	3.1	**0.1698**	0.006	3.6	ug/L	229	Standard
	Ni	60	2008.5	3.0	**1.0412**	0.045	4.3	ug/L	344	Standard
	Cu	65	501.7	4.6	**0.2868**	0.015	5.3	ug/L	115	Standard
	Zn	66	1399.4	3.9	**1.2760**	0.045	3.5	ug/L	190	Standard
>	**Ge**	72	409521.5	0.8				ug/L	409858	Standard
	As	75	12.5	172.1	**0.1110**	0.021	18.8	ug/L	-22	Standard
	Se	82	10.5	43.9	**0.0481**	0.043	89.6	ug/L	18	Standard
	Se-1	77	56.3	5.4	**0.0596**	0.039	65.9	ug/L	50	Standard
>	**Ga**	71	276.7	15.4				mg/L	97	Standard
	Rb	85	1983.5	4.3				ug/L	25	Standard
	Y	89	351546.8	1.0				ug/L	376763	Standard
>	**Rh**	103	28.3	66.8				ug/L	20	Standard
	Mo	98	63.3	18.4	**0.0992**	0.005	4.9	ug/L	51	Standard
	Ag	107	73.0	2.4	**0.0354**	0.000	0.5	ug/L	76	Standard
	Cd	111	9.5	59.4	**0.0444**	0.003	6.7	mg/L	6	Standard
	Cd	114	7.7	41.1	**0.0390**	0.001	1.7	ug/L	18	Standard
>	**In**	115	480900.1	0.8				ug/L	507261	Standard
	Sn	118	273.3	30.7	**-0.0575**	0.016	27.5	ug/L	683	Standard
	Sb	123	545.0	29.4	**0.1135**	0.038	33.9	ug/L	446	Standard
	Ba	135	6151.2	0.6	**3.4251**	0.011	0.3	ug/L	28	Standard
	Ce	140	16228.7	3.1				ug/L	33	Standard
>	**Tb**	159	762988.8	1.0				ug/L	800803	Standard
	Ho	165	260.0	5.8				ug/L	10	Standard
	Tl	203	21.0	21.8	**0.0362**	0.001	1.7	ug/L	13	Standard
	Tl	205	16.7	45.8	**0.0451**	0.001	2.6	ug/L	13	Standard
	Pb	206	954.4	5.5	**0.1966**	0.011	5.6	ug/L	226	Standard
	Pb	207	774.4	6.6	**0.1781**	0.012	6.6	ug/L	204	Standard
	Pb	208	3303.8	1.1	**0.1913**	0.002	1.1	ug/L	852	Standard
	U	238	67.3	16.4	**0.0531**	0.002	3.2	ug/L	13	Standard
>	**Bi**	209	435406.8	0.0				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	60.0	30.0	**0.0438**	0.026	59.2	mg/L	58	Standard
K	39	53.3	19.5	**0.0725**	0.042	57.3	mg/L	27	Standard
Ca	43	35.0	86.9	**1.2893**	2.236	173.4	mg/L	20	Standard
Fe	54	235.9	19.0	**0.0786**	0.036	45.3	mg/L	158	Standard
Fe	57	275.0	6.6	**0.2477**	0.053	21.5	mg/L	267	Standard
> **Sc-1**	45	38490.5	1.6				mg/L	38815	Standard
Cl	35	56979.6	1.6				ug/L	57611	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	1446.7	8.9				ug/L	1617	Standard
P	31	6057.9	4.7				ug/L	19244	Standard
S	34	3533.7	1.3				ug/L	3557	Standard
Sr	88	60.0	38.2				ug/L	65	Standard
C	12	53.3	47.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	49.5				mg/L	23	Standard
Dy	164	461.8	9.9				mg/L	13	Standard
Ho-1	165	260.0	5.8				mg/L	10	Standard
Er	166	240.0	15.0				mg/L	13	Standard
I	127	9427.9	1.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		81.352	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.918	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.803
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.963
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129402
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Method 6020 - Summary Report

Sample ID: L1606129402PS WG574825-01
Sample Date/Time: Wednesday, July 06, 2016 12:09:40
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	54790.6	1.6				ug/L	68501	Standard
	Be	9	39210.7	2.1	**54.0276**	0.299	0.6	ug/L	8	Standard
	Al	27	349919.9	1.2	**3.1165**	0.040	1.3	ug/L	1397	Standard
	Sc	45	38071.1	1.5				ug/L	38815	Standard
	Ti	47	139.3	7.7	**0.3905**	0.032	8.3	ug/L	36	Standard
	V	51	357198.1	0.5	**51.0105**	0.499	1.0	ug/L	1284	Standard
	Cr	52	374242.3	0.6	**53.8691**	0.605	1.1	ug/L	6503	Standard
	Cr	53	44929.9	1.3	**52.3904**	0.872	1.7	ug/L	492	Standard
	Mn	55	385613.1	1.2	**63.4541**	1.113	1.8	ug/L	841	Standard
	Co	59	296804.1	1.8	**49.5762**	1.152	2.3	ug/L	229	Standard
	Ni	60	90550.8	1.5	**54.2626**	1.046	1.9	ug/L	344	Standard
	Cu	65	89722.9	0.9	**54.0167**	0.809	1.5	ug/L	115	Standard
	Zn	66	60871.4	1.6	**60.7556**	1.323	2.2	ug/L	190	Standard
>	Ge	72	406696.1	0.6				ug/L	409858	Standard
	As	75	57014.1	0.8	**55.5263**	0.338	0.6	ug/L	-22	Standard
	Se	82	6157.5	2.0	**58.6840**	0.934	1.6	ug/L	18	Standard
	Se-1	77	4118.6	1.0	**59.5136**	0.313	0.5	ug/L	50	Standard
>	Ga	71	278.3	7.5				mg/L	97	Standard
	Rb	85	2040.1	11.2				ug/L	25	Standard
	Y	89	353428.2	1.1				ug/L	376763	Standard
>	Rh	103	26.7	57.3				ug/L	20	Standard
	Mo	98	64.1	32.2	**0.0994**	0.009	9.5	ug/L	51	Standard
	Ag	107	307132.7	0.5	**51.4044**	1.091	2.1	ug/L	76	Standard
	Cd	111	102209.5	1.3	**53.8173**	1.067	2.0	mg/L	6	Standard
	Cd	114	247369.8	2.7	**53.2740**	1.402	2.6	ug/L	18	Standard
>	In	115	485872.2	1.6				ug/L	507261	Standard
	Sn	118	406.7	28.8	**-0.0323**	0.024	73.6	ug/L	683	Standard
	Sb	123	165974.2	9.4	**40.3528**	3.311	8.2	ug/L	446	Standard
	Ba	135	100406.3	1.0	**55.1115**	1.426	2.6	ug/L	28	Standard
	Ce	140	17148.0	2.3				ug/L	33	Standard
>	Tb	159	762062.0	1.0				ug/L	800803	Standard
	Ho	165	298.3	11.2				ug/L	10	Standard
	Tl	203	380011.9	0.5	**51.1742**	0.679	1.3	ug/L	13	Standard
	Tl	205	332491.0	1.8	**51.7103**	1.465	2.8	ug/L	13	Standard
	Pb	206	244455.9	0.3	**51.2687**	0.650	1.3	ug/L	226	Standard
	Pb	207	213518.0	0.6	**49.3099**	0.355	0.7	ug/L	204	Standard
	Pb	208	895635.4	1.1	**51.7280**	1.052	2.0	ug/L	852	Standard
	U	238	304258.0	0.7	**47.4576**	0.682	1.4	ug/L	13	Standard
>	Bi	209	436323.4	1.0				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	46.7	43.3	**0.0262**	0.029	109.0	mg/L	58	Standard
K	39	21.7	48.0	**-0.0536**	0.043	80.3	mg/L	27	Standard
Ca	43	38.3	19.9	**1.5703**	0.606	38.6	mg/L	20	Standard
Fe	54	229.0	24.0	**0.0748**	0.044	58.9	mg/L	158	Standard
Fe	57	328.3	26.3	**0.4430**	0.310	69.9	mg/L	267	Standard
Sc-1	45	38071.1	1.5				mg/L	38815	Standard
Cl	35	57080.7	0.6				ug/L	57611	Standard
Kr	83	3.3	17.3				ug/L	2	Standard
Br	81	1353.4	3.7				ug/L	1617	Standard
P	31	6239.6	1.0				ug/L	19244	Standard
S	34	3545.4	3.4				ug/L	3557	Standard
Sr	88	58.3	17.8				ug/L	65	Standard
C	12	43.3	13.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	23	Standard
Dy	164	519.0	13.5				mg/L	13	Standard
Ho-1	165	298.3	11.2				mg/L	10	Standard
Er	166	230.0	13.0				mg/L	13	Standard
I	127	8790.9	2.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		79.985	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.229	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.784
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.167
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129402SDL WG574825-02
Sample Date/Time: Wednesday, July 06, 2016 12:12:51
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 250
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54700.3	2.3				ug/L	68501	Standard
	Be	9	28.3	40.8	**0.0584**	0.015	26.5	ug/L	8	Standard
	Al	27	73412.6	3.4	**0.6828**	0.029	4.2	ug/L	1397	Standard
	Sc	45	38520.6	1.2				ug/L	38815	Standard
	Ti	47	44.0	15.9	**0.1062**	0.021	20.1	ug/L	36	Standard
	V	51	1855.2	4.9	**0.1254**	0.011	9.1	ug/L	1284	Standard
	Cr	52	5931.8	1.1	**-0.0525**	0.011	20.6	ug/L	6503	Standard
	Cr	53	220.0	6.0	**-0.1563**	0.014	8.9	ug/L	492	Standard
	Mn	55	13278.8	8.4	**2.1236**	0.179	8.4	ug/L	841	Standard
	Co	59	439.0	11.4	**0.0798**	0.008	10.1	ug/L	229	Standard
	Ni	60	1383.1	2.0	**0.6854**	0.014	2.0	ug/L	344	Standard
	Cu	65	176.0	2.8	**0.0942**	0.002	2.6	ug/L	115	Standard
	Zn	66	955.7	4.6	**0.8559**	0.041	4.8	ug/L	190	Standard
>	**Ge**	72	400899.4	0.7				ug/L	409858	Standard
	As	75	-14.9	238.7	**0.0840**	0.035	42.1	ug/L	-22	Standard
	Se	82	23.4	28.9	**0.1750**	0.064	36.6	ug/L	18	Standard
	Se-1	77	53.3	4.7	**0.0331**	0.043	130.4	ug/L	50	Standard
>	**Ga**	71	101.7	12.4				mg/L	97	Standard
	Rb	85	461.7	6.2				ug/L	25	Standard
	Y	89	350361.9	1.6				ug/L	376763	Standard
>	**Rh**	103	28.3	10.2				ug/L	20	Standard
	Mo	98	91.5	56.2	**0.1114**	0.022	20.1	ug/L	51	Standard
	Ag	107	144.0	18.7	**0.0473**	0.004	9.4	ug/L	76	Standard
	Cd	111	29.2	12.8	**0.0548**	0.002	3.7	mg/L	6	Standard
	Cd	114	54.0	33.8	**0.0490**	0.004	7.9	ug/L	18	Standard
>	**In**	115	483201.8	0.5				ug/L	507261	Standard
	Sn	118	223.3	32.2	**-0.0673**	0.014	20.4	ug/L	683	Standard
	Sb	123	4340.8	19.8	**1.0427**	0.214	20.6	ug/L	446	Standard
	Ba	135	1163.7	5.0	**0.6576**	0.030	4.6	ug/L	28	Standard
	Ce	140	1280.1	25.4				ug/L	33	Standard
>	**Tb**	159	755371.6	0.4				ug/L	800803	Standard
	Ho	165	23.3	12.4				ug/L	10	Standard
	Tl	203	202.3	18.7	**0.0608**	0.005	8.5	ug/L	13	Standard
	Tl	205	188.3	38.1	**0.0720**	0.011	15.7	ug/L	13	Standard
	Pb	206	349.7	10.7	**0.0698**	0.008	11.6	ug/L	226	Standard
	Pb	207	301.0	10.7	**0.0689**	0.008	11.1	ug/L	204	Standard
	Pb	208	1311.7	14.2	**0.0763**	0.011	14.4	ug/L	852	Standard
	U	238	138.3	31.6	**0.0643**	0.007	10.7	ug/L	13	Standard
>	**Bi**	209	433563.8	0.3				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	40.0	12.5	**0.0162**	0.007	41.8	mg/L	58	Standard
K	39	35.0	14.3	**-0.0012**	0.021	1708.5	mg/L	27	Standard
Ca	43	16.7	17.3	**-0.0559**	0.217	388.7	mg/L	20	Standard
Fe	54	72.9	24.0	**-0.0586**	0.015	26.1	mg/L	158	Standard
Fe	57	255.0	9.0	**0.1794**	0.069	38.3	mg/L	267	Standard
Sc-1	45	38520.6	1.2				mg/L	38815	Standard
Cl	35	57567.2	1.3				ug/L	57611	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	1493.4	3.9				ug/L	1617	Standard
P	31	5902.8	2.7				ug/L	19244	Standard
S	34	3515.4	7.2				ug/L	3557	Standard
Sr	88	65.0	35.3				ug/L	65	Standard
C	12	53.3	54.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	64.4				mg/L	23	Standard
Dy	164	39.0	76.2				mg/L	13	Standard
Ho-1	165	23.3	12.4				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	9352.9	2.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		79.853	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.814	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.257
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.553
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129404
Sample Date/Time: Wednesday, July 06, 2016 12:16:03
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55356.0	2.8				ug/L	68501	Standard
	Be	9	35.0	37.8	**0.0670**	0.017	26.0	ug/L	8	Standard
	Al	27	288380.7	1.7	**2.5498**	0.086	3.4	ug/L	1397	Standard
	Sc	45	37910.7	1.6				ug/L	38815	Standard
	Ti	47	133.3	4.5	**0.3737**	0.020	5.3	ug/L	36	Standard
	V	51	4846.3	0.6	**0.5519**	0.007	1.3	ug/L	1284	Standard
	Cr	52	8450.0	0.8	**0.3072**	0.012	4.0	ug/L	6503	Standard
	Cr	53	633.3	6.4	**0.3281**	0.051	15.4	ug/L	492	Standard
	Mn	55	81458.4	0.3	**13.3665**	0.080	0.6	ug/L	841	Standard
	Co	59	1490.1	4.7	**0.2551**	0.012	4.9	ug/L	229	Standard
	Ni	60	1995.8	2.9	**1.0452**	0.038	3.7	ug/L	344	Standard
	Cu	65	792.0	2.3	**0.4650**	0.011	2.4	ug/L	115	Standard
	Zn	66	2804.3	1.6	**2.6986**	0.046	1.7	ug/L	190	Standard
>	**Ge**	72	405530.8	0.5				ug/L	409858	Standard
	As	75	91.8	10.5	**0.1884**	0.009	4.8	ug/L	-22	Standard
	Se	82	14.0	22.9	**0.0821**	0.030	36.5	ug/L	18	Standard
	Se-1	77	50.3	22.2	**-0.0198**	0.167	845.0	ug/L	50	Standard
>	**Ga**	71	443.3	8.8				mg/L	97	Standard
	Rb	85	3478.7	3.6				ug/L	25	Standard
	Y	89	346530.8	2.1				ug/L	376763	Standard
>	**Rh**	103	21.7	53.3				ug/L	20	Standard
	Mo	98	38.5	9.1	**0.0883**	0.002	1.9	ug/L	51	Standard
	Ag	107	90.7	4.5	**0.0384**	0.001	1.4	ug/L	76	Standard
	Cd	111	32.2	12.9	**0.0564**	0.002	3.6	mg/L	6	Standard
	Cd	114	56.3	46.1	**0.0496**	0.006	11.3	ug/L	18	Standard
>	**In**	115	482585.2	1.1				ug/L	507261	Standard
	Sn	118	261.7	29.4	**-0.0598**	0.015	24.8	ug/L	683	Standard
	Sb	123	1752.1	30.8	**0.4084**	0.130	31.8	ug/L	446	Standard
	Ba	135	6403.0	2.4	**3.5521**	0.068	1.9	ug/L	28	Standard
	Ce	140	22207.9	2.6				ug/L	33	Standard
>	**Tb**	159	747679.0	1.3				ug/L	800803	Standard
	Ho	165	328.3	8.4				ug/L	10	Standard
	Tl	203	70.0	40.8	**0.0429**	0.004	9.2	ug/L	13	Standard
	Tl	205	61.7	32.8	**0.0523**	0.003	6.2	ug/L	13	Standard
	Pb	206	4676.4	2.0	**0.9892**	0.018	1.8	ug/L	226	Standard
	Pb	207	3935.8	4.2	**0.9193**	0.033	3.6	ug/L	204	Standard
	Pb	208	16777.7	1.0	**0.9813**	0.004	0.4	ug/L	852	Standard
	U	238	97.3	10.3	**0.0580**	0.002	2.7	ug/L	13	Standard
>	**Bi**	209	430847.5	0.8				ug/L	449044	Standard

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Na	23	3.3	86.6	**9.9759**	16.247	162.9	mg/L	2	Standard
Mg	24	53.3	21.7	**0.0357**	0.017	47.3	mg/L	58	Standard
K	39	38.3	19.9	**0.0150**	0.034	224.3	mg/L	27	Standard
Ca	43	21.7	48.0	**0.3274**	0.754	230.2	mg/L	20	Standard
Fe	54	375.8	5.4	**0.2018**	0.014	7.1	mg/L	158	Standard
Fe	57	395.0	11.0	**0.6746**	0.165	24.5	mg/L	267	Standard
> **Sc-1**	45	37910.7	1.6				mg/L	38815	Standard
Cl	35	57027.1	0.7				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1433.4	12.3				ug/L	1617	Standard
P	31	6096.2	1.4				ug/L	19244	Standard
S	34	3193.7	7.5				ug/L	3557	Standard
Sr	88	73.3	17.2				ug/L	65	Standard
C	12	46.7	32.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	120.2				mg/L	23	Standard
Dy	164	569.8	11.8				mg/L	13	Standard
Ho-1	165	328.3	8.4				mg/L	10	Standard
Er	166	283.3	8.2				mg/L	13	Standard
I	127	9558.0	0.2				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		80.810	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.944	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.136
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.948
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129405
Sample Date/Time: Wednesday, July 06, 2016 12:19:14
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55280.7	2.4				ug/L	68501	Standard
	Be	9	28.3	56.7	**0.0578**	0.021	36.8	ug/L	8	Standard
	Al	27	345100.5	2.3	**3.0477**	0.083	2.7	ug/L	1397	Standard
	Sc	45	37553.2	2.4				ug/L	38815	Standard
	Ti	47	159.0	8.7	**0.4458**	0.044	9.9	ug/L	36	Standard
	V	51	3623.9	1.5	**0.3706**	0.009	2.5	ug/L	1284	Standard
	Cr	52	7451.5	0.4	**0.1485**	0.012	7.7	ug/L	6503	Standard
	Cr	53	463.3	5.0	**0.1216**	0.030	25.1	ug/L	492	Standard
	Mn	55	63417.4	0.9	**10.2694**	0.142	1.4	ug/L	841	Standard
	Co	59	1040.7	2.7	**0.1779**	0.005	2.9	ug/L	229	Standard
	Ni	60	1672.4	3.0	**0.8389**	0.023	2.8	ug/L	344	Standard
	Cu	65	436.3	8.4	**0.2473**	0.022	8.9	ug/L	115	Standard
	Zn	66	3256.0	1.8	**3.1159**	0.080	2.6	ug/L	190	Standard
>	**Ge**	72	410064.5	0.7				ug/L	409858	Standard
	As	75	32.7	78.6	**0.1303**	0.025	18.8	ug/L	-22	Standard
	Se	82	12.7	55.9	**0.0690**	0.066	96.2	ug/L	18	Standard
	Se-1	77	48.3	10.4	**-0.0572**	0.076	132.7	ug/L	50	Standard
>	**Ga**	71	286.7	11.6				mg/L	97	Standard
	Rb	85	2041.8	2.1				ug/L	25	Standard
	Y	89	353144.0	1.9				ug/L	376763	Standard
>	**Rh**	103	23.3	24.7				ug/L	20	Standard
	Mo	98	117.0	7.9	**0.1233**	0.004	3.6	ug/L	51	Standard
	Ag	107	97.3	22.3	**0.0397**	0.004	9.1	ug/L	76	Standard
	Cd	111	7.7	46.1	**0.0435**	0.002	4.3	mg/L	6	Standard
	Cd	114	27.9	69.2	**0.0435**	0.004	9.8	ug/L	18	Standard
>	**In**	115	475836.3	0.7				ug/L	507261	Standard
	Sn	118	265.0	46.3	**-0.0586**	0.024	40.3	ug/L	683	Standard
	Sb	123	1332.7	26.2	**0.3107**	0.086	27.6	ug/L	446	Standard
	Ba	135	4395.0	1.0	**2.4776**	0.020	0.8	ug/L	28	Standard
	Ce	140	16080.2	3.1				ug/L	33	Standard
>	**Tb**	159	747297.9	2.3				ug/L	800803	Standard
	Ho	165	211.7	8.9				ug/L	10	Standard
	Tl	203	56.3	21.2	**0.0410**	0.002	3.8	ug/L	13	Standard
	Tl	205	50.0	52.9	**0.0503**	0.004	8.1	ug/L	13	Standard
	Pb	206	931.0	1.2	**0.1925**	0.004	1.9	ug/L	226	Standard
	Pb	207	757.7	5.6	**0.1750**	0.009	5.0	ug/L	204	Standard
	Pb	208	3295.8	1.2	**0.1916**	0.001	0.7	ug/L	852	Standard
	U	238	95.3	30.7	**0.0575**	0.004	7.8	ug/L	13	Standard
>	**Bi**	209	433596.0	0.9				ug/L	449044	Standard

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Na	23	1.7	173.2	**0.4926**	16.065	3261.2	mg/L	2	Standard
Mg	24	33.3	8.7	**0.0082**	0.003	35.8	mg/L	58	Standard
K	39	46.7	16.4	**0.0504**	0.031	60.9	mg/L	27	Standard
Ca	43	40.0	21.7	**1.7196**	0.586	34.1	mg/L	20	Standard
Fe	54	261.0	22.4	**0.1060**	0.053	49.9	mg/L	158	Standard
Fe	57	340.0	11.5	**0.4952**	0.122	24.6	mg/L	267	Standard
> **Sc-1**	45	37553.2	2.4				mg/L	38815	Standard
Cl	35	58030.3	1.0				ug/L	57611	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	1506.7	7.7				ug/L	1617	Standard
P	31	5954.5	2.4				ug/L	19244	Standard
S	34	3350.4	3.7				ug/L	3557	Standard
Sr	88	71.7	35.8				ug/L	65	Standard
C	12	60.0	16.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	65.5				mg/L	23	Standard
Dy	164	405.5	13.8				mg/L	13	Standard
Ho-1	165	211.7	8.9				mg/L	10	Standard
Er	166	233.3	23.6				mg/L	13	Standard
I	127	8981.0	4.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		80.700	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.050	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.805
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.560
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129406
Sample Date/Time: Wednesday, July 06, 2016 12:22:25
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54210.2	3.2				ug/L	68501	Standard
	Be	9	31.7	55.5	**0.0640**	0.026	39.9	ug/L	8	Standard
	Al	27	346229.8	1.0	**3.1189**	0.121	3.9	ug/L	1397	Standard
	Sc	45	38104.5	1.7				ug/L	38815	Standard
	Ti	47	141.3	13.3	**0.3972**	0.060	15.0	ug/L	36	Standard
	V	51	4813.8	1.8	**0.5459**	0.016	2.9	ug/L	1284	Standard
	Cr	52	8692.8	0.7	**0.3404**	0.024	6.9	ug/L	6503	Standard
	Cr	53	671.7	4.2	**0.3715**	0.031	8.3	ug/L	492	Standard
	Mn	55	113579.2	2.1	**18.6402**	0.592	3.2	ug/L	841	Standard
	Co	59	1764.8	1.1	**0.3005**	0.003	0.9	ug/L	229	Standard
	Ni	60	2134.8	3.7	**1.1263**	0.050	4.4	ug/L	344	Standard
	Cu	65	981.4	6.5	**0.5779**	0.032	5.5	ug/L	115	Standard
	Zn	66	4410.6	3.1	**4.3008**	0.155	3.6	ug/L	190	Standard
>	**Ge**	72	406370.9	1.1				ug/L	409858	Standard
	As	75	172.2	15.0	**0.2662**	0.024	9.0	ug/L	-22	Standard
	Se	82	14.0	50.3	**0.0817**	0.066	80.7	ug/L	18	Standard
	Se-1	77	54.7	22.6	**0.0405**	0.173	426.3	ug/L	50	Standard
>	**Ga**	71	473.3	14.3				mg/L	97	Standard
	Rb	85	4915.8	3.7				ug/L	25	Standard
	Y	89	347860.3	1.6				ug/L	376763	Standard
>	**Rh**	103	15.0	33.3				ug/L	20	Standard
	Mo	98	31.2	15.5	**0.0853**	0.002	2.6	ug/L	51	Standard
	Ag	107	124.7	3.2	**0.0442**	0.001	2.0	ug/L	76	Standard
	Cd	111	28.3	20.6	**0.0545**	0.003	6.0	mg/L	6	Standard
	Cd	114	49.9	18.0	**0.0482**	0.002	3.9	ug/L	18	Standard
>	**In**	115	479551.2	1.0				ug/L	507261	Standard
	Sn	118	253.3	47.1	**-0.0610**	0.024	38.7	ug/L	683	Standard
	Sb	123	1266.8	28.3	**0.2922**	0.090	30.7	ug/L	446	Standard
	Ba	135	10588.4	1.5	**5.9016**	0.132	2.2	ug/L	28	Standard
	Ce	140	27012.4	1.1				ug/L	33	Standard
>	**Tb**	159	753343.1	0.8				ug/L	800803	Standard
	Ho	165	453.3	2.3				ug/L	10	Standard
	Tl	203	43.0	12.9	**0.0392**	0.001	2.2	ug/L	13	Standard
	Tl	205	45.0	50.9	**0.0496**	0.003	7.1	ug/L	13	Standard
	Pb	206	32257.3	1.7	**6.8313**	0.126	1.8	ug/L	226	Standard
	Pb	207	26033.3	0.6	**6.0737**	0.104	1.7	ug/L	204	Standard
	Pb	208	113526.9	0.9	**6.6251**	0.168	2.5	ug/L	852	Standard
	U	238	100.0	9.2	**0.0584**	0.002	2.7	ug/L	13	Standard
>	**Bi**	209	431894.1	1.7				ug/L	449044	Standard

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Na	23	1.7	173.2	**0.3340**	15.790	4727.5	mg/L	2	Standard
Mg	24	41.7	36.7	**0.0192**	0.021	111.2	mg/L	58	Standard
K	39	50.0	55.7	**0.0600**	0.110	182.6	mg/L	27	Standard
Ca	43	43.3	46.6	**1.9169**	1.459	76.1	mg/L	20	Standard
Fe	54	447.4	10.1	**0.2615**	0.041	15.9	mg/L	158	Standard
Fe	57	348.3	8.4	**0.5065**	0.084	16.5	mg/L	267	Standard
> **Sc-1**	45	38104.5	1.7				mg/L	38815	Standard
Cl	35	57337.6	1.4				ug/L	57611	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	1443.4	10.1				ug/L	1617	Standard
P	31	6067.9	5.1				ug/L	19244	Standard
S	34	3453.7	2.9				ug/L	3557	Standard
Sr	88	78.3	18.4				ug/L	65	Standard
C	12	26.7	21.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	23	Standard
Dy	164	696.9	13.4				mg/L	13	Standard
Ho-1	165	453.3	2.3				mg/L	10	Standard
Er	166	413.3	7.4				mg/L	13	Standard
I	127	9544.7	1.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		79.138	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.149	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.537
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.181
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 12:25:38
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	57713.1	1.9				ug/L	68501	Standard
	Be	9	40562.6	2.7	**53.0591**	0.703	1.3	ug/L	8	Standard
	Al	27	6854351.8	1.5	**57.3384**	0.709	1.2	ug/L	1397	Standard
	Sc	45	42252.2	1.6				ug/L	38815	Standard
	Ti	47	37981.5	0.7	**106.4757**	1.580	1.5	ug/L	36	Standard
	V	51	384974.2	1.1	**51.3482**	0.405	0.8	ug/L	1284	Standard
	Cr	52	390659.1	1.7	**52.4957**	0.804	1.5	ug/L	6503	Standard
	Cr	53	48342.0	1.8	**52.6513**	1.045	2.0	ug/L	492	Standard
	Mn	55	343119.1	1.5	**52.7154**	0.588	1.1	ug/L	841	Standard
	Co	59	321661.9	1.7	**50.1749**	0.347	0.7	ug/L	229	Standard
	Ni	60	94210.3	1.1	**52.7236**	0.659	1.3	ug/L	344	Standard
	Cu	65	93051.5	1.1	**52.3212**	0.523	1.0	ug/L	115	Standard
	Zn	66	55785.5	1.2	**51.9842**	0.406	0.8	ug/L	190	Standard
>	Ge	72	435468.8	1.8				ug/L	409858	Standard
	As	75	56447.7	0.8	**51.3598**	0.923	1.8	ug/L	-22	Standard
	Se	82	5642.5	0.7	**50.2241**	0.550	1.1	ug/L	18	Standard
	Se-1	77	3846.2	0.6	**51.8162**	0.606	1.2	ug/L	50	Standard
>	Ga	71	93.3	34.0				mg/L	97	Standard
	Rb	85	855.0	10.7				ug/L	25	Standard
	Y	89	372043.3	1.8				ug/L	376763	Standard
>	Rh	103	28.3	44.4				ug/L	20	Standard
	Mo	98	247417.0	1.8	**100.6981**	2.037	2.0	ug/L	51	Standard
	Ag	107	322886.9	0.5	**50.7596**	0.429	0.8	ug/L	76	Standard
	Cd	111	103380.1	1.6	**51.1323**	0.753	1.5	mg/L	6	Standard
	Cd	114	249642.6	2.1	**50.5060**	0.965	1.9	ug/L	18	Standard
>	In	115	517180.3	0.5				ug/L	507261	Standard
	Sn	118	281599.6	1.0	**50.3463**	0.451	0.9	ug/L	683	Standard
	Sb	123	224090.9	2.0	**51.2237**	1.019	2.0	ug/L	446	Standard
	Ba	135	98293.2	0.9	**50.6730**	0.371	0.7	ug/L	28	Standard
	Ce	140	388.3	61.7				ug/L	33	Standard
>	Tb	159	803119.0	1.6				ug/L	800803	Standard
	Ho	165	13.3	78.1				ug/L	10	Standard
	Tl	203	393332.7	0.4	**51.3833**	0.224	0.4	ug/L	13	Standard
	Tl	205	344323.2	2.3	**51.9430**	1.227	2.4	ug/L	13	Standard
	Pb	206	250518.2	1.0	**50.9688**	0.598	1.2	ug/L	226	Standard
	Pb	207	226786.0	0.6	**50.8099**	0.417	0.8	ug/L	204	Standard
	Pb	208	934502.9	1.1	**52.3560**	0.613	1.2	ug/L	852	Standard
	U	238	332727.2	0.8	**50.3434**	0.503	1.0	ug/L	13	Standard
>	Bi	209	449742.2	0.2				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	3997.2	1.2	**4.9337**	0.066	1.3	mg/L	58	Standard
K	39	1391.7	1.8	**4.9566**	0.172	3.5	mg/L	27	Standard
Ca	43	85.0	20.4	**4.3924**	1.093	24.9	mg/L	20	Standard
Fe	54	6751.6	4.8	**5.0714**	0.234	4.6	mg/L	158	Standard
Fe	57	1835.1	3.3	**4.9621**	0.274	5.5	mg/L	267	Standard
> **Sc-1**	45	42252.2	1.6				mg/L	38815	Standard
Cl	35	66109.3	1.9				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1836.8	15.6				ug/L	1617	Standard
P	31	20357.0	3.6				ug/L	19244	Standard
S	34	4018.9	2.4				ug/L	3557	Standard
Sr	88	78.3	7.4				ug/L	65	Standard
C	12	56.7	27.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	63.0				mg/L	23	Standard
Dy	164	15.4	100.9				mg/L	13	Standard
Ho-1	165	13.3	78.1				mg/L	10	Standard
Er	166	26.7	86.6				mg/L	13	Standard
I	127	12523.5	3.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	106.118		
Al	27	114.677		
Sc	45			
Ti	47	106.476		
V	51	102.696		
Cr	52	104.991		
Cr	53			
Mn	55	105.431		
Co	59	100.350		
Ni	60	105.447		
Cu	65	104.642		
Zn	66	103.968		
> Ge	72		106.249	
As	75	102.720		
Se	82	100.448		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	100.698		
Ag	107	101.519		
Cd	111	102.265		
Cd	114			
In	115		101.956	
Sn	118	100.693		
Sb	123	102.447		
Ba	135	101.346		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.767		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.712		
U	238	100.687		
Bi	209		100.156	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 12:28:50
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58365.5	1.3				ug/L	68501	Standard
	Be	9	20.0	66.1	**0.0452**	0.017	37.0	ug/L	8	Standard
	Al	27	3228.7	16.1	**0.0617**	0.004	6.5	ug/L	1397	Standard
	Sc	45	41531.9	1.8				ug/L	38815	Standard
	Ti	47	37.0	11.8	**0.0760**	0.013	16.9	ug/L	36	Standard
	V	51	1351.4	2.0	**0.0367**	0.005	12.3	ug/L	1284	Standard
	Cr	52	7169.4	2.1	**0.0470**	0.012	26.2	ug/L	6503	Standard
	Cr	53	401.7	8.5	**0.0227**	0.041	182.3	ug/L	492	Standard
	Mn	55	1129.0	3.0	**0.0779**	0.004	5.1	ug/L	841	Standard
	Co	59	288.7	8.3	**0.0505**	0.003	6.6	ug/L	229	Standard
	Ni	60	1071.7	1.9	**0.4440**	0.010	2.2	ug/L	344	Standard
	Cu	65	122.7	12.6	**0.0557**	0.008	14.8	ug/L	115	Standard
	Zn	66	225.0	0.4	**0.0968**	0.003	2.8	ug/L	190	Standard
>	**Ge**	72	435313.2	0.9				ug/L	409858	Standard
	As	75	-55.3	38.4	**0.0486**	0.019	39.7	ug/L	-22	Standard
	Se	82	13.9	51.6	**0.0725**	0.064	88.6	ug/L	18	Standard
	Se-1	77	56.0	26.4	**0.0064**	0.200	3125.0	ug/L	50	Standard
>	**Ga**	71	55.0	27.3				mg/L	97	Standard
	Rb	85	13.3	43.3				ug/L	25	Standard
	Y	89	378425.9	0.5				ug/L	376763	Standard
>	**Rh**	103	18.3	110.2				ug/L	20	Standard
	Mo	98	181.0	20.1	**0.1454**	0.014	9.6	ug/L	51	Standard
	Ag	107	120.0	21.0	**0.0420**	0.004	9.1	ug/L	76	Standard
	Cd	111	18.7	38.4	**0.0486**	0.003	7.1	mg/L	6	Standard
	Cd	114	41.8	72.4	**0.0458**	0.006	13.2	ug/L	18	Standard
>	**In**	115	514592.2	1.2				ug/L	507261	Standard
	Sn	118	928.4	24.2	**0.0574**	0.043	74.2	ug/L	683	Standard
	Sb	123	912.7	31.3	**0.1899**	0.068	35.7	ug/L	446	Standard
	Ba	135	47.7	19.0	**0.0404**	0.004	10.9	ug/L	28	Standard
	Ce	140	65.0	13.3				ug/L	33	Standard
>	**Tb**	159	797771.6	1.0				ug/L	800803	Standard
	Ho	165	6.7	114.6				ug/L	10	Standard
	Tl	203	79.0	26.2	**0.0436**	0.003	6.0	ug/L	13	Standard
	Tl	205	80.0	16.5	**0.0546**	0.002	3.6	ug/L	13	Standard
	Pb	206	267.3	21.0	**0.0502**	0.011	21.9	ug/L	226	Standard
	Pb	207	232.0	12.4	**0.0508**	0.006	12.0	ug/L	204	Standard
	Pb	208	975.0	8.5	**0.0546**	0.004	7.8	ug/L	852	Standard
	U	238	65.3	37.9	**0.0525**	0.004	7.0	ug/L	13	Standard
>	**Bi**	209	450418.1	0.7				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	17.6	**0.0166**	0.011	63.9	mg/L	58	Standard
K	39	35.0	37.8	**-0.0108**	0.052	481.1	mg/L	27	Standard
Ca	43	45.0	58.8	**1.7629**	1.770	100.4	mg/L	20	Standard
Fe	54	129.3	20.6	**-0.0188**	0.022	116.1	mg/L	158	Standard
Fe	57	218.3	7.4	**0.0034**	0.059	1711.1	mg/L	267	Standard
Sc-1	45	41531.9	1.8				mg/L	38815	Standard
Cl	35	65165.8	0.5				ug/L	57611	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	1780.1	4.4				ug/L	1617	Standard
P	31	19916.4	1.9				ug/L	19244	Standard
S	34	3963.9	7.0				ug/L	3557	Standard
Sr	88	71.7	8.1				ug/L	65	Standard
C	12	43.3	81.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	23	Standard
Dy	164	19.0	51.3				mg/L	13	Standard
Ho-1	165	6.7	114.6				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	8842.6	1.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.211	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	101.445
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.306
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Tl	203	

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Method 6020 - Summary Report

Sample ID: L1606129407
Sample Date/Time: Wednesday, July 06, 2016 12:32:02
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54571.5	2.9				ug/L	68501	Standard
	Be	9	46.7	32.7	**0.0837**	0.019	23.3	ug/L	8	Standard
	Al	27	387342.3	1.0	**3.4619**	0.131	3.8	ug/L	1397	Standard
	Sc	45	37803.8	0.7				ug/L	38815	Standard
	Ti	47	113.3	7.3	**0.3159**	0.024	7.5	ug/L	36	Standard
	V	51	4062.2	2.2	**0.4437**	0.011	2.4	ug/L	1284	Standard
	Cr	52	8232.2	2.9	**0.2844**	0.031	10.8	ug/L	6503	Standard
	Cr	53	635.0	7.2	**0.3355**	0.052	15.5	ug/L	492	Standard
	Mn	55	59198.8	1.4	**9.7624**	0.126	1.3	ug/L	841	Standard
	Co	59	1666.4	3.6	**0.2867**	0.010	3.5	ug/L	229	Standard
	Ni	60	2062.8	3.2	**1.0951**	0.044	4.0	ug/L	344	Standard
	Cu	65	728.7	9.0	**0.4300**	0.038	8.9	ug/L	115	Standard
	Zn	66	2828.3	2.6	**2.7445**	0.082	3.0	ug/L	190	Standard
>	**Ge**	72	402452.6	0.5				ug/L	409858	Standard
	As	75	60.0	38.6	**0.1578**	0.023	14.3	ug/L	-22	Standard
	Se	82	13.7	6.1	**0.0805**	0.008	9.4	ug/L	18	Standard
	Se-1	77	48.3	10.6	**-0.0442**	0.075	170.0	ug/L	50	Standard
>	**Ga**	71	525.0	16.3				mg/L	97	Standard
	Rb	85	4585.7	1.5				ug/L	25	Standard
	Y	89	348985.7	1.6				ug/L	376763	Standard
>	**Rh**	103	23.3	12.4				ug/L	20	Standard
	Mo	98	114.4	13.2	**0.1222**	0.007	5.6	ug/L	51	Standard
	Ag	107	90.7	24.0	**0.0386**	0.004	10.0	ug/L	76	Standard
	Cd	111	16.4	22.8	**0.0482**	0.002	4.3	mg/L	6	Standard
	Cd	114	48.9	72.6	**0.0482**	0.008	16.5	ug/L	18	Standard
>	**In**	115	474745.8	0.8				ug/L	507261	Standard
	Sn	118	475.0	40.2	**-0.0173**	0.037	215.3	ug/L	683	Standard
	Sb	123	1751.0	31.8	**0.4164**	0.141	33.8	ug/L	446	Standard
	Ba	135	7868.7	1.7	**4.4335**	0.060	1.3	ug/L	28	Standard
	Ce	140	27979.1	1.8				ug/L	33	Standard
>	**Tb**	159	753238.8	1.1				ug/L	800803	Standard
	Ho	165	351.7	20.6				ug/L	10	Standard
	Tl	203	62.3	20.9	**0.0418**	0.002	4.3	ug/L	13	Standard
	Tl	205	43.3	37.1	**0.0493**	0.003	5.1	ug/L	13	Standard
	Pb	206	1664.1	6.4	**0.3491**	0.020	5.6	ug/L	226	Standard
	Pb	207	1361.1	5.1	**0.3171**	0.016	5.0	ug/L	204	Standard
	Pb	208	5716.1	0.9	**0.3342**	0.003	0.9	ug/L	852	Standard
	U	238	108.3	8.3	**0.0597**	0.002	2.6	ug/L	13	Standard
>	**Bi**	209	431049.9	0.9				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	40.0	57.3	**0.0174**	0.032	185.7	mg/L	58	Standard
K	39	36.7	43.8	**0.0080**	0.065	811.5	mg/L	27	Standard
Ca	43	28.3	44.4	**0.8400**	0.949	113.0	mg/L	20	Standard
Fe	54	487.1	6.7	**0.2984**	0.026	8.7	mg/L	158	Standard
Fe	57	365.0	6.8	**0.5742**	0.091	15.9	mg/L	267	Standard
> **Sc-1**	45	37803.8	0.7				mg/L	38815	Standard
Cl	35	58008.8	0.8				ug/L	57611	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	1390.1	5.6				ug/L	1617	Standard
P	31	6723.2	3.1				ug/L	19244	Standard
S	34	3855.5	4.2				ug/L	3557	Standard
Sr	88	63.3	4.6				ug/L	65	Standard
C	12	33.3	34.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	604.3	2.5				mg/L	13	Standard
Ho-1	165	351.7	20.6				mg/L	10	Standard
Er	166	396.7	19.3				mg/L	13	Standard
I	127	8490.7	2.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		79.665	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.193	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.590
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.993
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129408
Sample Date/Time: Wednesday, July 06, 2016 12:35:14
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53967.6	2.0				ug/L	68501	Standard
	Be	9	36.7	90.8	**0.0713**	0.048	67.1	ug/L	8	Standard
	Al	27	260417.3	3.5	**2.3639**	0.101	4.3	ug/L	1397	Standard
	Sc	45	38027.7	2.1				ug/L	38815	Standard
	Ti	47	160.0	7.6	**0.4572**	0.036	7.8	ug/L	36	Standard
	V	51	3667.6	1.6	**0.3863**	0.010	2.7	ug/L	1284	Standard
	Cr	52	8066.5	2.2	**0.2591**	0.022	8.5	ug/L	6503	Standard
	Cr	53	521.7	6.4	**0.2007**	0.041	20.4	ug/L	492	Standard
	Mn	55	48587.5	1.9	**7.9901**	0.137	1.7	ug/L	841	Standard
	Co	59	1120.0	7.7	**0.1944**	0.014	7.2	ug/L	229	Standard
	Ni	60	1576.1	3.3	**0.7989**	0.035	4.4	ug/L	344	Standard
	Cu	65	583.7	2.0	**0.3417**	0.008	2.4	ug/L	115	Standard
	Zn	66	2526.5	2.7	**2.4378**	0.065	2.7	ug/L	190	Standard
>	**Ge**	72	402701.4	0.4				ug/L	409858	Standard
	As	75	163.7	17.4	**0.2597**	0.028	10.9	ug/L	-22	Standard
	Se	82	19.0	37.8	**0.1322**	0.070	52.7	ug/L	18	Standard
	Se-1	77	47.7	2.4	**-0.0545**	0.015	27.3	ug/L	50	Standard
>	**Ga**	71	363.3	5.2				mg/L	97	Standard
	Rb	85	2791.9	5.5				ug/L	25	Standard
	Y	89	350903.9	1.1				ug/L	376763	Standard
>	**Rh**	103	21.7	13.3				ug/L	20	Standard
	Mo	98	87.0	11.7	**0.1099**	0.004	4.0	ug/L	51	Standard
	Ag	107	79.7	1.9	**0.0367**	0.000	0.7	ug/L	76	Standard
	Cd	111	10.8	33.4	**0.0452**	0.002	4.3	mg/L	6	Standard
	Cd	114	19.7	33.6	**0.0417**	0.001	3.5	ug/L	18	Standard
>	**In**	115	476250.4	0.2				ug/L	507261	Standard
	Sn	118	320.0	28.2	**-0.0479**	0.017	36.3	ug/L	683	Standard
	Sb	123	1247.0	34.2	**0.2892**	0.105	36.5	ug/L	446	Standard
	Ba	135	4132.6	3.6	**2.3285**	0.078	3.3	ug/L	28	Standard
	Ce	140	19167.1	2.8				ug/L	33	Standard
>	**Tb**	159	745961.4	1.0				ug/L	800803	Standard
	Ho	165	288.3	7.0				ug/L	10	Standard
	Tl	203	28.0	25.0	**0.0372**	0.001	2.6	ug/L	13	Standard
	Tl	205	36.7	61.5	**0.0483**	0.004	7.4	ug/L	13	Standard
	Pb	206	1164.0	3.0	**0.2435**	0.008	3.2	ug/L	226	Standard
	Pb	207	928.4	2.8	**0.2163**	0.006	2.9	ug/L	204	Standard
	Pb	208	4144.6	2.1	**0.2428**	0.005	2.2	ug/L	852	Standard
	U	238	88.7	22.2	**0.0566**	0.003	5.5	ug/L	13	Standard
>	**Bi**	209	430308.6	0.2				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	30.0	60.1	**0.0029**	0.024	833.5	mg/L	58	Standard
K	39	36.7	51.6	**0.0083**	0.079	949.7	mg/L	27	Standard
Ca	43	36.7	15.7	**1.4456**	0.439	30.4	mg/L	20	Standard
Fe	54	322.3	20.3	**0.1558**	0.060	38.7	mg/L	158	Standard
Fe	57	341.7	9.5	**0.4863**	0.100	20.6	mg/L	267	Standard
> **Sc-1**	45	38027.7	2.1				mg/L	38815	Standard
Cl	35	58256.5	1.5				ug/L	57611	Standard
Kr	83	3.7	31.5				ug/L	2	Standard
Br	81	1490.1	7.9				ug/L	1617	Standard
P	31	6151.2	2.7				ug/L	19244	Standard
S	34	3462.1	4.7				ug/L	3557	Standard
Sr	88	65.0	7.7				ug/L	65	Standard
C	12	56.7	66.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	107.9				mg/L	23	Standard
Dy	164	456.8	15.1				mg/L	13	Standard
Ho-1	165	288.3	7.0				mg/L	10	Standard
Er	166	276.7	11.0				mg/L	13	Standard
I	127	8354.0	1.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		78.784	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.254	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.887
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.828
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129409
Sample Date/Time: Wednesday, July 06, 2016 12:38:25
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54002.8	2.0				ug/L	68501	Standard
	Be	9	26.7	39.0	**0.0569**	0.015	26.3	ug/L	8	Standard
	Al	27	355774.4	1.8	**3.2137**	0.037	1.2	ug/L	1397	Standard
	Sc	45	37870.6	1.0				ug/L	38815	Standard
	Ti	47	155.3	6.4	**0.4407**	0.029	6.6	ug/L	36	Standard
	V	51	4291.3	2.7	**0.4733**	0.016	3.5	ug/L	1284	Standard
	Cr	52	8425.7	1.8	**0.3059**	0.026	8.4	ug/L	6503	Standard
	Cr	53	601.7	11.3	**0.2919**	0.080	27.6	ug/L	492	Standard
	Mn	55	74360.1	1.5	**12.2164**	0.218	1.8	ug/L	841	Standard
	Co	59	1332.1	3.0	**0.2290**	0.007	2.9	ug/L	229	Standard
	Ni	60	1608.8	1.4	**0.8136**	0.011	1.4	ug/L	344	Standard
	Cu	65	689.0	4.4	**0.4036**	0.018	4.4	ug/L	115	Standard
	Zn	66	2706.2	1.2	**2.6054**	0.035	1.3	ug/L	190	Standard
>	**Ge**	72	404779.3	0.2				ug/L	409858	Standard
	As	75	99.4	24.9	**0.1959**	0.024	12.2	ug/L	-22	Standard
	Se	82	14.7	23.1	**0.0894**	0.032	36.3	ug/L	18	Standard
	Se-1	77	47.3	8.8	**-0.0630**	0.060	95.1	ug/L	50	Standard
>	**Ga**	71	375.0	6.7				mg/L	97	Standard
	Rb	85	3093.6	2.9				ug/L	25	Standard
	Y	89	349363.7	0.6				ug/L	376763	Standard
>	**Rh**	103	21.7	74.2				ug/L	20	Standard
	Mo	98	73.5	9.1	**0.1039**	0.003	3.1	ug/L	51	Standard
	Ag	107	87.0	23.9	**0.0379**	0.004	9.8	ug/L	76	Standard
	Cd	111	24.2	46.8	**0.0523**	0.006	11.9	mg/L	6	Standard
	Cd	114	44.8	59.1	**0.0472**	0.006	12.5	ug/L	18	Standard
>	**In**	115	478695.7	1.2				ug/L	507261	Standard
	Sn	118	316.7	14.6	**-0.0487**	0.010	19.9	ug/L	683	Standard
	Sb	123	1033.1	29.1	**0.2353**	0.077	32.6	ug/L	446	Standard
	Ba	135	8158.2	1.0	**4.5590**	0.096	2.1	ug/L	28	Standard
	Ce	140	20727.5	4.7				ug/L	33	Standard
>	**Tb**	159	748176.5	0.9				ug/L	800803	Standard
	Ho	165	301.7	5.3				ug/L	10	Standard
	Tl	203	38.0	43.8	**0.0385**	0.002	5.8	ug/L	13	Standard
	Tl	205	25.0	20.0	**0.0464**	0.001	1.7	ug/L	13	Standard
	Pb	206	1980.1	3.6	**0.4139**	0.012	3.0	ug/L	226	Standard
	Pb	207	1697.4	4.2	**0.3935**	0.015	3.7	ug/L	204	Standard
	Pb	208	7219.0	0.8	**0.4197**	0.000	0.1	ug/L	852	Standard
	U	238	87.3	10.6	**0.0563**	0.002	2.8	ug/L	13	Standard
>	**Bi**	209	433469.7	0.7				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	35.0	37.8	**0.0103**	0.019	181.6	mg/L	58	Standard
K	39	28.3	62.0	**-0.0265**	0.071	267.8	mg/L	27	Standard
Ca	43	43.3	6.7	**1.9512**	0.183	9.4	mg/L	20	Standard
Fe	54	372.4	10.3	**0.1991**	0.030	15.0	mg/L	158	Standard
Fe	57	348.3	14.7	**0.5158**	0.189	36.6	mg/L	267	Standard
> **Sc-1**	45	37870.6	1.0				mg/L	38815	Standard
Cl	35	57598.0	1.7				ug/L	57611	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1430.1	3.7				ug/L	1617	Standard
P	31	6121.2	3.1				ug/L	19244	Standard
S	34	3705.5	5.3				ug/L	3557	Standard
Sr	88	80.0	6.3				ug/L	65	Standard
C	12	30.0	57.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	23	Standard
Dy	164	487.1	10.2				mg/L	13	Standard
Ho-1	165	301.7	5.3				mg/L	10	Standard
Er	166	270.0	39.0				mg/L	13	Standard
I	127	8914.3	2.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		78.835	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.761	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.369
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.532
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129410
Sample Date/Time: Wednesday, July 06, 2016 12:41:37
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52887.2	1.8				ug/L	68501	Standard
	Be	9	35.0	49.5	**0.0693**	0.024	35.3	ug/L	8	Standard
	Al	27	340518.6	2.3	**3.1422**	0.100	3.2	ug/L	1397	Standard
	Sc	45	37329.3	1.2				ug/L	38815	Standard
	Ti	47	155.7	8.7	**0.4476**	0.042	9.3	ug/L	36	Standard
	V	51	4098.4	2.5	**0.4530**	0.016	3.5	ug/L	1284	Standard
	Cr	52	8107.5	2.5	**0.2742**	0.033	12.0	ug/L	6503	Standard
	Cr	53	540.0	14.7	**0.2273**	0.096	42.4	ug/L	492	Standard
	Mn	55	64857.5	0.9	**10.7783**	0.125	1.2	ug/L	841	Standard
	Co	59	1397.1	3.7	**0.2429**	0.009	3.7	ug/L	229	Standard
	Ni	60	1640.4	2.0	**0.8452**	0.018	2.1	ug/L	344	Standard
	Cu	65	730.0	2.4	**0.4339**	0.009	2.1	ug/L	115	Standard
	Zn	66	2844.9	1.6	**2.7808**	0.051	1.8	ug/L	190	Standard
>	**Ge**	72	399739.8	0.3				ug/L	409858	Standard
	As	75	150.8	4.3	**0.2480**	0.007	2.7	ug/L	-22	Standard
	Se	82	16.8	16.3	**0.1118**	0.027	24.2	ug/L	18	Standard
	Se-1	77	46.7	10.8	**-0.0641**	0.075	117.7	ug/L	50	Standard
>	**Ga**	71	411.7	9.7				mg/L	97	Standard
	Rb	85	3715.5	3.6				ug/L	25	Standard
	Y	89	349263.3	1.1				ug/L	376763	Standard
>	**Rh**	103	33.3	45.8				ug/L	20	Standard
	Mo	98	68.3	41.2	**0.1017**	0.012	12.2	ug/L	51	Standard
	Ag	107	125.7	38.0	**0.0445**	0.008	18.3	ug/L	76	Standard
	Cd	111	35.2	63.7	**0.0582**	0.012	20.7	mg/L	6	Standard
	Cd	114	65.6	64.7	**0.0517**	0.009	18.0	ug/L	18	Standard
>	**In**	115	476516.9	0.8				ug/L	507261	Standard
	Sn	118	290.0	40.4	**-0.0538**	0.023	42.0	ug/L	683	Standard
	Sb	123	913.9	33.0	**0.2061**	0.074	35.7	ug/L	446	Standard
	Ba	135	7815.7	1.2	**4.3874**	0.031	0.7	ug/L	28	Standard
	Ce	140	22171.2	2.0				ug/L	33	Standard
>	**Tb**	159	745014.1	0.6				ug/L	800803	Standard
	Ho	165	338.3	7.0				ug/L	10	Standard
	Tl	203	93.0	73.2	**0.0459**	0.009	19.9	ug/L	13	Standard
	Tl	205	58.3	9.9	**0.0517**	0.001	1.6	ug/L	13	Standard
	Pb	206	1839.8	0.9	**0.3856**	0.008	2.0	ug/L	226	Standard
	Pb	207	1528.7	1.0	**0.3554**	0.002	0.6	ug/L	204	Standard
	Pb	208	6653.9	1.0	**0.3880**	0.007	1.7	ug/L	852	Standard
	U	238	118.7	34.7	**0.0613**	0.006	10.4	ug/L	13	Standard
>	**Bi**	209	432197.8	1.2				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	33.3	22.9	**0.0085**	0.010	120.9	mg/L	58	Standard
K	39	45.0	19.2	**0.0446**	0.035	78.7	mg/L	27	Standard
Ca	43	16.7	62.4	**-0.0167**	0.785	4697.8	mg/L	20	Standard
Fe	54	374.1	9.5	**0.2053**	0.029	14.4	mg/L	158	Standard
Fe	57	340.0	19.9	**0.5012**	0.223	44.4	mg/L	267	Standard
> **Sc-1**	45	37329.3	1.2				mg/L	38815	Standard
Cl	35	57528.4	1.2				ug/L	57611	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	1460.1	4.3				ug/L	1617	Standard
P	31	6161.3	2.2				ug/L	19244	Standard
S	34	3503.7	2.5				ug/L	3557	Standard
Sr	88	90.0	29.4				ug/L	65	Standard
C	12	40.0	25.0				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	26.7	78.1				mg/L	23	Standard
Dy	164	527.1	16.0				mg/L	13	Standard
Ho-1	165	338.3	7.0				mg/L	10	Standard
Er	166	270.0	7.4				mg/L	13	Standard
I	127	8217.2	2.1				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		77.206	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.531	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.939
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.248
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129414
Sample Date/Time: Wednesday, July 06, 2016 12:44:48
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53690.0	2.0				ug/L	68501	Standard
	Be	9	20.0	0.0	**0.0476**	0.001	1.2	ug/L	8	Standard
	Al	27	331712.6	1.9	**3.0171**	0.105	3.5	ug/L	1397	Standard
	Sc	45	37394.4	2.5				ug/L	38815	Standard
	Ti	47	127.3	9.9	**0.3586**	0.037	10.3	ug/L	36	Standard
	V	51	4142.5	1.3	**0.4557**	0.010	2.3	ug/L	1284	Standard
	Cr	52	8322.6	1.1	**0.2984**	0.018	6.0	ug/L	6503	Standard
	Cr	53	555.0	4.1	**0.2408**	0.025	10.2	ug/L	492	Standard
	Mn	55	93280.6	0.9	**15.4453**	0.177	1.1	ug/L	841	Standard
	Co	59	1455.1	2.3	**0.2512**	0.006	2.5	ug/L	229	Standard
	Ni	60	1657.4	3.5	**0.8492**	0.031	3.6	ug/L	344	Standard
	Cu	65	862.0	3.3	**0.5115**	0.017	3.4	ug/L	115	Standard
	Zn	66	3313.7	0.9	**3.2364**	0.043	1.3	ug/L	190	Standard
>	**Ge**	72	402275.0	0.4				ug/L	409858	Standard
	As	75	118.9	36.8	**0.2157**	0.043	19.9	ug/L	-22	Standard
	Se	82	16.6	28.2	**0.1090**	0.045	41.5	ug/L	18	Standard
	Se-1	77	47.7	6.4	**-0.0538**	0.042	78.2	ug/L	50	Standard
>	**Ga**	71	391.7	11.4				mg/L	97	Standard
	Rb	85	3747.1	3.7				ug/L	25	Standard
	Y	89	345576.8	1.0				ug/L	376763	Standard
>	**Rh**	103	18.3	15.7				ug/L	20	Standard
	Mo	98	44.0	23.2	**0.0909**	0.005	5.1	ug/L	51	Standard
	Ag	107	79.0	5.5	**0.0365**	0.001	1.8	ug/L	76	Standard
	Cd	111	24.2	10.4	**0.0523**	0.001	2.6	mg/L	6	Standard
	Cd	114	73.2	46.7	**0.0534**	0.008	14.1	ug/L	18	Standard
>	**In**	115	478607.8	0.7				ug/L	507261	Standard
	Sn	118	251.7	25.3	**-0.0613**	0.013	20.5	ug/L	683	Standard
	Sb	123	792.2	33.5	**0.1757**	0.067	37.9	ug/L	446	Standard
	Ba	135	7870.7	0.5	**4.3991**	0.031	0.7	ug/L	28	Standard
	Ce	140	22131.2	0.9				ug/L	33	Standard
>	**Tb**	159	749864.4	0.1				ug/L	800803	Standard
	Ho	165	340.0	10.2				ug/L	10	Standard
	Tl	203	23.0	32.8	**0.0365**	0.001	2.8	ug/L	13	Standard
	Tl	205	30.0	33.3	**0.0472**	0.002	3.3	ug/L	13	Standard
	Pb	206	14608.4	1.3	**3.0830**	0.023	0.8	ug/L	226	Standard
	Pb	207	10978.6	2.2	**2.5535**	0.043	1.7	ug/L	204	Standard
	Pb	208	49268.3	1.0	**2.8669**	0.016	0.5	ug/L	852	Standard
	U	238	88.0	5.0	**0.0564**	0.001	1.1	ug/L	13	Standard
>	**Bi**	209	433017.9	0.5				ug/L	449044	Standard

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Na	23	1.7	173.2	**0.9237**	16.812	1820.0	mg/L	2	Standard
Mg	24	31.7	18.2	**0.0060**	0.007	118.5	mg/L	58	Standard
K	39	35.0	14.3	**0.0034**	0.024	720.1	mg/L	27	Standard
Ca	43	16.7	17.3	**-0.0157**	0.252	1610.8	mg/L	20	Standard
Fe	54	313.9	9.8	**0.1522**	0.020	13.3	mg/L	158	Standard
Fe	57	301.7	18.8	**0.3670**	0.187	50.9	mg/L	267	Standard
Sc-1	45	37394.4	2.5				mg/L	38815	Standard
Cl	35	58101.9	0.6				ug/L	57611	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	1443.4	4.6				ug/L	1617	Standard
P	31	6066.2	5.4				ug/L	19244	Standard
S	34	3347.0	3.0				ug/L	3557	Standard
Sr	88	83.3	40.8				ug/L	65	Standard
C	12	43.3	53.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	23	Standard
Dy	164	599.9	19.0				mg/L	13	Standard
Ho-1	165	340.0	10.2				mg/L	10	Standard
Er	166	350.0	10.3				mg/L	13	Standard
I	127	8285.6	5.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		78.378	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.150	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.351
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.431
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129415
Sample Date/Time: Wednesday, July 06, 2016 12:47:59
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54170.0	2.0				ug/L	68501	Standard
	Be	9	26.7	28.6	**0.0565**	0.010	17.6	ug/L	8	Standard
	Al	27	359573.2	2.4	**3.2386**	0.111	3.4	ug/L	1397	Standard
	Sc	45	37168.9	1.3				ug/L	38815	Standard
	Ti	47	145.3	6.2	**0.4119**	0.030	7.3	ug/L	36	Standard
	V	51	3535.1	1.8	**0.3660**	0.006	1.5	ug/L	1284	Standard
	Cr	52	7574.2	1.6	**0.1840**	0.024	12.9	ug/L	6503	Standard
	Cr	53	406.7	13.5	**0.0634**	0.069	108.4	ug/L	492	Standard
	Mn	55	61648.2	0.7	**10.1421**	0.149	1.5	ug/L	841	Standard
	Co	59	1089.0	4.5	**0.1888**	0.009	4.8	ug/L	229	Standard
	Ni	60	1346.1	2.3	**0.6575**	0.025	3.8	ug/L	344	Standard
	Cu	65	439.0	4.3	**0.2531**	0.013	5.1	ug/L	115	Standard
	Zn	66	2221.8	1.3	**2.1252**	0.014	0.7	ug/L	190	Standard
>	**Ge**	72	403591.8	0.7				ug/L	409858	Standard
	As	75	37.7	18.1	**0.1358**	0.007	4.9	ug/L	-22	Standard
	Se	82	20.1	10.3	**0.1419**	0.020	14.4	ug/L	18	Standard
	Se-1	77	48.7	17.5	**-0.0418**	0.121	288.3	ug/L	50	Standard
>	**Ga**	71	316.7	12.9				mg/L	97	Standard
	Rb	85	2226.8	3.0				ug/L	25	Standard
	Y	89	347784.9	1.1				ug/L	376763	Standard
>	**Rh**	103	25.0	40.0				ug/L	20	Standard
	Mo	98	33.3	21.8	**0.0862**	0.003	3.7	ug/L	51	Standard
	Ag	107	67.7	8.5	**0.0347**	0.001	2.9	ug/L	76	Standard
	Cd	111	6.3	51.4	**0.0427**	0.002	4.0	mg/L	6	Standard
	Cd	114	12.7	48.1	**0.0402**	0.001	3.4	ug/L	18	Standard
>	**In**	115	476216.8	0.5				ug/L	507261	Standard
	Sn	118	271.7	24.0	**-0.0573**	0.013	21.9	ug/L	683	Standard
	Sb	123	683.1	27.9	**0.1492**	0.047	31.4	ug/L	446	Standard
	Ba	135	5862.1	0.1	**3.2969**	0.020	0.6	ug/L	28	Standard
	Ce	140	16595.8	3.6				ug/L	33	Standard
>	**Tb**	159	744111.5	0.7				ug/L	800803	Standard
	Ho	165	248.3	13.1				ug/L	10	Standard
	Tl	203	19.0	9.1	**0.0359**	0.000	0.7	ug/L	13	Standard
	Tl	205	11.7	49.5	**0.0444**	0.001	2.1	ug/L	13	Standard
	Pb	206	921.0	2.0	**0.1925**	0.005	2.6	ug/L	226	Standard
	Pb	207	774.4	3.3	**0.1808**	0.005	2.9	ug/L	204	Standard
	Pb	208	3329.1	2.3	**0.1956**	0.005	2.8	ug/L	852	Standard
	U	238	55.0	25.0	**0.0513**	0.002	4.2	ug/L	13	Standard
>	**Bi**	209	429010.4	0.8				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	17.6	**0.0229**	0.010	45.8	mg/L	58	Standard
K	39	45.0	22.2	**0.0459**	0.044	95.9	mg/L	27	Standard
Ca	43	35.0	42.9	**1.3865**	1.153	83.2	mg/L	20	Standard
Fe	54	281.0	14.5	**0.1257**	0.038	30.3	mg/L	158	Standard
Fe	57	395.0	5.8	**0.7009**	0.097	13.9	mg/L	267	Standard
> **Sc-1**	45	37168.9	1.3				mg/L	38815	Standard
Cl	35	58603.8	1.1				ug/L	57611	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	1436.7	1.8				ug/L	1617	Standard
P	31	7160.1	19.7				ug/L	19244	Standard
S	34	3277.0	5.3				ug/L	3557	Standard
Sr	88	80.0	6.3				ug/L	65	Standard
C	12	33.3	75.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	124.9				mg/L	23	Standard
Dy	164	447.9	36.2				mg/L	13	Standard
Ho-1	165	248.3	13.1				mg/L	10	Standard
Er	166	253.3	24.1				mg/L	13	Standard
I	127	8542.4	2.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		79.079	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.471	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.880
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.539
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606138108
Sample Date/Time: Wednesday, July 06, 2016 12:51:11
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54233.6	3.5				ug/L	68501	Standard
	Be	9	30.0	28.9	**0.0612**	0.012	19.1	ug/L	8	Standard
	Al	27	458746.7	1.0	**4.1197**	0.165	4.0	ug/L	1397	Standard
	Sc	45	38214.8	1.8				ug/L	38815	Standard
	Ti	47	191.7	8.8	**0.5499**	0.046	8.4	ug/L	36	Standard
	V	51	7374.6	0.8	**0.9167**	0.006	0.6	ug/L	1284	Standard
	Cr	52	9768.5	2.0	**0.5031**	0.030	6.0	ug/L	6503	Standard
	Cr	53	703.3	8.3	**0.4117**	0.068	16.6	ug/L	492	Standard
	Mn	55	157025.5	0.1	**25.8971**	0.172	0.7	ug/L	841	Standard
	Co	59	2139.2	2.3	**0.3643**	0.008	2.2	ug/L	229	Standard
	Ni	60	2664.9	2.1	**1.4510**	0.037	2.6	ug/L	344	Standard
	Cu	65	1293.7	2.7	**0.7692**	0.019	2.5	ug/L	115	Standard
	Zn	66	3107.0	2.1	**3.0074**	0.079	2.6	ug/L	190	Standard
>	**Ge**	72	404886.3	0.7				ug/L	409858	Standard
	As	75	199.8	21.5	**0.2941**	0.043	14.5	ug/L	-22	Standard
	Se	82	16.0	51.6	**0.1025**	0.080	78.0	ug/L	18	Standard
	Se-1	77	49.0	14.3	**-0.0383**	0.106	277.2	ug/L	50	Standard
>	**Ga**	71	690.0	10.9				mg/L	97	Standard
	Rb	85	6126.2	5.8				ug/L	25	Standard
	Y	89	355822.1	1.8				ug/L	376763	Standard
>	**Rh**	103	20.0	75.0				ug/L	20	Standard
	Mo	98	37.1	35.1	**0.0878**	0.006	6.6	ug/L	51	Standard
	Ag	107	81.3	8.2	**0.0368**	0.001	2.8	ug/L	76	Standard
	Cd	111	8.9	29.5	**0.0441**	0.001	3.2	mg/L	6	Standard
	Cd	114	16.7	60.7	**0.0410**	0.002	5.4	ug/L	18	Standard
>	**In**	115	480767.7	0.8				ug/L	507261	Standard
	Sn	118	248.3	36.1	**-0.0621**	0.018	28.5	ug/L	683	Standard
	Sb	123	730.9	30.4	**0.1597**	0.056	35.0	ug/L	446	Standard
	Ba	135	13856.3	0.6	**7.6978**	0.013	0.2	ug/L	28	Standard
	Ce	140	35568.4	3.3				ug/L	33	Standard
>	**Tb**	159	750147.1	0.9				ug/L	800803	Standard
	Ho	165	496.7	9.5				ug/L	10	Standard
	Tl	203	43.3	7.4	**0.0392**	0.000	1.2	ug/L	13	Standard
	Tl	205	26.7	39.0	**0.0467**	0.002	3.5	ug/L	13	Standard
	Pb	206	1867.1	1.5	**0.3894**	0.009	2.2	ug/L	226	Standard
	Pb	207	1558.4	1.6	**0.3606**	0.008	2.1	ug/L	204	Standard
	Pb	208	6678.9	0.9	**0.3876**	0.004	1.2	ug/L	852	Standard
	U	238	113.7	2.7	**0.0604**	0.001	0.9	ug/L	13	Standard
>	**Bi**	209	434266.7	0.7				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	60.4	**0.0193**	0.035	182.4	mg/L	58	Standard
K	39	61.7	36.6	**0.1070**	0.087	81.4	mg/L	27	Standard
Ca	43	36.7	15.7	**1.4281**	0.401	28.0	mg/L	20	Standard
Fe	54	769.2	13.0	**0.5330**	0.076	14.2	mg/L	158	Standard
Fe	57	460.0	10.4	**0.8848**	0.183	20.7	mg/L	267	Standard
> **Sc-1**	45	38214.8	1.8				mg/L	38815	Standard
Cl	35	57334.9	0.4				ug/L	57611	Standard
Kr	83	3.0	145.3				ug/L	2	Standard
Br	81	1536.7	5.0				ug/L	1617	Standard
P	31	6094.6	1.6				ug/L	19244	Standard
S	34	3535.4	4.0				ug/L	3557	Standard
Sr	88	58.3	64.3				ug/L	65	Standard
C	12	26.7	21.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	896.4	9.8				mg/L	13	Standard
Ho-1	165	496.7	9.5				mg/L	10	Standard
Er	166	563.3	10.1				mg/L	13	Standard
I	127	8010.5	1.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		79.172	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.787	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.777
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.709
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 12:54:23
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	56752.8	1.7				ug/L	68501	Standard
	Be	9	41092.3	2.3	**54.6692**	1.162	2.1	ug/L	8	Standard
	Al	27	6751186.4	2.0	**57.4251**	0.440	0.8	ug/L	1397	Standard
	Sc	45	42482.8	2.4				ug/L	38815	Standard
	Ti	47	37579.6	2.3	**105.5354**	1.586	1.5	ug/L	36	Standard
	V	51	382333.4	1.2	**51.0931**	0.241	0.5	ug/L	1284	Standard
	Cr	52	391883.4	2.2	**52.7636**	0.793	1.5	ug/L	6503	Standard
	Cr	53	47835.4	0.2	**52.1976**	0.572	1.1	ug/L	492	Standard
	Mn	55	344317.1	1.3	**53.0012**	0.174	0.3	ug/L	841	Standard
	Co	59	325311.2	1.3	**50.8445**	0.267	0.5	ug/L	229	Standard
	Ni	60	93170.6	1.4	**52.2381**	0.359	0.7	ug/L	344	Standard
	Cu	65	92504.9	1.5	**52.1124**	0.483	0.9	ug/L	115	Standard
	Zn	66	55580.4	0.5	**51.8949**	0.362	0.7	ug/L	190	Standard
>	Ge	72	434601.8	1.2				ug/L	409858	Standard
	As	75	56578.8	0.7	**51.5738**	0.350	0.7	ug/L	-22	Standard
	Se	82	5647.5	1.8	**50.3603**	0.378	0.7	ug/L	18	Standard
	Se-1	77	3845.5	1.2	**51.9136**	1.176	2.3	ug/L	50	Standard
>	Ga	71	88.3	22.9				mg/L	97	Standard
	Rb	85	756.7	12.0				ug/L	25	Standard
	Y	89	367973.7	1.4				ug/L	376763	Standard
>	Rh	103	40.0	12.5				ug/L	20	Standard
	Mo	98	247770.2	0.4	**100.8550**	1.105	1.1	ug/L	51	Standard
	Ag	107	318642.7	1.1	**50.1013**	0.860	1.7	ug/L	76	Standard
	Cd	111	102680.4	0.6	**50.7935**	0.304	0.6	mg/L	6	Standard
	Cd	114	251457.4	1.9	**50.8827**	1.163	2.3	ug/L	18	Standard
>	In	115	517125.0	0.9				ug/L	507261	Standard
	Sn	118	279794.8	0.3	**50.0313**	0.520	1.0	ug/L	683	Standard
	Sb	123	221090.7	1.6	**50.5448**	0.872	1.7	ug/L	446	Standard
	Ba	135	98648.8	0.3	**50.8641**	0.342	0.7	ug/L	28	Standard
	Ce	140	283.3	6.7				ug/L	33	Standard
>	Tb	159	800642.8	0.2				ug/L	800803	Standard
	Ho	165	20.0	50.0				ug/L	10	Standard
	Tl	203	393462.9	0.9	**51.5261**	0.198	0.4	ug/L	13	Standard
	Tl	205	343273.5	0.6	**51.9120**	0.122	0.2	ug/L	13	Standard
	Pb	206	248406.7	0.2	**50.6641**	0.317	0.6	ug/L	226	Standard
	Pb	207	226320.8	0.2	**50.8305**	0.138	0.3	ug/L	204	Standard
	Pb	208	939047.0	1.1	**52.7397**	0.483	0.9	ug/L	852	Standard
	U	238	332825.8	0.4	**50.4825**	0.314	0.6	ug/L	13	Standard
>	Bi	209	448636.6	0.5				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	3842.2	4.2	**4.7135**	0.114	2.4	mg/L	58	Standard
K	39	1238.4	8.3	**4.3703**	0.386	8.8	mg/L	27	Standard
Ca	43	76.7	29.4	**3.8418**	1.628	42.4	mg/L	20	Standard
Fe	54	6532.7	3.0	**4.8761**	0.107	2.2	mg/L	158	Standard
Fe	57	1771.8	2.6	**4.7386**	0.249	5.3	mg/L	267	Standard
> **Sc-1**	45	42482.8	2.4				mg/L	38815	Standard
Cl	35	66120.0	1.5				ug/L	57611	Standard
Kr	83	2.7	43.3				ug/L	2	Standard
Br	81	1616.8	14.2				ug/L	1617	Standard
P	31	20527.2	2.3				ug/L	19244	Standard
S	34	4075.5	3.0				ug/L	3557	Standard
Sr	88	65.0	23.1				ug/L	65	Standard
C	12	66.7	37.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	20.0				mg/L	23	Standard
Dy	164	-0.5	0.0				mg/L	13	Standard
Ho-1	165	20.0	50.0				mg/L	10	Standard
Er	166	10.0					mg/L	13	Standard
I	127	11891.3	1.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	109.338		
Al	27	114.850		
Sc	45			
Ti	47	105.535		
V	51	102.186		
Cr	52	105.527		
Cr	53			
Mn	55	106.002		
Co	59	101.689		
Ni	60	104.476		
Cu	65	104.225		
Zn	66	103.790		
> Ge	72		106.037	
As	75	103.148		
Se	82	100.721		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	100.855		
Ag	107	100.203		
Cd	111	101.587		
Cd	114			
In	115		101.945	
Sn	118	100.063		
Sb	123	101.090		
Ba	135	101.728		
Ce	140			
Tb	159			
Ho	165			
Tl	203	103.052		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.479		
U	238	100.965		
Bi	209		99.909	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 12:57:35
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58173.1	0.9				ug/L	68501	Standard
	Be	9	16.7	62.4	**0.0411**	0.014	33.0	ug/L	8	Standard
	Al	27	2846.9	23.0	**0.0586**	0.005	8.9	ug/L	1397	Standard
	Sc	45	41419.9	4.2				ug/L	38815	Standard
	Ti	47	45.3	22.5	**0.1003**	0.029	28.7	ug/L	36	Standard
	V	51	1392.0	8.0	**0.0435**	0.015	35.5	ug/L	1284	Standard
	Cr	52	7010.6	2.2	**0.0324**	0.022	67.0	ug/L	6503	Standard
	Cr	53	413.3	1.4	**0.0386**	0.005	13.3	ug/L	492	Standard
	Mn	55	993.7	2.9	**0.0582**	0.005	8.5	ug/L	841	Standard
	Co	59	252.0	16.8	**0.0451**	0.007	14.5	ug/L	229	Standard
	Ni	60	638.3	0.7	**0.2033**	0.004	1.9	ug/L	344	Standard
	Cu	65	123.0	9.2	**0.0564**	0.006	11.0	ug/L	115	Standard
	Zn	66	222.3	5.3	**0.0958**	0.010	10.6	ug/L	190	Standard
>	**Ge**	72	432136.6	0.4				ug/L	409858	Standard
	As	75	-22.5	131.6	**0.0783**	0.027	34.6	ug/L	-22	Standard
	Se	82	22.9	5.7	**0.1545**	0.012	7.9	ug/L	18	Standard
	Se-1	77	53.3	16.9	**-0.0242**	0.125	515.8	ug/L	50	Standard
>	**Ga**	71	58.3	19.8				mg/L	97	Standard
	Rb	85	23.3	65.5				ug/L	25	Standard
	Y	89	371942.5	1.8				ug/L	376763	Standard
>	**Rh**	103	21.7	13.3				ug/L	20	Standard
	Mo	98	175.2	11.7	**0.1433**	0.007	5.1	ug/L	51	Standard
	Ag	107	108.7	20.6	**0.0403**	0.003	8.6	ug/L	76	Standard
	Cd	111	12.7	69.7	**0.0457**	0.004	9.6	mg/L	6	Standard
	Cd	114	61.2	41.0	**0.0498**	0.005	9.9	ug/L	18	Standard
>	**In**	115	513109.5	2.2				ug/L	507261	Standard
	Sn	118	888.4	17.9	**0.0506**	0.031	60.4	ug/L	683	Standard
	Sb	123	783.2	29.8	**0.1604**	0.056	34.6	ug/L	446	Standard
	Ba	135	35.7	15.4	**0.0343**	0.003	7.8	ug/L	28	Standard
	Ce	140	75.0	35.3				ug/L	33	Standard
>	**Tb**	159	797797.7	0.9				ug/L	800803	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	62.3	30.4	**0.0414**	0.002	5.9	ug/L	13	Standard
	Tl	205	41.7	38.6	**0.0488**	0.002	4.9	ug/L	13	Standard
	Pb	206	251.3	8.2	**0.0468**	0.004	8.7	ug/L	226	Standard
	Pb	207	237.7	5.0	**0.0519**	0.002	4.4	ug/L	204	Standard
	Pb	208	934.0	13.6	**0.0521**	0.007	13.0	ug/L	852	Standard
	U	238	57.0	50.8	**0.0512**	0.004	8.5	ug/L	13	Standard
>	**Bi**	209	452413.7	0.8				ug/L	449044	Standard

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Na	23	1.7	173.2	**-0.1481**	14.955	10096.3	mg/L	2	Standard
Mg	24	30.0	28.9	**-0.0002**	0.012	6433.4	mg/L	58	Standard
K	39	30.0	60.1	**-0.0297**	0.069	231.4	mg/L	27	Standard
Ca	43	23.3	12.4	**0.3104**	0.162	52.3	mg/L	20	Standard
Fe	54	169.0	5.8	**0.0125**	0.011	84.9	mg/L	158	Standard
Fe	57	230.0	13.6	**0.0408**	0.089	218.6	mg/L	267	Standard
Sc-1	45	41419.9	4.2				mg/L	38815	Standard
Cl	35	64416.7	1.6				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1666.8	5.1				ug/L	1617	Standard
P	31	19791.3	3.6				ug/L	19244	Standard
S	34	3802.1	3.9				ug/L	3557	Standard
Sr	88	75.0	6.7				ug/L	65	Standard
C	12	36.7	41.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	32.7				mg/L	23	Standard
Dy	164	6.0	100.4				mg/L	13	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	8088.8	1.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		105.436	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.153
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.750
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Tl	203	

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Method 6020 - Summary Report

Sample ID: L1606131306
Sample Date/Time: Wednesday, July 06, 2016 13:04:40
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57723.1	2.8				ug/L	68501	Standard
	Be	9	53.3	37.9	**0.0891**	0.026	29.2	ug/L	8	Standard
	Al	27	180289.7	0.5	**1.5427**	0.041	2.7	ug/L	1397	Standard
	Sc	45	41478.4	1.2				ug/L	38815	Standard
	Ti	47	1970.8	0.7	**5.6501**	0.108	1.9	ug/L	36	Standard
	V	51	47130.6	0.5	**6.3329**	0.078	1.2	ug/L	1284	Standard
	Cr	52	13127.7	2.7	**0.9112**	0.063	6.9	ug/L	6503	Standard
	Cr	53	2163.5	13.1	**2.0244**	0.352	17.4	ug/L	492	Standard
	Mn	55	24005.0	1.8	**3.6998**	0.025	0.7	ug/L	841	Standard
	Co	59	2263.2	1.0	**0.3682**	0.006	1.6	ug/L	229	Standard
	Ni	60	2942.3	2.6	**1.5389**	0.037	2.4	ug/L	344	Standard
	Cu	65	2666.9	0.5	**1.5278**	0.021	1.4	ug/L	115	Standard
	Zn	66	24175.6	1.3	**23.0819**	0.110	0.5	ug/L	190	Standard
>	**Ge**	72	423851.7	1.6				ug/L	409858	Standard
	As	75	21610.2	1.6	**20.2585**	0.239	1.2	ug/L	-22	Standard
	Se	82	171.9	10.5	**1.5230**	0.183	12.0	ug/L	18	Standard
	Se-1	77	168.3	8.9	**1.6075**	0.250	15.6	ug/L	50	Standard
>	**Ga**	71	1233.4	11.2				mg/L	97	Standard
	Rb	85	18406.2	1.8				ug/L	25	Standard
	Y	89	373385.9	1.9				ug/L	376763	Standard
>	**Rh**	103	136.7	32.0				ug/L	20	Standard
	Mo	98	197428.1	1.3	**83.4331**	0.661	0.8	ug/L	51	Standard
	Ag	107	113.3	9.7	**0.0416**	0.002	4.6	ug/L	76	Standard
	Cd	111	101.4	12.4	**0.0914**	0.006	6.8	mg/L	6	Standard
	Cd	114	1017.6	7.1	**0.2510**	0.016	6.4	ug/L	18	Standard
>	**In**	115	498128.4	0.6				ug/L	507261	Standard
	Sn	118	2950.3	4.8	**0.4389**	0.029	6.6	ug/L	683	Standard
	Sb	123	1594.2	12.3	**0.3583**	0.049	13.6	ug/L	446	Standard
	Ba	135	34883.1	0.8	**18.6813**	0.138	0.7	ug/L	28	Standard
	Ce	140	16956.2	2.0				ug/L	33	Standard
>	**Tb**	159	784060.2	1.2				ug/L	800803	Standard
	Ho	165	340.0	7.4				ug/L	10	Standard
	Tl	203	172.0	8.2	**0.0569**	0.002	3.1	ug/L	13	Standard
	Tl	205	160.0	9.4	**0.0679**	0.003	3.7	ug/L	13	Standard
	Pb	206	2934.0	0.9	**0.6227**	0.008	1.3	ug/L	226	Standard
	Pb	207	2315.2	1.5	**0.5435**	0.010	1.9	ug/L	204	Standard
	Pb	208	10260.4	1.0	**0.6036**	0.005	0.8	ug/L	852	Standard
	U	238	3112.7	1.7	**0.5366**	0.008	1.5	ug/L	13	Standard
>	**Bi**	209	428381.7	0.9				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	60549.1	1.3	**76.6878**	1.707	2.2	mg/L	58	Standard
K	39	128.3	2.2	**0.3369**	0.012	3.7	mg/L	27	Standard
Ca	43	146.7	19.4	**8.6910**	1.829	21.0	mg/L	20	Standard
Fe	54	590.3	17.9	**0.3427**	0.087	25.3	mg/L	158	Standard
Fe	57	436.7	7.4	**0.6872**	0.100	14.6	mg/L	267	Standard
> **Sc-1**	45	41478.4	1.2				mg/L	38815	Standard
Cl	35	63464.0	2.9				ug/L	57611	Standard
Kr	83	1.0	173.2				ug/L	2	Standard
Br	81	29495.4	4.8				ug/L	1617	Standard
P	31	22338.1	1.2				ug/L	19244	Standard
S	34	3658.8	8.4				ug/L	3557	Standard
Sr	88	95.0	19.0				ug/L	65	Standard
C	12	90.0	48.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	0.0				mg/L	23	Standard
Dy	164	578.4	10.6				mg/L	13	Standard
Ho-1	165	340.0	7.4				mg/L	10	Standard
Er	166	243.3	12.6				mg/L	13	Standard
I	127	234795.7	5.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		84.266	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.414	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.200
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.399
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606131307
Sample Date/Time: Wednesday, July 06, 2016 13:07:52
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58787.2	3.0				ug/L	68501	Standard
	Be	9	21.7	35.3	**0.0472**	0.010	20.4	ug/L	8	Standard
	Al	27	32170.8	2.3	**0.2994**	0.014	4.7	ug/L	1397	Standard
	Sc	45	40791.5	1.3				ug/L	38815	Standard
	Ti	47	455.7	9.2	**1.3061**	0.131	10.0	ug/L	36	Standard
	V	51	30069.6	2.2	**4.0535**	0.114	2.8	ug/L	1284	Standard
	Cr	52	9306.9	0.9	**0.3948**	0.031	7.9	ug/L	6503	Standard
	Cr	53	2293.5	7.2	**2.2101**	0.212	9.6	ug/L	492	Standard
	Mn	55	3385.7	0.8	**0.4479**	0.008	1.7	ug/L	841	Standard
	Co	59	676.3	3.4	**0.1156**	0.005	4.5	ug/L	229	Standard
	Ni	60	1130.4	2.9	**0.5044**	0.018	3.5	ug/L	344	Standard
	Cu	65	1215.0	4.0	**0.6996**	0.013	1.9	ug/L	115	Standard
	Zn	66	1554.4	4.0	**1.4018**	0.069	4.9	ug/L	190	Standard
>	**Ge**	72	417314.7	2.2				ug/L	409858	Standard
	As	75	14441.7	1.3	**13.7878**	0.455	3.3	ug/L	-22	Standard
	Se	82	149.1	1.8	**1.3351**	0.052	3.9	ug/L	18	Standard
	Se-1	77	180.3	7.9	**1.8165**	0.258	14.2	ug/L	50	Standard
>	**Ga**	71	601.7	10.6				mg/L	97	Standard
	Rb	85	5239.2	1.8				ug/L	25	Standard
	Y	89	358062.8	2.2				ug/L	376763	Standard
>	**Rh**	103	165.0	16.0				ug/L	20	Standard
	Mo	98	206408.8	1.4	**88.5714**	1.056	1.2	ug/L	51	Standard
	Ag	107	79.3	17.8	**0.0362**	0.002	6.4	ug/L	76	Standard
	Cd	111	-128.2	9.7	**-0.0275**	0.007	27.1	mg/L	6	Standard
	Cd	114	441.2	1.2	**0.1314**	0.002	1.5	ug/L	18	Standard
>	**In**	115	490588.1	1.5				ug/L	507261	Standard
	Sn	118	950.0	9.6	**0.0693**	0.017	24.1	ug/L	683	Standard
	Sb	123	1528.0	9.2	**0.3484**	0.039	11.2	ug/L	446	Standard
	Ba	135	7029.0	1.2	**3.8355**	0.097	2.5	ug/L	28	Standard
	Ce	140	2000.1	10.1				ug/L	33	Standard
>	**Tb**	159	781482.7	1.4				ug/L	800803	Standard
	Ho	165	31.7	39.7				ug/L	10	Standard
	Tl	203	103.7	18.0	**0.0476**	0.003	5.7	ug/L	13	Standard
	Tl	205	90.0	9.6	**0.0568**	0.001	1.9	ug/L	13	Standard
	Pb	206	490.7	1.2	**0.1012**	0.001	1.4	ug/L	226	Standard
	Pb	207	398.0	8.8	**0.0930**	0.010	10.2	ug/L	204	Standard
	Pb	208	1670.4	2.7	**0.0987**	0.002	1.8	ug/L	852	Standard
	U	238	2792.6	0.6	**0.4878**	0.013	2.7	ug/L	13	Standard
>	**Bi**	209	426654.8	2.3				ug/L	449044	Standard

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Na	23	1.7	173.2	**-0.1322**	14.983	11333.2	mg/L	2	Standard
Mg	24	62671.0	0.6	**80.7120**	1.324	1.6	mg/L	58	Standard
K	39	93.3	12.4	**0.2122**	0.044	20.7	mg/L	27	Standard
Ca	43	48.3	26.0	**2.0631**	0.852	41.3	mg/L	20	Standard
Fe	54	193.6	22.1	**0.0342**	0.035	102.9	mg/L	158	Standard
Fe	57	265.0	14.7	**0.1630**	0.116	71.3	mg/L	267	Standard
> **Sc-1**	45	40791.5	1.3				mg/L	38815	Standard
Cl	35	64717.9	0.6				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	26954.1	8.2				ug/L	1617	Standard
P	31	21436.8	2.7				ug/L	19244	Standard
S	34	3510.4	3.2				ug/L	3557	Standard
Sr	88	73.3	30.7				ug/L	65	Standard
C	12	60.0	33.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	44.6				mg/L	23	Standard
Dy	164	34.8	81.9				mg/L	13	Standard
Ho-1	165	31.7	39.7				mg/L	10	Standard
Er	166	40.0	25.0				mg/L	13	Standard
I	127	224703.9	3.8				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		85.819	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.819	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.713
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.014
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606131308
Sample Date/Time: Wednesday, July 06, 2016 13:11:03
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	98735.9	3.3				ug/L	68501	Standard
	Be	9	58.3	13.1	**0.0640**	0.004	6.9	ug/L	8	Standard
	Al	27	51788511.2	2.3	**253.1524**	3.815	1.5	ug/L	1397	Standard
	Sc	45	41498.4	1.6				ug/L	38815	Standard
	Ti	47	3931.8	1.1	**11.5935**	0.069	0.6	ug/L	36	Standard
	V	51	21071.2	0.6	**2.8272**	0.045	1.6	ug/L	1284	Standard
	Cr	52	24687.4	1.3	**2.6256**	0.034	1.3	ug/L	6503	Standard
	Cr	53	2983.6	1.1	**3.0340**	0.005	0.2	ug/L	492	Standard
	Mn	55	1699805.7	0.4	**275.7234**	3.638	1.3	ug/L	841	Standard
	Co	59	8628.5	0.7	**1.4243**	0.010	0.7	ug/L	229	Standard
	Ni	60	7274.1	0.7	**4.1465**	0.043	1.0	ug/L	344	Standard
	Cu	65	4390.6	0.8	**2.5899**	0.030	1.2	ug/L	115	Standard
	Zn	66	25222.0	1.8	**24.7202**	0.623	2.5	ug/L	190	Standard
>	Ge	72	413063.1	1.0				ug/L	409858	Standard
	As	75	638.5	11.5	**0.7099**	0.068	9.6	ug/L	-22	Standard
	Se	82	163.0	16.8	**1.4794**	0.255	17.2	ug/L	18	Standard
	Se-1	77	91.7	9.4	**0.5625**	0.134	23.8	ug/L	50	Standard
>	Ga	71	2932.0	4.6				mg/L	97	Standard
	Rb	85	15868.3	1.8				ug/L	25	Standard
	Y	89	380333.5	1.6				ug/L	376763	Standard
>	Rh	103	393.3	8.5				ug/L	20	Standard
	Mo	98	89251.1	1.2	**38.3286**	0.514	1.3	ug/L	51	Standard
	Ag	107	106.3	8.5	**0.0407**	0.001	3.4	ug/L	76	Standard
	Cd	111	94.4	11.3	**0.0885**	0.005	6.1	mg/L	6	Standard
	Cd	114	588.6	13.1	**0.1629**	0.017	10.6	ug/L	18	Standard
>	In	115	490708.4	0.7				ug/L	507261	Standard
	Sn	118	1108.4	12.3	**0.0991**	0.025	25.0	ug/L	683	Standard
	Sb	123	526.3	24.2	**0.1063**	0.030	28.1	ug/L	446	Standard
	Ba	135	56034.1	1.2	**30.4523**	0.347	1.1	ug/L	28	Standard
	Ce	140	32763.7	1.0				ug/L	33	Standard
>	Tb	159	795920.7	1.3				ug/L	800803	Standard
	Ho	165	1490.1	6.0				ug/L	10	Standard
	Tl	203	1153.0	2.9	**0.1924**	0.005	2.8	ug/L	13	Standard
	Tl	205	1041.7	17.1	**0.2084**	0.028	13.6	ug/L	13	Standard
	Pb	206	9848.9	2.0	**2.1134**	0.031	1.5	ug/L	226	Standard
	Pb	207	8248.6	1.8	**1.9517**	0.020	1.0	ug/L	204	Standard
	Pb	208	34195.5	0.8	**2.0245**	0.016	0.8	ug/L	852	Standard
	U	238	19291.3	1.0	**3.1243**	0.008	0.3	ug/L	13	Standard
>	Bi	209	425624.2	1.2				ug/L	449044	Standard

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Na	23	11.7	24.7	**50.8395**	15.486	30.5	mg/L	2	Standard
Mg	24	70599.2	2.2	**89.3675**	1.571	1.8	mg/L	58	Standard
K	39	696.7	9.4	**2.4576**	0.269	10.9	mg/L	27	Standard
Ca	43	1303.4	8.1	**87.3396**	5.961	6.8	mg/L	20	Standard
Fe	54	3302.4	5.0	**2.4661**	0.145	5.9	mg/L	158	Standard
Fe	57	1820.1	6.9	**5.0122**	0.320	6.4	mg/L	267	Standard
> **Sc-1**	45	41498.4	1.6				mg/L	38815	Standard
Cl	35	155745.8	0.9				ug/L	57611	Standard
Kr	83	2.3	107.9				ug/L	2	Standard
Br	81	21044.6	6.1				ug/L	1617	Standard
P	31	23146.0	0.9				ug/L	19244	Standard
S	34	3535.4	4.1				ug/L	3557	Standard
Sr	88	1208.4	2.4				ug/L	65	Standard
C	12	123.3	49.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	86.6				mg/L	23	Standard
Dy	164	2373.5	4.1				mg/L	13	Standard
Ho-1	165	1490.1	6.0				mg/L	10	Standard
Er	166	1113.4	3.4				mg/L	13	Standard
I	127	189431.0	7.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		144.137	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.782	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	96.737	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	94.785	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606131309
Sample Date/Time: Wednesday, July 06, 2016 13:14:15
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	112009.2	1.2				ug/L	68501	Standard
	Be	9	11.7	89.2	**0.0273**	0.007	25.8	ug/L	8	Standard
	Al	27	60416903.1	0.9	**260.2685**	0.699	0.3	ug/L	1397	Standard
	Sc	45	40617.7	2.9				ug/L	38815	Standard
	Ti	47	233.7	12.0	**0.6551**	0.079	12.0	ug/L	36	Standard
	V	51	2902.2	5.1	**0.2606**	0.020	7.8	ug/L	1284	Standard
	Cr	52	10576.4	0.2	**0.5745**	0.006	1.0	ug/L	6503	Standard
	Cr	53	935.0	8.0	**0.6514**	0.081	12.4	ug/L	492	Standard
	Mn	55	366630.7	1.4	**58.7416**	0.775	1.3	ug/L	841	Standard
	Co	59	1672.1	6.1	**0.2774**	0.017	6.1	ug/L	229	Standard
	Ni	60	5612.4	2.4	**3.1269**	0.078	2.5	ug/L	344	Standard
	Cu	65	3260.7	3.2	**1.8987**	0.055	2.9	ug/L	115	Standard
	Zn	66	2963.3	1.2	**2.7722**	0.047	1.7	ug/L	190	Standard
>	**Ge**	72	417618.5	0.4				ug/L	409858	Standard
	As	75	338.7	3.7	**0.4195**	0.011	2.6	ug/L	-22	Standard
	Se	82	165.1	4.0	**1.4829**	0.064	4.3	ug/L	18	Standard
	Se-1	77	92.0	7.5	**0.5522**	0.098	17.7	ug/L	50	Standard
>	**Ga**	71	76.7	32.2				mg/L	97	Standard
	Rb	85	9524.7	2.8				ug/L	25	Standard
	Y	89	362464.7	1.2				ug/L	376763	Standard
>	**Rh**	103	398.3	9.4				ug/L	20	Standard
	Mo	98	52319.0	0.7	**22.4021**	0.342	1.5	ug/L	51	Standard
	Ag	107	111.0	7.0	**0.0414**	0.001	2.8	ug/L	76	Standard
	Cd	111	66.3	40.6	**0.0737**	0.014	18.5	mg/L	6	Standard
	Cd	114	308.8	11.5	**0.1029**	0.008	7.4	ug/L	18	Standard
>	**In**	115	492839.5	0.9				ug/L	507261	Standard
	Sn	118	665.0	17.0	**0.0148**	0.020	136.3	ug/L	683	Standard
	Sb	123	764.7	12.4	**0.1630**	0.021	13.0	ug/L	446	Standard
	Ba	135	9741.8	0.6	**5.2844**	0.019	0.4	ug/L	28	Standard
	Ce	140	305.0	27.4				ug/L	33	Standard
>	**Tb**	159	798779.4	1.0				ug/L	800803	Standard
	Ho	165	31.7	39.7				ug/L	10	Standard
	Tl	203	781.0	0.8	**0.1406**	0.001	0.7	ug/L	13	Standard
	Tl	205	756.7	10.9	**0.1626**	0.013	8.1	ug/L	13	Standard
	Pb	206	357.0	22.6	**0.0724**	0.017	23.9	ug/L	226	Standard
	Pb	207	331.7	30.7	**0.0771**	0.024	31.2	ug/L	204	Standard
	Pb	208	1314.7	25.2	**0.0776**	0.020	25.3	ug/L	852	Standard
	U	238	20801.9	1.6	**3.3517**	0.050	1.5	ug/L	13	Standard
>	**Bi**	209	427402.4	0.1				ug/L	449044	Standard

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Na	23	13.3	114.6	**62.0110**	82.574	133.2	mg/L	2	Standard
Mg	24	78283.4	0.8	**101.3167**	3.674	3.6	mg/L	58	Standard
K	39	796.7	7.0	**2.8989**	0.304	10.5	mg/L	27	Standard
Ca	43	1360.1	8.5	**93.1611**	5.461	5.9	mg/L	20	Standard
Fe	54	138.6	19.3	**-0.0090**	0.023	257.3	mg/L	158	Standard
Fe	57	1113.4	5.6	**2.8774**	0.101	3.5	mg/L	267	Standard
> **Sc-1**	45	40617.7	2.9				mg/L	38815	Standard
Cl	35	174591.6	1.3				ug/L	57611	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	22737.1	1.6				ug/L	1617	Standard
P	31	22062.7	1.2				ug/L	19244	Standard
S	34	3545.4	4.9				ug/L	3557	Standard
Sr	88	1375.1	2.5				ug/L	65	Standard
C	12	143.3	17.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	23	Standard
Dy	164	35.1	42.2				mg/L	13	Standard
Ho-1	165	31.7	39.7				mg/L	10	Standard
Er	166	33.3	75.5				mg/L	13	Standard
I	127	145904.3	2.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		163.514	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.893	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.157
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.181
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606131310
Sample Date/Time: Wednesday, July 06, 2016 13:17:26
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	106268.1	1.4				ug/L	68501	Standard
	Be	9	63.3	38.9	**0.0644**	0.017	26.8	ug/L	8	Standard
	Al	27	52095911.6	1.1	**236.5686**	3.641	1.5	ug/L	1397	Standard
	Sc	45	39504.8	2.4				ug/L	38815	Standard
	Ti	47	3313.4	1.4	**9.7590**	0.120	1.2	ug/L	36	Standard
	V	51	18247.3	0.4	**2.4270**	0.009	0.4	ug/L	1284	Standard
	Cr	52	21880.5	1.2	**2.2188**	0.034	1.6	ug/L	6503	Standard
	Cr	53	2420.2	1.3	**2.3803**	0.041	1.7	ug/L	492	Standard
	Mn	55	1489117.7	1.3	**241.3594**	3.092	1.3	ug/L	841	Standard
	Co	59	7567.6	1.7	**1.2490**	0.022	1.8	ug/L	229	Standard
	Ni	60	6846.2	2.0	**3.8905**	0.085	2.2	ug/L	344	Standard
	Cu	65	3759.5	2.6	**2.2142**	0.059	2.6	ug/L	115	Standard
	Zn	66	21879.1	1.2	**21.4117**	0.233	1.1	ug/L	190	Standard
>	**Ge**	72	413331.3	0.2				ug/L	409858	Standard
	As	75	501.1	13.5	**0.5781**	0.064	11.1	ug/L	-22	Standard
	Se	82	133.9	9.5	**1.2055**	0.119	9.9	ug/L	18	Standard
	Se-1	77	81.7	12.7	**0.4168**	0.148	35.4	ug/L	50	Standard
>	**Ga**	71	2415.2	7.5				mg/L	97	Standard
	Rb	85	13447.6	2.0				ug/L	25	Standard
	Y	89	375082.1	2.0				ug/L	376763	Standard
>	**Rh**	103	300.0	16.9				ug/L	20	Standard
	Mo	98	77032.6	1.1	**32.9500**	0.312	0.9	ug/L	51	Standard
	Ag	107	104.0	8.3	**0.0403**	0.001	3.4	ug/L	76	Standard
	Cd	111	84.0	6.5	**0.0830**	0.003	3.8	mg/L	6	Standard
	Cd	114	521.9	11.1	**0.1480**	0.011	7.6	ug/L	18	Standard
>	**In**	115	492807.2	0.8				ug/L	507261	Standard
	Sn	118	923.4	10.2	**0.0635**	0.017	26.7	ug/L	683	Standard
	Sb	123	509.4	21.5	**0.1018**	0.026	25.1	ug/L	446	Standard
	Ba	135	49536.5	1.3	**26.8113**	0.563	2.1	ug/L	28	Standard
	Ce	140	27353.0	2.7				ug/L	33	Standard
>	**Tb**	159	798757.9	0.8				ug/L	800803	Standard
	Ho	165	1208.4	4.8				ug/L	10	Standard
	Tl	203	1080.7	2.6	**0.1803**	0.004	2.2	ug/L	13	Standard
	Tl	205	941.7	9.1	**0.1904**	0.013	7.0	ug/L	13	Standard
	Pb	206	8916.3	0.4	**1.8863**	0.006	0.3	ug/L	226	Standard
	Pb	207	7376.8	1.2	**1.7210**	0.025	1.4	ug/L	204	Standard
	Pb	208	30608.2	0.4	**1.7869**	0.009	0.5	ug/L	852	Standard
	U	238	18463.6	1.5	**2.9510**	0.048	1.6	ug/L	13	Standard
>	**Bi**	209	431634.5	0.2				ug/L	449044	Standard

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Na	23	13.3	57.3	**62.5936**	41.262	65.9	mg/L	2	Standard
Mg	24	69025.2	2.0	**91.8053**	2.126	2.3	mg/L	58	Standard
K	39	646.7	2.5	**2.3927**	0.113	4.7	mg/L	27	Standard
Ca	43	1190.0	3.7	**83.7533**	1.325	1.6	mg/L	20	Standard
Fe	54	2913.4	1.1	**2.2771**	0.083	3.6	mg/L	158	Standard
Fe	57	1741.8	2.1	**5.0459**	0.132	2.6	mg/L	267	Standard
> **Sc-1**	45	39504.8	2.4				mg/L	38815	Standard
Cl	35	159194.6	0.7				ug/L	57611	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	17703.7	0.6				ug/L	1617	Standard
P	31	21099.7	2.5				ug/L	19244	Standard
S	34	3588.8	1.7				ug/L	3557	Standard
Sr	88	1331.7	11.3				ug/L	65	Standard
C	12	116.7	9.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	43.3	13.3				mg/L	23	Standard
Dy	164	2016.1	16.6				mg/L	13	Standard
Ho-1	165	1208.4	4.8				mg/L	10	Standard
Er	166	920.0	8.6				mg/L	13	Standard
I	127	174842.2	7.9				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		155.133	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.847	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	97.151	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.123	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606131311
Sample Date/Time: Wednesday, July 06, 2016 13:20:37
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	118945.1	1.5				ug/L	68501	Standard
	Be	9	20.0	75.0	**0.0321**	0.009	29.1	ug/L	8	Standard
	Al	27	59847300.9	2.0	**242.8152**	6.040	2.5	ug/L	1397	Standard
	Sc	45	40133.1	1.7				ug/L	38815	Standard
	Ti	47	250.0	3.8	**0.7024**	0.019	2.7	ug/L	36	Standard
	V	51	2763.5	2.9	**0.2410**	0.007	2.7	ug/L	1284	Standard
	Cr	52	10665.1	1.1	**0.5862**	0.006	1.1	ug/L	6503	Standard
	Cr	53	901.7	5.9	**0.6125**	0.051	8.3	ug/L	492	Standard
	Mn	55	321677.0	3.2	**51.4864**	0.989	1.9	ug/L	841	Standard
	Co	59	1652.1	4.6	**0.2739**	0.009	3.4	ug/L	229	Standard
	Ni	60	5762.4	1.4	**3.2127**	0.047	1.5	ug/L	344	Standard
	Cu	65	3074.6	2.7	**1.7884**	0.032	1.8	ug/L	115	Standard
	Zn	66	2723.6	3.0	**2.5374**	0.093	3.7	ug/L	190	Standard
>	**Ge**	72	417885.3	1.3				ug/L	409858	Standard
	As	75	346.6	6.8	**0.4267**	0.019	4.6	ug/L	-22	Standard
	Se	82	150.0	1.7	**1.3415**	0.014	1.1	ug/L	18	Standard
	Se-1	77	80.3	7.3	**0.3848**	0.073	18.9	ug/L	50	Standard
>	**Ga**	71	56.7	25.5				mg/L	97	Standard
	Rb	85	9339.5	2.6				ug/L	25	Standard
	Y	89	365791.3	0.7				ug/L	376763	Standard
>	**Rh**	103	375.0	15.0				ug/L	20	Standard
	Mo	98	48799.1	2.4	**20.6077**	0.295	1.4	ug/L	51	Standard
	Ag	107	106.3	18.5	**0.0404**	0.003	7.0	ug/L	76	Standard
	Cd	111	51.0	31.1	**0.0653**	0.008	11.7	mg/L	6	Standard
	Cd	114	304.0	25.3	**0.1009**	0.016	15.7	ug/L	18	Standard
>	**In**	115	499809.1	2.0				ug/L	507261	Standard
	Sn	118	658.3	6.1	**0.0119**	0.005	43.2	ug/L	683	Standard
	Sb	123	517.5	16.7	**0.1024**	0.023	22.2	ug/L	446	Standard
	Ba	135	9295.5	1.5	**4.9733**	0.035	0.7	ug/L	28	Standard
	Ce	140	326.7	10.2				ug/L	33	Standard
>	**Tb**	159	803773.3	0.9				ug/L	800803	Standard
	Ho	165	38.3	66.9				ug/L	10	Standard
	Tl	203	761.0	2.1	**0.1360**	0.001	1.0	ug/L	13	Standard
	Tl	205	746.7	8.7	**0.1588**	0.009	5.9	ug/L	13	Standard
	Pb	206	396.3	12.6	**0.0792**	0.010	12.4	ug/L	226	Standard
	Pb	207	324.7	4.8	**0.0741**	0.003	4.6	ug/L	204	Standard
	Pb	208	1389.7	4.7	**0.0805**	0.003	3.8	ug/L	852	Standard
	U	238	20230.2	0.9	**3.2026**	0.028	0.9	ug/L	13	Standard
>	**Bi**	209	435285.7	0.8				ug/L	449044	Standard

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Na	23	8.3	69.3	**35.2289**	30.621	86.9	mg/L	2	Standard
Mg	24	76150.9	0.8	**99.6881**	0.997	1.0	mg/L	58	Standard
K	39	673.3	8.3	**2.4572**	0.258	10.5	mg/L	27	Standard
Ca	43	1470.1	6.0	**102.1100**	5.109	5.0	mg/L	20	Standard
Fe	54	163.6	6.0	**0.0122**	0.008	61.6	mg/L	158	Standard
Fe	57	1090.0	8.3	**2.8493**	0.334	11.7	mg/L	267	Standard
> **Sc-1**	45	40133.1	1.7				mg/L	38815	Standard
Cl	35	175348.2	1.1				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	22723.7	4.9				ug/L	1617	Standard
P	31	22189.6	0.9				ug/L	19244	Standard
S	34	3623.8	1.4				ug/L	3557	Standard
Sr	88	1358.4	7.2				ug/L	65	Standard
C	12	133.3	38.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	49.5				mg/L	23	Standard
Dy	164	55.7	38.2				mg/L	13	Standard
Ho-1	165	38.3	66.9				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	135084.6	1.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		173.640	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.959	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.531	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.936	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606131312
Sample Date/Time: Wednesday, July 06, 2016 13:23:49
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74687.0	2.1				ug/L	68501	Standard
	Be	9	21.7	58.1	**0.0412**	0.012	30.1	ug/L	8	Standard
	Al	27	121226.9	4.1	**0.8180**	0.021	2.6	ug/L	1397	Standard
	Sc	45	46195.4	5.0				ug/L	38815	Standard
	Ti	47	1765.8	3.6	**5.0716**	0.166	3.3	ug/L	36	Standard
	V	51	952242.6	1.1	**131.0501**	0.792	0.6	ug/L	1284	Standard
	Cr	52	25163.5	1.1	**2.6112**	0.016	0.6	ug/L	6503	Standard
	Cr	53	3345.4	2.9	**3.3642**	0.111	3.3	ug/L	492	Standard
	Mn	55	22524.4	1.1	**3.4752**	0.031	0.9	ug/L	841	Standard
	Co	59	1867.8	4.0	**0.3055**	0.010	3.4	ug/L	229	Standard
	Ni	60	2889.9	0.3	**1.5131**	0.005	0.3	ug/L	344	Standard
	Cu	65	15427.2	0.5	**8.9242**	0.052	0.6	ug/L	115	Standard
	Zn	66	2837.6	3.0	**2.6163**	0.082	3.1	ug/L	190	Standard
>	**Ge**	72	422725.3	0.6				ug/L	409858	Standard
	As	75	83342.9	0.8	**78.0495**	0.213	0.3	ug/L	-22	Standard
	Se	82	1406.5	2.7	**12.8586**	0.427	3.3	ug/L	18	Standard
	Se-1	77	976.4	1.2	**12.9889**	0.247	1.9	ug/L	50	Standard
>	**Ga**	71	7822.0	4.1				mg/L	97	Standard
	Rb	85	9009.3	3.0				ug/L	25	Standard
	Y	89	365311.7	1.0				ug/L	376763	Standard
>	**Rh**	103	25.0	103.9				ug/L	20	Standard
	Mo	98	102838.5	0.2	**43.0255**	0.171	0.4	ug/L	51	Standard
	Ag	107	207.7	3.4	**0.0566**	0.001	2.0	ug/L	76	Standard
	Cd	111	-42.9	18.2	**0.0176**	0.004	22.6	mg/L	6	Standard
	Cd	114	287.6	3.5	**0.0971**	0.002	2.3	ug/L	18	Standard
>	**In**	115	503572.6	0.2				ug/L	507261	Standard
	Sn	118	1271.7	5.8	**0.1239**	0.014	11.4	ug/L	683	Standard
	Sb	123	6992.3	1.3	**1.6218**	0.024	1.5	ug/L	446	Standard
	Ba	135	6974.3	1.1	**3.7072**	0.039	1.0	ug/L	28	Standard
	Ce	140	9868.2	2.8				ug/L	33	Standard
>	**Tb**	159	803443.7	0.1				ug/L	800803	Standard
	Ho	165	190.0	16.4				ug/L	10	Standard
	Tl	203	56.3	5.7	**0.0407**	0.000	1.1	ug/L	13	Standard
	Tl	205	45.0	48.4	**0.0493**	0.003	6.6	ug/L	13	Standard
	Pb	206	1400.1	2.2	**0.2825**	0.008	2.8	ug/L	226	Standard
	Pb	207	1130.4	1.0	**0.2536**	0.002	0.8	ug/L	204	Standard
	Pb	208	4754.6	0.4	**0.2680**	0.003	1.1	ug/L	852	Standard
	U	238	139.3	1.5	**0.0638**	0.000	0.3	ug/L	13	Standard
>	**Bi**	209	447272.3	0.8				ug/L	449044	Standard

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Na	23	1.7	173.2	**-1.5275**	12.566	822.6	mg/L	2	Standard
Mg	24	80273.8	0.4	**91.4367**	4.664	5.1	mg/L	58	Standard
K	39	151.7	22.0	**0.3638**	0.088	24.1	mg/L	27	Standard
Ca	43	53.3	28.6	**2.0171**	1.102	54.7	mg/L	20	Standard
Fe	54	330.9	19.8	**0.1145**	0.058	50.5	mg/L	158	Standard
Fe	57	306.7	7.4	**0.1824**	0.050	27.7	mg/L	267	Standard
> **Sc-1**	45	46195.4	5.0				mg/L	38815	Standard
Cl	35	70691.9	1.4				ug/L	57611	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	6874.9	2.4				ug/L	1617	Standard
P	31	43087.9	1.6				ug/L	19244	Standard
S	34	3130.3	1.7				ug/L	3557	Standard
Sr	88	113.3	11.1				ug/L	65	Standard
C	12	116.7	38.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	20.0				mg/L	23	Standard
Dy	164	362.7	17.1				mg/L	13	Standard
Ho-1	165	190.0	16.4				mg/L	10	Standard
Er	166	153.3	7.5				mg/L	13	Standard
I	127	18636.5	0.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.030	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.139	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.273
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.605
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Upper, S, EEE	V	51	

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Method 6020 - Summary Report

Sample ID: L1606131313
Sample Date/Time: Wednesday, July 06, 2016 13:27:00
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74881.2	0.3				ug/L	68501	Standard
	Be	9	18.3	56.8	**0.0379**	0.010	27.6	ug/L	8	Standard
	Al	27	15759.9	6.9	**0.1366**	0.007	5.1	ug/L	1397	Standard
	Sc	45	44047.3	0.7				ug/L	38815	Standard
	Ti	47	750.4	1.3	**2.1655**	0.009	0.4	ug/L	36	Standard
	V	51	807233.0	1.0	**112.4283**	1.823	1.6	ug/L	1284	Standard
	Cr	52	22355.5	1.3	**2.2538**	0.026	1.1	ug/L	6503	Standard
	Cr	53	2878.6	7.2	**2.8773**	0.265	9.2	ug/L	492	Standard
	Mn	55	2539.5	0.9	**0.3116**	0.003	1.1	ug/L	841	Standard
	Co	59	1098.0	3.2	**0.1840**	0.005	2.8	ug/L	229	Standard
	Ni	60	2191.8	3.9	**1.1252**	0.061	5.4	ug/L	344	Standard
	Cu	65	13147.4	0.4	**7.6957**	0.046	0.6	ug/L	115	Standard
	Zn	66	1622.1	3.7	**1.4659**	0.055	3.8	ug/L	190	Standard
>	**Ge**	72	417667.4	0.9				ug/L	409858	Standard
	As	75	65646.2	1.0	**62.2459**	0.908	1.5	ug/L	-22	Standard
	Se	82	1281.5	2.7	**11.8523**	0.347	2.9	ug/L	18	Standard
	Se-1	77	877.4	3.0	**11.7424**	0.290	2.5	ug/L	50	Standard
>	**Ga**	71	7043.3	2.2				mg/L	97	Standard
	Rb	85	6473.1	4.8				ug/L	25	Standard
	Y	89	361539.6	1.0				ug/L	376763	Standard
>	**Rh**	103	35.0	28.6				ug/L	20	Standard
	Mo	98	91857.5	1.2	**38.8302**	0.319	0.8	ug/L	51	Standard
	Ag	107	120.0	5.2	**0.0427**	0.001	2.5	ug/L	76	Standard
	Cd	111	-68.2	22.5	**0.0044**	0.008	181.8	mg/L	6	Standard
	Cd	114	168.6	5.8	**0.0727**	0.002	2.6	ug/L	18	Standard
>	**In**	115	498500.3	1.2				ug/L	507261	Standard
	Sn	118	985.0	10.5	**0.0729**	0.018	24.8	ug/L	683	Standard
	Sb	123	5971.7	3.5	**1.3968**	0.062	4.5	ug/L	446	Standard
	Ba	135	5602.4	1.3	**3.0115**	0.051	1.7	ug/L	28	Standard
	Ce	140	348.3	13.0				ug/L	33	Standard
>	**Tb**	159	797835.4	0.2				ug/L	800803	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	31.3	7.4	**0.0375**	0.000	0.8	ug/L	13	Standard
	Tl	205	36.7	34.3	**0.0482**	0.002	4.0	ug/L	13	Standard
	Pb	206	352.7	5.6	**0.0690**	0.004	5.6	ug/L	226	Standard
	Pb	207	319.7	1.3	**0.0718**	0.001	1.6	ug/L	204	Standard
	Pb	208	1334.7	4.5	**0.0761**	0.004	4.8	ug/L	852	Standard
	U	238	71.3	19.4	**0.0536**	0.002	4.0	ug/L	13	Standard
>	**Bi**	209	442170.6	0.3				ug/L	449044	Standard

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Na	23	1.7	173.2	**-0.8330**	13.769	1652.9	mg/L	2	Standard
Mg	24	73682.1	1.9	**87.8782**	2.088	2.4	mg/L	58	Standard
K	39	131.7	28.8	**0.3201**	0.130	40.5	mg/L	27	Standard
Ca	43	48.3	39.2	**1.8220**	1.221	67.0	mg/L	20	Standard
Fe	54	173.2	27.4	**0.0076**	0.035	465.1	mg/L	158	Standard
Fe	57	268.3	19.1	**0.1117**	0.154	137.8	mg/L	267	Standard
> **Sc-1**	45	44047.3	0.7				mg/L	38815	Standard
Cl	35	68623.1	1.0				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	6154.6	8.4				ug/L	1617	Standard
P	31	39404.5	1.6				ug/L	19244	Standard
S	34	3313.7	8.1				ug/L	3557	Standard
Sr	88	98.3	14.7				ug/L	65	Standard
C	12	103.3	59.1				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	93.3	27.0				mg/L	23	Standard
Dy	164	16.0	73.0				mg/L	13	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	16884.4	1.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.314	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.905	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.273
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.469
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Upper, S, EEE	V	51	

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Method 6020 - Summary Report

Sample ID: L1606131314
Sample Date/Time: Wednesday, July 06, 2016 13:30:12
Number of Replicates: 3
Autosampler Position: 346
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75656.9	2.8				ug/L	68501	Standard
	Be	9	15.0	33.3	**0.0345**	0.005	15.6	ug/L	8	Standard
	Al	27	14080.0	14.5	**0.1247**	0.011	8.5	ug/L	1397	Standard
	Sc	45	41217.7	1.6				ug/L	38815	Standard
	Ti	47	52.3	16.0	**0.1193**	0.023	19.3	ug/L	36	Standard
	V	51	1921.9	1.9	**0.1137**	0.005	4.1	ug/L	1284	Standard
	Cr	52	10025.0	1.0	**0.4416**	0.001	0.3	ug/L	6503	Standard
	Cr	53	720.0	11.6	**0.3743**	0.092	24.7	ug/L	492	Standard
	Mn	55	2755.6	1.7	**0.3296**	0.011	3.2	ug/L	841	Standard
	Co	59	220.0	2.7	**0.0399**	0.001	3.1	ug/L	229	Standard
	Ni	60	727.0	7.2	**0.2514**	0.026	10.3	ug/L	344	Standard
	Cu	65	392.3	0.5	**0.2081**	0.003	1.5	ug/L	115	Standard
	Zn	66	1867.1	2.7	**1.6357**	0.048	2.9	ug/L	190	Standard
>	**Ge**	72	434092.3	1.0				ug/L	409858	Standard
	As	75	-44.4	23.2	**0.0584**	0.009	16.0	ug/L	-22	Standard
	Se	82	16.6	20.7	**0.0974**	0.032	32.9	ug/L	18	Standard
	Se-1	77	53.7	22.5	**-0.0223**	0.171	769.3	ug/L	50	Standard
>	**Ga**	71	60.0					mg/L	97	Standard
	Rb	85	51.7	20.1				ug/L	25	Standard
	Y	89	374010.2	1.0				ug/L	376763	Standard
>	**Rh**	103	26.7	39.0				ug/L	20	Standard
	Mo	98	123.9	8.7	**0.1214**	0.005	3.7	ug/L	51	Standard
	Ag	107	66.0	4.0	**0.0334**	0.000	1.2	ug/L	76	Standard
	Cd	111	8.1	26.0	**0.0433**	0.001	2.4	mg/L	6	Standard
	Cd	114	20.3	63.2	**0.0414**	0.003	6.3	ug/L	18	Standard
>	**In**	115	522826.6	0.6				ug/L	507261	Standard
	Sn	118	671.7	15.4	**0.0090**	0.019	209.6	ug/L	683	Standard
	Sb	123	373.8	29.8	**0.0643**	0.026	39.9	ug/L	446	Standard
	Ba	135	367.3	10.7	**0.2030**	0.020	10.1	ug/L	28	Standard
	Ce	140	70.0	24.7				ug/L	33	Standard
>	**Tb**	159	816297.7	0.4				ug/L	800803	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	12.7	43.5	**0.0349**	0.001	2.0	ug/L	13	Standard
	Tl	205	10.0	86.6	**0.0440**	0.001	2.8	ug/L	13	Standard
	Pb	206	293.7	4.0	**0.0530**	0.003	4.9	ug/L	226	Standard
	Pb	207	253.3	4.7	**0.0531**	0.003	5.5	ug/L	204	Standard
	Pb	208	1091.0	0.9	**0.0584**	0.000	0.3	ug/L	852	Standard
	U	238	6.3	39.7	**0.0435**	0.000	0.8	ug/L	13	Standard
>	**Bi**	209	471129.2	0.7				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	81.7	9.4	**0.0659**	0.011	17.4	mg/L	58	Standard
K	39	40.0	33.1	**0.0087**	0.051	587.7	mg/L	27	Standard
Ca	43	40.0	33.1	**1.4722**	0.959	65.1	mg/L	20	Standard
Fe	54	165.4	13.6	**0.0102**	0.017	169.3	mg/L	158	Standard
Fe	57	263.3	9.6	**0.1498**	0.077	51.2	mg/L	267	Standard
> **Sc-1**	45	41217.7	1.6				mg/L	38815	Standard
Cl	35	74398.3	2.1				ug/L	57611	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	1870.1	8.9				ug/L	1617	Standard
P	31	20320.3	3.0				ug/L	19244	Standard
S	34	3478.7	2.9				ug/L	3557	Standard
Sr	88	58.3	13.1				ug/L	65	Standard
C	12	96.7	26.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	50.0				mg/L	23	Standard
Dy	164	9.4	186.5				mg/L	13	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	11277.5	2.0				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		110.446	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		105.913	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.069
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.918
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 13:33:25
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71032.9	3.2				ug/L	68501	Standard
	Be	9	49644.6	3.8	**52.7590**	0.376	0.7	ug/L	8	Standard
	Al	27	7276045.0	3.6	**49.4520**	0.759	1.5	ug/L	1397	Standard
	Sc	45	40617.7	1.7				ug/L	38815	Standard
	Ti	47	36592.1	1.5	**104.2643**	1.312	1.3	ug/L	36	Standard
	V	51	380028.6	1.4	**51.5285**	0.926	1.8	ug/L	1284	Standard
	Cr	52	378060.1	1.4	**51.6245**	0.410	0.8	ug/L	6503	Standard
	Cr	53	45820.9	0.9	**50.7151**	0.800	1.6	ug/L	492	Standard
	Mn	55	335783.4	1.7	**52.4367**	0.457	0.9	ug/L	841	Standard
	Co	59	330610.2	0.8	**52.4262**	0.501	1.0	ug/L	229	Standard
	Ni	60	89641.1	1.9	**50.9842**	0.470	0.9	ug/L	344	Standard
	Cu	65	88949.4	1.9	**50.8351**	0.479	0.9	ug/L	115	Standard
	Zn	66	54236.6	1.5	**51.3717**	0.389	0.8	ug/L	190	Standard
>	**Ge**	72	428368.8	1.0				ug/L	409858	Standard
	As	75	55183.0	1.9	**51.0293**	0.514	1.0	ug/L	-22	Standard
	Se	82	5609.7	2.2	**50.7497**	0.648	1.3	ug/L	18	Standard
	Se-1	77	3726.5	0.8	**51.0205**	0.660	1.3	ug/L	50	Standard
>	**Ga**	71	75.0	26.7				mg/L	97	Standard
	Rb	85	798.4	0.7				ug/L	25	Standard
	Y	89	365913.3	1.8				ug/L	376763	Standard
>	**Rh**	103	31.7	45.6				ug/L	20	Standard
	Mo	98	252415.2	0.3	**103.5648**	0.413	0.4	ug/L	51	Standard
	Ag	107	322419.8	1.3	**51.0968**	0.426	0.8	ug/L	76	Standard
	Cd	111	102425.7	0.7	**51.0729**	0.119	0.2	mg/L	6	Standard
	Cd	114	248750.6	1.3	**50.7350**	0.434	0.9	ug/L	18	Standard
>	**In**	115	512998.2	0.5				ug/L	507261	Standard
	Sn	118	281858.1	1.8	**50.8022**	0.706	1.4	ug/L	683	Standard
	Sb	123	224590.4	2.0	**51.7546**	0.851	1.6	ug/L	446	Standard
	Ba	135	96967.3	0.4	**50.3975**	0.124	0.2	ug/L	28	Standard
	Ce	140	76.7	22.9				ug/L	33	Standard
>	**Tb**	159	807610.1	1.2				ug/L	800803	Standard
	Ho	165	13.3	108.3				ug/L	10	Standard
	Tl	203	402371.9	0.7	**51.2061**	0.338	0.7	ug/L	13	Standard
	Tl	205	361232.2	0.6	**53.0904**	0.997	1.9	ug/L	13	Standard
	Pb	206	258336.1	0.4	**51.2021**	0.466	0.9	ug/L	226	Standard
	Pb	207	236173.9	1.0	**51.5463**	0.597	1.2	ug/L	204	Standard
	Pb	208	955448.1	0.9	**52.1465**	0.509	1.0	ug/L	852	Standard
	U	238	353176.6	0.8	**52.0549**	0.397	0.8	ug/L	13	Standard
>	**Bi**	209	461695.2	1.3				ug/L	449044	Standard

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Na	23	1.7	173.2	**-0.0060**	15.20	254926.2	mg/L	2	Standard
Mg	24	3982.2	7.2	**5.1131**	0.347	6.8	mg/L	58	Standard
K	39	1251.7	4.8	**4.6283**	0.271	5.8	mg/L	27	Standard
Ca	43	98.3	10.6	**5.5607**	0.773	13.9	mg/L	20	Standard
Fe	54	6182.6	4.1	**4.8281**	0.276	5.7	mg/L	158	Standard
Fe	57	1796.8	8.3	**5.0597**	0.384	7.6	mg/L	267	Standard
Sc-1	45	40617.7	1.7				mg/L	38815	Standard
Cl	35	71016.7	1.7				ug/L	57611	Standard
Kr	83	1.7	124.9				ug/L	2	Standard
Br	81	1816.8	11.3				ug/L	1617	Standard
P	31	20987.9	2.4				ug/L	19244	Standard
S	34	3898.8	3.0				ug/L	3557	Standard
Sr	88	63.3	88.7				ug/L	65	Standard
C	12	73.3	20.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	23	Standard
Dy	164	12.5	122.8				mg/L	13	Standard
Ho-1	165	13.3	108.3				mg/L	10	Standard
Er	166	16.7	69.3				mg/L	13	Standard
I	127	9928.3	0.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	105.518		
Al	27	98.904		
Sc	45			
Ti	47	104.264		
V	51	103.057		
Cr	52	103.249		
Cr	53			
Mn	55	104.873		
Co	59	104.852		
Ni	60	101.968		
Cu	65	101.670		
Zn	66	102.743		
Ge	72		104.516	
As	75	102.059		
Se	82	101.499		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	103.565		
Ag	107	102.194		
Cd	111	102.146		
Cd	114			
In	115			101.131
Sn	118	101.604		
Sb	123	103.509		
Ba	135	100.795		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.412		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.293		
U	238	104.110		
Bi	209			102.817
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 13:36:36
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70170.6	3.6				ug/L	68501	Standard
	Be	9	20.0	66.1	**0.0408**	0.014	34.6	ug/L	8	Standard
	Al	27	4097.2	22.8	**0.0631**	0.005	8.6	ug/L	1397	Standard
	Sc	45	40888.4	1.6				ug/L	38815	Standard
	Ti	47	36.7	15.0	**0.0775**	0.016	20.6	ug/L	36	Standard
	V	51	1298.2	6.1	**0.0337**	0.009	26.1	ug/L	1284	Standard
	Cr	52	6730.8	1.5	**0.0096**	0.023	239.8	ug/L	6503	Standard
	Cr	53	421.7	5.3	**0.0558**	0.029	51.7	ug/L	492	Standard
	Mn	55	951.7	0.7	**0.0542**	0.001	2.6	ug/L	841	Standard
	Co	59	222.3	4.9	**0.0410**	0.001	3.3	ug/L	229	Standard
	Ni	60	546.3	4.0	**0.1564**	0.009	5.7	ug/L	344	Standard
	Cu	65	169.3	14.7	**0.0843**	0.015	17.4	ug/L	115	Standard
	Zn	66	237.0	4.9	**0.1134**	0.013	11.2	ug/L	190	Standard
>	**Ge**	72	425017.2	1.2				ug/L	409858	Standard
	As	75	-56.5	37.0	**0.0462**	0.020	43.5	ug/L	-22	Standard
	Se	82	18.8	28.9	**0.1200**	0.050	41.3	ug/L	18	Standard
	Se-1	77	56.7	22.1	**0.0358**	0.184	513.5	ug/L	50	Standard
>	**Ga**	71	38.3	32.8				mg/L	97	Standard
	Rb	85	21.7	58.1				ug/L	25	Standard
	Y	89	373106.6	0.9				ug/L	376763	Standard
>	**Rh**	103	11.7	24.7				ug/L	20	Standard
	Mo	98	207.2	6.5	**0.1549**	0.006	3.9	ug/L	51	Standard
	Ag	107	99.7	6.4	**0.0386**	0.001	2.3	ug/L	76	Standard
	Cd	111	12.3	44.5	**0.0454**	0.003	5.9	mg/L	6	Standard
	Cd	114	43.6	27.2	**0.0461**	0.002	5.3	ug/L	18	Standard
>	**In**	115	523036.2	0.7				ug/L	507261	Standard
	Sn	118	858.4	20.1	**0.0421**	0.032	74.9	ug/L	683	Standard
	Sb	123	696.7	34.3	**0.1374**	0.055	40.1	ug/L	446	Standard
	Ba	135	33.3	29.6	**0.0327**	0.005	15.2	ug/L	28	Standard
	Ce	140	15.0	100.0				ug/L	33	Standard
>	**Tb**	159	811648.4	1.8				ug/L	800803	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	53.3	18.0	**0.0400**	0.001	3.2	ug/L	13	Standard
	Tl	205	50.0	43.6	**0.0498**	0.003	6.2	ug/L	13	Standard
	Pb	206	260.0	8.8	**0.0469**	0.005	10.7	ug/L	226	Standard
	Pb	207	224.7	4.5	**0.0473**	0.002	3.4	ug/L	204	Standard
	Pb	208	928.0	6.1	**0.0501**	0.003	6.3	ug/L	852	Standard
	U	238	46.7	34.8	**0.0494**	0.002	5.0	ug/L	13	Standard
>	**Bi**	209	467536.0	1.3				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	68.3	33.0	**0.0494**	0.029	58.3	mg/L	58	Standard
K	39	21.7	74.2	**-0.0604**	0.059	97.8	mg/L	27	Standard
Ca	43	16.7	34.6	**-0.1281**	0.396	308.9	mg/L	20	Standard
Fe	54	142.5	13.4	**-0.0070**	0.016	223.0	mg/L	158	Standard
Fe	57	210.0	13.3	**-0.0128**	0.088	687.9	mg/L	267	Standard
> **Sc-1**	45	40888.4	1.6				mg/L	38815	Standard
Cl	35	70304.7	0.6				ug/L	57611	Standard
Kr	83	3.0	57.7				ug/L	2	Standard
Br	81	1736.8	5.0				ug/L	1617	Standard
P	31	20357.0	2.1				ug/L	19244	Standard
S	34	3848.8	1.9				ug/L	3557	Standard
Sr	88	75.0	40.6				ug/L	65	Standard
C	12	76.7	19.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	89.2				mg/L	23	Standard
Dy	164	6.5	179.6				mg/L	13	Standard
Ho-1	165	8.3	91.7				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	8040.5	0.6				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.699	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.110
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.118
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Tl	203	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBS M3 WG574881-02
Sample Date/Time: Wednesday, July 06, 2016 13:40:17
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68772.5	2.8				ug/L	68501	Standard
	Be	9	26.7	57.3	**0.0485**	0.016	33.3	ug/L	8	Standard
	Al	27	26492.7	43.2	**0.2195**	0.074	33.7	ug/L	1397	Standard
	Sc	45	40814.9	1.9				ug/L	38815	Standard
	Ti	47	68.7	38.8	**0.1678**	0.076	45.2	ug/L	36	Standard
	V	51	1431.9	6.0	**0.0505**	0.012	23.3	ug/L	1284	Standard
	Cr	52	8678.2	2.2	**0.2724**	0.025	9.3	ug/L	6503	Standard
	Cr	53	668.3	1.7	**0.3270**	0.012	3.7	ug/L	492	Standard
	Mn	55	1096.7	5.7	**0.0756**	0.010	12.7	ug/L	841	Standard
	Co	59	218.7	2.3	**0.0401**	0.001	2.1	ug/L	229	Standard
	Ni	60	676.7	1.4	**0.2282**	0.006	2.5	ug/L	344	Standard
	Cu	65	164.7	17.5	**0.0808**	0.016	20.4	ug/L	115	Standard
	Zn	66	1225.4	4.5	**1.0496**	0.052	5.0	ug/L	190	Standard
>	**Ge**	72	428471.9	0.1				ug/L	409858	Standard
	As	75	-34.2	102.1	**0.0673**	0.032	47.9	ug/L	-22	Standard
	Se	82	14.4	31.5	**0.0792**	0.041	51.8	ug/L	18	Standard
	Se-1	77	60.7	4.8	**0.0838**	0.040	47.3	ug/L	50	Standard
>	**Ga**	71	43.3	17.6				mg/L	97	Standard
	Rb	85	50.0	36.1				ug/L	25	Standard
	Y	89	374156.8	0.0				ug/L	376763	Standard
>	**Rh**	103	23.3	32.7				ug/L	20	Standard
	Mo	98	104.8	6.5	**0.1142**	0.003	2.3	ug/L	51	Standard
	Ag	107	77.3	10.5	**0.0353**	0.001	3.5	ug/L	76	Standard
	Cd	111	15.8	51.6	**0.0472**	0.004	8.5	mg/L	6	Standard
	Cd	114	30.5	128.3	**0.0435**	0.008	18.1	ug/L	18	Standard
>	**In**	115	517117.7	0.3				ug/L	507261	Standard
	Sn	118	726.7	15.9	**0.0202**	0.021	104.7	ug/L	683	Standard
	Sb	123	449.3	32.2	**0.0824**	0.033	40.5	ug/L	446	Standard
	Ba	135	85.3	19.1	**0.0597**	0.008	13.9	ug/L	28	Standard
	Ce	140	66.7	18.9				ug/L	33	Standard
>	**Tb**	159	816139.1	1.5				ug/L	800803	Standard
	Ho	165	13.3	57.3				ug/L	10	Standard
	Tl	203	45.0	46.2	**0.0391**	0.003	6.8	ug/L	13	Standard
	Tl	205	38.3	7.5	**0.0482**	0.000	0.8	ug/L	13	Standard
	Pb	206	268.0	2.2	**0.0490**	0.001	2.8	ug/L	226	Standard
	Pb	207	225.0	13.5	**0.0479**	0.007	14.2	ug/L	204	Standard
	Pb	208	928.3	1.6	**0.0506**	0.000	0.9	ug/L	852	Standard
	U	238	21.7	42.9	**0.0458**	0.001	3.0	ug/L	13	Standard
>	**Bi**	209	462790.3	1.0				ug/L	449044	Standard

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Na	23	3.3	173.2	**8.7117**	30.301	347.8	mg/L	2	Standard
Mg	24	56.7	44.4	**0.0345**	0.033	94.3	mg/L	58	Standard
K	39	21.7	74.2	**-0.0592**	0.062	105.0	mg/L	27	Standard
Ca	43	21.7	26.6	**0.2183**	0.387	177.5	mg/L	20	Standard
Fe	54	122.4	12.5	**-0.0227**	0.013	56.3	mg/L	158	Standard
Fe	57	196.7	8.2	**-0.0536**	0.057	106.8	mg/L	267	Standard
> **Sc-1**	45	40814.9	1.9				mg/L	38815	Standard
Cl	35	70365.0	0.8				ug/L	57611	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	1806.8	3.1				ug/L	1617	Standard
P	31	20176.8	1.0				ug/L	19244	Standard
S	34	3830.5	2.6				ug/L	3557	Standard
Sr	88	81.7	30.2				ug/L	65	Standard
C	12	63.3	48.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	23	Standard
Dy	164	9.2	114.0				mg/L	13	Standard
Ho-1	165	13.3	57.3				mg/L	10	Standard
Er	166	16.7	91.7				mg/L	13	Standard
I	127	13672.8	1.9				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		100.396	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		104.542	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: PBS M3 WG574881-02
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Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		101.943
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		103.061
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBS M3 WG574881-02
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Method 6020 - Summary Report

Sample ID: LCSS M3 WG574881-03
Sample Date/Time: Wednesday, July 06, 2016 13:43:29
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68990.1	1.8				ug/L	68501	Standard
	Be	9	24376.3	2.4	**26.6849**	0.365	1.4	ug/L	8	Standard
	Al	27	11726.2	9.6	**0.1171**	0.008	6.9	ug/L	1397	Standard
	Sc	45	40908.5	1.7				ug/L	38815	Standard
	Ti	47	51.0	12.2	**0.1170**	0.017	14.3	ug/L	36	Standard
	V	51	192004.5	0.9	**25.8862**	0.288	1.1	ug/L	1284	Standard
	Cr	52	196880.6	0.7	**26.3586**	0.223	0.8	ug/L	6503	Standard
	Cr	53	23802.0	3.1	**26.0705**	1.067	4.1	ug/L	492	Standard
	Mn	55	172021.4	0.9	**26.7397**	0.133	0.5	ug/L	841	Standard
	Co	59	167427.5	2.0	**26.4724**	0.266	1.0	ug/L	229	Standard
	Ni	60	46631.0	1.6	**26.3691**	0.164	0.6	ug/L	344	Standard
	Cu	65	46298.6	0.5	**26.3794**	0.223	0.8	ug/L	115	Standard
	Zn	66	28692.8	0.8	**27.0456**	0.053	0.2	ug/L	190	Standard
>	Ge	72	429617.8	1.0				ug/L	409858	Standard
	As	75	28228.4	0.8	**26.0779**	0.089	0.3	ug/L	-22	Standard
	Se	82	2890.3	2.2	**26.0545**	0.832	3.2	ug/L	18	Standard
	Se-1	77	1885.8	3.0	**25.3705**	0.938	3.7	ug/L	50	Standard
>	Ga	71	55.0	24.1				mg/L	97	Standard
	Rb	85	66.7	51.1				ug/L	25	Standard
	Y	89	370054.8	1.0				ug/L	376763	Standard
>	Rh	103	15.0	57.7				ug/L	20	Standard
	Mo	98	60.8	28.4	**0.0961**	0.007	7.2	ug/L	51	Standard
	Ag	107	164778.6	1.2	**25.7565**	0.385	1.5	ug/L	76	Standard
	Cd	111	52128.6	0.9	**25.6456**	0.390	1.5	mg/L	6	Standard
	Cd	114	126625.7	0.7	**25.4800**	0.270	1.1	ug/L	18	Standard
>	In	115	520385.2	0.7				ug/L	507261	Standard
	Sn	118	611.7	22.6	**-0.0013**	0.024	1875.5	ug/L	683	Standard
	Sb	123	117175.1	0.7	**26.6109**	0.351	1.3	ug/L	446	Standard
	Ba	135	49858.9	0.6	**25.5546**	0.293	1.1	ug/L	28	Standard
	Ce	140	111.7	40.6				ug/L	33	Standard
>	Tb	159	817750.1	0.7				ug/L	800803	Standard
	Ho	165	13.3	57.3				ug/L	10	Standard
	Tl	203	204537.7	0.5	**25.7502**	0.134	0.5	ug/L	13	Standard
	Tl	205	183705.4	1.0	**26.7105**	0.250	0.9	ug/L	13	Standard
	Pb	206	134972.9	1.2	**26.4449**	0.332	1.3	ug/L	226	Standard
	Pb	207	117902.7	1.0	**25.4395**	0.259	1.0	ug/L	204	Standard
	Pb	208	484818.2	0.4	**26.1594**	0.107	0.4	ug/L	852	Standard
	U	238	173966.7	0.5	**25.3714**	0.152	0.6	ug/L	13	Standard
>	Bi	209	466979.8	0.1				ug/L	449044	Standard

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Na	23	1.7	173.2	**-0.2919**	14.706	5037.9	mg/L	2	Standard
Mg	24	43.3	59.2	**0.0177**	0.034	191.1	mg/L	58	Standard
K	39	26.7	47.2	**-0.0406**	0.049	121.2	mg/L	27	Standard
Ca	43	23.3	81.1	**0.3327**	1.302	391.4	mg/L	20	Standard
Fe	54	183.2	34.4	**0.0249**	0.048	191.5	mg/L	158	Standard
Fe	57	246.7	15.2	**0.1047**	0.132	126.6	mg/L	267	Standard
> **Sc-1**	45	40908.5	1.7				mg/L	38815	Standard
Cl	35	71227.7	0.6				ug/L	57611	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	1863.4	2.7				ug/L	1617	Standard
P	31	21552.1	8.9				ug/L	19244	Standard
S	34	3725.5	3.2				ug/L	3557	Standard
Sr	88	56.7	20.4				ug/L	65	Standard
C	12	63.3	65.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	23	Standard
Dy	164	16.2	126.5				mg/L	13	Standard
Ho-1	165	13.3	57.3				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	3618.8	4.0				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		100.714	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		104.821	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.587
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.994
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSS M3 WG574881-03
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Method 6020 - Summary Report

Sample ID: L1606153303 WG574881-01
Sample Date/Time: Wednesday, July 06, 2016 13:46:40
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71784.8	3.3				ug/L	68501	Standard
	Be	9	791.7	9.0	**0.8524**	0.078	9.2	ug/L	8	Standard
	Al	27	9689691.6	1.4	**65.1923**	1.739	2.7	ug/L	1397	Standard
	Sc	45	46471.2	2.1				ug/L	38815	Standard
	Ti	47	6104.2	0.6	**17.2565**	0.240	1.4	ug/L	36	Standard
	V	51	142596.3	1.0	**19.1176**	0.362	1.9	ug/L	1284	Standard
	Cr	52	105517.2	0.7	**13.6401**	0.218	1.6	ug/L	6503	Standard
	Cr	53	12873.8	0.5	**13.8523**	0.056	0.4	ug/L	492	Standard
	Mn	55	2385498.8	0.3	**370.6799**	2.478	0.7	ug/L	841	Standard
	Co	59	48892.4	1.4	**7.7061**	0.041	0.5	ug/L	229	Standard
	Ni	60	30595.9	0.8	**17.1852**	0.278	1.6	ug/L	344	Standard
	Cu	65	20807.6	0.9	**11.8042**	0.131	1.1	ug/L	115	Standard
	Zn	66	37430.8	0.4	**35.1878**	0.440	1.3	ug/L	190	Standard
>	**Ge**	72	431211.0	0.9				ug/L	409858	Standard
	As	75	4224.0	0.7	**3.9722**	0.059	1.5	ug/L	-22	Standard
	Se	82	51.8	22.7	**0.4155**	0.110	26.5	ug/L	18	Standard
	Se-1	77	104.0		**0.6766**	0.012	1.8	ug/L	50	Standard
>	**Ga**	71	14602.0	2.0				mg/L	97	Standard
	Rb	85	144001.5	3.2				ug/L	25	Standard
	Y	89	554219.3	0.4				ug/L	376763	Standard
>	**Rh**	103	38.3	37.7				ug/L	20	Standard
	Mo	98	491.5	7.3	**0.2735**	0.016	5.9	ug/L	51	Standard
	Ag	107	436.7	7.8	**0.0924**	0.006	6.2	ug/L	76	Standard
	Cd	111	251.4	8.5	**0.1649**	0.011	6.9	mg/L	6	Standard
	Cd	114	651.7	7.7	**0.1704**	0.010	6.0	ug/L	18	Standard
>	**In**	115	512072.0	0.7				ug/L	507261	Standard
	Sn	118	560.0	17.6	**-0.0088**	0.018	202.0	ug/L	683	Standard
	Sb	123	551.5	29.4	**0.1068**	0.037	34.4	ug/L	446	Standard
	Ba	135	204633.9	0.3	**106.5325**	0.500	0.5	ug/L	28	Standard
	Ce	140	1043824.3	0.6				ug/L	33	Standard
>	**Tb**	159	829436.7	0.5				ug/L	800803	Standard
	Ho	165	16388.9	2.6				ug/L	10	Standard
	Tl	203	873.4	3.5	**0.1439**	0.003	2.4	ug/L	13	Standard
	Tl	205	835.0	6.8	**0.1645**	0.007	4.5	ug/L	13	Standard
	Pb	206	174627.9	0.8	**34.4509**	0.503	1.5	ug/L	226	Standard
	Pb	207	146187.5	0.8	**31.7593**	0.420	1.3	ug/L	204	Standard
	Pb	208	624158.0	1.4	**33.9102**	0.683	2.0	ug/L	852	Standard
	U	238	4147.6	4.4	**0.6507**	0.030	4.6	ug/L	13	Standard
>	**Bi**	209	463820.1	0.7				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	135.0	12.8	**0.1146**	0.022	19.4	mg/L	58	Standard
K	39	315.0	4.2	**0.9068**	0.031	3.4	mg/L	27	Standard
Ca	43	76.7	22.9	**3.3661**	0.968	28.8	mg/L	20	Standard
Fe	54	15252.4	1.7	**10.5440**	0.100	0.9	mg/L	158	Standard
Fe	57	4027.2	4.2	**10.5813**	0.706	6.7	mg/L	267	Standard
> **Sc-1**	45	46471.2	2.1				mg/L	38815	Standard
Cl	35	67899.1	0.4				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	3187.0	8.5				ug/L	1617	Standard
P	31	19424.1	0.8				ug/L	19244	Standard
S	34	3938.8	4.5				ug/L	3557	Standard
Sr	88	103.3	18.3				ug/L	65	Standard
C	12	96.7	33.3				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	66.7	22.9				mg/L	23	Standard
Dy	164	27319.0	2.3				mg/L	13	Standard
Ho-1	165	16388.9	2.6				mg/L	10	Standard
Er	166	14617.0	1.4				mg/L	13	Standard
I	127	15192.6	2.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.793	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.210	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.949
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.291
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606153303 WG574881-01
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Method 6020 - Summary Report

Sample ID: L1606153303S WG574881-04
Sample Date/Time: Wednesday, July 06, 2016 13:49:51
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71635.7	2.1				ug/L	68501	Standard
	Be	9	24508.1	0.6	**25.8454**	0.409	1.6	ug/L	8	Standard
	Al	27	8935502.9	3.1	**60.2062**	0.708	1.2	ug/L	1397	Standard
	Sc	45	46611.6	1.6				ug/L	38815	Standard
	Ti	47	7709.0	2.2	**21.4214**	0.368	1.7	ug/L	36	Standard
	V	51	320903.9	2.5	**42.4517**	1.035	2.4	ug/L	1284	Standard
	Cr	52	282285.7	1.5	**37.3800**	0.540	1.4	ug/L	6503	Standard
	Cr	53	34678.0	2.7	**37.3607**	1.069	2.9	ug/L	492	Standard
	Mn	55	2822174.7	1.6	**430.9768**	6.120	1.4	ug/L	841	Standard
	Co	59	210055.8	0.7	**32.5207**	0.190	0.6	ug/L	229	Standard
	Ni	60	74054.9	1.2	**41.0920**	0.339	0.8	ug/L	344	Standard
	Cu	65	61255.9	1.3	**34.1760**	0.431	1.3	ug/L	115	Standard
	Zn	66	61088.9	0.6	**56.5039**	0.401	0.7	ug/L	190	Standard
>	**Ge**	72	438770.2	0.5				ug/L	409858	Standard
	As	75	29378.1	1.7	**26.5713**	0.390	1.5	ug/L	-22	Standard
	Se	82	2240.3	0.6	**19.7570**	0.095	0.5	ug/L	18	Standard
	Se-1	77	1512.1	2.0	**19.7511**	0.299	1.5	ug/L	50	Standard
>	**Ga**	71	14647.1	3.0				mg/L	97	Standard
	Rb	85	135624.3	1.0				ug/L	25	Standard
	Y	89	555533.5	1.1				ug/L	376763	Standard
>	**Rh**	103	46.7	65.5				ug/L	20	Standard
	Mo	98	390.1	7.1	**0.2288**	0.011	5.0	ug/L	51	Standard
	Ag	107	155710.4	1.2	**24.2735**	0.361	1.5	ug/L	76	Standard
	Cd	111	51031.4	0.2	**25.0372**	0.235	0.9	mg/L	6	Standard
	Cd	114	122987.6	0.6	**24.6803**	0.081	0.3	ug/L	18	Standard
>	**In**	115	521819.8	0.7				ug/L	507261	Standard
	Sn	118	673.3	13.7	**0.0095**	0.017	174.9	ug/L	683	Standard
	Sb	123	4402.7	3.1	**0.9775**	0.034	3.5	ug/L	446	Standard
	Ba	135	235513.0	0.9	**120.3159**	1.166	1.0	ug/L	28	Standard
	Ce	140	908964.0	1.9				ug/L	33	Standard
>	**Tb**	159	835671.6	1.8				ug/L	800803	Standard
	Ho	165	15187.6	2.1				ug/L	10	Standard
	Tl	203	194649.0	0.4	**24.6275**	0.265	1.1	ug/L	13	Standard
	Tl	205	174462.0	0.6	**25.4936**	0.299	1.2	ug/L	13	Standard
	Pb	206	271068.0	0.8	**53.3729**	0.261	0.5	ug/L	226	Standard
	Pb	207	231576.7	0.5	**50.2120**	0.216	0.4	ug/L	204	Standard
	Pb	208	974786.8	0.9	**52.8532**	0.298	0.6	ug/L	852	Standard
	U	238	172945.8	1.1	**25.3460**	0.283	1.1	ug/L	13	Standard
>	**Bi**	209	464715.4	0.8				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	140.0	24.7	**0.1199**	0.042	35.0	mg/L	58	Standard
K	39	246.7	28.8	**0.6783**	0.242	35.7	mg/L	27	Standard
Ca	43	106.7	28.6	**5.2041**	1.969	37.8	mg/L	20	Standard
Fe	54	13845.9	5.5	**9.5323**	0.545	5.7	mg/L	158	Standard
Fe	57	3610.4	7.4	**9.3762**	0.715	7.6	mg/L	267	Standard
Sc-1	45	46611.6	1.6				mg/L	38815	Standard
Cl	35	67005.2	1.4				ug/L	57611	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2923.6	6.4				ug/L	1617	Standard
P	31	20552.3	2.8				ug/L	19244	Standard
S	34	3690.4	4.4				ug/L	3557	Standard
Sr	88	98.3	37.5				ug/L	65	Standard
C	12	156.7	30.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	63.3	48.2				mg/L	23	Standard
Dy	164	25034.1	3.0				mg/L	13	Standard
Ho-1	165	15187.6	2.1				mg/L	10	Standard
Er	166	13729.6	2.1				mg/L	13	Standard
I	127	15666.4	3.6				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.576	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.054	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606153303S WG574881-04
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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	102.870
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.490
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606153304SD WG574881-05
Sample Date/Time: Wednesday, July 06, 2016 13:53:03
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70716.4	3.2				ug/L	68501	Standard
	Be	9	24144.2	3.0	**25.7886**	0.154	0.6	ug/L	8	Standard
	Al	27	7663846.1	3.2	**52.3201**	0.024	0.0	ug/L	1397	Standard
	Sc	45	45911.1	1.9				ug/L	38815	Standard
	Ti	47	7610.9	2.1	**21.3112**	0.418	2.0	ug/L	36	Standard
	V	51	300171.5	0.6	**40.0063**	0.532	1.3	ug/L	1284	Standard
	Cr	52	273409.5	0.7	**36.4591**	0.295	0.8	ug/L	6503	Standard
	Cr	53	33261.5	0.8	**36.0945**	0.455	1.3	ug/L	492	Standard
	Mn	55	1970137.4	0.8	**303.1298**	1.288	0.4	ug/L	841	Standard
	Co	59	199356.3	0.9	**31.0997**	0.116	0.4	ug/L	229	Standard
	Ni	60	69404.3	1.6	**38.7962**	0.444	1.1	ug/L	344	Standard
	Cu	65	58317.0	0.6	**32.7842**	0.142	0.4	ug/L	115	Standard
	Zn	66	56590.2	1.5	**52.7315**	0.372	0.7	ug/L	190	Standard
>	**Ge**	72	435454.2	0.9				ug/L	409858	Standard
	As	75	28521.3	0.6	**25.9959**	0.102	0.4	ug/L	-22	Standard
	Se	82	2258.1	0.6	**20.0673**	0.180	0.9	ug/L	18	Standard
	Se-1	77	1570.7	5.6	**20.7187**	1.401	6.8	ug/L	50	Standard
>	**Ga**	71	13471.0	2.5				mg/L	97	Standard
	Rb	85	126714.4	1.6				ug/L	25	Standard
	Y	89	546387.0	2.7				ug/L	376763	Standard
>	**Rh**	103	26.7	28.6				ug/L	20	Standard
	Mo	98	406.5	7.2	**0.2358**	0.011	4.8	ug/L	51	Standard
	Ag	107	157043.0	0.6	**24.5389**	0.267	1.1	ug/L	76	Standard
	Cd	111	50615.0	0.7	**24.8953**	0.579	2.3	mg/L	6	Standard
	Cd	114	122865.8	1.8	**24.7200**	0.777	3.1	ug/L	18	Standard
>	**In**	115	520626.2	1.6				ug/L	507261	Standard
	Sn	118	831.7	9.5	**0.0379**	0.012	32.9	ug/L	683	Standard
	Sb	123	5047.0	1.4	**1.1262**	0.007	0.6	ug/L	446	Standard
	Ba	135	215146.1	0.2	**110.1816**	1.809	1.6	ug/L	28	Standard
	Ce	140	844813.7	0.2				ug/L	33	Standard
>	**Tb**	159	836023.1	1.3				ug/L	800803	Standard
	Ho	165	14603.7	1.6				ug/L	10	Standard
	Tl	203	192463.7	0.7	**24.2350**	0.335	1.4	ug/L	13	Standard
	Tl	205	170559.7	1.0	**24.8059**	0.448	1.8	ug/L	13	Standard
	Pb	206	218685.4	1.3	**42.8560**	0.907	2.1	ug/L	226	Standard
	Pb	207	186119.5	0.7	**40.1644**	0.622	1.5	ug/L	204	Standard
	Pb	208	790383.4	0.9	**42.6511**	0.562	1.3	ug/L	852	Standard
	U	238	169425.8	1.3	**24.7144**	0.534	2.2	ug/L	13	Standard
>	**Bi**	209	466956.4	0.8				ug/L	449044	Standard

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Na	23	8.3	34.6	**29.4785**	12.738	43.2	mg/L	2	Standard
Mg	24	111.7	38.1	**0.0901**	0.052	57.2	mg/L	58	Standard
K	39	305.0	19.9	**0.8870**	0.210	23.7	mg/L	27	Standard
Ca	43	85.0	36.7	**3.9473**	1.895	48.0	mg/L	20	Standard
Fe	54	12091.5	0.9	**8.4377**	0.104	1.2	mg/L	158	Standard
Fe	57	3287.0	5.2	**8.6117**	0.314	3.6	mg/L	267	Standard
> **Sc-1**	45	45911.1	1.9				mg/L	38815	Standard
Cl	35	66770.8	1.3				ug/L	57611	Standard
Kr	83	3.7	31.5				ug/L	2	Standard
Br	81	2370.2	6.7				ug/L	1617	Standard
P	31	19586.0	2.8				ug/L	19244	Standard
S	34	3682.1	1.9				ug/L	3557	Standard
Sr	88	90.0	16.7				ug/L	65	Standard
C	12	103.3	36.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	145.3				mg/L	23	Standard
Dy	164	24871.6	1.2				mg/L	13	Standard
Ho-1	165	14603.7	1.6				mg/L	10	Standard
Er	166	13219.1	1.9				mg/L	13	Standard
I	127	16539.0	1.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.234	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.245	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	102.635
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.989
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606148801
Sample Date/Time: Wednesday, July 06, 2016 13:56:14
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73357.2	0.4				ug/L	68501	Standard
	Be	9	1408.4	5.6	**1.4686**	0.086	5.9	ug/L	8	Standard
	Al	27	4909182.8	0.1	**32.3215**	0.095	0.3	ug/L	1397	Standard
	Sc	45	49124.5	1.0				ug/L	38815	Standard
	Ti	47	14209.0	0.8	**39.1648**	0.336	0.9	ug/L	36	Standard
	V	51	261146.3	1.2	**34.2175**	0.380	1.1	ug/L	1284	Standard
	Cr	52	189098.4	0.5	**24.5084**	0.136	0.6	ug/L	6503	Standard
	Cr	53	22658.6	1.5	**24.0508**	0.402	1.7	ug/L	492	Standard
	Mn	55	11231230.2	1.1	**1700.4825**	20.100	1.2	ug/L	841	Standard
	Co	59	183788.7	1.1	**28.2069**	0.325	1.2	ug/L	229	Standard
	Ni	60	45196.3	0.8	**24.7984**	0.212	0.9	ug/L	344	Standard
	Cu	65	36381.0	0.5	**20.1154**	0.113	0.6	ug/L	115	Standard
	Zn	66	87683.0	0.2	**80.4422**	0.249	0.3	ug/L	190	Standard
>	**Ge**	72	442627.6	0.1				ug/L	409858	Standard
	As	75	15335.5	1.0	**13.7975**	0.156	1.1	ug/L	-22	Standard
	Se	82	128.8	8.6	**1.0772**	0.098	9.1	ug/L	18	Standard
	Se-1	77	152.7	9.5	**1.2940**	0.197	15.2	ug/L	50	Standard
>	**Ga**	71	28750.6	0.9				mg/L	97	Standard
	Rb	85	247795.0	1.2				ug/L	25	Standard
	Y	89	608680.2	2.0				ug/L	376763	Standard
>	**Rh**	103	46.7	32.7				ug/L	20	Standard
	Mo	98	4400.7	0.8	**1.8278**	0.010	0.6	ug/L	51	Standard
	Ag	107	658.3	6.4	**0.1246**	0.007	5.4	ug/L	76	Standard
	Cd	111	633.7	3.7	**0.3467**	0.011	3.1	mg/L	6	Standard
	Cd	114	1538.9	7.7	**0.3426**	0.022	6.5	ug/L	18	Standard
>	**In**	115	527046.7	0.4				ug/L	507261	Standard
	Sn	118	666.7	18.6	**0.0071**	0.022	303.7	ug/L	683	Standard
	Sb	123	511.6	32.6	**0.0943**	0.037	39.3	ug/L	446	Standard
	Ba	135	351130.5	0.5	**177.5923**	1.124	0.6	ug/L	28	Standard
	Ce	140	1219612.4	0.4				ug/L	33	Standard
>	**Tb**	159	850998.1	0.7				ug/L	800803	Standard
	Ho	165	20655.7	1.1				ug/L	10	Standard
	Tl	203	2286.5	1.5	**0.3205**	0.003	0.8	ug/L	13	Standard
	Tl	205	2111.8	1.5	**0.3488**	0.003	0.9	ug/L	13	Standard
	Pb	206	198517.4	0.6	**38.8584**	0.398	1.0	ug/L	226	Standard
	Pb	207	163761.6	0.7	**35.3001**	0.431	1.2	ug/L	204	Standard
	Pb	208	697965.4	0.2	**37.6228**	0.271	0.7	ug/L	852	Standard
	U	238	11299.5	1.2	**1.6862**	0.031	1.8	ug/L	13	Standard
>	**Bi**	209	467460.9	0.8				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	858.4	12.6	**0.8792**	0.107	12.1	mg/L	58	Standard
K	39	243.3	19.1	**0.6247**	0.147	23.5	mg/L	27	Standard
Ca	43	75.0	11.5	**3.0298**	0.465	15.4	mg/L	20	Standard
Fe	54	51419.1	3.0	**33.8886**	1.056	3.1	mg/L	158	Standard
Fe	57	12892.1	0.9	**33.3949**	0.427	1.3	mg/L	267	Standard
> **Sc-1**	45	49124.5	1.0				mg/L	38815	Standard
Cl	35	64920.1	0.4				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	4657.4	5.5				ug/L	1617	Standard
P	31	21221.5	1.2				ug/L	19244	Standard
S	34	3662.1	1.3				ug/L	3557	Standard
Sr	88	81.7	24.7				ug/L	65	Standard
C	12	186.7	15.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	110.0	32.8				mg/L	23	Standard
Dy	164	33674.7	0.9				mg/L	13	Standard
Ho-1	165	20655.7	1.1				mg/L	10	Standard
Er	166	18397.8	1.0				mg/L	13	Standard
I	127	43973.7	2.2				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.089	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.995	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.901
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.101
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606148802
Sample Date/Time: Wednesday, July 06, 2016 13:59:26
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72174.9	2.1				ug/L	68501	Standard
	Be	9	1363.4	2.0	1.4452	0.016	1.1	ug/L	8	Standard
	Al	27	5016443.5	2.2	33.5756	0.975	2.9	ug/L	1397	Standard
	Sc	45	49604.4	2.2				ug/L	38815	Standard
	Ti	47	13329.2	0.7	36.5911	0.221	0.6	ug/L	36	Standard
	V	51	271044.6	1.6	35.3787	0.645	1.8	ug/L	1284	Standard
	Cr	52	198790.4	1.2	25.7054	0.289	1.1	ug/L	6503	Standard
	Cr	53	24150.9	1.3	25.5582	0.352	1.4	ug/L	492	Standard
	Mn	55	11513450.8	0.6	1736.2656	13.109	0.8	ug/L	841	Standard
	Co	59	196653.4	1.0	30.0609	0.361	1.2	ug/L	229	Standard
	Ni	60	45854.3	1.1	25.0607	0.284	1.1	ug/L	344	Standard
	Cu	65	39818.3	0.9	21.9288	0.143	0.7	ug/L	115	Standard
	Zn	66	95918.7	0.5	87.6568	0.438	0.5	ug/L	190	Standard
>	Ge	72	444401.8	0.3				ug/L	409858	Standard
	As	75	16440.4	0.6	14.7259	0.127	0.9	ug/L	-22	Standard
	Se	82	139.3	7.0	1.1645	0.084	7.2	ug/L	18	Standard
	Se-1	77	176.7	9.1	1.6071	0.214	13.3	ug/L	50	Standard
>	Ga	71	29804.3	1.7				mg/L	97	Standard
	Rb	85	250326.1	0.9				ug/L	25	Standard
	Y	89	612201.9	0.7				ug/L	376763	Standard
>	Rh	103	30.0	16.7				ug/L	20	Standard
	Mo	98	4155.8	2.6	1.7430	0.057	3.3	ug/L	51	Standard
	Ag	107	726.0	6.2	0.1359	0.006	4.5	ug/L	76	Standard
	Cd	111	824.8	3.0	0.4424	0.009	2.1	mg/L	6	Standard
	Cd	114	1869.7	3.7	0.4111	0.011	2.6	ug/L	18	Standard
>	In	115	523048.0	0.9				ug/L	507261	Standard
	Sn	118	761.7	20.6	0.0247	0.027	107.5	ug/L	683	Standard
	Sb	123	582.5	17.5	0.1112	0.022	19.6	ug/L	446	Standard
	Ba	135	359493.1	0.4	183.2153	0.988	0.5	ug/L	28	Standard
	Ce	140	1224075.1	1.2				ug/L	33	Standard
>	Tb	159	837617.0	0.4				ug/L	800803	Standard
	Ho	165	19946.5	2.5				ug/L	10	Standard
	Tl	203	2243.5	3.6	0.3187	0.011	3.4	ug/L	13	Standard
	Tl	205	1978.5	3.9	0.3331	0.011	3.2	ug/L	13	Standard
	Pb	206	201103.2	0.9	39.8610	0.478	1.2	ug/L	226	Standard
	Pb	207	165612.9	0.9	36.1489	0.408	1.1	ug/L	204	Standard
	Pb	208	712328.8	0.4	38.8804	0.069	0.2	ug/L	852	Standard
	U	238	11780.6	2.0	1.7777	0.038	2.2	ug/L	13	Standard
>	Bi	209	461635.2	0.6				ug/L	449044	Standard

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Na	23	3.3	86.6	**5.6198**	12.473	221.9	mg/L	2	Standard
Mg	24	811.7	6.0	**0.8224**	0.066	8.0	mg/L	58	Standard
K	39	266.7	3.9	**0.6899**	0.024	3.5	mg/L	27	Standard
Ca	43	78.3	20.5	**3.1770**	0.895	28.2	mg/L	20	Standard
Fe	54	51703.8	1.6	**33.7475**	0.264	0.8	mg/L	158	Standard
Fe	57	13155.7	2.5	**33.7514**	0.118	0.3	mg/L	267	Standard
> **Sc-1**	45	49604.4	2.2				mg/L	38815	Standard
Cl	35	64079.3	2.1				ug/L	57611	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	4820.8	8.0				ug/L	1617	Standard
P	31	20555.6	1.7				ug/L	19244	Standard
S	34	3685.4	3.7				ug/L	3557	Standard
Sr	88	80.0	12.5				ug/L	65	Standard
C	12	210.0	12.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	143.3	29.0				mg/L	23	Standard
Dy	164	33047.7	1.8				mg/L	13	Standard
Ho-1	165	19946.5	2.5				mg/L	10	Standard
Er	166	18027.4	2.6				mg/L	13	Standard
I	127	49079.4	3.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.363	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.428	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.112
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.804
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606148802
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Method 6020 - Summary Report

Sample ID: L1606148802PS WG575023-01
Sample Date/Time: Wednesday, July 06, 2016 14:03:18
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70967.5	1.3				ug/L	68501	Standard
	Be	9	50019.1	1.4	**53.2137**	0.442	0.8	ug/L	8	Standard
	Al	27	4943736.8	2.2	**33.6473**	0.870	2.6	ug/L	1397	Standard
	Sc	45	49438.9	1.5				ug/L	38815	Standard
	Ti	47	13311.2	1.7	**36.5309**	0.490	1.3	ug/L	36	Standard
	V	51	666714.3	1.8	**87.2147**	1.927	2.2	ug/L	1284	Standard
	Cr	52	595393.9	0.7	**78.8320**	0.260	0.3	ug/L	6503	Standard
	Cr	53	73718.9	1.6	**78.8501**	0.957	1.2	ug/L	492	Standard
	Mn	55	11846150.9	0.6	**1786.0047**	17.199	1.0	ug/L	841	Standard
	Co	59	539486.4	0.6	**82.4367**	0.844	1.0	ug/L	229	Standard
	Ni	60	141497.6	0.4	**77.6414**	0.318	0.4	ug/L	344	Standard
	Cu	65	136279.5	1.3	**75.0688**	1.236	1.6	ug/L	115	Standard
	Zn	66	155918.3	1.5	**142.5288**	2.656	1.9	ug/L	190	Standard
>	**Ge**	72	444516.8	0.4				ug/L	409858	Standard
	As	75	76484.3	0.4	**68.1297**	0.511	0.7	ug/L	-22	Standard
	Se	82	6120.7	0.4	**53.3679**	0.273	0.5	ug/L	18	Standard
	Se-1	77	4216.9	2.2	**55.7069**	1.453	2.6	ug/L	50	Standard
>	**Ga**	71	29956.3	2.2				mg/L	97	Standard
	Rb	85	245433.6	0.4				ug/L	25	Standard
	Y	89	607565.5	0.4				ug/L	376763	Standard
>	**Rh**	103	43.3	13.3				ug/L	20	Standard
	Mo	98	4207.7	1.7	**1.7539**	0.024	1.4	ug/L	51	Standard
	Ag	107	334603.0	0.3	**51.7151**	0.283	0.5	ug/L	76	Standard
	Cd	111	107468.9	0.8	**52.2597**	0.482	0.9	mg/L	6	Standard
	Cd	114	260778.0	1.3	**51.8721**	0.850	1.6	ug/L	18	Standard
>	**In**	115	526034.8	0.3				ug/L	507261	Standard
	Sn	118	906.7	9.2	**0.0497**	0.015	30.6	ug/L	683	Standard
	Sb	123	228637.4	2.2	**51.3808**	0.943	1.8	ug/L	446	Standard
	Ba	135	461661.6	0.5	**233.9378**	0.796	0.3	ug/L	28	Standard
	Ce	140	1241223.1	0.6				ug/L	33	Standard
>	**Tb**	159	845221.1	0.7				ug/L	800803	Standard
	Ho	165	19689.5	2.4				ug/L	10	Standard
	Tl	203	418679.3	0.7	**52.5517**	0.300	0.6	ug/L	13	Standard
	Tl	205	374864.0	0.5	**54.3340**	0.313	0.6	ug/L	13	Standard
	Pb	206	469240.7	0.1	**91.7326**	0.118	0.1	ug/L	226	Standard
	Pb	207	401720.1	1.0	**86.4784**	0.812	0.9	ug/L	204	Standard
	Pb	208	1685835.2	0.3	**90.7511**	0.393	0.4	ug/L	852	Standard
	U	238	363435.6	0.6	**52.8339**	0.348	0.7	ug/L	13	Standard
>	**Bi**	209	468069.6	0.1				ug/L	449044	Standard

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Na	23	3.3	173.2	**5.7365**	25.148	438.4	mg/L	2	Standard
Mg	24	811.7	3.2	**0.8244**	0.021	2.6	mg/L	58	Standard
K	39	260.0	10.0	**0.6728**	0.094	14.0	mg/L	27	Standard
Ca	43	73.3	27.6	**2.9214**	1.221	41.8	mg/L	20	Standard
Fe	54	53337.6	2.0	**34.9297**	0.220	0.6	mg/L	158	Standard
Fe	57	13099.0	0.8	**33.7266**	0.746	2.2	mg/L	267	Standard
Sc-1	45	49438.9	1.5				mg/L	38815	Standard
Cl	35	63709.7	1.4				ug/L	57611	Standard
Kr	83	4.0	25.0				ug/L	2	Standard
Br	81	4744.1	1.6				ug/L	1617	Standard
P	31	20497.2	1.0				ug/L	19244	Standard
S	34	3630.4	3.0				ug/L	3557	Standard
Sr	88	100.0	39.1				ug/L	65	Standard
C	12	173.3	31.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	150.0	26.7				mg/L	23	Standard
Dy	164	33116.1	1.2				mg/L	13	Standard
Ho-1	165	19689.5	2.4				mg/L	10	Standard
Er	166	17226.5	1.3				mg/L	13	Standard
I	127	48460.8	5.1				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.600	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.456	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.701
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.237
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606148802SDL WG575023-02
Sample Date/Time: Wednesday, July 06, 2016 14:06:30
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63548.1	3.0				ug/L	68501	Standard
	Be	9	288.3	10.6	**0.3615**	0.028	7.7	ug/L	8	Standard
	Al	27	982443.2	1.9	**7.5000**	0.333	4.4	ug/L	1397	Standard
	Sc	45	40199.9	2.0				ug/L	38815	Standard
	Ti	47	2527.5	2.7	**7.3731**	0.269	3.6	ug/L	36	Standard
	V	51	51751.0	0.8	**7.0830**	0.038	0.5	ug/L	1284	Standard
	Cr	52	41542.9	0.5	**4.9988**	0.076	1.5	ug/L	6503	Standard
	Cr	53	4679.1	3.2	**4.9436**	0.129	2.6	ug/L	492	Standard
	Mn	55	2192799.4	0.8	**352.2976**	2.787	0.8	ug/L	841	Standard
	Co	59	37114.1	0.7	**6.0504**	0.107	1.8	ug/L	229	Standard
	Ni	60	9289.5	1.4	**5.2864**	0.076	1.4	ug/L	344	Standard
	Cu	65	8027.8	0.9	**4.7012**	0.083	1.8	ug/L	115	Standard
	Zn	66	20879.4	1.1	**20.2468**	0.335	1.7	ug/L	190	Standard
>	Ge	72	417056.1	1.1				ug/L	409858	Standard
	As	75	3262.2	0.9	**3.1917**	0.033	1.0	ug/L	-22	Standard
	Se	82	44.0	21.0	**0.3588**	0.090	25.1	ug/L	18	Standard
	Se-1	77	65.0	4.1	**0.1687**	0.036	21.3	ug/L	50	Standard
>	Ga	71	5822.8	3.2				mg/L	97	Standard
	Rb	85	47444.2	2.6				ug/L	25	Standard
	Y	89	396491.1	1.0				ug/L	376763	Standard
>	Rh	103	18.3	15.7				ug/L	20	Standard
	Mo	98	797.0	2.4	**0.4100**	0.007	1.6	ug/L	51	Standard
	Ag	107	247.7	14.2	**0.0638**	0.006	9.4	ug/L	76	Standard
	Cd	111	188.8	16.4	**0.1369**	0.016	12.0	mg/L	6	Standard
	Cd	114	455.1	14.7	**0.1335**	0.014	10.7	ug/L	18	Standard
>	In	115	495215.4	0.6				ug/L	507261	Standard
	Sn	118	306.7	21.2	**-0.0527**	0.012	22.6	ug/L	683	Standard
	Sb	123	1584.6	32.4	**0.3576**	0.121	33.8	ug/L	446	Standard
	Ba	135	69337.3	0.6	**37.3369**	0.445	1.2	ug/L	28	Standard
	Ce	140	240398.8	0.7				ug/L	33	Standard
>	Tb	159	781869.4	2.0				ug/L	800803	Standard
	Ho	165	3793.8	3.7				ug/L	10	Standard
	Tl	203	541.0	11.5	**0.1045**	0.008	7.3	ug/L	13	Standard
	Tl	205	446.7	1.7	**0.1104**	0.001	1.2	ug/L	13	Standard
	Pb	206	39320.3	1.2	**8.0618**	0.009	0.1	ug/L	226	Standard
	Pb	207	32613.1	1.3	**7.3654**	0.019	0.3	ug/L	204	Standard
	Pb	208	139704.5	0.1	**7.8917**	0.091	1.1	ug/L	852	Standard
	U	238	2243.8	4.7	**0.3846**	0.014	3.7	ug/L	13	Standard
>	Bi	209	446092.5	1.1				ug/L	449044	Standard

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Na	23	1.7	173.2	**-0.0852**	15.064	17690.3	mg/L	2	Standard
Mg	24	178.3	16.4	**0.1952**	0.042	21.4	mg/L	58	Standard
K	39	71.7	21.3	**0.1333**	0.054	40.3	mg/L	27	Standard
Ca	43	21.7	35.3	**0.2417**	0.521	215.7	mg/L	20	Standard
Fe	54	9922.9	1.2	**7.9026**	0.239	3.0	mg/L	158	Standard
Fe	57	2586.9	3.4	**7.6807**	0.443	5.8	mg/L	267	Standard
> **Sc-1**	45	40199.9	2.0				mg/L	38815	Standard
Cl	35	59757.0	1.6				ug/L	57611	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2373.5	8.5				ug/L	1617	Standard
P	31	8939.3	3.6				ug/L	19244	Standard
S	34	3305.4	5.9				ug/L	3557	Standard
Sr	88	70.0	12.4				ug/L	65	Standard
C	12	83.3	30.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	66.1				mg/L	23	Standard
Dy	164	6234.0	6.6				mg/L	13	Standard
Ho-1	165	3793.8	3.7				mg/L	10	Standard
Er	166	3353.7	1.4				mg/L	13	Standard
I	127	17223.1	2.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.769	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.756	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.625
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.343
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606148802SDL WG575023-02
Sample Date/Time: Wednesday, July 06, 2016 14:09:41
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61153.3	3.7				ug/L	68501	Standard
	Be	9	65.0	42.8	**0.1004**	0.036	36.0	ug/L	8	Standard
	Al	27	208272.0	1.9	**1.6804**	0.091	5.4	ug/L	1397	Standard
	Sc	45	38433.7	1.9				ug/L	38815	Standard
	Ti	47	530.0	5.2	**1.5456**	0.076	4.9	ug/L	36	Standard
	V	51	11816.6	2.0	**1.5294**	0.026	1.7	ug/L	1284	Standard
	Cr	52	12533.2	2.1	**0.8813**	0.029	3.3	ug/L	6503	Standard
	Cr	53	1153.4	3.5	**0.9224**	0.056	6.1	ug/L	492	Standard
	Mn	55	487303.2	1.1	**79.3278**	0.956	1.2	ug/L	841	Standard
	Co	59	8144.2	1.6	**1.3507**	0.025	1.8	ug/L	229	Standard
	Ni	60	2325.5	3.0	**1.2243**	0.032	2.6	ug/L	344	Standard
	Cu	65	1801.8	1.3	**1.0597**	0.011	1.0	ug/L	115	Standard
	Zn	66	5046.8	1.1	**4.8774**	0.028	0.6	ug/L	190	Standard
>	**Ge**	72	411214.4	0.8				ug/L	409858	Standard
	As	75	641.0	4.9	**0.7152**	0.032	4.5	ug/L	-22	Standard
	Se	82	22.5	31.9	**0.1611**	0.067	41.8	ug/L	18	Standard
	Se-1	77	60.7	21.2	**0.1202**	0.192	160.1	ug/L	50	Standard
>	**Ga**	71	1250.1	4.5				mg/L	97	Standard
	Rb	85	10276.8	2.8				ug/L	25	Standard
	Y	89	358834.8	1.2				ug/L	376763	Standard
>	**Rh**	103	21.7	93.3				ug/L	20	Standard
	Mo	98	214.8	13.2	**0.1640**	0.012	7.2	ug/L	51	Standard
	Ag	107	100.7	16.5	**0.0398**	0.003	6.9	ug/L	76	Standard
	Cd	111	42.6	17.8	**0.0617**	0.004	6.7	mg/L	6	Standard
	Cd	114	96.9	24.7	**0.0581**	0.005	9.0	ug/L	18	Standard
>	**In**	115	488527.0	0.6				ug/L	507261	Standard
	Sn	118	241.7	24.7	**-0.0643**	0.011	17.6	ug/L	683	Standard
	Sb	123	892.5	39.9	**0.1955**	0.086	43.8	ug/L	446	Standard
	Ba	135	14870.6	2.2	**8.1290**	0.162	2.0	ug/L	28	Standard
	Ce	140	51485.7	0.7				ug/L	33	Standard
>	**Tb**	159	761353.5	0.5				ug/L	800803	Standard
	Ho	165	790.0	5.5				ug/L	10	Standard
	Tl	203	118.7	1.9	**0.0491**	0.000	0.6	ug/L	13	Standard
	Tl	205	93.3	16.4	**0.0569**	0.002	4.2	ug/L	13	Standard
	Pb	206	8500.1	0.7	**1.7547**	0.014	0.8	ug/L	226	Standard
	Pb	207	6935.9	1.5	**1.5792**	0.031	2.0	ug/L	204	Standard
	Pb	208	29923.0	0.5	**1.7048**	0.006	0.3	ug/L	852	Standard
	U	238	485.7	4.5	**0.1173**	0.004	3.1	ug/L	13	Standard
>	**Bi**	209	442277.7	0.5				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	60.0	8.3	**0.0437**	0.008	18.1	mg/L	58	Standard
K	39	36.7	20.8	**0.0061**	0.033	544.1	mg/L	27	Standard
Ca	43	10.0	50.0	**-0.5414**	0.370	68.3	mg/L	20	Standard
Fe	54	2058.4	6.6	**1.6217**	0.147	9.0	mg/L	158	Standard
Fe	57	700.0	4.7	**1.6862**	0.138	8.2	mg/L	267	Standard
> **Sc-1**	45	38433.7	1.9				mg/L	38815	Standard
Cl	35	58499.4	1.0				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1713.4	5.1				ug/L	1617	Standard
P	31	6586.4	1.7				ug/L	19244	Standard
S	34	3485.4	1.6				ug/L	3557	Standard
Sr	88	75.0	29.1				ug/L	65	Standard
C	12	86.7	54.5				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	23	Standard
Dy	164	1243.5	11.8				mg/L	13	Standard
Ho-1	165	790.0	5.5				mg/L	10	Standard
Er	166	693.3	5.5				mg/L	13	Standard
I	127	12079.8	0.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.273	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.331	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.307
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.493
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 14:12:54
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63738.8	1.7				ug/L	68501	Standard
	Be	9	45163.9	1.6	**53.5049**	1.125	2.1	ug/L	8	Standard
	Al	27	7084192.1	1.1	**53.6599**	0.327	0.6	ug/L	1397	Standard
	Sc	45	42454.4	2.4				ug/L	38815	Standard
	Ti	47	37910.4	1.3	**105.6465**	0.728	0.7	ug/L	36	Standard
	V	51	387318.4	1.9	**51.3574**	0.599	1.2	ug/L	1284	Standard
	Cr	52	391741.5	0.8	**52.3323**	0.346	0.7	ug/L	6503	Standard
	Cr	53	47810.3	0.9	**51.7616**	0.626	1.2	ug/L	492	Standard
	Mn	55	346050.2	2.0	**52.8532**	0.639	1.2	ug/L	841	Standard
	Co	59	335311.7	0.2	**52.0055**	0.542	1.0	ug/L	229	Standard
	Ni	60	93758.6	1.2	**52.1631**	0.630	1.2	ug/L	344	Standard
	Cu	65	93201.8	0.3	**52.1020**	0.486	0.9	ug/L	115	Standard
	Zn	66	55967.5	1.2	**51.8489**	0.246	0.5	ug/L	190	Standard
>	**Ge**	72	437984.2	0.8				ug/L	409858	Standard
	As	75	56734.5	0.8	**51.3146**	0.032	0.1	ug/L	-22	Standard
	Se	82	5730.9	1.4	**50.7103**	0.310	0.6	ug/L	18	Standard
	Se-1	77	3929.8	1.6	**52.6431**	0.552	1.0	ug/L	50	Standard
>	**Ga**	71	86.7	40.5				mg/L	97	Standard
	Rb	85	845.0	5.4				ug/L	25	Standard
	Y	89	374490.1	0.9				ug/L	376763	Standard
>	**Rh**	103	40.0	45.1				ug/L	20	Standard
	Mo	98	255896.5	1.3	**102.3860**	1.426	1.4	ug/L	51	Standard
	Ag	107	327414.9	0.7	**50.6019**	0.494	1.0	ug/L	76	Standard
	Cd	111	104466.1	0.8	**50.7976**	0.478	0.9	mg/L	6	Standard
	Cd	114	256849.9	0.9	**51.0868**	0.503	1.0	ug/L	18	Standard
>	**In**	115	526066.0	0.3				ug/L	507261	Standard
	Sn	118	288924.0	1.2	**50.7835**	0.489	1.0	ug/L	683	Standard
	Sb	123	230814.7	0.8	**51.8699**	0.499	1.0	ug/L	446	Standard
	Ba	135	99108.1	0.2	**50.2309**	0.251	0.5	ug/L	28	Standard
	Ce	140	848.4	30.5				ug/L	33	Standard
>	**Tb**	159	811893.2	1.1				ug/L	800803	Standard
	Ho	165	20.0	25.0				ug/L	10	Standard
	Tl	203	398961.7	0.3	**51.0576**	0.167	0.3	ug/L	13	Standard
	Tl	205	353593.5	0.8	**52.2552**	0.467	0.9	ug/L	13	Standard
	Pb	206	253241.8	0.6	**50.4734**	0.317	0.6	ug/L	226	Standard
	Pb	207	230608.0	0.3	**50.6138**	0.209	0.4	ug/L	204	Standard
	Pb	208	952060.4	0.8	**52.2535**	0.454	0.9	ug/L	852	Standard
	U	238	344272.4	0.3	**51.0286**	0.202	0.4	ug/L	13	Standard
>	**Bi**	209	459089.4	0.1				ug/L	449044	Standard

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Na	23	1.7	173.2	**-0.5144**	14.321	2783.9	mg/L	2	Standard
Mg	24	3913.8	1.8	**4.8089**	0.175	3.6	mg/L	58	Standard
K	39	1278.4	11.0	**4.5125**	0.420	9.3	mg/L	27	Standard
Ca	43	80.0	27.2	**4.0653**	1.588	39.1	mg/L	20	Standard
Fe	54	6825.0	1.6	**5.1062**	0.211	4.1	mg/L	158	Standard
Fe	57	1940.1	4.8	**5.2575**	0.365	6.9	mg/L	267	Standard
Sc-1	45	42454.4	2.4				mg/L	38815	Standard
Cl	35	68210.5	0.3				ug/L	57611	Standard
Kr	83	3.0	100.0				ug/L	2	Standard
Br	81	1940.1	4.2				ug/L	1617	Standard
P	31	20874.4	2.4				ug/L	19244	Standard
S	34	4085.6	5.9				ug/L	3557	Standard
Sr	88	61.7	20.4				ug/L	65	Standard
C	12	33.3	45.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	45.8				mg/L	23	Standard
Dy	164	35.5	65.8				mg/L	13	Standard
Ho-1	165	20.0	25.0				mg/L	10	Standard
Er	166	23.3	89.2				mg/L	13	Standard
I	127	9708.1	1.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	107.010		
Al	27	107.320		
Sc	45			
Ti	47	105.646		
V	51	102.715		
Cr	52	104.665		
Cr	53			
Mn	55	105.706		
Co	59	104.011		
Ni	60	104.326		
Cu	65	104.204		
Zn	66	103.698		
Ge	72		106.862	
As	75	102.629		
Se	82	101.421		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	102.386		
Ag	107	101.204		
Cd	111	101.595		
Cd	114			
In	115			103.707
Sn	118	101.567		
Sb	123	103.740		
Ba	135	100.462		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.115		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.507		
U	238	102.057		
Bi	209			102.237
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 14:16:06
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64190.7	0.9				ug/L	68501	Standard
	Be	9	26.7	65.8	**0.0509**	0.021	40.7	ug/L	8	Standard
	Al	27	2635.2	25.2	**0.0549**	0.005	9.3	ug/L	1397	Standard
	Sc	45	41592.0	2.0				ug/L	38815	Standard
	Ti	47	36.7	15.0	**0.0752**	0.016	21.4	ug/L	36	Standard
	V	51	1268.1	2.4	**0.0258**	0.006	23.1	ug/L	1284	Standard
	Cr	52	6579.4	1.7	**-0.0325**	0.005	16.6	ug/L	6503	Standard
	Cr	53	420.0	13.4	**0.0428**	0.057	133.5	ug/L	492	Standard
	Mn	55	1455.1	37.2	**0.1289**	0.086	66.7	ug/L	841	Standard
	Co	59	261.3	5.7	**0.0463**	0.003	5.8	ug/L	229	Standard
	Ni	60	441.3	5.5	**0.0905**	0.016	18.0	ug/L	344	Standard
	Cu	65	137.0	7.6	**0.0639**	0.007	10.5	ug/L	115	Standard
	Zn	66	238.0	11.0	**0.1094**	0.027	24.7	ug/L	190	Standard
>	**Ge**	72	434760.5	1.1				ug/L	409858	Standard
	As	75	-27.5	109.6	**0.0740**	0.027	36.9	ug/L	-22	Standard
	Se	82	16.6	21.2	**0.0970**	0.033	34.0	ug/L	18	Standard
	Se-1	77	54.7	20.1	**-0.0094**	0.159	1680.0	ug/L	50	Standard
>	**Ga**	71	66.7	31.2				mg/L	97	Standard
	Rb	85	81.7	12.7				ug/L	25	Standard
	Y	89	378186.4	2.2				ug/L	376763	Standard
>	**Rh**	103	20.0	50.0				ug/L	20	Standard
	Mo	98	153.7	3.6	**0.1334**	0.003	2.2	ug/L	51	Standard
	Ag	107	127.3	10.2	**0.0429**	0.002	5.0	ug/L	76	Standard
	Cd	111	17.1	59.0	**0.0478**	0.005	10.5	mg/L	6	Standard
	Cd	114	45.6	53.1	**0.0465**	0.005	10.6	ug/L	18	Standard
>	**In**	115	522609.3	1.2				ug/L	507261	Standard
	Sn	118	908.4	22.2	**0.0513**	0.037	72.9	ug/L	683	Standard
	Sb	123	878.6	35.9	**0.1790**	0.073	41.1	ug/L	446	Standard
	Ba	135	58.0	51.9	**0.0454**	0.016	34.5	ug/L	28	Standard
	Ce	140	331.7	19.9				ug/L	33	Standard
>	**Tb**	159	810828.6	0.2				ug/L	800803	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	80.0	40.2	**0.0435**	0.004	9.5	ug/L	13	Standard
	Tl	205	55.0	47.2	**0.0506**	0.004	7.6	ug/L	13	Standard
	Pb	206	272.3	12.8	**0.0499**	0.007	14.3	ug/L	226	Standard
	Pb	207	234.3	3.4	**0.0500**	0.002	3.4	ug/L	204	Standard
	Pb	208	1043.0	5.0	**0.0570**	0.003	5.6	ug/L	852	Standard
	U	238	68.3	34.1	**0.0527**	0.003	6.5	ug/L	13	Standard
>	**Bi**	209	461986.5	0.9				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	56.7	25.5	**0.0334**	0.019	57.4	mg/L	58	Standard
K	39	33.3	22.9	**-0.0174**	0.031	176.3	mg/L	27	Standard
Ca	43	15.0	57.7	**-0.2614**	0.582	222.6	mg/L	20	Standard
Fe	54	152.4	21.9	**-0.0009**	0.028	3226.3	mg/L	158	Standard
Fe	57	235.0	9.3	**0.0532**	0.054	101.4	mg/L	267	Standard
Sc-1	45	41592.0	2.0				mg/L	38815	Standard
Cl	35	67828.8	1.6				ug/L	57611	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1916.8	3.7				ug/L	1617	Standard
P	31	20525.6	1.1				ug/L	19244	Standard
S	34	3962.2	2.2				ug/L	3557	Standard
Sr	88	60.0	30.0				ug/L	65	Standard
C	12	70.0	65.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	49.5				mg/L	23	Standard
Dy	164	19.5	52.5				mg/L	13	Standard
Ho-1	165	8.3	69.3				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	7308.4	3.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.076	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.026
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.882
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Tl	203	

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Method 6020 - Summary Report

Sample ID: L1606148803
Sample Date/Time: Wednesday, July 06, 2016 14:20:24
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68964.9	1.0				ug/L	68501	Standard
	Be	9	1430.1	4.1	**1.5844**	0.061	3.9	ug/L	8	Standard
	Al	27	4479340.7	0.7	**31.3738**	0.508	1.6	ug/L	1397	Standard
	Sc	45	50281.6	1.3				ug/L	38815	Standard
	Ti	47	12786.1	2.2	**35.4002**	0.626	1.8	ug/L	36	Standard
	V	51	245283.9	0.7	**32.2795**	0.259	0.8	ug/L	1284	Standard
	Cr	52	185195.4	1.3	**24.0973**	0.220	0.9	ug/L	6503	Standard
	Cr	53	22409.9	1.6	**23.8925**	0.264	1.1	ug/L	492	Standard
	Mn	55	13045244.9	0.7	**1984.2182**	4.943	0.2	ug/L	841	Standard
	Co	59	203887.4	1.0	**31.4350**	0.326	1.0	ug/L	229	Standard
	Ni	60	45030.8	0.2	**24.8217**	0.122	0.5	ug/L	344	Standard
	Cu	65	36415.4	1.0	**20.2279**	0.287	1.4	ug/L	115	Standard
	Zn	66	89164.3	0.6	**82.1810**	0.549	0.7	ug/L	190	Standard
>	**Ge**	72	440601.3	0.6				ug/L	409858	Standard
	As	75	13472.2	0.2	**12.1886**	0.074	0.6	ug/L	-22	Standard
	Se	82	159.2	6.3	**1.3506**	0.096	7.1	ug/L	18	Standard
	Se-1	77	180.7	12.1	**1.6818**	0.299	17.8	ug/L	50	Standard
>	**Ga**	71	27493.3	2.0				mg/L	97	Standard
	Rb	85	255486.1	0.8				ug/L	25	Standard
	Y	89	620644.7	1.4				ug/L	376763	Standard
>	**Rh**	103	36.7	41.7				ug/L	20	Standard
	Mo	98	4260.2	4.6	**1.7838**	0.088	4.9	ug/L	51	Standard
	Ag	107	692.3	11.4	**0.1306**	0.012	9.5	ug/L	76	Standard
	Cd	111	567.0	10.9	**0.3164**	0.032	10.0	mg/L	6	Standard
	Cd	114	1370.0	2.6	**0.3110**	0.006	1.8	ug/L	18	Standard
>	**In**	115	523416.4	1.0				ug/L	507261	Standard
	Sn	118	871.7	16.6	**0.0442**	0.026	57.7	ug/L	683	Standard
	Sb	123	1006.4	24.1	**0.2069**	0.054	26.1	ug/L	446	Standard
	Ba	135	368283.0	0.9	**187.5586**	0.267	0.1	ug/L	28	Standard
	Ce	140	1316437.2	1.5				ug/L	33	Standard
>	**Tb**	159	838738.9	0.8				ug/L	800803	Standard
	Ho	165	20597.3	3.2				ug/L	10	Standard
	Tl	203	2287.2	4.0	**0.3245**	0.009	2.9	ug/L	13	Standard
	Tl	205	2041.8	8.7	**0.3428**	0.028	8.2	ug/L	13	Standard
	Pb	206	194756.4	0.4	**38.6453**	0.250	0.6	ug/L	226	Standard
	Pb	207	160861.5	1.1	**35.1512**	0.495	1.4	ug/L	204	Standard
	Pb	208	691666.3	0.4	**37.7954**	0.298	0.8	ug/L	852	Standard
	U	238	13502.7	0.9	**2.0337**	0.035	1.7	ug/L	13	Standard
>	**Bi**	209	461132.8	1.0				ug/L	449044	Standard

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Na	23	1.7	173.2	**-1.7326**	12.211	704.7	mg/L	2	Standard
Mg	24	543.3	3.7	**0.5297**	0.028	5.3	mg/L	58	Standard
K	39	225.0	27.8	**0.5493**	0.186	33.8	mg/L	27	Standard
Ca	43	70.0	56.7	**2.6354**	2.167	82.2	mg/L	20	Standard
Fe	54	48868.5	1.4	**31.4625**	0.788	2.5	mg/L	158	Standard
Fe	57	12516.8	1.7	**31.6469**	0.919	2.9	mg/L	267	Standard
> **Sc-1**	45	50281.6	1.3				mg/L	38815	Standard
Cl	35	64480.9	1.3				ug/L	57611	Standard
Kr	83	0.0					ug/L	2	Standard
Br	81	5207.6	4.9				ug/L	1617	Standard
P	31	20347.0	4.2				ug/L	19244	Standard
S	34	3723.8	2.7				ug/L	3557	Standard
Sr	88	93.3	25.3				ug/L	65	Standard
C	12	180.0	25.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	126.7	24.1				mg/L	23	Standard
Dy	164	34149.5	0.7				mg/L	13	Standard
Ho-1	165	20597.3	3.2				mg/L	10	Standard
Er	166	18180.9	3.1				mg/L	13	Standard
I	127	51178.1	4.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.677	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.501	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.185
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.692
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606148804
Sample Date/Time: Wednesday, July 06, 2016 14:23:36
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70455.2	2.5				ug/L	68501	Standard
	Be	9	1626.8	3.8	**1.7617**	0.027	1.5	ug/L	8	Standard
	Al	27	7885247.8	2.0	**54.0384**	0.819	1.5	ug/L	1397	Standard
	Sc	45	53661.5	0.5				ug/L	38815	Standard
	Ti	47	11445.7	1.5	**31.6092**	0.269	0.9	ug/L	36	Standard
	V	51	210519.3	1.1	**27.6148**	0.047	0.2	ug/L	1284	Standard
	Cr	52	229151.0	1.1	**29.9626**	0.113	0.4	ug/L	6503	Standard
	Cr	53	28164.5	1.2	**30.0635**	0.512	1.7	ug/L	492	Standard
	Mn	55	5437614.7	1.0	**824.9869**	1.318	0.2	ug/L	841	Standard
	Co	59	122777.2	1.3	**18.8851**	0.187	1.0	ug/L	229	Standard
	Ni	60	93939.7	0.8	**51.8238**	0.133	0.3	ug/L	344	Standard
	Cu	65	81336.1	1.0	**45.0835**	0.163	0.4	ug/L	115	Standard
	Zn	66	135372.5	1.5	**124.5154**	0.758	0.6	ug/L	190	Standard
>	**Ge**	72	441688.5	1.0				ug/L	409858	Standard
	As	75	11413.4	2.1	**10.3148**	0.117	1.1	ug/L	-22	Standard
	Se	82	92.0	7.7	**0.7569**	0.057	7.6	ug/L	18	Standard
	Se-1	77	150.3	6.9	**1.2665**	0.131	10.4	ug/L	50	Standard
>	**Ga**	71	36022.8	0.3				mg/L	97	Standard
	Rb	85	260976.9	1.1				ug/L	25	Standard
	Y	89	737452.6	1.5				ug/L	376763	Standard
>	**Rh**	103	23.3	32.7				ug/L	20	Standard
	Mo	98	2377.3	0.4	**1.0254**	0.007	0.7	ug/L	51	Standard
	Ag	107	577.7	3.2	**0.1127**	0.003	2.7	ug/L	76	Standard
	Cd	111	456.4	3.3	**0.2619**	0.006	2.3	mg/L	6	Standard
	Cd	114	1138.8	4.7	**0.2645**	0.009	3.5	ug/L	18	Standard
>	**In**	115	524213.1	0.7				ug/L	507261	Standard
	Sn	118	543.3	24.0	**-0.0140**	0.023	166.6	ug/L	683	Standard
	Sb	123	503.1	37.6	**0.0932**	0.043	46.3	ug/L	446	Standard
	Ba	135	536592.0	1.6	**272.8382**	2.586	0.9	ug/L	28	Standard
	Ce	140	1270636.3	1.2				ug/L	33	Standard
>	**Tb**	159	849609.4	0.3				ug/L	800803	Standard
	Ho	165	27800.5	1.7				ug/L	10	Standard
	Tl	203	1988.8	1.5	**0.2853**	0.004	1.5	ug/L	13	Standard
	Tl	205	1725.1	5.5	**0.2949**	0.014	4.8	ug/L	13	Standard
	Pb	206	129785.5	0.5	**25.6264**	0.046	0.2	ug/L	226	Standard
	Pb	207	107864.6	0.4	**23.4549**	0.043	0.2	ug/L	204	Standard
	Pb	208	464868.0	0.1	**25.2790**	0.193	0.8	ug/L	852	Standard
	U	238	12298.7	1.6	**1.8471**	0.019	1.0	ug/L	13	Standard
>	**Bi**	209	463372.4	0.6				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	698.3	14.5	**0.6452**	0.096	14.8	mg/L	58	Standard
K	39	333.3	20.4	**0.8199**	0.200	24.4	mg/L	27	Standard
Ca	43	106.7	16.5	**4.3315**	0.899	20.8	mg/L	20	Standard
Fe	54	57795.6	2.6	**34.8751**	1.045	3.0	mg/L	158	Standard
Fe	57	14308.4	2.2	**33.9418**	0.935	2.8	mg/L	267	Standard
> **Sc-1**	45	53661.5	0.5				mg/L	38815	Standard
Cl	35	64031.0	0.5				ug/L	57611	Standard
Kr	83	1.7	124.9				ug/L	2	Standard
Br	81	4340.6	6.3				ug/L	1617	Standard
P	31	20407.1	0.3				ug/L	19244	Standard
S	34	3852.2	0.9				ug/L	3557	Standard
Sr	88	138.3	14.6				ug/L	65	Standard
C	12	113.3	18.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	130.0	40.7				mg/L	23	Standard
Dy	164	46817.8	1.5				mg/L	13	Standard
Ho-1	165	27800.5	1.7				mg/L	10	Standard
Er	166	24663.4	1.1				mg/L	13	Standard
I	127	21059.6	1.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.852	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.766	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.342
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.191
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606153301
Sample Date/Time: Wednesday, July 06, 2016 14:26:47
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68147.9	1.7				ug/L	68501	Standard
	Be	9	771.7	9.4	**0.8747**	0.088	10.0	ug/L	8	Standard
	Al	27	12416267.7	1.3	**87.9634**	2.577	2.9	ug/L	1397	Standard
	Sc	45	47710.0	1.2				ug/L	38815	Standard
	Ti	47	7376.1	1.1	**20.2551**	0.367	1.8	ug/L	36	Standard
	V	51	162623.9	0.2	**21.1879**	0.259	1.2	ug/L	1284	Standard
	Cr	52	163391.7	0.9	**20.9810**	0.252	1.2	ug/L	6503	Standard
	Cr	53	20403.7	2.8	**21.5523**	0.880	4.1	ug/L	492	Standard
	Mn	55	2250867.1	1.6	**339.6230**	1.651	0.5	ug/L	841	Standard
	Co	59	55901.3	1.7	**8.5555**	0.031	0.4	ug/L	229	Standard
	Ni	60	36823.0	1.7	**20.1135**	0.523	2.6	ug/L	344	Standard
	Cu	65	25825.3	0.5	**14.2313**	0.219	1.5	ug/L	115	Standard
	Zn	66	93990.6	0.8	**85.9661**	0.695	0.8	ug/L	190	Standard
>	**Ge**	72	444050.8	1.4				ug/L	409858	Standard
	As	75	4736.3	1.7	**4.3159**	0.012	0.3	ug/L	-22	Standard
	Se	82	75.0	10.7	**0.6032**	0.062	10.3	ug/L	18	Standard
	Se-1	77	104.3	17.3	**0.6382**	0.227	35.6	ug/L	50	Standard
>	**Ga**	71	16657.5	2.6				mg/L	97	Standard
	Rb	85	168562.8	2.3				ug/L	25	Standard
	Y	89	576458.9	1.1				ug/L	376763	Standard
>	**Rh**	103	53.3	23.6				ug/L	20	Standard
	Mo	98	1965.0	3.3	**0.8634**	0.018	2.1	ug/L	51	Standard
	Ag	107	631.3	4.3	**0.1214**	0.003	2.5	ug/L	76	Standard
	Cd	111	1012.4	2.3	**0.5352**	0.005	1.0	mg/L	6	Standard
	Cd	114	2475.0	2.2	**0.5334**	0.017	3.1	ug/L	18	Standard
>	**In**	115	521855.9	1.3				ug/L	507261	Standard
	Sn	118	2306.8	5.0	**0.2998**	0.026	8.7	ug/L	683	Standard
	Sb	123	509.0	29.8	**0.0952**	0.035	37.2	ug/L	446	Standard
	Ba	135	490095.6	1.4	**250.3317**	0.859	0.3	ug/L	28	Standard
	Ce	140	1104772.4	2.2				ug/L	33	Standard
>	**Tb**	159	830689.6	0.7				ug/L	800803	Standard
	Ho	165	16939.5	1.9				ug/L	10	Standard
	Tl	203	806.0	2.3	**0.1371**	0.003	2.2	ug/L	13	Standard
	Tl	205	756.7	4.5	**0.1550**	0.005	3.1	ug/L	13	Standard
	Pb	206	256607.5	1.0	**51.4795**	1.086	2.1	ug/L	226	Standard
	Pb	207	212619.8	0.6	**46.9700**	0.785	1.7	ug/L	204	Standard
	Pb	208	921038.1	0.5	**50.8782**	0.603	1.2	ug/L	852	Standard
	U	238	4276.6	4.5	**0.6802**	0.035	5.1	ug/L	13	Standard
>	**Bi**	209	456168.6	1.1				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	461.7	6.3	**0.4703**	0.034	7.2	mg/L	58	Standard
K	39	460.0	2.2	**1.3504**	0.049	3.6	mg/L	27	Standard
Ca	43	195.0	13.6	**10.2687**	1.651	16.1	mg/L	20	Standard
Fe	54	17929.3	3.8	**12.0874**	0.347	2.9	mg/L	158	Standard
Fe	57	4672.4	2.6	**12.0353**	0.317	2.6	mg/L	267	Standard
> **Sc-1**	45	47710.0	1.2				mg/L	38815	Standard
Cl	35	66407.9	0.5				ug/L	57611	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	5230.9	3.6				ug/L	1617	Standard
P	31	20996.2	0.8				ug/L	19244	Standard
S	34	3925.5	4.1				ug/L	3557	Standard
Sr	88	201.7	18.6				ug/L	65	Standard
C	12	120.0	0.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	70.0	28.6				mg/L	23	Standard
Dy	164	27810.2	4.4				mg/L	13	Standard
Ho-1	165	16939.5	1.9				mg/L	10	Standard
Er	166	15100.9	0.7				mg/L	13	Standard
I	127	13139.0	1.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.484	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.343	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.877
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.587
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606153302
Sample Date/Time: Wednesday, July 06, 2016 14:29:58
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	69505.8	1.9				ug/L	68501	Standard
	Be	9	856.7	3.2	**0.9501**	0.043	4.5	ug/L	8	Standard
	Al	27	18425399.3	2.6	**127.9163**	0.913	0.7	ug/L	1397	Standard
	Sc	45	48345.3	1.0				ug/L	38815	Standard
	Ti	47	8361.0	2.5	**23.2865**	0.575	2.5	ug/L	36	Standard
	V	51	163202.5	0.9	**21.5655**	0.254	1.2	ug/L	1284	Standard
	Cr	52	141504.8	1.1	**18.3140**	0.301	1.6	ug/L	6503	Standard
	Cr	53	17246.5	1.5	**18.4104**	0.344	1.9	ug/L	492	Standard
	Mn	55	3248037.2	1.4	**497.1143**	9.755	2.0	ug/L	841	Standard
	Co	59	64929.8	0.9	**10.0780**	0.141	1.4	ug/L	229	Standard
	Ni	60	40681.2	0.4	**22.5514**	0.203	0.9	ug/L	344	Standard
	Cu	65	26231.7	0.4	**14.6587**	0.056	0.4	ug/L	115	Standard
	Zn	66	59371.1	1.2	**55.0294**	0.757	1.4	ug/L	190	Standard
>	Ge	72	437841.6	0.5				ug/L	409858	Standard
	As	75	3819.1	1.3	**3.5477**	0.051	1.4	ug/L	-22	Standard
	Se	82	63.2	15.3	**0.5090**	0.087	17.2	ug/L	18	Standard
	Se-1	77	114.7	10.2	**0.7996**	0.156	19.5	ug/L	50	Standard
>	Ga	71	17126.3	2.1				mg/L	97	Standard
	Rb	85	174436.8	1.0				ug/L	25	Standard
	Y	89	589810.1	1.2				ug/L	376763	Standard
>	Rh	103	46.7	22.3				ug/L	20	Standard
	Mo	98	807.3	1.4	**0.3999**	0.004	1.0	ug/L	51	Standard
	Ag	107	589.0	14.0	**0.1156**	0.013	10.8	ug/L	76	Standard
	Cd	111	588.8	3.3	**0.3304**	0.006	2.0	mg/L	6	Standard
	Cd	114	1476.5	2.1	**0.3360**	0.010	2.9	ug/L	18	Standard
>	In	115	517084.2	1.2				ug/L	507261	Standard
	Sn	118	753.4	15.5	**0.0248**	0.019	78.5	ug/L	683	Standard
	Sb	123	464.2	27.6	**0.0856**	0.028	33.1	ug/L	446	Standard
	Ba	135	439401.4	0.4	**226.5278**	2.065	0.9	ug/L	28	Standard
	Ce	140	1185543.6	1.0				ug/L	33	Standard
>	Tb	159	826809.9	1.0				ug/L	800803	Standard
	Ho	165	18733.2	1.7				ug/L	10	Standard
	Tl	203	866.7	5.6	**0.1458**	0.007	4.6	ug/L	13	Standard
	Tl	205	758.4	2.7	**0.1562**	0.003	2.2	ug/L	13	Standard
	Pb	206	95906.3	1.6	**19.3933**	0.272	1.4	ug/L	226	Standard
	Pb	207	79499.0	1.3	**17.7046**	0.235	1.3	ug/L	204	Standard
	Pb	208	341366.3	0.2	**19.0116**	0.119	0.6	ug/L	852	Standard
	U	238	4789.8	2.5	**0.7624**	0.020	2.6	ug/L	13	Standard
>	Bi	209	452435.1	0.4				ug/L	449044	Standard

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Na	23	1.7	173.2	**-1.5685**	12.495	796.6	mg/L	2	Standard
Mg	24	160.0	16.5	**0.1354**	0.027	19.9	mg/L	58	Standard
K	39	441.7	8.0	**1.2712**	0.100	7.8	mg/L	27	Standard
Ca	43	336.7	4.5	**18.3838**	0.917	5.0	mg/L	20	Standard
Fe	54	18193.1	1.4	**12.1065**	0.180	1.5	mg/L	158	Standard
Fe	57	5070.8	1.9	**12.9392**	0.314	2.4	mg/L	267	Standard
> **Sc-1**	45	48345.3	1.0				mg/L	38815	Standard
Cl	35	67048.7	0.3				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	3283.7	4.1				ug/L	1617	Standard
P	31	21121.4	2.3				ug/L	19244	Standard
S	34	4137.2	5.8				ug/L	3557	Standard
Sr	88	201.7	17.9				ug/L	65	Standard
C	12	140.0	25.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	15.7				mg/L	23	Standard
Dy	164	31095.7	1.2				mg/L	13	Standard
Ho-1	165	18733.2	1.7				mg/L	10	Standard
Er	166	16796.0	2.1				mg/L	13	Standard
I	127	12917.2	2.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.467	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.828	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.937
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.755
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606153302
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Method 6020 - Summary Report

Sample ID: L1606164301
Sample Date/Time: Wednesday, July 06, 2016 14:33:10
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69428.8	2.6				ug/L	68501	Standard
	Be	9	1636.8	2.5	**1.7991**	0.043	2.4	ug/L	8	Standard
	Al	27	39500793.5	2.5	**274.5277**	1.455	0.5	ug/L	1397	Standard
	Sc	45	53986.0	1.4				ug/L	38815	Standard
	Ti	47	691754.6	0.6	**2204.8276**	20.610	0.9	ug/L	36	Standard
	V	51	699452.5	0.9	**106.2143**	1.985	1.9	ug/L	1284	Standard
	Cr	52	809923.1	0.9	**124.9852**	1.160	0.9	ug/L	6503	Standard
	Cr	53	99527.5	0.8	**123.7822**	1.570	1.3	ug/L	492	Standard
	Mn	55	8147594.7	0.9	**1425.4572**	14.550	1.0	ug/L	841	Standard
	Co	59	124493.7	1.1	**22.0821**	0.488	2.2	ug/L	229	Standard
	Ni	60	113209.8	1.5	**72.0728**	0.756	1.0	ug/L	344	Standard
	Cu	65	118972.0	1.6	**76.0424**	0.278	0.4	ug/L	115	Standard
	Zn	66	977529.9	1.7	**1037.5458**	5.451	0.5	ug/L	190	Standard
>	**Ge**	72	383077.6	1.4				ug/L	409858	Standard
	As	75	7978.6	0.8	**8.3342**	0.070	0.8	ug/L	-22	Standard
	Se	82	147.2	5.6	**1.4400**	0.093	6.5	ug/L	18	Standard
	Se-1	77	136.0	10.2	**1.3561**	0.241	17.8	ug/L	50	Standard
>	**Ga**	71	64701.3	2.8				mg/L	97	Standard
	Rb	85	943143.2	0.2				ug/L	25	Standard
	Y	89	702387.7	2.1				ug/L	376763	Standard
>	**Rh**	103	1626.8	7.8				ug/L	20	Standard
	Mo	98	7031.4	1.4	**3.3995**	0.013	0.4	ug/L	51	Standard
	Ag	107	4514.3	1.1	**0.8488**	0.018	2.1	ug/L	76	Standard
	Cd	111	293.3	7.2	**0.2082**	0.014	6.7	mg/L	6	Standard
	Cd	114	505.6	12.8	**0.1562**	0.013	8.4	ug/L	18	Standard
>	**In**	115	444413.1	1.7				ug/L	507261	Standard
	Sn	118	9111.1	1.5	**1.7898**	0.024	1.4	ug/L	683	Standard
	Sb	123	891.2	18.5	**0.2170**	0.046	21.2	ug/L	446	Standard
	Ba	135	515064.5	1.4	**308.9390**	0.851	0.3	ug/L	28	Standard
	Ce	140	1739811.5	1.9				ug/L	33	Standard
>	**Tb**	159	758128.4	1.9				ug/L	800803	Standard
	Ho	165	26984.0	3.1				ug/L	10	Standard
	Tl	203	51.3	14.6	**0.0413**	0.001	2.8	ug/L	13	Standard
	Tl	205	46.7	37.6	**0.0509**	0.003	6.1	ug/L	13	Standard
	Pb	206	99318.1	0.4	**24.0923**	0.176	0.7	ug/L	226	Standard
	Pb	207	82369.3	0.9	**22.0041**	0.206	0.9	ug/L	204	Standard
	Pb	208	340801.2	1.0	**22.7675**	0.282	1.2	ug/L	852	Standard
	U	238	15059.5	0.6	**2.7573**	0.009	0.3	ug/L	13	Standard
>	**Bi**	209	377183.0	0.9				ug/L	449044	Standard

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Na	23	78.3	22.4	**298.4994**	69.283	23.2	mg/L	2	Standard
Mg	24	3415.4	0.4	**3.2866**	0.036	1.1	mg/L	58	Standard
K	39	4233.9	1.4	**11.9963**	0.339	2.8	mg/L	27	Standard
Ca	43	11469.3	1.3	**598.6185**	13.178	2.2	mg/L	20	Standard
Fe	54	41027.6	1.7	**24.5701**	0.110	0.4	mg/L	158	Standard
Fe	57	17586.9	0.5	**41.6189**	0.442	1.1	mg/L	267	Standard
Sc-1	45	53986.0	1.4				mg/L	38815	Standard
Cl	35	87387.3	0.7				ug/L	57611	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	6948.3	7.7				ug/L	1617	Standard
P	31	19342.3	1.6				ug/L	19244	Standard
S	34	3842.2	3.5				ug/L	3557	Standard
Sr	88	6896.6	5.2				ug/L	65	Standard
C	12	66.7	52.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	78.1				mg/L	23	Standard
Dy	164	39507.9	2.2				mg/L	13	Standard
Ho-1	165	26984.0	3.1				mg/L	10	Standard
Er	166	26867.1	2.1				mg/L	13	Standard
I	127	8078.8	2.6				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		101.354	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		93.466	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		87.610
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		83.997
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ti 47 Upper, S, EEE	Ti	47	
V 51 Upper, S, EEE	V	51	

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Cr 52 Upper, S, EEE	Cr	52
Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606164302
Sample Date/Time: Wednesday, July 06, 2016 14:36:21
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68074.3	3.1				ug/L	68501	Standard
	Be	9	1676.8	1.0	**1.8798**	0.070	3.7	ug/L	8	Standard
	Al	27	36487885.7	1.0	**258.8300**	9.964	3.8	ug/L	1397	Standard
	Sc	45	54253.7	2.1				ug/L	38815	Standard
	Ti	47	713173.1	0.2	**2239.9907**	37.989	1.7	ug/L	36	Standard
	V	51	784062.8	1.0	**117.3418**	2.757	2.3	ug/L	1284	Standard
	Cr	52	1058816.2	0.3	**161.2792**	2.118	1.3	ug/L	6503	Standard
	Cr	53	128302.6	1.0	**157.3675**	3.831	2.4	ug/L	492	Standard
	Mn	55	9336934.6	1.6	**1610.0137**	50.338	3.1	ug/L	841	Standard
	Co	59	128111.4	1.0	**22.3925**	0.580	2.6	ug/L	229	Standard
	Ni	60	125551.8	1.3	**78.7899**	1.983	2.5	ug/L	344	Standard
	Cu	65	139849.8	0.4	**88.0931**	1.328	1.5	ug/L	115	Standard
	Zn	66	1090011.4	0.8	**1140.1019**	9.125	0.8	ug/L	190	Standard
>	**Ge**	72	388774.8	1.6				ug/L	409858	Standard
	As	75	7748.3	0.5	**7.9803**	0.149	1.9	ug/L	-22	Standard
	Se	82	129.2	7.5	**1.2374**	0.092	7.5	ug/L	18	Standard
	Se-1	77	141.7	10.4	**1.4093**	0.214	15.2	ug/L	50	Standard
>	**Ga**	71	64269.4	0.9				mg/L	97	Standard
	Rb	85	903484.1	1.4				ug/L	25	Standard
	Y	89	691327.0	0.5				ug/L	376763	Standard
>	**Rh**	103	1586.7	6.2				ug/L	20	Standard
	Mo	98	9576.0	1.4	**4.5403**	0.058	1.3	ug/L	51	Standard
	Ag	107	4941.8	1.4	**0.9141**	0.012	1.3	ug/L	76	Standard
	Cd	111	288.9	5.1	**0.2032**	0.008	4.0	mg/L	6	Standard
	Cd	114	581.5	10.2	**0.1723**	0.014	8.0	ug/L	18	Standard
>	**In**	115	450717.4	0.1				ug/L	507261	Standard
	Sn	118	12807.1	1.6	**2.5230**	0.040	1.6	ug/L	683	Standard
	Sb	123	677.8	18.9	**0.1575**	0.034	21.4	ug/L	446	Standard
	Ba	135	495414.8	0.4	**292.9882**	1.099	0.4	ug/L	28	Standard
	Ce	140	1637103.7	0.8				ug/L	33	Standard
>	**Tb**	159	767161.8	1.6				ug/L	800803	Standard
	Ho	165	25913.8	1.5				ug/L	10	Standard
	Tl	203	48.0	24.0	**0.0407**	0.002	4.4	ug/L	13	Standard
	Tl	205	53.3	28.6	**0.0520**	0.003	5.2	ug/L	13	Standard
	Pb	206	78980.0	0.3	**18.8920**	0.060	0.3	ug/L	226	Standard
	Pb	207	65462.4	0.2	**17.2450**	0.059	0.3	ug/L	204	Standard
	Pb	208	274937.4	1.0	**18.1124**	0.167	0.9	ug/L	852	Standard
	U	238	14384.5	2.0	**2.5996**	0.049	1.9	ug/L	13	Standard
>	**Bi**	209	382475.3	0.1				ug/L	449044	Standard

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Na	23	78.3	13.3	**296.5126**	36.423	12.3	mg/L	2	Standard
Mg	24	3305.4	5.9	**3.1653**	0.224	7.1	mg/L	58	Standard
K	39	4055.5	3.2	**11.4256**	0.339	3.0	mg/L	27	Standard
Ca	43	11172.5	2.0	**580.2218**	13.558	2.3	mg/L	20	Standard
Fe	54	41719.4	1.1	**24.8710**	0.620	2.5	mg/L	158	Standard
Fe	57	17573.5	0.4	**41.3869**	0.919	2.2	mg/L	267	Standard
Sc-1	45	54253.7	2.1				mg/L	38815	Standard
Cl	35	87803.0	1.0				ug/L	57611	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	6821.5	3.6				ug/L	1617	Standard
P	31	19047.0	1.8				ug/L	19244	Standard
S	34	3895.5	3.5				ug/L	3557	Standard
Sr	88	6293.0	3.0				ug/L	65	Standard
C	12	76.7	30.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	137.8				mg/L	23	Standard
Dy	164	38633.3	1.4				mg/L	13	Standard
Ho-1	165	25913.8	1.5				mg/L	10	Standard
Er	166	26426.4	1.5				mg/L	13	Standard
I	127	8060.5	1.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.377	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.856	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		88.853
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		85.175
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ti 47 Upper, S, EEE	Ti	47	
V 51 Upper, S, EEE	V	51	

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Cr 52 Upper, S, EEE	Cr	52
Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606168701
Sample Date/Time: Wednesday, July 06, 2016 14:39:33
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65198.3	0.3				ug/L	68501	Standard
	Be	9	1203.4	5.3	**1.4124**	0.070	5.0	ug/L	8	Standard
	Al	27	8002436.2	0.7	**59.2503**	0.304	0.5	ug/L	1397	Standard
	Sc	45	54516.2	1.1				ug/L	38815	Standard
	Ti	47	4355.0	3.4	**11.9055**	0.476	4.0	ug/L	36	Standard
	V	51	172515.9	1.4	**22.4049**	0.478	2.1	ug/L	1284	Standard
	Cr	52	187973.8	0.1	**24.1888**	0.362	1.5	ug/L	6503	Standard
	Cr	53	22812.2	3.1	**24.0476**	0.569	2.4	ug/L	492	Standard
	Mn	55	702950.0	1.2	**105.6433**	2.666	2.5	ug/L	841	Standard
	Co	59	51718.1	1.6	**7.8896**	0.229	2.9	ug/L	229	Standard
	Ni	60	55454.0	0.9	**30.2604**	0.655	2.2	ug/L	344	Standard
	Cu	65	88613.7	0.9	**48.6862**	0.625	1.3	ug/L	115	Standard
	Zn	66	118159.3	0.7	**107.7164**	1.479	1.4	ug/L	190	Standard
>	**Ge**	72	445650.1	1.4				ug/L	409858	Standard
	As	75	4148.8	2.4	**3.7802**	0.107	2.8	ug/L	-22	Standard
	Se	82	64.4	6.6	**0.5094**	0.043	8.5	ug/L	18	Standard
	Se-1	77	139.3	4.1	**1.1025**	0.091	8.3	ug/L	50	Standard
>	**Ga**	71	24242.7	5.2				mg/L	97	Standard
	Rb	85	141026.7	1.5				ug/L	25	Standard
	Y	89	763474.6	0.4				ug/L	376763	Standard
>	**Rh**	103	46.7	48.3				ug/L	20	Standard
	Mo	98	184.5	10.6	**0.1457**	0.007	4.9	ug/L	51	Standard
	Ag	107	1242.4	5.7	**0.2161**	0.011	5.3	ug/L	76	Standard
	Cd	111	699.4	2.5	**0.3810**	0.006	1.5	mg/L	6	Standard
	Cd	114	1744.0	5.9	**0.3858**	0.018	4.5	ug/L	18	Standard
>	**In**	115	523267.4	0.9				ug/L	507261	Standard
	Sn	118	786.7	19.9	**0.0294**	0.029	98.1	ug/L	683	Standard
	Sb	123	369.0	28.6	**0.0632**	0.025	38.8	ug/L	446	Standard
	Ba	135	302502.8	1.1	**154.1018**	0.436	0.3	ug/L	28	Standard
	Ce	140	1768629.8	1.3				ug/L	33	Standard
>	**Tb**	159	852268.4	0.8				ug/L	800803	Standard
	Ho	165	30797.9	0.5				ug/L	10	Standard
	Tl	203	1307.4	0.4	**0.2006**	0.001	0.5	ug/L	13	Standard
	Tl	205	1103.4	7.1	**0.2055**	0.011	5.5	ug/L	13	Standard
	Pb	206	198522.1	0.7	**39.5866**	0.197	0.5	ug/L	226	Standard
	Pb	207	158834.2	0.5	**34.8785**	0.060	0.2	ug/L	204	Standard
	Pb	208	698105.2	0.3	**38.3353**	0.192	0.5	ug/L	852	Standard
	U	238	7948.1	2.5	**1.2203**	0.026	2.1	ug/L	13	Standard
>	**Bi**	209	458856.3	0.6				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	120.0	16.7	**0.0774**	0.020	26.2	mg/L	58	Standard
K	39	231.7	10.9	**0.5161**	0.076	14.8	mg/L	27	Standard
Ca	43	146.7	7.1	**6.3201**	0.584	9.2	mg/L	20	Standard
Fe	54	26063.7	2.4	**15.4120**	0.269	1.7	mg/L	158	Standard
Fe	57	6638.1	2.2	**15.1289**	0.287	1.9	mg/L	267	Standard
> **Sc-1**	45	54516.2	1.1				mg/L	38815	Standard
Cl	35	64574.7	2.3				ug/L	57611	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	2150.2	3.8				ug/L	1617	Standard
P	31	19699.5	1.2				ug/L	19244	Standard
S	34	3850.5	8.7				ug/L	3557	Standard
Sr	88	93.3	41.6				ug/L	65	Standard
C	12	103.3	24.4				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	120.0	22.0				mg/L	23	Standard
Dy	164	49394.7	1.6				mg/L	13	Standard
Ho-1	165	30797.9	0.5				mg/L	10	Standard
Er	166	29024.5	3.2				mg/L	13	Standard
I	127	21525.3	2.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.178	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.733	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.156
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.185
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606168701
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Method 6020 - Summary Report

Sample ID: L1606129601
Sample Date/Time: Wednesday, July 06, 2016 14:42:44
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56620.6	2.4				ug/L	68501	Standard
	Be	9	20.0	50.0	**0.0459**	0.013	27.6	ug/L	8	Standard
	Al	27	5728922.0	1.3	**48.8606**	0.848	1.7	ug/L	1397	Standard
	Sc	45	39332.7	0.5				ug/L	38815	Standard
	Ti	47	250.7	40.1	**0.7210**	0.296	41.0	ug/L	36	Standard
	V	51	5583.3	1.1	**0.6527**	0.007	1.1	ug/L	1284	Standard
	Cr	52	6924.9	7.8	**0.0771**	0.083	107.9	ug/L	6503	Standard
	Cr	53	828.4	12.4	**0.5513**	0.117	21.2	ug/L	492	Standard
	Mn	55	39639.9	5.7	**6.4122**	0.323	5.0	ug/L	841	Standard
	Co	59	636.3	9.7	**0.1113**	0.009	8.5	ug/L	229	Standard
	Ni	60	1640.1	10.3	**0.8248**	0.105	12.8	ug/L	344	Standard
	Cu	65	1729.4	1.9	**1.0246**	0.025	2.4	ug/L	115	Standard
	Zn	66	1474.4	4.9	**1.3554**	0.062	4.5	ug/L	190	Standard
>	**Ge**	72	408109.4	0.7				ug/L	409858	Standard
	As	75	1683.3	3.0	**1.7299**	0.056	3.2	ug/L	-22	Standard
	Se	82	50.4	6.7	**0.4278**	0.029	6.7	ug/L	18	Standard
	Se-1	77	99.0	13.7	**0.6840**	0.188	27.4	ug/L	50	Standard
>	**Ga**	71	166.7	27.7				mg/L	97	Standard
	Rb	85	7700.3	2.6				ug/L	25	Standard
	Y	89	351613.9	1.8				ug/L	376763	Standard
>	**Rh**	103	36.7	20.8				ug/L	20	Standard
	Mo	98	1713.4	1.7	**0.8237**	0.007	0.8	ug/L	51	Standard
	Ag	107	91.7	52.6	**0.0387**	0.008	21.3	ug/L	76	Standard
	Cd	111	14.1	4.0	**0.0469**	0.000	0.7	mg/L	6	Standard
	Cd	114	55.2	43.3	**0.0495**	0.005	10.8	ug/L	18	Standard
>	**In**	115	479114.4	0.9				ug/L	507261	Standard
	Sn	118	240.0	21.1	**-0.0637**	0.009	14.8	ug/L	683	Standard
	Sb	123	897.3	23.2	**0.2010**	0.050	25.0	ug/L	446	Standard
	Ba	135	36392.7	1.3	**20.2618**	0.198	1.0	ug/L	28	Standard
	Ce	140	1328.4	93.1				ug/L	33	Standard
>	**Tb**	159	753581.0	0.7				ug/L	800803	Standard
	Ho	165	46.7	83.2				ug/L	10	Standard
	Tl	203	318.0	7.7	**0.0770**	0.004	4.6	ug/L	13	Standard
	Tl	205	243.3	7.2	**0.0811**	0.003	3.7	ug/L	13	Standard
	Pb	206	459.0	35.8	**0.0943**	0.036	37.7	ug/L	226	Standard
	Pb	207	393.0	33.0	**0.0916**	0.031	33.8	ug/L	204	Standard
	Pb	208	1558.0	19.6	**0.0919**	0.018	20.0	ug/L	852	Standard
	U	238	568.7	6.1	**0.1330**	0.006	4.4	ug/L	13	Standard
>	**Bi**	209	427650.1	0.7				ug/L	449044	Standard

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Na	23	3.3	173.2	**9.1076**	30.987	340.2	mg/L	2	Standard
Mg	24	7790.3	1.4	**10.3704**	0.153	1.5	mg/L	58	Standard
K	39	265.0	21.3	**0.9004**	0.219	24.3	mg/L	27	Standard
Ca	43	261.7	8.0	**17.5007**	1.426	8.2	mg/L	20	Standard
Fe	54	72.7	37.5	**-0.0601**	0.023	38.1	mg/L	158	Standard
Fe	57	375.0	6.1	**0.5580**	0.070	12.6	mg/L	267	Standard
> **Sc-1**	45	39332.7	0.5				mg/L	38815	Standard
Cl	35	70004.8	3.9				ug/L	57611	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	3617.1	4.1				ug/L	1617	Standard
P	31	6836.5	0.9				ug/L	19244	Standard
S	34	3590.4	5.8				ug/L	3557	Standard
Sr	88	210.0	23.0				ug/L	65	Standard
C	12	153.3	24.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	65.5				mg/L	23	Standard
Dy	164	54.4	85.8				mg/L	13	Standard
Ho-1	165	46.7	83.2				mg/L	10	Standard
Er	166	46.7	24.7				mg/L	13	Standard
I	127	20814.3	4.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		82.656	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.573	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.451
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.236
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606131308
Sample Date/Time: Wednesday, July 06, 2016 14:45:56
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60497.3	3.0				ug/L	68501	Standard
	Be	9	15.0	88.2	**0.0379**	0.016	41.5	ug/L	8	Standard
	Al	27	5083469.3	2.6	**40.5780**	0.231	0.6	ug/L	1397	Standard
	Sc	45	38739.5	1.9				ug/L	38815	Standard
	Ti	47	412.0	7.8	**1.1968**	0.101	8.4	ug/L	36	Standard
	V	51	3464.8	0.7	**0.3471**	0.005	1.4	ug/L	1284	Standard
	Cr	52	8692.2	1.2	**0.3263**	0.023	7.2	ug/L	6503	Standard
	Cr	53	598.3	7.3	**0.2774**	0.047	17.0	ug/L	492	Standard
	Mn	55	171328.2	0.3	**27.8533**	0.134	0.5	ug/L	841	Standard
	Co	59	1006.4	6.9	**0.1718**	0.011	6.3	ug/L	229	Standard
	Ni	60	1056.4	6.2	**0.4705**	0.035	7.3	ug/L	344	Standard
	Cu	65	541.3	4.5	**0.3095**	0.017	5.4	ug/L	115	Standard
	Zn	66	3408.4	0.5	**3.2604**	0.045	1.4	ug/L	190	Standard
>	**Ge**	72	410842.2	0.8				ug/L	409858	Standard
	As	75	28.9	66.4	**0.1266**	0.018	14.5	ug/L	-22	Standard
	Se	82	24.9	24.0	**0.1836**	0.054	29.6	ug/L	18	Standard
	Se-1	77	64.7	7.6	**0.1778**	0.069	38.8	ug/L	50	Standard
>	**Ga**	71	391.7	10.7				mg/L	97	Standard
	Rb	85	1593.4	5.4				ug/L	25	Standard
	Y	89	352039.8	1.1				ug/L	376763	Standard
>	**Rh**	103	45.0	11.1				ug/L	20	Standard
	Mo	98	8222.6	1.1	**3.6505**	0.031	0.8	ug/L	51	Standard
	Ag	107	73.7	8.2	**0.0355**	0.001	2.8	ug/L	76	Standard
	Cd	111	17.4	50.3	**0.0486**	0.005	9.5	mg/L	6	Standard
	Cd	114	57.8	14.9	**0.0499**	0.002	3.7	ug/L	18	Standard
>	**In**	115	483224.8	0.3				ug/L	507261	Standard
	Sn	118	266.7	2.9	**-0.0590**	0.002	2.7	ug/L	683	Standard
	Sb	123	167.3	27.5	**0.0206**	0.011	54.5	ug/L	446	Standard
	Ba	135	5694.1	2.5	**3.1566**	0.082	2.6	ug/L	28	Standard
	Ce	140	3217.0	6.3				ug/L	33	Standard
>	**Tb**	159	754978.3	0.8				ug/L	800803	Standard
	Ho	165	158.3	9.6				ug/L	10	Standard
	Tl	203	120.0	0.8	**0.0497**	0.000	0.2	ug/L	13	Standard
	Tl	205	133.3	11.5	**0.0636**	0.002	3.9	ug/L	13	Standard
	Pb	206	1150.0	3.7	**0.2410**	0.009	3.5	ug/L	226	Standard
	Pb	207	967.0	3.1	**0.2258**	0.007	3.2	ug/L	204	Standard
	Pb	208	4211.2	0.6	**0.2471**	0.000	0.1	ug/L	852	Standard
	U	238	1898.1	1.9	**0.3431**	0.007	2.1	ug/L	13	Standard
>	**Bi**	209	429522.8	0.4				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	7080.0	1.9	**9.5693**	0.314	3.3	mg/L	58	Standard
K	39	105.0	14.3	**0.2779**	0.063	22.6	mg/L	27	Standard
Ca	43	131.7	17.9	**8.2986**	1.559	18.8	mg/L	20	Standard
Fe	54	415.2	7.8	**0.2279**	0.024	10.7	mg/L	158	Standard
Fe	57	483.3	3.2	**0.9402**	0.043	4.5	mg/L	267	Standard
> **Sc-1**	45	38739.5	1.9				mg/L	38815	Standard
Cl	35	77637.7	0.8				ug/L	57611	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	3303.7	2.7				ug/L	1617	Standard
P	31	7910.4	3.8				ug/L	19244	Standard
S	34	3723.8	0.9				ug/L	3557	Standard
Sr	88	186.7	14.8				ug/L	65	Standard
C	12	56.7	27.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	23	Standard
Dy	164	224.4	22.2				mg/L	13	Standard
Ho-1	165	158.3	9.6				mg/L	10	Standard
Er	166	116.7	17.8				mg/L	13	Standard
I	127	29163.1	5.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.316	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.240	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.262
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.653
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606131310
Sample Date/Time: Wednesday, July 06, 2016 14:49:07
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60284.7	0.7				ug/L	68501	Standard
	Be	9	16.7	96.4	**0.0402**	0.020	49.5	ug/L	8	Standard
	Al	27	4773931.6	0.4	**38.2412**	0.333	0.9	ug/L	1397	Standard
	Sc	45	38686.0	1.6				ug/L	38815	Standard
	Ti	47	382.3	5.5	**1.1093**	0.058	5.3	ug/L	36	Standard
	V	51	3331.3	3.4	**0.3285**	0.015	4.5	ug/L	1284	Standard
	Cr	52	8364.3	1.3	**0.2800**	0.022	8.0	ug/L	6503	Standard
	Cr	53	436.7	3.5	**0.0900**	0.018	19.6	ug/L	492	Standard
	Mn	55	151915.9	1.7	**24.7109**	0.509	2.1	ug/L	841	Standard
	Co	59	908.4	1.9	**0.1558**	0.002	1.3	ug/L	229	Standard
	Ni	60	1009.0	5.0	**0.4432**	0.034	7.7	ug/L	344	Standard
	Cu	65	498.0	5.2	**0.2839**	0.017	6.0	ug/L	115	Standard
	Zn	66	2894.9	3.3	**2.7552**	0.112	4.1	ug/L	190	Standard
>	**Ge**	72	410454.1	0.7				ug/L	409858	Standard
	As	75	10.9	361.4	**0.1096**	0.038	35.0	ug/L	-22	Standard
	Se	82	22.6	41.6	**0.1626**	0.091	55.7	ug/L	18	Standard
	Se-1	77	58.3	4.0	**0.0868**	0.029	33.7	ug/L	50	Standard
>	**Ga**	71	321.7	15.6				mg/L	97	Standard
	Rb	85	1441.7	6.2				ug/L	25	Standard
	Y	89	347697.6	0.5				ug/L	376763	Standard
>	**Rh**	103	43.3	24.0				ug/L	20	Standard
	Mo	98	7063.4	0.4	**3.1412**	0.026	0.8	ug/L	51	Standard
	Ag	107	62.7	8.8	**0.0336**	0.001	3.0	ug/L	76	Standard
	Cd	111	6.0	35.2	**0.0425**	0.001	2.6	mg/L	6	Standard
	Cd	114	70.1	22.4	**0.0525**	0.003	6.5	ug/L	18	Standard
>	**In**	115	484013.8	1.0				ug/L	507261	Standard
	Sn	118	245.0	7.4	**-0.0632**	0.004	5.8	ug/L	683	Standard
	Sb	123	172.0	39.0	**0.0218**	0.017	77.0	ug/L	446	Standard
	Ba	135	5035.5	0.9	**2.7890**	0.049	1.7	ug/L	28	Standard
	Ce	140	2850.3	7.9				ug/L	33	Standard
>	**Tb**	159	754149.8	0.6				ug/L	800803	Standard
	Ho	165	116.7	32.5				ug/L	10	Standard
	Tl	203	121.3	6.4	**0.0500**	0.001	2.3	ug/L	13	Standard
	Tl	205	91.7	20.7	**0.0570**	0.003	5.2	ug/L	13	Standard
	Pb	206	1035.0	3.4	**0.2170**	0.007	3.5	ug/L	226	Standard
	Pb	207	864.7	5.6	**0.2022**	0.012	5.7	ug/L	204	Standard
	Pb	208	3790.9	3.4	**0.2229**	0.007	3.1	ug/L	852	Standard
	U	238	1786.8	0.6	**0.3261**	0.002	0.6	ug/L	13	Standard
>	**Bi**	209	428583.4	0.4				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	6726.5	2.4	**9.0996**	0.200	2.2	mg/L	58	Standard
K	39	83.3	19.3	**0.1919**	0.067	34.9	mg/L	27	Standard
Ca	43	153.3	10.5	**9.9211**	1.276	12.9	mg/L	20	Standard
Fe	54	335.5	13.4	**0.1612**	0.033	20.7	mg/L	158	Standard
Fe	57	411.7	5.1	**0.7028**	0.090	12.8	mg/L	267	Standard
> **Sc-1**	45	38686.0	1.6				mg/L	38815	Standard
Cl	35	78795.0	1.3				ug/L	57611	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	3103.7	2.3				ug/L	1617	Standard
P	31	7433.5	0.4				ug/L	19244	Standard
S	34	3570.4	2.2				ug/L	3557	Standard
Sr	88	160.0	21.9				ug/L	65	Standard
C	12	53.3	28.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	23	Standard
Dy	164	257.9	19.0				mg/L	13	Standard
Ho-1	165	116.7	32.5				mg/L	10	Standard
Er	166	113.3	41.7				mg/L	13	Standard
I	127	27441.5	5.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.005	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.145	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.417
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.444
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 14:52:20
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60043.8	2.8				ug/L	68501	Standard
	Be	9	43534.1	0.6	**54.7667**	1.524	2.8	ug/L	8	Standard
	Al	27	6869395.1	1.4	**55.2466**	1.005	1.8	ug/L	1397	Standard
	Sc	45	41879.5	0.9				ug/L	38815	Standard
	Ti	47	38239.2	2.0	**105.8766**	2.401	2.3	ug/L	36	Standard
	V	51	382889.2	1.6	**50.4416**	0.931	1.8	ug/L	1284	Standard
	Cr	52	391303.2	1.4	**51.9269**	0.799	1.5	ug/L	6503	Standard
	Cr	53	47750.1	2.0	**51.3561**	1.104	2.1	ug/L	492	Standard
	Mn	55	349156.6	1.1	**52.9861**	0.731	1.4	ug/L	841	Standard
	Co	59	328642.6	1.2	**50.6387**	0.762	1.5	ug/L	229	Standard
	Ni	60	93736.4	1.3	**51.8094**	0.651	1.3	ug/L	344	Standard
	Cu	65	92724.5	1.0	**51.4957**	0.451	0.9	ug/L	115	Standard
	Zn	66	55630.9	0.6	**51.2018**	0.296	0.6	ug/L	190	Standard
>	Ge	72	440847.9	0.3				ug/L	409858	Standard
	As	75	56533.3	0.5	**50.8018**	0.319	0.6	ug/L	-22	Standard
	Se	82	5695.8	1.1	**50.0727**	0.446	0.9	ug/L	18	Standard
	Se-1	77	3910.2	3.6	**52.0362**	2.090	4.0	ug/L	50	Standard
>	Ga	71	91.7	64.6				mg/L	97	Standard
	Rb	85	1126.7	27.5				ug/L	25	Standard
	Y	89	379803.2	0.9				ug/L	376763	Standard
>	Rh	103	20.0	50.0				ug/L	20	Standard
	Mo	98	249542.6	0.2	**100.9076**	1.379	1.4	ug/L	51	Standard
	Ag	107	319216.6	1.3	**49.8601**	0.930	1.9	ug/L	76	Standard
	Cd	111	103382.2	1.9	**50.8051**	1.171	2.3	mg/L	6	Standard
	Cd	114	253145.9	2.3	**50.8792**	0.856	1.7	ug/L	18	Standard
>	In	115	520581.4	1.3				ug/L	507261	Standard
	Sn	118	282841.0	1.7	**50.2425**	1.007	2.0	ug/L	683	Standard
	Sb	123	225633.6	2.0	**51.2453**	1.238	2.4	ug/L	446	Standard
	Ba	135	97427.9	0.9	**49.9049**	0.789	1.6	ug/L	28	Standard
	Ce	140	1405.1	39.8				ug/L	33	Standard
>	Tb	159	796311.9	0.5				ug/L	800803	Standard
	Ho	165	20.0	75.0				ug/L	10	Standard
	Tl	203	391045.0	0.3	**50.8324**	0.261	0.5	ug/L	13	Standard
	Tl	205	349650.5	1.2	**52.4891**	0.998	1.9	ug/L	13	Standard
	Pb	206	248507.1	0.9	**50.3121**	0.815	1.6	ug/L	226	Standard
	Pb	207	225788.4	1.2	**50.3393**	0.932	1.9	ug/L	204	Standard
	Pb	208	942000.4	0.7	**52.5165**	0.637	1.2	ug/L	852	Standard
	U	238	335311.4	0.3	**50.4845**	0.512	1.0	ug/L	13	Standard
>	Bi	209	451983.7	0.7				ug/L	449044	Standard

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Na	23	1.7	173.2	**-0.3266**	14.646	4484.3	mg/L	2	Standard
Mg	24	3847.2	3.9	**4.7894**	0.192	4.0	mg/L	58	Standard
K	39	1318.4	11.8	**4.7296**	0.581	12.3	mg/L	27	Standard
Ca	43	100.0	13.2	**5.4608**	0.861	15.8	mg/L	20	Standard
Fe	54	6717.0	2.9	**5.0904**	0.124	2.4	mg/L	158	Standard
Fe	57	1981.8	8.3	**5.4666**	0.546	10.0	mg/L	267	Standard
> **Sc-1**	45	41879.5	0.9				mg/L	38815	Standard
Cl	35	72953.3	2.7				ug/L	57611	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	1906.8	5.6				ug/L	1617	Standard
P	31	20882.7	2.6				ug/L	19244	Standard
S	34	4390.6	2.4				ug/L	3557	Standard
Sr	88	61.7	44.7				ug/L	65	Standard
C	12	83.3	50.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	23	Standard
Dy	164	35.5	69.8				mg/L	13	Standard
Ho-1	165	20.0	75.0				mg/L	10	Standard
Er	166	23.3	137.8				mg/L	13	Standard
I	127	9009.4	6.4				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	109.533		
	Al	27	110.493		
	Sc	45			
	Ti	47	105.877		
	V	51	100.883		
	Cr	52	103.854		
	Cr	53			
	Mn	55	105.972		
	Co	59	101.277		
	Ni	60	103.619		
	Cu	65	102.991		
	Zn	66	102.404		
>	Ge	72		107.561	
	As	75	101.604		
	Se	82	100.145		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	100.908		
Ag	107	99.720		
Cd	111	101.610		
Cd	114			
In	115		102.626	
Sn	118	100.485		
Sb	123	102.491		
Ba	135	99.810		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.665		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.033		
U	238	100.969		
Bi	209		100.655	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 14:55:31
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60231.2	2.6				ug/L	68501	Standard
	Be	9	25.0	72.1	**0.0504**	0.022	42.9	ug/L	8	Standard
	Al	27	19713.1	109.9	**0.1901**	0.168	88.3	ug/L	1397	Standard
	Sc	45	42006.5	3.8				ug/L	38815	Standard
	Ti	47	224.3	111.3	**0.5966**	0.692	116.0	ug/L	36	Standard
	V	51	1431.0	15.4	**0.0464**	0.029	61.7	ug/L	1284	Standard
	Cr	52	7221.1	7.9	**0.0495**	0.073	147.8	ug/L	6503	Standard
	Cr	53	473.3	16.7	**0.0985**	0.084	84.9	ug/L	492	Standard
	Mn	55	3357.1	60.7	**0.4180**	0.310	74.1	ug/L	841	Standard
	Co	59	281.3	22.2	**0.0492**	0.010	19.4	ug/L	229	Standard
	Ni	60	409.3	34.9	**0.0709**	0.079	111.3	ug/L	344	Standard
	Cu	65	212.7	66.8	**0.1056**	0.079	74.7	ug/L	115	Standard
	Zn	66	585.0	81.2	**0.4294**	0.438	102.1	ug/L	190	Standard
>	**Ge**	72	437279.0	0.5				ug/L	409858	Standard
	As	75	-8.2	295.3	**0.0914**	0.022	23.9	ug/L	-22	Standard
	Se	82	22.9	23.0	**0.1520**	0.046	30.1	ug/L	18	Standard
	Se-1	77	50.7	10.1	**-0.0694**	0.069	99.2	ug/L	50	Standard
>	**Ga**	71	63.3	37.3				mg/L	97	Standard
	Rb	85	270.0	77.0				ug/L	25	Standard
	Y	89	377259.1	0.6				ug/L	376763	Standard
>	**Rh**	103	11.7	89.2				ug/L	20	Standard
	Mo	98	200.5	13.9	**0.1523**	0.011	7.1	ug/L	51	Standard
	Ag	107	134.3	29.4	**0.0440**	0.006	13.7	ug/L	76	Standard
	Cd	111	21.9	94.6	**0.0501**	0.010	20.1	mg/L	6	Standard
	Cd	114	56.4	104.5	**0.0486**	0.012	24.1	ug/L	18	Standard
>	**In**	115	521770.5	0.7				ug/L	507261	Standard
	Sn	118	940.0	16.5	**0.0570**	0.029	50.1	ug/L	683	Standard
	Sb	123	649.8	29.0	**0.1271**	0.044	34.3	ug/L	446	Standard
	Ba	135	254.7	83.5	**0.1453**	0.107	73.9	ug/L	28	Standard
	Ce	140	905.0	72.4				ug/L	33	Standard
>	**Tb**	159	799280.8	1.7				ug/L	800803	Standard
	Ho	165	16.7	91.7				ug/L	10	Standard
	Tl	203	96.7	77.0	**0.0458**	0.010	21.1	ug/L	13	Standard
	Tl	205	83.3	39.0	**0.0549**	0.005	8.9	ug/L	13	Standard
	Pb	206	346.3	28.6	**0.0653**	0.020	30.9	ug/L	226	Standard
	Pb	207	300.0	24.3	**0.0650**	0.016	25.2	ug/L	204	Standard
	Pb	208	1153.4	25.6	**0.0636**	0.017	26.2	ug/L	852	Standard
	U	238	71.7	52.3	**0.0533**	0.006	10.6	ug/L	13	Standard
>	**Bi**	209	457657.2	0.6				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	30.2	**0.0135**	0.015	107.6	mg/L	58	Standard
K	39	38.3	32.8	**-0.0006**	0.046	8155.2	mg/L	27	Standard
Ca	43	23.3	101.3	**0.2596**	1.533	590.5	mg/L	20	Standard
Fe	54	159.4	14.2	**0.0035**	0.021	599.5	mg/L	158	Standard
Fe	57	215.0	16.8	**-0.0121**	0.133	1100.9	mg/L	267	Standard
Sc-1	45	42006.5	3.8				mg/L	38815	Standard
Cl	35	71083.7	1.4				ug/L	57611	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	1720.1	9.7				ug/L	1617	Standard
P	31	20742.5	3.1				ug/L	19244	Standard
S	34	4203.9	4.9				ug/L	3557	Standard
Sr	88	78.3	19.5				ug/L	65	Standard
C	12	50.0	40.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	23	Standard
Dy	164	45.5	74.5				mg/L	13	Standard
Ho-1	165	16.7	91.7				mg/L	10	Standard
Er	166	23.3	107.9				mg/L	13	Standard
I	127	6801.5	1.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.690	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.860
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.918
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Ti	47	
QC Std 7	Mn	55	
QC Std 7	Tl	203	

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Method 6020 - Summary Report

Sample ID: L1606090708
Sample Date/Time: Wednesday, July 06, 2016 15:07:31
Number of Replicates: 3
Autosampler Position: 349
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56123.9	4.1				ug/L	68501	Standard
	Be	9	6.7	173.2	**0.0286**	0.016	55.2	ug/L	8	Standard
	Al	27	66942.6	2.6	**0.6112**	0.031	5.0	ug/L	1397	Standard
	Sc	45	36869.8	1.5				ug/L	38815	Standard
	Ti	47	31.0	25.2	**0.0658**	0.025	37.8	ug/L	36	Standard
	V	51	1339.2	5.0	**0.0485**	0.012	24.6	ug/L	1284	Standard
	Cr	52	5285.6	3.9	**-0.1571**	0.018	11.6	ug/L	6503	Standard
	Cr	53	546.7	13.8	**0.2255**	0.079	34.9	ug/L	492	Standard
	Mn	55	1303.4	5.1	**0.1198**	0.014	11.8	ug/L	841	Standard
	Co	59	203.3	12.1	**0.0396**	0.004	10.4	ug/L	229	Standard
	Ni	60	359.0	4.4	**0.0588**	0.010	17.7	ug/L	344	Standard
	Cu	65	113.3	13.5	**0.0553**	0.010	18.4	ug/L	115	Standard
	Zn	66	768.7	2.8	**0.6582**	0.025	3.8	ug/L	190	Standard
>	**Ge**	72	405192.6	1.5				ug/L	409858	Standard
	As	75	4918.3	2.2	**4.8977**	0.034	0.7	ug/L	-22	Standard
	Se	82	13.5	76.0	**0.0775**	0.096	124.3	ug/L	18	Standard
	Se-1	77	71.0	7.5	**0.2844**	0.084	29.4	ug/L	50	Standard
>	**Ga**	71	28.3	10.2				mg/L	97	Standard
	Rb	85	61.7	32.8				ug/L	25	Standard
	Y	89	345042.0	1.8				ug/L	376763	Standard
>	**Rh**	103	21.7	53.3				ug/L	20	Standard
	Mo	98	142.5	28.0	**0.1346**	0.017	12.8	ug/L	51	Standard
	Ag	107	76.3	5.5	**0.0362**	0.001	2.1	ug/L	76	Standard
	Cd	111	6.7	54.8	**0.0430**	0.002	4.7	mg/L	6	Standard
	Cd	114	12.5	52.3	**0.0401**	0.001	3.5	ug/L	18	Standard
>	**In**	115	474459.0	1.3				ug/L	507261	Standard
	Sn	118	216.7	17.9	**-0.0677**	0.008	11.7	ug/L	683	Standard
	Sb	123	745.2	27.2	**0.1651**	0.049	29.8	ug/L	446	Standard
	Ba	135	790.0	3.4	**0.4596**	0.016	3.5	ug/L	28	Standard
	Ce	140	65.0	78.1				ug/L	33	Standard
>	**Tb**	159	739678.8	0.7				ug/L	800803	Standard
	Ho	165	6.7	114.6				ug/L	10	Standard
	Tl	203	93.0	10.3	**0.0460**	0.001	2.8	ug/L	13	Standard
	Tl	205	83.3	39.0	**0.0557**	0.005	9.2	ug/L	13	Standard
	Pb	206	252.3	10.6	**0.0497**	0.006	11.9	ug/L	226	Standard
	Pb	207	211.7	8.9	**0.0486**	0.005	9.5	ug/L	204	Standard
	Pb	208	860.0	6.9	**0.0505**	0.003	6.7	ug/L	852	Standard
	U	238	14.7	30.7	**0.0449**	0.001	1.6	ug/L	13	Standard
>	**Bi**	209	429750.5	0.4				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	3003.6	1.6	**4.2430**	0.057	1.3	mg/L	58	Standard
K	39	36.7	43.8	**0.0119**	0.066	559.7	mg/L	27	Standard
Ca	43	21.7	35.3	**0.3805**	0.578	151.8	mg/L	20	Standard
Fe	54	55.9	13.9	**-0.0709**	0.008	10.7	mg/L	158	Standard
Fe	57	308.3	16.4	**0.4073**	0.188	46.1	mg/L	267	Standard
> **Sc-1**	45	36869.8	1.5				mg/L	38815	Standard
Cl	35	66431.3	1.6				ug/L	57611	Standard
Kr	83	2.7	43.3				ug/L	2	Standard
Br	81	2016.8	5.6				ug/L	1617	Standard
P	31	6839.9	2.1				ug/L	19244	Standard
S	34	4038.9	3.4				ug/L	3557	Standard
Sr	88	80.0	32.5				ug/L	65	Standard
C	12	53.3	28.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	25.0				mg/L	23	Standard
Dy	164	12.5	45.3				mg/L	13	Standard
Ho-1	165	6.7	114.6				mg/L	10	Standard
Er	166	16.7	91.7				mg/L	13	Standard
I	127	15781.6	6.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		81.931	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.862	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.534
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.703
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606090710
Sample Date/Time: Wednesday, July 06, 2016 15:10:42
Number of Replicates: 3
Autosampler Position: 350
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55767.5	3.1				ug/L	68501	Standard
	Be	9	15.0	33.3	**0.0396**	0.006	15.5	ug/L	8	Standard
	Al	27	57067.4	4.0	**0.5293**	0.032	6.0	ug/L	1397	Standard
	Sc	45	37737.0	2.8				ug/L	38815	Standard
	Ti	47	27.0	11.1	**0.0534**	0.009	16.5	ug/L	36	Standard
	V	51	1378.9	8.7	**0.0540**	0.019	35.6	ug/L	1284	Standard
	Cr	52	5384.0	1.6	**-0.1434**	0.011	7.6	ug/L	6503	Standard
	Cr	53	555.0	6.5	**0.2351**	0.036	15.1	ug/L	492	Standard
	Mn	55	1200.4	3.4	**0.1025**	0.009	8.7	ug/L	841	Standard
	Co	59	202.3	5.0	**0.0394**	0.001	3.3	ug/L	229	Standard
	Ni	60	349.3	8.9	**0.0527**	0.019	35.2	ug/L	344	Standard
	Cu	65	113.0	24.1	**0.0551**	0.017	31.4	ug/L	115	Standard
	Zn	66	816.4	3.2	**0.7051**	0.033	4.7	ug/L	190	Standard
>	**Ge**	72	405693.9	1.3				ug/L	409858	Standard
	As	75	4000.4	1.6	**3.9982**	0.091	2.3	ug/L	-22	Standard
	Se	82	17.3	50.2	**0.1136**	0.082	71.8	ug/L	18	Standard
	Se-1	77	68.7	10.9	**0.2488**	0.115	46.4	ug/L	50	Standard
>	**Ga**	71	28.3	36.7				mg/L	97	Standard
	Rb	85	40.0	45.1				ug/L	25	Standard
	Y	89	346549.0	3.0				ug/L	376763	Standard
>	**Rh**	103	16.7	17.3				ug/L	20	Standard
	Mo	98	97.7	27.5	**0.1145**	0.012	10.9	ug/L	51	Standard
	Ag	107	72.7	8.4	**0.0354**	0.001	3.2	ug/L	76	Standard
	Cd	111	4.8	40.9	**0.0420**	0.001	2.6	mg/L	6	Standard
	Cd	114	2.8	127.9	**0.0380**	0.001	2.1	ug/L	18	Standard
>	**In**	115	479824.6	1.7				ug/L	507261	Standard
	Sn	118	205.0	16.0	**-0.0705**	0.007	9.5	ug/L	683	Standard
	Sb	123	434.3	26.7	**0.0870**	0.030	34.6	ug/L	446	Standard
	Ba	135	658.3	5.7	**0.3813**	0.014	3.8	ug/L	28	Standard
	Ce	140	16.7	62.4				ug/L	33	Standard
>	**Tb**	159	748992.8	2.4				ug/L	800803	Standard
	Ho	165	5.0	100.0				ug/L	10	Standard
	Tl	203	71.3	13.3	**0.0431**	0.001	3.4	ug/L	13	Standard
	Tl	205	60.0	65.1	**0.0521**	0.006	12.2	ug/L	13	Standard
	Pb	206	267.3	9.0	**0.0528**	0.006	11.2	ug/L	226	Standard
	Pb	207	234.3	3.4	**0.0538**	0.003	5.1	ug/L	204	Standard
	Pb	208	992.7	7.2	**0.0582**	0.004	7.5	ug/L	852	Standard
	U	238	5.7	53.9	**0.0435**	0.000	1.1	ug/L	13	Standard
>	**Bi**	209	430634.6	1.8				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	2340.2	3.7	**3.2200**	0.031	1.0	mg/L	58	Standard
K	39	35.0	37.8	**0.0008**	0.051	6246.2	mg/L	27	Standard
Ca	43	15.0	33.3	**-0.1583**	0.367	231.7	mg/L	20	Standard
Fe	54	62.8	31.4	**-0.0660**	0.018	27.6	mg/L	158	Standard
Fe	57	236.7	3.2	**0.1352**	0.041	30.0	mg/L	267	Standard
> **Sc-1**	45	37737.0	2.8				mg/L	38815	Standard
Cl	35	66671.0	0.2				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	2100.1	1.6				ug/L	1617	Standard
P	31	6753.2	3.3				ug/L	19244	Standard
S	34	4090.6	7.3				ug/L	3557	Standard
Sr	88	83.3	12.5				ug/L	65	Standard
C	12	30.0	33.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	23	Standard
Dy	164	12.7	119.6				mg/L	13	Standard
Ho-1	165	5.0	100.0				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	15177.6	3.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		81.411	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.984	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.591
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.900
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606090711
Sample Date/Time: Wednesday, July 06, 2016 15:13:54
Number of Replicates: 3
Autosampler Position: 351
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54814.1	3.8				ug/L	68501	Standard
	Be	9	16.7	62.4	**0.0422**	0.014	32.8	ug/L	8	Standard
	Al	27	52699.8	1.6	**0.4995**	0.024	4.8	ug/L	1397	Standard
	Sc	45	38356.9	3.4				ug/L	38815	Standard
	Ti	47	29.7	14.0	**0.0612**	0.013	21.0	ug/L	36	Standard
	V	51	1298.7	4.2	**0.0417**	0.008	18.1	ug/L	1284	Standard
	Cr	52	5448.0	3.0	**-0.1368**	0.021	15.5	ug/L	6503	Standard
	Cr	53	526.7	9.4	**0.1996**	0.054	27.2	ug/L	492	Standard
	Mn	55	966.0	3.4	**0.0631**	0.005	7.8	ug/L	841	Standard
	Co	59	192.7	2.3	**0.0376**	0.001	2.1	ug/L	229	Standard
	Ni	60	332.3	7.6	**0.0417**	0.014	33.8	ug/L	344	Standard
	Cu	65	107.0	4.9	**0.0511**	0.004	7.0	ug/L	115	Standard
	Zn	66	673.7	5.7	**0.5595**	0.037	6.6	ug/L	190	Standard
>	**Ge**	72	407073.7	0.6				ug/L	409858	Standard
	As	75	3936.4	1.8	**3.9222**	0.063	1.6	ug/L	-22	Standard
	Se	82	12.1	66.2	**0.0641**	0.076	118.6	ug/L	18	Standard
	Se-1	77	60.7	18.2	**0.1275**	0.157	123.2	ug/L	50	Standard
>	**Ga**	71	41.7	50.0				mg/L	97	Standard
	Rb	85	40.0	45.1				ug/L	25	Standard
	Y	89	345252.8	0.9				ug/L	376763	Standard
>	**Rh**	103	20.0	25.0				ug/L	20	Standard
	Mo	98	101.1	24.4	**0.1158**	0.011	9.9	ug/L	51	Standard
	Ag	107	60.3	15.9	**0.0333**	0.002	5.0	ug/L	76	Standard
	Cd	111	2.5	44.5	**0.0407**	0.001	1.5	mg/L	6	Standard
	Cd	114	12.2	59.9	**0.0400**	0.002	4.1	ug/L	18	Standard
>	**In**	115	481188.3	1.3				ug/L	507261	Standard
	Sn	118	168.3	9.5	**-0.0777**	0.003	4.4	ug/L	683	Standard
	Sb	123	324.9	34.4	**0.0597**	0.028	47.6	ug/L	446	Standard
	Ba	135	608.7	5.5	**0.3529**	0.019	5.4	ug/L	28	Standard
	Ce	140	8.3	34.6				ug/L	33	Standard
>	**Tb**	159	745199.8	0.8				ug/L	800803	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	72.3	21.5	**0.0432**	0.002	5.0	ug/L	13	Standard
	Tl	205	55.0	39.6	**0.0512**	0.003	6.8	ug/L	13	Standard
	Pb	206	221.3	7.7	**0.0430**	0.004	9.0	ug/L	226	Standard
	Pb	207	189.0	5.0	**0.0431**	0.002	5.7	ug/L	204	Standard
	Pb	208	789.3	5.2	**0.0462**	0.003	5.7	ug/L	852	Standard
	U	238	4.3	81.0	**0.0433**	0.001	1.3	ug/L	13	Standard
>	**Bi**	209	431209.2	0.7				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	2360.2	3.7	**3.2002**	0.221	6.9	mg/L	58	Standard
K	39	20.0	86.6	**-0.0601**	0.072	120.5	mg/L	27	Standard
Ca	43	25.0	20.0	**0.5647**	0.390	69.0	mg/L	20	Standard
Fe	54	59.1	42.1	**-0.0702**	0.021	30.3	mg/L	158	Standard
Fe	57	290.0	10.5	**0.3038**	0.121	40.0	mg/L	267	Standard
> **Sc-1**	45	38356.9	3.4				mg/L	38815	Standard
Cl	35	66762.1	1.2				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1850.1	7.8				ug/L	1617	Standard
P	31	6509.7	3.4				ug/L	19244	Standard
S	34	3905.5	1.3				ug/L	3557	Standard
Sr	88	58.3	4.9				ug/L	65	Standard
C	12	43.3	70.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	23	Standard
Dy	164	6.5	179.6				mg/L	13	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	14775.5	3.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		80.019	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.321	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.860
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.028
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606090712
Sample Date/Time: Wednesday, July 06, 2016 15:17:05
Number of Replicates: 3
Autosampler Position: 352
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59136.9	1.9				ug/L	68501	Standard
	Be	9	100.0	0.0	**0.1471**	0.002	1.6	ug/L	8	Standard
	Al	27	3735465.7	0.2	**30.5168**	0.591	1.9	ug/L	1397	Standard
	Sc	45	39907.5	1.6				ug/L	38815	Standard
	Ti	47	188106.0	1.6	**592.5898**	9.341	1.6	ug/L	36	Standard
	V	51	727880.7	2.1	**109.2334**	0.828	0.8	ug/L	1284	Standard
	Cr	52	2147459.5	0.6	**329.0918**	4.735	1.4	ug/L	6503	Standard
	Cr	53	294234.5	0.7	**362.5456**	7.204	2.0	ug/L	492	Standard
	Mn	55	136764.2	1.0	**23.5558**	0.108	0.5	ug/L	841	Standard
	Co	59	7595.9	0.5	**1.3368**	0.018	1.4	ug/L	229	Standard
	Ni	60	30975.0	0.9	**19.3783**	0.287	1.5	ug/L	344	Standard
	Cu	65	63388.3	1.8	**40.0459**	0.878	2.2	ug/L	115	Standard
	Zn	66	366901.8	1.0	**384.8805**	2.395	0.6	ug/L	190	Standard
>	Ge	72	387555.3	1.4				ug/L	409858	Standard
	As	75	11510.2	1.9	**11.8429**	0.269	2.3	ug/L	-22	Standard
	Se	82	113.3	57.4	**1.0824**	0.654	60.4	ug/L	18	Standard
	Se-1	77	1337.7	1.3	**19.7866**	0.288	1.5	ug/L	50	Standard
>	Ga	71	3715.5	1.3				mg/L	97	Standard
	Rb	85	24456.4	1.2				ug/L	25	Standard
	Y	89	367766.8	1.0				ug/L	376763	Standard
>	Rh	103	636.7	41.6				ug/L	20	Standard
	Mo	98	20218.7	0.2	**9.5016**	0.081	0.9	ug/L	51	Standard
	Ag	107	1395.4	2.2	**0.2746**	0.007	2.5	ug/L	76	Standard
	Cd	111	15436.6	1.1	**8.7889**	0.145	1.6	mg/L	6	Standard
	Cd	114	36990.0	1.0	**8.6137**	0.136	1.6	ug/L	18	Standard
>	In	115	450987.5	0.7				ug/L	507261	Standard
	Sn	118	123207.3	0.8	**25.2064**	0.206	0.8	ug/L	683	Standard
	Sb	123	4061.0	3.4	**1.0445**	0.031	3.0	ug/L	446	Standard
	Ba	135	211456.5	1.1	**124.9888**	0.973	0.8	ug/L	28	Standard
	Ce	140	95684.5	0.7				ug/L	33	Standard
>	Tb	159	728548.4	1.4				ug/L	800803	Standard
	Ho	165	2620.2	2.6				ug/L	10	Standard
	Tl	203	268.7	6.6	**0.0756**	0.003	4.2	ug/L	13	Standard
	Tl	205	228.3	5.1	**0.0840**	0.002	2.8	ug/L	13	Standard
	Pb	206	246609.4	0.5	**60.3899**	0.539	0.9	ug/L	226	Standard
	Pb	207	209210.9	0.8	**56.4141**	0.211	0.4	ug/L	204	Standard
	Pb	208	889009.1	1.9	**59.9416**	0.514	0.9	ug/L	852	Standard
	U	238	12374.1	0.4	**2.2942**	0.018	0.8	ug/L	13	Standard
>	Bi	209	373680.6	1.1				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	627460.5	0.3	**826.3355**	10.138	1.2	mg/L	58	Standard
K	39	891.7	12.4	**3.3152**	0.420	12.7	mg/L	27	Standard
Ca	43	85.0	25.6	**4.7327**	1.524	32.2	mg/L	20	Standard
Fe	54	2238.8	0.7	**1.7027**	0.033	1.9	mg/L	158	Standard
Fe	57	931.7	3.2	**2.3514**	0.086	3.7	mg/L	267	Standard
> **Sc-1**	45	39907.5	1.6				mg/L	38815	Standard
Cl	35	105249.6	0.7				ug/L	57611	Standard
Kr	83	3.3	45.8				ug/L	2	Standard
Br	81	33069.4	2.9				ug/L	1617	Standard
P	31	23598.4	1.5				ug/L	19244	Standard
S	34	3327.0	1.9				ug/L	3557	Standard
Sr	88	1011.7	3.7				ug/L	65	Standard
C	12	380.0	11.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1216.7	6.6				mg/L	23	Standard
Dy	164	3819.8	3.9				mg/L	13	Standard
Ho-1	165	2620.2	2.6				mg/L	10	Standard
Er	166	2590.2	4.1				mg/L	13	Standard
I	127	159962.4	8.6				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		86.330	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.558	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	88.906	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	83.217	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
V 51 Upper, S, EEE	V	51	
Cr 52 Upper, S, EEE	Cr	52	

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Cr 53 Upper, S, EEE	Cr	53
Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606090713
Sample Date/Time: Wednesday, July 06, 2016 15:20:17
Number of Replicates: 3
Autosampler Position: 353
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62142.2	2.7				ug/L	68501	Standard
	Be	9	75.0	11.5	**0.1107**	0.012	10.9	ug/L	8	Standard
	Al	27	3038140.7	0.5	**23.6329**	0.622	2.6	ug/L	1397	Standard
	Sc	45	40017.8	2.7				ug/L	38815	Standard
	Ti	47	163885.9	0.8	**513.6032**	3.518	0.7	ug/L	36	Standard
	V	51	602537.0	0.8	**89.9411**	0.844	0.9	ug/L	1284	Standard
	Cr	52	1965909.2	0.6	**299.6143**	3.300	1.1	ug/L	6503	Standard
	Cr	53	263656.0	0.8	**323.1168**	4.959	1.5	ug/L	492	Standard
	Mn	55	23201.4	1.5	**3.8959**	0.074	1.9	ug/L	841	Standard
	Co	59	4269.3	1.9	**0.7498**	0.008	1.1	ug/L	229	Standard
	Ni	60	23944.9	1.0	**14.8649**	0.057	0.4	ug/L	344	Standard
	Cu	65	10740.1	1.4	**6.7382**	0.053	0.8	ug/L	115	Standard
	Zn	66	144279.7	1.0	**150.4939**	0.640	0.4	ug/L	190	Standard
>	**Ge**	72	389560.3	0.8				ug/L	409858	Standard
	As	75	11554.1	2.0	**11.8265**	0.285	2.4	ug/L	-22	Standard
	Se	82	21.7	113.6	**0.1655**	0.247	149.4	ug/L	18	Standard
	Se-1	77	1182.7	5.8	**17.3115**	1.052	6.1	ug/L	50	Standard
>	**Ga**	71	2596.9	4.5				mg/L	97	Standard
	Rb	85	17209.8	0.9				ug/L	25	Standard
	Y	89	365815.6	1.4				ug/L	376763	Standard
>	**Rh**	103	1266.7	9.5				ug/L	20	Standard
	Mo	98	37661.3	0.8	**17.4867**	0.129	0.7	ug/L	51	Standard
	Ag	107	1201.4	1.7	**0.2377**	0.003	1.5	ug/L	76	Standard
	Cd	111	8334.2	0.6	**4.7227**	0.028	0.6	mg/L	6	Standard
	Cd	114	20677.6	2.4	**4.7904**	0.113	2.4	ug/L	18	Standard
>	**In**	115	454857.0	0.1				ug/L	507261	Standard
	Sn	118	108567.6	1.5	**22.0081**	0.314	1.4	ug/L	683	Standard
	Sb	123	8996.4	2.4	**2.3188**	0.059	2.5	ug/L	446	Standard
	Ba	135	159685.7	0.2	**93.5896**	0.278	0.3	ug/L	28	Standard
	Ce	140	50972.3	0.2				ug/L	33	Standard
>	**Tb**	159	740846.9	0.5				ug/L	800803	Standard
	Ho	165	1838.4	7.4				ug/L	10	Standard
	Tl	203	115.0	7.4	**0.0513**	0.001	2.8	ug/L	13	Standard
	Tl	205	115.0	11.5	**0.0632**	0.002	3.6	ug/L	13	Standard
	Pb	206	61112.0	0.3	**14.8501**	0.069	0.5	ug/L	226	Standard
	Pb	207	52034.5	0.1	**13.9261**	0.103	0.7	ug/L	204	Standard
	Pb	208	219213.3	1.2	**14.6715**	0.162	1.1	ug/L	852	Standard
	U	238	13518.0	1.2	**2.4841**	0.046	1.9	ug/L	13	Standard
>	**Bi**	209	376481.4	0.7				ug/L	449044	Standard

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Na	23	1.7	173.2	**-0.2091**	14.850	7100.1	mg/L	2	Standard
Mg	24	652049.2	1.0	**856.5114**	15.399	1.8	mg/L	58	Standard
K	39	871.7	10.5	**3.2293**	0.355	11.0	mg/L	27	Standard
Ca	43	33.3	17.3	**1.0753**	0.417	38.8	mg/L	20	Standard
Fe	54	940.9	10.2	**0.6444**	0.085	13.1	mg/L	158	Standard
Fe	57	590.0	8.3	**1.2381**	0.210	16.9	mg/L	267	Standard
Sc-1	45	40017.8	2.7				mg/L	38815	Standard
Cl	35	107621.5	0.7				ug/L	57611	Standard
Kr	83	1.3	173.2				ug/L	2	Standard
Br	81	33026.0	3.0				ug/L	1617	Standard
P	31	22977.4	2.0				ug/L	19244	Standard
S	34	3573.8	1.9				ug/L	3557	Standard
Sr	88	981.7	8.2				ug/L	65	Standard
C	12	476.7	10.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	473.3	11.6				mg/L	23	Standard
Dy	164	2439.4	1.3				mg/L	13	Standard
Ho-1	165	1838.4	7.4				mg/L	10	Standard
Er	166	1896.8	12.1				mg/L	13	Standard
I	127	172276.0	5.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		90.717	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.048	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.669
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		83.841
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	

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Zn 66 Upper, S, EEE	Zn	66

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Method 6020 - Summary Report

Sample ID: L1606102602
Sample Date/Time: Wednesday, July 06, 2016 15:23:28
Number of Replicates: 3
Autosampler Position: 354
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59909.9	2.1				ug/L	68501	Standard
	Be	9	50.0	20.0	**0.0823**	0.012	14.0	ug/L	8	Standard
	Al	27	4054931.1	0.6	**32.6975**	0.624	1.9	ug/L	1397	Standard
	Sc	45	38943.3	1.5				ug/L	38815	Standard
	Ti	47	155.7	35.2	**0.4319**	0.159	36.8	ug/L	36	Standard
	V	51	1895.1	102.8	**0.1241**	0.276	222.3	ug/L	1284	Standard
	Cr	52	788614.2	0.5	**112.8373**	0.952	0.8	ug/L	6503	Standard
	Cr	53	99272.7	3.0	**114.5378**	3.777	3.3	ug/L	492	Standard
	Mn	55	467403.8	1.8	**75.7860**	1.140	1.5	ug/L	841	Standard
	Co	59	46321.0	0.9	**7.6267**	0.075	1.0	ug/L	229	Standard
	Ni	60	543017.8	1.4	**321.3449**	4.568	1.4	ug/L	344	Standard
	Cu	65	30865.4	1.3	**18.2968**	0.119	0.7	ug/L	115	Standard
	Zn	66	4929.8	3.6	**4.7423**	0.151	3.2	ug/L	190	Standard
>	**Ge**	72	412808.8	0.6				ug/L	409858	Standard
	As	75	190.7	12.5	**0.2816**	0.024	8.4	ug/L	-22	Standard
	Se	82	121.8	12.3	**1.0936**	0.147	13.4	ug/L	18	Standard
	Se-1	77	250.0	5.6	**2.8454**	0.195	6.9	ug/L	50	Standard
>	**Ga**	71	66.7	37.0				mg/L	97	Standard
	Rb	85	911.7	9.3				ug/L	25	Standard
	Y	89	356017.5	0.3				ug/L	376763	Standard
>	**Rh**	103	295.0	2.9				ug/L	20	Standard
	Mo	98	2507.9	2.1	**1.1659**	0.032	2.8	ug/L	51	Standard
	Ag	107	115.3	4.1	**0.0426**	0.001	2.3	ug/L	76	Standard
	Cd	111	280.0	2.5	**0.1878**	0.004	2.0	mg/L	6	Standard
	Cd	114	681.9	2.0	**0.1853**	0.004	2.4	ug/L	18	Standard
>	**In**	115	482113.9	1.0				ug/L	507261	Standard
	Sn	118	426.7	9.5	**-0.0281**	0.007	24.6	ug/L	683	Standard
	Sb	123	379.3	24.4	**0.0725**	0.022	30.2	ug/L	446	Standard
	Ba	135	7036.6	1.4	**3.9062**	0.063	1.6	ug/L	28	Standard
	Ce	140	5290.9	3.8				ug/L	33	Standard
>	**Tb**	159	759964.6	0.4				ug/L	800803	Standard
	Ho	165	306.7	9.6				ug/L	10	Standard
	Tl	203	71.3	11.7	**0.0430**	0.001	2.7	ug/L	13	Standard
	Tl	205	78.3	13.3	**0.0547**	0.002	3.2	ug/L	13	Standard
	Pb	206	322.0	17.6	**0.0637**	0.013	19.6	ug/L	226	Standard
	Pb	207	276.0	19.8	**0.0629**	0.013	21.1	ug/L	204	Standard
	Pb	208	1167.0	11.9	**0.0676**	0.009	12.7	ug/L	852	Standard
	U	238	240.0	4.2	**0.0801**	0.002	2.4	ug/L	13	Standard
>	**Bi**	209	435576.2	0.8				ug/L	449044	Standard

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Na	23	1.7	173.2	**0.3081**	15.746	5110.4	mg/L	2	Standard
Mg	24	9246.2	5.3	**12.4378**	0.612	4.9	mg/L	58	Standard
K	39	103.3	36.6	**0.2687**	0.151	56.1	mg/L	27	Standard
Ca	43	96.7	10.8	**5.7243**	0.667	11.7	mg/L	20	Standard
Fe	54	584.2	1.4	**0.3673**	0.013	3.7	mg/L	158	Standard
Fe	57	408.3	5.7	**0.6812**	0.058	8.4	mg/L	267	Standard
> **Sc-1**	45	38943.3	1.5				mg/L	38815	Standard
Cl	35	65179.9	1.4				ug/L	57611	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	17183.1	2.9				ug/L	1617	Standard
P	31	7878.7	4.8				ug/L	19244	Standard
S	34	3810.5	4.5				ug/L	3557	Standard
Sr	88	171.7	24.8				ug/L	65	Standard
C	12	30.0	57.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	23	Standard
Dy	164	473.7	16.7				mg/L	13	Standard
Ho-1	165	306.7	9.6				mg/L	10	Standard
Er	166	270.0	23.1				mg/L	13	Standard
I	127	24579.9	4.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		87.458	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.720	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.043
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.001
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	
Ni 60 Upper, S, EEE	Ni	60	

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Method 6020 - Summary Report

Sample ID: L1606102602
Sample Date/Time: Wednesday, July 06, 2016 15:27:52
Number of Replicates: 3
Autosampler Position: 354
Sample Description: 200
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59652.3	3.2				ug/L	68501	Standard
	Be	9	20.0	90.1	**0.0451**	0.023	51.8	ug/L	8	Standard
	Al	27	418604.7	3.4	**3.4231**	0.167	4.9	ug/L	1397	Standard
	Sc	45	38361.8	1.8				ug/L	38815	Standard
	Ti	47	48.0	17.1	**0.1155**	0.025	21.3	ug/L	36	Standard
	V	51	1557.5	16.7	**0.0776**	0.037	47.4	ug/L	1284	Standard
	Cr	52	69895.5	5.2	**9.2442**	0.610	6.6	ug/L	6503	Standard
	Cr	53	8322.3	4.2	**9.3078**	0.491	5.3	ug/L	492	Standard
	Mn	55	46163.3	3.7	**7.4663**	0.256	3.4	ug/L	841	Standard
	Co	59	4716.7	3.2	**0.7886**	0.025	3.2	ug/L	229	Standard
	Ni	60	53355.9	3.6	**31.7146**	0.955	3.0	ug/L	344	Standard
	Cu	65	2976.0	1.8	**1.7684**	0.046	2.6	ug/L	115	Standard
	Zn	66	1005.0	2.7	**0.8857**	0.031	3.5	ug/L	190	Standard
>	**Ge**	72	409101.3	0.8				ug/L	409858	Standard
	As	75	-25.1	69.7	**0.0745**	0.017	23.1	ug/L	-22	Standard
	Se	82	28.0	12.9	**0.2140**	0.032	15.1	ug/L	18	Standard
	Se-1	77	74.7	8.1	**0.3270**	0.081	24.7	ug/L	50	Standard
>	**Ga**	71	36.7	55.1				mg/L	97	Standard
	Rb	85	145.0	21.0				ug/L	25	Standard
	Y	89	351461.6	1.1				ug/L	376763	Standard
>	**Rh**	103	78.3	24.2				ug/L	20	Standard
	Mo	98	270.6	12.5	**0.1889**	0.015	7.9	ug/L	51	Standard
	Ag	107	67.0	25.1	**0.0343**	0.003	8.3	ug/L	76	Standard
	Cd	111	22.5	15.3	**0.0512**	0.002	3.6	mg/L	6	Standard
	Cd	114	64.7	40.1	**0.0513**	0.006	11.0	ug/L	18	Standard
>	**In**	115	485128.4	0.5				ug/L	507261	Standard
	Sn	118	258.3	11.7	**-0.0608**	0.006	9.1	ug/L	683	Standard
	Sb	123	528.0	32.4	**0.1083**	0.042	38.5	ug/L	446	Standard
	Ba	135	657.0	3.1	**0.3767**	0.010	2.6	ug/L	28	Standard
	Ce	140	241.7	34.1				ug/L	33	Standard
>	**Tb**	159	760299.8	0.9				ug/L	800803	Standard
	Ho	165	15.0	0.0				ug/L	10	Standard
	Tl	203	60.0	11.7	**0.0413**	0.001	2.2	ug/L	13	Standard
	Tl	205	45.0	19.2	**0.0494**	0.001	2.7	ug/L	13	Standard
	Pb	206	227.7	7.2	**0.0431**	0.003	8.1	ug/L	226	Standard
	Pb	207	180.3	9.6	**0.0401**	0.004	9.9	ug/L	204	Standard
	Pb	208	797.0	7.7	**0.0455**	0.003	7.5	ug/L	852	Standard
	U	238	16.7	30.2	**0.0452**	0.001	1.7	ug/L	13	Standard
>	**Bi**	209	441832.6	0.2				ug/L	449044	Standard

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Na	23	1.7	173.2	**0.3058**	15.741	5148.3	mg/L	2	Standard
Mg	24	908.4	5.6	**1.2054**	0.048	4.0	mg/L	58	Standard
K	39	36.7	39.4	**0.0054**	0.056	1043.3	mg/L	27	Standard
Ca	43	40.0	12.5	**1.6623**	0.322	19.4	mg/L	20	Standard
Fe	54	67.9	4.4	**-0.0627**	0.002	2.4	mg/L	158	Standard
Fe	57	248.3	12.1	**0.1622**	0.117	72.3	mg/L	267	Standard
Sc-1	45	38361.8	1.8				mg/L	38815	Standard
Cl	35	69584.8	2.6				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	3120.3	5.7				ug/L	1617	Standard
P	31	6753.2	0.8				ug/L	19244	Standard
S	34	3768.8	1.3				ug/L	3557	Standard
Sr	88	76.7	7.5				ug/L	65	Standard
C	12	16.7	124.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	78.1				mg/L	23	Standard
Dy	164	39.0	0.0				mg/L	13	Standard
Ho-1	165	15.0	0.0				mg/L	10	Standard
Er	166	20.0	0.0				mg/L	13	Standard
I	127	14281.7	3.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		87.082	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.815	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.637
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.394
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606102602
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 15:31:05
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	62510.4	1.5				ug/L	68501	Standard
	Be	9	45265.9	1.1	**54.6732**	0.331	0.6	ug/L	8	Standard
	Al	27	7101979.2	2.0	**54.8496**	0.969	1.8	ug/L	1397	Standard
	Sc	45	42855.5	1.1				ug/L	38815	Standard
	Ti	47	38254.6	0.4	**105.6282**	1.379	1.3	ug/L	36	Standard
	V	51	389890.4	0.9	**51.2225**	0.409	0.8	ug/L	1284	Standard
	Cr	52	394953.7	1.4	**52.2714**	0.664	1.3	ug/L	6503	Standard
	Cr	53	49295.1	1.9	**52.8778**	0.470	0.9	ug/L	492	Standard
	Mn	55	355133.0	1.5	**53.7409**	0.198	0.4	ug/L	841	Standard
	Co	59	338270.8	0.6	**51.9779**	0.514	1.0	ug/L	229	Standard
	Ni	60	95167.3	1.8	**52.4560**	0.799	1.5	ug/L	344	Standard
	Cu	65	94410.2	0.3	**52.2916**	0.811	1.6	ug/L	115	Standard
	Zn	66	56526.3	1.3	**51.8812**	0.251	0.5	ug/L	190	Standard
>	Ge	72	442099.8	1.5				ug/L	409858	Standard
	As	75	57168.4	1.7	**51.2247**	0.117	0.2	ug/L	-22	Standard
	Se	82	5880.4	1.8	**51.5509**	0.555	1.1	ug/L	18	Standard
	Se-1	77	3935.5	1.6	**52.2257**	0.689	1.3	ug/L	50	Standard
>	Ga	71	56.7	35.7				mg/L	97	Standard
	Rb	85	830.0	10.6				ug/L	25	Standard
	Y	89	383309.8	0.5				ug/L	376763	Standard
>	Rh	103	65.0	13.3				ug/L	20	Standard
	Mo	98	258034.7	0.3	**102.2558**	0.442	0.4	ug/L	51	Standard
	Ag	107	328084.2	0.8	**50.2200**	0.076	0.2	ug/L	76	Standard
	Cd	111	104954.0	1.1	**50.5459**	0.249	0.5	mg/L	6	Standard
	Cd	114	257205.6	1.2	**50.6685**	0.423	0.8	ug/L	18	Standard
>	In	115	531139.6	0.6				ug/L	507261	Standard
	Sn	118	287869.1	1.0	**50.1137**	0.324	0.6	ug/L	683	Standard
	Sb	123	226343.7	0.7	**50.3782**	0.153	0.3	ug/L	446	Standard
	Ba	135	98602.1	0.7	**49.4969**	0.088	0.2	ug/L	28	Standard
	Ce	140	105.0	29.0				ug/L	33	Standard
>	Tb	159	805440.7	1.6				ug/L	800803	Standard
	Ho	165	15.0	57.7				ug/L	10	Standard
	Tl	203	401097.9	1.2	**51.3040**	0.273	0.5	ug/L	13	Standard
	Tl	205	355854.2	1.4	**52.5682**	1.130	2.1	ug/L	13	Standard
	Pb	206	254786.8	0.7	**50.7595**	0.728	1.4	ug/L	226	Standard
	Pb	207	230315.6	0.2	**50.5265**	0.425	0.8	ug/L	204	Standard
	Pb	208	963927.7	0.8	**52.8789**	0.356	0.7	ug/L	852	Standard
	U	238	345757.3	0.5	**51.2253**	0.548	1.1	ug/L	13	Standard
>	Bi	209	459318.8	0.8				ug/L	449044	Standard

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Na	23	3.3	86.6	**7.7717**	14.337	184.5	mg/L	2	Standard
Mg	24	3975.5	6.9	**4.8346**	0.283	5.8	mg/L	58	Standard
K	39	1343.4	5.6	**4.7102**	0.312	6.6	mg/L	27	Standard
Ca	43	80.0	12.5	**3.9950**	0.686	17.2	mg/L	20	Standard
Fe	54	6635.7	2.5	**4.9103**	0.105	2.1	mg/L	158	Standard
Fe	57	1878.4	2.2	**5.0116**	0.137	2.7	mg/L	267	Standard
Sc-1	45	42855.5	1.1				mg/L	38815	Standard
Cl	35	74232.2	2.7				ug/L	57611	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	2200.2	12.5				ug/L	1617	Standard
P	31	22027.7	0.8				ug/L	19244	Standard
S	34	4434.0	2.1				ug/L	3557	Standard
Sr	88	70.0	43.4				ug/L	65	Standard
C	12	53.3	60.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	107.9				mg/L	23	Standard
Dy	164	6.3	86.9				mg/L	13	Standard
Ho-1	165	15.0	57.7				mg/L	10	Standard
Er	166	6.7	173.2				mg/L	13	Standard
I	127	13556.1	3.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	109.346		
Al	27	109.699		
Sc	45			
Ti	47	105.628		
V	51	102.445		
Cr	52	104.543		
Cr	53			
Mn	55	107.482		
Co	59	103.956		
Ni	60	104.912		
Cu	65	104.583		
Zn	66	103.762		
Ge	72		107.867	
As	75	102.449		
Se	82	103.102		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	102.256		
Ag	107	100.440		
Cd	111	101.092		
Cd	114			
In	115			104.707
Sn	118	100.227		
Sb	123	100.756		
Ba	135	98.994		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.608		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.758		
U	238	102.451		
Bi	209			102.288
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 15:34:17
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61561.6	3.3				ug/L	68501	Standard
	Be	9	28.3	10.2	**0.0542**	0.003	6.0	ug/L	8	Standard
	Al	27	2803.6	30.9	**0.0569**	0.006	11.2	ug/L	1397	Standard
	Sc	45	42046.6	2.5				ug/L	38815	Standard
	Ti	47	62.0	4.3	**0.1464**	0.006	4.0	ug/L	36	Standard
	V	51	1620.5	26.0	**0.0735**	0.059	79.9	ug/L	1284	Standard
	Cr	52	6965.3	2.5	**0.0210**	0.012	56.9	ug/L	6503	Standard
	Cr	53	605.0	6.6	**0.2469**	0.038	15.2	ug/L	492	Standard
	Mn	55	1194.1	59.5	**0.0889**	0.112	125.6	ug/L	841	Standard
	Co	59	316.0	35.1	**0.0550**	0.018	32.3	ug/L	229	Standard
	Ni	60	524.0	11.7	**0.1368**	0.031	22.5	ug/L	344	Standard
	Cu	65	203.7	7.4	**0.1015**	0.007	7.2	ug/L	115	Standard
	Zn	66	198.3	8.9	**0.0722**	0.015	21.3	ug/L	190	Standard
>	**Ge**	72	434423.2	1.3				ug/L	409858	Standard
	As	75	6.5	179.2	**0.1047**	0.011	10.1	ug/L	-22	Standard
	Se	82	30.2	4.2	**0.2183**	0.008	3.5	ug/L	18	Standard
	Se-1	77	61.7	3.4	**0.0858**	0.019	22.0	ug/L	50	Standard
>	**Ga**	71	23.3	53.9				mg/L	97	Standard
	Rb	85	55.0	18.2				ug/L	25	Standard
	Y	89	380097.4	1.2				ug/L	376763	Standard
>	**Rh**	103	41.7	66.1				ug/L	20	Standard
	Mo	98	226.8	44.6	**0.1626**	0.040	24.7	ug/L	51	Standard
	Ag	107	177.7	32.6	**0.0506**	0.009	17.4	ug/L	76	Standard
	Cd	111	18.4	27.8	**0.0483**	0.002	5.1	mg/L	6	Standard
	Cd	114	45.5	94.0	**0.0464**	0.008	18.1	ug/L	18	Standard
>	**In**	115	523505.1	2.0				ug/L	507261	Standard
	Sn	118	850.0	23.5	**0.0404**	0.035	87.4	ug/L	683	Standard
	Sb	123	632.5	33.7	**0.1228**	0.049	39.7	ug/L	446	Standard
	Ba	135	56.0	36.1	**0.0443**	0.011	23.8	ug/L	28	Standard
	Ce	140	53.3	43.3				ug/L	33	Standard
>	**Tb**	159	800127.8	1.0				ug/L	800803	Standard
	Ho	165	13.3	43.3				ug/L	10	Standard
	Tl	203	113.3	28.9	**0.0477**	0.004	8.6	ug/L	13	Standard
	Tl	205	96.7	62.4	**0.0567**	0.009	15.5	ug/L	13	Standard
	Pb	206	352.3	41.0	**0.0657**	0.028	43.1	ug/L	226	Standard
	Pb	207	330.3	42.9	**0.0709**	0.031	43.2	ug/L	204	Standard
	Pb	208	1337.7	38.2	**0.0729**	0.028	37.8	ug/L	852	Standard
	U	238	139.0	62.6	**0.0630**	0.013	20.1	ug/L	13	Standard
>	**Bi**	209	462113.9	1.9				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	215.0	89.1	**0.2268**	0.230	101.4	mg/L	58	Standard
K	39	25.0	20.0	**-0.0496**	0.020	40.1	mg/L	27	Standard
Ca	43	25.0	69.3	**0.3967**	1.159	292.2	mg/L	20	Standard
Fe	54	166.1	29.4	**0.0075**	0.034	454.2	mg/L	158	Standard
Fe	57	271.7	18.9	**0.1597**	0.163	102.1	mg/L	267	Standard
> **Sc-1**	45	42046.6	2.5				mg/L	38815	Standard
Cl	35	72320.2	1.4				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1920.1	8.2				ug/L	1617	Standard
P	31	21066.3	3.1				ug/L	19244	Standard
S	34	4195.6	5.6				ug/L	3557	Standard
Sr	88	68.3	11.2				ug/L	65	Standard
C	12	40.0	25.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	23	Standard
Dy	164	9.5	107.6				mg/L	13	Standard
Ho-1	165	13.3	43.3				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	10325.2	3.1				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.994	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.202
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.911
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Se	82	
QC Std 7	Tl	203	

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Method 6020 - Summary Report

Sample ID: PBS M4 WG574306-02
Sample Date/Time: Wednesday, July 06, 2016 15:50:33
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60321.5	1.7				ug/L	68501	Standard
	Be	9	10.0	50.0	**0.0319**	0.006	19.1	ug/L	8	Standard
	Al	27	4340.6	5.6	**0.0698**	0.002	2.5	ug/L	1397	Standard
	Sc	45	39145.5	1.2				ug/L	38815	Standard
	Ti	47	32.0	13.6	**0.0648**	0.013	19.6	ug/L	36	Standard
	V	51	1399.3	2.8	**0.0491**	0.007	14.5	ug/L	1284	Standard
	Cr	52	6817.5	0.4	**0.0288**	0.009	30.6	ug/L	6503	Standard
	Cr	53	396.7	5.8	**0.0309**	0.026	84.0	ug/L	492	Standard
	Mn	55	677.0	5.0	**0.0117**	0.006	54.9	ug/L	841	Standard
	Co	59	186.7	9.5	**0.0355**	0.003	8.2	ug/L	229	Standard
	Ni	60	465.3	4.8	**0.1119**	0.014	12.9	ug/L	344	Standard
	Cu	65	161.3	5.2	**0.0804**	0.006	7.2	ug/L	115	Standard
	Zn	66	946.4	3.1	**0.7988**	0.024	3.0	ug/L	190	Standard
>	**Ge**	72	421846.3	1.0				ug/L	409858	Standard
	As	75	-69.8	37.3	**0.0336**	0.024	70.9	ug/L	-22	Standard
	Se	82	12.6	46.4	**0.0646**	0.055	84.5	ug/L	18	Standard
	Se-1	77	60.0	12.6	**0.0881**	0.111	126.1	ug/L	50	Standard
>	**Ga**	71	30.0	16.7				mg/L	97	Standard
	Rb	85	28.3	88.8				ug/L	25	Standard
	Y	89	365994.3	0.0				ug/L	376763	Standard
>	**Rh**	103	16.7	34.6				ug/L	20	Standard
	Mo	98	75.8	22.7	**0.1031**	0.007	6.8	ug/L	51	Standard
	Ag	107	68.0	16.4	**0.0340**	0.002	5.1	ug/L	76	Standard
	Cd	111	6.5	46.8	**0.0427**	0.002	3.6	mg/L	6	Standard
	Cd	114	7.1	121.2	**0.0388**	0.002	4.6	ug/L	18	Standard
>	**In**	115	505408.1	0.5				ug/L	507261	Standard
	Sn	118	480.0	14.7	**-0.0221**	0.013	57.1	ug/L	683	Standard
	Sb	123	394.1	24.4	**0.0718**	0.022	30.9	ug/L	446	Standard
	Ba	135	54.0	8.5	**0.0442**	0.002	5.3	ug/L	28	Standard
	Ce	140	33.3	34.6				ug/L	33	Standard
>	**Tb**	159	771411.9	1.2				ug/L	800803	Standard
	Ho	165	6.7	114.6				ug/L	10	Standard
	Tl	203	7.7	41.9	**0.0343**	0.000	1.2	ug/L	13	Standard
	Tl	205	5.0	100.0	**0.0433**	0.001	1.7	ug/L	13	Standard
	Pb	206	241.3	5.2	**0.0451**	0.002	5.2	ug/L	226	Standard
	Pb	207	212.7	12.1	**0.0466**	0.006	12.9	ug/L	204	Standard
	Pb	208	890.0	2.3	**0.0499**	0.001	2.7	ug/L	852	Standard
	U	238	5.0	0.0	**0.0434**	0.000	0.0	ug/L	13	Standard
>	**Bi**	209	449902.0	0.5				ug/L	449044	Standard

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Na	23	1.7	173.2	**0.3470**	15.813	4556.7	mg/L	2	Standard
Mg	24	53.3	14.3	**0.0332**	0.009	28.5	mg/L	58	Standard
K	39	23.3	24.7	**-0.0497**	0.022	44.0	mg/L	27	Standard
Ca	43	35.0	14.3	**1.2473**	0.369	29.6	mg/L	20	Standard
Fe	54	97.6	24.1	**-0.0391**	0.021	52.6	mg/L	158	Standard
Fe	57	258.3	21.3	**0.1767**	0.178	100.7	mg/L	267	Standard
> **Sc-1**	45	39145.5	1.2				mg/L	38815	Standard
Cl	35	72061.6	0.7				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	2043.5	4.9				ug/L	1617	Standard
P	31	12745.4	1.4				ug/L	19244	Standard
S	34	4235.6	4.4				ug/L	3557	Standard
Sr	88	66.7	48.2				ug/L	65	Standard
C	12	56.7	79.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	23	Standard
Dy	164	19.4	90.2				mg/L	13	Standard
Ho-1	165	6.7	114.6				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	6898.2	1.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.059	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.925	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.635	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.191	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBS M4 WG574306-02
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Method 6020 - Summary Report

Sample ID: LCSS M4 WG574306-03
Sample Date/Time: Wednesday, July 06, 2016 15:53:45
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61943.1	2.3				ug/L	68501	Standard
	Be	9	22788.8	2.5	**27.7900**	0.695	2.5	ug/L	8	Standard
	Al	27	9251.2	3.3	**0.1071**	0.002	1.6	ug/L	1397	Standard
	Sc	45	42504.5	0.8				ug/L	38815	Standard
	Ti	47	40.7	16.4	**0.0847**	0.019	22.5	ug/L	36	Standard
	V	51	197378.2	0.5	**25.8881**	0.107	0.4	ug/L	1284	Standard
	Cr	52	203716.1	0.7	**26.5392**	0.082	0.3	ug/L	6503	Standard
	Cr	53	24791.9	0.3	**26.4178**	0.193	0.7	ug/L	492	Standard
	Mn	55	180941.1	1.4	**27.3648**	0.262	1.0	ug/L	841	Standard
	Co	59	170099.0	1.8	**26.1669**	0.414	1.6	ug/L	229	Standard
	Ni	60	48290.2	1.5	**26.5688**	0.339	1.3	ug/L	344	Standard
	Cu	65	47767.2	0.9	**26.4765**	0.075	0.3	ug/L	115	Standard
	Zn	66	29860.1	0.4	**27.3841**	0.124	0.5	ug/L	190	Standard
>	**Ge**	72	441594.3	0.7				ug/L	409858	Standard
	As	75	28851.8	0.7	**25.9316**	0.203	0.8	ug/L	-22	Standard
	Se	82	2909.4	1.3	**25.5079**	0.168	0.7	ug/L	18	Standard
	Se-1	77	1983.1	1.3	**25.9713**	0.453	1.7	ug/L	50	Standard
>	**Ga**	71	40.0	25.0				mg/L	97	Standard
	Rb	85	45.0	22.2				ug/L	25	Standard
	Y	89	378682.1	0.2				ug/L	376763	Standard
>	**Rh**	103	58.3	17.8				ug/L	20	Standard
	Mo	98	80.9	10.8	**0.1038**	0.003	3.3	ug/L	51	Standard
	Ag	107	168208.2	0.7	**25.9425**	0.038	0.1	ug/L	76	Standard
	Cd	111	52395.3	0.4	**25.4346**	0.241	0.9	mg/L	6	Standard
	Cd	114	129575.9	0.9	**25.7262**	0.071	0.3	ug/L	18	Standard
>	**In**	115	527384.1	0.8				ug/L	507261	Standard
	Sn	118	595.0	11.9	**-0.0055**	0.012	224.7	ug/L	683	Standard
	Sb	123	110230.2	2.2	**24.6989**	0.538	2.2	ug/L	446	Standard
	Ba	135	50026.8	0.7	**25.2997**	0.128	0.5	ug/L	28	Standard
	Ce	140	40.0	25.0				ug/L	33	Standard
>	**Tb**	159	818911.5	0.3				ug/L	800803	Standard
	Ho	165	18.3	41.7				ug/L	10	Standard
	Tl	203	202774.2	0.8	**25.6253**	0.275	1.1	ug/L	13	Standard
	Tl	205	180453.3	0.7	**26.3379**	0.254	1.0	ug/L	13	Standard
	Pb	206	132149.2	1.1	**25.9889**	0.213	0.8	ug/L	226	Standard
	Pb	207	115159.0	0.9	**24.9410**	0.164	0.7	ug/L	204	Standard
	Pb	208	485832.8	0.3	**26.3134**	0.103	0.4	ug/L	852	Standard
	U	238	171207.5	0.5	**25.0637**	0.032	0.1	ug/L	13	Standard
>	**Bi**	209	465221.6	0.3				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	73.3	19.7	**0.0522**	0.017	32.6	mg/L	58	Standard
K	39	20.0	43.3	**-0.0690**	0.032	46.1	mg/L	27	Standard
Ca	43	20.0	0.0	**0.0504**	0.011	22.1	mg/L	20	Standard
Fe	54	135.8	35.4	**-0.0166**	0.036	215.7	mg/L	158	Standard
Fe	57	223.3	9.0	**0.0024**	0.060	2457.7	mg/L	267	Standard
> **Sc-1**	45	42504.5	0.8				mg/L	38815	Standard
Cl	35	74399.6	2.0				ug/L	57611	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1826.8	5.9				ug/L	1617	Standard
P	31	21475.2	2.0				ug/L	19244	Standard
S	34	3890.5	2.7				ug/L	3557	Standard
Sr	88	60.0	28.9				ug/L	65	Standard
C	12	73.3	7.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	89.2				mg/L	23	Standard
Dy	164	19.2	54.6				mg/L	13	Standard
Ho-1	165	18.3	41.7				mg/L	10	Standard
Er	166	16.7	69.3				mg/L	13	Standard
I	127	986.7	12.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.426	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.743	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.967
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.603
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129701
Sample Date/Time: Wednesday, July 06, 2016 15:56:56
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63174.8	1.0				ug/L	68501	Standard
	Be	9	473.3	11.9	**0.5854**	0.073	12.4	ug/L	8	Standard
	Al	27	12963863.6	1.0	**99.0412**	1.266	1.3	ug/L	1397	Standard
	Sc	45	46787.1	1.7				ug/L	38815	Standard
	Ti	47	2854.9	1.5	**7.7964**	0.128	1.6	ug/L	36	Standard
	V	51	64534.0	0.8	**8.2932**	0.120	1.4	ug/L	1284	Standard
	Cr	52	48530.6	0.9	**5.5538**	0.041	0.7	ug/L	6503	Standard
	Cr	53	5602.7	1.4	**5.5927**	0.038	0.7	ug/L	492	Standard
	Mn	55	1656218.8	1.2	**249.0852**	4.524	1.8	ug/L	841	Standard
	Co	59	22515.4	0.2	**3.4383**	0.034	1.0	ug/L	229	Standard
	Ni	60	14536.6	0.7	**7.8173**	0.023	0.3	ug/L	344	Standard
	Cu	65	15589.0	1.3	**8.5559**	0.041	0.5	ug/L	115	Standard
	Zn	66	14797.9	0.3	**13.3947**	0.133	1.0	ug/L	190	Standard
>	**Ge**	72	445500.3	0.9				ug/L	409858	Standard
	As	75	1680.8	1.7	**1.5905**	0.019	1.2	ug/L	-22	Standard
	Se	82	44.1	2.8	**0.3324**	0.009	2.6	ug/L	18	Standard
	Se-1	77	86.7	6.8	**0.3989**	0.076	19.1	ug/L	50	Standard
>	**Ga**	71	5177.6	2.2				mg/L	97	Standard
	Rb	85	61377.4	2.5				ug/L	25	Standard
	Y	89	546818.1	1.0				ug/L	376763	Standard
>	**Rh**	103	41.7	27.7				ug/L	20	Standard
	Mo	98	385.0	8.4	**0.2247**	0.014	6.4	ug/L	51	Standard
	Ag	107	262.3	9.1	**0.0634**	0.004	6.3	ug/L	76	Standard
	Cd	111	147.3	2.4	**0.1106**	0.002	2.1	mg/L	6	Standard
	Cd	114	389.3	18.3	**0.1143**	0.014	12.0	ug/L	18	Standard
>	**In**	115	529068.3	1.1				ug/L	507261	Standard
	Sn	118	523.3	19.7	**-0.0183**	0.019	102.0	ug/L	683	Standard
	Sb	123	1234.0	36.4	**0.2562**	0.103	40.2	ug/L	446	Standard
	Ba	135	251951.3	0.7	**126.9549**	1.383	1.1	ug/L	28	Standard
	Ce	140	741746.7	2.0				ug/L	33	Standard
>	**Tb**	159	829704.7	1.4				ug/L	800803	Standard
	Ho	165	14426.9	0.8				ug/L	10	Standard
	Tl	203	395.0	2.9	**0.0846**	0.002	2.0	ug/L	13	Standard
	Tl	205	333.3	8.8	**0.0924**	0.004	4.1	ug/L	13	Standard
	Pb	206	37568.5	0.8	**7.5872**	0.046	0.6	ug/L	226	Standard
	Pb	207	30719.8	0.7	**6.8349**	0.128	1.9	ug/L	204	Standard
	Pb	208	133956.4	0.3	**7.4538**	0.109	1.5	ug/L	852	Standard
	U	238	2766.3	1.8	**0.4579**	0.009	1.9	ug/L	13	Standard
>	**Bi**	209	452887.3	1.3				ug/L	449044	Standard

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Na	23	5.0	100.0	**13.8021**	22.785	165.1	mg/L	2	Standard
Mg	24	116.7	20.3	**0.0930**	0.029	30.7	mg/L	58	Standard
K	39	146.7	20.0	**0.3435**	0.099	28.9	mg/L	27	Standard
Ca	43	471.7	5.0	**27.1766**	1.103	4.1	mg/L	20	Standard
Fe	54	4043.0	2.7	**2.6886**	0.120	4.5	mg/L	158	Standard
Fe	57	1505.1	10.2	**3.5022**	0.490	14.0	mg/L	267	Standard
> **Sc-1**	45	46787.1	1.7				mg/L	38815	Standard
Cl	35	75827.3	1.6				ug/L	57611	Standard
Kr	83	3.3	69.3				ug/L	2	Standard
Br	81	2300.2	6.3				ug/L	1617	Standard
P	31	21613.7	1.2				ug/L	19244	Standard
S	34	4237.3	7.4				ug/L	3557	Standard
Sr	88	135.0	22.2				ug/L	65	Standard
C	12	83.3	6.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	36.7				mg/L	23	Standard
Dy	164	23454.8	2.1				mg/L	13	Standard
Ho-1	165	14426.9	0.8				mg/L	10	Standard
Er	166	12475.1	2.4				mg/L	13	Standard
I	127	30869.8	6.1				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.224	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.696	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.299
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.856
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129702
Sample Date/Time: Wednesday, July 06, 2016 16:00:08
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	62448.5	2.1				ug/L	68501	Standard
	Be	9	608.3	3.9	**0.7548**	0.029	3.8	ug/L	8	Standard
	Al	27	6425419.7	0.6	**49.6924**	1.257	2.5	ug/L	1397	Standard
	Sc	45	46516.3	2.2				ug/L	38815	Standard
	Ti	47	2114.1	0.3	**5.7561**	0.071	1.2	ug/L	36	Standard
	V	51	99038.6	0.2	**12.7815**	0.178	1.4	ug/L	1284	Standard
	Cr	52	73702.5	0.2	**8.9021**	0.153	1.7	ug/L	6503	Standard
	Cr	53	8640.8	2.1	**8.8356**	0.138	1.6	ug/L	492	Standard
	Mn	55	3399995.6	0.6	**510.5494**	9.401	1.8	ug/L	841	Standard
	Co	59	39995.4	1.5	**6.0929**	0.144	2.4	ug/L	229	Standard
	Ni	60	19123.7	0.6	**10.3160**	0.152	1.5	ug/L	344	Standard
	Cu	65	22636.2	1.2	**12.4080**	0.116	0.9	ug/L	115	Standard
	Zn	66	34261.7	0.2	**31.1072**	0.396	1.3	ug/L	190	Standard
>	Ge	72	446311.5	1.4				ug/L	409858	Standard
	As	75	5487.0	1.7	**4.9603**	0.106	2.1	ug/L	-22	Standard
	Se	82	64.7	18.6	**0.5105**	0.101	19.7	ug/L	18	Standard
	Se-1	77	119.3	10.5	**0.8342**	0.188	22.6	ug/L	50	Standard
>	Ga	71	6746.5	3.9				mg/L	97	Standard
	Rb	85	67168.6	2.7				ug/L	25	Standard
	Y	89	576416.9	0.8				ug/L	376763	Standard
>	Rh	103	25.0	40.0				ug/L	20	Standard
	Mo	98	316.3	8.4	**0.1968**	0.010	5.1	ug/L	51	Standard
	Ag	107	622.3	4.9	**0.1183**	0.004	3.3	ug/L	76	Standard
	Cd	111	1170.1	2.9	**0.6028**	0.021	3.6	mg/L	6	Standard
	Cd	114	2831.4	7.2	**0.5947**	0.035	5.8	ug/L	18	Standard
>	In	115	530969.0	0.9				ug/L	507261	Standard
	Sn	118	826.7	11.4	**0.0343**	0.017	50.9	ug/L	683	Standard
	Sb	123	887.8	24.2	**0.1772**	0.047	26.5	ug/L	446	Standard
	Ba	135	307580.0	0.5	**154.4232**	1.212	0.8	ug/L	28	Standard
	Ce	140	898326.7	0.8				ug/L	33	Standard
>	Tb	159	824712.1	0.3				ug/L	800803	Standard
	Ho	165	16273.7	1.2				ug/L	10	Standard
	Tl	203	381.3	11.6	**0.0815**	0.006	6.8	ug/L	13	Standard
	Tl	205	301.7	12.4	**0.0866**	0.006	6.5	ug/L	13	Standard
	Pb	206	268899.5	0.4	**52.9720**	0.278	0.5	ug/L	226	Standard
	Pb	207	225053.4	0.2	**48.8212**	0.186	0.4	ug/L	204	Standard
	Pb	208	970125.3	0.5	**52.6267**	0.336	0.6	ug/L	852	Standard
	U	238	2932.0	0.9	**0.4718**	0.005	1.0	ug/L	13	Standard
>	Bi	209	464484.9	0.4				ug/L	449044	Standard

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Na	23	1.7	173.2	**-1.0199**	13.445	1318.3	mg/L	2	Standard
Mg	24	86.7	23.3	**0.0599**	0.025	41.5	mg/L	58	Standard
K	39	201.7	8.7	**0.5298**	0.070	13.2	mg/L	27	Standard
Ca	43	88.3	40.9	**4.1135**	2.328	56.6	mg/L	20	Standard
Fe	54	6704.1	3.0	**4.5654**	0.231	5.1	mg/L	158	Standard
Fe	57	1951.8	5.0	**4.7665**	0.192	4.0	mg/L	267	Standard
> **Sc-1**	45	46516.3	2.2				mg/L	38815	Standard
Cl	35	72128.6	1.7				ug/L	57611	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	3473.7	2.6				ug/L	1617	Standard
P	31	21530.3	0.6				ug/L	19244	Standard
S	34	4282.3	1.4				ug/L	3557	Standard
Sr	88	103.3	19.6				ug/L	65	Standard
C	12	130.0	30.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	86.7	24.0				mg/L	23	Standard
Dy	164	26856.5	1.1				mg/L	13	Standard
Ho-1	165	16273.7	1.2				mg/L	10	Standard
Er	166	14303.4	1.1				mg/L	13	Standard
I	127	19058.7	4.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.164	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.894	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.674
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.439
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129702
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Method 6020 - Summary Report

Sample ID: L1606129703
Sample Date/Time: Wednesday, July 06, 2016 16:03:19
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64073.5	1.5				ug/L	68501	Standard
	Be	9	488.3	11.8	**0.5945**	0.065	10.9	ug/L	8	Standard
	Al	27	15365624.4	1.2	**115.7621**	3.069	2.7	ug/L	1397	Standard
	Sc	45	47029.6	3.1				ug/L	38815	Standard
	Ti	47	3571.8	3.3	**9.7737**	0.346	3.5	ug/L	36	Standard
	V	51	87368.0	0.8	**11.2921**	0.054	0.5	ug/L	1284	Standard
	Cr	52	51636.8	0.5	**5.9777**	0.036	0.6	ug/L	6503	Standard
	Cr	53	5932.8	2.8	**5.9551**	0.175	2.9	ug/L	492	Standard
	Mn	55	2674680.4	0.3	**402.7958**	2.485	0.6	ug/L	841	Standard
	Co	59	24903.4	0.4	**3.8070**	0.028	0.7	ug/L	229	Standard
	Ni	60	15225.3	1.5	**8.2054**	0.092	1.1	ug/L	344	Standard
	Cu	65	11942.7	0.4	**6.5600**	0.017	0.3	ug/L	115	Standard
	Zn	66	18930.8	1.4	**17.1883**	0.221	1.3	ug/L	190	Standard
>	**Ge**	72	444933.7	0.4				ug/L	409858	Standard
	As	75	2651.5	1.9	**2.4550**	0.037	1.5	ug/L	-22	Standard
	Se	82	42.3	10.6	**0.3172**	0.041	12.8	ug/L	18	Standard
	Se-1	77	92.3	10.9	**0.4762**	0.134	28.1	ug/L	50	Standard
>	**Ga**	71	5626.0	1.8				mg/L	97	Standard
	Rb	85	70065.0	0.9				ug/L	25	Standard
	Y	89	547830.0	0.7				ug/L	376763	Standard
>	**Rh**	103	41.7	66.1				ug/L	20	Standard
	Mo	98	346.8	7.1	**0.2100**	0.010	4.9	ug/L	51	Standard
	Ag	107	260.7	7.0	**0.0633**	0.003	4.6	ug/L	76	Standard
	Cd	111	151.1	5.0	**0.1127**	0.004	3.5	mg/L	6	Standard
	Cd	114	305.5	8.0	**0.0980**	0.005	4.8	ug/L	18	Standard
>	**In**	115	526795.7	0.4				ug/L	507261	Standard
	Sn	118	728.4	17.9	**0.0180**	0.023	126.5	ug/L	683	Standard
	Sb	123	456.1	40.3	**0.0819**	0.041	49.8	ug/L	446	Standard
	Ba	135	321937.8	0.9	**162.9100**	2.079	1.3	ug/L	28	Standard
	Ce	140	745612.3	0.4				ug/L	33	Standard
>	**Tb**	159	836768.9	0.5				ug/L	800803	Standard
	Ho	165	13641.1	0.6				ug/L	10	Standard
	Tl	203	454.0	2.2	**0.0918**	0.001	1.6	ug/L	13	Standard
	Tl	205	421.7	1.8	**0.1052**	0.001	0.8	ug/L	13	Standard
	Pb	206	37397.8	1.0	**7.5039**	0.094	1.3	ug/L	226	Standard
	Pb	207	30975.0	1.9	**6.8467**	0.160	2.3	ug/L	204	Standard
	Pb	208	134337.6	0.8	**7.4262**	0.090	1.2	ug/L	852	Standard
	U	238	3398.4	2.4	**0.5496**	0.015	2.7	ug/L	13	Standard
>	**Bi**	209	455822.4	0.5				ug/L	449044	Standard

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Na	23	3.3	173.2	**5.7906**	25.242	435.9	mg/L	2	Standard
Mg	24	116.7	6.5	**0.0919**	0.005	5.1	mg/L	58	Standard
K	39	116.7	13.8	**0.2413**	0.042	17.4	mg/L	27	Standard
Ca	43	616.7	11.5	**35.8509**	5.371	15.0	mg/L	20	Standard
Fe	54	6215.4	1.8	**4.1752**	0.098	2.3	mg/L	158	Standard
Fe	57	2093.5	3.0	**5.1002**	0.085	1.7	mg/L	267	Standard
> **Sc-1**	45	47029.6	3.1				mg/L	38815	Standard
Cl	35	76435.7	0.6				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	2476.9	7.5				ug/L	1617	Standard
P	31	21748.9	2.3				ug/L	19244	Standard
S	34	4344.0	5.1				ug/L	3557	Standard
Sr	88	190.0	16.0				ug/L	65	Standard
C	12	80.0	50.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	24.7				mg/L	23	Standard
Dy	164	22508.9	3.2				mg/L	13	Standard
Ho-1	165	13641.1	0.6				mg/L	10	Standard
Er	166	11941.4	2.7				mg/L	13	Standard
I	127	22788.8	3.6				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.536	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.558	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.851
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.510
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129704
Sample Date/Time: Wednesday, July 06, 2016 16:06:31
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63111.2	1.9				ug/L	68501	Standard
	Be	9	405.0	3.3	**0.5041**	0.025	4.9	ug/L	8	Standard
	Al	27	14440748.1	0.6	**110.4469**	1.680	1.5	ug/L	1397	Standard
	Sc	45	46800.5	2.4				ug/L	38815	Standard
	Ti	47	3445.7	2.3	**9.4186**	0.270	2.9	ug/L	36	Standard
	V	51	92403.7	0.4	**11.9391**	0.031	0.3	ug/L	1284	Standard
	Cr	52	56856.5	0.5	**6.6687**	0.062	0.9	ug/L	6503	Standard
	Cr	53	6406.4	1.9	**6.4568**	0.128	2.0	ug/L	492	Standard
	Mn	55	2848070.2	1.3	**428.4666**	4.579	1.1	ug/L	841	Standard
	Co	59	25663.7	0.9	**3.9191**	0.042	1.1	ug/L	229	Standard
	Ni	60	17112.0	0.7	**9.2328**	0.115	1.2	ug/L	344	Standard
	Cu	65	13470.0	0.7	**7.3933**	0.074	1.0	ug/L	115	Standard
	Zn	66	18281.4	1.3	**16.5792**	0.322	1.9	ug/L	190	Standard
>	**Ge**	72	445391.0	0.7				ug/L	409858	Standard
	As	75	2839.7	2.5	**2.6195**	0.053	2.0	ug/L	-22	Standard
	Se	82	42.5	11.2	**0.3192**	0.042	13.2	ug/L	18	Standard
	Se-1	77	89.7	5.6	**0.4395**	0.071	16.1	ug/L	50	Standard
>	**Ga**	71	6004.5	4.9				mg/L	97	Standard
	Rb	85	64888.7	1.6				ug/L	25	Standard
	Y	89	547330.6	1.7				ug/L	376763	Standard
>	**Rh**	103	36.7	34.3				ug/L	20	Standard
	Mo	98	863.5	1.4	**0.4161**	0.007	1.6	ug/L	51	Standard
	Ag	107	246.7	2.8	**0.0611**	0.001	2.1	ug/L	76	Standard
	Cd	111	146.5	7.6	**0.1104**	0.005	4.9	mg/L	6	Standard
	Cd	114	392.6	2.3	**0.1152**	0.003	2.4	ug/L	18	Standard
>	**In**	115	527277.1	1.4				ug/L	507261	Standard
	Sn	118	525.0	11.9	**-0.0179**	0.010	53.9	ug/L	683	Standard
	Sb	123	402.9	30.5	**0.0700**	0.028	39.4	ug/L	446	Standard
	Ba	135	399609.8	0.2	**202.0498**	3.263	1.6	ug/L	28	Standard
	Ce	140	769293.1	0.4				ug/L	33	Standard
>	**Tb**	159	836566.5	0.5				ug/L	800803	Standard
	Ho	165	13921.4	3.2				ug/L	10	Standard
	Tl	203	408.0	3.2	**0.0858**	0.002	2.1	ug/L	13	Standard
	Tl	205	323.3	16.7	**0.0906**	0.008	9.2	ug/L	13	Standard
	Pb	206	37067.0	0.2	**7.4216**	0.029	0.4	ug/L	226	Standard
	Pb	207	30343.0	0.2	**6.6925**	0.054	0.8	ug/L	204	Standard
	Pb	208	133022.6	0.7	**7.3378**	0.057	0.8	ug/L	852	Standard
	U	238	3191.3	1.0	**0.5176**	0.003	0.5	ug/L	13	Standard
>	**Bi**	209	456789.9	0.6				ug/L	449044	Standard

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Na	23	3.3	86.6	**6.3700**	13.132	206.2	mg/L	2	Standard
Mg	24	128.3	14.8	**0.1061**	0.025	23.5	mg/L	58	Standard
K	39	143.3	10.7	**0.3315**	0.041	12.4	mg/L	27	Standard
Ca	43	511.7	6.9	**29.5725**	1.591	5.4	mg/L	20	Standard
Fe	54	6320.5	3.8	**4.2715**	0.264	6.2	mg/L	158	Standard
Fe	57	2060.1	4.0	**5.0347**	0.146	2.9	mg/L	267	Standard
Sc-1	45	46800.5	2.4				mg/L	38815	Standard
Cl	35	76096.0	1.2				ug/L	57611	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	2130.2	8.0				ug/L	1617	Standard
P	31	21824.0	1.6				ug/L	19244	Standard
S	34	4499.0	2.5				ug/L	3557	Standard
Sr	88	190.0	22.5				ug/L	65	Standard
C	12	116.7	13.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	34.3				mg/L	23	Standard
Dy	164	23701.7	2.6				mg/L	13	Standard
Ho-1	165	13921.4	3.2				mg/L	10	Standard
Er	166	12548.5	3.2				mg/L	13	Standard
I	127	21098.0	2.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.132	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.670	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.946
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.725
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129705
Sample Date/Time: Wednesday, July 06, 2016 16:09:42
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62980.8	4.4				ug/L	68501	Standard
	Be	9	241.7	15.3	**0.3086**	0.039	12.6	ug/L	8	Standard
	Al	27	8184375.2	3.0	**62.7980**	3.036	4.8	ug/L	1397	Standard
	Sc	45	45461.4	1.7				ug/L	38815	Standard
	Ti	47	2327.2	1.1	**6.2933**	0.241	3.8	ug/L	36	Standard
	V	51	39700.9	1.0	**4.9997**	0.179	3.6	ug/L	1284	Standard
	Cr	52	37108.7	1.5	**3.9823**	0.167	4.2	ug/L	6503	Standard
	Cr	53	4053.9	1.9	**3.8931**	0.198	5.1	ug/L	492	Standard
	Mn	55	1570873.5	1.2	**234.1318**	8.981	3.8	ug/L	841	Standard
	Co	59	16607.1	2.1	**2.5154**	0.122	4.9	ug/L	229	Standard
	Ni	60	11198.5	1.8	**5.9319**	0.267	4.5	ug/L	344	Standard
	Cu	65	5955.8	0.8	**3.2313**	0.106	3.3	ug/L	115	Standard
	Zn	66	12788.4	0.9	**11.4529**	0.260	2.3	ug/L	190	Standard
>	**Ge**	72	449788.7	2.7				ug/L	409858	Standard
	As	75	1755.0	2.5	**1.6418**	0.024	1.5	ug/L	-22	Standard
	Se	82	35.2	7.0	**0.2524**	0.026	10.5	ug/L	18	Standard
	Se-1	77	82.3	13.7	**0.3325**	0.167	50.3	ug/L	50	Standard
>	**Ga**	71	3890.5	2.5				mg/L	97	Standard
	Rb	85	35301.1	1.9				ug/L	25	Standard
	Y	89	468000.1	2.2				ug/L	376763	Standard
>	**Rh**	103	28.3	27.0				ug/L	20	Standard
	Mo	98	787.1	2.4	**0.3831**	0.014	3.6	ug/L	51	Standard
	Ag	107	180.0	4.3	**0.0506**	0.001	1.2	ug/L	76	Standard
	Cd	111	90.5	11.3	**0.0829**	0.005	5.4	mg/L	6	Standard
	Cd	114	247.4	18.0	**0.0862**	0.010	11.5	ug/L	18	Standard
>	**In**	115	531650.1	2.4				ug/L	507261	Standard
	Sn	118	468.3	13.2	**-0.0284**	0.012	41.2	ug/L	683	Standard
	Sb	123	293.4	31.1	**0.0451**	0.021	46.7	ug/L	446	Standard
	Ba	135	101024.0	0.5	**50.6871**	1.476	2.9	ug/L	28	Standard
	Ce	140	396222.3	2.3				ug/L	33	Standard
>	**Tb**	159	820450.8	2.1				ug/L	800803	Standard
	Ho	165	7663.6	3.4				ug/L	10	Standard
	Tl	203	202.0	8.6	**0.0593**	0.002	3.7	ug/L	13	Standard
	Tl	205	163.3	23.4	**0.0667**	0.005	7.8	ug/L	13	Standard
	Pb	206	15664.1	0.4	**3.1305**	0.070	2.2	ug/L	226	Standard
	Pb	207	13014.6	1.2	**2.8667**	0.073	2.6	ug/L	204	Standard
	Pb	208	56294.6	0.6	**3.1020**	0.075	2.4	ug/L	852	Standard
	U	238	1239.1	1.5	**0.2268**	0.001	0.7	ug/L	13	Standard
>	**Bi**	209	457425.1	1.9				ug/L	449044	Standard

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Na	23	5.0	0.0	**14.5008**	0.406	2.8	mg/L	2	Standard
Mg	24	86.7	3.3	**0.0619**	0.005	8.0	mg/L	58	Standard
K	39	118.3	10.6	**0.2605**	0.036	13.8	mg/L	27	Standard
Ca	43	278.3	10.5	**15.9906**	1.553	9.7	mg/L	20	Standard
Fe	54	4712.4	4.0	**3.2496**	0.185	5.7	mg/L	158	Standard
Fe	57	1498.4	9.3	**3.5981**	0.364	10.1	mg/L	267	Standard
Sc-1	45	45461.4	1.7				mg/L	38815	Standard
Cl	35	74689.7	1.1				ug/L	57611	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	2046.8	4.4				ug/L	1617	Standard
P	31	21545.3	1.7				ug/L	19244	Standard
S	34	4452.3	4.6				ug/L	3557	Standard
Sr	88	106.7	7.2				ug/L	65	Standard
C	12	86.7	6.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	17.3				mg/L	23	Standard
Dy	164	12824.6	3.4				mg/L	13	Standard
Ho-1	165	7663.6	3.4				mg/L	10	Standard
Er	166	6424.7	4.2				mg/L	13	Standard
I	127	6124.6	5.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		91.941	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		109.743	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.808
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.866
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606129705
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Method 6020 - Summary Report

Sample ID: L1606129706
Sample Date/Time: Wednesday, July 06, 2016 16:13:18
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64657.7	2.5				ug/L	68501	Standard
	Be	9	596.7	3.8	**0.7167**	0.043	6.1	ug/L	8	Standard
	Al	27	18962129.8	1.5	**141.5551**	2.522	1.8	ug/L	1397	Standard
	Sc	45	48390.5	1.6				ug/L	38815	Standard
	Ti	47	5454.0	2.9	**14.7696**	0.651	4.4	ug/L	36	Standard
	V	51	114915.0	1.1	**14.7253**	0.322	2.2	ug/L	1284	Standard
	Cr	52	97543.3	1.1	**11.9723**	0.286	2.4	ug/L	6503	Standard
	Cr	53	11629.5	1.9	**11.9313**	0.316	2.7	ug/L	492	Standard
	Mn	55	2838609.2	0.2	**422.5630**	7.353	1.7	ug/L	841	Standard
	Co	59	46821.9	1.5	**7.0698**	0.102	1.4	ug/L	229	Standard
	Ni	60	31539.5	0.9	**16.9679**	0.340	2.0	ug/L	344	Standard
	Cu	65	17669.0	0.7	**9.6004**	0.216	2.2	ug/L	115	Standard
	Zn	66	32520.2	0.6	**29.2655**	0.447	1.5	ug/L	190	Standard
>	**Ge**	72	450193.7	1.6				ug/L	409858	Standard
	As	75	3232.5	2.7	**2.9388**	0.110	3.7	ug/L	-22	Standard
	Se	82	40.5	15.8	**0.2979**	0.061	20.4	ug/L	18	Standard
	Se-1	77	106.0	12.3	**0.6444**	0.195	30.3	ug/L	50	Standard
>	**Ga**	71	12046.5	0.5				mg/L	97	Standard
	Rb	85	121075.3	2.3				ug/L	25	Standard
	Y	89	581582.5	1.1				ug/L	376763	Standard
>	**Rh**	103	45.0	40.1				ug/L	20	Standard
	Mo	98	459.1	2.0	**0.2547**	0.001	0.5	ug/L	51	Standard
	Ag	107	359.0	2.9	**0.0785**	0.001	1.1	ug/L	76	Standard
	Cd	111	176.8	9.6	**0.1252**	0.009	7.3	mg/L	6	Standard
	Cd	114	436.3	8.6	**0.1240**	0.008	6.8	ug/L	18	Standard
>	**In**	115	527081.5	1.5				ug/L	507261	Standard
	Sn	118	510.0	17.0	**-0.0203**	0.016	79.6	ug/L	683	Standard
	Sb	123	349.7	39.3	**0.0582**	0.031	53.2	ug/L	446	Standard
	Ba	135	303281.6	0.5	**153.4065**	2.551	1.7	ug/L	28	Standard
	Ce	140	891716.1	1.3				ug/L	33	Standard
>	**Tb**	159	842437.6	1.7				ug/L	800803	Standard
	Ho	165	15568.0	0.8				ug/L	10	Standard
	Tl	203	681.3	6.5	**0.1212**	0.007	5.6	ug/L	13	Standard
	Tl	205	580.0	11.6	**0.1289**	0.011	8.5	ug/L	13	Standard
	Pb	206	40420.2	0.2	**8.1176**	0.115	1.4	ug/L	226	Standard
	Pb	207	33350.0	1.0	**7.3771**	0.048	0.7	ug/L	204	Standard
	Pb	208	144996.6	0.8	**8.0229**	0.180	2.2	ug/L	852	Standard
	U	238	3286.4	1.0	**0.5332**	0.008	1.6	ug/L	13	Standard
>	**Bi**	209	455484.6	1.5				ug/L	449044	Standard

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Na	23	6.7	43.3	**20.4143**	12.774	62.6	mg/L	2	Standard
Mg	24	121.7	22.6	**0.0937**	0.029	31.3	mg/L	58	Standard
K	39	271.7	9.4	**0.7277**	0.094	13.0	mg/L	27	Standard
Ca	43	496.7	3.1	**27.7114**	1.278	4.6	mg/L	20	Standard
Fe	54	12166.7	5.7	**8.0532**	0.562	7.0	mg/L	158	Standard
Fe	57	3530.4	5.6	**8.7932**	0.532	6.0	mg/L	267	Standard
> **Sc-1**	45	48390.5	1.6				mg/L	38815	Standard
Cl	35	75046.1	0.8				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	2516.9	8.4				ug/L	1617	Standard
P	31	22914.0	1.9				ug/L	19244	Standard
S	34	4679.1	4.3				ug/L	3557	Standard
Sr	88	175.0	11.4				ug/L	65	Standard
C	12	103.3	11.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	61.9				mg/L	23	Standard
Dy	164	26276.7	2.8				mg/L	13	Standard
Ho-1	165	15568.0	0.8				mg/L	10	Standard
Er	166	14557.0	1.8				mg/L	13	Standard
I	127	10100.0	3.2				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.389	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.841	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.907
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.434
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129706PS WG574306-03
Sample Date/Time: Wednesday, July 06, 2016 16:16:29
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65638.6	1.3				ug/L	68501	Standard
	Be	9	47235.2	3.7	**54.3206**	1.379	2.5	ug/L	8	Standard
	Al	27	18835675.6	1.4	**138.4866**	2.016	1.5	ug/L	1397	Standard
	Sc	45	49333.5	1.1				ug/L	38815	Standard
	Ti	47	5414.0	2.5	**14.5933**	0.391	2.7	ug/L	36	Standard
	V	51	522594.2	1.1	**67.1805**	0.866	1.3	ug/L	1284	Standard
	Cr	52	505801.0	1.2	**65.6951**	0.946	1.4	ug/L	6503	Standard
	Cr	53	61240.2	0.9	**64.3307**	0.679	1.1	ug/L	492	Standard
	Mn	55	3170347.7	0.4	**469.8912**	2.616	0.6	ug/L	841	Standard
	Co	59	390409.0	1.3	**58.6580**	0.869	1.5	ug/L	229	Standard
	Ni	60	128704.0	1.0	**69.4198**	0.572	0.8	ug/L	344	Standard
	Cu	65	114667.3	0.7	**62.1001**	0.353	0.6	ug/L	115	Standard
	Zn	66	90999.1	0.5	**81.7384**	0.460	0.6	ug/L	190	Standard
>	Ge	72	452095.1	0.2				ug/L	409858	Standard
	As	75	63497.9	0.5	**55.6305**	0.152	0.3	ug/L	-22	Standard
	Se	82	6044.8	0.4	**51.8208**	0.084	0.2	ug/L	18	Standard
	Se-1	77	4081.5	2.1	**52.9750**	1.154	2.2	ug/L	50	Standard
>	Ga	71	12565.2	1.9				mg/L	97	Standard
	Rb	85	120846.7	0.6				ug/L	25	Standard
	Y	89	582495.4	1.4				ug/L	376763	Standard
>	Rh	103	46.7	6.2				ug/L	20	Standard
	Mo	98	465.3	6.4	**0.2542**	0.012	4.5	ug/L	51	Standard
	Ag	107	334602.4	0.8	**50.7827**	0.439	0.9	ug/L	76	Standard
	Cd	111	107601.5	0.9	**51.3814**	0.550	1.1	mg/L	6	Standard
	Cd	114	265146.9	0.4	**51.7884**	0.150	0.3	ug/L	18	Standard
>	In	115	535693.2	0.2				ug/L	507261	Standard
	Sn	118	681.7	4.0	**0.0078**	0.005	61.1	ug/L	683	Standard
	Sb	123	227133.0	2.2	**50.1244**	1.130	2.3	ug/L	446	Standard
	Ba	135	404136.5	0.0	**201.0985**	0.320	0.2	ug/L	28	Standard
	Ce	140	893510.7	1.3				ug/L	33	Standard
>	Tb	159	845372.4	0.6				ug/L	800803	Standard
	Ho	165	15911.7	2.3				ug/L	10	Standard
	Tl	203	408287.9	0.2	**51.8952**	0.240	0.5	ug/L	13	Standard
	Tl	205	364142.3	0.8	**53.4457**	0.113	0.2	ug/L	13	Standard
	Pb	206	300773.2	1.0	**59.5377**	0.256	0.4	ug/L	226	Standard
	Pb	207	260929.3	0.7	**56.8780**	0.098	0.2	ug/L	204	Standard
	Pb	208	1108705.4	0.8	**60.4375**	0.635	1.1	ug/L	852	Standard
	U	238	349519.1	1.2	**51.4517**	0.353	0.7	ug/L	13	Standard
>	Bi	209	462240.9	0.6				ug/L	449044	Standard

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Na	23	5.0	173.2	**12.6704**	37.158	293.3	mg/L	2	Standard
Mg	24	160.0	0.0	**0.1321**	0.002	1.4	mg/L	58	Standard
K	39	288.3	24.0	**0.7615**	0.209	27.5	mg/L	27	Standard
Ca	43	518.3	15.0	**28.3825**	4.388	15.5	mg/L	20	Standard
Fe	54	12155.2	2.2	**7.8853**	0.184	2.3	mg/L	158	Standard
Fe	57	3485.4	4.5	**8.4918**	0.357	4.2	mg/L	267	Standard
> **Sc-1**	45	49333.5	1.1				mg/L	38815	Standard
Cl	35	74319.2	1.8				ug/L	57611	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	2610.2	11.1				ug/L	1617	Standard
P	31	22970.8	4.6				ug/L	19244	Standard
S	34	4464.0	3.1				ug/L	3557	Standard
Sr	88	186.7	5.6				ug/L	65	Standard
C	12	90.0	0.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	57.3				mg/L	23	Standard
Dy	164	26019.7	0.4				mg/L	13	Standard
Ho-1	165	15911.7	2.3				mg/L	10	Standard
Er	166	14136.6	1.7				mg/L	13	Standard
I	127	10356.9	0.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.821	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.305	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	105.605
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.939
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129706SDL WG574306-04
Sample Date/Time: Wednesday, July 06, 2016 16:19:40
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59394.6	4.0				ug/L	68501	Standard
	Be	9	136.7	15.2	**0.1928**	0.021	11.0	ug/L	8	Standard
	Al	27	3625047.6	2.3	**29.4976**	0.752	2.5	ug/L	1397	Standard
	Sc	45	41548.6	2.0				ug/L	38815	Standard
	Ti	47	1013.7	1.7	**2.8782**	0.035	1.2	ug/L	36	Standard
	V	51	22627.7	0.9	**2.9504**	0.021	0.7	ug/L	1284	Standard
	Cr	52	22779.8	0.8	**2.2518**	0.032	1.4	ug/L	6503	Standard
	Cr	53	2320.2	8.0	**2.1856**	0.208	9.5	ug/L	492	Standard
	Mn	55	561370.1	1.9	**88.2489**	1.740	2.0	ug/L	841	Standard
	Co	59	8994.3	1.2	**1.4399**	0.020	1.4	ug/L	229	Standard
	Ni	60	6379.0	0.4	**3.5032**	0.010	0.3	ug/L	344	Standard
	Cu	65	3582.1	2.8	**2.0468**	0.068	3.3	ug/L	115	Standard
	Zn	66	7592.9	3.0	**7.1367**	0.210	2.9	ug/L	190	Standard
>	**Ge**	72	425871.9	0.5				ug/L	409858	Standard
	As	75	602.1	4.6	**0.6579**	0.027	4.1	ug/L	-22	Standard
	Se	82	22.0	4.8	**0.1488**	0.010	7.0	ug/L	18	Standard
	Se-1	77	64.7	19.5	**0.1443**	0.172	119.0	ug/L	50	Standard
>	**Ga**	71	2455.2	8.8				mg/L	97	Standard
	Rb	85	23403.1	1.2				ug/L	25	Standard
	Y	89	404683.9	1.4				ug/L	376763	Standard
>	**Rh**	103	18.3	83.3				ug/L	20	Standard
	Mo	98	98.4	1.8	**0.1127**	0.001	0.7	ug/L	51	Standard
	Ag	107	188.3	8.0	**0.0536**	0.003	4.8	ug/L	76	Standard
	Cd	111	50.1	14.7	**0.0649**	0.004	5.9	mg/L	6	Standard
	Cd	114	129.9	32.1	**0.0644**	0.009	13.3	ug/L	18	Standard
>	**In**	115	502656.9	0.5				ug/L	507261	Standard
	Sn	118	251.7	4.1	**-0.0637**	0.002	2.7	ug/L	683	Standard
	Sb	123	1461.3	35.9	**0.3234**	0.124	38.2	ug/L	446	Standard
	Ba	135	59210.5	0.9	**31.4134**	0.327	1.0	ug/L	28	Standard
	Ce	140	176180.2	1.5				ug/L	33	Standard
>	**Tb**	159	789797.5	0.7				ug/L	800803	Standard
	Ho	165	3095.3	2.0				ug/L	10	Standard
	Tl	203	197.3	15.5	**0.0592**	0.004	6.7	ug/L	13	Standard
	Tl	205	206.7	20.6	**0.0739**	0.007	8.8	ug/L	13	Standard
	Pb	206	8175.2	1.2	**1.6680**	0.016	1.0	ug/L	226	Standard
	Pb	207	6752.8	0.9	**1.5198**	0.017	1.1	ug/L	204	Standard
	Pb	208	29344.5	0.8	**1.6527**	0.018	1.1	ug/L	852	Standard
	U	238	683.3	7.1	**0.1464**	0.007	4.8	ug/L	13	Standard
>	**Bi**	209	447412.8	0.4				ug/L	449044	Standard

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Na	23	3.3	173.2	**8.0243**	29.110	362.8	mg/L	2	Standard
Mg	24	58.3	51.7	**0.0354**	0.038	106.4	mg/L	58	Standard
K	39	88.3	23.6	**0.1879**	0.082	43.7	mg/L	27	Standard
Ca	43	123.3	25.7	**7.1346**	2.357	33.0	mg/L	20	Standard
Fe	54	2352.8	8.6	**1.7214**	0.183	10.7	mg/L	158	Standard
Fe	57	870.0	5.7	**2.0416**	0.207	10.1	mg/L	267	Standard
Sc-1	45	41548.6	2.0				mg/L	38815	Standard
Cl	35	69353.0	0.5				ug/L	57611	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	1813.4	2.8				ug/L	1617	Standard
P	31	9801.5	0.5				ug/L	19244	Standard
S	34	4442.3	5.0				ug/L	3557	Standard
Sr	88	86.7	17.6				ug/L	65	Standard
C	12	30.0	66.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	23	Standard
Dy	164	5101.7	4.2				mg/L	13	Standard
Ho-1	165	3095.3	2.0				mg/L	10	Standard
Er	166	2906.9	10.0				mg/L	13	Standard
I	127	9299.5	6.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		86.706	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.907	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.092
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.637
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 16:22:53
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60746.5	0.9				ug/L	68501	Standard
	Be	9	45232.5	3.1	**56.2087**	1.203	2.1	ug/L	8	Standard
	Al	27	7025646.2	1.4	**55.8398**	1.243	2.2	ug/L	1397	Standard
	Sc	45	43885.1	1.6				ug/L	38815	Standard
	Ti	47	39346.4	1.8	**105.0322**	1.452	1.4	ug/L	36	Standard
	V	51	399771.6	1.8	**50.7770**	0.685	1.3	ug/L	1284	Standard
	Cr	52	408680.4	1.5	**52.2946**	0.501	1.0	ug/L	6503	Standard
	Cr	53	49651.2	1.7	**51.4861**	0.632	1.2	ug/L	492	Standard
	Mn	55	365429.9	1.0	**53.4684**	0.344	0.6	ug/L	841	Standard
	Co	59	342619.4	1.5	**50.8981**	0.508	1.0	ug/L	229	Standard
	Ni	60	97635.3	1.3	**52.0312**	0.392	0.8	ug/L	344	Standard
	Cu	65	96633.6	1.5	**51.7429**	0.498	1.0	ug/L	115	Standard
	Zn	66	58073.1	0.4	**51.5362**	0.092	0.2	ug/L	190	Standard
>	Ge	72	457224.4	0.5				ug/L	409858	Standard
	As	75	58758.4	1.3	**50.9081**	0.396	0.8	ug/L	-22	Standard
	Se	82	5908.8	1.4	**50.0836**	0.538	1.1	ug/L	18	Standard
	Se-1	77	4046.2	1.7	**51.9099**	0.667	1.3	ug/L	50	Standard
>	Ga	71	71.7	35.8				mg/L	97	Standard
	Rb	85	925.0	5.2				ug/L	25	Standard
	Y	89	386855.1	1.1				ug/L	376763	Standard
>	Rh	103	26.7	39.0				ug/L	20	Standard
	Mo	98	260548.6	1.7	**101.5059**	1.231	1.2	ug/L	51	Standard
	Ag	107	333857.6	0.8	**50.2422**	0.230	0.5	ug/L	76	Standard
	Cd	111	106896.1	1.3	**50.6138**	0.586	1.2	mg/L	6	Standard
	Cd	114	261895.3	0.9	**50.7223**	0.238	0.5	ug/L	18	Standard
>	In	115	540248.5	0.5				ug/L	507261	Standard
	Sn	118	287622.8	1.0	**49.2241**	0.242	0.5	ug/L	683	Standard
	Sb	123	234354.1	0.2	**51.2826**	0.225	0.4	ug/L	446	Standard
	Ba	135	100660.9	0.4	**49.6785**	0.054	0.1	ug/L	28	Standard
	Ce	140	903.4	31.1				ug/L	33	Standard
>	Tb	159	825556.3	1.2				ug/L	800803	Standard
	Ho	165	15.0	66.7				ug/L	10	Standard
	Tl	203	403211.3	0.9	**51.3846**	0.184	0.4	ug/L	13	Standard
	Tl	205	358156.0	1.6	**52.7071**	0.732	1.4	ug/L	13	Standard
	Pb	206	253695.6	0.3	**50.3526**	0.142	0.3	ug/L	226	Standard
	Pb	207	230829.7	0.2	**50.4514**	0.278	0.6	ug/L	204	Standard
	Pb	208	973141.8	0.3	**53.1876**	0.234	0.4	ug/L	852	Standard
	U	238	345863.7	0.5	**51.0501**	0.177	0.3	ug/L	13	Standard
>	Bi	209	461018.5	0.6				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	3902.2	4.8	**4.6351**	0.229	4.9	mg/L	58	Standard
K	39	1138.4	5.1	**3.8705**	0.145	3.7	mg/L	27	Standard
Ca	43	88.3	21.4	**4.4183**	1.316	29.8	mg/L	20	Standard
Fe	54	6708.1	2.0	**4.8466**	0.111	2.3	mg/L	158	Standard
Fe	57	1900.1	10.0	**4.9466**	0.629	12.7	mg/L	267	Standard
> **Sc-1**	45	43885.1	1.6				mg/L	38815	Standard
Cl	35	75193.5	0.6				ug/L	57611	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	2086.8	6.4				ug/L	1617	Standard
P	31	23875.5	3.4				ug/L	19244	Standard
S	34	4587.4	2.6				ug/L	3557	Standard
Sr	88	76.7	13.6				ug/L	65	Standard
C	12	56.7	66.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	15.5	75.3				mg/L	13	Standard
Ho-1	165	15.0	66.7				mg/L	10	Standard
Er	166	23.3	65.5				mg/L	13	Standard
I	127	11913.0	0.9				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	112.417		
	Al	27	111.680		
	Sc	45			
	Ti	47	105.032		
	V	51	101.554		
	Cr	52	104.589		
	Cr	53			
	Mn	55	106.937		
	Co	59	101.796		
	Ni	60	104.062		
	Cu	65	103.486		
	Zn	66	103.072		
>	Ge	72		111.557	
	As	75	101.816		
	Se	82	100.167		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.506		
Ag	107	100.484		
Cd	111	101.228		
Cd	114			
In	115		106.503	
Sn	118	98.448		
Sb	123	102.565		
Ba	135	99.357		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.769		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.375		
U	238	102.100		
Bi	209		102.667	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 16:26:05
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59652.3	2.7				ug/L	68501	Standard
	Be	9	23.3	32.7	**0.0490**	0.010	20.4	ug/L	8	Standard
	Al	27	2736.9	29.7	**0.0571**	0.006	10.5	ug/L	1397	Standard
	Sc	45	42310.7	3.3				ug/L	38815	Standard
	Ti	47	47.7	12.8	**0.1017**	0.018	17.3	ug/L	36	Standard
	V	51	1321.9	6.0	**0.0271**	0.012	43.3	ug/L	1284	Standard
	Cr	52	7227.1	0.7	**0.0231**	0.007	30.2	ug/L	6503	Standard
	Cr	53	390.0	9.0	**-0.0040**	0.039	981.7	ug/L	492	Standard
	Mn	55	829.7	10.8	**0.0277**	0.014	49.4	ug/L	841	Standard
	Co	59	226.7	8.5	**0.0397**	0.003	7.1	ug/L	229	Standard
	Ni	60	355.7	6.2	**0.0355**	0.010	29.2	ug/L	344	Standard
	Cu	65	127.3	6.1	**0.0561**	0.005	8.3	ug/L	115	Standard
	Zn	66	147.3	6.4	**0.0198**	0.007	37.3	ug/L	190	Standard
>	**Ge**	72	449813.6	0.9				ug/L	409858	Standard
	As	75	-43.7	96.3	**0.0603**	0.037	61.7	ug/L	-22	Standard
	Se	82	20.9	21.2	**0.1285**	0.037	28.5	ug/L	18	Standard
	Se-1	77	65.3	19.3	**0.1056**	0.167	158.4	ug/L	50	Standard
>	**Ga**	71	53.3	32.9				mg/L	97	Standard
	Rb	85	36.7	31.5				ug/L	25	Standard
	Y	89	387520.9	1.9				ug/L	376763	Standard
>	**Rh**	103	31.7	36.5				ug/L	20	Standard
	Mo	98	158.1	15.1	**0.1336**	0.009	6.9	ug/L	51	Standard
	Ag	107	129.3	17.4	**0.0427**	0.003	7.9	ug/L	76	Standard
	Cd	111	12.7	34.3	**0.0454**	0.002	4.6	mg/L	6	Standard
	Cd	114	30.1	98.8	**0.0432**	0.006	13.3	ug/L	18	Standard
>	**In**	115	535496.2	0.5				ug/L	507261	Standard
	Sn	118	930.0	12.9	**0.0509**	0.021	42.1	ug/L	683	Standard
	Sb	123	953.8	32.5	**0.1905**	0.069	36.3	ug/L	446	Standard
	Ba	135	46.3	44.9	**0.0388**	0.010	26.4	ug/L	28	Standard
	Ce	140	301.7	26.9				ug/L	33	Standard
>	**Tb**	159	813211.4	0.3				ug/L	800803	Standard
	Ho	165	10.0	86.6				ug/L	10	Standard
	Tl	203	60.0	30.9	**0.0409**	0.002	5.7	ug/L	13	Standard
	Tl	205	63.3	19.9	**0.0518**	0.002	3.6	ug/L	13	Standard
	Pb	206	249.0	7.2	**0.0449**	0.004	8.0	ug/L	226	Standard
	Pb	207	210.3	18.0	**0.0445**	0.008	18.6	ug/L	204	Standard
	Pb	208	921.7	7.5	**0.0500**	0.004	7.6	ug/L	852	Standard
	U	238	50.7	31.7	**0.0500**	0.002	4.7	ug/L	13	Standard
>	**Bi**	209	465283.4	0.2				ug/L	449044	Standard

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Na	23	1.7	173.2	**-0.1598**	14.935	9348.2	mg/L	2	Standard
Mg	24	43.3	63.5	**0.0158**	0.036	224.9	mg/L	58	Standard
K	39	35.0	28.6	**-0.0142**	0.035	248.6	mg/L	27	Standard
Ca	43	31.7	39.7	**0.8179**	0.767	93.7	mg/L	20	Standard
Fe	54	157.8	13.1	**0.0007**	0.012	1779.7	mg/L	158	Standard
Fe	57	258.3	17.6	**0.1106**	0.114	103.0	mg/L	267	Standard
> **Sc-1**	45	42310.7	3.3				mg/L	38815	Standard
Cl	35	73706.2	0.7				ug/L	57611	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	1970.1	7.7				ug/L	1617	Standard
P	31	23151.0	1.4				ug/L	19244	Standard
S	34	4444.0	2.1				ug/L	3557	Standard
Sr	88	86.7	14.5				ug/L	65	Standard
C	12	40.0	25.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	9.5	105.0				mg/L	13	Standard
Ho-1	165	10.0	86.6				mg/L	10	Standard
Er	166	10.0					mg/L	13	Standard
I	127	9379.6	1.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.749	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	105.566
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.616
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Tl	203	

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Method 6020 - Summary Report

Sample ID: L1606129707 WG574306-01
Sample Date/Time: Wednesday, July 06, 2016 16:29:17
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62286.1	0.5				ug/L	68501	Standard
	Be	9	590.0	8.1	**0.7344**	0.059	8.0	ug/L	8	Standard
	Al	27	5802855.8	2.1	**44.9798**	0.730	1.6	ug/L	1397	Standard
	Sc	45	47460.9	0.8				ug/L	38815	Standard
	Ti	47	2622.6	0.7	**6.9832**	0.015	0.2	ug/L	36	Standard
	V	51	118742.6	1.7	**14.9984**	0.176	1.2	ug/L	1284	Standard
	Cr	52	68916.1	1.6	**8.0526**	0.088	1.1	ug/L	6503	Standard
	Cr	53	7815.4	3.9	**7.7623**	0.350	4.5	ug/L	492	Standard
	Mn	55	3441228.5	0.4	**504.9305**	4.973	1.0	ug/L	841	Standard
	Co	59	38475.8	1.4	**5.7274**	0.052	0.9	ug/L	229	Standard
	Ni	60	19435.1	0.7	**10.2433**	0.008	0.1	ug/L	344	Standard
	Cu	65	70101.8	0.8	**37.5778**	0.219	0.6	ug/L	115	Standard
	Zn	66	89509.6	0.3	**79.5911**	0.747	0.9	ug/L	190	Standard
>	**Ge**	72	456693.8	0.8				ug/L	409858	Standard
	As	75	4972.9	0.2	**4.4043**	0.033	0.8	ug/L	-22	Standard
	Se	82	91.2	4.0	**0.7235**	0.025	3.5	ug/L	18	Standard
	Se-1	77	143.3	10.9	**1.1097**	0.212	19.1	ug/L	50	Standard
>	**Ga**	71	7243.4	0.8				mg/L	97	Standard
	Rb	85	78332.0	0.4				ug/L	25	Standard
	Y	89	577179.6	1.5				ug/L	376763	Standard
>	**Rh**	103	28.3	71.3				ug/L	20	Standard
	Mo	98	515.5	2.9	**0.2739**	0.006	2.0	ug/L	51	Standard
	Ag	107	799.7	1.9	**0.1444**	0.002	1.1	ug/L	76	Standard
	Cd	111	871.4	1.4	**0.4552**	0.009	2.0	mg/L	6	Standard
	Cd	114	2093.9	5.3	**0.4460**	0.018	4.1	ug/L	18	Standard
>	**In**	115	535671.5	0.9				ug/L	507261	Standard
	Sn	118	976.7	8.8	**0.0588**	0.014	23.2	ug/L	683	Standard
	Sb	123	802.4	23.2	**0.1566**	0.040	25.4	ug/L	446	Standard
	Ba	135	402037.3	0.8	**200.0633**	0.694	0.3	ug/L	28	Standard
	Ce	140	877863.7	0.2				ug/L	33	Standard
>	**Tb**	159	837773.6	0.3				ug/L	800803	Standard
	Ho	165	15416.2	0.4				ug/L	10	Standard
	Tl	203	410.0	8.3	**0.0849**	0.004	5.1	ug/L	13	Standard
	Tl	205	346.7	13.4	**0.0929**	0.007	7.3	ug/L	13	Standard
	Pb	206	205127.3	1.0	**40.2103**	0.531	1.3	ug/L	226	Standard
	Pb	207	170744.1	1.2	**36.8573**	0.439	1.2	ug/L	204	Standard
	Pb	208	743612.6	0.6	**40.1400**	0.046	0.1	ug/L	852	Standard
	U	238	2929.6	1.6	**0.4694**	0.010	2.0	ug/L	13	Standard
>	**Bi**	209	466785.1	0.7				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	75.0	43.7	**0.0448**	0.037	81.9	mg/L	58	Standard
K	39	176.7	14.5	**0.4343**	0.086	19.8	mg/L	27	Standard
Ca	43	93.3	17.2	**4.2717**	0.936	21.9	mg/L	20	Standard
Fe	54	7751.6	1.4	**5.1861**	0.045	0.9	mg/L	158	Standard
Fe	57	2096.8	4.7	**5.0575**	0.302	6.0	mg/L	267	Standard
> **Sc-1**	45	47460.9	0.8				mg/L	38815	Standard
Cl	35	71723.4	0.6				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	3453.7	11.2				ug/L	1617	Standard
P	31	22111.1	2.8				ug/L	19244	Standard
S	34	4340.6	3.7				ug/L	3557	Standard
Sr	88	108.3	18.7				ug/L	65	Standard
C	12	240.0	42.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	80.0	66.1				mg/L	23	Standard
Dy	164	25701.8	3.3				mg/L	13	Standard
Ho-1	165	15416.2	0.4				mg/L	10	Standard
Er	166	14290.1	3.2				mg/L	13	Standard
I	127	14562.0	5.1				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.927	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.427	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	105.601
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.951
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129708S WG574306-04
Sample Date/Time: Wednesday, July 06, 2016 16:32:29
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65139.8	3.2				ug/L	68501	Standard
	Be	9	23027.5	2.6	**26.7153**	1.021	3.8	ug/L	8	Standard
	Al	27	19735456.9	0.7	**146.2945**	4.400	3.0	ug/L	1397	Standard
	Sc	45	50831.8	1.5				ug/L	38815	Standard
	Ti	47	7097.0	1.6	**19.2848**	0.355	1.8	ug/L	36	Standard
	V	51	396965.1	2.0	**51.3808**	0.553	1.1	ug/L	1284	Standard
	Cr	52	346805.3	1.3	**45.0983**	0.535	1.2	ug/L	6503	Standard
	Cr	53	42561.4	1.9	**44.9217**	0.536	1.2	ug/L	492	Standard
	Mn	55	6042160.1	0.9	**902.5000**	12.755	1.4	ug/L	841	Standard
	Co	59	253173.7	1.6	**38.3278**	0.245	0.6	ug/L	229	Standard
	Ni	60	99179.6	0.7	**53.8687**	0.256	0.5	ug/L	344	Standard
	Cu	65	82472.5	0.7	**45.0035**	0.499	1.1	ug/L	115	Standard
	Zn	66	93214.5	0.6	**84.3712**	0.399	0.5	ug/L	190	Standard
>	Ge	72	448680.5	1.0				ug/L	409858	Standard
	As	75	30784.9	0.5	**27.2279**	0.215	0.8	ug/L	-22	Standard
	Se	82	2057.5	0.8	**17.7407**	0.303	1.7	ug/L	18	Standard
	Se-1	77	1452.1	0.9	**18.5033**	0.080	0.4	ug/L	50	Standard
>	Ga	71	22316.4	1.0				mg/L	97	Standard
	Rb	85	222447.8	1.1				ug/L	25	Standard
	Y	89	643588.6	0.9				ug/L	376763	Standard
>	Rh	103	50.0	60.8				ug/L	20	Standard
	Mo	98	517.5	2.0	**0.2780**	0.005	1.8	ug/L	51	Standard
	Ag	107	156492.7	0.3	**24.1422**	0.180	0.7	ug/L	76	Standard
	Cd	111	51764.0	0.6	**25.1322**	0.102	0.4	mg/L	6	Standard
	Cd	114	125131.9	1.0	**24.8510**	0.352	1.4	ug/L	18	Standard
>	In	115	527283.7	0.4				ug/L	507261	Standard
	Sn	118	791.7	15.9	**0.0290**	0.022	74.9	ug/L	683	Standard
	Sb	123	3550.1	4.8	**0.7758**	0.036	4.7	ug/L	446	Standard
	Ba	135	543933.7	1.1	**274.9734**	2.917	1.1	ug/L	28	Standard
	Ce	140	1333014.6	0.2				ug/L	33	Standard
>	Tb	159	846765.5	0.7				ug/L	800803	Standard
	Ho	165	21213.2	1.0				ug/L	10	Standard
	Tl	203	192947.1	0.4	**24.8377**	0.074	0.3	ug/L	13	Standard
	Tl	205	170482.1	0.3	**25.3468**	0.072	0.3	ug/L	13	Standard
	Pb	206	246709.2	1.1	**49.4262**	0.596	1.2	ug/L	226	Standard
	Pb	207	210661.0	1.7	**46.4760**	0.864	1.9	ug/L	204	Standard
	Pb	208	904086.0	0.3	**49.8775**	0.217	0.4	ug/L	852	Standard
	U	238	170509.8	1.1	**25.4257**	0.301	1.2	ug/L	13	Standard
>	Bi	209	456722.4	0.1				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	125.0	14.4	**0.0910**	0.020	22.1	mg/L	58	Standard
K	39	506.7	4.1	**1.4005**	0.060	4.3	mg/L	27	Standard
Ca	43	278.3	16.7	**14.1761**	2.506	17.7	mg/L	20	Standard
Fe	54	22365.1	4.7	**14.1739**	0.605	4.3	mg/L	158	Standard
Fe	57	5997.9	3.3	**14.6419**	0.543	3.7	mg/L	267	Standard
> **Sc-1**	45	50831.8	1.5				mg/L	38815	Standard
Cl	35	71146.0	0.3				ug/L	57611	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	2550.2	3.4				ug/L	1617	Standard
P	31	21758.9	0.6				ug/L	19244	Standard
S	34	4350.6	3.0				ug/L	3557	Standard
Sr	88	115.0	13.0				ug/L	65	Standard
C	12	76.7	19.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	60.0	72.6				mg/L	23	Standard
Dy	164	36109.1	2.3				mg/L	13	Standard
Ho-1	165	21213.2	1.0				mg/L	10	Standard
Er	166	19612.7	2.0				mg/L	13	Standard
I	127	14929.0	5.1				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.093	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.472	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.947
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.710
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129709SD WG574306-05
Sample Date/Time: Wednesday, July 06, 2016 16:35:40
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62165.6	0.8				ug/L	68501	Standard
	Be	9	22977.4	1.3	**27.9141**	0.157	0.6	ug/L	8	Standard
	Al	27	5977445.6	0.9	**46.4267**	0.626	1.3	ug/L	1397	Standard
	Sc	45	46502.9	1.1				ug/L	38815	Standard
	Ti	47	4422.6	1.5	**11.7578**	0.201	1.7	ug/L	36	Standard
	V	51	293762.5	0.4	**37.1989**	0.125	0.3	ug/L	1284	Standard
	Cr	52	242440.6	0.2	**30.5796**	0.135	0.4	ug/L	6503	Standard
	Cr	53	29553.8	1.4	**30.4146**	0.403	1.3	ug/L	492	Standard
	Mn	55	1745341.1	1.0	**255.2154**	2.554	1.0	ug/L	841	Standard
	Co	59	200410.1	0.8	**29.7146**	0.215	0.7	ug/L	229	Standard
	Ni	60	64660.7	0.2	**34.3358**	0.159	0.5	ug/L	344	Standard
	Cu	65	77163.7	1.0	**41.2321**	0.418	1.0	ug/L	115	Standard
	Zn	66	63624.0	0.3	**56.3574**	0.253	0.4	ug/L	190	Standard
>	**Ge**	72	458159.9	0.2				ug/L	409858	Standard
	As	75	34584.2	0.5	**29.9440**	0.087	0.3	ug/L	-22	Standard
	Se	82	2480.9	2.2	**20.9556**	0.422	2.0	ug/L	18	Standard
	Se-1	77	1708.8	1.4	**21.4388**	0.252	1.2	ug/L	50	Standard
>	**Ga**	71	6708.2	4.2				mg/L	97	Standard
	Rb	85	76939.9	2.2				ug/L	25	Standard
	Y	89	570101.8	2.0				ug/L	376763	Standard
>	**Rh**	103	36.7	51.6				ug/L	20	Standard
	Mo	98	447.6	4.3	**0.2470**	0.005	2.1	ug/L	51	Standard
	Ag	107	160361.2	0.4	**24.3127**	0.260	1.1	ug/L	76	Standard
	Cd	111	52812.1	0.4	**25.1997**	0.264	1.0	mg/L	6	Standard
	Cd	114	128280.5	1.6	**25.0410**	0.737	2.9	ug/L	18	Standard
>	**In**	115	536567.6	1.4				ug/L	507261	Standard
	Sn	118	1265.1	9.3	**0.1086**	0.023	21.5	ug/L	683	Standard
	Sb	123	19496.0	0.7	**4.2771**	0.044	1.0	ug/L	446	Standard
	Ba	135	268259.3	0.0	**133.2908**	1.869	1.4	ug/L	28	Standard
	Ce	140	797112.1	1.2				ug/L	33	Standard
>	**Tb**	159	844790.9	0.3				ug/L	800803	Standard
	Ho	165	14488.6	0.9				ug/L	10	Standard
	Tl	203	189672.5	0.4	**23.9754**	0.103	0.4	ug/L	13	Standard
	Tl	205	168670.4	1.0	**24.6251**	0.301	1.2	ug/L	13	Standard
	Pb	206	211717.6	0.5	**41.6489**	0.491	1.2	ug/L	226	Standard
	Pb	207	180603.7	0.8	**39.1231**	0.361	0.9	ug/L	204	Standard
	Pb	208	773838.1	0.2	**41.9198**	0.337	0.8	ug/L	852	Standard
	U	238	167844.2	0.7	**24.5765**	0.189	0.8	ug/L	13	Standard
>	**Bi**	209	465149.6	0.7				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	81.7	7.1	**0.0539**	0.007	12.4	mg/L	58	Standard
K	39	186.7	7.7	**0.4794**	0.049	10.3	mg/L	27	Standard
Ca	43	85.0	17.6	**3.8866**	0.950	24.4	mg/L	20	Standard
Fe	54	6828.4	0.4	**4.6510**	0.070	1.5	mg/L	158	Standard
Fe	57	1968.5	1.7	**4.8161**	0.074	1.5	mg/L	267	Standard
> **Sc-1**	45	46502.9	1.1				mg/L	38815	Standard
Cl	35	69530.5	0.8				ug/L	57611	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	2346.8	1.8				ug/L	1617	Standard
P	31	22379.9	1.8				ug/L	19244	Standard
S	34	4130.6	6.2				ug/L	3557	Standard
Sr	88	100.0	13.2				ug/L	65	Standard
C	12	93.3	22.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	53.9				mg/L	23	Standard
Dy	164	23262.7	2.3				mg/L	13	Standard
Ho-1	165	14488.6	0.9				mg/L	10	Standard
Er	166	13002.2	3.7				mg/L	13	Standard
I	127	6032.9	1.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.751	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.785	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	105.778
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	103.587
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129710
Sample Date/Time: Wednesday, July 06, 2016 16:38:52
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61658.5	1.1				ug/L	68501	Standard
	Be	9	316.7	10.7	**0.4069**	0.038	9.5	ug/L	8	Standard
	Al	27	11438871.0	0.8	**89.5399**	0.292	0.3	ug/L	1397	Standard
	Sc	45	47305.4	2.4				ug/L	38815	Standard
	Ti	47	2888.9	1.5	**7.7475**	0.158	2.0	ug/L	36	Standard
	V	51	65037.6	1.0	**8.2058**	0.107	1.3	ug/L	1284	Standard
	Cr	52	41695.6	0.6	**4.5400**	0.052	1.1	ug/L	6503	Standard
	Cr	53	4632.4	3.3	**4.4625**	0.170	3.8	ug/L	492	Standard
	Mn	55	3373933.1	1.4	**498.3465**	6.643	1.3	ug/L	841	Standard
	Co	59	22272.7	1.1	**3.3401**	0.042	1.2	ug/L	229	Standard
	Ni	60	13505.0	1.3	**7.1185**	0.133	1.9	ug/L	344	Standard
	Cu	65	8779.5	1.7	**4.7263**	0.092	1.9	ug/L	115	Standard
	Zn	66	14455.2	1.4	**12.8447**	0.245	1.9	ug/L	190	Standard
>	**Ge**	72	453660.4	0.7				ug/L	409858	Standard
	As	75	2368.1	1.0	**2.1628**	0.015	0.7	ug/L	-22	Standard
	Se	82	36.2	24.0	**0.2586**	0.077	29.7	ug/L	18	Standard
	Se-1	77	83.0	13.0	**0.3306**	0.149	44.9	ug/L	50	Standard
>	**Ga**	71	4710.7	2.3				mg/L	97	Standard
	Rb	85	48778.4	1.7				ug/L	25	Standard
	Y	89	519310.4	2.7				ug/L	376763	Standard
>	**Rh**	103	20.0	25.0				ug/L	20	Standard
	Mo	98	355.6	6.9	**0.2104**	0.009	4.3	ug/L	51	Standard
	Ag	107	213.0	13.9	**0.0552**	0.004	7.9	ug/L	76	Standard
	Cd	111	153.3	5.2	**0.1121**	0.004	3.3	mg/L	6	Standard
	Cd	114	308.2	15.1	**0.0972**	0.009	9.1	ug/L	18	Standard
>	**In**	115	538651.6	0.3				ug/L	507261	Standard
	Sn	118	1185.0	5.3	**0.0938**	0.011	12.2	ug/L	683	Standard
	Sb	123	504.2	33.5	**0.0904**	0.037	41.4	ug/L	446	Standard
	Ba	135	168151.0	0.7	**83.2208**	0.364	0.4	ug/L	28	Standard
	Ce	140	555700.4	0.4				ug/L	33	Standard
>	**Tb**	159	826502.3	1.1				ug/L	800803	Standard
	Ho	165	10727.1	1.4				ug/L	10	Standard
	Tl	203	298.3	5.8	**0.0715**	0.002	3.3	ug/L	13	Standard
	Tl	205	258.3	24.5	**0.0806**	0.009	11.5	ug/L	13	Standard
	Pb	206	25876.7	1.2	**5.1492**	0.086	1.7	ug/L	226	Standard
	Pb	207	21503.6	1.1	**4.7143**	0.066	1.4	ug/L	204	Standard
	Pb	208	94054.5	0.9	**5.1574**	0.064	1.2	ug/L	852	Standard
	U	238	2598.9	1.6	**0.4272**	0.008	1.8	ug/L	13	Standard
>	**Bi**	209	459527.8	0.4				ug/L	449044	Standard

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Na	23	1.7	173.2	**-1.1163**	13.278	1189.5	mg/L	2	Standard
Mg	24	101.7	15.0	**0.0744**	0.014	19.5	mg/L	58	Standard
K	39	90.0	28.9	**0.1540**	0.093	60.5	mg/L	27	Standard
Ca	43	258.3	9.5	**14.1618**	1.744	12.3	mg/L	20	Standard
Fe	54	5464.4	2.8	**3.6325**	0.017	0.5	mg/L	158	Standard
Fe	57	1618.4	2.2	**3.7627**	0.073	1.9	mg/L	267	Standard
> **Sc-1**	45	47305.4	2.4				mg/L	38815	Standard
Cl	35	72933.2	1.9				ug/L	57611	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	2110.1	3.1				ug/L	1617	Standard
P	31	21301.6	3.6				ug/L	19244	Standard
S	34	4172.2	7.4				ug/L	3557	Standard
Sr	88	111.7	9.3				ug/L	65	Standard
C	12	113.3	51.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	43.3				mg/L	23	Standard
Dy	164	17720.6	1.8				mg/L	13	Standard
Ho-1	165	10727.1	1.4				mg/L	10	Standard
Er	166	9609.7	2.4				mg/L	13	Standard
I	127	5551.0	2.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.011	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.687	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	106.188
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.335
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606129711
Sample Date/Time: Wednesday, July 06, 2016 16:42:03
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61509.7	3.8				ug/L	68501	Standard
	Be	9	421.7	11.9	**0.5360**	0.044	8.3	ug/L	8	Standard
	Al	27	10093377.0	0.1	**79.2770**	2.936	3.7	ug/L	1397	Standard
	Sc	45	47273.6	1.6				ug/L	38815	Standard
	Ti	47	2244.8	4.6	**5.9961**	0.328	5.5	ug/L	36	Standard
	V	51	64690.3	3.2	**8.1339**	0.229	2.8	ug/L	1284	Standard
	Cr	52	41467.0	1.1	**4.4925**	0.049	1.1	ug/L	6503	Standard
	Cr	53	4380.6	4.0	**4.1841**	0.234	5.6	ug/L	492	Standard
	Mn	55	1967568.3	1.0	**289.6495**	0.452	0.2	ug/L	841	Standard
	Co	59	21596.7	2.2	**3.2283**	0.050	1.5	ug/L	229	Standard
	Ni	60	13599.1	0.4	**7.1457**	0.060	0.8	ug/L	344	Standard
	Cu	65	11548.7	0.5	**6.2013**	0.045	0.7	ug/L	115	Standard
	Zn	66	32738.0	1.3	**29.1384**	0.231	0.8	ug/L	190	Standard
>	**Ge**	72	455117.1	1.2				ug/L	409858	Standard
	As	75	1894.3	1.2	**1.7445**	0.001	0.1	ug/L	-22	Standard
	Se	82	34.2	19.1	**0.2399**	0.054	22.3	ug/L	18	Standard
	Se-1	77	89.7	7.9	**0.4132**	0.082	19.9	ug/L	50	Standard
>	**Ga**	71	4574.0	4.3				mg/L	97	Standard
	Rb	85	42773.6	1.6				ug/L	25	Standard
	Y	89	524642.6	2.0				ug/L	376763	Standard
>	**Rh**	103	38.3	41.9				ug/L	20	Standard
	Mo	98	280.4	4.0	**0.1822**	0.004	2.2	ug/L	51	Standard
	Ag	107	290.0	6.2	**0.0673**	0.003	3.9	ug/L	76	Standard
	Cd	111	303.1	4.7	**0.1849**	0.008	4.1	mg/L	6	Standard
	Cd	114	713.7	10.5	**0.1775**	0.016	8.7	ug/L	18	Standard
>	**In**	115	532671.1	0.6				ug/L	507261	Standard
	Sn	118	545.0	4.2	**-0.0153**	0.004	24.1	ug/L	683	Standard
	Sb	123	363.0	29.1	**0.0603**	0.024	39.6	ug/L	446	Standard
	Ba	135	135054.2	0.2	**67.5967**	0.490	0.7	ug/L	28	Standard
	Ce	140	604058.3	1.0				ug/L	33	Standard
>	**Tb**	159	835508.5	0.3				ug/L	800803	Standard
	Ho	165	11549.4	3.1				ug/L	10	Standard
	Tl	203	238.3	7.6	**0.0638**	0.002	3.4	ug/L	13	Standard
	Tl	205	201.7	7.6	**0.0723**	0.002	3.1	ug/L	13	Standard
	Pb	206	26825.1	0.3	**5.3397**	0.042	0.8	ug/L	226	Standard
	Pb	207	22029.7	1.2	**4.8311**	0.044	0.9	ug/L	204	Standard
	Pb	208	95852.2	1.1	**5.2576**	0.032	0.6	ug/L	852	Standard
	U	238	1621.4	2.0	**0.2826**	0.005	1.9	ug/L	13	Standard
>	**Bi**	209	459368.4	0.5				ug/L	449044	Standard

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Na	23	3.3	173.2	**5.9880**	25.583	427.2	mg/L	2	Standard
Mg	24	116.7	6.5	**0.0913**	0.008	8.9	mg/L	58	Standard
K	39	153.3	5.0	**0.3603**	0.032	8.8	mg/L	27	Standard
Ca	43	206.7	11.4	**11.0522**	1.238	11.2	mg/L	20	Standard
Fe	54	4403.2	3.1	**2.9074**	0.141	4.9	mg/L	158	Standard
Fe	57	1453.4	5.7	**3.3122**	0.223	6.7	mg/L	267	Standard
> **Sc-1**	45	47273.6	1.6				mg/L	38815	Standard
Cl	35	73026.9	1.1				ug/L	57611	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	2326.8	3.5				ug/L	1617	Standard
P	31	21620.4	3.9				ug/L	19244	Standard
S	34	4283.9	3.4				ug/L	3557	Standard
Sr	88	91.7	25.2				ug/L	65	Standard
C	12	113.3	22.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	43.3	74.2				mg/L	23	Standard
Dy	164	18872.5	1.8				mg/L	13	Standard
Ho-1	165	11549.4	3.1				mg/L	10	Standard
Er	166	10086.7	2.7				mg/L	13	Standard
I	127	5506.0	1.1				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.794	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.043	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.009
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.299
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606129712
Sample Date/Time: Wednesday, July 06, 2016 16:45:15
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	62284.5	2.8				ug/L	68501	Standard
	Be	9	626.7	11.2	**0.7777**	0.063	8.1	ug/L	8	Standard
	Al	27	11858606.3	0.2	**91.9349**	2.408	2.6	ug/L	1397	Standard
	Sc	45	48037.8	3.3				ug/L	38815	Standard
	Ti	47	2357.2	0.2	**6.3474**	0.073	1.2	ug/L	36	Standard
	V	51	114692.2	1.3	**14.6525**	0.138	0.9	ug/L	1284	Standard
	Cr	52	59864.0	0.2	**6.9640**	0.100	1.4	ug/L	6503	Standard
	Cr	53	6913.2	4.7	**6.8996**	0.276	4.0	ug/L	492	Standard
	Mn	55	2523368.3	1.4	**374.5058**	1.280	0.3	ug/L	841	Standard
	Co	59	39749.1	0.9	**5.9856**	0.007	0.1	ug/L	229	Standard
	Ni	60	20932.8	0.7	**11.1753**	0.077	0.7	ug/L	344	Standard
	Cu	65	16367.5	0.7	**8.8658**	0.064	0.7	ug/L	115	Standard
	Zn	66	22188.6	1.2	**19.8731**	0.049	0.2	ug/L	190	Standard
>	Ge	72	451446.6	1.0				ug/L	409858	Standard
	As	75	4917.0	1.1	**4.4055**	0.055	1.3	ug/L	-22	Standard
	Se	82	53.2	6.3	**0.4054**	0.024	6.0	ug/L	18	Standard
	Se-1	77	117.0	9.6	**0.7828**	0.135	17.2	ug/L	50	Standard
>	Ga	71	7840.4	2.3				mg/L	97	Standard
	Rb	85	81734.9	2.0				ug/L	25	Standard
	Y	89	590877.9	1.6				ug/L	376763	Standard
>	Rh	103	21.7	74.2				ug/L	20	Standard
	Mo	98	218.0	6.9	**0.1585**	0.006	3.5	ug/L	51	Standard
	Ag	107	377.3	2.6	**0.0813**	0.001	1.8	ug/L	76	Standard
	Cd	111	204.3	7.9	**0.1384**	0.008	5.9	mg/L	6	Standard
	Cd	114	447.0	7.9	**0.1260**	0.007	5.6	ug/L	18	Standard
>	In	115	527105.5	0.6				ug/L	507261	Standard
	Sn	118	735.0	14.8	**0.0192**	0.020	103.9	ug/L	683	Standard
	Sb	123	336.6	35.8	**0.0552**	0.027	49.6	ug/L	446	Standard
	Ba	135	247544.5	0.6	**125.1941**	1.145	0.9	ug/L	28	Standard
	Ce	140	1027087.5	0.1				ug/L	33	Standard
>	Tb	159	835383.6	1.9				ug/L	800803	Standard
	Ho	165	16989.5	1.8				ug/L	10	Standard
	Tl	203	540.3	4.1	**0.1026**	0.003	2.8	ug/L	13	Standard
	Tl	205	516.7	13.6	**0.1190**	0.010	8.4	ug/L	13	Standard
	Pb	206	50080.3	1.0	**10.0053**	0.065	0.7	ug/L	226	Standard
	Pb	207	41332.3	1.0	**9.0954**	0.067	0.7	ug/L	204	Standard
	Pb	208	181531.5	0.5	**9.9907**	0.076	0.8	ug/L	852	Standard
	U	238	3604.8	1.5	**0.5780**	0.011	1.8	ug/L	13	Standard
>	Bi	209	457841.6	0.5				ug/L	449044	Standard

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Na	23	1.7	173.2	**-1.4320**	12.732	889.1	mg/L	2	Standard
Mg	24	88.3	18.2	**0.0586**	0.020	33.9	mg/L	58	Standard
K	39	208.3	5.5	**0.5297**	0.044	8.2	mg/L	27	Standard
Ca	43	198.3	3.9	**10.3900**	0.688	6.6	mg/L	20	Standard
Fe	54	10183.2	1.4	**6.7705**	0.172	2.5	mg/L	158	Standard
Fe	57	2888.6	4.0	**7.1262**	0.052	0.7	mg/L	267	Standard
Sc-1	45	48037.8	3.3				mg/L	38815	Standard
Cl	35	71743.5	1.2				ug/L	57611	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	2346.8	1.7				ug/L	1617	Standard
P	31	22069.4	3.2				ug/L	19244	Standard
S	34	4567.4	1.3				ug/L	3557	Standard
Sr	88	123.3	24.8				ug/L	65	Standard
C	12	66.7	56.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	53.3	21.7				mg/L	23	Standard
Dy	164	28481.1	1.9				mg/L	13	Standard
Ho-1	165	16989.5	1.8				mg/L	10	Standard
Er	166	15664.8	7.4				mg/L	13	Standard
I	127	16987.9	6.1				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		90.925	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		110.147	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.912
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.959
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129713
Sample Date/Time: Wednesday, July 06, 2016 16:48:26
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62081.9	1.3				ug/L	68501	Standard
	Be	9	588.3	10.8	**0.7344**	0.072	9.8	ug/L	8	Standard
	Al	27	6441179.9	0.6	**50.0948**	0.588	1.2	ug/L	1397	Standard
	Sc	45	46996.1	0.3				ug/L	38815	Standard
	Ti	47	4702.4	3.0	**12.5186**	0.330	2.6	ug/L	36	Standard
	V	51	126562.6	0.7	**15.9663**	0.222	1.4	ug/L	1284	Standard
	Cr	52	86983.0	1.8	**10.3879**	0.247	2.4	ug/L	6503	Standard
	Cr	53	10093.4	2.8	**10.1257**	0.297	2.9	ug/L	492	Standard
	Mn	55	2761878.1	1.1	**404.4912**	8.928	2.2	ug/L	841	Standard
	Co	59	32009.4	1.1	**4.7569**	0.065	1.4	ug/L	229	Standard
	Ni	60	18023.4	1.2	**9.4702**	0.190	2.0	ug/L	344	Standard
	Cu	65	36669.7	2.1	**19.6142**	0.495	2.5	ug/L	115	Standard
	Zn	66	64542.2	1.0	**57.2489**	0.809	1.4	ug/L	190	Standard
>	**Ge**	72	457586.6	1.3				ug/L	409858	Standard
	As	75	5767.8	0.7	**5.0828**	0.039	0.8	ug/L	-22	Standard
	Se	82	73.1	7.8	**0.5680**	0.044	7.8	ug/L	18	Standard
	Se-1	77	124.7	9.4	**0.8629**	0.154	17.9	ug/L	50	Standard
>	**Ga**	71	6903.2	3.8				mg/L	97	Standard
	Rb	85	75785.8	2.6				ug/L	25	Standard
	Y	89	556387.3	2.0				ug/L	376763	Standard
>	**Rh**	103	41.7	18.3				ug/L	20	Standard
	Mo	98	811.4	4.0	**0.3881**	0.011	2.9	ug/L	51	Standard
	Ag	107	1541.1	3.9	**0.2555**	0.010	4.0	ug/L	76	Standard
	Cd	111	1561.6	1.3	**0.7799**	0.014	1.8	mg/L	6	Standard
	Cd	114	3866.0	5.7	**0.7876**	0.050	6.4	ug/L	18	Standard
>	**In**	115	539012.8	1.0				ug/L	507261	Standard
	Sn	118	1225.0	9.7	**0.1005**	0.021	20.4	ug/L	683	Standard
	Sb	123	611.7	14.4	**0.1138**	0.019	16.8	ug/L	446	Standard
	Ba	135	285012.1	0.7	**140.9593**	1.156	0.8	ug/L	28	Standard
	Ce	140	825628.1	1.9				ug/L	33	Standard
>	**Tb**	159	838546.8	0.7				ug/L	800803	Standard
	Ho	165	13836.3	2.6				ug/L	10	Standard
	Tl	203	403.0	17.3	**0.0841**	0.008	9.8	ug/L	13	Standard
	Tl	205	401.7	15.2	**0.1009**	0.008	8.4	ug/L	13	Standard
	Pb	206	251264.0	0.4	**49.3384**	0.673	1.4	ug/L	226	Standard
	Pb	207	212218.9	0.6	**45.8892**	0.707	1.5	ug/L	204	Standard
	Pb	208	913725.3	0.8	**49.4054**	0.501	1.0	ug/L	852	Standard
	U	238	2752.6	2.3	**0.4442**	0.005	1.2	ug/L	13	Standard
>	**Bi**	209	466022.1	1.0				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	115.0	15.7	**0.0903**	0.020	22.6	mg/L	58	Standard
K	39	278.3	12.6	**0.7745**	0.115	14.8	mg/L	27	Standard
Ca	43	168.3	19.8	**8.8314**	1.980	22.4	mg/L	20	Standard
Fe	54	7282.0	1.6	**4.9140**	0.076	1.6	mg/L	158	Standard
Fe	57	2116.8	11.8	**5.1693**	0.700	13.5	mg/L	267	Standard
> **Sc-1**	45	46996.1	0.3				mg/L	38815	Standard
Cl	35	71568.0	0.9				ug/L	57611	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	3147.0	7.8				ug/L	1617	Standard
P	31	22919.0	2.6				ug/L	19244	Standard
S	34	4474.0	1.6				ug/L	3557	Standard
Sr	88	126.7	22.4				ug/L	65	Standard
C	12	176.7	13.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	760.0	23.3				mg/L	23	Standard
Dy	164	23022.3	1.6				mg/L	13	Standard
Ho-1	165	13836.3	2.6				mg/L	10	Standard
Er	166	12234.9	4.5				mg/L	13	Standard
I	127	16075.2	5.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.629	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.645	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.260
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.781
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129714
Sample Date/Time: Wednesday, July 06, 2016 16:51:37
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64485.3	1.7				ug/L	68501	Standard
	Be	9	643.3	12.9	**0.7736**	0.109	14.1	ug/L	8	Standard
	Al	27	16270383.4	0.8	**121.7751**	1.183	1.0	ug/L	1397	Standard
	Sc	45	49480.7	0.7				ug/L	38815	Standard
	Ti	47	7625.3	2.0	**20.4654**	0.223	1.1	ug/L	36	Standard
	V	51	152406.4	1.4	**19.3979**	0.334	1.7	ug/L	1284	Standard
	Cr	52	112572.0	1.3	**13.8245**	0.074	0.5	ug/L	6503	Standard
	Cr	53	13571.1	1.6	**13.8632**	0.302	2.2	ug/L	492	Standard
	Mn	55	3345367.4	0.6	**493.5133**	5.656	1.1	ug/L	841	Standard
	Co	59	51653.3	1.9	**7.7286**	0.128	1.7	ug/L	229	Standard
	Ni	60	34920.2	0.7	**18.6317**	0.182	1.0	ug/L	344	Standard
	Cu	65	19504.5	1.4	**10.5020**	0.112	1.1	ug/L	115	Standard
	Zn	66	37327.3	0.6	**33.3035**	0.247	0.7	ug/L	190	Standard
>	**Ge**	72	454248.1	0.9				ug/L	409858	Standard
	As	75	5161.1	0.9	**4.5913**	0.045	1.0	ug/L	-22	Standard
	Se	82	41.2	27.1	**0.3007**	0.097	32.2	ug/L	18	Standard
	Se-1	77	113.0	5.3	**0.7222**	0.092	12.7	ug/L	50	Standard
>	**Ga**	71	14894.0	0.4				mg/L	97	Standard
	Rb	85	120504.0	0.8				ug/L	25	Standard
	Y	89	585057.3	0.9				ug/L	376763	Standard
>	**Rh**	103	31.7	32.9				ug/L	20	Standard
	Mo	98	934.2	6.2	**0.4430**	0.022	5.1	ug/L	51	Standard
	Ag	107	442.7	30.5	**0.0912**	0.021	23.1	ug/L	76	Standard
	Cd	111	177.9	31.7	**0.1254**	0.028	22.0	mg/L	6	Standard
	Cd	114	466.6	45.4	**0.1297**	0.042	32.6	ug/L	18	Standard
>	**In**	115	528910.4	1.0				ug/L	507261	Standard
	Sn	118	500.0	36.8	**-0.0224**	0.033	146.1	ug/L	683	Standard
	Sb	123	298.8	51.6	**0.0464**	0.035	74.6	ug/L	446	Standard
	Ba	135	213503.8	0.4	**107.6130**	0.595	0.6	ug/L	28	Standard
	Ce	140	982054.3	1.4				ug/L	33	Standard
>	**Tb**	159	834048.4	0.7				ug/L	800803	Standard
	Ho	165	16108.6	2.7				ug/L	10	Standard
	Tl	203	791.0	23.1	**0.1346**	0.024	17.7	ug/L	13	Standard
	Tl	205	631.7	12.1	**0.1359**	0.012	8.6	ug/L	13	Standard
	Pb	206	43066.1	0.7	**8.5804**	0.077	0.9	ug/L	226	Standard
	Pb	207	35289.1	1.2	**7.7451**	0.149	1.9	ug/L	204	Standard
	Pb	208	154795.7	0.5	**8.4963**	0.061	0.7	ug/L	852	Standard
	U	238	3394.7	2.0	**0.5454**	0.012	2.2	ug/L	13	Standard
>	**Bi**	209	459082.4	0.7				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	123.3	22.3	**0.0927**	0.029	31.6	mg/L	58	Standard
K	39	355.0	20.7	**0.9694**	0.239	24.7	mg/L	27	Standard
Ca	43	303.3	12.6	**16.0400**	2.304	14.4	mg/L	20	Standard
Fe	54	17039.6	2.1	**11.0689**	0.263	2.4	mg/L	158	Standard
Fe	57	4547.3	1.5	**11.2525**	0.203	1.8	mg/L	267	Standard
Sc-1	45	49480.7	0.7				mg/L	38815	Standard
Cl	35	71902.9	0.6				ug/L	57611	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	2206.8	5.3				ug/L	1617	Standard
P	31	21572.0	0.5				ug/L	19244	Standard
S	34	4592.4	3.0				ug/L	3557	Standard
Sr	88	108.3	17.5				ug/L	65	Standard
C	12	53.3	28.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	78.1				mg/L	23	Standard
Dy	164	26618.0	1.8				mg/L	13	Standard
Ho-1	165	16108.6	2.7				mg/L	10	Standard
Er	166	14123.2	0.7				mg/L	13	Standard
I	127	4255.6	6.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.137	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.831	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.268
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.236
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129715
Sample Date/Time: Wednesday, July 06, 2016 16:54:49
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62682.8	1.8				ug/L	68501	Standard
	Be	9	538.3	13.5	**0.6670**	0.078	11.7	ug/L	8	Standard
	Al	27	8483295.7	2.3	**65.3309**	1.261	1.9	ug/L	1397	Standard
	Sc	45	48000.9	1.9				ug/L	38815	Standard
	Ti	47	2220.8	1.9	**5.8672**	0.116	2.0	ug/L	36	Standard
	V	51	95825.1	1.7	**11.9905**	0.267	2.2	ug/L	1284	Standard
	Cr	52	53975.7	1.5	**6.0545**	0.065	1.1	ug/L	6503	Standard
	Cr	53	6017.9	2.1	**5.8357**	0.149	2.6	ug/L	492	Standard
	Mn	55	1814367.2	1.0	**264.2710**	0.941	0.4	ug/L	841	Standard
	Co	59	32503.5	1.0	**4.8051**	0.055	1.1	ug/L	229	Standard
	Ni	60	18362.5	1.6	**9.5997**	0.169	1.8	ug/L	344	Standard
	Cu	65	21373.4	0.6	**11.3667**	0.082	0.7	ug/L	115	Standard
	Zn	66	29953.3	1.6	**26.3688**	0.448	1.7	ug/L	190	Standard
>	**Ge**	72	459957.3	0.6				ug/L	409858	Standard
	As	75	3998.2	0.8	**3.5358**	0.038	1.1	ug/L	-22	Standard
	Se	82	59.0	6.1	**0.4460**	0.030	6.7	ug/L	18	Standard
	Se-1	77	107.7	2.3	**0.6343**	0.031	4.9	ug/L	50	Standard
>	**Ga**	71	6808.2	1.8				mg/L	97	Standard
	Rb	85	56838.1	3.0				ug/L	25	Standard
	Y	89	574047.0	2.1				ug/L	376763	Standard
>	**Rh**	103	26.7	10.8				ug/L	20	Standard
	Mo	98	310.7	1.4	**0.1928**	0.003	1.7	ug/L	51	Standard
	Ag	107	486.0	4.2	**0.0964**	0.004	4.0	ug/L	76	Standard
	Cd	111	347.1	4.1	**0.2040**	0.007	3.5	mg/L	6	Standard
	Cd	114	922.3	3.8	**0.2163**	0.008	3.8	ug/L	18	Standard
>	**In**	115	538984.3	1.4				ug/L	507261	Standard
	Sn	118	660.0	8.6	**0.0033**	0.008	248.6	ug/L	683	Standard
	Sb	123	305.2	20.5	**0.0465**	0.013	27.9	ug/L	446	Standard
	Ba	135	215332.4	0.7	**106.5103**	0.948	0.9	ug/L	28	Standard
	Ce	140	882731.2	1.5				ug/L	33	Standard
>	**Tb**	159	841647.7	1.0				ug/L	800803	Standard
	Ho	165	15134.2	4.0				ug/L	10	Standard
	Tl	203	293.0	7.2	**0.0705**	0.003	4.2	ug/L	13	Standard
	Tl	205	273.3	21.4	**0.0825**	0.009	10.8	ug/L	13	Standard
	Pb	206	60251.9	1.3	**11.8850**	0.195	1.6	ug/L	226	Standard
	Pb	207	49982.3	0.2	**10.8591**	0.117	1.1	ug/L	204	Standard
	Pb	208	217106.5	0.8	**11.7955**	0.057	0.5	ug/L	852	Standard
	U	238	2425.2	0.7	**0.3982**	0.003	0.8	ug/L	13	Standard
>	**Bi**	209	463776.3	0.9				ug/L	449044	Standard

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Na	23	1.7	173.2	**-1.4158**	12.760	901.2	mg/L	2	Standard
Mg	24	95.0	27.9	**0.0656**	0.028	43.3	mg/L	58	Standard
K	39	300.0	6.0	**0.8260**	0.072	8.7	mg/L	27	Standard
Ca	43	156.7	22.4	**7.9262**	2.009	25.4	mg/L	20	Standard
Fe	54	6886.5	4.2	**4.5396**	0.113	2.5	mg/L	158	Standard
Fe	57	2083.5	2.4	**4.9568**	0.163	3.3	mg/L	267	Standard
> **Sc-1**	45	48000.9	1.9				mg/L	38815	Standard
Cl	35	71939.7	0.8				ug/L	57611	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	2656.9	9.5				ug/L	1617	Standard
P	31	21992.6	2.8				ug/L	19244	Standard
S	34	4395.6	4.3				ug/L	3557	Standard
Sr	88	90.0	11.1				ug/L	65	Standard
C	12	133.3	15.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	53.3	57.3				mg/L	23	Standard
Dy	164	26288.0	3.3				mg/L	13	Standard
Ho-1	165	15134.2	4.0				mg/L	10	Standard
Er	166	13973.1	2.6				mg/L	13	Standard
I	127	9231.2	7.2				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.506	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		112.224	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.254
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.281
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129716
Sample Date/Time: Wednesday, July 06, 2016 16:58:00
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63096.1	1.7				ug/L	68501	Standard
	Be	9	386.7	6.4	**0.4820**	0.030	6.2	ug/L	8	Standard
	Al	27	12937858.5	0.6	**98.9797**	1.758	1.8	ug/L	1397	Standard
	Sc	45	48714.9	0.8				ug/L	38815	Standard
	Ti	47	5477.7	1.0	**14.5444**	0.163	1.1	ug/L	36	Standard
	V	51	88820.6	0.9	**11.1277**	0.088	0.8	ug/L	1284	Standard
	Cr	52	76178.4	0.5	**8.9516**	0.065	0.7	ug/L	6503	Standard
	Cr	53	8680.8	4.0	**8.6226**	0.356	4.1	ug/L	492	Standard
	Mn	55	1630364.2	1.5	**237.9886**	2.912	1.2	ug/L	841	Standard
	Co	59	33074.4	1.8	**4.9001**	0.076	1.6	ug/L	229	Standard
	Ni	60	24834.7	1.6	**13.0681**	0.216	1.7	ug/L	344	Standard
	Cu	65	11549.7	0.5	**6.1498**	0.016	0.3	ug/L	115	Standard
	Zn	66	25965.9	1.2	**22.8939**	0.212	0.9	ug/L	190	Standard
>	**Ge**	72	458933.8	0.3				ug/L	409858	Standard
	As	75	2635.7	3.3	**2.3695**	0.072	3.1	ug/L	-22	Standard
	Se	82	39.0	10.2	**0.2785**	0.034	12.2	ug/L	18	Standard
	Se-1	77	99.7	9.1	**0.5334**	0.114	21.4	ug/L	50	Standard
>	**Ga**	71	9593.0	4.0				mg/L	97	Standard
	Rb	85	78841.3	0.9				ug/L	25	Standard
	Y	89	536495.1	0.8				ug/L	376763	Standard
>	**Rh**	103	36.7	28.4				ug/L	20	Standard
	Mo	98	2152.4	3.2	**0.9206**	0.036	3.9	ug/L	51	Standard
	Ag	107	274.7	3.4	**0.0650**	0.002	3.0	ug/L	76	Standard
	Cd	111	138.7	8.4	**0.1059**	0.005	5.2	mg/L	6	Standard
	Cd	114	352.4	1.6	**0.1064**	0.001	1.1	ug/L	18	Standard
>	**In**	115	533377.1	1.3				ug/L	507261	Standard
	Sn	118	720.0	12.1	**0.0149**	0.014	92.3	ug/L	683	Standard
	Sb	123	207.4	30.5	**0.0257**	0.014	55.5	ug/L	446	Standard
	Ba	135	126797.7	0.9	**63.3864**	1.016	1.6	ug/L	28	Standard
	Ce	140	703196.5	0.5				ug/L	33	Standard
>	**Tb**	159	828490.0	1.1				ug/L	800803	Standard
	Ho	165	12056.5	2.6				ug/L	10	Standard
	Tl	203	401.7	6.8	**0.0849**	0.003	3.6	ug/L	13	Standard
	Tl	205	353.3	15.1	**0.0948**	0.007	7.8	ug/L	13	Standard
	Pb	206	26317.8	0.7	**5.2595**	0.080	1.5	ug/L	226	Standard
	Pb	207	21590.4	0.4	**4.7535**	0.039	0.8	ug/L	204	Standard
	Pb	208	95620.4	0.7	**5.2655**	0.020	0.4	ug/L	852	Standard
	U	238	2673.9	0.9	**0.4400**	0.007	1.5	ug/L	13	Standard
>	**Bi**	209	457582.5	0.9				ug/L	449044	Standard

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Na	23	1.7	173.2	**-1.6111**	12.421	771.0	mg/L	2	Standard
Mg	24	158.3	9.6	**0.1325**	0.017	12.8	mg/L	58	Standard
K	39	220.0	19.4	**0.5570**	0.137	24.5	mg/L	27	Standard
Ca	43	283.3	9.1	**15.1368**	1.384	9.1	mg/L	20	Standard
Fe	54	9746.1	3.5	**6.3807**	0.257	4.0	mg/L	158	Standard
Fe	57	2695.2	3.4	**6.5045**	0.279	4.3	mg/L	267	Standard
> **Sc-1**	45	48714.9	0.8				mg/L	38815	Standard
Cl	35	72318.2	1.6				ug/L	57611	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	2336.8	8.3				ug/L	1617	Standard
P	31	22189.6	1.5				ug/L	19244	Standard
S	34	4620.7	2.9				ug/L	3557	Standard
Sr	88	90.0	33.8				ug/L	65	Standard
C	12	106.7	32.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	23	Standard
Dy	164	20294.5	0.9				mg/L	13	Standard
Ho-1	165	12056.5	2.6				mg/L	10	Standard
Er	166	10990.7	3.8				mg/L	13	Standard
I	127	4535.7	3.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.110	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.974	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.149
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.901
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 17:01:13
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60376.8	2.6				ug/L	68501	Standard
	Be	9	44512.0	1.5	**55.6704**	0.695	1.2	ug/L	8	Standard
	Al	27	7120483.4	2.5	**56.9325**	0.062	0.1	ug/L	1397	Standard
	Sc	45	43315.2	1.8				ug/L	38815	Standard
	Ti	47	39751.1	0.4	**106.1099**	0.782	0.7	ug/L	36	Standard
	V	51	401647.2	0.6	**51.0142**	0.378	0.7	ug/L	1284	Standard
	Cr	52	408076.6	1.9	**52.2101**	0.647	1.2	ug/L	6503	Standard
	Cr	53	50005.7	0.6	**51.8569**	0.658	1.3	ug/L	492	Standard
	Mn	55	369517.4	2.0	**54.0603**	0.738	1.4	ug/L	841	Standard
	Co	59	348277.1	0.6	**51.7368**	0.391	0.8	ug/L	229	Standard
	Ni	60	97436.0	1.6	**51.9218**	0.797	1.5	ug/L	344	Standard
	Cu	65	95915.0	1.3	**51.3579**	0.881	1.7	ug/L	115	Standard
	Zn	66	57969.4	1.5	**51.4363**	0.236	0.5	ug/L	190	Standard
>	Ge	72	457275.6	1.0				ug/L	409858	Standard
	As	75	58788.3	2.0	**50.9283**	0.742	1.5	ug/L	-22	Standard
	Se	82	5911.7	2.9	**50.0997**	1.103	2.2	ug/L	18	Standard
	Se-1	77	4074.2	1.9	**52.2687**	0.612	1.2	ug/L	50	Standard
>	Ga	71	96.7	23.3				mg/L	97	Standard
	Rb	85	1058.4	6.9				ug/L	25	Standard
	Y	89	392635.2	2.0				ug/L	376763	Standard
>	Rh	103	21.7	48.0				ug/L	20	Standard
	Mo	98	260641.0	0.5	**102.7583**	1.540	1.5	ug/L	51	Standard
	Ag	107	333266.2	0.9	**50.7538**	0.981	1.9	ug/L	76	Standard
	Cd	111	106013.6	0.7	**50.7968**	0.877	1.7	mg/L	6	Standard
	Cd	114	258297.0	0.9	**50.6190**	0.162	0.3	ug/L	18	Standard
>	In	115	533927.7	1.1				ug/L	507261	Standard
	Sn	118	285746.1	0.7	**49.4885**	0.793	1.6	ug/L	683	Standard
	Sb	123	232642.5	0.9	**51.5176**	1.036	2.0	ug/L	446	Standard
	Ba	135	100593.6	1.7	**50.2427**	1.379	2.7	ug/L	28	Standard
	Ce	140	2383.6	81.0				ug/L	33	Standard
>	Tb	159	816962.9	1.4				ug/L	800803	Standard
	Ho	165	35.0	93.7				ug/L	10	Standard
	Tl	203	397625.7	0.5	**51.1513**	0.555	1.1	ug/L	13	Standard
	Tl	205	354455.7	1.9	**52.6519**	0.879	1.7	ug/L	13	Standard
	Pb	206	250509.7	0.6	**50.1879**	0.498	1.0	ug/L	226	Standard
	Pb	207	228549.6	0.8	**50.4213**	0.378	0.7	ug/L	204	Standard
	Pb	208	952303.1	0.4	**52.5370**	0.233	0.4	ug/L	852	Standard
	U	238	343600.4	0.5	**51.1931**	0.467	0.9	ug/L	13	Standard
>	Bi	209	456734.7	0.7				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	3950.5	6.0	**4.7562**	0.311	6.5	mg/L	58	Standard
K	39	1280.1	6.4	**4.4296**	0.249	5.6	mg/L	27	Standard
Ca	43	98.3	12.8	**5.1241**	0.729	14.2	mg/L	20	Standard
Fe	54	7039.2	1.9	**5.1600**	0.075	1.5	mg/L	158	Standard
Fe	57	2025.1	7.5	**5.3968**	0.562	10.4	mg/L	267	Standard
Sc-1	45	43315.2	1.8				mg/L	38815	Standard
Cl	35	73434.9	1.8				ug/L	57611	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	2060.1	7.2				ug/L	1617	Standard
P	31	23247.8	2.5				ug/L	19244	Standard
S	34	4565.7	3.9				ug/L	3557	Standard
Sr	88	55.0	15.7				ug/L	65	Standard
C	12	40.0	86.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	23	Standard
Dy	164	91.3	86.7				mg/L	13	Standard
Ho-1	165	35.0	93.7				mg/L	10	Standard
Er	166	43.3	81.0				mg/L	13	Standard
I	127	11119.1	0.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	111.341		
Al	27	113.865		
Sc	45			
Ti	47	106.110		
V	51	102.028		
Cr	52	104.420		
Cr	53			
Mn	55	108.121		
Co	59	103.474		
Ni	60	103.844		
Cu	65	102.716		
Zn	66	102.873		
Ge	72		111.569	
As	75	101.857		
Se	82	100.199		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	102.758		
Ag	107	101.508		
Cd	111	101.594		
Cd	114			
In	115		105.257	
Sn	118	98.977		
Sb	123	103.035		
Ba	135	100.485		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.303		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.074		
U	238	102.386		
Bi	209		101.713	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 17:04:25
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60135.8	3.0				ug/L	68501	Standard
	Be	9	20.0	25.0	**0.0445**	0.006	13.7	ug/L	8	Standard
	Al	27	4068.9	40.2	**0.0675**	0.012	17.8	ug/L	1397	Standard
	Sc	45	43684.6	2.9				ug/L	38815	Standard
	Ti	47	31.7	9.6	**0.0570**	0.008	13.6	ug/L	36	Standard
	V	51	1454.7	5.9	**0.0417**	0.010	22.9	ug/L	1284	Standard
	Cr	52	7266.7	1.7	**0.0155**	0.022	144.6	ug/L	6503	Standard
	Cr	53	398.3	22.0	**-0.0005**	0.095	18388.9	ug/L	492	Standard
	Mn	55	872.4	17.7	**0.0322**	0.022	68.2	ug/L	841	Standard
	Co	59	220.0	3.6	**0.0383**	0.001	2.7	ug/L	229	Standard
	Ni	60	339.7	0.6	**0.0243**	0.001	6.1	ug/L	344	Standard
	Cu	65	116.7	6.9	**0.0494**	0.004	7.9	ug/L	115	Standard
	Zn	66	152.0	6.7	**0.0221**	0.008	36.6	ug/L	190	Standard
>	**Ge**	72	455933.5	0.8				ug/L	409858	Standard
	As	75	-68.9	29.1	**0.0392**	0.017	43.5	ug/L	-22	Standard
	Se	82	11.7	48.5	**0.0481**	0.049	101.1	ug/L	18	Standard
	Se-1	77	57.3	9.9	**-0.0102**	0.078	766.6	ug/L	50	Standard
>	**Ga**	71	33.3	17.3				mg/L	97	Standard
	Rb	85	41.7	45.4				ug/L	25	Standard
	Y	89	385104.6	1.0				ug/L	376763	Standard
>	**Rh**	103	13.3	57.3				ug/L	20	Standard
	Mo	98	140.6	2.9	**0.1263**	0.002	1.2	ug/L	51	Standard
	Ag	107	97.3	14.0	**0.0377**	0.002	5.3	ug/L	76	Standard
	Cd	111	6.4	55.2	**0.0424**	0.002	4.0	mg/L	6	Standard
	Cd	114	30.5	14.6	**0.0433**	0.001	2.0	ug/L	18	Standard
>	**In**	115	540459.8	0.5				ug/L	507261	Standard
	Sn	118	913.4	16.4	**0.0466**	0.027	57.0	ug/L	683	Standard
	Sb	123	642.8	37.4	**0.1205**	0.053	44.1	ug/L	446	Standard
	Ba	135	50.3	16.5	**0.0406**	0.004	9.8	ug/L	28	Standard
	Ce	140	301.7	26.9				ug/L	33	Standard
>	**Tb**	159	814839.3	0.6				ug/L	800803	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	55.3	13.6	**0.0404**	0.001	2.2	ug/L	13	Standard
	Tl	205	38.3	19.9	**0.0482**	0.001	2.3	ug/L	13	Standard
	Pb	206	233.0	9.0	**0.0423**	0.004	9.3	ug/L	226	Standard
	Pb	207	226.7	5.1	**0.0486**	0.003	5.8	ug/L	204	Standard
	Pb	208	902.7	4.3	**0.0495**	0.002	4.5	ug/L	852	Standard
	U	238	45.7	27.4	**0.0494**	0.002	3.8	ug/L	13	Standard
>	**Bi**	209	459869.9	1.0				ug/L	449044	Standard

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Na	23	3.3	86.6	**7.0995**	13.754	193.7	mg/L	2	Standard
Mg	24	40.0	25.0	**0.0098**	0.012	121.3	mg/L	58	Standard
K	39	30.0	28.9	**-0.0361**	0.028	77.7	mg/L	27	Standard
Ca	43	23.3	65.5	**0.2490**	1.044	419.1	mg/L	20	Standard
Fe	54	149.1	34.9	**-0.0096**	0.037	384.5	mg/L	158	Standard
Fe	57	258.3	22.4	**0.0918**	0.196	213.6	mg/L	267	Standard
> **Sc-1**	45	43684.6	2.9				mg/L	38815	Standard
Cl	35	72508.4	1.4				ug/L	57611	Standard
Kr	83	3.3	45.8				ug/L	2	Standard
Br	81	1963.5	7.1				ug/L	1617	Standard
P	31	22001.0	3.1				ug/L	19244	Standard
S	34	4517.3	1.1				ug/L	3557	Standard
Sr	88	58.3	4.9				ug/L	65	Standard
C	12	60.0	60.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	86.6				mg/L	23	Standard
Dy	164	-0.6	86.6				mg/L	13	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	13.3	86.6				mg/L	13	Standard
I	127	8687.5	0.4				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		111.242	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	106.545	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	102.411	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Tl	203	

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Method 6020 - Summary Report

Sample ID: L1606129717
Sample Date/Time: Wednesday, July 06, 2016 17:07:37
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60512.3	2.0				ug/L	68501	Standard
	Be	9	250.0	13.9	**0.3317**	0.048	14.5	ug/L	8	Standard
	Al	27	9127879.8	0.8	**72.8313**	1.774	2.4	ug/L	1397	Standard
	Sc	45	47044.6	2.2				ug/L	38815	Standard
	Ti	47	2194.2	2.3	**5.8566**	0.188	3.2	ug/L	36	Standard
	V	51	44194.1	1.4	**5.5087**	0.044	0.8	ug/L	1284	Standard
	Cr	52	31815.4	1.1	**3.2274**	0.004	0.1	ug/L	6503	Standard
	Cr	53	3368.7	1.5	**3.1179**	0.053	1.7	ug/L	492	Standard
	Mn	55	1436494.1	1.3	**211.3511**	2.993	1.4	ug/L	841	Standard
	Co	59	14124.2	0.5	**2.1125**	0.030	1.4	ug/L	229	Standard
	Ni	60	10017.3	2.5	**5.2188**	0.093	1.8	ug/L	344	Standard
	Cu	65	5555.4	1.2	**2.9746**	0.020	0.7	ug/L	115	Standard
	Zn	66	12515.5	1.3	**11.0639**	0.068	0.6	ug/L	190	Standard
>	**Ge**	72	455331.3	1.0				ug/L	409858	Standard
	As	75	1273.2	2.2	**1.2046**	0.032	2.7	ug/L	-22	Standard
	Se	82	33.8	7.8	**0.2365**	0.025	10.6	ug/L	18	Standard
	Se-1	77	77.0	7.9	**0.2473**	0.074	30.1	ug/L	50	Standard
>	**Ga**	71	3477.1	5.3				mg/L	97	Standard
	Rb	85	29470.3	4.4				ug/L	25	Standard
	Y	89	504672.2	1.8				ug/L	376763	Standard
>	**Rh**	103	21.7	48.0				ug/L	20	Standard
	Mo	98	162.5	13.2	**0.1360**	0.008	6.2	ug/L	51	Standard
	Ag	107	184.7	11.1	**0.0514**	0.003	5.6	ug/L	76	Standard
	Cd	111	116.7	0.9	**0.0956**	0.000	0.2	mg/L	6	Standard
	Cd	114	300.7	13.5	**0.0966**	0.007	7.7	ug/L	18	Standard
>	**In**	115	530453.6	1.0				ug/L	507261	Standard
	Sn	118	595.0	16.1	**-0.0061**	0.017	280.1	ug/L	683	Standard
	Sb	123	364.2	29.0	**0.0609**	0.024	39.6	ug/L	446	Standard
	Ba	135	104851.9	0.7	**52.7028**	0.330	0.6	ug/L	28	Standard
	Ce	140	465635.4	0.9				ug/L	33	Standard
>	**Tb**	159	824090.2	0.7				ug/L	800803	Standard
	Ho	165	9299.5	0.7				ug/L	10	Standard
	Tl	203	170.7	6.7	**0.0554**	0.002	2.8	ug/L	13	Standard
	Tl	205	143.3	10.7	**0.0639**	0.002	3.6	ug/L	13	Standard
	Pb	206	18810.3	1.3	**3.7880**	0.037	1.0	ug/L	226	Standard
	Pb	207	15556.0	1.1	**3.4522**	0.034	1.0	ug/L	204	Standard
	Pb	208	67949.4	0.5	**3.7721**	0.028	0.8	ug/L	852	Standard
	U	238	1726.8	1.0	**0.3013**	0.003	0.8	ug/L	13	Standard
>	**Bi**	209	453909.1	0.3				ug/L	449044	Standard

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Na	23	3.3	86.6	**6.4032**	13.152	205.4	mg/L	2	Standard
Mg	24	106.7	21.1	**0.0812**	0.028	34.1	mg/L	58	Standard
K	39	105.0	8.2	**0.2040**	0.036	17.4	mg/L	27	Standard
Ca	43	343.3	12.4	**19.3079**	2.257	11.7	mg/L	20	Standard
Fe	54	2967.9	3.2	**1.9306**	0.096	5.0	mg/L	158	Standard
Fe	57	1078.4	0.5	**2.2974**	0.071	3.1	mg/L	267	Standard
Sc-1	45	47044.6	2.2				mg/L	38815	Standard
Cl	35	74756.6	0.2				ug/L	57611	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	2176.8	7.6				ug/L	1617	Standard
P	31	21623.8	0.7				ug/L	19244	Standard
S	34	4430.6	2.9				ug/L	3557	Standard
Sr	88	118.3	10.6				ug/L	65	Standard
C	12	80.0	12.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	100.0				mg/L	23	Standard
Dy	164	15003.4	3.0				mg/L	13	Standard
Ho-1	165	9299.5	0.7				mg/L	10	Standard
Er	166	8652.5	3.3				mg/L	13	Standard
I	127	4919.1	6.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		88.338	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		111.095	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.572
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.083
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606129717
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Method 6020 - Summary Report

Sample ID: L1606129718
Sample Date/Time: Wednesday, July 06, 2016 17:10:49
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61002.6	0.7				ug/L	68501	Standard
	Be	9	386.7	8.4	**0.4980**	0.044	8.7	ug/L	8	Standard
	Al	27	11064224.1	1.9	**87.5342**	1.217	1.4	ug/L	1397	Standard
	Sc	45	47497.7	2.4				ug/L	38815	Standard
	Ti	47	2700.2	0.1	**7.2287**	0.073	1.0	ug/L	36	Standard
	V	51	75721.1	0.9	**9.5634**	0.159	1.7	ug/L	1284	Standard
	Cr	52	48504.5	0.5	**5.4244**	0.053	1.0	ug/L	6503	Standard
	Cr	53	5401.0	0.6	**5.2639**	0.061	1.2	ug/L	492	Standard
	Mn	55	2606946.8	1.3	**384.5071**	8.038	2.1	ug/L	841	Standard
	Co	59	24500.5	0.6	**3.6683**	0.045	1.2	ug/L	229	Standard
	Ni	60	16206.3	0.4	**8.5606**	0.051	0.6	ug/L	344	Standard
	Cu	65	11319.2	0.3	**6.0884**	0.078	1.3	ug/L	115	Standard
	Zn	66	16272.4	0.9	**14.4512**	0.062	0.4	ug/L	190	Standard
>	**Ge**	72	454337.4	1.0				ug/L	409858	Standard
	As	75	3766.5	1.0	**3.3768**	0.043	1.3	ug/L	-22	Standard
	Se	82	38.2	18.9	**0.2748**	0.058	21.2	ug/L	18	Standard
	Se-1	77	92.7	8.1	**0.4557**	0.110	24.0	ug/L	50	Standard
>	**Ga**	71	5367.6	4.1				mg/L	97	Standard
	Rb	85	50199.7	1.5				ug/L	25	Standard
	Y	89	528757.6	1.4				ug/L	376763	Standard
>	**Rh**	103	41.7	30.2				ug/L	20	Standard
	Mo	98	628.2	4.9	**0.3208**	0.014	4.2	ug/L	51	Standard
	Ag	107	249.3	11.6	**0.0613**	0.005	7.6	ug/L	76	Standard
	Cd	111	202.2	4.6	**0.1368**	0.004	2.9	mg/L	6	Standard
	Cd	114	542.1	7.4	**0.1443**	0.007	5.1	ug/L	18	Standard
>	**In**	115	530184.6	0.5				ug/L	507261	Standard
	Sn	118	480.0	21.8	**-0.0261**	0.019	71.3	ug/L	683	Standard
	Sb	123	306.2	37.7	**0.0480**	0.026	54.3	ug/L	446	Standard
	Ba	135	151848.5	0.9	**76.3535**	0.309	0.4	ug/L	28	Standard
	Ce	140	632673.3	1.1				ug/L	33	Standard
>	**Tb**	159	826901.6	0.1				ug/L	800803	Standard
	Ho	165	11909.7	2.7				ug/L	10	Standard
	Tl	203	275.7	6.5	**0.0692**	0.002	3.3	ug/L	13	Standard
	Tl	205	261.7	21.3	**0.0818**	0.008	10.1	ug/L	13	Standard
	Pb	206	30210.1	0.2	**6.1134**	0.033	0.5	ug/L	226	Standard
	Pb	207	25026.0	0.9	**5.5792**	0.065	1.2	ug/L	204	Standard
	Pb	208	109142.1	0.7	**6.0856**	0.048	0.8	ug/L	852	Standard
	U	238	2218.8	3.0	**0.3764**	0.010	2.5	ug/L	13	Standard
>	**Bi**	209	451902.1	0.3				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	85.0	21.2	**0.0555**	0.018	32.7	mg/L	58	Standard
K	39	141.7	2.0	**0.3200**	0.021	6.5	mg/L	27	Standard
Ca	43	346.7	12.0	**19.2981**	2.044	10.6	mg/L	20	Standard
Fe	54	6583.4	6.0	**4.3806**	0.177	4.0	mg/L	158	Standard
Fe	57	2040.1	4.5	**4.9012**	0.343	7.0	mg/L	267	Standard
> **Sc-1**	45	47497.7	2.4				mg/L	38815	Standard
Cl	35	74496.0	0.9				ug/L	57611	Standard
Kr	83	1.7	124.9				ug/L	2	Standard
Br	81	2060.1	5.8				ug/L	1617	Standard
P	31	21615.4	2.3				ug/L	19244	Standard
S	34	4407.3	3.3				ug/L	3557	Standard
Sr	88	146.7	22.2				ug/L	65	Standard
C	12	80.0	12.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	43.3	74.2				mg/L	23	Standard
Dy	164	20267.7	1.2				mg/L	13	Standard
Ho-1	165	11909.7	2.7				mg/L	10	Standard
Er	166	10853.9	1.7				mg/L	13	Standard
I	127	5491.0	3.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.053	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.852	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.519
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.637
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606129719
Sample Date/Time: Wednesday, July 06, 2016 17:14:00
Number of Replicates: 3
Autosampler Position: 227
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63665.1	0.4				ug/L	68501	Standard
	Be	9	740.0	0.7	**0.8967**	0.007	0.8	ug/L	8	Standard
	Al	27	10091474.2	0.2	**76.5080**	0.424	0.6	ug/L	1397	Standard
	Sc	45	49554.3	2.7				ug/L	38815	Standard
	Ti	47	4880.5	4.1	**13.0100**	0.620	4.8	ug/L	36	Standard
	V	51	140318.8	0.3	**17.7350**	0.174	1.0	ug/L	1284	Standard
	Cr	52	211034.0	1.3	**26.5622**	0.505	1.9	ug/L	6503	Standard
	Cr	53	25681.8	2.5	**26.4393**	0.783	3.0	ug/L	492	Standard
	Mn	55	2842033.0	1.3	**416.5880**	2.843	0.7	ug/L	841	Standard
	Co	59	55629.6	1.1	**8.2712**	0.092	1.1	ug/L	229	Standard
	Ni	60	34092.3	1.7	**18.0725**	0.426	2.4	ug/L	344	Standard
	Cu	65	61233.5	0.2	**32.7936**	0.273	0.8	ug/L	115	Standard
	Zn	66	88786.7	1.0	**78.8718**	0.401	0.5	ug/L	190	Standard
>	**Ge**	72	457106.3	0.6				ug/L	409858	Standard
	As	75	6665.3	1.7	**5.8642**	0.105	1.8	ug/L	-22	Standard
	Se	82	74.8	1.4	**0.5833**	0.008	1.4	ug/L	18	Standard
	Se-1	77	116.0	23.7	**0.7520**	0.363	48.2	ug/L	50	Standard
>	**Ga**	71	14478.6	1.2				mg/L	97	Standard
	Rb	85	153343.8	1.1				ug/L	25	Standard
	Y	89	584906.0	1.5				ug/L	376763	Standard
>	**Rh**	103	63.3	50.1				ug/L	20	Standard
	Mo	98	921.9	3.1	**0.4300**	0.010	2.3	ug/L	51	Standard
	Ag	107	1490.7	1.6	**0.2471**	0.003	1.4	ug/L	76	Standard
	Cd	111	12899.8	1.4	**6.1352**	0.119	1.9	mg/L	6	Standard
	Cd	114	31602.1	1.1	**6.1457**	0.066	1.1	ug/L	18	Standard
>	**In**	115	540935.6	0.6				ug/L	507261	Standard
	Sn	118	2395.2	5.4	**0.3002**	0.022	7.2	ug/L	683	Standard
	Sb	123	506.3	17.8	**0.0902**	0.019	21.2	ug/L	446	Standard
	Ba	135	402882.8	0.3	**198.5336**	0.517	0.3	ug/L	28	Standard
	Ce	140	1001355.4	1.2				ug/L	33	Standard
>	**Tb**	159	839605.9	0.3				ug/L	800803	Standard
	Ho	165	16278.7	1.4				ug/L	10	Standard
	Tl	203	762.4	2.3	**0.1303**	0.002	1.9	ug/L	13	Standard
	Tl	205	646.7	4.5	**0.1375**	0.004	3.0	ug/L	13	Standard
	Pb	206	722382.1	0.3	**143.1625**	0.699	0.5	ug/L	226	Standard
	Pb	207	605458.0	1.1	**132.1283**	1.402	1.1	ug/L	204	Standard
	Pb	208	2619914.0	0.5	**142.9705**	0.450	0.3	ug/L	852	Standard
	U	238	3167.0	3.3	**0.5090**	0.016	3.1	ug/L	13	Standard
>	**Bi**	209	461727.1	0.2				ug/L	449044	Standard

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Na	23	3.3	173.2	**5.7695**	25.205	436.9	mg/L	2	Standard
Mg	24	183.3	8.3	**0.1563**	0.019	12.4	mg/L	58	Standard
K	39	323.3	6.4	**0.8694**	0.091	10.5	mg/L	27	Standard
Ca	43	148.3	18.6	**7.1496**	1.328	18.6	mg/L	20	Standard
Fe	54	14825.9	2.7	**9.6082**	0.482	5.0	mg/L	158	Standard
Fe	57	4082.2	1.4	**10.0200**	0.287	2.9	mg/L	267	Standard
Sc-1	45	49554.3	2.7				mg/L	38815	Standard
Cl	35	70608.8	1.1				ug/L	57611	Standard
Kr	83	0.0					ug/L	2	Standard
Br	81	5050.8	4.7				ug/L	1617	Standard
P	31	22351.5	1.7				ug/L	19244	Standard
S	34	4362.3	8.2				ug/L	3557	Standard
Sr	88	115.0	13.0				ug/L	65	Standard
C	12	230.0	28.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	176.7	31.2				mg/L	23	Standard
Dy	164	26663.3	1.8				mg/L	13	Standard
Ho-1	165	16278.7	1.4				mg/L	10	Standard
Er	166	14503.6	3.7				mg/L	13	Standard
I	127	13963.1	5.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		92.940	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		111.528	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	106.639
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.824
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	
Pb 206 Upper, S, EEE	Pb	206	

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Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1606129720
Sample Date/Time: Wednesday, July 06, 2016 17:17:12
Number of Replicates: 3
Autosampler Position: 228
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62043.4	0.8				ug/L	68501	Standard
	Be	9	535.0	5.2	**0.6704**	0.036	5.4	ug/L	8	Standard
	Al	27	16466441.8	1.0	**128.0760**	0.413	0.3	ug/L	1397	Standard
	Sc	45	47537.8	1.8				ug/L	38815	Standard
	Ti	47	3601.8	1.1	**9.7028**	0.127	1.3	ug/L	36	Standard
	V	51	114496.1	0.8	**14.6114**	0.083	0.6	ug/L	1284	Standard
	Cr	52	66045.0	1.4	**7.7705**	0.194	2.5	ug/L	6503	Standard
	Cr	53	7416.8	1.1	**7.4262**	0.092	1.2	ug/L	492	Standard
	Mn	55	2745613.9	0.3	**407.0973**	4.419	1.1	ug/L	841	Standard
	Co	59	34784.6	1.7	**5.2334**	0.108	2.1	ug/L	229	Standard
	Ni	60	22063.1	1.1	**11.7754**	0.232	2.0	ug/L	344	Standard
	Cu	65	16897.4	1.0	**9.1435**	0.112	1.2	ug/L	115	Standard
	Zn	66	22892.0	2.0	**20.4833**	0.194	0.9	ug/L	190	Standard
>	**Ge**	72	451935.2	1.0				ug/L	409858	Standard
	As	75	3957.0	1.3	**3.5607**	0.038	1.1	ug/L	-22	Standard
	Se	82	48.3	15.3	**0.3639**	0.066	18.3	ug/L	18	Standard
	Se-1	77	89.0	3.9	**0.4130**	0.038	9.3	ug/L	50	Standard
>	**Ga**	71	8247.2	1.1				mg/L	97	Standard
	Rb	85	77169.4	1.5				ug/L	25	Standard
	Y	89	561968.7	0.4				ug/L	376763	Standard
>	**Rh**	103	36.7	41.7				ug/L	20	Standard
	Mo	98	835.4	2.8	**0.4040**	0.010	2.5	ug/L	51	Standard
	Ag	107	320.7	6.4	**0.0724**	0.003	3.8	ug/L	76	Standard
	Cd	111	190.8	4.2	**0.1316**	0.003	2.5	mg/L	6	Standard
	Cd	114	457.1	0.9	**0.1278**	0.000	0.1	ug/L	18	Standard
>	**In**	115	528583.4	0.8				ug/L	507261	Standard
	Sn	118	668.3	6.0	**0.0070**	0.006	88.1	ug/L	683	Standard
	Sb	123	238.4	30.1	**0.0330**	0.016	49.2	ug/L	446	Standard
	Ba	135	413766.5	1.3	**208.6575**	1.840	0.9	ug/L	28	Standard
	Ce	140	816123.1	1.5				ug/L	33	Standard
>	**Tb**	159	818775.6	1.8				ug/L	800803	Standard
	Ho	165	14605.4	0.2				ug/L	10	Standard
	Tl	203	529.0	5.3	**0.1022**	0.004	3.5	ug/L	13	Standard
	Tl	205	483.3	6.3	**0.1152**	0.005	4.0	ug/L	13	Standard
	Pb	206	38689.3	1.6	**7.8483**	0.117	1.5	ug/L	226	Standard
	Pb	207	31946.0	0.6	**7.1384**	0.036	0.5	ug/L	204	Standard
	Pb	208	139239.2	0.4	**7.7816**	0.049	0.6	ug/L	852	Standard
	U	238	4116.2	1.0	**0.6633**	0.006	1.0	ug/L	13	Standard
>	**Bi**	209	450865.9	0.2				ug/L	449044	Standard

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Na	23	5.0	100.0	**13.6788**	22.396	163.7	mg/L	2	Standard
Mg	24	173.3	26.8	**0.1527**	0.048	31.1	mg/L	58	Standard
K	39	153.3	13.6	**0.3567**	0.061	17.0	mg/L	27	Standard
Ca	43	540.0	15.4	**30.7921**	4.937	16.0	mg/L	20	Standard
Fe	54	8837.8	2.1	**5.9199**	0.065	1.1	mg/L	158	Standard
Fe	57	2686.9	4.2	**6.6633**	0.423	6.3	mg/L	267	Standard
> **Sc-1**	45	47537.8	1.8				mg/L	38815	Standard
Cl	35	73158.9	1.0				ug/L	57611	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	2540.2	9.3				ug/L	1617	Standard
P	31	21500.3	3.4				ug/L	19244	Standard
S	34	4425.6	2.7				ug/L	3557	Standard
Sr	88	181.7	13.6				ug/L	65	Standard
C	12	100.0	34.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	78.1				mg/L	23	Standard
Dy	164	25202.4	7.2				mg/L	13	Standard
Ho-1	165	14605.4	0.2				mg/L	10	Standard
Er	166	13145.7	4.6				mg/L	13	Standard
I	127	7560.2	2.6				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.573	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.266	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	104.204	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.406	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129701
Sample Date/Time: Wednesday, July 06, 2016 17:20:23
Number of Replicates: 3
Autosampler Position: 229
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54705.3	3.3				ug/L	68501	Standard
	Be	9	20.0	75.0	**0.0471**	0.021	44.9	ug/L	8	Standard
	Al	27	254394.6	0.7	**2.2805**	0.089	3.9	ug/L	1397	Standard
	Sc	45	38919.9	0.3				ug/L	38815	Standard
	Ti	47	76.0	1.3	**0.1928**	0.003	1.6	ug/L	36	Standard
	V	51	2687.0	2.1	**0.2280**	0.008	3.3	ug/L	1284	Standard
	Cr	52	6953.6	2.9	**0.0509**	0.028	55.7	ug/L	6503	Standard
	Cr	53	256.7	13.0	**-0.1269**	0.038	29.7	ug/L	492	Standard
	Mn	55	32697.3	3.6	**5.1146**	0.183	3.6	ug/L	841	Standard
	Co	59	591.3	9.7	**0.1010**	0.009	9.1	ug/L	229	Standard
	Ni	60	630.7	6.1	**0.2088**	0.022	10.6	ug/L	344	Standard
	Cu	65	421.7	12.1	**0.2323**	0.030	12.8	ug/L	115	Standard
	Zn	66	1478.1	4.0	**1.3158**	0.058	4.4	ug/L	190	Standard
>	**Ge**	72	420563.3	0.1				ug/L	409858	Standard
	As	75	-15.5	83.8	**0.0843**	0.012	14.5	ug/L	-22	Standard
	Se	82	13.0	43.8	**0.0690**	0.053	76.4	ug/L	18	Standard
	Se-1	77	54.7	13.5	**0.0147**	0.104	707.4	ug/L	50	Standard
>	**Ga**	71	123.3	20.8				mg/L	97	Standard
	Rb	85	1151.7	4.4				ug/L	25	Standard
	Y	89	361203.1	0.5				ug/L	376763	Standard
>	**Rh**	103	13.3	43.3				ug/L	20	Standard
	Mo	98	68.7	38.7	**0.1009**	0.011	11.2	ug/L	51	Standard
	Ag	107	80.0	25.1	**0.0363**	0.003	9.1	ug/L	76	Standard
	Cd	111	10.5	68.1	**0.0448**	0.004	8.3	mg/L	6	Standard
	Cd	114	35.2	40.1	**0.0449**	0.003	6.7	ug/L	18	Standard
>	**In**	115	492416.3	0.6				ug/L	507261	Standard
	Sn	118	241.7	18.8	**-0.0646**	0.009	13.4	ug/L	683	Standard
	Sb	123	498.9	38.1	**0.0993**	0.045	45.6	ug/L	446	Standard
	Ba	135	4886.5	2.1	**2.6610**	0.070	2.6	ug/L	28	Standard
	Ce	140	13354.2	3.4				ug/L	33	Standard
>	**Tb**	159	765708.7	0.7				ug/L	800803	Standard
	Ho	165	263.3	11.6				ug/L	10	Standard
	Tl	203	36.7	55.6	**0.0383**	0.003	7.2	ug/L	13	Standard
	Tl	205	40.0	33.1	**0.0487**	0.002	4.2	ug/L	13	Standard
	Pb	206	956.0	8.3	**0.1957**	0.017	8.7	ug/L	226	Standard
	Pb	207	823.4	8.4	**0.1883**	0.016	8.8	ug/L	204	Standard
	Pb	208	3454.8	7.4	**0.1989**	0.016	8.0	ug/L	852	Standard
	U	238	55.3	15.2	**0.0512**	0.001	2.6	ug/L	13	Standard
>	**Bi**	209	438088.3	0.6				ug/L	449044	Standard

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Na	23	1.7	173.2	**0.2882**	15.711	5451.7	mg/L	2	Standard
Mg	24	71.7	16.1	**0.0584**	0.016	26.8	mg/L	58	Standard
K	39	21.7	35.3	**-0.0557**	0.030	54.0	mg/L	27	Standard
Ca	43	33.3	60.6	**1.1412**	1.472	128.9	mg/L	20	Standard
Fe	54	127.5	9.8	**-0.0137**	0.011	78.4	mg/L	158	Standard
Fe	57	326.7	25.5	**0.4101**	0.278	67.8	mg/L	267	Standard
> **Sc-1**	45	38919.9	0.3				mg/L	38815	Standard
Cl	35	69819.9	1.7				ug/L	57611	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	1756.8	7.7				ug/L	1617	Standard
P	31	7073.3	2.3				ug/L	19244	Standard
S	34	4202.2	2.7				ug/L	3557	Standard
Sr	88	83.3	15.1				ug/L	65	Standard
C	12	36.7	31.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	25.0				mg/L	23	Standard
Dy	164	443.9	18.5				mg/L	13	Standard
Ho-1	165	263.3	11.6				mg/L	10	Standard
Er	166	266.7	18.5				mg/L	13	Standard
I	127	7595.2	3.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		79.860	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.612	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.074
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.560
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129702
Sample Date/Time: Wednesday, July 06, 2016 17:23:34
Number of Replicates: 3
Autosampler Position: 230
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53813.8	3.3				ug/L	68501	Standard
	Be	9	20.0	25.0	**0.0474**	0.006	12.9	ug/L	8	Standard
	Al	27	123757.2	3.7	**1.1460**	0.073	6.3	ug/L	1397	Standard
	Sc	45	40009.4	1.7				ug/L	38815	Standard
	Ti	47	75.7	14.5	**0.1929**	0.030	15.3	ug/L	36	Standard
	V	51	3286.9	6.1	**0.3136**	0.023	7.3	ug/L	1284	Standard
	Cr	52	7502.9	1.7	**0.1350**	0.010	7.1	ug/L	6503	Standard
	Cr	53	293.3	39.6	**-0.0841**	0.129	153.1	ug/L	492	Standard
	Mn	55	65790.6	3.2	**10.4491**	0.229	2.2	ug/L	841	Standard
	Co	59	905.0	7.8	**0.1525**	0.011	7.0	ug/L	229	Standard
	Ni	60	746.0	5.8	**0.2783**	0.022	7.9	ug/L	344	Standard
	Cu	65	536.7	2.7	**0.3011**	0.007	2.5	ug/L	115	Standard
	Zn	66	1996.5	2.1	**1.8285**	0.039	2.1	ug/L	190	Standard
>	**Ge**	72	418080.4	1.1				ug/L	409858	Standard
	As	75	56.1	91.8	**0.1516**	0.048	31.6	ug/L	-22	Standard
	Se	82	15.2	60.8	**0.0892**	0.084	94.3	ug/L	18	Standard
	Se-1	77	55.0	22.3	**0.0229**	0.166	724.1	ug/L	50	Standard
>	**Ga**	71	163.3	29.4				mg/L	97	Standard
	Rb	85	1311.7	19.5				ug/L	25	Standard
	Y	89	361563.3	0.7				ug/L	376763	Standard
>	**Rh**	103	16.7	62.4				ug/L	20	Standard
	Mo	98	51.7	65.1	**0.0937**	0.014	15.4	ug/L	51	Standard
	Ag	107	124.7	52.2	**0.0437**	0.011	24.6	ug/L	76	Standard
	Cd	111	51.5	87.7	**0.0662**	0.024	35.5	mg/L	6	Standard
	Cd	114	122.3	87.7	**0.0634**	0.023	36.0	ug/L	18	Standard
>	**In**	115	491187.9	0.1				ug/L	507261	Standard
	Sn	118	286.7	14.1	**-0.0560**	0.008	13.6	ug/L	683	Standard
	Sb	123	388.5	44.1	**0.0731**	0.041	56.3	ug/L	446	Standard
	Ba	135	5842.1	6.6	**3.1859**	0.208	6.5	ug/L	28	Standard
	Ce	140	16594.1	7.9				ug/L	33	Standard
>	**Tb**	159	754328.2	0.4				ug/L	800803	Standard
	Ho	165	276.7	4.2				ug/L	10	Standard
	Tl	203	81.0	143.3	**0.0443**	0.016	35.4	ug/L	13	Standard
	Tl	205	25.0	121.7	**0.0464**	0.005	10.2	ug/L	13	Standard
	Pb	206	4919.1	2.0	**1.0313**	0.021	2.0	ug/L	226	Standard
	Pb	207	4164.2	1.0	**0.9640**	0.011	1.1	ug/L	204	Standard
	Pb	208	17566.3	0.6	**1.0181**	0.006	0.6	ug/L	852	Standard
	U	238	66.0	41.2	**0.0529**	0.004	8.1	ug/L	13	Standard
>	**Bi**	209	434793.9	0.1				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	30.0	44.1	**0.0012**	0.018	1479.1	mg/L	58	Standard
K	39	31.7	48.2	**-0.0200**	0.057	286.5	mg/L	27	Standard
Ca	43	21.7	13.3	**0.2504**	0.197	78.6	mg/L	20	Standard
Fe	54	164.3	5.3	**0.0132**	0.007	50.9	mg/L	158	Standard
Fe	57	281.7	17.2	**0.2361**	0.173	73.2	mg/L	267	Standard
> **Sc-1**	45	40009.4	1.7				mg/L	38815	Standard
Cl	35	68860.1	0.4				ug/L	57611	Standard
Kr	83	3.7	68.6				ug/L	2	Standard
Br	81	1723.4	1.5				ug/L	1617	Standard
P	31	6801.5	2.1				ug/L	19244	Standard
S	34	4285.6	1.1				ug/L	3557	Standard
Sr	88	58.3	13.1				ug/L	65	Standard
C	12	50.0	20.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	65.5				mg/L	23	Standard
Dy	164	521.0	31.1				mg/L	13	Standard
Ho-1	165	276.7	4.2				mg/L	10	Standard
Er	166	256.7	18.0				mg/L	13	Standard
I	127	7405.1	2.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		78.559	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.006	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.831
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.827
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129703
Sample Date/Time: Wednesday, July 06, 2016 17:26:46
Number of Replicates: 3
Autosampler Position: 231
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52977.6	3.9				ug/L	68501	Standard
	Be	9	23.3	53.9	**0.0523**	0.017	32.0	ug/L	8	Standard
	Al	27	286352.9	1.9	**2.6464**	0.144	5.4	ug/L	1397	Standard
	Sc	45	39770.5	0.9				ug/L	38815	Standard
	Ti	47	84.7	11.6	**0.2173**	0.027	12.6	ug/L	36	Standard
	V	51	2934.4	1.9	**0.2613**	0.009	3.4	ug/L	1284	Standard
	Cr	52	6753.2	1.5	**0.0203**	0.012	59.4	ug/L	6503	Standard
	Cr	53	273.3	5.3	**-0.1087**	0.015	14.0	ug/L	492	Standard
	Mn	55	51194.3	0.4	**8.0434**	0.033	0.4	ug/L	841	Standard
	Co	59	633.0	5.9	**0.1075**	0.006	5.9	ug/L	229	Standard
	Ni	60	612.3	1.2	**0.1973**	0.007	3.6	ug/L	344	Standard
	Cu	65	360.0	4.6	**0.1959**	0.011	5.8	ug/L	115	Standard
	Zn	66	1592.1	2.9	**1.4225**	0.048	3.4	ug/L	190	Standard
>	**Ge**	72	421549.0	0.8				ug/L	409858	Standard
	As	75	16.0	110.0	**0.1138**	0.016	14.5	ug/L	-22	Standard
	Se	82	20.4	24.4	**0.1361**	0.045	33.3	ug/L	18	Standard
	Se-1	77	48.7	33.0	**-0.0726**	0.223	307.4	ug/L	50	Standard
>	**Ga**	71	180.0	2.8				mg/L	97	Standard
	Rb	85	1370.1	4.2				ug/L	25	Standard
	Y	89	356859.6	1.9				ug/L	376763	Standard
>	**Rh**	103	16.7	34.6				ug/L	20	Standard
	Mo	98	41.0	28.5	**0.0892**	0.005	5.8	ug/L	51	Standard
	Ag	107	61.7	14.2	**0.0333**	0.001	4.3	ug/L	76	Standard
	Cd	111	7.9	65.9	**0.0435**	0.003	6.2	mg/L	6	Standard
	Cd	114	13.8	66.1	**0.0403**	0.002	4.8	ug/L	18	Standard
>	**In**	115	489951.3	1.2				ug/L	507261	Standard
	Sn	118	230.0	17.0	**-0.0666**	0.007	10.4	ug/L	683	Standard
	Sb	123	297.8	34.1	**0.0515**	0.024	47.0	ug/L	446	Standard
	Ba	135	6056.2	1.2	**3.3108**	0.061	1.8	ug/L	28	Standard
	Ce	140	13239.1	4.5				ug/L	33	Standard
>	**Tb**	159	754124.2	0.9				ug/L	800803	Standard
	Ho	165	233.3	12.2				ug/L	10	Standard
	Tl	203	23.3	23.6	**0.0365**	0.001	2.0	ug/L	13	Standard
	Tl	205	23.3	32.7	**0.0462**	0.001	2.6	ug/L	13	Standard
	Pb	206	897.0	2.3	**0.1837**	0.002	1.3	ug/L	226	Standard
	Pb	207	712.0	3.3	**0.1630**	0.005	3.0	ug/L	204	Standard
	Pb	208	3193.5	2.8	**0.1841**	0.007	3.7	ug/L	852	Standard
	U	238	62.0	10.6	**0.0523**	0.001	2.0	ug/L	13	Standard
>	**Bi**	209	437276.0	1.1				ug/L	449044	Standard

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Na	23	1.7	173.2	**0.0658**	15.326	23301.0	mg/L	2	Standard
Mg	24	45.0	33.3	**0.0212**	0.020	96.0	mg/L	58	Standard
K	39	33.3	37.7	**-0.0122**	0.049	398.1	mg/L	27	Standard
Ca	43	31.7	71.2	**0.9607**	1.582	164.7	mg/L	20	Standard
Fe	54	142.5	25.0	**-0.0039**	0.028	714.0	mg/L	158	Standard
Fe	57	326.7	9.8	**0.3869**	0.106	27.4	mg/L	267	Standard
> **Sc-1**	45	39770.5	0.9				mg/L	38815	Standard
Cl	35	68774.4	1.1				ug/L	57611	Standard
Kr	83	3.7	56.8				ug/L	2	Standard
Br	81	1646.8	11.9				ug/L	1617	Standard
P	31	7296.8	6.4				ug/L	19244	Standard
S	34	4085.6	2.8				ug/L	3557	Standard
Sr	88	73.3	43.8				ug/L	65	Standard
C	12	40.0	25.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	23	Standard
Dy	164	359.6	15.9				mg/L	13	Standard
Ho-1	165	233.3	12.2				mg/L	10	Standard
Er	166	216.7	41.6				mg/L	13	Standard
I	127	7513.5	3.2				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		77.338	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.852	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.588
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.379
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129704
Sample Date/Time: Wednesday, July 06, 2016 17:29:57
Number of Replicates: 3
Autosampler Position: 232
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53208.3	2.9				ug/L	68501	Standard
	Be	9	20.0	43.3	**0.0481**	0.013	26.7	ug/L	8	Standard
	Al	27	267589.1	1.1	**2.4624**	0.062	2.5	ug/L	1397	Standard
	Sc	45	38983.4	0.9				ug/L	38815	Standard
	Ti	47	86.3	13.4	**0.2222**	0.033	14.9	ug/L	36	Standard
	V	51	2971.7	1.5	**0.2666**	0.009	3.5	ug/L	1284	Standard
	Cr	52	6861.9	1.4	**0.0360**	0.021	57.2	ug/L	6503	Standard
	Cr	53	280.0	12.5	**-0.1010**	0.040	39.2	ug/L	492	Standard
	Mn	55	53663.9	0.6	**8.4379**	0.069	0.8	ug/L	841	Standard
	Co	59	633.0	1.9	**0.1075**	0.003	2.4	ug/L	229	Standard
	Ni	60	604.7	3.8	**0.1930**	0.015	7.6	ug/L	344	Standard
	Cu	65	1370.7	3.8	**0.7831**	0.024	3.0	ug/L	115	Standard
	Zn	66	1720.1	1.0	**1.5462**	0.005	0.3	ug/L	190	Standard
>	**Ge**	72	421463.7	0.8				ug/L	409858	Standard
	As	75	0.2	24746.5	**0.0992**	0.037	37.7	ug/L	-22	Standard
	Se	82	13.7	9.8	**0.0749**	0.012	16.5	ug/L	18	Standard
	Se-1	77	47.7	15.2	**-0.0857**	0.103	120.6	ug/L	50	Standard
>	**Ga**	71	165.0	10.9				mg/L	97	Standard
	Rb	85	1178.4	10.0				ug/L	25	Standard
	Y	89	361176.9	2.0				ug/L	376763	Standard
>	**Rh**	103	31.7	32.9				ug/L	20	Standard
	Mo	98	43.7	31.8	**0.0901**	0.006	6.7	ug/L	51	Standard
	Ag	107	67.7	0.9	**0.0342**	0.000	0.2	ug/L	76	Standard
	Cd	111	7.6	42.4	**0.0433**	0.002	3.8	mg/L	6	Standard
	Cd	114	24.9	40.0	**0.0426**	0.002	4.8	ug/L	18	Standard
>	**In**	115	496890.3	0.8				ug/L	507261	Standard
	Sn	118	191.7	25.7	**-0.0744**	0.009	12.2	ug/L	683	Standard
	Sb	123	273.9	35.3	**0.0449**	0.023	52.2	ug/L	446	Standard
	Ba	135	7247.4	1.8	**3.9038**	0.095	2.4	ug/L	28	Standard
	Ce	140	13307.5	2.3				ug/L	33	Standard
>	**Tb**	159	749231.7	0.8				ug/L	800803	Standard
	Ho	165	201.7	18.6				ug/L	10	Standard
	Tl	203	6.7	22.9	**0.0342**	0.000	0.6	ug/L	13	Standard
	Tl	205	10.0	50.0	**0.0441**	0.001	1.8	ug/L	13	Standard
	Pb	206	890.4	2.0	**0.1845**	0.003	1.6	ug/L	226	Standard
	Pb	207	785.4	5.0	**0.1821**	0.008	4.6	ug/L	204	Standard
	Pb	208	3319.8	2.1	**0.1937**	0.005	2.5	ug/L	852	Standard
	U	238	55.0	18.5	**0.0513**	0.002	3.1	ug/L	13	Standard
>	**Bi**	209	432108.8	0.5				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	30.0	28.9	**0.0020**	0.011	565.0	mg/L	58	Standard
K	39	33.3	8.7	**-0.0095**	0.013	132.2	mg/L	27	Standard
Ca	43	43.3	33.3	**1.8622**	1.056	56.7	mg/L	20	Standard
Fe	54	149.2	13.7	**0.0041**	0.017	410.4	mg/L	158	Standard
Fe	57	290.0	7.5	**0.2863**	0.075	26.2	mg/L	267	Standard
> **Sc-1**	45	38983.4	0.9				mg/L	38815	Standard
Cl	35	68125.5	1.5				ug/L	57611	Standard
Kr	83	3.3	69.3				ug/L	2	Standard
Br	81	1650.1	13.3				ug/L	1617	Standard
P	31	6829.9	0.8				ug/L	19244	Standard
S	34	3992.2	2.3				ug/L	3557	Standard
Sr	88	71.7	49.0				ug/L	65	Standard
C	12	33.3	34.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	24.7				mg/L	23	Standard
Dy	164	349.8	7.3				mg/L	13	Standard
Ho-1	165	201.7	18.6				mg/L	10	Standard
Er	166	213.3	15.1				mg/L	13	Standard
I	127	7331.8	5.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		77.675	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.832	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.956
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.229
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129705
Sample Date/Time: Wednesday, July 06, 2016 17:33:09
Number of Replicates: 3
Autosampler Position: 233
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52218.3	4.1				ug/L	68501	Standard
	Be	9	18.3	78.7	**0.0455**	0.020	42.9	ug/L	8	Standard
	Al	27	149022.9	2.3	**1.4135**	0.067	4.7	ug/L	1397	Standard
	Sc	45	38976.7	1.1				ug/L	38815	Standard
	Ti	47	70.7	9.6	**0.1786**	0.020	11.0	ug/L	36	Standard
	V	51	2061.2	2.6	**0.1432**	0.008	5.3	ug/L	1284	Standard
	Cr	52	6495.4	1.3	**-0.0080**	0.014	176.0	ug/L	6503	Standard
	Cr	53	245.0	15.4	**-0.1382**	0.044	31.6	ug/L	492	Standard
	Mn	55	28846.8	1.0	**4.5310**	0.050	1.1	ug/L	841	Standard
	Co	59	501.0	2.5	**0.0869**	0.002	2.6	ug/L	229	Standard
	Ni	60	539.7	1.9	**0.1579**	0.005	3.3	ug/L	344	Standard
	Cu	65	193.7	9.7	**0.1002**	0.011	10.8	ug/L	115	Standard
	Zn	66	1393.1	2.6	**1.2423**	0.034	2.7	ug/L	190	Standard
>	**Ge**	72	417845.3	0.3				ug/L	409858	Standard
	As	75	-2.6	310.6	**0.0964**	0.008	8.0	ug/L	-22	Standard
	Se	82	19.2	21.8	**0.1273**	0.039	30.3	ug/L	18	Standard
	Se-1	77	49.7	23.3	**-0.0512**	0.167	325.4	ug/L	50	Standard
>	**Ga**	71	116.7	28.5				mg/L	97	Standard
	Rb	85	655.0	8.8				ug/L	25	Standard
	Y	89	354001.3	0.9				ug/L	376763	Standard
>	**Rh**	103	11.7	137.8				ug/L	20	Standard
	Mo	98	34.3	48.2	**0.0864**	0.007	8.2	ug/L	51	Standard
	Ag	107	63.0	11.4	**0.0336**	0.001	3.7	ug/L	76	Standard
	Cd	111	4.3	26.6	**0.0416**	0.001	1.4	mg/L	6	Standard
	Cd	114	13.3	81.4	**0.0402**	0.002	5.8	ug/L	18	Standard
>	**In**	115	485890.6	0.5				ug/L	507261	Standard
	Sn	118	188.3	10.1	**-0.0742**	0.003	4.6	ug/L	683	Standard
	Sb	123	256.5	30.4	**0.0420**	0.019	44.8	ug/L	446	Standard
	Ba	135	1863.4	2.6	**1.0379**	0.025	2.4	ug/L	28	Standard
	Ce	140	6439.7	6.3				ug/L	33	Standard
>	**Tb**	159	741477.9	1.2				ug/L	800803	Standard
	Ho	165	126.7	14.9				ug/L	10	Standard
	Tl	203	7.7	27.2	**0.0344**	0.000	0.8	ug/L	13	Standard
	Tl	205	3.3	173.2	**0.0431**	0.001	2.1	ug/L	13	Standard
	Pb	206	453.0	6.6	**0.0915**	0.006	6.3	ug/L	226	Standard
	Pb	207	371.3	12.6	**0.0852**	0.011	13.3	ug/L	204	Standard
	Pb	208	1656.7	2.1	**0.0963**	0.003	2.6	ug/L	852	Standard
	U	238	22.0	35.5	**0.0461**	0.001	2.6	ug/L	13	Standard
>	**Bi**	209	433929.8	0.5				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	40.0	25.0	**0.0157**	0.014	90.0	mg/L	58	Standard
K	39	31.7	24.1	**-0.0163**	0.029	176.8	mg/L	27	Standard
Ca	43	23.3	44.6	**0.4103**	0.749	182.7	mg/L	20	Standard
Fe	54	135.9	5.4	**-0.0069**	0.007	104.0	mg/L	158	Standard
Fe	57	293.3	12.9	**0.2967**	0.118	39.6	mg/L	267	Standard
> **Sc-1**	45	38976.7	1.1				mg/L	38815	Standard
Cl	35	68355.2	0.1				ug/L	57611	Standard
Kr	83	3.0	115.5				ug/L	2	Standard
Br	81	1733.4	2.8				ug/L	1617	Standard
P	31	6756.5	5.8				ug/L	19244	Standard
S	34	3932.2	2.4				ug/L	3557	Standard
Sr	88	61.7	12.4				ug/L	65	Standard
C	12	33.3	69.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	65.5				mg/L	23	Standard
Dy	164	212.0	14.5				mg/L	13	Standard
Ho-1	165	126.7	14.9				mg/L	10	Standard
Er	166	96.7	15.8				mg/L	13	Standard
I	127	7300.1	1.1				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		76.230	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.949	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.787
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.634
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129706
Sample Date/Time: Wednesday, July 06, 2016 17:36:20
Number of Replicates: 3
Autosampler Position: 234
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53041.1	3.6				ug/L	68501	Standard
	Be	9	13.3	114.6	**0.0381**	0.021	54.7	ug/L	8	Standard
	Al	27	347063.6	1.2	**3.1948**	0.126	4.0	ug/L	1397	Standard
	Sc	45	38433.7	1.1				ug/L	38815	Standard
	Ti	47	110.7	14.1	**0.2971**	0.045	15.1	ug/L	36	Standard
	V	51	3417.2	1.2	**0.3346**	0.008	2.5	ug/L	1284	Standard
	Cr	52	7571.6	1.1	**0.1508**	0.016	10.6	ug/L	6503	Standard
	Cr	53	368.3	9.6	**0.0050**	0.042	843.9	ug/L	492	Standard
	Mn	55	57046.2	0.1	**9.1002**	0.105	1.2	ug/L	841	Standard
	Co	59	1016.0	2.9	**0.1715**	0.006	3.6	ug/L	229	Standard
	Ni	60	913.4	2.1	**0.3792**	0.012	3.3	ug/L	344	Standard
	Cu	65	438.0	0.8	**0.2447**	0.003	1.1	ug/L	115	Standard
	Zn	66	2260.5	1.5	**2.0975**	0.023	1.1	ug/L	190	Standard
>	**Ge**	72	415785.3	1.3				ug/L	409858	Standard
	As	75	14.0	101.9	**0.1122**	0.013	12.0	ug/L	-22	Standard
	Se	82	15.4	23.0	**0.0925**	0.032	34.2	ug/L	18	Standard
	Se-1	77	54.3	4.3	**0.0192**	0.043	224.5	ug/L	50	Standard
>	**Ga**	71	248.3	18.2				mg/L	97	Standard
	Rb	85	2065.1	7.2				ug/L	25	Standard
	Y	89	358556.5	0.8				ug/L	376763	Standard
>	**Rh**	103	25.0	34.6				ug/L	20	Standard
	Mo	98	36.2	30.2	**0.0870**	0.005	5.4	ug/L	51	Standard
	Ag	107	65.3	10.2	**0.0339**	0.001	2.9	ug/L	76	Standard
	Cd	111	7.9	21.9	**0.0435**	0.001	2.0	mg/L	6	Standard
	Cd	114	31.5	18.6	**0.0440**	0.001	2.8	ug/L	18	Standard
>	**In**	115	493442.8	1.0				ug/L	507261	Standard
	Sn	118	191.7	8.0	**-0.0741**	0.003	3.6	ug/L	683	Standard
	Sb	123	249.1	35.2	**0.0392**	0.020	52.2	ug/L	446	Standard
	Ba	135	5603.4	2.9	**3.0428**	0.102	3.3	ug/L	28	Standard
	Ce	140	15599.7	2.1				ug/L	33	Standard
>	**Tb**	159	754515.5	0.5				ug/L	800803	Standard
	Ho	165	246.7	8.4				ug/L	10	Standard
	Tl	203	18.0	50.9	**0.0358**	0.001	3.5	ug/L	13	Standard
	Tl	205	16.7	34.6	**0.0451**	0.001	2.0	ug/L	13	Standard
	Pb	206	895.7	5.4	**0.1853**	0.010	5.5	ug/L	226	Standard
	Pb	207	758.4	5.5	**0.1754**	0.010	5.5	ug/L	204	Standard
	Pb	208	3314.1	2.3	**0.1929**	0.004	2.3	ug/L	852	Standard
	U	238	57.0	6.1	**0.0516**	0.001	1.0	ug/L	13	Standard
>	**Bi**	209	433029.8	0.1				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	38.3	45.8	**0.0139**	0.024	170.6	mg/L	58	Standard
K	39	25.0	34.6	**-0.0412**	0.035	84.9	mg/L	27	Standard
Ca	43	23.3	24.7	**0.4358**	0.423	97.0	mg/L	20	Standard
Fe	54	232.5	14.5	**0.0765**	0.031	40.0	mg/L	158	Standard
Fe	57	305.0	15.6	**0.3518**	0.173	49.1	mg/L	267	Standard
> **Sc-1**	45	38433.7	1.1				mg/L	38815	Standard
Cl	35	68301.6	0.8				ug/L	57611	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	1563.4	12.6				ug/L	1617	Standard
P	31	6891.6	2.4				ug/L	19244	Standard
S	34	4058.9	3.0				ug/L	3557	Standard
Sr	88	76.7	22.9				ug/L	65	Standard
C	12	50.0	87.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	43.3				mg/L	23	Standard
Dy	164	429.6	3.2				mg/L	13	Standard
Ho-1	165	246.7	8.4				mg/L	10	Standard
Er	166	216.7	43.9				mg/L	13	Standard
I	127	6868.2	5.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		77.431	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.446	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.276
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.434
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 17:39:34
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	56184.0	1.5				ug/L	68501	Standard
	Be	9	42193.7	3.3	**56.7110**	2.227	3.9	ug/L	8	Standard
	Al	27	6758921.7	1.6	**58.0837**	1.381	2.4	ug/L	1397	Standard
	Sc	45	43373.7	1.8				ug/L	38815	Standard
	Ti	47	38978.7	1.6	**104.3602**	2.100	2.0	ug/L	36	Standard
	V	51	395536.0	0.9	**50.3846**	0.381	0.8	ug/L	1284	Standard
	Cr	52	403664.8	1.3	**51.7924**	0.179	0.3	ug/L	6503	Standard
	Cr	53	49393.7	0.7	**51.3707**	0.694	1.4	ug/L	492	Standard
	Mn	55	360638.8	1.5	**52.9155**	0.083	0.2	ug/L	841	Standard
	Co	59	340505.3	2.0	**50.7269**	0.441	0.9	ug/L	229	Standard
	Ni	60	97629.2	1.0	**52.1793**	0.372	0.7	ug/L	344	Standard
	Cu	65	97262.5	1.2	**52.2313**	0.507	1.0	ug/L	115	Standard
	Zn	66	57699.0	0.4	**51.3545**	0.692	1.3	ug/L	190	Standard
>	Ge	72	455947.2	1.7				ug/L	409858	Standard
	As	75	58327.6	1.2	**50.6820**	0.482	1.0	ug/L	-22	Standard
	Se	82	5895.0	1.3	**50.1103**	0.397	0.8	ug/L	18	Standard
	Se-1	77	4006.5	1.7	**51.5470**	0.957	1.9	ug/L	50	Standard
>	Ga	71	46.7	6.2				mg/L	97	Standard
	Rb	85	828.4	2.7				ug/L	25	Standard
	Y	89	382174.2	1.8				ug/L	376763	Standard
>	Rh	103	36.7	43.8				ug/L	20	Standard
	Mo	98	258222.6	0.8	**102.3410**	1.203	1.2	ug/L	51	Standard
	Ag	107	329212.7	1.1	**50.4028**	1.029	2.0	ug/L	76	Standard
	Cd	111	104910.2	1.3	**50.5299**	0.587	1.2	mg/L	6	Standard
	Cd	114	258679.1	1.2	**50.9671**	0.928	1.8	ug/L	18	Standard
>	In	115	531108.2	1.0				ug/L	507261	Standard
	Sn	118	291168.3	1.7	**50.6915**	0.534	1.1	ug/L	683	Standard
	Sb	123	228289.4	1.3	**50.8183**	0.854	1.7	ug/L	446	Standard
	Ba	135	99147.7	1.1	**49.7738**	0.251	0.5	ug/L	28	Standard
	Ce	140	468.3	31.0				ug/L	33	Standard
>	Tb	159	796348.2	1.9				ug/L	800803	Standard
	Ho	165	15.0	0.0				ug/L	10	Standard
	Tl	203	393824.6	0.3	**51.5142**	0.264	0.5	ug/L	13	Standard
	Tl	205	351893.0	1.0	**53.1532**	0.636	1.2	ug/L	13	Standard
	Pb	206	246206.3	0.6	**50.1555**	0.275	0.5	ug/L	226	Standard
	Pb	207	224054.8	0.7	**50.2623**	0.350	0.7	ug/L	204	Standard
	Pb	208	951155.7	0.9	**53.3579**	0.526	1.0	ug/L	852	Standard
	U	238	334629.8	1.0	**50.6959**	0.518	1.0	ug/L	13	Standard
>	Bi	209	449162.8	0.3				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	3925.5	6.4	**4.7180**	0.298	6.3	mg/L	58	Standard
K	39	1286.7	7.2	**4.4497**	0.350	7.9	mg/L	27	Standard
Ca	43	105.0	20.8	**5.5423**	1.295	23.4	mg/L	20	Standard
Fe	54	6872.9	4.1	**5.0279**	0.184	3.7	mg/L	158	Standard
Fe	57	2058.5	4.5	**5.4851**	0.346	6.3	mg/L	267	Standard
Sc-1	45	43373.7	1.8				mg/L	38815	Standard
Cl	35	75336.2	1.2				ug/L	57611	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	1873.4	7.7				ug/L	1617	Standard
P	31	23039.2	2.9				ug/L	19244	Standard
S	34	4664.1	1.7				ug/L	3557	Standard
Sr	88	71.7	10.7				ug/L	65	Standard
C	12	43.3	26.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	57.7				mg/L	23	Standard
Dy	164	19.4	52.9				mg/L	13	Standard
Ho-1	165	15.0	0.0				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	9819.8	2.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	113.422		
Al	27	116.167		
Sc	45			
Ti	47	104.360		
V	51	100.769		
Cr	52	103.585		
Cr	53			
Mn	55	105.831		
Co	59	101.454		
Ni	60	104.359		
Cu	65	104.463		
Zn	66	102.709		
Ge	72		111.245	
As	75	101.364		
Se	82	100.221		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	102.341		
Ag	107	100.806		
Cd	111	101.060		
Cd	114			
In	115		104.701	
Sn	118	101.383		
Sb	123	101.637		
Ba	135	99.548		
Ce	140			
Tb	159			
Ho	165			
Tl	203	103.028		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.716		
U	238	101.392		
Bi	209		100.026	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 17:42:45
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56496.8	1.6				ug/L	68501	Standard
	Be	9	30.0	33.3	**0.0595**	0.013	22.5	ug/L	8	Standard
	Al	27	2731.9	35.8	**0.0583**	0.008	13.6	ug/L	1397	Standard
	Sc	45	43056.1	0.8				ug/L	38815	Standard
	Ti	47	37.3	11.2	**0.0731**	0.011	14.7	ug/L	36	Standard
	V	51	1366.4	11.2	**0.0320**	0.018	57.7	ug/L	1284	Standard
	Cr	52	7206.4	0.8	**0.0165**	0.004	24.9	ug/L	6503	Standard
	Cr	53	368.3	21.1	**-0.0286**	0.083	288.7	ug/L	492	Standard
	Mn	55	773.7	9.9	**0.0188**	0.010	55.7	ug/L	841	Standard
	Co	59	257.7	14.0	**0.0442**	0.005	11.6	ug/L	229	Standard
	Ni	60	301.3	5.7	**0.0053**	0.008	154.5	ug/L	344	Standard
	Cu	65	113.7	8.1	**0.0484**	0.005	10.4	ug/L	115	Standard
	Zn	66	152.3	7.9	**0.0237**	0.010	43.4	ug/L	190	Standard
>	**Ge**	72	451631.1	0.7				ug/L	409858	Standard
	As	75	-25.4	107.4	**0.0766**	0.024	31.2	ug/L	-22	Standard
	Se	82	21.4	50.9	**0.1323**	0.094	70.7	ug/L	18	Standard
	Se-1	77	52.0	6.9	**-0.0734**	0.052	71.2	ug/L	50	Standard
>	**Ga**	71	55.0	55.3				mg/L	97	Standard
	Rb	85	26.7	71.0				ug/L	25	Standard
	Y	89	391397.9	1.1				ug/L	376763	Standard
>	**Rh**	103	21.7	26.6				ug/L	20	Standard
	Mo	98	187.7	19.7	**0.1465**	0.015	10.1	ug/L	51	Standard
	Ag	107	145.3	17.2	**0.0455**	0.004	8.7	ug/L	76	Standard
	Cd	111	26.0	68.7	**0.0520**	0.009	16.8	mg/L	6	Standard
	Cd	114	76.7	36.2	**0.0526**	0.006	10.6	ug/L	18	Standard
>	**In**	115	527013.5	0.4				ug/L	507261	Standard
	Sn	118	870.0	8.1	**0.0429**	0.012	27.7	ug/L	683	Standard
	Sb	123	613.8	28.1	**0.1173**	0.038	32.6	ug/L	446	Standard
	Ba	135	45.3	19.0	**0.0387**	0.004	11.5	ug/L	28	Standard
	Ce	140	195.0	30.8				ug/L	33	Standard
>	**Tb**	159	800215.4	0.9				ug/L	800803	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	88.7	35.2	**0.0448**	0.004	8.8	ug/L	13	Standard
	Tl	205	81.7	78.7	**0.0547**	0.009	17.3	ug/L	13	Standard
	Pb	206	256.3	10.8	**0.0475**	0.005	10.8	ug/L	226	Standard
	Pb	207	223.0	12.5	**0.0483**	0.006	11.9	ug/L	204	Standard
	Pb	208	989.0	13.1	**0.0548**	0.007	12.3	ug/L	852	Standard
	U	238	68.3	61.3	**0.0528**	0.006	11.7	ug/L	13	Standard
>	**Bi**	209	454884.7	0.8				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	63.3	37.3	**0.0388**	0.028	72.5	mg/L	58	Standard
K	39	23.3	44.6	**-0.0579**	0.038	65.5	mg/L	27	Standard
Ca	43	15.0	66.7	**-0.2912**	0.662	227.5	mg/L	20	Standard
Fe	54	129.2	8.0	**-0.0227**	0.007	31.7	mg/L	158	Standard
Fe	57	245.0	9.4	**0.0588**	0.063	107.5	mg/L	267	Standard
Sc-1	45	43056.1	0.8				mg/L	38815	Standard
Cl	35	74182.5	1.6				ug/L	57611	Standard
Kr	83	3.7	41.7				ug/L	2	Standard
Br	81	2006.8	7.6				ug/L	1617	Standard
P	31	22273.0	1.7				ug/L	19244	Standard
S	34	4494.0	2.4				ug/L	3557	Standard
Sr	88	88.3	14.2				ug/L	65	Standard
C	12	43.3	35.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	16.2	74.0				mg/L	13	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	10.0	173.2				mg/L	13	Standard
I	127	7897.1	3.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		110.192	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.894
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.301
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Tl	203	

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Method 6020 - Summary Report

Sample ID: L1606129706PS WG574306-03
Sample Date/Time: Wednesday, July 06, 2016 17:45:59
Number of Replicates: 3
Autosampler Position: 235
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52061.0	2.5				ug/L	68501	Standard
	Be	9	39322.6	1.8	**57.0313**	0.436	0.8	ug/L	8	Standard
	Al	27	346882.7	0.8	**3.2506**	0.058	1.8	ug/L	1397	Standard
	Sc	45	38510.6	2.1				ug/L	38815	Standard
	Ti	47	121.3	8.1	**0.3306**	0.030	9.1	ug/L	36	Standard
	V	51	352822.0	0.3	**49.5734**	0.278	0.6	ug/L	1284	Standard
	Cr	52	363360.0	0.0	**51.4224**	0.353	0.7	ug/L	6503	Standard
	Cr	53	45331.1	2.6	**52.0070**	1.381	2.7	ug/L	492	Standard
	Mn	55	374762.9	0.5	**60.6733**	0.366	0.6	ug/L	841	Standard
	Co	59	297322.9	0.4	**48.8649**	0.481	1.0	ug/L	229	Standard
	Ni	60	88030.0	0.4	**51.8970**	0.116	0.2	ug/L	344	Standard
	Cu	65	89235.3	0.1	**52.8603**	0.282	0.5	ug/L	115	Standard
	Zn	66	60863.7	0.8	**59.7714**	0.851	1.4	ug/L	190	Standard
>	**Ge**	72	413319.4	0.6				ug/L	409858	Standard
	As	75	56179.5	0.5	**53.8413**	0.457	0.8	ug/L	-22	Standard
	Se	82	6037.9	1.1	**56.6258**	0.899	1.6	ug/L	18	Standard
	Se-1	77	4065.5	1.4	**57.7863**	0.843	1.5	ug/L	50	Standard
>	**Ga**	71	251.7	12.0				mg/L	97	Standard
	Rb	85	2095.1	9.1				ug/L	25	Standard
	Y	89	352123.4	1.2				ug/L	376763	Standard
>	**Rh**	103	28.3	20.4				ug/L	20	Standard
	Mo	98	95.7	30.9	**0.1128**	0.013	11.3	ug/L	51	Standard
	Ag	107	302025.2	0.4	**50.3381**	0.232	0.5	ug/L	76	Standard
	Cd	111	100050.8	1.2	**52.4626**	0.368	0.7	mg/L	6	Standard
	Cd	114	244946.2	1.7	**52.5392**	0.964	1.8	ug/L	18	Standard
>	**In**	115	487818.7	0.7				ug/L	507261	Standard
	Sn	118	375.0	20.8	**-0.0389**	0.014	36.6	ug/L	683	Standard
	Sb	123	169126.9	9.0	**40.9955**	3.876	9.5	ug/L	446	Standard
	Ba	135	96142.1	0.9	**52.5481**	0.525	1.0	ug/L	28	Standard
	Ce	140	16108.6	1.5				ug/L	33	Standard
>	**Tb**	159	748604.8	0.6				ug/L	800803	Standard
	Ho	165	316.7	22.1				ug/L	10	Standard
	Tl	203	370203.1	1.1	**50.1188**	0.294	0.6	ug/L	13	Standard
	Tl	205	328523.9	1.5	**51.3627**	0.905	1.8	ug/L	13	Standard
	Pb	206	239461.5	0.5	**50.4918**	0.662	1.3	ug/L	226	Standard
	Pb	207	209364.6	0.7	**48.6110**	0.316	0.6	ug/L	204	Standard
	Pb	208	876451.2	0.8	**50.8881**	0.419	0.8	ug/L	852	Standard
	U	238	298587.8	0.7	**46.8254**	0.729	1.6	ug/L	13	Standard
>	**Bi**	209	433980.1	0.9				ug/L	449044	Standard

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Na	23	1.7	173.2	**0.5802**	16.217	2794.9	mg/L	2	Standard
Mg	24	35.0	51.5	**0.0091**	0.024	262.2	mg/L	58	Standard
K	39	45.0	33.3	**0.0382**	0.056	148.0	mg/L	27	Standard
Ca	43	38.3	30.1	**1.5431**	0.889	57.6	mg/L	20	Standard
Fe	54	291.6	10.8	**0.1255**	0.022	17.4	mg/L	158	Standard
Fe	57	300.0	13.2	**0.3303**	0.113	34.2	mg/L	267	Standard
> **Sc-1**	45	38510.6	2.1				mg/L	38815	Standard
Cl	35	65285.7	1.5				ug/L	57611	Standard
Kr	83	4.0	25.0				ug/L	2	Standard
Br	81	1633.4	20.9				ug/L	1617	Standard
P	31	7273.4	2.6				ug/L	19244	Standard
S	34	4210.6	2.8				ug/L	3557	Standard
Sr	88	91.7	25.8				ug/L	65	Standard
C	12	33.3	69.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	23	Standard
Dy	164	472.9	17.3				mg/L	13	Standard
Ho-1	165	316.7	22.1				mg/L	10	Standard
Er	166	286.7	16.5				mg/L	13	Standard
I	127	6766.5	5.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		76.000	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.845	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.167
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.645
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129706SDL WG574306-04
Sample Date/Time: Wednesday, July 06, 2016 17:49:10
Number of Replicates: 3
Autosampler Position: 236
Sample Description: 250
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51079.4	3.4				ug/L	68501	Standard
	Be	9	31.7	39.7	**0.0660**	0.017	25.9	ug/L	8	Standard
	Al	27	69767.0	1.7	**0.6945**	0.024	3.4	ug/L	1397	Standard
	Sc	45	38154.7	3.2				ug/L	38815	Standard
	Ti	47	41.3	10.1	**0.0953**	0.013	13.3	ug/L	36	Standard
	V	51	1741.8	2.9	**0.1034**	0.007	6.6	ug/L	1284	Standard
	Cr	52	5536.7	1.4	**-0.1292**	0.008	6.3	ug/L	6503	Standard
	Cr	53	206.7	14.8	**-0.1774**	0.037	20.7	ug/L	492	Standard
	Mn	55	11490.7	2.8	**1.7831**	0.047	2.7	ug/L	841	Standard
	Co	59	425.0	3.3	**0.0759**	0.002	2.7	ug/L	229	Standard
	Ni	60	431.7	6.7	**0.0997**	0.016	16.5	ug/L	344	Standard
	Cu	65	174.3	11.2	**0.0909**	0.011	12.5	ug/L	115	Standard
	Zn	66	890.4	7.9	**0.7699**	0.066	8.6	ug/L	190	Standard
>	**Ge**	72	409835.0	0.5				ug/L	409858	Standard
	As	75	-30.4	24.5	**0.0696**	0.007	10.1	ug/L	-22	Standard
	Se	82	18.9	10.9	**0.1272**	0.019	14.6	ug/L	18	Standard
	Se-1	77	53.0	16.8	**0.0104**	0.126	1205.9	ug/L	50	Standard
>	**Ga**	71	66.7	45.8				mg/L	97	Standard
	Rb	85	433.3	9.3				ug/L	25	Standard
	Y	89	346927.3	1.3				ug/L	376763	Standard
>	**Rh**	103	11.7	49.5				ug/L	20	Standard
	Mo	98	94.2	43.0	**0.1127**	0.017	15.4	ug/L	51	Standard
	Ag	107	153.7	12.9	**0.0491**	0.003	7.1	ug/L	76	Standard
	Cd	111	33.5	14.8	**0.0572**	0.002	4.3	mg/L	6	Standard
	Cd	114	58.8	25.2	**0.0502**	0.003	6.3	ug/L	18	Standard
>	**In**	115	479890.1	1.0				ug/L	507261	Standard
	Sn	118	170.0	10.6	**-0.0773**	0.003	4.3	ug/L	683	Standard
	Sb	123	3081.4	22.4	**0.7379**	0.163	22.1	ug/L	446	Standard
	Ba	135	1088.4	1.0	**0.6203**	0.005	0.8	ug/L	28	Standard
	Ce	140	1321.7	27.0				ug/L	33	Standard
>	**Tb**	159	738085.9	0.9				ug/L	800803	Standard
	Ho	165	26.7	39.0				ug/L	10	Standard
	Tl	203	221.3	14.1	**0.0633**	0.004	6.7	ug/L	13	Standard
	Tl	205	156.7	43.3	**0.0670**	0.011	15.8	ug/L	13	Standard
	Pb	206	350.0	3.9	**0.0698**	0.003	4.2	ug/L	226	Standard
	Pb	207	313.7	4.7	**0.0718**	0.003	4.7	ug/L	204	Standard
	Pb	208	1331.7	5.9	**0.0774**	0.005	6.0	ug/L	852	Standard
	U	238	140.0	38.9	**0.0646**	0.009	13.3	ug/L	13	Standard
>	**Bi**	209	433783.9	0.1				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	40.0	12.5	**0.0167**	0.006	38.2	mg/L	58	Standard
K	39	35.0	14.3	**0.0005**	0.024	5012.0	mg/L	27	Standard
Ca	43	15.0	120.2	**-0.1387**	1.386	999.3	mg/L	20	Standard
Fe	54	70.8	18.4	**-0.0600**	0.010	17.1	mg/L	158	Standard
Fe	57	256.7	14.4	**0.1917**	0.099	51.9	mg/L	267	Standard
Sc-1	45	38154.7	3.2				mg/L	38815	Standard
Cl	35	65026.6	1.2				ug/L	57611	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1630.1	9.5				ug/L	1617	Standard
P	31	6834.9	2.7				ug/L	19244	Standard
S	34	4033.9	3.6				ug/L	3557	Standard
Sr	88	63.3	4.6				ug/L	65	Standard
C	12	43.3	48.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	25.0				mg/L	23	Standard
Dy	164	60.9	17.6				mg/L	13	Standard
Ho-1	165	26.7	39.0				mg/L	10	Standard
Er	166	50.0	40.0				mg/L	13	Standard
I	127	7083.3	2.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		74.567	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.994	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.604
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.602
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129707 WG574306-01
Sample Date/Time: Wednesday, July 06, 2016 17:52:22
Number of Replicates: 3
Autosampler Position: 237
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51248.2	2.7				ug/L	68501	Standard
	Be	9	23.3	89.2	**0.0533**	0.030	56.3	ug/L	8	Standard
	Al	27	111147.5	7.0	**1.0806**	0.044	4.1	ug/L	1397	Standard
	Sc	45	38983.5	3.6				ug/L	38815	Standard
	Ti	47	82.7	39.8	**0.2157**	0.100	46.2	ug/L	36	Standard
	V	51	3332.5	0.9	**0.3229**	0.010	3.0	ug/L	1284	Standard
	Cr	52	6723.5	1.3	**0.0297**	0.023	76.2	ug/L	6503	Standard
	Cr	53	306.7	17.6	**-0.0659**	0.063	95.1	ug/L	492	Standard
	Mn	55	63863.7	1.1	**10.2010**	0.042	0.4	ug/L	841	Standard
	Co	59	882.0	4.7	**0.1496**	0.008	5.0	ug/L	229	Standard
	Ni	60	685.7	6.3	**0.2455**	0.028	11.5	ug/L	344	Standard
	Cu	65	1373.7	4.0	**0.7963**	0.041	5.1	ug/L	115	Standard
	Zn	66	3122.3	2.6	**2.9407**	0.042	1.4	ug/L	190	Standard
>	**Ge**	72	415681.5	1.2				ug/L	409858	Standard
	As	75	58.1	52.9	**0.1541**	0.029	18.8	ug/L	-22	Standard
	Se	82	16.9	11.8	**0.1058**	0.017	15.9	ug/L	18	Standard
	Se-1	77	56.7	10.3	**0.0523**	0.082	156.6	ug/L	50	Standard
>	**Ga**	71	146.7	7.9				mg/L	97	Standard
	Rb	85	1408.4	7.1				ug/L	25	Standard
	Y	89	353972.1	0.5				ug/L	376763	Standard
>	**Rh**	103	18.3	41.7				ug/L	20	Standard
	Mo	98	33.9	22.9	**0.0862**	0.004	4.1	ug/L	51	Standard
	Ag	107	107.3	11.7	**0.0409**	0.002	4.7	ug/L	76	Standard
	Cd	111	26.3	31.1	**0.0531**	0.004	7.8	mg/L	6	Standard
	Cd	114	65.6	39.2	**0.0514**	0.005	10.4	ug/L	18	Standard
>	**In**	115	488687.7	1.4				ug/L	507261	Standard
	Sn	118	226.7	19.0	**-0.0671**	0.008	12.4	ug/L	683	Standard
	Sb	123	1265.3	27.9	**0.2867**	0.089	31.2	ug/L	446	Standard
	Ba	135	7176.7	1.4	**3.9306**	0.084	2.1	ug/L	28	Standard
	Ce	140	15084.2	4.7				ug/L	33	Standard
>	**Tb**	159	743253.1	1.0				ug/L	800803	Standard
	Ho	165	210.0	6.3				ug/L	10	Standard
	Tl	203	75.0	26.3	**0.0436**	0.003	6.2	ug/L	13	Standard
	Tl	205	78.3	16.1	**0.0549**	0.002	3.7	ug/L	13	Standard
	Pb	206	3721.1	3.6	**0.7888**	0.029	3.7	ug/L	226	Standard
	Pb	207	3091.0	2.2	**0.7241**	0.015	2.1	ug/L	204	Standard
	Pb	208	13585.7	0.7	**0.7971**	0.007	0.9	ug/L	852	Standard
	U	238	98.0	3.7	**0.0581**	0.001	0.9	ug/L	13	Standard
>	**Bi**	209	429509.1	0.3				ug/L	449044	Standard

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Na	23	1.7	173.2	**0.6077**	16.264	2676.3	mg/L	2	Standard
Mg	24	46.7	16.4	**0.0248**	0.013	50.9	mg/L	58	Standard
K	39	26.7	78.1	**-0.0373**	0.078	209.9	mg/L	27	Standard
Ca	43	31.7	50.8	**0.9958**	1.079	108.3	mg/L	20	Standard
Fe	54	169.2	19.3	**0.0214**	0.030	140.6	mg/L	158	Standard
Fe	57	311.7	19.4	**0.3547**	0.164	46.2	mg/L	267	Standard
> **Sc-1**	45	38983.5	3.6				mg/L	38815	Standard
Cl	35	65585.6	0.8				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1850.1	11.7				ug/L	1617	Standard
P	31	6584.8	4.1				ug/L	19244	Standard
S	34	3993.9	4.2				ug/L	3557	Standard
Sr	88	60.0	38.2				ug/L	65	Standard
C	12	63.3	50.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	23	Standard
Dy	164	407.2	18.9				mg/L	13	Standard
Ho-1	165	210.0	6.3				mg/L	10	Standard
Er	166	266.7	14.2				mg/L	13	Standard
I	127	6713.2	3.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		74.814	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.421	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.339
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.650
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129708S WG574306-04
Sample Date/Time: Wednesday, July 06, 2016 17:55:33
Number of Replicates: 3
Autosampler Position: 238
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51191.4	2.1				ug/L	68501	Standard
	Be	9	456.7	14.9	**0.6931**	0.104	14.9	ug/L	8	Standard
	Al	27	368531.9	1.3	**3.5098**	0.114	3.2	ug/L	1397	Standard
	Sc	45	38654.3	2.0				ug/L	38815	Standard
	Ti	47	150.0	13.3	**0.4155**	0.059	14.1	ug/L	36	Standard
	V	51	8279.9	2.7	**1.0233**	0.024	2.3	ug/L	1284	Standard
	Cr	52	11886.0	0.7	**0.7800**	0.019	2.4	ug/L	6503	Standard
	Cr	53	971.7	9.1	**0.7058**	0.100	14.2	ug/L	492	Standard
	Mn	55	116648.0	0.9	**18.8323**	0.300	1.6	ug/L	841	Standard
	Co	59	4758.4	1.0	**0.7880**	0.011	1.5	ug/L	229	Standard
	Ni	60	2198.5	3.1	**1.1434**	0.051	4.4	ug/L	344	Standard
	Cu	65	1677.8	2.9	**0.9813**	0.022	2.2	ug/L	115	Standard
	Zn	66	3428.7	2.7	**3.2624**	0.100	3.1	ug/L	190	Standard
>	**Ge**	72	413053.1	0.8				ug/L	409858	Standard
	As	75	557.0	5.7	**0.6320**	0.027	4.2	ug/L	-22	Standard
	Se	82	59.8	8.9	**0.5102**	0.047	9.1	ug/L	18	Standard
	Se-1	77	79.3	14.3	**0.3834**	0.155	40.3	ug/L	50	Standard
>	**Ga**	71	475.0	14.8				mg/L	97	Standard
	Rb	85	4023.9	0.7				ug/L	25	Standard
	Y	89	354538.7	1.1				ug/L	376763	Standard
>	**Rh**	103	16.7	34.6				ug/L	20	Standard
	Mo	98	38.8	30.7	**0.0883**	0.005	6.1	ug/L	51	Standard
	Ag	107	3068.3	0.7	**0.5322**	0.005	1.0	ug/L	76	Standard
	Cd	111	1011.0	4.4	**0.5671**	0.029	5.1	mg/L	6	Standard
	Cd	114	2379.9	1.4	**0.5454**	0.011	2.0	ug/L	18	Standard
>	**In**	115	489876.3	1.6				ug/L	507261	Standard
	Sn	118	198.3	31.3	**-0.0724**	0.012	17.2	ug/L	683	Standard
	Sb	123	1135.1	32.9	**0.2543**	0.093	36.6	ug/L	446	Standard
	Ba	135	10341.9	0.8	**5.6440**	0.127	2.3	ug/L	28	Standard
	Ce	140	25015.6	2.1				ug/L	33	Standard
>	**Tb**	159	748391.4	0.7				ug/L	800803	Standard
	Ho	165	353.3	14.3				ug/L	10	Standard
	Tl	203	3619.4	1.4	**0.5242**	0.010	1.8	ug/L	13	Standard
	Tl	205	3225.3	2.9	**0.5476**	0.017	3.2	ug/L	13	Standard
	Pb	206	4699.4	4.3	**0.9890**	0.036	3.7	ug/L	226	Standard
	Pb	207	3997.5	2.3	**0.9292**	0.017	1.9	ug/L	204	Standard
	Pb	208	17494.3	1.6	**1.0181**	0.011	1.1	ug/L	852	Standard
	U	238	3047.3	0.6	**0.5211**	0.002	0.4	ug/L	13	Standard
>	**Bi**	209	432971.0	0.6				ug/L	449044	Standard

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Na	23	1.7	173.2	**0.4512**	15.993	3544.3	mg/L	2	Standard
Mg	24	48.3	39.2	**0.0276**	0.027	96.6	mg/L	58	Standard
K	39	61.7	41.6	**0.1038**	0.097	93.7	mg/L	27	Standard
Ca	43	36.7	15.7	**1.3979**	0.400	28.6	mg/L	20	Standard
Fe	54	485.5	18.9	**0.2870**	0.069	23.9	mg/L	158	Standard
Fe	57	386.7	11.0	**0.6194**	0.147	23.7	mg/L	267	Standard
> **Sc-1**	45	38654.3	2.0				mg/L	38815	Standard
Cl	35	66229.1	0.6				ug/L	57611	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	1640.1	1.1				ug/L	1617	Standard
P	31	7413.5	5.4				ug/L	19244	Standard
S	34	4038.9	0.8				ug/L	3557	Standard
Sr	88	83.3	9.2				ug/L	65	Standard
C	12	26.7	21.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	99.0				mg/L	23	Standard
Dy	164	691.3	10.8				mg/L	13	Standard
Ho-1	165	353.3	14.3				mg/L	10	Standard
Er	166	390.0	13.6				mg/L	13	Standard
I	127	6844.9	3.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		74.731	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.780	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.573
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.421
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129709SD WG574306-05
Sample Date/Time: Wednesday, July 06, 2016 17:58:44
Number of Replicates: 3
Autosampler Position: 239
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50474.0	3.7				ug/L	68501	Standard
	Be	9	410.0	12.7	**0.6334**	0.085	13.4	ug/L	8	Standard
	Al	27	110523.8	4.2	**1.0928**	0.068	6.2	ug/L	1397	Standard
	Sc	45	38594.1	2.2				ug/L	38815	Standard
	Ti	47	104.0	5.4	**0.2765**	0.018	6.6	ug/L	36	Standard
	V	51	6697.0	1.6	**0.7904**	0.016	2.1	ug/L	1284	Standard
	Cr	52	9874.2	1.2	**0.4752**	0.026	5.4	ug/L	6503	Standard
	Cr	53	716.7	5.9	**0.4021**	0.047	11.6	ug/L	492	Standard
	Mn	55	32613.7	2.7	**5.1415**	0.174	3.4	ug/L	841	Standard
	Co	59	3776.8	1.7	**0.6201**	0.014	2.3	ug/L	229	Standard
	Ni	60	1462.1	1.1	**0.6984**	0.005	0.8	ug/L	344	Standard
	Cu	65	1586.7	1.5	**0.9177**	0.017	1.8	ug/L	115	Standard
	Zn	66	2979.0	1.6	**2.7891**	0.060	2.2	ug/L	190	Standard
>	**Ge**	72	417395.3	0.7				ug/L	409858	Standard
	As	75	608.0	6.0	**0.6750**	0.037	5.5	ug/L	-22	Standard
	Se	82	67.3	11.2	**0.5741**	0.074	12.9	ug/L	18	Standard
	Se-1	77	82.7	9.8	**0.4197**	0.112	26.7	ug/L	50	Standard
>	**Ga**	71	180.0	12.1				mg/L	97	Standard
	Rb	85	1421.7	5.1				ug/L	25	Standard
	Y	89	354281.1	1.0				ug/L	376763	Standard
>	**Rh**	103	13.3	43.3				ug/L	20	Standard
	Mo	98	40.9	50.3	**0.0891**	0.009	9.8	ug/L	51	Standard
	Ag	107	3037.6	5.9	**0.5279**	0.026	4.9	ug/L	76	Standard
	Cd	111	1061.0	6.0	**0.5939**	0.029	4.8	mg/L	6	Standard
	Cd	114	2592.4	5.7	**0.5917**	0.027	4.6	ug/L	18	Standard
>	**In**	115	488883.1	0.9				ug/L	507261	Standard
	Sn	118	291.7	30.7	**-0.0549**	0.017	30.3	ug/L	683	Standard
	Sb	123	1181.2	24.2	**0.2650**	0.067	25.2	ug/L	446	Standard
	Ba	135	5083.9	4.4	**2.7871**	0.107	3.8	ug/L	28	Standard
	Ce	140	14129.9	2.8				ug/L	33	Standard
>	**Tb**	159	743713.8	1.2				ug/L	800803	Standard
	Ho	165	243.3	11.3				ug/L	10	Standard
	Tl	203	3550.1	4.9	**0.5153**	0.021	4.0	ug/L	13	Standard
	Tl	205	3118.7	2.7	**0.5315**	0.016	3.1	ug/L	13	Standard
	Pb	206	4004.2	1.4	**0.8433**	0.006	0.7	ug/L	226	Standard
	Pb	207	3411.7	1.3	**0.7940**	0.016	2.0	ug/L	204	Standard
	Pb	208	14769.9	0.5	**0.8607**	0.008	0.9	ug/L	852	Standard
	U	238	2870.9	1.4	**0.4941**	0.010	2.0	ug/L	13	Standard
>	**Bi**	209	432422.4	0.8				ug/L	449044	Standard

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Na	23	1.7	173.2	**0.5319**	16.133	3033.1	mg/L	2	Standard
Mg	24	38.3	19.9	**0.0138**	0.010	71.2	mg/L	58	Standard
K	39	35.0	57.1	**-0.0026**	0.077	2940.7	mg/L	27	Standard
Ca	43	30.0	50.0	**0.9064**	1.056	116.5	mg/L	20	Standard
Fe	54	176.0	9.1	**0.0280**	0.015	53.5	mg/L	158	Standard
Fe	57	306.7	10.5	**0.3522**	0.110	31.3	mg/L	267	Standard
> **Sc-1**	45	38594.1	2.2				mg/L	38815	Standard
Cl	35	65870.2	1.0				ug/L	57611	Standard
Kr	83	3.7	41.7				ug/L	2	Standard
Br	81	1676.8	6.4				ug/L	1617	Standard
P	31	6811.5	4.4				ug/L	19244	Standard
S	34	3892.2	5.0				ug/L	3557	Standard
Sr	88	63.3	35.6				ug/L	65	Standard
C	12	40.0	43.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	23	Standard
Dy	164	400.9	15.7				mg/L	13	Standard
Ho-1	165	243.3	11.3				mg/L	10	Standard
Er	166	190.0	32.0				mg/L	13	Standard
I	127	6444.7	3.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		73.683	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.839	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129709SD WG574306-05
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.377
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.298
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129709SD WG574306-05
Report Date/Time: Wednesday, July 06, 2016 18:01:01
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Method 6020 - Summary Report

Sample ID: L1606129710
Sample Date/Time: Wednesday, July 06, 2016 18:01:56
Number of Replicates: 3
Autosampler Position: 240
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50694.8	5.0				ug/L	68501	Standard
	Be	9	23.3	44.6	**0.0544**	0.017	30.4	ug/L	8	Standard
	Al	27	211106.2	2.8	**2.0456**	0.049	2.4	ug/L	1397	Standard
	Sc	45	38264.9	1.5				ug/L	38815	Standard
	Ti	47	83.7	9.1	**0.2178**	0.022	10.1	ug/L	36	Standard
	V	51	2417.0	1.9	**0.1944**	0.007	3.8	ug/L	1284	Standard
	Cr	52	6348.3	0.6	**-0.0247**	0.006	22.6	ug/L	6503	Standard
	Cr	53	258.3	17.5	**-0.1216**	0.053	43.2	ug/L	492	Standard
	Mn	55	63628.7	0.8	**10.1580**	0.084	0.8	ug/L	841	Standard
	Co	59	574.3	2.6	**0.0993**	0.002	2.3	ug/L	229	Standard
	Ni	60	527.7	5.4	**0.1523**	0.016	10.8	ug/L	344	Standard
	Cu	65	252.3	5.2	**0.1353**	0.008	6.0	ug/L	115	Standard
	Zn	66	1691.8	2.2	**1.5409**	0.039	2.5	ug/L	190	Standard
>	**Ge**	72	415881.7	0.3				ug/L	409858	Standard
	As	75	-24.7	122.3	**0.0754**	0.029	38.2	ug/L	-22	Standard
	Se	82	17.5	32.4	**0.1117**	0.053	47.4	ug/L	18	Standard
	Se-1	77	56.7	18.9	**0.0522**	0.155	295.9	ug/L	50	Standard
>	**Ga**	71	123.3	10.2				mg/L	97	Standard
	Rb	85	903.4	10.2				ug/L	25	Standard
	Y	89	349426.8	0.6				ug/L	376763	Standard
>	**Rh**	103	15.0	57.7				ug/L	20	Standard
	Mo	98	37.0	15.6	**0.0875**	0.002	2.8	ug/L	51	Standard
	Ag	107	85.3	14.5	**0.0373**	0.002	5.5	ug/L	76	Standard
	Cd	111	9.9	46.2	**0.0446**	0.002	5.4	mg/L	6	Standard
	Cd	114	20.2	56.9	**0.0417**	0.002	5.9	ug/L	18	Standard
>	**In**	115	488396.8	0.4				ug/L	507261	Standard
	Sn	118	241.7	16.7	**-0.0643**	0.008	11.8	ug/L	683	Standard
	Sb	123	676.4	23.5	**0.1434**	0.038	26.8	ug/L	446	Standard
	Ba	135	3064.6	1.1	**1.6882**	0.015	0.9	ug/L	28	Standard
	Ce	140	9409.6	3.5				ug/L	33	Standard
>	**Tb**	159	744362.4	1.0				ug/L	800803	Standard
	Ho	165	175.0	9.9				ug/L	10	Standard
	Tl	203	42.7	34.8	**0.0392**	0.002	5.1	ug/L	13	Standard
	Tl	205	30.0	33.3	**0.0473**	0.002	3.3	ug/L	13	Standard
	Pb	206	661.3	6.5	**0.1366**	0.008	6.0	ug/L	226	Standard
	Pb	207	567.7	4.1	**0.1319**	0.005	3.6	ug/L	204	Standard
	Pb	208	2453.4	2.1	**0.1438**	0.002	1.6	ug/L	852	Standard
	U	238	68.7	7.3	**0.0535**	0.001	1.6	ug/L	13	Standard
>	**Bi**	209	430131.5	0.6				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	65.0	33.5	**0.0511**	0.031	60.0	mg/L	58	Standard
K	39	28.3	27.0	**-0.0270**	0.032	120.1	mg/L	27	Standard
Ca	43	20.0	75.0	**0.2066**	1.119	541.6	mg/L	20	Standard
Fe	54	127.8	19.6	**-0.0119**	0.020	165.0	mg/L	158	Standard
Fe	57	263.3	4.4	**0.2137**	0.033	15.5	mg/L	267	Standard
> **Sc-1**	45	38264.9	1.5				mg/L	38815	Standard
Cl	35	65564.9	1.1				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1613.4	6.0				ug/L	1617	Standard
P	31	6929.9	2.6				ug/L	19244	Standard
S	34	3928.8	1.5				ug/L	3557	Standard
Sr	88	76.7	22.9				ug/L	65	Standard
C	12	36.7	15.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	23	Standard
Dy	164	234.6	36.6				mg/L	13	Standard
Ho-1	165	175.0	9.9				mg/L	10	Standard
Er	166	183.3	35.1				mg/L	13	Standard
I	127	6321.3	1.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		74.006	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.470	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.281
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.788
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129711
Sample Date/Time: Wednesday, July 06, 2016 18:05:07
Number of Replicates: 3
Autosampler Position: 241
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50754.9	2.2				ug/L	68501	Standard
	Be	9	15.0	33.3	**0.0419**	0.008	18.8	ug/L	8	Standard
	Al	27	183332.5	0.4	**1.7784**	0.046	2.6	ug/L	1397	Standard
	Sc	45	37919.1	1.8				ug/L	38815	Standard
	Ti	47	69.7	10.1	**0.1784**	0.021	11.6	ug/L	36	Standard
	V	51	2453.4	3.6	**0.2024**	0.014	6.8	ug/L	1284	Standard
	Cr	52	6402.0	1.2	**-0.0091**	0.014	151.7	ug/L	6503	Standard
	Cr	53	266.7	6.6	**-0.1094**	0.021	19.0	ug/L	492	Standard
	Mn	55	36825.0	0.9	**5.8894**	0.074	1.2	ug/L	841	Standard
	Co	59	582.3	7.8	**0.1014**	0.008	7.6	ug/L	229	Standard
	Ni	60	536.3	5.0	**0.1602**	0.017	10.5	ug/L	344	Standard
	Cu	65	306.7	13.1	**0.1689**	0.024	14.4	ug/L	115	Standard
	Zn	66	2348.8	3.0	**2.2031**	0.076	3.5	ug/L	190	Standard
>	**Ge**	72	412357.7	0.3				ug/L	409858	Standard
	As	75	-25.4	36.6	**0.0746**	0.009	11.8	ug/L	-22	Standard
	Se	82	13.4	35.5	**0.0744**	0.045	60.1	ug/L	18	Standard
	Se-1	77	51.3	15.7	**-0.0182**	0.115	632.7	ug/L	50	Standard
>	**Ga**	71	115.0	30.1				mg/L	97	Standard
	Rb	85	766.7	3.1				ug/L	25	Standard
	Y	89	352987.1	1.9				ug/L	376763	Standard
>	**Rh**	103	11.7	49.5				ug/L	20	Standard
	Mo	98	33.6	40.7	**0.0860**	0.006	6.8	ug/L	51	Standard
	Ag	107	103.0	24.8	**0.0402**	0.004	10.5	ug/L	76	Standard
	Cd	111	15.3	49.9	**0.0474**	0.004	8.3	mg/L	6	Standard
	Cd	114	50.3	53.6	**0.0481**	0.006	11.9	ug/L	18	Standard
>	**In**	115	488095.7	0.6				ug/L	507261	Standard
	Sn	118	175.0	20.6	**-0.0769**	0.007	8.8	ug/L	683	Standard
	Sb	123	600.2	31.8	**0.1249**	0.045	36.4	ug/L	446	Standard
	Ba	135	2511.9	2.3	**1.3873**	0.023	1.6	ug/L	28	Standard
	Ce	140	10036.7	3.1				ug/L	33	Standard
>	**Tb**	159	743862.7	0.4				ug/L	800803	Standard
	Ho	165	233.3	12.2				ug/L	10	Standard
	Tl	203	53.3	68.4	**0.0405**	0.005	12.1	ug/L	13	Standard
	Tl	205	48.3	110.6	**0.0501**	0.008	16.7	ug/L	13	Standard
	Pb	206	710.4	11.0	**0.1459**	0.016	11.2	ug/L	226	Standard
	Pb	207	563.0	9.3	**0.1298**	0.012	9.0	ug/L	204	Standard
	Pb	208	2506.1	5.9	**0.1457**	0.008	5.7	ug/L	852	Standard
	U	238	57.0	28.2	**0.0516**	0.002	4.8	ug/L	13	Standard
>	**Bi**	209	433560.5	0.7				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	36.7	15.7	**0.0124**	0.007	59.7	mg/L	58	Standard
K	39	40.0	25.0	**0.0209**	0.038	181.0	mg/L	27	Standard
Ca	43	31.7	24.1	**1.0837**	0.598	55.2	mg/L	20	Standard
Fe	54	129.3	10.3	**-0.0095**	0.010	101.4	mg/L	158	Standard
Fe	57	325.0	11.6	**0.4318**	0.109	25.3	mg/L	267	Standard
> **Sc-1**	45	37919.1	1.8				mg/L	38815	Standard
Cl	35	65636.5	0.4				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1646.8	7.3				ug/L	1617	Standard
P	31	6866.6	2.8				ug/L	19244	Standard
S	34	4128.9	4.7				ug/L	3557	Standard
Sr	88	71.7	35.8				ug/L	65	Standard
C	12	33.3	17.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	23	Standard
Dy	164	276.8	15.7				mg/L	13	Standard
Ho-1	165	233.3	12.2				mg/L	10	Standard
Er	166	206.7	34.0				mg/L	13	Standard
I	127	6129.6	0.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		74.093	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.610	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.222
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.552
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129712
Sample Date/Time: Wednesday, July 06, 2016 18:08:18
Number of Replicates: 3
Autosampler Position: 242
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50335.2	2.7				ug/L	68501	Standard
	Be	9	18.3	15.7	**0.0470**	0.005	10.6	ug/L	8	Standard
	Al	27	215415.6	1.0	**2.1004**	0.037	1.7	ug/L	1397	Standard
	Sc	45	38381.9	1.8				ug/L	38815	Standard
	Ti	47	60.3	5.3	**0.1507**	0.008	5.4	ug/L	36	Standard
	V	51	3357.9	2.5	**0.3301**	0.014	4.2	ug/L	1284	Standard
	Cr	52	6864.9	1.2	**0.0575**	0.017	30.3	ug/L	6503	Standard
	Cr	53	286.7	22.8	**-0.0866**	0.075	86.1	ug/L	492	Standard
	Mn	55	47490.3	1.4	**7.6213**	0.154	2.0	ug/L	841	Standard
	Co	59	909.0	0.9	**0.1552**	0.001	0.4	ug/L	229	Standard
	Ni	60	721.0	3.8	**0.2695**	0.016	5.9	ug/L	344	Standard
	Cu	65	403.0	1.3	**0.2260**	0.005	2.4	ug/L	115	Standard
	Zn	66	1975.8	1.6	**1.8347**	0.040	2.2	ug/L	190	Standard
>	**Ge**	72	412470.3	1.0				ug/L	409858	Standard
	As	75	31.9	13.5	**0.1295**	0.004	3.3	ug/L	-22	Standard
	Se	82	17.4	8.7	**0.1126**	0.015	13.5	ug/L	18	Standard
	Se-1	77	45.0	25.6	**-0.1084**	0.173	159.5	ug/L	50	Standard
>	**Ga**	71	148.3	15.9				mg/L	97	Standard
	Rb	85	1413.4	1.1				ug/L	25	Standard
	Y	89	355079.6	1.3				ug/L	376763	Standard
>	**Rh**	103	21.7	35.3				ug/L	20	Standard
	Mo	98	20.8	25.7	**0.0806**	0.002	2.8	ug/L	51	Standard
	Ag	107	73.0	9.6	**0.0354**	0.001	3.2	ug/L	76	Standard
	Cd	111	6.6	8.6	**0.0429**	0.000	0.7	mg/L	6	Standard
	Cd	114	20.9	33.3	**0.0419**	0.002	3.6	ug/L	18	Standard
>	**In**	115	483721.6	0.7				ug/L	507261	Standard
	Sn	118	213.3	19.9	**-0.0693**	0.008	11.5	ug/L	683	Standard
	Sb	123	539.2	27.8	**0.1113**	0.036	32.3	ug/L	446	Standard
	Ba	135	4478.0	0.8	**2.4832**	0.009	0.3	ug/L	28	Standard
	Ce	140	17977.3	3.2				ug/L	33	Standard
>	**Tb**	159	746978.8	0.4				ug/L	800803	Standard
	Ho	165	251.7	13.5				ug/L	10	Standard
	Tl	203	17.3	17.6	**0.0357**	0.000	1.2	ug/L	13	Standard
	Tl	205	23.3	61.9	**0.0462**	0.002	5.0	ug/L	13	Standard
	Pb	206	1045.0	1.4	**0.2194**	0.003	1.4	ug/L	226	Standard
	Pb	207	882.0	2.6	**0.2066**	0.005	2.6	ug/L	204	Standard
	Pb	208	3909.9	0.4	**0.2303**	0.000	0.1	ug/L	852	Standard
	U	238	73.3	9.1	**0.0543**	0.001	2.0	ug/L	13	Standard
>	**Bi**	209	427989.3	0.3				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	30.2	**0.0188**	0.018	96.0	mg/L	58	Standard
K	39	33.3	70.9	**-0.0063**	0.098	1546.5	mg/L	27	Standard
Ca	43	15.0	66.7	**-0.1831**	0.717	391.6	mg/L	20	Standard
Fe	54	209.2	17.9	**0.0570**	0.033	57.1	mg/L	158	Standard
Fe	57	285.0	7.6	**0.2853**	0.087	30.4	mg/L	267	Standard
Sc-1	45	38381.9	1.8				mg/L	38815	Standard
Cl	35	64770.8	1.6				ug/L	57611	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	1600.1	5.6				ug/L	1617	Standard
P	31	6721.5	5.0				ug/L	19244	Standard
S	34	3827.2	4.3				ug/L	3557	Standard
Sr	88	76.7	13.6				ug/L	65	Standard
C	12	23.3	24.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	23	Standard
Dy	164	426.8	9.3				mg/L	13	Standard
Ho-1	165	251.7	13.5				mg/L	10	Standard
Er	166	276.7	32.6				mg/L	13	Standard
I	127	6603.1	2.1				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		73.481	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.637	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129712
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.360
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.311
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129712
Report Date/Time: Wednesday, July 06, 2016 18:10:35
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Method 6020 - Summary Report

Sample ID: L1606129713
Sample Date/Time: Wednesday, July 06, 2016 18:11:30
Number of Replicates: 3
Autosampler Position: 243
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49761.6	2.9				ug/L	68501	Standard
	Be	9	16.7	17.3	**0.0447**	0.004	8.0	ug/L	8	Standard
	Al	27	115065.3	0.5	**1.1513**	0.034	2.9	ug/L	1397	Standard
	Sc	45	37810.5	0.3				ug/L	38815	Standard
	Ti	47	105.3	4.9	**0.2866**	0.015	5.4	ug/L	36	Standard
	V	51	3530.3	1.5	**0.3586**	0.009	2.5	ug/L	1284	Standard
	Cr	52	7133.3	2.4	**0.1049**	0.027	25.4	ug/L	6503	Standard
	Cr	53	420.0	21.7	**0.0724**	0.107	148.4	ug/L	492	Standard
	Mn	55	50677.6	0.5	**8.2081**	0.064	0.8	ug/L	841	Standard
	Co	59	768.4	0.7	**0.1331**	0.001	0.7	ug/L	229	Standard
	Ni	60	628.0	4.0	**0.2175**	0.015	6.7	ug/L	344	Standard
	Cu	65	765.7	2.5	**0.4451**	0.010	2.2	ug/L	115	Standard
	Zn	66	3143.0	1.5	**3.0116**	0.058	1.9	ug/L	190	Standard
>	**Ge**	72	409013.8	0.4				ug/L	409858	Standard
	As	75	56.6	69.8	**0.1536**	0.038	24.9	ug/L	-22	Standard
	Se	82	14.1	32.3	**0.0827**	0.043	52.2	ug/L	18	Standard
	Se-1	77	48.7	8.3	**-0.0506**	0.061	121.0	ug/L	50	Standard
>	**Ga**	71	178.3	9.0				mg/L	97	Standard
	Rb	85	1400.1	8.4				ug/L	25	Standard
	Y	89	346257.1	1.1				ug/L	376763	Standard
>	**Rh**	103	21.7	13.3				ug/L	20	Standard
	Mo	98	39.5	18.5	**0.0886**	0.003	3.5	ug/L	51	Standard
	Ag	107	102.3	20.3	**0.0402**	0.004	8.7	ug/L	76	Standard
	Cd	111	61.3	15.2	**0.0716**	0.005	7.0	mg/L	6	Standard
	Cd	114	112.7	18.4	**0.0616**	0.004	7.2	ug/L	18	Standard
>	**In**	115	485884.7	0.3				ug/L	507261	Standard
	Sn	118	211.7	20.1	**-0.0697**	0.008	11.5	ug/L	683	Standard
	Sb	123	494.9	23.2	**0.1000**	0.028	27.5	ug/L	446	Standard
	Ba	135	5100.2	1.4	**2.8135**	0.039	1.4	ug/L	28	Standard
	Ce	140	13969.8	3.7				ug/L	33	Standard
>	**Tb**	159	740578.5	1.6				ug/L	800803	Standard
	Ho	165	228.3	7.0				ug/L	10	Standard
	Tl	203	33.3	49.9	**0.0379**	0.002	6.1	ug/L	13	Standard
	Tl	205	23.3	81.1	**0.0462**	0.003	6.5	ug/L	13	Standard
	Pb	206	4522.7	3.0	**0.9547**	0.035	3.7	ug/L	226	Standard
	Pb	207	3741.1	1.9	**0.8721**	0.023	2.7	ug/L	204	Standard
	Pb	208	16474.8	2.1	**0.9616**	0.028	2.9	ug/L	852	Standard
	U	238	62.0	21.8	**0.0524**	0.002	4.1	ug/L	13	Standard
>	**Bi**	209	431770.2	0.8				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	55.0	9.1	**0.0381**	0.007	18.2	mg/L	58	Standard
K	39	51.7	14.8	**0.0696**	0.031	44.3	mg/L	27	Standard
Ca	43	35.0	14.3	**1.3352**	0.372	27.8	mg/L	20	Standard
Fe	54	132.7	26.7	**-0.0061**	0.031	500.8	mg/L	158	Standard
Fe	57	271.7	4.6	**0.2533**	0.046	18.1	mg/L	267	Standard
> **Sc-1**	45	37810.5	0.3				mg/L	38815	Standard
Cl	35	65102.2	0.6				ug/L	57611	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1543.4	1.0				ug/L	1617	Standard
P	31	6598.1	0.9				ug/L	19244	Standard
S	34	3738.8	4.5				ug/L	3557	Standard
Sr	88	60.0	28.9				ug/L	65	Standard
C	12	40.0	43.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	23	Standard
Dy	164	348.0	17.2				mg/L	13	Standard
Ho-1	165	228.3	7.0				mg/L	10	Standard
Er	166	180.0	41.9				mg/L	13	Standard
I	127	6603.1	2.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		72.643	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.794	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.786
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.153
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129714
Sample Date/Time: Wednesday, July 06, 2016 18:14:41
Number of Replicates: 3
Autosampler Position: 244
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50039.2	2.4				ug/L	68501	Standard
	Be	9	13.3	94.4	**0.0397**	0.019	48.8	ug/L	8	Standard
	Al	27	298991.3	0.5	**2.9188**	0.070	2.4	ug/L	1397	Standard
	Sc	45	38122.9	0.7				ug/L	38815	Standard
	Ti	47	166.7	6.2	**0.4716**	0.032	6.7	ug/L	36	Standard
	V	51	3977.0	4.8	**0.4242**	0.024	5.7	ug/L	1284	Standard
	Cr	52	7631.6	1.3	**0.1818**	0.022	12.3	ug/L	6503	Standard
	Cr	53	421.7	6.1	**0.0761**	0.031	40.8	ug/L	492	Standard
	Mn	55	62384.2	1.3	**10.1648**	0.070	0.7	ug/L	841	Standard
	Co	59	1085.4	5.6	**0.1864**	0.009	4.9	ug/L	229	Standard
	Ni	60	966.4	3.8	**0.4220**	0.026	6.2	ug/L	344	Standard
	Cu	65	440.0	5.6	**0.2511**	0.013	5.2	ug/L	115	Standard
	Zn	66	2042.1	4.2	**1.9247**	0.087	4.5	ug/L	190	Standard
>	**Ge**	72	407467.1	0.7				ug/L	409858	Standard
	As	75	39.9	63.0	**0.1377**	0.025	17.9	ug/L	-22	Standard
	Se	82	20.6	24.9	**0.1454**	0.050	34.3	ug/L	18	Standard
	Se-1	77	51.0	9.8	**-0.0143**	0.068	476.2	ug/L	50	Standard
>	**Ga**	71	275.0	4.8				mg/L	97	Standard
	Rb	85	2116.8	7.7				ug/L	25	Standard
	Y	89	347005.1	2.4				ug/L	376763	Standard
>	**Rh**	103	13.3	21.7				ug/L	20	Standard
	Mo	98	39.7	31.0	**0.0889**	0.005	5.9	ug/L	51	Standard
	Ag	107	79.3	14.1	**0.0365**	0.002	5.0	ug/L	76	Standard
	Cd	111	3.3	35.1	**0.0411**	0.001	1.5	mg/L	6	Standard
	Cd	114	13.4	19.7	**0.0403**	0.001	1.4	ug/L	18	Standard
>	**In**	115	481126.5	1.0				ug/L	507261	Standard
	Sn	118	183.3	26.9	**-0.0748**	0.009	12.4	ug/L	683	Standard
	Sb	123	489.1	28.0	**0.0996**	0.033	32.8	ug/L	446	Standard
	Ba	135	3839.5	1.3	**2.1428**	0.020	0.9	ug/L	28	Standard
	Ce	140	17111.3	4.6				ug/L	33	Standard
>	**Tb**	159	731912.0	0.9				ug/L	800803	Standard
	Ho	165	248.3	22.6				ug/L	10	Standard
	Tl	203	18.0	20.0	**0.0358**	0.000	1.3	ug/L	13	Standard
	Tl	205	36.7	92.8	**0.0483**	0.005	10.9	ug/L	13	Standard
	Pb	206	988.0	8.2	**0.2061**	0.015	7.2	ug/L	226	Standard
	Pb	207	789.4	4.2	**0.1839**	0.006	3.4	ug/L	204	Standard
	Pb	208	3493.2	5.0	**0.2047**	0.008	3.9	ug/L	852	Standard
	U	238	71.0	33.8	**0.0538**	0.004	6.8	ug/L	13	Standard
>	**Bi**	209	429968.6	1.1				ug/L	449044	Standard

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Na	23	1.7	173.2	**0.3994**	15.904	3981.5	mg/L	2	Standard
Mg	24	36.7	56.8	**0.0121**	0.028	234.3	mg/L	58	Standard
K	39	36.7	7.9	**0.0069**	0.011	154.1	mg/L	27	Standard
Ca	43	26.7	47.2	**0.6938**	0.919	132.4	mg/L	20	Standard
Fe	54	318.9	15.1	**0.1514**	0.039	25.9	mg/L	158	Standard
Fe	57	351.7	13.5	**0.5176**	0.156	30.2	mg/L	267	Standard
> **Sc-1**	45	38122.9	0.7				mg/L	38815	Standard
Cl	35	64778.2	1.0				ug/L	57611	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	1553.4	14.8				ug/L	1617	Standard
P	31	6536.4	3.0				ug/L	19244	Standard
S	34	3808.8	6.3				ug/L	3557	Standard
Sr	88	81.7	40.8				ug/L	65	Standard
C	12	40.0	90.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	398.3	4.1				mg/L	13	Standard
Ho-1	165	248.3	22.6				mg/L	10	Standard
Er	166	313.3	13.3				mg/L	13	Standard
I	127	6079.6	3.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		73.049	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.417	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.848
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.752
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 18:17:55
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54024.5	1.3				ug/L	68501	Standard
	Be	9	40169.9	2.9	**56.1283**	0.922	1.6	ug/L	8	Standard
	Al	27	6551308.5	0.6	**58.5425**	0.397	0.7	ug/L	1397	Standard
	Sc	45	42979.2	3.3				ug/L	38815	Standard
	Ti	47	38471.8	2.2	**105.7272**	1.558	1.5	ug/L	36	Standard
	V	51	387365.7	0.3	**50.6573**	0.316	0.6	ug/L	1284	Standard
	Cr	52	393336.6	1.6	**51.8098**	0.574	1.1	ug/L	6503	Standard
	Cr	53	48883.7	0.9	**52.1960**	0.426	0.8	ug/L	492	Standard
	Mn	55	351248.3	1.5	**52.9139**	0.978	1.8	ug/L	841	Standard
	Co	59	330751.7	0.9	**50.5900**	0.617	1.2	ug/L	229	Standard
	Ni	60	94988.8	0.8	**52.1212**	0.782	1.5	ug/L	344	Standard
	Cu	65	94496.8	0.9	**52.0968**	0.601	1.2	ug/L	115	Standard
	Zn	66	56465.0	1.0	**51.5913**	0.693	1.3	ug/L	190	Standard
>	**Ge**	72	444111.1	0.9				ug/L	409858	Standard
	As	75	56881.0	0.2	**50.7406**	0.409	0.8	ug/L	-22	Standard
	Se	82	5659.7	1.3	**49.3953**	1.039	2.1	ug/L	18	Standard
	Se-1	77	3934.8	1.9	**51.9754**	0.965	1.9	ug/L	50	Standard
>	**Ga**	71	63.3	12.1				mg/L	97	Standard
	Rb	85	791.7	16.0				ug/L	25	Standard
	Y	89	378356.6	1.6				ug/L	376763	Standard
>	**Rh**	103	31.7	9.1				ug/L	20	Standard
	Mo	98	250588.8	1.2	**101.8789**	1.315	1.3	ug/L	51	Standard
	Ag	107	320660.5	1.6	**50.3603**	1.102	2.2	ug/L	76	Standard
	Cd	111	103525.7	0.4	**51.1518**	0.364	0.7	mg/L	6	Standard
	Cd	114	252584.7	0.9	**51.0493**	0.583	1.1	ug/L	18	Standard
>	**In**	115	517728.7	0.8				ug/L	507261	Standard
	Sn	118	283510.6	2.4	**50.6309**	0.871	1.7	ug/L	683	Standard
	Sb	123	222186.6	0.8	**50.7357**	0.494	1.0	ug/L	446	Standard
	Ba	135	97423.9	1.0	**50.1717**	0.147	0.3	ug/L	28	Standard
	Ce	140	245.0	5.4				ug/L	33	Standard
>	**Tb**	159	787196.4	1.1				ug/L	800803	Standard
	Ho	165	13.3	57.3				ug/L	10	Standard
	Tl	203	390883.9	0.5	**51.3380**	0.249	0.5	ug/L	13	Standard
	Tl	205	344356.0	0.7	**52.2281**	0.549	1.1	ug/L	13	Standard
	Pb	206	242793.9	0.2	**49.6623**	0.143	0.3	ug/L	226	Standard
	Pb	207	219389.0	1.0	**49.4158**	0.332	0.7	ug/L	204	Standard
	Pb	208	936979.2	0.8	**52.7777**	0.597	1.1	ug/L	852	Standard
	U	238	329537.5	0.4	**50.1290**	0.317	0.6	ug/L	13	Standard
>	**Bi**	209	447337.3	0.3				ug/L	449044	Standard

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Na	23	1.7	173.2	**-0.2714**	14.742	5432.3	mg/L	2	Standard
Mg	24	3770.5	0.9	**4.5762**	0.194	4.2	mg/L	58	Standard
K	39	1251.7	8.8	**4.3649**	0.370	8.5	mg/L	27	Standard
Ca	43	105.0	26.5	**5.6632**	2.047	36.2	mg/L	20	Standard
Fe	54	6656.7	3.8	**4.9191**	0.344	7.0	mg/L	158	Standard
Fe	57	1763.4	5.5	**4.6571**	0.458	9.8	mg/L	267	Standard
> **Sc-1**	45	42979.2	3.3				mg/L	38815	Standard
Cl	35	73216.5	0.1				ug/L	57611	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	1880.1	6.8				ug/L	1617	Standard
P	31	22333.1	1.9				ug/L	19244	Standard
S	34	4467.3	1.5				ug/L	3557	Standard
Sr	88	61.7	20.4				ug/L	65	Standard
C	12	36.7	56.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	86.6				mg/L	23	Standard
Dy	164	9.4	3.0				mg/L	13	Standard
Ho-1	165	13.3	57.3				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	9071.0	1.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	112.257		
Al	27	117.085		
Sc	45			
Ti	47	105.727		
V	51	101.315		
Cr	52	103.620		
Cr	53			
Mn	55	105.828		
Co	59	101.180		
Ni	60	104.242		
Cu	65	104.194		
Zn	66	103.183		
> Ge	72		108.357	
As	75	101.481		
Se	82	98.791		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.879		
Ag	107	100.721		
Cd	111	102.304		
Cd	114			
In	115		102.064	
Sn	118	101.262		
Sb	123	101.471		
Ba	135	100.343		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.676		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.555		
U	238	100.258		
Bi	209		99.620	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 18:21:06
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53853.9	2.1				ug/L	68501	Standard
	Be	9	15.0	33.3	**0.0404**	0.007	16.8	ug/L	8	Standard
	Al	27	1768.4	11.1	**0.0509**	0.002	3.4	ug/L	1397	Standard
	Sc	45	40911.9	2.8				ug/L	38815	Standard
	Ti	47	37.3	10.1	**0.0755**	0.011	15.1	ug/L	36	Standard
	V	51	1313.5	5.0	**0.0293**	0.011	37.3	ug/L	1284	Standard
	Cr	52	7003.6	1.7	**0.0114**	0.018	158.3	ug/L	6503	Standard
	Cr	53	368.3	10.2	**-0.0194**	0.043	223.1	ug/L	492	Standard
	Mn	55	702.7	6.6	**0.0108**	0.006	59.0	ug/L	841	Standard
	Co	59	223.7	10.0	**0.0399**	0.004	9.9	ug/L	229	Standard
	Ni	60	302.0	2.3	**0.0095**	0.002	20.4	ug/L	344	Standard
	Cu	65	109.0	1.8	**0.0472**	0.001	3.1	ug/L	115	Standard
	Zn	66	139.3	9.0	**0.0149**	0.010	66.2	ug/L	190	Standard
>	**Ge**	72	441370.6	1.5				ug/L	409858	Standard
	As	75	-46.1	48.3	**0.0575**	0.020	35.0	ug/L	-22	Standard
	Se	82	9.6	47.9	**0.0324**	0.039	121.7	ug/L	18	Standard
	Se-1	77	57.0	0.0	**0.0098**	0.011	116.4	ug/L	50	Standard
>	**Ga**	71	38.3	27.2				mg/L	97	Standard
	Rb	85	30.0	28.9				ug/L	25	Standard
	Y	89	377601.0	1.0				ug/L	376763	Standard
>	**Rh**	103	20.0	25.0				ug/L	20	Standard
	Mo	98	144.9	13.3	**0.1298**	0.007	5.7	ug/L	51	Standard
	Ag	107	94.0	11.1	**0.0377**	0.002	4.1	ug/L	76	Standard
	Cd	111	11.7	44.9	**0.0451**	0.003	5.7	mg/L	6	Standard
	Cd	114	44.2	78.5	**0.0462**	0.007	15.0	ug/L	18	Standard
>	**In**	115	523143.8	0.8				ug/L	507261	Standard
	Sn	118	836.7	10.2	**0.0382**	0.016	41.2	ug/L	683	Standard
	Sb	123	689.1	33.4	**0.1356**	0.053	39.0	ug/L	446	Standard
	Ba	135	32.0	12.5	**0.0321**	0.002	6.4	ug/L	28	Standard
	Ce	140	78.3	25.8				ug/L	33	Standard
>	**Tb**	159	783160.6	1.3				ug/L	800803	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	56.7	8.9	**0.0407**	0.001	1.5	ug/L	13	Standard
	Tl	205	43.3	33.3	**0.0491**	0.002	4.4	ug/L	13	Standard
	Pb	206	250.3	3.1	**0.0469**	0.002	3.3	ug/L	226	Standard
	Pb	207	202.3	12.0	**0.0442**	0.005	11.8	ug/L	204	Standard
	Pb	208	864.7	5.7	**0.0485**	0.003	5.2	ug/L	852	Standard
	U	238	41.7	42.1	**0.0489**	0.003	5.4	ug/L	13	Standard
>	**Bi**	209	449825.1	0.5				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	45.0	44.4	**0.0195**	0.025	130.1	mg/L	58	Standard
K	39	28.3	20.4	**-0.0342**	0.025	73.9	mg/L	27	Standard
Ca	43	18.3	68.6	**0.0010**	0.903	88278.4	mg/L	20	Standard
Fe	54	179.1	16.9	**0.0223**	0.027	118.7	mg/L	158	Standard
Fe	57	268.3	2.2	**0.1727**	0.043	24.9	mg/L	267	Standard
> **Sc-1**	45	40911.9	2.8				mg/L	38815	Standard
Cl	35	71267.2	1.2				ug/L	57611	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1836.8	5.5				ug/L	1617	Standard
P	31	21515.3	2.4				ug/L	19244	Standard
S	34	4337.3	1.0				ug/L	3557	Standard
Sr	88	85.0	17.6				ug/L	65	Standard
C	12	46.7	61.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	23	Standard
Dy	164	19.4	88.0				mg/L	13	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	7335.1	3.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.689	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.131
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.174
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Tl	203	

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Method 6020 - Summary Report

Sample ID: L1606129715
Sample Date/Time: Wednesday, July 06, 2016 18:24:19
Number of Replicates: 3
Autosampler Position: 245
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51096.1	3.4				ug/L	68501	Standard
	Be	9	26.7	39.0	**0.0592**	0.016	27.6	ug/L	8	Standard
	Al	27	148208.1	1.5	**1.4356**	0.057	3.9	ug/L	1397	Standard
	Sc	45	37817.2	2.3				ug/L	38815	Standard
	Ti	47	67.3	15.5	**0.1741**	0.030	17.0	ug/L	36	Standard
	V	51	2738.4	3.5	**0.2479**	0.012	4.9	ug/L	1284	Standard
	Cr	52	5883.1	4.0	**-0.0725**	0.032	44.2	ug/L	6503	Standard
	Cr	53	275.0	16.2	**-0.0957**	0.050	51.8	ug/L	492	Standard
	Mn	55	31313.0	0.6	**5.0634**	0.058	1.2	ug/L	841	Standard
	Co	59	696.0	7.5	**0.1217**	0.009	7.3	ug/L	229	Standard
	Ni	60	595.3	3.5	**0.2000**	0.014	7.1	ug/L	344	Standard
	Cu	65	462.0	6.3	**0.2649**	0.019	7.3	ug/L	115	Standard
	Zn	66	1771.8	2.4	**1.6578**	0.039	2.4	ug/L	190	Standard
>	**Ge**	72	406781.1	0.8				ug/L	409858	Standard
	As	75	-2.5	307.1	**0.0964**	0.008	7.9	ug/L	-22	Standard
	Se	82	14.4	23.6	**0.0856**	0.032	37.8	ug/L	18	Standard
	Se-1	77	49.7	10.1	**-0.0320**	0.077	241.4	ug/L	50	Standard
>	**Ga**	71	133.3	15.2				mg/L	97	Standard
	Rb	85	1070.0	12.2				ug/L	25	Standard
	Y	89	342977.7	1.9				ug/L	376763	Standard
>	**Rh**	103	10.0	86.6				ug/L	20	Standard
	Mo	98	69.0	6.1	**0.1021**	0.002	1.8	ug/L	51	Standard
	Ag	107	75.0	15.1	**0.0359**	0.002	5.1	ug/L	76	Standard
	Cd	111	10.5	22.1	**0.0450**	0.001	2.9	mg/L	6	Standard
	Cd	114	30.6	59.6	**0.0441**	0.004	9.2	ug/L	18	Standard
>	**In**	115	475398.0	0.9				ug/L	507261	Standard
	Sn	118	288.3	20.8	**-0.0540**	0.011	20.7	ug/L	683	Standard
	Sb	123	904.8	33.4	**0.2044**	0.074	36.3	ug/L	446	Standard
	Ba	135	3854.2	0.5	**2.1767**	0.015	0.7	ug/L	28	Standard
	Ce	140	14745.5	3.6				ug/L	33	Standard
>	**Tb**	159	732486.7	1.4				ug/L	800803	Standard
	Ho	165	231.7	6.6				ug/L	10	Standard
	Tl	203	26.3	32.7	**0.0370**	0.001	3.2	ug/L	13	Standard
	Tl	205	26.7	75.8	**0.0468**	0.003	6.8	ug/L	13	Standard
	Pb	206	1241.1	6.3	**0.2624**	0.017	6.3	ug/L	226	Standard
	Pb	207	1051.0	1.6	**0.2474**	0.003	1.0	ug/L	204	Standard
	Pb	208	4456.3	3.3	**0.2635**	0.008	2.9	ug/L	852	Standard
	U	238	51.3	13.8	**0.0508**	0.001	2.1	ug/L	13	Standard
>	**Bi**	209	426274.4	0.6				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	38.3	37.7	**0.0152**	0.021	140.9	mg/L	58	Standard
K	39	41.7	42.1	**0.0281**	0.069	245.2	mg/L	27	Standard
Ca	43	38.3	27.2	**1.5938**	0.839	52.6	mg/L	20	Standard
Fe	54	157.6	18.0	**0.0155**	0.027	174.3	mg/L	158	Standard
Fe	57	308.3	20.9	**0.3760**	0.197	52.3	mg/L	267	Standard
> **Sc-1**	45	37817.2	2.3				mg/L	38815	Standard
Cl	35	64603.4	0.9				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1573.4	6.8				ug/L	1617	Standard
P	31	6883.2	4.2				ug/L	19244	Standard
S	34	4027.2	3.2				ug/L	3557	Standard
Sr	88	95.0	13.9				ug/L	65	Standard
C	12	16.7	69.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	23	Standard
Dy	164	343.9	15.8				mg/L	13	Standard
Ho-1	165	231.7	6.6				mg/L	10	Standard
Er	166	266.7	12.1				mg/L	13	Standard
I	127	5834.5	3.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		74.592	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.249	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.719
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.929
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129716
Sample Date/Time: Wednesday, July 06, 2016 18:27:31
Number of Replicates: 3
Autosampler Position: 246
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49923.8	3.3				ug/L	68501	Standard
	Be	9	18.3	56.8	**0.0475**	0.017	35.4	ug/L	8	Standard
	Al	27	230733.6	0.6	**2.2666**	0.081	3.6	ug/L	1397	Standard
	Sc	45	37661.8	1.0				ug/L	38815	Standard
	Ti	47	113.7	12.5	**0.3124**	0.041	13.3	ug/L	36	Standard
	V	51	2650.5	1.4	**0.2344**	0.006	2.6	ug/L	1284	Standard
	Cr	52	6503.1	1.7	**0.0160**	0.013	79.2	ug/L	6503	Standard
	Cr	53	336.7	7.6	**-0.0240**	0.029	120.3	ug/L	492	Standard
	Mn	55	28933.6	2.8	**4.6595**	0.134	2.9	ug/L	841	Standard
	Co	59	727.0	2.8	**0.1266**	0.004	3.0	ug/L	229	Standard
	Ni	60	734.0	4.0	**0.2822**	0.019	6.7	ug/L	344	Standard
	Cu	65	281.7	2.1	**0.1559**	0.003	2.0	ug/L	115	Standard
	Zn	66	1718.8	0.7	**1.6006**	0.010	0.6	ug/L	190	Standard
>	**Ge**	72	407782.6	0.3				ug/L	409858	Standard
	As	75	29.7	102.1	**0.1278**	0.030	23.1	ug/L	-22	Standard
	Se	82	15.2	18.7	**0.0932**	0.027	29.3	ug/L	18	Standard
	Se-1	77	49.3	15.5	**-0.0391**	0.109	279.2	ug/L	50	Standard
>	**Ga**	71	208.3	25.2				mg/L	97	Standard
	Rb	85	1360.1	2.6				ug/L	25	Standard
	Y	89	349773.2	1.1				ug/L	376763	Standard
>	**Rh**	103	13.3	21.7				ug/L	20	Standard
	Mo	98	77.6	13.8	**0.1054**	0.005	4.4	ug/L	51	Standard
	Ag	107	74.3	11.2	**0.0356**	0.001	3.8	ug/L	76	Standard
	Cd	111	4.9	41.3	**0.0419**	0.001	2.5	mg/L	6	Standard
	Cd	114	14.6	85.5	**0.0405**	0.003	6.7	ug/L	18	Standard
>	**In**	115	482015.0	1.1				ug/L	507261	Standard
	Sn	118	201.7	20.8	**-0.0713**	0.008	11.8	ug/L	683	Standard
	Sb	123	673.6	33.4	**0.1453**	0.057	39.1	ug/L	446	Standard
	Ba	135	2231.8	3.5	**1.2502**	0.051	4.1	ug/L	28	Standard
	Ce	140	11809.6	4.9				ug/L	33	Standard
>	**Tb**	159	735033.6	0.2				ug/L	800803	Standard
	Ho	165	191.7	30.5				ug/L	10	Standard
	Tl	203	24.3	43.6	**0.0367**	0.001	4.0	ug/L	13	Standard
	Tl	205	21.7	35.3	**0.0460**	0.001	2.7	ug/L	13	Standard
	Pb	206	652.0	1.7	**0.1367**	0.003	2.2	ug/L	226	Standard
	Pb	207	554.0	8.6	**0.1306**	0.011	8.3	ug/L	204	Standard
	Pb	208	2402.7	3.9	**0.1429**	0.006	4.1	ug/L	852	Standard
	U	238	57.7	18.7	**0.0519**	0.002	3.4	ug/L	13	Standard
>	**Bi**	209	424036.1	0.4				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	46.7	22.3	**0.0268**	0.015	55.3	mg/L	58	Standard
K	39	35.0	37.8	**0.0023**	0.056	2456.1	mg/L	27	Standard
Ca	43	26.7	57.3	**0.7245**	1.158	159.8	mg/L	20	Standard
Fe	54	184.2	20.5	**0.0385**	0.032	82.0	mg/L	158	Standard
Fe	57	346.7	0.8	**0.5155**	0.007	1.4	mg/L	267	Standard
> **Sc-1**	45	37661.8	1.0				mg/L	38815	Standard
Cl	35	64539.9	1.7				ug/L	57611	Standard
Kr	83	2.3	99.0				ug/L	2	Standard
Br	81	1656.8	7.8				ug/L	1617	Standard
P	31	6881.6	2.3				ug/L	19244	Standard
S	34	4020.5	2.0				ug/L	3557	Standard
Sr	88	70.0	18.9				ug/L	65	Standard
C	12	23.3	24.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	23	Standard
Dy	164	317.2	20.1				mg/L	13	Standard
Ho-1	165	191.7	30.5				mg/L	10	Standard
Er	166	196.7	29.8				mg/L	13	Standard
I	127	5742.8	1.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		72.880	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.494	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.023
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.431
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129716
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Method 6020 - Summary Report

Sample ID: L1606129717
Sample Date/Time: Wednesday, July 06, 2016 18:30:42
Number of Replicates: 3
Autosampler Position: 247
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49927.2	4.0				ug/L	68501	Standard
	Be	9	6.7	86.6	**0.0295**	0.009	29.5	ug/L	8	Standard
	Al	27	176079.0	1.1	**1.7381**	0.061	3.5	ug/L	1397	Standard
	Sc	45	37752.0	1.9				ug/L	38815	Standard
	Ti	47	66.7	17.6	**0.1708**	0.035	20.7	ug/L	36	Standard
	V	51	2034.0	1.8	**0.1449**	0.004	2.4	ug/L	1284	Standard
	Cr	52	5892.5	3.0	**-0.0777**	0.022	28.4	ug/L	6503	Standard
	Cr	53	233.3	5.4	**-0.1465**	0.014	9.9	ug/L	492	Standard
	Mn	55	27870.3	0.4	**4.4613**	0.044	1.0	ug/L	841	Standard
	Co	59	460.7	4.3	**0.0818**	0.004	4.5	ug/L	229	Standard
	Ni	60	475.3	4.0	**0.1257**	0.013	10.3	ug/L	344	Standard
	Cu	65	199.0	7.8	**0.1056**	0.009	8.7	ug/L	115	Standard
	Zn	66	1356.7	2.9	**1.2325**	0.031	2.5	ug/L	190	Standard
>	**Ge**	72	409883.6	0.6				ug/L	409858	Standard
	As	75	-13.7	138.1	**0.0856**	0.018	21.4	ug/L	-22	Standard
	Se	82	18.9	14.6	**0.1275**	0.025	19.9	ug/L	18	Standard
	Se-1	77	45.7	12.6	**-0.0955**	0.087	91.6	ug/L	50	Standard
>	**Ga**	71	91.7	39.5				mg/L	97	Standard
	Rb	85	566.7	12.2				ug/L	25	Standard
	Y	89	345220.3	0.5				ug/L	376763	Standard
>	**Rh**	103	25.0	40.0				ug/L	20	Standard
	Mo	98	35.3	42.3	**0.0869**	0.007	7.5	ug/L	51	Standard
	Ag	107	78.7	26.0	**0.0364**	0.003	9.5	ug/L	76	Standard
	Cd	111	6.3	97.1	**0.0427**	0.003	7.6	mg/L	6	Standard
	Cd	114	16.3	120.1	**0.0409**	0.004	10.4	ug/L	18	Standard
>	**In**	115	482875.6	0.6				ug/L	507261	Standard
	Sn	118	201.7	24.1	**-0.0714**	0.009	13.1	ug/L	683	Standard
	Sb	123	493.0	35.1	**0.1003**	0.042	42.1	ug/L	446	Standard
	Ba	135	2040.1	1.5	**1.1419**	0.022	1.9	ug/L	28	Standard
	Ce	140	8042.1	7.0				ug/L	33	Standard
>	**Tb**	159	739223.8	0.5				ug/L	800803	Standard
	Ho	165	156.7	24.8				ug/L	10	Standard
	Tl	203	24.3	80.8	**0.0367**	0.003	7.4	ug/L	13	Standard
	Tl	205	16.7	124.9	**0.0452**	0.003	7.3	ug/L	13	Standard
	Pb	206	573.0	3.0	**0.1186**	0.004	3.5	ug/L	226	Standard
	Pb	207	492.3	5.0	**0.1149**	0.006	5.4	ug/L	204	Standard
	Pb	208	2010.1	6.7	**0.1185**	0.008	7.0	ug/L	852	Standard
	U	238	45.0	35.3	**0.0498**	0.003	5.1	ug/L	13	Standard
>	**Bi**	209	427779.3	0.6				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	52.0	**0.0221**	0.031	142.3	mg/L	58	Standard
K	39	25.0	52.9	**-0.0397**	0.053	132.2	mg/L	27	Standard
Ca	43	40.0	33.1	**1.7146**	0.988	57.6	mg/L	20	Standard
Fe	54	87.6	38.5	**-0.0445**	0.030	67.3	mg/L	158	Standard
Fe	57	243.3	8.3	**0.1569**	0.062	39.5	mg/L	267	Standard
> **Sc-1**	45	37752.0	1.9				mg/L	38815	Standard
Cl	35	64779.5	1.0				ug/L	57611	Standard
Kr	83	1.0	173.2				ug/L	2	Standard
Br	81	1533.4	1.5				ug/L	1617	Standard
P	31	7010.0	1.3				ug/L	19244	Standard
S	34	4125.6	2.1				ug/L	3557	Standard
Sr	88	75.0	41.6				ug/L	65	Standard
C	12	30.0	57.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	23	Standard
Dy	164	253.9	13.7				mg/L	13	Standard
Ho-1	165	156.7	24.8				mg/L	10	Standard
Er	166	126.7	27.7				mg/L	13	Standard
I	127	5844.5	1.1				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		72.885	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.006	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.193
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.264
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129718
Sample Date/Time: Wednesday, July 06, 2016 18:33:53
Number of Replicates: 3
Autosampler Position: 248
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49219.9	3.6				ug/L	68501	Standard
	Be	9	21.7	48.0	**0.0524**	0.015	29.0	ug/L	8	Standard
	Al	27	198461.6	1.9	**1.9826**	0.097	4.9	ug/L	1397	Standard
	Sc	45	37516.4	1.7				ug/L	38815	Standard
	Ti	47	71.3	2.1	**0.1863**	0.005	2.7	ug/L	36	Standard
	V	51	2505.0	3.4	**0.2146**	0.013	6.0	ug/L	1284	Standard
	Cr	52	6002.2	1.2	**-0.0548**	0.018	32.5	ug/L	6503	Standard
	Cr	53	295.0	2.9	**-0.0719**	0.012	17.2	ug/L	492	Standard
	Mn	55	48746.3	0.9	**7.9365**	0.123	1.6	ug/L	841	Standard
	Co	59	629.0	5.7	**0.1105**	0.005	4.7	ug/L	229	Standard
	Ni	60	634.3	3.6	**0.2235**	0.015	6.7	ug/L	344	Standard
	Cu	65	303.3	2.5	**0.1694**	0.006	3.6	ug/L	115	Standard
	Zn	66	1702.4	1.3	**1.5886**	0.017	1.1	ug/L	190	Standard
>	**Ge**	72	406757.2	0.8				ug/L	409858	Standard
	As	75	26.9	60.5	**0.1251**	0.016	12.8	ug/L	-22	Standard
	Se	82	15.2	34.0	**0.0937**	0.050	53.0	ug/L	18	Standard
	Se-1	77	48.0	21.8	**-0.0562**	0.155	275.7	ug/L	50	Standard
>	**Ga**	71	121.7	29.7				mg/L	97	Standard
	Rb	85	888.4	3.7				ug/L	25	Standard
	Y	89	349047.3	1.9				ug/L	376763	Standard
>	**Rh**	103	21.7	26.6				ug/L	20	Standard
	Mo	98	40.6	35.4	**0.0894**	0.006	7.0	ug/L	51	Standard
	Ag	107	68.3	1.7	**0.0347**	0.000	0.5	ug/L	76	Standard
	Cd	111	7.6	27.3	**0.0434**	0.001	2.6	mg/L	6	Standard
	Cd	114	11.2	115.1	**0.0398**	0.003	7.0	ug/L	18	Standard
>	**In**	115	477932.0	0.3				ug/L	507261	Standard
	Sn	118	205.0	16.0	**-0.0704**	0.006	9.0	ug/L	683	Standard
	Sb	123	472.3	24.8	**0.0965**	0.029	29.8	ug/L	446	Standard
	Ba	135	2835.6	3.8	**1.5971**	0.059	3.7	ug/L	28	Standard
	Ce	140	10725.5	3.5				ug/L	33	Standard
>	**Tb**	159	732266.0	0.3				ug/L	800803	Standard
	Ho	165	195.0	10.3				ug/L	10	Standard
	Tl	203	22.7	26.6	**0.0365**	0.001	2.3	ug/L	13	Standard
	Tl	205	18.3	31.5	**0.0455**	0.001	2.0	ug/L	13	Standard
	Pb	206	728.7	6.0	**0.1531**	0.010	6.5	ug/L	226	Standard
	Pb	207	589.7	3.5	**0.1389**	0.005	3.8	ug/L	204	Standard
	Pb	208	2571.8	4.1	**0.1528**	0.006	4.0	ug/L	852	Standard
	U	238	45.7	19.9	**0.0499**	0.001	3.0	ug/L	13	Standard
>	**Bi**	209	424407.0	0.4				ug/L	449044	Standard

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Na	23	1.7	173.2	**0.5085**	16.093	3164.5	mg/L	2	Standard
Mg	24	58.3	32.5	**0.0436**	0.028	64.4	mg/L	58	Standard
K	39	28.3	10.2	**-0.0249**	0.013	52.9	mg/L	27	Standard
Ca	43	46.7	16.4	**2.2408**	0.637	28.4	mg/L	20	Standard
Fe	54	164.4	5.2	**0.0222**	0.006	27.5	mg/L	158	Standard
Fe	57	271.7	12.0	**0.2595**	0.099	38.0	mg/L	267	Standard
> **Sc-1**	45	37516.4	1.7				mg/L	38815	Standard
Cl	35	64231.2	0.9				ug/L	57611	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	1653.4	10.1				ug/L	1617	Standard
P	31	6803.2	2.7				ug/L	19244	Standard
S	34	4030.5	4.2				ug/L	3557	Standard
Sr	88	73.3	20.8				ug/L	65	Standard
C	12	36.7	83.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	23	Standard
Dy	164	291.2	29.4				mg/L	13	Standard
Ho-1	165	195.0	10.3				mg/L	10	Standard
Er	166	183.3	13.7				mg/L	13	Standard
I	127	5851.1	1.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		71.853	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.243	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.218
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.513
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129719
Sample Date/Time: Wednesday, July 06, 2016 18:37:05
Number of Replicates: 3
Autosampler Position: 249
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49597.7	1.7				ug/L	68501	Standard
	Be	9	20.0	50.0	**0.0498**	0.015	29.6	ug/L	8	Standard
	Al	27	178365.5	1.1	**1.7702**	0.019	1.1	ug/L	1397	Standard
	Sc	45	38361.8	1.5				ug/L	38815	Standard
	Ti	47	106.3	3.9	**0.2933**	0.013	4.4	ug/L	36	Standard
	V	51	3584.6	1.2	**0.3723**	0.006	1.7	ug/L	1284	Standard
	Cr	52	8956.0	2.3	**0.3854**	0.023	6.0	ug/L	6503	Standard
	Cr	53	613.3	13.7	**0.3062**	0.095	31.0	ug/L	492	Standard
	Mn	55	52415.2	1.1	**8.5929**	0.076	0.9	ug/L	841	Standard
	Co	59	1118.7	2.1	**0.1934**	0.005	2.8	ug/L	229	Standard
	Ni	60	857.4	3.9	**0.3605**	0.017	4.8	ug/L	344	Standard
	Cu	65	1218.0	1.7	**0.7246**	0.017	2.4	ug/L	115	Standard
	Zn	66	2914.9	3.0	**2.8183**	0.075	2.7	ug/L	190	Standard
>	**Ge**	72	404299.3	0.7				ug/L	409858	Standard
	As	75	83.7	20.3	**0.1808**	0.017	9.4	ug/L	-22	Standard
	Se	82	20.3	22.4	**0.1438**	0.044	30.9	ug/L	18	Standard
	Se-1	77	47.7	20.2	**-0.0567**	0.146	256.9	ug/L	50	Standard
>	**Ga**	71	268.3	13.5				mg/L	97	Standard
	Rb	85	2543.5	5.6				ug/L	25	Standard
	Y	89	349884.6	1.8				ug/L	376763	Standard
>	**Rh**	103	15.0	57.7				ug/L	20	Standard
	Mo	98	40.2	17.9	**0.0892**	0.003	3.4	ug/L	51	Standard
	Ag	107	86.0	9.5	**0.0377**	0.001	3.4	ug/L	76	Standard
	Cd	111	242.6	4.4	**0.1687**	0.007	3.9	mg/L	6	Standard
	Cd	114	556.3	15.0	**0.1587**	0.018	11.6	ug/L	18	Standard
>	**In**	115	479494.0	0.9				ug/L	507261	Standard
	Sn	118	201.7	12.5	**-0.0711**	0.005	7.3	ug/L	683	Standard
	Sb	123	449.3	33.4	**0.0905**	0.037	41.0	ug/L	446	Standard
	Ba	135	7131.3	1.5	**3.9802**	0.073	1.8	ug/L	28	Standard
	Ce	140	17274.8	3.3				ug/L	33	Standard
>	**Tb**	159	731573.9	0.5				ug/L	800803	Standard
	Ho	165	271.7	13.3				ug/L	10	Standard
	Tl	203	22.0	4.5	**0.0364**	0.000	0.4	ug/L	13	Standard
	Tl	205	21.7	26.6	**0.0460**	0.001	2.0	ug/L	13	Standard
	Pb	206	12640.9	1.7	**2.7274**	0.067	2.5	ug/L	226	Standard
	Pb	207	10629.1	0.7	**2.5278**	0.032	1.3	ug/L	204	Standard
	Pb	208	45996.3	0.4	**2.7365**	0.011	0.4	ug/L	852	Standard
	U	238	52.7	14.3	**0.0511**	0.001	2.2	ug/L	13	Standard
>	**Bi**	209	423536.2	0.7				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	30.0	16.7	**0.0028**	0.007	265.9	mg/L	58	Standard
K	39	33.3	60.6	**-0.0076**	0.080	1062.8	mg/L	27	Standard
Ca	43	35.0	24.7	**1.2944**	0.612	47.3	mg/L	20	Standard
Fe	54	275.8	22.7	**0.1135**	0.054	47.1	mg/L	158	Standard
Fe	57	321.7	11.9	**0.4080**	0.116	28.3	mg/L	267	Standard
Sc-1	45	38361.8	1.5				mg/L	38815	Standard
Cl	35	63609.3	1.6				ug/L	57611	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1613.4	3.4				ug/L	1617	Standard
P	31	6818.2	1.7				ug/L	19244	Standard
S	34	3835.5	3.1				ug/L	3557	Standard
Sr	88	88.3	18.2				ug/L	65	Standard
C	12	43.3	13.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	23	Standard
Dy	164	365.0	17.7				mg/L	13	Standard
Ho-1	165	271.7	13.3				mg/L	10	Standard
Er	166	243.3	16.6				mg/L	13	Standard
I	127	5821.1	6.6				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		72.404	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.644	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.526
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.320
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129720
Sample Date/Time: Wednesday, July 06, 2016 18:40:16
Number of Replicates: 3
Autosampler Position: 250
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49808.5	3.5				ug/L	68501	Standard
	Be	9	18.3	31.5	**0.0471**	0.008	16.3	ug/L	8	Standard
	Al	27	322343.2	1.3	**3.1588**	0.066	2.1	ug/L	1397	Standard
	Sc	45	38503.9	1.9				ug/L	38815	Standard
	Ti	47	85.7	8.8	**0.2272**	0.020	8.8	ug/L	36	Standard
	V	51	3356.6	1.5	**0.3328**	0.012	3.6	ug/L	1284	Standard
	Cr	52	6512.4	1.2	**0.0124**	0.010	83.1	ug/L	6503	Standard
	Cr	53	368.3	14.5	**0.0105**	0.058	554.5	ug/L	492	Standard
	Mn	55	54600.9	0.9	**8.8309**	0.108	1.2	ug/L	841	Standard
	Co	59	857.4	4.2	**0.1475**	0.006	4.2	ug/L	229	Standard
	Ni	60	713.4	0.7	**0.2676**	0.004	1.6	ug/L	344	Standard
	Cu	65	474.0	6.3	**0.2699**	0.018	6.8	ug/L	115	Standard
	Zn	66	1859.8	2.3	**1.7316**	0.052	3.0	ug/L	190	Standard
>	**Ge**	72	409950.0	1.0				ug/L	409858	Standard
	As	75	28.0	87.6	**0.1258**	0.023	18.6	ug/L	-22	Standard
	Se	82	16.9	34.9	**0.1084**	0.055	50.7	ug/L	18	Standard
	Se-1	77	47.3	10.8	**-0.0712**	0.082	115.0	ug/L	50	Standard
>	**Ga**	71	210.0	13.3				mg/L	97	Standard
	Rb	85	1438.4	5.3				ug/L	25	Standard
	Y	89	348052.6	1.2				ug/L	376763	Standard
>	**Rh**	103	11.7	24.7				ug/L	20	Standard
	Mo	98	34.6	40.8	**0.0867**	0.006	7.3	ug/L	51	Standard
	Ag	107	66.7	5.7	**0.0343**	0.001	2.1	ug/L	76	Standard
	Cd	111	11.6	17.9	**0.0455**	0.001	2.5	mg/L	6	Standard
	Cd	114	40.9	25.9	**0.0462**	0.002	5.2	ug/L	18	Standard
>	**In**	115	482584.0	1.5				ug/L	507261	Standard
	Sn	118	216.7	34.6	**-0.0684**	0.015	21.8	ug/L	683	Standard
	Sb	123	404.8	28.3	**0.0791**	0.029	37.1	ug/L	446	Standard
	Ba	135	8081.8	0.6	**4.4800**	0.057	1.3	ug/L	28	Standard
	Ce	140	15314.4	4.4				ug/L	33	Standard
>	**Tb**	159	724958.7	0.5				ug/L	800803	Standard
	Ho	165	230.0	12.1				ug/L	10	Standard
	Tl	203	18.3	34.6	**0.0359**	0.001	2.4	ug/L	13	Standard
	Tl	205	25.0	34.6	**0.0465**	0.001	2.9	ug/L	13	Standard
	Pb	206	948.7	3.6	**0.1994**	0.007	3.4	ug/L	226	Standard
	Pb	207	786.0	2.5	**0.1846**	0.005	2.6	ug/L	204	Standard
	Pb	208	3433.5	2.8	**0.2028**	0.005	2.5	ug/L	852	Standard
	U	238	79.0	5.1	**0.0552**	0.001	1.1	ug/L	13	Standard
>	**Bi**	209	426681.8	0.3				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	35.0	37.8	**0.0096**	0.019	193.4	mg/L	58	Standard
K	39	35.0	37.8	**-0.0016**	0.051	3125.7	mg/L	27	Standard
Ca	43	36.7	43.8	**1.3977**	1.125	80.5	mg/L	20	Standard
Fe	54	200.7	14.4	**0.0489**	0.022	45.4	mg/L	158	Standard
Fe	57	295.0	12.2	**0.3148**	0.117	37.0	mg/L	267	Standard
> **Sc-1**	45	38503.9	1.9				mg/L	38815	Standard
Cl	35	64110.0	0.9				ug/L	57611	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1486.7	6.9				ug/L	1617	Standard
P	31	6881.6	0.9				ug/L	19244	Standard
S	34	3978.9	4.5				ug/L	3557	Standard
Sr	88	86.7	27.3				ug/L	65	Standard
C	12	50.0	60.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	23	Standard
Dy	164	457.7	22.7				mg/L	13	Standard
Ho-1	165	230.0	12.1				mg/L	10	Standard
Er	166	256.7	25.9				mg/L	13	Standard
I	127	5424.3	2.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		72.712	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.022	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.135
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.020
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606145201
Sample Date/Time: Wednesday, July 06, 2016 18:43:28
Number of Replicates: 3
Autosampler Position: 251
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49942.2	2.4				ug/L	68501	Standard
	Be	9	13.3	21.7	**0.0396**	0.004	10.5	ug/L	8	Standard
	Al	27	301632.8	0.2	**2.9500**	0.071	2.4	ug/L	1397	Standard
	Sc	45	37337.6	0.6				ug/L	38815	Standard
	Ti	47	30.0	25.2	**0.0620**	0.022	36.3	ug/L	36	Standard
	V	51	1297.4	5.0	**0.0413**	0.011	25.7	ug/L	1284	Standard
	Cr	52	5952.5	2.6	**-0.0642**	0.028	43.2	ug/L	6503	Standard
	Cr	53	440.0	7.1	**0.0973**	0.038	38.6	ug/L	492	Standard
	Mn	55	44039.2	0.4	**7.1434**	0.022	0.3	ug/L	841	Standard
	Co	59	640.3	1.6	**0.1122**	0.002	1.7	ug/L	229	Standard
	Ni	60	375.0	10.2	**0.0671**	0.024	35.3	ug/L	344	Standard
	Cu	65	91.7	13.2	**0.0417**	0.007	16.5	ug/L	115	Standard
	Zn	66	1720.1	1.2	**1.6022**	0.016	1.0	ug/L	190	Standard
>	**Ge**	72	407710.2	0.7				ug/L	409858	Standard
	As	75	-3.9	410.5	**0.0951**	0.015	16.3	ug/L	-22	Standard
	Se	82	21.0	19.7	**0.1485**	0.041	27.6	ug/L	18	Standard
	Se-1	77	56.0	7.1	**0.0584**	0.054	92.0	ug/L	50	Standard
>	**Ga**	71	38.3	15.1				mg/L	97	Standard
	Rb	85	16589.1	3.8				ug/L	25	Standard
	Y	89	346930.8	1.5				ug/L	376763	Standard
>	**Rh**	103	26.7	75.8				ug/L	20	Standard
	Mo	98	27.0	22.1	**0.0835**	0.003	3.3	ug/L	51	Standard
	Ag	107	65.0	10.1	**0.0342**	0.001	3.1	ug/L	76	Standard
	Cd	111	5.9	60.9	**0.0426**	0.002	4.5	mg/L	6	Standard
	Cd	114	14.7	56.1	**0.0406**	0.002	4.5	ug/L	18	Standard
>	**In**	115	476390.2	0.6				ug/L	507261	Standard
	Sn	118	196.7	16.1	**-0.0718**	0.006	8.8	ug/L	683	Standard
	Sb	123	314.0	20.5	**0.0577**	0.016	28.4	ug/L	446	Standard
	Ba	135	9508.6	1.0	**5.3362**	0.084	1.6	ug/L	28	Standard
	Ce	140	66.7	30.3				ug/L	33	Standard
>	**Tb**	159	730152.5	1.3				ug/L	800803	Standard
	Ho	165	15.0	57.7				ug/L	10	Standard
	Tl	203	59.7	25.7	**0.0416**	0.002	5.1	ug/L	13	Standard
	Tl	205	63.3	40.5	**0.0527**	0.004	7.8	ug/L	13	Standard
	Pb	206	213.0	1.4	**0.0419**	0.001	1.5	ug/L	226	Standard
	Pb	207	186.7	5.2	**0.0433**	0.002	5.4	ug/L	204	Standard
	Pb	208	800.0	4.8	**0.0476**	0.002	4.7	ug/L	852	Standard
	U	238	11.0	32.8	**0.0444**	0.001	1.3	ug/L	13	Standard
>	**Bi**	209	424235.5	0.1				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	1208.4	11.8	**1.6626**	0.203	12.2	mg/L	58	Standard
K	39	188.3	4.1	**0.6388**	0.037	5.7	mg/L	27	Standard
Ca	43	23.3	32.7	**0.4852**	0.572	117.8	mg/L	20	Standard
Fe	54	82.1	2.7	**-0.0488**	0.002	3.8	mg/L	158	Standard
Fe	57	270.0	10.3	**0.2595**	0.101	38.9	mg/L	267	Standard
> **Sc-1**	45	37337.6	0.6				mg/L	38815	Standard
Cl	35	64590.7	1.0				ug/L	57611	Standard
Kr	83	2.0	132.3				ug/L	2	Standard
Br	81	3110.3	5.6				ug/L	1617	Standard
P	31	6779.9	4.1				ug/L	19244	Standard
S	34	3923.8	3.9				ug/L	3557	Standard
Sr	88	75.0	17.6				ug/L	65	Standard
C	12	33.3	62.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	23	Standard
Dy	164	22.5	71.0				mg/L	13	Standard
Ho-1	165	15.0	57.7				mg/L	10	Standard
Er	166	16.7	91.7				mg/L	13	Standard
I	127	9886.6	5.0				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		72.907	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.476	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.914
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.475
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606145201
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Method 6020 - Summary Report

Sample ID: L1606145301
Sample Date/Time: Wednesday, July 06, 2016 18:46:39
Number of Replicates: 3
Autosampler Position: 252
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49236.5	1.5				ug/L	68501	Standard
	Be	9	10.0	50.0	**0.0348**	0.008	21.9	ug/L	8	Standard
	Al	27	563111.7	0.5	**5.5538**	0.103	1.8	ug/L	1397	Standard
	Sc	45	37698.5	2.4				ug/L	38815	Standard
	Ti	47	34.3	24.8	**0.0744**	0.025	33.3	ug/L	36	Standard
	V	51	1482.7	2.4	**0.0667**	0.006	9.1	ug/L	1284	Standard
	Cr	52	6641.8	2.5	**0.0318**	0.030	94.7	ug/L	6503	Standard
	Cr	53	711.7	9.4	**0.4118**	0.079	19.3	ug/L	492	Standard
	Mn	55	100193.2	1.3	**16.2941**	0.290	1.8	ug/L	841	Standard
	Co	59	2670.6	2.7	**0.4482**	0.011	2.6	ug/L	229	Standard
	Ni	60	847.0	5.6	**0.3476**	0.029	8.5	ug/L	344	Standard
	Cu	65	98.3	6.5	**0.0455**	0.004	9.1	ug/L	115	Standard
	Zn	66	2172.5	1.8	**2.0427**	0.029	1.4	ug/L	190	Standard
>	**Ge**	72	409724.8	0.7				ug/L	409858	Standard
	As	75	27.9	65.5	**0.1259**	0.018	14.1	ug/L	-22	Standard
	Se	82	13.4	6.0	**0.0753**	0.008	11.1	ug/L	18	Standard
	Se-1	77	77.7	0.7	**0.3694**	0.016	4.2	ug/L	50	Standard
>	**Ga**	71	48.3	26.0				mg/L	97	Standard
	Rb	85	333.3	17.9				ug/L	25	Standard
	Y	89	346517.9	0.9				ug/L	376763	Standard
>	**Rh**	103	30.0	16.7				ug/L	20	Standard
	Mo	98	26.6	22.6	**0.0831**	0.003	3.1	ug/L	51	Standard
	Ag	107	75.3	9.3	**0.0358**	0.001	3.4	ug/L	76	Standard
	Cd	111	9.9	79.8	**0.0446**	0.004	9.4	mg/L	6	Standard
	Cd	114	11.8	57.5	**0.0399**	0.001	3.7	ug/L	18	Standard
>	**In**	115	483775.2	0.4				ug/L	507261	Standard
	Sn	118	181.7	20.8	**-0.0753**	0.007	9.4	ug/L	683	Standard
	Sb	123	311.7	20.4	**0.0558**	0.015	27.5	ug/L	446	Standard
	Ba	135	38280.0	1.1	**21.1061**	0.144	0.7	ug/L	28	Standard
	Ce	140	506.7	16.0				ug/L	33	Standard
>	**Tb**	159	726142.8	1.1				ug/L	800803	Standard
	Ho	165	6.7	86.6				ug/L	10	Standard
	Tl	203	87.3	10.6	**0.0454**	0.001	2.7	ug/L	13	Standard
	Tl	205	61.7	12.4	**0.0524**	0.001	2.4	ug/L	13	Standard
	Pb	206	228.3	5.6	**0.0453**	0.003	6.1	ug/L	226	Standard
	Pb	207	166.7	4.4	**0.0385**	0.002	3.9	ug/L	204	Standard
	Pb	208	789.0	2.6	**0.0470**	0.001	3.1	ug/L	852	Standard
	U	238	3.0	0.0	**0.0431**	0.000	0.0	ug/L	13	Standard
>	**Bi**	209	423989.3	0.6				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	1283.4	3.1	**1.7513**	0.066	3.8	mg/L	58	Standard
K	39	31.7	36.5	**-0.0116**	0.049	419.3	mg/L	27	Standard
Ca	43	35.0	49.5	**1.3299**	1.268	95.4	mg/L	20	Standard
Fe	54	124.2	10.3	**-0.0133**	0.009	68.8	mg/L	158	Standard
Fe	57	296.7	5.1	**0.3432**	0.074	21.6	mg/L	267	Standard
> **Sc-1**	45	37698.5	2.4				mg/L	38815	Standard
Cl	35	64298.8	0.9				ug/L	57611	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	2353.5	6.6				ug/L	1617	Standard
P	31	7038.3	3.1				ug/L	19244	Standard
S	34	3735.5	4.2				ug/L	3557	Standard
Sr	88	108.3	21.8				ug/L	65	Standard
C	12	20.0	132.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	23	Standard
Dy	164	15.7	34.1				mg/L	13	Standard
Ho-1	165	6.7	86.6				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	25099.2	7.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		71.877	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.967	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145301
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.370
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.420
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 18:49:52
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	52878.8	1.7				ug/L	68501	Standard
	Be	9	38918.3	1.6	**55.5825**	1.619	2.9	ug/L	8	Standard
	Al	27	6450514.7	0.4	**58.8972**	0.887	1.5	ug/L	1397	Standard
	Sc	45	41904.5	0.1				ug/L	38815	Standard
	Ti	47	37711.9	1.5	**103.7687**	1.613	1.6	ug/L	36	Standard
	V	51	378872.4	1.5	**49.6055**	1.127	2.3	ug/L	1284	Standard
	Cr	52	391857.7	0.8	**51.6770**	0.688	1.3	ug/L	6503	Standard
	Cr	53	48258.4	3.2	**51.5823**	1.577	3.1	ug/L	492	Standard
	Mn	55	349488.5	0.5	**52.7116**	0.800	1.5	ug/L	841	Standard
	Co	59	325919.6	1.0	**49.9129**	0.956	1.9	ug/L	229	Standard
	Ni	60	93953.1	0.7	**51.6102**	0.592	1.1	ug/L	344	Standard
	Cu	65	93092.5	0.7	**51.3818**	0.426	0.8	ug/L	115	Standard
	Zn	66	55991.6	1.2	**51.2143**	0.257	0.5	ug/L	190	Standard
>	Ge	72	443597.8	1.1				ug/L	409858	Standard
	As	75	56348.9	1.0	**50.3269**	0.784	1.6	ug/L	-22	Standard
	Se	82	5647.5	1.0	**49.3431**	0.684	1.4	ug/L	18	Standard
	Se-1	77	3836.5	3.0	**50.7225**	1.760	3.5	ug/L	50	Standard
>	Ga	71	73.3	37.6				mg/L	97	Standard
	Rb	85	758.4	7.1				ug/L	25	Standard
	Y	89	378699.5	0.9				ug/L	376763	Standard
>	Rh	103	25.0	34.6				ug/L	20	Standard
	Mo	98	248808.2	0.6	**100.1033**	1.976	2.0	ug/L	51	Standard
	Ag	107	315179.5	0.6	**48.9768**	0.482	1.0	ug/L	76	Standard
	Cd	111	102466.1	0.8	**50.0968**	0.522	1.0	mg/L	6	Standard
	Cd	114	249854.1	0.9	**49.9651**	0.245	0.5	ug/L	18	Standard
>	In	115	523251.4	1.3				ug/L	507261	Standard
	Sn	118	278121.1	0.6	**49.1520**	0.859	1.7	ug/L	683	Standard
	Sb	123	219592.2	1.7	**49.6144**	0.799	1.6	ug/L	446	Standard
	Ba	135	96411.8	0.1	**49.1334**	0.712	1.4	ug/L	28	Standard
	Ce	140	196.7	54.3				ug/L	33	Standard
>	Tb	159	777653.8	1.1				ug/L	800803	Standard
	Ho	165	5.0	100.0				ug/L	10	Standard
	Tl	203	386233.1	0.9	**50.7844**	0.429	0.8	ug/L	13	Standard
	Tl	205	341495.9	1.1	**51.8522**	0.626	1.2	ug/L	13	Standard
	Pb	206	240491.9	0.2	**49.2471**	0.244	0.5	ug/L	226	Standard
	Pb	207	217886.1	0.3	**49.1333**	0.157	0.3	ug/L	204	Standard
	Pb	208	926190.9	0.5	**52.2285**	0.416	0.8	ug/L	852	Standard
	U	238	325513.2	0.6	**49.5735**	0.460	0.9	ug/L	13	Standard
>	Bi	209	446834.5	0.4				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	3653.8	1.5	**4.5438**	0.069	1.5	mg/L	58	Standard
K	39	1298.4	0.6	**4.6524**	0.027	0.6	mg/L	27	Standard
Ca	43	101.7	11.4	**5.5715**	0.778	14.0	mg/L	20	Standard
Fe	54	6427.7	3.3	**4.8634**	0.168	3.5	mg/L	158	Standard
Fe	57	1803.4	4.2	**4.9080**	0.240	4.9	mg/L	267	Standard
> **Sc-1**	45	41904.5	0.1				mg/L	38815	Standard
Cl	35	72444.1	0.6				ug/L	57611	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1936.8	7.3				ug/L	1617	Standard
P	31	22136.2	2.7				ug/L	19244	Standard
S	34	4570.7	1.6				ug/L	3557	Standard
Sr	88	60.0	8.3				ug/L	65	Standard
C	12	56.7	27.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	40.0				mg/L	23	Standard
Dy	164	19.4	92.4				mg/L	13	Standard
Ho-1	165	5.0	100.0				mg/L	10	Standard
Er	166	13.3	173.2				mg/L	13	Standard
I	127	8907.6	4.2				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	111.165		
	Al	27	117.794		
	Sc	45			
	Ti	47	103.769		
	V	51	99.211		
	Cr	52	103.354		
	Cr	53			
	Mn	55	105.423		
	Co	59	99.826		
	Ni	60	103.220		
	Cu	65	102.764		
	Zn	66	102.429		
>	Ge	72		108.232	
	As	75	100.654		
	Se	82	98.686		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	100.103		
Ag	107	97.954		
Cd	111	100.194		
Cd	114			
In	115		103.152	
Sn	118	98.304		
Sb	123	99.229		
Ba	135	98.267		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.569		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.457		
U	238	99.147		
Bi	209		99.508	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 18:53:04
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53059.4	1.6				ug/L	68501	Standard
	Be	9	26.7	71.0	**0.0575**	0.027	47.3	ug/L	8	Standard
	Al	27	2088.5	29.0	**0.0540**	0.005	9.8	ug/L	1397	Standard
	Sc	45	42618.2	0.4				ug/L	38815	Standard
	Ti	47	37.3	8.2	**0.0766**	0.009	12.0	ug/L	36	Standard
	V	51	1299.1	5.0	**0.0291**	0.009	31.1	ug/L	1284	Standard
	Cr	52	6942.9	2.8	**0.0128**	0.010	76.9	ug/L	6503	Standard
	Cr	53	380.0	9.5	**-0.0026**	0.042	1611.2	ug/L	492	Standard
	Mn	55	723.4	5.7	**0.0151**	0.007	43.4	ug/L	841	Standard
	Co	59	245.0	10.0	**0.0436**	0.003	7.4	ug/L	229	Standard
	Ni	60	278.7	11.0	**-0.0020**	0.014	725.8	ug/L	344	Standard
	Cu	65	100.3	5.7	**0.0429**	0.002	5.4	ug/L	115	Standard
	Zn	66	141.0	3.8	**0.0179**	0.003	17.3	ug/L	190	Standard
>	**Ge**	72	436796.5	1.7				ug/L	409858	Standard
	As	75	-37.4	66.6	**0.0652**	0.022	33.9	ug/L	-22	Standard
	Se	82	18.8	25.6	**0.1159**	0.045	39.0	ug/L	18	Standard
	Se-1	77	56.0	6.2	**0.0042**	0.048	1131.8	ug/L	50	Standard
>	**Ga**	71	40.0	33.1				mg/L	97	Standard
	Rb	85	26.7	21.7				ug/L	25	Standard
	Y	89	376465.2	1.4				ug/L	376763	Standard
>	**Rh**	103	13.3	57.3				ug/L	20	Standard
	Mo	98	184.3	20.1	**0.1468**	0.015	10.1	ug/L	51	Standard
	Ag	107	117.3	17.5	**0.0416**	0.003	7.7	ug/L	76	Standard
	Cd	111	17.7	40.5	**0.0481**	0.004	7.3	mg/L	6	Standard
	Cd	114	55.7	53.6	**0.0487**	0.006	12.4	ug/L	18	Standard
>	**In**	115	515275.6	0.4				ug/L	507261	Standard
	Sn	118	845.0	18.4	**0.0419**	0.028	67.9	ug/L	683	Standard
	Sb	123	650.4	23.7	**0.1290**	0.036	27.9	ug/L	446	Standard
	Ba	135	44.7	20.1	**0.0388**	0.005	11.8	ug/L	28	Standard
	Ce	140	48.3	23.9				ug/L	33	Standard
>	**Tb**	159	772663.9	0.8				ug/L	800803	Standard
	Ho	165	1.7	173.2				ug/L	10	Standard
	Tl	203	68.7	35.0	**0.0424**	0.003	7.6	ug/L	13	Standard
	Tl	205	53.3	19.5	**0.0507**	0.002	3.2	ug/L	13	Standard
	Pb	206	240.3	15.2	**0.0454**	0.008	16.8	ug/L	226	Standard
	Pb	207	202.0	9.9	**0.0447**	0.004	10.0	ug/L	204	Standard
	Pb	208	909.3	5.6	**0.0516**	0.003	6.0	ug/L	852	Standard
	U	238	47.7	45.2	**0.0499**	0.003	6.7	ug/L	13	Standard
>	**Bi**	209	445177.1	0.5				ug/L	449044	Standard

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Na	23	1.7	173.2	**-0.5415**	14.274	2635.8	mg/L	2	Standard
Mg	24	30.0	28.9	**-0.0014**	0.011	783.2	mg/L	58	Standard
K	39	25.0	34.6	**-0.0511**	0.031	61.4	mg/L	27	Standard
Ca	43	30.0	33.3	**0.7081**	0.656	92.7	mg/L	20	Standard
Fe	54	142.5	14.4	**-0.0116**	0.015	132.3	mg/L	158	Standard
Fe	57	271.7	19.7	**0.1479**	0.162	109.7	mg/L	267	Standard
> **Sc-1**	45	42618.2	0.4				mg/L	38815	Standard
Cl	35	70856.0	1.2				ug/L	57611	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	1870.1	16.2				ug/L	1617	Standard
P	31	21663.8	0.6				ug/L	19244	Standard
S	34	4233.9	6.1				ug/L	3557	Standard
Sr	88	65.0	23.1				ug/L	65	Standard
C	12	56.7	44.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	33.3				mg/L	23	Standard
Dy	164	4.9	129.2				mg/L	13	Standard
Ho-1	165	1.7	173.2				mg/L	10	Standard
Er	166	36.7	41.7				mg/L	13	Standard
I	127	6878.2	1.9				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		106.573	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.580	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.139	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Tl	203	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606145303
Sample Date/Time: Wednesday, July 06, 2016 18:56:16
Number of Replicates: 3
Autosampler Position: 253
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50022.5	3.7				ug/L	68501	Standard
	Be	9	18.3	41.7	**0.0469**	0.011	22.7	ug/L	8	Standard
	Al	27	192424.3	1.2	**1.8923**	0.056	3.0	ug/L	1397	Standard
	Sc	45	37018.5	2.6				ug/L	38815	Standard
	Ti	47	106.3	105.8	**0.2939**	0.339	115.2	ug/L	36	Standard
	V	51	1360.1	13.7	**0.0532**	0.028	52.4	ug/L	1284	Standard
	Cr	52	5062.5	2.5	**-0.1831**	0.020	10.7	ug/L	6503	Standard
	Cr	53	318.3	8.9	**-0.0399**	0.031	78.4	ug/L	492	Standard
	Mn	55	28813.0	2.0	**4.7119**	0.100	2.1	ug/L	841	Standard
	Co	59	362.0	33.1	**0.0668**	0.021	30.8	ug/L	229	Standard
	Ni	60	329.0	9.1	**0.0425**	0.018	43.4	ug/L	344	Standard
	Cu	65	104.7	14.9	**0.0506**	0.010	19.4	ug/L	115	Standard
	Zn	66	1040.4	1.6	**0.9400**	0.022	2.3	ug/L	190	Standard
>	**Ge**	72	401656.7	0.7				ug/L	409858	Standard
	As	75	102.1	29.0	**0.1995**	0.030	14.9	ug/L	-22	Standard
	Se	82	22.0	21.0	**0.1618**	0.046	28.3	ug/L	18	Standard
	Se-1	77	58.0	7.9	**0.1003**	0.062	62.1	ug/L	50	Standard
>	**Ga**	71	36.7	7.9				mg/L	97	Standard
	Rb	85	1030.0	7.3				ug/L	25	Standard
	Y	89	344398.5	0.4				ug/L	376763	Standard
>	**Rh**	103	16.7	45.8				ug/L	20	Standard
	Mo	98	141.0	55.3	**0.1337**	0.034	25.4	ug/L	51	Standard
	Ag	107	118.7	35.0	**0.0433**	0.007	15.9	ug/L	76	Standard
	Cd	111	15.5	16.2	**0.0477**	0.001	2.7	mg/L	6	Standard
	Cd	114	35.3	65.1	**0.0451**	0.005	11.0	ug/L	18	Standard
>	**In**	115	476321.1	1.0				ug/L	507261	Standard
	Sn	118	363.3	12.5	**-0.0394**	0.009	22.9	ug/L	683	Standard
	Sb	123	965.8	23.1	**0.2197**	0.057	26.1	ug/L	446	Standard
	Ba	135	12744.7	0.5	**7.1481**	0.108	1.5	ug/L	28	Standard
	Ce	140	156.7	18.7				ug/L	33	Standard
>	**Tb**	159	727969.7	0.5				ug/L	800803	Standard
	Ho	165	10.0	132.3				ug/L	10	Standard
	Tl	203	101.7	19.3	**0.0475**	0.003	5.7	ug/L	13	Standard
	Tl	205	131.7	61.7	**0.0637**	0.013	20.4	ug/L	13	Standard
	Pb	206	310.7	47.9	**0.0633**	0.032	50.8	ug/L	226	Standard
	Pb	207	272.7	44.1	**0.0640**	0.029	44.6	ug/L	204	Standard
	Pb	208	1044.7	27.1	**0.0624**	0.017	26.8	ug/L	852	Standard
	U	238	87.0	107.3	**0.0566**	0.015	26.5	ug/L	13	Standard
>	**Bi**	209	422240.6	0.2				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	511.7	4.4	**0.6878**	0.013	1.9	mg/L	58	Standard
K	39	38.3	54.3	**0.0182**	0.086	471.7	mg/L	27	Standard
Ca	43	26.7	54.1	**0.7577**	1.106	145.9	mg/L	20	Standard
Fe	54	417.6	4.7	**0.2468**	0.027	10.9	mg/L	158	Standard
Fe	57	390.0	22.4	**0.6933**	0.341	49.2	mg/L	267	Standard
> **Sc-1**	45	37018.5	2.6				mg/L	38815	Standard
Cl	35	62864.2	1.3				ug/L	57611	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	2226.8	14.5				ug/L	1617	Standard
P	31	7123.3	3.9				ug/L	19244	Standard
S	34	4055.5	5.8				ug/L	3557	Standard
Sr	88	70.0	18.9				ug/L	65	Standard
C	12	20.0	86.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	34.6				mg/L	23	Standard
Dy	164	19.4	1.4				mg/L	13	Standard
Ho-1	165	10.0	132.3				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	8815.9	10.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		73.024	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.999	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.901
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.031
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129601
Sample Date/Time: Wednesday, July 06, 2016 18:59:28
Number of Replicates: 3
Autosampler Position: 254
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54200.1	1.0				ug/L	68501	Standard
	Be	9	18.3	41.7	**0.0451**	0.011	24.0	ug/L	8	Standard
	Al	27	5857472.0	1.8	**52.1721**	0.567	1.1	ug/L	1397	Standard
	Sc	45	41752.5	1.3				ug/L	38815	Standard
	Ti	47	188.3	12.3	**0.4941**	0.065	13.1	ug/L	36	Standard
	V	51	5597.3	1.8	**0.5958**	0.017	2.9	ug/L	1284	Standard
	Cr	52	10278.8	4.1	**0.4558**	0.064	14.0	ug/L	6503	Standard
	Cr	53	1303.4	22.2	**0.9965**	0.321	32.2	ug/L	492	Standard
	Mn	55	40819.6	0.2	**6.1131**	0.025	0.4	ug/L	841	Standard
	Co	59	685.3	1.4	**0.1111**	0.002	1.7	ug/L	229	Standard
	Ni	60	1914.1	2.2	**0.9041**	0.028	3.1	ug/L	344	Standard
	Cu	65	1543.4	2.5	**0.8445**	0.017	2.0	ug/L	115	Standard
	Zn	66	2332.2	1.7	**2.0391**	0.041	2.0	ug/L	190	Standard
>	**Ge**	72	440615.0	0.5				ug/L	409858	Standard
	As	75	1763.0	4.5	**1.6810**	0.077	4.6	ug/L	-22	Standard
	Se	82	71.3	8.5	**0.5761**	0.052	9.1	ug/L	18	Standard
	Se-1	77	95.7	7.1	**0.5337**	0.098	18.4	ug/L	50	Standard
>	**Ga**	71	226.7	25.4				mg/L	97	Standard
	Rb	85	8287.3	3.3				ug/L	25	Standard
	Y	89	371654.7	0.3				ug/L	376763	Standard
>	**Rh**	103	51.7	11.2				ug/L	20	Standard
	Mo	98	2079.3	2.8	**0.9217**	0.019	2.1	ug/L	51	Standard
	Ag	107	84.3	10.7	**0.0364**	0.001	3.8	ug/L	76	Standard
	Cd	111	17.6	21.2	**0.0481**	0.002	3.9	mg/L	6	Standard
	Cd	114	47.7	27.6	**0.0471**	0.003	5.8	ug/L	18	Standard
>	**In**	115	514374.2	0.8				ug/L	507261	Standard
	Sn	118	583.3	13.2	**-0.0050**	0.014	280.1	ug/L	683	Standard
	Sb	123	620.8	8.9	**0.1224**	0.013	11.0	ug/L	446	Standard
	Ba	135	37233.0	0.6	**19.3102**	0.212	1.1	ug/L	28	Standard
	Ce	140	788.4	3.0				ug/L	33	Standard
>	**Tb**	159	776406.0	1.3				ug/L	800803	Standard
	Ho	165	36.7	7.9				ug/L	10	Standard
	Tl	203	275.0	8.4	**0.0703**	0.003	4.3	ug/L	13	Standard
	Tl	205	258.3	22.0	**0.0827**	0.009	10.8	ug/L	13	Standard
	Pb	206	392.7	8.6	**0.0783**	0.007	8.7	ug/L	226	Standard
	Pb	207	321.0	5.6	**0.0730**	0.004	5.5	ug/L	204	Standard
	Pb	208	1419.7	2.7	**0.0820**	0.002	2.4	ug/L	852	Standard
	U	238	725.7	4.2	**0.1557**	0.005	2.9	ug/L	13	Standard
>	**Bi**	209	436491.8	0.4				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	7728.6	0.1	**9.6904**	0.119	1.2	mg/L	58	Standard
K	39	243.3	9.5	**0.7593**	0.074	9.7	mg/L	27	Standard
Ca	43	238.3	12.8	**14.8303**	1.960	13.2	mg/L	20	Standard
Fe	54	205.9	12.2	**0.0401**	0.020	50.5	mg/L	158	Standard
Fe	57	403.3	6.4	**0.5753**	0.093	16.2	mg/L	267	Standard
Sc-1	45	41752.5	1.3				mg/L	38815	Standard
Cl	35	80815.0	2.6				ug/L	57611	Standard
Kr	83	2.3	89.2				ug/L	2	Standard
Br	81	8709.2	1.9				ug/L	1617	Standard
P	31	20899.4	2.9				ug/L	19244	Standard
S	34	3923.8	3.6				ug/L	3557	Standard
Sr	88	181.7	25.6				ug/L	65	Standard
C	12	66.7	37.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	52.9				mg/L	23	Standard
Dy	164	54.4	29.0				mg/L	13	Standard
Ho-1	165	36.7	7.9				mg/L	10	Standard
Er	166	46.7	24.7				mg/L	13	Standard
I	127	22747.1	6.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		79.123	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		107.504	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.402	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.205	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606145303
Sample Date/Time: Wednesday, July 06, 2016 19:02:39
Number of Replicates: 3
Autosampler Position: 255
Sample Description: 500
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54932.8	2.5				ug/L	68501	Standard
	Be	9	16.7	34.6	**0.0423**	0.008	18.4	ug/L	8	Standard
	Al	27	25593.4	8.7	**0.2596**	0.014	5.4	ug/L	1397	Standard
	Sc	45	41463.3	1.5				ug/L	38815	Standard
	Ti	47	35.0	2.9	**0.0701**	0.002	3.4	ug/L	36	Standard
	V	51	1967.8	3.8	**0.1185**	0.012	9.8	ug/L	1284	Standard
	Cr	52	9177.1	2.0	**0.3186**	0.035	11.0	ug/L	6503	Standard
	Cr	53	426.7	14.0	**0.0491**	0.069	141.4	ug/L	492	Standard
	Mn	55	3966.2	3.7	**0.5132**	0.026	5.1	ug/L	841	Standard
	Co	59	221.7	8.5	**0.0400**	0.003	8.1	ug/L	229	Standard
	Ni	60	278.7	5.0	**-0.0017**	0.009	557.7	ug/L	344	Standard
	Cu	65	121.7	21.6	**0.0551**	0.015	27.9	ug/L	115	Standard
	Zn	66	1492.4	2.4	**1.2770**	0.032	2.5	ug/L	190	Standard
>	**Ge**	72	436481.1	0.9				ug/L	409858	Standard
	As	75	-38.2	37.5	**0.0644**	0.013	19.7	ug/L	-22	Standard
	Se	82	15.9	48.3	**0.0903**	0.069	75.9	ug/L	18	Standard
	Se-1	77	53.0	21.4	**-0.0353**	0.160	454.4	ug/L	50	Standard
>	**Ga**	71	30.0	16.7				mg/L	97	Standard
	Rb	85	160.0	13.6				ug/L	25	Standard
	Y	89	379621.3	1.9				ug/L	376763	Standard
>	**Rh**	103	13.3	21.7				ug/L	20	Standard
	Mo	98	41.5	24.0	**0.0884**	0.004	4.4	ug/L	51	Standard
	Ag	107	87.7	27.9	**0.0369**	0.004	10.1	ug/L	76	Standard
	Cd	111	10.3	66.1	**0.0444**	0.003	7.4	mg/L	6	Standard
	Cd	114	24.7	126.4	**0.0423**	0.006	14.8	ug/L	18	Standard
>	**In**	115	515985.1	0.9				ug/L	507261	Standard
	Sn	118	508.3	20.2	**-0.0188**	0.019	100.1	ug/L	683	Standard
	Sb	123	235.4	13.7	**0.0336**	0.008	23.5	ug/L	446	Standard
	Ba	135	1419.4	6.6	**0.7487**	0.042	5.6	ug/L	28	Standard
	Ce	140	46.7	22.3				ug/L	33	Standard
>	**Tb**	159	782731.4	0.8				ug/L	800803	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	38.7	73.8	**0.0384**	0.004	9.8	ug/L	13	Standard
	Tl	205	28.3	36.7	**0.0469**	0.002	3.4	ug/L	13	Standard
	Pb	206	226.7	4.3	**0.0426**	0.002	4.3	ug/L	226	Standard
	Pb	207	202.3	12.6	**0.0447**	0.006	12.5	ug/L	204	Standard
	Pb	208	847.0	1.7	**0.0480**	0.001	1.3	ug/L	852	Standard
	U	238	34.3	65.1	**0.0479**	0.003	7.1	ug/L	13	Standard
>	**Bi**	209	445218.2	0.4				ug/L	449044	Standard

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Na	23	1.7	173.2	**-0.2487**	14.781	5944.3	mg/L	2	Standard
Mg	24	75.0	13.3	**0.0566**	0.012	20.7	mg/L	58	Standard
K	39	33.3	67.6	**-0.0172**	0.085	496.8	mg/L	27	Standard
Ca	43	20.0	50.0	**0.0907**	0.700	772.0	mg/L	20	Standard
Fe	54	202.2	8.8	**0.0382**	0.013	33.1	mg/L	158	Standard
Fe	57	280.0	17.0	**0.1987**	0.161	81.0	mg/L	267	Standard
> **Sc-1**	45	41463.3	1.5				mg/L	38815	Standard
Cl	35	79616.6	0.3				ug/L	57611	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	1973.5	13.7				ug/L	1617	Standard
P	31	20081.6	2.2				ug/L	19244	Standard
S	34	4032.2	1.1				ug/L	3557	Standard
Sr	88	75.0	13.3				ug/L	65	Standard
C	12	33.3	17.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	107.9				mg/L	23	Standard
Dy	164	3.0	200.7				mg/L	13	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	6319.7	6.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		80.192	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.496	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.720	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.148	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Wednesday, July 06, 2016 19:05:51
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	49574.4	3.4				ug/L	68501	Standard
	Be	9	8.3	91.7	**0.0319**	0.012	36.0	ug/L	8	Standard
	Al	27	5564328.9	0.3	**54.2268**	1.817	3.4	ug/L	1397	Standard
	Sc	45	35692.0	2.4				ug/L	38815	Standard
	Ti	47	36104.0	1.5	**112.1954**	1.361	1.2	ug/L	36	Standard
	V	51	1644.2	9.1	**0.0998**	0.025	24.6	ug/L	1284	Standard
	Cr	52	5783.1	2.0	**-0.0569**	0.013	23.5	ug/L	6503	Standard
	Cr	53	3715.5	10.2	**4.1060**	0.499	12.2	ug/L	492	Standard
	Mn	55	2312.2	2.1	**0.2987**	0.012	4.0	ug/L	841	Standard
	Co	59	338.3	2.8	**0.0640**	0.002	2.4	ug/L	229	Standard
	Ni	60	699.0	3.7	**0.2774**	0.021	7.6	ug/L	344	Standard
	Cu	65	516.7	2.9	**0.3089**	0.012	4.0	ug/L	115	Standard
	Zn	66	966.4	1.2	**0.8872**	0.018	2.1	ug/L	190	Standard
>	Ge	72	392789.0	1.2				ug/L	409858	Standard
	As	75	8.9	378.2	**0.1077**	0.034	31.7	ug/L	-22	Standard
	Se	82	9.6	1.0	**0.0433**	0.001	1.2	ug/L	18	Standard
	Se-1	77	298.3	4.0	**3.7633**	0.228	6.0	ug/L	50	Standard
>	Ga	71	140.0	3.6				mg/L	97	Standard
	Rb	85	681.7	11.0				ug/L	25	Standard
	Y	89	328443.5	0.8				ug/L	376763	Standard
>	Rh	103	10.0	50.0				ug/L	20	Standard
	Mo	98	206890.0	0.3	**95.0894**	0.233	0.2	ug/L	51	Standard
	Ag	107	198.0	5.6	**0.0582**	0.002	3.5	ug/L	76	Standard
	Cd	111	-148.1	17.9	**-0.0433**	0.015	34.5	mg/L	6	Standard
	Cd	114	374.7	10.7	**0.1229**	0.009	7.4	ug/L	18	Standard
>	In	115	457975.9	0.3				ug/L	507261	Standard
	Sn	118	506.7	15.7	**-0.0076**	0.016	214.4	ug/L	683	Standard
	Sb	123	654.2	44.4	**0.1485**	0.075	50.3	ug/L	446	Standard
	Ba	135	41.7	8.4	**0.0400**	0.002	5.2	ug/L	28	Standard
	Ce	140	56.7	18.4				ug/L	33	Standard
>	Tb	159	724034.0	1.2				ug/L	800803	Standard
	Ho	165	1.7	173.2				ug/L	10	Standard
	Tl	203	61.0	16.4	**0.0420**	0.001	3.4	ug/L	13	Standard
	Tl	205	80.0	22.5	**0.0557**	0.003	5.3	ug/L	13	Standard
	Pb	206	274.7	5.6	**0.0570**	0.003	6.1	ug/L	226	Standard
	Pb	207	244.0	2.6	**0.0586**	0.002	2.6	ug/L	204	Standard
	Pb	208	992.0	1.0	**0.0608**	0.000	0.8	ug/L	852	Standard
	U	238	3.3	17.3	**0.0432**	0.000	0.2	ug/L	13	Standard
>	Bi	209	411885.0	0.3				ug/L	449044	Standard

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Na	23	3.3	86.6	**10.9828**	17.131	156.0	mg/L	2	Standard
Mg	24	8128.8	1.7	**11.9344**	0.323	2.7	mg/L	58	Standard
K	39	1198.4	13.9	**5.0665**	0.841	16.6	mg/L	27	Standard
Ca	43	223.3	20.8	**16.4476**	4.028	24.5	mg/L	20	Standard
Fe	54	13775.4	2.0	**12.4240**	0.399	3.2	mg/L	158	Standard
Fe	57	3787.1	3.0	**13.1073**	0.728	5.6	mg/L	267	Standard
Sc-1	45	35692.0	2.4				mg/L	38815	Standard
Cl	35	64987.8	1.8				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1570.1	6.7				ug/L	1617	Standard
P	31	7198.4	1.3				ug/L	19244	Standard
S	34	3923.8	4.6				ug/L	3557	Standard
Sr	88	86.7	29.6				ug/L	65	Standard
C	12	60.0	28.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	124.9				mg/L	23	Standard
Dy	164	9.8	99.2				mg/L	13	Standard
Ho-1	165	1.7	173.2				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	1970.1	5.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27	1.085		
Sc	45			
Ti	47	112.195		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.835	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	95.089		
Ag	107			
Cd	111			
Cd	114			
In	115			90.284
Sn	118			
Sb	123			
Ba	135			
Ce	140			
Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
Bi	209			91.725
Na	23	87.862		
Mg	24	238.688		
K	39	101.331		
Ca	43	109.651		
Fe	54	99.392		
Fe	57	104.859		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Mn	55	
QC Std 4	Tl	203	

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QC Std 4	Mg	24

Sample ID: QC Std 4
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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Wednesday, July 06, 2016 19:09:02
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53800.4	2.4				ug/L	68501	Standard
	Be	9	80136.4	0.3	**112.4788**	2.820	2.5	ug/L	8	Standard
	Al	27	5345078.2	1.5	**47.9732**	0.520	1.1	ug/L	1397	Standard
	Sc	45	40047.9	2.3				ug/L	38815	Standard
	Ti	47	33763.2	0.9	**96.4504**	1.307	1.4	ug/L	36	Standard
	V	51	728137.8	0.7	**99.1068**	0.604	0.6	ug/L	1284	Standard
	Cr	52	735138.4	0.1	**101.5294**	0.486	0.5	ug/L	6503	Standard
	Cr	53	93405.4	1.5	**104.0804**	2.037	2.0	ug/L	492	Standard
	Mn	55	670391.6	0.5	**105.0574**	0.041	0.0	ug/L	841	Standard
	Co	59	625211.3	0.7	**99.3861**	0.375	0.4	ug/L	229	Standard
	Ni	60	177152.0	0.7	**101.1772**	1.070	1.1	ug/L	344	Standard
	Cu	65	176839.4	0.8	**101.3457**	1.271	1.3	ug/L	115	Standard
	Zn	66	108752.9	0.7	**103.3905**	1.002	1.0	ug/L	190	Standard
>	**Ge**	72	427279.4	0.5				ug/L	409858	Standard
	As	75	110602.5	0.2	**102.4449**	0.341	0.3	ug/L	-22	Standard
	Se	82	10923.0	1.3	**99.1236**	0.756	0.8	ug/L	18	Standard
	Se-1	77	7617.9	1.9	**105.3511**	1.540	1.5	ug/L	50	Standard
>	**Ga**	71	150.0	20.3				mg/L	97	Standard
	Rb	85	640.0	9.0				ug/L	25	Standard
	Y	89	365147.7	0.6				ug/L	376763	Standard
>	**Rh**	103	38.3	27.2				ug/L	20	Standard
	Mo	98	200476.5	0.5	**83.7342**	0.804	1.0	ug/L	51	Standard
	Ag	107	373410.5	4.9	**60.2577**	3.748	6.2	ug/L	76	Standard
	Cd	111	196845.2	0.6	**99.8684**	1.157	1.2	mg/L	6	Standard
	Cd	114	474901.6	0.3	**98.5610**	1.581	1.6	ug/L	18	Standard
>	**In**	115	504053.2	1.4				ug/L	507261	Standard
	Sn	118	878.4	8.3	**0.0514**	0.013	25.9	ug/L	683	Standard
	Sb	123	423194.9	2.3	**99.2653**	0.897	0.9	ug/L	446	Standard
	Ba	135	184944.3	0.6	**97.8210**	0.904	0.9	ug/L	28	Standard
	Ce	140	98.3	26.1				ug/L	33	Standard
>	**Tb**	159	781877.2	0.7				ug/L	800803	Standard
	Ho	165	3.3	86.6				ug/L	10	Standard
	Tl	203	756201.8	0.3	**101.0466**	0.150	0.1	ug/L	13	Standard
	Tl	205	668626.3	1.4	**103.1658**	1.578	1.5	ug/L	13	Standard
	Pb	206	486910.7	0.4	**101.3655**	0.440	0.4	ug/L	226	Standard
	Pb	207	424759.6	0.9	**97.3740**	1.059	1.1	ug/L	204	Standard
	Pb	208	1806310.1	0.5	**103.5475**	0.667	0.6	ug/L	852	Standard
	U	238	638520.7	0.1	**98.8114**	0.143	0.1	ug/L	13	Standard
>	**Bi**	209	439542.4	0.2				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	7566.9	1.1	**9.8964**	0.338	3.4	mg/L	58	Standard
K	39	965.0	7.5	**3.5840**	0.202	5.6	mg/L	27	Standard
Ca	43	173.3	4.4	**10.9529**	0.788	7.2	mg/L	20	Standard
Fe	54	13008.8	3.3	**10.4391**	0.487	4.7	mg/L	158	Standard
Fe	57	3495.4	1.2	**10.6564**	0.312	2.9	mg/L	267	Standard
> **Sc-1**	45	40047.9	2.3				mg/L	38815	Standard
Cl	35	68148.9	1.5				ug/L	57611	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	1856.8	10.6				ug/L	1617	Standard
P	31	18643.1	3.8				ug/L	19244	Standard
S	34	3855.5	1.5				ug/L	3557	Standard
Sr	88	75.0	11.5				ug/L	65	Standard
C	12	76.7	32.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	78.1				mg/L	23	Standard
Dy	164	12.5	45.0				mg/L	13	Standard
Ho-1	165	3.3	86.6				mg/L	10	Standard
Er	166	16.7	34.6				mg/L	13	Standard
I	127	2608.6	3.1				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	112.479		
	Al	27	0.959		
	Sc	45			
	Ti	47	96.450		
	V	51	99.107		
	Cr	52	101.529		
	Cr	53			
	Mn	55	105.057		
	Co	59	99.386		
	Ni	60	101.177		
	Cu	65	101.346		
	Zn	66	103.390		
>	Ge	72		104.251	
	As	75	102.445		
	Se	82	99.124		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	83.734		
Ag	107	60.258		
Cd	111	99.868		
Cd	114			
In	115		99.368	
Sn	118			
Sb	123	99.265		
Ba	135	97.821		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.047		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.548		
U	238	98.811		
Bi	209		97.884	
Na	23	-70.261		
Mg	24	197.928		
K	39	71.680		
Ca	43	73.019		
Fe	54	83.513		
Fe	57	85.251		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Ag	107	
QC Std 5	Na	23	

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QC Std 5	Mg	24
QC Std 5	K	39
QC Std 5	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 19:12:15
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56160.6	1.8				ug/L	68501	Standard
	Be	9	40845.0	2.6	**54.9047**	0.516	0.9	ug/L	8	Standard
	Al	27	6551970.4	1.3	**56.3392**	1.670	3.0	ug/L	1397	Standard
	Sc	45	41572.0	1.7				ug/L	38815	Standard
	Ti	47	36365.9	0.5	**103.4324**	2.154	2.1	ug/L	36	Standard
	V	51	373639.8	1.0	**50.5673**	1.295	2.6	ug/L	1284	Standard
	Cr	52	379248.9	0.8	**51.6976**	1.271	2.5	ug/L	6503	Standard
	Cr	53	46753.7	2.6	**51.6544**	1.526	3.0	ug/L	492	Standard
	Mn	55	339745.6	0.4	**52.9632**	1.088	2.1	ug/L	841	Standard
	Co	59	324073.7	1.0	**51.2920**	0.893	1.7	ug/L	229	Standard
	Ni	60	90518.2	0.2	**51.3924**	0.862	1.7	ug/L	344	Standard
	Cu	65	89968.0	0.9	**51.3303**	1.278	2.5	ug/L	115	Standard
	Zn	66	54219.2	0.3	**51.2630**	0.968	1.9	ug/L	190	Standard
>	**Ge**	72	429235.1	1.6				ug/L	409858	Standard
	As	75	54773.7	0.3	**50.5602**	0.755	1.5	ug/L	-22	Standard
	Se	82	5564.8	1.1	**50.2523**	0.837	1.7	ug/L	18	Standard
	Se-1	77	3822.5	2.6	**52.2437**	1.024	2.0	ug/L	50	Standard
>	**Ga**	71	50.0	43.6				mg/L	97	Standard
	Rb	85	710.0	7.8				ug/L	25	Standard
	Y	89	370978.9	2.7				ug/L	376763	Standard
>	**Rh**	103	28.3	27.0				ug/L	20	Standard
	Mo	98	248182.1	1.3	**102.1495**	2.550	2.5	ug/L	51	Standard
	Ag	107	315228.1	1.3	**50.1230**	1.611	3.2	ug/L	76	Standard
	Cd	111	101311.6	0.8	**50.6817**	1.416	2.8	mg/L	6	Standard
	Cd	114	244330.1	1.0	**49.9947**	1.328	2.7	ug/L	18	Standard
>	**In**	115	511526.4	1.9				ug/L	507261	Standard
	Sn	118	274865.9	1.0	**49.7021**	1.424	2.9	ug/L	683	Standard
	Sb	123	227715.3	0.9	**52.6442**	1.349	2.6	ug/L	446	Standard
	Ba	135	94984.1	0.2	**49.5208**	0.934	1.9	ug/L	28	Standard
	Ce	140	70.0	32.7				ug/L	33	Standard
>	**Tb**	159	779844.1	2.6				ug/L	800803	Standard
	Ho	165	8.3	124.9				ug/L	10	Standard
	Tl	203	387182.7	1.1	**51.2437**	1.689	3.3	ug/L	13	Standard
	Tl	205	339494.8	2.7	**51.8947**	2.431	4.7	ug/L	13	Standard
	Pb	206	244515.0	0.9	**50.3913**	1.162	2.3	ug/L	226	Standard
	Pb	207	222226.5	0.3	**50.4333**	1.116	2.2	ug/L	204	Standard
	Pb	208	917872.5	1.1	**52.0981**	1.678	3.2	ug/L	852	Standard
	U	238	329693.9	0.7	**50.5295**	1.103	2.2	ug/L	13	Standard
>	**Bi**	209	444129.6	2.2				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	3783.8	2.4	**4.7446**	0.059	1.2	mg/L	58	Standard
K	39	1246.7	9.1	**4.5032**	0.493	10.9	mg/L	27	Standard
Ca	43	88.3	21.4	**4.7358**	1.393	29.4	mg/L	20	Standard
Fe	54	6374.5	1.5	**4.8625**	0.107	2.2	mg/L	158	Standard
Fe	57	1813.4	8.2	**4.9797**	0.369	7.4	mg/L	267	Standard
Sc-1	45	41572.0	1.7				mg/L	38815	Standard
Cl	35	68583.5	0.6				ug/L	57611	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1763.4	8.9				ug/L	1617	Standard
P	31	20635.7	1.1				ug/L	19244	Standard
S	34	4107.2	3.8				ug/L	3557	Standard
Sr	88	65.0	23.1				ug/L	65	Standard
C	12	40.0	66.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	99.0				mg/L	23	Standard
Dy	164	2.4	243.1				mg/L	13	Standard
Ho-1	165	8.3	124.9				mg/L	10	Standard
Er	166	20.0	0.0				mg/L	13	Standard
I	127	7728.6	2.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	109.809		
Al	27	112.678		
Sc	45			
Ti	47	103.432		
V	51	101.135		
Cr	52	103.395		
Cr	53			
Mn	55	105.926		
Co	59	102.584		
Ni	60	102.785		
Cu	65	102.661		
Zn	66	102.526		
Ge	72		104.728	
As	75	101.120		
Se	82	100.505		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	102.150		
Ag	107	100.246		
Cd	111	101.363		
Cd	114			
In	115		100.841	
Sn	118	99.404		
Sb	123	105.288		
Ba	135	99.042		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.487		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.196		
U	238	101.059		
Bi	209		98.906	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 19:15:26
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54942.8	0.8				ug/L	68501	Standard
	Be	9	45.0	58.8	**0.0811**	0.036	44.1	ug/L	8	Standard
	Al	27	2566.9	14.5	**0.0576**	0.003	5.7	ug/L	1397	Standard
	Sc	45	40367.0	1.9				ug/L	38815	Standard
	Ti	47	43.7	19.1	**0.0971**	0.023	23.6	ug/L	36	Standard
	V	51	1287.9	1.2	**0.0318**	0.001	4.5	ug/L	1284	Standard
	Cr	52	6591.1	1.2	**-0.0129**	0.006	47.5	ug/L	6503	Standard
	Cr	53	453.3	8.3	**0.0900**	0.045	50.2	ug/L	492	Standard
	Mn	55	728.4	5.6	**0.0186**	0.006	32.9	ug/L	841	Standard
	Co	59	301.7	1.7	**0.0536**	0.001	2.0	ug/L	229	Standard
	Ni	60	268.7	8.4	**-0.0036**	0.014	384.2	ug/L	344	Standard
	Cu	65	137.7	7.5	**0.0658**	0.006	8.9	ug/L	115	Standard
	Zn	66	149.7	3.3	**0.0294**	0.004	14.0	ug/L	190	Standard
>	**Ge**	72	426278.5	0.7				ug/L	409858	Standard
	As	75	-60.6	31.8	**0.0426**	0.018	42.7	ug/L	-22	Standard
	Se	82	12.3	13.8	**0.0602**	0.015	25.5	ug/L	18	Standard
	Se-1	77	61.3	12.3	**0.0978**	0.110	112.6	ug/L	50	Standard
>	**Ga**	71	30.0	76.4				mg/L	97	Standard
	Rb	85	28.3	81.5				ug/L	25	Standard
	Y	89	363777.1	0.9				ug/L	376763	Standard
>	**Rh**	103	21.7	35.3				ug/L	20	Standard
	Mo	98	237.6	7.5	**0.1704**	0.006	3.3	ug/L	51	Standard
	Ag	107	180.0	7.3	**0.0521**	0.002	3.0	ug/L	76	Standard
	Cd	111	26.5	12.9	**0.0528**	0.002	2.9	mg/L	6	Standard
	Cd	114	73.9	24.0	**0.0526**	0.003	6.3	ug/L	18	Standard
>	**In**	115	505090.7	2.8				ug/L	507261	Standard
	Sn	118	850.0	27.6	**0.0452**	0.040	87.7	ug/L	683	Standard
	Sb	123	1365.7	35.3	**0.2977**	0.106	35.6	ug/L	446	Standard
	Ba	135	52.7	11.0	**0.0436**	0.003	8.0	ug/L	28	Standard
	Ce	140	15.0	33.3				ug/L	33	Standard
>	**Tb**	159	772979.8	1.0				ug/L	800803	Standard
	Ho	165	13.3	21.7				ug/L	10	Standard
	Tl	203	117.7	17.4	**0.0490**	0.003	5.3	ug/L	13	Standard
	Tl	205	106.7	25.8	**0.0589**	0.004	7.1	ug/L	13	Standard
	Pb	206	279.7	3.0	**0.0539**	0.002	4.1	ug/L	226	Standard
	Pb	207	242.7	5.0	**0.0543**	0.002	3.8	ug/L	204	Standard
	Pb	208	992.3	1.7	**0.0567**	0.001	1.3	ug/L	852	Standard
	U	238	100.3	19.8	**0.0580**	0.003	5.0	ug/L	13	Standard
>	**Bi**	209	441868.4	1.5				ug/L	449044	Standard

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Na	23	1.7	173.2	**-0.2018**	14.862	7363.8	mg/L	2	Standard
Mg	24	58.3	21.6	**0.0377**	0.017	45.5	mg/L	58	Standard
K	39	43.3	17.6	**0.0241**	0.028	114.8	mg/L	27	Standard
Ca	43	16.7	45.8	**-0.1077**	0.555	515.1	mg/L	20	Standard
Fe	54	119.4	36.2	**-0.0244**	0.033	134.8	mg/L	158	Standard
Fe	57	231.7	10.2	**0.0663**	0.086	129.4	mg/L	267	Standard
> **Sc-1**	45	40367.0	1.9				mg/L	38815	Standard
Cl	35	68330.4	0.6				ug/L	57611	Standard
Kr	83	1.0	173.2				ug/L	2	Standard
Br	81	1713.4	13.1				ug/L	1617	Standard
P	31	20178.4	0.4				ug/L	19244	Standard
S	34	4103.9	3.9				ug/L	3557	Standard
Sr	88	90.0	25.5				ug/L	65	Standard
C	12	50.0	52.9				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	10.0					mg/L	23	Standard
Dy	164	3.3	173.2				mg/L	13	Standard
Ho-1	165	13.3	21.7				mg/L	10	Standard
Er	166	0.0					mg/L	13	Standard
I	127	6669.8	2.1				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		104.006	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.572
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.402
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	
QC Std 7	Tl	203	

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Wednesday, July 06, 2016 19:18:39
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54098.1	3.3				ug/L	68501	Standard
	Be	9	163.3	29.7	**0.2472**	0.068	27.4	ug/L	8	Standard
	Al	27	1381.7	7.5	**0.0474**	0.001	1.4	ug/L	1397	Standard
	Sc	45	39292.6	1.5				ug/L	38815	Standard
	Ti	47	34.0	18.4	**0.0714**	0.018	24.9	ug/L	36	Standard
	V	51	3870.1	3.3	**0.3951**	0.013	3.3	ug/L	1284	Standard
	Cr	52	12230.6	2.3	**0.8091**	0.053	6.6	ug/L	6503	Standard
	Cr	53	1161.7	5.5	**0.9103**	0.080	8.8	ug/L	492	Standard
	Mn	55	3706.1	1.4	**0.4983**	0.003	0.6	ug/L	841	Standard
	Co	59	2545.5	1.1	**0.4192**	0.008	2.0	ug/L	229	Standard
	Ni	60	2951.0	3.0	**1.5680**	0.059	3.8	ug/L	344	Standard
	Cu	65	1450.1	4.3	**0.8366**	0.044	5.2	ug/L	115	Standard
	Zn	66	6995.9	1.6	**6.6934**	0.141	2.1	ug/L	190	Standard
>	**Ge**	72	417981.6	0.9				ug/L	409858	Standard
	As	75	357.8	10.2	**0.4371**	0.031	7.2	ug/L	-22	Standard
	Se	82	58.2	14.0	**0.4880**	0.071	14.6	ug/L	18	Standard
	Se-1	77	83.3	10.3	**0.4273**	0.117	27.3	ug/L	50	Standard
>	**Ga**	71	23.3	12.4				mg/L	97	Standard
	Rb	85	20.0	25.0				ug/L	25	Standard
	Y	89	356946.8	2.1				ug/L	376763	Standard
>	**Rh**	103	18.3	56.8				ug/L	20	Standard
	Mo	98	97.8	17.1	**0.1129**	0.007	6.1	ug/L	51	Standard
	Ag	107	2415.2	3.0	**0.4182**	0.014	3.2	ug/L	76	Standard
	Cd	111	473.5	8.0	**0.2829**	0.018	6.5	mg/L	6	Standard
	Cd	114	1005.4	9.2	**0.2490**	0.020	8.2	ug/L	18	Standard
>	**In**	115	496796.7	0.5				ug/L	507261	Standard
	Sn	118	420.0	26.1	**-0.0318**	0.020	63.4	ug/L	683	Standard
	Sb	123	1980.8	7.1	**0.4511**	0.032	7.0	ug/L	446	Standard
	Ba	135	1323.4	2.0	**0.7257**	0.012	1.7	ug/L	28	Standard
	Ce	140	11.7	49.5				ug/L	33	Standard
>	**Tb**	159	765291.8	0.8				ug/L	800803	Standard
	Ho	165	0.0					ug/L	10	Standard
	Tl	203	599.7	3.3	**0.1133**	0.003	2.3	ug/L	13	Standard
	Tl	205	568.3	2.8	**0.1301**	0.002	1.9	ug/L	13	Standard
	Pb	206	1184.7	1.2	**0.2423**	0.003	1.1	ug/L	226	Standard
	Pb	207	965.7	3.9	**0.2200**	0.009	4.0	ug/L	204	Standard
	Pb	208	4239.9	0.9	**0.2428**	0.002	0.9	ug/L	852	Standard
	U	238	2448.2	1.2	**0.4208**	0.005	1.2	ug/L	13	Standard
>	**Bi**	209	440163.0	0.1				ug/L	449044	Standard

Sample ID: QC Std 8
Report Date/Time: Wednesday, July 06, 2016 19:20:56
Page 1

Approved: July 07, 2016

Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	38.6	**0.0174**	0.022	123.7	mg/L	58	Standard
K	39	18.3	31.5	**-0.0697**	0.023	32.5	mg/L	27	Standard
Ca	43	33.3	8.7	**1.1191**	0.237	21.2	mg/L	20	Standard
Fe	54	95.2	14.9	**-0.0415**	0.012	28.6	mg/L	158	Standard
Fe	57	223.3	9.0	**0.0577**	0.056	96.4	mg/L	267	Standard
Sc-1	45	39292.6	1.5				mg/L	38815	Standard
Cl	35	66674.4	1.3				ug/L	57611	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	1723.4	3.8				ug/L	1617	Standard
P	31	15454.6	10.5				ug/L	19244	Standard
S	34	4087.2	4.8				ug/L	3557	Standard
Sr	88	58.3	17.8				ug/L	65	Standard
C	12	66.7	17.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	23	Standard
Dy	164	12.9	48.2				mg/L	13	Standard
Ho-1	165	0.0					mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	761.7	2.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	123.590		
Al	27			
Sc	45			
Ti	47			
V	51	98.765		
Cr	52	101.142		
Cr	53			
Mn	55	99.663		
Co	59	104.792		
Ni	60	97.997		
Cu	65	104.570		
Zn	66	107.094		
Ge	72		101.982	
As	75	109.275		
Se	82	122.008		
Se-1	77			
Ga	71			

Sample ID: QC Std 8
Report Date/Time: Wednesday, July 06, 2016 19:20:56
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Approved: July 07, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	104.554		
Cd	111	117.890		
Cd	114			
> In	115			97.937
Sn	118			
Sb	123	112.777		
Ba	135	96.767		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	141.665		
Tl	205			
Pb	206			
Pb	207			
Pb	208	121.398		
U	238	105.196		
> Bi	209			98.022
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 8	Tl	203	

Sample ID: QC Std 8
Report Date/Time: Wednesday, July 06, 2016 19:20:56
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Approved: July 07, 2016

2.3.3 Metals CVAA Data (Mercury)

2.3.3.1 Summary Data

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-02	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18WW16F-061616	**Prep Method:**	7470A	**Prep Date:**	06/21/2016 12:47
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/24/2016 11:43
Workgroup #:	WG573634	**Analyst:**	AMA	**Run Date:**	06/24/2016 12:18
Collect Date:	06/16/2016 07:55	**Dilution:**	1	**File ID:**	M7.062416.121852
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-04	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	129-061616	**Prep Method:**	7470A	**Prep Date:**	06/21/2016 12:47
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/24/2016 11:43
Workgroup #:	WG573634	**Analyst:**	AMA	**Run Date:**	06/24/2016 12:26
Collect Date:	06/16/2016 09:05	**Dilution:**	1	**File ID:**	M7.062416.122629
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-06	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	120F-061616	**Prep Method:**	7470A	**Prep Date:**	06/21/2016 12:47
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/24/2016 11:43
Workgroup #:	WG573634	**Analyst:**	AMA	**Run Date:**	06/24/2016 12:31
Collect Date:	06/16/2016 09:25	**Dilution:**	1	**File ID:**	M7.062416.123133
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-07	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	123-061616	**Prep Method:**	7470A	**Prep Date:**	06/21/2016 12:47
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/24/2016 11:43
Workgroup #:	WG573634	**Analyst:**	AMA	**Run Date:**	06/24/2016 12:34
Collect Date:	06/16/2016 09:55	**Dilution:**	1	**File ID:**	M7.062416.123404
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.3.3.2 QC Summary

Example Cold Vapor Mercury Calculations
Hydra AA Mercury Analyzer / CETAC M-7600 Quick Trace Mercury Analyzer

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and five standards.

2.0 Calculating the concentration (C) of an element in water using data from run log and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to Volume (mL)	40
Vi = Aliquot Volume (mL)	40
D = Manual dilution factor, if required (10X = 10)	1
Cx = Concentration of element in ppb (ug/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Ws} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to volume (mL)	40
Ws = Aliquot weight (g)	0.6
D = Manual dilution factor	1
Cx = Concentration of element in ug/kg	6.67

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

1 Cx = Concentration calculated as received (wet basis)	6.67
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	8.33

8.33 ug/kg = 0.00833 mg/kg

TCLP Non-Volatile

Analyst(s): AMA
Date: 06/20/2016
Filter Lot #: 94860030
Microbac SOP: TCLP 01 Rev #: 12

Analyst / Date		Analyst / Date	
AMA/CPD 6/20/16		CPD	6/21/16
Time On	Temp On °C	Time Off	Temp Off °C
1538	24.9	0832	23.1

Agitator Speed 30 ± 2 rpm ☑

Jug #	Sample #	Tests	Method	Fluid #	Matrix *	% Solid	Pretest pH Initial	Pretest pH Final	Int. Wt. (g)	Fluid Vol. (mL)	Final extract pH
D	6-0946-01	ME	1311	F1-182	S	100	6.50	1.88	100.44	2008	4.81
D	6-0924-01	ME					10.49	2.51	100.70	2014	11.53
2	6-0990-01	Herb.					9.30	1.92	100.51	2010	5.65
D	6-1050-01	ME		F2-380			12.73	12.23	25.51	510	10.95
31	6-1005-01	Herb.					10.98	6.97	25.20	504	7.33
D	6-0964-01	300	1312	SPLPF1.63	S	100	NA	NA	25.60	512	9.17
D	-02								25.63	512	8.34
D	-03								25.53	510	9.44
D	-04								25.46	509	8.90
D	-05								25.68	513	9.55
D	-06								25.43	508	8.69
D	6-1069-01	ME wet lab	1311	F2-380	S	100	8.60	5.06	50.40	~~1008~~ AMA	6.19
D	6-1071-01		1311	F1-182	S	100	8.75	4.97	50.58	1012	8.51
D	6-1073-01						8.63	4.83	50.60	1012	8.46
D	6-1075-01						9.40	4.56	50.50	1010	5.98
D	6-1080-01						9.39	4.28	50.26	1005	6.53
D	6-1082-01						9.16	2.35	50.33	1007	6.13
D	6-1084-01						9.42	2.34	50.69	1014	8.80
D	6-1086-01						9.31	2.55	50.86	1016	5.67
D	6-1088-01						9.54	3.18	50.96	1019	6.46
NA	FBIK1	ME wet lab	1311	F1-182	NA	NA	NA	NA	100	100	4.90
	FBIK2			F2-380							2.80
	SPLP FBIK1	300	1312	SPLPF1.63							~~4.25~~ ~~1.90~~ CPD 6/21
			CPD 6/20/16								

*Matrix Code: (S = solid, sand, soil or sludge) (P = paint) (O = organic) (W = water or aqueous waste)
D = Disposable plastic jug
TCLP Pretest weight will be 5.0 g (± 0.1) unless otherwise noted.
Temperature shall be maintained at 23° ± 2 for 18 ± 2 hours unless otherwise noted.

Comments: N/A

Peer Review By: [signature]

Microbac Laboratories Inc.
Metals Digest Log

Workgroup: WG573569
Analyst: REK
Spike Analyst: REK
Method: 7470A
Run Date: 06/21/2016 12:47
Hotblock Start Temp: 95.6 @ 12:40
Hotblock End Temp: 95.5 @ 14:40
Instrument: HB6

SOP: ME404 Revison 17
Spike Solution: STD76734
Spike Witness: VC
H2SO4 Lot #: COA18359
HNO3 Lot #: COA18905
40 & 50 ML. DIGESTION TU COA18987
K2S2O8 1:1 Lot #: RGT37046
KMnO4 1:1 Lot #: RGT37082
Mercury Water ICV Lot #: STD76727
HG H2O STDS 10PPM Lot #: STD76733

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Spike Amount	Due Date
1	WG573569-02	BLANK	1	40 mL	40 mL		
2	WG573353-01	FBLK1	17	4 mL	40 mL		
3	WG573353-02	FBLK2	17	4 mL	40 mL		
4	WG573569-03	LCS	1	40 mL	40 mL	4 mL	
5	L16060924-01	SAMP	17	4 mL	40 mL		06/23/16
6	WG573569-01	REF	17	4 mL	40 mL		
7	L16060946-01	SAMP	17	4 mL	40 mL		06/22/16
8	L16061026-02	SAMP	1	40 mL	40 mL		06/28/16
9	L16061026-04	SAMP	1	40 mL	40 mL		06/28/16
10	L16061026-06	SAMP	1	40 mL	40 mL		06/28/16
11	L16061026-07	SAMP	1	40 mL	40 mL		06/28/16
12	L16061050-01	SAMP	17	4 mL	40 mL		06/24/16
13	L16061069-01	SAMP	17	4 mL	40 mL		06/24/16
14	L16061071-01	SAMP	17	4 mL	40 mL		06/24/16
15	L16061073-01	SAMP	17	4 mL	40 mL		06/24/16
16	L16061075-01	SAMP	17	4 mL	40 mL		06/24/16
17	L16061080-01	SAMP	17	4 mL	40 mL		06/24/16
18	L16061082-01	SAMP	17	4 mL	40 mL		06/24/16
19	L16061084-01	SAMP	17	4 mL	40 mL		06/24/16
20	L16061086-01	SAMP	17	4 mL	40 mL		06/24/16
21	L16061088-01	SAMP	17	4 mL	40 mL		06/24/16
22	WG573569-04	MS	1	4 mL	40 mL	4 mL	
23	WG573569-05	MSD	1	4 mL	40 mL	4 mL	

Analyst: [signature]

Reviewer: [signature]

* All calibration and check standards are prepared and digested with sample batch following the procedures in section 7.0 of SOP ME404/ME405.

HB_DIG - Modified 07/26/2012
PDF ID: 4817129
Report generated: 06/21/2016 15:16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 062416C.CSV

Analyst1: AMA Analyst2: N/A

Method: 7470A/245.1 SOP: ME404 Rev: 17

Maintenance Log ID:

Calibration Std: STD76733 ICV Std: STD76727 Post Spike: STD76733

ICSA: N/A ICSAB: N/A Int. Std:

CCV: LLCCV: Tuning Sol :

Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 573634

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	M7.062416.113041	WG574110-01	Calibration Point		1		06/24/16 11:30
2	M7.062416.113312	WG574110-02	Calibration Point		1		06/24/16 11:33
3	M7.062416.113544	WG574110-03	Calibration Point		1		06/24/16 11:35
4	M7.062416.113817	WG574110-04	Calibration Point		1		06/24/16 11:38
5	M7.062416.114050	WG574110-05	Calibration Point		1		06/24/16 11:40
6	M7.062416.114323	WG574110-06	Calibration Point		1		06/24/16 11:43
7	M7.062416.114558	WG574110-07	Initial Calibration Verification		1		06/24/16 11:45
8	M7.062416.114828	WG574110-08	Initial Calib Blank		1		06/24/16 11:48
9	M7.062416.115100	WG574110-09	CCV		1		06/24/16 11:51
10	M7.062416.115331	WG574110-10	CCB		1		06/24/16 11:53
11	M7.062416.115602	WG573569-02	Method/Prep Blank	40/40	1		06/24/16 11:56
12	M7.062416.115833	WG573569-03	Laboratory Control S	40/40	1		06/24/16 11:58
13	M7.062416.120104	WG573353-01	Fluid Blank 1		1		06/24/16 12:01
14	M7.062416.120336	WG573353-02	Fluid Blank 2		1		06/24/16 12:03
15	M7.062416.120608	L16060924-01	K6F0495-01	4/40	1		06/24/16 12:06
16	M7.062416.120840	WG573634-01	Post Digestion Spike		1	L16060924-01	06/24/16 12:08
17	M7.062416.121113	WG573569-01	Reference Sample	4/40	1	L16060946-01	06/24/16 12:11
18	M7.062416.121345	WG573569-04	Matrix Spike	4/40	1	L16060946-01	06/24/16 12:13
19	M7.062416.121618	WG573569-05	Matrix Spike Duplica	4/40	1	L16060946-01	06/24/16 12:16
20	M7.062416.121852	L16061026-02	18WW16F-061616	40/40	1		06/24/16 12:18
21	M7.062416.122124	WG574110-11	CCV		1		06/24/16 12:21
22	M7.062416.122355	WG574110-12	CCB		1		06/24/16 12:23
23	M7.062416.122629	L16061026-04	129-061616	40/40	1		06/24/16 12:26
24	M7.062416.122903	WG573634-02	Post Digestion Spike		1	L16061026-04	06/24/16 12:29
25	M7.062416.123133	L16061026-06	120F-061616	40/40	1		06/24/16 12:31
26	M7.062416.123404	L16061026-07	123-061616	40/40	1		06/24/16 12:34
27	M7.062416.123635	L16061050-01	AWV 32 BAGS	4/40	1		06/24/16 12:36
28	M7.062416.123906	L16061069-01	MIX 8	4/40	1		06/24/16 12:39
29	M7.062416.124137	L16061071-01	380 SC 10	4/40	1		06/24/16 12:41
30	M7.062416.124409	L16061073-01	MIX 10	4/40	1		06/24/16 12:44
31	M7.062416.124641	L16061075-01	IMP 10	4/40	1		06/24/16 12:46
32	M7.062416.124913	L16061080-01	380 SALTCAKE	4/40	1		06/24/16 12:49
33	M7.062416.125146	WG574110-13	CCV		1		06/24/16 12:51
34	M7.062416.125416	WG574110-14	CCB		1		06/24/16 12:54

Page: 1 Approved: June 24, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 062416C.CSV

Analyst1: AMA Analyst2: N/A

Method: 7470A/245.1 SOP: ME404 Rev: 17

Maintenance Log ID:

Calibration Std: STD76733 ICV Std: STD76727 Post Spike: STD76733

ICSA: N/A ICSAB: N/A Int. Std:

CCV: LLCCV: Tuning Sol :

Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 573634

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	M7.062416.125649	L16061082-01	REG SALTCAKE	4/40	1		06/24/16 12:56
36	M7.062416.125922	L16061084-01	ALOCA SALTCAKE	4/40	1		06/24/16 12:59
37	M7.062416.130155	L16061086-01	IMP 8	4/40	1		06/24/16 13:01
38	M7.062416.130428	L16061088-01	URV 8	4/40	1		06/24/16 13:04
39	M7.062416.130659	L0-25	025		1		06/24/16 13:06
40	M7.062416.130930	L0-26	026		1		06/24/16 13:09
41	M7.062416.131201	L0-27	027		1		06/24/16 13:12
42	M7.062416.131432	L0-28	028		1		06/24/16 13:14
43	M7.062416.131703	L0-29	029		1		06/24/16 13:17
44	M7.062416.131935	L0-30	030		1		06/24/16 13:19
45	M7.062416.132207	WG574110-15	CCV		1		06/24/16 13:22
46	M7.062416.132438	WG574110-16	CCB		1		06/24/16 13:24

Page: 2 Approved: June 24, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 24-JUN-2016
Analyst: AMA
Analyst: NA
Method: 7470A/245.1
Instrument: CVAA1
Curve Workgroup: 574110
Runlog ID: 75910
Analytical Workgroups: 573634

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	1026
Client Forms	X
Level X	
Level 3	
Level 4	1026
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	AMA
Secondary Reviewer	KHR
Comments	

Primary Reviewer:
24-JUN-2016
Alexandra M. Alfred

Secondary Reviewer:
24-JUN-2016
Kym H. Rhoden

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-24-2016 16:45:41

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 7470A

AAB#: WG573634

Login Number: L16061026

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW16F-061616	02	06/16/16					06/21/2016	5.2	28		06/24/16	8.2	28	
129-061616	04	06/16/16					06/21/2016	5.2	28		06/24/16	8.1	28	
120F-061616	06	06/16/16					06/21/2016	5.1	28		06/24/16	8.1	28	
123-061616	07	06/16/16					06/21/2016	5.1	28		06/24/16	8.1	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4823372
Report generated 06/24/2016 13:39

METHOD BLANK SUMMARY

Login Number: L16061026
Blank File ID: M7.062416.115602
Prep Date: 06/21/16 12:47
Analyzed Date: 06/24/16 11:56
Analyst: AMA

Work Group: WG573634
Blank Sample ID: WG573569-02
Instrument ID: CVAA1
Method: 7470A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573569-03	M7.062416.115833	06/24/16 11:58	01
18WW16F-061616	L16061026-02	M7.062416.121852	06/24/16 12:18	01
129-061616	L16061026-04	M7.062416.122629	06/24/16 12:26	01
120F-061616	L16061026-06	M7.062416.123133	06/24/16 12:31	01
123-061616	L16061026-07	M7.062416.123404	06/24/16 12:34	01

Report Name: BLANK_SUMMARY
PDF File ID: 4823373
Report generated 06/24/2016 13:39

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061026 Prep Date: 06/21/16 12:47 Sample ID: WG573569-02
Instrument ID: CVAA1 Run Date: 06/24/16 11:56 Prep Method: 7470A
File ID: M7.062416.115602 Analyst: AMA Method: 7470A
Workgroup (AAB#): WG573634 Matrix: Water Units: mg/L
Contract #: Cal ID: CVAA1-24-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Mercury	0.000100	0.000400	0.000100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4823374
24-JUN-2016 13:39

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061026 Run Date: 06/24/2016 Sample ID: WG573569-03
Instrument ID: CVAA1 Run Time: 11:58 Prep Method: 7470A
File ID: M7.062416.115833 Analyst: AMA Method: 7470A
Workgroup (AAB#): WG573634 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76734 Cal ID: CVAA1-24-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Mercury	0.00400	0.00410	103	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4823375
Report generated: 06/24/2016 13:40

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061026 Cal ID: CVAA1 - Worknum: WG573634
Instrument ID: CVAA1 Contract #: Method: 7470A
Parent ID: WG573569-01 File ID: M7.062416.121113 Dil: 1 Matrix: WATER
Sample ID: WG573569-04 MS File ID: M7.062416.121345 Dil: 1 Units: mg/L
Sample ID: WG573569-05 MSD File ID: M7.062416.121618 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Mercury	ND	0.0400	0.0414	103	0.0400	0.0422	105	1.96	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4823376
Report generated 06/24/2016 13:40

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061026 **Worknum:** WG573634
Instrument ID: CVAA1 **Method:** 7470A
Post Spike ID: WG573634-02 **File ID:** M7.062416.122903 **Dil:** 1 **Units:** ug/L
Sample ID: L16061026-04 **File ID:** M7.062416.122629 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MERCURY	1.12		0	U	1	111.7	85 - 115	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4823371
Report generated: 06/24/2016 13:39

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061026
Analytical Method: 7470A
ICAL Worknum: WG574110

Workgroup (AAB#): WG573634
Instrument ID: CVAA1
Initial Calibration Date: 06/24/2016 11:43

Analyte	WG574110-01		WG574110-02		WG574110-03		WG574110-04		WG574110-05		WG574110-06	
	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT
Mercury	0	-123.7	0.200	2497	1.00	13190	2.00	25900	5.00	62740	10.0	123100

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4823377
Report generated 06/24/2016 13:40

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061026
Analytical Method: 7470A
ICAL Worknum: WG574110

Workgroup (AAB#): WG573634
Instrument ID: CVAA1
Initial Calibration Date: 06/24/2016 11:43

Analyte	R	Q
Mercury	1.000	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4823377
Report generated 06/24/2016 13:40

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061026
Run Date: 06/24/2016
Sample ID: WG574110-08
Instrument ID: CVAA1
Run Time: 11:48
Method: 7470A
File ID: M7.062416.114828
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG573634
Cal ID: CVAA1 - 24-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
MERCURY	.1	.4	.1	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4823379
Report generated 06/24/2016 13:40

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 06/24/2016
Sample ID: WG574110-10
Instrument ID: CVAA1
Run Time: 11:53
Method: 7470A
File ID: M7.062416.115331
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG573634
Cal ID: CVAA1 - 24-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4823381
Report generated 06/24/2016 13:40

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 06/24/2016
Sample ID: WG574110-12
Instrument ID: CVAA1
Run Time: 12:23
Method: 7470A
File ID: M7.062416.122355
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG573634
Cal ID: CVAA1 - 24-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4823381
Report generated 06/24/2016 13:40

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 06/24/2016
Sample ID: WG574110-14
Instrument ID: CVAA1
Run Time: 12:54
Method: 7470A
File ID: M7.062416.125416
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG573634
Cal ID: CVAA1 - 24-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4823381
Report generated 06/24/2016 13:40

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061026 Run Date: 06/24/2016 Sample ID: WG574110-07
Instrument ID: CVAA1 Run Time: 11:45 Method: 7470A
File ID: M7.062416.114558 Analyst: AMA Units: ug/L
Workgroup (AAB#): WG573634 Cal ID: CVAA1 - 24-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Mercury		2	2.12	106	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4823378
Report generated 06/24/2016 13:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 06/24/2016
Sample ID: WG574110-09
Instrument ID: CVAA1
Run Time: 11:51
Method: 7470A
File ID: M7.062416.115100
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG573634
Cal ID: CVAA1 - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00208	mg/L	104	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4823380
Report generated 06/24/2016 13:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 06/24/2016
Sample ID: WG574110-11
Instrument ID: CVAA1
Run Time: 12:21
Method: 7470A
File ID: M7.062416.122124
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG573634
Cal ID: CVAA1 - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00209	mg/L	104	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4823380
Report generated 06/24/2016 13:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 06/24/2016
Sample ID: WG574110-13
Instrument ID: CVAA1
Run Time: 12:51
Method: 7470A
File ID: M7.062416.125146
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG573634
Cal ID: CVAA1 - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00210	mg/L	105	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4823380
Report generated 06/24/2016 13:40

2.3.3.3 Raw Data

PDM CVAA1 245.1/7470/7471

Report Generated By CETAC QuickTrace
Analyst: VOA
Worksheet file: C:\Program Files (x86)\QuickTrace\Worksheets\062416C.wsz
Date Started: 6/24/2016 10:42:42 AM
Comment:

Results

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
Standard #0					STD	06/24/16 11:30:41 am	0.0000	-124	6.50		1.00
Replicates	-125.6	-120.7	-114.7	-133.7							
Standard #1 (0.2 ug/L)					STD	06/24/16 11:33:12 am	0.2000	2497	1.03		1.00
Replicates	2532.4	2495.4	2485.2	2473.0							
Standard #2 (1.0 ug/L)					STD	06/24/16 11:35:44 am	1.0000	13188	0.20		1.00
Replicates	13156.9	13204.2	13176.2	13216.7							
Standard #3 (2.0 ug/L)					STD	06/24/16 11:38:17 am	2.0000	25902	0.19		1.00
Replicates	25832.1	25909.2	25919.1	25947.6							
Standard #4 (5.0 ug/L)					STD	06/24/16 11:40:50 am	5.0000	62743	0.07		1.00
Replicates	62774.8	62784.3	62720.3	62693.3							
Standard #5 (10.0 ug/L)					STD	06/24/16 11:43:23 am	10.0000	123113	0.05		1.00
Replicates	123114.0	123195.4	123091.9	123051.0							

Calibration

Equation: A = 562.316 + 12304.710C
R2: 0.99982
SEE: 718.1607
Flags:

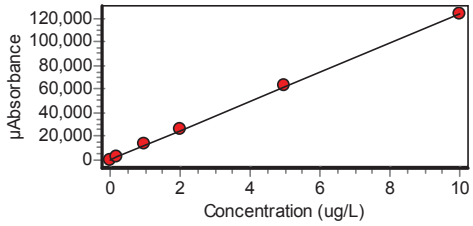

ICV					ICV	06/24/16 11:45:58 am	2.1200	26644	0.08		1.00
Replicates	26667.3	26648.5	26644.8	26613.7							
% Recovery	105.98										

Approved: June 24, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
ICB					ICB	06/24/16 11:48:28 am	-0.0565	-133	13.15		1.00
Replicates	-108.7	-130.8	-146.4	-144.6							
CCV					CCV	06/24/16 11:51:00 am	2.0750	26090	0.11		1.00
Replicates	26047.2	26112.0	26096.1	26105.0							
% Recovery	103.73										
CCB					CCB	06/24/16 11:53:31 am	-0.0565	-133	19.09		1.00
Replicates	-104.5	-135.1	-165.3	-125.1							
WG573569-02					MB	06/24/16 11:56:02 am	-0.0519	-76	32.96		1.00
Replicates	-68.9	-49.0	-109.2	-76.8							
WG573569-03					LCS	06/24/16 11:58:33 am	4.1010	51028	0.27		1.00
Replicates	51167.9	51113.4	50952.9	50877.9							
% Recovery	102.53										
WG573353-01					UNK	06/24/16 12:01:04 pm	-0.0539	-100	17.95		1.00
Replicates	-110.8	-94.0	-78.3	-118.8							
WG573353-02					UNK	06/24/16 12:03:36 pm	-0.0522	-80	23.40		1.00
Replicates	-65.6	-64.0	-88.5	-102.8							
L1606092401					UNK	06/24/16 12:06:08 pm	-0.0500	-53	43.61		1.00
Replicates	-45.8	-23.2	-73.7	-67.4							
WG573634-01					SPK	06/24/16 12:08:40 pm	1.0160	13067	0.05		1.00
Replicates	13062.7	13073.7	13072.7	13060.1							
% Recovery	106.62										
L1606094601					UNK	06/24/16 12:11:13 pm	-0.0515	-71	18.47		1.00
Replicates	-61.7	-83.9	-81.5	-58.4							
WG573569-04					MSK	06/24/16 12:13:45 pm	4.1370	51465	0.26		1.00
Replicates	51584.9	51566.1	51401.3	51308.1							
% Recovery	104.71										
WG573569-05					MSDUP	06/24/16 12:16:18 pm	4.2190	52479	0.25		1.00
Replicates	52616.2	52552.9	52417.8	52330.6							
% Recovery	106.77	RPD 1.97									

Approved: June 24, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1606102602					UNK	06/24/16 12:18:52 pm	-0.0127	406	3.31		1.00
Replicates	419.5	412.0	405.9	388.0							
CCV					CCV	06/24/16 12:21:24 pm	2.0880	26260	0.11		1.00
Replicates	26221.2	26256.1	26279.1	26282.6							
% Recovery	104.42										
CCB					CCB	06/24/16 12:23:55 pm	-0.0508	-63	26.93		1.00
Replicates	-51.4	-74.7	-79.8	-45.5							
L1606102604					UNK	06/24/16 12:26:29 pm	0.0578	1274	0.97		1.00
Replicates	1286.3	1277.8	1274.3	1257.0							
WG573634-02					SPK	06/24/16 12:29:03 pm	1.1170	14301	0.43		1.00
Replicates	14377.4	14319.1	14276.8	14231.6							
% Recovery	105.87										
L1606102606					UNK	06/24/16 12:31:33 pm	-0.0171	352	3.68		1.00
Replicates	357.3	364.0	352.5	333.8							
L1606102607					UNK	06/24/16 12:34:04 pm	-0.0371	105	17.82		1.00
Replicates	77.9	117.1	108.3	117.9							
L1606105001					UNK	06/24/16 12:36:35 pm	-0.0459	-2	358.28		1.00
Replicates	6.4	-11.0	-4.5	0.8							
L1606106901					UNK	06/24/16 12:39:06 pm	-0.0485	-34	55.27		1.00
Replicates	-23.9	-40.3	-14.9	-57.9							
L1606107101					UNK	06/24/16 12:41:37 pm	-0.0481	-29	48.26		1.00
Replicates	-41.6	-39.6	-12.8	-21.8							
L1606107301					UNK	06/24/16 12:44:09 pm	-0.0488	-39	41.51		1.00
Replicates	-28.6	-57.0	-46.4	-22.2							
L1606107501					UNK	06/24/16 12:46:41 pm	-0.0480	-29	76.76		1.00
Replicates	-26.3	-25.9	-4.4	-57.5							

Approved: June 24, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1606108001					UNK	06/24/16 12:49:13 pm	-0.0462	-7	88.87		1.00
Replicates	-6.5	-6.5	0.5	-13.8							
CCV					CCV	06/24/16 12:51:46 pm	2.1040	26453	0.22		1.00
Replicates	26375.1	26443.2	26484.2	26510.7							
% Recovery	105.21										
CCB					CCB	06/24/16 12:54:16 pm	-0.0485	-34	24.78		1.00
Replicates	-46.2	-26.8	-34.0	-30.0							
L1606108201					UNK	06/24/16 12:56:49 pm	-0.0472	-18	62.97		1.00
Replicates	-12.7	-11.4	-35.1	-13.1							
L1606108401					UNK	06/24/16 12:59:22 pm	-0.0485	-35	50.45		1.00
Replicates	-42.3	-9.0	-48.2	-39.8							
L1606108601					UNK	06/24/16 01:01:55 pm	-0.0481	-29	81.30		1.00
Replicates	-31.3	-23.7	-2.0	-59.2							
L1606108801					UNK	06/24/16 01:04:28 pm	-0.0474	-21	90.18		1.00
Replicates	-31.9	-30.0	-27.8	7.2							
025					UNK	06/24/16 01:06:59 pm	-0.0468	-13	51.82		1.00
Replicates	-22.1	-6.8	-15.0	-9.0							
026					UNK	06/24/16 01:09:30 pm	-0.0454	4	505.74		1.00
Replicates	-14.7	16.4	-13.5	29.0							
027					UNK	06/24/16 01:12:01 pm	-0.0485	-34	28.66		1.00
Replicates	-21.1	-34.6	-35.5	-44.8							
028					UNK	06/24/16 01:14:32 pm	-0.0467	-12	134.10		1.00
Replicates	-8.5	-20.3	-29.3	8.9							
029					UNK	06/24/16 01:17:03 pm	-0.0486	-35	64.66		1.00
Replicates	-43.5	-15.5	-63.2	-17.9							

Approved: June 24, 2016
Alexandra M. Alfred

Sample Name						Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
030						UNK	06/24/16 01:19:35 pm	-0.0481	-30	59.77		1.00
	Replicates	-41.5	-3.9	-31.8	-41.1							
CCV						CCV	06/24/16 01:22:07 pm	2.1150	26592	0.19		1.00
	Replicates	26521.3	26594.8	26640.8	26612.1							
	% Recovery	105.77										
CCB						CCB	06/24/16 01:24:38 pm	-0.0484	-33	62.87		1.00
	Replicates	-59.1	-18.7	-14.2	-39.5							

Approved: June 24, 2016

Alexandra M. Alfred

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
July 12, 2016

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BNB - Brandi N. Bentley
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJQ - Cameron J. Quick
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
CV - Carl Volkman
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
EMW - ERIC M. WILKEN
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
HDC - Hanah D. Coe
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LJH - Lacey J. Hendershot
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
NPH - Natalie P. Hart
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
July 12, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
July 12, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Debra Richmann
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD	pH:	
Project Name/Location:	Longhorn		
Project Number:	60274185.0013BH 1824 MR10		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Total Metals	1,4 - DIOXANE					SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 18/24	18WW16-061616			6/16/16	0755		✓	W	4	✓	✓											
	18WW16F-061616			6/16/16	0755		✓	W	1			✓										
	102-061616			6/16/16	0840		✓	W	4	✓	✓											
	129-061616			6/16/16	0905		✓	W	7	✓	✓	✓	✓									
	120-061616			6/16/16	0925		✓	W	6	✓	✓		✓									
	120F-061616			6/16/16	0925		✓	W	1			✓										
	123-061616			6/16/16	0955		✓	W	7	✓	✓	✓	✓									
	TRIP BLANK			6/16/16			✓	W	2	✓												

Comments: **STANDARD TAT**

Relinquished by: (Signature) Scott Beesinger	Date 6/16/16	Time 1545	Received by: (Signature)	Received by: (Signature)	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for (Signature)			Remarks:

Microbac OVD
Received: 06/17/2016 09:48
By: BRENDA GREGORY
221000087344
Brenda Gregory

*Homogenize all composite samples prior to analysis

ink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061026
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 28-JUN-2016

Samplenum	Container ID	Products
L16061026-01	762826	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-JUN-2016 15:15	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 15:29	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:58	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-JUN-2016 15:15	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 15:29	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:58	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-JUN-2016 15:15	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 15:29	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:58	CLS	AWE	

Samplenum	Container ID	Products
L16061026-01	762827	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-JUN-2016 15:15	CLS		
2	ANALYZ	W1	SEM	24-JUN-2016 12:12	JWR	BRG	
3	STORE	SEM	A1	29-JUN-2016 13:20	CLS	JWR	

Samplenum	Container ID	Products
L16061026-02	762828	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-JUN-2016 15:15	CLS		
2	PREP	W1	DIG	18-JUN-2016 08:03	ERP	BRG	
3	ANALYZ*	DIG	METALS	21-JUN-2016 16:29	AMA	ERP	
4	STORE	DIG	A1	22-JUN-2016 12:31	CLS	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061026
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 28-JUN-2016

Samplenum	Container ID	Products
L16061026-03	762829	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-JUN-2016 15:15	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 15:29	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:58	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-JUN-2016 15:15	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 15:29	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:58	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-JUN-2016 15:15	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 15:29	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:58	CLS	AWE	

Samplenum	Container ID	Products
L16061026-03	762830	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-JUN-2016 15:15	CLS		
2	ANALYZ	W1	SEM	24-JUN-2016 12:12	JWR	BRG	
3	STORE	SEM	A1	29-JUN-2016 13:20	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061026
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 28-JUN-2016

Samplenum	Container ID	Products
L16061026-04	762831	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-JUN-2016 15:15	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 15:29	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:58	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-JUN-2016 15:15	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 15:29	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:58	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-JUN-2016 15:15	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 15:29	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:58	CLS	AWE	

Samplenum	Container ID	Products
L16061026-04	762832	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-JUN-2016 15:15	CLS		
2	PREP	W1	EXT	20-JUN-2016 16:36	CPD	BRG	
3	ANALYZ*	EXT	SEMI	23-JUN-2016 09:21	SCB	CPD	
4	DISP	EXT	DISP	24-JUN-2016 11:59	BJO	BJO	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-JUN-2016 15:15	CLS		
2	STORE	W1	A1	24-JUN-2016 08:45	BRG	BRG	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061026
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 28-JUN-2016

Samplenum	Container ID	Products
L16061026-04	762833	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-JUN-2016 15:15	CLS		
2	ANALYZ	W1	SEM	24-JUN-2016 12:12	JWR	BRG	
3	STORE	SEM	A1	29-JUN-2016 13:20	CLS	JWR	

Samplenum	Container ID	Products
L16061026-04	762834	K MG MN-MS NA NI-MS PB-MS SB-MS SE-AX TL-MS V-

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-JUN-2016 15:15	CLS		
2	PREP	W1	DIG	18-JUN-2016 08:03	ERP	BRG	
3	ANALYZ*	DIG	METALS	21-JUN-2016 16:29	AMA	ERP	
4	STORE	DIG	A1	22-JUN-2016 12:31	CLS	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061026-05	762835	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-JUN-2016 15:15	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 15:29	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:58	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-JUN-2016 15:15	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 15:29	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:58	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-JUN-2016 15:15	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 15:29	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:58	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061026
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 28-JUN-2016

Samplenum	Container ID	Products
L16061026-05	762836	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-JUN-2016 15:15	CLS		
2	PREP	W1	EXT	20-JUN-2016 16:36	CPD	BRG	
3	ANALYZ*	EXT	SEMI	23-JUN-2016 09:21	SCB	CPD	
4	DISP	EXT	DISP	24-JUN-2016 11:59	BJO	BJO	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-JUN-2016 15:15	CLS		
2	STORE	W1	A1	24-JUN-2016 08:22	BRG	BRG	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061026-05	762837	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-JUN-2016 15:15	CLS		
2	ANALYZ	W1	SEM	24-JUN-2016 12:12	JWR	BRG	
3	STORE	SEM	A1	29-JUN-2016 13:20	CLS	JWR	

Samplenum	Container ID	Products
L16061026-06	762838	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-JUN-2016 15:15	CLS		
2	PREP	W1	DIG	18-JUN-2016 08:03	ERP	BRG	
3	ANALYZ*	DIG	METALS	21-JUN-2016 16:29	AMA	ERP	
4	STORE	DIG	A1	22-JUN-2016 12:31	CLS	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061026
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 28-JUN-2016

Samplenum	Container ID	Products
L16061026-07	762839	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-JUN-2016 15:15	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 15:29	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:58	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-JUN-2016 15:15	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 15:29	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:58	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-JUN-2016 15:15	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 15:29	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:58	CLS	AWE	

Samplenum	Container ID	Products
L16061026-07	762840	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-JUN-2016 15:15	CLS		
2	PREP	W1	EXT	20-JUN-2016 16:36	CPD	BRG	
3	ANALYZ*	EXT	SEMI	23-JUN-2016 09:21	SCB	CPD	
4	DISP	EXT	DISP	24-JUN-2016 11:59	BJO	BJO	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-JUN-2016 15:15	CLS		
2	STORE	W1	A1	24-JUN-2016 08:23	BRG	BRG	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061026
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 28-JUN-2016

Samplenum	Container ID	Products
L16061026-07	762841	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-JUN-2016 15:15	CLS		
2	ANALYZ	W1	SEM	24-JUN-2016 12:12	JWR	BRG	
3	STORE	SEM	A1	29-JUN-2016 13:20	CLS	JWR	

Samplenum	Container ID	Products
L16061026-07	762842	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	17-JUN-2016 15:15	CLS		
2	PREP	W1	DIG	18-JUN-2016 08:03	ERP	BRG	
3	ANALYZ*	DIG	METALS	21-JUN-2016 16:29	AMA	ERP	
4	STORE	DIG	A1	22-JUN-2016 12:31	CLS	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061026-08	762843	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-JUN-2016 15:15	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 15:29	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:58	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	17-JUN-2016 15:15	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 15:29	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:58	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16061068

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Michelle Taylor – Client Services Specialist
(740) 373-4071
Michelle.Taylor@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on July 12 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

The following discrepancies were noted:

Discrepancy	Resolution
Sample ID per COC: MW18F-061716. Label reads: MW18-061716. BRG Sample ID: MW18MS-061716. No analyses marked on COC. Received VOC's and Perchlorate. BRG Sample ID per COC: MW18FMS-061716. Label reads: MW18-061716. BRG Sample ID per COC: MW18FMSD-061716. Label reads: MW18-061716. BRG	Sample ID per COC: MW18F-061716. Label reads: MW18-061716. MW18F-061716 should only be for metals, if the F is not on the label please add. Sample ID: MW18MS-061716. No analyses marked on COC. Received VOC's and Perchlorate. Please check VOCs and perchlorate on COC Sample ID per COC: MW18FMS-061716. Label reads: MW18-061716. Please add F if for metals Sample ID per COC: MW18FMSD-061716. Label reads: MW18-061716. Please add F is for metals
Sample ID: MW19-061716. 1 of 3 voa vials received w/headspace. BRG	Please log and proceed. MRT

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00113044	H	6.0		J2317164966	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	No
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	No

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
MW23-061716	L16061068-01	06/17/2016 07:30	06/18/2016 10:41
MW23MS-061716	L16061068-02	06/17/2016 07:30	06/18/2016 10:41
MW23MSD-061716	L16061068-03	06/17/2016 07:30	06/18/2016 10:41
C01-061716	L16061068-04	06/17/2016 08:35	06/18/2016 10:41
C01FD-061716	L16061068-05	06/17/2016 08:35	06/18/2016 10:41
MW13-061716	L16061068-06	06/17/2016 09:45	06/18/2016 10:41
C02-061716	L16061068-07	06/17/2016 10:45	06/18/2016 10:41
C02MS-061716	L16061068-08	06/17/2016 10:45	06/18/2016 10:41
C02MSD-061716	L16061068-09	06/17/2016 10:45	06/18/2016 10:41
MW19-061716	L16061068-10	06/17/2016 13:10	06/18/2016 10:41
MW19F-061716	L16061068-11	06/17/2016 13:10	06/18/2016 10:41
MW18-061716	L16061068-12	06/17/2016 14:20	06/18/2016 10:41
MW18F-061716	L16061068-13	06/17/2016 14:20	06/18/2016 10:41
MW18MS-061716	L16061068-14	06/17/2016 14:20	06/18/2016 10:41
MW18FMS-061716	L16061068-15	06/17/2016 14:20	06/18/2016 10:41
MW18MSD-061716	L16061068-16	06/17/2016 14:20	06/18/2016 10:41
MW18FMSD-061716	L16061068-17	06/17/2016 14:20	06/18/2016 10:41
TRIP BLANK	L16061068-18	06/17/2016 00:01	06/18/2016 10:41

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16061068
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.0 Summary Data

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Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	8260
Prep Batch Number(s):	573991, 574227, 574410, 574736	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-07-11 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2016-07-11 20:26:47

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	8260
Prep Batch Number(s):	573991, 574227, 574410, 574736	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-07-11 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?		X			1
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	8260
Prep Batch Number(s):	573991, 574227, 574410, 574736	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-07-11 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				2
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	8260
Prep Batch Number(s):	573991, 574227, 574410, 574736	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-07-11 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			3
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	8260
Prep Batch Number(s):	573991, 574227, 574410, 574736	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-07-11 00:00:00		

Method detection limit (MDL) studies					
Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	8260
Prep Batch Number(s):	573991, 574227, 574410, 574736	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-07-11 00:00:00		

data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1)1,2-Dichloroethane-d4 exceeded the UCL in the surrogate standards.
2) Bromodichloromethane exceeded the UCL for % recovery in the MS/MSD.
3)2,2-Dichloropropane exceeded the UCL in the CCV analyzed 06/23/16 on HPMS8. 2,2-Dichloropropane exceeded the UCL in the CCV analyzed 06/26/16 on HPMS8. Acetone, Carbon Tetrachloride, 1,2-Dichloroethane, 2,2-Dichloropropane, 1,1,1-Trichloroethane, and Trichlorofluoromethane exceeded the UCL in the CCV analyzed on 06/27/16 on HPMS8. Dichlorodifluoromethane and 2,2-Dichloropropane exceeded the UCL in the CCV analyzed 06/30/16 on HPMS8.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574701	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-01 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Wade DeLong	Wade DeLong	Chemist I	2016-07-01 12:55:51

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574701	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-01 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?	X				
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574701	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-01 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574701	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-01 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574701	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-01 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574701	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-01 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER1 Recoveries in the MS and MSD are out of range due to high level of target analyte in the reference sample and required dilutions to obtain results within the calibration range for Sample 01. Acceptable recoveries were observed in the MS/MSD performed on Sample 07 and Sample 12.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573869	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-07-07 21:59:12

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573869	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?		X			ER#3
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573869	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			ER#2
Were MS/MSD RPDs within laboratory QC limits?		X			ER#2
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573869	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			ER#1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573869	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573869	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - Due to continuing calibration verification failure on 27-JUN-2016 at 20:09, the post digestion spike was reanalyzed on 28-Jun-2016 and met all acceptance criteria.

ER#2 - Sample 13 was chosen by the client for MS/MSD analysis. Samples 15 (MS) and 17 (MSD) yielded noncompliant recoveries for three analytes and a noncompliant RPD for one analyte.

ER#3 - Client samples 04 and 05 required dilution analyses in order to obtain results for calcium, magnesium, and sodium within the calibration range. Client sample 11 required dilution analysis in order to obtain results for aluminum and iron within the calibration range. Client samples 13, 15, and 17 required dilution analyses in order to obtain results for iron and sodium within the calibration range.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG573840	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-07-07 21:55:26

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG573840	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?		X			ER#2
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG573840	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			ER#1
Were MS/MSD RPDs within laboratory QC limits?		X			ER#1
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG573840	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG573840	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG573840	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - Sample 13 was chosen by the client for MS/MSD analysis. Samples 15 (MS) and 17 (MSD) yielded noncompliant recoveries and RPD's for three analytes.

ER#2 - Client samples 04, 05, 11, and 17 required dilution analyses in order to obtain results for barium within the calibration range. For consistency with the batch QC sample 17 (MSD), the reference 13 and batch QC sample 15 (MS) were also reanalyzed at dilutions for barium. Client samples 11, 13, 15, and 17 required dilution analyses in order to obtain results for manganese within the calibration range. Client sample 11 required dilution analysis in order to obtain result for zinc within the calibration range.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG573482	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-07-07 21:53:27

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG573482	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG573482	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG573482	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG573482	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061068
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG573482	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW23-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573991	**Analyst:**	FJB	**Run Date:**	06/24/2016 05:15
Collect Date:	06/17/2016 07:30	**Dilution:**	10	**File ID:**	8M413209
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	50.0	U	100	50.0	25.0
Benzene	71-43-2	2.50	U	10.0	2.50	1.25
Bromobenzene	108-86-1	2.50	U	10.0	2.50	1.25
Bromochloromethane	74-97-5	4.00	U	10.0	4.00	2.00
Bromodichloromethane	75-27-4	5.00	U	10.0	5.00	2.50
Bromoform	75-25-2	10.0	U	20.0	10.0	5.00
Bromomethane	74-83-9	10.0	U	20.0	10.0	5.00
2-Butanone	78-93-3	50.0	U	100	50.0	25.0
n-Butylbenzene	104-51-8	5.00	U	10.0	5.00	2.50
sec-Butylbenzene	135-98-8	5.00	U	10.0	5.00	2.50
tert-Butylbenzene	98-06-6	5.00	U	10.0	5.00	2.50
Carbon disulfide	75-15-0	10.0	U	20.0	10.0	5.00
Carbon tetrachloride	56-23-5	5.00	U	10.0	5.00	2.50
Chlorobenzene	108-90-7	2.50	U	10.0	2.50	1.25
Chlorodibromomethane	124-48-1	5.00	U	10.0	5.00	2.50
Chloroethane	75-00-3	10.0	U	20.0	10.0	5.00
Chloroform	67-66-3	4.78	J	10.0	2.50	1.25
Chloromethane	74-87-3	10.0	U	20.0	10.0	5.00
2-Chlorotoluene	95-49-8	2.50	U	10.0	2.50	1.25
4-Chlorotoluene	106-43-4	5.00	U	10.0	5.00	2.50
1,2-Dibromo-3-chloropropane	96-12-8	20.0	U	50.0	20.0	10.0
1,2-Dibromoethane	106-93-4	5.00	U	10.0	5.00	2.50
Dibromomethane	74-95-3	5.00	U	10.0	5.00	2.50
1,2-Dichlorobenzene	95-50-1	2.50	U	10.0	2.50	1.25
1,3-Dichlorobenzene	541-73-1	5.00	U	10.0	5.00	2.50
1,4-Dichlorobenzene	106-46-7	2.50	U	10.0	2.50	1.25
Dichlorodifluoromethane	75-71-8	5.00	U	10.0	5.00	2.50
1,1-Dichloroethane	75-34-3	2.50	U	10.0	2.50	1.25
1,2-Dichloroethane	107-06-2	50.5		10.0	5.00	2.50
1,1-Dichloroethene	75-35-4	10.0	U	20.0	10.0	5.00
cis-1,2-Dichloroethene	156-59-2	7.33	J	10.0	5.00	2.50
trans-1,2-Dichloroethene	156-60-5	5.00	U	10.0	5.00	2.50

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	4.00	U	10.0	4.00	2.00
1,3-Dichloropropane	142-28-9	4.00	U	10.0	4.00	2.00
2,2-Dichloropropane	594-20-7	5.00	Q	10.0	5.00	2.50
cis-1,3-Dichloropropene	10061-01-5	5.00	U	10.0	5.00	2.50
trans-1,3-Dichloropropene	10061-02-6	10.0	U	20.0	10.0	5.00
1,1-Dichloropropene	563-58-6	5.00	U	10.0	5.00	2.50
Ethylbenzene	100-41-4	5.00	U	10.0	5.00	2.50
2-Hexanone	591-78-6	50.0	U	100	50.0	25.0
Hexachlorobutadiene	87-68-3	5.00	U	10.0	5.00	2.50
Isopropylbenzene	98-82-8	5.00	U	10.0	5.00	2.50
p-Isopropyltoluene	99-87-6	5.00	U	10.0	5.00	2.50
4-Methyl-2-pentanone	108-10-1	50.0	U	100	50.0	25.0
Methylene chloride	75-09-2	5.00	U	10.0	5.00	2.50
Naphthalene	91-20-3	4.00	U	10.0	4.00	2.00
n-Propylbenzene	103-65-1	2.50	U	10.0	2.50	1.25
Styrene	100-42-5	2.50	U	10.0	2.50	1.25
1,1,1,2-Tetrachloroethane	630-20-6	5.00	U	10.0	5.00	2.50
1,1,2,2-Tetrachloroethane	79-34-5	4.00	U	10.0	4.00	2.00
Tetrachloroethene	127-18-4	5.00	U	10.0	5.00	2.50
Toluene	108-88-3	5.00	U	10.0	5.00	2.50
1,2,3-Trichlorobenzene	87-61-6	3.00	U	10.0	3.00	1.50
1,2,4-Trichlorobenzene	120-82-1	4.00	U	10.0	4.00	2.00
1,1,1-Trichloroethane	71-55-6	5.00	U	10.0	5.00	2.50
1,1,2-Trichloroethane	79-00-5	5.00	U	10.0	5.00	2.50
Trichloroethene	79-01-6	1170		10.0	5.00	2.50
Trichlorofluoromethane	75-69-4	5.00	U	10.0	5.00	2.50
1,2,3-Trichloropropane	96-18-4	10.0	U	20.0	10.0	5.00
1,2,4-Trimethylbenzene	95-63-6	5.00	U	10.0	5.00	2.50
1,3,5-Trimethylbenzene	108-67-8	5.00	U	10.0	5.00	2.50
Vinyl chloride	75-01-4	5.00	U	10.0	5.00	2.50
o-Xylene	95-47-6	5.00	U	10.0	5.00	2.50
m-,p-Xylene	179601-23-1	10.0	U	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	111	85	115	
1,2-Dichloroethane-d4	118	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	100	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW23-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/29/2016 19:11
Collect Date:	06/17/2016 07:30	**Dilution:**	10000	**File ID:**	1LM.LM35524
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	65200		4000	2000	1000

Certificate of Analysis

Sample #:	L16061068-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW23MS-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573991	**Analyst:**	FJB	**Run Date:**	06/24/2016 05:44
Collect Date:	06/17/2016 07:30	**Dilution:**	10	**File ID:**	8M413210
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	242	J	100	50.0	25.0
Benzene	71-43-2	222	J	10.0	2.50	1.25
Bromobenzene	108-86-1	189	J	10.0	2.50	1.25
Bromochloromethane	74-97-5	230	J	10.0	4.00	2.00
Bromodichloromethane	75-27-4	245	J	10.0	5.00	2.50
Bromoform	75-25-2	208	J	20.0	10.0	5.00
Bromomethane	74-83-9	117	J	20.0	10.0	5.00
2-Butanone	78-93-3	205	J	100	50.0	25.0
n-Butylbenzene	104-51-8	190	J	10.0	5.00	2.50
sec-Butylbenzene	135-98-8	203	J	10.0	5.00	2.50
tert-Butylbenzene	98-06-6	196	J	10.0	5.00	2.50
Carbon disulfide	75-15-0	212	J	20.0	10.0	5.00
Carbon tetrachloride	56-23-5	259	J	10.0	5.00	2.50
Chlorobenzene	108-90-7	208	J	10.0	2.50	1.25
Chlorodibromomethane	124-48-1	211	J	10.0	5.00	2.50
Chloroethane	75-00-3	227	J	20.0	10.0	5.00
Chloroform	67-66-3	236	J	10.0	2.50	1.25
Chloromethane	74-87-3	228	J	20.0	10.0	5.00
2-Chlorotoluene	95-49-8	181	J	10.0	2.50	1.25
4-Chlorotoluene	106-43-4	222	J	10.0	5.00	2.50

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	185	J	50.0	20.0	10.0
1,2-Dibromoethane	106-93-4	201	J	10.0	5.00	2.50
Dibromomethane	74-95-3	218	J	10.0	5.00	2.50
1,2-Dichlorobenzene	95-50-1	196	J	10.0	2.50	1.25
1,3-Dichlorobenzene	541-73-1	199	J	10.0	5.00	2.50
1,4-Dichlorobenzene	106-46-7	197	J	10.0	2.50	1.25
Dichlorodifluoromethane	75-71-8	293	J	10.0	5.00	2.50
1,1-Dichloroethane	75-34-3	219	J	10.0	2.50	1.25
1,2-Dichloroethane	107-06-2	309	J	10.0	5.00	2.50
1,1-Dichloroethene	75-35-4	226	J	20.0	10.0	5.00
cis-1,2-Dichloroethene	156-59-2	234	J	10.0	5.00	2.50
trans-1,2-Dichloroethene	156-60-5	224	J	10.0	5.00	2.50
1,2-Dichloropropane	78-87-5	215	J	10.0	4.00	2.00
1,3-Dichloropropane	142-28-9	210	J	10.0	4.00	2.00
2,2-Dichloropropane	594-20-7	226	Q	10.0	5.00	2.50
cis-1,3-Dichloropropene	10061-01-5	244	J	10.0	5.00	2.50
trans-1,3-Dichloropropene	10061-02-6	214	J	20.0	10.0	5.00
1,1-Dichloropropene	563-58-6	225	J	10.0	5.00	2.50
Ethylbenzene	100-41-4	203	J	10.0	5.00	2.50
2-Hexanone	591-78-6	168	J	100	50.0	25.0
Hexachlorobutadiene	87-68-3	202	J	10.0	5.00	2.50
Isopropylbenzene	98-82-8	222	J	10.0	5.00	2.50
p-Isopropyltoluene	99-87-6	199	J	10.0	5.00	2.50
4-Methyl-2-pentanone	108-10-1	188	J	100	50.0	25.0
Methylene chloride	75-09-2	216	J	10.0	5.00	2.50
Naphthalene	91-20-3	157	J	10.0	4.00	2.00
n-Propylbenzene	103-65-1	205	J	10.0	2.50	1.25
Styrene	100-42-5	210	J	10.0	2.50	1.25
1,1,1,2-Tetrachloroethane	630-20-6	215	J	10.0	5.00	2.50
1,1,2,2-Tetrachloroethane	79-34-5	173	J	10.0	4.00	2.00
Tetrachloroethene	127-18-4	210	J	10.0	5.00	2.50
Toluene	108-88-3	205	J	10.0	5.00	2.50
1,2,3-Trichlorobenzene	87-61-6	175	J	10.0	3.00	1.50
1,2,4-Trichlorobenzene	120-82-1	186	J	10.0	4.00	2.00
1,1,1-Trichloroethane	71-55-6	249	J	10.0	5.00	2.50
1,1,2-Trichloroethane	79-00-5	197	J	10.0	5.00	2.50
Trichloroethene	79-01-6	1390	J	10.0	5.00	2.50
Trichlorofluoromethane	75-69-4	257	J	10.0	5.00	2.50
1,2,3-Trichloropropane	96-18-4	189	J	20.0	10.0	5.00

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	198	J	10.0	5.00	2.50
1,3,5-Trimethylbenzene	108-67-8	204	J	10.0	5.00	2.50
Vinyl chloride	75-01-4	281	J	10.0	5.00	2.50
o-Xylene	95-47-6	212	J	10.0	5.00	2.50
m-,p-Xylene	179601-23-1	422	J	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	111	85	115	
1,2-Dichloroethane-d4	121	70	120	*
Toluene-d8	102	85	120	
4-Bromofluorobenzene	100	75	120	

J	The reported result is an estimated value.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW23MS-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/29/2016 19:30
Collect Date:	06/17/2016 07:30	**Dilution:**	10000	**File ID:**	1LM.LM35525
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	66700		4000	2000	1000

Certificate of Analysis

Sample #:	L16061068-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW23MSD-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573991	**Analyst:**	FJB	**Run Date:**	06/24/2016 06:13
Collect Date:	06/17/2016 07:30	**Dilution:**	10	**File ID:**	8M413211
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	247		100	50.0	25.0
Benzene	71-43-2	218		10.0	2.50	1.25
Bromobenzene	108-86-1	190		10.0	2.50	1.25
Bromochloromethane	74-97-5	214		10.0	4.00	2.00
Bromodichloromethane	75-27-4	237		10.0	5.00	2.50
Bromoform	75-25-2	195		20.0	10.0	5.00
Bromomethane	74-83-9	138		20.0	10.0	5.00
2-Butanone	78-93-3	193		100	50.0	25.0
n-Butylbenzene	104-51-8	189		10.0	5.00	2.50
sec-Butylbenzene	135-98-8	199		10.0	5.00	2.50
tert-Butylbenzene	98-06-6	200		10.0	5.00	2.50
Carbon disulfide	75-15-0	208		20.0	10.0	5.00
Carbon tetrachloride	56-23-5	247		10.0	5.00	2.50
Chlorobenzene	108-90-7	205		10.0	2.50	1.25
Chlorodibromomethane	124-48-1	208		10.0	5.00	2.50
Chloroethane	75-00-3	225		20.0	10.0	5.00
Chloroform	67-66-3	233		10.0	2.50	1.25
Chloromethane	74-87-3	228		20.0	10.0	5.00
2-Chlorotoluene	95-49-8	204		10.0	2.50	1.25
4-Chlorotoluene	106-43-4	194		10.0	5.00	2.50

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	195		50.0	20.0	10.0
1,2-Dibromoethane	106-93-4	202		10.0	5.00	2.50
Dibromomethane	74-95-3	214		10.0	5.00	2.50
1,2-Dichlorobenzene	95-50-1	198		10.0	2.50	1.25
1,3-Dichlorobenzene	541-73-1	201		10.0	5.00	2.50
1,4-Dichlorobenzene	106-46-7	201		10.0	2.50	1.25
Dichlorodifluoromethane	75-71-8	288		10.0	5.00	2.50
1,1-Dichloroethane	75-34-3	211		10.0	2.50	1.25
1,2-Dichloroethane	107-06-2	299		10.0	5.00	2.50
1,1-Dichloroethene	75-35-4	220		20.0	10.0	5.00
cis-1,2-Dichloroethene	156-59-2	226		10.0	5.00	2.50
trans-1,2-Dichloroethene	156-60-5	224		10.0	5.00	2.50
1,2-Dichloropropane	78-87-5	212		10.0	4.00	2.00
1,3-Dichloropropane	142-28-9	210		10.0	4.00	2.00
2,2-Dichloropropane	594-20-7	217	Q	10.0	5.00	2.50
cis-1,3-Dichloropropene	10061-01-5	231		10.0	5.00	2.50
trans-1,3-Dichloropropene	10061-02-6	205		20.0	10.0	5.00
1,1-Dichloropropene	563-58-6	220		10.0	5.00	2.50
Ethylbenzene	100-41-4	192		10.0	5.00	2.50
2-Hexanone	591-78-6	168		100	50.0	25.0
Hexachlorobutadiene	87-68-3	204		10.0	5.00	2.50
Isopropylbenzene	98-82-8	213		10.0	5.00	2.50
p-Isopropyltoluene	99-87-6	197		10.0	5.00	2.50
4-Methyl-2-pentanone	108-10-1	186		100	50.0	25.0
Methylene chloride	75-09-2	210		10.0	5.00	2.50
Naphthalene	91-20-3	167		10.0	4.00	2.00
n-Propylbenzene	103-65-1	204		10.0	2.50	1.25
Styrene	100-42-5	207		10.0	2.50	1.25
1,1,1,2-Tetrachloroethane	630-20-6	207		10.0	5.00	2.50
1,1,2,2-Tetrachloroethane	79-34-5	177		10.0	4.00	2.00
Tetrachloroethene	127-18-4	202		10.0	5.00	2.50
Toluene	108-88-3	199		10.0	5.00	2.50
1,2,3-Trichlorobenzene	87-61-6	180		10.0	3.00	1.50
1,2,4-Trichlorobenzene	120-82-1	191		10.0	4.00	2.00
1,1,1-Trichloroethane	71-55-6	246		10.0	5.00	2.50
1,1,2-Trichloroethane	79-00-5	194		10.0	5.00	2.50
Trichloroethene	79-01-6	1350		10.0	5.00	2.50
Trichlorofluoromethane	75-69-4	248		10.0	5.00	2.50
1,2,3-Trichloropropane	96-18-4	196		20.0	10.0	5.00

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	200		10.0	5.00	2.50
1,3,5-Trimethylbenzene	108-67-8	206		10.0	5.00	2.50
Vinyl chloride	75-01-4	276		10.0	5.00	2.50
o-Xylene	95-47-6	203		10.0	5.00	2.50
m-,p-Xylene	179601-23-1	405		20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	118	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	101	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW23MSD-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/29/2016 19:49
Collect Date:	06/17/2016 07:30	**Dilution:**	10000	**File ID:**	1LM.LM35526
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	65600		4000	2000	1000

Certificate of Analysis

Sample #:	L16061068-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	C01-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574736	**Analyst:**	TMB	**Run Date:**	06/30/2016 13:53
Collect Date:	06/17/2016 08:35	**Dilution:**	1	**File ID:**	8M413367
Sample Tag:	02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	85	115	
1,2-Dichloroethane-d4	113	70	120	
Toluene-d8	108	85	120	
4-Bromofluorobenzene	100	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	C01-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/29/2016 20:08
Collect Date:	06/17/2016 08:35	**Dilution:**	1	**File ID:**	1LM.LM35527
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3.15		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16061068-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	C01-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:40
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 16:42
Workgroup #:	WG574276	**Analyst:**	JYH	**Run Date:**	06/27/2016 18:21
Collect Date:	06/17/2016 08:35	**Dilution:**	1	**File ID:**	T3.062716.182149
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.100	U	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	0.189	J	0.200	0.100	0.0500
Potassium, Total	7440-09-7	2.11		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	C01-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:40
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/28/2016 09:31
Workgroup #:	WG574276	**Analyst:**	JYH	**Run Date:**	06/28/2016 13:11
Collect Date:	06/17/2016 08:35	**Dilution:**	20	**File ID:**	T3.062816.131108
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	91.0		10.0	5.00	2.50
Magnesium, Total	7439-95-4	68.5		20.0	10.0	5.00
Sodium, Total	7440-23-5	334		20.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	C01-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:23
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574804	**Analyst:**	JYH	**Run Date:**	06/30/2016 18:09
Collect Date:	06/17/2016 08:35	**Dilution:**	1	**File ID:**	NI.063016.180913
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00438		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000345	J	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00251	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00101	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00135	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.0324		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00428	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00242		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	C01-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:23
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574804	**Analyst:**	JYH	**Run Date:**	07/01/2016 13:57
Collect Date:	06/17/2016 08:35	**Dilution:**	50	**File ID:**	NI.070116.135751
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.441		0.300	0.150	0.0750

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-04	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	C01-061716	**Prep Method:**	7470A	**Prep Date:**	06/21/2016 07:12
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/30/2016 17:42
Workgroup #:	WG573638	**Analyst:**	AMA	**Run Date:**	06/30/2016 18:31
Collect Date:	06/17/2016 08:35	**Dilution:**	1	**File ID:**	M7.063016.183105
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	C01FD-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574227	**Analyst:**	ADC	**Run Date:**	06/27/2016 00:18
Collect Date:	06/17/2016 08:35	**Dilution:**	1	**File ID:**	8M413263
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	117	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	101	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	C01FD-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/29/2016 20:26
Collect Date:	06/17/2016 08:35	**Dilution:**	1	**File ID:**	1LM.LM35528
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3.02		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16061068-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	C01FD-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:40
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 16:42
Workgroup #:	WG574276	**Analyst:**	JYH	**Run Date:**	06/27/2016 18:25
Collect Date:	06/17/2016 08:35	**Dilution:**	1	**File ID:**	T3.062716.182543
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.100	U	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	0.180	J	0.200	0.100	0.0500
Potassium, Total	7440-09-7	2.16		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	C01FD-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:40
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/28/2016 09:31
Workgroup #:	WG574276	**Analyst:**	JYH	**Run Date:**	06/28/2016 13:15
Collect Date:	06/17/2016 08:35	**Dilution:**	20	**File ID:**	T3.062816.131503
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	90.3		10.0	5.00	2.50
Magnesium, Total	7439-95-4	66.6		20.0	10.0	5.00
Sodium, Total	7440-23-5	336		20.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	C01FD-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:23
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574804	**Analyst:**	JYH	**Run Date:**	06/30/2016 18:12
Collect Date:	06/17/2016 08:35	**Dilution:**	1	**File ID:**	NI.063016.181225
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00431		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000340	J	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00247	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.000974	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00128	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.0318		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00424	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00266		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	C01FD-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:23
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574804	**Analyst:**	JYH	**Run Date:**	07/01/2016 14:01
Collect Date:	06/17/2016 08:35	**Dilution:**	50	**File ID:**	NI.070116.140103
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.471		0.300	0.150	0.0750

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-05	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	C01FD-061716	**Prep Method:**	7470A	**Prep Date:**	06/21/2016 07:12
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/30/2016 17:42
Workgroup #:	WG573638	**Analyst:**	AMA	**Run Date:**	06/30/2016 18:33
Collect Date:	06/17/2016 08:35	**Dilution:**	1	**File ID:**	M7.063016.183335
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW13-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574227	**Analyst:**	ADC	**Run Date:**	06/27/2016 00:47
Collect Date:	06/17/2016 09:45	**Dilution:**	1	**File ID:**	8M413264
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	114	85	115	
1,2-Dichloroethane-d4	115	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	101	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW13-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/29/2016 20:45
Collect Date:	06/17/2016 09:45	**Dilution:**	1	**File ID:**	1LM.LM35529
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	C02-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574227	**Analyst:**	ADC	**Run Date:**	06/27/2016 01:16
Collect Date:	06/17/2016 10:45	**Dilution:**	1	**File ID:**	8M413265
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	118	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	99.8	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	C02-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/29/2016 22:01
Collect Date:	06/17/2016 10:45	**Dilution:**	1	**File ID:**	1LM.LM35533
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	C02MS-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574227	**Analyst:**	ADC	**Run Date:**	06/26/2016 19:29
Collect Date:	06/17/2016 10:45	**Dilution:**	1	**File ID:**	8M413253
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	24.6		10.0	5.00	2.50
Benzene	71-43-2	22.0		1.00	0.250	0.125
Bromobenzene	108-86-1	19.5		1.00	0.250	0.125
Bromochloromethane	74-97-5	22.2		1.00	0.400	0.200
Bromodichloromethane	75-27-4	23.0		1.00	0.500	0.250
Bromoform	75-25-2	20.1		2.00	1.00	0.500
Bromomethane	74-83-9	16.5		2.00	1.00	0.500
2-Butanone	78-93-3	22.0		10.0	5.00	2.50
n-Butylbenzene	104-51-8	18.7		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	19.4		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	19.6		1.00	0.500	0.250
Carbon disulfide	75-15-0	20.7		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	23.3		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.6		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	20.2		1.00	0.500	0.250
Chloroethane	75-00-3	23.4		2.00	1.00	0.500
Chloroform	67-66-3	22.4		1.00	0.250	0.125
Chloromethane	74-87-3	22.9		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	20.2		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	19.1		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	18.3		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	19.9		1.00	0.500	0.250
Dibromomethane	74-95-3	20.4		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	19.2		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	20.0		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	19.8		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	25.1		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	21.2		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	24.1		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	21.4		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	22.0		1.00	0.500	0.250

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	22.0		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	21.6		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	21.2		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	24.6	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	24.7		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	20.8		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	21.6		1.00	0.500	0.250
Ethylbenzene	100-41-4	19.6		1.00	0.500	0.250
2-Hexanone	591-78-6	18.2		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	20.0		1.00	0.500	0.250
Isopropylbenzene	98-82-8	21.2		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	19.4		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	19.9		10.0	5.00	2.50
Methylene chloride	75-09-2	21.5		1.00	0.500	0.250
Naphthalene	91-20-3	16.3		1.00	0.400	0.200
n-Propylbenzene	103-65-1	20.2		1.00	0.250	0.125
Styrene	100-42-5	20.8		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	20.5		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	17.3		1.00	0.400	0.200
Tetrachloroethene	127-18-4	20.9		1.00	0.500	0.250
Toluene	108-88-3	20.0		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	17.7		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	18.8		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	23.2		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	19.8		1.00	0.500	0.250
Trichloroethene	79-01-6	22.9		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	23.5		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	18.7		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	19.3		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	20.0		1.00	0.500	0.250
Vinyl chloride	75-01-4	26.0		1.00	0.500	0.250
o-Xylene	95-47-6	21.0		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	41.1		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	85	115	
1,2-Dichloroethane-d4	108	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	98.0	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	C02MS-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/29/2016 22:20
Collect Date:	06/17/2016 10:45	**Dilution:**	1	**File ID:**	1LM.LM35534
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.216	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	C02MSD-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574227	**Analyst:**	ADC	**Run Date:**	06/26/2016 19:58
Collect Date:	06/17/2016 10:45	**Dilution:**	1	**File ID:**	8M413254
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	24.5		10.0	5.00	2.50
Benzene	71-43-2	21.4		1.00	0.250	0.125
Bromobenzene	108-86-1	18.9		1.00	0.250	0.125
Bromochloromethane	74-97-5	21.1		1.00	0.400	0.200
Bromodichloromethane	75-27-4	22.2		1.00	0.500	0.250
Bromoform	75-25-2	18.8		2.00	1.00	0.500
Bromomethane	74-83-9	16.6		2.00	1.00	0.500
2-Butanone	78-93-3	19.8		10.0	5.00	2.50
n-Butylbenzene	104-51-8	18.5		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	19.5		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	18.9		1.00	0.500	0.250
Carbon disulfide	75-15-0	21.2		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	22.4		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.1		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	19.4		1.00	0.500	0.250
Chloroethane	75-00-3	23.2		2.00	1.00	0.500
Chloroform	67-66-3	22.1		1.00	0.250	0.125
Chloromethane	74-87-3	23.0		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	17.9		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	21.4		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	16.6		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	19.1		1.00	0.500	0.250
Dibromomethane	74-95-3	20.0		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	18.9		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	19.6		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	19.2		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	25.4		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	21.0		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	23.0		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	21.0		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	21.7		1.00	0.500	0.250

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	21.7		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	21.3		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	20.2		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	23.7	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	23.8		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	20.2		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	21.1		1.00	0.500	0.250
Ethylbenzene	100-41-4	19.2		1.00	0.500	0.250
2-Hexanone	591-78-6	18.9		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	19.9		1.00	0.500	0.250
Isopropylbenzene	98-82-8	20.9		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	19.3		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	19.3		10.0	5.00	2.50
Methylene chloride	75-09-2	21.1		1.00	0.500	0.250
Naphthalene	91-20-3	15.8		1.00	0.400	0.200
n-Propylbenzene	103-65-1	20.0		1.00	0.250	0.125
Styrene	100-42-5	20.2		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	20.0		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	17.0		1.00	0.400	0.200
Tetrachloroethene	127-18-4	20.0		1.00	0.500	0.250
Toluene	108-88-3	19.9		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	17.4		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	18.9		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	22.9		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	19.2		1.00	0.500	0.250
Trichloroethene	79-01-6	22.7		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	23.3		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	17.9		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	19.2		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	19.7		1.00	0.500	0.250
Vinyl chloride	75-01-4	26.1		1.00	0.500	0.250
o-Xylene	95-47-6	20.5		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	40.5		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	108	85	115	
1,2-Dichloroethane-d4	108	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	100	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-09	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	C02MSD-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/29/2016 22:39
Collect Date:	06/17/2016 10:45	**Dilution:**	1	**File ID:**	1LM.LM35535
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.220	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW19-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574227	**Analyst:**	ADC	**Run Date:**	06/27/2016 01:45
Collect Date:	06/17/2016 13:10	**Dilution:**	1	**File ID:**	8M413266
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.345	J	1.00	0.500	0.250

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	1.82		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	111	85	115	
1,2-Dichloroethane-d4	118	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	99.7	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-10	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW19-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/30/2016 13:53
Collect Date:	06/17/2016 13:10	**Dilution:**	5	**File ID:**	1LM.LM35555
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	11.4		2.00	1.00	0.500

Certificate of Analysis

Sample #:	L16061068-11	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW19F-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:40
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 16:42
Workgroup #:	WG574276	**Analyst:**	JYH	**Run Date:**	06/27/2016 18:29
Collect Date:	06/17/2016 13:10	**Dilution:**	1	**File ID:**	T3.062716.182935
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Beryllium, Total	7440-41-7	0.00575	J	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	18.9		0.500	0.250	0.125
Magnesium, Total	7439-95-4	9.83		1.00	0.500	0.250
Potassium, Total	7440-09-7	3.84		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	20.5		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-11	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW19F-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:40
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/28/2016 09:31
Workgroup #:	WG574276	**Analyst:**	JYH	**Run Date:**	06/28/2016 13:22
Collect Date:	06/17/2016 13:10	**Dilution:**	20	**File ID:**	T3.062816.132234
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	35.6		4.00	2.00	1.00
Iron, Total	7439-89-6	50.0		4.00	2.00	1.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-11	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW19F-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:23
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574804	**Analyst:**	JYH	**Run Date:**	06/30/2016 18:15
Collect Date:	06/17/2016 13:10	**Dilution:**	1	**File ID:**	NI.063016.181536
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.0130		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.00495		0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.116		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.0274		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.127		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.0706		0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0997		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000821		0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.152		0.00200	0.00100	0.000500

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-11	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW19F-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:23
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574804	**Analyst:**	JYH	**Run Date:**	07/01/2016 14:04
Collect Date:	06/17/2016 13:10	**Dilution:**	10	**File ID:**	NI.070116.140414
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.695		0.0600	0.0300	0.0150
Manganese, Total	7439-96-5	1.09		0.0400	0.0200	0.0100
Zinc, Total	7440-66-6	1.09		0.500	0.250	0.125

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-11	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW19F-061716	**Prep Method:**	7470A	**Prep Date:**	06/21/2016 07:12
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/30/2016 17:42
Workgroup #:	WG573638	**Analyst:**	AMA	**Run Date:**	06/30/2016 18:36
Collect Date:	06/17/2016 13:10	**Dilution:**	1	**File ID:**	M7.063016.183606
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000381	J	0.000400	0.000200	0.000100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW18-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574227	**Analyst:**	ADC	**Run Date:**	06/27/2016 02:14
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	8M413267
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	1.11		1.00	0.500	0.250

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	14.1		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	115	85	115	
1,2-Dichloroethane-d4	119	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	101	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-12	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW18-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/29/2016 23:17
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	1LM.LM35537
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-13	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW18F-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:40
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 16:42
Workgroup #:	WG574276	**Analyst:**	JYH	**Run Date:**	06/27/2016 18:33
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	T3.062716.183322
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	1.91		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	14.1		0.500	0.250	0.125
Magnesium, Total	7439-95-4	6.42		1.00	0.500	0.250
Potassium, Total	7440-09-7	2.19		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-13	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW18F-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:40
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/28/2016 09:31
Workgroup #:	WG574276	**Analyst:**	JYH	**Run Date:**	06/28/2016 13:26
Collect Date:	06/17/2016 14:20	**Dilution:**	20	**File ID:**	T3.062816.132628
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	12.6		4.00	2.00	1.00
Sodium, Total	7440-23-5	249		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-13	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW18F-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:23
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574804	**Analyst:**	JYH	**Run Date:**	06/30/2016 17:18
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	NI.063016.171806
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00149	J	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00583		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.00225		0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.0138		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00915		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00447		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00227		0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0630		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000127	J	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.0105		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0491	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-13	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW18F-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:23
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574804	**Analyst:**	JYH	**Run Date:**	07/01/2016 14:07
Collect Date:	06/17/2016 14:20	**Dilution:**	10	**File ID:**	NI.070116.140725
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.157		0.0600	0.0300	0.0150
Manganese, Total	7439-96-5	0.360		0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-13	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW18F-061716	**Prep Method:**	7470A	**Prep Date:**	06/21/2016 07:12
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/30/2016 17:42
Workgroup #:	WG573638	**Analyst:**	AMA	**Run Date:**	06/30/2016 18:38
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	M7.063016.183837
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-14	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW18MS-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574227	**Analyst:**	ADC	**Run Date:**	06/26/2016 20:27
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	8M413255
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	23.9		10.0	5.00	2.50
Benzene	71-43-2	21.9		1.00	0.250	0.125
Bromobenzene	108-86-1	19.7		1.00	0.250	0.125
Bromochloromethane	74-97-5	21.5		1.00	0.400	0.200
Bromodichloromethane	75-27-4	22.5		1.00	0.500	0.250
Bromoform	75-25-2	18.7		2.00	1.00	0.500
Bromomethane	74-83-9	17.9		2.00	1.00	0.500
2-Butanone	78-93-3	19.6		10.0	5.00	2.50
n-Butylbenzene	104-51-8	18.8		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	20.1		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	19.4		1.00	0.500	0.250
Carbon disulfide	75-15-0	21.2		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	22.8		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.4		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	19.4		1.00	0.500	0.250
Chloroethane	75-00-3	23.9		2.00	1.00	0.500
Chloroform	67-66-3	22.2		1.00	0.250	0.125
Chloromethane	74-87-3	23.3		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	20.6		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	19.4		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	17.6		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	19.3		1.00	0.500	0.250
Dibromomethane	74-95-3	20.4		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	19.6		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	20.0		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	19.9		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	25.6		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	21.2		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	23.8		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	21.6		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	22.8		1.00	0.500	0.250

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	22.4		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	21.8		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	20.5		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	24.3	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	24.2		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	20.2		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	21.8		1.00	0.500	0.250
Ethylbenzene	100-41-4	19.7		1.00	0.500	0.250
2-Hexanone	591-78-6	17.7		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	20.1		1.00	0.500	0.250
Isopropylbenzene	98-82-8	21.1		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	19.6		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	19.4		10.0	5.00	2.50
Methylene chloride	75-09-2	20.9		1.00	0.500	0.250
Naphthalene	91-20-3	16.1		1.00	0.400	0.200
n-Propylbenzene	103-65-1	20.6		1.00	0.250	0.125
Styrene	100-42-5	20.4		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	20.1		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	17.2		1.00	0.400	0.200
Tetrachloroethene	127-18-4	20.8		1.00	0.500	0.250
Toluene	108-88-3	20.2		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	17.4		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	18.4		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	23.3		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	18.8		1.00	0.500	0.250
Trichloroethene	79-01-6	34.8		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	23.4		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	17.8		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	19.6		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	20.5		1.00	0.500	0.250
Vinyl chloride	75-01-4	26.3		1.00	0.500	0.250
o-Xylene	95-47-6	20.4		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	40.9		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	85	115	
1,2-Dichloroethane-d4	109	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	99.1	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-14	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW18MS-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/29/2016 23:36
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	1LM.LM35538
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.196	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-15	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW18FMS-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:40
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 16:42
Workgroup #:	WG574276	**Analyst:**	JYH	**Run Date:**	06/27/2016 18:37
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	T3.062716.183713
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	10.7		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0300		0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	19.7		0.500	0.250	0.125
Magnesium, Total	7439-95-4	12.6		1.00	0.500	0.250
Potassium, Total	7440-09-7	32.4		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.226		0.0200	0.0100	0.00500

Certificate of Analysis

Sample #:	L16061068-15	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW18FMS-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:40
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/28/2016 09:31
Workgroup #:	WG574276	**Analyst:**	JYH	**Run Date:**	06/28/2016 13:30
Collect Date:	06/17/2016 14:20	**Dilution:**	20	**File ID:**	T3.062816.133023
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	15.1		4.00	2.00	1.00
Sodium, Total	7440-23-5	281		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-15	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW18FMS-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574804	**Analyst:**	JYH	**Run Date:**	06/30/2016 17:21
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	NI.063016.172118
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.117		0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.131		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.125		0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.141		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.127		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.125		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.133		0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.170		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.116		0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.125		0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.131		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.160		0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was greater than the highest standard

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-15	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW18FMS-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574804	**Analyst:**	JYH	**Run Date:**	07/01/2016 14:17
Collect Date:	06/17/2016 14:20	**Dilution:**	10	**File ID:**	NI.070116.141703
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.245		0.0600	0.0300	0.0150
Manganese, Total	7439-96-5	0.408		0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-15	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW18FMS-061716	**Prep Method:**	7470A	**Prep Date:**	06/21/2016 07:12
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/30/2016 17:42
Workgroup #:	WG573638	**Analyst:**	AMA	**Run Date:**	06/30/2016 18:41
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	M7.063016.184109
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.00481		0.000444	0.000222	0.000111

Certificate of Analysis

Sample #:	L16061068-16	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW18MSD-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574227	**Analyst:**	ADC	**Run Date:**	06/26/2016 20:56
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	8M413256
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	26.3		10.0	5.00	2.50
Benzene	71-43-2	22.1		1.00	0.250	0.125
Bromobenzene	108-86-1	19.1		1.00	0.250	0.125
Bromochloromethane	74-97-5	22.1		1.00	0.400	0.200
Bromodichloromethane	75-27-4	22.6		1.00	0.500	0.250
Bromoform	75-25-2	18.9		2.00	1.00	0.500
Bromomethane	74-83-9	17.6		2.00	1.00	0.500
2-Butanone	78-93-3	19.8		10.0	5.00	2.50
n-Butylbenzene	104-51-8	18.7		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	19.7		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	19.5		1.00	0.500	0.250
Carbon disulfide	75-15-0	21.2		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	23.1		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.7		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	19.5		1.00	0.500	0.250
Chloroethane	75-00-3	23.3		2.00	1.00	0.500
Chloroform	67-66-3	22.4		1.00	0.250	0.125
Chloromethane	74-87-3	23.9		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	20.6		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	18.7		1.00	0.500	0.250

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	17.5		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	19.2		1.00	0.500	0.250
Dibromomethane	74-95-3	20.1		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	19.4		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	20.0		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	19.8		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	25.6		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	21.2		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	23.7		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	21.8		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	23.1		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	22.2		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	21.8		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	20.6		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	23.9	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	23.9		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	20.0		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	21.7		1.00	0.500	0.250
Ethylbenzene	100-41-4	19.0		1.00	0.500	0.250
2-Hexanone	591-78-6	17.8		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	20.5		1.00	0.500	0.250
Isopropylbenzene	98-82-8	21.0		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	19.7		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	20.4		10.0	5.00	2.50
Methylene chloride	75-09-2	21.8		1.00	0.500	0.250
Naphthalene	91-20-3	16.2		1.00	0.400	0.200
n-Propylbenzene	103-65-1	20.1		1.00	0.250	0.125
Styrene	100-42-5	20.4		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	20.3		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	17.1		1.00	0.400	0.200
Tetrachloroethene	127-18-4	20.2		1.00	0.500	0.250
Toluene	108-88-3	20.0		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	18.1		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	19.2		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	23.3		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	18.8		1.00	0.500	0.250
Trichloroethene	79-01-6	35.0		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	23.4		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	18.3		2.00	1.00	0.500

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	19.5		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	20.0		1.00	0.500	0.250
Vinyl chloride	75-01-4	26.6		1.00	0.500	0.250
o-Xylene	95-47-6	20.6		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	40.6		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	109	85	115	
1,2-Dichloroethane-d4	109	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	98.5	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-16	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW18MSD-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/29/2016 23:55
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	1LM.LM35539
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.207	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-17	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW18FMSD-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:40
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 16:42
Workgroup #:	WG574276	**Analyst:**	JYH	**Run Date:**	06/27/2016 18:40
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	T3.062716.184051
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	12.8		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0287		0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	19.2		0.500	0.250	0.125
Magnesium, Total	7439-95-4	12.1		1.00	0.500	0.250
Potassium, Total	7440-09-7	31.0		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.215		0.0200	0.0100	0.00500

Certificate of Analysis

Sample #:	L16061068-17	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW18FMSD-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:40
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/28/2016 09:31
Workgroup #:	WG574276	**Analyst:**	JYH	**Run Date:**	06/28/2016 13:34
Collect Date:	06/17/2016 14:20	**Dilution:**	20	**File ID:**	T3.062816.133415
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	19.5		4.00	2.00	1.00
Sodium, Total	7440-23-5	264		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-17	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW18FMSD-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574804	**Analyst:**	JYH	**Run Date:**	06/30/2016 17:24
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	NI.063016.172429
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.111		0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.133		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.126		0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.180		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.133		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.130		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.133		0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.195		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.116		0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.125		0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.147		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.181		0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was greater than the highest standard

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-17	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW18FMSD-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574804	**Analyst:**	JYH	**Run Date:**	07/01/2016 14:20
Collect Date:	06/17/2016 14:20	**Dilution:**	10	**File ID:**	NI.070116.142015
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.311		0.0600	0.0300	0.0150
Manganese, Total	7439-96-5	0.521		0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-17	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW18FMSD-061716	**Prep Method:**	7470A	**Prep Date:**	06/21/2016 07:12
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/30/2016 17:42
Workgroup #:	WG573638	**Analyst:**	AMA	**Run Date:**	06/30/2016 18:43
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	M7.063016.184340
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.00483		0.000444	0.000222	0.000111

Certificate of Analysis

Sample #:	L16061068-18	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574410	**Analyst:**	FJB	**Run Date:**	06/27/2016 22:06
Collect Date:	06/17/2016 00:01	**Dilution:**	1	**File ID:**	8M413284
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	114	85	115	
1,2-Dichloroethane-d4	118	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	101	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW23-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573991	**Analyst:**	FJB	**Run Date:**	06/24/2016 05:15
Collect Date:	06/17/2016 07:30	**Dilution:**	10	**File ID:**	8M413209
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	50.0	U	100	50.0	25.0
Benzene	71-43-2	2.50	U	10.0	2.50	1.25
Bromobenzene	108-86-1	2.50	U	10.0	2.50	1.25
Bromochloromethane	74-97-5	4.00	U	10.0	4.00	2.00
Bromodichloromethane	75-27-4	5.00	U	10.0	5.00	2.50
Bromoform	75-25-2	10.0	U	20.0	10.0	5.00
Bromomethane	74-83-9	10.0	U	20.0	10.0	5.00
2-Butanone	78-93-3	50.0	U	100	50.0	25.0
n-Butylbenzene	104-51-8	5.00	U	10.0	5.00	2.50
sec-Butylbenzene	135-98-8	5.00	U	10.0	5.00	2.50
tert-Butylbenzene	98-06-6	5.00	U	10.0	5.00	2.50
Carbon disulfide	75-15-0	10.0	U	20.0	10.0	5.00
Carbon tetrachloride	56-23-5	5.00	U	10.0	5.00	2.50
Chlorobenzene	108-90-7	2.50	U	10.0	2.50	1.25
Chlorodibromomethane	124-48-1	5.00	U	10.0	5.00	2.50
Chloroethane	75-00-3	10.0	U	20.0	10.0	5.00
Chloroform	67-66-3	4.78	J	10.0	2.50	1.25
Chloromethane	74-87-3	10.0	U	20.0	10.0	5.00
2-Chlorotoluene	95-49-8	2.50	U	10.0	2.50	1.25
4-Chlorotoluene	106-43-4	5.00	U	10.0	5.00	2.50
1,2-Dibromo-3-chloropropane	96-12-8	20.0	U	50.0	20.0	10.0
1,2-Dibromoethane	106-93-4	5.00	U	10.0	5.00	2.50
Dibromomethane	74-95-3	5.00	U	10.0	5.00	2.50
1,2-Dichlorobenzene	95-50-1	2.50	U	10.0	2.50	1.25
1,3-Dichlorobenzene	541-73-1	5.00	U	10.0	5.00	2.50
1,4-Dichlorobenzene	106-46-7	2.50	U	10.0	2.50	1.25
Dichlorodifluoromethane	75-71-8	5.00	U	10.0	5.00	2.50
1,1-Dichloroethane	75-34-3	2.50	U	10.0	2.50	1.25
1,2-Dichloroethane	107-06-2	50.5		10.0	5.00	2.50
1,1-Dichloroethene	75-35-4	10.0	U	20.0	10.0	5.00
cis-1,2-Dichloroethene	156-59-2	7.33	J	10.0	5.00	2.50
trans-1,2-Dichloroethene	156-60-5	5.00	U	10.0	5.00	2.50

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	4.00	U	10.0	4.00	2.00
1,3-Dichloropropane	142-28-9	4.00	U	10.0	4.00	2.00
2,2-Dichloropropane	594-20-7	5.00	Q	10.0	5.00	2.50
cis-1,3-Dichloropropene	10061-01-5	5.00	U	10.0	5.00	2.50
trans-1,3-Dichloropropene	10061-02-6	10.0	U	20.0	10.0	5.00
1,1-Dichloropropene	563-58-6	5.00	U	10.0	5.00	2.50
Ethylbenzene	100-41-4	5.00	U	10.0	5.00	2.50
2-Hexanone	591-78-6	50.0	U	100	50.0	25.0
Hexachlorobutadiene	87-68-3	5.00	U	10.0	5.00	2.50
Isopropylbenzene	98-82-8	5.00	U	10.0	5.00	2.50
p-Isopropyltoluene	99-87-6	5.00	U	10.0	5.00	2.50
4-Methyl-2-pentanone	108-10-1	50.0	U	100	50.0	25.0
Methylene chloride	75-09-2	5.00	U	10.0	5.00	2.50
Naphthalene	91-20-3	4.00	U	10.0	4.00	2.00
n-Propylbenzene	103-65-1	2.50	U	10.0	2.50	1.25
Styrene	100-42-5	2.50	U	10.0	2.50	1.25
1,1,1,2-Tetrachloroethane	630-20-6	5.00	U	10.0	5.00	2.50
1,1,2,2-Tetrachloroethane	79-34-5	4.00	U	10.0	4.00	2.00
Tetrachloroethene	127-18-4	5.00	U	10.0	5.00	2.50
Toluene	108-88-3	5.00	U	10.0	5.00	2.50
1,2,3-Trichlorobenzene	87-61-6	3.00	U	10.0	3.00	1.50
1,2,4-Trichlorobenzene	120-82-1	4.00	U	10.0	4.00	2.00
1,1,1-Trichloroethane	71-55-6	5.00	U	10.0	5.00	2.50
1,1,2-Trichloroethane	79-00-5	5.00	U	10.0	5.00	2.50
Trichloroethene	79-01-6	1170		10.0	5.00	2.50
Trichlorofluoromethane	75-69-4	5.00	U	10.0	5.00	2.50
1,2,3-Trichloropropane	96-18-4	10.0	U	20.0	10.0	5.00
1,2,4-Trimethylbenzene	95-63-6	5.00	U	10.0	5.00	2.50
1,3,5-Trimethylbenzene	108-67-8	5.00	U	10.0	5.00	2.50
Vinyl chloride	75-01-4	5.00	U	10.0	5.00	2.50
o-Xylene	95-47-6	5.00	U	10.0	5.00	2.50
m-,p-Xylene	179601-23-1	10.0	U	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	111	85	115	
1,2-Dichloroethane-d4	118	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	100	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW23MS-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573991	**Analyst:**	FJB	**Run Date:**	06/24/2016 05:44
Collect Date:	06/17/2016 07:30	**Dilution:**	10	**File ID:**	8M413210
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	242	J	100	50.0	25.0
Benzene	71-43-2	222	J	10.0	2.50	1.25
Bromobenzene	108-86-1	189	J	10.0	2.50	1.25
Bromochloromethane	74-97-5	230	J	10.0	4.00	2.00
Bromodichloromethane	75-27-4	245	J	10.0	5.00	2.50
Bromoform	75-25-2	208	J	20.0	10.0	5.00
Bromomethane	74-83-9	117	J	20.0	10.0	5.00
2-Butanone	78-93-3	205	J	100	50.0	25.0
n-Butylbenzene	104-51-8	190	J	10.0	5.00	2.50
sec-Butylbenzene	135-98-8	203	J	10.0	5.00	2.50
tert-Butylbenzene	98-06-6	196	J	10.0	5.00	2.50
Carbon disulfide	75-15-0	212	J	20.0	10.0	5.00
Carbon tetrachloride	56-23-5	259	J	10.0	5.00	2.50
Chlorobenzene	108-90-7	208	J	10.0	2.50	1.25
Chlorodibromomethane	124-48-1	211	J	10.0	5.00	2.50
Chloroethane	75-00-3	227	J	20.0	10.0	5.00
Chloroform	67-66-3	236	J	10.0	2.50	1.25
Chloromethane	74-87-3	228	J	20.0	10.0	5.00
2-Chlorotoluene	95-49-8	181	J	10.0	2.50	1.25
4-Chlorotoluene	106-43-4	222	J	10.0	5.00	2.50
1,2-Dibromo-3-chloropropane	96-12-8	185	J	50.0	20.0	10.0
1,2-Dibromoethane	106-93-4	201	J	10.0	5.00	2.50
Dibromomethane	74-95-3	218	J	10.0	5.00	2.50
1,2-Dichlorobenzene	95-50-1	196	J	10.0	2.50	1.25
1,3-Dichlorobenzene	541-73-1	199	J	10.0	5.00	2.50
1,4-Dichlorobenzene	106-46-7	197	J	10.0	2.50	1.25
Dichlorodifluoromethane	75-71-8	293	J	10.0	5.00	2.50
1,1-Dichloroethane	75-34-3	219	J	10.0	2.50	1.25
1,2-Dichloroethane	107-06-2	309	J	10.0	5.00	2.50
1,1-Dichloroethene	75-35-4	226	J	20.0	10.0	5.00
cis-1,2-Dichloroethene	156-59-2	234	J	10.0	5.00	2.50

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	224	J	10.0	5.00	2.50
1,2-Dichloropropane	78-87-5	215	J	10.0	4.00	2.00
1,3-Dichloropropane	142-28-9	210	J	10.0	4.00	2.00
2,2-Dichloropropane	594-20-7	226	Q	10.0	5.00	2.50
cis-1,3-Dichloropropene	10061-01-5	244	J	10.0	5.00	2.50
trans-1,3-Dichloropropene	10061-02-6	214	J	20.0	10.0	5.00
1,1-Dichloropropene	563-58-6	225	J	10.0	5.00	2.50
Ethylbenzene	100-41-4	203	J	10.0	5.00	2.50
2-Hexanone	591-78-6	168	J	100	50.0	25.0
Hexachlorobutadiene	87-68-3	202	J	10.0	5.00	2.50
Isopropylbenzene	98-82-8	222	J	10.0	5.00	2.50
p-Isopropyltoluene	99-87-6	199	J	10.0	5.00	2.50
4-Methyl-2-pentanone	108-10-1	188	J	100	50.0	25.0
Methylene chloride	75-09-2	216	J	10.0	5.00	2.50
Naphthalene	91-20-3	157	J	10.0	4.00	2.00
n-Propylbenzene	103-65-1	205	J	10.0	2.50	1.25
Styrene	100-42-5	210	J	10.0	2.50	1.25
1,1,1,2-Tetrachloroethane	630-20-6	215	J	10.0	5.00	2.50
1,1,2,2-Tetrachloroethane	79-34-5	173	J	10.0	4.00	2.00
Tetrachloroethene	127-18-4	210	J	10.0	5.00	2.50
Toluene	108-88-3	205	J	10.0	5.00	2.50
1,2,3-Trichlorobenzene	87-61-6	175	J	10.0	3.00	1.50
1,2,4-Trichlorobenzene	120-82-1	186	J	10.0	4.00	2.00
1,1,1-Trichloroethane	71-55-6	249	J	10.0	5.00	2.50
1,1,2-Trichloroethane	79-00-5	197	J	10.0	5.00	2.50
Trichloroethene	79-01-6	1390	J	10.0	5.00	2.50
Trichlorofluoromethane	75-69-4	257	J	10.0	5.00	2.50
1,2,3-Trichloropropane	96-18-4	189	J	20.0	10.0	5.00
1,2,4-Trimethylbenzene	95-63-6	198	J	10.0	5.00	2.50
1,3,5-Trimethylbenzene	108-67-8	204	J	10.0	5.00	2.50
Vinyl chloride	75-01-4	281	J	10.0	5.00	2.50
o-Xylene	95-47-6	212	J	10.0	5.00	2.50
m-,p-Xylene	179601-23-1	422	J	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	111	85	115	
1,2-Dichloroethane-d4	121	70	120	*
Toluene-d8	102	85	120	
4-Bromofluorobenzene	100	75	120	

J	The reported result is an estimated value.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW23MSD-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573991	**Analyst:**	FJB	**Run Date:**	06/24/2016 06:13
Collect Date:	06/17/2016 07:30	**Dilution:**	10	**File ID:**	8M413211
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	247		100	50.0	25.0
Benzene	71-43-2	218		10.0	2.50	1.25
Bromobenzene	108-86-1	190		10.0	2.50	1.25
Bromochloromethane	74-97-5	214		10.0	4.00	2.00
Bromodichloromethane	75-27-4	237		10.0	5.00	2.50
Bromoform	75-25-2	195		20.0	10.0	5.00
Bromomethane	74-83-9	138		20.0	10.0	5.00
2-Butanone	78-93-3	193		100	50.0	25.0
n-Butylbenzene	104-51-8	189		10.0	5.00	2.50
sec-Butylbenzene	135-98-8	199		10.0	5.00	2.50
tert-Butylbenzene	98-06-6	200		10.0	5.00	2.50
Carbon disulfide	75-15-0	208		20.0	10.0	5.00
Carbon tetrachloride	56-23-5	247		10.0	5.00	2.50
Chlorobenzene	108-90-7	205		10.0	2.50	1.25
Chlorodibromomethane	124-48-1	208		10.0	5.00	2.50
Chloroethane	75-00-3	225		20.0	10.0	5.00
Chloroform	67-66-3	233		10.0	2.50	1.25
Chloromethane	74-87-3	228		20.0	10.0	5.00
2-Chlorotoluene	95-49-8	204		10.0	2.50	1.25
4-Chlorotoluene	106-43-4	194		10.0	5.00	2.50
1,2-Dibromo-3-chloropropane	96-12-8	195		50.0	20.0	10.0
1,2-Dibromoethane	106-93-4	202		10.0	5.00	2.50
Dibromomethane	74-95-3	214		10.0	5.00	2.50
1,2-Dichlorobenzene	95-50-1	198		10.0	2.50	1.25
1,3-Dichlorobenzene	541-73-1	201		10.0	5.00	2.50
1,4-Dichlorobenzene	106-46-7	201		10.0	2.50	1.25
Dichlorodifluoromethane	75-71-8	288		10.0	5.00	2.50
1,1-Dichloroethane	75-34-3	211		10.0	2.50	1.25
1,2-Dichloroethane	107-06-2	299		10.0	5.00	2.50
1,1-Dichloroethene	75-35-4	220		20.0	10.0	5.00
cis-1,2-Dichloroethene	156-59-2	226		10.0	5.00	2.50

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	224		10.0	5.00	2.50
1,2-Dichloropropane	78-87-5	212		10.0	4.00	2.00
1,3-Dichloropropane	142-28-9	210		10.0	4.00	2.00
2,2-Dichloropropane	594-20-7	217	Q	10.0	5.00	2.50
cis-1,3-Dichloropropene	10061-01-5	231		10.0	5.00	2.50
trans-1,3-Dichloropropene	10061-02-6	205		20.0	10.0	5.00
1,1-Dichloropropene	563-58-6	220		10.0	5.00	2.50
Ethylbenzene	100-41-4	192		10.0	5.00	2.50
2-Hexanone	591-78-6	168		100	50.0	25.0
Hexachlorobutadiene	87-68-3	204		10.0	5.00	2.50
Isopropylbenzene	98-82-8	213		10.0	5.00	2.50
p-Isopropyltoluene	99-87-6	197		10.0	5.00	2.50
4-Methyl-2-pentanone	108-10-1	186		100	50.0	25.0
Methylene chloride	75-09-2	210		10.0	5.00	2.50
Naphthalene	91-20-3	167		10.0	4.00	2.00
n-Propylbenzene	103-65-1	204		10.0	2.50	1.25
Styrene	100-42-5	207		10.0	2.50	1.25
1,1,1,2-Tetrachloroethane	630-20-6	207		10.0	5.00	2.50
1,1,2,2-Tetrachloroethane	79-34-5	177		10.0	4.00	2.00
Tetrachloroethene	127-18-4	202		10.0	5.00	2.50
Toluene	108-88-3	199		10.0	5.00	2.50
1,2,3-Trichlorobenzene	87-61-6	180		10.0	3.00	1.50
1,2,4-Trichlorobenzene	120-82-1	191		10.0	4.00	2.00
1,1,1-Trichloroethane	71-55-6	246		10.0	5.00	2.50
1,1,2-Trichloroethane	79-00-5	194		10.0	5.00	2.50
Trichloroethene	79-01-6	1350		10.0	5.00	2.50
Trichlorofluoromethane	75-69-4	248		10.0	5.00	2.50
1,2,3-Trichloropropane	96-18-4	196		20.0	10.0	5.00
1,2,4-Trimethylbenzene	95-63-6	200		10.0	5.00	2.50
1,3,5-Trimethylbenzene	108-67-8	206		10.0	5.00	2.50
Vinyl chloride	75-01-4	276		10.0	5.00	2.50
o-Xylene	95-47-6	203		10.0	5.00	2.50
m-,p-Xylene	179601-23-1	405		20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	118	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	101	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	C01-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574736	**Analyst:**	TMB	**Run Date:**	06/30/2016 13:53
Collect Date:	06/17/2016 08:35	**Dilution:**	1	**File ID:**	8M413367
Sample Tag:	02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	85	115	
1,2-Dichloroethane-d4	113	70	120	
Toluene-d8	108	85	120	
4-Bromofluorobenzene	100	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	C01FD-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574227	**Analyst:**	ADC	**Run Date:**	06/27/2016 00:18
Collect Date:	06/17/2016 08:35	**Dilution:**	1	**File ID:**	8M413263
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	117	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	101	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW13-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574227	**Analyst:**	ADC	**Run Date:**	06/27/2016 00:47
Collect Date:	06/17/2016 09:45	**Dilution:**	1	**File ID:**	8M413264
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	114	85	115	
1,2-Dichloroethane-d4	115	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	101	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	C02-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574227	**Analyst:**	ADC	**Run Date:**	06/27/2016 01:16
Collect Date:	06/17/2016 10:45	**Dilution:**	1	**File ID:**	8M413265
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	118	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	99.8	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	C02MS-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574227	**Analyst:**	ADC	**Run Date:**	06/26/2016 19:29
Collect Date:	06/17/2016 10:45	**Dilution:**	1	**File ID:**	8M413253
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	24.6		10.0	5.00	2.50
Benzene	71-43-2	22.0		1.00	0.250	0.125
Bromobenzene	108-86-1	19.5		1.00	0.250	0.125
Bromochloromethane	74-97-5	22.2		1.00	0.400	0.200
Bromodichloromethane	75-27-4	23.0		1.00	0.500	0.250
Bromoform	75-25-2	20.1		2.00	1.00	0.500
Bromomethane	74-83-9	16.5		2.00	1.00	0.500
2-Butanone	78-93-3	22.0		10.0	5.00	2.50
n-Butylbenzene	104-51-8	18.7		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	19.4		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	19.6		1.00	0.500	0.250
Carbon disulfide	75-15-0	20.7		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	23.3		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.6		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	20.2		1.00	0.500	0.250
Chloroethane	75-00-3	23.4		2.00	1.00	0.500
Chloroform	67-66-3	22.4		1.00	0.250	0.125
Chloromethane	74-87-3	22.9		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	20.2		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	19.1		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	18.3		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	19.9		1.00	0.500	0.250
Dibromomethane	74-95-3	20.4		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	19.2		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	20.0		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	19.8		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	25.1		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	21.2		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	24.1		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	21.4		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	22.0		1.00	0.500	0.250

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	22.0		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	21.6		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	21.2		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	24.6	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	24.7		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	20.8		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	21.6		1.00	0.500	0.250
Ethylbenzene	100-41-4	19.6		1.00	0.500	0.250
2-Hexanone	591-78-6	18.2		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	20.0		1.00	0.500	0.250
Isopropylbenzene	98-82-8	21.2		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	19.4		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	19.9		10.0	5.00	2.50
Methylene chloride	75-09-2	21.5		1.00	0.500	0.250
Naphthalene	91-20-3	16.3		1.00	0.400	0.200
n-Propylbenzene	103-65-1	20.2		1.00	0.250	0.125
Styrene	100-42-5	20.8		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	20.5		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	17.3		1.00	0.400	0.200
Tetrachloroethene	127-18-4	20.9		1.00	0.500	0.250
Toluene	108-88-3	20.0		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	17.7		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	18.8		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	23.2		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	19.8		1.00	0.500	0.250
Trichloroethene	79-01-6	22.9		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	23.5		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	18.7		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	19.3		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	20.0		1.00	0.500	0.250
Vinyl chloride	75-01-4	26.0		1.00	0.500	0.250
o-Xylene	95-47-6	21.0		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	41.1		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	85	115	
1,2-Dichloroethane-d4	108	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	98.0	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	C02MSD-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574227	**Analyst:**	ADC	**Run Date:**	06/26/2016 19:58
Collect Date:	06/17/2016 10:45	**Dilution:**	1	**File ID:**	8M413254
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	24.5		10.0	5.00	2.50
Benzene	71-43-2	21.4		1.00	0.250	0.125
Bromobenzene	108-86-1	18.9		1.00	0.250	0.125
Bromochloromethane	74-97-5	21.1		1.00	0.400	0.200
Bromodichloromethane	75-27-4	22.2		1.00	0.500	0.250
Bromoform	75-25-2	18.8		2.00	1.00	0.500
Bromomethane	74-83-9	16.6		2.00	1.00	0.500
2-Butanone	78-93-3	19.8		10.0	5.00	2.50
n-Butylbenzene	104-51-8	18.5		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	19.5		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	18.9		1.00	0.500	0.250
Carbon disulfide	75-15-0	21.2		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	22.4		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.1		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	19.4		1.00	0.500	0.250
Chloroethane	75-00-3	23.2		2.00	1.00	0.500
Chloroform	67-66-3	22.1		1.00	0.250	0.125
Chloromethane	74-87-3	23.0		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	17.9		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	21.4		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	16.6		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	19.1		1.00	0.500	0.250
Dibromomethane	74-95-3	20.0		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	18.9		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	19.6		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	19.2		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	25.4		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	21.0		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	23.0		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	21.0		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	21.7		1.00	0.500	0.250

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	21.7		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	21.3		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	20.2		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	23.7	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	23.8		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	20.2		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	21.1		1.00	0.500	0.250
Ethylbenzene	100-41-4	19.2		1.00	0.500	0.250
2-Hexanone	591-78-6	18.9		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	19.9		1.00	0.500	0.250
Isopropylbenzene	98-82-8	20.9		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	19.3		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	19.3		10.0	5.00	2.50
Methylene chloride	75-09-2	21.1		1.00	0.500	0.250
Naphthalene	91-20-3	15.8		1.00	0.400	0.200
n-Propylbenzene	103-65-1	20.0		1.00	0.250	0.125
Styrene	100-42-5	20.2		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	20.0		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	17.0		1.00	0.400	0.200
Tetrachloroethene	127-18-4	20.0		1.00	0.500	0.250
Toluene	108-88-3	19.9		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	17.4		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	18.9		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	22.9		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	19.2		1.00	0.500	0.250
Trichloroethene	79-01-6	22.7		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	23.3		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	17.9		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	19.2		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	19.7		1.00	0.500	0.250
Vinyl chloride	75-01-4	26.1		1.00	0.500	0.250
o-Xylene	95-47-6	20.5		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	40.5		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	108	85	115	
1,2-Dichloroethane-d4	108	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	100	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW19-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574227	**Analyst:**	ADC	**Run Date:**	06/27/2016 01:45
Collect Date:	06/17/2016 13:10	**Dilution:**	1	**File ID:**	8M413266
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.345	J	1.00	0.500	0.250

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	1.82		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	111	85	115	
1,2-Dichloroethane-d4	118	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	99.7	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW18-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574227	**Analyst:**	ADC	**Run Date:**	06/27/2016 02:14
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	8M413267
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	1.11		1.00	0.500	0.250

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	14.1		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	115	85	115	
1,2-Dichloroethane-d4	119	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	101	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-14	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW18MS-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574227	**Analyst:**	ADC	**Run Date:**	06/26/2016 20:27
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	8M413255
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	23.9		10.0	5.00	2.50
Benzene	71-43-2	21.9		1.00	0.250	0.125
Bromobenzene	108-86-1	19.7		1.00	0.250	0.125
Bromochloromethane	74-97-5	21.5		1.00	0.400	0.200
Bromodichloromethane	75-27-4	22.5		1.00	0.500	0.250
Bromoform	75-25-2	18.7		2.00	1.00	0.500
Bromomethane	74-83-9	17.9		2.00	1.00	0.500
2-Butanone	78-93-3	19.6		10.0	5.00	2.50
n-Butylbenzene	104-51-8	18.8		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	20.1		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	19.4		1.00	0.500	0.250
Carbon disulfide	75-15-0	21.2		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	22.8		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.4		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	19.4		1.00	0.500	0.250
Chloroethane	75-00-3	23.9		2.00	1.00	0.500
Chloroform	67-66-3	22.2		1.00	0.250	0.125
Chloromethane	74-87-3	23.3		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	20.6		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	19.4		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	17.6		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	19.3		1.00	0.500	0.250
Dibromomethane	74-95-3	20.4		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	19.6		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	20.0		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	19.9		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	25.6		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	21.2		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	23.8		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	21.6		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	22.8		1.00	0.500	0.250

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	22.4		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	21.8		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	20.5		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	24.3	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	24.2		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	20.2		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	21.8		1.00	0.500	0.250
Ethylbenzene	100-41-4	19.7		1.00	0.500	0.250
2-Hexanone	591-78-6	17.7		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	20.1		1.00	0.500	0.250
Isopropylbenzene	98-82-8	21.1		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	19.6		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	19.4		10.0	5.00	2.50
Methylene chloride	75-09-2	20.9		1.00	0.500	0.250
Naphthalene	91-20-3	16.1		1.00	0.400	0.200
n-Propylbenzene	103-65-1	20.6		1.00	0.250	0.125
Styrene	100-42-5	20.4		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	20.1		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	17.2		1.00	0.400	0.200
Tetrachloroethene	127-18-4	20.8		1.00	0.500	0.250
Toluene	108-88-3	20.2		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	17.4		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	18.4		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	23.3		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	18.8		1.00	0.500	0.250
Trichloroethene	79-01-6	34.8		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	23.4		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	17.8		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	19.6		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	20.5		1.00	0.500	0.250
Vinyl chloride	75-01-4	26.3		1.00	0.500	0.250
o-Xylene	95-47-6	20.4		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	40.9		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	85	115	
1,2-Dichloroethane-d4	109	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	99.1	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-16	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW18MSD-061716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574227	**Analyst:**	ADC	**Run Date:**	06/26/2016 20:56
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	8M413256
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	26.3		10.0	5.00	2.50
Benzene	71-43-2	22.1		1.00	0.250	0.125
Bromobenzene	108-86-1	19.1		1.00	0.250	0.125
Bromochloromethane	74-97-5	22.1		1.00	0.400	0.200
Bromodichloromethane	75-27-4	22.6		1.00	0.500	0.250
Bromoform	75-25-2	18.9		2.00	1.00	0.500
Bromomethane	74-83-9	17.6		2.00	1.00	0.500
2-Butanone	78-93-3	19.8		10.0	5.00	2.50
n-Butylbenzene	104-51-8	18.7		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	19.7		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	19.5		1.00	0.500	0.250
Carbon disulfide	75-15-0	21.2		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	23.1		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.7		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	19.5		1.00	0.500	0.250
Chloroethane	75-00-3	23.3		2.00	1.00	0.500
Chloroform	67-66-3	22.4		1.00	0.250	0.125
Chloromethane	74-87-3	23.9		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	20.6		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	18.7		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	17.5		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	19.2		1.00	0.500	0.250
Dibromomethane	74-95-3	20.1		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	19.4		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	20.0		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	19.8		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	25.6		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	21.2		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	23.7		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	21.8		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	23.1		1.00	0.500	0.250

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	22.2		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	21.8		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	20.6		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	23.9	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	23.9		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	20.0		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	21.7		1.00	0.500	0.250
Ethylbenzene	100-41-4	19.0		1.00	0.500	0.250
2-Hexanone	591-78-6	17.8		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	20.5		1.00	0.500	0.250
Isopropylbenzene	98-82-8	21.0		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	19.7		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	20.4		10.0	5.00	2.50
Methylene chloride	75-09-2	21.8		1.00	0.500	0.250
Naphthalene	91-20-3	16.2		1.00	0.400	0.200
n-Propylbenzene	103-65-1	20.1		1.00	0.250	0.125
Styrene	100-42-5	20.4		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	20.3		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	17.1		1.00	0.400	0.200
Tetrachloroethene	127-18-4	20.2		1.00	0.500	0.250
Toluene	108-88-3	20.0		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	18.1		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	19.2		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	23.3		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	18.8		1.00	0.500	0.250
Trichloroethene	79-01-6	35.0		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	23.4		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	18.3		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	19.5		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	20.0		1.00	0.500	0.250
Vinyl chloride	75-01-4	26.6		1.00	0.500	0.250
o-Xylene	95-47-6	20.6		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	40.6		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	109	85	115	
1,2-Dichloroethane-d4	109	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	98.5	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-18	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574410	**Analyst:**	FJB	**Run Date:**	06/27/2016 22:06
Collect Date:	06/17/2016 00:01	**Dilution:**	1	**File ID:**	8M413284
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	114	85	115	
1,2-Dichloroethane-d4	118	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	101	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Analyst(s): CPD
Date: 6/22/16
Filter Lot #: 9697607

Agitator Speed 30 ± 2 rpm ☑

Analyst / Date		Analyst / Date	
CPD	6/22/16	CPD	6/23/16
Time On	Temp On °C	Time Off	Temp Off °C
1457	23.1	0812	21.7

ZHE	Sample #	Pressure √	PSI ON	PSI OFF	Method	Fluid #	Matrix*	%Solid	Size Reduction Yes	Size Reduction No	Int. Wt. (g)	Fluid Vol. (mL)
A												
B												
C												
D												
E												
F												
G	06-1164-11	✓	10	10	1311	FI-182	S	100		✓	25.00	500
H												
I												
J												
K												
L												
M												
N												
O												
P												
Q												
R												
S												
NA	FBIK1	NA	NA	NA	1311	FI-182	NA	NA	NA	NA	40	40

CPD 6/22/16

*Matrix Code = (S-solid) (SS-sand, soil or sludge) (P-paint) (O-organic) (W-water or waste)

Comments: N/A

Peer Review By: Allie Alfred 06/23/2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051316
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53752

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG568561

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412209	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 08:38
8M412210	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 08:57
8M412211	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 09:29
8M412212	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 09:56
8M412213	WG568561-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/13/16 10:19
8M412214	WG568561-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/13/16 10:51
8M412215	WG568565-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76072	05/13/16 11:36
8M412216	BFB CHECK	NA	1	1	STD76034	05/13/16 12:04
8M412217	BFB CHECK	NA	1	1	STD76034	05/13/16 12:18
8M412218	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 12:36
8M412219	RINSE	NA	1	1		05/13/16 13:00
8M412220	WG568561-02 0.3ug/L STD 8260	NA	1	1	STD76127	05/13/16 13:29
8M412221	WG568561-03 0.4ug/L STD 8260	NA	1	1	STD76127	05/13/16 13:58
8M412222	WG568561-04 1ug/L STD 8260	NA	1	1	STD76127	05/13/16 14:27
8M412223	WG568561-05 2ug/L STD 8260	NA	1	1	STD76127	05/13/16 14:56
8M412224	WG568561-06 5ug/L STD 8260	NA	1	1	STD76127	05/13/16 15:25
8M412225	WG568561-07 20ug/L STD 8260	NA	1	1	STD76127	05/13/16 15:54
8M412226	WG568561-08 50ug/L STD 8260	NA	1	1	STD76127	05/13/16 16:23
8M412227	WG568561-09 100ug/L STD 8260	NA	1	1	STD76127	05/13/16 16:52
8M412228	WG568561-10 200ug/L STD 8260	NA	1	1	STD76127	05/13/16 17:21
8M412229	WG568561-11 300ug/L STD 8260	NA	1	1	STD76127	05/13/16 17:50
8M412230	RINSE	NA	1	1		05/13/16 18:19
8M412231	RINSE	NA	1	1		05/13/16 18:49
8M412232	WG568561-12 50ug/L ALT SRC STD 8260	NA	1	1	STD76109	05/13/16 19:17
8M412233	RINSE	NA	1	1		05/13/16 19:46

Comments

Seq.	Rerun	Dil.	Reason	Analytes
5	X			
File ID: 8M412213				
			Several compounds were low, DNR.	
6				
File ID: 8M412214				

Approved: May 20, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS8	Dataset:	051316		
Analyst1:	TMB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	23
Method:	624	SOP:	MSV10	Rev:	14
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:	53752				

Internal Standard: STD75899 Surrogate Standard: STD75899

CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG568561

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			Two C compounds failed. DNR. Run a curve.	
7 File ID: 8M412215				
			DNR.	

Approved: May 20, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051716
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76072; STD76127 LCS: STD76109; STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG569079; WG569083

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412319	WG569084-01 50ng BFB STD 8260	NA	1	1	STD76034	05/17/16 08:53
8M412320	WG569084-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/17/16 09:18
8M412321	WG569079-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76072	05/17/16 09:47
8M412322	WG569079-03 50ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 10:16
8M412323	WG569079-04 20ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 10:44
8M412324	WG569079-05 5ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 11:13
8M412325	WG569079-06 200ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 11:42
8M412326	WG569079-07 300ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 12:40
8M412327	WG569079-08 400ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 13:10
8M412328	WG569079-09 500ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 13:39
8M412329	RINSE	NA	1	1		05/17/16 14:08
8M412330	RINSE	NA	1	1		05/17/16 14:37
8M412331	WG569079-10 100ug/L ALT SRC STD 826	NA	1	1	STD75801	05/17/16 15:06
8M412332	WG569259-01 BFB 50ng 8260	NA	1	1	STD76034	05/17/16 18:27
8M412333	WG569259-02 50ug/L CCV 8260	NA	1	1	STD76034	05/17/16 18:53
8M412334	WG569260-01 100ug/L CCV A9	NA	1	1	STD76072	05/17/16 19:22
8M412335	WG569083-01 VBLK0517 BLANK 8260	NA	1	1		05/17/16 19:51
8M412336	WG569083-02 20ug/L LCS 8260	NA	1	1	STD76109	05/17/16 20:20
8M412337	WG569083-03 20ug/L LCS2 8260	NA	1	1	STD76109	05/17/16 20:49
8M412338	WG569083-04 100ug/L LCS A9	NA	1	1	STD75801	05/17/16 21:18
8M412339	WG569083-05 100ug/L LCS2 A9	NA	1	1	STD75801	05/17/16 21:46
8M412340	L16050844-01 TB A 826-A9-SPE	5	1	1		05/17/16 22:16
8M412341	L16050844-07 EB A 826-A9-SPE	5	1	1		05/17/16 22:45
8M412342	L16050844-11 AB A 826-A9-SPE	5	1	1		05/17/16 23:14
8M412343	L16050844-02 A 826-A9-SPE	6	1	1		05/17/16 23:43
8M412344	L16050844-05 A 826-A9-SPE	6	1	1		05/18/16 00:12
8M412345	L16050844-06 A 826-A9-SPE	6	1	1		05/18/16 00:41
8M412346	L16050844-12 A 826-A9-SPE	6	1	1		05/18/16 01:10
8M412347	L16050840-01 A 826-A9-SPE	7	1	1		05/18/16 01:38
8M412348	L16050844-08 A 826-A9-SPE	7	1	1		05/18/16 02:07
8M412349	L16050844-13 A 826-A9-SPE	7	1	1		05/18/16 02:36
8M412350	L16050844-15 A 826-A9-SPE	7	1	1		05/18/16 03:05
8M412351	L16050839-01 A 826-A9-SPE	7	1	1		05/18/16 03:33
8M412352	L16050844-03 2.5X A 826-A9-SPE	7	1	2.5		05/18/16 04:02

Approved: May 20, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051716
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76072; STD76127 LCS: STD76109; STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG569079; WG569083

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412353	L16050844-04 5X A 826-A9-SPE	7	1	5		05/18/16 04:31
8M412354	L16050844-09 5X A 826-A9-SPE	7	1	5		05/18/16 05:01
8M412355	L16050844-10 5X A 826-A9-SPE	7	1	5		05/18/16 05:30
8M412356	L16050844-14 50X A 826-A9-SPE	7	1	50		05/18/16 05:59
8M412357	RINSE	NA	1	1		05/18/16 06:28

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
File ID: 8M412320				
	DNR. Running an a9/foo curve.			
32	X	10	Over Calibration Range	CIS12-DCE
File ID: 8M412350				
40	X	2.5	Analyzed too dilute	
File ID: 8M412353				
	DNR.			
37	X	25	Over Calibration Range	TCE
File ID: 8M412355				
38	X	20	Analyzed too dilute	
File ID: 8M412356				
	DNR.			

Approved: May 20, 2016
Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 062316
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD76370 Surrogate Standard: STD76370
CCV: STD76715 LCS: STD76744 MS/MSD: STD76744

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG573991

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M413190	WG573990-01 BFB 50ng 8260	NA	1	1	STD76496	06/23/16 19:56
8M413191	WG573990-02 50ug/L CCV 8260	NA	1	1	STD76715	06/23/16 20:24
8M413192	WG573990-02 50ug/L CCV 8260	NA	1	1	STD76715	06/23/16 21:00
8M413193	WG573XXX-01 100ug/L CCV A9	NA	1	1	STDXXXXX	06/23/16 21:30
8M413194	WG573991-01 BLANK 8260	NA	1	1		06/23/16 21:59
8M413195	WG573991-02 20ug/L LCS 8260	NA	1	1	STD76744	06/23/16 22:28
8M413196	L16060927-02 200X C 826-LOW D1	<2	1	200		06/23/16 22:56
8M413197	L16060978-05 A 826-SPE	<2	1	1		06/23/16 23:26
8M413198	L16060992-01 A 826-SPE	<2	1	1		06/23/16 23:55
8M413199	L16060927-01 C 826-LOW	<2	1	1		06/24/16 00:24
8M413200	L16060927-03 C 826-LOW	<2	1	1		06/24/16 00:53
8M413201	L16060992-04 A 826-SPE	<2	1	1		06/24/16 01:22
8M413202	L16061095-12 A 826-SPE	<2	1	1		06/24/16 01:51
8M413203	L16061095-13 A 826-SPE	<2	1	1		06/24/16 02:20
8M413204	L16060896-06 B 826-SPE	<2	1	1		06/24/16 02:49
8M413205	L16060896-07 B 826-SPE	<2	1	1		06/24/16 03:18
8M413206	L16060930-03 B+C 826-SPE	7	1	1	SEDIMENT	06/24/16 03:47
8M413207	L16060730-03 B 826-LOW A1	<2	1	1		06/24/16 04:16
8M413208	L16060823-04 B 826-LOW A1	<2	1	1		06/24/16 04:46
8M413209	L16061068-01 REF 10X A 826-LOW	NA	1	10		06/24/16 05:15
8M413210	L16061068-02 MS 10X A 826-LOW	NA	1	10	STD76744	06/24/16 05:44
8M413211	L16061068-03 MSD 10X A 826-LOW	NA	1	10	STD76744	06/24/16 06:13
8M413212	L16060978-03 10X A 826-SPE	11	1	10		06/24/16 06:42
8M413213	L16060978-04 10X A 826-SPE	11	1	10		06/24/16 07:11
8M413214	L16061068-04 A 826-LOW	<2	1	1		06/24/16 07:40
8M413215	RINSE	NA	1	1		06/24/16 08:09
8M413216	RINSE	NA	1	1		06/24/16 08:38
8M413217	GROUNDWATER	NA	1	1		06/24/16 09:07

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 8M413191				

Approved: June 29, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 062316
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD76370 Surrogate Standard: STD76370
CCV: STD76715 LCS: STD76744 MS/MSD: STD76744

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG573991

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
	DNR.			
4				
File ID: 8M413193				
	Not needed, DNR.			
23	X	100	Over Calibration Range	TOLUENE
File ID: 8M413212				
25			Carry-over contamination	
File ID: 8M413214				

Approved: June 29, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 062616
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD76370 Surrogate Standard: STD76370
CCV: STD76578 LCS: STD76744 MS/MSD: STD76744

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG574227

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M413247	WG574226-01 BFB 50ng 8260	NA	1	1	STD76496	06/26/16 16:40
8M413248	WG574226-02 50ug/L CCV 8260	NA	1	1	STD76578	06/26/16 17:05
8M413249	WG574226-02 50ug/L CCV 8260	NA	1	1	STD76578	06/26/16 17:34
8M413250	WG574XXX-01 100ug/L CCV A9	NA	1	1	STD7XXXX	06/26/16 18:03
8M413251	WG574227-01 BLANK 8260	NA	1	1		06/26/16 18:32
8M413252	WG574227-02 20ug/L LCS 8260	NA	1	1	STD76744	06/26/16 19:00
8M413253	L16061068-08 A MS 826-LOW	NA	1	1	STD76744	06/26/16 19:29
8M413254	L16061068-09 A MSD 826-LOW	NA	1	1	STD76744	06/26/16 19:58
8M413255	L16061068-14 A MS 826-LOW	NA	1	1	STD76744	06/26/16 20:27
8M413256	L16061068-16 A MSD 826-LOW	NA	1	1	STD76744	06/26/16 20:56
8M413257	L16061055-04 B 1000X 826-SPE D1	NA	1	1000		06/26/16 21:25
8M413258	L16061055-07 B 100X 826-SPE D1	NA	1	100		06/26/16 21:54
8M413259	L16061068-18 A 826-LOW TB	<2	1	1		06/26/16 22:22
8M413260	L16061148-03 A 826-SPE TB	<2	1	1		06/26/16 22:51
8M413261	L16061232-03 A 826-SPE TB	<2	1	1		06/26/16 23:20
8M413262	L16061096-01 B 826-SPE	<2	1	1		06/26/16 23:49
8M413263	L16061068-05 A 826-SPE	<2	1	1		06/27/16 00:18
8M413264	L16061068-06 A 826-SPE	<2	1	1		06/27/16 00:47
8M413265	L16061068-07 A 826-SPE	NA	1	1		06/27/16 01:16
8M413266	L16061068-10 A 826-SPE	<2	1	1		06/27/16 01:45
8M413267	L16061068-12 A 826-SPE	NA	1	1		06/27/16 02:14
8M413268	L16061148-01 A 826-SPE	<2	1	1		06/27/16 02:42
8M413269	L16061148-02 A 826-SPE	<2	1	1		06/27/16 03:12
8M413270	L16061232-02 A 826-SPE	<2	1	1		06/27/16 03:41
8M413271	L16061232-01 A 826-SPE	<2	1	1		06/27/16 04:10
8M413272	RINSE	NA	1	1		06/27/16 04:38
8M413273	RINSE	NA	1	1		06/27/16 05:07

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 8M413248				
VC was high, DNR.				

Approved: June 29, 2016

Sarah Vandenberg

Microbac

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 062616
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD76370 Surrogate Standard: STD76370
CCV: STD76578 LCS: STD76744 MS/MSD: STD76744

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG574227

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
4				
File ID: 8M413250				
	Not needed, DNR.			
11				
File ID: 8M413257				
	Sample was too dirty to read pH.			
12	X	1000	Over Calibration Range	ben, cb
File ID: 8M413258				
	Sample was too dirty to read pH.			
13	X	1	Carry-over contamination	
File ID: 8M413259				
	Possible CB carry over. DNR.			
14	X	1	Carry-over contamination	
File ID: 8M413260				
	Possible CB carry over. DNR.			

Approved: June 29, 2016

Sarah Vandenberg

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 062716
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD76370 Surrogate Standard: STD76370
CCV: STD76715 LCS: STD76744 MS/MSD: STD76744

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG574410

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M413275	WG574409-01 BFB 50ng 8260	NA	1	1	STD76496	06/27/16 17:45
8M413276	WG574409-02 50ug/L CCV 8260	NA	1	1	STD76715	06/27/16 18:10
8M413277	WG574409-02 50ug/L CCV 8260	NA	1	1	STD76578	06/27/16 18:40
8M413278	WG574XXX-01 100ug/L CCV A9	NA	1	1	STDXXXXX	06/27/16 19:13
8M413279	WG574410-01 BLANK 8260	NA	1	1		06/27/16 19:42
8M413280	WG574410-02 20ug/L LCS 8260	NA	1	1	STD76744	06/27/16 20:11
8M413281	L16061055-07 1000X C 826-SPE D2	NA	1	1000		06/27/16 20:39
8M413282	L16061144-04 TB A 826-LOW	<2	1	1		06/27/16 21:08
8M413283	L16061151-06 TB A 826-SPE	<2	1	1		06/27/16 21:37
8M413284	L16061068-18 TB B 826-SPE	<2	1	1		06/27/16 22:06
8M413285	L16061148-03 TB B 826-SPE	<2	1	1		06/27/16 22:35
8M413286	L16061151-03 MS A 826-SPE	<2	1	1	STD76744	06/27/16 23:04
8M413287	L16061151-04 MSD A 826-SPE	<2	1	1	STD76744	06/27/16 23:34
8M413288	L16061164-11 10X 826-TC	NA	17	10		06/28/16 00:02
8M413289	L16061151-02 A 826-SPE	<2	1	1		06/28/16 00:31
8M413290	L16061151-01 REF A 826-SPE	<2	1	1		06/28/16 01:00
8M413291	L16061151-05 A 826-SPE	<2	1	1		06/28/16 01:29
8M413292	L16061150-01 A 826-SPE	<2	1	1		06/28/16 01:58
8M413293	L16061150-02 A 826-SPE	<2	1	1		06/28/16 02:27
8M413294	L16061155-01 A 826-SPE	<2	1	1		06/28/16 02:56
8M413295	L16061155-02 A 826-SPE	<2	1	1		06/28/16 03:25
8M413296	L16061155-03 A 826-SPE	<2	1	1		06/28/16 03:54
8M413297	L16061144-01 A 826-LOW	<2	1	1		06/28/16 04:23
8M413298	L16061144-02 A 826-LOW	<2	1	1		06/28/16 04:52
8M413299	L16061144-03 A 826-LOW	<2	1	1		06/28/16 05:21
8M413300	CCV	NA	1	1		06/28/16 05:50
8M413301	RINSE	NA	1	1		06/28/16 06:19
8M413302	RINSE	NA	1	1		06/28/16 06:48
8M413303	WG573693-01 10X FBLK	NA	17	10		06/28/16 07:17

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			

Approved: July 08, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 062716
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD76370 Surrogate Standard: STD76370
CCV: STD76715 LCS: STD76744 MS/MSD: STD76744

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG574410

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
File ID: 8M413276				
	VC was high, DNR.			
4				
File ID: 8M413278				
	Not needed, DNR.			
7				
File ID: 8M413281				
	Could not read the pH because the sample was too dark.			
21	X	1	Surrogate standard failure	
File ID: 8M413295				

Approved: July 08, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 063016
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID: 53797

Internal Standard: STD76893 Surrogate Standard: STD76893
CCV: STD76892 LCS: STD76744 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG574736

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M413360	WG574735-01 50ng BFB STD 8260	NA	1	1	STD76496	06/30/16 08:38
8M413361	WG574735-02 50ug/L CCV STD 8260	NA	1	1	STD76715	06/30/16 09:03
8M413362	WG574735-02 50ug/L CCV STD 8260	NA	1	1	STD76892	06/30/16 09:33
8M413363	WG574735-01 50ng BFB STD 8260	NA	1	1	STD76496	06/30/16 12:03
8M413364	WG574735-02 50ug/L CCV STD 8260	NA	1	1	STD76892	06/30/16 12:27
8M413365	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76432	06/30/16 12:56
8M413366	WG574736-01 VBLK0630 BLANK STD 826	NA	1	1		06/30/16 13:24
8M413367	L16061068-04 B 826-LOW	<2	1	1		06/30/16 13:53
8M413368	WG574736-02 20ug/L LCS STD 8260	NA	1	1	STD76744	06/30/16 14:22
8M413369	WG574736-03 20ug/L LCS2 STD 8260	NA	1	1	STD76744	06/30/16 14:51
8M413370	L16060974-10 B TB 826-SPE	<2	1	1		06/30/16 15:21
8M413371	L16061275-01 B 826-SPE	<2	1	1		06/30/16 15:50
8M413372	L16061275-02 B 826-SPE	<2	1	1		06/30/16 16:19
8M413373	L16061276-01 B 826-SPE	<2	1	1		06/30/16 16:48
8M413374	L16061589-08 B 826-SPE	<2	1	1		06/30/16 17:17
8M413375	L16061589-11 B 826-SPE	<2	1	1		06/30/16 17:46
8M413376	L16061589-13 B 826-SPE	<2	1	1		06/30/16 18:15
8M413377	L16061589-14 B 826-SPE	<2	1	1		06/30/16 18:43
8M413378	L16061589-15 B 826-SPE	<2	1	1		06/30/16 19:12
8M413379	L16061589-16 B 826-SPE	<2	1	1		06/30/16 19:41
8M413380	L16061589-19 B 826-SPE	<2	1	1		06/30/16 20:10
8M413381	L16061589-20 B 826-SPE	<2	1	1		06/30/16 20:39
8M413382	L16061589-21 A 826-SPE	<2	1	1		06/30/16 21:08
8M413383	L16061278-01 B 100X 826-SPE	<2	1	100		06/30/16 21:37
8M413384	L16061589-17 B 826-LOW	<2	1	1		06/30/16 22:06
8M413385	L16061589-18 B 826-LOW	<2	1	1		06/30/16 22:35
8M413386	L16061589-12 B 2.5X 826-LOW	<2	1	2.5		06/30/16 23:04
8M413387	L16061589-09 B 2000X 826-LOW D1	<2	1	2000		06/30/16 23:32
8M413388	CCV	NA	1	1		07/01/16 00:01
8M413389	RINSE	NA	1	1		07/01/16 00:30
8M413390	RINSE	NA	1	1		07/01/16 00:58

Comments

Approved: July 05, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 063016
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID: 53797

Internal Standard: STD76893 Surrogate Standard: STD76893
CCV: STD76892 LCS: STD76744 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG574736

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 8M413361				
	VC was high, DNR.			
3	X			
File ID: 8M413362				
	VC was high, DNR. Baked the instrument and increased the voltage.			
6				
File ID: 8M413365				
	Not needed, DNR.			
26	X	1	Carry-over contamination	
File ID: 8M413385				
	Possible CB carry over.			

Approved: July 05, 2016

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Microbac Laboratories Inc.

Data Checklist

Date: 13-MAY-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75126
Analytical Workgroups: WG568561

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	TMB
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
17-MAY-2016
Tiffany Bailey

Secondary Reviewer:
20-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2016 11:18:36

Microbac Laboratories Inc.

Data Checklist

Date: 17-MAY-2016
Analyst: TMB
Analyst: FJB
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75174
Analytical Workgroups: WG569079; WG569083

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
19-MAY-2016
Tiffany Bailey

Secondary Reviewer:
20-MAY-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2016 11:05:37

Microbac Laboratories Inc.

Data Checklist

Date: 23-JUN-2016
Analyst: FJB
Analyst: NA
Method: 8260B
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 76008
Analytical Workgroups: WG573991

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	WTD
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
29-JUN-2016
Tiffany Bailey

Secondary Reviewer:
29-JUN-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-29-2016 14:37:11

Microbac Laboratories Inc.

Data Checklist

Date: 26-JUN-2016
Analyst: ADC
Analyst: NA
Method: 8260B
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75995
Analytical Workgroups: WG574227

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	WTD
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
29-JUN-2016
Tiffany Bailey

Secondary Reviewer:
29-JUN-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-29-2016 13:01:31

Microbac Laboratories Inc.

Data Checklist

Date: 27-JUN-2016
Analyst: FJB
Analyst: NA
Method: 8260B
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 76035
Analytical Workgroups: WG574410

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	WTD
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	ADC
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
30-JUN-2016
Tiffany Bailey

Secondary Reviewer:
08-JUL-2016
Cathy Cater

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-08-2016 12:26:26

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 30-JUN-2016
Analyst: TMB
Analyst: NA
Method: 8260B
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 76058
Analytical Workgroups: WG574736

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
30-JUN-2016
Tiffany Bailey

Secondary Reviewer:
05-JUL-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-05-2016 09:40:07

Microbac

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG573991

Login Number: L16061068

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW23-061716	01	06/17/16					06/24/2016	6.9	14		06/24/16	6.9	14	
MW23MS-061716	02	06/17/16					06/24/2016	6.9	14		06/24/16	6.9	14	
MW23MSD-061716	03	06/17/16					06/24/2016	6.9	14		06/24/16	6.9	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4830410
Report generated 07/11/2016 16:24

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG574227

Login Number: L16061068

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
C01FD-061716	05	06/17/16					06/27/2016	9.7	14		06/27/16	9.7	14	
MW13-061716	06	06/17/16					06/27/2016	9.6	14		06/27/16	9.6	14	
C02-061716	07	06/17/16					06/27/2016	9.6	14		06/27/16	9.6	14	
C02MS-061716	08	06/17/16					06/26/2016	9.4	14		06/26/16	9.4	14	
C02MSD-061716	09	06/17/16					06/26/2016	9.4	14		06/26/16	9.4	14	
MW19-061716	10	06/17/16					06/27/2016	9.5	14		06/27/16	9.5	14	
MW18-061716	12	06/17/16					06/27/2016	9.5	14		06/27/16	9.5	14	
MW18MS-061716	14	06/17/16					06/26/2016	9.3	14		06/26/16	9.3	14	
MW18MSD-061716	16	06/17/16					06/26/2016	9.3	14		06/26/16	9.3	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4830410
Report generated 07/11/2016 16:24

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG574410

Login Number: L16061068

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
TRIP BLANK	18	06/17/16					06/27/2016	10.9	14		06/27/16	10.9	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4830410
Report generated 07/11/2016 16:24

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG574736

Login Number: L16061068

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
C01-061716	04	06/17/16					06/30/2016	13.2	14		06/30/16	13.2	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4830410
Report generated 07/11/2016 16:24

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061068
Instrument Id: HPMS8
Workgroup (AAB#): WG574227

Method: 8260
CAL ID: HPMS8-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16061068-05	1.00	01	117	112	101	101
L16061068-06	1.00	01	115	114	101	101
L16061068-07	1.00	01	118	112	99.8	102
L16061068-08	1.00	01	108	107	98.0	103
L16061068-09	1.00	01	108	108	100	102
L16061068-10	1.00	01	118	111	99.7	102
L16061068-12	1.00	01	119	115	101	102
L16061068-14	1.00	01	109	107	99.1	101
L16061068-16	1.00	01	109	109	98.5	101
WG574227-01	1.00	01	109	111	97.9	102
WG574227-02	1.00	01	108	108	99.2	103

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4830419
Report generated: 07/11/2016 16:24

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061068
Instrument Id: HPMS8
Workgroup (AAB#): WG574410

Method: 8260
CAL ID: HPMS8-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16061068-18	1.00	01	118	114	101	102
WG574410-01	1.00	01	114	113	100	103
WG574410-02	1.00	01	114	110	99.3	103

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4830419
Report generated: 07/11/2016 16:24

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061068
Instrument Id: HPMS8
Workgroup (AAB#): WG573991

Method: 8260
CAL ID: HPMS8-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16061068-01	10.0	DL01	118	111	100	103
L16061068-02	10.0	DL01	121	111	100	102
L16061068-03	10.0	DL01	118	110	101	103
WG573991-01	1.00	01	115	113	102	102
WG573991-02	1.00	01	113	110	98.9	103

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4830419
Report generated: 07/11/2016 16:24

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061068
Instrument Id: HPMS8
Workgroup (AAB#): WG574736

Method: 8260
CAL ID: HPMS8-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16061068-04	1.00	02	113	107	100	108
WG574736-01	1.00	01	115	109	102	108
WG574736-02	1.00	01	112	106	99.9	109
WG574736-03	1.00	01	112	107	99.9	107

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4830419
Report generated: 07/11/2016 16:24

METHOD BLANK SUMMARY

Login Number: L16061068
Blank File ID: 8M413194
Prep Date: 06/23/16 21:59
Analyzed Date: 06/23/16 21:59
Analyst: FJB

Work Group: WG573991
Blank Sample ID: WG573991-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573991-02	8M413195	06/23/16 22:28	01
MW23-061716	L16061068-01	8M413209	06/24/16 05:15	DL01
MW23MS-061716	L16061068-02	8M413210	06/24/16 05:44	DL01
MW23MSD-061716	L16061068-03	8M413211	06/24/16 06:13	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4845051
Report generated 07/11/2016 16:24

METHOD BLANK SUMMARY

Login Number: L16061068
Blank File ID: 8M413251
Prep Date: 06/26/16 18:32
Analyzed Date: 06/26/16 18:32
Analyst: ADC

Work Group: WG574227
Blank Sample ID: WG574227-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG574227-02	8M413252	06/26/16 19:00	01
C02MS-061716	L16061068-08	8M413253	06/26/16 19:29	01
C02MSD-061716	L16061068-09	8M413254	06/26/16 19:58	01
MW18MS-061716	L16061068-14	8M413255	06/26/16 20:27	01
MW18MSD-061716	L16061068-16	8M413256	06/26/16 20:56	01
C01FD-061716	L16061068-05	8M413263	06/27/16 00:18	01
MW13-061716	L16061068-06	8M413264	06/27/16 00:47	01
C02-061716	L16061068-07	8M413265	06/27/16 01:16	01
MW19-061716	L16061068-10	8M413266	06/27/16 01:45	01
MW18-061716	L16061068-12	8M413267	06/27/16 02:14	01

Report Name: BLANK_SUMMARY
PDF File ID: 4845051
Report generated 07/11/2016 16:24

METHOD BLANK SUMMARY

Login Number: L16061068
Blank File ID: 8M413279
Prep Date: 06/27/16 19:42
Analyzed Date: 06/27/16 19:42
Analyst: FJB

Work Group: WG574410
Blank Sample ID: WG574410-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG574410-02	8M413280	06/27/16 20:11	01
TRIP BLANK	L16061068-18	8M413284	06/27/16 22:06	01

Report Name: BLANK_SUMMARY
PDF File ID: 4845051
Report generated 07/11/2016 16:24

METHOD BLANK SUMMARY

Login Number: L16061068
Blank File ID: 8M413366
Prep Date: 06/30/16 13:24
Analyzed Date: 06/30/16 13:24
Analyst: TMB

Work Group: WG574736
Blank Sample ID: WG574736-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
C01-061716	L16061068-04	8M413367	06/30/16 13:53	02
LCS	WG574736-02	8M413368	06/30/16 14:22	01
LCS2	WG574736-03	8M413369	06/30/16 14:51	01

Report Name: BLANK_SUMMARY
PDF File ID: 4845051
Report generated 07/11/2016 16:24

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16061068 Prep Date: 06/23/16 21:59 Sample ID: WG573991-01
Instrument ID: HPMS8 Run Date: 06/23/16 21:59 Prep Method: 5030B/5030C/503
File ID: 8M413194 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573991 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 4830412
11-JUL-2016 16:24

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061068 Prep Date: 06/23/16 21:59 Sample ID: WG573991-01
Instrument ID: HPMS8 Run Date: 06/23/16 21:59 Prep Method: 5030B/5030C/503
File ID: 8M413194 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573991 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	113	85 - 115	PASS
1,2-Dichloroethane-d4	115	70 - 120	PASS
Toluene-d8	102	85 - 120	PASS
4-Bromofluorobenzene	102	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4830412
11-JUL-2016 16:24

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16061068 Prep Date: 06/26/16 18:32 Sample ID: WG574227-01
Instrument ID: HPMS8 Run Date: 06/26/16 18:32 Prep Method: 5030B/5030C/503
File ID: 8M413251 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG574227 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.128	1	J
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
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Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061068 Prep Date: 06/26/16 18:32 Sample ID: WG574227-01
Instrument ID: HPMS8 Run Date: 06/26/16 18:32 Prep Method: 5030B/5030C/503
File ID: 8M413251 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG574227 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	111	85 - 115	PASS
1,2-Dichloroethane-d4	109	70 - 120	PASS
Toluene-d8	102	85 - 120	PASS
4-Bromofluorobenzene	97.9	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4830412
11-JUL-2016 16:24

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16061068 Prep Date: 06/27/16 19:42 Sample ID: WG574410-01
Instrument ID: HPMS8 Run Date: 06/27/16 19:42 Prep Method: 5030B/5030C/503
File ID: 8M413279 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG574410 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

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METHOD BLANK REPORT

Login Number: L16061068 Prep Date: 06/27/16 19:42 Sample ID: WG574410-01
Instrument ID: HPMS8 Run Date: 06/27/16 19:42 Prep Method: 5030B/5030C/503
File ID: 8M413279 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG574410 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	113	85 - 115	PASS
1,2-Dichloroethane-d4	114	70 - 120	PASS
Toluene-d8	103	85 - 120	PASS
4-Bromofluorobenzene	100	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
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Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061068 Prep Date: 06/30/16 13:24 Sample ID: WG574736-01
Instrument ID: HPMS8 Run Date: 06/30/16 13:24 Prep Method: 5030B/5030C/503
File ID: 8M413366 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG574736 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

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Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061068 Prep Date: 06/30/16 13:24 Sample ID: WG574736-01
Instrument ID: HPMS8 Run Date: 06/30/16 13:24 Prep Method: 5030B/5030C/503
File ID: 8M413366 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG574736 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	109	85 - 115	PASS
1,2-Dichloroethane-d4	115	70 - 120	PASS
Toluene-d8	108	85 - 120	PASS
4-Bromofluorobenzene	102	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061068 | Run Date: 06/23/2016 | Sample ID: WG573991-02
Instrument ID: HPMS8 | Run Time: 22:28 | Prep Method: 5030B/5030C/503
File ID: 8M413195 | Analyst: FJB | Method: 8260B
Workgroup (AAB#): WG573991 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD76744 | Cal ID: HPMS8-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	24.0	120	40 - 140	
Benzene	20.0	21.8	109	80 - 120	
Bromobenzene	20.0	19.4	97.1	75 - 125	
Bromochloromethane	20.0	21.6	108	65 - 130	
Bromodichloromethane	20.0	23.4	117	75 - 120	
Bromoform	20.0	19.1	95.6	70 - 130	
Bromomethane	20.0	17.2	86.1	30 - 145	
2-Butanone	20.0	21.2	106	30 - 150	
n-Butylbenzene	20.0	19.0	94.8	70 - 135	
sec-Butylbenzene	20.0	20.2	101	70 - 125	
tert-Butylbenzene	20.0	20.0	99.8	70 - 130	
Carbon disulfide	20.0	20.9	104	35 - 160	
Carbon tetrachloride	20.0	24.4	122	65 - 140	
Chlorobenzene	20.0	20.7	104	80 - 120	
Chlorodibromomethane	20.0	20.4	102	60 - 135	
Chloroethane	20.0	23.4	117	60 - 135	
Chloroform	20.0	22.7	114	65 - 135	
Chloromethane	20.0	23.0	115	40 - 125	
2-Chlorotoluene	20.0	18.4	92.0	75 - 125	
4-Chlorotoluene	20.0	22.2	111	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	17.1	85.6	50 - 130	
1,2-Dibromoethane	20.0	19.8	98.9	80 - 120	
Dibromomethane	20.0	20.7	104	75 - 125	
1,2-Dichlorobenzene	20.0	19.4	96.9	70 - 120	
1,3-Dichlorobenzene	20.0	20.2	101	75 - 125	
1,4-Dichlorobenzene	20.0	19.8	99.0	75 - 125	
Dichlorodifluoromethane	20.0	28.6	143	30 - 155	
1,1-Dichloroethane	20.0	21.4	107	70 - 135	
1,2-Dichloroethane	20.0	24.7	123	70 - 130	
1,1-Dichloroethene	20.0	22.4	112	70 - 130	
cis-1,2-Dichloroethene	20.0	22.0	110	70 - 125	
trans-1,2-Dichloroethene	20.0	22.1	111	60 - 140	
1,2-Dichloropropane	20.0	21.6	108	75 - 125	
1,3-Dichloropropane	20.0	21.4	107	75 - 125	
2,2-Dichloropropane	20.0	25.6	128	70 - 135	
cis-1,3-Dichloropropene	20.0	24.5	122	70 - 130	
trans-1,3-Dichloropropene	20.0	21.2	106	55 - 140	
1,1-Dichloropropene	20.0	21.8	109	75 - 130	
Ethylbenzene	20.0	20.1	100	75 - 125	
2-Hexanone	20.0	17.3	86.5	55 - 130	
Hexachlorobutadiene	20.0	20.7	103	50 - 140	

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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061068 Run Date: 06/23/2016 Sample ID: WG573991-02
Instrument ID: HPMS8 Run Time: 22:28 Prep Method: 5030B/5030C/503
File ID: 8M413195 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573991 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD76744 Cal ID: HPMS8-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	21.7	109	75 - 125	
p-Isopropyltoluene	20.0	19.8	98.9	75 - 130	
4-Methyl-2-pentanone	20.0	19.9	99.3	60 - 135	
Methylene chloride	20.0	21.3	107	55 - 140	
Naphthalene	20.0	15.2	76.1	55 - 140	
n-Propylbenzene	20.0	20.9	104	70 - 130	
Styrene	20.0	21.1	105	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	20.9	105	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	17.1	85.3	65 - 130	
Tetrachloroethene	20.0	20.9	105	45 - 150	
Toluene	20.0	20.6	103	75 - 120	
1,2,3-Trichlorobenzene	20.0	17.5	87.3	55 - 140	
1,2,4-Trichlorobenzene	20.0	18.5	92.5	65 - 135	
1,1,1-Trichloroethane	20.0	24.7	123	65 - 130	
1,1,2-Trichloroethane	20.0	19.2	95.9	75 - 125	
Trichloroethene	20.0	23.4	117	70 - 125	
Trichlorofluoromethane	20.0	24.5	123	60 - 145	
1,2,3-Trichloropropane	20.0	19.1	95.6	75 - 125	
1,2,4-Trimethylbenzene	20.0	19.9	99.5	75 - 130	
1,3,5-Trimethylbenzene	20.0	20.8	104	75 - 130	
Vinyl chloride	20.0	27.9	139	50 - 145	
o-Xylene	20.0	21.2	106	80 - 120	
m-,p-Xylene	40.0	42.0	105	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	110	85 - 115	PASS
1,2-Dichloroethane-d4	113	70 - 120	PASS
Toluene-d8	103	85 - 120	PASS
4-Bromofluorobenzene	98.9	75 - 120	PASS

* EXCEEDS %REC LIMIT

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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061068 | Run Date: 06/26/2016 | Sample ID: WG574227-02
Instrument ID: HPMS8 | Run Time: 19:00 | Prep Method: 5030B/5030C/503
File ID: 8M413252 | Analyst: ADC | Method: 8260B
Workgroup (AAB#): WG574227 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD76744 | Cal ID: HPMS8-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	24.0	120	40 - 140	
Benzene	20.0	22.3	112	80 - 120	
Bromobenzene	20.0	19.6	97.9	75 - 125	
Bromochloromethane	20.0	22.7	113	65 - 130	
Bromodichloromethane	20.0	22.9	114	75 - 120	
Bromoform	20.0	20.6	103	70 - 130	
Bromomethane	20.0	15.3	76.7	30 - 145	
2-Butanone	20.0	22.9	114	30 - 150	
n-Butylbenzene	20.0	18.7	93.3	70 - 135	
sec-Butylbenzene	20.0	20.1	101	70 - 125	
tert-Butylbenzene	20.0	19.8	99.1	70 - 130	
Carbon disulfide	20.0	21.8	109	35 - 160	
Carbon tetrachloride	20.0	24.2	121	65 - 140	
Chlorobenzene	20.0	21.1	105	80 - 120	
Chlorodibromomethane	20.0	20.5	103	60 - 135	
Chloroethane	20.0	24.1	121	60 - 135	
Chloroform	20.0	22.7	114	65 - 135	
Chloromethane	20.0	23.4	117	40 - 125	
2-Chlorotoluene	20.0	20.6	103	75 - 125	
4-Chlorotoluene	20.0	19.4	97.0	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	18.0	90.2	50 - 130	
1,2-Dibromoethane	20.0	19.9	99.4	80 - 120	
Dibromomethane	20.0	20.0	100	75 - 125	
1,2-Dichlorobenzene	20.0	19.5	97.4	70 - 120	
1,3-Dichlorobenzene	20.0	20.0	100	75 - 125	
1,4-Dichlorobenzene	20.0	19.9	99.3	75 - 125	
Dichlorodifluoromethane	20.0	26.4	132	30 - 155	
1,1-Dichloroethane	20.0	21.6	108	70 - 135	
1,2-Dichloroethane	20.0	23.5	117	70 - 130	
1,1-Dichloroethene	20.0	22.0	110	70 - 130	
cis-1,2-Dichloroethene	20.0	22.8	114	70 - 125	
trans-1,2-Dichloroethene	20.0	22.3	111	60 - 140	
1,2-Dichloropropane	20.0	21.5	108	75 - 125	
1,3-Dichloropropane	20.0	21.2	106	75 - 125	
2,2-Dichloropropane	20.0	24.3	122	70 - 135	
cis-1,3-Dichloropropene	20.0	24.7	124	70 - 130	
trans-1,3-Dichloropropene	20.0	21.0	105	55 - 140	
1,1-Dichloropropene	20.0	22.3	112	75 - 130	
Ethylbenzene	20.0	20.2	101	75 - 125	
2-Hexanone	20.0	18.9	94.7	55 - 130	
Hexachlorobutadiene	20.0	20.0	100	50 - 140	

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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061068 Run Date: 06/26/2016 Sample ID: WG574227-02
Instrument ID: HPMS8 Run Time: 19:00 Prep Method: 5030B/5030C/503
File ID: 8M413252 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG574227 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD76744 Cal ID: HPMS8-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	21.9	110	75 - 125	
p-Isopropyltoluene	20.0	19.8	99.2	75 - 130	
4-Methyl-2-pentanone	20.0	20.2	101	60 - 135	
Methylene chloride	20.0	22.1	111	55 - 140	
Naphthalene	20.0	15.8	79.0	55 - 140	
n-Propylbenzene	20.0	20.6	103	70 - 130	
Styrene	20.0	21.1	105	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	21.4	107	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	17.2	85.8	65 - 130	
Tetrachloroethene	20.0	21.8	109	45 - 150	
Toluene	20.0	21.0	105	75 - 120	
1,2,3-Trichlorobenzene	20.0	17.6	88.0	55 - 140	
1,2,4-Trichlorobenzene	20.0	19.0	94.9	65 - 135	
1,1,1-Trichloroethane	20.0	23.8	119	65 - 130	
1,1,2-Trichloroethane	20.0	19.6	97.9	75 - 125	
Trichloroethene	20.0	24.2	121	70 - 125	
Trichlorofluoromethane	20.0	24.3	121	60 - 145	
1,2,3-Trichloropropane	20.0	19.2	95.9	75 - 125	
1,2,4-Trimethylbenzene	20.0	19.8	99.1	75 - 130	
1,3,5-Trimethylbenzene	20.0	20.2	101	75 - 130	
Vinyl chloride	20.0	27.4	137	50 - 145	
o-Xylene	20.0	21.7	109	80 - 120	
m-,p-Xylene	40.0	42.4	106	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	108	85 - 115	PASS
1,2-Dichloroethane-d4	108	70 - 120	PASS
Toluene-d8	103	85 - 120	PASS
4-Bromofluorobenzene	99.2	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061068 | Run Date: 06/27/2016 | Sample ID: WG574410-02
Instrument ID: HPMS8 | Run Time: 20:11 | Prep Method: 5030B/5030C/503
File ID: 8M413280 | Analyst: FJB | Method: 8260B
Workgroup (AAB#): WG574410 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD76744 | Cal ID: HPMS8-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	25.4	127	40 - 140	
Benzene	20.0	21.6	108	80 - 120	
Bromobenzene	20.0	19.0	94.8	75 - 125	
Bromochloromethane	20.0	21.5	108	65 - 130	
Bromodichloromethane	20.0	23.5	118	75 - 120	
Bromoform	20.0	19.9	99.5	70 - 130	
Bromomethane	20.0	16.9	84.7	30 - 145	
2-Butanone	20.0	20.5	103	30 - 150	
n-Butylbenzene	20.0	18.7	93.6	70 - 135	
sec-Butylbenzene	20.0	19.6	98.1	70 - 125	
tert-Butylbenzene	20.0	19.5	97.5	70 - 130	
Carbon disulfide	20.0	20.6	103	35 - 160	
Carbon tetrachloride	20.0	24.3	121	65 - 140	
Chlorobenzene	20.0	20.3	101	80 - 120	
Chlorodibromomethane	20.0	20.4	102	60 - 135	
Chloroethane	20.0	23.1	115	60 - 135	
Chloroform	20.0	23.0	115	65 - 135	
Chloromethane	20.0	22.5	113	40 - 125	
2-Chlorotoluene	20.0	18.2	90.8	75 - 125	
4-Chlorotoluene	20.0	21.4	107	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	17.9	89.4	50 - 130	
1,2-Dibromoethane	20.0	19.6	97.8	80 - 120	
Dibromomethane	20.0	20.3	102	75 - 125	
1,2-Dichlorobenzene	20.0	19.0	95.1	70 - 120	
1,3-Dichlorobenzene	20.0	19.7	98.4	75 - 125	
1,4-Dichlorobenzene	20.0	19.3	96.7	75 - 125	
Dichlorodifluoromethane	20.0	25.4	127	30 - 155	
1,1-Dichloroethane	20.0	21.2	106	70 - 135	
1,2-Dichloroethane	20.0	24.7	124	70 - 130	
1,1-Dichloroethene	20.0	21.6	108	70 - 130	
cis-1,2-Dichloroethene	20.0	21.9	109	70 - 125	
trans-1,2-Dichloroethene	20.0	22.3	112	60 - 140	
1,2-Dichloropropane	20.0	20.8	104	75 - 125	
1,3-Dichloropropane	20.0	20.7	103	75 - 125	
2,2-Dichloropropane	20.0	24.5	123	70 - 135	
cis-1,3-Dichloropropene	20.0	24.2	121	70 - 130	
trans-1,3-Dichloropropene	20.0	20.8	104	55 - 140	
1,1-Dichloropropene	20.0	22.1	110	75 - 130	
Ethylbenzene	20.0	19.8	98.8	75 - 125	
2-Hexanone	20.0	17.1	85.3	55 - 130	
Hexachlorobutadiene	20.0	19.8	98.9	50 - 140	

LCS - Modified 03/06/2008
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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061068 | Run Date: 06/27/2016 | Sample ID: WG574410-02
Instrument ID: HPMS8 | Run Time: 20:11 | Prep Method: 5030B/5030C/503
File ID: 8M413280 | Analyst: FJB | Method: 8260B
Workgroup (AAB#): WG574410 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD76744 | Cal ID: HPMS8-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	21.5	107	75 - 125	
p-Isopropyltoluene	20.0	19.6	98.0	75 - 130	
4-Methyl-2-pentanone	20.0	18.3	91.7	60 - 135	
Methylene chloride	20.0	20.9	105	55 - 140	
Naphthalene	20.0	15.6	77.9	55 - 140	
n-Propylbenzene	20.0	20.1	101	70 - 130	
Styrene	20.0	20.7	104	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	20.6	103	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	16.6	83.2	65 - 130	
Tetrachloroethene	20.0	20.5	103	45 - 150	
Toluene	20.0	19.8	99.2	75 - 120	
1,2,3-Trichlorobenzene	20.0	17.1	85.4	55 - 140	
1,2,4-Trichlorobenzene	20.0	18.2	90.9	65 - 135	
1,1,1-Trichloroethane	20.0	24.0	120	65 - 130	
1,1,2-Trichloroethane	20.0	19.3	96.7	75 - 125	
Trichloroethene	20.0	23.3	117	70 - 125	
Trichlorofluoromethane	20.0	24.4	122	60 - 145	
1,2,3-Trichloropropane	20.0	18.4	92.2	75 - 125	
1,2,4-Trimethylbenzene	20.0	19.7	98.6	75 - 130	
1,3,5-Trimethylbenzene	20.0	20.2	101	75 - 130	
Vinyl chloride	20.0	26.2	131	50 - 145	
o-Xylene	20.0	20.5	102	80 - 120	
m-,p-Xylene	40.0	41.3	103	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	110	85 - 115	PASS
1,2-Dichloroethane-d4	114	70 - 120	PASS
Toluene-d8	103	85 - 120	PASS
4-Bromofluorobenzene	99.3	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4830413
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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061068 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG574736 Units: ug/L
QC Key: DOD4 Lot #: STD76744

Sample ID: WG574736-02 LCS File ID: 8M413368 Run Date: 06/30/2016 14:22
Sample ID: WG574736-03 LCS2 File ID: 8M413369 Run Date: 06/30/2016 14:51

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	21.6	108	20.0	21.0	105	2.76	80 - 130	30	
1,1,1-Trichloroethane	20.0	22.6	113	20.0	22.1	111	2.16	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	17.3	86.5	20.0	18.0	90.2	4.30	65 - 130	30	
1,1,2-Trichloroethane	20.0	19.8	98.8	20.0	19.1	95.7	3.13	75 - 125	30	
1,1-Dichloroethane	20.0	19.4	97.2	20.0	19.4	97.2	0.0357	70 - 135	30	
1,1-Dichloroethene	20.0	19.5	97.6	20.0	18.5	92.3	5.53	70 - 130	30	
1,1-Dichloropropene	20.0	20.2	101	20.0	19.9	99.3	1.54	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	18.7	93.7	20.0	19.2	95.9	2.28	55 - 140	30	
1,2,3-Trichloropropane	20.0	20.2	101	20.0	19.4	96.9	4.08	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	19.8	98.9	20.0	19.9	99.7	0.829	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	21.1	105	20.0	20.7	104	1.75	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	20.4	102	20.0	20.9	105	2.54	50 - 130	30	
1,2-Dibromoethane	20.0	20.1	101	20.0	20.1	100	0.259	80 - 120	30	
1,2-Dichlorobenzene	20.0	20.7	104	20.0	20.8	104	0.450	70 - 120	30	
1,2-Dichloroethane	20.0	22.6	113	20.0	22.5	113	0.420	70 - 130	30	
1,2-Dichloropropane	20.0	19.5	97.3	20.0	19.7	98.6	1.32	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	22.0	110	20.0	21.4	107	2.84	75 - 130	30	
1,3-Dichlorobenzene	20.0	21.0	105	20.0	20.9	105	0.447	75 - 125	30	
1,3-Dichloropropane	20.0	21.5	107	20.0	20.7	104	3.58	75 - 125	30	
1,4-Dichlorobenzene	20.0	20.9	104	20.0	20.8	104	0.370	75 - 125	30	
2,2-Dichloropropane	20.0	21.5	107	20.0	22.6	113	4.95	70 - 135	30	
2-Butanone	20.0	19.0	95.2	20.0	18.8	94.1	1.16	30 - 150	30	
2-Chlorotoluene	20.0	22.1	110	20.0	21.5	107	2.70	75 - 125	30	
2-Hexanone	20.0	18.2	91.2	20.0	17.4	86.8	4.97	55 - 130	30	
4-Chlorotoluene	20.0	20.6	103	20.0	20.3	101	1.79	75 - 130	30	
4-Methyl-2-pentanone	20.0	16.8	84.1	20.0	17.3	86.6	2.99	60 - 135	30	
Acetone	20.0	22.7	114	20.0	21.4	107	6.16	40 - 140	30	
Benzene	20.0	20.2	101	20.0	19.8	99.2	1.88	80 - 120	30	
Bromobenzene	20.0	20.4	102	20.0	20.1	101	1.53	75 - 125	30	
Bromochloromethane	20.0	19.4	96.8	20.0	19.2	95.9	0.964	65 - 130	30	
Bromodichloromethane	20.0	22.0	110	20.0	21.6	108	1.75	75 - 120	30	
Bromoform	20.0	20.7	104	20.0	20.1	100	3.00	70 - 130	30	
Bromomethane	20.0	15.0	74.8	20.0	15.6	77.8	3.90	30 - 145	30	
Carbon disulfide	20.0	18.4	92.0	20.0	17.9	89.5	2.73	35 - 160	30	
Carbon tetrachloride	20.0	22.6	113	20.0	21.7	109	4.10	65 - 140	30	
Chlorobenzene	20.0	21.1	106	20.0	20.9	105	0.908	80 - 120	30	
Chloroethane	20.0	20.8	104	20.0	19.6	98.1	5.64	60 - 135	30	
Chloroform	20.0	21.0	105	20.0	21.0	105	0.367	65 - 135	30	
Chloromethane	20.0	20.4	102	20.0	19.6	97.9	4.03	40 - 125	30	
cis-1,2-Dichloroethene	20.0	20.4	102	20.0	20.3	102	0.228	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061068 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG574736 Units: ug/L
QC Key: DOD4 Lot #: STD76744

Sample ID: WG574736-02 LCS File ID: 8M413368 Run Date: 06/30/2016 14:22
Sample ID: WG574736-03 LCS2 File ID: 8M413369 Run Date: 06/30/2016 14:51

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	22.2	111	20.0	22.8	114	2.36	70 - 130	30	
Chlorodibromomethane	20.0	21.1	106	20.0	20.7	103	2.38	60 - 135	30	
Dibromomethane	20.0	18.2	91.2	20.0	18.1	90.6	0.657	75 - 125	30	
Dichlorodifluoromethane	20.0	19.0	95.2	20.0	18.2	90.9	4.59	30 - 155	30	
Ethylbenzene	20.0	20.7	103	20.0	19.9	99.7	3.58	75 - 125	30	
Hexachlorobutadiene	20.0	20.9	105	20.0	21.5	108	2.81	50 - 140	30	
Isopropylbenzene	20.0	22.5	113	20.0	21.9	109	2.87	75 - 125	30	
m-,p-Xylene	40.0	43.2	108	40.0	41.8	104	3.27	75 - 130	30	
Methylene chloride	20.0	19.2	95.8	20.0	19.0	95.1	0.689	55 - 140	30	
n-Butylbenzene	20.0	19.9	99.7	20.0	19.9	99.5	0.203	70 - 135	30	
n-Propylbenzene	20.0	21.7	109	20.0	21.4	107	1.29	70 - 130	30	
Naphthalene	20.0	16.9	84.7	20.0	17.1	85.4	0.774	55 - 140	30	
o-Xylene	20.0	21.8	109	20.0	21.4	107	1.86	80 - 120	30	
p-Isopropyltoluene	20.0	20.8	104	20.0	20.9	105	0.485	75 - 130	30	
sec-Butylbenzene	20.0	21.1	105	20.0	21.1	106	0.0455	70 - 125	30	
Styrene	20.0	21.4	107	20.0	21.3	107	0.489	65 - 135	30	
tert-Butylbenzene	20.0	20.9	104	20.0	20.5	103	1.88	70 - 130	30	
Tetrachloroethene	20.0	21.6	108	20.0	20.7	103	4.28	45 - 150	30	
Toluene	20.0	20.8	104	20.0	20.3	101	2.61	75 - 120	30	
trans-1,2-Dichloroethene	20.0	19.4	96.9	20.0	19.5	97.7	0.783	60 - 140	30	
trans-1,3-Dichloropropene	20.0	21.4	107	20.0	21.0	105	1.76	55 - 140	30	
Trichloroethene	20.0	22.0	110	20.0	20.9	105	4.95	70 - 125	30	
Trichlorofluoromethane	20.0	22.2	111	20.0	20.7	104	6.88	60 - 145	30	
Vinyl chloride	20.0	24.0	120	20.0	22.8	114	4.86	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	112	112	70 - 120	PASS
Dibromofluoromethane	106	107	85 - 115	PASS
4-Bromofluorobenzene	99.9	99.9	75 - 120	PASS
Toluene-d8	109	107	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
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Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16061068 Cal ID: HPMS8- 13-MAY-16 Worknum: WG573991

Instrument ID: HPMS8 Contract #: Prep Method: 5030B/5030C/

Parent ID: L16061068-01 File ID: 8M413209 Dil: 10 Method: 5035A

Sample ID: L16061068-02 MS File ID: 8M413210 Dil: 10 Matrix: 8260B

Sample ID: L16061068-03 MSD File ID: 8M413211 Dil: 10 Units: Water ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,1,1,2-Tetrachloroethane	U	200	215	108	200	207	104	3.69	80 - 130	30	
1,1,1-Trichloroethane	U	200	249	125	200	246	123	1.53	65 - 130	30	
1,1,2,2-Tetrachloroethane	U	200	173	86.6	200	177	88.6	2.30	65 - 130	30	
1,1,2-Trichloroethane	U	200	197	98.7	200	194	96.8	1.97	75 - 125	30	
1,1-Dichloroethane	U	200	219	110	200	211	105	3.89	70 - 135	30	
1,1-Dichloroethene	U	200	226	113	200	220	110	2.81	70 - 130	30	
1,1-Dichloropropene	U	200	225	112	200	220	110	2.22	75 - 130	30	
1,2,3-Trichlorobenzene	U	200	175	87.4	200	180	89.8	2.74	55 - 140	30	
1,2,3-Trichloropropane	U	200	189	94.4	200	196	98.1	3.87	75 - 125	30	
1,2,4-Trichlorobenzene	U	200	186	92.8	200	191	95.7	3.04	65 - 135	30	
1,2,4-Trimethylbenzene	U	200	198	98.9	200	200	99.9	0.966	75 - 130	30	
1,2-Dibromo-3-chloropropane	U	200	185	92.5	200	195	97.3	5.08	50 - 130	30	
1,2-Dibromoethane	U	200	201	101	200	202	101	0.140	80 - 120	30	
1,2-Dichlorobenzene	U	200	196	98.2	200	198	99.2	0.939	70 - 120	30	
1,2-Dichloroethane	50.5	200	309	129	200	299	124	3.23	70 - 130	30	
1,2-Dichloropropane	U	200	215	107	200	212	106	1.41	75 - 125	30	
1,3,5-Trimethylbenzene	U	200	204	102	200	206	103	1.28	75 - 130	30	
1,3-Dichlorobenzene	U	200	199	99.4	200	201	100	0.933	75 - 125	30	
1,3-Dichloropropane	U	200	210	105	200	210	105	0.347	75 - 125	30	
1,4-Dichlorobenzene	U	200	197	98.5	200	201	100	1.97	75 - 125	30	
2,2-Dichloropropane	U	200	226	113	200	217	109	4.07	70 - 135	30	
2-Butanone	U	200	205	103	200	193	96.7	5.99	30 - 150	30	
2-Chlorotoluene	U	200	181	90.6	200	204	102	11.9	75 - 125	30	
2-Hexanone	U	200	168	84	200	168	83.9	0.0407	55 - 130	30	
4-Chlorotoluene	U	200	222	111	200	194	97	13.4	75 - 130	30	
4-Methyl-2-pentanone	U	200	188	93.9	200	186	92.8	1.11	60 - 135	30	
Acetone	U	200	242	121	200	247	123	2.02	40 - 140	30	
Benzene	U	200	222	111	200	218	109	1.73	80 - 120	30	
Bromobenzene	U	200	189	94.7	200	190	95.1	0.436	75 - 125	30	
Bromochloromethane	U	200	230	115	200	214	107	7.27	65 - 130	30	
Bromodichloromethane	U	200	245	123	200	237	118	3.66	75 - 120	30	*
Bromoform	U	200	208	104	200	195	97.5	6.47	70 - 130	30	
Bromomethane	U	200	117	58.5	200	138	69.1	16.7	30 - 145	30	
Carbon disulfide	U	200	212	106	200	208	104	1.91	35 - 160	30	
Carbon tetrachloride	U	200	259	129	200	247	124	4.57	65 - 140	30	
Chlorobenzene	U	200	208	104	200	205	103	1.67	80 - 120	30	
Chloroethane	U	200	227	113	200	225	112	0.898	60 - 135	30	
Chloroform	4.78	200	236	116	200	233	114	1.29	65 - 135	30	
Chloromethane	U	200	228	114	200	228	114	0.0175	40 - 125	30	
cis-1,2-Dichloroethene	7.33	200	234	113	200	226	109	3.42	70 - 125	30	
cis-1,3-Dichloropropene	U	200	244	122	200	231	115	5.66	70 - 130	30	

MS_MSD - Modified 03/06/2008
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Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16061068 Cal ID: HPMS8 13-MAY-16 Worknum: WG573991

Instrument ID: HPMS8 Contract #: Prep Method: 5030B/5030C/

Parent ID: L16061068-01 File ID: 8M413209 Dil: 10 Method: 5035A

Sample ID: L16061068-02 MS File ID: 8M413210 Dil: 10 Matrix: 8260B

Sample ID: L16061068-03 MSD File ID: 8M413211 Dil: 10 Units: Water ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chlorodibromomethane	U	200	211	106	200	208	104	1.38	60 - 135	30	
Dibromomethane	U	200	218	109	200	214	107	1.86	75 - 125	30	
Dichlorodifluoromethane	U	200	293	147	200	288	144	1.81	30 - 155	30	
Ethylbenzene	U	200	203	102	200	192	95.9	5.82	75 - 125	30	
Hexachlorobutadiene	U	200	202	101	200	204	102	1.32	50 - 140	30	
Isopropylbenzene	U	200	222	111	200	213	107	4.19	75 - 125	30	
m-,p-Xylene	U	400	422	106	400	405	101	4.22	75 - 130	30	
Methylene chloride	U	200	216	108	200	210	105	2.79	55 - 140	30	
n-Butylbenzene	U	200	190	95	200	189	94.6	0.383	70 - 135	30	
n-Propylbenzene	U	200	205	103	200	204	102	0.752	70 - 130	30	
Naphthalene	U	200	157	78.7	200	167	83.5	5.96	55 - 140	30	
o-Xylene	U	200	212	106	200	203	101	4.53	80 - 120	30	
p-Isopropyltoluene	U	200	199	99.5	200	197	98.6	0.991	75 - 130	30	
sec-Butylbenzene	U	200	203	101	200	199	99.6	1.65	70 - 125	30	
Styrene	U	200	210	105	200	207	104	1.08	65 - 135	30	
tert-Butylbenzene	U	200	196	97.9	200	200	100	2.27	70 - 130	30	
Tetrachloroethene	U	200	210	105	200	202	101	3.91	45 - 150	30	
Toluene	U	200	205	103	200	199	99.5	3.11	75 - 120	30	
trans-1,2-Dichloroethene	U	200	224	112	200	224	112	0.102	60 - 140	30	
trans-1,3-Dichloropropene	U	200	214	107	200	205	102	4.18	55 - 140	30	
Trichloroethene	1170	200	1390	108	200	1350	90.5	2.62	70 - 125	30	
Trichlorofluoromethane	U	200	257	128	200	248	124	3.38	60 - 145	30	
Vinyl chloride	U	200	281	140	200	276	138	1.57	50 - 145	30	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
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Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16061068 Cal ID: HPMS8- 13-MAY-16 Worknum: WG574227

Instrument ID: HPMS8 Contract #: Prep Method: 5030B/5030C/

Parent ID: L16061068-07 File ID: 8M413265 Dil: 1 Method: 5035A

Sample ID: L16061068-08 MS File ID: 8M413253 Dil: 1 Matrix: 8260B

Sample ID: L16061068-09 MSD File ID: 8M413254 Dil: 1 Units: Water ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,1,1,2-Tetrachloroethane	U	20.0	20.5	103	20.0	20.0	100	2.68	80 - 130	30	
1,1,1-Trichloroethane	U	20.0	23.2	116	20.0	22.9	114	1.21	65 - 130	30	
1,1,2,2-Tetrachloroethane	U	20.0	17.3	86.7	20.0	17.0	85.1	1.89	65 - 130	30	
1,1,2-Trichloroethane	U	20.0	19.8	99.1	20.0	19.2	96	3.13	75 - 125	30	
1,1-Dichloroethane	U	20.0	21.2	106	20.0	21.0	105	1.02	70 - 135	30	
1,1-Dichloroethene	U	20.0	21.4	107	20.0	21.0	105	2.12	70 - 130	30	
1,1-Dichloropropene	U	20.0	21.6	108	20.0	21.1	106	2.22	75 - 130	30	
1,2,3-Trichlorobenzene	U	20.0	17.7	88.4	20.0	17.4	87.2	1.41	55 - 140	30	
1,2,3-Trichloropropane	U	20.0	18.7	93.3	20.0	17.9	89.3	4.35	75 - 125	30	
1,2,4-Trichlorobenzene	U	20.0	18.8	94.2	20.0	18.9	94.3	0.145	65 - 135	30	
1,2,4-Trimethylbenzene	U	20.0	19.3	96.6	20.0	19.2	96	0.545	75 - 130	30	
1,2-Dibromo-3-chloropropane	U	20.0	18.3	91.7	20.0	16.6	82.8	10.2	50 - 130	30	
1,2-Dibromoethane	U	20.0	19.9	99.5	20.0	19.1	95.5	4.14	80 - 120	30	
1,2-Dichlorobenzene	U	20.0	19.2	96.2	20.0	18.9	94.4	1.86	70 - 120	30	
1,2-Dichloroethane	U	20.0	24.1	121	20.0	23.0	115	4.85	70 - 130	30	
1,2-Dichloropropane	U	20.0	21.6	108	20.0	21.3	107	1.42	75 - 125	30	
1,3,5-Trimethylbenzene	U	20.0	20.0	99.9	20.0	19.7	98.3	1.63	75 - 130	30	
1,3-Dichlorobenzene	U	20.0	20.0	99.8	20.0	19.6	98.2	1.68	75 - 125	30	
1,3-Dichloropropane	U	20.0	21.2	106	20.0	20.2	101	5.02	75 - 125	30	
1,4-Dichlorobenzene	U	20.0	19.8	99	20.0	19.2	95.9	3.20	75 - 125	30	
2,2-Dichloropropane	U	20.0	24.6	123	20.0	23.7	119	3.69	70 - 135	30	
2-Butanone	U	20.0	22.0	110	20.0	19.8	99.1	10.2	30 - 150	30	
2-Chlorotoluene	U	20.0	20.2	101	20.0	17.9	89.6	12.2	75 - 125	30	
2-Hexanone	U	20.0	18.2	90.8	20.0	18.9	94.6	4.06	55 - 130	30	
4-Chlorotoluene	U	20.0	19.1	95.5	20.0	21.4	107	11.4	75 - 130	30	
4-Methyl-2-pentanone	U	20.0	19.9	99.4	20.0	19.3	96.4	3.13	60 - 135	30	
Acetone	U	20.0	24.6	123	20.0	24.5	123	0.0686	40 - 140	30	
Benzene	U	20.0	22.0	110	20.0	21.4	107	2.57	80 - 120	30	
Bromobenzene	U	20.0	19.5	97.4	20.0	18.9	94.5	3.11	75 - 125	30	
Bromochloromethane	U	20.0	22.2	111	20.0	21.1	106	4.74	65 - 130	30	
Bromodichloromethane	U	20.0	23.0	115	20.0	22.2	111	3.34	75 - 120	30	
Bromoform	U	20.0	20.1	100	20.0	18.8	94.1	6.39	70 - 130	30	
Bromomethane	U	20.0	16.5	82.6	20.0	16.6	82.9	0.354	30 - 145	30	
Carbon disulfide	U	20.0	20.7	103	20.0	21.2	106	2.34	35 - 160	30	
Carbon tetrachloride	U	20.0	23.3	117	20.0	22.4	112	4.01	65 - 140	30	
Chlorobenzene	U	20.0	20.6	103	20.0	20.1	100	2.37	80 - 120	30	
Chloroethane	U	20.0	23.4	117	20.0	23.2	116	0.594	60 - 135	30	
Chloroform	U	20.0	22.4	112	20.0	22.1	110	1.43	65 - 135	30	
Chloromethane	U	20.0	22.9	115	20.0	23.0	115	0.552	40 - 125	30	
cis-1,2-Dichloroethene	U	20.0	22.0	110	20.0	21.7	108	1.80	70 - 125	30	
cis-1,3-Dichloropropene	U	20.0	24.7	124	20.0	23.8	119	3.69	70 - 130	30	

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Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16061068 Cal ID: HPMS8 13-MAY-16 Worknum: WG574227

Instrument ID: HPMS8 Contract #: Prep Method: 5030B/5030C/

Parent ID: L16061068-07 File ID: 8M413265 Dil: 1 Method: 5035A

Sample ID: L16061068-08 MS File ID: 8M413253 Dil: 1 Matrix: 8260B

Sample ID: L16061068-09 MSD File ID: 8M413254 Dil: 1 Units: Water

ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chlorodibromomethane	U	20.0	20.2	101	20.0	19.4	97.1	3.74	60 - 135	30	
Dibromomethane	U	20.0	20.4	102	20.0	20.0	100	1.69	75 - 125	30	
Dichlorodifluoromethane	U	20.0	25.1	126	20.0	25.4	127	0.938	30 - 155	30	
Ethylbenzene	U	20.0	19.6	98.2	20.0	19.2	96.2	2.03	75 - 125	30	
Hexachlorobutadiene	U	20.0	20.0	100	20.0	19.9	99.3	0.839	50 - 140	30	
Isopropylbenzene	U	20.0	21.2	106	20.0	20.9	105	1.51	75 - 125	30	
m-,p-Xylene	U	40.0	41.1	103	40.0	40.5	101	1.51	75 - 130	30	
Methylene chloride	U	20.0	21.5	107	20.0	21.1	105	1.91	55 - 140	30	
n-Butylbenzene	U	20.0	18.7	93.3	20.0	18.5	92.3	1.02	70 - 135	30	
n-Propylbenzene	U	20.0	20.2	101	20.0	20.0	99.8	1.14	70 - 130	30	
Naphthalene	U	20.0	16.3	81.4	20.0	15.8	79.2	2.69	55 - 140	30	
o-Xylene	U	20.0	21.0	105	20.0	20.5	102	2.61	80 - 120	30	
p-Isopropyltoluene	U	20.0	19.4	96.9	20.0	19.3	96.6	0.273	75 - 130	30	
sec-Butylbenzene	U	20.0	19.4	97.2	20.0	19.5	97.5	0.321	70 - 125	30	
Styrene	U	20.0	20.8	104	20.0	20.2	101	2.56	65 - 135	30	
tert-Butylbenzene	U	20.0	19.6	98.2	20.0	18.9	94.7	3.55	70 - 130	30	
Tetrachloroethene	U	20.0	20.9	105	20.0	20.0	100	4.32	45 - 150	30	
Toluene	U	20.0	20.0	100	20.0	19.9	99.5	0.672	75 - 120	30	
trans-1,2-Dichloroethene	U	20.0	22.0	110	20.0	21.7	109	1.42	60 - 140	30	
trans-1,3-Dichloropropene	U	20.0	20.8	104	20.0	20.2	101	3.14	55 - 140	30	
Trichloroethene	U	20.0	22.9	114	20.0	22.7	114	0.752	70 - 125	30	
Trichlorofluoromethane	U	20.0	23.5	117	20.0	23.3	116	0.747	60 - 145	30	
Vinyl chloride	U	20.0	26.0	130	20.0	26.1	130	0.432	50 - 145	30	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

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Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16061068 Cal ID: HPMS8- 13-MAY-16 Worknum: WG574227

Instrument ID: HPMS8 Contract #: Prep Method: 5030B/5030C/

Parent ID: L16061068-12 File ID: 8M413267 Dil: 1 Method: 5035A

Sample ID: L16061068-14 MS File ID: 8M413255 Dil: 1 Matrix: 8260B

Sample ID: L16061068-16 MSD File ID: 8M413256 Dil: 1 Units: Water ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,1,1,2-Tetrachloroethane	U	20.0	20.1	100	20.0	20.3	102	1.27	80 - 130	30	
1,1,1-Trichloroethane	U	20.0	23.3	117	20.0	23.3	116	0.342	65 - 130	30	
1,1,2,2-Tetrachloroethane	U	20.0	17.2	86.1	20.0	17.1	85.4	0.774	65 - 130	30	
1,1,2-Trichloroethane	U	20.0	18.8	93.9	20.0	18.8	94.2	0.343	75 - 125	30	
1,1-Dichloroethane	U	20.0	21.2	106	20.0	21.2	106	0.0614	70 - 135	30	
1,1-Dichloroethene	U	20.0	21.6	108	20.0	21.8	109	0.698	70 - 130	30	
1,1-Dichloropropene	U	20.0	21.8	109	20.0	21.7	108	0.601	75 - 130	30	
1,2,3-Trichlorobenzene	U	20.0	17.4	87	20.0	18.1	90.4	3.73	55 - 140	30	
1,2,3-Trichloropropane	U	20.0	17.8	89.2	20.0	18.3	91.4	2.41	75 - 125	30	
1,2,4-Trichlorobenzene	U	20.0	18.4	91.9	20.0	19.2	96	4.37	65 - 135	30	
1,2,4-Trimethylbenzene	U	20.0	19.6	97.9	20.0	19.5	97.3	0.672	75 - 130	30	
1,2-Dibromo-3-chloropropane	U	20.0	17.6	88.2	20.0	17.5	87.7	0.477	50 - 130	30	
1,2-Dibromoethane	U	20.0	19.3	96.3	20.0	19.2	96.2	0.128	80 - 120	30	
1,2-Dichlorobenzene	U	20.0	19.6	98	20.0	19.4	97	1.03	70 - 120	30	
1,2-Dichloroethane	U	20.0	23.8	119	20.0	23.7	118	0.505	70 - 130	30	
1,2-Dichloropropane	U	20.0	21.8	109	20.0	21.8	109	0.0428	75 - 125	30	
1,3,5-Trimethylbenzene	U	20.0	20.5	102	20.0	20.0	99.8	2.62	75 - 130	30	
1,3-Dichlorobenzene	U	20.0	20.0	99.8	20.0	20.0	99.8	0.0383	75 - 125	30	
1,3-Dichloropropane	U	20.0	20.5	102	20.0	20.6	103	0.548	75 - 125	30	
1,4-Dichlorobenzene	U	20.0	19.9	99.7	20.0	19.8	98.8	0.979	75 - 125	30	
2,2-Dichloropropane	U	20.0	24.3	122	20.0	23.9	120	1.76	70 - 135	30	
2-Butanone	U	20.0	19.6	97.8	20.0	19.8	98.8	1.00	30 - 150	30	
2-Chlorotoluene	U	20.0	20.6	103	20.0	20.6	103	0.110	75 - 125	30	
2-Hexanone	U	20.0	17.7	88.5	20.0	17.8	89.1	0.733	55 - 130	30	
4-Chlorotoluene	U	20.0	19.4	96.8	20.0	18.7	93.7	3.30	75 - 130	30	
4-Methyl-2-pentanone	U	20.0	19.4	96.9	20.0	20.4	102	5.26	60 - 135	30	
Acetone	U	20.0	23.9	120	20.0	26.3	132	9.73	40 - 140	30	
Benzene	U	20.0	21.9	109	20.0	22.1	111	1.14	80 - 120	30	
Bromobenzene	U	20.0	19.7	98.5	20.0	19.1	95.6	2.98	75 - 125	30	
Bromochloromethane	U	20.0	21.5	107	20.0	22.1	111	2.80	65 - 130	30	
Bromodichloromethane	U	20.0	22.5	113	20.0	22.6	113	0.277	75 - 120	30	
Bromoform	U	20.0	18.7	93.4	20.0	18.9	94.6	1.34	70 - 130	30	
Bromomethane	U	20.0	17.9	89.6	20.0	17.6	87.9	1.91	30 - 145	30	
Carbon disulfide	U	20.0	21.2	106	20.0	21.2	106	0.114	35 - 160	30	
Carbon tetrachloride	U	20.0	22.8	114	20.0	23.1	115	1.28	65 - 140	30	
Chlorobenzene	U	20.0	20.4	102	20.0	20.7	104	1.69	80 - 120	30	
Chloroethane	U	20.0	23.9	119	20.0	23.3	116	2.53	60 - 135	30	
Chloroform	U	20.0	22.2	111	20.0	22.4	112	1.07	65 - 135	30	
Chloromethane	U	20.0	23.3	116	20.0	23.9	120	2.81	40 - 125	30	
cis-1,2-Dichloroethene	1.11	20.0	22.8	109	20.0	23.1	110	1.22	70 - 125	30	
cis-1,3-Dichloropropene	U	20.0	24.2	121	20.0	23.9	119	1.07	70 - 130	30	

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Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16061068 Cal ID: HPMS8 13-MAY-16 Worknum: WG574227

Instrument ID: HPMS8 Contract #: Prep Method: 5030B/5030C/

Parent ID: L16061068-12 File ID: 8M413267 Dil: 1 Method: 5035A

Sample ID: L16061068-14 MS File ID: 8M413255 Dil: 1 Matrix: 8260B

Sample ID: L16061068-16 MSD File ID: 8M413256 Dil: 1 Units: Water

ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chlorodibromomethane	U	20.0	19.4	97.1	20.0	19.5	97.3	0.230	60 - 135	30	
Dibromomethane	U	20.0	20.4	102	20.0	20.1	101	1.31	75 - 125	30	
Dichlorodifluoromethane	U	20.0	25.6	128	20.0	25.6	128	0.117	30 - 155	30	
Ethylbenzene	U	20.0	19.7	98.4	20.0	19.0	95.2	3.34	75 - 125	30	
Hexachlorobutadiene	U	20.0	20.1	100	20.0	20.5	103	2.17	50 - 140	30	
Isopropylbenzene	U	20.0	21.1	106	20.0	21.0	105	0.525	75 - 125	30	
m-,p-Xylene	U	40.0	40.9	102	40.0	40.6	102	0.630	75 - 130	30	
Methylene chloride	U	20.0	20.9	105	20.0	21.8	109	4.05	55 - 140	30	
n-Butylbenzene	U	20.0	18.8	93.8	20.0	18.7	93.3	0.504	70 - 135	30	
n-Propylbenzene	U	20.0	20.6	103	20.0	20.1	101	2.44	70 - 130	30	
Naphthalene	U	20.0	16.1	80.3	20.0	16.2	81.1	0.998	55 - 140	30	
o-Xylene	U	20.0	20.4	102	20.0	20.6	103	0.704	80 - 120	30	
p-Isopropyltoluene	U	20.0	19.6	97.8	20.0	19.7	98.7	0.969	75 - 130	30	
sec-Butylbenzene	U	20.0	20.1	101	20.0	19.7	98.4	2.16	70 - 125	30	
Styrene	U	20.0	20.4	102	20.0	20.4	102	0.259	65 - 135	30	
tert-Butylbenzene	U	20.0	19.4	97.2	20.0	19.5	97.5	0.244	70 - 130	30	
Tetrachloroethene	U	20.0	20.8	104	20.0	20.2	101	2.57	45 - 150	30	
Toluene	U	20.0	20.2	101	20.0	20.0	99.9	0.940	75 - 120	30	
trans-1,2-Dichloroethene	U	20.0	22.4	112	20.0	22.2	111	0.974	60 - 140	30	
trans-1,3-Dichloropropene	U	20.0	20.2	101	20.0	20.0	99.8	1.02	55 - 140	30	
Trichloroethene	14.1	20.0	34.8	103	20.0	35.0	104	0.541	70 - 125	30	
Trichlorofluoromethane	U	20.0	23.4	117	20.0	23.4	117	0.199	60 - 145	30	
Vinyl chloride	U	20.0	26.3	132	20.0	26.6	133	0.980	50 - 145	30	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
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Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061068
Instrument: HPMS8
Analyst: TMB
Workgroup: WG568561

Tune ID: WG568561-01
Run Date: 05/13/2016
Run Time: 12:36
File ID: 8M412218
Cal ID: HPMS8 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	16.7	6575	PASS
75.0	95.0	30.0	60.0	51.3	20171	PASS
95.0	95.0	100	100	100	39312	PASS
96.0	95.0	5.00	9.00	6.74	2649	PASS
173	174	0	2.00	0.363	122	PASS
174	95.0	50.0	100	85.5	33616	PASS
175	174	5.00	9.00	8.17	2746	PASS
176	174	95.0	101	99.2	33360	PASS
177	176	5.00	9.00	6.80	2267	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG568561-02	STD	01	05/13/2016 13:29	
WG568561-03	STD	01	05/13/2016 13:58	
WG568561-04	STD	01	05/13/2016 14:27	
WG568561-05	STD	01	05/13/2016 14:56	
WG568561-06	STD	01	05/13/2016 15:25	
WG568561-07	STD	01	05/13/2016 15:54	
WG568561-08	STD-CCV	01	05/13/2016 16:23	
WG568561-09	STD	01	05/13/2016 16:52	
WG568561-10	STD	01	05/13/2016 17:21	
WG568561-11	STD	01	05/13/2016 17:50	
WG568561-12	SSCV	01	05/13/2016 19:17	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4830417
Report generated 07/11/2016 16:24

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061068
Instrument: HPMS8
Analyst: TMB
Workgroup: WG569084

Tune ID: WG569084-01
Run Date: 05/17/2016
Run Time: 08:53
File ID: 8M412319
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.1	6316	PASS
75.0	95.0	30.0	60.0	54.7	18130	PASS
95.0	95.0	100	100	100	33138	PASS
96.0	95.0	5.00	9.00	6.76	2241	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	72.2	23934	PASS
175	174	5.00	9.00	7.88	1886	PASS
176	174	95.0	101	96.8	23159	PASS
177	176	5.00	9.00	7.15	1655	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG569079-01	STD-CCV	01	05/17/2016 09:47	
WG569079-03	STD	01	05/17/2016 10:16	
WG569079-04	STD	01	05/17/2016 10:44	
WG569079-05	STD	01	05/17/2016 11:13	
WG569079-06	STD	01	05/17/2016 11:42	
WG569079-07	STD	01	05/17/2016 12:40	
WG569079-08	STD	01	05/17/2016 13:10	
WG569079-09	STD	01	05/17/2016 13:39	
WG569079-10	SSCV	01	05/17/2016 15:06	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4830417
Report generated 07/11/2016 16:24

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061068
Instrument: HPMS8
Analyst: FJB
Workgroup: WG573990

Tune ID: WG573990-01
Run Date: 06/23/2016
Run Time: 19:56
File ID: 8M413190
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.0	10373	PASS
75.0	95.0	30.0	60.0	58.1	31797	PASS
95.0	95.0	100	100	100	54685	PASS
96.0	95.0	5.00	9.00	6.95	3803	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	76.1	41629	PASS
175	174	5.00	9.00	7.18	2991	PASS
176	174	95.0	101	95.9	39941	PASS
177	176	5.00	9.00	6.76	2702	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573990-02	CCV	01	06/23/2016 21:00	
WG573991-01	BLANK	01	06/23/2016 21:59	
WG573991-02	LCS	01	06/23/2016 22:28	
L16061068-01	MW23-061716	DL01	06/24/2016 05:15	
L16061068-02	MW23MS-061716	DL01	06/24/2016 05:44	
L16061068-03	MW23MSD-061716	DL01	06/24/2016 06:13	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4830417
Report generated 07/11/2016 16:24

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061068
Instrument: HPMS8
Analyst: ADC
Workgroup: WG574226

Tune ID: WG574226-01
Run Date: 06/26/2016
Run Time: 16:40
File ID: 8M413247
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	18.3	7413	PASS
75.0	95.0	30.0	60.0	56.2	22773	PASS
95.0	95.0	100	100	100	40520	PASS
96.0	95.0	5.00	9.00	6.64	2692	PASS
173	174	0	2.00	0.568	192	PASS
174	95.0	50.0	100	83.4	33789	PASS
175	174	5.00	9.00	8.64	2920	PASS
176	174	95.0	101	98.3	33202	PASS
177	176	5.00	9.00	7.17	2381	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG574226-02	CCV	01	06/26/2016 17:34	
WG574227-01	BLANK	01	06/26/2016 18:32	
WG574227-02	LCS	01	06/26/2016 19:00	
L16061068-08	C02MS-061716	01	06/26/2016 19:29	
L16061068-09	C02MSD-061716	01	06/26/2016 19:58	
L16061068-14	MW18MS-061716	01	06/26/2016 20:27	
L16061068-16	MW18MSD-061716	01	06/26/2016 20:56	
L16061068-05	C01FD-061716	01	06/27/2016 00:18	
L16061068-06	MW13-061716	01	06/27/2016 00:47	
L16061068-07	C02-061716	01	06/27/2016 01:16	
L16061068-10	MW19-061716	01	06/27/2016 01:45	
L16061068-12	MW18-061716	01	06/27/2016 02:14	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4830417
Report generated 07/11/2016 16:24

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061068
Instrument: HPMS8
Analyst: FJB
Workgroup: WG574409

Tune ID: WG574409-01
Run Date: 06/27/2016
Run Time: 17:45
File ID: 8M413275
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	18.5	9667	PASS
75.0	95.0	30.0	60.0	57.7	30122	PASS
95.0	95.0	100	100	100	52181	PASS
96.0	95.0	5.00	9.00	6.82	3559	PASS
173	174	0	2.00	0.363	160	PASS
174	95.0	50.0	100	84.5	44069	PASS
175	174	5.00	9.00	7.30	3216	PASS
176	174	95.0	101	98.9	43568	PASS
177	176	5.00	9.00	6.07	2646	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG574409-02	CCV	01	06/27/2016 18:40	
WG574410-01	BLANK	01	06/27/2016 19:42	
WG574410-02	LCS	01	06/27/2016 20:11	
L16061068-18	TRIP BLANK	01	06/27/2016 22:06	
WG573693-01	FBLK1	DL01	06/28/2016 07:17	*

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4830417
Report generated 07/11/2016 16:24

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061068
Instrument: HPMS8
Analyst: TMB
Workgroup: WG574735

Tune ID: WG574735-01
Run Date: 06/30/2016
Run Time: 12:03
File ID: 8M413363
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	18.1	9775	PASS
75.0	95.0	30.0	60.0	58.1	31346	PASS
95.0	95.0	100	100	100	53981	PASS
96.0	95.0	5.00	9.00	6.34	3423	PASS
173	174	0	2.00	0.380	157	PASS
174	95.0	50.0	100	76.6	41338	PASS
175	174	5.00	9.00	8.57	3544	PASS
176	174	95.0	101	96.8	40000	PASS
177	176	5.00	9.00	6.66	2662	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG574735-02	CCV	01	06/30/2016 12:27	
WG574736-01	BLANK	01	06/30/2016 13:24	
L16061068-04	C01-061716	02	06/30/2016 13:53	
WG574736-02	LCS	01	06/30/2016 14:22	
WG574736-03	LCS2	01	06/30/2016 14:51	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4830417
Report generated 07/11/2016 16:24

Calibration Table Report
Method: 8260WT.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Calibration: Sat May 14 18:08:06 2016
Curve: WG568561
Calibration Files

	Compound	0.3 8M412220.D	0.4 8M412221.D	1 8M412222.D	2 8M412223.D	5 8M412224.D	20 8M412225.D	50 8M412226.D	100 8M412227.D	200 8M412228.D	300 8M412229.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane		0.427	0.390	0.397	0.364	0.468	0.439	0.452	0.427	0.408	0.419	7.751		
P	Chloromethane			0.264	0.257	0.223	0.253	0.240	0.240	0.239	0.241	0.245	5.336		
C	Vinyl Chloride		0.274	0.296	0.297	0.277	0.299	0.292	0.299	0.292	0.288	0.290	3.191		
T	1,3-Butadiene				0.218	0.208	0.242	0.251	0.277	0.254	0.254	0.243	9.644		
T	Bromomethane			0.129	0.133	0.127	0.162	0.167	0.187	0.205	0.212	0.165	20.449		1.000
T	Chloroethane		0.173	0.157	0.153	0.143	0.164	0.157	0.163	0.164	0.164	0.160	5.354		
T	Trichlorofluoromethane		0.544	0.538	0.559	0.506	0.570	0.538	0.551	0.531	0.525	0.540	3.520		
T	Diethyl ether			0.130	0.138	0.123	0.132	0.125	0.128		0.127	0.129	3.866		
T	Isoprene		0.335	0.351	0.334	0.293	0.334	0.320	0.334	0.322	0.329	0.328	4.867		
T	Acrolein				0.012	0.010	0.010	0.011	0.012		0.014	0.012	12.987		
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.256	0.269	0.240	0.260	0.249	0.257	0.251	0.250	0.254	3.397		
T	Acetone					0.023	0.030	0.029	0.030	0.028	0.028	0.028	9.132		
C	1,1-Dichloroethene		0.424	0.407	0.406	0.387	0.416	0.398	0.409	0.400	0.393	0.404	2.830		
T	Tert-Butyl Alcohol				0.010	0.009	0.009	0.009	0.009		0.009	0.009	2.872		
T	Dimethyl Sulfide		0.133	0.142	0.152	0.137	0.145	0.142	0.151	0.147	0.151	0.145	4.534		
T	Iodomethane				0.019	0.024	0.066	0.101	0.129	0.135	0.131	0.087	58.244		0.998
T	Methyl acetate					0.075	0.076	0.074	0.078	0.076	0.078	0.076	2.221		
T	Methylene Chloride			0.274	0.265	0.244	0.263	0.250	0.255	0.254	0.252	0.257	3.686		
T	Carbon Disulfide			0.888	0.922	0.801	0.873	0.816	0.854	0.813	0.802	0.846	5.346		
T	Acrylonitrile			0.027	0.035	0.033	0.038	0.038	0.039		0.044	0.036	14.671		
T	Methyl Tert Butyl Ether			0.534	0.543	0.521	0.586	0.579	0.585	0.560	0.546	0.557	4.455		
T	trans-1,2-Dichloroethene		0.389	0.395	0.364	0.352	0.381	0.367	0.372	0.364	0.358	0.371	3.858		
T	n-Hexane					0.265	0.280	0.270	0.286	0.275	0.279	0.276	2.732		
T	Diisopropyl ether			0.600	0.607	0.548	0.588	0.572	0.571		0.567	0.579	3.559		
T	Vinyl Acetate				0.256	0.243	0.270	0.275	0.266	0.271	0.275	0.265	4.509		
P	1,1-Dichloroethane		0.441	0.463	0.486	0.434	0.488	0.464	0.470	0.459	0.447	0.461	4.012		
T	Ethyl-Tert-Butyl ether			0.616	0.645	0.590	0.641	0.628	0.619		0.603	0.620	3.188		
T	2-Butanone					0.035	0.042	0.043	0.045	0.041	0.043	0.041	8.268		
T	Propionitrile			0.010	0.012	0.012	0.013	0.012	0.013		0.013	0.012	8.354		
T	2,2-Dichloropropane		0.471	0.462	0.520	0.476	0.503	0.494	0.497	0.483	0.470	0.486	3.839		
T	cis-1,2-Dichloroethene		0.299	0.298	0.291	0.267	0.295	0.282	0.289	0.283	0.277	0.287	3.685		
C	Chloroform	0.563	0.567	0.581	0.536	0.509	0.566	0.543	0.546	0.529	0.506	0.545	4.619		
T	1-Bromopropane			0.034	0.040	0.040	0.043	0.041	0.043	0.043	0.044	0.041	7.649		
T	Bromochloromethane		0.131	0.164	0.147	0.137	0.154	0.148	0.151	0.148	0.145	0.147	6.598		
T	Tetrahydrofuran			0.034	0.028	0.025	0.026	0.026	0.026		0.026	0.027	11.724		
S	Dibromofluoromethane			0.249	0.261	0.257	0.280	0.271	0.284	0.271	0.275	0.269	4.465		
T	1,1,1-Trichloroethane		0.492	0.537	0.515	0.496	0.545	0.525	0.533	0.515	0.499	0.517	3.660		
T	Cyclohexane			0.373	0.369	0.335	0.359	0.344	0.366	0.356	0.364	0.358	3.619		
T	1,1-Dichloropropene			0.414	0.399	0.369	0.403	0.395	0.399	0.392	0.382	0.394	3.488		
T	Tert-Amyl-Methyl ether			0.567	0.587	0.534	0.576	0.568	0.561		0.549	0.563	3.077		
T	Carbon Tetrachloride		0.444	0.456	0.462	0.441	0.481	0.465	0.474	0.462	0.448	0.4594	2.92173		
S	1,2-Dichloroethane-d4			0.241	0.309	0.276	0.312	0.295	0.301	0.284	0.286	0.288	7.93644		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.347	0.335	0.354	0.336	0.371	0.36	0.364	0.349	0.338	0.3505	3.65503		
T	Benzene		1.128	1.084	1.071	0.977	1.085	1.033	1.019	0.963	0.883	1.0269	7.39343		
T	Trichloroethene		0.285	0.275	0.276	0.251	0.283	0.273	0.279	0.273	0.27	0.2739	3.66126		
T	Methylcyclohexane					0.396	0.426	0.408	0.429	0.416	0.422	0.4161	2.94153		
C	1,2-Dichloropropane		0.239	0.222	0.233	0.207	0.238	0.226	0.233	0.231	0.229	0.2286	4.30096		
T	Bromodichloromethane		0.369	0.382	0.412	0.385	0.426	0.421	0.417	0.41	0.395	0.4018	4.93305		
T	1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.0011	14.5817		
T	Dibromomethane		0.141	0.13	0.137	0.128	0.141	0.134	0.137	0.136	0.133	0.1353	3.26799		
T	2-Chloroethyl Vinyl Ether				0.1	0.084	0.103	0.104	0.103	0.095	0.098	0.0983	7.09792		
T	4-Methyl-2-Pentanone					0.033	0.042	0.042	0.043	0.04	0.041	0.0401	8.66859		
T	cis-1,3-Dichloropropene		0.391	0.393	0.386	0.398	0.431	0.428	0.428	0.42	0.405	0.409	4.41527		

T	Dimethyl Disulfide					0.182	0.218	0.221	0.23	0.229	0.23	0.2183	8.49419	
I	Chlorobenzene-d5	ISTD												
S	Toluene-d8			1.282	1.295	1.228	1.385	1.333	1.378	1.289	1.278	1.3084	4.07746	
C	Toluene		1.653	1.696	1.678	1.507	1.647	1.554	1.545	1.418	1.27	1.552	8.98325	
T	Ethyl Methacrylate			0.251	0.293	0.268	0.314	0.314	0.327	0.309	0.31	0.2981	8.76897	
T	Paraldehyde											0	0	
T	trans-1,3-Dichloropropene			0.472	0.51	0.466	0.561	0.552	0.553	0.533	0.515	0.5201	7.01006	
T	1,1,2-Trichloroethane		0.261	0.241	0.242	0.222	0.254	0.249	0.252	0.243	0.241	0.2449	4.54209	
T	2-Hexanone					0.042	0.053	0.053	0.056	0.051	0.053	0.0515	9.50479	
T	1,3-Dichloropropane		0.355	0.442	0.465	0.42	0.468	0.454	0.457	0.437	0.428	0.436	7.93348	
T	Tetrachloroethene		0.355	0.337	0.336	0.306	0.333	0.325	0.337	0.334	0.33	0.3325	3.83886	
T	Dibromochloromethane		0.349	0.336	0.338	0.328	0.373	0.372	0.383	0.373	0.367	0.3576	5.60043	
T	1,2-Dibromoethane		0.233	0.234	0.234	0.227	0.259	0.254	0.258	0.251	0.247	0.2441	5.04151	
T	1-Chlorohexane		0.532	0.584	0.505	0.502	0.54	0.52	0.547	0.521	0.516	0.5298	4.7826	
P	Chlorobenzene		1.029	1.173	1.09	1.007	1.099	1.037	1.043	1.002	0.939	1.0466	6.41465	
T	1,1,1,2-Tetrachloroethane		0.392	0.399	0.403	0.357	0.431	0.414	0.424	0.417	0.413	0.4055	5.39495	
C	Ethylbenzene		0.6	0.594	0.59	0.532	0.586	0.559	0.57	0.564	0.558	0.5726	3.7769	
T	m-,p-Xylene		0.744	0.696	0.691	0.643	0.713	0.67	0.673	0.634	0.581	0.6716	7.12586	
T	o-Xylene			0.691	0.651	0.614	0.692	0.658	0.667	0.65	0.63	0.6567	4.11758	
T	Styrene		1.05	1.06	1.096	1.043	1.159	1.124	1.12	1.061	0.98	1.077	4.96781	
P	Bromoform			0.177	0.21	0.181	0.226	0.221	0.232	0.227	0.223	0.2121	10.0546	
T	Isopropylbenzene		1.853	1.891	1.871	1.708	1.897	1.781	1.75	1.573	1.377	1.7444	9.92447	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.426	0.492	0.503	0.486	0.543	0.51	0.527	0.513	0.514	0.5018	6.60291	
S	p-Bromofluorobenzene				1.054	0.976	1.071	1.016	1.053	1.031	1.046	1.0352	3.05136	
T	1,2,3-Trichloropropane			0.119	0.158	0.161	0.162	0.155	0.162	0.16	0.158	0.1545	9.40789	
T	trans-1,4-Dichloro-2-Butene			0.085	0.118	0.12	0.149	0.151	0.16	0.159	0.161	0.1376	19.9543	1.000
T	n-Propylbenzene		4.139	4.239	4.243	4.051	4.241	3.953	3.882	3.419	2.935	3.9003	11.4439	
T	Bromobenzene	0.796	0.708	0.843	0.837	0.778	0.84	0.798	0.817	0.803	0.803	0.8022	4.93253	
T	1,3,5-Trimethylbenzene		2.941	2.93	2.941	2.839	3.053	2.882	2.871	2.689	2.423	2.8411	6.50391	
T	2-Chlorotoluene		2.917	2.935	2.929	2.712	2.861	2.795	2.682	2.533	2.145	2.7231	9.37022	
T	4-Chlorotoluene		2.681	2.596	2.581	2.474	2.625	2.326	2.447	2.286	2.121	2.4597	7.49558	
T	a-Methylstyrene					1.257	1.406	1.34	1.384	1.35	1.351	1.3479	3.77654	
T	tert-Butylbenzene			0.587	0.555	0.53	0.571	0.533	0.552	0.561	0.558	0.5558	3.34508	
T	1,2,4-Trimethylbenzene		2.955	3.168	3.127	2.936	3.12	2.914	2.937	2.709	2.427	2.9214	7.97314	
T	sec-Butylbenzene			3.701	3.536	3.487	3.607	3.34	3.332	3.045	2.69	3.3424	9.93324	
T	p-Isopropyltoluene			3.112	3.062	2.903	2.988	2.813	2.809	2.634	2.382	2.8379	8.45265	
T	1,3-Dichlorobenzene		1.484	1.617	1.627	1.53	1.605	1.531	1.549	1.51	1.45	1.5448	3.95774	
T	1,4-Dichlorobenzene	1.713	1.524	1.672	1.594	1.503	1.6	1.511	1.535	1.49	1.431	1.5574	5.56562	
T	n-Butylbenzene			3.143	2.96	2.895	3.002	2.791	2.792	2.571	2.292	2.8056	9.55812	
T	1,2-Dichlorobenzene	1.59	1.307	1.415	1.41	1.322	1.404	1.333	1.356	1.315	1.286	1.3739	6.4618	
T	1,2-Dibromo-3-Chloropropane				0.085	0.103	0.102	0.103	0.106	0.104	0.103	0.1007	6.86771	
T	1,2,4-Trichlorobenzene		1.074	1.01	1.028	0.982	1.069	1.013	1.036	1.029	1.002	1.0269	2.90829	
T	Hexachlorobutadiene		0.516	0.476	0.483	0.447	0.487	0.459	0.48	0.485	0.485	0.4798	4.00465	
T	Naphthalene		1.594	1.457	1.574	1.455	1.63	1.552	1.564	1.485	1.422	1.5258	4.75891	
T	1,2,3-Trichlorobenzene	0.913	0.934	0.905	0.862	0.805	0.877	0.824	0.862	0.846	0.835	0.8664	4.7474	

Tue May 17 11:49:41 2016

Calibration Table Report
Method: A9FOOWT.M
Title: A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Calibration: Thu May 19 08:54:31 2016
Curve: WG569079
Calibration Files

	Compound	5 8M412324.D	20 8M412323.D	50 8M412322.D	100 8M412321.D	200 8M412325.D	300 8M412326.D	400 8M412327.D	500 8M412328.D	Avg	%RSD
I	Fluorobenzene	ISTD									
T	Acetonitrile		0.009	0.010	0.010	0.010	0.010	0.010	0.010	0.010	2.076
T	3-Chloro-1-propene	0.306	0.330	0.335	0.331	0.324	0.307	0.304	0.304	0.318	4.307
T	2-Chloro-1,3-butadiene	0.368	0.420	0.420	0.419	0.419	0.392	0.389	0.387	0.402	5.022
T	Ethyl Acetate	0.080	0.096	0.097	0.100	0.099	0.098	0.100	0.095	0.096	6.751
T	Methacrylonitrile	0.041	0.054	0.055	0.055	0.055	0.054	0.055	0.052	0.053	9.227
T	Isobutyl Alcohol			0.003	0.003	0.003	0.003	0.003	0.003	0.003	3.599
T	1-Butanol									0.000	0.000
T	Methyl methacrylate	0.089	0.106	0.106	0.105	0.106	0.105	0.107	0.102	0.103	5.868
T	2-Nitropropane		0.041	0.042	0.043	0.046	0.047	0.048	0.046	0.045	5.992
I	Chlorobenzene-d5	ISTD									
I	1,4-Dichlorobenzene-d4	ISTD									
T	Cyclohexanone		0.011	0.010	0.010	0.009	0.010	0.011	0.010	0.010	4.971

Thu May 19 09:04:52 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061068 Run Date: 05/13/2016 Sample ID: WG568561-12
Instrument ID: HPMS8 Run Time: 19:17 Method: 8260B
File ID: 8M412232 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG568561 Cal ID: HPMS8 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.1	ug/L	0.513	5.70	20	
1,1-Dichloroethene	CCC	50.0	46.0	ug/L	0.372	8.10	20	
1,2-Dichloropropane	CCC	50.0	51.0	ug/L	0.233	1.90	20	
Ethylbenzene	CCC	50.0	48.2	ug/L	0.552	3.60	20	
Toluene	CCC	50.0	49.1	ug/L	1.52	1.80	20	
Vinyl Chloride	CCC	50.0	52.4	ug/L	0.304	4.80	20	
Bromoform	SPCC	50.0	48.2	ug/L	0.205	3.60	20	
Chlorobenzene	SPCC	50.0	50.2	ug/L	1.05	0.400	20	
Chloromethane	SPCC	50.0	50.7	ug/L	0.248	1.40	20	
1,1-Dichloroethane	SPCC	50.0	46.7	ug/L	0.431	6.60	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.6	ug/L	0.498	0.800	20	
Acetone		50.0	57.5	ug/L	0.0324	15.1	20	
Benzene		50.0	48.5	ug/L	0.997	3.00	20	
Bromobenzene		50.0	49.5	ug/L	0.794	1.10	20	
Bromochloromethane		50.0	47.5	ug/L	0.140	4.90	20	
Bromodichloromethane		50.0	48.3	ug/L	0.388	3.40	20	
Bromomethane		50.0	46.4	ug/L	0.162	7.20	20	
2-Butanone		50.0	53.0	ug/L	0.0438	6.00	20	
n-Butylbenzene		50.0	49.7	ug/L	2.79	0.700	20	
sec-Butylbenzene		50.0	51.3	ug/L	3.43	2.70	20	
tert-Butylbenzene		50.0	50.9	ug/L	0.566	1.90	20	
Carbon Disulfide		50.0	42.3	ug/L	0.716	15.4	20	
Carbon Tetrachloride		50.0	46.2	ug/L	0.425	7.50	20	
Dibromochloromethane		50.0	49.7	ug/L	0.355	0.700	20	
Chloroethane		50.0	53.3	ug/L	0.170	6.70	20	
2-Chlorotoluene		50.0	51.6	ug/L	2.81	3.10	20	
4-Chlorotoluene		50.0	48.3	ug/L	2.37	3.50	20	
1,2-Dibromo-3-Chloropropane		50.0	48.5	ug/L	0.0977	3.00	20	
1,2-Dibromoethane		50.0	51.1	ug/L	0.250	2.20	20	
Dibromomethane		50.0	45.8	ug/L	0.124	8.40	20	
1,2-Dichlorobenzene		50.0	50.5	ug/L	1.39	1.00	20	
1,3-Dichlorobenzene		50.0	50.9	ug/L	1.57	1.80	20	
1,4-Dichlorobenzene		50.0	50.5	ug/L	1.57	0.900	20	
Dichlorodifluoromethane		50.0	54.2	ug/L	0.455	8.40	20	
1,2-Dichloroethane		50.0	49.0	ug/L	0.344	2.00	20	
cis-1,2-Dichloroethene		50.0	48.9	ug/L	0.281	2.20	20	
trans-1,2-Dichloroethene		50.0	48.1	ug/L	0.357	3.90	20	
1,3-Dichloropropane		50.0	53.7	ug/L	0.468	7.30	20	
2,2-Dichloropropane		50.0	47.9	ug/L	0.466	4.20	20	
cis-1,3-Dichloropropene		50.0	53.9	ug/L	0.441	7.80	20	
trans-1,3-Dichloropropene		50.0	50.7	ug/L	0.527	1.30	20	
1,1-Dichloropropene		50.0	47.5	ug/L	0.374	5.10	20	

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Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061068 Run Date: 05/13/2016 Sample ID: WG568561-12
Instrument ID: HPMS8 Run Time: 19:17 Method: 8260B
File ID: 8M412232 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG568561 Cal ID: HPMS8 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	53.6	ug/L	0.0552	7.20	20	
Hexachlorobutadiene		50.0	52.1	ug/L	0.500	4.20	20	
Isopropylbenzene		50.0	51.1	ug/L	1.78	2.20	20	
p-Isopropyltoluene		50.0	50.1	ug/L	2.85	0.300	20	
4-Methyl-2-Pentanone		50.0	51.9	ug/L	0.0416	3.70	20	
Methylene Chloride		50.0	48.4	ug/L	0.249	3.10	20	
Naphthalene		50.0	45.8	ug/L	1.40	8.40	20	
n-Propylbenzene		50.0	51.9	ug/L	4.05	3.80	20	
Styrene		50.0	51.5	ug/L	1.11	3.00	20	
1,1,1,2-Tetrachloroethane		50.0	49.4	ug/L	0.400	1.20	20	
Tetrachloroethene		50.0	47.8	ug/L	0.318	4.40	20	
1,2,3-Trichlorobenzene		50.0	47.7	ug/L	0.827	4.50	20	
1,2,4-Trichlorobenzene		50.0	50.1	ug/L	1.03	0.200	20	
1,1,1-Trichloroethane		50.0	47.6	ug/L	0.492	4.80	20	
1,1,2-Trichloroethane		50.0	49.0	ug/L	0.240	1.90	20	
Trichloroethene		50.0	51.1	ug/L	0.280	2.10	20	
Trichlorofluoromethane		50.0	46.9	ug/L	0.507	6.10	20	
1,2,3-Trichloropropane		50.0	50.1	ug/L	0.155	0.200	20	
1,2,4-Trimethylbenzene		50.0	49.7	ug/L	2.90	0.700	20	
1,3,5-Trimethylbenzene		50.0	51.6	ug/L	2.93	3.30	20	
o-Xylene		50.0	50.6	ug/L	0.664	1.10	20	
m-,p-Xylene		100	101	ug/L	0.679	1.10	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068 Run Date: 06/23/2016 Sample ID: WG573990-02
Instrument ID: HPMS8 Run Time: 21:00 Method: 8260B
File ID: 8M413192 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG573991 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	54.9	ug/L	0.598	9.72	20	
1,1-Dichloroethene	CCC	50.0	54.2	ug/L	0.439	8.49	20	
1,2-Dichloropropane	CCC	50.0	49.4	ug/L	0.226	1.11	20	
Ethylbenzene	CCC	50.0	46.8	ug/L	0.536	6.46	20	
Toluene	CCC	50.0	47.3	ug/L	1.47	5.48	20	
Vinyl Chloride	CCC	50.0	56.0	ug/L	0.325	12.0	20	
Bromoform	SPCC	50.0	50.5	ug/L	0.214	0.904	20	
Chlorobenzene	SPCC	50.0	47.1	ug/L	0.986	5.76	20	
Chloromethane	SPCC	50.0	47.4	ug/L	0.232	5.29	20	
1,1-Dichloroethane	SPCC	50.0	53.1	ug/L	0.490	6.25	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	43.2	ug/L	0.433	13.7	20	
Xylenes		150	143	ug/L	0.633	4.33	20	
Acetone		50.0	55.7	ug/L	0.0313	11.4	20	
Benzene		50.0	51.7	ug/L	1.06	3.36	20	
Bromobenzene		50.0	48.2	ug/L	0.773	3.63	20	
Bromochloromethane		50.0	53.3	ug/L	0.157	6.63	20	
Bromodichloromethane		50.0	56.3	ug/L	0.452	12.6	20	
Bromomethane		50.0	44.2	ug/L	0.154	11.6	20	
2-Butanone		50.0	47.8	ug/L	0.0395	4.39	20	
n-Butylbenzene		50.0	47.6	ug/L	2.67	4.73	20	
sec-Butylbenzene		50.0	48.0	ug/L	3.21	3.91	20	
tert-Butylbenzene		50.0	46.7	ug/L	0.520	6.51	20	
Carbon Disulfide		50.0	55.6	ug/L	0.940	11.2	20	
Carbon Tetrachloride		50.0	60.0	ug/L	0.551	19.9	20	
Dibromochloromethane		50.0	49.7	ug/L	0.356	0.505	20	
Chloroethane		50.0	49.8	ug/L	0.159	0.424	20	
2-Chlorotoluene		50.0	47.6	ug/L	2.59	4.80	20	
4-Chlorotoluene		50.0	47.6	ug/L	2.34	4.71	20	
1,2-Dibromo-3-Chloropropane		50.0	44.8	ug/L	0.0902	10.5	20	
1,2-Dibromoethane		50.0	47.7	ug/L	0.233	4.68	20	
Dibromomethane		50.0	50.5	ug/L	0.137	0.985	20	
1,2-Dichlorobenzene		50.0	46.5	ug/L	1.28	7.08	20	
1,3-Dichlorobenzene		50.0	48.2	ug/L	1.49	3.65	20	
1,4-Dichlorobenzene		50.0	47.0	ug/L	1.46	5.94	20	
Dichlorodifluoromethane		50.0	52.4	ug/L	0.439	4.74	20	
1,2-Dichloroethane		50.0	58.3	ug/L	0.409	16.6	20	
cis-1,2-Dichloroethene		50.0	52.0	ug/L	0.298	3.98	20	
trans-1,2-Dichloroethene		50.0	52.6	ug/L	0.391	5.23	20	
1,3-Dichloropropane		50.0	46.4	ug/L	0.405	7.22	20	
2,2-Dichloropropane		50.0	61.6	ug/L	0.599	23.3	20	*
cis-1,3-Dichloropropene		50.0	54.4	ug/L	0.445	8.81	20	
trans-1,3-Dichloropropene		50.0	49.5	ug/L	0.515	0.990	20	

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068 Run Date: 06/23/2016 Sample ID: WG573990-02
Instrument ID: HPMS8 Run Time: 21:00 Method: 8260B
File ID: 8M413192 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG573991 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	54.7	ug/L	0.431	9.40	20	
2-Hexanone		50.0	42.6	ug/L	0.0438	14.9	20	
Hexachlorobutadiene		50.0	49.1	ug/L	0.471	1.81	20	
Isopropylbenzene		50.0	49.8	ug/L	1.74	0.478	20	
p-Isopropyltoluene		50.0	48.6	ug/L	2.76	2.77	20	
4-Methyl-2-Pentanone		50.0	48.0	ug/L	0.0386	3.95	20	
Methylene Chloride		50.0	50.2	ug/L	0.258	0.364	20	
Naphthalene		50.0	43.5	ug/L	1.33	13.1	20	
n-Propylbenzene		50.0	48.3	ug/L	3.77	3.46	20	
Styrene		50.0	48.6	ug/L	1.05	2.85	20	
1,1,1,2-Tetrachloroethane		50.0	49.6	ug/L	0.402	0.773	20	
Tetrachloroethene		50.0	49.7	ug/L	0.331	0.579	20	
1,2,3-Trichlorobenzene		50.0	43.5	ug/L	0.754	13.0	20	
1,2,4-Trichlorobenzene		50.0	46.2	ug/L	0.949	7.59	20	
1,1,1-Trichloroethane		50.0	58.9	ug/L	0.609	17.8	20	
1,1,2-Trichloroethane		50.0	45.7	ug/L	0.224	8.57	20	
Trichloroethene		50.0	54.4	ug/L	0.298	8.88	20	
Trichlorofluoromethane		50.0	58.4	ug/L	0.630	16.7	20	
1,2,3-Trichloropropane		50.0	44.8	ug/L	0.139	10.3	20	
1,2,4-Trimethylbenzene		50.0	48.5	ug/L	2.84	2.95	20	
1,3,5-Trimethylbenzene		50.0	49.0	ug/L	2.78	2.08	20	
o-Xylene		50.0	47.1	ug/L	0.619	5.74	20	
m-,p-Xylene		100	96.4	ug/L	0.647	3.63	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068 Run Date: 06/26/2016 Sample ID: WG574226-02
Instrument ID: HPMS8 Run Time: 17:34 Method: 8260B
File ID: 8M413249 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG574227 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	55.9	ug/L	0.609	11.9	20	
1,1-Dichloroethene	CCC	50.0	56.1	ug/L	0.454	12.2	20	
1,2-Dichloropropane	CCC	50.0	52.4	ug/L	0.240	4.89	20	
Ethylbenzene	CCC	50.0	49.0	ug/L	0.561	2.06	20	
Toluene	CCC	50.0	50.1	ug/L	1.55	0.159	20	
Vinyl Chloride	CCC	50.0	56.2	ug/L	0.327	12.5	20	
Bromoform	SPCC	50.0	50.9	ug/L	0.216	1.77	20	
Chlorobenzene	SPCC	50.0	50.1	ug/L	1.05	0.119	20	
Chloromethane	SPCC	50.0	46.9	ug/L	0.229	6.23	20	
1,1-Dichloroethane	SPCC	50.0	55.5	ug/L	0.512	11.0	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	44.5	ug/L	0.447	11.0	20	
Xylenes		150	150	ug/L	0.665	0.0458	20	
Acetone		50.0	55.8	ug/L	0.0314	11.6	20	
Benzene		50.0	54.5	ug/L	1.12	9.05	20	
Bromobenzene		50.0	49.5	ug/L	0.794	1.01	20	
Bromochloromethane		50.0	55.3	ug/L	0.163	10.6	20	
Bromodichloromethane		50.0	57.1	ug/L	0.459	14.2	20	
Bromomethane		50.0	45.3	ug/L	0.158	9.47	20	
2-Butanone		50.0	49.6	ug/L	0.0410	0.854	20	
n-Butylbenzene		50.0	47.9	ug/L	2.69	4.21	20	
sec-Butylbenzene		50.0	48.3	ug/L	3.23	3.38	20	
tert-Butylbenzene		50.0	47.9	ug/L	0.533	4.18	20	
Carbon Disulfide		50.0	59.3	ug/L	1.00	18.5	20	
Carbon Tetrachloride		50.0	59.9	ug/L	0.550	19.8	20	
Dibromochloromethane		50.0	51.2	ug/L	0.367	2.50	20	
Chloroethane		50.0	53.4	ug/L	0.171	6.82	20	
2-Chlorotoluene		50.0	45.6	ug/L	2.48	8.80	20	
4-Chlorotoluene		50.0	51.5	ug/L	2.53	2.97	20	
1,2-Dibromo-3-Chloropropane		50.0	44.8	ug/L	0.0902	10.5	20	
1,2-Dibromoethane		50.0	49.2	ug/L	0.240	1.67	20	
Dibromomethane		50.0	52.5	ug/L	0.142	5.09	20	
1,2-Dichlorobenzene		50.0	47.1	ug/L	1.29	5.75	20	
1,3-Dichlorobenzene		50.0	49.3	ug/L	1.52	1.39	20	
1,4-Dichlorobenzene		50.0	48.1	ug/L	1.50	3.83	20	
Dichlorodifluoromethane		50.0	45.0	ug/L	0.377	10.0	20	
1,2-Dichloroethane		50.0	57.5	ug/L	0.403	15.1	20	
cis-1,2-Dichloroethene		50.0	54.9	ug/L	0.315	9.77	20	
trans-1,2-Dichloroethene		50.0	54.4	ug/L	0.404	8.86	20	
1,3-Dichloropropane		50.0	48.1	ug/L	0.420	3.78	20	
2,2-Dichloropropane		50.0	63.2	ug/L	0.614	26.4	20	*
cis-1,3-Dichloropropene		50.0	56.0	ug/L	0.458	12.1	20	
trans-1,3-Dichloropropene		50.0	50.6	ug/L	0.527	1.28	20	

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068 Run Date: 06/26/2016 Sample ID: WG574226-02
Instrument ID: HPMS8 Run Time: 17:34 Method: 8260B
File ID: 8M413249 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG574227 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	56.4	ug/L	0.445	12.9	20	
2-Hexanone		50.0	44.8	ug/L	0.0462	10.3	20	
Hexachlorobutadiene		50.0	49.7	ug/L	0.477	0.640	20	
Isopropylbenzene		50.0	51.6	ug/L	1.80	3.24	20	
p-Isopropyltoluene		50.0	48.6	ug/L	2.76	2.74	20	
4-Methyl-2-Pentanone		50.0	47.7	ug/L	0.0383	4.61	20	
Methylene Chloride		50.0	53.3	ug/L	0.274	6.51	20	
Naphthalene		50.0	44.2	ug/L	1.35	11.6	20	
n-Propylbenzene		50.0	49.0	ug/L	3.82	2.08	20	
Styrene		50.0	51.0	ug/L	1.10	2.00	20	
1,1,1,2-Tetrachloroethane		50.0	51.5	ug/L	0.418	3.08	20	
Tetrachloroethene		50.0	53.5	ug/L	0.356	7.10	20	
1,2,3-Trichlorobenzene		50.0	44.7	ug/L	0.775	10.5	20	
1,2,4-Trichlorobenzene		50.0	47.4	ug/L	0.974	5.21	20	
1,1,1-Trichloroethane		50.0	59.0	ug/L	0.611	18.1	20	
1,1,2-Trichloroethane		50.0	47.6	ug/L	0.233	4.77	20	
Trichloroethene		50.0	57.0	ug/L	0.312	14.0	20	
Trichlorofluoromethane		50.0	58.6	ug/L	0.633	17.2	20	
1,2,3-Trichloropropane		50.0	46.0	ug/L	0.142	7.95	20	
1,2,4-Trimethylbenzene		50.0	48.6	ug/L	2.84	2.82	20	
1,3,5-Trimethylbenzene		50.0	49.6	ug/L	2.82	0.811	20	
o-Xylene		50.0	50.2	ug/L	0.659	0.406	20	
m-,p-Xylene		100	99.9	ug/L	0.671	0.135	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068 Run Date: 06/27/2016 Sample ID: WG574409-02
Instrument ID: HPMS8 Run Time: 18:40 Method: 8260B
File ID: 8M413277 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG574410 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	56.5	ug/L	0.615	13.0	20	
1,1-Dichloroethene	CCC	50.0	55.7	ug/L	0.450	11.3	20	
1,2-Dichloropropane	CCC	50.0	51.2	ug/L	0.234	2.31	20	
Ethylbenzene	CCC	50.0	48.1	ug/L	0.550	3.89	20	
Toluene	CCC	50.0	48.6	ug/L	1.51	2.82	20	
Vinyl Chloride	CCC	50.0	55.4	ug/L	0.321	10.7	20	
Bromoform	SPCC	50.0	53.4	ug/L	0.227	6.82	20	
Chlorobenzene	SPCC	50.0	48.6	ug/L	1.02	2.71	20	
Chloromethane	SPCC	50.0	47.4	ug/L	0.232	5.15	20	
1,1-Dichloroethane	SPCC	50.0	54.2	ug/L	0.500	8.46	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	44.4	ug/L	0.446	11.2	20	
Xylenes		150	147	ug/L	0.647	2.29	20	
Acetone		50.0	61.8	ug/L	0.0348	23.5	20	*
Benzene		50.0	52.9	ug/L	1.09	5.84	20	
Bromobenzene		50.0	47.6	ug/L	0.765	4.71	20	
Bromochloromethane		50.0	54.7	ug/L	0.161	9.36	20	
Bromodichloromethane		50.0	58.1	ug/L	0.467	16.2	20	
Bromomethane		50.0	44.9	ug/L	0.157	10.1	20	
2-Butanone		50.0	52.3	ug/L	0.0432	4.63	20	
n-Butylbenzene		50.0	47.3	ug/L	2.65	5.48	20	
sec-Butylbenzene		50.0	47.6	ug/L	3.18	4.82	20	
tert-Butylbenzene		50.0	46.6	ug/L	0.518	6.82	20	
Carbon Disulfide		50.0	59.1	ug/L	1.00	18.2	20	
Carbon Tetrachloride		50.0	61.6	ug/L	0.566	23.2	20	*
Dibromochloromethane		50.0	50.8	ug/L	0.363	1.57	20	
Chloroethane		50.0	50.8	ug/L	0.162	1.69	20	
2-Chlorotoluene		50.0	48.6	ug/L	2.65	2.74	20	
4-Chlorotoluene		50.0	44.8	ug/L	2.21	10.3	20	
1,2-Dibromo-3-Chloropropane		50.0	46.0	ug/L	0.0927	7.99	20	
1,2-Dibromoethane		50.0	48.7	ug/L	0.238	2.57	20	
Dibromomethane		50.0	54.0	ug/L	0.146	7.97	20	
1,2-Dichlorobenzene		50.0	46.4	ug/L	1.28	7.10	20	
1,3-Dichlorobenzene		50.0	48.0	ug/L	1.48	4.07	20	
1,4-Dichlorobenzene		50.0	46.6	ug/L	1.45	6.70	20	
Dichlorodifluoromethane		50.0	45.5	ug/L	0.382	8.98	20	
1,2-Dichloroethane		50.0	60.2	ug/L	0.422	20.3	20	*
cis-1,2-Dichloroethene		50.0	52.9	ug/L	0.304	5.75	20	
trans-1,2-Dichloroethene		50.0	54.0	ug/L	0.401	8.05	20	
1,3-Dichloropropane		50.0	48.0	ug/L	0.418	4.07	20	
2,2-Dichloropropane		50.0	64.1	ug/L	0.623	28.2	20	*
cis-1,3-Dichloropropene		50.0	56.3	ug/L	0.461	12.7	20	
trans-1,3-Dichloropropene		50.0	52.1	ug/L	0.542	4.14	20	

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068 Run Date: 06/27/2016 Sample ID: WG574409-02
Instrument ID: HPMS8 Run Time: 18:40 Method: 8260B
File ID: 8M413277 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG574410 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	56.7	ug/L	0.447	13.3	20	
2-Hexanone		50.0	47.2	ug/L	0.0486	5.63	20	
Hexachlorobutadiene		50.0	49.1	ug/L	0.472	1.72	20	
Isopropylbenzene		50.0	50.9	ug/L	1.78	1.84	20	
p-Isopropyltoluene		50.0	47.7	ug/L	2.71	4.55	20	
4-Methyl-2-Pentanone		50.0	50.6	ug/L	0.0406	1.24	20	
Methylene Chloride		50.0	52.3	ug/L	0.269	4.59	20	
Naphthalene		50.0	44.8	ug/L	1.37	10.4	20	
n-Propylbenzene		50.0	47.7	ug/L	3.72	4.64	20	
Styrene		50.0	50.0	ug/L	1.08	0.0298	20	
1,1,1,2-Tetrachloroethane		50.0	51.0	ug/L	0.414	1.98	20	
Tetrachloroethene		50.0	52.5	ug/L	0.349	4.93	20	
1,2,3-Trichlorobenzene		50.0	44.5	ug/L	0.771	11.1	20	
1,2,4-Trichlorobenzene		50.0	47.6	ug/L	0.977	4.90	20	
1,1,1-Trichloroethane		50.0	60.8	ug/L	0.629	21.5	20	*
1,1,2-Trichloroethane		50.0	46.9	ug/L	0.230	6.12	20	
Trichloroethene		50.0	55.0	ug/L	0.301	9.96	20	
Trichlorofluoromethane		50.0	60.2	ug/L	0.650	20.4	20	*
1,2,3-Trichloropropane		50.0	47.0	ug/L	0.145	5.96	20	
1,2,4-Trimethylbenzene		50.0	48.2	ug/L	2.82	3.51	20	
1,3,5-Trimethylbenzene		50.0	48.3	ug/L	2.75	3.32	20	
o-Xylene		50.0	48.3	ug/L	0.635	3.34	20	
m-,p-Xylene		100	98.2	ug/L	0.660	1.76	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068 Run Date: 06/30/2016 Sample ID: WG574735-02
Instrument ID: HPMS8 Run Time: 12:27 Method: 8260B
File ID: 8M413364 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG574736 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	54.5	ug/L	0.593	8.92	20	
1,1-Dichloroethene	CCC	50.0	55.9	ug/L	0.452	11.8	20	
1,2-Dichloropropane	CCC	50.0	49.0	ug/L	0.224	2.08	20	
Ethylbenzene	CCC	50.0	51.6	ug/L	0.591	3.26	20	
Toluene	CCC	50.0	51.6	ug/L	1.60	3.21	20	
Vinyl Chloride	CCC	50.0	59.9	ug/L	0.348	19.8	20	
Bromoform	SPCC	50.0	54.4	ug/L	0.231	8.84	20	
Chlorobenzene	SPCC	50.0	50.8	ug/L	1.06	1.64	20	
Chloromethane	SPCC	50.0	55.8	ug/L	0.273	11.5	20	
1,1-Dichloroethane	SPCC	50.0	52.8	ug/L	0.487	5.59	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	46.5	ug/L	0.467	7.01	20	
Xylenes		150	156	ug/L	0.691	4.13	20	
Acetone		50.0	56.3	ug/L	0.0316	12.5	20	
Benzene		50.0	51.6	ug/L	1.06	3.15	20	
Bromobenzene		50.0	52.8	ug/L	0.847	5.62	20	
Bromochloromethane		50.0	53.8	ug/L	0.158	7.52	20	
Bromodichloromethane		50.0	55.5	ug/L	0.446	10.9	20	
Bromomethane		50.0	45.8	ug/L	0.160	8.41	20	
2-Butanone		50.0	50.1	ug/L	0.0414	0.266	20	
n-Butylbenzene		50.0	50.6	ug/L	2.84	1.25	20	
sec-Butylbenzene		50.0	51.7	ug/L	3.46	3.42	20	
tert-Butylbenzene		50.0	51.4	ug/L	0.572	2.86	20	
Carbon Disulfide		50.0	51.2	ug/L	0.867	2.43	20	
Carbon Tetrachloride		50.0	58.8	ug/L	0.541	17.7	20	
Dibromochloromethane		50.0	53.3	ug/L	0.381	6.58	20	
Chloroethane		50.0	52.6	ug/L	0.168	5.25	20	
2-Chlorotoluene		50.0	46.9	ug/L	2.55	6.21	20	
4-Chlorotoluene		50.0	56.3	ug/L	2.77	12.7	20	
1,2-Dibromo-3-Chloropropane		50.0	48.4	ug/L	0.0975	3.16	20	
1,2-Dibromoethane		50.0	49.1	ug/L	0.240	1.77	20	
Dibromomethane		50.0	49.9	ug/L	0.135	0.263	20	
1,2-Dichlorobenzene		50.0	50.0	ug/L	1.37	0.0616	20	
1,3-Dichlorobenzene		50.0	52.4	ug/L	1.62	4.82	20	
1,4-Dichlorobenzene		50.0	50.4	ug/L	1.57	0.872	20	
Dichlorodifluoromethane		50.0	65.9	ug/L	0.553	31.8	20	*
1,2-Dichloroethane		50.0	57.2	ug/L	0.401	14.4	20	
cis-1,2-Dichloroethene		50.0	51.4	ug/L	0.295	2.71	20	
trans-1,2-Dichloroethene		50.0	52.9	ug/L	0.393	5.77	20	
1,3-Dichloropropane		50.0	50.9	ug/L	0.444	1.79	20	
2,2-Dichloropropane		50.0	62.0	ug/L	0.602	23.9	20	*
cis-1,3-Dichloropropene		50.0	54.3	ug/L	0.444	8.55	20	
trans-1,3-Dichloropropene		50.0	54.1	ug/L	0.563	8.22	20	

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068 Run Date: 06/30/2016 Sample ID: WG574735-02
Instrument ID: HPMS8 Run Time: 12:27 Method: 8260B
File ID: 8M413364 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG574736 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	54.6	ug/L	0.430	9.15	20	
2-Hexanone		50.0	46.0	ug/L	0.0474	7.93	20	
Hexachlorobutadiene		50.0	54.8	ug/L	0.526	9.57	20	
Isopropylbenzene		50.0	53.4	ug/L	1.86	6.87	20	
p-Isopropyltoluene		50.0	52.8	ug/L	3.00	5.60	20	
4-Methyl-2-Pentanone		50.0	48.1	ug/L	0.0386	3.79	20	
Methylene Chloride		50.0	50.4	ug/L	0.259	0.824	20	
Naphthalene		50.0	47.0	ug/L	1.43	5.98	20	
n-Propylbenzene		50.0	51.9	ug/L	4.05	3.85	20	
Styrene		50.0	52.5	ug/L	1.13	4.99	20	
1,1,1,2-Tetrachloroethane		50.0	54.1	ug/L	0.439	8.14	20	
Tetrachloroethene		50.0	54.8	ug/L	0.365	9.64	20	
1,2,3-Trichlorobenzene		50.0	48.8	ug/L	0.845	2.42	20	
1,2,4-Trichlorobenzene		50.0	50.9	ug/L	1.05	1.83	20	
1,1,1-Trichloroethane		50.0	58.0	ug/L	0.600	16.0	20	
1,1,2-Trichloroethane		50.0	49.4	ug/L	0.242	1.15	20	
Trichloroethene		50.0	53.8	ug/L	0.295	7.60	20	
Trichlorofluoromethane		50.0	59.7	ug/L	0.645	19.4	20	
1,2,3-Trichloropropane		50.0	47.8	ug/L	0.148	4.31	20	
1,2,4-Trimethylbenzene		50.0	52.2	ug/L	3.05	4.45	20	
1,3,5-Trimethylbenzene		50.0	53.3	ug/L	3.03	6.68	20	
o-Xylene		50.0	51.9	ug/L	0.682	3.85	20	
m-,p-Xylene		100	104	ug/L	0.700	4.27	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061068
Instrument ID: HPMS8
Workgroup (AAB#): WG573991

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	288225	539116	778260
Upper Limit	NA	NA	576450	1078232	1556520
Lower Limit	NA	NA	144113	269558	389130
L16061068-01	10.0	DL01	279888	503387	650326
L16061068-02	10.0	DL01	292191	505106	651724
L16061068-03	10.0	DL01	293205	524870	676034
WG573991-01	1.00	01	300577	547838	695599
WG573991-02	1.00	01	307359	541017	709070

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4845052
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Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061068
Instrument ID: HPMS8
Workgroup (AAB#): WG574227

ICAL CCV Number: WG568561-08
CAL ID: HPMS8-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	288225	539116	778260
Upper Limit	NA	NA	576450	1078232	1556520
Lower Limit	NA	NA	144113	269558	389130
L16061068-05	1.00	01	310736	551592	692629
L16061068-06	1.00	01	298976	537883	675327
L16061068-07	1.00	01	300171	528229	668576
L16061068-08	1.00	01	335628	591220	763805
L16061068-09	1.00	01	333917	593148	767625
L16061068-10	1.00	01	297560	526953	664459
L16061068-12	1.00	01	289542	522236	654571
L16061068-14	1.00	01	332656	598726	768288
L16061068-16	1.00	01	335549	595198	759205
WG574227-01	1.00	01	335642	592099	754008
WG574227-02	1.00	01	335103	585678	766171

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4845052
Report generated 07/11/2016 16:24

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061068
Instrument ID: HPMS8
Workgroup (AAB#): WG574410

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	288225	539116	778260
Upper Limit	NA	NA	576450	1078232	1556520
Lower Limit	NA	NA	144113	269558	389130
L16061068-18	1.00	01	284359	510260	642856
WG574410-01	1.00	01	302642	539767	679552
WG574410-02	1.00	01	303369	528164	681082

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
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Report generated 07/11/2016 16:24

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061068
Instrument ID: HPMS8
Workgroup (AAB#): WG574736

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	288225	539116	778260
Upper Limit	NA	NA	576450	1078232	1556520
Lower Limit	NA	NA	144113	269558	389130
L16061068-04	1.00	02	377951	698148	992774
WG574736-01	1.00	01	391003	714298	1024963
WG574736-02	1.00	01	381905	693194	1003043
WG574736-03	1.00	01	385162	697382	981508

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
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Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061068
Instrument ID: HPMS8
Workgroup (AAB#): WG573991

ICAL CCV Number: WG568561-08
CAL ID: HPMS8-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	17.6	14.58	10.71
Upper Limit	NA	NA	18.1	15.08	11.21
Lower Limit	NA	NA	17.1	14.08	10.21
L16061068-01	10.0	DL01	17.6	14.57	10.71
L16061068-02	10.0	DL01	17.6	14.57	10.71
L16061068-03	10.0	DL01	17.6	14.57	10.71
WG573991-01	1.00	01	17.6	14.57	10.71
WG573991-02	1.00	01	17.6	14.57	10.71

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4845053
Report generated: 07/11/2016 16:24

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061068
Instrument ID: HPMS8
Workgroup (AAB#): WG574227

ICAL CCV Number: WG568561-08
CAL ID: HPMS8-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	17.6	14.58	10.71
Upper Limit	NA	NA	18.1	15.08	11.21
Lower Limit	NA	NA	17.1	14.08	10.21
L16061068-05	1.00	01	17.59	14.58	10.71
L16061068-06	1.00	01	17.6	14.57	10.71
L16061068-07	1.00	01	17.6	14.57	10.71
L16061068-08	1.00	01	17.6	14.57	10.71
L16061068-09	1.00	01	17.6	14.57	10.71
L16061068-10	1.00	01	17.6	14.57	10.71
L16061068-12	1.00	01	17.6	14.58	10.71
L16061068-14	1.00	01	17.6	14.57	10.71
L16061068-16	1.00	01	17.6	14.57	10.71
WG574227-01	1.00	01	17.6	14.57	10.71
WG574227-02	1.00	01	17.6	14.57	10.71

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
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Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061068
Instrument ID: HPMS8
Workgroup (AAB#): WG574410

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	17.6	14.58	10.71
Upper Limit	NA	NA	18.1	15.08	11.21
Lower Limit	NA	NA	17.1	14.08	10.21
L16061068-18	1.00	01	17.6	14.57	10.71
WG574410-01	1.00	01	17.6	14.57	10.71
WG574410-02	1.00	01	17.6	14.58	10.71

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4845053
Report generated: 07/11/2016 16:24

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061068
Instrument ID: HPMS8
Workgroup (AAB#): WG574736

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	17.6	14.58	10.71
Upper Limit	NA	NA	18.1	15.08	11.21
Lower Limit	NA	NA	17.1	14.08	10.21
L16061068-04	1.00	02	17.6	14.58	10.71
WG574736-01	1.00	01	17.6	14.58	10.7
WG574736-02	1.00	01	17.6	14.57	10.71
WG574736-03	1.00	01	17.6	14.57	10.71

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4845053
Report generated: 07/11/2016 16:24

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413209.D Vial: 20
Acq On : 24 Jun 2016 5:15 Operator: FJB
Sample : L16061068-01 REF 10X A 826-LOW Inst : HPMS8
Misc : 1,10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 24 05:37:03 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	650326	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	503387	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	279888	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	193349	27.6719 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.68%		
43) 1,2-Dichloroethane-d4	10.30	65	220551	29.4381 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 117.76%		
58) Toluene-d8	12.68	98	679698	25.7999 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.20%		
80) p-Bromofluorobenzene	16.07	95	289736	25.0002 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.00%		

Target Compounds					Qvalue
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	438166	66.3433 ug/L	95
13) Acetone	6.15	43	5122	7.0004 ug/L #	50
32) cis-1,2-Dichloroethene	9.17	96	5469	0.7326 ug/L	80
33) Chloroform	9.38	83	6776	0.4783 ug/L	95
36) Tetrahydrofuran	9.63	42	456	0.6440 ug/L #	60
45) 1,2-Dichloroethane	10.42	62	46032	5.0485 ug/L	91
47) Trichloroethene	11.22	130	833915	117.0435 ug/L	100
48) Methylcyclohexane	11.21	83	11521	1.0644 ug/L #	1

(#) = qualifier out of range (m) = manual integration
8M413209.D 8260WT.M Mon Jun 27 12:42:37 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413209.D Vial: 20
Acq On : 24 Jun 2016 5:15 Operator: FJB
Sample : L16061068-01 REF 10X A 826-LOW Inst : HPMS8
Misc : 1,10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 24 5:37 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

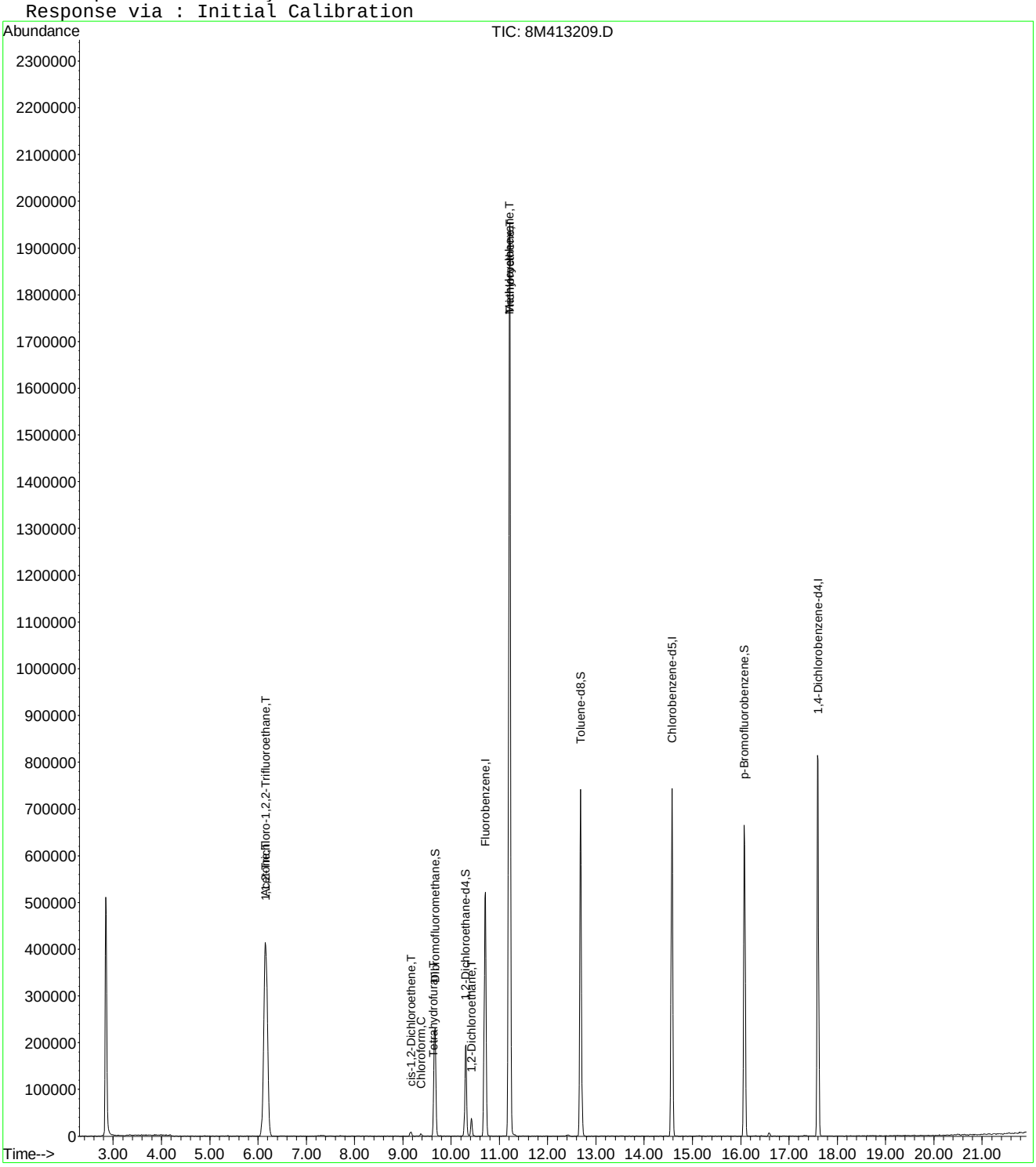

8M413209.D 8260WT.M Mon Jun 27 12:42:38 2016 Page 2

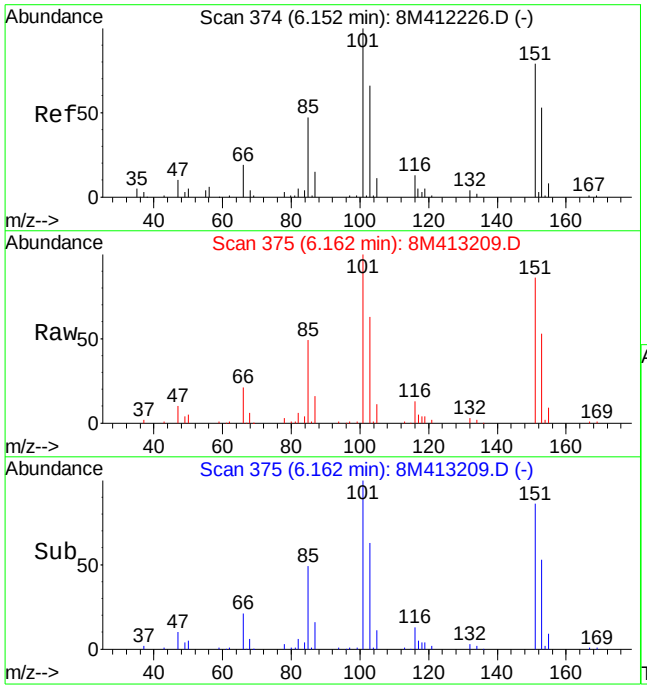

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 66.34 ug/L
RT: 6.16 min Scan# 375
Delta R.T. 0.01 min
Lab File: 8M413209.D
Acq: 24 Jun 2016 5:15

Tgt Ion:101 Resp: 438166

Ion	Ratio	Lower	Upper
101	100		
151	84.6	40.2	120.2

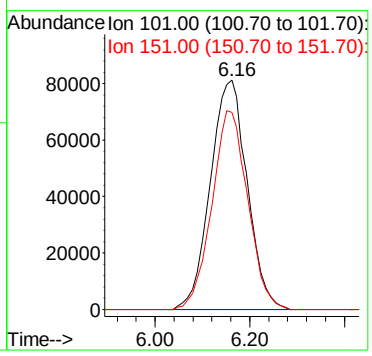

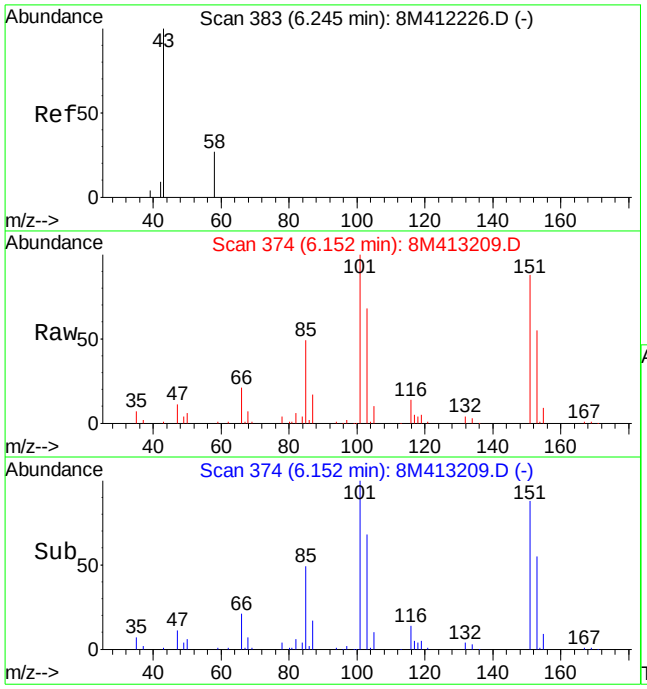

#13
Acetone
Concen: 7.00 ug/L
RT: 6.15 min Scan# 374
Delta R.T. -0.09 min
Lab File: 8M413209.D
Acq: 24 Jun 2016 5:15

Tgt Ion: 43 Resp: 5122

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.2	35.4#

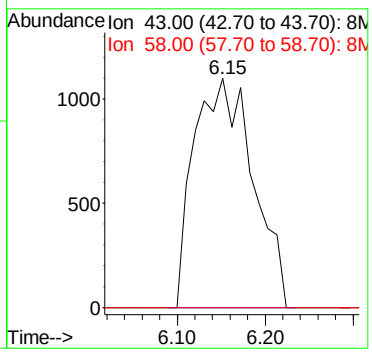

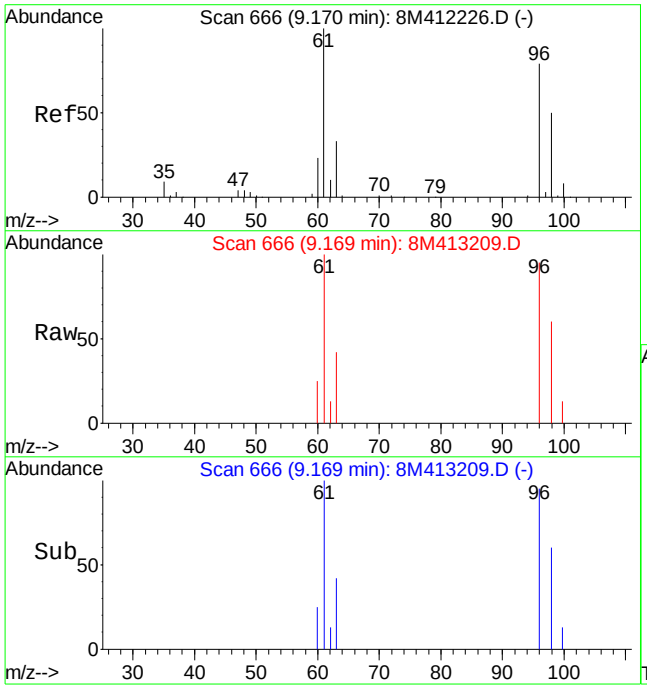

#32
cis-1,2-Dichloroethene
Concen: 0.73 ug/L
RT: 9.17 min Scan# 666
Delta R.T. -0.00 min
Lab File: 8M413209.D
Acq: 24 Jun 2016 5:15

Tgt Ion: 96 Resp: 5469

Ion	Ratio	Lower	Upper
96	100		
61	126.7	91.5	213.5

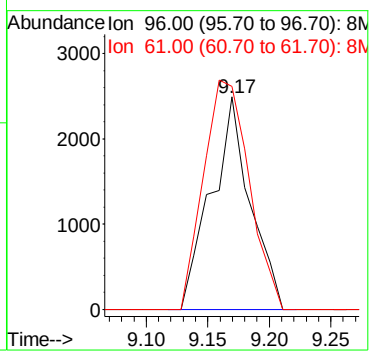

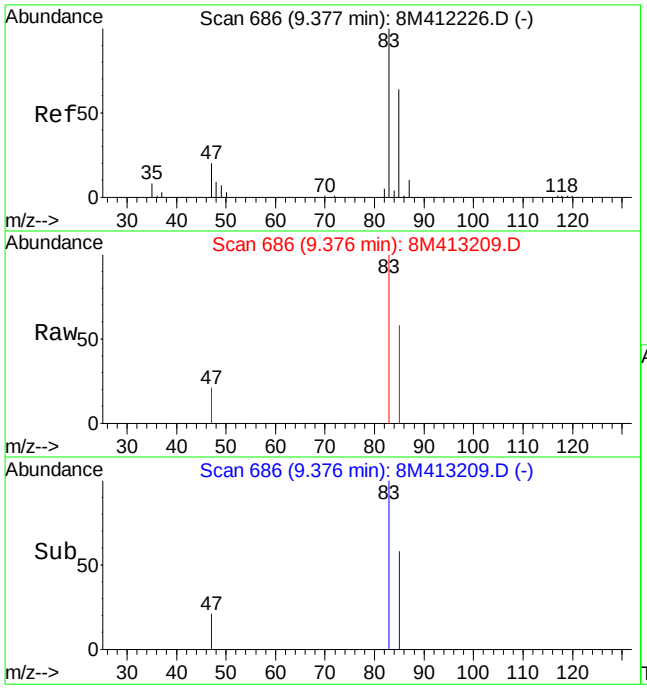

#33
Chloroform
Concen: 0.48 ug/L
RT: 9.38 min Scan# 686
Delta R.T. -0.00 min
Lab File: 8M413209.D
Acq: 24 Jun 2016 5:15

Tgt Ion: 83 Resp: 6776

Ion	Ratio	Lower	Upper
83	100		
85	58.7	37.5	87.5

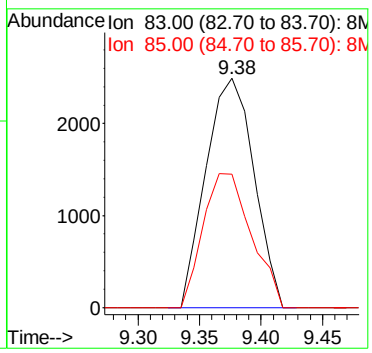

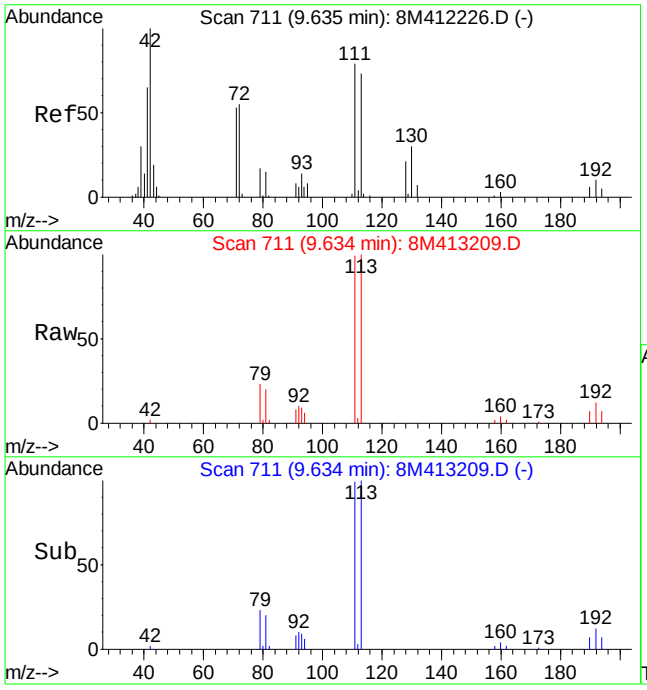

#36
Tetrahydrofuran
Concen: 0.64 ug/L
RT: 9.63 min Scan# 711
Delta R.T. -0.00 min
Lab File: 8M413209.D
Acq: 24 Jun 2016 5:15

Tgt Ion: 42 Resp: 456

Ion	Ratio	Lower	Upper
42	100		
72	51.5	33.8	78.8
71	0.0	32.0	74.8#

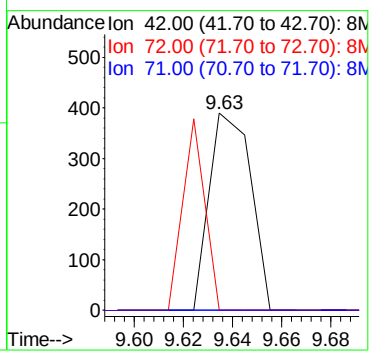

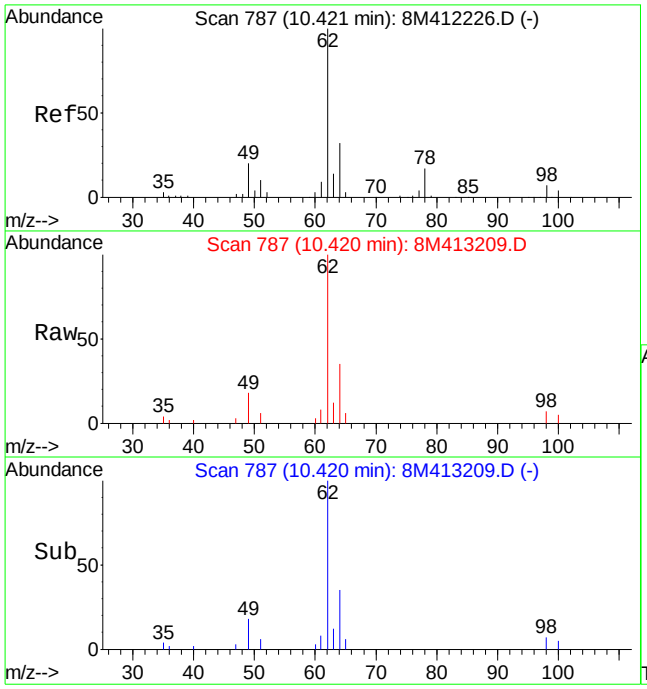

#45
1,2-Dichloroethane
Concen: 5.05 ug/L
RT: 10.42 min Scan# 787
Delta R.T. -0.00 min
Lab File: 8M413209.D
Acq: 24 Jun 2016 5:15

Tgt Ion: 62 Resp: 46032

Ion	Ratio	Lower	Upper
62	100		
64	31.5	19.6	45.6
49	16.8	15.5	36.1

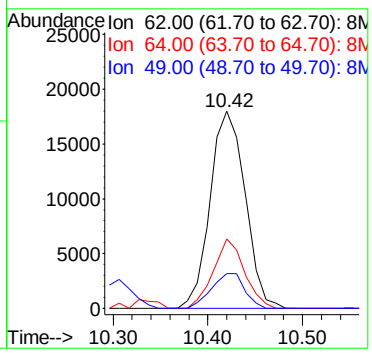

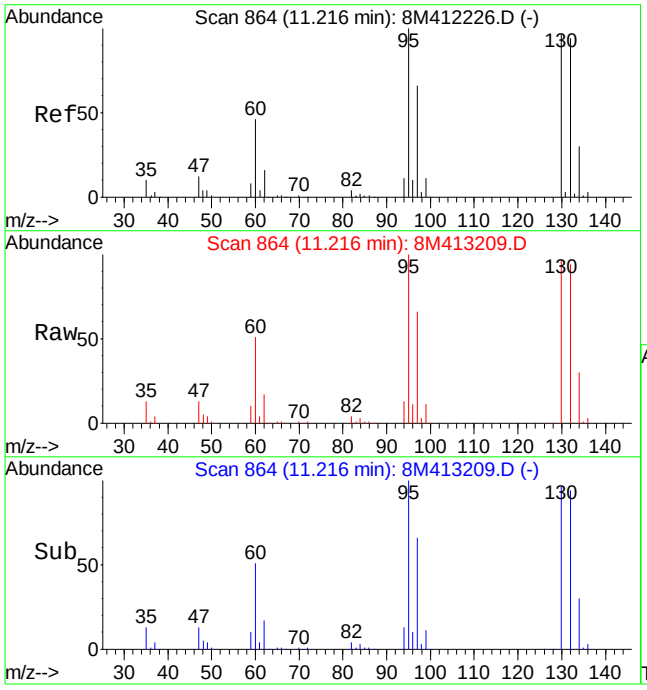

#47
Trichloroethene
Concen: 117.04 ug/L
RT: 11.22 min Scan# 864
Delta R.T. -0.00 min
Lab File: 8M413209.D
Acq: 24 Jun 2016 5:15

Tgt Ion:130 Resp: 833915

Ion	Ratio	Lower	Upper
130	100		
132	96.9	58.0	135.2
95	108.1	64.9	151.5

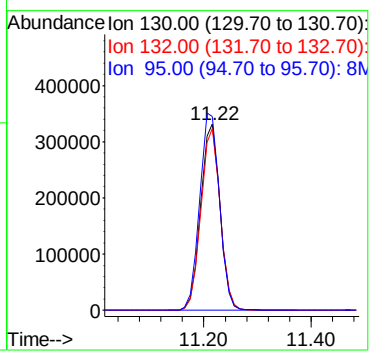

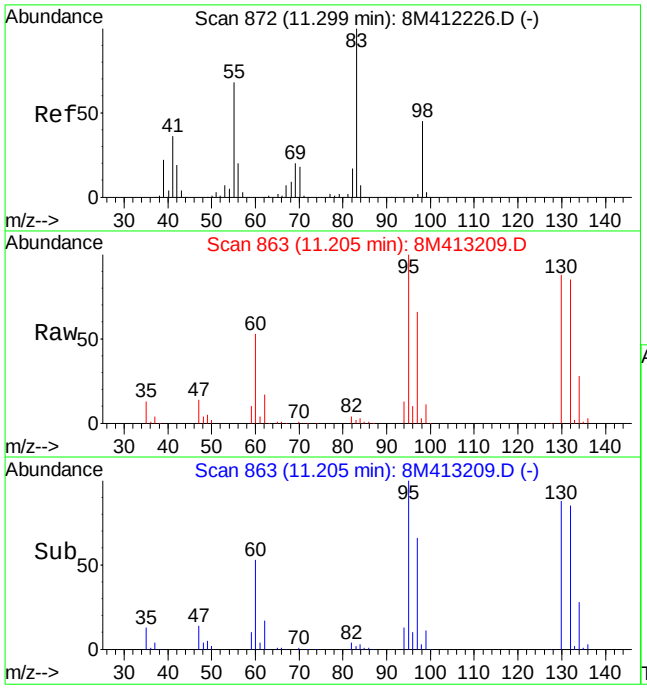

#48
Methylcyclohexane
Concen: 1.06 ug/L
RT: 11.21 min Scan# 863
Delta R.T. -0.09 min
Lab File: 8M413209.D
Acq: 24 Jun 2016 5:15

Tgt Ion: 83 Resp: 11521

Ion	Ratio	Lower	Upper
83	100		
55	0.0	40.9	95.3#
98	219.7	28.1	65.7#

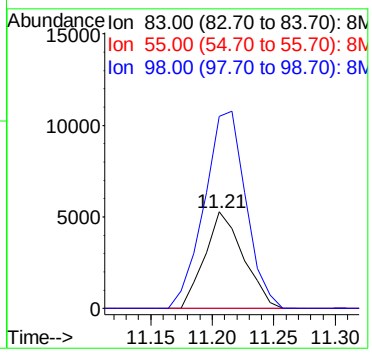

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413210.D Vial: 21
Acq On : 24 Jun 2016 5:44 Operator: FJB
Sample : L16061068-02 MS 10X A 826-LOW Inst : HPMS8
Misc : 1,10 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 24 06:06:14 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	651724	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	505106	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	292191	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	194982	27.8457 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.40%		
43) 1,2-Dichloroethane-d4	10.31	65	227227	30.2641 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 121.04%#		
58) Toluene-d8	12.68	98	674074	25.4994 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.00%		
80) p-Bromofluorobenzene	16.07	95	303828	25.1123 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.44%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	320323	29.3154 ug/L	99
3) Chloromethane	3.62	50	145557	22.8210 ug/L	100
4) Vinyl Chloride	3.84	62	212305	28.0554 ug/L	98
5) 1,3-Butadiene	3.88	54	131598	20.7370 ug/L	98
6) Bromomethane	4.72	94	50296	11.7007 ug/L	99
7) Chloroethane	4.89	64	94337	22.6559 ug/L	94
8) Trichlorofluoromethane	5.38	101	361849	25.6982 ug/L	99
9) Diethyl ether	5.90	59	356943	106.1847 ug/L	96
10) Isoprene	5.94	67	209611	24.5138 ug/L	98
11) Acrolein	6.14	56	23023	76.4949 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	566941	85.6572 ug/L	96
13) Acetone	6.23	43	17747	24.2032 ug/L	100
14) 1,1-Dichloroethene	6.46	61	238221	22.6049 ug/L	96
15) Tert-Butyl Alcohol	6.58	59	41290	175.7202 ug/L	98
16) Dimethyl Sulfide	6.73	62	143673	38.1291 ug/L	100
17) Iodomethane	6.98	142	43483	17.0112 ug/L	99
18) Methyl acetate	7.00	43	38868	19.6101 ug/L	95
19) Methylene Chloride	7.25	84	144969	21.6162 ug/L	100
20) Carbon Disulfide	7.29	76	467149	21.1823 ug/L	99
21) Acrylonitrile	7.43	53	18680	19.6346 ug/L	95
22) Methyl Tert Butyl Ether	7.46	73	349606	24.0861 ug/L	98
23) trans-1,2-Dichloroethene	7.70	61	216859	22.3987 ug/L	99
24) n-Hexane	7.78	57	144364	20.0804 ug/L	96
25) Diisopropyl ether	8.12	45	1538667	101.9548 ug/L	94
26) Vinyl Acetate	8.29	43	142437	20.6139 ug/L	99
27) 1,1-Dichloroethane	8.32	63	263449	21.9106 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1711594	105.8534 ug/L	98
29) 2-Butanone	8.88	43	22122	20.5343 ug/L	96
30) Propionitrile	8.98	54	28906	92.0721 ug/L	96
31) 2,2-Dichloropropane	9.10	77	286679	22.6249 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	174779	23.3632 ug/L	98
33) Chloroform	9.38	83	335373	23.6229 ug/L	100
34) 1-Bromopropane	9.51	122	35973	33.5709 ug/L	92
35) Bromochloromethane	9.60	130	88282	23.0129 ug/L	90
36) Tetrahydrofuran	9.63	42	59800	84.2779 ug/L	96
38) 1,1,1-Trichloroethane	9.90	97	336291	24.9374 ug/L	99
39) Cyclohexane	9.93	56	195068	20.8934 ug/L	94
40) 1,1-Dichloropropene	10.10	75	231073	22.4805 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	1671556	113.8203 ug/L	99
42) Carbon Tetrachloride	10.24	117	309661	25.8592 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M413210.D 8260WT.M Mon Jun 27 12:31:42 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413210.D Vial: 21
Acq On : 24 Jun 2016 5:44 Operator: FJB
Sample : L16061068-02 MS 10X A 826-LOW Inst : HPMS8
Misc : 1,10 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 24 06:06:14 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	282540	30.9205 ug/L		97
46)	Benzene	10.46	78	594716	22.2148 ug/L		99
47)	Trichloroethene	11.21	130	990550	138.7296 ug/L		99
48)	Methylcyclohexane	11.30	83	244924	22.5795 ug/L		98
49)	1,2-Dichloropropane	11.42	63	128104	21.4956 ug/L		86
50)	Bromodichloromethane	11.72	83	257000	24.5359 ug/L		99
51)	1,4-Dioxane	11.72	88	3278	109.4983 ug/L		92
52)	Dibromomethane	11.81	93	76922	21.8048 ug/L		98
54)	4-Methyl-2-Pentanone	12.05	58	19647	18.7772 ug/L		88
55)	cis-1,3-Dichloropropene	12.36	75	260621	24.4450 ug/L		99
56)	Dimethyl Disulfide	12.62	79	124755	21.9236 ug/L		92
59)	Toluene	12.79	91	643970	20.5362 ug/L		99
60)	Ethyl Methacrylate	12.88	69	124883	20.7373 ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	224368	21.3509 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	97691	19.7429 ug/L		100
64)	2-Hexanone	13.12	58	17465	16.7963 ug/L	#	87
65)	1,3-Dichloropropane	13.48	76	184754	20.9717 ug/L		94
66)	Tetrachloroethene	13.60	164	141165	21.0117 ug/L		98
67)	Dibromochloromethane	13.86	129	152579	21.1183 ug/L		99
68)	1,2-Dibromoethane	14.12	107	99281	20.1320 ug/L		99
69)	1-Chlorohexane	14.21	91	213003	19.8993 ug/L		98
70)	Chlorobenzene	14.63	112	440851	20.8484 ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.66	131	176217	21.5107 ug/L		99
72)	Ethylbenzene	14.66	106	235268	20.3356 ug/L		97
73)	m-,p-Xylene	14.74	106	572908	42.2183 ug/L		96
74)	o-Xylene	15.31	106	281501	21.2179 ug/L		95
75)	Styrene	15.34	104	456094	20.9600 ug/L		94
76)	Bromoform	15.83	173	89176	20.8092 ug/L		99
77)	Isopropylbenzene	15.73	105	783014	22.2165 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	101606	17.3236 ug/L		98
81)	1,2,3-Trichloropropane	16.13	110	34087	18.8732 ug/L		73
82)	trans-1,4-Dichloro-2-Buten	16.19	53	28513	15.9122 ug/L		87
83)	n-Propylbenzene	16.24	91	936340	20.5405 ug/L		100
84)	Bromobenzene	16.36	156	177579	18.9391 ug/L		98
85)	1,3,5-Trimethylbenzene	16.42	105	675918	20.3554 ug/L		100
86)	2-Chlorotoluene	16.51	91	576904	18.1266 ug/L		93
87)	4-Chlorotoluene	16.56	91	637659	22.1807 ug/L		92
88)	a-Methylstyrene	16.83	118	325480	20.6599 ug/L		99
89)	tert-Butylbenzene	16.89	134	127149	19.5726 ug/L		95
90)	1,2,4-Trimethylbenzene	16.94	105	675349	19.7792 ug/L		100
91)	sec-Butylbenzene	17.16	105	791102	20.2512 ug/L		99
92)	p-Isopropyltoluene	17.32	119	660281	19.9067 ug/L		100
93)	1,3-Dichlorobenzene	17.51	146	358801	19.8732 ug/L		99
94)	1,4-Dichlorobenzene	17.64	146	358494	19.6952 ug/L		99
95)	n-Butylbenzene	17.84	91	622717	18.9905 ug/L		100
96)	1,2-Dichlorobenzene	18.14	146	315528	19.6498 ug/L		100
97)	1,2-Dibromo-3-Chloropropan	19.13	75	21781	18.5004 ug/L		98
98)	1,2,4-Trichlorobenzene	20.27	180	222767	18.5600 ug/L		99
99)	Hexachlorobutadiene	20.43	225	113030	20.1549 ug/L		98
100)	Naphthalene	20.64	128	280513	15.7305 ug/L		99
101)	1,2,3-Trichlorobenzene	20.95	180	176996	17.4793 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M413210.D 8260WT.M Mon Jun 27 12:31:43 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413210.D Vial: 21
Acq On : 24 Jun 2016 5:44 Operator: FJB
Sample : L16061068-02 MS 10X A 826-LOW Inst : HPMS8
Misc : 1,10 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 24 6:06 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

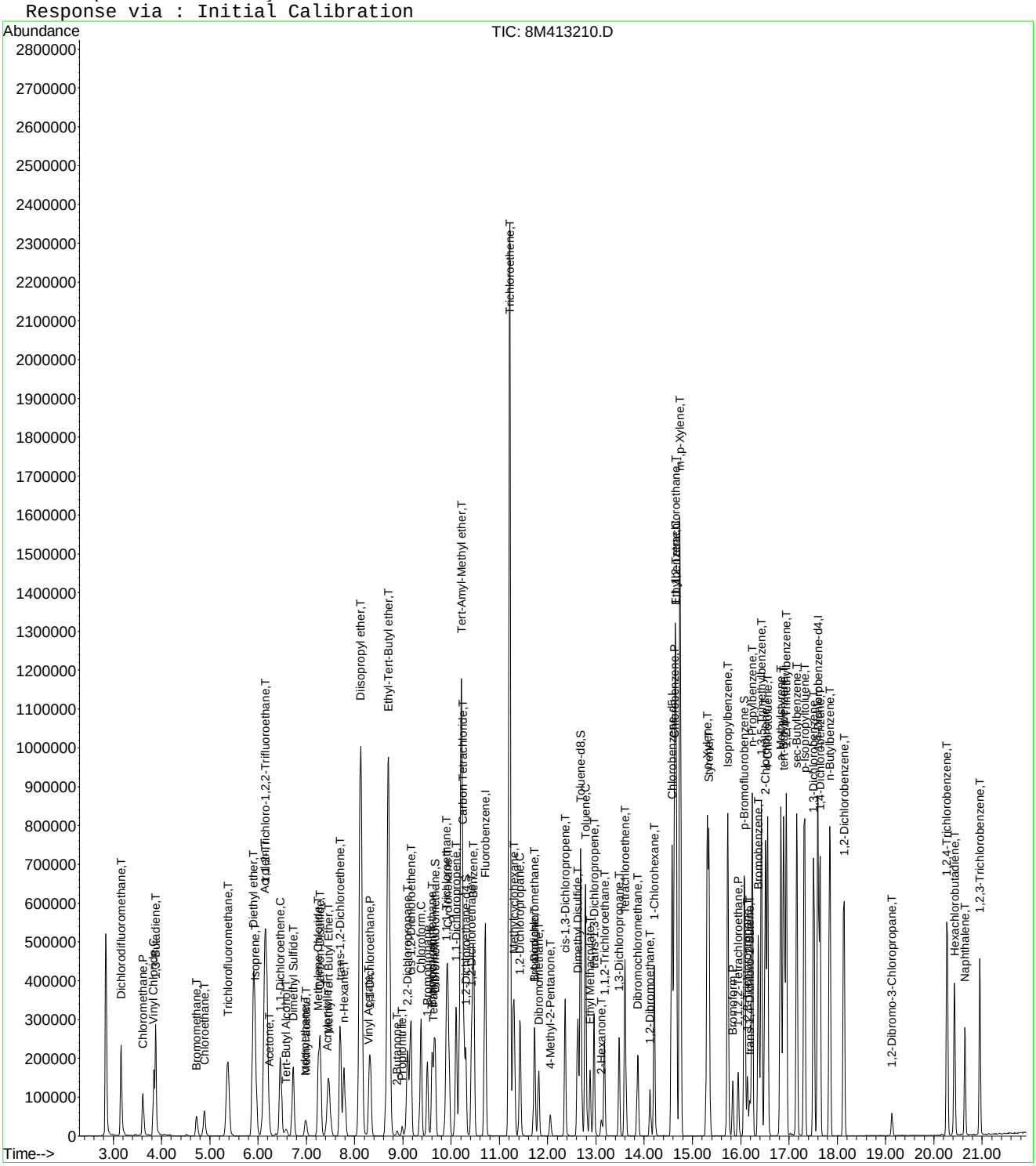

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413211.D Vial: 22
Acq On : 24 Jun 2016 6:13 Operator: FJB
Sample : L16061068-03 MSD 10X A 826-LOW Inst : HPMS8
Misc : 1,10 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 24 06:35:06 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	676034	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	524870	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	293205	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	199005	27.3983 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.60%		
43) 1,2-Dichloroethane-d4	10.30	65	230083	29.5426 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 118.16%		
58) Toluene-d8	12.68	98	706978	25.7371 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.96%		
80) p-Bromofluorobenzene	16.07	95	305554	25.1676 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.68%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	326322	28.7905 ug/L	99
3) Chloromethane	3.62	50	150960	22.8170 ug/L	98
4) Vinyl Chloride	3.84	62	216793	27.6183 ug/L	100
5) 1,3-Butadiene	3.87	54	139137	21.1366 ug/L	98
6) Bromomethane	4.73	94	62141	13.8260 ug/L	99
7) Chloroethane	4.89	64	96981	22.4533 ug/L	95
8) Trichlorofluoromethane	5.37	101	362857	24.8432 ug/L	98
9) Diethyl ether	5.90	59	361006	103.5316 ug/L	97
10) Isoprene	5.93	67	212184	23.9224 ug/L	96
11) Acrolein	6.14	56	25662	82.1971 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	566797	82.5560 ug/L	94
13) Acetone	6.24	43	18784	24.6963 ug/L	92
14) 1,1-Dichloroethene	6.46	61	240263	21.9788 ug/L	97
15) Tert-Butyl Alcohol	6.56	59	47934	196.6598 ug/L	97
16) Dimethyl Sulfide	6.73	62	145857	37.3167 ug/L	100
17) Iodomethane	6.98	142	61548	22.1566 ug/L	96
18) Methyl acetate	7.00	43	41941	20.3996 ug/L	96
19) Methylene Chloride	7.24	84	146238	21.0213 ug/L	98
20) Carbon Disulfide	7.29	76	475408	20.7816 ug/L	99
21) Acrylonitrile	7.43	53	19232	19.4879 ug/L	91
22) Methyl Tert Butyl Ether	7.46	73	353827	23.5003 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	224718	22.3758 ug/L	99
24) n-Hexane	7.78	57	142535	19.1130 ug/L	99
25) Diisopropyl ether	8.12	45	1605626	102.5658 ug/L	95
26) Vinyl Acetate	8.30	43	142981	19.9485 ug/L	100
27) 1,1-Dichloroethane	8.32	63	262837	21.0736 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1759122	104.8806 ug/L	98
29) 2-Butanone	8.88	43	21613	19.3404 ug/L	100
30) Propionitrile	8.98	54	30429	93.4379 ug/L	99
31) 2,2-Dichloropropane	9.09	77	285523	21.7234 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	175194	22.5766 ug/L	98
33) Chloroform	9.37	83	343437	23.3210 ug/L	100
34) 1-Bromopropane	9.51	122	34917	31.4136 ug/L	99
35) Bromochloromethane	9.60	130	85148	21.3977 ug/L	95
36) Tetrahydrofuran	9.63	42	61340	83.3396 ug/L	92
38) 1,1,1-Trichloroethane	9.90	97	343549	24.5595 ug/L	99
39) Cyclohexane	9.93	56	205174	21.1856 ug/L	95
40) 1,1-Dichloropropene	10.11	75	234426	21.9866 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	1693164	111.1458 ug/L	100
42) Carbon Tetrachloride	10.25	117	306848	24.7029 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413211.D 8260WT.M Mon Jun 27 12:31:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413211.D Vial: 22
Acq On : 24 Jun 2016 6:13 Operator: FJB
Sample : L16061068-03 MSD 10X A 826-LOW Inst : HPMS8
Misc : 1,10 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 24 06:35:06 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	283774	29.9388	ug/L		97
46)	Benzene	10.46	78	606295	21.8330	ug/L		98
47)	Trichloroethene	11.21	130	1000912	135.1400	ug/L		99
48)	Methylcyclohexane	11.30	83	243668	21.6559	ug/L		100
49)	1,2-Dichloropropane	11.43	63	131017	21.1938	ug/L		86
50)	Bromodichloromethane	11.73	83	256999	23.6535	ug/L		99
51)	1,4-Dioxane	11.71	88	4978	160.3055	ug/L		80
52)	Dibromomethane	11.81	93	78322	21.4033	ug/L		99
54)	4-Methyl-2-Pentanone	12.06	58	20155	18.5700	ug/L		89
55)	cis-1,3-Dichloropropene	12.36	75	255460	23.0993	ug/L		98
56)	Dimethyl Disulfide	12.62	79	130561	22.1189	ug/L		94
59)	Toluene	12.78	91	648657	19.9067	ug/L		100
60)	Ethyl Methacrylate	12.88	69	126871	20.2741	ug/L		97
62)	trans-1,3-Dichloropropene	12.96	75	223601	20.4767	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	99529	19.3570	ug/L		99
64)	2-Hexanone	13.11	58	18141	16.7895	ug/L	#	93
65)	1,3-Dichloropropane	13.48	76	192651	21.0446	ug/L		96
66)	Tetrachloroethene	13.60	164	141066	20.2063	ug/L		99
67)	Dibromochloromethane	13.87	129	156375	20.8287	ug/L		97
68)	1,2-Dibromoethane	14.13	107	103310	20.1602	ug/L		99
69)	1-Chlorohexane	14.21	91	213378	19.1837	ug/L		96
70)	Chlorobenzene	14.62	112	450496	20.5023	ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.65	131	176473	20.7308	ug/L		98
72)	Ethylbenzene	14.65	106	230653	19.1859	ug/L		95
73)	m-,p-Xylene	14.75	106	570696	40.4717	ug/L		94
74)	o-Xylene	15.31	106	279564	20.2784	ug/L		94
75)	Styrene	15.35	104	468869	20.7357	ug/L		95
76)	Bromoform	15.83	173	86855	19.5045	ug/L		100
77)	Isopropylbenzene	15.73	105	780239	21.3041	ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	104331	17.7267	ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	35554	19.6173	ug/L		75
82)	trans-1,4-Dichloro-2-Buten	16.18	53	25467	14.2307	ug/L		92
83)	n-Propylbenzene	16.24	91	932554	20.3867	ug/L		100
84)	Bromobenzene	16.37	156	178973	19.0218	ug/L		99
85)	1,3,5-Trimethylbenzene	16.42	105	687010	20.6178	ug/L		98
86)	2-Chlorotoluene	16.50	91	652439	20.4290	ug/L		99
87)	4-Chlorotoluene	16.56	91	559711	19.4020	ug/L		100
88)	a-Methylstyrene	16.82	118	319513	20.2110	ug/L		98
89)	tert-Butylbenzene	16.89	134	130520	20.0220	ug/L		99
90)	1,2,4-Trimethylbenzene	16.94	105	684268	19.9711	ug/L		99
91)	sec-Butylbenzene	17.16	105	780840	19.9194	ug/L		99
92)	p-Isopropyltoluene	17.32	119	656039	19.7104	ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	363421	20.0595	ug/L		99
94)	1,4-Dichlorobenzene	17.64	146	366894	20.0869	ug/L		99
95)	n-Butylbenzene	17.85	91	622492	18.9180	ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	319610	19.8352	ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	22996	19.4649	ug/L		96
98)	1,2,4-Trichlorobenzene	20.28	180	230434	19.1323	ug/L		99
99)	Hexachlorobutadiene	20.43	225	114934	20.4236	ug/L		99
100)	Naphthalene	20.65	128	298769	16.6963	ug/L		99
101)	1,2,3-Trichlorobenzene	20.95	180	182550	17.9654	ug/L		98

(#) = qualifier out of range (m) = manual integration
8M413211.D 8260WT.M Mon Jun 27 12:31:49 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413211.D Vial: 22
Acq On : 24 Jun 2016 6:13 Operator: FJB
Sample : L16061068-03 MSD 10X A 826-LOW Inst : HPMS8
Misc : 1,10 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 24 6:35 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

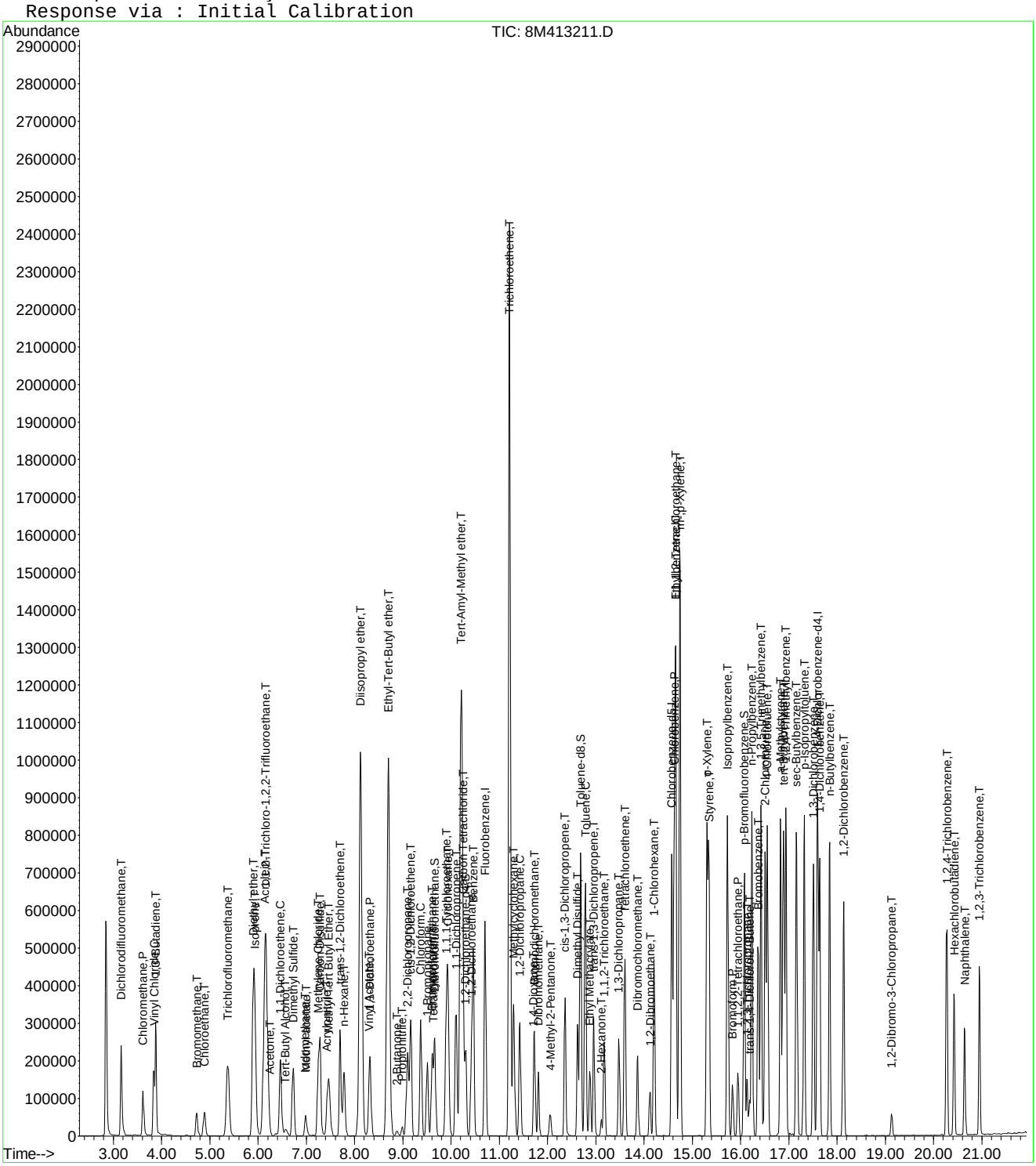

8M413211.D 8260WT.M Mon Jun 27 12:31:51 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\063016\8M413367.D Vial: 5
Acq On : 30 Jun 2016 13:53 Operator: TMB
Sample : L16061068-04 B 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 09:22:21 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	992774	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	698148	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	377951	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	286599	26.8690 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.48%		
43) 1,2-Dichloroethane-d4	10.31	65	323234	28.2617 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 113.04%		
58) Toluene-d8	12.68	98	987440	27.0251 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 108.12%		
80) p-Bromofluorobenzene	16.07	95	392895	25.1053 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.44%		
Target Compounds					Qvalue
3) Chloromethane	3.61	50	1443	0.1485 ug/L	81

(#) = qualifier out of range (m) = manual integration
8M413367.D 8260WT.M Fri Jul 01 09:22:24 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\063016\8M413367.D Vial: 5
Acq On : 30 Jun 2016 13:53 Operator: TMB
Sample : L16061068-04 B 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 9:22 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

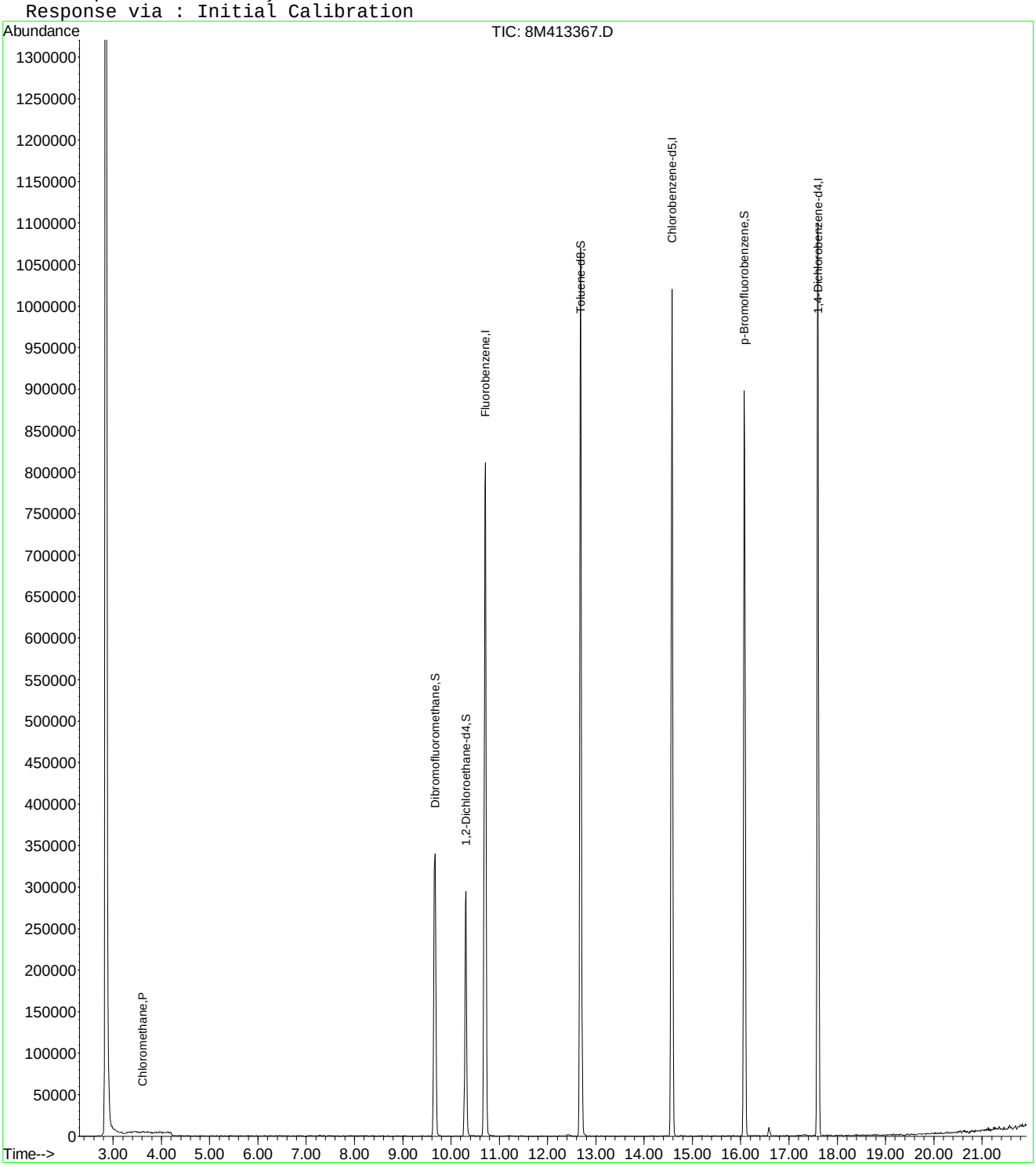

8M413367.D 8260WT.M Fri Jul 01 09:22:24 2016 Page 2

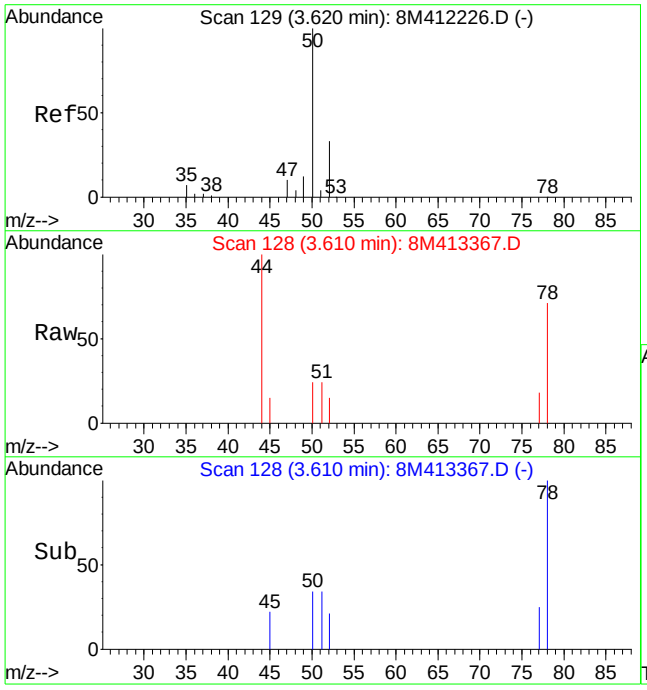

#3
Chloromethane
Concen: 0.15 ug/L
RT: 3.61 min Scan# 128
Delta R.T. -0.01 min
Lab File: 8M413367.D
Acq: 30 Jun 2016 13:53

Tgt Ion: 50 Resp: 1443

Ion	Ratio	Lower	Upper
50	100		
52	44.0	19.9	46.3

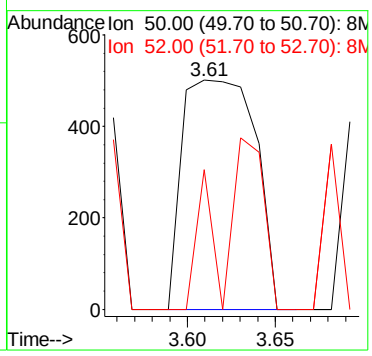

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413263.D Vial: 16
Acq On : 27 Jun 2016 00:18 Operator: ADC
Sample : L16061068-05 A 826-SPE Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	692629	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	551592	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	310736	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	209140	28.1038 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 112.40%		
43) 1,2-Dichloroethane-d4	10.30	65	232567	29.1460 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 116.60%		
58) Toluene-d8	12.68	98	726566	25.1688 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.68%		
80) p-Bromofluorobenzene	16.07	95	323554	25.1466 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.60%		

Target Compounds					Qvalue
3) Chloromethane	3.61	50	1037	0.1530 ug/L #	42
70) Chlorobenzene	14.63	112	3075	0.1332 ug/L #	1

(#) = qualifier out of range (m) = manual integration
8M413263.D 8260WT.M Mon Jun 27 12:45:23 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413263.D Vial: 16
Acq On : 27 Jun 2016 00:18 Operator: ADC
Sample : L16061068-05 A 826-SPE Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

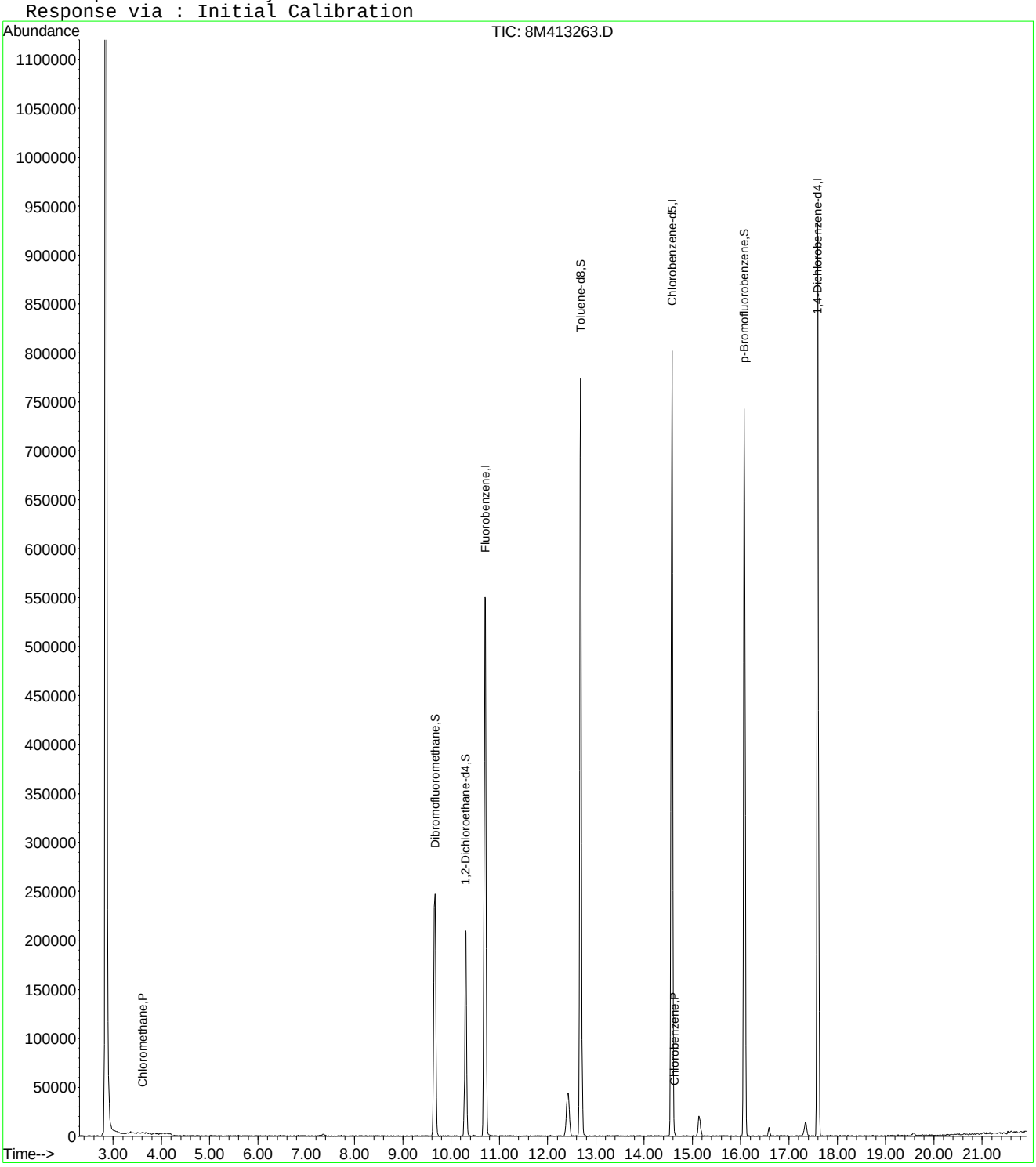

8M413263.D 8260WT.M Mon Jun 27 12:45:23 2016 Page 2

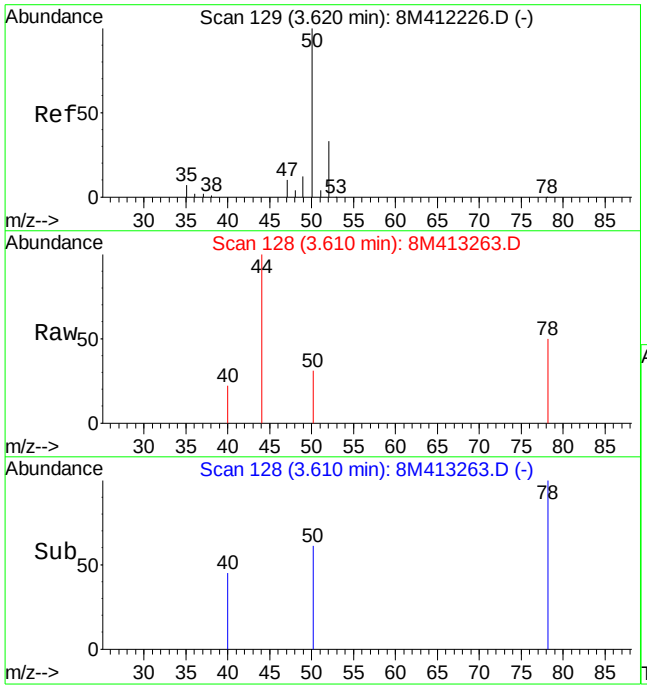

#3
Chloromethane
Concen: 0.15 ug/L
RT: 3.61 min Scan# 128
Delta R.T. -0.01 min
Lab File: 8M413263.D
Acq: 27 Jun 2016 00:18

Tgt Ion: 50 Resp: 1037

Ion	Ratio	Lower	Upper
50	100		
52	0.0	19.9	46.3#

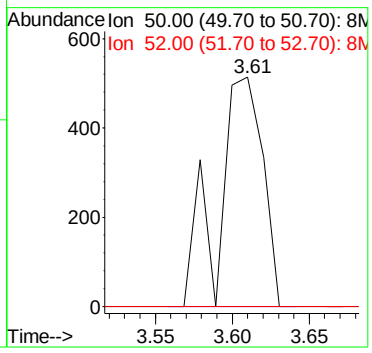

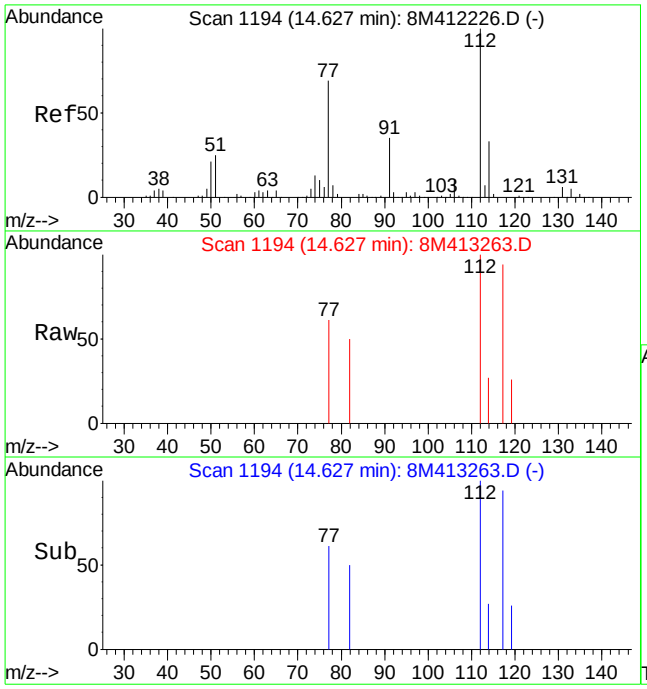

#70
Chlorobenzene
Concen: 0.13 ug/L
RT: 14.63 min Scan# 1194
Delta R.T. 0.00 min
Lab File: 8M413263.D
Acq: 27 Jun 2016 00:18

Tgt Ion:112 Resp: 3075

Ion	Ratio	Lower	Upper
112	100		
77	260.7	49.7	115.9#

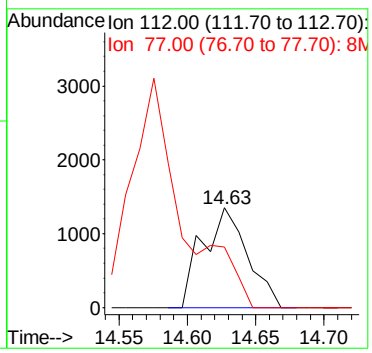

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413264.D Vial: 17
Acq On : 27 Jun 2016 00:47 Operator: ADC
Sample : L16061068-06 A 826-SPE Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02:46 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	675327	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	537883	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	298976	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	206326	28.4360 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 113.76%		
43) 1,2-Dichloroethane-d4	10.30	65	223625	28.7434 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 114.96%		
58) Toluene-d8	12.68	98	712643	25.3156 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.28%		
80) p-Bromofluorobenzene	16.08	95	312110	25.2114 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.84%		

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
8M413264.D 8260WT.M Mon Jun 27 12:45:27 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413264.D Vial: 17
Acq On : 27 Jun 2016 00:47 Operator: ADC
Sample : L16061068-06 A 826-SPE Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

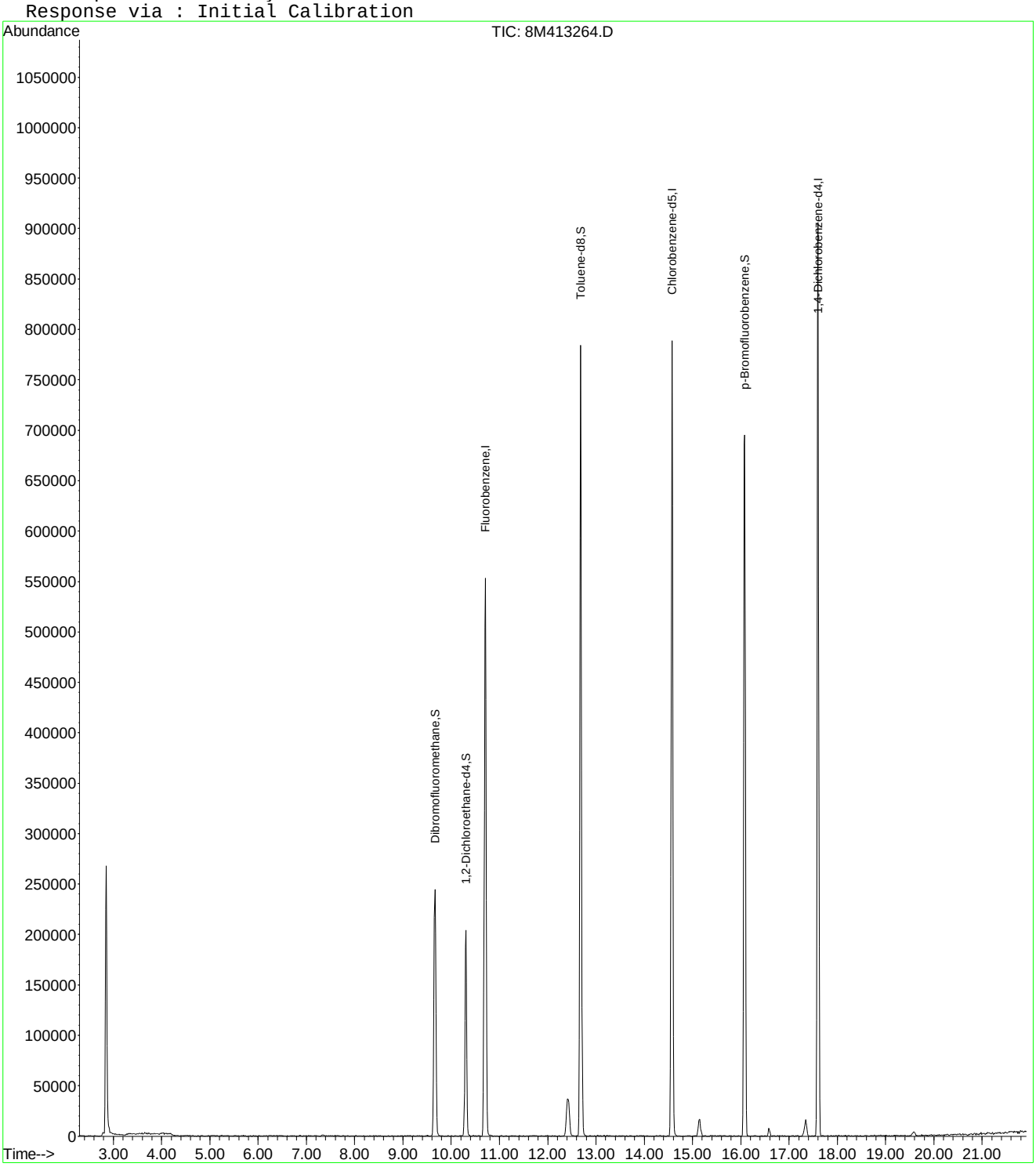

8M413264.D 8260WT.M Mon Jun 27 12:45:28 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413265.D Vial: 18
Acq On : 27 Jun 2016 1:16 Operator: ADC
Sample : L16061068-07 A 826-SPE Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02:46 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	668576	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	528229	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	300171	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	201025	27.9851 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.96%		
43) 1,2-Dichloroethane-d4	10.30	65	226540	29.4121 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 117.64%		
58) Toluene-d8	12.68	98	703254	25.4387 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.76%		
80) p-Bromofluorobenzene	16.08	95	310053	24.9455 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.80%		
Target Compounds					Qvalue
3) Chloromethane	3.63	50	928	0.1418 ug/L #	40
13) Acetone	6.24	43	602	0.8003 ug/L #	50

(#) = qualifier out of range (m) = manual integration
8M413265.D 8260WT.M Mon Jun 27 12:45:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413265.D Vial: 18
Acq On : 27 Jun 2016 1:16 Operator: ADC
Sample : L16061068-07 A 826-SPE Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

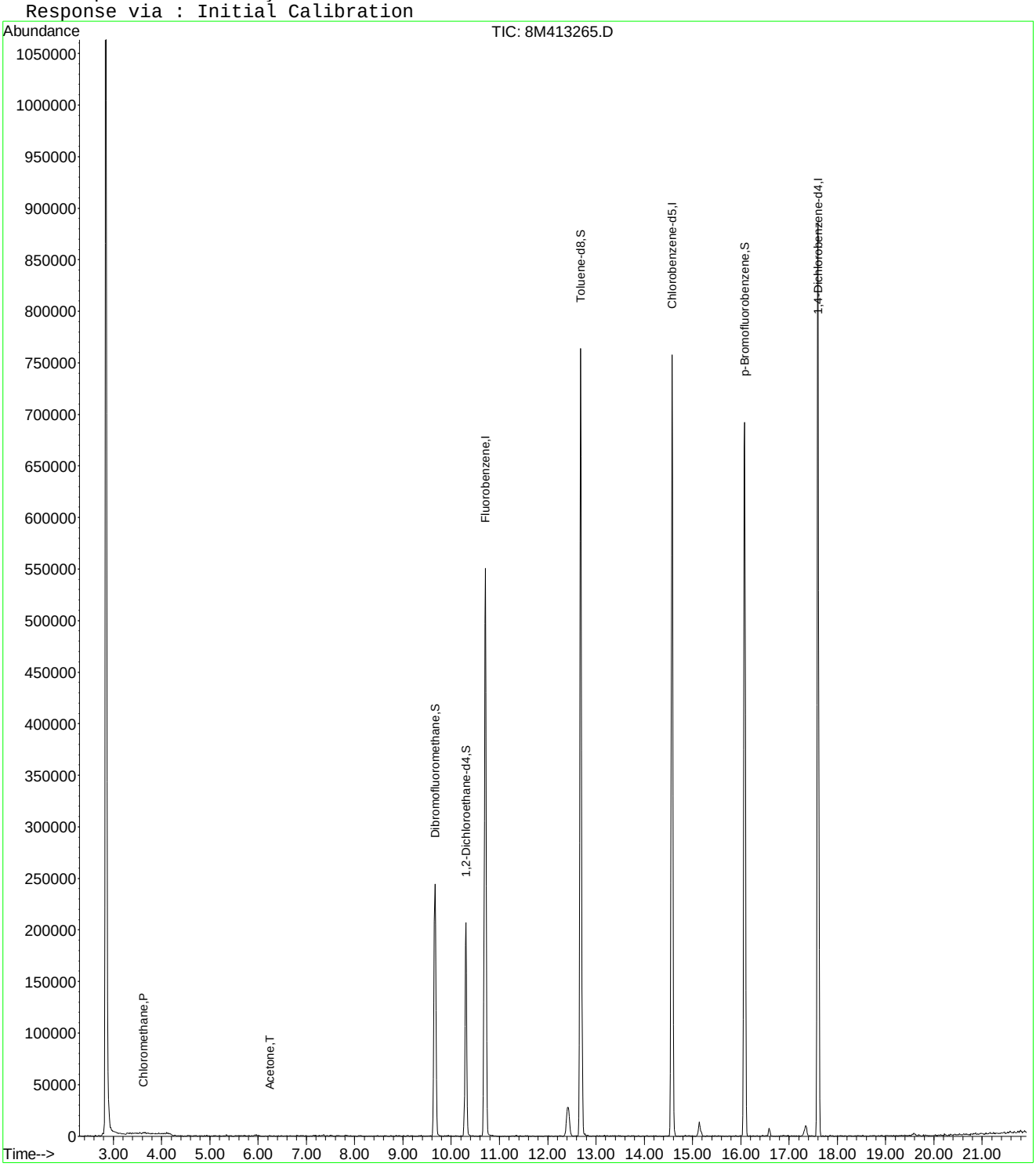

8M413265.D 8260WT.M Mon Jun 27 12:45:32 2016 Page 2

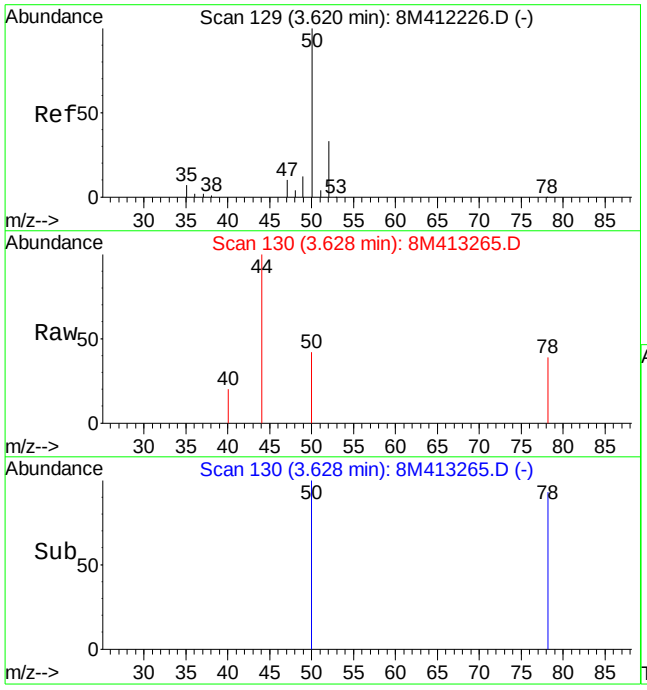

#3
Chloromethane
Concen: 0.14 ug/L
RT: 3.63 min Scan# 130
Delta R.T. 0.01 min
Lab File: 8M413265.D
Acq: 27 Jun 2016 1:16

Tgt Ion: 50 Resp: 928

Ion	Ratio	Lower	Upper
50	100		
52	66.8	19.9	46.3#

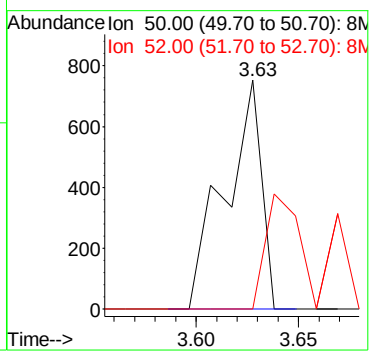

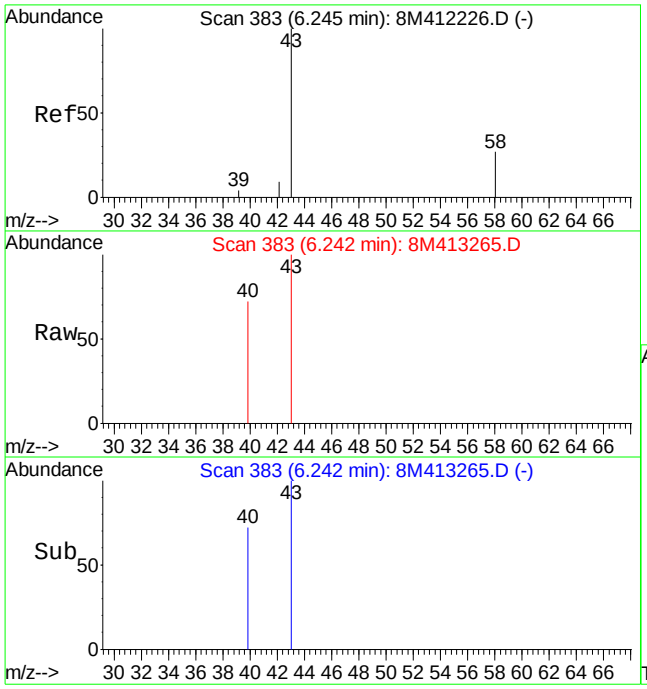

#13
Acetone
Concen: 0.80 ug/L
RT: 6.24 min Scan# 383
Delta R.T. -0.00 min
Lab File: 8M413265.D
Acq: 27 Jun 2016 1:16

Tgt Ion: 43 Resp: 602

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.2	35.4#

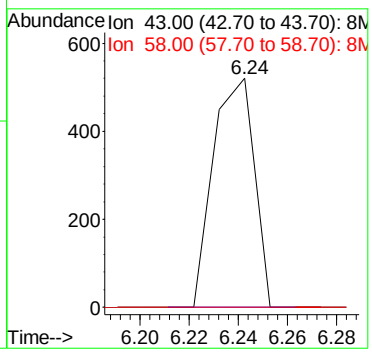

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413253.D Vial: 6
Acq On : 26 Jun 2016 19:29 Operator: ADC
Sample : L16061068-08 A MS 826-LOW Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02:42 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	763805	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	591220	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	335628	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	220310	26.8460 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.40%		
43) 1,2-Dichloroethane-d4	10.30	65	238397	27.0926 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 108.36%		
58) Toluene-d8	12.68	98	793921	25.6586 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.64%		
80) p-Bromofluorobenzene	16.08	95	340409	24.4945 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.96%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	321699	25.1211 ug/L	99
3) Chloromethane	3.62	50	171350	22.9228 ug/L	100
4) Vinyl Chloride	3.84	62	230274	25.9647 ug/L	100
5) 1,3-Butadiene	3.89	54	1281	0.1722 ug/L #	2
6) Bromomethane	4.73	94	84539	16.5187 ug/L	97
7) Chloroethane	4.89	64	114019	23.3645 ug/L	96
8) Trichlorofluoromethane	5.37	101	387213	23.4643 ug/L	99
9) Diethyl ether	5.91	59	1793	0.4551 ug/L #	48
10) Isoprene	5.94	67	240790	24.0280 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	173777	22.4026 ug/L	93
13) Acetone	6.23	43	21103	24.5569 ug/L	95
14) 1,1-Dichloroethene	6.46	61	264312	21.4003 ug/L	97
15) Tert-Butyl Alcohol	6.58	59	204	0.7408 ug/L #	62
16) Dimethyl Sulfide	6.73	62	167322	37.8892 ug/L	97
17) Iodomethane	6.98	142	77343	24.3089 ug/L	98
18) Methyl acetate	7.00	43	45373	19.5329 ug/L	100
19) Methylene Chloride	7.24	84	168936	21.4935 ug/L	99
20) Carbon Disulfide	7.29	76	534331	20.6733 ug/L	100
21) Acrylonitrile	7.43	53	24885	22.3185 ug/L	98
22) Methyl Tert Butyl Ether	7.46	73	398679	23.4364 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	249877	22.0218 ug/L	99
24) n-Hexane	7.78	57	186030	22.0789 ug/L	99
27) 1,1-Dichloroethane	8.32	63	298810	21.2048 ug/L	99
29) 2-Butanone	8.88	43	27720	21.9548 ug/L	98
31) 2,2-Dichloropropane	9.09	77	365890	24.6390 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	193321	22.0497 ug/L	99
33) Chloroform	9.37	83	372389	22.3812 ug/L	100
34) 1-Bromopropane	9.51	122	40141	31.9636 ug/L	98
35) Bromochloromethane	9.60	130	99646	22.1636 ug/L	95
38) 1,1,1-Trichloroethane	9.91	97	365883	23.1505 ug/L	100
39) Cyclohexane	9.94	56	235079	21.4842 ug/L	99
40) 1,1-Dichloropropene	10.11	75	260412	21.6172 ug/L	99
42) Carbon Tetrachloride	10.25	117	327244	23.3175 ug/L	98
45) 1,2-Dichloroethane	10.42	62	258204	24.1108 ug/L	98
46) Benzene	10.46	78	689253	21.9681 ug/L	100
47) Trichloroethene	11.21	130	191583	22.8945 ug/L	99
48) Methylcyclohexane	11.30	83	281966	22.1800 ug/L	99
49) 1,2-Dichloropropane	11.43	63	150916	21.6074 ug/L	93
50) Bromodichloromethane	11.73	83	282216	22.9896 ug/L	99
52) Dibromomethane	11.81	93	84226	20.3717 ug/L	96

(#) = qualifier out of range (m) = manual integration
8M413253.D 8260WT.M Mon Jun 27 12:33:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413253.D Vial: 6
Acq On : 26 Jun 2016 19:29 Operator: ADC
Sample : L16061068-08 A MS 826-LOW Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02:42 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
54)	4-Methyl-2-Pentanone	12.05	58	24388	19.8880 ug/L		91
55)	cis-1,3-Dichloropropene	12.36	75	308901	24.7219 ug/L		100
56)	Dimethyl Disulfide	12.62	79	148191	22.2207 ug/L		91
59)	Toluene	12.78	91	735293	20.0331 ug/L		100
60)	Ethyl Methacrylate	12.88	69	148038	21.0018 ug/L		99
62)	trans-1,3-Dichloropropene	12.96	75	256022	20.8145 ug/L		98
63)	1,1,2-Trichloroethane	13.18	97	114767	19.8156 ug/L		97
64)	2-Hexanone	13.11	58	22099	18.1573 ug/L	#	97
65)	1,3-Dichloropropane	13.48	76	218761	21.2150 ug/L		97
66)	Tetrachloroethene	13.60	164	164436	20.9105 ug/L		95
67)	Dibromochloromethane	13.87	129	170414	20.1513 ug/L		98
68)	1,2-Dibromoethane	14.12	107	114882	19.9025 ug/L		99
69)	1-Chlorohexane	14.21	91	251822	20.0992 ug/L		98
70)	Chlorobenzene	14.62	112	509036	20.5667 ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.65	131	196944	20.5392 ug/L		100
72)	Ethylbenzene	14.65	106	265897	19.6354 ug/L		97
73)	m-,p-Xylene	14.74	106	653080	41.1164 ug/L		96
74)	o-Xylene	15.31	106	326154	21.0029 ug/L		100
75)	Styrene	15.35	104	528715	20.7583 ug/L		96
76)	Bromoform	15.83	173	100659	20.0675 ug/L		98
77)	Isopropylbenzene	15.73	105	875597	21.2248 ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	116819	17.3397 ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	38702	18.6551 ug/L		77
82)	trans-1,4-Dichloro-2-Buten	16.18	53	30400	14.8137 ug/L		95
83)	n-Propylbenzene	16.24	91	1057475	20.1956 ug/L		100
84)	Bromobenzene	16.37	156	209896	19.4886 ug/L		96
85)	1,3,5-Trimethylbenzene	16.42	105	762383	19.9879 ug/L		100
86)	2-Chlorotoluene	16.50	91	739904	20.2394 ug/L		99
87)	4-Chlorotoluene	16.56	91	630633	19.0973 ug/L		99
88)	a-Methylstyrene	16.83	118	369447	20.4157 ug/L		99
89)	tert-Butylbenzene	16.89	134	146504	19.6333 ug/L		97
90)	1,2,4-Trimethylbenzene	16.94	105	757424	19.3120 ug/L		99
91)	sec-Butylbenzene	17.16	105	872611	19.4468 ug/L		100
92)	p-Isopropyltoluene	17.32	119	738215	19.3759 ug/L		100
93)	1,3-Dichlorobenzene	17.51	146	414015	19.9636 ug/L		97
94)	1,4-Dichlorobenzene	17.64	146	413912	19.7968 ug/L		99
95)	n-Butylbenzene	17.85	91	702475	18.6503 ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	354912	19.2419 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	24803	18.3407 ug/L		100
98)	1,2,4-Trichlorobenzene	20.28	180	259697	18.8366 ug/L		98
99)	Hexachlorobutadiene	20.43	225	128992	20.0244 ug/L		97
100)	Naphthalene	20.65	128	333353	16.2743 ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	205673	17.6826 ug/L		97

(#) = qualifier out of range (m) = manual integration
8M413253.D 8260WT.M Mon Jun 27 12:33:01 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413253.D Vial: 6
Acq On : 26 Jun 2016 19:29 Operator: ADC
Sample : L16061068-08 A MS 826-LOW Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

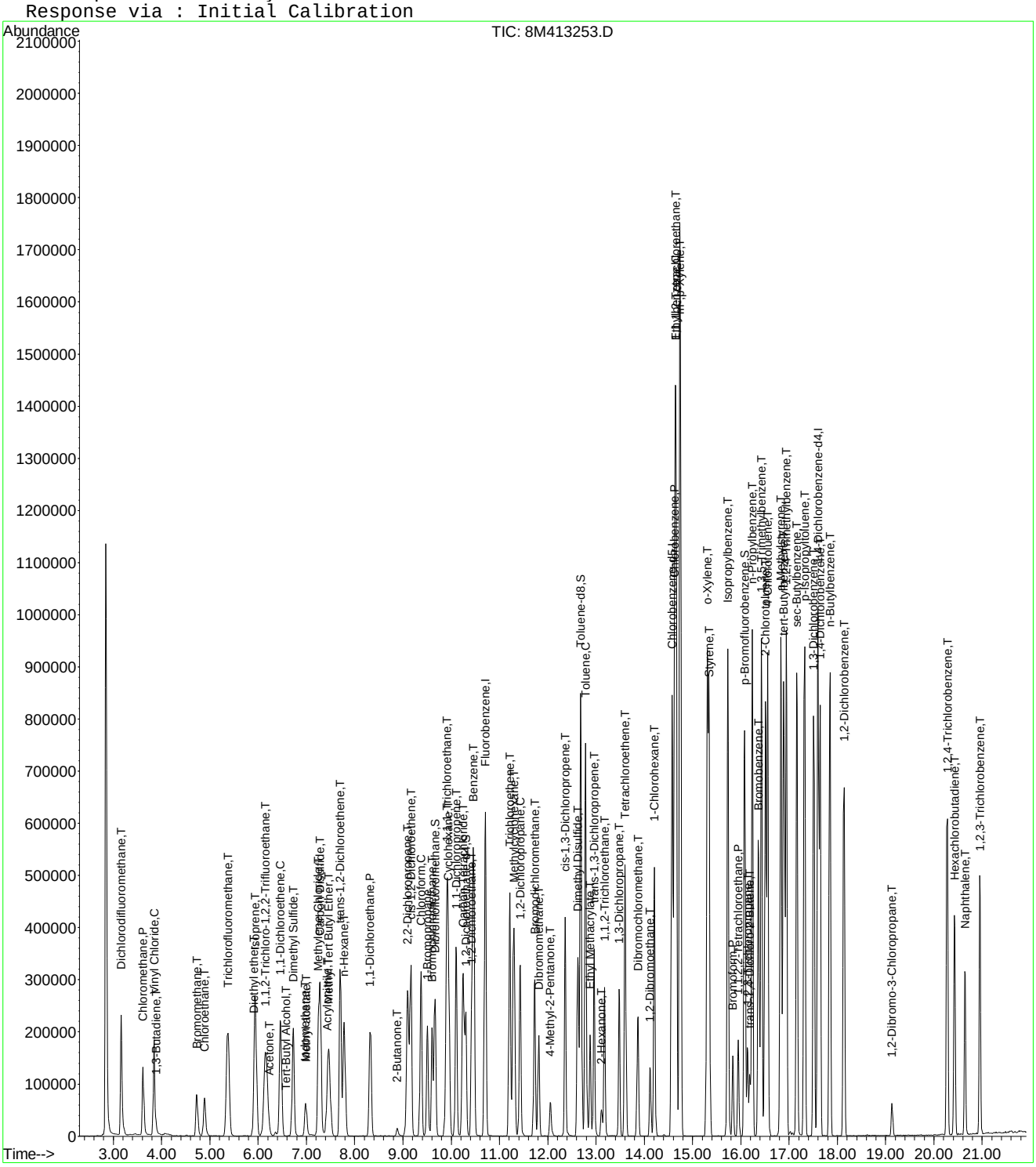

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413254.D Vial: 7
Acq On : 26 Jun 2016 19:58 Operator: ADC
Sample : L16061068-09 A MSD 826-LOW Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02:42 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	767625	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	593148	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	333917	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	221850	26.8991 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.60%		
43) 1,2-Dichloroethane-d4	10.31	65	237908	26.9025 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.60%		
58) Toluene-d8	12.68	98	792003	25.5134 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.04%		
80) p-Bromofluorobenzene	16.07	95	346027	25.0263 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.12%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	326356	25.3580 ug/L	99
3) Chloromethane	3.62	50	173160	23.0497 ug/L	100
4) Vinyl Chloride	3.84	62	232428	26.0771 ug/L	99
6) Bromomethane	4.72	94	85276	16.5773 ug/L	99
7) Chloroethane	4.89	64	113911	23.2262 ug/L	96
8) Trichlorofluoromethane	5.37	101	386254	23.2897 ug/L	99
9) Diethyl ether	5.91	59	1616	0.4081 ug/L #	46
10) Isoprene	5.94	67	239864	23.8164 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	177782	22.8049 ug/L	94
13) Acetone	6.23	43	21194	24.5400 ug/L	100
14) 1,1-Dichloroethene	6.46	61	260070	20.9521 ug/L	99
16) Dimethyl Sulfide	6.73	62	170923	38.5120 ug/L	100
17) Iodomethane	6.98	142	82917	25.7294 ug/L	100
18) Methyl acetate	6.99	43	42881	18.3682 ug/L	99
19) Methylene Chloride	7.25	84	166576	21.0878 ug/L	97
20) Carbon Disulfide	7.29	76	549713	21.1626 ug/L	100
21) Acrylonitrile	7.43	53	23400	20.8822 ug/L	99
22) Methyl Tert Butyl Ether	7.46	73	387529	22.6676 ug/L	100
23) trans-1,2-Dichloroethene	7.70	61	247587	21.7114 ug/L	99
24) n-Hexane	7.78	57	186661	22.0435 ug/L	98
27) 1,1-Dichloroethane	8.32	63	297270	20.9905 ug/L	99
29) 2-Butanone	8.88	43	25150	19.8202 ug/L	94
31) 2,2-Dichloropropane	9.11	77	354399	23.7464 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	190827	21.6570 ug/L	99
33) Chloroform	9.38	83	368944	22.0638 ug/L	99
34) 1-Bromopropane	9.51	122	39361	31.1865 ug/L	99
35) Bromochloromethane	9.60	130	95505	21.1368 ug/L	95
38) 1,1,1-Trichloroethane	9.90	97	363284	22.8716 ug/L	99
39) Cyclohexane	9.93	56	236537	21.5099 ug/L	98
40) 1,1-Dichloropropene	10.10	75	255968	21.1425 ug/L	99
42) Carbon Tetrachloride	10.24	117	315945	22.4003 ug/L	99
45) 1,2-Dichloroethane	10.42	62	247215	22.9697 ug/L	99
46) Benzene	10.46	78	675101	21.4100 ug/L	100
47) Trichloroethene	11.22	130	191098	22.7229 ug/L	98
48) Methylcyclohexane	11.30	83	283199	22.1661 ug/L	99
49) 1,2-Dichloropropane	11.42	63	149537	21.3035 ug/L	93
50) Bromodichloromethane	11.72	83	274304	22.2339 ug/L	100
52) Dibromomethane	11.80	93	83231	20.0309 ug/L	98
54) 4-Methyl-2-Pentanone	12.05	58	23754	19.2746 ug/L	95
55) cis-1,3-Dichloropropene	12.36	75	299193	23.8258 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413254.D 8260WT.M Mon Jun 27 12:33:07 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413254.D Vial: 7
Acq On : 26 Jun 2016 19:58 Operator: ADC
Sample : L16061068-09 A MSD 826-LOW Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02:42 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
56)	Dimethyl Disulfide	12.62	79	148888	22.2141	ug/L		96
59)	Toluene	12.79	91	732751	19.8989	ug/L		99
60)	Ethyl Methacrylate	12.88	69	145255	20.5400	ug/L		100
62)	trans-1,3-Dichloropropene	12.96	75	248915	20.1709	ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	111596	19.2055	ug/L		99
64)	2-Hexanone	13.12	58	23091	18.9107	ug/L	#	92
65)	1,3-Dichloropropane	13.48	76	208736	20.1770	ug/L		99
66)	Tetrachloroethene	13.60	164	158001	20.0269	ug/L		98
67)	Dibromochloromethane	13.86	129	164690	19.4112	ug/L		98
68)	1,2-Dibromoethane	14.12	107	110586	19.0959	ug/L		98
69)	1-Chlorohexane	14.21	91	248637	19.7805	ug/L		96
70)	Chlorobenzene	14.63	112	498754	20.0857	ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.66	131	192359	19.9958	ug/L		100
72)	Ethylbenzene	14.66	106	261407	19.2411	ug/L		96
73)	m-,p-Xylene	14.74	106	645378	40.4995	ug/L		96
74)	o-Xylene	15.31	106	318777	20.4611	ug/L		98
75)	Styrene	15.34	104	517045	20.2341	ug/L		98
76)	Bromoform	15.84	173	94738	18.8257	ug/L		99
77)	Isopropylbenzene	15.73	105	865277	20.9064	ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.94	83	114050	17.0155	ug/L		100
81)	1,2,3-Trichloropropane	16.13	110	36865	17.8607	ug/L		73
82)	trans-1,4-Dichloro-2-Buten	16.19	53	32714	15.9728	ug/L		83
83)	n-Propylbenzene	16.24	91	1040183	19.9672	ug/L		100
84)	Bromobenzene	16.36	156	202429	18.8916	ug/L		97
85)	1,3,5-Trimethylbenzene	16.42	105	746245	19.6650	ug/L		100
86)	2-Chlorotoluene	16.51	91	651552	17.9139	ug/L		93
87)	4-Chlorotoluene	16.56	91	703077	21.4002	ug/L		91
88)	a-Methylstyrene	16.83	118	359596	19.9732	ug/L		100
89)	tert-Butylbenzene	16.89	134	140673	18.9485	ug/L		97
90)	1,2,4-Trimethylbenzene	16.94	105	749465	19.2070	ug/L		99
91)	sec-Butylbenzene	17.16	105	870957	19.5094	ug/L		100
92)	p-Isopropyltoluene	17.32	119	732449	19.3231	ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	405043	19.6310	ug/L		97
94)	1,4-Dichlorobenzene	17.64	146	398831	19.1732	ug/L		99
95)	n-Butylbenzene	17.84	91	691800	18.4610	ug/L		100
96)	1,2-Dichlorobenzene	18.14	146	346601	18.8876	ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	22276	16.5565	ug/L		97
98)	1,2,4-Trichlorobenzene	20.28	180	258748	18.8639	ug/L		99
99)	Hexachlorobutadiene	20.42	225	127262	19.8571	ug/L		99
100)	Naphthalene	20.64	128	322837	15.8417	ug/L		97
101)	1,2,3-Trichlorobenzene	20.95	180	201766	17.4356	ug/L		97

(#) = qualifier out of range (m) = manual integration
8M413254.D 8260WT.M Mon Jun 27 12:33:07 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413254.D Vial: 7
Acq On : 26 Jun 2016 19:58 Operator: ADC
Sample : L16061068-09 A MSD 826-LOW Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

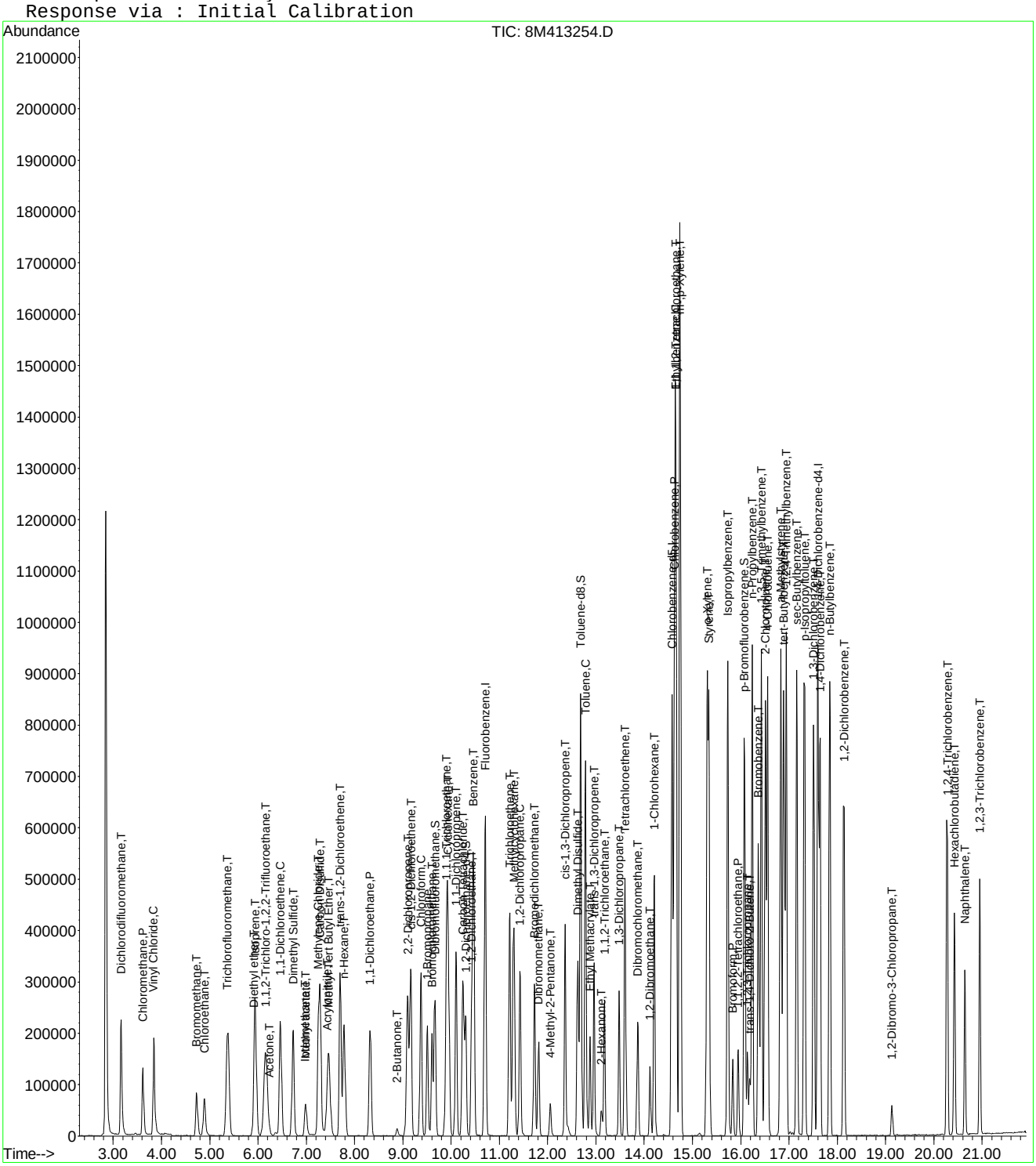

8M413254.D 8260WT.M Mon Jun 27 12:33:09 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413266.D Vial: 19
Acq On : 27 Jun 2016 1:45 Operator: ADC
Sample : L16061068-10 A 826-SPE Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02:46 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	664459	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	526953	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	297560	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	198803	27.8473 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.40%		
43) 1,2-Dichloroethane-d4	10.31	65	226182	29.5476 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 118.20%		
58) Toluene-d8	12.68	98	702679	25.4794 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.92%		
80) p-Bromofluorobenzene	16.07	95	307015	24.9178 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.68%		
Target Compounds					Qvalue
3) Chloromethane	3.61	50	1274	0.1959 ug/L	99
13) Acetone	6.24	43	1761	2.3556 ug/L #	50
32) cis-1,2-Dichloroethene	9.16	96	2628	0.3446 ug/L	86
47) Trichloroethene	11.21	130	13238	1.8185 ug/L	90

(#) = qualifier out of range (m) = manual integration
8M413266.D 8260WT.M Mon Jun 27 12:45:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413266.D Vial: 19
Acq On : 27 Jun 2016 1:45 Operator: ADC
Sample : L16061068-10 A 826-SPE Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

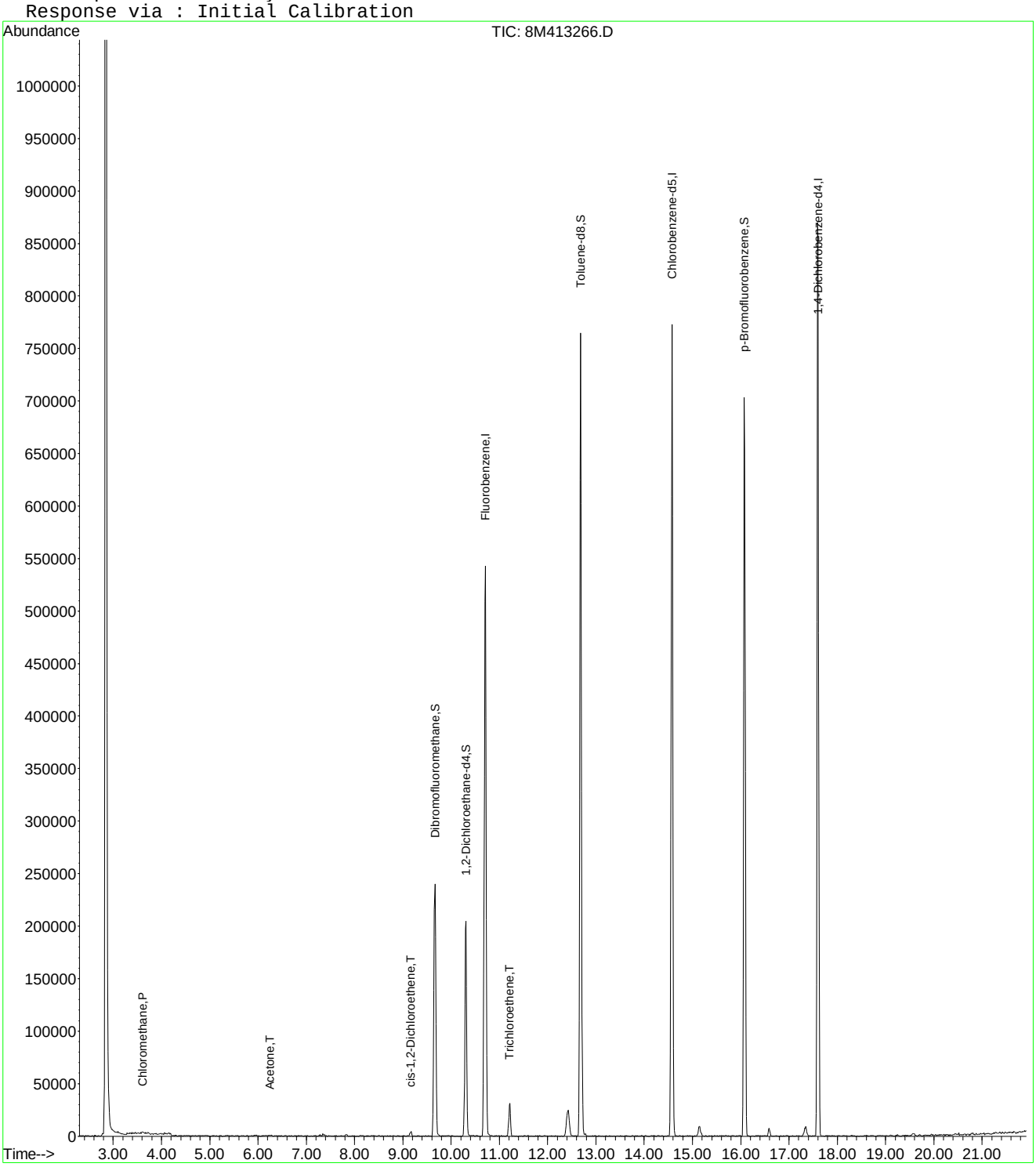

8M413266.D 8260WT.M Mon Jun 27 12:45:36 2016 Page 2

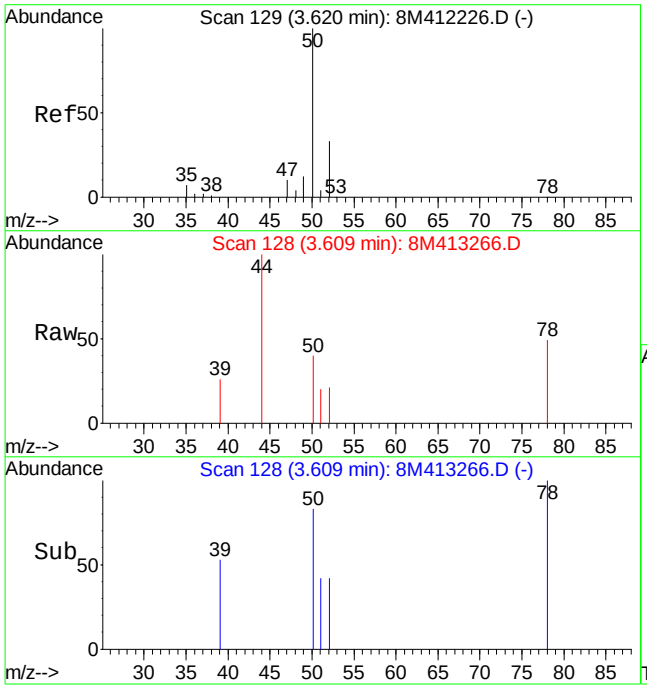

#3
Chloromethane
Concen: 0.20 ug/L
RT: 3.61 min Scan# 128
Delta R.T. -0.01 min
Lab File: 8M413266.D
Acq: 27 Jun 2016 1:45

Tgt Ion: 50 Resp: 1274

Ion	Ratio	Lower	Upper
50	100		
52	32.4	19.9	46.3

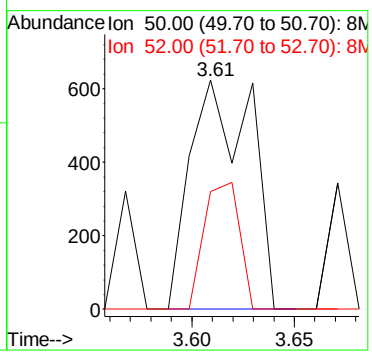

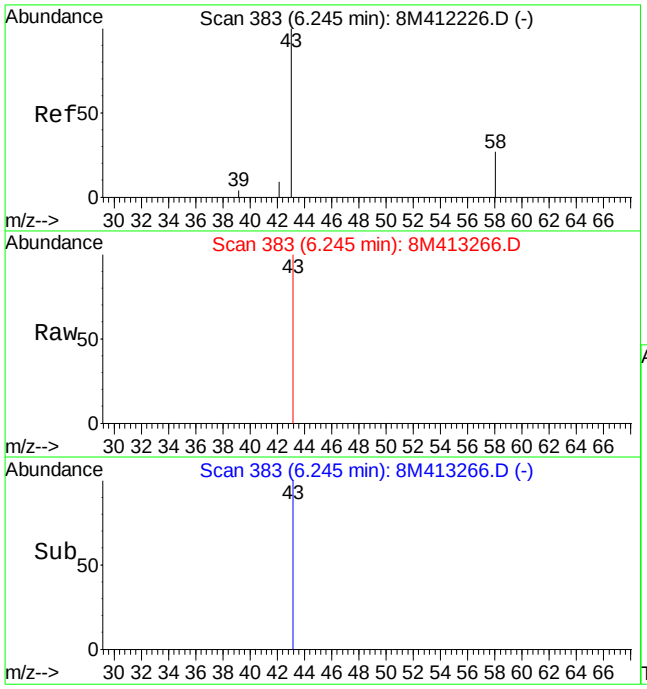

#13
Acetone
Concen: 2.36 ug/L
RT: 6.24 min Scan# 383
Delta R.T. -0.00 min
Lab File: 8M413266.D
Acq: 27 Jun 2016 1:45

Tgt Ion: 43 Resp: 1761

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.2	35.4#

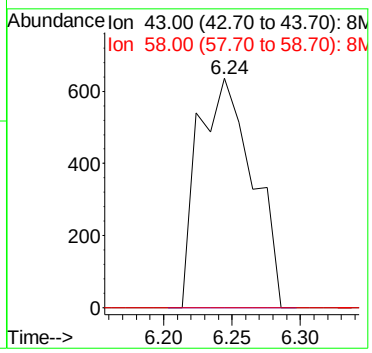

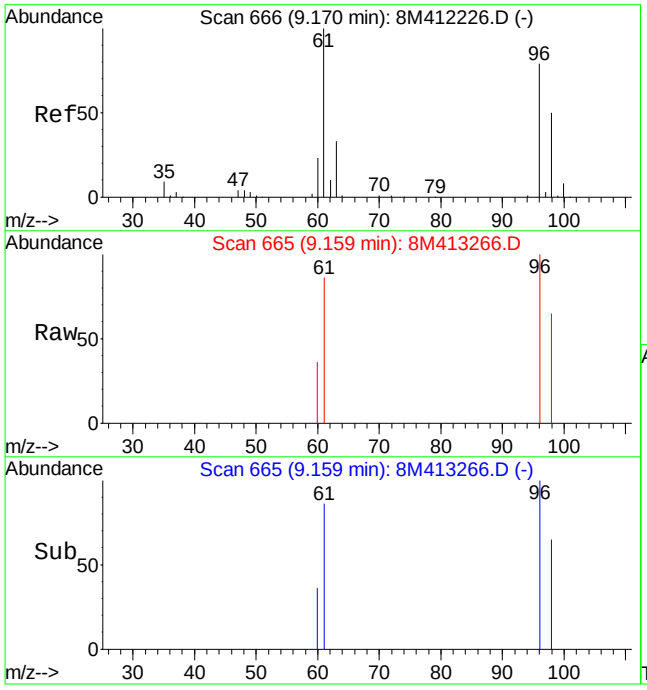

#32
cis-1,2-Dichloroethene
Concen: 0.34 ug/L
RT: 9.16 min Scan# 665
Delta R.T. -0.01 min
Lab File: 8M413266.D
Acq: 27 Jun 2016 1:45

Tgt Ion: 96 Resp: 2628

Ion	Ratio	Lower	Upper
96	100		
61	134.9	91.5	213.5

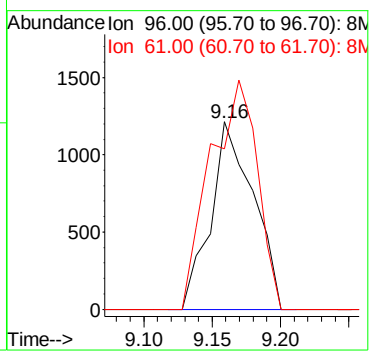

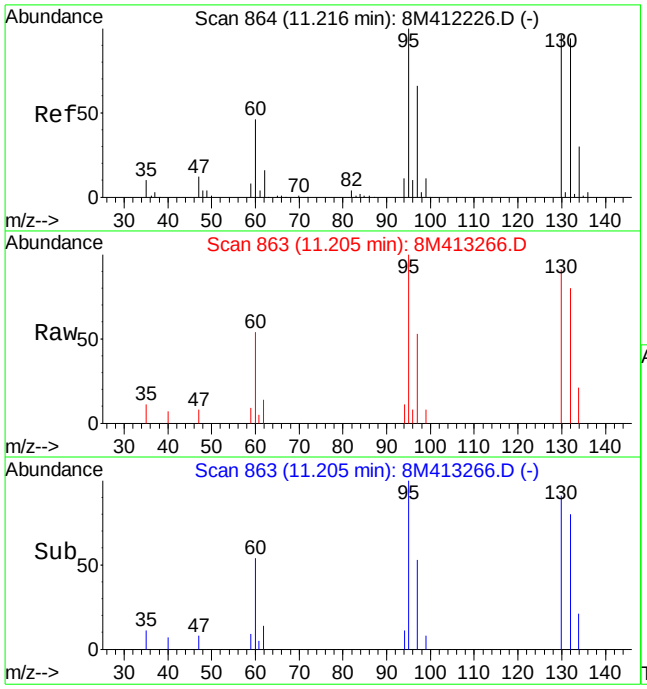

#47
Trichloroethene
Concen: 1.82 ug/L
RT: 11.21 min Scan# 863
Delta R.T. -0.01 min
Lab File: 8M413266.D
Acq: 27 Jun 2016 1:45

Tgt Ion:130 Resp: 13238

Ion	Ratio	Lower	Upper
130	100		
132	103.6	58.0	135.2
95	121.0	64.9	151.5

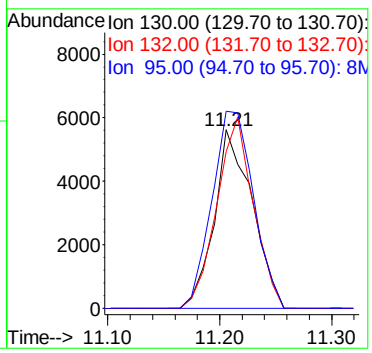

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413267.D Vial: 20
Acq On : 27 Jun 2016 2:14 Operator: ADC
Sample : L16061068-12 A 826-SPE Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02:47 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	654571	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	522236	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	289542	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	201696	28.6793 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 114.72%		
43) 1,2-Dichloroethane-d4	10.31	65	224477	29.7678 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 119.08%		
58) Toluene-d8	12.68	98	693597	25.3773 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.52%		
80) p-Bromofluorobenzene	16.07	95	303192	25.2890 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.16%		

Target Compounds					Qvalue
3) Chloromethane	3.62	50	770	0.1202 ug/L	95
13) Acetone	6.22	43	521	0.7074 ug/L #	50
32) cis-1,2-Dichloroethene	9.16	96	8375	1.1146 ug/L	90
47) Trichloroethene	11.21	130	101357	14.1336 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M413267.D 8260WT.M Mon Jun 27 12:45:41 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413267.D Vial: 20
Acq On : 27 Jun 2016 2:14 Operator: ADC
Sample : L16061068-12 A 826-SPE Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

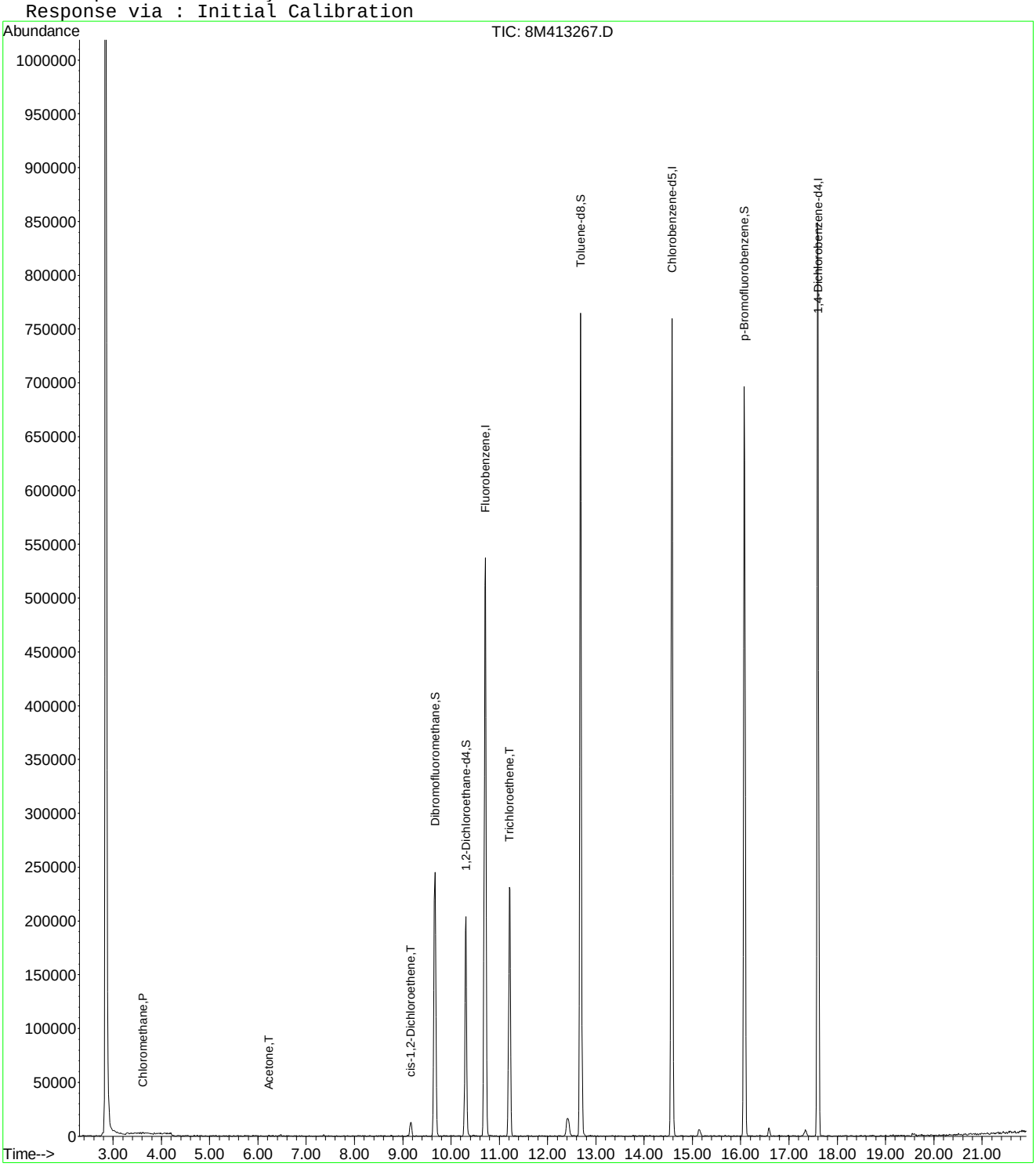

8M413267.D 8260WT.M Mon Jun 27 12:45:42 2016 Page 2

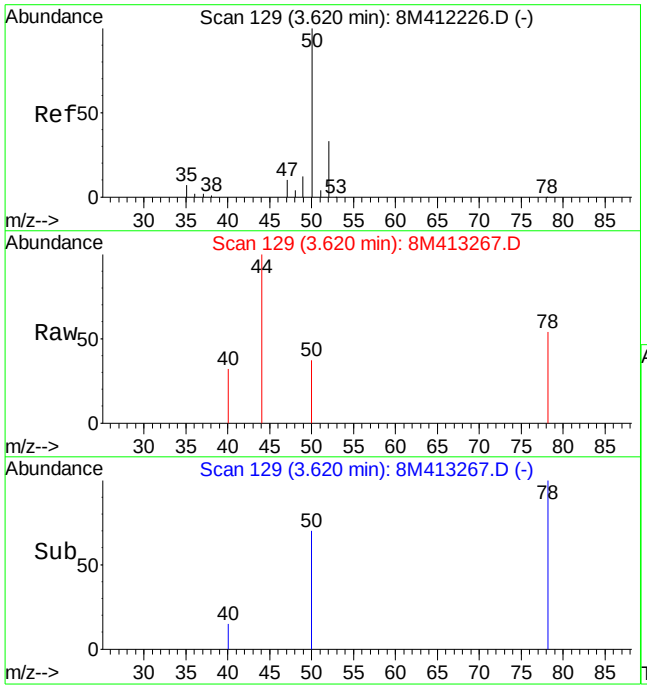

#3
Chloromethane
Concen: 0.12 ug/L
RT: 3.62 min Scan# 129
Delta R.T. -0.00 min
Lab File: 8M413267.D
Acq: 27 Jun 2016 2:14

Tgt Ion: 50 Resp: 770

Ion	Ratio	Lower	Upper
50	100		
52	30.1	19.9	46.3

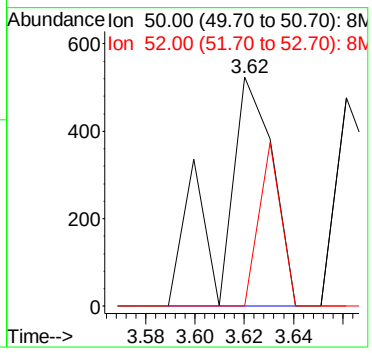

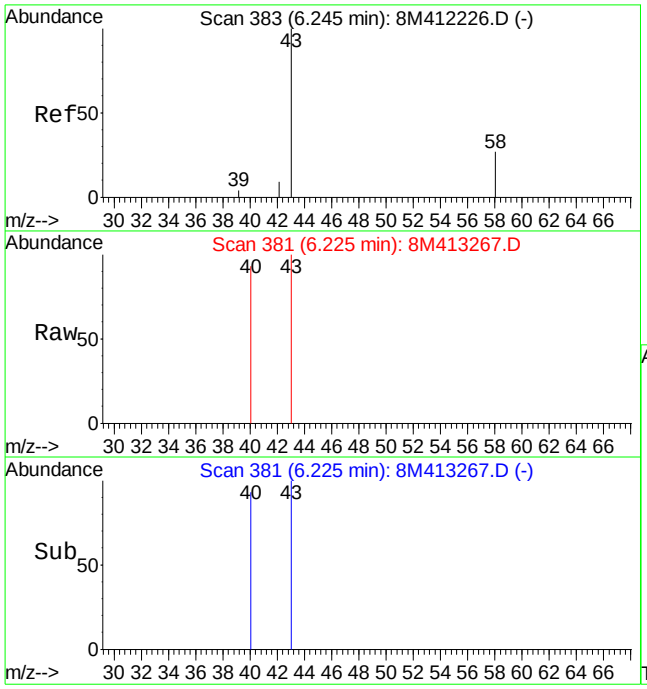

#13
Acetone
Concen: 0.71 ug/L
RT: 6.22 min Scan# 381
Delta R.T. -0.02 min
Lab File: 8M413267.D
Acq: 27 Jun 2016 2:14

Tgt Ion: 43 Resp: 521

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.2	35.4#

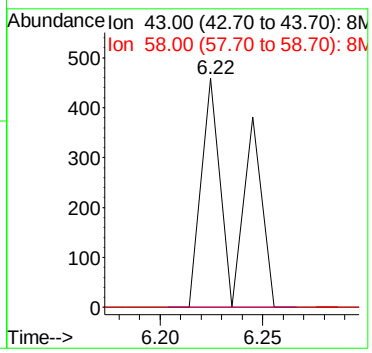

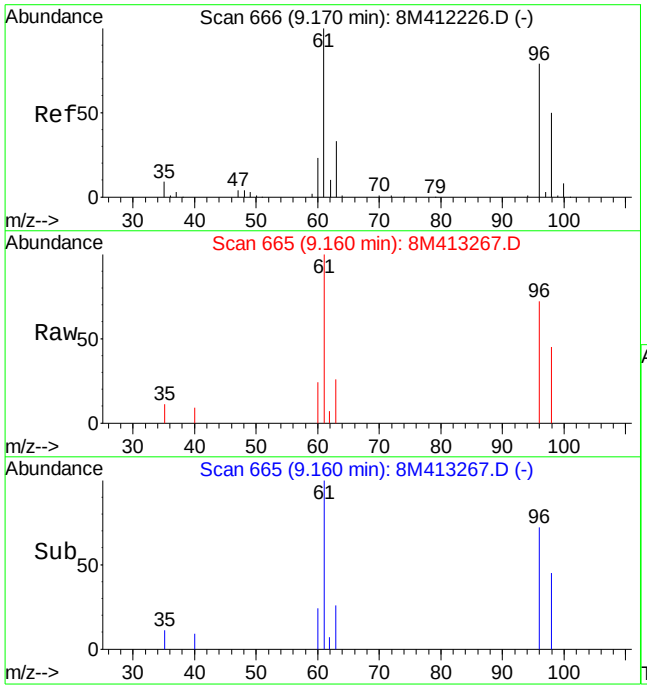

#32
cis-1,2-Dichloroethene
Concen: 1.11 ug/L
RT: 9.16 min Scan# 665
Delta R.T. -0.01 min
Lab File: 8M413267.D
Acq: 27 Jun 2016 2:14

Tgt Ion: 96 Resp: 8375

Ion	Ratio	Lower	Upper
96	100		
61	139.3	91.5	213.5

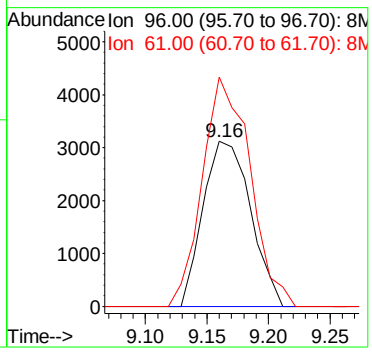

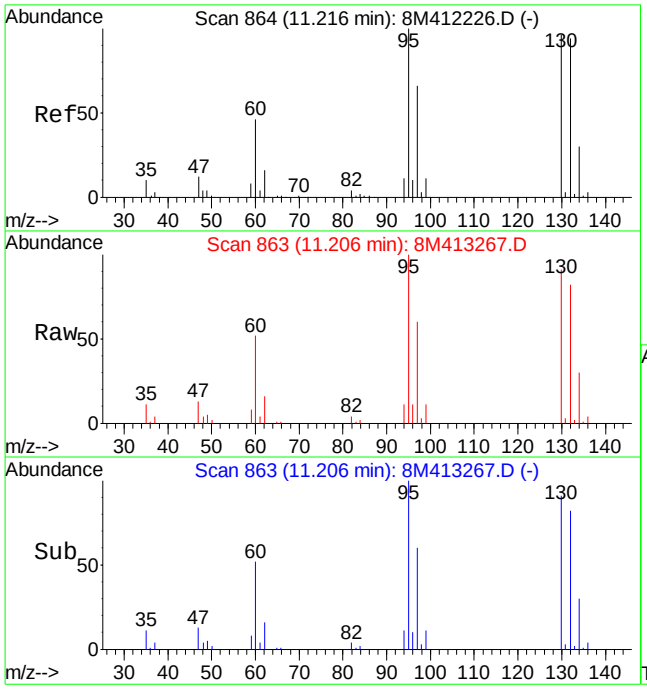

#47
Trichloroethene
Concen: 14.13 ug/L
RT: 11.21 min Scan# 863
Delta R.T. -0.01 min
Lab File: 8M413267.D
Acq: 27 Jun 2016 2:14

Tgt Ion:130 Resp: 101357

Ion	Ratio	Lower	Upper
130	100		
132	95.3	58.0	135.2
95	105.5	64.9	151.5

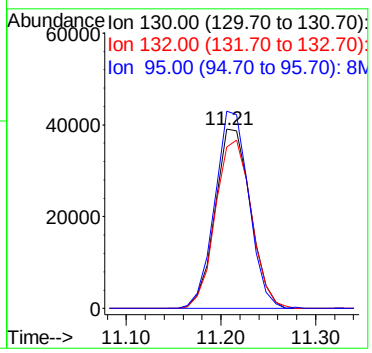

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413255.D Vial: 8
Acq On : 26 Jun 2016 20:27 Operator: ADC
Sample : L16061068-14 A MS 826-LOW Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02:43 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	768288	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	598726	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	332656	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	220105	26.6645 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.64%		
43) 1,2-Dichloroethane-d4	10.30	65	240720	27.1970 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 108.80%		
58) Toluene-d8	12.68	98	789197	25.1862 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.76%		
80) p-Bromofluorobenzene	16.08	95	341223	24.7724 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.08%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	330232	25.6370 ug/L	100
3) Chloromethane	3.62	50	174892	23.2601 ug/L	99
4) Vinyl Chloride	3.84	62	234877	26.3291 ug/L	100
6) Bromomethane	4.73	94	92592	17.9254 ug/L	98
7) Chloroethane	4.89	64	117119	23.8597 ug/L	98
8) Trichlorofluoromethane	5.37	101	387616	23.3516 ug/L	100
9) Diethyl ether	5.91	59	2363	0.5963 ug/L #	6
10) Isoprene	5.94	67	246185	24.4230 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	184614	23.6608 ug/L	94
13) Acetone	6.24	43	20661	23.9022 ug/L	96
14) 1,1-Dichloroethene	6.46	61	268927	21.6469 ug/L	98
16) Dimethyl Sulfide	6.73	62	171706	38.6550 ug/L	100
17) Iodomethane	6.98	142	90063	27.6612 ug/L	99
18) Methyl acetate	7.00	43	42061	18.0014 ug/L	97
19) Methylene Chloride	7.24	84	165508	20.9345 ug/L	100
20) Carbon Disulfide	7.29	76	550489	21.1742 ug/L	100
21) Acrylonitrile	7.43	53	25014	22.3033 ug/L	93
22) Methyl Tert Butyl Ether	7.46	73	385520	22.5306 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	255473	22.3836 ug/L	99
24) n-Hexane	7.78	57	187781	22.1566 ug/L	99
27) 1,1-Dichloroethane	8.32	63	300756	21.2184 ug/L	99
29) 2-Butanone	8.88	43	24835	19.5550 ug/L	99
31) 2,2-Dichloropropane	9.10	77	363408	24.3291 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	201216	22.8163 ug/L	99
33) Chloroform	9.37	83	371497	22.1973 ug/L	99
34) 1-Bromopropane	9.51	122	41091	32.5291 ug/L	99
35) Bromochloromethane	9.60	130	97225	21.4989 ug/L	96
38) 1,1,1-Trichloroethane	9.90	97	371180	23.3486 ug/L	99
39) Cyclohexane	9.94	56	241298	21.9239 ug/L	99
40) 1,1-Dichloropropene	10.11	75	264254	21.8081 ug/L	99
42) Carbon Tetrachloride	10.25	117	321354	22.7642 ug/L	99
45) 1,2-Dichloroethane	10.42	62	256476	23.8097 ug/L	98
46) Benzene	10.46	78	690778	21.8883 ug/L	99
47) Trichloroethene	11.21	130	293082	34.8194 ug/L	98
48) Methylcyclohexane	11.30	83	290926	22.7512 ug/L	98
49) 1,2-Dichloropropane	11.43	63	153163	21.8012 ug/L	94
50) Bromodichloromethane	11.73	83	278029	22.5164 ug/L	97
52) Dibromomethane	11.81	93	84843	20.4012 ug/L	95
54) 4-Methyl-2-Pentanone	12.05	58	23915	19.3885 ug/L	94
55) cis-1,3-Dichloropropene	12.36	75	303574	24.1538 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413255.D Vial: 8
Acq On : 26 Jun 2016 20:27 Operator: ADC
Sample : L16061068-14 A MS 826-LOW Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02:43 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
56)	Dimethyl Disulfide	12.63	79	147933	22.0525 ug/L		91
59)	Toluene	12.78	91	749732	20.1704 ug/L		100
60)	Ethyl Methacrylate	12.88	69	145657	20.4049 ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	251075	20.1564 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	110126	18.7759 ug/L		98
64)	2-Hexanone	13.11	58	21811	17.6960 ug/L	#	96
65)	1,3-Dichloropropane	13.48	76	213687	20.4631 ug/L		99
66)	Tetrachloroethene	13.60	164	165312	20.7584 ug/L		95
67)	Dibromochloromethane	13.87	129	166303	19.4187 ug/L		100
68)	1,2-Dibromoethane	14.12	107	112579	19.2590 ug/L		100
69)	1-Chlorohexane	14.21	91	256476	20.2140 ug/L		99
70)	Chlorobenzene	14.62	112	510762	20.3777 ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.65	131	195000	20.0815 ug/L		99
72)	Ethylbenzene	14.65	106	269866	19.6787 ug/L		99
73)	m-,p-Xylene	14.74	106	657387	40.8687 ug/L		97
74)	o-Xylene	15.31	106	321173	20.4228 ug/L		96
75)	Styrene	15.35	104	527287	20.4427 ug/L		97
76)	Bromoform	15.83	173	94861	18.6746 ug/L		99
77)	Isopropylbenzene	15.73	105	881700	21.1048 ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	114958	17.2159 ug/L		99
81)	1,2,3-Trichloropropane	16.13	110	36689	17.8428 ug/L	#	45
82)	trans-1,4-Dichloro-2-Buten	16.18	53	33306	16.3100 ug/L	#	37
83)	n-Propylbenzene	16.24	91	1071204	20.6406 ug/L		100
84)	Bromobenzene	16.37	156	210272	19.6979 ug/L		93
85)	1,3,5-Trimethylbenzene	16.42	105	774668	20.4914 ug/L		99
86)	2-Chlorotoluene	16.50	91	746640	20.6061 ug/L		98
87)	4-Chlorotoluene	16.56	91	633851	19.3663 ug/L		99
88)	a-Methylstyrene	16.82	118	368251	20.5314 ug/L		99
89)	tert-Butylbenzene	16.89	134	143837	19.4481 ug/L		97
90)	1,2,4-Trimethylbenzene	16.94	105	761359	19.5858 ug/L		100
91)	sec-Butylbenzene	17.16	105	893981	20.1010 ug/L		99
92)	p-Isopropyltoluene	17.32	119	738265	19.5503 ug/L		100
93)	1,3-Dichlorobenzene	17.51	146	410449	19.9685 ug/L		97
94)	1,4-Dichlorobenzene	17.64	146	413414	19.9496 ug/L		98
95)	n-Butylbenzene	17.85	91	700112	18.7536 ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	358470	19.6085 ug/L		97
97)	1,2-Dibromo-3-Chloropropan	19.13	75	23632	17.6309 ug/L		93
98)	1,2,4-Trichlorobenzene	20.28	180	251174	18.3811 ug/L		98
99)	Hexachlorobutadiene	20.43	225	128164	20.0736 ug/L		98
100)	Naphthalene	20.65	128	325850	16.0502 ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	200707	17.4098 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M413255.D 8260WT.M Mon Jun 27 12:33:14 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413255.D Vial: 8
Acq On : 26 Jun 2016 20:27 Operator: ADC
Sample : L16061068-14 A MS 826-LOW Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

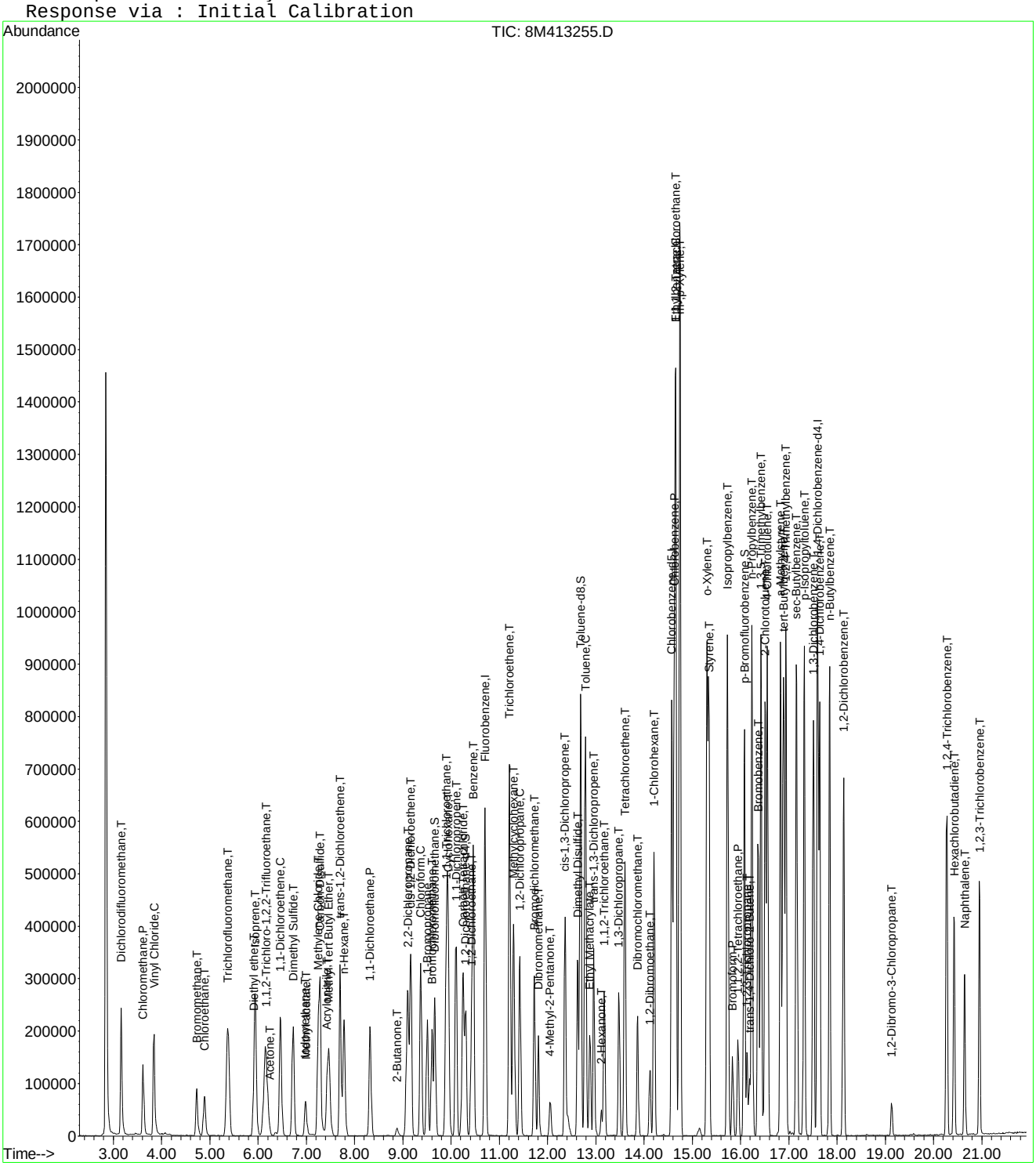

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413256.D Vial: 9
Acq On : 26 Jun 2016 20:56 Operator: ADC
Sample : L16061068-16 A MSD 826-LOW Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02:43 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	759205	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	595198	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	335549	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	221559	27.1618 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 108.64%		
43) 1,2-Dichloroethane-d4	10.30	65	238244	27.2392 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 108.96%		
58) Toluene-d8	12.68	98	787777	25.2899 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.16%		
80) p-Bromofluorobenzene	16.08	95	342219	24.6305 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.52%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	325946	25.6070 ug/L	100
3) Chloromethane	3.62	50	177749	23.9229 ug/L	99
4) Vinyl Chloride	3.84	62	234387	26.5885 ug/L	100
6) Bromomethane	4.73	94	89694	17.5860 ug/L	98
7) Chloroethane	4.89	64	112846	23.2643 ug/L	99
8) Trichlorofluoromethane	5.37	101	383797	23.3982 ug/L	99
9) Diethyl ether	5.90	59	1801	0.4599 ug/L #	48
10) Isoprene	5.94	67	236744	23.7674 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	177696	23.0467 ug/L	93
13) Acetone	6.24	43	22506	26.3482 ug/L	94
14) 1,1-Dichloroethene	6.47	61	267609	21.7985 ug/L	99
16) Dimethyl Sulfide	6.73	62	166451	37.9203 ug/L	98
17) Iodomethane	6.98	142	89185	27.7127 ug/L	99
18) Methyl acetate	7.00	43	41632	18.0310 ug/L	97
19) Methylene Chloride	7.24	84	170314	21.8001 ug/L	96
20) Carbon Disulfide	7.29	76	543362	21.1501 ug/L	99
21) Acrylonitrile	7.43	53	23486	21.1914 ug/L	98
22) Methyl Tert Butyl Ether	7.46	73	382187	22.6031 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	250005	22.1665 ug/L	100
24) n-Hexane	7.78	57	181767	21.7036 ug/L	100
27) 1,1-Dichloroethane	8.32	63	297018	21.2054 ug/L	99
29) 2-Butanone	8.88	43	24788	19.7516 ug/L	92
31) 2,2-Dichloropropane	9.11	77	352855	23.9052 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	201279	23.0965 ug/L	99
33) Chloroform	9.37	83	371072	22.4372 ug/L	99
34) 1-Bromopropane	9.51	122	38857	31.1286 ug/L	98
35) Bromochloromethane	9.60	130	98805	22.1096 ug/L	96
38) 1,1,1-Trichloroethane	9.90	97	365538	23.2688 ug/L	99
39) Cyclohexane	9.94	56	237297	21.8183 ug/L	98
40) 1,1-Dichloropropene	10.10	75	259566	21.6775 ug/L	99
42) Carbon Tetrachloride	10.25	117	321640	23.0570 ug/L	99
45) 1,2-Dichloroethane	10.42	62	252167	23.6897 ug/L	98
46) Benzene	10.46	78	690412	22.1384 ug/L	100
47) Trichloroethene	11.21	130	291187	35.0082 ug/L	98
48) Methylcyclohexane	11.30	83	285042	22.5578 ug/L	100
49) 1,2-Dichloropropane	11.42	63	151417	21.8105 ug/L	94
50) Bromodichloromethane	11.72	83	275504	22.5788 ug/L	99
52) Dibromomethane	11.81	93	82748	20.1355 ug/L	96
54) 4-Methyl-2-Pentanone	12.05	58	24910	20.4368 ug/L	96
55) cis-1,3-Dichloropropene	12.36	75	296785	23.8961 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413256.D Vial: 9
Acq On : 26 Jun 2016 20:56 Operator: ADC
Sample : L16061068-16 A MSD 826-LOW Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02:43 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
56)	Dimethyl Disulfide	12.62	79	145242	21.9104	ug/L		92
59)	Toluene	12.78	91	738343	19.9817	ug/L		100
60)	Ethyl Methacrylate	12.88	69	142589	20.0935	ug/L		99
62)	trans-1,3-Dichloropropene	12.96	75	247066	19.9522	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	109853	18.8404	ug/L		98
64)	2-Hexanone	13.12	58	21842	17.8262	ug/L	#	99
65)	1,3-Dichloropropane	13.48	76	213595	20.5755	ug/L		99
66)	Tetrachloroethene	13.60	164	160165	20.2313	ug/L		97
67)	Dibromochloromethane	13.87	129	165704	19.4634	ug/L		99
68)	1,2-Dibromoethane	14.12	107	111772	19.2343	ug/L		99
69)	1-Chlorohexane	14.21	91	252444	20.0142	ug/L		98
70)	Chlorobenzene	14.62	112	516418	20.7255	ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.66	131	196324	20.3377	ug/L		98
72)	Ethylbenzene	14.66	106	259466	19.0324	ug/L		94
73)	m-,p-Xylene	14.74	106	649408	40.6120	ug/L		97
74)	o-Xylene	15.31	106	321537	20.5672	ug/L		99
75)	Styrene	15.35	104	522822	20.3897	ug/L		98
76)	Bromoform	15.83	173	95570	18.9257	ug/L		99
77)	Isopropylbenzene	15.73	105	871912	20.9942	ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	115064	17.0832	ug/L		99
81)	1,2,3-Trichloropropane	16.13	110	37910	18.2777	ug/L	#	23
82)	trans-1,4-Dichloro-2-Buten	16.18	53	32210	15.6627	ug/L	#	2
83)	n-Propylbenzene	16.24	91	1054438	20.1423	ug/L		99
84)	Bromobenzene	16.37	156	205876	19.1199	ug/L		96
85)	1,3,5-Trimethylbenzene	16.42	105	761208	19.9618	ug/L		99
86)	2-Chlorotoluene	16.51	91	753965	20.6288	ug/L		98
87)	4-Chlorotoluene	16.56	91	618628	18.7382	ug/L		99
88)	a-Methylstyrene	16.83	118	360182	19.9084	ug/L		100
89)	tert-Butylbenzene	16.89	134	145442	19.4956	ug/L		100
90)	1,2,4-Trimethylbenzene	16.94	105	762834	19.4545	ug/L		99
91)	sec-Butylbenzene	17.16	105	882487	19.6715	ug/L		100
92)	p-Isopropyltoluene	17.32	119	751938	19.7407	ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	413860	19.9608	ug/L		98
94)	1,4-Dichlorobenzene	17.64	146	412948	19.7553	ug/L		98
95)	n-Butylbenzene	17.85	91	702648	18.6593	ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	357890	19.4080	ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.13	75	23724	17.5470	ug/L		96
98)	1,2,4-Trichlorobenzene	20.28	180	264677	19.2023	ug/L		99
99)	Hexachlorobutadiene	20.43	225	132113	20.5137	ug/L		100
100)	Naphthalene	20.65	128	331982	16.2112	ug/L		98
101)	1,2,3-Trichlorobenzene	20.96	180	210152	18.0719	ug/L		97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413256.D Vial: 9
Acq On : 26 Jun 2016 20:56 Operator: ADC
Sample : L16061068-16 A MSD 826-LOW Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

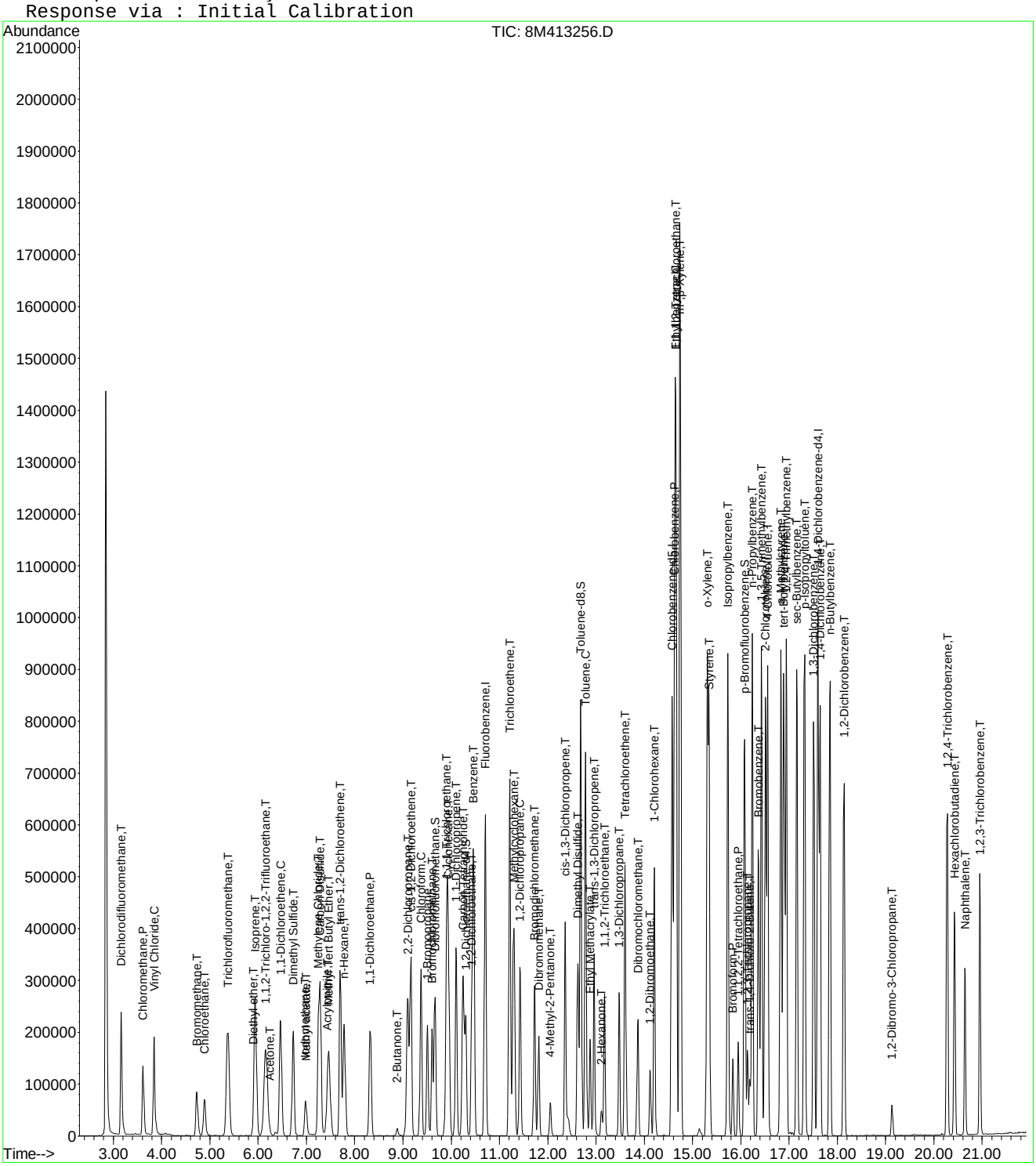

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413284.D Vial: 10
Acq On : 27 Jun 2016 22:06 Operator: FJB
Sample : L16061068-18 TB B 826-SPE Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 08:57:29 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	642856	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	510260	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	284359	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	196356	28.4288 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 113.72%		
43) 1,2-Dichloroethane-d4	10.30	65	217905	29.4229 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 117.68%		
58) Toluene-d8	12.68	98	683658	25.6007 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.40%		
80) p-Bromofluorobenzene	16.08	95	298576	25.3579 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.44%		
Target Compounds					Qvalue
36) Tetrahydrofuran	9.64	42	558	0.7973 ug/L #	50

(#) = qualifier out of range (m) = manual integration
8M413284.D 8260WT.M Wed Jun 29 08:57:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413284.D Vial: 10
Acq On : 27 Jun 2016 22:06 Operator: FJB
Sample : L16061068-18 TB B 826-SPE Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 8:57 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

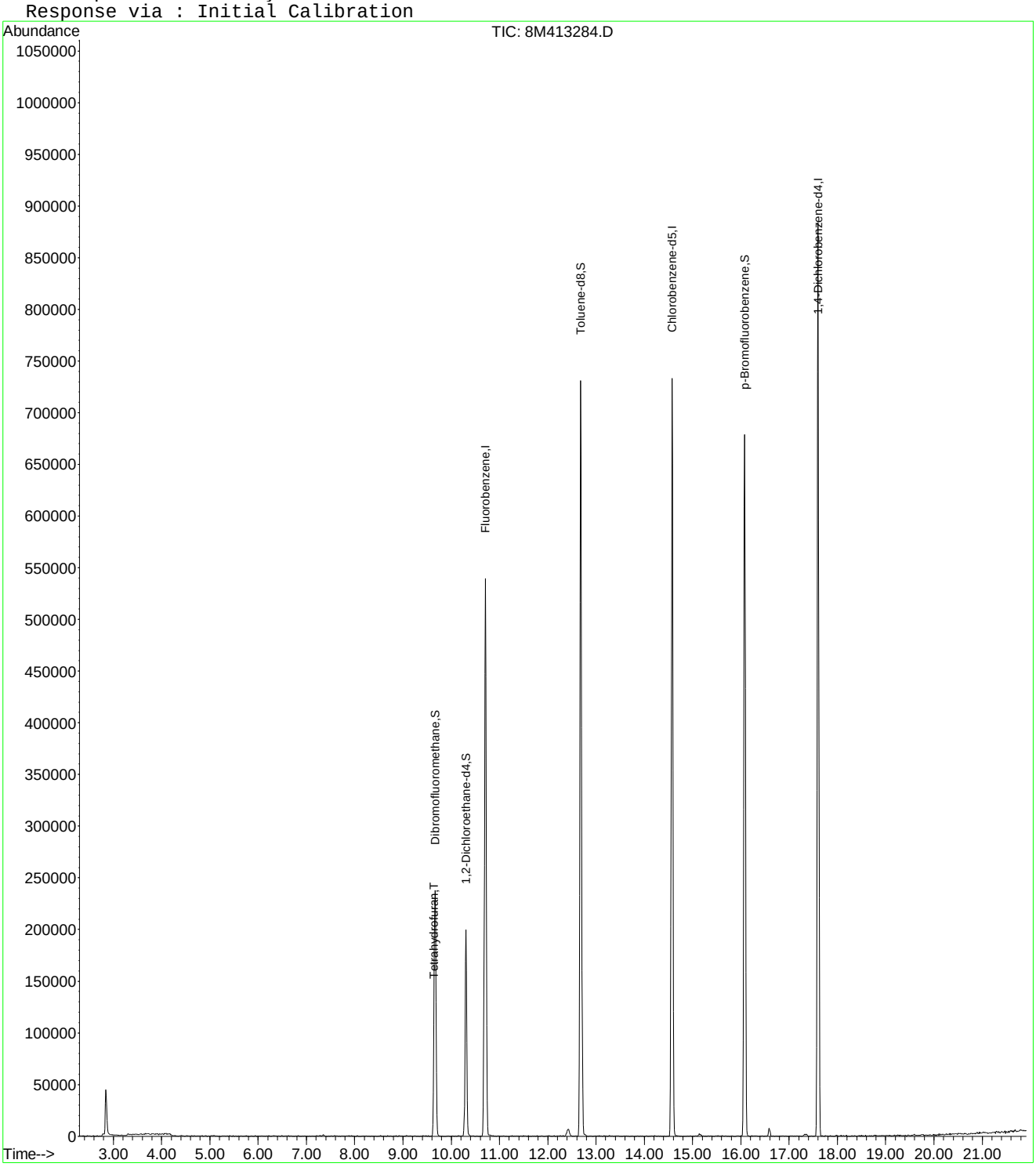

8M413284.D 8260WT.M Wed Jun 29 08:57:32 2016 Page 2

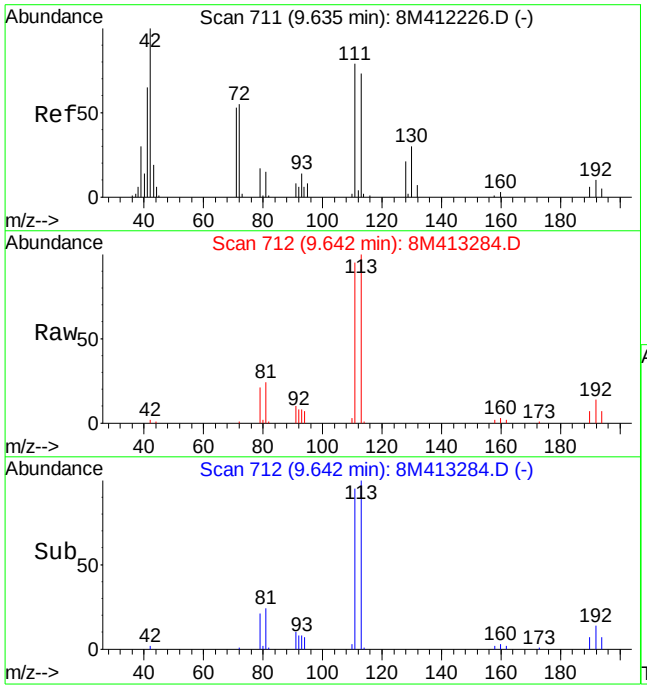

#36
Tetrahydrofuran
Concen: 0.80 ug/L
RT: 9.64 min Scan# 712
Delta R.T. 0.01 min
Lab File: 8M413284.D
Acq: 27 Jun 2016 22:06

Tgt Ion: 42 Resp: 558

Ion	Ratio	Lower	Upper
42	100		
72	76.2	33.8	78.8
71	0.0	32.0	74.8#

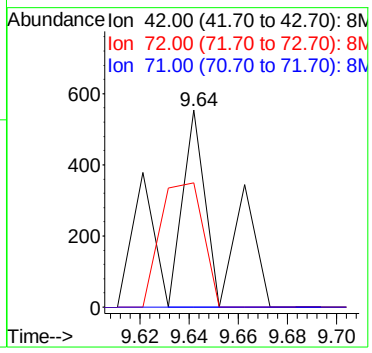

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:40:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	823748	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	571926	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	299321	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	12.68	98	567	0.0189 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.08%#	
80) p-Bromofluorobenzene	16.08	95	313	0.0253 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	3836	0.2778 ug/L	91
3) Chloromethane	3.62	50	3658	0.4537 ug/L	95
4) Vinyl Chloride	3.85	62	2516	0.2630 ug/L #	58
5) 1,3-Butadiene	3.91	54	2079	0.2592 ug/L	71
6) Bromomethane	4.73	94	1152	0.6530 ug/L #	55
7) Chloroethane	4.90	64	1112	0.2113 ug/L #	72
8) Trichlorofluoromethane	5.35	101	2706	0.1520 ug/L #	53
10) Isoprene	5.93	67	2147	0.1987 ug/L	85
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1746	0.2087 ug/L	97
14) 1,1-Dichloroethene	6.48	61	3332	0.2501 ug/L	75
16) Dimethyl Sulfide	6.73	62	1099	0.2308 ug/L	95
19) Methylene Chloride	7.26	84	3414	0.4028 ug/L	88
20) Carbon Disulfide	7.30	76	10739	0.3853 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	4927	0.2686 ug/L #	60
23) trans-1,2-Dichloroethene	7.70	61	3879	0.3170 ug/L	98
24) n-Hexane	7.78	57	2794	0.3075 ug/L	85
26) Vinyl Acetate	8.30	43	1973	0.2259 ug/L #	70
27) 1,1-Dichloroethane	8.33	63	4881	0.3212 ug/L #	88
31) 2,2-Dichloropropane	9.11	77	4966	0.3101 ug/L	89
32) cis-1,2-Dichloroethene	9.17	96	2958	0.3128 ug/L	87
33) Chloroform	9.37	83	5564	0.3101 ug/L	95
34) 1-Bromopropane	9.52	122	210	0.1551 ug/L #	1
35) Bromochloromethane	9.60	130	1386	0.2858 ug/L	76
36) Tetrahydrofuran	9.62	42	1849	2.0617 ug/L #	60
38) 1,1,1-Trichloroethane	9.91	97	4978	0.2921 ug/L	95
39) Cyclohexane	9.93	56	3120	0.2644 ug/L #	85
40) 1,1-Dichloropropene	10.11	75	3779	0.2909 ug/L	97
42) Carbon Tetrachloride	10.24	117	4835	0.3194 ug/L #	74
45) 1,2-Dichloroethane	10.43	62	3295	0.2853 ug/L #	81
46) Benzene	10.46	78	11279	0.3333 ug/L	93
47) Trichloroethene	11.20	130	2410	0.2670 ug/L	97
48) Methylcyclohexane	11.31	83	3936	0.2871 ug/L	84
49) 1,2-Dichloropropane	11.42	63	2136	0.2836 ug/L	88
50) Bromodichloromethane	11.73	83	3767	0.2845 ug/L #	91
52) Dibromomethane	11.82	93	700	0.1570 ug/L #	59
53) 2-Chloroethyl Vinyl Ether	12.02	63	847	0.2616 ug/L #	47
55) cis-1,3-Dichloropropene	12.36	75	4763	0.3535 ug/L	84
56) Dimethyl Disulfide	12.63	79	1647	0.2290 ug/L	82
59) Toluene	12.78	91	11513	0.3243 ug/L	92
60) Ethyl Methacrylate	12.89	69	1631	0.2392 ug/L #	64

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:40:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
62)	trans-1,3-Dichloropropene	12.96	75	3626	0.3047 ug/L		82
63)	1,1,2-Trichloroethane	13.18	97	1409	0.2515 ug/L		98
65)	1,3-Dichloropropane	13.49	76	2584	0.2590 ug/L		93
66)	Tetrachloroethene	13.61	164	2678	0.3520 ug/L	#	75
67)	Dibromochloromethane	13.87	129	2126	0.2599 ug/L		79
68)	1,2-Dibromoethane	14.12	107	1895	0.3394 ug/L		91
69)	1-Chlorohexane	14.21	91	3835	0.3164 ug/L		99
70)	Chlorobenzene	14.62	112	7968	0.3328 ug/L		88
71)	1,1,1,2-Tetrachloroethane	14.67	131	2872	0.3096 ug/L		87
72)	Ethylbenzene	14.64	106	3844	0.2934 ug/L		81
73)	m-,p-Xylene	14.75	106	10447	0.6799 ug/L		96
74)	o-Xylene	15.31	106	4577	0.3047 ug/L		97
75)	Styrene	15.35	104	7545	0.3062 ug/L		95
76)	Bromoform	15.84	173	1301	0.2681 ug/L	#	51
77)	Isopropylbenzene	15.74	105	13119	0.3287 ug/L		90
79)	1,1,2,2-Tetrachloroethane	15.96	83	1714	0.2853 ug/L	#	85
83)	n-Propylbenzene	16.24	91	15676	0.3357 ug/L		92
84)	Bromobenzene	16.38	156	2859	0.2977 ug/L		90
85)	1,3,5-Trimethylbenzene	16.43	105	10873	0.3196 ug/L		99
86)	2-Chlorotoluene	16.52	91	11133	0.3415 ug/L		96
87)	4-Chlorotoluene	16.56	91	10305	0.3499 ug/L		97
88)	a-Methylstyrene	16.83	118	4090	0.2534 ug/L		86
89)	tert-Butylbenzene	16.90	134	1734	0.2606 ug/L		72
90)	1,2,4-Trimethylbenzene	16.95	105	10734	0.3069 ug/L		89
91)	sec-Butylbenzene	17.16	105	13749	0.3436 ug/L		97
92)	p-Isopropyltoluene	17.32	119	10847	0.3192 ug/L		95
93)	1,3-Dichlorobenzene	17.52	146	6023	0.3257 ug/L		99
94)	1,4-Dichlorobenzene	17.65	146	6152	0.3299 ug/L	#	60
95)	n-Butylbenzene	17.85	91	11161	0.3323 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	5711	0.3472 ug/L		92
98)	1,2,4-Trichlorobenzene	20.29	180	4203	0.3418 ug/L		91
99)	Hexachlorobutadiene	20.43	225	1894	0.3297 ug/L		84
100)	Naphthalene	20.65	128	6039	0.3306 ug/L		91
101)	1,2,3-Trichlorobenzene	20.96	180	3279	0.3161 ug/L		86

(#) = qualifier out of range (m) = manual integration
8M412220.D 8260WT.M Tue May 17 11:40:55 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2778	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.4537	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.2630	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	0.2592	0.0	100	0.03
6	T	Bromomethane	-1.0000	0.9911	0.0	100	0.00
7	T	Chloroethane	-1.0000	0.2113	0.0	100	0.00
8	T	Trichlorofluoromethane	-1.0000	0.1520	0.0	100	-0.02
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.90#
10	T	Isoprene	-1.0000	0.1987	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.13#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2087	0.0	100	0.00
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	-1.0000	0.2501	0.0	100	0.02
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.58#
16	T	Dimethyl Sulfide	-1.0000	0.2308	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.0000	0.0	0	-7.00#
19	T	Methylene Chloride	-1.0000	0.4028	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.3853	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.43#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2686	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	-1.0000	0.3170	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.3075	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.2259	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.3212	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.98#
31	T	2,2-Dichloropropane	-1.0000	0.3101	0.0	100	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.3128	0.0	100	0.00
33	C	Chloroform	0.3000	0.3101	-3.4	100	0.00
34		1-Bromopropane	-1.0000	0.1551	0.0	100	0.00
35	T	Bromochloromethane	-1.0000	0.2858	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	2.0617	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	-1.0000	0.2921	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.2644	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.2909	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	-1.0000	0.3194	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	-1.0000	0.2853	0.0	100	0.00
46	T	Benzene	-1.0000	0.3333	0.0	100	0.00
47	T	Trichloroethene	-1.0000	0.2670	0.0	100	-0.01
48	T	Methylcyclohexane	-1.0000	0.2871	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2836	0.0	100	0.00
50	T	Bromodichloromethane	-1.0000	0.2845	0.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	-1.0000	0.1570	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2616	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.05#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.3535	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2290	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0189	0.0	100	0.00
59	C	Toluene	-1.0000	0.3243	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2392	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3047	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.2515	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	-1.0000	0.2590	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.3520	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.2599	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.3394	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.3164	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.3328	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.3096	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.2934	0.0	100	-0.01
73	T	m-,p-Xylene	-1.0000	0.6799	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.3047	0.0	100	0.00
75	T	Styrene	-1.0000	0.3062	0.0	100	0.00
76	P	Bromoform	-1.0000	0.2681	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.3287	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2853	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0253	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.1103	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	-1.0000	0.3357	0.0	100	0.00
84	T	Bromobenzene	0.3000	0.2977	0.8	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.3196	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.3415	0.0	100	0.00
87	T	4-Chlorotoluene	-1.0000	0.3499	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2534	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.2606	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.3069	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3436	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.3192	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.3257	0.0	100	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.3299	-10.0	100	0.00
95	T	n-Butylbenzene	-1.0000	0.3323	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.3472	-15.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.3418	0.0	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.3297	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.3306	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.3161	-5.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412220.D 8260WT.M Sat May 14 18:03:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	801173	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	557498	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	293108	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.00%#	
80) p-Bromofluorobenzene	16.08	95	343	0.0286 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	5478	0.3262 ug/L	79
3) Chloromethane	3.63	50	3930	0.2484 ug/L	85
4) Vinyl Chloride	3.84	62	3512	0.3288 ug/L	97
5) 1,3-Butadiene	3.90	54	2479	0.2375 ug/L #	75
6) Bromomethane	4.73	94	1343	0.9497 ug/L	85
7) Chloroethane	4.90	64	2219	0.3174 ug/L #	43
8) Trichlorofluoromethane	5.36	101	6974	0.3289 ug/L #	93
10) Isoprene	5.94	67	4288	0.3952 ug/L #	62
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	3168	0.3263 ug/L #	40
14) 1,1-Dichloroethene	6.47	61	5431	0.2882 ug/L	92
16) Dimethyl Sulfide	6.74	62	1708	0.2453 ug/L	64
19) Methylene Chloride	7.24	84	3785	0.4239 ug/L #	43
20) Carbon Disulfide	7.29	76	12437	0.4565 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	6580	0.3336 ug/L #	76
23) trans-1,2-Dichloroethene	7.71	61	4990	0.2928 ug/L	96
24) n-Hexane	7.79	57	3110	0.2011 ug/L	99
26) Vinyl Acetate	8.31	43	2753	0.1566 ug/L	100
27) 1,1-Dichloroethane	8.32	63	5655	0.2774 ug/L #	92
31) 2,2-Dichloropropane	9.10	77	6035	0.3360 ug/L	82
32) cis-1,2-Dichloroethene	9.16	96	3837	0.3762 ug/L	74
33) Chloroform	9.37	83	7267	0.3842 ug/L	100
34) 1-Bromopropane	9.50	122	234	0.1456 ug/L #	1
35) Bromochloromethane	9.60	130	1674	0.3137 ug/L	62
36) Tetrahydrofuran	9.62	42	447	0.2146 ug/L #	41
38) 1,1,1-Trichloroethane	9.91	97	6304	0.3305 ug/L	90
39) Cyclohexane	9.94	56	4658	0.2238 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	5172	0.3768 ug/L	80
42) Carbon Tetrachloride	10.25	117	5692	0.3172 ug/L	95
45) 1,2-Dichloroethane	10.43	62	4443	0.2796 ug/L #	63
46) Benzene	10.46	78	14456	0.4134 ug/L #	77
47) Trichloroethene	11.21	130	3659	0.3626 ug/L	98
48) Methylcyclohexane	11.29	83	5025	0.3562 ug/L	84
49) 1,2-Dichloropropane	11.42	63	3060	0.3007 ug/L	98
50) Bromodichloromethane	11.73	83	4734	0.3343 ug/L #	93
52) Dibromomethane	11.82	93	1805	0.3767 ug/L	84
55) cis-1,3-Dichloropropene	12.36	75	5008	0.3514 ug/L	90
56) Dimethyl Disulfide	12.63	79	1921	0.2573 ug/L	85
59) Toluene	12.78	91	14742	0.4416 ug/L	98
60) Ethyl Methacrylate	12.90	69	2062	0.3292 ug/L	66
62) trans-1,3-Dichloropropene	12.96	75	3693	0.3171 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
63)	1,1,2-Trichloroethane	13.18	97	2326	0.4391 ug/L		70
65)	1,3-Dichloropropane	13.49	76	3163	0.3219 ug/L		88
66)	Tetrachloroethene	13.61	164	3164	0.4185 ug/L		93
67)	Dibromochloromethane	13.87	129	3113	0.3727 ug/L		86
68)	1,2-Dibromoethane	14.12	107	2076	0.3760 ug/L		90
69)	1-Chlorohexane	14.21	91	4746	0.4174 ug/L		80
70)	Chlorobenzene	14.62	112	9180	0.3960 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.66	131	3501	0.3876 ug/L		95
72)	Ethylbenzene	14.65	106	5348	0.4066 ug/L		84
73)	m-,p-Xylene	14.75	106	13269	0.8757 ug/L		89
74)	o-Xylene	15.31	106	6019	0.3943 ug/L		97
75)	Styrene	15.35	104	9370	0.3849 ug/L		95
76)	Bromoform	15.83	173	1198	0.2500 ug/L	#	76
77)	Isopropylbenzene	15.73	105	16528	0.4270 ug/L		92
79)	1,1,2,2-Tetrachloroethane	15.96	83	1999	0.3419 ug/L	#	83
83)	n-Propylbenzene	16.25	91	19410	0.4297 ug/L		95
84)	Bromobenzene	16.37	156	3319	0.3524 ug/L		75
85)	1,3,5-Trimethylbenzene	16.42	105	13794	0.4127 ug/L		95
86)	2-Chlorotoluene	16.51	91	13678	0.4729 ug/L		90
87)	4-Chlorotoluene	16.56	91	12572	0.4219 ug/L		98
88)	a-Methylstyrene	16.84	118	5739	0.3485 ug/L		96
89)	tert-Butylbenzene	16.90	134	2254	0.3403 ug/L		55
90)	1,2,4-Trimethylbenzene	16.95	105	13859	0.4051 ug/L		90
91)	sec-Butylbenzene	17.17	105	17612	0.4382 ug/L		90
92)	p-Isopropyltoluene	17.32	119	13616	0.3968 ug/L		90
93)	1,3-Dichlorobenzene	17.52	146	6961	0.3724 ug/L		86
94)	1,4-Dichlorobenzene	17.64	146	7149	0.3832 ug/L	#	1
95)	n-Butylbenzene	17.85	91	15223	0.4664 ug/L		91
96)	1,2-Dichlorobenzene	18.14	146	6129	0.3742 ug/L		92
98)	1,2,4-Trichlorobenzene	20.28	180	5035	0.3969 ug/L		97
99)	Hexachlorobutadiene	20.44	225	2420	0.4122 ug/L		83
100)	Naphthalene	20.65	128	7474	0.3874 ug/L	#	84
101)	1,2,3-Trichlorobenzene	20.96	180	4378	0.4056 ug/L	#	78

(#) = qualifier out of range (m) = manual integration
8M412221.D 8260WT.M Fri May 13 14:20:39 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

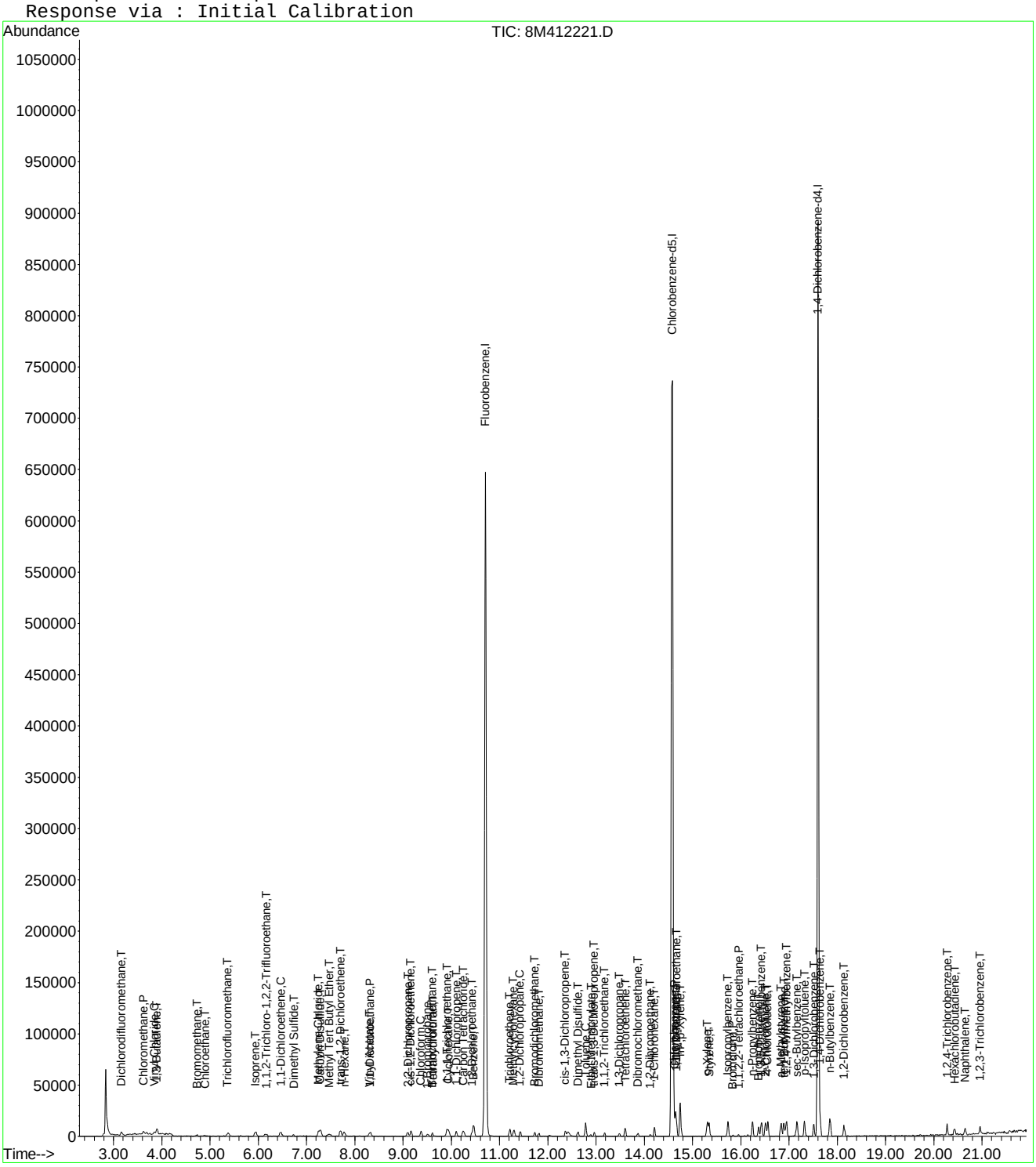

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	0.4000	0.4078	-2.0	100	0.00
3	P	Chloromethane	-1.0000	0.5012	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.3775	5.6	100	0.00
5	T	1,3-Butadiene	-1.0000	0.3178	0.0	100	0.02
6	T	Bromomethane	-1.0000	1.0253	0.0	100	0.00
7	T	Chloroethane	0.4000	0.4335	-8.4	100	0.00
8	T	Trichlorofluoromethane	0.4000	0.4029	-0.7	100	-0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.90#
10	T	Isoprene	0.4000	0.4079	-2.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.13#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3894	0.0	100	0.02
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	0.4000	0.4192	-4.8	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.58#
16	T	Dimethyl Sulfide	0.4000	0.3687	7.8	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.2179	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4591	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4587	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.43#
22	T	Methyl Tert Butyl Ether	-1.0000	0.3688	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.4193	-4.8	100	0.00
24	T	n-Hexane	-1.0000	0.3519	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.3241	0.0	100	0.02
27	P	1,1-Dichloroethane	0.4000	0.3826	4.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.98#
31	T	2,2-Dichloropropane	0.4000	0.3874	3.1	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.4172	-4.3	100	-0.01
33	C	Chloroform	0.4000	0.4164	-4.1	100	0.00
34		1-Bromopropane	-1.0000	0.1776	0.0	100	-0.01
35	T	Bromochloromethane	0.4000	0.3550	11.3	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.5125	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	0.4000	0.3803	4.9	100	0.00
39	T	Cyclohexane	-1.0000	0.4058	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4093	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	0.4000	0.3867	3.3	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	0.4000	0.3955	1.1	100	0.00
46	T	Benzene	0.4000	0.4393	-9.8	100	0.00
47	T	Trichloroethene	0.4000	0.4169	-4.2	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3768	0.0	100	-0.01
49	C	1,2-Dichloropropane	0.4000	0.4177	-4.4	100	0.00
50	T	Bromodichloromethane	0.4000	0.3676	8.1	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	0.4000	0.4162	-4.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1401	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.05#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3821	4.5	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2746	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0000	0.0	0	-12.68#
59	C	Toluene	0.4000	0.4259	-6.5	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3102	0.0	100	0.02
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3184	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.4259	-6.5	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	0.4000	0.3253	18.7	100	0.00
66	T	Tetrachloroethene	0.4000	0.4267	-6.7	100	0.00
67	T	Dibromochloromethane	0.4000	0.3904	2.4	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.3814	4.6	100	0.00
69	T	1-Chlorohexane	0.4000	0.4017	-0.4	100	0.00
70	P	Chlorobenzene	0.4000	0.3933	1.7	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3872	3.2	100	0.00
72	C	Ethylbenzene	0.4000	0.4188	-4.7	100	0.00
73	T	m-,p-Xylene	0.8000	0.8859	-10.7	100	0.00
74	T	o-Xylene	-1.0000	0.4110	0.0	100	0.00
75	T	Styrene	0.4000	0.3901	2.5	100	0.00
76	P	Bromoform	-1.0000	0.2533	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.4249	-6.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.3398	15.1	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0283	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.14#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	0.4000	0.4245	-6.1	100	0.00
84	T	Bromobenzene	0.4000	0.3529	11.8	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.4141	-3.5	100	0.00
86	T	2-Chlorotoluene	0.4000	0.4284	-7.1	100	0.00
87	T	4-Chlorotoluene	0.4000	0.4359	-9.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.3631	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3459	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	0.4000	0.4046	-1.2	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.4494	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4092	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.3844	3.9	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.3915	2.1	100	0.00
95	T	n-Butylbenzene	-1.0000	0.4628	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.3805	4.9	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	0.4000	0.4182	-4.5	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.4302	-7.5	100	0.00
100	T	Naphthalene	0.4000	0.4178	-4.5	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.4310	-7.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412221.D 8260WT.M Sat May 14 18:03:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	795577	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	547129	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	284579	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.65	111	3962	0.3966 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery	= 1.60%#	
43) 1,2-Dichloroethane-d4	10.31	65	3835	0.3356 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery	= 1.36%#	
58) Toluene-d8	12.68	98	14023	0.4957 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 2.00%#	
80) p-Bromofluorobenzene	16.08	95	6483	0.5565 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery	= 2.24%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	12402	0.7438 ug/L	97
3) Chloromethane	3.62	50	8415	0.5357 ug/L #	75
4) Vinyl Chloride	3.84	62	9412	0.8873 ug/L	89
5) 1,3-Butadiene	3.90	54	6974	0.6729 ug/L	81
6) Bromomethane	4.73	94	4114	1.3123 ug/L	92
7) Chloroethane	4.90	64	4983	0.7178 ug/L #	80
8) Trichlorofluoromethane	5.38	101	17133	0.8136 ug/L #	96
9) Diethyl ether	5.90	59	20707	3.2140 ug/L	84
10) Isoprene	5.94	67	11176	1.0373 ug/L	76
11) Acrolein	6.14	56	246	0.4300 ug/L #	15
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	8135	0.8438 ug/L	96
13) Acetone	6.24	43	413	0.2115 ug/L #	48
14) 1,1-Dichloroethene	6.46	61	12947	0.6919 ug/L	91
15) Tert-Butyl Alcohol	6.59	59	3316	7.3747 ug/L #	55
16) Dimethyl Sulfide	6.72	62	4505	0.6515 ug/L	79
18) Methyl acetate	7.00	43	2119	0.3630 ug/L #	66
19) Methylene Chloride	7.24	84	8723	0.9837 ug/L #	43
20) Carbon Disulfide	7.29	76	28246	1.0441 ug/L	100
21) Acrylonitrile	7.43	53	2164	0.8620 ug/L	76
22) Methyl Tert Butyl Ether	7.47	73	16998	0.8678 ug/L	84
23) trans-1,2-Dichloroethene	7.70	61	12571	0.7427 ug/L	100
24) n-Hexane	7.78	57	9382	0.6109 ug/L	82
25) Diisopropyl ether	8.12	45	95400	2.1939 ug/L #	91
26) Vinyl Acetate	8.30	43	6750	0.3867 ug/L #	89
27) 1,1-Dichloroethane	8.32	63	14721	0.7271 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	97972	3.2102 ug/L	88
29) 2-Butanone	8.88	43	380	0.1215 ug/L #	57
30) Propionitrile	8.99	54	1593	2.0138 ug/L #	56
31) 2,2-Dichloropropane	9.09	77	14691	0.8236 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	9482	0.9362 ug/L	72
33) Chloroform	9.37	83	18494	0.9845 ug/L	94
34) 1-Bromopropane	9.50	122	1092	0.6844 ug/L	80
35) Bromochloromethane	9.61	130	5234	0.9877 ug/L #	55
36) Tetrahydrofuran	9.63	42	5415	2.6185 ug/L #	68
38) 1,1,1-Trichloroethane	9.91	97	17074	0.9016 ug/L	92
39) Cyclohexane	9.94	56	11865	0.5740 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	13172	0.9663 ug/L	87
41) Tert-Amyl-Methyl ether	10.21	73	90255	4.6173 ug/L #	88
42) Carbon Tetrachloride	10.25	117	14515	0.8146 ug/L	95
45) 1,2-Dichloroethane	10.42	62	10675	0.6766 ug/L	85

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	10.47	78	34504	0.9938 ug/L		84
47)	Trichloroethene	11.21	130	8752	0.8735 ug/L		93
48)	Methylcyclohexane	11.30	83	13513	0.9646 ug/L		79
49)	1,2-Dichloropropane	11.43	63	7057	0.6982 ug/L	#	67
50)	Bromodichloromethane	11.73	83	12147	0.8638 ug/L		96
52)	Dibromomethane	11.81	93	4130	0.8681 ug/L		95
53)	2-Chloroethyl Vinyl Ether	12.03	63	2694	0.6366 ug/L		86
54)	4-Methyl-2-Pentanone	12.06	58	848	0.3671 ug/L	#	41
55)	cis-1,3-Dichloropropene	12.36	75	12521	0.8847 ug/L		97
56)	Dimethyl Disulfide	12.63	79	5799	0.7821 ug/L		96
59)	Toluene	12.79	91	37114	1.1328 ug/L		95
60)	Ethyl Methacrylate	12.88	69	5490	0.8930 ug/L		69
62)	trans-1,3-Dichloropropene	12.96	75	10328	0.9035 ug/L		92
63)	1,1,2-Trichloroethane	13.18	97	5274	1.0144 ug/L		93
64)	2-Hexanone	13.10	58	397	0.2127 ug/L	#	1
65)	1,3-Dichloropropane	13.49	76	9673	1.0032 ug/L		73
66)	Tetrachloroethene	13.61	164	7373	0.9937 ug/L		95
67)	Dibromochloromethane	13.87	129	7358	0.8977 ug/L		95
68)	1,2-Dibromoethane	14.13	107	5123	0.9454 ug/L		95
69)	1-Chlorohexane	14.21	91	12790	1.1461 ug/L		79
70)	Chlorobenzene	14.62	112	25662	1.1281 ug/L		89
71)	1,1,1,2-Tetrachloroethane	14.66	131	8722	0.9838 ug/L		94
72)	Ethylbenzene	14.65	106	13009	1.0078 ug/L		87
73)	m-,p-Xylene	14.75	106	30465	2.0486 ug/L		84
74)	o-Xylene	15.31	106	15133	1.0101 ug/L		84
75)	Styrene	15.35	104	23191	0.9707 ug/L		91
76)	Bromoform	15.84	173	3875	0.8240 ug/L		96
77)	Isopropylbenzene	15.74	105	41382	1.0895 ug/L		95
79)	1,1,2,2-Tetrachloroethane	15.95	83	5604	0.9873 ug/L	#	93
81)	1,2,3-Trichloropropane	16.15	110	1355	0.7428 ug/L	#	1
82)	trans-1,4-Dichloro-2-Buten	16.19	53	962	0.3479 ug/L	#	1
83)	n-Propylbenzene	16.25	91	48249	1.1002 ug/L		99
84)	Bromobenzene	16.37	156	9598	1.0497 ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	33355	1.0278 ug/L		96
86)	2-Chlorotoluene	16.51	91	33408	1.1895 ug/L		94
87)	4-Chlorotoluene	16.56	91	29548	1.0213 ug/L		95
88)	a-Methylstyrene	16.84	118	14414	0.9014 ug/L		91
89)	tert-Butylbenzene	16.89	134	6686	1.0398 ug/L		86
90)	1,2,4-Trimethylbenzene	16.95	105	36066	1.0857 ug/L		96
91)	sec-Butylbenzene	17.16	105	42128	1.0796 ug/L		96
92)	p-Isopropyltoluene	17.32	119	35424	1.0633 ug/L		94
93)	1,3-Dichlorobenzene	17.52	146	18409	1.0144 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	19031	1.0506 ug/L	#	62
95)	n-Butylbenzene	17.85	91	35772	1.1288 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	16104	1.0126 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.14	75	1262	1.0152 ug/L	#	53
98)	1,2,4-Trichlorobenzene	20.28	180	11494	0.9331 ug/L		98
99)	Hexachlorobutadiene	20.43	225	5421	0.9510 ug/L		98
100)	Naphthalene	20.65	128	16581	0.8853 ug/L		100
101)	1,2,3-Trichlorobenzene	20.96	180	10306	0.9835 ug/L		94

(#) = qualifier out of range (m) = manual integration
8M412222.D 8260WT.M Fri May 13 14:49:48 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

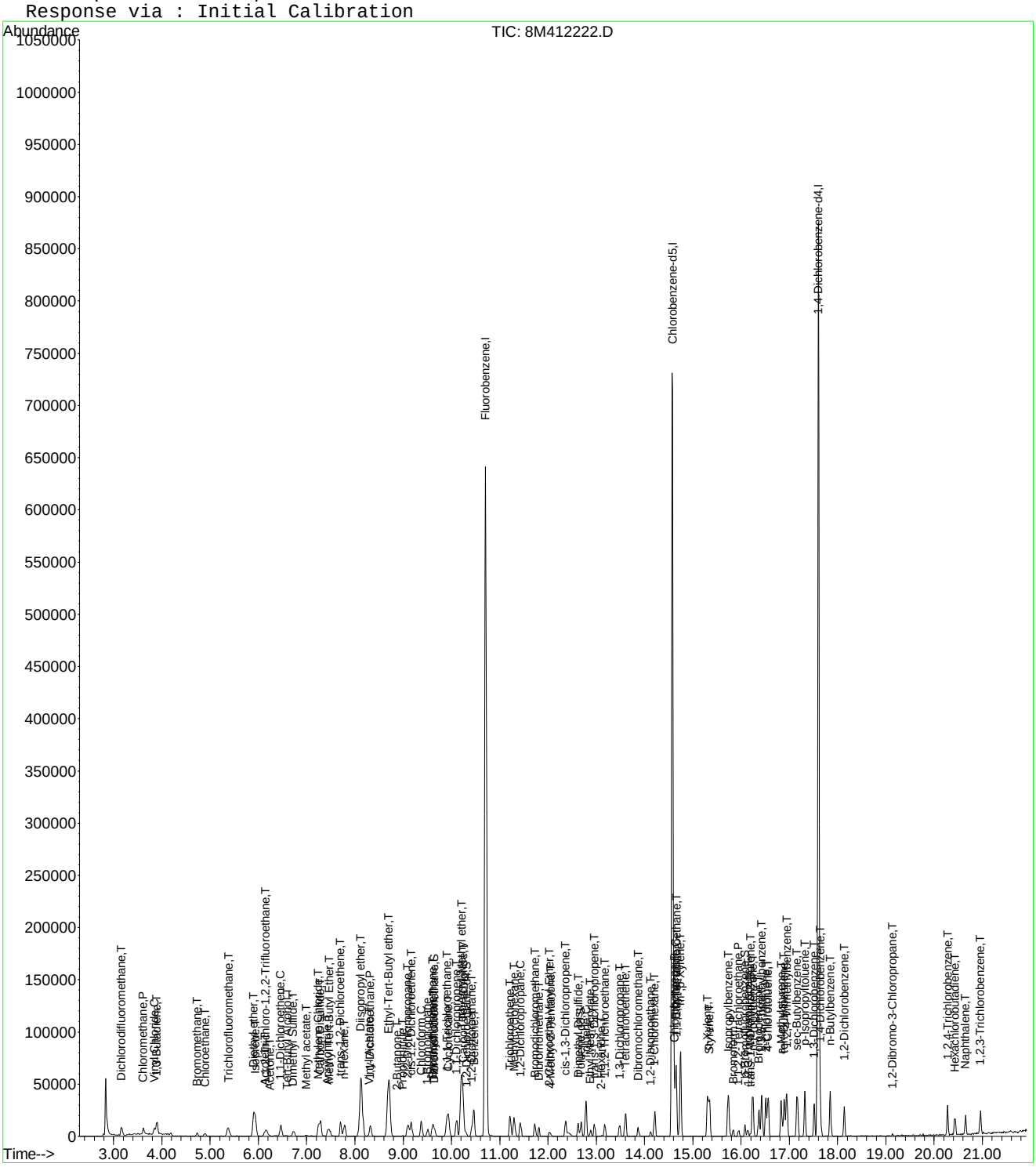

8M412222.D 8260WT.M Fri May 13 14:49:48 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:05:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9298	7.0	100	0.00
3	P	Chloromethane	1.0000	1.0808	-8.1	100	0.00
4	C	Vinyl Chloride	1.0000	1.0189	-1.9	100	0.00
5	T	1,3-Butadiene	-1.0000	0.9002	0.0	100	0.02
6	T	Bromomethane	1.0000	1.2082	-20.8	100	0.00
7	T	Chloroethane	1.0000	0.9803	2.0	100	0.00
8	T	Trichlorofluoromethane	1.0000	0.9968	0.3	100	0.00
9	T	Diethyl ether	5.0000	5.0462	-0.9	100	0.00
10	T	Isoprene	1.0000	1.0707	-7.1	100	0.00
11	T	Acrolein	-1.0000	0.6696	0.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0069	-0.7	100	0.00
13	T	Acetone	-1.0000	0.4614	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	1.0064	-0.6	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	11.5604	0.0	0	0.02
16	T	Dimethyl Sulfide	1.0000	0.9794	2.1	100	-0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.8758	0.0	100	0.00
19	T	Methylene Chloride	1.0000	1.0655	-6.5	100	0.00
20	T	Carbon Disulfide	1.0000	1.0492	-4.9	100	0.00
21	T	Acrylonitrile	2.5000	1.8633	25.5#	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9593	4.1	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	1.0636	-6.4	100	0.00
24	T	n-Hexane	-1.0000	1.0690	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	5.1784	-3.6	100	0.00
26	T	Vinyl Acetate	-1.0000	0.8002	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0029	-0.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.9635	0.7	100	0.00
29	T	2-Butanone	-1.0000	0.2889	0.0	100	0.00
30	T	Propionitrile	5.0000	4.1566	16.9	100	0.00
31	T	2,2-Dichloropropane	1.0000	0.9498	5.0	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	1.0383	-3.8	100	0.00
33	C	Chloroform	1.0000	1.0671	-6.7	100	0.00
34		1-Bromopropane	1.0000	0.8348	16.5	100	-0.01
35	T	Bromochloromethane	1.0000	1.1177	-11.8	100	0.00
36	T	Tetrahydrofuran	5.0000	6.2516	-25.0#	100	0.00
37	S	Dibromofluoromethane	0.5000	0.4635	7.3	100	-0.01
38	T	1,1,1-Trichloroethane	1.0000	1.0372	-3.7	100	0.00
39	T	Cyclohexane	1.0000	1.0411	-4.1	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0498	-5.0	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	5.0344	-0.7	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.9930	0.7	100	0.00
43	S	1,2-Dichloroethane-d4	0.5000	0.4184	16.3	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	1.0000	0.9570	4.3	100	0.00
46	T	Benzene	1.0000	1.0558	-5.6	100	0.00
47	T	Trichloroethene	1.0000	1.0041	-0.4	100	0.00
48	T	Methylcyclohexane	-1.0000	1.0205	0.0	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.9700	3.0	100	0.00
50	T	Bromodichloromethane	1.0000	0.9500	5.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	1.0000	0.9590	4.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.8616	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.6639	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:05:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9621	3.8	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.8348	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	0.5000	0.4897	2.1	100	0.00
59	C	Toluene	1.0000	1.0927	-9.3	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.8416	15.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	1.0000	0.9073	9.3	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.9840	1.6	100	0.00
64	T	2-Hexanone	-1.0000	0.3525	0.0	100	-0.01
65	T	1,3-Dichloropropane	1.0000	1.0137	-1.4	100	0.00
66	T	Tetrachloroethene	1.0000	1.0132	-1.3	100	0.00
67	T	Dibromochloromethane	1.0000	0.9402	6.0	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.9590	4.1	100	0.00
69	T	1-Chlorohexane	1.0000	1.1031	-10.3	100	0.00
70	P	Chlorobenzene	1.0000	1.1204	-12.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.9829	1.7	100	0.00
72	C	Ethylbenzene	1.0000	1.0381	-3.8	100	0.00
73	T	m-,p-Xylene	2.0000	2.0726	-3.6	100	0.00
74	T	o-Xylene	1.0000	1.0530	-5.3	100	0.00
75	T	Styrene	1.0000	0.9839	1.6	100	0.00
76	P	Bromoform	1.0000	0.8348	16.5	100	0.00
77	T	Isopropylbenzene	1.0000	1.0840	-8.4	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	0.9810	1.9	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5502	0.0	100	0.00
81	T	1,2,3-Trichloropropane	1.0000	0.7703	23.0	100	0.02
82	T	trans-1,4-Dichloro-2-Butene	1.0000	1.1443	-14.4	100	0.00
83	T	n-Propylbenzene	1.0000	1.0868	-8.7	100	0.00
84	T	Bromobenzene	1.0000	1.0510	-5.1	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	1.0314	-3.1	100	0.00
86	T	2-Chlorotoluene	1.0000	1.0778	-7.8	100	0.00
87	T	4-Chlorotoluene	1.0000	1.0553	-5.5	100	0.00
88	T	a-Methylstyrene	-1.0000	0.9394	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	1.0567	-5.7	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	1.0845	-8.5	100	0.00
91	T	sec-Butylbenzene	1.0000	1.1073	-10.7	100	0.00
92	T	p-Isopropyltoluene	1.0000	1.0966	-9.7	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0469	-4.7	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	1.0735	-7.3	100	0.00
95	T	n-Butylbenzene	1.0000	1.1201	-12.0	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0297	-3.0	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.1006	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	1.0000	0.9832	1.7	100	0.00
99	T	Hexachlorobutadiene	1.0000	0.9925	0.7	100	0.00
100	T	Naphthalene	1.0000	0.9547	4.5	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	1.0450	-4.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	782460	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.57	117	543252	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	286450	25.00	ug/L	0.01

System Monitoring Compounds						
37) Dibromofluoromethane	9.66	111	8161	0.8307	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.32%#		
43) 1,2-Dichloroethane-d4	10.30	65	9681	0.8613	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.44%#		
58) Toluene-d8	12.68	98	28135	1.0016	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.00%#		
80) p-Bromofluorobenzene	16.08	95	12079	1.0302	ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.12%#		

Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.16	85	24870	1.5166	ug/L	98
3) Chloromethane	3.62	50	16106	1.0425	ug/L	93
4) Vinyl Chloride	3.85	62	18562	1.7792	ug/L	94
5) 1,3-Butadiene	3.90	54	13617	1.3360	ug/L	92
6) Bromomethane	4.73	94	8329	1.8804	ug/L	94
7) Chloroethane	4.90	64	9562	1.4006	ug/L	86
8) Trichlorofluoromethane	5.39	101	34970	1.6885	ug/L	97
9) Diethyl ether	5.90	59	107986	17.0420	ug/L	79
10) Isoprene	5.93	67	20936	1.9757	ug/L	73
11) Acrolein	6.14	56	4864	8.6444	ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	16832	1.7751	ug/L	99
13) Acetone	6.23	43	1519	0.7908	ug/L #	48
14) 1,1-Dichloroethene	6.47	61	25394	1.3798	ug/L	89
15) Tert-Butyl Alcohol	6.58	59	14891	33.6725	ug/L	85
16) Dimethyl Sulfide	6.73	62	9489	1.3953	ug/L	79
17) Iodomethane	6.98	142	1211	1.3472	ug/L #	60
18) Methyl acetate	7.01	43	5064	0.8821	ug/L #	79
19) Methylene Chloride	7.25	84	16579	1.9010	ug/L	52
20) Carbon Disulfide	7.29	76	57693	2.1683	ug/L	98
21) Acrylonitrile	7.43	53	13848	5.6089	ug/L	93
22) Methyl Tert Butyl Ether	7.47	73	33991	1.7644	ug/L	84
23) trans-1,2-Dichloroethene	7.70	61	22786	1.3688	ug/L	88
24) n-Hexane	7.79	57	18282	1.2105	ug/L	84
25) Diisopropyl ether	8.12	45	475271	11.1128	ug/L #	92
26) Vinyl Acetate	8.29	43	15998	0.9318	ug/L	93
27) 1,1-Dichloroethane	8.32	63	30419	1.5277	ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	505010	16.8250	ug/L	89
29) 2-Butanone	8.90	43	2250	0.7313	ug/L #	57
30) Propionitrile	8.99	54	9373	12.0479	ug/L	86
31) 2,2-Dichloropropane	9.10	77	32521	1.8538	ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	18238	1.8309	ug/L	91
33) Chloroform	9.37	83	33543	1.8156	ug/L	99
34) 1-Bromopropane	9.52	122	2513	1.6014	ug/L	88
35) Bromochloromethane	9.60	130	9189	1.7632	ug/L	67
36) Tetrahydrofuran	9.63	42	22074	10.8529	ug/L #	66
38) 1,1,1-Trichloroethane	9.90	97	32268	1.7324	ug/L	96
39) Cyclohexane	9.93	56	23097	1.1362	ug/L #	65
40) 1,1-Dichloropropene	10.10	75	24988	1.8639	ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	459535	23.9029	ug/L	87
42) Carbon Tetrachloride	10.24	117	28935	1.6512	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412223.D 8260WT.M Fri May 13 15:18:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.42	62	22142	1.4270 ug/L #	83
46)	Benzene	10.46	78	67028	1.9629 ug/L	83
47)	Trichloroethene	11.21	130	17287	1.7543 ug/L	96
48)	Methylcyclohexane	11.30	83	26050	1.8907 ug/L	84
49)	1,2-Dichloropropane	11.42	63	14582	1.4670 ug/L	77
50)	Bromodichloromethane	11.73	83	25794	1.8651 ug/L	93
51)	1,4-Dioxane	11.73	88	1282	32.3515 ug/L	74
52)	Dibromomethane	11.81	93	8575	1.8325 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.02	63	6234	1.4979 ug/L	100
54)	4-Methyl-2-Pentanone	12.06	58	2139	0.9416 ug/L	84
55)	cis-1,3-Dichloropropene	12.37	75	24153	1.7353 ug/L	98
56)	Dimethyl Disulfide	12.62	79	12288	1.6851 ug/L	99
59)	Toluene	12.79	91	72944	2.2423 ug/L	95
60)	Ethyl Methacrylate	12.88	69	12716	2.0832 ug/L	71
62)	trans-1,3-Dichloropropene	12.96	75	22163	1.9527 ug/L	100
63)	1,1,2-Trichloroethane	13.18	97	10537	2.0412 ug/L	99
64)	2-Hexanone	13.13	58	2200	1.1873 ug/L #	65
65)	1,3-Dichloropropane	13.49	76	20212	2.1112 ug/L	72
66)	Tetrachloroethene	13.60	164	14595	1.9811 ug/L	90
67)	Dibromochloromethane	13.87	129	14698	1.8061 ug/L	98
68)	1,2-Dibromoethane	14.12	107	10152	1.8869 ug/L	95
69)	1-Chlorohexane	14.21	91	21960	1.9818 ug/L	89
70)	Chlorobenzene	14.62	112	47376	2.0974 ug/L	81
71)	1,1,1,2-Tetrachloroethane	14.66	131	17526	1.9910 ug/L	97
72)	Ethylbenzene	14.66	106	25628	1.9996 ug/L	92
73)	m-,p-Xylene	14.74	106	60087	4.0693 ug/L	84
74)	o-Xylene	15.31	106	28289	1.9017 ug/L	79
75)	Styrene	15.35	104	47644	2.0086 ug/L	92
76)	Bromoform	15.84	173	9145	1.9585 ug/L	95
77)	Isopropylbenzene	15.73	105	81301	2.1557 ug/L	97
79)	1,1,2,2-Tetrachloroethane	15.95	83	11538	2.0194 ug/L	95
81)	1,2,3-Trichloropropane	16.13	110	3630	1.9770 ug/L	94
82)	trans-1,4-Dichloro-2-Buten	16.19	53	2699	0.9698 ug/L #	36
83)	n-Propylbenzene	16.24	91	97233	2.2026 ug/L	96
84)	Bromobenzene	16.37	156	19174	2.0834 ug/L	92
85)	1,3,5-Trimethylbenzene	16.42	105	67395	2.0631 ug/L	97
86)	2-Chlorotoluene	16.51	91	67110	2.3739 ug/L	94
87)	4-Chlorotoluene	16.56	91	59154	2.0313 ug/L	92
88)	a-Methylstyrene	16.84	118	29415	1.8275 ug/L	86
89)	tert-Butylbenzene	16.89	134	12716	1.9647 ug/L	67
90)	1,2,4-Trimethylbenzene	16.95	105	71669	2.1435 ug/L	94
91)	sec-Butylbenzene	17.17	105	81038	2.0632 ug/L	98
92)	p-Isopropyltoluene	17.32	119	70170	2.0924 ug/L	92
93)	1,3-Dichlorobenzene	17.52	146	37289	2.0413 ug/L	93
94)	1,4-Dichlorobenzene	17.64	146	36528	2.0034 ug/L #	73
95)	n-Butylbenzene	17.85	91	67823	2.1262 ug/L	96
96)	1,2-Dichlorobenzene	18.14	146	32322	2.0190 ug/L	92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	1955	1.5624 ug/L	94
98)	1,2,4-Trichlorobenzene	20.28	180	23558	1.9000 ug/L	98
99)	Hexachlorobutadiene	20.43	225	11066	1.9286 ug/L	99
100)	Naphthalene	20.65	128	36066	1.9130 ug/L	99
101)	1,2,3-Trichlorobenzene	20.96	180	19765	1.8738 ug/L	95

(#) = qualifier out of range (m) = manual integration
8M412223.D 8260WT.M Fri May 13 15:18:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

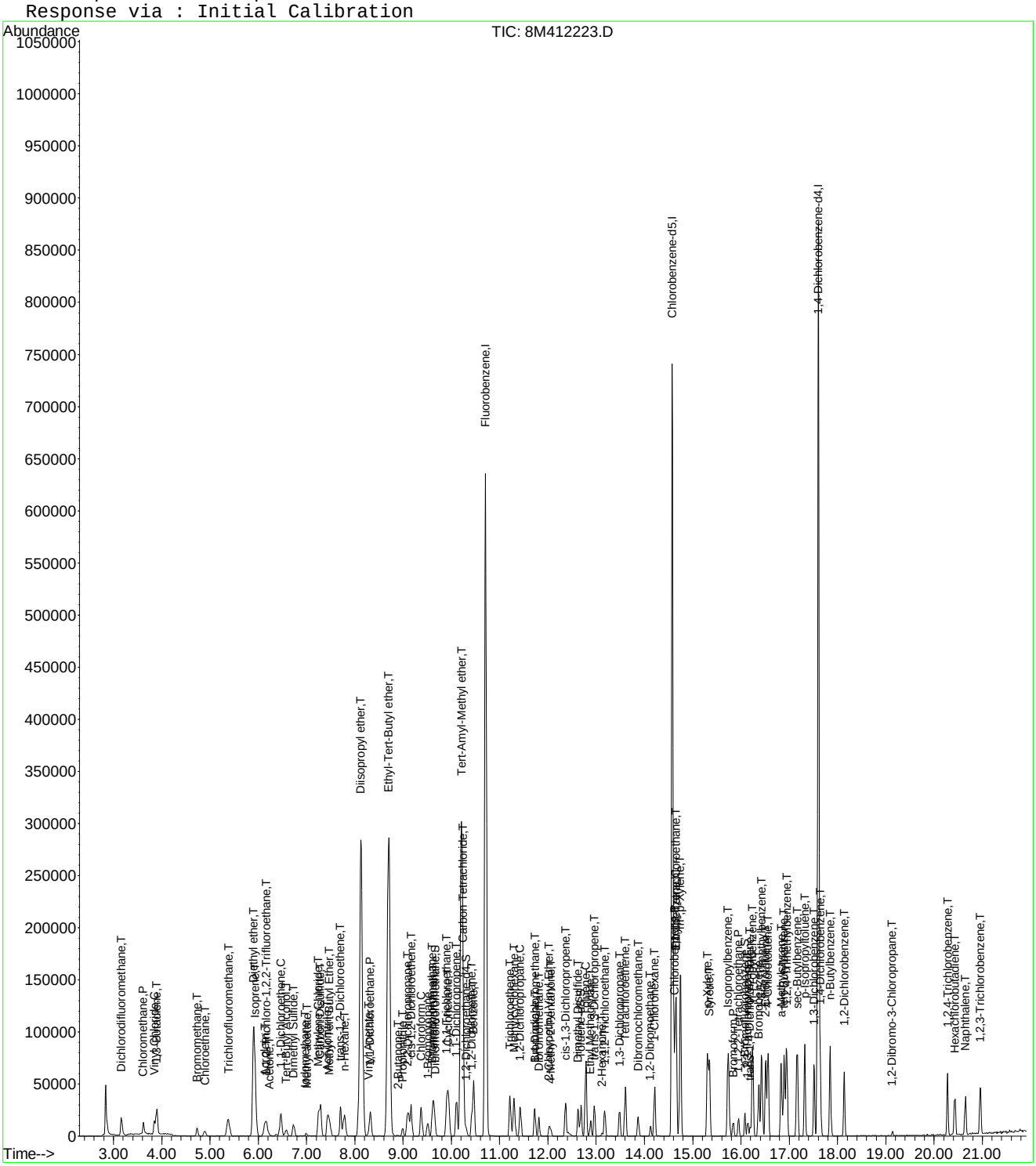

8M412223.D 8260WT.M Fri May 13 15:18:37 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.8958	5.2	100	0.00
3	P	Chloromethane	2.0000	2.1033	-5.2	100	0.00
4	C	Vinyl Chloride	2.0000	2.0431	-2.2	100	0.00
5	T	1,3-Butadiene	2.0000	1.7872	10.6	100	0.02
6	T	Bromomethane	2.0000	2.0126	-0.6	100	0.00
7	T	Chloroethane	2.0000	1.9127	4.4	100	0.00
8	T	Trichlorofluoromethane	2.0000	2.0686	-3.4	100	0.00
9	T	Diethyl ether	25.0000	26.7567	-7.0	100	0.00
10	T	Isoprene	2.0000	2.0394	-2.0	100	0.00
11	T	Acrolein	12.5000	13.4606	-7.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	2.1182	-5.9	100	0.02
13	T	Acetone	-1.0000	1.7255	0.0	100	-0.01
14	C	1,1-Dichloroethene	2.0000	2.0070	-0.4	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	52.7840	-5.6	100	0.00
16	T	Dimethyl Sulfide	2.0000	2.0975	-4.9	100	0.00
17	T	Iodomethane	2.0000	3.0680	-53.4#	100	0.00
18	T	Methyl acetate	-1.0000	2.1281	0.0	100	0.00
19	T	Methylene Chloride	2.0000	2.0590	-3.0	100	0.00
20	T	Carbon Disulfide	2.0000	2.1789	-8.9	100	0.00
21	T	Acrylonitrile	12.5000	12.1237	3.0	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.9505	2.5	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.9603	2.0	100	0.00
24	T	n-Hexane	-1.0000	2.1181	0.0	100	0.00
25	T	Diisopropyl ether	25.0000	26.2305	-4.9	100	0.00
26	T	Vinyl Acetate	2.0000	1.9284	3.6	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.1072	-5.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	26.0139	-4.1	100	0.00
29	T	2-Butanone	-1.0000	1.7396	0.0	100	0.02
30	T	Propionitrile	25.0000	24.8668	0.5	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1378	-6.9	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0306	-1.5	100	0.00
33	C	Chloroform	2.0000	1.9679	1.6	100	0.00
34		1-Bromopropane	2.0000	1.9533	2.3	100	0.00
35	T	Bromochloromethane	2.0000	1.9951	0.2	100	0.00
36	T	Tetrahydrofuran	25.0000	25.9117	-3.6	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9708	2.9	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.9930	0.3	100	0.00
39	T	Cyclohexane	2.0000	2.0605	-3.0	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0248	-1.2	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	26.0627	-4.3	100	0.00
42	T	Carbon Tetrachloride	2.0000	2.0126	-0.6	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0740	-7.4	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	2.0000	2.0183	-0.9	100	0.00
46	T	Benzene	2.0000	2.0854	-4.3	100	0.00
47	T	Trichloroethene	2.0000	2.0166	-0.8	100	0.00
48	T	Methylcyclohexane	-1.0000	2.0003	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0380	-1.9	100	0.00
50	T	Bromodichloromethane	2.0000	2.0511	-2.6	100	0.00
51	T	1,4-Dioxane	-1.0000	35.6688	0.0	100	0.02
52	T	Dibromomethane	2.0000	2.0246	-1.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	2.0271	-1.4	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.7027	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.8869	5.7	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.7986	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	0.9896	1.0	100	0.00
59	C	Toluene	2.0000	2.1628	-8.1	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.9633	1.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	2.0000	1.9609	2.0	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.9800	1.0	100	0.00
64	T	2-Hexanone	-1.0000	1.9672	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.1332	-6.7	100	0.00
66	T	Tetrachloroethene	2.0000	2.0198	-1.0	100	0.00
67	T	Dibromochloromethane	2.0000	1.8915	5.4	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.9141	4.3	100	0.00
69	T	1-Chlorohexane	2.0000	1.9075	4.6	100	0.00
70	P	Chlorobenzene	2.0000	2.0831	-4.2	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.9892	0.5	100	0.00
72	C	Ethylbenzene	2.0000	2.0596	-3.0	100	0.00
73	T	m-,p-Xylene	4.0000	4.1170	-2.9	100	0.00
74	T	o-Xylene	2.0000	1.9825	0.9	100	0.00
75	T	Styrene	2.0000	2.0358	-1.8	100	0.00
76	P	Bromoform	2.0000	1.9841	0.8	100	0.00
77	T	Isopropylbenzene	2.0000	2.1448	-7.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	2.0066	-0.3	100	0.00
80	S	p-Bromofluorobenzene	1.0000	1.0184	-1.8	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	2.0501	-2.5	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	2.0915	-4.6	100	0.00
83	T	n-Propylbenzene	2.0000	2.1757	-8.8	100	0.00
84	T	Bromobenzene	2.0000	2.0859	-4.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.0703	-3.5	100	0.00
86	T	2-Chlorotoluene	2.0000	2.1509	-7.5	100	0.00
87	T	4-Chlorotoluene	2.0000	2.0989	-4.9	100	0.00
88	T	a-Methylstyrene	-1.0000	1.9045	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	1.9967	0.2	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.1411	-7.1	100	0.00
91	T	sec-Butylbenzene	2.0000	2.1161	-5.8	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.1579	-7.9	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.1067	-5.3	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.0470	-2.4	100	0.00
95	T	n-Butylbenzene	2.0000	2.1098	-5.5	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0532	-2.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.6938	15.3	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	2.0021	-0.1	100	0.00
99	T	Hexachlorobutadiene	2.0000	2.0128	-0.6	100	0.00
100	T	Naphthalene	2.0000	2.0630	-3.2	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9910	0.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412223.D 8260WT.M Sat May 14 18:08:14 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	768397	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	534372	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	274234	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	19775	2.0496 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	8.20%#	
43) 1,2-Dichloroethane-d4	10.30	65	21200	1.9207 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	7.68%#	
58) Toluene-d8	12.68	98	65647	2.3758 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	9.52%#	
80) p-Bromofluorobenzene	16.08	95	26759	2.3838 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	9.52%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	55961	3.4750 ug/L	99
3) Chloromethane	3.62	50	34194	2.2538 ug/L	100
4) Vinyl Chloride	3.84	62	42506	4.1488 ug/L	99
5) 1,3-Butadiene	3.89	54	32006	3.1976 ug/L	93
6) Bromomethane	4.72	94	19582	3.4204 ug/L	94
7) Chloroethane	4.90	64	22000	3.2814 ug/L	84
8) Trichlorofluoromethane	5.37	101	77715	3.8212 ug/L	96
9) Diethyl ether	5.90	59	188516	30.2955 ug/L	79
10) Isoprene	5.94	67	44975	4.3218 ug/L	78
11) Acrolein	6.15	56	7712	13.9568 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	36867	3.9591 ug/L	99
13) Acetone	6.24	43	3578	1.8967 ug/L	85
14) 1,1-Dichloroethene	6.47	61	59405	3.2870 ug/L	95
15) Tert-Butyl Alcohol	6.58	59	27833	64.0897 ug/L #	82
16) Dimethyl Sulfide	6.73	62	21102	3.1597 ug/L	77
17) Iodomethane	6.99	142	3667	1.8964 ug/L	95
18) Methyl acetate	7.00	43	11500	2.0398 ug/L #	86
19) Methylene Chloride	7.24	84	37533	4.3823 ug/L	52
20) Carbon Disulfide	7.29	76	123060	4.7097 ug/L	100
21) Acrylonitrile	7.43	53	25653	10.5804 ug/L	99
22) Methyl Tert Butyl Ether	7.47	73	80005	4.2289 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	54124	3.3108 ug/L	94
24) n-Hexane	7.78	57	40758	2.7480 ug/L	82
25) Diisopropyl ether	8.12	45	841400	20.0337 ug/L #	91
26) Vinyl Acetate	8.30	43	37284	2.2113 ug/L #	90
27) 1,1-Dichloroethane	8.32	63	66711	3.4116 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	907423	30.7852 ug/L	89
29) 2-Butanone	8.89	43	5359	1.7738 ug/L #	82
30) Propionitrile	8.99	54	17933	23.4726 ug/L	100
31) 2,2-Dichloropropane	9.10	77	73150	4.2462 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	41036	4.1950 ug/L	89
33) Chloroform	9.37	83	78227	4.3116 ug/L	99
34) 1-Bromopropane	9.52	122	6162	3.9986 ug/L	99
35) Bromochloromethane	9.60	130	20988	4.1009 ug/L #	62
36) Tetrahydrofuran	9.62	42	38098	19.0742 ug/L #	62
38) 1,1,1-Trichloroethane	9.91	97	76152	4.1633 ug/L	97
39) Cyclohexane	9.94	56	51439	2.5767 ug/L #	66
40) 1,1-Dichloropropene	10.11	75	56645	4.3027 ug/L	93
41) Tert-Amyl-Methyl ether	10.21	73	821180	43.4958 ug/L	87
42) Carbon Tetrachloride	10.25	117	67831	3.9416 ug/L	96

(#) = qualifier out of range (m) = manual integration
8M412224.D 8260WT.M Fri May 13 15:47:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	51708	3.3934 ug/L		85
46)	Benzene	10.46	78	150204	4.4792 ug/L		86
47)	Trichloroethene	11.21	130	38500	3.9784 ug/L		94
48)	Methylcyclohexane	11.30	83	60897	4.5008 ug/L		81
49)	1,2-Dichloropropane	11.43	63	31773	3.2549 ug/L		77
50)	Bromodichloromethane	11.73	83	59127	4.3535 ug/L		94
51)	1,4-Dioxane	11.71	88	2719	69.8702 ug/L	#	62
52)	Dibromomethane	11.81	93	19711	4.2894 ug/L		96
53)	2-Chloroethyl Vinyl Ether	12.03	63	12946	3.1676 ug/L		98
54)	4-Methyl-2-Pentanone	12.05	58	5129	2.2991 ug/L	#	78
55)	cis-1,3-Dichloropropene	12.36	75	61169	4.4752 ug/L		94
56)	Dimethyl Disulfide	12.62	79	27966	3.9053 ug/L		98
59)	Toluene	12.78	91	161007	5.0316 ug/L		97
60)	Ethyl Methacrylate	12.88	69	28595	4.7624 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	49791	4.4599 ug/L		97
63)	1,1,2-Trichloroethane	13.18	97	23678	4.6631 ug/L		99
64)	2-Hexanone	13.11	58	4499	2.4685 ug/L	#	97
65)	1,3-Dichloropropane	13.49	76	44838	4.7614 ug/L		73
66)	Tetrachloroethene	13.60	164	32715	4.5144 ug/L		97
67)	Dibromochloromethane	13.87	129	35009	4.3734 ug/L		98
68)	1,2-Dibromoethane	14.13	107	24247	4.5815 ug/L		99
69)	1-Chlorohexane	14.21	91	53599	4.9176 ug/L		84
70)	Chlorobenzene	14.62	112	107618	4.8437 ug/L		95
71)	1,1,1,2-Tetrachloroethane	14.65	131	38120	4.4025 ug/L		96
72)	Ethylbenzene	14.65	106	56905	4.5138 ug/L		91
73)	m-,p-Xylene	14.75	106	137390	9.4592 ug/L		86
74)	o-Xylene	15.31	106	65650	4.4866 ug/L		85
75)	Styrene	15.35	104	111433	4.7758 ug/L		91
76)	Bromoform	15.84	173	19346	4.2121 ug/L		97
77)	Isopropylbenzene	15.73	105	182523	4.9200 ug/L		96
79)	1,1,2,2-Tetrachloroethane	15.95	83	26655	4.8730 ug/L		99
81)	1,2,3-Trichloropropane	16.13	110	8840	5.0289 ug/L		81
82)	trans-1,4-Dichloro-2-Buten	16.19	53	6584	2.4712 ug/L	#	51
83)	n-Propylbenzene	16.24	91	222196	5.2576 ug/L		96
84)	Bromobenzene	16.37	156	42665	4.8423 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	155714	4.9790 ug/L		93
86)	2-Chlorotoluene	16.52	91	148764	5.4968 ug/L		94
87)	4-Chlorotoluene	16.56	91	135679	4.8666 ug/L		94
88)	a-Methylstyrene	16.84	118	68945	4.4743 ug/L		91
89)	tert-Butylbenzene	16.89	134	29069	4.6914 ug/L		77
90)	1,2,4-Trimethylbenzene	16.95	105	161016	5.0301 ug/L		94
91)	sec-Butylbenzene	17.17	105	191273	5.0866 ug/L		94
92)	p-Isopropyltoluene	17.32	119	159232	4.9597 ug/L		93
93)	1,3-Dichlorobenzene	17.52	146	83896	4.7972 ug/L		95
94)	1,4-Dichlorobenzene	17.64	146	82462	4.7242 ug/L		86
95)	n-Butylbenzene	17.85	91	158787	5.1996 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	72524	4.7321 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	5629	4.6990 ug/L		76
98)	1,2,4-Trichlorobenzene	20.28	180	53855	4.5369 ug/L		98
99)	Hexachlorobutadiene	20.43	225	24504	4.4608 ug/L		93
100)	Naphthalene	20.65	128	79806	4.4217 ug/L		98
101)	1,2,3-Trichlorobenzene	20.96	180	44150	4.3720 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412224.D 8260WT.M Fri May 13 15:47:44 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

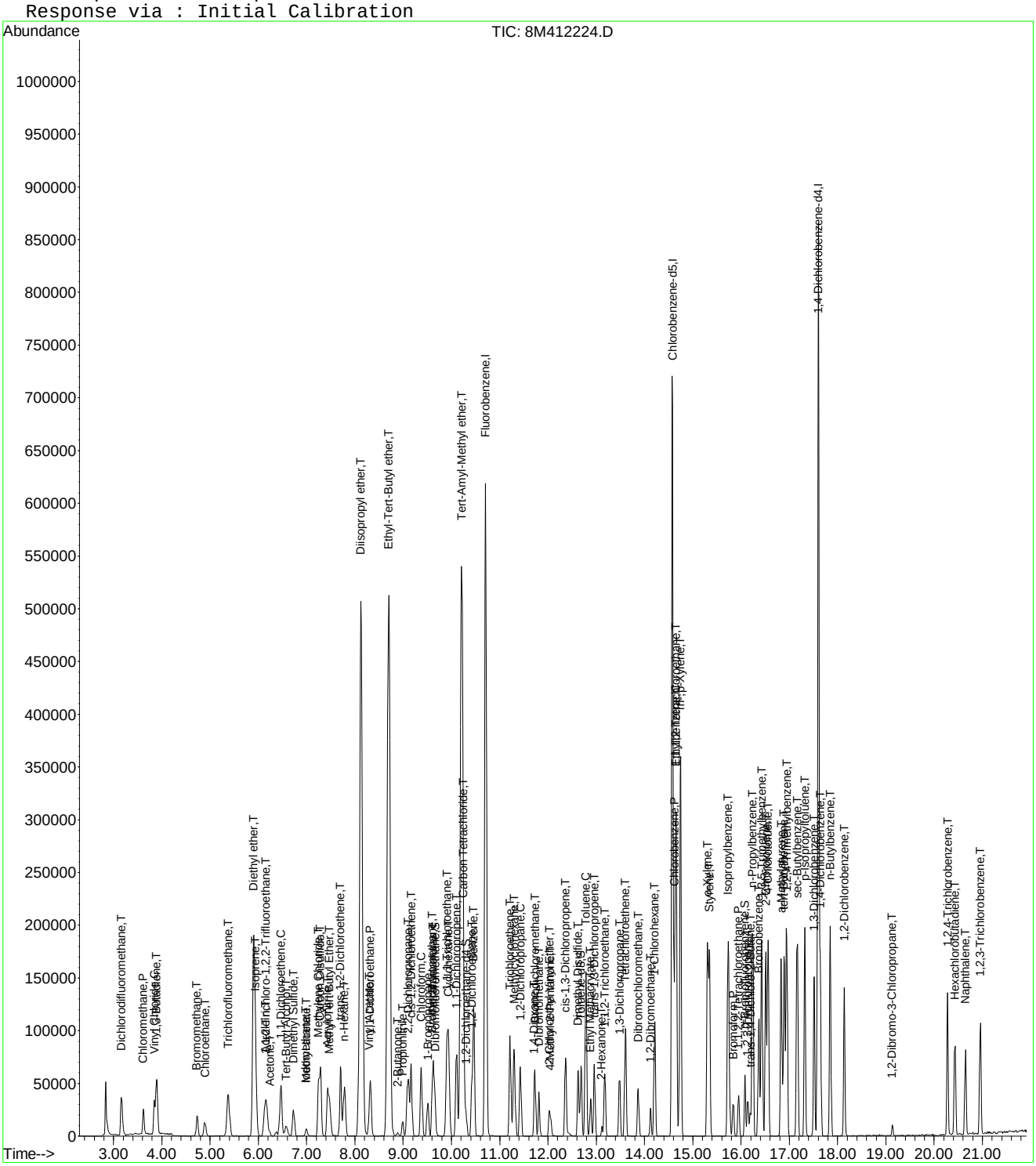

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.3438	13.1	100	0.00
3	P	Chloromethane	5.0000	4.5471	9.1	100	0.00
4	C	Vinyl Chloride	5.0000	4.7641	4.7	100	0.00
5	T	1,3-Butadiene	5.0000	4.2777	14.4	100	0.00
6	T	Bromomethane	5.0000	4.1880	16.2	100	-0.01
7	T	Chloroethane	5.0000	4.4813	10.4	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.6812	6.4	100	0.00
9	T	Diethyl ether	50.0000	47.5652	4.9	100	0.00
10	T	Isoprene	5.0000	4.4611	10.8	100	0.00
11	T	Acrolein	25.0000	21.7328	13.1	100	0.02
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.7244	5.5	100	0.00
13	T	Acetone	5.0000	4.1387	17.2	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.7810	4.4	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	100.4650	-0.5	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.7499	5.0	100	0.00
17	T	Iodomethane	5.0000	3.7634	24.7	100	0.00
18	T	Methyl acetate	5.0000	4.9211	1.6	100	0.00
19	T	Methylene Chloride	5.0000	4.7467	5.1	100	0.00
20	T	Carbon Disulfide	5.0000	4.7328	5.3	100	0.00
21	T	Acrylonitrile	25.0000	22.8698	8.5	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.6750	6.5	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.7415	5.2	100	0.00
24	T	n-Hexane	5.0000	4.8084	3.8	100	0.00
25	T	Diisopropyl ether	50.0000	47.2872	5.4	100	0.00
26	T	Vinyl Acetate	5.0000	4.5766	8.5	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.7058	5.9	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	47.5984	4.8	100	0.00
29	T	2-Butanone	5.0000	4.2191	15.6	100	0.00
30	T	Propionitrile	50.0000	48.4475	3.1	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.8965	2.1	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.6525	7.0	100	0.00
33	C	Chloroform	5.0000	4.6735	6.5	100	0.00
34		1-Bromopropane	5.0000	4.8774	2.5	100	0.00
35	T	Bromochloromethane	5.0000	4.6403	7.2	100	0.00
36	T	Tetrahydrofuran	50.0000	45.5400	8.9	100	-0.01
37	S	Dibromofluoromethane	2.5000	2.3953	4.2	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.7896	4.2	100	0.00
39	T	Cyclohexane	5.0000	4.6730	6.5	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.6741	6.5	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	47.6211	4.8	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.8044	3.9	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.3949	4.2	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	5.0000	4.7996	4.0	100	0.00
46	T	Benzene	5.0000	4.7588	4.8	100	0.00
47	T	Trichloroethene	5.0000	4.5733	8.5	100	0.00
48	T	Methylcyclohexane	5.0000	4.7616	4.8	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.5219	9.6	100	0.00
50	T	Bromodichloromethane	5.0000	4.7878	4.2	100	0.00
51	T	1,4-Dioxane	100.0000	77.0346	23.0	100	0.00
52	T	Dibromomethane	5.0000	4.7390	5.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.2867	14.3	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.1576	16.8	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.8662	2.7	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.1683	16.6	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.3473	6.1	100	0.00
59	C	Toluene	5.0000	4.8533	2.9	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.4883	10.2	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	5.0000	4.4786	10.4	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.5231	9.5	100	0.00
64	T	2-Hexanone	5.0000	4.0898	18.2	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.8109	3.8	100	0.00
66	T	Tetrachloroethene	5.0000	4.6028	7.9	100	0.00
67	T	Dibromochloromethane	5.0000	4.5802	8.4	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.6475	7.1	100	0.00
69	T	1-Chlorohexane	5.0000	4.7331	5.3	100	0.00
70	P	Chlorobenzene	5.0000	4.8107	3.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.3984	12.0	100	0.00
72	C	Ethylbenzene	5.0000	4.6492	7.0	100	0.00
73	T	m-,p-Xylene	10.0000	9.5700	4.3	100	0.00
74	T	o-Xylene	5.0000	4.6773	6.5	100	0.00
75	T	Styrene	5.0000	4.8405	3.2	100	0.00
76	P	Bromoform	5.0000	4.2672	14.7	100	0.00
77	T	Isopropylbenzene	5.0000	4.8951	2.1	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	4.8422	3.2	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.3565	5.7	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.2150	-4.3	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.3781	12.4	100	0.00
83	T	n-Propylbenzene	5.0000	5.1935	-3.9	100	0.00
84	T	Bromobenzene	5.0000	4.8483	3.0	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	4.9964	0.1	100	0.00
86	T	2-Chlorotoluene	5.0000	4.9803	0.4	100	0.00
87	T	4-Chlorotoluene	5.0000	5.0286	-0.6	100	0.00
88	T	a-Methylstyrene	5.0000	4.6629	6.7	100	0.00
89	T	tert-Butylbenzene	5.0000	4.7677	4.6	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.0245	-0.5	100	0.00
91	T	sec-Butylbenzene	5.0000	5.2170	-4.3	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.1150	-2.3	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	4.9511	1.0	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	4.8270	3.5	100	0.00
95	T	n-Butylbenzene	5.0000	5.1595	-3.2	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	4.8122	3.8	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	5.0942	-1.9	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.7808	4.4	100	0.00
99	T	Hexachlorobutadiene	5.0000	4.6555	6.9	100	0.00
100	T	Naphthalene	5.0000	4.7684	4.6	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.6455	7.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412224.D 8260WT.M Sat May 14 18:08:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	770027	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	531490	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	283594	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	86295	10.9569 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 43.84%#		
43) 1,2-Dichloroethane-d4	10.30	65	96239	11.3450 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 45.36%#		
58) Toluene-d8	12.68	98	294491	10.9223 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 43.68%#		
80) p-Bromofluorobenzene	16.08	95	121459	10.5490 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 42.20%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	288235	23.7135 ug/L	99
3) Chloromethane	3.62	50	155712	20.3784 ug/L	98
4) Vinyl Chloride	3.84	62	184250	20.9368 ug/L	95
5) 1,3-Butadiene	3.89	54	149348	22.7750 ug/L	96
6) Bromomethane	4.73	94	100098	25.0143 ug/L	99
7) Chloroethane	4.89	64	100876	20.9404 ug/L	91
8) Trichlorofluoromethane	5.37	101	351299	21.2512 ug/L	98
9) Diethyl ether	5.90	59	324317	80.8265 ug/L	78
10) Isoprene	5.94	67	205842	20.3622 ug/L	77
11) Acrolein	6.14	56	12049	34.8201 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	159996	20.3859 ug/L	97
13) Acetone	6.25	43	18459	25.7405 ug/L	98
14) 1,1-Dichloroethene	6.47	61	256241	20.5065 ug/L	92
15) Tert-Butyl Alcohol	6.57	59	43922	153.5712 ug/L	93
16) Dimethyl Sulfide	6.73	62	89456	20.6087 ug/L	83
17) Iodomethane	6.99	142	40622	61.0474 ug/L	93
18) Methyl acetate	7.00	43	46598	20.2171 ug/L #	85
19) Methylene Chloride	7.25	84	161897	20.1338 ug/L	52
20) Carbon Disulfide	7.30	76	538090	20.0802 ug/L	98
21) Acrylonitrile	7.43	53	46305	46.9889 ug/L	100
22) Methyl Tert Butyl Ether	7.47	73	361116	22.0137 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	234754	20.3175 ug/L	90
24) n-Hexane	7.78	57	172498	21.1165 ug/L	84
25) Diisopropyl ether	8.12	45	1447822	80.3755 ug/L #	91
26) Vinyl Acetate	8.30	43	166501	21.7017 ug/L #	88
27) 1,1-Dichloroethane	8.33	63	300321	21.3849 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	1579265	83.0733 ug/L	89
29) 2-Butanone	8.88	43	25681	23.9099 ug/L	87
30) Propionitrile	8.98	54	30953	89.5673 ug/L	94
31) 2,2-Dichloropropane	9.10	77	309575	20.8527 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	181973	20.4488 ug/L	89
33) Chloroform	9.37	83	348925	20.5535 ug/L	96
34) 1-Bromopropane	9.52	122	26723	22.7206 ug/L	96
35) Bromochloromethane	9.61	130	94952	21.3181 ug/L	65
36) Tetrahydrofuran	9.63	42	63066	70.5772 ug/L #	57
38) 1,1,1-Trichloroethane	9.91	97	335486	21.3640 ug/L	99
39) Cyclohexane	9.94	56	221040	19.9984 ug/L #	64
40) 1,1-Dichloropropene	10.11	75	248373	20.4717 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1418183	81.7883 ug/L	88
42) Carbon Tetrachloride	10.25	117	296471	21.3449 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412225.D 8260WT.M Fri May 13 16:16:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	228665	21.6403	ug/L		85
46)	Benzene	10.46	78	668449	20.3769	ug/L		86
47)	Trichloroethene	11.21	130	174107	20.7980	ug/L		96
48)	Methylcyclohexane	11.29	83	262275	21.4887	ug/L		82
49)	1,2-Dichloropropane	11.43	63	146868	21.1883	ug/L	#	72
50)	Bromodichloromethane	11.73	83	262192	21.9986	ug/L		98
51)	1,4-Dioxane	11.71	88	5351	196.3837	ug/L		76
52)	Dibromomethane	11.81	93	86951	21.0734	ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	63586	22.4600	ug/L		91
54)	4-Methyl-2-Pentanone	12.05	58	25754	25.0531	ug/L	#	73
55)	cis-1,3-Dichloropropene	12.36	75	265439	21.9841	ug/L		99
56)	Dimethyl Disulfide	12.63	79	134192	23.9412	ug/L		100
59)	Toluene	12.78	91	700473	20.1722	ug/L		99
60)	Ethyl Methacrylate	12.88	69	133361	23.2046	ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	238585	23.2548	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	107901	21.0216	ug/L		99
64)	2-Hexanone	13.11	58	22561	25.2093	ug/L	#	85
65)	1,3-Dichloropropane	13.49	76	198804	22.2491	ug/L		74
66)	Tetrachloroethene	13.60	164	141791	20.0055	ug/L		94
67)	Dibromochloromethane	13.87	129	158465	22.0695	ug/L		99
68)	1,2-Dibromoethane	14.13	107	110085	22.3366	ug/L		100
69)	1-Chlorohexane	14.21	91	229753	20.3591	ug/L		83
70)	Chlorobenzene	14.62	112	467492	20.4613	ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.65	131	183079	22.2095	ug/L		96
72)	Ethylbenzene	14.65	106	249016	20.2289	ug/L		90
73)	m-,p-Xylene	14.75	106	606381	41.1308	ug/L		88
74)	o-Xylene	15.30	106	294106	21.2106	ug/L		90
75)	Styrene	15.35	104	492781	21.8207	ug/L		89
76)	Bromoform	15.83	173	95911	23.8070	ug/L		99
77)	Isopropylbenzene	15.73	105	806678	20.7280	ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	123253	22.7779	ug/L		95
81)	1,2,3-Trichloropropane	16.14	110	36712	22.1354	ug/L		94
82)	trans-1,4-Dichloro-2-Buten	16.18	53	33702	27.6513	ug/L	#	56
83)	n-Propylbenzene	16.24	91	962196	20.3511	ug/L		97
84)	Bromobenzene	16.37	156	190566	21.2033	ug/L		94
85)	1,3,5-Trimethylbenzene	16.43	105	692633	20.9615	ug/L		94
86)	2-Chlorotoluene	16.51	91	649077	19.9155	ug/L		96
87)	4-Chlorotoluene	16.56	91	595446	20.3225	ug/L		95
88)	a-Methylstyrene	16.83	118	318960	22.3680	ug/L		92
89)	tert-Butylbenzene	16.90	134	129440	20.4705	ug/L		83
90)	1,2,4-Trimethylbenzene	16.95	105	707749	20.4783	ug/L		94
91)	sec-Butylbenzene	17.17	105	818359	20.1802	ug/L		97
92)	p-Isopropyltoluene	17.32	119	677859	19.7492	ug/L		96
93)	1,3-Dichlorobenzene	17.52	146	364065	20.5126	ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	363066	19.9874	ug/L		92
95)	n-Butylbenzene	17.85	91	681055	20.0187	ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	318612	19.9358	ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	23070	21.6419	ug/L		93
98)	1,2,4-Trichlorobenzene	20.28	180	242455	20.8863	ug/L		98
99)	Hexachlorobutadiene	20.43	225	110384	20.2523	ug/L		96
100)	Naphthalene	20.65	128	369849	21.4526	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	198876	19.8356	ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration

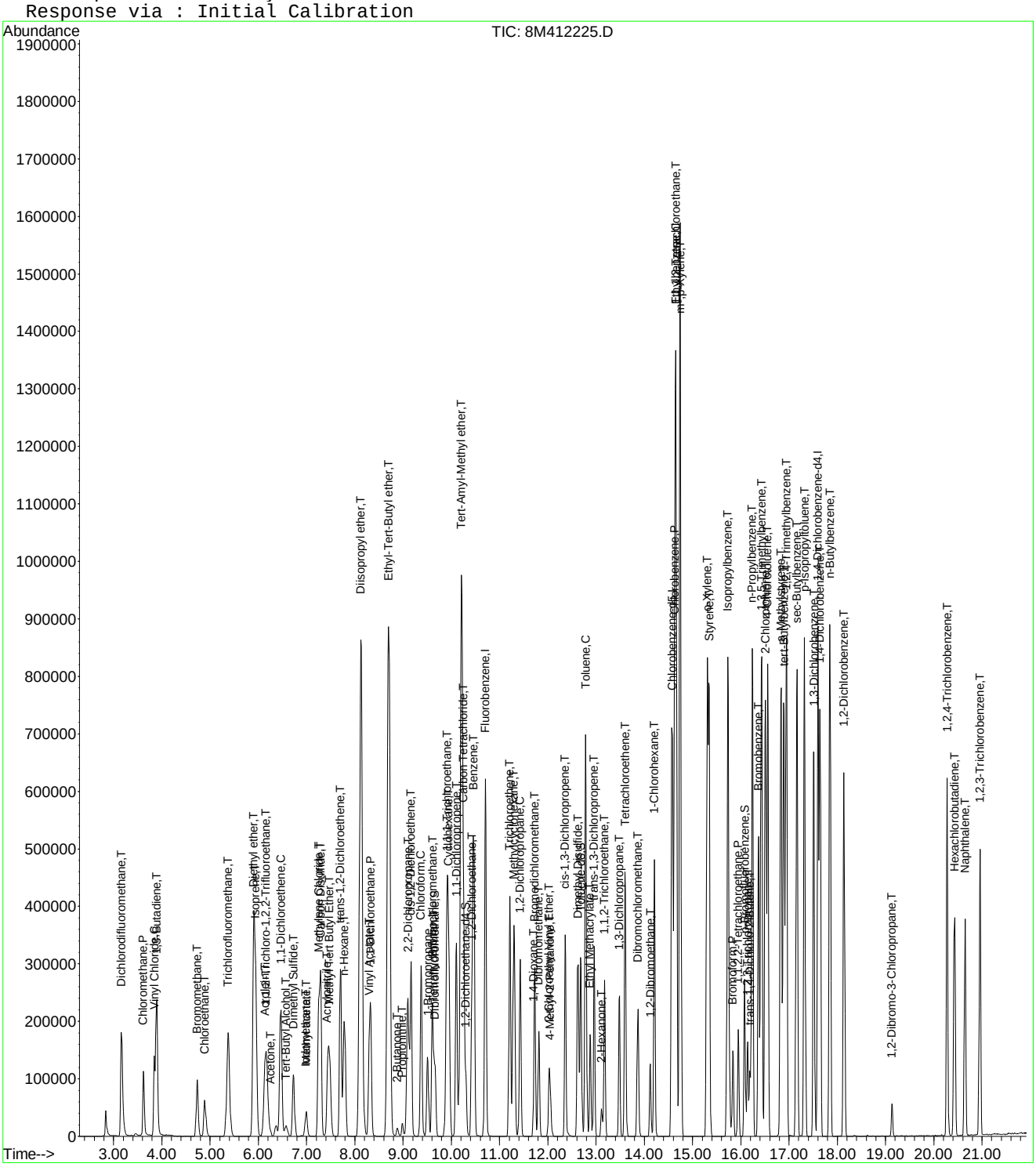

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45:30 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	778260	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	539116	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	288225	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	211053	26.5139 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.04%		
43) 1,2-Dichloroethane-d4	10.31	65	229348	26.7504 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.00%		
58) Toluene-d8	12.68	98	718491	26.2709 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.08%		
80) p-Bromofluorobenzene	16.07	95	292755	25.0180 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.08%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	682745	55.5761 ug/L	100
3) Chloromethane	3.62	50	372858	48.2806 ug/L	98
4) Vinyl Chloride	3.85	62	453905	51.0328 ug/L	96
5) 1,3-Butadiene	3.88	54	390501	58.9199 ug/L	99
6) Bromomethane	4.74	94	260493	64.4080 ug/L	97
7) Chloroethane	4.89	64	244336	50.1840 ug/L	91
8) Trichlorofluoromethane	5.38	101	837676	50.1376 ug/L	99
9) Diethyl ether	5.90	59	389327	96.0019 ug/L	79
10) Isoprene	5.94	67	498060	48.7477 ug/L	76
11) Acrolein	6.13	56	17644	50.4496 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	387643	48.8691 ug/L	97
13) Acetone	6.25	43	45901	63.3305 ug/L	97
14) 1,1-Dichloroethene	6.46	61	619744	49.0724 ug/L	94
15) Tert-Butyl Alcohol	6.58	59	53656	185.6211 ug/L	91
16) Dimethyl Sulfide	6.73	62	221107	50.3993 ug/L	82
17) Iodomethane	6.98	142	157872	234.7428 ug/L	94
18) Methyl acetate	7.00	43	114759	49.2629 ug/L #	81
19) Methylene Chloride	7.25	84	389653	47.9453 ug/L	52
20) Carbon Disulfide	7.29	76	1269941	46.8897 ug/L	99
21) Acrylonitrile	7.43	53	59882	60.1236 ug/L	97
22) Methyl Tert Butyl Ether	7.46	73	901668	54.3843 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	571507	48.9396 ug/L	93
24) n-Hexane	7.79	57	419656	50.8290 ug/L	83
25) Diisopropyl ether	8.13	45	1781012	97.8265 ug/L #	90
26) Vinyl Acetate	8.29	43	428708	55.2866 ug/L #	89
27) 1,1-Dichloroethane	8.32	63	722574	50.9078 ug/L	96
28) Ethyl-Tert-Butyl ether	8.71	59	1955100	101.7552 ug/L	89
29) 2-Butanone	8.88	43	66579	61.3316 ug/L #	82
30) Propionitrile	8.98	54	38235	109.4684 ug/L	95
31) 2,2-Dichloropropane	9.10	77	768496	51.2175 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	439590	48.8754 ug/L	91
33) Chloroform	9.38	83	844564	49.2230 ug/L	97
34) 1-Bromopropane	9.51	122	63442	53.3693 ug/L	99
35) Bromochloromethane	9.60	130	230119	51.1185 ug/L	66
36) Tetrahydrofuran	9.64	42	79437	87.9575 ug/L #	62
38) 1,1,1-Trichloroethane	9.90	97	817606	51.5150 ug/L	99
39) Cyclohexane	9.93	56	535882	47.9707 ug/L #	65
40) 1,1-Dichloropropene	10.10	75	615439	50.1899 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1769381	100.9628 ug/L	88
42) Carbon Tetrachloride	10.24	117	724058	51.5782 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412226.D 8260WT.M Fri May 13 16:45:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45:30 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	561107	52.5401 ug/L		85
46)	Benzene	10.46	78	1607407	48.4816 ug/L		86
47)	Trichloroethene	11.22	130	424998	50.2312 ug/L		96
48)	Methylcyclohexane	11.30	83	635339	51.5040 ug/L		83
49)	1,2-Dichloropropane	11.42	63	351908	50.2320 ug/L	#	71
50)	Bromodichloromethane	11.72	83	654943	54.3701 ug/L		97
51)	1,4-Dioxane	11.71	88	7573	274.9918 ug/L		73
52)	Dibromomethane	11.82	93	209167	50.1574 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	162319	56.7281 ug/L		93
54)	4-Methyl-2-Pentanone	12.05	58	64928	62.4928 ug/L		80
55)	cis-1,3-Dichloropropene	12.36	75	666861	54.6463 ug/L		98
56)	Dimethyl Disulfide	12.62	79	343446	60.6260 ug/L		96
59)	Toluene	12.79	91	1676069	47.5846 ug/L		100
60)	Ethyl Methacrylate	12.88	69	338996	58.1503 ug/L		69
62)	trans-1,3-Dichloropropene	12.96	75	594749	57.1499 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	268432	51.5570 ug/L		98
64)	2-Hexanone	13.12	58	56859	62.6347 ug/L	#	83
65)	1,3-Dichloropropane	13.48	76	489226	53.9770 ug/L		75
66)	Tetrachloroethene	13.60	164	350332	48.7296 ug/L		95
67)	Dibromochloromethane	13.86	129	401149	55.0780 ug/L		100
68)	1,2-Dibromoethane	14.12	107	273580	54.7252 ug/L		99
69)	1-Chlorohexane	14.21	91	560883	48.9984 ug/L		82
70)	Chlorobenzene	14.63	112	1117812	48.2326 ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	446892	53.4462 ug/L		99
72)	Ethylbenzene	14.66	106	603074	48.2980 ug/L		91
73)	m-,p-Xylene	14.74	106	1443780	96.5463 ug/L		90
74)	o-Xylene	15.31	106	709244	50.4265 ug/L		90
75)	Styrene	15.34	104	1212099	52.9133 ug/L		91
76)	Bromoform	15.84	173	238354	58.3272 ug/L		100
77)	Isopropylbenzene	15.73	105	1919993	48.6372 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	294266	53.5083 ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	89279	52.9656 ug/L		93
82)	trans-1,4-Dichloro-2-Buten	16.19	53	86829	70.0956 ug/L	#	53
83)	n-Propylbenzene	16.24	91	2278994	47.4277 ug/L		98
84)	Bromobenzene	16.37	156	459959	50.3549 ug/L		93
85)	1,3,5-Trimethylbenzene	16.43	105	1661486	49.4745 ug/L		95
86)	2-Chlorotoluene	16.51	91	1611031	48.6367 ug/L		97
87)	4-Chlorotoluene	16.56	91	1341051	45.0344 ug/L		95
88)	a-Methylstyrene	16.83	118	772611	53.3111 ug/L		90
89)	tert-Butylbenzene	16.89	134	307503	47.8493 ug/L		81
90)	1,2,4-Trimethylbenzene	16.94	105	1679809	47.8234 ug/L		95
91)	sec-Butylbenzene	17.16	105	1925411	46.7166 ug/L		97
92)	p-Isopropyltoluene	17.32	119	1621383	46.4795 ug/L		95
93)	1,3-Dichlorobenzene	17.51	146	882656	48.9327 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	871210	47.1909 ug/L		92
95)	n-Butylbenzene	17.85	91	1608832	46.5296 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	768548	47.3159 ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	59586	54.9992 ug/L		86
98)	1,2,4-Trichlorobenzene	20.28	180	583880	49.4902 ug/L		100
99)	Hexachlorobutadiene	20.44	225	264699	47.7844 ug/L		98
100)	Naphthalene	20.65	128	894629	51.0579 ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	475246	46.6387 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412226.D 8260WT.M Fri May 13 16:45:33 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration

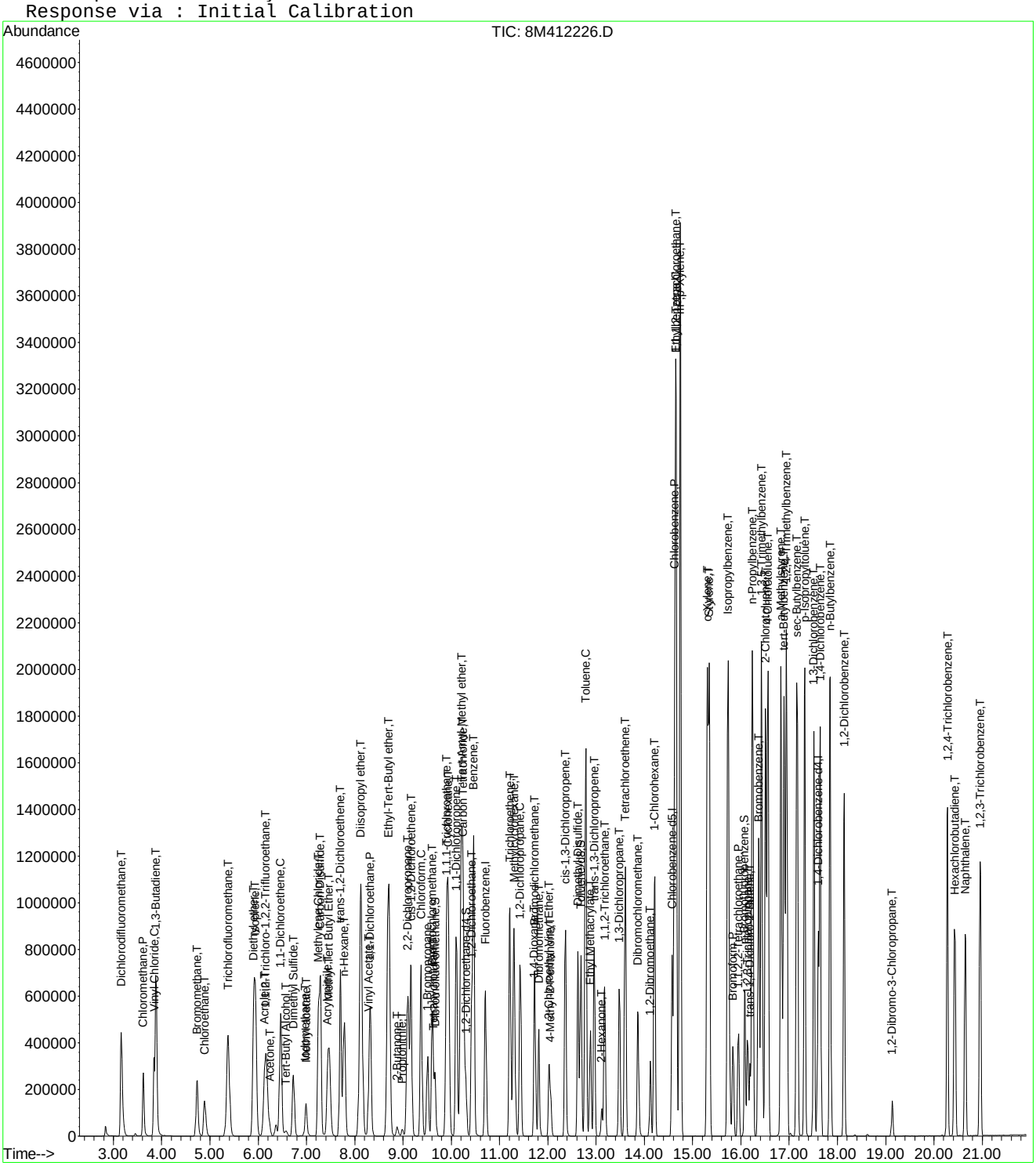

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	809533	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	559075	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	296193	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	460283	53.9056 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 215.64%#		
43) 1,2-Dichloroethane-d4	10.30	65	488116	52.5821 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 210.32%#		
58) Toluene-d8	12.68	98	1540572	52.8075 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 211.24%#		
80) p-Bromofluorobenzene	16.08	95	623735	51.1573 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 204.64%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	1463283	109.1068 ug/L	100
3) Chloromethane	3.62	50	778702	97.2380 ug/L	98
4) Vinyl Chloride	3.84	62	968312	103.4979 ug/L	95
5) 1,3-Butadiene	3.88	54	896569	120.4972 ug/L	95
6) Bromomethane	4.73	94	605228	129.8677 ug/L	99
7) Chloroethane	4.89	64	528153	103.4126 ug/L	90
8) Trichlorofluoromethane	5.37	101	1782726	101.4754 ug/L	99
9) Diethyl ether	5.90	59	828091	197.4770 ug/L	79
10) Isoprene	5.94	67	1080684	101.8037 ug/L	78
11) Acrolein	6.14	56	38655	109.5572 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	833546	101.0906 ug/L	97
13) Acetone	6.24	43	97515	109.1944 ug/L	100
14) 1,1-Dichloroethene	6.46	61	1323999	100.6729 ug/L	93
15) Tert-Butyl Alcohol	6.57	59	114220	387.5328 ug/L	91
16) Dimethyl Sulfide	6.73	62	489571	106.5996 ug/L	82
17) Iodomethane	6.99	142	416890	244.5557 ug/L	97
18) Methyl acetate	7.00	43	252444	104.3161 ug/L #	81
19) Methylene Chloride	7.24	84	827241	98.5346 ug/L	53
20) Carbon Disulfide	7.29	76	2766110	99.3432 ug/L	100
21) Acrylonitrile	7.43	53	126153	113.2272 ug/L	98
22) Methyl Tert Butyl Ether	7.46	73	1894494	105.8643 ug/L	87
23) trans-1,2-Dichloroethene	7.70	61	1203701	99.1822 ug/L	93
24) n-Hexane	7.78	57	926226	105.3097 ug/L	84
25) Diisopropyl ether	8.12	45	3699807	196.0386 ug/L #	90
26) Vinyl Acetate	8.29	43	860820	101.8643 ug/L #	88
27) 1,1-Dichloroethane	8.32	63	1521237	101.5567 ug/L	96
28) Ethyl-Tert-Butyl ether	8.70	59	4005676	198.2271 ug/L	89
29) 2-Butanone	8.88	43	145126	112.6698 ug/L #	81
30) Propionitrile	8.98	54	83038	219.1648 ug/L	97
31) 2,2-Dichloropropane	9.11	77	1610615	102.0557 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	935490	99.9944 ug/L	89
33) Chloroform	9.37	83	1766988	98.8341 ug/L	98
34) 1-Bromopropane	9.51	122	139657	108.5299 ug/L	100
35) Bromochloromethane	9.61	130	488678	102.8480 ug/L	66
36) Tetrahydrofuran	9.63	42	167812	187.5699 ug/L #	61
38) 1,1,1-Trichloroethane	9.91	97	1724504	102.7713 ug/L	100
39) Cyclohexane	9.94	56	1185537	102.8628 ug/L #	66
40) 1,1-Dichloropropene	10.11	75	1293224	100.8377 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	3634806	198.1264 ug/L	88
42) Carbon Tetrachloride	10.25	117	1534696	103.3979 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412227.D 8260WT.M Fri May 13 17:14:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	1177876	103.7352	ug/L		85
46)	Benzene	10.46	78	3298928	95.8405	ug/L		87
47)	Trichloroethene	11.21	130	903490	101.9036	ug/L		97
48)	Methylcyclohexane	11.30	83	1389528	104.6454	ug/L		83
49)	1,2-Dichloropropane	11.43	63	755128	102.5297	ug/L		73
50)	Bromodichloromethane	11.73	83	1351612	104.6036	ug/L		99
51)	1,4-Dioxane	11.72	88	16303	473.9624	ug/L		68
52)	Dibromomethane	11.81	93	445130	101.6543	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.02	63	333977	105.4228	ug/L		92
54)	4-Methyl-2-Pentanone	12.05	58	138980	110.1494	ug/L	#	77
55)	cis-1,3-Dichloropropene	12.36	75	1387475	105.9136	ug/L		100
56)	Dimethyl Disulfide	12.62	79	745504	111.3169	ug/L		97
59)	Toluene	12.78	91	3455614	95.2346	ug/L		99
60)	Ethyl Methacrylate	12.88	69	731009	113.5760	ug/L		70
62)	trans-1,3-Dichloropropene	12.96	75	1236182	107.9445	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	564076	103.0604	ug/L		99
64)	2-Hexanone	13.12	58	126268	114.5366	ug/L	#	79
65)	1,3-Dichloropropane	13.48	76	1021082	105.2672	ug/L		74
66)	Tetrachloroethene	13.60	164	752835	101.4023	ug/L		95
67)	Dibromochloromethane	13.87	129	856499	109.6525	ug/L		100
68)	1,2-Dibromoethane	14.12	107	577701	107.6426	ug/L		98
69)	1-Chlorohexane	14.21	91	1222720	103.0385	ug/L		82
70)	Chlorobenzene	14.62	112	2332247	97.2408	ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	947925	106.1463	ug/L		99
72)	Ethylbenzene	14.66	106	1275519	98.8771	ug/L		97
73)	m-,p-Xylene	14.75	106	3009424	194.2602	ug/L		98
74)	o-Xylene	15.31	106	1490638	100.8068	ug/L		93
75)	Styrene	15.35	104	2503721	102.8373	ug/L		88
76)	Bromoform	15.83	173	517827	114.0520	ug/L		100
77)	Isopropylbenzene	15.73	105	3913141	95.4433	ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	624965	106.8610	ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	192087	107.3268	ug/L		97
82)	trans-1,4-Dichloro-2-Buten	16.18	53	189214	128.4818	ug/L	#	59
83)	n-Propylbenzene	16.24	91	4599057	93.6644	ug/L		100
84)	Bromobenzene	16.37	156	968011	102.1426	ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	3401719	97.9556	ug/L		97
86)	2-Chlorotoluene	16.52	91	3177047	93.8267	ug/L		98
87)	4-Chlorotoluene	16.56	91	2899171	96.0712	ug/L		96
88)	a-Methylstyrene	16.84	118	1639166	103.6811	ug/L		90
89)	tert-Butylbenzene	16.90	134	654025	99.4199	ug/L		85
90)	1,2,4-Trimethylbenzene	16.95	105	3479295	96.7054	ug/L		97
91)	sec-Butylbenzene	17.17	105	3947832	94.2785	ug/L		98
92)	p-Isopropyltoluene	17.32	119	3328450	94.4148	ug/L		97
93)	1,3-Dichlorobenzene	17.52	146	1834740	98.9074	ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	1818309	96.6271	ug/L		92
95)	n-Butylbenzene	17.85	91	3308330	94.4002	ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	1606254	97.0179	ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	125368	107.7020	ug/L		87
98)	1,2,4-Trichlorobenzene	20.28	180	1227926	100.7076	ug/L		99
99)	Hexachlorobutadiene	20.43	225	569213	100.5231	ug/L		97
100)	Naphthalene	20.65	128	1852486	101.2968	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	1021163	98.5794	ug/L		100

(#) = qualifier out of range (m) = manual integration
8M412227.D 8260WT.M Fri May 13 17:14:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration

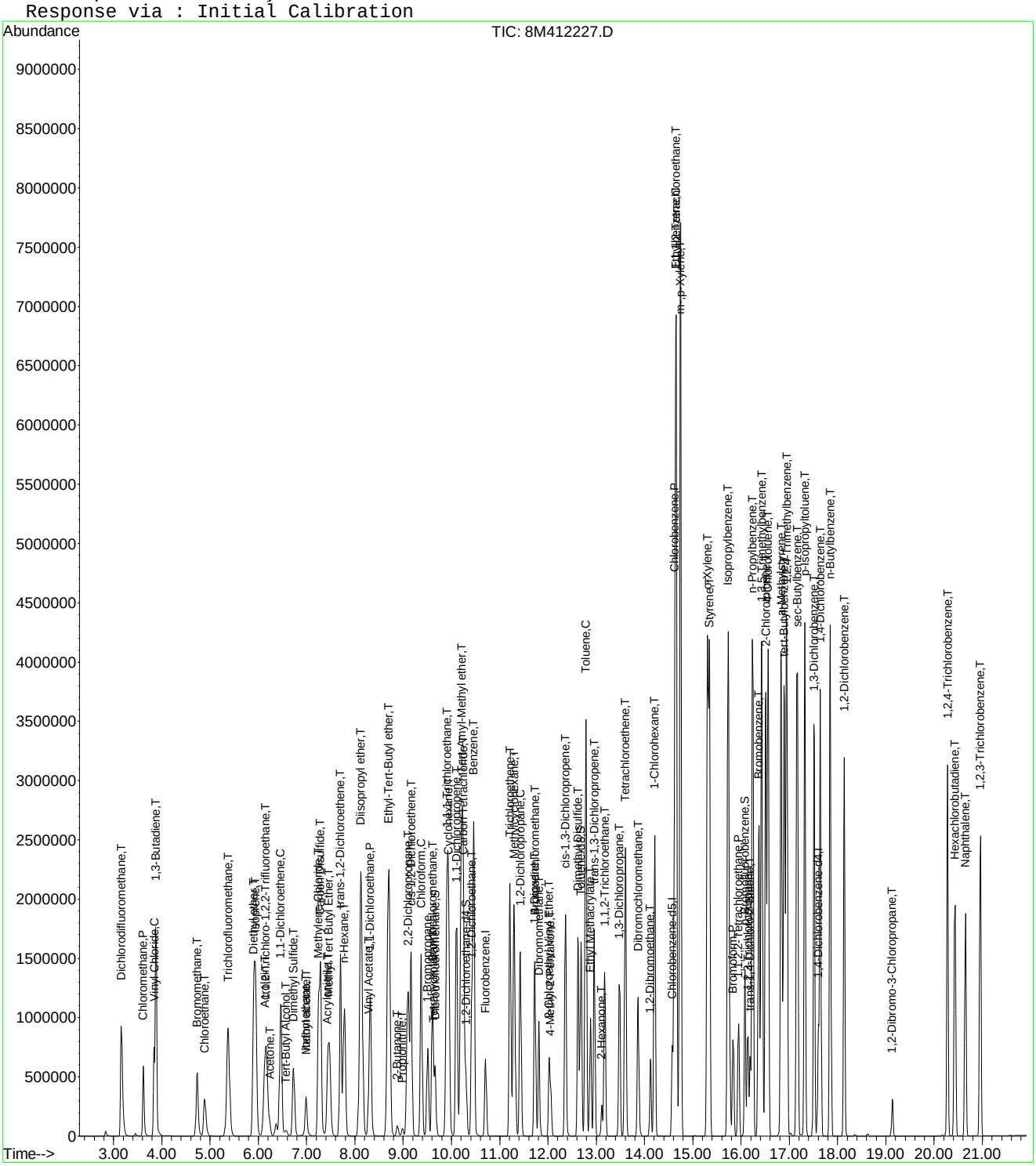

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	828540	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	578848	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	301401	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	898145	101.4517 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 405.80%#		
43) 1,2-Dichloroethane-d4	10.30	65	939848	98.0779 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 392.32%#		
58) Toluene-d8	12.68	98	2984162	97.8805 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 391.52%#		
80) p-Bromofluorobenzene	16.08	95	1242720	99.7023 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 398.80%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	2830517	203.5621 ug/L	98
3) Chloromethane	3.62	50	1586058	194.4056 ug/L	97
4) Vinyl Chloride	3.83	62	1935009	201.0738 ug/L	94
5) 1,3-Butadiene	3.88	54	1684964	212.5477 ug/L	94
6) Bromomethane	4.72	94	1358068	271.2231 ug/L	99
7) Chloroethane	4.89	64	1084803	206.5255 ug/L	90
8) Trichlorofluoromethane	5.37	101	3516760	195.1756 ug/L	99
10) Isoprene	5.94	67	2136665	196.1573 ug/L	78
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1662142	196.5993 ug/L	95
13) Acetone	6.24	43	187748	200.7963 ug/L	97
14) 1,1-Dichloroethene	6.46	61	2649821	196.6732 ug/L	92
15) Tert-Butyl Alcohol	6.58	59	6024	20.0950 ug/L #	87
16) Dimethyl Sulfide	6.73	62	976862	205.8822 ug/L	82
17) Iodomethane	6.99	142	896947	398.7987 ug/L	100
18) Methyl acetate	7.00	43	504293	201.4324 ug/L #	81
19) Methylene Chloride	7.25	84	1684780	196.5546 ug/L	52
20) Carbon Disulfide	7.29	76	5386210	189.2120 ug/L	99
21) Acrylonitrile	7.45	53	30354	26.0447 ug/L #	32
22) Methyl Tert Butyl Ether	7.46	73	3711011	200.6529 ug/L	87
23) trans-1,2-Dichloroethene	7.70	61	2410498	194.2902 ug/L	92
24) n-Hexane	7.78	57	1821777	199.7288 ug/L	84
26) Vinyl Acetate	8.29	43	1796217	206.9060 ug/L #	88
27) 1,1-Dichloroethane	8.32	63	3042055	197.9863 ug/L	95
29) 2-Butanone	8.88	43	271767	199.8193 ug/L #	77
30) Propionitrile	8.90	54	208	0.5280 ug/L #	1
31) 2,2-Dichloropropane	9.11	77	3202633	197.6970 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	1875631	195.8883 ug/L	89
33) Chloroform	9.37	83	3506648	191.9199 ug/L	99
34) 1-Bromopropane	9.51	122	286158	214.2313 ug/L	99
35) Bromochloromethane	9.60	130	980373	200.7807 ug/L	66
36) Tetrahydrofuran	9.62	42	2381	2.6275 ug/L	87
38) 1,1,1-Trichloroethane	9.91	97	3410306	197.7909 ug/L	99
39) Cyclohexane	9.94	56	2357393	198.8974 ug/L #	66
40) 1,1-Dichloropropene	10.10	75	2601175	197.8946 ug/L	96
42) Carbon Tetrachloride	10.25	117	3062767	200.6417 ug/L	99
45) 1,2-Dichloroethane	10.42	62	2313662	198.0324 ug/L	85
46) Benzene	10.46	78	6379817	182.1771 ug/L	89
47) Trichloroethene	11.21	130	1810459	198.9741 ug/L	97
48) Methylcyclohexane	11.30	83	2755373	200.4193 ug/L	83
49) 1,2-Dichloropropane	11.43	63	1528407	202.0331 ug/L	74

(#) = qualifier out of range (m) = manual integration
8M412228.D 8260WT.M Fri May 13 17:43:34 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
50)	Bromodichloromethane	11.73	83	2716764	204.0895 ug/L		99
51)	1,4-Dioxane	11.73	88	3865	104.9352 ug/L	#	18
52)	Dibromomethane	11.81	93	898971	200.1154 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.02	63	631656	192.7236 ug/L		90
54)	4-Methyl-2-Pentanone	12.05	58	262702	198.3957 ug/L	#	75
55)	cis-1,3-Dichloropropene	12.36	75	2784162	205.9153 ug/L		99
56)	Dimethyl Disulfide	12.62	79	1518705	215.4711 ug/L		95
59)	Toluene	12.78	91	6564353	175.9274 ug/L		96
60)	Ethyl Methacrylate	12.88	69	1429837	209.8161 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	2468609	205.4771 ug/L		98
63)	1,1,2-Trichloroethane	13.18	97	1124672	197.6019 ug/L		100
64)	2-Hexanone	13.12	58	237678	200.9290 ug/L	#	81
65)	1,3-Dichloropropane	13.48	76	2023247	199.9545 ug/L		76
66)	Tetrachloroethene	13.60	164	1546618	200.8018 ug/L		97
67)	Dibromochloromethane	13.87	129	1726523	210.5823 ug/L		100
68)	1,2-Dibromoethane	14.12	107	1163160	207.0667 ug/L		99
69)	1-Chlorohexane	14.21	91	2414147	195.6413 ug/L		83
70)	Chlorobenzene	14.62	112	4641169	187.6386 ug/L		94
71)	1,1,1,2-Tetrachloroethane	14.66	131	1929251	206.8372 ug/L		99
72)	Ethylbenzene	14.66	106	2611321	195.8267 ug/L		88
73)	m-,p-Xylene	14.75	106	5876234	367.8657 ug/L		83
74)	o-Xylene	15.31	106	3012318	196.4899 ug/L		98
75)	Styrene	15.35	104	4913204	194.1235 ug/L		86
76)	Bromoform	15.83	173	1052629	218.7989 ug/L		100
77)	Isopropylbenzene	15.73	105	7284624	172.7305 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	1237171	205.8673 ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	386738	209.7906 ug/L	#	54
82)	trans-1,4-Dichloro-2-Buten	16.19	53	382467	243.6526 ug/L		76
83)	n-Propylbenzene	16.24	91	8244387	166.5110 ug/L		93
84)	Bromobenzene	16.37	156	1935166	200.1305 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	6482975	183.9948 ug/L		98
86)	2-Chlorotoluene	16.52	91	6108308	178.8549 ug/L		99
87)	4-Chlorotoluene	16.56	91	5513221	180.5508 ug/L		99
88)	a-Methylstyrene	16.84	118	3255254	200.4995 ug/L		89
89)	tert-Butylbenzene	16.90	134	1351569	202.1005 ug/L		92
90)	1,2,4-Trimethylbenzene	16.95	105	6531416	179.2445 ug/L		97
91)	sec-Butylbenzene	17.17	105	7342730	173.9814 ug/L		97
92)	p-Isopropyltoluene	17.32	119	6352010	178.7315 ug/L		99
93)	1,3-Dichlorobenzene	17.52	146	3640547	193.1654 ug/L		90
94)	1,4-Dichlorobenzene	17.64	146	3593548	188.4603 ug/L		91
95)	n-Butylbenzene	17.85	91	6198060	175.4375 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	3171699	188.9651 ug/L		89
97)	1,2-Dibromo-3-Chloropropan	19.13	75	249646	207.5645 ug/L		88
98)	1,2,4-Trichlorobenzene	20.28	180	2480626	199.7296 ug/L		99
99)	Hexachlorobutadiene	20.43	225	1169411	202.7981 ug/L		98
100)	Naphthalene	20.65	128	3580198	192.0323 ug/L		97
101)	1,2,3-Trichlorobenzene	20.96	180	2040570	193.9298 ug/L		100

(#) = qualifier out of range (m) = manual integration
8M412228.D 8260WT.M Fri May 13 17:43:35 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration

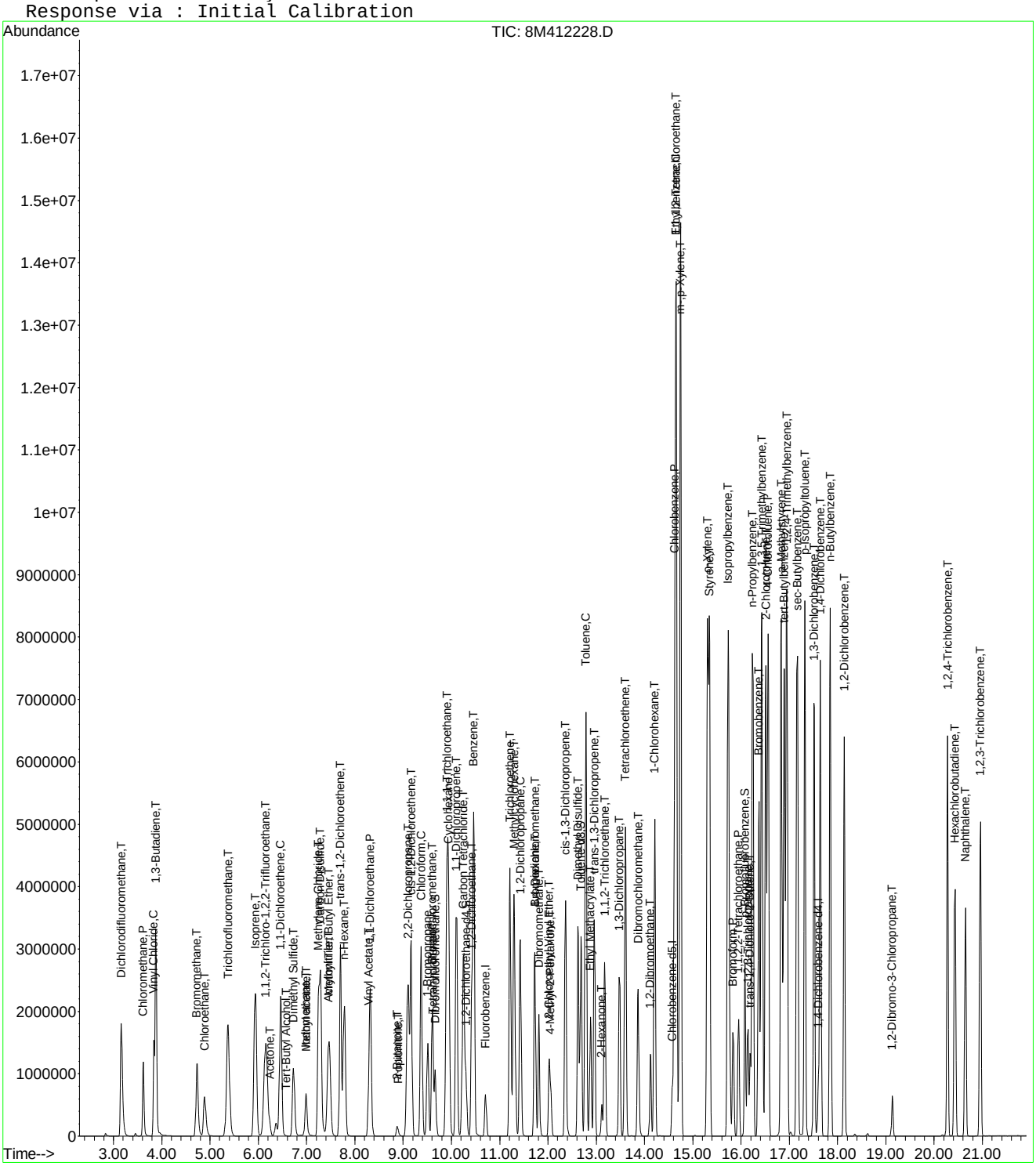

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	855409	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	599314	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	305726	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	1411837	154.4674 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 617.88%#		
43) 1,2-Dichloroethane-d4	10.30	65	1466019	148.1811 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 592.72%#		
58) Toluene-d8	12.69	98	4594713	145.5601 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 582.24%#		
80) p-Bromofluorobenzene	16.08	95	1918996	151.7813 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 607.12%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	4191932	292.0014 ug/L	97
3) Chloromethane	3.62	50	2474035	293.7212 ug/L	97
4) Vinyl Chloride	3.83	62	2956347	297.5552 ug/L	94
5) 1,3-Butadiene	3.87	54	2605506	318.3447 ug/L	94
6) Bromomethane	4.72	94	2177550	421.2239 ug/L	98
7) Chloroethane	4.89	64	1688005	311.2693 ug/L	90
8) Trichlorofluoromethane	5.37	101	5387662	289.6161 ug/L	99
9) Diethyl ether	5.90	59	1306432	295.4610 ug/L	80
10) Isoprene	5.93	67	3377164	300.3032 ug/L	78
11) Acrolein	6.14	56	70572	185.7401 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	2563878	293.7317 ug/L	94
13) Acetone	6.24	43	283185	293.3529 ug/L	90
14) 1,1-Dichloroethene	6.46	61	4031745	289.8421 ug/L	91
15) Tert-Butyl Alcohol	6.58	59	181796	587.3907 ug/L	90
16) Dimethyl Sulfide	6.73	62	1553493	317.1280 ug/L	81
17) Iodomethane	6.99	142	1347307	580.2206 ug/L	98
18) Methyl acetate	7.00	43	800046	309.5287 ug/L #	80
19) Methylene Chloride	7.24	84	2587731	292.4144 ug/L	52
20) Carbon Disulfide	7.29	76	8228181	279.9683 ug/L	98
21) Acrylonitrile	7.43	53	228227	189.6753 ug/L	94
22) Methyl Tert Butyl Ether	7.46	73	5605924	293.5892 ug/L	88
23) trans-1,2-Dichloroethene	7.70	61	3678699	287.1957 ug/L	92
24) n-Hexane	7.78	57	2863434	304.0691 ug/L	86
25) Diisopropyl ether	8.12	45	5819647	292.7898 ug/L #	89
26) Vinyl Acetate	8.30	43	2819503	314.5767 ug/L #	87
27) 1,1-Dichloroethane	8.32	63	4586531	289.1293 ug/L	94
28) Ethyl-Tert-Butyl ether	8.70	59	6190206	290.3321 ug/L	89
29) 2-Butanone	8.88	43	439359	312.8959 ug/L #	76
30) Propionitrile	8.99	54	133197	327.4673 ug/L	95
31) 2,2-Dichloropropane	9.10	77	4821388	288.2735 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	2847005	287.9976 ug/L	89
33) Chloroform	9.37	83	5197860	275.5447 ug/L	100
34) 1-Bromopropane	9.51	122	450012	326.3179 ug/L	100
35) Bromochloromethane	9.61	130	1490221	295.6112 ug/L	66
36) Tetrahydrofuran	9.63	42	271736	290.4491 ug/L #	62
38) 1,1,1-Trichloroethane	9.91	97	5126354	287.9792 ug/L	98
39) Cyclohexane	9.94	56	3733392	305.0987 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	3923871	289.1471 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	5639573	291.3713 ug/L	88
42) Carbon Tetrachloride	10.25	117	4598150	291.7629 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412229.D 8260WT.M Fri May 13 18:12:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	3468738	287.5726	ug/L		86
46)	Benzene	10.46	78	9065861	250.7462	ug/L		93
47)	Trichloroethene	11.21	130	2772282	295.1106	ug/L		97
48)	Methylcyclohexane	11.30	83	4327357	304.8748	ug/L		84
49)	1,2-Dichloropropane	11.43	63	2350729	300.9718	ug/L		74
50)	Bromodichloromethane	11.73	83	4051493	294.7973	ug/L		99
51)	1,4-Dioxane	11.72	88	26614	699.8767	ug/L		67
52)	Dibromomethane	11.81	93	1369945	295.3776	ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.03	63	1006317	297.3917	ug/L		90
54)	4-Methyl-2-Pentanone	12.06	58	424684	310.6522	ug/L	#	76
55)	cis-1,3-Dichloropropene	12.36	75	4156310	297.7431	ug/L		97
56)	Dimethyl Disulfide	12.63	79	2359825	324.2911	ug/L		94
59)	Toluene	12.78	91	9135213	236.4669	ug/L		90
60)	Ethyl Methacrylate	12.88	69	2228037	315.7801	ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	3700845	297.5240	ug/L		96
63)	1,1,2-Trichloroethane	13.18	97	1730199	293.6104	ug/L		100
64)	2-Hexanone	13.11	58	381967	311.8816	ug/L	#	78
65)	1,3-Dichloropropane	13.49	76	3080177	294.0141	ug/L		76
66)	Tetrachloroethene	13.60	164	2374435	297.7522	ug/L		96
67)	Dibromochloromethane	13.87	129	2638145	310.7838	ug/L		100
68)	1,2-Dibromoethane	14.13	107	1778561	305.8085	ug/L		99
69)	1-Chlorohexane	14.21	91	3712592	290.5924	ug/L		84
70)	Chlorobenzene	14.63	112	6754240	263.7433	ug/L		90
71)	1,1,1,2-Tetrachloroethane	14.65	131	2967650	307.3001	ug/L		100
72)	Ethylbenzene	14.65	106	4014412	290.7661	ug/L		70
73)	m-,p-Xylene	14.75	106	8357822	505.3514	ug/L		70
74)	o-Xylene	15.31	106	4530840	285.4488	ug/L		88
75)	Styrene	15.35	104	7050702	269.0641	ug/L		82
76)	Bromoform	15.84	173	1602587	321.7373	ug/L		99
77)	Isopropylbenzene	15.73	105	9900817	226.7477	ug/L		90
79)	1,1,2,2-Tetrachloroethane	15.95	83	1885953	309.3861	ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	581198	310.8176	ug/L		61
82)	trans-1,4-Dichloro-2-Buten	16.18	53	589705	370.3601	ug/L		82
83)	n-Propylbenzene	16.25	91	10768378	214.4110	ug/L		86
84)	Bromobenzene	16.37	156	2947671	300.5290	ug/L		99
85)	1,3,5-Trimethylbenzene	16.43	105	8890651	248.7580	ug/L		92
86)	2-Chlorotoluene	16.51	91	7868844	227.1449	ug/L		92
87)	4-Chlorotoluene	16.57	91	7782731	251.2687	ug/L		93
88)	a-Methylstyrene	16.84	118	4955768	300.9205	ug/L		86
89)	tert-Butylbenzene	16.90	134	2046401	301.6701	ug/L		95
90)	1,2,4-Trimethylbenzene	16.95	105	8903769	240.8932	ug/L		89
91)	sec-Butylbenzene	17.17	105	9867862	230.5051	ug/L		91
92)	p-Isopropyltoluene	17.32	119	8738927	242.4155	ug/L		94
93)	1,3-Dichlorobenzene	17.52	146	5319954	278.2806	ug/L		87
94)	1,4-Dichlorobenzene	17.64	146	5248511	271.3593	ug/L		88
95)	n-Butylbenzene	17.85	91	8408157	234.6279	ug/L		92
96)	1,2-Dichlorobenzene	18.14	146	4717385	277.0787	ug/L		87
97)	1,2-Dibromo-3-Chloropropan	19.13	75	377070	309.0741	ug/L		91
98)	1,2,4-Trichlorobenzene	20.28	180	3677657	291.9206	ug/L		98
99)	Hexachlorobutadiene	20.43	225	1780695	304.4378	ug/L		96
100)	Naphthalene	20.65	128	5216751	275.8542	ug/L		95
101)	1,2,3-Trichlorobenzene	20.96	180	3064908	287.1593	ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412229.D 8260WT.M Fri May 13 18:12:36 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration

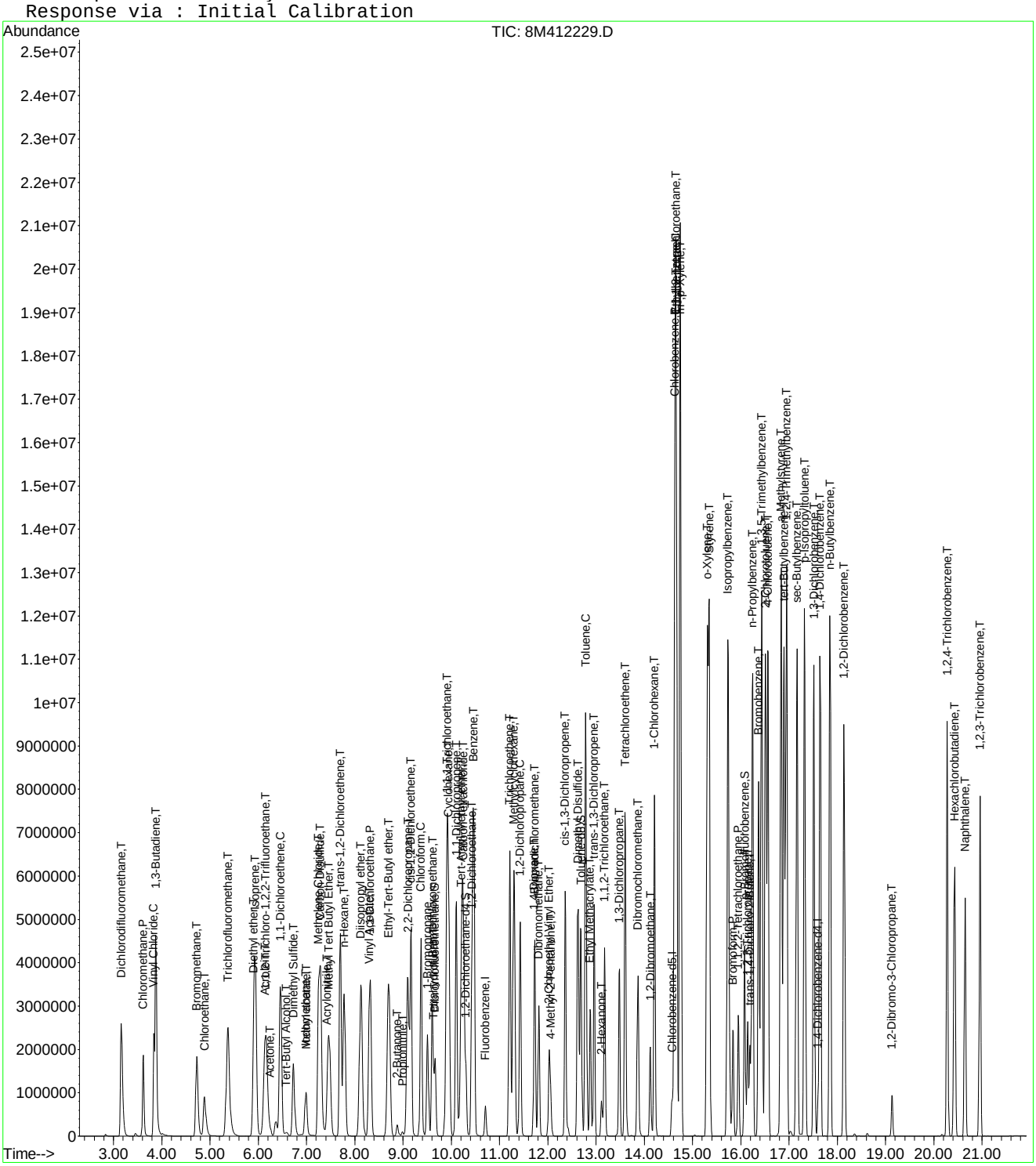

8M412229.D 8260WT.M Fri May 13 18:12:36 2016 Page 3

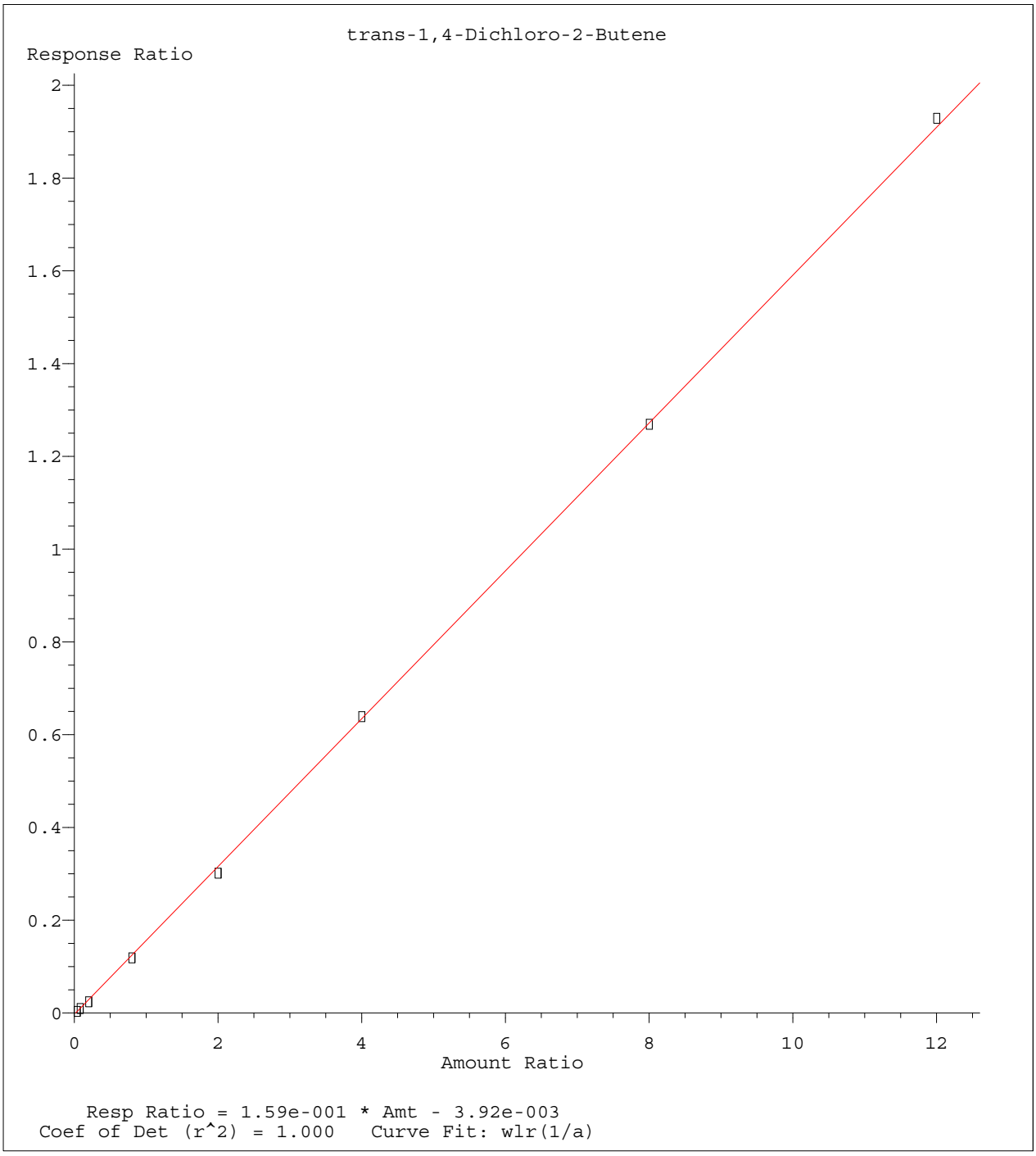

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

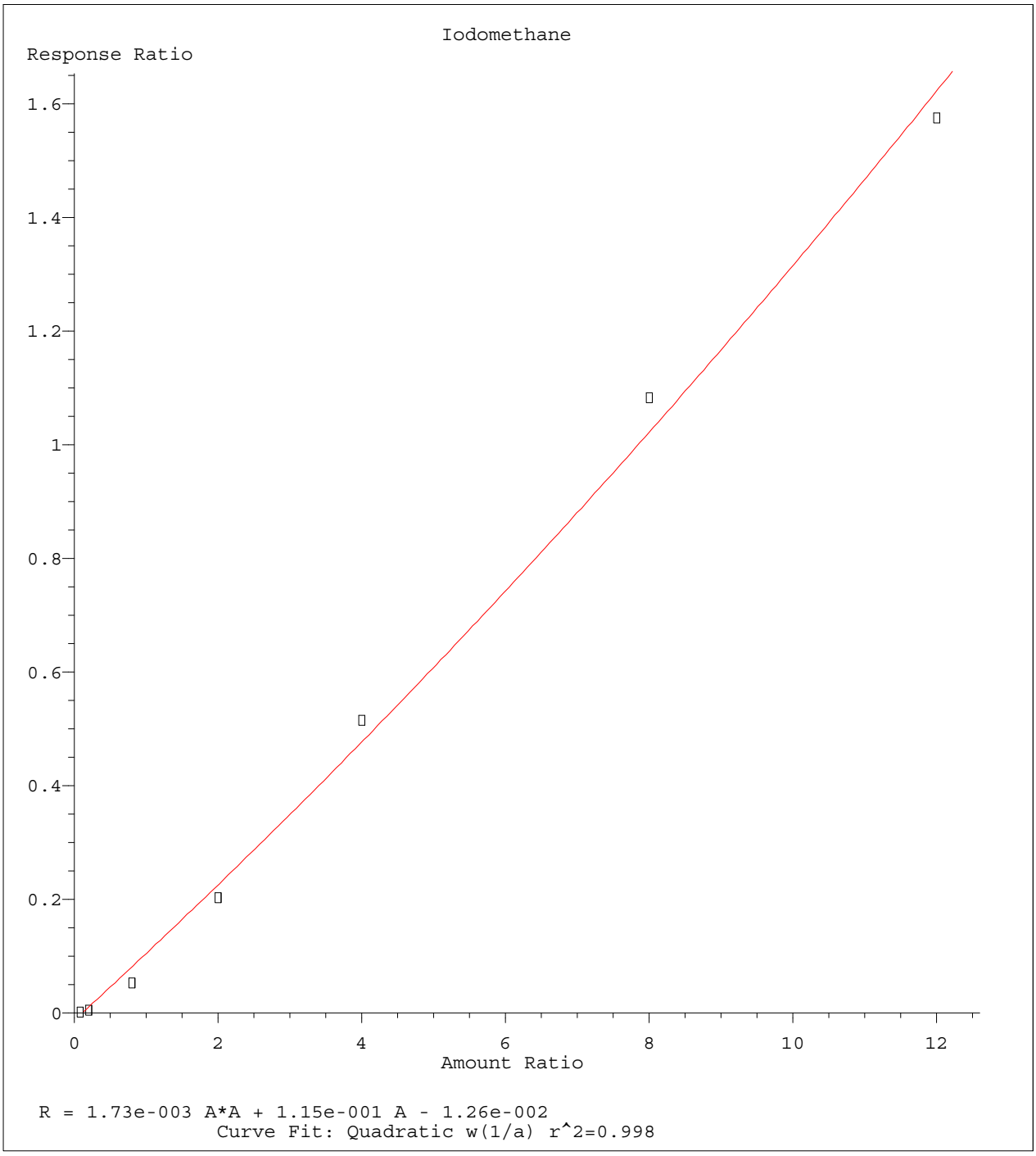

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

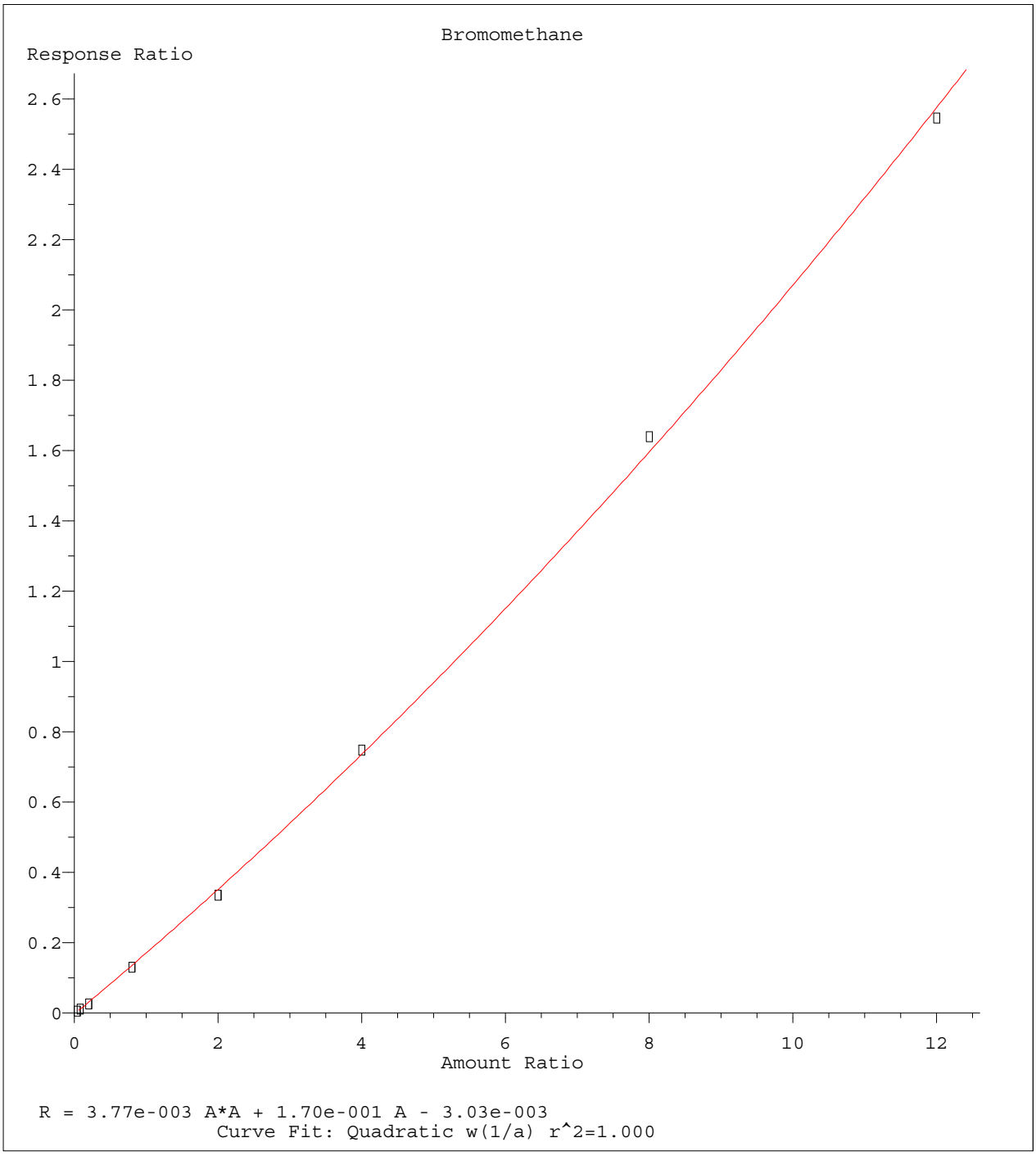

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:44:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Tue May 17 11:43:20 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	837879	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	574720	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	304324	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	229742	25.5204 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.08%		
43) 1,2-Dichloroethane-d4	10.31	65	238672	24.7259 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.92%		
58) Toluene-d8	12.68	98	776362	25.8115 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.24%		
80) p-Bromofluorobenzene	16.07	95	315683	25.0519 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.20%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	761591	54.2141 ug/L	99
3) Chloromethane	3.62	50	415589	50.6814 ug/L	100
4) Vinyl Chloride	3.84	62	509607	52.3810 ug/L	100
5) 1,3-Butadiene	3.88	54	347562	42.6002 ug/L	97
6) Bromomethane	4.73	94	272060	46.3924 ug/L	99
7) Chloroethane	4.88	64	285509	53.3336 ug/L	98
8) Trichlorofluoromethane	5.37	101	849580	46.9313 ug/L	100
9) Diethyl ether	5.90	59	451307	104.4282 ug/L	99
10) Isoprene	5.93	67	582863	53.0208 ug/L	99
11) Acrolein	6.13	56	38877	100.4722 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	419584	49.3091 ug/L	97
13) Acetone	6.23	43	54234	57.5310 ug/L	94
14) 1,1-Dichloroethene	6.46	61	622831	45.9700 ug/L	99
15) Tert-Butyl Alcohol	6.59	59	59797	197.9422 ug/L	97
16) Dimethyl Sulfide	6.73	62	351814	72.6234 ug/L	98
17) Iodomethane	6.99	142	92716	26.2832 ug/L	99
18) Methyl acetate	7.00	43	127540	50.0514 ug/L	98
19) Methylene Chloride	7.25	84	417642	48.4385 ug/L	99
20) Carbon Disulfide	7.29	76	1199899	42.3200 ug/L	100
21) Acrylonitrile	7.43	53	65324	53.4074 ug/L	93
22) Methyl Tert Butyl Ether	7.46	73	949572	50.8859 ug/L	97
23) trans-1,2-Dichloroethene	7.70	61	598296	48.0666 ug/L	99
24) n-Hexane	7.77	57	425106	45.9930 ug/L	99
25) Diisopropyl ether	8.13	45	2040382	105.1615 ug/L	98
26) Vinyl Acetate	8.29	43	415568	46.7802 ug/L	99
27) 1,1-Dichloroethane	8.32	63	721661	46.6846 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	2040020	98.1343 ug/L	99
29) 2-Butanone	8.88	43	73394	52.9905 ug/L	99
30) Propionitrile	8.98	54	42290	104.7756 ug/L	100
31) 2,2-Dichloropropane	9.10	77	780073	47.8861 ug/L	99
32) cis-1,2-Dichloroethene	9.16	96	470465	48.9162 ug/L	98
33) Chloroform	9.38	83	860252	47.1317 ug/L	100
34) 1-Bromopropane	9.51	122	98585	71.5615 ug/L	98
35) Bromochloromethane	9.60	130	234493	47.5456 ug/L	99
36) Tetrahydrofuran	9.62	42	86049	94.3281 ug/L	99
38) 1,1,1-Trichloroethane	9.90	97	825167	47.5949 ug/L	100
39) Cyclohexane	9.93	56	586721	48.8808 ug/L	97
40) 1,1-Dichloropropene	10.10	75	627217	47.4632 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1962875	103.9618 ug/L	99
42) Carbon Tetrachloride	10.24	117	711823	46.2363 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M412232.D 8260WT.M Tue May 17 11:44:38 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	108	0.00
2	T	Dichlorodifluoromethane	50.0000	54.2141	-8.4	112	0.00
3	P	Chloromethane	50.0000	50.6814	-1.4	111	0.00
4	C	Vinyl Chloride	50.0000	52.3811	-4.8	112	-0.01
5	T	1,3-Butadiene	50.0000	42.6002	14.8	89	0.00
6	T	Bromomethane	50.0000	46.3924	7.2	104	-0.01
7	T	Chloroethane	50.0000	53.3336	-6.7	117	-0.01
8	T	Trichlorofluoromethane	50.0000	46.9313	6.1	101	-0.01
9	T	Diethyl ether	100.0000	104.4282	-4.4	116	0.00
10	T	Isoprene	50.0000	53.0208	-6.0	117	0.00
11	T	Acrolein	50.0000	100.4722	-100.9#	220	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	49.3091	1.4	108	0.00
13	T	Acetone	50.0000	57.5310	-15.1	118	-0.01
14	C	1,1-Dichloroethene	50.0000	45.9700	8.1	100	0.00
15	T	Tert-Butyl Alcohol	200.0000	197.9423	1.0	108	0.01
16	T	Dimethyl Sulfide	50.0000	72.6234	-45.2#	159	0.00
17	T	Iodomethane	50.0000	26.2832	47.4#	59	0.01
18	T	Methyl acetate	50.0000	50.0514	-0.1	111	0.00
19	T	Methylene Chloride	50.0000	48.4385	3.1	107	0.00
20	T	Carbon Disulfide	50.0000	42.3200	15.4	94	0.00
21	T	Acrylonitrile	50.0000	53.4074	-6.8	109	0.00
22	T	Methyl Tert Butyl Ether	50.0000	50.8859	-1.8	105	0.00
23	T	trans-1,2-Dichloroethene	50.0000	48.0666	3.9	105	0.00
24	T	n-Hexane	50.0000	45.9930	8.0	101	-0.01
25	T	Diisopropyl ether	100.0000	105.1615	-5.2	115	0.00
26	T	Vinyl Acetate	50.0000	46.7802	6.4	97	0.00
27	P	1,1-Dichloroethane	50.0000	46.6846	6.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.1343	1.9	104	0.00
29	T	2-Butanone	50.0000	52.9905	-6.0	110	0.00
30	T	Propionitrile	100.0000	104.7756	-4.8	111	0.00
31	T	2,2-Dichloropropane	50.0000	47.8861	4.2	102	0.00
32	T	cis-1,2-Dichloroethene	50.0000	48.9162	2.2	107	-0.01
33	C	Chloroform	50.0000	47.1317	5.7	102	0.00
34		1-Bromopropane	50.0000	71.5615	-43.1#	155	0.00
35	T	Bromochloromethane	50.0000	47.5456	4.9	102	0.00
36	T	Tetrahydrofuran	100.0000	94.3281	5.7	108	-0.01
37	S	Dibromofluoromethane	25.0000	25.5204	-2.1	109	0.00
38	T	1,1,1-Trichloroethane	50.0000	47.5949	4.8	101	0.00
39	T	Cyclohexane	50.0000	48.8808	2.2	109	0.00
40	T	1,1-Dichloropropene	50.0000	47.4632	5.1	102	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	103.9618	-4.0	111	0.00
42	T	Carbon Tetrachloride	50.0000	46.2363	7.5	98	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.7259	1.1	104	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	49.0148	2.0	103	0.00
46	T	Benzene	50.0000	48.5232	3.0	104	0.00
47	T	Trichloroethene	50.0000	51.0658	-2.1	110	0.00
48	T	Methylcyclohexane	50.0000	49.8573	0.3	109	0.00
49	C	1,2-Dichloropropane	50.0000	50.9747	-1.9	111	0.00
50	T	Bromodichloromethane	50.0000	48.3053	3.4	99	0.00
51	T	1,4-Dioxane	200.0000	216.9538	-8.5	110	0.01
52	T	Dibromomethane	50.0000	45.8126	8.4	99	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	51.2623	-2.5	104	0.00
54	T	4-Methyl-2-Pentanone	50.0000	51.8715	-3.7	107	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.8979	-7.8	111	0.00
56	T	Dimethyl Disulfide	50.0000	52.2714	-4.5	111	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	107	0.00
58	S	Toluene-d8	25.0000	25.8115	-3.2	108	0.00
59	C	Toluene	50.0000	49.0912	1.8	105	0.00
60	T	Ethyl Methacrylate	50.0000	55.9509	-11.9	113	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	50.6740	-1.3	102	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.0377	1.9	103	0.00
64	T	2-Hexanone	50.0000	53.6057	-7.2	112	0.00
65	T	1,3-Dichloropropane	50.0000	53.6720	-7.3	110	0.00
66	T	Tetrachloroethene	50.0000	47.8053	4.4	104	0.00
67	T	Dibromochloromethane	50.0000	49.6585	0.7	102	0.00
68	T	1,2-Dibromoethane	50.0000	51.1121	-2.2	105	0.00
69	T	1-Chlorohexane	50.0000	51.0611	-2.1	111	0.00
70	P	Chlorobenzene	50.0000	50.1844	-0.4	108	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	49.3793	1.2	103	0.00
72	C	Ethylbenzene	50.0000	48.2013	3.6	105	0.00
73	T	m-,p-Xylene	100.0000	101.1341	-1.1	108	0.00
74	T	o-Xylene	50.0000	50.5675	-1.1	108	0.00
75	T	Styrene	50.0000	51.5086	-3.0	105	0.00
76	P	Bromoform	50.0000	48.2227	3.6	99	0.00
77	T	Isopropylbenzene	50.0000	51.1140	-2.2	107	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	106	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	49.6172	0.8	103	0.00
80	S	p-Bromofluorobenzene	25.0000	25.0519	-0.2	108	0.00
81	T	1,2,3-Trichloropropane	50.0000	50.0849	-0.2	106	0.01
82	T	trans-1,4-Dichloro-2-Butene	50.0000	39.2043	21.6	86	0.00
83	T	n-Propylbenzene	50.0000	51.9237	-3.8	108	0.00
84	T	Bromobenzene	50.0000	49.4648	1.1	105	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	51.6344	-3.3	107	0.00
86	T	2-Chlorotoluene	50.0000	51.5639	-3.1	106	0.00
87	T	4-Chlorotoluene	50.0000	48.2650	3.5	108	0.00
88	T	a-Methylstyrene	50.0000	56.4132	-12.8	120	0.00
89	T	tert-Butylbenzene	50.0000	50.9494	-1.9	112	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	49.6617	0.7	105	0.00
91	T	sec-Butylbenzene	50.0000	51.3386	-2.7	108	0.00
92	T	p-Isopropyltoluene	50.0000	50.1261	-0.3	107	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.8943	-1.8	108	0.00
94	T	1,4-Dichlorobenzene	50.0000	50.4742	-0.9	110	0.00
95	T	n-Butylbenzene	50.0000	49.6520	0.7	105	0.00
96	T	1,2-Dichlorobenzene	50.0000	50.4907	-1.0	110	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	48.4851	3.0	100	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	50.1129	-0.2	107	0.00
99	T	Hexachlorobutadiene	50.0000	52.0919	-4.2	115	0.00
100	T	Naphthalene	50.0000	45.8047	8.4	95	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	47.7353	4.5	106	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412232.D 8260WT.M Sat May 14 18:09:03 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:21 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	709364	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	505399	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	272922	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	27428	100.2132 ug/L	99
3) 3-Chloro-1-propene	7.07	41	940418	104.3259 ug/L	82
4) 2-Chloro-1,3-butadiene	8.45	53	1188994	104.3183 ug/L	86
5) Ethyl Acetate	9.10	43	283167	104.3264 ug/L	95
6) Methacrylonitrile	9.25	67	155775	104.5365 ug/L #	63
7) Isobutyl Alcohol	9.25	43	17893	197.3629 ug/L #	96
9) Methyl methacrylate	11.42	41	298802	102.0346 ug/L	70
10) 2-Nitropropane	11.75	43	121321	95.8263 ug/L	97
13) Cyclohexanone	15.84	55	11401	102.1363 ug/L #	70

(#) = qualifier out of range (m) = manual integration
8M412321.D A9FOOWT.M Thu May 19 09:01:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

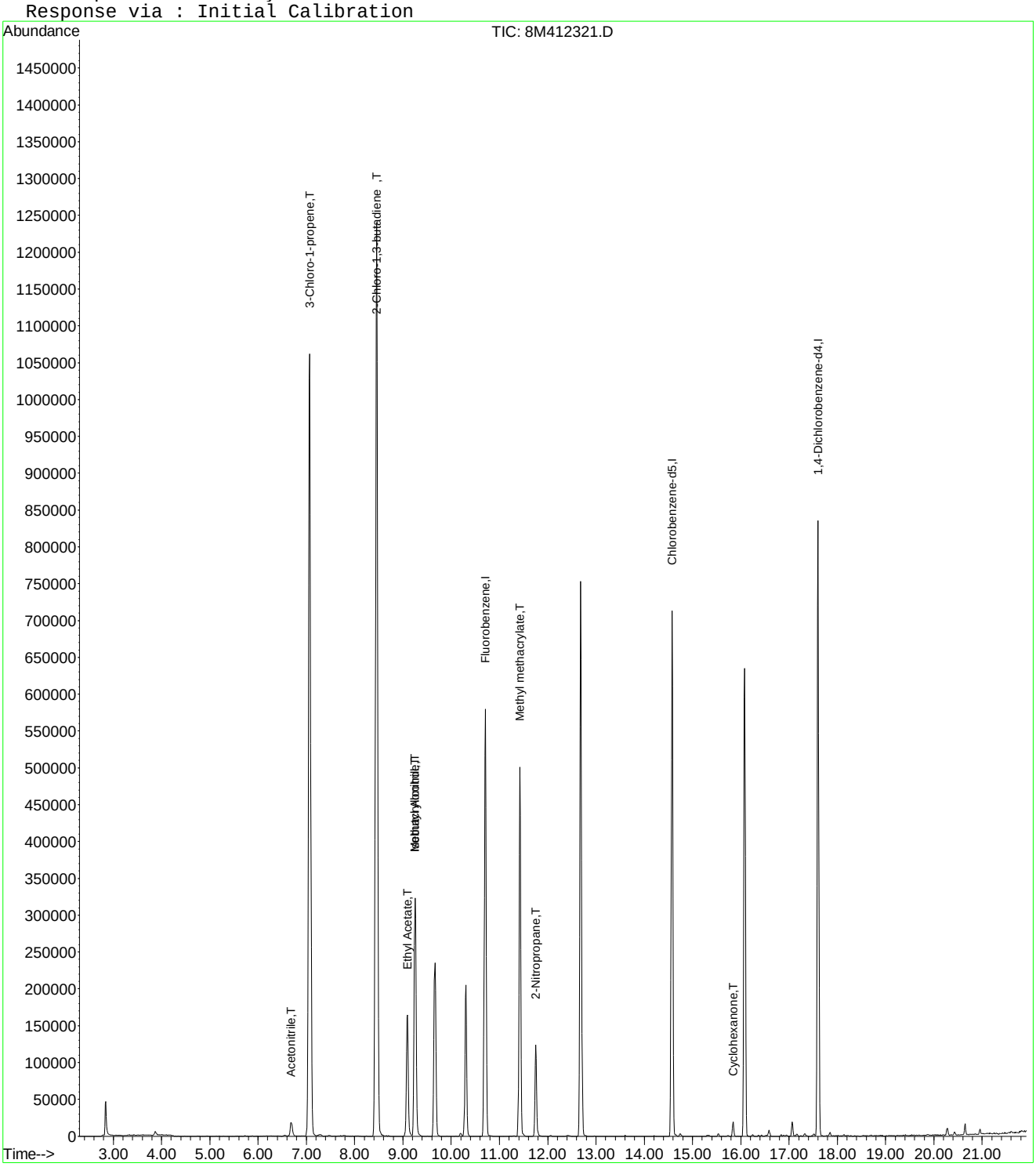

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	100.2132	-0.2	100	0.00
3	T	3-Chloro-1-propene	100.0000	104.3259	-4.3	100	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	104.3183	-4.3	100	0.00
5	T	Ethyl Acetate	100.0000	104.3264	-4.3	100	0.00
6	T	Methacrylonitrile	100.0000	104.5365	-4.5	100	0.00
7	T	Isobutyl Alcohol	200.0000	197.3629	1.3	100	-0.01
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.02
9	T	Methyl methacrylate	100.0000	102.0346	-2.0	100	0.00
10	T	2-Nitropropane	100.0000	95.8263	4.2	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	100.0000	102.1363	-2.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412321.D A9FOOWT.M Thu May 19 09:02:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:20:35 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	677339	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	488377	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	260939	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	13323	50.9795 ug/L	98
3) 3-Chloro-1-propene	7.07	41	453655	52.7060 ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	568765	52.2609 ug/L	87
5) Ethyl Acetate	9.09	43	131636	50.7913 ug/L	97
6) Methacrylonitrile	9.25	67	74064	52.0523 ug/L #	62
7) Isobutyl Alcohol	9.26	43	8483	97.9930 ug/L	95
9) Methyl methacrylate	11.42	41	143892	51.4593 ug/L	70
10) 2-Nitropropane	11.75	43	56559	46.7858 ug/L	95
13) Cyclohexanone	15.84	55	5225	48.9579 ug/L	83

(#) = qualifier out of range (m) = manual integration
8M412322.D A9FOOWT.M Thu May 19 09:20:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:19 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

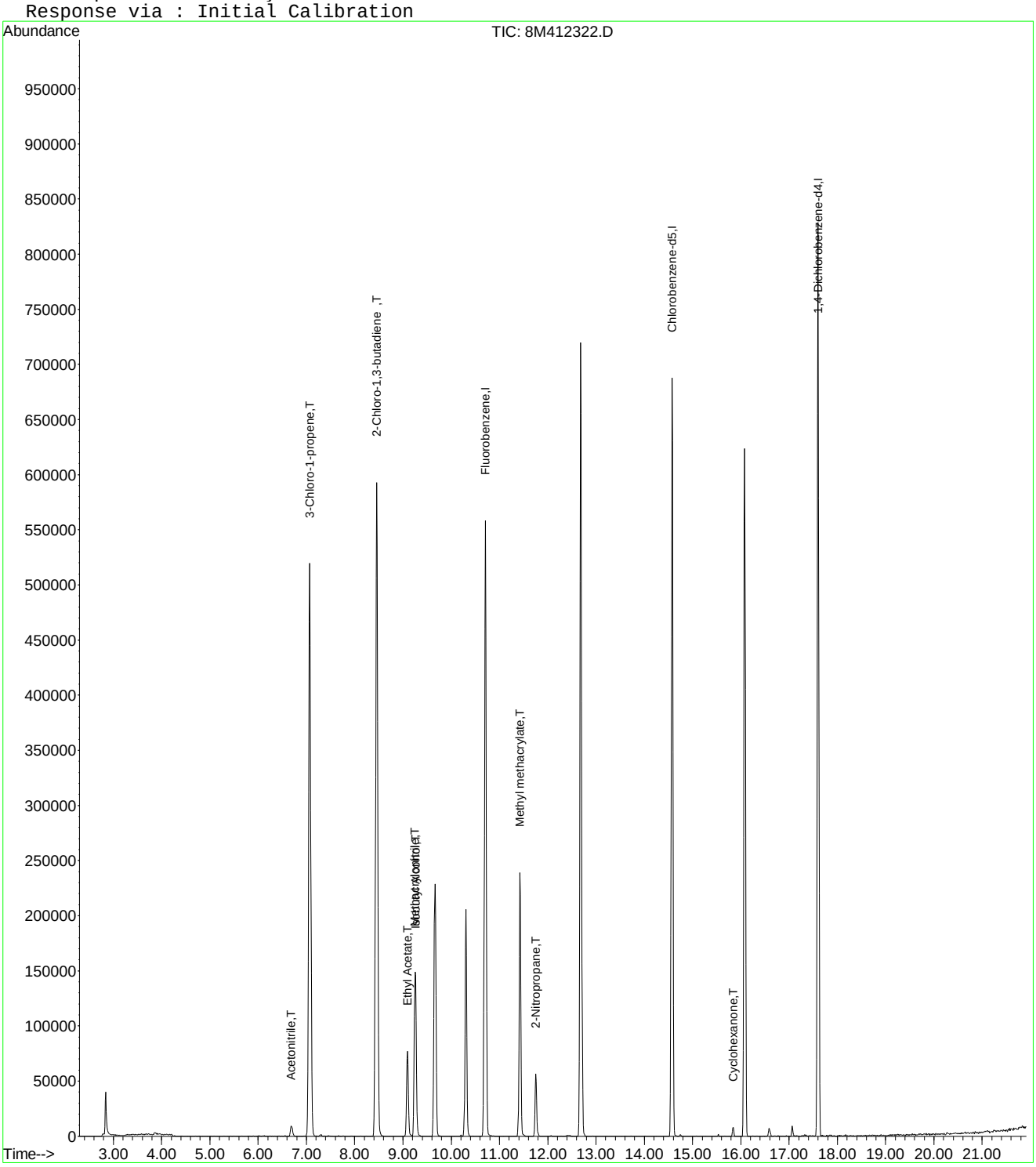

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	50.9795	-2.0	100	0.00
3	T	3-Chloro-1-propene	50.0000	52.7060	-5.4	100	0.00
4	T	2-Chloro-1,3-butadiene	50.0000	52.2609	-4.5	100	0.00
5	T	Ethyl Acetate	50.0000	50.7913	-1.6	100	0.00
6	T	Methacrylonitrile	50.0000	52.0523	-4.1	100	0.00
7	T	Isobutyl Alcohol	100.0000	97.9929	2.0	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.02
9	T	Methyl methacrylate	50.0000	51.4592	-2.9	100	0.00
10	T	2-Nitropropane	50.0000	46.7858	6.4	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	50.0000	48.9579	2.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412322.D A9FOOWT.M Thu May 19 09:02:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:22:33 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	652985	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	476539	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	256082	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	4873	19.3416 ug/L	80
3) 3-Chloro-1-propene	7.07	41	172467	20.7847 ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	219296	20.9015 ug/L	87
5) Ethyl Acetate	9.09	43	50385	20.1659 ug/L	100
6) Methacrylonitrile	9.26	67	28119	20.4992 ug/L #	63
7) Isobutyl Alcohol	9.27	43	2774	33.2395 ug/L #	8
9) Methyl methacrylate	11.42	41	55309	20.5176 ug/L	73
10) 2-Nitropropane	11.75	43	21584	18.5202 ug/L	99
13) Cyclohexanone	15.84	55	2230	21.2913 ug/L	87

(#) = qualifier out of range (m) = manual integration
8M412323.D A9FOOWT.M Thu May 19 09:22:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:21 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

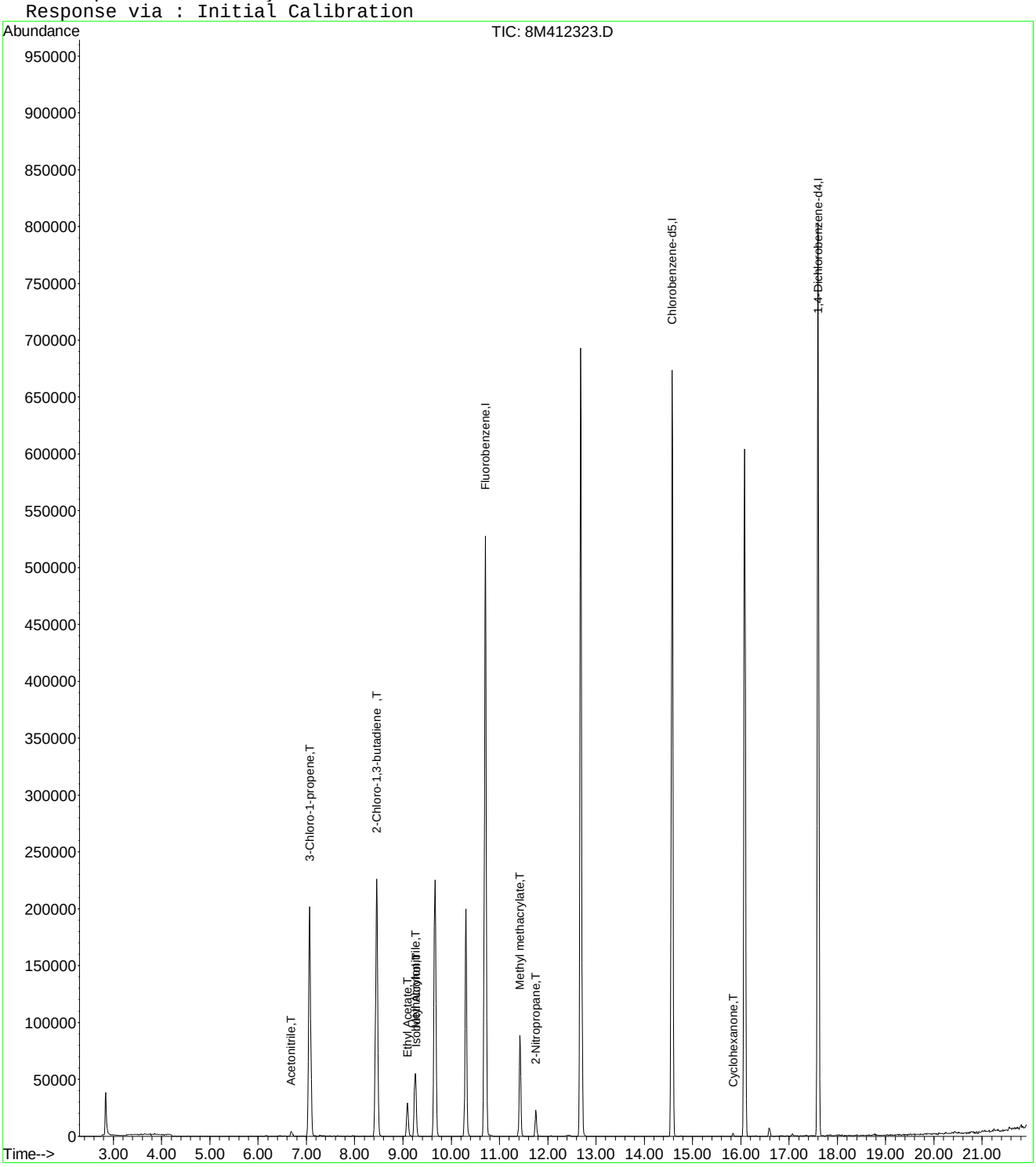

8M412323.D A9FOOWT.M Thu May 19 09:22:34 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	19.3416	3.3	100	0.00
3	T	3-Chloro-1-propene	20.0000	20.7847	-3.9	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	20.9015	-4.5	100	0.00
5	T	Ethyl Acetate	20.0000	20.1659	-0.8	100	0.00
6	T	Methacrylonitrile	20.0000	20.4992	-2.5	100	0.00
7	T	Isobutyl Alcohol	-1.0000	33.2395	0.0	0	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.18#
9	T	Methyl methacrylate	20.0000	20.5176	-2.6	100	0.00
10	T	2-Nitropropane	20.0000	18.5203	7.4	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	20.0000	21.2913	-6.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412323.D A9FOOWT.M Thu May 19 09:02:17 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:22:43 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	665645	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	483812	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	257678	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	405	1.5769 ug/L #	23
3) 3-Chloro-1-propene	7.07	41	40699	4.8115 ug/L	84
4) 2-Chloro-1,3-butadiene	8.45	53	48973	4.5789 ug/L	81
5) Ethyl Acetate	9.09	43	10675	4.1913 ug/L	95
6) Methacrylonitrile	9.26	67	5417	3.8740 ug/L #	72
7) Isobutyl Alcohol	9.27	43	441	5.1838 ug/L #	8
9) Methyl methacrylate	11.43	41	11811	4.2981 ug/L	65
10) 2-Nitropropane	11.76	43	4170	3.5100 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412324.D A9FOOWT.M Thu May 19 09:22:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:21 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

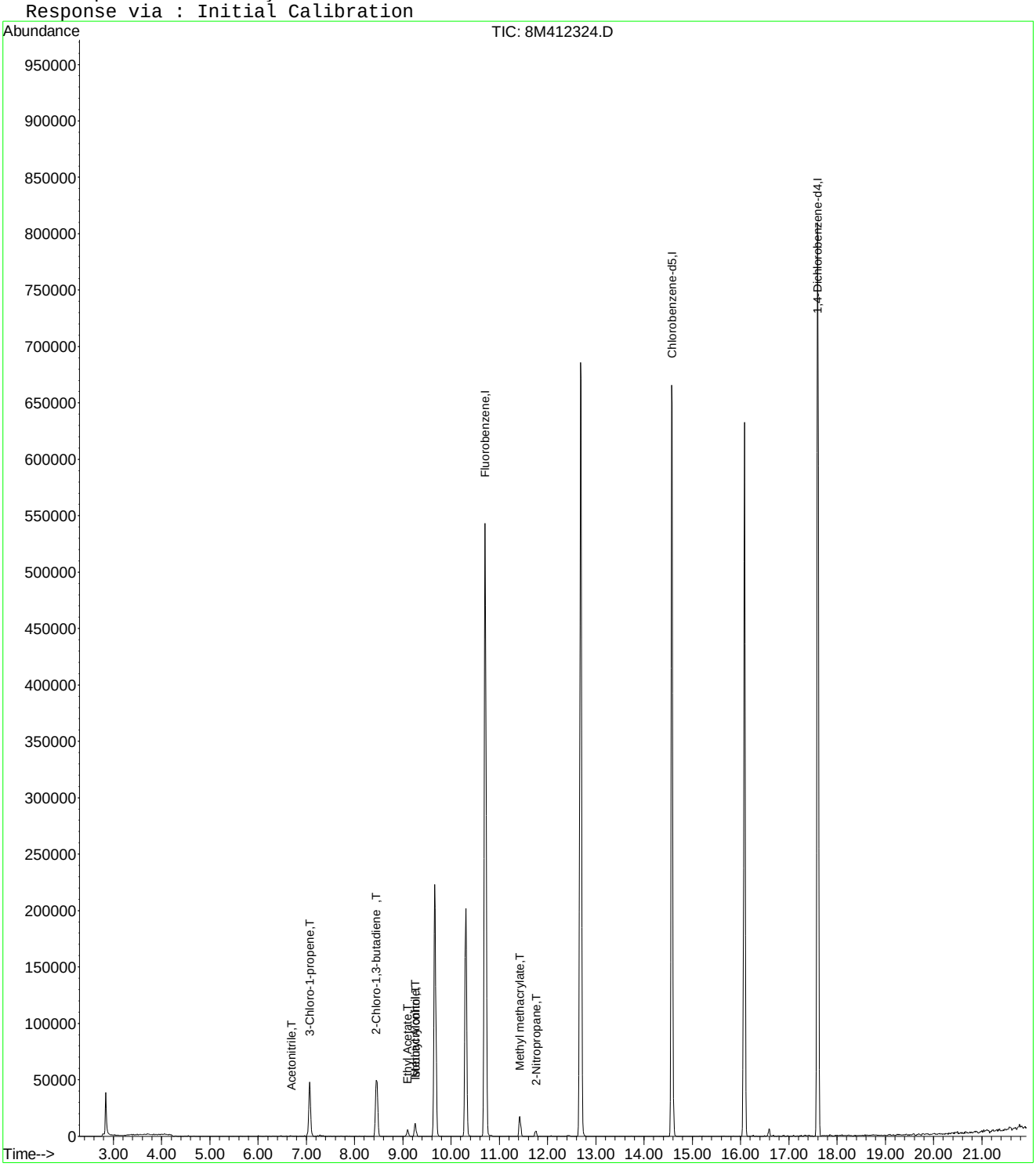

8M412324.D A9FOOWT.M Thu May 19 09:22:43 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	-1.0000	1.5769	0.0	0	0.00
3	T	3-Chloro-1-propene	5.0000	4.8115	3.8	100	0.00
4	T	2-Chloro-1,3-butadiene	5.0000	4.5789	8.4	100	0.00
5	T	Ethyl Acetate	5.0000	4.1913	16.2	100	0.00
6	T	Methacrylonitrile	5.0000	3.8740	22.5	100	0.00
7	T	Isobutyl Alcohol	-1.0000	5.1838	0.0	0	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.18#
9	T	Methyl methacrylate	5.0000	4.2981	14.0	100	0.00
10	T	2-Nitropropane	-1.0000	3.5100	0.0	0	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	0.0000	0.0	0	-15.84#

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412324.D A9FOOWT.M Thu May 19 09:02:03 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412325.D Vial: 7
Acq On : 17 May 2016 11:42 Operator: TMB
Sample : WG569079-06 200ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:27 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	682012	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	491515	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	261877	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.68	41	52022	197.6946 ug/L	97
3) 3-Chloro-1-propene	7.06	41	1768403	204.0468 ug/L	83
4) 2-Chloro-1,3-butadiene	8.46	53	2283706	208.4003 ug/L	87
5) Ethyl Acetate	9.09	43	537585	206.0040 ug/L	94
6) Methacrylonitrile	9.25	67	297408	207.5869 ug/L #	63
7) Isobutyl Alcohol	9.26	43	34441	395.1256 ug/L	95
9) Methyl methacrylate	11.42	41	577612	205.1526 ug/L	72
10) 2-Nitropropane	11.75	43	248395	204.0652 ug/L	95
13) Cyclohexanone	15.85	55	19752	184.4122 ug/L #	59

(#) = qualifier out of range (m) = manual integration
8M412325.D A9FOOWT.M Thu May 19 09:01:28 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412325.D Vial: 7
Acq On : 17 May 2016 11:42 Operator: TMB
Sample : WG569079-06 200ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

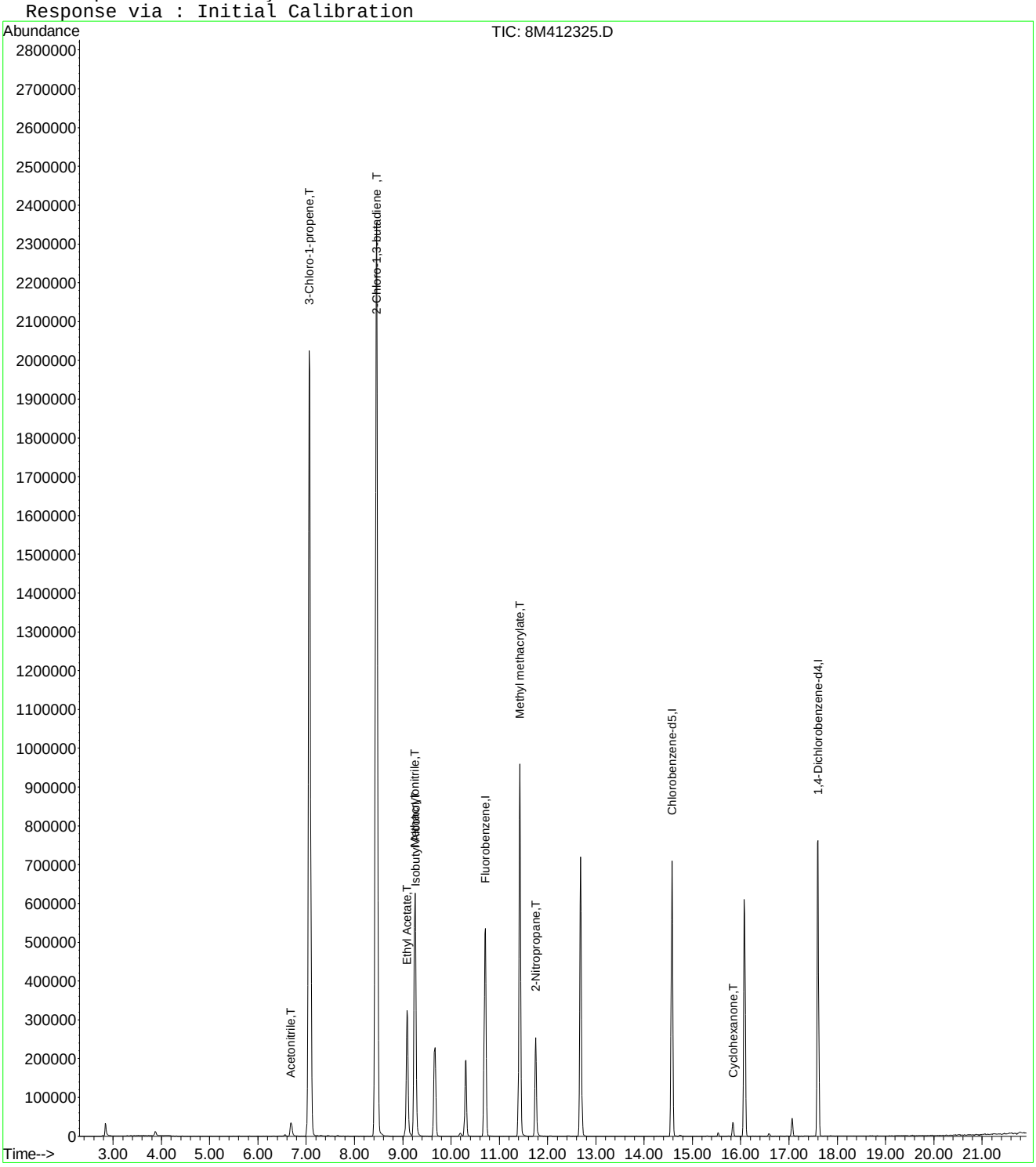

8M412325.D A9FOOWT.M Thu May 19 09:01:28 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412326.D Vial: 8
Acq On : 17 May 2016 12:40 Operator: TMB
Sample : WG569079-07 300ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:29 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	694903	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	496643	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	267309	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.69	41	81471	303.8636	ug/L	98
3) 3-Chloro-1-propene	7.06	41	2563559	290.3084	ug/L	83
4) 2-Chloro-1,3-butadiene	8.46	53	3270971	292.9562	ug/L	86
5) Ethyl Acetate	9.09	43	821184	308.8424	ug/L	95
6) Methacrylonitrile	9.25	67	451708	309.4374	ug/L #	62
7) Isobutyl Alcohol	9.26	43	55071	620.0836	ug/L	94
9) Methyl methacrylate	11.42	41	874430	304.8132	ug/L	70
10) 2-Nitropropane	11.75	43	392965	316.8456	ug/L	94
13) Cyclohexanone	15.84	55	33523	306.6233	ug/L #	61

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412326.D Vial: 8
Acq On : 17 May 2016 12:40 Operator: TMB
Sample : WG569079-07 300ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

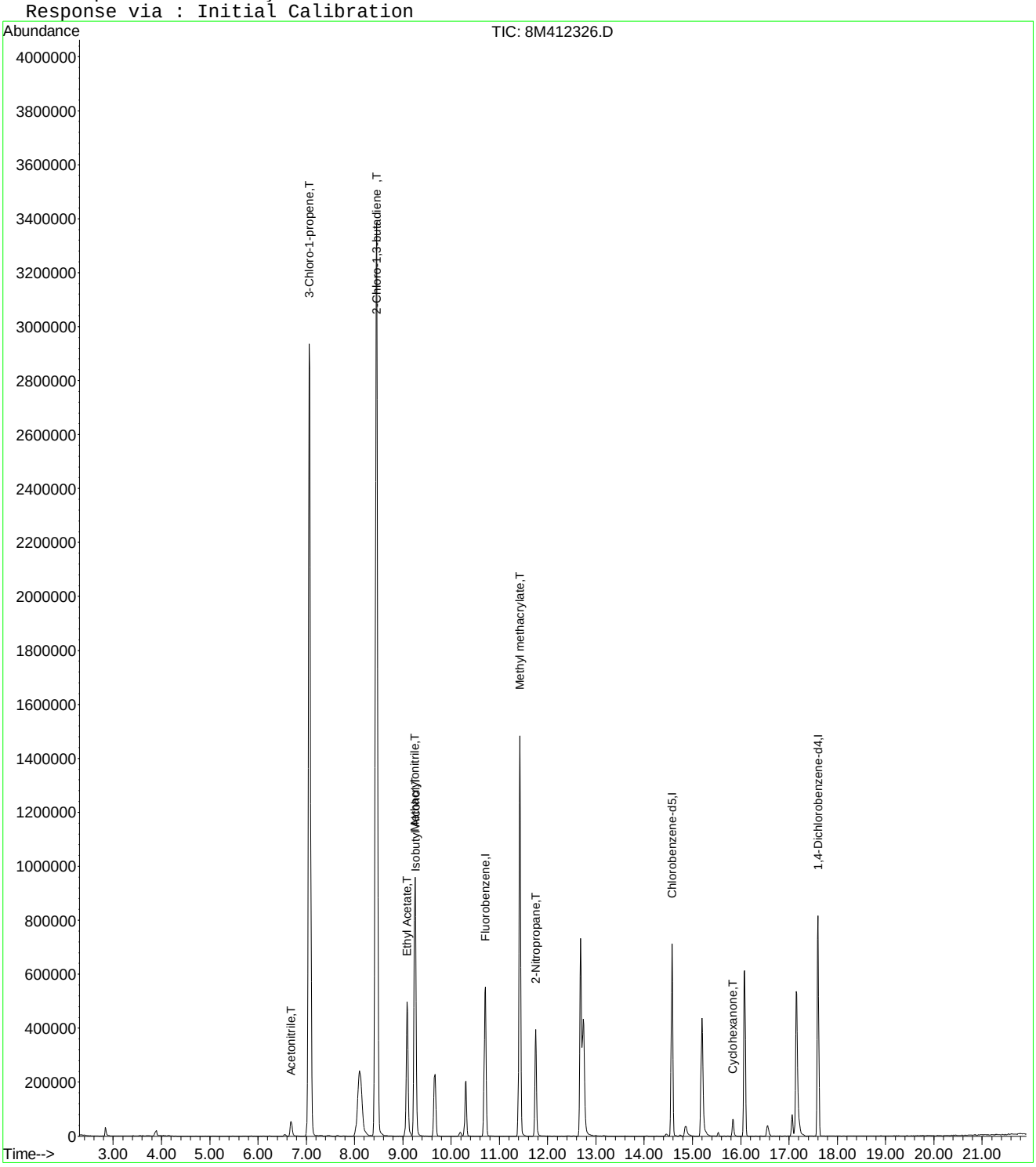

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412327.D Vial: 9
Acq On : 17 May 2016 13:10 Operator: TMB
Sample : WG569079-08 400ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:30 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	700514	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	502552	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	270883	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	110761	409.7980 ug/L	97
3) 3-Chloro-1-propene	7.07	41	3406131	382.6353 ug/L	82
4) 2-Chloro-1,3-butadiene	8.45	53	4356691	387.0705 ug/L	85
5) Ethyl Acetate	9.09	43	1116818	416.6642 ug/L	94
6) Methacrylonitrile	9.25	67	615482	418.2517 ug/L #	62
7) Isobutyl Alcohol	9.26	43	75472	842.9862 ug/L	97
9) Methyl methacrylate	11.42	41	1199317	414.7153 ug/L	71
10) 2-Nitropropane	11.75	43	538580	430.7760 ug/L	94
13) Cyclohexanone	15.84	55	45874	414.0575 ug/L #	55

(#) = qualifier out of range (m) = manual integration
8M412327.D A9FOOWT.M Thu May 19 09:01:31 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412327.D Vial: 9
Acq On : 17 May 2016 13:10 Operator: TMB
Sample : WG569079-08 400ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

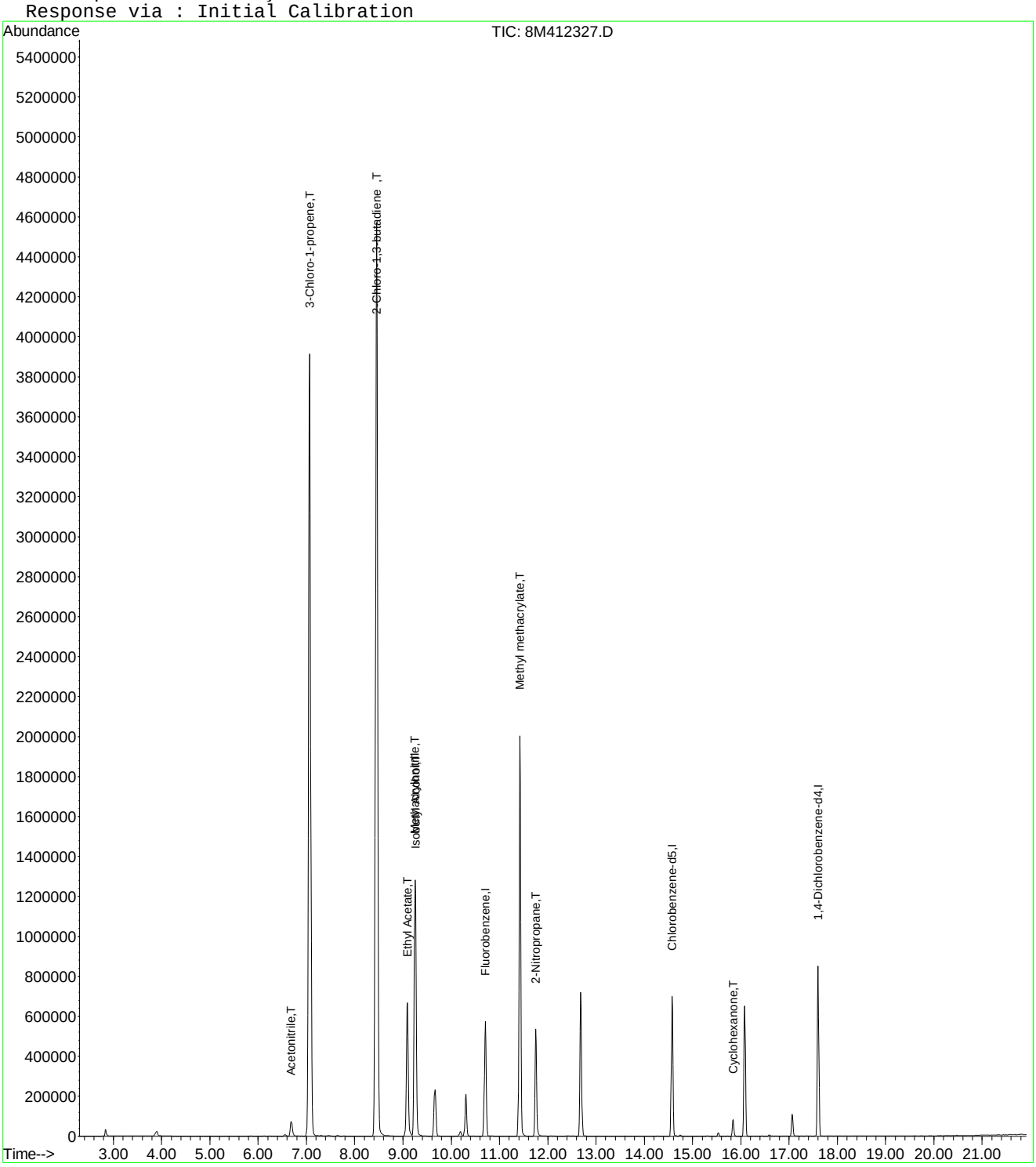

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412328.D Vial: 10
Acq On : 17 May 2016 13:39 Operator: TMB
Sample : WG569079-09 500ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:31 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	695694	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	495257	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	266442	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.69	41	132245	492.6753	ug/L	99
3) 3-Chloro-1-propene	7.06	41	4228273	478.2834	ug/L	82
4) 2-Chloro-1,3-butadiene	8.46	53	5390856	482.2693	ug/L	85
5) Ethyl Acetate	9.09	43	1321922	496.6017	ug/L	95
6) Methacrylonitrile	9.25	67	729852	499.4083	ug/L #	61
7) Isobutyl Alcohol	9.26	43	85200	958.2367	ug/L	96
9) Methyl methacrylate	11.42	41	1416438	493.1877	ug/L	72
10) 2-Nitropropane	11.75	43	637335	513.2956	ug/L	93
13) Cyclohexanone	15.84	55	52070	477.8160	ug/L #	61

(#) = qualifier out of range (m) = manual integration
8M412328.D A9FOOWT.M Thu May 19 09:01:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412328.D Vial: 10
Acq On : 17 May 2016 13:39 Operator: TMB
Sample : WG569079-09 500ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

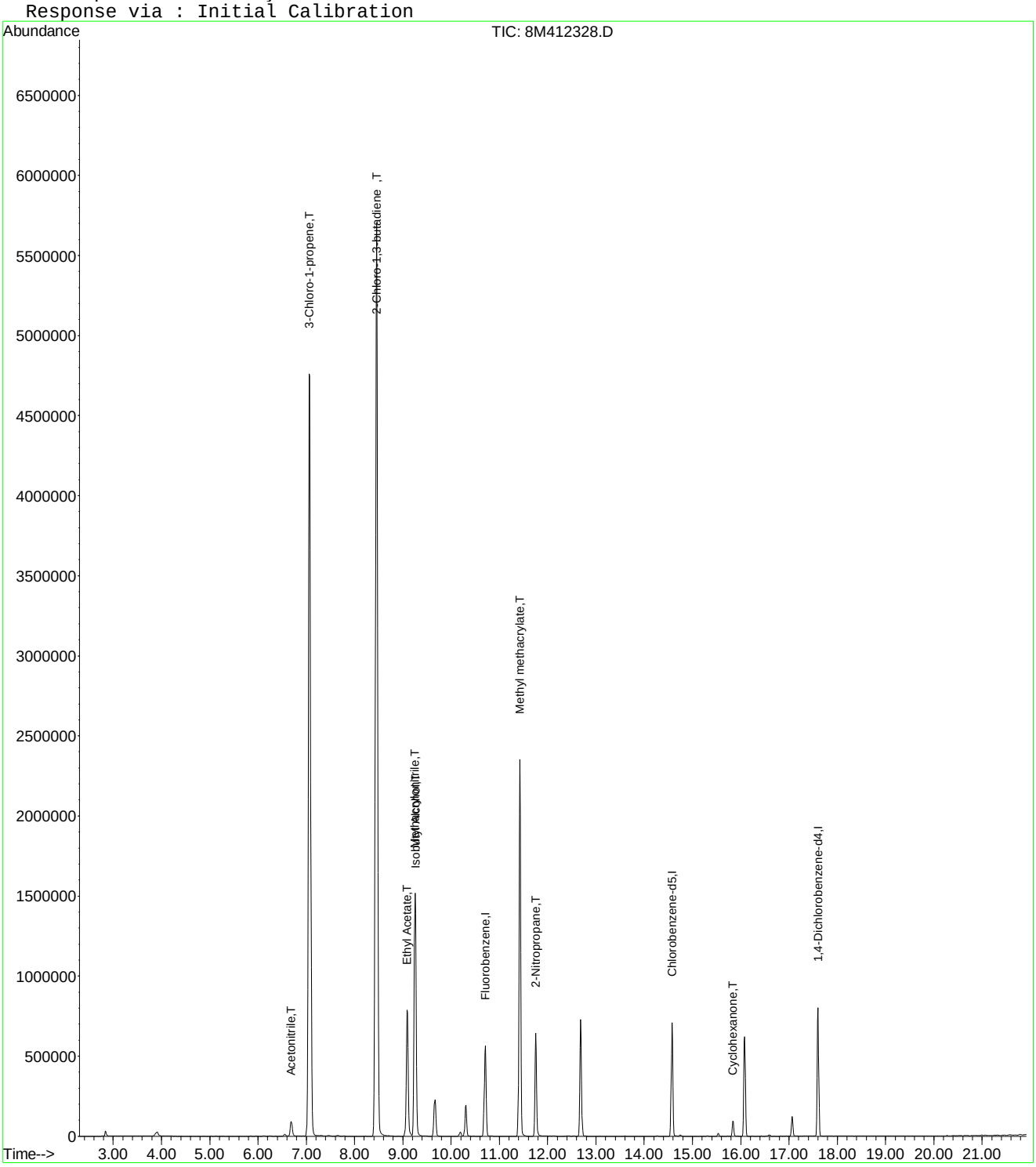

8M412328.D A9FOOWT.M Thu May 19 09:01:32 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:32 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	676765	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	486447	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	263036	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.69	41	29876	114.4154	ug/L	97
3) 3-Chloro-1-propene	7.07	41	858035	99.7718	ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	1224194	112.5803	ug/L	87
5) Ethyl Acetate	9.09	43	295545	114.1317	ug/L	96
6) Methacrylonitrile	9.25	67	161574	113.6509	ug/L #	63
7) Isobutyl Alcohol	9.26	43	19948	230.6285	ug/L	94
9) Methyl methacrylate	11.42	41	326465	116.8508	ug/L	72
10) 2-Nitropropane	11.75	43	131261	108.6716	ug/L	94
13) Cyclohexanone	15.83	55	10459	97.2189	ug/L #	74

(#) = qualifier out of range (m) = manual integration
8M412331.D A9FOOWT.M Thu May 19 09:01:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

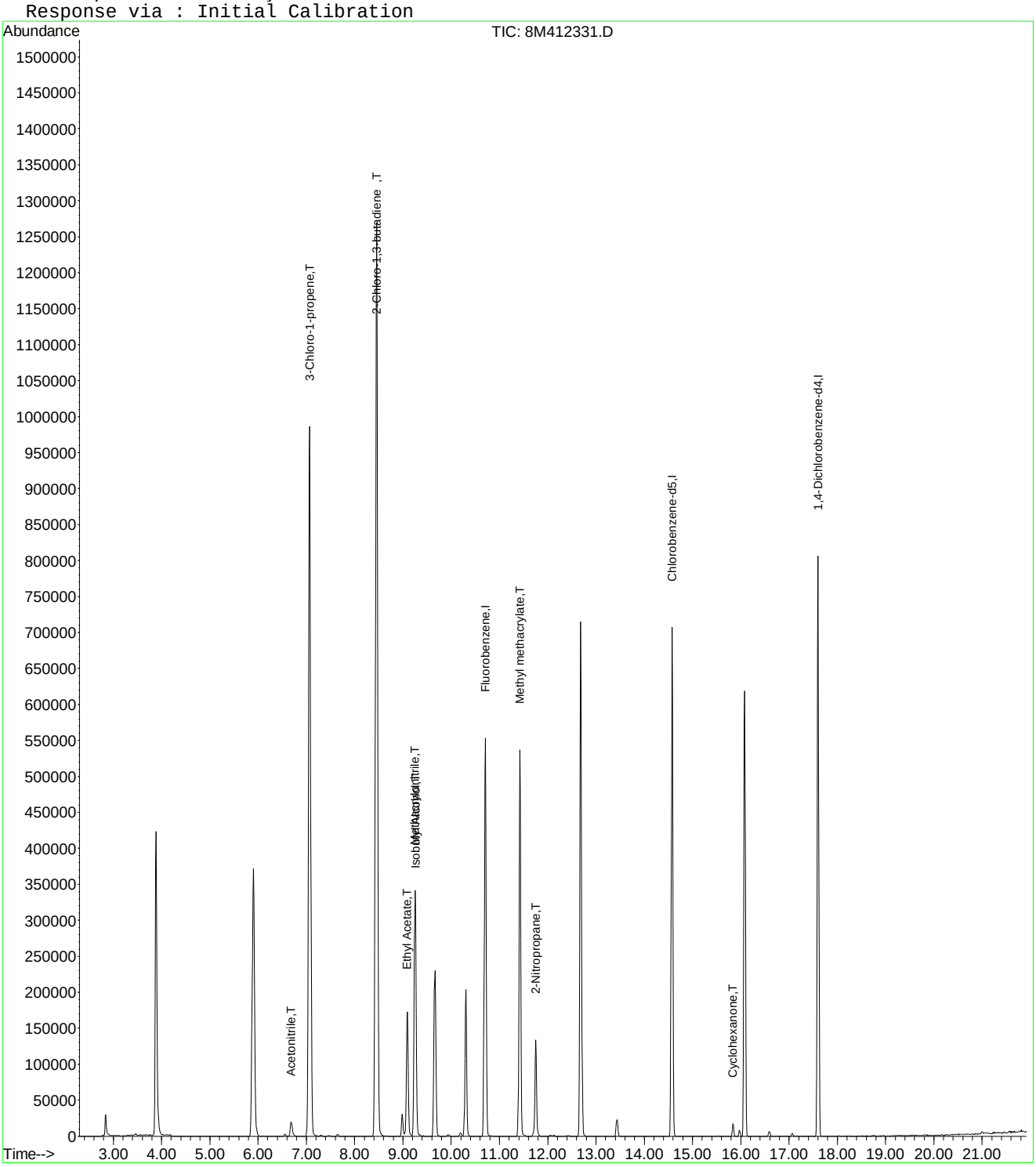

8M412331.D A9FOOWT.M Thu May 19 09:01:33 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	95	0.00
2	T	Acetonitrile	100.0000	114.4154	-14.4	109	0.00
3	T	3-Chloro-1-propene	100.0000	99.7718	0.2	91	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	112.5803	-12.6	103	0.00
5	T	Ethyl Acetate	100.0000	114.1317	-14.1	104	0.00
6	T	Methacrylonitrile	100.0000	113.6509	-13.7	104	0.00
7	T	Isobutyl Alcohol	200.0000	230.6285	-15.3	111	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.01
9	T	Methyl methacrylate	100.0000	116.8508	-16.9	109	0.00
10	T	2-Nitropropane	100.0000	108.6716	-8.7	108	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	96	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	96	0.00
13	T	Cyclohexanone	100.0000	97.2189	2.8	92	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412331.D A9FOOWT.M Thu May 19 09:03:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413192.D Vial: 3
Acq On : 23 Jun 2016 21:00 Operator: FJB
Sample : WG573990-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76715 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 21:22:50 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	725028	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	565784	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	309614	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	215407	27.6524 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.60%		
43) 1,2-Dichloroethane-d4	10.30	65	235972	28.2513 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 113.00%		
58) Toluene-d8	12.68	98	743592	25.1124 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.44%		
80) p-Bromofluorobenzene	16.08	95	325934	25.4234 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.68%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	636587	52.3691 ug/L	100
3) Chloromethane	3.62	50	336005	47.3540 ug/L	99
4) Vinyl Chloride	3.84	62	471297	55.9835 ug/L	99
5) 1,3-Butadiene	3.88	54	466509	66.0793 ug/L	94
6) Bromomethane	4.73	94	223807	44.2082 ug/L	96
7) Chloroethane	4.89	64	230630	49.7879 ug/L	97
8) Trichlorofluoromethane	5.37	101	914053	58.3521 ug/L	99
9) Diethyl ether	5.90	59	365966	97.8617 ug/L	97
10) Isoprene	5.94	67	528954	55.6063 ug/L	97
11) Acrolein	6.14	56	12820	38.2884 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	398018	54.0552 ug/L	94
13) Acetone	6.23	43	45416	55.6757 ug/L	96
14) 1,1-Dichloroethene	6.47	61	635976	54.2465 ug/L	98
15) Tert-Butyl Alcohol	6.58	59	52882	202.2989 ug/L	98
16) Dimethyl Sulfide	6.73	62	202068	48.2045 ug/L	99
17) Iodomethane	6.99	142	143986	44.5471 ug/L	100
18) Methyl acetate	7.00	43	125266	56.8107 ug/L	98
19) Methylene Chloride	7.25	84	374398	50.1818 ug/L	100
20) Carbon Disulfide	7.29	76	1363583	55.5787 ug/L	100
21) Acrylonitrile	7.43	53	52604	49.7020 ug/L	93
22) Methyl Tert Butyl Ether	7.46	73	871485	53.9704 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	566696	52.6143 ug/L	100
24) n-Hexane	7.78	57	459061	57.3974 ug/L	99
25) Diisopropyl ether	8.12	45	1678736	99.9895 ug/L	96
26) Vinyl Acetate	8.30	43	314225	40.8778 ug/L	100
27) 1,1-Dichloroethane	8.33	63	710629	53.1263 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1931789	107.3922 ug/L	98
29) 2-Butanone	8.88	43	57296	47.8066 ug/L	96
30) Propionitrile	8.98	54	34033	97.4427 ug/L	94
31) 2,2-Dichloropropane	9.10	77	868732	61.6292 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	432671	51.9888 ug/L	98
33) Chloroform	9.37	83	866433	54.8591 ug/L	100
34) 1-Bromopropane	9.51	122	73212	61.4154 ug/L	100
35) Bromochloromethane	9.61	130	227524	53.3132 ug/L	95
36) Tetrahydrofuran	9.63	42	69393	87.9098 ug/L	97
38) 1,1,1-Trichloroethane	9.91	97	883344	58.8810 ug/L	100
39) Cyclohexane	9.94	56	560595	53.9737 ug/L	97
40) 1,1-Dichloropropene	10.11	75	625468	54.6979 ug/L	100
41) Tert-Amyl-Methyl ether	10.21	73	1774358	108.6048 ug/L	100
42) Carbon Tetrachloride	10.25	117	798795	59.9616 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413192.D Vial: 3
Acq On : 23 Jun 2016 21:00 Operator: FJB
Sample : WG573990-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76715 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 21:22:50 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.42	62	592395	58.2757 ug/L	98
46)	Benzene	10.46	78	1539106	51.6786 ug/L	99
47)	Trichloroethene	11.21	130	432431	54.4401 ug/L	99
48)	Methylcyclohexane	11.30	83	686795	56.9140 ug/L	99
49)	1,2-Dichloropropane	11.43	63	327801	49.4432 ug/L	91
50)	Bromodichloromethane	11.73	83	655856	56.2842 ug/L	100
51)	1,4-Dioxane	11.72	88	6670	200.2779 ug/L	83
52)	Dibromomethane	11.81	93	198160	50.4924 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.02	63	128306	45.0262 ug/L	95
54)	4-Methyl-2-Pentanone	12.06	58	55902	48.0253 ug/L	91
55)	cis-1,3-Dichloropropene	12.36	75	645256	54.4029 ug/L	100
56)	Dimethyl Disulfide	12.63	79	358712	56.6642 ug/L	98
59)	Toluene	12.78	91	1659929	47.2580 ug/L	99
60)	Ethyl Methacrylate	12.88	69	327740	48.5859 ug/L	95
62)	trans-1,3-Dichloropropene	12.96	75	582725	49.5052 ug/L	99
63)	1,1,2-Trichloroethane	13.18	97	253367	45.7129 ug/L	100
64)	2-Hexanone	13.11	58	49571	42.5602 ug/L #	95
65)	1,3-Dichloropropane	13.49	76	457785	46.3909 ug/L	96
66)	Tetrachloroethene	13.60	164	374094	49.7104 ug/L	98
67)	Dibromochloromethane	13.87	129	402599	49.7473 ug/L	98
68)	1,2-Dibromoethane	14.13	107	263257	47.6577 ug/L	98
69)	1-Chlorohexane	14.21	91	606471	50.5817 ug/L	98
70)	Chlorobenzene	14.62	112	1116015	47.1177 ug/L	98
71)	1,1,1,2-Tetrachloroethane	14.65	131	455262	49.6136 ug/L	99
72)	Ethylbenzene	14.65	106	606126	46.7722 ug/L	99
73)	m-,p-Xylene	14.75	106	1464859	96.3703 ug/L	98
74)	o-Xylene	15.31	106	700366	47.1280 ug/L	96
75)	Styrene	15.35	104	1184000	48.5758 ug/L	95
76)	Bromoform	15.83	173	242179	50.4518 ug/L	99
77)	Isopropylbenzene	15.73	105	1964495	49.7609 ug/L	99
79)	1,1,2,2-Tetrachloroethane	15.95	83	268196	43.1537 ug/L	99
81)	1,2,3-Trichloropropane	16.14	110	85820	44.8426 ug/L	85
82)	trans-1,4-Dichloro-2-Buten	16.18	53	93736	48.0756 ug/L	75
83)	n-Propylbenzene	16.24	91	2331548	48.2690 ug/L	99
84)	Bromobenzene	16.37	156	478746	48.1858 ug/L	95
85)	1,3,5-Trimethylbenzene	16.42	105	1722684	48.9595 ug/L	99
86)	2-Chlorotoluene	16.51	91	1605346	47.6022 ug/L	99
87)	4-Chlorotoluene	16.56	91	1451412	47.6458 ug/L	100
88)	a-Methylstyrene	16.83	118	820053	49.1238 ug/L	100
89)	tert-Butylbenzene	16.90	134	321775	46.7449 ug/L	97
90)	1,2,4-Trimethylbenzene	16.94	105	1755727	48.5269 ug/L	100
91)	sec-Butylbenzene	17.17	105	1988839	48.0468 ug/L	99
92)	p-Isopropyltoluene	17.32	119	1708694	48.6162 ug/L	99
93)	1,3-Dichlorobenzene	17.52	146	921602	48.1730 ug/L	98
94)	1,4-Dichlorobenzene	17.64	146	907047	47.0277 ug/L	99
95)	n-Butylbenzene	17.85	91	1655056	47.6327 ug/L	99
96)	1,2-Dichlorobenzene	18.14	146	790507	46.4592 ug/L	99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	55858	44.7749 ug/L	98
98)	1,2,4-Trichlorobenzene	20.28	180	587639	46.2043 ug/L	98
99)	Hexachlorobutadiene	20.43	225	291731	49.0927 ug/L	98
100)	Naphthalene	20.65	128	821061	43.4522 ug/L	98
101)	1,2,3-Trichlorobenzene	20.96	180	466895	43.5136 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413192.D 8260WT.M Mon Jun 27 12:30:01 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413192.D Vial: 3
Acq On : 23 Jun 2016 21:00 Operator: FJB
Sample : WG573990-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76715 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 21:22 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

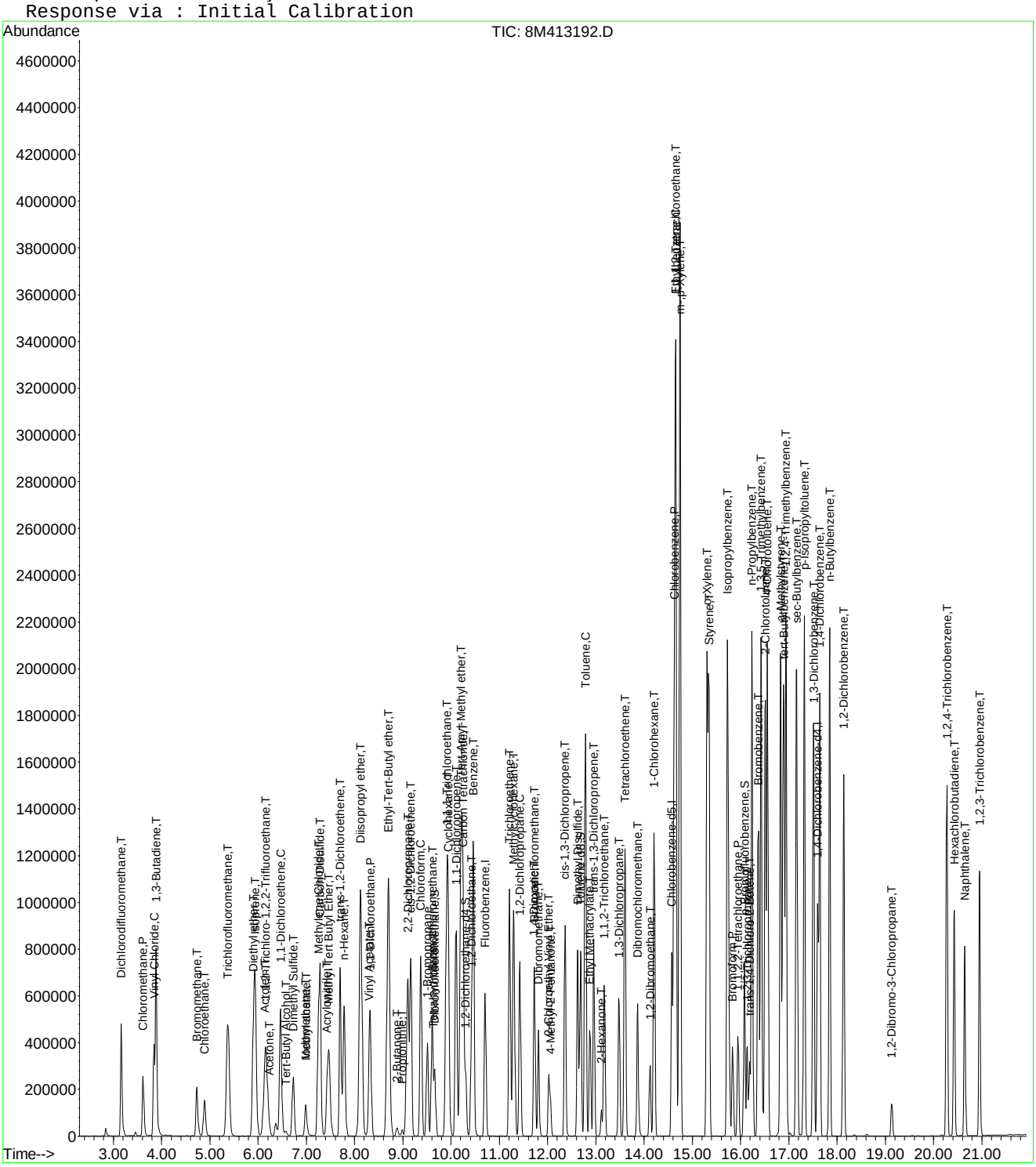

8M413192.D 8260WT.M Mon Jun 27 12:30:03 2016 Page 3

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413192.D Vial: 3
Acq On : 23 Jun 2016 21:00 Operator: FJB
Sample : WG573990-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76715 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	93	0.00
2	T	Dichlorodifluoromethane	0.4192	0.4390	-4.7	93	0.00
3	P	Chloromethane	0.2447	0.2317	5.3	90	0.00
4	C	Vinyl Chloride	0.2903	0.3250	-12.0	104	0.00
5	T	1,3-Butadiene	0.2434	0.3217	-32.2#	119	0.00
6	T	Bromomethane	0.1654	0.1543	6.7	86	0.00
7	T	Chloroethane	0.1597	0.1591	0.4	94	0.00
8	T	Trichlorofluoromethane	0.5401	0.6304	-16.7	109	0.00
9	T	Diethyl ether	0.1290	0.1262	2.1	94	0.00
10	T	Isoprene	0.3280	0.3648	-11.2	106	0.00
11	T	Acrolein	0.0116	0.0088	23.5	73	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2539	0.2745	-8.1	103	0.00
13	T	Acetone	0.0281	0.0313	-11.3	99	-0.01
14	C	1,1-Dichloroethene	0.4043	0.4386	-8.5	103	0.00
15	T	Tert-Butyl Alcohol	0.0090	0.0091	-1.2	95	0.00
16	T	Dimethyl Sulfide	0.1445	0.1394	3.6	91	0.00
17	T	Iodomethane	0.0866	0.0993	-14.7	91	0.00
18	T	Methyl acetate	0.0760	0.0864	-13.6	109	0.00
19	T	Methylene Chloride	0.2573	0.2582	-0.4	96	0.00
20	T	Carbon Disulfide	0.8460	0.9404	-11.2	107	0.00
21	T	Acrylonitrile	0.0365	0.0363	0.6	88	0.00
22	T	Methyl Tert Butyl Ether	0.5568	0.6010	-7.9	97	0.00
23	T	trans-1,2-Dichloroethene	0.3714	0.3908	-5.2	99	0.00
24	T	n-Hexane	0.2758	0.3166	-14.8	109	0.00
25	T	Diisopropyl ether	0.5789	0.5788	0.0	94	0.00
26	T	Vinyl Acetate	0.2651	0.2167	18.2	73	0.00
27	P	1,1-Dichloroethane	0.4612	0.4901	-6.3	98	0.00
28	T	Ethyl-Tert-Butyl ether	0.6203	0.6661	-7.4	99	0.00
29	T	2-Butanone	0.0413	0.0395	4.4	86	0.00
30	T	Propionitrile	0.0120	0.0117	2.5	89	0.00
31	T	2,2-Dichloropropane	0.4860	0.5991	-23.3	113	0.00
32	T	cis-1,2-Dichloroethene	0.2870	0.2984	-4.0	98	0.00
33	C	Chloroform	0.5446	0.5975	-9.7	103	0.00
34		1-Bromopropane	0.0411	0.0505	-22.8	115	0.00
35	T	Bromochloromethane	0.1472	0.1569	-6.6	99	0.00
36	T	Tetrahydrofuran	0.0272	0.0239	12.1	87	0.00
37	S	Dibromofluoromethane	0.2686	0.2971	-10.6	102	0.00
38	T	1,1,1-Trichloroethane	0.5173	0.6092	-17.8	108	0.00
39	T	Cyclohexane	0.3581	0.3866	-7.9	105	0.00
40	T	1,1-Dichloropropene	0.3943	0.4313	-9.4	102	0.00
41	T	Tert-Amyl-Methyl ether	0.5634	0.6118	-8.6	100	0.00
42	T	Carbon Tetrachloride	0.4593	0.5509	-19.9	110	0.00
43	S	1,2-Dichloroethane-d4	0.2880	0.3255	-13.0	103	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.3505	0.4085	-16.5	106	0.00
46	T	Benzene	1.0269	1.0614	-3.4	96	0.00
47	T	Trichloroethene	0.2739	0.2982	-8.9	102	0.00
48	T	Methylcyclohexane	0.4161	0.4736	-13.8	108	0.00
49	C	1,2-Dichloropropane	0.2286	0.2261	1.1	93	0.00
50	T	Bromodichloromethane	0.4018	0.4523	-12.6	100	0.00
51	T	1,4-Dioxane	0.0012	0.0012	0.0	88	0.00
52	T	Dibromomethane	0.1353	0.1367	-1.0	95	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0983	0.0885	10.0	79	0.00
54	T	4-Methyl-2-Pentanone	0.0401	0.0386	4.0	86	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413192.D Vial: 3
Acq On : 23 Jun 2016 21:00 Operator: FJB
Sample : WG573990-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76715 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4090	0.4450	-8.8	97	0.00
56	T	Dimethyl Disulfide	0.2183	0.2474	-13.3	104	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	105	0.00
58	S	Toluene-d8	1.3084	1.3143	-0.5	103	0.00
59	C	Toluene	1.5520	1.4669	5.5	99	0.00
60	T	Ethyl Methacrylate	0.2981	0.2896	2.8	97	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.5201	0.5150	1.0	98	0.00
63	T	1,1,2-Trichloroethane	0.2449	0.2239	8.6	94	0.00
64	T	2-Hexanone	0.0515	0.0438	14.9	87	0.00
65	T	1,3-Dichloropropane	0.4360	0.4046	7.2	94	0.00
66	T	Tetrachloroethene	0.3325	0.3306	0.6	107	0.00
67	T	Dibromochloromethane	0.3576	0.3558	0.5	100	0.00
68	T	1,2-Dibromoethane	0.2441	0.2327	4.7	96	0.00
69	T	1-Chlorohexane	0.5298	0.5360	-1.2	108	0.00
70	P	Chlorobenzene	1.0466	0.9863	5.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4055	0.4023	0.8	102	0.00
72	C	Ethylbenzene	0.5726	0.5356	6.5	101	0.00
73	T	m-,p-Xylene	0.6716	0.6473	3.6	101	0.00
74	T	o-Xylene	0.6566	0.6189	5.7	99	0.00
75	T	Styrene	1.0770	1.0463	2.8	98	0.00
76	P	Bromoform	0.2121	0.2140	-0.9	102	0.00
77	T	Isopropylbenzene	1.7444	1.7361	0.5	102	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	107	0.00
79	P	1,1,2,2-Tetrachloroethane	0.5018	0.4331	13.7	91	0.00
80	S	p-Bromofluorobenzene	1.0352	1.0527	-1.7	111	0.00
81	T	1,2,3-Trichloropropane	0.1545	0.1386	10.3	96	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1376	0.1514	-10.0	108	0.00
83	T	n-Propylbenzene	3.9003	3.7653	3.5	102	0.00
84	T	Bromobenzene	0.8022	0.7731	3.6	104	0.00
85	T	1,3,5-Trimethylbenzene	2.8411	2.7820	2.1	104	0.00
86	T	2-Chlorotoluene	2.7231	2.5925	4.8	100	0.00
87	T	4-Chlorotoluene	2.4597	2.3439	4.7	108	0.00
88	T	a-Methylstyrene	1.3479	1.3243	1.8	106	0.00
89	T	tert-Butylbenzene	0.5558	0.5196	6.5	105	0.00
90	T	1,2,4-Trimethylbenzene	2.9214	2.8354	2.9	105	0.00
91	T	sec-Butylbenzene	3.3424	3.2118	3.9	103	0.00
92	T	p-Isopropyltoluene	2.8379	2.7594	2.8	105	0.00
93	T	1,3-Dichlorobenzene	1.5448	1.4883	3.7	104	0.00
94	T	1,4-Dichlorobenzene	1.5574	1.4648	5.9	104	0.00
95	T	n-Butylbenzene	2.8056	2.6728	4.7	103	0.00
96	T	1,2-Dichlorobenzene	1.3739	1.2766	7.1	103	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1007	0.0902	10.4	94	0.00
98	T	1,2,4-Trichlorobenzene	1.0269	0.9490	7.6	101	0.00
99	T	Hexachlorobutadiene	0.4798	0.4711	1.8	110	0.00
100	T	Naphthalene	1.5257	1.3259	13.1	92	0.00
101	T	1,2,3-Trichlorobenzene	0.8664	0.7540	13.0	98	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413192.D 8260WT.M Mon Jun 27 12:37:25 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413192.D Vial: 3
Acq On : 23 Jun 2016 21:00 Operator: FJB
Sample : WG573990-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76715 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	93	0.00
2	T	Dichlorodifluoromethane	50.0000	52.3691	-4.7	93	0.00
3	P	Chloromethane	50.0000	47.3540	5.3	90	0.00
4	C	Vinyl Chloride	50.0000	55.9835	-12.0	104	0.00
5	T	1,3-Butadiene	50.0000	66.0793	-32.2#	119	0.00
6	T	Bromomethane	50.0000	44.2082	11.6	86	0.00
7	T	Chloroethane	50.0000	49.7878	0.4	94	0.00
8	T	Trichlorofluoromethane	50.0000	58.3521	-16.7	109	0.00
9	T	Diethyl ether	100.0000	97.8617	2.1	94	0.00
10	T	Isoprene	50.0000	55.6063	-11.2	106	0.00
11	T	Acrolein	50.0000	38.2884	23.4	73	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	54.0552	-8.1	103	0.00
13	T	Acetone	50.0000	55.6757	-11.4	99	-0.01
14	C	1,1-Dichloroethene	50.0000	54.2465	-8.5	103	0.00
15	T	Tert-Butyl Alcohol	200.0000	202.2989	-1.1	95	0.00
16	T	Dimethyl Sulfide	50.0000	48.2045	3.6	91	0.00
17	T	Iodomethane	50.0000	44.5471	10.9	91	0.00
18	T	Methyl acetate	50.0000	56.8107	-13.6	109	0.00
19	T	Methylene Chloride	50.0000	50.1818	-0.4	96	0.00
20	T	Carbon Disulfide	50.0000	55.5787	-11.2	107	0.00
21	T	Acrylonitrile	50.0000	49.7020	0.6	88	0.00
22	T	Methyl Tert Butyl Ether	50.0000	53.9704	-7.9	97	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.6143	-5.2	99	0.00
24	T	n-Hexane	50.0000	57.3974	-14.8	109	0.00
25	T	Diisopropyl ether	100.0000	99.9895	0.0	94	0.00
26	T	Vinyl Acetate	50.0000	40.8778	18.2	73	0.00
27	P	1,1-Dichloroethane	50.0000	53.1264	-6.3	98	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	107.3922	-7.4	99	0.00
29	T	2-Butanone	50.0000	47.8066	4.4	86	0.00
30	T	Propionitrile	100.0000	97.4427	2.6	89	0.00
31	T	2,2-Dichloropropane	50.0000	61.6292	-23.3	113	0.00
32	T	cis-1,2-Dichloroethene	50.0000	51.9888	-4.0	98	0.00
33	C	Chloroform	50.0000	54.8591	-9.7	103	0.00
34		1-Bromopropane	50.0000	61.4154	-22.8	115	0.00
35	T	Bromochloromethane	50.0000	53.3132	-6.6	99	0.00
36	T	Tetrahydrofuran	100.0000	87.9098	12.1	87	0.00
37	S	Dibromofluoromethane	25.0000	27.6524	-10.6	102	0.00
38	T	1,1,1-Trichloroethane	50.0000	58.8810	-17.8	108	0.00
39	T	Cyclohexane	50.0000	53.9737	-7.9	105	0.00
40	T	1,1-Dichloropropene	50.0000	54.6979	-9.4	102	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	108.6048	-8.6	100	0.00
42	T	Carbon Tetrachloride	50.0000	59.9616	-19.9	110	0.00
43	S	1,2-Dichloroethane-d4	25.0000	28.2513	-13.0	103	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	58.2756	-16.6	106	0.00
46	T	Benzene	50.0000	51.6786	-3.4	96	0.00
47	T	Trichloroethene	50.0000	54.4400	-8.9	102	0.00
48	T	Methylcyclohexane	50.0000	56.9140	-13.8	108	0.00
49	C	1,2-Dichloropropane	50.0000	49.4432	1.1	93	0.00
50	T	Bromodichloromethane	50.0000	56.2841	-12.6	100	0.00
51	T	1,4-Dioxane	200.0000	200.2779	-0.1	88	0.00
52	T	Dibromomethane	50.0000	50.4924	-1.0	95	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	45.0262	9.9	79	0.00
54	T	4-Methyl-2-Pentanone	50.0000	48.0253	3.9	86	0.00

(#) = Out of Range

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413192.D Vial: 3
Acq On : 23 Jun 2016 21:00 Operator: FJB
Sample : WG573990-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76715 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	54.4029	-8.8	97	0.00
56	T	Dimethyl Disulfide	50.0000	56.6642	-13.3	104	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	105	0.00
58	S	Toluene-d8	25.0000	25.1124	-0.4	103	0.00
59	C	Toluene	50.0000	47.2580	5.5	99	0.00
60	T	Ethyl Methacrylate	50.0000	48.5859	2.8	97	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	49.5052	1.0	98	0.00
63	T	1,1,2-Trichloroethane	50.0000	45.7129	8.6	94	0.00
64	T	2-Hexanone	50.0000	42.5602	14.9	87	0.00
65	T	1,3-Dichloropropane	50.0000	46.3909	7.2	94	0.00
66	T	Tetrachloroethene	50.0000	49.7104	0.6	107	0.00
67	T	Dibromochloromethane	50.0000	49.7473	0.5	100	0.00
68	T	1,2-Dibromoethane	50.0000	47.6577	4.7	96	0.00
69	T	1-Chlorohexane	50.0000	50.5817	-1.2	108	0.00
70	P	Chlorobenzene	50.0000	47.1177	5.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	49.6136	0.8	102	0.00
72	C	Ethylbenzene	50.0000	46.7722	6.5	101	0.00
73	T	m-,p-Xylene	100.0000	96.3703	3.6	101	0.00
74	T	o-Xylene	50.0000	47.1280	5.7	99	0.00
75	T	Styrene	50.0000	48.5758	2.8	98	0.00
76	P	Bromoform	50.0000	50.4518	-0.9	102	0.00
77	T	Isopropylbenzene	50.0000	49.7609	0.5	102	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	107	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	43.1537	13.7	91	0.00
80	S	p-Bromofluorobenzene	25.0000	25.4234	-1.7	111	0.00
81	T	1,2,3-Trichloropropane	50.0000	44.8426	10.3	96	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	48.0756	3.8	108	0.00
83	T	n-Propylbenzene	50.0000	48.2690	3.5	102	0.00
84	T	Bromobenzene	50.0000	48.1858	3.6	104	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	48.9595	2.1	104	0.00
86	T	2-Chlorotoluene	50.0000	47.6022	4.8	100	0.00
87	T	4-Chlorotoluene	50.0000	47.6458	4.7	108	0.00
88	T	a-Methylstyrene	50.0000	49.1238	1.8	106	0.00
89	T	tert-Butylbenzene	50.0000	46.7449	6.5	105	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	48.5269	2.9	105	0.00
91	T	sec-Butylbenzene	50.0000	48.0468	3.9	103	0.00
92	T	p-Isopropyltoluene	50.0000	48.6162	2.8	105	0.00
93	T	1,3-Dichlorobenzene	50.0000	48.1730	3.7	104	0.00
94	T	1,4-Dichlorobenzene	50.0000	47.0277	5.9	104	0.00
95	T	n-Butylbenzene	50.0000	47.6327	4.7	103	0.00
96	T	1,2-Dichlorobenzene	50.0000	46.4592	7.1	103	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	44.7749	10.5	94	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	46.2043	7.6	101	0.00
99	T	Hexachlorobutadiene	50.0000	49.0927	1.8	110	0.00
100	T	Naphthalene	50.0000	43.4522	13.1	92	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	43.5136	13.0	98	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413192.D 8260WT.M Mon Jun 27 12:37:29 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413249.D Vial: 3
Acq On : 26 Jun 2016 17:34 Operator: ADC
Sample : WG574226-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 26 17:56:49 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	792305	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	610141	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	338425	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	230766	27.1086 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 108.44%		
43) 1,2-Dichloroethane-d4	10.30	65	246217	26.9748 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.88%		
58) Toluene-d8	12.68	98	812451	25.4432 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.76%		
80) p-Bromofluorobenzene	16.07	95	349944	24.9724 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.88%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	597625	44.9892 ug/L	99
3) Chloromethane	3.62	50	363564	46.8872 ug/L	97
4) Vinyl Chloride	3.84	62	517399	56.2410 ug/L	99
5) 1,3-Butadiene	3.88	54	528523	68.5065 ug/L	96
6) Bromomethane	4.73	94	250718	45.2668 ug/L	100
7) Chloroethane	4.89	64	270358	53.4084 ug/L	97
8) Trichlorofluoromethane	5.37	101	1003093	58.5988 ug/L	99
9) Diethyl ether	5.90	59	378264	92.5613 ug/L	97
10) Isoprene	5.94	67	612195	58.8923 ug/L	97
11) Acrolein	6.13	56	12656	34.5890 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	445293	55.3405 ug/L	93
13) Acetone	6.23	43	49719	55.7752 ug/L	97
14) 1,1-Dichloroethene	6.46	61	718821	56.1066 ug/L	99
15) Tert-Butyl Alcohol	6.57	59	69098	241.8875 ug/L	98
16) Dimethyl Sulfide	6.72	62	238832	52.1369 ug/L	99
17) Iodomethane	6.98	142	162623	45.9147 ug/L	94
18) Methyl acetate	7.00	43	143382	59.5050 ug/L	98
19) Methylene Chloride	7.25	84	434212	53.2570 ug/L	98
20) Carbon Disulfide	7.29	76	1588552	59.2503 ug/L	100
21) Acrylonitrile	7.42	53	61543	53.2103 ug/L	100
22) Methyl Tert Butyl Ether	7.46	73	965883	54.7372 ug/L	100
23) trans-1,2-Dichloroethene	7.70	61	640673	54.4318 ug/L	99
24) n-Hexane	7.77	57	536478	61.3813 ug/L	100
25) Diisopropyl ether	8.13	45	1888502	102.9323 ug/L	98
26) Vinyl Acetate	8.29	43	321982	38.3302 ug/L	100
27) 1,1-Dichloroethane	8.32	63	811567	55.5206 ug/L	100
28) Ethyl-Tert-Butyl ether	8.69	59	2126472	108.1770 ug/L	99
29) 2-Butanone	8.88	43	64926	49.5730 ug/L	95
30) Propionitrile	8.98	54	40143	105.1771 ug/L	98
31) 2,2-Dichloropropane	9.10	77	973346	63.1873 ug/L	99
32) cis-1,2-Dichloroethene	9.16	96	499140	54.8829 ug/L	99
33) Chloroform	9.38	83	965576	55.9452 ug/L	100
34) 1-Bromopropane	9.51	122	82820	63.5759 ug/L	96
35) Bromochloromethane	9.60	130	257964	55.3132 ug/L	95
36) Tetrahydrofuran	9.62	42	79638	92.3218 ug/L	95
38) 1,1,1-Trichloroethane	9.90	97	967940	59.0413 ug/L	99
39) Cyclohexane	9.93	56	654991	57.7073 ug/L	99
40) 1,1-Dichloropropene	10.10	75	705164	56.4311 ug/L	100
41) Tert-Amyl-Methyl ether	10.20	73	1932122	108.2193 ug/L	100
42) Carbon Tetrachloride	10.25	117	872237	59.9149 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M413249.D 8260WT.M Mon Jun 27 12:32:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413249.D Vial: 3
Acq On : 26 Jun 2016 17:34 Operator: ADC
Sample : WG574226-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 26 17:56:49 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	639063	57.5283 ug/L		99
46)	Benzene	10.46	78	1774497	54.5230 ug/L		99
47)	Trichloroethene	11.22	130	494864	57.0099 ug/L		98
48)	Methylcyclohexane	11.30	83	778615	59.0442 ug/L		100
49)	1,2-Dichloropropane	11.42	63	379952	52.4429 ug/L		96
50)	Bromodichloromethane	11.72	83	727332	57.1180 ug/L		100
51)	1,4-Dioxane	11.71	88	8035	220.7779 ug/L		91
52)	Dibromomethane	11.82	93	225354	52.5457 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	144101	46.2752 ug/L		97
54)	4-Methyl-2-Pentanone	12.05	58	60672	47.6973 ug/L		92
55)	cis-1,3-Dichloropropene	12.36	75	726400	56.0439 ug/L		98
56)	Dimethyl Disulfide	12.62	79	407970	58.9730 ug/L		98
59)	Toluene	12.79	91	1896935	50.0794 ug/L		99
60)	Ethyl Methacrylate	12.88	69	372062	51.1466 ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	642807	50.6394 ug/L		98
63)	1,1,2-Trichloroethane	13.17	97	284596	47.6143 ug/L		99
64)	2-Hexanone	13.11	58	56329	44.8465 ug/L	#	98
65)	1,3-Dichloropropane	13.48	76	511977	48.1107 ug/L		97
66)	Tetrachloroethene	13.60	164	434567	53.5481 ug/L		95
67)	Dibromochloromethane	13.86	129	447268	51.2489 ug/L		99
68)	1,2-Dibromoethane	14.12	107	292866	49.1635 ug/L		99
69)	1-Chlorohexane	14.20	91	691416	53.4741 ug/L		99
70)	Chlorobenzene	14.63	112	1278650	50.0594 ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.66	131	510017	51.5400 ug/L		99
72)	Ethylbenzene	14.65	106	684339	48.9685 ug/L		99
73)	m-,p-Xylene	14.74	106	1636996	99.8655 ug/L		99
74)	o-Xylene	15.31	106	804557	50.2032 ug/L		99
75)	Styrene	15.34	104	1340603	51.0022 ug/L		98
76)	Bromoform	15.84	173	263420	50.8873 ug/L		99
77)	Isopropylbenzene	15.73	105	2197573	51.6180 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	302300	44.5003 ug/L		100
81)	1,2,3-Trichloropropane	16.14	110	96277	46.0239 ug/L		92
82)	trans-1,4-Dichloro-2-Buten	16.19	53	99904	46.8922 ug/L		87
83)	n-Propylbenzene	16.24	91	2584981	48.9598 ug/L		99
84)	Bromobenzene	16.36	156	537510	49.4947 ug/L		93
85)	1,3,5-Trimethylbenzene	16.43	105	1907417	49.5946 ug/L		99
86)	2-Chlorotoluene	16.51	91	1681016	45.6025 ug/L		99
87)	4-Chlorotoluene	16.56	91	1714274	51.4840 ug/L		99
88)	a-Methylstyrene	16.83	118	911301	49.9425 ug/L		98
89)	tert-Butylbenzene	16.89	134	360482	47.9097 ug/L		98
90)	1,2,4-Trimethylbenzene	16.94	105	1921664	48.5916 ug/L		99
91)	sec-Butylbenzene	17.16	105	2185788	48.3094 ug/L		99
92)	p-Isopropyltoluene	17.31	119	1868144	48.6279 ug/L		97
93)	1,3-Dichlorobenzene	17.51	146	1031016	49.3042 ug/L		98
94)	1,4-Dichlorobenzene	17.65	146	1013760	48.0858 ug/L		99
95)	n-Butylbenzene	17.84	91	1819119	47.8974 ug/L		98
96)	1,2-Dichlorobenzene	18.13	146	876436	47.1242 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	61037	44.7611 ug/L		95
98)	1,2,4-Trichlorobenzene	20.27	180	658890	47.3962 ug/L		100
99)	Hexachlorobutadiene	20.43	225	322692	49.6799 ug/L		98
100)	Naphthalene	20.64	128	912662	44.1880 ug/L		100
101)	1,2,3-Trichlorobenzene	20.95	180	524580	44.7276 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M413249.D 8260WT.M Mon Jun 27 12:32:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413249.D Vial: 3
Acq On : 26 Jun 2016 17:34 Operator: ADC
Sample : WG574226-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 26 17:56 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

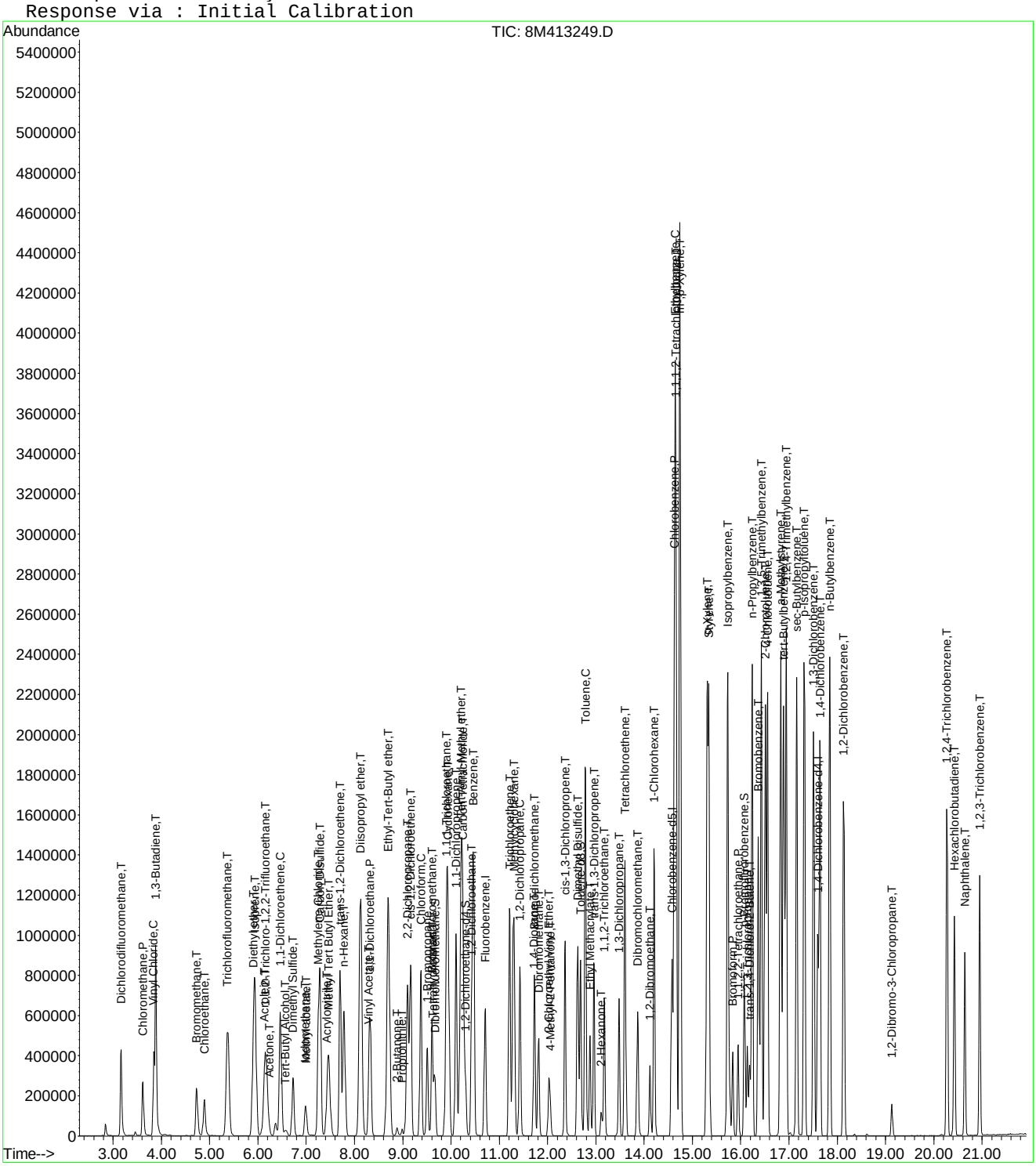

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413249.D Vial: 3
Acq On : 26 Jun 2016 17:34 Operator: ADC
Sample : WG574226-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	102	0.00
2	T	Dichlorodifluoromethane	0.4192	0.3771	10.0	88	0.00
3	P	Chloromethane	0.2447	0.2294	6.2	98	0.00
4	C	Vinyl Chloride	0.2903	0.3265	-12.5	114	-0.01
5	T	1,3-Butadiene	0.2434	0.3335	-37.0#	135	0.00
6	T	Bromomethane	0.1654	0.1582	4.4	96	0.00
7	T	Chloroethane	0.1597	0.1706	-6.8	111	0.00
8	T	Trichlorofluoromethane	0.5401	0.6330	-17.2	120	-0.01
9	T	Diethyl ether	0.1290	0.1194	7.4	97	0.00
10	T	Isoprene	0.3280	0.3863	-17.8	123	0.00
11	T	Acrolein	0.0116	0.0080	30.8#	72	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2539	0.2810	-10.7	115	0.00
13	T	Acetone	0.0281	0.0314	-11.6	108	-0.01
14	C	1,1-Dichloroethene	0.4043	0.4536	-12.2	116	0.00
15	T	Tert-Butyl Alcohol	0.0090	0.0109	-21.0	124	-0.01
16	T	Dimethyl Sulfide	0.1445	0.1507	-4.3	108	-0.01
17	T	Iodomethane	0.0866	0.1026	-18.6	103	0.00
18	T	Methyl acetate	0.0760	0.0905	-19.0	125	0.00
19	T	Methylene Chloride	0.2573	0.2740	-6.5	111	0.00
20	T	Carbon Disulfide	0.8460	1.0025	-18.5	125	0.00
21	T	Acrylonitrile	0.0365	0.0388	-6.4	103	-0.01
22	T	Methyl Tert Butyl Ether	0.5568	0.6095	-9.5	107	0.00
23	T	trans-1,2-Dichloroethene	0.3714	0.4043	-8.9	112	0.00
24	T	n-Hexane	0.2758	0.3386	-22.8	128	-0.01
25	T	Diisopropyl ether	0.5789	0.5959	-2.9	106	0.00
26	T	Vinyl Acetate	0.2651	0.2032	23.3	75	0.00
27	P	1,1-Dichloroethane	0.4612	0.5122	-11.0	112	0.00
28	T	Ethyl-Tert-Butyl ether	0.6203	0.6710	-8.2	109	-0.01
29	T	2-Butanone	0.0413	0.0410	0.9	98	0.00
30	T	Propionitrile	0.0120	0.0127	-5.2	105	0.00
31	T	2,2-Dichloropropane	0.4860	0.6142	-26.4#	127	0.00
32	T	cis-1,2-Dichloroethene	0.2870	0.3150	-9.8	114	-0.01
33	C	Chloroform	0.5446	0.6093	-11.9	114	0.00
34		1-Bromopropane	0.0411	0.0523	-27.2#	131	0.00
35	T	Bromochloromethane	0.1472	0.1628	-10.6	112	0.00
36	T	Tetrahydrofuran	0.0272	0.0251	7.7	100	-0.01
37	S	Dibromofluoromethane	0.2686	0.2913	-8.4	109	0.00
38	T	1,1,1-Trichloroethane	0.5173	0.6108	-18.1	118	0.00
39	T	Cyclohexane	0.3581	0.4134	-15.4	122	0.00
40	T	1,1-Dichloropropene	0.3943	0.4450	-12.9	115	0.00
41	T	Tert-Amyl-Methyl ether	0.5634	0.6097	-8.2	109	-0.01
42	T	Carbon Tetrachloride	0.4593	0.5504	-19.8	120	0.00
43	S	1,2-Dichloroethane-d4	0.2880	0.3108	-7.9	107	-0.01
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.3505	0.4033	-15.1	114	0.00
46	T	Benzene	1.0269	1.1198	-9.0	110	0.00
47	T	Trichloroethene	0.2739	0.3123	-14.0	116	0.00
48	T	Methylcyclohexane	0.4161	0.4914	-18.1	123	0.00
49	C	1,2-Dichloropropane	0.2286	0.2398	-4.9	108	0.00
50	T	Bromodichloromethane	0.4018	0.4590	-14.2	111	0.00
51	T	1,4-Dioxane	0.0012	0.0013	-10.4	106	0.00
52	T	Dibromomethane	0.1353	0.1422	-5.1	108	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0983	0.0909	7.4	89	0.00
54	T	4-Methyl-2-Pentanone	0.0401	0.0383	4.6	93	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413249.D Vial: 3
Acq On : 26 Jun 2016 17:34 Operator: ADC
Sample : WG574226-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4090	0.4584	-12.1	109	0.00
56	T	Dimethyl Disulfide	0.2183	0.2575	-17.9	119	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	113	0.00
58	S	Toluene-d8	1.3084	1.3316	-1.8	113	0.00
59	C	Toluene	1.5520	1.5545	-0.2	113	0.00
60	T	Ethyl Methacrylate	0.2981	0.3049	-2.3	110	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.5201	0.5268	-1.3	108	0.00
63	T	1,1,2-Trichloroethane	0.2449	0.2332	4.8	106	-0.01
64	T	2-Hexanone	0.0515	0.0462	10.3	99	-0.01
65	T	1,3-Dichloropropane	0.4360	0.4196	3.8	105	0.00
66	T	Tetrachloroethene	0.3325	0.3561	-7.1	124	0.00
67	T	Dibromochloromethane	0.3576	0.3665	-2.5	111	0.00
68	T	1,2-Dibromoethane	0.2441	0.2400	1.7	107	0.00
69	T	1-Chlorohexane	0.5298	0.5666	-6.9	123	-0.01
70	P	Chlorobenzene	1.0466	1.0478	-0.1	114	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4055	0.4179	-3.1	114	0.00
72	C	Ethylbenzene	0.5726	0.5608	2.1	113	-0.01
73	T	m-,p-Xylene	0.6716	0.6707	0.1	113	0.00
74	T	o-Xylene	0.6566	0.6593	-0.4	113	0.00
75	T	Styrene	1.0770	1.0986	-2.0	111	0.00
76	P	Bromoform	0.2121	0.2159	-1.8	111	0.00
77	T	Isopropylbenzene	1.7444	1.8009	-3.2	114	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	117	0.00
79	P	1,1,2,2-Tetrachloroethane	0.5018	0.4466	11.0	103	0.00
80	S	p-Bromofluorobenzene	1.0352	1.0340	0.1	120	0.00
81	T	1,2,3-Trichloropropane	0.1545	0.1422	8.0	108	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1376	0.1476	-7.3	115	0.00
83	T	n-Propylbenzene	3.9003	3.8191	2.1	113	0.00
84	T	Bromobenzene	0.8022	0.7941	1.0	117	-0.01
85	T	1,3,5-Trimethylbenzene	2.8411	2.8181	0.8	115	0.00
86	T	2-Chlorotoluene	2.7231	2.4836	8.8	104	0.00
87	T	4-Chlorotoluene	2.4597	2.5327	-3.0	128	0.00
88	T	a-Methylstyrene	1.3479	1.3464	0.1	118	0.00
89	T	tert-Butylbenzene	0.5558	0.5326	4.2	117	0.00
90	T	1,2,4-Trimethylbenzene	2.9214	2.8391	2.8	114	0.00
91	T	sec-Butylbenzene	3.3424	3.2294	3.4	114	0.00
92	T	p-Isopropyltoluene	2.8379	2.7601	2.7	115	-0.01
93	T	1,3-Dichlorobenzene	1.5448	1.5233	1.4	117	0.00
94	T	1,4-Dichlorobenzene	1.5574	1.4978	3.8	116	0.00
95	T	n-Butylbenzene	2.8056	2.6876	4.2	113	-0.01
96	T	1,2-Dichlorobenzene	1.3739	1.2949	5.8	114	-0.01
97	T	1,2-Dibromo-3-Chloropropane	0.1007	0.0902	10.5	102	0.00
98	T	1,2,4-Trichlorobenzene	1.0269	0.9735	5.2	113	-0.01
99	T	Hexachlorobutadiene	0.4798	0.4768	0.6	122	-0.01
100	T	Naphthalene	1.5257	1.3484	11.6	102	-0.01
101	T	1,2,3-Trichlorobenzene	0.8664	0.7750	10.5	110	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413249.D 8260WT.M Mon Jun 27 12:38:14 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413249.D Vial: 3
Acq On : 26 Jun 2016 17:34 Operator: ADC
Sample : WG574226-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	102	0.00
2	T	Dichlorodifluoromethane	50.0000	44.9892	10.0	88	0.00
3	P	Chloromethane	50.0000	46.8872	6.2	98	0.00
4	C	Vinyl Chloride	50.0000	56.2410	-12.5	114	-0.01
5	T	1,3-Butadiene	50.0000	68.5065	-37.0#	135	0.00
6	T	Bromomethane	50.0000	45.2668	9.5	96	0.00
7	T	Chloroethane	50.0000	53.4083	-6.8	111	0.00
8	T	Trichlorofluoromethane	50.0000	58.5988	-17.2	120	-0.01
9	T	Diethyl ether	100.0000	92.5613	7.4	97	0.00
10	T	Isoprene	50.0000	58.8923	-17.8	123	0.00
11	T	Acrolein	50.0000	34.5890	30.8#	72	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	55.3405	-10.7	115	0.00
13	T	Acetone	50.0000	55.7752	-11.6	108	-0.01
14	C	1,1-Dichloroethene	50.0000	56.1066	-12.2	116	0.00
15	T	Tert-Butyl Alcohol	200.0000	241.8875	-20.9	124	-0.01
16	T	Dimethyl Sulfide	50.0000	52.1369	-4.3	108	-0.01
17	T	Iodomethane	50.0000	45.9147	8.2	103	0.00
18	T	Methyl acetate	50.0000	59.5050	-19.0	125	0.00
19	T	Methylene Chloride	50.0000	53.2570	-6.5	111	0.00
20	T	Carbon Disulfide	50.0000	59.2503	-18.5	125	0.00
21	T	Acrylonitrile	50.0000	53.2103	-6.4	103	-0.01
22	T	Methyl Tert Butyl Ether	50.0000	54.7372	-9.5	107	0.00
23	T	trans-1,2-Dichloroethene	50.0000	54.4318	-8.9	112	0.00
24	T	n-Hexane	50.0000	61.3813	-22.8	128	-0.01
25	T	Diisopropyl ether	100.0000	102.9323	-2.9	106	0.00
26	T	Vinyl Acetate	50.0000	38.3302	23.3	75	0.00
27	P	1,1-Dichloroethane	50.0000	55.5206	-11.0	112	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	108.1770	-8.2	109	-0.01
29	T	2-Butanone	50.0000	49.5730	0.9	98	0.00
30	T	Propionitrile	100.0000	105.1771	-5.2	105	0.00
31	T	2,2-Dichloropropane	50.0000	63.1873	-26.4#	127	0.00
32	T	cis-1,2-Dichloroethene	50.0000	54.8829	-9.8	114	-0.01
33	C	Chloroform	50.0000	55.9452	-11.9	114	0.00
34		1-Bromopropane	50.0000	63.5759	-27.2#	131	0.00
35	T	Bromochloromethane	50.0000	55.3132	-10.6	112	0.00
36	T	Tetrahydrofuran	100.0000	92.3218	7.7	100	-0.01
37	S	Dibromofluoromethane	25.0000	27.1086	-8.4	109	0.00
38	T	1,1,1-Trichloroethane	50.0000	59.0413	-18.1	118	0.00
39	T	Cyclohexane	50.0000	57.7073	-15.4	122	0.00
40	T	1,1-Dichloropropene	50.0000	56.4311	-12.9	115	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	108.2193	-8.2	109	-0.01
42	T	Carbon Tetrachloride	50.0000	59.9149	-19.8	120	0.00
43	S	1,2-Dichloroethane-d4	25.0000	26.9748	-7.9	107	-0.01
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	57.5283	-15.1	114	0.00
46	T	Benzene	50.0000	54.5230	-9.0	110	0.00
47	T	Trichloroethene	50.0000	57.0099	-14.0	116	0.00
48	T	Methylcyclohexane	50.0000	59.0442	-18.1	123	0.00
49	C	1,2-Dichloropropane	50.0000	52.4429	-4.9	108	0.00
50	T	Bromodichloromethane	50.0000	57.1180	-14.2	111	0.00
51	T	1,4-Dioxane	200.0000	220.7779	-10.4	106	0.00
52	T	Dibromomethane	50.0000	52.5457	-5.1	108	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	46.2752	7.4	89	0.00
54	T	4-Methyl-2-Pentanone	50.0000	47.6972	4.6	93	0.00

(#) = Out of Range

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413249.D Vial: 3
Acq On : 26 Jun 2016 17:34 Operator: ADC
Sample : WG574226-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	56.0439	-12.1	109	0.00
56	T	Dimethyl Disulfide	50.0000	58.9730	-17.9	119	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	113	0.00
58	S	Toluene-d8	25.0000	25.4432	-1.8	113	0.00
59	C	Toluene	50.0000	50.0794	-0.2	113	0.00
60	T	Ethyl Methacrylate	50.0000	51.1466	-2.3	110	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	50.6394	-1.3	108	0.00
63	T	1,1,2-Trichloroethane	50.0000	47.6143	4.8	106	-0.01
64	T	2-Hexanone	50.0000	44.8465	10.3	99	-0.01
65	T	1,3-Dichloropropane	50.0000	48.1107	3.8	105	0.00
66	T	Tetrachloroethene	50.0000	53.5481	-7.1	124	0.00
67	T	Dibromochloromethane	50.0000	51.2489	-2.5	111	0.00
68	T	1,2-Dibromoethane	50.0000	49.1635	1.7	107	0.00
69	T	1-Chlorohexane	50.0000	53.4740	-6.9	123	-0.01
70	P	Chlorobenzene	50.0000	50.0594	-0.1	114	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	51.5400	-3.1	114	0.00
72	C	Ethylbenzene	50.0000	48.9685	2.1	113	-0.01
73	T	m-,p-Xylene	100.0000	99.8655	0.1	113	0.00
74	T	o-Xylene	50.0000	50.2032	-0.4	113	0.00
75	T	Styrene	50.0000	51.0022	-2.0	111	0.00
76	P	Bromoform	50.0000	50.8873	-1.8	111	0.00
77	T	Isopropylbenzene	50.0000	51.6180	-3.2	114	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	117	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	44.5003	11.0	103	0.00
80	S	p-Bromofluorobenzene	25.0000	24.9724	0.1	120	0.00
81	T	1,2,3-Trichloropropane	50.0000	46.0239	8.0	108	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	46.8922	6.2	115	0.00
83	T	n-Propylbenzene	50.0000	48.9598	2.1	113	0.00
84	T	Bromobenzene	50.0000	49.4947	1.0	117	-0.01
85	T	1,3,5-Trimethylbenzene	50.0000	49.5947	0.8	115	0.00
86	T	2-Chlorotoluene	50.0000	45.6025	8.8	104	0.00
87	T	4-Chlorotoluene	50.0000	51.4840	-3.0	128	0.00
88	T	a-Methylstyrene	50.0000	49.9425	0.1	118	0.00
89	T	tert-Butylbenzene	50.0000	47.9097	4.2	117	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	48.5916	2.8	114	0.00
91	T	sec-Butylbenzene	50.0000	48.3094	3.4	114	0.00
92	T	p-Isopropyltoluene	50.0000	48.6279	2.7	115	-0.01
93	T	1,3-Dichlorobenzene	50.0000	49.3042	1.4	117	0.00
94	T	1,4-Dichlorobenzene	50.0000	48.0858	3.8	116	0.00
95	T	n-Butylbenzene	50.0000	47.8974	4.2	113	-0.01
96	T	1,2-Dichlorobenzene	50.0000	47.1242	5.8	114	-0.01
97	T	1,2-Dibromo-3-Chloropropane	50.0000	44.7611	10.5	102	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	47.3962	5.2	113	-0.01
99	T	Hexachlorobutadiene	50.0000	49.6799	0.6	122	-0.01
100	T	Naphthalene	50.0000	44.1880	11.6	102	-0.01
101	T	1,2,3-Trichlorobenzene	50.0000	44.7276	10.5	110	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413277.D Vial: 3
Acq On : 27 Jun 2016 18:40 Operator: FJB
Sample : WG574409-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 08:23:32 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	708255	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	558123	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	315137	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	212502	27.9255 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.72%		
43) 1,2-Dichloroethane-d4	10.30	65	237357	29.0901 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 116.36%		
58) Toluene-d8	12.68	98	736182	25.2035 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.80%		
80) p-Bromofluorobenzene	16.07	95	333093	25.5265 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.12%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	540391	45.5083 ug/L	100
3) Chloromethane	3.62	50	328739	47.4272 ug/L	99
4) Vinyl Chloride	3.84	62	455331	55.3679 ug/L	99
5) 1,3-Butadiene	3.89	54	493105	71.5007 ug/L	97
6) Bromomethane	4.73	94	222431	44.9412 ug/L	98
7) Chloroethane	4.89	64	230089	50.8474 ug/L	97
8) Trichlorofluoromethane	5.37	101	921029	60.1899 ug/L	99
9) Diethyl ether	5.90	59	329176	90.1084 ug/L	97
10) Isoprene	5.94	67	543864	58.5277 ug/L	97
11) Acrolein	6.13	56	10450	31.9493 ug/L	89
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	397606	55.2781 ug/L	96
13) Acetone	6.23	43	49224	61.7730 ug/L	95
14) 1,1-Dichloroethene	6.46	61	637496	55.6639 ug/L	98
15) Tert-Butyl Alcohol	6.57	59	56211	220.1264 ug/L	96
16) Dimethyl Sulfide	6.73	62	208344	50.8787 ug/L	99
17) Iodomethane	6.98	142	170642	53.2063 ug/L	99
18) Methyl acetate	7.00	43	133012	61.7522 ug/L	99
19) Methylene Chloride	7.25	84	381140	52.2953 ug/L	99
20) Carbon Disulfide	7.29	76	1416153	59.0884 ug/L	100
21) Acrylonitrile	7.43	53	55176	53.3667 ug/L	98
22) Methyl Tert Butyl Ether	7.46	73	890658	56.4640 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	568436	54.0257 ug/L	100
24) n-Hexane	7.78	57	473111	60.5549 ug/L	100
25) Diisopropyl ether	8.12	45	1653566	100.8228 ug/L	96
26) Vinyl Acetate	8.29	43	289159	38.5078 ug/L	99
27) 1,1-Dichloroethane	8.32	63	708581	54.2278 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1927676	109.7014 ug/L	99
29) 2-Butanone	8.88	43	61250	52.3161 ug/L	94
30) Propionitrile	8.99	54	36343	106.5209 ug/L	100
31) 2,2-Dichloropropane	9.10	77	882692	64.1025 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	429873	52.8759 ug/L	96
33) Chloroform	9.37	83	871320	56.4751 ug/L	99
34) 1-Bromopropane	9.51	122	75427	64.7720 ug/L	98
35) Bromochloromethane	9.60	130	227968	54.6822 ug/L	94
36) Tetrahydrofuran	9.63	42	70838	91.8656 ug/L	95
38) 1,1,1-Trichloroethane	9.91	97	890583	60.7694 ug/L	100
39) Cyclohexane	9.94	56	583136	57.4735 ug/L	97
40) 1,1-Dichloropropene	10.10	75	632920	56.6604 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	1794513	112.4396 ug/L	99
42) Carbon Tetrachloride	10.25	117	801759	61.6093 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413277.D 8260WT.M Wed Jun 29 08:23:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413277.D Vial: 3
Acq On : 27 Jun 2016 18:40 Operator: FJB
Sample : WG574409-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 08:23:32 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	597374	60.1571 ug/L		98
46)	Benzene	10.46	78	1539572	52.9185 ug/L		99
47)	Trichloroethene	11.21	130	426598	54.9776 ug/L		98
48)	Methylcyclohexane	11.30	83	704621	59.7740 ug/L		99
49)	1,2-Dichloropropane	11.43	63	331303	51.1548 ug/L		90
50)	Bromodichloromethane	11.72	83	661441	58.1077 ug/L		99
51)	1,4-Dioxane	11.72	88	7409	227.7362 ug/L		88
52)	Dibromomethane	11.81	93	206969	53.9859 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	130048	46.7184 ug/L		94
54)	4-Methyl-2-Pentanone	12.05	58	57560	50.6207 ug/L		92
55)	cis-1,3-Dichloropropene	12.36	75	652717	56.3352 ug/L		100
56)	Dimethyl Disulfide	12.62	79	371318	60.0446 ug/L		97
59)	Toluene	12.78	91	1683635	48.5909 ug/L		100
60)	Ethyl Methacrylate	12.88	69	348427	52.3617 ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	604607	52.0693 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	256636	46.9382 ug/L		99
64)	2-Hexanone	13.12	58	54211	47.1829 ug/L	#	96
65)	1,3-Dichloropropane	13.48	76	466904	47.9644 ug/L		98
66)	Tetrachloroethene	13.60	164	389465	52.4633 ug/L		97
67)	Dibromochloromethane	13.87	129	405413	50.7826 ug/L		100
68)	1,2-Dibromoethane	14.12	107	265443	48.7130 ug/L		99
69)	1-Chlorohexane	14.21	91	620553	52.4666 ug/L		95
70)	Chlorobenzene	14.62	112	1136584	48.6448 ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.66	131	461555	50.9898 ug/L		100
72)	Ethylbenzene	14.66	106	614295	48.0532 ug/L		100
73)	m-,p-Xylene	14.74	106	1473086	98.2418 ug/L		98
74)	o-Xylene	15.31	106	708507	48.3302 ug/L		97
75)	Styrene	15.34	104	1201852	49.9851 ug/L		96
76)	Bromoform	15.83	173	252897	53.4078 ug/L		99
77)	Isopropylbenzene	15.73	105	1983006	50.9193 ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	280807	44.3910 ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	91595	47.0214 ug/L		84
82)	trans-1,4-Dichloro-2-Buten	16.18	53	97851	49.2908 ug/L		76
83)	n-Propylbenzene	16.24	91	2344121	47.6788 ug/L		99
84)	Bromobenzene	16.37	156	481835	47.6468 ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	1731219	48.3397 ug/L		99
86)	2-Chlorotoluene	16.51	91	1669268	48.6302 ug/L		99
87)	4-Chlorotoluene	16.56	91	1390077	44.8326 ug/L		98
88)	a-Methylstyrene	16.83	118	838059	49.3226 ug/L		99
89)	tert-Butylbenzene	16.89	134	326432	46.5903 ug/L		98
90)	1,2,4-Trimethylbenzene	16.94	105	1776678	48.2454 ug/L		99
91)	sec-Butylbenzene	17.16	105	2005098	47.5907 ug/L		99
92)	p-Isopropyltoluene	17.32	119	1707286	47.7248 ug/L		98
93)	1,3-Dichlorobenzene	17.51	146	933961	47.9634 ug/L		98
94)	1,4-Dichlorobenzene	17.64	146	915806	46.6497 ug/L		100
95)	n-Butylbenzene	17.85	91	1671344	47.2585 ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	804434	46.4491 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	58417	46.0055 ug/L		97
98)	1,2,4-Trichlorobenzene	20.28	180	615552	47.5508 ug/L		100
99)	Hexachlorobutadiene	20.43	225	297223	49.1403 ug/L		97
100)	Naphthalene	20.65	128	861244	44.7800 ug/L		98
101)	1,2,3-Trichlorobenzene	20.96	180	485630	44.4665 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M413277.D 8260WT.M Wed Jun 29 08:23:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413277.D Vial: 3
Acq On : 27 Jun 2016 18:40 Operator: FJB
Sample : WG574409-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 8:23 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

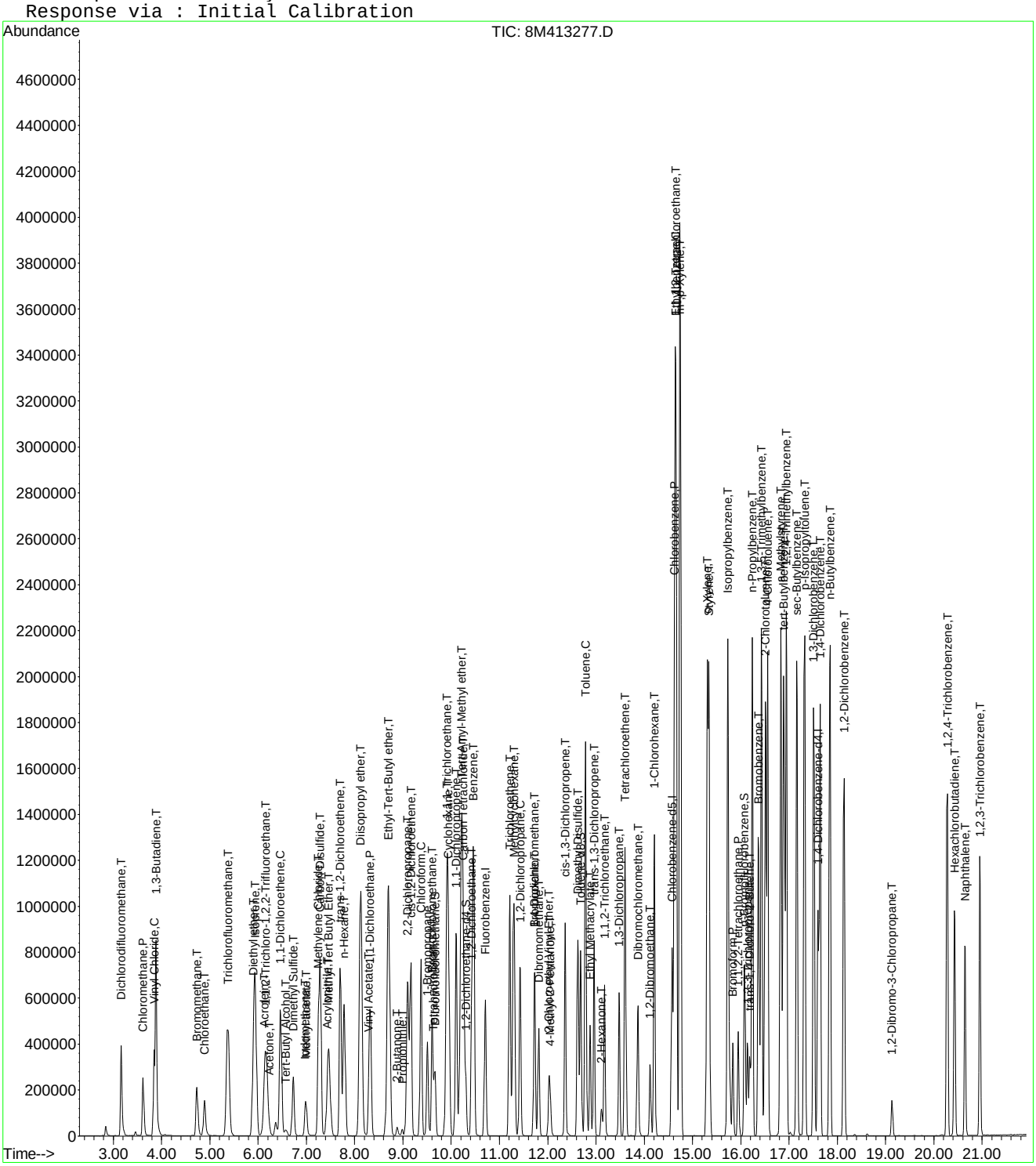

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413277.D Vial: 3
Acq On : 27 Jun 2016 18:40 Operator: FJB
Sample : WG574409-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	91	0.00
2	T	Dichlorodifluoromethane	0.4192	0.3815	9.0	79	0.00
3	P	Chloromethane	0.2447	0.2321	5.1	88	0.00
4	C	Vinyl Chloride	0.2903	0.3215	-10.7	100	0.00
5	T	1,3-Butadiene	0.2434	0.3481	-43.0#	126	0.00
6	T	Bromomethane	0.1654	0.1570	5.1	85	0.00
7	T	Chloroethane	0.1597	0.1624	-1.7	94	0.00
8	T	Trichlorofluoromethane	0.5401	0.6502	-20.4	110	0.00
9	T	Diethyl ether	0.1290	0.1162	9.9	85	0.00
10	T	Isoprene	0.3280	0.3840	-17.1	109	0.00
11	T	Acrolein	0.0116	0.0074	36.1#	59	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2539	0.2807	-10.6	103	0.00
13	T	Acetone	0.0281	0.0348	-23.5	107	-0.01
14	C	1,1-Dichloroethene	0.4043	0.4501	-11.3	103	0.00
15	T	Tert-Butyl Alcohol	0.0090	0.0099	-10.1	101	0.00
16	T	Dimethyl Sulfide	0.1445	0.1471	-1.8	94	0.00
17	T	Iodomethane	0.0866	0.1205	-39.2#	108	0.00
18	T	Methyl acetate	0.0760	0.0939	-23.5	116	0.00
19	T	Methylene Chloride	0.2573	0.2691	-4.6	98	0.00
20	T	Carbon Disulfide	0.8460	0.9998	-18.2	112	0.00
21	T	Acrylonitrile	0.0365	0.0389	-6.7	92	0.00
22	T	Methyl Tert Butyl Ether	0.5568	0.6288	-12.9	99	0.00
23	T	trans-1,2-Dichloroethene	0.3714	0.4013	-8.1	99	0.00
24	T	n-Hexane	0.2758	0.3340	-21.1	113	0.00
25	T	Diisopropyl ether	0.5789	0.5837	-0.8	93	0.00
26	T	Vinyl Acetate	0.2651	0.2041	23.0	67	0.00
27	P	1,1-Dichloroethane	0.4612	0.5002	-8.5	98	0.00
28	T	Ethyl-Tert-Butyl ether	0.6203	0.6804	-9.7	99	0.00
29	T	2-Butanone	0.0413	0.0432	-4.6	92	0.00
30	T	Propionitrile	0.0120	0.0128	-6.6	95	0.00
31	T	2,2-Dichloropropane	0.4860	0.6231	-28.2#	115	0.00
32	T	cis-1,2-Dichloroethene	0.2870	0.3035	-5.7	98	0.00
33	C	Chloroform	0.5446	0.6151	-13.0	103	0.00
34		1-Bromopropane	0.0411	0.0532	-29.6#	119	0.00
35	T	Bromochloromethane	0.1472	0.1609	-9.4	99	0.00
36	T	Tetrahydrofuran	0.0272	0.0250	8.2	89	0.00
37	S	Dibromofluoromethane	0.2686	0.3000	-11.7	101	0.00
38	T	1,1,1-Trichloroethane	0.5173	0.6287	-21.5	109	0.00
39	T	Cyclohexane	0.3581	0.4117	-14.9	109	0.00
40	T	1,1-Dichloropropene	0.3943	0.4468	-13.3	103	0.00
41	T	Tert-Amyl-Methyl ether	0.5634	0.6334	-12.4	101	0.00
42	T	Carbon Tetrachloride	0.4593	0.5660	-23.2	111	0.00
43	S	1,2-Dichloroethane-d4	0.2880	0.3351	-16.4	103	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.3505	0.4217	-20.3	106	0.00
46	T	Benzene	1.0269	1.0869	-5.8	96	0.00
47	T	Trichloroethene	0.2739	0.3012	-10.0	100	0.00
48	T	Methylcyclohexane	0.4161	0.4974	-19.5	111	0.00
49	C	1,2-Dichloropropane	0.2286	0.2339	-2.3	94	0.00
50	T	Bromodichloromethane	0.4018	0.4669	-16.2	101	0.00
51	T	1,4-Dioxane	0.0012	0.0013	-13.9	98	0.00
52	T	Dibromomethane	0.1353	0.1461	-8.0	99	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0983	0.0918	6.6	80	0.00
54	T	4-Methyl-2-Pentanone	0.0401	0.0406	-1.2	89	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413277.D Vial: 3
Acq On : 27 Jun 2016 18:40 Operator: FJB
Sample : WG574409-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4090	0.4608	-12.7	98	0.00
56	T	Dimethyl Disulfide	0.2183	0.2621	-20.1	108	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	104	0.00
58	S	Toluene-d8	1.3084	1.3190	-0.8	102	0.00
59	C	Toluene	1.5520	1.5083	2.8	100	0.00
60	T	Ethyl Methacrylate	0.2981	0.3121	-4.7	103	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.5201	0.5416	-4.1	102	0.00
63	T	1,1,2-Trichloroethane	0.2449	0.2299	6.1	96	0.00
64	T	2-Hexanone	0.0515	0.0486	5.6	95	0.00
65	T	1,3-Dichloropropane	0.4360	0.4183	4.1	95	0.00
66	T	Tetrachloroethene	0.3325	0.3489	-4.9	111	0.00
67	T	Dibromochloromethane	0.3576	0.3632	-1.6	101	0.00
68	T	1,2-Dibromoethane	0.2441	0.2378	2.6	97	0.00
69	T	1-Chlorohexane	0.5298	0.5559	-4.9	111	0.00
70	P	Chlorobenzene	1.0466	1.0182	2.7	102	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4055	0.4135	-2.0	103	0.00
72	C	Ethylbenzene	0.5726	0.5503	3.9	102	0.00
73	T	m-,p-Xylene	0.6716	0.6598	1.8	102	0.00
74	T	o-Xylene	0.6566	0.6347	3.3	100	0.00
75	T	Styrene	1.0770	1.0767	0.0	99	0.00
76	P	Bromoform	0.2121	0.2266	-6.8	106	0.00
77	T	Isopropylbenzene	1.7444	1.7765	-1.8	103	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	109	0.00
79	P	1,1,2,2-Tetrachloroethane	0.5018	0.4455	11.2	95	0.00
80	S	p-Bromofluorobenzene	1.0352	1.0570	-2.1	114	0.00
81	T	1,2,3-Trichloropropane	0.1545	0.1453	6.0	103	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1376	0.1553	-12.9	113	0.00
83	T	n-Propylbenzene	3.9003	3.7192	4.6	103	0.00
84	T	Bromobenzene	0.8022	0.7645	4.7	105	0.00
85	T	1,3,5-Trimethylbenzene	2.8411	2.7468	3.3	104	0.00
86	T	2-Chlorotoluene	2.7231	2.6485	2.7	104	0.00
87	T	4-Chlorotoluene	2.4597	2.2055	10.3	104	0.00
88	T	a-Methylstyrene	1.3479	1.3297	1.4	108	0.00
89	T	tert-Butylbenzene	0.5558	0.5179	6.8	106	0.00
90	T	1,2,4-Trimethylbenzene	2.9214	2.8189	3.5	106	0.00
91	T	sec-Butylbenzene	3.3424	3.1813	4.8	104	0.00
92	T	p-Isopropyltoluene	2.8379	2.7088	4.6	105	0.00
93	T	1,3-Dichlorobenzene	1.5448	1.4818	4.1	106	0.00
94	T	1,4-Dichlorobenzene	1.5574	1.4530	6.7	105	0.00
95	T	n-Butylbenzene	2.8056	2.6518	5.5	104	0.00
96	T	1,2-Dichlorobenzene	1.3739	1.2763	7.1	105	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1007	0.0927	8.0	98	0.00
98	T	1,2,4-Trichlorobenzene	1.0269	0.9766	4.9	105	0.00
99	T	Hexachlorobutadiene	0.4798	0.4716	1.7	112	0.00
100	T	Naphthalene	1.5257	1.3665	10.4	96	0.00
101	T	1,2,3-Trichlorobenzene	0.8664	0.7705	11.1	102	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413277.D 8260WT.M Wed Jun 29 08:37:36 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413277.D Vial: 3
Acq On : 27 Jun 2016 18:40 Operator: FJB
Sample : WG574409-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	91	0.00
2	T	Dichlorodifluoromethane	50.0000	45.5083	9.0	79	0.00
3	P	Chloromethane	50.0000	47.4272	5.1	88	0.00
4	C	Vinyl Chloride	50.0000	55.3678	-10.7	100	0.00
5	T	1,3-Butadiene	50.0000	71.5007	-43.0#	126	0.00
6	T	Bromomethane	50.0000	44.9412	10.1	85	0.00
7	T	Chloroethane	50.0000	50.8474	-1.7	94	0.00
8	T	Trichlorofluoromethane	50.0000	60.1899	-20.4	110	0.00
9	T	Diethyl ether	100.0000	90.1084	9.9	85	0.00
10	T	Isoprene	50.0000	58.5277	-17.1	109	0.00
11	T	Acrolein	50.0000	31.9493	36.1#	59	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	55.2781	-10.6	103	0.00
13	T	Acetone	50.0000	61.7730	-23.5	107	-0.01
14	C	1,1-Dichloroethene	50.0000	55.6639	-11.3	103	0.00
15	T	Tert-Butyl Alcohol	200.0000	220.1264	-10.1	101	0.00
16	T	Dimethyl Sulfide	50.0000	50.8787	-1.8	94	0.00
17	T	Iodomethane	50.0000	53.2063	-6.4	108	0.00
18	T	Methyl acetate	50.0000	61.7522	-23.5	116	0.00
19	T	Methylene Chloride	50.0000	52.2953	-4.6	98	0.00
20	T	Carbon Disulfide	50.0000	59.0884	-18.2	112	0.00
21	T	Acrylonitrile	50.0000	53.3667	-6.7	92	0.00
22	T	Methyl Tert Butyl Ether	50.0000	56.4641	-12.9	99	0.00
23	T	trans-1,2-Dichloroethene	50.0000	54.0257	-8.1	99	0.00
24	T	n-Hexane	50.0000	60.5549	-21.1	113	0.00
25	T	Diisopropyl ether	100.0000	100.8228	-0.8	93	0.00
26	T	Vinyl Acetate	50.0000	38.5078	23.0	67	0.00
27	P	1,1-Dichloroethane	50.0000	54.2278	-8.5	98	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	109.7014	-9.7	99	0.00
29	T	2-Butanone	50.0000	52.3161	-4.6	92	0.00
30	T	Propionitrile	100.0000	106.5209	-6.5	95	0.00
31	T	2,2-Dichloropropane	50.0000	64.1025	-28.2#	115	0.00
32	T	cis-1,2-Dichloroethene	50.0000	52.8759	-5.8	98	0.00
33	C	Chloroform	50.0000	56.4751	-13.0	103	0.00
34		1-Bromopropane	50.0000	64.7720	-29.5#	119	0.00
35	T	Bromochloromethane	50.0000	54.6822	-9.4	99	0.00
36	T	Tetrahydrofuran	100.0000	91.8656	8.1	89	0.00
37	S	Dibromofluoromethane	25.0000	27.9255	-11.7	101	0.00
38	T	1,1,1-Trichloroethane	50.0000	60.7694	-21.5	109	0.00
39	T	Cyclohexane	50.0000	57.4735	-14.9	109	0.00
40	T	1,1-Dichloropropene	50.0000	56.6604	-13.3	103	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	112.4396	-12.4	101	0.00
42	T	Carbon Tetrachloride	50.0000	61.6093	-23.2	111	0.00
43	S	1,2-Dichloroethane-d4	25.0000	29.0901	-16.4	103	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	60.1572	-20.3	106	0.00
46	T	Benzene	50.0000	52.9185	-5.8	96	0.00
47	T	Trichloroethene	50.0000	54.9776	-10.0	100	0.00
48	T	Methylcyclohexane	50.0000	59.7741	-19.5	111	0.00
49	C	1,2-Dichloropropane	50.0000	51.1548	-2.3	94	0.00
50	T	Bromodichloromethane	50.0000	58.1077	-16.2	101	0.00
51	T	1,4-Dioxane	200.0000	227.7362	-13.9	98	0.00
52	T	Dibromomethane	50.0000	53.9859	-8.0	99	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	46.7184	6.6	80	0.00
54	T	4-Methyl-2-Pentanone	50.0000	50.6208	-1.2	89	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413277.D Vial: 3
Acq On : 27 Jun 2016 18:40 Operator: FJB
Sample : WG574409-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	56.3352	-12.7	98	0.00
56	T	Dimethyl Disulfide	50.0000	60.0446	-20.1	108	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	104	0.00
58	S	Toluene-d8	25.0000	25.2035	-0.8	102	0.00
59	C	Toluene	50.0000	48.5909	2.8	100	0.00
60	T	Ethyl Methacrylate	50.0000	52.3617	-4.7	103	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	52.0693	-4.1	102	0.00
63	T	1,1,2-Trichloroethane	50.0000	46.9382	6.1	96	0.00
64	T	2-Hexanone	50.0000	47.1829	5.6	95	0.00
65	T	1,3-Dichloropropane	50.0000	47.9644	4.1	95	0.00
66	T	Tetrachloroethene	50.0000	52.4633	-4.9	111	0.00
67	T	Dibromochloromethane	50.0000	50.7826	-1.6	101	0.00
68	T	1,2-Dibromoethane	50.0000	48.7131	2.6	97	0.00
69	T	1-Chlorohexane	50.0000	52.4666	-4.9	111	0.00
70	P	Chlorobenzene	50.0000	48.6448	2.7	102	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	50.9898	-2.0	103	0.00
72	C	Ethylbenzene	50.0000	48.0532	3.9	102	0.00
73	T	m-,p-Xylene	100.0000	98.2418	1.8	102	0.00
74	T	o-Xylene	50.0000	48.3302	3.3	100	0.00
75	T	Styrene	50.0000	49.9851	0.0	99	0.00
76	P	Bromoform	50.0000	53.4078	-6.8	106	0.00
77	T	Isopropylbenzene	50.0000	50.9192	-1.8	103	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	109	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	44.3910	11.2	95	0.00
80	S	p-Bromofluorobenzene	25.0000	25.5265	-2.1	114	0.00
81	T	1,2,3-Trichloropropane	50.0000	47.0214	6.0	103	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	49.2908	1.4	113	0.00
83	T	n-Propylbenzene	50.0000	47.6788	4.6	103	0.00
84	T	Bromobenzene	50.0000	47.6468	4.7	105	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	48.3397	3.3	104	0.00
86	T	2-Chlorotoluene	50.0000	48.6302	2.7	104	0.00
87	T	4-Chlorotoluene	50.0000	44.8326	10.3	104	0.00
88	T	a-Methylstyrene	50.0000	49.3226	1.4	108	0.00
89	T	tert-Butylbenzene	50.0000	46.5903	6.8	106	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	48.2454	3.5	106	0.00
91	T	sec-Butylbenzene	50.0000	47.5907	4.8	104	0.00
92	T	p-Isopropyltoluene	50.0000	47.7248	4.6	105	0.00
93	T	1,3-Dichlorobenzene	50.0000	47.9634	4.1	106	0.00
94	T	1,4-Dichlorobenzene	50.0000	46.6497	6.7	105	0.00
95	T	n-Butylbenzene	50.0000	47.2585	5.5	104	0.00
96	T	1,2-Dichlorobenzene	50.0000	46.4491	7.1	105	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	46.0055	8.0	98	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	47.5508	4.9	105	0.00
99	T	Hexachlorobutadiene	50.0000	49.1403	1.7	112	0.00
100	T	Naphthalene	50.0000	44.7800	10.4	96	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	44.4665	11.1	102	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413277.D 8260WT.M Wed Jun 29 08:37:40 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\063016\8M413364.D Vial: 2
Acq On : 30 Jun 2016 12:27 Operator: TMB
Sample : WG574735-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:20:44 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	1033916	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	727817	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	393758	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	302234	27.2073 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 108.84%		
43) 1,2-Dichloroethane-d4	10.31	65	341161	28.6422 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 114.56%		
58) Toluene-d8	12.68	98	1037323	27.2331 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 108.92%		
80) p-Bromofluorobenzene	16.07	95	416886	25.5689 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.28%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	1142637	65.9166 ug/L	100
3) Chloromethane	3.62	50	564281	55.7669 ug/L	99
4) Vinyl Chloride	3.84	62	718835	59.8776 ug/L	99
5) 1,3-Butadiene	3.88	54	643584	63.9264 ug/L	97
6) Bromomethane	4.73	94	331175	45.7945 ug/L	97
7) Chloroethane	4.89	64	347615	52.6230 ug/L	97
8) Trichlorofluoromethane	5.38	101	1333463	59.6947 ug/L	99
9) Diethyl ether	5.90	59	518281	97.1867 ug/L	97
10) Isoprene	5.93	67	664451	48.9822 ug/L	96
11) Acrolein	6.13	56	29273	61.3079 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	570168	54.3009 ug/L	96
13) Acetone	6.23	43	65446	56.2612 ug/L	95
14) 1,1-Dichloroethene	6.46	61	934405	55.8902 ug/L	97
15) Tert-Butyl Alcohol	6.58	59	86054	230.8481 ug/L	99
16) Dimethyl Sulfide	6.72	62	279609	46.7747 ug/L	98
17) Iodomethane	6.98	142	190909	41.6759 ug/L	99
18) Methyl acetate	7.00	43	141159	44.8926 ug/L	99
19) Methylene Chloride	7.25	84	536355	50.4121 ug/L	100
20) Carbon Disulfide	7.29	76	1791767	51.2128 ug/L	99
21) Acrylonitrile	7.43	53	75343	49.9192 ug/L	94
22) Methyl Tert Butyl Ether	7.46	73	1230777	53.4496 ug/L	100
23) trans-1,2-Dichloroethene	7.70	61	812253	52.8828 ug/L	100
24) n-Hexane	7.77	57	600120	52.6174 ug/L	100
25) Diisopropyl ether	8.13	45	2313227	96.6184 ug/L	97
26) Vinyl Acetate	8.29	43	584271	53.3004 ug/L	99
27) 1,1-Dichloroethane	8.32	63	1007092	52.7966 ug/L	99
28) Ethyl-Tert-Butyl ether	8.69	59	2638560	102.8607 ug/L	99
29) 2-Butanone	8.87	43	85682	50.1329 ug/L	98
30) Propionitrile	8.98	54	47489	95.3480 ug/L	96
31) 2,2-Dichloropropane	9.10	77	1245750	61.9728 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	609482	51.3550 ug/L	97
33) Chloroform	9.38	83	1226607	54.4614 ug/L	100
34) 1-Bromopropane	9.51	122	96998	57.0594 ug/L	96
35) Bromochloromethane	9.60	130	327163	53.7577 ug/L	95
36) Tetrahydrofuran	9.63	42	97939	87.0055 ug/L	96
38) 1,1,1-Trichloroethane	9.90	97	1240815	57.9992 ug/L	99
39) Cyclohexane	9.93	56	737241	49.7751 ug/L	97
40) 1,1-Dichloropropene	10.10	75	889895	54.5725 ug/L	98
41) Tert-Amyl-Methyl ether	10.20	73	2369011	101.6820 ug/L	99
42) Carbon Tetrachloride	10.24	117	1117955	58.8480 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\063016\8M413364.D Vial: 2
Acq On : 30 Jun 2016 12:27 Operator: TMB
Sample : WG574735-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:20:44 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	828938	57.1831 ug/L		99
46)	Benzene	10.46	78	2190376	51.5740 ug/L		99
47)	Trichloroethene	11.22	130	609384	53.7975 ug/L		99
48)	Methylcyclohexane	11.30	83	882622	51.2904 ug/L		99
49)	1,2-Dichloropropane	11.42	63	462882	48.9594 ug/L		90
50)	Bromodichloromethane	11.72	83	921801	55.4733 ug/L		100
51)	1,4-Dioxane	11.71	88	11718	246.7347 ug/L		98
52)	Dibromomethane	11.82	93	279093	49.8687 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	176032	43.3191 ug/L		95
54)	4-Methyl-2-Pentanone	12.05	58	79853	48.1065 ug/L		95
55)	cis-1,3-Dichloropropene	12.36	75	918009	54.2758 ug/L		100
56)	Dimethyl Disulfide	12.62	79	472093	52.2950 ug/L		98
59)	Toluene	12.79	91	2331792	51.6065 ug/L		100
60)	Ethyl Methacrylate	12.88	69	435801	50.2224 ug/L		97
62)	trans-1,3-Dichloropropene	12.96	75	819334	54.1099 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	352411	49.4272 ug/L		100
64)	2-Hexanone	13.12	58	68974	46.0352 ug/L	#	96
65)	1,3-Dichloropropane	13.48	76	646094	50.8974 ug/L		96
66)	Tetrachloroethene	13.60	164	530683	54.8189 ug/L		98
67)	Dibromochloromethane	13.86	129	554775	53.2895 ug/L		99
68)	1,2-Dibromoethane	14.12	107	348991	49.1129 ug/L		96
69)	1-Chlorohexane	14.21	91	789891	51.2128 ug/L		97
70)	Chlorobenzene	14.63	112	1548452	50.8206 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.66	131	638268	54.0718 ug/L		99
72)	Ethylbenzene	14.66	106	860652	51.6275 ug/L		98
73)	m-,p-Xylene	14.74	106	2038752	104.2654 ug/L		100
74)	o-Xylene	15.31	106	992611	51.9232 ug/L		98
75)	Styrene	15.34	104	1645890	52.4926 ug/L		94
76)	Bromoform	15.84	173	336048	54.4214 ug/L		100
77)	Isopropylbenzene	15.73	105	2713660	53.4344 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	367497	46.4955 ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	116451	47.8451 ug/L		95
82)	trans-1,4-Dichloro-2-Buten	16.19	53	123515	49.7892 ug/L		86
83)	n-Propylbenzene	16.24	91	3189850	51.9261 ug/L		99
84)	Bromobenzene	16.36	156	667274	52.8092 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	2386869	53.3397 ug/L		100
86)	2-Chlorotoluene	16.51	91	2011298	46.8950 ug/L		91
87)	4-Chlorotoluene	16.56	91	2182986	56.3476 ug/L		92
88)	a-Methylstyrene	16.83	118	1037141	48.8516 ug/L		97
89)	tert-Butylbenzene	16.89	134	450238	51.4298 ug/L		99
90)	1,2,4-Trimethylbenzene	16.94	105	2402950	52.2230 ug/L		99
91)	sec-Butylbenzene	17.16	105	2722217	51.7105 ug/L		99
92)	p-Isopropyltoluene	17.32	119	2359980	52.7979 ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	1275105	52.4080 ug/L		99
94)	1,4-Dichlorobenzene	17.64	146	1237165	50.4362 ug/L		99
95)	n-Butylbenzene	17.84	91	2236999	50.6232 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	1082630	50.0308 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	76820	48.4189 ug/L		97
98)	1,2,4-Trichlorobenzene	20.28	180	823563	50.9167 ug/L		99
99)	Hexachlorobutadiene	20.44	225	414031	54.7846 ug/L		99
100)	Naphthalene	20.64	128	1129660	47.0084 ug/L		98
101)	1,2,3-Trichlorobenzene	20.95	180	665782	48.7898 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M413364.D 8260WT.M Thu Jun 30 15:20:48 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\063016\8M413364.D Vial: 2
Acq On : 30 Jun 2016 12:27 Operator: TMB
Sample : WG574735-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:20 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

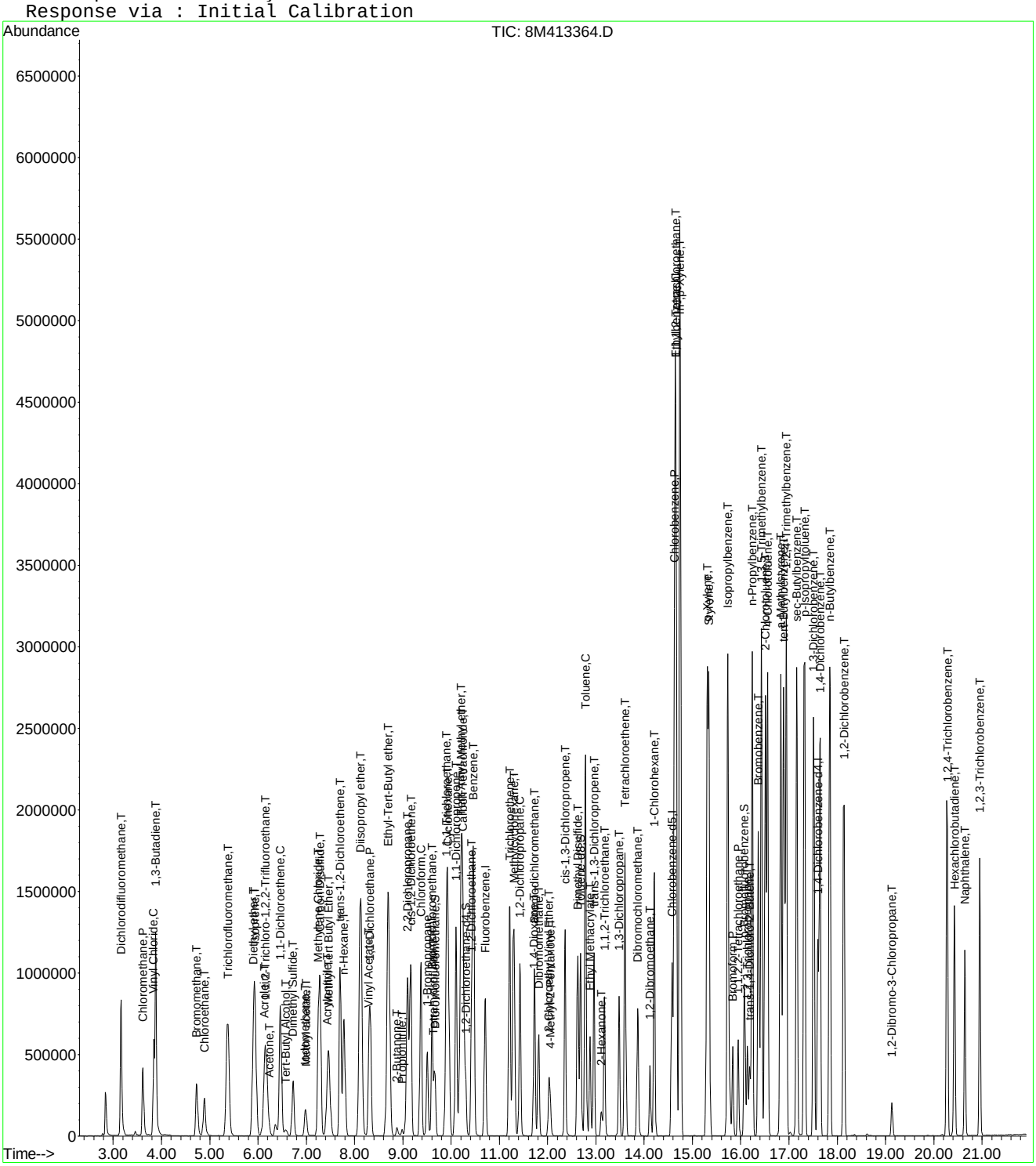

8M413364.D 8260WT.M Thu Jun 30 15:20:50 2016 Page 3

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\063016\8M413364.D Vial: 2
Acq On : 30 Jun 2016 12:27 Operator: TMB
Sample : WG574735-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	133	0.00
2	T	Dichlorodifluoromethane	0.4192	0.5526	-31.8#	167#	0.00
3	P	Chloromethane	0.2447	0.2729	-11.5	151#	0.00
4	C	Vinyl Chloride	0.2903	0.3476	-19.8	158#	-0.01
5	T	1,3-Butadiene	0.2434	0.3112	-27.9#	165#	0.00
6	T	Bromomethane	0.1654	0.1602	3.2	127	-0.01
7	T	Chloroethane	0.1597	0.1681	-5.2	142	0.00
8	T	Trichlorofluoromethane	0.5401	0.6449	-19.4	159#	0.00
9	T	Diethyl ether	0.1290	0.1253	2.8	133	0.00
10	T	Isoprene	0.3280	0.3213	2.0	133	0.00
11	T	Acrolein	0.0116	0.0142	-22.6	166#	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2539	0.2757	-8.6	147	0.00
13	T	Acetone	0.0281	0.0316	-12.5	143	-0.01
14	C	1,1-Dichloroethene	0.4043	0.4519	-11.8	151#	0.00
15	T	Tert-Butyl Alcohol	0.0090	0.0104	-15.4	155#	0.00
16	T	Dimethyl Sulfide	0.1445	0.1352	6.4	126	-0.01
17	T	Iodomethane	0.0866	0.0923	-6.7	121	0.00
18	T	Methyl acetate	0.0760	0.0683	10.2	123	0.00
19	T	Methylene Chloride	0.2573	0.2594	-0.8	138	0.00
20	T	Carbon Disulfide	0.8460	0.8665	-2.4	141	0.00
21	T	Acrylonitrile	0.0365	0.0364	0.1	126	0.00
22	T	Methyl Tert Butyl Ether	0.5568	0.5952	-6.9	137	0.00
23	T	trans-1,2-Dichloroethene	0.3714	0.3928	-5.8	142	0.00
24	T	n-Hexane	0.2758	0.2902	-5.2	143	-0.01
25	T	Diisopropyl ether	0.5789	0.5593	3.4	130	0.00
26	T	Vinyl Acetate	0.2651	0.2826	-6.6	136	0.00
27	P	1,1-Dichloroethane	0.4612	0.4870	-5.6	139	0.00
28	T	Ethyl-Tert-Butyl ether	0.6203	0.6380	-2.9	135	-0.01
29	T	2-Butanone	0.0413	0.0414	-0.3	129	-0.01
30	T	Propionitrile	0.0120	0.0115	4.7	124	0.00
31	T	2,2-Dichloropropane	0.4860	0.6024	-23.9	162#	0.00
32	T	cis-1,2-Dichloroethene	0.2870	0.2947	-2.7	139	0.00
33	C	Chloroform	0.5446	0.5932	-8.9	145	0.00
34		1-Bromopropane	0.0411	0.0469	-14.1	153#	0.00
35	T	Bromochloromethane	0.1472	0.1582	-7.5	142	0.00
36	T	Tetrahydrofuran	0.0272	0.0237	13.0	123	0.00
37	S	Dibromofluoromethane	0.2686	0.2923	-8.8	143	0.00
38	T	1,1,1-Trichloroethane	0.5173	0.6001	-16.0	152#	0.00
39	T	Cyclohexane	0.3581	0.3565	0.4	138	0.00
40	T	1,1-Dichloropropene	0.3943	0.4304	-9.1	145	0.00
41	T	Tert-Amyl-Methyl ether	0.5634	0.5728	-1.7	134	-0.01
42	T	Carbon Tetrachloride	0.4593	0.5406	-17.7	154#	0.00
43	S	1,2-Dichloroethane-d4	0.2880	0.3300	-14.6	149	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.3505	0.4009	-14.4	148	0.00
46	T	Benzene	1.0269	1.0593	-3.1	136	0.00
47	T	Trichloroethene	0.2739	0.2947	-7.6	143	0.00
48	T	Methylcyclohexane	0.4161	0.4268	-2.6	139	0.00
49	C	1,2-Dichloropropane	0.2286	0.2238	2.1	132	0.00
50	T	Bromodichloromethane	0.4018	0.4458	-10.9	141	0.00
51	T	1,4-Dioxane	0.0012	0.0014	-23.5	155#	0.00
52	T	Dibromomethane	0.1353	0.1350	0.3	133	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0983	0.0851	13.4	108	0.00
54	T	4-Methyl-2-Pentanone	0.0401	0.0386	3.8	123	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\063016\8M413364.D Vial: 2
Acq On : 30 Jun 2016 12:27 Operator: TMB
Sample : WG574735-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4090	0.4440	-8.6	138	0.00
56	T	Dimethyl Disulfide	0.2183	0.2283	-4.6	137	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	135	0.00
58	S	Toluene-d8	1.3084	1.4252	-8.9	144	0.00
59	C	Toluene	1.5520	1.6019	-3.2	139	0.00
60	T	Ethyl Methacrylate	0.2981	0.2994	-0.4	129	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.5201	0.5629	-8.2	138	0.00
63	T	1,1,2-Trichloroethane	0.2449	0.2421	1.1	131	0.00
64	T	2-Hexanone	0.0515	0.0474	7.9	121	0.00
65	T	1,3-Dichloropropane	0.4360	0.4439	-1.8	132	0.00
66	T	Tetrachloroethene	0.3325	0.3646	-9.6	151#	0.00
67	T	Dibromochloromethane	0.3576	0.3811	-6.6	138	0.00
68	T	1,2-Dibromoethane	0.2441	0.2397	1.8	128	0.00
69	T	1-Chlorohexane	0.5298	0.5426	-2.4	141	0.00
70	P	Chlorobenzene	1.0466	1.0638	-1.6	139	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4055	0.4385	-8.1	143	0.00
72	C	Ethylbenzene	0.5726	0.5913	-3.3	143	0.00
73	T	m-,p-Xylene	0.6716	0.7003	-4.3	141	0.00
74	T	o-Xylene	0.6566	0.6819	-3.8	140	0.00
75	T	Styrene	1.0770	1.1307	-5.0	136	0.00
76	P	Bromoform	0.2121	0.2309	-8.8	141	0.00
77	T	Isopropylbenzene	1.7444	1.8643	-6.9	141	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	137	0.00
79	P	1,1,2,2-Tetrachloroethane	0.5018	0.4667	7.0	125	0.00
80	S	p-Bromofluorobenzene	1.0352	1.0587	-2.3	142	0.00
81	T	1,2,3-Trichloropropane	0.1545	0.1479	4.3	130	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1376	0.1568	-14.0	142	0.00
83	T	n-Propylbenzene	3.9003	4.0505	-3.9	140	0.00
84	T	Bromobenzene	0.8022	0.8473	-5.6	145	-0.01
85	T	1,3,5-Trimethylbenzene	2.8411	3.0309	-6.7	144	0.00
86	T	2-Chlorotoluene	2.7231	2.5540	6.2	125	0.00
87	T	4-Chlorotoluene	2.4597	2.7720	-12.7	163#	0.00
88	T	a-Methylstyrene	1.3479	1.3170	2.3	134	0.00
89	T	tert-Butylbenzene	0.5558	0.5717	-2.9	146	0.00
90	T	1,2,4-Trimethylbenzene	2.9214	3.0513	-4.4	143	0.00
91	T	sec-Butylbenzene	3.3424	3.4567	-3.4	141	0.00
92	T	p-Isopropyltoluene	2.8379	2.9967	-5.6	146	0.00
93	T	1,3-Dichlorobenzene	1.5448	1.6192	-4.8	144	0.00
94	T	1,4-Dichlorobenzene	1.5574	1.5710	-0.9	142	0.00
95	T	n-Butylbenzene	2.8056	2.8406	-1.2	139	-0.01
96	T	1,2-Dichlorobenzene	1.3739	1.3747	-0.1	141	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1007	0.0975	3.2	129	0.00
98	T	1,2,4-Trichlorobenzene	1.0269	1.0458	-1.8	141	0.00
99	T	Hexachlorobutadiene	0.4798	0.5257	-9.6	156#	0.00
100	T	Naphthalene	1.5257	1.4345	6.0	126	-0.01
101	T	1,2,3-Trichlorobenzene	0.8664	0.8454	2.4	140	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413364.D 8260WT.M Thu Jun 30 15:21:58 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\063016\8M413364.D Vial: 2
Acq On : 30 Jun 2016 12:27 Operator: TMB
Sample : WG574735-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	133	0.00
2	T	Dichlorodifluoromethane	50.0000	65.9166	-31.8#	167	0.00
3	P	Chloromethane	50.0000	55.7669	-11.5	151	0.00
4	C	Vinyl Chloride	50.0000	59.8776	-19.8	158	-0.01
5	T	1,3-Butadiene	50.0000	63.9264	-27.9#	165	0.00
6	T	Bromomethane	50.0000	45.7945	8.4	127	-0.01
7	T	Chloroethane	50.0000	52.6230	-5.2	142	0.00
8	T	Trichlorofluoromethane	50.0000	59.6947	-19.4	159	0.00
9	T	Diethyl ether	100.0000	97.1867	2.8	133	0.00
10	T	Isoprene	50.0000	48.9822	2.0	133	0.00
11	T	Acrolein	50.0000	61.3079	-22.6	166	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	54.3009	-8.6	147	0.00
13	T	Acetone	50.0000	56.2612	-12.5	143	-0.01
14	C	1,1-Dichloroethene	50.0000	55.8902	-11.8	151	0.00
15	T	Tert-Butyl Alcohol	200.0000	230.8481	-15.4	155	0.00
16	T	Dimethyl Sulfide	50.0000	46.7747	6.5	126	-0.01
17	T	Iodomethane	50.0000	41.6759	16.6	121	0.00
18	T	Methyl acetate	50.0000	44.8926	10.2	123	0.00
19	T	Methylene Chloride	50.0000	50.4121	-0.8	138	0.00
20	T	Carbon Disulfide	50.0000	51.2128	-2.4	141	0.00
21	T	Acrylonitrile	50.0000	49.9192	0.2	126	0.00
22	T	Methyl Tert Butyl Ether	50.0000	53.4496	-6.9	137	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.8828	-5.8	142	0.00
24	T	n-Hexane	50.0000	52.6174	-5.2	143	-0.01
25	T	Diisopropyl ether	100.0000	96.6184	3.4	130	0.00
26	T	Vinyl Acetate	50.0000	53.3004	-6.6	136	0.00
27	P	1,1-Dichloroethane	50.0000	52.7966	-5.6	139	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	102.8607	-2.9	135	-0.01
29	T	2-Butanone	50.0000	50.1329	-0.3	129	-0.01
30	T	Propionitrile	100.0000	95.3480	4.7	124	0.00
31	T	2,2-Dichloropropane	50.0000	61.9728	-23.9	162	0.00
32	T	cis-1,2-Dichloroethene	50.0000	51.3550	-2.7	139	0.00
33	C	Chloroform	50.0000	54.4614	-8.9	145	0.00
34		1-Bromopropane	50.0000	57.0594	-14.1	153	0.00
35	T	Bromochloromethane	50.0000	53.7577	-7.5	142	0.00
36	T	Tetrahydrofuran	100.0000	87.0055	13.0	123	0.00
37	S	Dibromofluoromethane	25.0000	27.2073	-8.8	143	0.00
38	T	1,1,1-Trichloroethane	50.0000	57.9992	-16.0	152	0.00
39	T	Cyclohexane	50.0000	49.7751	0.4	138	0.00
40	T	1,1-Dichloropropene	50.0000	54.5725	-9.1	145	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	101.6821	-1.7	134	-0.01
42	T	Carbon Tetrachloride	50.0000	58.8480	-17.7	154	0.00
43	S	1,2-Dichloroethane-d4	25.0000	28.6422	-14.6	149	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	57.1831	-14.4	148	0.00
46	T	Benzene	50.0000	51.5740	-3.1	136	0.00
47	T	Trichloroethene	50.0000	53.7975	-7.6	143	0.00
48	T	Methylcyclohexane	50.0000	51.2904	-2.6	139	0.00
49	C	1,2-Dichloropropane	50.0000	48.9594	2.1	132	0.00
50	T	Bromodichloromethane	50.0000	55.4733	-10.9	141	0.00
51	T	1,4-Dioxane	200.0000	246.7347	-23.4	155	0.00
52	T	Dibromomethane	50.0000	49.8687	0.3	133	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	43.3191	13.4	108	0.00
54	T	4-Methyl-2-Pentanone	50.0000	48.1065	3.8	123	0.00

(#) = Out of Range

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\063016\8M413364.D Vial: 2
Acq On : 30 Jun 2016 12:27 Operator: TMB
Sample : WG574735-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	54.2758	-8.6	138	0.00
56	T	Dimethyl Disulfide	50.0000	52.2950	-4.6	137	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	135	0.00
58	S	Toluene-d8	25.0000	27.2331	-8.9	144	0.00
59	C	Toluene	50.0000	51.6065	-3.2	139	0.00
60	T	Ethyl Methacrylate	50.0000	50.2224	-0.4	129	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	54.1099	-8.2	138	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.4272	1.1	131	0.00
64	T	2-Hexanone	50.0000	46.0352	7.9	121	0.00
65	T	1,3-Dichloropropane	50.0000	50.8974	-1.8	132	0.00
66	T	Tetrachloroethene	50.0000	54.8189	-9.6	151	0.00
67	T	Dibromochloromethane	50.0000	53.2895	-6.6	138	0.00
68	T	1,2-Dibromoethane	50.0000	49.1129	1.8	128	0.00
69	T	1-Chlorohexane	50.0000	51.2128	-2.4	141	0.00
70	P	Chlorobenzene	50.0000	50.8206	-1.6	139	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	54.0718	-8.1	143	0.00
72	C	Ethylbenzene	50.0000	51.6275	-3.3	143	0.00
73	T	m-,p-Xylene	100.0000	104.2654	-4.3	141	0.00
74	T	o-Xylene	50.0000	51.9232	-3.8	140	0.00
75	T	Styrene	50.0000	52.4926	-5.0	136	0.00
76	P	Bromoform	50.0000	54.4214	-8.8	141	0.00
77	T	Isopropylbenzene	50.0000	53.4344	-6.9	141	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	137	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	46.4955	7.0	125	0.00
80	S	p-Bromofluorobenzene	25.0000	25.5690	-2.3	142	0.00
81	T	1,2,3-Trichloropropane	50.0000	47.8451	4.3	130	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	49.7892	0.4	142	0.00
83	T	n-Propylbenzene	50.0000	51.9261	-3.9	140	0.00
84	T	Bromobenzene	50.0000	52.8092	-5.6	145	-0.01
85	T	1,3,5-Trimethylbenzene	50.0000	53.3397	-6.7	144	0.00
86	T	2-Chlorotoluene	50.0000	46.8950	6.2	125	0.00
87	T	4-Chlorotoluene	50.0000	56.3476	-12.7	163	0.00
88	T	a-Methylstyrene	50.0000	48.8516	2.3	134	0.00
89	T	tert-Butylbenzene	50.0000	51.4298	-2.9	146	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	52.2230	-4.4	143	0.00
91	T	sec-Butylbenzene	50.0000	51.7105	-3.4	141	0.00
92	T	p-Isopropyltoluene	50.0000	52.7979	-5.6	146	0.00
93	T	1,3-Dichlorobenzene	50.0000	52.4080	-4.8	144	0.00
94	T	1,4-Dichlorobenzene	50.0000	50.4362	-0.9	142	0.00
95	T	n-Butylbenzene	50.0000	50.6232	-1.2	139	-0.01
96	T	1,2-Dichlorobenzene	50.0000	50.0308	-0.1	141	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	48.4189	3.2	129	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	50.9167	-1.8	141	0.00
99	T	Hexachlorobutadiene	50.0000	54.7846	-9.6	156	0.00
100	T	Naphthalene	50.0000	47.0084	6.0	126	-0.01
101	T	1,2,3-Trichlorobenzene	50.0000	48.7898	2.4	140	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\2\DATA\051316\8M412218.D          Vial: 3
Acq On    : 13 May 2016  12:36                       Operator: TMB
Sample    : WG568561-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD76034                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

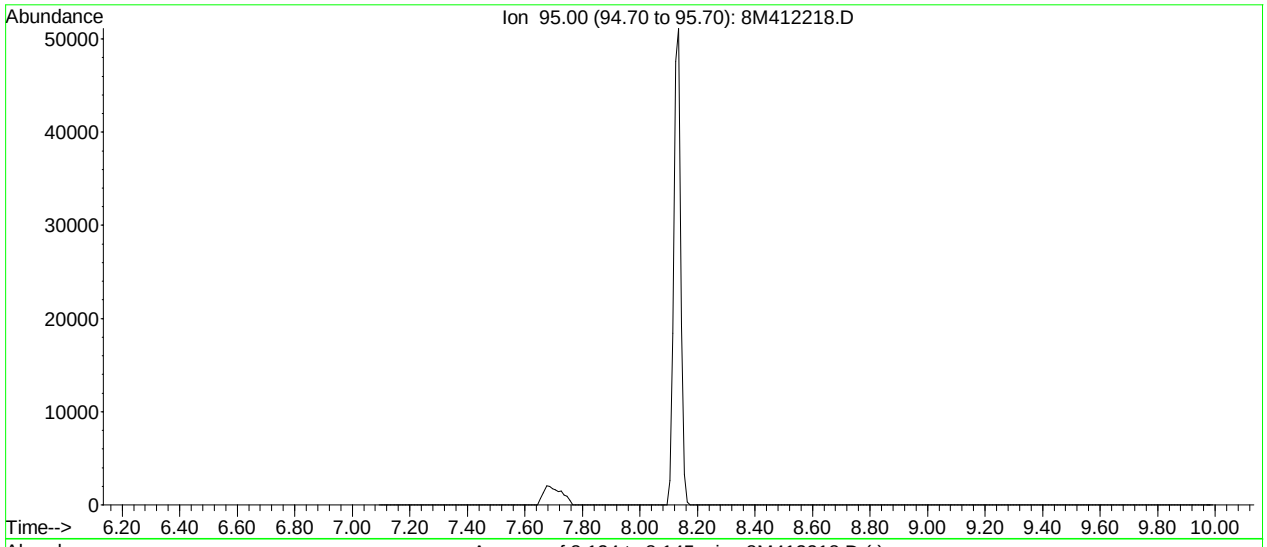

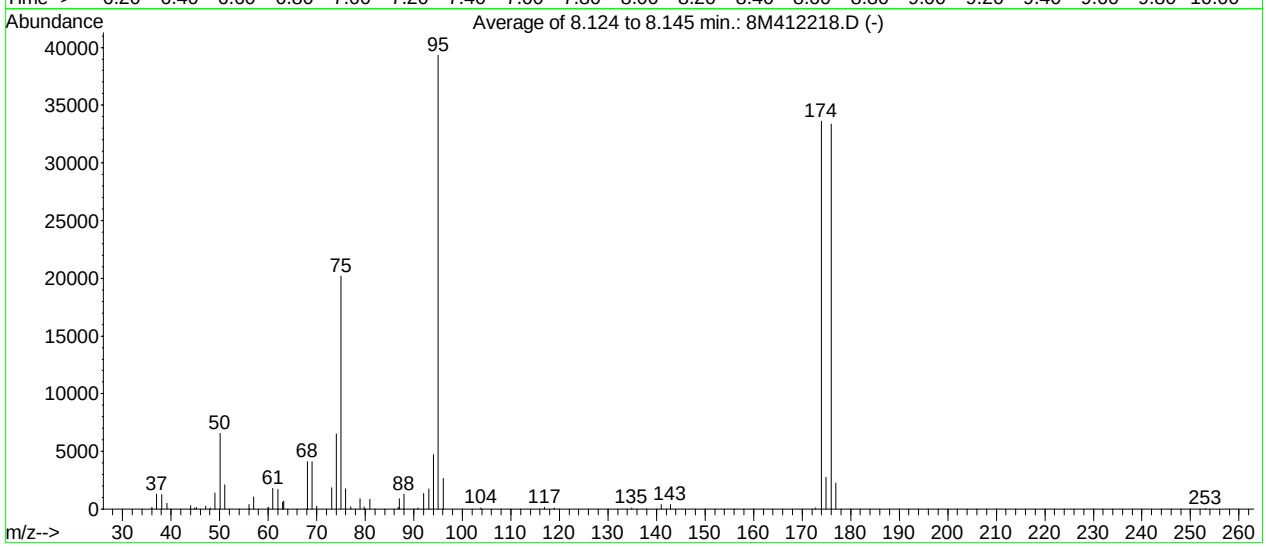

AutoFind: Scans 102, 103, 104; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.7	6575	PASS
75	95	30	60	51.3	20171	PASS
95	95	100	100	100.0	39312	PASS
96	95	5	9	6.7	2649	PASS
173	174	0.00	2	0.4	122	PASS
174	95	50	100	85.5	33616	PASS
175	174	5	9	8.2	2746	PASS
176	174	95	101	99.2	33360	PASS
177	176	5	9	6.8	2267	PASS

8M412218.D BFB.M Fri May 13 12:47:24 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413190.D Vial: 1
Acq On    : 23 Jun 2016  19:56                        Operator: FJB
Sample    : WG573990-01 BFB 50ng 8260                 Inst    : HPMS8
Misc      : 1,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title     : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
```

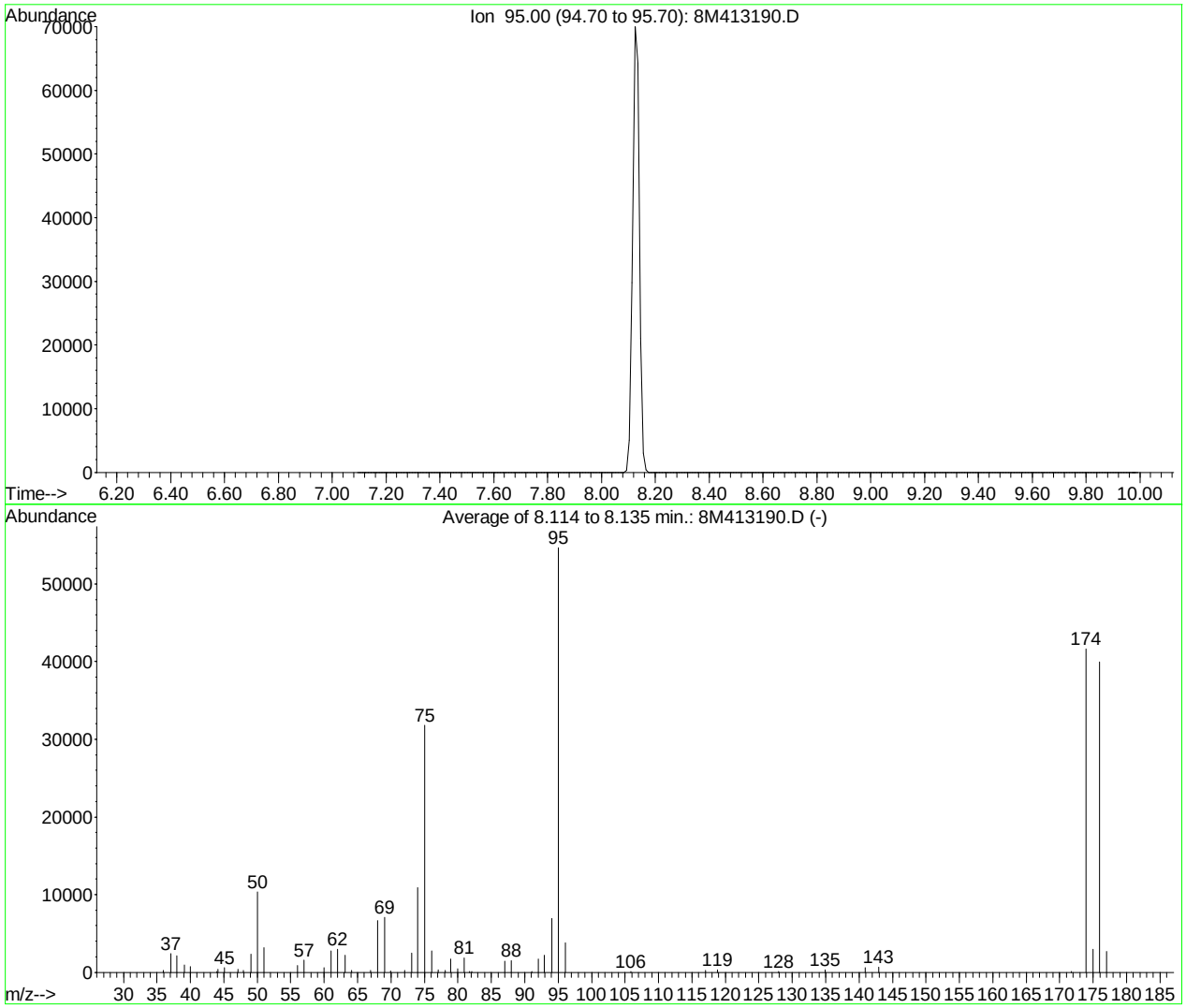

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 96

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.0	10373	PASS
75	95	30	60	58.1	31797	PASS
95	95	100	100	100.0	54685	PASS
96	95	5	9	7.0	3803	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	76.1	41629	PASS
175	174	5	9	7.2	2991	PASS
176	174	95	101	95.9	39941	PASS
177	176	5	9	6.8	2702	PASS

8M413190.D 8260WT.M Mon Jun 27 12:37:11 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413247.D Vial: 1
Acq On    : 26 Jun 2016  16:40                        Operator: ADC
Sample    : WG574226-01 BFB 50ng 8260                 Inst    : HPMS8
Misc      : 1,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title     : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
```

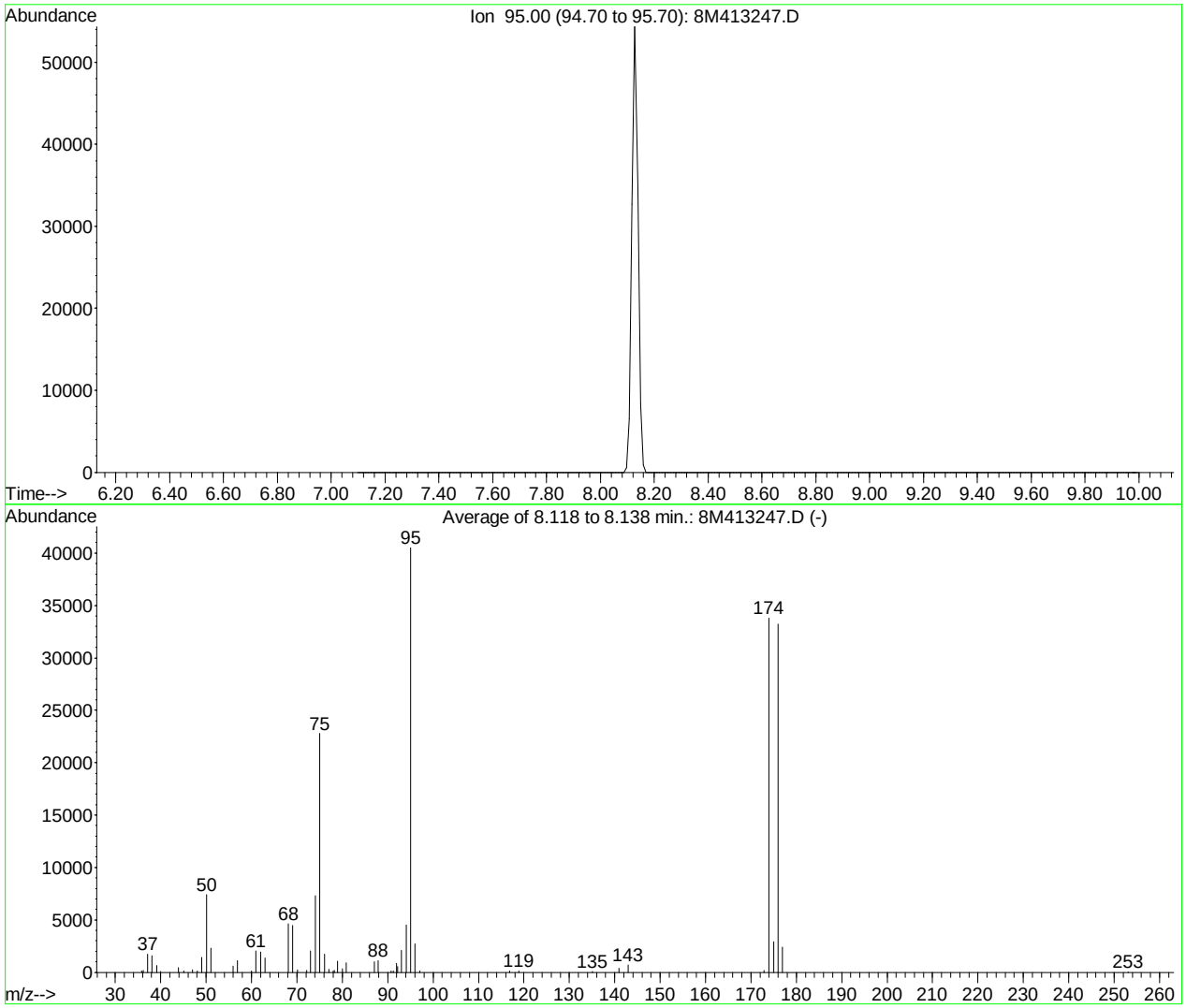

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 96

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.3	7413	PASS
75	95	30	60	56.2	22773	PASS
95	95	100	100	100.0	40520	PASS
96	95	5	9	6.6	2692	PASS
173	174	0.00	2	0.6	192	PASS
174	95	50	100	83.4	33789	PASS
175	174	5	9	8.6	2920	PASS
176	174	95	101	98.3	33202	PASS
177	176	5	9	7.2	2381	PASS

8M413247.D 8260WT.M Mon Jun 27 12:37:58 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413275.D Vial: 1
Acq On    : 27 Jun 2016  17:45                        Operator: FJB
Sample    : WG574409-01 BFB 50ng 8260                 Inst    : HPMS8
Misc      : 1,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title     : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
```

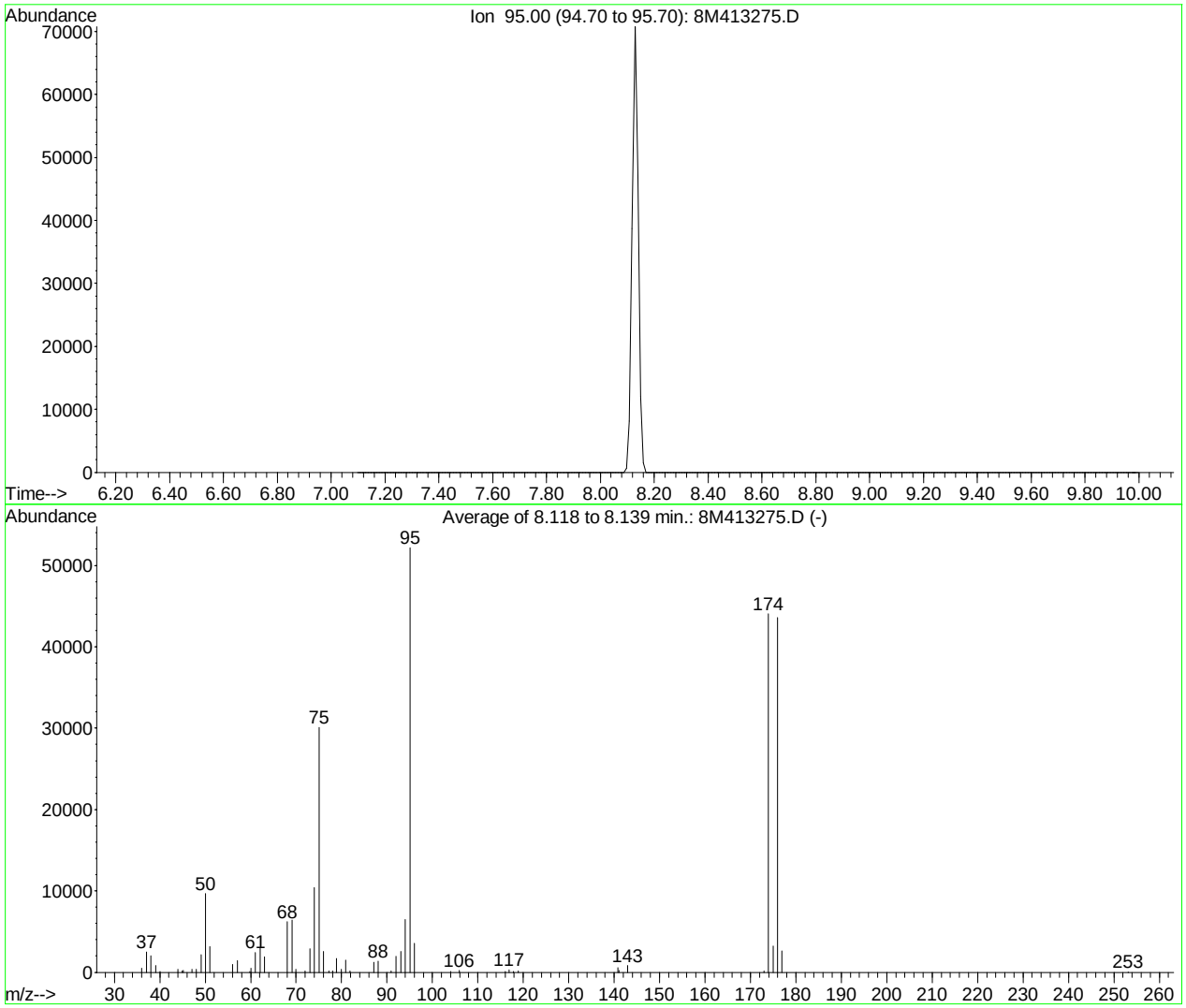

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 96

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.5	9667	PASS
75	95	30	60	57.7	30122	PASS
95	95	100	100	100.0	52181	PASS
96	95	5	9	6.8	3559	PASS
173	174	0.00	2	0.4	160	PASS
174	95	50	100	84.5	44069	PASS
175	174	5	9	7.3	3216	PASS
176	174	95	101	98.9	43568	PASS
177	176	5	9	6.1	2646	PASS

8M413275.D 8260WT.M Wed Jun 29 08:37:20 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\063016\8M413363.D Vial: 1
Acq On    : 30 Jun 2016  12:03                        Operator: TMB
Sample    : WG574735-01 50ng BFB STD 8260             Inst    : HPMS8
Misc      : 1,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title     : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
```

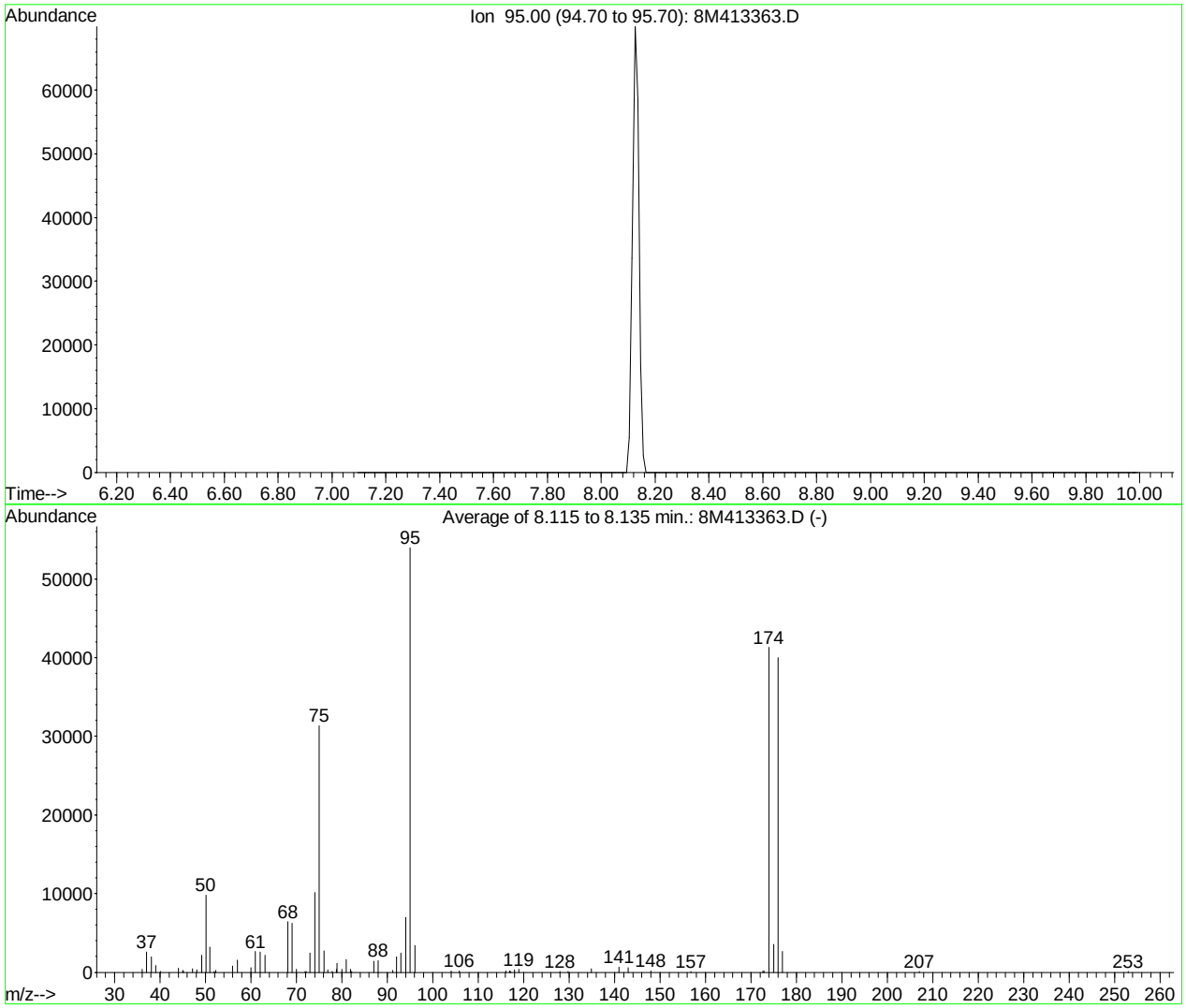

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.1	9775	PASS
75	95	30	60	58.1	31346	PASS
95	95	100	100	100.0	53981	PASS
96	95	5	9	6.3	3423	PASS
173	174	0.00	2	0.4	157	PASS
174	95	50	100	76.6	41338	PASS
175	174	5	9	8.6	3544	PASS
176	174	95	101	96.8	40000	PASS
177	176	5	9	6.7	2662	PASS

8M413363.D 8260WT.M Thu Jun 30 15:22:21 2016

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413194.D Vial: 5
Acq On : 23 Jun 2016 21:59 Operator: FJB
Sample : WG573991-01 BLANK 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 22:21:08 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	695599	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	547838	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	300577	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	210658	28.1869 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 112.76%		
43) 1,2-Dichloroethane-d4	10.30	65	230039	28.7061 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 114.84%		
58) Toluene-d8	12.68	98	731476	25.5125 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.04%		
80) p-Bromofluorobenzene	16.08	95	315963	25.3867 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.56%		
Target Compounds					Qvalue
36) Tetrahydrofuran	9.62	42	624	0.8240 ug/L	82

(#) = qualifier out of range (m) = manual integration
8M413194.D 8260WT.M Mon Jun 27 12:41:31 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413194.D Vial: 5
Acq On : 23 Jun 2016 21:59 Operator: FJB
Sample : WG573991-01 BLANK 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 22:21 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

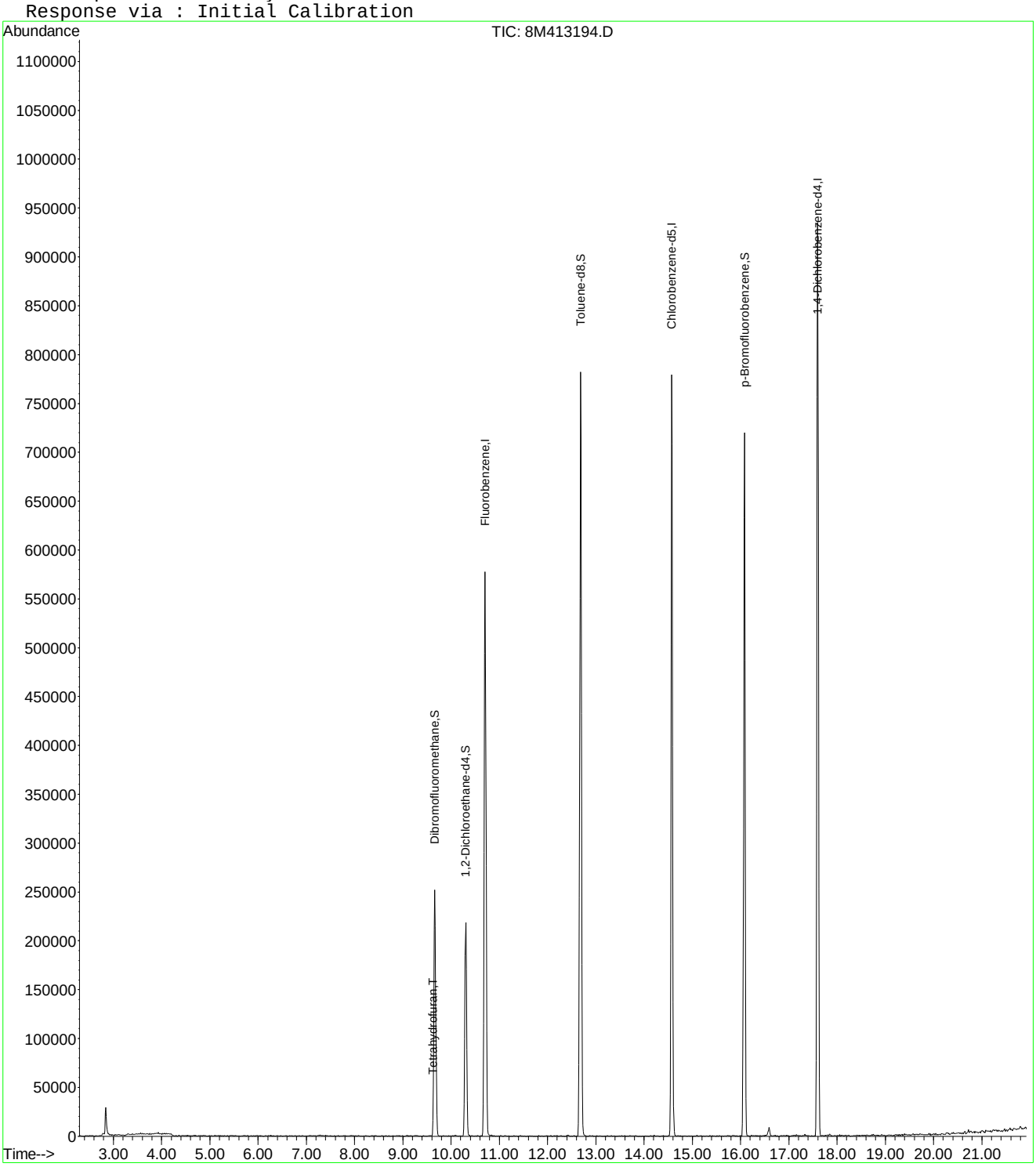

8M413194.D 8260WT.M Mon Jun 27 12:41:32 2016 Page 2

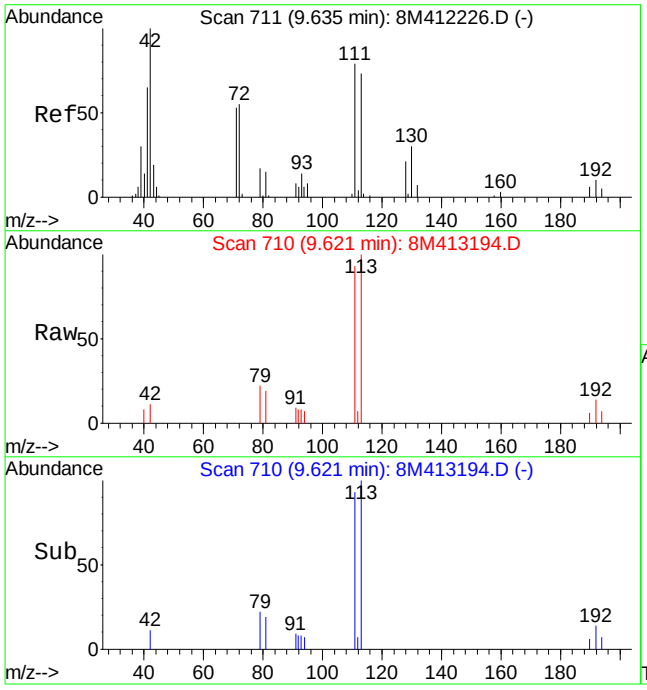

#36
Tetrahydrofuran
Concen: 0.82 ug/L
RT: 9.62 min Scan# 710
Delta R.T. -0.01 min
Lab File: 8M413194.D
Acq: 23 Jun 2016 21:59

Tgt Ion: 42 Resp: 624

Ion	Ratio	Lower	Upper
42	100		
72	65.5	33.8	78.8
71	70.5	32.0	74.8

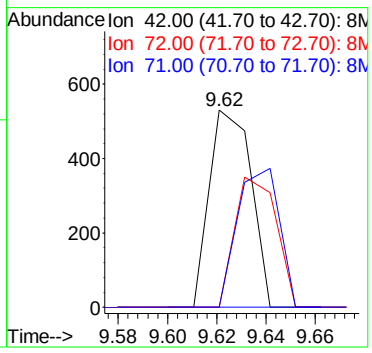

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413251.D Vial: 4
Acq On : 26 Jun 2016 18:32 Operator: ADC
Sample : WG574227-01 BLANK 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02:42 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	754008	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	592099	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	335642	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	224525	27.7151 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.88%		
43) 1,2-Dichloroethane-d4	10.31	65	237055	27.2901 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 109.16%		
58) Toluene-d8	12.68	98	792460	25.5734 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.28%		
80) p-Bromofluorobenzene	16.07	95	340162	24.4757 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.92%		

Target Compounds					Qvalue
36) Tetrahydrofuran	9.63	42	778	0.9477 ug/L #	58
70) Chlorobenzene	14.63	112	3179	0.1283 ug/L #	1

(#) = qualifier out of range (m) = manual integration
8M413251.D 8260WT.M Mon Jun 27 12:44:45 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413251.D Vial: 4
Acq On : 26 Jun 2016 18:32 Operator: ADC
Sample : WG574227-01 BLANK 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

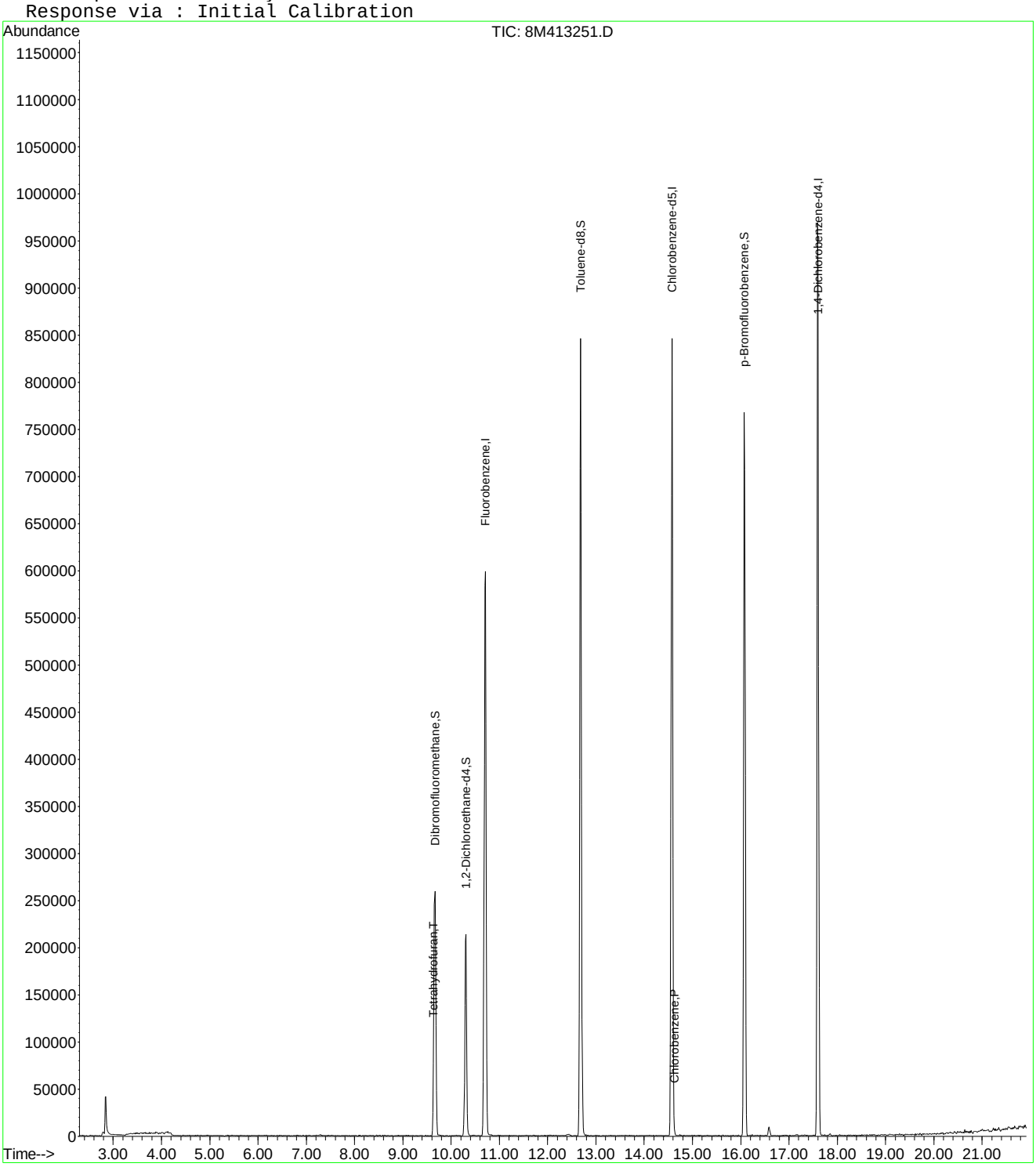

8M413251.D 8260WT.M Mon Jun 27 12:44:45 2016 Page 2

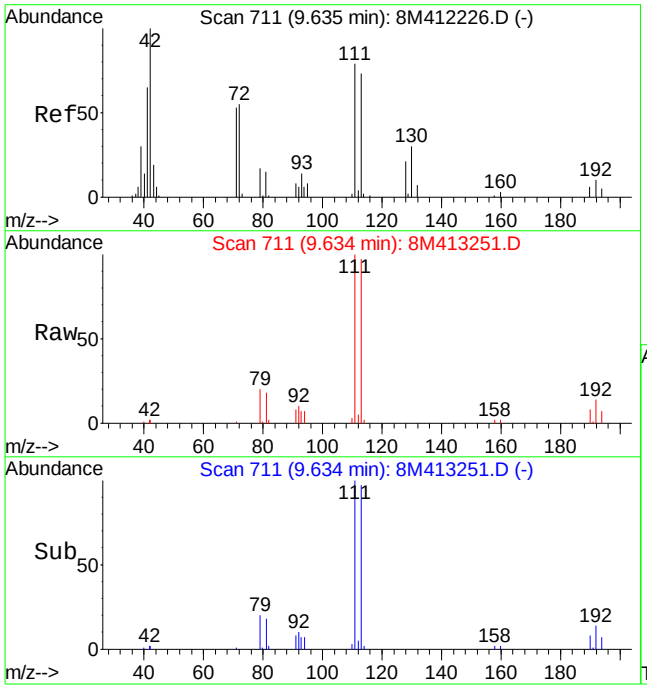

#36
Tetrahydrofuran
Concen: 0.95 ug/L
RT: 9.63 min Scan# 711
Delta R.T. -0.00 min
Lab File: 8M413251.D
Acq: 26 Jun 2016 18:32

Tgt Ion: 42 Resp: 778

Ion	Ratio	Lower	Upper
42	100		
72	0.0	33.8	78.8#
71	50.3	32.0	74.8

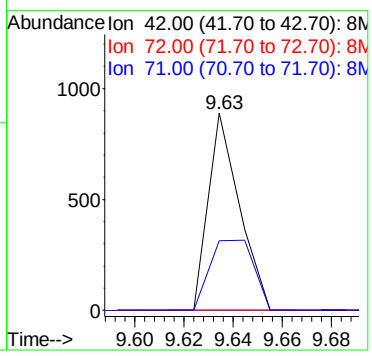

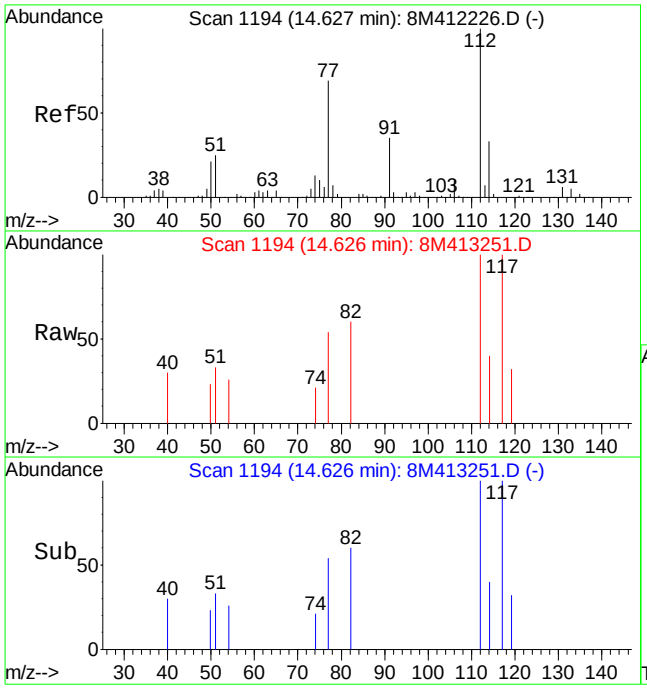

#70
Chlorobenzene
Concen: 0.13 ug/L
RT: 14.63 min Scan# 1194
Delta R.T. -0.00 min
Lab File: 8M413251.D
Acq: 26 Jun 2016 18:32

Tgt Ion:112 Resp: 3179

Ion	Ratio	Lower	Upper
112	100		
77	300.3	49.7	115.9#

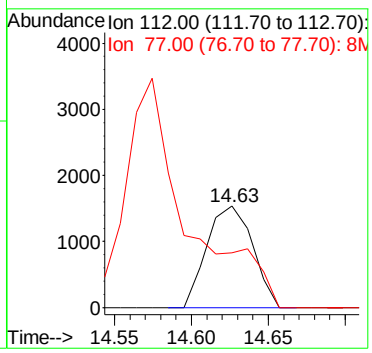

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413279.D Vial: 5
Acq On : 27 Jun 2016 19:42 Operator: FJB
Sample : WG574410-01 BLANK 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 08:57:05 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	679552	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	539767	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	302642	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	205706	28.1742 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 112.68%		
43) 1,2-Dichloroethane-d4	10.30	65	222351	28.4020 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 113.60%		
58) Toluene-d8	12.68	98	726188	25.7068 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.84%		
80) p-Bromofluorobenzene	16.08	95	314092	25.0641 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.24%		

Target Compounds					Qvalue
36) Tetrahydrofuran	9.64	42	699	0.9448 ug/L #	56

(#) = qualifier out of range (m) = manual integration
8M413279.D 8260WT.M Wed Jun 29 08:57:08 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413279.D Vial: 5
Acq On : 27 Jun 2016 19:42 Operator: FJB
Sample : WG574410-01 BLANK 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 8:57 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

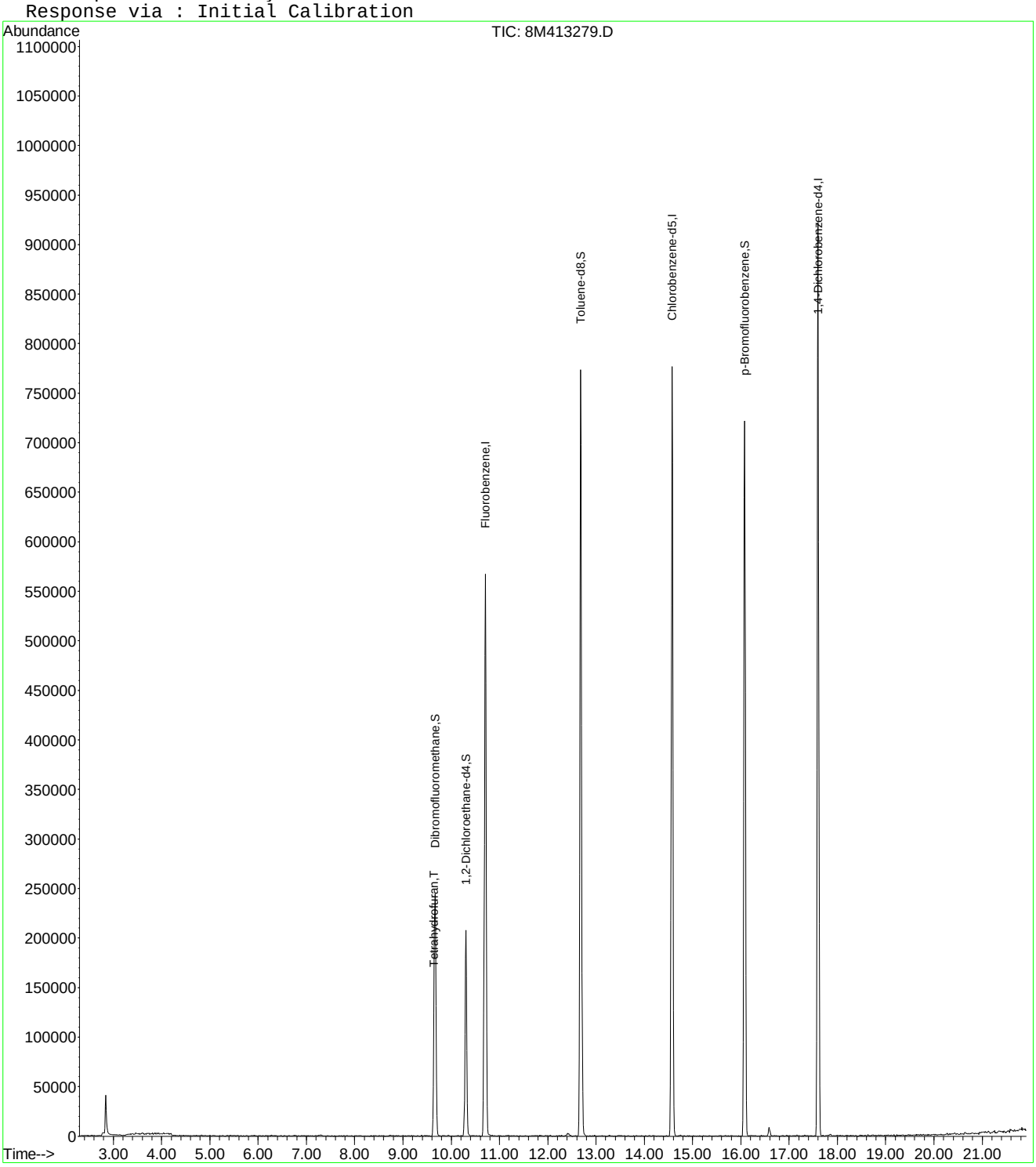

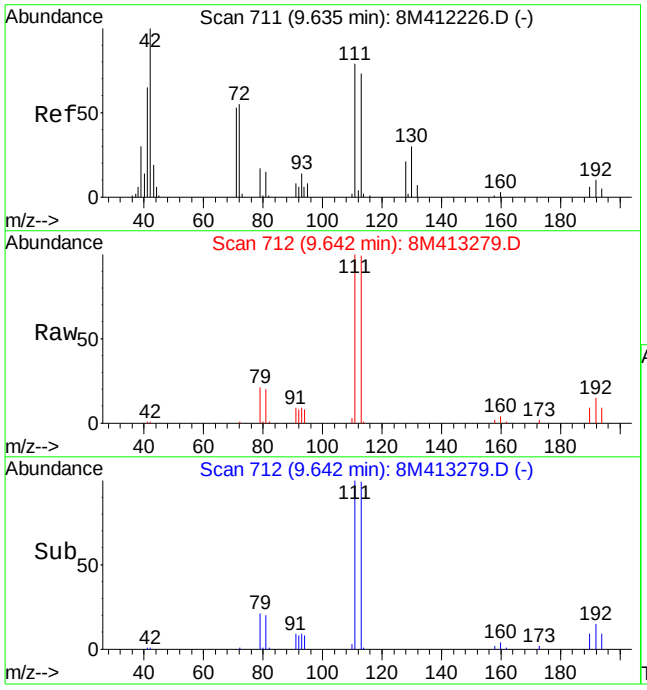

#36
Tetrahydrofuran
Concen: 0.94 ug/L
RT: 9.64 min Scan# 712
Delta R.T. 0.01 min
Lab File: 8M413279.D
Acq: 27 Jun 2016 19:42

Tgt Ion: 42 Resp: 699

Ion	Ratio	Lower	Upper
42	100		
72	67.0	33.8	78.8
71	0.0	32.0	74.8#

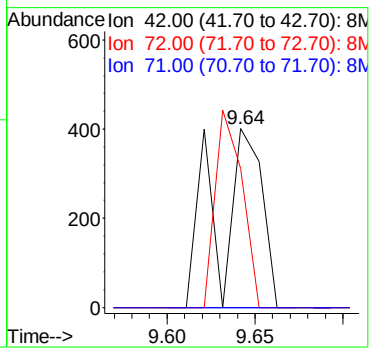

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\063016\8M413366.D Vial: 4
Acq On : 30 Jun 2016 13:24 Operator: TMB
Sample : WG574736-01 VBLK0630 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 16:59:17 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.70	96	1024963	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	714298	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	391003	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	298794	27.1326 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 108.52%		
43) 1,2-Dichloroethane-d4	10.30	65	338824	28.6945 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 114.76%		
58) Toluene-d8	12.68	98	1006984	26.9369 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 107.76%		
80) p-Bromofluorobenzene	16.07	95	413475	25.5384 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.16%		
Target Compounds					Qvalue
3) Chloromethane	3.65	50	2059	0.2053 ug/L	84
36) Tetrahydrofuran	9.65	42	932	0.8352 ug/L #	24
100) Naphthalene	20.65	128	3273	0.1372 ug/L #	67

(#) = qualifier out of range (m) = manual integration
8M413366.D 8260WT.M Thu Jun 30 16:59:21 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\063016\8M413366.D Vial: 4
Acq On : 30 Jun 2016 13:24 Operator: TMB
Sample : WG574736-01 VBLK0630 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 16:59 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

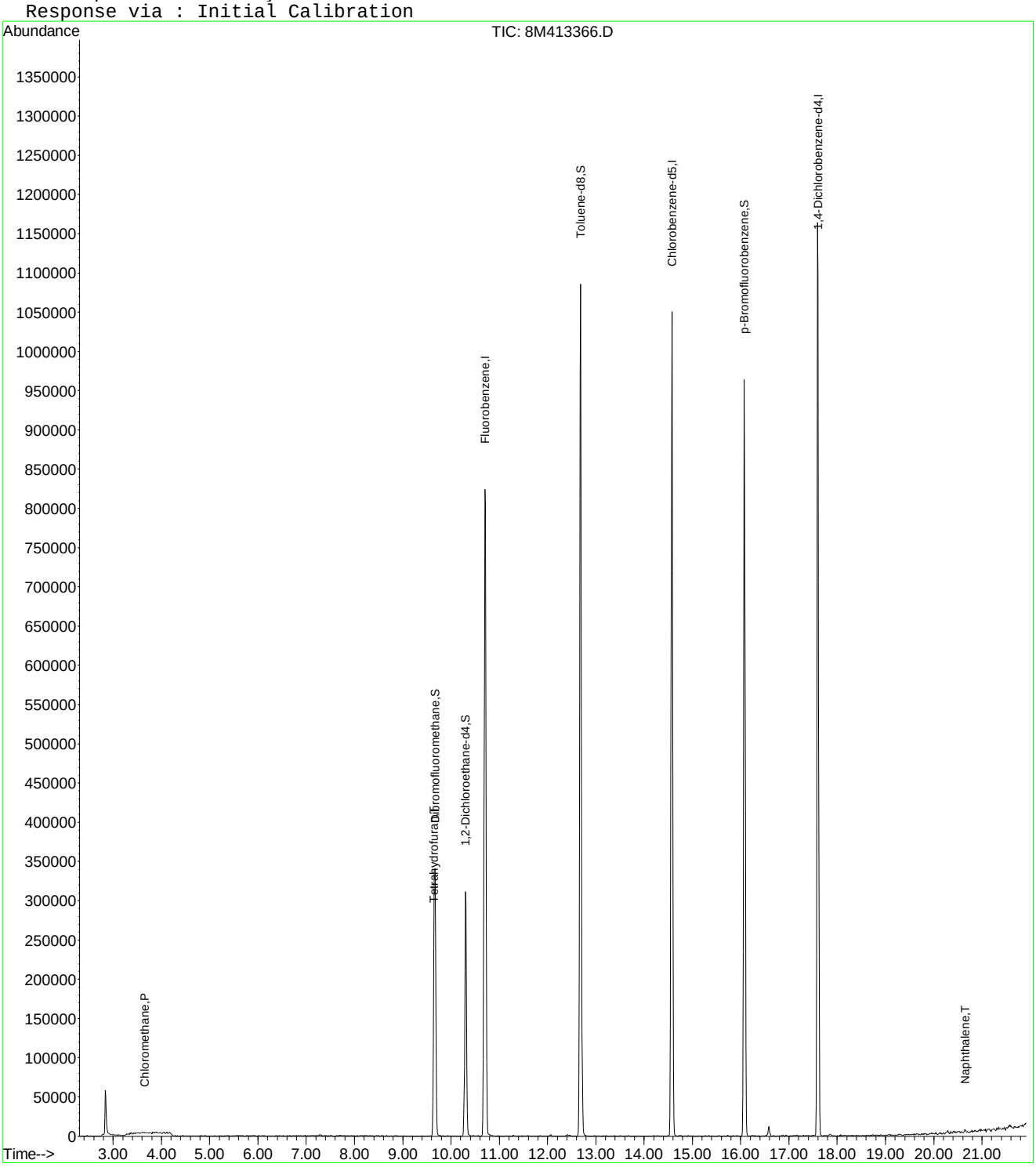

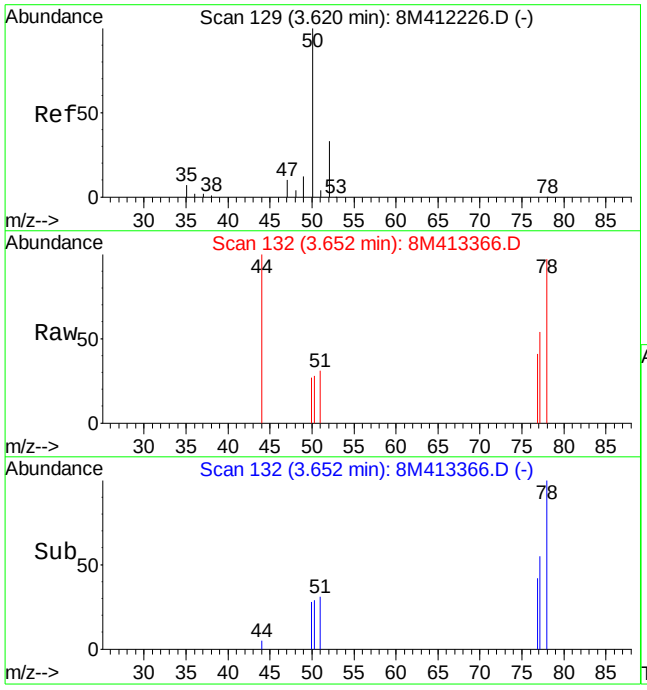

#3
Chloromethane
Concen: 0.21 ug/L
RT: 3.65 min Scan# 132
Delta R.T. 0.03 min
Lab File: 8M413366.D
Acq: 30 Jun 2016 13:24

Tgt Ion: 50 Resp: 2059

Ion	Ratio	Lower	Upper
50	100		
52	23.8	19.9	46.3

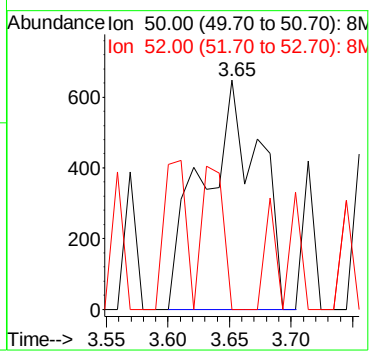

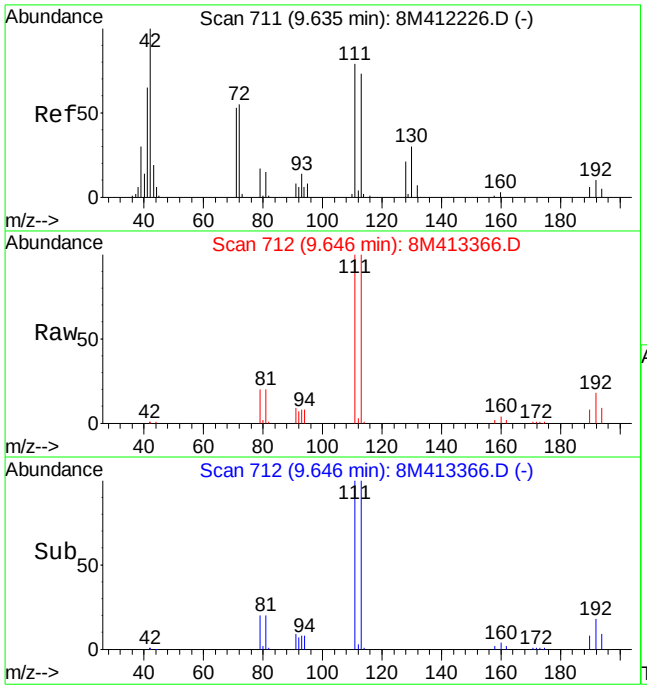

#36
Tetrahydrofuran
Concen: 0.84 ug/L
RT: 9.65 min Scan# 712
Delta R.T. 0.01 min
Lab File: 8M413366.D
Acq: 30 Jun 2016 13:24

Tgt Ion: 42 Resp: 932

Ion	Ratio	Lower	Upper
42	100		
72	0.0	33.8	78.8#
71	0.0	32.0	74.8#

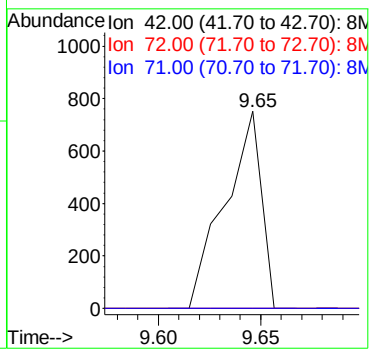

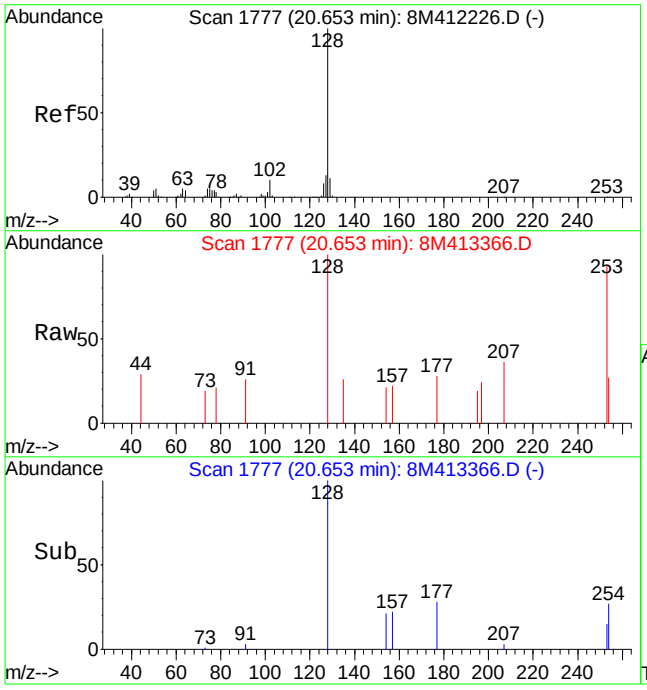

#100
Naphthalene
Concen: 0.14 ug/L
RT: 20.65 min Scan# 1777
Delta R.T. 0.00 min
Lab File: 8M413366.D
Acq: 30 Jun 2016 13:24

Tgt Ion:128 Resp: 3273

Ion	Ratio	Lower	Upper
128	100		
127	0.0	7.8	18.2#

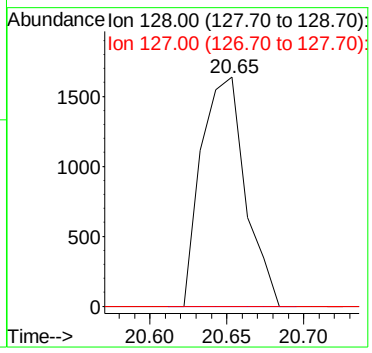

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413195.D Vial: 6
Acq On : 23 Jun 2016 22:28 Operator: FJB
Sample : WG573991-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 22:50:03 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	709070	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	541017	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	307359	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	209450	27.4928 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.96%		
43) 1,2-Dichloroethane-d4	10.31	65	229900	28.1438 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.56%		
58) Toluene-d8	12.68	98	729028	25.7477 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.00%		
80) p-Bromofluorobenzene	16.07	95	314680	24.7257 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.92%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	339836	28.5859 ug/L	99
3) Chloromethane	3.62	50	159886	23.0403 ug/L	100
4) Vinyl Chloride	3.84	62	229600	27.8871 ug/L	99
5) 1,3-Butadiene	3.88	54	140587	20.3618 ug/L	99
6) Bromomethane	4.72	94	81952	17.2192 ug/L	98
7) Chloroethane	4.89	64	105860	23.3671 ug/L	98
8) Trichlorofluoromethane	5.38	101	375940	24.5397 ug/L	99
9) Diethyl ether	5.90	59	379335	103.7196 ug/L	97
10) Isoprene	5.94	67	220602	23.7127 ug/L	96
11) Acrolein	6.13	56	25939	79.2134 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	164574	22.8540 ug/L	93
13) Acetone	6.24	43	19152	24.0069 ug/L	87
14) 1,1-Dichloroethene	6.46	61	256541	22.3745 ug/L	96
15) Tert-Butyl Alcohol	6.57	59	45376	177.4915 ug/L	96
16) Dimethyl Sulfide	6.73	62	153966	37.5561 ug/L	98
17) Iodomethane	6.98	142	63771	21.9232 ug/L	96
18) Methyl acetate	7.00	43	43450	20.1489 ug/L	98
19) Methylene Chloride	7.25	84	155667	21.3341 ug/L	99
20) Carbon Disulfide	7.29	76	500362	20.8534 ug/L	99
21) Acrylonitrile	7.43	53	20108	19.4263 ug/L	95
22) Methyl Tert Butyl Ether	7.46	73	358831	22.7223 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	233011	22.1205 ug/L	99
24) n-Hexane	7.78	57	168096	21.4904 ug/L	97
25) Diisopropyl ether	8.12	45	1709292	104.1008 ug/L	97
26) Vinyl Acetate	8.30	43	136128	18.1075 ug/L	99
27) 1,1-Dichloroethane	8.32	63	280479	21.4404 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	1832290	104.1533 ug/L	98
29) 2-Butanone	8.88	43	24883	21.2291 ug/L	100
30) Propionitrile	8.98	54	32526	95.2238 ug/L	98
31) 2,2-Dichloropropane	9.10	77	352384	25.5613 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	179136	22.0090 ug/L	95
33) Chloroform	9.38	83	351389	22.7493 ug/L	99
34) 1-Bromopropane	9.51	122	39005	33.4565 ug/L	91
35) Bromochloromethane	9.60	130	90313	21.6383 ug/L	94
36) Tetrahydrofuran	9.63	42	64447	83.4814 ug/L	94
38) 1,1,1-Trichloroethane	9.90	97	361985	24.6718 ug/L	99
39) Cyclohexane	9.94	56	211867	20.8575 ug/L	96
40) 1,1-Dichloropropene	10.10	75	243522	21.7756 ug/L	100
41) Tert-Amyl-Methyl ether	10.21	73	1748040	109.4019 ug/L	100
42) Carbon Tetrachloride	10.24	117	317988	24.4070 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413195.D Vial: 6
Acq On : 23 Jun 2016 22:28 Operator: FJB
Sample : WG573991-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 22:50:03 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	245331	24.6771 ug/L		98
46)	Benzene	10.46	78	636186	21.8420 ug/L		99
47)	Trichloroethene	11.21	130	181612	23.3782 ug/L		99
48)	Methylcyclohexane	11.30	83	258623	21.9142 ug/L		99
49)	1,2-Dichloropropane	11.43	63	139989	21.5901 ug/L		90
50)	Bromodichloromethane	11.72	83	266207	23.3595 ug/L		100
51)	1,4-Dioxane	11.72	88	2551	78.3219 ug/L		94
52)	Dibromomethane	11.81	93	79612	20.7422 ug/L		96
53)	2-Chloroethyl Vinyl Ether	12.02	63	54338	19.4979 ug/L		95
54)	4-Methyl-2-Pentanone	12.06	58	22608	19.8596 ug/L		96
55)	cis-1,3-Dichloropropene	12.36	75	284141	24.4957 ug/L		100
56)	Dimethyl Disulfide	12.62	79	134379	21.7050 ug/L		88
59)	Toluene	12.79	91	690554	20.5600 ug/L		99
60)	Ethyl Methacrylate	12.88	69	136325	21.1347 ug/L		100
62)	trans-1,3-Dichloropropene	12.96	75	238780	21.2141 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	101653	19.1800 ug/L		99
64)	2-Hexanone	13.11	58	19262	17.2949 ug/L	#	96
65)	1,3-Dichloropropane	13.48	76	201584	21.3632 ug/L		96
66)	Tetrachloroethene	13.60	164	150481	20.9116 ug/L		99
67)	Dibromochloromethane	13.86	129	157618	20.3677 ug/L		100
68)	1,2-Dibromoethane	14.12	107	104511	19.7859 ug/L		99
69)	1-Chlorohexane	14.21	91	228001	19.8866 ug/L		98
70)	Chlorobenzene	14.63	112	469098	20.7118 ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.66	131	183570	20.9209 ug/L		99
72)	Ethylbenzene	14.66	106	248486	20.0524 ug/L		96
73)	m-,p-Xylene	14.74	106	610436	41.9979 ug/L		96
74)	o-Xylene	15.31	106	301773	21.2361 ug/L		97
75)	Styrene	15.34	104	491214	21.0756 ug/L		97
76)	Bromoform	15.83	173	87737	19.1145 ug/L		98
77)	Isopropylbenzene	15.73	105	820778	21.7422 ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	105306	17.0684 ug/L		100
81)	1,2,3-Trichloropropane	16.13	110	36317	19.1156 ug/L	#	31
82)	trans-1,4-Dichloro-2-Buten	16.19	53	29611	15.7173 ug/L	#	4
83)	n-Propylbenzene	16.24	91	1001969	20.8955 ug/L		99
84)	Bromobenzene	16.37	156	191590	19.4250 ug/L		97
85)	1,3,5-Trimethylbenzene	16.42	105	724823	20.7509 ug/L		98
86)	2-Chlorotoluene	16.51	91	616163	18.4047 ug/L		92
87)	4-Chlorotoluene	16.56	91	670668	22.1777 ug/L		91
88)	a-Methylstyrene	16.83	118	336395	20.2990 ug/L		98
89)	tert-Butylbenzene	16.89	134	136372	19.9564 ug/L		99
90)	1,2,4-Trimethylbenzene	16.94	105	714803	19.9015 ug/L		99
91)	sec-Butylbenzene	17.16	105	828940	20.1726 ug/L		99
92)	p-Isopropyltoluene	17.32	119	690041	19.7773 ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	383600	20.1982 ug/L		98
94)	1,4-Dichlorobenzene	17.64	146	379062	19.7974 ug/L		100
95)	n-Butylbenzene	17.84	91	654053	18.9618 ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	327323	19.3784 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	21199	17.1175 ug/L		94
98)	1,2,4-Trichlorobenzene	20.27	180	233503	18.4944 ug/L		98
99)	Hexachlorobutadiene	20.43	225	122070	20.6927 ug/L		98
100)	Naphthalene	20.64	128	285406	15.2151 ug/L		98
101)	1,2,3-Trichlorobenzene	20.95	180	185957	17.4579 ug/L		97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413195.D Vial: 6
Acq On : 23 Jun 2016 22:28 Operator: FJB
Sample : WG573991-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 22:50 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

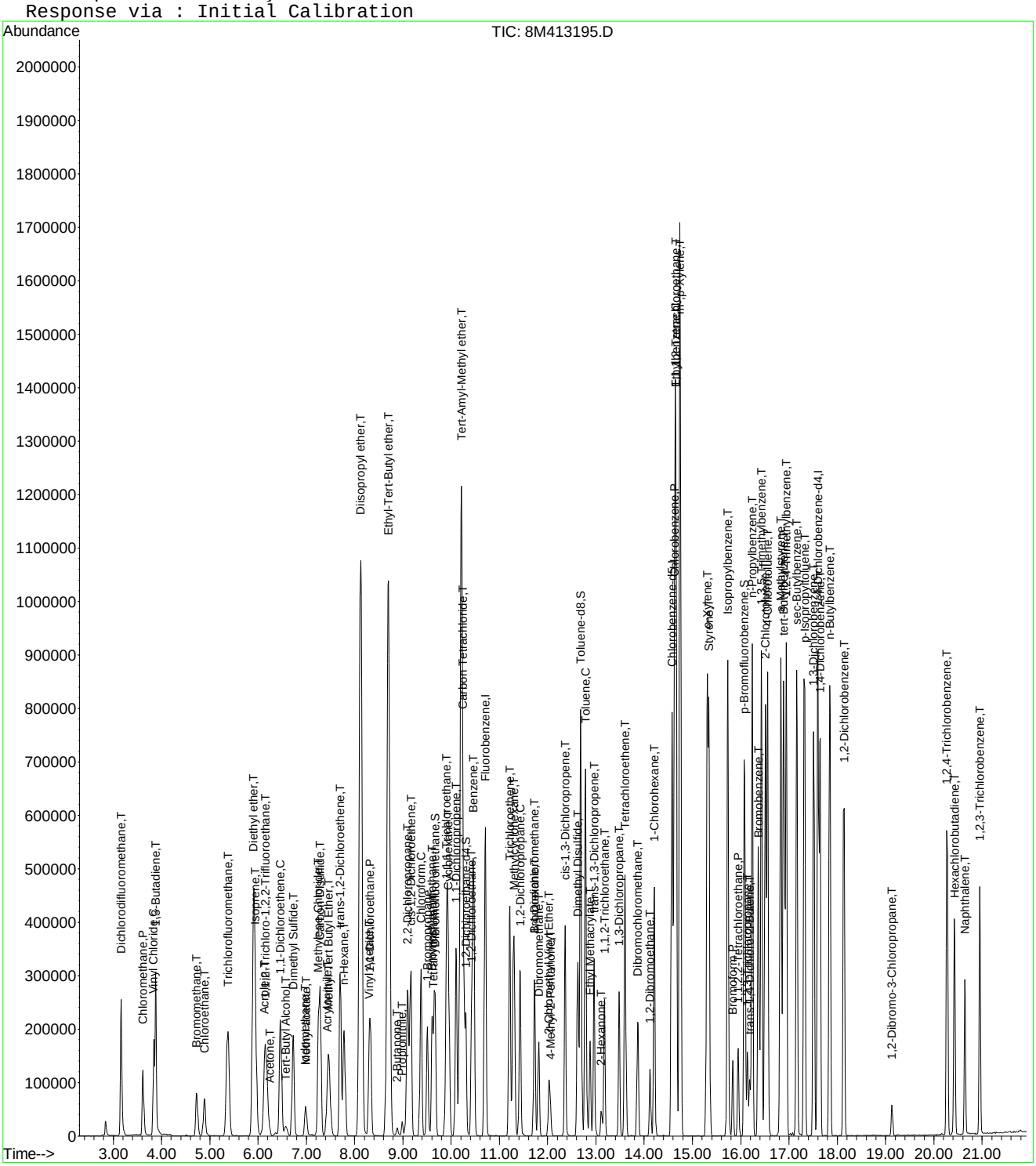

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413252.D Vial: 5
Acq On : 26 Jun 2016 19:00 Operator: ADC
Sample : WG574227-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02:42 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	766171	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	585678	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	335103	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	221283	26.8813 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.52%		
43) 1,2-Dichloroethane-d4	10.30	65	239133	27.0923 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 108.36%		
58) Toluene-d8	12.68	98	786503	25.6594 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.64%		
80) p-Bromofluorobenzene	16.08	95	344169	24.8038 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.20%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	338862	26.3797 ug/L	99
3) Chloromethane	3.62	50	175734	23.4367 ug/L	99
4) Vinyl Chloride	3.83	62	243382	27.3579 ug/L	99
5) 1,3-Butadiene	3.88	54	131327	17.6031 ug/L	98
6) Bromomethane	4.72	94	78450	15.3306 ug/L	99
7) Chloroethane	4.88	64	118084	24.1228 ug/L	95
8) Trichlorofluoromethane	5.37	101	401840	24.2754 ug/L	99
9) Diethyl ether	5.90	59	415938	105.2519 ug/L	98
10) Isoprene	5.94	67	251796	25.0486 ug/L	95
11) Acrolein	6.14	56	27320	77.2128 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	185493	23.8392 ug/L	93
13) Acetone	6.24	43	20652	23.9579 ug/L	96
14) 1,1-Dichloroethene	6.46	61	272759	22.0160 ug/L	99
15) Tert-Butyl Alcohol	6.58	59	65114	235.7160 ug/L	99
16) Dimethyl Sulfide	6.73	62	170716	38.5384 ug/L	100
17) Iodomethane	6.98	142	59651	19.3709 ug/L	100
18) Methyl acetate	7.00	43	50287	21.5815 ug/L	98
19) Methylene Chloride	7.24	84	174439	22.1251 ug/L	95
20) Carbon Disulfide	7.29	76	564628	21.7780 ug/L	99
21) Acrylonitrile	7.43	53	24204	21.6407 ug/L	99
22) Methyl Tert Butyl Ether	7.46	73	404143	23.6843 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	253351	22.2590 ug/L	97
24) n-Hexane	7.78	57	183762	21.7423 ug/L	100
25) Diisopropyl ether	8.12	45	1910194	107.6660 ug/L	98
26) Vinyl Acetate	8.29	43	137910	16.9774 ug/L	98
27) 1,1-Dichloroethane	8.32	63	305965	21.6455 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	2021197	106.3288 ug/L	99
29) 2-Butanone	8.88	43	28979	22.8811 ug/L	98
30) Propionitrile	8.98	54	41997	113.7880 ug/L	99
31) 2,2-Dichloropropane	9.09	77	362213	24.3161 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	200557	22.8044 ug/L	98
33) Chloroform	9.37	83	379050	22.7112 ug/L	100
34) 1-Bromopropane	9.51	122	41286	32.7738 ug/L	98
35) Bromochloromethane	9.60	130	102152	22.6508 ug/L	94
36) Tetrahydrofuran	9.63	42	77202	92.5506 ug/L	99
38) 1,1,1-Trichloroethane	9.90	97	376553	23.7520 ug/L	99
39) Cyclohexane	9.93	56	243482	22.1834 ug/L	97
40) 1,1-Dichloropropene	10.10	75	269782	22.3258 ug/L	100
41) Tert-Amyl-Methyl ether	10.21	73	1928086	111.6769 ug/L	100
42) Carbon Tetrachloride	10.25	117	340579	24.1927 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M413252.D 8260WT.M Mon Jun 27 12:32:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413252.D Vial: 5
Acq On : 26 Jun 2016 19:00 Operator: ADC
Sample : WG574227-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02:42 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	252195	23.4769 ug/L		99
46)	Benzene	10.46	78	701907	22.3024 ug/L		100
47)	Trichloroethene	11.21	130	202985	24.1821 ug/L		98
48)	Methylcyclohexane	11.30	83	291114	22.8289 ug/L		99
49)	1,2-Dichloropropane	11.42	63	150632	21.5002 ug/L		93
50)	Bromodichloromethane	11.72	83	281943	22.8964 ug/L		100
51)	1,4-Dioxane	11.71	88	7852	223.1088 ug/L		96
52)	Dibromomethane	11.81	93	83022	20.0185 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	63270	21.0109 ug/L		99
54)	4-Methyl-2-Pentanone	12.06	58	24855	20.2062 ug/L		90
55)	cis-1,3-Dichloropropene	12.36	75	310193	24.7486 ug/L		99
56)	Dimethyl Disulfide	12.62	79	150300	22.4673 ug/L		94
59)	Toluene	12.78	91	761843	20.9529 ug/L		99
60)	Ethyl Methacrylate	12.88	69	149138	21.3580 ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	255554	20.9731 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	112359	19.5834 ug/L		96
64)	2-Hexanone	13.11	58	22830	18.9354 ug/L	#	100
65)	1,3-Dichloropropane	13.48	76	216827	21.2264 ug/L		97
66)	Tetrachloroethene	13.60	164	169664	21.7795 ug/L		96
67)	Dibromochloromethane	13.87	129	172003	20.5317 ug/L		99
68)	1,2-Dibromoethane	14.12	107	113650	19.8753 ug/L		100
69)	1-Chlorohexane	14.21	91	253628	20.4349 ug/L		97
70)	Chlorobenzene	14.62	112	517265	21.0969 ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.65	131	202844	21.3547 ug/L		99
72)	Ethylbenzene	14.65	106	271332	20.2264 ug/L		99
73)	m-,p-Xylene	14.74	106	667243	42.4056 ug/L		98
74)	o-Xylene	15.31	106	334352	21.7345 ug/L		99
75)	Styrene	15.34	104	532349	21.0988 ug/L		97
76)	Bromoform	15.83	173	102126	20.5527 ug/L		98
77)	Isopropylbenzene	15.73	105	895519	21.9131 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	115393	17.1549 ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	39747	19.1889 ug/L		71
82)	trans-1,4-Dichloro-2-Buten	16.18	53	29225	14.2863 ug/L		95
83)	n-Propylbenzene	16.24	91	1076549	20.5921 ug/L		100
84)	Bromobenzene	16.37	156	210653	19.5895 ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	770207	20.2246 ug/L		99
86)	2-Chlorotoluene	16.50	91	751307	20.5835 ug/L		99
87)	4-Chlorotoluene	16.56	91	639557	19.3979 ug/L		99
88)	a-Methylstyrene	16.82	118	373735	20.6850 ug/L		99
89)	tert-Butylbenzene	16.89	134	147666	19.8200 ug/L		98
90)	1,2,4-Trimethylbenzene	16.94	105	776429	19.8276 ug/L		100
91)	sec-Butylbenzene	17.16	105	901299	20.1176 ug/L		100
92)	p-Isopropyltoluene	17.32	119	754487	19.8340 ug/L		100
93)	1,3-Dichlorobenzene	17.51	146	414462	20.0165 ug/L		98
94)	1,4-Dichlorobenzene	17.64	146	414489	19.8554 ug/L		99
95)	n-Butylbenzene	17.85	91	701849	18.6629 ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	358659	19.4756 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	24353	18.0362 ug/L		94
98)	1,2,4-Trichlorobenzene	20.28	180	261201	18.9753 ug/L		99
99)	Hexachlorobutadiene	20.43	225	128748	20.0178 ug/L		99
100)	Naphthalene	20.65	128	322977	15.7925 ug/L		99
101)	1,2,3-Trichlorobenzene	20.95	180	204502	17.6094 ug/L		97

(#) = qualifier out of range (m) = manual integration
8M413252.D 8260WT.M Mon Jun 27 12:32:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062616\8M413252.D Vial: 5
Acq On : 26 Jun 2016 19:00 Operator: ADC
Sample : WG574227-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 27 11:02 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

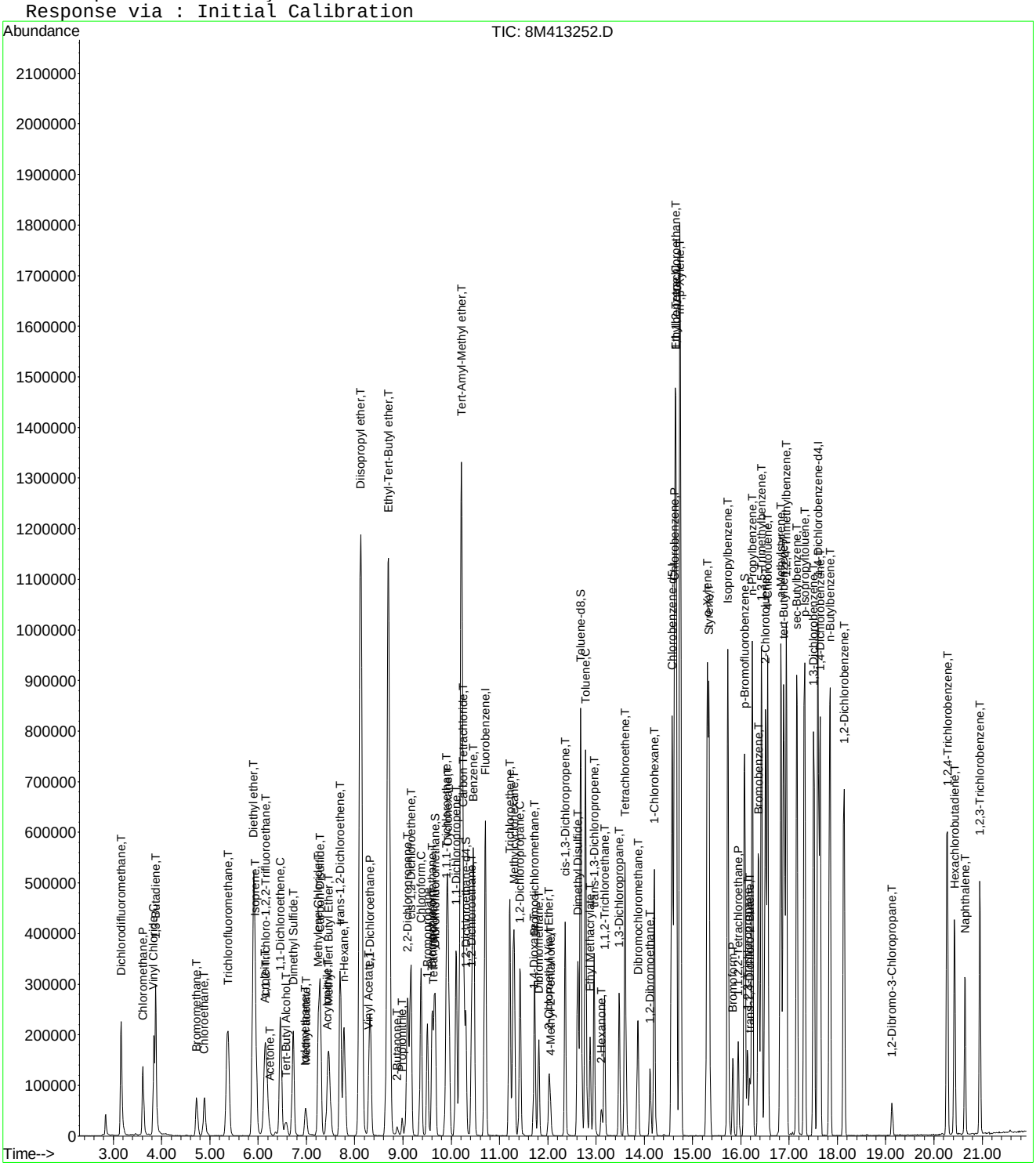

8M413252.D 8260WT.M Mon Jun 27 12:32:56 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413280.D Vial: 6
Acq On : 27 Jun 2016 20:11 Operator: FJB
Sample : WG574410-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 08:23:54 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	681082	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	528164	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	303369	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	201383	27.5202 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.08%		
43) 1,2-Dichloroethane-d4	10.31	65	224098	28.5608 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 114.24%		
58) Toluene-d8	12.68	98	715116	25.8710 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.48%		
80) p-Bromofluorobenzene	16.07	95	311755	24.8180 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.28%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	290548	25.4443 ug/L	99
3) Chloromethane	3.62	50	150178	22.5306 ug/L	97
4) Vinyl Chloride	3.84	62	207577	26.2482 ug/L	98
5) 1,3-Butadiene	3.88	54	103786	15.6495 ug/L	98
6) Bromomethane	4.73	94	77353	16.9327 ug/L	98
7) Chloroethane	4.88	64	100493	23.0940 ug/L	97
8) Trichlorofluoromethane	5.37	101	358613	24.3706 ug/L	99
9) Diethyl ether	5.90	59	350742	99.8424 ug/L	98
10) Isoprene	5.94	67	214217	23.9726 ug/L	99
11) Acrolein	6.13	56	22309	70.9276 ug/L	88
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	158184	22.8693 ug/L	95
13) Acetone	6.25	43	19484	25.4267 ug/L	94
14) 1,1-Dichloroethene	6.46	61	238182	21.6269 ug/L	98
15) Tert-Butyl Alcohol	6.58	59	49065	199.8080 ug/L	98
16) Dimethyl Sulfide	6.73	62	144988	36.8195 ug/L	99
17) Iodomethane	6.98	142	69030	24.3285 ug/L	100
18) Methyl acetate	7.00	43	41707	20.1354 ug/L	95
19) Methylene Chloride	7.25	84	146530	20.9071 ug/L	99
20) Carbon Disulfide	7.29	76	474119	20.5717 ug/L	99
21) Acrylonitrile	7.43	53	20023	20.1391 ug/L	99
22) Methyl Tert Butyl Ether	7.46	73	349130	23.0165 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	225867	22.3235 ug/L	98
24) n-Hexane	7.79	57	160733	21.3935 ug/L	99
25) Diisopropyl ether	8.13	45	1611083	102.1516 ug/L	96
26) Vinyl Acetate	8.29	43	116387	16.1178 ug/L	100
27) 1,1-Dichloroethane	8.32	63	266239	21.1882 ug/L	99
28) Ethyl-Tert-Butyl ether	8.69	59	1732266	102.5140 ug/L	98
29) 2-Butanone	8.88	43	23100	20.5178 ug/L	100
30) Propionitrile	8.98	54	31306	95.4184 ug/L	98
31) 2,2-Dichloropropane	9.10	77	324518	24.5072 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	171028	21.8763 ug/L	99
33) Chloroform	9.38	83	341403	23.0111 ug/L	98
34) 1-Bromopropane	9.51	122	36558	32.6462 ug/L	98
35) Bromochloromethane	9.60	130	86317	21.5307 ug/L	96
36) Tetrahydrofuran	9.62	42	61031	82.3052 ug/L	94
38) 1,1,1-Trichloroethane	9.90	97	338469	24.0170 ug/L	100
39) Cyclohexane	9.93	56	201814	20.6842 ug/L	96
40) 1,1-Dichloropropene	10.10	75	236903	22.0542 ug/L	97
41) Tert-Amyl-Methyl ether	10.20	73	1661227	108.2411 ug/L	100
42) Carbon Tetrachloride	10.24	117	303524	24.2541 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413280.D 8260WT.M Wed Jun 29 08:23:58 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413280.D Vial: 6
Acq On : 27 Jun 2016 20:11 Operator: FJB
Sample : WG574410-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 08:23:54 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	236082	24.7226 ug/L		98
46)	Benzene	10.46	78	605519	21.6434 ug/L		99
47)	Trichloroethene	11.22	130	174082	23.3298 ug/L		99
48)	Methylcyclohexane	11.30	83	251982	22.2288 ug/L		100
49)	1,2-Dichloropropane	11.42	63	129626	20.8134 ug/L		88
50)	Bromodichloromethane	11.72	83	257769	23.5485 ug/L		99
51)	1,4-Dioxane	11.71	88	4652	148.6971 ug/L		93
52)	Dibromomethane	11.81	93	74844	20.3012 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.02	63	52144	19.4795 ug/L		93
54)	4-Methyl-2-Pentanone	12.06	58	20053	18.3391 ug/L		88
55)	cis-1,3-Dichloropropene	12.36	75	269581	24.1955 ug/L		98
56)	Dimethyl Disulfide	12.62	79	135405	22.7695 ug/L		93
59)	Toluene	12.79	91	650563	19.8407 ug/L		100
60)	Ethyl Methacrylate	12.88	69	126680	20.1174 ug/L		99
62)	trans-1,3-Dichloropropene	12.96	75	228531	20.7977 ug/L		100
63)	1,1,2-Trichloroethane	13.17	97	100026	19.3323 ug/L		98
64)	2-Hexanone	13.12	58	18558	17.0683 ug/L	#	97
65)	1,3-Dichloropropane	13.48	76	190456	20.6751 ug/L		99
66)	Tetrachloroethene	13.60	164	144130	20.5165 ug/L		97
67)	Dibromochloromethane	13.86	129	153794	20.3572 ug/L		99
68)	1,2-Dibromoethane	14.12	107	100863	19.5599 ug/L		98
69)	1-Chlorohexane	14.21	91	225215	20.1216 ug/L		100
70)	Chlorobenzene	14.63	112	448084	20.2654 ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.66	131	176797	20.6393 ug/L		100
72)	Ethylbenzene	14.65	106	239033	19.7590 ug/L		97
73)	m-,p-Xylene	14.74	106	586089	41.3041 ug/L		96
74)	o-Xylene	15.31	106	284203	20.4864 ug/L		94
75)	Styrene	15.34	104	471198	20.7088 ug/L		96
76)	Bromoform	15.84	173	89190	19.9039 ug/L		98
77)	Isopropylbenzene	15.73	105	790764	21.4569 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	101272	16.6305 ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	34568	18.4343 ug/L		81
82)	trans-1,4-Dichloro-2-Buten	16.19	53	30633	16.4440 ug/L		89
83)	n-Propylbenzene	16.24	91	952312	20.1212 ug/L		99
84)	Bromobenzene	16.36	156	184517	18.9540 ug/L		92
85)	1,3,5-Trimethylbenzene	16.43	105	697206	20.2228 ug/L		98
86)	2-Chlorotoluene	16.51	91	599994	18.1575 ug/L		93
87)	4-Chlorotoluene	16.56	91	640125	21.4461 ug/L		92
88)	a-Methylstyrene	16.83	118	338335	20.6846 ug/L		99
89)	tert-Butylbenzene	16.89	134	131548	19.5036 ug/L		98
90)	1,2,4-Trimethylbenzene	16.94	105	699066	19.7194 ug/L		98
91)	sec-Butylbenzene	17.16	105	795429	19.6117 ug/L		100
92)	p-Isopropyltoluene	17.32	119	675309	19.6096 ug/L		100
93)	1,3-Dichlorobenzene	17.51	146	368775	19.6730 ug/L		97
94)	1,4-Dichlorobenzene	17.64	146	365385	19.3341 ug/L		99
95)	n-Butylbenzene	17.84	91	637234	18.7172 ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	316991	19.0135 ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.13	75	21850	17.8752 ug/L		98
98)	1,2,4-Trichlorobenzene	20.27	180	226638	18.1867 ug/L		97
99)	Hexachlorobutadiene	20.43	225	115147	19.7759 ug/L		98
100)	Naphthalene	20.64	128	288316	15.5724 ug/L		98
101)	1,2,3-Trichlorobenzene	20.95	180	179526	17.0759 ug/L		97

(#) = qualifier out of range (m) = manual integration
8M413280.D 8260WT.M Wed Jun 29 08:23:58 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413280.D Vial: 6
Acq On : 27 Jun 2016 20:11 Operator: FJB
Sample : WG574410-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 8:23 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

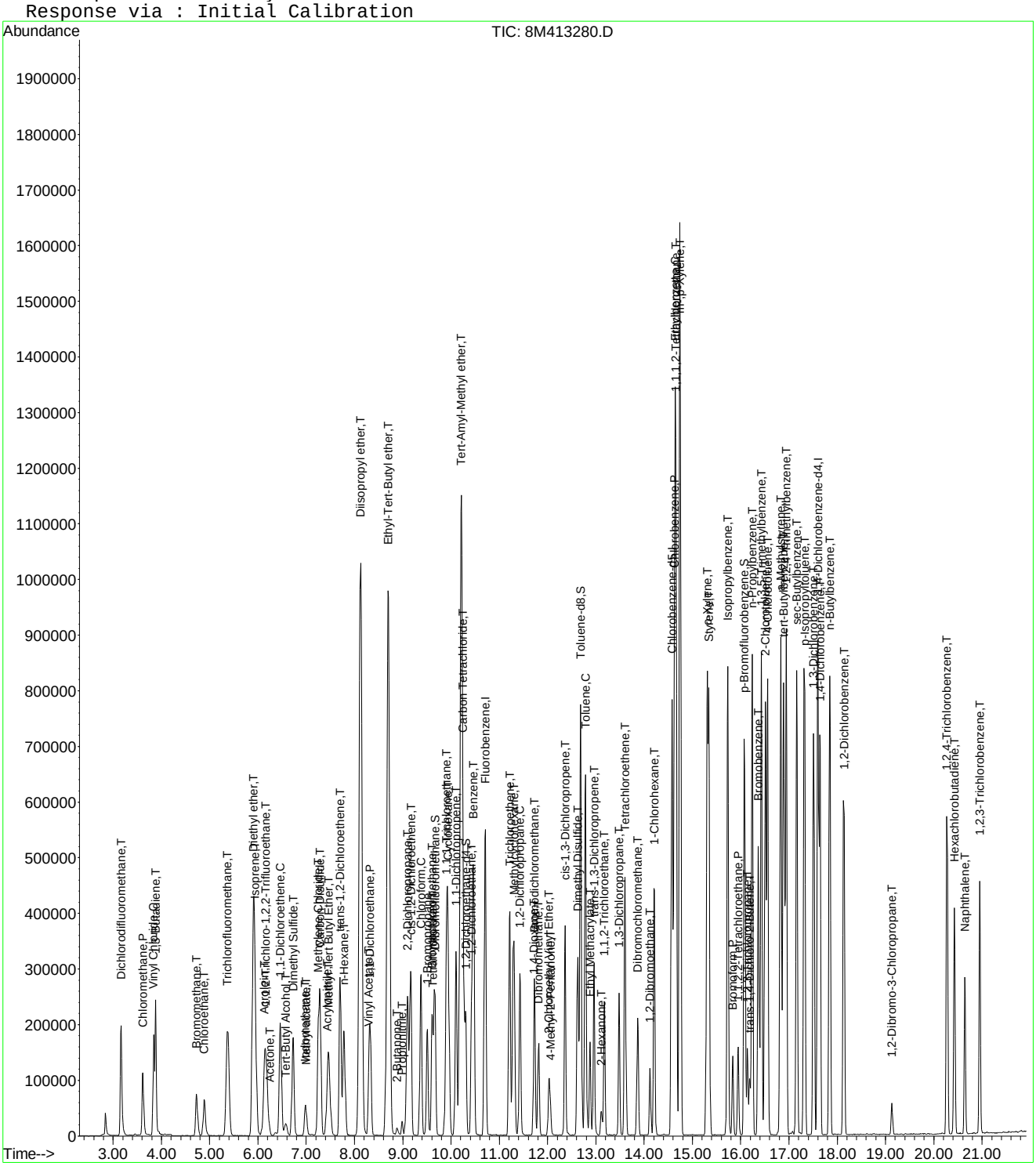

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\063016\8M413368.D Vial: 6
Acq On : 30 Jun 2016 14:22 Operator: TMB
Sample : WG574736-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:21:13 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	1003043	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	693194	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	381905	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	285341	26.4772 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 105.92%		
43) 1,2-Dichloroethane-d4	10.30	65	322831	27.9375 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.76%		
58) Toluene-d8	12.68	98	985363	27.1610 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 108.64%		
80) p-Bromofluorobenzene	16.08	95	394950	24.9754 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.92%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	320051	19.0314 ug/L	98
3) Chloromethane	3.62	50	200110	20.3852 ug/L	99
4) Vinyl Chloride	3.83	62	279317	23.9827 ug/L	99
5) 1,3-Butadiene	3.88	54	205309	21.0208 ug/L	100
6) Bromomethane	4.72	94	100157	14.9661 ug/L	100
7) Chloroethane	4.89	64	133084	20.7668 ug/L	99
8) Trichlorofluoromethane	5.37	101	480849	22.1886 ug/L	98
9) Diethyl ether	5.90	59	454930	87.9330 ug/L	98
10) Isoprene	5.94	67	286335	21.7578 ug/L	96
11) Acrolein	6.14	56	56548	122.0765 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	210693	20.6833 ug/L	97
13) Acetone	6.24	43	25640	22.7201 ug/L	99
14) 1,1-Dichloroethene	6.46	61	316529	19.5155 ug/L	95
15) Tert-Butyl Alcohol	6.57	59	70645	195.3450 ug/L	97
16) Dimethyl Sulfide	6.73	62	193531	33.3715 ug/L	98
17) Iodomethane	6.98	142	99999	23.9797 ug/L	92
18) Methyl acetate	7.00	43	53547	17.5536 ug/L	96
19) Methylene Chloride	7.24	84	197749	19.1585 ug/L	98
20) Carbon Disulfide	7.29	76	624266	18.3921 ug/L	100
21) Acrylonitrile	7.43	53	26299	17.9610 ug/L	97
22) Methyl Tert Butyl Ether	7.46	73	468193	20.9583 ug/L	98
23) trans-1,2-Dichloroethene	7.70	61	288784	19.3804 ug/L	98
24) n-Hexane	7.78	57	192145	17.3654 ug/L	99
25) Diisopropyl ether	8.12	45	2190053	94.2892 ug/L	96
26) Vinyl Acetate	8.30	43	141278	13.2848 ug/L	99
27) 1,1-Dichloroethane	8.32	63	359781	19.4420 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	2322530	93.3275 ug/L	99
29) 2-Butanone	8.88	43	31557	19.0325 ug/L	99
30) Propionitrile	8.99	54	42901	88.7875 ug/L	99
31) 2,2-Dichloropropane	9.09	77	419093	21.4905 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	234528	20.3696 ug/L	98
33) Chloroform	9.37	83	459909	21.0485 ug/L	100
34) 1-Bromopropane	9.51	122	47874	29.0289 ug/L	98
35) Bromochloromethane	9.60	130	114333	19.3648 ug/L	94
36) Tetrahydrofuran	9.63	42	84021	76.9387 ug/L	96
38) 1,1,1-Trichloroethane	9.90	97	469338	22.6134 ug/L	100
39) Cyclohexane	9.93	56	270126	18.7990 ug/L	97
40) 1,1-Dichloropropene	10.10	75	318948	20.1614 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	2235077	98.8861 ug/L	100
42) Carbon Tetrachloride	10.25	117	417402	22.6479 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\063016\8M413368.D Vial: 6
Acq On : 30 Jun 2016 14:22 Operator: TMB
Sample : WG574736-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:21:13 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	318446	22.6437 ug/L		96
46)	Benzene	10.46	78	832728	20.2107 ug/L		98
47)	Trichloroethene	11.21	130	241452	21.9719 ug/L		99
48)	Methylcyclohexane	11.30	83	326907	19.5817 ug/L		99
49)	1,2-Dichloropropane	11.43	63	178496	19.4608 ug/L		88
50)	Bromodichloromethane	11.73	83	354207	21.9720 ug/L		99
51)	1,4-Dioxane	11.71	88	7734	167.8598 ug/L		98
52)	Dibromomethane	11.81	93	99001	18.2341 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	69570	17.6472 ug/L		95
54)	4-Methyl-2-Pentanone	12.05	58	27074	16.8124 ug/L		91
55)	cis-1,3-Dichloropropene	12.36	75	365017	22.2453 ug/L		99
56)	Dimethyl Disulfide	12.62	79	173224	19.7791 ug/L		89
59)	Toluene	12.78	91	895938	20.8190 ug/L		99
60)	Ethyl Methacrylate	12.88	69	166138	20.1023 ug/L		97
62)	trans-1,3-Dichloropropene	12.96	75	308101	21.3637 ug/L		98
63)	1,1,2-Trichloroethane	13.18	97	134153	19.7554 ug/L		98
64)	2-Hexanone	13.12	58	26037	18.2458 ug/L	#	98
65)	1,3-Dichloropropane	13.48	76	259628	21.4743 ug/L		96
66)	Tetrachloroethene	13.60	164	198904	21.5728 ug/L		98
67)	Dibromochloromethane	13.87	129	209695	21.1485 ug/L		97
68)	1,2-Dibromoethane	14.12	107	136192	20.1234 ug/L		100
69)	1-Chlorohexane	14.21	91	285915	19.4633 ug/L		95
70)	Chlorobenzene	14.62	112	613391	21.1372 ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.66	131	243007	21.6149 ug/L		99
72)	Ethylbenzene	14.66	106	328055	20.6618 ug/L		100
73)	m-,p-Xylene	14.74	106	804332	43.1896 ug/L		96
74)	o-Xylene	15.31	106	397310	21.8212 ug/L		97
75)	Styrene	15.34	104	640525	21.4487 ug/L		95
76)	Bromoform	15.83	173	121776	20.7061 ug/L		99
77)	Isopropylbenzene	15.73	105	1088406	22.5022 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	132546	17.2901 ug/L		98
81)	1,2,3-Trichloropropane	16.13	110	47643	20.1821 ug/L		72
82)	trans-1,4-Dichloro-2-Buten	16.18	53	39790	16.9476 ug/L		86
83)	n-Propylbenzene	16.24	91	1293398	21.7081 ug/L		100
84)	Bromobenzene	16.37	156	250171	20.4135 ug/L		98
85)	1,3,5-Trimethylbenzene	16.42	105	954087	21.9829 ug/L		99
86)	2-Chlorotoluene	16.51	91	917588	22.0583 ug/L		98
87)	4-Chlorotoluene	16.56	91	775383	20.6355 ug/L		99
88)	a-Methylstyrene	16.83	118	434724	21.1120 ug/L		99
89)	tert-Butylbenzene	16.89	134	177418	20.8951 ug/L		96
90)	1,2,4-Trimethylbenzene	16.94	105	940536	21.0749 ug/L		100
91)	sec-Butylbenzene	17.16	105	1077208	21.0974 ug/L		100
92)	p-Isopropyltoluene	17.32	119	903068	20.8306 ug/L		98
93)	1,3-Dichlorobenzene	17.51	146	495786	21.0097 ug/L		100
94)	1,4-Dichlorobenzene	17.64	146	496687	20.8772 ug/L		99
95)	n-Butylbenzene	17.85	91	854354	19.9341 ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	434855	20.7193 ug/L		100
97)	1,2-Dibromo-3-Chloropropan	19.13	75	31414	20.4145 ug/L		94
98)	1,2,4-Trichlorobenzene	20.28	180	310208	19.7738 ug/L		100
99)	Hexachlorobutadiene	20.43	225	153497	20.9411 ug/L		96
100)	Naphthalene	20.65	128	394926	16.9441 ug/L		98
101)	1,2,3-Trichlorobenzene	20.96	180	248035	18.7406 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M413368.D 8260WT.M Thu Jun 30 15:21:17 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\063016\8M413368.D Vial: 6
Acq On : 30 Jun 2016 14:22 Operator: TMB
Sample : WG574736-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:21 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

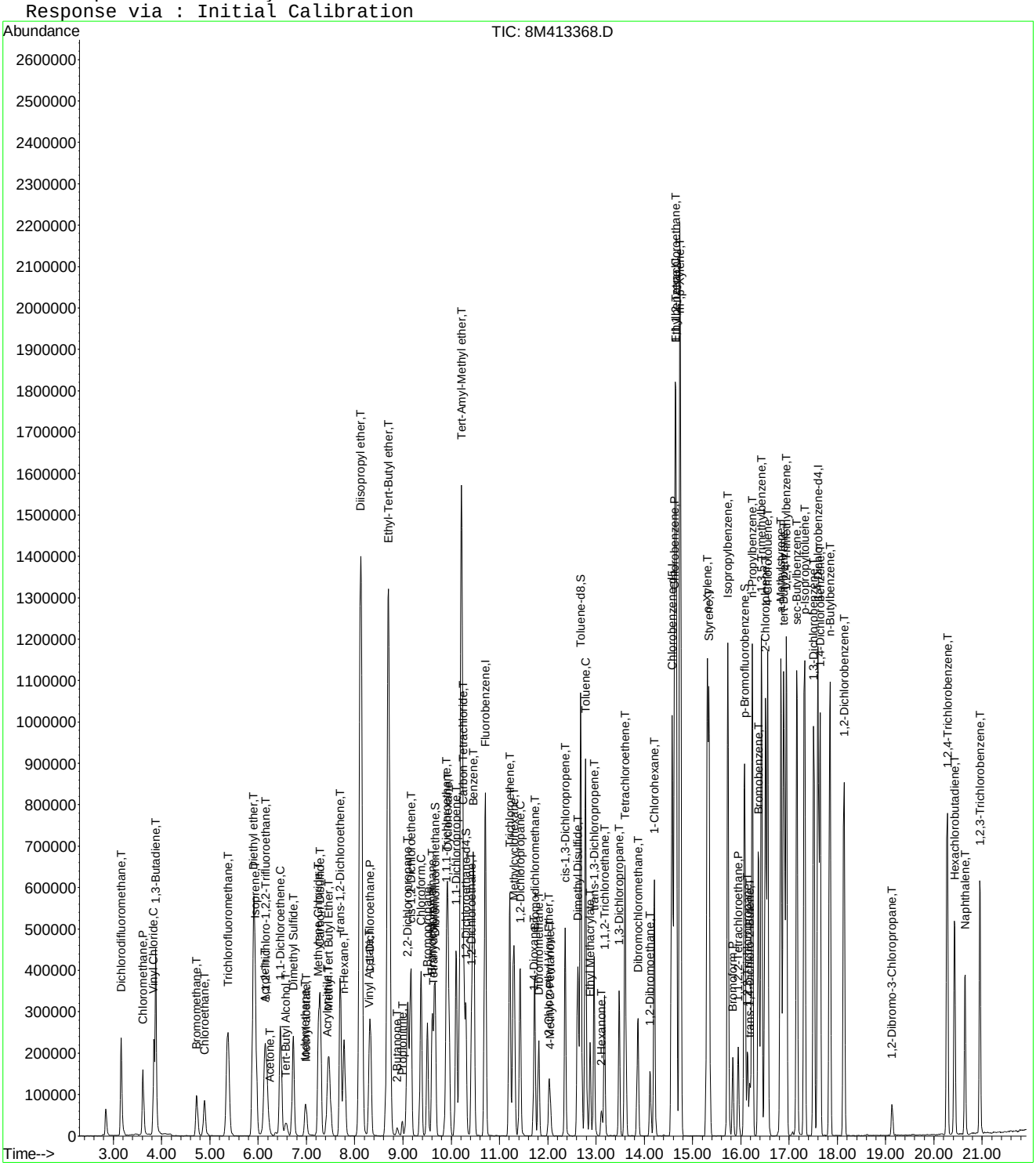

8M413368.D 8260WT.M Thu Jun 30 15:21:19 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\063016\8M413369.D Vial: 7
Acq On : 30 Jun 2016 14:51 Operator: TMB
Sample : WG574736-03 20ug/L LCS2 STD 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:21:21 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	981508	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	697382	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	385162	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	281516	26.6954 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.80%		
43) 1,2-Dichloroethane-d4	10.30	65	315441	27.8969 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.60%		
58) Toluene-d8	12.68	98	972254	26.6387 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 106.56%		
80) p-Bromofluorobenzene	16.08	95	398428	24.9822 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.92%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	299135	18.1780 ug/L	98
3) Chloromethane	3.62	50	188070	19.5791 ug/L	99
4) Vinyl Chloride	3.84	62	260357	22.8452 ug/L	99
5) 1,3-Butadiene	3.89	54	193751	20.2726 ug/L	97
6) Bromomethane	4.73	94	102081	15.5618 ug/L	96
7) Chloroethane	4.89	64	123079	19.6269 ug/L	97
8) Trichlorofluoromethane	5.37	101	439217	20.7121 ug/L	100
9) Diethyl ether	5.91	59	444357	87.7738 ug/L	99
10) Isoprene	5.93	67	266704	20.7108 ug/L	96
11) Acrolein	6.14	56	59363	130.9653 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	201187	20.1835 ug/L	95
13) Acetone	6.24	43	23591	21.3631 ug/L	95
14) 1,1-Dichloroethene	6.46	61	293069	18.4655 ug/L	98
15) Tert-Butyl Alcohol	6.58	59	69175	195.4770 ug/L	97
16) Dimethyl Sulfide	6.73	62	192868	33.9869 ug/L	100
17) Iodomethane	6.99	142	118290	28.3510 ug/L	99
18) Methyl acetate	7.00	43	54146	18.1394 ug/L	97
19) Methylene Chloride	7.25	84	192175	19.0270 ug/L	98
20) Carbon Disulfide	7.29	76	594425	17.8972 ug/L	100
21) Acrylonitrile	7.43	53	27299	19.0530 ug/L	100
22) Methyl Tert Butyl Ether	7.46	73	453869	20.7629 ug/L	98
23) trans-1,2-Dichloroethene	7.70	61	284806	19.5328 ug/L	98
24) n-Hexane	7.78	57	200222	18.4924 ug/L	100
25) Diisopropyl ether	8.12	45	2158529	94.9710 ug/L	96
26) Vinyl Acetate	8.30	43	180686	17.3633 ug/L	99
27) 1,1-Dichloroethane	8.32	63	351931	19.4350 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	2270455	93.2367 ug/L	98
29) 2-Butanone	8.88	43	30522	18.8121 ug/L	93
30) Propionitrile	8.99	54	44578	94.2824 ug/L	97
31) 2,2-Dichloropropane	9.10	77	430924	22.5820 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	228971	20.3233 ug/L	98
33) Chloroform	9.37	83	448388	20.9715 ug/L	100
34) 1-Bromopropane	9.52	122	49574	30.7192 ug/L	97
35) Bromochloromethane	9.60	130	110805	19.1791 ug/L	97
36) Tetrahydrofuran	9.63	42	84053	78.6567 ug/L	96
38) 1,1,1-Trichloroethane	9.90	97	449433	22.1295 ug/L	100
39) Cyclohexane	9.94	56	260387	18.5188 ug/L	96
40) 1,1-Dichloropropene	10.10	75	307344	19.8542 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	2205168	99.7035 ug/L	99
42) Carbon Tetrachloride	10.25	117	392024	21.7376 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413369.D 8260WT.M Thu Jun 30 15:21:24 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\063016\8M413369.D Vial: 7
Acq On : 30 Jun 2016 14:51 Operator: TMB
Sample : WG574736-03 20ug/L LCS2 STD 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:21:21 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	310303	22.5488	ug/L		98
46)	Benzene	10.46	78	799699	19.8349	ug/L		99
47)	Trichloroethene	11.21	130	224851	20.9102	ug/L		99
48)	Methylcyclohexane	11.30	83	321920	19.7061	ug/L		99
49)	1,2-Dichloropropane	11.43	63	176984	19.7193	ug/L		88
50)	Bromodichloromethane	11.73	83	340575	21.5899	ug/L		99
51)	1,4-Dioxane	11.72	88	7755	172.0085	ug/L		89
52)	Dibromomethane	11.81	93	96241	18.1147	ug/L		96
53)	2-Chloroethyl Vinyl Ether	12.02	63	69373	17.9833	ug/L		99
54)	4-Methyl-2-Pentanone	12.06	58	27298	17.3235	ug/L		89
55)	cis-1,3-Dichloropropene	12.36	75	365704	22.7762	ug/L		99
56)	Dimethyl Disulfide	12.62	79	173570	20.2534	ug/L		93
59)	Toluene	12.78	91	878108	20.2821	ug/L		98
60)	Ethyl Methacrylate	12.88	69	163067	19.6122	ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	304545	20.9903	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	130807	19.1469	ug/L		99
64)	2-Hexanone	13.12	58	24923	17.3603	ug/L	#	94
65)	1,3-Dichloropropane	13.48	76	252000	20.7182	ug/L		95
66)	Tetrachloroethene	13.60	164	191722	20.6690	ug/L		99
67)	Dibromochloromethane	13.87	129	205995	20.6506	ug/L		99
68)	1,2-Dibromoethane	14.12	107	136661	20.0714	ug/L		99
69)	1-Chlorohexane	14.21	91	284877	19.2762	ug/L		97
70)	Chlorobenzene	14.62	112	611522	20.9462	ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.66	131	237827	21.0271	ug/L		99
72)	Ethylbenzene	14.66	106	318436	19.9355	ug/L		98
73)	m-,p-Xylene	14.74	106	783124	41.7982	ug/L		95
74)	o-Xylene	15.31	106	392354	21.4196	ug/L		95
75)	Styrene	15.34	104	641249	21.3440	ug/L		95
76)	Bromoform	15.83	173	118885	20.0931	ug/L		99
77)	Isopropylbenzene	15.73	105	1064002	21.8655	ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	139551	18.0500	ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	46127	19.3747	ug/L		76
82)	trans-1,4-Dichloro-2-Buten	16.19	53	40738	17.1953	ug/L		86
83)	n-Propylbenzene	16.24	91	1287685	21.4295	ug/L		99
84)	Bromobenzene	16.37	156	248462	20.1026	ug/L		96
85)	1,3,5-Trimethylbenzene	16.42	105	935293	21.3676	ug/L		99
86)	2-Chlorotoluene	16.51	91	900735	21.4700	ug/L		99
87)	4-Chlorotoluene	16.56	91	768136	20.2698	ug/L		100
88)	a-Methylstyrene	16.83	118	440688	21.2206	ug/L		100
89)	tert-Butylbenzene	16.89	134	175590	20.5050	ug/L		96
90)	1,2,4-Trimethylbenzene	16.94	105	932065	20.7085	ug/L		99
91)	sec-Butylbenzene	17.16	105	1086889	21.1070	ug/L		100
92)	p-Isopropyltoluene	17.32	119	915197	20.9319	ug/L		100
93)	1,3-Dichlorobenzene	17.51	146	497782	20.9159	ug/L		99
94)	1,4-Dichlorobenzene	17.64	146	499074	20.8001	ug/L		99
95)	n-Butylbenzene	17.85	91	859897	19.8937	ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	440540	20.8127	ug/L		97
97)	1,2-Dibromo-3-Chloropropan	19.13	75	32498	20.9403	ug/L		95
98)	1,2,4-Trichlorobenzene	20.28	180	315459	19.9385	ug/L		99
99)	Hexachlorobutadiene	20.43	225	159216	21.5376	ug/L		98
100)	Naphthalene	20.65	128	401389	17.0757	ug/L		97
101)	1,2,3-Trichlorobenzene	20.96	180	255932	19.1738	ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\063016\8M413369.D Vial: 7
Acq On : 30 Jun 2016 14:51 Operator: TMB
Sample : WG574736-03 20ug/L LCS2 STD 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 30 15:21 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

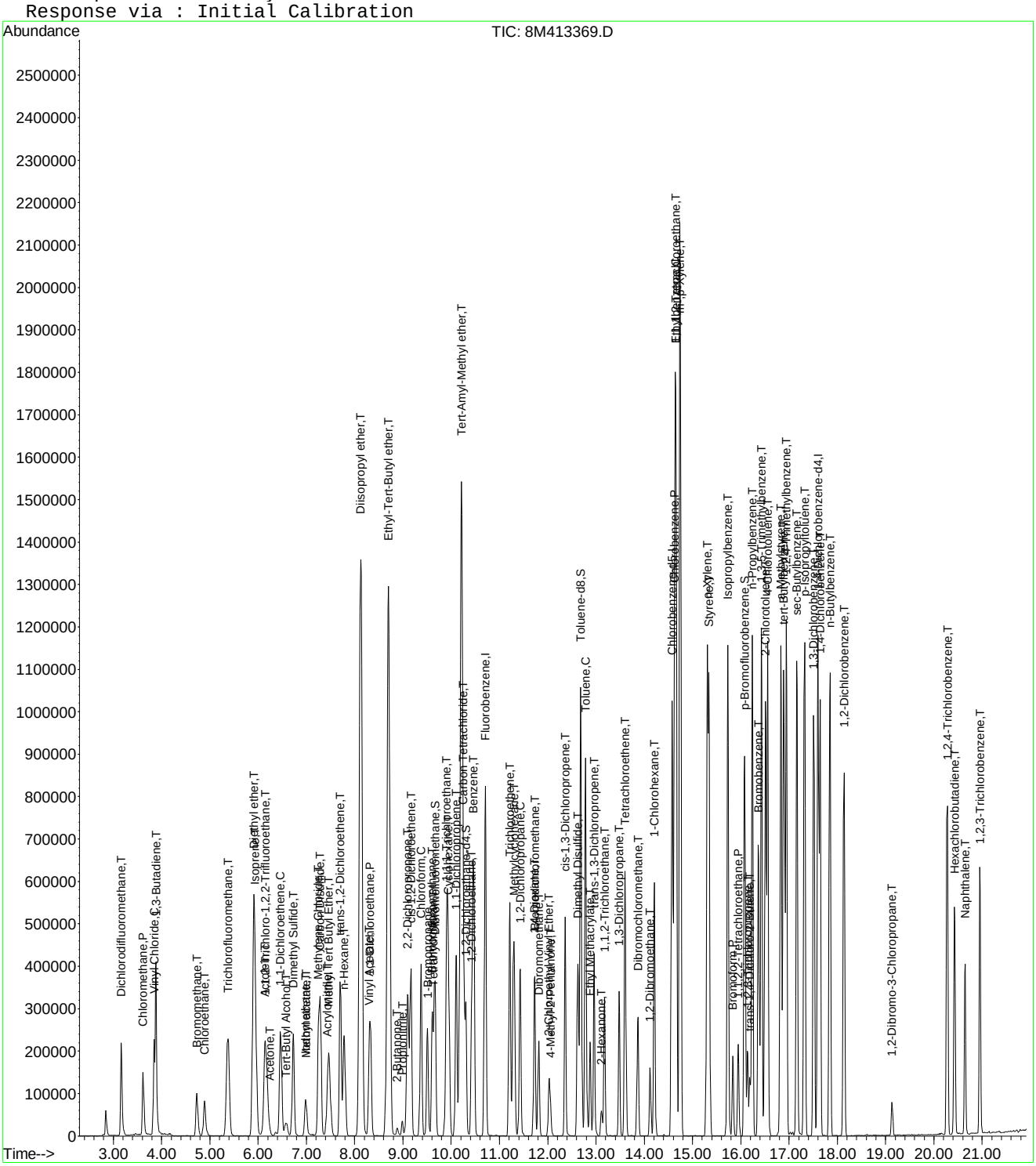

2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW23-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/29/2016 19:11
Collect Date:	06/17/2016 07:30	**Dilution:**	10000	**File ID:**	1LM.LM35524
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	65200		4000	2000	1000

Certificate of Analysis

Sample #:	L16061068-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW23MS-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/29/2016 19:30
Collect Date:	06/17/2016 07:30	**Dilution:**	10000	**File ID:**	1LM.LM35525
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	66700		4000	2000	1000

Certificate of Analysis

Sample #:	L16061068-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW23MSD-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/29/2016 19:49
Collect Date:	06/17/2016 07:30	**Dilution:**	10000	**File ID:**	1LM.LM35526
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	65600		4000	2000	1000

Certificate of Analysis

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Sample #:	L16061068-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	C01-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/29/2016 20:08
Collect Date:	06/17/2016 08:35	**Dilution:**	1	**File ID:**	1LM.LM35527
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3.15		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16061068-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	C01FD-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/29/2016 20:26
Collect Date:	06/17/2016 08:35	**Dilution:**	1	**File ID:**	1LM.LM35528
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3.02		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16061068-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW13-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/29/2016 20:45
Collect Date:	06/17/2016 09:45	**Dilution:**	1	**File ID:**	1LM.LM35529
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	C02-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/29/2016 22:01
Collect Date:	06/17/2016 10:45	**Dilution:**	1	**File ID:**	1LM.LM35533
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	C02MS-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/29/2016 22:20
Collect Date:	06/17/2016 10:45	**Dilution:**	1	**File ID:**	1LM.LM35534
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.216	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-09	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	C02MSD-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/29/2016 22:39
Collect Date:	06/17/2016 10:45	**Dilution:**	1	**File ID:**	1LM.LM35535
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.220	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-10	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW19-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/30/2016 13:53
Collect Date:	06/17/2016 13:10	**Dilution:**	5	**File ID:**	1LM.LM35555
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	11.4		2.00	1.00	0.500

Certificate of Analysis

Sample #:	L16061068-12	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW18-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/29/2016 23:17
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	1LM.LM35537
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-14	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW18MS-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/29/2016 23:36
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	1LM.LM35538
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.196	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-16	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW18MSD-061716	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/29/2016 23:55
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	1LM.LM35539
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.207	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1405 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG574701-01 MCT	10,030.	
-02 Blank	0.43	
-03 LCS	0.65	
L16061068-01 RS	1,959.	
-02 MS	1,957.	
-03 MSD	1,961.	
-04	3,020.	
-05	3,020.	
-06	170.3	
-07 RS	615.	
-08 MS	615.	
-09 MSD	607.	
-10	146.5	
-12 RS	1409.	
-14 MS	1412.	
-16 MSD	1398.	
L16061227-01	1242.	
-02	317.	
-04	317.	
-06	9,000.	
-07	1,645.	
-08	10,310.	
L16061549-01	3,090.	

Analyst: John Richards

Date/Time: 06/30/16 1430

DCN#119395

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

Page: 1 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

Page: 2 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 062916_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG574701 (waters)

Internal STD: STD18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: Samples L16061068(-01RS,-02MS,-03MSD) and L16061227-08 were analyzed at 10,000x dilutions based on their historical results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35517	WG574710-01 CCB	1	1		06/29/16 16:58
2	1LM.LM35518	WG574710-02 CCV (1.0ug/L)	1	1	STD75510	06/29/16 17:17
3	1LM.LM35519	WG574701-13 MRL (0.2ug/L)	1	1	STD75510	06/29/16 17:36
4	1LM.LM35520	WG574701-01 MCT (0.2ug/L)	1	1	STD75512	06/29/16 17:55
5	1LM.LM35521	WG574701-02 BLANK	1	1		06/29/16 18:14
6	1LM.LM35522	WG574701-03 LCS (0.2ug/L)	1	1	STD75512	06/29/16 18:33
7	1LM.LM35523	L16061549-01	1	1		06/29/16 18:52
8	1LM.LM35524	L16061068-01 RS (10.000x)	1	10000		06/29/16 19:11
9	1LM.LM35525	L16061068-02 MS (10.000x)	1	10000	STD75512	06/29/16 19:30
10	1LM.LM35526	L16061068-03 MSD (10.000x)	1	10000	STD75512	06/29/16 19:49
11	1LM.LM35527	L16061068-04	1	1		06/29/16 20:08
12	1LM.LM35528	L16061068-05	1	1		06/29/16 20:26
13	1LM.LM35529	L16061068-06	1	1		06/29/16 20:45
14	1LM.LM35530	WG574710-03 CCV (1.0ug/L)	1	1	STD75510	06/29/16 21:04
15	1LM.LM35531	WG574701-14 MRL (0.2ug/L)	1	1	STD75510	06/29/16 21:23
16	1LM.LM35532	WG574710-04 CCB	1	1		06/29/16 21:42
17	1LM.LM35533	L16061068-07 RS	1	1		06/29/16 22:01
18	1LM.LM35534	L16061068-08 MS	1	1	STD75512	06/29/16 22:20
19	1LM.LM35535	L16061068-09 MSD	1	1	STD75512	06/29/16 22:39
20	1LM.LM35536	L16061068-10 (NR)	1	1		06/29/16 22:58
21	1LM.LM35537	L16061068-12 RS	1	1		06/29/16 23:17
22	1LM.LM35538	L16061068-14 MS	1	1	STD75512	06/29/16 23:36
23	1LM.LM35539	L16061068-16 MSD	1	1	STD75512	06/29/16 23:55
24	1LM.LM35540	L16061227-01	1	1		06/30/16 00:14
25	1LM.LM35541	L16061227-02	1	1		06/30/16 00:33
26	1LM.LM35542	L16061227-04	1	1		06/30/16 00:52
27	1LM.LM35543	WG574710-05 CCV (1.0ug/L)	1	1	STD75510	06/30/16 01:11
28	1LM.LM35544	WG574701-15 MRL (0.2ug/L)	1	1	STD75510	06/30/16 01:29
29	1LM.LM35545	WG574710-06 CCB	1	1		06/30/16 01:48
30	1LM.LM35546	L16061227-06	1	1		06/30/16 02:07
31	1LM.LM35547	L16061227-07	1	1		06/30/16 02:26
32	1LM.LM35548	L16061227-08 (10,000x)	1	10000		06/30/16 02:45
33	1LM.LM35549	WG574710-07 CCV (1.0ug/L)	1	1	STD75510	06/30/16 03:04

Page: 1 Approved: 01-JUL-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 062916_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG574701 (waters)

Internal STD: STD18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM35550	WG574701-16 MRL (0.2ug/L)	1	1	STD75510	06/30/16 03:23
35	1LM.LM35551	WG574710-08 CCB	1	1		06/30/16 03:42
36	1LM.LM35552	WG574710-09 CCV (1.0ug/L)	1	1	STD75510	06/30/16 12:56
37	1LM.LM35553	WG574701-17 MRL (0.2ug/L)	1	1	STD75510	06/30/16 13:15
38	1LM.LM35554	WG574710-10 CCB	1	1		06/30/16 13:34
39	1LM.LM35555	L16061068-10 (RR 5x)	1	5		06/30/16 13:53
40	1LM.LM35556	WG574710-11 CCV (1.0ug/L)	1	1	STD75510	06/30/16 14:12
41	1LM.LM35557	WG574701-18 MRL (0.2ug/L)	1	1	STD75510	06/30/16 14:31
42	1LM.LM35558	WG574710-12 CCB	1	1		06/30/16 14:50

Comments

Seq.	Rerun	Dil.	Reason	Analytes
9				
	L16061068-02 MS (10.000x) : The MS %Rec is above the advisory limit. At this level of dilution, the spiked amount added to the MS has been diluted below the method detection limit.			
10				
	L16061068-03 MSD (10.000x) : The MSD %Rec is above the advisory limit. At this level of dilution, the spiked amount added to the MSD has been diluted below the method detection limit.			
20	X	5	Over Calibration Range	
	L16061068-10 (NR) : This sample was reanalyzed at a 5x dilution on the end of this sequence.			

Page: 2 Approved: 01-JUL-16

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
04-MAY-2016
John Richards

Secondary Reviewer:
05-MAY-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 29-JUN-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 76038
Analytical Workgroups: L16061068, 1227, 1549

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 30-JUN-2016 John Richards

Secondary Reviewer: 01-JUL-2016 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-01-2016 09:20:44

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG574701

Login Number: L16061068

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW23-061716	01	06/17/16					06/29/2016	12.3	28		06/29/16	.2	28	
MW23MS-061716	02	06/17/16					06/29/2016	12.3	28		06/29/16	.2	28	
MW23MSD-061716	03	06/17/16					06/29/2016	12.3	28		06/29/16	.2	28	
C01-061716	04	06/17/16					06/29/2016	12.3	28		06/29/16	.2	28	
C01FD-061716	05	06/17/16					06/29/2016	12.3	28		06/29/16	.2	28	
MW13-061716	06	06/17/16					06/29/2016	12.2	28		06/29/16	.2	28	
C02-061716	07	06/17/16					06/29/2016	12.2	28		06/29/16	.3	28	
C02MS-061716	08	06/17/16					06/29/2016	12.2	28		06/29/16	.3	28	
C02MSD-061716	09	06/17/16					06/29/2016	12.2	28		06/29/16	.3	28	
MW19-061716	10	06/17/16					06/29/2016	12.1	28		06/30/16	1	28	
MW18-061716	12	06/17/16					06/29/2016	12	28		06/29/16	.3	28	
MW18MS-061716	14	06/17/16					06/29/2016	12	28		06/29/16	.4	28	
MW18MSD-061716	16	06/17/16					06/29/2016	12	28		06/29/16	.4	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4834036
Report generated 06/30/2016 15:48

METHOD BLANK SUMMARY

Login Number: L16061068
Blank File ID: 1LM.LM35521
Prep Date: 06/29/16 15:00
Analyzed Date: 06/29/16 18:14
Analyst: JWR

Work Group: WG574701
Blank Sample ID: WG574701-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG574701-13	1LM.LM35519	06/29/16 17:36	01
MCT	WG574701-01	1LM.LM35520	06/29/16 17:55	01
LCS	WG574701-03	1LM.LM35522	06/29/16 18:33	01
MW23-061716	L16061068-01	1LM.LM35524	06/29/16 19:11	DL01
MW23MS-061716	L16061068-02	1LM.LM35525	06/29/16 19:30	DL01
MW23MSD-061716	L16061068-03	1LM.LM35526	06/29/16 19:49	DL01
C01-061716	L16061068-04	1LM.LM35527	06/29/16 20:08	01
C01FD-061716	L16061068-05	1LM.LM35528	06/29/16 20:26	01
MW13-061716	L16061068-06	1LM.LM35529	06/29/16 20:45	01
QCMRL	WG574701-14	1LM.LM35531	06/29/16 21:23	01
C02-061716	L16061068-07	1LM.LM35533	06/29/16 22:01	01
C02MS-061716	L16061068-08	1LM.LM35534	06/29/16 22:20	01
C02MSD-061716	L16061068-09	1LM.LM35535	06/29/16 22:39	01
MW18-061716	L16061068-12	1LM.LM35537	06/29/16 23:17	01
MW18MS-061716	L16061068-14	1LM.LM35538	06/29/16 23:36	01
MW18MSD-061716	L16061068-16	1LM.LM35539	06/29/16 23:55	01
QCMRL	WG574701-15	1LM.LM35544	06/30/16 01:29	01
QCMRL	WG574701-16	1LM.LM35550	06/30/16 03:23	01
QCMRL	WG574701-17	1LM.LM35553	06/30/16 13:15	01
MW19-061716	L16061068-10	1LM.LM35555	06/30/16 13:53	DL01
QCMRL	WG574701-18	1LM.LM35557	06/30/16 14:31	01

Report Name: BLANK_SUMMARY
PDF File ID: 4834037
Report generated 06/30/2016 15:48

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061068 Prep Date: 06/29/16 15:00 Sample ID: WG574701-02
Instrument ID: LCMS1 Run Date: 06/29/16 18:14 Prep Method: 6850
File ID: 1LM.LM35521 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574701 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4834038
30-JUN-2016 15:48

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061068 Run Date: 06/29/2016 Sample ID: WG574701-03
Instrument ID: LCMS1 Run Time: 18:33 Prep Method: 6850
File ID: 1LM.LM35522 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574701 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD75512 Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	0.200	0.201	101	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4834039
Report generated: 06/30/2016 15:48

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16061068 Cal ID: LCMS1- 03-MAY-16 Worknum: WG574701
Instrument ID: LCMS1 Contract #: Prep Method: 6850
Parent ID: L16061068-01 File ID: 1LM.LM35524 Dil: 10000 Method: 6850
Sample ID: L16061068-02 MS File ID: 1LM.LM35525 Dil: 10000 Matrix: Water
Sample ID: L16061068-03 MSD File ID: 1LM.LM35526 Dil: 10000 Units: ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Perchlorate	65200	0.200	66700	750000	0.200	65600	200000	1.66	80 - 120	15	*

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4834040
Report generated 06/30/2016 15:48

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16061068 Cal ID: LCMS1- 03-MAY-16 Worknum: WG574701
Instrument ID: LCMS1 Contract #: Prep Method: 6850
Parent ID: L16061068-07 File ID: 1LM.LM35533 Dil: 1 Method: 6850
Sample ID: L16061068-08 MS File ID: 1LM.LM35534 Dil: 1 Matrix: Water
Sample ID: L16061068-09 MSD File ID: 1LM.LM35535 Dil: 1 Units: ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Perchlorate	U	0.200	0.216	108	0.200	0.220	110	1.83	80 - 120	15	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4834040
Report generated 06/30/2016 15:48

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16061068 Cal ID: LCMS1- 03-MAY-16 Worknum: WG574701
Instrument ID: LCMS1 Contract #: Prep Method: 6850
Parent ID: L16061068-12 File ID: 1LM.LM35537 Dil: 1 Method: 6850
Sample ID: L16061068-14 MS File ID: 1LM.LM35538 Dil: 1 Matrix: Water
Sample ID: L16061068-16 MSD File ID: 1LM.LM35539 Dil: 1 Units: ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Perchlorate	U	0.200	0.196	98	0.200	0.207	104	5.46	80 - 120	15	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4834040
Report generated 06/30/2016 15:48

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061068
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4834630
Report generated 07/01/2016 08:59

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061068

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4834630
Report generated 07/01/2016 08:59

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061068

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4834630
Report generated 07/01/2016 08:59

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061068

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008
PDF File ID: 4834630
Report generated 07/01/2016 08:59

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061068 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4834638
Report generated 07/01/2016 08:59

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 06/29/2016
Sample ID: WG574710-01
Instrument ID: LCMS1
Run Time: 16:58
Method: 6850
File ID: 1LM.LM35517
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574701
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4834043
Report generated 06/30/2016 15:49

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 06/29/2016
Sample ID: WG574710-04
Instrument ID: LCMS1
Run Time: 21:42
Method: 6850
File ID: 1LM.LM35532
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574701
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4834043
Report generated 06/30/2016 15:49

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574710-06
Instrument ID: LCMS1
Run Time: 01:48
Method: 6850
File ID: 1LM.LM35545
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574701
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4834043
Report generated 06/30/2016 15:49

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574710-08
Instrument ID: LCMS1
Run Time: 03:42
Method: 6850
File ID: 1LM.LM35551
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574701
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4834043
Report generated 06/30/2016 15:49

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574710-10
Instrument ID: LCMS1
Run Time: 13:34
Method: 6850
File ID: 1LM.LM35554
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574701
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4834043
Report generated 06/30/2016 15:49

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574710-12
Instrument ID: LCMS1
Run Time: 14:50
Method: 6850
File ID: 1LM.LM35558
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574701
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4834043
Report generated 06/30/2016 15:49

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068
Run Date: 06/29/2016
Sample ID: WG574710-02
Instrument ID: LCMS1
Run Time: 17:17
Method: 6850
File ID: 1LM.LM35518
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574701
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.73	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4834042
Report generated 06/30/2016 15:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068
Run Date: 06/29/2016
Sample ID: WG574710-03
Instrument ID: LCMS1
Run Time: 21:04
Method: 6850
File ID: 1LM.LM35530
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574701
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.996	ug/L	1.68	0.400	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4834042
Report generated 06/30/2016 15:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574710-05
Instrument ID: LCMS1
Run Time: 01:11
Method: 6850
File ID: 1LM.LM35543
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574701
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.74	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4834042
Report generated 06/30/2016 15:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574710-07
Instrument ID: LCMS1
Run Time: 03:04
Method: 6850
File ID: 1LM.LM35549
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574701
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.73	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4834042
Report generated 06/30/2016 15:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574710-09
Instrument ID: LCMS1
Run Time: 12:56
Method: 6850
File ID: 1LM.LM35552
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574701
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.72	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4834042
Report generated 06/30/2016 15:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574710-11
Instrument ID: LCMS1
Run Time: 14:12
Method: 6850
File ID: 1LM.LM35556
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574701
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.74	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4834042
Report generated 06/30/2016 15:48

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061068 Run Date: 06/29/2016 Sample ID: WG574701-13
Instrument ID: LCMS1 Run Time: 17:36 Prep Method: 6850
File ID: 1LM.LM35519 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574701 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.203	102	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4834041
Report generated 06/30/2016 15:48

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061068 Run Date: 06/29/2016 Sample ID: WG574701-14
Instrument ID: LCMS1 Run Time: 21:23 Prep Method: 6850
File ID: 1LM.LM35531 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574701 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.209	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4834041
Report generated 06/30/2016 15:48

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061068 Run Date: 06/30/2016 Sample ID: WG574701-15
Instrument ID: LCMS1 Run Time: 01:29 Prep Method: 6850
File ID: 1LM.LM35544 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574701 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.201	101	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4834041
Report generated 06/30/2016 15:48

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061068 Run Date: 06/30/2016 Sample ID: WG574701-16
Instrument ID: LCMS1 Run Time: 03:23 Prep Method: 6850
File ID: 1LM.LM35550 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574701 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.208	104	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4834041
Report generated 06/30/2016 15:48

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061068 Run Date: 06/30/2016 Sample ID: WG574701-17
Instrument ID: LCMS1 Run Time: 13:15 Prep Method: 6850
File ID: 1LM.LM35553 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574701 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.204	102	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4834041
Report generated 06/30/2016 15:48

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061068 Run Date: 06/30/2016 Sample ID: WG574701-18
Instrument ID: LCMS1 Run Time: 14:31 Prep Method: 6850
File ID: 1LM.LM35557 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574701 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4834041
Report generated 06/30/2016 15:48

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16061068
Instrument ID: LCMS1
Workgroup (AAB#): WG574701

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16061068-01	10000	DL01	452000
L16061068-02	10000	DL01	450000
L16061068-03	10000	DL01	459000
L16061068-04	1.00	01	352000
L16061068-05	1.00	01	354000
L16061068-06	1.00	01	421000
L16061068-07	1.00	01	396000
L16061068-08	1.00	01	397000
L16061068-09	1.00	01	394000
L16061068-10	5.00	DL01	455000
L16061068-12	1.00	01	472000
L16061068-14	1.00	01	484000
L16061068-16	1.00	01	486000
WG574701-02	1.00	01	465000
WG574701-03	1.00	01	462000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4834044
Report generated 06/30/2016 15:49

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**	6850	**Samplenum:**	L16061068-01
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35524
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 19:11	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	991000	344000	2.88	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**	6850	**Samplenum:**	L16061068-02
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35525
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 19:30	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1010000	346000	2.92	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**	6850	**Samplenum:**	L16061068-03
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35526
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 19:49	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1010000	344000	2.94	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**	6850	**Samplenum:**	L16061068-04
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35527
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 20:08	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	374000	128000	2.92	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**	6850	**Samplenum:**	L16061068-05
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35528
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 20:26	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	359000	126000	2.85	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**	6850	**Samplenum:**	L16061068-06
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35529
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 20:45	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	2950	1310	2.25	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**	6850	**Samplenum:**	L16061068-07
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35533
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 22:01	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	3080	1370	2.25	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**	6850	**Samplenum:**	L16061068-08
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35534
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 22:20	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	29300	10200	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**	6850	**Samplenum:**	L16061068-09
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35535
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 22:39	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	29700	9590	3.10	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**	6850	**Samplenum:**	L16061068-10
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35555
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 13:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	349000	121000	2.88	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**	6850	**Samplenum:**	L16061068-12
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35537
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 23:17	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	2130	1410	1.51	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**	6850	**Samplenum:**	L16061068-14
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35538
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 23:36	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32600	11900	2.74	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**	6850	**Samplenum:**	L16061068-16
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35539
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 23:55	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34400	11200	3.07	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**	6850	**Samplenum:**	WG574701-01
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35520
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 17:55	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	30100	11300	2.66	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**	6850	**Samplenum:**	WG574701-02
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35521
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 18:14	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**	6850	**Samplenum:**	WG574701-03
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35522
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 18:33	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	31800	11300	2.81	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**	6850	**Samplenum:**	WG574701-13
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35519
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 17:36	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32700	12200	2.68	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**	6850	**Samplenum:**	WG574701-14
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35531
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 21:23	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37300	12900	2.89	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**	6850	**Samplenum:**	WG574701-15
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35544
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 01:29	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38200	13200	2.89	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**	6850	**Samplenum:**	WG574701-16
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35550
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 03:23	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38900	13900	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**	6850	**Samplenum:**	WG574701-17
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35553
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 13:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32600	11300	2.88	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**	6850	**Samplenum:**	WG574701-18
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35557
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 14:31	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34700	12600	2.75	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**		**Samplenum:**	WG574710-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35517
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 16:58	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**		**Samplenum:**	WG574710-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35518
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 17:17	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	162000	57400	2.82	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**		**Samplenum:**	WG574710-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35530
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 21:04	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	176000	59400	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**		**Samplenum:**	WG574710-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35532
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 21:42	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**		**Samplenum:**	WG574710-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35543
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 01:11	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	187000	65800	2.84	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**		**Samplenum:**	WG574710-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35545
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 01:48	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	264	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**		**Samplenum:**	WG574710-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35549
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 03:04	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	188000	65500	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**		**Samplenum:**	WG574710-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35551
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 03:42	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**		**Samplenum:**	WG574710-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35552
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 12:56	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	162000	55700	2.91	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**		**Samplenum:**	WG574710-10
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35554
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 13:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	445	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**		**Samplenum:**	WG574710-11
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35556
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 14:12	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	174000	60800	2.86	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061068	**Prep Method:**		**Samplenum:**	WG574710-12
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35558
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 14:50	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

2.2.1.3 Sample Data

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Printed: 6/30/2016 3:31 PM

Data File	LM35524.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 7:11:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061068-01 RS (10.000x)	**Injection Vial**	8.00
Data File	LM35524.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 7:11:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-04	**Dilution Factor**	1.00
Sample Comment	1,10000 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.520e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	9.910e+05	9.68	N/A	6.52
Perchlorate conf	3.440e+05	9.67	N/A	6.81

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

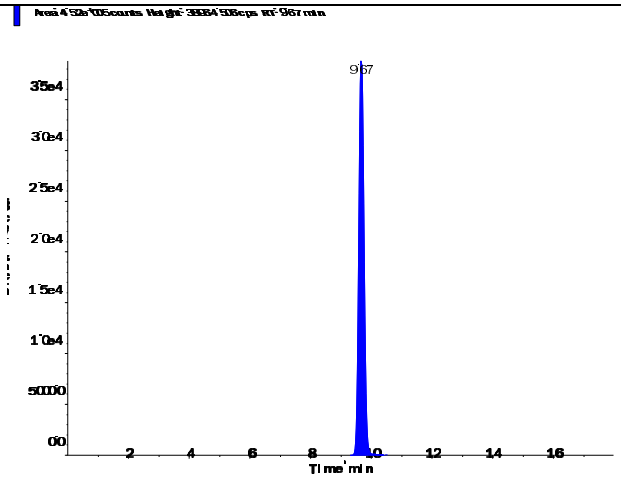

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Printed: 6/30/2016 3:31 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.68 (9.84) min Calculated conc: 6.52 ng/ml Area Ratio: 2.194 Sample Type: (Unknown)	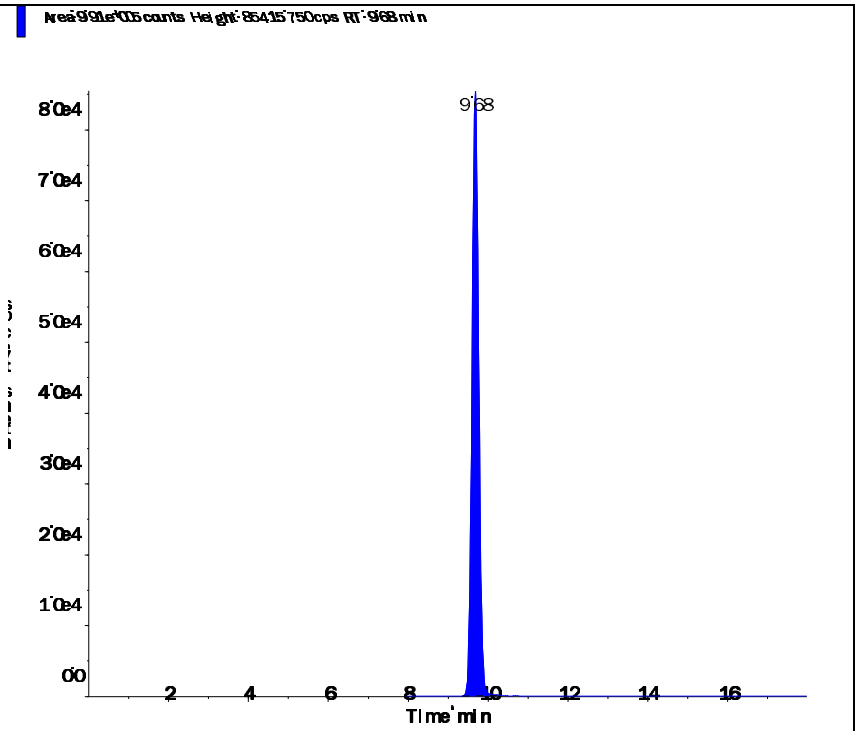
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.67 (9.84) min Calculated conc: 6.81 ng/ml Area Ratio: 0.763 Sample Type: (Unknown)	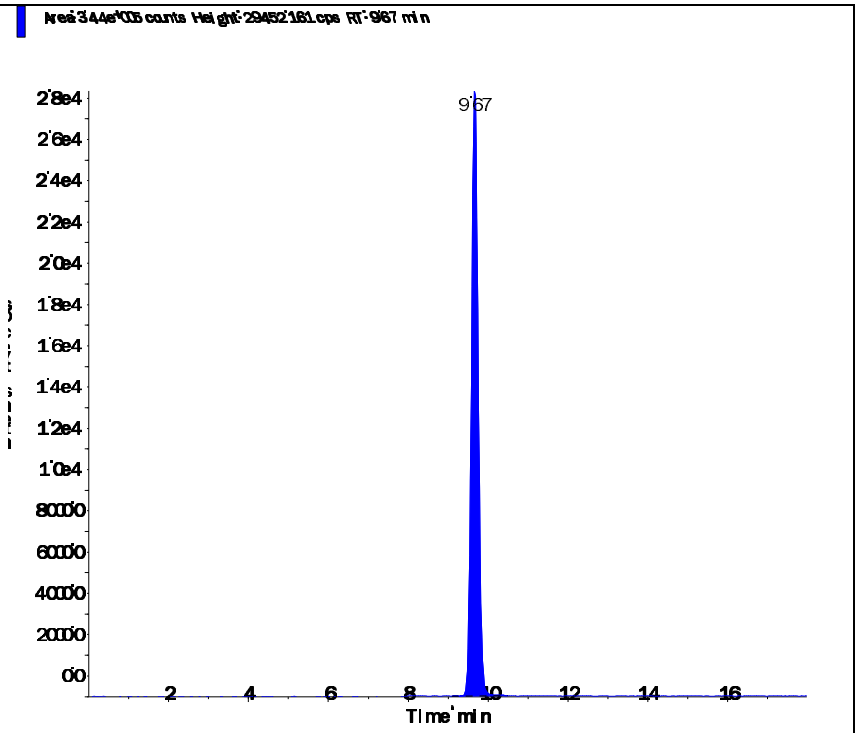

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Created with Analyst Reporter
Printed: 6/30/2016 3:32 PM

Data File	LM35525.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 7:30:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061068-02 MS (10.000x)	**Injection Vial**	9.00
Data File	LM35525.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 7:30:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-05	**Dilution Factor**	1.00
Sample Comment	1,10000 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.500e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.010e+06	9.68	N/A	6.67
Perchlorate conf	3.460e+05	9.67	N/A	6.87

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

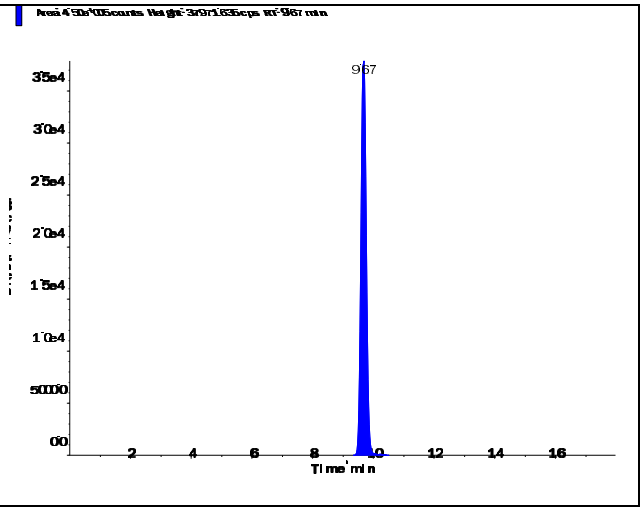

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.68 (9.84) min
Calculated conc:	6.67 ng/ml
Area Ratio:	2.243
Sample Type:	(Unknown)

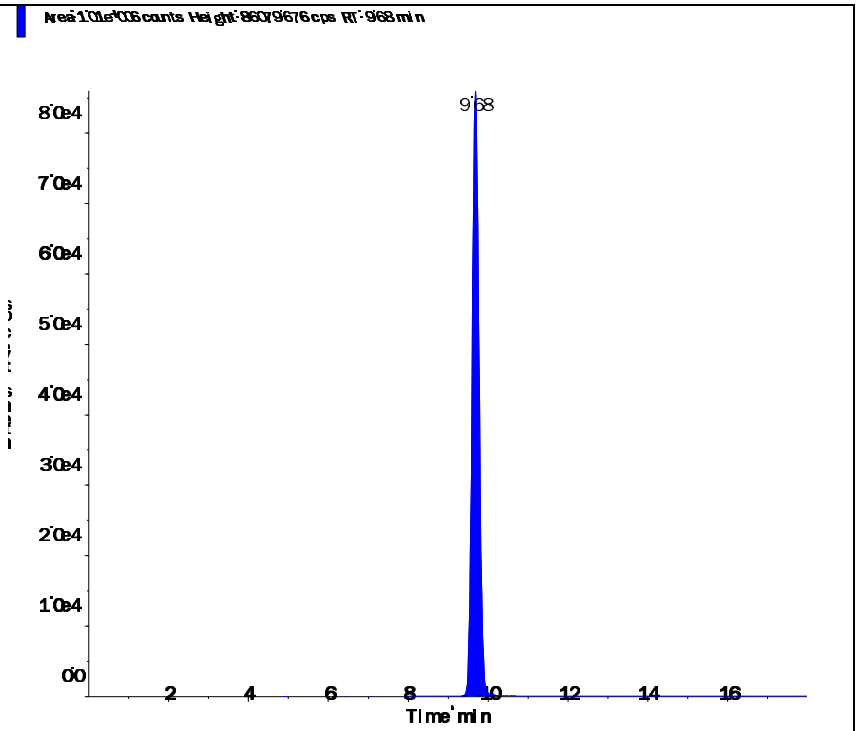

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.67 (9.84) min
Calculated conc:	6.87 ng/ml
Area Ratio:	0.769
Sample Type:	(Unknown)

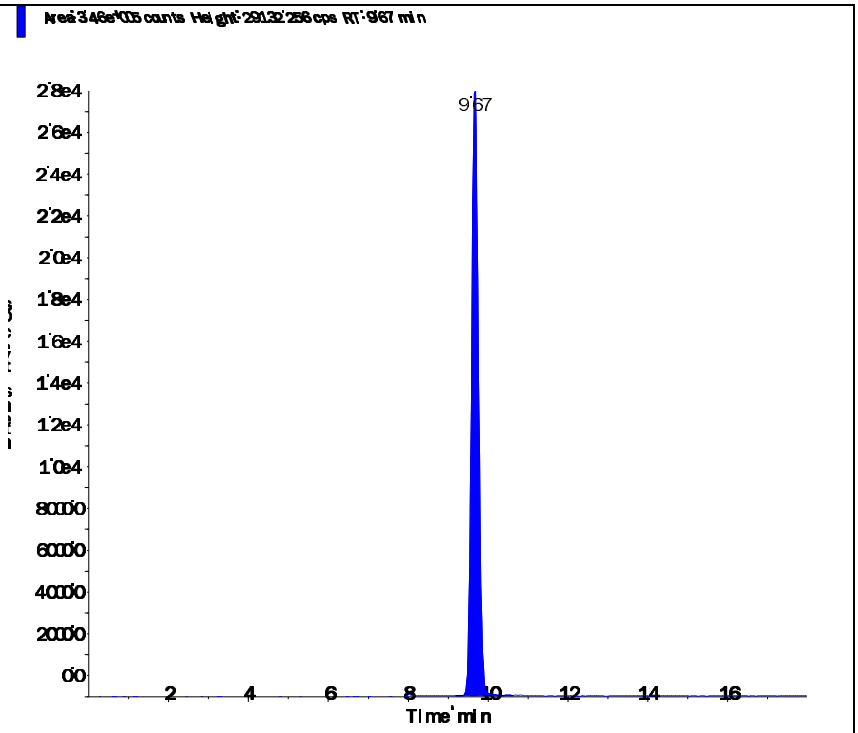

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Data File	LM35526.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 7:49:07 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061068-03 MSD (10.000x)	**Injection Vial**	10.00
Data File	LM35526.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 7:49:07 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-06	**Dilution Factor**	1.00
Sample Comment	1,10000 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.590e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.010e+06	9.68	N/A	6.56
Perchlorate conf	3.440e+05	9.67	N/A	6.68

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

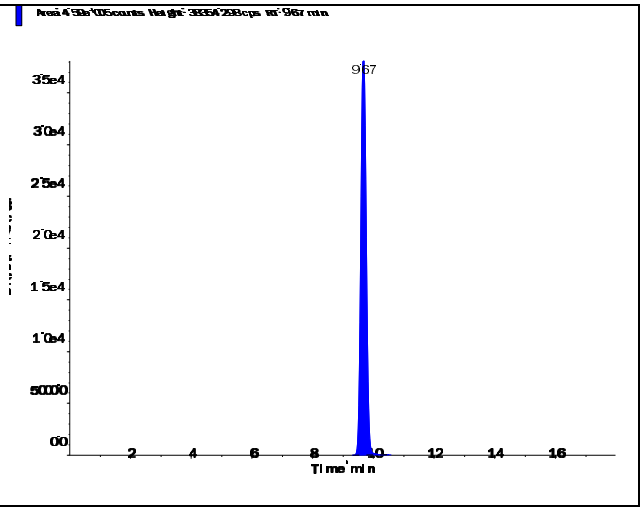

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.68 (9.84) min
Calculated conc:	6.56 ng/ml
Area Ratio:	2.208
Sample Type:	(Unknown)

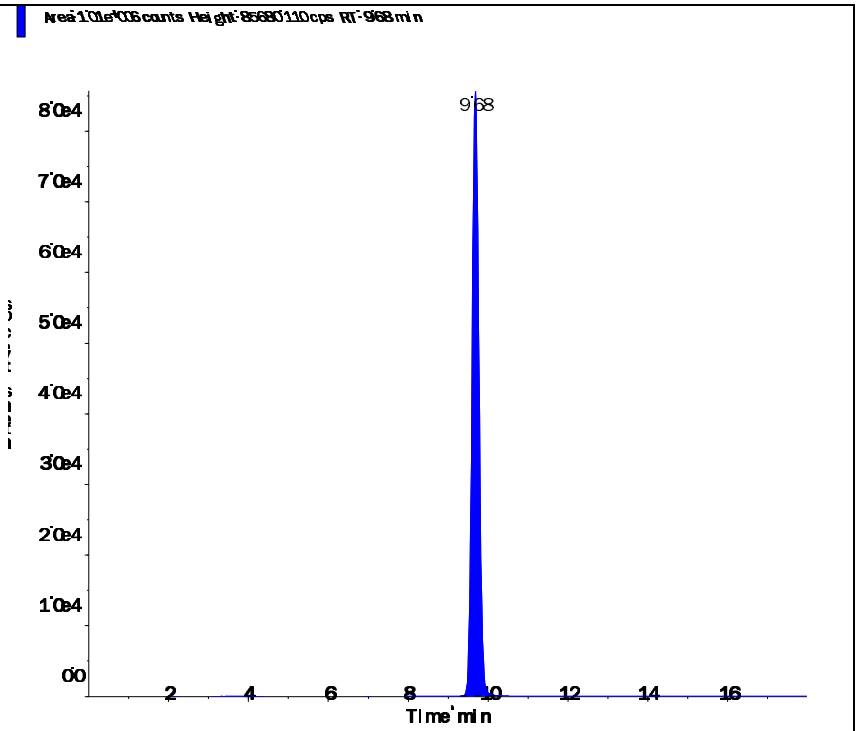

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.67 (9.84) min
Calculated conc:	6.68 ng/ml
Area Ratio:	0.748
Sample Type:	(Unknown)

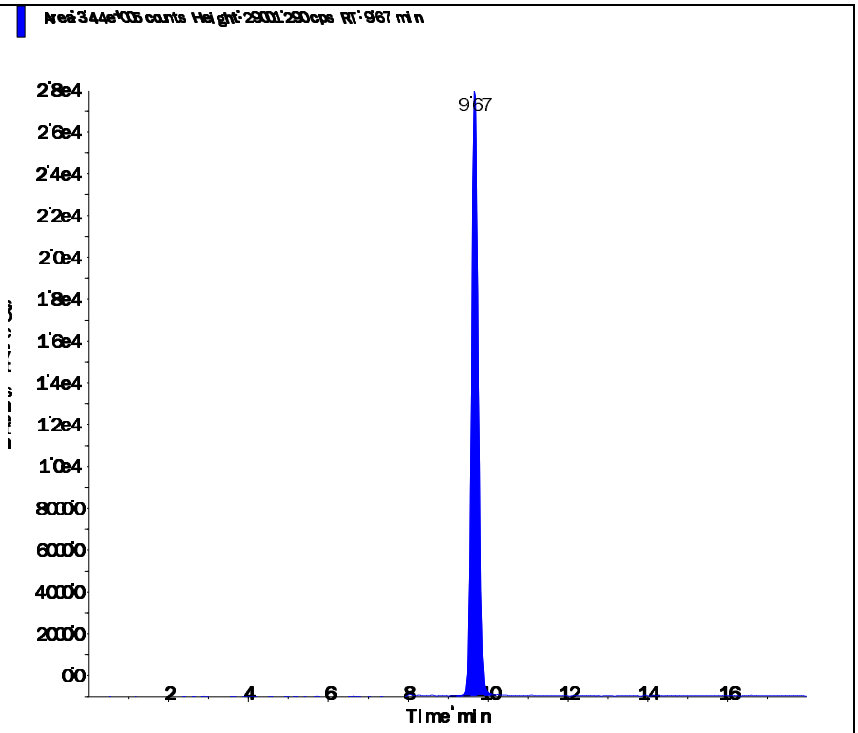

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Data File	LM35527.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 8:08:02 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061068-04	**Injection Vial**	11.00
Data File	LM35527.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 8:08:02 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	L16061068-04	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.520e+05	9.24	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.740e+05	9.25	N/A	3.15
Perchlorate conf	1.280e+05	9.24	N/A	3.22

O18LP (Internal Standard)

RT (Exp. RT): 9.24(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

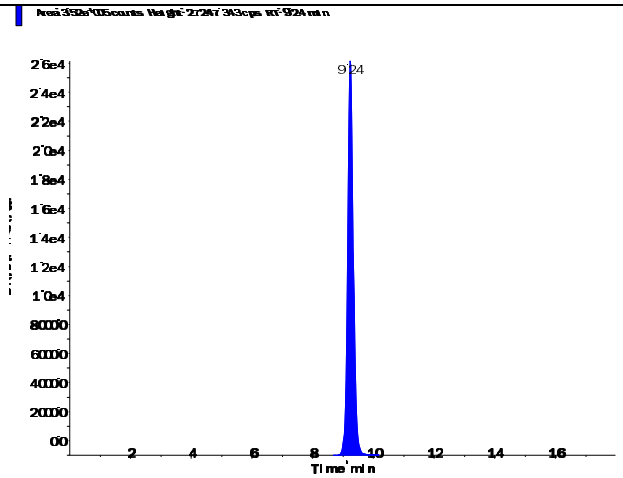

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.25 (9.84) min
Calculated conc:	3.15 ng/ml
Area Ratio:	1.06
Sample Type:	(Unknown)

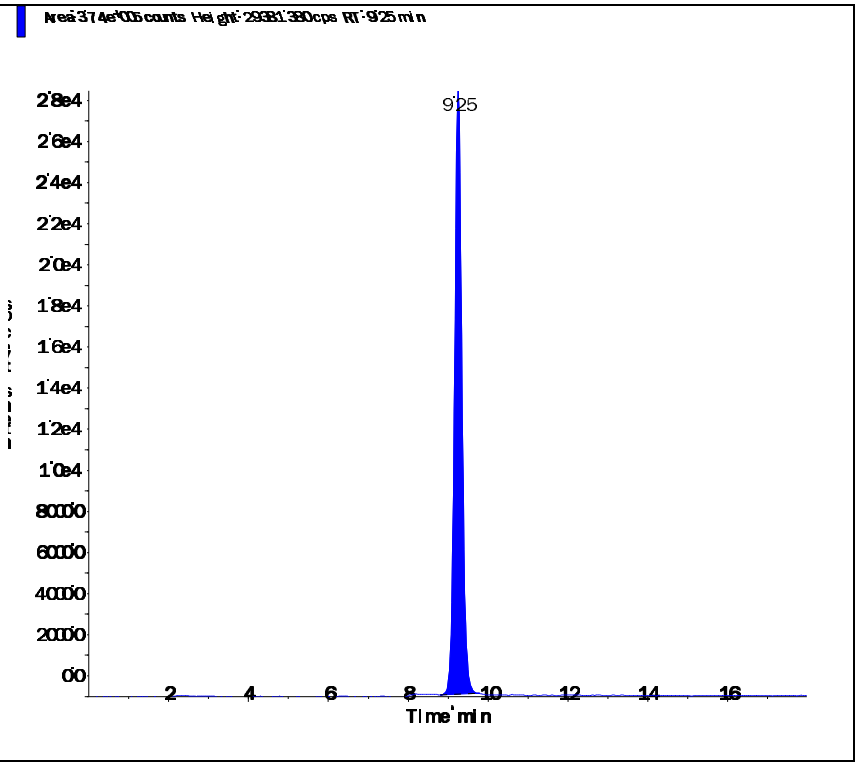

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.24 (9.84) min
Calculated conc:	3.22 ng/ml
Area Ratio:	0.362
Sample Type:	(Unknown)

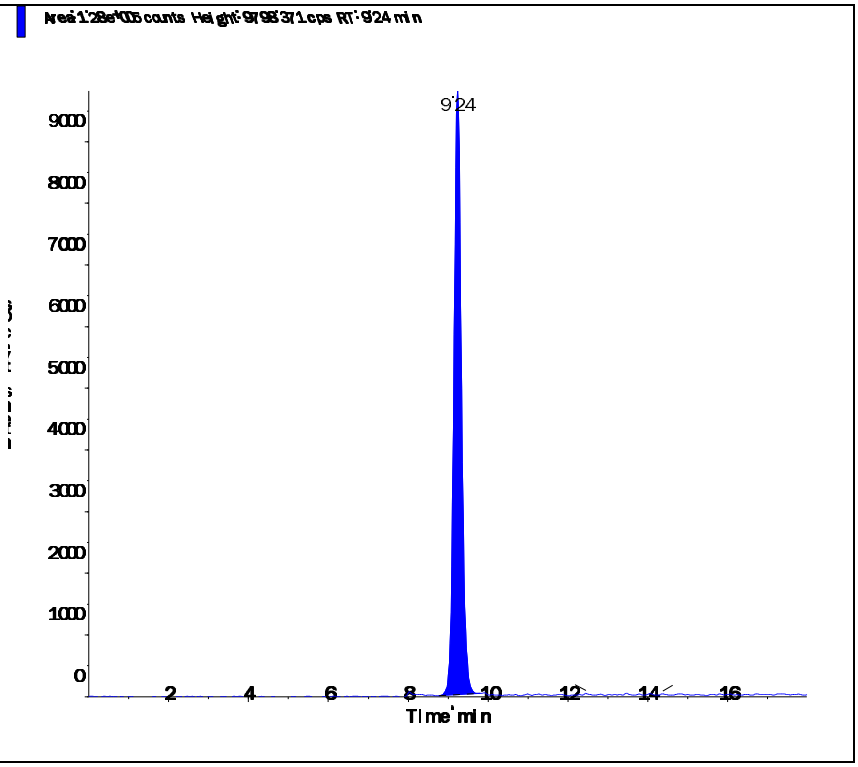

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Data File	LM35528.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 8:26:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061068-05	**Injection Vial**	12.00
Data File	LM35528.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 8:26:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	L16061068-05	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.540e+05	9.25	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.590e+05	9.26	N/A	3.02
Perchlorate conf	1.260e+05	9.24	N/A	3.17

O18LP (Internal Standard)

RT (Exp. RT): 9.25(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

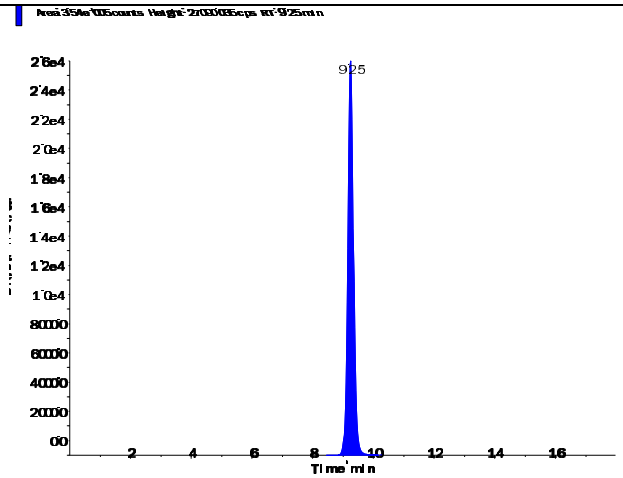

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.26 (9.84) min
Calculated conc:	3.02 ng/ml
Area Ratio:	1.016
Sample Type:	(Unknown)

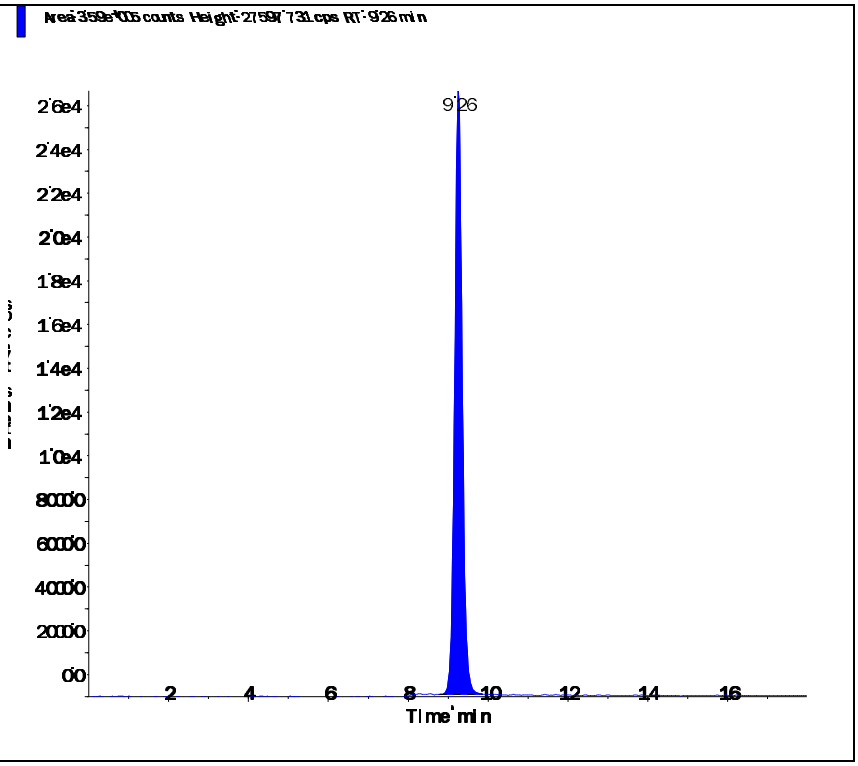

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.24 (9.84) min
Calculated conc:	3.17 ng/ml
Area Ratio:	0.356
Sample Type:	(Unknown)

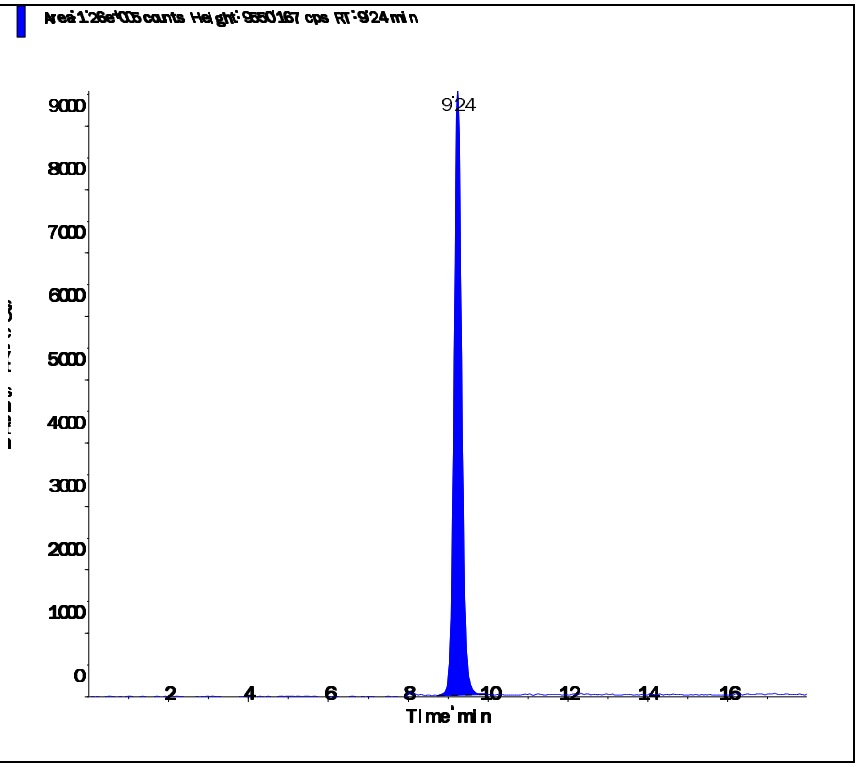

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Data File	LM35529.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 8:45:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061068-06	**Injection Vial**	13.00
Data File	LM35529.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 8:45:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	L16061068-06	**Dilution Factor**	1.00
Sample Comment	1,1 (screened)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.210e+05	9.58	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.950e+03	9.60	N/A	0.017
Perchlorate conf	1.310e+03	9.60	N/A	0.0074

O18LP (Internal Standard)

RT (Exp. RT): 9.58(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

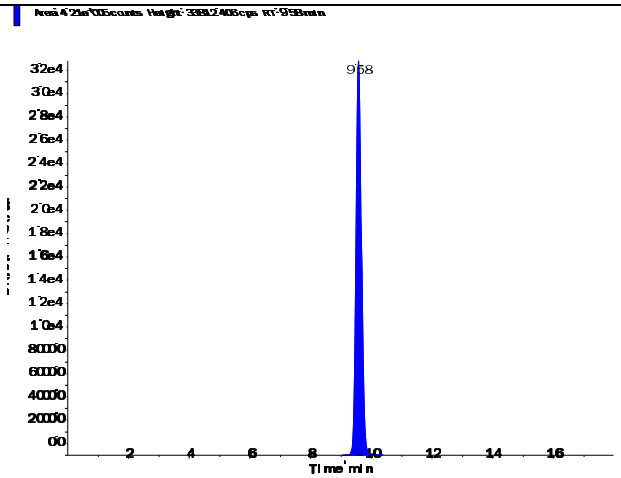

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.60 (9.84) min
Calculated conc:	0.017 ng/ml
Area Ratio:	0.007
Sample Type:	(Unknown)

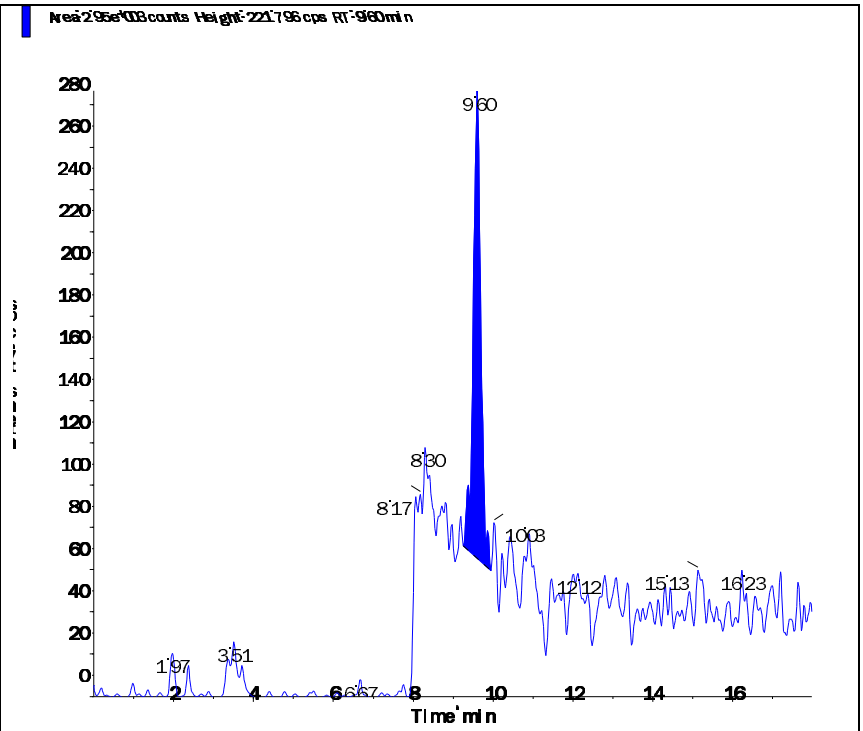

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.60 (9.84) min
Calculated conc:	0.0074 ng/ml
Area Ratio:	0.003
Sample Type:	(Unknown)

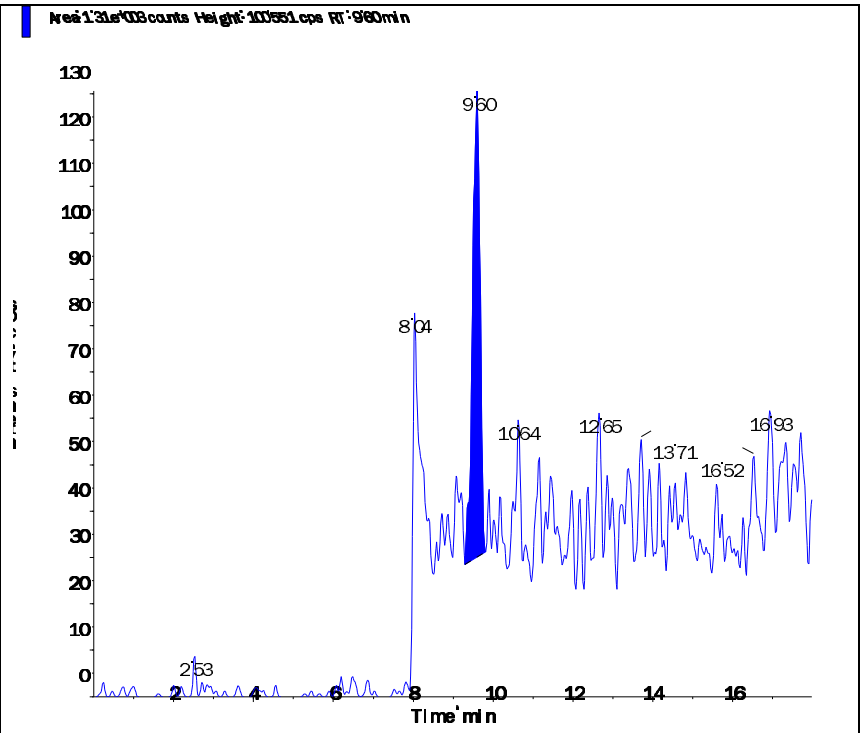

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Data File	LM35533.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 10:01:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061068-07 RS	**Injection Vial**	14.00
Data File	LM35533.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 10:01:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-07	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.960e+05	9.43	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.080e+03	9.42	N/A	0.0194
Perchlorate conf	1.370e+03	9.41	N/A	0.0106

O18LP (Internal Standard)

RT (Exp. RT): 9.43(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

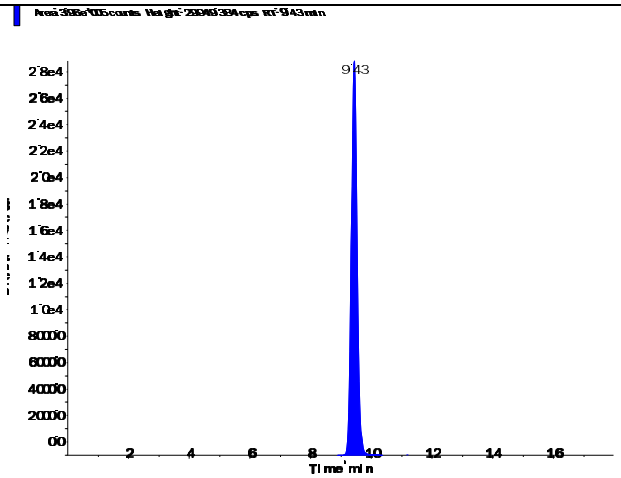

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.42 (9.84) min
Calculated conc:	0.0194 ng/ml
Area Ratio:	0.008
Sample Type:	(Unknown)

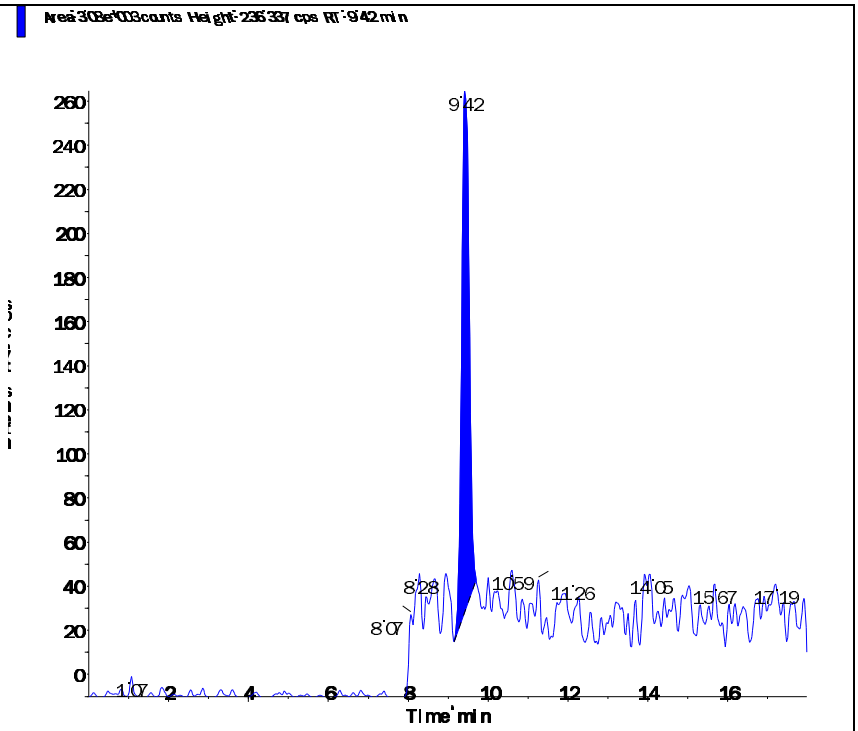

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.41 (9.84) min
Calculated conc:	0.0106 ng/ml
Area Ratio:	0.003
Sample Type:	(Unknown)

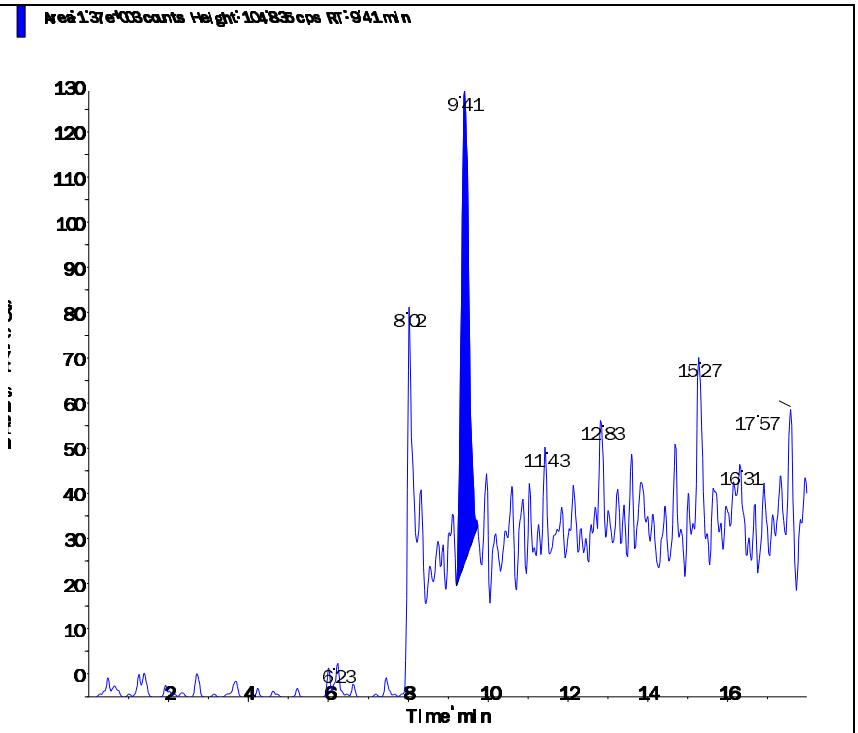

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Data File	LM35534.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 10:20:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061068-08 MS	**Injection Vial**	15.00
Data File	LM35534.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 10:20:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.970e+05	9.43	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.930e+04	9.45	N/A	0.216
Perchlorate conf	1.020e+04	9.44	N/A	0.21

O18LP (Internal Standard)

RT (Exp. RT): 9.43(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

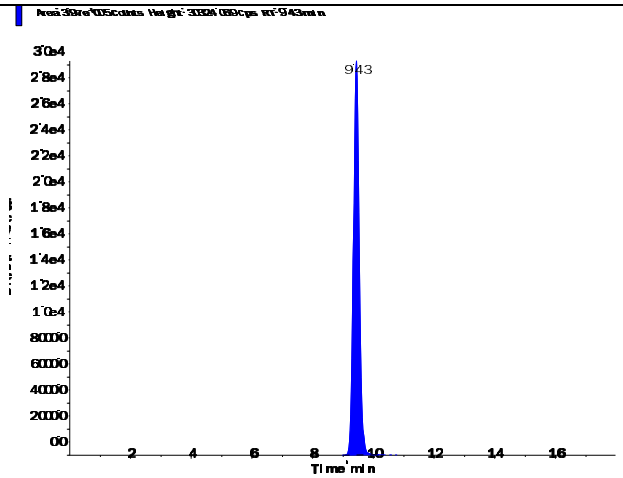

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.45 (9.84) min
Calculated conc:	0.216 ng/ml
Area Ratio:	0.074
Sample Type:	(Unknown)

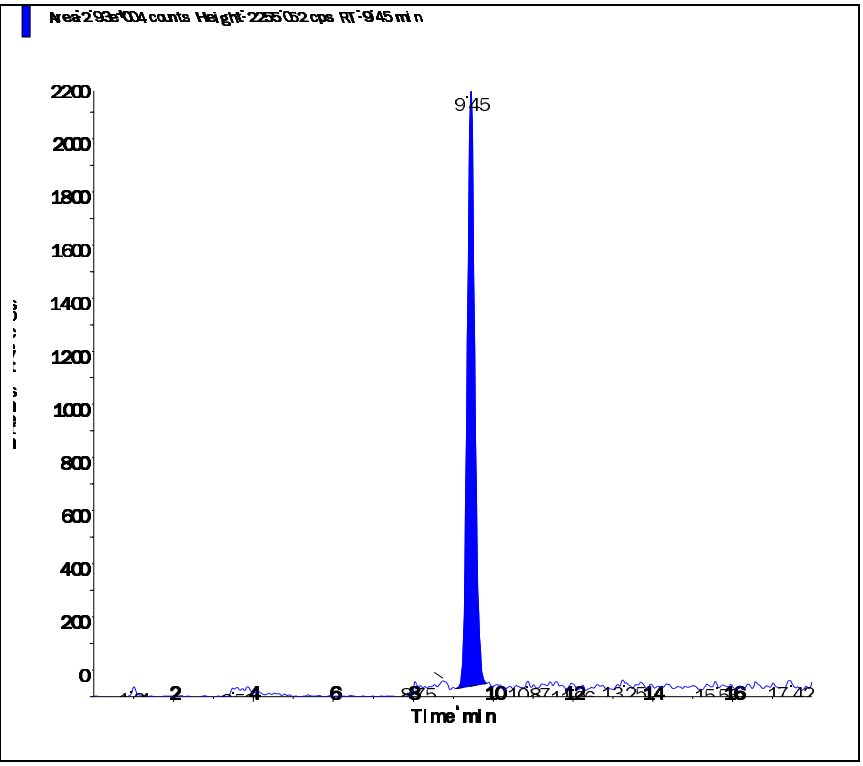

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

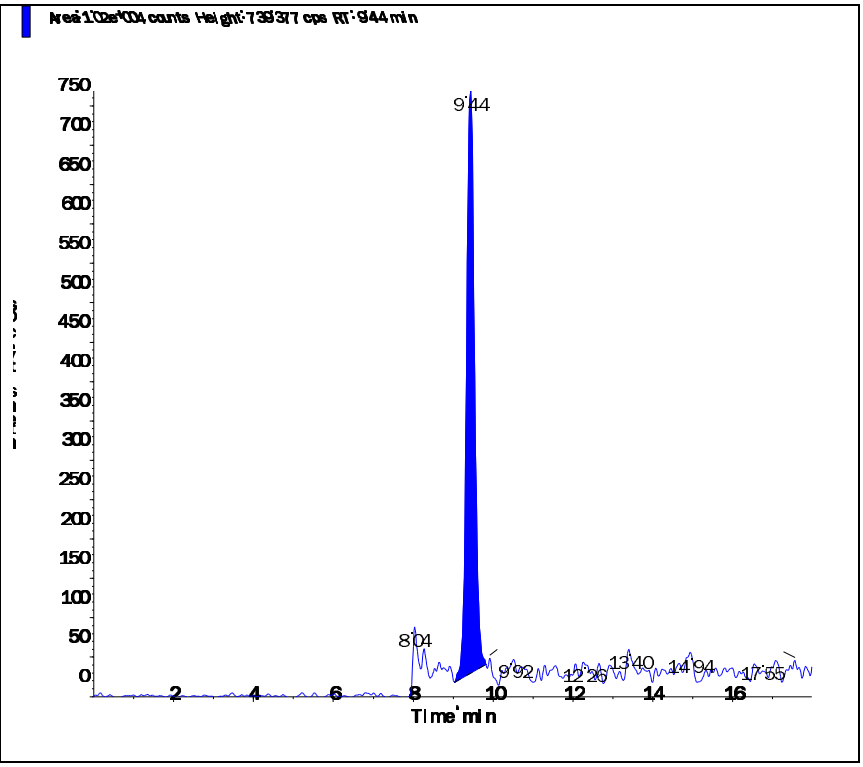

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Data File	LM35535.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 10:39:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061068-09 MSD	**Injection Vial**	16.00
Data File	LM35535.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 10:39:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.940e+05	9.44	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.970e+04	9.45	N/A	0.22
Perchlorate conf	9.590e+03	9.42	N/A	0.198

O18LP (Internal Standard)

RT (Exp. RT): 9.44(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

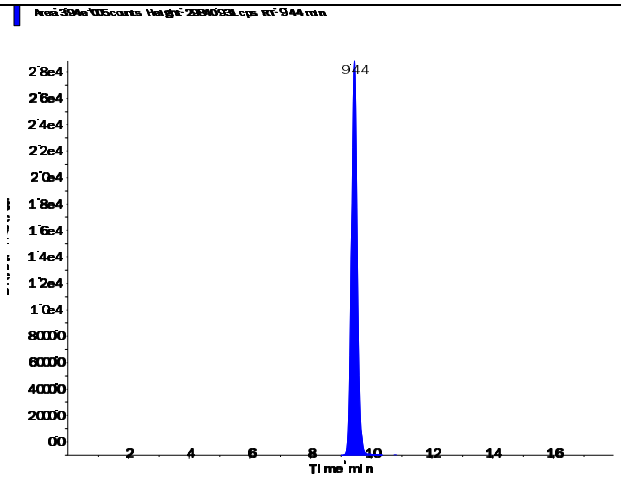

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.45 (9.84) min
Calculated conc:	0.22 ng/ml
Area Ratio:	0.075
Sample Type:	(Unknown)

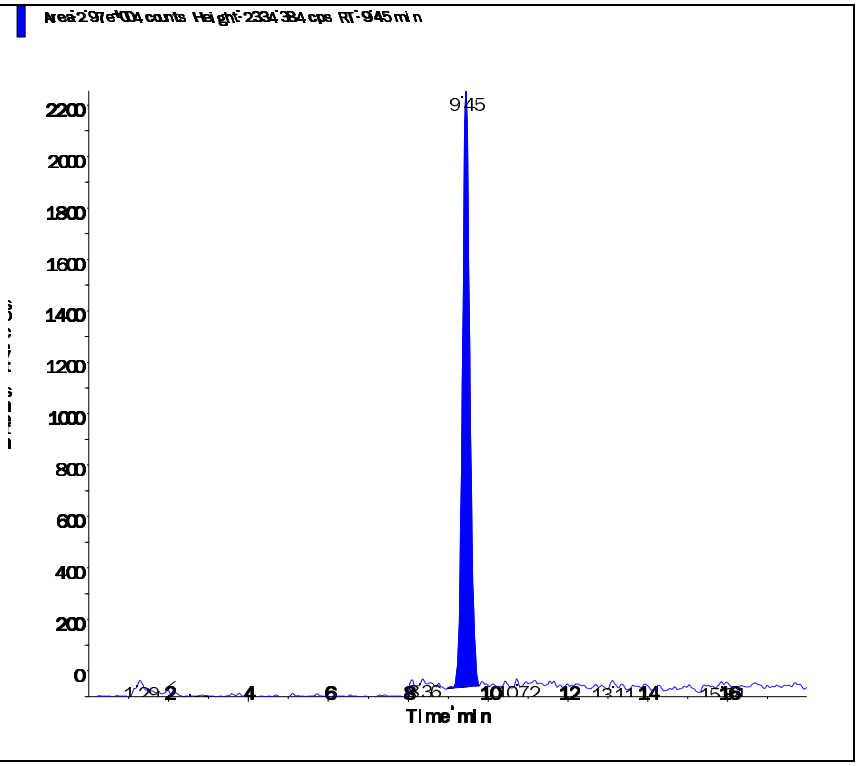

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.42 (9.84) min
Calculated conc:	0.198 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

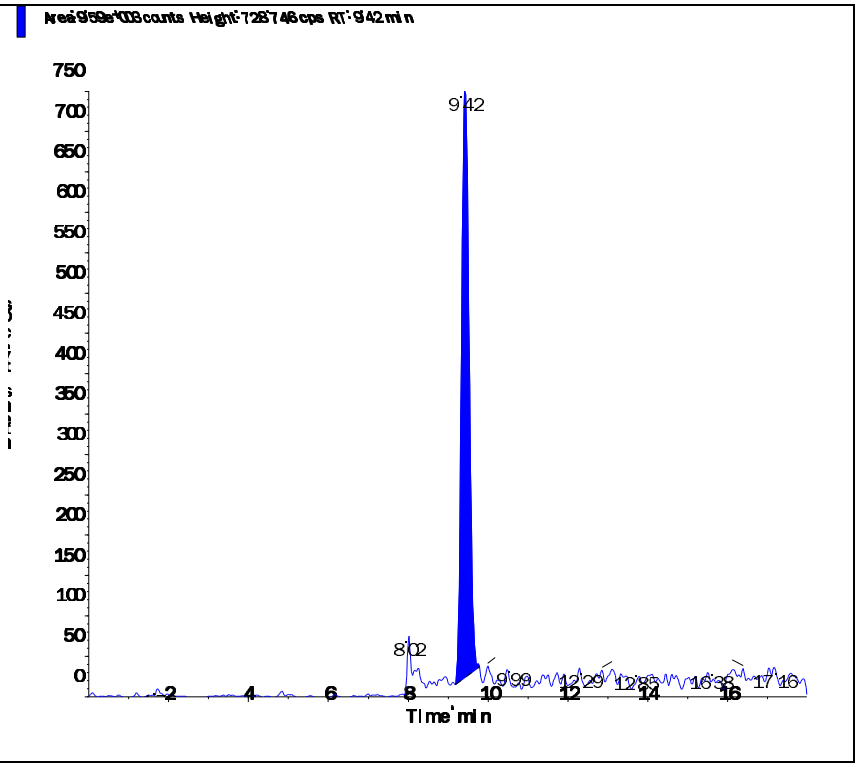

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Data File	LM35555.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 1:53:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061068-10 (RR 5x)	**Injection Vial**	27.00
Data File	LM35555.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 1:53:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	L16061068-10	**Dilution Factor**	1.00
Sample Comment	15.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.550e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.490e+05	9.67	N/A	2.28
Perchlorate conf	1.210e+05	9.66	N/A	2.36

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

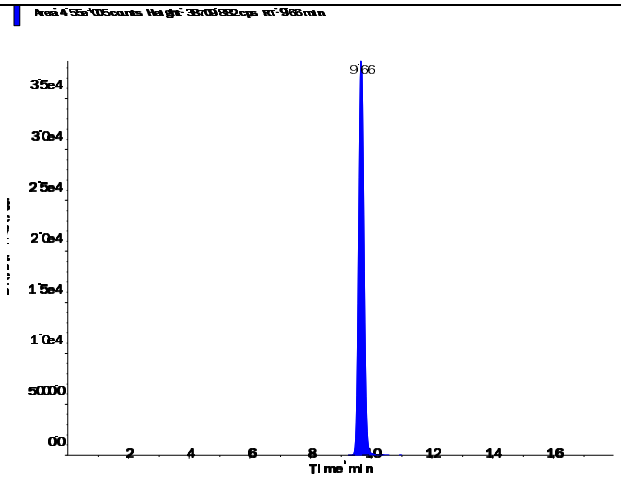

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.67 (9.84) min Calculated conc: 2.28 ng/ml Area Ratio: 0.769 Sample Type: (Unknown)	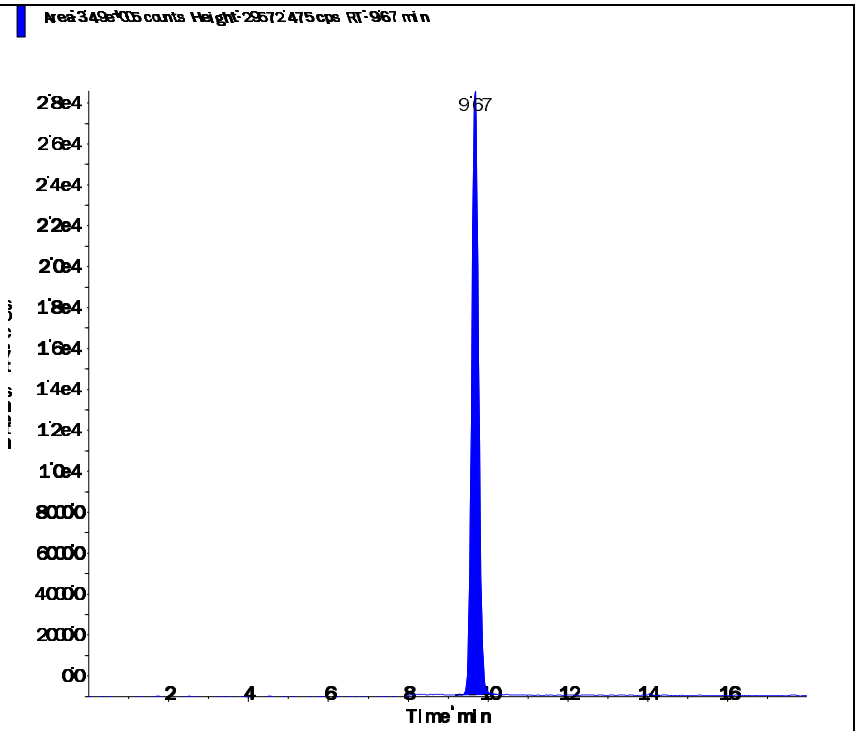
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.66 (9.84) min Calculated conc: 2.36 ng/ml Area Ratio: 0.266 Sample Type: (Unknown)	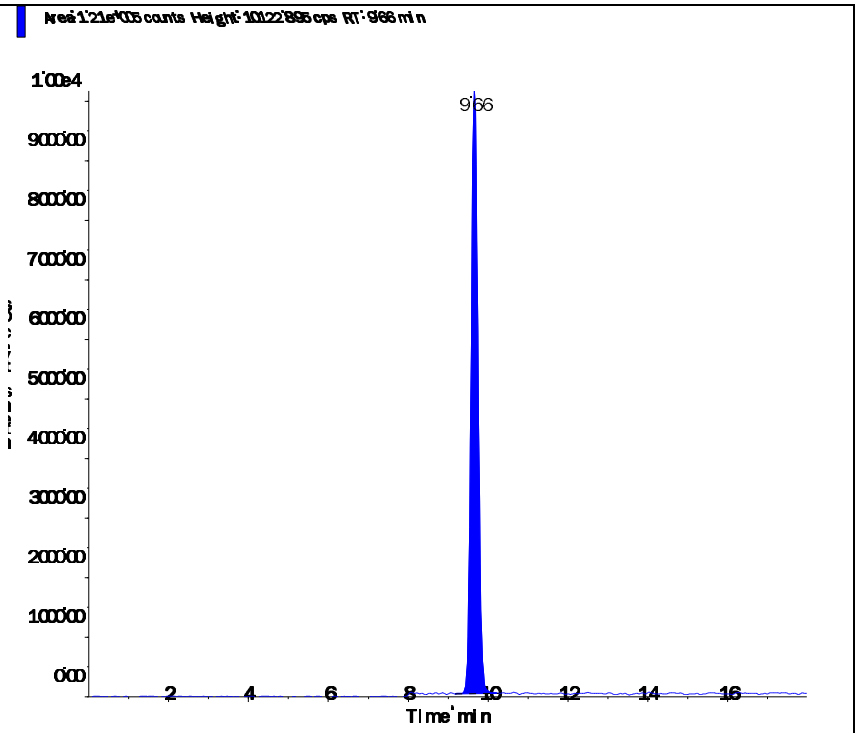

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Data File	LM35537.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 11:17:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061068-12 RS	**Injection Vial**	18.00
Data File	LM35537.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 11:17:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-10	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.720e+05	9.43	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.130e+03	9.46	N/A	0.0096
Perchlorate conf	1.410e+03	9.45	N/A	0.0063

O18LP (Internal Standard)

RT (Exp. RT): 9.43(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

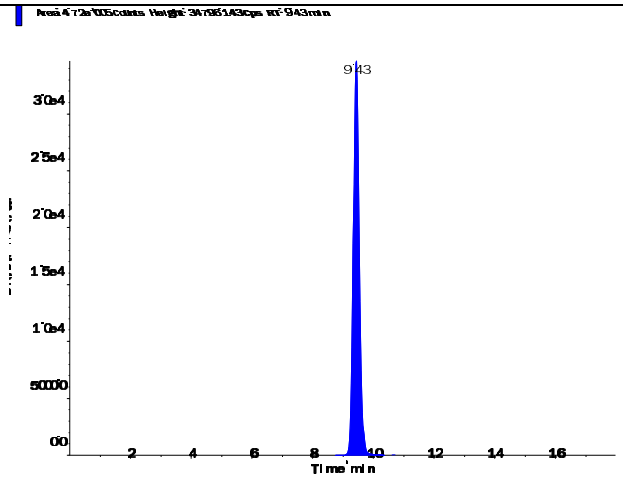

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.46 (9.84) min
Calculated conc:	0.0096 ng/ml
Area Ratio:	0.005
Sample Type:	(Unknown)

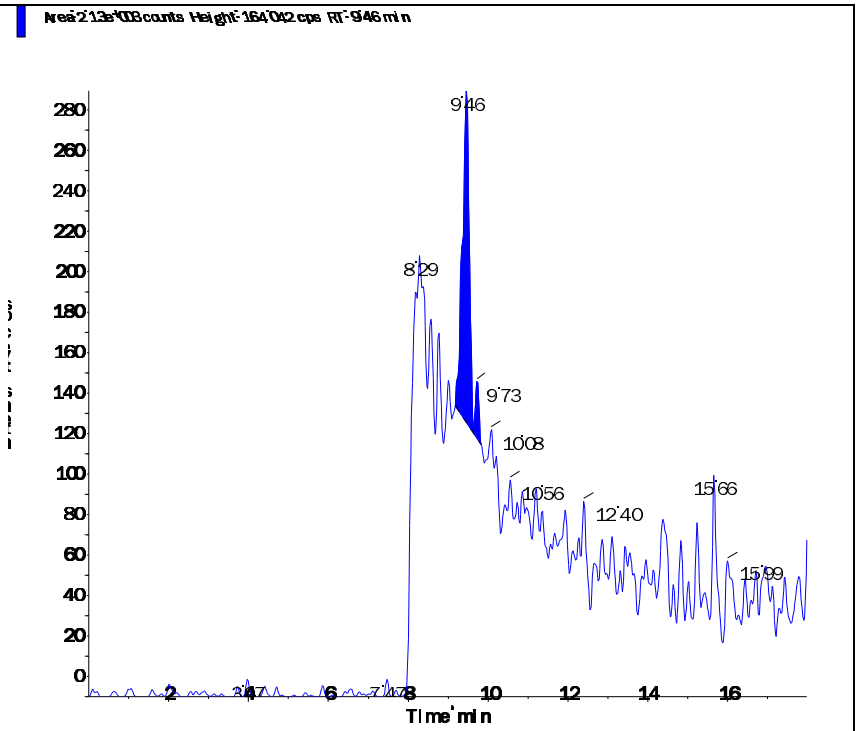

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.45 (9.84) min
Calculated conc:	0.0063 ng/ml
Area Ratio:	0.003
Sample Type:	(Unknown)

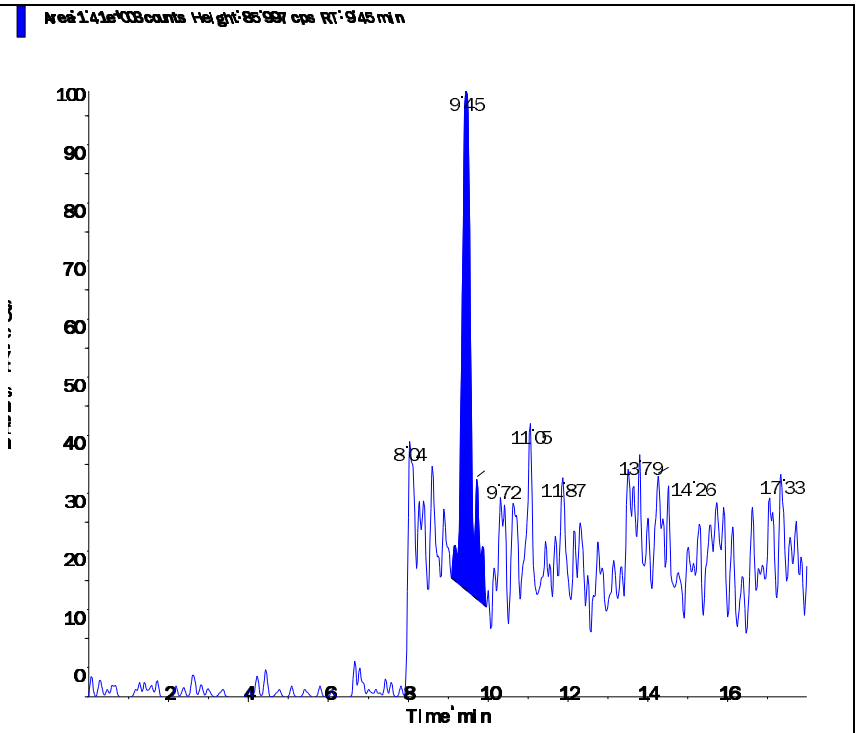

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Data File	LM35538.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 11:36:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061068-14 MS	**Injection Vial**	19.00
Data File	LM35538.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 11:36:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.840e+05	9.45	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.260e+04	9.47	N/A	0.196
Perchlorate conf	1.190e+04	9.45	N/A	0.20

O18LP (Internal Standard)

RT (Exp. RT): 9.45(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

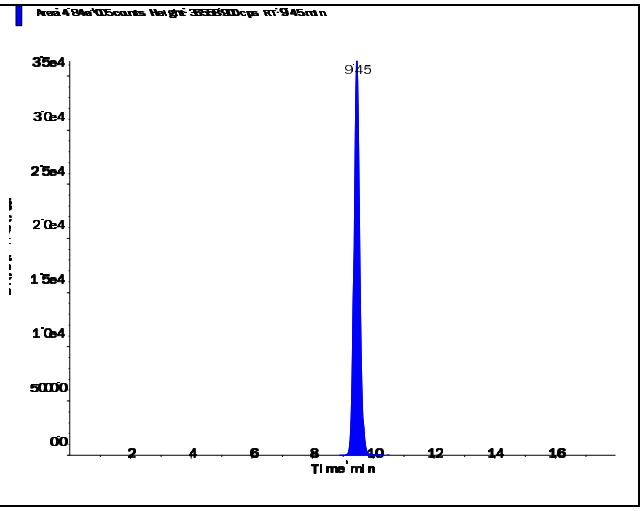

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.47 (9.84) min
Calculated conc:	0.196 ng/ml
Area Ratio:	0.067
Sample Type:	(Unknown)

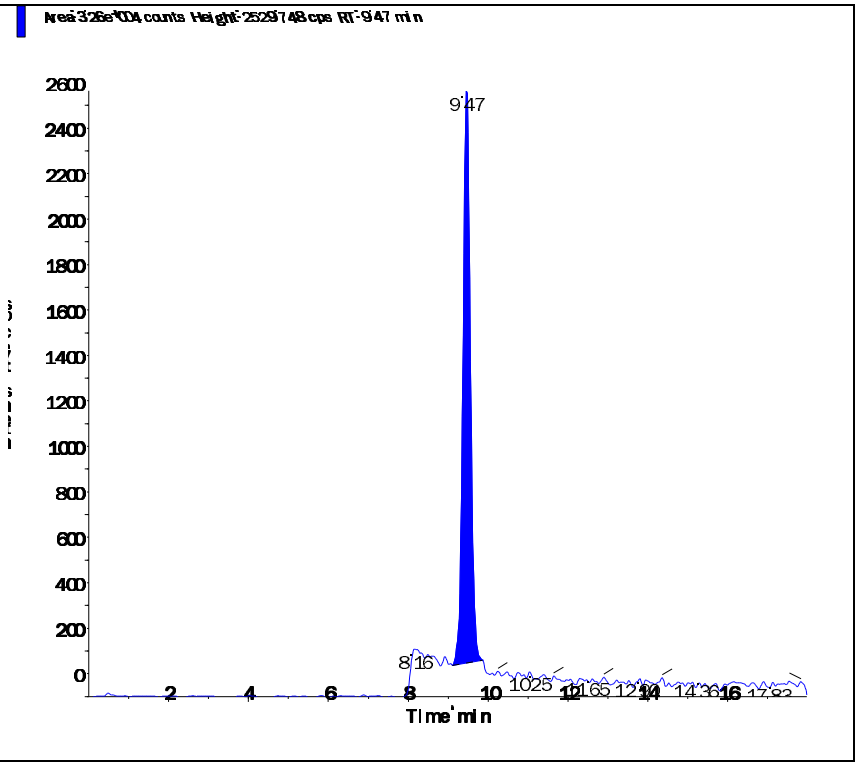

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.45 (9.84) min
Calculated conc:	0.20 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

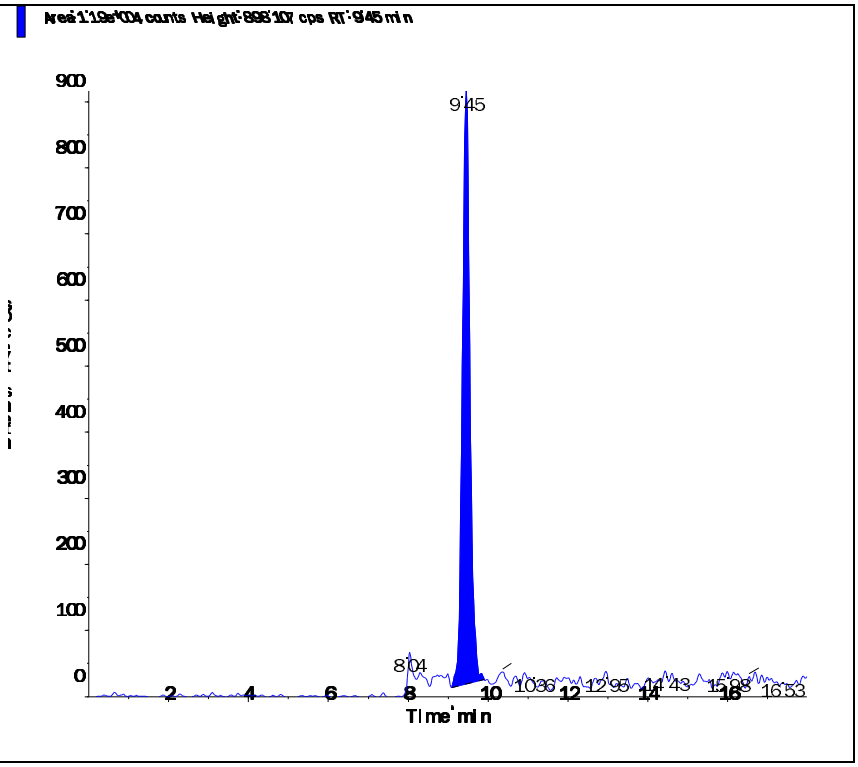

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Data File	LM35539.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 11:55:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061068-16 MSD	**Injection Vial**	20.00
Data File	LM35539.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 11:55:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-12	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.860e+05	9.45	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.440e+04	9.46	N/A	0.207
Perchlorate conf	1.120e+04	9.46	N/A	0.186

O18LP (Internal Standard)

RT (Exp. RT): 9.45(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

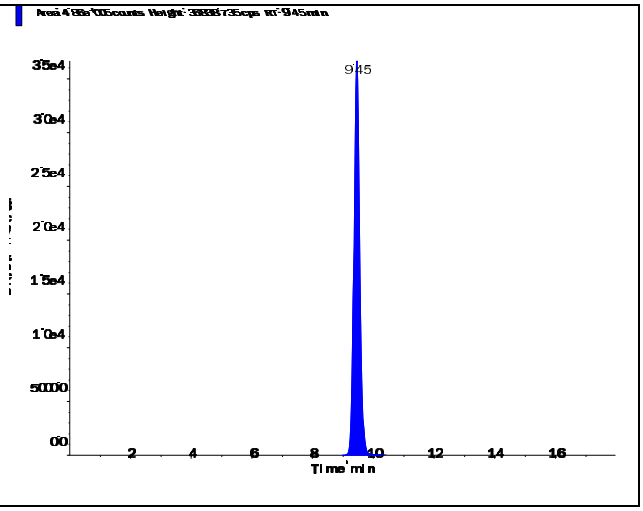

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.46 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

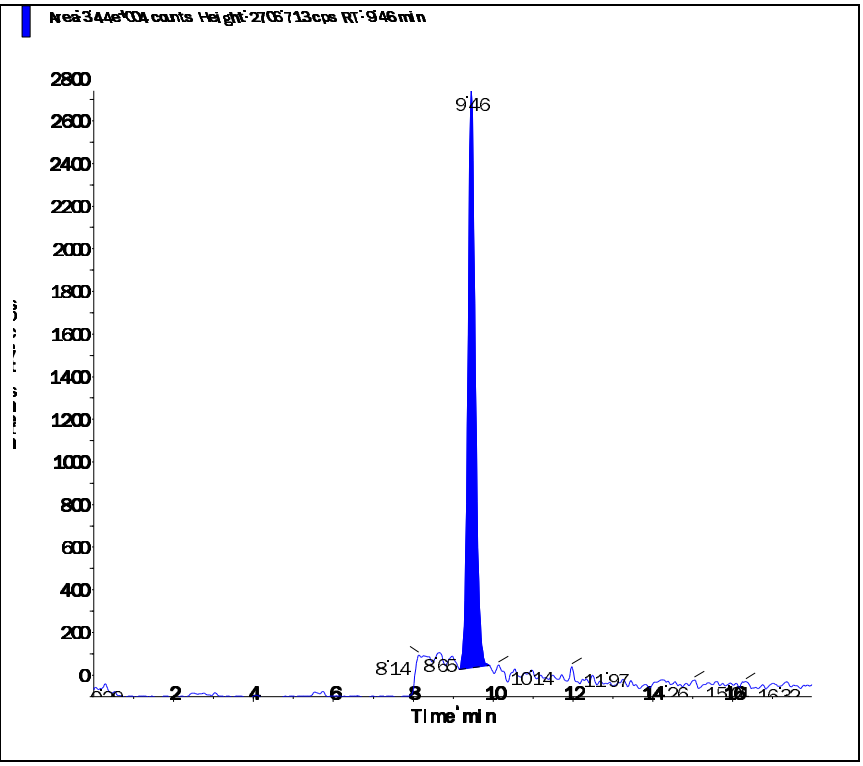

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.46 (9.84) min
Calculated conc:	0.186 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

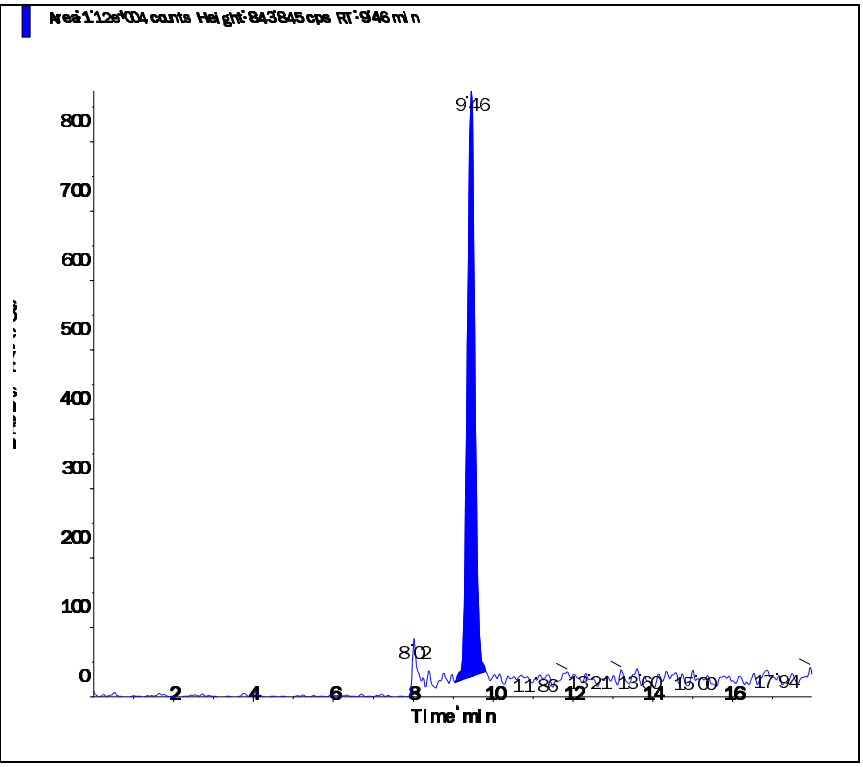

2.2.1.4 Standards Data

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Data File	LM34686.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

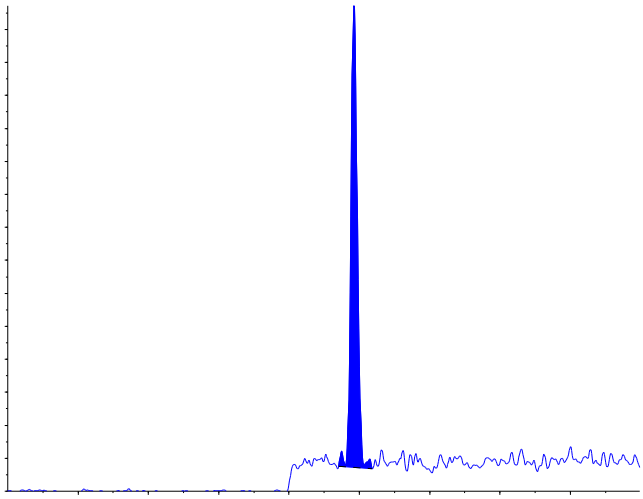

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

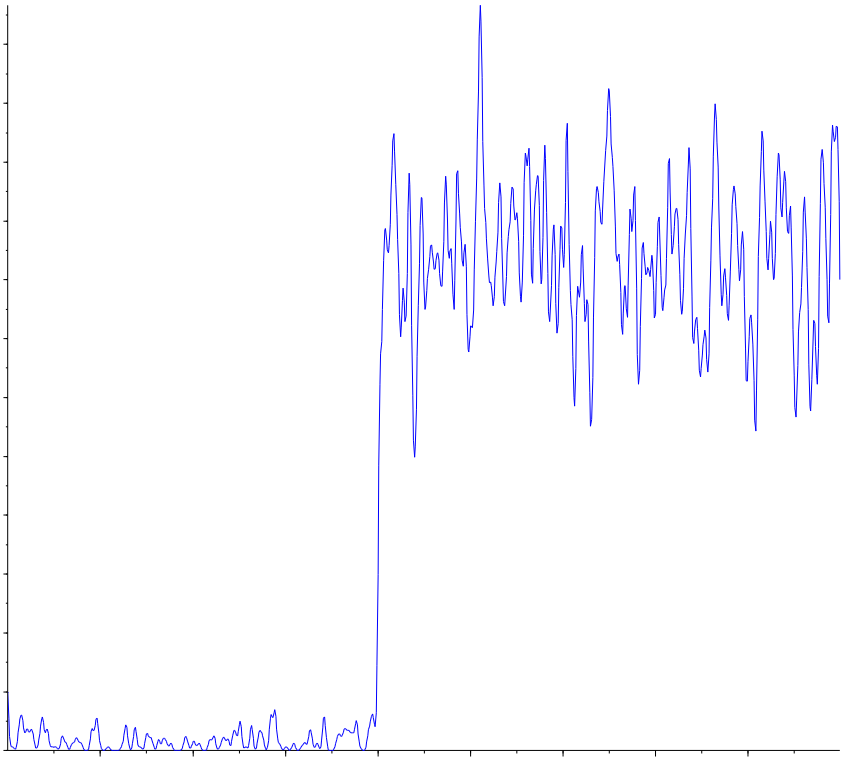

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

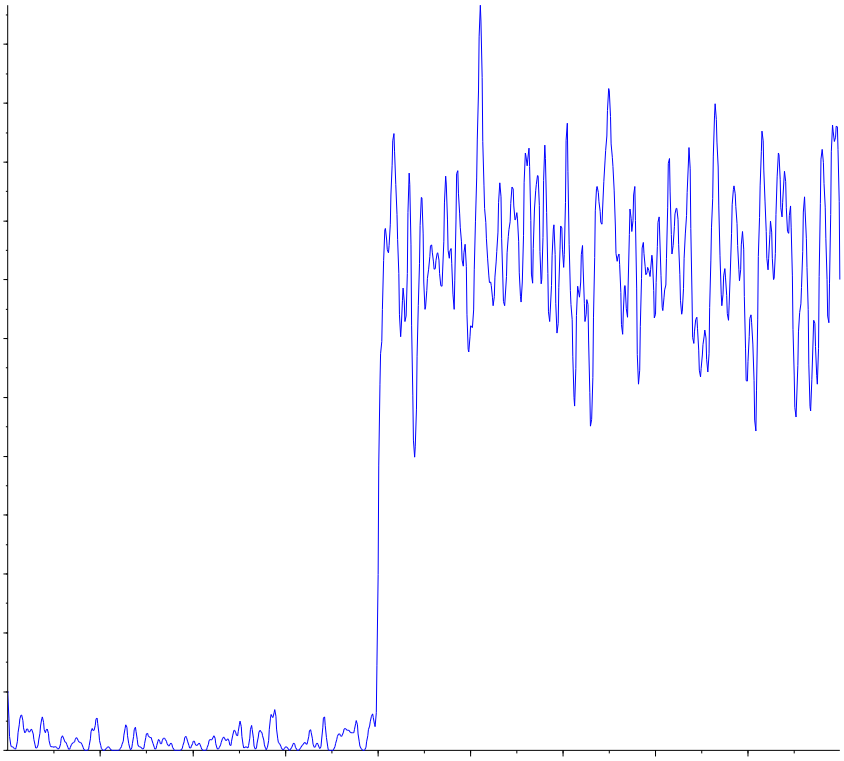

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Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

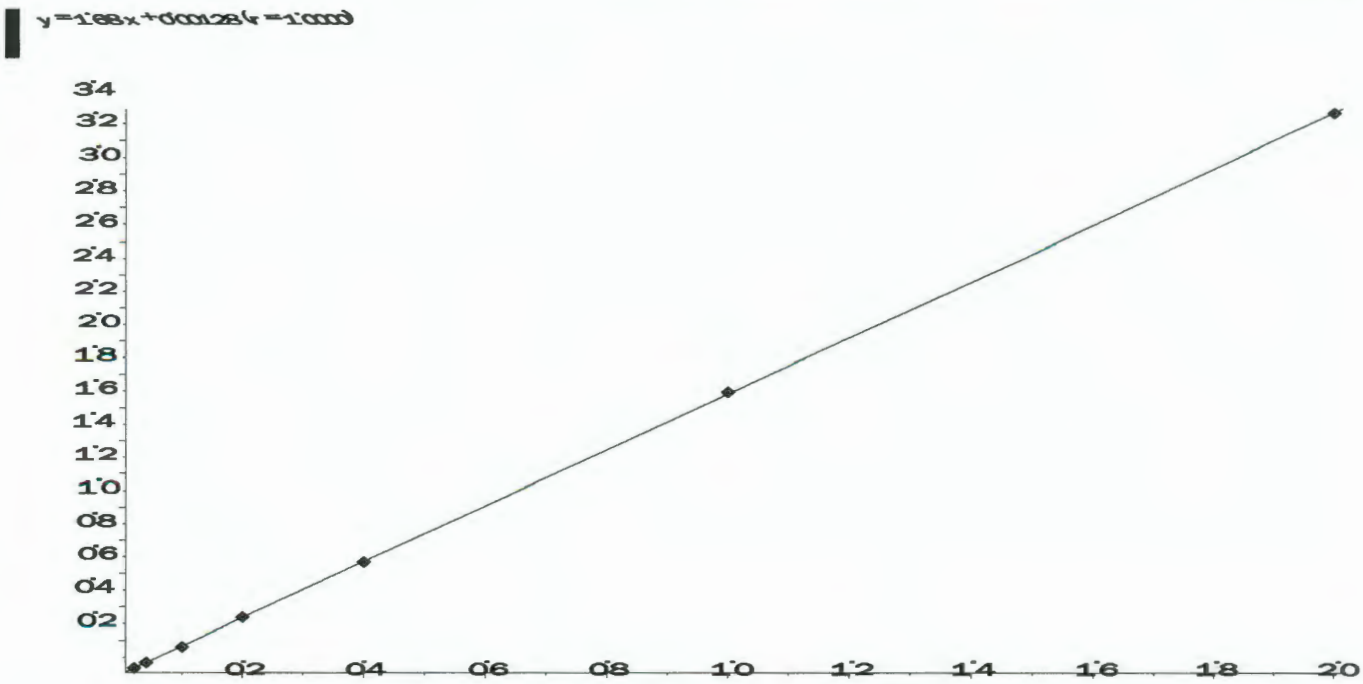

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Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

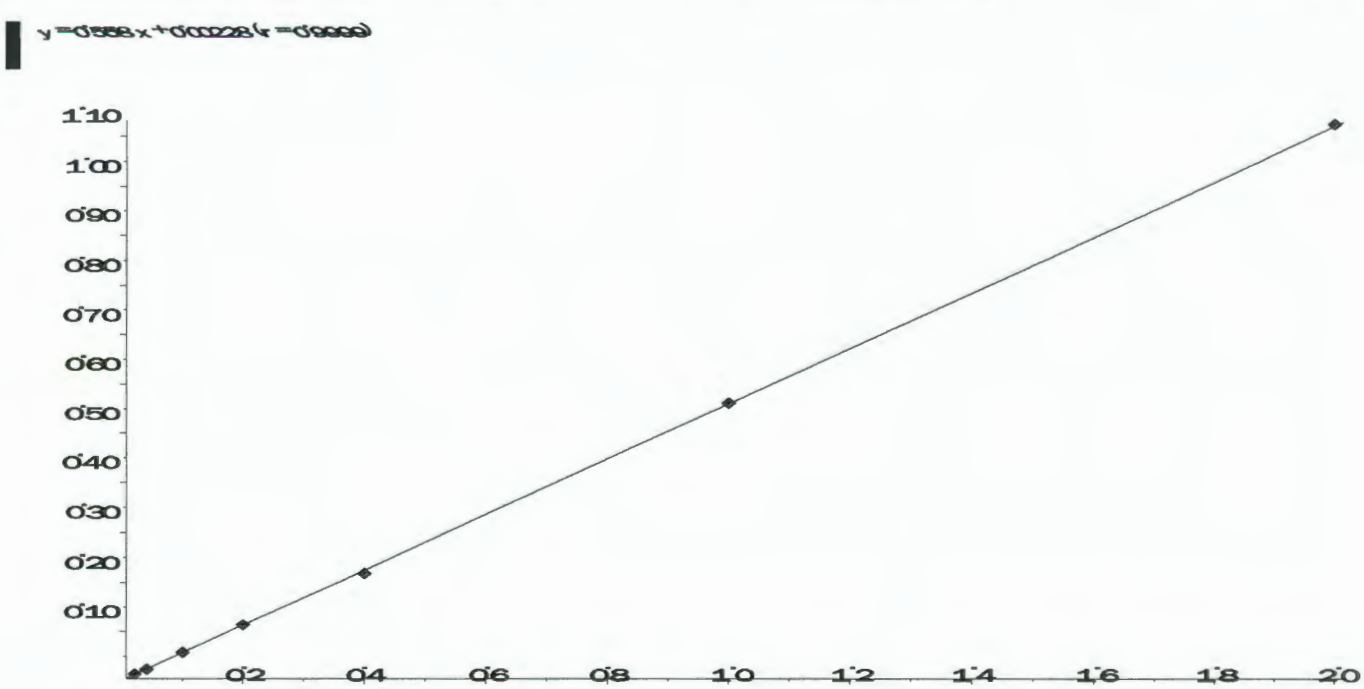

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Printed: 6/30/2016 3:27 PM

Data File	LM34687.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

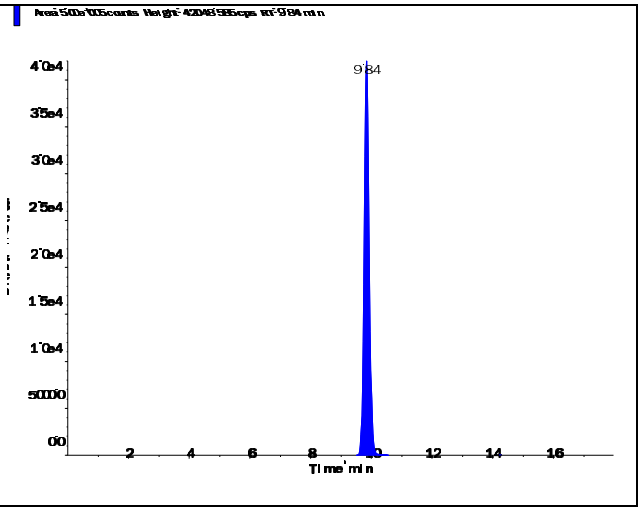

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.103 ng/ml
Area Ratio:	0.036
Sample Type:	(Standard)

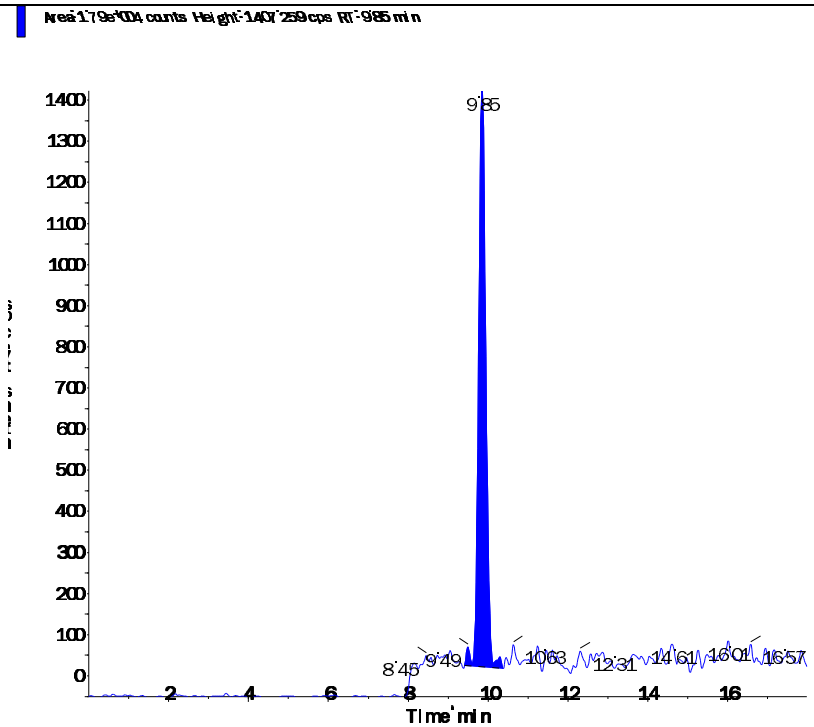

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.104 ng/ml
Area Ratio:	0.014
Sample Type:	(Standard)

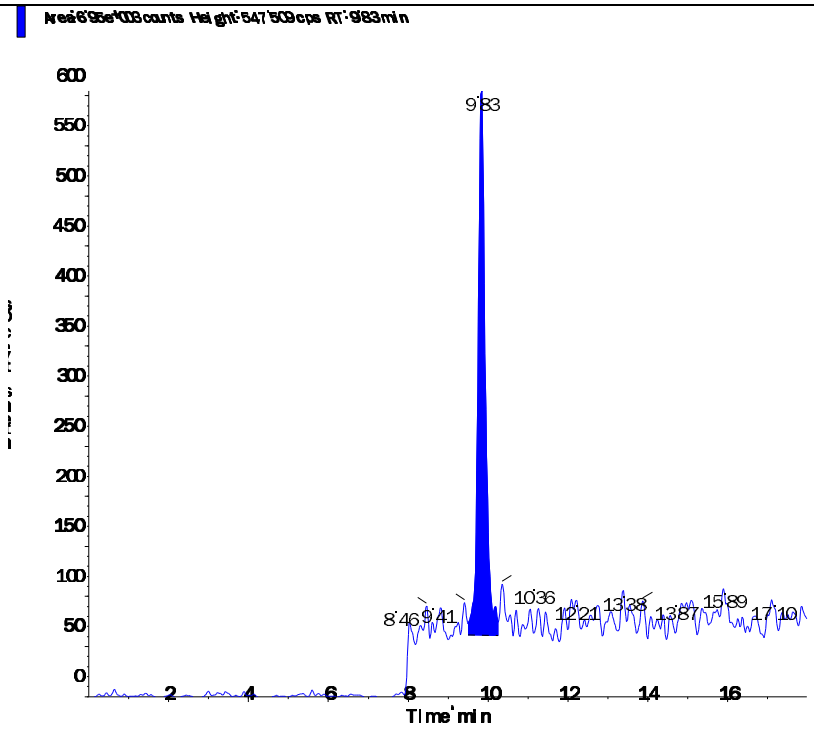

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Data File	LM34688.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

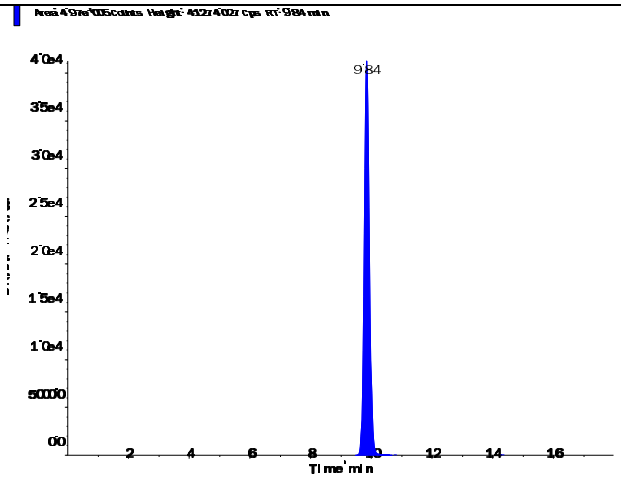

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

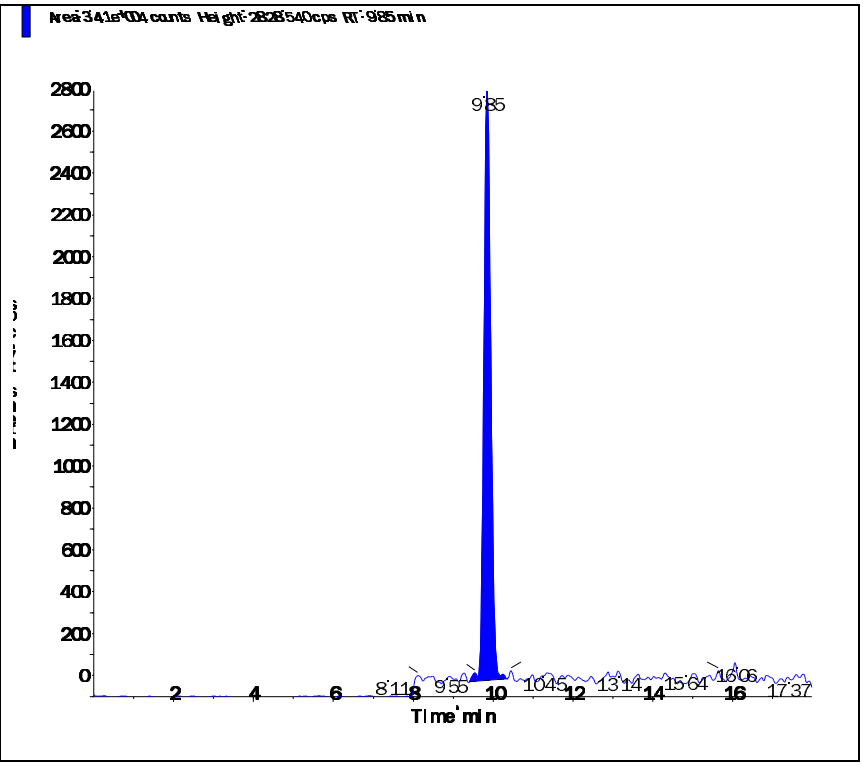

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

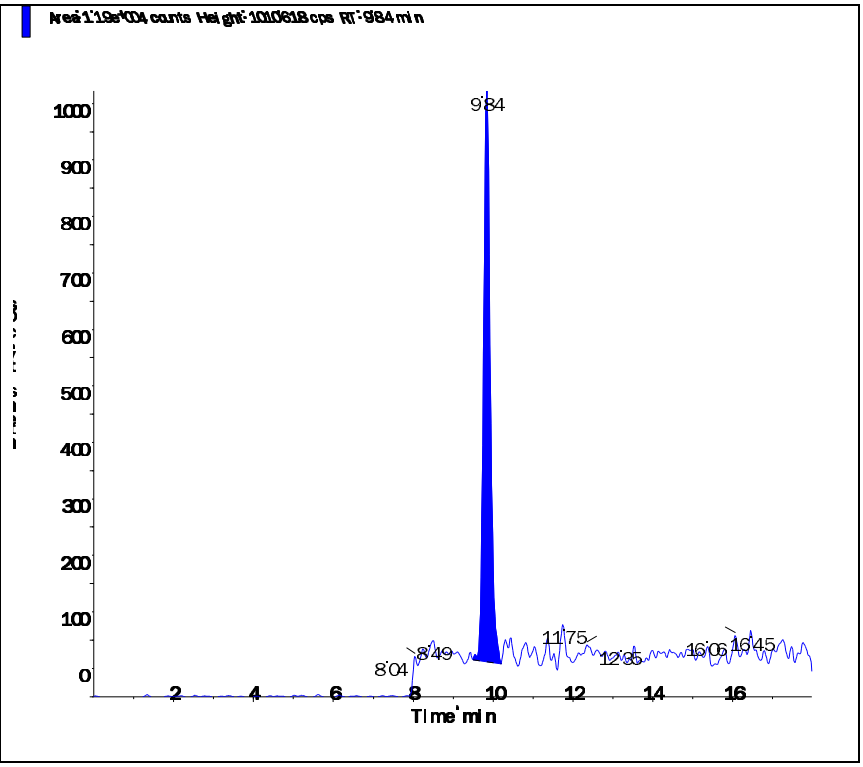

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Data File	LM34689.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

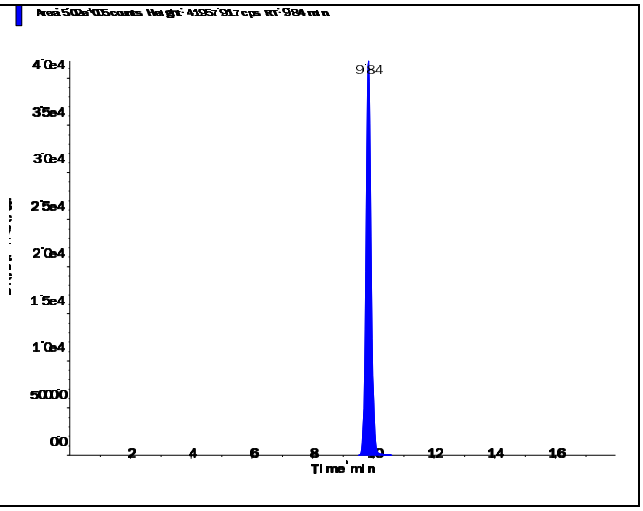

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.483 ng/ml
Area Ratio:	0.164
Sample Type:	(Standard)

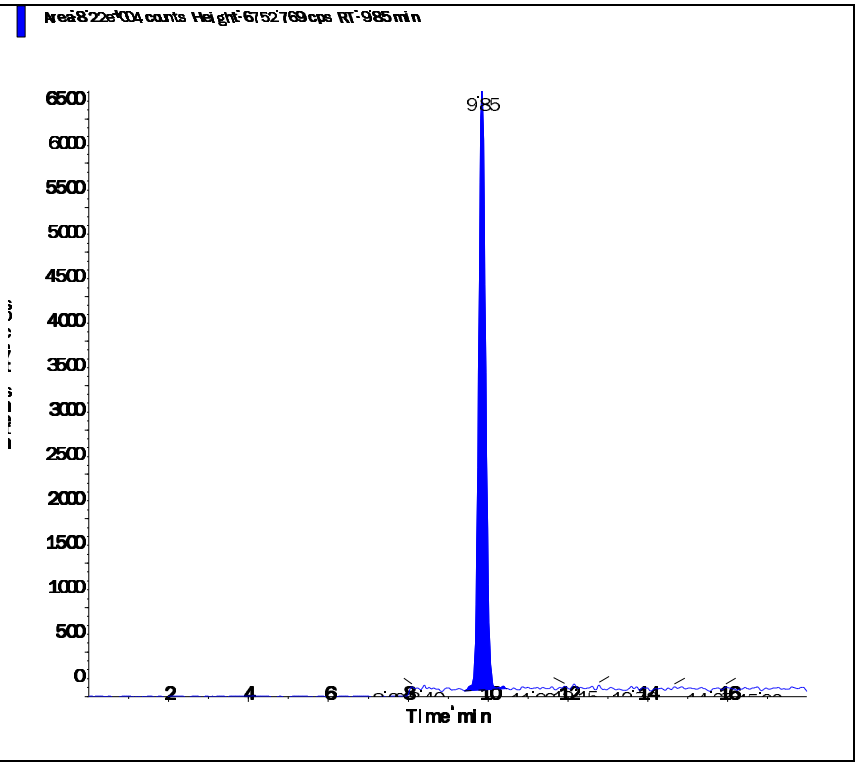

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.503 ng/ml
Area Ratio:	0.058
Sample Type:	(Standard)

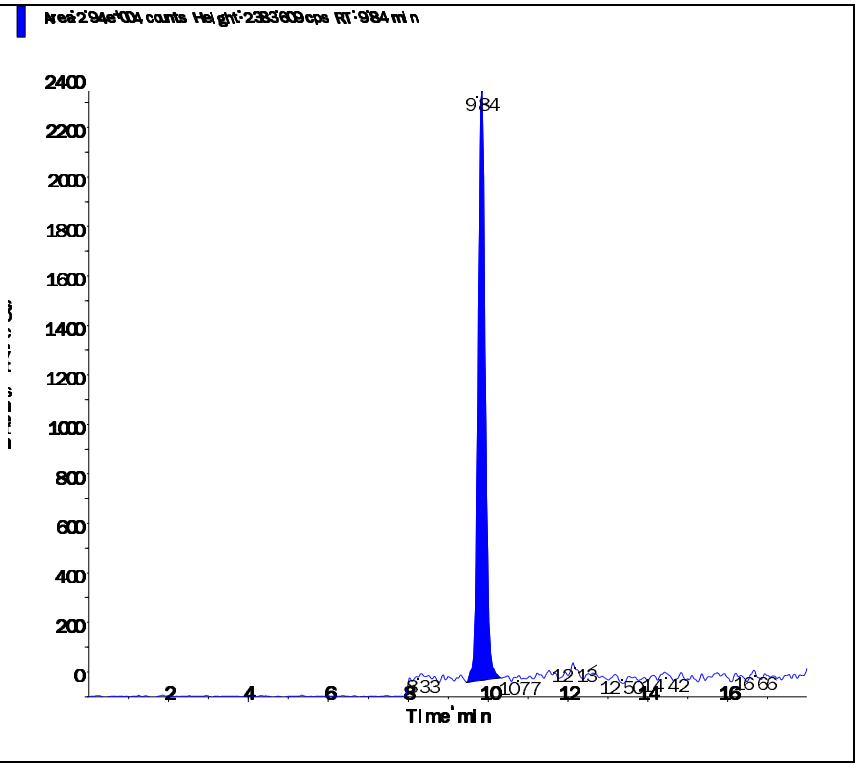

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Data File	LM34690.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

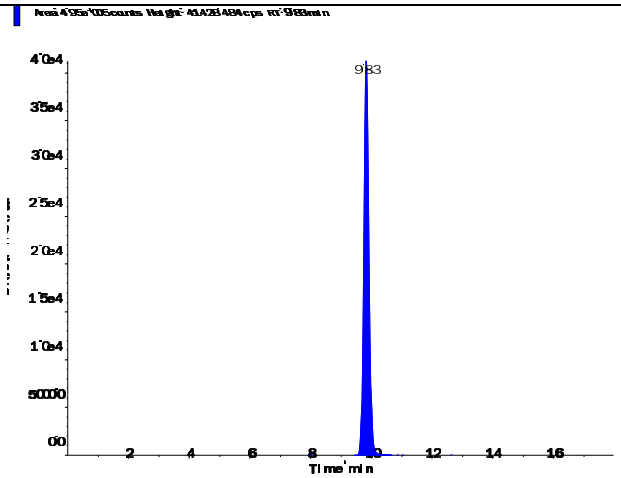

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

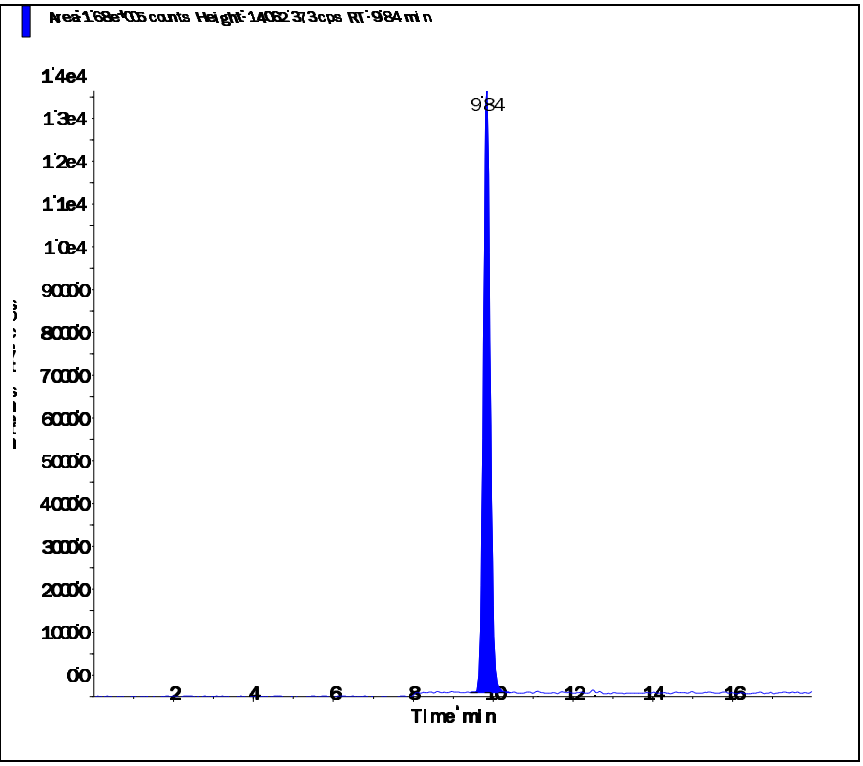

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

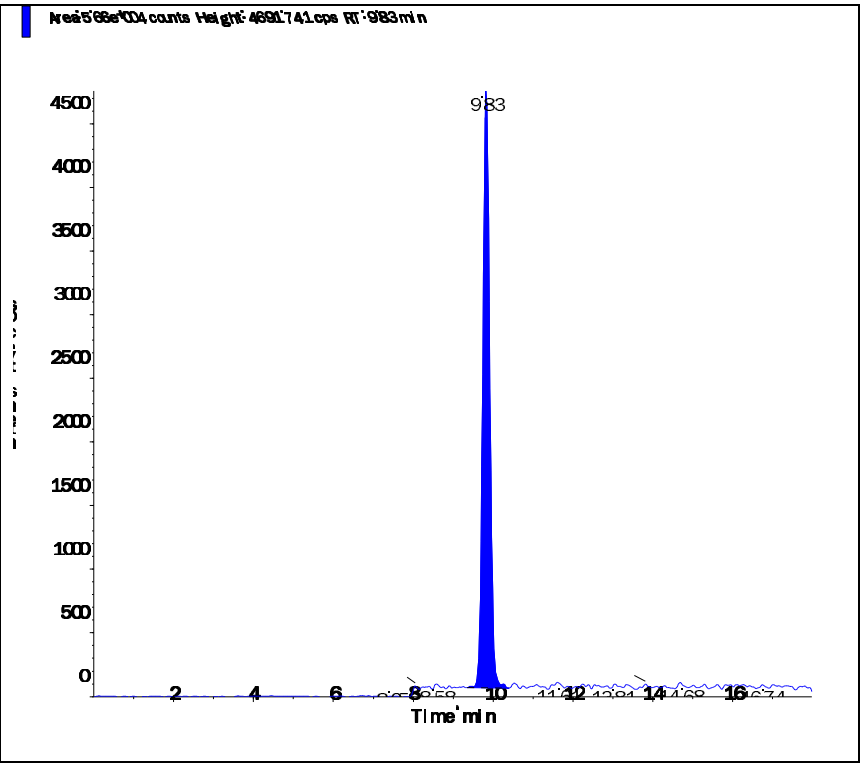

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Data File	LM34691.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

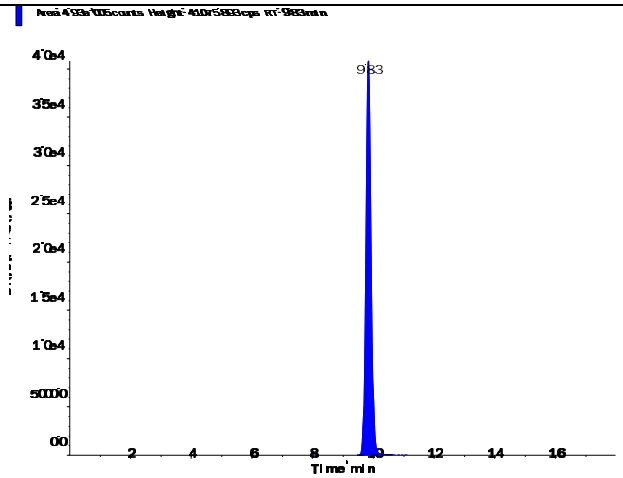

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 1.99 ng/ml Area Ratio: 0.669 Sample Type: (Standard)	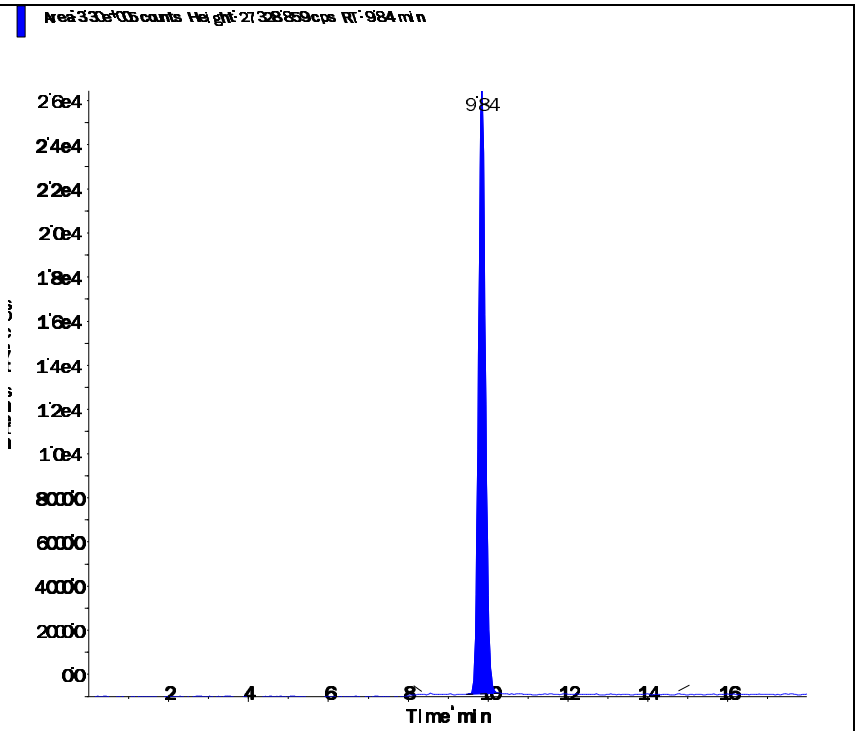
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 1.94 ng/ml Area Ratio: 0.219 Sample Type: (Standard)	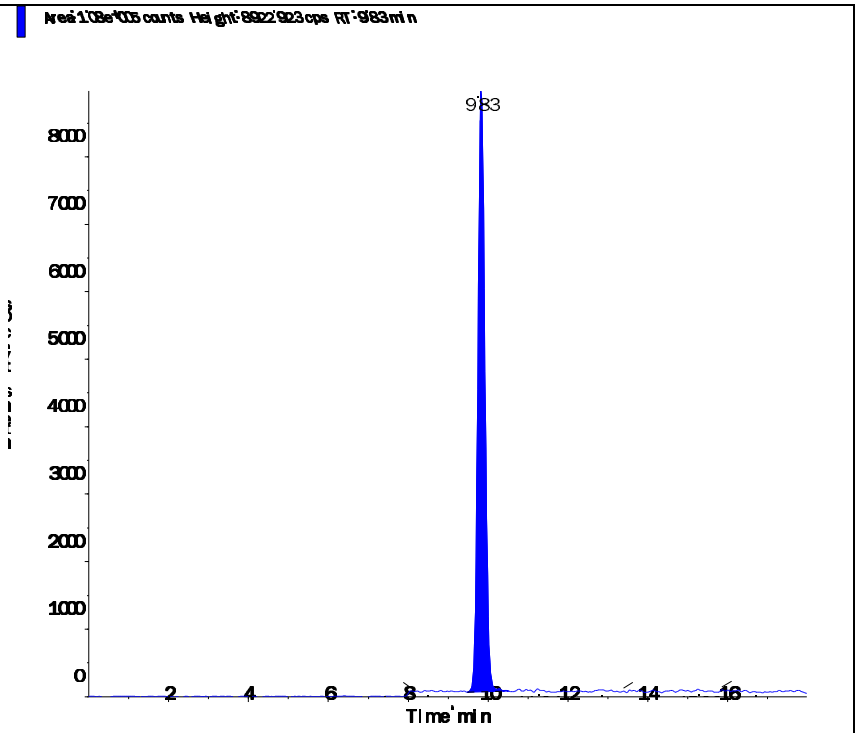

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Data File	LM34692.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

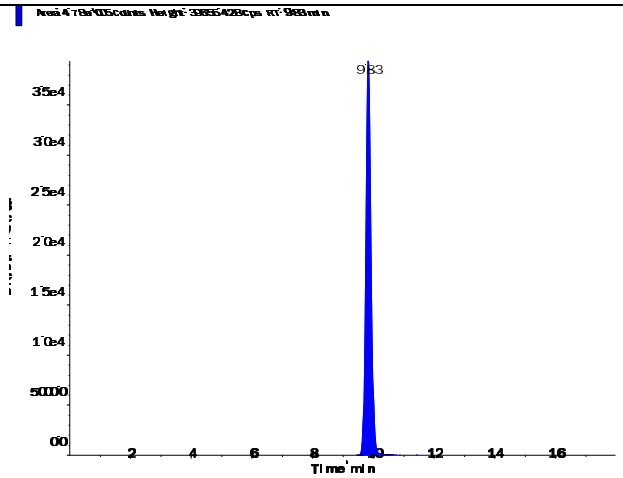

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

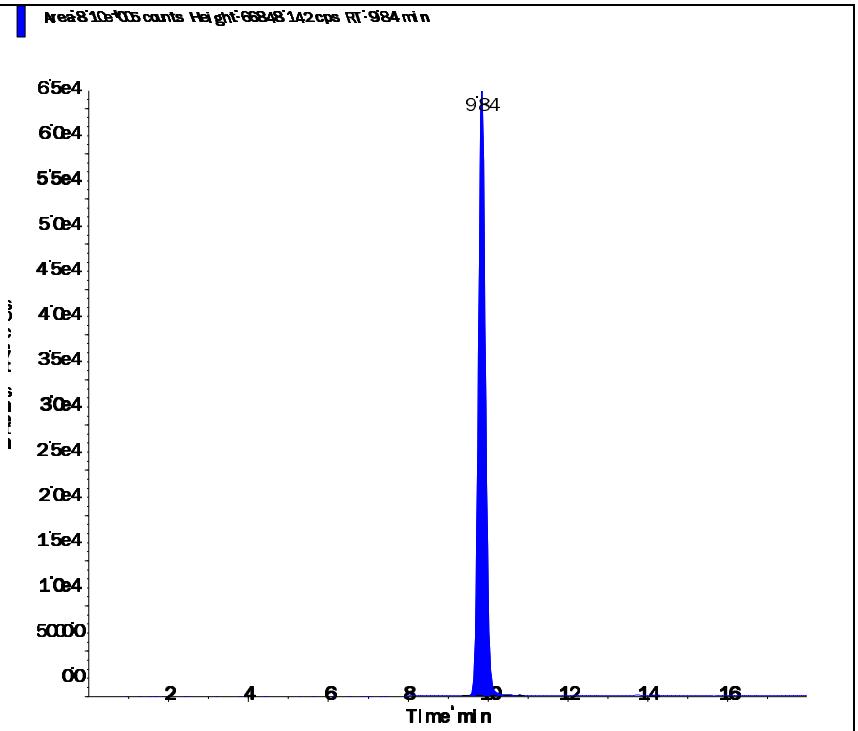

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

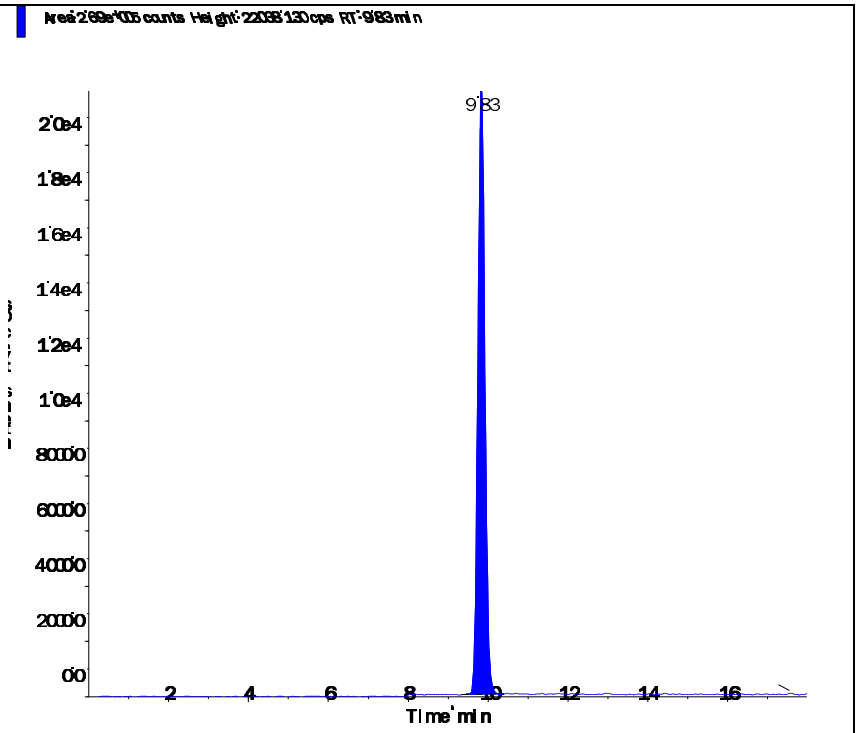

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Data File	LM34693.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

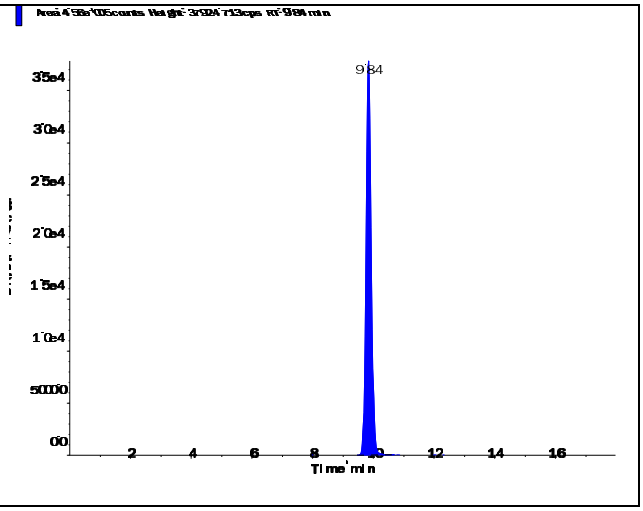

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 9.99 ng/ml Area Ratio: 3.36 Sample Type: (Standard)	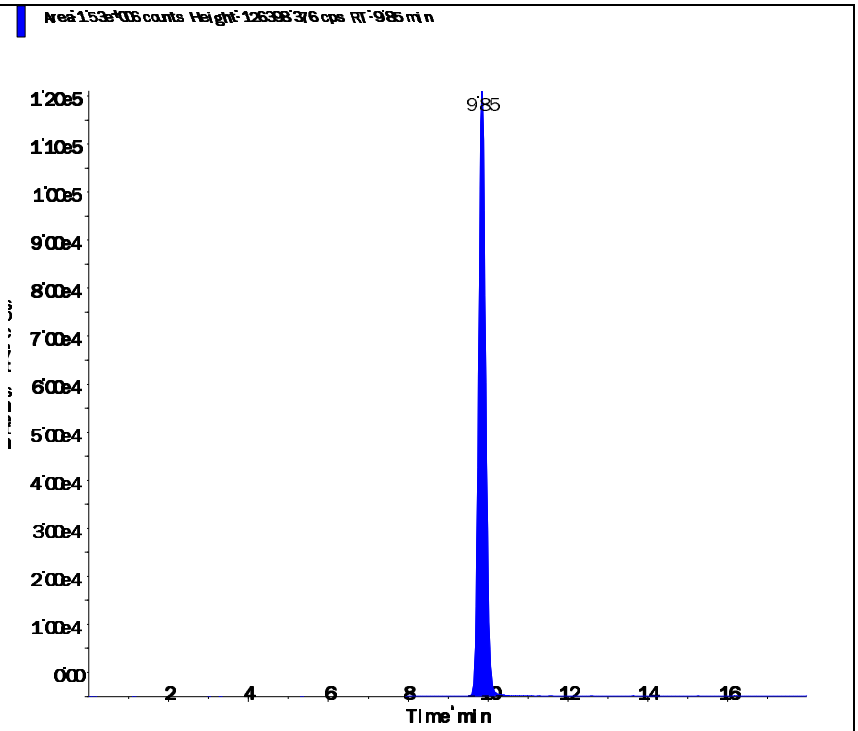
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 10.00 ng/ml Area Ratio: 1.122 Sample Type: (Standard)	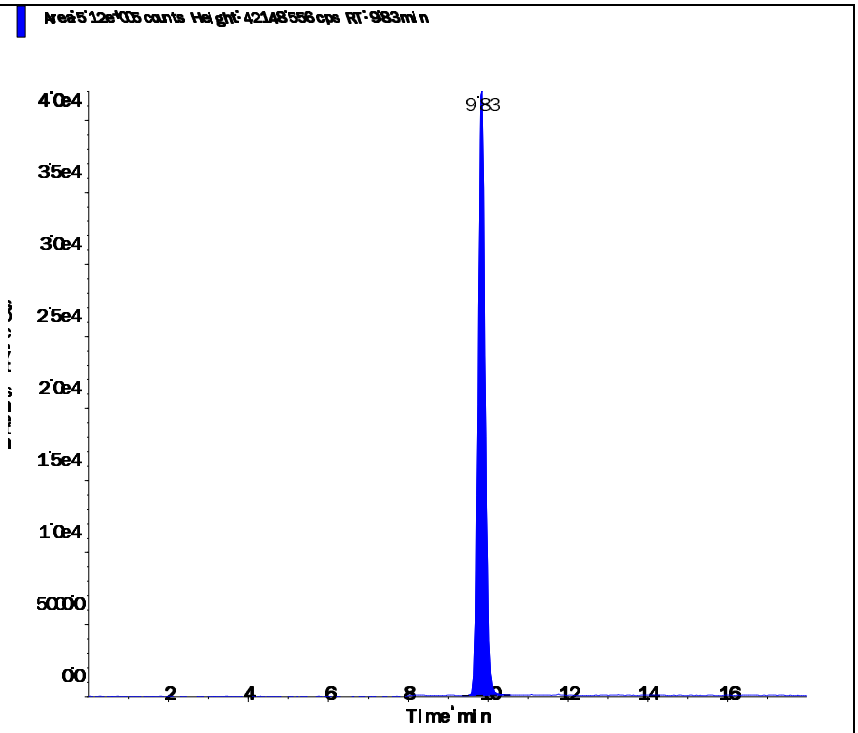

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Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

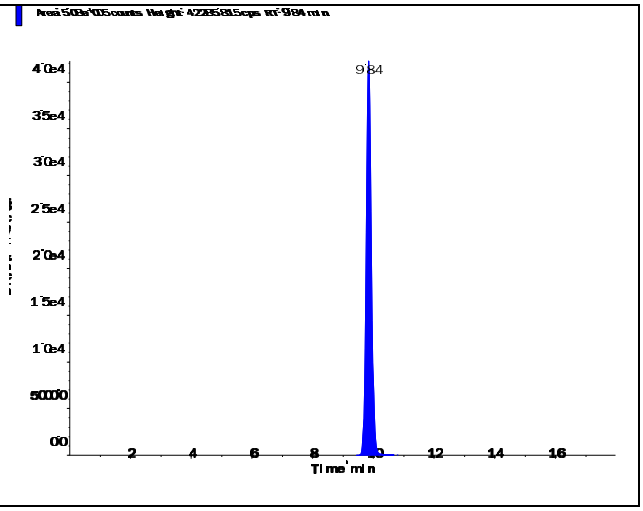

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.332
Sample Type:	(Quality Control)

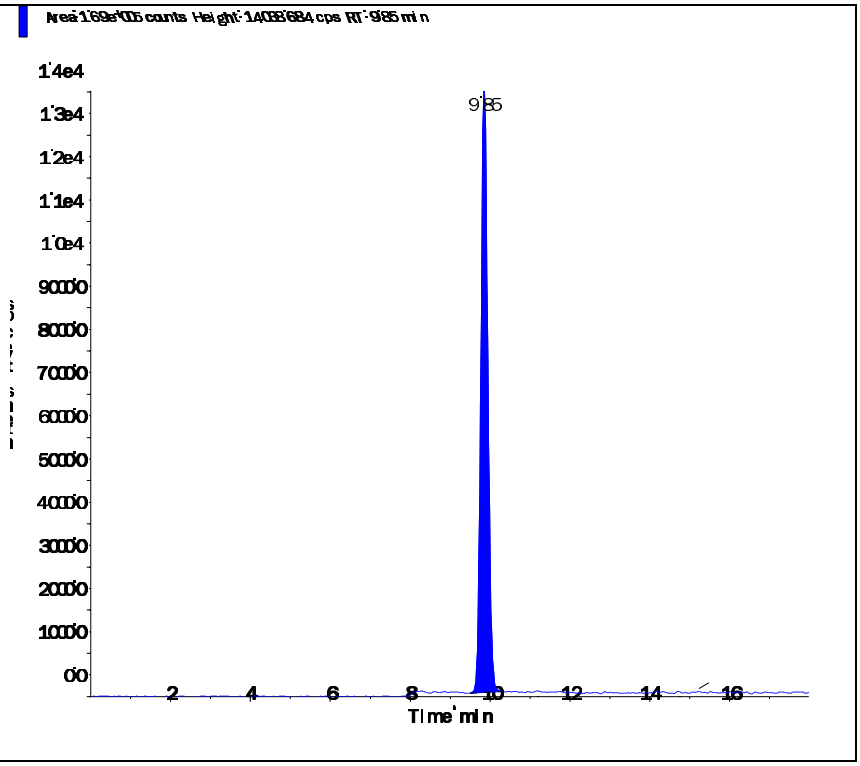

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

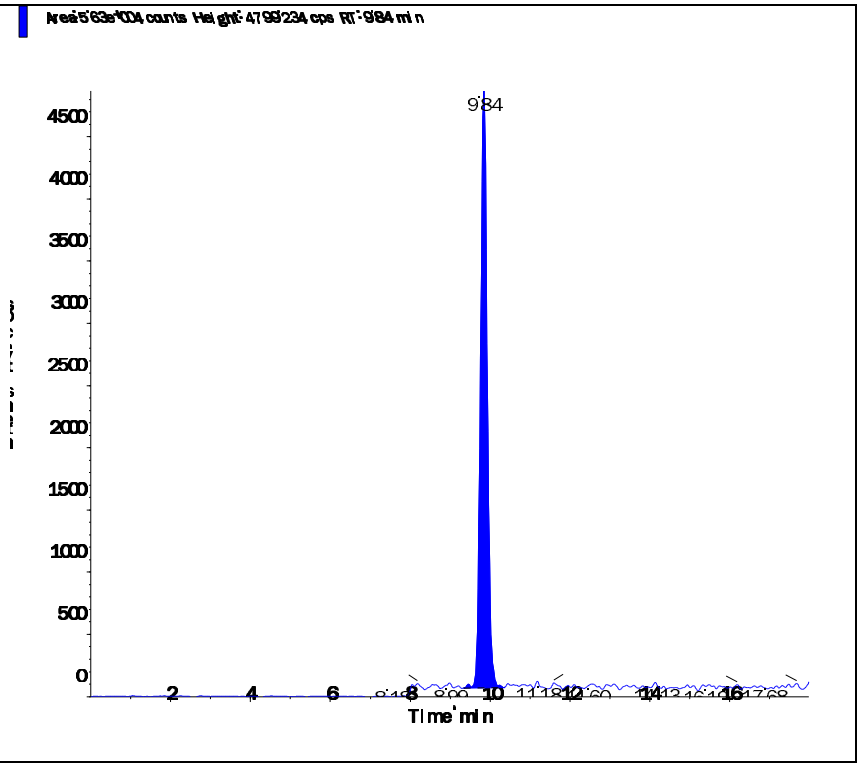

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Data File	LM35518.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 5:17:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574710-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35518.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 5:17:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574710-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.700e+05	9.38	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.620e+05	9.40	1.00	1.02
Perchlorate conf	5.740e+04	9.39	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 9.38(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

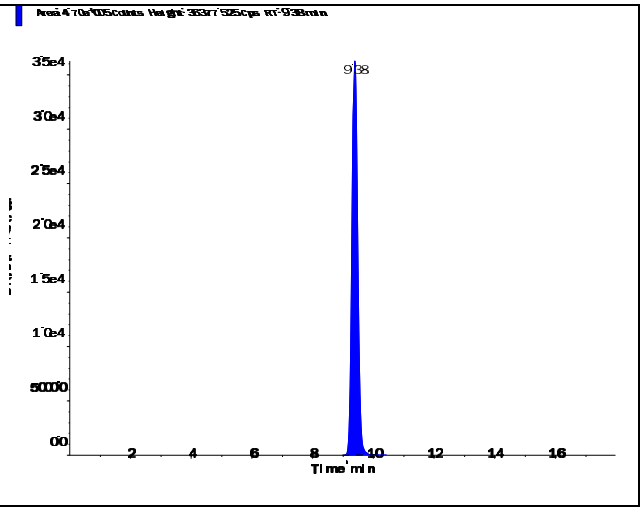

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.345
Sample Type:	(Quality Control)

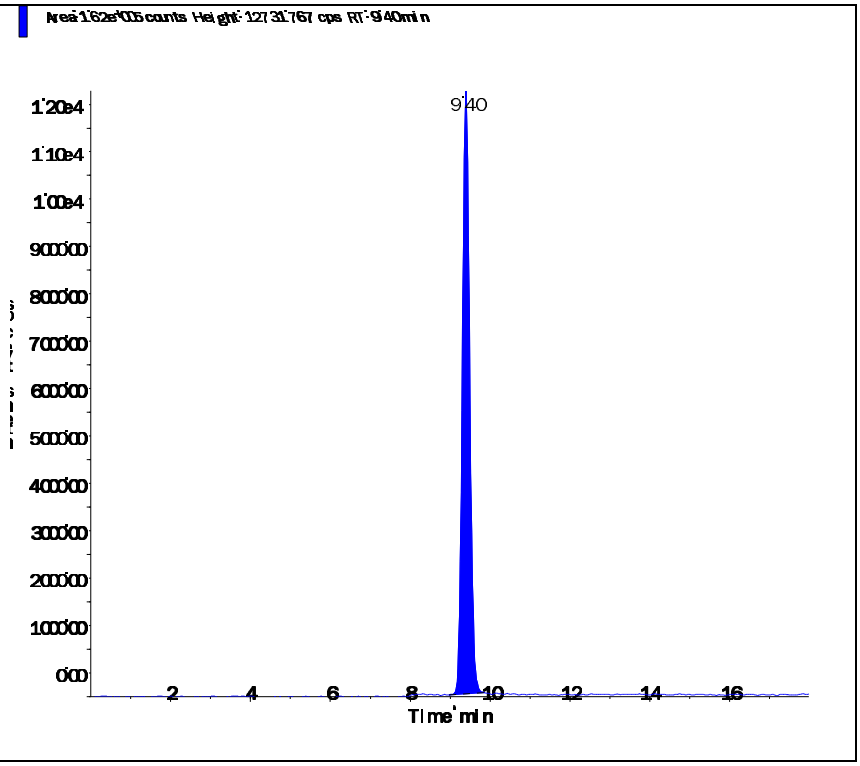

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	1.07 ng/ml
Area Ratio:	0.122
Sample Type:	(Quality Control)

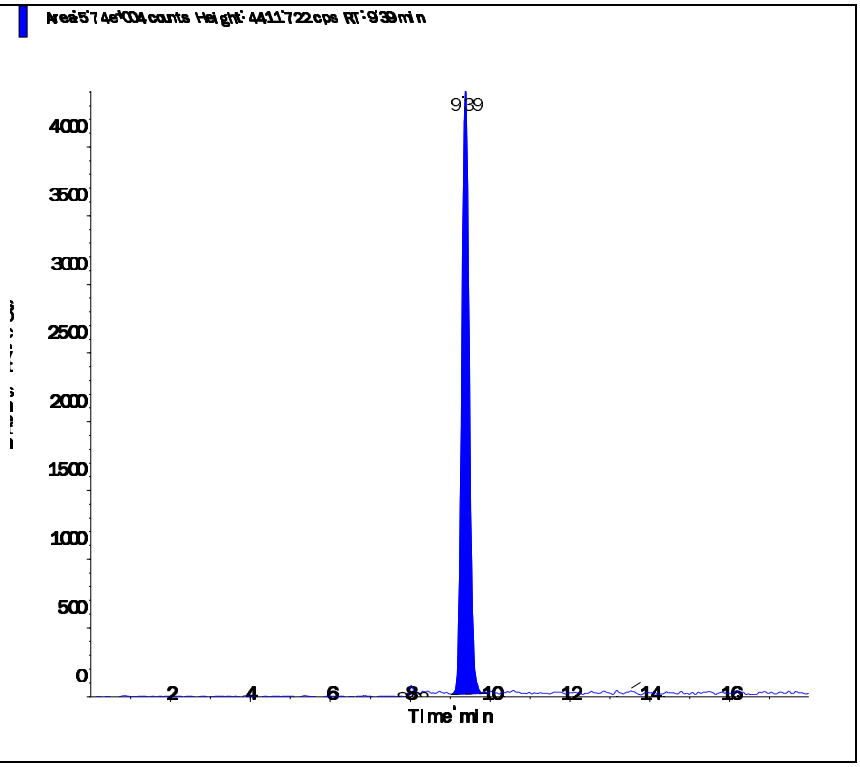

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Data File	LM35530.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 9:04:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574710-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35530.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 9:04:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574710-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.240e+05	9.38	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.760e+05	9.39	1.00	0.996
Perchlorate conf	5.940e+04	9.38	1.00	0.994

O18LP (Internal Standard)

RT (Exp. RT): 9.38(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

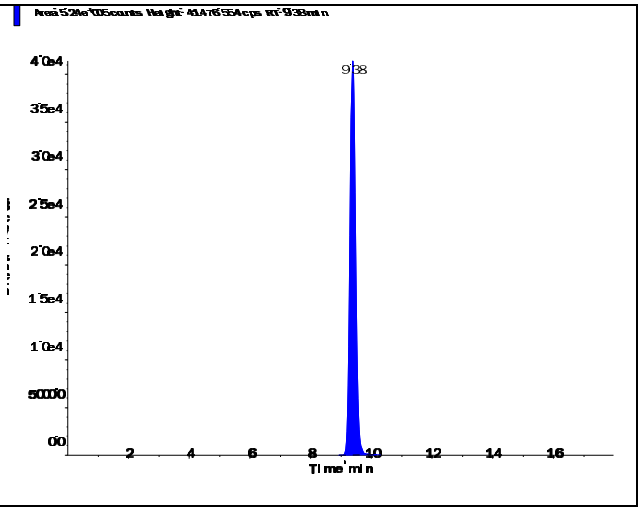

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.39 (9.84) min Calculated conc: 0.996 ng/ml Area Ratio: 0.336 Sample Type: (Quality Control)	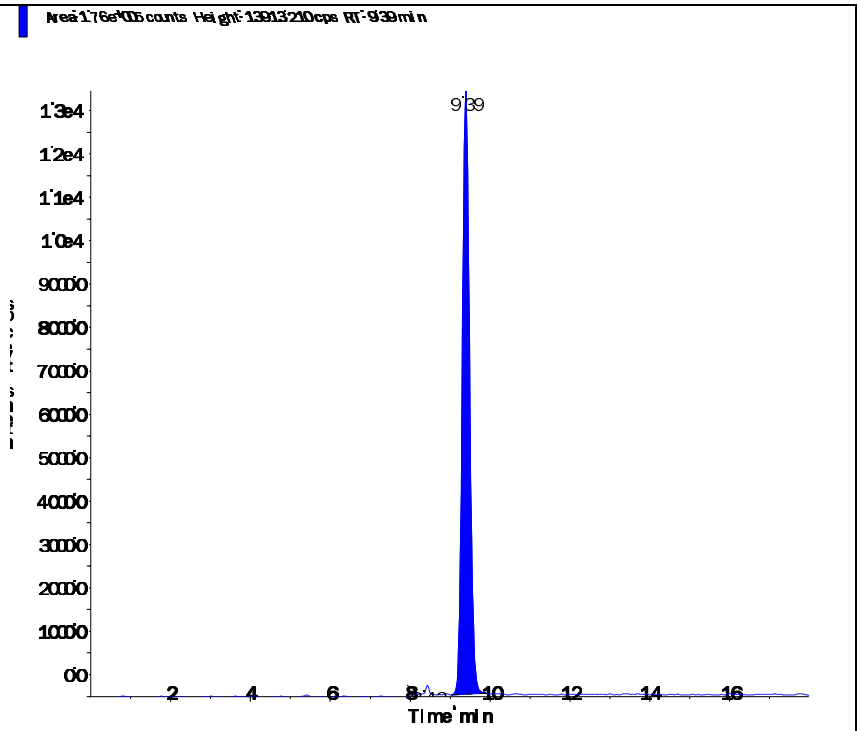
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.38 (9.84) min Calculated conc: 0.994 ng/ml Area Ratio: 0.113 Sample Type: (Quality Control)	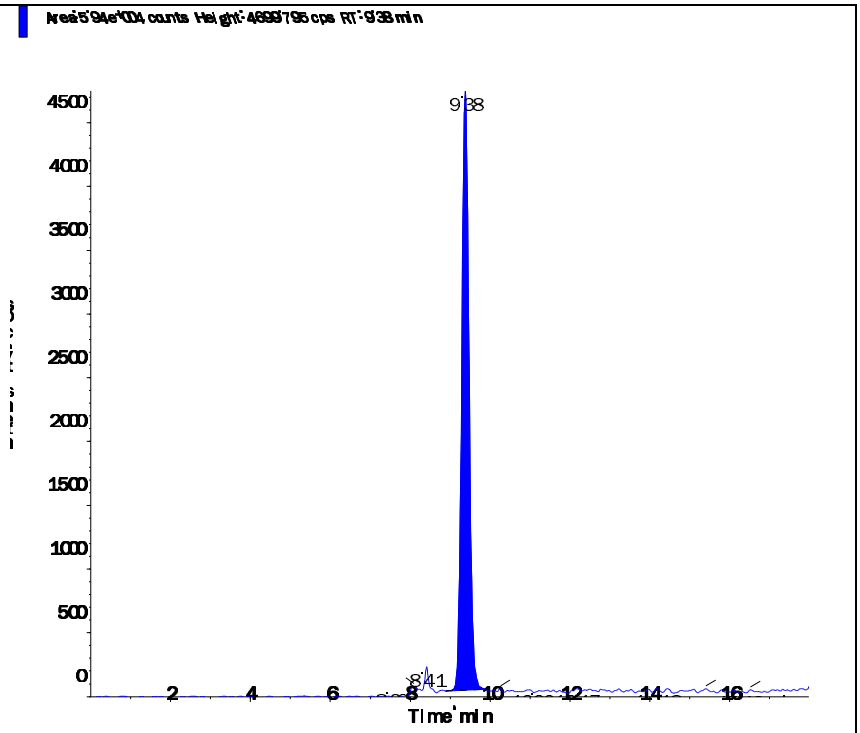

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Data File	LM35543.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 1:11:03 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574710-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35543.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 1:11:03 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574710-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.400e+05	9.37	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.870e+05	9.38	1.00	1.03
Perchlorate conf	6.580e+04	9.37	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 9.37(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

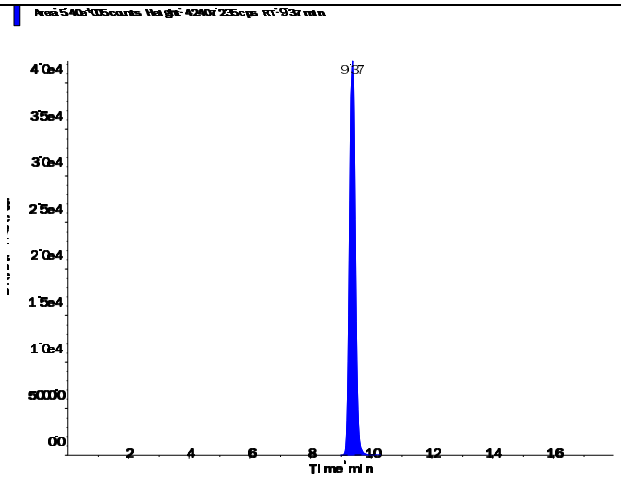

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.347
Sample Type:	(Quality Control)

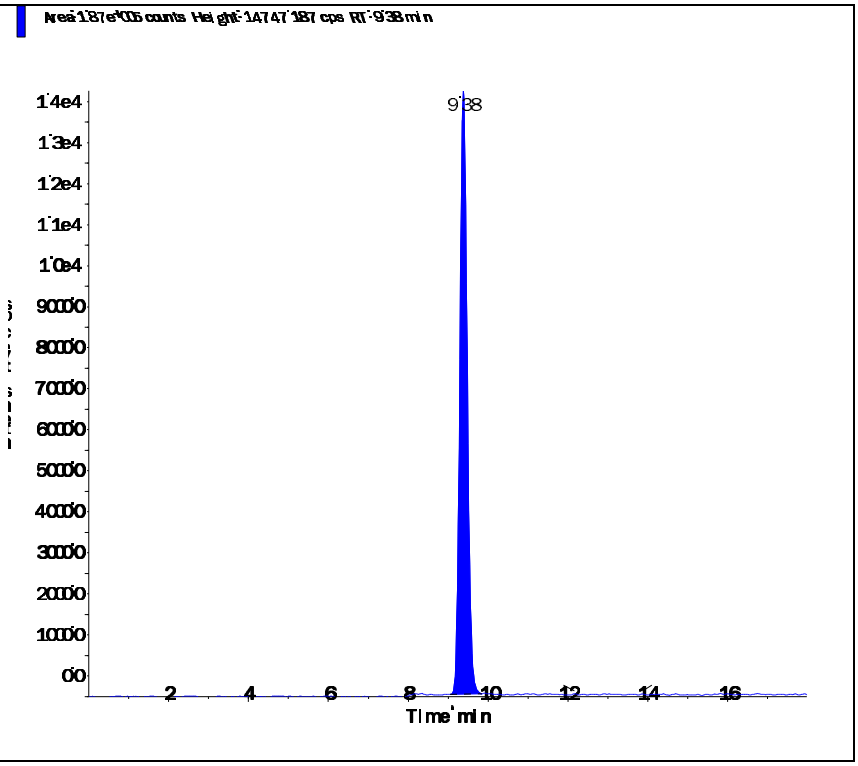

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.37 (9.84) min
Calculated conc:	1.07 ng/ml
Area Ratio:	0.122
Sample Type:	(Quality Control)

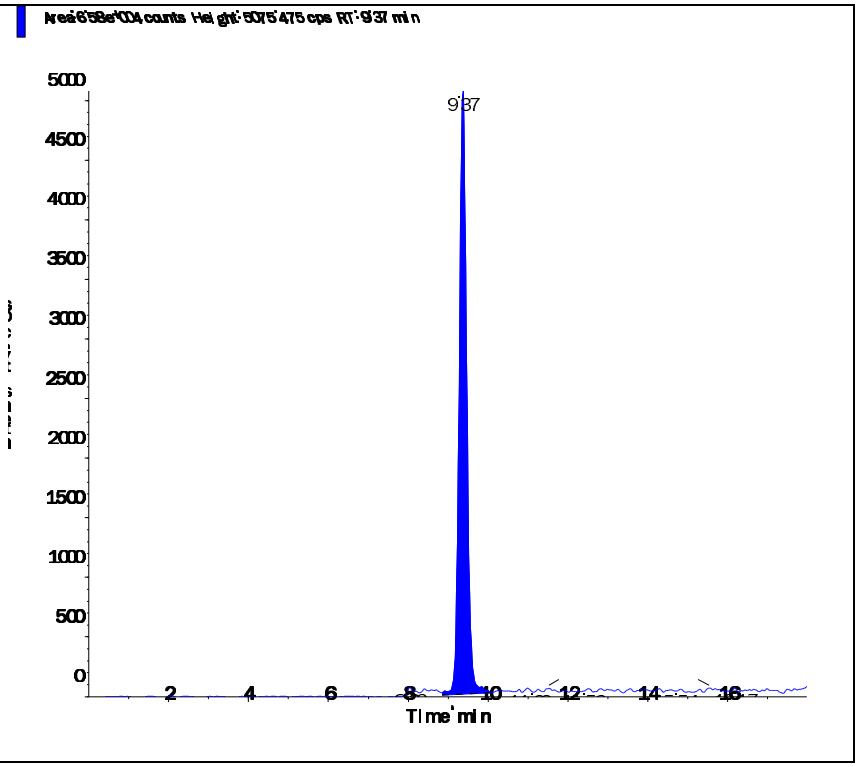

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Data File	LM35549.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 3:04:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574710-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35549.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 3:04:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574710-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.430e+05	9.38	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.880e+05	9.38	1.00	1.03
Perchlorate conf	6.550e+04	9.37	1.00	1.06

O18LP (Internal Standard)

RT (Exp. RT): 9.38(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

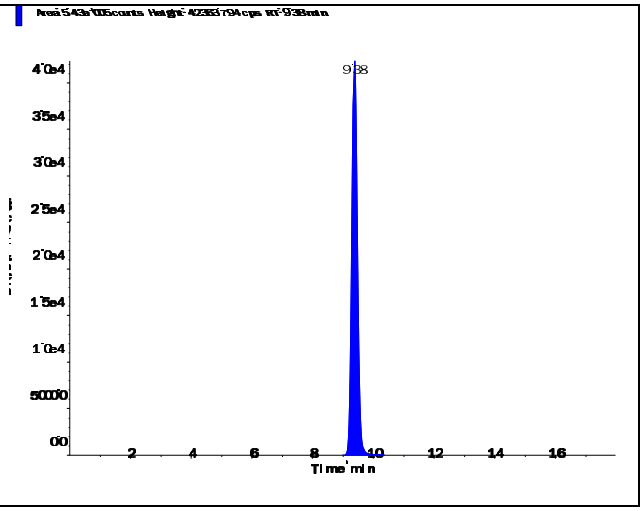

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.346
Sample Type:	(Quality Control)

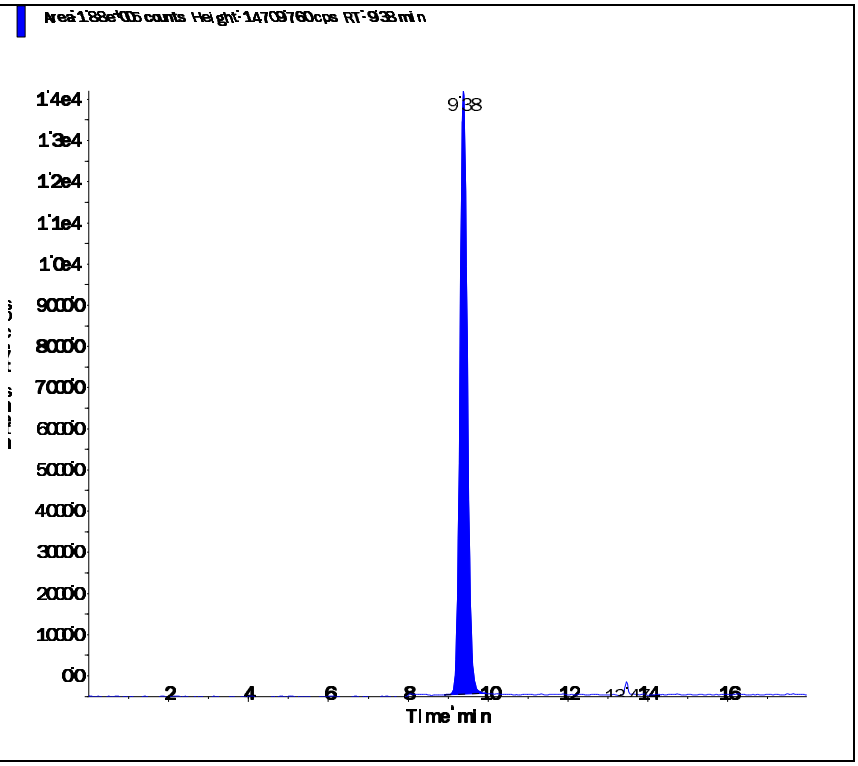

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.37 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

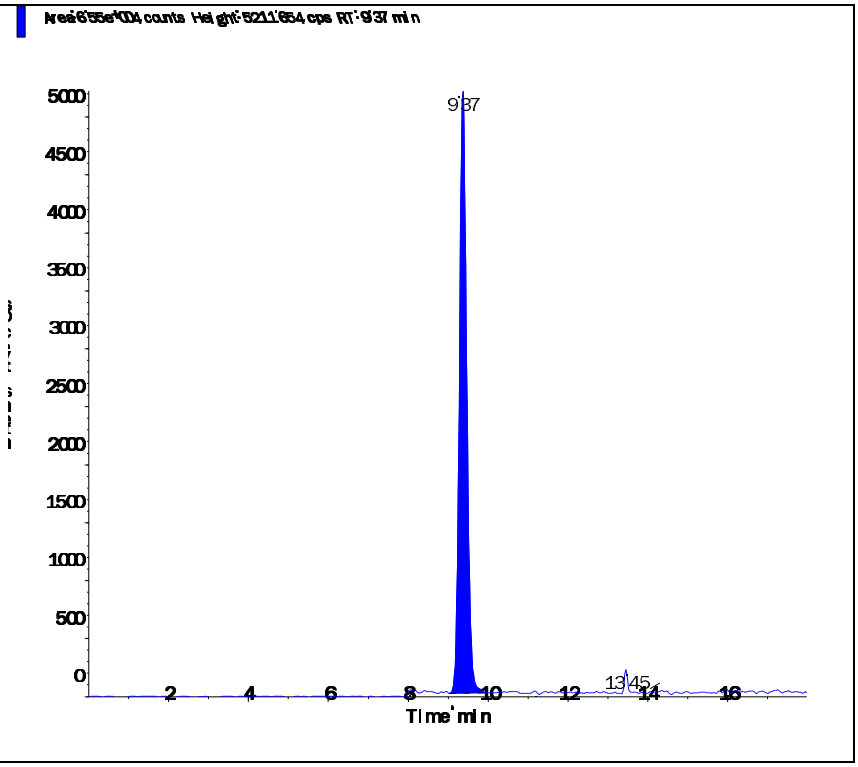

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Data File	LM35552.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 12:56:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574710-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35552.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 12:56:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574710-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.710e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.620e+05	9.40	1.00	1.02
Perchlorate conf	5.570e+04	9.38	1.00	1.04

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

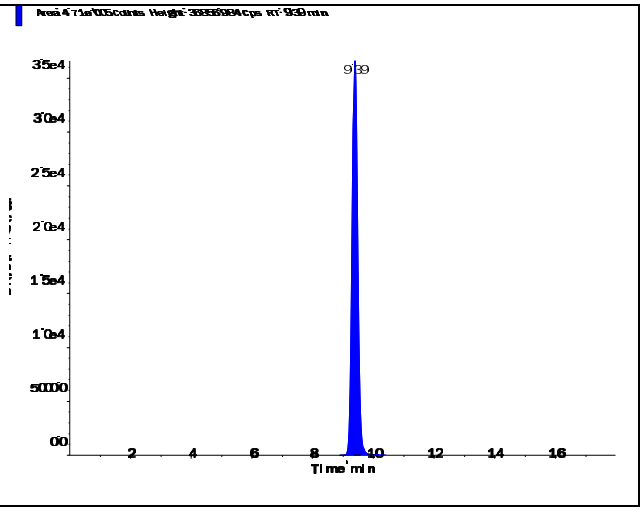

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.344
Sample Type:	(Quality Control)

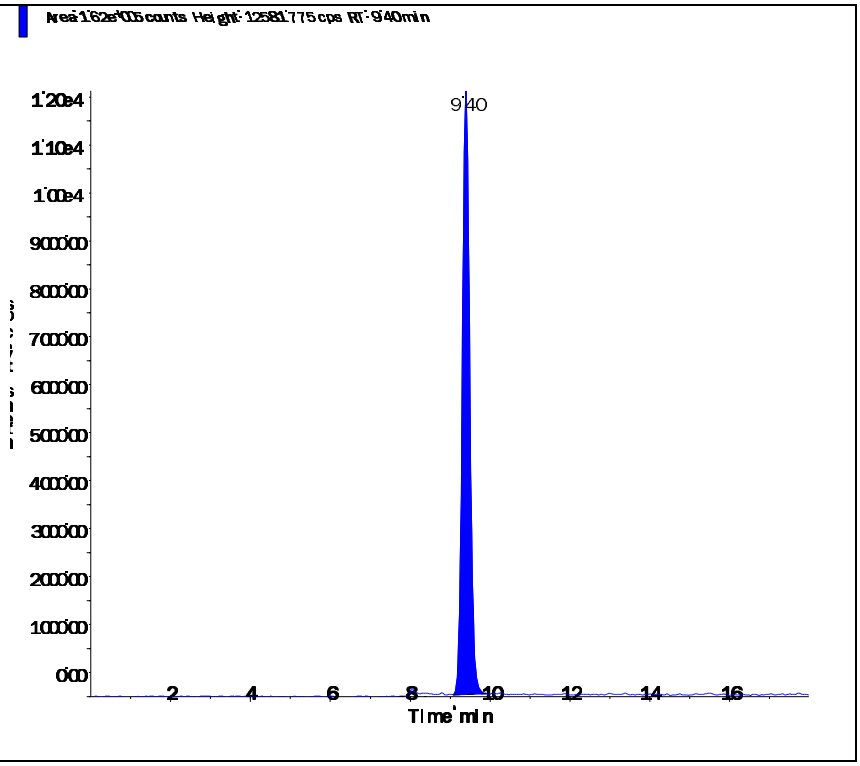

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.118
Sample Type:	(Quality Control)

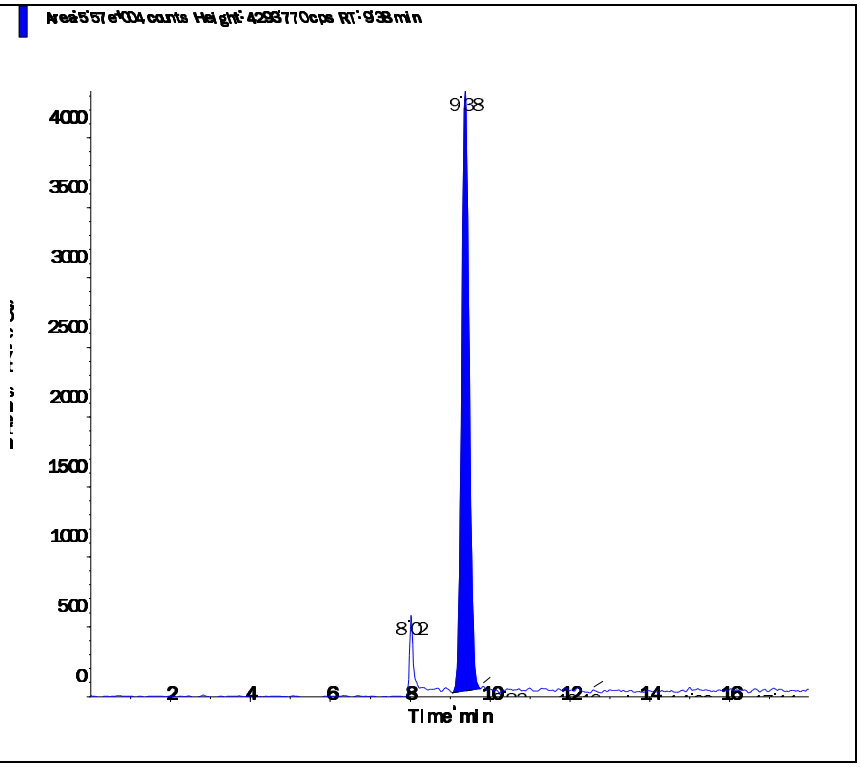

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Data File	LM35556.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 2:12:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574710-11 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35556.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 2:12:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574710-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.740e+05	9.40	1.00	1.03
Perchlorate conf	6.080e+04	9.39	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

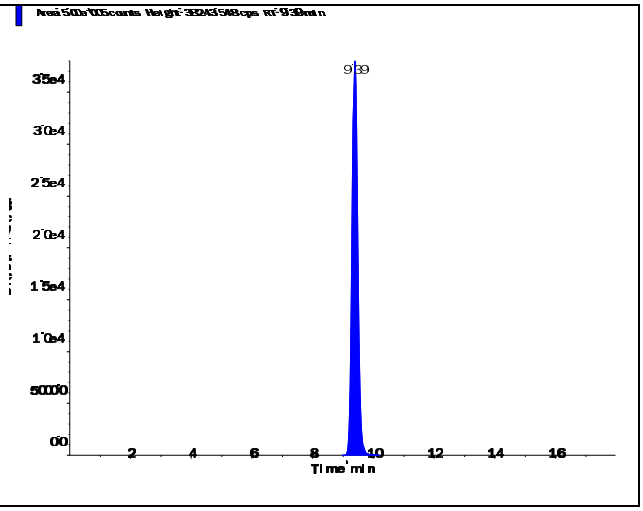

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.348
Sample Type:	(Quality Control)

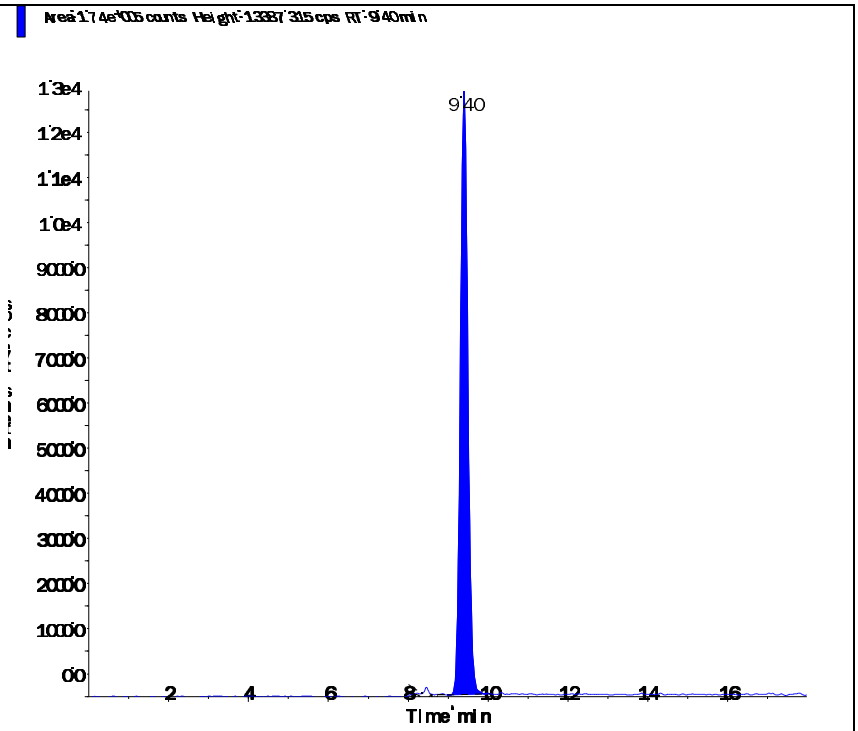

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	1.07 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

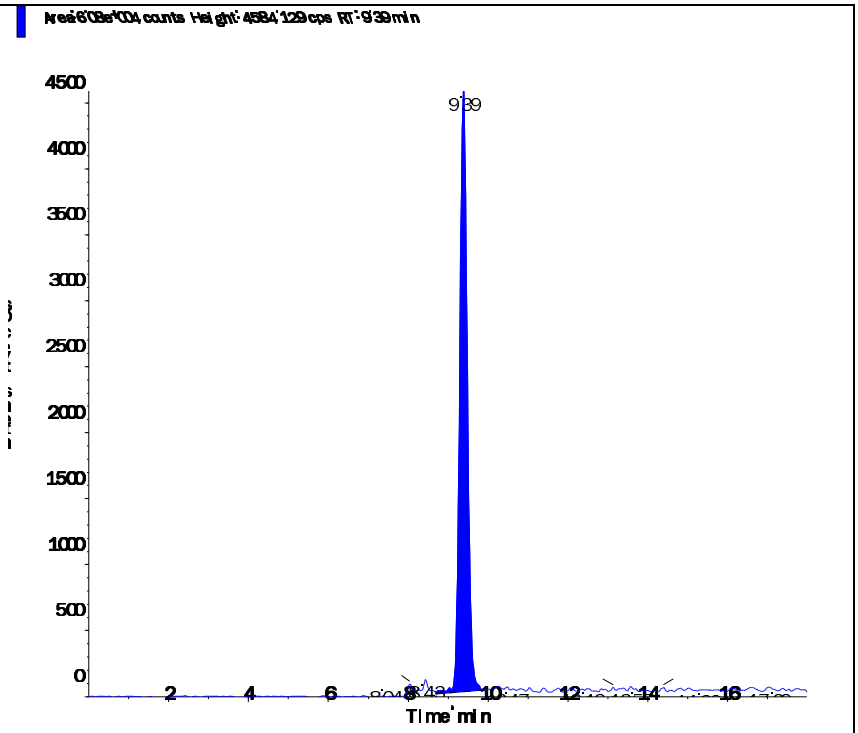

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Data File	LM35519.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 5:36:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574701-13 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35519.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 5:36:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-13	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.700e+05	9.43	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.270e+04	9.44	N/A	0.203
Perchlorate conf	1.220e+04	9.43	N/A	0.212

O18LP (Internal Standard)

RT (Exp. RT): 9.43(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

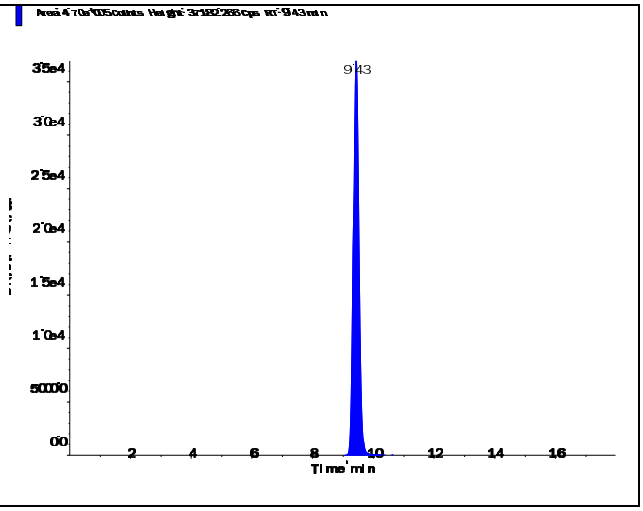

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	0.203 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

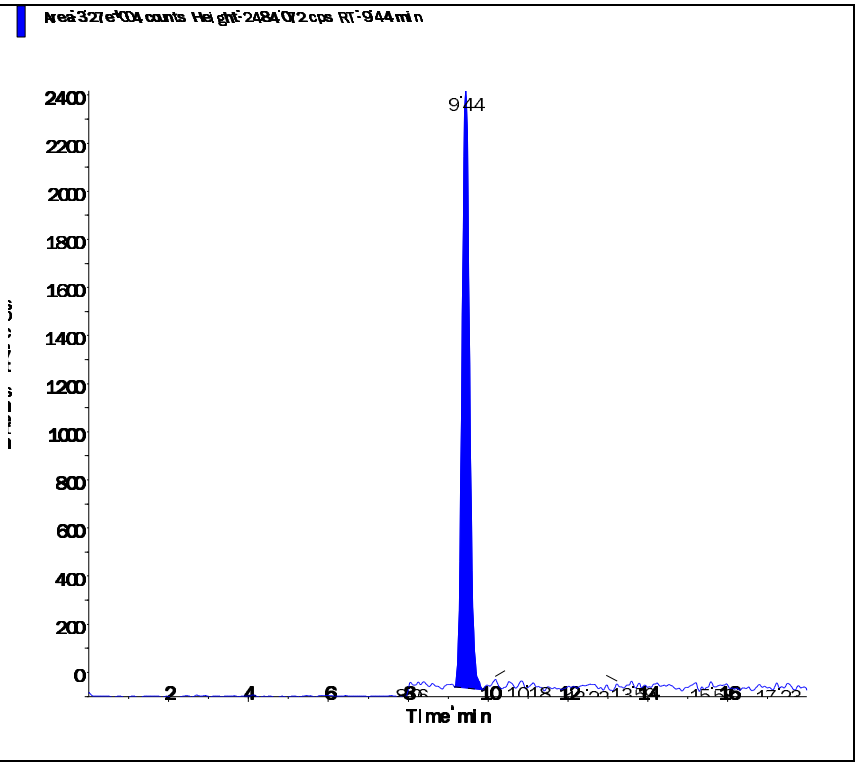

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.43 (9.84) min
Calculated conc:	0.212 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

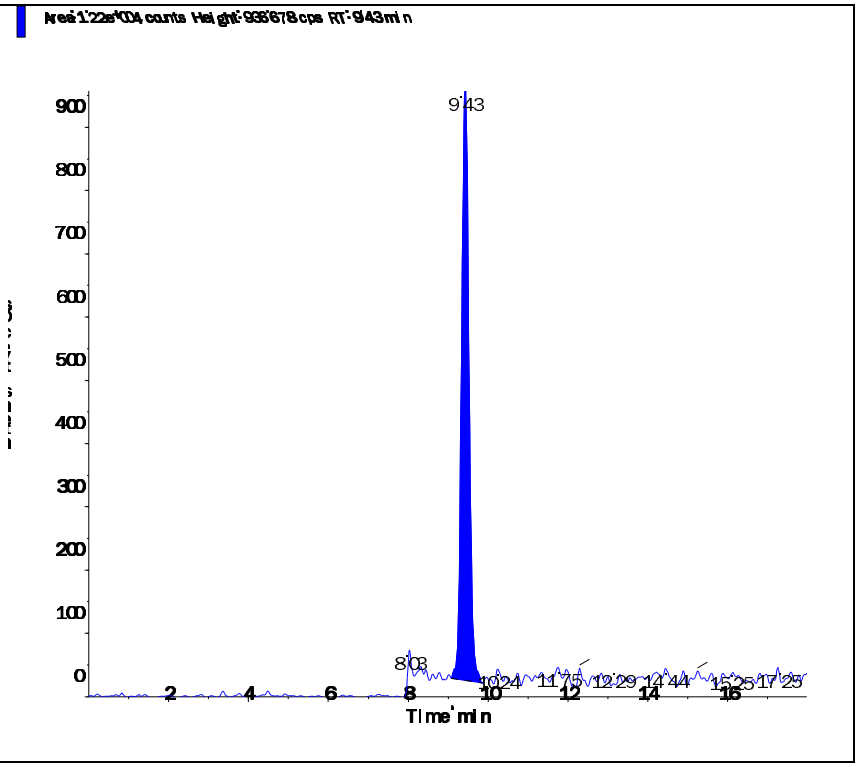

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Data File	LM35531.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 9:23:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574701-14 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35531.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 9:23:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-14	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.220e+05	9.42	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.730e+04	9.43	N/A	0.209
Perchlorate conf	1.290e+04	9.43	N/A	0.201

O18LP (Internal Standard)

RT (Exp. RT): 9.42(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

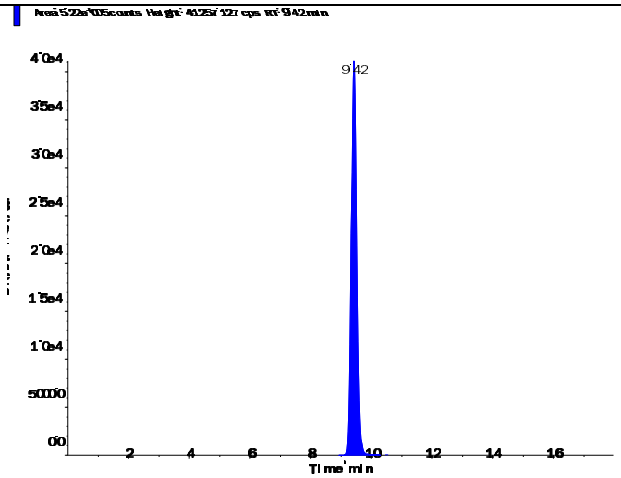

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.43 (9.84) min
Calculated conc:	0.209 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

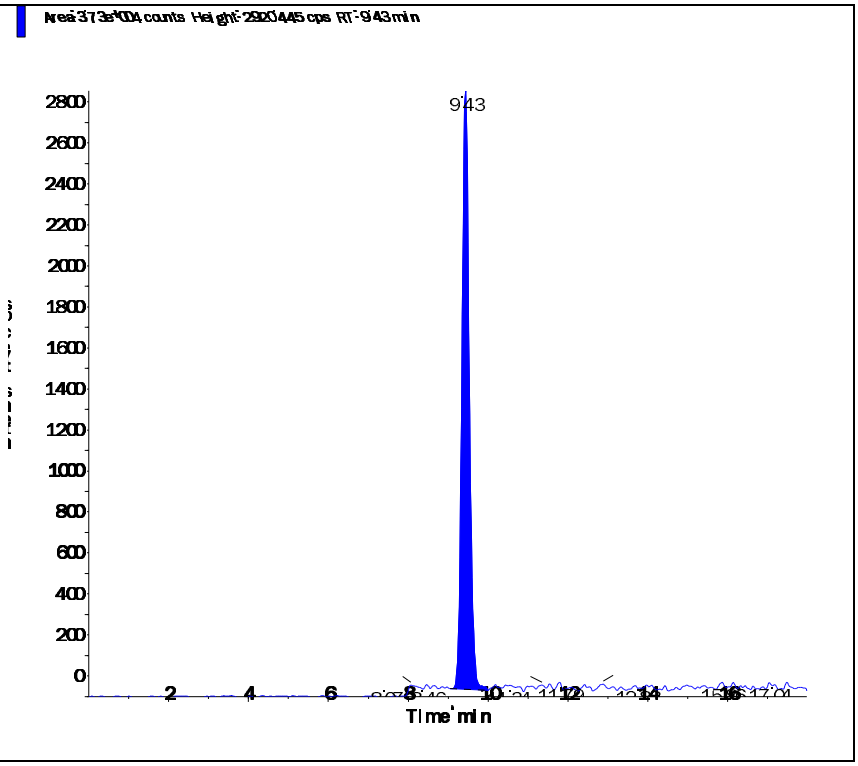

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.43 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

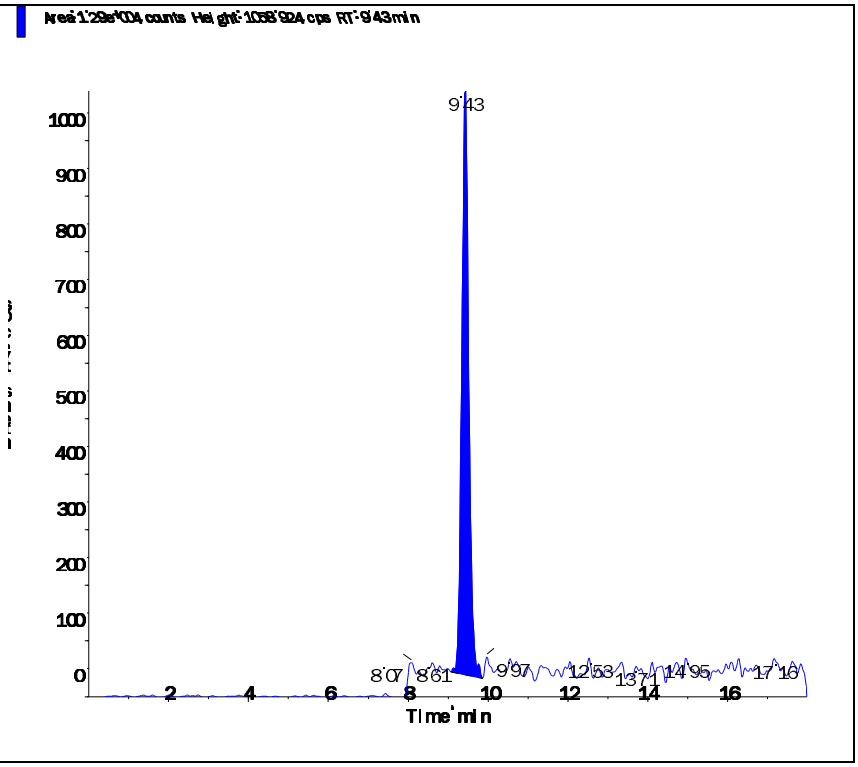

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Data File	LM35544.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 1:29:59 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574701-15 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35544.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 1:29:59 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-15	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.540e+05	9.42	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.820e+04	9.43	N/A	0.201
Perchlorate conf	1.320e+04	9.42	N/A	0.193

O18LP (Internal Standard)

RT (Exp. RT): 9.42(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

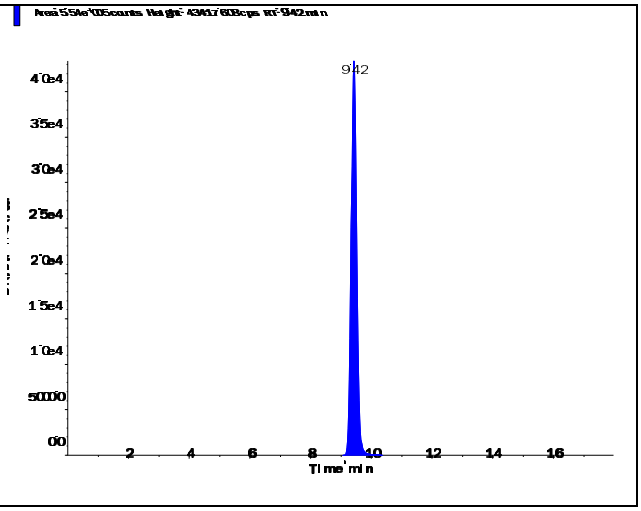

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.43 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

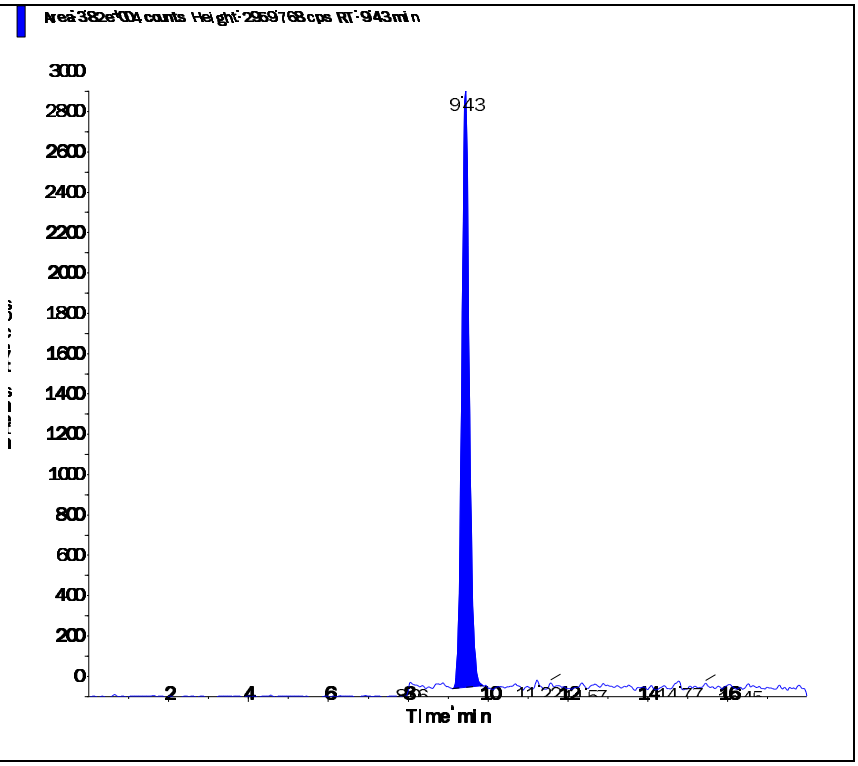

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.42 (9.84) min
Calculated conc:	0.193 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

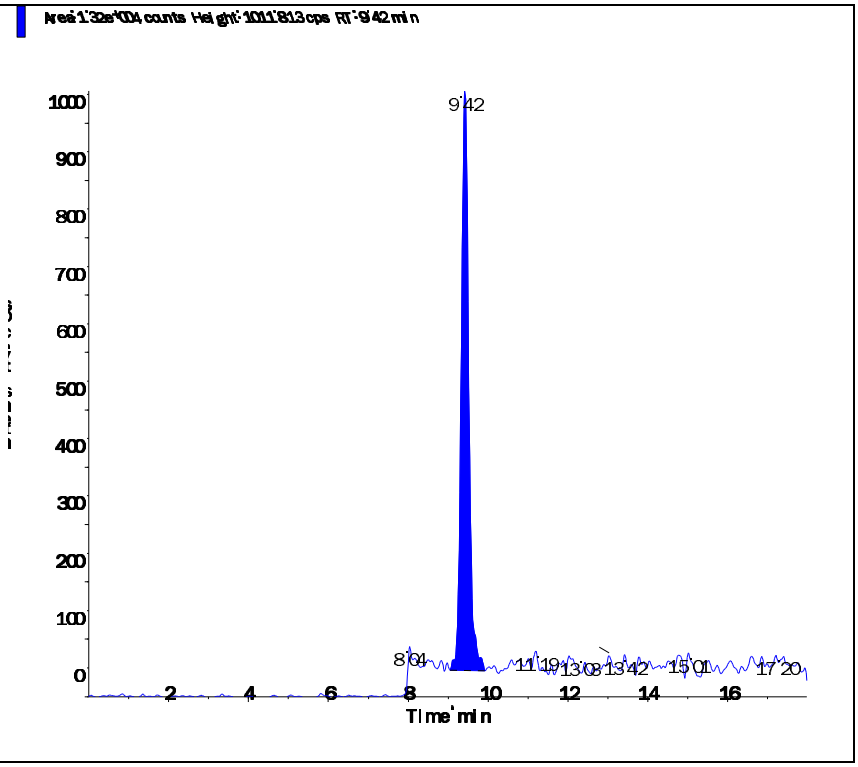

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Data File	LM35550.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 3:23:36 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574701-16 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35550.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 3:23:36 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-16	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.460e+05	9.41	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.890e+04	9.41	N/A	0.208
Perchlorate conf	1.390e+04	9.41	N/A	0.207

O18LP (Internal Standard)

RT (Exp. RT): 9.41(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

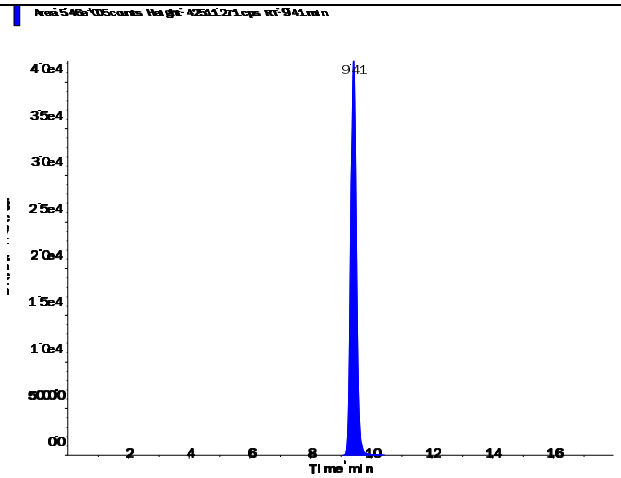

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.41 (9.84) min
Calculated conc:	0.208 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

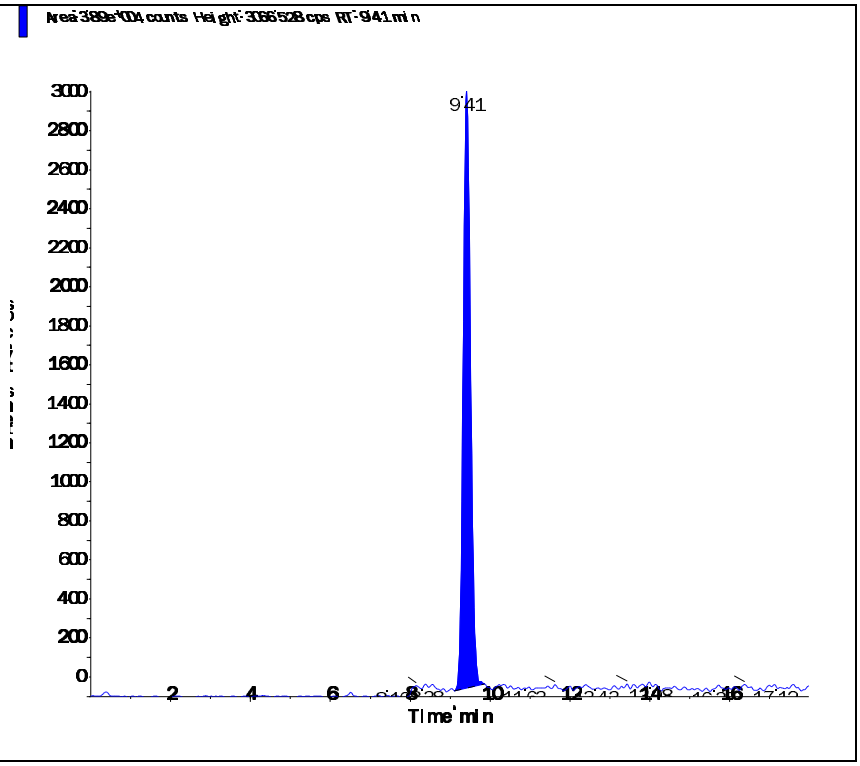

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.41 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

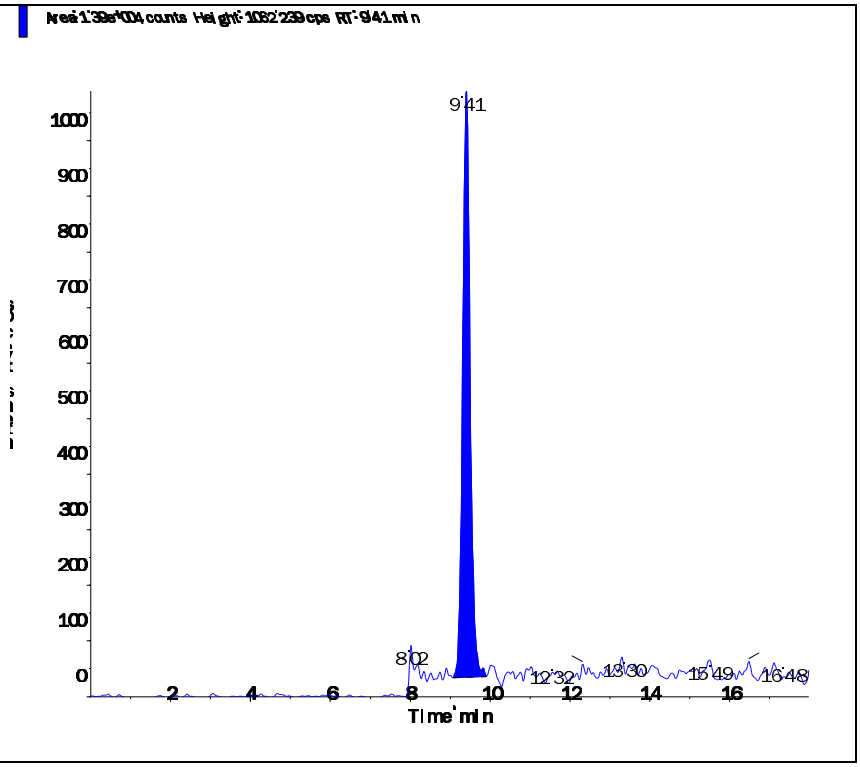

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Data File	LM35553.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 1:15:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574701-17 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35553.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 1:15:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-17	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.670e+05	9.43	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.260e+04	9.45	N/A	0.204
Perchlorate conf	1.130e+04	9.44	N/A	0.197

O18LP (Internal Standard)

RT (Exp. RT): 9.43(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

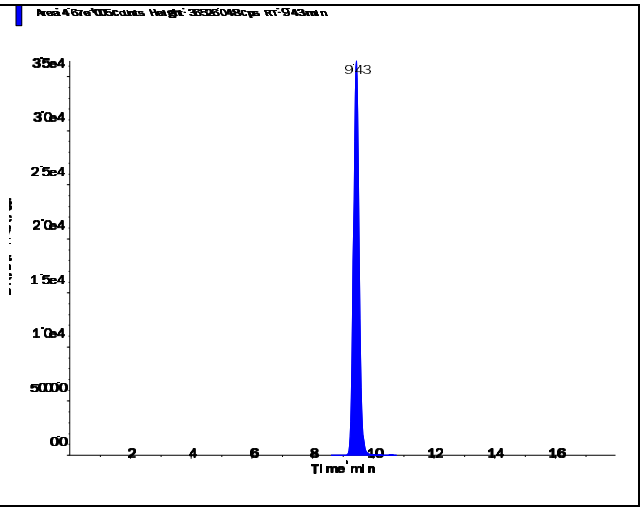

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.45 (9.84) min
Calculated conc:	0.204 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

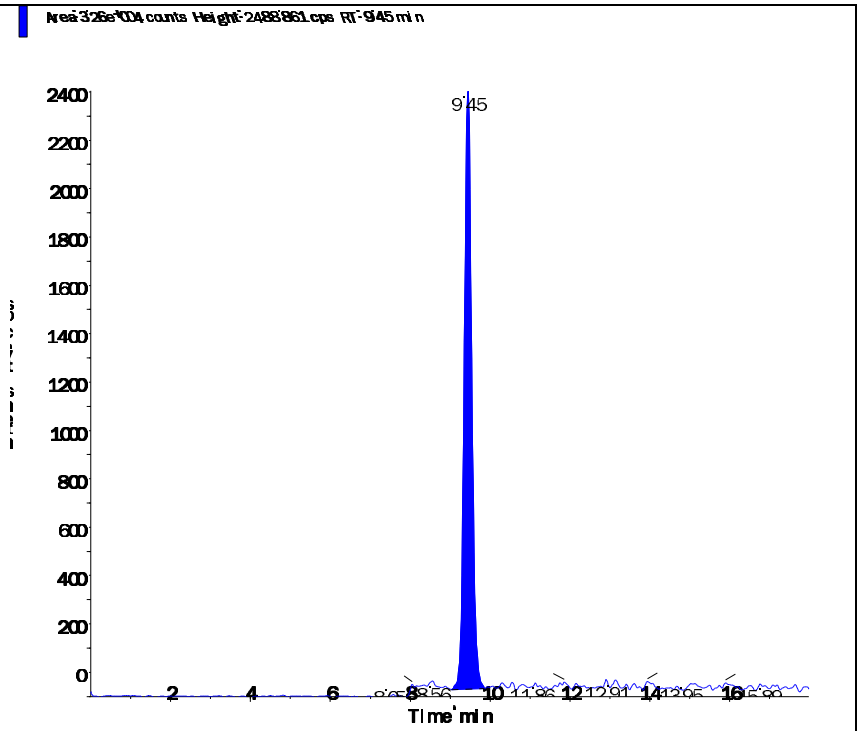

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

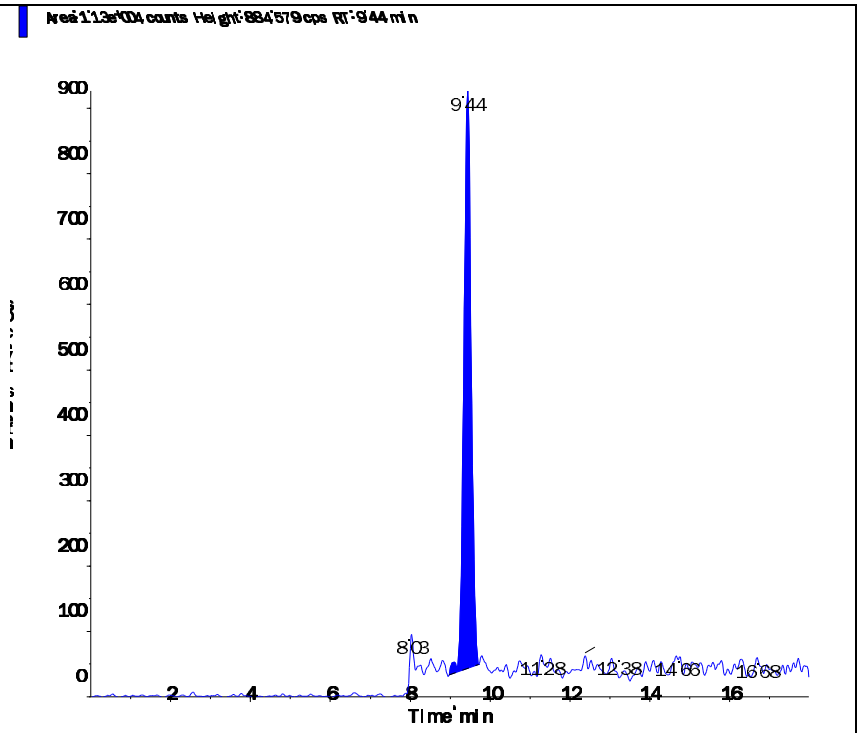

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Data File	LM35557.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 2:31:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574701-18 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35557.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 2:31:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-18	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.920e+05	9.44	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.470e+04	9.44	N/A	0.206
Perchlorate conf	1.260e+04	9.43	N/A	0.21

O18LP (Internal Standard)

RT (Exp. RT): 9.44(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

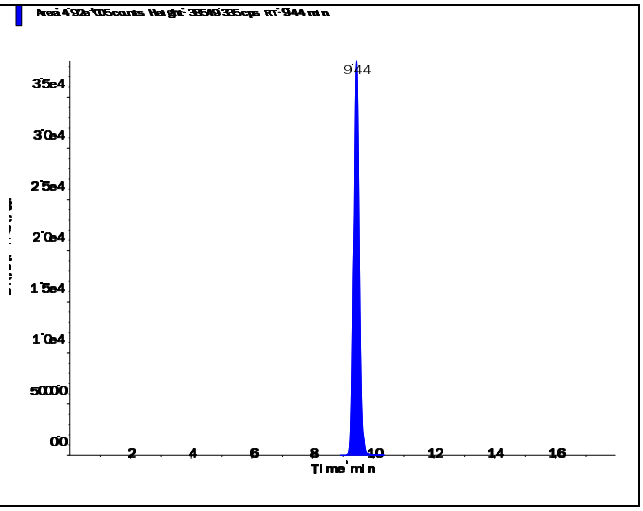

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

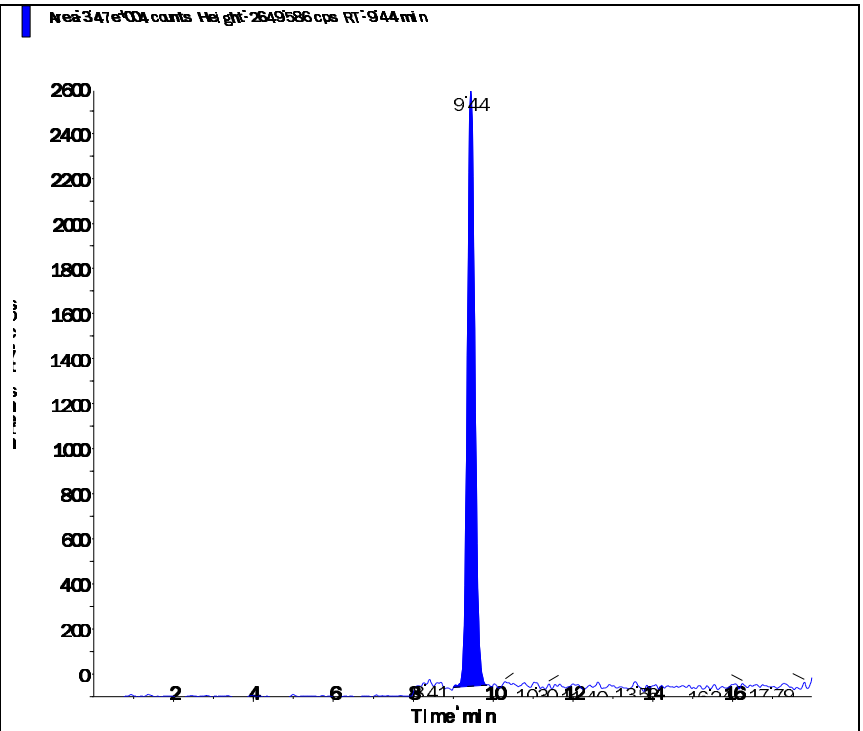

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.43 (9.84) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

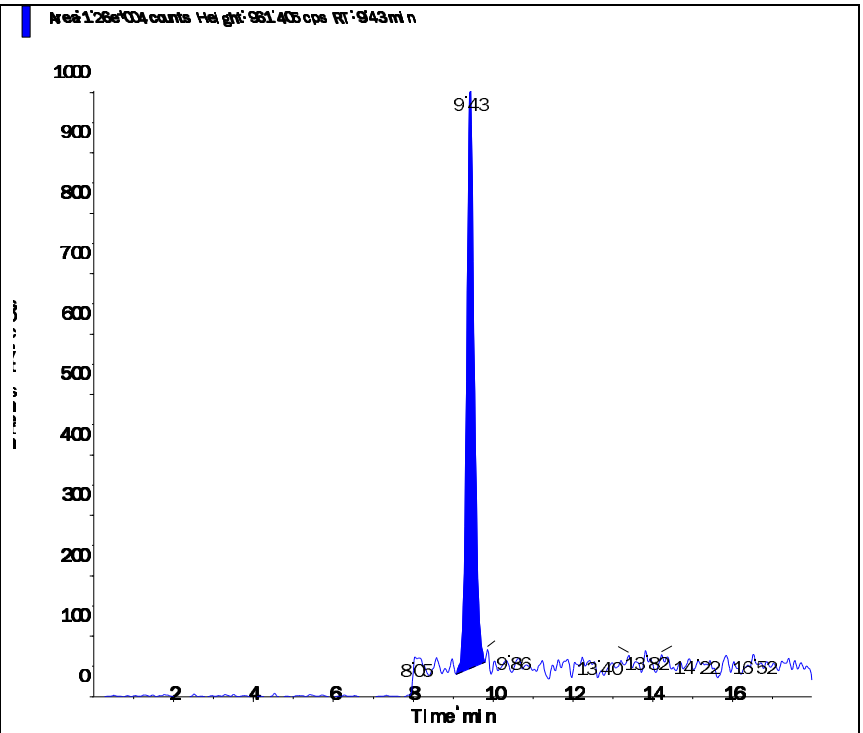

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Printed: 6/30/2016 3:29 PM

Data File	LM35517.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 4:58:47 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574710-01 CCB	**Injection Vial**	1.00
Data File	LM35517.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 4:58:47 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574710-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.490e+05	9.65	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.65(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

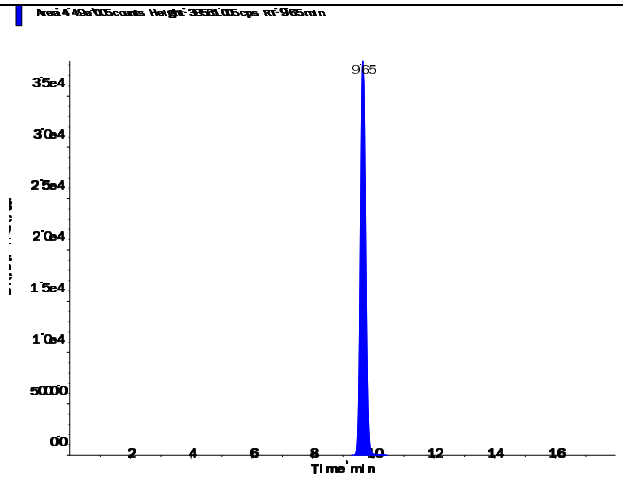

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

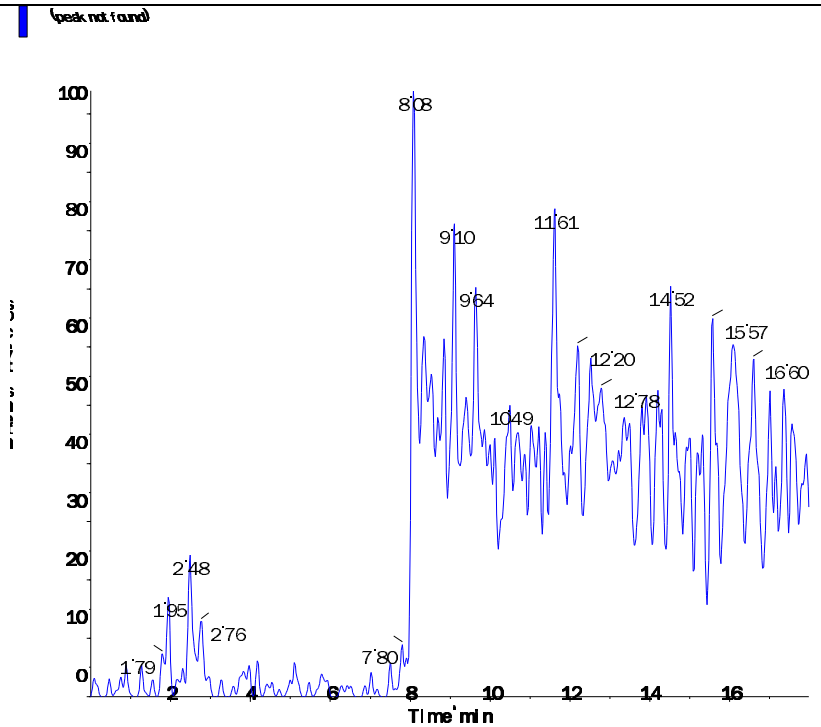

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

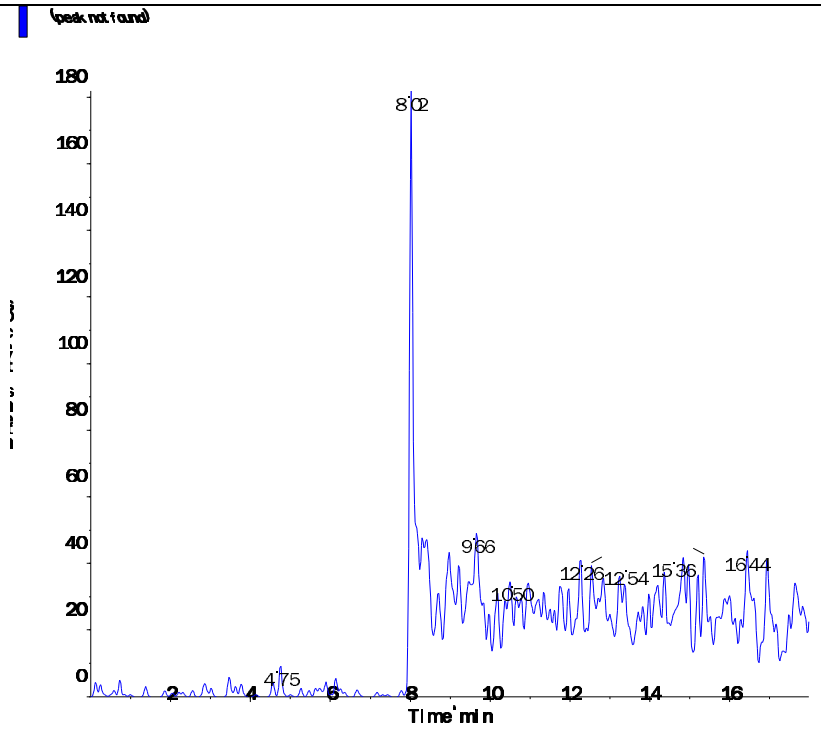

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Printed: 6/30/2016 3:34 PM

Data File	LM35532.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 9:42:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574710-04 CCB	**Injection Vial**	1.00
Data File	LM35532.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 9:42:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574710-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.230e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

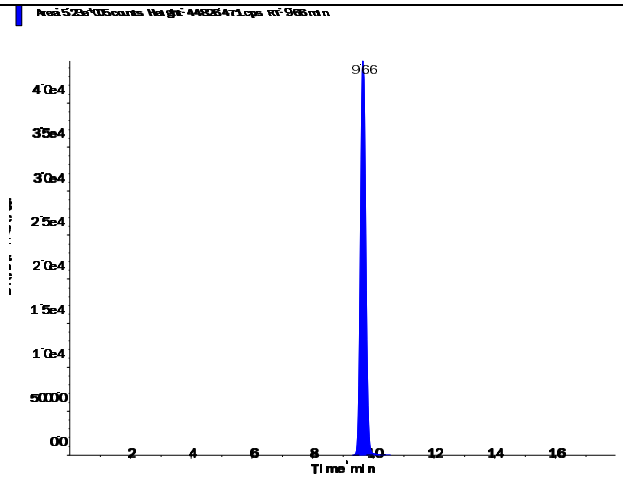

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

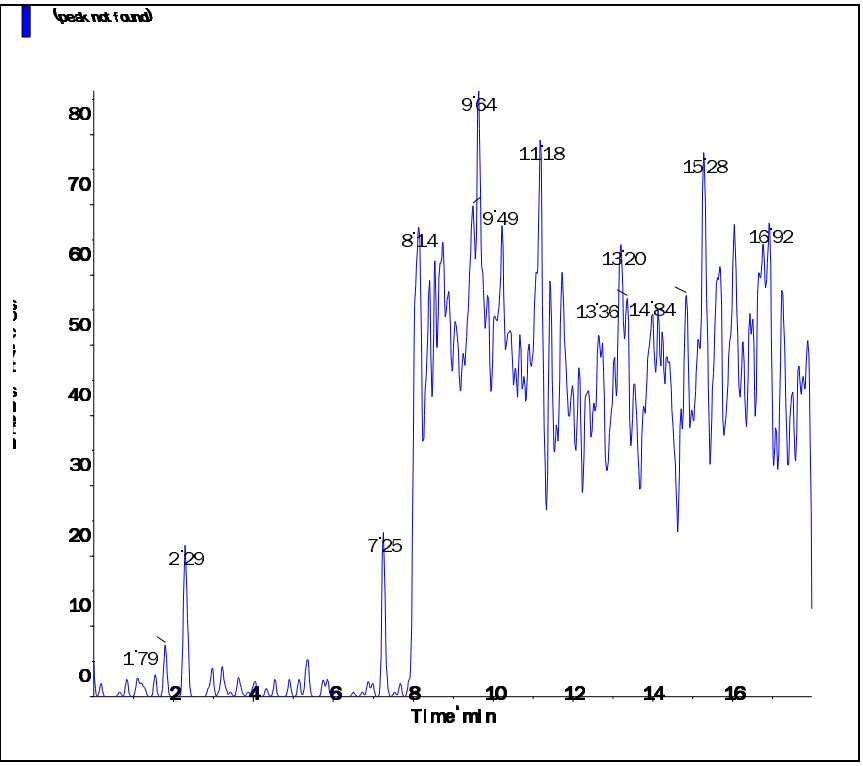

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

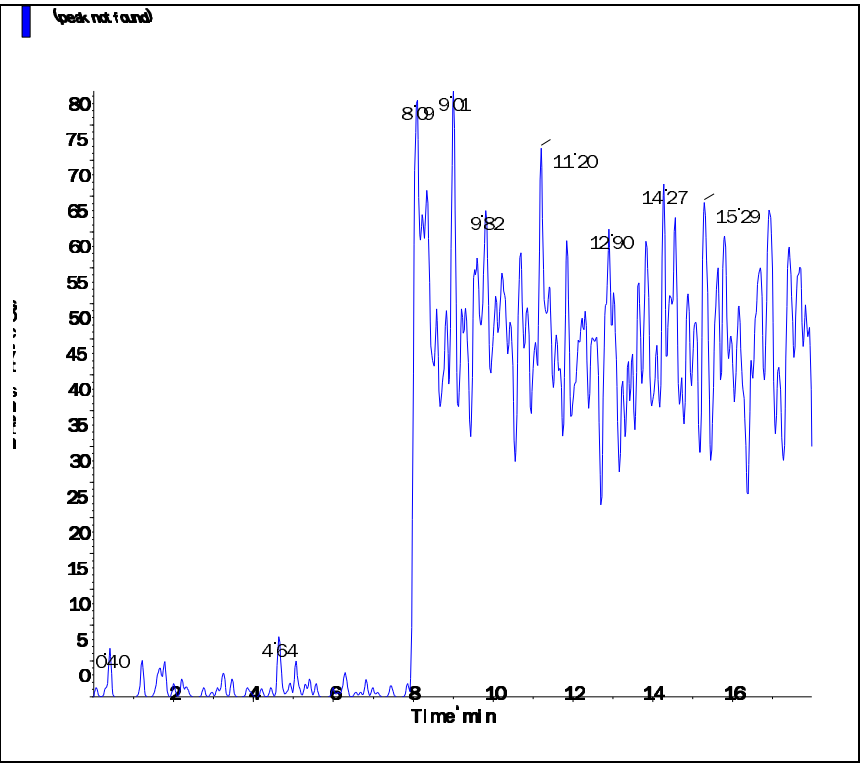

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Printed: 6/30/2016 3:38 PM

Data File	LM35545.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 1:48:54 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574710-06 CCB	**Injection Vial**	1.00
Data File	LM35545.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 1:48:54 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574710-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.550e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	2.640e+02	9.60	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

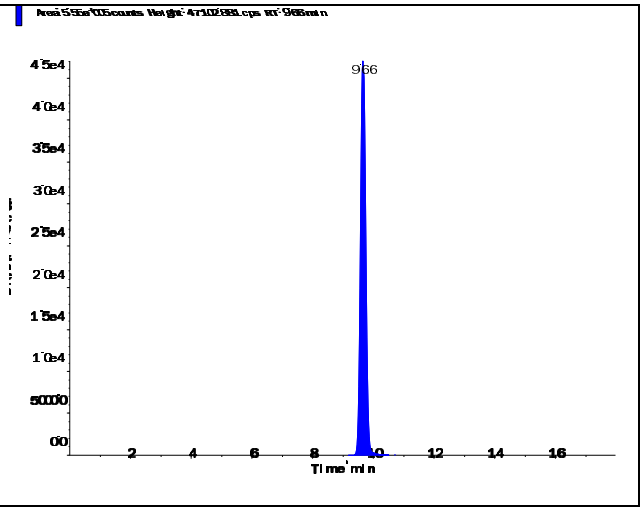

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

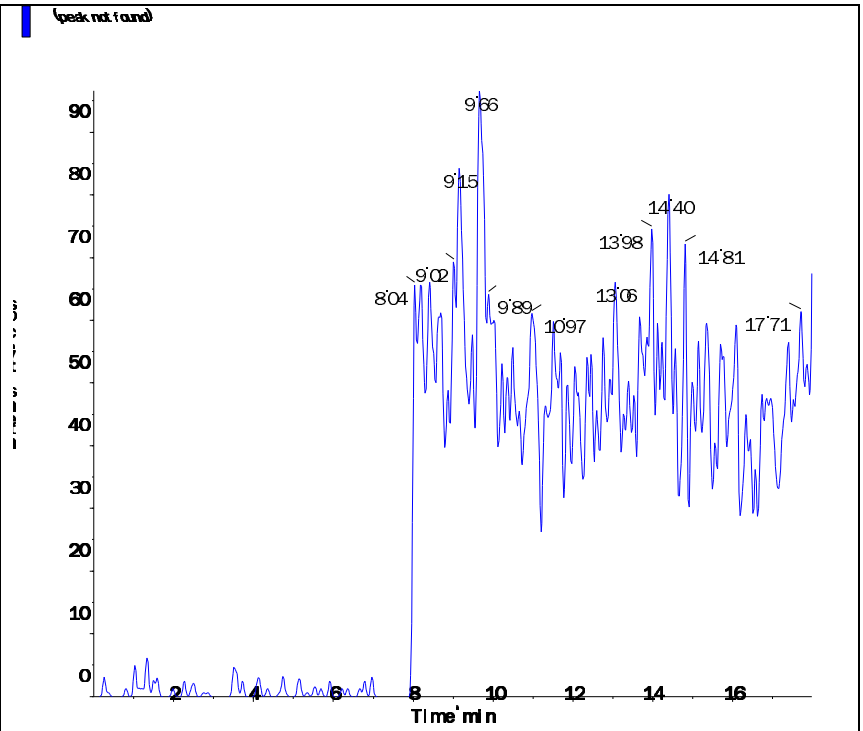

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.60 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

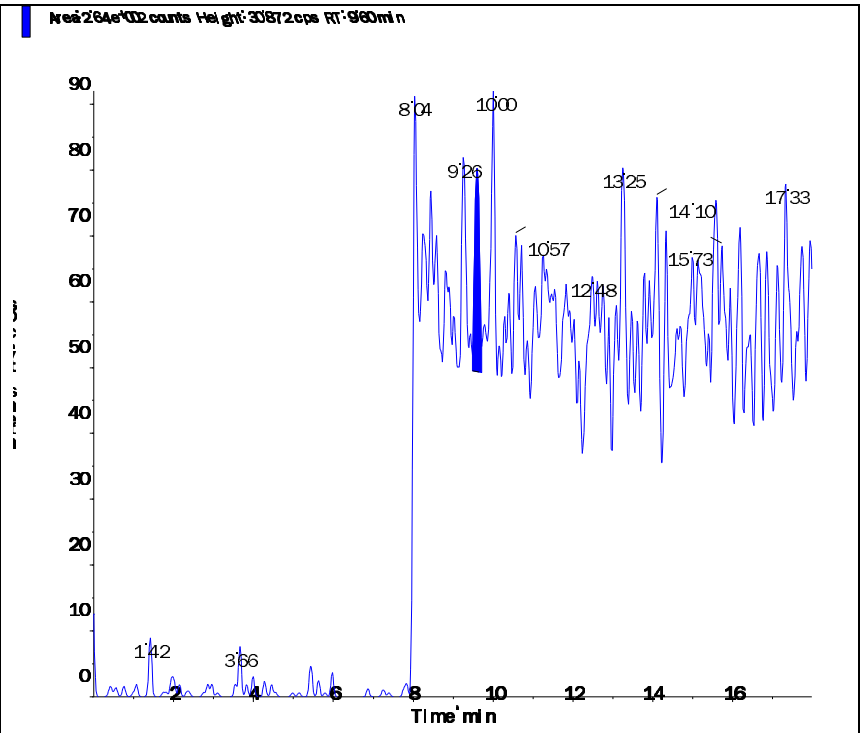

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Printed: 6/30/2016 3:40 PM

Data File	LM35551.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 3:42:32 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574710-08 CCB	**Injection Vial**	1.00
Data File	LM35551.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 3:42:32 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574710-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.530e+05	9.65	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.65(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

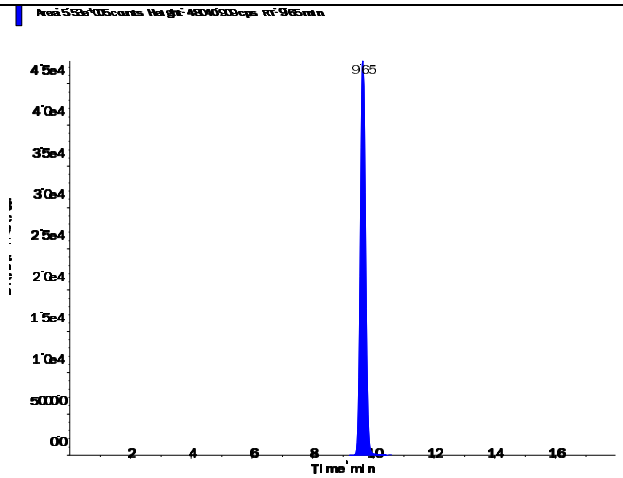

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

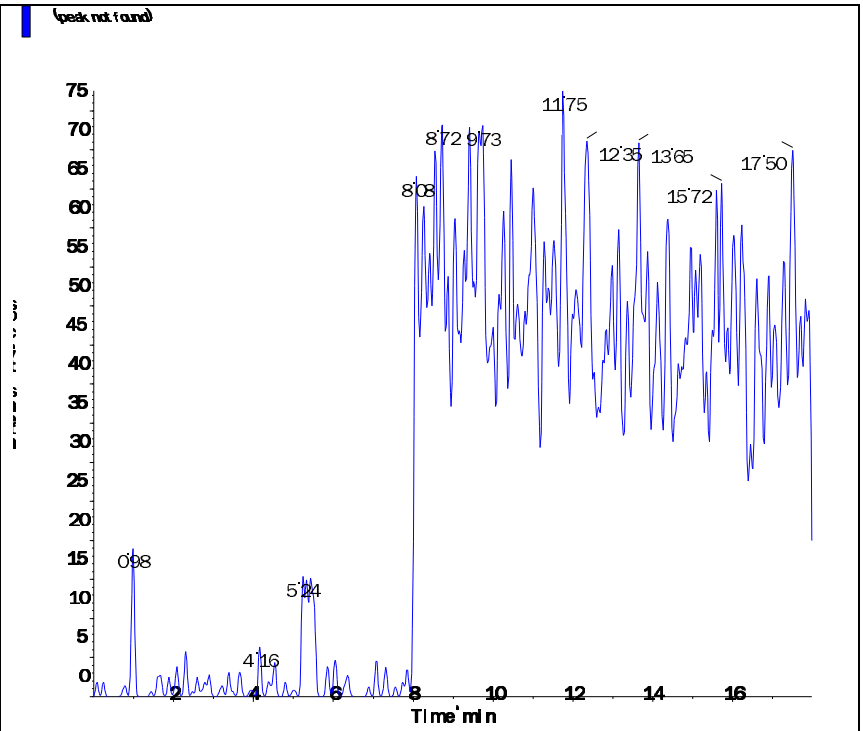

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

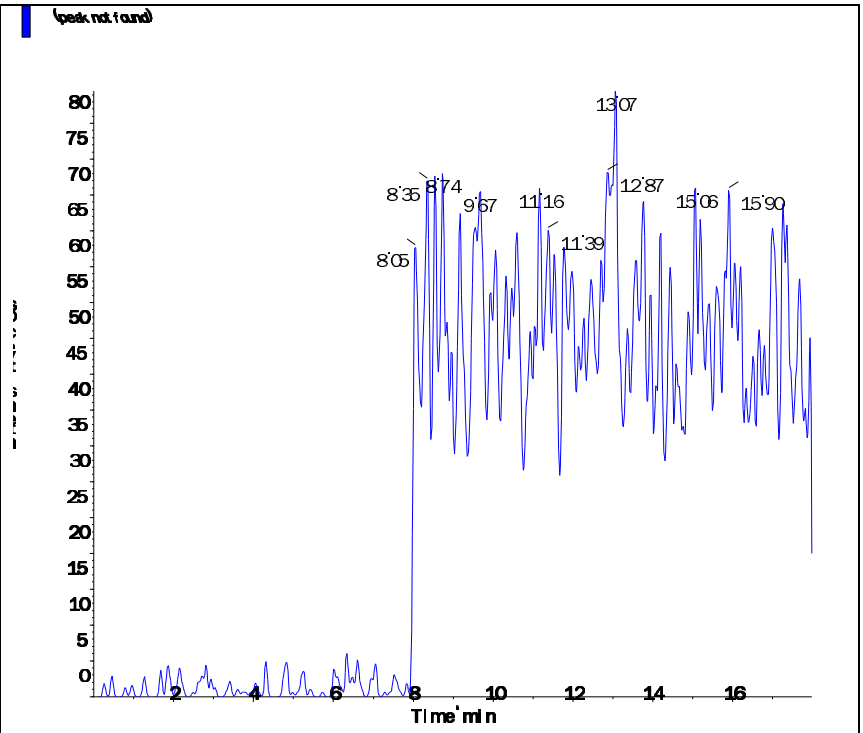

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Data File	LM35554.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 1:34:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574710-10 CCB	**Injection Vial**	1.00
Data File	LM35554.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 1:34:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574710-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.840e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	4.450e+02	9.65	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

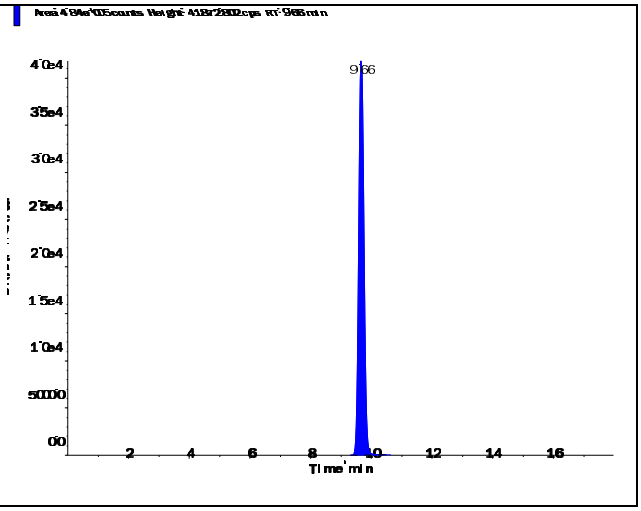

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

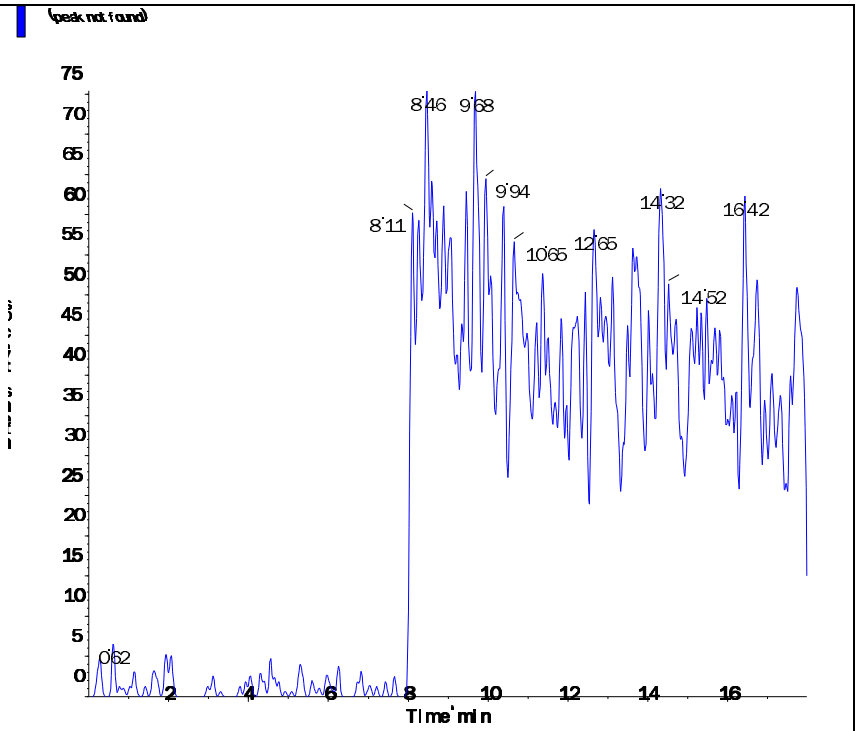

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.65 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

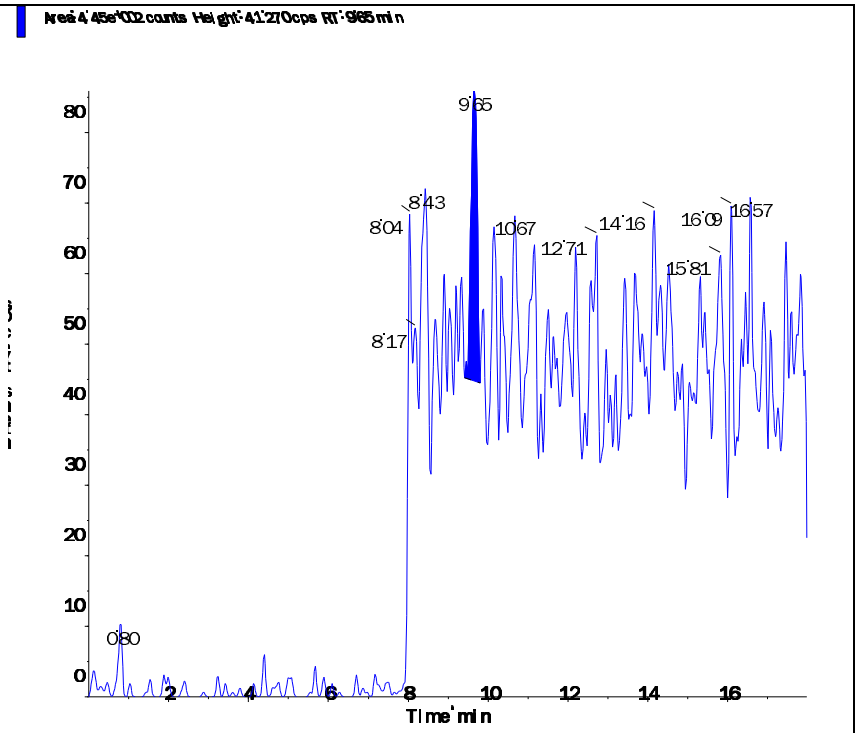

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Printed: 6/30/2016 3:42 PM

Data File	LM35558.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 2:50:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574710-12 CCB	**Injection Vial**	1.00
Data File	LM35558.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 2:50:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574710-12	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.870e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

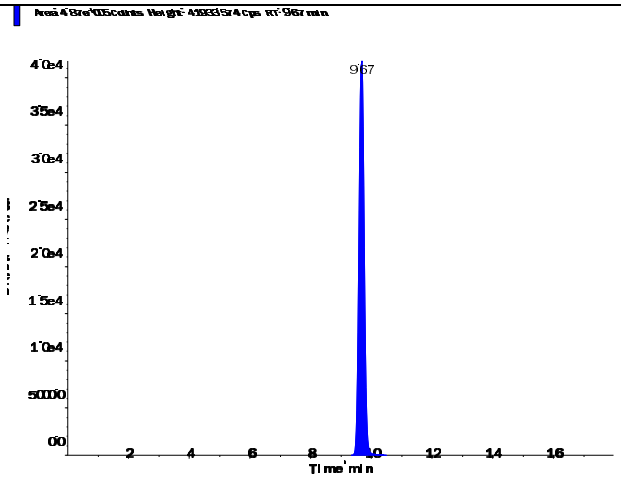

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

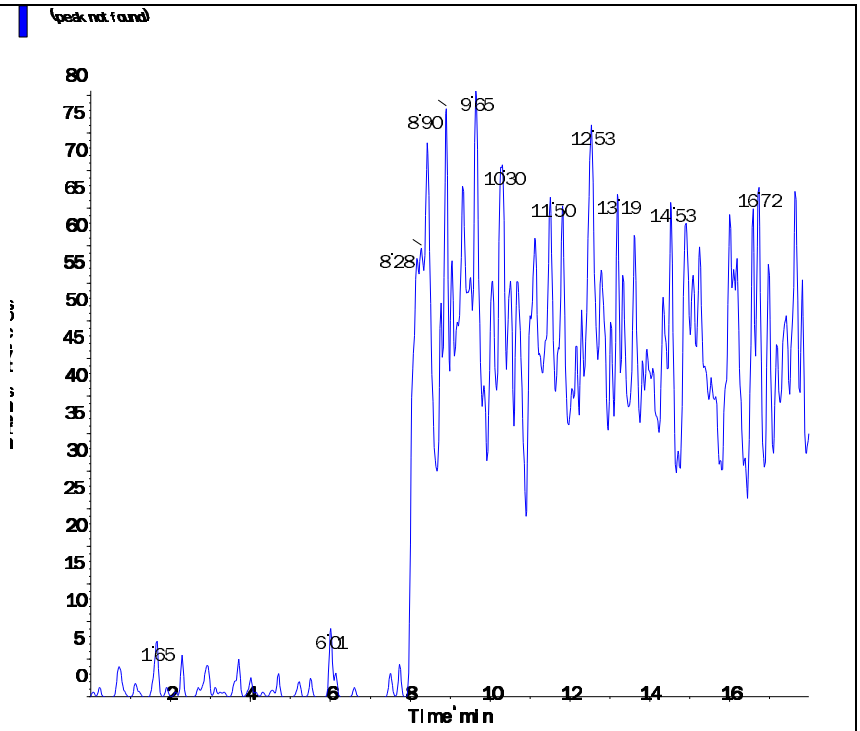

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

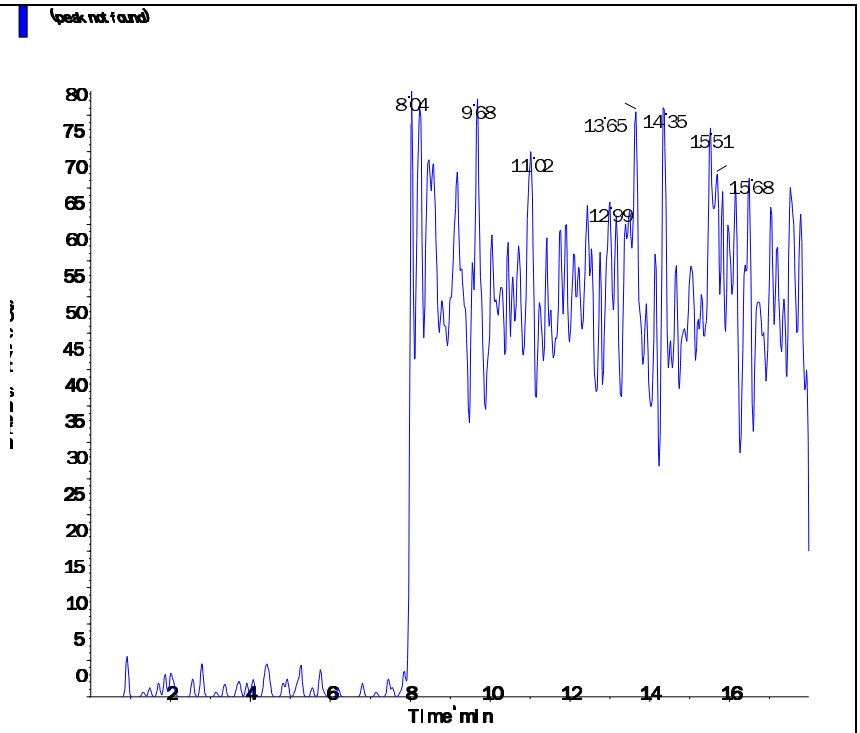

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Printed: 6/30/2016 3:30 PM

Data File	LM35520.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 5:55:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574701-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM35520.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 5:55:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.450e+05	9.03	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.010e+04	9.04	N/A	0.197
Perchlorate conf	1.130e+04	9.03	N/A	0.206

O18LP (Internal Standard)

RT (Exp. RT): 9.03(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

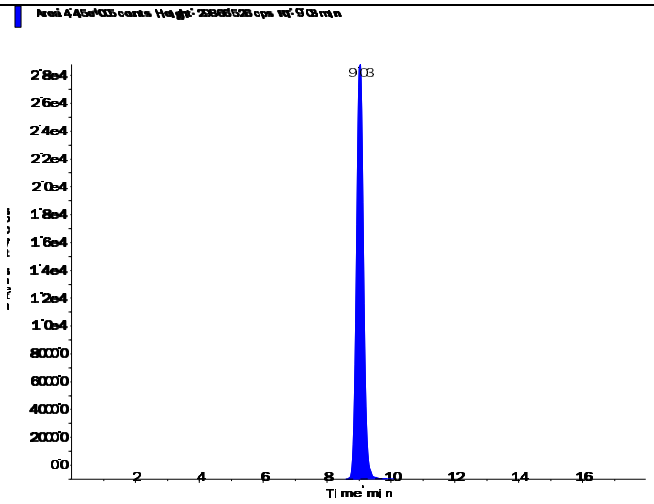

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.04 (9.84) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.068
Sample Type:	(Unknown)

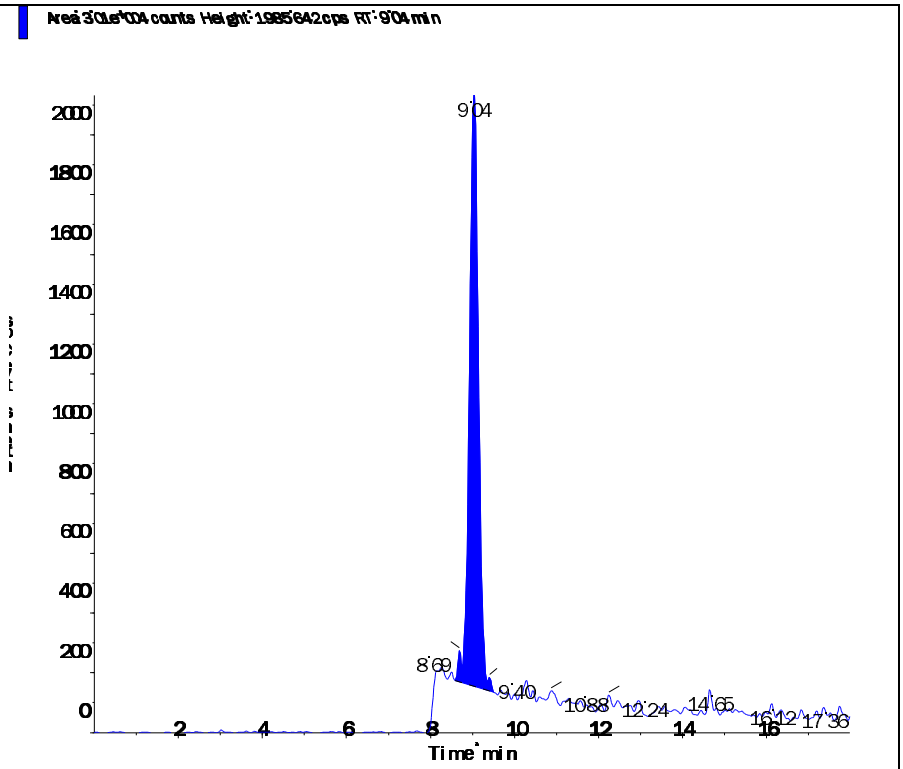

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.03 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

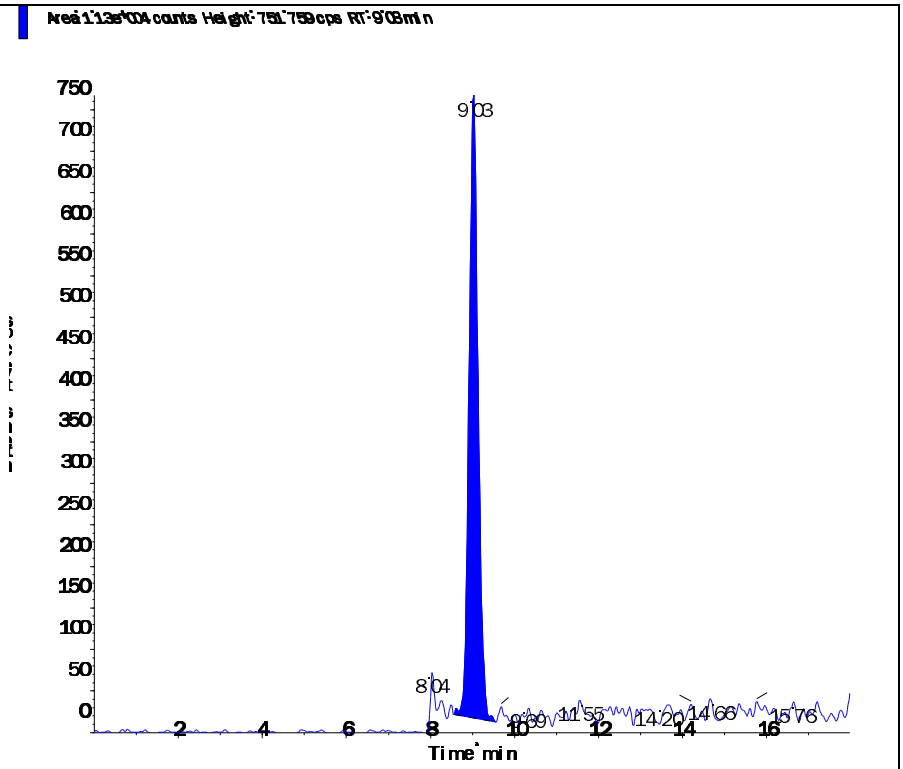

Printing Time: 2:10:45 PM
Printing Date: Thursday, June 30, 2016

Sample Name: "WG574701-01 MCT (0.2ug/L)" Sample ID: "WG574701-01" File: "LM35520.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index: 1
Sample Type: Unknown
Concentration: N/A
Calculated Conc: 0.223 ug/L
Acq. Date: 6/29/2016
Acq. Time: 5:55:30 PM

Modified: No
Proc. Algorithm: Analyst Classic
Bunching Factor: 2
Noise Threshold: 18.48 cps
Area Threshold: 92.40 cps
Num. Smooths: 5
Sep. Width: 0.20
Sep. Height: 0.01
Exp. Peak Ratio: 5.00
Exp. Adj. Ratio: 4.00
Exp. Val. Ratio: 3.00
RT Window: 30.000 sec
Expected RT: 9.84 min
Use Relative RT: Yes

Int. Type: Valley
Retention Time: 9.04 min
Area: 3.39e+004 counts
Height: 2055.212 cps
Start Time: 8.587 min
End Time: 9.579 min

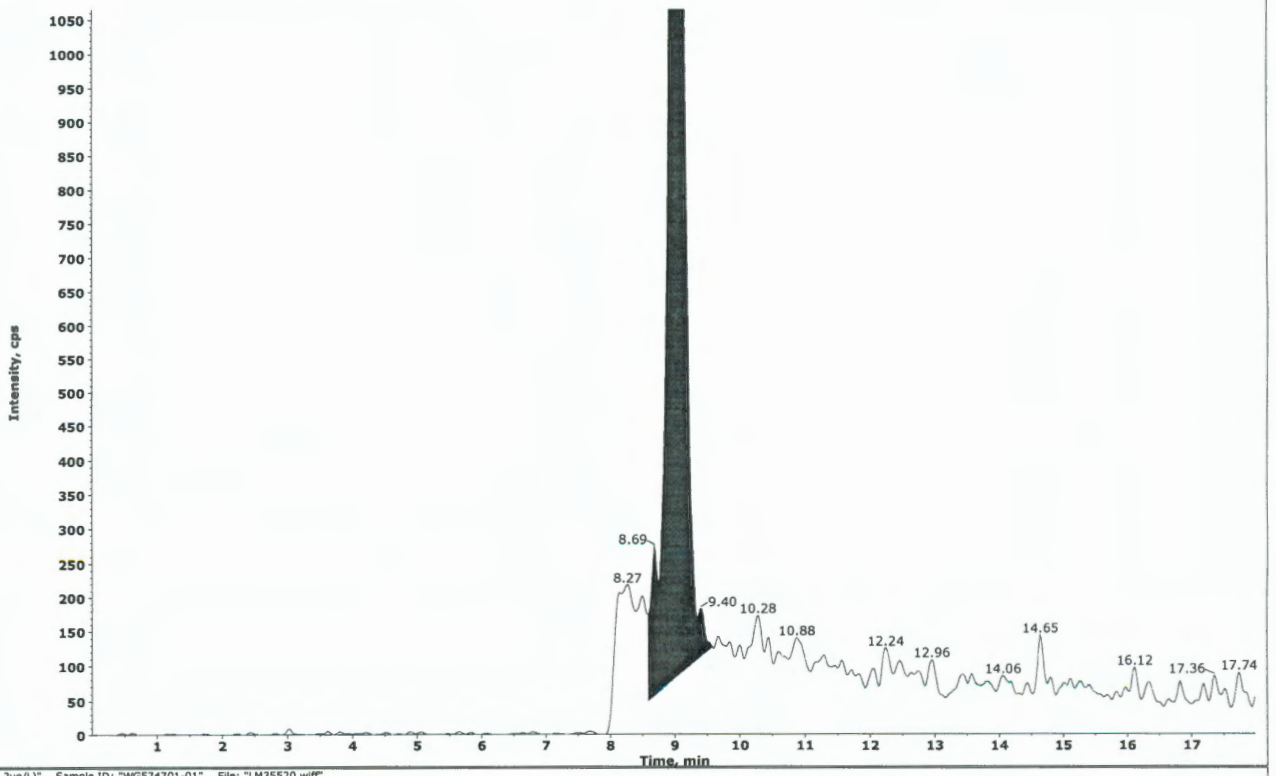

Sample Name: "WG574701-01 MCT (0.2ug/L)" Sample ID: "WG574701-01" File: "LM35520.wiff"
Peak Name: "Perchlorate conf" Mass(es): "100.8/85.2 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index: 1
Sample Type: Unknown
Concentration: N/A
Calculated Conc: 0.220 ug/L
Acq. Date: 6/29/2016
Acq. Time: 5:55:30 PM

Modified: No
Proc. Algorithm: Analyst Classic
Bunching Factor: 2
Noise Threshold: 7.14 cps
Area Threshold: 35.71 cps
Num. Smooths: 5
Sep. Width: 0.20
Sep. Height: 0.01
Exp. Peak Ratio: 5.00
Exp. Adj. Ratio: 4.00
Exp. Val. Ratio: 3.00
RT Window: 30.000 sec
Expected RT: 9.84 min
Use Relative RT: Yes

Int. Type: Valley
Retention Time: 9.03 min
Area: 1.20e+004 counts
Height: 760.490 cps
Start Time: 8.384 min
End Time: 9.538 min

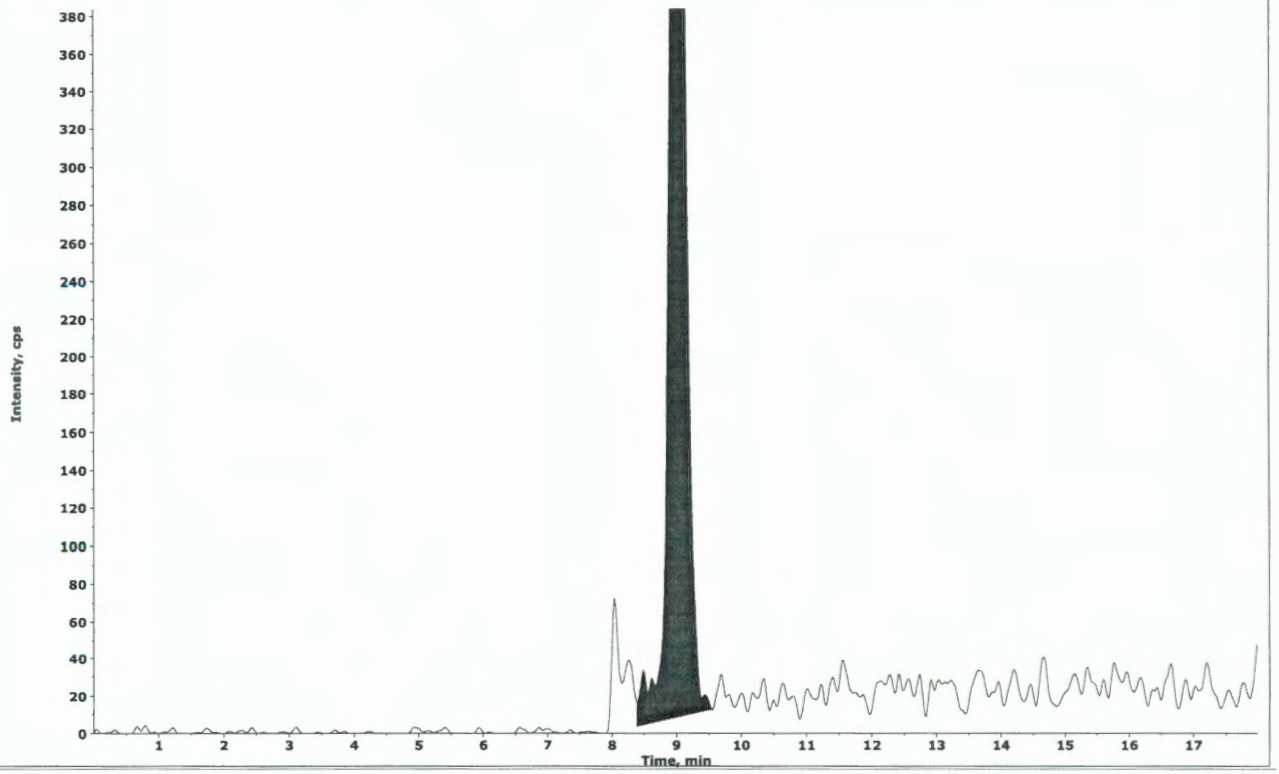

Collected by: N/A
Electronic Signature: no
Operator: lcms1

Printing Time: 2:12:53 PM
Printing Date: Thursday, June 30, 2016

Sample Name: "WG574701-01 MCT (0.2ug/L)" Sample ID: "WG574701-01" File: "LM35520.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.197 ug/L
Acq. Date:	6/29/2016
Acq. Time:	5:55:30 PM
Modified:	Yes
Proc. Algorithm:	Analyst Classic
Smoothing Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Exp. Width:	0.20
Exp. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Manual
Retention Time:	9.04 min
Area:	3.01e+004 counts
Height:	1985.642 cps
Start Time:	8.587 min
End Time:	9.498 min

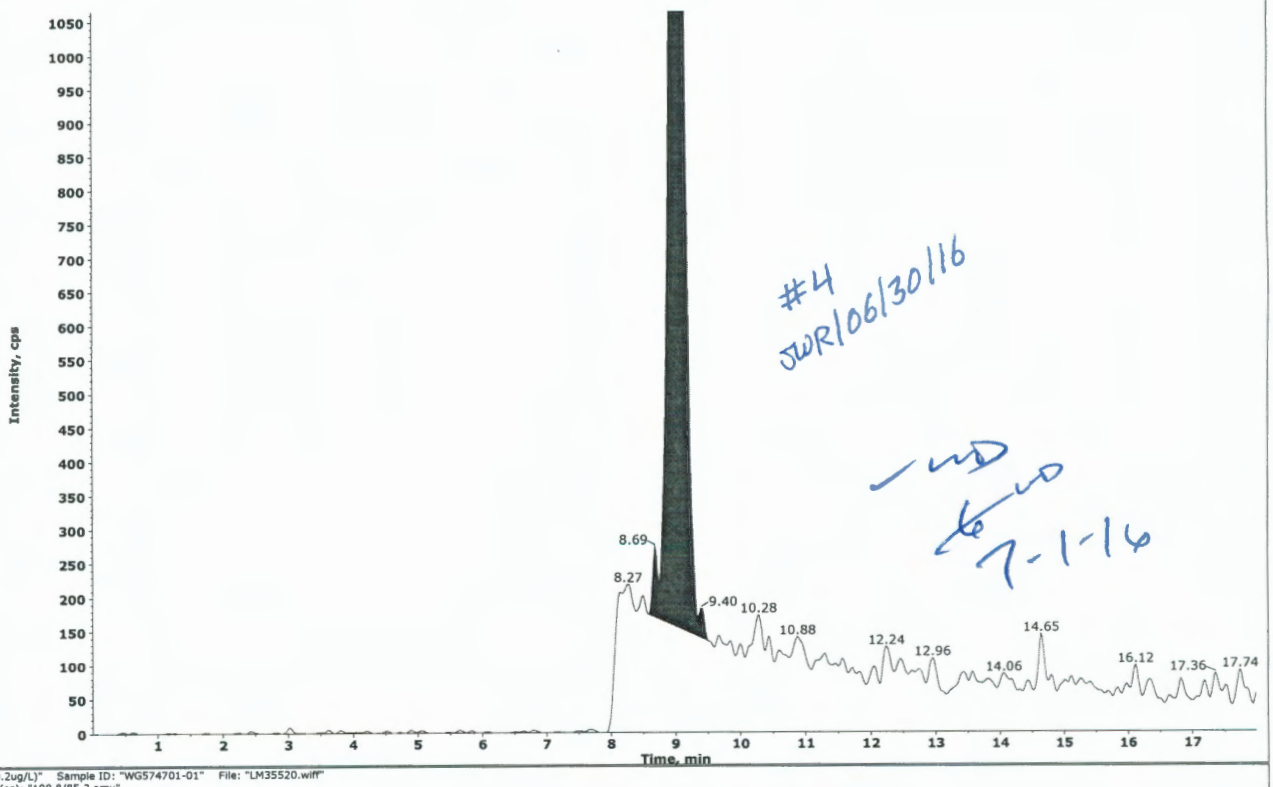

Sample Name: "WG574701-01 MCT (0.2ug/L)" Sample ID: "WG574701-01" File: "LM35520.wiff"
Peak Name: "Perchlorate conf" Mass(es): "100.8/85.2 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.206 ug/L
Acq. Date:	6/29/2016
Acq. Time:	5:55:30 PM
Modified:	Yes
Proc. Algorithm:	Analyst Classic
Smoothing Factor:	2
Noise Threshold:	7.14 cps
Area Threshold:	35.71 cps
Num. Smooths:	5
Exp. Width:	0.20
Exp. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Manual
Retention Time:	9.03 min
Area:	1.13e+004 counts
Height:	751.759 cps
Start Time:	8.566 min
End Time:	9.538 min

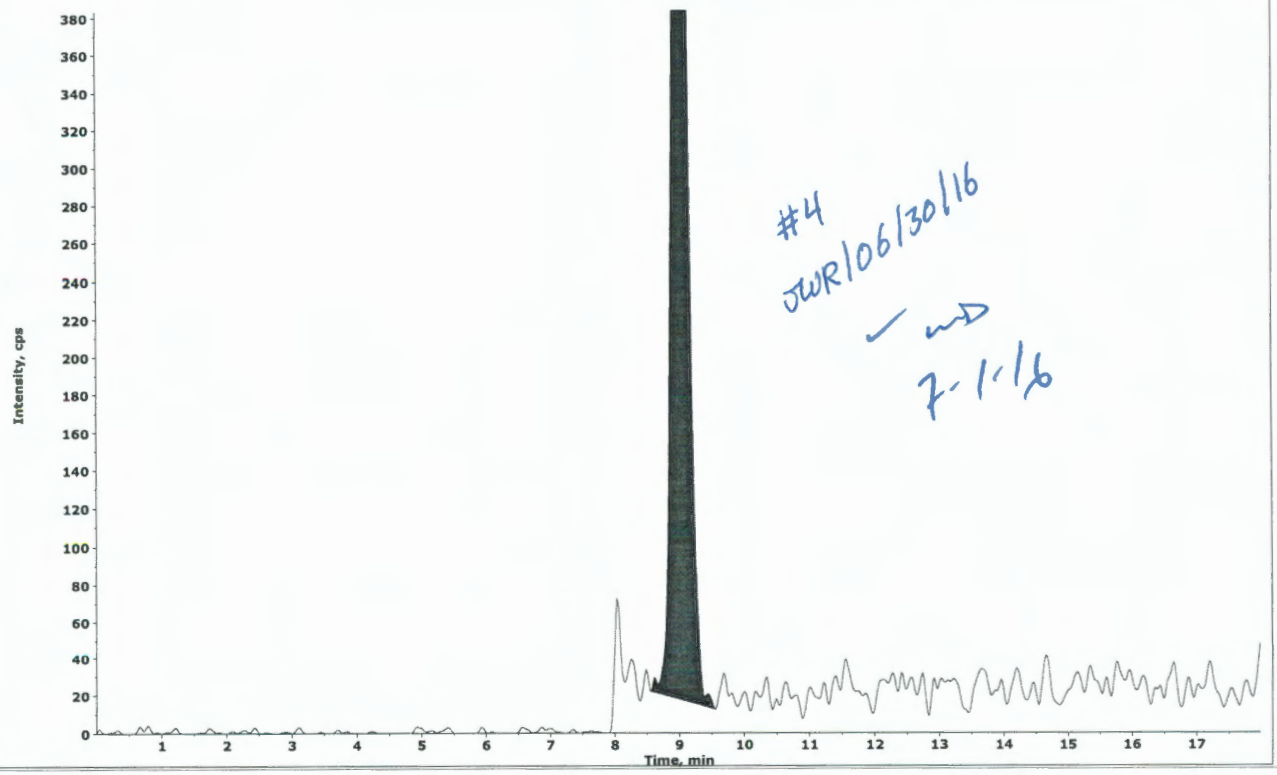

Collected by: N/A
Electronic Signature: no
Operator: lcms1

2.2.1.5 Raw QC Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:31 PM

Data File	LM35521.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 6:14:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574701-02 BLANK	**Injection Vial**	5.00
Data File	LM35521.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 6:14:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.650e+05	9.56	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.56(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

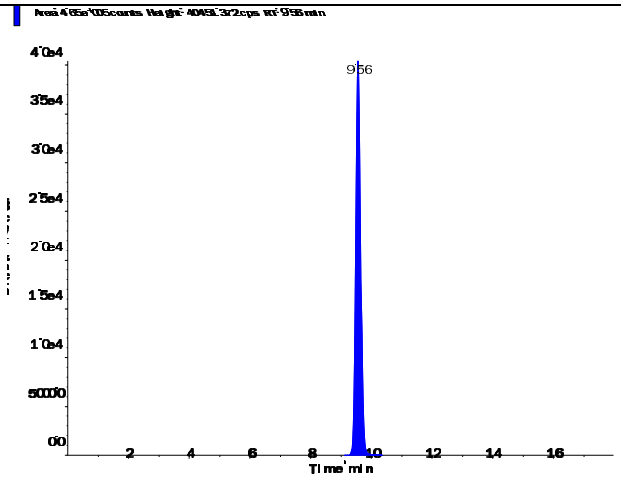

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:31 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

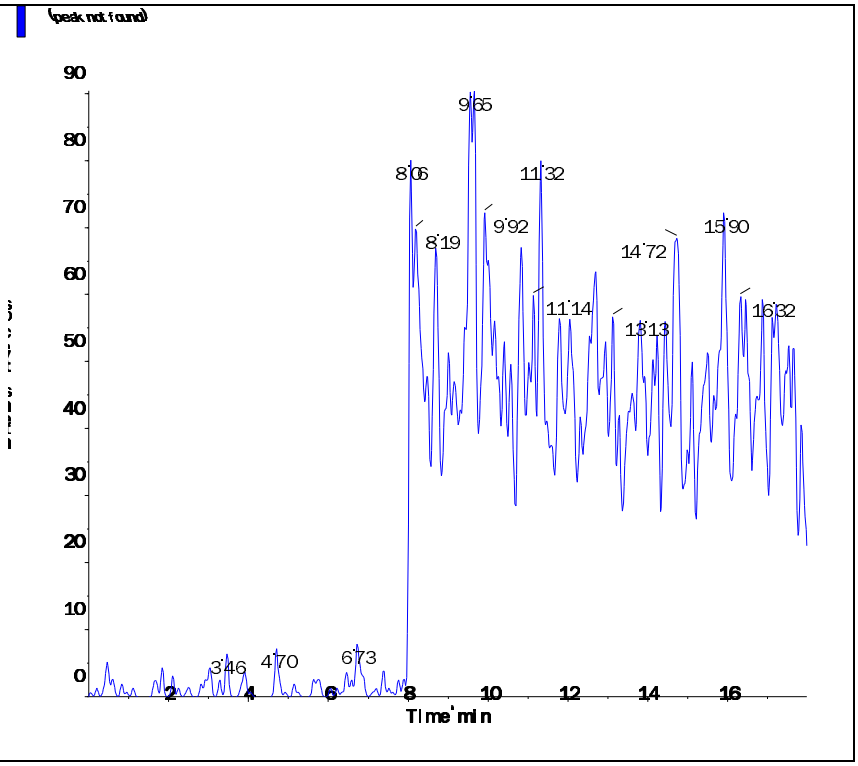

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

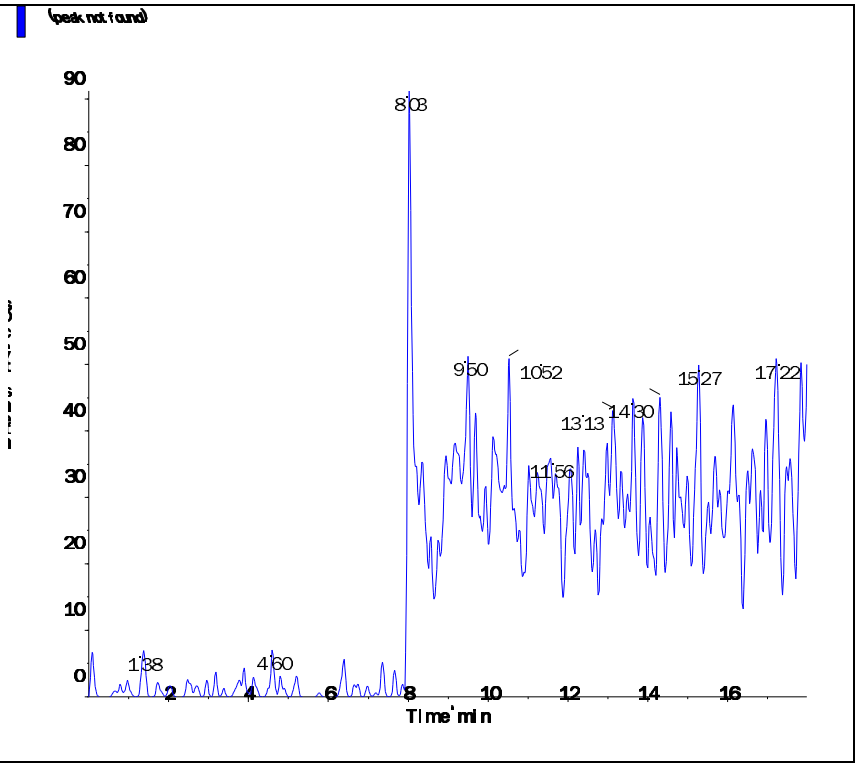

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/30/2016 3:31 PM

Data File	LM35522.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 6:33:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574701-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM35522.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 6:33:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.620e+05	9.58	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.180e+04	9.60	N/A	0.201
Perchlorate conf	1.130e+04	9.58	N/A	0.199

O18LP (Internal Standard)

RT (Exp. RT): 9.58(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

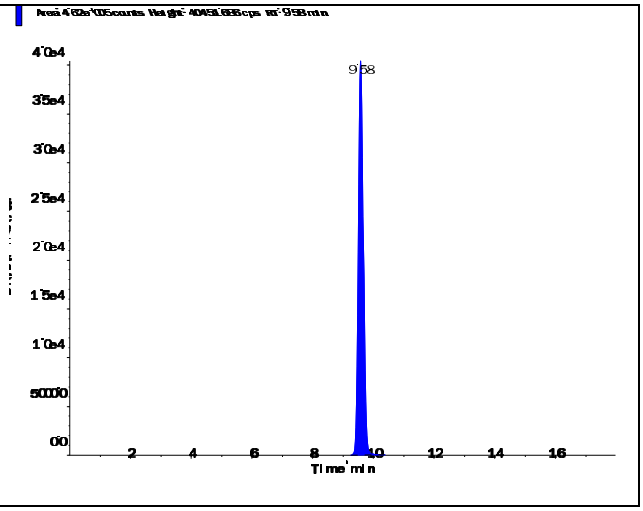

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.60 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

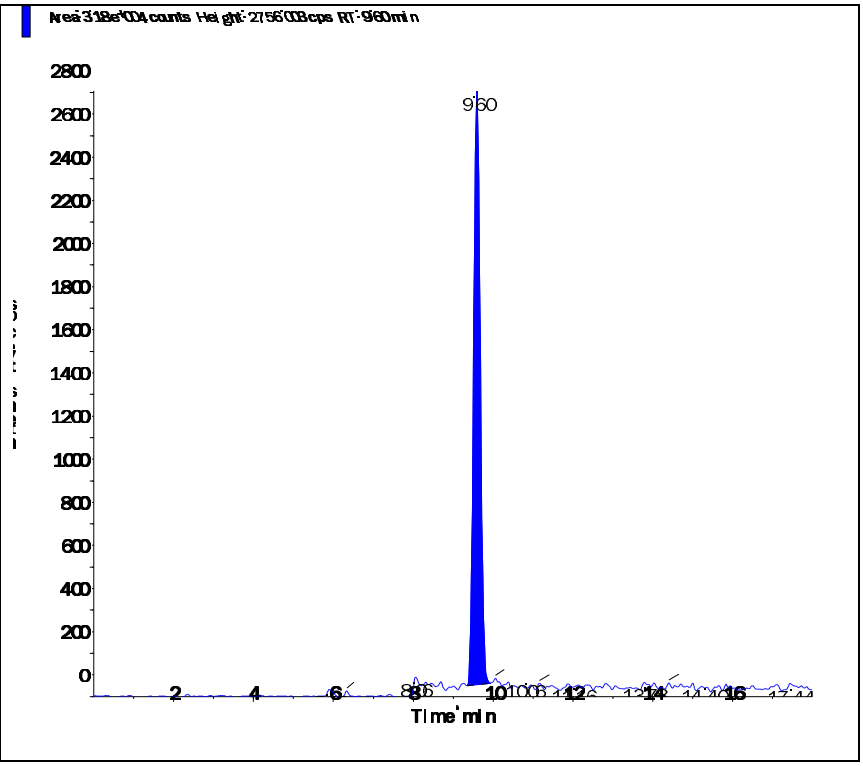

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.58 (9.84) min
Calculated conc:	0.199 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

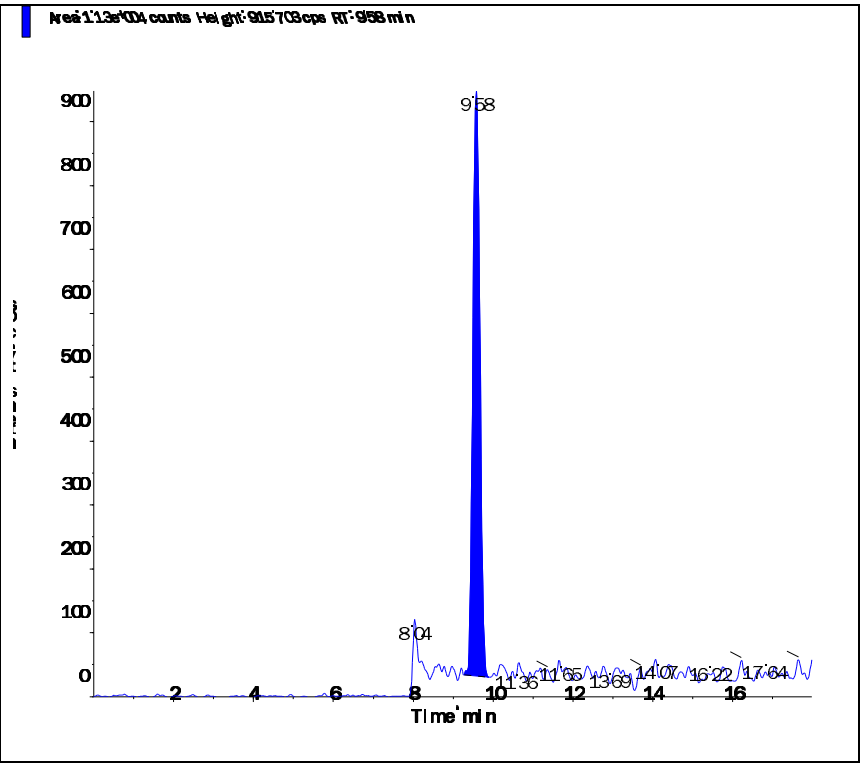

2.3 Metals Data

2.3.1 Metals I C P Data

2.3.1.1 Summary Data

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	C01-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:40
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 16:42
Workgroup #:	WG574276	**Analyst:**	JYH	**Run Date:**	06/27/2016 18:21
Collect Date:	06/17/2016 08:35	**Dilution:**	1	**File ID:**	T3.062716.182149
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.100	U	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	0.189	J	0.200	0.100	0.0500
Potassium, Total	7440-09-7	2.11		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	C01-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:40
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/28/2016 09:31
Workgroup #:	WG574276	**Analyst:**	JYH	**Run Date:**	06/28/2016 13:11
Collect Date:	06/17/2016 08:35	**Dilution:**	20	**File ID:**	T3.062816.131108
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	91.0		10.0	5.00	2.50
Magnesium, Total	7439-95-4	68.5		20.0	10.0	5.00
Sodium, Total	7440-23-5	334		20.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	C01FD-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:40
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 16:42
Workgroup #:	WG574276	**Analyst:**	JYH	**Run Date:**	06/27/2016 18:25
Collect Date:	06/17/2016 08:35	**Dilution:**	1	**File ID:**	T3.062716.182543
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.100	U	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	0.180	J	0.200	0.100	0.0500
Potassium, Total	7440-09-7	2.16		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	C01FD-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:40
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/28/2016 09:31
Workgroup #:	WG574276	**Analyst:**	JYH	**Run Date:**	06/28/2016 13:15
Collect Date:	06/17/2016 08:35	**Dilution:**	20	**File ID:**	T3.062816.131503
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	90.3		10.0	5.00	2.50
Magnesium, Total	7439-95-4	66.6		20.0	10.0	5.00
Sodium, Total	7440-23-5	336		20.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-11	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW19F-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:40
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 16:42
Workgroup #:	WG574276	**Analyst:**	JYH	**Run Date:**	06/27/2016 18:29
Collect Date:	06/17/2016 13:10	**Dilution:**	1	**File ID:**	T3.062716.182935
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Beryllium, Total	7440-41-7	0.00575	J	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	18.9		0.500	0.250	0.125
Magnesium, Total	7439-95-4	9.83		1.00	0.500	0.250
Potassium, Total	7440-09-7	3.84		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	20.5		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-11	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW19F-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:40
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/28/2016 09:31
Workgroup #:	WG574276	**Analyst:**	JYH	**Run Date:**	06/28/2016 13:22
Collect Date:	06/17/2016 13:10	**Dilution:**	20	**File ID:**	T3.062816.132234
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	35.6		4.00	2.00	1.00
Iron, Total	7439-89-6	50.0		4.00	2.00	1.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-13	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW18F-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:40
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 16:42
Workgroup #:	WG574276	**Analyst:**	JYH	**Run Date:**	06/27/2016 18:33
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	T3.062716.183322
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	1.91		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	14.1		0.500	0.250	0.125
Magnesium, Total	7439-95-4	6.42		1.00	0.500	0.250
Potassium, Total	7440-09-7	2.19		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-13	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW18F-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:40
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/28/2016 09:31
Workgroup #:	WG574276	**Analyst:**	JYH	**Run Date:**	06/28/2016 13:26
Collect Date:	06/17/2016 14:20	**Dilution:**	20	**File ID:**	T3.062816.132628
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	12.6		4.00	2.00	1.00
Sodium, Total	7440-23-5	249		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-15	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW18FMS-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:40
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 16:42
Workgroup #:	WG574276	**Analyst:**	JYH	**Run Date:**	06/27/2016 18:37
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	T3.062716.183713
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	10.7		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0300		0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	19.7		0.500	0.250	0.125
Magnesium, Total	7439-95-4	12.6		1.00	0.500	0.250
Potassium, Total	7440-09-7	32.4		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.226		0.0200	0.0100	0.00500

Certificate of Analysis

Sample #:	L16061068-15	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW18FMS-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:40
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/28/2016 09:31
Workgroup #:	WG574276	**Analyst:**	JYH	**Run Date:**	06/28/2016 13:30
Collect Date:	06/17/2016 14:20	**Dilution:**	20	**File ID:**	T3.062816.133023
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	15.1		4.00	2.00	1.00
Sodium, Total	7440-23-5	281		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-17	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW18FMSD-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:40
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 16:42
Workgroup #:	WG574276	**Analyst:**	JYH	**Run Date:**	06/27/2016 18:40
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	T3.062716.184051
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	12.8		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0287		0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	19.2		0.500	0.250	0.125
Magnesium, Total	7439-95-4	12.1		1.00	0.500	0.250
Potassium, Total	7440-09-7	31.0		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.215		0.0200	0.0100	0.00500

Certificate of Analysis

Sample #:	L16061068-17	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW18FMSD-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:40
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/28/2016 09:31
Workgroup #:	WG574276	**Analyst:**	JYH	**Run Date:**	06/28/2016 13:34
Collect Date:	06/17/2016 14:20	**Dilution:**	20	**File ID:**	T3.062816.133415
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	19.5		4.00	2.00	1.00
Sodium, Total	7440-23-5	264		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.1.2 QC Summary Data

Example 6010 Calculations
Thermo Scientific iCAP

1.0 Initial Calibration (ICAL) Parameters
For a multi-point calibration, the system performs linear regression from data consisting of a blank and four standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG573869
Analyst: ERP
Spike Analyst: ERP
Run Date: 06/23/2016 09:40
Method: 3015
Balance: BAL019
Instrument: MW-4
Instrument Start: 06/23/2016 10:23

SOP: ME407 Revison 19
Spike Solution: STD76576
Spike Witness: REK
HNO3 Lot #: COA18905
HCL Lot #: COA18769
40 & 50 ML. DIGESTION TU COA18987
ICP Filters- fisher-Lot# RGT35619

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG573869-02	BLANK	1	40 mL	50 mL	206.17 g	206.164 g		
2	WG573699-01	FBLK1	17	5 mL	50 mL	207.039 g	207.021 g		
3	WG573869-03	LCS	1	40 mL	50 mL	210.697 g	210.681 g	5 mL	
4	L16061068-04	SAMP	1	40 mL	50 mL	203.72 g	203.693 g		07/01/16
5	L16061068-05	SAMP	1	40 mL	50 mL	206.562 g	206.548 g		07/01/16
6	L16061068-11	SAMP	1	40 mL	50 mL	209.061 g	209.048 g		07/01/16
7	WG573869-01	REF	1	40 mL	50 mL	208.529 g	208.513 g		
8	L16061068-13	RS04	1	40 mL	50 mL	208.529 g	208.513 g		07/01/16
9	WG573869-04	MS	1	40 mL	50 mL	209.957 g	209.936 g	5 mL	
10	L16061068-15	MS04	1	40 mL	50 mL	209.957 g	209.936 g	5 mL	07/01/16
11	WG573869-05	MSD	1	40 mL	50 mL	211.799 g	211.786 g	5 mL	
12	L16061068-17	SD04	1	40 mL	50 mL	211.799 g	211.786 g	5 mL	07/01/16
13	L16061130-01	SAMP	1	40 mL	50 mL	207.57 g	207.559 g		07/05/16
14	L16061130-02	SAMP	1	40 mL	50 mL	206.701 g	206.688 g		07/05/16
15	L16061130-03	SAMP	1	40 mL	50 mL	205.872 g	205.863 g		07/05/16
16	L16061130-04	SAMP	1	40 mL	50 mL	208.397 g	208.37 g		07/05/16
17	L16061130-05	SAMP	1	40 mL	50 mL	206.702 g	206.676 g		07/05/16
18	L16061161-01	SAMP	1	40 mL	50 mL	207.423 g	207.406 g		07/01/16
19	L16061161-02	SAMP	1	40 mL	50 mL	205.856 g	205.838 g		07/01/16
20	L16061161-03	SAMP	1	40 mL	50 mL	208.076 g	208.055 g		07/01/16
21	L16061161-04	SAMP	1	40 mL	50 mL	205.022 g	205 g		07/01/16
22	L16061161-05	SAMP	1	40 mL	50 mL	204.502 g	204.478 g		07/01/16
23	L16061161-06	SAMP	1	40 mL	50 mL	208.227 g	208.215 g		07/01/16
24	L16061164-11	SAMP	17	5 mL	50 mL	205.786 g	205.759 g		06/28/16
25	L16061190-01	SAMP	1	40 mL	50 mL	206.107 g	206.088 g		06/28/16
26	L16061190-02	SAMP	1	40 mL	50 mL	208.256 g	208.239 g		06/28/16
27	L16061252-01	SAMP	1	40 mL	50 mL	206.193 g	206.172 g		07/01/16

L16061068-15	FILTERED DIGESTATE
L16061068-17	FILTERED DIGESTATE
L16061068-11	FILTERED DIGESTATE
L16061068-13	FILTERED DIGESTATE
WG573869-01	FILTERED DIGESTATE
WG573869-04	FILTERED DIGESTATE
WG573869-05	FILTERED DIGESTATE
L16061190-01	FILTERED DIGESTATE

MW_DIG - Modified 09/30/2009
PDF ID: 4820401
Report generated: 06/23/2016 11:03

Microbac Laboratories Inc.
Microwave Digestion Log

L16061190-02	FILTERED DIGESTATE	SOP:

Spike Solution:

Analyst: Erin Potter

Spike Witness:

Reviewer:

Method:

Balance:

Instrument:

Instrument Start:

MW_DIG - Modified 09/30/2009
PDF ID: 4820401
Report generated: 06/23/2016 11:03

TCLP Non-Volatile

Analyst(s): CPD
Date: 6/22/16
Filter Lot #: 9486030
Microbac SOP: TCLP 01 Rev #: 12

Analyst / Date		Analyst / Date	
CPD 6/22/16		CPD 6/23/16	
Time On	Temp On °C	Time Off	Temp Off °C
1457	23.1	0812	21.7

Agitator Speed 30 ± 2 rpm ☑

Jug #	Sample #	Tests	Method	Fluid #	Matrix *	% Solid	Pretest pH Initial	Pretest pH Final	Int. Wt. (g)	Fluid Vol. (mL)	Final extract pH
D	06-1191-01	9056	1312	SPLP FI-63	S	100	NA	NA	25.57	511	9.82
	-02								25.51	510	10.98
	-03								25.61	512	9.12
	-04								25.95	519	9.83
	-05								25.81	516	10.48
	-06								25.77	515	9.88
	-07								25.76	515	10.66
	-08								25.68	514	10.66
	-09								25.56	511	11.01
67	06-1164-11	ME, SV, Pest, Herb	1311	FI-182			7.27	3.78	100.99	2020	5.15
NA	FBIK1	ME, SV, Pest, Herb	1311	FI-182	NA	NA	NA	NA	100	100	4.91
NA	SPLP FI	9056	1312	SPLP FI-63	NA	NA	NA	NA	100	100	4.18

CPD 6/22/16

*Matrix Code: (S = solid, sand, soil or sludge) (P = paint) (O = organic) (W = water or aqueous waste)
D = Disposable plastic jug
TCLP Pretest weight will be 5.0 g (± 0.1) unless otherwise noted.
Temperature shall be maintained at 23° ± 2 for 18 ± 2 hours unless otherwise noted.

Comments: N/A

Peer Review By: Allie Alfred 06/23/2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062716T3.5R.TXT

Analyst1: JYH Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 573560,574476

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.062716.162728	WG574461-01	Calibration Point		1		06/27/16 16:27
2	T3.062716.163125	WG574461-02	Calibration Point		1		06/27/16 16:31
3	T3.062716.163522	WG574461-03	Calibration Point		1		06/27/16 16:35
4	T3.062716.163919	WG574461-04	Calibration Point		1		06/27/16 16:39
5	T3.062716.164256	WG574461-05	Calibration Point		1		06/27/16 16:42
6	T3.062716.164633	WG574461-06	Initial Calibration Verification		1		06/27/16 16:46
7	T3.062716.165010	WG574461-07	Initial Calib Blank		1		06/27/16 16:50
8	T3.062716.165407	WG574461-08	Low Level Initial Calibration V		1		06/27/16 16:54
9	T3.062716.165800	WG574461-09	Interference Check		1		06/27/16 16:58
10	T3.062716.170150	WG574461-10	Interference Check		1		06/27/16 17:01
11	T3.062716.170532	WG574461-11	CCV		1		06/27/16 17:05
12	T3.062716.170909	WG574461-12	CCB		1		06/27/16 17:09
13	T3.062716.171308	WG572929-02	Method/Prep Blank	40/50	1		06/27/16 17:13
14	T3.062716.171707	WG572929-03	Laboratory Control S	40/50	1		06/27/16 17:17
15	T3.062716.172046	WG572929-01	Reference Sample		1	L16060806-01	06/27/16 17:20
16	T3.062716.172440	WG572929-04	Matrix Spike	40/50	1	L16060806-01	06/27/16 17:24
17	T3.062716.172819	WG572929-05	Matrix Spike Duplica	40/50	1	L16060806-01	06/27/16 17:28
18	T3.062716.173158	L16060729-01	A09-MW10-Y1S2	40/50	1		06/27/16 17:31
19	T3.062716.173552	L16060729-02	A09-MW11-Y1S2	40/50	1		06/27/16 17:35
20	T3.062716.173946	L16060729-03	A09-MW12-Y1S2	40/50	1		06/27/16 17:39
21	T3.062716.174337	L16060643-03	15-13-8 S3	40/50	1		06/27/16 17:43
22	T3.062716.174728	WG573560-04	Serial Dilution		5	L16060643-03	06/27/16 17:47
23	T3.062716.175126	WG574461-13	CCV		1		06/27/16 17:51
24	T3.062716.175503	WG574461-14	CCB		1		06/27/16 17:55
25	T3.062716.175902	WG573560-03	Post Digestion Spike		1	L16060643-03	06/27/16 17:59
26	T3.062716.180241	WG574461-15	CCV		1		06/27/16 18:02
27	T3.062716.180618	WG574461-16	CCB		1		06/27/16 18:06
28	T3.062716.181016	WG573869-02	Method/Prep Blank	40/50	1		06/27/16 18:10
29	T3.062716.181413	WG573869-03	Laboratory Control S	40/50	1		06/27/16 18:14
30	T3.062716.181752	WG573699-01	Fluid Blank 1		1		06/27/16 18:17
31	T3.062716.182149	L16061068-04	C01-061716	40/50	1		06/27/16 18:21
32	T3.062716.182543	L16061068-05	C01FD-061716	40/50	1		06/27/16 18:25
33	T3.062716.182935	L16061068-11	MW19F-061716	40/50	1		06/27/16 18:29
34	T3.062716.183322	L16061068-13	MW18F-061716		1	WG573869-01	06/27/16 18:33

Page: 1 Approved: June 29, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062716T3.5R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573560,574476

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.062716.183713	L16061068-15	MW18FMS-061716	40/50	1	WG573869-04	06/27/16 18:37
36	T3.062716.184051	L16061068-17	MW18FMSD-061716	40/50	1	WG573869-05	06/27/16 18:40
37	T3.062716.184428	L16061130-01	MW-23-012	40/50	1		06/27/16 18:44
38	T3.062716.184824	WG574461-17	CCV		1		06/27/16 18:48
39	T3.062716.185157	WG574461-18	CCB		1		06/27/16 18:51
40	T3.062716.185555	L16061130-02	MW-23-003	40/50	1		06/27/16 18:55
41	T3.062716.185947	L16061130-03	MW-23-013	40/50	1		06/27/16 18:59
42	T3.062716.190341	L16061130-04	MW-23-001	40/50	1		06/27/16 19:03
43	T3.062716.190734	L16061130-05	EB (1) WATER A	40/50	1		06/27/16 19:07
44	T3.062716.191132	L16061161-01	062116-PS-CB021	40/50	1		06/27/16 19:11
45	T3.062716.191527	L16061161-02	062116-PS-CB021	40/50	1		06/27/16 19:15
46	T3.062716.191921	L16061161-03	062116-PS-OF2BS	40/50	1		06/27/16 19:19
47	T3.062716.192313	L16061161-04	062116-PS-OF2BS	40/50	1		06/27/16 19:23
48	T3.062716.192706	L16061161-05	062116-PS-CB022	40/50	1		06/27/16 19:27
49	T3.062716.193100	L16061161-06	062116-PS-CB022	40/50	1		06/27/16 19:31
50	T3.062716.193453	WG574461-19	CCV		1		06/27/16 19:34
51	T3.062716.193831	WG574461-20	CCB		1		06/27/16 19:38
52	T3.062716.194227	L16061190-01	USDA / 04/07/16	40/50	1		06/27/16 19:42
53	T3.062716.194623	L16061190-02	USDA / 05/06/16	40/50	1		06/27/16 19:46
54	T3.062716.195012	L16061252-01	35006822000-W-1-06-22-16	40/50	1		06/27/16 19:50
55	T3.062716.195404	L16061164-11	16F1336-11	5/50	1		06/27/16 19:54
56	T3.062716.195756	WG574276-01	Post Digestion Spike		1	L16061130-05	06/27/16 19:57
57	T3.062716.200134	WG574276-02	Serial Dilution		5	L16061130-05	06/27/16 20:01
58	T3.062716.200528	WG574276-02	Serial Dilution		25	L16061130-05	06/27/16 20:05
59	T3.062716.200924	WG574461-21	CCV		1		06/27/16 20:09
60	T3.062716.201301	WG574461-22	CCB		1		06/27/16 20:13
61	T3.062716.201659	WG574461-23	Low Level Continuing Calibra		1		06/27/16 20:16

Page: 2 Approved: June 29, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062816T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574216,574276,574350,574351,574353,574357,574358

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.062816.091620	WG574512-01	Calibration Point		1		06/28/16 09:16
2	T3.062816.092018	WG574512-02	Calibration Point		1		06/28/16 09:20
3	T3.062816.092413	WG574512-03	Calibration Point		1		06/28/16 09:24
4	T3.062816.092811	WG574512-04	Calibration Point		1		06/28/16 09:28
5	T3.062816.093148	WG574512-05	Calibration Point		1		06/28/16 09:31
6	T3.062816.093524	WG574512-06	Initial Calibration Verification		1		06/28/16 09:35
7	T3.062816.093901	WG574512-07	Initial Calib Blank		1		06/28/16 09:39
8	T3.062816.094252	WG574512-08	Low Level Initial Calibration V		1		06/28/16 09:42
9	T3.062816.094645	WG574512-09	Interference Check		1		06/28/16 09:46
10	T3.062816.095036	WG574512-10	Interference Check		1		06/28/16 09:50
11	T3.062816.095416	WG574512-11	CCV		1		06/28/16 09:54
12	T3.062816.095753	WG574512-12	CCB		1		06/28/16 09:57
13	T3.062816.100445	L16060986-10	MW-03-11	40/50	1		06/28/16 10:04
14	T3.062816.100840	L16060986-12	MW-01-01	40/50	1		06/28/16 10:08
15	T3.062816.101220	L16060986-14	MW-03-09	40/50	1		06/28/16 10:12
16	T3.062816.101612	L16060986-16	MW-01-08	40/50	1		06/28/16 10:16
17	T3.062816.102001	L16060986-18	MW-03-06	40/50	1		06/28/16 10:20
18	T3.062816.102355	L16060986-20	MW-03-05	40/50	1		06/28/16 10:23
19	T3.062816.102749	WG573530-01	Reference Sample		1	L16060986-22	06/28/16 10:27
20	T3.062816.103142	WG573530-02	Reference Sample		1	L16060986-24	06/28/16 10:31
21	T3.062816.103535	L16060986-26	MW-01-02	40/50	1		06/28/16 10:35
22	T3.062816.103931	WG574512-13	CCV		1		06/28/16 10:39
23	T3.062816.104308	WG574512-14	CCB		1		06/28/16 10:43
24	T3.062816.104705	L16060986-28	DUP 1	40/50	1		06/28/16 10:47
25	T3.062816.105057	L16060986-30	DUP 2	40/50	1		06/28/16 10:50
26	T3.062816.105450	WG573530-06	Matrix Spike	40/50	1	L16060986-22	06/28/16 10:54
27	T3.062816.105829	WG573530-07	Matrix Spike Duplica	40/50	1	L16060986-22	06/28/16 10:58
28	T3.062816.110208	WG573530-08	Matrix Spike	40/50	1	L16060986-24	06/28/16 11:02
29	T3.062816.110547	WG573530-09	Matrix Spike Duplica	40/50	1	L16060986-24	06/28/16 11:05
30	T3.062816.110925	L16060986-40	EQUIP BLANK 1	40/50	1		06/28/16 11:09
31	T3.062816.111320	L16060986-42	EQUIP BLANK 2	40/50	1		06/28/16 11:13
32	T3.062816.111715	WG574512-15	CCV		1		06/28/16 11:17
33	T3.062816.112053	WG574512-16	CCB		1		06/28/16 11:20
34	T3.062816.112448	L16061190-01	USDA / 04/07/16		2		06/28/16 11:24

Page: 1 Approved: June 30, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062816T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574216,574276,574350,574351,574353,574357,574358

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.062816.112835	L16061190-02	USDA / 05/06/16		1		06/28/16 11:28
36	T3.062816.113223	L16061130-02	MW-23-003		5		06/28/16 11:32
37	T3.062816.113618	L16061130-03	MW-23-013		5		06/28/16 11:36
38	T3.062816.114012	L16061130-04	MW-23-001		5		06/28/16 11:40
39	T3.062816.114405	L16061130-05	EB (1) WATER A		1		06/28/16 11:44
40	T3.062816.114802	L16061164-11	16F1336-11		1		06/28/16 11:48
41	T3.062816.115153	L16061252-01	35006822000-W-1-06-22-16		1		06/28/16 11:51
42	T3.062816.115545	WG574476-01	L1606125201PS		1		06/28/16 11:55
43	T3.062816.115924	WG574476-02	L1606125201SDL		5		06/28/16 11:59
44	T3.062816.120319	WG574512-17	CCV		1		06/28/16 12:03
45	T3.062816.120656	WG574512-18	CCV		1		06/28/16 12:06
46	T3.062816.121034	L16061068-04	C01-061716		20		06/28/16 12:10
47	T3.062816.121735	WG574512-19	CCV		1		06/28/16 12:17
48	T3.062816.122110	WG574512-20	CCB		1		06/28/16 12:21
49	T3.062816.122507	L16061190-01	USDA / 04/07/16	40/50	2		06/28/16 12:25
50	T3.062816.122854	L16061190-02	USDA / 05/06/16	40/50	2		06/28/16 12:28
51	T3.062816.123240	L16061130-02	MW-23-003	40/50	5		06/28/16 12:32
52	T3.062816.123633	L16061130-03	MW-23-013	40/50	5		06/28/16 12:36
53	T3.062816.124025	L16061130-04	MW-23-001	40/50	5		06/28/16 12:40
54	T3.062816.124418	L16061130-05	EB (1) WATER A	40/50	1		06/28/16 12:44
55	T3.062816.124814	L16061164-11	16F1336-11	5/50	1		06/28/16 12:48
56	T3.062816.125207	L16061252-01	35006822000-W-1-06-22-16	40/50	1		06/28/16 12:52
57	T3.062816.125559	WG574276-01	Post Digestion Spike		1	L16061130-05	06/28/16 12:55
58	T3.062816.125938	WG574276-02	Serial Dilution		5	L16061130-05	06/28/16 12:59
59	T3.062816.130335	WG574512-21	CCV		1		06/28/16 13:03
60	T3.062816.130712	WG574512-22	CCB		1		06/28/16 13:07
61	T3.062816.131108	L16061068-04	C01-061716	40/50	20		06/28/16 13:11
62	T3.062816.131503	L16061068-05	C01FD-061716	40/50	20		06/28/16 13:15
63	T3.062816.131855	WG574276-01	Post Digestion Spike		1	L16061130-05	06/28/16 13:18
64	T3.062816.132234	L16061068-11	MW19F-061716	40/50	20		06/28/16 13:22
65	T3.062816.132628	WG573869-01	Reference Sample		20	L16061068-13	06/28/16 13:26
66	T3.062816.133023	WG573869-04	Matrix Spike	40/50	20	L16061068-13	06/28/16 13:30
67	T3.062816.133415	WG573869-05	Matrix Spike Duplica	40/50	20	L16061068-13	06/28/16 13:34
68	T3.062816.133809	WG574512-23	CCV		1		06/28/16 13:38

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Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062816T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574216,574276,574350,574351,574353,574357,574358

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.062816.134146	WG574512-24	CCB		1		06/28/16 13:41
70	T3.062816.134543	WG574512-25	Low Level Continuing Calibra		1		06/28/16 13:45
71	T3.062816.134937	WG573828-02	Method/Prep Blank	40/50	1		06/28/16 13:49
72	T3.062816.135333	WG573828-03	Laboratory Control S	40/50	1		06/28/16 13:53
73	T3.062816.135712	L16061142-01	18WW20-062016	40/50	1		06/28/16 13:57
74	T3.062816.140107	L16061142-03	18WW19F-062016	40/50	1		06/28/16 14:01
75	T3.062816.140501	L16061142-05	18WW19FFD-062016	40/50	1		06/28/16 14:05
76	T3.062816.140856	WG573828-01	Reference Sample		1	L16061177-01	06/28/16 14:08
77	T3.062816.141250	WG573828-04	Matrix Spike	40/50	1	L16061177-01	06/28/16 14:12
78	T3.062816.141630	WG573828-05	Matrix Spike Duplica	40/50	1	L16061177-01	06/28/16 14:16
79	T3.062816.142009	L16061185-01	2203-123 W1 (B)	40/50	1		06/28/16 14:20
80	T3.062816.142402	L16061185-02	2203-123 W1 (B)	40/50	1		06/28/16 14:24
81	T3.062816.142755	WG574512-26	CCV		1		06/28/16 14:27
82	T3.062816.143132	WG574512-27	CCB		1		06/28/16 14:31
83	T3.062816.143530	L16061185-03	2203-123 W1 (FF)	40/50	1		06/28/16 14:35
84	T3.062816.143922	L16061185-04	2203-123 W1 (FF)	40/50	1		06/28/16 14:39
85	T3.062816.144315	L16061228-01	SS007MWOB03-007	40/50	1		06/28/16 14:43
86	T3.062816.144709	L16061228-02	SS007MWN751-007	40/50	1		06/28/16 14:47
87	T3.062816.145057	L16061228-03	SS007MWN753-007	40/50	1		06/28/16 14:50
88	T3.062816.145448	L16061231-01	FT002MW0205-007	40/50	1		06/28/16 14:54
89	T3.062816.145841	L16061237-01	SS007MWN769-007	40/50	1		06/28/16 14:58
90	T3.062816.150234	L16061237-02	SS007MWN740-007	40/50	1		06/28/16 15:02
91	T3.062816.150626	L16061237-03	SS007MWN740-007 DUP	40/50	1		06/28/16 15:06
92	T3.062816.151019	L16061237-04	SS007MWN738-007	40/50	1		06/28/16 15:10
93	T3.062816.151411	WG574512-28	CCV		1		06/28/16 15:14
94	T3.062816.151749	WG574512-29	CCB		1		06/28/16 15:17
95	T3.062816.152146	L16061237-05	SS007MWN741-007	40/50	1		06/28/16 15:21
96	T3.062816.152539	L16061237-06	SS007MWNOB09-007	40/50	1		06/28/16 15:25
97	T3.062816.152932	L16061238-01	LF003MW0306-007	40/50	1		06/28/16 15:29
98	T3.062816.153324	L16061238-02	LF003MW0307-007	40/50	1		06/28/16 15:33
99	T3.062816.153717	WG574350-01	Post Digestion Spike		1	L16061238-01	06/28/16 15:37
100	T3.062816.154055	WG574350-02	Serial Dilution		5	L16061238-01	06/28/16 15:40
101	T3.062816.154446	WG574350-02	Serial Dilution		25	L16061238-01	06/28/16 15:44
102	T3.062816.154842	WG574512-30	CCV		1		06/28/16 15:48

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062816T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574216,574276,574350,574351,574353,574357,574358

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T3.062816.155209	WG574512-31	CCB		1		06/28/16 15:52
104	T3.062816.155606	WG574512-32	Low Level Continuing Calibra		1		06/28/16 15:56
105	T3.062816.160000	WG574197-02	Method/Prep Blank	40/50	1		06/28/16 16:00
106	T3.062816.160356	WG574197-03	Laboratory Control S	40/50	1		06/28/16 16:03
107	T3.062816.160736	L16061378-01	11002-G05-WQ-W0080	40/50	1		06/28/16 16:07
108	T3.062816.161133	L16061378-02	11103-G08-WQ-W0017	40/50	1		06/28/16 16:11
109	T3.062816.161529	L16061378-03	18311-G02-WQ-W0010	40/50	1		06/28/16 16:15
110	T3.062816.161925	L16061378-04	18416-L04-WQ-W0025	40/50	1		06/28/16 16:19
111	T3.062816.162323	L16061380-01	XU936TW003A	40/50	1		06/28/16 16:23
112	T3.062816.162711	L16061380-02	XU936TW003C	40/50	1		06/28/16 16:27
113	T3.062816.163057	L16061381-06	EB02	40/50	1		06/28/16 16:30
114	T3.062816.163455	L16061401-01	DP005MW0501-007	40/50	1		06/28/16 16:34
115	T3.062816.163852	WG574512-33	CCV		1		06/28/16 16:38
116	T3.062816.164230	WG574512-34	CCB		1		06/28/16 16:42
117	T3.062816.164626	L16061402-01	SS007MW0715-007	40/50	1		06/28/16 16:46
118	T3.062816.165019	L16061404-01	DP005MW0503-007	40/50	1		06/28/16 16:50
119	T3.062816.165410	L16061408-01	DP005MW0508-007	40/50	1		06/28/16 16:54
120	T3.062816.165803	L16061409-01	ST008MW0818-007	40/50	1		06/28/16 16:58
121	T3.062816.170156	L16061410-01	SS007MW0704-007	40/50	1		06/28/16 17:01
122	T3.062816.170548	L16061417-01	SS007MW0B04-007	40/50	1		06/28/16 17:05
123	T3.062816.170940	L16061417-02	SS007MW0B06-007	40/50	1		06/28/16 17:09
124	T3.062816.171335	L16061417-03	SS007MW0B06-007DUP	40/50	1		06/28/16 17:13
125	T3.062816.171728	L16061417-04	SS007MW0B13-007	40/50	1		06/28/16 17:17
126	T3.062816.172123	WG574197-01	Reference Sample		1	L16061417-05	06/28/16 17:21
127	T3.062816.172517	WG574512-35	CCV		1		06/28/16 17:25
128	T3.062816.172854	WG574512-36	CCB		1		06/28/16 17:28
129	T3.062816.173251	WG574197-04	Matrix Spike	40/50	1	L16061417-05	06/28/16 17:32
130	T3.062816.173629	WG574197-05	Matrix Spike Duplica	40/50	1	L16061417-05	06/28/16 17:36
131	T3.062816.174008	L16061417-09	FQC-RB06221601-CC	40/50	1		06/28/16 17:40
132	T3.062816.174405	L16061417-08	SS007MWN748-007	40/50	1		06/28/16 17:44
133	T3.062816.174800	WG574351-01	Post Digestion Spike		1	L16061417-04	06/28/16 17:48
134	T3.062816.175139	WG574351-02	Serial Dilution		5	L16061417-04	06/28/16 17:51
135	T3.062816.175533	WG574351-02	Serial Dilution		25	L16061417-04	06/28/16 17:55
136	T3.062816.175929	WG574512-37	CCV		1		06/28/16 17:59

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062816T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574216,574276,574350,574351,574353,574357,574358

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	T3.062816.180306	WG574512-38	CCB		1		06/28/16 18:03
138	T3.062816.180704	WG573861-03	Method/Prep Blank	40/50	1		06/28/16 18:07
139	T3.062816.181059	WG573861-04	Laboratory Control S	40/50	1		06/28/16 18:10
140	T3.062816.181438	L16061116-01	062016-PS-OF001	40/50	1		06/28/16 18:14
141	T3.062816.181827	L16061116-02	062016-PS-OF001	40/50	1		06/28/16 18:18
142	T3.062816.182218	L16061116-03	062016-PS-OF1BN	40/50	1		06/28/16 18:22
143	T3.062816.182609	L16061116-04	062016-PS-OF1BN	40/50	1		06/28/16 18:26
144	T3.062816.183001	L16061116-05	062016-PS-OF1BS	40/50	1		06/28/16 18:30
145	T3.062816.183352	L16061116-06	062016-PS-OF1BS	40/50	1		06/28/16 18:33
146	T3.062816.183743	L16061116-07	062016-PS-OF1BE	40/50	1		06/28/16 18:37
147	T3.062816.184134	L16061116-08	062016-PS-OF1BE	40/50	1		06/28/16 18:41
148	T3.062816.184525	WG574512-39	CCV		1		06/28/16 18:45
149	T3.062816.184903	WG574512-40	CCB		1		06/28/16 18:49
150	T3.062816.185258	L16061116-09	062016-PS-CB032	40/50	1		06/28/16 18:52
151	T3.062816.185648	L16061116-10	062016-PS-CB032	40/50	1		06/28/16 18:56
152	T3.062816.190038	WG573861-01	Reference Sample		1	L16061116-11	06/28/16 19:00
153	T3.062816.190429	WG573861-02	Reference Sample		1	L16061116-12	06/28/16 19:04
154	T3.062816.190819	WG573861-05	Matrix Spike	40/50	1	L16061116-11	06/28/16 19:08
155	T3.062816.191158	WG573861-06	Matrix Spike	40/50	1	L16061116-12	06/28/16 19:11
156	T3.062816.191537	WG573861-07	Matrix Spike Duplica	40/50	1	L16061116-11	06/28/16 19:15
157	T3.062816.191915	WG573861-08	Matrix Spike Duplica	40/50	1	L16061116-12	06/28/16 19:19
158	T3.062816.192255	L16061116-17	062016-PS-CB029	40/50	1		06/28/16 19:22
159	T3.062816.192645	L16061116-18	062016-PS-CB029	40/50	1		06/28/16 19:26
160	T3.062816.193036	WG574512-41	CCV		1		06/28/16 19:30
161	T3.062816.193413	WG574512-42	CCB		1		06/28/16 19:34
162	T3.062816.193810	L16061116-19	062016-PS-CB099	40/50	1		06/28/16 19:38
163	T3.062816.194200	L16061116-20	062016-PS-CB099	40/50	1		06/28/16 19:42
164	T3.062816.194549	L16061116-22	062016-PS-CB028	40/50	1		06/28/16 19:45
165	T3.062816.194939	L16061116-21	062016-PS-CB028	40/50	1		06/28/16 19:49
166	T3.062816.195330	WG574353-01	Post Digestion Spike		1	L16061116-21	06/28/16 19:53
167	T3.062816.195708	WG574353-02	Serial Dilution		5	L16061116-21	06/28/16 19:57
168	T3.062816.200100	WG574353-02	Serial Dilution		25	L16061116-21	06/28/16 20:01
169	T3.062816.200456	WG574512-43	CCV		1		06/28/16 20:04
170	T3.062816.200834	WG574512-44	CCB		1		06/28/16 20:08

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062816T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574216,574276,574350,574351,574353,574357,574358

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
171	T3.062816.201230	WG573661-02	Method/Prep Blank	40/50	1		06/28/16 20:12
172	T3.062816.201625	WG573661-03	Laboratory Control S	40/50	1		06/28/16 20:16
173	T3.062816.202004	L16061030-02	SW1A-322-14	40/50	1		06/28/16 20:20
174	T3.062816.202358	L16061030-05	SW1B-322-14	40/50	1		06/28/16 20:23
175	T3.062816.202753	L16061030-08	SW2A-322-14	40/50	1		06/28/16 20:27
176	T3.062816.203148	WG573661-01	Reference Sample		1	L16061030-13	06/28/16 20:31
177	T3.062816.203543	WG573661-04	Matrix Spike	40/50	1	L16061030-13	06/28/16 20:35
178	T3.062816.203922	WG573661-05	Matrix Spike Duplica	40/50	1	L16061030-13	06/28/16 20:39
179	T3.062816.204301	L16061030-20	SW4A-322-14	40/50	1		06/28/16 20:43
180	T3.062816.204657	L16061030-23	SW5A-322-14	40/50	1		06/28/16 20:46
181	T3.062816.205052	WG574512-45	CCV		1		06/28/16 20:50
182	T3.062816.205431	WG574512-46	CCB		1		06/28/16 20:54
183	T3.062816.205827	L16061065-01	MW-23-007	40/50	1		06/28/16 20:58
184	T3.062816.210220	L16061065-02	MW-23-006	40/50	1		06/28/16 21:02
185	T3.062816.210612	L16061065-03	MW-23-008	40/50	1		06/28/16 21:06
186	T3.062816.211004	L16061065-04	MW-23-009	40/50	1		06/28/16 21:10
187	T3.062816.211355	L16061065-05	MW-23-010	40/50	1		06/28/16 21:13
188	T3.062816.211749	L16061065-06	MW-23-011	40/50	1		06/28/16 21:17
189	T3.062816.212143	L16061066-01	ST1H16-SW-01	40/50	1		06/28/16 21:21
190	T3.062816.212535	L16061066-02	ST1H16-SW-05	40/50	1		06/28/16 21:25
191	T3.062816.212927	L16061066-03	ST1H16-SW-06	40/50	1		06/28/16 21:29
192	T3.062816.213320	L16061066-04	FB-	40/50	1		06/28/16 21:33
193	T3.062816.213718	WG574512-47	CCV		1		06/28/16 21:37
194	T3.062816.214055	WG574512-48	CCB		1		06/28/16 21:40
195	T3.062816.214452	L16061128-01	MW-23-104	40/50	1		06/28/16 21:44
196	T3.062816.214841	L16061128-02	MW-23-103	40/50	1		06/28/16 21:48
197	T3.062816.215232	L16061128-03	FD062016	40/50	1		06/28/16 21:52
198	T3.062816.215619	L16061128-04	EB WATER A	40/50	1		06/28/16 21:56
199	T3.062816.220016	WG574357-01	Post Digestion Spike		1	L16061128-03	06/28/16 22:00
200	T3.062816.220354	WG574357-02	Serial Dilution		5	L16061128-03	06/28/16 22:03
201	T3.062816.220747	WG574357-02	Serial Dilution		25	L16061128-03	06/28/16 22:07
202	T3.062816.221140	WG574512-49	CCV		1		06/28/16 22:11
203	T3.062816.221518	WG574512-50	CCB		1		06/28/16 22:15
204	T3.062816.221914	WG573685-03	Method/Prep Blank	40/50	1		06/28/16 22:19

Page: 6 Approved: June 30, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062816T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574216,574276,574350,574351,574353,574357,574358

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
205	T3.062816.222308	WG573685-04	Laboratory Control S	40/50	1		06/28/16 22:23
206	T3.062816.222647	L16060907-01	MW21-061516	40/50	5		06/28/16 22:26
207	T3.062816.223047	L16060907-02	MW21-061516	40/50	5		06/28/16 22:30
208	T3.062816.223447	L16060907-03	MW21-061516	40/50	5		06/28/16 22:34
209	T3.062816.223848	L16060907-04	MW35-061516	40/50	1		06/28/16 22:38
210	T3.062816.224241	L16060907-05	MW35-061516	40/50	1		06/28/16 22:42
211	T3.062816.224635	L16060907-06	MW35-061516	40/50	1		06/28/16 22:46
212	T3.062816.225029	L16060907-07	MW11S-061516	40/50	1		06/28/16 22:50
213	T3.062816.225430	L16060907-08	MW11S-061516	40/50	1		06/28/16 22:54
214	T3.062816.225832	WG574512-51	CCV		1		06/28/16 22:58
215	T3.062816.230210	WG574512-52	CCB		1		06/28/16 23:02
216	T3.062816.230607	L16060907-09	MW11S-061516	40/50	1		06/28/16 23:06
217	T3.062816.231008	L16060907-10	DUP-GW-061516	40/50	1		06/28/16 23:10
218	T3.062816.231410	L16060907-11	DUP-GW-061516	40/50	1		06/28/16 23:14
219	T3.062816.231813	L16060907-12	MW31-061516	40/50	5		06/28/16 23:18
220	T3.062816.232204	L16060907-13	MW31-061516	40/50	5		06/28/16 23:22
221	T3.062816.232555	L16060907-14	MW30-061516		1	WG573685-01	06/28/16 23:25
222	T3.062816.232948	L16060907-15	MW30-061516		1	WG573685-02	06/28/16 23:29
223	T3.062816.233341	L16060907-16	MW30-061516	40/50	1		06/28/16 23:33
224	T3.062816.233734	L16060907-17	MW30-061516-MS	40/50	1	WG573685-05	06/28/16 23:37
225	T3.062816.234116	L16060907-18	MW30-061516-MS	40/50	1	WG573685-07	06/28/16 23:41
226	T3.062816.234453	WG574512-53	CCV		1		06/28/16 23:44
227	T3.062816.234830	WG574512-54	CCB		1		06/28/16 23:48
228	T3.062816.235226	L16060907-19	MW30-061516-MSD	40/50	1	WG573685-06	06/28/16 23:52
229	T3.062816.235604	L16060907-20	MW30-061516-MSD	40/50	1	WG573685-08	06/28/16 23:56
230	T3.062816.235945	L16060907-21	MW36-061516	40/50	1		06/28/16 23:59
231	T3.062916.000336	WG574358-01	Post Digestion Spike		1	L16060907-22	06/29/16 00:03
232	T3.062916.000715	WG574358-02	Serial Dilution		5	L16060907-22	06/29/16 00:07
233	T3.062916.001107	WG574358-02	Serial Dilution		25	L16060907-22	06/29/16 00:11
234	T3.062916.001503	L16060907-22	MW36-061516	40/50	1		06/29/16 00:15
235	T3.062916.001856	L16060907-01	MW21-061516	40/50	500		06/29/16 00:18
236	T3.062916.002252	L16060907-02	MW21-061516		500		06/29/16 00:22
237	T3.062916.002650	L16060907-03	MW21-061516		500		06/29/16 00:26
238	T3.062916.003045	WG574512-55	CCV		1		06/29/16 00:30

Page: 7 Approved: June 30, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062816T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574216,574276,574350,574351,574353,574357,574358

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
239	T3.062916.003423	WG574512-56	CCB		1		06/29/16 00:34
240	T3.062916.003819	WG574512-57	Interference Check		1		06/29/16 00:38
241	T3.062916.004209	WG574512-58	Interference Check		1		06/29/16 00:42
242	T3.062916.004552	WG574512-59	CCV		1		06/29/16 00:45
243	T3.062916.004929	WG574512-60	CCB		1		06/29/16 00:49
244	T3.062916.005324	WG574512-61	Low Level Continuing Calibra		1		06/29/16 00:53

Comments

Seq.	Rerun	Dil.	Reason	Analytes
45			Operation error, CCB was not run. Rerun Seq.34-43 and 46. JYH	

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Microbac Laboratories Inc.

Data Checklist

Date: 27-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 574461
Runlog ID: 75972
Analytical Workgroups: 573560,574476

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1130
Level 4	1068,729
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer:

Secondary Reviewer:
29-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-29-2016 13:55:52

Microbac Laboratories Inc.

Data Checklist

Date: 28-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 574512
Runlog ID: 75979
Analytical Workgroups: 574216,574276,574350,574351,574353,574357,574358

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1177,1380,1381,1065,1128
Level 4	986,1142,1228,1231,1237,1238
	1378,1401,1402,1404,1409,1410
	1417,907
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	BKT
Comments	

Primary Reviewer:
30-JUN-2016

Secondary Reviewer:
30-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-30-2016 14:08:10

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010C

AAB#: WG574276

Login Number: L16061068

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
C01-061716	04	06/17/16					06/23/2016	6	180		06/27/16	10.4	180	
C01-061716	04	06/17/16					06/23/2016	6	180		06/28/16	11.2	180	
C01FD-061716	05	06/17/16					06/23/2016	6	180		06/27/16	10.4	180	
C01FD-061716	05	06/17/16					06/23/2016	6	180		06/28/16	11.2	180	
MW19F-061716	11	06/17/16					06/23/2016	5.9	180		06/27/16	10.2	180	
MW19F-061716	11	06/17/16					06/23/2016	5.9	180		06/28/16	11	180	
MW18F-061716	13	06/17/16					06/23/2016	5.8	180		06/27/16	10.2	180	
MW18F-061716	13	06/17/16					06/23/2016	5.8	180		06/28/16	11	180	
MW18FMS-061716	15	06/17/16					06/23/2016	5.8	180		06/28/16	11	180	
MW18FMS-061716	15	06/17/16					06/23/2016	5.8	180		06/27/16	10.2	180	
MW18FMSD-061716	17	06/17/16					06/23/2016	5.8	180		06/27/16	10.2	180	
MW18FMSD-061716	17	06/17/16					06/23/2016	5.8	180		06/28/16	11	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4828320
Report generated 06/28/2016 14:08

METHOD BLANK SUMMARY

Login Number: L16061068
Blank File ID: T3.062716.181016
Prep Date: 06/23/16 09:40
Analyzed Date: 06/27/16 18:10
Analyst: JYH

Work Group: WG574276
Blank Sample ID: WG573869-02
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573869-03	T3.062716.181413	06/27/16 18:14	01
C01-061716	L16061068-04	T3.062716.182149	06/27/16 18:21	01
C01FD-061716	L16061068-05	T3.062716.182543	06/27/16 18:25	01
MW19F-061716	L16061068-11	T3.062716.182935	06/27/16 18:29	01
MW18F-061716	L16061068-13	T3.062716.183322	06/27/16 18:33	01
MW18FMS-061716	L16061068-15	T3.062716.183713	06/27/16 18:37	01
MW18FMSD-061716	L16061068-17	T3.062716.184051	06/27/16 18:40	01
C01-061716	L16061068-04	T3.062816.131108	06/28/16 13:11	DL01
C01FD-061716	L16061068-05	T3.062816.131503	06/28/16 13:15	DL01
MW19F-061716	L16061068-11	T3.062816.132234	06/28/16 13:22	DL01
MW18F-061716	L16061068-13	T3.062816.132628	06/28/16 13:26	DL01
MW18FMS-061716	L16061068-15	T3.062816.133023	06/28/16 13:30	DL01
MW18FMSD-061716	L16061068-17	T3.062816.133415	06/28/16 13:34	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4828322
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061068 Prep Date: 06/23/16 09:40 Sample ID: WG573869-02
Instrument ID: ICP-THERMO3 Run Date: 06/27/16 18:10 Prep Method: 3015
File ID: T3.062716.181016 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG574276 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-27-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Aluminum, Total	0.0500	0.200	0.0500	1	U
Beryllium, Total	0.00500	0.0200	0.00500	1	U
Calcium, Total	0.125	0.500	0.125	1	U
Iron, Total	0.0500	0.200	0.0500	1	U
Magnesium, Total	0.250	1.00	0.250	1	U
Potassium, Total	0.500	2.00	0.500	1	U
Selenium, Total	0.00500	0.0200	0.00500	1	U
Sodium, Total	0.250	1.00	0.250	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4828323
28-JUN-2016 14:08

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061068 Run Date: 06/27/2016 Sample ID: WG573869-03
Instrument ID: ICP-THERMO3 Run Time: 18:14 Prep Method: 3015
File ID: T3.062716.181413 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG574276 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76576 Cal ID: ICP-TH-27-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Aluminum, Total	6.25	6.17	98.7	80 - 120	
Beryllium, Total	0.0313	0.0304	97.1	80 - 120	
Calcium, Total	6.25	6.36	102	80 - 120	
Iron, Total	2.50	2.49	99.4	80 - 120	
Magnesium, Total	6.25	6.36	102	80 - 120	
Potassium, Total	31.3	30.8	98.5	80 - 120	
Selenium, Total	0.250	0.232	92.8	80 - 120	
Sodium, Total	31.3	31.2	99.9	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4828324
Report generated: 06/28/2016 14:08

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16061068 Cal ID: ICP-THERMO3- 27-JUN-16 Worknum: WG574276
Instrument ID: ICP-THERMO3 Contract #: Prep Method: 3015
Parent ID: L16061068-13 File ID: T3.062716.183322 Dil: 1 Method: 6010B
Sample ID: L16061068-15 MS File ID: T3.062716.183713 Dil: 1 Matrix: Water
Sample ID: L16061068-17 MSD File ID: T3.062716.184051 Dil: 1 Units: mg/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Aluminum, Total	1.91	6.25	10.7	141	6.25	12.8	174	17.4	80 - 120	20	*
Beryllium, Total	U	0.0313	0.0300	96.1	0.0313	0.0287	91.8	4.60	80 - 120	20	
Calcium, Total	14.1	6.25	19.7	89.9	6.25	19.2	81.3	2.76	80 - 120	20	
Iron, Total	10.8	2.50	15.0	167	2.50	18.4	303	20.4	80 - 120	20	*#
Magnesium, Total	6.42	6.25	12.6	98.5	6.25	12.1	91.2	3.69	80 - 120	20	
Potassium, Total	2.19	31.3	32.4	96.7	31.3	31.0	92.1	4.48	80 - 120	20	
Selenium, Total	U	0.250	0.226	90.2	0.250	0.215	86.1	4.68	80 - 120	20	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4828325
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16061068 Cal ID: ICP-THERMO3- 28-JUN-16 Worknum: WG574276
Instrument ID: ICP-THERMO3 Contract #: Prep Method: 3015
Parent ID: L16061068-13 File ID: T3.062816.132628 Dil: 20 Method: 6010B
Sample ID: L16061068-15 MS File ID: T3.062816.133023 Dil: 20 Matrix: Water
Sample ID: L16061068-17 MSD File ID: T3.062816.133415 Dil: 20 Units: mg/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Sodium, Total	249	31.3	281	103	31.3	264	48.5	6.21	80 - 120	20	*

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4828325
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16061068 **Worknum:** WG574276
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG574276-02 **File ID:** T3.062816.125938 **Dil:** 5 **Units:** ug/L
Sample: L16061130-05 **File ID:** T3.062816.124418 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	12.0		89.8		650.00	E
Beryllium			0.200			
Calcium	ND	U	ND	U		
Iron	ND	U	ND	U		
Magnesium	ND	U	248		6140.00	
Potassium	136		463		240.00	E
Selenium	2.81		11.0		291.00	E
Sodium	6.12		ND	U		

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4828318
06/28/2016 14:08

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061068 **Worknum:** WG574276
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG574276-01 **File ID:** T3.062816.131855 **Dil:** 1 **Units:** ug/L
Sample ID: L16061130-05 **File ID:** T3.062816.124418 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	5520		0	U	5000	110.4	75 - 125	
BERYLLIUM	26.8		0		25	107.0	75 - 125	
CALCIUM	5380		0	U	5000	107.7	75 - 125	
IRON	2140		0	U	2000	107.1	75 - 125	
MAGNESIUM	5640		0	U	5000	112.7	75 - 125	
POTASSIUM	26600		0	U	25000	106.4	75 - 125	
SELENIUM	238		0	U	200	118.9	75 - 125	
SODIUM	27000		0	U	25000	108.0	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4828319
Report generated: 06/28/2016 14:08

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061068	Workgroup (AAB#):	WG574276
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG574461	Initial Calibration Date:	27-JUN-2016 16:42

	WG574461-01		WG574461-02		WG574461-03		WG574461-04		WG574461-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000770	.1	0.00144	.2	0.00204	10	0.0801	20	0.161	.999991	
BERYLLIUM	0	0.000560	.0005	0.000950	.001	0.00129	.05	0.0471	.1	0.0946	.999982	
CALCIUM	0	0.00114	.1	0.00373	.2	0.00753	10	0.447	20	0.894	.999871	
IRON	0	-0.000540	.04	0.000400	.08	0.00174	4	0.0893	8	0.177	.998945	
MAGNESIUM	0	-0.0000300	NA	NA	.2	0.00122	10	0.0828	20	0.165	.999989	
POTASSIUM	0	-0.00533	.5	0.00567	1	0.0306	50	2.54	100	5.16	.999651	
SELENIUM	0	-0.000420	NA	NA	.008	-0.000330	.4	0.00627	.8	0.0130	.999938	
SODIUM	0	-0.0462	.5	0.0267	1	0.102	50	8.83	100	17.7	.999993	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4828328
Report generated: 29-JUN-2016 14:45

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061068	Workgroup (AAB#):	WG574276
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG574512	Initial Calibration Date:	28-JUN-2016 09:31

	WG574512-01		WG574512-02		WG574512-03		WG574512-04		WG574512-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000630	.1	0.00126	.2	0.00193	10	0.0790	20	0.158	.999993	
BERYLLIUM	0	0.000750	.0005	0.00103	.001	0.00146	.05	0.0470	.1	0.0945	.999896	
CALCIUM	0	0.00165	.1	0.00358	.2	0.00723	10	0.437	20	0.881	.999618	
IRON	0	-0.000100	.04	0.000550	.08	0.00104	4	0.0851	8	0.170	.999924	
MAGNESIUM	0	-0.000900	NA	NA	.2	0.00127	10	0.0818	20	0.164	.998924	
POTASSIUM	0	-0.0173	.5	0.00427	1	0.0257	50	2.67	100	5.41	.999988	
SELENIUM	0	-0.000470	NA	NA	.008	-0.000390	.4	0.00576	.8	0.0121	.999816	
SODIUM	0	-0.0583	.5	0.0109	1	0.0824	50	8.61	100	17.5	.999988	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4828328
Report generated: 29-JUN-2016 14:45

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061068
Instrument ID: ICP-THERMO3
File ID: T3.062716.165010
Workgroup (AAB#): WG574276
Matrix: WATER

Run Date: 06/27/2016
Run Time: 16:50
Analyst: JYH
Cal ID: ICP-THERI - 27-JUN-16

Sample ID: WG574461-07
Method: 6010C
Units: mg/L

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	.004	U
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4828330
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061068
Run Date: 06/28/2016
Sample ID: WG574512-07
Instrument ID: ICP-THERMO3
Run Time: 09:39
Method: 6010C
File ID: T3.062816.093901
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574276
Cal ID: ICP-THERI - 28-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	.004	U
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4828330
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 06/27/2016
Sample ID: WG574461-12
Instrument ID: ICP-THERMO3
Run Time: 17:09
Method: 6010C
File ID: T3.062716.170909
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574276
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4828333
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 06/27/2016
Sample ID: WG574461-16
Instrument ID: ICP-THERMO3
Run Time: 18:06
Method: 6010C
File ID: T3.062716.180618
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574276
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4828333
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 06/27/2016
Sample ID: WG574461-18
Instrument ID: ICP-THERMO3
Run Time: 18:51
Method: 6010C
File ID: T3.062716.185157
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574276
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4828333
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 06/27/2016
Sample ID: WG574461-20
Instrument ID: ICP-THERMO3
Run Time: 19:38
Method: 6010C
File ID: T3.062716.193831
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574276
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4828333
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 06/27/2016
Sample ID: WG574461-22
Instrument ID: ICP-THERMO3
Run Time: 20:13
Method: 6010C
File ID: T3.062716.201301
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574276
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4828333
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 06/28/2016
Sample ID: WG574512-12
Instrument ID: ICP-THERMO3
Run Time: 09:57
Method: 6010C
File ID: T3.062816.095753
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574276
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4828333
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 06/28/2016
Sample ID: WG574512-20
Instrument ID: ICP-THERMO3
Run Time: 12:21
Method: 6010C
File ID: T3.062816.122110
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574276
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	-0.00687	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4828333
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 06/28/2016
Sample ID: WG574512-22
Instrument ID: ICP-THERMO3
Run Time: 13:07
Method: 6010C
File ID: T3.062816.130712
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574276
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	-0.00634	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4828333
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 06/28/2016
Sample ID: WG574512-24
Instrument ID: ICP-THERMO3
Run Time: 13:41
Method: 6010C
File ID: T3.062816.134146
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574276
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4828333
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061068
Run Date: 06/28/2016
Sample ID: WG574512-06
Instrument ID: ICP-THERMO3
Run Time: 09:35
Method: 6010C
File ID: T3.062816.093524
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574276
Cal ID: ICP-TH - 28-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	9.94	99.4	90 - 110	
Beryllium		.05	0.0494	98.9	90 - 110	
Calcium		10	9.88	98.8	90 - 110	
Iron		4	3.95	98.8	90 - 110	
Magnesium		10	10.0	100	90 - 110	
Potassium		50	49.4	98.7	90 - 110	
Selenium		.4	0.401	100	90 - 110	
Sodium		50	49.5	98.9	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4828329
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061068
Run Date: 06/27/2016
Sample ID: WG574461-06
Instrument ID: ICP-THERMO3
Run Time: 16:46
Method: 6010C
File ID: T3.062716.164633
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574276
Cal ID: ICP-TH - 27-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	9.97	99.7	90 - 110	
Beryllium		.05	0.0499	99.8	90 - 110	
Calcium		10	10.1	101	90 - 110	
Iron		4	4.02	100	90 - 110	
Magnesium		10	10.1	101	90 - 110	
Potassium		50	50.0	100	90 - 110	
Selenium		.4	0.399	99.6	90 - 110	
Sodium		50	50.2	100	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4828329
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068
Run Date: 06/27/2016
Sample ID: WG574461-11
Instrument ID: ICP-THERMO3
Run Time: 17:05
Method: 6010C
File ID: T3.062716.170532
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574276
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.2	mg/L	102	90 - 110		
Beryllium		0.0500	0.0502	mg/L	100	90 - 110		
Calcium		10.0	10.3	mg/L	103	90 - 110		
Iron		4.00	4.12	mg/L	103	90 - 110		
Magnesium		10.0	10.4	mg/L	104	90 - 110		
Potassium		50.0	50.4	mg/L	101	90 - 110		
Selenium		0.400	0.396	mg/L	98.9	90 - 110		
Sodium		50.0	49.9	mg/L	99.8	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4828332
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068
Run Date: 06/27/2016
Sample ID: WG574461-15
Instrument ID: ICP-THERMO3
Run Time: 18:02
Method: 6010C
File ID: T3.062716.180241
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574276
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.0	mg/L	100	90 - 110		
Beryllium		0.0500	0.0495	mg/L	98.9	90 - 110		
Calcium		10.0	10.1	mg/L	101	90 - 110		
Iron		4.00	4.04	mg/L	101	90 - 110		
Magnesium		10.0	10.1	mg/L	101	90 - 110		
Potassium		50.0	50.1	mg/L	100	90 - 110		
Selenium		0.400	0.401	mg/L	100	90 - 110		
Sodium		50.0	50.3	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4828332
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068
Run Date: 06/27/2016
Sample ID: WG574461-17
Instrument ID: ICP-THERMO3
Run Time: 18:48
Method: 6010C
File ID: T3.062716.184824
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574276
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.87	mg/L	98.7	90 - 110		
Beryllium		0.0500	0.0488	mg/L	97.6	90 - 110		
Calcium		10.0	9.89	mg/L	98.9	90 - 110		
Iron		4.00	3.91	mg/L	97.7	90 - 110		
Magnesium		10.0	10.1	mg/L	101	90 - 110		
Potassium		50.0	49.5	mg/L	99.0	90 - 110		
Selenium		0.400	0.384	mg/L	96.1	90 - 110		
Sodium		50.0	49.0	mg/L	97.9	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4828332
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068
Run Date: 06/27/2016
Sample ID: WG574461-19
Instrument ID: ICP-THERMO3
Run Time: 19:34
Method: 6010C
File ID: T3.062716.193453
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574276
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.9	mg/L	109	90 - 110		
Beryllium		0.0500	0.0543	mg/L	109	90 - 110		
Calcium		10.0	10.8	mg/L	108	90 - 110		
Iron		4.00	4.26	mg/L	106	90 - 110		
Magnesium		10.0	11.1	mg/L	111	90 - 110		*
Potassium		50.0	54.5	mg/L	109	90 - 110		
Selenium		0.400	0.417	mg/L	104	90 - 110		
Sodium		50.0	53.2	mg/L	106	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4828332
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068
Run Date: 06/27/2016
Sample ID: WG574461-21
Instrument ID: ICP-THERMO3
Run Time: 20:09
Method: 6010C
File ID: T3.062716.200924
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574276
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	11.2	mg/L	112	90 - 110		*
Beryllium		0.0500	0.0558	mg/L	112	90 - 110		*
Calcium		10.0	11.1	mg/L	111	90 - 110		*
Iron		4.00	4.44	mg/L	111	90 - 110		*
Magnesium		10.0	11.4	mg/L	114	90 - 110		*
Potassium		50.0	55.9	mg/L	112	90 - 110		*
Selenium		0.400	0.439	mg/L	110	90 - 110		
Sodium		50.0	54.6	mg/L	109	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4828332
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068
Run Date: 06/28/2016
Sample ID: WG574512-11
Instrument ID: ICP-THERMO3
Run Time: 09:54
Method: 6010C
File ID: T3.062816.095416
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574276
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.6	mg/L	106	90 - 110		
Beryllium		0.0500	0.0510	mg/L	102	90 - 110		
Calcium		10.0	10.2	mg/L	102	90 - 110		
Iron		4.00	4.07	mg/L	102	90 - 110		
Magnesium		10.0	10.3	mg/L	103	90 - 110		
Potassium		50.0	50.2	mg/L	100	90 - 110		
Selenium		0.400	0.412	mg/L	103	90 - 110		
Sodium		50.0	50.2	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4828332
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068
Run Date: 06/28/2016
Sample ID: WG574512-19
Instrument ID: ICP-THERMO3
Run Time: 12:17
Method: 6010C
File ID: T3.062816.121735
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574276
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.6	mg/L	106	90 - 110		
Beryllium		0.0500	0.0524	mg/L	105	90 - 110		
Calcium		10.0	10.4	mg/L	104	90 - 110		
Iron		4.00	4.15	mg/L	104	90 - 110		
Magnesium		10.0	10.6	mg/L	106	90 - 110		
Potassium		50.0	52.7	mg/L	105	90 - 110		
Selenium		0.400	0.420	mg/L	105	90 - 110		
Sodium		50.0	52.7	mg/L	105	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068
Run Date: 06/28/2016
Sample ID: WG574512-21
Instrument ID: ICP-THERMO3
Run Time: 13:03
Method: 6010C
File ID: T3.062816.130335
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574276
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.91	mg/L	99.1	90 - 110		
Beryllium		0.0500	0.0491	mg/L	98.3	90 - 110		
Calcium		10.0	9.78	mg/L	97.8	90 - 110		
Iron		4.00	3.94	mg/L	98.5	90 - 110		
Magnesium		10.0	10.0	mg/L	100	90 - 110		
Potassium		50.0	49.3	mg/L	98.6	90 - 110		
Selenium		0.400	0.396	mg/L	99.0	90 - 110		
Sodium		50.0	49.3	mg/L	98.6	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4828332
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068
Run Date: 06/28/2016
Sample ID: WG574512-23
Instrument ID: ICP-THERMO3
Run Time: 13:38
Method: 6010C
File ID: T3.062816.133809
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574276
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.1	mg/L	101	90 - 110		
Beryllium		0.0500	0.0500	mg/L	100	90 - 110		
Calcium		10.0	9.99	mg/L	99.9	90 - 110		
Iron		4.00	4.01	mg/L	100	90 - 110		
Magnesium		10.0	10.2	mg/L	102	90 - 110		
Potassium		50.0	50.3	mg/L	101	90 - 110		
Selenium		0.400	0.409	mg/L	102	90 - 110		
Sodium		50.0	50.4	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4828332
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Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061068
Run Date: 06/27/2016
Sample ID: WG574461-08
Instrument ID: ICP-THERMO3
Run Time: 16:54
Method: 6010C
File ID: T3.062716.165407
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574276
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.162	mg/L	101	70 - 130		
Beryllium		0.00160	0.00158	mg/L	98.8	70 - 130		
Calcium		0.400	0.387	mg/L	96.8	70 - 130		
Iron		0.0800	0.0883	mg/L	110	70 - 130		
Magnesium		0.400	0.341	mg/L	85.2	70 - 130		
Potassium		0.800	0.678	mg/L	84.7	70 - 130		
Selenium		0.0160	0.0133	mg/L	83.3	70 - 130		
Sodium		0.400	0.429	mg/L	107	70 - 130		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061068
Run Date: 06/27/2016
Sample ID: WG574461-23
Instrument ID: ICP-THERMO3
Run Time: 20:16
Method: 6010C
File ID: T3.062716.201659
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574276
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.174	mg/L	109	70 - 130		
Beryllium		0.00160	0.00182	mg/L	114	70 - 130		
Calcium		0.400	0.440	mg/L	110	70 - 130		
Iron		0.0800	0.0915	mg/L	114	70 - 130		
Magnesium		0.400	0.436	mg/L	109	70 - 130		
Potassium		0.800	0.742	mg/L	92.7	70 - 130		
Selenium		0.0160	0.0164	mg/L	103	70 - 130		
Sodium		0.400	0.445	mg/L	111	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4828334
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061068
Run Date: 06/28/2016
Sample ID: WG574512-08
Instrument ID: ICP-THERMO3
Run Time: 09:42
Method: 6010C
File ID: T3.062816.094252
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574276
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.178	mg/L	111	70 - 130		
Beryllium		0.00160	0.00148	mg/L	92.5	70 - 130		
Calcium		0.400	0.354	mg/L	88.6	70 - 130		
Iron		0.0800	0.0839	mg/L	105	70 - 130		
Magnesium		0.400	0.487	mg/L	122	70 - 130		
Potassium		0.800	0.762	mg/L	95.2	70 - 130		
Selenium		0.0160	0.0178	mg/L	111	70 - 130		
Sodium		0.400	0.434	mg/L	108	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4828334
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061068
Run Date: 06/28/2016
Sample ID: WG574512-25
Instrument ID: ICP-THERMO3
Run Time: 13:45
Method: 6010C
File ID: T3.062816.134543
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574276
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.191	mg/L	119	70 - 130		
Beryllium		0.00160	0.00173	mg/L	108	70 - 130		
Calcium		0.400	0.426	mg/L	106	70 - 130		
Iron		0.0800	0.0666	mg/L	83.2	70 - 130		
Magnesium		0.400	0.500	mg/L	125	70 - 130		
Potassium		0.800	0.922	mg/L	115	70 - 130		
Selenium		0.0160	0.0142	mg/L	88.8	70 - 130		
Sodium		0.400	0.400	mg/L	100	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4828334
Report generated 06/28/2016 14:08

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061068
Instrument ID: ICP-THERMO3
Sol. A : WG574461-09 **File ID:** T3.062716.165800
Sol. AB : WG574461-10 **File ID:** T3.062716.170150

Workgroup (AAB#): WG574276
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	261	104	250	260	104	
Beryllium	NS	0.0000300	NS	0.250	0.238	95.2	
Calcium	250	244	97.6	250	245	98.0	
Iron	100	96.2	96.2	100	94.7	94.7	
Magnesium	250	249	99.6	250	246	98.4	
Potassium	NS	-0.0621	NS	5.00	5.06	101	
Selenium	NS	0.00507	NS	0.250	0.244	97.6	
Sodium	NS	0.0381	NS	5.00	5.33	107	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

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Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061068
Instrument ID: ICP-THERMO3
Sol. A : WG574512-09 **File ID:** T3.062816.094645
Sol. AB : WG574512-10 **File ID:** T3.062816.095036

Workgroup (AAB#): WG574276
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	266	106	250	262	105	
Beryllium	NS	-0.0000500	NS	0.250	0.243	97.2	
Calcium	250	248	99.2	250	244	97.6	
Iron	100	98.7	98.7	100	95.1	95.1	
Magnesium	250	251	100	250	244	97.6	
Potassium	NS	0.0688	NS	5.00	5.25	105	
Selenium	NS	-0.00226	NS	0.250	0.249	99.6	
Sodium	NS	0.0593	NS	5.00	5.25	105	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061068 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	AG	AL	AS	B	BA
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000410	0	0	0
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0.0115	0	-0.0000800
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0.000260	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	-0.000289	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	-0.0000490	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.0000120	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0.0000300	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
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Report generated: 06/28/2016 14:08

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061068 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	BE	CA	CD	CO	CR
ALUMINUM	308.20	0	0	0	-0.000820	0
ANTIMONY	206.80	0	0	0	0	0.0200
ARSENIC	189.00	0	0	0	0	-0.00190
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0.00343	0
CADMIUM	228.80	0	0	0	-0.00390	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	-0.000200
COPPER	224.70	0	0	0	0.0000770	-0.00100
IRON	261.10	0	0	0	0	-0.00100
LEAD	220.30	0	0	0	-0.0000130	-0.000132
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.0000500
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	-0.000860	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0.00000500	0	0	0
THALLIUM	190.80	0	0	0	0.00240	0.000276
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	-0.00480
ZINC	206.20	0	0	0	0	-0.00180
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4828327
Report generated: 06/28/2016 14:08

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061068 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	CU	FE	K	LI	MG
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000560	0	0	0
ARSENIC	189.00	0	-0.0000500	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0.000300	0	0	0
CADMIUM	228.80	0	-0.0000190	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000500	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0.00160	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0.000609	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.00000300
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0.0000420	0	0	0
PHOSPHORUS	214.90	-0.323	0.000900	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000270	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000400	0	0	0
VANADIUM	292.40	0	0.00000700	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	-0.0000300	0	0	0

CORR_FACTORS - Modified 03/05/2008
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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061068 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	MN	MO	NA	NI	P
ALUMINUM	308.20	0	0.0163	0	0	0
ANTIMONY	206.80	0	-0.00310	0	-0.00350	0
ARSENIC	189.00	0	0.00120	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	-0.00190	0	0	0
CADMIUM	228.80	0	0.0000320	0	-0.000770	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0.000360	0	0	0	0
COBALT	228.60	0	-0.00200	0	0.000100	0
COPPER	224.70	0	0.00160	0	-0.0123	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	-0.00210	0	0.000110	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	-0.00290	-0.0230	0	0	0
MANGANESE	257.60	0	0.0000300	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0.00710	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0.000600	0.000580	0	0	0
SILICON	212.40	0	0.0187	0	0	0
SILVER	328.00	0	-0.0000430	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0.00100	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000153	0	0	0
VANADIUM	292.40	-0.000200	-0.00830	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061068 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	PB	SB	SE	SI	SN
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0	0	0	-0.0220
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0.00440	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061068 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	SR	TI	TL	V	ZN
ALUMINUM	308.20	0	0	0	0.0950	0
ANTIMONY	206.80	0	0.00110	0	-0.00360	0
ARSENIC	189.00	0	0	0	0.000107	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	-0.00000700	0	0.000990	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0.000102	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000550	0	0	0
COBALT	228.60	0	0.00210	0	0.0000200	0
COPPER	224.70	0	0.000269	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	-0.000126	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	-0.00290	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	-0.000110	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	-0.00100	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000720	0	-0.000260	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.000800	0	-0.00490	0
TIN	189.90	0	-0.00190	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0.000820	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4828327
Report generated: 06/28/2016 14:08

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061068 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	ZR
ALUMINUM	308.20	0
ANTIMONY	206.80	0
ARSENIC	189.00	0
BARIUM	455.40	0
BERYLLIUM	313.10	0
BORON	249.60	0
CADMIUM	228.80	0
CALCIUM	422.60	0
CHROMIUM	267.70	0
COBALT	228.60	0
COPPER	224.70	0
IRON	261.10	0
LEAD	220.30	0
LITHIUM	670.70	0
MAGNESIUM	279.00	0
MANGANESE	257.60	0
MOLYBDENUM	202.00	0
NICKEL	231.60	0
PHOSPHORUS	214.90	0
POTASSIUM	766.40	0
SELENIUM	196.00	0
SILICON	212.40	0
SILVER	328.00	0
SODIUM	589.50	0
STRONTIUM	407.70	0
THALLIUM	190.80	0
TIN	189.90	0
TITANIUM	337.20	0
VANADIUM	292.40	0
ZINC	206.20	0
ZIRCONIUM	339.10	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4828327
Report generated: 06/28/2016 14:08

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16061068 **Date:** 04/29/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	900.0
Antimony	20.00	45.0
Arsenic	10.00	45.0
Barium	10.00	45.0
Beryllium	10.00	1.8
Boron	20.00	45.0
Cadmium	20.00	4.5
Calcium	5.00	270.0
Chromium	20.00	36.0
Cobalt	20.00	45.0
Copper	20.00	180.0
Iron	5.00	720.0
Lead	20.00	225.0
Lithium	5.00	36.0
Magnesium	5.00	900.0
Manganese	10.00	36.0
Molybdenum	20.00	27.0
Nickel	20.00	90.0
Phosphorus	20.00	180.0
Potassium	5.00	450.0
Selenium	20.00	90.0
Silicon	20.00	36.0
Silver	10.00	9.0
Sodium	5.00	270.0
Strontium	5.00	9.0
Thallium	20.00	18.0
Tin	20.00	45.0
Titanium	5.00	36.0
Vanadium	20.00	27.0
Zinc	20.00	45.0
Zirconium	10.00	45.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4828326
Report generated: 06/28/2016 14:08

2.3.1.3 Raw Data

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	-0.000196	0.050519	0.000000	1.000000
Al 308.215 {109}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	0.000769	0.007903	0.000000	1.000000
As 189.042 {478}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	-0.000004	0.024051	0.000000	1.000000
B 249.678 {135}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	0.000015	0.022924	0.000000	1.000000
Ba 455.403 { 74}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	0.048549	2.123209	0.000000	1.000000
Be 313.107 {108}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	0.000564	0.918734	0.000000	1.000000
Ca 422.673 { 80}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	0.001142	0.044563	0.000000	1.000000
Cd 228.802 {447}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	-0.000020	0.565155	0.000000	1.000000
Co 228.616 {447}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	-0.000150	0.354063	0.000000	1.000000
Cr 267.716 {126}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	0.000270	0.057317	0.000000	1.000000
Cu 224.700 {450}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	-0.000035	0.126338	0.000000	1.000000
Fe 261.187 {129}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	-0.000537	0.022398	0.000000	1.000000
K 766.490 { 44}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	-0.005342	0.051358	0.000000	1.000000
Li 670.784 { 50}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	-0.006300	1.507681	0.000000	1.000000
Mg 279.079 {121}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	-0.000025	0.008285	0.000000	1.000000
Mn 257.610 {131}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	-0.000506	0.275257	0.000000	1.000000
Mo 202.030 {467}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	0.000665	0.178173	0.000000	1.000000
Na 589.592 { 57}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	-0.046169	0.177279	0.000000	1.000000
Ni 231.604 {446}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	-0.000789	0.132968	0.000000	1.000000
P 214.914 {457}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	-0.000087	0.013756	0.000000	1.000000
Pb 220.353 {453}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	-0.000973	0.062058	0.000000	1.000000
Sb 206.833 {463}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	0.000340	0.030133	0.000000	1.000000
Se 196.090 {472}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	-0.000420	0.016769	0.000000	1.000000
Si 212.412 {459}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	0.002496	0.039526	0.000000	1.000000
Sn 189.989 {477}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	0.000088	0.068709	0.000000	1.000000
Sr 407.771 { 83}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	0.002119	3.520376	0.000000	1.000000
Ti 337.280 {100}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	-0.001743	0.094127	0.000000	1.000000
Tl 190.856 {477}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	-0.000356	0.028211	0.000000	1.000000
V 292.402 {115}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	-0.000041	0.067298	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	0.000768	0.415656	0.000000	1.000000
Zr 339.198 { 99}	6/27/2016 16:46:28	6/27/2016 16:46:28	Linear	1/Conc	-0.004839	3.355347	0.000000	1.000000

Approved: June 28, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999779	0.000003	0.002210	0.007368	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999991	0.000002	0.009704	0.032347	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999992	0.000000	0.003147	0.010490	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999856	0.000002	0.002882	0.009605	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999975	0.000096	0.001072	0.003575	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999982	0.000002	0.000098	0.000326	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999871	0.000045	0.042441	0.141472	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999878	0.000003	0.000270	0.000899	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999991	0.000002	0.000413	0.001377	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999966	0.000001	0.001232	0.004108	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999961	0.000004	0.001364	0.004545	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.998945	0.000026	0.027353	0.091178	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999651	0.000431	0.125366	0.417887	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999992	0.000057	0.004005	0.013351	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999989	0.000004	0.082718	0.275727	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.998675	0.000045	0.002623	0.008743	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999647	0.000030	0.000437	0.001457	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999993	0.000214	0.031747	0.105822	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999968	0.000003	0.001168	0.003894	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999993	0.000003	0.007033	0.023442	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999765	0.000004	0.003642	0.012140	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999816	0.000004	0.004417	0.014724	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999938	0.000001	0.006576	0.021920	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999974	0.000009	0.002316	0.007720	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999927	0.000005	0.000902	0.003006	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999993	0.000085	0.000447	0.001490	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999288	0.000022	0.008282	0.027606	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999810	0.000002	0.003166	0.010552	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999965	0.000004	0.001015	0.003385	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999960	0.000023	0.000202	0.000672	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.999911	0.000284	0.000541	0.001802	OK.	1.000000	0.000000	1	0

Approved: June 28, 2016

Sample Name: S0 Acquired: 6/27/2016 16:27:28 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00020**	**.00077**	**-.00000**	**.00002**	**.04855**	**.00056**	**.00114**
Stddev	.00005	.00004	.00003	.00006	.00280	.00003	.00103
%RSD	24.843	4.9721	769.16	381.14	5.7735	5.1043	90.050
#1	-.00014	.00073	.00002	-.00004	.05095	.00053	.00115
#2	-.00024	.00081	.00001	.00008	.04547	.00057	.00011
#3	-.00021	.00076	-.00004	.00001	.04923	.00059	.00217

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00002**	**-.00015**	**.00027**	**-.00004**	**-.00054**	**-.00533**	**-.00630**
Stddev	.00011	.00013	.00005	.00008	.00028	.00342	.00133
%RSD	544.64	87.986	19.860	214.76	52.213	64.161	21.180
#1	-.00012	-.00003	.00031	-.00007	-.00047	-.00147	-.00593
#2	.00009	-.00029	.00021	-.00009	-.00030	-.00653	-.00519
#3	-.00003	-.00013	.00029	.00005	-.00085	-.00798	-.00778

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00003**	**-.00051**	**.00067**	**-.04617**	**-.00079**	**-.00009**	**-.00097**
Stddev	.00036	.00043	.00023	.00158	.00015	.00009	.00012
%RSD	1430.1	84.446	33.895	3.4274	19.059	108.38	12.114
#1	-.00038	-.00034	.00047	-.04794	-.00080	-.00019	-.00087
#2	.00033	-.00099	.00061	-.04490	-.00063	-.00005	-.00110
#3	-.00002	-.00019	.00091	-.04568	-.00093	-.00002	-.00095

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00034**	**-.00042**	**.00250**	**.00009**	**.00212**	**-.00174**	**-.00036**
Stddev	.00001	.00011	.00007	.00003	.00106	.00072	.00005
%RSD	1.6171	26.348	2.9748	30.290	50.207	41.266	12.918
#1	.00034	-.00044	.00241	.00006	.00188	-.00109	-.00039
#2	.00034	-.00030	.00252	.00008	.00328	-.00162	-.00030
#3	.00035	-.00052	.00255	.00012	.00119	-.00251	-.00037

Approved: June 28, 2016

Sample Name: S0 Acquired: 6/27/2016 16:27:28 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	-.00004	.00077	-.00483
Stddev	.00001	.00012	.00235
%RSD	34.789	15.744	48.654
#1	-.00003	.00081	-.00753
#2	-.00004	.00063	-.00372
#3	-.00005	.00086	-.00324
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10141.	61964.	3157.7
Stddev	13.	84.	13.2
%RSD	.12529	.13556	.41911
#1	10150.	61891.	3150.2
#2	10126.	62055.	3149.9
#3	10146.	61945.	3173.0

Approved: June 28, 2016

Sample Name: S1 Acquired: 6/27/2016 16:31:25 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00001**	**.00144**	**.06452**	**.00095**	**.00373**	**.00014**	**.00038**
Stddev	.00010	.00004	.00019	.00005	.00062	.00013	.00007
%RSD	1272.4	2.6441	.29043	4.9605	16.672	89.580	17.915
#1	-.00010	.00148	.06472	.00093	.00303	.00023	.00033
#2	.00008	.00141	.06434	.00092	.00422	-.00000	.00034
#3	.00004	.00142	.06450	.00100	.00394	.00019	.00045

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00053**	**.00045**	**.00040**	**.00567**	**.00122**	**.00152**	**.02671**
Stddev	.00001	.00007	.00049	.00559	.00083	.00003	.00605
%RSD	1.3143	15.364	124.34	98.514	68.218	1.9282	22.646
#1	.00052	.00053	.00033	-.00072	.00218	.00151	.02224
#2	.00053	.00040	.00092	.00965	.00080	.00155	.02431
#3	.00054	.00042	-.00006	.00809	.00068	.00149	.03359

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00019**	**.00093**	**-.00075**	**.00059**	**.00411**	**.00053**	**.03030**
Stddev	.00017	.00006	.00001	.00007	.00004	.00005	.00198
%RSD	90.323	6.8396	.98230	11.115	.90448	9.5626	6.5198
#1	-.00038	.00092	-.00074	.00057	.00407	.00058	.02807
#2	-.00005	.00088	-.00074	.00066	.00410	.00048	.03095
#3	-.00014	.00100	-.00075	.00054	.00415	.00052	.03186

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00140**	**.00054**	**.00367**	**.01597**
Stddev	.00014	.00005	.00002	.00090
%RSD	9.6619	9.1805	.62859	5.6397
#1	-.00138	.00051	.00364	.01504
#2	-.00154	.00060	.00369	.01683
#3	-.00128	.00052	.00367	.01605

Approved: June 28, 2016

Sample Name: S1 Acquired: 6/27/2016 16:31:25 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10143.**	**62124.**	**3206.0**
Stddev	11.	72.	19.9
%RSD	.10378	.11522	.62068
#1	10143.	62198.	3228.9
#2	10154.	62119.	3196.1
#3	10133.	62055.	3193.0

Approved: June 28, 2016

Sample Name: S2 Acquired: 6/27/2016 16:35:22 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00019**	**.00204**	**.00015**	**.00016**	**.07988**	**.00129**	**.00753**
Stddev	.00015	.00001	.00005	.00003	.00111	.00005	.00063
%RSD	76.400	.72668	34.821	16.692	1.3939	3.7663	8.3132
#1	.00014	.00202	.00014	.00014	.08117	.00125	.00706
#2	.00036	.00205	.00010	.00019	.07928	.00127	.00730
#3	.00008	.00205	.00020	.00015	.07920	.00134	.00824

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00053**	**.00102**	**.00074**	**.00109**	**.00174**	**.03060**	**.01658**
Stddev	.00011	.00012	.00002	.00012	.00025	.00438	.00264
%RSD	20.398	12.080	3.1396	11.485	14.384	14.310	15.916
#1	.00043	.00104	.00072	.00106	.00189	.02563	.01399
#2	.00053	.00113	.00073	.00122	.00188	.03228	.01649
#3	.00064	.00088	.00077	.00098	.00145	.03389	.01926

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00122**	**.00297**	**.00288**	**.10232**	**.00021**	**.00207**	**-.00033**
Stddev	.00025	.00037	.00005	.00210	.00012	.00004	.00024
%RSD	20.483	12.420	1.6057	2.0510	56.922	1.7394	72.208
#1	.00118	.00312	.00293	.10069	.00009	.00210	-.00043
#2	.00148	.00324	.00286	.10469	.00032	.00203	-.00006
#3	.00099	.00255	.00284	.10158	.00021	.00208	-.00050

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00077**	**-.00033**	**.00557**	**.00109**	**.05849**	**.00029**	**-.00009**
Stddev	.00005	.00002	.00003	.00007	.00142	.00027	.00005
%RSD	7.0396	4.8769	.59685	6.8444	2.4236	94.437	55.201
#1	.00071	-.00035	.00560	.00105	.05754	.00009	-.00005
#2	.00082	-.00032	.00555	.00117	.06012	.00059	-.00008
#3	.00077	-.00032	.00554	.00104	.05781	.00018	-.00015

Approved: June 28, 2016

Sample Name: S2 Acquired: 6/27/2016 16:35:22 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00099	.00689	.04576
Stddev	.00001	.00001	.00170
%RSD	.93447	.19571	3.7054
#1	.00098	.00689	.04458
#2	.00099	.00691	.04770
#3	.00100	.00688	.04499
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10149.	62108.	3182.3
Stddev	15.	64.	11.6
%RSD	.15093	.10354	.36544
#1	10134.	62148.	3186.5
#2	10149.	62034.	3169.1
#3	10165.	62142.	3191.2

Approved: June 28, 2016

Sample Name: S3 Acquired: 6/27/2016 16:39:19 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.01977	.08011	.00950	.01136	2.1821	.04707	.44692	.03069
Stddev	.00007	.00014	.00004	.00006	.0115	.00010	.00291	.00010
%RSD	.37662	.17721	.39515	.53859	.52769	.21426	.65058	.31828
#1	.01986	.08021	.00955	.01134	2.1940	.04695	.44762	.03077
#2	.01973	.08016	.00948	.01132	2.1710	.04709	.44372	.03073
#3	.01972	.07995	.00949	.01143	2.1813	.04715	.44941	.03058

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.07062	.02876	.06405	.08925	2.5439	1.5038	.08279	.13726
Stddev	.00014	.00006	.00014	.00091	.0092	.0108	.00054	.00104
%RSD	.19258	.22540	.21161	1.0216	.36207	.71942	.65735	.75848
#1	.07056	.02873	.06402	.09002	2.5492	1.5161	.08292	.13843
#2	.07077	.02884	.06420	.08825	2.5333	1.4959	.08219	.13643
#3	.07052	.02872	.06394	.08949	2.5493	1.4993	.08326	.13692

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.17987	8.8250	.06580	.13498	.03019	.03587	.00627	.20279
Stddev	.00049	.0429	.00007	.00030	.00007	.00013	.00010	.00037
%RSD	.27317	.48579	.11308	.22386	.22726	.36683	1.6735	.18491
#1	.18005	8.8691	.06583	.13512	.03017	.03588	.00637	.20240
#2	.18024	8.7835	.06586	.13519	.03013	.03599	.00616	.20315
#3	.17931	8.8223	.06572	.13464	.03026	.03573	.00627	.20283

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.06882	3.5417	.09219	.01258	.06648	.41754	3.3774
Stddev	.00008	.0059	.00015	.00008	.00013	.00035	.0035
%RSD	.12264	.16580	.15815	.64131	.19316	.08426	.10337
#1	.06876	3.5484	.09213	.01253	.06633	.41715	3.3801
#2	.06892	3.5374	.09235	.01267	.06655	.41784	3.3786
#3	.06878	3.5392	.09208	.01253	.06655	.41763	3.3735

Approved: June 28, 2016

Sample Name: S3 Acquired: 6/27/2016 16:39:19 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9961.2**	**60849.**	**3164.1**
Stddev	24.5	76.	5.5
%RSD	.24609	.12516	.17292
#1	9975.5	60901.	3160.7
#2	9932.9	60762.	3161.1
#3	9975.2	60885.	3170.4

Approved: June 28, 2016

Sample Name: S4 Acquired: 6/27/2016 16:42:56 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.04001	.16059	.01917	.02298	4.2883	.09460	.89396	.06192
Stddev	.00016	.00033	.00004	.00016	.0205	.00024	.00500	.00016
%RSD	.39050	.20296	.22035	.71015	.47915	.25587	.55875	.25604
#1	.03987	.16030	.01913	.02297	4.3042	.09433	.89843	.06208
#2	.04018	.16094	.01922	.02315	4.2956	.09468	.89487	.06190
#3	.03997	.16053	.01917	.02283	4.2651	.09479	.88857	.06177

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.14117	.05778	.12698	.17736	5.1637	3.0079	.16510	.27284
Stddev	.00007	.00004	.00003	.00068	.0239	.0115	.00087	.00300
%RSD	.05131	.06413	.02518	.38417	.46255	.38110	.52414	1.1006
#1	.14125	.05777	.12697	.17785	5.1700	3.0175	.16425	.27344
#2	.14117	.05774	.12702	.17764	5.1839	3.0110	.16598	.27550
#3	.14111	.05782	.12696	.17658	5.1373	2.9952	.16505	.26959

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.35713	17.666	.13208	.27122	.06132	.07151	.01302	.39738
Stddev	.00068	.073	.00028	.00036	.00024	.00004	.00003	.00055
%RSD	.19168	.41191	.21506	.13273	.38512	.05984	.22776	.13831
#1	.35788	17.727	.13240	.27097	.06108	.07156	.01305	.39689
#2	.35698	17.686	.13196	.27163	.06156	.07151	.01299	.39727
#3	.35653	17.585	.13187	.27105	.06133	.07147	.01303	.39797

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13730	7.0241	.18587	.02541	.13481	.83123	6.6869
Stddev	.00024	.0199	.00094	.00007	.00021	.00076	.0539
%RSD	.17500	.28366	.50330	.26419	.15783	.09165	.80524
#1	.13741	7.0416	.18680	.02547	.13465	.83035	6.7411
#2	.13745	7.0283	.18587	.02534	.13505	.83172	6.6861
#3	.13702	7.0024	.18493	.02543	.13473	.83162	6.6334

Approved: June 28, 2016

Sample Name: S4 Acquired: 6/27/2016 16:42:56 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9856.7**	**59819.**	**3182.9**
Stddev	25.1	202.	18.4
%RSD	.25431	.33837	.57738
#1	9883.0	60053.	3164.0
#2	9853.9	59697.	3184.1
#3	9833.1	59707.	3200.7

Approved: June 28, 2016

Sample Name: ICV Acquired: 6/27/2016 16:46:33 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39681**	**9.9728**	**.39850**	**.50216**	**1.0074**	**.04989**	**10.080**	**.05002**
Stddev	.00197	.0221	.00202	.00310	.0012	.00009	.071	.00025
%RSD	.49638	.22139	.50815	.61823	.12165	.17076	.70716	.49588
#1	.39557	9.9476	.39922	.50491	1.0072	.04987	10.144	.04994
#2	.39579	9.9820	.39621	.49879	1.0063	.04982	10.094	.04983
#3	.39909	9.9888	.40006	.50277	1.0088	.04999	10.003	.05030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20001**	**.49745**	**.50424**	**4.0154**	**49.997**	**1.0014**	**10.119**	**.50433**
Stddev	.00026	.00261	.00051	.0089	.068	.0024	.078	.00319
%RSD	.12992	.52396	.10047	.22298	.13555	.24336	.77300	.63202
#1	.19972	.49948	.50383	4.0078	50.048	.99873	10.155	.50669
#2	.20009	.49451	.50481	4.0131	50.023	1.0035	10.174	.50070
#3	.20022	.49837	.50408	4.0253	49.920	1.0020	10.030	.50559
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0126**	**50.216**	**.50377**	**9.9997**	**.50153**	**1.2052**	**.39856**	**5.0870**
Stddev	.0015	.076	.00105	.0129	.00381	.0040	.00301	.0029
%RSD	.15346	.15078	.20747	.12858	.75928	.32752	.75620	.05666
#1	1.0136	50.301	.50341	10.009	.50085	1.2027	.40189	5.0837
#2	1.0134	50.156	.50495	10.006	.50564	1.2032	.39601	5.0882
#3	1.0108	50.190	.50295	9.9850	.49812	1.2098	.39778	5.0891
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 28, 2016

Sample Name: ICV Acquired: 6/27/2016 16:46:33 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0029**	**1.0074**	**.99157**	**.50233**	**.99514**	**1.0076**	**1.0062**
Stddev	.0014	.0008	.00668	.00099	.00304	.0016	.0051
%RSD	.14359	.08284	.67385	.19644	.30577	.15863	.50391
#1	1.0045	1.0081	.98527	.50131	.99749	1.0071	1.0120
#2	1.0027	1.0065	.99086	.50239	.99170	1.0093	1.0026
#3	1.0016	1.0077	.99858	.50328	.99623	1.0062	1.0040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9922.2**	**60431.**	**3158.4**
Stddev	43.9	238.	14.3
%RSD	.44205	.39322	.45249
#1	9961.5	60566.	3146.4
#2	9874.9	60571.	3174.2
#3	9930.1	60157.	3154.6

Approved: June 28, 2016

Sample Name: ICB Acquired: 6/27/2016 16:50:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00099	.00554	-.00115	.00276	.00110	.00009	.03225	-.00014
Stddev	.00257	.00430	.00329	.00225	.00039	.00002	.02084	.00024
%RSD	259.01	77.618	286.24	81.620	35.268	20.576	64.619	173.65
#1	-.00177	.00059	.00141	.00093	.00066	.00008	.01638	.00014
#2	.00332	.00765	-.00486	.00528	.00122	.00012	.05585	-.00026
#3	.00143	.00836	-.00000	.00207	.00140	.00008	.02452	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	-.00084	.00077	.00357	-.01667	.00419	.00085	.00163
Stddev	.00026	.00054	.00169	.03849	.08556	.00418	.09571	.00297
%RSD	281.25	64.831	218.37	1078.3	513.20	99.882	11248.	182.06
#1	.00024	-.00045	-.00077	-.04052	.07661	.00428	-.05300	.00498
#2	-.00020	-.00060	.00258	.03052	-.03512	-.00004	-.05580	-.00067
#3	.00024	-.00145	.00050	.02070	-.09150	.00833	.11135	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00085	.12979	.00064	.00370	.00032	-.00065	.00306	.01702
Stddev	.00013	.01999	.00158	.00073	.00243	.00219	.00526	.00215
%RSD	15.046	15.405	244.30	19.815	762.96	338.70	171.50	12.657
#1	-.00091	.11829	.00230	.00310	.00007	-.00006	.00002	.01948
#2	-.00070	.11820	.00047	.00349	-.00198	.00119	.00004	.01608
#3	-.00093	.15287	-.00084	.00452	.00287	-.00307	.00913	.01549
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: ICB Acquired: 6/27/2016 16:50:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.00176**	**-.00246**	**-.00165**	**.00086**	**-.00023**	**.00144**
Stddev	.00069	.00016	.00837	.00252	.00144	.00034	.00007
%RSD	2189.1	9.3341	340.57	152.76	167.10	146.78	4.5591
#1	.00028	.00195	-.01133	-.00326	.00161	.00013	.00152
#2	.00045	.00170	-.00134	.00125	-.00080	-.00027	.00141
#3	-.00082	.00163	.00530	-.00294	.00178	-.00055	.00140
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10100.**	**61911.**	**3176.0**
Stddev	26.	142.	12.7
%RSD	.25830	.22955	.40027
#1	10129.	62065.	3161.5
#2	10079.	61884.	3181.4
#3	10093.	61784.	3185.2

Approved: June 28, 2016

Sample Name: LLICV Acquired: 6/27/2016 16:54:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01060**	**.16216**	**.00794**	**.08233**	**.00807**	**.00158**	**.38728**	**.00095**
Stddev	.00154	.00419	.00461	.00200	.00023	.00002	.05548	.00024
%RSD	14.552	2.5850	58.097	2.4343	2.8714	.96796	14.325	24.756
#1	.01238	.16647	.01159	.08216	.00807	.00157	.39614	.00117
#2	.00978	.15809	.00948	.08041	.00784	.00160	.32791	.00099
#3	.00965	.16193	.00275	.08441	.00831	.00158	.43780	.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00421**	**.00369**	**.00520**	**.08834**	**.67797**	**.08124**	**.34077**	**.01248**
Stddev	.00021	.00046	.00095	.03850	.09873	.00296	.04304	.00174
%RSD	4.9476	12.429	18.247	43.579	14.563	3.6423	12.630	13.941
#1	.00398	.00363	.00528	.10429	.57905	.07907	.29881	.01430
#2	.00437	.00327	.00422	.04443	.67835	.08003	.33870	.01083
#3	.00430	.00418	.00611	.11629	.77651	.08461	.38481	.01232
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00486**	**.42948**	**.01665**	**.78146**	**.00629**	**.07752**	**.01332**	**.81131**
Stddev	.00018	.00656	.00124	.01123	.00188	.00272	.00289	.00120
%RSD	3.7331	1.5266	7.4190	1.4366	29.819	3.5144	21.689	.14730
#1	.00472	.43588	.01583	.79374	.00553	.07443	.01075	.81250
#2	.00507	.42278	.01807	.77891	.00842	.07855	.01645	.81132
#3	.00480	.42978	.01606	.77173	.00491	.07958	.01277	.81011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: LLICV Acquired: 6/27/2016 16:54:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40418**	**.04101**	**.02622**	**.15484**	**.00861**	**.01605**	**.04509**
Stddev	.00239	.00036	.00653	.00299	.00037	.00018	.00076
%RSD	.59159	.87009	24.888	1.9286	4.2794	1.1352	1.6837
#1	.40510	.04074	.02154	.15809	.00821	.01604	.04496
#2	.40599	.04088	.03367	.15222	.00870	.01624	.04440
#3	.40147	.04141	.02344	.15422	.00893	.01588	.04590
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10083.**	**61787.**	**3161.8**
Stddev	13.	95.	9.0
%RSD	.12480	.15329	.28406
#1	10069.	61872.	3168.5
#2	10095.	61805.	3165.4
#3	10084.	61685.	3151.6

Approved: June 28, 2016

Sample Name: ICSA Acquired: 6/27/2016 16:58:00 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00099**	**260.59**	**.00067**	**-.01433**	**-.00064**	**.00003**	**244.07**	**-.00027**
Stddev	.00103	.04	.00184	.00207	.00114	.00004	.85	.00015
%RSD	104.15	.01672	273.35	14.427	177.38	125.03	.34666	54.518
#1	.00019	260.64	.00043	-.01264	.00066	.00001	244.74	-.00040
#2	-.00143	260.56	.00262	-.01371	-.00145	.00008	243.12	-.00030
#3	-.00171	260.57	-.00103	-.01663	-.00115	.00001	244.35	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00109**	**-.00064**	**.00038**	**96.225**	**-.06210**	**.00911**	**249.00**	**-.00014**
Stddev	.00026	.00059	.00203	.218	.13083	.00426	.50	.00324
%RSD	23.913	92.446	537.24	.22698	210.68	46.751	.20145	2364.2
#1	-.00120	-.00000	.00143	96.372	.07097	.01144	249.57	.00215
#2	-.00128	-.00117	.00167	95.974	-.19057	.01170	248.83	-.00385
#3	-.00080	-.00075	-.00196	96.328	-.06670	.00420	248.61	.00128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00410**	**.03807**	**.00125**	**.00845**	**.00129**	**-.00295**	**.00507**	**-.01235**
Stddev	.00018	.01282	.00103	.00221	.00279	.00338	.00333	.00091
%RSD	4.4785	33.680	82.821	26.181	217.33	114.53	65.779	7.4017
#1	-.00395	.03046	.00230	.00621	-.00193	-.00152	.00805	-.01137
#2	-.00405	.05287	.00023	.01063	.00307	-.00681	.00147	-.01317
#3	-.00431	.03087	.00121	.00851	.00272	-.00052	.00568	-.01250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: ICSA Acquired: 6/27/2016 16:58:00 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00054**	**.00054**	**.02073**	**.00086**	**-.00239**	**-.00765**	**-.00325**
Stddev	.00049	.00006	.00554	.00418	.00062	.00009	.00028
%RSD	90.845	11.771	26.720	484.85	25.742	1.1964	8.6868
#1	-.00025	.00051	.02203	.00566	-.00203	-.00759	-.00328
#2	-.00111	.00050	.02550	-.00199	-.00204	-.00775	-.00352
#3	-.00027	.00062	.01465	-.00109	-.00310	-.00760	-.00296
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9590.6**	**58096.**	**3120.3**
Stddev	14.6	53.	20.2
%RSD	.15235	.09132	.64704
#1	9581.4	58077.	3098.1
#2	9607.4	58156.	3137.6
#3	9583.0	58056.	3125.2

Approved: June 28, 2016

Sample Name: ICSAB Acquired: 6/27/2016 17:01:50 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50690	260.11	.24859	-.01640	.24976	.23774	245.13	.48330
Stddev	.00189	.60	.00382	.00094	.00054	.00047	.96	.00078
%RSD	.37269	.23092	1.5352	5.7378	.21812	.19574	.39029	.16049
#1	.50805	259.80	.24535	-.01603	.24973	.23722	244.54	.48375
#2	.50792	260.80	.24762	-.01746	.25032	.23812	244.62	.48374
#3	.50472	259.72	.25280	-.01569	.24923	.23788	246.24	.48240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.23513	.24427	.24409	94.716	5.0617	.00921	246.04	.24477
Stddev	.00073	.00027	.00276	.486	.0658	.00148	1.28	.00137
%RSD	.31164	.11038	1.1321	.51320	1.3006	16.119	.51967	.55902
#1	.23503	.24397	.24493	94.335	5.0116	.00886	245.48	.24320
#2	.23591	.24449	.24633	94.549	5.0371	.00793	245.14	.24569
#3	.23445	.24434	.24100	95.264	5.1362	.01084	247.50	.24543
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00486	5.3310	.47130	.08050	.48396	.49560	.24381	-.02283
Stddev	.00015	.0330	.00066	.00153	.00431	.00280	.00827	.00213
%RSD	3.0857	.61898	.13932	1.9055	.89132	.56428	3.3914	9.3448
#1	-.00487	5.3040	.47187	.07931	.48866	.49579	.24220	-.02529
#2	-.00501	5.3678	.47144	.08223	.48018	.49830	.23647	-.02170
#3	-.00471	5.3211	.47058	.07995	.48304	.49272	.25277	-.02150
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: ICSAB Acquired: 6/27/2016 17:01:50 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00048**	**.00035**	**.01993**	**.45058**	**.24659**	**.46536**	**-.00377**
Stddev	.00038	.00008	.00278	.00100	.00022	.00042	.00037
%RSD	79.283	22.066	13.970	.22111	.08877	.09081	9.8936
#1	-.00073	.00031	.02267	.44975	.24663	.46530	-.00403
#2	-.00004	.00030	.02004	.45168	.24679	.46581	-.00393
#3	-.00067	.00043	.01710	.45030	.24636	.46497	-.00334
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9569.8**	**58094.**	**3117.7**
Stddev	15.5	235.	15.5
%RSD	.16148	.40421	.49683
#1	9554.0	58043.	3123.9
#2	9570.6	57889.	3129.1
#3	9584.9	58351.	3100.0

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 17:05:32 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39812	10.194	.39571	.49617	1.0047	.05015	10.320	.04983
Stddev	.00099	.031	.00174	.00046	.0019	.00014	.042	.00049
%RSD	.24973	.29978	.43860	.09187	.19235	.28871	.41088	.97351
#1	.39738	10.228	.39635	.49590	1.0063	.05008	10.297	.05009
#2	.39773	10.181	.39375	.49592	1.0025	.05031	10.369	.05012
#3	.39925	10.171	.39704	.49670	1.0051	.05005	10.295	.04927
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19973	.50036	.50054	4.1240	50.411	1.0001	10.412	.50273
Stddev	.00033	.00059	.00102	.0403	.210	.0056	.079	.00395
%RSD	.16441	.11801	.20367	.97754	.41667	.56171	.75919	.78628
#1	.19954	.50095	.50041	4.1590	50.628	1.0018	10.434	.49841
#2	.19953	.50036	.50162	4.1329	50.208	.99382	10.325	.50363
#3	.20011	.49977	.49959	4.0799	50.397	1.0047	10.478	.50616
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0040	49.910	.49867	9.9408	.50190	1.1964	.39564	5.0119
Stddev	.0034	.129	.00164	.0207	.00148	.0021	.00342	.0091
%RSD	.33672	.25901	.32901	.20775	.29456	.17193	.86336	.18204
#1	1.0078	49.996	.50020	9.9590	.50173	1.1973	.39659	5.0219
#2	1.0030	49.762	.49887	9.9451	.50346	1.1978	.39185	5.0101
#3	1.0012	49.973	.49693	9.9184	.50052	1.1940	.39848	5.0039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 17:05:32 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0002**	**1.0018**	**1.0016**	**.50197**	**1.0005**	**.99872**	**1.0136**
Stddev	.0024	.0021	.0061	.00116	.0006	.00151	.0037
%RSD	.24513	.21221	.61065	.23065	.05650	.15076	.36157
#1	1.0027	1.0033	1.0042	.50113	1.00000	.99977	1.0152
#2	1.0001	.99937	.99467	.50329	1.0011	.99940	1.0094
#3	.99776	1.0027	1.0061	.50150	1.0003	.99699	1.0162
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10039.**	**60813.**	**3145.7**
Stddev	3.	208.	14.4
%RSD	.03010	.34163	.45770
#1	10036.	60702.	3129.8
#2	10042.	60684.	3157.8
#3	10038.	61053.	3149.4

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 17:09:09 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00137**	**.01673**	**.00109**	**.00206**	**.00086**	**.00010**	**.03042**	**-.00014**
Stddev	.00081	.00979	.00286	.00238	.00116	.00006	.04347	.00018
%RSD	58.981	58.522	261.70	115.49	135.64	61.421	142.88	134.69
#1	.00223	.02185	-.00012	.00406	.00200	.00014	.02498	.00008
#2	.00128	.00544	-.00096	.00270	-.00032	.00013	.07635	-.00025
#3	.00062	.02290	.00436	-.00057	.00089	.00003	-.01007	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00032**	**.00068**	**.00010**	**.01799**	**-.07860**	**-.00000**	**.03574**	**.00112**
Stddev	.00019	.00054	.00016	.01691	.10277	.00272	.01893	.00218
%RSD	59.090	78.804	160.89	93.958	130.74	167340.	52.981	194.22
#1	.00023	.00015	.00010	.00464	-.01285	.00047	.04208	.00279
#2	.00053	.00068	-.00006	.03700	-.19703	.00245	.05068	.00191
#3	.00020	.00122	.00026	.01235	-.02593	-.00293	.01445	-.00134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00165**	**.09131**	**.00047**	**.00133**	**-.00098**	**-.00375**	**-.00093**	**.00947**
Stddev	.00056	.03898	.00022	.00691	.00319	.00290	.00484	.00086
%RSD	34.173	42.696	47.090	517.43	326.90	77.233	517.65	9.1162
#1	-.00108	.07673	.00050	.00027	-.00287	-.00484	.00094	.01042
#2	-.00166	.13548	.00023	-.00497	.00271	-.00047	-.00643	.00925
#3	-.00220	.06171	.00067	.00871	-.00277	-.00595	.00269	.00874
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 17:09:09 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.00134**	**.00294**	**.00126**	**.00107**	**-.00118**	**.00127**
Stddev	.00038	.00047	.00825	.00251	.00076	.00007	.00026
%RSD	243.07	35.413	280.33	198.89	71.009	6.1199	20.447
#1	.00028	.00189	.00077	-.00145	.00019	-.00126	.00137
#2	-.00044	.00104	.01206	.00349	.00154	-.00114	.00097
#3	-.00031	.00110	-.00401	.00174	.00147	-.00114	.00146
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10203.**	**62526.**	**3197.0**
Stddev	15.	54.	3.0
%RSD	.14233	.08586	.09413
#1	10188.	62582.	3193.5
#2	10217.	62520.	3198.4
#3	10206.	62475.	3199.0

Approved: June 28, 2016

Sample Name: PBW 02 Acquired: 6/27/2016 17:13:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00030**	**-.00881**	**.00095**	**.00019**	**-.00047**	**.00003**	**-.00616**	**-.00018**
Stddev	.00116	.00554	.00248	.00193	.00024	.00004	.03560	.00010
%RSD	390.35	62.878	261.95	998.89	52.384	149.57	577.96	59.781
#1	.00049	-.01170	-.00122	-.00172	-.00019	.00005	-.04135	-.00026
#2	-.00163	-.00242	.00041	.00015	-.00056	-.00002	.02984	-.00021
#3	.00025	-.01230	.00365	.00214	-.00065	.00005	-.00698	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**-.00078**	**-.00058**	**.03013**	**-.14899**	**-.00152**	**.01432**	**.00153**
Stddev	.00010	.00102	.00108	.01394	.15583	.00301	.03037	.00216
%RSD	103.57	131.40	186.20	46.269	104.59	197.34	212.04	140.87
#1	.00011	-.00168	-.00178	.01414	-.00849	-.00181	-.00533	.00249
#2	-.00001	.00033	.00029	.03971	-.12189	-.00438	-.00101	-.00094
#3	.00020	-.00097	-.00024	.03656	-.31659	.00162	.04931	.00305
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00363**	**.00444**	**.00008**	**.00404**	**.00187**	**-.00311**	**-.00416**	**-.02308**
Stddev	.00038	.01833	.00068	.00383	.00021	.00333	.00428	.00035
%RSD	10.400	413.25	879.56	94.791	11.348	107.14	102.83	1.4951
#1	-.00320	-.00716	.00073	.00046	.00206	-.00084	-.00453	-.02269
#2	-.00391	-.00509	.00013	.00808	.00164	-.00155	-.00825	-.02333
#3	-.00378	.02556	-.00063	.00359	.00189	-.00693	.00029	-.02323
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: PBW 02 Acquired: 6/27/2016 17:13:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00119**	**-.00005**	**.00339**	**-.00129**	**.00012**	**-.00166**	**-.00032**
Stddev	.00066	.00044	.00302	.00334	.00053	.00009	.00052
%RSD	55.564	794.08	89.101	257.98	441.52	5.3649	162.89
#1	-.00143	.00007	.00475	-.00092	.00055	-.00174	-.00039
#2	-.00169	.00031	-.00007	.00184	.00028	-.00168	.00024
#3	-.00044	-.00054	.00549	-.00481	-.00047	-.00156	-.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10695.**	**65258.**	**3317.0**
Stddev	26.	67.	10.3
%RSD	.24550	.10262	.31041
#1	10724.	65229.	3328.8
#2	10685.	65211.	3311.2
#3	10674.	65335.	3310.8

Approved: June 28, 2016

Sample Name: LCSW 02 Acquired: 6/27/2016 17:17:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19571**	**4.8490**	**.19209**	**.95260**	**.49496**	**.02398**	**5.0421**	**.02419**
Stddev	.00111	.0129	.00279	.00437	.00076	.00005	.0485	.00044
%RSD	.56887	.26582	1.4534	.45858	.15291	.19806	.96135	1.8282
#1	.19681	4.8597	.18908	.95165	.49551	.02394	4.9862	.02470
#2	.19459	4.8527	.19257	.95737	.49410	.02397	5.0668	.02397
#3	.19572	4.8347	.19460	.94879	.49527	.02403	5.0732	.02390
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09895**	**.24424**	**.24790**	**1.9821**	**24.454**	**.49863**	**4.8988**	**.24435**
Stddev	.00038	.00036	.00007	.0304	.036	.00321	.0550	.00167
%RSD	.37934	.14761	.02688	1.5339	.14581	.64407	1.1233	.68185
#1	.09935	.24452	.24794	2.0079	24.461	.49816	4.9440	.24337
#2	.09861	.24384	.24782	1.9486	24.415	.49568	4.8375	.24627
#3	.09888	.24438	.24793	1.9900	24.486	.50205	4.9148	.24340
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49750**	**24.783**	**.24880**	**4.7583**	**.24566**	**.57847**	**.18598**	**2.2967**
Stddev	.00165	.055	.00020	.0071	.00321	.00254	.00362	.0031
%RSD	.33263	.22119	.07997	.14988	1.3070	.43860	1.9477	.13564
#1	.49941	24.839	.24866	4.7640	.24678	.58140	.18180	2.2995
#2	.49645	24.729	.24903	4.7607	.24204	.57705	.18822	2.2934
#3	.49664	24.780	.24872	4.7503	.24816	.57696	.18791	2.2971
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: LCSW 02 Acquired: 6/27/2016 17:17:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49159	.50204	.50144	.24674	.48932	.48878	.00532
Stddev	.00166	.00065	.00707	.00252	.00196	.00067	.00106
%RSD	.33693	.12972	1.4104	1.0206	.40010	.13751	20.007
#1	.49003	.50195	.50206	.24623	.48747	.48951	.00419
#2	.49332	.50272	.49408	.24947	.49137	.48866	.00547
#3	.49141	.50143	.50818	.24452	.48913	.48818	.00630
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10147.	61787.	3228.2
Stddev	37.	110.	8.7
%RSD	.36126	.17761	.26817
#1	10110.	61660.	3218.3
#2	10148.	61854.	3234.2
#3	10184.	61846.	3232.2

Approved: June 28, 2016

Sample Name: L1606080601 Acquired: 6/27/2016 17:20:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00116	.02060	-.00067	.02166	.01964	-.00003	39.024	.00036
Stddev	.00121	.01252	.00277	.00159	.00172	.00000	.405	.00015
%RSD	104.80	60.749	416.24	7.3609	8.7455	3.2878	1.0374	42.349
#1	-.00019	.02843	.00239	.01993	.02142	-.00003	39.191	.00018
#2	.00216	.00617	-.00302	.02196	.01799	-.00003	38.563	.00045
#3	.00151	.02721	-.00136	.02307	.01952	-.00003	39.319	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.00061	.00065	.37457	2.1803	-.00098	6.8201	.03122
Stddev	.00007	.00064	.00085	.03063	.0659	.00198	.0589	.00141
%RSD	140.83	104.89	131.80	8.1773	3.0246	202.18	.86401	4.5043
#1	.00012	.00117	-.00033	.38487	2.1041	-.00090	6.7836	.03003
#2	.00004	-.00009	.00101	.34012	2.2194	.00096	6.7887	.03278
#3	-.00001	.00076	.00126	.39872	2.2173	-.00300	6.8881	.03086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00224	7.9243	.00121	.00966	.00454	.00356	-.00214	2.0660
Stddev	.00010	.0628	.00102	.00239	.00227	.00380	.00192	.0076
%RSD	4.6694	.79232	84.243	24.770	50.071	106.76	89.458	.36669
#1	-.00220	7.9968	.00004	.01147	.00645	.00782	-.00177	2.0732
#2	-.00235	7.8897	.00190	.01055	.00203	.00052	-.00422	2.0667
#3	-.00215	7.8865	.00170	.00695	.00514	.00234	-.00044	2.0581
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606080601 Acquired: 6/27/2016 17:20:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00042**	**.14441**	**-.00334**	**-.00110**	**-.00005**	**.01269**	**-.00008**
Stddev	.00017	.00107	.00485	.00138	.00019	.00007	.00040
%RSD	40.179	.74183	145.18	125.66	394.47	.55580	499.78
#1	-.00061	.14527	-.00777	.00023	-.00019	.01275	-.00032
#2	-.00027	.14321	.00183	-.00252	.00017	.01261	-.00031
#3	-.00039	.14475	-.00407	-.00100	-.00012	.01271	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10064.**	**62041.**	**3235.9**
Stddev	24.	275.	7.2
%RSD	.23601	.44359	.22143
#1	10090.	62357.	3229.8
#2	10059.	61850.	3243.8
#3	10043.	61917.	3234.0

Approved: June 28, 2016

Sample Name: L1606080603S Acquired: 6/27/2016 17:24:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18868**	**4.7978**	**.19215**	**.95733**	**.50798**	**.02373**	**42.730**	**.02400**
Stddev	.00383	.0141	.00123	.00243	.00250	.00004	.161	.00036
%RSD	2.0316	.29475	.63755	.25426	.49208	.18406	.37756	1.5030
#1	.18503	4.7834	.19345	.95703	.51026	.02378	42.809	.02433
#2	.18835	4.7983	.19200	.95990	.50837	.02372	42.838	.02361
#3	.19267	4.8117	.19101	.95506	.50530	.02370	42.545	.02405
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09709**	**.24438**	**.24122**	**2.2734**	**26.392**	**.49852**	**11.683**	**.26736**
Stddev	.00039	.00143	.00144	.0214	.111	.00409	.004	.00231
%RSD	.40610	.58323	.59889	.93939	.41934	.81977	.03681	.86328
#1	.09753	.24273	.24036	2.2674	26.519	.50112	11.683	.26624
#2	.09677	.24515	.24289	2.2557	26.337	.50063	11.679	.27001
#3	.09697	.24525	.24041	2.2971	26.319	.49381	11.688	.26582
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49532**	**32.123**	**.24190**	**4.7490**	**.24151**	**.57560**	**.18260**	**4.3522**
Stddev	.00085	.181	.00103	.0073	.00375	.00173	.00128	.0086
%RSD	.17117	.56228	.42655	.15262	1.5524	.30096	.70043	.19708
#1	.49630	32.258	.24220	4.7506	.24413	.57400	.18403	4.3549
#2	.49484	32.194	.24076	4.7410	.23722	.57535	.18156	4.3426
#3	.49482	31.918	.24276	4.7553	.24319	.57744	.18221	4.3591
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606080603S Acquired: 6/27/2016 17:24:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48392**	**.63166**	**.47797**	**.11312**	**.48669**	**.48272**	**.00177**
Stddev	.00182	.00737	.00275	.00269	.00040	.00100	.00069
%RSD	.37525	1.1667	.57509	2.3740	.08212	.20793	38.757
#1	.48524	.63710	.47480	.11502	.48676	.48342	.00148
#2	.48185	.63460	.47955	.11005	.48705	.48157	.00128
#3	.48468	.62327	.47957	.11429	.48626	.48316	.00256
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9928.3**	**61031.**	**3189.4**
Stddev	9.2	124.	12.5
%RSD	.09293	.20381	.39199
#1	9917.7	61126.	3181.7
#2	9933.6	61078.	3182.6
#3	9933.7	60890.	3203.8

Approved: June 28, 2016

Sample Name: L1606080604SD Acquired: 6/27/2016 17:28:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19102	4.8382	.19433	.96593	.50967	.02395	43.216	.02415
Stddev	.00169	.0118	.00323	.00185	.00456	.00006	.345	.00019
%RSD	.88505	.24462	1.6639	.19102	.89440	.23583	.79902	.78496
#1	.18936	4.8295	.19111	.96765	.51436	.02390	43.567	.02393
#2	.19274	4.8517	.19431	.96398	.50938	.02401	43.203	.02428
#3	.19096	4.8335	.19758	.96617	.50526	.02396	42.877	.02423
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09757	.24569	.24197	2.4082	26.572	.50077	11.683	.27585
Stddev	.00013	.00151	.00041	.0256	.254	.00306	.149	.00299
%RSD	.13140	.61587	.17000	1.0630	.95428	.61193	1.2770	1.0836
#1	.09759	.24397	.24179	2.4160	26.850	.50303	11.852	.27486
#2	.09743	.24680	.24244	2.4290	26.513	.50199	11.631	.27921
#3	.09768	.24631	.24168	2.3796	26.353	.49728	11.567	.27348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50011	31.356	.24339	4.7797	.24121	.58153	.18374	4.3776
Stddev	.00108	.255	.00034	.0045	.00341	.00298	.00584	.0084
%RSD	.21609	.81394	.13903	.09467	1.4152	.51196	3.1762	.19113
#1	.50102	31.634	.24347	4.7825	.23728	.58495	.18112	4.3817
#2	.50040	31.305	.24368	4.7821	.24343	.57952	.17967	4.3680
#3	.49891	31.131	.24302	4.7745	.24291	.58012	.19043	4.3831
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606080604SD Acquired: 6/27/2016 17:28:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48830**	**.62923**	**.48040**	**.12523**	**.49076**	**.49086**	**.00086**
Stddev	.00100	.00990	.01133	.00260	.00121	.00041	.00059
%RSD	.20416	1.5740	2.3594	2.0756	.24672	.08420	69.005
#1	.48782	.64025	.48497	.12310	.49057	.49134	.00029
#2	.48945	.62635	.48874	.12813	.49205	.49058	.00148
#3	.48763	.62107	.46750	.12446	.48965	.49067	.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9952.8**	**61100.**	**3205.8**
Stddev	19.4	73.	20.3
%RSD	.19536	.11893	.63427
#1	9965.5	61024.	3201.6
#2	9962.6	61108.	3188.0
#3	9930.5	61168.	3228.0

Approved: June 28, 2016

Sample Name: L1606072901 Acquired: 6/27/2016 17:31:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00126	1.6254	.00181	.01071	.09412	.00028	3.1712	.00031
Stddev	.00092	.0153	.00348	.00115	.00125	.00008	.0788	.00021
%RSD	72.863	.93997	192.48	10.769	1.3261	29.024	2.4839	67.369
#1	-.00068	1.6406	.00453	.01113	.09539	.00037	3.0829	.00050
#2	-.00078	1.6100	.00300	.00941	.09407	.00023	3.2344	.00008
#3	-.00231	1.6256	-.00211	.01160	.09290	.00024	3.1962	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00601	.00400	.00545	7.4449	3.5070	.00094	2.1844	.17045
Stddev	.00011	.00088	.00036	.0210	.0322	.00203	.0563	.00068
%RSD	1.7799	22.070	6.6592	.28202	.91869	215.66	2.5756	.39846
#1	.00598	.00478	.00522	7.4322	3.4868	.00123	2.2429	.16979
#2	.00612	.00416	.00587	7.4691	3.5442	.00281	2.1795	.17115
#3	.00591	.00304	.00526	7.4334	3.4901	-.00122	2.1307	.17042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00251	7.7887	.00608	.07035	.00411	-.00221	.00028	6.1931
Stddev	.00020	.0229	.00075	.00127	.00357	.00204	.00486	.0088
%RSD	7.9372	.29408	12.322	1.8117	86.863	92.342	1741.5	.14225
#1	-.00271	7.7930	.00545	.07162	.00350	-.00109	-.00230	6.1945
#2	-.00251	7.7640	.00587	.06908	.00088	-.00097	-.00275	6.2011
#3	-.00231	7.8092	.00691	.07036	.00795	-.00457	.00588	6.1836
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606072901 Acquired: 6/27/2016 17:31:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.03770	.03904	-.00171	.00877	.04031	.00004
Stddev	.00095	.00007	.00389	.00164	.00050	.00036	.00028
%RSD	1355.8	.19554	9.9681	96.012	5.6468	.89509	696.17
#1	-.00094	.03763	.04075	-.00193	.00824	.04070	.00005
#2	.00094	.03768	.03458	.00003	.00922	.04025	.00031
#3	.00021	.03778	.04177	-.00323	.00885	.03999	-.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10254.	63020.	3242.6
Stddev	22.	136.	20.5
%RSD	.21566	.21638	.63087
#1	10263.	63177.	3231.6
#2	10271.	62928.	3229.9
#3	10229.	62955.	3266.2

Approved: June 28, 2016

Sample Name: L1606072902 Acquired: 6/27/2016 17:35:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00128	1.5279	.00294	.00920	.09400	.00027	3.1337	-.00009
Stddev	.00143	.0023	.00152	.00102	.00017	.00008	.0194	.00027
%RSD	111.63	.14858	51.695	11.057	.18433	28.848	.61979	311.50
#1	-.00273	1.5264	.00204	.01036	.09402	.00030	3.1198	.00004
#2	.00014	1.5268	.00470	.00875	.09382	.00032	3.1254	-.00040
#3	-.00126	1.5305	.00209	.00848	.09416	.00018	3.1559	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00578	.00305	.00383	6.9357	3.6196	.00036	2.2247	.16079
Stddev	.00009	.00069	.00011	.0222	.0856	.00202	.0717	.00269
%RSD	1.6177	22.682	2.8626	.32082	2.3649	566.62	3.2222	1.6755
#1	.00583	.00231	.00379	6.9403	3.5666	-.00130	2.1889	.15775
#2	.00584	.00314	.00396	6.9553	3.5739	-.00023	2.1779	.16288
#3	.00568	.00369	.00375	6.9115	3.7184	.00260	2.3072	.16173
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00316	7.8271	.00617	.06136	.00503	-.00395	-.00238	6.1065
Stddev	.00011	.0235	.00078	.00202	.00411	.00200	.00604	.0250
%RSD	3.4171	.30059	12.658	3.2964	81.711	50.696	254.06	.40948
#1	-.00328	7.8096	.00697	.06369	.00428	-.00186	.00226	6.1188
#2	-.00313	7.8538	.00541	.06033	.00947	-.00585	-.00018	6.1229
#3	-.00307	7.8178	.00612	.06006	.00135	-.00415	-.00921	6.0777
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606072902 Acquired: 6/27/2016 17:35:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00050**	**.03735**	**.04117**	**.00144**	**.00691**	**.04017**	**-.00009**
Stddev	.00061	.00088	.01014	.00158	.00065	.00019	.00036
%RSD	122.98	2.3434	24.633	110.03	9.4394	.48407	415.84
#1	-.00023	.03672	.05048	.00262	.00767	.04037	-.00035
#2	-.00006	.03835	.04268	.00205	.00650	.04014	.00033
#3	-.00119	.03698	.03036	-.00036	.00657	.03999	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10214.**	**62944.**	**3231.5**
Stddev	13.	159.	13.0
%RSD	.12414	.25254	.40292
#1	10201.	62804.	3216.5
#2	10215.	63117.	3238.7
#3	10227.	62911.	3239.3

Approved: June 28, 2016

Sample Name: L1606072903 Acquired: 6/27/2016 17:39:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00067	2.8993	.00024	.05090	.04272	.00242	48.903	.00044
Stddev	.00242	.0050	.00116	.00092	.00122	.00001	.251	.00029
%RSD	362.55	.17204	489.39	1.8154	2.8651	.52901	.51289	65.440
#1	-.00319	2.8982	-.00110	.05178	.04208	.00244	48.832	.00051
#2	.00164	2.8950	.00081	.04994	.04195	.00242	49.181	.00068
#3	-.00046	2.9048	.00100	.05100	.04413	.00241	48.695	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04849	.00140	.00749	3.0672	1.9831	.00232	14.704	.77098
Stddev	.00042	.00064	.00097	.0252	.0340	.00146	.045	.00786
%RSD	.86550	45.900	12.942	.82162	1.7160	62.964	.30575	1.0200
#1	.04824	.00074	.00639	3.0420	2.0045	.00249	14.747	.76450
#2	.04897	.00144	.00788	3.0673	2.0010	.00078	14.658	.77973
#3	.04825	.00202	.00822	3.0924	1.9439	.00368	14.707	.76872
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00364	5.7088	.02145	.00824	.00251	-.00129	-.00306	4.9636
Stddev	.00021	.0628	.00121	.00259	.00020	.00314	.00422	.0134
%RSD	5.7663	1.0997	5.6406	31.436	8.0705	242.36	137.85	.26944
#1	-.00341	5.7321	.02273	.01082	.00238	-.00123	-.00163	4.9731
#2	-.00369	5.7565	.02032	.00826	.00275	-.00446	-.00780	4.9694
#3	-.00382	5.6376	.02129	.00564	.00242	.00181	.00026	4.9483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606072903 Acquired: 6/27/2016 17:39:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00113**	**.44457**	**.00054**	**-.00117**	**.00062**	**.06031**	**.00044**
Stddev	.00082	.00282	.00416	.00123	.00028	.00015	.00054
%RSD	72.494	.63420	769.78	105.89	44.803	.25518	120.80
#1	-.00046	.44280	-.00184	-.00085	.00074	.06037	.00105
#2	-.00204	.44782	-.00188	-.00253	.00081	.06042	.00022
#3	-.00088	.44308	.00534	-.00012	.00030	.06013	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10214.**	**62764.**	**3251.9**
Stddev	15.	226.	30.0
%RSD	.14894	.36043	.92367
#1	10231.	62885.	3269.5
#2	10201.	62904.	3217.2
#3	10210.	62503.	3268.9

Approved: June 28, 2016

Sample Name: L1606064303 Acquired: 6/27/2016 17:43:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	.04359	-.00038	.00804	.07142	-.00001	63.015	.00015
Stddev	.00107	.00439	.00112	.00188	.00050	.00002	.332	.00017
%RSD	197.47	10.071	294.88	23.434	.70180	200.01	.52652	108.50
#1	.00048	.04856	.00030	.00597	.07123	-.00002	63.389	.00034
#2	.00163	.04196	.00023	.00850	.07103	.00001	62.898	.00009
#3	-.00050	.04025	-.00167	.00965	.07198	-.00002	62.758	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	.00094	.00048	.07420	.46744	.00469	5.9191	.00737
Stddev	.00049	.00027	.00085	.01333	.03874	.00182	.0707	.00248
%RSD	364.97	28.500	178.88	17.963	8.2881	38.796	1.1953	33.604
#1	.00004	.00098	.00137	.06301	.51154	.00623	5.9807	.00533
#2	-.00069	.00118	-.00032	.08895	.43888	.00517	5.8418	.00665
#3	.00025	.00065	.00038	.07065	.45190	.00268	5.9348	.01013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00345	2.0614	.00079	.00378	.00074	-.00347	.00097	3.4640
Stddev	.00016	.0382	.00046	.00156	.00278	.00208	.00200	.0078
%RSD	4.6376	1.8549	57.890	41.293	376.00	59.886	206.13	.22468
#1	-.00326	2.1040	.00058	.00508	.00299	-.00460	-.00104	3.4696
#2	-.00352	2.0301	.00048	.00205	.00160	-.00475	.00296	3.4673
#3	-.00356	2.0501	.00132	.00420	-.00237	-.00107	.00098	3.4551
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606064303 Acquired: 6/27/2016 17:43:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00113**	**.15664**	**-.00009**	**-.00291**	**-.00002**	**-.00057**	**-.00001**
Stddev	.00011	.00086	.00155	.00390	.00031	.00003	.00025
%RSD	9.4705	.54870	1738.0	134.05	1699.1	5.0477	4249.3
#1	-.00112	.15763	-.00071	-.00083	.00034	-.00057	-.00026
#2	-.00103	.15623	-.00123	-.00049	-.00018	-.00054	.00024
#3	-.00124	.15606	.00168	-.00742	-.00022	-.00059	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10085.**	**61835.**	**3202.9**
Stddev	33.	33.	7.2
%RSD	.32599	.05277	.22534
#1	10060.	61810.	3199.6
#2	10073.	61824.	3197.8
#3	10122.	61872.	3211.1

Approved: June 28, 2016

Sample Name: L1606064303SDL Acquired: 6/27/2016 17:47:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573560-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00104**	**-.00182**	**.00057**	**.00138**	**.01420**	**.00000**	**12.930**	**.00004**
Stddev	.00099	.01165	.00136	.00056	.00049	.00002	.075	.00009
%RSD	94.909	639.42	237.36	40.936	3.4314	523.47	.57956	208.52
#1	-.00030	-.00277	.00186	.00073	.01467	-.00002	12.849	.00003
#2	-.00066	-.01297	.00069	.00164	.01423	.00001	12.996	-.00004
#3	-.00217	.01027	-.00084	.00176	.01370	.00002	12.947	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**.00013**	**-.00009**	**.03538**	**-.01742**	**-.00240**	**1.2370**	**.00326**
Stddev	.00037	.00026	.00087	.00737	.12475	.00125	.0784	.00249
%RSD	379.46	209.66	976.09	20.838	716.36	52.079	6.3337	76.471
#1	.00021	-.00015	-.00080	.03750	-.12221	-.00187	1.2692	.00272
#2	.00040	.00016	.00089	.04147	.12058	-.00151	1.2941	.00108
#3	-.00032	.00037	-.00035	.02719	-.05062	-.00383	1.1477	.00597
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00395**	**.41283**	**.00031**	**.00142**	**.00042**	**-.00181**	**.00041**	**.67743**
Stddev	.00039	.02396	.00075	.00696	.00065	.00114	.00402	.00193
%RSD	9.8684	5.8049	242.68	489.26	154.75	62.729	976.91	.28493
#1	-.00350	.43926	.00093	.00943	-.00030	-.00121	-.00187	.67920
#2	-.00414	.39251	.00052	-.00197	.00096	-.00313	-.00195	.67771
#3	-.00421	.40673	-.00052	-.00319	.00059	-.00110	.00505	.67537
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606064303SDL Acquired: 6/27/2016 17:47:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573560-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00166**	**.03115**	**.00031**	**.00188**	**.00043**	**-.00103**	**-.00037**
Stddev	.00053	.00040	.00035	.00087	.00047	.00010	.00021
%RSD	31.650	1.2705	115.54	46.302	110.95	9.7399	56.928
#1	-.00183	.03085	.00007	.00118	.00094	-.00111	-.00017
#2	-.00107	.03160	.00013	.00286	.00031	-.00092	-.00058
#3	-.00208	.03101	.00071	.00160	.00002	-.00107	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10409.**	**64183.**	**3241.0**
Stddev	21.	213.	7.7
%RSD	.20588	.33131	.23753
#1	10429.	64320.	3246.3
#2	10412.	64291.	3232.2
#3	10387.	63938.	3244.6

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 17:51:26 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40066	10.072	.39812	.50122	1.0144	.04986	10.130	.05015
Stddev	.00156	.020	.00127	.00349	.0044	.00013	.030	.00030
%RSD	.39014	.19385	.31846	.69631	.43738	.26477	.29810	.59051
#1	.40225	10.051	.39688	.50371	1.0096	.04972	10.155	.04996
#2	.39913	10.077	.39941	.49723	1.0184	.04988	10.137	.05049
#3	.40059	10.089	.39807	.50271	1.0153	.04998	10.096	.04999
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20250	.50126	.50507	4.0583	50.216	1.0137	10.276	.50369
Stddev	.00053	.00189	.00136	.0124	.109	.0035	.157	.00318
%RSD	.26379	.37697	.27003	.30545	.21690	.34526	1.5238	.63046
#1	.20261	.50187	.50661	4.0726	50.159	1.0105	10.190	.50720
#2	.20297	.50277	.50455	4.0520	50.341	1.0175	10.457	.50285
#3	.20192	.49914	.50404	4.0504	50.147	1.0131	10.182	.50101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0149	50.606	.50435	10.008	.50479	1.2025	.40740	5.0370
Stddev	.0036	.139	.00024	.024	.00297	.0055	.00387	.0035
%RSD	.35766	.27559	.04774	.24116	.58880	.45529	.94974	.06874
#1	1.0188	50.492	.50462	10.015	.50786	1.2087	.40818	5.0389
#2	1.0145	50.761	.50426	10.027	.50459	1.2008	.41082	5.0390
#3	1.0115	50.564	.50416	9.9806	.50192	1.1981	.40320	5.0330
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 17:51:26 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0100**	**1.0158**	**.99746**	**.50873**	**1.0039**	**1.0074**	**1.0255**
Stddev	.0023	.0055	.00576	.00190	.0007	.0011	.0062
%RSD	.22437	.54185	.57782	.37394	.07075	.10886	.60071
#1	1.0120	1.0120	1.0034	.51092	1.0031	1.0067	1.0218
#2	1.0104	1.0221	.99708	.50748	1.0041	1.0087	1.0221
#3	1.0075	1.0132	.99189	.50779	1.0044	1.0068	1.0326
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9989.8**	**60538.**	**3114.3**
Stddev	18.8	207.	7.1
%RSD	.18819	.34214	.22805
#1	9976.7	60414.	3118.2
#2	9981.3	60422.	3118.5
#3	10011.	60777.	3106.1

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 17:55:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00184	.00256	.00249	.00155	.00059	.00012	.00773	-.00019
Stddev	.00286	.00382	.00129	.00250	.00044	.00005	.01707	.00028
%RSD	155.00	149.01	52.042	160.78	74.283	42.929	220.69	147.14
#1	-.00136	.00314	.00328	.00425	.00047	.00006	.02014	-.00048
#2	.00275	.00607	.00320	.00108	.00108	.00017	.01479	.00008
#3	.00414	-.00151	.00099	-.00067	.00023	.00014	-.01173	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.00091	.00101	-.01248	-.12640	.00096	-.05209	.00366
Stddev	.00029	.00105	.00051	.01108	.15982	.00382	.06014	.00072
%RSD	289.78	114.87	50.593	88.731	126.44	399.34	115.45	19.561
#1	.00038	.00137	.00046	-.02519	.04185	-.00342	.00669	.00291
#2	.00011	-.00029	.00109	-.00484	-.14486	.00267	-.11351	.00373
#3	-.00020	.00165	.00146	-.00743	-.27619	.00361	-.04945	.00434
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00153	.10016	.00117	.00628	-.00046	.00012	-.00491	.00658
Stddev	.00032	.02091	.00025	.00632	.00236	.00079	.00487	.00148
%RSD	20.891	20.881	21.265	100.71	514.88	646.91	99.143	22.567
#1	-.00157	.11337	.00146	.01235	.00103	.00103	-.00678	.00803
#2	-.00183	.07605	.00104	-.00027	-.00317	-.00031	-.00856	.00664
#3	-.00120	.11106	.00101	.00675	.00077	-.00035	.00062	.00506
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 17:55:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00058**	**.00135**	**.00863**	**.00065**	**.00168**	**-.00125**	**.00145**
Stddev	.00107	.00032	.00418	.00249	.00015	.00014	.00009
%RSD	183.75	23.996	48.475	381.05	9.1355	11.194	5.8593
#1	-.00181	.00171	.00742	.00264	.00180	-.00113	.00151
#2	.00001	.00123	.00519	-.00214	.00175	-.00121	.00135
#3	.00006	.00110	.01328	.00145	.00151	-.00141	.00149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10170.**	**62460.**	**3172.4**
Stddev	9.	55.	26.8
%RSD	.08999	.08761	.84511
#1	10173.	62515.	3163.3
#2	10160.	62458.	3202.6
#3	10177.	62406.	3151.3

Approved: June 28, 2016

Sample Name: L1606064303PS Acquired: 6/27/2016 17:59:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573560-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19569**	**4.9914**	**.20072**	**.97886**	**.56801**	**.02434**	**62.212**	**.02462**
Stddev	.00060	.0051	.00092	.00325	.00116	.00009	.181	.00017
%RSD	.30426	.10303	.45699	.33158	.20341	.35823	.29160	.70023
#1	.19543	4.9964	.20023	.97513	.56685	.02429	62.419	.02468
#2	.19527	4.9917	.20178	.98038	.56916	.02444	62.133	.02475
#3	.19637	4.9862	.20015	.98106	.56803	.02429	62.082	.02442
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10001**	**.24729**	**.24649**	**2.0559**	**25.490**	**.51532**	**10.387**	**.25202**
Stddev	.00006	.00053	.00128	.0305	.069	.00044	.068	.00174
%RSD	.06255	.21576	.51848	1.4856	.26883	.08487	.65089	.69065
#1	.09996	.24688	.24522	2.0268	25.547	.51506	10.443	.25312
#2	.09999	.24709	.24649	2.0531	25.414	.51508	10.312	.25292
#3	.10008	.24789	.24777	2.0877	25.509	.51583	10.408	.25001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50904**	**27.023**	**.24753**	**4.9289**	**.24651**	**.59560**	**.19532**	**5.4708**
Stddev	.00020	.028	.00106	.0156	.00279	.00196	.00625	.0073
%RSD	.04009	.10300	.42967	.31586	1.1336	.32886	3.1979	.13380
#1	.50885	27.050	.24860	4.9410	.24813	.59343	.19550	5.4789
#2	.50901	27.026	.24647	4.9342	.24328	.59611	.20148	5.4687
#3	.50926	26.994	.24753	4.9113	.24811	.59725	.18899	5.4647
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606064303PS Acquired: 6/27/2016 17:59:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573560-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50394	.64361	.49760	.24837	.49949	.48811	.00423
Stddev	.00130	.00594	.00612	.00148	.00166	.00320	.00083
%RSD	.25740	.92299	1.2308	.59519	.33240	.65534	19.573
#1	.50479	.65032	.49391	.24734	.49759	.49176	.00365
#2	.50457	.64148	.50467	.24771	.50022	.48674	.00387
#3	.50244	.63903	.49423	.25006	.50066	.48582	.00518
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10066.	61876.	3200.6
Stddev	5.	130.	24.7
%RSD	.04617	.21023	.77103
#1	10067.	61896.	3182.8
#2	10061.	61737.	3190.3
#3	10070.	61995.	3228.8

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 18:02:41 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39770**	**10.029**	**.39803**	**.50031**	**1.0114**	**.04947**	**10.110**	**.05021**
Stddev	.00318	.032	.00264	.00522	.0032	.00009	.070	.00020
%RSD	.79963	.31679	.66282	1.0434	.31904	.17697	.69075	.40440
#1	.39794	9.9960	.39576	.49494	1.0135	.04949	10.187	.05011
#2	.39440	10.059	.40092	.50536	1.0077	.04938	10.050	.05045
#3	.40075	10.031	.39740	.50063	1.0130	.04955	10.094	.05008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20230**	**.50114**	**.50470**	**4.0382**	**50.080**	**1.0090**	**10.103**	**.50267**
Stddev	.00019	.00208	.00095	.0353	.124	.0056	.086	.00501
%RSD	.09220	.41499	.18872	.87512	.24720	.55139	.84680	.99571
#1	.20223	.49915	.50494	4.0229	50.013	1.0029	10.130	.50807
#2	.20251	.50098	.50552	4.0787	50.222	1.0139	10.007	.49819
#3	.20216	.50330	.50366	4.0132	50.003	1.0101	10.171	.50174
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0149**	**50.311**	**.50285**	**9.9782**	**.50366**	**1.1995**	**.40115**	**5.0158**
Stddev	.0028	.102	.00091	.0321	.00226	.0053	.00330	.0069
%RSD	.27273	.20359	.18152	.32169	.44945	.44323	.82206	.13740
#1	1.0157	50.423	.50384	9.9689	.50623	1.2051	.39950	5.0139
#2	1.0172	50.223	.50204	10.014	.50198	1.1991	.40495	5.0235
#3	1.0119	50.286	.50267	9.9517	.50275	1.1945	.39900	5.0101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 18:02:41 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0108**	**1.0111**	**.98797**	**.50534**	**.99931**	**1.0027**	**1.0150**
Stddev	.0013	.0020	.00224	.00122	.00181	.0005	.0078
%RSD	.13256	.19343	.22671	.24208	.18073	.04936	.76836
#1	1.0094	1.0123	.98711	.50418	.99723	1.0023	1.0060
#2	1.0110	1.0088	.99051	.50522	1.0002	1.0033	1.0193
#3	1.0121	1.0120	.98628	.50662	1.0005	1.0025	1.0196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10085.**	**61434.**	**3174.5**
Stddev	15.	119.	13.0
%RSD	.14840	.19385	.40870
#1	10072.	61321.	3188.2
#2	10102.	61422.	3162.5
#3	10082.	61558.	3172.9

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 18:06:18 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00061	.01087	.00101	.00354	.00081	.00011	-.01216	-.00005
Stddev	.00291	.00181	.00125	.00222	.00081	.00003	.00734	.00018
%RSD	479.25	16.649	122.88	62.827	99.772	25.589	60.386	368.86
#1	.00256	.01280	.00224	.00608	.00073	.00014	-.00369	-.00007
#2	-.00318	.00921	.00106	.00197	.00005	.00008	-.01615	.00014
#3	-.00120	.01061	-.00025	.00256	.00167	.00010	-.01664	-.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	.00097	.00013	.01338	.00793	-.00130	-.01349	.00353
Stddev	.00022	.00044	.00115	.03749	.08421	.00162	.04683	.00277
%RSD	59.479	45.275	876.15	280.27	1061.5	124.61	347.06	78.447
#1	.00042	.00128	-.00097	.00494	.01373	-.00269	.01480	.00599
#2	.00058	.00047	.00132	-.01918	.08910	-.00167	-.06755	.00053
#3	.00014	.00118	.00004	.05437	-.07903	.00047	.01226	.00407
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00136	.08312	.00113	.00069	.00081	.00032	-.00044	.00742
Stddev	.00027	.03096	.00087	.00872	.00109	.00250	.00205	.00292
%RSD	20.022	37.244	76.387	1264.9	134.28	787.06	470.90	39.351
#1	-.00159	.11127	.00181	.00987	.00206	-.00000	-.00148	.01078
#2	-.00144	.08813	.00143	-.00747	.00032	.00296	.00193	.00560
#3	-.00106	.04996	.00016	-.00034	.00006	-.00200	-.00175	.00586
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 18:06:18 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00027**	**.00128**	**.00636**	**-.00137**	**.00109**	**-.00114**	**.00132**
Stddev	.00051	.00031	.00900	.00079	.00075	.00021	.00052
%RSD	187.40	24.464	141.50	57.378	68.713	18.529	39.786
#1	-.00004	.00163	.00791	-.00098	.00069	-.00097	.00113
#2	.00008	.00107	.01449	-.00086	.00062	-.00107	.00191
#3	-.00086	.00112	-.00332	-.00228	.00196	-.00138	.00091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10207.**	**62751.**	**3218.3**
Stddev	3.	103.	20.1
%RSD	.02820	.16376	.62534
#1	10206.	62841.	3206.2
#2	10205.	62771.	3241.6
#3	10210.	62639.	3207.2

Approved: June 28, 2016

Sample Name: PBW 73 Acquired: 6/27/2016 18:10:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572869-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	-.00075	.00011	.00154	-.00165	.00003	.02758	.00000
Stddev	.00151	.00181	.00325	.00025	.00085	.00007	.00552	.00011
%RSD	394.48	239.58	2859.3	15.959	51.420	259.17	20.016	4420.2
#1	-.00092	-.00147	.00134	.00152	-.00094	.00009	.03389	-.00010
#2	.00203	-.00210	.00258	.00180	-.00259	-.00005	.02366	-.00002
#3	.00003	.00130	-.00357	.00131	-.00142	.00005	.02519	.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	-.00041	.00047	.02116	-.07592	-.00201	-.01973	.00565
Stddev	.00033	.00150	.00014	.03401	.11846	.00262	.05854	.00464
%RSD	207.88	365.99	29.367	160.76	156.05	130.26	296.68	82.093
#1	.00012	-.00038	.00062	.05189	-.20357	-.00080	-.03379	.00430
#2	-.00053	-.00193	.00045	.02697	.03048	-.00022	-.06996	.00184
#3	-.00008	.00108	.00034	-.01539	-.05465	-.00502	.04456	.01082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00287	.01923	.00104	-.00547	-.00013	.00089	-.00178	-.01207
Stddev	.00021	.03374	.00161	.00158	.00137	.00259	.00212	.00130
%RSD	7.4810	175.48	154.77	28.903	1027.6	289.82	119.05	10.782
#1	-.00311	.02811	-.00007	-.00641	.00079	-.00048	-.00048	-.01355
#2	-.00269	-.01807	.00288	-.00635	-.00170	-.00072	-.00422	-.01110
#3	-.00280	.04764	.00031	-.00364	.00051	.00388	-.00063	-.01157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: PBW 73 Acquired: 6/27/2016 18:10:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572869-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00025**	**-.00007**	**.00533**	**-.00054**	**-.00005**	**-.00028**	**.00079**
Stddev	.00093	.00028	.00638	.00178	.00039	.00003	.00033
%RSD	375.87	423.03	119.65	331.68	768.32	9.5439	42.440
#1	-.00080	.00022	.00723	-.00231	.00004	-.00027	.00042
#2	.00082	-.00008	.01054	-.00055	-.00048	-.00026	.00107
#3	-.00077	-.00035	-.00178	.00125	.00028	-.00031	.00088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10264.**	**63347.**	**3206.5**
Stddev	4.	85.	16.9
%RSD	.03641	.13480	.52651
#1	10260.	63248.	3198.9
#2	10265.	63392.	3225.9
#3	10267.	63399.	3194.8

Approved: June 28, 2016

Sample Name: LCSW 73 Acquired: 6/27/2016 18:14:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572869-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19635**	**4.9357**	**.19488**	**.95746**	**.50147**	**.02428**	**5.0882**	**.02441**
Stddev	.00250	.0158	.00193	.00113	.00243	.00008	.0281	.00021
%RSD	1.2733	.32044	.99170	.11774	.48526	.32756	.55194	.84332
#1	.19698	4.9532	.19687	.95855	.49867	.02435	5.0608	.02445
#2	.19847	4.9223	.19477	.95630	.50307	.02430	5.1170	.02459
#3	.19359	4.9317	.19300	.95752	.50267	.02419	5.0868	.02418
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10119**	**.25111**	**.25058**	**1.9881**	**24.637**	**.50617**	**5.0850**	**.24902**
Stddev	.00018	.00140	.00049	.0278	.292	.00410	.0568	.00237
%RSD	.17479	.55709	.19647	1.3993	1.1832	.81093	1.1169	.95209
#1	.10104	.25265	.25067	1.9652	24.668	.50262	5.0516	.24699
#2	.10114	.24993	.25005	1.9801	24.912	.51067	5.0528	.24844
#3	.10138	.25074	.25102	2.0190	24.331	.50522	5.1506	.25163
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50642**	**24.975**	**.25116**	**4.8012**	**.25191**	**.58652**	**.18566**	**2.3942**
Stddev	.00078	.120	.00194	.0109	.00135	.00287	.00470	.0006
%RSD	.15370	.48203	.77123	.22650	.53744	.48943	2.5329	.02515
#1	.50563	24.839	.25082	4.7908	.25201	.58360	.18058	2.3949
#2	.50718	25.016	.25324	4.8125	.25321	.58662	.18652	2.3941
#3	.50646	25.070	.24941	4.8003	.25051	.58934	.18987	2.3937
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: LCSW 73 Acquired: 6/27/2016 18:14:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572869-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50437	.50898	.49550	.25118	.49915	.49294	.00420
Stddev	.00186	.00140	.00878	.00096	.00125	.00238	.00094
%RSD	.36851	.27596	1.7728	.38021	.25115	.48366	22.404
#1	.50322	.50806	.49040	.25014	.49995	.49145	.00323
#2	.50651	.50829	.50564	.25202	.49771	.49168	.00428
#3	.50337	.51060	.49046	.25138	.49980	.49569	.00510
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10089.	61872.	3186.4
Stddev	25.	165.	9.9
%RSD	.25115	.26715	.30972
#1	10098.	61700.	3191.7
#2	10061.	62029.	3192.5
#3	10109.	61887.	3175.0

Approved: June 28, 2016

Sample Name: F BLANK Acquired: 6/27/2016 18:17:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573699-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00124	.01321	.00063	.00493	.00009	.00009	.04598	-.00005
Stddev	.00159	.00599	.00256	.00101	.00066	.00004	.02907	.00006
%RSD	128.34	45.362	405.26	20.539	716.19	49.735	63.231	135.69
#1	.00005	.01979	-.00183	.00529	.00028	.00004	.03249	.00002
#2	.00062	.01179	.00328	.00572	-.00064	.00011	.07935	-.00006
#3	.00304	.00805	.00044	.00379	.00064	.00011	.02610	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.00060	.00207	.05181	-.15252	-.00238	-.00617	.00453
Stddev	.00035	.00100	.00062	.02558	.05582	.00473	.02053	.00249
%RSD	114.01	165.01	29.869	49.372	36.598	198.48	332.93	55.067
#1	.00055	-.00024	.00143	.07830	-.21470	-.00632	-.02919	.00739
#2	.00046	.00171	.00266	.02725	-.13616	.00287	.00044	.00332
#3	-.00009	.00035	.00210	.04987	-.10671	-.00370	.01025	.00286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00297	137.79	.00092	-.00071	-.00109	-.00596	.00126	-.00996
Stddev	.00031	.52	.00064	.00249	.00423	.00374	.00098	.00036
%RSD	10.278	.37803	69.803	351.48	387.51	62.830	77.874	3.5925
#1	-.00323	137.24	.00159	.00156	.00326	-.00724	.00016	-.00957
#2	-.00305	137.85	.00031	-.00336	-.00135	-.00174	.00156	-.01004
#3	-.00264	138.28	.00085	-.00032	-.00518	-.00890	.00206	-.01027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: F BLANK Acquired: 6/27/2016 18:17:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573699-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00043**	**.00076**	**.00006**	**-.00152**	**.00055**	**.00210**	**-.00025**
Stddev	.00037	.00021	.00270	.00283	.00080	.00016	.00046
%RSD	88.111	27.218	4578.1	186.49	144.84	7.5867	184.28
#1	-.00072	.00058	-.00210	.00164	.00057	.00225	-.00073
#2	-.00056	.00072	-.00081	-.00384	.00134	.00210	.00019
#3	-.00000	.00099	.00308	-.00235	-.00025	.00193	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10002.**	**60993.**	**3183.8**
Stddev	14.	72.	11.1
%RSD	.13662	.11819	.34926
#1	10014.	60921.	3193.9
#2	10003.	61065.	3171.9
#3	9987.1	60992.	3185.5

Approved: June 28, 2016

Sample Name: L1606106804 Acquired: 6/27/2016 18:21:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00108	.02957	.00249	.07802	.50993	.00006	69.494	.00009
Stddev	.00057	.00679	.00097	.00232	.00249	.00011	.401	.00026
%RSD	52.710	22.964	39.161	2.9780	.48870	171.13	.57690	304.97
#1	.00064	.02814	.00291	.07765	.51257	.00015	69.917	-.00019
#2	.00173	.02361	.00318	.07591	.50762	.00010	69.119	.00032
#3	.00088	.03697	.00137	.08051	.50961	-.00006	69.445	.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00106	.00146	.00167	.15126	1.6916	.03292	48.915	.02947
Stddev	.00051	.00072	.00142	.01687	.0769	.00410	.153	.00038
%RSD	48.398	49.399	85.137	11.152	4.5469	12.443	.31260	1.2911
#1	.00098	.00190	.00016	.15737	1.7626	.02849	49.092	.02989
#2	.00058	.00185	.00297	.16422	1.6099	.03369	48.818	.02936
#3	.00160	.00063	.00187	.13219	1.7022	.03658	48.836	.02915
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00305	255.13	.00201	.05710	.00006	.00249	-.00499	15.418
Stddev	.00007	1.53	.00032	.00778	.00252	.00286	.00385	.018
%RSD	2.1699	.59857	16.181	13.619	4187.9	114.98	77.155	.11530
#1	-.00311	256.87	.00168	.05751	.00110	.00075	-.00188	15.398
#2	-.00298	254.01	.00200	.04912	.00189	.00092	-.00929	15.430
#3	-.00306	254.52	.00233	.06466	-.00281	.00580	-.00379	15.427
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606106804 Acquired: 6/27/2016 18:21:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00102**	**1.4679**	**-.00765**	**-.00142**	**.00053**	**.00425**	**-.00008**
Stddev	.00035	.0098	.00420	.00062	.00090	.00012	.00033
%RSD	34.227	.66697	54.924	43.957	170.48	2.7442	407.96
#1	-.00062	1.4791	-.01099	-.00213	.00074	.00414	.00011
#2	-.00123	1.4610	-.00293	-.00096	-.00046	.00437	-.00047
#3	-.00122	1.4635	-.00901	-.00116	.00131	.00424	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9703.1**	**59365.**	**3129.5**
Stddev	22.1	92.	27.8
%RSD	.22763	.15517	.88976
#1	9696.7	59367.	3097.7
#2	9727.7	59272.	3149.7
#3	9684.9	59456.	3141.1

Approved: June 28, 2016

Sample Name: L1606106805 Acquired: 6/27/2016 18:25:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	.01323	.00092	.07799	.50248	.00011	68.385	.00038
Stddev	.00209	.00864	.00095	.00150	.00097	.00007	.304	.00013
%RSD	416.26	65.312	103.27	1.9292	.19274	66.114	.44423	33.490
#1	-.00165	.02273	.00132	.07957	.50161	.00006	68.037	.00032
#2	.00064	.01110	.00161	.07782	.50230	.00008	68.526	.00053
#3	.00252	.00585	-.00017	.07658	.50352	.00020	68.593	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00130	.00149	.00050	.14380	1.7292	.03180	48.310	.02630
Stddev	.00077	.00098	.00067	.02377	.0362	.00229	.047	.00113
%RSD	59.464	65.885	135.71	16.529	2.0933	7.1978	.09696	4.2783
#1	.00153	.00051	.00067	.12029	1.7679	.03276	48.332	.02693
#2	.00044	.00149	-.00025	.14330	1.6961	.03346	48.256	.02697
#3	.00193	.00247	.00107	.16782	1.7234	.02919	48.342	.02500
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00343	250.44	.00269	.05365	-.00295	-.00140	-.00403	15.182
Stddev	.00006	1.04	.00060	.00528	.00256	.00230	.00109	.040
%RSD	1.6737	.41337	22.452	9.8331	86.650	164.62	27.005	.26378
#1	-.00348	249.45	.00202	.05340	-.00361	-.00227	-.00525	15.196
#2	-.00344	250.36	.00320	.04850	-.00512	-.00314	-.00316	15.214
#3	-.00336	251.51	.00284	.05904	-.00013	.00121	-.00367	15.137
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606106805 Acquired: 6/27/2016 18:25:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00081**	**1.4437**	**-.00641**	**.00146**	**.00085**	**.00415**	**.00011**
Stddev	.00100	.0050	.00636	.00053	.00075	.00005	.00068
%RSD	123.92	.34575	99.338	36.530	87.873	1.2544	624.21
#1	.00030	1.4383	-.00642	.00101	.00171	.00417	-.00029
#2	-.00164	1.4446	-.00004	.00132	.00033	.00418	-.00028
#3	-.00108	1.4482	-.01277	.00205	.00051	.00409	.00089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9704.2**	**58931.**	**3123.4**
Stddev	9.1	160.	16.8
%RSD	.09383	.27192	.53704
#1	9694.5	58843.	3140.7
#2	9705.3	59116.	3122.3
#3	9712.6	58834.	3107.2

Approved: June 28, 2016

Sample Name: L1606106811 Acquired: 6/27/2016 18:29:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00104	25.075	.00950	.00524	.49922	.00460	15.151	.00374
Stddev	.00169	.008	.00103	.00153	.00107	.00003	.008	.00006
%RSD	162.33	.03131	10.891	29.141	.21450	.71629	.05350	1.4755
#1	.00043	25.073	.00905	.00682	.50015	.00459	15.143	.00372
#2	-.00289	25.083	.00876	.00377	.49946	.00464	15.153	.00370
#3	-.00066	25.068	.01068	.00513	.49805	.00458	15.158	.00380
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01602	.05630	.09575	36.809	3.0725	.01827	7.8660	.88904
Stddev	.00026	.00038	.00192	.066	.1238	.00280	.1878	.00323
%RSD	1.6023	.67931	2.0010	.18045	4.0304	15.329	2.3876	.36317
#1	.01628	.05586	.09386	36.776	3.0616	.01860	7.8114	.89254
#2	.01599	.05658	.09769	36.766	2.9545	.01532	7.7115	.88619
#3	.01577	.05646	.09570	36.886	3.2014	.02089	8.0750	.88838
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00281	16.437	.06368	.46654	.05236	-.00194	-.00387	34.225
Stddev	.00042	.089	.00022	.00061	.00230	.00144	.00442	.011
%RSD	15.085	.54220	.34877	.13013	4.4015	74.046	114.39	.03090
#1	-.00309	16.538	.06343	.46721	.05069	-.00141	-.00897	34.217
#2	-.00232	16.368	.06381	.46603	.05140	-.00357	-.00150	34.221
#3	-.00303	16.406	.06381	.46637	.05499	-.00084	-.00113	34.237
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606106811 Acquired: 6/27/2016 18:29:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	.24764	.13316	.00087	.07906	.17946	.00209
Stddev	.00077	.00054	.00778	.00120	.00058	.00015	.00027
%RSD	182.04	.21659	5.8458	138.84	.73464	.08561	12.984
#1	-.00002	.24822	.12442	-.00052	.07874	.17964	.00203
#2	.00131	.24754	.13934	.00150	.07973	.17936	.00186
#3	-.00003	.24716	.13573	.00162	.07870	.17938	.00239
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10189.	62573.	3194.8
Stddev	9.	63.	4.5
%RSD	.08868	.09995	.13985
#1	10179.	62643.	3199.7
#2	10191.	62554.	3193.6
#3	10197.	62522.	3191.1

Approved: June 28, 2016

Sample Name: L1606106813 Acquired: 6/27/2016 18:33:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573869-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00035**	**1.5303**	**.00217**	**.00839**	**.14704**	**.00022**	**11.294**	**.00177**
Stddev	.00241	.0113	.00254	.00283	.00110	.00008	.074	.00003
%RSD	694.13	.73689	117.03	33.750	.74806	35.777	.65951	1.6660
#1	-.00256	1.5230	-.00071	.00839	.14738	.00019	11.378	.00179
#2	-.00070	1.5247	.00407	.00555	.14794	.00031	11.238	.00174
#3	.00222	1.5433	.00315	.01121	.14581	.00016	11.266	.00179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00691**	**.00896**	**.00433**	**8.6282**	**1.7551**	**.00402**	**5.1369**	**.30052**
Stddev	.00051	.00008	.00151	.0543	.1378	.00076	.0254	.00220
%RSD	7.3380	.90220	34.798	.62977	7.8524	18.845	.49460	.73284
#1	.00749	.00891	.00607	8.6091	1.8812	.00346	5.1266	.30169
#2	.00665	.00905	.00338	8.6895	1.7761	.00488	5.1183	.29798
#3	.00658	.00891	.00354	8.5860	1.6080	.00372	5.1659	.30190
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00222**	**190.23**	**.04940**	**.07457**	**.00064**	**-.00216**	**-.00058**	**8.5564**
Stddev	.00036	.82	.00113	.00391	.00261	.00192	.00280	.0188
%RSD	16.335	.42896	2.2806	5.2365	407.30	89.093	481.49	.21923
#1	-.00233	189.84	.05044	.07773	-.00078	-.00214	-.00376	8.5778
#2	-.00252	191.16	.04820	.07021	.00366	-.00024	.00045	8.5490
#3	-.00182	189.68	.04956	.07578	-.00096	-.00408	.00156	8.5425
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606106813 Acquired: 6/27/2016 18:33:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573869-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00126**	**.16432**	**.01956**	**.00106**	**.00620**	**.24579**	**.00094**
Stddev	.00072	.00055	.00529	.00037	.00041	.00073	.00029
%RSD	57.439	.33516	27.054	35.249	6.5962	.29864	30.982
#1	-.00115	.16369	.01454	.00138	.00620	.24627	.00102
#2	-.00059	.16467	.02509	.00065	.00660	.24616	.00119
#3	-.00203	.16461	.01906	.00116	.00578	.24494	.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9866.7**	**59971.**	**3125.5**
Stddev	21.0	118.	16.8
%RSD	.21290	.19611	.53601
#1	9865.5	60069.	3142.8
#2	9888.3	60002.	3124.3
#3	9846.4	59841.	3109.4

Approved: June 28, 2016

Sample Name: L1606106815S Acquired: 6/27/2016 18:37:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573869-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18624**	**8.5914**	**.19132**	**.93655**	**.62101**	**.02402**	**15.787**	**.02567**
Stddev	.00199	.0528	.00265	.00643	.00097	.00023	.072	.00002
%RSD	1.0690	.61495	1.3871	.68680	.15629	.94670	.45324	.08793
#1	.18853	8.6286	.19370	.93652	.62134	.02398	15.707	.02567
#2	.18490	8.6147	.19180	.94299	.61992	.02427	15.809	.02570
#3	.18531	8.5310	.18846	.93013	.62177	.02382	15.845	.02565
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10370**	**.25931**	**.24271**	**11.971**	**25.924**	**.49829**	**10.060**	**.53636**
Stddev	.00026	.00183	.00195	.152	.117	.00224	.043	.00156
%RSD	.24767	.70616	.80357	1.2677	.44958	.44864	.43223	.29058
#1	.10371	.25903	.24479	11.803	25.841	.50062	10.025	.53496
#2	.10344	.26127	.24244	12.099	26.057	.49809	10.109	.53804
#3	.10395	.25763	.24092	12.011	25.873	.49616	10.047	.53609
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48472**	**210.62**	**.28605**	**4.7421**	**.23930**	**.54200**	**.18044**	**14.340**
Stddev	.00003	.48	.00161	.0043	.00592	.00076	.00442	.022
%RSD	.00690	.22789	.56307	.08970	2.4723	.14040	2.4510	.15333
#1	.48469	210.08	.28693	4.7375	.24208	.54125	.18551	14.356
#2	.48475	210.79	.28419	4.7431	.23251	.54198	.17738	14.349
#3	.48471	210.99	.28703	4.7458	.24331	.54277	.17843	14.315
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606106815S Acquired: 6/27/2016 18:37:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573869-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48159**	**.63938**	**.50165**	**.23336**	**.49385**	**.68934**	**.00256**
Stddev	.00152	.00468	.00170	.00185	.00176	.00048	.00034
%RSD	.31525	.73233	.33923	.79068	.35694	.07000	13.127
#1	.48100	.64476	.50068	.23395	.49444	.68920	.00225
#2	.48045	.63722	.50362	.23129	.49524	.68987	.00251
#3	.48331	.63617	.50065	.23484	.49187	.68893	.00292
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9792.4**	**59337.**	**3123.1**
Stddev	17.9	265.	11.3
%RSD	.18300	.44714	.36098
#1	9792.7	59252.	3133.8
#2	9810.2	59125.	3111.3
#3	9774.3	59635.	3124.3

Approved: June 28, 2016

Sample Name: L1606106817SD Acquired: 6/27/2016 18:40:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573869-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.17704**	**10.231**	**.18237**	**.89365**	**.62895**	**.02294**	**15.357**	**.02593**
Stddev	.00289	.005	.00112	.00341	.00086	.00006	.040	.00022
%RSD	1.6334	.04420	.61630	.38165	.13728	.25467	.26220	.84276
#1	.17998	10.229	.18360	.89603	.62960	.02291	15.398	.02575
#2	.17420	10.228	.18214	.88974	.62929	.02289	15.354	.02618
#3	.17693	10.236	.18139	.89517	.62797	.02300	15.318	.02587
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09998**	**.26700**	**.23276**	**14.685**	**24.789**	**.47424**	**9.6953**	**.52188**
Stddev	.00054	.00123	.00152	.033	.119	.00028	.1756	.00093
%RSD	.54228	.46008	.65312	.22415	.48105	.05888	1.8112	.17899
#1	.10055	.26588	.23240	14.715	24.902	.47403	9.4977	.52100
#2	.09991	.26832	.23146	14.690	24.665	.47456	9.8335	.52177
#3	.09947	.26681	.23443	14.650	24.801	.47414	9.7548	.52286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.46046**	**200.85**	**.27711**	**4.5264**	**.22652**	**.50376**	**.17219**	**16.579**
Stddev	.00030	.53	.00141	.0080	.00302	.00589	.00485	.015
%RSD	.06552	.26175	.50771	.17636	1.3343	1.1696	2.8150	.09310
#1	.46068	201.01	.27628	4.5205	.22372	.49855	.17655	16.568
#2	.46057	201.29	.27873	4.5354	.22613	.51015	.16697	16.597
#3	.46011	200.27	.27631	4.5232	.22973	.50259	.17305	16.573
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606106817SD Acquired: 6/27/2016 18:40:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573869-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.45763**	**.61578**	**.47146**	**.21987**	**.47175**	**.83894**	**.00289**
Stddev	.00112	.00614	.00528	.00344	.00188	.00075	.00036
%RSD	.24458	.99736	1.1204	1.5638	.39933	.08952	12.527
#1	.45859	.62284	.47755	.21662	.47130	.83894	.00288
#2	.45790	.61277	.46805	.22347	.47013	.83969	.00326
#3	.45640	.61172	.46879	.21952	.47382	.83818	.00254
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9802.2**	**59678.**	**3124.2**
Stddev	11.5	29.	6.7
%RSD	.11691	.04935	.21504
#1	9807.7	59701.	3118.5
#2	9809.8	59645.	3122.6
#3	9789.0	59688.	3131.6

Approved: June 28, 2016

Sample Name: L1606113001 Acquired: 6/27/2016 18:44:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.05806	.00281	.01439	.01757	.00005	42.874	.00025
Stddev	.00148	.00400	.00314	.00071	.00092	.00006	.175	.00017
%RSD	1574.8	6.8942	111.52	4.9384	5.2313	125.74	.40919	67.476
#1	-.00174	.05761	.00588	.01521	.01785	-.00002	42.909	.00029
#2	.00033	.06228	-.00038	.01396	.01831	.00010	42.683	.00006
#3	.00113	.05431	.00294	.01400	.01654	.00007	43.029	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00135	.12325	.00536	1.0235	1.8661	-.00040	15.071	.16035
Stddev	.00034	.00085	.00130	.0093	.0850	.00341	.109	.00314
%RSD	25.357	.68884	24.227	.90745	4.5559	863.98	.72331	1.9564
#1	.00174	.12401	.00392	1.0337	1.7732	.00213	15.162	.15924
#2	.00113	.12233	.00575	1.0210	1.8852	-.00428	15.100	.15793
#3	.00117	.12342	.00643	1.0156	1.9399	.00097	14.950	.16390
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	24.224	.06008	.11609	.00388	.00535	.00169	6.0541
Stddev	.00016	.022	.00178	.00782	.00037	.00215	.00584	.0185
%RSD	446.97	.08922	2.9695	6.7384	9.4563	40.270	345.10	.30530
#1	-.00015	24.240	.06214	.10718	.00346	.00322	-.00450	6.0716
#2	.00013	24.200	.05913	.12183	.00412	.00530	.00709	6.0558
#3	.00013	24.233	.05897	.11927	.00405	.00752	.00249	6.0347
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606113001 Acquired: 6/27/2016 18:44:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00094**	**.29258**	**.00044**	**-.00121**	**.00131**	**.00468**	**-.00030**
Stddev	.00041	.00056	.00619	.00122	.00067	.00017	.00030
%RSD	44.265	.19205	1416.6	101.17	51.193	3.5319	98.900
#1	-.00080	.29303	-.00642	-.00024	.00054	.00484	-.00054
#2	-.00061	.29195	.00211	-.00080	.00167	.00467	-.00039
#3	-.00140	.29277	.00562	-.00258	.00172	.00451	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9929.1**	**60967.**	**3129.0**
Stddev	13.7	125.	3.3
%RSD	.13782	.20543	.10402
#1	9916.3	61033.	3132.7
#2	9943.5	60822.	3126.6
#3	9927.6	61045.	3127.7

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 18:48:24 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39013	9.8677	.38659	.48621	.98810	.04878	9.8929	.04908
Stddev	.00279	.0143	.00348	.00485	.00651	.00009	.0925	.00027
%RSD	.71515	.14503	.90007	.99787	.65924	.19316	.93488	.54123
#1	.38904	9.8758	.38421	.48065	.98892	.04870	9.9531	.04884
#2	.39330	9.8512	.39058	.48959	.98122	.04874	9.7864	.04904
#3	.38805	9.8762	.38497	.48839	.99417	.04888	9.9392	.04937
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19932	.49486	.49370	3.9084	49.513	.99337	10.092	.48947
Stddev	.00051	.00362	.00070	.0234	.461	.00451	.090	.00401
%RSD	.25454	.73120	.14174	.59861	.93132	.45383	.89128	.81948
#1	.19874	.49093	.49319	3.9200	49.477	.99670	10.193	.49350
#2	.19970	.49558	.49341	3.8815	49.071	.98824	10.020	.48548
#3	.19952	.49806	.49450	3.9238	49.991	.99517	10.065	.48942
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99157	48.960	.48989	9.6786	.49165	1.1644	.38431	4.8424
Stddev	.00077	.344	.00140	.0024	.00036	.0058	.00336	.0391
%RSD	.07798	.70344	.28656	.02513	.07393	.49769	.87527	.80776
#1	.99079	49.157	.48958	9.6762	.49186	1.1578	.38753	4.7977
#2	.99233	48.562	.48867	9.6786	.49187	1.1683	.38082	4.8597
#3	.99160	49.160	.49143	9.6811	.49123	1.1673	.38457	4.8700
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 18:48:24 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99567	.98880	.97059	.49844	.98858	.97661	1.0086
Stddev	.00270	.00521	.01227	.00204	.00080	.00243	.0091
%RSD	.27165	.52706	1.2646	.40900	.08098	.24840	.90214
#1	.99356	.98920	.96440	.49777	.98767	.97393	1.0181
#2	.99472	.98340	.96264	.49681	.98889	.97866	.99993
#3	.99872	.99380	.98473	.50073	.98917	.97723	1.0078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10079.	61901.	3169.3
Stddev	50.	127.	23.0
%RSD	.49414	.20460	.72449
#1	10136.	62023.	3145.9
#2	10052.	61770.	3191.8
#3	10048.	61909.	3170.3

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 18:51:57 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00046**	**.00359**	**.00207**	**.00359**	**.00257**	**.00019**	**.03731**	**-.00004**
Stddev	.00035	.00954	.00193	.00102	.00116	.00001	.02182	.00008
%RSD	76.934	265.49	93.139	28.267	45.261	6.4061	58.495	215.30
#1	.00035	.01028	.00199	.00475	.00378	.00020	.04492	-.00011
#2	.00018	.00783	.00404	.00283	.00246	.00018	.01270	-.00004
#3	.00085	-.00733	.00018	.00320	.00146	.00018	.05430	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**.00119**	**.00080**	**.02381**	**-.01887**	**-.00055**	**.00633**	**.00280**
Stddev	.00014	.00055	.00135	.02321	.09316	.00196	.06379	.00313
%RSD	61.583	46.529	167.68	97.508	493.80	355.42	1007.7	111.57
#1	.00009	.00056	.00235	-.00158	-.10377	.00169	-.00245	.00619
#2	.00037	.00144	.00014	.02906	.08080	-.00195	-.05261	.00003
#3	.00021	.00158	-.00008	.04394	-.03363	-.00139	.07406	.00219
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00130**	**.10392**	**.00120**	**.00304**	**.00068**	**-.00052**	**-.00057**	**.00722**
Stddev	.00048	.04257	.00052	.00806	.00255	.00054	.00657	.00394
%RSD	36.677	40.966	43.104	265.08	374.37	103.35	1149.9	54.508
#1	-.00080	.05986	.00144	.00561	.00306	-.00107	.00605	.00990
#2	-.00134	.14483	.00155	-.00599	-.00201	-.00000	-.00710	.00906
#3	-.00176	.10707	.00061	.00950	.00100	-.00048	-.00067	.00270
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 18:51:57 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00041**	**.00130**	**.00596**	**.00026**	**.00083**	**-.00116**	**.00120**
Stddev	.00040	.00034	.01084	.00067	.00059	.00026	.00037
%RSD	97.107	26.030	181.89	256.89	70.336	22.820	31.199
#1	-.00007	.00169	.01823	.00014	.00134	-.00088	.00100
#2	-.00085	.00107	-.00234	-.00034	.00096	-.00119	.00163
#3	-.00031	.00114	.00200	.00098	.00019	-.00141	.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10084.**	**61372.**	**3084.8**
Stddev	29.	187.	9.3
%RSD	.28766	.30413	.30074
#1	10055.	61476.	3086.1
#2	10085.	61157.	3074.9
#3	10113.	61483.	3093.3

Approved: June 28, 2016

Sample Name: L1606113002 Acquired: 6/27/2016 18:55:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00206	.01683	.00324	.01425	.02969	.00007	67.855	-.00018
Stddev	.00179	.00331	.00029	.00391	.00042	.00005	.103	.00023
%RSD	87.155	19.648	9.0689	27.453	1.4231	75.907	.15153	125.10
#1	-.00034	.01894	.00345	.01788	.03006	.00010	67.778	.00005
#2	-.00392	.01302	.00336	.01011	.02923	.00011	67.815	-.00019
#3	-.00191	.01854	.00290	.01476	.02978	.00001	67.972	-.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	-.00058	.00253	32.752	2.5698	.00262	13.354	1.0030
Stddev	.00038	.00067	.00156	.415	.1107	.00299	.012	.0055
%RSD	144.08	115.71	61.556	1.2677	4.3056	114.26	.09096	.54703
#1	.00019	.00019	.00314	32.844	2.5631	.00594	13.356	.99681
#2	.00068	-.00098	.00370	32.298	2.4627	.00179	13.365	1.0049
#3	-.00007	-.00094	.00076	33.113	2.6837	.00013	13.341	1.0073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00334	33.738	.00101	.13922	.00385	-.00174	-.00239	5.9434
Stddev	.00007	.117	.00071	.00740	.00030	.00240	.00275	.0130
%RSD	1.9596	.34556	70.152	5.3173	7.7687	137.46	115.28	.21905
#1	-.00341	33.655	.00180	.14774	.00409	-.00408	-.00341	5.9583
#2	-.00329	33.688	.00079	.13431	.00351	-.00187	.00073	5.9377
#3	-.00332	33.871	.00044	.13562	.00393	.00071	-.00448	5.9342
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606113002 Acquired: 6/27/2016 18:55:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00092**	**.20587**	**.00950**	**.00252**	**-.00009**	**.00723**	**-.00022**
Stddev	.00040	.00178	.00301	.00127	.00108	.00012	.00027
%RSD	43.454	.86678	31.737	50.412	1275.0	1.6562	124.36
#1	-.00060	.20399	.00879	.00122	-.00043	.00736	-.00049
#2	-.00137	.20610	.01280	.00258	.00113	.00713	.00005
#3	-.00080	.20753	.00690	.00375	-.00095	.00720	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9826.6**	**60101.**	**3132.8**
Stddev	12.3	20.	10.3
%RSD	.12537	.03317	.32898
#1	9813.0	60112.	3143.5
#2	9830.0	60112.	3122.9
#3	9837.0	60078.	3132.0

Approved: June 28, 2016

Sample Name: L1606113003 Acquired: 6/27/2016 18:59:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	.03067	.00078	.00899	.02053	.00011	48.308	.00030
Stddev	.00117	.00107	.00115	.00181	.00045	.00007	.475	.00010
%RSD	246.62	3.4960	146.03	20.144	2.1753	69.670	.98369	32.162
#1	.00014	.03079	.00016	.01107	.02104	.00002	48.780	.00041
#2	-.00049	.03167	.00009	.00813	.02022	.00016	48.315	.00028
#3	.00177	.02954	.00211	.00777	.02032	.00014	47.830	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00142	.10372	.00498	1.9040	1.4866	-.00165	16.540	.39638
Stddev	.00012	.00029	.00207	.0480	.0747	.00357	.190	.00202
%RSD	8.2227	.28069	41.497	2.5194	5.0252	217.19	1.1502	.50872
#1	.00132	.10393	.00546	1.9448	1.4705	.00050	16.647	.39857
#2	.00140	.10338	.00676	1.8511	1.4212	-.00577	16.321	.39459
#3	.00155	.10384	.00271	1.9161	1.5680	.00033	16.654	.39599
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00138	41.621	.05090	.16052	.00342	.00001	.00007	5.1114
Stddev	.00033	.292	.00076	.00426	.00261	.00138	.00572	.0218
%RSD	23.932	.70109	1.4857	2.6522	76.237	16961.	8728.2	.42694
#1	-.00123	41.872	.05134	.15580	.00426	-.00148	-.00037	5.0863
#2	-.00176	41.301	.05134	.16408	.00050	.00127	.00599	5.1250
#3	-.00116	41.691	.05003	.16167	.00551	.00023	-.00542	5.1231
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606113003 Acquired: 6/27/2016 18:59:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00074**	**.28622**	**.00032**	**-.00071**	**.00062**	**.00336**	**.00012**
Stddev	.00055	.00159	.00953	.00184	.00073	.00018	.00028
%RSD	74.322	.55582	2940.1	257.31	117.89	5.2586	237.33
#1	-.00105	.28800	.00135	-.00246	.00145	.00355	-.00016
#2	-.00107	.28494	-.00968	-.00090	.00011	.00320	.00039
#3	-.00011	.28572	.00931	.00121	.00029	.00334	.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9835.2**	**60242.**	**3121.9**
Stddev	17.0	21.	24.2
%RSD	.17269	.03467	.77578
#1	9828.5	60252.	3100.2
#2	9854.6	60257.	3148.0
#3	9822.7	60218.	3117.6

Approved: June 28, 2016

Sample Name: L1606113004 Acquired: 6/27/2016 19:03:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00160	.00974	.00729	-.00235	.03882	.00002	87.197	-.00025
Stddev	.00099	.00312	.00131	.00082	.00098	.00005	.277	.00002
%RSD	61.791	32.036	18.021	35.131	2.5244	267.24	.31745	8.6671
#1	-.00091	.00642	.00578	-.00267	.03887	.00007	86.926	-.00026
#2	-.00274	.01019	.00804	-.00141	.03978	.00003	87.479	-.00027
#3	-.00117	.01261	.00807	-.00296	.03782	-.00004	87.187	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00470	-.00143	.00274	57.871	1.7738	.00184	14.027	.86622
Stddev	.00022	.00036	.00111	.483	.0843	.00303	.115	.00691
%RSD	4.6428	25.091	40.577	.83428	4.7521	164.23	.81785	.79779
#1	.00464	-.00110	.00146	58.414	1.7163	.00518	13.895	.85824
#2	.00451	-.00181	.00340	57.706	1.7346	.00108	14.089	.87021
#3	.00494	-.00139	.00336	57.492	1.8706	-.00073	14.098	.87020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00387	16.969	.00455	-.00223	.00278	.00261	-.00695	7.0032
Stddev	.00047	.036	.00039	.00321	.00404	.00429	.00260	.0208
%RSD	12.210	.21283	8.4949	143.73	145.63	164.36	37.379	.29681
#1	-.00406	16.928	.00499	.00048	.00574	-.00221	-.00898	6.9812
#2	-.00333	16.995	.00429	-.00140	-.00183	.00401	-.00787	7.0061
#3	-.00421	16.984	.00436	-.00578	.00442	.00603	-.00402	7.0224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606113004 Acquired: 6/27/2016 19:03:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00051**	**.28736**	**.02551**	**-.00208**	**-.00082**	**.00411**	**-.00198**
Stddev	.00062	.00169	.00865	.00371	.00099	.00025	.00051
%RSD	122.50	.58686	33.933	178.25	120.62	6.1307	25.715
#1	-.00033	.28545	.02255	-.00252	-.00074	.00392	-.00257
#2	.00001	.28864	.01871	.00183	-.00185	.00440	-.00166
#3	-.00120	.28799	.03525	-.00555	.00013	.00403	-.00172
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9773.6**	**59615.**	**3085.6**
Stddev	12.7	161.	17.0
%RSD	.13023	.26935	.55076
#1	9788.3	59435.	3101.8
#2	9767.7	59666.	3067.9
#3	9765.0	59743.	3087.3

Approved: June 28, 2016

Sample Name: L1606113005 Acquired: 6/27/2016 19:07:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	-.01113	.00084	-.00067	.00055	.00012	.11962	.00001
Stddev	.00193	.00065	.00037	.00189	.00016	.00001	.03094	.00015
%RSD	723.49	5.8142	44.243	280.16	28.687	9.9704	25.863	982.10
#1	.00151	-.01148	.00080	.00008	.00044	.00013	.12564	-.00004
#2	.00000	-.01038	.00122	.00072	.00047	.00011	.08611	.00018
#3	-.00231	-.01153	.00048	-.00282	.00073	.00011	.14710	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.00003	.00202	.07284	-.29508	-.00061	.02918	.00259
Stddev	.00023	.00056	.00090	.00296	.07101	.00232	.05820	.00124
%RSD	163.94	1659.4	44.555	4.0585	24.066	383.54	199.45	47.956
#1	.00033	-.00050	.00282	.07103	-.37307	.00132	-.01973	.00400
#2	-.00012	-.00002	.00104	.07123	-.23416	-.00319	.01372	.00168
#3	.00022	.00062	.00221	.07625	-.27802	.00005	.09356	.00207
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00374	.18536	.00053	-.00095	.00104	-.00195	-.00649	.00077
Stddev	.00036	.01393	.00089	.00388	.00091	.00230	.00301	.00208
%RSD	9.5270	7.5151	167.45	406.71	87.694	118.09	46.348	268.59
#1	-.00415	.17003	.00155	.00339	.00029	.00053	-.00779	.00312
#2	-.00351	.18884	.00013	-.00218	.00205	-.00402	-.00863	-.00083
#3	-.00356	.19723	-.00009	-.00407	.00077	-.00236	-.00305	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606113005 Acquired: 6/27/2016 19:07:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00073**	**.00083**	**-.00070**	**-.00292**	**.00025**	**.00064**	**.00008**
Stddev	.00080	.00023	.00323	.00082	.00081	.00022	.00016
%RSD	109.58	27.426	463.93	27.970	325.67	34.210	195.96
#1	.00019	.00108	-.00304	-.00291	-.00053	.00053	-.00010
#2	-.00110	.00066	.00299	-.00211	.00110	.00050	.00017
#3	-.00129	.00073	-.00204	-.00375	.00018	.00090	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9968.0**	**61327.**	**3106.6**
Stddev	16.8	94.	25.1
%RSD	.16835	.15294	.80778
#1	9955.2	61288.	3083.4
#2	9987.0	61259.	3133.2
#3	9961.7	61434.	3103.1

Approved: June 28, 2016

Sample Name: L1606116101 Acquired: 6/27/2016 19:11:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	.04860	.00214	.13190	.02157	.00009	31.053	.00011
Stddev	.00079	.00672	.00101	.00194	.00106	.00008	.417	.00022
%RSD	416.38	13.835	47.067	1.4723	4.9311	89.301	1.3429	197.25
#1	-.00053	.05633	.00167	.12979	.02271	.00002	31.430	-.00006
#2	.00071	.04535	.00330	.13230	.02060	.00019	31.123	.00036
#3	-.00075	.04412	.00145	.13362	.02139	.00007	30.605	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.00069	.00412	.08470	2.9383	.01479	11.353	.00956
Stddev	.00023	.00068	.00036	.04777	.0762	.00526	.015	.00033
%RSD	907.19	99.351	8.8420	56.391	2.5922	35.520	.13537	3.4001
#1	-.00023	.00118	.00370	.06348	2.9493	.01019	11.365	.00953
#2	.00009	-.00009	.00436	.05123	3.0084	.01367	11.336	.00925
#3	.00021	.00097	.00431	.13941	2.8572	.02052	11.357	.00990
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	92.171	.00236	.65331	-.00188	-.00478	-.00371	3.1163
Stddev	.00042	.452	.00150	.00157	.00056	.00255	.00955	.0067
%RSD	364.94	.48991	63.480	.23986	29.940	53.420	257.32	.21458
#1	-.00030	92.337	.00098	.65154	-.00253	-.00241	-.00739	3.1179
#2	.00054	92.515	.00214	.65387	-.00150	-.00445	-.01088	3.1221
#3	.00010	91.659	.00395	.65452	-.00162	-.00749	.00713	3.1090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606116101 Acquired: 6/27/2016 19:11:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00068**	**.89893**	**-.00447**	**.00099**	**.01931**	**.01394**	**.00110**
Stddev	.00020	.00488	.00438	.00163	.00069	.00011	.00032
%RSD	29.854	.54316	98.089	164.15	3.5614	.75851	28.702
#1	-.00067	.90042	-.00838	.00182	.01895	.01405	.00146
#2	-.00048	.90290	-.00529	-.00088	.02011	.01393	.00098
#3	-.00089	.89348	.00027	.00203	.01888	.01384	.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9553.5**	**58902.**	**3063.6**
Stddev	144.7	396.	17.8
%RSD	1.5141	.67216	.58108
#1	9502.6	59228.	3063.8
#2	9441.2	59017.	3045.8
#3	9716.8	58462.	3081.4

Approved: June 28, 2016

Sample Name: L1606116102 Acquired: 6/27/2016 19:15:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.00577	.00204	.12784	.02200	.00011	29.944	-.00001
Stddev	.00045	.00626	.00168	.00092	.00058	.00003	.183	.00023
%RSD	1169.4	108.47	82.281	.72102	2.6575	27.365	.61271	2802.0
#1	-.00028	.00320	.00238	.12889	.02133	.00013	29.855	-.00014
#2	.00055	.00120	.00354	.12743	.02231	.00013	29.823	.00026
#3	-.00016	.01290	.00022	.12719	.02237	.00008	30.155	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.00091	.00390	.02477	2.9495	.01753	10.866	.00532
Stddev	.00036	.00101	.00074	.03000	.1210	.00241	.038	.00370
%RSD	97.563	111.40	18.993	121.09	4.1038	13.722	.34772	69.494
#1	.00006	.00109	.00313	-.00494	3.0627	.01490	10.861	.00691
#2	.00029	.00182	.00396	.02422	2.8219	.01963	10.831	.00795
#3	.00077	-.00018	.00460	.05505	2.9640	.01806	10.906	.00109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	89.022	.00229	.62553	.00008	-.00414	-.00448	2.9365
Stddev	.00031	.564	.00068	.00212	.00422	.00227	.00127	.0138
%RSD	124.45	.63346	29.845	.33853	5368.2	54.867	28.295	.47017
#1	.00011	88.808	.00181	.62797	-.00479	-.00191	-.00445	2.9505
#2	-.00042	88.595	.00198	.62425	.00230	-.00406	-.00576	2.9361
#3	-.00044	89.661	.00307	.62436	.00273	-.00646	-.00322	2.9229
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606116102 Acquired: 6/27/2016 19:15:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.86324**	**-.00129**	**-.00063**	**.01714**	**.01232**	**.00074**
Stddev	.00078	.00516	.00506	.00324	.00105	.00007	.00050
%RSD	510.95	.59816	391.60	515.49	6.1386	.57878	67.773
#1	-.00058	.86195	.00359	-.00139	.01713	.01224	.00104
#2	.00075	.85884	-.00095	-.00341	.01820	.01237	.00103
#3	-.00063	.86893	-.00652	.00292	.01609	.01236	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9752.3**	**59218.**	**3054.8**
Stddev	23.7	320.	14.4
%RSD	.24273	.54118	.47057
#1	9739.1	58898.	3055.3
#2	9779.7	59217.	3068.9
#3	9738.2	59539.	3040.2

Approved: June 28, 2016

Sample Name: L1606116103 Acquired: 6/27/2016 19:19:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	.03506	.00712	.07551	.04188	.00158	20.508	-.00002
Stddev	.00084	.00807	.00171	.00181	.00069	.00004	.136	.00017
%RSD	651.77	23.006	23.996	2.3903	1.6575	2.7525	.66552	884.07
#1	-.00080	.03259	.00833	.07650	.04108	.00154	20.385	-.00021
#2	-.00041	.04407	.00787	.07343	.04238	.00162	20.483	.00012
#3	.00082	.02852	.00517	.07661	.04217	.00158	20.655	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	.00136	.00282	.06994	2.1985	-.00081	7.7606	.02966
Stddev	.00023	.00170	.00079	.01989	.0584	.00386	.0307	.00320
%RSD	61.219	125.12	27.894	28.440	2.6554	475.88	.39600	10.800
#1	.00033	.00164	.00219	.04755	2.1597	-.00296	7.7763	.02714
#2	.00017	-.00046	.00370	.08558	2.2656	-.00312	7.7802	.02857
#3	.00063	.00291	.00257	.07668	2.1702	.00365	7.7251	.03326
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.58025	26.711	.01217	.02291	-.00168	-.00309	-.00198	.17020
Stddev	.00378	.134	.00096	.00393	.00016	.00223	.00721	.00343
%RSD	.65186	.50029	7.8825	17.170	9.4794	72.314	363.89	2.0125
#1	.58379	26.559	.01320	.01839	-.00157	-.00168	.00625	.17349
#2	.58070	26.764	.01199	.02484	-.00186	-.00567	-.00506	.17046
#3	.57627	26.811	.01131	.02552	-.00162	-.00192	-.00713	.16666
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606116103 Acquired: 6/27/2016 19:19:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.15299	-.00551	.03505	.96728	.00426	.00074
Stddev	.00062	.00063	.00461	.00364	.00318	.00006	.00084
%RSD	2189.8	.41351	83.643	10.383	.32926	1.3697	114.29
#1	.00030	.15226	-.00242	.03087	.96516	.00420	.00169
#2	.00046	.15332	-.00330	.03683	.96573	.00430	.00007
#3	-.00068	.15339	-.01081	.03747	.97094	.00430	.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9492.3	59716.	3042.3
Stddev	121.9	141.	16.5
%RSD	1.2846	.23579	.54287
#1	9632.0	59860.	3053.7
#2	9437.9	59578.	3049.9
#3	9407.1	59711.	3023.4

Approved: June 28, 2016

Sample Name: L1606116104 Acquired: 6/27/2016 19:23:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	-.01186	.00254	.07664	.04345	.00159	20.848	-.00007
Stddev	.00212	.00508	.00257	.00149	.00081	.00002	.094	.00009
%RSD	6307.4	42.870	101.27	1.9446	1.8755	1.5592	.45151	128.56
#1	-.00243	-.00640	.00537	.07503	.04295	.00161	20.915	.00003
#2	.00070	-.01646	.00033	.07691	.04439	.00156	20.741	-.00012
#3	.00162	-.01272	.00193	.07797	.04301	.00160	20.890	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00062	.00080	.00213	.01930	2.3034	.00354	8.0427	.01084
Stddev	.00018	.00136	.00121	.02471	.1464	.00201	.0307	.00142
%RSD	29.373	171.24	56.970	128.01	6.3535	56.767	.38175	13.097
#1	.00066	.00149	.00245	-.00582	2.1466	.00421	8.0464	.01073
#2	.00079	.00168	.00079	.02016	2.4364	.00128	8.0103	.00948
#3	.00043	-.00078	.00315	.04357	2.3271	.00512	8.0714	.01232
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.59730	27.451	.00983	.00439	.00004	-.00026	.00060	.11481
Stddev	.00399	.139	.00086	.00724	.00084	.00311	.00348	.00090
%RSD	.66740	.50649	8.7293	164.88	2163.4	1183.9	579.54	.78293
#1	.59951	27.604	.01082	.01270	-.00049	-.00365	.00041	.11412
#2	.59969	27.332	.00935	.00109	-.00040	.00040	-.00278	.11583
#3	.59270	27.417	.00933	-.00061	.00101	.00246	.00417	.11449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606116104 Acquired: 6/27/2016 19:23:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00036**	**.15442**	**-.00693**	**.03739**	**.99876**	**.00017**	**.00109**
Stddev	.00068	.00149	.00505	.00111	.00236	.00009	.00046
%RSD	189.83	.96644	72.868	2.9730	.23595	53.416	42.495
#1	-.00021	.15585	-.01154	.03856	.99714	.00016	.00110
#2	.00024	.15456	-.00774	.03635	.99769	.00027	.00156
#3	-.00111	.15287	-.00153	.03724	1.0015	.00009	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9800.5**	**58978.**	**2899.9**
Stddev	52.8	743.	21.9
%RSD	.53851	1.2596	.75456
#1	9750.8	58120.	2889.0
#2	9794.8	59436.	2925.1
#3	9855.9	59376.	2885.6

Approved: June 28, 2016

Sample Name: L1606116105 Acquired: 6/27/2016 19:27:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	.01946	.00390	.07448	.04284	.00157	21.027	.00011
Stddev	.00121	.00450	.00376	.00070	.00106	.00003	.137	.00024
%RSD	166.72	23.135	96.548	.93762	2.4757	2.0914	.65116	225.70
#1	.00212	.01950	.00420	.07527	.04197	.00158	21.024	-.00017
#2	.00008	.02394	.00749	.07423	.04253	.00159	21.165	.00025
#3	-.00002	.01494	-.00001	.07395	.04402	.00153	20.891	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	.00082	.00582	.04839	2.3850	.00098	7.8006	.02592
Stddev	.00048	.00123	.00109	.00332	.1850	.00303	.0803	.00225
%RSD	90.824	151.42	18.732	6.8604	7.7576	310.10	1.0289	8.6848
#1	.00020	.00174	.00474	.04637	2.3464	.00444	7.7080	.02815
#2	.00108	-.00059	.00579	.05222	2.5863	-.00035	7.8441	.02594
#3	.00031	.00130	.00692	.04657	2.2224	-.00116	7.8498	.02365
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.57766	26.748	.01396	.02192	.00087	-.00481	-.00390	.17769
Stddev	.00537	.194	.00045	.00599	.00079	.00526	.00460	.00371
%RSD	.92972	.72401	3.2461	27.303	90.992	109.23	117.76	2.0884
#1	.58243	26.813	.01408	.01689	.00002	-.01088	.00128	.17674
#2	.57184	26.900	.01433	.02034	.00159	-.00146	-.00550	.17454
#3	.57870	26.530	.01345	.02854	.00100	-.00210	-.00749	.18178
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606116105 Acquired: 6/27/2016 19:27:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00048	.15363	-.00304	.03659	.96783	.00684	.00099
Stddev	.00101	.00148	.00056	.00403	.00503	.00018	.00013
%RSD	209.79	.96081	18.505	11.025	.52018	2.6762	12.705
#1	-.00072	.15477	-.00363	.03833	.96694	.00701	.00103
#2	-.00135	.15415	-.00250	.03198	.96330	.00665	.00085
#3	.00063	.15196	-.00299	.03946	.97325	.00686	.00108
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9748.9	60685.	3093.7
Stddev	243.7	28.	20.2
%RSD	2.4999	.04568	.65339
#1	9877.2	60670.	3088.7
#2	9901.7	60717.	3076.4
#3	9467.9	60668.	3115.9

Approved: June 28, 2016

Sample Name: L1606116106 Acquired: 6/27/2016 19:31:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00080	.01157	.00342	.07354	.04483	.00161	21.274	.00006
Stddev	.00246	.00354	.00054	.00141	.00151	.00009	.202	.00021
%RSD	307.83	30.555	15.802	1.9238	3.3769	5.5529	.94716	363.40
#1	-.00348	.01552	.00300	.07499	.04579	.00168	21.474	.00030
#2	-.00029	.00870	.00324	.07345	.04562	.00151	21.071	-.00002
#3	.00137	.01049	.00403	.07217	.04309	.00165	21.276	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	.00090	.00129	.03729	2.3919	.00402	7.9485	.00584
Stddev	.00024	.00059	.00132	.00163	.0287	.00460	.1698	.00272
%RSD	60.413	65.004	102.12	4.3716	1.1990	114.26	2.1361	46.550
#1	.00019	.00042	-.00005	.03899	2.4000	-.00014	8.1044	.00553
#2	.00066	.00073	.00133	.03714	2.3601	.00895	7.9734	.00870
#3	.00033	.00155	.00258	.03574	2.4157	.00326	7.7676	.00329
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.59193	27.362	.01055	.00242	-.00133	-.00014	.00057	.13995
Stddev	.00305	.108	.00093	.00502	.00202	.00238	.00354	.00201
%RSD	.51575	.39501	8.7943	207.40	151.87	1662.2	615.36	1.4379
#1	.59337	27.480	.01104	.00117	.00015	.00260	.00121	.14107
#2	.59400	27.268	.01114	.00795	-.00362	-.00171	-.00324	.14115
#3	.58842	27.337	.00948	-.00186	-.00051	-.00132	.00375	.13762
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606116106 Acquired: 6/27/2016 19:31:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.15575	.00576	.03450	.98791	.00504	.00042
Stddev	.00079	.00070	.00604	.00222	.00217	.00013	.00015
%RSD	414.83	.45086	104.94	6.4445	.21925	2.5112	36.586
#1	.00003	.15575	.00064	.03702	.98894	.00496	.00027
#2	.00104	.15505	.01242	.03282	.98938	.00497	.00041
#3	-.00051	.15646	.00421	.03366	.98543	.00518	.00057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9573.0	58310.	2922.1
Stddev	34.5	112.	49.3
%RSD	.36041	.19133	1.6864
#1	9533.1	58210.	2866.6
#2	9592.6	58430.	2939.0
#3	9593.2	58290.	2960.8

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 19:34:53 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.42480**	**10.925**	**.41905**	**.52291**	**1.0821**	**.05427**	**10.818**
Stddev	.00025	.036	.00071	.00445	.0084	.00013	.033
%RSD	.05770	.32867	.16841	.85070	.77674	.24259	.30833
#1	.42451	10.965	.41861	.51777	1.0918	.05442	10.856
#2	.42491	10.897	.41987	.52560	1.0772	.05417	10.798
#3	.42496	10.912	.41868	.52535	1.0773	.05421	10.800
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05366**	**.21786**	**.54850**	**.54061**	**4.2591**	**54.510**	**1.0808**
Stddev	.00024	.00059	.00176	.00043	.0572	.618	.0072
%RSD	.44655	.27207	.32034	.07869	1.3425	1.1329	.66469
#1	.05348	.21718	.55030	.54037	4.3131	55.125	1.0887
#2	.05357	.21816	.54679	.54110	4.2648	53.889	1.0747
#3	.05393	.21825	.54843	.54035	4.1992	54.516	1.0790
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **11.092**	**.53535**	**1.0844**	**53.246**	**.53574**	**10.501**	**.53340**
Stddev	.069	.00661	.0022	.395	.00192	.024	.00281
%RSD	.62293	1.2342	.20212	.74176	.35856	.23287	.52724
#1	11.048	.54186	1.0869	53.701	.53793	10.473	.53021
#2	11.172	.53555	1.0835	53.042	.53436	10.519	.53551
#3	11.057	.52865	1.0829	52.994	.53492	10.511	.53449
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	10.000						
Range	10.000%						

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 19:34:53 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2638**	**.41659**	**5.2616**	**1.0927**	**1.0780**	**1.0789**	**.54165**
Stddev	.0040	.00564	.0039	.0023	.0065	.0174	.00133
%RSD	.31495	1.3531	.07431	.21360	.59793	1.6123	.24593
#1	1.2631	.41067	5.2585	1.0946	1.0854	1.0888	.54011
#2	1.2680	.41720	5.2603	1.0935	1.0748	1.0890	.54233
#3	1.2601	.42189	5.2660	1.0901	1.0738	1.0588	.54250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0959**	**1.0702**	F **1.1185**
Stddev	.0023	.0015	.0115
%RSD	.20964	.14271	1.0288
#1	1.0971	1.0690	1.1297
#2	1.0933	1.0719	1.1067
#3	1.0974	1.0697	1.1190
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9147.0**	**55206.**	**2806.1**
Stddev	5.3	126.	31.2
%RSD	.05842	.22832	1.1121
#1	9148.3	55062.	2772.2
#2	9151.5	55260.	2833.6
#3	9141.1	55296.	2812.6

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 19:38:31 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00004**	**.00490**	**.00178**	**.00111**	**.00453**	**.00019**	**.02320**
Stddev	.00284	.01177	.00323	.00118	.00039	.00011	.00727
%RSD	7519.4	240.39	180.93	106.68	8.5738	60.175	31.332
#1	-.00321	.01176	-.00056	.00211	.00408	.00031	.02151
#2	.00123	.01163	.00547	.00141	.00475	.00015	.03117
#3	.00209	-.00870	.00044	-.00020	.00475	.00010	.01692
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.00014**	**.00150**	**.00050**	**.02400**	**-.11989**	**.00036**
Stddev	.00014	.00036	.00102	.00134	.01343	.14193	.00349
%RSD	80.960	259.90	67.536	271.23	55.965	118.38	960.98
#1	-.00002	-.00001	.00043	.00055	.03387	.03234	.00264
#2	-.00030	.00055	.00245	-.00087	.02943	-.24858	-.00366
#3	-.00019	-.00013	.00162	.00181	.00871	-.14342	.00211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.04459**	**.00163**	**-.00122**	**.05342**	**.00039**	**.00535**	F **-.00554**
Stddev	.08139	.00165	.00009	.01088	.00232	.00007	.00103
%RSD	182.52	101.48	7.5934	20.365	598.68	1.3864	18.619
#1	-.09630	-.00015	-.00115	.05278	.00044	.00528	-.00659
#2	-.08670	.00311	-.00133	.04288	.00268	.00534	-.00453
#3	.04922	.00192	-.00118	.06461	-.00196	.00542	-.00549
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							.00500
Low Limit							-.00500

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 19:38:31 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00058**	**-.00113**	**.00955**	**.00006**	**.00136**	**.00024**	**-.00107**
Stddev	.00153	.00375	.00095	.00046	.00025	.00745	.00262
%RSD	262.80	330.27	9.9279	792.93	18.125	3043.4	245.14
#1	-.00031	-.00111	.00846	-.00043	.00150	-.00489	-.00005
#2	.00235	.00260	.01008	.00048	.00150	-.00316	-.00404
#3	-.00030	-.00489	.01011	.00013	.00107	.00879	.00089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00172**	**-.00099**	**.00103**
Stddev	.00022	.00020	.00053
%RSD	12.610	19.780	51.778
#1	.00153	-.00077	.00137
#2	.00196	-.00105	.00129
#3	.00167	-.00115	.00041
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9379.7**	**57325.**	**2865.6**
Stddev	48.0	139.	9.0
%RSD	.51141	.24290	.31554
#1	9434.2	57197.	2856.8
#2	9360.8	57306.	2865.2
#3	9344.0	57473.	2874.9

Approved: June 28, 2016

Sample Name: L1606119001 Acquired: 6/27/2016 19:42:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00267	8.0985	.01397	4.5540	1.9703	.00081	154.00
Stddev	.00156	.0820	.00323	.0037	.0095	.00006	.59
%RSD	58.285	1.0123	23.161	.08237	.48269	6.7891	.38249
#1	-.00220	8.0438	.01726	4.5498	1.9785	.00086	154.55
#2	-.00440	8.1927	.01384	4.5550	1.9598	.00075	153.38
#3	-.00140	8.0589	.01080	4.5571	1.9725	.00082	154.06
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.56192	.00830	.02341	1.5436	22.347	196.70	10.761
Stddev	.00306	.00015	.00048	.0071	.208	.61	.035
%RSD	.54460	1.8570	2.0293	.46142	.93140	.31175	.32796
#1	.56474	.00844	.02324	1.5506	22.480	197.41	10.795
#2	.56234	.00813	.02304	1.5438	22.455	196.32	10.725
#3	.55866	.00833	.02395	1.5363	22.107	196.38	10.762
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	14.620	.86871	.00729	F 646.93	.06970	1.0488	.49194
Stddev	.092	.00438	.00012	3.64	.00076	.0020	.00257
%RSD	.63243	.50448	1.7062	.56327	1.0846	.19194	.52336
#1	14.727	.86962	.00739	648.56	.07057	1.0482	.49281
#2	14.566	.86394	.00733	642.75	.06919	1.0471	.49397
#3	14.568	.87256	.00715	649.47	.06934	1.0510	.48904
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 28, 2016

Sample Name: L1606119001 Acquired: 6/27/2016 19:42:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00800	-.00729	16.893	.23145	.59674	.13690	.00082
Stddev	.00455	.00994	.050	.00157	.00160	.00899	.00155
%RSD	56.794	136.24	.29760	.67961	.26743	6.5681	187.98
#1	.01320	-.01798	16.947	.23175	.59744	.12980	.00158
#2	.00474	-.00557	16.885	.23286	.59492	.14701	-.00096
#3	.00608	.00167	16.847	.22975	.59788	.13390	.00185
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.02457	1.0474	.00566
Stddev	.00037	.0061	.00112
%RSD	1.4885	.58616	19.843
#1	.02427	1.0513	.00466
#2	.02498	1.0506	.00543
#3	.02446	1.0403	.00687
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8891.1	52962.	2833.8
Stddev	14.4	126.	18.0
%RSD	.16209	.23784	.63488
#1	8875.4	52841.	2813.5
#2	8903.7	52953.	2847.6
#3	8894.3	53092.	2840.3

Approved: June 28, 2016

Sample Name: L1606119002 Acquired: 6/27/2016 19:46:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00057	9.9587	.00827	1.6822	.76061	.00071	267.34
Stddev	.00079	.0300	.00176	.0088	.00393	.00004	.52
%RSD	136.94	.30083	21.260	.52335	.51670	5.7257	.19513
#1	.00021	9.9872	.00769	1.6722	.75886	.00074	266.82
#2	-.00057	9.9275	.01025	1.6857	.76511	.00066	267.86
#3	-.00136	9.9615	.00688	1.6887	.75786	.00072	267.35
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.28134	.01324	.16749	6.0562	30.006	60.333	.94675
Stddev	.00045	.00010	.00146	.0045	.135	.207	.00522
%RSD	.16064	.74013	.87293	.07445	.44869	.34349	.55094
#1	.28137	.01313	.16915	6.0602	29.878	60.393	.95276
#2	.28178	.01332	.16643	6.0569	30.146	60.103	.94340
#3	.28088	.01327	.16687	6.0513	29.994	60.504	.94410
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	27.909	4.1360	.02496	F 657.14	.14345	3.0382	.58038
Stddev	.097	.0122	.00048	3.20	.00024	.0093	.00064
%RSD	.34805	.29449	1.9237	.48739	.16716	.30583	.11086
#1	27.882	4.1229	.02550	653.49	.14351	3.0484	.58034
#2	28.016	4.1469	.02458	659.48	.14365	3.0362	.58104
#3	27.827	4.1382	.02481	658.46	.14318	3.0301	.57975
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 28, 2016

Sample Name: L1606119002 Acquired: 6/27/2016 19:46:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00437	-.00113	14.639	.71103	1.9740	.14697	-.00318
Stddev	.00093	.00679	.009	.00456	.0023	.00671	.00395
%RSD	21.238	599.63	.06107	.64087	.11721	4.5657	124.38
#1	.00531	.00628	14.638	.71353	1.9732	.14888	-.00698
#2	.00434	-.00707	14.631	.71379	1.9766	.13951	.00091
#3	.00346	-.00261	14.649	.70577	1.9722	.15252	-.00346
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.02961	.86049	.00530
Stddev	.00073	.00135	.00085
%RSD	2.4733	.15683	16.000
#1	.02909	.86204	.00478
#2	.02930	.85985	.00483
#3	.03045	.85958	.00628
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8764.1	53053.	2836.8
Stddev	18.0	107.	14.5
%RSD	.20589	.20218	.51289
#1	8771.9	53063.	2848.6
#2	8776.9	53155.	2820.5
#3	8743.4	52941.	2841.2

Approved: June 28, 2016

Sample Name: L1606125201 Acquired: 6/27/2016 19:50:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.00495	-.00095	.02860	.04479	.00005	61.384	.00017
Stddev	.00094	.00506	.00346	.00060	.00092	.00009	.422	.00012
%RSD	169.30	102.29	363.70	2.0982	2.0546	156.00	.68776	70.487
#1	-.00043	.00982	-.00248	.02929	.04573	-.00003	61.443	.00010
#2	.00145	-.00028	.00301	.02824	.04475	.00005	61.773	.00031
#3	.00065	.00530	-.00339	.02826	.04389	.00014	60.935	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	.00075	.01911	.10175	1.1286	.00201	12.422	.00989
Stddev	.00041	.00107	.00135	.03529	.0724	.00375	.123	.00190
%RSD	373.98	143.71	7.0668	34.684	6.4117	186.58	.99238	19.199
#1	-.00017	.00158	.02067	.09676	1.2037	.00634	12.387	.01195
#2	.00033	.00113	.01847	.13928	1.0593	-.00007	12.559	.00821
#3	-.00048	-.00046	.01820	.06922	1.1227	-.00024	12.319	.00950
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00193	13.644	.00073	.00105	-.00006	.00107	-.00136	4.4228
Stddev	.00034	.139	.00121	.00773	.00230	.00401	.00914	.0144
%RSD	17.500	1.0186	166.81	735.10	3736.7	373.25	673.05	.32612
#1	-.00157	13.779	.00160	.00989	.00067	.00196	.00648	4.4394
#2	-.00198	13.653	.00124	-.00224	.00178	-.00330	.00084	4.4140
#3	-.00225	13.501	-.00066	-.00449	-.00264	.00456	-.01140	4.4149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606125201 Acquired: 6/27/2016 19:50:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00073**	**.09784**	**-.00607**	**-.00328**	**-.00046**	**.14985**	**-.00007**
Stddev	.00058	.00084	.00670	.00447	.00081	.00083	.00029
%RSD	78.824	.86169	110.31	136.06	176.80	.55686	405.03
#1	-.00018	.09829	-.00120	-.00762	-.00136	.15081	-.00040
#2	-.00069	.09837	-.00331	-.00353	.00020	.14942	.00009
#3	-.00133	.09687	-.01372	.00130	-.00021	.14931	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9395.5**	**56788.**	**2851.0**
Stddev	80.1	323.	22.3
%RSD	.85229	.56921	.78277
#1	9314.4	57161.	2851.1
#2	9397.6	56614.	2828.6
#3	9474.5	56590.	2873.2

Approved: June 28, 2016

Sample Name: L1606116411 Acquired: 6/27/2016 19:54:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.14663	.00215	.03810	.02119	.00016	18.411	.00044
Stddev	.00221	.00912	.00176	.00137	.00092	.00001	.155	.00023
%RSD	681.83	6.2203	82.070	3.5904	4.3436	6.1555	.84062	51.747
#1	.00285	.14257	.00272	.03674	.02202	.00016	18.587	.00023
#2	-.00123	.15708	.00017	.03809	.02134	.00016	18.351	.00068
#3	-.00065	.14025	.00355	.03948	.02020	.00015	18.296	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	.00086	.01359	.02531	.94352	.00091	4.7712	.05655
Stddev	.00031	.00068	.00046	.01114	.02413	.00615	.0771	.00231
%RSD	111.85	79.360	3.3953	44.018	2.5576	674.67	1.6152	4.0836
#1	.00056	.00083	.01312	.03806	.95507	-.00497	4.7964	.05510
#2	-.00006	.00156	.01360	.01747	.91578	.00041	4.6847	.05921
#3	.00034	.00019	.01405	.02039	.95970	.00729	4.8326	.05534
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00369	151.86	.00477	.17540	-.00130	-.00056	-.00670	2.8318
Stddev	.00037	.71	.00067	.00122	.00395	.00497	.00873	.0160
%RSD	9.9860	.46427	14.104	.69348	303.24	885.27	130.27	.56460
#1	-.00327	151.07	.00552	.17637	-.00268	-.00517	.00140	2.8353
#2	-.00390	152.08	.00454	.17403	-.00438	-.00122	-.01595	2.8457
#3	-.00391	152.43	.00423	.17578	.00315	.00471	-.00556	2.8143
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606116411 Acquired: 6/27/2016 19:54:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00092**	**.09946**	**-.00305**	**-.00422**	**.00095**	**.28204**	**-.00025**
Stddev	.00082	.00139	.00477	.00256	.00041	.00115	.00070
%RSD	89.145	1.3990	156.08	60.728	43.182	.40732	284.05
#1	-.00093	.09856	-.00779	-.00141	.00111	.28171	-.00063
#2	-.00172	.09876	.00175	-.00642	.00125	.28332	-.00067
#3	-.00009	.10107	-.00312	-.00483	.00048	.28109	.00056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9116.8**	**55637.**	**2923.6**
Stddev	77.0	159.	39.2
%RSD	.84431	.28626	1.3395
#1	9205.6	55607.	2899.2
#2	9068.0	55494.	2968.8
#3	9077.0	55809.	2902.8

Approved: June 28, 2016

Sample Name: L1606116411PS Acquired: 6/27/2016 19:57:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574476-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19548**	**5.1804**	**.19851**	**1.0098**	**.52533**	**.02514**	**21.635**	**.02550**
Stddev	.00072	.0196	.00302	.0024	.00218	.00008	.081	.00008
%RSD	.36844	.37848	1.5199	.23408	.41510	.30949	.37298	.31943
#1	.19600	5.1775	.19968	1.0071	.52503	.02507	21.606	.02545
#2	.19466	5.2014	.19509	1.0111	.52331	.02512	21.573	.02560
#3	.19578	5.1625	.20078	1.0112	.52764	.02522	21.727	.02546
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10233**	**.25435**	**.25938**	**2.0153**	**26.667**	**.51197**	**9.4111**	**.30079**
Stddev	.00042	.00189	.00095	.0229	.082	.00391	.1325	.00486
%RSD	.41284	.74425	.36479	1.1341	.30756	.76337	1.4074	1.6164
#1	.10282	.25323	.25964	2.0043	26.628	.51123	9.3568	.29588
#2	.10215	.25653	.26017	2.0000	26.612	.50849	9.3144	.30089
#3	.10203	.25328	.25833	2.0416	26.761	.51620	9.5620	.30560
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51225**	**162.42**	**.25362**	**5.0507**	**.25017**	**.58754**	**.18763**	**4.9804**
Stddev	.00132	.94	.00143	.0063	.00212	.00191	.00166	.0055
%RSD	.25761	.57595	.56580	.12433	.84901	.32427	.88323	.11061
#1	.51355	162.15	.25196	5.0549	.25259	.58603	.18591	4.9845
#2	.51091	161.65	.25441	5.0536	.24933	.58968	.18775	4.9741
#3	.51228	163.46	.25448	5.0434	.24860	.58691	.18922	4.9825
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606116411PS Acquired: 6/27/2016 19:57:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574476-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50914	.60179	.50308	.24664	.51403	.74148	.00215
Stddev	.00198	.00284	.01244	.00364	.00263	.00112	.00047
%RSD	.38850	.47170	2.4725	1.4761	.51104	.15139	21.792
#1	.51105	.60080	.51068	.25053	.51179	.74270	.00175
#2	.50925	.59959	.48873	.24605	.51338	.74127	.00204
#3	.50710	.60500	.50984	.24332	.51692	.74048	.00266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9785.8	59525.	3089.6
Stddev	5.3	128.	22.0
%RSD	.05398	.21481	.71061
#1	9780.5	59663.	3089.8
#2	9791.1	59411.	3111.4
#3	9785.9	59502.	3067.5

Approved: June 28, 2016

Sample Name: L1606116411DL Acquired: 6/27/2016 20:01:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574476-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.01244**	**.00077**	**.00993**	**.00251**	**.00007**	**3.1652**	**.00003**
Stddev	.00165	.00684	.00240	.00167	.00051	.00004	.0405	.00004
%RSD	1706.3	55.017	310.90	16.791	20.376	59.493	1.2786	128.87
#1	-.00117	.02033	.00032	.01184	.00274	.00006	3.1186	.00005
#2	.00180	.00812	.00336	.00882	.00192	.00012	3.1857	-.00001
#3	-.00092	.00887	-.00137	.00912	.00286	.00004	3.1913	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00011**	**-.00011**	**.00239**	**.00360**	**.17739**	**-.00026**	**.83519**	**.01270**
Stddev	.00035	.00099	.00040	.01719	.06985	.00240	.07272	.00110
%RSD	305.66	864.19	16.756	476.98	39.374	931.69	8.7064	8.6367
#1	-.00024	.00042	.00275	-.01062	.18834	-.00207	.91669	.01326
#2	.00045	.00049	.00196	.02270	.10272	-.00117	.81196	.01143
#3	.00013	-.00126	.00245	-.00127	.24112	.00247	.77693	.01340
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00366**	**26.217**	**.00180**	**.03157**	**.00020**	**-.00341**	**.00027**	**.46858**
Stddev	.00037	.099	.00067	.00088	.00266	.00308	.00201	.00038
%RSD	10.012	.37933	37.354	2.8031	1302.6	90.487	741.36	.08205
#1	-.00324	26.121	.00150	.03183	-.00284	-.00052	.00218	.46845
#2	-.00380	26.319	.00133	.03059	.00204	-.00304	-.00183	.46901
#3	-.00393	26.210	.00258	.03230	.00141	-.00666	.00046	.46828
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606116411DL Acquired: 6/27/2016 20:01:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574476-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00062**	**.01749**	**.00168**	**.00173**	**.00076**	**.04891**	**.00027**
Stddev	.00022	.00018	.00109	.00146	.00042	.00018	.00034
%RSD	34.942	1.0421	65.275	84.070	55.974	.37361	124.90
#1	-.00054	.01730	.00260	.00112	.00124	.04912	.00038
#2	-.00087	.01751	.00196	.00340	.00060	.04885	.00055
#3	-.00046	.01767	.00047	.00068	.00044	.04877	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11279.**	**68657.**	**3497.6**
Stddev	17.	69.	2.3
%RSD	.14899	.10047	.06606
#1	11292.	68728.	3500.3
#2	11285.	68590.	3496.7
#3	11260.	68652.	3495.9

Approved: June 28, 2016

Sample Name: L1606116411DL Acquired: 6/27/2016 20:05:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574476-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00027**	**-.00734**	**.00074**	**.00368**	**.00025**	**.00001**	**.64489**	**-.00004**
Stddev	.00197	.00503	.00031	.00116	.00074	.00006	.03948	.00007
%RSD	728.94	68.592	41.050	31.357	289.93	558.66	6.1212	200.47
#1	-.00218	-.00153	.00056	.00381	.00018	.00007	.60725	-.00011
#2	-.00038	-.01010	.00058	.00477	-.00044	-.00001	.64145	.00004
#3	.00175	-.01039	.00110	.00247	.00102	-.00004	.68598	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**-.00038**	**.00085**	**.01781**	**-.08744**	**.00170**	**.17950**	**.00501**
Stddev	.00008	.00066	.00051	.01400	.03108	.00242	.00980	.00644
%RSD	823.65	173.11	59.500	78.614	35.542	142.12	5.4604	128.55
#1	.00008	-.00018	.00032	.02136	-.05308	-.00006	.19028	.00935
#2	-.00005	-.00111	.00133	.00237	-.11360	.00070	.17711	-.00239
#3	-.00006	.00015	.00091	.02969	-.09563	.00447	.17112	.00806
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00376**	**5.7425**	**.00188**	**.00910**	**.00218**	**-.00555**	**-.00021**	**.07533**
Stddev	.00013	.0356	.00064	.00390	.00026	.00169	.00349	.00042
%RSD	3.5506	.61948	33.699	42.866	11.879	30.460	1674.1	.55103
#1	-.00365	5.7020	.00239	.00623	.00245	-.00375	.00346	.07486
#2	-.00391	5.7564	.00117	.00753	.00193	-.00582	-.00062	.07553
#3	-.00371	5.7689	.00209	.01354	.00216	-.00710	-.00347	.07561
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606116411DL Acquired: 6/27/2016 20:05:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574476-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00156**	**.00340**	**.00426**	**-.00055**	**.00003**	**.00937**	**-.00011**
Stddev	.00052	.00010	.00552	.00191	.00013	.00019	.00034
%RSD	33.470	2.8124	129.55	347.53	382.70	2.0726	312.23
#1	-.00178	.00330	.00902	.00003	-.00006	.00956	.00025
#2	-.00096	.00343	.00554	-.00268	-.00002	.00938	-.00043
#3	-.00193	.00348	-.00179	.00100	.00019	.00917	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11182.**	**67990.**	**3405.1**
Stddev	37.	86.	17.1
%RSD	.33184	.12588	.50329
#1	11145.	68081.	3418.8
#2	11180.	67979.	3410.6
#3	11219.	67911.	3385.8

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 20:09:24 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .44069	F 11.200	.43242	.54739	F 1.1113	F .05577	F 11.072
Stddev	.00222	.009	.00131	.00632	.0023	.00017	.079
%RSD	.50357	.07720	.30405	1.1552	.20831	.31151	.71280
#1	.43816	11.194	.43374	.54391	1.1132	.05565	11.159
#2	.44232	11.210	.43111	.54357	1.1087	.05569	11.005
#3	.44159	11.195	.43241	.55469	1.1120	.05597	11.051
Check ?	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Fail
Value	.40000	10.000			1.0000	.05000	10.000
Range	10.000%	10.000%			10.000%	10.000%	10.000%

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .05545	F .22568	F .56356	F .55844	F 4.4391	F 55.893	F 1.1164
Stddev	.00016	.00045	.00127	.00115	.0315	.248	.0054
%RSD	.28698	.19850	.22503	.20674	.71028	.44419	.48233
#1	.05536	.22609	.56266	.55840	4.4051	56.087	1.1224
#2	.05563	.22575	.56301	.55961	4.4449	55.613	1.1144
#3	.05535	.22520	.56501	.55730	4.4674	55.980	1.1122
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.05000	.20000	.50000	.50000	4.0000	50.000	1.0000
Range	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 11.367	F .55144	F 1.1209	54.614	F .55389	10.904	F .55260
Stddev	.158	.00584	.0027	.214	.00054	.020	.00375
%RSD	1.3880	1.0583	.24184	.39223	.09781	.18521	.67848
#1	11.501	.55706	1.1241	54.769	.55378	10.927	.55692
#2	11.193	.54541	1.1195	54.369	.55448	10.897	.55018
#3	11.407	.55184	1.1192	54.702	.55341	10.888	.55070
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Fail	Chk Pass	Chk Fail
Value	10.000	.50000	1.0000		.50000		.50000
Range	10.000%	10.000%	10.000%		10.000%		10.000%

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 20:09:24 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.3086	.43877	5.4261	F 1.1279	F 1.1088	F 1.1123	F .56166
Stddev	.0051	.00573	.0415	.0022	.0045	.0044	.00292
%RSD	.38856	1.3068	.76504	.19783	.40842	.39203	.52039
#1	1.3028	.43891	5.4510	1.1299	1.1137	1.1166	.56243
#2	1.3116	.43296	5.4490	1.1255	1.1047	1.1079	.56412
#3	1.3115	.44443	5.3781	1.1283	1.1082	1.1125	.55843
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value				1.0000	1.0000	1.0000	.50000
Range				10.000%	10.000%	10.000%	10.000%

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	F 1.1271	1.0978	F 1.1288
Stddev	.0048	.0014	.0022
%RSD	.42660	.12863	.19309
#1	1.1217	1.0990	1.1313
#2	1.1306	1.0963	1.1280
#3	1.1292	1.0981	1.1272
Check ?	Chk Fail	Chk Pass	Chk Fail
Value	1.0000		1.0000
Range	10.000%		10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9228.5	56095.	2911.7
Stddev	16.3	175.	11.1
%RSD	.17690	.31207	.38122
#1	9220.6	56196.	2908.4
#2	9247.3	56196.	2924.1
#3	9217.7	55893.	2902.7

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 20:13:01 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00032**	**.00661**	**.00137**	**.00153**	**.00460**	**.00020**	**-.00210**	**-.00012**
Stddev	.00222	.00658	.00585	.00041	.00121	.00004	.01482	.00037
%RSD	688.29	99.570	427.58	27.097	26.238	19.089	705.59	300.28
#1	-.00131	-.00099	.00065	.00106	.00324	.00024	.00206	-.00018
#2	.00222	.01056	.00755	.00184	.00554	.00016	.01020	-.00046
#3	-.00188	.01025	-.00409	.00168	.00501	.00019	-.01856	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00020**	**.00086**	**.00058**	**.03443**	**-.06795**	**.00436**	**.02152**	**.00495**
Stddev	.00026	.00098	.00133	.02040	.08285	.00365	.05375	.00119
%RSD	128.39	114.27	230.64	59.259	121.94	83.674	249.75	24.120
#1	-.00006	-.00022	.00202	.01816	-.11674	.00568	.08294	.00365
#2	.00047	.00168	.00033	.05733	-.11482	.00717	-.00139	.00599
#3	.00020	.00111	-.00061	.02781	.02772	.00024	-.01698	.00521
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00099**	**.07511**	**.00016**	**.00691**	**.00038**	**-.00171**	**.00102**	**.01102**
Stddev	.00029	.02112	.00175	.00674	.00323	.00063	.00351	.00258
%RSD	29.118	28.116	1126.3	97.608	854.53	37.204	344.74	23.434
#1	-.00066	.05386	-.00159	.01011	.00043	-.00164	.00341	.01263
#2	-.00121	.09610	.00191	-.00084	.00358	-.00111	-.00301	.01239
#3	-.00110	.07538	.00014	.01145	-.00288	-.00237	.00266	.00804
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 20:13:01 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.00133	.00669	.00147	.00207	-.00108	.00120
Stddev	.00059	.00028	.00303	.00106	.00038	.00016	.00069
%RSD	844.24	21.263	45.374	71.946	18.408	14.931	57.233
#1	-.00057	.00159	.00395	.00146	.00215	-.00100	.00051
#2	.00058	.00138	.00995	.00253	.00241	-.00097	.00121
#3	.00021	.00103	.00616	.00042	.00166	-.00126	.00189
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9552.3	58406.	2934.9
Stddev	8.5	52.	18.5
%RSD	.08943	.08875	.63041
#1	9543.9	58378.	2946.0
#2	9552.1	58465.	2945.2
#3	9561.0	58373.	2913.6

Approved: June 28, 2016

Sample Name: LLCCV Acquired: 6/27/2016 20:16:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00784	.17392	.01068	.08482	.01013	.00182	.44020	.00060
Stddev	.00152	.00593	.00110	.00215	.00046	.00007	.05306	.00008
%RSD	19.329	3.4104	10.264	2.5304	4.5534	3.8318	12.053	13.379
#1	.00829	.17272	.00945	.08460	.01048	.00190	.39421	.00056
#2	.00907	.16869	.01154	.08279	.01030	.00179	.42813	.00069
#3	.00615	.18037	.01105	.08706	.00961	.00177	.49825	.00054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00409	.00421	.00591	.09152	.74156	.08590	.43623	.01080
Stddev	.00045	.00094	.00042	.03057	.09740	.00212	.03100	.00098
%RSD	11.039	22.310	7.0885	33.399	13.134	2.4647	7.1073	9.0431
#1	.00439	.00325	.00633	.06572	.85188	.08408	.45979	.01103
#2	.00357	.00513	.00592	.08357	.70532	.08822	.40111	.00973
#3	.00430	.00425	.00549	.12528	.66748	.08540	.44779	.01164
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00522	.44545	.01676	.80783	.00510	.08425	.01640	.83721
Stddev	.00026	.02096	.00053	.00259	.00287	.00281	.00859	.00198
%RSD	4.9680	4.7062	3.1762	.32073	56.273	3.3378	52.390	.23648
#1	.00517	.45426	.01625	.80698	.00804	.08266	.01043	.83557
#2	.00549	.42152	.01731	.81073	.00231	.08749	.01252	.83667
#3	.00498	.46057	.01671	.80576	.00494	.08259	.02625	.83941
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: LLCCV Acquired: 6/27/2016 20:16:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v981) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.43339**	**.04343**	**.02361**	**.15925**	**.00953**	**.02086**	**.04862**
Stddev	.00158	.00032	.00243	.00384	.00084	.00016	.00040
%RSD	.36406	.73560	10.313	2.4081	8.8401	.76226	.82816
#1	.43434	.04332	.02619	.16366	.00946	.02077	.04833
#2	.43426	.04379	.02328	.15743	.01041	.02077	.04844
#3	.43157	.04318	.02135	.15667	.00873	.02105	.04908
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9578.4**	**58333.**	**2941.1**
Stddev	20.1	189.	15.3
%RSD	.20960	.32457	.52044
#1	9579.6	58549.	2923.8
#2	9597.9	58198.	2946.7
#3	9557.8	58251.	2952.9

Approved: June 28, 2016

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.000232	0.049165	0.000000	1.000000
Al 308.215 {109}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.000634	0.007803	0.000000	1.000000
As 189.042 {478}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.000040	0.022231	0.000000	1.000000
B 249.678 {135}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.000011	0.021528	0.000000	1.000000
Ba 455.403 { 74}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.057094	2.076352	0.000000	1.000000
Be 313.107 {108}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.000750	0.915011	0.000000	1.000000
Ca 422.673 { 80}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.001646	0.043727	0.000000	1.000000
Cd 228.802 {447}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.000087	0.541329	0.000000	1.000000
Co 228.616 {447}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.000124	0.345900	0.000000	1.000000
Cr 267.716 {126}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.000307	0.057253	0.000000	1.000000
Cu 224.700 {450}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.000095	0.121091	0.000000	1.000000
Fe 261.187 {129}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.000099	0.021228	0.000000	1.000000
K 766.490 { 44}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.017252	0.054111	0.000000	1.000000
Li 670.784 { 50}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.017716	1.541847	0.000000	1.000000
Mg 279.079 {121}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.000903	0.008313	0.000000	1.000000
Mn 257.610 {131}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.000352	0.261349	0.000000	1.000000
Mo 202.030 {467}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.000019	0.173301	0.000000	1.000000
Na 589.592 { 57}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.058329	0.174631	0.000000	1.000000
Ni 231.604 {446}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.000820	0.127033	0.000000	1.000000
P 214.914 {457}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.000118	0.012842	0.000000	1.000000
Pb 220.353 {453}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.001076	0.059382	0.000000	1.000000
Sb 206.833 {463}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.000235	0.028236	0.000000	1.000000
Se 196.090 {472}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.000467	0.015624	0.000000	1.000000
Si 212.412 {459}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.002275	0.036630	0.000000	1.000000
Sn 189.989 {477}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.000014	0.067208	0.000000	1.000000
Sr 407.771 { 83}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.002067	3.402056	0.000000	1.000000
Ti 337.280 {100}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.001900	0.093443	0.000000	1.000000
Tl 190.856 {477}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.000364	0.027650	0.000000	1.000000
V 292.402 {115}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.000001	0.067460	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.000143	0.395720	0.000000	1.000000
Zr 339.198 { 99}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.005896	3.544760	0.000000	1.000000

Approved: June 29, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999853	0.000002	0.002445	0.008150	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999993	0.000002	0.010657	0.035523	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999959	0.000001	0.003594	0.011982	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999958	0.000001	0.003317	0.011056	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999927	0.000159	0.001217	0.004057	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999896	0.000004	0.000106	0.000355	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999618	0.000077	0.047958	0.159859	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999881	0.000003	0.000300	0.001001	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999934	0.000005	0.000451	0.001504	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999876	0.000003	0.001342	0.004472	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999948	0.000004	0.001515	0.005051	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999924	0.000007	0.031406	0.104688	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999988	0.000084	0.134248	0.447494	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999873	0.000241	0.004399	0.014664	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.998924	0.000038	0.090376	0.301254	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999918	0.000011	0.002982	0.009941	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999968	0.000009	0.000477	0.001591	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999988	0.000275	0.036379	0.121263	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999979	0.000003	0.001305	0.004351	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999991	0.000003	0.008026	0.026754	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999140	0.000008	0.004059	0.013529	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999877	0.000003	0.005017	0.016722	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999816	0.000001	0.007504	0.025013	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999953	0.000011	0.002658	0.008861	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999971	0.000003	0.000978	0.003261	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999990	0.000095	0.000514	0.001713	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999983	0.000003	0.009263	0.030877	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999987	0.000001	0.003426	0.011421	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999951	0.000004	0.001103	0.003675	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999989	0.000012	0.000225	0.000751	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.999946	0.000234	0.000575	0.001916	OK.	1.000000	0.000000	1	0

Approved: June 29, 2016

Sample Name: S0 Acquired: 6/28/2016 9:16:20 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00023**	**.00063**	**.00004**	**.00001**	**.05709**	**.00075**	**.00165**
Stddev	.00004	.00000	.00006	.00004	.00140	.00001	.00175
%RSD	18.419	.66325	140.27	332.02	2.4545	1.9590	105.90
#1	-.00020	.00063	.00001	-.00001	.05868	.00075	.00362
#2	-.00028	.00063	.00011	.00005	.05658	.00077	.00103
#3	-.00021	.00064	.00001	-.00001	.05602	.00074	.00029

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00009**	**-.00012**	**.00031**	**.00009**	**-.00010**	**-.01725**	**-.01772**
Stddev	.00004	.00011	.00006	.00003	.00070	.00436	.00866
%RSD	42.371	86.096	18.227	29.654	708.02	25.277	48.862
#1	-.00013	-.00001	.00037	.00012	-.00045	-.02225	-.01094
#2	-.00006	-.00013	.00026	.00009	.00071	-.01424	-.01475
#3	-.00007	-.00022	.00029	.00007	-.00056	-.01526	-.02747

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00090**	**.00035**	**-.00002**	**-.05833**	**-.00082**	**-.00012**	**-.00108**
Stddev	.00031	.00041	.00003	.00617	.00011	.00009	.00011
%RSD	34.693	116.29	174.79	10.585	13.184	75.086	10.636
#1	-.00126	.00024	-.00001	-.06271	-.00070	-.00002	-.00106
#2	-.00067	.00001	-.00005	-.05127	-.00084	-.00018	-.00097
#3	-.00079	.00081	.00001	-.06101	-.00091	-.00016	-.00120

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00024**	**-.00047**	**.00228**	**.00001**	**.00207**	**-.00190**	**-.00036**
Stddev	.00009	.00015	.00006	.00003	.00122	.00047	.00004
%RSD	36.331	33.173	2.6350	196.75	58.814	24.571	11.950
#1	.00014	-.00032	.00223	-.00000	.00073	-.00184	-.00033
#2	.00029	-.00046	.00225	.00000	.00310	-.00239	-.00041
#3	.00027	-.00063	.00234	.00005	.00238	-.00147	-.00035

Approved: June 29, 2016

Sample Name: S0 Acquired: 6/28/2016 9:16:20 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00000	.00014	-.00589
Stddev	.00002	.00004	.00178
%RSD	4049.1	26.620	30.214
#1	.00001	.00014	-.00623
#2	.00002	.00018	-.00748
#3	-.00003	.00011	-.00397
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9714.8	58491.	2823.7
Stddev	16.7	110.	25.4
%RSD	.17193	.18886	.90073
#1	9720.2	58546.	2801.2
#2	9728.1	58564.	2818.6
#3	9696.1	58364.	2851.3

Approved: June 29, 2016

Sample Name: S1 Acquired: 6/28/2016 9:20:18 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00003**	**.00126**	**.07127**	**.00103**	**.00358**	**.00016**	**.00031**
Stddev	.00003	.00006	.00137	.00015	.00050	.00014	.00006
%RSD	125.85	5.1064	1.9277	14.298	14.086	85.616	20.693
#1	-.00003	.00132	.07141	.00093	.00380	.00017	.00036
#2	-.00006	.00119	.06983	.00097	.00300	.00002	.00024
#3	.00001	.00129	.07256	.00120	.00394	.00029	.00032

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00048**	**.00049**	**.00055**	**.00427**	**.00160**	**.00124**	**.01092**
Stddev	.00003	.00005	.00040	.00427	.00016	.00011	.00082
%RSD	5.3307	9.2632	73.814	99.979	9.7621	8.7281	7.5482
#1	.00050	.00044	.00022	-.00041	.00157	.00131	.01050
#2	.00048	.00050	.00100	.00797	.00147	.00129	.01187
#3	.00045	.00053	.00042	.00526	.00178	.00112	.01039

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00036**	**.00088**	**-.00103**	**.00046**	**.00356**	**.00049**	**.02743**
Stddev	.00012	.00002	.00015	.00009	.00009	.00003	.00119
%RSD	33.945	2.6105	14.271	18.586	2.5479	7.0434	4.3541
#1	-.00026	.00090	-.00097	.00039	.00354	.00052	.02869
#2	-.00032	.00085	-.00092	.00044	.00366	.00049	.02631
#3	-.00050	.00088	-.00120	.00055	.00348	.00045	.02730

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00122**	**.00048**	**.00307**	**.01800**
Stddev	.00014	.00002	.00019	.00142
%RSD	11.782	4.8775	6.2838	7.8748
#1	-.00137	.00048	.00311	.01754
#2	-.00108	.00050	.00324	.01687
#3	-.00121	.00046	.00286	.01959

Approved: June 29, 2016

Sample Name: S1 Acquired: 6/28/2016 9:20:18 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9700.9**	**58648.**	**2834.2**
Stddev	11.6	54.	2.3
%RSD	.11996	.09285	.08254
#1	9688.0	58595.	2831.5
#2	9710.7	58703.	2835.9
#3	9703.9	58646.	2835.0

Approved: June 29, 2016

Sample Name: S2 Acquired: 6/28/2016 9:24:13 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00009**	**.00193**	**.00017**	**.00017**	**.09454**	**.00146**	**.00723**
Stddev	.00008	.00006	.00006	.00004	.00278	.00004	.00160
%RSD	83.939	3.1358	35.753	24.828	2.9371	2.8533	22.087
#1	.00011	.00190	.00023	.00019	.09719	.00151	.00588
#2	.00016	.00200	.00011	.00012	.09477	.00143	.00900
#3	.00001	.00189	.00016	.00019	.09166	.00144	.00682

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00030**	**.00098**	**.00072**	**.00105**	**.00104**	**.02566**	**.01205**
Stddev	.00008	.00005	.00004	.00009	.00055	.01120	.00176
%RSD	26.659	5.3135	5.7558	8.1488	52.725	43.631	14.637
#1	.00039	.00103	.00070	.00107	.00130	.03847	.01331
#2	.00024	.00098	.00070	.00112	.00141	.02079	.01003
#3	.00028	.00092	.00077	.00096	.00041	.01773	.01281

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00127**	**.00261**	**.00256**	**.08239**	**.00025**	**.00182**	**-.00058**
Stddev	.00061	.00102	.00007	.00826	.00004	.00007	.00016
%RSD	48.074	39.234	2.6316	10.022	14.836	3.8680	28.275
#1	.00188	.00263	.00261	.07825	.00022	.00177	-.00077
#2	.00066	.00362	.00258	.09190	.00023	.00190	-.00050
#3	.00125	.00158	.00248	.07702	.00029	.00179	-.00047

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00067**	**-.00039**	**.00509**	**.00102**	**.05525**	**-.00033**	**-.00016**
Stddev	.00007	.00004	.00018	.00007	.00176	.00054	.00011
%RSD	10.832	9.8136	3.4524	6.4870	3.1861	162.21	68.603
#1	.00071	-.00038	.00503	.00109	.05600	-.00081	-.00013
#2	.00071	-.00036	.00529	.00102	.05324	-.00043	-.00028
#3	.00059	-.00044	.00495	.00096	.05652	.00025	-.00007

Approved: June 29, 2016

Sample Name: S2 Acquired: 6/28/2016 9:24:13 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00099	.00624	.04815
Stddev	.00002	.00020	.00347
%RSD	1.9896	3.2439	7.2147
#1	.00101	.00634	.05143
#2	.00097	.00637	.04451
#3	.00100	.00601	.04852
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9488.3	57374.	2740.7
Stddev	13.3	265.	16.1
%RSD	.14056	.46229	.58687
#1	9498.8	57303.	2735.4
#2	9492.7	57152.	2758.8
#3	9473.3	57668.	2728.0

Approved: June 29, 2016

Sample Name: S3 Acquired: 6/28/2016 9:28:11 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.01916	.07899	.00881	.01065	2.1276	.04704	.43747	.02939
Stddev	.00009	.00021	.00004	.00008	.0188	.00004	.00572	.00012
%RSD	.48290	.26798	.41949	.72661	.88345	.07530	1.3084	.39245
#1	.01915	.07889	.00878	.01070	2.1392	.04705	.43801	.02929
#2	.01907	.07924	.00885	.01056	2.1376	.04700	.44291	.02935
#3	.01926	.07886	.00880	.01070	2.1059	.04707	.43150	.02951

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.06899	.02881	.06128	.08514	2.6698	1.5114	.08181	.12999
Stddev	.00025	.00010	.00021	.00074	.0161	.0132	.00070	.00035
%RSD	.36800	.36413	.33638	.86441	.60241	.87096	.85392	.26989
#1	.06876	.02869	.06116	.08576	2.6757	1.5250	.08180	.13021
#2	.06894	.02886	.06152	.08533	2.6821	1.5103	.08252	.13017
#3	.06926	.02888	.06116	.08432	2.6516	1.4988	.08112	.12959

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.17433	8.6122	.06285	.12581	.02893	.03354	.00576	.18790
Stddev	.00031	.0732	.00005	.00024	.00024	.00003	.00001	.00028
%RSD	.17582	.84951	.08654	.19275	.83516	.09147	.09744	.15032
#1	.17399	8.6595	.06279	.12561	.02891	.03350	.00576	.18758
#2	.17443	8.6492	.06290	.12608	.02871	.03355	.00576	.18800
#3	.17457	8.5280	.06286	.12575	.02919	.03356	.00575	.18812

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.06712	3.3956	.09127	.01239	.06680	.39577	3.5688
Stddev	.00013	.0315	.00072	.00006	.00018	.00037	.0461
%RSD	.19851	.92688	.79280	.51421	.27024	.09319	1.2920
#1	.06699	3.4194	.09199	.01232	.06671	.39600	3.5820
#2	.06711	3.4075	.09128	.01243	.06669	.39597	3.6069
#3	.06726	3.3599	.09055	.01243	.06701	.39535	3.5176

Approved: June 29, 2016

Sample Name: S3 Acquired: 6/28/2016 9:28:11 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9241.9**	**55260.**	**2668.0**
Stddev	19.7	48.	33.4
%RSD	.21369	.08737	1.2509
#1	9229.8	55276.	2646.9
#2	9231.3	55298.	2650.6
#3	9264.7	55205.	2706.4

Approved: June 29, 2016

Sample Name: S4 Acquired: 6/28/2016 9:31:48 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.03898	.15838	.01780	.02157	4.2139	.09454	.88060	.05924
Stddev	.00003	.00023	.00001	.00010	.0233	.00025	.00662	.00020
%RSD	.08866	.14782	.07112	.46921	.55230	.26866	.75203	.34365
#1	.03894	.15829	.01779	.02152	4.1947	.09434	.87964	.05948
#2	.03900	.15864	.01780	.02151	4.2398	.09446	.88765	.05914
#3	.03900	.15820	.01781	.02169	4.2071	.09483	.87451	.05911

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13809	.05786	.12220	.16962	5.4128	3.0736	.16425	.26249
Stddev	.00033	.00011	.00045	.00080	.0435	.0280	.00229	.00125
%RSD	.24203	.19009	.36880	.47369	.80337	.91276	1.3953	.47581
#1	.13820	.05783	.12257	.16937	5.3823	3.0436	.16161	.26184
#2	.13836	.05797	.12233	.17052	5.4626	3.0991	.16579	.26393
#3	.13772	.05776	.12170	.16898	5.3936	3.0782	.16533	.26170

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.34580	17.465	.12606	.25335	.05863	.06689	.01208	.36847
Stddev	.00103	.089	.00054	.00060	.00028	.00018	.00008	.00027
%RSD	.29826	.51204	.42896	.23539	.46906	.26956	.69300	.07400
#1	.34674	17.386	.12620	.25381	.05870	.06700	.01218	.36872
#2	.34597	17.562	.12651	.25356	.05887	.06699	.01203	.36850
#3	.34470	17.448	.12546	.25268	.05833	.06668	.01204	.36818

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13428	6.8183	.18453	.02487	.13520	.79151	7.0595
Stddev	.00083	.0500	.00093	.00006	.00027	.00264	.0521
%RSD	.61918	.73271	.50222	.22755	.19752	.33404	.73814
#1	.13469	6.7844	.18348	.02491	.13496	.79350	7.0011
#2	.13482	6.8757	.18485	.02490	.13515	.79251	7.1011
#3	.13332	6.7948	.18525	.02481	.13549	.78851	7.0763

Approved: June 29, 2016

Sample Name: S4 Acquired: 6/28/2016 9:31:48 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9167.2**	**54335.**	**2654.7**
Stddev	38.1	122.	22.7
%RSD	.41612	.22434	.85400
#1	9143.1	54461.	2678.0
#2	9211.2	54218.	2632.7
#3	9147.4	54326.	2653.3

Approved: June 29, 2016

Sample Name: ICV Acquired: 6/28/2016 9:35:24 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39623	9.9377	.39889	.49732	.99363	.04944	9.8812	.04987
Stddev	.00106	.0076	.00708	.00191	.00263	.00011	.0536	.00024
%RSD	.26775	.07627	1.7741	.38466	.26478	.22215	.54207	.47368
#1	.39548	9.9303	.40454	.49713	.99097	.04941	9.8633	.05008
#2	.39577	9.9454	.39095	.49550	.99623	.04956	9.9414	.04961
#3	.39744	9.9373	.40117	.49932	.99370	.04935	9.8388	.04991
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19959	.49664	.50149	3.9513	49.374	.98661	10.034	.49580
Stddev	.00028	.00150	.00082	.0258	.237	.00181	.192	.00669
%RSD	.13960	.30233	.16435	.65329	.47968	.18320	1.9142	1.3487
#1	.19946	.49575	.50241	3.9273	49.179	.98559	9.9342	.48809
#2	.19940	.49837	.50124	3.9482	49.637	.98870	10.255	.49945
#3	.19991	.49580	.50081	3.9786	49.305	.98555	9.9118	.49988
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0065	49.454	.49982	9.9830	.50183	1.1963	.40103	5.0777
Stddev	.0002	.121	.00152	.0155	.00322	.0016	.00482	.0052
%RSD	.02228	.24557	.30431	.15537	.64110	.13254	1.2016	.10217
#1	1.0068	49.335	.49901	9.9766	.49881	1.1979	.40328	5.0825
#2	1.0063	49.578	.50157	10.001	.50521	1.1962	.40432	5.0786
#3	1.0065	49.448	.49887	9.9716	.50146	1.1947	.39550	5.0722
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: ICV Acquired: 6/28/2016 9:35:24 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0016**	**.99261**	**.99584**	**.50153**	**.98848**	**1.0048**	**.99997**
Stddev	.0014	.00354	.00789	.00098	.00445	.0012	.00652
%RSD	.13679	.35675	.79209	.19533	.45048	.12104	.65160
#1	1.0013	.98970	.98754	.50134	.98379	1.0059	.99456
#2	1.0032	.99655	1.0032	.50259	.98898	1.0050	1.0072
#3	1.0005	.99159	.99673	.50066	.99265	1.0035	.99814
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9250.5**	**55131.**	**2679.3**
Stddev	20.5	128.	17.4
%RSD	.22138	.23235	.64777
#1	9233.7	55045.	2687.8
#2	9273.3	55070.	2659.3
#3	9244.5	55278.	2690.7

Approved: June 29, 2016

Sample Name: ICB Acquired: 6/28/2016 9:39:01 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00132	.01180	-.00119	.00063	.00251	.00001	-.00918	.00008
Stddev	.00181	.00703	.00094	.00081	.00066	.00006	.02928	.00031
%RSD	136.70	59.632	79.494	126.97	26.308	597.53	319.03	386.11
#1	-.00000	.01298	-.00012	.00058	.00242	.00008	.02412	.00032
#2	.00059	.00425	-.00191	-.00014	.00322	-.00002	-.03090	.00018
#3	.00338	.01816	-.00154	.00147	.00191	-.00003	-.02076	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.00027	.00073	-.01933	.22486	.00161	-.02324	-.00042
Stddev	.00014	.00107	.00081	.05271	.09957	.00256	.03321	.00086
%RSD	166.85	404.59	111.23	272.68	44.280	159.67	142.93	202.90
#1	.00015	.00041	.00096	.00121	.27186	-.00060	-.05724	.00035
#2	.00017	.00126	.00140	.02002	.11049	.00442	.00912	-.00027
#3	-.00008	-.00087	-.00017	-.07922	.29222	.00100	-.02159	-.00135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	.04470	.00005	.00699	.00132	.00357	.00008	.01683
Stddev	.00109	.04154	.00064	.00960	.00083	.00638	.00236	.00483
%RSD	272.72	92.940	1291.7	137.41	63.029	178.79	2974.4	28.717
#1	.00158	-.00292	.00078	.01781	.00208	.00712	.00108	.02228
#2	.00021	.06349	-.00026	-.00050	.00043	-.00380	.00178	.01513
#3	-.00058	.07352	-.00037	.00365	.00143	.00739	-.00262	.01308
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: ICB Acquired: 6/28/2016 9:39:01 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	.00014	.00196	-.00125	-.00073	.00103	-.00010
Stddev	.00135	.00023	.00632	.00329	.00106	.00089	.00055
%RSD	236.56	168.90	323.11	262.65	146.43	86.352	567.67
#1	.00210	.00040	.00249	-.00348	-.00093	.00203	.00036
#2	-.00046	.00003	.00799	.00252	.00042	.00071	-.00070
#3	.00007	-.00002	-.00462	-.00279	-.00168	.00034	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9447.3	56860.	2718.2
Stddev	10.4	122.	12.5
%RSD	.11005	.21506	.45975
#1	9458.4	56769.	2709.1
#2	9437.8	56999.	2713.0
#3	9445.8	56813.	2732.4

Approved: June 29, 2016

Sample Name: LLICV Acquired: 6/28/2016 9:42:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00991	.17815	.00897	.07876	.00904	.00148	.35423	.00069
Stddev	.00104	.00704	.00226	.00139	.00049	.00009	.03506	.00011
%RSD	10.461	3.9500	25.189	1.7678	5.4305	6.3955	9.8986	16.368
#1	.01050	.18405	.01008	.07716	.00948	.00155	.38883	.00057
#2	.00871	.18003	.00637	.07946	.00851	.00152	.35515	.00072
#3	.01051	.17036	.01047	.07966	.00912	.00137	.31872	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00362	.00403	.00418	.08391	.76193	.08522	.48689	.00680
Stddev	.00017	.00112	.00111	.04090	.06478	.00043	.08244	.00161
%RSD	4.7207	27.688	26.526	48.748	8.5024	.50386	16.933	23.633
#1	.00366	.00518	.00483	.03807	.79397	.08473	.56288	.00695
#2	.00378	.00296	.00481	.11670	.68737	.08539	.39923	.00512
#3	.00344	.00395	.00290	.09695	.80445	.08554	.49855	.00832
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00769	.43375	.01599	.75966	.00664	.08175	.01775	.80263
Stddev	.00020	.02121	.00136	.01273	.00191	.00204	.01011	.01097
%RSD	2.5737	4.8901	8.5264	1.6756	28.742	2.5008	56.975	1.3672
#1	.00787	.45781	.01609	.77125	.00884	.08189	.01142	.80967
#2	.00748	.41776	.01730	.76168	.00573	.08373	.01242	.80822
#3	.00770	.42567	.01458	.74604	.00536	.07964	.02942	.78998
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LLICV Acquired: 6/28/2016 9:42:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39622**	**.04016**	**.02914**	**.14830**	**.00783**	**.01683**	**.04076**
Stddev	.01031	.00026	.01007	.00332	.00030	.00028	.00052
%RSD	2.6017	.65964	34.548	2.2355	3.7875	1.6572	1.2881
#1	.40211	.04028	.04047	.15075	.00751	.01695	.04117
#2	.40223	.03985	.02123	.14964	.00809	.01703	.04094
#3	.38431	.04033	.02572	.14453	.00790	.01651	.04016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9378.4**	**56347.**	**2705.9**
Stddev	26.7	218.	8.1
%RSD	.28463	.38711	.29918
#1	9402.3	56567.	2704.5
#2	9349.6	56344.	2698.6
#3	9383.4	56131.	2714.6

Approved: June 29, 2016

Sample Name: ICSA Acquired: 6/28/2016 9:46:45 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00050**	**266.36**	**-.00152**	**-.01712**	**.00324**	**-.00005**	**247.98**	**-.00027**
Stddev	.00037	.22	.00243	.00116	.00078	.00009	.43	.00011
%RSD	73.628	.08074	159.98	6.8032	24.071	185.53	.17248	39.233
#1	-.00041	266.18	-.00115	-.01623	.00235	.00002	248.46	-.00025
#2	-.00090	266.60	-.00411	-.01844	.00357	-.00002	247.82	-.00039
#3	-.00019	266.31	.00070	-.01669	.00379	-.00014	247.65	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00169**	**-.00144**	**.00013**	**98.701**	**.06883**	**.01603**	**250.89**	**-.00160**
Stddev	.00026	.00067	.00548	.311	.12623	.00270	.87	.00294
%RSD	15.267	46.704	4143.6	.31529	183.41	16.858	.34767	183.10
#1	-.00143	-.00069	.00362	98.701	.00013	.01708	251.87	.00066
#2	-.00170	-.00165	.00296	99.012	-.00816	.01805	250.59	-.00056
#3	-.00194	-.00199	-.00618	98.390	.21451	.01296	250.20	-.00492
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00105**	**.05927**	**.00061**	**.01849**	**-.00139**	**.00413**	**-.00226**	**.04009**
Stddev	.00038	.02841	.00031	.00445	.00749	.00506	.00450	.00578
%RSD	36.274	47.924	51.490	24.054	538.59	122.61	198.89	14.425
#1	-.00079	.07985	.00085	.02340	.00046	.00063	-.00723	.04658
#2	-.00149	.02686	.00025	.01473	.00500	.00182	-.00111	.03819
#3	-.00089	.07110	.00072	.01735	-.00963	.00993	.00155	.03549
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: ICSA Acquired: 6/28/2016 9:46:45 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00218	.00068	.00760	.00116	-.00333	-.00424	-.00339
Stddev	.00125	.00063	.00590	.00156	.00074	.00023	.00084
%RSD	57.532	93.689	77.648	134.06	22.180	5.4757	24.860
#1	.00360	.00138	.01052	.00203	-.00256	-.00418	-.00424
#2	.00168	.00049	.00081	.00210	-.00340	-.00449	-.00335
#3	.00125	.00016	.01147	-.00064	-.00403	-.00404	-.00256
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8775.1	51967.	2616.3
Stddev	20.6	83.	2.5
%RSD	.23472	.16025	.09692
#1	8795.9	51991.	2614.2
#2	8774.7	51875.	2619.1
#3	8754.7	52036.	2615.7

Approved: June 29, 2016

Sample Name: ICSAB Acquired: 6/28/2016 9:50:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50833	262.18	.25318	-.02181	.24986	.24306	244.26	.49106
Stddev	.00126	.58	.00122	.00145	.00044	.00020	.40	.00090
%RSD	.24874	.22306	.48164	6.6719	.17658	.08149	.16189	.18295
#1	.50757	261.68	.25459	-.02039	.25017	.24305	244.64	.49101
#2	.50979	262.82	.25250	-.02173	.25006	.24326	244.30	.49198
#3	.50763	262.05	.25246	-.02330	.24936	.24286	243.85	.49019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.23788	.25163	.25229	95.063	5.2464	.00919	243.78	.24277
Stddev	.00015	.00059	.00181	.158	.1191	.00381	.56	.00046
%RSD	.06168	.23621	.71702	.16578	2.2694	41.482	.22832	.18874
#1	.23792	.25213	.25258	94.883	5.3322	.01222	244.21	.24224
#2	.23772	.25179	.25393	95.178	5.2964	.01044	243.98	.24295
#3	.23800	.25098	.25035	95.128	5.1104	.00491	243.15	.24310
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00070	5.2460	.47642	.09011	.48731	.50360	.24875	-.01785
Stddev	.00037	.0122	.00205	.00129	.00428	.00481	.00501	.00607
%RSD	52.598	.23176	.42970	1.4289	.87800	.95448	2.0122	34.019
#1	-.00112	5.2480	.47501	.09145	.49090	.50915	.25453	-.01635
#2	-.00043	5.2330	.47877	.08998	.48258	.50104	.24582	-.01267
#3	-.00055	5.2571	.47549	.08889	.48845	.50062	.24591	-.02453
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: ICSAB Acquired: 6/28/2016 9:50:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.00034	.01432	.45770	.25003	.47450	-.00411
Stddev	.00066	.00044	.00471	.00381	.00123	.00039	.00022
%RSD	342.99	128.84	32.883	.83310	.49348	.08138	5.4415
#1	.00080	-.00016	.00974	.46183	.24862	.47464	-.00429
#2	.00027	.00065	.01408	.45695	.25056	.47407	-.00386
#3	-.00050	.00055	.01915	.45432	.25090	.47480	-.00418
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8832.1	52417.	2628.2
Stddev	21.0	68.	14.0
%RSD	.23726	.13011	.53298
#1	8814.6	52495.	2613.1
#2	8826.4	52369.	2631.0
#3	8855.3	52387.	2640.7

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 9:54:16 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40243**	**10.614**	**.40844**	**.50863**	**1.0121**	**.05102**	**10.217**	**.05116**
Stddev	.00112	.515	.00191	.00164	.0035	.00030	.043	.00068
%RSD	.27927	4.8494	.46671	.32182	.34959	.57927	.42277	1.3380
#1	.40130	11.204	.40953	.50971	1.0093	.05129	10.170	.05116
#2	.40355	10.382	.40955	.50943	1.0161	.05108	10.255	.05048
#3	.40244	10.257	.40624	.50675	1.0109	.05070	10.226	.05184
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20478**	**.51148**	**.51464**	**4.0677**	**50.173**	**1.0065**	**10.314**	**.50732**
Stddev	.00051	.00296	.00045	.0473	.353	.0072	.034	.00544
%RSD	.24945	.57908	.08841	1.1625	.70448	.71712	.33086	1.0728
#1	.20423	.51005	.51506	4.0134	50.081	1.0002	10.321	.50516
#2	.20489	.51489	.51415	4.0899	50.563	1.0144	10.277	.50329
#3	.20523	.50951	.51470	4.0998	49.875	1.0048	10.345	.51351
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0289**	**50.218**	**.51278**	**10.197**	**.51300**	**1.2267**	**.41248**	**5.1576**
Stddev	.0010	.142	.00154	.027	.00226	.0014	.00212	.0140
%RSD	.09444	.28181	.29952	.26129	.44099	.11533	.51455	.27050
#1	1.0300	50.065	.51438	10.173	.51371	1.2251	.41099	5.1524
#2	1.0287	50.345	.51264	10.193	.51047	1.2270	.41154	5.1469
#3	1.0281	50.245	.51132	10.226	.51482	1.2279	.41491	5.1734
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 9:54:16 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0271**	**1.0127**	**1.0140**	**.50854**	**1.0159**	**1.0260**	**1.0267**
Stddev	.0031	.0018	.0068	.00377	.0037	.0011	.0023
%RSD	.30094	.17428	.66974	.74115	.36573	.10367	.22623
#1	1.0299	1.0107	1.0170	.50547	1.0121	1.0262	1.0241
#2	1.0238	1.0132	1.0062	.51275	1.0195	1.0270	1.0274
#3	1.0277	1.0141	1.0187	.50742	1.0160	1.0249	1.0286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9112.2**	**54490.**	**2638.0**
Stddev	42.3	229.	4.9
%RSD	.46371	.42014	.18716
#1	9071.0	54716.	2643.2
#2	9110.2	54259.	2637.5
#3	9155.4	54496.	2633.3

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 9:57:53 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00107**	**.01265**	**.00066**	**-.00059**	**.00133**	**.00005**	**-.02321**
Stddev	.00172	.00739	.00480	.00117	.00044	.00009	.07069
%RSD	161.38	58.442	725.98	199.74	32.707	205.84	304.56
#1	-.00291	.01146	.00037	.00041	.00178	.00010	-.07158
#2	-.00078	.02057	-.00398	-.00188	.00091	.00010	-.05598
#3	.00050	.00593	.00560	-.00029	.00130	-.00006	.05792
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00006**	**-.00001**	**.00070**	**.00064**	**-.01248**	**.01896**	**.00424**
Stddev	.00008	.00024	.00052	.00024	.01697	.05567	.00356
%RSD	121.21	4578.5	75.209	37.753	135.92	293.58	84.012
#1	.00015	.00014	.00015	.00039	-.03204	-.04418	.00820
#2	.00001	-.00028	.00074	.00065	-.00181	.06099	.00129
#3	.00003	.00013	.00119	.00088	-.00359	.04008	.00323
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.07357**	**-.00184**	**.00007**	**-.01062**	**-.00011**	F **.01168**	**.00180**
Stddev	.01112	.00228	.00054	.01276	.00016	.00984	.00196
%RSD	15.118	123.77	820.65	120.18	144.89	84.220	109.05
#1	.06409	.00072	.00068	-.02016	-.00025	.02234	.00377
#2	.07080	-.00365	-.00031	.00388	.00006	.00294	.00177
#3	.08581	-.00260	-.00018	-.01557	-.00014	.00977	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						.01000	
Low Limit						-.01000	

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 9:57:53 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00297	-.00339	.01205	.00075	.00021	.00075	.00120
Stddev	.00590	.00357	.00514	.00126	.00040	.00784	.00102
%RSD	198.90	105.27	42.636	167.85	194.47	1051.9	85.165
#1	-.00142	-.00368	.01797	.00186	.00063	.00837	.00235
#2	.00967	.00031	.00882	.00102	.00016	.00116	.00040
#3	.00064	-.00682	.00935	-.00062	-.00017	-.00730	.00085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00000	.00050	.00010
Stddev	.00121	.00044	.00035
%RSD	61027.	88.545	331.42
#1	.00084	.00101	.00002
#2	-.00139	.00027	-.00019
#3	.00055	.00022	.00049
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9271.3	55578.	2655.9
Stddev	51.6	74.	4.9
%RSD	.55665	.13326	.18372
#1	9329.9	55635.	2650.8
#2	9251.9	55603.	2660.5
#3	9232.3	55494.	2656.4

Approved: June 29, 2016

Sample Name: L1606098610 Acquired: 6/28/2016 10:04:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00145	.02181	-.00206	.00832	.01391	-.00004	122.67	.00047
Stddev	.00304	.00477	.00237	.00423	.00116	.00002	.55	.00028
%RSD	209.83	21.890	115.10	50.795	8.3057	52.478	.44893	58.626
#1	-.00139	.02678	-.00462	.01283	.01523	-.00006	123.13	.00055
#2	.00107	.01726	.00006	.00445	.01310	-.00005	122.82	.00016
#3	.00466	.02139	-.00162	.00768	.01340	-.00002	122.06	.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00028	.00086	.00144	.02058	.44789	.01086	31.049	.01682
Stddev	.00026	.00146	.00109	.06247	.10797	.00372	.048	.00056
%RSD	92.227	169.73	75.475	303.53	24.107	34.217	.15599	3.3113
#1	-.00039	.00185	.00045	.09233	.41216	.01516	31.103	.01727
#2	.00001	.00156	.00128	-.00884	.36231	.00882	31.011	.01699
#3	-.00048	-.00082	.00261	-.02175	.56920	.00862	31.031	.01620
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	15.548	.00143	.00778	-.00125	.00088	-.00317	3.9825
Stddev	.00023	.062	.00093	.00138	.00116	.00443	.00234	.0926
%RSD	286.52	.39917	65.076	17.789	92.731	502.50	73.634	2.3256
#1	-.00018	15.614	.00107	.00849	-.00230	-.00088	-.00329	4.0331
#2	-.00025	15.539	.00249	.00867	-.00001	.00592	-.00078	4.0388
#3	.00019	15.491	.00074	.00619	-.00142	-.00240	-.00545	3.8756
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606098610 Acquired: 6/28/2016 10:04:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00033	.56094	-.01734	-.00186	-.00096	.01161	.00025
Stddev	.00056	.00226	.00672	.00164	.00046	.00049	.00009
%RSD	168.92	.40254	38.781	88.193	48.332	4.1942	34.377
#1	-.00041	.56174	-.00995	-.00027	-.00069	.01210	.00033
#2	-.00084	.56269	-.01895	-.00176	-.00070	.01160	.00016
#3	.00026	.55839	-.02311	-.00354	-.00150	.01113	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8920.2	53798.	2606.1
Stddev	42.2	101.	6.7
%RSD	.47268	.18837	.25865
#1	8966.4	53714.	2598.6
#2	8910.3	53770.	2608.4
#3	8883.9	53911.	2611.5

Approved: June 29, 2016

Sample Name: L1606098612 Acquired: 6/28/2016 10:08:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00179**	**.01817**	**-.00173**	**.08964**	**.06989**	**.00028**	**149.00**
Stddev	.00100	.00210	.00123	.00064	.00163	.00007	1.41
%RSD	55.707	11.569	71.245	.71011	2.3276	25.194	.94738
#1	-.00244	.01934	-.00082	.08904	.07170	.00025	150.63
#2	-.00230	.01575	-.00313	.08958	.06943	.00036	148.08
#3	-.00064	.01943	-.00124	.09031	.06855	.00023	148.30
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00025**	**.00006**	**.00125**	**.04446**	F **-.02369**	**1.8466**	**.02203**
Stddev	.00018	.00028	.00145	.00051	.01758	.1274	.00321
%RSD	72.096	487.94	115.70	1.1501	74.200	6.9016	14.550
#1	.00022	.00027	.00182	.04416	-.01622	1.8634	.02058
#2	.00009	.00016	.00233	.04417	-.01108	1.7116	.02570
#3	.00045	-.00026	-.00039	.04505	-.04377	1.9648	.01981
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**45.103**	**.03621**	**.00100**	**28.222**	**.00213**	**.00959**	**-.00001**
Stddev	.458	.00247	.00050	.258	.00087	.00880	.00083
%RSD	1.0159	6.8101	49.623	.91303	41.036	91.728	5820.7
#1	45.621	.03657	.00045	28.519	.00307	.00506	-.00095
#2	44.936	.03358	.00142	28.060	.00196	.00398	.00025
#3	44.752	.03847	.00113	28.087	.00135	.01973	.00066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606098612 Acquired: 6/28/2016 10:08:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	-.00578	2.4372	.00007	1.8293	-.02770	-.00171
Stddev	.00228	.00496	.0114	.00086	.0170	.00834	.00180
%RSD	301.69	85.805	.46813	1170.9	.92968	30.114	105.59
#1	.00125	-.00555	2.4456	-.00089	1.8486	-.01895	.00027
#2	-.00173	-.01085	2.4418	.00034	1.8168	-.03557	-.00325
#3	.00274	-.00094	2.4242	.00076	1.8224	-.02859	-.00214
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00089	.05918	-.00043
Stddev	.00099	.00066	.00035
%RSD	111.24	1.1098	81.505
#1	-.00131	.05965	-.00004
#2	.00024	.05947	-.00071
#3	-.00160	.05843	-.00054
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9014.1	54047.	2633.3
Stddev	35.9	224.	16.2
%RSD	.39815	.41359	.61534
#1	8976.7	54004.	2620.2
#2	9017.5	54289.	2628.3
#3	9048.2	53848.	2651.4

Approved: June 29, 2016

Sample Name: L1606098614 Acquired: 6/28/2016 10:12:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.01902	.00012	.03801	.03323	.00008	204.88
Stddev	.00080	.00540	.00300	.00376	.00070	.00006	.99
%RSD	85.438	28.379	2423.6	9.8935	2.1045	69.928	.48308
#1	.00016	.02493	-.00300	.03753	.03371	.00002	204.76
#2	.00176	.01436	.00037	.03451	.03355	.00011	205.92
#3	.00089	.01776	.00299	.04199	.03243	.00011	203.95
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	-.00056	.00150	.00728	.02142	3.2615	.02265
Stddev	.00057	.00060	.00108	.00027	.01165	.0798	.00129
%RSD	264.86	107.81	72.286	3.7643	54.407	2.4470	5.6835
#1	.00030	-.00037	.00047	.00737	.00797	3.2001	.02170
#2	.00074	-.00123	.00263	.00698	.02785	3.2326	.02412
#3	-.00040	-.00007	.00140	.00751	.02843	3.3517	.02214
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	82.993	.04380	.00084	23.890	.00021	.01373	-.00122
Stddev	.436	.00413	.00032	.112	.00062	.00340	.00542
%RSD	.52569	9.4361	37.780	.47033	292.92	24.777	445.93
#1	82.807	.04136	.00050	23.898	-.00050	.01127	.00505
#2	83.491	.04857	.00113	23.997	.00047	.01231	-.00431
#3	82.680	.04147	.00090	23.773	.00067	.01761	-.00439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606098614 Acquired: 6/28/2016 10:12:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00546**	**-.00344**	**3.4759**	**.00042**	**2.4733**	F **-.03075**	**-.00468**
Stddev	.00377	.00065	.0206	.00043	.0126	.00530	.00102
%RSD	69.101	18.985	.59208	103.39	.51047	17.253	21.736
#1	.00255	-.00418	3.4966	.00056	2.4736	-.02749	-.00377
#2	.00410	-.00321	3.4757	.00077	2.4857	-.02789	-.00578
#3	.00971	-.00293	3.4554	-.00007	2.4605	-.03687	-.00450
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00073**	**.02393**	**-.00042**
Stddev	.00117	.00020	.00017
%RSD	159.68	.83679	38.969
#1	.00060	.02379	-.00032
#2	-.00161	.02385	-.00034
#3	-.00119	.02416	-.00062
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8696.6**	**53360.**	**2635.3**
Stddev	53.3	123.	4.7
%RSD	.61278	.23073	.17646
#1	8705.6	53481.	2630.0
#2	8744.8	53363.	2637.4
#3	8639.3	53235.	2638.5

Approved: June 29, 2016

Sample Name: L1606098616 Acquired: 6/28/2016 10:16:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.04206**	**-.00224**	**.11946**	**.01583**	**.00019**	**231.26**
Stddev	.00241	.00928	.00150	.00213	.00097	.00003	2.09
%RSD	1408.6	22.062	66.850	1.7822	6.1387	16.849	.90274
#1	.00048	.04133	-.00337	.11784	.01688	.00018	233.06
#2	.00184	.05168	-.00054	.12187	.01496	.00017	228.97
#3	-.00284	.03317	-.00280	.11866	.01564	.00023	231.75
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00031**	**-.00016**	**.00227**	**.06476**	**-.01272**	**3.3820**	**.03902**
Stddev	.00014	.00007	.00186	.00299	.00289	.1857	.00289
%RSD	45.106	42.884	81.857	4.6169	22.742	5.4901	7.4164
#1	.00019	-.00024	.00395	.06819	-.00990	3.5637	.04149
#2	.00027	-.00014	.00028	.06274	-.01258	3.3897	.03974
#3	.00046	-.00010	.00258	.06334	-.01569	3.1925	.03584
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**89.176**	**.29540**	**.00093**	**71.926**	**.00066**	**.02514**	**-.00152**
Stddev	.613	.00274	.00025	.659	.00227	.00577	.00426
%RSD	.68703	.92907	27.507	.91616	345.74	22.967	279.33
#1	89.667	.29671	.00072	72.457	-.00083	.02487	.00332
#2	88.490	.29224	.00085	71.188	.00327	.01951	-.00323
#3	89.371	.29724	.00121	72.131	-.00047	.03105	-.00466
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606098616 Acquired: 6/28/2016 10:16:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00078	-.00519	4.9238	-.00027	6.5296	F -.03371	-.00165
Stddev	.00169	.00417	.0247	.00065	.0594	.00812	.00293
%RSD	216.35	80.222	.50103	244.32	.90963	24.078	177.80
#1	.00267	-.01000	4.9180	-.00088	6.5813	-.03699	.00082
#2	-.00061	-.00272	4.9024	-.00033	6.4647	-.03968	-.00088
#3	.00029	-.00285	4.9508	.00042	6.5427	-.02447	-.00488
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00235	.08965	.00001
Stddev	.00114	.00063	.00046
%RSD	48.572	.70222	6097.3
#1	-.00339	.09001	-.00002
#2	-.00113	.09001	.00048
#3	-.00252	.08892	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8519.2	51220.	2477.0
Stddev	81.7	146.	20.1
%RSD	.95935	.28481	.81146
#1	8551.6	51098.	2469.4
#2	8426.3	51180.	2499.8
#3	8579.8	51381.	2461.8

Approved: June 29, 2016

Sample Name: L1606098618 Acquired: 6/28/2016 10:20:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00278**	**.01446**	**.00065**	**.04414**	**.02803**	**.00003**	**62.939**	**.00005**
Stddev	.00132	.00733	.00348	.00493	.00138	.00006	.433	.00030
%RSD	47.733	50.692	534.45	11.174	4.9100	229.60	.68765	604.20
#1	-.00152	.00830	-.00263	.04725	.02745	.00008	62.838	-.00003
#2	-.00416	.02256	.00029	.04672	.02704	.00004	62.565	-.00021
#3	-.00264	.01251	.00429	.03845	.02960	-.00004	63.413	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.00082**	**.00223**	**-.00753**	**2.0170**	**.02393**	**21.554**	**.01082**
Stddev	.00031	.00057	.00204	.01101	.0505	.00515	.089	.00204
%RSD	220.03	69.016	91.162	146.17	2.5023	21.512	.41324	18.865
#1	-.00006	.00074	.00441	.00042	1.9589	.02045	21.554	.00997
#2	.00012	.00142	.00038	-.00291	2.0421	.02985	21.642	.01315
#3	-.00048	.00030	.00190	-.02010	2.0500	.02150	21.464	.00934
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00081**	**26.450**	**.00031**	**.00548**	**-.00155**	**.00176**	**.00395**	**3.0409**
Stddev	.00060	.129	.00015	.00670	.00328	.00355	.00393	.0829
%RSD	74.514	.48686	47.432	122.31	212.16	202.06	99.431	2.7275
#1	.00092	26.577	.00018	.00890	.00028	.00578	.00301	3.0910
#2	.00135	26.453	.00027	-.00224	.00041	-.00094	.00827	3.0866
#3	.00016	26.320	.00047	.00977	-.00534	.00043	.00058	2.9452
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606098618 Acquired: 6/28/2016 10:20:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	1.4649	-.02108	-.00228	-.00070	.00804	.00001
Stddev	.00065	.0081	.00355	.00310	.00029	.00035	.00069
%RSD	189.54	.55254	16.835	135.99	41.071	4.3066	10757.
#1	-.00024	1.4741	-.02257	-.00444	-.00038	.00819	-.00033
#2	.00023	1.4620	-.02365	-.00366	-.00094	.00828	-.00045
#3	.00104	1.4587	-.01703	.00127	-.00077	.00764	.00080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9023.1	54498.	2583.2
Stddev	14.4	184.	12.5
%RSD	.15969	.33755	.48540
#1	9006.5	54286.	2572.4
#2	9030.9	54590.	2580.1
#3	9032.0	54618.	2596.9

Approved: June 29, 2016

Sample Name: L1606098620 Acquired: 6/28/2016 10:23:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00081	.04817	-.00135	.07782	.03729	.00006	4.8405	.00006
Stddev	.00111	.00858	.00337	.00174	.00150	.00005	.2531	.00016
%RSD	136.72	17.805	248.80	2.2312	4.0209	85.004	5.2298	272.23
#1	-.00108	.04704	.00253	.07620	.03787	.00002	5.1119	.00014
#2	-.00176	.05726	-.00346	.07965	.03841	.00005	4.7988	.00016
#3	.00041	.04021	-.00313	.07760	.03559	.00012	4.6108	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	.00046	.00221	-.01377	.52680	.01239	2.0518	.01543
Stddev	.00035	.00041	.00041	.01525	.03562	.00363	.1072	.00237
%RSD	54.061	87.558	18.325	110.70	6.7607	29.289	5.2228	15.371
#1	.00030	.00060	.00268	-.00834	.49605	.00892	2.1754	.01476
#2	.00099	.00001	.00194	-.03099	.51851	.01616	1.9958	.01806
#3	.00063	.00078	.00201	-.00199	.56582	.01209	1.9843	.01346
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00122	258.51	.00049	.03608	-.00135	.00110	.00276	1.9678
Stddev	.00004	.62	.00088	.00106	.00357	.00320	.00409	.0632
%RSD	3.0038	.23936	179.30	2.9363	263.98	291.73	148.29	3.2116
#1	.00120	259.22	.00098	.03683	-.00547	-.00186	-.00133	2.0062
#2	.00121	258.20	-.00052	.03655	.00073	.00066	.00275	2.0024
#3	.00127	258.10	.00101	.03487	.00069	.00449	.00685	1.8949
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606098620 Acquired: 6/28/2016 10:23:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.15413	.00227	-.00087	-.00034	.02123	.00037
Stddev	.00049	.00610	.00348	.00169	.00126	.00088	.00059
%RSD	102.24	3.9587	153.49	194.91	370.40	4.1503	159.78
#1	-.00007	.16053	.00379	-.00050	-.00014	.02154	.00024
#2	.00066	.15347	.00472	-.00270	-.00169	.02192	-.00015
#3	.00086	.14838	-.00171	.00061	.00081	.02024	.00101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8915.1	52786.	2597.1
Stddev	45.8	164.	11.0
%RSD	.51429	.31058	.42540
#1	8885.2	52710.	2592.9
#2	8967.9	52674.	2609.6
#3	8892.2	52974.	2588.8

Approved: June 29, 2016

Sample Name: L1606098622 Acquired: 6/28/2016 10:27:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	.01654	-.00212	.05780	.02851	.00007	128.50
Stddev	.00221	.00540	.00112	.00139	.00140	.00008	.61
%RSD	309.11	32.673	53.037	2.3972	4.9093	109.84	.47424
#1	.00268	.01727	-.00108	.05667	.02774	.00013	128.79
#2	.00113	.01080	-.00331	.05935	.02767	.00011	127.80
#3	-.00167	.02153	-.00197	.05738	.03013	-.00002	128.91
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	-.00035	.00003	.00865	F -.02013	2.5823	.02626
Stddev	.00019	.00016	.00078	.00202	.02937	.0866	.00292
%RSD	53.805	45.705	2672.0	23.404	145.91	3.3518	11.104
#1	.00057	-.00046	-.00008	.00753	-.05397	2.5533	.02584
#2	.00019	-.00041	-.00070	.01099	-.00133	2.5140	.02357
#3	.00032	-.00017	.00086	.00744	-.00508	2.6797	.02936
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	34.597	.04887	.00126	48.333	.00152	.00681	.00163
Stddev	.218	.00218	.00027	.227	.00088	.00369	.00090
%RSD	.63072	4.4551	21.418	.46900	57.830	54.237	55.351
#1	34.383	.05123	.00152	48.447	.00051	.00489	.00144
#2	34.589	.04693	.00098	48.072	.00204	.01107	.00084
#3	34.819	.04846	.00127	48.480	.00202	.00448	.00261
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606098622 Acquired: 6/28/2016 10:27:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00300	-.00363	3.4283	-.00015	1.8035	-.01458	-.00022
Stddev	.00517	.00367	.0159	.00066	.0069	.00510	.00189
%RSD	172.02	101.31	.46354	431.28	.38479	35.008	872.11
#1	.00363	-.00181	3.4416	-.00081	1.8070	-.00945	-.00025
#2	.00783	-.00785	3.4326	.00051	1.7956	-.01462	.00169
#3	-.00245	-.00121	3.4107	-.00016	1.8081	-.01966	-.00209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00041	.00960	-.00053
Stddev	.00135	.00013	.00033
%RSD	325.34	1.3960	61.890
#1	-.00062	.00974	-.00080
#2	.00102	.00959	-.00064
#3	-.00165	.00947	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9009.7	53993.	2581.9
Stddev	49.8	532.	16.6
%RSD	.55257	.98445	.64409
#1	9066.2	53507.	2574.9
#2	8972.3	53911.	2600.9
#3	8990.7	54561.	2570.0

Approved: June 29, 2016

Sample Name: L1606098624 Acquired: 6/28/2016 10:31:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00211**	**.01815**	**-.00167**	**.41043**	**.02519**	**.00017**	**236.59**
Stddev	.00165	.00860	.00049	.00361	.00225	.00005	1.75
%RSD	78.365	47.395	29.692	.87850	8.9284	28.538	.73841
#1	.00350	.00823	-.00192	.40698	.02636	.00020	238.49
#2	.00028	.02269	-.00199	.41417	.02260	.00012	236.21
#3	.00255	.02352	-.00110	.41015	.02661	.00021	235.06
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**.00007**	**.00153**	**.02731**	**.01601**	**5.9761**	**.01623**
Stddev	.00020	.00023	.00113	.00041	.03451	.1797	.00053
%RSD	49.211	326.20	73.951	1.5130	215.56	3.0065	3.2775
#1	.00029	-.00013	.00162	.02743	.05242	6.1344	.01570
#2	.00064	.00003	.00036	.02684	.01181	6.0132	.01623
#3	.00030	.00031	.00261	.02764	-.01621	5.7808	.01676
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**70.059**	**.32158**	**.00074**	**64.433**	**.00096**	**.01137**	**-.00087**
Stddev	.188	.00511	.00049	.448	.00028	.00676	.00448
%RSD	.26817	1.5886	66.238	.69502	29.106	59.452	515.84
#1	70.206	.32391	.00122	64.934	.00127	.00901	.00428
#2	70.123	.32510	.00024	64.295	.00071	.00610	-.00300
#3	69.847	.31572	.00075	64.070	.00091	.01899	-.00388
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606098624 Acquired: 6/28/2016 10:31:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00110	.00013	3.2594	-.00019	1.6653	F -.04852	-.00220
Stddev	.00114	.00630	.0380	.00073	.0105	.00857	.00107
%RSD	104.21	4773.5	1.1667	393.67	.63193	17.652	48.834
#1	-.00018	-.00673	3.2387	-.00082	1.6771	-.04225	-.00215
#2	.00203	.00564	3.2362	-.00035	1.6619	-.05828	-.00115
#3	.00144	.00149	3.3033	.00061	1.6569	-.04504	-.00329
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00178	.00879	-.00005
Stddev	.00106	.00026	.00053
%RSD	59.569	2.9138	1129.9
#1	-.00264	.00862	-.00059
#2	-.00060	.00868	.00046
#3	-.00210	.00909	-.00000
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8997.1	53950.	2623.6
Stddev	115.6	416.	17.2
%RSD	1.2846	.77044	.65487
#1	8946.4	53576.	2606.1
#2	8915.6	53878.	2640.4
#3	9129.4	54398.	2624.3

Approved: June 29, 2016

Sample Name: L1606098626 Acquired: 6/28/2016 10:35:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00028	.02934	-.00299	.04282	.02918	-.00008	122.59	.00031
Stddev	.00120	.01200	.00108	.00189	.00069	.00004	3.30	.00024
%RSD	428.74	40.885	35.969	4.4087	2.3809	49.214	2.6919	77.572
#1	-.00145	.03984	-.00192	.04492	.02875	-.00008	118.95	.00057
#2	-.00034	.03192	-.00408	.04224	.02881	-.00012	123.44	.00009
#3	.00095	.01627	-.00298	.04128	.02998	-.00004	125.38	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00006	.00038	.00374	.00620	1.8137	.01464	39.490	.00270
Stddev	.00028	.00100	.00067	.03925	.1385	.00311	.817	.00349
%RSD	438.71	263.65	17.855	633.53	7.6349	21.247	2.0694	129.32
#1	.00016	.00133	.00448	.05110	1.6558	.01155	38.561	.00059
#2	.00003	.00048	.00318	-.01091	1.9146	.01461	39.811	.00673
#3	-.00038	-.00067	.00356	-.02160	1.8706	.01777	40.098	.00078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00097	19.000	.00026	.00581	.00143	.00022	.00066	2.8563
Stddev	.00035	.513	.00086	.00438	.00335	.00426	.00443	.1067
%RSD	36.480	2.6998	327.05	75.398	234.01	1917.0	667.74	3.7341
#1	.00125	18.423	.00118	.00259	-.00228	.00258	.00540	2.9183
#2	.00109	19.169	.00011	.00403	.00234	.00279	-.00338	2.9176
#3	.00057	19.406	-.00051	.01080	.00423	-.00470	-.00003	2.7332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606098626 Acquired: 6/28/2016 10:35:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	1.0049	-.01768	-.00157	-.00079	.00650	-.00003
Stddev	.00125	.0273	.00276	.00082	.00042	.00016	.00045
%RSD	736.86	2.7217	15.631	52.392	53.276	2.3973	1567.8
#1	.00079	.97482	-.02087	-.00077	-.00110	.00664	-.00010
#2	-.00127	1.0117	-.01607	-.00241	-.00031	.00653	-.00044
#3	.00099	1.0283	-.01609	-.00153	-.00097	.00633	.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9200.3	55136.	2700.9
Stddev	51.6	162.	67.0
%RSD	.56114	.29336	2.4815
#1	9251.8	55033.	2629.7
#2	9200.4	55053.	2762.9
#3	9148.5	55323.	2710.0

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 10:39:31 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40316	10.167	.40001	.49776	1.0062	.05040	10.043	.05094
Stddev	.00469	.048	.00207	.00593	.0065	.00018	.026	.00025
%RSD	1.1625	.47037	.51652	1.1910	.64434	.35492	.25579	.48606
#1	.39929	10.121	.40159	.49635	.99979	.05020	10.020	.05080
#2	.40837	10.217	.40076	.50427	1.0061	.05053	10.038	.05080
#3	.40182	10.164	.39767	.49267	1.0128	.05048	10.071	.05123
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20379	.50933	.50963	3.9847	49.804	.99855	10.245	.49740
Stddev	.00075	.00518	.00117	.0199	.296	.00583	.114	.00646
%RSD	.36648	1.0175	.23038	.49825	.59527	.58364	1.1171	1.2985
#1	.20447	.50484	.51099	3.9622	49.552	.99411	10.313	.49230
#2	.20299	.51500	.50900	3.9996	49.731	.99638	10.112	.49523
#3	.20392	.50814	.50891	3.9924	50.131	1.0051	10.309	.50466
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0194	49.838	.50664	10.073	.50309	1.2101	.40117	5.0889
Stddev	.0025	.220	.00264	.006	.00460	.0036	.00581	.0083
%RSD	.24924	.44233	.52114	.06246	.91484	.29951	1.4477	.16335
#1	1.0223	49.626	.50960	10.070	.50141	1.2135	.39633	5.0972
#2	1.0176	49.821	.50452	10.070	.50829	1.2063	.40761	5.0805
#3	1.0182	50.066	.50581	10.081	.49956	1.2105	.39956	5.0889
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 10:39:31 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0195**	**1.0042**	**.99589**	**.50209**	**1.0096**	**1.0169**	**1.0180**
Stddev	.0017	.0067	.00461	.00153	.0035	.0027	.0027
%RSD	.16394	.66869	.46256	.30430	.34566	.26637	.26670
#1	1.0212	.99679	.99292	.50045	1.0057	1.0199	1.0193
#2	1.0196	1.0061	1.0012	.50348	1.0124	1.0159	1.0148
#3	1.0178	1.0098	.99355	.50234	1.0106	1.0148	1.0197
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8953.2**	**53239.**	**2577.6**
Stddev	23.4	339.	5.2
%RSD	.26092	.63651	.20155
#1	8926.2	53533.	2582.1
#2	8967.5	52869.	2578.9
#3	8965.8	53316.	2571.9

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 10:43:08 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00123**	**.00119**	**-.00233**	**.00197**	**.00081**	**-.00003**	**-.00118**	**-.00001**
Stddev	.00124	.00937	.00168	.00233	.00089	.00007	.03680	.00041
%RSD	101.18	784.56	72.249	118.43	110.25	242.13	3131.7	3937.7
#1	.00020	-.00943	-.00396	.00429	.00168	-.00010	.01949	-.00043
#2	-.00188	.00831	-.00241	.00200	-.00010	.00003	.02065	.00038
#3	-.00200	.00470	-.00060	-.00038	.00085	-.00002	-.04366	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**-.00032**	**-.00018**	**-.00841**	**-.05157**	**.00253**	**.10335**	**.00001**
Stddev	.00014	.00088	.00159	.02756	.08915	.00185	.07359	.00304
%RSD	112.37	271.26	897.41	327.75	172.89	73.129	71.209	38148.
#1	.00010	-.00096	.00052	-.01693	-.00526	.00052	.04788	-.00301
#2	.00028	-.00070	.00095	-.03070	.00491	.00415	.18683	-.00003
#3	.00000	.00068	-.00200	.02240	-.15434	.00291	.07532	.00306
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00026**	**.00291**	**.00020**	**.00111**	**.00124**	**.00025**	**-.00505**	**.00674**
Stddev	.00041	.04187	.00054	.00259	.00351	.00041	.00455	.00227
%RSD	156.26	1437.8	265.49	232.95	283.47	162.45	90.076	33.594
#1	.00004	.02857	.00067	.00385	.00454	.00007	-.00177	.00790
#2	.00074	-.04540	.00034	.00079	-.00245	.00072	-.01025	.00820
#3	.00002	.02557	-.00039	-.00130	.00163	-.00004	-.00314	.00413
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 10:43:08 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.00062	-.00008	-.00234	.00029	-.00011	.00048
Stddev	.00029	.00031	.00355	.00123	.00093	.00007	.00056
%RSD	94.778	49.380	4253.5	52.618	315.05	60.863	118.05
#1	.00048	.00088	-.00419	-.00246	.00016	-.00015	.00054
#2	-.00003	.00028	.00187	-.00105	-.00056	-.00003	-.00012
#3	.00045	.00070	.00207	-.00351	.00128	-.00015	.00100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9397.7	55798.	2684.8
Stddev	44.8	443.	24.5
%RSD	.47711	.79465	.91327
#1	9351.5	55593.	2688.7
#2	9400.6	55494.	2707.1
#3	9441.1	56307.	2658.6

Approved: June 29, 2016

Sample Name: L1606098628 Acquired: 6/28/2016 10:47:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	.01289	-.00450	.03718	.02822	.00000	209.02
Stddev	.00173	.00565	.00095	.00078	.00109	.00010	1.27
%RSD	229.23	43.846	21.152	2.0843	3.8710	5293.1	.60706
#1	-.00123	.01938	-.00381	.03806	.02943	-.00005	210.45
#2	.00156	.00899	-.00410	.03658	.02732	.00011	208.59
#3	.00195	.01032	-.00559	.03691	.02790	-.00005	208.03
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	-.00021	.00021	.00536	.02317	3.4262	.02729
Stddev	.00012	.00047	.00073	.00148	.01277	.1489	.00102
%RSD	44.425	218.43	358.22	27.667	55.118	4.3469	3.7448
#1	.00038	-.00004	.00086	.00388	.02959	3.3053	.02760
#2	.00027	.00014	-.00059	.00685	.03147	3.3808	.02615
#3	.00014	-.00074	.00035	.00535	.00846	3.5926	.02812
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	85.261	.03463	.00082	23.989	.00048	.00818	-.00223
Stddev	.205	.00172	.00021	.129	.00033	.00315	.00320
%RSD	.24047	4.9805	26.329	.53970	67.997	38.475	143.54
#1	85.478	.03271	.00090	24.123	.00028	.00681	-.00384
#2	85.071	.03605	.00097	23.979	.00031	.01177	.00146
#3	85.235	.03513	.00057	23.865	.00086	.00594	-.00430
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606098628 Acquired: 6/28/2016 10:47:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00183**	**-.00402**	**3.5345**	**-.00007**	**2.5328**	F **-.03692**	**-.00256**
Stddev	.00348	.00068	.0862	.00082	.0182	.00467	.00334
%RSD	190.40	16.928	2.4394	1141.0	.71790	12.653	130.28
#1	.00212	-.00480	3.5847	.00072	2.5529	-.03669	.00110
#2	.00515	-.00362	3.5839	-.00002	2.5280	-.03237	-.00334
#3	-.00179	-.00363	3.4349	-.00092	2.5174	-.04170	-.00545
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00175**	**.01366**	**.00039**
Stddev	.00082	.00040	.00061
%RSD	47.069	2.9163	156.65
#1	-.00224	.01395	.00082
#2	-.00220	.01381	.00067
#3	-.00080	.01320	-.00031
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9020.9**	**54213.**	**2666.2**
Stddev	63.0	332.	24.9
%RSD	.69874	.61196	.93493
#1	8948.2	53830.	2642.0
#2	9059.3	54396.	2664.8
#3	9055.2	54413.	2691.8

Approved: June 29, 2016

Sample Name: L1606098630 Acquired: 6/28/2016 10:50:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00112**	**.06305**	**-.00208**	**.14294**	**.01941**	**.00005**	**247.94**
Stddev	.00418	.00320	.00118	.00341	.00034	.00004	1.16
%RSD	374.44	5.0732	57.040	2.3857	1.7709	83.190	.46966
#1	-.00594	.06207	-.00172	.14395	.01911	.00002	248.74
#2	.00155	.06046	-.00111	.13914	.01934	.00002	248.48
#3	.00104	.06663	-.00340	.14573	.01978	.00009	246.60
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00037**	**.00009**	**.00160**	**.01136**	**-.00695**	**3.7319**	**.04659**
Stddev	.00054	.00031	.00100	.00046	.03558	.1216	.00224
%RSD	146.09	341.82	62.102	4.0522	512.15	3.2581	4.8143
#1	.00014	-.00027	.00197	.01085	-.04459	3.6608	.04457
#2	-.00002	.00027	.00237	.01175	-.00238	3.8723	.04620
#3	.00098	.00026	.00048	.01148	.02612	3.6627	.04901
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**99.425**	**.22627**	**.00078**	**83.428**	**.00189**	**.01477**	**.00041**
Stddev	.285	.00121	.00060	.359	.00084	.00647	.00324
%RSD	.28701	.53622	77.492	.43083	44.222	43.791	786.52
#1	99.365	.22489	.00068	83.673	.00183	.01186	-.00163
#2	99.736	.22719	.00143	83.596	.00276	.01026	-.00128
#3	99.175	.22671	.00023	83.016	.00109	.02218	.00415
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606098630 Acquired: 6/28/2016 10:50:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00057**	**-.00604**	**5.5242**	**-.00008**	**7.3387**	F **-.04842**	**-.00099**
Stddev	.00550	.00651	.1293	.00039	.0359	.00782	.00111
%RSD	956.70	107.88	2.3409	477.24	.48860	16.146	111.89
#1	-.00505	.00055	5.6118	.00017	7.3571	-.05406	.00009
#2	.00556	-.00619	5.5851	.00012	7.3615	-.05171	-.00094
#3	-.00223	-.01247	5.3757	-.00054	7.2973	-.03950	-.00212
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00124**	**.02012**	**.00029**
Stddev	.00033	.00104	.00012
%RSD	26.862	5.1684	42.853
#1	-.00086	.02074	.00038
#2	-.00135	.02071	.00015
#3	-.00150	.01892	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8910.3**	**53758.**	**2664.2**
Stddev	38.9	307.	8.4
%RSD	.43613	.57080	.31523
#1	8941.3	53508.	2654.7
#2	8922.9	53664.	2667.2
#3	8866.7	54100.	2670.6

Approved: June 29, 2016

Sample Name: L1606098632S Acquired: 6/28/2016 10:54:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18846**	**4.8019**	**.19046**	**.99326**	**.50409**	**.02350**	**135.29**	**.02353**
Stddev	.00068	.0071	.00255	.00360	.00221	.00005	.67	.00010
%RSD	.36110	.14839	1.3406	.36288	.43782	.20602	.49154	.44605
#1	.18832	4.8004	.18755	.99057	.50651	.02352	135.95	.02364
#2	.18786	4.7956	.19150	.99185	.50356	.02354	135.31	.02351
#3	.18920	4.8096	.19232	.99735	.50219	.02345	134.62	.02344
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09381**	**.23815**	**.24000**	**1.9130**	**26.640**	**.51162**	**39.895**	**.28319**
Stddev	.00100	.00189	.00228	.0193	.074	.00286	.188	.00285
%RSD	1.0649	.79307	.95050	1.0075	.27942	.55998	.47192	1.0073
#1	.09414	.23597	.24247	1.9319	26.717	.50832	39.903	.28423
#2	.09460	.23915	.23954	1.8934	26.568	.51350	40.079	.27997
#3	.09269	.23933	.23798	1.9136	26.635	.51303	39.702	.28538
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48664**	**72.566**	**.23006**	**4.7722**	**.22970**	**.57011**	**.17961**	**5.9299**
Stddev	.00164	.276	.00122	.0198	.00405	.00461	.00446	.0220
%RSD	.33708	.38027	.53077	.41398	1.7643	.80832	2.4833	.37111
#1	.48809	72.880	.23128	4.7950	.22929	.56933	.17995	5.9451
#2	.48697	72.458	.23005	4.7606	.22586	.57506	.17499	5.9047
#3	.48486	72.361	.22884	4.7610	.23394	.56595	.18389	5.9400
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606098632S Acquired: 6/28/2016 10:54:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48032**	**2.3017**	**.44242**	**.23394**	**.48469**	**.47339**	**.00132**
Stddev	.00248	.0102	.00605	.00222	.00214	.00181	.00037
%RSD	.51666	.44364	1.3679	.95093	.44068	.38183	28.098
#1	.48314	2.3134	.43785	.23403	.48605	.47524	.00138
#2	.47932	2.2973	.44013	.23167	.48223	.47329	.00166
#3	.47849	2.2945	.44928	.23611	.48580	.47163	.00093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8688.7**	**52383.**	**2561.5**
Stddev	20.4	122.	19.3
%RSD	.23454	.23294	.75227
#1	8695.7	52408.	2540.1
#2	8704.6	52491.	2567.0
#3	8665.7	52251.	2577.4

Approved: June 29, 2016

Sample Name: L1606098634SD Acquired: 6/28/2016 10:58:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19385**	**4.8954**	**.19343**	**1.0128**	**.51753**	**.02388**	**139.76**	**.02445**
Stddev	.00262	.0093	.00107	.0024	.00290	.00006	.52	.00008
%RSD	1.3538	.19080	.55216	.23927	.56012	.24808	.37032	.30805
#1	.19684	4.8863	.19374	1.0156	.52087	.02381	140.34	.02445
#2	.19279	4.8948	.19430	1.0111	.51582	.02391	139.58	.02437
#3	.19192	4.9050	.19224	1.0118	.51589	.02392	139.35	.02452
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09545**	**.24302**	**.24613**	**1.9627**	**27.284**	**.52635**	**41.619**	**.28310**
Stddev	.00064	.00064	.00329	.0225	.313	.00748	.406	.00352
%RSD	.67403	.26200	1.3360	1.1470	1.1482	1.4202	.97438	1.2446
#1	.09594	.24255	.24524	1.9887	27.508	.53175	41.826	.28499
#2	.09569	.24375	.24338	1.9514	27.417	.52947	41.880	.28528
#3	.09473	.24277	.24977	1.9481	26.926	.51782	41.152	.27904
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49748**	**77.859**	**.23713**	**4.8957**	**.23743**	**.58527**	**.18307**	**6.0698**
Stddev	.00174	.416	.00057	.0088	.00258	.00169	.00798	.0098
%RSD	.34891	.53439	.24187	.17976	1.0881	.28860	4.3602	.16074
#1	.49948	78.314	.23758	4.8994	.23444	.58557	.17919	6.0801
#2	.49658	77.767	.23648	4.8857	.23897	.58346	.19225	6.0608
#3	.49638	77.497	.23733	4.9021	.23886	.58679	.17777	6.0685
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606098634SD Acquired: 6/28/2016 10:58:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49219**	**2.3909**	**.46099**	**.23620**	**.49011**	**.49486**	**.00108**
Stddev	.00112	.0136	.00414	.00270	.00213	.00031	.00019
%RSD	.22718	.56755	.89815	1.1447	.43392	.06172	17.459
#1	.49342	2.4057	.45931	.23351	.49185	.49518	.00110
#2	.49125	2.3880	.46570	.23892	.49073	.49457	.00126
#3	.49188	2.3790	.45795	.23618	.48774	.49484	.00088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8624.4**	**51785.**	**2507.5**
Stddev	34.6	103.	7.8
%RSD	.40116	.19897	.31044
#1	8586.0	51883.	2498.6
#2	8634.1	51794.	2512.9
#3	8653.1	51678.	2511.1

Approved: June 29, 2016

Sample Name: L1606098636S Acquired: 6/28/2016 11:02:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19772	5.0127	.19966	1.3850	.51214	.02480	245.86	.02477
Stddev	.00596	.1383	.00099	.0339	.00319	.00076	.17	.00011
%RSD	3.0140	2.7597	.49707	2.4504	.62221	3.0708	.06737	.45242
#1	.19402	4.9072	.19852	1.3612	.50849	.02423	245.76	.02490
#2	.19456	4.9616	.20011	1.3699	.51358	.02450	245.78	.02470
#3	.20460	5.1693	.20034	1.4238	.51436	.02566	246.05	.02471
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09581	.24802	.29870	1.9392	30.905	.51342	76.554	.61303
Stddev	.00037	.00685	.00225	.0091	.082	.00243	.057	.00284
%RSD	.38833	2.7631	.75304	.46767	.26421	.47237	.07486	.46294
#1	.09581	.24194	.29785	1.9318	30.865	.51510	76.515	.60976
#2	.09544	.24668	.29700	1.9365	30.851	.51064	76.620	.61444
#3	.09618	.25545	.30125	1.9493	30.999	.51451	76.527	.61488
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50074	91.350	.23694	4.9730	.23904	.58934	.18488	6.0814
Stddev	.00390	.151	.00117	.0362	.00508	.00409	.00290	.0627
%RSD	.77792	.16492	.49565	.72715	2.1269	.69342	1.5687	1.0313
#1	.49883	91.182	.23828	4.9726	.24049	.59260	.18219	6.0847
#2	.49816	91.394	.23610	4.9370	.23339	.58475	.18448	6.0172
#3	.50522	91.474	.23644	5.0093	.24324	.59066	.18795	6.1425
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606098636S Acquired: 6/28/2016 11:02:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49354	2.1681	.44779	.23586	.50155	.49646	.00080
Stddev	.00336	.0036	.01493	.00523	.01154	.00341	.00057
%RSD	.68125	.16648	3.3336	2.2166	2.3017	.68636	71.538
#1	.49311	2.1641	.44018	.24186	.49241	.49616	.00138
#2	.49041	2.1691	.46499	.23232	.49771	.49322	.00078
#3	.49709	2.1712	.43821	.23340	.51452	.50001	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8497.3	50908.	2509.3
Stddev	53.2	719.	14.0
%RSD	.62617	1.4115	.55736
#1	8555.0	51320.	2495.2
#2	8486.6	51326.	2509.5
#3	8450.3	50078.	2523.2

Approved: June 29, 2016

Sample Name: L1606098638SD Acquired: 6/28/2016 11:05:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-09

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19461**	**5.0104**	**.19785**	**1.3932**	**.51464**	**.02415**	**242.84**	**.02509**
Stddev	.00205	.0136	.00122	.0024	.00243	.00017	.45	.00015
%RSD	1.0512	.27199	.61628	.17380	.47230	.71874	.18597	.59393
#1	.19352	5.0251	.19758	1.3915	.51540	.02406	242.69	.02519
#2	.19697	4.9981	.19918	1.3960	.51192	.02405	243.35	.02492
#3	.19334	5.0079	.19678	1.3921	.51660	.02436	242.49	.02515
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09681**	**.24640**	**.24874**	**1.9227**	**30.934**	**.51907**	**74.733**	**.61185**
Stddev	.00041	.00117	.00213	.0127	.073	.00309	.315	.00169
%RSD	.41948	.47310	.85495	.66056	.23719	.59567	.42145	.27686
#1	.09707	.24697	.24714	1.9111	30.855	.51695	74.400	.61033
#2	.09701	.24718	.24794	1.9363	30.948	.51764	75.026	.61368
#3	.09634	.24506	.25116	1.9209	30.999	.52261	74.774	.61153
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50496**	**89.306**	**.23899**	**5.0248**	**.24132**	**.60097**	**.18640**	**6.1693**
Stddev	.00099	.033	.00162	.0082	.00136	.00275	.00260	.0316
%RSD	.19543	.03715	.67633	.16292	.56193	.45730	1.3937	.51177
#1	.50490	89.343	.23842	5.0209	.24263	.60304	.18468	6.1440
#2	.50597	89.278	.24081	5.0342	.24141	.60202	.18939	6.1591
#3	.50400	89.298	.23773	5.0193	.23992	.59785	.18513	6.2046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606098638SD Acquired: 6/28/2016 11:05:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-09

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49778**	**2.1733**	**.44248**	**.23628**	**.49700**	**.48274**	**.00039**
Stddev	.00133	.0033	.00419	.00330	.00105	.00040	.00032
%RSD	.26806	.15241	.94725	1.3974	.21218	.08361	80.302
#1	.49916	2.1747	.44732	.23753	.49767	.48239	.00025
#2	.49766	2.1756	.44019	.23254	.49578	.48318	.00017
#3	.49650	2.1695	.43994	.23878	.49754	.48266	.00075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8832.1**	**52381.**	**2503.4**
Stddev	43.7	518.	14.9
%RSD	.49512	.98899	.59513
#1	8807.7	51789.	2505.9
#2	8806.1	52747.	2487.4
#3	8882.6	52609.	2516.9

Approved: June 29, 2016

Sample Name: L1606098640 Acquired: 6/28/2016 11:09:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**.00368**	**-.00222**	**.01141**	**.00216**	**-.00005**	**2.2430**
Stddev	.00288	.00455	.00278	.00149	.00149	.00004	.0120
%RSD	1876.7	123.61	125.40	13.107	68.951	89.131	.53399
#1	.00212	-.00155	.00099	.01182	.00231	.00000	2.2297
#2	.00149	.00669	-.00400	.01265	.00060	-.00007	2.2530
#3	-.00315	.00590	-.00364	.00975	.00356	-.00007	2.2463
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00000**	**-.00031**	**-.00074**	**.00067**	F **-.02010**	**.12601**	**.00716**
Stddev	.00037	.00033	.00115	.00024	.02550	.12950	.00076
%RSD	108380.	105.10	155.50	35.998	126.88	102.77	10.598
#1	-.00034	-.00043	.00014	.00085	-.03819	.06228	.00655
#2	.00040	-.00057	-.00204	.00039	-.03117	.27502	.00801
#3	-.00006	.00006	-.00032	.00076	.00907	.04072	.00691
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.91287**	**.00205**	**.00013**	**1.3571**	**.00020**	**.00323**	**.00041**
Stddev	.06200	.00215	.00012	.0399	.00066	.00482	.00096
%RSD	6.7914	104.57	86.770	2.9418	320.37	149.47	236.42
#1	.98438	.00035	.00001	1.3860	-.00004	.00798	-.00051
#2	.88005	.00447	.00014	1.3115	.00095	-.00166	.00141
#3	.87419	.00135	.00025	1.3737	-.00030	.00336	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606098640 Acquired: 6/28/2016 11:09:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00221	.00185	1.7777	.00057	.02861	-.00047	-.00375
Stddev	.00170	.00581	.0072	.00092	.00010	.00218	.00315
%RSD	76.838	313.71	.40541	163.27	.34066	460.98	84.031
#1	.00123	-.00324	1.7771	-.00035	.02870	-.00248	-.00217
#2	.00122	.00819	1.7852	.00150	.02863	.00184	-.00737
#3	.00417	.00061	1.7709	.00054	.02851	-.00078	-.00170
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00006	.00283	-.00030
Stddev	.00069	.00010	.00048
%RSD	1079.8	3.5427	163.06
#1	-.00026	.00293	.00025
#2	-.00064	.00284	-.00049
#3	.00070	.00273	-.00065
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9289.4	56423.	2690.4
Stddev	27.6	170.	4.0
%RSD	.29737	.30164	.14881
#1	9321.1	56618.	2691.8
#2	9276.4	56308.	2693.5
#3	9270.7	56341.	2685.9

Approved: June 29, 2016

Sample Name: L1606098642 Acquired: 6/28/2016 11:13:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00044	.00480	-.00226	.00604	.00443	.00001	2.2648	-.00002
Stddev	.00055	.00920	.00193	.00047	.00218	.00005	.0520	.00023
%RSD	123.65	191.72	85.371	7.7247	49.175	647.11	2.2956	994.00
#1	-.00030	.00393	-.00387	.00657	.00289	-.00004	2.2275	.00024
#2	.00002	.01441	-.00279	.00586	.00347	.00000	2.2427	-.00020
#3	-.00105	-.00394	-.00012	.00569	.00692	.00006	2.3242	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	-.00035	.00052	-.01163	.26316	-.00051	.80762	-.00038
Stddev	.00019	.00021	.00043	.02440	.11608	.00572	.03343	.00041
%RSD	387.22	60.889	84.163	209.79	44.110	1124.5	4.1388	108.83
#1	.00017	-.00048	.00015	.00199	.20693	-.00220	.77340	-.00048
#2	-.00012	-.00045	.00040	.00292	.39664	-.00520	.84019	.00008
#3	-.00019	-.00010	.00100	-.03980	.18589	.00587	.80927	-.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	1.3652	-.00037	-.00442	.00066	.00257	-.00014	1.8170
Stddev	.00002	.0250	.00097	.00540	.00267	.00332	.00546	.0049
%RSD	11.711	1.8350	262.18	122.21	406.64	129.03	3833.7	.27083
#1	.00022	1.3435	.00047	-.00429	.00358	.00628	.00485	1.8126
#2	.00018	1.3926	-.00143	.00091	-.00166	.00155	.00069	1.8223
#3	.00023	1.3596	-.00015	-.00989	.00005	-.00012	-.00597	1.8161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606098642 Acquired: 6/28/2016 11:13:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.02904**	**.00647**	**-.00118**	**-.00045**	**.00265**	**-.00055**
Stddev	.00078	.00075	.00403	.00186	.00068	.00009	.00024
%RSD	611.12	2.5787	62.343	157.68	153.74	3.2764	43.066
#1	-.00025	.02923	.01112	-.00164	-.00121	.00267	-.00035
#2	.00071	.02821	.00425	-.00276	.00011	.00273	-.00081
#3	-.00084	.02967	.00404	.00087	-.00024	.00256	-.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9188.1**	**55730.**	**2641.7**
Stddev	33.3	117.	26.1
%RSD	.36205	.20964	.98933
#1	9221.4	55818.	2623.5
#2	9188.1	55775.	2671.6
#3	9154.9	55598.	2630.0

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 11:17:15 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38793**	**9.8216**	**.38568**	**.48241**	**.97649**	**.04892**	**9.6575**	**.04905**
Stddev	.00173	.0104	.00606	.00258	.00599	.00017	.0817	.00054
%RSD	.44530	.10617	1.5701	.53397	.61359	.35505	.84634	1.1034
#1	.38989	9.8335	.38005	.48355	.98308	.04912	9.7295	.04916
#2	.38662	9.8141	.38489	.48422	.97502	.04879	9.6743	.04953
#3	.38729	9.8171	.39209	.47946	.97137	.04886	9.5686	.04846
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19642**	**.49210**	**.49159**	**3.8879**	**49.158**	**.97992**	**9.9365**	**.48176**
Stddev	.00062	.00133	.00208	.0465	.286	.01938	.0224	.00474
%RSD	.31488	.26994	.42282	1.1966	.58105	1.9777	.22529	.98319
#1	.19623	.49213	.49102	3.9206	49.268	1.0012	9.9456	.48577
#2	.19711	.49342	.49389	3.8346	49.372	.97517	9.9530	.48297
#3	.19592	.49076	.48986	3.9083	48.833	.96335	9.9111	.47653
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.98549**	**48.425**	**.48820**	**9.6834**	**.49219**	**1.1658**	**.39200**	**4.9060**
Stddev	.00189	.277	.00164	.0239	.00612	.0064	.00693	.0198
%RSD	.19203	.57139	.33676	.24696	1.2434	.54907	1.7666	.40262
#1	.98469	48.726	.48865	9.6700	.48522	1.1587	.39787	4.8842
#2	.98765	48.367	.48957	9.7110	.49669	1.1709	.39376	4.9228
#3	.98412	48.182	.48637	9.6693	.49465	1.1680	.38436	4.9109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 11:17:15 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98346	.97426	.97669	.49225	.97791	.97750	.99577
Stddev	.00532	.00518	.00473	.00251	.00190	.00255	.00695
%RSD	.54046	.53167	.48472	.51088	.19391	.26059	.69772
#1	.97812	.97975	.97533	.49200	.98010	.97761	.99790
#2	.98875	.97359	.98196	.49488	.97671	.98000	1.0014
#3	.98352	.96945	.97279	.48987	.97693	.97491	.98801
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9011.4	53420.	2554.4
Stddev	14.3	287.	21.0
%RSD	.15841	.53648	.82136
#1	9023.0	53101.	2539.8
#2	9015.8	53501.	2545.0
#3	8995.5	53657.	2578.4

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 11:20:53 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.01332	-.00300	.00111	.00410	.00008	-.01736	-.00010
Stddev	.00226	.00916	.00118	.00122	.00098	.00004	.05399	.00024
%RSD	699.99	68.781	39.157	109.28	23.888	50.210	311.03	239.48
#1	-.00228	.00555	-.00168	.00251	.00332	.00003	-.00609	-.00000
#2	.00145	.02343	-.00393	.00054	.00378	.00011	-.07609	-.00037
#3	.00179	.01099	-.00341	.00029	.00520	.00009	.03011	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	.00110	.00006	.01011	.09868	.00495	.07318	.00116
Stddev	.00025	.00108	.00079	.01784	.17501	.00447	.04292	.00196
%RSD	68.981	98.497	1300.8	176.39	177.35	90.362	58.654	169.29
#1	-.00043	.00034	.00081	.02055	.15066	.00125	.10534	-.00110
#2	-.00008	.00234	-.00076	.02028	-.09643	.00992	.08977	.00218
#3	-.00056	.00062	.00013	-.01049	.24181	.00367	.02444	.00240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	-.02000	-.00044	.00549	-.00016	.00387	-.00237	.01323
Stddev	.00029	.01349	.00065	.00222	.00288	.00267	.00270	.00241
%RSD	229.41	67.461	146.65	40.388	1830.6	69.139	113.99	18.207
#1	-.00016	-.02660	-.00048	.00468	-.00328	.00695	-.00095	.01375
#2	.00041	-.00448	.00023	.00379	.00041	.00244	-.00067	.01533
#3	.00012	-.02893	-.00107	.00800	.00240	.00221	-.00547	.01060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 11:20:53 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00065**	**.00010**	**-.00014**	**-.00111**	**.00009**	**.00013**	**.00028**
Stddev	.00030	.00013	.00720	.00236	.00051	.00023	.00053
%RSD	46.135	130.04	5092.9	212.88	551.63	170.81	192.28
#1	.00099	.00011	-.00831	.00150	.00056	.00036	.00028
#2	.00056	.00023	.00527	-.00171	.00017	.00013	-.00025
#3	.00041	-.00004	.00262	-.00312	-.00045	-.00009	.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9053.5**	**54352.**	**2576.2**
Stddev	33.1	114.	10.5
%RSD	.36561	.20997	.40893
#1	9016.7	54226.	2573.6
#2	9062.8	54383.	2567.2
#3	9080.9	54448.	2587.8

Approved: June 29, 2016

Sample Name: L1606119001 Acquired: 6/28/2016 11:24:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00000	4.0152	.00528	2.3259	.97175	.00033	76.368
Stddev	.00145	.0194	.00250	.0144	.00516	.00005	.270
%RSD	95608.	.48208	47.457	.61971	.53148	14.625	.35367
#1	-.00049	4.0240	.00561	2.3204	.97765	.00033	76.657
#2	.00163	3.9931	.00262	2.3150	.96956	.00039	76.325
#3	-.00113	4.0287	.00760	2.3422	.96804	.00029	76.122
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.28502	.00428	.01113	.78990	11.216	94.553	5.2188
Stddev	.00690	.00052	.00063	.02058	.061	.313	.0182
%RSD	2.4193	12.177	5.6284	2.6050	.54549	.33117	.34821
#1	.28852	.00403	.01182	.80121	11.248	94.859	5.2386
#2	.28946	.00488	.01097	.80233	11.145	94.233	5.2147
#3	.27708	.00393	.01060	.76615	11.255	94.567	5.2030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.3151	.43401	.00500	F 331.07	.03574	.54738	.24924
Stddev	.0468	.00253	.00007	1.32	.00213	.01964	.00568
%RSD	.63935	.58333	1.3949	.39954	5.9585	3.5886	2.2783
#1	7.2826	.43190	.00497	332.57	.03794	.56696	.24923
#2	7.3687	.43331	.00508	330.56	.03559	.54753	.25493
#3	7.2939	.43682	.00496	330.08	.03368	.52767	.24357
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606119001 Acquired: 6/28/2016 11:24:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00505**	**.00245**	**8.5723**	**.11492**	**.29561**	**.07288**	**-.00059**
Stddev	.00259	.00222	.1258	.00299	.00020	.00814	.00245
%RSD	51.234	90.320	1.4673	2.6021	.06631	11.173	418.30
#1	.00505	.00304	8.6004	.11669	.29581	.06658	.00209
#2	.00763	.00432	8.6817	.11661	.29560	.08207	-.00273
#3	.00246	.00000	8.4349	.11147	.29542	.06998	-.00111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.01057**	**.54262**	**.00107**
Stddev	.00081	.00978	.00031
%RSD	7.6255	1.8021	29.122
#1	.01026	.54683	.00071
#2	.00995	.54959	.00123
#3	.01148	.53144	.00128
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8964.1**	**52749.**	**2647.9**
Stddev	10.0	121.	22.5
%RSD	.11182	.22893	.85076
#1	8961.3	52886.	2630.7
#2	8955.9	52660.	2639.6
#3	8975.3	52700.	2673.4

Approved: June 29, 2016

Sample Name: L1606119002 Acquired: 6/28/2016 11:28:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00226	9.5586	.00773	1.6559	.73068	.00051	257.60
Stddev	.00052	.0101	.00172	.0111	.00315	.00004	1.13
%RSD	22.844	.10580	22.192	.66996	.43173	8.0795	.43961
#1	.00168	9.5657	.00865	1.6683	.73423	.00052	258.78
#2	.00243	9.5631	.00575	1.6469	.72960	.00055	257.50
#3	.00267	9.5470	.00879	1.6525	.72821	.00047	256.52
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.27201	.01208	.15894	5.8326	29.202	56.914	.89923
Stddev	.00800	.00051	.00172	.1763	.137	.111	.00962
%RSD	2.9395	4.2506	1.0801	3.0229	.46817	.19512	1.0694
#1	.27750	.01242	.16039	5.9433	29.059	57.042	.90987
#2	.27569	.01234	.15938	5.9253	29.332	56.857	.89667
#3	.26284	.01149	.15704	5.6293	29.213	56.842	.89116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	26.114	4.0320	.02706	F 641.62	.13792	2.9803	.56145
Stddev	.234	.0137	.00074	.68	.00389	.0818	.01198
%RSD	.89502	.33980	2.7478	.10649	2.8189	2.7454	2.1345
#1	26.329	4.0439	.02755	642.37	.14139	3.0362	.56756
#2	26.147	4.0170	.02743	641.44	.13863	3.0183	.56915
#3	25.865	4.0350	.02621	641.04	.13372	2.8863	.54765
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606119002 Acquired: 6/28/2016 11:28:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00979	-.00034	14.513	.67159	1.9116	.14184	-.00066
Stddev	.00494	.00207	.288	.02476	.0087	.00052	.00174
%RSD	50.481	600.71	1.9859	3.6868	.45688	.36836	261.54
#1	.00442	.00077	14.679	.68753	1.9215	.14241	.00006
#2	.01414	.00093	14.679	.68417	1.9086	.14139	.00059
#3	.01081	-.00273	14.180	.64307	1.9048	.14170	-.00265
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.02758	.83818	.00313
Stddev	.00126	.02623	.00047
%RSD	4.5579	3.1291	15.093
#1	.02770	.85462	.00293
#2	.02877	.85200	.00279
#3	.02627	.80794	.00367
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8763.8	51691.	2636.9
Stddev	54.5	455.	6.1
%RSD	.62147	.88063	.23063
#1	8706.8	51253.	2642.2
#2	8769.1	51659.	2630.3
#3	8815.4	52162.	2638.2

Approved: June 29, 2016

Sample Name: L1606113002 Acquired: 6/28/2016 11:32:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00067	.01380	-.00240	.00864	.00926	.00006	15.171	-.00018
Stddev	.00307	.00691	.00324	.00121	.00165	.00002	1.078	.00030
%RSD	455.23	50.094	135.19	14.049	17.829	34.170	7.1085	168.95
#1	.00371	.01054	-.00132	.00990	.01087	.00005	16.216	.00013
#2	.00073	.02174	-.00604	.00857	.00757	.00005	14.062	-.00047
#3	-.00242	.00912	.00017	.00747	.00933	.00008	15.233	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	-.00078	.00175	7.4035	.65514	.00126	3.1114	.22587
Stddev	.00041	.00010	.00078	.5798	.12316	.00237	.1931	.01787
%RSD	103.82	12.531	44.704	7.8320	18.799	187.66	6.2047	7.9098
#1	-.00077	-.00083	.00095	7.9945	.79583	-.00145	3.3337	.24355
#2	.00004	-.00083	.00179	6.8355	.60273	.00229	3.0148	.20782
#3	-.00044	-.00067	.00251	7.3806	.56685	.00294	2.9857	.22623
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	7.8703	-.00110	.02647	.00010	.00317	-.00146	1.3559
Stddev	.00029	.5148	.00130	.00375	.00018	.00401	.00278	.0434
%RSD	105.72	6.5408	117.93	14.181	179.79	126.53	190.62	3.2002
#1	.00001	8.3807	.00026	.03049	.00025	.00397	.00071	1.3799
#2	.00057	7.3512	-.00123	.02306	.00015	-.00118	-.00460	1.3819
#3	.00023	7.8789	-.00233	.02587	-.00010	.00671	-.00049	1.3058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606113002 Acquired: 6/28/2016 11:32:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.04585	.00437	.00135	-.00004	.00151	-.00058
Stddev	.00032	.00370	.00161	.00255	.00053	.00030	.00048
%RSD	366.92	8.0609	36.855	189.29	1464.5	19.895	82.203
#1	-.00028	.04933	.00574	-.00050	.00009	.00168	-.00060
#2	.00024	.04197	.00260	.00028	-.00062	.00169	-.00105
#3	.00030	.04625	.00477	.00426	.00042	.00116	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8887.2	54480.	2588.1
Stddev	8.3	105.	124.4
%RSD	.09307	.19333	4.8069
#1	8877.7	54601.	2466.9
#2	8891.0	54436.	2715.4
#3	8892.9	54405.	2581.9

Approved: June 29, 2016

Sample Name: L1606113003 Acquired: 6/28/2016 11:36:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00199	.01185	.00153	.00484	.00664	.00004	9.9420	.00012
Stddev	.00057	.00418	.00300	.00411	.00234	.00009	.0992	.00025
%RSD	28.803	35.249	195.88	84.950	35.328	255.34	.99760	201.23
#1	-.00137	.01667	.00500	.00870	.00401	-.00007	9.8294	.00023
#2	-.00250	.00939	-.00016	.00531	.00737	.00008	9.9801	-.00016
#3	-.00209	.00948	-.00024	.00051	.00853	.00010	10.016	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	.02213	-.00028	.36601	.35983	.00751	3.5741	.08240
Stddev	.00036	.00055	.00099	.01258	.21039	.00239	.0830	.00265
%RSD	82.966	2.4851	349.65	3.4376	58.470	31.762	2.3219	3.2186
#1	.00005	.02193	-.00142	.36347	.26015	.00991	3.6265	.07933
#2	.00075	.02171	.00038	.35488	.21781	.00514	3.4784	.08395
#3	.00049	.02275	.00019	.37966	.60153	.00749	3.6174	.08391
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	8.7826	.01128	.03643	-.00299	.00077	.00315	1.0910
Stddev	.00028	.1122	.00042	.00453	.00296	.00304	.00520	.0093
%RSD	64.641	1.2779	3.7546	12.430	98.761	393.00	164.71	.84873
#1	.00031	8.6590	.01174	.03424	.00033	.00008	.00433	1.0822
#2	.00023	8.8782	.01120	.04164	-.00532	.00410	-.00253	1.0901
#3	.00075	8.8106	.01090	.03342	-.00399	-.00186	.00766	1.1007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606113003 Acquired: 6/28/2016 11:36:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00126**	**.05910**	**-.00486**	**-.00167**	**.00006**	**.00125**	**-.00028**
Stddev	.00101	.00068	.01199	.00195	.00033	.00009	.00031
%RSD	79.892	1.1523	246.70	116.87	522.92	7.2617	108.50
#1	-.00239	.05832	-.01255	.00057	.00043	.00116	-.00058
#2	-.00044	.05946	.00896	-.00295	-.00002	.00134	.00003
#3	-.00096	.05953	-.01099	-.00262	-.00022	.00124	-.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8931.3**	**53313.**	**2521.9**
Stddev	14.6	143.	15.7
%RSD	.16319	.26910	.62180
#1	8916.4	53341.	2539.7
#2	8945.5	53157.	2510.1
#3	8932.1	53440.	2516.0

Approved: June 29, 2016

Sample Name: L1606113004 Acquired: 6/28/2016 11:40:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00113	.02222	.00110	.00027	.01162	-.00003	18.226	-.00011
Stddev	.00136	.00709	.00170	.00161	.00137	.00004	.270	.00007
%RSD	119.92	31.895	155.12	594.93	11.803	130.22	1.4817	59.967
#1	-.00255	.01595	.00108	.00065	.01004	-.00002	18.002	-.00019
#2	-.00101	.02991	.00280	.00166	.01248	-.00007	18.526	-.00009
#3	.00016	.02079	-.00060	-.00150	.01235	.00000	18.151	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	.00113	.00050	12.248	.30126	.00680	2.9585	.18185
Stddev	.00033	.00029	.00150	.171	.15023	.00143	.1165	.00697
%RSD	47.931	25.751	303.47	1.3989	49.868	21.079	3.9387	3.8302
#1	.00103	.00109	.00212	12.067	.36563	.00839	2.8255	.17423
#2	.00063	.00143	.00021	12.407	.12957	.00562	3.0425	.18341
#3	.00039	.00085	-.00085	12.269	.40858	.00638	3.0074	.18790
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00054	3.5805	.00166	-.00089	.00199	.00216	-.00111	1.4748
Stddev	.00031	.0484	.00142	.01002	.00221	.00115	.00472	.0131
%RSD	56.104	1.3521	86.025	1120.2	111.08	53.382	426.06	.88890
#1	-.00024	3.5448	.00324	-.01222	-.00050	.00236	-.00656	1.4818
#2	-.00054	3.6356	.00047	.00271	.00273	.00319	.00167	1.4830
#3	-.00085	3.5610	.00126	.00683	.00373	.00092	.00156	1.4597
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606113004 Acquired: 6/28/2016 11:40:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.05971**	**.00554**	**-.00232**	**.00022**	**.00127**	**-.00119**
Stddev	.00077	.00117	.00381	.00169	.00059	.00013	.00052
%RSD	1033.9	1.9573	68.806	72.951	263.47	9.9627	43.812
#1	-.00086	.05843	.00447	-.00042	.00027	.00122	-.00179
#2	-.00005	.05996	.00238	-.00366	.00078	.00117	-.00100
#3	.00069	.06073	.00977	-.00287	-.00039	.00141	-.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8958.9**	**53683.**	**2529.9**
Stddev	18.8	182.	9.0
%RSD	.20935	.33875	.35708
#1	8940.1	53478.	2539.9
#2	8977.6	53746.	2527.6
#3	8959.1	53825.	2522.2

Approved: June 29, 2016

Sample Name: L1606113005 Acquired: 6/28/2016 11:44:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00182**	**.01311**	**.00051**	**.00299**	**.00274**	**.00002**	**.01783**	**.00015**
Stddev	.00166	.01606	.00127	.00175	.00219	.00006	.07620	.00018
%RSD	91.021	122.54	248.12	58.424	80.129	245.90	427.38	117.06
#1	.00009	.00017	.00177	.00119	.00493	.00004	.05273	-.00005
#2	-.00271	.03109	-.00078	.00468	.00054	-.00004	.07033	.00024
#3	-.00285	.00807	.00055	.00311	.00275	.00008	-.06957	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**.00095**	**.00149**	**.02702**	**.10837**	**.00321**	**.11311**	**-.00002**
Stddev	.00036	.00069	.00082	.03091	.04208	.00286	.07473	.00053
%RSD	129.07	72.480	55.118	114.41	38.834	89.276	66.068	2828.5
#1	-.00066	.00072	.00241	.01040	.11048	-.00009	.02883	.00056
#2	.00006	.00172	.00083	.06268	.14936	.00460	.17128	-.00048
#3	-.00024	.00040	.00123	.00797	.06527	.00511	.13923	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00004**	**.14703**	**-.00110**	**.00001**	**-.00405**	**.00493**	**-.00195**	**.00009**
Stddev	.00015	.00703	.00100	.00895	.00424	.00502	.00669	.00125
%RSD	397.74	4.7833	91.383	69819.	104.75	101.87	342.93	1350.1
#1	-.00013	.13899	-.00221	.00892	-.00839	.01054	-.00251	.00105
#2	.00007	.15007	-.00083	.00011	.00008	.00340	.00500	.00055
#3	.00017	.15203	-.00026	-.00899	-.00384	.00085	-.00835	-.00132
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606113005 Acquired: 6/28/2016 11:44:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	.00033	.00406	-.00662	-.00014	.00205	-.00081
Stddev	.00067	.00019	.00234	.00168	.00056	.00014	.00050
%RSD	289.31	57.588	57.746	25.401	396.40	6.6090	62.107
#1	.00035	.00053	.00524	-.00854	-.00067	.00221	-.00127
#2	.00084	.00030	.00136	-.00544	-.00020	.00198	-.00088
#3	-.00049	.00015	.00557	-.00587	.00045	.00197	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9124.4	55026.	2621.2
Stddev	17.1	95.	9.0
%RSD	.18749	.17295	.34452
#1	9106.9	54988.	2610.8
#2	9141.1	54956.	2626.5
#3	9125.3	55135.	2626.4

Approved: June 29, 2016

Sample Name: L1606116411 Acquired: 6/28/2016 11:48:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00116	.15574	-.00171	.03469	.02190	.00005	17.821	.00072
Stddev	.00249	.00517	.00262	.00295	.00047	.00004	.280	.00014
%RSD	214.69	3.3183	153.13	8.5097	2.1648	73.045	1.5685	20.189
#1	-.00013	.15599	.00126	.03787	.02218	.00010	18.080	.00083
#2	-.00400	.15045	-.00368	.03416	.02217	.00002	17.859	.00077
#3	.00065	.16078	-.00272	.03204	.02135	.00004	17.525	.00055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	.00035	.01227	-.00191	1.2161	.00565	4.5909	.05471
Stddev	.00038	.00143	.00159	.00993	.1817	.00134	.0709	.00378
%RSD	72.627	412.52	12.998	520.76	14.943	23.688	1.5437	6.9078
#1	.00010	-.00130	.01325	.00952	1.3973	.00718	4.6629	.05221
#2	.00063	.00107	.01313	-.00839	1.2171	.00474	4.5886	.05906
#3	.00085	.00127	.01043	-.00684	1.0339	.00502	4.5212	.05287
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	149.27	.00544	.18485	.00133	.00189	.00259	2.8294
Stddev	.00013	1.17	.00052	.00541	.00548	.00141	.00335	.0138
%RSD	244.26	.78109	9.5881	2.9257	410.94	74.968	129.26	.48586
#1	.00018	150.37	.00500	.18839	.00765	.00261	.00270	2.8383
#2	.00006	149.40	.00602	.18752	-.00158	.00279	.00589	2.8363
#3	-.00008	148.04	.00532	.17862	-.00207	.00026	-.00081	2.8135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606116411 Acquired: 6/28/2016 11:48:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.09608**	**-.00129**	**-.00451**	**-.00011**	**.28311**	**-.00011**
Stddev	.00052	.00077	.00571	.00248	.00066	.00134	.00023
%RSD	725.00	.80553	444.09	55.074	621.07	.47167	205.12
#1	-.00008	.09641	-.00625	-.00208	.00066	.28404	.00010
#2	-.00058	.09664	-.00256	-.00704	-.00051	.28372	-.00008
#3	.00045	.09519	.00495	-.00441	-.00047	.28158	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8982.8**	**53771.**	**2629.9**
Stddev	48.8	105.	30.6
%RSD	.54280	.19464	1.1632
#1	8959.8	53701.	2596.0
#2	8949.8	53720.	2638.3
#3	9038.8	53891.	2655.4

Approved: June 29, 2016

Sample Name: L1606125201 Acquired: 6/28/2016 11:51:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00044	.00808	.00092	.01736	.04150	-.00001	59.752	.00004
Stddev	.00109	.00569	.00477	.00370	.00024	.00002	.163	.00026
%RSD	249.64	70.512	516.83	21.331	.58544	204.06	.27226	661.60
#1	.00028	.01318	.00124	.01758	.04162	-.00002	59.723	-.00013
#2	.00010	.00912	-.00400	.02095	.04122	-.00002	59.926	.00034
#3	-.00170	.00193	.00552	.01356	.04165	.00001	59.605	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00024	.00105	.01353	.02848	.98155	.01054	12.132	.00186
Stddev	.00040	.00059	.00094	.00603	.11795	.00844	.120	.00147
%RSD	167.20	55.860	6.9174	21.168	12.016	80.068	.99227	78.733
#1	.00020	.00042	.01338	.02633	1.0139	.01791	12.003	.00351
#2	-.00057	.00157	.01453	.03529	1.0799	.00134	12.241	.00136
#3	-.00035	.00116	.01268	.02382	.85080	.01237	12.153	.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00154	12.528	-.00123	.00509	-.00134	-.00035	-.00136	4.3626
Stddev	.00032	.026	.00095	.01517	.00147	.00729	.00401	.1038
%RSD	20.620	.21109	76.599	298.19	110.07	2060.5	294.51	2.3803
#1	.00138	12.559	-.00213	-.00513	.00020	.00791	.00309	4.4196
#2	.00191	12.513	-.00025	-.00213	-.00274	-.00307	-.00249	4.4255
#3	.00134	12.513	-.00132	.02253	-.00148	-.00590	-.00469	4.2428
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606125201 Acquired: 6/28/2016 11:51:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.09497	-.00811	-.00165	-.00065	.14615	.00006
Stddev	.00084	.00057	.01110	.00179	.00026	.00541	.00097
%RSD	275.55	.59736	136.87	108.47	39.705	3.7017	1589.8
#1	-.00036	.09453	-.02080	-.00192	-.00082	.14952	-.00035
#2	.00002	.09561	-.00026	-.00330	-.00076	.14903	-.00064
#3	.00125	.09477	-.00326	.00026	-.00035	.13991	.00117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9050.9	54259.	2611.6
Stddev	24.4	120.	10.7
%RSD	.26996	.22034	.40861
#1	9055.7	54242.	2602.0
#2	9072.5	54149.	2609.9
#3	9024.4	54386.	2623.1

Approved: June 29, 2016

Sample Name: L1606125201PS Acquired: 6/28/2016 11:55:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574476-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19713**	**4.9850**	**.19938**	**.98259**	**.53606**	**.02430**	**58.735**	**.02467**
Stddev	.00252	.0319	.00165	.00595	.00044	.00011	.100	.00014
%RSD	1.2789	.63905	.82752	.60524	.08260	.44321	.17011	.54992
#1	.19699	5.0215	.20128	.98818	.53631	.02437	58.848	.02453
#2	.19468	4.9705	.19832	.97634	.53633	.02417	58.701	.02479
#3	.19971	4.9630	.19854	.98325	.53555	.02435	58.657	.02469
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09853**	**.24959**	**.25779**	**1.9940**	**25.955**	**.51235**	**15.607**	**.24725**
Stddev	.00015	.00271	.00101	.0002	.163	.00380	.184	.00385
%RSD	.14890	1.0852	.39099	.01202	.62623	.74157	1.1781	1.5551
#1	.09836	.25245	.25808	1.9940	26.102	.51077	15.685	.25049
#2	.09861	.24927	.25667	1.9942	25.780	.51669	15.739	.24827
#3	.09861	.24706	.25862	1.9938	25.981	.50960	15.397	.24300
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50641**	**36.138**	**.24471**	**4.9220**	**.24277**	**.59332**	**.18728**	**6.2893**
Stddev	.00201	.141	.00057	.0106	.00369	.00471	.00450	.0036
%RSD	.39673	.38951	.23146	.21453	1.5208	.79362	2.4037	.05782
#1	.50751	36.227	.24534	4.9234	.23851	.58972	.18452	6.2906
#2	.50763	36.211	.24424	4.9318	.24479	.59865	.19247	6.2920
#3	.50409	35.975	.24455	4.9109	.24500	.59159	.18484	6.2851
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606125201PS Acquired: 6/28/2016 11:55:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574476-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50287**	**.59203**	**.48462**	**.24484**	**.49847**	**.62032**	**.00031**
Stddev	.00348	.00235	.01112	.00246	.00062	.00139	.00056
%RSD	.69291	.39643	2.2946	1.0047	.12404	.22456	180.38
#1	.50407	.59317	.49567	.24405	.49892	.62057	.00088
#2	.50560	.59358	.47343	.24759	.49776	.62157	-.00025
#3	.49894	.58933	.48477	.24287	.49872	.61882	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8956.0**	**53595.**	**2586.0**
Stddev	7.2	179.	8.2
%RSD	.08052	.33342	.31697
#1	8962.8	53389.	2589.0
#2	8948.4	53695.	2576.8
#3	8956.9	53701.	2592.3

Approved: June 29, 2016

Sample Name: L1606125201SDL Acquired: 6/28/2016 11:59:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574476-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**.01671**	**-.00017**	**.00590**	**.01366**	**.00008**	**12.549**	**-.00003**
Stddev	.00109	.00831	.00155	.00052	.00114	.00007	.147	.00014
%RSD	490.08	49.726	924.95	8.8632	8.3647	94.657	1.1712	436.97
#1	-.00120	.02324	.00142	.00599	.01298	.00012	12.397	-.00020
#2	-.00041	.00736	-.00168	.00637	.01498	-.00001	12.691	.00004
#3	.00095	.01951	-.00024	.00534	.01302	.00012	12.559	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**-.00055**	**.00330**	**.02155**	**.18221**	**.00169**	**2.6697**	**.00154**
Stddev	.00046	.00062	.00153	.05047	.05382	.00357	.1664	.00168
%RSD	347.45	113.82	46.434	234.17	29.535	210.70	6.2340	108.73
#1	-.00043	.00016	.00428	.07981	.17328	.00202	2.4947	.00080
#2	-.00035	-.00077	.00409	-.00886	.13342	.00509	2.8260	.00036
#3	.00039	-.00103	.00153	-.00630	.23993	-.00203	2.6883	.00347
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00031**	**2.6194**	**-.00013**	**.00061**	**-.00141**	**.00494**	**-.00552**	**.91317**
Stddev	.00033	.0355	.00106	.00742	.00364	.00102	.00604	.02111
%RSD	105.42	1.3554	806.80	1223.5	258.10	20.595	109.34	2.3117
#1	.00054	2.5862	-.00081	.00846	-.00288	.00400	-.00758	.92321
#2	.00047	2.6151	-.00067	-.00627	.00274	.00482	.00127	.92739
#3	-.00007	2.6568	.00109	-.00037	-.00409	.00602	-.01027	.88892
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606125201SDL Acquired: 6/28/2016 11:59:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574476-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.02020**	**-.00216**	**-.00071**	**.00054**	**.03260**	**-.00049**
Stddev	.00123	.00015	.01450	.00185	.00070	.00071	.00047
%RSD	952.10	.73452	670.38	260.03	131.19	2.1790	95.648
#1	.00112	.02029	-.00037	-.00281	-.00027	.03290	-.00001
#2	.00052	.02003	-.01747	.00063	.00085	.03311	-.00052
#3	-.00125	.02028	.01135	.00006	.00104	.03179	-.00094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8880.0**	**53367.**	**2505.0**
Stddev	8.8	162.	12.6
%RSD	.09890	.30282	.50213
#1	8876.4	53181.	2518.5
#2	8890.0	53447.	2493.6
#3	8873.6	53474.	2502.8

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 12:03:19 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39604**	**9.9338**	**.39063**	**.49129**	**.99294**	**.04901**	**9.8191**	**.04975**
Stddev	.00115	.0144	.00305	.00317	.01061	.00012	.1615	.00008
%RSD	.29058	.14522	.78082	.64570	1.0682	.24533	1.6444	.16252
#1	.39472	9.9394	.39301	.48784	.98919	.04914	9.7373	.04966
#2	.39680	9.9174	.39169	.49407	1.0049	.04899	10.005	.04978
#3	.39661	9.9446	.38719	.49197	.98472	.04890	9.7148	.04982
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19938**	**.49368**	**.49836**	**3.9588**	**49.592**	**1.0011**	**10.136**	**.49600**
Stddev	.00076	.00169	.00055	.0389	.495	.0160	.209	.00324
%RSD	.38333	.34266	.11061	.98134	.99848	1.5991	2.0667	.65357
#1	.19915	.49541	.49812	3.9156	49.268	1.0040	10.062	.49281
#2	.20024	.49360	.49899	3.9910	50.162	1.0155	10.372	.49929
#3	.19876	.49203	.49797	3.9698	49.346	.98384	9.9735	.49590
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99694**	**49.459**	**.49353**	**9.8429**	**.49371**	**1.1831**	**.39955**	**4.9585**
Stddev	.00198	.418	.00311	.0260	.00213	.0043	.00974	.0151
%RSD	.19873	.84487	.62974	.26365	.43098	.36417	2.4372	.30413
#1	.99853	49.324	.49702	9.8721	.49533	1.1881	.41022	4.9686
#2	.99758	49.928	.49253	9.8341	.49450	1.1811	.39115	4.9656
#3	.99472	49.126	.49105	9.8225	.49130	1.1803	.39729	4.9411
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 12:03:19 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99925**	**.99620**	**.98765**	**.49522**	**.98406**	**.99406**	**.99798**
Stddev	.00409	.01037	.01478	.00173	.00289	.00196	.01227
%RSD	.40928	1.0406	1.4963	.35024	.29354	.19682	1.2297
#1	1.0037	.99304	.99034	.49484	.98708	.99630	1.0021
#2	.99836	1.0078	1.0009	.49371	.98377	.99319	1.0076
#3	.99567	.98778	.97171	.49712	.98132	.99269	.98417
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8892.1**	**53022.**	**2559.8**
Stddev	30.1	42.	27.6
%RSD	.33893	.07993	1.0776
#1	8879.1	53044.	2558.6
#2	8870.6	53049.	2532.8
#3	8926.5	52973.	2588.0

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 12:06:56 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .39465	F 9.9931	F .39555	F .49345	F 1.0003	F .04972	F 9.8499
Stddev	.00164	.0211	.00073	.00199	.0066	.00034	.0718
%RSD	.41653	.21167	.18546	.40249	.65578	.67878	.72872
#1	.39279	10.018	.39637	.49550	.99845	.05006	9.8255
#2	.39529	9.9815	.39494	.49331	.99483	.04970	9.7935
#3	.39589	9.9803	.39535	.49153	1.0076	.04939	9.9307
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
High Limit	.01000	.40000	.01000	.10000	.01000	.00050	.20000
Low Limit	-.01000	-.40000	-.01000	-.10000	-.01000	-.00050	-.20000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .04977	F .19951	F .49879	F .49849	F 3.9395	F 49.977	F .99931
Stddev	.00024	.00059	.00324	.00096	.0630	.291	.00350
%RSD	.48691	.29607	.64977	.19182	1.6002	.58270	.34995
#1	.04951	.19997	.50244	.49760	3.8939	50.029	.99545
#2	.04979	.19971	.49625	.49837	3.9132	49.664	1.0002
#3	.05000	.19884	.49769	.49950	4.0115	50.239	1.0023
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
High Limit	.00050	.00500	.00300	.00500	.06000	1.0000	.10000
Low Limit	-.00050	-.00500	-.00300	-.00500	-.06000	-1.0000	-.10000

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 10.183	F .49950	F .99809	F 49.556	F .49691	F 9.8570	F .49710
Stddev	.118	.00483	.00208	.300	.00135	.0031	.00340
%RSD	1.1579	.96758	.20882	.60573	.27181	.03173	.68461
#1	10.053	.49446	.99874	49.416	.49598	9.8551	.49386
#2	10.284	.49996	.99977	49.351	.49846	9.8552	.50064
#3	10.211	.50409	.99576	49.900	.49629	9.8606	.49679
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
High Limit	.50000	.01000	.03000	.50000	.04000	.01000	.00500
Low Limit	-.50000	-.01000	-.03000	-.50000	-.04000	-.01000	-.00500

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 12:06:56 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 1.1874	F .39718	F 4.9738	F .99992	F .99471	F .98567	F .49751
Stddev	.0050	.00732	.0146	.00106	.00668	.00514	.00393
%RSD	.42134	1.8429	.29372	.10565	.67114	.52154	.78948
#1	1.1930	.38926	4.9571	1.0004	.99317	.98490	.49328
#2	1.1832	.40370	4.9798	.99871	.98893	.98096	.50105
#3	1.1861	.39859	4.9845	1.0006	1.0020	.99115	.49819
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
High Limit	.02000	.02000	1.0000	.10000	.01000	.02000	.04000
Low Limit	-.02000	-.02000	-1.0000	-.10000	-.01000	-.02000	-.04000

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	F .99162	F .99392	F 1.0151
Stddev	.00177	.00034	.0047
%RSD	.17898	.03404	.46771
#1	.99365	.99368	1.0097
#2	.99037	.99430	1.0182
#3	.99084	.99377	1.0176
Check ?	Chk Fail	Chk Fail	Chk Fail
High Limit	.01000	.02000	.04000
Low Limit	-.01000	-.02000	-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8914.6	52945.	2529.2
Stddev	18.8	191.	6.1
%RSD	.21085	.36073	.24217
#1	8900.5	52726.	2535.8
#2	8907.5	53030.	2528.2
#3	8936.0	53078.	2523.7

Approved: June 29, 2016

Sample Name: L1606106804 Acquired: 6/28/2016 12:10:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.01338	-.00121	.00508	.03185	.00009	3.6877	.00017
Stddev	.00142	.00661	.00402	.00517	.00094	.00009	.0388	.00010
%RSD	287.71	49.409	332.18	101.76	2.9404	100.39	1.0532	57.471
#1	.00152	.00668	.00324	.00758	.03253	.00003	3.6435	.00017
#2	.00108	.01355	-.00456	-.00086	.03078	.00020	3.7163	.00027
#3	-.00113	.01990	-.00231	.00853	.03224	.00005	3.7035	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00005	-.00076	-.00822	.13727	.00256	2.7340	.00095
Stddev	.00016	.00066	.00166	.01850	.10390	.00635	.0183	.00367
%RSD	87.960	1442.0	217.75	225.20	75.690	248.06	.67093	387.13
#1	.00023	-.00018	.00101	-.00312	.24997	.00152	2.7317	-.00127
#2	.00000	-.00047	-.00227	-.02873	.11656	-.00321	2.7534	.00519
#3	.00030	.00079	-.00103	.00721	.04529	.00937	2.7169	-.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	13.446	-.00128	.00796	-.00240	.00107	-.00749	.89476
Stddev	.00012	.159	.00147	.00634	.00286	.00190	.00205	.03670
%RSD	59.407	1.1832	114.59	79.680	118.77	177.46	27.322	4.1020
#1	.00020	13.262	-.00199	.00652	-.00435	-.00100	-.00730	.93379
#2	.00031	13.548	-.00227	.01489	-.00374	.00273	-.00963	.88955
#3	.00008	13.526	.00041	.00246	.00087	.00148	-.00555	.86094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106804 Acquired: 6/28/2016 12:10:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	.07848	-.00729	-.00293	.00035	.00081	.00010
Stddev	.00072	.00144	.00861	.00420	.00095	.00031	.00071
%RSD	282.15	1.8402	118.03	143.58	272.65	37.884	750.18
#1	.00103	.07682	-.01705	-.00519	-.00013	.00046	.00016
#2	-.00038	.07946	-.00079	-.00551	-.00027	.00097	-.00065
#3	.00011	.07915	-.00403	.00192	.00145	.00101	.00077
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8391.9	52991.	2480.9
Stddev	209.3	303.	24.4
%RSD	2.4937	.57243	.98306
#1	8150.7	53076.	2506.3
#2	8526.1	52655.	2457.7
#3	8498.7	53243.	2478.7

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 12:17:35 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41677	10.617	.42173	.52317	1.0592	.05242	10.437	.05320
Stddev	.00494	.006	.00167	.00113	.0024	.00005	.036	.00038
%RSD	1.1855	.05241	.39551	.21611	.22327	.08862	.34169	.71563
#1	.41695	10.610	.42174	.52446	1.0569	.05239	10.436	.05292
#2	.42162	10.620	.42006	.52234	1.0617	.05239	10.473	.05363
#3	.41174	10.619	.42339	.52271	1.0591	.05247	10.402	.05304
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21389	.52863	.53349	4.1544	52.704	1.0582	10.637	.53232
Stddev	.00028	.00120	.00163	.0414	.159	.0081	.061	.00322
%RSD	.12990	.22697	.30630	.99750	.30078	.76528	.57767	.60508
#1	.21406	.52875	.53304	4.1924	52.536	1.0673	10.687	.53406
#2	.21405	.52737	.53531	4.1605	52.724	1.0519	10.655	.53429
#3	.21357	.52976	.53213	4.1102	52.851	1.0553	10.568	.52860
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0701	52.715	.53198	10.580	.52742	1.2754	.42001	5.3332
Stddev	.0021	.187	.00144	.031	.00604	.0052	.00192	.0057
%RSD	.19737	.35393	.27059	.29310	1.1458	.40749	.45755	.10679
#1	1.0717	52.536	.53285	10.596	.53320	1.2801	.42135	5.3376
#2	1.0708	52.909	.53032	10.599	.52791	1.2764	.42087	5.3352
#3	1.0677	52.701	.53278	10.544	.52114	1.2698	.41781	5.3267
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 12:17:35 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0702**	**1.0585**	**1.0486**	**.53559**	**1.0520**	**1.0670**	**1.0704**
Stddev	.0023	.0014	.0170	.00247	.0005	.0014	.0016
%RSD	.21754	.13581	1.6184	.46078	.04785	.13170	.14621
#1	1.0727	1.0578	1.0679	.53720	1.0518	1.0683	1.0710
#2	1.0698	1.0602	1.0416	.53275	1.0526	1.0673	1.0686
#3	1.0681	1.0576	1.0362	.53683	1.0516	1.0655	1.0716
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8530.1**	**50935.**	**2446.7**
Stddev	12.6	71.	7.1
%RSD	.14738	.13921	.28868
#1	8532.0	50877.	2439.2
#2	8516.7	50915.	2447.6
#3	8541.6	51014.	2453.3

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 12:21:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00052**	**.01757**	**.00051**	**.00060**	**.00555**	**.00009**	**-.03141**	**-.00004**
Stddev	.00210	.00687	.00034	.00273	.00052	.00012	.03206	.00025
%RSD	401.46	39.083	66.709	452.47	9.4128	140.54	102.06	654.37
#1	-.00295	.02310	.00088	-.00156	.00610	.00020	.00184	-.00018
#2	.00077	.01972	.00044	.00368	.00548	.00010	-.03394	.00026
#3	.00061	.00988	.00021	-.00031	.00506	-.00004	-.06212	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00006**	**-.00085**	**.00138**	**-.03182**	**.02086**	**.00079**	**.04251**	**-.00303**
Stddev	.00049	.00020	.00101	.01677	.06898	.00220	.02283	.00146
%RSD	858.17	23.008	73.388	52.718	330.70	279.06	53.713	48.237
#1	-.00026	-.00088	.00207	-.01272	.03691	-.00149	.04644	-.00330
#2	.00062	-.00065	.00022	-.03857	.08040	.00095	.01796	-.00145
#3	-.00019	-.00104	.00186	-.04417	-.05474	.00290	.06311	-.00434
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00032**	**.02638**	**-.00081**	**.00361**	**-.00013**	**.00136**	**-.00687**	**.00930**
Stddev	.00014	.01940	.00088	.00797	.00371	.00249	.00684	.00129
%RSD	43.475	73.535	108.60	220.58	2776.3	182.43	99.588	13.921
#1	.00044	.01661	-.00035	.01274	-.00311	.00320	.00102	.00948
#2	.00034	.01381	-.00025	.00014	.00403	-.00147	-.01039	.01050
#3	.00017	.04873	-.00183	-.00203	-.00132	.00237	-.01124	.00792
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 12:21:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	.00024	.00247	-.00209	.00076	-.00001	-.00016
Stddev	.00084	.00071	.00879	.00248	.00067	.00030	.00058
%RSD	360.61	300.56	355.79	118.51	88.280	3028.0	367.13
#1	.00120	.00076	-.00623	-.00494	.00143	.00027	-.00032
#2	-.00033	-.00057	.01135	-.00041	.00075	.00002	.00048
#3	-.00017	.00052	.00229	-.00093	.00009	-.00032	-.00064
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9061.7	52464.	2475.1
Stddev	58.5	188.	6.2
%RSD	.64581	.35783	.25222
#1	8996.0	52260.	2481.3
#2	9081.3	52501.	2468.8
#3	9108.0	52630.	2475.3

Approved: June 29, 2016

Sample Name: L1606119001 Acquired: 6/28/2016 12:25:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**3.7898**	**.00843**	**2.2113**	**.93713**	**.00029**	**73.518**
Stddev	.00241	.0251	.00321	.0173	.00590	.00011	.465
%RSD	579.81	.66230	38.057	.78270	.62931	37.980	.63263
#1	.00245	3.7774	.00479	2.1961	.93518	.00037	73.330
#2	-.00224	3.8186	.01084	2.2301	.94376	.00016	74.048
#3	.00104	3.7732	.00967	2.2078	.93246	.00033	73.177
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.26930**	**.00396**	**.01111**	**.74577**	**10.780**	**91.314**	**5.0388**
Stddev	.00689	.00019	.00105	.02017	.009	.389	.0316
%RSD	2.5572	4.6850	9.4166	2.7048	.08645	.42570	.62740
#1	.27369	.00414	.01045	.75841	10.787	91.342	5.0432
#2	.27284	.00377	.01232	.75638	10.785	91.689	5.0680
#3	.26136	.00397	.01057	.72250	10.770	90.913	5.0052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**6.9578**	**.41341**	**.00495**	F **322.00**	**.03245**	**.51167**	**.23733**
Stddev	.0388	.00209	.00010	1.98	.00092	.00738	.00526
%RSD	.55712	.50459	2.0546	.61452	2.8333	1.4421	2.2181
#1	6.9132	.41312	.00504	321.58	.03349	.51560	.24197
#2	6.9766	.41563	.00497	324.15	.03208	.51624	.23840
#3	6.9836	.41148	.00484	320.26	.03177	.50315	.23161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606119001 Acquired: 6/28/2016 12:25:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**-.00226**	**8.1164**	**.11006**	**.28460**	**.06459**	**.00103**
Stddev	.00474	.00305	.1340	.00508	.00251	.00944	.00141
%RSD	2924.3	135.05	1.6510	4.6133	.88362	14.611	136.61
#1	-.00531	.00126	8.1898	.11381	.28615	.07364	.00264
#2	.00284	-.00383	8.1977	.11208	.28594	.05481	.00043
#3	.00295	-.00421	7.9618	.10428	.28170	.06533	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.01031**	**.51297**	**.00088**
Stddev	.00146	.01667	.00015
%RSD	14.174	3.2493	16.646
#1	.01173	.52302	.00102
#2	.01039	.52215	.00073
#3	.00881	.49373	.00088
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9087.8**	**53911.**	**2652.7**
Stddev	11.1	101.	11.7
%RSD	.12235	.18748	.44077
#1	9076.3	53852.	2662.2
#2	9098.5	53854.	2639.7
#3	9088.6	54028.	2656.3

Approved: June 29, 2016

Sample Name: L1606119002 Acquired: 6/28/2016 12:28:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00050**	**4.7655**	**.00357**	**.82145**	**.35900**	**.00023**	**127.61**
Stddev	.00210	.0202	.00173	.00700	.00172	.00005	.83
%RSD	418.70	.42476	48.395	.85203	.47811	21.405	.64918
#1	-.00103	4.7888	.00554	.82869	.35756	.00023	127.22
#2	-.00228	4.7535	.00228	.82094	.36090	.00028	128.56
#3	.00181	4.7541	.00290	.81472	.35853	.00018	127.04
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.13601**	**.00630**	**.07860**	**2.9711**	**14.514**	**28.078**	**.44975**
Stddev	.00051	.00049	.00062	.0182	.129	.058	.00684
%RSD	.37797	7.8306	.79321	.61317	.88662	.20775	1.5205
#1	.13646	.00584	.07894	2.9863	14.410	28.114	.44275
#2	.13613	.00623	.07898	2.9761	14.658	28.010	.45641
#3	.13545	.00682	.07788	2.9509	14.474	28.108	.45009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**13.075**	**1.9805**	**.01310**	F **322.69**	**.06978**	**1.5045**	**.28408**
Stddev	.114	.0220	.00041	2.01	.00078	.0104	.00225
%RSD	.86971	1.1114	3.1207	.62252	1.1180	.69133	.79147
#1	12.950	1.9651	.01263	322.58	.07034	1.5043	.28667
#2	13.105	2.0058	.01333	324.75	.07012	1.5150	.28272
#3	13.171	1.9708	.01335	320.73	.06889	1.4942	.28283
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606119002 Acquired: 6/28/2016 12:28:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00351**	**-.00222**	**7.1567**	**.34122**	**.93711**	**.07983**	**-.00060**
Stddev	.00546	.00103	.0143	.00275	.00806	.00358	.00175
%RSD	155.33	46.531	.19985	.80486	.85994	4.4860	289.82
#1	-.00045	-.00104	7.1693	.34240	.93448	.07594	-.00003
#2	.00974	-.00267	7.1597	.34317	.94616	.08056	-.00257
#3	.00125	-.00296	7.1411	.33808	.93070	.08299	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.01322**	**.43603**	**.00171**
Stddev	.00064	.00396	.00089
%RSD	4.8731	.90805	51.957
#1	.01381	.43892	.00132
#2	.01331	.43765	.00108
#3	.01253	.43152	.00272
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8990.1**	**53592.**	**2679.4**
Stddev	12.6	181.	12.2
%RSD	.14029	.33827	.45474
#1	9004.5	53800.	2682.8
#2	8981.0	53465.	2665.9
#3	8984.8	53512.	2689.5

Approved: June 29, 2016

Sample Name: L1606113002 Acquired: 6/28/2016 12:32:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00054	.00964	.00218	.00589	.01061	.00005	14.366	.00022
Stddev	.00139	.00845	.00195	.00141	.00037	.00004	.110	.00037
%RSD	256.99	87.693	89.589	23.967	3.4831	65.158	.76837	164.56
#1	.00092	.00409	.00003	.00579	.01026	.00004	14.305	.00064
#2	-.00184	.01937	.00384	.00453	.01099	.00009	14.493	-.00002
#3	-.00070	.00546	.00265	.00735	.01059	.00003	14.299	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	-.00066	.00224	7.0016	.64344	-.00073	2.9261	.21249
Stddev	.00066	.00095	.00029	.0489	.12305	.00350	.1024	.00192
%RSD	1558.0	145.31	13.111	.69901	19.123	480.34	3.4986	.90146
#1	.00065	.00043	.00227	7.0215	.70582	.00331	2.9706	.21039
#2	-.00067	-.00136	.00251	7.0375	.50170	-.00263	2.9987	.21294
#3	-.00011	-.00104	.00193	6.9459	.72281	-.00287	2.8090	.21414
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	7.4084	-.00034	.02764	-.00033	.00328	.00636	1.2813
Stddev	.00029	.0264	.00110	.00512	.00225	.00261	.00547	.0008
%RSD	86.515	.35650	327.89	18.533	676.62	79.623	86.012	.06472
#1	.00064	7.4354	.00065	.03157	-.00206	.00234	.01173	1.2807
#2	.00006	7.3826	-.00152	.02951	-.00115	.00126	.00657	1.2823
#3	.00032	7.4072	-.00014	.02185	.00222	.00622	.00079	1.2810
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606113002 Acquired: 6/28/2016 12:32:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	.04316	-.00341	-.00137	-.00043	.00134	-.00077
Stddev	.00044	.00035	.01120	.00427	.00126	.00015	.00075
%RSD	82.014	.80151	328.08	310.71	293.00	11.021	96.860
#1	.00105	.04344	.00282	-.00628	-.00096	.00117	.00009
#2	.00036	.04327	.00329	.00066	-.00133	.00146	-.00120
#3	.00021	.04278	-.01634	.00150	.00101	.00138	-.00120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8907.6	53531.	2524.4
Stddev	10.1	60.	6.0
%RSD	.11391	.11183	.23739
#1	8900.1	53468.	2527.8
#2	8903.7	53587.	2528.0
#3	8919.2	53538.	2517.5

Approved: June 29, 2016

Sample Name: L1606113003 Acquired: 6/28/2016 12:36:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.01861	-.00206	.00558	.00707	.00003	10.328	.00010
Stddev	.00106	.01054	.00074	.00327	.00096	.00005	.166	.00003
%RSD	1760.8	56.650	35.759	58.620	13.649	170.04	1.6032	27.231
#1	.00106	.00767	-.00130	.00838	.00816	-.00001	10.139	.00008
#2	.00016	.01945	-.00211	.00637	.00671	.00001	10.398	.00013
#3	-.00105	.02870	-.00277	.00199	.00633	.00009	10.447	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	.02380	.00118	.43713	.30859	.00371	3.6737	.08669
Stddev	.00023	.00120	.00107	.03281	.13714	.00332	.0307	.00422
%RSD	110.49	5.0417	90.208	7.5052	44.440	89.431	.83598	4.8696
#1	-.00001	.02282	.00028	.47375	.37426	.00144	3.6555	.09075
#2	.00019	.02343	.00236	.42725	.40055	.00218	3.6565	.08700
#3	.00045	.02514	.00091	.41041	.15097	.00753	3.7092	.08232
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	9.1912	.01331	.04027	-.00006	.00344	-.00704	1.2782
Stddev	.00026	.1694	.00203	.00077	.00185	.00489	.00234	.0259
%RSD	38.989	1.8436	15.245	1.9193	3027.6	142.10	33.280	2.0280
#1	.00094	9.0018	.01267	.04079	-.00200	.00905	-.00906	1.2518
#2	.00068	9.2436	.01168	.04064	.00170	.00010	-.00758	1.2792
#3	.00042	9.3283	.01558	.03938	.00011	.00117	-.00447	1.3037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606113003 Acquired: 6/28/2016 12:36:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.06137	-.00305	-.00210	.00082	.00133	-.00058
Stddev	.00060	.00103	.00441	.00110	.00027	.00013	.00060
%RSD	439.98	1.6752	144.54	52.349	33.189	9.5496	104.64
#1	.00052	.06032	.00091	-.00241	.00105	.00145	-.00001
#2	-.00055	.06141	-.00226	-.00088	.00052	.00120	-.00050
#3	.00045	.06237	-.00781	-.00301	.00090	.00135	-.00122
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8946.2	53500.	2545.9
Stddev	7.6	202.	12.1
%RSD	.08522	.37788	.47674
#1	8939.8	53704.	2554.9
#2	8944.2	53497.	2532.1
#3	8954.6	53300.	2550.7

Approved: June 29, 2016

Sample Name: L1606113004 Acquired: 6/28/2016 12:40:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00024	.01809	-.00077	-.00297	.01150	-.00004	17.766	-.00020
Stddev	.00248	.00463	.00136	.00361	.00041	.00010	.240	.00018
%RSD	1046.0	25.617	176.90	121.87	3.5982	267.63	1.3496	89.328
#1	-.00243	.02260	-.00109	-.00662	.01167	-.00009	17.550	-.00001
#2	-.00073	.01334	-.00195	.00061	.01180	.00008	17.723	-.00036
#3	.00245	.01832	.00072	-.00289	.01103	-.00011	18.024	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	-.00049	.00113	11.978	.48918	.00583	2.9320	.17953
Stddev	.00016	.00104	.00263	.080	.02205	.00475	.1307	.00167
%RSD	29.412	210.00	231.85	.66571	4.5076	81.514	4.4592	.92948
#1	.00071	.00060	.00417	11.907	.46449	.00134	2.7961	.17819
#2	.00050	-.00062	-.00050	11.963	.50692	.01081	2.9429	.17900
#3	.00040	-.00146	-.00027	12.065	.49613	.00534	3.0569	.18140
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	3.4886	.00079	.00034	-.00084	.00008	-.00358	1.4319
Stddev	.00037	.0303	.00108	.00465	.00493	.00454	.00459	.0399
%RSD	6980.2	.86819	137.12	1365.6	589.47	5537.2	127.98	2.7882
#1	-.00042	3.5017	.00204	.00553	-.00257	-.00483	-.00318	1.4507
#2	.00014	3.5101	.00028	-.00346	.00472	.00097	.00079	1.4590
#3	.00027	3.4540	.00006	-.00104	-.00466	.00411	-.00836	1.3861
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606113004 Acquired: 6/28/2016 12:40:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.05790	.00930	.00016	-.00139	.00147	-.00089
Stddev	.00098	.00075	.00706	.00120	.00037	.00013	.00021
%RSD	272.08	1.2926	75.921	741.78	26.600	8.7062	23.335
#1	-.00025	.05719	.01138	-.00002	-.00134	.00155	-.00101
#2	-.00016	.05868	.01508	-.00094	-.00104	.00132	-.00102
#3	.00150	.05784	.00143	.00144	-.00178	.00153	-.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8934.7	53539.	2547.3
Stddev	11.4	243.	6.4
%RSD	.12800	.45343	.25275
#1	8922.9	53678.	2554.2
#2	8935.5	53681.	2546.3
#3	8945.8	53259.	2541.4

Approved: June 29, 2016

Sample Name: L1606113005 Acquired: 6/28/2016 12:44:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.01198	-.00210	-.00164	.00301	-.00000	-.01159	-.00004
Stddev	.00141	.01055	.00136	.00247	.00082	.00009	.02499	.00026
%RSD	8281.9	88.039	64.731	150.47	27.174	3406.6	215.61	657.73
#1	-.00151	-.00013	-.00110	.00120	.00210	.00010	-.03630	.00007
#2	.00029	.01695	-.00155	-.00327	.00325	-.00006	.01366	.00015
#3	.00127	.01913	-.00365	-.00286	.00368	-.00005	-.01213	-.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00029	.00072	-.00086	-.00681	.13612	.00452	-.00411	-.00268
Stddev	.00035	.00054	.00121	.03393	.13157	.00463	.09255	.00149
%RSD	121.46	74.302	141.19	498.06	96.661	102.38	2250.3	55.603
#1	-.00047	.00035	-.00226	.03226	.24020	-.00067	-.10321	-.00194
#2	.00012	.00134	-.00019	-.02389	-.01177	.00603	.01080	-.00439
#3	-.00051	.00048	-.00012	-.02881	.17993	.00821	.08007	-.00170
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	.00612	-.00010	-.00227	-.00119	.00203	.00281	-.01390
Stddev	.00016	.01574	.00083	.00326	.00065	.00303	.00207	.00142
%RSD	63.438	257.20	796.79	143.34	54.751	148.94	73.532	10.213
#1	-.00023	.01962	.00052	-.00416	-.00058	-.00145	.00097	-.01537
#2	-.00011	.00990	-.00104	-.00414	-.00188	.00405	.00505	-.01379
#3	-.00043	-.01116	.00021	.00149	-.00111	.00350	.00242	-.01254
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606113005 Acquired: 6/28/2016 12:44:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	.00024	.00598	-.00423	-.00105	.00062	-.00054
Stddev	.00042	.00049	.01065	.00088	.00086	.00015	.00071
%RSD	166.82	202.02	177.94	20.764	82.165	23.770	132.28
#1	.00003	.00079	-.00224	-.00322	-.00048	.00048	-.00061
#2	.00074	-.00014	.00218	-.00482	-.00203	.00077	.00021
#3	-.00001	.00007	.01801	-.00465	-.00062	.00061	-.00121
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9001.9	54024.	2557.5
Stddev	1.4	38.	4.0
%RSD	.01509	.07122	.15560
#1	9000.4	54033.	2562.1
#2	9002.0	54058.	2555.7
#3	9003.1	53982.	2554.8

Approved: June 29, 2016

Sample Name: L1606116411 Acquired: 6/28/2016 12:48:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.15451	-.00350	.03775	.01914	.00006	17.496	.00071
Stddev	.00064	.00207	.00555	.00311	.00096	.00006	.010	.00032
%RSD	895.05	1.3418	158.59	8.2436	5.0367	100.05	.05556	45.738
#1	.00036	.15691	-.00921	.03969	.01877	.00012	17.500	.00093
#2	.00023	.15334	-.00315	.03939	.02023	.00000	17.503	.00086
#3	-.00081	.15329	.00187	.03416	.01842	.00005	17.485	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00082	-.00079	.01211	.00467	1.2228	.00134	4.5617	.05182
Stddev	.00031	.00121	.00109	.02467	.0793	.00097	.0493	.00231
%RSD	37.826	152.51	8.9718	528.03	6.4818	72.554	1.0800	4.4566
#1	.00056	-.00158	.01238	.00794	1.2872	.00031	4.6166	.05236
#2	.00074	-.00139	.01092	-.02147	1.2470	.00223	4.5470	.04929
#3	.00116	.00060	.01304	.02754	1.1343	.00148	4.5214	.05381
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	147.55	.00517	.17885	.00030	-.00139	-.00110	2.8258
Stddev	.00053	.34	.00060	.01359	.00349	.00151	.00321	.0017
%RSD	327.61	.23187	11.605	7.6006	1182.6	109.29	291.30	.06077
#1	.00045	147.36	.00485	.16363	.00281	-.00253	.00244	2.8278
#2	-.00045	147.95	.00586	.18316	.00177	.00033	-.00382	2.8246
#3	-.00049	147.35	.00479	.18977	-.00369	-.00196	-.00192	2.8252
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606116411 Acquired: 6/28/2016 12:48:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.09596	-.00181	-.00373	.00021	.28203	.00032
Stddev	.00094	.00045	.00088	.00410	.00026	.00067	.00045
%RSD	349.19	.47142	48.709	109.75	123.26	.23930	138.59
#1	-.00080	.09544	-.00135	-.00237	.00002	.28265	.00011
#2	.00095	.09615	-.00283	-.00834	.00051	.28212	.00002
#3	.00066	.09628	-.00126	-.00049	.00011	.28131	.00084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9005.5	53766.	2640.9
Stddev	16.7	224.	2.5
%RSD	.18548	.41670	.09612
#1	8990.9	53512.	2638.5
#2	9002.0	53850.	2640.7
#3	9023.7	53936.	2643.6

Approved: June 29, 2016

Sample Name: L1606125201 Acquired: 6/28/2016 12:52:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00129	.02165	-.00248	.01692	.04160	-.00001	59.586	.00010
Stddev	.00123	.00416	.00137	.00291	.00115	.00005	.518	.00026
%RSD	95.801	19.216	55.265	17.215	2.7688	473.44	.86976	263.07
#1	.00051	.02261	-.00142	.02017	.04292	-.00004	60.152	.00021
#2	.00271	.01709	-.00199	.01606	.04104	-.00004	59.136	-.00020
#3	.00064	.02524	-.00402	.01454	.04083	.00005	59.469	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	.00013	.01444	.02703	1.0062	.00850	11.899	.00064
Stddev	.00032	.00079	.00036	.02181	.0699	.00671	.190	.00094
%RSD	142.92	594.81	2.5182	80.678	6.9428	78.943	1.5983	147.02
#1	.00011	-.00078	.01433	.04967	1.0334	.01527	12.058	.00007
#2	-.00025	.00050	.01414	.00617	.92685	.00185	11.688	.00012
#3	-.00054	.00067	.01484	.02525	1.0584	.00837	11.951	.00173
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00154	12.417	.00097	.00359	.00058	.00173	-.00540	4.4257
Stddev	.00023	.049	.00108	.00335	.00547	.00081	.00408	.0469
%RSD	14.809	.39598	110.69	93.301	945.36	46.838	75.601	1.0597
#1	.00130	12.360	.00206	.00037	-.00004	.00264	-.00697	4.4557
#2	.00176	12.443	.00096	.00706	.00633	.00146	-.00846	4.4497
#3	.00156	12.447	-.00010	.00334	-.00455	.00109	-.00076	4.3716
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606125201 Acquired: 6/28/2016 12:52:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.09375	-.01059	-.00376	-.00096	.14846	-.00009
Stddev	.00046	.00020	.00430	.00170	.00027	.00282	.00014
%RSD	889.88	.21863	40.616	45.127	27.765	1.8964	162.80
#1	.00053	.09352	-.01507	-.00509	-.00082	.15050	-.00010
#2	-.00039	.09382	-.01019	-.00185	-.00079	.14964	.00006
#3	.00001	.09390	-.00650	-.00435	-.00127	.14525	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9046.7	54426.	2639.5
Stddev	5.6	47.	11.7
%RSD	.06203	.08606	.44426
#1	9047.5	54470.	2646.7
#2	9040.7	54430.	2645.8
#3	9051.9	54377.	2626.0

Approved: June 29, 2016

Sample Name: L1606113005PS Acquired: 6/28/2016 12:55:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574276-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.23710**	**6.1119**	**.25853**	**1.1827**	**.56629**	**.02969**	**5.7632**	**.03235**
Stddev	.00531	.1115	.00359	.0243	.00883	.00056	.1133	.00088
%RSD	2.2382	1.8239	1.3873	2.0549	1.5587	1.8898	1.9662	2.7146
#1	.23205	6.0117	.25594	1.1589	.55772	.02914	5.6706	.03134
#2	.23663	6.0922	.26262	1.1819	.56578	.02965	5.7294	.03278
#3	.24263	6.2320	.25703	1.2075	.57535	.03026	5.8895	.03293
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.12838**	**.29825**	**.32424**	**2.2596**	**28.378**	**.57291**	**5.7557**	**.27905**
Stddev	.00240	.00576	.00674	.0769	.298	.00617	.1009	.00395
%RSD	1.8707	1.9317	2.0773	3.4010	1.0488	1.0767	1.7530	1.4157
#1	.12561	.29278	.31691	2.2190	28.035	.56580	5.7393	.27488
#2	.12963	.29770	.32564	2.2116	28.539	.57612	5.6641	.27953
#3	.12989	.30426	.33016	2.3482	28.561	.57681	5.8639	.28273
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.63702**	**28.482**	**.32021**	**6.3858**	**.32156**	**.76680**	**.26481**	**3.0255**
Stddev	.01158	.382	.00730	.1267	.00813	.01550	.00541	.0590
%RSD	1.8173	1.3412	2.2809	1.9843	2.5298	2.0212	2.0434	1.9491
#1	.62392	28.101	.31227	6.2466	.31241	.75013	.25870	2.9613
#2	.64128	28.479	.32173	6.4163	.32431	.76951	.26900	3.0381
#3	.64587	28.865	.32663	6.4945	.32797	.78077	.26672	3.0772
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606113005PS Acquired: 6/28/2016 12:55:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574276-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.63969	.57282	.56662	.32033	.59043	.65161	.00037
Stddev	.01089	.00891	.00918	.00410	.01004	.01220	.00038
%RSD	1.7019	1.5563	1.6202	1.2812	1.6999	1.8719	104.40
#1	.62840	.56390	.56153	.31578	.58130	.63808	.00013
#2	.64053	.57283	.56111	.32376	.58880	.65498	.00081
#3	.65013	.58173	.57721	.32144	.60118	.66177	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8751.7	53132.	2528.1
Stddev	60.4	53.	3.0
%RSD	.69033	.09944	.11892
#1	8820.8	53193.	2527.4
#2	8725.4	53105.	2525.4
#3	8708.9	53099.	2531.3

Approved: June 29, 2016

Sample Name: L1606113005SDL Acquired: 6/28/2016 12:59:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574276-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00103**	**.01796**	**-.00051**	**.00421**	**.00435**	**.00004**	**-.04891**
Stddev	.00215	.00108	.00203	.00129	.00070	.00007	.03888
%RSD	208.21	6.0021	400.75	30.574	16.137	155.88	79.499
#1	-.00349	.01733	.00035	.00562	.00513	-.00001	-.08125
#2	-.00014	.01921	-.00283	.00310	.00377	.00012	-.00577
#3	.00053	.01735	.00096	.00392	.00414	.00002	-.05970
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**-.00021**	**.00034**	**-.00130**	F **-.02855**	**.09256**	**-.00001**
Stddev	.00019	.00029	.00087	.00052	.03818	.11285	.00108
%RSD	135.21	139.53	256.35	40.003	133.73	121.92	12196.
#1	.00033	-.00017	.00003	-.00112	-.00187	-.03430	.00122
#2	.00015	.00006	-.00033	-.00089	-.07228	.18179	-.00043
#3	-.00005	-.00051	.00132	-.00188	-.01150	.13019	-.00082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04964**	**.00128**	**-.00009**	**-.03957**	**-.00092**	**.00133**	**.00059**
Stddev	.08575	.00365	.00020	.01448	.00047	.00474	.00362
%RSD	172.76	285.55	232.06	36.594	50.685	355.96	608.45
#1	-.01476	.00357	-.00013	-.03404	-.00146	.00407	-.00017
#2	.14698	-.00293	-.00026	-.02866	-.00064	-.00415	-.00258
#3	.01669	.00320	.00013	-.05599	-.00066	.00407	.00453
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606113005SDL Acquired: 6/28/2016 12:59:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574276-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00115**	**.00220**	**-.01924**	**-.00065**	**-.00003**	**.00117**	**-.00175**
Stddev	.00111	.00032	.00072	.00026	.00026	.00353	.00064
%RSD	96.818	14.545	3.7264	40.121	751.34	302.16	36.404
#1	.00179	.00256	-.01991	-.00045	-.00033	.00149	-.00246
#2	.00179	.00208	-.01848	-.00056	.00003	.00452	-.00122
#3	-.00014	.00195	-.01932	-.00095	.00019	-.00251	-.00158
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00037**	**.00004**	**.00006**
Stddev	.00133	.00016	.00091
%RSD	362.84	470.08	1572.9
#1	-.00190	.00017	.00111
#2	.00031	.00008	-.00050
#3	.00049	-.00015	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8934.0**	**53568.**	**2513.2**
Stddev	29.7	195.	12.2
%RSD	.33241	.36323	.48531
#1	8968.0	53408.	2517.4
#2	8913.6	53784.	2499.4
#3	8920.3	53512.	2522.7

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 13:03:35 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39336	9.9130	.39284	.49276	.98996	.04913	9.7806	.04958
Stddev	.00206	.0250	.00280	.00453	.00775	.00022	.1020	.00017
%RSD	.52294	.25249	.71387	.91843	.78274	.45192	1.0426	.33908
#1	.39555	9.8943	.39549	.49271	.98476	.04924	9.7809	.04947
#2	.39146	9.9033	.39312	.48826	.99887	.04887	9.8824	.04950
#3	.39308	9.9415	.38991	.49731	.98626	.04928	9.6784	.04977
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19911	.49357	.49698	3.9417	49.290	.99570	10.037	.49012
Stddev	.00056	.00102	.00099	.0647	.405	.00934	.166	.00587
%RSD	.28371	.20597	.19976	1.6421	.82182	.93815	1.6489	1.1977
#1	.19976	.49455	.49812	3.8892	49.011	1.0015	9.9546	.48688
#2	.19874	.49365	.49630	4.0140	49.755	1.0007	10.228	.49689
#3	.19883	.49252	.49652	3.9218	49.104	.98492	9.9293	.48657
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99761	49.317	.49464	9.8819	.49704	1.1821	.39600	4.9694
Stddev	.00067	.437	.00153	.0272	.00775	.0053	.00447	.0102
%RSD	.06677	.88655	.30937	.27532	1.5587	.45187	1.1292	.20589
#1	.99834	49.066	.49637	9.8946	.49017	1.1760	.39998	4.9688
#2	.99747	49.822	.49411	9.9004	.50544	1.1860	.39116	4.9799
#3	.99703	49.064	.49345	9.8506	.49550	1.1842	.39685	4.9594
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 13:03:35 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99893	.98924	.97761	.49219	.98422	.99536	1.0005
Stddev	.00341	.00988	.00968	.00058	.00242	.00222	.0071
%RSD	.34152	.99831	.99030	.11778	.24579	.22340	.71326
#1	.99825	.98412	.97111	.49255	.98277	.99710	1.0023
#2	1.0026	1.0006	.98873	.49250	.98289	.99612	1.0065
#3	.99591	.98298	.97298	.49152	.98702	.99285	.99261
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8808.6	52540.	2520.5
Stddev	22.0	62.	15.2
%RSD	.24977	.11782	.60493
#1	8791.2	52557.	2515.2
#2	8801.3	52592.	2508.6
#3	8833.3	52472.	2537.7

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 13:07:12 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00082**	**.01053**	**-.00036**	**.00015**	**.00380**	**.00002**	**-.02913**	**.00012**
Stddev	.00164	.00730	.00278	.00170	.00038	.00004	.01234	.00023
%RSD	200.52	69.374	782.83	1134.5	9.9196	215.17	42.362	195.21
#1	-.00230	.01885	.00098	.00123	.00338	-.00001	-.02250	.00039
#2	.00094	.00755	-.00355	.00103	.00412	.00000	-.04337	.00002
#3	-.00109	.00518	.00151	-.00181	.00390	.00006	-.02152	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**-.00040**	**-.00056**	**-.03142**	**-.08528**	**.00138**	**.09579**	**.00138**
Stddev	.00026	.00054	.00111	.03234	.05121	.00380	.04905	.00114
%RSD	288.69	133.86	197.52	102.92	60.056	275.21	51.203	82.972
#1	.00039	.00012	.00067	.00375	-.10959	-.00091	.09891	.00250
#2	-.00005	-.00095	-.00089	-.03814	-.02643	.00576	.04526	.00142
#3	-.00007	-.00038	-.00146	-.05988	-.11980	-.00071	.14320	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.00034**	**-.00082**	**.00453**	**.00067**	**.00273**	**-.00634**	**.01081**
Stddev	.00046	.03322	.00172	.00246	.00130	.00263	.00099	.00066
%RSD	1443.9	9865.4	210.49	54.266	194.38	96.401	15.628	6.1253
#1	-.00027	-.03144	-.00223	.00385	.00158	.00481	-.00722	.01120
#2	-.00032	-.00239	.00110	.00726	-.00082	.00361	-.00654	.01118
#3	.00050	.03484	-.00133	.00249	.00126	-.00023	-.00526	.01004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 13:07:12 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	-.00004	-.00011	-.00239	.00051	-.00009	.00046
Stddev	.00048	.00052	.01049	.00287	.00057	.00022	.00015
%RSD	141.44	1176.3	9514.5	120.28	111.99	260.70	33.023
#1	-.00017	.00049	-.00485	.00091	-.00011	-.00034	.00063
#2	.00078	-.00055	-.00739	-.00378	.00102	.00002	.00034
#3	.00040	-.00008	.01191	-.00430	.00063	.00007	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8877.7	53504.	2525.8
Stddev	7.8	98.	6.9
%RSD	.08803	.18354	.27296
#1	8875.6	53546.	2517.8
#2	8871.1	53575.	2530.1
#3	8886.3	53392.	2529.4

Approved: June 29, 2016

Sample Name: L1606106804 Acquired: 6/28/2016 13:11:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00083**	**.01493**	**-.00423**	**.00176**	**.03015**	**-.00003**	**3.6405**
Stddev	.00270	.00745	.00413	.00110	.00128	.00004	.0379
%RSD	326.75	49.870	97.505	62.290	4.2618	148.88	1.0420
#1	.00091	.00665	-.00573	.00301	.03092	-.00007	3.6017
#2	.00055	.01707	.00043	.00096	.02867	.00002	3.6775
#3	-.00393	.02109	-.00740	.00132	.03086	-.00003	3.6422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00021**	**.00015**	**.00129**	**-.00149**	F **-.02186**	**.05820**	**.00564**
Stddev	.00033	.00012	.00022	.00079	.02615	.09648	.00301
%RSD	152.41	81.233	16.848	53.239	119.66	165.77	53.430
#1	.00056	.00029	.00112	-.00106	-.02018	.07061	.00912
#2	.00018	.00006	.00122	-.00240	.00342	-.04388	.00405
#3	-.00009	.00011	.00154	-.00100	-.04881	.14787	.00375
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.7402**	**.00088**	**-.00022**	**13.379**	**-.00112**	**.00621**	**-.00255**
Stddev	.0825	.00130	.00029	.125	.00063	.00226	.00432
%RSD	3.0123	147.46	130.54	.93109	55.815	36.397	169.94
#1	2.8157	.00026	.00011	13.280	-.00075	.00378	-.00737
#2	2.6521	.00001	-.00042	13.519	-.00185	.00825	.00097
#3	2.7529	.00238	-.00035	13.339	-.00077	.00660	-.00123
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606106804 Acquired: 6/28/2016 13:11:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.00140	.80989	.00026	.07823	.00230	-.00078
Stddev	.00354	.00473	.00437	.00092	.00095	.00620	.00164
%RSD	688.84	338.79	.53928	348.19	1.2119	269.39	209.76
#1	.00452	.00191	.80963	.00121	.07773	.00423	-.00129
#2	-.00219	-.00357	.80566	.00020	.07932	.00731	-.00210
#3	-.00078	.00585	.81439	-.00062	.07763	-.00464	.00105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00017	.00062	.00008
Stddev	.00072	.00005	.00089
%RSD	415.57	7.9078	1128.7
#1	.00052	.00060	-.00014
#2	-.00012	.00059	-.00068
#3	-.00092	.00068	.00106
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8814.1	52984.	2489.1
Stddev	14.5	171.	14.5
%RSD	.16454	.32216	.58377
#1	8813.1	52905.	2486.3
#2	8829.0	52867.	2476.2
#3	8800.1	53180.	2504.9

Approved: June 29, 2016

Sample Name: L1606106805 Acquired: 6/28/2016 13:15:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.01476	-.00335	.00279	.03196	.00016	3.6115	.00006
Stddev	.00013	.01355	.00295	.00275	.00100	.00003	.0684	.00038
%RSD	26.179	91.766	87.876	98.584	3.1228	20.664	1.8938	648.50
#1	.00036	.00536	-.00601	.00187	.03088	.00015	3.5339	-.00033
#2	.00061	.03030	-.00387	.00588	.03216	.00014	3.6376	.00008
#3	.00055	.00864	-.00018	.00062	.03285	.00020	3.6629	.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00124	-.00037	.00663	-.09688	.00565	2.6653	-.00201
Stddev	.00033	.00034	.00106	.05088	.15873	.00409	.0912	.00124
%RSD	108.45	27.910	282.74	767.75	163.84	72.409	3.4234	61.642
#1	.00054	.00159	.00005	.06285	.02031	.00145	2.7282	-.00343
#2	.00045	.00122	.00040	-.03623	-.27753	.00963	2.5606	-.00143
#3	-.00007	.00090	-.00158	-.00674	-.03343	.00587	2.7071	-.00117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	13.446	-.00011	.00621	-.00083	.00412	-.00378	.79854
Stddev	.00033	.084	.00067	.00374	.00294	.00421	.00411	.02914
%RSD	125.20	.62581	624.45	60.274	353.08	102.24	108.59	3.6487
#1	-.00051	13.385	.00031	.00824	-.00270	.00007	-.00672	.81403
#2	-.00038	13.412	.00025	.00851	.00255	.00381	.00091	.81667
#3	.00011	13.542	-.00087	.00189	-.00235	.00848	-.00555	.76493
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106805 Acquired: 6/28/2016 13:15:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00114**	**.07802**	**-.01175**	**-.00160**	**-.00071**	**.00064**	**-.00064**
Stddev	.00080	.00057	.00450	.00481	.00018	.00029	.00100
%RSD	70.173	.73637	38.340	300.68	25.129	45.592	156.76
#1	.00154	.07777	-.01564	-.00402	-.00054	.00032	-.00059
#2	.00022	.07761	-.01279	-.00472	-.00068	.00071	-.00166
#3	.00167	.07867	-.00682	.00394	-.00090	.00089	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8812.1**	**52840.**	**2480.2**
Stddev	18.2	110.	13.2
%RSD	.20629	.20796	.53284
#1	8829.9	52966.	2477.2
#2	8793.5	52795.	2494.7
#3	8813.1	52760.	2468.8

Approved: June 29, 2016

Sample Name: L1606113005PS Acquired: 6/28/2016 13:18:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574276-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21527**	**5.5207**	**.22885**	**1.0733**	**.53756**	**.02675**	**5.3843**	**.02798**
Stddev	.00177	.0241	.00604	.0068	.00866	.00017	.1256	.00062
%RSD	.82163	.43648	2.6407	.63358	1.6107	.62031	2.3326	2.2056
#1	.21494	5.4931	.22193	1.0693	.52821	.02656	5.2417	.02735
#2	.21370	5.5373	.23308	1.0694	.54530	.02683	5.4785	.02800
#3	.21719	5.5318	.23155	1.0812	.53918	.02687	5.4328	.02858
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.11240**	**.26779**	**.28467**	**2.1409**	**26.588**	**.54010**	**5.6370**	**.26559**
Stddev	.00134	.00204	.00370	.0435	.354	.00874	.0613	.00133
%RSD	1.1923	.76133	1.2984	2.0304	1.3318	1.6179	1.0880	.50041
#1	.11114	.26666	.28128	2.0918	26.179	.53071	5.5700	.26421
#2	.11225	.27014	.28413	2.1745	26.784	.54800	5.6903	.26569
#3	.11381	.26657	.28861	2.1565	26.800	.54160	5.6507	.26686
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.55583**	**27.010**	**.28072**	**5.5936**	**.27785**	**.67635**	**.23788**	**2.6476**
Stddev	.00678	.332	.00179	.0702	.00294	.01038	.00437	.0376
%RSD	1.2200	1.2287	.63745	1.2556	1.0594	1.5353	1.8390	1.4181
#1	.54951	26.631	.27867	5.5246	.27615	.66586	.23509	2.6120
#2	.55500	27.250	.28160	5.5913	.27615	.67657	.23563	2.6439
#3	.56299	27.148	.28190	5.6650	.28125	.68663	.24292	2.6868
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606113005PS Acquired: 6/28/2016 13:18:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574276-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.55961**	**.54418**	**.52610**	**.27731**	**.53391**	**.57796**	**.00002**
Stddev	.00665	.00642	.00644	.00532	.00205	.00443	.00061
%RSD	1.1882	1.1791	1.2246	1.9177	.38439	.76707	3254.2
#1	.55276	.53680	.51967	.27196	.53154	.57285	.00055
#2	.56005	.54842	.52608	.27737	.53509	.58036	-.00064
#3	.56603	.54733	.53256	.28260	.53511	.58068	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8721.8**	**52045.**	**2470.1**
Stddev	12.9	159.	19.9
%RSD	.14792	.30493	.80385
#1	8712.6	52146.	2491.7
#2	8716.2	51863.	2452.6
#3	8736.5	52127.	2466.0

Approved: June 29, 2016

Sample Name: L1606106811 Acquired: 6/28/2016 13:22:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	1.4251	.00175	.00444	.02966	.00019	.75379	.00014
Stddev	.00254	.0230	.00237	.00185	.00178	.00007	.01953	.00030
%RSD	372.28	1.6113	134.90	41.704	5.9999	38.159	2.5915	208.89
#1	.00086	1.4176	.00360	.00231	.03158	.00013	.73878	.00028
#2	.00313	1.4068	.00258	.00562	.02807	.00027	.77588	-.00020
#3	-.00194	1.4508	-.00091	.00540	.02931	.00016	.74672	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00092	.00335	.00482	1.9991	.20881	.00441	.50207	.04768
Stddev	.00034	.00085	.00089	.0268	.14239	.00363	.02928	.00189
%RSD	37.329	25.343	18.412	1.3414	68.193	82.227	5.8325	3.9582
#1	.00066	.00431	.00413	2.0299	.05656	.00851	.48210	.04617
#2	.00080	.00306	.00583	1.9868	.23117	.00309	.48842	.04709
#3	.00131	.00269	.00451	1.9806	.33870	.00163	.53568	.04980
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	.82682	.00345	.02528	.00114	.00172	.00203	1.9469
Stddev	.00016	.02518	.00063	.00984	.00435	.00064	.00703	.0392
%RSD	106.86	3.0448	18.143	38.938	380.81	36.954	346.34	2.0118
#1	-.00021	.83413	.00274	.02291	.00446	.00124	-.00577	1.9065
#2	.00003	.84753	.00372	.03609	.00275	.00148	.00399	1.9496
#3	-.00028	.79880	.00390	.01684	-.00378	.00244	.00788	1.9846
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106811 Acquired: 6/28/2016 13:22:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00043**	**.01264**	**.01238**	**-.00117**	**.00334**	**.01101**	**-.00003**
Stddev	.00138	.00046	.00941	.00358	.00072	.00018	.00085
%RSD	320.63	3.6366	75.984	305.85	21.543	1.6013	2670.1
#1	-.00017	.01307	.00337	-.00435	.00366	.01090	.00070
#2	-.00193	.01271	.02213	.00271	.00383	.01092	-.00097
#3	.00080	.01215	.01164	-.00188	.00251	.01122	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8900.9**	**53614.**	**2515.0**
Stddev	10.3	101.	14.4
%RSD	.11598	.18784	.57294
#1	8911.7	53726.	2520.3
#2	8899.7	53531.	2498.6
#3	8891.2	53585.	2525.9

Approved: June 29, 2016

Sample Name: L1606106813 Acquired: 6/28/2016 13:26:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573869-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00070**	**.08929**	**-.00063**	**.00006**	**.01168**	**.00007**	**.52951**
Stddev	.00235	.00667	.00336	.00302	.00069	.00007	.04393
%RSD	336.83	7.4648	536.52	4814.6	5.8717	106.69	8.2961
#1	.00033	.09297	.00116	-.00324	.01236	-.00001	.48000
#2	-.00338	.08159	.00146	.00268	.01099	.00008	.56380
#3	.00097	.09330	-.00450	.00075	.01168	.00014	.54475
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00024**	**.00014**	**-.00032**	**-.00089**	**.50487**	**.06610**	**.00543**
Stddev	.00013	.00013	.00098	.00076	.03701	.02572	.00316
%RSD	54.751	94.669	310.30	85.305	7.3296	38.914	58.115
#1	.00037	-.00001	-.00100	-.00177	.54463	.05677	.00370
#2	.00011	.00024	.00081	-.00040	.47144	.04634	.00352
#3	.00023	.00017	-.00075	-.00051	.49854	.09518	.00907
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.24782**	**.01542**	**-.00030**	**9.9493**	**.00196**	**.00299**	**-.00405**
Stddev	.06260	.00320	.00016	.0254	.00076	.00585	.00006
%RSD	25.260	20.782	55.007	.25544	38.518	195.64	1.5814
#1	.18176	.01748	-.00035	9.9649	.00283	-.00361	-.00412
#2	.30627	.01705	-.00011	9.9630	.00152	.00506	-.00399
#3	.25541	.01173	-.00043	9.9200	.00154	.00753	-.00403
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606106813 Acquired: 6/28/2016 13:26:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573869-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00147	F -.01043	.44265	.00053	.00826	.00460	-.00109
Stddev	.00413	.00452	.00364	.00082	.00054	.00453	.00264
%RSD	281.76	43.304	.82158	152.78	6.5812	98.520	242.23
#1	-.00330	-.01335	.43851	-.00016	.00889	.00897	.00195
#2	.00406	-.01271	.44534	.00033	.00796	.00490	-.00281
#3	.00364	-.00523	.44409	.00143	.00793	-.00007	-.00241
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		90.000					
Low Limit		-.01000					

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00066	.01438	-.00014
Stddev	.00142	.00018	.00049
%RSD	215.70	1.2745	349.23
#1	.00072	.01420	-.00057
#2	.00204	.01438	.00039
#3	-.00079	.01457	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8894.1	53345.	2527.6
Stddev	11.3	192.	9.0
%RSD	.12726	.35929	.35499
#1	8903.4	53287.	2524.9
#2	8897.4	53190.	2520.3
#3	8881.5	53560.	2537.6

Approved: June 29, 2016

Sample Name: L1606106815S Acquired: 6/28/2016 13:30:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573869-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01034	.48324	.01210	.05173	.03631	.00139	.81008	.00131
Stddev	.00168	.00913	.00454	.00211	.00077	.00002	.05542	.00034
%RSD	16.230	1.8901	37.543	4.0701	2.1243	1.7135	6.8408	26.091
#1	.00951	.48142	.01272	.04933	.03558	.00136	.84100	.00095
#2	.01227	.47515	.00728	.05327	.03711	.00140	.74610	.00163
#3	.00924	.49315	.01631	.05260	.03624	.00141	.84313	.00134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00589	.01431	.01389	.60245	1.2703	.02598	.65226	.02740
Stddev	.00010	.00080	.00059	.02997	.1236	.00403	.12231	.00108
%RSD	1.6235	5.5726	4.2518	4.9754	9.7328	15.510	18.751	3.9595
#1	.00594	.01410	.01335	.62519	1.3214	.03061	.51621	.02751
#2	.00578	.01519	.01452	.61367	1.3602	.02401	.68749	.02626
#3	.00595	.01364	.01381	.56848	1.1293	.02331	.75309	.02842
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02529	11.232	.01369	.25676	.01408	.03296	.00670	.76007
Stddev	.00074	.094	.00032	.00264	.00187	.00446	.00542	.01605
%RSD	2.9338	.83344	2.3164	1.0266	13.279	13.535	80.861	2.1112
#1	.02593	11.212	.01335	.25960	.01558	.03663	.00871	.76848
#2	.02547	11.334	.01397	.25627	.01467	.03425	.00057	.77017
#3	.02448	11.150	.01377	.25440	.01199	.02799	.01083	.74157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106815S Acquired: 6/28/2016 13:30:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573869-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02563**	**.03388**	**.01773**	**.01091**	**.02573**	**.03942**	**-.00028**
Stddev	.00095	.00028	.00659	.00373	.00028	.00077	.00015
%RSD	3.7070	.81921	37.144	34.158	1.0704	1.9567	52.633
#1	.02654	.03356	.02444	.01329	.02542	.03966	-.00019
#2	.02571	.03399	.01750	.01283	.02582	.04004	-.00020
#3	.02465	.03408	.01127	.00662	.02595	.03856	-.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8867.8**	**53225.**	**2534.6**
Stddev	20.8	148.	12.1
%RSD	.23412	.27882	.47921
#1	8887.9	53363.	2539.7
#2	8869.1	53068.	2520.7
#3	8846.4	53244.	2543.4

Approved: June 29, 2016

Sample Name: L1606106817SD Acquired: 6/28/2016 13:34:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573869-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00954	.55625	.00901	.04561	.03585	.00128	.75307	.00155
Stddev	.00085	.01106	.00306	.00213	.00056	.00014	.01847	.00025
%RSD	8.9440	1.9883	33.996	4.6764	1.5586	11.128	2.4524	16.149
#1	.00901	.54454	.01081	.04442	.03526	.00122	.75451	.00184
#2	.01052	.55769	.01075	.04434	.03593	.00144	.73392	.00139
#3	.00907	.56652	.00547	.04808	.03636	.00118	.77077	.00142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00549	.01478	.01221	.77846	1.4049	.02129	.61217	.02711
Stddev	.00032	.00163	.00076	.01528	.1399	.00335	.01573	.00179
%RSD	5.8665	11.047	6.2537	1.9633	9.9619	15.732	2.5687	6.5920
#1	.00530	.01663	.01247	.78322	1.5650	.02299	.61554	.02504
#2	.00586	.01356	.01135	.79080	1.3061	.02345	.62594	.02816
#3	.00531	.01413	.01280	.76136	1.3434	.01743	.59504	.02812
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02377	10.556	.01424	.23784	.01238	.03034	.00363	.87740
Stddev	.00044	.042	.00056	.00722	.00117	.00374	.01030	.00313
%RSD	1.8350	.39963	3.9141	3.0340	9.4640	12.322	283.48	.35703
#1	.02350	10.603	.01488	.24458	.01183	.02602	.00965	.87786
#2	.02427	10.521	.01398	.23870	.01159	.03248	-.00826	.88027
#3	.02354	10.545	.01386	.23023	.01373	.03252	.00951	.87406
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106817SD Acquired: 6/28/2016 13:34:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573869-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02422**	**.03180**	**.02657**	**.00958**	**.02469**	**.04759**	**-.00024**
Stddev	.00037	.00023	.00522	.00222	.00019	.00022	.00034
%RSD	1.5338	.72534	19.663	23.212	.77692	.46605	142.47
#1	.02456	.03201	.02173	.01169	.02478	.04734	.00013
#2	.02383	.03182	.02587	.00726	.02483	.04775	-.00054
#3	.02427	.03156	.03211	.00977	.02447	.04768	-.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8832.1**	**53126.**	**2512.3**
Stddev	9.4	250.	6.6
%RSD	.10606	.47116	.26253
#1	8823.5	53414.	2505.6
#2	8830.8	53002.	2518.8
#3	8842.1	52962.	2512.4

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 13:38:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39992	10.123	.40264	.50115	1.0119	.05004	9.9930	.05061
Stddev	.00156	.020	.00072	.00146	.0056	.00004	.0193	.00069
%RSD	.38920	.19439	.17777	.29040	.55589	.08201	.19290	1.3554
#1	.40151	10.135	.40191	.50084	1.0167	.05004	10.012	.05093
#2	.39840	10.100	.40268	.50273	1.0057	.05009	9.9739	.05107
#3	.39986	10.133	.40334	.49987	1.0133	.05000	9.9927	.04982
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20347	.50495	.51127	4.0051	50.272	1.0063	10.156	.50245
Stddev	.00106	.00087	.00229	.0192	.057	.0069	.244	.00203
%RSD	.51854	.17321	.44767	.47891	.11298	.68238	2.4046	.40338
#1	.20248	.50414	.51231	4.0230	50.215	1.0132	9.9480	.50011
#2	.20458	.50482	.51284	4.0074	50.329	1.0062	10.425	.50357
#3	.20337	.50588	.50864	3.9849	50.271	.99951	10.095	.50368
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0193	50.359	.50700	10.109	.50281	1.2148	.40917	5.0738
Stddev	.0035	.068	.00168	.015	.00071	.0017	.00995	.0074
%RSD	.34543	.13420	.33213	.14998	.14070	.14140	2.4316	.14602
#1	1.0203	50.417	.50661	10.106	.50215	1.2133	.40239	5.0667
#2	1.0222	50.285	.50884	10.125	.50356	1.2145	.42059	5.0815
#3	1.0154	50.374	.50554	10.095	.50271	1.2167	.40452	5.0731
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 13:38:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0180**	**1.0116**	**1.0030**	**.50319**	**1.0036**	**1.0198**	**1.0177**
Stddev	.0017	.0008	.0100	.00318	.0045	.0016	.0066
%RSD	.16741	.07569	.99288	.63294	.45095	.15795	.65127
#1	1.0172	1.0125	1.0037	.50161	.99881	1.0184	1.0253
#2	1.0200	1.0110	1.0126	.50686	1.0078	1.0216	1.0148
#3	1.0168	1.0113	.99273	.50111	1.0043	1.0194	1.0130
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8653.4**	**51777.**	**2497.9**
Stddev	13.9	203.	9.7
%RSD	.16072	.39139	.38989
#1	8647.5	52010.	2489.4
#2	8643.5	51649.	2495.7
#3	8669.3	51671.	2508.6

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 13:41:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00104	.00832	.00025	.00317	.00518	.00001	-.06282	-.00014
Stddev	.00113	.00232	.00379	.00237	.00098	.00007	.02008	.00018
%RSD	108.04	27.826	1523.1	74.803	18.875	1321.3	31.972	135.63
#1	-.00233	.00655	-.00397	.00515	.00475	.00008	-.08510	-.00031
#2	-.00027	.00747	.00339	.00383	.00450	-.00000	-.05722	.00006
#3	-.00052	.01094	.00133	.00054	.00631	-.00006	-.04612	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00005	.00000	.00765	.00800	.00105	.10373	-.00086
Stddev	.00041	.00054	.00032	.02751	.27697	.00210	.06003	.00167
%RSD	129.99	1044.3	24142.	359.43	3464.1	200.86	57.867	194.61
#1	-.00012	.00038	.00002	-.00198	-.22735	.00161	.13805	.00035
#2	.00037	-.00057	-.00033	-.01374	.31321	-.00128	.03442	-.00016
#3	.00069	.00035	.00032	.03868	-.06187	.00280	.13873	-.00277
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	-.01774	-.00085	.00022	-.00383	.00347	-.00358	.01133
Stddev	.00023	.00564	.00091	.00322	.00198	.00075	.00308	.00240
%RSD	290.90	31.796	106.50	1451.8	51.642	21.670	86.137	21.191
#1	-.00018	-.02016	.00006	.00100	-.00507	.00310	-.00378	.01213
#2	.00018	-.01129	-.00176	.00298	-.00155	.00434	-.00040	.00863
#3	.00023	-.02177	-.00087	-.00331	-.00487	.00298	-.00656	.01323
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 13:41:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	-.00020	-.00686	-.00117	-.00035	-.00007	-.00004
Stddev	.00093	.00056	.00673	.00291	.00054	.00018	.00058
%RSD	141.43	280.92	98.219	248.99	152.27	240.76	1409.3
#1	-.00040	-.00015	-.00234	.00198	.00011	-.00028	.00057
#2	.00138	-.00079	-.01460	-.00377	-.00094	.00005	-.00012
#3	.00100	.00034	-.00363	-.00172	-.00023	.00001	-.00057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8739.5	52609.	2487.4
Stddev	5.9	231.	25.7
%RSD	.06776	.43844	1.0317
#1	8738.4	52562.	2473.5
#2	8745.9	52406.	2471.8
#3	8734.2	52860.	2517.0

Approved: June 29, 2016

Sample Name: LLCCV Acquired: 6/28/2016 13:45:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00736	.19083	.00295	.08111	.01169	.00173	.42567	.00083
Stddev	.00215	.00749	.00324	.00095	.00258	.00011	.07147	.00024
%RSD	29.248	3.9252	110.04	1.1726	22.036	6.3725	16.791	28.962
#1	.00643	.18891	.00590	.08220	.01078	.00161	.36982	.00072
#2	.00982	.19909	.00347	.08061	.01460	.00176	.50622	.00066
#3	.00583	.18448	-.00053	.08050	.00970	.00182	.40099	.00110
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00405	.00421	.00347	.06656	.92169	.09021	.49979	.00778
Stddev	.00018	.00133	.00080	.01156	.07020	.00767	.10689	.00166
%RSD	4.4368	31.559	23.151	17.365	7.6164	8.4978	21.388	21.292
#1	.00387	.00286	.00290	.06880	.84213	.08382	.50249	.00852
#2	.00423	.00426	.00439	.05405	.97492	.09871	.60531	.00893
#3	.00404	.00551	.00313	.07683	.94800	.08810	.39157	.00588
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00824	.40026	.01713	.79167	.00734	.08280	.01420	.83284
Stddev	.00020	.05939	.00016	.00289	.00216	.00238	.00347	.00433
%RSD	2.4033	14.837	.95090	.36532	29.499	2.8801	24.464	.52024
#1	.00846	.37436	.01732	.79217	.00972	.08006	.01171	.83783
#2	.00811	.46821	.01704	.79429	.00549	.08442	.01272	.83000
#3	.00813	.35823	.01704	.78857	.00680	.08392	.01817	.83070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LLCCV Acquired: 6/28/2016 13:45:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41311**	**.04388**	**.02180**	**.15222**	**.00680**	**.01756**	**.04365**
Stddev	.00284	.00364	.00295	.00341	.00126	.00047	.00236
%RSD	.68722	8.3006	13.524	2.2432	18.554	2.6678	5.4105
#1	.41479	.04175	.01857	.15193	.00823	.01804	.04226
#2	.41472	.04809	.02246	.14896	.00635	.01755	.04638
#3	.40984	.04181	.02436	.15577	.00583	.01710	.04231
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8968.0**	**53610.**	**2478.4**
Stddev	17.5	218.	149.1
%RSD	.19522	.40702	6.0172
#1	8968.4	53836.	2571.5
#2	8985.3	53400.	2306.4
#3	8950.3	53594.	2557.4

Approved: June 29, 2016

Sample Name: PBW FB Acquired: 6/28/2016 13:49:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00087**	**.02038**	**.00047**	**-.00233**	**.00447**	**.00003**	**-.00809**
Stddev	.00077	.01026	.00092	.00070	.00161	.00010	.01414
%RSD	87.875	50.329	198.12	30.080	36.066	351.83	174.83
#1	.00102	.02586	.00110	-.00223	.00426	.00009	.00526
#2	.00004	.02673	.00089	-.00307	.00619	.00008	-.00661
#3	.00155	.00855	-.00059	-.00168	.00298	-.00009	-.02291
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**-.00013**	**-.00021**	**-.00020**	F **-.02980**	**-.06122**	**-.00080**
Stddev	.00011	.00037	.00090	.00203	.05319	.07805	.00227
%RSD	216.97	283.62	430.30	1027.0	178.53	127.49	282.96
#1	.00015	-.00011	-.00112	-.00202	-.00231	-.14344	-.00181
#2	-.00007	-.00051	-.00019	-.00056	.00403	-.05207	.00180
#3	.00007	.00023	.00068	.00199	-.09111	.01185	-.00240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05348**	**.00154**	**-.00031**	**-.01531**	**-.00101**	**.00072**	F **-.00564**
Stddev	.06861	.00047	.00024	.04577	.00073	.00883	.00089
%RSD	128.29	30.648	76.777	298.97	72.111	1223.2	15.852
#1	-.01835	.00108	-.00025	-.05048	-.00157	.01081	-.00509
#2	.06045	.00202	-.00011	-.03189	-.00019	-.00559	-.00667
#3	.11835	.00153	-.00058	.03644	-.00128	-.00306	-.00516
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							225.00
Low Limit							-.00500

Approved: June 29, 2016

Sample Name: PBW FB Acquired: 6/28/2016 13:49:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00065**	**-.00023**	**-.01671**	**.00024**	**-.00003**	**.00346**	**-.00227**
Stddev	.00348	.00224	.00217	.00048	.00014	.00679	.00206
%RSD	537.23	965.80	12.999	203.88	544.08	196.40	91.144
#1	-.00120	-.00236	-.01904	.00079	-.00017	.00308	-.00056
#2	.00308	.00211	-.01635	-.00008	.00010	.01042	-.00456
#3	-.00382	-.00045	-.01474	-.00000	-.00000	-.00313	-.00167
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00131**	**-.00013**	**-.00037**
Stddev	.00074	.00032	.00054
%RSD	56.570	254.87	146.28
#1	-.00205	.00008	-.00061
#2	-.00057	-.00049	.00025
#3	-.00132	.00003	-.00075
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8902.6**	**52766.**	**2457.8**
Stddev	27.6	121.	33.4
%RSD	.30966	.22861	1.3598
#1	8874.6	52650.	2470.0
#2	8929.8	52756.	2420.0
#3	8903.5	52891.	2483.4

Approved: June 29, 2016

Sample Name: LCSW FB Acquired: 6/28/2016 13:53:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19900**	**5.0246**	**.20339**	**.97761**	**.50424**	**.02444**	**5.1220**	**.02524**
Stddev	.00408	.0181	.00015	.00343	.00078	.00018	.0265	.00018
%RSD	2.0517	.36103	.07344	.35073	.15497	.73251	.51681	.72858
#1	.19842	5.0082	.20346	.97720	.50470	.02423	5.1241	.02527
#2	.20334	5.0441	.20349	.98122	.50468	.02453	5.0945	.02541
#3	.19524	5.0216	.20322	.97440	.50334	.02455	5.1473	.02505
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10172**	**.25359**	**.25466**	**1.9566**	**25.129**	**.51169**	**5.0823**	**.24884**
Stddev	.00117	.00149	.00174	.0183	.104	.00398	.0798	.00105
%RSD	1.1545	.58953	.68227	.93432	.41251	.77852	1.5695	.42348
#1	.10256	.25489	.25542	1.9763	25.248	.50761	5.1110	.24940
#2	.10222	.25196	.25590	1.9532	25.076	.51190	4.9922	.24950
#3	.10038	.25391	.25267	1.9402	25.063	.51556	5.1438	.24762
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51178**	**25.253**	**.25676**	**4.9088**	**.25422**	**.59597**	**.18860**	**2.4342**
Stddev	.00524	.095	.00268	.0320	.00217	.01042	.00956	.0116
%RSD	1.0231	.37434	1.0420	.65246	.85430	1.7492	5.0693	.47799
#1	.51545	25.322	.25712	4.9122	.25650	.60794	.19825	2.4390
#2	.51410	25.145	.25924	4.9390	.25400	.59103	.17913	2.4426
#3	.50578	25.293	.25392	4.8752	.25217	.58893	.18842	2.4209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LCSW FB Acquired: 6/28/2016 13:53:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50998	.51127	.49771	.25349	.50193	.50932	.00039
Stddev	.00635	.00050	.01112	.00112	.00034	.00540	.00060
%RSD	1.2450	.09829	2.2341	.44241	.06687	1.0610	152.55
#1	.51302	.51172	.51004	.25380	.50215	.51193	.00030
#2	.51424	.51073	.49468	.25443	.50209	.51292	.00103
#3	.50268	.51135	.48843	.25225	.50154	.50310	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9046.0	54533.	2638.4
Stddev	14.1	223.	12.5
%RSD	.15595	.40924	.47439
#1	9051.7	54651.	2624.5
#2	9030.0	54275.	2641.9
#3	9056.5	54672.	2648.8

Approved: June 29, 2016

Sample Name: L1606114201 Acquired: 6/28/2016 13:57:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	.05867	-.00226	.01052	.07923	.00004	2.2270	.00045
Stddev	.00191	.00845	.00118	.00102	.00159	.00009	.0352	.00028
%RSD	281.54	14.410	52.249	9.6741	2.0032	236.41	1.5789	62.236
#1	-.00129	.05427	-.00108	.01155	.07914	.00005	2.1919	.00032
#2	.00253	.06842	-.00345	.01051	.07769	.00013	2.2622	.00026
#3	.00079	.05332	-.00227	.00951	.08086	-.00006	2.2269	.00076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00611	.00086	.00022	4.6017	1.0549	.01036	1.7153	.22886
Stddev	.00021	.00091	.00108	.0366	.0934	.00385	.1156	.00109
%RSD	3.3884	105.55	488.55	.79525	8.8568	37.198	6.7381	.47751
#1	.00594	.00065	-.00085	4.5708	1.1252	.00825	1.8224	.23005
#2	.00634	.00008	.00131	4.5921	.94888	.01481	1.7306	.22791
#3	.00605	.00187	.00020	4.6421	1.0906	.00803	1.5928	.22861
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00067	19.649	.00742	.06001	.00256	.00190	-.00560	15.630
Stddev	.00025	.047	.00125	.00498	.00162	.00400	.00341	.024
%RSD	36.725	.24068	16.819	8.3002	62.980	210.77	60.813	.15501
#1	.00039	19.680	.00649	.06119	.00330	-.00159	-.00593	15.642
#2	.00086	19.594	.00884	.05455	.00071	.00627	-.00204	15.602
#3	.00077	19.673	.00692	.06430	.00368	.00102	-.00884	15.646
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606114201 Acquired: 6/28/2016 13:57:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.04045	.00831	-.00411	-.00073	.00996	-.00035
Stddev	.00045	.00014	.00359	.00080	.00037	.00006	.00052
%RSD	311.96	.33991	43.132	19.576	51.383	.64259	148.00
#1	.00050	.04035	.00782	-.00352	-.00043	.00996	.00021
#2	-.00036	.04061	.01212	-.00378	-.00114	.01002	-.00081
#3	.00029	.04040	.00500	-.00502	-.00061	.00990	-.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9162.3	55345.	2645.7
Stddev	10.7	90.	11.1
%RSD	.11628	.16311	.41823
#1	9165.6	55439.	2634.7
#2	9171.0	55259.	2656.9
#3	9150.4	55338.	2645.6

Approved: June 29, 2016

Sample Name: L1606114203 Acquired: 6/28/2016 14:01:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	.27324	.00028	.01119	.05232	.00009	6.9241	.00031
Stddev	.00101	.00614	.00251	.00136	.00133	.00010	.0879	.00018
%RSD	266.07	2.2463	905.28	12.143	2.5487	105.81	1.2689	57.110
#1	-.00028	.27239	.00087	.01128	.05314	.00018	6.9787	.00052
#2	-.00013	.27976	.00243	.00979	.05078	-.00001	6.8228	.00022
#3	.00154	.26758	-.00247	.01250	.05303	.00011	6.9709	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00078	.00109	.00195	3.8878	1.4786	.00534	1.2697	.19674
Stddev	.00032	.00129	.00126	.0500	.0652	.00341	.0789	.00271
%RSD	41.154	117.52	64.945	1.2853	4.4076	63.859	6.2160	1.3769
#1	.00045	.00238	.00086	3.9201	1.4084	.00927	1.1830	.19458
#2	.00080	-.00019	.00334	3.8303	1.4901	.00355	1.2887	.19586
#3	.00109	.00110	.00164	3.9131	1.5372	.00319	1.3374	.19978
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	4.0555	.00376	.09011	.00040	.00452	.00674	5.1074
Stddev	.00026	.0801	.00092	.00618	.00366	.00529	.00378	.0076
%RSD	43.606	1.9741	24.497	6.8539	912.10	116.99	56.046	.14975
#1	.00088	4.1283	.00348	.09257	-.00281	.00886	.01094	5.1157
#2	.00053	3.9698	.00480	.08308	-.00037	-.00137	.00566	5.1006
#3	.00037	4.0683	.00302	.09467	.00438	.00607	.00362	5.1060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606114203 Acquired: 6/28/2016 14:01:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.05564	.00818	-.00403	.00143	.00405	-.00066
Stddev	.00051	.00078	.00097	.00126	.00045	.00015	.00091
%RSD	99.768	1.3964	11.885	31.161	31.303	3.6828	139.20
#1	.00041	.05588	.00755	-.00404	.00187	.00404	-.00037
#2	.00106	.05477	.00930	-.00277	.00145	.00420	.00008
#3	.00006	.05627	.00769	-.00529	.00097	.00390	-.00168
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9201.0	55505.	2656.0
Stddev	2.7	216.	28.0
%RSD	.02917	.38837	1.0526
#1	9204.0	55434.	2638.8
#2	9200.5	55334.	2688.3
#3	9198.7	55747.	2641.0

Approved: June 29, 2016

Sample Name: L1606114205 Acquired: 6/28/2016 14:05:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	.29510	-.00399	.00877	.05188	-.00004	6.7570	.00011
Stddev	.00067	.00175	.00127	.00194	.00134	.00008	.0441	.00013
%RSD	252.45	.59391	31.797	22.120	2.5800	189.17	.65263	119.13
#1	.00002	.29353	-.00540	.01064	.05066	-.00012	6.7835	.00001
#2	.00022	.29699	-.00295	.00677	.05331	-.00003	6.7815	.00005
#3	-.00104	.29478	-.00362	.00890	.05166	.00003	6.7061	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	.00134	.00069	3.9328	1.3894	.00419	1.1700	.19925
Stddev	.00032	.00079	.00081	.0387	.1354	.00230	.0806	.00367
%RSD	36.699	59.423	117.74	.98304	9.7482	54.930	6.8871	1.8408
#1	.00124	.00156	.00082	3.9719	1.3019	.00307	1.2435	.19866
#2	.00081	.00045	-.00018	3.9318	1.5454	.00266	1.0838	.19590
#3	.00060	.00199	.00142	3.8946	1.3208	.00683	1.1826	.20317
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00083	3.8918	.00306	.08988	-.00133	.00008	.00151	5.0348
Stddev	.00026	.0463	.00151	.00143	.00236	.00278	.01136	.0439
%RSD	31.031	1.1889	49.164	1.5872	177.57	3618.7	749.90	.87231
#1	.00109	3.8662	.00383	.09149	.00045	.00019	-.00515	5.0503
#2	.00058	3.8641	.00133	.08876	-.00400	.00280	.01463	5.0688
#3	.00081	3.9452	.00403	.08939	-.00043	-.00276	-.00494	4.9852
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606114205 Acquired: 6/28/2016 14:05:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	.05416	.00822	-.00288	.00086	.00400	.00007
Stddev	.00016	.00040	.00287	.00338	.00029	.00007	.00049
%RSD	21.082	.73417	34.929	117.45	33.623	1.7284	732.53
#1	.00096	.05384	.01137	.00094	.00052	.00392	.00060
#2	.00065	.05403	.00754	-.00410	.00104	.00406	-.00038
#3	.00071	.05460	.00574	-.00548	.00100	.00401	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9201.1	55778.	2648.2
Stddev	37.4	65.	11.1
%RSD	.40596	.11714	.41951
#1	9204.5	55810.	2639.2
#2	9236.6	55821.	2660.6
#3	9162.1	55702.	2644.7

Approved: June 29, 2016

Sample Name: L1606117701 Acquired: 6/28/2016 14:08:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.02633	.00391	.09124	.00216	-.00001	.04445	.00021
Stddev	.00357	.00399	.00273	.00180	.00064	.00008	.02994	.00017
%RSD	633.00	15.134	69.874	1.9731	29.489	753.28	67.370	80.852
#1	.00209	.02913	.00092	.08925	.00161	-.00006	.02918	.00014
#2	-.00351	.02177	.00451	.09276	.00286	.00008	.02521	.00041
#3	.00311	.02809	.00628	.09171	.00201	-.00005	.07895	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.00061	.00088	-.00762	.14322	.00304	.00749	-.00130
Stddev	.00014	.00092	.00010	.01515	.07780	.00086	.11866	.00374
%RSD	135.34	149.59	11.631	198.87	54.324	28.196	1585.3	287.00
#1	-.00026	.00164	.00082	.00409	.16832	.00379	.14380	.00278
#2	-.00007	.00031	.00100	-.00221	.20536	.00324	-.04864	-.00213
#3	.00002	-.00012	.00083	-.02474	.05596	.00210	-.07270	-.00457
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00618	114.73	-.00098	.00713	-.00154	-.00199	-.00540	4.0889
Stddev	.00069	.24	.00089	.00359	.00371	.00107	.00275	.0405
%RSD	11.161	.20894	90.679	50.357	240.96	53.790	50.915	.99133
#1	.00671	114.98	-.00155	.00652	.00272	-.00177	-.00432	4.1112
#2	.00642	114.51	.00004	.00389	-.00331	-.00316	-.00853	4.1134
#3	.00540	114.71	-.00143	.01099	-.00403	-.00105	-.00335	4.0421
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606117701 Acquired: 6/28/2016 14:08:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00090	.00049	-.00033	-.00039	.00002	.04431	-.00003
Stddev	.00033	.00085	.00164	.00116	.00035	.00083	.00029
%RSD	37.100	171.33	490.65	296.81	2057.2	1.8684	1114.3
#1	.00128	-.00025	.00001	.00095	-.00011	.04496	-.00018
#2	.00068	.00031	.00110	-.00114	-.00025	.04459	-.00021
#3	.00074	.00142	-.00212	-.00098	.00042	.04338	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8994.7	53956.	2615.7
Stddev	16.7	185.	5.8
%RSD	.18524	.34302	.22052
#1	9004.1	53789.	2622.2
#2	8975.4	53925.	2611.4
#3	9004.5	54155.	2613.3

Approved: June 29, 2016

Sample Name: L1606117702S Acquired: 6/28/2016 14:12:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18856**	**4.8322**	**.19823**	**1.0372**	**.48497**	**.02389**	**4.8901**	**.02419**
Stddev	.00126	.0224	.00385	.0034	.00200	.00009	.0917	.00033
%RSD	.66628	.46355	1.9424	.32332	.41215	.38786	1.8745	1.3800
#1	.18738	4.8110	.20072	1.0333	.48716	.02398	4.9959	.02380
#2	.18843	4.8299	.20017	1.0396	.48325	.02391	4.8365	.02440
#3	.18988	4.8556	.19379	1.0386	.48450	.02379	4.8378	.02436
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09773**	**.24028**	**.24429**	**1.9433**	**24.096**	**.49868**	**4.8729**	**.24053**
Stddev	.00042	.00128	.00172	.0409	.182	.00260	.0127	.00377
%RSD	.42582	.53446	.70316	2.1030	.75545	.52233	.26047	1.5680
#1	.09729	.23949	.24430	1.9193	24.200	.50110	4.8876	.23932
#2	.09777	.23959	.24600	1.9905	24.203	.49592	4.8649	.23751
#3	.09812	.24176	.24257	1.9202	23.886	.49901	4.8663	.24476
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49903**	**133.30**	**.24372**	**4.7766**	**.24190**	**.58145**	**.19108**	**6.2503**
Stddev	.00177	.44	.00088	.0144	.00430	.00207	.00466	.0076
%RSD	.35510	.32916	.36129	.30177	1.7763	.35588	2.4370	.12137
#1	.49709	133.73	.24391	4.7678	.23751	.58233	.19481	6.2453
#2	.50057	133.32	.24450	4.7933	.24610	.58293	.19258	6.2590
#3	.49944	132.86	.24276	4.7689	.24208	.57908	.18586	6.2464
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606117702S Acquired: 6/28/2016 14:12:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49123	.49119	.47597	.23865	.48318	.53456	.00014
Stddev	.00207	.00091	.01591	.00292	.00064	.00399	.00041
%RSD	.42144	.18556	3.3435	1.2227	.13247	.74582	297.24
#1	.48887	.49089	.46600	.23578	.48356	.53549	.00061
#2	.49273	.49048	.49433	.24161	.48244	.53800	-.00012
#3	.49210	.49222	.46759	.23856	.48353	.53019	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9062.2	54261.	2652.5
Stddev	15.4	248.	3.2
%RSD	.16948	.45726	.12250
#1	9046.5	54417.	2651.6
#2	9063.0	54391.	2649.8
#3	9077.1	53975.	2656.1

Approved: June 29, 2016

Sample Name: L1606117703SD Acquired: 6/28/2016 14:16:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19356**	**4.9188**	**.20421**	**1.0578**	**.49216**	**.02440**	**4.9691**	**.02479**
Stddev	.00895	.1866	.00113	.0433	.00110	.00088	.0385	.00041
%RSD	4.6250	3.7942	.55157	4.0894	.22408	3.5915	.77489	1.6672
#1	.18329	4.7033	.20392	1.0080	.49332	.02338	4.9851	.02437
#2	.19968	5.0258	.20546	1.0792	.49113	.02490	4.9252	.02481
#3	.19771	5.0273	.20327	1.0862	.49201	.02491	4.9970	.02520
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10078**	**.24659**	**.25170**	**1.9836**	**24.515**	**.50071**	**4.9089**	**.24206**
Stddev	.00071	.00855	.00324	.0197	.194	.00317	.0729	.00081
%RSD	.70462	3.4653	1.2865	.99364	.79032	.63278	1.4848	.33473
#1	.09996	.23678	.24814	1.9956	24.736	.50021	4.8669	.24188
#2	.10125	.25241	.25448	1.9609	24.376	.50410	4.8667	.24135
#3	.10112	.25058	.25247	1.9944	24.433	.49782	4.9931	.24294
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51266**	**134.43**	**.24903**	**4.8929**	**.24866**	**.59669**	**.19110**	**6.3693**
Stddev	.00471	.21	.00178	.0290	.00195	.00618	.00196	.0537
%RSD	.91932	.15842	.71645	.59312	.78413	1.0357	1.0265	.84288
#1	.50722	134.58	.24697	4.8597	.24684	.59011	.19121	6.3079
#2	.51547	134.19	.24998	4.9131	.25072	.59760	.19300	6.3927
#3	.51529	134.54	.25013	4.9060	.24842	.60237	.18908	6.4074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606117703SD Acquired: 6/28/2016 14:16:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50534**	**.49778**	**.47860**	**.24351**	**.49461**	**.54919**	**.00063**
Stddev	.00438	.00222	.00954	.00352	.02044	.00714	.00039
%RSD	.86690	.44590	1.9934	1.4471	4.1324	1.2998	61.841
#1	.50028	.49612	.47958	.23954	.47101	.54095	.00098
#2	.50788	.49692	.46861	.24475	.50647	.55304	.00021
#3	.50786	.50030	.48762	.24625	.50636	.55358	.00071
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8931.1**	**53527.**	**2625.0**
Stddev	64.6	1463.	5.1
%RSD	.72334	2.7322	.19309
#1	9005.7	55214.	2624.2
#2	8895.3	52620.	2620.4
#3	8892.4	52747.	2630.5

Approved: June 29, 2016

Sample Name: L1606118501 Acquired: 6/28/2016 14:20:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**.01981**	**.00181**	**.02105**	**.20719**	**-.00013**	**36.631**	**-.00001**
Stddev	.00036	.00473	.00377	.00300	.00054	.00006	.042	.00033
%RSD	398.51	23.884	207.88	14.263	.26264	47.225	.11494	2546.0
#1	-.00016	.01435	-.00154	.02364	.20768	-.00019	36.658	.00036
#2	-.00041	.02230	.00590	.01776	.20660	-.00012	36.653	-.00025
#3	.00030	.02278	.00108	.02176	.20727	-.00007	36.583	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00032**	**.00085**	**.00210**	**.31623**	**1.4446**	**.01015**	**11.970**	**.18513**
Stddev	.00005	.00052	.00100	.01586	.0492	.00660	.209	.00173
%RSD	16.614	61.255	47.788	5.0151	3.4040	64.996	1.7496	.93595
#1	-.00038	.00138	.00318	.33404	1.4096	.01149	12.203	.18396
#2	-.00030	.00083	.00192	.30365	1.5008	.01598	11.910	.18712
#3	-.00028	.00034	.00120	.31100	1.4233	.00299	11.797	.18431
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00050**	**4.4335**	**-.00023**	**.01231**	**-.00295**	**.00236**	**-.00468**	**4.3495**
Stddev	.00021	.0505	.00048	.00514	.00078	.00525	.00740	.0503
%RSD	43.336	1.1395	208.73	41.760	26.533	222.86	158.18	1.1577
#1	.00045	4.4850	.00005	.01702	-.00294	-.00332	-.00133	4.3685
#2	.00031	4.4315	.00005	.01308	-.00218	.00703	-.01316	4.3876
#3	.00073	4.3840	-.00078	.00682	-.00375	.00336	.00045	4.2924
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606118501 Acquired: 6/28/2016 14:20:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.11439	-.00457	-.00192	-.00064	.00598	-.00008
Stddev	.00103	.00003	.00727	.00266	.00040	.00009	.00041
%RSD	320.31	.02290	159.11	138.96	63.165	1.5139	518.32
#1	.00044	.11442	-.01291	.00082	-.00076	.00593	-.00003
#2	-.00076	.11438	.00037	-.00206	-.00019	.00608	-.00051
#3	.00129	.11438	-.00116	-.00451	-.00097	.00592	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9080.6	54899.	2621.2
Stddev	26.5	80.	9.7
%RSD	.29154	.14617	.37101
#1	9071.9	54981.	2610.3
#2	9059.5	54897.	2628.8
#3	9110.3	54820.	2624.7

Approved: June 29, 2016

Sample Name: L1606118502 Acquired: 6/28/2016 14:24:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00183	.01781	-.00212	.01875	.20094	-.00005	36.701	.00026
Stddev	.00200	.00542	.00366	.00101	.00099	.00005	.201	.00011
%RSD	109.47	30.421	172.60	5.3632	.49395	109.70	.54766	41.230
#1	-.00099	.01285	-.00403	.01780	.20067	-.00004	36.930	.00018
#2	-.00038	.01699	-.00444	.01864	.20204	-.00010	36.622	.00038
#3	-.00412	.02359	.00210	.01980	.20011	-.00000	36.552	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	-.00029	.00156	-.00426	1.2802	.01013	12.015	.03565
Stddev	.00024	.00202	.00090	.01892	.1572	.00074	.100	.00090
%RSD	112.56	697.40	58.083	443.63	12.278	7.3510	.83356	2.5284
#1	-.00005	.00204	.00230	.01500	1.4475	.01081	12.082	.03464
#2	.00042	-.00155	.00182	-.02282	1.1357	.00933	11.900	.03639
#3	.00026	-.00136	.00055	-.00497	1.2574	.01025	12.063	.03591
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	4.3567	.00008	.01630	.00178	.00663	.00318	4.3819
Stddev	.00047	.0319	.00036	.00510	.00496	.00405	.01096	.0031
%RSD	39.998	.73095	427.54	31.262	278.16	61.058	344.17	.06952
#1	.00164	4.3274	-.00016	.01074	-.00009	.00272	.01572	4.3834
#2	.00071	4.3906	.00050	.02076	.00741	.01080	-.00457	4.3838
#3	.00116	4.3521	-.00009	.01740	-.00197	.00638	-.00160	4.3783
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606118502 Acquired: 6/28/2016 14:24:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	.11567	-.00542	-.00245	-.00068	.00475	-.00073
Stddev	.00075	.00034	.00321	.00261	.00124	.00014	.00075
%RSD	138.82	.29531	59.328	106.53	183.90	3.0145	102.93
#1	.00127	.11569	-.00887	-.00098	-.00123	.00461	-.00010
#2	-.00024	.11600	-.00251	-.00547	-.00155	.00490	-.00156
#3	.00060	.11532	-.00488	-.00091	.00075	.00475	-.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9004.4	54315.	2596.8
Stddev	6.0	163.	7.5
%RSD	.06714	.30096	.28851
#1	8998.9	54182.	2588.9
#2	9003.4	54266.	2597.7
#3	9010.9	54497.	2603.8

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 14:27:55 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40478**	**10.178**	**.40422**	**.50272**	**1.0182**	**.05010**	**10.117**	**.05116**
Stddev	.00143	.039	.00189	.00370	.0036	.00010	.084	.00013
%RSD	.35403	.38613	.46653	.73542	.35070	.20789	.83028	.24807
#1	.40641	10.169	.40280	.50476	1.0158	.05021	10.021	.05130
#2	.40420	10.144	.40349	.49845	1.0223	.05006	10.175	.05112
#3	.40372	10.221	.40636	.50495	1.0166	.05001	10.156	.05105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20477**	**.50603**	**.51383**	**4.0435**	**50.597**	**1.0187**	**10.217**	**.50703**
Stddev	.00037	.00132	.00209	.0422	.398	.0115	.070	.00204
%RSD	.18089	.26016	.40633	1.0446	.78750	1.1266	.68585	.40329
#1	.20497	.50590	.51513	4.0309	50.226	1.0132	10.286	.50533
#2	.20499	.50478	.51142	4.0906	51.018	1.0319	10.145	.50646
#3	.20434	.50740	.51493	4.0091	50.545	1.0110	10.219	.50930
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0275**	**51.068**	**.51117**	**10.186**	**.50920**	**1.2210**	**.40575**	**5.1330**
Stddev	.0029	.260	.00076	.004	.00283	.0039	.00479	.0071
%RSD	.28249	.50917	.14897	.03557	.55508	.32091	1.1813	.13907
#1	1.0300	50.879	.51205	10.187	.50593	1.2169	.40023	5.1345
#2	1.0243	51.364	.51075	10.181	.51093	1.2247	.40878	5.1252
#3	1.0281	50.959	.51071	10.188	.51072	1.2213	.40825	5.1392
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 14:27:55 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0262**	**1.0196**	**1.0035**	**.51029**	**1.0039**	**1.0274**	**1.0303**
Stddev	.0014	.0055	.0092	.00045	.0019	.0011	.0016
%RSD	.13372	.54345	.91866	.08898	.18612	.10889	.15402
#1	1.0260	1.0143	1.0059	.51073	1.0034	1.0271	1.0321
#2	1.0249	1.0254	1.0113	.51031	1.0024	1.0265	1.0292
#3	1.0277	1.0193	.99336	.50982	1.0060	1.0287	1.0296
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8845.5**	**52891.**	**2530.2**
Stddev	13.0	259.	2.3
%RSD	.14752	.48995	.09114
#1	8830.5	52920.	2531.0
#2	8853.6	53135.	2531.9
#3	8852.5	52619.	2527.6

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 14:31:32 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00056**	**.01926**	**-.00013**	**.00341**	**.00468**	**-.00000**	**-.05543**	**-.00005**
Stddev	.00124	.00642	.00202	.00053	.00158	.00004	.03472	.00018
%RSD	221.71	33.309	1579.8	15.620	33.778	1830.7	62.635	343.75
#1	.00075	.01319	-.00158	.00365	.00623	.00003	-.09510	-.00016
#2	-.00077	.01863	.00218	.00379	.00307	-.00005	-.04067	-.00015
#3	.00170	.02597	-.00098	.00280	.00476	.00001	-.03054	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**-.00003**	**.00065**	**-.03110**	**.00840**	**.00435**	**.07075**	**-.00353**
Stddev	.00025	.00039	.00086	.05263	.04476	.00220	.05753	.00211
%RSD	170.85	1476.6	131.66	169.21	533.20	50.700	81.315	59.738
#1	-.00012	.00034	.00149	-.04084	-.04327	.00596	.13712	-.00186
#2	.00038	.00001	-.00022	-.07818	.03553	.00184	.03511	-.00590
#3	.00018	-.00043	.00068	.02571	.03293	.00525	.04002	-.00283
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00038**	**-.00211**	**-.00140**	**.00654**	**-.00110**	**.00555**	**-.00142**	**.01151**
Stddev	.00020	.02131	.00149	.00778	.00433	.00338	.00909	.00299
%RSD	53.690	1009.3	106.58	118.96	393.61	60.927	639.97	25.955
#1	.00016	.01887	-.00251	.00779	-.00569	.00828	-.01172	.01441
#2	.00056	-.02373	.00030	-.00179	-.00050	.00177	.00552	.01167
#3	.00042	-.00147	-.00200	.01362	.00290	.00661	.00193	.00844
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 14:31:32 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.00035	.00367	-.00382	-.00046	-.00011	.00019
Stddev	.00063	.00026	.00803	.00073	.00113	.00004	.00026
%RSD	443.88	75.185	218.90	19.094	247.43	37.683	132.20
#1	.00085	.00054	-.00558	-.00315	.00076	-.00006	-.00004
#2	-.00032	.00005	.00769	-.00370	-.00064	-.00014	.00015
#3	-.00011	.00044	.00889	-.00460	-.00149	-.00012	.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8886.0	53560.	2532.4
Stddev	4.5	43.	39.0
%RSD	.05032	.07981	1.5390
#1	8890.3	53608.	2500.9
#2	8881.4	53525.	2520.3
#3	8886.2	53548.	2576.0

Approved: June 29, 2016

Sample Name: L1606118503 Acquired: 6/28/2016 14:35:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00202	.02161	.00180	.02007	.23617	-.00001	40.887	.00011
Stddev	.00099	.00769	.00222	.00262	.00121	.00007	.146	.00021
%RSD	48.705	35.578	123.21	13.077	.51256	1215.3	.35637	192.07
#1	.00244	.01680	.00349	.01716	.23640	.00004	41.054	-.00012
#2	.00090	.03047	.00262	.02077	.23725	-.00009	40.826	.00018
#3	.00273	.01755	-.00071	.02227	.23486	.00003	40.782	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00035	.00109	.00511	.34655	1.1428	.00647	13.092	.53400
Stddev	.00026	.00045	.00092	.03444	.1788	.00519	.108	.00237
%RSD	72.904	41.467	17.980	9.9383	15.642	80.280	.82692	.44381
#1	-.00021	.00100	.00602	.30680	1.3477	.01159	13.138	.53641
#2	-.00065	.00158	.00418	.36745	1.0183	.00121	13.170	.53167
#3	-.00020	.00069	.00514	.36540	1.0626	.00661	12.968	.53391
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	4.1492	-.00102	.01805	-.00349	.00349	.00192	5.3671
Stddev	.00011	.0311	.00076	.00623	.00340	.00523	.01036	.0746
%RSD	21.373	.74966	74.891	34.520	97.453	149.86	540.47	1.3897
#1	.00064	4.1661	-.00189	.02426	.00044	.00952	-.00363	5.3789
#2	.00041	4.1681	-.00053	.01807	-.00541	.00085	.01386	5.4352
#3	.00054	4.1133	-.00063	.01180	-.00550	.00011	-.00448	5.2874
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606118503 Acquired: 6/28/2016 14:35:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.13606	.00942	-.00266	-.00026	.00502	-.00020
Stddev	.00060	.00122	.00692	.00135	.00016	.00014	.00047
%RSD	357.61	.89434	73.452	50.899	63.957	2.8606	234.85
#1	-.00048	.13568	.00705	-.00366	-.00039	.00516	-.00074
#2	.00030	.13742	.01721	-.00112	-.00030	.00503	.00008
#3	.00069	.13508	.00399	-.00321	-.00007	.00487	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8985.1	54141.	2607.5
Stddev	68.9	113.	9.9
%RSD	.76704	.20860	.37944
#1	8959.9	54010.	2596.2
#2	8932.3	54202.	2614.5
#3	9063.1	54210.	2611.9

Approved: June 29, 2016

Sample Name: L1606118504 Acquired: 6/28/2016 14:39:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00281	.01231	-.00378	.01715	.18396	.00002	39.241	.00007
Stddev	.00284	.01379	.00266	.00198	.00123	.00005	.068	.00012
%RSD	101.00	111.99	70.399	11.565	.67073	292.22	.17321	167.01
#1	.00318	.00084	-.00177	.01844	.18277	.00007	39.281	-.00007
#2	.00544	.00848	-.00679	.01486	.18523	-.00001	39.279	.00017
#3	-.00020	.02761	-.00277	.01813	.18389	-.00001	39.162	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	.00041	.00009	.02781	1.1592	.00635	12.544	.03306
Stddev	.00039	.00039	.00050	.00876	.0640	.00197	.136	.00335
%RSD	188.82	92.921	540.86	31.508	5.5188	31.058	1.0804	10.119
#1	.00008	.00055	.00066	.03789	1.2110	.00841	12.549	.02924
#2	-.00064	.00071	-.00009	.02355	1.1790	.00616	12.405	.03545
#3	-.00005	-.00002	-.00029	.02200	1.0877	.00448	12.676	.03450
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	4.1142	-.00138	.00594	-.00243	.00156	-.00599	5.1014
Stddev	.00034	.0254	.00175	.00327	.00106	.00331	.00095	.0198
%RSD	45.159	.61799	126.82	55.033	43.497	212.54	15.883	.38751
#1	.00078	4.1406	-.00335	.00906	-.00309	.00514	-.00609	5.1189
#2	.00107	4.1121	-.00000	.00254	-.00299	-.00138	-.00499	5.1053
#3	.00040	4.0899	-.00079	.00621	-.00121	.00092	-.00688	5.0799
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606118504 Acquired: 6/28/2016 14:39:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.13051	.00208	-.00195	-.00027	.00509	.00059
Stddev	.00121	.00032	.00140	.00224	.00072	.00006	.00068
%RSD	369.81	.24768	67.178	114.92	265.56	1.1916	116.72
#1	-.00071	.13048	.00143	.00041	-.00103	.00516	.00001
#2	.00166	.13085	.00368	-.00404	-.00020	.00504	.00040
#3	.00003	.13021	.00112	-.00222	.00041	.00508	.00134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9024.1	54546.	2625.6
Stddev	23.0	44.	4.3
%RSD	.25529	.08000	.16349
#1	9001.2	54496.	2624.5
#2	9023.7	54565.	2622.0
#3	9047.3	54578.	2630.4

Approved: June 29, 2016

Sample Name: L1606122801 Acquired: 6/28/2016 14:43:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00043	.05529	-.00070	.36414	.30012	-.00001	46.892	.00009
Stddev	.00151	.00695	.00227	.00169	.00185	.00017	.188	.00014
%RSD	346.68	12.576	323.44	.46322	.61527	1421.4	.40185	155.59
#1	.00087	.04779	-.00274	.36355	.29800	-.00020	46.812	.00026
#2	-.00009	.06153	-.00112	.36605	.30092	.00002	46.756	-.00001
#3	-.00208	.05656	.00175	.36283	.30142	.00014	47.107	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.00032	.00146	.30139	.17266	.01007	27.595	.49689
Stddev	.00012	.00126	.00054	.02974	.11841	.00327	.189	.00972
%RSD	91.374	395.93	36.671	9.8684	68.580	32.469	.68458	1.9568
#1	.00001	-.00006	.00093	.33490	.15184	.00696	27.710	.49002
#2	.00013	-.00071	.00200	.27814	.30010	.01348	27.377	.49263
#3	.00024	.00172	.00146	.29113	.06604	.00977	27.698	.50801
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	237.01	-.00001	.02821	-.00020	.00213	-.00175	7.7102
Stddev	.00031	.46	.00127	.00726	.00178	.00151	.00237	.2440
%RSD	83.135	.19280	12415.	25.738	882.16	71.025	135.79	3.1645
#1	.00029	236.67	.00144	.02218	.00151	.00387	-.00385	7.8512
#2	.00072	236.84	-.00093	.03627	-.00204	.00139	.00083	7.8510
#3	.00012	237.53	-.00054	.02617	-.00007	.00113	-.00222	7.4285
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606122801 Acquired: 6/28/2016 14:43:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.34455**	**-.00087**	**-.00253**	**-.00056**	**.00291**	**.00028**
Stddev	.00021	.00144	.00857	.00209	.00024	.00016	.00019
%RSD	2796.0	.41714	985.87	82.630	43.945	5.4136	67.279
#1	-.00004	.34469	.00782	-.00199	-.00033	.00306	.00007
#2	-.00020	.34305	-.00111	-.00076	-.00082	.00291	.00033
#3	.00021	.34591	-.00931	-.00484	-.00053	.00275	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8828.3**	**52599.**	**2598.8**
Stddev	14.2	203.	6.7
%RSD	.16104	.38684	.25611
#1	8812.1	52510.	2599.4
#2	8834.0	52831.	2605.2
#3	8838.8	52454.	2591.9

Approved: June 29, 2016

Sample Name: L1606122802 Acquired: 6/28/2016 14:47:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	.24773	.00384	.73133	.01985	-.00002	122.11
Stddev	.00047	.00814	.00183	.00266	.00172	.00008	.32
%RSD	59.094	3.2873	47.707	.36367	8.6676	533.02	.26379
#1	.00082	.25291	.00446	.72855	.02000	.00007	122.07
#2	.00127	.25194	.00178	.73385	.01805	-.00009	121.80
#3	.00032	.23835	.00528	.73160	.02148	-.00002	122.44
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	.00061	.00364	.00024	.13406	2.9490	.06033
Stddev	.00015	.00056	.00089	.00194	.02548	.0972	.00576
%RSD	117.68	90.548	24.400	804.45	19.009	3.2942	9.5438
#1	.00004	.00114	.00268	.00118	.11925	2.9091	.05431
#2	-.00018	.00003	.00380	-.00199	.16349	2.8781	.06090
#3	-.00025	.00067	.00443	.00154	.11945	3.0597	.06579
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	83.351	.00470	.00909	F 494.48	.00080	.00391	-.00095
Stddev	.200	.00054	.00063	6.35	.00043	.00506	.00498
%RSD	.23940	11.426	6.9165	1.2837	54.026	129.43	524.42
#1	83.122	.00411	.00921	489.88	.00098	.00975	-.00345
#2	83.439	.00515	.00964	491.83	.00112	.00093	.00479
#3	83.491	.00484	.00840	501.72	.00031	.00104	-.00419
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606122802 Acquired: 6/28/2016 14:47:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00358	.01899	6.7737	-.00038	1.8734	-.00742	-.00303
Stddev	.00218	.00536	.3560	.00123	.0049	.00344	.00249
%RSD	60.879	28.229	5.2554	326.02	.26130	46.410	82.258
#1	.00385	.01350	6.9788	.00081	1.8729	-.00828	-.00125
#2	.00128	.02421	6.9797	-.00164	1.8688	-.01034	-.00196
#3	.00562	.01925	6.3627	-.00030	1.8786	-.00362	-.00587
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00623	.00598	.00041
Stddev	.00042	.00040	.00025
%RSD	6.8000	6.6498	61.221
#1	.00579	.00621	.00070
#2	.00628	.00620	.00024
#3	.00663	.00552	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8633.2	51179.	2574.8
Stddev	3.5	175.	6.3
%RSD	.04019	.34160	.24339
#1	8636.7	51327.	2574.2
#2	8629.7	50986.	2581.4
#3	8633.1	51225.	2568.9

Approved: June 29, 2016

Sample Name: L1606122803 Acquired: 6/28/2016 14:50:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	.70132	.00035	.02798	.05264	.00002	26.376	.00018
Stddev	.00162	.00440	.00311	.00147	.00140	.00003	.041	.00006
%RSD	184.77	.62782	894.60	5.2466	2.6558	152.86	.15454	34.633
#1	-.00094	.70274	-.00320	.02633	.05125	.00004	26.414	.00011
#2	.00141	.70484	.00260	.02849	.05405	-.00002	26.380	.00021
#3	.00217	.69638	.00165	.02913	.05261	.00004	26.333	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	.00205	.00225	.73691	10.431	.00316	4.0316	.01712
Stddev	.00044	.00223	.00120	.04104	.098	.00487	.0254	.00164
%RSD	87.419	109.09	53.600	5.5690	.94063	154.18	.63069	9.5496
#1	.00051	.00418	.00086	.72309	10.533	.00879	4.0148	.01636
#2	.00006	-.00027	.00302	.78307	10.423	.00024	4.0190	.01900
#3	.00093	.00223	.00287	.70456	10.338	.00045	4.0608	.01601
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	3.6299	.00133	1.2655	.00018	.00234	-.00022	8.3262
Stddev	.00034	.0325	.00036	.0046	.00169	.00165	.00811	.0240
%RSD	44.819	.89431	26.962	.36391	940.84	70.433	3610.5	.28865
#1	.00046	3.6655	.00158	1.2659	-.00144	.00203	.00041	8.3324
#2	.00114	3.6221	.00149	1.2607	.00004	.00412	-.00863	8.3466
#3	.00071	3.6020	.00092	1.2699	.00194	.00087	.00755	8.2997
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606122803 Acquired: 6/28/2016 14:50:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.16996	-.00049	-.00267	.00668	.02497	.00072
Stddev	.00041	.00057	.00459	.00213	.00167	.00013	.00052
%RSD	349.75	.33502	936.91	79.854	24.954	.51527	71.969
#1	-.00021	.16934	-.00062	-.00249	.00555	.02487	.00102
#2	-.00002	.17046	-.00501	-.00489	.00860	.02512	.00012
#3	.00058	.17007	.00416	-.00063	.00589	.02492	.00101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9083.7	54994.	2625.8
Stddev	32.1	280.	15.6
%RSD	.35308	.50892	.59429
#1	9098.6	54788.	2630.5
#2	9105.6	54881.	2608.4
#3	9046.9	55313.	2638.5

Approved: June 29, 2016

Sample Name: L1606123101 Acquired: 6/28/2016 14:54:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00130**	**.03358**	**.00504**	**.10022**	**.06249**	**-.00004**	**40.181**
Stddev	.00232	.01017	.00297	.00077	.00087	.00007	.051
%RSD	178.17	30.295	58.852	.77176	1.3950	168.73	.12715
#1	-.00102	.02445	.00772	.10047	.06331	.00000	40.179
#2	.00086	.04455	.00186	.09935	.06257	-.00012	40.233
#3	-.00374	.03174	.00554	.10084	.06157	-.00000	40.131
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00033**	**.00050**	**.00076**	**.00060**	**.30063**	**.48774**	**.01354**
Stddev	.00020	.00048	.00020	.00057	.02412	.07259	.00046
%RSD	61.093	95.301	26.045	94.150	8.0217	14.882	3.3817
#1	.00041	.00018	.00054	.00046	.32254	.40562	.01388
#2	.00010	.00105	.00083	.00012	.27479	.51432	.01372
#3	.00049	.00027	.00092	.00123	.30457	.54330	.01302
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**24.461**	**.03824**	**.00059**	F **356.14**	**.00012**	**.01554**	**-.00275**
Stddev	.028	.00192	.00017	.68	.00104	.00351	.00164
%RSD	.11535	5.0184	29.467	.19191	857.75	22.597	59.838
#1	24.458	.03687	.00073	356.91	.00045	.01950	-.00190
#2	24.490	.03740	.00063	355.90	-.00104	.01431	-.00464
#3	24.434	.04043	.00040	355.61	.00096	.01280	-.00170
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606123101 Acquired: 6/28/2016 14:54:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00131	7.6287	-.00030	.19994	.00193	-.00240
Stddev	.00444	.00542	.0664	.00070	.00063	.00368	.00183
%RSD	1440.4	414.59	.87064	236.14	.31690	190.57	76.335
#1	-.00481	.00201	7.6562	.00049	.19949	.00094	-.00434
#2	.00299	.00635	7.6769	-.00085	.19966	-.00115	-.00216
#3	.00274	-.00443	7.5529	-.00053	.20066	.00600	-.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.01511	.00218	.00108
Stddev	.00115	.00003	.00059
%RSD	7.6271	1.5101	54.589
#1	.01378	.00217	.00040
#2	.01567	.00214	.00135
#3	.01587	.00221	.00148
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8764.2	51928.	2582.3
Stddev	13.1	149.	6.1
%RSD	.14999	.28773	.23656
#1	8779.2	52076.	2575.3
#2	8754.5	51777.	2586.0
#3	8759.0	51929.	2585.7

Approved: June 29, 2016

Sample Name: L1606123701 Acquired: 6/28/2016 14:58:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.86220	.00030	.02608	.10905	.00003	34.347	.00012
Stddev	.00174	.00170	.00301	.00186	.00127	.00006	.194	.00018
%RSD	564.65	.19754	1005.2	7.1209	1.1623	218.75	.56366	147.95
#1	-.00044	.86036	.00377	.02779	.11041	.00007	34.570	-.00000
#2	-.00093	.86249	-.00168	.02410	.10791	.00007	34.244	.00004
#3	.00230	.86373	-.00119	.02634	.10883	-.00004	34.227	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.00221	.00193	1.0236	4.3467	.00729	4.7415	.08453
Stddev	.00030	.00072	.00043	.0191	.1897	.00550	.1021	.00257
%RSD	57.812	32.448	22.265	1.8647	4.3649	75.413	2.1527	3.0439
#1	.00031	.00244	.00238	1.0286	4.3693	.01127	4.7874	.08637
#2	.00087	.00279	.00153	1.0397	4.5240	.00960	4.8126	.08159
#3	.00039	.00141	.00188	1.0025	4.1466	.00102	4.6246	.08563
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00114	6.7097	.00118	.75592	.00235	.00295	-.00415	8.7205
Stddev	.00023	.0742	.00086	.00849	.00308	.00098	.01006	.0164
%RSD	20.336	1.1057	73.223	1.1232	131.32	33.198	242.49	.18770
#1	.00107	6.7845	.00024	.76557	.00254	.00408	.00346	8.7339
#2	.00140	6.7083	.00193	.74963	-.00083	.00246	-.01555	8.7254
#3	.00096	6.6362	.00135	.75255	.00533	.00232	-.00036	8.7023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606123701 Acquired: 6/28/2016 14:58:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.11631	.00910	.00032	.00557	.01002	.00056
Stddev	.00036	.00123	.00292	.00117	.00030	.00021	.00026
%RSD	527.06	1.0585	32.124	361.94	5.3880	2.1043	46.899
#1	.00026	.11720	.01159	-.00065	.00522	.01006	.00074
#2	-.00045	.11490	.00984	-.00001	.00572	.01021	.00069
#3	-.00001	.11683	.00588	.00162	.00576	.00979	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9045.5	54231.	2595.0
Stddev	15.9	47.	9.4
%RSD	.17556	.08717	.36382
#1	9027.4	54250.	2589.5
#2	9057.2	54265.	2589.7
#3	9051.8	54177.	2605.9

Approved: June 29, 2016

Sample Name: L1606123702 Acquired: 6/28/2016 15:02:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	.35806	.00336	.05941	.10822	.00002	46.389	.00046
Stddev	.00125	.00967	.00137	.00155	.00090	.00006	.192	.00013
%RSD	482.05	2.7000	40.919	2.6148	.82997	317.17	.41342	27.749
#1	.00170	.36784	.00416	.05847	.10724	.00007	46.592	.00034
#2	-.00055	.34851	.00177	.05857	.10841	.00004	46.363	.00060
#3	-.00037	.35782	.00414	.06121	.10900	-.00005	46.212	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00145	-.00046	.00560	.25357	4.1249	.00811	8.4816	.40128
Stddev	.00040	.00126	.00080	.02259	.0851	.00405	.1416	.00234
%RSD	27.841	272.27	14.300	8.9081	2.0630	49.986	1.6691	.58357
#1	.00190	-.00083	.00652	.27800	4.0582	.00353	8.6301	.40195
#2	.00111	-.00150	.00510	.24927	4.2207	.01125	8.4664	.39868
#3	.00135	.00094	.00517	.23344	4.0957	.00953	8.3482	.40322
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00897	49.739	.00323	1.1073	-.00122	.00595	-.00099	5.6031
Stddev	.00051	.226	.00083	.0035	.00339	.00416	.00714	.0065
%RSD	5.6716	.45382	25.644	.31913	277.57	69.947	722.21	.11513
#1	.00839	49.978	.00408	1.1111	.00163	.00612	-.00288	5.6106
#2	.00931	49.708	.00243	1.1068	-.00033	.01001	-.00699	5.5999
#3	.00922	49.530	.00318	1.1041	-.00497	.00170	.00691	5.5990
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606123702 Acquired: 6/28/2016 15:02:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00042**	**.20899**	**-.00484**	**-.00144**	**.01646**	**.01361**	**.00051**
Stddev	.00087	.00138	.00675	.00158	.00136	.00002	.00021
%RSD	203.97	.66158	139.51	109.79	8.2556	.18253	41.907
#1	-.00125	.21009	.00106	-.00321	.01502	.01359	.00038
#2	-.00051	.20944	-.00337	-.00019	.01772	.01362	.00039
#3	.00048	.20744	-.01221	-.00091	.01665	.01364	.00075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8952.5**	**53938.**	**2591.9**
Stddev	13.8	60.	26.8
%RSD	.15432	.11034	1.0332
#1	8944.8	53877.	2561.4
#2	8944.3	53996.	2602.6
#3	8968.5	53941.	2611.7

Approved: June 29, 2016

Sample Name: L1606123703 Acquired: 6/28/2016 15:06:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00096	.59752	.00235	.05887	.10953	.00010	45.449	.00061
Stddev	.00188	.01442	.00188	.00217	.00084	.00004	.107	.00021
%RSD	196.78	2.4125	80.080	3.6777	.76588	42.343	.23638	33.550
#1	.00313	.58363	.00149	.05668	.11041	.00011	45.572	.00080
#2	-.00012	.59652	.00451	.05892	.10874	.00014	45.399	.00039
#3	-.00015	.61241	.00105	.06101	.10945	.00006	45.375	.00064
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00197	.00107	.00451	.49836	4.3315	.00593	8.2564	.42750
Stddev	.00043	.00053	.00112	.03371	.0594	.00283	.1112	.00160
%RSD	21.959	49.735	24.752	6.7645	1.3702	47.678	1.3470	.37326
#1	.00240	.00061	.00515	.52558	4.3292	.00740	8.1328	.42566
#2	.00199	.00166	.00515	.50884	4.2733	.00773	8.3484	.42847
#3	.00153	.00095	.00322	.46065	4.3920	.00267	8.2880	.42838
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00832	48.038	.00480	1.1170	.00156	.00449	.00211	5.9008
Stddev	.00018	.210	.00083	.0297	.00244	.00459	.00289	.1999
%RSD	2.1323	.43630	17.412	2.6556	156.67	102.18	136.97	3.3885
#1	.00840	48.278	.00408	1.1340	.00424	.00399	.00211	5.9955
#2	.00811	47.891	.00571	1.1343	.00096	.00932	.00500	6.0359
#3	.00843	47.944	.00459	1.0828	-.00053	.00018	-.00078	5.6711
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606123703 Acquired: 6/28/2016 15:06:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	.20626	.00356	-.00259	.01810	.01007	.00072
Stddev	.00090	.00051	.00462	.00066	.00064	.00040	.00057
%RSD	217.27	.24848	129.94	25.342	3.5305	4.0008	79.254
#1	-.00027	.20622	-.00030	-.00198	.01883	.01026	.00015
#2	.00008	.20577	.00229	-.00252	.01778	.01034	.00071
#3	.00144	.20680	.00868	-.00328	.01768	.00961	.00130
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8956.7	54106.	2597.5
Stddev	12.8	517.	14.5
%RSD	.14242	.95624	.55787
#1	8942.2	54146.	2581.2
#2	8966.2	54602.	2609.0
#3	8961.7	53569.	2602.4

Approved: June 29, 2016

Sample Name: L1606123704 Acquired: 6/28/2016 15:10:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	.30584	.00022	.07806	.04631	-.00007	86.838	.00042
Stddev	.00185	.00268	.00345	.00265	.00063	.00003	.629	.00015
%RSD	374.03	.87790	1532.5	3.3999	1.3692	39.237	.72380	35.608
#1	.00256	.30452	-.00375	.07670	.04704	-.00006	87.235	.00033
#2	-.00102	.30893	.00199	.08111	.04591	-.00004	86.113	.00033
#3	-.00005	.30407	.00243	.07636	.04597	-.00010	87.164	.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.00311	.00019	.19183	1.3796	.02014	16.870	.00347
Stddev	.00041	.00038	.00119	.02141	.0940	.00375	.172	.00343
%RSD	112.87	12.382	625.05	11.160	6.8113	18.636	1.0218	99.013
#1	.00069	.00287	-.00117	.18943	1.4866	.02403	16.673	.00364
#2	.00049	.00289	.00103	.17172	1.3417	.01985	16.946	.00681
#3	-.00010	.00355	.00071	.21434	1.3105	.01654	16.992	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00058	124.13	.00130	.01394	-.00088	.00294	-.00088	8.2953
Stddev	.00049	.75	.00059	.00298	.00182	.00383	.00750	.1384
%RSD	85.759	.60252	45.422	21.349	207.01	130.44	850.09	1.6682
#1	.00111	124.41	.00134	.01734	-.00106	.00099	-.00390	8.4027
#2	.00013	123.28	.00069	.01271	-.00260	.00735	.00766	8.3442
#3	.00050	124.70	.00187	.01178	.00102	.00047	-.00640	8.1392
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606123704 Acquired: 6/28/2016 15:10:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00144	.35168	-.01564	-.00152	.00864	.00392	.00056
Stddev	.00088	.00194	.00581	.00323	.00030	.00024	.00024
%RSD	61.207	.55033	37.169	212.41	3.4817	6.0324	43.195
#1	.00222	.35267	-.01694	-.00180	.00893	.00407	.00065
#2	.00162	.34945	-.00929	.00184	.00864	.00404	.00075
#3	.00048	.35293	-.02070	-.00461	.00833	.00365	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8830.3	52874.	2585.9
Stddev	30.5	305.	19.1
%RSD	.34580	.57739	.73803
#1	8801.9	53154.	2563.9
#2	8862.6	52918.	2596.7
#3	8826.4	52548.	2597.1

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 15:14:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.42851	10.904	.43202	.53365	1.0713	.05416	10.632	.05436
Stddev	.00833	.207	.00698	.01060	.0092	.00113	.051	.00087
%RSD	1.9443	1.8987	1.6150	1.9855	.86162	2.0806	.48126	1.5946
#1	.43201	10.956	.42597	.53474	1.0624	.05432	10.627	.05433
#2	.43451	11.081	.43965	.54367	1.0708	.05520	10.583	.05525
#3	.41900	10.676	.43045	.52256	1.0808	.05296	10.685	.05351
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21691	.54305	.54534	4.2422	53.589	1.0743	10.753	.53540
Stddev	.00265	.01079	.00663	.0250	.605	.0074	.243	.00955
%RSD	1.2229	1.9867	1.2161	.58983	1.1288	.68793	2.2611	1.7829
#1	.21785	.54548	.54617	4.2292	53.055	1.0693	10.485	.52508
#2	.21896	.55241	.55152	4.2264	53.466	1.0707	10.814	.54392
#3	.21391	.53125	.53833	4.2711	54.246	1.0827	10.959	.53721
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0888	53.402	.54101	10.808	.54113	1.2945	.42478	5.4312
Stddev	.0125	.411	.00747	.101	.00400	.0128	.00597	.0423
%RSD	1.1472	.76993	1.3802	.93509	.73884	.98633	1.4059	.77953
#1	1.0938	53.143	.54400	10.826	.54038	1.2910	.42653	5.4334
#2	1.0980	53.187	.54652	10.899	.54546	1.3087	.42968	5.4724
#3	1.0746	53.876	.53251	10.699	.53757	1.2839	.41813	5.3878
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 15:14:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0880**	**1.0698**	**1.0587**	**.53918**	**1.0803**	**1.0912**	**1.0905**
Stddev	.0165	.0081	.0156	.00244	.0234	.0149	.0071
%RSD	1.5142	.75461	1.4705	.45291	2.1646	1.3620	.64790
#1	1.0951	1.0636	1.0407	.54192	1.0838	1.0967	1.0880
#2	1.0997	1.0668	1.0667	.53723	1.1018	1.1025	1.0984
#3	1.0692	1.0789	1.0686	.53839	1.0554	1.0744	1.0849
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8324.0**	**49682.**	**2402.2**
Stddev	17.8	544.	12.3
%RSD	.21421	1.0943	.51191
#1	8331.2	49629.	2414.5
#2	8303.7	49167.	2402.2
#3	8337.1	50251.	2389.9

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 15:17:49 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.02128**	**-.00359**	**.00020**	**.00645**	**.00016**	**.03104**	**-.00001**
Stddev	.00368	.00954	.00134	.00133	.00115	.00007	.03317	.00021
%RSD	2417.2	44.820	37.242	679.78	17.837	43.650	106.87	1643.1
#1	.00382	.03228	-.00217	-.00019	.00525	.00009	.04970	-.00011
#2	-.00083	.01540	-.00483	.00168	.00754	.00023	-.00726	.00022
#3	-.00345	.01615	-.00378	-.00090	.00658	.00016	.05067	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00000**	**-.00009**	**.00060**	**-.00539**	**.06178**	**.00365**	**.11492**	**-.00042**
Stddev	.00027	.00249	.00114	.03062	.06298	.00114	.06730	.00281
%RSD	19519.	2863.7	188.91	568.14	101.95	31.357	58.557	670.16
#1	-.00023	-.00274	.00064	-.03327	.02851	.00462	.17314	-.00124
#2	-.00006	.00029	.00173	-.01028	.13442	.00395	.13040	-.00273
#3	.00029	.00220	-.00056	.02738	.02240	.00239	.04124	.00271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.01334**	**-.00085**	**.00345**	**-.00265**	**-.00015**	**-.00929**	**.01410**
Stddev	.00037	.04028	.00161	.01368	.00462	.00549	.00635	.00099
%RSD	1184.4	301.84	190.56	396.12	174.30	3544.8	68.343	7.0250
#1	-.00012	-.03144	-.00246	-.00423	-.00155	.00467	-.00204	.01504
#2	.00038	.02488	.00077	.01925	.00132	.00100	-.01384	.01419
#3	-.00035	.04660	-.00085	-.00466	-.00772	-.00613	-.01201	.01306
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 15:17:49 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00073**	**.00052**	**-.00203**	**-.00342**	**.00076**	**-.00006**	**-.00039**
Stddev	.00127	.00033	.00700	.00165	.00110	.00011	.00067
%RSD	172.70	63.242	344.78	48.219	143.65	179.28	173.07
#1	.00181	.00076	.00234	-.00524	.00041	-.00010	.00036
#2	.00105	.00064	.00167	-.00201	.00199	.00006	-.00094
#3	-.00066	.00015	-.01010	-.00302	-.00011	-.00014	-.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8189.4**	**49088.**	**2337.5**
Stddev	22.9	596.	43.0
%RSD	.28011	1.2145	1.8391
#1	8163.8	49132.	2317.2
#2	8196.5	48471.	2308.4
#3	8208.0	49661.	2386.9

Approved: June 29, 2016

Sample Name: L1606123705 Acquired: 6/28/2016 15:21:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00108	.04623	.00085	.21038	.07029	.00001	79.469	.00017
Stddev	.00222	.00535	.00227	.00117	.00065	.00009	.518	.00002
%RSD	204.79	11.577	266.22	.55809	.91995	677.50	.65241	13.277
#1	-.00065	.04058	.00026	.21146	.07103	.00002	80.066	.00020
#2	.00089	.05122	-.00106	.20913	.06992	.00010	79.135	.00015
#3	-.00348	.04691	.00336	.21054	.06991	-.00008	79.206	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00093	.00131	.00140	.02187	.23359	.01641	19.643	.17357
Stddev	.00058	.00117	.00106	.01644	.12348	.00424	.180	.00442
%RSD	62.558	89.144	75.582	75.195	52.861	25.842	.91849	2.5439
#1	.00116	.00119	.00047	.03944	.34002	.01444	19.847	.17668
#2	.00027	.00021	.00119	.01931	.26254	.02128	19.578	.16852
#3	.00135	.00254	.00256	.00685	.09821	.01352	19.504	.17552
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00508	130.27	.00168	.03531	-.00111	.00448	.00147	6.5007
Stddev	.00041	.61	.00031	.00544	.00373	.00088	.00174	.0441
%RSD	8.1653	.46503	18.265	15.412	336.79	19.641	118.95	.67865
#1	.00460	130.96	.00141	.03231	-.00538	.00518	.00241	6.5208
#2	.00530	130.06	.00163	.04159	.00057	.00349	.00254	6.5312
#3	.00533	129.80	.00202	.03203	.00149	.00478	-.00055	6.4501
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606123705 Acquired: 6/28/2016 15:21:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00044	.29132	-.00812	-.00078	.00450	.01669	.00021
Stddev	.00083	.00110	.00185	.00384	.00049	.00043	.00026
%RSD	188.82	.37699	22.765	492.55	10.842	2.5630	124.73
#1	-.00001	.29259	-.00799	-.00430	.00476	.01696	.00036
#2	-.00139	.29065	-.00634	.00332	.00394	.01692	-.00009
#3	.00009	.29073	-.01003	-.00136	.00481	.01620	.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8582.9	51393.	2509.2
Stddev	5.4	178.	27.4
%RSD	.06333	.34690	1.0927
#1	8588.2	51452.	2477.8
#2	8577.3	51534.	2521.9
#3	8583.3	51192.	2528.0

Approved: June 29, 2016

Sample Name: L1606123706 Acquired: 6/28/2016 15:25:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00056**	**.05590**	**-.00086**	**.15524**	**.06415**	**.00015**	**38.707**	**.00004**
Stddev	.00068	.00750	.00333	.00467	.00118	.00008	.048	.00037
%RSD	120.74	13.417	386.55	3.0061	1.8367	51.500	.12271	1019.0
#1	.00007	.06166	.00220	.16020	.06535	.00010	38.737	-.00020
#2	-.00048	.05862	-.00037	.15094	.06300	.00024	38.653	-.00015
#3	-.00127	.04742	-.00441	.15457	.06411	.00011	38.732	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.00124**	**.00088**	**.04193**	**.59026**	**.01156**	**14.181**	**.00907**
Stddev	.00030	.00041	.00134	.00712	.11627	.00296	.079	.00052
%RSD	1211.0	33.302	152.35	16.990	19.697	25.640	.55724	5.7259
#1	-.00010	.00169	.00098	.03411	.69162	.00926	14.090	.00959
#2	.00031	.00116	-.00051	.04804	.46334	.01050	14.233	.00905
#3	-.00028	.00087	.00216	.04365	.61583	.01490	14.220	.00856
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01006**	**117.62**	**.00066**	**.02208**	**-.00217**	**.00519**	**-.00038**	**5.6043**
Stddev	.00042	.67	.00047	.00386	.00193	.00564	.00551	.1074
%RSD	4.2259	.57374	71.751	17.493	88.780	108.55	1433.6	1.9158
#1	.01015	118.19	.00038	.02111	-.00386	-.00129	.00182	5.6411
#2	.01043	116.87	.00039	.02633	-.00257	.00795	-.00666	5.6884
#3	.00959	117.78	.00120	.01879	-.00007	.00892	.00368	5.4833
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606123706 Acquired: 6/28/2016 15:25:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**.22497**	**-.00316**	**-.00133**	**.00900**	**.00431**	**-.00007**
Stddev	.00019	.00151	.00967	.00273	.00049	.00016	.00052
%RSD	80.655	.67150	306.39	204.69	5.4393	3.8183	767.12
#1	-.00029	.22594	-.01079	-.00244	.00856	.00434	.00052
#2	-.00002	.22323	.00772	.00177	.00890	.00446	-.00046
#3	-.00038	.22574	-.00641	-.00334	.00952	.00413	-.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8541.3**	**51659.**	**2526.2**
Stddev	32.8	370.	23.2
%RSD	.38388	.71629	.91927
#1	8579.1	51926.	2501.9
#2	8523.7	51815.	2548.1
#3	8521.0	51237.	2528.6

Approved: June 29, 2016

Sample Name: L1606123801 Acquired: 6/28/2016 15:29:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	.02841	.00066	.32177	.09038	.00009	100.82	.00016
Stddev	.00404	.00560	.00333	.00725	.00172	.00003	.53	.00014
%RSD	31331.	19.726	502.38	2.2540	1.9010	27.369	.52928	84.386
#1	.00443	.03482	.00403	.31699	.08868	.00012	100.36	.00001
#2	-.00348	.02597	.00059	.33011	.09211	.00007	101.41	.00028
#3	-.00099	.02444	-.00263	.31820	.09034	.00009	100.71	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	.00165	-.00011	.04282	.34758	.02236	50.725	.10043
Stddev	.00006	.00110	.00050	.02588	.08170	.00650	.406	.00197
%RSD	8.7231	66.713	438.66	60.445	23.504	29.071	.80019	1.9636
#1	.00069	.00189	-.00059	.04711	.25812	.02918	50.261	.10255
#2	.00060	.00261	-.00015	.01506	.41822	.02165	51.011	.09864
#3	.00070	.00045	.00040	.06629	.36641	.01624	50.904	.10012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	135.14	-.00138	.02281	.00531	.00297	-.00440	7.8806
Stddev	.00015	.52	.00074	.00601	.00255	.00266	.00697	.1292
%RSD	39.646	.38483	53.444	26.359	47.957	89.611	158.44	1.6396
#1	.00055	134.83	-.00221	.02166	.00433	.00262	-.00926	7.9875
#2	.00030	135.74	-.00109	.01746	.00340	.00579	-.00753	7.9174
#3	.00028	134.84	-.00083	.02932	.00820	.00050	.00359	7.7370
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606123801 Acquired: 6/28/2016 15:29:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.69804	-.01792	-.00350	.00631	.00306	-.00006
Stddev	.00089	.00322	.00937	.00240	.00064	.00010	.00062
%RSD	534.48	.46184	52.294	68.655	10.123	3.4173	981.45
#1	.00078	.69567	-.02467	-.00611	.00575	.00313	.00007
#2	-.00029	.70171	-.00722	-.00301	.00700	.00294	.00048
#3	-.00098	.69675	-.02186	-.00138	.00616	.00311	-.00074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8519.0	50868.	2492.0
Stddev	24.4	171.	15.6
%RSD	.28672	.33552	.62561
#1	8492.6	50879.	2508.7
#2	8523.7	50692.	2489.6
#3	8540.8	51032.	2477.8

Approved: June 29, 2016

Sample Name: L1606123802 Acquired: 6/28/2016 15:33:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	.10980	.00392	.94724	.02557	.00003	77.218
Stddev	.00183	.00971	.00125	.00776	.00106	.00007	.742
%RSD	329.00	8.8394	31.885	.81970	4.1264	245.57	.96108
#1	-.00056	.11256	.00341	.95373	.02525	.00004	76.910
#2	.00128	.11783	.00534	.94934	.02472	.00009	76.680
#3	-.00238	.09902	.00300	.93864	.02675	-.00005	78.065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.00030	.00389	-.00035	.22634	2.6762	.04857
Stddev	.00016	.00014	.00093	.00186	.01305	.0714	.00761
%RSD	84.843	47.925	23.820	529.18	5.7658	2.6678	15.667
#1	.00027	.00025	.00485	-.00233	.22844	2.6021	.05624
#2	.00000	.00019	.00379	-.00009	.23821	2.6819	.04845
#3	.00030	.00046	.00301	.00137	.21237	2.7445	.04102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	46.632	.00252	.01010	F 345.47	-.00062	.00983	-.00176
Stddev	.509	.00191	.00020	2.85	.00048	.00266	.00080
%RSD	1.0915	75.779	1.9903	.82504	77.205	27.047	45.354
#1	46.118	.00384	.01033	344.78	-.00007	.00722	-.00125
#2	46.641	.00339	.00999	343.03	-.00083	.00973	-.00135
#3	47.136	.00033	.00998	348.60	-.00097	.01254	-.00267
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606123802 Acquired: 6/28/2016 15:33:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00328**	**.00554**	**6.7719**	**-.00021**	**1.5406**	**-.01434**	**-.00073**
Stddev	.00167	.00590	.0156	.00147	.0167	.00367	.00386
%RSD	50.891	106.49	.22993	707.84	1.0842	25.593	526.75
#1	.00142	-.00114	6.7795	.00002	1.5371	-.01055	-.00140
#2	.00377	.01005	6.7823	-.00177	1.5260	-.01461	.00342
#3	.00466	.00771	6.7540	.00113	1.5588	-.01787	-.00422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.01112**	**.00460**	**.00044**
Stddev	.00050	.00012	.00055
%RSD	4.4846	2.6197	123.27
#1	.01110	.00466	.00008
#2	.01163	.00446	.00107
#3	.01063	.00468	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8395.4**	**49805.**	**2522.8**
Stddev	34.6	239.	37.5
%RSD	.41206	.48030	1.4877
#1	8419.9	49616.	2519.8
#2	8410.5	49725.	2561.7
#3	8355.9	50074.	2486.8

Approved: June 29, 2016

Sample Name: L1606123801PS Acquired: 6/28/2016 15:37:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574350-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20566**	**5.2613**	**.20977**	**1.3242**	**.59672**	**.02593**	**94.859**	**.02633**
Stddev	.00128	.0235	.00601	.0130	.00240	.00012	.490	.00065
%RSD	.62377	.44726	2.8645	.98473	.40146	.45189	.51690	2.4555
#1	.20632	5.2753	.21194	1.3337	.59396	.02581	94.339	.02662
#2	.20419	5.2745	.21440	1.3296	.59799	.02605	94.923	.02678
#3	.20649	5.2342	.20298	1.3094	.59822	.02592	95.313	.02559
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10300**	**.26033**	**.25484**	**2.0703**	**26.313**	**.53993**	**50.042**	**.34483**
Stddev	.00282	.00213	.00508	.0309	.165	.00242	.323	.00158
%RSD	2.7370	.81790	1.9951	1.4940	.62590	.44906	.64515	.45837
#1	.10411	.26128	.25729	2.0499	26.123	.54130	49.789	.34643
#2	.10509	.26182	.25823	2.0552	26.411	.54136	49.932	.34327
#3	.09979	.25789	.24899	2.1059	26.406	.53713	50.406	.34477
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53067**	**146.32**	**.25190**	**5.2586**	**.25990**	**.62316**	**.19247**	**9.5907**
Stddev	.01382	.46	.00596	.1176	.00198	.01383	.00658	.1798
%RSD	2.6034	.31765	2.3647	2.2364	.76171	2.2199	3.4177	1.8743
#1	.53819	146.01	.25439	5.3290	.26193	.63457	.18659	9.6888
#2	.53909	146.08	.25620	5.3239	.25979	.62714	.19124	9.7000
#3	.51472	146.85	.24510	5.1228	.25797	.60777	.19957	9.3832
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606123801PS Acquired: 6/28/2016 15:37:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574350-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52525	1.1214	.49433	.25598	.53086	.51942	.00057
Stddev	.01294	.0042	.01033	.00462	.00191	.01218	.00063
%RSD	2.4638	.36967	2.0899	1.8038	.35889	2.3458	110.78
#1	.53113	1.1189	.48240	.25460	.53295	.52541	.00036
#2	.53421	1.1192	.49999	.26112	.53042	.52746	.00007
#3	.51041	1.1262	.50059	.25220	.52921	.50540	.00128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8305.6	49994.	2441.9
Stddev	60.9	85.	13.6
%RSD	.73304	.17028	.55805
#1	8315.5	49940.	2454.5
#2	8240.4	49950.	2443.9
#3	8360.9	50092.	2427.4

Approved: June 29, 2016

Sample Name: L1606123801SDL Acquired: 6/28/2016 15:40:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574350-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**.02473**	**-.00212**	**.07147**	**.02347**	**.00005**	**20.928**
Stddev	.00109	.00054	.00149	.00334	.00066	.00008	.186
%RSD	959.81	2.1896	70.454	4.6683	2.8226	151.78	.88836
#1	-.00121	.02419	-.00043	.06839	.02351	.00006	20.873
#2	.00098	.02528	-.00266	.07501	.02410	-.00003	20.775
#3	-.00011	.02472	-.00327	.07101	.02278	.00013	21.135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.00020**	**.00129**	**-.00091**	F **-.02170**	**.07079**	**.00330**
Stddev	.00020	.00019	.00149	.00070	.02117	.10620	.00513
%RSD	152.92	96.557	115.37	76.358	97.585	150.02	155.31
#1	.00028	.00042	-.00040	-.00157	-.03475	.08932	-.00056
#2	-.00010	.00010	.00240	-.00018	-.03307	.16651	.00912
#3	.00022	.00008	.00187	-.00098	.00273	-.04346	.00135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.841**	**.01654**	**-.00003**	**27.860**	**.00069**	**.00399**	**-.00141**
Stddev	.023	.00153	.00042	.220	.00116	.00351	.00048
%RSD	.21249	9.2697	1543.8	.79051	169.21	87.841	33.856
#1	10.864	.01533	-.00031	27.785	-.00065	.00007	-.00151
#2	10.840	.01604	-.00023	27.686	.00126	.00682	-.00183
#3	10.818	.01827	.00046	28.107	.00145	.00508	-.00089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606123801SDL Acquired: 6/28/2016 15:40:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574350-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00343**	**-.00608**	**1.6380**	**-.00029**	**.14366**	**-.00165**	**-.00327**
Stddev	.00269	.01052	.1152	.00086	.00186	.00409	.00319
%RSD	78.400	173.02	7.0326	294.81	1.2945	248.67	97.486
#1	.00612	-.01199	1.7682	-.00089	.14229	.00192	-.00269
#2	.00074	.00606	1.5494	.00069	.14292	-.00612	-.00041
#3	.00343	-.01230	1.5964	-.00067	.14578	-.00074	-.00670
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00179**	**.00210**	**-.00083**
Stddev	.00019	.00035	.00068
%RSD	10.525	16.568	81.540
#1	.00157	.00187	-.00059
#2	.00190	.00193	-.00160
#3	.00189	.00250	-.00031
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8980.6**	**51089.**	**2404.2**
Stddev	513.4	106.	3.2
%RSD	5.7168	.20814	.13357
#1	8390.5	50977.	2401.4
#2	9324.8	51188.	2403.4
#3	9226.6	51103.	2407.7

Approved: June 29, 2016

Sample Name: L1606123801SDL Acquired: 6/28/2016 15:44:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574350-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00100	.00544	-.00466	.01306	.00527	.00004	3.9791	-.00005
Stddev	.00192	.00294	.00175	.00317	.00104	.00003	.0275	.00007
%RSD	192.17	54.006	37.652	24.284	19.652	67.711	.69174	155.22
#1	.00265	.00880	-.00547	.01616	.00425	.00007	3.9526	.00002
#2	.00146	.00337	-.00586	.01321	.00523	.00005	4.0075	-.00005
#3	-.00111	.00414	-.00264	.00982	.00632	.00001	3.9771	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	-.00008	.00135	.00570	-.18715	-.00195	2.1695	.00167
Stddev	.00035	.00105	.00042	.01759	.08574	.00312	.1088	.00211
%RSD	329.62	1341.6	31.025	308.32	45.816	160.03	5.0156	125.86
#1	-.00043	-.00123	.00169	-.01195	-.20685	-.00263	2.0731	-.00042
#2	.00026	.00020	.00088	.02322	-.26133	.00145	2.2875	.00379
#3	-.00015	.00080	.00149	.00585	-.09327	-.00466	2.1479	.00165
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	5.4403	-.00105	.00422	.00008	.00091	-.00076	.31889
Stddev	.00014	.0432	.00018	.00137	.00143	.00279	.00380	.00752
%RSD	53.477	.79435	17.170	32.493	1733.1	305.96	502.20	2.3587
#1	-.00039	5.4024	-.00085	.00350	-.00067	.00351	.00289	.31022
#2	-.00012	5.4873	-.00118	.00336	.00173	.00127	-.00470	.32275
#3	-.00026	5.4311	-.00114	.00580	-.00081	-.00204	-.00046	.32370
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606123801SDL Acquired: 6/28/2016 15:44:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574350-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**.02709**	**-.00343**	**.00004**	**-.00020**	**.00057**	**-.00020**
Stddev	.00007	.00027	.00150	.00159	.00059	.00007	.00002
%RSD	30.681	.98959	43.744	4248.5	287.84	11.467	11.328
#1	-.00016	.02726	-.00241	.00171	.00045	.00064	-.00022
#2	-.00025	.02722	-.00516	-.00145	-.00070	.00056	-.00019
#3	-.00030	.02678	-.00273	-.00015	-.00037	.00051	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9310.6**	**56752.**	**2686.9**
Stddev	63.1	308.	17.7
%RSD	.67723	.54199	.65719
#1	9346.3	56469.	2690.1
#2	9347.7	57079.	2667.9
#3	9237.8	56710.	2702.7

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 15:48:42 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37803**	**9.4509**	**.37927**	**.47338**	**.93970**	**.04711**	**9.3479**	**.04781**
Stddev	.00060	.0265	.00353	.00198	.00337	.00046	.0483	.00035
%RSD	.15821	.28063	.93117	.41832	.35812	.97758	.51686	.74077
#1	.37812	9.4602	.37661	.47340	.93759	.04659	9.2929	.04782
#2	.37857	9.4210	.38328	.47139	.94358	.04729	9.3677	.04744
#3	.37739	9.4716	.37792	.47535	.93794	.04746	9.3833	.04815
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19084**	**.47601**	**.47860**	**3.7082**	**47.404**	**.94988**	**9.4725**	**.46603**
Stddev	.00018	.00437	.00180	.0182	.243	.00785	.0656	.00569
%RSD	.09392	.91738	.37524	.49034	.51322	.82606	.69243	1.2217
#1	.19064	.47138	.47677	3.7162	47.463	.95871	9.4046	.45960
#2	.19097	.47661	.48036	3.6874	47.613	.94719	9.5356	.47043
#3	.19092	.48005	.47868	3.7211	47.137	.94372	9.4773	.46806
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.95641**	**46.996**	**.47435**	**9.5039**	**.47492**	**1.1385**	**.37881**	**4.7730**
Stddev	.00103	.185	.00298	.0141	.00194	.0048	.00807	.0182
%RSD	.10794	.39464	.62734	.14807	.40903	.42443	2.1306	.38085
#1	.95599	46.794	.47098	9.4895	.47674	1.1343	.37621	4.7554
#2	.95758	47.158	.47546	9.5046	.47515	1.1438	.38785	4.7720
#3	.95565	47.035	.47662	9.5176	.47288	1.1374	.37235	4.7917
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 15:48:42 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.95895	.93858	.93355	.47987	.94590	.95388	.94289
Stddev	.00233	.00125	.00061	.00084	.00826	.00045	.00708
%RSD	.24329	.13351	.06579	.17523	.87309	.04728	.75040
#1	.95863	.93915	.93330	.48029	.94284	.95418	.93557
#2	.95678	.93945	.93311	.48041	.93960	.95408	.94341
#3	.96142	.93715	.93425	.47890	.95525	.95336	.94969
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9128.8	54572.	2652.9
Stddev	10.8	125.	12.9
%RSD	.11881	.22890	.48483
#1	9120.0	54520.	2667.7
#2	9125.3	54480.	2647.0
#3	9140.9	54714.	2644.1

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 15:52:09 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.01657	-.00127	.00115	.00250	-.00001	-.01570	-.00008
Stddev	.00036	.00130	.00303	.00289	.00094	.00001	.05663	.00022
%RSD	176.13	7.8679	239.02	251.46	37.681	146.04	360.65	289.87
#1	-.00012	.01564	.00223	.00292	.00336	-.00002	.04213	-.00032
#2	.00015	.01600	-.00298	.00271	.00149	.00001	-.01819	.00011
#3	.00058	.01806	-.00306	-.00219	.00266	-.00002	-.07104	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	-.00043	-.00012	-.00756	.11853	.00019	.11865	-.00072
Stddev	.00021	.00071	.00013	.01917	.08400	.00373	.04872	.00393
%RSD	170.38	164.98	107.35	253.73	70.863	1929.0	41.059	547.65
#1	-.00008	.00011	-.00028	-.00923	.10917	-.00410	.07959	.00173
#2	.00010	-.00017	-.00004	.01240	.20682	.00202	.10312	-.00525
#3	.00034	-.00124	-.00005	-.02583	.03961	.00266	.17324	.00137
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00000	.03861	-.00041	-.00107	-.00082	.00445	-.00040	.00468
Stddev	.00011	.02350	.00123	.00234	.00156	.00285	.00220	.00283
%RSD	12754.	60.879	299.90	219.01	189.95	64.010	547.51	60.452
#1	-.00002	.01230	.00092	.00084	.00098	.00164	-.00293	.00399
#2	-.00009	.04600	-.00152	-.00368	-.00166	.00734	.00063	.00778
#3	.00012	.05752	-.00063	-.00036	-.00178	.00437	.00110	.00225
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 15:52:09 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00014	-.00244	-.00182	-.00043	-.00006	.00022
Stddev	.00074	.00027	.01113	.00188	.00034	.00016	.00053
%RSD	275.25	191.71	456.10	103.32	79.604	249.56	242.25
#1	.00006	.00024	.00647	-.00399	-.00080	.00004	-.00010
#2	-.00034	.00035	-.01492	-.00065	-.00014	-.00025	.00084
#3	.00109	-.00016	.00112	-.00082	-.00034	.00002	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9233.0	55737.	2640.6
Stddev	13.3	35.	14.4
%RSD	.14406	.06308	.54390
#1	9239.5	55725.	2651.8
#2	9241.9	55777.	2645.7
#3	9217.7	55710.	2624.4

Approved: June 29, 2016

Sample Name: LLCCV Acquired: 6/28/2016 15:56:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00768	.16617	.00778	.07829	.00901	.00151	.38054	.00078
Stddev	.00059	.00295	.00193	.00097	.00103	.00007	.07318	.00003
%RSD	7.6710	1.7771	24.811	1.2403	11.419	4.7078	19.231	3.8071
#1	.00795	.16515	.00562	.07934	.01014	.00143	.38882	.00081
#2	.00809	.16949	.00841	.07742	.00877	.00153	.30357	.00075
#3	.00701	.16386	.00933	.07809	.00813	.00156	.44923	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00392	.00406	.00277	.07220	.88839	.07750	.42309	.00647
Stddev	.00041	.00101	.00161	.00675	.06165	.00672	.10881	.00245
%RSD	10.423	24.871	58.208	9.3419	6.9397	8.6651	25.717	37.928
#1	.00348	.00448	.00393	.06545	.94580	.07065	.50818	.00416
#2	.00428	.00291	.00346	.07222	.82323	.07776	.30049	.00620
#3	.00399	.00479	.00093	.07894	.89615	.08408	.46061	.00904
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00734	.42612	.01516	.74724	.00671	.07731	.01024	.78186
Stddev	.00014	.02288	.00056	.02937	.00279	.00543	.00225	.02095
%RSD	1.9299	5.3700	3.7208	3.9305	41.642	7.0266	22.010	2.6791
#1	.00738	.40444	.01558	.75304	.00961	.07477	.00846	.78889
#2	.00745	.42388	.01452	.77328	.00647	.07361	.00950	.79839
#3	.00718	.45004	.01539	.71540	.00404	.08355	.01278	.75830
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LLCCV Acquired: 6/28/2016 15:56:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38759**	**.03962**	**.02473**	**.14477**	**.00726**	**.01644**	**.04043**
Stddev	.01743	.00052	.00802	.00281	.00047	.00057	.00036
%RSD	4.4976	1.3110	32.414	1.9392	6.4568	3.4888	.88409
#1	.39748	.04019	.03053	.14368	.00780	.01686	.04002
#2	.39782	.03951	.02808	.14796	.00696	.01668	.04064
#3	.36746	.03916	.01558	.14267	.00701	.01579	.04063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9278.8**	**55862.**	**2662.5**
Stddev	17.4	75.	12.2
%RSD	.18739	.13429	.45669
#1	9298.8	55917.	2661.6
#2	9268.8	55892.	2650.8
#3	9268.6	55777.	2675.0

Approved: June 29, 2016

Sample Name: PBW E3 Acquired: 6/28/2016 16:00:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574197-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00067**	**.00550**	**-.00520**	**-.00061**	**.00284**	**-.00002**	**-.01393**	**.00001**
Stddev	.00056	.00246	.00322	.00129	.00065	.00007	.02787	.00025
%RSD	83.137	44.655	61.978	212.48	22.799	453.28	200.02	1981.0
#1	-.00080	.00747	-.00760	.00073	.00209	-.00004	-.03036	.00018
#2	-.00115	.00275	-.00154	-.00183	.00313	.00006	.01824	.00014
#3	-.00006	.00629	-.00646	-.00072	.00328	-.00007	-.02968	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**-.00175**	**-.00007**	**-.01889**	**-.01522**	**.00715**	**.05791**	**-.00024**
Stddev	.00026	.00044	.00113	.02013	.06900	.00186	.02945	.00354
%RSD	1112.4	25.112	1698.9	106.58	453.40	25.993	50.851	1450.7
#1	-.00014	-.00137	.00024	-.02736	-.08990	.00755	.04372	-.00331
#2	-.00020	-.00164	-.00131	-.03340	-.00194	.00878	.09176	.00364
#3	.00027	-.00223	.00088	.00410	.04618	.00513	.03824	-.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00033**	**.01548**	**.00101**	**-.00415**	**.00067**	**.00583**	**-.00128**	**.00641**
Stddev	.00066	.03272	.00114	.00104	.00400	.00217	.00175	.00141
%RSD	198.80	211.42	113.35	25.146	598.17	37.322	136.61	22.043
#1	.00000	-.00039	.00079	-.00336	-.00328	.00401	-.00289	.00803
#2	.00109	-.00628	.00224	-.00533	.00056	.00824	-.00152	.00541
#3	-.00010	.05311	-.00001	-.00375	.00473	.00523	.00058	.00580
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: PBW E3 Acquired: 6/28/2016 16:00:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574197-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	.00018	.00251	-.00111	-.00059	.00005	-.00000
Stddev	.00088	.00063	.00518	.00198	.00079	.00012	.00017
%RSD	418.04	345.63	206.19	177.70	134.04	250.99	18380.
#1	-.00080	.00059	-.00302	-.00206	-.00103	-.00003	-.00020
#2	.00081	-.00055	.00332	-.00244	-.00106	.00019	.00007
#3	.00062	.00051	.00724	.00116	.00032	-.00002	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9302.4	56171.	2670.9
Stddev	30.2	35.	11.1
%RSD	.32472	.06178	.41452
#1	9337.2	56185.	2670.8
#2	9286.1	56197.	2659.9
#3	9283.7	56132.	2682.0

Approved: June 29, 2016

Sample Name: LCSW E3 Acquired: 6/28/2016 16:03:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574197-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19164**	**4.8348**	**.19399**	**.96238**	**.48851**	**.02340**	**4.9583**	**.02409**
Stddev	.00070	.0039	.00200	.00191	.00160	.00019	.0273	.00005
%RSD	.36607	.08097	1.0288	.19845	.32724	.81759	.55135	.21374
#1	.19241	4.8320	.19461	.96035	.48786	.02338	4.9331	.02405
#2	.19147	4.8332	.19175	.96264	.49033	.02360	4.9545	.02415
#3	.19104	4.8393	.19560	.96414	.48733	.02321	4.9874	.02408
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09838**	**.24122**	**.24571**	**1.9415**	**24.306**	**.49959**	**5.0727**	**.23822**
Stddev	.00032	.00119	.00094	.0510	.052	.00122	.0794	.00107
%RSD	.32120	.49389	.38434	2.6263	.21259	.24402	1.5660	.44936
#1	.09855	.24092	.24516	1.9035	24.363	.49831	5.0865	.23888
#2	.09857	.24254	.24680	1.9995	24.262	.50073	5.1444	.23698
#3	.09802	.24022	.24517	1.9216	24.293	.49974	4.9873	.23879
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49267**	**24.636**	**.24311**	**4.7132**	**.24277**	**.57388**	**.18611**	**2.4298**
Stddev	.00071	.059	.00031	.0018	.00139	.00584	.00559	.0037
%RSD	.14398	.24026	.12844	.03776	.57264	1.0177	3.0019	.15241
#1	.49330	24.611	.24347	4.7116	.24222	.57387	.19001	2.4294
#2	.49280	24.594	.24294	4.7151	.24173	.56804	.18862	2.4264
#3	.49190	24.704	.24293	4.7129	.24435	.57973	.17971	2.4338
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LCSW E3 Acquired: 6/28/2016 16:03:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574197-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48900**	**.49567**	**.46962**	**.24399**	**.47814**	**.48958**	**.00062**
Stddev	.00125	.00161	.00327	.00133	.00046	.00034	.00090
%RSD	.25648	.32520	.69633	.54666	.09619	.06849	146.54
#1	.49015	.49753	.46715	.24325	.47797	.48939	.00087
#2	.48919	.49488	.46839	.24318	.47866	.48996	-.00039
#3	.48766	.49462	.47333	.24553	.47779	.48937	.00136
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9097.3**	**54813.**	**2632.8**
Stddev	16.7	109.	5.1
%RSD	.18401	.19922	.19486
#1	9101.7	54693.	2627.8
#2	9078.9	54840.	2638.1
#3	9111.5	54906.	2632.5

Approved: June 29, 2016

Sample Name: L1606137801 Acquired: 6/28/2016 16:07:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00133	.02995	-.00247	.00497	.00313	-.00004	.12563	.00022
Stddev	.00136	.01041	.00165	.00241	.00128	.00001	.07525	.00023
%RSD	102.23	34.771	66.713	48.415	40.906	37.046	59.900	104.72
#1	-.00291	.04066	-.00357	.00738	.00449	-.00003	.04003	.00049
#2	-.00050	.01986	-.00058	.00257	.00293	-.00005	.15547	.00013
#3	-.00059	.02933	-.00326	.00495	.00196	-.00004	.18138	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	.00067	.00962	.06701	.11243	.00301	.16999	-.00022
Stddev	.00042	.00098	.00044	.01189	.09990	.00323	.01565	.00390
%RSD	524.67	146.04	4.5944	17.737	88.858	107.10	9.2056	1768.4
#1	.00003	-.00046	.00945	.05635	.22726	.00117	.15968	.00351
#2	.00027	.00129	.01011	.06486	.04543	.00674	.18799	.00009
#3	-.00054	.00119	.00928	.07983	.06460	.00113	.16229	-.00427
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	.10552	.00028	.00468	.00047	.00320	-.00427	.00402
Stddev	.00036	.03871	.00041	.00975	.00165	.00377	.00708	.00338
%RSD	82.113	36.686	145.32	208.23	350.78	117.78	165.76	84.059
#1	.00083	.13385	.00075	-.00374	.00130	-.00089	-.01229	.00792
#2	.00032	.12132	-.00004	.01536	-.00143	.00652	-.00163	.00220
#3	.00015	.06141	.00014	.00242	.00155	.00397	.00111	.00194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606137801 Acquired: 6/28/2016 16:07:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.00119	.00220	-.00184	.00011	.00305	-.00009
Stddev	.00064	.00024	.00451	.00322	.00006	.00008	.00007
%RSD	1633.7	19.830	204.62	175.10	57.970	2.4756	76.127
#1	.00052	.00132	-.00187	-.00536	.00004	.00303	-.00003
#2	-.00069	.00133	.00704	-.00111	.00016	.00314	-.00016
#3	.00028	.00092	.00144	.00096	.00014	.00299	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9255.0	55896.	2662.5
Stddev	31.8	116.	12.9
%RSD	.34321	.20711	.48455
#1	9275.2	55940.	2674.4
#2	9271.5	55764.	2648.8
#3	9218.4	55982.	2664.3

Approved: June 29, 2016

Sample Name: L1606137802 Acquired: 6/28/2016 16:11:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00098	.24127	-.00216	.00978	.00727	-.00000	.91725	.00010
Stddev	.00151	.00761	.00236	.00115	.00053	.00003	.01367	.00033
%RSD	154.09	3.1538	109.31	11.785	7.2310	5360.9	1.4902	319.09
#1	.00169	.23297	.00049	.01008	.00771	.00001	.91395	.00028
#2	-.00075	.24791	-.00403	.00851	.00741	.00002	.93226	.00031
#3	.00200	.24294	-.00293	.01075	.00669	-.00003	.90553	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	-.00034	.02208	.19804	.10104	.00364	.28039	.00749
Stddev	.00057	.00062	.00090	.05727	.01689	.00502	.07826	.00133
%RSD	613.93	179.99	4.0773	28.920	16.719	137.96	27.912	17.702
#1	.00065	.00032	.02216	.21210	.11978	.00411	.20842	.00717
#2	.00012	-.00091	.02294	.13505	.09634	.00840	.36371	.00635
#3	-.00049	-.00043	.02114	.24698	.08699	-.00160	.26905	.00895
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.36176	.00023	.01940	.00079	.00029	-.00783	.41959
Stddev	.00014	.03222	.00168	.00181	.00348	.00484	.00345	.01536
%RSD	353.07	8.9077	738.46	9.3468	437.79	1683.6	44.023	3.6610
#1	.00018	.39404	.00214	.02073	.00068	.00448	-.00387	.42485
#2	.00004	.32959	-.00043	.02013	.00433	-.00501	-.00950	.43163
#3	-.00010	.36167	-.00103	.01733	-.00263	.00139	-.01012	.40229
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606137802 Acquired: 6/28/2016 16:11:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	.00639	.00238	-.00432	.00102	.00723	.00044
Stddev	.00074	.00025	.00737	.00078	.00072	.00034	.00043
%RSD	114.39	3.9538	310.16	18.130	70.551	4.6981	98.173
#1	.00125	.00616	.01079	-.00520	.00020	.00754	.00086
#2	-.00017	.00666	-.00073	-.00370	.00152	.00727	-.00001
#3	.00085	.00634	-.00293	-.00405	.00134	.00686	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9157.6	55840.	2649.1
Stddev	8.8	126.	16.6
%RSD	.09618	.22561	.62530
#1	9166.4	55974.	2664.8
#2	9157.6	55724.	2631.8
#3	9148.8	55822.	2650.6

Approved: June 29, 2016

Sample Name: L1606137803 Acquired: 6/28/2016 16:15:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00123	.03613	-.00107	.00717	.00261	.00001	.20229	.00004
Stddev	.00057	.00887	.00175	.00045	.00128	.00005	.03288	.00045
%RSD	46.612	24.549	164.26	6.2941	49.199	461.39	16.255	1093.4
#1	-.00154	.02644	-.00104	.00692	.00113	.00007	.18429	-.00031
#2	-.00158	.04384	.00067	.00689	.00338	-.00002	.24024	.00054
#3	-.00057	.03813	-.00284	.00769	.00331	-.00002	.18234	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	-.00125	.02974	.02446	.22250	.00496	.03287	.00243
Stddev	.00024	.00034	.00035	.03617	.07798	.00081	.11336	.00308
%RSD	66.571	27.354	1.1617	147.86	35.048	16.433	344.85	126.87
#1	.00058	-.00164	.02957	-.01471	.31086	.00411	.05459	.00539
#2	.00010	-.00107	.03014	.05658	.19336	.00574	.13379	-.00077
#3	.00041	-.00102	.02952	.03151	.16329	.00502	-.08977	.00267
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.32876	.00072	.01481	.00334	.00498	-.00272	.03276
Stddev	.00069	.00872	.00029	.00640	.00320	.00234	.00271	.00135
%RSD	2428.7	2.6516	40.869	43.182	95.766	46.923	99.661	4.1065
#1	.00029	.31874	.00103	.00985	.00172	.00230	-.00358	.03164
#2	.00054	.33460	.00067	.02203	.00702	.00601	.00032	.03238
#3	-.00075	.33295	.00045	.01256	.00127	.00662	-.00489	.03425
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606137803 Acquired: 6/28/2016 16:15:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.00147	.00034	-.00167	-.00043	.00872	-.00013
Stddev	.00054	.00056	.00466	.00220	.00123	.00025	.00095
%RSD	56.877	37.984	1386.8	131.84	288.10	2.8588	736.06
#1	.00095	.00178	-.00140	-.00136	.00013	.00853	.00094
#2	.00041	.00083	.00561	.00036	-.00184	.00862	-.00047
#3	.00148	.00180	-.00321	-.00401	.00043	.00900	-.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9279.4	55188.	2617.5
Stddev	5.8	62.	13.4
%RSD	.06281	.11260	.51339
#1	9277.1	55217.	2631.1
#2	9286.0	55116.	2617.1
#3	9275.0	55230.	2604.2

Approved: June 29, 2016

Sample Name: L1606137804 Acquired: 6/28/2016 16:19:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00033	.00583	-.00362	.00297	.00220	-.00003	.01525	.00015
Stddev	.00186	.01048	.00045	.00162	.00081	.00003	.03382	.00030
%RSD	567.99	179.69	12.428	54.580	36.950	109.52	221.79	195.99
#1	.00129	.00783	-.00389	.00475	.00158	-.00003	-.00321	.00012
#2	-.00236	.01516	-.00310	.00260	.00191	-.00005	.05427	-.00013
#3	.00008	-.00550	-.00387	.00157	.00312	.00001	-.00532	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.00006	.00038	-.00080	.11004	.00434	.10714	-.00234
Stddev	.00015	.00068	.00115	.02641	.13143	.00212	.11999	.00115
%RSD	120.12	1104.2	304.96	3316.9	119.44	48.731	111.99	49.262
#1	.00030	.00084	.00160	.00792	.21872	.00201	.24567	-.00135
#2	.00003	-.00025	.00020	-.03047	.14744	.00615	.03567	-.00360
#3	.00004	-.00041	-.00068	.02016	-.03603	.00487	.04008	-.00206
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	.07562	.00088	-.00216	-.00036	.00498	.00348	-.02142
Stddev	.00039	.01403	.00154	.00376	.00510	.00407	.00646	.00069
%RSD	153.47	18.559	175.49	173.82	1407.8	81.770	185.82	3.2242
#1	-.00003	.08160	.00250	.00183	-.00607	.00888	.00840	-.02216
#2	-.00003	.05959	-.00057	-.00267	.00126	.00532	.00587	-.02080
#3	-.00070	.08568	.00071	-.00565	.00373	.00075	-.00384	-.02131
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606137804 Acquired: 6/28/2016 16:19:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00029	.00515	-.00424	-.00024	.00234	.00012
Stddev	.00145	.00038	.00994	.00233	.00166	.00018	.00028
%RSD	2444.3	128.27	193.09	54.933	684.71	7.6940	243.78
#1	.00093	.00057	.01372	-.00155	.00160	.00213	.00004
#2	.00087	.00045	-.00575	-.00568	-.00070	.00247	-.00012
#3	-.00162	-.00014	.00748	-.00547	-.00163	.00241	.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9250.6	56270.	2671.7
Stddev	7.7	175.	15.8
%RSD	.08274	.31170	.59260
#1	9250.0	56071.	2667.9
#2	9258.6	56337.	2658.1
#3	9243.3	56403.	2689.1

Approved: June 29, 2016

Sample Name: L1606138001 Acquired: 6/28/2016 16:23:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	18.881	.01121	.04582	.29039	.00157	84.977	.00008
Stddev	.00214	.028	.00257	.00283	.00147	.00003	.069	.00009
%RSD	760.43	.15027	22.957	6.1732	.50732	2.0312	.08124	101.89
#1	.00044	18.907	.01411	.04268	.28883	.00155	84.906	.00014
#2	-.00194	18.851	.00920	.04662	.29058	.00155	85.044	.00013
#3	.00234	18.884	.01031	.04817	.29175	.00161	84.981	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01286	.02713	.02544	25.071	4.7884	.04041	29.287	1.3847
Stddev	.00023	.00057	.00272	.102	.0770	.00278	.109	.0090
%RSD	1.7707	2.0963	10.709	.40653	1.6080	6.8777	.37299	.64781
#1	.01290	.02753	.02636	25.088	4.8757	.03765	29.161	1.3860
#2	.01306	.02648	.02759	24.961	4.7300	.04036	29.341	1.3751
#3	.01261	.02739	.02238	25.163	4.7596	.04321	29.358	1.3929
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00487	6.5012	.02834	.77361	.03577	-.00040	-.00445	24.324
Stddev	.00048	.0395	.00143	.01408	.00193	.00077	.00299	.309
%RSD	9.7902	.60716	5.0582	1.8200	5.4033	194.49	67.253	1.2710
#1	.00474	6.4671	.02787	.77271	.03771	.00030	-.00208	24.356
#2	.00448	6.4920	.02995	.78811	.03385	-.00122	-.00346	24.616
#3	.00540	6.5445	.02721	.76000	.03574	-.00026	-.00782	24.000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606138001 Acquired: 6/28/2016 16:23:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00136	.32243	.11171	-.00130	.03430	.48738	.00279
Stddev	.00095	.00109	.00577	.00271	.00009	.01023	.00049
%RSD	69.999	.33711	5.1618	208.64	.26249	2.0990	17.473
#1	.00224	.32130	.11837	-.00291	.03420	.49075	.00224
#2	.00148	.32253	.10821	.00183	.03437	.49550	.00298
#3	.00035	.32346	.10856	-.00282	.03432	.47589	.00316
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9127.1	55258.	2659.8
Stddev	31.6	168.	9.9
%RSD	.34567	.30373	.37056
#1	9162.7	55122.	2666.0
#2	9102.6	55206.	2665.1
#3	9116.0	55446.	2648.5

Approved: June 29, 2016

Sample Name: L1606138002 Acquired: 6/28/2016 16:27:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00123	23.052	.01041	.04995	.27455	.00176	89.804	.00018
Stddev	.00155	.082	.00437	.00204	.00194	.00013	.487	.00012
%RSD	125.65	.35572	42.002	4.0787	.70771	7.3034	.54236	68.679
#1	.00299	23.127	.01537	.05225	.27502	.00178	89.890	.00009
#2	.00062	22.965	.00710	.04925	.27241	.00188	89.280	.00012
#3	.00009	23.063	.00876	.04836	.27621	.00162	90.243	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01514	.03329	.04031	30.770	5.4790	.04939	32.771	1.4662
Stddev	.00034	.00089	.00429	.139	.0866	.00299	.215	.0056
%RSD	2.2702	2.6859	10.637	.45045	1.5804	6.0611	.65743	.38355
#1	.01483	.03431	.04248	30.753	5.5759	.05008	32.805	1.4652
#2	.01507	.03264	.04307	30.640	5.4517	.05198	32.541	1.4611
#3	.01551	.03294	.03537	30.916	5.4093	.04611	32.968	1.4722
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00568	6.9225	.04829	.81670	.03824	.00474	-.00326	28.829
Stddev	.00022	.0247	.00159	.00954	.00261	.00036	.00176	.340
%RSD	3.8794	.35719	3.2983	1.1676	6.8251	7.6137	53.869	1.1781
#1	.00542	6.9011	.04906	.82661	.03980	.00485	-.00372	29.055
#2	.00582	6.9168	.04936	.81588	.03970	.00503	-.00474	28.994
#3	.00579	6.9496	.04646	.80759	.03523	.00433	-.00132	28.438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606138002 Acquired: 6/28/2016 16:27:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00159**	**.34526**	**.13497**	**-.00119**	**.04001**	**.16840**	**.00274**
Stddev	.00067	.00143	.00550	.00167	.00032	.00291	.00035
%RSD	41.910	.41554	4.0771	139.98	.79480	1.7261	12.734
#1	.00103	.34567	.14130	-.00077	.04036	.16974	.00234
#2	.00142	.34366	.13131	-.00303	.03974	.17040	.00288
#3	.00233	.34644	.13231	.00023	.03992	.16507	.00299
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8969.2**	**53823.**	**2585.6**
Stddev	28.5	121.	22.8
%RSD	.31768	.22430	.88148
#1	8943.3	53758.	2563.7
#2	8964.7	53962.	2609.2
#3	8999.7	53748.	2583.9

Approved: June 29, 2016

Sample Name: L1606138106 Acquired: 6/28/2016 16:30:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**.02671**	**-.00035**	**.00219**	**.00470**	**.00004**	**.11044**	**-.00004**
Stddev	.00038	.00978	.00157	.00132	.00024	.00006	.05141	.00009
%RSD	165.88	36.629	453.87	60.161	5.0940	180.89	46.554	218.04
#1	-.00009	.02052	-.00215	.00221	.00459	-.00002	.11853	.00006
#2	.00006	.03798	.00042	.00086	.00497	.00010	.15733	-.00007
#3	-.00066	.02162	.00070	.00350	.00453	.00002	.05546	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**.00005**	**.00232**	**.03313**	**-.06208**	**.00365**	**.11571**	**.00058**
Stddev	.00026	.00107	.00141	.04609	.12036	.00290	.06176	.00147
%RSD	301.01	2205.9	60.777	139.12	193.89	79.577	53.372	255.27
#1	.00021	-.00039	.00332	-.01338	-.04214	.00473	.04833	.00099
#2	-.00027	-.00073	.00071	.03397	-.19116	.00585	.16963	-.00106
#3	-.00021	.00127	.00293	.07879	.04707	.00036	.12917	.00179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00109**	**.24481**	**.00038**	**-.00234**	**-.00159**	**.00016**	**-.00878**	**.09592**
Stddev	.00097	.01784	.00090	.00446	.00039	.00135	.00458	.00474
%RSD	88.792	7.2876	235.47	190.19	24.402	834.50	52.202	4.9452
#1	-.00001	.23411	.00143	-.00495	-.00164	.00032	-.00992	.10032
#2	.00182	.23491	-.00009	-.00489	-.00194	-.00126	-.00373	.09654
#3	.00146	.26540	-.00018	.00280	-.00117	.00142	-.01269	.09090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606138106 Acquired: 6/28/2016 16:30:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.00062	.00178	-.00320	-.00041	.00111	.00044
Stddev	.00070	.00028	.00840	.00027	.00016	.00005	.00090
%RSD	1472.0	44.552	471.90	8.3543	38.969	4.6667	202.68
#1	.00057	.00039	.01143	-.00294	-.00023	.00107	.00025
#2	.00032	.00054	-.00218	-.00347	-.00044	.00117	.00143
#3	-.00075	.00092	-.00391	-.00320	-.00054	.00111	-.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9023.2	54420.	2586.9
Stddev	15.6	552.	19.1
%RSD	.17278	1.0141	.73711
#1	9027.4	54765.	2565.0
#2	9005.9	53783.	2600.1
#3	9036.3	54711.	2595.6

Approved: June 29, 2016

Sample Name: L1606140101 Acquired: 6/28/2016 16:34:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00218**	**.03485**	**-.00002**	**.15342**	**.05582**	**.00004**	**124.06**
Stddev	.00377	.00379	.00309	.00144	.00081	.00010	.59
%RSD	173.24	10.886	14926.	.93675	1.4530	248.52	.47866
#1	-.00649	.03170	-.00302	.15179	.05540	-.00004	124.70
#2	.00049	.03906	-.00019	.15398	.05530	.00001	123.52
#3	-.00053	.03380	.00315	.15449	.05676	.00015	123.97
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00037**	**.00081**	**.00157**	**.00148**	**-.00402**	**4.6678**	**.03748**
Stddev	.00028	.00030	.00094	.00090	.03288	.1961	.00193
%RSD	74.186	37.448	59.598	60.764	818.25	4.2000	5.1617
#1	.00032	.00047	.00131	.00240	-.04194	4.8019	.03666
#2	.00067	.00091	.00079	.00144	.01346	4.4428	.03610
#3	.00013	.00106	.00261	.00060	.01643	4.7587	.03969
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**68.192**	**.05341**	**.00048**	F **466.83**	**.00047**	**.03766**	**-.00231**
Stddev	.481	.00218	.00034	3.88	.00102	.00627	.00128
%RSD	.70585	4.0834	70.291	.83087	216.30	16.655	55.400
#1	68.743	.05536	.00077	470.23	-.00050	.04431	-.00303
#2	67.983	.05105	.00011	462.61	.00152	.03184	-.00308
#3	67.851	.05382	.00058	467.64	.00039	.03685	-.00083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606140101 Acquired: 6/28/2016 16:34:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00400	-.00182	8.1478	-.00033	.59118	-.01873	-.00283
Stddev	.00606	.00359	.2322	.00009	.00171	.00223	.00229
%RSD	151.32	197.31	2.8496	28.393	.28995	11.927	80.664
#1	.00315	.00214	8.2785	-.00022	.59313	-.01787	-.00251
#2	.01044	-.00486	8.2851	-.00038	.58988	-.01706	-.00073
#3	-.00158	-.00274	7.8797	-.00039	.59054	-.02127	-.00526
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.01052	.00862	-.00010
Stddev	.00054	.00045	.00005
%RSD	5.1636	5.2265	48.833
#1	.01088	.00862	-.00007
#2	.00990	.00907	-.00016
#3	.01079	.00817	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8570.3	50744.	2512.0
Stddev	3.6	222.	16.8
%RSD	.04183	.43745	.66696
#1	8571.5	50750.	2499.4
#2	8573.2	50964.	2505.5
#3	8566.3	50520.	2531.0

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 16:38:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.37743	9.5469	.37580	.46956	.96306	.04732	9.5900	.04763
Stddev	.00032	.0457	.00153	.00617	.00655	.00061	.1412	.00029
%RSD	.08532	.47855	.40663	1.3148	.67978	1.2795	1.4727	.59955
#1	.37735	9.5820	.37757	.47612	.95760	.04798	9.4341	.04791
#2	.37715	9.4952	.37489	.46387	.97032	.04680	9.7095	.04764
#3	.37778	9.5634	.37495	.46868	.96126	.04718	9.6262	.04734
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19060	.47605	.47829	3.8107	47.965	.96689	9.5619	.47181
Stddev	.00024	.00645	.00177	.0548	.355	.00545	.1009	.00470
%RSD	.12427	1.3544	.36908	1.4378	.74026	.56386	1.0554	.99639
#1	.19054	.48349	.47931	3.7975	47.711	.97312	9.5140	.46713
#2	.19086	.47251	.47932	3.7637	48.370	.96453	9.6779	.47176
#3	.19040	.47215	.47626	3.8709	47.812	.96301	9.4939	.47654
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.95597	48.254	.47535	9.4451	.47197	1.1388	.37546	4.7416
Stddev	.00130	.258	.00091	.0048	.00087	.0031	.00351	.0044
%RSD	.13561	.53539	.19143	.05067	.18424	.27052	.93376	.09185
#1	.95741	48.008	.47561	9.4415	.47108	1.1390	.37327	4.7366
#2	.95559	48.523	.47610	9.4505	.47281	1.1357	.37950	4.7447
#3	.95491	48.230	.47434	9.4432	.47203	1.1419	.37360	4.7435
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 16:38:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.95500	.96146	.94728	.47529	.94833	.95572	.95903
Stddev	.00332	.00652	.00706	.00206	.01224	.00202	.01434
%RSD	.34717	.67854	.74512	.43417	1.2902	.21119	1.4950
#1	.95726	.95688	.93938	.47767	.96203	.95768	.97550
#2	.95654	.96893	.95296	.47401	.93850	.95585	.95225
#3	.95119	.95858	.94951	.47419	.94446	.95365	.94934
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8735.1	52223.	2511.8
Stddev	63.3	525.	1.7
%RSD	.72433	1.0049	.06962
#1	8662.4	52817.	2513.3
#2	8778.0	52030.	2509.9
#3	8764.8	51821.	2512.3

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 16:42:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.01470**	**-.00025**	**.00262**	**.00329**	**.00012**	**-.02149**	**-.00003**
Stddev	.00154	.00095	.00292	.00132	.00173	.00009	.02627	.00031
%RSD	1544.9	6.4296	1158.7	50.561	52.631	76.669	122.21	1035.2
#1	-.00164	.01568	-.00292	.00112	.00524	.00002	.00862	.00001
#2	.00145	.01379	.00286	.00311	.00269	.00015	-.03344	-.00036
#3	-.00011	.01463	-.00070	.00362	.00193	.00019	-.03967	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.00016**	**.00034**	**-.02214**	**.02979**	**.00145**	**.10931**	**.00271**
Stddev	.00051	.00066	.00090	.02571	.04548	.00077	.07392	.00140
%RSD	2067.0	426.18	262.93	116.12	152.66	52.848	67.621	51.511
#1	.00053	-.00060	-.00060	-.02698	.06941	.00057	.09763	.00431
#2	-.00012	.00064	.00044	.00564	-.01988	.00197	.04193	.00177
#3	-.00048	.00043	.00119	-.04508	.03985	.00181	.18838	.00204
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.03000**	**-.00064**	**.00171**	**-.00372**	**.00640**	**-.00145**	**.00449**
Stddev	.00010	.02671	.00081	.00257	.00221	.00555	.00310	.00229
%RSD	83.710	89.031	127.20	149.94	59.483	86.786	214.27	50.847
#1	.00001	.05832	-.00087	.00364	-.00239	.01032	.00214	.00691
#2	.00015	.02642	.00026	-.00120	-.00627	.00882	-.00323	.00237
#3	.00022	.00526	-.00130	.00270	-.00250	.00004	-.00325	.00420
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 16:42:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**.00049**	**-.01452**	**-.00036**	**-.00012**	**.00009**	**.00041**
Stddev	.00126	.00017	.00425	.00086	.00052	.00022	.00068
%RSD	855.56	34.806	29.266	240.24	446.61	242.31	167.64
#1	-.00110	.00067	-.01245	.00044	.00047	.00034	-.00033
#2	.00142	.00033	-.01941	-.00024	-.00053	-.00002	.00101
#3	.00012	.00048	-.01171	-.00127	-.00029	-.00005	.00055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8858.9**	**52799.**	**2450.2**
Stddev	49.1	64.	4.8
%RSD	.55389	.12185	.19423
#1	8802.7	52841.	2455.1
#2	8893.3	52831.	2449.9
#3	8880.6	52725.	2445.6

Approved: June 29, 2016

Sample Name: L1606140201 Acquired: 6/28/2016 16:46:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00181	.18513	.02928	.14134	.38651	.00004	73.568
Stddev	.00241	.01412	.00193	.00546	.00425	.00001	.573
%RSD	133.09	7.6297	6.5893	3.8601	1.0993	29.408	.77835
#1	.00291	.20114	.02830	.14308	.39084	.00005	74.208
#2	-.00095	.17441	.03150	.13522	.38635	.00004	73.392
#3	.00347	.17984	.02803	.14571	.38234	.00003	73.104
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00063	.00146	.00109	3.0011	.94204	.01461
Stddev	.00046	.00060	.00093	.00074	.0567	.07130	.00110
%RSD	261.16	95.173	63.756	68.332	1.8895	7.5684	7.5102
#1	-.00032	.00116	.00051	.00142	3.0614	.97099	.01585
#2	.00058	.00073	.00149	.00024	2.9931	.99432	.01377
#3	.00027	-.00002	.00237	.00161	2.9488	.86083	.01420
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	38.058	.43706	.00004	F 295.60	.00193	.05522	.01773
Stddev	.228	.00233	.00047	2.46	.00047	.00807	.00162
%RSD	.59975	.53242	1121.0	.83240	24.555	14.612	9.1557
#1	38.300	.43535	.00053	298.43	.00156	.06449	.01703
#2	37.846	.43971	-.00002	294.41	.00176	.05148	.01657
#3	38.030	.43611	-.00039	293.96	.00247	.04971	.01958
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606140201 Acquired: 6/28/2016 16:46:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	.00237	8.7308	.00015	.49039	-.00143	-.00119
Stddev	.00063	.00758	.1924	.00050	.00229	.01348	.00163
%RSD	85.658	319.42	2.2032	321.51	.46707	942.90	137.19
#1	.00129	.00959	8.8327	.00016	.49271	.00974	-.00033
#2	.00085	-.00552	8.8507	.00065	.48813	.00238	-.00306
#3	.00005	.00305	8.5089	-.00035	.49034	-.01641	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00028	.03320	.00085
Stddev	.00126	.00113	.00030
%RSD	444.68	3.4045	35.186
#1	.00111	.03408	.00089
#2	-.00135	.03360	.00053
#3	-.00061	.03193	.00112
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8382.1	49791.	2432.6
Stddev	7.8	183.	38.6
%RSD	.09266	.36744	1.5885
#1	8375.1	49580.	2390.7
#2	8380.9	49886.	2440.4
#3	8390.4	49908.	2466.7

Approved: June 29, 2016

Sample Name: L1606140401 Acquired: 6/28/2016 16:50:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**.03821**	**-.00140**	**.26467**	**.10202**	**.00005**	**50.693**
Stddev	.00024	.00694	.00356	.00502	.00099	.00006	.236
%RSD	804.72	18.151	253.62	1.8972	.97072	117.83	.46459
#1	.00030	.03117	.00222	.26303	.10113	.00002	50.662
#2	-.00006	.04503	-.00153	.26068	.10308	.00001	50.943
#3	-.00015	.03843	-.00490	.27031	.10184	.00011	50.475
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**-.00001**	**.00112**	**.06878**	F **-.02326**	**1.5239**	**.00630**
Stddev	.00003	.00031	.00147	.00150	.05164	.0926	.00419
%RSD	44.836	2286.3	131.16	2.1829	222.07	6.0793	66.532
#1	.00010	-.00018	.00053	.06940	-.04001	1.5675	.00989
#2	.00007	-.00020	.00280	.06987	-.06444	1.4175	.00733
#3	.00004	.00035	.00004	.06707	.03469	1.5866	.00169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**44.442**	**.00063**	**.00036**	**72.140**	**.00050**	**.05225**	**-.00268**
Stddev	.059	.00064	.00040	.335	.00098	.00445	.00289
%RSD	.13305	101.22	111.41	.46490	195.38	8.5261	107.94
#1	44.502	.00028	.00021	72.178	-.00051	.05651	-.00492
#2	44.384	.00024	.00005	72.455	.00146	.04762	-.00370
#3	44.442	.00137	.00081	71.788	.00057	.05261	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606140401 Acquired: 6/28/2016 16:50:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00458**	**.00271**	**7.5828**	**-.00004**	**.40719**	**-.00830**	**-.00459**
Stddev	.00339	.00160	.1230	.00105	.00129	.01300	.00404
%RSD	74.002	59.221	1.6221	2834.0	.31705	156.70	88.066
#1	.00766	.00090	7.6391	-.00054	.40835	-.01367	-.00740
#2	.00095	.00327	7.6675	.00116	.40742	.00653	.00004
#3	.00513	.00396	7.4417	-.00074	.40580	-.01775	-.00642
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00580**	**.09151**	**-.00012**
Stddev	.00045	.00280	.00032
%RSD	7.8121	3.0615	257.30
#1	.00536	.09306	.00004
#2	.00577	.09320	-.00049
#3	.00626	.08828	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8505.3**	**50949.**	**2448.3**
Stddev	4.7	97.	7.2
%RSD	.05529	.19049	.29577
#1	8510.2	50847.	2451.9
#2	8504.8	51040.	2439.9
#3	8500.9	50960.	2453.0

Approved: June 29, 2016

Sample Name: L1606140801 Acquired: 6/28/2016 16:54:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00269	.05550	.00124	.10441	.03467	.00011	48.037	.00033
Stddev	.00032	.00542	.00441	.00240	.00077	.00017	.480	.00014
%RSD	12.026	9.7675	356.84	2.2960	2.2111	152.00	.99969	41.534
#1	-.00273	.05194	.00607	.10284	.03551	.00004	48.584	.00021
#2	-.00235	.05283	.00021	.10717	.03401	.00031	47.685	.00029
#3	-.00299	.06174	-.00257	.10322	.03449	-.00001	47.842	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.00133	.00196	.02831	.61212	.01738	25.614	.03236
Stddev	.00024	.00079	.00030	.03168	.08741	.00355	.200	.00047
%RSD	139.58	59.723	15.107	111.90	14.280	20.412	.77912	1.4530
#1	.00039	.00162	.00174	-.00239	.54855	.01510	25.399	.03211
#2	-.00008	.00043	.00185	.02644	.57601	.01556	25.793	.03291
#3	.00020	.00194	.00230	.06087	.71180	.02146	25.650	.03207
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	206.01	-.00120	.01021	-.00101	.00550	.00259	8.6735
Stddev	.00042	.68	.00076	.00625	.00147	.00271	.00758	.1899
%RSD	138.54	.32826	63.036	61.251	146.18	49.218	292.32	2.1896
#1	.00029	206.21	-.00200	.00303	.00017	.00243	-.00099	8.8411
#2	.00073	205.26	-.00109	.01314	-.00266	.00755	-.00253	8.7122
#3	-.00011	206.57	-.00050	.01446	-.00053	.00651	.01130	8.4672
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606140801 Acquired: 6/28/2016 16:54:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00021**	**.27833**	**-.01037**	**-.00392**	**.01481**	**.00801**	**.00028**
Stddev	.00091	.00026	.01132	.00271	.00106	.00023	.00098
%RSD	440.50	.09448	109.12	69.013	7.1866	2.8324	351.91
#1	-.00123	.27804	.00144	-.00081	.01601	.00808	.00139
#2	.00012	.27839	-.02112	-.00572	.01398	.00819	-.00008
#3	.00049	.27855	-.01143	-.00524	.01444	.00775	-.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8483.8**	**50357.**	**2436.1**
Stddev	58.6	54.	14.0
%RSD	.69075	.10730	.57272
#1	8442.5	50404.	2437.2
#2	8550.9	50298.	2449.4
#3	8458.1	50369.	2421.6

Approved: June 29, 2016

Sample Name: L1606140901 Acquired: 6/28/2016 16:58:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00099	.04882	.00371	.20045	.03867	.00009	59.705	.00007
Stddev	.00072	.01173	.00262	.00323	.00088	.00009	.777	.00015
%RSD	72.631	24.027	70.725	1.6092	2.2861	93.237	1.3014	220.09
#1	.00019	.06057	.00264	.20394	.03863	.00006	60.594	-.00007
#2	.00118	.04879	.00670	.19758	.03957	.00003	59.158	.00005
#3	.00159	.03711	.00179	.19984	.03781	.00019	59.361	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00403	.00250	.01083	1.0006	.02725	29.385	-.00066
Stddev	.00047	.00069	.00086	.02070	.0638	.00443	.111	.00203
%RSD	152.21	17.223	34.415	191.17	6.3737	16.261	.37652	304.79
#1	.00046	.00463	.00157	.03441	1.0394	.02239	29.323	-.00206
#2	.00069	.00419	.00266	.00242	1.0354	.02829	29.320	-.00159
#3	-.00022	.00327	.00326	-.00435	.92699	.03107	29.513	.00166
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	217.82	.00187	.00952	-.00078	.00397	.00052	12.937
Stddev	.00043	.68	.00072	.00413	.00349	.00593	.00750	.288
%RSD	36.550	.31139	38.549	43.374	445.42	149.39	1452.8	2.2279
#1	.00074	218.59	.00267	.00652	.00255	.00869	.00583	13.115
#2	.00160	217.56	.00168	.01423	-.00442	-.00268	.00378	13.092
#3	.00118	217.31	.00126	.00781	-.00049	.00590	-.00806	12.605
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606140901 Acquired: 6/28/2016 16:58:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00070	.41800	-.01150	-.00534	.01663	.00273	-.00008
Stddev	.00115	.00113	.01412	.00229	.00053	.00022	.00050
%RSD	163.28	.27095	122.73	42.869	3.1942	7.9309	605.21
#1	.00042	.41714	.00226	-.00301	.01717	.00278	-.00039
#2	-.00028	.41928	-.01083	-.00542	.01611	.00292	-.00035
#3	.00197	.41759	-.02595	-.00759	.01661	.00250	.00049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8381.2	49920.	2427.7
Stddev	31.2	187.	3.4
%RSD	.37235	.37554	.13931
#1	8401.2	49725.	2426.3
#2	8397.2	50098.	2425.3
#3	8345.2	49937.	2431.6

Approved: June 29, 2016

Sample Name: L1606141001 Acquired: 6/28/2016 17:01:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	.02510	.00497	.20581	.20983	.00003	102.14	.00026
Stddev	.00030	.00820	.00130	.00289	.00164	.00004	.41	.00020
%RSD	132.67	32.679	26.145	1.4058	.78174	121.97	.39842	78.906
#1	-.00038	.02965	.00419	.20299	.20986	-.00001	102.16	.00008
#2	-.00042	.03003	.00425	.20877	.21146	.00008	102.53	.00047
#3	.00012	.01563	.00647	.20568	.20818	.00003	101.72	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00216	.00155	.00164	3.1291	.47793	.01373	63.988	1.5385
Stddev	.00048	.00052	.00154	.0242	.07621	.00416	.332	.0084
%RSD	22.492	33.181	93.521	.77254	15.946	30.274	.51854	.54910
#1	.00229	.00213	.00024	3.1377	.39525	.01480	63.844	1.5384
#2	.00256	.00113	.00328	3.1477	.49319	.01724	64.367	1.5470
#3	.00162	.00140	.00141	3.1017	.54536	.00914	63.752	1.5301
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00097	24.785	.00318	.06025	-.00071	.00159	-.00450	8.1780
Stddev	.00021	.166	.00156	.01067	.00149	.00213	.00703	.0115
%RSD	21.778	.67072	48.863	17.704	209.43	133.71	156.14	.14010
#1	.00082	24.747	.00140	.05953	-.00225	.00279	-.01157	8.1903
#2	.00088	24.967	.00391	.07127	-.00060	.00285	.00248	8.1761
#3	.00122	24.640	.00424	.04997	.00072	-.00087	-.00441	8.1677
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606141001 Acquired: 6/28/2016 17:01:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.83498**	**-.01138**	**-.00652**	**-.00046**	**.00246**	**.00022**
Stddev	.00032	.01215	.00763	.00068	.00064	.00003	.00013
%RSD	732.85	1.4548	67.036	10.406	137.93	1.1193	58.335
#1	.00030	.84711	-.01222	-.00631	-.00099	.00248	.00014
#2	-.00009	.83502	-.00337	-.00728	-.00063	.00243	.00015
#3	-.00034	.82281	-.01855	-.00597	.00024	.00247	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8519.7**	**50943.**	**2455.8**
Stddev	41.5	104.	11.2
%RSD	.48695	.20482	.45529
#1	8476.0	50829.	2457.0
#2	8524.5	50968.	2444.1
#3	8558.5	51034.	2466.4

Approved: June 29, 2016

Sample Name: L1606141701 Acquired: 6/28/2016 17:05:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00052	.03393	-.00177	.10053	.08448	-.00004	53.590	.00002
Stddev	.00097	.00124	.00310	.00010	.00185	.00008	.041	.00011
%RSD	187.14	3.6575	175.63	.10167	2.1911	190.60	.07628	441.87
#1	-.00070	.03279	-.00174	.10063	.08240	-.00001	53.548	.00011
#2	.00053	.03374	.00132	.10054	.08594	-.00013	53.593	.00006
#3	-.00138	.03525	-.00488	.10042	.08511	.00002	53.630	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00024	.00044	.00128	-.00110	.33167	.01186	38.029	-.00243
Stddev	.00036	.00064	.00035	.02584	.15378	.00271	.064	.00614
%RSD	150.55	144.37	27.302	2350.8	46.367	22.894	.16857	253.12
#1	.00006	.00102	.00169	.02694	.15662	.01278	37.963	.00451
#2	-.00014	.00055	.00113	-.00629	.39337	.01399	38.033	-.00718
#3	-.00064	-.00024	.00104	-.02395	.44502	.00880	38.091	-.00460
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	33.333	-.00018	.03468	-.00253	.00442	-.00992	5.5877
Stddev	.00036	.145	.00111	.00200	.00379	.00454	.00714	.0097
%RSD	59.623	.43463	614.27	5.7635	149.78	102.72	72.013	.17278
#1	.00028	33.231	.00062	.03279	-.00669	-.00040	-.01801	5.5766
#2	.00098	33.270	.00028	.03677	-.00163	.00861	-.00730	5.5928
#3	.00052	33.499	-.00144	.03448	.00073	.00504	-.00446	5.5938
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606141701 Acquired: 6/28/2016 17:05:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**.44744**	**.00486**	**-.00242**	**.00397**	**.00215**	**-.00019**
Stddev	.00115	.00102	.01325	.00158	.00124	.00030	.00081
%RSD	273.06	.22830	272.58	65.278	31.160	14.124	423.65
#1	.00148	.44860	.01694	-.00104	.00255	.00245	.00001
#2	.00059	.44670	.00696	-.00207	.00454	.00184	-.00109
#3	-.00081	.44700	-.00931	-.00414	.00482	.00217	.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8516.7**	**51136.**	**2430.8**
Stddev	5.8	216.	3.4
%RSD	.06805	.42159	.13898
#1	8511.4	51374.	2427.1
#2	8515.8	50955.	2431.5
#3	8522.9	51079.	2433.8

Approved: June 29, 2016

Sample Name: L1606141702 Acquired: 6/28/2016 17:09:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00121**	**.03639**	**-.00063**	**.10512**	**.02263**	**.00004**	**92.101**
Stddev	.00265	.00570	.00129	.00214	.00133	.00009	.123
%RSD	218.85	15.676	205.46	2.0348	5.8751	237.61	.13318
#1	-.00148	.03441	-.00194	.10701	.02405	-.00003	92.180
#2	.00156	.04282	-.00060	.10554	.02243	.00000	91.959
#3	-.00372	.03194	.00065	.10280	.02142	.00015	92.163
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00026**	**.00043**	**.00230**	**.00145**	**.01095**	**.92150**	**.01897**
Stddev	.00016	.00030	.00101	.00055	.01537	.06607	.00536
%RSD	60.469	71.156	43.805	38.203	140.44	7.1694	28.272
#1	.00040	.00074	.00197	.00195	.00404	.99360	.01602
#2	.00009	.00013	.00344	.00085	.00024	.86385	.01572
#3	.00028	.00041	.00150	.00154	.02856	.90706	.02516
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**27.394**	**-.00128**	**.00072**	F **328.03**	**-.00024**	**.01343**	**-.00378**
Stddev	.208	.00450	.00025	.24	.00131	.00969	.00030
%RSD	.76042	352.14	34.308	.07448	557.20	72.100	7.9547
#1	27.591	.00141	.00093	327.78	-.00038	.02137	-.00366
#2	27.176	-.00648	.00078	328.27	-.00147	.00264	-.00356
#3	27.416	.00124	.00045	328.04	.00114	.01629	-.00413
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606141702 Acquired: 6/28/2016 17:09:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00068**	**.00807**	**6.3322**	**.00006**	**.43551**	**-.01380**	**-.00128**
Stddev	.00415	.00304	.0529	.00114	.00058	.00955	.00057
%RSD	614.28	37.628	.83619	2038.7	.13254	69.207	44.382
#1	-.00042	.00804	6.2743	.00129	.43554	-.01279	-.00131
#2	-.00282	.00505	6.3439	-.00094	.43492	-.00480	-.00070
#3	.00526	.01112	6.3783	-.00018	.43608	-.02382	-.00184
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00632**	**.00278**	**.00030**
Stddev	.00160	.00015	.00099
%RSD	25.307	5.4480	328.68
#1	.00451	.00293	.00136
#2	.00691	.00278	-.00061
#3	.00754	.00263	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8506.3**	**50580.**	**2460.8**
Stddev	18.6	37.	28.4
%RSD	.21858	.07230	1.1552
#1	8522.2	50576.	2432.4
#2	8485.9	50619.	2460.7
#3	8510.9	50546.	2489.2

Approved: June 29, 2016

Sample Name: L1606141703 Acquired: 6/28/2016 17:13:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	.06301	-.00157	.10756	.02273	.00003	93.540
Stddev	.00063	.00870	.00342	.00417	.00053	.00004	.787
%RSD	81.445	13.806	217.64	3.8746	2.3136	138.93	.84165
#1	.00056	.06732	.00238	.10359	.02331	.00007	94.370
#2	.00147	.06870	-.00350	.10719	.02260	-.00001	93.445
#3	.00027	.05299	-.00360	.11190	.02228	.00003	92.804
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	.00058	.00377	.00076	.04301	1.0274	.02683
Stddev	.00022	.00022	.00232	.00027	.02476	.0852	.00237
%RSD	83.493	38.162	61.441	35.871	57.574	8.2920	8.8258
#1	.00023	.00040	.00271	.00068	.03982	1.0581	.02443
#2	.00006	.00082	.00217	.00106	.06921	1.0929	.02690
#3	.00049	.00051	.00643	.00053	.02000	.93107	.02916
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	27.770	.00313	.00061	F 332.81	-.00044	.01690	-.00176
Stddev	.423	.00058	.00038	3.06	.00040	.00623	.00193
%RSD	1.5234	18.415	63.127	.91936	91.512	36.876	109.22
#1	28.198	.00356	.00025	336.04	.00001	.01696	-.00039
#2	27.758	.00247	.00101	332.45	-.00075	.02309	-.00397
#3	27.352	.00335	.00056	329.95	-.00058	.01063	-.00094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606141703 Acquired: 6/28/2016 17:13:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00858	.01098	6.5142	.00063	.44020	-.01426	-.00360
Stddev	.00279	.00554	.1057	.00026	.00270	.00856	.00203
%RSD	32.540	50.432	1.6223	41.814	.61389	60.018	56.525
#1	.00962	.01118	6.3931	.00093	.44308	-.01059	-.00516
#2	.01070	.00535	6.5621	.00043	.43979	-.02404	-.00433
#3	.00542	.01642	6.5875	.00053	.43772	-.00815	-.00130
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00669	.00204	-.00040
Stddev	.00083	.00018	.00060
%RSD	12.431	8.6576	149.18
#1	.00573	.00187	-.00046
#2	.00724	.00205	.00022
#3	.00709	.00222	-.00098
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8495.4	50392.	2471.0
Stddev	66.1	29.	28.9
%RSD	.77818	.05745	1.1711
#1	8420.9	50365.	2455.1
#2	8518.1	50387.	2453.4
#3	8547.1	50423.	2504.4

Approved: June 29, 2016

Sample Name: L1606141704 Acquired: 6/28/2016 17:17:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00131	.02482	-.00058	.24745	.03445	.00011	46.133	.00013
Stddev	.00193	.01764	.00214	.00411	.00146	.00007	.158	.00013
%RSD	147.77	71.076	366.90	1.6599	4.2502	65.051	.34241	99.279
#1	-.00177	.00897	-.00061	.25084	.03426	.00013	46.315	.00028
#2	.00081	.04383	-.00271	.24288	.03309	.00018	46.057	.00008
#3	-.00297	.02167	.00157	.24864	.03600	.00003	46.028	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	.00119	.00162	-.00306	.52222	.01059	18.887	-.00098
Stddev	.00017	.00069	.00127	.00742	.12961	.00196	.293	.00125
%RSD	37.399	57.908	78.405	242.24	24.820	18.472	1.5517	128.58
#1	.00027	.00063	.00172	-.01046	.43642	.00841	19.107	-.00051
#2	.00051	.00196	.00284	-.00310	.45891	.01218	18.554	-.00002
#3	.00061	.00099	.00030	.00437	.67132	.01118	18.999	-.00240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00251	211.55	.00005	.09692	-.00255	.00520	.00074	5.8088
Stddev	.00031	1.48	.00154	.00855	.00138	.00793	.00785	.0129
%RSD	12.444	.69803	3150.4	8.8176	54.182	152.43	1053.9	.22195
#1	.00230	213.19	-.00158	.08800	-.00410	-.00390	.00629	5.8189
#2	.00287	210.31	.00147	.10504	-.00145	.00891	-.00823	5.8132
#3	.00236	211.16	.00025	.09771	-.00210	.01060	.00418	5.7943
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606141704 Acquired: 6/28/2016 17:17:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00087**	**.24315**	**-.00010**	**.00005**	**.02598**	**.00233**	**-.00026**
Stddev	.00079	.00119	.00743	.00177	.00061	.00010	.00030
%RSD	90.563	.49112	7319.3	3564.4	2.3394	4.3126	117.95
#1	-.00043	.24447	-.00795	.00163	.02643	.00244	-.00018
#2	-.00040	.24280	.00683	-.00186	.02529	.00223	-.00059
#3	-.00178	.24216	.00082	.00037	.02622	.00233	.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8783.8**	**51975.**	**2512.3**
Stddev	55.8	116.	24.2
%RSD	.63563	.22378	.96215
#1	8722.3	51847.	2485.1
#2	8798.0	52074.	2520.4
#3	8831.2	52004.	2531.4

Approved: June 29, 2016

Sample Name: L1606141705 Acquired: 6/28/2016 17:21:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574197-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00054**	**.11762**	**.00112**	**.10521**	**.06752**	**.00001**	**96.827**
Stddev	.00144	.00687	.00475	.00641	.00069	.00009	.209
%RSD	266.03	5.8421	425.10	6.0937	1.0190	779.17	.21573
#1	.00025	.12457	.00638	.10747	.06826	-.00009	97.016
#2	-.00220	.11083	-.00017	.11018	.06690	.00006	96.862
#3	.00033	.11745	-.00286	.09797	.06740	.00006	96.602
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**.00042**	**.00173**	**.00085**	**.07794**	**1.1917**	**.02902**
Stddev	.00013	.00033	.00044	.00109	.03187	.0495	.00258
%RSD	266.30	77.268	25.434	127.96	40.886	4.1514	8.8807
#1	-.00005	.00044	.00124	.00186	.09460	1.1478	.03156
#2	.00000	.00009	.00207	.00099	.09803	1.1821	.02911
#3	.00019	.00074	.00190	-.00030	.04120	1.2453	.02640
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**26.446**	**.00090**	**.00036**	F **307.46**	**.00034**	**.04921**	**.00215**
Stddev	.192	.00233	.00015	.43	.00044	.00674	.00302
%RSD	.72707	257.45	43.349	.13955	128.77	13.697	140.25
#1	26.224	-.00095	.00040	307.47	.00021	.05695	.00186
#2	26.549	.00352	.00048	307.88	-.00002	.04463	-.00071
#3	26.565	.00014	.00018	307.02	.00082	.04604	.00531
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606141705 Acquired: 6/28/2016 17:21:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574197-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00223**	**.01012**	**6.7901**	**.00005**	**.42714**	**-.01174**	**-.00258**
Stddev	.00151	.00578	.1318	.00082	.00162	.00247	.00377
%RSD	67.939	57.128	1.9417	1493.3	.37951	21.069	146.44
#1	.00395	.00984	6.8579	.00068	.42786	-.01002	.00062
#2	.00163	.00449	6.8743	-.00087	.42528	-.01457	-.00161
#3	.00110	.01604	6.6382	.00036	.42827	-.01063	-.00674
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00811**	**.00497**	**.00003**
Stddev	.00068	.00032	.00018
%RSD	8.4177	6.3841	661.65
#1	.00813	.00521	.00024
#2	.00742	.00509	-.00009
#3	.00878	.00461	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9194.6**	**53158.**	**2688.0**
Stddev	76.3	238.	10.9
%RSD	.83016	.44694	.40654
#1	9130.2	52915.	2686.1
#2	9174.7	53169.	2699.8
#3	9278.9	53389.	2678.2

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 17:25:17 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41063**	**10.434**	**.41428**	**.51216**	**1.0413**	**.05168**	**10.315**	**.05208**
Stddev	.00142	.012	.00197	.00241	.0092	.00008	.139	.00046
%RSD	.34482	.11024	.47507	.46985	.88353	.15858	1.3488	.87992
#1	.40968	10.421	.41378	.50971	1.0318	.05172	10.241	.05259
#2	.41226	10.438	.41644	.51224	1.0501	.05159	10.475	.05195
#3	.40996	10.443	.41260	.51453	1.0420	.05174	10.228	.05171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20970**	**.52123**	**.52471**	**4.0931**	**52.107**	**1.0384**	**10.427**	**.51647**
Stddev	.00019	.00093	.00318	.0350	.543	.0086	.193	.01133
%RSD	.09137	.17808	.60593	.85548	1.0418	.83105	1.8528	2.1946
#1	.20971	.52017	.52700	4.0605	51.502	1.0310	10.245	.50418
#2	.20989	.52190	.52606	4.1301	52.552	1.0479	10.630	.52652
#3	.20951	.52163	.52108	4.0888	52.265	1.0363	10.407	.51870
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0482**	**51.967**	**.51895**	**10.327**	**.51794**	**1.2481**	**.41250**	**5.1601**
Stddev	.0026	.422	.00111	.039	.00260	.0051	.00656	.0088
%RSD	.24430	.81231	.21458	.37322	.50188	.41057	1.5909	.16973
#1	1.0496	51.513	.51962	10.370	.52089	1.2510	.40521	5.1697
#2	1.0497	52.348	.51956	10.315	.51696	1.2512	.41433	5.1579
#3	1.0452	52.039	.51766	10.296	.51597	1.2422	.41795	5.1526
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 17:25:17 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0508**	**1.0412**	**1.0262**	**.51737**	**1.0382**	**1.0416**	**1.0509**
Stddev	.0050	.0079	.0142	.00345	.0016	.0036	.0045
%RSD	.47886	.76203	1.3860	.66661	.15530	.34623	.42861
#1	1.0543	1.0324	1.0107	.52109	1.0370	1.0443	1.0488
#2	1.0530	1.0478	1.0385	.51427	1.0400	1.0430	1.0561
#3	1.0450	1.0435	1.0296	.51675	1.0375	1.0375	1.0479
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8847.3**	**52671.**	**2540.6**
Stddev	20.9	44.	7.8
%RSD	.23606	.08261	.30650
#1	8856.9	52626.	2545.5
#2	8823.3	52713.	2531.6
#3	8861.6	52672.	2544.7

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 17:28:54 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00137	.00864	.00114	-.00129	.00127	-.00000	-.01842	.00016
Stddev	.00208	.01298	.00369	.00160	.00030	.00002	.02089	.00015
%RSD	151.69	150.30	323.38	123.51	23.213	416.07	113.36	96.218
#1	.00296	.01546	.00540	-.00214	.00094	.00000	-.03653	.00004
#2	.00212	-.00633	-.00086	.00055	.00137	.00001	.00443	.00033
#3	-.00098	.01679	-.00111	-.00229	.00151	-.00003	-.02317	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	.00001	-.00021	-.02327	.02556	.00089	.03301	-.00177
Stddev	.00011	.00022	.00156	.02043	.19953	.00092	.03673	.00050
%RSD	58.035	3375.3	728.02	87.786	780.71	103.42	111.26	28.440
#1	-.00007	-.00024	-.00110	-.02841	.00357	.00171	.07479	-.00121
#2	-.00029	.00018	-.00114	-.04064	.23518	-.00011	.00581	-.00190
#3	-.00022	.00008	.00159	-.00076	-.16207	.00108	.01843	-.00219
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.06157	-.00058	.00198	-.00199	.00000	.00086	.00395
Stddev	.00050	.00743	.00023	.00447	.00074	.00175	.00619	.00169
%RSD	183.95	12.061	39.085	225.38	37.403	67237.	719.77	42.864
#1	.00033	.06954	-.00076	.00470	-.00248	.00162	.00734	.00430
#2	-.00025	.05484	-.00065	-.00318	-.00235	.00025	.00023	.00543
#3	.00073	.06032	-.00032	.00443	-.00113	-.00186	-.00499	.00211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 17:28:54 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	-.00008	-.01040	-.00139	-.00079	.00004	.00033
Stddev	.00046	.00033	.00366	.00282	.00058	.00008	.00063
%RSD	63.012	430.45	35.254	202.56	72.599	178.70	188.25
#1	.00097	.00029	-.00635	-.00462	-.00069	.00001	.00060
#2	.00104	-.00036	-.01349	-.00012	-.00141	-.00001	.00078
#3	.00020	-.00016	-.01135	.00056	-.00027	.00013	-.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9498.1	57616.	2748.5
Stddev	20.5	444.	8.5
%RSD	.21556	.76995	.30872
#1	9518.0	57981.	2752.3
#2	9477.1	57746.	2754.4
#3	9499.4	57122.	2738.8

Approved: June 29, 2016

Sample Name: L1606141706S Acquired: 6/28/2016 17:32:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574197-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19808	5.1906	.20655	1.1063	.57218	.02520	102.15
Stddev	.00320	.0196	.00418	.0036	.00217	.00008	.64
%RSD	1.6176	.37720	2.0223	.32409	.37887	.32992	.62171
#1	.19656	5.2063	.20695	1.1061	.57455	.02521	102.72
#2	.20176	5.1967	.20219	1.1100	.57029	.02512	102.28
#3	.19591	5.1687	.21052	1.1028	.57171	.02528	101.46
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02536	.10182	.25402	.25166	2.0225	26.938	.54649
Stddev	.00023	.00059	.00225	.00113	.0134	.195	.00157
%RSD	.90274	.57849	.88493	.45019	.66474	.72444	.28645
#1	.02538	.10156	.25429	.25139	2.0225	26.994	.54509
#2	.02512	.10141	.25164	.25291	2.0090	26.721	.54621
#3	.02558	.10250	.25611	.25069	2.0359	27.099	.54818
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	31.531	.24839	.51920	F 332.57	.24791	5.1748	.24660
Stddev	.247	.00395	.00098	1.46	.00066	.0118	.00293
%RSD	.78179	1.5908	.18966	.43910	.26478	.22818	1.1879
#1	31.335	.25082	.52003	334.01	.24863	5.1884	.24946
#2	31.808	.25052	.51945	332.62	.24776	5.1669	.24361
#3	31.450	.24383	.51811	331.09	.24734	5.1692	.24672
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606141706S Acquired: 6/28/2016 17:32:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574197-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.61097**	**.20159**	**9.3307**	**.51429**	**.92047**	**.49095**	**.24148**
Stddev	.00187	.00312	.0070	.00177	.00593	.00874	.00358
%RSD	.30591	1.5463	.07478	.34390	.64371	1.7794	1.4806
#1	.61249	.20339	9.3354	.51622	.92365	.50103	.24486
#2	.60888	.20339	9.3340	.51274	.92414	.48612	.24184
#3	.61152	.19799	9.3227	.51392	.91364	.48569	.23774
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.51988**	**.50708**	**.00128**
Stddev	.00090	.00063	.00024
%RSD	.17257	.12519	18.835
#1	.51899	.50720	.00124
#2	.52079	.50640	.00105
#3	.51985	.50765	.00153
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8731.6**	**52119.**	**2623.8**
Stddev	22.2	108.	5.5
%RSD	.25407	.20627	.21124
#1	8715.2	51996.	2617.7
#2	8722.7	52171.	2625.3
#3	8756.8	52191.	2628.5

Approved: June 29, 2016

Sample Name: L1606141707SD Acquired: 6/28/2016 17:36:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574197-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19904**	**5.1577**	**.20660**	**1.1125**	**.57944**	**.02527**	**106.96**
Stddev	.00340	.0324	.00258	.0072	.00374	.00015	.93
%RSD	1.7077	.62831	1.2482	.64388	.64630	.60260	.86711
#1	.20153	5.1918	.20939	1.1207	.58341	.02544	107.96
#2	.19517	5.1540	.20430	1.1077	.57895	.02523	106.79
#3	.20043	5.1273	.20611	1.1090	.57596	.02514	106.12
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02530**	**.10083**	**.25465**	**.25033**	**2.0157**	**27.093**	**.55071**
Stddev	.00018	.00022	.00034	.00103	.0346	.134	.00560
%RSD	.70257	.22081	.13182	.41222	1.7175	.49434	1.0172
#1	.02513	.10089	.25485	.25054	2.0488	27.229	.55640
#2	.02549	.10058	.25426	.25124	2.0186	27.089	.55053
#3	.02527	.10101	.25483	.24921	1.9797	26.961	.54520
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**32.784**	**.25113**	**.51748**	F **347.90**	**.24681**	**5.1621**	**.24360**
Stddev	.318	.00113	.00098	2.92	.00070	.0064	.00204
%RSD	.96981	.45137	.18933	.83831	.28316	.12380	.83787
#1	33.099	.25131	.51706	350.96	.24677	5.1662	.24508
#2	32.463	.24992	.51678	347.61	.24753	5.1653	.24127
#3	32.791	.25217	.51860	345.15	.24614	5.1547	.24444
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606141707SD Acquired: 6/28/2016 17:36:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574197-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.60853	.20159	9.5063	.51055	.94598	.48772	.24112
Stddev	.00227	.00218	.0161	.00183	.00572	.00698	.00257
%RSD	.37335	1.0822	.16904	.35915	.60455	1.4306	1.0676
#1	.61075	.19909	9.5194	.50854	.95255	.48242	.24016
#2	.60861	.20252	9.5110	.51099	.94327	.49562	.23916
#3	.60621	.20315	9.4883	.51212	.94213	.48511	.24404
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.52390	.50579	.00079
Stddev	.00181	.00036	.00028
%RSD	.34515	.07203	35.877
#1	.52594	.50600	.00091
#2	.52251	.50601	.00100
#3	.52323	.50537	.00047
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8701.2	52153.	2588.8
Stddev	22.5	132.	32.1
%RSD	.25813	.25395	1.2418
#1	8722.7	52088.	2562.7
#2	8703.0	52067.	2578.9
#3	8677.9	52306.	2624.7

Approved: June 29, 2016

Sample Name: L1606141709 Acquired: 6/28/2016 17:40:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00103**	**.02204**	**-.00015**	**.00568**	**.00369**	**.00002**	**.47478**	**.00028**
Stddev	.00045	.00870	.00406	.00129	.00006	.00006	.02804	.00019
%RSD	43.527	39.495	2684.0	22.677	1.7207	230.26	5.9059	67.226
#1	-.00109	.03207	-.00068	.00707	.00366	.00007	.49930	.00006
#2	-.00145	.01651	.00415	.00452	.00376	.00004	.44421	.00040
#3	-.00056	.01753	-.00393	.00546	.00365	-.00004	.48083	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.02074**	**.00159**	**.09814**	**.12915**	**.00263**	**.17253**	**.00183**
Stddev	.00019	.00087	.00109	.02609	.10413	.00216	.05728	.00183
%RSD	330.23	4.1809	68.745	26.582	80.624	82.131	33.199	99.777
#1	.00015	.01977	.00259	.09334	.07504	.00025	.14881	.00162
#2	-.00024	.02105	.00042	.07478	.06322	.00447	.13091	.00012
#3	-.00009	.02142	.00176	.12629	.24919	.00317	.23785	.00376
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00330**	**.41183**	**.01258**	**.00202**	**.00096**	**-.00040**	**-.00693**	**.16243**
Stddev	.00024	.05071	.00143	.00577	.00237	.00111	.00365	.00635
%RSD	7.1652	12.314	11.384	285.46	247.83	277.45	52.696	3.9090
#1	.00340	.46553	.01410	-.00056	-.00071	-.00008	-.00639	.16499
#2	.00347	.40521	.01126	.00862	-.00009	-.00164	-.00357	.16710
#3	.00303	.36476	.01237	-.00200	.00367	.00051	-.01081	.15520
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606141709 Acquired: 6/28/2016 17:40:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00116	.00211	-.00432	-.00552	-.00015	.00799	.00005
Stddev	.00091	.00055	.00239	.00248	.00116	.00023	.00041
%RSD	78.681	25.991	55.399	44.889	756.12	2.9356	786.44
#1	.00192	.00181	-.00182	-.00838	-.00117	.00818	-.00009
#2	.00142	.00275	-.00659	-.00412	.00112	.00805	-.00027
#3	.00015	.00178	-.00454	-.00406	-.00041	.00773	.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9048.9	54685.	2582.3
Stddev	39.5	183.	15.2
%RSD	.43628	.33548	.58820
#1	9076.5	54575.	2577.5
#2	9066.5	54583.	2599.3
#3	9003.7	54897.	2570.1

Approved: June 29, 2016

Sample Name: L1606141708 Acquired: 6/28/2016 17:44:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00243	.04088	.00267	.26401	.02074	.00004	47.847
Stddev	.00156	.00747	.00452	.00205	.00069	.00006	.211
%RSD	64.389	18.266	169.40	.77531	3.3096	146.55	.44118
#1	.00245	.04279	-.00253	.26335	.02076	.00000	47.982
#2	.00398	.04720	.00490	.26237	.02005	.00001	47.955
#3	.00085	.03264	.00564	.26630	.02142	.00010	47.604
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	.00060	.00322	.00115	.00871	1.4455	.03114
Stddev	.00026	.00038	.00063	.00167	.01045	.0814	.00316
%RSD	92.339	63.370	19.723	144.37	119.94	5.6330	10.156
#1	.00029	.00050	.00255	.00254	.00807	1.5394	.02833
#2	.00053	.00102	.00329	.00161	.01948	1.3939	.03051
#3	.00002	.00028	.00381	-.00069	-.00140	1.4033	.03456
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	26.580	.00101	.00380	F 309.24	.00068	.01262	.00097
Stddev	.048	.00103	.00020	2.61	.00100	.00203	.00350
%RSD	.18102	102.63	5.2895	.84510	146.78	16.065	362.04
#1	26.525	-.00017	.00403	311.99	.00029	.01371	.00191
#2	26.602	.00179	.00375	308.94	-.00007	.01387	.00390
#3	26.613	.00140	.00364	306.79	.00182	.01028	-.00290
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606141708 Acquired: 6/28/2016 17:44:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00603	-.00211	10.769	-.00049	.45330	.00227	.00090
Stddev	.00610	.00730	.105	.00096	.00324	.00961	.00040
%RSD	101.14	346.44	.97867	196.72	.71523	422.80	43.933
#1	.01107	-.00689	10.832	.00052	.45646	-.00118	.00055
#2	-.00075	.00629	10.827	-.00058	.45347	.01314	.00083
#3	.00777	-.00572	10.647	-.00140	.44998	-.00514	.00133
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.02416	.00349	-.00002
Stddev	.00018	.00017	.00027
%RSD	.72781	4.8721	1121.0
#1	.02432	.00336	-.00019
#2	.02418	.00368	-.00016
#3	.02397	.00343	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8723.1	51951.	2551.9
Stddev	8.7	67.	17.3
%RSD	.09932	.12929	.67853
#1	8714.7	51875.	2544.1
#2	8722.7	51978.	2539.9
#3	8732.0	52001.	2571.8

Approved: June 29, 2016

Sample Name: L1606141708PS Acquired: 6/28/2016 17:48:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574351-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20259**	**5.1687**	**.21063**	**1.2212**	**.54196**	**.02561**	**44.961**	**.02555**
Stddev	.00156	.0084	.00541	.0004	.00321	.00011	.062	.00021
%RSD	.77095	.16245	2.5702	.03511	.59146	.43676	.13812	.83840
#1	.20436	5.1784	.21685	1.2216	.54096	.02570	44.969	.02567
#2	.20201	5.1643	.20696	1.2207	.54555	.02549	45.019	.02531
#3	.20140	5.1635	.20807	1.2214	.53937	.02565	44.896	.02568
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10323**	**.25884**	**.25619**	**2.0636**	**26.644**	**.53793**	**21.729**	**.25488**
Stddev	.00046	.00092	.00047	.0109	.087	.00284	.132	.00399
%RSD	.44581	.35703	.18334	.52827	.32624	.52750	.60733	1.5672
#1	.10353	.25833	.25664	2.0633	26.595	.54042	21.633	.25244
#2	.10270	.25829	.25623	2.0528	26.745	.53851	21.880	.25949
#3	.10346	.25991	.25571	2.0746	26.593	.53484	21.675	.25271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52668**	**211.46**	**.25296**	**5.1993**	**.25070**	**.61175**	**.19559**	**7.5114**
Stddev	.00057	.61	.00083	.0189	.00209	.00406	.00531	.0237
%RSD	.10810	.29018	.32665	.36271	.83523	.66301	2.7154	.31540
#1	.52639	211.92	.25279	5.2151	.25160	.61155	.19173	7.5159
#2	.52734	211.69	.25223	5.1784	.24831	.60780	.20165	7.4857
#3	.52632	210.76	.25385	5.2044	.25219	.61590	.19340	7.5324
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606141708PS Acquired: 6/28/2016 17:48:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574351-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52241	.73587	.50781	.25087	.54413	.51477	.00060
Stddev	.00290	.00286	.00391	.00293	.00166	.00074	.00075
%RSD	.55542	.38921	.77060	1.1694	.30456	.14412	124.36
#1	.52548	.73778	.50331	.25358	.54423	.51470	-.00018
#2	.51972	.73725	.50974	.25127	.54243	.51407	.00132
#3	.52202	.73258	.51039	.24775	.54574	.51555	.00067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8718.0	52220.	2556.6
Stddev	23.7	196.	14.1
%RSD	.27134	.37526	.55135
#1	8736.2	52007.	2546.0
#2	8726.6	52260.	2551.3
#3	8691.3	52392.	2572.6

Approved: June 29, 2016

Sample Name: L1606141708SDL Acquired: 6/28/2016 17:51:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574351-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.01090	-.00177	.05174	.01000	.00001	8.8372	-.00021
Stddev	.00417	.00346	.00166	.00113	.00148	.00006	.1364	.00021
%RSD	5352.3	31.779	93.638	2.1803	14.756	761.48	1.5432	99.645
#1	.00017	.00731	-.00114	.05151	.01145	.00003	8.8881	-.00044
#2	.00421	.01117	-.00365	.05297	.00850	-.00006	8.6827	-.00014
#3	-.00414	.01422	-.00052	.05075	.01005	.00005	8.9409	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.00002	-.00037	.00887	.07836	.00595	3.7843	.00093
Stddev	.00016	.00091	.00083	.02803	.17140	.00666	.0653	.00243
%RSD	242.29	5773.0	224.03	316.15	218.73	111.94	1.7261	261.96
#1	.00012	.00086	.00008	.02549	.25974	-.00139	3.8020	-.00110
#2	-.00018	.00013	.00013	.02462	.05625	.01163	3.7120	.00361
#3	-.00014	-.00095	-.00132	-.02350	-.08091	.00762	3.8391	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	40.985	-.00098	.02316	-.00046	.00112	-.00399	1.1071
Stddev	.00050	.143	.00145	.00549	.00197	.00317	.00369	.0032
%RSD	158.02	.34971	148.07	23.714	432.35	283.73	92.483	.28900
#1	.00038	40.844	-.00095	.02909	-.00059	.00328	-.00185	1.1065
#2	.00079	41.130	-.00244	.01825	-.00236	-.00252	-.00825	1.1106
#3	-.00021	40.981	.00046	.02213	.00158	.00260	-.00187	1.1042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606141708SDL Acquired: 6/28/2016 17:51:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574351-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.04740	-.00415	.00232	.00509	.00125	.00026
Stddev	.00038	.00027	.00885	.00316	.00105	.00019	.00028
%RSD	55.625	.56719	213.10	136.27	20.717	14.844	108.09
#1	.00036	.04714	.00557	.00596	.00466	.00104	.00057
#2	.00059	.04739	-.01172	.00027	.00432	.00135	.00002
#3	.00110	.04768	-.00631	.00073	.00629	.00137	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9108.9	55839.	2680.3
Stddev	144.9	45.	11.8
%RSD	1.5908	.07970	.44130
#1	9276.0	55823.	2679.3
#2	9017.9	55805.	2669.0
#3	9032.9	55889.	2692.6

Approved: June 29, 2016

Sample Name: L1606141708SDL Acquired: 6/28/2016 17:55:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574351-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00126	.00679	-.00461	.01048	.00757	.00011	2.0282	.00002
Stddev	.00171	.00662	.00192	.00130	.00164	.00004	.0721	.00039
%RSD	135.72	97.538	41.786	12.376	21.676	33.161	3.5542	1576.6
#1	-.00322	.01267	-.00428	.00936	.00767	.00014	1.9808	-.00023
#2	-.00010	.00808	-.00667	.01019	.00916	.00013	1.9926	.00048
#3	-.00045	-.00038	-.00287	.01190	.00588	.00007	2.1111	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00006	-.00063	.00029	-.00169	-.06458	.00324	.94026	-.00186
Stddev	.00030	.00093	.00186	.00633	.11707	.00642	.04956	.00422
%RSD	519.60	146.77	651.58	374.87	181.27	198.03	5.2707	227.50
#1	-.00038	-.00149	.00071	-.00880	-.05117	.01066	.99743	.00249
#2	.00001	-.00076	-.00175	.00336	-.18778	-.00040	.90962	-.00211
#3	.00020	.00035	.00190	.00037	.04520	-.00053	.91371	-.00594
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	9.3983	.00052	.00643	-.00278	.00377	-.00358	.23575
Stddev	.00058	.0421	.00029	.00838	.00339	.00244	.00209	.00590
%RSD	5118.0	.44773	56.366	130.29	121.91	64.746	58.308	2.5017
#1	.00064	9.3497	.00078	.01272	-.00577	.00122	-.00340	.23326
#2	-.00047	9.4246	.00057	.00965	-.00346	.00609	-.00159	.24249
#3	-.00020	9.4204	.00020	-.00308	.00090	.00400	-.00576	.23152
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606141708SDL Acquired: 6/28/2016 17:55:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574351-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00025**	**.01067**	**-.00653**	**-.00309**	**.00097**	**.00051**	**-.00036**
Stddev	.00026	.00020	.00256	.00383	.00052	.00006	.00045
%RSD	104.08	1.8650	39.262	124.14	53.131	10.829	124.08
#1	-.00034	.01058	-.00528	-.00684	.00060	.00050	-.00083
#2	.00004	.01054	-.00948	-.00325	.00157	.00046	.00006
#3	-.00045	.01090	-.00483	.00082	.00076	.00057	-.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8810.1**	**51837.**	**2375.6**
Stddev	22.4	803.	12.2
%RSD	.25452	1.5500	.51506
#1	8798.7	50934.	2387.5
#2	8795.7	52105.	2376.5
#3	8835.9	52472.	2363.0

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 17:59:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40953	10.358	.40325	.50569	1.0377	.05127	10.173	.05163
Stddev	.00263	.030	.00244	.00340	.0049	.00005	.046	.00026
%RSD	.64327	.29367	.60614	.67192	.46748	.10702	.44991	.49526
#1	.41131	10.365	.40190	.50898	1.0429	.05127	10.218	.05188
#2	.41078	10.384	.40178	.50219	1.0369	.05133	10.173	.05137
#3	.40651	10.324	.40607	.50590	1.0333	.05122	10.126	.05164
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20801	.51774	.51845	4.0570	51.916	1.0358	10.380	.51050
Stddev	.00080	.00113	.00121	.0359	.257	.0087	.109	.00365
%RSD	.38296	.21789	.23327	.88438	.49446	.84111	1.0481	.71493
#1	.20753	.51704	.51738	4.0712	51.951	1.0448	10.412	.51462
#2	.20757	.51713	.51821	4.0836	52.154	1.0274	10.470	.50765
#3	.20893	.51904	.51976	4.0162	51.644	1.0352	10.259	.50923
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0353	51.313	.51142	10.168	.51109	1.2278	.40810	5.0792
Stddev	.0016	.308	.00212	.020	.00397	.0065	.00283	.0118
%RSD	.15321	.60001	.41391	.19194	.77733	.52512	.69386	.23247
#1	1.0334	51.668	.50929	10.152	.51162	1.2205	.41062	5.0661
#2	1.0361	51.140	.51353	10.163	.50688	1.2303	.40503	5.0828
#3	1.0362	51.129	.51144	10.190	.51477	1.2327	.40864	5.0889
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 17:59:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0405**	**1.0319**	**1.0258**	**.51595**	**1.0303**	**1.0251**	**1.0489**
Stddev	.0014	.0058	.0056	.00284	.0033	.0006	.0073
%RSD	.13748	.56547	.54363	.55091	.32022	.05544	.69634
#1	1.0389	1.0385	1.0307	.51844	1.0265	1.0248	1.0547
#2	1.0411	1.0296	1.0270	.51655	1.0327	1.0248	1.0513
#3	1.0416	1.0275	1.0197	.51285	1.0317	1.0258	1.0407
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8637.3**	**51278.**	**2447.4**
Stddev	8.2	60.	15.8
%RSD	.09533	.11663	.64353
#1	8627.9	51221.	2433.5
#2	8641.0	51271.	2444.2
#3	8643.1	51341.	2464.5

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 18:03:06 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	.01080	-.00271	.00248	.00477	.00007	-.01292	.00019
Stddev	.00093	.01033	.00298	.00158	.00062	.00003	.03053	.00023
%RSD	167.94	95.684	110.04	63.788	13.065	47.480	236.25	120.92
#1	-.00037	.02131	.00021	.00086	.00529	.00005	.01946	-.00005
#2	.00055	.00066	-.00259	.00256	.00494	.00011	-.01705	.00041
#3	.00149	.01043	-.00574	.00402	.00408	.00005	-.04118	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	.00071	-.00033	-.00673	.08495	.00461	-.03119	-.00165
Stddev	.00027	.00104	.00159	.02679	.11097	.00127	.02914	.00031
%RSD	626.90	146.32	486.02	398.01	130.63	27.579	93.428	18.937
#1	.00002	.00124	-.00155	-.03370	.21293	.00585	-.05176	-.00140
#2	.00019	-.00049	.00147	-.00638	.02640	.00467	-.04395	-.00200
#3	-.00034	.00140	-.00090	.01989	.01551	.00331	.00215	-.00155
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	.02578	-.00088	.00040	-.00098	-.00036	-.00052	.01027
Stddev	.00021	.03313	.00045	.00299	.00110	.00141	.00278	.00190
%RSD	46.697	128.47	50.984	754.22	112.15	395.94	532.06	18.530
#1	.00030	.06378	-.00037	-.00306	-.00117	-.00054	-.00113	.01167
#2	.00035	.01063	-.00119	.00206	-.00198	-.00167	-.00295	.01105
#3	.00068	.00295	-.00107	.00219	.00020	.00114	.00251	.00811
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 18:03:06 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.00044	.00810	-.00323	.00026	-.00003	-.00076
Stddev	.00017	.00061	.00298	.00109	.00047	.00016	.00056
%RSD	206.40	138.10	36.823	33.645	180.38	466.73	74.263
#1	.00022	.00021	.00523	-.00378	.00040	.00014	-.00039
#2	-.00011	.00113	.01118	-.00394	.00064	-.00017	-.00141
#3	.00015	-.00002	.00788	-.00198	-.00026	-.00007	-.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9036.2	53954.	2557.7
Stddev	26.9	80.	23.2
%RSD	.29811	.14859	.90574
#1	9037.5	53990.	2536.5
#2	9008.6	53862.	2554.3
#3	9062.4	54009.	2582.4

Approved: June 29, 2016

Sample Name: PBW B2 Acquired: 6/28/2016 18:07:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00170	.01043	-.00052	-.00011	.00401	.00007	-.00778	-.00022
Stddev	.00200	.00199	.00155	.00108	.00075	.00012	.01103	.00049
%RSD	117.21	19.061	298.33	973.04	18.651	166.11	141.79	229.43
#1	.00033	.01227	.00099	.00098	.00488	.00019	-.00668	-.00044
#2	-.00177	.01070	-.00043	-.00014	.00355	-.00004	.00266	-.00056
#3	-.00366	.00832	-.00211	-.00118	.00361	.00007	-.01931	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.00016	-.00003	-.00729	-.08053	.00362	.00599	-.00068
Stddev	.00020	.00072	.00044	.04593	.12257	.00210	.05243	.00472
%RSD	1586.2	448.35	1436.5	630.15	152.21	57.897	875.90	696.56
#1	.00025	-.00030	.00028	-.00464	.04618	.00556	-.04922	.00095
#2	-.00010	-.00021	.00017	-.05448	-.08928	.00391	.05511	.00302
#3	-.00011	.00099	-.00054	.03726	-.19848	.00140	.01207	-.00600
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	-.04423	-.00022	.00531	-.00089	-.00119	.00160	-.02066
Stddev	.00010	.03208	.00087	.00542	.00193	.00297	.00550	.00313
%RSD	415.26	72.525	401.96	101.93	217.31	249.65	344.45	15.170
#1	-.00009	-.00833	-.00050	.00397	-.00247	-.00230	.00628	-.01727
#2	.00010	-.05429	.00076	.01128	.00126	.00217	.00297	-.02345
#3	.00005	-.07006	-.00091	.00070	-.00146	-.00344	-.00446	-.02126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: PBW B2 Acquired: 6/28/2016 18:07:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	-.00015	-.00225	-.00154	-.00086	.00116	.00006
Stddev	.00083	.00033	.00560	.00109	.00062	.00019	.00059
%RSD	296.10	220.11	249.29	70.822	71.238	16.407	922.03
#1	.00057	-.00047	-.00793	-.00227	-.00023	.00104	-.00013
#2	.00092	.00019	-.00209	-.00207	-.00091	.00107	-.00041
#3	-.00066	-.00017	.00327	-.00029	-.00146	.00138	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9262.0	55509.	2596.5
Stddev	18.3	93.	16.0
%RSD	.19752	.16788	.61454
#1	9274.8	55517.	2609.7
#2	9270.0	55412.	2600.9
#3	9241.0	55598.	2578.7

Approved: June 29, 2016

Sample Name: LCSW B2 Acquired: 6/28/2016 18:10:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19908	5.0837	.19736	.97686	.51693	.02483	5.1160	.02576
Stddev	.00333	.0233	.00330	.00209	.00312	.00008	.0362	.00019
%RSD	1.6735	.45847	1.6711	.21444	.60374	.33692	.70721	.74443
#1	.20187	5.1093	.19698	.97458	.51353	.02488	5.0743	.02555
#2	.19539	5.0782	.19426	.97732	.51761	.02473	5.1397	.02592
#3	.19996	5.0637	.20083	.97869	.51966	.02488	5.1340	.02583
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10460	.25742	.25769	2.0140	25.917	.52465	5.3350	.25267
Stddev	.00067	.00235	.00084	.0526	.053	.00613	.0905	.00627
%RSD	.63742	.91298	.32425	2.6137	.20278	1.1691	1.6966	2.4834
#1	.10462	.25478	.25712	2.0495	25.966	.51774	5.4250	.24876
#2	.10392	.25819	.25865	1.9535	25.922	.52675	5.3359	.24934
#3	.10526	.25929	.25731	2.0391	25.861	.52946	5.2440	.25991
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51758	25.584	.25454	4.9065	.25584	.59881	.19289	2.4365
Stddev	.00117	.139	.00175	.0056	.00447	.00308	.00511	.0047
%RSD	.22594	.54341	.68580	.11407	1.7469	.51446	2.6494	.19215
#1	.51794	25.441	.25346	4.9066	.25810	.60066	.18701	2.4311
#2	.51627	25.594	.25361	4.9121	.25069	.59525	.19551	2.4392
#3	.51853	25.718	.25655	4.9009	.25872	.60051	.19617	2.4392
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LCSW B2 Acquired: 6/28/2016 18:10:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51885**	**.51980**	**.51295**	**.25574**	**.51101**	**.50971**	**.00042**
Stddev	.00154	.00188	.00585	.00184	.00161	.00098	.00030
%RSD	.29738	.36262	1.1413	.71911	.31603	.19237	71.457
#1	.51820	.51785	.50904	.25411	.51259	.50924	.00060
#2	.51773	.51992	.51968	.25538	.51108	.50904	.00007
#3	.52061	.52162	.51013	.25773	.50936	.51083	.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8877.1**	**53509.**	**2551.3**
Stddev	31.9	97.	7.5
%RSD	.35911	.18077	.29508
#1	8840.7	53429.	2556.0
#2	8900.2	53617.	2555.2
#3	8890.4	53481.	2542.6

Approved: June 29, 2016

Sample Name: L1606111601 Acquired: 6/28/2016 18:14:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00175	.75194	-.00188	.32623	.17213	.00042	25.558	.00036
Stddev	.00238	.00520	.00227	.00208	.00077	.00003	.203	.00028
%RSD	136.60	.69204	120.67	.63750	.44552	6.9430	.79597	78.709
#1	.00443	.75721	-.00276	.32666	.17289	.00039	25.699	.00066
#2	.00095	.74680	-.00356	.32806	.17213	.00044	25.649	.00033
#3	-.00014	.75181	.00070	.32397	.17136	.00044	25.324	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	.00162	.00161	.43834	3.6149	.00818	8.6223	1.3794
Stddev	.00029	.00043	.00106	.01562	.1050	.00271	.0664	.0124
%RSD	66.289	26.509	65.893	3.5643	2.9055	33.115	.76954	.89552
#1	.00018	.00211	.00097	.42430	3.6132	.00657	8.6870	1.3840
#2	.00037	.00131	.00283	.43554	3.7208	.00667	8.5544	1.3888
#3	.00075	.00144	.00102	.45517	3.5108	.01131	8.6255	1.3654
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.82237	61.256	.01056	.10449	-.00054	.00079	-.00339	1.3032
Stddev	.01556	.433	.00155	.00880	.00214	.00072	.00094	.0137
%RSD	1.8916	.70641	14.638	8.4251	399.33	91.364	27.639	1.0523
#1	.82848	61.393	.00878	.10322	-.00275	-.00004	-.00252	1.3043
#2	.83394	61.603	.01153	.11386	.00153	.00114	-.00439	1.3164
#3	.80468	60.771	.01138	.09639	-.00039	.00126	-.00327	1.2890
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111601 Acquired: 6/28/2016 18:14:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.12519	.00073	.00973	.28446	.03296	.00120
Stddev	.00125	.00052	.01152	.00045	.00234	.00077	.00065
%RSD	240.46	.41609	1586.8	4.5963	.82348	2.3343	53.563
#1	.00060	.12497	.00089	.01024	.28676	.03326	.00114
#2	-.00077	.12578	-.01088	.00945	.28455	.03352	.00188
#3	.00173	.12482	.01216	.00948	.28207	.03208	.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8934.8	53164.	2570.5
Stddev	63.4	236.	32.6
%RSD	.70947	.44424	1.2681
#1	8865.2	53054.	2563.3
#2	8949.9	53003.	2542.1
#3	8989.3	53435.	2606.1

Approved: June 29, 2016

Sample Name: L1606111602 Acquired: 6/28/2016 18:18:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00167	.05684	-.00343	.33210	.01181	.00032	25.192	.00026
Stddev	.00070	.00702	.00218	.00119	.00056	.00011	.210	.00018
%RSD	41.704	12.357	63.446	.35804	4.7323	34.511	.83422	71.792
#1	-.00245	.04934	-.00499	.33083	.01149	.00038	24.963	.00046
#2	-.00144	.06326	-.00094	.33231	.01149	.00020	25.377	.00010
#3	-.00112	.05791	-.00437	.33318	.01246	.00039	25.236	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	.00054	.00098	.05399	3.4614	.00763	8.3315	1.1868
Stddev	.00037	.00050	.00047	.02106	.0611	.00138	.1473	.0089
%RSD	43.361	91.231	48.453	39.004	1.7663	18.129	1.7684	.75103
#1	.00123	.00086	.00114	.07669	3.4270	.00610	8.4685	1.1955
#2	.00088	.00080	.00135	.05019	3.5320	.00879	8.3503	1.1873
#3	.00048	-.00003	.00045	.03509	3.4252	.00801	8.1757	1.1777
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.77485	61.289	.00273	.00726	-.00250	.00670	-.00397	.99945
Stddev	.02513	.173	.00112	.00756	.00399	.00495	.00812	.02573
%RSD	3.2436	.28163	41.035	104.18	159.14	73.879	204.64	2.5740
#1	.78995	61.413	.00210	.01493	-.00616	.01227	-.00779	1.0114
#2	.78875	61.363	.00402	.00703	.00175	.00505	.00536	1.0171
#3	.74583	61.092	.00207	-.00019	-.00310	.00279	-.00947	.96993
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111602 Acquired: 6/28/2016 18:18:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.11618	-.00756	.00607	.22798	.00125	.00119
Stddev	.00051	.00073	.00385	.00060	.00039	.00028	.00063
%RSD	167.15	.62850	50.905	9.9696	.17155	22.072	53.253
#1	.00088	.11591	-.00950	.00538	.22834	.00093	.00056
#2	-.00010	.11563	-.01005	.00634	.22804	.00143	.00118
#3	.00014	.11701	-.00313	.00649	.22756	.00138	.00183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8986.7	53984.	2599.1
Stddev	18.2	25.	10.7
%RSD	.20235	.04593	.41189
#1	8972.4	53975.	2586.8
#2	8980.5	54013.	2604.3
#3	9007.1	53966.	2606.2

Approved: June 29, 2016

Sample Name: L1606111603 Acquired: 6/28/2016 18:22:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00223	1.1464	-.00441	.28841	.02792	.00827	8.9601	.00016
Stddev	.00052	.0149	.00268	.00355	.00152	.00004	.1383	.00022
%RSD	23.436	1.2979	60.747	1.2309	5.4320	.50015	1.5440	137.57
#1	.00165	1.1556	-.00488	.29186	.02923	.00831	8.9131	-.00009
#2	.00238	1.1543	-.00153	.28860	.02626	.00826	9.1158	.00031
#3	.00267	1.1292	-.00682	.28477	.02827	.00823	8.8514	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00109	-.00064	.00258	.07504	4.0785	.00681	3.0877	.00503
Stddev	.00006	.00074	.00165	.01492	.0121	.00176	.0490	.00383
%RSD	5.5066	116.09	64.203	19.881	.29670	25.819	1.5852	76.094
#1	.00112	-.00064	.00420	.07009	4.0833	.00756	3.1337	.00894
#2	.00102	.00010	.00263	.09181	4.0647	.00807	3.0931	.00128
#3	.00112	-.00138	.00089	.06323	4.0874	.00480	3.0363	.00488
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.0749	53.201	.00601	.03502	-.00442	.00758	.00168	.47187
Stddev	.0024	.169	.00041	.00508	.00342	.00227	.00368	.00413
%RSD	.11769	.31689	6.7944	14.494	77.276	29.913	219.34	.87606
#1	2.0777	53.286	.00597	.03074	-.00237	.00807	-.00232	.47663
#2	2.0732	53.311	.00644	.04063	-.00253	.00511	.00245	.46976
#3	2.0738	53.007	.00563	.03371	-.00837	.00956	.00491	.46922
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111603 Acquired: 6/28/2016 18:22:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00105	.07044	-.00406	.19724	5.3313	.00345	.00238
Stddev	.00044	.00089	.00986	.00504	.0090	.00003	.00019
%RSD	41.969	1.2705	243.00	2.5534	.16898	.76249	7.7882
#1	.00085	.07098	.00719	.20246	5.3414	.00348	.00217
#2	.00155	.06941	-.01123	.19241	5.3281	.00342	.00253
#3	.00074	.07094	-.00814	.19686	5.3242	.00346	.00244
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9079.8	54344.	2576.4
Stddev	20.1	201.	12.9
%RSD	.22108	.37061	.50181
#1	9060.8	54116.	2567.7
#2	9077.8	54415.	2570.1
#3	9100.8	54499.	2591.2

Approved: June 29, 2016

Sample Name: L1606111604 Acquired: 6/28/2016 18:26:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00128	1.0608	.00027	.29379	.02626	.00838	8.9222	.00022
Stddev	.00216	.0148	.00204	.00040	.00119	.00001	.1772	.00016
%RSD	168.06	1.3915	765.02	.13570	4.5474	.16575	1.9866	70.345
#1	.00245	1.0777	.00249	.29425	.02614	.00839	9.1266	.00005
#2	.00261	1.0543	-.00017	.29358	.02751	.00837	8.8113	.00036
#3	-.00121	1.0505	-.00152	.29355	.02513	.00837	8.8286	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00115	-.00107	.00202	.01618	4.0008	.00398	2.9400	.00197
Stddev	.00046	.00041	.00114	.04826	.0713	.00315	.1370	.00199
%RSD	39.980	38.272	56.060	298.24	1.7824	79.084	4.6586	101.16
#1	.00066	-.00124	.00325	.00768	3.9409	.00747	2.9887	.00363
#2	.00157	-.00060	.00101	.06812	3.9817	.00310	2.7854	.00251
#3	.00122	-.00135	.00181	-.02726	4.0797	.00137	3.0460	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.0707	53.672	.00227	.01864	.00250	.00843	.00429	.39329
Stddev	.0652	.416	.00124	.00348	.00202	.00309	.00847	.00926
%RSD	3.1464	.77539	54.674	18.645	80.869	36.635	197.40	2.3550
#1	2.1089	54.149	.00341	.01565	.00353	.01005	.01388	.39850
#2	2.1078	53.380	.00245	.02245	.00379	.01038	-.00217	.39878
#3	1.9955	53.488	.00095	.01781	.00017	.00487	.00116	.38260
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111604 Acquired: 6/28/2016 18:26:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	.07097	-.00020	.19980	5.4078	.00087	.00220
Stddev	.00049	.00096	.00857	.00144	.0032	.00009	.00030
%RSD	88.077	1.3536	4391.4	.71878	.05937	10.899	13.574
#1	-.00002	.07208	.00167	.19930	5.4115	.00076	.00250
#2	-.00098	.07035	-.00954	.20141	5.4060	.00094	.00220
#3	-.00067	.07048	.00729	.19867	5.4059	.00090	.00190
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9098.1	54839.	2634.9
Stddev	10.8	84.	19.7
%RSD	.11843	.15302	.74728
#1	9087.3	54934.	2612.4
#2	9098.3	54808.	2643.3
#3	9108.9	54775.	2649.1

Approved: June 29, 2016

Sample Name: L1606111605 Acquired: 6/28/2016 18:30:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	1.1046	-.00047	.29401	.02674	.00837	9.0902	.00018
Stddev	.00051	.0068	.00195	.00276	.00055	.00013	.1597	.00025
%RSD	183.66	.61449	418.42	.93718	2.0449	1.5797	1.7571	141.92
#1	.00052	1.1045	-.00089	.29719	.02618	.00851	9.2744	.00038
#2	.00062	1.1115	-.00216	.29244	.02678	.00825	9.0057	.00026
#3	-.00031	1.0979	.00166	.29240	.02727	.00833	8.9905	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00090	.00036	.00344	-.00021	4.1151	.00307	3.0707	.00584
Stddev	.00007	.00085	.00090	.00481	.0581	.00406	.0774	.00070
%RSD	7.8761	232.39	26.094	2293.5	1.4117	132.06	2.5207	12.039
#1	.00097	-.00039	.00248	-.00372	4.1757	.00772	3.0599	.00646
#2	.00083	.00021	.00426	-.00219	4.0599	.00023	3.1530	.00598
#3	.00090	.00128	.00357	.00528	4.1097	.00126	2.9993	.00507
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.1147	54.076	.00459	.02783	.00092	.00817	.00379	.45224
Stddev	.0030	.380	.00072	.00802	.00370	.00274	.00228	.00672
%RSD	.13986	.70301	15.787	28.835	402.73	33.495	60.194	1.4856
#1	2.1120	54.403	.00376	.02582	-.00328	.00502	.00533	.44893
#2	2.1143	54.165	.00509	.02100	.00372	.00962	.00117	.45997
#3	2.1179	53.659	.00493	.03667	.00232	.00988	.00488	.44781
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111605 Acquired: 6/28/2016 18:30:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00035**	**.07120**	**-.00047**	**.19870**	**5.4024**	**.00245**	**.00289**
Stddev	.00042	.00060	.00634	.00473	.0163	.00006	.00013
%RSD	119.85	.83776	1355.6	2.3784	.30238	2.3257	4.5179
#1	.00035	.07164	-.00580	.19939	5.4209	.00245	.00275
#2	-.00007	.07052	.00654	.19367	5.3901	.00251	.00301
#3	.00076	.07144	-.00215	.20304	5.3963	.00240	.00292
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9105.6**	**54691.**	**2624.7**
Stddev	15.2	82.	15.9
%RSD	.16696	.14967	.60539
#1	9119.5	54648.	2613.5
#2	9108.0	54785.	2617.8
#3	9089.3	54640.	2642.9

Approved: June 29, 2016

Sample Name: L1606111606 Acquired: 6/28/2016 18:33:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00148	1.0362	.00000	.29254	.02502	.00843	8.7484	.00005
Stddev	.00312	.0077	.00375	.00301	.00132	.00005	.0697	.00043
%RSD	211.26	.74553	75583.	1.0288	5.2832	.58296	.79709	890.62
#1	.00415	1.0304	-.00385	.29524	.02349	.00848	8.6784	.00054
#2	.00222	1.0450	.00023	.29310	.02572	.00839	8.7490	-.00026
#3	-.00195	1.0333	.00364	.28930	.02584	.00841	8.8179	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00161	.00056	.00206	-.00926	3.9257	.00283	2.8857	.00118
Stddev	.00030	.00120	.00133	.03110	.1203	.00120	.1392	.00270
%RSD	18.711	214.76	64.670	335.83	3.0638	42.265	4.8225	229.65
#1	.00171	-.00081	.00219	.00883	3.9102	.00360	2.9016	-.00067
#2	.00185	.00144	.00067	-.04518	3.8138	.00345	3.0163	.00428
#3	.00127	.00105	.00332	.00856	4.0529	.00145	2.7393	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.0536	53.544	.00308	.01428	-.00163	.00492	.00033	.39787
Stddev	.0614	.064	.00025	.00557	.00089	.00226	.00282	.00762
%RSD	2.9907	.12002	8.0178	39.006	54.415	45.871	859.62	1.9160
#1	2.0891	53.487	.00286	.00796	-.00119	.00750	-.00270	.40196
#2	2.0891	53.531	.00335	.01849	-.00105	.00334	.00287	.40259
#3	1.9827	53.613	.00302	.01638	-.00266	.00392	.00082	.38908
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111606 Acquired: 6/28/2016 18:33:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.06946	.00006	.19289	5.3081	.00068	.00210
Stddev	.00064	.00041	.00383	.00136	.0126	.00024	.00069
%RSD	629.49	.59397	6372.8	.70403	.23798	34.528	32.797
#1	.00028	.06986	-.00421	.19344	5.3225	.00055	.00130
#2	-.00061	.06949	.00119	.19134	5.3025	.00054	.00247
#3	.00063	.06904	.00319	.19388	5.2992	.00096	.00252
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9170.7	54866.	2633.7
Stddev	6.0	273.	8.6
%RSD	.06522	.49683	.32757
#1	9164.6	54558.	2643.7
#2	9176.5	55078.	2628.0
#3	9171.0	54961.	2629.5

Approved: June 29, 2016

Sample Name: L1606111607 Acquired: 6/28/2016 18:37:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00211	1.1117	.00162	.28972	.02692	.00835	9.0280	.00021
Stddev	.00194	.0108	.00405	.00301	.00121	.00002	.1291	.00015
%RSD	92.265	.97432	250.36	1.0374	4.4977	.29176	1.4303	70.337
#1	.00010	1.1122	.00562	.28943	.02812	.00832	9.1025	.00016
#2	.00223	1.1223	.00172	.29286	.02570	.00836	8.8789	.00037
#3	.00398	1.1007	-.00249	.28687	.02693	.00836	9.1026	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00132	-.00114	.00389	.07623	4.0957	.00739	2.9495	.00442
Stddev	.00011	.00129	.00096	.01157	.0445	.00783	.0540	.00109
%RSD	8.1592	112.30	24.657	15.180	1.0873	106.06	1.8298	24.709
#1	.00140	-.00250	.00399	.08950	4.0447	.00034	2.9996	.00516
#2	.00120	-.00099	.00479	.06828	4.1157	.00599	2.8924	.00494
#3	.00137	.00006	.00288	.07090	4.1268	.01582	2.9566	.00317
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.0386	53.529	.00507	.03227	-.00061	.00632	.00043	.44078
Stddev	.0621	.302	.00017	.00294	.00248	.00399	.00658	.01514
%RSD	3.0463	.56438	3.4047	9.0970	405.64	63.116	1540.8	3.4349
#1	2.0762	53.822	.00487	.02889	.00186	.00185	-.00148	.44888
#2	2.0727	53.218	.00515	.03376	-.00310	.00759	.00775	.45015
#3	1.9669	53.546	.00518	.03416	-.00059	.00951	-.00499	.42332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111607 Acquired: 6/28/2016 18:37:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.07058	.00030	.20096	5.4024	.00417	.00203
Stddev	.00130	.00048	.01325	.00141	.0090	.00022	.00037
%RSD	1062.3	.67593	4477.7	.70349	.16631	5.2101	18.227
#1	-.00089	.07107	.00038	.19936	5.4094	.00435	.00234
#2	-.00033	.07054	.01350	.20205	5.4055	.00424	.00162
#3	.00158	.07012	-.01300	.20146	5.3923	.00393	.00212
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9201.6	55034.	2642.1
Stddev	7.1	79.	26.3
%RSD	.07703	.14385	.99526
#1	9205.8	54943.	2626.0
#2	9193.5	55085.	2672.5
#3	9205.7	55075.	2627.9

Approved: June 29, 2016

Sample Name: L1606111608 Acquired: 6/28/2016 18:41:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	1.0836	.00155	.29561	.02737	.00841	8.9137	-.00007
Stddev	.00156	.0090	.00338	.00146	.00064	.00008	.0643	.00007
%RSD	4624.4	.83043	217.43	.49435	2.3557	.95212	.72145	103.03
#1	.00100	1.0803	.00289	.29408	.02794	.00850	8.9526	-.00007
#2	-.00177	1.0767	-.00229	.29699	.02667	.00839	8.9490	.00000
#3	.00087	1.0938	.00407	.29576	.02749	.00834	8.8395	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00092	-.00027	.00315	-.00654	4.0822	.00491	2.9725	.00152
Stddev	.00045	.00163	.00123	.01841	.1560	.00365	.0835	.00117
%RSD	48.428	601.30	39.073	281.52	3.8212	74.269	2.8076	77.224
#1	.00143	.00001	.00352	.00348	4.1388	.00247	2.9149	.00036
#2	.00068	-.00203	.00414	-.02779	4.2020	.00911	3.0682	.00271
#3	.00064	.00120	.00177	.00468	3.9058	.00316	2.9344	.00149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.0716	54.124	.00334	.01569	-.00178	.00730	.00009	.38883
Stddev	.0672	.212	.00081	.00676	.00119	.00610	.00096	.00730
%RSD	3.2436	.39123	24.294	43.076	67.031	83.462	1099.7	1.8783
#1	2.1038	54.235	.00342	.00933	-.00315	.01434	-.00098	.39366
#2	2.1167	54.257	.00250	.01495	-.00107	.00369	.00088	.39241
#3	1.9944	53.880	.00412	.02278	-.00111	.00388	.00036	.38043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111608 Acquired: 6/28/2016 18:41:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.07040	-.00406	.20156	5.4999	.00103	.00270
Stddev	.00025	.00061	.01483	.00093	.0053	.00022	.00040
%RSD	48.871	.86374	364.91	.46232	.09575	21.050	14.848
#1	.00078	.06990	.01194	.20238	5.5013	.00078	.00314
#2	.00049	.07022	-.01733	.20055	5.5043	.00112	.00236
#3	.00028	.07108	-.00680	.20175	5.4940	.00118	.00259
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9087.9	54467.	2610.4
Stddev	38.8	90.	2.9
%RSD	.42699	.16539	.10989
#1	9131.5	54444.	2612.9
#2	9057.3	54566.	2611.1
#3	9074.7	54390.	2607.3

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 18:45:25 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39229	9.9415	.39105	.49054	.99686	.04957	9.8857	.04959
Stddev	.00335	.0095	.00513	.00388	.00176	.00023	.0395	.00014
%RSD	.85319	.09541	1.3130	.79016	.17667	.46681	.39949	.28298
#1	.39521	9.9524	.38973	.48964	.99784	.04938	9.8418	.04971
#2	.38864	9.9353	.39671	.48720	.99791	.04983	9.9182	.04961
#3	.39302	9.9368	.38670	.49479	.99482	.04950	9.8972	.04943
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19995	.49831	.49568	3.9005	50.426	1.0075	9.9621	.48878
Stddev	.00185	.00270	.00320	.0383	.052	.0078	.0603	.00225
%RSD	.92562	.54191	.64620	.98241	.10382	.77658	.60485	.46087
#1	.20112	.50117	.49741	3.9444	50.472	1.0071	9.9738	.49127
#2	.20092	.49581	.49765	3.8837	50.369	.99982	10.016	.48690
#3	.19782	.49794	.49199	3.8735	50.435	1.0155	9.8969	.48816
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99302	49.356	.49108	9.7656	.49096	1.1720	.39192	4.8719
Stddev	.00566	.139	.00280	.0493	.00323	.0138	.00972	.0103
%RSD	.57015	.28252	.57000	.50534	.65722	1.1784	2.4806	.21075
#1	.99726	49.251	.49381	9.7998	.49123	1.1824	.39913	4.8781
#2	.99521	49.515	.49123	9.7879	.48761	1.1774	.39576	4.8777
#3	.98659	49.303	.48822	9.7090	.49404	1.1564	.38086	4.8601
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 18:45:25 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99872	.99343	.98950	.50063	.99718	.98347	.99916
Stddev	.00591	.00326	.01354	.00208	.00090	.00598	.00568
%RSD	.59190	.32803	1.3679	.41514	.09036	.60831	.56812
#1	1.0032	.99072	.98506	.49978	.99708	.98808	.99430
#2	1.0009	.99705	.97874	.50300	.99813	.98561	.99778
#3	.99203	.99253	1.0047	.49911	.99633	.97671	1.0054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9221.9	54639.	2638.4
Stddev	13.6	202.	11.2
%RSD	.14695	.37013	.42347
#1	9211.2	54552.	2650.8
#2	9237.1	54495.	2629.1
#3	9217.4	54870.	2635.2

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 18:49:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	.00990	-.00013	.00158	.00622	.00015	-.03448	-.00005
Stddev	.00201	.00440	.00170	.00465	.00108	.00012	.06651	.00006
%RSD	284.08	44.487	1351.7	293.28	17.312	75.433	192.88	107.88
#1	-.00024	.01493	.00061	.00689	.00663	.00014	.00916	-.00005
#2	-.00065	.00802	-.00207	-.00177	.00703	.00028	-.11104	.00000
#3	.00301	.00675	.00108	-.00037	.00500	.00005	-.00158	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	-.00059	-.00069	-.03680	.10197	.00489	.05898	.00047
Stddev	.00049	.00057	.00083	.01990	.12028	.00273	.03828	.00209
%RSD	250.97	96.139	120.16	54.083	117.96	55.806	64.899	448.61
#1	.00032	-.00064	.00011	-.05829	.13290	.00716	.01495	.00055
#2	-.00024	-.00000	-.00063	-.01900	.20376	.00186	.07761	-.00167
#3	-.00065	-.00113	-.00155	-.03311	-.03076	.00564	.08437	.00251
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	-.03142	.00040	-.00674	.00048	.00402	.00227	.00817
Stddev	.00075	.00727	.00091	.00301	.00387	.00356	.00433	.00283
%RSD	299.38	23.154	227.74	44.575	805.42	88.468	190.77	34.630
#1	-.00012	-.03106	-.00003	-.01019	.00167	.00785	.00618	.01078
#2	-.00024	-.03887	.00145	-.00468	.00362	.00082	.00301	.00858
#3	.00112	-.02433	-.00022	-.00536	-.00385	.00340	-.00238	.00516
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 18:49:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00000**	**.00016**	**-.00514**	**-.00296**	**-.00003**	**-.00004**	**-.00000**
Stddev	.00082	.00022	.01243	.00218	.00079	.00006	.00076
%RSD	35165.	134.62	241.93	73.509	2857.6	158.73	314340.
#1	-.00095	.00039	-.01930	-.00352	.00021	-.00010	-.00021
#2	.00045	.00012	.00396	-.00481	-.00091	.00002	.00084
#3	.00049	-.00003	-.00008	-.00056	.00062	-.00004	-.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8657.8**	**52038.**	**2416.2**
Stddev	9.1	416.	5.6
%RSD	.10560	.80031	.23071
#1	8648.4	51987.	2418.7
#2	8666.6	52477.	2420.0
#3	8658.5	51649.	2409.8

Approved: June 29, 2016

Sample Name: L1606111609 Acquired: 6/28/2016 18:52:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00169	F -.24671	.00229	.31259	.02791	.01137	34.044
Stddev	.00182	.00332	.00272	.00627	.00207	.00015	.034
%RSD	108.17	1.3465	118.72	2.0066	7.4142	1.3347	.09998
#1	.00061	-.24434	.00262	.30730	.02980	.01136	34.020
#2	.00379	-.24528	-.00058	.31952	.02570	.01123	34.083
#3	.00066	-.25051	.00484	.31094	.02824	.01153	34.030
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		900.00					
Low Limit		-.10000					

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	.00211	-.00014	.01058	.02927	8.1895	.00744
Stddev	.00018	.00013	.00056	.00103	.01880	.0223	.00285
%RSD	63.443	5.9452	413.29	9.7235	64.214	.27208	38.275
#1	.00044	.00214	-.00068	.01172	.05095	8.1784	.00919
#2	.00030	.00221	.00044	.00972	.01751	8.2152	.00415
#3	.00009	.00197	-.00017	.01030	.01936	8.1750	.00898
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	13.085	.00986	3.4753	73.279	.01200	.10844	-.00023
Stddev	.146	.00193	.0933	.091	.00073	.01049	.00052
%RSD	1.1124	19.578	2.6833	.12431	6.1213	9.6747	220.87
#1	13.015	.01182	3.5272	73.382	.01266	.10696	.00034
#2	13.253	.00982	3.5310	73.212	.01121	.11959	-.00040
#3	12.988	.00796	3.3676	73.241	.01214	.09876	-.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606111609 Acquired: 6/28/2016 18:52:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01341**	**.00048**	**1.8767**	**.00012**	**.18806**	**-.01559**	**.26285**
Stddev	.00215	.00285	.0302	.00117	.00070	.00849	.00279
%RSD	16.054	593.98	1.6105	1001.4	.37260	54.468	1.0632
#1	.01137	.00362	1.9013	.00122	.18745	-.02478	.26486
#2	.01320	-.00195	1.8860	.00025	.18882	-.00803	.26404
#3	.01566	-.00023	1.8430	-.00111	.18791	-.01396	.25966
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**7.1565**	**.01706**	**.00390**
Stddev	.0080	.00047	.00028
%RSD	.11254	2.7742	7.1930
#1	7.1473	.01735	.00373
#2	7.1594	.01731	.00422
#3	7.1626	.01651	.00374
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8637.3**	**51686.**	**2438.8**
Stddev	25.5	111.	18.4
%RSD	.29499	.21405	.75414
#1	8657.6	51701.	2418.8
#2	8645.7	51569.	2442.5
#3	8608.7	51789.	2455.0

Approved: June 29, 2016

Sample Name: L1606111610 Acquired: 6/28/2016 18:56:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00186**	F **-.26089**	**.00361**	**.32094**	**.02805**	**.01175**	**34.227**
Stddev	.00286	.00497	.00209	.00164	.00119	.00004	.119
%RSD	153.61	1.9054	57.885	.50971	4.2395	.35073	.34827
#1	.00418	-.26319	.00600	.32229	.02668	.01176	34.342
#2	-.00133	-.25518	.00273	.32140	.02867	.01178	34.236
#3	.00273	-.26429	.00211	.31912	.02880	.01170	34.104
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		900.00					
Low Limit		-.10000					

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**.00133**	**.00023**	**.00630**	**.00366**	**8.0682**	**.00998**
Stddev	.00013	.00007	.00098	.00212	.02782	.0640	.00247
%RSD	59.800	5.5704	427.48	33.690	759.07	.79377	24.736
#1	.00035	.00141	-.00091	.00835	-.01455	8.1226	.00792
#2	.00022	.00127	.00077	.00411	-.01014	8.0843	.01271
#3	.00009	.00130	.00082	.00645	.03568	7.9976	.00929
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**13.124**	**.00493**	**3.5460**	**74.032**	**.00990**	**.11211**	**-.00262**
Stddev	.040	.00133	.0477	.229	.00101	.00704	.00448
%RSD	.30775	26.938	1.3453	.30869	10.165	6.2824	171.27
#1	13.104	.00643	3.5704	74.144	.01095	.11324	.00151
#2	13.170	.00443	3.5766	74.183	.00982	.10457	-.00739
#3	13.097	.00392	3.4910	73.769	.00894	.11852	-.00197
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606111610 Acquired: 6/28/2016 18:56:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01102**	**.00507**	**1.8845**	**.00126**	**.18824**	**.00050**	**.26949**
Stddev	.00429	.00618	.0149	.00056	.00018	.00574	.00545
%RSD	38.980	121.81	.79273	44.228	.09495	1156.8	2.0221
#1	.01018	.01016	1.8905	.00172	.18843	.00529	.26417
#2	.00720	-.00180	1.8955	.00064	.18807	.00206	.26925
#3	.01567	.00685	1.8675	.00140	.18821	-.00586	.27506
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**7.2308**	**.01161**	**.00445**
Stddev	.0079	.00013	.00036
%RSD	.10869	1.0937	8.2072
#1	7.2225	.01163	.00451
#2	7.2316	.01172	.00405
#3	7.2381	.01147	.00477
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8565.6**	**51126.**	**2443.1**
Stddev	32.1	49.	10.7
%RSD	.37452	.09590	.43979
#1	8602.6	51159.	2447.6
#2	8546.8	51149.	2430.8
#3	8547.3	51069.	2450.8

Approved: June 29, 2016

Sample Name: L1606111611 Acquired: 6/28/2016 19:00:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00104	.15531	.00139	.28793	.01827	.01349	24.276	.00009
Stddev	.00107	.01241	.00393	.00635	.00086	.00004	.280	.00036
%RSD	103.35	7.9927	283.58	2.2043	4.7272	.32117	1.1547	390.92
#1	.00070	.14804	-.00256	.29526	.01783	.01353	24.198	.00026
#2	.00018	.14825	.00142	.28441	.01927	.01344	24.587	-.00032
#3	.00224	.16965	.00531	.28413	.01772	.01350	24.043	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00157	.00300	.00201	.00864	6.5616	.01000	6.1571	.00075
Stddev	.00028	.00060	.00288	.05988	.1467	.00381	.1385	.00265
%RSD	17.628	19.937	142.86	693.02	2.2358	38.125	2.2501	355.75
#1	.00142	.00238	-.00123	.07744	6.6406	.01428	6.0978	-.00228
#2	.00141	.00307	.00426	-.01970	6.3924	.00877	6.0580	.00268
#3	.00189	.00357	.00301	-.03181	6.6519	.00695	6.3154	.00183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.7556	61.390	.01872	.08689	.00039	.00398	.00545	3.8083
Stddev	.0037	.059	.00102	.00595	.00183	.00284	.00115	.0067
%RSD	.13597	.09548	5.4741	6.8505	472.50	71.316	21.148	.17711
#1	2.7593	61.416	.01989	.09312	-.00124	.00695	.00540	3.8145
#2	2.7559	61.431	.01827	.08126	.00237	.00367	.00432	3.8011
#3	2.7518	61.323	.01799	.08629	.00003	.00131	.00662	3.8092
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111611 Acquired: 6/28/2016 19:00:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	.11645	-.00318	.29346	7.9427	.02210	.00268
Stddev	.00089	.00042	.00288	.00285	.0190	.00021	.00040
%RSD	424.15	.35948	90.314	.97028	.23929	.95091	14.963
#1	-.00007	.11631	-.00534	.29241	7.9282	.02188	.00233
#2	.00120	.11692	-.00429	.29668	7.9358	.02230	.00312
#3	-.00050	.11612	.00008	.29129	7.9642	.02211	.00259
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8640.4	51497.	2440.2
Stddev	.7	35.	3.8
%RSD	.00807	.06819	.15410
#1	8641.2	51534.	2436.1
#2	8640.2	51493.	2441.0
#3	8639.9	51464.	2443.5

Approved: June 29, 2016

Sample Name: L1606111612 Acquired: 6/28/2016 19:04:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00383	.04912	.00056	.28402	.01911	.01326	24.157	.00025
Stddev	.00060	.00917	.00387	.00359	.00131	.00019	.121	.00011
%RSD	15.694	18.661	688.23	1.2647	6.8730	1.4327	.50040	45.926
#1	.00354	.05967	-.00073	.28770	.01856	.01347	24.092	.00016
#2	.00452	.04305	.00491	.28053	.01816	.01310	24.082	.00038
#3	.00343	.04465	-.00250	.28382	.02061	.01321	24.296	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00126	.00207	.00162	.00171	6.7063	.01259	6.4107	-.00251
Stddev	.00050	.00113	.00240	.00914	.0591	.00141	.1102	.00295
%RSD	39.655	54.778	148.14	535.36	.88143	11.226	1.7192	117.53
#1	.00128	.00310	.00395	.01079	6.6558	.01417	6.3134	-.00541
#2	.00075	.00085	-.00084	-.00748	6.7713	.01145	6.5304	.00048
#3	.00174	.00226	.00174	.00181	6.6917	.01215	6.3883	-.00259
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.7810	60.169	.00746	.07950	-.00097	.00332	.01301	3.5713
Stddev	.0078	.217	.00129	.00746	.00078	.00182	.00602	.0121
%RSD	.28149	.36015	17.286	9.3799	80.451	54.684	46.276	.34028
#1	2.7863	60.279	.00610	.08231	-.00184	.00537	.00606	3.5680
#2	2.7847	60.308	.00763	.07105	-.00077	.00266	.01661	3.5847
#3	2.7720	59.919	.00866	.08515	-.00031	.00192	.01637	3.5611
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111612 Acquired: 6/28/2016 19:04:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	.11823	-.01269	.28756	7.9060	.00211	.00306
Stddev	.00060	.00069	.00639	.00445	.0044	.00031	.00049
%RSD	79.968	.58467	50.323	1.5482	.05612	14.573	16.027
#1	.00138	.11902	-.01137	.28902	7.9062	.00229	.00348
#2	.00018	.11773	-.01964	.28257	7.9103	.00227	.00320
#3	.00069	.11794	-.00707	.29111	7.9015	.00175	.00252
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8559.9	51268.	2442.1
Stddev	44.0	211.	7.2
%RSD	.51415	.41125	.29469
#1	8531.4	51489.	2434.3
#2	8537.7	51069.	2443.4
#3	8610.6	51245.	2448.5

Approved: June 29, 2016

Sample Name: L1606111613S Acquired: 6/28/2016 19:08:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19477	5.0228	.18939	1.2073	.49579	.03691	28.766	.02419
Stddev	.00338	.0209	.00300	.0033	.00412	.00009	.267	.00009
%RSD	1.7336	.41639	1.5864	.27651	.83112	.24129	.92755	.35345
#1	.19088	5.0294	.18741	1.2112	.50051	.03686	29.074	.02421
#2	.19696	5.0396	.19284	1.2050	.49391	.03685	28.615	.02427
#3	.19647	4.9994	.18791	1.2058	.49294	.03701	28.608	.02410
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09931	.24662	.24317	1.8719	31.139	.50428	11.097	.23993
Stddev	.00047	.00109	.00134	.0365	.322	.00060	.031	.00147
%RSD	.47574	.44006	.55302	1.9526	1.0333	.11928	.28144	.61370
#1	.09976	.24549	.24417	1.8725	31.459	.50401	11.061	.24152
#2	.09882	.24765	.24370	1.9082	30.816	.50497	11.121	.23964
#3	.09936	.24674	.24164	1.8351	31.142	.50386	11.108	.23862
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.2182	84.368	.25735	4.7443	.23955	.56662	.19040	6.0686
Stddev	.0227	.847	.00146	.0198	.00289	.00283	.00282	.0236
%RSD	.70479	1.0036	.56858	.41773	1.2060	.49958	1.4787	.38948
#1	3.2303	85.345	.25712	4.7563	.23856	.56753	.19307	6.0767
#2	3.2323	83.860	.25891	4.7552	.23729	.56889	.19066	6.0871
#3	3.1921	83.897	.25601	4.7214	.24281	.56345	.18746	6.0419
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111613S Acquired: 6/28/2016 19:08:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48813	.60214	.48390	.53165	8.4149	.50011	.00340
Stddev	.00470	.00482	.00480	.00148	.0070	.00378	.00043
%RSD	.96282	.80038	.99193	.27906	.08316	.75545	12.759
#1	.49143	.60762	.48857	.52994	8.4205	.50262	.00309
#2	.49021	.59858	.48417	.53261	8.4071	.50196	.00321
#3	.48275	.60020	.47898	.53240	8.4172	.49577	.00389
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8510.8	50989.	2449.9
Stddev	6.3	114.	33.0
%RSD	.07397	.22271	1.3464
#1	8503.9	50891.	2415.0
#2	8512.3	50963.	2454.1
#3	8516.3	51114.	2480.6

Approved: June 29, 2016

Sample Name: L1606111614S Acquired: 6/28/2016 19:11:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19976**	**5.1117**	**.20033**	**1.2397**	**.51862**	**.03817**	**29.160**	**.02517**
Stddev	.00238	.0040	.00143	.0029	.00064	.00013	.036	.00013
%RSD	1.1919	.07822	.71462	.23398	.12376	.34613	.12271	.50966
#1	.19785	5.1103	.19976	1.2364	.51935	.03832	29.152	.02502
#2	.20243	5.1086	.20196	1.2408	.51837	.03812	29.199	.02526
#3	.19900	5.1163	.19927	1.2419	.51815	.03807	29.129	.02522
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10267**	**.25542**	**.25111**	**1.9749**	**32.092**	**.51979**	**11.538**	**.24636**
Stddev	.00038	.00140	.00135	.0226	.087	.00342	.033	.00382
%RSD	.36984	.54933	.53776	1.1454	.27022	.65811	.28987	1.5500
#1	.10308	.25694	.25257	2.0009	32.157	.51648	11.576	.24780
#2	.10260	.25514	.24991	1.9599	32.125	.52332	11.525	.24203
#3	.10233	.25417	.25084	1.9639	31.994	.51957	11.512	.24924
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.2930**	**85.625**	**.25474**	**4.9054**	**.24911**	**.58625**	**.19523**	**5.9056**
Stddev	.0102	.114	.00008	.0176	.00426	.00482	.00530	.0210
%RSD	.30930	.13280	.03193	.35965	1.7112	.82238	2.7172	.35590
#1	3.3047	85.748	.25482	4.9258	.24475	.58430	.19918	5.9288
#2	3.2880	85.523	.25466	4.8957	.25327	.59174	.18920	5.8877
#3	3.2862	85.605	.25475	4.8948	.24930	.58270	.19731	5.9004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111614S Acquired: 6/28/2016 19:11:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50712**	**.62989**	**.48967**	**.54077**	**8.4652**	**.49980**	**.00375**
Stddev	.00290	.00007	.00896	.00153	.0082	.00166	.00086
%RSD	.57187	.01071	1.8306	.28317	.09739	.33159	22.982
#1	.51044	.62981	.48549	.54245	8.4713	.50169	.00283
#2	.50507	.62993	.49996	.54041	8.4558	.49912	.00454
#3	.50584	.62992	.48355	.53945	8.4685	.49860	.00388
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8539.3**	**50582.**	**2414.9**
Stddev	42.3	178.	.8
%RSD	.49581	.35193	.03111
#1	8490.5	50389.	2414.0
#2	8561.9	50739.	2415.4
#3	8565.6	50619.	2415.2

Approved: June 29, 2016

Sample Name: L1606111615SD Acquired: 6/28/2016 19:15:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19483**	**5.0631**	**.19408**	**1.2283**	**.50358**	**.03725**	**28.794**	**.02439**
Stddev	.00134	.0103	.00311	.0052	.00068	.00010	.078	.00026
%RSD	.68665	.20360	1.6033	.42015	.13592	.27409	.26967	1.0469
#1	.19572	5.0522	.19292	1.2310	.50432	.03719	28.759	.02459
#2	.19329	5.0727	.19172	1.2223	.50297	.03737	28.739	.02448
#3	.19549	5.0645	.19761	1.2315	.50343	.03719	28.883	.02410
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10051**	**.25222**	**.24531**	**1.9227**	**31.387**	**.50736**	**11.086**	**.24417**
Stddev	.00036	.00165	.00180	.0406	.232	.00434	.198	.00465
%RSD	.35572	.65305	.73217	2.1114	.74000	.85470	1.7857	1.9034
#1	.10011	.25331	.24577	1.9166	31.361	.50253	10.859	.23883
#2	.10066	.25302	.24683	1.9661	31.168	.51091	11.218	.24727
#3	.10078	.25033	.24333	1.8856	31.631	.50863	11.182	.24642
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.2181**	**85.276**	**.26287**	**4.8382**	**.24342**	**.57943**	**.19535**	**6.0855**
Stddev	.0060	.153	.00086	.0107	.00115	.00114	.00430	.0514
%RSD	.18621	.17890	.32739	.22191	.47258	.19717	2.1988	.84430
#1	3.2234	85.200	.26251	4.8499	.24473	.58070	.19814	6.1440
#2	3.2191	85.176	.26386	4.8357	.24298	.57910	.19751	6.0647
#3	3.2116	85.451	.26226	4.8289	.24256	.57849	.19040	6.0477
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111615SD Acquired: 6/28/2016 19:15:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49741**	**.60939**	**.48961**	**.53564**	**8.4041**	**.50988**	**.00349**
Stddev	.00079	.00397	.00999	.00166	.0095	.00077	.00075
%RSD	.15965	.65174	2.0396	.30908	.11341	.15171	21.486
#1	.49688	.60498	.48083	.53444	8.3943	.51072	.00337
#2	.49832	.61049	.50047	.53753	8.4133	.50974	.00280
#3	.49703	.61269	.48751	.53496	8.4047	.50919	.00429
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8539.4**	**50792.**	**2446.6**
Stddev	44.7	29.	15.5
%RSD	.52366	.05646	.63223
#1	8497.6	50788.	2447.9
#2	8534.2	50765.	2461.4
#3	8586.5	50822.	2430.5

Approved: June 29, 2016

Sample Name: L1606111616SD Acquired: 6/28/2016 19:19:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19566**	**5.0340**	**.19553**	**1.2462**	**.51633**	**.03826**	**29.342**	**.02460**
Stddev	.00296	.0138	.00253	.0064	.00627	.00019	.244	.00026
%RSD	1.5107	.27370	1.2962	.51335	1.2136	.50612	.83044	1.0564
#1	.19547	5.0283	.19831	1.2494	.52271	.03808	29.613	.02477
#2	.19280	5.0497	.19492	1.2503	.51019	.03846	29.141	.02474
#3	.19870	5.0240	.19335	1.2388	.51609	.03824	29.271	.02430
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10113**	**.25397**	**.24998**	**1.9550**	**32.109**	**.51960**	**11.565**	**.24878**
Stddev	.00115	.00165	.00206	.0245	.390	.00560	.094	.00225
%RSD	1.1409	.65005	.82441	1.2540	1.2158	1.0784	.81447	.90305
#1	.10149	.25518	.24986	1.9783	32.535	.51825	11.457	.25104
#2	.10207	.25209	.25210	1.9294	31.767	.51479	11.631	.24655
#3	.09984	.25464	.24798	1.9572	32.026	.52575	11.608	.24874
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.2885**	**85.842**	**.25247**	**4.8800**	**.24597**	**.58377**	**.19459**	**5.8979**
Stddev	.0263	.672	.00277	.0334	.00227	.00367	.00306	.0457
%RSD	.80102	.78328	1.0953	.68517	.92218	.62874	1.5723	.77555
#1	3.2998	86.565	.25353	4.9123	.24665	.58202	.19353	5.9262
#2	3.3073	85.235	.25454	4.8822	.24782	.58799	.19220	5.9224
#3	3.2584	85.728	.24933	4.8456	.24344	.58131	.19804	5.8451
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111616SD Acquired: 6/28/2016 19:19:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50068**	**.62675**	**.49003**	**.54097**	**8.4762**	**.49546**	**.00325**
Stddev	.00490	.00349	.00592	.00219	.0243	.00502	.00063
%RSD	.97814	.55741	1.2076	.40406	.28687	1.0134	19.262
#1	.50340	.62999	.48564	.54178	8.4602	.49873	.00394
#2	.50361	.62305	.48768	.54264	8.5042	.49797	.00312
#3	.49503	.62722	.49676	.53850	8.4642	.48968	.00270
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8528.3**	**50976.**	**2438.2**
Stddev	27.5	232.	22.5
%RSD	.32190	.45566	.92424
#1	8510.6	51237.	2412.6
#2	8514.4	50792.	2454.8
#3	8559.9	50900.	2447.3

Approved: June 29, 2016

Sample Name: L1606111617 Acquired: 6/28/2016 19:22:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00125	1.0730	.00243	.94456	.02345	.00664	17.171	.00021
Stddev	.00060	.0107	.00330	.00310	.00170	.00011	.205	.00052
%RSD	48.268	.99365	135.53	.32796	7.2297	1.6862	1.1957	249.35
#1	.00156	1.0648	.00541	.94322	.02195	.00655	16.934	.00026
#2	.00163	1.0691	.00299	.94810	.02529	.00661	17.299	-.00034
#3	.00055	1.0851	-.00111	.94236	.02311	.00677	17.280	.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00108	.00191	.00281	.25427	4.8595	.00560	5.8034	.00933
Stddev	.00016	.00103	.00070	.00526	.1531	.00470	.0236	.00159
%RSD	14.503	53.864	25.013	2.0678	3.1508	83.930	.40616	17.040
#1	.00127	.00295	.00200	.25974	4.7953	.00368	5.8137	.01117
#2	.00101	.00187	.00320	.24926	4.7490	.00216	5.7764	.00848
#3	.00097	.00090	.00323	.25382	5.0343	.01095	5.8200	.00835
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.8732	108.42	.01899	.06575	.00152	.00875	-.00339	2.6514
Stddev	.0510	.52	.00065	.00357	.00326	.00209	.00602	.0593
%RSD	2.7232	.47845	3.4259	5.4245	214.84	23.862	177.37	2.2363
#1	1.9089	108.16	.01967	.06171	.00070	.00991	-.00992	2.6947
#2	1.8959	108.08	.01894	.06707	-.00126	.00999	-.00219	2.6757
#3	1.8147	109.02	.01837	.06847	.00511	.00634	.00193	2.5838
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111617 Acquired: 6/28/2016 19:22:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	.10483	.00185	.15786	4.3684	.01245	.00245
Stddev	.00024	.00064	.00471	.00205	.0215	.00016	.00037
%RSD	56.363	.60720	254.36	1.2973	.49093	1.2926	14.916
#1	.00019	.10503	.00197	.15899	4.3753	.01255	.00229
#2	.00043	.10411	-.00292	.15910	4.3855	.01252	.00287
#3	.00068	.10534	.00651	.15550	4.3443	.01226	.00219
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8650.9	51835.	2476.1
Stddev	44.0	196.	5.9
%RSD	.50891	.37736	.23711
#1	8623.8	51739.	2476.2
#2	8701.7	51706.	2482.0
#3	8627.2	52060.	2470.2

Approved: June 29, 2016

Sample Name: L1606111618 Acquired: 6/28/2016 19:26:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00084	.56274	.00067	.98109	.02095	.00642	16.310
Stddev	.00331	.00447	.00274	.01353	.00114	.00010	.137
%RSD	394.10	.79427	408.71	1.3790	5.4340	1.4834	.83691
#1	-.00455	.55904	.00292	.97246	.02155	.00652	16.441
#2	.00181	.56149	.00148	.97414	.01964	.00642	16.322
#3	.00022	.56771	-.00238	.99669	.02167	.00633	16.169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	.00100	.00142	.00119	F -.03203	4.7407	.00634
Stddev	.00008	.00008	.00165	.00103	.02107	.2217	.00377
%RSD	96.854	7.8871	116.18	86.889	65.774	4.6773	59.434
#1	-.00016	.00103	-.00048	.00236	-.03693	4.9721	.00557
#2	-.00000	.00106	.00229	.00077	-.05021	4.5301	.00302
#3	-.00007	.00091	.00247	.00043	-.00894	4.7199	.01044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.7406	-.00088	1.9276	110.50	.00879	.04672	-.00257
Stddev	.0231	.00321	.0069	.44	.00089	.00711	.00272
%RSD	.40167	363.18	.35848	.39919	10.179	15.225	105.97
#1	5.7191	-.00006	1.9325	110.73	.00978	.05410	-.00278
#2	5.7650	-.00442	1.9306	110.77	.00855	.03990	-.00517
#3	5.7377	.00183	1.9197	109.99	.00803	.04617	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606111618 Acquired: 6/28/2016 19:26:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00562**	**.00319**	**2.4858**	**.00030**	**.10363**	**-.00481**	**.15781**
Stddev	.00632	.00265	.0011	.00117	.00034	.00601	.00138
%RSD	112.44	83.121	.04373	394.14	.32381	124.77	.87536
#1	-.00139	.00622	2.4870	.00161	.10345	-.00946	.15828
#2	.00737	.00205	2.4854	-.00063	.10401	.00197	.15625
#3	.01088	.00129	2.4849	-.00009	.10341	-.00695	.15889
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**4.3243**	**.00293**	**.00203**
Stddev	.0040	.00018	.00019
%RSD	.09253	6.0250	9.2239
#1	4.3200	.00309	.00196
#2	4.3251	.00274	.00224
#3	4.3278	.00296	.00188
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8649.2**	**51256.**	**2459.2**
Stddev	26.4	33.	12.7
%RSD	.30519	.06388	.51770
#1	8619.7	51249.	2448.1
#2	8670.6	51291.	2456.2
#3	8657.2	51227.	2473.1

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 19:30:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39393	9.9883	.38526	.48583	.99716	.04966	9.8788	.04935
Stddev	.00274	.0657	.00281	.00348	.00753	.00030	.0948	.00070
%RSD	.69453	.65784	.72864	.71673	.75560	.60690	.95943	1.4215
#1	.39152	9.9183	.38763	.48958	.99649	.04943	9.9453	.04941
#2	.39338	9.9981	.38600	.48519	1.0050	.04954	9.9209	.05002
#3	.39691	10.049	.38216	.48271	.98999	.05000	9.7703	.04862
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19983	.49932	.49547	3.9046	50.536	1.0022	10.054	.48961
Stddev	.00147	.00411	.00502	.0586	.237	.0052	.125	.00704
%RSD	.73720	.82307	1.0132	1.4999	.46996	.51863	1.2450	1.4380
#1	.20016	.49579	.49771	3.8488	50.432	1.0027	9.9795	.48796
#2	.20111	.49833	.49897	3.8995	50.808	1.0072	10.199	.49733
#3	.19822	.50383	.48972	3.9656	50.368	.99679	9.9842	.48355
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99313	49.311	.48871	9.7009	.48971	1.1713	.38503	4.8337
Stddev	.00735	.281	.00306	.0472	.00373	.0075	.00878	.0139
%RSD	.74006	.57071	.62643	.48696	.76211	.63694	2.2792	.28793
#1	.99583	49.366	.49104	9.7306	.49397	1.1682	.38711	4.8340
#2	.99875	49.561	.48985	9.7256	.48702	1.1798	.39257	4.8476
#3	.98481	49.006	.48524	9.6464	.48815	1.1659	.37540	4.8197
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 19:30:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99640**	**.99015**	**.99144**	**.49657**	**1.0014**	**.98139**	**1.0163**
Stddev	.00750	.00955	.01096	.00546	.0032	.00618	.0028
%RSD	.75223	.96471	1.1057	1.1003	.32191	.62995	.27980
#1	.99975	.98887	.98824	.50220	.99790	.98458	1.0194
#2	1.0016	1.0003	1.0036	.49622	1.0022	.98533	1.0138
#3	.98781	.98130	.98243	.49129	1.0042	.97427	1.0157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8569.8**	**50820.**	**2413.3**
Stddev	22.8	215.	10.0
%RSD	.26631	.42243	.41304
#1	8596.2	51061.	2401.8
#2	8557.1	50752.	2419.5
#3	8556.2	50649.	2418.7

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 19:34:13 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.01126	-.00191	.00369	.00601	.00008	-.03261	.00023
Stddev	.00083	.00295	.00043	.00344	.00076	.00009	.04958	.00007
%RSD	2485.5	26.217	22.615	93.254	12.676	109.00	152.07	30.275
#1	-.00036	.01071	-.00159	.00497	.00514	.00011	-.00746	.00016
#2	.00091	.00862	-.00240	.00631	.00653	.00015	-.08972	.00029
#3	-.00065	.01445	-.00173	-.00021	.00638	-.00002	-.00063	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00032	.00036	.00042	-.02542	.08850	.00754	.02716	-.00001
Stddev	.00032	.00072	.00077	.03243	.07274	.00155	.02996	.00286
%RSD	101.42	198.05	182.72	127.59	82.190	20.545	110.27	20010.
#1	-.00001	-.00045	-.00017	.00826	.17224	.00907	.06169	-.00167
#2	-.00065	.00061	.00129	-.05644	.05213	.00598	.01173	-.00167
#3	-.00029	.00093	.00014	-.02808	.04111	.00758	.00807	.00329
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	-.02218	-.00022	.00390	-.00185	.00471	-.00735	.00643
Stddev	.00026	.02297	.00070	.00522	.00292	.00099	.00270	.00027
%RSD	72.849	103.55	318.05	133.94	157.68	20.938	36.741	4.2724
#1	.00022	-.00188	.00014	-.00158	-.00179	.00386	-.00755	.00620
#2	.00020	-.04711	.00023	.00445	.00104	.00446	-.00455	.00635
#3	.00066	-.01756	-.00102	.00882	-.00480	.00579	-.00994	.00673
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 19:34:13 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**.00011**	**-.00295**	**-.00216**	**-.00011**	**-.00020**	**.00008**
Stddev	.00025	.00026	.01036	.00538	.00059	.00009	.00023
%RSD	103.56	243.90	351.50	249.36	558.75	45.397	304.65
#1	-.00048	.00011	-.01053	-.00797	-.00074	-.00021	.00016
#2	-.00025	-.00016	-.00717	-.00113	.00043	-.00010	-.00018
#3	.00001	.00036	.00886	.00263	-.00001	-.00028	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8584.9**	**51861.**	**2415.8**
Stddev	34.0	193.	3.9
%RSD	.39651	.37302	.16307
#1	8587.6	51689.	2412.4
#2	8617.5	51822.	2415.0
#3	8549.6	52070.	2420.1

Approved: June 29, 2016

Sample Name: L1606111619 Acquired: 6/28/2016 19:38:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00160	.68300	.00298	.94890	.02124	.00623	16.028	.00009
Stddev	.00153	.00929	.00216	.00311	.00159	.00004	.199	.00019
%RSD	95.469	1.3607	72.654	.32754	7.4787	.64700	1.2441	212.75
#1	-.00316	.69092	.00048	.94760	.02211	.00626	15.949	-.00013
#2	-.00154	.67277	.00421	.94665	.02219	.00618	16.255	.00019
#3	-.00011	.68530	.00424	.95245	.01940	.00624	15.880	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00083	.00146	.00101	.06660	4.6769	.00611	5.5653	.00232
Stddev	.00038	.00087	.00102	.04994	.1055	.00291	.0608	.00117
%RSD	45.388	59.327	101.31	74.984	2.2547	47.587	1.0918	50.494
#1	.00042	.00046	.00001	.11500	4.7788	.00549	5.5199	.00343
#2	.00116	.00202	.00096	.06957	4.5682	.00927	5.6344	.00110
#3	.00091	.00190	.00205	.01524	4.6836	.00356	5.5417	.00244
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.8655	106.18	.00945	.05932	-.00122	.00524	-.00087	2.5232
Stddev	.0051	.51	.00068	.00476	.00312	.00511	.00330	.0070
%RSD	.27431	.48054	7.1517	8.0194	256.67	97.554	378.34	.27855
#1	1.8613	105.69	.00978	.05706	-.00065	-.00032	.00289	2.5222
#2	1.8712	106.71	.00990	.05612	-.00459	.00631	-.00330	2.5307
#3	1.8639	106.14	.00867	.06479	.00159	.00973	-.00221	2.5168
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111619 Acquired: 6/28/2016 19:38:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00097	.10012	.00178	.15139	4.1196	.00540	.00233
Stddev	.00072	.00064	.00812	.00311	.0202	.00029	.00034
%RSD	74.194	.63498	455.71	2.0563	.49052	5.3242	14.549
#1	.00180	.09940	-.00592	.14827	4.1171	.00540	.00271
#2	.00065	.10061	.00100	.15450	4.1410	.00569	.00204
#3	.00047	.10035	.01027	.15138	4.1008	.00511	.00226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8557.6	51294.	2452.0
Stddev	21.8	241.	14.5
%RSD	.25502	.47029	.58949
#1	8579.3	51378.	2467.4
#2	8535.6	51022.	2438.8
#3	8557.8	51482.	2449.8

Approved: June 29, 2016

Sample Name: L1606111620 Acquired: 6/28/2016 19:42:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00295	.56244	.00280	.96687	.02135	.00630	16.074
Stddev	.00131	.01105	.00379	.00718	.00109	.00014	.120
%RSD	44.380	1.9644	135.37	.74234	5.1103	2.2934	.74460
#1	.00309	.56666	.00701	.96071	.02019	.00645	16.211
#2	.00158	.54991	-.00033	.96515	.02236	.00617	15.989
#3	.00419	.57076	.00172	.97476	.02150	.00629	16.022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.00106	.00163	.00111	F -.02581	4.8505	.00840
Stddev	.00013	.00035	.00059	.00204	.01590	.1029	.00879
%RSD	305.99	32.498	35.872	184.93	61.610	2.1216	104.57
#1	-.00005	.00072	.00103	-.00124	-.02373	4.9502	.01854
#2	.00018	.00106	.00219	.00204	-.04264	4.7447	.00303
#3	-.00001	.00141	.00167	.00251	-.01105	4.8565	.00364
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.6738	.00004	1.9119	109.76	.00809	.05682	-.00029
Stddev	.0837	.00164	.0022	.23	.00072	.00469	.00702
%RSD	1.4744	4418.1	.11247	.21081	8.8910	8.2569	2392.1
#1	5.5837	.00127	1.9095	109.90	.00791	.05158	.00755
#2	5.6886	-.00183	1.9135	109.49	.00889	.06062	-.00243
#3	5.7491	.00068	1.9128	109.89	.00748	.05828	-.00599
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606111620 Acquired: 6/28/2016 19:42:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00855**	**.00850**	**2.4320**	**.00016**	**.10308**	**-.00383**	**.15782**
Stddev	.00505	.00431	.0076	.00051	.00112	.00965	.00176
%RSD	59.103	50.745	.31126	313.39	1.0892	251.80	1.1132
#1	.01045	.00709	2.4269	.00075	.10291	-.01059	.15635
#2	.00282	.00507	2.4407	-.00017	.10206	.00722	.15734
#3	.01237	.01334	2.4285	-.00009	.10428	-.00812	.15976
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**4.3294**	**.00391**	**.00237**
Stddev	.0135	.00010	.00041
%RSD	.31202	2.6141	17.073
#1	4.3261	.00389	.00284
#2	4.3179	.00402	.00222
#3	4.3443	.00381	.00207
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8570.2**	**51185.**	**2431.1**
Stddev	16.8	144.	4.2
%RSD	.19595	.28147	.17452
#1	8558.1	51035.	2427.6
#2	8563.2	51197.	2429.8
#3	8589.4	51322.	2435.8

Approved: June 29, 2016

Sample Name: L1606111622 Acquired: 6/28/2016 19:45:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	.87307	.00376	1.0028	.01970	.00516	16.701	.00008
Stddev	.00275	.01177	.00328	.0087	.00207	.00001	.349	.00017
%RSD	453.56	1.3482	87.385	.86913	10.519	.21170	2.0900	213.70
#1	.00209	.88302	.00024	1.0005	.02079	.00517	17.020	-.00007
#2	.00229	.87610	.00674	1.0124	.01731	.00514	16.328	.00027
#3	-.00256	.86008	.00430	.99542	.02099	.00516	16.755	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	.00168	.00105	-.01952	4.8292	.00792	5.5250	.00337
Stddev	.00071	.00046	.00224	.03206	.0356	.00332	.0079	.00274
%RSD	108.36	27.467	213.78	164.20	.73811	41.960	.14350	81.451
#1	.00145	.00177	.00318	-.03204	4.8246	.00856	5.5330	.00028
#2	.00045	.00209	.00123	-.04344	4.7960	.01087	5.5172	.00553
#3	.00007	.00118	-.00128	.01691	4.8668	.00432	5.5248	.00429
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.8436	107.62	.00865	.05049	.00159	.00599	.00234	3.1978
Stddev	.0496	.66	.00102	.00782	.00359	.00355	.00678	.0507
%RSD	2.6901	.60916	11.825	15.489	225.27	59.251	290.12	1.5846
#1	1.8729	108.36	.00855	.05950	.00195	.00379	.00343	3.2178
#2	1.8715	107.10	.00972	.04548	.00500	.01009	.00851	3.2354
#3	1.7863	107.41	.00768	.04648	-.00216	.00410	-.00492	3.1402
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111622 Acquired: 6/28/2016 19:45:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.10520	.00129	.12933	3.5297	.00382	.00225
Stddev	.00032	.00026	.00903	.00111	.0124	.00014	.00048
%RSD	92.272	.24564	702.47	.85816	.35251	3.5780	21.396
#1	.00031	.10501	-.00520	.13061	3.5439	.00398	.00258
#2	.00067	.10509	-.00254	.12863	3.5204	.00376	.00169
#3	.00004	.10549	.01159	.12875	3.5250	.00373	.00247
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8557.6	50978.	2435.4
Stddev	16.4	192.	22.1
%RSD	.19149	.37612	.90601
#1	8544.4	50773.	2411.3
#2	8575.9	51152.	2454.7
#3	8552.3	51009.	2440.1

Approved: June 29, 2016

Sample Name: L1606111621 Acquired: 6/28/2016 19:49:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00012**	**1.2480**	**.00198**	**1.0327**	**.02264**	**.00547**	**18.182**	**.00013**
Stddev	.00194	.0178	.00129	.0087	.00195	.00004	.071	.00017
%RSD	1582.9	1.4252	65.077	.84575	8.6101	.76334	.39323	128.92
#1	-.00236	1.2432	.00313	1.0426	.02486	.00547	18.264	.00009
#2	.00108	1.2677	.00059	1.0293	.02122	.00551	18.132	-.00001
#3	.00091	1.2332	.00222	1.0261	.02183	.00542	18.150	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00131**	**.00266**	**.00073**	**.14945**	**4.9265**	**.00587**	**5.7574**	**.00778**
Stddev	.00006	.00060	.00074	.03015	.0708	.00362	.0112	.00237
%RSD	4.8967	22.584	100.47	20.173	1.4368	61.782	.19527	30.414
#1	.00126	.00302	.00026	.16463	4.9515	.00548	5.7647	.00815
#2	.00138	.00197	.00035	.16899	4.8466	.00967	5.7445	.00525
#3	.00128	.00299	.00158	.11473	4.9815	.00245	5.7631	.00994
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.8844**	**110.24**	**.02602**	**.05230**	**-.00137**	**.00278**	**.00257**	**3.3575**
Stddev	.0044	.94	.00041	.00319	.00128	.00231	.00425	.0100
%RSD	.23212	.85470	1.5924	6.1014	93.257	83.383	164.92	.29688
#1	1.8827	111.32	.02618	.05018	-.00027	.00406	-.00182	3.3660
#2	1.8812	109.79	.02554	.05597	-.00278	.00416	.00665	3.3599
#3	1.8894	109.61	.02632	.05075	-.00107	.00010	.00289	3.3465
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111621 Acquired: 6/28/2016 19:49:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.10916**	**-.00035**	**.13194**	**3.5926**	**.02298**	**.00262**
Stddev	.00020	.00060	.00601	.00115	.0085	.00025	.00068
%RSD	658.00	.55090	1712.3	.87434	.23753	1.1059	25.841
#1	.00019	.10966	-.00350	.13204	3.5910	.02275	.00189
#2	-.00009	.10932	.00657	.13305	3.6018	.02325	.00322
#3	-.00019	.10849	-.00412	.13075	3.5849	.02293	.00276
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8585.5**	**51290.**	**2447.3**
Stddev	16.4	232.	31.9
%RSD	.19058	.45271	1.3052
#1	8593.8	51548.	2410.7
#2	8596.0	51097.	2470.0
#3	8566.6	51224.	2461.0

Approved: June 29, 2016

Sample Name: L1606111621PS Acquired: 6/28/2016 19:53:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574353-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19468**	**6.0660**	**.19521**	**1.8722**	**.51246**	**.02949**	**20.753**	**.02465**
Stddev	.00142	.0372	.00389	.0114	.00429	.00037	.018	.00028
%RSD	.73007	.61388	1.9931	.60821	.83688	1.2477	.08755	1.1435
#1	.19470	6.0400	.19605	1.8777	.51629	.02940	20.759	.02497
#2	.19609	6.1086	.19862	1.8798	.51325	.02989	20.733	.02442
#3	.19325	6.0492	.19097	1.8591	.50782	.02917	20.768	.02457
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10096**	**.25313**	**.24800**	**2.0910**	**29.458**	**.51484**	**10.216**	**.25050**
Stddev	.00033	.00389	.00199	.0653	.254	.00462	.022	.00499
%RSD	.32385	1.5373	.80283	3.1231	.86080	.89712	.21194	1.9907
#1	.10132	.25558	.25029	2.0630	29.743	.50967	10.211	.24512
#2	.10090	.25518	.24664	2.1657	29.378	.51857	10.240	.25143
#3	.10067	.24865	.24708	2.0444	29.255	.51628	10.197	.25496
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.1652**	**122.67**	**.26701**	**4.8421**	**.24685**	**.59094**	**.18681**	**5.2988**
Stddev	.0048	.55	.00141	.0071	.00697	.00238	.00199	.0076
%RSD	.22092	.45123	.52961	.14579	2.8222	.40196	1.0655	.14396
#1	2.1706	123.02	.26692	4.8361	.25240	.59112	.18463	5.3029
#2	2.1635	122.97	.26565	4.8499	.24912	.59322	.18854	5.3035
#3	2.1615	122.03	.26847	4.8402	.23904	.58848	.18724	5.2900
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111621PS Acquired: 6/28/2016 19:53:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574353-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50175**	**.59885**	**.49702**	**.36149**	**3.6922**	**.51455**	**.00306**
Stddev	.00351	.00245	.00463	.00462	.0323	.00120	.00082
%RSD	.70040	.40928	.93221	1.2780	.87500	.23340	26.856
#1	.50530	.60156	.49256	.36198	3.6891	.51562	.00379
#2	.50167	.59818	.50181	.36585	3.7259	.51478	.00321
#3	.49827	.59680	.49668	.35664	3.6616	.51325	.00217
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8416.7**	**50775.**	**2421.5**
Stddev	30.8	95.	12.5
%RSD	.36629	.18680	.51774
#1	8445.0	50804.	2409.6
#2	8421.4	50669.	2434.6
#3	8383.9	50852.	2420.4

Approved: June 29, 2016

Sample Name: L1606111621SDL Acquired: 6/28/2016 19:57:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574353-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00239**	**.31622**	**-.00231**	**.24437**	**.01409**	**.00137**	**4.1117**	**-.00020**
Stddev	.00194	.00515	.00245	.00449	.00108	.00004	.0487	.00022
%RSD	81.142	1.6301	106.06	1.8354	7.6473	2.7793	1.1848	106.31
#1	-.00074	.31773	-.00306	.24074	.01311	.00133	4.0568	-.00039
#2	-.00453	.31048	-.00429	.24299	.01392	.00138	4.1285	.00003
#3	-.00192	.32045	.00043	.24939	.01524	.00140	4.1497	-.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.00147**	**-.00005**	**.04410**	**1.1455**	**.00290**	**1.4672**	**.00303**
Stddev	.00040	.00051	.00157	.01165	.0954	.00211	.0292	.00333
%RSD	310.14	34.335	3202.6	26.411	8.3248	72.704	1.9920	110.07
#1	.00038	.00191	-.00187	.05253	1.2446	.00496	1.4876	.00346
#2	-.00033	.00092	.00084	.04895	1.1376	.00075	1.4804	-.00050
#3	.00033	.00158	.00088	.03081	1.0544	.00298	1.4337	.00612
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.44321**	**25.209**	**.00584**	**.01782**	**-.00254**	**.00758**	**-.00250**	**.77100**
Stddev	.00496	.261	.00097	.00869	.00142	.00840	.00573	.00711
%RSD	1.1184	1.0350	16.619	48.769	55.674	110.84	229.02	.92249
#1	.43981	24.910	.00677	.01707	-.00383	.00045	-.00909	.76316
#2	.44889	25.390	.00593	.02686	-.00103	.01683	.00129	.77702
#3	.44092	25.327	.00483	.00953	-.00278	.00544	.00030	.77283
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111621SDL Acquired: 6/28/2016 19:57:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574353-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00027**	**.02516**	**.00409**	**.02933**	**.84357**	**.00687**	**-.00052**
Stddev	.00046	.00033	.00903	.00490	.01043	.00013	.00018
%RSD	170.41	1.3067	221.08	16.711	1.2366	1.8237	34.157
#1	.00024	.02524	.00944	.03021	.84518	.00685	-.00063
#2	-.00039	.02544	-.00634	.02405	.83243	.00701	-.00032
#3	-.00066	.02480	.00916	.03373	.85310	.00676	-.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7962.9**	**47699.**	**2191.2**
Stddev	49.3	397.	19.0
%RSD	.61886	.83205	.86731
#1	8016.6	47547.	2212.4
#2	7952.4	48149.	2175.8
#3	7919.7	47400.	2185.5

Approved: June 29, 2016

Sample Name: L1606111621SDL Acquired: 6/28/2016 20:01:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574353-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00220	.08412	-.00098	.05898	.01353	.00054	.91615	.00008
Stddev	.00227	.00966	.00332	.00253	.00093	.00007	.00736	.00009
%RSD	102.97	11.484	337.90	4.2843	6.8634	12.877	.80313	114.45
#1	-.00454	.08593	-.00444	.06030	.01321	.00062	.91854	.00012
#2	-.00204	.09274	-.00069	.05606	.01457	.00052	.92201	-.00003
#3	-.00002	.07368	.00218	.06056	.01280	.00048	.90789	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00030	-.00003	.00020	.02649	.07159	-.00408	.31593	.00066
Stddev	.00029	.00145	.00079	.05924	.07718	.00166	.07825	.00318
%RSD	94.515	4957.5	402.59	223.60	107.81	40.645	24.770	481.89
#1	-.00055	.00121	-.00002	.02143	-.01732	-.00422	.38108	-.00178
#2	-.00037	-.00163	.00107	.08811	.11070	-.00567	.33757	.00425
#3	.00001	.00034	-.00046	-.03005	.12139	-.00236	.22913	-.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09882	5.7701	-.00007	.00258	-.00340	.00808	-.00626	.16219
Stddev	.00415	.0571	.00075	.01108	.00322	.00231	.00531	.00906
%RSD	4.2025	.99020	1059.0	429.05	94.662	28.564	84.871	5.5866
#1	.10108	5.7401	-.00079	-.00895	-.00365	.00648	-.00734	.16783
#2	.10135	5.8360	.00071	.00355	-.00007	.00703	-.00049	.16700
#3	.09403	5.7342	-.00014	.01314	-.00649	.01073	-.01095	.15174
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111621SDL Acquired: 6/28/2016 20:01:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574353-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00540	-.00624	.00071	.19156	.00163	-.00080
Stddev	.00127	.00048	.01474	.00471	.00154	.00020	.00062
%RSD	695.58	8.9416	236.32	662.29	.80152	12.201	77.554
#1	-.00105	.00588	.01064	-.00385	.19251	.00153	-.00143
#2	.00148	.00492	-.01281	.00043	.18979	.00187	-.00018
#3	.00012	.00540	-.01655	.00555	.19238	.00151	-.00080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7627.8	45454.	2086.8
Stddev	55.0	364.	20.9
%RSD	.72101	.80095	.99922
#1	7592.7	45203.	2110.3
#2	7599.6	45872.	2070.5
#3	7691.2	45288.	2079.6

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 20:04:56 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39468**	**9.9919**	**.38524**	**.49000**	**.99891**	**.04984**	**9.8622**	**.04970**
Stddev	.00284	.1069	.00529	.00663	.01100	.00082	.0586	.00006
%RSD	.72016	1.0695	1.3730	1.3520	1.1013	1.6424	.59433	.12719
#1	.39781	10.110	.38107	.49549	1.0050	.05079	9.8740	.04967
#2	.39225	9.9017	.39119	.49187	1.0056	.04935	9.9141	.04978
#3	.39399	9.9640	.38346	.48265	.98621	.04939	9.7986	.04966
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20024**	**.50366**	**.49874**	**3.9042**	**50.609**	**1.0132**	**10.196**	**.49110**
Stddev	.00088	.00890	.00204	.0671	.360	.0175	.032	.00179
%RSD	.43996	1.7676	.40940	1.7179	.71095	1.7241	.31502	.36464
#1	.20059	.51378	.49900	3.9752	50.665	1.0320	10.174	.49303
#2	.20090	.50017	.50064	3.8956	50.938	1.0101	10.180	.49076
#3	.19924	.49703	.49658	3.8419	50.225	.99743	10.233	.48950
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99465**	**49.418**	**.48986**	**9.7317**	**.48767**	**1.1715**	**.38878**	**4.8485**
Stddev	.00335	.439	.00143	.0238	.00502	.0005	.00867	.0081
%RSD	.33685	.88754	.29263	.24474	1.0289	.04616	2.2296	.16675
#1	.99612	49.767	.49149	9.7202	.48543	1.1710	.37885	4.8466
#2	.99702	49.562	.48882	9.7590	.49341	1.1720	.39482	4.8574
#3	.99082	48.926	.48926	9.7158	.48416	1.1714	.39268	4.8415
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 20:04:56 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0012**	**.99258**	**.98461**	**.49932**	**1.0047**	**.98518**	**1.0223**
Stddev	.0045	.00906	.01093	.00400	.0132	.00322	.0184
%RSD	.44880	.91273	1.1097	.80100	1.3181	.32655	1.8040
#1	1.0037	1.0004	.98097	.49605	1.0199	.98533	1.0410
#2	1.0040	.99468	.99690	.49812	.99898	.98832	1.0218
#3	.99605	.98265	.97597	.50378	.99532	.98189	1.0041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8343.7**	**49686.**	**2335.7**
Stddev	14.5	349.	32.0
%RSD	.17419	.70159	1.3697
#1	8333.7	49418.	2308.4
#2	8337.0	50080.	2327.9
#3	8360.4	49561.	2370.9

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 20:08:34 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.01307	.00097	.00455	.00820	.00010	-.02755	-.00021
Stddev	.00104	.01247	.00311	.00169	.00066	.00010	.03058	.00032
%RSD	296.10	95.448	320.02	37.046	8.0349	101.30	111.00	150.49
#1	.00149	.01497	-.00146	.00413	.00751	-.00001	-.02714	-.00053
#2	.00012	.02448	.00448	.00311	.00827	.00011	.00282	.00010
#3	-.00055	-.00025	-.00010	.00641	.00882	.00020	-.05835	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	-.00000	.00043	-.00987	-.13623	.00296	.02443	-.00127
Stddev	.00015	.00108	.00133	.02618	.16437	.00209	.07510	.00308
%RSD	37.578	222640.	306.60	265.31	120.65	70.680	307.46	241.97
#1	-.00035	-.00108	.00185	.01077	-.32571	.00231	.09619	-.00058
#2	-.00027	.00109	.00025	-.00105	-.03196	.00127	.03072	-.00464
#3	-.00056	-.00000	-.00079	-.03932	-.05103	.00530	-.05362	.00140
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	-.05415	-.00143	-.00451	-.00388	-.00043	.00021	.01035
Stddev	.00026	.03602	.00084	.00344	.00352	.00440	.01010	.00223
%RSD	51.899	66.528	58.470	76.294	90.757	1022.8	4717.4	21.569
#1	.00080	-.06463	-.00126	-.00419	-.00562	-.00551	-.00141	.01131
#2	.00032	-.01405	-.00234	-.00124	.00017	.00213	.01103	.00779
#3	.00038	-.08377	-.00070	-.00809	-.00620	.00209	-.00897	.01193
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 20:08:34 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.00039	.00182	-.00334	-.00065	-.00015	-.00062
Stddev	.00038	.00037	.00698	.00141	.00068	.00014	.00057
%RSD	65.200	93.117	384.19	42.173	104.96	95.152	92.632
#1	.00019	.00056	.00413	-.00255	-.00075	-.00020	-.00054
#2	.00096	.00065	.00734	-.00497	-.00127	.00001	-.00122
#3	.00061	-.00003	-.00603	-.00250	.00008	-.00025	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8377.9	50066.	2322.8
Stddev	11.8	39.	3.8
%RSD	.14096	.07868	.16426
#1	8391.1	50022.	2322.0
#2	8374.2	50099.	2326.9
#3	8368.4	50077.	2319.4

Approved: June 29, 2016

Sample Name: PBW 99 Acquired: 6/28/2016 20:12:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573661-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00088**	**.00750**	**-.00134**	**-.00155**	**.00809**	**.00007**	**-.02153**
Stddev	.00149	.00464	.00181	.00288	.00105	.00013	.04471
%RSD	169.29	61.817	134.89	186.22	12.953	183.95	207.73
#1	.00260	.00497	.00020	.00175	.00727	-.00007	-.01747
#2	-.00006	.00468	-.00089	-.00282	.00772	.00018	-.06813
#3	.00010	.01285	-.00333	-.00356	.00927	.00011	.02102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**-.00026**	**.00092**	**.00045**	**-.01278**	**-.04738**	**.00421**
Stddev	.00009	.00055	.00029	.00138	.01257	.08734	.00306
%RSD	1683.4	210.81	31.581	306.14	98.384	184.34	72.672
#1	.00009	-.00085	.00096	-.00059	-.02606	-.10158	.00388
#2	-.00009	-.00016	.00061	-.00008	-.00106	-.09393	.00133
#3	-.00002	.00023	.00118	.00202	-.01122	.05337	.00743
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03706**	**-.00091**	**-.00010**	**-.03674**	**.00010**	**.00484**	F **-.00585**
Stddev	.09839	.00348	.00042	.04472	.00066	.00464	.00307
%RSD	265.47	380.96	421.16	121.74	644.83	95.895	52.587
#1	.06275	.00046	-.00036	-.08692	.00085	.00827	-.00286
#2	.12006	.00167	.00039	-.00107	-.00011	.00670	-.00900
#3	-.07162	-.00487	-.00033	-.02223	-.00043	-.00044	-.00569
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							225.00
Low Limit							-.00500

Approved: June 29, 2016

Sample Name: PBW 99 Acquired: 6/28/2016 20:12:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573661-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00138**	**-.00579**	**-.02078**	**-.00075**	**.00054**	**-.01132**	**-.00160**
Stddev	.00341	.00609	.00098	.00105	.00081	.01400	.00202
%RSD	246.45	105.24	4.6969	139.55	148.11	123.66	126.66
#1	-.00243	.00090	-.01984	-.00028	.00065	.00478	-.00303
#2	.00243	-.01101	-.02072	-.00003	-.00031	-.01809	-.00248
#3	.00414	-.00726	-.02179	-.00195	.00130	-.02066	.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00011**	**.00156**	**.00019**
Stddev	.00141	.00019	.00025
%RSD	1303.5	12.265	129.05
#1	-.00167	.00153	.00046
#2	.00109	.00176	.00015
#3	.00025	.00138	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8356.4**	**50399.**	**2322.9**
Stddev	8.3	118.	3.0
%RSD	.09907	.23470	.12985
#1	8347.2	50294.	2324.0
#2	8363.3	50377.	2325.3
#3	8358.7	50527.	2319.5

Approved: June 29, 2016

Sample Name: LCSW 99 Acquired: 6/28/2016 20:16:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573661-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19995	5.0912	.19748	.95968	.51139	.02486	5.1037	.02526
Stddev	.00032	.0354	.00084	.00286	.00382	.00010	.0403	.00037
%RSD	.15788	.69540	.42347	.29829	.74601	.41008	.78855	1.4664
#1	.19968	5.0507	.19653	.95642	.50904	.02497	5.0799	.02550
#2	.19986	5.1067	.19807	.96179	.50933	.02479	5.0811	.02546
#3	.20029	5.1162	.19785	.96084	.51579	.02480	5.1502	.02484
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10303	.25830	.25596	2.0188	25.751	.52228	5.1309	.25135
Stddev	.00022	.00109	.00033	.0408	.160	.00512	.1085	.00253
%RSD	.21109	.42113	.12736	2.0199	.62027	.98007	2.1152	1.0066
#1	.10303	.25833	.25623	2.0032	25.831	.52616	5.0847	.25064
#2	.10325	.25719	.25607	1.9882	25.567	.51648	5.0530	.24926
#3	.10282	.25937	.25560	2.0651	25.854	.52419	5.2548	.25416
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51177	25.309	.25293	4.8448	.25021	.59893	.18799	2.3541
Stddev	.00075	.047	.00239	.0104	.00425	.00108	.00919	.0027
%RSD	.14617	.18756	.94684	.21420	1.6966	.18076	4.8881	.11542
#1	.51116	25.262	.25394	4.8393	.24722	.59977	.17738	2.3529
#2	.51261	25.308	.25465	4.8568	.24835	.59930	.19305	2.3572
#3	.51156	25.357	.25020	4.8383	.25507	.59771	.19354	2.3522
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LCSW 99 Acquired: 6/28/2016 20:16:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573661-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51396**	**.51437**	**.50259**	**.25425**	**.51004**	**.50528**	**.00005**
Stddev	.00065	.00349	.00644	.00254	.00151	.00067	.00071
%RSD	.12647	.67931	1.2807	1.0005	.29615	.13296	1399.5
#1	.51408	.51338	.50618	.25171	.50839	.50499	.00085
#2	.51325	.51147	.50643	.25680	.51037	.50605	-.00049
#3	.51454	.51825	.49516	.25426	.51135	.50481	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8481.5**	**50727.**	**2391.5**
Stddev	11.9	137.	2.9
%RSD	.14054	.27002	.12169
#1	8473.9	50817.	2394.5
#2	8475.3	50570.	2388.7
#3	8495.2	50795.	2391.3

Approved: June 29, 2016

Sample Name: L1606103002 Acquired: 6/28/2016 20:20:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00086	.08224	.00197	.00534	.01469	.00012	1.9817	.00031
Stddev	.00055	.00471	.00244	.00304	.00144	.00010	.0399	.00021
%RSD	63.865	5.7266	123.81	56.929	9.8322	85.543	2.0151	68.281
#1	-.00059	.08517	-.00019	.00319	.01626	.00019	1.9365	.00050
#2	-.00050	.08474	.00148	.00401	.01343	.00016	1.9965	.00034
#3	-.00149	.07681	.00462	.00882	.01437	.00000	2.0122	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	-.00045	.00074	.30708	.34575	.00631	.89402	.01274
Stddev	.00014	.00051	.00098	.04097	.11046	.00210	.02638	.00322
%RSD	184.58	113.87	132.95	13.342	31.947	33.270	2.9503	25.299
#1	.00012	-.00029	.00089	.28127	.35693	.00620	.87221	.01522
#2	.00018	-.00004	.00163	.35432	.45019	.00847	.88652	.01390
#3	-.00008	-.00103	-.00031	.28565	.23013	.00427	.92334	.00910
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	1.3755	.00035	.00032	-.00145	.00301	-.00742	3.3833
Stddev	.00021	.0193	.00083	.00254	.00345	.00433	.00137	.0020
%RSD	539.25	1.4022	233.79	793.81	238.34	143.91	18.400	.05809
#1	.00010	1.3556	-.00060	-.00199	.00238	-.00106	-.00608	3.3841
#2	-.00020	1.3942	.00076	-.00009	-.00242	.00756	-.00881	3.3848
#3	.00021	1.3766	.00090	.00305	-.00430	.00253	-.00738	3.3811
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606103002 Acquired: 6/28/2016 20:20:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.01298	.00036	-.00177	-.00034	.00350	-.00071
Stddev	.00042	.00073	.01327	.00171	.00090	.00026	.00044
%RSD	81.181	5.6431	3661.7	96.392	259.96	7.4203	63.034
#1	.00034	.01321	.00513	-.00316	.00067	.00330	-.00071
#2	.00021	.01357	.01059	-.00230	-.00067	.00340	-.00115
#3	.00100	.01216	-.01464	.00014	-.00103	.00379	-.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8609.6	51561.	2393.0
Stddev	10.5	208.	9.5
%RSD	.12240	.40391	.39514
#1	8618.0	51346.	2384.4
#2	8597.8	51575.	2391.5
#3	8613.0	51762.	2403.2

Approved: June 29, 2016

Sample Name: L1606103005 Acquired: 6/28/2016 20:23:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00092	.07338	.00108	.00414	.01584	.00008	1.8416	.00020
Stddev	.00203	.00510	.00353	.00309	.00055	.00009	.0159	.00025
%RSD	220.00	6.9546	327.84	74.566	3.4564	105.80	.86203	127.67
#1	-.00182	.07796	-.00226	.00228	.01647	.00008	1.8588	.00043
#2	.00140	.07431	.00071	.00244	.01548	.00017	1.8275	-.00008
#3	-.00235	.06788	.00477	.00770	.01558	-.00000	1.8385	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.00090	.00159	.27024	.13061	-.00133	.82130	.01111
Stddev	.00022	.00107	.00044	.03951	.12301	.00128	.07164	.00263
%RSD	139.18	119.00	27.684	14.621	94.178	95.818	8.7221	23.653
#1	.00038	.00192	.00121	.24967	.00755	-.00155	.90350	.00969
#2	-.00007	-.00021	.00207	.24525	.13071	-.00249	.77217	.00951
#3	.00017	.00099	.00150	.31579	.25356	.00004	.78824	.01415
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	1.3092	-.00001	.00072	.00005	.00458	-.00378	3.3076
Stddev	.00020	.0283	.00086	.00100	.00271	.00195	.00824	.0156
%RSD	85.562	2.1605	12970.	139.93	5208.4	42.553	217.94	.47001
#1	.00023	1.3197	-.00058	.00088	-.00137	.00405	-.01271	3.3062
#2	.00003	1.3307	-.00042	-.00036	.00318	.00675	.00355	3.3238
#3	.00043	1.2772	.00098	.00162	-.00165	.00296	-.00220	3.2928
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606103005 Acquired: 6/28/2016 20:23:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	.01292	-.00204	-.00247	.00029	.00314	-.00035
Stddev	.00071	.00027	.00622	.00123	.00022	.00013	.00044
%RSD	152.45	2.1003	305.29	49.901	75.753	4.1400	124.35
#1	.00001	.01323	-.00350	-.00117	.00016	.00300	-.00025
#2	.00129	.01274	-.00740	-.00362	.00016	.00316	-.00084
#3	.00011	.01279	.00479	-.00262	.00054	.00326	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8591.7	51718.	2396.2
Stddev	32.8	139.	5.9
%RSD	.38213	.26800	.24697
#1	8553.8	51723.	2390.7
#2	8608.4	51854.	2395.5
#3	8612.8	51577.	2402.5

Approved: June 29, 2016

Sample Name: L1606103008 Acquired: 6/28/2016 20:27:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00248	.06335	-.00155	.00171	.01387	.00004	1.6732	.00015
Stddev	.00069	.00988	.00102	.00041	.00106	.00006	.0055	.00026
%RSD	27.761	15.595	65.691	24.128	7.6363	153.17	.32845	175.08
#1	-.00325	.07445	-.00144	.00165	.01367	-.00001	1.6770	-.00015
#2	-.00226	.06007	-.00261	.00215	.01292	.00003	1.6669	.00031
#3	-.00193	.05553	-.00059	.00133	.01501	.00011	1.6758	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00000	.00268	.00155	.25935	.21785	.00346	.90723	.00963
Stddev	.00047	.00094	.00044	.02869	.03338	.00211	.08643	.00343
%RSD	11692.	35.293	28.463	11.064	15.323	60.967	9.5265	35.627
#1	-.00015	.00179	.00186	.23014	.25226	.00217	.80749	.00585
#2	-.00037	.00256	.00176	.28750	.18560	.00232	.95414	.01255
#3	.00053	.00367	.00105	.26042	.21567	.00590	.96007	.01047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	1.6028	.00050	.00285	-.00172	.00432	-.00424	3.4372
Stddev	.00034	.0210	.00082	.00190	.00344	.00344	.00226	.0990
%RSD	117.08	1.3071	162.19	66.549	200.13	79.563	53.304	2.8817
#1	.00026	1.6264	.00111	.00504	-.00499	.00768	-.00276	3.4985
#2	-.00003	1.5953	-.00042	.00170	-.00202	.00447	-.00684	3.4902
#3	.00065	1.5866	.00082	.00181	.00186	.00081	-.00311	3.3230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606103008 Acquired: 6/28/2016 20:27:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	.01269	-.00096	-.00294	-.00047	.00324	-.00082
Stddev	.00041	.00020	.01187	.00205	.00058	.00036	.00004
%RSD	61.897	1.5519	1242.1	69.635	121.79	11.026	4.5093
#1	.00086	.01290	-.01258	-.00059	-.00094	.00364	-.00086
#2	.00019	.01251	.01115	-.00387	.00017	.00296	-.00080
#3	.00094	.01265	-.00143	-.00435	-.00065	.00312	-.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8606.8	51900.	2410.3
Stddev	16.7	132.	9.1
%RSD	.19431	.25415	.37944
#1	8598.2	51935.	2406.3
#2	8626.0	52011.	2420.8
#3	8596.0	51754.	2403.9

Approved: June 29, 2016

Sample Name: L1606103013 Acquired: 6/28/2016 20:31:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573661-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00122	.04624	-.00178	.00095	.01561	.00013	2.0066	.00029
Stddev	.00021	.00680	.00616	.00269	.00083	.00001	.0376	.00015
%RSD	16.871	14.707	345.25	283.48	5.3373	8.0351	1.8742	52.224
#1	.00114	.05286	.00318	.00378	.01466	.00012	1.9900	.00012
#2	.00107	.03927	.00014	-.00156	.01599	.00012	1.9801	.00033
#3	.00146	.04659	-.00868	.00062	.01619	.00014	2.0497	.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	.00029	.00151	.29221	.26761	.00398	1.1180	.00839
Stddev	.00019	.00101	.00091	.02806	.10146	.00258	.0551	.00336
%RSD	34.020	344.06	60.719	9.6032	37.912	64.760	4.9282	40.034
#1	-.00034	-.00082	.00255	.26127	.37672	.00184	1.1808	.00543
#2	-.00064	.00055	.00087	.31601	.17611	.00684	1.0778	.00769
#3	-.00069	.00115	.00110	.29936	.25000	.00325	1.0955	.01204
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	2.1231	-.00118	.00513	-.00473	.00222	-.00603	4.1440
Stddev	.00017	.0465	.00037	.00302	.00167	.00456	.00114	.1226
%RSD	44.300	2.1922	31.218	58.874	35.342	205.45	18.846	2.9593
#1	.00039	2.0706	-.00115	.00459	-.00336	-.00152	-.00552	4.2262
#2	.00021	2.1594	-.00082	.00839	-.00423	.00089	-.00733	4.2027
#3	.00054	2.1393	-.00156	.00242	-.00659	.00729	-.00523	4.0030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606103013 Acquired: 6/28/2016 20:31:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573661-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.01567	-.00061	-.00476	.00024	.00140	.00136
Stddev	.00090	.00032	.00297	.00325	.00067	.00012	.00036
%RSD	182.01	2.0296	488.92	68.203	279.71	8.5409	26.414
#1	.00112	.01532	-.00325	-.00849	.00036	.00144	.00160
#2	-.00054	.01594	-.00118	-.00260	-.00048	.00150	.00152
#3	.00089	.01575	.00260	-.00319	.00084	.00127	.00095
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8578.5	51693.	2409.2
Stddev	5.0	380.	28.4
%RSD	.05873	.73419	1.1788
#1	8583.0	51259.	2441.8
#2	8579.4	51855.	2395.8
#3	8573.1	51965.	2389.9

Approved: June 29, 2016

Sample Name: L1606103014S Acquired: 6/28/2016 20:35:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573661-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19712**	**5.1426**	**.19698**	**.95559**	**.52325**	**.02504**	**7.1364**	**.02503**
Stddev	.00387	.0305	.00335	.00861	.00545	.00008	.1283	.00025
%RSD	1.9618	.59258	1.7000	.90073	1.0423	.33543	1.7978	1.0117
#1	.19423	5.1194	.19313	.94725	.52465	.02497	7.2805	.02505
#2	.20152	5.1771	.19856	.96444	.52787	.02513	7.0347	.02477
#3	.19563	5.1313	.19924	.95509	.51723	.02503	7.0939	.02528
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10214**	**.25928**	**.25338**	**2.3233**	**26.069**	**.52468**	**6.2318**	**.26664**
Stddev	.00135	.00040	.00160	.0125	.190	.00255	.1325	.00172
%RSD	1.3220	.15466	.63168	.53830	.72708	.48682	2.1255	.64432
#1	.10357	.25975	.25477	2.3215	26.081	.52258	6.1381	.26856
#2	.10088	.25905	.25163	2.3367	26.253	.52752	6.3833	.26525
#3	.10197	.25905	.25375	2.3118	25.874	.52393	6.1739	.26611
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50844**	**27.294**	**.25043**	**4.7758**	**.25102**	**.58741**	**.18813**	**6.5890**
Stddev	.00349	.254	.00206	.0281	.00585	.00436	.00782	.0469
%RSD	.68643	.93201	.82062	.58817	2.3315	.74208	4.1588	.71105
#1	.50968	27.367	.25075	4.8009	.25595	.59104	.19682	6.6036
#2	.50450	27.505	.24824	4.7455	.24455	.58257	.18596	6.5365
#3	.51115	27.012	.25231	4.7809	.25256	.58861	.18163	6.6267
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606103014S Acquired: 6/28/2016 20:35:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573661-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50967	.53343	.50624	.24971	.50892	.50235	.00030
Stddev	.00450	.00383	.00683	.00270	.00053	.00313	.00028
%RSD	.88259	.71764	1.3493	1.0831	.10449	.62256	93.438
#1	.51146	.53276	.51236	.24681	.50919	.50409	.00052
#2	.50455	.53755	.49887	.25015	.50927	.49874	.00041
#3	.51300	.52998	.50747	.25217	.50831	.50421	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8552.5	50892.	2386.8
Stddev	54.7	220.	25.0
%RSD	.63959	.43158	1.0478
#1	8521.9	50991.	2379.9
#2	8615.7	50640.	2366.0
#3	8519.9	51045.	2414.5

Approved: June 29, 2016

Sample Name: L1606103015SD Acquired: 6/28/2016 20:39:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573661-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19945**	**5.1587**	**.19596**	**.96938**	**.52400**	**.02505**	**7.0900**	**.02511**
Stddev	.00173	.0276	.00166	.00022	.00923	.00012	.1630	.00023
%RSD	.86965	.53434	.84677	.02230	1.7606	.49890	2.2987	.89707
#1	.19757	5.1745	.19499	.96955	.51782	.02518	7.0286	.02491
#2	.20100	5.1748	.19501	.96947	.53460	.02502	7.2748	.02508
#3	.19978	5.1269	.19788	.96914	.51957	.02493	6.9667	.02535
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10337**	**.25841**	**.25831**	**2.3603**	**26.179**	**.52946**	**6.2591**	**.26435**
Stddev	.00053	.00183	.00149	.0599	.253	.00794	.0416	.00468
%RSD	.51104	.70916	.57726	2.5380	.96484	1.4993	.66458	1.7695
#1	.10285	.25643	.25699	2.3235	25.984	.52081	6.3007	.26566
#2	.10390	.26004	.25993	2.4294	26.464	.53640	6.2175	.26822
#3	.10336	.25876	.25800	2.3280	26.088	.53118	6.2592	.25915
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51686**	**27.396**	**.25484**	**4.8687**	**.25758**	**.59782**	**.19383**	**6.6540**
Stddev	.00352	.389	.00234	.0367	.00220	.00371	.00712	.0309
%RSD	.68063	1.4205	.91811	.75454	.85248	.62120	3.6739	.46516
#1	.51287	27.174	.25226	4.8340	.25694	.59358	.19131	6.6202
#2	.51954	27.845	.25683	4.9072	.25577	.59937	.20186	6.6810
#3	.51815	27.168	.25544	4.8648	.26002	.60051	.18830	6.6607
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606103015SD Acquired: 6/28/2016 20:39:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573661-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51888	.53421	.50143	.25567	.51178	.51917	-.00014
Stddev	.00271	.00813	.00412	.00076	.00169	.00325	.00025
%RSD	.52203	1.5219	.82169	.29775	.33018	.62683	177.03
#1	.51614	.52777	.50024	.25556	.51373	.51570	-.00031
#2	.52156	.54335	.50602	.25496	.51071	.52215	.00015
#3	.51894	.53152	.49804	.25648	.51089	.51968	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8578.1	51459.	2426.3
Stddev	28.4	147.	29.4
%RSD	.33082	.28491	1.2131
#1	8609.8	51467.	2430.4
#2	8555.2	51308.	2395.1
#3	8569.3	51601.	2453.5

Approved: June 29, 2016

Sample Name: L1606103020 Acquired: 6/28/2016 20:43:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00084	.00877	-.00460	.00734	.00651	.00012	-.01988	.00004
Stddev	.00095	.00655	.00314	.00147	.00132	.00008	.02973	.00023
%RSD	113.31	74.670	68.199	20.026	20.246	69.398	149.59	546.82
#1	.00026	.00462	-.00377	.00900	.00698	.00005	-.02899	-.00013
#2	-.00133	.00538	-.00807	.00684	.00753	.00010	.01335	-.00004
#3	-.00146	.01633	-.00196	.00619	.00502	.00021	-.04399	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.00085	.00015	-.01469	-.08758	-.00071	.02146	-.00067
Stddev	.00039	.00091	.00020	.03225	.15993	.00263	.03330	.00092
%RSD	722.61	106.86	135.15	219.57	182.60	369.20	155.19	138.50
#1	.00047	.00117	.00036	.01959	-.08635	-.00237	-.01567	-.00103
#2	-.00032	-.00018	-.00004	-.04444	-.24812	-.00209	.04870	.00038
#3	.00002	.00155	.00013	-.01922	.07172	.00232	.03135	-.00135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	1.4536	.00020	.00376	-.00365	.00289	-.00559	.47911
Stddev	.00033	.0476	.00046	.00579	.00477	.00166	.00612	.00016
%RSD	762.05	3.2713	232.76	153.90	130.81	57.274	109.47	.03278
#1	-.00021	1.4309	-.00026	.00280	-.00897	.00420	.00111	.47898
#2	.00042	1.4217	.00020	.00997	-.00221	.00344	-.00701	.47928
#3	-.00008	1.5083	.00065	-.00149	.00024	.00103	-.01088	.47906
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606103020 Acquired: 6/28/2016 20:43:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00110	.00023	.00531	-.00695	.00052	.00111	-.00094
Stddev	.00104	.00028	.00887	.00154	.00080	.00027	.00037
%RSD	94.401	122.88	167.05	22.192	152.73	24.492	38.941
#1	.00055	.00021	-.00034	-.00767	-.00026	.00097	-.00109
#2	.00045	.00052	.01554	-.00801	.00050	.00093	-.00122
#3	.00229	-.00004	.00074	-.00518	.00133	.00142	-.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8676.7	52192.	2438.5
Stddev	21.8	312.	21.6
%RSD	.25144	.59803	.88605
#1	8698.9	52061.	2422.8
#2	8655.3	52548.	2429.6
#3	8676.1	51966.	2463.1

Approved: June 29, 2016

Sample Name: L1606103023 Acquired: 6/28/2016 20:46:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00096	.03076	-.00276	.00673	.00671	.00004	.05475	.00017
Stddev	.00096	.00939	.00497	.00251	.00155	.00008	.07827	.00022
%RSD	99.279	30.538	179.87	37.370	23.180	233.89	142.96	130.78
#1	.00014	.03473	-.00086	.00447	.00515	-.00006	-.03529	.00042
#2	-.00159	.02004	.00098	.00628	.00671	.00008	.09300	-.00001
#3	-.00144	.03753	-.00840	.00943	.00826	.00009	.10653	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	.00042	.00160	.00802	-.07936	.00670	.15045	.00000
Stddev	.00034	.00040	.00030	.01615	.07275	.00052	.09119	.00197
%RSD	252.40	96.122	18.507	201.43	91.670	7.7603	60.608	39387.
#1	.00018	.00089	.00159	.00372	-.00710	.00612	.20505	-.00172
#2	-.00050	.00018	.00191	.02589	-.07840	.00713	.04519	.00215
#3	-.00009	.00019	.00131	-.00555	-.15259	.00684	.20113	-.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	1.4650	-.00008	-.00133	-.00359	.00243	-.00207	.48862
Stddev	.00012	.0168	.00079	.00979	.00280	.00016	.00574	.01993
%RSD	46.960	1.1474	959.93	737.61	77.930	6.5708	277.61	4.0787
#1	.00030	1.4786	-.00025	-.00456	-.00204	.00262	.00363	.50244
#2	.00036	1.4701	-.00078	.00967	-.00191	.00233	-.00784	.49764
#3	.00012	1.4462	.00078	-.00909	-.00683	.00235	-.00199	.46577
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606103023 Acquired: 6/28/2016 20:46:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00091	-.00161	-.00016	-.00030	.00149	-.00032
Stddev	.00042	.00021	.00547	.00220	.00012	.00020	.00112
%RSD	227.16	23.373	338.87	1370.6	39.551	13.167	345.43
#1	-.00021	.00113	-.00777	.00081	-.00028	.00135	-.00141
#2	.00014	.00070	.00268	-.00268	-.00042	.00139	-.00038
#3	.00062	.00089	.00025	.00139	-.00019	.00171	.00082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8702.3	52447.	2432.2
Stddev	19.4	88.	24.6
%RSD	.22259	.16845	1.0115
#1	8681.6	52435.	2433.5
#2	8720.0	52366.	2406.9
#3	8705.2	52541.	2456.1

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 20:50:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39387**	**10.025**	**.39209**	**.48927**	**.99341**	**.04979**	**9.8452**	**.05027**
Stddev	.00255	.030	.00174	.00801	.00147	.00030	.0611	.00024
%RSD	.64753	.29611	.44340	1.6369	.14776	.60772	.62029	.48017
#1	.39528	10.011	.39103	.48057	.99301	.04978	9.8212	.05054
#2	.39540	10.004	.39410	.49091	.99218	.05009	9.9146	.05017
#3	.39092	10.059	.39115	.49634	.99504	.04949	9.7997	.05008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20130**	**.50328**	**.50194**	**3.8976**	**50.161**	**.99794**	**9.9823**	**.49277**
Stddev	.00054	.00180	.00113	.0316	.096	.00307	.0048	.00233
%RSD	.27066	.35681	.22427	.80949	.19110	.30743	.04819	.47273
#1	.20072	.50134	.50064	3.8647	50.177	.99891	9.9878	.49045
#2	.20180	.50488	.50251	3.9005	50.058	.99450	9.9799	.49510
#3	.20139	.50362	.50266	3.9276	50.248	1.0004	9.9792	.49275
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0041**	**49.461**	**.49722**	**9.8366**	**.49583**	**1.1908**	**.39387**	**4.9618**
Stddev	.0018	.062	.00041	.0283	.00102	.0064	.00958	.0100
%RSD	.18282	.12491	.08194	.28740	.20516	.53822	2.4318	.20201
#1	1.0023	49.480	.49734	9.8053	.49524	1.1847	.40206	4.9509
#2	1.0059	49.391	.49755	9.8603	.49525	1.1975	.38334	4.9705
#3	1.0042	49.510	.49676	9.8443	.49700	1.1901	.39620	4.9641
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 20:50:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0071**	**.98955**	**.99924**	**.50029**	**1.0027**	**.99967**	**1.0262**
Stddev	.0029	.00102	.00558	.00094	.0071	.00173	.0015
%RSD	.28373	.10289	.55859	.18755	.70574	.17318	.15142
#1	1.0044	.99067	.99835	.50120	.99916	.99923	1.0257
#2	1.0069	.98868	.99416	.50035	1.0109	.99819	1.0280
#3	1.0101	.98929	1.0052	.49933	.99811	1.0016	1.0250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8509.8**	**50998.**	**2411.4**
Stddev	31.1	121.	5.1
%RSD	.36540	.23792	.21191
#1	8492.7	50959.	2406.2
#2	8545.7	51133.	2411.4
#3	8491.1	50900.	2416.4

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 20:54:31 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00097	.01028	-.00070	.00231	.00628	.00006	-.00151	.00026
Stddev	.00117	.00825	.00285	.00203	.00132	.00006	.05286	.00040
%RSD	121.50	80.294	406.96	87.692	20.977	99.683	3494.8	153.91
#1	.00016	.01966	.00239	.00134	.00484	.00005	.05735	-.00019
#2	-.00088	.00413	-.00127	.00096	.00743	.00012	-.01695	.00040
#3	-.00218	.00705	-.00323	.00465	.00656	.00001	-.04494	.00057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00019	.00124	.00012	.01193	.00194	.09408	-.00460
Stddev	.00035	.00047	.00168	.01222	.12968	.00350	.09956	.00259
%RSD	394.87	246.49	135.63	10327.	1086.9	179.97	105.82	56.340
#1	.00045	.00000	.00318	.00632	-.11270	.00119	.17982	-.00178
#2	.00006	-.00016	.00036	.00799	.14613	-.00112	.11753	-.00516
#3	-.00024	.00072	.00018	-.01395	.00236	.00576	-.01511	-.00687
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	-.08282	-.00179	.00255	-.00305	.00088	-.00266	.00929
Stddev	.00044	.02080	.00061	.00580	.00051	.00568	.00235	.00264
%RSD	390.13	25.120	34.102	227.36	16.768	645.68	88.410	28.446
#1	.00023	-.05883	-.00182	.00709	-.00359	.00496	-.00107	.01233
#2	-.00061	-.09382	-.00238	.00454	-.00296	.00329	-.00155	.00806
#3	.00004	-.09582	-.00116	-.00398	-.00258	-.00561	-.00536	.00749
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 20:54:31 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**-.00009**	**.00531**	**-.00285**	**-.00050**	**.00011**	**-.00047**
Stddev	.00107	.00038	.00364	.00117	.00035	.00019	.00041
%RSD	261.53	433.74	68.573	40.924	69.361	167.36	86.498
#1	-.00066	-.00053	.00158	-.00249	-.00082	.00015	-.00018
#2	.00041	.00010	.00885	-.00415	-.00057	.00029	-.00029
#3	.00148	.00017	.00551	-.00191	-.00013	-.00009	-.00094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8624.7**	**51659.**	**2390.8**
Stddev	26.4	102.	13.3
%RSD	.30619	.19728	.55665
#1	8650.5	51749.	2395.5
#2	8626.0	51679.	2375.8
#3	8597.7	51548.	2401.1

Approved: June 29, 2016

Sample Name: L1606106501 Acquired: 6/28/2016 20:58:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00122	.04246	.00096	.00933	.01907	.00012	48.210	.00018
Stddev	.00080	.00956	.00129	.00476	.00169	.00009	.667	.00040
%RSD	66.026	22.514	133.81	51.003	8.8376	74.850	1.3838	224.50
#1	-.00109	.03166	-.00051	.00441	.01870	.00022	47.543	-.00028
#2	-.00049	.04591	.00187	.01391	.02090	.00006	48.211	.00033
#3	-.00208	.04982	.00152	.00966	.01759	.00008	48.877	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00082	.12034	.00337	.84538	4.8885	.00613	19.130	.19236
Stddev	.00035	.00062	.00185	.01733	.0577	.00353	.062	.00124
%RSD	42.451	.51230	55.118	2.0499	1.1811	57.613	.32623	.64546
#1	.00076	.11987	.00429	.84110	4.8268	.00687	19.058	.19093
#2	.00050	.12104	.00123	.83059	4.9412	.00229	19.167	.19314
#3	.00119	.12012	.00458	.86445	4.8975	.00923	19.166	.19300
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00502	101.49	.03666	.05061	.00037	.00552	-.00691	4.2371
Stddev	.00063	.70	.00145	.00855	.00214	.00409	.00550	.0714
%RSD	12.644	.68806	3.9580	16.896	580.68	74.132	79.603	1.6841
#1	.00553	100.80	.03830	.04656	-.00196	.00856	-.01288	4.2787
#2	.00521	102.20	.03615	.06044	.00225	.00087	-.00206	4.2778
#3	.00431	101.47	.03554	.04484	.00082	.00713	-.00578	4.1547
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106501 Acquired: 6/28/2016 20:58:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00058	.27982	-.00044	-.00323	.00081	.00487	-.00039
Stddev	.00124	.00141	.01103	.00191	.00135	.00030	.00090
%RSD	214.61	.50382	2503.1	59.084	167.35	6.2180	234.47
#1	.00005	.27832	-.00113	-.00441	-.00040	.00461	-.00063
#2	-.00031	.28112	-.01111	-.00103	.00055	.00520	-.00114
#3	.00199	.28001	.01092	-.00425	.00227	.00480	.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8509.3	50804.	2422.1
Stddev	39.1	141.	10.1
%RSD	.45930	.27662	.41861
#1	8466.1	50939.	2433.8
#2	8542.3	50658.	2415.8
#3	8519.4	50814.	2416.7

Approved: June 29, 2016

Sample Name: L1606106502 Acquired: 6/28/2016 21:02:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00114	.04867	-.00289	.00851	.01762	.00016	35.936	.00020
Stddev	.00268	.00795	.00156	.00216	.00094	.00011	.343	.00034
%RSD	234.09	16.342	53.935	25.365	5.3376	68.879	.95434	175.42
#1	.00194	.04010	-.00140	.00603	.01790	.00019	36.093	.00008
#2	-.00255	.05010	-.00450	.00991	.01657	.00024	35.543	-.00007
#3	-.00282	.05581	-.00276	.00961	.01839	.00004	36.172	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00459	1.0529	.01632	5.0050	.94962	.00464	10.669	.16800
Stddev	.00041	.0021	.00038	.0194	.06132	.00481	.111	.00302
%RSD	9.0431	.19962	2.3454	.38836	6.4578	103.77	1.0376	1.7983
#1	.00412	1.0546	.01676	4.9982	.96223	.00667	10.667	.17029
#2	.00491	1.0537	.01605	4.9898	.88297	.00810	10.781	.16912
#3	.00473	1.0506	.01616	5.0269	1.0037	-.00086	10.559	.16457
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02964	111.70	.04251	.05620	-.00251	-.00857	-.00677	5.3032
Stddev	.00092	.30	.00079	.00640	.00333	.00438	.01076	.0854
%RSD	3.1108	.26623	1.8609	11.382	132.84	51.124	158.88	1.6112
#1	.03041	111.57	.04282	.05992	-.00625	-.00890	-.00689	5.3352
#2	.02990	112.04	.04309	.05987	.00011	-.01278	-.01747	5.3680
#3	.02862	111.49	.04161	.04882	-.00137	-.00403	.00405	5.2064
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106502 Acquired: 6/28/2016 21:02:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00084	.12031	.00009	-.00450	.00634	.00260	-.00112
Stddev	.00029	.00088	.00398	.00333	.00034	.00025	.00041
%RSD	34.357	.73136	4483.1	74.119	5.3714	9.8103	36.698
#1	.00117	.11973	.00242	-.00289	.00663	.00269	-.00123
#2	.00063	.11988	.00235	-.00833	.00641	.00231	-.00066
#3	.00072	.12132	-.00450	-.00227	.00596	.00279	-.00146
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8550.4	51133.	2443.3
Stddev	23.9	86.	5.6
%RSD	.27987	.16812	.22818
#1	8569.9	51216.	2438.0
#2	8523.7	51044.	2442.8
#3	8557.6	51139.	2449.1

Approved: June 29, 2016

Sample Name: L1606106503 Acquired: 6/28/2016 21:06:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.01851	-.00143	.00738	.04387	.00008	45.653	.00029
Stddev	.00152	.00228	.00115	.00348	.00218	.00006	.183	.00008
%RSD	414.82	12.329	80.342	47.166	4.9668	74.693	.40194	29.371
#1	-.00121	.01940	-.00262	.01046	.04591	.00013	45.864	.00034
#2	.00047	.01591	-.00034	.00806	.04157	.00001	45.552	.00019
#3	.00183	.02021	-.00132	.00361	.04412	.00011	45.542	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00159	.16212	.00545	3.1219	1.3740	.00540	11.847	.51275
Stddev	.00044	.00101	.00037	.0120	.1362	.00337	.092	.00428
%RSD	27.935	.62303	6.8000	.38450	9.9150	62.457	.77861	.83566
#1	.00146	.16139	.00566	3.1123	1.2183	.00220	11.756	.51512
#2	.00123	.16169	.00502	3.1180	1.4714	.00892	11.844	.51533
#3	.00209	.16327	.00567	3.1354	1.4322	.00507	11.940	.50781
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00114	174.62	.04481	.00362	-.00178	.00108	-.00296	4.4236
Stddev	.00017	1.14	.00119	.00421	.00226	.00281	.00929	.0795
%RSD	14.627	.65397	2.6463	116.24	127.13	258.91	313.99	1.7977
#1	.00095	175.93	.04559	.00590	.00071	.00419	.00728	4.4682
#2	.00127	174.11	.04540	.00619	-.00233	.00033	-.01085	4.4708
#3	.00118	173.82	.04345	-.00124	-.00371	-.00127	-.00530	4.3318
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106503 Acquired: 6/28/2016 21:06:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	.16890	-.00309	-.00225	-.00026	.00270	-.00035
Stddev	.00100	.00033	.00750	.00208	.00148	.00008	.00068
%RSD	483.66	.19786	242.96	92.738	566.95	2.9192	192.50
#1	.00079	.16911	.00487	-.00262	-.00195	.00276	-.00032
#2	.00078	.16908	-.00411	-.00000	.00082	.00261	.00031
#3	-.00095	.16852	-.01002	-.00412	.00034	.00274	-.00104
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8510.3	50639.	2430.2
Stddev	7.5	23.	18.8
%RSD	.08869	.04463	.77216
#1	8519.0	50665.	2409.5
#2	8505.2	50628.	2435.0
#3	8506.7	50623.	2446.1

Approved: June 29, 2016

Sample Name: L1606106504 Acquired: 6/28/2016 21:10:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00213	.09096	-.00153	.00691	.01641	.00011	37.014	.00041
Stddev	.00056	.01201	.00090	.00198	.00229	.00006	.834	.00023
%RSD	26.320	13.200	58.781	28.617	13.939	54.878	2.2539	56.817
#1	-.00260	.08217	-.00057	.00917	.01902	.00005	37.973	.00016
#2	-.00228	.08608	-.00235	.00547	.01545	.00018	36.605	.00061
#3	-.00151	.10464	-.00168	.00611	.01476	.00011	36.463	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01035	.41103	.00712	3.8800	9.5189	.02111	18.430	.25101
Stddev	.00050	.00097	.00195	.0540	.1479	.00400	.267	.00484
%RSD	4.8232	.23525	27.322	1.3928	1.5538	18.953	1.4467	1.9274
#1	.01046	.40992	.00878	3.9419	9.3883	.02555	18.710	.25657
#2	.01079	.41171	.00760	3.8560	9.4889	.01780	18.402	.24876
#3	.00981	.41145	.00498	3.8422	9.6795	.01998	18.179	.24771
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00352	122.20	.09998	.03453	.00070	.00399	-.00526	5.7215
Stddev	.00039	1.45	.00206	.00291	.00260	.00243	.00421	.1201
%RSD	11.002	1.1895	2.0639	8.4366	372.00	61.032	80.108	2.0990
#1	.00375	123.86	.09940	.03333	.00304	.00199	-.00504	5.7577
#2	.00373	121.61	.10227	.03785	.00117	.00670	-.00958	5.8193
#3	.00307	121.14	.09827	.03241	-.00211	.00327	-.00116	5.5875
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106504 Acquired: 6/28/2016 21:10:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	.21514	-.00193	-.00213	.00339	.00785	-.00076
Stddev	.00062	.00319	.01407	.00225	.00062	.00025	.00024
%RSD	114.95	1.4817	727.11	106.00	18.385	3.1697	31.487
#1	-.00008	.21868	-.01773	-.00095	.00282	.00786	-.00068
#2	.00115	.21423	.00924	-.00472	.00328	.00810	-.00058
#3	.00055	.21250	.00269	-.00070	.00405	.00760	-.00104
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8604.3	51216.	2448.5
Stddev	45.8	176.	25.8
%RSD	.53283	.34304	1.0528
#1	8580.4	51038.	2418.8
#2	8575.4	51389.	2463.9
#3	8657.2	51221.	2462.9

Approved: June 29, 2016

Sample Name: L1606106505 Acquired: 6/28/2016 21:13:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	.02921	-.00384	.00411	.01418	.00007	21.596	.00014
Stddev	.00260	.01455	.00201	.00175	.00156	.00012	.210	.00028
%RSD	285.47	49.798	52.350	42.699	10.969	180.72	.97426	194.07
#1	.00036	.04383	-.00604	.00599	.01579	.00008	21.785	.00041
#2	-.00137	.02906	-.00336	.00383	.01407	-.00006	21.633	.00016
#3	.00374	.01474	-.00211	.00251	.01268	.00019	21.369	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.01331	.00184	.28146	42.106	.02502	24.386	.10216
Stddev	.00023	.00099	.00045	.02441	.255	.00418	.202	.00328
%RSD	74.655	7.4575	24.686	8.6720	.60615	16.715	.82951	3.2063
#1	.00037	.01445	.00205	.27951	42.035	.02729	24.208	.10074
#2	.00049	.01291	.00132	.25808	42.390	.02759	24.606	.10590
#3	.00005	.01259	.00215	.30678	41.894	.02020	24.342	.09983
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00133	71.860	.01009	.01291	-.00001	.00666	-.00207	3.4334
Stddev	.00030	.672	.00042	.00086	.00201	.00229	.00662	.0871
%RSD	22.478	.93503	4.1380	6.6831	38038.	34.442	319.11	2.5378
#1	.00135	71.698	.01043	.01290	-.00221	.00546	.00549	3.4892
#2	.00102	72.598	.01021	.01205	.00049	.00930	-.00683	3.4780
#3	.00161	71.284	.00963	.01377	.00171	.00522	-.00488	3.3330
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106505 Acquired: 6/28/2016 21:13:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.11257**	**-.00701**	**-.00258**	**-.00079**	**.00417**	**-.00019**
Stddev	.00050	.00059	.00451	.00158	.00075	.00010	.00046
%RSD	710.42	.52043	64.379	61.242	94.617	2.3387	242.20
#1	.00015	.11286	-.00751	-.00313	-.00089	.00412	-.00046
#2	.00029	.11296	-.00227	-.00080	.00000	.00428	.00034
#3	-.00065	.11190	-.01126	-.00381	-.00148	.00411	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8614.1**	**51472.**	**2478.5**
Stddev	5.8	202.	14.1
%RSD	.06752	.39279	.56993
#1	8607.5	51241.	2482.7
#2	8616.5	51619.	2462.8
#3	8618.3	51555.	2490.1

Approved: June 29, 2016

Sample Name: L1606106506 Acquired: 6/28/2016 21:17:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00158	.03183	.00137	.00857	.02635	.00004	82.528	.00016
Stddev	.00017	.00971	.00409	.00205	.00061	.00005	.363	.00031
%RSD	10.921	30.510	298.35	23.919	2.2963	131.49	.43946	194.55
#1	-.00141	.03589	.00503	.01061	.02646	.00008	82.864	-.00015
#2	-.00175	.02075	-.00305	.00651	.02569	.00004	82.576	.00046
#3	-.00159	.03886	.00214	.00859	.02689	-.00001	82.144	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00909	.00538	7.0235	1.4155	.00695	12.915	.85197
Stddev	.00018	.00062	.00113	.0060	.1772	.00130	.106	.00198
%RSD	58.487	6.8567	20.985	.08524	12.519	18.696	.82117	.23221
#1	.00037	.00928	.00506	7.0254	1.2352	.00616	12.934	.85425
#2	.00011	.00839	.00445	7.0168	1.5895	.00845	12.800	.85094
#3	.00046	.00960	.00664	7.0283	1.4219	.00623	13.010	.85072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00083	144.61	.00414	.05218	-.00444	.00163	-.00756	3.8921
Stddev	.00008	.67	.00044	.00345	.00182	.00509	.00113	.0069
%RSD	10.115	.46055	10.513	6.6114	41.057	312.15	14.927	.17602
#1	.00074	145.24	.00447	.04820	-.00234	.00737	-.00725	3.8999
#2	.00089	144.68	.00430	.05438	-.00538	-.00013	-.00661	3.8886
#3	.00088	143.92	.00365	.05395	-.00561	-.00234	-.00881	3.8876
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106506 Acquired: 6/28/2016 21:17:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.28262	-.01096	-.00234	-.00027	.00256	-.00032
Stddev	.00025	.00036	.01126	.00040	.00113	.00013	.00040
%RSD	112.34	.12884	102.74	17.244	427.21	5.1943	124.24
#1	.00047	.28284	-.02222	-.00236	-.00117	.00256	-.00074
#2	-.00003	.28281	-.01096	-.00193	.00101	.00243	-.00026
#3	.00022	.28220	.00030	-.00273	-.00063	.00270	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8553.4	50864.	2455.9
Stddev	12.6	33.	15.0
%RSD	.14684	.06447	.61218
#1	8567.9	50893.	2443.3
#2	8545.3	50829.	2451.9
#3	8547.0	50870.	2472.6

Approved: June 29, 2016

Sample Name: L1606106601 Acquired: 6/28/2016 21:21:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.05733	.00013	.02509	.01675	.00006	41.897	-.00001
Stddev	.00135	.00660	.00335	.00142	.00111	.00014	.519	.00029
%RSD	143.38	11.514	2627.2	5.6694	6.6496	234.17	1.2380	2888.5
#1	.00055	.05738	-.00157	.02580	.01748	-.00008	42.496	-.00021
#2	.00244	.05071	-.00204	.02601	.01731	.00006	41.615	.00032
#3	-.00017	.06391	.00399	.02345	.01547	.00020	41.581	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.00150	.00375	.10753	1.7660	.00792	6.7640	.37747
Stddev	.00046	.00032	.00079	.04103	.1722	.00282	.0311	.00284
%RSD	89.372	21.198	21.178	38.159	9.7541	35.537	.45978	.75243
#1	.00018	.00135	.00466	.11217	1.9288	.00664	6.7589	.37569
#2	.00032	.00186	.00321	.14605	1.5857	.00598	6.7358	.38075
#3	.00103	.00128	.00336	.06438	1.7834	.01115	6.7974	.37598
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	6.4675	.00459	.04483	-.00411	-.00214	-.00687	1.9555
Stddev	.00003	.0420	.00107	.01033	.00284	.00195	.00638	.0168
%RSD	4.2619	.64927	23.394	23.036	69.131	91.184	92.837	.85655
#1	.00071	6.4802	.00522	.05673	-.00662	.00006	-.00932	1.9683
#2	.00077	6.5017	.00335	.03834	-.00102	-.00280	-.01166	1.9616
#3	.00075	6.4206	.00521	.03940	-.00470	-.00368	.00037	1.9365
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106601 Acquired: 6/28/2016 21:21:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.11283	.00392	-.00305	.00047	.33904	-.00049
Stddev	.00054	.00044	.00554	.00319	.00027	.00188	.00070
%RSD	78.018	.39156	141.22	104.31	56.552	.55336	141.29
#1	.00130	.11256	.00656	-.00672	.00074	.33986	-.00115
#2	.00051	.11260	-.00244	-.00097	.00046	.34036	.00023
#3	.00027	.11334	.00764	-.00147	.00021	.33689	-.00056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8739.1	52488.	2461.2
Stddev	19.7	68.	11.7
%RSD	.22495	.12970	.47713
#1	8753.6	52516.	2461.6
#2	8716.7	52537.	2449.3
#3	8747.0	52410.	2472.8

Approved: June 29, 2016

Sample Name: L1606106602 Acquired: 6/28/2016 21:25:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00046	.01721	-.00296	.03350	.01766	.00005	126.67	.00054
Stddev	.00050	.00800	.00245	.00208	.00078	.00011	.63	.00011
%RSD	109.04	46.468	82.731	6.1998	4.4271	218.76	.50118	20.238
#1	-.00060	.00978	-.00457	.03491	.01741	.00017	126.16	.00043
#2	-.00087	.01618	-.00418	.03448	.01853	-.00005	127.38	.00054
#3	.00010	.02568	-.00014	.03112	.01703	.00003	126.47	.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	.00096	.00718	.00525	3.3984	.03319	27.870	.32098
Stddev	.00008	.00104	.00040	.03706	.0389	.00390	.150	.00200
%RSD	36.271	108.18	5.6337	705.29	1.1462	11.750	.53992	.62385
#1	.00015	.00156	.00702	.03492	3.4430	.02922	27.743	.31869
#2	.00018	.00157	.00764	-.03628	3.3810	.03702	28.037	.32186
#3	.00029	-.00024	.00689	.01712	3.3711	.03334	27.832	.32239
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00100	7.9568	.00808	.01457	-.00103	.00082	-.00252	4.0823
Stddev	.00027	.0423	.00084	.00435	.00417	.00306	.00511	.0358
%RSD	27.211	.53158	10.346	29.825	404.71	372.65	202.25	.87730
#1	.00131	7.9223	.00760	.01070	.00365	.00377	.00155	4.1012
#2	.00089	8.0040	.00905	.01927	-.00238	-.00234	-.00088	4.1048
#3	.00080	7.9440	.00760	.01373	-.00436	.00104	-.00825	4.0410
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106602 Acquired: 6/28/2016 21:25:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.69108**	**-.02422**	**-.00202**	**-.00021**	**.92972**	**-.00088**
Stddev	.00073	.00328	.00761	.00348	.00114	.01192	.00037
%RSD	1124.6	.47509	31.395	172.68	544.07	1.2824	42.708
#1	.00025	.68768	-.03174	-.00293	-.00019	.93618	-.00131
#2	-.00090	.69423	-.02440	.00183	-.00135	.93701	-.00069
#3	.00046	.69134	-.01653	-.00495	.00092	.91596	-.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8615.2**	**51801.**	**2454.3**
Stddev	26.5	242.	3.2
%RSD	.30743	.46655	.13005
#1	8603.8	51557.	2457.9
#2	8596.2	52040.	2451.7
#3	8645.4	51806.	2453.4

Approved: June 29, 2016

Sample Name: L1606106603 Acquired: 6/28/2016 21:29:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00173	.36498	-.00171	.02440	.03685	.00017	69.851	.00055
Stddev	.00273	.00934	.00289	.00202	.00234	.00006	.658	.00005
%RSD	157.80	2.5588	168.91	8.2904	6.3439	36.518	.94238	8.8191
#1	.00060	.37414	.00151	.02477	.03915	.00011	70.340	.00053
#2	-.00025	.35547	-.00258	.02621	.03693	.00017	70.112	.00051
#3	.00484	.36534	-.00407	.02222	.03448	.00024	69.103	.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00147	.00148	.00571	.64206	2.7655	.02243	19.201	.14255
Stddev	.00003	.00107	.00122	.07652	.0955	.00337	.326	.00224
%RSD	2.0740	72.233	21.333	11.918	3.4524	15.030	1.6982	1.5740
#1	.00146	.00206	.00710	.58376	2.7001	.02239	18.883	.14401
#2	.00145	.00214	.00480	.72871	2.8751	.02581	19.185	.14366
#3	.00151	.00025	.00524	.61371	2.7214	.01907	19.535	.13996
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	3.0430	.00499	.01511	-.00185	.00358	-.00385	4.6375
Stddev	.00045	.0310	.00026	.00537	.00127	.00190	.00513	.0117
%RSD	87.312	1.0191	5.2903	35.507	68.817	52.995	133.19	.25255
#1	.00026	3.0201	.00477	.02129	-.00278	.00269	-.00042	4.6465
#2	.00025	3.0307	.00490	.01164	-.00235	.00230	-.00139	4.6243
#3	.00103	3.0783	.00528	.01241	-.00040	.00576	-.00975	4.6417
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106603 Acquired: 6/28/2016 21:29:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.48630**	**-.01289**	**-.00215**	**-.00076**	**.45919**	**-.00029**
Stddev	.00139	.00323	.00210	.00305	.00079	.00017	.00032
%RSD	712.04	.66440	16.307	141.91	103.26	.03766	109.68
#1	.00037	.48604	-.01099	-.00551	.00014	.45931	-.00027
#2	.00083	.48966	-.01254	.00045	-.00114	.45927	.00002
#3	-.00178	.48321	-.01515	-.00139	-.00129	.45899	-.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8732.4**	**52177.**	**2462.7**
Stddev	20.3	54.	13.0
%RSD	.23191	.10365	.52811
#1	8709.0	52117.	2455.4
#2	8744.0	52190.	2455.1
#3	8744.2	52223.	2477.8

Approved: June 29, 2016

Sample Name: L1606106604 Acquired: 6/28/2016 21:33:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.02304**	**-.00165**	**.00067**	**.00485**	**.00005**	**.13530**	**.00025**
Stddev	.00174	.00560	.00089	.00160	.00009	.00013	.04003	.00020
%RSD	1057.4	24.313	53.680	240.55	1.7582	234.28	29.589	79.333
#1	-.00143	.01809	-.00247	.00206	.00495	-.00009	.15528	.00024
#2	-.00088	.02190	-.00178	.00103	.00479	.00014	.16141	.00046
#3	.00182	.02912	-.00071	-.00109	.00480	.00012	.08921	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**-.00028**	**.00384**	**-.00237**	**-.08280**	**.00575**	**.00931**	**.00331**
Stddev	.00028	.00070	.00074	.02982	.04654	.00319	.05212	.00164
%RSD	101.17	250.89	19.269	1258.4	56.201	55.378	559.70	49.631
#1	-.00033	.00034	.00360	.02974	-.13452	.00564	-.05087	.00491
#2	-.00053	-.00104	.00467	-.02920	-.06959	.00900	.03957	.00338
#3	.00003	-.00014	.00325	-.00765	-.04430	.00263	.03924	.00163
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00012**	**.19024**	**-.00085**	**.00306**	**-.00070**	**.00752**	**-.00658**	**.00832**
Stddev	.00018	.04205	.00044	.00554	.00157	.00438	.00441	.00165
%RSD	146.41	22.106	51.727	180.83	225.72	58.246	67.118	19.873
#1	.00006	.19030	-.00035	-.00122	.00046	.00812	-.01079	.00852
#2	-.00012	.14815	-.00101	.00932	-.00006	.01158	-.00199	.00657
#3	-.00030	.23226	-.00118	.00109	-.00249	.00288	-.00695	.00986
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106604 Acquired: 6/28/2016 21:33:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.00064	.00545	-.00336	-.00090	.00138	-.00024
Stddev	.00073	.00042	.00640	.00137	.00073	.00023	.00007
%RSD	328.97	65.140	117.35	40.879	80.825	16.816	28.554
#1	-.00060	.00107	-.00114	-.00247	-.00171	.00118	-.00029
#2	.00047	.00023	.00586	-.00494	-.00029	.00133	-.00016
#3	.00080	.00064	.01164	-.00267	-.00071	.00163	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8774.5	53148.	2468.5
Stddev	18.9	40.	21.3
%RSD	.21516	.07564	.86449
#1	8788.8	53138.	2443.9
#2	8753.1	53192.	2479.7
#3	8781.7	53113.	2481.9

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 21:37:18 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39973**	**10.108**	**.39636**	**.49128**	**1.0030**	**.05037**	**9.9826**	**.05037**
Stddev	.00161	.031	.00538	.00660	.0054	.00040	.0796	.00027
%RSD	.40227	.30747	1.3561	1.3434	.53726	.79813	.79769	.52668
#1	.39827	10.073	.40184	.49693	1.0081	.05010	10.074	.05059
#2	.40145	10.121	.39615	.48403	1.0036	.05018	9.9267	.05044
#3	.39946	10.132	.39110	.49289	.99738	.05083	9.9473	.05007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20223**	**.50813**	**.50393**	**3.9109**	**50.905**	**1.0169**	**10.132**	**.49597**
Stddev	.00031	.00309	.00152	.0391	.191	.0173	.111	.00237
%RSD	.15093	.60823	.30237	1.0004	.37447	1.6974	1.0972	.47821
#1	.20248	.50643	.50485	3.9094	51.119	1.0362	10.014	.49324
#2	.20231	.50627	.50217	3.9508	50.843	1.0112	10.235	.49743
#3	.20189	.51170	.50477	3.8726	50.754	1.0031	10.147	.49725
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0097**	**50.118**	**.50038**	**9.9139**	**.50050**	**1.1943**	**.39418**	**4.9666**
Stddev	.0018	.494	.00134	.0075	.00314	.0064	.01371	.0067
%RSD	.17790	.98650	.26717	.07528	.62691	.53237	3.4790	.13412
#1	1.0110	50.489	.50146	9.9177	.49695	1.2005	.39664	4.9686
#2	1.0105	50.309	.49889	9.9187	.50165	1.1878	.40650	4.9721
#3	1.0077	49.557	.50079	9.9053	.50291	1.1945	.37940	4.9592
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 21:37:18 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0102**	**1.0008**	**1.0090**	**.50371**	**1.0109**	**1.0026**	**1.0337**
Stddev	.0011	.0082	.0140	.00342	.0098	.0015	.0091
%RSD	.11060	.81843	1.3826	.67900	.97198	.15021	.87957
#1	1.0110	1.0081	1.0239	.50460	1.0029	1.0041	1.0379
#2	1.0108	1.0024	1.0069	.49993	1.0080	1.0025	1.0399
#3	1.0089	.99194	.99622	.50660	1.0219	1.0011	1.0232
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8691.4**	**51771.**	**2447.6**
Stddev	17.1	102.	28.5
%RSD	.19660	.19712	1.1648
#1	8710.9	51793.	2432.1
#2	8679.2	51660.	2430.3
#3	8684.1	51860.	2480.5

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 21:40:55 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00230**	**.02348**	**.00079**	**.00047**	**.00786**	**.00018**	**.01177**
Stddev	.00096	.01651	.00379	.00372	.00037	.00013	.04160
%RSD	41.591	70.337	482.07	783.24	4.6602	72.515	353.45
#1	-.00126	.02991	-.00187	-.00345	.00750	.00031	.00397
#2	-.00315	.03582	.00513	.00092	.00824	.00004	.05672
#3	-.00250	.00472	-.00090	.00395	.00784	.00020	-.02538
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00034**	**-.00004**	**.00107**	**-.00001**	**.00019**	**.07602**	**.00268**
Stddev	.00009	.00025	.00159	.00135	.01328	.08213	.00385
%RSD	25.273	632.10	148.38	19006.	6889.7	108.05	143.60
#1	.00043	-.00027	.00031	-.00143	.01232	-.01693	.00613
#2	.00026	.00023	.00290	.00015	.00226	.13881	-.00146
#3	.00033	-.00008	.00001	.00125	-.01400	.10617	.00337
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02421**	**-.00287**	**.00013**	**-.07567**	**-.00105**	**-.00288**	F **-.00510**
Stddev	.14641	.00299	.00020	.04275	.00176	.00467	.00166
%RSD	604.74	104.22	149.54	56.498	167.99	162.30	32.476
#1	.17026	-.00597	.00032	-.12254	-.00215	-.00071	-.00500
#2	.02494	-.00265	.00015	-.03883	-.00199	-.00824	-.00350
#3	-.12256	.00000	-.00007	-.06562	.00099	.00032	-.00681
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							.00500
Low Limit							-.00500

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 21:40:55 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00053	-.00493	.01371	-.00034	.00027	-.00092	-.00343
Stddev	.00210	.00240	.00112	.00073	.00037	.00774	.00240
%RSD	400.61	48.796	8.1935	212.64	134.38	841.10	69.734
#1	-.00285	-.00741	.01246	.00047	.00065	-.00106	-.00415
#2	.00126	-.00477	.01464	-.00055	-.00009	.00689	-.00076
#3	.00001	-.00260	.01404	-.00095	.00027	-.00859	-.00539
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00092	-.00006	-.00074
Stddev	.00130	.00011	.00020
%RSD	140.65	194.82	26.527
#1	-.00015	.00005	-.00062
#2	-.00242	-.00018	-.00097
#3	-.00020	-.00005	-.00063
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8260.5	48995.	2264.7
Stddev	38.9	34.	4.4
%RSD	.47079	.06981	.19247
#1	8254.9	49022.	2262.3
#2	8224.7	48957.	2262.1
#3	8301.9	49006.	2269.7

Approved: June 29, 2016

Sample Name: L1606112801 Acquired: 6/28/2016 21:44:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00126	6.6020	.00045	.01160	.10137	.00065	89.722	.00048
Stddev	.00051	.0809	.00394	.00130	.00139	.00003	.444	.00026
%RSD	40.081	1.2256	881.01	11.180	1.3750	5.0705	.49497	55.083
#1	-.00112	6.5919	-.00406	.01267	.10022	.00066	90.003	.00018
#2	-.00084	6.6875	.00325	.01199	.10292	.00061	89.952	.00066
#3	-.00182	6.5266	.00216	.01016	.10097	.00067	89.210	.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00927	.01015	.01734	9.3384	2.8756	.00909	27.581	3.3145
Stddev	.00031	.00120	.00195	.1034	.1441	.00919	.176	.0157
%RSD	3.3697	11.836	11.222	1.1073	5.0108	101.13	.63765	.47468
#1	.00919	.00915	.01674	9.4457	3.0190	.01971	27.402	3.3263
#2	.00961	.01148	.01952	9.3301	2.7308	.00356	27.753	3.3205
#3	.00901	.00981	.01576	9.2394	2.8771	.00401	27.587	3.2966
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	179.82	.00990	1.1598	.00365	.00463	-.00760	14.603
Stddev	.00021	1.25	.00112	.0071	.00319	.00725	.01197	.046
%RSD	66.922	.69527	11.336	.61274	87.319	156.46	157.61	.31395
#1	.00024	180.61	.01115	1.1668	.00089	-.00339	.00615	14.625
#2	.00016	180.48	.00957	1.1601	.00293	.00659	-.01320	14.633
#3	.00056	178.38	.00898	1.1526	.00715	.01070	-.01573	14.550
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606112801 Acquired: 6/28/2016 21:44:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00050**	**.32812**	**.27643**	**-.00273**	**.01512**	**.04982**	**.00275**
Stddev	.00096	.00293	.00218	.00221	.00018	.00020	.00062
%RSD	189.76	.89290	.78923	80.867	1.2130	.39717	22.527
#1	-.00059	.32919	.27449	-.00043	.01522	.04962	.00329
#2	.00116	.33038	.27600	-.00484	.01491	.05001	.00207
#3	.00094	.32481	.27879	-.00294	.01525	.04985	.00290
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8325.9**	**49707.**	**2420.6**
Stddev	10.7	333.	17.2
%RSD	.12902	.66931	.71130
#1	8327.5	49554.	2417.7
#2	8314.4	49478.	2405.1
#3	8335.7	50088.	2439.1

Approved: June 29, 2016

Sample Name: L1606112802 Acquired: 6/28/2016 21:48:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00143	.09340	.02577	.01283	.03807	.00004	75.043	.00011
Stddev	.00212	.00753	.00448	.00265	.00148	.00008	1.434	.00026
%RSD	147.93	8.0639	17.390	20.691	3.8920	211.55	1.9113	230.46
#1	-.00174	.08474	.03069	.01180	.03842	.00008	76.162	.00016
#2	.00082	.09699	.02192	.01584	.03935	.00009	75.542	.00034
#3	-.00338	.09846	.02470	.01084	.03645	-.00006	73.426	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00256	.00042	.00242	21.284	2.4576	.00843	12.599	.64431
Stddev	.00040	.00092	.00111	.262	.1645	.00155	.042	.01215
%RSD	15.565	219.85	45.761	1.2315	6.6928	18.347	.33457	1.8852
#1	.00298	.00009	.00303	21.442	2.3550	.00665	12.584	.64760
#2	.00219	-.00029	.00309	21.428	2.6473	.00944	12.646	.65447
#3	.00251	.00146	.00114	20.981	2.3704	.00920	12.565	.63085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	109.87	.00156	.12368	.00708	.01401	-.00736	10.011
Stddev	.00039	1.13	.00086	.00820	.00187	.00109	.00394	.102
%RSD	64.929	1.0247	55.389	6.6338	26.435	7.7786	53.526	1.0229
#1	.00016	109.93	.00215	.13208	.00744	.01525	-.00302	10.118
#2	.00091	110.97	.00196	.11568	.00875	.01358	-.00834	9.9991
#3	.00075	108.72	.00057	.12329	.00506	.01321	-.01070	9.9145
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606112802 Acquired: 6/28/2016 21:48:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.26989	-.00221	-.00203	.00052	.00463	-.00108
Stddev	.00059	.00192	.01536	.00088	.00043	.00003	.00047
%RSD	347.96	.71298	693.92	43.316	83.559	.73022	43.462
#1	.00080	.26979	-.00603	-.00248	.00037	.00465	-.00105
#2	.00006	.27186	-.01531	-.00259	.00018	.00459	-.00063
#3	-.00036	.26801	.01470	-.00102	.00101	.00465	-.00157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8612.0	50934.	2441.5
Stddev	51.1	190.	21.3
%RSD	.59296	.37328	.87422
#1	8555.4	50716.	2436.0
#2	8626.2	51018.	2423.5
#3	8654.5	51068.	2465.1

Approved: June 29, 2016

Sample Name: L1606112803 Acquired: 6/28/2016 21:52:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	10.535	.00189	.01142	.11626	.00079	98.814	.00034
Stddev	.00177	.148	.00298	.00095	.00142	.00002	1.200	.00026
%RSD	1594.6	1.4026	157.74	8.3374	1.2246	2.0752	1.2140	75.122
#1	.00006	10.645	.00445	.01111	.11595	.00080	97.453	.00005
#2	-.00196	10.593	-.00138	.01249	.11781	.00080	99.717	.00044
#3	.00157	10.367	.00259	.01066	.11501	.00077	99.273	.00054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01269	.01633	.02038	16.450	3.4713	.02302	33.982	3.5230
Stddev	.00024	.00161	.00072	.240	.0597	.00431	.399	.0643
%RSD	1.8735	9.8301	3.5542	1.4610	1.7189	18.733	1.1733	1.8258
#1	.01276	.01759	.02108	16.172	3.4581	.02703	33.528	3.4508
#2	.01289	.01452	.02043	16.578	3.5364	.02358	34.277	3.5743
#3	.01243	.01688	.01963	16.598	3.4193	.01846	34.140	3.5438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	177.78	.01566	2.3781	.01017	.00458	.00154	17.494
Stddev	.00046	2.20	.00031	.0458	.00324	.00567	.00741	.335
%RSD	138.39	1.2365	1.9982	1.9246	31.815	123.68	482.45	1.9164
#1	.00086	175.28	.01531	2.3321	.00645	.01104	-.00628	17.130
#2	.00008	179.42	.01577	2.4236	.01171	.00230	.00241	17.790
#3	.00005	178.65	.01590	2.3786	.01235	.00041	.00847	17.563
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606112803 Acquired: 6/28/2016 21:52:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00194	.33225	.42590	-.00152	.02349	.08177	.00412
Stddev	.00069	.00446	.00364	.00092	.00102	.00175	.00011
%RSD	35.430	1.3426	.85533	60.584	4.3449	2.1409	2.7154
#1	.00163	.32718	.42347	-.00248	.02252	.08031	.00399
#2	.00273	.33556	.42414	-.00146	.02455	.08371	.00417
#3	.00146	.33402	.43009	-.00063	.02340	.08128	.00419
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8675.3	50297.	2418.4
Stddev	148.1	449.	26.1
%RSD	1.7076	.89307	1.0785
#1	8846.2	49999.	2446.3
#2	8582.5	50079.	2394.7
#3	8597.3	50814.	2414.2

Approved: June 29, 2016

Sample Name: L1606112804 Acquired: 6/28/2016 21:56:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00094**	**.01965**	**-.00331**	**.00170**	**.00552**	**.00010**	**.05227**	**.00019**
Stddev	.00209	.00679	.00295	.00183	.00070	.00003	.01579	.00009
%RSD	221.69	34.539	88.933	107.86	12.661	29.053	30.205	45.792
#1	.00131	.01674	-.00652	.00375	.00632	.00013	.06667	.00010
#2	-.00132	.01480	-.00269	.00112	.00517	.00009	.03539	.00027
#3	-.00281	.02740	-.00073	.00022	.00506	.00008	.05477	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**.00071**	**.00267**	**.01034**	**.01751**	**-.00294**	**.07074**	**-.00085**
Stddev	.00057	.00072	.00087	.00956	.06462	.00447	.02273	.00293
%RSD	719.54	101.38	32.771	92.501	368.98	151.68	32.134	344.35
#1	-.00017	.00050	.00329	-.00070	-.05466	.00197	.07932	-.00361
#2	-.00060	.00012	.00167	.01592	.03721	-.00675	.08794	-.00115
#3	.00053	.00152	.00304	.01581	.06999	-.00405	.04497	.00221
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.21454**	**-.00017**	**-.00100**	**.00001**	**.00141**	**-.00683**	**.00229**
Stddev	.00011	.05619	.00160	.00204	.00183	.00153	.00705	.00107
%RSD	69.253	26.191	936.44	203.28	21825.	108.74	103.17	46.841
#1	-.00005	.18801	.00145	.00032	.00208	.00290	.00047	.00242
#2	-.00016	.27908	-.00021	-.00335	-.00071	-.00017	-.00737	.00116
#3	-.00026	.17652	-.00175	.00002	-.00135	.00151	-.01361	.00329
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606112804 Acquired: 6/28/2016 21:56:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.00011	-.00309	-.00145	-.00050	.00490	-.00036
Stddev	.00050	.00071	.00063	.00370	.00123	.00023	.00073
%RSD	84.759	627.39	20.331	254.92	247.66	4.6374	203.87
#1	.00014	.00011	-.00285	.00062	.00082	.00464	-.00007
#2	.00050	.00083	-.00380	-.00573	-.00071	.00507	.00019
#3	.00112	-.00060	-.00261	.00075	-.00160	.00499	-.00118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8819.2	53004.	2487.9
Stddev	17.1	187.	24.2
%RSD	.19396	.35229	.97464
#1	8810.0	52928.	2477.4
#2	8808.7	52868.	2515.7
#3	8839.0	53217.	2470.7

Approved: June 29, 2016

Sample Name: L1606112803PS Acquired: 6/28/2016 22:00:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574357-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20095**	**14.356**	**.21007**	**1.0121**	**.61454**	**.02613**	**91.444**	**.02600**
Stddev	.00481	.061	.00389	.0043	.00540	.00013	.473	.00017
%RSD	2.3919	.42364	1.8524	.42525	.87819	.48337	.51703	.64154
#1	.20638	14.390	.20954	1.0149	.61844	.02627	91.821	.02612
#2	.19724	14.393	.21420	1.0141	.60838	.02605	90.914	.02607
#3	.19924	14.286	.20647	1.0071	.61679	.02607	91.598	.02581
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.11359**	**.27131**	**.27123**	**16.370**	**29.233**	**.54468**	**34.678**	**3.3100**
Stddev	.00068	.00178	.00265	.137	.068	.00572	.153	.0190
%RSD	.59694	.65438	.97793	.83583	.23153	1.0504	.44001	.57504
#1	.11319	.27050	.27032	16.469	29.265	.54266	34.847	3.3073
#2	.11437	.27335	.27422	16.214	29.156	.54024	34.636	3.2925
#3	.11320	.27008	.26916	16.428	29.280	.55113	34.551	3.3302
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52427**	**181.81**	**.26694**	**7.3186**	**.26296**	**.61666**	**.18939**	**18.508**
Stddev	.00210	1.02	.00124	.0166	.00398	.01135	.00558	.072
%RSD	.39994	.56052	.46561	.22700	1.5152	1.8411	2.9443	.38719
#1	.52344	182.62	.26633	7.3067	.26751	.60699	.18666	18.466
#2	.52665	180.67	.26837	7.3376	.26010	.62916	.19580	18.591
#3	.52271	182.14	.26613	7.3116	.26127	.61382	.18570	18.468
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606112803PS Acquired: 6/28/2016 22:00:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574357-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51709**	**.80563**	**.87003**	**.24848**	**.53655**	**.57886**	**.00411**
Stddev	.00316	.01295	.00934	.00030	.00121	.00554	.00024
%RSD	.61122	1.6072	1.0733	.11999	.22571	.95632	5.7393
#1	.51459	.81184	.86393	.24821	.53722	.57986	.00392
#2	.52065	.79075	.86539	.24844	.53727	.58383	.00405
#3	.51604	.81430	.88078	.24880	.53515	.57289	.00438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8563.6**	**51061.**	**2463.3**
Stddev	11.6	133.	17.7
%RSD	.13595	.26074	.71667
#1	8550.2	51001.	2450.1
#2	8569.8	50969.	2483.3
#3	8571.0	51214.	2456.3

Approved: June 29, 2016

Sample Name: L1606112803SDL Acquired: 6/28/2016 22:03:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574357-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00068	2.3653	-.00080	.00071	.03250	.00019	21.647	.00016
Stddev	.00316	.0441	.00432	.00148	.00027	.00002	.131	.00015
%RSD	464.59	1.8640	543.10	206.66	.83918	8.5968	.60578	92.705
#1	.00138	2.4022	-.00231	.00088	.03251	.00017	21.568	.00033
#2	.00090	2.3165	-.00415	.00210	.03223	.00021	21.798	.00006
#3	-.00432	2.3773	.00408	-.00084	.03278	.00019	21.574	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00291	.00430	.00502	3.5754	.78870	.00110	7.4514	.76169
Stddev	.00023	.00147	.00070	.0615	.07166	.00058	.1103	.00877
%RSD	7.7357	34.230	14.001	1.7196	9.0857	52.847	1.4803	1.1513
#1	.00300	.00450	.00487	3.5046	.87006	.00064	7.5321	.75196
#2	.00308	.00274	.00441	3.6152	.73494	.00175	7.3257	.76897
#3	.00266	.00566	.00579	3.6064	.76111	.00090	7.4964	.76415
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	38.198	.00320	.53198	-.00107	.00060	-.00472	3.8999
Stddev	.00032	.372	.00123	.01450	.00685	.00503	.00573	.0839
%RSD	361.14	.97448	38.470	2.7254	640.05	841.28	121.39	2.1521
#1	.00046	37.770	.00281	.54432	-.00286	-.00142	.00062	3.9374
#2	-.00016	38.375	.00221	.53562	.00650	.00633	-.01076	3.9585
#3	-.00002	38.448	.00458	.51601	-.00685	-.00311	-.00401	3.8037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606112803SDL Acquired: 6/28/2016 22:03:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574357-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00095	.07216	.10212	-.00231	.00431	.01844	.00038
Stddev	.00133	.00117	.01163	.00109	.00028	.00061	.00039
%RSD	139.81	1.6216	11.386	47.354	6.3917	3.2919	103.05
#1	.00178	.07087	.10324	-.00353	.00402	.01856	.00004
#2	-.00058	.07246	.08998	-.00140	.00456	.01897	.00081
#3	.00165	.07315	.11315	-.00201	.00435	.01778	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8361.5	49819.	2293.8
Stddev	17.0	414.	11.1
%RSD	.20308	.83150	.48449
#1	8371.9	49341.	2306.4
#2	8370.6	50077.	2289.6
#3	8341.9	50038.	2285.5

Approved: June 29, 2016

Sample Name: L1606112803SDL Acquired: 6/28/2016 22:07:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574357-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00162	.47788	-.00227	-.00056	.01205	.00011	4.2713	-.00014
Stddev	.00075	.01163	.00206	.00203	.00116	.00004	.0877	.00019
%RSD	46.251	2.4344	90.808	362.12	9.6597	38.275	2.0541	140.63
#1	-.00216	.46621	-.00032	.00059	.01219	.00006	4.2856	-.00036
#2	-.00193	.47795	-.00443	-.00290	.01082	.00014	4.1772	-.00003
#3	-.00076	.48948	-.00206	.00063	.01313	.00013	4.3509	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.00135	.00081	.70827	-.00670	.00175	1.6675	.15266
Stddev	.00036	.00138	.00156	.01174	.12685	.00342	.0917	.00439
%RSD	70.312	102.42	193.61	1.6582	1893.3	194.78	5.4974	2.8763
#1	.00076	.00267	-.00050	.72142	.10653	-.00105	1.7637	.14860
#2	.00010	.00144	.00038	.69883	-.14379	.00076	1.5812	.15207
#3	.00068	-.00008	.00254	.70455	.01716	.00556	1.6574	.15732
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	7.7362	-.00043	.10795	-.00209	.00389	.00185	.76606
Stddev	.00023	.0714	.00020	.00783	.00156	.00375	.00575	.01334
%RSD	90.709	.92253	45.658	7.2541	74.799	96.576	310.52	1.7416
#1	.00014	7.7553	-.00031	.10438	-.00205	.00754	.00542	.76915
#2	.00053	7.6573	-.00033	.11693	-.00366	.00407	.00492	.77759
#3	.00010	7.7962	-.00066	.10255	-.00054	.00004	-.00478	.75145
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606112803SDL Acquired: 6/28/2016 22:07:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574357-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**.01382**	**.01746**	**-.00635**	**.00012**	**.00409**	**-.00003**
Stddev	.00069	.00028	.00359	.00161	.00049	.00018	.00092
%RSD	183.96	2.0556	20.543	25.328	418.39	4.2845	2643.0
#1	.00006	.01368	.01735	-.00457	-.00044	.00393	.00099
#2	-.00116	.01415	.01394	-.00676	.00031	.00406	-.00031
#3	-.00002	.01364	.02111	-.00771	.00048	.00427	-.00078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8482.1**	**50509.**	**2297.3**
Stddev	19.5	251.	4.0
%RSD	.23043	.49685	.17596
#1	8501.8	50309.	2293.8
#2	8462.7	50428.	2301.7
#3	8481.9	50791.	2296.4

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 22:11:40 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40572	10.228	.40778	.50344	1.0288	.05092	10.169	.05113
Stddev	.00314	.025	.00392	.00430	.0033	.00034	.070	.00010
%RSD	.77427	.24251	.96061	.85317	.32250	.67424	.69173	.19962
#1	.40916	10.221	.40874	.50657	1.0322	.05126	10.249	.05122
#2	.40300	10.207	.41114	.49854	1.0288	.05058	10.116	.05116
#3	.40501	10.255	.40348	.50520	1.0255	.05093	10.143	.05102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20555	.51334	.51382	4.0383	51.647	1.0392	10.217	.50448
Stddev	.00151	.00479	.00222	.0333	.180	.0070	.054	.00584
%RSD	.73486	.93225	.43112	.82342	.34947	.67702	.52572	1.1579
#1	.20603	.51676	.51420	4.0121	51.784	1.0466	10.278	.51121
#2	.20676	.50787	.51582	4.0757	51.443	1.0326	10.191	.50138
#3	.20385	.51538	.51144	4.0272	51.715	1.0383	10.180	.50084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0275	51.414	.51049	10.139	.51106	1.2210	.41631	5.0808
Stddev	.0045	.240	.00280	.062	.00613	.0093	.00996	.0304
%RSD	.44229	.46623	.54817	.61116	1.2004	.75913	2.3927	.59862
#1	1.0302	51.644	.51221	10.175	.51426	1.2272	.41472	5.0962
#2	1.0300	51.433	.51200	10.175	.51493	1.2253	.42698	5.1005
#3	1.0222	51.166	.50726	10.067	.50399	1.2103	.40725	5.0458
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 22:11:40 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0285**	**1.0247**	**1.0020**	**.51174**	**1.0149**	**1.0240**	**1.0488**
Stddev	.0076	.0082	.0163	.00555	.0049	.0062	.0044
%RSD	.74427	.80293	1.6241	1.0847	.48551	.60338	.42003
#1	1.0309	1.0329	1.0205	.51033	1.0132	1.0279	1.0440
#2	1.0346	1.0248	.99569	.51786	1.0111	1.0272	1.0498
#3	1.0199	1.0165	.98987	.50703	1.0205	1.0168	1.0527
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8678.6**	**51516.**	**2445.1**
Stddev	45.7	29.	5.4
%RSD	.52668	.05576	.22001
#1	8663.9	51536.	2449.9
#2	8642.0	51483.	2439.3
#3	8729.8	51529.	2446.2

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 22:15:18 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00113**	**.01093**	**-.00104**	**.00133**	**.00382**	**.00009**	**-.00048**	**.00002**
Stddev	.00188	.00631	.00224	.00072	.00217	.00014	.03647	.00017
%RSD	165.57	57.741	215.36	54.491	56.767	157.27	7575.1	819.46
#1	-.00328	.01759	-.00360	.00205	.00490	-.00007	-.04232	.00021
#2	.00023	.00503	.00062	.00060	.00523	.00020	.02457	-.00011
#3	-.00035	.01017	-.00015	.00133	.00132	.00013	.01631	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00047**	**.00130**	**-.00003**	**.00471**	**-.17082**	**.00107**	**.07763**	**-.00159**
Stddev	.00008	.00102	.00244	.01922	.12011	.00243	.10018	.00118
%RSD	17.678	78.123	6991.8	407.68	70.313	226.77	129.04	74.398
#1	-.00055	.00013	.00120	.01111	-.16180	-.00099	-.03260	-.00250
#2	-.00047	.00194	-.00284	-.01689	-.29517	.00375	.16311	-.00025
#3	-.00039	.00184	.00154	.01992	-.05547	.00046	.10239	-.00202
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**-.04420**	**-.00104**	**.00127**	**-.00270**	**.00108**	**-.00369**	**.01070**
Stddev	.00019	.01963	.00078	.00469	.00329	.00282	.00430	.00127
%RSD	85.105	44.403	74.947	368.86	121.95	262.24	116.56	11.870
#1	-.00021	-.06646	-.00192	.00316	.00110	.00244	-.00063	.01216
#2	-.00041	-.02938	-.00045	-.00407	-.00449	.00296	-.00183	.00984
#3	-.00004	-.03676	-.00074	.00473	-.00469	-.00217	-.00860	.01010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 22:15:18 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.00007	-.00497	-.00309	-.00064	.00009	-.00028
Stddev	.00131	.00026	.00562	.00208	.00140	.00004	.00053
%RSD	191.19	360.61	113.14	67.324	219.62	39.362	185.03
#1	.00036	.00023	-.00552	-.00204	.00054	.00008	-.00040
#2	-.00043	-.00023	-.01029	-.00175	-.00218	.00006	.00029
#3	.00213	.00021	.00091	-.00549	-.00027	.00013	-.00075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8755.8	52637.	2452.1
Stddev	10.5	105.	18.3
%RSD	.11982	.19865	.74545
#1	8744.3	52518.	2444.9
#2	8764.9	52679.	2438.5
#3	8758.1	52714.	2472.9

Approved: June 29, 2016

Sample Name: PBW 1C Acquired: 6/28/2016 22:19:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00055**	**.02526**	**.00019**	**-.00126**	**.00474**	**.00005**	**-.06440**
Stddev	.00133	.00097	.00079	.00039	.00092	.00008	.02795
%RSD	244.34	3.8298	424.05	30.922	19.421	160.84	43.410
#1	-.00187	.02587	.00106	-.00084	.00457	-.00003	-.06853
#2	.00080	.02577	-.00004	-.00132	.00392	.00005	-.09005
#3	-.00056	.02414	-.00046	-.00161	.00574	.00012	-.03461
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.00006**	**.00004**	**.00069**	**-.01050**	**-.08446**	**.00399**
Stddev	.00019	.00018	.00021	.00178	.00472	.04011	.00130
%RSD	121.72	319.28	500.05	257.41	44.944	47.484	32.424
#1	-.00037	.00018	.00005	-.00122	-.00949	-.05954	.00250
#2	.00000	-.00015	.00026	.00099	-.00637	-.06312	.00463
#3	-.00011	.00014	-.00017	.00231	-.01564	-.13073	.00485
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.07442**	F **-.00430**	**-.00000**	**-.03320**	**.00047**	**.00033**	**-.00283**
Stddev	.16565	.00512	.00038	.01914	.00036	.00983	.00441
%RSD	222.60	119.13	36626.	57.648	77.208	2964.3	155.82
#1	-.00353	-.00406	-.00012	-.01395	.00031	.00271	.00178
#2	.26466	.00070	-.00031	-.05223	.00089	.00875	-.00700
#3	-.03788	-.00953	.00043	-.03344	.00022	-.01047	-.00327
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		36.000					
Low Limit		-.00300					

Approved: June 29, 2016

Sample Name: PBW 1C Acquired: 6/28/2016 22:19:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00187	-.00564	.01154	.00035	.00053	-.00260	-.00298
Stddev	.00354	.00266	.00212	.00068	.00032	.00827	.00455
%RSD	188.84	47.177	18.346	195.26	60.764	317.95	152.51
#1	.00215	-.00544	.01047	-.00041	.00085	.00498	-.00808
#2	.00526	-.00840	.01398	.00054	.00053	-.00136	.00064
#3	-.00180	-.00309	.01017	.00091	.00020	-.01142	-.00150
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00022	.00074	-.00068
Stddev	.00020	.00015	.00030
%RSD	90.741	19.670	43.452
#1	.00003	.00058	-.00080
#2	.00020	.00077	-.00090
#3	.00043	.00086	-.00034
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8910.1	53689.	2496.9
Stddev	19.0	146.	12.6
%RSD	.21295	.27185	.50389
#1	8888.4	53854.	2492.7
#2	8917.8	53579.	2487.0
#3	8923.9	53632.	2511.1

Approved: June 29, 2016

Sample Name: LCSW 1C Acquired: 6/28/2016 22:23:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20404**	**5.1631**	**.20421**	**1.0014**	**.52128**	**.02521**	**5.2991**	**.02561**
Stddev	.00280	.0119	.00623	.0076	.00253	.00014	.0470	.00003
%RSD	1.3713	.22990	3.0485	.76107	.48529	.54123	.88764	.12887
#1	.20159	5.1496	.20785	.99456	.52403	.02523	5.3257	.02562
#2	.20343	5.1720	.20777	1.0096	.52076	.02506	5.2447	.02564
#3	.20709	5.1676	.19702	.99998	.51906	.02533	5.3267	.02557
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10436**	**.26054**	**.26124**	**2.0905**	**25.769**	**.53496**	**5.1879**	**.25915**
Stddev	.00080	.00255	.00082	.0795	.010	.00339	.0920	.00313
%RSD	.76572	.97787	.31411	3.8046	.04033	.63443	1.7740	1.2087
#1	.10510	.25765	.26079	2.1392	25.768	.53886	5.0993	.25829
#2	.10447	.26150	.26218	2.1337	25.780	.53341	5.2830	.26262
#3	.10352	.26247	.26074	1.9988	25.760	.53262	5.1814	.25654
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52537**	**26.143**	**.26070**	**4.9992**	**.25777**	**.61678**	**.19947**	**2.4584**
Stddev	.00273	.080	.00155	.0135	.00340	.00487	.01034	.0045
%RSD	.51951	.30602	.59512	.27082	1.3194	.78946	5.1860	.18373
#1	.52631	26.235	.25959	5.0046	.26170	.61253	.18798	2.4607
#2	.52751	26.100	.26247	5.0092	.25571	.62209	.20805	2.4614
#3	.52230	26.093	.26005	4.9838	.25591	.61572	.20236	2.4532
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LCSW 1C Acquired: 6/28/2016 22:23:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51944**	**.52676**	**.50888**	**.25733**	**.51326**	**.52069**	**.00091**
Stddev	.00368	.00097	.01396	.00225	.00359	.00299	.00071
%RSD	.70927	.18347	2.7425	.87396	.69915	.57451	78.366
#1	.52040	.52780	.52316	.25579	.50921	.52136	.00095
#2	.52255	.52659	.49527	.25991	.51455	.52330	.00161
#3	.51537	.52589	.50819	.25630	.51603	.51743	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8773.4**	**52628.**	**2505.9**
Stddev	31.5	151.	8.4
%RSD	.35958	.28754	.33514
#1	8809.4	52672.	2499.6
#2	8750.4	52753.	2515.4
#3	8760.5	52460.	2502.6

Approved: June 29, 2016

Sample Name: L1606090701 Acquired: 6/28/2016 22:26:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00037**	**.20247**	**.70648**	**.23731**	**.05346**	**.00049**	**.47637**
Stddev	.00453	.01902	.01020	.00474	.00090	.00011	.00516
%RSD	1221.6	9.3956	1.4434	1.9964	1.6844	23.047	1.0839
#1	.00534	.18337	.70812	.23191	.05262	.00038	.48206
#2	-.00353	.20262	.71575	.23925	.05337	.00050	.47199
#3	-.00070	.22142	.69556	.24077	.05441	.00060	.47505
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00033**	**.00415**	**.02862**	**.00093**	**.10270**	**.46857**	**.00685**
Stddev	.00039	.00030	.00044	.00084	.02803	.04045	.00114
%RSD	116.54	7.1863	1.5407	90.443	27.291	8.6325	16.609
#1	-.00000	.00449	.02829	.00068	.12172	.48022	.00762
#2	.00075	.00403	.02912	.00024	.07051	.50192	.00738
#3	.00024	.00393	.02845	.00187	.11586	.42358	.00554
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47395**	**-.00153**	**.00856**	F **1299.3**	**.04735**	**3.3563**	**-.00183**
Stddev	.11995	.00088	.00070	14.8	.00184	.0605	.00319
%RSD	25.309	57.507	8.1580	1.1376	3.8948	1.8029	173.76
#1	.60272	-.00108	.00804	1312.4	.04531	3.3872	-.00182
#2	.45373	-.00097	.00935	1302.3	.04891	3.3952	-.00503
#3	.36539	-.00255	.00827	1283.3	.04783	3.2866	.00135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090701 Acquired: 6/28/2016 22:26:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01444	-.00771	1.4228	.00372	.16630	.19886	.00097
Stddev	.00266	.00684	.0230	.00054	.00110	.01041	.00476
%RSD	18.436	88.776	1.6168	14.433	.66413	5.2364	489.80
#1	.01722	-.01490	1.4366	.00426	.16673	.19548	-.00309
#2	.01418	-.00696	1.4355	.00319	.16713	.19055	.00621
#3	.01192	-.00127	1.3962	.00371	.16505	.21054	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.09811	.00863	.04798
Stddev	.00119	.00010	.00066
%RSD	1.2143	1.1489	1.3715
#1	.09836	.00872	.04820
#2	.09915	.00866	.04850
#3	.09681	.00853	.04724
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8051.3	46745.	2322.8
Stddev	24.3	190.	26.3
%RSD	.30151	.40704	1.1338
#1	8077.3	46953.	2301.4
#2	8047.1	46580.	2314.8
#3	8029.3	46702.	2352.2

Approved: June 29, 2016

Sample Name: L1606090702 Acquired: 6/28/2016 22:30:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**.12789**	**.78212**	**.25911**	**.04510**	**.00044**	**.29251**
Stddev	.00416	.00204	.04015	.00375	.00118	.00013	.04673
%RSD	1709.5	1.5928	5.1337	1.4478	2.6147	30.156	15.977
#1	-.00276	.12878	.80294	.26034	.04582	.00029	.26761
#2	-.00253	.12932	.80758	.25489	.04573	.00055	.34642
#3	.00456	.12555	.73583	.26208	.04374	.00048	.26349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00038**	**.00446**	**.02542**	**.00097**	**.03210**	**.49071**	**.00689**
Stddev	.00021	.00018	.00107	.00162	.00935	.12505	.00134
%RSD	55.703	4.0075	4.2056	166.85	29.132	25.483	19.378
#1	.00017	.00467	.02432	.00112	.04087	.49772	.00816
#2	.00060	.00437	.02549	-.00072	.02226	.61210	.00550
#3	.00038	.00436	.02645	.00251	.03316	.36230	.00703
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.29743**	**-.00100**	**.00979**	F **1332.3**	**.05469**	**3.0958**	**-.00494**
Stddev	.04778	.00165	.00042	7.8	.00235	.1690	.00326
%RSD	16.064	165.30	4.2654	.58822	4.2891	5.4596	66.047
#1	.35189	.00017	.00961	1324.6	.05628	3.1896	-.00696
#2	.26255	-.00289	.01026	1340.3	.05580	3.1972	-.00668
#3	.27785	-.00028	.00948	1332.0	.05200	2.9007	-.00118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090702 Acquired: 6/28/2016 22:30:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01286**	**.00017**	**1.3895**	**.00591**	**.14936**	**.14448**	**.00213**
Stddev	.00363	.00339	.0730	.00055	.00219	.01191	.00247
%RSD	28.193	1943.7	5.2542	9.3870	1.4656	8.2462	115.94
#1	.00873	-.00252	1.4256	.00645	.14987	.13233	.00187
#2	.01432	.00398	1.4374	.00594	.15125	.15614	.00472
#3	.01553	-.00093	1.3055	.00534	.14696	.14496	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.11003**	**.00718**	**.05092**
Stddev	.00070	.00058	.00075
%RSD	.63332	8.0564	1.4819
#1	.10929	.00774	.05172
#2	.11013	.00723	.05022
#3	.11067	.00658	.05082
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8056.2**	**46928.**	**2348.2**
Stddev	8.2	310.	23.7
%RSD	.10227	.66009	1.0082
#1	8051.3	47216.	2344.9
#2	8065.8	46600.	2326.3
#3	8051.7	46969.	2373.3

Approved: June 29, 2016

Sample Name: L1606090703 Acquired: 6/28/2016 22:34:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00058	.21822	.91288	.25581	.05517	.00054	.50027
Stddev	.00200	.00882	.04933	.00386	.00034	.00010	.04190
%RSD	345.56	4.0400	5.4034	1.5075	.62106	17.932	8.3762
#1	.00247	.21173	.93681	.25152	.05494	.00064	.53835
#2	.00079	.21468	.94567	.25692	.05501	.00052	.50708
#3	-.00152	.22826	.85615	.25899	.05557	.00045	.45538
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.00493	.03469	.00014	.09214	.56022	.00836
Stddev	.00022	.00016	.00072	.00051	.02370	.09849	.00192
%RSD	45.113	3.2908	2.0715	363.89	25.718	17.581	22.978
#1	.00073	.00482	.03419	-.00033	.08643	.44861	.01057
#2	.00042	.00511	.03437	.00006	.11818	.63492	.00708
#3	.00031	.00484	.03551	.00069	.07183	.59714	.00744
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.61119	-.00056	.01189	F 1334.7	.05087	3.6444	-.00456
Stddev	.01713	.00296	.00070	15.6	.00309	.2175	.00548
%RSD	2.8035	531.91	5.8615	1.1715	6.0695	5.9671	120.21
#1	.60865	-.00389	.01246	1319.5	.05224	3.7621	-.00857
#2	.59546	.00047	.01210	1334.0	.05304	3.7775	.00168
#3	.62945	.00176	.01111	1350.7	.04734	3.3934	-.00679
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090703 Acquired: 6/28/2016 22:34:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01265**	**-.00629**	**1.5342**	**.00519**	**.17328**	**.25183**	**.00137**
Stddev	.00236	.00192	.0849	.00050	.00293	.00765	.00343
%RSD	18.686	30.543	5.5340	9.5782	1.6931	3.0382	249.67
#1	.01081	-.00496	1.5818	.00485	.17075	.25533	.00530
#2	.01532	-.00543	1.5846	.00576	.17259	.25711	-.00011
#3	.01184	-.00850	1.4362	.00496	.17650	.24305	-.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.10623**	**.00853**	**.05422**
Stddev	.00168	.00057	.00054
%RSD	1.5791	6.6217	.99216
#1	.10430	.00883	.05362
#2	.10728	.00889	.05438
#3	.10713	.00788	.05466
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8112.9**	**46934.**	**2373.1**
Stddev	19.1	67.	8.5
%RSD	.23568	.14286	.35956
#1	8109.4	46928.	2363.7
#2	8095.8	46871.	2380.5
#3	8133.5	47004.	2375.0

Approved: June 29, 2016

Sample Name: L1606090704 Acquired: 6/28/2016 22:38:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00032	.17494	.00497	.32040	.06352	-.00003	139.74	.00030
Stddev	.00119	.00286	.00470	.00160	.00110	.00008	2.95	.00025
%RSD	374.53	1.6346	94.501	.49976	1.7242	295.73	2.1089	83.199
#1	.00106	.17492	.00205	.31857	.06422	.00005	142.00	.00051
#2	-.00095	.17781	.01040	.32109	.06226	-.00011	140.82	.00003
#3	-.00106	.17209	.00247	.32154	.06408	-.00002	136.41	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	.00111	.00256	1.0822	3.9031	.04950	69.750	.15431
Stddev	.00071	.00119	.00142	.0787	.1085	.00334	1.215	.00158
%RSD	309.50	107.58	55.330	7.2741	2.7812	6.7370	1.7420	1.0263
#1	.00104	.00235	.00211	1.1580	4.0127	.04909	70.913	.15511
#2	-.00025	-.00002	.00143	1.0878	3.9011	.05302	69.848	.15534
#3	-.00010	.00099	.00415	1.0009	3.7956	.04639	68.489	.15249
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00079	147.94	.00034	.01280	.00111	.00125	-.00760	7.7303
Stddev	.00015	3.31	.00058	.00224	.00503	.00297	.00295	.1525
%RSD	18.814	2.2398	171.11	17.506	453.42	236.93	38.834	1.9722
#1	.00091	150.42	.00094	.01352	.00164	.00194	-.01096	7.8177
#2	.00084	149.24	-.00021	.01029	.00586	.00382	-.00641	7.8188
#3	.00062	144.18	.00028	.01459	-.00416	-.00200	-.00542	7.5542
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090704 Acquired: 6/28/2016 22:38:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00058	2.6834	-.02101	-.00193	-.00039	.00292	.00059
Stddev	.00145	.0622	.00529	.00167	.00032	.00031	.00010
%RSD	249.72	2.3172	25.156	86.729	81.495	10.722	17.819
#1	-.00052	2.7308	-.01626	-.00066	-.00034	.00285	.00056
#2	.00004	2.7065	-.02670	-.00382	-.00010	.00326	.00070
#3	.00223	2.6130	-.02007	-.00130	-.00073	.00265	.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8658.8	51888.	2487.2
Stddev	9.9	148.	69.0
%RSD	.11468	.28592	2.7755
#1	8654.6	51738.	2521.7
#2	8651.7	51893.	2532.1
#3	8670.2	52035.	2407.7

Approved: June 29, 2016

Sample Name: L1606090705 Acquired: 6/28/2016 22:42:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	.02159	.00561	.30320	.06274	.00002	137.80	.00024
Stddev	.00156	.00578	.00162	.00302	.00133	.00008	.48	.00030
%RSD	1169.5	26.784	28.929	.99639	2.1264	326.70	.34802	126.66
#1	.00118	.01941	.00433	.30596	.06334	.00006	138.36	.00017
#2	.00028	.01721	.00744	.29997	.06367	-.00006	137.52	.00057
#3	-.00186	.02814	.00507	.30366	.06121	.00008	137.53	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.00085	.00036	.84842	3.8794	.05303	68.272	.14675
Stddev	.00018	.00119	.00129	.00435	.1739	.00302	.204	.00403
%RSD	105.03	140.13	361.75	.51297	4.4822	5.6928	.29863	2.7492
#1	.00037	.00018	-.00104	.84393	4.0068	.05284	68.461	.14708
#2	.00011	.00015	.00062	.85262	3.6813	.05011	68.056	.14255
#3	.00003	.00223	.00149	.84870	3.9500	.05614	68.298	.15060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00104	148.72	.00060	.00270	-.00210	.00669	-.00077	7.1810
Stddev	.00029	.55	.00115	.00224	.00157	.00298	.00974	.1338
%RSD	28.046	.37003	191.52	82.940	75.086	44.551	1260.3	1.8630
#1	.00086	149.35	.00186	.00114	-.00376	.00586	-.01160	7.2794
#2	.00138	148.49	-.00039	.00526	-.00190	.00999	.00201	7.2349
#3	.00089	148.32	.00033	.00169	-.00063	.00421	.00728	7.0286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090705 Acquired: 6/28/2016 22:42:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**2.6618**	**-.01517**	**-.00418**	**-.00152**	**.00293**	**-.00010**
Stddev	.00046	.0095	.01009	.00214	.00102	.00029	.00027
%RSD	208.97	.35779	66.496	51.120	67.379	10.065	276.76
#1	-.00061	2.6723	-.02480	-.00226	-.00057	.00310	-.00034
#2	.00029	2.6591	-.00468	-.00649	-.00139	.00309	-.00014
#3	-.00035	2.6538	-.01602	-.00381	-.00260	.00259	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8674.4**	**51820.**	**2498.2**
Stddev	32.9	175.	23.9
%RSD	.37941	.33839	.95480
#1	8655.0	51617.	2471.9
#2	8712.4	51919.	2518.5
#3	8655.8	51922.	2504.0

Approved: June 29, 2016

Sample Name: L1606090706 Acquired: 6/28/2016 22:46:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00090	.15373	.00403	.30250	.06188	-.00006	136.59	.00008
Stddev	.00131	.01001	.00352	.00314	.00039	.00009	.12	.00010
%RSD	146.19	6.5090	87.260	1.0395	.62550	147.12	.08614	120.77
#1	-.00023	.14243	.00610	.30562	.06154	-.00015	136.60	.00004
#2	-.00240	.16146	-.00003	.29933	.06180	-.00006	136.69	.00019
#3	-.00006	.15730	.00602	.30256	.06230	.00003	136.46	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.00069	.00154	1.0178	3.8522	.04856	67.952	.14959
Stddev	.00011	.00084	.00094	.0208	.1250	.00071	.165	.00297
%RSD	287.57	121.84	61.318	2.0466	3.2435	1.4598	.24300	1.9863
#1	-.00009	.00158	.00258	.99741	3.7640	.04774	67.876	.15012
#2	.00008	.00057	.00074	1.0390	3.7975	.04899	68.142	.15226
#3	.00012	-.00009	.00130	1.0169	3.9952	.04895	67.839	.14639
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00078	143.60	.00084	.00793	.00189	.00624	-.00491	7.3759
Stddev	.00024	.10	.00096	.00216	.00148	.00303	.01046	.0144
%RSD	31.262	.06631	114.15	27.183	78.406	48.515	213.04	.19504
#1	.00105	143.69	.00177	.00696	.00306	.00927	-.00685	7.3596
#2	.00073	143.50	.00091	.01041	.00237	.00321	.00638	7.3867
#3	.00057	143.61	-.00015	.00644	.00023	.00625	-.01426	7.3815
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090706 Acquired: 6/28/2016 22:46:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	2.6312	-.02241	-.00027	-.00185	.00410	.00039
Stddev	.00066	.0032	.00434	.00181	.00059	.00019	.00047
%RSD	431.02	.12040	19.377	673.65	32.035	4.6825	118.72
#1	.00001	2.6346	-.01751	-.00130	-.00179	.00402	.00057
#2	.00087	2.6307	-.02577	.00182	-.00129	.00433	.00075
#3	-.00042	2.6283	-.02395	-.00133	-.00248	.00397	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8657.0	51883.	2499.7
Stddev	10.6	192.	2.4
%RSD	.12268	.36927	.09631
#1	8645.7	51825.	2499.6
#2	8666.7	51727.	2502.1
#3	8658.7	52097.	2497.3

Approved: June 29, 2016

Sample Name: L1606090707 Acquired: 6/28/2016 22:50:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00031**	**.07375**	**.70623**	**.33607**	**.07325**	**.00013**	**5.4165**
Stddev	.00058	.00357	.03344	.00389	.00301	.00005	.0795
%RSD	186.60	4.8345	4.7357	1.1586	4.1099	37.394	1.4682
#1	.00098	.06964	.72690	.33159	.07673	.00018	5.4977
#2	-.00006	.07564	.72414	.33855	.07162	.00013	5.4130
#3	.00001	.07598	.66764	.33808	.07141	.00008	5.3387
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00063**	**.00137**	**.00186**	**.00186**	**.13231**	**1.7812**	**.01194**
Stddev	.00063	.00056	.00061	.00033	.00855	.0656	.00137
%RSD	100.58	40.601	32.549	17.672	6.4637	3.6831	11.472
#1	.00037	.00105	.00175	.00201	.12751	1.7109	.01081
#2	.00134	.00202	.00252	.00148	.14218	1.8407	.01346
#3	.00017	.00106	.00132	.00208	.12723	1.7919	.01155
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**8.0009**	**.01807**	**.00288**	F **632.46**	**.00073**	**.07554**	**-.00359**
Stddev	.2970	.00121	.00074	7.98	.00139	.01500	.00381
%RSD	3.7122	6.7066	25.889	1.2624	189.72	19.859	106.12
#1	8.0051	.01910	.00358	628.03	.00117	.07361	.00081
#2	7.7019	.01674	.00210	641.68	.00185	.09142	-.00577
#3	8.2959	.01837	.00295	627.68	-.00082	.06160	-.00580
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090707 Acquired: 6/28/2016 22:50:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00671	-.00605	4.2226	.00040	.59804	-.00277	-.00454
Stddev	.00347	.00661	.2109	.00102	.00214	.01232	.00349
%RSD	51.629	109.28	4.9938	255.44	.35786	444.35	76.911
#1	.01029	-.01053	4.3569	.00029	.59679	-.00286	-.00813
#2	.00648	.00154	4.3313	.00147	.60051	-.01505	-.00116
#3	.00337	-.00917	3.9795	-.00056	.59683	.00959	-.00431
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00049	.00286	.00051
Stddev	.00080	.00026	.00019
%RSD	163.21	9.1726	36.456
#1	-.00139	.00288	.00066
#2	.00012	.00312	.00056
#3	-.00019	.00259	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8507.4	50781.	2448.7
Stddev	26.8	172.	22.3
%RSD	.31549	.33939	.91265
#1	8532.0	50586.	2429.1
#2	8511.6	50913.	2444.0
#3	8478.8	50844.	2473.0

Approved: June 29, 2016

Sample Name: L1606090708 Acquired: 6/28/2016 22:54:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00089	.02176	.71471	.33811	.07254	.00002	5.0730
Stddev	.00183	.00345	.04493	.00058	.00161	.00009	.0292
%RSD	206.52	15.872	6.2858	.17285	2.2229	399.17	.57529
#1	-.00228	.02426	.73953	.33878	.07437	.00010	5.0414
#2	-.00158	.02321	.74175	.33786	.07193	.00005	5.0990
#3	.00119	.01782	.66285	.33769	.07132	-.00008	5.0787
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	.00106	.00161	-.00160	.00022	1.6878	.01046
Stddev	.00022	.00018	.00152	.00051	.02286	.2081	.00428
%RSD	25.222	17.186	94.297	32.142	10180.	12.331	40.874
#1	.00101	.00121	.00011	-.00101	-.01033	1.5372	.01387
#2	.00062	.00110	.00315	-.00189	.02646	1.6009	.01186
#3	.00099	.00086	.00158	-.00190	-.01545	1.9252	.00566
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.5862	.01686	.00321	F 624.73	-.00051	.07940	.00105
Stddev	.1396	.00137	.00063	16.41	.00145	.00521	.00014
%RSD	1.8406	8.1255	19.463	2.6262	285.59	6.5654	13.351
#1	7.7394	.01591	.00323	635.00	.00084	.07365	.00093
#2	7.5528	.01843	.00383	605.81	-.00204	.08381	.00120
#3	7.4662	.01624	.00258	633.40	-.00032	.08075	.00101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090708 Acquired: 6/28/2016 22:54:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00382**	**-.00261**	**4.2531**	**-.00015**	**.57918**	**-.00135**	**-.00088**
Stddev	.00153	.00968	.2281	.00025	.00127	.00872	.00071
%RSD	40.120	370.97	5.3644	163.66	.21989	646.16	81.340
#1	.00451	.00347	4.3850	-.00018	.57780	-.01137	-.00170
#2	.00488	.00248	4.3845	-.00038	.57941	.00279	-.00040
#3	.00206	-.01378	3.9896	.00011	.58032	.00452	-.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00039**	**.00142**	**-.00001**
Stddev	.00093	.00008	.00004
%RSD	238.33	5.7809	430.75
#1	.00066	.00151	.00002
#2	-.00071	.00137	.00000
#3	-.00112	.00137	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8720.2**	**51336.**	**2488.0**
Stddev	11.3	289.	71.4
%RSD	.12924	.56321	2.8704
#1	8716.8	51002.	2405.8
#2	8732.7	51515.	2524.3
#3	8710.9	51489.	2534.0

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 22:58:32 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39344	9.8988	.39249	.49224	.99894	.04861	9.8375	.04953
Stddev	.00232	.0610	.00510	.00165	.00208	.00013	.0480	.00023
%RSD	.58958	.61629	1.2996	.33480	.20806	.26302	.48816	.47024
#1	.39269	9.9164	.39121	.49398	1.0005	.04864	9.7932	.04952
#2	.39604	9.9491	.38815	.49071	.99967	.04871	9.8308	.04977
#3	.39158	9.8310	.39811	.49203	.99659	.04847	9.8885	.04931
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19950	.49097	.49985	3.9366	49.669	1.0039	9.9168	.49251
Stddev	.00092	.00192	.00190	.0169	.237	.0038	.0981	.00169
%RSD	.46102	.39146	.38006	.43000	.47634	.37925	.98952	.34245
#1	.20054	.49018	.50105	3.9395	49.542	1.0056	9.8676	.49093
#2	.19920	.49316	.50084	3.9519	49.523	1.0066	9.8530	.49429
#3	.19877	.48957	.49766	3.9184	49.942	.99955	10.030	.49232
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0011	50.743	.49860	9.8926	.50483	1.1979	.39869	4.9753
Stddev	.0024	.181	.00037	.0093	.00530	.0033	.00678	.0067
%RSD	.24044	.35752	.07415	.09361	1.0505	.27239	1.7002	.13442
#1	1.0035	50.865	.49899	9.8952	.49872	1.1997	.40291	4.9679
#2	1.0012	50.535	.49826	9.8824	.50755	1.1999	.39088	4.9770
#3	.99870	50.831	.49856	9.9004	.50822	1.1942	.40230	4.9810
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 22:58:32 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99767**	**.99373**	**.96406**	**.49618**	**.97586**	**1.0021**	**1.0208**
Stddev	.00239	.00053	.01473	.00080	.00425	.0005	.0053
%RSD	.23990	.05369	1.5278	.16191	.43595	.04913	.51729
#1	.99930	.99431	.95995	.49662	.97870	1.0018	1.0265
#2	.99492	.99361	.98040	.49526	.97791	1.0017	1.0160
#3	.99879	.99327	.95182	.49667	.97097	1.0026	1.0199
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8992.4**	**54014.**	**2548.3**
Stddev	16.7	153.	12.1
%RSD	.18517	.28361	.47426
#1	9002.2	53936.	2534.7
#2	9001.8	53916.	2557.9
#3	8973.1	54191.	2552.3

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 23:02:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00100	.00842	-.00230	.00116	.00400	.00005	-.04233	.00014
Stddev	.00182	.01035	.00099	.00018	.00131	.00006	.03657	.00020
%RSD	181.88	122.94	43.133	15.210	32.627	109.75	86.407	142.05
#1	.00262	.00341	-.00343	.00121	.00497	.00012	-.01453	.00036
#2	.00137	.02033	-.00158	.00130	.00252	.00002	-.02869	-.00000
#3	-.00098	.00153	-.00189	.00096	.00452	.00002	-.08376	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00012	.00068	-.00021	.00012	.02280	.00716	.14734	-.00204
Stddev	.00036	.00099	.00052	.02768	.05559	.00282	.07268	.00369
%RSD	309.21	145.76	249.13	22189.	243.81	39.425	49.327	180.61
#1	-.00027	.00166	.00038	.00594	.06447	.00463	.06670	-.00567
#2	-.00037	.00072	-.00040	-.03000	.04426	.01020	.20779	-.00216
#3	.00030	-.00033	-.00061	.02443	-.04032	.00663	.16753	.00171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.12092	.00014	.00488	-.00013	-.00107	.00087	.00687
Stddev	.00019	.00980	.00054	.01211	.00369	.00175	.00409	.00121
%RSD	60.294	8.1009	381.60	248.32	2776.9	163.54	471.54	17.539
#1	.00012	.11566	.00070	.01850	.00389	-.00115	.00253	.00754
#2	.00049	.11487	-.00036	.00084	-.00094	-.00278	-.00379	.00548
#3	.00032	.13222	.00008	-.00470	-.00334	.00072	.00386	.00760
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 23:02:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**-.00010**	**-.00017**	**-.00250**	**.00002**	**-.00009**	**-.00070**
Stddev	.00071	.00061	.00969	.00374	.00116	.00001	.00017
%RSD	1926.0	592.76	5554.2	149.55	5142.7	8.4484	24.855
#1	-.00059	.00055	.00970	.00174	-.00131	-.00008	-.00087
#2	-.00028	-.00020	-.00967	-.00390	.00076	-.00009	-.00069
#3	.00076	-.00066	-.00055	-.00533	.00062	-.00010	-.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9051.2**	**54427.**	**2508.0**
Stddev	17.0	197.	4.4
%RSD	.18779	.36147	.17683
#1	9069.0	54303.	2506.7
#2	9035.2	54324.	2512.9
#3	9049.2	54654.	2504.3

Approved: June 29, 2016

Sample Name: L1606090709 Acquired: 6/28/2016 23:06:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00023**	**.08904**	**.70931**	**.33668**	**.07317**	**.00007**	**5.4108**
Stddev	.00023	.01573	.03728	.00368	.00092	.00002	.0048
%RSD	102.45	17.664	5.2553	1.0924	1.2568	32.392	.08917
#1	-.00004	.10613	.73018	.33255	.07211	.00008	5.4124
#2	.00036	.07518	.73148	.33961	.07369	.00004	5.4146
#3	.00036	.08580	.66628	.33788	.07371	.00008	5.4054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00048**	**.00121**	**.00143**	**-.00011**	**.08534**	**1.8682**	**.01053**
Stddev	.00027	.00057	.00102	.00206	.00736	.0683	.00158
%RSD	56.037	47.367	71.215	1896.7	8.6284	3.6542	15.010
#1	.00057	.00153	.00064	.00015	.08703	1.9454	.01051
#2	.00068	.00154	.00258	-.00229	.07728	1.8158	.01212
#3	.00018	.00055	.00107	.00181	.09172	1.8434	.00896
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.9578**	**.01679**	**.00329**	F **631.90**	**.00018**	**.07592**	**-.00095**
Stddev	.0271	.00359	.00013	.79	.00058	.01123	.00345
%RSD	.34071	21.404	3.9287	.12431	324.85	14.789	363.21
#1	7.9889	.01584	.00341	631.44	-.00006	.07663	-.00321
#2	7.9445	.01376	.00316	631.46	.00084	.08678	-.00265
#3	7.9398	.02076	.00331	632.81	-.00024	.06436	.00302
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090709 Acquired: 6/28/2016 23:06:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00637	-.00876	4.2975	.00019	.59786	.00813	-.00327
Stddev	.00220	.00654	.2103	.00077	.00208	.00724	.00217
%RSD	34.543	74.679	4.8941	408.44	.34807	88.983	66.163
#1	.00831	-.00342	4.4325	.00026	.59619	.01154	-.00545
#2	.00398	-.00680	4.4049	.00092	.59720	-.00018	-.00111
#3	.00683	-.01606	4.0552	-.00061	.60019	.01303	-.00326
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00013	.00214	.00012
Stddev	.00062	.00011	.00013
%RSD	463.70	5.1663	101.51
#1	.00051	.00222	.00005
#2	-.00072	.00219	.00027
#3	-.00019	.00201	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8576.6	50611.	2469.4
Stddev	28.5	223.	8.7
%RSD	.33249	.44051	.35190
#1	8552.3	50373.	2459.7
#2	8608.0	50645.	2476.6
#3	8569.3	50815.	2471.8

Approved: June 29, 2016

Sample Name: L1606090710 Acquired: 6/28/2016 23:10:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00116	.07123	.69978	.33683	.07153	.00003	5.2509
Stddev	.00269	.00183	.03909	.00290	.00172	.00010	.0210
%RSD	231.20	2.5745	5.5862	.86014	2.4047	323.75	.39931
#1	.00066	.07077	.72204	.33383	.07008	-.00001	5.2751
#2	-.00426	.07325	.72266	.33703	.07108	.00015	5.2375
#3	.00010	.06968	.65465	.33962	.07343	-.00004	5.2401
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	.00133	.00103	.00035	.08426	1.6622	.01610
Stddev	.00034	.00039	.00026	.00054	.01504	.0838	.00599
%RSD	134.41	29.601	25.679	154.79	17.852	5.0401	37.195
#1	.00030	.00160	.00133	.00074	.08774	1.7067	.01003
#2	-.00011	.00150	.00091	.00058	.06778	1.5655	.02201
#3	.00057	.00088	.00085	-.00027	.09725	1.7142	.01628
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.8156	.01761	.00333	F 618.28	.00063	.07265	-.00419
Stddev	.1337	.00064	.00050	3.47	.00003	.00721	.00267
%RSD	1.7102	3.6403	15.005	.56098	4.6752	9.9227	63.740
#1	7.6942	.01720	.00381	615.78	.00063	.07234	-.00378
#2	7.7937	.01835	.00338	622.24	.00060	.08001	-.00174
#3	7.9588	.01729	.00281	616.81	.00065	.06560	-.00704
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090710 Acquired: 6/28/2016 23:10:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00217	-.00567	4.1751	.00077	.58570	.01177	-.00436
Stddev	.00165	.00574	.2229	.00130	.00328	.00743	.00507
%RSD	75.844	101.25	5.3390	169.28	.56049	63.116	116.30
#1	.00029	-.01056	4.2974	.00224	.58523	.01020	-.00962
#2	.00289	.00066	4.3100	-.00023	.58919	.00525	.00049
#3	.00334	-.00712	3.9178	.00030	.58268	.01986	-.00394
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00034	.00214	.00029
Stddev	.00041	.00018	.00078
%RSD	121.71	8.4377	264.45
#1	-.00045	.00193	-.00059
#2	.00012	.00222	.00087
#3	-.00068	.00226	.00060
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8615.9	50993.	2485.4
Stddev	19.1	101.	8.7
%RSD	.22196	.19826	.34997
#1	8599.4	50877.	2486.2
#2	8636.9	51045.	2476.3
#3	8611.5	51058.	2493.6

Approved: June 29, 2016

Sample Name: L1606090711 Acquired: 6/28/2016 23:14:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00097**	**.03556**	**.73169**	**.34795**	**.07439**	**.00003**	**5.2478**
Stddev	.00024	.00485	.04137	.00163	.00035	.00006	.0392
%RSD	25.030	13.645	5.6546	.46954	.46963	202.86	.74701
#1	-.00117	.03016	.75338	.34674	.07421	-.00003	5.2114
#2	-.00105	.03698	.75772	.34980	.07479	.00004	5.2427
#3	-.00070	.03955	.68398	.34730	.07416	.00008	5.2893
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00078**	**.00109**	**.00075**	**-.00124**	**.01430**	**1.9312**	**.01121**
Stddev	.00032	.00057	.00098	.00116	.01452	.0662	.00375
%RSD	40.847	52.643	130.59	93.056	101.50	3.4299	33.475
#1	.00065	.00148	.00185	-.00182	.00722	1.9905	.00707
#2	.00054	.00136	-.00002	-.00201	.00468	1.8597	.01218
#3	.00114	.00043	.00041	.00009	.03100	1.9435	.01438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.6988**	**.01630**	**.00313**	F **663.81**	**.00018**	**.08187**	**.00053**
Stddev	.0966	.00360	.00048	5.28	.00079	.00852	.00463
%RSD	1.2553	22.095	15.303	.79571	446.31	10.404	870.46
#1	7.7774	.01955	.00368	663.60	.00064	.09166	-.00463
#2	7.7282	.01692	.00294	669.19	.00063	.07782	.00192
#3	7.5909	.01243	.00279	658.64	-.00073	.07613	.00430
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090711 Acquired: 6/28/2016 23:14:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00477	-.00947	4.3743	.00012	.59749	-.00341	-.00368
Stddev	.00205	.00703	.2235	.00071	.00261	.00718	.00482
%RSD	42.998	74.264	5.1088	610.33	.43726	210.78	131.07
#1	.00352	-.01297	4.5068	.00080	.59457	-.00637	-.00075
#2	.00366	-.01406	4.4999	-.00061	.59959	.00478	-.00105
#3	.00714	-.00137	4.1163	.00016	.59832	-.00864	-.00924
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00067	.00187	.00016
Stddev	.00018	.00039	.00039
%RSD	26.132	20.991	250.81
#1	-.00048	.00224	.00013
#2	-.00072	.00192	-.00022
#3	-.00082	.00146	.00055
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8558.7	50968.	2468.0
Stddev	32.6	266.	12.5
%RSD	.38137	.52256	.50634
#1	8582.1	50678.	2474.2
#2	8572.7	51022.	2453.7
#3	8521.4	51203.	2476.3

Approved: June 29, 2016

Sample Name: L1606090712 Acquired: 6/28/2016 23:18:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00081	.33933	.00030	.07127	.05688	.00016	2.0338
Stddev	.00237	.00787	.00132	.00246	.00045	.00012	.0603
%RSD	291.62	2.3179	435.76	3.4534	.79846	72.701	2.9649
#1	.00177	.33514	-.00021	.06852	.05740	.00027	2.1010
#2	-.00288	.33445	-.00068	.07204	.05653	.00003	1.9844
#3	-.00133	.34841	.00181	.07326	.05673	.00019	2.0160
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00348	.00115	.14552	.01724	.92438	1.6617	.01097
Stddev	.00018	.00061	.00045	.00110	.03976	.0106	.00703
%RSD	5.1777	53.182	.30931	6.3566	4.3016	.63818	64.052
#1	.00353	.00097	.14500	.01788	.88776	1.6670	.01828
#2	.00362	.00183	.14581	.01597	.91871	1.6687	.00426
#3	.00327	.00065	.14575	.01786	.96668	1.6495	.01039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.3249	.01152	.00383	F 391.44	.00707	.86059	.02181
Stddev	.1530	.00179	.00054	2.81	.00137	.01152	.00342
%RSD	11.552	15.543	14.106	.71775	19.411	1.3389	15.698
#1	1.5007	.01088	.00325	388.59	.00558	.86948	.01787
#2	1.2531	.01014	.00432	391.52	.00829	.84757	.02352
#3	1.2210	.01354	.00392	394.20	.00735	.86472	.02403
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090712 Acquired: 6/28/2016 23:18:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00348**	**.00035**	**1.9954**	**.01117**	**.32038**	**.22636**	**.00135**
Stddev	.00020	.00121	.0012	.00040	.00240	.00266	.00214
%RSD	5.8328	347.48	.06231	3.5705	.75050	1.1738	158.56
#1	.00370	.00157	1.9940	.01149	.31769	.22820	.00269
#2	.00345	.00033	1.9955	.01130	.32111	.22756	-.00112
#3	.00330	-.00085	1.9965	.01072	.32233	.22331	.00247
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.04514**	**.17974**	**.02206**
Stddev	.00090	.00019	.00066
%RSD	1.9881	.10310	2.9925
#1	.04612	.17978	.02281
#2	.04436	.17953	.02156
#3	.04495	.17989	.02182
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8716.9**	**51451.**	**2449.4**
Stddev	48.4	29.	7.6
%RSD	.55475	.05648	.30870
#1	8664.0	51484.	2448.2
#2	8758.7	51440.	2457.4
#3	8728.0	51429.	2442.4

Approved: June 29, 2016

Sample Name: L1606090713 Acquired: 6/28/2016 23:22:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00219	.08213	.00368	.07443	.04854	.00011	.42469
Stddev	.00096	.00972	.00334	.00183	.00110	.00005	.01977
%RSD	43.698	11.832	90.686	2.4627	2.2723	40.957	4.6556
#1	-.00225	.09092	.00289	.07233	.04795	.00011	.40186
#2	-.00121	.08378	.00081	.07521	.04981	.00016	.43586
#3	-.00312	.07170	.00734	.07574	.04786	.00007	.43635
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00222	.00137	.13907	.00317	.34040	1.7220	.00905
Stddev	.00025	.00028	.00123	.00071	.01243	.0003	.00271
%RSD	11.273	20.393	.88415	22.430	3.6529	.01888	29.930
#1	.00223	.00160	.13998	.00280	.34114	1.7219	.00629
#2	.00247	.00146	.13767	.00272	.32761	1.7224	.01170
#3	.00197	.00106	.13955	.00399	.35244	1.7218	.00916
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0987	.00113	.00754	F 415.04	.00596	.74146	.00350
Stddev	.0280	.00202	.00033	2.37	.00037	.00798	.00379
%RSD	2.5471	178.69	4.3197	.57087	6.2471	1.0768	108.44
#1	1.1249	.00313	.00717	412.47	.00613	.73242	-.00053
#2	1.0692	.00117	.00780	417.13	.00621	.74754	.00700
#3	1.1020	-.00091	.00765	415.51	.00553	.74442	.00403
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090713 Acquired: 6/28/2016 23:22:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00153**	**-.00521**	**1.6202**	**.00992**	**.32429**	**.20882**	**-.00046**
Stddev	.00624	.00387	.0074	.00050	.00323	.01892	.00304
%RSD	408.39	74.236	.45925	5.0727	.99564	9.0597	653.54
#1	.00863	-.00095	1.6128	.00948	.32128	.19072	-.00372
#2	-.00310	-.00851	1.6200	.01047	.32770	.22846	.00004
#3	-.00095	-.00616	1.6277	.00980	.32389	.20727	.00229
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.03937**	**.07492**	**.02350**
Stddev	.00096	.00040	.00055
%RSD	2.4413	.53362	2.3494
#1	.04043	.07465	.02411
#2	.03855	.07474	.02336
#3	.03914	.07538	.02304
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8640.6**	**51402.**	**2468.9**
Stddev	11.6	25.	10.8
%RSD	.13368	.04908	.43542
#1	8653.3	51400.	2462.0
#2	8630.8	51378.	2463.4
#3	8637.6	51428.	2481.3

Approved: June 29, 2016

Sample Name: L1606090714 Acquired: 6/28/2016 23:25:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	.05270	.00261	.14849	.04532	.00003	61.576
Stddev	.00185	.00318	.00454	.00253	.00179	.00010	.493
%RSD	687.89	6.0257	174.05	1.7055	3.9414	357.59	.80130
#1	-.00157	.04958	.00318	.15133	.04382	.00007	61.008
#2	-.00110	.05258	.00683	.14767	.04484	-.00009	61.890
#3	.00185	.05593	-.00219	.14646	.04729	.00010	61.831
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	.00075	.00337	-.00019	.78003	7.3488	.01657
Stddev	.00021	.00021	.00077	.00126	.00831	.1082	.00291
%RSD	72.792	28.536	22.927	672.72	1.0653	1.4723	17.561
#1	.00008	.00100	.00398	.00126	.77075	7.4712	.01488
#2	.00027	.00062	.00363	-.00091	.78677	7.3091	.01993
#3	.00050	.00063	.00250	-.00091	.78257	7.2660	.01490
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.360	.06191	.00071	F 463.30	-.00030	.21561	.00177
Stddev	.046	.00525	.00020	1.03	.00019	.00661	.00305
%RSD	.37543	8.4821	27.996	.22272	64.080	3.0658	172.41
#1	12.310	.05872	.00072	464.48	-.00041	.22283	.00423
#2	12.369	.06797	.00051	462.60	-.00008	.21412	-.00164
#3	12.401	.05903	.00091	462.81	-.00041	.20986	.00271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090714 Acquired: 6/28/2016 23:25:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00300	-.00604	7.8267	-.00025	.74218	.01975	-.00197
Stddev	.00421	.00260	.1047	.00019	.00050	.00124	.00109
%RSD	140.31	43.094	1.3380	77.158	.06708	6.2763	55.271
#1	.00785	-.00902	7.8821	-.00023	.74201	.02073	-.00317
#2	.00099	-.00423	7.8920	-.00045	.74274	.02016	-.00166
#3	.00018	-.00486	7.7059	-.00006	.74179	.01835	-.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00316	.00407	.00256
Stddev	.00077	.00024	.00075
%RSD	24.497	5.8483	29.163
#1	.00354	.00412	.00330
#2	.00227	.00381	.00258
#3	.00367	.00428	.00181
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8639.6	51094.	2465.7
Stddev	41.6	335.	13.0
%RSD	.48197	.65487	.52745
#1	8594.7	50709.	2451.1
#2	8647.1	51260.	2476.1
#3	8677.0	51313.	2469.8

Approved: June 29, 2016

Sample Name: L1606090715 Acquired: 6/28/2016 23:29:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00285	.04407	.00140	.14412	.04143	.00005	59.558
Stddev	.00231	.00586	.00072	.00507	.00040	.00007	.224
%RSD	81.027	13.303	51.277	3.5199	.95567	130.41	.37536
#1	-.00334	.04994	.00156	.14606	.04131	.00012	59.814
#2	-.00033	.03822	.00202	.13837	.04111	-.00001	59.406
#3	-.00486	.04404	.00061	.14794	.04188	.00004	59.452
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00118	.00184	.00063	.76100	7.1671	.01922
Stddev	.00015	.00052	.00098	.00103	.01018	.0349	.00312
%RSD	163.96	43.892	53.087	163.96	1.3375	.48685	16.215
#1	.00011	.00058	.00246	-.00047	.77275	7.1527	.02093
#2	-.00007	.00153	.00071	.00158	.75530	7.1417	.01563
#3	.00022	.00141	.00236	.00077	.75494	7.2069	.02112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.054	.05684	.00116	F 450.35	.00088	.20516	-.00211
Stddev	.082	.00269	.00042	2.00	.00126	.00415	.00576
%RSD	.68190	4.7277	35.663	.44397	142.77	2.0226	273.36
#1	11.975	.05375	.00106	452.52	-.00055	.20427	-.00571
#2	12.048	.05807	.00162	449.96	.00139	.20968	.00454
#3	12.139	.05868	.00081	448.58	.00181	.20152	-.00515
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090715 Acquired: 6/28/2016 23:29:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00081**	**-.00862**	**7.6795**	**-.00039**	**.71676**	**.00461**	**-.00278**
Stddev	.00283	.00291	.1196	.00106	.00041	.01298	.00101
%RSD	347.45	33.797	1.5570	275.08	.05661	281.78	36.497
#1	-.00157	-.00587	7.7419	-.00040	.71645	-.00429	-.00356
#2	.00007	-.01167	7.7550	.00069	.71722	.01951	-.00313
#3	.00394	-.00832	7.5417	-.00144	.71660	-.00140	-.00163
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00152**	**.00115**	**.00113**
Stddev	.00105	.00008	.00105
%RSD	68.884	6.8866	93.346
#1	.00202	.00117	.00002
#2	.00032	.00106	.00212
#3	.00223	.00121	.00124
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8792.1**	**51880.**	**2496.3**
Stddev	133.4	299.	10.1
%RSD	1.5178	.57649	.40317
#1	8941.8	51623.	2484.7
#2	8685.6	51808.	2502.1
#3	8748.8	52208.	2502.2

Approved: June 29, 2016

Sample Name: L1606090716 Acquired: 6/28/2016 23:33:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00333	.06674	.00128	.14298	.04222	-.00000	59.504
Stddev	.00201	.01138	.00278	.00064	.00070	.00007	.484
%RSD	60.249	17.058	217.94	.44859	1.6629	94045.	.81312
#1	-.00169	.07800	-.00194	.14246	.04294	.00002	59.231
#2	-.00557	.05523	.00286	.14278	.04219	.00006	60.063
#3	-.00273	.06698	.00291	.14369	.04154	-.00008	59.219
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00092	.00339	.00042	.74101	7.3675	.01893
Stddev	.00006	.00016	.00146	.00135	.02065	.0749	.00240
%RSD	50.431	17.014	43.091	324.21	2.7866	1.0165	12.657
#1	.00017	.00075	.00375	-.00081	.76451	7.3956	.01995
#2	.00005	.00106	.00463	.00020	.72578	7.2826	.02065
#3	.00013	.00095	.00178	.00187	.73273	7.4242	.01619
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.094	.05669	.00049	F 451.79	.00147	.21191	-.00151
Stddev	.163	.00550	.00036	.50	.00054	.00242	.00084
%RSD	1.3447	9.6932	73.725	.11164	37.077	1.1421	55.736
#1	12.012	.05647	.00070	451.99	.00147	.21046	-.00232
#2	11.990	.05131	.00007	452.16	.00201	.21470	-.00064
#3	12.282	.06230	.00070	451.22	.00092	.21056	-.00157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090716 Acquired: 6/28/2016 23:33:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00348**	**.00089**	**7.5669**	**.00117**	**.72443**	**.01709**	**-.00245**
Stddev	.00354	.00448	.1572	.00050	.00298	.00437	.00201
%RSD	101.58	501.51	2.0775	42.865	.41088	25.593	82.267
#1	.00281	-.00275	7.6956	.00118	.72247	.02126	-.00474
#2	.00033	-.00046	7.6136	.00167	.72297	.01748	-.00099
#3	.00731	.00590	7.3917	.00066	.72785	.01253	-.00161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00241**	**.00548**	**.00402**
Stddev	.00054	.00017	.00083
%RSD	22.212	3.0592	20.651
#1	.00257	.00567	.00416
#2	.00285	.00542	.00312
#3	.00181	.00535	.00476
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8690.3**	**52175.**	**2516.1**
Stddev	61.6	126.	8.6
%RSD	.70844	.24177	.34375
#1	8760.8	52034.	2508.6
#2	8663.2	52277.	2514.2
#3	8646.9	52214.	2525.5

Approved: June 29, 2016

Sample Name: L1606090717S Acquired: 6/28/2016 23:37:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19035**	**4.9212**	**.20242**	**1.1173**	**.53870**	**.02399**	**64.987**
Stddev	.00066	.0138	.00438	.0089	.00438	.00023	.548
%RSD	.34417	.28081	2.1640	.79744	.81379	.96737	.84372
#1	.19107	4.9363	.19945	1.1238	.54193	.02421	65.145
#2	.19018	4.9092	.20745	1.1071	.54046	.02375	65.440
#3	.18980	4.9181	.20036	1.1209	.53371	.02402	64.378
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02424**	**.09697**	**.24272**	**.24153**	**2.7000**	**32.302**	**.53435**
Stddev	.00017	.00063	.00128	.00115	.0542	.305	.00423
%RSD	.69750	.64652	.52774	.47706	2.0085	.94343	.79145
#1	.02434	.09701	.24384	.24064	2.6890	32.507	.53012
#2	.02404	.09757	.24299	.24283	2.7589	32.447	.53858
#3	.02433	.09632	.24133	.24112	2.6521	31.952	.53434
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**16.882**	**.30451**	**.49711**	F **482.71**	**.24091**	**5.1537**	**.23668**
Stddev	.177	.00348	.00560	3.01	.00269	.0308	.00218
%RSD	1.0459	1.1415	1.1272	.62426	1.1176	.59723	.92237
#1	16.684	.30381	.50102	485.98	.24166	5.1882	.23907
#2	16.940	.30143	.49961	480.04	.24314	5.1434	.23479
#3	17.023	.30828	.49069	482.12	.23792	5.1293	.23620
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090717S Acquired: 6/28/2016 23:37:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.58578**	**.18538**	**10.159**	**.48811**	**1.2154**	**.49634**	**.23046**
Stddev	.00448	.00618	.043	.00637	.0098	.00608	.00038
%RSD	.76433	3.3363	.42424	1.3058	.80446	1.2245	.16463
#1	.58622	.18565	10.182	.49235	1.2180	.50327	.23047
#2	.59002	.19142	10.185	.49120	1.2236	.49195	.23007
#3	.58110	.17906	10.109	.48078	1.2045	.49379	.23083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.48987**	**.55148**	**.00343**
Stddev	.00176	.00599	.00013
%RSD	.35980	1.0854	3.7809
#1	.49143	.55650	.00328
#2	.49024	.55309	.00353
#3	.48796	.54486	.00348
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8539.5**	**51024.**	**2450.9**
Stddev	15.7	223.	7.4
%RSD	.18405	.43733	.30335
#1	8544.9	50769.	2447.1
#2	8551.8	51123.	2446.2
#3	8521.8	51181.	2459.5

Approved: June 29, 2016

Sample Name: L1606090718S Acquired: 6/28/2016 23:41:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19819**	**5.0418**	**.21172**	**1.1474**	**.55608**	**.02463**	**66.735**
Stddev	.00185	.0069	.00260	.0063	.00500	.00008	.403
%RSD	.93500	.13782	1.2291	.55360	.89834	.32817	.60319
#1	.19951	5.0496	.20902	1.1497	.56117	.02462	67.001
#2	.19607	5.0393	.21422	1.1402	.55588	.02472	66.933
#3	.19898	5.0364	.21193	1.1522	.55119	.02456	66.272
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02500**	**.10059**	**.24966**	**.24894**	**2.7946**	**32.968**	**.54262**
Stddev	.00038	.00067	.00147	.00202	.0041	.141	.00182
%RSD	1.5041	.66457	.58723	.81332	.14772	.42769	.33489
#1	.02475	.10047	.25066	.24998	2.7907	33.127	.54285
#2	.02543	.10131	.25035	.25022	2.7989	32.857	.54431
#3	.02482	.09999	.24798	.24660	2.7943	32.920	.54070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**17.345**	**.31116**	**.51510**	F **490.28**	**.24919**	**5.3591**	**.24651**
Stddev	.105	.00167	.00292	3.51	.00358	.0052	.00234
%RSD	.60374	.53669	.56649	.71621	1.4381	.09607	.95097
#1	17.354	.31227	.51623	493.94	.25164	5.3628	.24477
#2	17.445	.31197	.51728	489.95	.25087	5.3613	.24917
#3	17.236	.30924	.51178	486.94	.24508	5.3532	.24558
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090718S Acquired: 6/28/2016 23:41:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-07

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.61053**	**.18691**	**10.528**	**.50556**	**1.2260**	**.48937**	**.23724**
Stddev	.00166	.00666	.059	.00312	.0084	.00665	.00363
%RSD	.27229	3.5608	.55758	.61700	.68851	1.3593	1.5298
#1	.60861	.19403	10.543	.50630	1.2334	.49010	.24128
#2	.61141	.18085	10.578	.50824	1.2277	.48238	.23618
#3	.61157	.18584	10.464	.50214	1.2168	.49562	.23425
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.50091**	**.51523**	**.00172**
Stddev	.00126	.00263	.00010
%RSD	.25176	.51067	5.6499
#1	.50233	.51612	.00161
#2	.50044	.51730	.00180
#3	.49994	.51227	.00174
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8681.6**	**51146.**	**2422.3**
Stddev	38.8	474.	15.3
%RSD	.44711	.92760	.63064
#1	8639.4	50613.	2406.1
#2	8715.8	51303.	2424.3
#3	8689.6	51522.	2436.4

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 23:44:53 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39087**	**9.8878**	**.39267**	**.49465**	**1.0058**	**.04827**	**9.9182**	**.04932**
Stddev	.00134	.0059	.00349	.00240	.0067	.00007	.1083	.00019
%RSD	.34212	.05973	.88952	.48553	.66475	.14231	1.0921	.38581
#1	.39238	9.8935	.39657	.49655	.99820	.04819	9.9431	.04942
#2	.39039	9.8883	.38984	.49195	1.0109	.04832	10.012	.04944
#3	.38985	9.8817	.39158	.49545	1.0082	.04830	9.7996	.04910
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19738**	**.48910**	**.49523**	**3.9669**	**49.882**	**1.0110**	**9.9379**	**.49619**
Stddev	.00146	.00249	.00033	.0535	.426	.0100	.0856	.00254
%RSD	.73891	.50943	.06565	1.3490	.85413	.98572	.86106	.51125
#1	.19864	.48643	.49560	3.9112	49.398	1.0025	9.9597	.49529
#2	.19771	.49137	.49512	4.0179	50.203	1.0219	10.010	.49906
#3	.19578	.48951	.49498	3.9715	50.043	1.0085	9.8435	.49423
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99366**	**51.102**	**.49479**	**9.8180**	**.49245**	**1.1839**	**.38331**	**4.9252**
Stddev	.00229	.296	.00112	.0436	.00417	.0076	.00756	.0162
%RSD	.23040	.57951	.22563	.44368	.84739	.64567	1.9734	.32807
#1	.99519	50.797	.49605	9.8652	.48874	1.1905	.38626	4.9385
#2	.99476	51.389	.49438	9.8094	.49696	1.1858	.38895	4.9300
#3	.99103	51.119	.49393	9.7793	.49165	1.1755	.37471	4.9072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 23:44:53 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98988	.99765	.95643	.49291	.97109	.99816	1.0264
Stddev	.00005	.00662	.00491	.00612	.00246	.00225	.0069
%RSD	.00544	.66367	.51341	1.2415	.25373	.22587	.66714
#1	.98986	.99154	.96068	.49817	.96993	.99855	1.0228
#2	.98985	1.0047	.95106	.49436	.97392	1.0002	1.0343
#3	.98995	.99673	.95756	.48619	.96943	.99574	1.0221
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8852.4	53248.	2485.2
Stddev	68.1	165.	17.6
%RSD	.76947	.31035	.70769
#1	8891.9	53420.	2501.0
#2	8891.6	53232.	2466.3
#3	8773.7	53091.	2488.4

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 23:48:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	.00890	-.00396	.00204	.00494	-.00000	-.03955	.00028
Stddev	.00061	.00649	.00226	.00096	.00139	.00006	.02980	.00016
%RSD	121.10	72.941	57.036	47.171	28.084	1878.9	75.346	56.000
#1	.00012	.00140	-.00135	.00236	.00433	-.00007	-.00514	.00025
#2	.00019	.01256	-.00530	.00280	.00653	.00003	-.05651	.00014
#3	.00120	.01274	-.00524	.00096	.00396	.00003	-.05701	.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00030	.00009	-.00055	-.00135	.02566	.00472	.12990	-.00124
Stddev	.00026	.00133	.00103	.03748	.11658	.00694	.07003	.00153
%RSD	88.905	1496.9	185.85	2784.8	454.39	146.81	53.907	123.10
#1	-.00021	.00162	-.00060	-.04304	-.10891	.00709	.05840	.00042
#2	-.00009	-.00079	.00050	.02953	.08997	-.00309	.19836	-.00156
#3	-.00059	-.00057	-.00156	.00947	.09591	.01017	.13295	-.00259
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.11232	.00016	-.00070	-.00263	.00402	-.00130	.00878
Stddev	.00052	.01221	.00035	.00315	.00378	.00429	.00491	.00194
%RSD	233.23	10.874	219.15	451.13	143.82	106.54	378.44	22.144
#1	.00018	.09853	.00056	-.00433	-.00468	.00891	-.00563	.01097
#2	.00076	.12179	-.00003	.00108	-.00494	.00227	.00404	.00808
#3	-.00027	.11663	-.00005	.00116	.00173	.00089	-.00230	.00727
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 23:48:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.00041	.00381	-.00016	-.00081	-.00009	-.00076
Stddev	.00089	.00029	.01190	.00136	.00028	.00006	.00080
%RSD	548.13	70.796	312.63	830.39	34.214	65.418	104.29
#1	.00094	.00011	.00779	-.00069	-.00088	-.00002	-.00004
#2	-.00080	.00043	-.00957	-.00118	-.00051	-.00014	-.00063
#3	.00035	.00070	.01320	.00138	-.00105	-.00011	-.00162
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8917.9	53751.	2458.4
Stddev	22.4	401.	6.6
%RSD	.25103	.74546	.27049
#1	8939.0	53385.	2451.2
#2	8920.3	53689.	2464.4
#3	8894.4	54179.	2459.5

Approved: June 29, 2016

Sample Name: L1606090719SD Acquired: 6/28/2016 23:52:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19494	4.9876	.20649	1.1206	.54899	.02446	63.684
Stddev	.00341	.0267	.00227	.0072	.00266	.00017	.197
%RSD	1.7503	.53500	1.0987	.64357	.48472	.70636	.30953
#1	.19841	5.0143	.20896	1.1267	.55198	.02458	63.895
#2	.19159	4.9875	.20600	1.1224	.54814	.02454	63.505
#3	.19483	4.9610	.20450	1.1126	.54686	.02426	63.652
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02431	.09859	.24820	.24356	2.7627	32.523	.53917
Stddev	.00024	.00035	.00106	.00236	.0104	.139	.00283
%RSD	.97941	.35770	.42716	.97084	.37521	.42742	.52434
#1	.02452	.09895	.24891	.24428	2.7631	32.683	.54200
#2	.02405	.09857	.24872	.24548	2.7521	32.438	.53915
#3	.02436	.09824	.24698	.24092	2.7728	32.447	.53635
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	16.744	.30262	.50161	F 474.44	.24121	5.1977	.24211
Stddev	.092	.00376	.00063	1.95	.00134	.0033	.00235
%RSD	.55099	1.2423	.12466	.41010	.55486	.06327	.97156
#1	16.843	.30299	.50231	476.69	.24248	5.1948	.24104
#2	16.730	.29869	.50142	473.46	.24134	5.2012	.24049
#3	16.660	.30618	.50110	473.18	.23981	5.1970	.24481
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090719SD Acquired: 6/28/2016 23:52:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-06

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.59430	.19071	9.9338	.49319	1.2061	.50455	.23257
Stddev	.00255	.00879	.0338	.00371	.0041	.01325	.00642
%RSD	.42853	4.6099	.34057	.75174	.34161	2.6270	2.7619
#1	.59360	.18296	9.9720	.49283	1.2102	.50667	.23886
#2	.59713	.20026	9.9217	.49706	1.2019	.49036	.23282
#3	.59219	.18890	9.9077	.48967	1.2063	.51661	.22602
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.49849	.50582	.00353
Stddev	.00523	.00152	.00043
%RSD	1.0487	.30029	12.202
#1	.50407	.50610	.00382
#2	.49770	.50717	.00372
#3	.49371	.50417	.00303
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8401.5	50047.	2408.6
Stddev	47.5	258.	12.0
%RSD	.56522	.51528	.50025
#1	8347.1	50008.	2396.9
#2	8422.6	49810.	2408.1
#3	8434.7	50321.	2421.0

Approved: June 29, 2016

Sample Name: L1606090720SD Acquired: 6/28/2016 23:56:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19353**	**5.0216**	**.20252**	**1.1352**	**.55071**	**.02451**	**66.439**
Stddev	.00144	.0141	.00254	.0111	.00305	.00002	.233
%RSD	.74536	.28090	1.2537	.97553	.55460	.08092	.35135
#1	.19274	5.0377	.20544	1.1467	.55275	.02452	66.357
#2	.19265	5.0157	.20132	1.1247	.54720	.02453	66.259
#3	.19519	5.0114	.20080	1.1342	.55218	.02449	66.703
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02480**	**.09885**	**.24939**	**.24699**	**2.8311**	**33.202**	**.54334**
Stddev	.00042	.00109	.00128	.00315	.0563	.083	.00155
%RSD	1.6782	1.1039	.51473	1.2735	1.9886	.24955	.28467
#1	.02471	.09937	.24793	.24805	2.7662	33.298	.54161
#2	.02525	.09958	.24991	.24947	2.8664	33.150	.54461
#3	.02443	.09759	.25034	.24345	2.8608	33.159	.54379
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**17.468**	**.30738**	**.50680**	F **486.61**	**.24492**	**5.2693**	**.23893**
Stddev	.072	.00145	.00532	.70	.00225	.0369	.00191
%RSD	.41344	.47181	1.0490	.14406	.91921	.69961	.79970
#1	17.534	.30875	.50843	487.39	.24519	5.2707	.23692
#2	17.479	.30586	.51112	486.41	.24702	5.3054	.24072
#3	17.391	.30753	.50086	486.04	.24254	5.2317	.23916
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090720SD Acquired: 6/28/2016 23:56:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-08

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.60142**	**.18637**	**10.363**	**.49767**	**1.2283**	**.48765**	**.23702**
Stddev	.00105	.00245	.038	.00779	.0034	.01138	.00072
%RSD	.17417	1.3166	.36865	1.5652	.27874	2.3335	.30474
#1	.60114	.18602	10.365	.50037	1.2270	.48994	.23679
#2	.60258	.18411	10.400	.50376	1.2257	.49771	.23784
#3	.60054	.18898	10.323	.48889	1.2322	.47530	.23645
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.49895**	**.50500**	**.00250**
Stddev	.00095	.00538	.00016
%RSD	.19000	1.0655	6.4596
#1	.49928	.50545	.00254
#2	.49789	.51014	.00232
#3	.49969	.49940	.00263
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8545.4**	**50337.**	**2417.3**
Stddev	21.8	38.	36.4
%RSD	.25460	.07587	1.5070
#1	8520.7	50381.	2377.2
#2	8553.5	50312.	2448.3
#3	8561.9	50318.	2426.3

Approved: June 29, 2016

Sample Name: L1606090721 Acquired: 6/28/2016 23:59:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.02815	.15472	.21993	.04999	-.00009	89.088	.00036
Stddev	.00081	.00286	.00224	.00203	.00067	.00013	.252	.00044
%RSD	366.68	10.152	1.4476	.92302	1.3456	150.92	.28326	121.20
#1	-.00034	.03039	.15696	.22227	.04930	.00005	89.280	.00047
#2	-.00015	.02493	.15248	.21860	.05065	-.00021	89.181	.00073
#3	.00116	.02913	.15471	.21893	.05004	-.00011	88.802	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.00053	-.00019	3.2279	4.7476	.04543	58.195	.03506
Stddev	.00051	.00109	.00130	.0396	.0330	.00398	.306	.00452
%RSD	326.23	207.39	678.63	1.2283	.69494	8.7612	.52530	12.890
#1	.00000	.00087	.00120	3.2707	4.7445	.04159	58.337	.03505
#2	.00073	-.00070	-.00039	3.2207	4.7162	.04953	57.844	.03055
#3	-.00026	.00141	-.00138	3.1923	4.7820	.04517	58.404	.03959
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00255	148.09	.00067	.00784	-.00039	.00421	.00052	8.2957
Stddev	.00041	.74	.00056	.00761	.00326	.00112	.00642	.0916
%RSD	15.975	.49798	83.836	97.017	843.36	26.690	1239.6	1.1044
#1	.00242	148.81	.00126	.01662	.00333	.00379	.00730	8.3545
#2	.00222	148.12	.00060	.00379	-.00277	.00548	-.00546	8.3426
#3	.00300	147.34	.00015	.00312	-.00172	.00336	-.00029	8.1902
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090721 Acquired: 6/28/2016 23:59:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00030**	**2.8879**	**-.00940**	**-.00107**	**-.00134**	**.00848**	**-.00035**
Stddev	.00043	.0149	.00196	.00331	.00181	.00045	.00038
%RSD	143.26	.51746	20.833	308.32	134.84	5.2706	107.75
#1	.00019	2.8997	-.00999	-.00402	.00042	.00893	-.00019
#2	-.00051	2.8929	-.00722	-.00170	-.00320	.00845	-.00008
#3	-.00059	2.8711	-.01100	.00251	-.00126	.00804	-.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8758.0**	**52368.**	**2466.4**
Stddev	37.5	325.	5.9
%RSD	.42875	.61986	.23758
#1	8801.1	52031.	2461.0
#2	8740.8	52395.	2465.6
#3	8732.2	52679.	2472.6

Approved: June 29, 2016

Sample Name: L1606090721PS Acquired: 6/29/2016 0:03:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574358-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20019**	**5.1576**	**.34766**	**1.2114**	**.56381**	**.02498**	**84.663**	**.02573**
Stddev	.00211	.0098	.00116	.0050	.00202	.00020	.418	.00033
%RSD	1.0557	.19056	.33293	.41263	.35822	.78492	.49396	1.2934
#1	.20254	5.1664	.34633	1.2164	.56443	.02520	84.492	.02609
#2	.19843	5.1594	.34818	1.2115	.56156	.02488	84.358	.02565
#3	.19962	5.1470	.34846	1.2064	.56545	.02485	85.140	.02544
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10080**	**.25421**	**.24916**	**4.8701**	**30.624**	**.57779**	**56.693**	**.28817**
Stddev	.00058	.00200	.00195	.0302	.149	.00202	.131	.00453
%RSD	.57642	.78787	.78160	.62019	.48743	.34921	.23190	1.5720
#1	.10116	.25562	.25054	4.8792	30.503	.58012	56.633	.28367
#2	.10112	.25192	.25001	4.8364	30.577	.57659	56.844	.28809
#3	.10013	.25509	.24693	4.8947	30.791	.57665	56.603	.29273
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52502**	**158.09**	**.24876**	**5.1636**	**.25008**	**.61265**	**.20014**	**9.8671**
Stddev	.00212	.60	.00180	.0181	.00331	.00479	.00936	.0394
%RSD	.40403	.38248	.72227	.35030	1.3223	.78195	4.6766	.39881
#1	.52705	157.73	.25045	5.1793	.25359	.61277	.21037	9.9112
#2	.52519	157.76	.24895	5.1678	.24962	.60780	.19201	9.8547
#3	.52282	158.79	.24687	5.1438	.24702	.61738	.19805	9.8355
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090721PS Acquired: 6/29/2016 0:03:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574358-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51223**	**3.0821**	**.49582**	**.24982**	**.51140**	**.51568**	**.00008**
Stddev	.00186	.0080	.00627	.00152	.00318	.00201	.00023
%RSD	.36371	.25984	1.2655	.60916	.62230	.38914	288.95
#1	.51427	3.0793	.49082	.24918	.51445	.51741	-.00011
#2	.51181	3.0759	.50286	.24872	.51164	.51616	.00001
#3	.51062	3.0912	.49379	.25156	.50810	.51348	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8832.3**	**52453.**	**2508.5**
Stddev	83.5	84.	29.4
%RSD	.94590	.16065	1.1725
#1	8737.3	52363.	2520.1
#2	8865.3	52530.	2530.3
#3	8894.3	52465.	2475.0

Approved: June 29, 2016

Sample Name: L1606090721SDL Acquired: 6/29/2016 0:07:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574358-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00109**	**.01687**	**.03369**	**.04578**	**.01396**	**.00004**	**18.552**	**-.00004**
Stddev	.00056	.00689	.00354	.00177	.00096	.00009	.306	.00023
%RSD	51.289	40.861	10.514	3.8702	6.8513	202.11	1.6474	556.22
#1	-.00057	.01633	.03244	.04378	.01352	-.00003	18.207	-.00012
#2	-.00168	.02401	.03094	.04715	.01506	.00002	18.661	-.00023
#3	-.00102	.01026	.03768	.04641	.01331	.00014	18.789	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00027**	**.00087**	**.00035**	**.65230**	**1.0355**	**.01184**	**12.221**	**.00894**
Stddev	.00063	.00100	.00121	.00671	.0941	.00202	.100	.00309
%RSD	228.11	115.30	345.85	1.0286	9.0852	17.078	.82191	34.543
#1	-.00017	.00049	.00025	.64609	1.1157	.01374	12.150	.00874
#2	-.00095	.00201	.00160	.65942	.93195	.00972	12.336	.01212
#3	.00029	.00011	-.00080	.65140	1.0588	.01205	12.177	.00595
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00056**	**30.325**	**-.00027**	**.00422**	**-.00298**	**-.00092**	**.00109**	**1.7914**
Stddev	.00016	.440	.00045	.00425	.00057	.00256	.00169	.0091
%RSD	27.689	1.4521	163.54	100.75	19.102	277.37	155.02	.50513
#1	.00039	29.824	.00017	.00885	-.00259	-.00352	.00170	1.7813
#2	.00063	30.649	-.00072	.00329	-.00363	.00160	.00240	1.7986
#3	.00068	30.503	-.00027	.00050	-.00270	-.00084	-.00082	1.7945
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090721SDL Acquired: 6/29/2016 0:07:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574358-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00031**	**.60742**	**-.00374**	**-.00166**	**-.00033**	**.00256**	**-.00085**
Stddev	.00088	.00734	.00118	.00273	.00106	.00022	.00027
%RSD	279.18	1.2083	31.693	164.00	318.25	8.4916	31.787
#1	.00070	.59907	-.00244	.00132	.00067	.00233	-.00090
#2	-.00077	.61036	-.00402	-.00403	-.00023	.00276	-.00109
#3	-.00087	.61284	-.00475	-.00228	-.00144	.00259	-.00056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9187.1**	**55503.**	**2599.5**
Stddev	26.1	119.	10.7
%RSD	.28437	.21476	.41022
#1	9217.2	55501.	2602.6
#2	9170.3	55385.	2587.6
#3	9173.8	55623.	2608.2

Approved: June 29, 2016

Sample Name: L1606090721SDL Acquired: 6/29/2016 0:11:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574358-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00118	.01500	.00516	.01043	.00379	.00000	3.7995	-.00012
Stddev	.00135	.01168	.00534	.00108	.00026	.00003	.1244	.00014
%RSD	115.03	77.862	103.64	10.384	6.8212	2470.3	3.2736	120.38
#1	.00206	.02216	.00814	.01042	.00375	-.00003	3.6648	-.00028
#2	.00185	.00152	-.00101	.01152	.00355	.00003	3.8235	-.00005
#3	-.00038	.02133	.00835	.00935	.00407	.00000	3.9101	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	.00065	-.00055	.11045	.13865	.00675	2.5225	.00092
Stddev	.00015	.00092	.00086	.02744	.23040	.00333	.0784	.00193
%RSD	109.63	141.35	157.85	24.848	166.17	49.354	3.1085	209.31
#1	.00002	-.00027	.00015	.09324	.28975	.00394	2.5026	.00021
#2	-.00015	.00158	-.00028	.14210	.25272	.01043	2.6090	-.00055
#3	-.00028	.00066	-.00151	.09600	-.12653	.00587	2.4560	.00311
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	6.3739	.00039	-.00167	-.00065	-.00192	-.00400	.35805
Stddev	.00019	.1221	.00077	.00568	.00220	.00225	.00392	.00092
%RSD	80.325	1.9149	193.81	340.49	339.56	117.21	97.951	.25782
#1	-.00041	6.2501	.00122	.00247	-.00170	-.00154	.00049	.35884
#2	-.00025	6.3776	.00024	.00067	-.00212	-.00435	-.00579	.35826
#3	-.00004	6.4941	-.00028	-.00815	.00188	.00011	-.00671	.35703
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090721SDL Acquired: 6/29/2016 0:11:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574358-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00035**	**.12378**	**-.00436**	**-.00134**	**-.00055**	**.00073**	**-.00039**
Stddev	.00019	.00308	.00683	.00086	.00034	.00007	.00029
%RSD	53.797	2.4878	156.69	64.146	61.988	8.9830	73.514
#1	-.00044	.12023	-.00553	-.00058	-.00062	.00068	-.00036
#2	-.00014	.12543	.00298	-.00228	-.00018	.00081	-.00070
#3	-.00049	.12569	-.01052	-.00118	-.00084	.00071	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9402.9**	**57082.**	**2645.4**
Stddev	82.4	75.	15.8
%RSD	.87665	.13174	.59891
#1	9406.7	56995.	2659.6
#2	9483.5	57126.	2628.3
#3	9318.7	57125.	2648.2

Approved: June 29, 2016

Sample Name: L1606090722 Acquired: 6/29/2016 0:15:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.01028	.16985	.22958	.04883	-.00008	90.394	.00025
Stddev	.00324	.00963	.00396	.00222	.00061	.00002	.121	.00028
%RSD	4949.1	93.723	2.3290	.96586	1.2550	23.760	.13404	111.24
#1	-.00285	.02132	.16813	.22730	.04935	-.00010	90.382	.00038
#2	.00356	.00356	.17438	.23172	.04815	-.00006	90.279	.00045
#3	-.00051	.00596	.16705	.22972	.04898	-.00008	90.521	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.00041	.00087	3.5026	4.9295	.04910	59.267	.03325
Stddev	.00022	.00111	.00098	.0284	.0894	.00151	.265	.00219
%RSD	60.847	271.25	113.61	.80943	1.8143	3.0855	.44788	6.5929
#1	.00021	.00134	-.00025	3.5352	5.0034	.05063	59.294	.03495
#2	.00061	-.00082	.00122	3.4887	4.9549	.04760	58.989	.03402
#3	.00025	.00070	.00163	3.4838	4.8301	.04907	59.518	.03077
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00244	153.19	.00041	.00458	-.00053	.00040	-.00283	8.7875
Stddev	.00007	.41	.00041	.00497	.00262	.00456	.00573	.1224
%RSD	2.9584	.27064	99.304	108.46	489.40	1152.0	202.89	1.3923
#1	.00237	153.49	.00084	-.00022	.00239	-.00465	-.00944	8.8015
#2	.00251	152.72	.00004	.00427	-.00266	.00424	.00068	8.9022
#3	.00243	153.37	.00034	.00970	-.00134	.00160	.00029	8.6587
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090722 Acquired: 6/29/2016 0:15:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	2.9518	-.00995	-.00362	-.00096	.00440	.00001
Stddev	.00028	.0074	.00793	.00237	.00054	.00006	.00056
%RSD	32.226	.25211	79.682	65.490	56.708	1.2532	6214.2
#1	.00100	2.9566	-.00351	-.00118	-.00042	.00436	.00025
#2	.00104	2.9432	-.00753	-.00591	-.00150	.00446	-.00063
#3	.00054	2.9556	-.01881	-.00378	-.00096	.00438	.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9054.6	54099.	2585.8
Stddev	57.4	436.	25.2
%RSD	.63423	.80554	.97528
#1	8988.4	53629.	2556.7
#2	9090.0	54180.	2602.1
#3	9085.5	54489.	2598.5

Approved: June 29, 2016

Sample Name: L1606090701 Acquired: 6/29/2016 0:18:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 500 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00057**	**.00128**	**.00101**	**.00061**	**.00104**	**-.00005**	**.00169**
Stddev	.00126	.00585	.00355	.00032	.00091	.00002	.04030
%RSD	221.80	456.51	353.52	53.224	87.506	37.484	2388.3
#1	-.00202	.00804	-.00224	.00024	.00004	-.00004	.00221
#2	.00024	-.00195	.00046	.00078	.00184	-.00004	.04172
#3	.00008	-.00224	.00480	.00082	.00125	-.00008	-.03887
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**.00013**	**.00013**	**-.00052**	F **-.02173**	**.03273**	**.00032**
Stddev	.00034	.00034	.00036	.00092	.03139	.06816	.00284
%RSD	181.69	267.06	267.98	175.61	144.44	208.24	885.16
#1	-.00016	-.00013	.00000	.00035	-.00211	-.02317	-.00284
#2	.00052	.00001	.00054	-.00148	-.05793	.01270	.00268
#3	.00020	.00050	-.00014	-.00044	-.00515	.10865	.00112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03898**	**-.00058**	**-.00045**	**13.251**	**.00077**	**.02846**	**.00119**
Stddev	.01377	.00586	.00050	.124	.00076	.00679	.00468
%RSD	35.318	1010.5	110.38	.93889	99.705	23.842	394.31
#1	.05488	.00610	.00012	13.121	-.00004	.03395	.00279
#2	.03088	-.00485	-.00078	13.369	.00087	.03056	.00485
#3	.03118	-.00299	-.00069	13.262	.00148	.02087	-.00408
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606090701 Acquired: 6/29/2016 0:18:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 500 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00122	-.00537	-.00914	-.00006	.00159	.00532	.00037
Stddev	.00582	.00242	.00090	.00019	.00051	.00299	.00136
%RSD	476.64	45.078	9.7969	317.95	32.073	56.250	371.00
#1	.00683	-.00708	-.00955	.00015	.00207	.00837	-.00054
#2	.00162	-.00260	-.00812	-.00022	.00105	.00517	.00193
#3	-.00479	-.00644	-.00976	-.00012	.00165	.00240	-.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00093	.00059	-.00016
Stddev	.00081	.00031	.00018
%RSD	87.282	53.168	114.46
#1	.00149	.00024	-.00018
#2	-.00000	.00070	.00003
#3	.00130	.00083	-.00034
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10015.	59457.	2772.0
Stddev	42.	185.	13.1
%RSD	.41543	.31142	.47139
#1	9974.4	59316.	2765.7
#2	10014.	59389.	2763.3
#3	10058.	59667.	2787.0

Approved: June 29, 2016

Sample Name: L1606090702 Acquired: 6/29/2016 0:22:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 500 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**.01099**	**.00749**	**.00123**	**.00036**	**-.00012**	**-.07492**	**-.00003**
Stddev	.00077	.00938	.00313	.00162	.00100	.00005	.00757	.00027
%RSD	273.98	85.420	41.773	131.72	279.74	40.850	10.106	1080.6
#1	-.00115	.00075	.00467	.00308	.00068	-.00017	-.07360	-.00000
#2	.00027	.01919	.00694	.00049	.00115	-.00008	-.08306	.00024
#3	.00004	.01302	.01085	.00011	-.00076	-.00011	-.06809	-.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**-.00052**	**.00026**	**.00386**	**.16270**	**.00415**	**.04673**	**.00035**
Stddev	.00014	.00036	.00083	.03541	.08205	.00393	.05332	.00318
%RSD	207.94	70.672	315.94	916.99	50.431	94.730	114.10	912.30
#1	-.00005	-.00049	.00109	.03399	.24654	.00843	.09724	.00046
#2	.00003	-.00089	.00028	-.03514	.15901	.00071	-.00901	-.00289
#3	.00022	-.00017	-.00058	.01273	.08256	.00330	.05196	.00347
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00011**	**13.268**	**.00028**	**.03344**	**-.00107**	**.00163**	**-.00334**	**-.00974**
Stddev	.00034	.166	.00066	.00168	.00231	.00202	.00700	.00231
%RSD	306.42	1.2519	239.13	5.0110	216.85	124.05	209.45	23.731
#1	-.00024	13.091	.00009	.03433	-.00011	.00058	-.00482	-.01123
#2	.00014	13.421	-.00027	.03151	-.00370	.00396	.00428	-.01090
#3	.00044	13.292	.00101	.03449	.00061	.00035	-.00947	-.00708
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090702 Acquired: 6/29/2016 0:22:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 500 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00006	.00164	-.00565	.00199	.00055	.00050	.00004
Stddev	.00079	.00045	.00790	.00125	.00014	.00028	.00055
%RSD	1277.4	27.361	139.76	62.800	24.818	56.699	1243.8
#1	-.00043	.00119	-.00017	.00104	.00045	.00053	.00062
#2	.00085	.00209	-.00208	.00153	.00070	.00020	-.00000
#3	-.00061	.00165	-.01471	.00341	.00048	.00076	-.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9738.1	60303.	2841.7
Stddev	547.0	130.	36.2
%RSD	5.6170	.21550	1.2725
#1	10017.	60254.	2883.1
#2	10090.	60205.	2816.3
#3	9107.9	60450.	2825.6

Approved: June 29, 2016

Sample Name: L1606090703 Acquired: 6/29/2016 0:26:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 500 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00034	.01419	.00833	.00267	.00573	.00007	-.01298	.00028
Stddev	.00111	.00653	.00123	.00250	.00075	.00004	.01762	.00008
%RSD	324.10	46.043	14.722	93.692	13.099	59.317	135.74	30.625
#1	.00043	.01132	.00941	.00414	.00600	.00009	-.02179	.00028
#2	-.00162	.02166	.00699	-.00022	.00488	.00010	-.02446	.00036
#3	.00015	.00958	.00859	.00408	.00631	.00002	.00731	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	.00028	-.00007	.00093	-.08334	.00442	.05416	-.00223
Stddev	.00033	.00039	.00100	.03445	.03697	.00209	.12696	.00364
%RSD	714.65	138.78	1370.0	3703.8	44.357	47.372	234.43	163.51
#1	-.00035	-.00004	.00065	.03766	-.04634	.00636	-.08396	-.00517
#2	-.00009	.00071	.00035	-.03067	-.08341	.00220	.08067	-.00335
#3	.00030	.00016	-.00122	-.00419	-.12027	.00471	.16576	.00184
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	12.860	.00056	.03060	.00372	.00167	-.00610	-.00860
Stddev	.00033	.114	.00047	.00278	.00309	.00242	.00720	.00231
%RSD	68.677	.88636	84.171	9.0836	83.096	145.58	118.12	26.807
#1	.00085	12.729	.00085	.03311	.00720	.00039	-.01435	-.00824
#2	.00020	12.918	.00082	.03107	.00133	.00015	-.00106	-.01107
#3	.00040	12.934	.00002	.02761	.00261	.00446	-.00289	-.00650
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090703 Acquired: 6/29/2016 0:26:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 500 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00163	.00150	-.00142	-.00028	.00054	-.00031
Stddev	.00154	.00020	.00473	.00186	.00089	.00012	.00014
%RSD	833.10	12.147	314.69	131.50	317.50	23.204	44.658
#1	-.00148	.00177	.00555	.00056	-.00022	.00040	-.00038
#2	.00049	.00140	.00264	-.00313	-.00119	.00057	-.00015
#3	.00155	.00171	-.00369	-.00168	.00058	.00064	-.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8961.9	53770.	2483.7
Stddev	24.6	200.	12.6
%RSD	.27397	.37198	.50552
#1	8948.0	53948.	2494.1
#2	8947.6	53810.	2487.2
#3	8990.3	53554.	2469.8

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 0:30:45 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.38698	9.7002	.38881	.48586	.97844	.04760	9.6997	.04862
Stddev	.00201	.0203	.00157	.00014	.00815	.00008	.1085	.00031
%RSD	.51885	.20953	.40456	.02940	.83333	.17484	1.1184	.62844
#1	.38537	9.7101	.38875	.48602	.97139	.04767	9.5885	.04859
#2	.38923	9.7137	.39041	.48575	.97656	.04751	9.7056	.04893
#3	.38635	9.6768	.38727	.48580	.98737	.04761	9.8052	.04833
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19474	.48277	.49043	3.8560	48.915	.99456	9.7949	.48405
Stddev	.00051	.00254	.00033	.0609	.335	.00767	.1720	.00787
%RSD	.26333	.52661	.06686	1.5789	.68546	.77131	1.7563	1.6253
#1	.19457	.48338	.49081	3.8528	48.576	.99076	9.7412	.47822
#2	.19531	.48496	.49029	3.7967	48.921	.98953	9.9874	.49300
#3	.19433	.47998	.49020	3.9184	49.247	1.0034	9.6561	.48095
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98170	49.583	.48813	9.7294	.48732	1.1783	.39418	4.8785
Stddev	.00158	.461	.00119	.0077	.00141	.0038	.00511	.0212
%RSD	.16102	.92944	.24398	.07901	.28900	.32524	1.2962	.43401
#1	.98309	49.171	.48947	9.7258	.48621	1.1793	.39983	4.8671
#2	.98204	49.497	.48720	9.7383	.48891	1.1815	.38987	4.9030
#3	.97998	50.081	.48770	9.7242	.48685	1.1740	.39285	4.8655
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 0:30:45 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.97834	.97494	.95108	.49247	.96191	.98339	1.0034
Stddev	.00099	.00909	.00833	.00178	.00224	.00090	.0089
%RSD	.10136	.93258	.87586	.36227	.23243	.09113	.88886
#1	.97841	.96663	.94449	.49042	.96271	.98417	1.0004
#2	.97929	.97353	.96044	.49368	.96363	.98360	.99636
#3	.97731	.98465	.94830	.49330	.95938	.98241	1.0134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9122.8	54587.	2572.6
Stddev	38.4	60.	22.7
%RSD	.42057	.10952	.88400
#1	9080.2	54522.	2582.2
#2	9154.5	54598.	2589.0
#3	9133.9	54640.	2546.6

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 0:34:23 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00122	.00466	-.00017	.00093	.00303	.00003	-.00913	.00007
Stddev	.00162	.00478	.00123	.00265	.00146	.00003	.02230	.00003
%RSD	132.99	102.72	706.52	285.61	48.176	128.86	244.19	39.474
#1	-.00245	.00930	-.00082	.00154	.00139	-.00001	-.02871	.00006
#2	.00062	-.00026	-.00095	.00321	.00352	.00005	-.01382	.00010
#3	-.00182	.00494	.00125	-.00197	.00419	.00004	.01514	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	.00032	.00081	.00903	.11096	.00079	.11616	-.00064
Stddev	.00021	.00106	.00150	.00328	.08553	.00255	.04775	.00185
%RSD	92.337	329.80	184.91	36.276	77.077	324.20	41.108	287.40
#1	-.00031	.00116	.00012	.01041	.15087	-.00162	.12367	.00002
#2	.00001	-.00087	.00253	.01139	.16925	.00345	.06510	.00078
#3	-.00037	.00068	-.00022	.00529	.01278	.00053	.15972	-.00273
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00000	.03737	.00066	.00144	-.00082	.00340	-.00182	.00536
Stddev	.00029	.03843	.00053	.00265	.00132	.00154	.00313	.00166
%RSD	18406.	102.83	80.134	184.71	160.11	45.408	172.27	31.019
#1	-.00023	-.00602	.00051	.00428	-.00109	.00444	-.00083	.00643
#2	-.00008	.05101	.00125	-.00097	.00061	.00162	-.00533	.00344
#3	.00032	.06712	.00022	.00100	-.00199	.00412	.00070	.00619
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 0:34:23 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**.00006**	**-.00104**	**-.00128**	**-.00041**	**-.00019**	**-.00004**
Stddev	.00023	.00034	.00413	.00294	.00104	.00017	.00025
%RSD	118.21	534.50	395.70	230.77	254.74	88.279	579.67
#1	-.00003	.00003	-.00572	-.00154	-.00150	-.00037	.00025
#2	.00043	-.00026	.00210	-.00408	.00058	-.00004	-.00020
#3	.00019	.00042	.00049	.00179	-.00032	-.00016	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9272.3**	**55978.**	**2591.0**
Stddev	17.3	111.	14.1
%RSD	.18630	.19762	.54251
#1	9287.0	55853.	2604.2
#2	9276.7	56064.	2576.2
#3	9253.3	56018.	2592.6

Approved: June 29, 2016

Sample Name: ICSA Acquired: 6/29/2016 0:38:19 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00047**	**262.47**	**-.00206**	**-.02130**	**.00281**	**-.00000**	**250.14**
Stddev	.00247	1.07	.00184	.00233	.00097	.00005	2.94
%RSD	520.49	.40938	89.302	10.960	34.651	8633.1	1.1761
#1	-.00151	263.71	-.00344	-.02376	.00260	-.00002	251.91
#2	-.00030	261.77	-.00276	-.02102	.00386	-.00004	251.76
#3	.00324	261.93	.00003	-.01911	.00195	.00005	246.74
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00029**	**-.00148**	**-.00209**	F **.00553**	**97.120**	**.04934**	**.01710**
Stddev	.00029	.00036	.00124	.00159	1.989	.10530	.00684
%RSD	102.43	24.677	59.423	28.729	2.0482	213.42	39.969
#1	-.00058	-.00111	-.00306	.00402	99.151	-.05089	.02085
#2	.00000	-.00184	-.00069	.00538	97.032	.03984	.00921
#3	-.00028	-.00147	-.00253	.00719	95.176	.15907	.02125
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				.00400			
Low Limit				-.00400			

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**246.62**	**-.00237**	**-.00057**	**.08363**	**.00230**	**.02090**	**.00151**
Stddev	4.84	.00083	.00044	.01520	.00099	.00801	.00124
%RSD	1.9620	34.848	77.462	18.179	42.768	38.309	82.153
#1	250.97	-.00179	-.00098	.08232	.00251	.02109	.00293
#2	247.47	-.00201	-.00011	.06913	.00317	.02881	.00068
#3	241.41	-.00332	-.00061	.09945	.00123	.01280	.00091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: ICSA Acquired: 6/29/2016 0:38:19 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	-.00153	.00160	.00135	.00065	.01387	-.00370
Stddev	.00668	.00418	.00084	.00065	.00032	.01328	.00337
%RSD	5905.2	273.58	52.462	48.380	49.235	95.708	91.188
#1	-.00013	-.00376	.00212	.00090	.00048	.02812	.00019
#2	-.00679	.00330	.00063	.00209	.00102	.01165	-.00584
#3	.00658	-.00412	.00205	.00104	.00045	.00184	-.00544
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00278	-.00222	-.00352
Stddev	.00102	.00014	.00042
%RSD	36.742	6.2944	12.022
#1	-.00380	-.00209	-.00303
#2	-.00176	-.00220	-.00370
#3	-.00277	-.00237	-.00382
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8680.3	52289.	2546.4
Stddev	44.3	276.	34.7
%RSD	.51002	.52714	1.3639
#1	8712.8	51991.	2529.8
#2	8698.3	52534.	2523.1
#3	8629.9	52343.	2586.3

Approved: June 29, 2016

Sample Name: ICSAB Acquired: 6/29/2016 0:42:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50445	258.44	.25287	-.02137	.25789	.23434	248.80	.48765
Stddev	.00262	.64	.00200	.00127	.00279	.00053	1.58	.00305
%RSD	.51933	.24817	.79007	5.9512	1.0819	.22550	.63387	.62636
#1	.50738	258.98	.25156	-.02092	.26103	.23410	250.34	.49004
#2	.50363	257.73	.25188	-.02281	.25570	.23397	248.87	.48870
#3	.50233	258.62	.25517	-.02038	.25694	.23494	247.19	.48420
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.23586	.24441	.24607	95.941	5.0748	.01284	244.06	.24468
Stddev	.00239	.00022	.00330	.799	.2552	.00183	1.38	.00514
%RSD	1.0145	.09063	1.3420	.83270	5.0291	14.276	.56411	2.1022
#1	.23719	.24416	.24760	96.679	5.2910	.01485	245.62	.25020
#2	.23730	.24453	.24833	96.052	5.1401	.01124	243.56	.24384
#3	.23310	.24455	.24228	95.093	4.7933	.01244	243.01	.24001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00082	5.5086	.47332	.08682	.49116	.50117	.24881	-.01883
Stddev	.00020	.0636	.00452	.00312	.00773	.00981	.00506	.00303
%RSD	24.735	1.1550	.95592	3.5983	1.5729	1.9568	2.0355	16.104
#1	-.00060	5.5795	.47560	.08552	.49675	.50459	.25092	-.01667
#2	-.00101	5.4897	.47625	.09038	.49439	.50881	.24304	-.01753
#3	-.00086	5.4566	.46811	.08455	.48235	.49011	.25248	-.02230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: ICSAB Acquired: 6/29/2016 0:42:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	.00046	.01528	.45471	.24352	.47724	-.00365
Stddev	.00022	.00062	.01129	.00542	.00062	.00539	.00054
%RSD	53.078	134.10	73.872	1.1924	.25306	1.1297	14.769
#1	.00016	.00017	.02136	.45909	.24299	.47979	-.00426
#2	.00054	.00004	.00226	.44865	.24337	.48089	-.00344
#3	.00057	.00118	.02221	.45639	.24420	.47105	-.00324
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8595.4	51463.	2494.4
Stddev	12.5	154.	16.1
%RSD	.14588	.29931	.64420
#1	8581.0	51365.	2476.0
#2	8601.3	51640.	2501.3
#3	8603.9	51383.	2505.9

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 0:45:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.37249	9.3850	.37153	.46617	.94206	.04580	9.3425	.04736
Stddev	.00135	.0062	.00236	.00421	.00815	.00009	.1257	.00021
%RSD	.36335	.06605	.63425	.90259	.86541	.20303	1.3456	.44636
#1	.37201	9.3922	.37250	.46400	.93313	.04575	9.2021	.04760
#2	.37402	9.3815	.37325	.46348	.94911	.04591	9.4445	.04730
#3	.37145	9.3814	.36885	.47102	.94393	.04575	9.3811	.04719
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.18881	.46476	.47375	3.7404	47.124	.95096	9.4232	.47238
Stddev	.00059	.00211	.00197	.0379	.346	.01412	.1940	.00206
%RSD	.31469	.45346	.41514	1.0141	.73325	1.4848	2.0589	.43640
#1	.18948	.46353	.47602	3.7313	46.726	.93751	9.5290	.47025
#2	.18859	.46356	.47266	3.7821	47.295	.96567	9.5413	.47436
#3	.18835	.46719	.47256	3.7079	47.350	.94969	9.1993	.47253
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.95052	47.859	.47282	9.4102	.47603	1.1343	.38138	4.6607
Stddev	.00385	.439	.00178	.0522	.00235	.0072	.00804	.0170
%RSD	.40470	.91770	.37626	.55421	.49431	.63621	2.1084	.36583
#1	.95410	47.399	.47476	9.4689	.47851	1.1426	.37301	4.6779
#2	.95101	48.274	.47244	9.3923	.47383	1.1311	.38207	4.6604
#3	.94645	47.904	.47126	9.3694	.47575	1.1293	.38905	4.6438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 0:45:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.95197**	**.93702**	**.92263**	**.47643**	**.92448**	**.95160**	**.97507**
Stddev	.00473	.00838	.01693	.00143	.00063	.00382	.00104
%RSD	.49684	.89484	1.8346	.30081	.06802	.40092	.10630
#1	.95683	.92974	.90667	.47650	.92520	.95592	.97461
#2	.95171	.94619	.94038	.47783	.92404	.95023	.97626
#3	.94738	.93514	.92083	.47497	.92419	.94867	.97435
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9087.0**	**54614.**	**2550.6**
Stddev	3.8	262.	13.9
%RSD	.04182	.47951	.54585
#1	9083.1	54480.	2543.1
#2	9087.3	54445.	2542.0
#3	9090.7	54915.	2566.6

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 0:49:29 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00068**	**.00400**	**.00139**	**.00122**	**.00267**	**.00003**	**.05025**	**.00011**
Stddev	.00251	.01163	.00213	.00125	.00165	.00007	.07513	.00012
%RSD	366.27	290.42	152.53	102.57	61.778	205.07	149.51	109.92
#1	-.00158	.01718	.00371	.00209	.00087	-.00002	.05175	.00020
#2	.00215	-.00482	-.00047	.00177	.00412	.00002	-.02562	.00016
#3	-.00262	-.00035	.00094	-.00021	.00303	.00011	.12463	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**.00016**	**-.00070**	**-.01893**	**.07755**	**.00375**	**.03834**	**-.00121**
Stddev	.00013	.00056	.00119	.00831	.13350	.00081	.08590	.00146
%RSD	171.58	345.66	170.55	43.884	172.14	21.694	224.04	120.18
#1	-.00006	.00072	-.00188	-.00946	.20051	.00374	-.05322	.00040
#2	-.00022	-.00040	.00049	-.02497	.09658	.00457	.05108	-.00244
#3	.00005	.00017	-.00070	-.02237	-.06444	.00295	.11717	-.00160
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	**.01371**	**-.00046**	**-.00067**	**-.00131**	**.00551**	**-.00590**	**.00629**
Stddev	.00042	.03708	.00226	.00533	.00161	.00520	.00597	.00022
%RSD	217.83	270.34	492.60	796.20	122.75	94.376	101.19	3.4434
#1	.00027	-.00597	.00177	-.00182	-.00130	.00352	-.00607	.00632
#2	-.00054	.05648	-.00040	.00514	.00029	.00160	-.01178	.00649
#3	-.00030	-.00937	-.00275	-.00532	-.00293	.01141	.00016	.00606
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 0:49:29 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.00044	-.00315	-.00473	-.00034	.00003	.00018
Stddev	.00061	.00016	.00698	.00077	.00104	.00016	.00023
%RSD	455.77	35.798	221.58	16.356	310.41	589.77	124.55
#1	.00084	.00062	.00235	-.00465	.00045	.00020	.00037
#2	-.00027	.00040	-.00079	-.00401	.00006	-.00010	.00024
#3	-.00017	.00031	-.01101	-.00555	-.00152	-.00003	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9180.5	55417.	2549.1
Stddev	25.8	125.	21.9
%RSD	.28083	.22601	.86043
#1	9183.5	55274.	2554.0
#2	9204.7	55507.	2568.1
#3	9153.4	55471.	2525.1

Approved: June 29, 2016

Sample Name: LLCCV Acquired: 6/29/2016 0:53:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00728	.16725	.00378	.07726	.01180	.00143	.35906	.00066
Stddev	.00137	.00666	.00178	.00289	.00157	.00004	.05069	.00023
%RSD	18.848	3.9821	47.186	3.7351	13.268	2.6821	14.119	34.256
#1	.00828	.16623	.00413	.07569	.01240	.00145	.41129	.00054
#2	.00785	.17436	.00184	.07549	.01298	.00145	.35585	.00053
#3	.00572	.16116	.00536	.08059	.01002	.00138	.31005	.00093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00379	.00358	.00417	.08592	.63449	.08105	.42078	.00714
Stddev	.00037	.00061	.00084	.02959	.14149	.00217	.08217	.00569
%RSD	9.7874	16.945	20.280	34.437	22.301	2.6718	19.528	79.640
#1	.00409	.00347	.00508	.11985	.68708	.08034	.51284	.01145
#2	.00391	.00304	.00341	.07236	.74215	.08348	.39465	.00070
#3	.00338	.00424	.00401	.06554	.47423	.07932	.35486	.00927
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00745	.45225	.01495	.74739	.00741	.08220	.01330	.78982
Stddev	.00026	.01750	.00093	.01357	.00202	.00457	.00369	.00349
%RSD	3.4239	3.8702	6.2130	1.8157	27.283	5.5591	27.773	.44225
#1	.00762	.47114	.01588	.76086	.00541	.07740	.01396	.79161
#2	.00716	.43658	.01402	.74758	.00945	.08272	.01662	.79206
#3	.00758	.44903	.01495	.73372	.00736	.08649	.00932	.78580
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LLCCV Acquired: 6/29/2016 0:53:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38988**	**.03952**	**.02710**	**.14360**	**.00710**	**.01660**	**.04091**
Stddev	.00438	.00037	.00041	.00006	.00032	.00023	.00032
%RSD	1.1233	.93136	1.5058	.04290	4.5228	1.3963	.77546
#1	.39331	.03950	.02704	.14359	.00677	.01680	.04127
#2	.39139	.03989	.02754	.14367	.00741	.01665	.04070
#3	.38495	.03916	.02673	.14354	.00712	.01634	.04075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9192.1**	**55588.**	**2554.1**
Stddev	31.9	43.	25.7
%RSD	.34691	.07750	1.0055
#1	9168.6	55539.	2529.3
#2	9179.3	55615.	2552.4
#3	9228.4	55612.	2580.5

Approved: June 29, 2016

2.3.2 Metals ICP-MS Data

2.3.2.1 Summary Data

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	C01-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:23
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574804	**Analyst:**	JYH	**Run Date:**	06/30/2016 18:09
Collect Date:	06/17/2016 08:35	**Dilution:**	1	**File ID:**	NI.063016.180913
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00438		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000345	J	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00251	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00101	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00135	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.0324		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00428	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00242		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	C01-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:23
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574804	**Analyst:**	JYH	**Run Date:**	07/01/2016 13:57
Collect Date:	06/17/2016 08:35	**Dilution:**	50	**File ID:**	NI.070116.135751
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.441		0.300	0.150	0.0750

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	C01FD-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:23
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574804	**Analyst:**	JYH	**Run Date:**	06/30/2016 18:12
Collect Date:	06/17/2016 08:35	**Dilution:**	1	**File ID:**	NI.063016.181225
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00431		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000340	J	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00247	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.000974	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00128	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.0318		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00424	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00266		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	C01FD-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:23
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574804	**Analyst:**	JYH	**Run Date:**	07/01/2016 14:01
Collect Date:	06/17/2016 08:35	**Dilution:**	50	**File ID:**	NI.070116.140103
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.471		0.300	0.150	0.0750

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-11	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW19F-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:23
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574804	**Analyst:**	JYH	**Run Date:**	06/30/2016 18:15
Collect Date:	06/17/2016 13:10	**Dilution:**	1	**File ID:**	NI.063016.181536
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.0130		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.00495		0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.116		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.0274		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.127		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.0706		0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0997		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000821		0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.152		0.00200	0.00100	0.000500

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-11	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW19F-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:23
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574804	**Analyst:**	JYH	**Run Date:**	07/01/2016 14:04
Collect Date:	06/17/2016 13:10	**Dilution:**	10	**File ID:**	NI.070116.140414
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.695		0.0600	0.0300	0.0150
Manganese, Total	7439-96-5	1.09		0.0400	0.0200	0.0100
Zinc, Total	7440-66-6	1.09		0.500	0.250	0.125

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-13	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW18F-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:23
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574804	**Analyst:**	JYH	**Run Date:**	06/30/2016 17:18
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	NI.063016.171806
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00149	J	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00583		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.00225		0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.0138		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00915		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00447		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00227		0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0630		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000127	J	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.0105		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0491	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-13	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW18F-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:23
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574804	**Analyst:**	JYH	**Run Date:**	07/01/2016 14:07
Collect Date:	06/17/2016 14:20	**Dilution:**	10	**File ID:**	NI.070116.140725
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.157		0.0600	0.0300	0.0150
Manganese, Total	7439-96-5	0.360		0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-15	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW18FMS-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574804	**Analyst:**	JYH	**Run Date:**	06/30/2016 17:21
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	NI.063016.172118
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.117		0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.131		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.125		0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.141		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.127		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.125		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.133		0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.170		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.116		0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.125		0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.131		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.160		0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was greater than the highest standard

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-15	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW18FMS-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574804	**Analyst:**	JYH	**Run Date:**	07/01/2016 14:17
Collect Date:	06/17/2016 14:20	**Dilution:**	10	**File ID:**	NI.070116.141703
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.245		0.0600	0.0300	0.0150
Manganese, Total	7439-96-5	0.408		0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-17	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW18FMSD-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574804	**Analyst:**	JYH	**Run Date:**	06/30/2016 17:24
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	NI.063016.172429
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.111		0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.133		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.126		0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.180		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.133		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.130		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.133		0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.195		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.116		0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.125		0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.147		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.181		0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was greater than the highest standard

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-17	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW18FMSD-061716	**Prep Method:**	3015	**Prep Date:**	06/23/2016 09:19
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574804	**Analyst:**	JYH	**Run Date:**	07/01/2016 14:20
Collect Date:	06/17/2016 14:20	**Dilution:**	10	**File ID:**	NI.070116.142015
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.311		0.0600	0.0300	0.0150
Manganese, Total	7439-96-5	0.521		0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer NexION 300X

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	100
Vi = Initial volume	40
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/L)	0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	200
Vi = Initial volume	0.5
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/kg)	40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	40
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	50

50 ug/kg = 0.050 mg/kg

Perkin Elmer NexION ICP/MS

STANDARDS KEY

QC Std 1 - ICV
QC Std 2 - ICB
QC Std 3 - LLICV
QC Std 4 - ICSA
QC Std 5 - ICSAB
QC Std 6 - CCV
QC Std 7 - CCB
QC Std 8 - LLCCV

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.00005	0.05	0.1
Sb	10	0	0.00005	0.05	0.1
As	10	0	0.00005	0.05	0.1
Ba	10	0	0.00005	0.05	0.1
Be	10	0	0.00005	0.05	0.1
Ca	1000	0	0.005	5	10
Cd	10	0	0.0005	0.05	0.1
Cr	10	0	0.0005	0.05	0.1
Co	10	0	0.0005	0.05	0.1
Cu	10	0	0.0005	0.05	0.1
Fe	1000	0	0.005	5	10
Pb	10	0	0.00005	0.05	0.1
Mg	1000	0	0.005	5	10
Mn	10	0	0.00005	0.05	0.1
Ni	10	0	0.00005	0.05	0.1
K	1000	0	0.005	5	10
Se	10	0	0.00005	0.05	0.1
Ag	10	0	0.00005	0.05	0.1
Na	1000	0	0.005	5	10
Tl	10	0	0.00005	0.05	0.1
V	10	0	0.00005	0.05	0.1
U	1000	0	0.00005	0.05	0.1
Zn	10	0	0.00005	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG573840
Analyst: AC
Spike Analyst: AC
Run Date: 06/23/2016 09:23
Method: 3015
Balance: BAL016
Instrument: MW-3
Instrument Start: 06/23/2016 09:23

SOP: ME407 Revison 19
Spike Solution: STD75998
Spike Witness: ERP
HNO3 Lot #: COA18905
MS Filters- fisher-Lot#R RGT35621
40 & 50 ML. DIGESTION TU COA18987

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG573840-02	BLANK	1	20 mL	50 mL	183.763 g	183.76 g		
2	WG573840-03	LCS	1	20 mL	50 mL	184.441 g	184.435 g	.25 mL	
3	L16061065-01	SAMP	1	20 mL	50 mL	184.148 g	184.145 g		07/01/16
4	L16061065-02	SAMP	1	20 mL	50 mL	182.231 g	182.216 g		07/01/16
5	L16061065-03	SAMP	1	20 mL	50 mL	184.52 g	184.527 g		07/01/16
6	L16061065-04	SAMP	1	20 mL	50 mL	182.46 g	182.457 g		07/01/16
7	L16061065-05	SAMP	1	20 mL	50 mL	183.334 g	183.327 g		07/01/16
8	L16061065-06	SAMP	1	20 mL	50 mL	184.895 g	184.889 g		07/01/16
9	L16061068-04	SAMP	1	20 mL	50 mL	181.9 g	181.889 g		07/01/16
10	L16061068-05	SAMP	1	20 mL	50 mL	180.941 g	180.93 g		07/01/16
11	L16061068-11	SAMP	1	20 mL	50 mL	182.577 g	182.569 g		07/01/16
12	WG573840-01	REF	1	20 mL	50 mL	180.736 g	180.717 g		
13	L16061068-13	RS04	1	20 mL	50 mL	180.736 g	180.717 g		07/01/16
14	WG573840-04	MS	1	20 mL	50 mL	176.431 g	176.415 g	.25 mL	
15	L16061068-15	MS04	1	20 mL	50 mL	176.431 g	176.415 g	.25 mL	07/01/16
16	WG573840-05	MSD	1	20 mL	50 mL	184.31 g	184.309 g	.25 mL	
17	L16061068-17	SD04	1	20 mL	50 mL	184.31 g	184.309 g	.25 mL	07/01/16
18	L16061228-01	SAMP	1	20 mL	50 mL	183.73 g	183.705 g		06/29/16
19	L16061228-02	SAMP	1	20 mL	50 mL	184.531 g	184.501 g		06/29/16
20	L16061228-03	SAMP	1	20 mL	50 mL	182.371 g	182.351 g		06/29/16
21	L16061231-01	SAMP	1	20 mL	50 mL	184.788 g	184.77 g		06/29/16
22	L16061237-01	SAMP	1	20 mL	50 mL	185.495 g	185.456 g		06/29/16
23	L16061237-02	SAMP	1	20 mL	50 mL	185.251 g	185.22 g		06/29/16
24	L16061237-03	SAMP	1	20 mL	50 mL	181.772 g	181.75 g		06/29/16
25	L16061237-04	SAMP	1	20 mL	50 mL	183.167 g	183.142 g		06/29/16
26	L16061237-05	SAMP	1	20 mL	50 mL	183.281 g	183.236 g		06/29/16
27	L16061237-06	SAMP	1	20 mL	50 mL	183.584 g	183.554 g		06/29/16

L16061068-15	Filtered Digestate
L16061068-17	Filtered Digestate
L16061065-01	Filtered Digestate
L16061065-03	Filtered Digestate
L16061065-04	Filtered Digestate
L16061068-11	Filtered Digestate
L16061068-13	Filtered Digestate
WG573840-01	Filtered Digestate
WG573840-04	Filtered Digestate

MW_DIG - Modified 09/30/2009
PDF ID: 4820394
Report generated: 06/23/2016 11:03

Microbac Laboratories Inc.
Microwave Digestion Log

WG573840-05	Filtered Digestate	SOP:
L16061228-03	Filtered Digestate	Spike Solution:
		Spike Witness:

Analyst: M
Balance:
Instrument:
Instrument Start:

Reviewer:

MW_DIG - Modified 09/30/2009
PDF ID: 4820394
Report generated: 06/23/2016 11:03

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 063016A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 574744,574571,574742,574807,574804,574806,574849

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.063016.103549	Blank	Blank		1		06/30/16 10:35
2	NI.063016.103900	WG574800-01	Calibration Point		1		06/30/16 10:39
3	NI.063016.104212	WG574800-02	Calibration Point		1		06/30/16 10:42
4	NI.063016.104523	WG574800-03	Calibration Point		1		06/30/16 10:45
5	NI.063016.104835	WG574800-04	Calibration Point		1		06/30/16 10:48
6	NI.063016.105148	WG574800-05	Initial Calibration Verification		1		06/30/16 10:51
7	NI.063016.105501	WG574800-06	Initial Calib Blank		1		06/30/16 10:55
8	NI.063016.105814	WG574800-07	Low Level Initial Calibration V		1		06/30/16 10:58
9	NI.063016.110126	WG574800-08	Interference Check		1		06/30/16 11:01
10	NI.063016.110437	WG574800-09	Interference Check		1		06/30/16 11:04
11	NI.063016.110750	WG574800-10	CCV		1		06/30/16 11:07
12	NI.063016.111102	WG574800-11	CCB		1		06/30/16 11:11
13	NI.063016.111415	WG574201-01	Method/Prep Blank	10/100	1		06/30/16 11:14
14	NI.063016.111727	WG574201-02	Laboratory Control S	10/100	1		06/30/16 11:17
15	NI.063016.112039	WG574201-03	Laboratory Control S	10/100	1		06/30/16 11:20
16	NI.063016.112351	L16061384-01	BFB-16-019	10.031/100	1		06/30/16 11:23
17	NI.063016.112702	L16061384-03	BFB-16-020	10.038/100	1		06/30/16 11:27
18	NI.063016.113014	L16061384-05	BFB-16-021	10.027/100	1		06/30/16 11:30
19	NI.063016.113325	L16061384-07	BFB-16-022	10.009/100	1		06/30/16 11:33
20	NI.063016.113637	L16061384-09	BFB-16-023	10.025/100	1		06/30/16 11:36
21	NI.063016.113948	L16061384-11	BFB-16-024	10.048/100	1		06/30/16 11:39
22	NI.063016.114300	WG574744-01	Post Digestion Spike		1	L16061384-11	06/30/16 11:43
23	NI.063016.114613	WG574800-12	CCV		1		06/30/16 11:46
24	NI.063016.114924	WG574800-13	CCB		1		06/30/16 11:49
25	NI.063016.115237	WG574744-02	Serial Dilution		5	L16061384-11	06/30/16 11:52
26	NI.063016.115550	WG574800-14	CCV		1		06/30/16 11:55
27	NI.063016.115902	WG574800-15	CCB		1		06/30/16 11:59
28	NI.063016.120956	WG573868-03	Method/Prep Blank	20/50	1		06/30/16 12:09
29	NI.063016.121308	WG573868-04	Laboratory Control S	20/50	1		06/30/16 12:13
30	NI.063016.121619	WG573868-01	Reference Sample		1	L16061130-05	06/30/16 12:16
31	NI.063016.121931	WG573868-05	Matrix Spike	20/50	1	L16061130-05	06/30/16 12:19
32	NI.063016.122242	WG573868-06	Matrix Spike Duplica	20/50	1	L16061130-05	06/30/16 12:22
33	NI.063016.122554	L16061238-01	LF003MW0306-007	20/50	1		06/30/16 12:25
34	NI.063016.122905	L16061238-02	LF003MW0307-007	20/50	1		06/30/16 12:29

Page: 1 Approved: June 30, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 063016A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 574744,574571,574742,574807,574804,574806,574849

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.063016.123217	WG574742-01	Post Digestion Spike		1	L16061238-02	06/30/16 12:32
36	NI.063016.123551	WG574742-02	Serial Dilution		5	L16061238-02	06/30/16 12:35
37	NI.063016.123903	WG574742-02	Serial Dilution		25	L16061238-02	06/30/16 12:39
38	NI.063016.124216	WG574800-16	CCV		1		06/30/16 12:42
39	NI.063016.124527	WG574800-17	CCB		1		06/30/16 12:45
40	NI.063016.124840	WG573868-02	Reference Sample		1	L16061229-03	06/30/16 12:48
41	NI.063016.125152	WG573868-07	Duplicate	20/50	1	L16061229-03	06/30/16 12:51
42	NI.063016.125503	L16061227-01	18WW22-062116	20/50	1		06/30/16 12:55
43	NI.063016.125815	L16061227-03	C04F-062116	20/50	1		06/30/16 12:58
44	NI.063016.130126	L16061227-05	C04FFD-062116	20/50	1		06/30/16 13:01
45	NI.063016.130438	L16061227-06	18CPTMW18-062116	20/50	1		06/30/16 13:04
46	NI.063016.130749	L16061227-07	18WW18-062116	20/50	1		06/30/16 13:07
47	NI.063016.131101	L16061129-01	MW-22-002	20/50	1		06/30/16 13:11
48	NI.063016.131412	L16061129-02	MW-22-010	20/50	1		06/30/16 13:14
49	NI.063016.131724	L16061129-03	MW-22-007	20/50	1		06/30/16 13:17
50	NI.063016.132037	WG574800-18	CCV		1		06/30/16 13:20
51	NI.063016.132348	WG574800-19	CCB		1		06/30/16 13:23
52	NI.063016.132701	L16061129-04	FD061716	20/50	1		06/30/16 13:27
53	NI.063016.133013	L16061129-05	EB-WATER A	20/50	1		06/30/16 13:30
54	NI.063016.133324	L16061130-01	MW-23-012	20/50	1		06/30/16 13:33
55	NI.063016.133636	L16061130-02	MW-23-003	20/50	1		06/30/16 13:36
56	NI.063016.133947	L16061130-03	MW-23-013	20/50	1		06/30/16 13:39
57	NI.063016.134259	L16061130-04	MW-23-001	20/50	1		06/30/16 13:42
58	NI.063016.134610	L16061380-01	XU936TW003A	20/50	50		06/30/16 13:46
59	NI.063016.134922	L16061380-02	XU936TW003C	20/50	50		06/30/16 13:49
60	NI.063016.135234	WG574800-20	CCV		1		06/30/16 13:52
61	NI.063016.135546	WG574800-21	CCB		1		06/30/16 13:55
62	NI.063016.135859	WG574800-22	Low Level Continuing Calibra		1		06/30/16 13:58
63	NI.063016.140445	WG574262-01	Method/Prep Blank	.25/100	1		06/30/16 14:04
64	NI.063016.140756	WG574262-02	Laboratory Control S	.25/100	1		06/30/16 14:07
65	NI.063016.141108	WG574262-03	Laboratory Control S	.25/100	1		06/30/16 14:11
66	NI.063016.141419	L16061291-01	V6F0270-01	.251/100	1		06/30/16 14:14
67	NI.063016.141731	WG574807-01	Post Digestion Spike		1	L16061291-01	06/30/16 14:17
68	NI.063016.142042	WG574807-02	Serial Dilution		5	L16061291-01	06/30/16 14:20

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 063016A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 574744,574571,574742,574807,574804,574806,574849

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.063016.142354	WG574807-02	Serial Dilution		25	L16061291-01	06/30/16 14:23
70	NI.063016.142707	WG574800-23	CCV		1		06/30/16 14:27
71	NI.063016.143019	WG574800-24	CCB		1		06/30/16 14:30
72	NI.063016.143630	WG573868-02	Reference Sample		1000	L16061229-03	06/30/16 14:36
73	NI.063016.143942	WG573868-07	Duplicate	20/50	1000	L16061229-03	06/30/16 14:39
74	NI.063016.144253	L16061227-01	18WW22-062116	20/50	20		06/30/16 14:42
75	NI.063016.144605	L16061227-03	C04F-062116	20/50	20		06/30/16 14:46
76	NI.063016.144917	L16061227-05	C04FFD-062116	20/50	20		06/30/16 14:49
77	NI.063016.145228	L16061227-06	18CPTMW18-062116	20/50	100		06/30/16 14:52
78	NI.063016.145540	L16061227-07	18WW18-062116	20/50	100		06/30/16 14:55
79	NI.063016.145853	WG574800-25	CCV		1		06/30/16 14:58
80	NI.063016.150204	WG574800-26	CCB		1		06/30/16 15:02
81	NI.063016.150517	WG574800-27	Low Level Continuing Calibra		1		06/30/16 15:05
82	NI.063016.151448	WG573728-03	Method/Prep Blank	20/50	1		06/30/16 15:14
83	NI.063016.151800	WG573728-04	Laboratory Control S	20/50	1		06/30/16 15:18
84	NI.063016.152111	L16060996-01	MW-21-007		1	WG573728-01	06/30/16 15:21
85	NI.063016.152423	L16060996-02	MW-21-007 MS	20/50	1	WG573728-05	06/30/16 15:24
86	NI.063016.152734	L16060996-03	MW-21-007 MSD	20/50	1	WG573728-06	06/30/16 15:27
87	NI.063016.153046	L16061148-01	DP005SW0513-007	20/50	1		06/30/16 15:30
88	NI.063016.153357	L16061148-02	DP005SW0514-007	20/50	1		06/30/16 15:33
89	NI.063016.153709	WG574806-01	Post Digestion Spike		1	L16061148-02	06/30/16 15:37
90	NI.063016.154020	WG574806-02	Serial Dilution		5	L16061148-02	06/30/16 15:40
91	NI.063016.154332	WG574806-02	Serial Dilution		25	L16061148-02	06/30/16 15:43
92	NI.063016.154645	WG574800-28	CCV		1		06/30/16 15:46
93	NI.063016.154956	WG574800-29	CCB		1		06/30/16 15:49
94	NI.063016.155309	L16061150-01	SS007SW0709-007	20/50	1		06/30/16 15:53
95	NI.063016.155621	L16061150-02	SS007SW0710-007	20/50	1		06/30/16 15:56
96	NI.063016.155932	L16060996-04	MW-21-006	20/50	1		06/30/16 15:59
97	NI.063016.160243	L16060996-05	MW-21-002	20/50	1		06/30/16 16:02
98	NI.063016.160555	L16060996-06	FD-061516-21	20/50	1		06/30/16 16:05
99	NI.063016.160906	L16060996-07	MW-21-009	20/50	1		06/30/16 16:09
100	NI.063016.161218	L16060996-08	MW-21-005	20/50	1		06/30/16 16:12
101	NI.063016.161529	L16060996-09	MW-21-004	20/50	1		06/30/16 16:15
102	NI.063016.161840	L16061030-02	SW1A-322-14	20/50	1		06/30/16 16:18

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Instrument Run Log

Instrument: ICP-MS2 Dataset: 063016A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 574744,574571,574742,574807,574804,574806,574849

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.063016.162152	L16061030-05	SW1B-322-14	20/50	1		06/30/16 16:21
104	NI.063016.162505	WG574800-30	CCV		1		06/30/16 16:25
105	NI.063016.162816	WG574800-31	CCB		1		06/30/16 16:28
106	NI.063016.163129	L16061030-08	SW2A-322-14	20/50	1		06/30/16 16:31
107	NI.063016.163440	L16061030-13	SW3A-322-14		1	WG573728-02	06/30/16 16:34
108	NI.063016.163752	L16061030-14	SW3A-322-14	20/50	1	WG573728-07	06/30/16 16:37
109	NI.063016.164103	L16061030-15	SW3A-322-14	20/50	1	WG573728-08	06/30/16 16:41
110	NI.063016.164415	L16061030-20	SW4A-322-14	20/50	1		06/30/16 16:44
111	NI.063016.170207	L16061030-23	SW5A-322-14	20/50	1		06/30/16 17:02
112	NI.063016.170519	WG574800-32	CCV		1		06/30/16 17:05
113	NI.063016.170831	WG574800-33	CCB		1		06/30/16 17:08
114	NI.063016.171143	WG573840-02	Method/Prep Blank	20/50	1		06/30/16 17:11
115	NI.063016.171455	WG573840-03	Laboratory Control S	20/50	1		06/30/16 17:14
116	NI.063016.171806	WG573840-01	Reference Sample		1	L16061068-13	06/30/16 17:18
117	NI.063016.172118	WG573840-04	Matrix Spike	20/50	1	L16061068-13	06/30/16 17:21
118	NI.063016.172429	WG573840-05	Matrix Spike Duplica	20/50	1	L16061068-13	06/30/16 17:24
119	NI.063016.172741	L16061228-01	SS007MWOB03-007	20/50	1		06/30/16 17:27
120	NI.063016.173052	L16061228-02	SS007MWN751-007	20/50	1		06/30/16 17:30
121	NI.063016.173403	WG574804-01	Post Digestion Spike		1	L16061228-02	06/30/16 17:34
122	NI.063016.173715	WG574804-02	Serial Dilution		5	L16061228-02	06/30/16 17:37
123	NI.063016.174026	WG574804-02	Serial Dilution		25	L16061228-02	06/30/16 17:40
124	NI.063016.174340	WG574800-34	CCV		1		06/30/16 17:43
125	NI.063016.174651	WG574800-35	CCB		1		06/30/16 17:46
126	NI.063016.175004	L16061065-01	MW-23-007	20/50	1		06/30/16 17:50
127	NI.063016.175316	L16061065-02	MW-23-006	20/50	1		06/30/16 17:53
128	NI.063016.175627	L16061065-03	MW-23-008	20/50	1		06/30/16 17:56
129	NI.063016.175939	L16061065-04	MW-23-009	20/50	1		06/30/16 17:59
130	NI.063016.180250	L16061065-05	MW-23-010	20/50	1		06/30/16 18:02
131	NI.063016.180602	L16061065-06	MW-23-011	20/50	1		06/30/16 18:06
132	NI.063016.180913	L16061068-04	C01-061716	20/50	1		06/30/16 18:09
133	NI.063016.181225	L16061068-05	C01FD-061716	20/50	1		06/30/16 18:12
134	NI.063016.181536	L16061068-11	MW19F-061716	20/50	1		06/30/16 18:15
135	NI.063016.181847	L16061228-03	SS007MWN753-007	20/50	1		06/30/16 18:18
136	NI.063016.182201	WG574800-36	CCV		1		06/30/16 18:22

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 063016A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 574744,574571,574742,574807,574804,574806,574849

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	NI.063016.182512	WG574800-37	CCB		1		06/30/16 18:25
138	NI.063016.182825	L16061231-01	FT002MW0205-007	20/50	1		06/30/16 18:28
139	NI.063016.183136	L16061237-01	SS007MWN769-007	20/50	1		06/30/16 18:31
140	NI.063016.183448	L16061237-02	SS007MWN740-007	20/50	1		06/30/16 18:34
141	NI.063016.183759	L16061237-03	SS007MWN740-007 DUP	20/50	1		06/30/16 18:37
142	NI.063016.184111	L16061237-04	SS007MWN738-007	20/50	1		06/30/16 18:41
143	NI.063016.184422	L16061237-05	SS007MWN741-007	20/50	1		06/30/16 18:44
144	NI.063016.184734	L16061237-06	SS007MWNOB09-007	20/50	1		06/30/16 18:47
145	NI.063016.185046	WG574800-38	CCV		1		06/30/16 18:50
146	NI.063016.185358	WG574800-39	CCB		1		06/30/16 18:53
147	NI.063016.185710	WG574593-02	Method/Prep Blank	20/50	1		06/30/16 18:57
148	NI.063016.190021	WG574593-03	Laboratory Control S	20/50	1		06/30/16 19:00
149	NI.063016.190333	WG574519-01	Fluid Blank 2		1		06/30/16 19:03
150	NI.063016.190644	WG574593-01	Reference Sample		1	L16061536-01	06/30/16 19:06
151	NI.063016.190956	WG574593-04	Duplicate	20/50	1	L16061536-01	06/30/16 19:09
152	NI.063016.191307	WG574593-05	Matrix Spike	20/50	1	L16061536-01	06/30/16 19:13
153	NI.063016.191619	WG574593-06	Matrix Spike Duplica	20/50	1	L16061536-01	06/30/16 19:16
154	NI.063016.191930	L16061496-02	60500-SSP0043-SSP0043	20/50	1		06/30/16 19:19
155	NI.063016.192242	WG574849-01	Post Digestion Spike		1	L16061496-02	06/30/16 19:22
156	NI.063016.192553	L16061496-02	60500-SSP0043-SSP0043		5		06/30/16 19:25
157	NI.063016.192906	WG574800-40	CCV		1		06/30/16 19:29
158	NI.063016.193217	WG574800-41	CCB		1		06/30/16 19:32
159	NI.063016.193530	WG574849-02	Serial Dilution		25	L16061496-02	06/30/16 19:35
160	NI.063016.193841	L16061498-01	AG6056	20/50	1		06/30/16 19:38
161	NI.063016.194153	L16061529-01	J6E1295-01	20/50	1		06/30/16 19:41
162	NI.063016.194506	L16061529-02	J6E1295-02	20/50	1		06/30/16 19:45
163	NI.063016.194817	L16061529-03	J6E1295-03	20/50	1		06/30/16 19:48
164	NI.063016.195129	L16061529-04	J6E1295-04	20/50	1		06/30/16 19:51
165	NI.063016.195440	L16061529-05	J6E1295-05	20/50	1		06/30/16 19:54
166	NI.063016.195752	L16061529-06	J6E1295-06	20/50	1		06/30/16 19:57
167	NI.063016.200103	L16061529-07	J6E1295-07	20/50	1		06/30/16 20:01
168	NI.063016.200415	L16061529-08	J6E1295-08	20/50	1		06/30/16 20:04
169	NI.063016.200728	WG574800-42	CCV		1		06/30/16 20:07
170	NI.063016.201039	WG574800-43	CCB		1		06/30/16 20:10

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 063016A.REP

Analyst1: JYH Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705

ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607

CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345

Stannous : Hydroxylamine :

Workgroups: 574744,574571,574742,574807,574804,574806,574849

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
171	NI.063016.201352	L16061529-09	J6E1295-09	20/50	1		06/30/16 20:13
172	NI.063016.201704	L16061529-10	J6E1295-10	20/50	1		06/30/16 20:17
173	NI.063016.202016	L16061529-11	J6E1295-11	20/50	1		06/30/16 20:20
174	NI.063016.202327	L16061529-12	J6E1295-12	20/50	1		06/30/16 20:23
175	NI.063016.202639	L16061529-13	J6E1295-13	20/50	1		06/30/16 20:26
176	NI.063016.202950	L16061532-01	TS935TW011A	20/50	1		06/30/16 20:29
177	NI.063016.203303	WG574800-44	CCV		1		06/30/16 20:33
178	NI.063016.203614	WG574800-45	CCB		1		06/30/16 20:36
179	NI.063016.203927	WG574800-46	Low Level Continuing Calibra		1		06/30/16 20:39
180	NI.063016.204240	L16060362-03	6060227-03		25		06/30/16 20:42
181	NI.063016.204553	WG574800-47	QC Std 6		1		06/30/16 20:45
182	NI.063016.204904	WG574800-48	QC Std 7		1		06/30/16 20:49

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070116A.REP

Analyst1: JYH Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705

ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607

CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345

Stannous : Hydroxylamine :

Workgroups: 574808,574849,574824,574804,575057

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.070116.102728	Blank	Blank		1		07/01/16 10:27
2	NI.070116.103040	WG575028-01	Calibration Point		1		07/01/16 10:30
3	NI.070116.103351	WG575028-02	Calibration Point		1		07/01/16 10:33
4	NI.070116.103702	WG575028-03	Calibration Point		1		07/01/16 10:37
5	NI.070116.104014	WG575028-04	Calibration Point		1		07/01/16 10:40
6	NI.070116.104327	WG575028-05	Initial Calibration Verification		1		07/01/16 10:43
7	NI.070116.104640	WG575028-06	Initial Calib Blank		1		07/01/16 10:46
8	NI.070116.104953	WG575028-07	Low Level Initial Calibration V		1		07/01/16 10:49
9	NI.070116.105304	WG575028-08	Interference Check		1		07/01/16 10:53
10	NI.070116.105616	WG575028-09	Interference Check		1		07/01/16 10:56
11	NI.070116.105929	WG575028-10	CCV		1		07/01/16 10:59
12	NI.070116.110241	WG575028-11	CCB		1		07/01/16 11:02
13	NI.070116.110553	WG574416-04	Method/Prep Blank	20/50	1		07/01/16 11:05
14	NI.070116.110904	WG574416-05	Laboratory Control S	20/50	1		07/01/16 11:09
15	NI.070116.111216	WG574416-01	Reference Sample		1	L16061417-05	07/01/16 11:12
16	NI.070116.111527	WG574416-06	Matrix Spike	20/50	1	L16061417-05	07/01/16 11:15
17	NI.070116.111839	WG574416-07	Matrix Spike Duplica	20/50	1	L16061417-05	07/01/16 11:18
18	NI.070116.112150	L16061417-01	SS007MW0B04-007	20/50	1		07/01/16 11:21
19	NI.070116.112502	L16061417-02	SS007MW0B06-007	20/50	1		07/01/16 11:25
20	NI.070116.112813	WG574808-01	Post Digestion Spike		1	L16061417-02	07/01/16 11:28
21	NI.070116.113125	WG574808-02	Serial Dilution		5	L16061417-02	07/01/16 11:31
22	NI.070116.113436	WG574808-02	Serial Dilution		25	L16061417-02	07/01/16 11:34
23	NI.070116.113750	WG575028-12	CCV		1		07/01/16 11:37
24	NI.070116.114101	WG575028-13	CCB		1		07/01/16 11:41
25	NI.070116.114414	L16061417-03	SS007MW0B06-007DUP	20/50	1		07/01/16 11:44
26	NI.070116.114726	L16061417-04	SS007MW0B13-007	20/50	1		07/01/16 11:47
27	NI.070116.115037	L16061417-08	SS007MWN748-007	20/50	1		07/01/16 11:50
28	NI.070116.115349	L16061417-09	FQC-RB06221601-CC	20/50	1		07/01/16 11:53
29	NI.070116.115701	L16061441-01	TS935TW002A	20/50	1		07/01/16 11:57
30	NI.070116.120012	L16061441-02	TS935TW005A	20/50	1		07/01/16 12:00
31	NI.070116.120324	WG574416-02	Reference Sample		1	L16061442-01	07/01/16 12:03
32	NI.070116.120635	L16061442-02	TS935TW010C	20/50	1		07/01/16 12:06
33	NI.070116.120947	WG574416-08	Matrix Spike	20/50	1	L16061442-01	07/01/16 12:09
34	NI.070116.121258	WG574416-09	Matrix Spike Duplica	20/50	1	L16061442-01	07/01/16 12:12

Page: 1 Approved: July 05, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070116A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 574808,574849,574824,574804,575057

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.070116.121611	WG575028-14	CCV		1		07/01/16 12:16
36	NI.070116.121923	WG575028-15	CCB		1		07/01/16 12:19
37	NI.070116.122236	L16061446-01	GH9-HSPRING	20/50	1		07/01/16 12:22
38	NI.070116.122548	WG574416-03	Reference Sample		1	L16061447-01	07/01/16 12:25
39	NI.070116.122859	WG574416-10	Duplicate	20/50	1	L16061447-01	07/01/16 12:28
40	NI.070116.123211	L16061289-01	MW21-062216	20/50	1		07/01/16 12:32
41	NI.070116.123523	L16061289-04	18WW02F-062216	20/50	1		07/01/16 12:35
42	NI.070116.123834	L16061290-03	MW16F-062116	20/50	1		07/01/16 12:38
43	NI.070116.124145	L16061290-05	109-062216	20/50	1		07/01/16 12:41
44	NI.070116.124458	WG575028-16	CCV		1		07/01/16 12:44
45	NI.070116.124810	WG575028-17	CCB		1		07/01/16 12:48
46	NI.070116.125836	WG574419-03	Method/Prep Blank	20/50	1		07/01/16 12:58
47	NI.070116.130334	WG574419-04	Laboratory Control S	20/50	1		07/01/16 13:03
48	NI.070116.130646	WG574419-01	Reference Sample		1	L16061400-06	07/01/16 13:06
49	NI.070116.130957	WG574419-05	Matrix Spike	20/50	1	L16061400-06	07/01/16 13:09
50	NI.070116.131309	WG574419-06	Matrix Spike Duplica	20/50	1	L16061400-06	07/01/16 13:13
51	NI.070116.131620	WG574419-02	Reference Sample		1	L16061427-01	07/01/16 13:16
52	NI.070116.131932	WG574419-07	Duplicate	20/50	1	L16061427-01	07/01/16 13:19
53	NI.070116.132243	L16061468-01	H6F0605-01	20/50	1		07/01/16 13:22
54	NI.070116.132555	WG574824-01	Post Digestion Spike		1	L16061468-01	07/01/16 13:25
55	NI.070116.132906	WG574824-02	Serial Dilution		5	L16061468-01	07/01/16 13:29
56	NI.070116.133218	WG575028-18	CCV		1		07/01/16 13:32
57	NI.070116.133530	WG575028-19	CCB		1		07/01/16 13:35
58	NI.070116.133842	L16061470-01	S6F0639-01	20/50	1		07/01/16 13:38
59	NI.070116.134154	L16061471-01	S6F0244-01	20/50	1		07/01/16 13:41
60	NI.070116.134505	WG574593-01	Reference Sample		2	L16061536-01	07/01/16 13:45
61	NI.070116.134817	WG574593-04	Duplicate	20/50	2	L16061536-01	07/01/16 13:48
62	NI.070116.135128	WG574593-05	Matrix Spike	20/50	2	L16061536-01	07/01/16 13:51
63	NI.070116.135440	WG574593-06	Matrix Spike Duplica	20/50	2	L16061536-01	07/01/16 13:54
64	NI.070116.135751	L16061068-04	C01-061716	20/50	50		07/01/16 13:57
65	NI.070116.140103	L16061068-05	C01FD-061716	20/50	50		07/01/16 14:01
66	NI.070116.140414	L16061068-11	MW19F-061716	20/50	10		07/01/16 14:04
67	NI.070116.140725	WG574840-01	Post Digestion Spike		10	L16061622-02	07/01/16 14:07
68	NI.070116.141039	WG575028-20	CCV		1		07/01/16 14:10

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070116A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 574808,574849,574824,574804,575057

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.070116.141350	WG575028-21	CCB		1		07/01/16 14:13
70	NI.070116.141703	WG574840-04	L1606106815S WG574840-0	20/50	10		07/01/16 14:17
71	NI.070116.142015	WG574840-05	L1606106817SD WG574840	20/50	10		07/01/16 14:20
72	NI.070116.142326	L16061065-02	MW-23-006	20/50	50		07/01/16 14:23
73	NI.070116.142637	L16061065-03	MW-23-008	20/50	50		07/01/16 14:26
74	NI.070116.142949	L16061065-04	MW-23-009	20/50	50		07/01/16 14:29
75	NI.070116.143302	WG575028-22	CCV		1		07/01/16 14:33
76	NI.070116.143613	WG575028-23	CCB		1		07/01/16 14:36
77	NI.070116.143926	WG575028-24	Low Level Continuing Calibra		1		07/01/16 14:39
78	NI.070116.151112	L16061360-01	NP0116-LM1	20/50	1		07/01/16 15:11
79	NI.070116.151423	L16061360-02	EB-062416	20/50	1		07/01/16 15:14
80	NI.070116.151735	L16061400-01	MW-22-008	20/50	1		07/01/16 15:17
81	NI.070116.152046	L16061400-02	MW-22-016	20/50	1		07/01/16 15:20
82	NI.070116.152358	L16061400-03	MW-22-006	20/50	1		07/01/16 15:23
83	NI.070116.152709	L16061400-04	MW-22-005	20/50	1		07/01/16 15:27
84	NI.070116.153021	L16061400-05	MW-22-001	20/50	1		07/01/16 15:30
85	NI.070116.153332	L16061400-09	MW-22-003	20/50	1		07/01/16 15:33
86	NI.070116.153643	L16061400-10	MW-22-004	20/50	1		07/01/16 15:36
87	NI.070116.153955	L16061444-11	EB03	20/50	1		07/01/16 15:39
88	NI.070116.154308	WG575028-25	CCV		1		07/01/16 15:43
89	NI.070116.154619	WG575028-26	CCB		1		07/01/16 15:46
90	NI.070116.154932	L16061452-01	18CPTMW12SW-062416	20/50	1		07/01/16 15:49
91	NI.070116.155244	L16061453-01	MW2-062416	20/50	1		07/01/16 15:52
92	NI.070116.155555	L16061453-03	18CPTMW01SW-062416	20/50	1		07/01/16 15:55
93	NI.070116.155907	WG574419-02	Reference Sample		5	L16061427-01	07/01/16 15:59
94	NI.070116.160218	WG574419-07	Duplicate	20/50	5	L16061427-01	07/01/16 16:02
95	NI.070116.160530	L16061289-01	MW21-062216	20/50	50		07/01/16 16:05
96	NI.070116.160841	L16061290-03	MW16F-062116	20/50	10		07/01/16 16:08
97	NI.070116.161155	WG575028-27	CCV		1		07/01/16 16:11
98	NI.070116.161506	WG575028-28	CCB		1		07/01/16 16:15
99	NI.070116.163708	WG574521-03	Method/Prep Blank	.25/100	1		07/01/16 16:37
100	NI.070116.164019	WG574521-04	Laboratory Control S	.25/100	1		07/01/16 16:40
101	NI.070116.164331	WG574521-01	Reference Sample		1	L16061445-04	07/01/16 16:43
102	NI.070116.164642	WG574521-05	Matrix Spike	.254/100	1	L16061445-04	07/01/16 16:46

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070116A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 574808,574849,574824,574804,575057

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.070116.164954	WG574521-06	Matrix Spike Duplica	.25/100	1	L16061445-04	07/01/16 16:49
104	NI.070116.165305	L16061451-01	GS165SS062016S-ES	.251/100	1		07/01/16 16:53
105	NI.070116.165617	L16061451-02	GS159SS062116G-ES	.25/100	1		07/01/16 16:56
106	NI.070116.165928	WG575057-01	Post Digestion Spike		1	L16061451-02	07/01/16 16:59
107	NI.070116.170240	WG575057-02	Serial Dilution		5	L16061451-02	07/01/16 17:02
108	NI.070116.170552	WG575057-02	Serial Dilution		25	L16061451-02	07/01/16 17:05
109	NI.070116.170905	WG575028-29	CCV		1		07/01/16 17:09
110	NI.070116.171217	WG575028-30	CCB		1		07/01/16 17:12
111	NI.070116.171825	L16061451-03	GS164SS062116S-ES	.251/100	1		07/01/16 17:18
112	NI.070116.172204	L16061451-04	GS164SS062116P-ES	.253/100	1		07/01/16 17:22
113	NI.070116.172516	L16061451-05	GS154SS062316X-ES	.253/100	1		07/01/16 17:25
114	NI.070116.172827	WG574521-02	Reference Sample		1	L16061451-06	07/01/16 17:28
115	NI.070116.173139	L16061451-07	GS153SS0622316X-ES	.253/100	1		07/01/16 17:31
116	NI.070116.173450	L16061451-08	GS153SS062316X-ESD	.256/100	1		07/01/16 17:34
117	NI.070116.173802	WG574521-07	Matrix Spike	.258/100	1	L16061451-06	07/01/16 17:38
118	NI.070116.174113	WG574521-08	Matrix Spike Duplica	.256/100	1	L16061451-06	07/01/16 17:41
119	NI.070116.174425	L16061445-01	TS935DS00700A	.258/100	1		07/01/16 17:44
120	NI.070116.174736	L16061445-02	TS935DS00705A	.256/100	1		07/01/16 17:47
121	NI.070116.175049	WG575028-31	CCV		1		07/01/16 17:50
122	NI.070116.175401	WG575028-32	CCB		1		07/01/16 17:54
123	NI.070116.175714	L16061445-03	TS935DS00800A		1		07/01/16 17:57
124	NI.070116.180025	L16061445-07	TS935DS00900A		1		07/01/16 18:00
125	NI.070116.180337	L16061445-08	TS935DS00905A		1		07/01/16 18:03
126	NI.070116.180648	L16061445-09	TS935DS00905C		1		07/01/16 18:06
127	NI.070116.181000	L16061445-10	TS935DS01000A		1		07/01/16 18:10
128	NI.070116.181311	L16061445-11	TS935DS01005A		1		07/01/16 18:13
129	NI.070116.181623	L16061445-12	TS935DS01205A		1		07/01/16 18:16
130	NI.070116.181934	L16061451-01	GS165SS062016S-ES		10		07/01/16 18:19
131	NI.070116.182246	L16061451-02	GS159SS062116G-ES		10		07/01/16 18:22
132	NI.070116.182557	WG575057-01	Post Digestion Spike		10	L16061451-02	07/01/16 18:25
133	NI.070116.182910	WG575028-33	CCV		1		07/01/16 18:29
134	NI.070116.183222	WG575028-34	CCB		1		07/01/16 18:32
135	NI.070116.183535	WG575057-02	Serial Dilution		50	L16061451-02	07/01/16 18:35
136	NI.070116.183846	L16061451-03	GS164SS062116S-ES		10		07/01/16 18:38

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070116A.REP

Analyst1: JYH Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705

ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607

CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345

Stannous : Hydroxylamine :

Workgroups: 574808,574849,574824,574804,575057

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	NI.070116.184158	L16061451-04	GS164SS062116P-ES		10		07/01/16 18:41
138	NI.070116.184509	L16061451-05	GS154SS062316X-ES		10		07/01/16 18:45
139	NI.070116.184821	WG574521-02	Reference Sample		10	L16061451-06	07/01/16 18:48
140	NI.070116.185132	L16061451-07	GS153SS0622316X-ES		10		07/01/16 18:51
141	NI.070116.185444	L16061451-08	GS153SS062316X-ESD		10		07/01/16 18:54
142	NI.070116.185755	WG574521-07	Matrix Spike		10	L16061451-06	07/01/16 18:57
143	NI.070116.190107	WG574521-08	Matrix Spike Duplica		10	L16061451-06	07/01/16 19:01
144	NI.070116.190419	WG575028-35	CCV		1		07/01/16 19:04
145	NI.070116.190731	WG575028-36	CCB		1		07/01/16 19:07
146	NI.070116.191044	WG575028-37	Low Level Continuing Calibra		1		07/01/16 19:10

Comments

Seq.	Rerun	Dil.	Reason	Analytes
67				
Seq. 67, 70-71: wrong WG numbers. JYH				

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Microbac Laboratories Inc.

Data Checklist

Date: 30-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 574800
Runlog ID: 76036
Analytical Workgroups: 574744,574571,574742,574807,574804,574806,574849

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1384,1129,1130,1065,996,1532
Level 4	1380,1227,1238,1068,1228,1231
	1237,1148,1150,1496,1498
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	BKT
Comments	

Primary Reviewer:
30-JUN-2016

Secondary Reviewer:
01-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-01-2016 12:44:08

Microbac Laboratories Inc.

Data Checklist

Date: 01-JUL-2016
Analyst: JYH
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 575028
Runlog ID: 76079
Analytical Workgroups: 574808,574849,574824,574804,575057

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1441,1442,1360,1400,1444,1445
Level 4	1289,12901417,1452,1453,1068
	1065,1451
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	BKT
Comments	

Primary Reviewer:

Secondary Reviewer:
05-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-05-2016 15:57:13

Microbac Laboratories Inc.

00679431

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG574804

Login Number: L16061068

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
C01-061716	04	06/17/16					06/23/2016	6	180		06/30/16	13.4	180	
C01-061716	04	06/17/16					06/23/2016	6	180		07/01/16	14.2	180	
C01FD-061716	05	06/17/16					06/23/2016	6	180		07/01/16	14.2	180	
C01FD-061716	05	06/17/16					06/23/2016	6	180		06/30/16	13.4	180	
MW19F-061716	11	06/17/16					06/23/2016	5.8	180		07/01/16	14	180	
MW19F-061716	11	06/17/16					06/23/2016	5.8	180		06/30/16	13.2	180	
MW18F-061716	13	06/17/16					06/23/2016	5.8	180		07/01/16	14	180	
MW18F-061716	13	06/17/16					06/23/2016	5.8	180		06/30/16	13.1	180	
MW18FMS-061716	15	06/17/16					06/23/2016	5.8	180		06/30/16	13.1	180	
MW18FMS-061716	15	06/17/16					06/23/2016	5.8	180		07/01/16	14	180	
MW18FMSD-061716	17	06/17/16					06/23/2016	5.8	180		07/01/16	14	180	
MW18FMSD-061716	17	06/17/16					06/23/2016	5.8	180		06/30/16	13.1	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4835989
Report generated 07/01/2016 15:24

METHOD BLANK SUMMARY

Login Number: L16061068
Blank File ID: NI.063016.171143
Prep Date: 06/23/16 09:23
Analyzed Date: 06/30/16 17:11
Analyst: JYH

Work Group: WG574804
Blank Sample ID: WG573840-02
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573840-03	NI.063016.171455	06/30/16 17:14	01
MW18F-061716	L16061068-13	NI.063016.171806	06/30/16 17:18	01
MW18FMS-061716	L16061068-15	NI.063016.172118	06/30/16 17:21	01
MW18FMSD-061716	L16061068-17	NI.063016.172429	06/30/16 17:24	01
C01-061716	L16061068-04	NI.063016.180913	06/30/16 18:09	01
C01FD-061716	L16061068-05	NI.063016.181225	06/30/16 18:12	01
MW19F-061716	L16061068-11	NI.063016.181536	06/30/16 18:15	01
C01-061716	L16061068-04	NI.070116.135751	07/01/16 13:57	DL01
C01FD-061716	L16061068-05	NI.070116.140103	07/01/16 14:01	DL01
MW19F-061716	L16061068-11	NI.070116.140414	07/01/16 14:04	DL01
MW18F-061716	L16061068-13	NI.070116.140725	07/01/16 14:07	DL01
MW18FMS-061716	L16061068-15	NI.070116.141703	07/01/16 14:17	DL01
MW18FMSD-061716	L16061068-17	NI.070116.142015	07/01/16 14:20	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4836148
Report generated 07/01/2016 15:24

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061068 Prep Date: 06/23/16 09:23 Sample ID: WG573840-02
Instrument ID: ICP-MS2 Run Date: 06/30/16 17:11 Prep Method: 3015
File ID: NI.063016.171143 Analyst: JYH Method: 6020A
Workgroup (AAB#): WG574804 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-30-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Antimony, Total	0.000500	0.00200	0.000500	1	U
Arsenic, Total	0.000500	0.00200	0.000500	1	U
Barium, Total	0.00150	0.00600	0.00150	1	U
Cadmium, Total	0.000300	0.00120	0.000300	1	U
Chromium, Total	0.00100	0.00400	0.00100	1	U
Cobalt, Total	0.000500	0.00200	0.000500	1	U
Copper, Total	0.00100	0.00400	0.00100	1	U
Lead, Total	0.000500	0.00200	0.000500	1	U
Manganese, Total	0.00100	0.00400	0.00100	1	U
Nickel, Total	0.00200	0.00800	0.00200	1	U
Silver, Total	0.000500	0.00200	0.000500	1	U
Thallium, Total	0.000100	0.000400	0.000100	1	U
Vanadium, Total	0.000500	0.00200	0.000500	1	U
Zinc, Total	0.0125	0.0500	0.0125	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4836149
01-JUL-2016 15:24

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061068 Run Date: 06/30/2016 Sample ID: WG573840-03
Instrument ID: ICP-MS2 Run Time: 17:14 Prep Method: 3015
File ID: NI.063016.171455 Analyst: JYH Method: 6020A
Workgroup (AAB#): WG574804 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD75998 Cal ID: ICP-MS-30-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Antimony, Total	0.125	0.120	96.1	80 - 120	
Arsenic, Total	0.125	0.122	97.3	80 - 120	
Barium, Total	0.125	0.125	100	80 - 120	
Cadmium, Total	0.125	0.125	99.7	80 - 120	
Chromium, Total	0.125	0.129	103	80 - 120	
Cobalt, Total	0.125	0.125	100	80 - 120	
Copper, Total	0.125	0.130	104	80 - 120	
Lead, Total	0.125	0.133	107	80 - 120	
Manganese, Total	0.125	0.128	103	80 - 120	
Nickel, Total	0.125	0.130	104	80 - 120	
Silver, Total	0.125	0.126	101	80 - 120	
Thallium, Total	0.125	0.129	103	80 - 120	
Vanadium, Total	0.125	0.126	100	80 - 120	
Zinc, Total	0.125	0.130	104	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4836150
Report generated: 07/01/2016 15:24

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16061068 Cal ID: ICP-MS2- 30-JUN-16 Worknum: WG574804
Instrument ID: ICP-MS2 Contract #: Prep Method: 3015
Parent ID: L16061068-13 File ID: NI.063016.171806 Dil: 1 Method: 6020
Sample ID: L16061068-15 MS File ID: NI.063016.172118 Dil: 1 Matrix: Water
Sample ID: L16061068-17 MSD File ID: NI.063016.172429 Dil: 1 Units: mg/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Antimony, Total	0.00149	0.125	0.117	92.6	0.125	0.111	87.3	5.82	80 - 120	20	
Arsenic, Total	0.00583	0.125	0.131	99.9	0.125	0.133	102	1.60	80 - 120	20	
Cadmium, Total	0.00225	0.125	0.125	97.9	0.125	0.126	99.4	1.43	80 - 120	20	
Chromium, Total	0.0138	0.125	0.141	102	0.125	0.180	133	24.2	80 - 120	20	*#
Cobalt, Total	0.00915	0.125	0.127	94.3	0.125	0.133	99.1	4.56	80 - 120	20	
Copper, Total	0.00447	0.125	0.125	96.5	0.125	0.130	100	3.58	80 - 120	20	
Lead, Total	0.00227	0.125	0.133	105	0.125	0.133	104	0.219	80 - 120	20	
Nickel, Total	0.0630	0.125	0.170	85.7	0.125	0.195	105	13.5	80 - 120	20	
Silver, Total	U	0.125	0.116	92.9	0.125	0.116	92.5	0.439	80 - 120	20	
Thallium, Total	0.000127	0.125	0.125	99.8	0.125	0.125	100	0.331	80 - 120	20	
Vanadium, Total	0.0105	0.125	0.131	96.4	0.125	0.147	109	11.2	80 - 120	20	
Zinc, Total	0.0491	0.125	0.160	88.8	0.125	0.181	106	12.4	80 - 120	20	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4835993
Report generated 07/05/2016 11:24

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16061068 Cal ID: ICP-MS2- 01-JUL-16 Worknum: WG574804
Instrument ID: ICP-MS2 Contract #: Prep Method: 3015
Parent ID: L16061068-13 File ID: NI.070116.140725 Dil: 10 Method: 6020
Sample ID: L16061068-15 MS File ID: NI.070116.141703 Dil: 10 Matrix: Water
Sample ID: L16061068-17 MSD File ID: NI.070116.142015 Dil: 10 Units: mg/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Barium, Total	0.157	0.125	0.245	70.6	0.125	0.311	124	23.9	80 - 120	20	*#
Manganese, Total	0.360	0.125	0.408	38.8	0.125	0.521	129	24.3	80 - 120	20	*#

* FAILS %REC LIMIT

FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4835993
Report generated 07/05/2016 11:24

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16061068 **Worknum:** WG574804
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG574804-02 **File ID:** NI.063016.173715 **Dil:** 5 **Units:** ug/L
Sample: L16061228-02 **File ID:** NI.063016.173052 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	ND	U	1.32	F	1960.00	
Arsenic	3.49	X	4.17	X	19.60	
Barium	8.08	X	8.66	F	7.22	
Cadmium	ND	U	ND	U		
Chromium	2.18	X	2.41	F	10.30	
Cobalt	0.215	F	ND	U		
Copper	1.00	F	ND	U		
Lead	0.256	F	ND	U		
Manganese	2.11	X	2.29	F	8.67	
Nickel	2.44	F	ND	U		
Silver	ND	U	ND	U		
Thallium	ND	U	0.259	F	1200.00	
Vanadium	4.89	X	5.37	X	9.81	
Zinc	ND	U	ND	U		

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4835987
07/01/2016 15:24

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061068 **Worknum:** WG574804
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG574804-01 **File ID:** NI.063016.173403 **Dil:** 1 **Units:** ug/L
Sample ID: L16061228-02 **File ID:** NI.063016.173052 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	47.0		0	U	50	94.0	75 - 125	
ARSENIC	53.9		3.49		50	100.8	75 - 125	
BARIUM	55.3		8.08		50	94.4	75 - 125	
CADMIUM	47.1		0	U	50	94.1	75 - 125	
CHROMIUM	52.2		2.18		50	100.0	75 - 125	
COBALT	48.2		0.215	F	50	96.0	75 - 125	
COPPER	47.7		1.00	F	50	93.4	75 - 125	
LEAD	50.9		0.256	F	50	101.2	75 - 125	
MANGANESE	51.9		2.11		50	99.5	75 - 125	
NICKEL	49.9		2.44	F	50	94.9	75 - 125	
SILVER	40.6		0	U	50	81.3	75 - 125	
THALLIUM	49.1		0	U	50	98.3	75 - 125	
VANADIUM	55.7		4.89		50	101.6	75 - 125	
ZINC	52.9		0	U	50	105.8	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4836147
Report generated: 07/01/2016 15:24

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061068	Workgroup (AAB#):	WG574804
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG574800	Initial Calibration Date:	30-JUN-2016 10:48

	WG574800-01		WG574800-02		WG574800-03		WG574800-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	70.5	.4	244	50	257000	100	505000	.999999	
ARSENIC	0	-57.0	.4	-7.10	50	66000	100	130000	.999996	
BARIUM	0	88.3	.4	161	50	111000	100	218000	1	
CADMIUM	0	5.70	.4	103	50	117000	100	230000	.999999	
CHROMIUM	0	9640	.4	9940	50	454000	100	879000	.999978	
COBALT	0	279	.4	601	50	400000	100	794000	.999998	
COPPER	0	114	.4	243	50	110000	100	211000	.999876	
LEAD	0	884	.4	1800	50	996000	100	1960000	.999999	
MANGANESE	0	954	.4	1350	50	423000	100	839000	1	
NICKEL	0	359	.4	445	50	112000	100	216000	.999936	
SILVER	0	123	.4	427	50	368000	100	716000	.999987	
THALLIUM	0	39.7	.4	401	50	446000	100	873000	.999999	
VANADIUM	0	1950	.4	2310	50	460000	100	897000	.99998	
ZINC	0	366	.4	523	50	64900	100	126000	.999968	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4835996
Report generated: 01-JUL-2016 15:25

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061068	Workgroup (AAB#):	WG574804
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG575028	Initial Calibration Date:	01-JUL-2016 10:40

	WG575028-01		WG575028-02		WG575028-03		WG575028-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	259	.4	428	50	250000	100	508000	.999935	
ARSENIC	0	-59.9	.4	5.90	50	61400	100	123000	.999997	
BARIUM	0	20.7	.4	146	50	107000	100	210000	.99998	
CADMIUM	0	2.60	.4	119	50	113000	100	223000	.999998	
CHROMIUM	0	7690	.4	8190	50	412000	100	812000	1	
COBALT	0	201	.4	604	50	385000	100	759000	.999986	
COPPER	0	167	.4	251	50	103000	100	201000	.999949	
LEAD	0	930	.4	2060	50	1040000	100	2040000	.999999	
MANGANESE	0	715	.4	1140	50	380000	100	751000	.999989	
NICKEL	0	335	.4	418	50	105000	100	205000	.999979	
SILVER	0	83.3	.4	447	50	352000	100	698000	1	
THALLIUM	0	7.70	.4	454	50	444000	100	872000	.999994	
VANADIUM	0	1560	.4	2030	50	413000	100	818000	.999998	
ZINC	0	240	.4	280	50	61600	100	122000	.999992	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4835996
Report generated: 01-JUL-2016 15:25

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061068
Instrument ID: ICP-MS2
File ID: NI.063016.105501
Workgroup (AAB#): WG574804
Matrix: WATER

Run Date: 06/30/2016
Run Time: 10:55
Analyst: JYH
Cal ID: ICP-MS2 - 30-JUN-16

Sample ID: WG574800-06
Method: 6020A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
COPPER	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.2	U
THALLIUM	.04	.16	.04	U
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4835998
Report generated 07/01/2016 15:25

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061068
Instrument ID: ICP-MS2
File ID: NI.070116.104640
Workgroup (AAB#): WG574804
Matrix: WATER

Run Date: 07/01/2016
Run Time: 10:46
Analyst: JYH
Cal ID: ICP-MS2 - 01-JUL-16

Sample ID: WG575028-06
Method: 6020A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
COPPER	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.2	U
THALLIUM	.04	.16	.04	U
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4835998
Report generated 07/01/2016 15:25

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574800-11
Instrument ID: ICP-MS2
Run Time: 11:11
Method: 6020A
File ID: NI.063016.111102
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574804
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4836001
Report generated 07/01/2016 15:25

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574800-33
Instrument ID: ICP-MS2
Run Time: 17:08
Method: 6020A
File ID: NI.063016.170831
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574804
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4836001
Report generated 07/01/2016 15:25

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574800-35
Instrument ID: ICP-MS2
Run Time: 17:46
Method: 6020A
File ID: NI.063016.174651
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574804
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4836001
Report generated 07/01/2016 15:25

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574800-37
Instrument ID: ICP-MS2
Run Time: 18:25
Method: 6020A
File ID: NI.063016.182512
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574804
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4836001
Report generated 07/01/2016 15:25

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 07/01/2016
Sample ID: WG575028-11
Instrument ID: ICP-MS2
Run Time: 11:02
Method: 6020A
File ID: NI.070116.110241
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574804
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.276	F
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 07/01/2016
Sample ID: WG575028-19
Instrument ID: ICP-MS2
Run Time: 13:35
Method: 6020A
File ID: NI.070116.133530
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574804
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Report generated 07/01/2016 15:25

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 07/01/2016
Sample ID: WG575028-21
Instrument ID: ICP-MS2
Run Time: 14:13
Method: 6020A
File ID: NI.070116.141350
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574804
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 07/01/2016
Sample ID: WG575028-23
Instrument ID: ICP-MS2
Run Time: 14:36
Method: 6020A
File ID: NI.070116.143613
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574804
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061068 Run Date: 07/01/2016 Sample ID: WG575028-05
Instrument ID: ICP-MS2 Run Time: 10:43 Method: 6020A
File ID: NI.070116.104327 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG574804 Cal ID: ICP-MS - 01-JUL-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	49.5	98.9	90 - 110	
Arsenic		50	50.5	101	90 - 110	
Barium		50	49.1	98.3	90 - 110	
Cadmium		50	49.7	99.4	90 - 110	
Chromium		50	50.3	101	90 - 110	
Cobalt		50	50.9	102	90 - 110	
Copper		50	50.6	101	90 - 110	
Lead		50	50.4	101	90 - 110	
Manganese		50	51.2	102	90 - 110	
Nickel		50	50.3	101	90 - 110	
Silver		50	49.2	98.3	90 - 110	
Thallium		50	49.7	99.3	90 - 110	
Vanadium		50	50.3	101	90 - 110	
Zinc		50	51.2	102	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4835997
Report generated 07/01/2016 15:25

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574800-05
Instrument ID: ICP-MS2
Run Time: 10:51
Method: 6020A
File ID: NI.063016.105148
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574804
Cal ID: ICP-MS - 30-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	49.0	98.1	90 - 110	
Arsenic		50	49.6	99.2	90 - 110	
Barium		50	49.4	98.8	90 - 110	
Cadmium		50	49.6	99.2	90 - 110	
Chromium		50	49.3	98.7	90 - 110	
Cobalt		50	50.0	99.9	90 - 110	
Copper		50	49.9	99.9	90 - 110	
Lead		50	50.0	99.9	90 - 110	
Manganese		50	49.5	99.0	90 - 110	
Nickel		50	49.8	99.6	90 - 110	
Silver		50	49.5	98.9	90 - 110	
Thallium		50	50.0	100	90 - 110	
Vanadium		50	49.7	99.4	90 - 110	
Zinc		50	50.5	101	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4835997
Report generated 07/01/2016 15:25

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574800-10
Instrument ID: ICP-MS2
Run Time: 11:07
Method: 6020A
File ID: NI.063016.110750
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574804
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0497	mg/L	99.4	90 - 110		
Arsenic		0.0500	0.0500	mg/L	100	90 - 110		
Barium		0.0500	0.0490	mg/L	98.0	90 - 110		
Cadmium		0.0500	0.0493	mg/L	98.6	90 - 110		
Chromium		0.0500	0.0496	mg/L	99.1	90 - 110		
Cobalt		0.0500	0.0509	mg/L	102	90 - 110		
Copper		0.0500	0.0502	mg/L	100	90 - 110		
Lead		0.0500	0.0502	mg/L	100	90 - 110		
Manganese		0.0500	0.0497	mg/L	99.4	90 - 110		
Nickel		0.0500	0.0499	mg/L	99.7	90 - 110		
Silver		0.0500	0.0494	mg/L	98.7	90 - 110		
Thallium		0.0500	0.0500	mg/L	100	90 - 110		
Vanadium		0.0500	0.0501	mg/L	100	90 - 110		
Zinc		0.0500	0.0501	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4836000
Report generated 07/01/2016 15:25

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574800-32
Instrument ID: ICP-MS2
Run Time: 17:05
Method: 6020A
File ID: NI.063016.170519
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574804
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0489	mg/L	97.8	90 - 110		
Arsenic		0.0500	0.0488	mg/L	97.6	90 - 110		
Barium		0.0500	0.0487	mg/L	97.3	90 - 110		
Cadmium		0.0500	0.0488	mg/L	97.7	90 - 110		
Chromium		0.0500	0.0497	mg/L	99.4	90 - 110		
Cobalt		0.0500	0.0496	mg/L	99.2	90 - 110		
Copper		0.0500	0.0498	mg/L	99.6	90 - 110		
Lead		0.0500	0.0517	mg/L	103	90 - 110		
Manganese		0.0500	0.0503	mg/L	101	90 - 110		
Nickel		0.0500	0.0498	mg/L	99.5	90 - 110		
Silver		0.0500	0.0484	mg/L	96.7	90 - 110		
Thallium		0.0500	0.0500	mg/L	99.9	90 - 110		
Vanadium		0.0500	0.0493	mg/L	98.7	90 - 110		
Zinc		0.0500	0.0503	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574800-34
Instrument ID: ICP-MS2
Run Time: 17:43
Method: 6020A
File ID: NI.063016.174340
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574804
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0499	mg/L	99.9	90 - 110		
Arsenic		0.0500	0.0499	mg/L	99.9	90 - 110		
Barium		0.0500	0.0496	mg/L	99.2	90 - 110		
Cadmium		0.0500	0.0500	mg/L	99.9	90 - 110		
Chromium		0.0500	0.0516	mg/L	103	90 - 110		
Cobalt		0.0500	0.0508	mg/L	102	90 - 110		
Copper		0.0500	0.0511	mg/L	102	90 - 110		
Lead		0.0500	0.0527	mg/L	105	90 - 110		
Manganese		0.0500	0.0501	mg/L	100	90 - 110		
Nickel		0.0500	0.0511	mg/L	102	90 - 110		
Silver		0.0500	0.0492	mg/L	98.4	90 - 110		
Thallium		0.0500	0.0511	mg/L	102	90 - 110		
Vanadium		0.0500	0.0504	mg/L	101	90 - 110		
Zinc		0.0500	0.0508	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4836000
Report generated 07/01/2016 15:25

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574800-36
Instrument ID: ICP-MS2
Run Time: 18:22
Method: 6020A
File ID: NI.063016.182201
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574804
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0487	mg/L	97.4	90 - 110		
Arsenic		0.0500	0.0491	mg/L	98.1	90 - 110		
Barium		0.0500	0.0483	mg/L	96.5	90 - 110		
Cadmium		0.0500	0.0493	mg/L	98.6	90 - 110		
Chromium		0.0500	0.0503	mg/L	101	90 - 110		
Cobalt		0.0500	0.0500	mg/L	100	90 - 110		
Copper		0.0500	0.0497	mg/L	99.5	90 - 110		
Lead		0.0500	0.0523	mg/L	105	90 - 110		
Manganese		0.0500	0.0500	mg/L	100	90 - 110		
Nickel		0.0500	0.0501	mg/L	100	90 - 110		
Silver		0.0500	0.0484	mg/L	96.7	90 - 110		
Thallium		0.0500	0.0501	mg/L	100	90 - 110		
Vanadium		0.0500	0.0495	mg/L	99.0	90 - 110		
Zinc		0.0500	0.0501	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068
Run Date: 07/01/2016
Sample ID: WG575028-10
Instrument ID: ICP-MS2
Run Time: 10:59
Method: 6020A
File ID: NI.070116.105929
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574804
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0511	mg/L	102	90 - 110		
Arsenic		0.0500	0.0505	mg/L	101	90 - 110		
Barium		0.0500	0.0496	mg/L	99.2	90 - 110		
Cadmium		0.0500	0.0500	mg/L	100	90 - 110		
Chromium		0.0500	0.0504	mg/L	101	90 - 110		
Cobalt		0.0500	0.0509	mg/L	102	90 - 110		
Copper		0.0500	0.0506	mg/L	101	90 - 110		
Lead		0.0500	0.0507	mg/L	101	90 - 110		
Manganese		0.0500	0.0505	mg/L	101	90 - 110		
Nickel		0.0500	0.0502	mg/L	100	90 - 110		
Silver		0.0500	0.0502	mg/L	100	90 - 110		
Thallium		0.0500	0.0505	mg/L	101	90 - 110		
Vanadium		0.0500	0.0509	mg/L	102	90 - 110		
Zinc		0.0500	0.0502	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068
Run Date: 07/01/2016
Sample ID: WG575028-18
Instrument ID: ICP-MS2
Run Time: 13:32
Method: 6020A
File ID: NI.070116.133218
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574804
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0501	mg/L	100	90 - 110		
Arsenic		0.0500	0.0499	mg/L	99.8	90 - 110		
Barium		0.0500	0.0480	mg/L	96.0	90 - 110		
Cadmium		0.0500	0.0496	mg/L	99.2	90 - 110		
Chromium		0.0500	0.0495	mg/L	99.0	90 - 110		
Cobalt		0.0500	0.0513	mg/L	103	90 - 110		
Copper		0.0500	0.0497	mg/L	99.5	90 - 110		
Lead		0.0500	0.0511	mg/L	102	90 - 110		
Manganese		0.0500	0.0499	mg/L	99.8	90 - 110		
Nickel		0.0500	0.0496	mg/L	99.3	90 - 110		
Silver		0.0500	0.0497	mg/L	99.3	90 - 110		
Thallium		0.0500	0.0503	mg/L	101	90 - 110		
Vanadium		0.0500	0.0504	mg/L	101	90 - 110		
Zinc		0.0500	0.0501	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068
Run Date: 07/01/2016
Sample ID: WG575028-20
Instrument ID: ICP-MS2
Run Time: 14:10
Method: 6020A
File ID: NI.070116.141039
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574804
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0495	mg/L	98.9	90 - 110		
Arsenic		0.0500	0.0500	mg/L	100	90 - 110		
Barium		0.0500	0.0481	mg/L	96.1	90 - 110		
Cadmium		0.0500	0.0499	mg/L	99.7	90 - 110		
Chromium		0.0500	0.0488	mg/L	97.6	90 - 110		
Cobalt		0.0500	0.0528	mg/L	106	90 - 110		
Copper		0.0500	0.0492	mg/L	98.3	90 - 110		
Lead		0.0500	0.0510	mg/L	102	90 - 110		
Manganese		0.0500	0.0487	mg/L	97.4	90 - 110		
Nickel		0.0500	0.0489	mg/L	97.8	90 - 110		
Silver		0.0500	0.0496	mg/L	99.2	90 - 110		
Thallium		0.0500	0.0500	mg/L	100	90 - 110		
Vanadium		0.0500	0.0503	mg/L	101	90 - 110		
Zinc		0.0500	0.0495	mg/L	99.0	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4836000
Report generated 07/01/2016 15:25

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068
Run Date: 07/01/2016
Sample ID: WG575028-22
Instrument ID: ICP-MS2
Run Time: 14:33
Method: 6020A
File ID: NI.070116.143302
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574804
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0491	mg/L	98.1	90 - 110		
Arsenic		0.0500	0.0499	mg/L	99.8	90 - 110		
Barium		0.0500	0.0481	mg/L	96.1	90 - 110		
Cadmium		0.0500	0.0497	mg/L	99.3	90 - 110		
Chromium		0.0500	0.0492	mg/L	98.4	90 - 110		
Cobalt		0.0500	0.0529	mg/L	106	90 - 110		
Copper		0.0500	0.0503	mg/L	101	90 - 110		
Lead		0.0500	0.0521	mg/L	104	90 - 110		
Manganese		0.0500	0.0492	mg/L	98.3	90 - 110		
Nickel		0.0500	0.0497	mg/L	99.5	90 - 110		
Silver		0.0500	0.0501	mg/L	100	90 - 110		
Thallium		0.0500	0.0502	mg/L	100	90 - 110		
Vanadium		0.0500	0.0504	mg/L	101	90 - 110		
Zinc		0.0500	0.0501	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4836000
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Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574800-07
Instrument ID: ICP-MS2
Run Time: 10:58
Method: 6020A
File ID: NI.063016.105814
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574804
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.420	ug/L	105	70 - 130		
Arsenic		0.400	0.398	ug/L	99.5	70 - 130		
Barium		0.750	0.731	ug/L	97.5	70 - 130		
Cadmium		0.240	0.241	ug/L	101	70 - 130		
Chromium		0.800	0.644	ug/L	80.6	70 - 130		
Cobalt		0.400	0.390	ug/L	97.6	70 - 130		
Copper		0.800	0.780	ug/L	97.4	70 - 130		
Lead		0.200	0.204	ug/L	102	70 - 130		
Manganese		0.500	0.454	ug/L	90.8	70 - 130		
Nickel		1.60	1.54	ug/L	96.3	70 - 130		
Silver		0.400	0.401	ug/L	100	70 - 130		
Thallium		0.0800	0.0893	ug/L	112	70 - 130		
Vanadium		0.400	0.355	ug/L	88.7	70 - 130		
Zinc		6.25	5.98	ug/L	95.7	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4837261
Report generated 07/01/2016 15:25

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574800-22
Instrument ID: ICP-MS2
Run Time: 13:58
Method: 6020A
File ID: NI.063016.135859
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574804
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.406	ug/L	101	70 - 130		
Arsenic		0.400	0.408	ug/L	102	70 - 130		
Barium		0.750	0.678	ug/L	90.4	70 - 130		
Cadmium		0.240	0.242	ug/L	101	70 - 130		
Chromium		0.800	0.711	ug/L	88.8	70 - 130		
Cobalt		0.400	0.382	ug/L	95.5	70 - 130		
Copper		0.800	0.787	ug/L	98.3	70 - 130		
Lead		0.200	0.207	ug/L	104	70 - 130		
Manganese		0.500	0.471	ug/L	94.1	70 - 130		
Nickel		1.60	1.52	ug/L	94.8	70 - 130		
Silver		0.400	0.386	ug/L	96.5	70 - 130		
Thallium		0.0800	0.0865	ug/L	108	70 - 130		
Vanadium		0.400	0.336	ug/L	84.0	70 - 130		
Zinc		6.25	6.19	ug/L	99.1	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4837261
Report generated 07/01/2016 15:25

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574800-27
Instrument ID: ICP-MS2
Run Time: 15:05
Method: 6020A
File ID: NI.063016.150517
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574804
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.411	ug/L	103	70 - 130		
Arsenic		0.400	0.411	ug/L	103	70 - 130		
Barium		0.750	0.703	ug/L	93.7	70 - 130		
Cadmium		0.240	0.234	ug/L	97.6	70 - 130		
Chromium		0.800	0.673	ug/L	84.1	70 - 130		
Cobalt		0.400	0.384	ug/L	95.9	70 - 130		
Copper		0.800	0.777	ug/L	97.1	70 - 130		
Lead		0.200	0.209	ug/L	104	70 - 130		
Manganese		0.500	0.449	ug/L	89.8	70 - 130		
Nickel		1.60	1.52	ug/L	95.3	70 - 130		
Silver		0.400	0.382	ug/L	95.4	70 - 130		
Thallium		0.0800	0.0853	ug/L	107	70 - 130		
Vanadium		0.400	0.356	ug/L	89.0	70 - 130		
Zinc		6.25	6.28	ug/L	101	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4837261
Report generated 07/01/2016 15:25

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574800-46
Instrument ID: ICP-MS2
Run Time: 20:39
Method: 6020A
File ID: NI.063016.203927
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574804
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.368	ug/L	92.0	70 - 130		
Arsenic		0.400	0.399	ug/L	99.8	70 - 130		
Barium		0.750	0.662	ug/L	88.2	70 - 130		
Cadmium		0.240	0.226	ug/L	94.3	70 - 130		
Chromium		0.800	0.633	ug/L	79.1	70 - 130		
Cobalt		0.400	0.403	ug/L	101	70 - 130		
Copper		0.800	0.775	ug/L	96.9	70 - 130		
Lead		0.200	0.209	ug/L	104	70 - 130		
Manganese		0.500	0.435	ug/L	86.9	70 - 130		
Nickel		1.60	1.55	ug/L	96.6	70 - 130		
Silver		0.400	0.387	ug/L	96.6	70 - 130		
Thallium		0.0800	0.0831	ug/L	104	70 - 130		
Vanadium		0.400	0.374	ug/L	93.5	70 - 130		
Zinc		6.25	6.10	ug/L	97.5	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4837261
Report generated 07/01/2016 15:25

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061068
Run Date: 07/01/2016
Sample ID: WG575028-07
Instrument ID: ICP-MS2
Run Time: 10:49
Method: 6020A
File ID: NI.070116.104953
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574804
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.364	ug/L	91.0	70 - 130		
Arsenic		0.400	0.390	ug/L	97.6	70 - 130		
Barium		0.750	0.697	ug/L	92.9	70 - 130		
Cadmium		0.240	0.238	ug/L	99.3	70 - 130		
Chromium		0.800	0.709	ug/L	88.6	70 - 130		
Cobalt		0.400	0.371	ug/L	92.7	70 - 130		
Copper		0.800	0.775	ug/L	96.9	70 - 130		
Lead		0.200	0.193	ug/L	96.3	70 - 130		
Manganese		0.500	0.457	ug/L	91.3	70 - 130		
Nickel		1.60	1.52	ug/L	95.0	70 - 130		
Silver		0.400	0.392	ug/L	98.0	70 - 130		
Thallium		0.0800	0.0815	ug/L	102	70 - 130		
Vanadium		0.400	0.339	ug/L	84.7	70 - 130		
Zinc		6.25	6.40	ug/L	102	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4837261
Report generated 07/01/2016 15:25

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061068
Run Date: 07/01/2016
Sample ID: WG575028-24
Instrument ID: ICP-MS2
Run Time: 14:39
Method: 6020A
File ID: NI.070116.143926
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574804
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.364	ug/L	90.9	70 - 130		
Arsenic		0.400	0.415	ug/L	104	70 - 130		
Barium		0.750	0.660	ug/L	88.0	70 - 130		
Cadmium		0.240	0.234	ug/L	97.3	70 - 130		
Chromium		0.800	0.671	ug/L	83.8	70 - 130		
Cobalt		0.400	0.393	ug/L	98.3	70 - 130		
Copper		0.800	0.781	ug/L	97.7	70 - 130		
Lead		0.200	0.199	ug/L	99.6	70 - 130		
Manganese		0.500	0.428	ug/L	85.7	70 - 130		
Nickel		1.60	1.54	ug/L	96.4	70 - 130		
Silver		0.400	0.385	ug/L	96.2	70 - 130		
Thallium		0.0800	0.0813	ug/L	102	70 - 130		
Vanadium		0.400	0.360	ug/L	90.0	70 - 130		
Zinc		6.25	7.08	ug/L	113	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4837261
Report generated 07/01/2016 15:25

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061068
Instrument ID: ICP-MS2
Sol. A : WG574800-08 **File ID:** NI.063016.110126
Sol. AB : WG574800-09 **File ID:** NI.063016.110437

Workgroup (AAB#): WG574804
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.0513	NS	100	96.0	96.0	
Arsenic	NS	0.0233	NS	100	97.5	97.5	
Barium	NS	0.348	NS	100	95.6	95.6	
Cadmium	NS	-0.0809	NS	100	95.8	95.8	
Chromium	NS	0.0229	NS	100	94.9	94.9	
Cobalt	NS	0.0396	NS	100	94.9	94.9	
Copper	NS	0.304	NS	100	95.5	95.5	
Lead	NS	0.0556	NS	100	95.9	95.9	
Manganese	NS	0.116	NS	100	94.4	94.4	
Nickel	NS	0.412	NS	100	94.4	94.4	
Silver	NS	0.0314	NS	100	85.1	85.1	
Thallium	NS	0.0458	NS	100	95.8	95.8	
Vanadium	NS	0.0260	NS	100	96.0	96.0	
Zinc	NS	0.752	NS	100	98.3	98.3	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4835999
Report generated 07/01/2016 15:25

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061068
Instrument ID: ICP-MS2
Sol. A : WG575028-08 **File ID:** NI.070116.105304
Sol. AB : WG575028-09 **File ID:** NI.070116.105616

Workgroup (AAB#): WG574804
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.118	NS	100	96.8	96.8	
Arsenic	NS	0	NS	100	100	100	
Barium	NS	0.406	NS	100	98.7	98.7	
Cadmium	NS	-0.0920	NS	100	99.5	99.5	
Chromium	NS	0.0974	NS	100	97.8	97.8	
Cobalt	NS	0.0353	NS	100	98.4	98.4	
Copper	NS	0.287	NS	100	98.5	98.5	
Lead	NS	0.0642	NS	100	98.7	98.7	
Manganese	NS	0.0949	NS	100	99.2	99.2	
Nickel	NS	0.398	NS	100	97.1	97.1	
Silver	NS	0.0605	NS	100	87.4	87.4	
Thallium	NS	0.0383	NS	100	98.2	98.2	
Vanadium	NS	0.0180	NS	100	99.7	99.7	
Zinc	NS	1.24	NS	100	103	103	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
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Report generated 07/01/2016 15:25

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16061068 **Analytical Method:** 6020
Analytical Workgroup: WG574804 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** JYH
ICAL Date: 30-JUN-2016 10:39

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16061068-04	SAMP	30-JUN-2016 18:09	94.398	97.396	95.708
L16061068-05	SAMP	30-JUN-2016 18:12	95.017	98.903	97.081
L16061068-11	SAMP	30-JUN-2016 18:15	104.851	106.076	105.072
L16061068-13	SAMP	30-JUN-2016 17:18	95.237	98.07	97.68
L16061068-15	SAMP	30-JUN-2016 17:21	95.349	100.413	98.47
L16061068-17	SAMP	30-JUN-2016 17:24	95.494	98.907	98.404
L16061228-02	SAMP	30-JUN-2016 17:30	91.277	96.4	94.63
WG573840-02	BLANK	30-JUN-2016 17:11	97.169	95.925	94.999
WG573840-03	LCS	30-JUN-2016 17:14	101.585	103.466	103.274
WG574800-05	ICV	30-JUN-2016 10:51	97.371	98.497	97.785
WG574800-06	ICB	30-JUN-2016 10:55	98.231	98.427	97.708
WG574800-07	LLICV	30-JUN-2016 10:58	96.27	95.948	95.14
WG574800-08	ICS	30-JUN-2016 11:01	97.491	98.02	97.584
WG574800-09	ICS	30-JUN-2016 11:04	99.493	99.441	97.601
WG574800-10	CCV	30-JUN-2016 11:07	99.729	98.935	99.965
WG574800-11	CCB	30-JUN-2016 11:11	100.592	99.112	100.515
WG574800-22	LLCCV	30-JUN-2016 13:58	98.475	97.374	97.764
WG574800-27	LLCCV	30-JUN-2016 15:05	98.002	96.511	98.029
WG574800-32	CCV	30-JUN-2016 17:05	99.022	100.899	100.829
WG574800-33	CCB	30-JUN-2016 17:08	101.747	102.289	102.818
WG574800-34	CCV	30-JUN-2016 17:43	103.129	103.628	104.03
WG574800-35	CCB	30-JUN-2016 17:46	105.158	103.663	106.407
WG574800-36	CCV	30-JUN-2016 18:22	101.016	102.877	103.708
WG574800-37	CCB	30-JUN-2016 18:25	102.533	102.639	103.588
WG574800-46	LLCCV	30-JUN-2016 20:39	99.181	92.721	97.658
WG574804-01	PSPK	30-JUN-2016 17:34	93.535	97.917	97.366
WG574804-02	SERIAL	30-JUN-2016 17:37	96.163	97.507	96.155

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4836152
Report generated: 07/01/2016 15:25

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16061068 **Analytical Method:** 6020
Analytical Workgroup: WG574804 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** JYH
ICAL Date: 01-JUL-2016 10:30

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16061068-04	SAMP	01-JUL-2016 13:57	99.248	94.861	95.359
L16061068-05	SAMP	01-JUL-2016 14:01	97.219	93.599	93.329
L16061068-11	SAMP	01-JUL-2016 14:04	98.247	94.031	93.75
L16061068-13	SAMP	01-JUL-2016 14:07	96.152	93.267	93.5
L16061068-15	SAMP	01-JUL-2016 14:17	94.686	91.96	91.442
L16061068-17	SAMP	01-JUL-2016 14:20	95.055	91.806	91.481
WG575028-05	ICV	01-JUL-2016 10:43	99.388	100.45	101.227
WG575028-06	ICB	01-JUL-2016 10:46	99.921	101.195	100.88
WG575028-07	LLICV	01-JUL-2016 10:49	97.843	98.579	96.464
WG575028-08	ICS	01-JUL-2016 10:53	97.097	100.956	98.373
WG575028-09	ICS	01-JUL-2016 10:56	99.537	101.553	98.936
WG575028-10	CCV	01-JUL-2016 10:59	98.413	100.239	99.347
WG575028-11	CCB	01-JUL-2016 11:02	101.078	100.828	100.108
WG575028-18	CCV	01-JUL-2016 13:32	102.499	106.565	105.514
WG575028-19	CCB	01-JUL-2016 13:35	102.831	106.05	104.856
WG575028-20	CCV	01-JUL-2016 14:10	100.873	99.656	100.42
WG575028-21	CCB	01-JUL-2016 14:13	101.791	98.273	100.402
WG575028-22	CCV	01-JUL-2016 14:33	101.588	103.499	103.495
WG575028-23	CCB	01-JUL-2016 14:36	103.592	103.273	104.686
WG575028-24	LLCCV	01-JUL-2016 14:39	100.804	98.706	100.09

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4836152
Report generated: 07/01/2016 15:25

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16061068 **Date:** 04/19/2016
Insturment ID: ICP-MS2 **Method:** 6020A

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Uranium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4835994
Report generated: 07/01/2016 15:25

2.3.2.3 Raw Data

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Thursday, June 30, 2016 10:16:38

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1328	2024	0.711	
Mg	23.985	23.975	4505	2020	0.704	
Co	58.933	58.925	11694	2022	0.703	
In	114.904	114.925	22865	2028	0.690	
U	238.050	238.075	47462	2043	0.688	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	7.630
5.575	5.349
5.625	5.081
5.675	3.334
5.725	4.033
5.775	2.990
5.825	2.517
5.875	2.463
5.925	2.363
5.975	1.901
6.025	1.768
6.075	2.257
6.125	3.087
6.175	2.374
6.225	3.065
6.275	23.027
6.325	91.287
6.375	104.583
6.425	79.057
6.475	31.882
6.525	13.481
6.575	6.091
6.625	4.743
6.675	2.806
6.725	1.215
6.775	1.960
6.825	1.716

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6.875	1.994
6.925	0.718
6.975	0.930
7.025	1.375
7.075	2.469
7.125	1.868
7.175	1.445
7.225	1.854
7.275	2.308
7.325	12.753
7.375	83.853
7.425	70.711
7.475	70.711
7.525	93.541
7.575	60.858
7.625	46.481
7.675	70.711
7.725	34.401
7.775	119.523
7.825	50.000
7.875	37.268
7.925	127.476
7.975	34.233
8.025	91.287
8.075	38.030
8.125	35.355
8.175	60.858
8.225	81.223
8.275	81.441
8.325	81.441
8.375	108.327
8.425	136.931
8.475	55.902
22.525	70.711
22.575	39.033
22.625	61.341
22.675	56.983
22.725	46.220
22.775	20.787
22.825	34.401
22.875	19.357
22.925	29.463
22.975	26.998
23.025	25.078
23.075	21.812
23.125	32.010
23.175	13.608

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23.225	32.341
23.275	38.828
23.325	30.053
23.375	30.859
23.425	25.074
23.475	16.686
23.525	2.987
23.575	2.068
23.625	1.912
23.675	1.479
23.725	1.430
23.775	0.814
23.825	0.812
23.875	0.782
23.925	1.354
23.975	0.967
24.025	1.220
24.075	1.436
24.125	1.501
24.175	1.650
24.225	1.929
24.275	3.295
24.325	8.839
24.375	20.738
24.425	26.143
24.475	8.190
24.525	2.847
24.575	2.081
24.625	0.816
24.675	1.083
24.725	1.324
24.775	1.693
24.825	1.461
24.875	0.765
24.925	0.362
24.975	0.884
25.025	1.720
25.075	1.315
25.125	1.430
25.175	1.294
25.225	3.746
25.275	11.806
25.325	62.251
25.375	39.219
25.425	15.767
25.475	12.071
57.525	1.335

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57.575	1.767
57.625	2.181
57.675	2.009
57.725	2.029
57.775	2.254
57.825	2.922
57.875	2.887
57.925	1.630
57.975	0.949
58.025	1.557
58.075	1.747
58.125	1.182
58.175	2.238
58.225	3.336
58.275	23.538
58.325	30.609
58.375	13.574
58.425	14.809
58.475	3.919
58.525	2.582
58.575	1.791
58.625	2.908
58.675	2.527
58.725	1.367
58.775	1.571
58.825	1.717
58.875	1.142
58.925	2.124
58.975	0.937
59.025	1.704
59.075	1.389
59.125	1.584
59.175	2.144
59.225	3.699
59.275	31.869
59.325	40.825
59.375	45.799
59.425	31.345
59.475	10.995
59.525	6.778
59.575	1.800
59.625	2.865
59.675	3.974
59.725	4.516
59.775	2.063
59.825	2.491
59.875	2.616

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59.925	2.954
59.975	2.919
60.025	2.174
60.075	3.080
60.125	2.036
60.175	4.733
60.225	16.194
60.275	23.923
60.325	52.705
60.375	71.261
60.425	42.592
60.475	38.540
113.525	6.475
113.575	2.639
113.625	3.226
113.675	0.931
113.725	0.501
113.775	1.524
113.825	1.495
113.875	2.496
113.925	1.825
113.975	1.532
114.025	1.933
114.075	0.733
114.125	2.194
114.175	1.035
114.225	3.370
114.275	8.850
114.325	18.763
114.375	48.230
114.425	17.246
114.475	8.898
114.525	2.048
114.575	2.379
114.625	1.068
114.675	1.539
114.725	1.194
114.775	2.031
114.825	1.123
114.875	1.770
114.925	1.834
114.975	1.824
115.025	1.759
115.075	1.250
115.125	0.617
115.175	2.122
115.225	1.801

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115.275	5.203
115.325	13.734
115.375	42.592
115.425	21.114
115.475	17.678
115.525	14.002
115.575	6.607
115.625	3.973
115.675	2.459
115.725	3.163
115.775	1.631
115.825	3.014
115.875	3.357
115.925	1.866
115.975	3.156
116.025	3.757
116.075	2.834
116.125	2.480
116.175	4.209
116.225	6.098
116.275	20.916
116.325	64.359
116.375	109.139
116.425	32.969
116.475	54.772
236.525	
236.575	32.723
236.625	28.020
236.675	32.394
236.725	27.217
236.775	29.607
236.825	46.481
236.875	38.528
236.925	40.232
236.975	25.495
237.025	28.917
237.075	16.767
237.125	20.306
237.175	41.714
237.225	28.144
237.275	25.377
237.325	14.678
237.375	15.811
237.425	32.785
237.475	27.741
237.525	21.495
237.575	7.610

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237.625	6.358
237.675	0.613
237.725	2.011
237.775	1.691
237.825	0.412
237.875	0.870
237.925	0.892
237.975	0.832
238.025	0.851
238.075	1.242
238.125	0.975
238.175	0.909
238.225	1.242
238.275	1.635
238.325	2.249
238.375	2.589
238.425	3.619
238.475	2.494
238.525	6.239
238.575	22.114
238.625	31.950
238.675	23.742
238.725	41.271
238.775	13.284
238.825	23.799
238.875	20.490
238.925	20.729
238.975	25.009
239.025	10.012
239.075	10.866
239.125	21.209
239.175	17.275
239.225	8.810
239.275	26.290
239.325	15.160
239.375	31.836
239.425	35.067
239.475	24.022

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SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 6/30/2016 10:25:18 AM
End Time: 6/30/2016 10:27:30 AM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 7351.05
        Obtained Intensity (Mg 23.985): 182663.43
        Obtained Intensity (In 114.904): 78892.53
        Obtained Intensity (U 238.05): 164664.04
        Obtained Intensity (Bkgd 220): 0.27
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.021 (=4819.37 / 231640.41)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.012 (=2694.11 / 231640.41)
```

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SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 6/30/2016 10:25:18 AM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 7351.05
                Obtained Intensity (Mg 23.985): 182663.43
                Obtained Intensity (In 114.904): 78892.53
                Obtained Intensity (U 238.05): 164664.04
                Obtained Intensity (Bkgd 220): 0.27
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.021 (=4819.37 / 231640.41)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.012 (=2694.11 / 231640.41)
[Passed]  Optimum value(s): N/A

End Time: 6/30/2016 10:27:30 AM
```


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Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Thursday, June 30, 2016 10:35:49
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74916.4	0.4				ug/L		Standard
	Be	9	10.0	50.0				ug/L		Standard
	Al	27	1821.8	4.2				ug/L		Standard
	Sc	45	55220.5	2.3				ug/L		Standard
	Ti	47	34.0	19.3				ug/L		Standard
	V	51	1937.5	2.5				ug/L		Standard
	Cr	52	9521.7	0.5				ug/L		Standard
	Cr	53	395.0	15.6				ug/L		Standard
	Mn	55	902.0	1.6				ug/L		Standard
	Co	59	262.3	7.9				ug/L		Standard
	Ni	60	370.7	8.4				ug/L		Standard
	Cu	65	105.7	3.8				ug/L		Standard
	Zn	66	398.3	3.8				ug/L		Standard
>	Ge	72	535147.0	1.3				ug/L		Standard
	As	75	-43.2	36.5				ug/L		Standard
	Se	82	13.7	13.4				ug/L		Standard
	Se-1	77	65.0	13.8				ug/L		Standard
>	Ga	71	96.7	26.0				mg/L		Standard
	Rb	85	15.0	88.2				ug/L		Standard
	Y	89	465703.7	0.2				ug/L		Standard
>	Rh	103	10.0	50.0				ug/L		Standard
	Mo	98	9.3	22.2				ug/L		Standard
	Ag	107	82.3	22.3				ug/L		Standard
	Cd	111	6.7	31.3				mg/L		Standard
	Cd	114	21.4	79.6				ug/L		Standard
>	In	115	619034.9	0.4				ug/L		Standard
	Sn	118	508.3	11.8				ug/L		Standard
	Sb	123	86.5	9.9				ug/L		Standard
	Ba	135	79.3	8.0				ug/L		Standard
	Ce	140	68.3	51.9				ug/L		Standard
>	Tb	159	986981.5	1.1				ug/L		Standard
	Ho	165	10.0	50.0				ug/L		Standard
	Tl	203	13.0	73.4				ug/L		Standard
	Tl	205	10.0	50.0				ug/L		Standard
	Pb	206	263.7	6.5				ug/L		Standard
	Pb	207	227.0	4.2				ug/L		Standard
	Pb	208	867.7	4.8				ug/L		Standard
	U	238	8.3	45.4				ug/L		Standard
>	Bi	209	541014.1	1.0				ug/L		Standard

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Na	23	1.7	173.2	mg/L	Standard
Mg	24	53.3	14.3	mg/L	Standard
K	39	53.3	37.9	mg/L	Standard
Ca	43	28.3	36.7	mg/L	Standard
Fe	54	180.5	24.2	mg/L	Standard
Fe	57	256.7	3.0	mg/L	Standard
Sc-1	45	55220.5	2.3	mg/L	Standard
Cl	35	35503.6	2.5	ug/L	Standard
Kr	83	1.7	69.3	ug/L	Standard
Br	81	2040.1	4.5	ug/L	Standard
P	31	20435.5	5.2	ug/L	Standard
S	34	2430.2	2.4	ug/L	Standard
Sr	88	75.0	24.0	ug/L	Standard
C	12	293.3	19.4	mg/L	Standard
N	14	0.0		mg/L	Standard
Hg	202	6.7	86.6	mg/L	Standard
Dy	164	8.9	104.8	mg/L	Standard
Ho-1	165	10.0	50.0	mg/L	Standard
Er	166	23.3	89.2	mg/L	Standard
I	127	1808.4	6.4	mg/L	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Blank
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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Thursday, June 30, 2016 10:39:00
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73168.0	2.3				ug/L	74916	Standard
	Be	9	18.3	41.7				ug/L	10	Standard
	Al	27	1861.8	6.0				ug/L	1822	Standard
	Sc	45	55454.6	1.0				ug/L	55220	Standard
	Ti	47	36.7	1.6				ug/L	34	Standard
	V	51	1952.1	3.2				ug/L	1938	Standard
	Cr	52	9643.4	1.2				ug/L	9522	Standard
	Cr	53	401.7	8.7				ug/L	395	Standard
	Mn	55	953.7	5.3				ug/L	902	Standard
	Co	59	279.0	21.4				ug/L	262	Standard
	Ni	60	359.3	5.8				ug/L	371	Standard
	Cu	65	114.3	1.0				ug/L	106	Standard
	Zn	66	366.0	3.4				ug/L	398	Standard
>	**Ge**	72	539086.2	1.2				ug/L	535147	Standard
	As	75	-57.0	25.6				ug/L	-43	Standard
	Se	82	17.9	18.3				ug/L	14	Standard
	Se-1	77	61.7	4.7				ug/L	65	Standard
>	**Ga**	71	95.0	29.3				mg/L	97	Standard
	Rb	85	35.0	24.7				ug/L	15	Standard
	Y	89	475042.0	0.3				ug/L	465704	Standard
>	**Rh**	103	18.3	15.7				ug/L	10	Standard
	Mo	98	4.2	10.7				ug/L	9	Standard
	Ag	107	122.7	49.1				ug/L	82	Standard
	Cd	111	5.7	113.6				mg/L	7	Standard
	Cd	114	21.7	100.9				ug/L	21	Standard
>	**In**	115	616759.5	0.1				ug/L	619035	Standard
	Sn	118	495.0	9.3				ug/L	508	Standard
	Sb	123	70.5	74.4				ug/L	86	Standard
	Ba	135	88.3	26.2				ug/L	79	Standard
	Ce	140	181.7	151.8				ug/L	68	Standard
>	**Tb**	159	989061.2	1.8				ug/L	986982	Standard
	Ho	165	8.3	124.9				ug/L	10	Standard
	Tl	203	39.7	160.1				ug/L	13	Standard
	Tl	205	28.3	142.6				ug/L	10	Standard
	Pb	206	285.3	17.3				ug/L	264	Standard
	Pb	207	226.7	15.6				ug/L	227	Standard
	Pb	208	883.7	9.2				ug/L	868	Standard
	U	238	17.7	134.0				ug/L	8	Standard
>	**Bi**	209	540861.9	0.7				ug/L	541014	Standard

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	Na	23	0.0		mg/L	2	Standard
	Mg	24	56.7	41.7	mg/L	53	Standard
	K	39	36.7	41.7	mg/L	53	Standard
	Ca	43	46.7	16.4	mg/L	28	Standard
	Fe	54	178.9	5.0	mg/L	181	Standard
	Fe	57	258.3	9.5	mg/L	257	Standard
>	**Sc-1**	45	55454.6	1.0	mg/L	55220	Standard
	Cl	35	35327.8	0.4	ug/L	35504	Standard
	Kr	83	2.7	57.3	ug/L	2	Standard
	Br	81	2013.5	0.6	ug/L	2040	Standard
	P	31	20338.7	3.7	ug/L	20435	Standard
	S	34	2328.5	3.8	ug/L	2430	Standard
	Sr	88	75.0	33.3	ug/L	75	Standard
	C	12	266.7	24.4	mg/L	293	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	0.0		mg/L	7	Standard
	Dy	164	2.2	285.5	mg/L	9	Standard
	Ho-1	165	8.3	124.9	mg/L	10	Standard
	Er	166	23.3	49.5	mg/L	23	Standard
	I	127	1715.1	9.7	mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Thursday, June 30, 2016 10:42:12
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72707.4	2.7				ug/L	74916	Standard
	Be	9	55.0	24.1				ug/L	10	Standard
	Al	27	8810.9	6.1				ug/L	1822	Standard
	Sc	45	55881.2	1.6				ug/L	55220	Standard
	Ti	47	71.3	25.6				ug/L	34	Standard
	V	51	2314.2	6.8				ug/L	1938	Standard
	Cr	52	9938.6	0.7				ug/L	9522	Standard
	Cr	53	495.0	15.3				ug/L	395	Standard
	Mn	55	1353.1	1.7				ug/L	902	Standard
	Co	59	601.3	1.5				ug/L	262	Standard
	Ni	60	444.7	3.8				ug/L	371	Standard
	Cu	65	243.3	5.3				ug/L	106	Standard
	Zn	66	523.0	8.5				ug/L	398	Standard
>	Ge	72	542852.5	0.7				ug/L	535147	Standard
	As	75	-7.1	315.0				ug/L	-43	Standard
	Se	82	20.2	32.1				ug/L	14	Standard
	Se-1	77	57.7	10.6				ug/L	65	Standard
>	Ga	71	103.3	22.9				mg/L	97	Standard
	Rb	85	45.0	48.4				ug/L	15	Standard
	Y	89	482686.3	1.8				ug/L	465704	Standard
>	Rh	103	15.0	57.7				ug/L	10	Standard
	Mo	98	276.1	8.9				ug/L	9	Standard
	Ag	107	427.3	2.1				ug/L	82	Standard
	Cd	111	102.5	11.8				mg/L	7	Standard
	Cd	114	241.2	14.1				ug/L	21	Standard
>	In	115	624979.9	1.0				ug/L	619035	Standard
	Sn	118	1010.0	34.3				ug/L	508	Standard
	Sb	123	243.8	4.7				ug/L	86	Standard
	Ba	135	160.7	8.2				ug/L	79	Standard
	Ce	140	43.3	35.3				ug/L	68	Standard
>	Tb	159	995051.3	1.5				ug/L	986982	Standard
	Ho	165	11.7	107.9				ug/L	10	Standard
	Tl	203	401.3	6.5				ug/L	13	Standard
	Tl	205	330.0	13.5				ug/L	10	Standard
	Pb	206	514.0	4.8				ug/L	264	Standard
	Pb	207	440.3	5.0				ug/L	227	Standard
	Pb	208	1803.0	2.1				ug/L	868	Standard
	U	238	318.0	5.0				ug/L	8	Standard
>	Bi	209	540720.8	0.8				ug/L	541014	Standard

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	Na	23	0.0		mg/L	2	Standard
	Mg	24	36.7	105.9	mg/L	53	Standard
	K	39	48.3	57.0	mg/L	53	Standard
	Ca	43	30.0	33.3	mg/L	28	Standard
	Fe	54	184.1	19.1	mg/L	181	Standard
	Fe	57	255.0	7.1	mg/L	257	Standard
>	**Sc-1**	45	55881.2	1.6	mg/L	55220	Standard
	Cl	35	35839.7	1.1	ug/L	35504	Standard
	Kr	83	1.3	43.3	ug/L	2	Standard
	Br	81	1970.1	12.0	ug/L	2040	Standard
	P	31	19911.4	2.6	ug/L	20435	Standard
	S	34	2461.9	5.7	ug/L	2430	Standard
	Sr	88	85.0	31.1	ug/L	75	Standard
	C	12	176.7	8.6	mg/L	293	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	0.0		mg/L	7	Standard
	Dy	164	149.0	35.5	mg/L	9	Standard
	Ho-1	165	11.7	107.9	mg/L	10	Standard
	Er	166	20.0	0.0	mg/L	23	Standard
	I	127	2015.1	5.0	mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: Standard 2
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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 2
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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Thursday, June 30, 2016 10:45:23
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68983.4	2.1				ug/L	74916	Standard
	Be	9	48367.2	4.1	**50.0000**	1.404	2.8	ug/L	10	Standard
	Al	27	7972073.9	2.0	**50.0000**	0.467	0.9	ug/L	1822	Standard
	Sc	45	52755.0	2.1				ug/L	55220	Standard
	Ti	47	40601.0	0.6	**100.0000**	1.612	1.6	ug/L	34	Standard
	V	51	460078.2	1.8	**50.0000**	0.531	1.1	ug/L	1938	Standard
	Cr	52	454436.3	1.4	**50.0000**	0.663	1.3	ug/L	9522	Standard
	Cr	53	55469.7	2.6	**50.0000**	1.635	3.3	ug/L	395	Standard
	Mn	55	423456.2	1.6	**50.0000**	0.702	1.4	ug/L	902	Standard
	Co	59	399872.6	2.0	**50.0000**	0.614	1.2	ug/L	262	Standard
	Ni	60	111808.1	1.4	**50.0000**	0.643	1.3	ug/L	371	Standard
	Cu	65	110333.0	1.1	**50.0000**	0.836	1.7	ug/L	106	Standard
	Zn	66	64857.2	2.2	**50.0000**	1.100	2.2	ug/L	398	Standard
>	**Ge**	72	526457.8	1.2				ug/L	535147	Standard
	As	75	65989.7	1.5	**50.0000**	0.778	1.6	ug/L	-43	Standard
	Se	82	6684.8	2.5	**50.0000**	0.729	1.5	ug/L	14	Standard
	Se-1	77	4547.7	2.0	**50.0000**	0.855	1.7	ug/L	65	Standard
>	**Ga**	71	88.3	42.5				mg/L	97	Standard
	Rb	85	925.0	7.6				ug/L	15	Standard
	Y	89	458987.7	1.5				ug/L	465704	Standard
>	**Rh**	103	40.0	50.0				ug/L	10	Standard
	Mo	98	300517.9	1.7	**100.0000**	1.196	1.2	ug/L	9	Standard
	Ag	107	368336.5	1.3	**50.0000**	0.495	1.0	ug/L	82	Standard
	Cd	111	117284.8	2.5	**50.0000**	0.847	1.7	mg/L	7	Standard
	Cd	114	285421.9	3.9	**50.0000**	1.210	2.4	ug/L	21	Standard
>	**In**	115	601036.1	1.7				ug/L	619035	Standard
	Sn	118	316578.1	2.8	**50.0000**	1.497	3.0	ug/L	508	Standard
	Sb	123	256746.9	1.1	**50.0000**	0.856	1.7	ug/L	86	Standard
	Ba	135	110969.6	1.5	**50.0000**	0.201	0.4	ug/L	79	Standard
	Ce	140	148.3	71.5				ug/L	68	Standard
>	**Tb**	159	962177.6	0.4				ug/L	986982	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	446239.6	0.2	**50.0000**	0.331	0.7	ug/L	13	Standard
	Tl	205	381081.2	0.4	**50.0000**	0.342	0.7	ug/L	10	Standard
	Pb	206	286636.0	1.6	**50.0000**	1.103	2.2	ug/L	264	Standard
	Pb	207	258526.4	1.8	**50.0000**	1.236	2.5	ug/L	227	Standard
	Pb	208	996447.9	1.4	**50.0000**	0.992	2.0	ug/L	868	Standard
	U	238	363811.3	1.8	**50.0000**	1.240	2.5	ug/L	8	Standard
>	**Bi**	209	528328.4	0.7				ug/L	541014	Standard

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Na	23	1.7	173.2	**5.0000**	8.652	173.0	mg/L	2	Standard
Mg	24	4435.6	3.0	**5.0000**	0.174	3.5	mg/L	53	Standard
K	39	2920.3	4.4	**5.0000**	0.139	2.8	mg/L	53	Standard
Ca	43	115.0	17.4	**5.0000**	1.130	22.6	mg/L	28	Standard
Fe	54	7160.1	1.1	**5.0000**	0.062	1.2	mg/L	181	Standard
Fe	57	2058.5	5.3	**5.0000**	0.343	6.9	mg/L	257	Standard
> **Sc-1**	45	52755.0	2.1				mg/L	55220	Standard
Cl	35	36143.1	1.7				ug/L	35504	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1956.8	4.7				ug/L	2040	Standard
P	31	21276.6	4.0				ug/L	20435	Standard
S	34	2776.9	2.8				ug/L	2430	Standard
Sr	88	73.3	3.9				ug/L	75	Standard
C	12	156.7	9.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	7	Standard
Dy	164	5.4	211.7				mg/L	9	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	26.7	21.7				mg/L	23	Standard
I	127	1676.8	9.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 3
Report Date/Time: Thursday, June 30, 2016 10:47:40
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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Thursday, June 30, 2016 10:48:35
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67369.5	1.7				ug/L	74916	Standard
	Be	9	95332.6	4.2	**100.4528**	2.854	2.8	ug/L	10	Standard
	Al	27	15638994.9	1.2	**100.2191**	0.593	0.6	ug/L	1822	Standard
	Sc	45	52572.7	1.6				ug/L	55220	Standard
	Ti	47	80471.2	2.1	**200.1947**	3.941	2.0	ug/L	34	Standard
	V	51	897077.3	1.5	**99.3635**	0.751	0.8	ug/L	1938	Standard
	Cr	52	878500.8	1.1	**99.3377**	0.531	0.5	ug/L	9522	Standard
	Cr	53	108574.4	1.8	**99.6484**	2.481	2.5	ug/L	395	Standard
	Mn	55	838539.2	2.6	**100.0892**	2.008	2.0	ug/L	902	Standard
	Co	59	794185.3	2.3	**100.1981**	1.503	1.5	ug/L	262	Standard
	Ni	60	215992.5	1.4	**98.8706**	0.739	0.7	ug/L	371	Standard
	Cu	65	211433.7	0.6	**98.4255**	0.669	0.7	ug/L	106	Standard
	Zn	66	125887.2	1.2	**99.2056**	0.438	0.4	ug/L	398	Standard
>	Ge	72	520828.8	0.8				ug/L	535147	Standard
	As	75	129933.5	1.4	**99.7289**	1.641	1.6	ug/L	-43	Standard
	Se	82	13193.5	0.9	**99.9295**	1.041	1.0	ug/L	14	Standard
	Se-1	77	8690.2	2.7	**98.5326**	2.339	2.4	ug/L	65	Standard
>	Ga	71	120.0	7.2				mg/L	97	Standard
	Rb	85	1946.8	5.2				ug/L	15	Standard
	Y	89	455643.2	0.7				ug/L	465704	Standard
>	Rh	103	55.0	27.3				ug/L	10	Standard
	Mo	98	599287.7	1.5	**201.5560**	2.360	1.2	ug/L	9	Standard
	Ag	107	715847.1	1.4	**99.4950**	1.075	1.1	ug/L	82	Standard
	Cd	111	229739.0	1.4	**99.8878**	1.448	1.4	mg/L	7	Standard
	Cd	114	547495.4	2.0	**98.8512**	2.232	2.3	ug/L	21	Standard
>	In	115	589960.6	0.7				ug/L	619035	Standard
	Sn	118	620778.1	1.3	**99.9891**	1.397	1.4	ug/L	508	Standard
	Sb	123	505252.4	1.5	**100.1114**	1.378	1.4	ug/L	86	Standard
	Ba	135	218020.5	1.0	**100.0495**	1.309	1.3	ug/L	79	Standard
	Ce	140	136.7	11.2				ug/L	68	Standard
>	Tb	159	952291.8	0.6				ug/L	986982	Standard
	Ho	165	18.3	31.5				ug/L	10	Standard
	Tl	203	872534.7	0.8	**99.8943**	0.590	0.6	ug/L	13	Standard
	Tl	205	745726.0	1.8	**99.9319**	1.346	1.3	ug/L	10	Standard
	Pb	206	560083.0	1.8	**99.8785**	1.571	1.6	ug/L	264	Standard
	Pb	207	507226.4	1.1	**100.0807**	0.918	0.9	ug/L	227	Standard
	Pb	208	1956705.3	0.7	**100.1279**	0.743	0.7	ug/L	868	Standard
	U	238	732371.6	1.4	**101.3423**	0.755	0.7	ug/L	8	Standard
>	Bi	209	517571.9	0.7				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	8717.5	4.3	**9.9469**	0.489	4.9	mg/L	53	Standard
K	39	5526.0	4.4	**9.7799**	0.589	6.0	mg/L	53	Standard
Ca	43	191.7	6.6	**9.7213**	0.568	5.8	mg/L	28	Standard
Fe	54	14164.2	4.7	**10.0228**	0.580	5.8	mg/L	181	Standard
Fe	57	3798.8	6.3	**9.9068**	0.665	6.7	mg/L	257	Standard
> **Sc-1**	45	52572.7	1.6				mg/L	55220	Standard
Cl	35	35283.0	1.9				ug/L	35504	Standard
Kr	83	3.3	69.3				ug/L	2	Standard
Br	81	1953.5	1.5				ug/L	2040	Standard
P	31	22002.6	2.6				ug/L	20435	Standard
S	34	2656.9	6.5				ug/L	2430	Standard
Sr	88	53.3	23.6				ug/L	75	Standard
C	12	190.0	13.9				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	16.0	70.4				mg/L	9	Standard
Ho-1	165	18.3	31.5				mg/L	10	Standard
Er	166	13.3	86.6				mg/L	23	Standard
I	127	1825.1	3.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998

Sample ID: Standard 4
Report Date/Time: Thursday, June 30, 2016 10:50:52
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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Thursday, June 30, 2016 10:51:48
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67351.1	1.6				ug/L	74916	Standard
	Be	9	48467.4	1.1	**51.0988**	0.634	1.2	ug/L	10	Standard
	Al	27	7996341.6	4.4	**51.2380**	1.451	2.8	ug/L	1822	Standard
	Sc	45	52557.8	3.9				ug/L	55220	Standard
	Ti	47	40171.9	1.7	**98.7092**	0.932	0.9	ug/L	34	Standard
	V	51	454957.7	1.1	**49.6959**	0.243	0.5	ug/L	1938	Standard
	Cr	52	446215.6	1.6	**49.3363**	0.396	0.8	ug/L	9522	Standard
	Cr	53	54578.1	1.1	**49.2937**	0.265	0.5	ug/L	395	Standard
	Mn	55	420081.9	2.7	**49.4914**	1.060	2.1	ug/L	902	Standard
	Co	59	400918.1	2.1	**49.9700**	0.795	1.6	ug/L	262	Standard
	Ni	60	110250.7	0.8	**49.7955**	0.072	0.1	ug/L	371	Standard
	Cu	65	108650.5	0.5	**49.9472**	0.257	0.5	ug/L	106	Standard
	Zn	66	65025.6	2.2	**50.4617**	0.801	1.6	ug/L	398	Standard
>	Ge	72	527102.6	0.8				ug/L	535147	Standard
	As	75	65350.8	1.2	**49.5867**	0.180	0.4	ug/L	-43	Standard
	Se	82	6565.5	1.3	**49.0843**	0.359	0.7	ug/L	14	Standard
	Se-1	77	4457.7	1.3	**49.6612**	0.976	2.0	ug/L	65	Standard
>	Ga	71	85.0	25.6				mg/L	97	Standard
	Rb	85	945.0	13.2				ug/L	15	Standard
	Y	89	464922.4	1.0				ug/L	465704	Standard
>	Rh	103	41.7	38.6				ug/L	10	Standard
	Mo	98	296691.4	1.5	**97.2606**	1.381	1.4	ug/L	9	Standard
	Ag	107	365082.9	0.7	**49.4519**	0.182	0.4	ug/L	82	Standard
	Cd	111	117076.7	0.2	**49.6152**	0.191	0.4	mg/L	7	Standard
	Cd	114	282101.6	2.6	**49.6402**	1.043	2.1	ug/L	21	Standard
>	In	115	605322.8	0.5				ug/L	619035	Standard
	Sn	118	311722.6	1.2	**48.8804**	0.420	0.9	ug/L	508	Standard
	Sb	123	253974.8	1.6	**49.0470**	0.652	1.3	ug/L	86	Standard
	Ba	135	110464.9	1.5	**49.3927**	0.528	1.1	ug/L	79	Standard
	Ce	140	80.0	31.3				ug/L	68	Standard
>	Tb	159	956299.2	0.4				ug/L	986982	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	444248.1	0.5	**49.9754**	0.316	0.6	ug/L	13	Standard
	Tl	205	381176.1	1.8	**50.1891**	0.437	0.9	ug/L	10	Standard
	Pb	206	285348.0	1.6	**49.9780**	0.770	1.5	ug/L	264	Standard
	Pb	207	258242.5	1.6	**50.0467**	0.816	1.6	ug/L	227	Standard
	Pb	208	994320.7	1.0	**49.9713**	0.343	0.7	ug/L	868	Standard
	U	238	366904.6	1.5	**49.8902**	0.853	1.7	ug/L	8	Standard
>	Bi	209	526788.4	0.9				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4402.3	4.6	**5.0055**	0.082	1.6	mg/L	53	Standard
K	39	2796.9	1.7	**4.9164**	0.229	4.7	mg/L	53	Standard
Ca	43	118.3	31.7	**5.3755**	2.210	41.1	mg/L	28	Standard
Fe	54	7106.9	6.1	**4.9714**	0.301	6.1	mg/L	181	Standard
Fe	57	2026.8	5.0	**4.9813**	0.301	6.0	mg/L	257	Standard
Sc-1	45	52557.8	3.9				mg/L	55220	Standard
Cl	35	34358.3	1.5				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	2053.5	3.5				ug/L	2040	Standard
P	31	21905.8	4.8				ug/L	20435	Standard
S	34	2591.9	2.6				ug/L	2430	Standard
Sr	88	80.0	27.2				ug/L	75	Standard
C	12	160.0	38.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	6.3	86.6				mg/L	9	Standard
Ho-1	165	8.3	69.3				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	23	Standard
I	127	26471.4	2.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.198		
Al	27	102.476		
Sc	45			
Ti	47	98.709		
V	51	99.392		
Cr	52	98.673		
Cr	53			
Mn	55	98.983		
Co	59	99.940		
Ni	60	99.591		
Cu	65	99.894		
Zn	66	100.923		
Ge	72		98.497	
As	75	99.173		
Se	82	98.169		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	97.261		
Ag	107	98.904		
Cd	111	99.230		
Cd	114			
In	115		97.785	
Sn	118	97.761		
Sb	123	98.094		
Ba	135	98.785		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.951		
Tl	205			
Pb	206	99.956		
Pb	207	100.093		
Pb	208	99.943		
U	238	99.780		
Bi	209		97.371	
Na	23	0.100		
Mg	24	100.110		
K	39	98.328		
Ca	43	107.510		
Fe	54	99.429		
Fe	57	99.625		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	

Sample ID: QC Std 1
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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Thursday, June 30, 2016 10:55:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67078.2	2.4				ug/L	74916	Standard
	Be	9	50.0	69.3	**0.0488**	0.035	71.6	ug/L	10	Standard
	Al	27	6411.8	70.9	**0.0385**	0.028	72.5	ug/L	1822	Standard
	Sc	45	54151.6	2.7				ug/L	55220	Standard
	Ti	47	64.0	40.2	**0.0867**	0.061	70.7	ug/L	34	Standard
	V	51	1644.8	9.3	**-0.0159**	0.016	101.1	ug/L	1938	Standard
	Cr	52	8148.5	4.3	**-0.1190**	0.032	26.5	ug/L	9522	Standard
	Cr	53	370.0	15.6	**-0.0506**	0.049	96.6	ug/L	395	Standard
	Mn	55	1219.4	21.0	**0.0389**	0.029	75.7	ug/L	902	Standard
	Co	59	552.3	35.6	**0.0460**	0.024	52.4	ug/L	262	Standard
	Ni	60	412.0	16.2	**0.0410**	0.028	69.1	ug/L	371	Standard
	Cu	65	206.0	25.8	**0.0359**	0.023	65.3	ug/L	106	Standard
	Zn	66	425.0	8.2	**-0.0140**	0.033	233.6	ug/L	398	Standard
>	**Ge**	72	526727.6	1.9				ug/L	535147	Standard
	As	75	12.2	412.1	**0.0647**	0.038	58.5	ug/L	-43	Standard
	Se	82	20.7	24.7	**0.0587**	0.041	69.9	ug/L	14	Standard
	Se-1	77	56.7	22.1	**0.0564**	0.131	231.2	ug/L	65	Standard
>	**Ga**	71	90.0	25.5				mg/L	97	Standard
	Rb	85	36.7	7.9				ug/L	15	Standard
	Y	89	462493.1	2.2				ug/L	465704	Standard
>	**Rh**	103	10.0	86.6				ug/L	10	Standard
	Mo	98	363.4	28.8	**0.1314**	0.033	25.2	ug/L	9	Standard
	Ag	107	282.0	43.5	**0.0321**	0.016	50.6	ug/L	82	Standard
	Cd	111	62.7	87.0	**0.0343**	0.023	66.4	mg/L	7	Standard
	Cd	114	166.3	71.5	**0.0381**	0.021	54.1	ug/L	21	Standard
>	**In**	115	604846.6	0.9				ug/L	619035	Standard
	Sn	118	1070.0	10.6	**0.0649**	0.019	29.1	ug/L	508	Standard
	Sb	123	524.8	1.2	**0.1058**	0.002	1.7	ug/L	86	Standard
	Ba	135	121.3	57.5	**0.0345**	0.031	88.8	ug/L	79	Standard
	Ce	140	45.0	50.9				ug/L	68	Standard
>	**Tb**	159	962411.6	1.0				ug/L	986982	Standard
	Ho	165	10.0	86.6				ug/L	10	Standard
	Tl	203	249.3	85.5	**0.0336**	0.023	69.7	ug/L	13	Standard
	Tl	205	243.3	73.6	**0.0393**	0.023	58.5	ug/L	10	Standard
	Pb	206	433.7	30.1	**0.0374**	0.022	58.2	ug/L	264	Standard
	Pb	207	379.0	24.0	**0.0395**	0.017	41.9	ug/L	227	Standard
	Pb	208	1619.7	32.3	**0.0422**	0.025	59.6	ug/L	868	Standard
	U	238	218.3	75.0	**0.0372**	0.022	58.4	ug/L	8	Standard
>	**Bi**	209	531441.7	1.6				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	50.0	43.6	**0.0208**	0.023	110.8	mg/L	53	Standard
K	39	51.7	24.4	**0.0138**	0.024	174.4	mg/L	53	Standard
Ca	43	30.0	33.3	**0.0685**	0.625	913.0	mg/L	28	Standard
Fe	54	162.6	13.7	**-0.0054**	0.018	338.9	mg/L	181	Standard
Fe	57	263.3	25.3	**0.0455**	0.163	357.3	mg/L	257	Standard
Sc-1	45	54151.6	2.7				mg/L	55220	Standard
Cl	35	33892.5	1.8				ug/L	35504	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1836.8	9.3				ug/L	2040	Standard
P	31	20765.9	1.7				ug/L	20435	Standard
S	34	2595.2	6.8				ug/L	2430	Standard
Sr	88	70.0	49.5				ug/L	75	Standard
C	12	130.0	27.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	586.2	22.6				mg/L	9	Standard
Ho-1	165	10.0	86.6				mg/L	10	Standard
Er	166	80.0	45.1				mg/L	23	Standard
I	127	16415.6	0.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.427	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.708
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.231
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Thursday, June 30, 2016 10:58:14
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64500.4	2.4				ug/L	74916	Standard
	Be	9	203.3	8.6	**0.2203**	0.020	9.0	ug/L	10	Standard
	Al	27	1753.4	16.3	**0.0094**	0.002	18.5	ug/L	1822	Standard
	Sc	45	50965.6	0.7				ug/L	55220	Standard
	Ti	47	28.7	28.0	**0.0021**	0.020	920.6	ug/L	34	Standard
	V	51	4896.0	2.8	**0.3548**	0.008	2.3	ug/L	1938	Standard
	Cr	52	14526.3	1.1	**0.6444**	0.040	6.2	ug/L	9522	Standard
	Cr	53	1280.1	8.5	**0.8090**	0.103	12.7	ug/L	395	Standard
	Mn	55	4612.7	1.2	**0.4540**	0.004	0.9	ug/L	902	Standard
	Co	59	3227.7	0.8	**0.3904**	0.004	1.1	ug/L	262	Standard
	Ni	60	3626.4	2.5	**1.5413**	0.064	4.1	ug/L	371	Standard
	Cu	65	1774.1	3.8	**0.7795**	0.031	3.9	ug/L	106	Standard
	Zn	66	7890.1	0.7	**5.9833**	0.114	1.9	ug/L	398	Standard
>	Ge	72	513465.0	1.3				ug/L	535147	Standard
	As	75	440.5	6.0	**0.3981**	0.023	5.9	ug/L	-43	Standard
	Se	82	66.6	10.6	**0.4154**	0.058	14.0	ug/L	14	Standard
	Se-1	77	87.0	3.0	**0.4255**	0.041	9.7	ug/L	65	Standard
>	Ga	71	58.3	17.8				mg/L	97	Standard
	Rb	85	26.7	43.3				ug/L	15	Standard
	Y	89	439375.0	1.0				ug/L	465704	Standard
>	Rh	103	10.0	86.6				ug/L	10	Standard
	Mo	98	96.4	30.1	**0.0448**	0.010	21.6	ug/L	9	Standard
	Ag	107	2923.6	0.8	**0.4010**	0.002	0.6	ug/L	82	Standard
	Cd	111	535.9	6.0	**0.2413**	0.014	6.0	mg/L	7	Standard
	Cd	114	1345.3	5.7	**0.2523**	0.016	6.4	ug/L	21	Standard
>	In	115	588951.2	1.0				ug/L	619035	Standard
	Sn	118	551.7	21.2	**-0.0144**	0.018	127.8	ug/L	508	Standard
	Sb	123	2094.7	0.9	**0.4201**	0.001	0.2	ug/L	86	Standard
	Ba	135	1633.1	2.2	**0.7313**	0.020	2.7	ug/L	79	Standard
	Ce	140	21.7	53.3				ug/L	68	Standard
>	Tb	159	931014.3	1.3				ug/L	986982	Standard
	Ho	165	6.7	114.6				ug/L	10	Standard
	Tl	203	732.7	7.5	**0.0893**	0.006	6.6	ug/L	13	Standard
	Tl	205	583.3	9.7	**0.0854**	0.008	9.3	ug/L	10	Standard
	Pb	206	1436.4	1.9	**0.2169**	0.006	2.8	ug/L	264	Standard
	Pb	207	1236.7	1.0	**0.2094**	0.002	0.7	ug/L	227	Standard
	Pb	208	4768.0	1.4	**0.2042**	0.003	1.4	ug/L	868	Standard
	U	238	2803.9	2.1	**0.3935**	0.009	2.3	ug/L	8	Standard
>	Bi	209	520833.4	0.5				ug/L	541014	Standard

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Na	23	1.7	173.2	**10.0840**	17.457	173.1	mg/L	2	Standard
Mg	24	35.0	65.5	**0.0068**	0.027	399.5	mg/L	53	Standard
K	39	51.7	29.6	**0.0189**	0.027	145.5	mg/L	53	Standard
Ca	43	41.7	13.9	**0.8836**	0.370	41.8	mg/L	28	Standard
Fe	54	120.1	2.6	**-0.0301**	0.003	9.4	mg/L	181	Standard
Fe	57	306.7	15.8	**0.2172**	0.139	63.9	mg/L	257	Standard
Sc-1	45	50965.6	0.7				mg/L	55220	Standard
Cl	35	32699.9	0.7				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1686.8	5.7				ug/L	2040	Standard
P	31	13986.5	2.7				ug/L	20435	Standard
S	34	2311.8	5.0				ug/L	2430	Standard
Sr	88	78.3	28.8				ug/L	75	Standard
C	12	143.3	10.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	25.4	58.0				mg/L	9	Standard
Ho-1	165	6.7	114.6				mg/L	10	Standard
Er	166	26.7	78.1				mg/L	23	Standard
I	127	1528.4	10.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	110.150		
Al	27	0.939		
Sc	45			
Ti	47			
V	51	88.689		
Cr	52	80.551		
Cr	53			
Mn	55	90.794		
Co	59	97.600		
Ni	60	96.329		
Cu	65	97.433		
Zn	66	95.733		
Ge	72		95.948	
As	75	99.531		
Se	82	103.853		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	100.254		
Cd	111	100.534		
Cd	114			
> In	115			95.140
Sn	118			
Sb	123	105.037		
Ba	135	97.502		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	111.679		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.099		
U	238	98.364		
> Bi	209			96.270
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Thursday, June 30, 2016 11:01:26
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	69047.0	1.6				ug/L	74916	Standard
	Be	9	30.0	28.9	**0.0273**	0.009	34.6	ug/L	10	Standard
	Al	27	7980071.2	1.4	**49.8949**	0.509	1.0	ug/L	1822	Standard
	Sc	45	53713.4	1.0				ug/L	55220	Standard
	Ti	47	44903.8	1.5	**110.8893**	1.899	1.7	ug/L	34	Standard
	V	51	2017.2	8.6	**0.0260**	0.020	77.0	ug/L	1938	Standard
	Cr	52	9364.2	1.6	**0.0229**	0.019	84.6	ug/L	9522	Standard
	Cr	53	2848.6	9.1	**2.2177**	0.229	10.3	ug/L	395	Standard
	Mn	55	1866.1	2.8	**0.1163**	0.006	5.5	ug/L	902	Standard
	Co	59	498.3	2.8	**0.0396**	0.002	5.1	ug/L	262	Standard
	Ni	60	1225.4	1.5	**0.4122**	0.009	2.1	ug/L	371	Standard
	Cu	65	783.4	1.7	**0.3035**	0.005	1.6	ug/L	106	Standard
	Zn	66	1398.7	2.4	**0.7516**	0.026	3.4	ug/L	398	Standard
>	Ge	72	524552.7	0.4				ug/L	535147	Standard
	As	75	-41.9	71.7	**0.0233**	0.023	98.3	ug/L	-43	Standard
	Se	82	17.8	18.1	**0.0369**	0.024	64.7	ug/L	14	Standard
	Se-1	77	315.0	3.8	**2.9861**	0.140	4.7	ug/L	65	Standard
>	Ga	71	231.7	8.7				mg/L	97	Standard
	Rb	85	1228.4	9.5				ug/L	15	Standard
	Y	89	457479.6	1.4				ug/L	465704	Standard
>	Rh	103	8.3	34.6				ug/L	10	Standard
	Mo	98	298868.9	1.0	**98.1743**	0.505	0.5	ug/L	9	Standard
	Ag	107	276.3	5.3	**0.0314**	0.002	6.3	ug/L	82	Standard
	Cd	111	-209.1	3.3	**-0.0809**	0.003	4.0	mg/L	7	Standard
	Cd	114	585.9	7.2	**0.1122**	0.007	6.1	ug/L	21	Standard
>	In	115	604081.8	0.6				ug/L	619035	Standard
	Sn	118	835.0	7.9	**0.0281**	0.011	39.5	ug/L	508	Standard
	Sb	123	241.9	20.1	**0.0513**	0.010	18.8	ug/L	86	Standard
	Ba	135	819.7	4.2	**0.3477**	0.013	3.8	ug/L	79	Standard
	Ce	140	243.3	11.3				ug/L	68	Standard
>	Tb	159	958745.4	0.6				ug/L	986982	Standard
	Ho	165	28.3	50.9				ug/L	10	Standard
	Tl	203	353.7	19.3	**0.0458**	0.008	17.2	ug/L	13	Standard
	Tl	205	340.0	24.1	**0.0525**	0.011	21.0	ug/L	10	Standard
	Pb	206	540.3	0.6	**0.0568**	0.001	1.7	ug/L	264	Standard
	Pb	207	482.3	2.7	**0.0602**	0.003	4.2	ug/L	227	Standard
	Pb	208	1869.4	0.5	**0.0556**	0.000	0.7	ug/L	868	Standard
	U	238	22.7	9.2	**0.0110**	0.000	2.7	ug/L	8	Standard
>	Bi	209	527440.0	0.7				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	11219.2	1.9	**12.5374**	0.364	2.9	mg/L	53	Standard
K	39	2653.6	10.5	**4.5535**	0.480	10.5	mg/L	53	Standard
Ca	43	296.7	13.7	**15.6039**	2.413	15.5	mg/L	28	Standard
Fe	54	17937.8	2.3	**12.4450**	0.170	1.4	mg/L	181	Standard
Fe	57	4687.4	2.3	**12.1000**	0.169	1.4	mg/L	257	Standard
Sc-1	45	53713.4	1.0				mg/L	55220	Standard
Cl	35	32003.8	1.7				ug/L	35504	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	1996.8	3.9				ug/L	2040	Standard
P	31	20527.4	12.6				ug/L	20435	Standard
S	34	2190.2	4.6				ug/L	2430	Standard
Sr	88	61.7	9.4				ug/L	75	Standard
C	12	220.0	16.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	86.7	40.5				mg/L	7	Standard
Dy	164	12.5	45.0				mg/L	9	Standard
Ho-1	165	28.3	50.9				mg/L	10	Standard
Er	166	16.7	34.6				mg/L	23	Standard
I	127	2538.5	6.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27	0.998		
Sc	45			
Ti	47	110.889		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.020	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.174		
Ag	107			
Cd	111			
Cd	114			
> In	115			97.584
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209			97.491
Na	23	0.040		
Mg	24	250.748		
K	39	91.069		
Ca	43	104.026		
Fe	54	99.560		
Fe	57	96.800		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Tl	203	
QC Std 4	Na	23	

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QC Std 4	Mg	24

Sample ID: QC Std 4
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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Thursday, June 30, 2016 11:04:37
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72463.0	3.2				ug/L	74916	Standard
	Be	9	98297.8	0.6	**96.3910**	3.517	3.6	ug/L	10	Standard
	Al	27	8447942.1	1.6	**50.3585**	1.657	3.3	ug/L	1822	Standard
	Sc	45	52367.0	0.4				ug/L	55220	Standard
	Ti	47	44980.0	1.7	**109.4960**	2.514	2.3	ug/L	34	Standard
	V	51	885855.9	1.8	**96.0355**	2.157	2.2	ug/L	1938	Standard
	Cr	52	857497.0	0.9	**94.8597**	1.504	1.6	ug/L	9522	Standard
	Cr	53	107918.0	1.0	**96.9200**	1.348	1.4	ug/L	395	Standard
	Mn	55	808410.1	1.8	**94.4490**	2.273	2.4	ug/L	902	Standard
	Co	59	768641.5	1.6	**94.9270**	2.168	2.3	ug/L	262	Standard
	Ni	60	210790.5	0.8	**94.4332**	0.812	0.9	ug/L	371	Standard
	Cu	65	209564.5	1.5	**95.4828**	2.026	2.1	ug/L	106	Standard
	Zn	66	127430.0	0.9	**98.2863**	1.219	1.2	ug/L	398	Standard
>	Ge	72	532155.6	0.7				ug/L	535147	Standard
	As	75	129733.9	1.2	**97.4561**	1.333	1.4	ug/L	-43	Standard
	Se	82	12863.9	0.1	**95.3546**	0.676	0.7	ug/L	14	Standard
	Se-1	77	9072.4	1.9	**100.6971**	2.031	2.0	ug/L	65	Standard
>	Ga	71	191.7	3.0				mg/L	97	Standard
	Rb	85	1040.0	3.4				ug/L	15	Standard
	Y	89	459617.2	0.7				ug/L	465704	Standard
>	Rh	103	48.3	36.3				ug/L	10	Standard
	Mo	98	300627.9	1.7	**98.7341**	1.433	1.5	ug/L	9	Standard
	Ag	107	626834.5	7.6	**85.0619**	6.265	7.4	ug/L	82	Standard
	Cd	111	225712.2	0.8	**95.8236**	0.304	0.3	mg/L	7	Standard
	Cd	114	546974.4	1.4	**96.4250**	0.861	0.9	ug/L	21	Standard
>	In	115	604185.2	0.5				ug/L	619035	Standard
	Sn	118	951.7	2.0	**0.0464**	0.002	5.3	ug/L	508	Standard
	Sb	123	496035.7	1.5	**95.9684**	1.123	1.2	ug/L	86	Standard
	Ba	135	213321.7	1.3	**95.5818**	0.880	0.9	ug/L	79	Standard
	Ce	140	56.7	10.2				ug/L	68	Standard
>	Tb	159	980693.1	0.1				ug/L	986982	Standard
	Ho	165	15.0	88.2				ug/L	10	Standard
	Tl	203	870360.2	0.9	**95.8131**	0.800	0.8	ug/L	13	Standard
	Tl	205	746193.3	0.5	**96.1523**	0.552	0.6	ug/L	10	Standard
	Pb	206	567035.9	1.4	**97.2301**	1.451	1.5	ug/L	264	Standard
	Pb	207	493132.7	0.8	**93.5550**	0.631	0.7	ug/L	227	Standard
	Pb	208	1948151.9	0.5	**95.8535**	0.504	0.5	ug/L	868	Standard
	U	238	709733.2	0.4	**94.4363**	0.351	0.4	ug/L	8	Standard
>	Bi	209	538272.1	0.1				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.9241**	17.180	173.1	mg/L	2	Standard
Mg	24	11447.7	3.7	**13.1199**	0.448	3.4	mg/L	53	Standard
K	39	2688.6	4.4	**4.7356**	0.226	4.8	mg/L	53	Standard
Ca	43	285.0	16.7	**15.3503**	2.879	18.8	mg/L	28	Standard
Fe	54	17502.0	3.9	**12.4563**	0.493	4.0	mg/L	181	Standard
Fe	57	4882.5	2.9	**12.9742**	0.403	3.1	mg/L	257	Standard
Sc-1	45	52367.0	0.4				mg/L	55220	Standard
Cl	35	31680.4	0.6				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2006.8	4.1				ug/L	2040	Standard
P	31	17386.6	2.6				ug/L	20435	Standard
S	34	2086.8	9.8				ug/L	2430	Standard
Sr	88	73.3	20.8				ug/L	75	Standard
C	12	173.3	37.5				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	8.9	6.2				mg/L	9	Standard
Ho-1	165	15.0	88.2				mg/L	10	Standard
Er	166	23.3	49.5				mg/L	23	Standard
I	127	19968.2	3.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	96.391		
Al	27	1.007		
Sc	45			
Ti	47	109.496		
V	51	96.035		
Cr	52	94.860		
Cr	53			
Mn	55	94.449		
Co	59	94.927		
Ni	60	94.433		
Cu	65	95.483		
Zn	66	98.286		
Ge	72		99.441	
As	75	97.456		
Se	82	95.355		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.734		
Ag	107	85.062		
Cd	111	95.824		
Cd	114			
> In	115		97.601	
Sn	118			
Sb	123	95.968		
Ba	135	95.582		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	95.813		
Tl	205			
Pb	206			
Pb	207			
Pb	208	95.853		
U	238	94.436		
> Bi	209		99.493	
Na	23	79.393		
Mg	24	262.398		
K	39	94.712		
Ca	43	102.336		
Fe	54	99.650		
Fe	57	103.794		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 11:07:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72536.7	3.7				ug/L	74916	Standard
	Be	9	50693.0	0.3	**49.6607**	1.688	3.4	ug/L	10	Standard
	Al	27	8327113.6	2.9	**49.5669**	0.426	0.9	ug/L	1822	Standard
	Sc	45	53057.7	1.0				ug/L	55220	Standard
	Ti	47	40618.4	1.5	**99.3748**	1.991	2.0	ug/L	34	Standard
	V	51	460379.9	0.4	**50.0683**	0.385	0.8	ug/L	1938	Standard
	Cr	52	450102.7	2.7	**49.5570**	1.580	3.2	ug/L	9522	Standard
	Cr	53	55635.3	1.9	**50.0358**	1.215	2.4	ug/L	395	Standard
	Mn	55	423500.2	1.5	**49.6797**	0.961	1.9	ug/L	902	Standard
	Co	59	409881.4	1.9	**50.8666**	1.204	2.4	ug/L	262	Standard
	Ni	60	110889.0	0.9	**49.8637**	0.615	1.2	ug/L	371	Standard
	Cu	65	109608.1	1.3	**50.1660**	0.894	1.8	ug/L	106	Standard
	Zn	66	64818.0	1.3	**50.0808**	0.895	1.8	ug/L	398	Standard
>	**Ge**	72	529450.1	0.5				ug/L	535147	Standard
	As	75	66239.4	0.3	**50.0394**	0.294	0.6	ug/L	-43	Standard
	Se	82	6726.4	0.5	**50.0674**	0.227	0.5	ug/L	14	Standard
	Se-1	77	4648.4	2.9	**51.5794**	1.744	3.4	ug/L	65	Standard
>	**Ga**	71	66.7	22.9				mg/L	97	Standard
	Rb	85	955.0	7.9				ug/L	15	Standard
	Y	89	458931.7	0.2				ug/L	465704	Standard
>	**Rh**	103	26.7	10.8				ug/L	10	Standard
	Mo	98	304032.3	1.1	**97.4918**	0.468	0.5	ug/L	9	Standard
	Ag	107	372476.9	0.7	**49.3535**	0.113	0.2	ug/L	82	Standard
	Cd	111	118909.2	1.2	**49.2913**	0.303	0.6	mg/L	7	Standard
	Cd	114	290136.7	0.3	**49.9462**	0.493	1.0	ug/L	21	Standard
>	**In**	115	618815.7	0.7				ug/L	619035	Standard
	Sn	118	323168.7	1.1	**49.5729**	0.500	1.0	ug/L	508	Standard
	Sb	123	263073.5	1.0	**49.6963**	0.188	0.4	ug/L	86	Standard
	Ba	135	112084.1	1.1	**49.0241**	0.233	0.5	ug/L	79	Standard
	Ce	140	163.3	15.7				ug/L	68	Standard
>	**Tb**	159	982022.6	0.6				ug/L	986982	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	455658.8	1.2	**50.0475**	0.793	1.6	ug/L	13	Standard
	Tl	205	396748.5	1.8	**51.0037**	0.610	1.2	ug/L	10	Standard
	Pb	206	292830.3	0.4	**50.0750**	0.191	0.4	ug/L	264	Standard
	Pb	207	264806.7	0.5	**50.1043**	0.182	0.4	ug/L	227	Standard
	Pb	208	1023180.7	1.1	**50.2060**	0.575	1.1	ug/L	868	Standard
	U	238	378257.3	1.4	**50.2134**	0.362	0.7	ug/L	8	Standard
>	**Bi**	209	539549.6	0.7				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.6749**	16.749	173.1	mg/L	2	Standard
Mg	24	4524.0	6.4	**5.0993**	0.385	7.5	mg/L	53	Standard
K	39	2573.6	1.7	**4.4700**	0.112	2.5	mg/L	53	Standard
Ca	43	131.7	2.2	**6.0879**	0.249	4.1	mg/L	28	Standard
Fe	54	7333.9	2.8	**5.0822**	0.153	3.0	mg/L	181	Standard
Fe	57	2120.1	7.9	**5.1834**	0.493	9.5	mg/L	257	Standard
> **Sc-1**	45	53057.7	1.0				mg/L	55220	Standard
Cl	35	34119.7	1.1				ug/L	35504	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	1983.5	11.5				ug/L	2040	Standard
P	31	20664.1	0.8				ug/L	20435	Standard
S	34	2381.9	5.4				ug/L	2430	Standard
Sr	88	63.3	9.1				ug/L	75	Standard
C	12	150.0	6.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	7	Standard
Dy	164	12.5	122.8				mg/L	9	Standard
Ho-1	165	8.3	34.6				mg/L	10	Standard
Er	166	16.7	69.3				mg/L	23	Standard
I	127	16197.0	2.5				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	99.321		
	Al	27	99.134		
	Sc	45			
	Ti	47	99.375		
	V	51	100.137		
	Cr	52	99.114		
	Cr	53			
	Mn	55	99.359		
	Co	59	101.733		
	Ni	60	99.727		
	Cu	65	100.332		
	Zn	66	100.162		
>	Ge	72		98.935	
	As	75	100.079		
	Se	82	100.135		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	97.492		
Ag	107	98.707		
Cd	111	98.583		
Cd	114			
> In	115			99.965
Sn	118	99.146		
Sb	123	99.393		
Ba	135	98.048		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.095		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.412		
U	238	100.427		
> Bi	209			99.729
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 11:11:02
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73134.5	2.3				ug/L	74916	Standard
	Be	9	38.3	7.5	**0.0336**	0.003	7.6	ug/L	10	Standard
	Al	27	3792.2	44.9	**0.0199**	0.009	47.4	ug/L	1822	Standard
	Sc	45	54190.1	0.5				ug/L	55220	Standard
	Ti	47	48.3	19.2	**0.0478**	0.021	44.7	ug/L	34	Standard
	V	51	1584.9	7.6	**-0.0237**	0.012	50.3	ug/L	1938	Standard
	Cr	52	7959.1	2.1	**-0.1465**	0.013	8.8	ug/L	9522	Standard
	Cr	53	491.7	4.1	**0.0574**	0.016	27.6	ug/L	395	Standard
	Mn	55	1049.0	8.7	**0.0179**	0.009	49.9	ug/L	902	Standard
	Co	59	426.3	10.5	**0.0300**	0.005	16.8	ug/L	262	Standard
	Ni	60	348.0	13.6	**0.0110**	0.021	186.8	ug/L	371	Standard
	Cu	65	167.7	18.3	**0.0179**	0.014	75.9	ug/L	106	Standard
	Zn	66	414.7	7.1	**-0.0248**	0.018	72.5	ug/L	398	Standard
>	**Ge**	72	530396.1	2.0				ug/L	535147	Standard
	As	75	-26.7	180.7	**0.0347**	0.037	105.8	ug/L	-43	Standard
	Se	82	16.6	86.9	**0.0271**	0.107	394.5	ug/L	14	Standard
	Se-1	77	63.0	18.0	**0.1234**	0.118	95.9	ug/L	65	Standard
>	**Ga**	71	83.3	33.0				mg/L	97	Standard
	Rb	85	18.3	15.7				ug/L	15	Standard
	Y	89	465262.4	0.7				ug/L	465704	Standard
>	**Rh**	103	18.3	63.0				ug/L	10	Standard
	Mo	98	279.5	14.4	**0.1015**	0.013	12.7	ug/L	9	Standard
	Ag	107	219.7	28.5	**0.0229**	0.008	36.2	ug/L	82	Standard
	Cd	111	34.5	55.0	**0.0221**	0.008	35.5	mg/L	7	Standard
	Cd	114	80.2	45.7	**0.0226**	0.006	27.8	ug/L	21	Standard
>	**In**	115	622224.2	0.3				ug/L	619035	Standard
	Sn	118	925.0	9.2	**0.0380**	0.013	34.2	ug/L	508	Standard
	Sb	123	983.6	25.4	**0.1892**	0.047	24.8	ug/L	86	Standard
	Ba	135	87.3	18.7	**0.0184**	0.007	38.9	ug/L	79	Standard
	Ce	140	26.7	78.1				ug/L	68	Standard
>	**Tb**	159	965445.1	0.7				ug/L	986982	Standard
	Ho	165	21.7	13.3				ug/L	10	Standard
	Tl	203	154.0	63.6	**0.0228**	0.011	46.9	ug/L	13	Standard
	Tl	205	146.7	58.8	**0.0264**	0.011	41.8	ug/L	10	Standard
	Pb	206	392.0	15.8	**0.0287**	0.011	37.2	ug/L	264	Standard
	Pb	207	329.3	12.9	**0.0286**	0.008	28.3	ug/L	227	Standard
	Pb	208	1276.7	12.2	**0.0238**	0.008	32.6	ug/L	868	Standard
	U	238	109.0	69.7	**0.0223**	0.010	45.1	ug/L	8	Standard
>	**Bi**	209	544217.1	0.5				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.4960**	16.439	173.1	mg/L	2	Standard
Mg	24	38.3	39.8	**0.0080**	0.017	212.6	mg/L	53	Standard
K	39	48.3	39.2	**0.0075**	0.032	430.4	mg/L	53	Standard
Ca	43	36.7	28.4	**0.4397**	0.593	134.8	mg/L	28	Standard
Fe	54	180.9	15.5	**0.0069**	0.020	289.3	mg/L	181	Standard
Fe	57	275.0	14.2	**0.0792**	0.103	130.6	mg/L	257	Standard
Sc-1	45	54190.1	0.5				mg/L	55220	Standard
Cl	35	34690.3	0.7				ug/L	35504	Standard
Kr	83	3.3	45.8				ug/L	2	Standard
Br	81	1803.4	1.8				ug/L	2040	Standard
P	31	20203.5	2.8				ug/L	20435	Standard
S	34	2368.5	5.0				ug/L	2430	Standard
Sr	88	71.7	21.3				ug/L	75	Standard
C	12	163.3	23.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	541.4	14.2				mg/L	9	Standard
Ho-1	165	21.7	13.3				mg/L	10	Standard
Er	166	110.0	18.2				mg/L	23	Standard
I	127	15639.7	0.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.112	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.515
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.592
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 11:13:19
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Method 6020 - Summary Report

Sample ID: PBW M6 WG574201-01
Sample Date/Time: Thursday, June 30, 2016 11:14:15
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66206.1	3.3				ug/L	74916	Standard
	Be	9	25.0	20.0	**0.0233**	0.006	25.2	ug/L	10	Standard
	Al	27	2728.6	2.0	**0.0155**	0.000	2.2	ug/L	1822	Standard
	Sc	45	49101.1	1.0				ug/L	55220	Standard
	Ti	47	33.3	12.5	**0.0177**	0.011	61.7	ug/L	34	Standard
	V	51	1448.5	2.2	**-0.0261**	0.004	15.6	ug/L	1938	Standard
	Cr	52	6056.9	2.1	**-0.3065**	0.017	5.5	ug/L	9522	Standard
	Cr	53	286.7	2.0	**-0.1076**	0.007	6.6	ug/L	395	Standard
	Mn	55	618.3	12.3	**-0.0269**	0.010	35.9	ug/L	902	Standard
	Co	59	318.7	5.7	**0.0198**	0.003	12.7	ug/L	262	Standard
	Ni	60	362.3	3.8	**0.0303**	0.006	18.8	ug/L	371	Standard
	Cu	65	99.7	13.6	**-0.0096**	0.007	69.2	ug/L	106	Standard
	Zn	66	633.3	59.2	**0.1836**	0.314	171.0	ug/L	398	Standard
>	**Ge**	72	491721.1	0.6				ug/L	535147	Standard
	As	75	-19.8	15.7	**0.0391**	0.003	6.6	ug/L	-43	Standard
	Se	82	19.7	30.5	**0.0611**	0.049	79.6	ug/L	14	Standard
	Se-1	77	63.7	13.1	**0.1875**	0.097	51.7	ug/L	65	Standard
>	**Ga**	71	55.0	24.1				mg/L	97	Standard
	Rb	85	18.3	15.7				ug/L	15	Standard
	Y	89	428431.8	1.3				ug/L	465704	Standard
>	**Rh**	103	13.3	57.3				ug/L	10	Standard
	Mo	98	53.7	29.6	**0.0311**	0.006	17.7	ug/L	9	Standard
	Ag	107	174.0	16.4	**0.0191**	0.004	21.5	ug/L	82	Standard
	Cd	111	22.2	17.0	**0.0179**	0.002	9.4	mg/L	7	Standard
	Cd	114	51.3	23.3	**0.0185**	0.002	12.1	ug/L	21	Standard
>	**In**	115	566677.7	0.5				ug/L	619035	Standard
	Sn	118	201.7	12.5	**-0.0696**	0.004	6.0	ug/L	508	Standard
	Sb	123	254.5	16.3	**0.0569**	0.009	15.1	ug/L	86	Standard
	Ba	135	59.7	19.4	**0.0089**	0.006	63.6	ug/L	79	Standard
	Ce	140	6.7	114.6				ug/L	68	Standard
>	**Tb**	159	901324.0	1.3				ug/L	986982	Standard
	Ho	165	0.0					ug/L	10	Standard
	Tl	203	103.0	43.3	**0.0179**	0.005	29.0	ug/L	13	Standard
	Tl	205	81.7	30.8	**0.0187**	0.003	18.3	ug/L	10	Standard
	Pb	206	284.0	15.4	**0.0131**	0.008	60.7	ug/L	264	Standard
	Pb	207	248.0	13.5	**0.0160**	0.007	42.8	ug/L	227	Standard
	Pb	208	1008.0	8.1	**0.0135**	0.004	32.6	ug/L	868	Standard
	U	238	45.7	20.3	**0.0142**	0.001	9.1	ug/L	8	Standard
>	**Bi**	209	515556.1	0.5				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	50.0	30.0	**0.0268**	0.019	70.2	mg/L	53	Standard
K	39	56.7	51.7	**0.0318**	0.055	171.6	mg/L	53	Standard
Ca	43	30.0	44.1	**0.2337**	0.839	359.0	mg/L	28	Standard
Fe	54	72.8	37.4	**-0.0631**	0.020	32.2	mg/L	181	Standard
Fe	57	295.0	9.0	**0.2156**	0.073	33.8	mg/L	257	Standard
Sc-1	45	49101.1	1.0				mg/L	55220	Standard
Cl	35	31979.7	0.9				ug/L	35504	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	1776.8	5.5				ug/L	2040	Standard
P	31	7448.6	24.8				ug/L	20435	Standard
S	34	2298.5	2.2				ug/L	2430	Standard
Sr	88	85.0	31.1				ug/L	75	Standard
C	12	140.0	46.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	-0.3	86.6				mg/L	9	Standard
Ho-1	165	0.0					mg/L	10	Standard
Er	166	6.7	86.6				mg/L	23	Standard
I	127	1355.1	9.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		88.373	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		91.885	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.542
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.294
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW M6 WG574201-02
Sample Date/Time: Thursday, June 30, 2016 11:17:27
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64644.4	3.5				ug/L	74916	Standard
	Be	9	24256.1	3.2	**26.6512**	0.918	3.4	ug/L	10	Standard
	Al	27	4295.6	5.2	**0.0264**	0.001	4.2	ug/L	1822	Standard
	Sc	45	48622.9	0.9				ug/L	55220	Standard
	Ti	47	37.7	9.3	**0.0291**	0.010	32.8	ug/L	34	Standard
	V	51	152090.0	9.7	**17.6711**	1.731	9.8	ug/L	1938	Standard
	Cr	52	215188.7	5.2	**24.9908**	1.463	5.9	ug/L	9522	Standard
	Cr	53	26019.0	4.3	**24.9885**	1.195	4.8	ug/L	395	Standard
	Mn	55	204766.0	5.1	**25.7989**	1.420	5.5	ug/L	902	Standard
	Co	59	189845.6	5.0	**25.3420**	1.375	5.4	ug/L	262	Standard
	Ni	60	54086.9	5.9	**26.1050**	1.650	6.3	ug/L	371	Standard
	Cu	65	53131.2	5.7	**26.1413**	1.611	6.2	ug/L	106	Standard
	Zn	66	36319.6	5.1	**30.0605**	1.673	5.6	ug/L	398	Standard
>	**Ge**	72	492035.7	0.4				ug/L	535147	Standard
	As	75	33099.6	0.8	**26.9307**	0.104	0.4	ug/L	-43	Standard
	Se	82	3603.6	1.9	**28.8201**	0.426	1.5	ug/L	14	Standard
	Se-1	77	2458.5	4.3	**29.0987**	1.177	4.0	ug/L	65	Standard
>	**Ga**	71	58.3	17.8				mg/L	97	Standard
	Rb	85	31.7	24.1				ug/L	15	Standard
	Y	89	422389.7	3.5				ug/L	465704	Standard
>	**Rh**	103	25.0	34.6				ug/L	10	Standard
	Mo	98	48.7	16.4	**0.0291**	0.003	9.1	ug/L	9	Standard
	Ag	107	180030.5	4.8	**25.6238**	1.186	4.6	ug/L	82	Standard
	Cd	111	60091.4	5.4	**26.7643**	1.380	5.2	mg/L	7	Standard
	Cd	114	145971.9	7.3	**26.9991**	1.950	7.2	ug/L	21	Standard
>	**In**	115	575992.2	0.7				ug/L	619035	Standard
	Sn	118	266.7	15.3	**-0.0594**	0.006	10.8	ug/L	508	Standard
	Sb	123	124962.0	1.4	**25.3655**	0.466	1.8	ug/L	86	Standard
	Ba	135	54723.2	6.3	**25.7054**	1.592	6.2	ug/L	79	Standard
	Ce	140	33.3	31.2				ug/L	68	Standard
>	**Tb**	159	900033.6	0.8				ug/L	986982	Standard
	Ho	165	3.3	86.6				ug/L	10	Standard
	Tl	203	216597.6	4.6	**24.8274**	1.034	4.2	ug/L	13	Standard
	Tl	205	186399.3	4.4	**25.0109**	0.997	4.0	ug/L	10	Standard
	Pb	206	132845.1	5.7	**23.6873**	1.326	5.6	ug/L	264	Standard
	Pb	207	115019.5	5.7	**22.6941**	1.280	5.6	ug/L	227	Standard
	Pb	208	460646.0	5.9	**23.5670**	1.321	5.6	ug/L	868	Standard
	U	238	142871.0	4.4	**19.8025**	0.973	4.9	ug/L	8	Standard
>	**Bi**	209	516996.9	0.9				ug/L	541014	Standard

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Na	23	1.7	173.2	**10.5453**	18.256	173.1	mg/L	2	Standard
Mg	24	33.3	34.6	**0.0068**	0.015	214.9	mg/L	53	Standard
K	39	51.7	22.3	**0.0236**	0.022	94.8	mg/L	53	Standard
Ca	43	36.7	43.8	**0.6853**	1.038	151.5	mg/L	28	Standard
Fe	54	45.4	21.0	**-0.0836**	0.007	8.8	mg/L	181	Standard
Fe	57	285.0	16.1	**0.1940**	0.134	69.1	mg/L	257	Standard
Sc-1	45	48622.9	0.9				mg/L	55220	Standard
Cl	35	31751.2	1.3				ug/L	35504	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	2096.8	15.6				ug/L	2040	Standard
P	31	6428.0	0.9				ug/L	20435	Standard
S	34	2303.5	8.7				ug/L	2430	Standard
Sr	88	73.3	37.6				ug/L	75	Standard
C	12	120.0	52.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	2.7	219.6				mg/L	9	Standard
Ho-1	165	3.3	86.6				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	1255.1	14.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		86.289	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		91.944	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.047
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.561
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW DP WG574201-03
Sample Date/Time: Thursday, June 30, 2016 11:20:39
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63201.6	1.5				ug/L	74916	Standard
	Be	9	23903.8	2.4	**26.8556**	0.733	2.7	ug/L	10	Standard
	Al	27	5737.8	6.2	**0.0369**	0.003	8.1	ug/L	1822	Standard
	Sc	45	48599.5	2.0				ug/L	55220	Standard
	Ti	47	46.3	53.8	**0.0520**	0.065	124.8	ug/L	34	Standard
	V	51	154520.0	8.3	**18.0168**	1.629	9.0	ug/L	1938	Standard
	Cr	52	211595.7	4.7	**24.6240**	1.093	4.4	ug/L	9522	Standard
	Cr	53	25357.9	3.6	**24.4081**	0.661	2.7	ug/L	395	Standard
	Mn	55	201667.5	4.7	**25.4735**	1.044	4.1	ug/L	902	Standard
	Co	59	189508.2	5.6	**25.3626**	1.278	5.0	ug/L	262	Standard
	Ni	60	53391.4	5.8	**25.8339**	1.363	5.3	ug/L	371	Standard
	Cu	65	52719.7	4.6	**26.0057**	1.035	4.0	ug/L	106	Standard
	Zn	66	36052.3	5.5	**29.9141**	1.463	4.9	ug/L	398	Standard
>	**Ge**	72	490614.4	0.9				ug/L	535147	Standard
	As	75	32692.3	1.1	**26.6791**	0.430	1.6	ug/L	-43	Standard
	Se	82	3581.2	1.2	**28.7291**	0.612	2.1	ug/L	14	Standard
	Se-1	77	2389.9	4.2	**28.3511**	1.007	3.6	ug/L	65	Standard
>	**Ga**	71	53.3	47.2				mg/L	97	Standard
	Rb	85	35.0	37.8				ug/L	15	Standard
	Y	89	419941.8	0.4				ug/L	465704	Standard
>	**Rh**	103	26.7	28.6				ug/L	10	Standard
	Mo	98	176.7	7.0	**0.0744**	0.004	5.7	ug/L	9	Standard
	Ag	107	179573.6	4.0	**26.0599**	0.863	3.3	ug/L	82	Standard
	Cd	111	59106.0	5.8	**26.8419**	1.431	5.3	mg/L	7	Standard
	Cd	114	142189.6	5.2	**26.8137**	1.236	4.6	ug/L	21	Standard
>	**In**	115	564866.5	1.0				ug/L	619035	Standard
	Sn	118	215.0	6.2	**-0.0672**	0.003	3.9	ug/L	508	Standard
	Sb	123	123122.3	1.2	**25.4843**	0.405	1.6	ug/L	86	Standard
	Ba	135	53570.4	6.3	**25.6553**	1.465	5.7	ug/L	79	Standard
	Ce	140	26.7	10.8				ug/L	68	Standard
>	**Tb**	159	893274.9	1.5				ug/L	986982	Standard
	Ho	165	10.0	132.3				ug/L	10	Standard
	Tl	203	214845.2	4.9	**24.7144**	1.262	5.1	ug/L	13	Standard
	Tl	205	185089.1	5.4	**24.9242**	1.414	5.7	ug/L	10	Standard
	Pb	206	130951.6	5.5	**23.4302**	1.330	5.7	ug/L	264	Standard
	Pb	207	113903.8	5.8	**22.5513**	1.338	5.9	ug/L	227	Standard
	Pb	208	456214.5	6.4	**23.4221**	1.520	6.5	ug/L	868	Standard
	U	238	142740.1	5.2	**19.8466**	1.002	5.1	ug/L	8	Standard
>	**Bi**	209	515247.5	0.5				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	36.7	20.8	**0.0109**	0.010	89.9	mg/L	53	Standard
K	39	50.0	69.3	**0.0209**	0.068	326.3	mg/L	53	Standard
Ca	43	36.7	56.8	**0.6973**	1.372	196.8	mg/L	28	Standard
Fe	54	53.5	29.3	**-0.0772**	0.013	16.4	mg/L	181	Standard
Fe	57	311.7	4.0	**0.2758**	0.054	19.4	mg/L	257	Standard
Sc-1	45	48599.5	2.0				mg/L	55220	Standard
Cl	35	31866.1	1.4				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	2513.5	3.9				ug/L	2040	Standard
P	31	6396.4	2.4				ug/L	20435	Standard
S	34	2231.8	5.4				ug/L	2430	Standard
Sr	88	76.7	33.5				ug/L	75	Standard
C	12	163.3	31.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	9.8	2.8				mg/L	9	Standard
Ho-1	165	10.0	132.3				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	23	Standard
I	127	1581.7	3.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		84.363	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		91.678	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.250
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.237
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW DP WG574201-03
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Method 6020 - Summary Report

Sample ID: L1606138401
Sample Date/Time: Thursday, June 30, 2016 11:23:51
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63507.9	2.7				ug/L	74916	Standard
	Be	9	45.0	0.0	**0.0467**	0.001	2.9	ug/L	10	Standard
	Al	27	579151.6	9.1	**3.9324**	0.299	7.6	ug/L	1822	Standard
	Sc	45	50261.6	2.0				ug/L	55220	Standard
	Ti	47	4807.4	10.2	**12.3788**	1.356	11.0	ug/L	34	Standard
	V	51	25206.6	26.1	**2.7183**	0.794	29.2	ug/L	1938	Standard
	Cr	52	66822.6	12.8	**6.9055**	1.063	15.4	ug/L	9522	Standard
	Cr	53	7641.9	11.2	**6.9388**	0.872	12.6	ug/L	395	Standard
	Mn	55	107364.1	9.0	**13.2318**	1.102	8.3	ug/L	902	Standard
	Co	59	1594.4	3.9	**0.1865**	0.008	4.5	ug/L	262	Standard
	Ni	60	5128.5	1.3	**2.2995**	0.031	1.3	ug/L	371	Standard
	Cu	65	1796.8	11.4	**0.8122**	0.107	13.2	ug/L	106	Standard
	Zn	66	6372.3	6.5	**4.8961**	0.382	7.8	ug/L	398	Standard
>	**Ge**	72	500812.1	1.0				ug/L	535147	Standard
	As	75	1116.8	10.4	**0.9467**	0.100	10.6	ug/L	-43	Standard
	Se	82	60.3	14.3	**0.3791**	0.073	19.4	ug/L	14	Standard
	Se-1	77	93.3	11.5	**0.5250**	0.117	22.2	ug/L	65	Standard
>	**Ga**	71	813.4	13.8				mg/L	97	Standard
	Rb	85	11027.4	9.6				ug/L	15	Standard
	Y	89	442099.3	1.0				ug/L	465704	Standard
>	**Rh**	103	20.0	43.3				ug/L	10	Standard
	Mo	98	5434.4	24.6	**1.8757**	0.486	25.9	ug/L	9	Standard
	Ag	107	172.0	1.5	**0.0182**	0.001	4.1	ug/L	82	Standard
	Cd	111	46.3	23.7	**0.0284**	0.005	17.2	mg/L	7	Standard
	Cd	114	171.4	15.4	**0.0404**	0.005	12.9	ug/L	21	Standard
>	**In**	115	580272.2	1.6				ug/L	619035	Standard
	Sn	118	256.7	21.4	**-0.0613**	0.009	14.7	ug/L	508	Standard
	Sb	123	1175.2	1.3	**0.2412**	0.007	2.8	ug/L	86	Standard
	Ba	135	26741.6	14.3	**12.4444**	1.604	12.9	ug/L	79	Standard
	Ce	140	16634.3	18.2				ug/L	68	Standard
>	**Tb**	159	906690.0	0.8				ug/L	986982	Standard
	Ho	165	818.4	17.3				ug/L	10	Standard
	Tl	203	327.3	4.6	**0.0436**	0.002	5.4	ug/L	13	Standard
	Tl	205	313.3	30.7	**0.0497**	0.013	25.8	ug/L	10	Standard
	Pb	206	746.4	9.3	**0.0958**	0.014	15.0	ug/L	264	Standard
	Pb	207	580.3	13.5	**0.0818**	0.017	21.2	ug/L	227	Standard
	Pb	208	2569.8	12.6	**0.0937**	0.019	19.8	ug/L	868	Standard
	U	238	407.7	27.8	**0.0646**	0.017	25.6	ug/L	8	Standard
>	**Bi**	209	516339.8	1.8				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	568.3	5.2	**0.6464**	0.045	7.0	mg/L	53	Standard
K	39	398.3	4.0	**0.6670**	0.037	5.6	mg/L	53	Standard
Ca	43	43.3	24.0	**1.0309**	0.707	68.6	mg/L	28	Standard
Fe	54	401.5	20.0	**0.1821**	0.061	33.6	mg/L	181	Standard
Fe	57	360.0	7.7	**0.3843**	0.068	17.7	mg/L	257	Standard
> **Sc-1**	45	50261.6	2.0				mg/L	55220	Standard
Cl	35	31812.1	3.4				ug/L	35504	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	2060.1	7.3				ug/L	2040	Standard
P	31	9829.9	2.5				ug/L	20435	Standard
S	34	1978.5	8.8				ug/L	2430	Standard
Sr	88	105.0	29.0				ug/L	75	Standard
C	12	246.7	30.4				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	33.3	105.4				mg/L	7	Standard
Dy	164	1002.4	17.9				mg/L	9	Standard
Ho-1	165	818.4	17.3				mg/L	10	Standard
Er	166	786.7	22.3				mg/L	23	Standard
I	127	4182.2	12.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		84.772	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.584	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.738
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.439
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606138403
Sample Date/Time: Thursday, June 30, 2016 11:27:02
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64930.5	1.2				ug/L	74916	Standard
	Be	9	30.0	16.7	**0.0292**	0.006	19.5	ug/L	10	Standard
	Al	27	1828795.5	14.8	**12.1666**	1.899	15.6	ug/L	1822	Standard
	Sc	45	51057.6	1.6				ug/L	55220	Standard
	Ti	47	1084.7	9.7	**2.6861**	0.266	9.9	ug/L	34	Standard
	V	51	32038.5	18.5	**3.4344**	0.672	19.6	ug/L	1938	Standard
	Cr	52	18396.2	5.5	**1.1067**	0.115	10.4	ug/L	9522	Standard
	Cr	53	1613.4	13.1	**1.1304**	0.201	17.7	ug/L	395	Standard
	Mn	55	121230.5	36.9	**14.6904**	5.474	37.3	ug/L	902	Standard
	Co	59	2783.6	25.6	**0.3360**	0.092	27.4	ug/L	262	Standard
	Ni	60	3626.8	8.1	**1.5522**	0.140	9.0	ug/L	371	Standard
	Cu	65	1153.4	7.6	**0.4897**	0.041	8.3	ug/L	106	Standard
	Zn	66	1516.1	18.4	**0.8777**	0.227	25.8	ug/L	398	Standard
>	**Ge**	72	510077.1	0.2				ug/L	535147	Standard
	As	75	1089.9	4.7	**0.9089**	0.038	4.2	ug/L	-43	Standard
	Se	82	41.3	17.6	**0.2229**	0.055	24.9	ug/L	14	Standard
	Se-1	77	73.7	2.1	**0.2766**	0.019	7.0	ug/L	65	Standard
>	**Ga**	71	165.0	19.9				mg/L	97	Standard
	Rb	85	5817.8	8.8				ug/L	15	Standard
	Y	89	441072.2	2.5				ug/L	465704	Standard
>	**Rh**	103	18.3	56.8				ug/L	10	Standard
	Mo	98	6803.9	9.9	**2.3308**	0.237	10.2	ug/L	9	Standard
	Ag	107	181.7	60.0	**0.0194**	0.015	77.8	ug/L	82	Standard
	Cd	111	51.3	53.5	**0.0304**	0.012	39.1	mg/L	7	Standard
	Cd	114	129.3	66.9	**0.0325**	0.016	48.0	ug/L	21	Standard
>	**In**	115	582444.7	1.2				ug/L	619035	Standard
	Sn	118	211.7	14.2	**-0.0689**	0.005	6.6	ug/L	508	Standard
	Sb	123	980.7	9.5	**0.2012**	0.018	8.8	ug/L	86	Standard
	Ba	135	33140.8	28.4	**15.3771**	4.302	28.0	ug/L	79	Standard
	Ce	140	5237.6	5.3				ug/L	68	Standard
>	**Tb**	159	914520.5	1.3				ug/L	986982	Standard
	Ho	165	355.0	24.1				ug/L	10	Standard
	Tl	203	250.0	41.9	**0.0344**	0.012	33.6	ug/L	13	Standard
	Tl	205	195.0	43.1	**0.0337**	0.011	32.6	ug/L	10	Standard
	Pb	206	406.3	9.3	**0.0344**	0.006	16.8	ug/L	264	Standard
	Pb	207	335.7	15.4	**0.0328**	0.009	28.5	ug/L	227	Standard
	Pb	208	1363.7	20.3	**0.0311**	0.013	42.6	ug/L	868	Standard
	U	238	178.3	24.1	**0.0325**	0.006	17.3	ug/L	8	Standard
>	**Bi**	209	519165.0	1.3				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	873.4	10.4	**0.9960**	0.122	12.2	mg/L	53	Standard
K	39	440.0	19.4	**0.7317**	0.159	21.7	mg/L	53	Standard
Ca	43	106.7	42.5	**4.8817**	2.847	58.3	mg/L	28	Standard
Fe	54	130.3	11.2	**-0.0228**	0.010	44.2	mg/L	181	Standard
Fe	57	360.0	10.8	**0.3692**	0.122	33.0	mg/L	257	Standard
> **Sc-1**	45	51057.6	1.6				mg/L	55220	Standard
Cl	35	32742.0	1.8				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2203.5	4.1				ug/L	2040	Standard
P	31	9269.5	5.3				ug/L	20435	Standard
S	34	2001.8	9.6				ug/L	2430	Standard
Sr	88	98.3	5.9				ug/L	75	Standard
C	12	460.0	18.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	70.0	14.3				mg/L	7	Standard
Dy	164	417.4	5.7				mg/L	9	Standard
Ho-1	165	355.0	24.1				mg/L	10	Standard
Er	166	403.3	16.5				mg/L	23	Standard
I	127	4218.9	8.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		86.671	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.315	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.089
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.961
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606138405
Sample Date/Time: Thursday, June 30, 2016 11:30:14
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	66576.0	3.1				ug/L	74916	Standard
	Be	9	26.7	60.3	**0.0246**	0.017	67.2	ug/L	10	Standard
	Al	27	782618.5	17.0	**5.0937**	1.037	20.4	ug/L	1822	Standard
	Sc	45	52681.5	3.6				ug/L	55220	Standard
	Ti	47	2692.2	14.0	**6.7525**	0.884	13.1	ug/L	34	Standard
	V	51	29525.5	27.9	**3.1409**	0.924	29.4	ug/L	1938	Standard
	Cr	52	36356.6	11.5	**3.1921**	0.449	14.1	ug/L	9522	Standard
	Cr	53	3823.8	11.5	**3.2008**	0.380	11.9	ug/L	395	Standard
	Mn	55	71662.3	35.6	**8.6456**	3.216	37.2	ug/L	902	Standard
	Co	59	1638.1	13.8	**0.1882**	0.032	16.8	ug/L	262	Standard
	Ni	60	4089.9	5.4	**1.7667**	0.129	7.3	ug/L	371	Standard
	Cu	65	1490.4	17.3	**0.6484**	0.119	18.4	ug/L	106	Standard
	Zn	66	3492.4	0.7	**2.4690**	0.059	2.4	ug/L	398	Standard
>	Ge	72	510976.4	1.4				ug/L	535147	Standard
	As	75	1205.8	5.9	**0.9977**	0.044	4.4	ug/L	-43	Standard
	Se	82	64.4	6.1	**0.4011**	0.034	8.4	ug/L	14	Standard
	Se-1	77	83.3	19.2	**0.3870**	0.184	47.4	ug/L	65	Standard
>	Ga	71	375.0	12.2				mg/L	97	Standard
	Rb	85	5906.2	3.9				ug/L	15	Standard
	Y	89	447665.9	1.1				ug/L	465704	Standard
>	Rh	103	23.3	49.5				ug/L	10	Standard
	Mo	98	14254.7	18.6	**4.8045**	0.870	18.1	ug/L	9	Standard
	Ag	107	108.0	4.0	**0.0089**	0.000	4.9	ug/L	82	Standard
	Cd	111	15.8	87.9	**0.0148**	0.006	41.1	mg/L	7	Standard
	Cd	114	128.0	25.5	**0.0321**	0.006	19.1	ug/L	21	Standard
>	In	115	589791.5	1.1				ug/L	619035	Standard
	Sn	118	200.0	31.2	**-0.0711**	0.010	14.6	ug/L	508	Standard
	Sb	123	861.9	5.1	**0.1752**	0.007	3.9	ug/L	86	Standard
	Ba	135	24057.3	38.8	**11.0457**	4.375	39.6	ug/L	79	Standard
	Ce	140	12245.0	12.8				ug/L	68	Standard
>	Tb	159	925423.5	1.9				ug/L	986982	Standard
	Ho	165	598.3	14.1				ug/L	10	Standard
	Tl	203	114.7	18.8	**0.0189**	0.002	11.7	ug/L	13	Standard
	Tl	205	115.0	19.0	**0.0229**	0.003	12.0	ug/L	10	Standard
	Pb	206	491.7	10.8	**0.0487**	0.009	19.0	ug/L	264	Standard
	Pb	207	396.7	4.3	**0.0440**	0.003	7.1	ug/L	227	Standard
	Pb	208	1699.4	6.7	**0.0474**	0.005	11.4	ug/L	868	Standard
	U	238	237.7	18.5	**0.0403**	0.006	14.7	ug/L	8	Standard
>	Bi	209	524816.3	1.6				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	765.0	11.5	**0.8403**	0.110	13.0	mg/L	53	Standard
K	39	351.7	11.5	**0.5493**	0.066	12.0	mg/L	53	Standard
Ca	43	48.3	36.3	**1.1962**	1.066	89.1	mg/L	28	Standard
Fe	54	235.5	17.5	**0.0492**	0.027	54.6	mg/L	181	Standard
Fe	57	333.3	10.6	**0.2631**	0.102	38.9	mg/L	257	Standard
> **Sc-1**	45	52681.5	3.6				mg/L	55220	Standard
Cl	35	32550.9	0.2				ug/L	35504	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	1960.1	15.1				ug/L	2040	Standard
P	31	10708.8	2.7				ug/L	20435	Standard
S	34	1863.4	4.2				ug/L	2430	Standard
Sr	88	111.7	20.2				ug/L	75	Standard
C	12	300.0	18.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	160.0	22.5				mg/L	7	Standard
Dy	164	774.6	21.6				mg/L	9	Standard
Ho-1	165	598.3	14.1				mg/L	10	Standard
Er	166	670.0	14.4				mg/L	23	Standard
I	127	3110.3	17.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.867	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.483	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.276
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.006
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606138407
Sample Date/Time: Thursday, June 30, 2016 11:33:25
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68944.9	2.8				ug/L	74916	Standard
	Be	9	65.0	46.8	**0.0639**	0.033	51.1	ug/L	10	Standard
	Al	27	579198.2	6.0	**3.6270**	0.255	7.0	ug/L	1822	Standard
	Sc	45	52994.2	2.6				ug/L	55220	Standard
	Ti	47	12552.6	16.4	**31.7432**	5.355	16.9	ug/L	34	Standard
	V	51	48414.4	28.6	**5.2766**	1.580	29.9	ug/L	1938	Standard
	Cr	52	170208.6	13.9	**18.7642**	2.854	15.2	ug/L	9522	Standard
	Cr	53	19978.3	13.2	**18.3538**	2.570	14.0	ug/L	395	Standard
	Mn	55	153875.3	17.2	**18.5999**	3.136	16.9	ug/L	902	Standard
	Co	59	4428.0	10.9	**0.5458**	0.059	10.8	ug/L	262	Standard
	Ni	60	12470.8	1.4	**5.6734**	0.108	1.9	ug/L	371	Standard
	Cu	65	4762.8	15.1	**2.2003**	0.350	15.9	ug/L	106	Standard
	Zn	66	14572.4	10.3	**11.3866**	1.269	11.1	ug/L	398	Standard
>	**Ge**	72	511732.4	0.5				ug/L	535147	Standard
	As	75	1713.1	6.8	**1.3930**	0.098	7.0	ug/L	-43	Standard
	Se	82	63.5	10.7	**0.3930**	0.055	14.0	ug/L	14	Standard
	Se-1	77	85.3	17.1	**0.4098**	0.173	42.3	ug/L	65	Standard
>	**Ga**	71	2083.5	15.4				mg/L	97	Standard
	Rb	85	24605.1	10.7				ug/L	15	Standard
	Y	89	487990.5	2.6				ug/L	465704	Standard
>	**Rh**	103	21.7	26.6				ug/L	10	Standard
	Mo	98	13071.8	23.3	**4.4058**	1.007	22.9	ug/L	9	Standard
	Ag	107	195.3	16.3	**0.0211**	0.005	22.9	ug/L	82	Standard
	Cd	111	83.6	29.8	**0.0443**	0.011	24.6	mg/L	7	Standard
	Cd	114	202.5	11.5	**0.0455**	0.004	9.2	ug/L	21	Standard
>	**In**	115	590114.0	1.7				ug/L	619035	Standard
	Sn	118	465.0	11.6	**-0.0284**	0.009	32.2	ug/L	508	Standard
	Sb	123	1175.4	1.8	**0.2373**	0.008	3.3	ug/L	86	Standard
	Ba	135	25691.2	16.9	**11.7737**	2.016	17.1	ug/L	79	Standard
	Ce	140	43623.8	16.3				ug/L	68	Standard
>	**Tb**	159	927358.9	1.0				ug/L	986982	Standard
	Ho	165	2205.2	13.9				ug/L	10	Standard
	Tl	203	354.7	15.2	**0.0460**	0.006	13.9	ug/L	13	Standard
	Tl	205	273.3	18.4	**0.0438**	0.007	15.7	ug/L	10	Standard
	Pb	206	1450.7	13.7	**0.2170**	0.035	16.0	ug/L	264	Standard
	Pb	207	1153.0	13.5	**0.1909**	0.031	16.0	ug/L	227	Standard
	Pb	208	4825.6	12.1	**0.2049**	0.030	14.8	ug/L	868	Standard
	U	238	954.0	24.1	**0.1379**	0.032	23.0	ug/L	8	Standard
>	**Bi**	209	525755.1	1.0				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	751.7	4.3	**0.8196**	0.047	5.7	mg/L	53	Standard
K	39	433.3	5.7	**0.6912**	0.060	8.6	mg/L	53	Standard
Ca	43	45.0	40.1	**0.9976**	1.122	112.5	mg/L	28	Standard
Fe	54	1005.3	16.4	**0.5974**	0.137	22.9	mg/L	181	Standard
Fe	57	478.3	11.2	**0.6589**	0.161	24.5	mg/L	257	Standard
> **Sc-1**	45	52994.2	2.6				mg/L	55220	Standard
Cl	35	31149.3	0.8				ug/L	35504	Standard
Kr	83	1.0	173.2				ug/L	2	Standard
Br	81	1960.1	22.3				ug/L	2040	Standard
P	31	11923.0	5.3				ug/L	20435	Standard
S	34	1808.4	9.5				ug/L	2430	Standard
Sr	88	90.0	14.7				ug/L	75	Standard
C	12	273.3	2.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	126.7	43.5				mg/L	7	Standard
Dy	164	2923.5	15.8				mg/L	9	Standard
Ho-1	165	2205.2	13.9				mg/L	10	Standard
Er	166	2160.2	11.2				mg/L	23	Standard
I	127	4143.9	13.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.029	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.625	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.328
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.180
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606138409
Sample Date/Time: Thursday, June 30, 2016 11:36:37
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71031.2	3.3				ug/L	74916	Standard
	Be	9	78.3	85.0	**0.0733**	0.063	85.7	ug/L	10	Standard
	Al	27	507801.3	1.9	**3.0867**	0.135	4.4	ug/L	1822	Standard
	Sc	45	54725.4	2.4				ug/L	55220	Standard
	Ti	47	7734.0	16.1	**19.1317**	3.053	16.0	ug/L	34	Standard
	V	51	40746.1	29.7	**4.3199**	1.365	31.6	ug/L	1938	Standard
	Cr	52	147373.0	14.9	**15.7599**	2.464	15.6	ug/L	9522	Standard
	Cr	53	17555.3	14.4	**15.7489**	2.305	14.6	ug/L	395	Standard
	Mn	55	34382.5	8.3	**3.9955**	0.352	8.8	ug/L	902	Standard
	Co	59	1254.7	3.7	**0.1352**	0.005	3.7	ug/L	262	Standard
	Ni	60	5111.5	10.0	**2.1928**	0.235	10.7	ug/L	371	Standard
	Cu	65	1596.4	19.1	**0.6834**	0.143	20.9	ug/L	106	Standard
	Zn	66	11716.9	11.6	**8.8995**	1.072	12.1	ug/L	398	Standard
>	**Ge**	72	521945.8	1.0				ug/L	535147	Standard
	As	75	1724.1	6.8	**1.3750**	0.090	6.6	ug/L	-43	Standard
	Se	82	46.2	10.0	**0.2522**	0.035	13.8	ug/L	14	Standard
	Se-1	77	78.3	9.2	**0.3101**	0.080	25.8	ug/L	65	Standard
>	**Ga**	71	1711.8	21.6				mg/L	97	Standard
	Rb	85	20609.2	14.7				ug/L	15	Standard
	Y	89	447841.8	2.7				ug/L	465704	Standard
>	**Rh**	103	13.3	108.3				ug/L	10	Standard
	Mo	98	4630.6	25.0	**1.5695**	0.394	25.1	ug/L	9	Standard
	Ag	107	199.3	39.5	**0.0217**	0.011	51.4	ug/L	82	Standard
	Cd	111	48.6	50.9	**0.0291**	0.011	37.5	mg/L	7	Standard
	Cd	114	117.9	23.7	**0.0302**	0.005	17.1	ug/L	21	Standard
>	**In**	115	590335.8	0.6				ug/L	619035	Standard
	Sn	118	451.7	7.4	**-0.0307**	0.005	16.4	ug/L	508	Standard
	Sb	123	1230.5	5.8	**0.2481**	0.015	6.0	ug/L	86	Standard
	Ba	135	6241.3	3.7	**2.8432**	0.109	3.8	ug/L	79	Standard
	Ce	140	17900.9	20.2				ug/L	68	Standard
>	**Tb**	159	927670.3	0.0				ug/L	986982	Standard
	Ho	165	476.7	22.1				ug/L	10	Standard
	Tl	203	214.7	41.9	**0.0301**	0.010	33.0	ug/L	13	Standard
	Tl	205	171.7	25.4	**0.0303**	0.006	18.5	ug/L	10	Standard
	Pb	206	875.7	18.6	**0.1158**	0.028	24.0	ug/L	264	Standard
	Pb	207	701.7	14.4	**0.1030**	0.019	18.5	ug/L	227	Standard
	Pb	208	2799.4	14.3	**0.1025**	0.019	18.9	ug/L	868	Standard
	U	238	455.3	22.3	**0.0698**	0.014	19.4	ug/L	8	Standard
>	**Bi**	209	526233.6	0.6				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.2734**	16.053	173.1	mg/L	2	Standard
Mg	24	760.0	1.1	**0.8014**	0.015	1.8	mg/L	53	Standard
K	39	358.3	21.9	**0.5397**	0.147	27.2	mg/L	53	Standard
Ca	43	60.0	28.9	**1.7401**	0.925	53.2	mg/L	28	Standard
Fe	54	574.4	11.0	**0.2769**	0.051	18.3	mg/L	181	Standard
Fe	57	445.0	7.9	**0.5259**	0.078	14.8	mg/L	257	Standard
> **Sc-1**	45	54725.4	2.4				mg/L	55220	Standard
Cl	35	30822.0	1.4				ug/L	35504	Standard
Kr	83	3.0	88.2				ug/L	2	Standard
Br	81	1956.8	6.5				ug/L	2040	Standard
P	31	12046.5	9.0				ug/L	20435	Standard
S	34	1585.1	5.2				ug/L	2430	Standard
Sr	88	81.7	24.7				ug/L	75	Standard
C	12	240.0	29.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	69.3				mg/L	7	Standard
Dy	164	622.3	8.0				mg/L	9	Standard
Ho-1	165	476.7	22.1				mg/L	10	Standard
Er	166	510.0	10.9				mg/L	23	Standard
I	127	5877.8	8.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.814	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.533	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.364
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.268
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606138411
Sample Date/Time: Thursday, June 30, 2016 11:39:48
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68988.4	0.8				ug/L	74916	Standard
	Be	9	63.3	27.7	**0.0617**	0.018	29.8	ug/L	10	Standard
	Al	27	533128.9	2.3	**3.3336**	0.057	1.7	ug/L	1822	Standard
	Sc	45	54469.4	1.5				ug/L	55220	Standard
	Ti	47	12265.4	15.6	**30.2589**	4.795	15.8	ug/L	34	Standard
	V	51	40732.1	26.3	**4.2961**	1.190	27.7	ug/L	1938	Standard
	Cr	52	160641.9	15.5	**17.1981**	2.864	16.7	ug/L	9522	Standard
	Cr	53	19144.0	17.4	**17.1367**	3.079	18.0	ug/L	395	Standard
	Mn	55	58616.6	4.2	**6.8526**	0.278	4.1	ug/L	902	Standard
	Co	59	2370.5	6.4	**0.2744**	0.019	6.8	ug/L	262	Standard
	Ni	60	7541.5	7.2	**3.2892**	0.256	7.8	ug/L	371	Standard
	Cu	65	2431.5	17.8	**1.0666**	0.202	19.0	ug/L	106	Standard
	Zn	66	13971.2	12.7	**10.6309**	1.416	13.3	ug/L	398	Standard
>	**Ge**	72	524288.1	0.2				ug/L	535147	Standard
	As	75	1576.3	4.9	**1.2565**	0.062	4.9	ug/L	-43	Standard
	Se	82	45.1	8.0	**0.2430**	0.026	10.9	ug/L	14	Standard
	Se-1	77	74.0	5.9	**0.2571**	0.049	19.1	ug/L	65	Standard
>	**Ga**	71	2193.5	19.5				mg/L	97	Standard
	Rb	85	24783.9	14.8				ug/L	15	Standard
	Y	89	461274.1	2.5				ug/L	465704	Standard
>	**Rh**	103	10.0	86.6				ug/L	10	Standard
	Mo	98	4756.2	29.4	**1.6006**	0.481	30.1	ug/L	9	Standard
	Ag	107	280.7	5.2	**0.0326**	0.002	6.8	ug/L	82	Standard
	Cd	111	53.5	28.3	**0.0309**	0.006	20.4	mg/L	7	Standard
	Cd	114	152.2	14.8	**0.0362**	0.004	11.9	ug/L	21	Standard
>	**In**	115	595368.5	1.0				ug/L	619035	Standard
	Sn	118	478.3	5.4	**-0.0270**	0.003	12.4	ug/L	508	Standard
	Sb	123	1264.5	1.8	**0.2527**	0.007	2.7	ug/L	86	Standard
	Ba	135	20157.8	10.1	**9.1433**	0.846	9.2	ug/L	79	Standard
	Ce	140	32943.3	19.1				ug/L	68	Standard
>	**Tb**	159	929811.0	1.1				ug/L	986982	Standard
	Ho	165	1143.4	16.9				ug/L	10	Standard
	Tl	203	188.0	9.8	**0.0269**	0.002	7.5	ug/L	13	Standard
	Tl	205	165.0	29.2	**0.0292**	0.006	21.4	ug/L	10	Standard
	Pb	206	1392.7	15.1	**0.2034**	0.036	17.6	ug/L	264	Standard
	Pb	207	1112.4	15.4	**0.1799**	0.032	18.0	ug/L	227	Standard
	Pb	208	4576.3	16.6	**0.1891**	0.037	19.7	ug/L	868	Standard
	U	238	725.4	20.4	**0.1053**	0.020	18.7	ug/L	8	Standard
>	**Bi**	209	533013.4	0.3				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	523.3	4.0	**0.5436**	0.020	3.8	mg/L	53	Standard
K	39	300.0	13.2	**0.4408**	0.075	17.0	mg/L	53	Standard
Ca	43	31.7	39.7	**0.1483**	0.737	497.2	mg/L	28	Standard
Fe	54	892.2	12.2	**0.4978**	0.078	15.8	mg/L	181	Standard
Fe	57	511.7	7.3	**0.7120**	0.117	16.4	mg/L	257	Standard
> **Sc-1**	45	54469.4	1.5				mg/L	55220	Standard
Cl	35	30870.8	3.1				ug/L	35504	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	2210.2	6.3				ug/L	2040	Standard
P	31	11792.9	4.9				ug/L	20435	Standard
S	34	1665.1	3.4				ug/L	2430	Standard
Sr	88	70.0	32.7				ug/L	75	Standard
C	12	196.7	25.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	70.0	37.8				mg/L	7	Standard
Dy	164	1450.0	22.0				mg/L	9	Standard
Ho-1	165	1143.4	16.9				mg/L	10	Standard
Er	166	1323.4	16.6				mg/L	23	Standard
I	127	4440.7	16.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.087	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.971	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.177
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.521
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606138411PS WG574744-01
Sample Date/Time: Thursday, June 30, 2016 11:43:00
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	70420.1	3.3				ug/L	74916	Standard
	Be	9	51515.8	1.6	**51.9868**	2.203	4.2	ug/L	10	Standard
	Al	27	613547.1	3.5	**3.7594**	0.075	2.0	ug/L	1822	Standard
	Sc	45	53633.1	1.0				ug/L	55220	Standard
	Ti	47	14734.5	10.7	**36.8395**	4.069	11.0	ug/L	34	Standard
	V	51	391216.4	6.5	**43.4919**	2.747	6.3	ug/L	1938	Standard
	Cr	52	587022.8	7.6	**66.4671**	5.340	8.0	ug/L	9522	Standard
	Cr	53	71068.6	7.9	**65.5072**	5.411	8.3	ug/L	395	Standard
	Mn	55	474064.1	4.8	**56.8941**	2.524	4.4	ug/L	902	Standard
	Co	59	383376.7	5.2	**48.6588**	2.335	4.8	ug/L	262	Standard
	Ni	60	116221.4	3.7	**53.4665**	1.823	3.4	ug/L	371	Standard
	Cu	65	109294.3	2.9	**51.1653**	1.259	2.5	ug/L	106	Standard
	Zn	66	88905.1	1.2	**70.4032**	0.762	1.1	ug/L	398	Standard
>	Ge	72	517573.1	0.5				ug/L	535147	Standard
	As	75	68907.6	0.8	**53.2464**	0.584	1.1	ug/L	-43	Standard
	Se	82	7342.5	1.8	**55.9224**	1.238	2.2	ug/L	14	Standard
	Se-1	77	4919.1	1.4	**55.8814**	1.046	1.9	ug/L	65	Standard
>	Ga	71	2736.9	9.9				mg/L	97	Standard
	Rb	85	30353.9	10.3				ug/L	15	Standard
	Y	89	452230.9	1.7				ug/L	465704	Standard
>	Rh	103	18.3	31.5				ug/L	10	Standard
	Mo	98	4465.2	8.1	**1.5113**	0.128	8.5	ug/L	9	Standard
	Ag	107	358914.4	3.0	**49.7747**	1.333	2.7	ug/L	82	Standard
	Cd	111	120938.7	5.0	**52.4694**	2.453	4.7	mg/L	7	Standard
	Cd	114	290724.6	3.9	**52.3777**	1.851	3.5	ug/L	21	Standard
>	In	115	591206.5	0.5				ug/L	619035	Standard
	Sn	118	663.3	18.1	**0.0033**	0.019	582.6	ug/L	508	Standard
	Sb	123	203333.4	8.8	**40.2163**	3.682	9.2	ug/L	86	Standard
	Ba	135	130878.8	4.1	**59.9209**	2.362	3.9	ug/L	79	Standard
	Ce	140	36251.9	10.0				ug/L	68	Standard
>	Tb	159	935141.5	0.6				ug/L	986982	Standard
	Ho	165	1171.7	15.8				ug/L	10	Standard
	Tl	203	430773.5	3.8	**48.3242**	2.170	4.5	ug/L	13	Standard
	Tl	205	368331.0	3.9	**48.3645**	2.148	4.4	ug/L	10	Standard
	Pb	206	258429.5	2.9	**45.1283**	1.492	3.3	ug/L	264	Standard
	Pb	207	224906.3	3.0	**43.4532**	1.377	3.2	ug/L	227	Standard
	Pb	208	907951.0	3.5	**45.4984**	1.868	4.1	ug/L	868	Standard
	U	238	238863.4	8.2	**32.3797**	2.553	7.9	ug/L	8	Standard
>	Bi	209	528361.0	0.9				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.7609**	16.898	173.1	mg/L	2	Standard
Mg	24	540.0	14.9	**0.5711**	0.087	15.3	mg/L	53	Standard
K	39	353.3	15.1	**0.5413**	0.093	17.1	mg/L	53	Standard
Ca	43	46.7	27.0	**1.0501**	0.758	72.2	mg/L	28	Standard
Fe	54	1043.5	12.3	**0.6128**	0.084	13.6	mg/L	181	Standard
Fe	57	565.0	6.4	**0.8781**	0.100	11.4	mg/L	257	Standard
> **Sc-1**	45	53633.1	1.0				mg/L	55220	Standard
Cl	35	30508.7	0.4				ug/L	35504	Standard
Kr	83	2.7	94.4				ug/L	2	Standard
Br	81	1973.5	7.0				ug/L	2040	Standard
P	31	12516.8	3.2				ug/L	20435	Standard
S	34	1548.4	4.5				ug/L	2430	Standard
Sr	88	85.0	41.2				ug/L	75	Standard
C	12	176.7	29.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	101.3				mg/L	7	Standard
Dy	164	1455.1	24.6				mg/L	9	Standard
Ho-1	165	1171.7	15.8				mg/L	10	Standard
Er	166	1146.7	6.8				mg/L	23	Standard
I	127	4585.7	8.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.998	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.716	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.505
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.661
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 11:46:13
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74928.3	3.4				ug/L	74916	Standard
	Be	9	53902.4	2.4	**51.0924**	0.960	1.9	ug/L	10	Standard
	Al	27	8626351.3	2.3	**49.7131**	0.749	1.5	ug/L	1822	Standard
	Sc	45	55387.8	2.6				ug/L	55220	Standard
	Ti	47	42382.5	2.0	**99.7465**	1.271	1.3	ug/L	34	Standard
	V	51	476315.9	2.5	**49.8302**	0.848	1.7	ug/L	1938	Standard
	Cr	52	470347.2	1.2	**49.8229**	0.501	1.0	ug/L	9522	Standard
	Cr	53	57733.1	1.8	**49.9468**	0.607	1.2	ug/L	395	Standard
	Mn	55	435418.4	0.8	**49.1370**	0.250	0.5	ug/L	902	Standard
	Co	59	421451.6	1.1	**50.3155**	0.452	0.9	ug/L	262	Standard
	Ni	60	115400.2	1.1	**49.9232**	0.424	0.8	ug/L	371	Standard
	Cu	65	114595.1	0.8	**50.4588**	0.504	1.0	ug/L	106	Standard
	Zn	66	67289.4	0.9	**50.0169**	0.513	1.0	ug/L	398	Standard
>	Ge	72	550336.8	1.3				ug/L	535147	Standard
	As	75	68538.5	1.1	**49.8127**	0.452	0.9	ug/L	-43	Standard
	Se	82	6897.2	0.4	**49.3931**	0.532	1.1	ug/L	14	Standard
	Se-1	77	4689.7	2.2	**50.0397**	0.834	1.7	ug/L	65	Standard
>	Ga	71	76.7	16.4				mg/L	97	Standard
	Rb	85	945.0	0.5				ug/L	15	Standard
	Y	89	476720.2	0.4				ug/L	465704	Standard
>	Rh	103	28.3	36.7				ug/L	10	Standard
	Mo	98	312410.4	2.2	**98.2077**	0.907	0.9	ug/L	9	Standard
	Ag	107	383396.7	0.8	**49.8064**	0.368	0.7	ug/L	82	Standard
	Cd	111	122235.8	0.9	**49.6791**	0.213	0.4	mg/L	7	Standard
	Cd	114	295258.0	0.8	**49.8307**	0.249	0.5	ug/L	21	Standard
>	In	115	631197.2	1.3				ug/L	619035	Standard
	Sn	118	332451.6	1.5	**49.9960**	0.217	0.4	ug/L	508	Standard
	Sb	123	270852.4	1.8	**50.1613**	0.406	0.8	ug/L	86	Standard
	Ba	135	115106.0	1.9	**49.3590**	0.653	1.3	ug/L	79	Standard
	Ce	140	496.7	33.3				ug/L	68	Standard
>	Tb	159	994881.4	0.9				ug/L	986982	Standard
	Ho	165	15.0	57.7				ug/L	10	Standard
	Tl	203	464133.7	1.0	**50.4278**	0.348	0.7	ug/L	13	Standard
	Tl	205	400913.7	1.2	**50.9890**	0.656	1.3	ug/L	10	Standard
	Pb	206	295146.5	1.0	**49.9276**	0.367	0.7	ug/L	264	Standard
	Pb	207	267176.6	1.9	**50.0076**	0.811	1.6	ug/L	227	Standard
	Pb	208	1048172.1	0.4	**50.8801**	0.254	0.5	ug/L	868	Standard
	U	238	382634.6	1.1	**50.2498**	0.381	0.8	ug/L	8	Standard
>	Bi	209	545406.3	0.3				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4579.0	2.2	**4.9409**	0.019	0.4	mg/L	53	Standard
K	39	2495.2	2.5	**4.1457**	0.017	0.4	mg/L	53	Standard
Ca	43	118.3	21.3	**4.9969**	1.350	27.0	mg/L	28	Standard
Fe	54	7373.6	3.8	**4.8932**	0.257	5.3	mg/L	181	Standard
Fe	57	2095.1	7.9	**4.8722**	0.455	9.3	mg/L	257	Standard
Sc-1	45	55387.8	2.6				mg/L	55220	Standard
Cl	35	37239.0	1.0				ug/L	35504	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1966.8	6.4				ug/L	2040	Standard
P	31	20163.4	0.1				ug/L	20435	Standard
S	34	2090.1	11.6				ug/L	2430	Standard
Sr	88	75.0	17.6				ug/L	75	Standard
C	12	90.0	29.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	9.4	109.6				mg/L	9	Standard
Ho-1	165	15.0	57.7				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	15120.9	2.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.185		
Al	27	99.426		
Sc	45			
Ti	47	99.747		
V	51	99.660		
Cr	52	99.646		
Cr	53			
Mn	55	98.274		
Co	59	100.631		
Ni	60	99.846		
Cu	65	100.918		
Zn	66	100.034		
Ge	72		102.838	
As	75	99.625		
Se	82	98.786		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	98.208		
Ag	107	99.613		
Cd	111	99.358		
Cd	114			
In	115			101.965
Sn	118	99.992		
Sb	123	100.323		
Ba	135	98.718		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.856		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.760		
U	238	100.500		
Bi	209			100.812
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 11:49:24
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74094.1	1.5				ug/L	74916	Standard
	Be	9	30.0	44.1	**0.0252**	0.013	50.7	ug/L	10	Standard
	Al	27	3078.6	12.8	**0.0156**	0.002	13.6	ug/L	1822	Standard
	Sc	45	54076.4	3.3				ug/L	55220	Standard
	Ti	47	61.3	20.6	**0.0770**	0.032	41.9	ug/L	34	Standard
	V	51	2046.2	3.0	**0.0221**	0.003	15.1	ug/L	1938	Standard
	Cr	52	9408.9	2.6	**-0.0053**	0.025	474.4	ug/L	9522	Standard
	Cr	53	521.7	3.9	**0.0752**	0.024	31.5	ug/L	395	Standard
	Mn	55	1218.7	3.2	**0.0349**	0.003	8.7	ug/L	902	Standard
	Co	59	397.7	13.6	**0.0254**	0.006	23.9	ug/L	262	Standard
	Ni	60	304.0	4.8	**-0.0116**	0.005	40.4	ug/L	371	Standard
	Cu	65	197.0	8.8	**0.0296**	0.009	29.9	ug/L	106	Standard
	Zn	66	431.7	5.1	**-0.0181**	0.021	114.0	ug/L	398	Standard
>	**Ge**	72	541436.6	1.5				ug/L	535147	Standard
	As	75	-19.0	261.9	**0.0415**	0.036	87.2	ug/L	-43	Standard
	Se	82	25.8	36.4	**0.0920**	0.070	76.5	ug/L	14	Standard
	Se-1	77	59.0	6.1	**0.0658**	0.032	48.9	ug/L	65	Standard
>	**Ga**	71	76.7	10.0				mg/L	97	Standard
	Rb	85	128.3	31.3				ug/L	15	Standard
	Y	89	473142.7	1.0				ug/L	465704	Standard
>	**Rh**	103	11.7	107.9				ug/L	10	Standard
	Mo	98	265.7	17.4	**0.0959**	0.014	14.2	ug/L	9	Standard
	Ag	107	244.3	17.5	**0.0257**	0.005	19.8	ug/L	82	Standard
	Cd	111	26.2	12.3	**0.0186**	0.001	7.8	mg/L	7	Standard
	Cd	114	60.2	29.1	**0.0191**	0.003	15.5	ug/L	21	Standard
>	**In**	115	630319.4	1.4				ug/L	619035	Standard
	Sn	118	863.4	18.4	**0.0271**	0.026	94.2	ug/L	508	Standard
	Sb	123	1310.0	30.1	**0.2480**	0.076	30.7	ug/L	86	Standard
	Ba	135	87.3	7.0	**0.0179**	0.003	17.3	ug/L	79	Standard
	Ce	140	170.0	74.6				ug/L	68	Standard
>	**Tb**	159	978400.2	1.6				ug/L	986982	Standard
	Ho	165	13.3	21.7				ug/L	10	Standard
	Tl	203	215.0	15.4	**0.0293**	0.004	12.6	ug/L	13	Standard
	Tl	205	185.0	13.5	**0.0312**	0.003	10.3	ug/L	10	Standard
	Pb	206	438.7	10.6	**0.0363**	0.008	21.0	ug/L	264	Standard
	Pb	207	354.7	1.3	**0.0331**	0.001	3.0	ug/L	227	Standard
	Pb	208	1461.0	8.2	**0.0324**	0.006	17.2	ug/L	868	Standard
	U	238	225.3	16.3	**0.0374**	0.005	13.1	ug/L	8	Standard
>	**Bi**	209	546754.7	0.4				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	30.0	88.2	**-0.0009**	0.030	3396.7	mg/L	53	Standard
K	39	36.7	47.9	**-0.0119**	0.033	273.8	mg/L	53	Standard
Ca	43	28.3	20.4	**-0.0367**	0.324	884.9	mg/L	28	Standard
Fe	54	202.3	1.2	**0.0221**	0.006	25.7	mg/L	181	Standard
Fe	57	298.3	9.2	**0.1443**	0.072	49.7	mg/L	257	Standard
Sc-1	45	54076.4	3.3				mg/L	55220	Standard
Cl	35	37355.3	1.2				ug/L	35504	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	2116.8	5.4				ug/L	2040	Standard
P	31	19372.4	0.8				ug/L	20435	Standard
S	34	2241.8	5.0				ug/L	2430	Standard
Sr	88	56.7	18.4				ug/L	75	Standard
C	12	126.7	4.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	576.3	20.2				mg/L	9	Standard
Ho-1	165	13.3	21.7				mg/L	10	Standard
Er	166	76.7	32.8				mg/L	23	Standard
I	127	14990.7	2.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.175	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.823
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.061
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606138411SDL WG574744-02
Sample Date/Time: Thursday, June 30, 2016 11:52:37
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66753.5	3.8				ug/L	74916	Standard
	Be	9	20.0	43.3	**0.0179**	0.010	55.7	ug/L	10	Standard
	Al	27	109583.5	3.6	**0.7064**	0.002	0.3	ug/L	1822	Standard
	Sc	45	49285.0	1.3				ug/L	55220	Standard
	Ti	47	2714.6	18.5	**6.9773**	1.363	19.5	ug/L	34	Standard
	V	51	8460.6	22.2	**0.7823**	0.217	27.8	ug/L	1938	Standard
	Cr	52	42071.6	15.6	**3.9736**	0.814	20.5	ug/L	9522	Standard
	Cr	53	4567.4	19.1	**4.0006**	0.862	21.5	ug/L	395	Standard
	Mn	55	11799.3	6.6	**1.3637**	0.086	6.3	ug/L	902	Standard
	Co	59	683.7	6.0	**0.0671**	0.005	7.4	ug/L	262	Standard
	Ni	60	1724.8	10.4	**0.6788**	0.092	13.6	ug/L	371	Standard
	Cu	65	611.3	19.9	**0.2382**	0.061	25.5	ug/L	106	Standard
	Zn	66	3527.1	6.4	**2.5607**	0.207	8.1	ug/L	398	Standard
>	**Ge**	72	499847.4	1.0				ug/L	535147	Standard
	As	75	293.4	16.2	**0.2897**	0.037	12.9	ug/L	-43	Standard
	Se	82	20.7	11.8	**0.0664**	0.019	28.0	ug/L	14	Standard
	Se-1	77	57.0	3.0	**0.0961**	0.020	21.2	ug/L	65	Standard
>	**Ga**	71	548.3	22.0				mg/L	97	Standard
	Rb	85	5541.0	15.0				ug/L	15	Standard
	Y	89	428396.1	1.6				ug/L	465704	Standard
>	**Rh**	103	13.3	57.3				ug/L	10	Standard
	Mo	98	811.0	25.3	**0.2924**	0.072	24.5	ug/L	9	Standard
	Ag	107	188.7	5.3	**0.0208**	0.001	6.6	ug/L	82	Standard
	Cd	111	19.9	11.6	**0.0168**	0.001	6.4	mg/L	7	Standard
	Cd	114	65.0	38.7	**0.0210**	0.005	22.4	ug/L	21	Standard
>	**In**	115	574769.4	0.5				ug/L	619035	Standard
	Sn	118	250.0	12.2	**-0.0621**	0.005	7.8	ug/L	508	Standard
	Sb	123	633.4	7.5	**0.1332**	0.009	6.8	ug/L	86	Standard
	Ba	135	3566.4	8.8	**1.6609**	0.154	9.3	ug/L	79	Standard
	Ce	140	6809.9	20.4				ug/L	68	Standard
>	**Tb**	159	905865.7	1.8				ug/L	986982	Standard
	Ho	165	275.0	21.0				ug/L	10	Standard
	Tl	203	97.0	21.5	**0.0171**	0.002	14.0	ug/L	13	Standard
	Tl	205	83.3	33.0	**0.0188**	0.004	19.6	ug/L	10	Standard
	Pb	206	526.3	11.0	**0.0559**	0.010	18.5	ug/L	264	Standard
	Pb	207	434.7	15.7	**0.0524**	0.014	25.8	ug/L	227	Standard
	Pb	208	1770.7	11.0	**0.0521**	0.010	19.0	ug/L	868	Standard
	U	238	198.0	23.7	**0.0352**	0.006	18.3	ug/L	8	Standard
>	**Bi**	209	518831.3	0.3				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	151.7	10.1	**0.1508**	0.020	13.4	mg/L	53	Standard
K	39	90.0	16.7	**0.0953**	0.030	31.3	mg/L	53	Standard
Ca	43	26.7	43.3	**0.0229**	0.756	3307.7	mg/L	28	Standard
Fe	54	233.3	5.5	**0.0594**	0.011	18.2	mg/L	181	Standard
Fe	57	301.7	6.7	**0.2328**	0.067	29.0	mg/L	257	Standard
> **Sc-1**	45	49285.0	1.3				mg/L	55220	Standard
Cl	35	32605.7	1.4				ug/L	35504	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	1956.8	5.5				ug/L	2040	Standard
P	31	7258.4	2.9				ug/L	20435	Standard
S	34	1698.4	1.5				ug/L	2430	Standard
Sr	88	61.7	28.5				ug/L	75	Standard
C	12	96.7	15.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	339.0	40.1				mg/L	9	Standard
Ho-1	165	275.0	21.0				mg/L	10	Standard
Er	166	230.0	47.8				mg/L	23	Standard
I	127	26713.5	1.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.104	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.404	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		92.849
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.900
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 11:55:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73471.1	1.5				ug/L	74916	Standard
	Be	9	53803.7	2.7	**51.9914**	0.927	1.8	ug/L	10	Standard
	Al	27	8617402.5	1.0	**50.6396**	0.854	1.7	ug/L	1822	Standard
	Sc	45	55560.0	1.1				ug/L	55220	Standard
	Ti	47	42477.1	1.5	**100.6323**	0.276	0.3	ug/L	34	Standard
	V	51	479326.5	1.4	**50.4824**	0.031	0.1	ug/L	1938	Standard
	Cr	52	467744.0	1.6	**49.8733**	0.359	0.7	ug/L	9522	Standard
	Cr	53	57450.4	2.8	**50.0258**	0.734	1.5	ug/L	395	Standard
	Mn	55	438319.0	2.2	**49.7885**	0.650	1.3	ug/L	902	Standard
	Co	59	429053.6	1.5	**51.5613**	0.502	1.0	ug/L	262	Standard
	Ni	60	116039.3	0.4	**50.5360**	0.520	1.0	ug/L	371	Standard
	Cu	65	115333.0	0.7	**51.1200**	0.359	0.7	ug/L	106	Standard
	Zn	66	67421.7	1.0	**50.4480**	0.173	0.3	ug/L	398	Standard
>	Ge	72	546720.8	1.3				ug/L	535147	Standard
	As	75	69011.0	1.2	**50.4869**	0.429	0.8	ug/L	-43	Standard
	Se	82	6880.5	0.7	**49.5985**	0.367	0.7	ug/L	14	Standard
	Se-1	77	4803.4	0.4	**51.6156**	0.560	1.1	ug/L	65	Standard
>	Ga	71	91.7	11.4				mg/L	97	Standard
	Rb	85	968.4	7.8				ug/L	15	Standard
	Y	89	476399.1	3.4				ug/L	465704	Standard
>	Rh	103	40.0	21.7				ug/L	10	Standard
	Mo	98	317271.3	0.9	**98.5797**	0.807	0.8	ug/L	9	Standard
	Ag	107	383771.0	1.9	**49.2667**	0.500	1.0	ug/L	82	Standard
	Cd	111	122621.3	2.1	**49.2465**	0.412	0.8	mg/L	7	Standard
	Cd	114	298584.6	2.3	**49.7946**	0.426	0.9	ug/L	21	Standard
>	In	115	638699.7	1.6				ug/L	619035	Standard
	Sn	118	330125.0	1.7	**49.0640**	0.589	1.2	ug/L	508	Standard
	Sb	123	267358.3	1.7	**48.9342**	0.249	0.5	ug/L	86	Standard
	Ba	135	115832.8	1.6	**49.0883**	0.336	0.7	ug/L	79	Standard
	Ce	140	405.0	17.3				ug/L	68	Standard
>	Tb	159	985370.4	0.8				ug/L	986982	Standard
	Ho	165	18.3	41.7				ug/L	10	Standard
	Tl	203	467550.0	0.1	**50.4119**	0.413	0.8	ug/L	13	Standard
	Tl	205	409083.0	1.4	**51.6282**	0.628	1.2	ug/L	10	Standard
	Pb	206	295016.7	1.2	**49.5226**	0.377	0.8	ug/L	264	Standard
	Pb	207	268860.1	1.3	**49.9385**	0.602	1.2	ug/L	227	Standard
	Pb	208	1058510.8	0.5	**50.9882**	0.179	0.4	ug/L	868	Standard
	U	238	383137.6	0.8	**49.9325**	0.552	1.1	ug/L	8	Standard
>	Bi	209	549624.3	0.8				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4540.7	2.6	**4.8831**	0.083	1.7	mg/L	53	Standard
K	39	2480.2	4.4	**4.1088**	0.230	5.6	mg/L	53	Standard
Ca	43	106.7	21.1	**4.3314**	1.274	29.4	mg/L	28	Standard
Fe	54	7391.6	1.2	**4.8870**	0.066	1.4	mg/L	181	Standard
Fe	57	2151.8	3.3	**5.0036**	0.248	5.0	mg/L	257	Standard
> **Sc-1**	45	55560.0	1.1				mg/L	55220	Standard
Cl	35	39075.0	0.9				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	2100.1	2.1				ug/L	2040	Standard
P	31	22523.4	5.5				ug/L	20435	Standard
S	34	2553.5	5.9				ug/L	2430	Standard
Sr	88	76.7	39.3				ug/L	75	Standard
C	12	140.0	37.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	6.2	186.8				mg/L	9	Standard
Ho-1	165	18.3	41.7				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	15276.0	3.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	103.983		
Al	27	101.279		
Sc	45			
Ti	47	100.632		
V	51	100.965		
Cr	52	99.747		
Cr	53			
Mn	55	99.577		
Co	59	103.123		
Ni	60	101.072		
Cu	65	102.240		
Zn	66	100.896		
> Ge	72		102.163	
As	75	100.974		
Se	82	99.197		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	98.580		
Ag	107	98.533		
Cd	111	98.493		
Cd	114			
In	115			103.177
Sn	118	98.128		
Sb	123	97.868		
Ba	135	98.177		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.824		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.976		
U	238	99.865		
Bi	209			101.591
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 11:59:02
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73266.9	3.6				ug/L	74916	Standard
	Be	9	38.3	30.1	**0.0335**	0.011	32.9	ug/L	10	Standard
	Al	27	2666.9	9.7	**0.0134**	0.001	8.7	ug/L	1822	Standard
	Sc	45	54129.9	0.6				ug/L	55220	Standard
	Ti	47	47.7	19.5	**0.0440**	0.021	48.7	ug/L	34	Standard
	V	51	1815.6	3.2	**-0.0022**	0.009	417.7	ug/L	1938	Standard
	Cr	52	8908.6	1.0	**-0.0592**	0.025	41.9	ug/L	9522	Standard
	Cr	53	500.0	6.1	**0.0561**	0.023	41.9	ug/L	395	Standard
	Mn	55	1168.7	1.2	**0.0293**	0.002	8.4	ug/L	902	Standard
	Co	59	347.7	9.3	**0.0194**	0.003	17.6	ug/L	262	Standard
	Ni	60	307.0	17.4	**-0.0098**	0.026	261.6	ug/L	371	Standard
	Cu	65	163.7	7.9	**0.0146**	0.005	33.6	ug/L	106	Standard
	Zn	66	431.7	0.7	**-0.0179**	0.007	39.9	ug/L	398	Standard
>	**Ge**	72	540936.2	1.7				ug/L	535147	Standard
	As	75	-11.2	339.5	**0.0471**	0.028	59.8	ug/L	-43	Standard
	Se	82	27.6	38.1	**0.1053**	0.080	75.7	ug/L	14	Standard
	Se-1	77	58.7	11.3	**0.0634**	0.079	124.5	ug/L	65	Standard
>	**Ga**	71	86.7	33.3				mg/L	97	Standard
	Rb	85	66.7	30.3				ug/L	15	Standard
	Y	89	467928.3	2.4				ug/L	465704	Standard
>	**Rh**	103	20.0	43.3				ug/L	10	Standard
	Mo	98	236.1	20.7	**0.0858**	0.015	17.2	ug/L	9	Standard
	Ag	107	190.0	14.6	**0.0184**	0.003	18.5	ug/L	82	Standard
	Cd	111	20.6	21.1	**0.0162**	0.002	10.4	mg/L	7	Standard
	Cd	114	68.1	34.7	**0.0203**	0.004	19.3	ug/L	21	Standard
>	**In**	115	637305.2	0.8				ug/L	619035	Standard
	Sn	118	880.0	7.4	**0.0280**	0.010	37.2	ug/L	508	Standard
	Sb	123	794.1	27.5	**0.1502**	0.041	27.2	ug/L	86	Standard
	Ba	135	64.0	4.1	**0.0076**	0.001	17.3	ug/L	79	Standard
	Ce	140	128.3	54.6				ug/L	68	Standard
>	**Tb**	159	982464.6	1.0				ug/L	986982	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	126.7	23.9	**0.0197**	0.003	16.6	ug/L	13	Standard
	Tl	205	91.7	36.3	**0.0193**	0.004	21.6	ug/L	10	Standard
	Pb	206	366.0	3.4	**0.0241**	0.001	6.0	ug/L	264	Standard
	Pb	207	305.7	8.4	**0.0239**	0.004	18.4	ug/L	227	Standard
	Pb	208	1216.7	5.0	**0.0206**	0.002	11.7	ug/L	868	Standard
	U	238	92.0	19.6	**0.0199**	0.002	11.6	ug/L	8	Standard
>	**Bi**	209	546299.6	1.1				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	21.7	48.0	**-0.0105**	0.011	109.1	mg/L	53	Standard
K	39	50.0	26.5	**0.0105**	0.023	214.7	mg/L	53	Standard
Ca	43	33.3	22.9	**0.2493**	0.431	172.8	mg/L	28	Standard
Fe	54	190.9	6.0	**0.0139**	0.008	54.2	mg/L	181	Standard
Fe	57	266.7	23.9	**0.0573**	0.169	295.2	mg/L	257	Standard
> **Sc-1**	45	54129.9	0.6				mg/L	55220	Standard
Cl	35	39084.3	0.8				ug/L	35504	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	2156.8	6.9				ug/L	2040	Standard
P	31	20552.3	1.5				ug/L	20435	Standard
S	34	2501.9	1.6				ug/L	2430	Standard
Sr	88	81.7	17.7				ug/L	75	Standard
C	12	106.7	23.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	608.4	11.8				mg/L	9	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	103.3	24.4				mg/L	23	Standard
I	127	15052.5	1.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.082	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.951
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.977
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 12:01:19
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Method 6020 - Summary Report

Sample ID: PBW DM WG573868-03
Sample Date/Time: Thursday, June 30, 2016 12:09:56
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75042.1	2.4				ug/L	74916	Standard
	Be	9	46.7	12.4	**0.0406**	0.006	15.0	ug/L	10	Standard
	Al	27	5130.9	23.4	**0.0272**	0.007	24.3	ug/L	1822	Standard
	Sc	45	55277.3	0.3				ug/L	55220	Standard
	Ti	47	46.0	12.1	**0.0376**	0.012	32.6	ug/L	34	Standard
	V	51	2344.5	6.5	**0.0487**	0.015	30.2	ug/L	1938	Standard
	Cr	52	10404.6	0.1	**0.0803**	0.013	15.7	ug/L	9522	Standard
	Cr	53	568.3	11.8	**0.1058**	0.058	54.8	ug/L	395	Standard
	Mn	55	2002.8	7.0	**0.1203**	0.016	13.2	ug/L	902	Standard
	Co	59	509.3	18.1	**0.0377**	0.011	28.5	ug/L	262	Standard
	Ni	60	393.3	5.9	**0.0243**	0.011	44.9	ug/L	371	Standard
	Cu	65	237.7	6.1	**0.0455**	0.005	11.8	ug/L	106	Standard
	Zn	66	1297.4	2.8	**0.6198**	0.029	4.7	ug/L	398	Standard
>	**Ge**	72	552956.0	1.0				ug/L	535147	Standard
	As	75	-28.9	102.6	**0.0343**	0.022	62.8	ug/L	-43	Standard
	Se	82	25.5	33.7	**0.0856**	0.062	72.0	ug/L	14	Standard
	Se-1	77	56.3	5.4	**0.0240**	0.037	152.5	ug/L	65	Standard
>	**Ga**	71	51.7	11.2				mg/L	97	Standard
	Rb	85	58.3	26.2				ug/L	15	Standard
	Y	89	476604.2	1.4				ug/L	465704	Standard
>	**Rh**	103	16.7	34.6				ug/L	10	Standard
	Mo	98	110.0	34.7	**0.0464**	0.011	24.7	ug/L	9	Standard
	Ag	107	470.0	14.4	**0.0541**	0.008	15.0	ug/L	82	Standard
	Cd	111	86.8	29.8	**0.0426**	0.010	23.4	mg/L	7	Standard
	Cd	114	200.3	71.6	**0.0421**	0.023	55.6	ug/L	21	Standard
>	**In**	115	640268.8	1.4				ug/L	619035	Standard
	Sn	118	798.4	8.9	**0.0152**	0.010	67.0	ug/L	508	Standard
	Sb	123	661.5	7.4	**0.1252**	0.009	7.3	ug/L	86	Standard
	Ba	135	127.0	35.5	**0.0340**	0.018	54.2	ug/L	79	Standard
	Ce	140	86.7	17.6				ug/L	68	Standard
>	**Tb**	159	987703.0	0.6				ug/L	986982	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	278.0	36.9	**0.0355**	0.011	29.9	ug/L	13	Standard
	Tl	205	215.0	34.7	**0.0344**	0.009	26.1	ug/L	10	Standard
	Pb	206	476.7	15.4	**0.0411**	0.012	28.1	ug/L	264	Standard
	Pb	207	439.0	17.9	**0.0472**	0.014	29.4	ug/L	227	Standard
	Pb	208	1642.0	10.9	**0.0397**	0.008	20.0	ug/L	868	Standard
	U	238	87.0	72.6	**0.0190**	0.008	41.9	ug/L	8	Standard
>	**Bi**	209	557268.1	1.1				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.3804**	16.239	173.1	mg/L	2	Standard
Mg	24	45.0	19.2	**0.0144**	0.009	65.7	mg/L	53	Standard
K	39	50.0	34.6	**0.0088**	0.030	334.6	mg/L	53	Standard
Ca	43	25.0	40.0	**-0.2606**	0.566	217.2	mg/L	28	Standard
Fe	54	165.8	13.9	**-0.0058**	0.016	274.6	mg/L	181	Standard
Fe	57	281.7	14.8	**0.0827**	0.112	135.9	mg/L	257	Standard
Sc-1	45	55277.3	0.3				mg/L	55220	Standard
Cl	35	39960.6	0.9				ug/L	35504	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	2270.2	3.8				ug/L	2040	Standard
P	31	20181.8	3.6				ug/L	20435	Standard
S	34	2101.8	5.3				ug/L	2430	Standard
Sr	88	70.0	14.3				ug/L	75	Standard
C	12	103.3	14.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	8.4	6.6				mg/L	9	Standard
Ho-1	165	8.3	91.7				mg/L	10	Standard
Er	166	33.3	34.6				mg/L	23	Standard
I	127	14196.7	3.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.168	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.328	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.430
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.004
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: LCSW DM WG573868-04
Sample Date/Time: Thursday, June 30, 2016 12:13:08
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75614.9	0.8				ug/L	74916	Standard
	Be	9	56461.7	2.6	**53.0158**	1.254	2.4	ug/L	10	Standard
	Al	27	8238.9	4.9	**0.0447**	0.003	6.0	ug/L	1822	Standard
	Sc	45	54966.2	2.3				ug/L	55220	Standard
	Ti	47	53.7	13.5	**0.0559**	0.016	29.5	ug/L	34	Standard
	V	51	486782.8	1.3	**50.7926**	0.588	1.2	ug/L	1938	Standard
	Cr	52	487122.6	0.7	**51.4915**	0.441	0.9	ug/L	9522	Standard
	Cr	53	59874.8	2.0	**51.6707**	0.958	1.9	ug/L	395	Standard
	Mn	55	464127.5	0.4	**52.2382**	0.073	0.1	ug/L	902	Standard
	Co	59	442230.6	0.3	**52.6518**	0.339	0.6	ug/L	262	Standard
	Ni	60	120110.9	0.7	**51.8238**	0.534	1.0	ug/L	371	Standard
	Cu	65	119462.5	1.3	**52.4568**	0.612	1.2	ug/L	106	Standard
	Zn	66	69006.1	0.8	**51.1577**	0.387	0.8	ug/L	398	Standard
>	**Ge**	72	551846.0	0.4				ug/L	535147	Standard
	As	75	70485.8	0.5	**51.0842**	0.120	0.2	ug/L	-43	Standard
	Se	82	6971.9	1.5	**49.7873**	0.613	1.2	ug/L	14	Standard
	Se-1	77	4835.1	1.1	**51.4687**	0.717	1.4	ug/L	65	Standard
>	**Ga**	71	75.0	11.5				mg/L	97	Standard
	Rb	85	53.3	19.5				ug/L	15	Standard
	Y	89	480514.9	1.4				ug/L	465704	Standard
>	**Rh**	103	46.7	16.4				ug/L	10	Standard
	Mo	98	72.7	13.4	**0.0347**	0.003	8.3	ug/L	9	Standard
	Ag	107	405687.5	0.3	**51.5601**	0.578	1.1	ug/L	82	Standard
	Cd	111	125440.7	0.4	**49.8773**	0.557	1.1	mg/L	7	Standard
	Cd	114	303151.0	0.5	**50.0526**	0.311	0.6	ug/L	21	Standard
>	**In**	115	645186.9	0.8				ug/L	619035	Standard
	Sn	118	700.0	7.4	**-0.0002**	0.007	3014.2	ug/L	508	Standard
	Sb	123	279461.7	1.0	**50.6399**	0.925	1.8	ug/L	86	Standard
	Ba	135	119660.3	0.8	**50.2013**	0.454	0.9	ug/L	79	Standard
	Ce	140	271.7	32.7				ug/L	68	Standard
>	**Tb**	159	996230.2	1.7				ug/L	986982	Standard
	Ho	165	10.0	86.6				ug/L	10	Standard
	Tl	203	481064.0	0.4	**50.8871**	0.487	1.0	ug/L	13	Standard
	Tl	205	418584.1	1.5	**51.8251**	0.426	0.8	ug/L	10	Standard
	Pb	206	313866.3	0.6	**51.6940**	0.593	1.1	ug/L	264	Standard
	Pb	207	273492.3	0.3	**49.8395**	0.528	1.1	ug/L	227	Standard
	Pb	208	1100367.2	0.4	**52.0040**	0.604	1.2	ug/L	868	Standard
	U	238	390238.6	0.2	**49.8959**	0.511	1.0	ug/L	8	Standard
>	**Bi**	209	560231.5	0.8				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	45.0	29.4	**0.0145**	0.014	94.0	mg/L	53	Standard
K	39	45.0	48.4	**0.0003**	0.036	11085.7	mg/L	53	Standard
Ca	43	20.0	50.0	**-0.5429**	0.546	100.5	mg/L	28	Standard
Fe	54	187.7	16.1	**0.0100**	0.023	229.2	mg/L	181	Standard
Fe	57	243.3	9.3	**-0.0154**	0.058	378.3	mg/L	257	Standard
Sc-1	45	54966.2	2.3				mg/L	55220	Standard
Cl	35	39538.2	1.9				ug/L	35504	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	1870.1	8.4				ug/L	2040	Standard
P	31	20659.1	1.9				ug/L	20435	Standard
S	34	2180.2	6.0				ug/L	2430	Standard
Sr	88	70.0	46.8				ug/L	75	Standard
C	12	96.7	31.6				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	19.5	53.7				mg/L	9	Standard
Ho-1	165	10.0	86.6				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	1283.4	22.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.932	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.120	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	104.225
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	103.552
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606113005 WG573868-01
Sample Date/Time: Thursday, June 30, 2016 12:16:19
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74224.7	0.4				ug/L	74916	Standard
	Be	9	33.3	48.2	**0.0282**	0.015	54.1	ug/L	10	Standard
	Al	27	13729.6	1.9	**0.0775**	0.002	2.4	ug/L	1822	Standard
	Sc	45	54909.3	1.4				ug/L	55220	Standard
	Ti	47	52.0	26.9	**0.0519**	0.035	66.5	ug/L	34	Standard
	V	51	2026.8	1.1	**0.0153**	0.002	15.9	ug/L	1938	Standard
	Cr	52	11350.9	1.2	**0.1808**	0.031	17.2	ug/L	9522	Standard
	Cr	53	698.3	8.0	**0.2175**	0.040	18.4	ug/L	395	Standard
	Mn	55	1997.1	1.0	**0.1194**	0.005	4.2	ug/L	902	Standard
	Co	59	345.0	7.0	**0.0182**	0.003	18.0	ug/L	262	Standard
	Ni	60	400.0	6.0	**0.0269**	0.011	41.9	ug/L	371	Standard
	Cu	65	1623.4	1.5	**0.6528**	0.021	3.2	ug/L	106	Standard
	Zn	66	1888.5	2.6	**1.0587**	0.056	5.3	ug/L	398	Standard
>	**Ge**	72	553668.9	1.4				ug/L	535147	Standard
	As	75	-49.2	51.8	**0.0198**	0.018	91.0	ug/L	-43	Standard
	Se	82	21.8	46.3	**0.0578**	0.071	122.1	ug/L	14	Standard
	Se-1	77	61.7	9.5	**0.0798**	0.054	67.4	ug/L	65	Standard
>	**Ga**	71	58.3	9.9				mg/L	97	Standard
	Rb	85	98.3	41.4				ug/L	15	Standard
	Y	89	487175.7	1.2				ug/L	465704	Standard
>	**Rh**	103	6.7	43.3				ug/L	10	Standard
	Mo	98	43.2	20.0	**0.0257**	0.003	10.5	ug/L	9	Standard
	Ag	107	172.0	10.9	**0.0160**	0.003	16.1	ug/L	82	Standard
	Cd	111	16.2	29.1	**0.0144**	0.002	13.5	mg/L	7	Standard
	Cd	114	56.3	71.8	**0.0183**	0.007	37.0	ug/L	21	Standard
>	**In**	115	640857.1	0.9				ug/L	619035	Standard
	Sn	118	2248.5	21.6	**0.2299**	0.069	29.9	ug/L	508	Standard
	Sb	123	230.9	14.3	**0.0465**	0.006	12.2	ug/L	86	Standard
	Ba	135	326.0	5.8	**0.1181**	0.009	7.4	ug/L	79	Standard
	Ce	140	65.0	23.1				ug/L	68	Standard
>	**Tb**	159	1002952.3	1.1				ug/L	986982	Standard
	Ho	165	16.7	17.3				ug/L	10	Standard
	Tl	203	365.3	26.2	**0.0447**	0.010	22.4	ug/L	13	Standard
	Tl	205	333.3	33.3	**0.0490**	0.014	27.8	ug/L	10	Standard
	Pb	206	323.3	11.2	**0.0156**	0.006	39.8	ug/L	264	Standard
	Pb	207	298.3	7.9	**0.0213**	0.005	21.2	ug/L	227	Standard
	Pb	208	1114.7	7.9	**0.0144**	0.004	30.0	ug/L	868	Standard
	U	238	59.7	41.1	**0.0155**	0.003	20.4	ug/L	8	Standard
>	**Bi**	209	559636.4	0.4				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.4552**	16.368	173.1	mg/L	2	Standard
Mg	24	115.0	19.0	**0.0914**	0.023	25.7	mg/L	53	Standard
K	39	31.7	48.2	**-0.0217**	0.026	121.6	mg/L	53	Standard
Ca	43	25.0	40.0	**-0.2454**	0.589	240.0	mg/L	28	Standard
Fe	54	195.2	12.5	**0.0152**	0.019	122.1	mg/L	181	Standard
Fe	57	260.0	19.5	**0.0288**	0.127	440.0	mg/L	257	Standard
> **Sc-1**	45	54909.3	1.4				mg/L	55220	Standard
Cl	35	39663.8	0.4				ug/L	35504	Standard
Kr	83	2.3	89.2				ug/L	2	Standard
Br	81	2350.2	5.6				ug/L	2040	Standard
P	31	21443.5	2.9				ug/L	20435	Standard
S	34	2165.2	3.8				ug/L	2430	Standard
Sr	88	63.3	31.9				ug/L	75	Standard
C	12	160.0	6.3				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	22.2	26.6				mg/L	9	Standard
Ho-1	165	16.7	17.3				mg/L	10	Standard
Er	166	23.3	24.7				mg/L	23	Standard
I	127	1581.8	15.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.077	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.461	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.525
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.442
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606113005S WG573868-05
Sample Date/Time: Thursday, June 30, 2016 12:19:31
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75859.5	1.7				ug/L	74916	Standard
	Be	9	53517.7	0.7	**50.0953**	0.496	1.0	ug/L	10	Standard
	Al	27	14822.3	4.1	**0.0821**	0.005	5.9	ug/L	1822	Standard
	Sc	45	55769.1	1.4				ug/L	55220	Standard
	Ti	47	56.7	12.4	**0.0625**	0.018	28.2	ug/L	34	Standard
	V	51	477963.8	1.8	**49.6645**	1.337	2.7	ug/L	1938	Standard
	Cr	52	477361.7	1.3	**50.2263**	1.123	2.2	ug/L	9522	Standard
	Cr	53	57509.0	1.8	**49.4101**	1.327	2.7	ug/L	395	Standard
	Mn	55	446297.6	2.8	**50.0240**	1.838	3.7	ug/L	902	Standard
	Co	59	429160.2	2.4	**50.8864**	1.638	3.2	ug/L	262	Standard
	Ni	60	116532.1	0.5	**50.0630**	0.586	1.2	ug/L	371	Standard
	Cu	65	119264.3	1.8	**52.1555**	1.404	2.7	ug/L	106	Standard
	Zn	66	68742.9	1.2	**50.7470**	0.887	1.7	ug/L	398	Standard
>	**Ge**	72	554202.5	0.9				ug/L	535147	Standard
	As	75	68808.0	1.4	**49.6622**	0.974	2.0	ug/L	-43	Standard
	Se	82	6870.4	2.1	**48.8573**	1.250	2.6	ug/L	14	Standard
	Se-1	77	4643.4	2.5	**49.1971**	1.525	3.1	ug/L	65	Standard
>	**Ga**	71	91.7	24.6				mg/L	97	Standard
	Rb	85	131.7	35.3				ug/L	15	Standard
	Y	89	486292.9	2.1				ug/L	465704	Standard
>	**Rh**	103	33.3	37.7				ug/L	10	Standard
	Mo	98	56.7	2.0	**0.0297**	0.000	0.2	ug/L	9	Standard
	Ag	107	395086.0	1.7	**50.0359**	0.832	1.7	ug/L	82	Standard
	Cd	111	123225.4	2.1	**48.8369**	1.711	3.5	mg/L	7	Standard
	Cd	114	293682.5	0.4	**48.3309**	1.240	2.6	ug/L	21	Standard
>	**In**	115	647535.4	2.3				ug/L	619035	Standard
	Sn	118	1893.5	3.7	**0.1750**	0.016	9.3	ug/L	508	Standard
	Sb	123	259785.3	2.7	**46.9064**	1.211	2.6	ug/L	86	Standard
	Ba	135	116849.2	1.2	**48.8634**	1.506	3.1	ug/L	79	Standard
	Ce	140	153.3	39.8				ug/L	68	Standard
>	**Tb**	159	1011084.7	1.8				ug/L	986982	Standard
	Ho	165	20.0	66.1				ug/L	10	Standard
	Tl	203	469188.2	1.0	**49.3773**	0.843	1.7	ug/L	13	Standard
	Tl	205	410523.6	2.0	**50.5675**	0.970	1.9	ug/L	10	Standard
	Pb	206	306453.9	0.8	**50.2156**	0.970	1.9	ug/L	264	Standard
	Pb	207	266953.5	1.4	**48.4007**	1.172	2.4	ug/L	227	Standard
	Pb	208	1071921.5	1.1	**50.3960**	0.627	1.2	ug/L	868	Standard
	U	238	385204.2	1.1	**49.0033**	1.122	2.3	ug/L	8	Standard
>	**Bi**	209	563202.7	2.1				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	121.7	16.6	**0.0969**	0.023	24.0	mg/L	53	Standard
K	39	41.7	36.7	**-0.0062**	0.025	403.7	mg/L	53	Standard
Ca	43	30.0	44.1	**0.0050**	0.728	14524.7	mg/L	28	Standard
Fe	54	196.3	28.3	**0.0135**	0.036	268.0	mg/L	181	Standard
Fe	57	255.0	3.9	**0.0060**	0.028	467.7	mg/L	257	Standard
Sc-1	45	55769.1	1.4				mg/L	55220	Standard
Cl	35	39136.5	1.8				ug/L	35504	Standard
Kr	83	3.7	31.5				ug/L	2	Standard
Br	81	2323.5	7.6				ug/L	2040	Standard
P	31	21603.7	3.7				ug/L	20435	Standard
S	34	2060.1	5.2				ug/L	2430	Standard
Sr	88	75.0	24.0				ug/L	75	Standard
C	12	180.0	0.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	2.9	187.9				mg/L	9	Standard
Ho-1	165	20.0	66.1				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	1540.1	16.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		101.259	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.561	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606113005S WG573868-05
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.604
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.101
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606113005SD WG573868-06
Sample Date/Time: Thursday, June 30, 2016 12:22:42
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74551.4	3.4				ug/L	74916	Standard
	Be	9	53178.2	3.2	**50.6600**	1.356	2.7	ug/L	10	Standard
	Al	27	18813.3	1.8	**0.1067**	0.003	2.5	ug/L	1822	Standard
	Sc	45	55598.5	1.6				ug/L	55220	Standard
	Ti	47	42.7	9.8	**0.0300**	0.010	32.2	ug/L	34	Standard
	V	51	475255.0	2.5	**49.5591**	1.214	2.5	ug/L	1938	Standard
	Cr	52	473969.7	2.1	**50.0448**	1.014	2.0	ug/L	9522	Standard
	Cr	53	57654.5	2.6	**49.7179**	1.462	2.9	ug/L	395	Standard
	Mn	55	442756.2	1.2	**49.8003**	0.298	0.6	ug/L	902	Standard
	Co	59	424024.9	0.7	**50.4565**	0.397	0.8	ug/L	262	Standard
	Ni	60	117258.1	2.1	**50.5593**	0.859	1.7	ug/L	371	Standard
	Cu	65	118084.1	1.1	**51.8235**	0.506	1.0	ug/L	106	Standard
	Zn	66	68404.8	2.2	**50.6819**	1.115	2.2	ug/L	398	Standard
>	Ge	72	552141.6	0.7				ug/L	535147	Standard
	As	75	67261.4	1.0	**48.7232**	0.168	0.3	ug/L	-43	Standard
	Se	82	6897.0	1.0	**49.2249**	0.173	0.4	ug/L	14	Standard
	Se-1	77	4659.0	1.2	**49.5452**	0.522	1.1	ug/L	65	Standard
>	Ga	71	111.7	11.3				mg/L	97	Standard
	Rb	85	128.3	11.9				ug/L	15	Standard
	Y	89	474313.0	0.2				ug/L	465704	Standard
>	Rh	103	28.3	40.8				ug/L	10	Standard
	Mo	98	52.5	25.1	**0.0287**	0.004	14.2	ug/L	9	Standard
	Ag	107	396093.4	0.8	**50.8417**	0.342	0.7	ug/L	82	Standard
	Cd	111	122436.6	0.5	**49.1678**	0.301	0.6	mg/L	7	Standard
	Cd	114	294291.4	1.0	**49.0751**	0.426	0.9	ug/L	21	Standard
>	In	115	638789.3	0.1				ug/L	619035	Standard
	Sn	118	1938.5	7.0	**0.1852**	0.020	10.9	ug/L	508	Standard
	Sb	123	259908.8	1.7	**47.5638**	0.768	1.6	ug/L	86	Standard
	Ba	135	117151.2	0.5	**49.6392**	0.187	0.4	ug/L	79	Standard
	Ce	140	143.3	62.0				ug/L	68	Standard
>	Tb	159	992320.5	0.6				ug/L	986982	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	470616.6	0.7	**49.8191**	0.719	1.4	ug/L	13	Standard
	Tl	205	411651.5	1.7	**51.0100**	1.168	2.3	ug/L	10	Standard
	Pb	206	306649.7	1.4	**50.5436**	1.089	2.2	ug/L	264	Standard
	Pb	207	268147.6	1.2	**48.9019**	0.972	2.0	ug/L	227	Standard
	Pb	208	1070133.8	1.2	**50.6106**	0.852	1.7	ug/L	868	Standard
	U	238	382139.7	1.1	**48.8973**	0.909	1.9	ug/L	8	Standard
>	Bi	209	559832.8	0.8				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	91.7	16.7	**0.0647**	0.017	26.6	mg/L	53	Standard
K	39	50.0	45.8	**0.0087**	0.040	460.5	mg/L	53	Standard
Ca	43	38.3	41.9	**0.4906**	0.931	189.7	mg/L	28	Standard
Fe	54	189.1	25.8	**0.0093**	0.033	357.3	mg/L	181	Standard
Fe	57	263.3	12.9	**0.0307**	0.097	316.1	mg/L	257	Standard
> **Sc-1**	45	55598.5	1.6				mg/L	55220	Standard
Cl	35	37237.1	2.9				ug/L	35504	Standard
Kr	83	4.3	13.3				ug/L	2	Standard
Br	81	2256.8	14.5				ug/L	2040	Standard
P	31	21346.7	0.5				ug/L	20435	Standard
S	34	2086.8	9.4				ug/L	2430	Standard
Sr	88	66.7	31.2				ug/L	75	Standard
C	12	123.3	54.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	9.7	98.4				mg/L	9	Standard
Ho-1	165	8.3	69.3				mg/L	10	Standard
Er	166	6.7	173.2				mg/L	23	Standard
I	127	1585.1	16.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.513	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.176	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606113005SD WG573868-06
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.191
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.478
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606123801
Sample Date/Time: Thursday, June 30, 2016 12:25:54
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74244.9	2.3				ug/L	74916	Standard
	Be	9	36.7	70.0	**0.0311**	0.024	75.7	ug/L	10	Standard
	Al	27	40987674.7	0.3	**238.4014**	4.801	2.0	ug/L	1822	Standard
	Sc	45	55571.8	3.6				ug/L	55220	Standard
	Ti	47	299.3	4.5	**0.6581**	0.032	4.9	ug/L	34	Standard
	V	51	36979.9	0.9	**3.8159**	0.038	1.0	ug/L	1938	Standard
	Cr	52	12709.3	1.3	**0.3801**	0.018	4.8	ug/L	9522	Standard
	Cr	53	5606.0	4.8	**4.6613**	0.240	5.1	ug/L	395	Standard
	Mn	55	421396.0	1.1	**49.1212**	0.583	1.2	ug/L	902	Standard
	Co	59	2301.5	3.1	**0.2611**	0.009	3.5	ug/L	262	Standard
	Ni	60	3910.8	2.1	**1.6070**	0.034	2.1	ug/L	371	Standard
	Cu	65	773.7	4.5	**0.2935**	0.015	5.3	ug/L	106	Standard
	Zn	66	2818.3	1.7	**1.8321**	0.037	2.0	ug/L	398	Standard
>	**Ge**	72	532768.3	0.2				ug/L	535147	Standard
	As	75	1369.2	3.1	**1.0820**	0.033	3.1	ug/L	-43	Standard
	Se	82	398.0	0.6	**2.8528**	0.021	0.7	ug/L	14	Standard
	Se-1	77	449.3	10.0	**4.4287**	0.501	11.3	ug/L	65	Standard
>	**Ga**	71	101.7	22.7				mg/L	97	Standard
	Rb	85	1325.1	2.3				ug/L	15	Standard
	Y	89	455634.3	1.9				ug/L	465704	Standard
>	**Rh**	103	173.3	7.3				ug/L	10	Standard
	Mo	98	459.2	2.9	**0.1632**	0.005	3.1	ug/L	9	Standard
	Ag	107	240.0	1.4	**0.0265**	0.000	1.4	ug/L	82	Standard
	Cd	111	29.9	2.0	**0.0206**	0.000	1.7	mg/L	7	Standard
	Cd	114	75.2	10.3	**0.0222**	0.001	6.1	ug/L	21	Standard
>	**In**	115	604246.1	1.1				ug/L	619035	Standard
	Sn	118	613.3	11.1	**-0.0069**	0.010	141.5	ug/L	508	Standard
	Sb	123	2719.5	28.6	**0.5309**	0.152	28.5	ug/L	86	Standard
	Ba	135	92033.0	0.8	**41.2277**	0.772	1.9	ug/L	79	Standard
	Ce	140	1463.4	3.8				ug/L	68	Standard
>	**Tb**	159	962887.3	0.3				ug/L	986982	Standard
	Ho	165	45.0	11.1				ug/L	10	Standard
	Tl	203	365.3	3.0	**0.0480**	0.002	3.3	ug/L	13	Standard
	Tl	205	323.3	10.3	**0.0512**	0.005	9.3	ug/L	10	Standard
	Pb	206	14023.2	0.8	**2.4745**	0.030	1.2	ug/L	264	Standard
	Pb	207	11750.2	0.5	**2.2958**	0.019	0.8	ug/L	227	Standard
	Pb	208	47567.6	0.7	**2.4069**	0.020	0.8	ug/L	868	Standard
	U	238	42987.9	0.7	**5.9811**	0.044	0.7	ug/L	8	Standard
>	**Bi**	209	515414.9	0.8				ug/L	541014	Standard

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Na	23	10.0	50.0	**56.5003**	29.382	52.0	mg/L	2	Standard
Mg	24	58837.4	0.7	**63.7321**	2.198	3.4	mg/L	53	Standard
K	39	145.0	6.0	**0.1689**	0.020	12.1	mg/L	53	Standard
Ca	43	801.7	4.7	**43.5056**	3.217	7.4	mg/L	28	Standard
Fe	54	230.3	10.8	**0.0375**	0.020	53.1	mg/L	181	Standard
Fe	57	665.0	0.0	**1.0889**	0.062	5.7	mg/L	257	Standard
> **Sc-1**	45	55571.8	3.6				mg/L	55220	Standard
Cl	35	43493.7	1.2				ug/L	35504	Standard
Kr	83	3.0	100.0				ug/L	2	Standard
Br	81	78305.5	5.1				ug/L	2040	Standard
P	31	26029.0	0.6				ug/L	20435	Standard
S	34	2565.2	4.1				ug/L	2430	Standard
Sr	88	583.3	1.0				ug/L	75	Standard
C	12	400.0	19.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	86.2	51.0				mg/L	9	Standard
Ho-1	165	45.0	11.1				mg/L	10	Standard
Er	166	80.0	21.7				mg/L	23	Standard
I	127	592701.8	6.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.104	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.556	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.611
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.268
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606123802
Sample Date/Time: Thursday, June 30, 2016 12:29:05
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85281.0	1.8				ug/L	74916	Standard
	Be	9	31.7	55.5	**0.0229**	0.015	65.8	ug/L	10	Standard
	Al	27	40832774.8	0.8	**206.7413**	3.781	1.8	ug/L	1822	Standard
	Sc	45	54113.1	1.6				ug/L	55220	Standard
	Ti	47	761.0	62.9	**1.8316**	1.167	63.7	ug/L	34	Standard
	V	51	60819.6	2.4	**6.6233**	0.223	3.4	ug/L	1938	Standard
	Cr	52	25517.8	0.5	**1.9058**	0.034	1.8	ug/L	9522	Standard
	Cr	53	20120.0	5.6	**18.3399**	1.146	6.2	ug/L	395	Standard
	Mn	55	7353.8	0.4	**0.7825**	0.010	1.3	ug/L	902	Standard
	Co	59	1110.7	5.5	**0.1187**	0.006	5.1	ug/L	262	Standard
	Ni	60	3088.6	0.9	**1.2848**	0.020	1.6	ug/L	371	Standard
	Cu	65	1541.7	3.9	**0.6667**	0.032	4.7	ug/L	106	Standard
	Zn	66	2653.2	4.4	**1.7721**	0.063	3.6	ug/L	398	Standard
>	**Ge**	72	515636.8	1.5				ug/L	535147	Standard
	As	75	3689.9	1.3	**2.9149**	0.078	2.7	ug/L	-43	Standard
	Se	82	1133.1	0.7	**8.5813**	0.174	2.0	ug/L	14	Standard
	Se-1	77	2001.1	4.2	**22.4732**	0.911	4.1	ug/L	65	Standard
>	**Ga**	71	131.7	22.3				mg/L	97	Standard
	Rb	85	21328.3	1.6				ug/L	15	Standard
	Y	89	452149.0	0.4				ug/L	465704	Standard
>	**Rh**	103	435.0	5.0				ug/L	10	Standard
	Mo	98	14977.2	1.8	**5.0495**	0.111	2.2	ug/L	9	Standard
	Ag	107	143.0	11.3	**0.0138**	0.002	16.7	ug/L	82	Standard
	Cd	111	11.4	2.3	**0.0128**	0.000	0.6	mg/L	7	Standard
	Cd	114	91.8	27.3	**0.0255**	0.005	18.1	ug/L	21	Standard
>	**In**	115	589985.2	0.7				ug/L	619035	Standard
	Sn	118	803.4	29.4	**0.0262**	0.038	147.0	ug/L	508	Standard
	Sb	123	773.1	32.3	**0.1578**	0.050	32.0	ug/L	86	Standard
	Ba	135	24159.6	0.8	**11.0685**	0.049	0.4	ug/L	79	Standard
	Ce	140	1713.4	3.5				ug/L	68	Standard
>	**Tb**	159	962435.5	0.7				ug/L	986982	Standard
	Ho	165	66.7	17.3				ug/L	10	Standard
	Tl	203	153.3	12.4	**0.0238**	0.002	9.0	ug/L	13	Standard
	Tl	205	135.0	13.4	**0.0261**	0.002	9.4	ug/L	10	Standard
	Pb	206	668.3	3.9	**0.0833**	0.005	5.5	ug/L	264	Standard
	Pb	207	559.7	2.3	**0.0790**	0.002	3.1	ug/L	227	Standard
	Pb	208	2297.4	1.6	**0.0811**	0.002	2.6	ug/L	868	Standard
	U	238	87580.4	0.3	**12.3190**	0.088	0.7	ug/L	8	Standard
>	**Bi**	209	509478.2	0.4				ug/L	541014	Standard

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Na	23	3.3	173.2	**19.0801**	33.039	173.2	mg/L	2	Standard
Mg	24	163394.8	1.7	**181.6976**	3.675	2.0	mg/L	53	Standard
K	39	673.3	8.2	**1.0905**	0.102	9.3	mg/L	53	Standard
Ca	43	636.7	6.7	**35.1510**	3.000	8.5	mg/L	28	Standard
Fe	54	221.2	1.4	**0.0350**	0.001	3.4	mg/L	181	Standard
Fe	57	676.7	6.7	**1.1677**	0.151	12.9	mg/L	257	Standard
> **Sc-1**	45	54113.1	1.6				mg/L	55220	Standard
Cl	35	50047.9	0.7				ug/L	35504	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	37272.5	1.7				ug/L	2040	Standard
P	31	24598.3	1.7				ug/L	20435	Standard
S	34	2330.2	6.3				ug/L	2430	Standard
Sr	88	1316.7	9.4				ug/L	75	Standard
C	12	223.3	21.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	106.6	56.7				mg/L	9	Standard
Ho-1	165	66.7	17.3				mg/L	10	Standard
Er	166	70.0	28.6				mg/L	23	Standard
I	127	129859.3	2.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.835	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.354	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.307
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.171
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606123802PS WG574742-01
Sample Date/Time: Thursday, June 30, 2016 12:32:17
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	90026.7	0.8				ug/L	74916	Standard
	Be	9	55156.9	1.4	**43.5024**	0.777	1.8	ug/L	10	Standard
	Al	27	42431963.2	0.5	**203.4865**	2.596	1.3	ug/L	1822	Standard
	Sc	45	55210.4	0.9				ug/L	55220	Standard
	Ti	47	633.0	44.3	**1.4860**	0.698	47.0	ug/L	34	Standard
	V	51	504685.6	0.5	**55.0548**	0.569	1.0	ug/L	1938	Standard
	Cr	52	444386.3	0.9	**49.0453**	0.582	1.2	ug/L	9522	Standard
	Cr	53	73665.3	1.6	**66.5494**	0.802	1.2	ug/L	395	Standard
	Mn	55	405919.8	1.3	**47.7397**	0.682	1.4	ug/L	902	Standard
	Co	59	377751.7	1.5	**47.0009**	0.675	1.4	ug/L	262	Standard
	Ni	60	103282.8	0.4	**46.5576**	0.059	0.1	ug/L	371	Standard
	Cu	65	101218.0	0.8	**46.4456**	0.553	1.2	ug/L	106	Standard
	Zn	66	63559.7	1.1	**49.2342**	0.736	1.5	ug/L	398	Standard
>	Ge	72	528026.7	0.5				ug/L	535147	Standard
	As	75	68292.3	0.5	**51.7282**	0.517	1.0	ug/L	-43	Standard
	Se	82	7467.2	1.7	**55.7421**	0.954	1.7	ug/L	14	Standard
	Se-1	77	6291.3	1.6	**70.2008**	1.328	1.9	ug/L	65	Standard
>	Ga	71	175.0	14.8				mg/L	97	Standard
	Rb	85	21011.2	0.9				ug/L	15	Standard
	Y	89	457532.3	0.8				ug/L	465704	Standard
>	Rh	103	456.7	13.1				ug/L	10	Standard
	Mo	98	15165.9	1.5	**5.0804**	0.082	1.6	ug/L	9	Standard
	Ag	107	323469.9	0.7	**44.6696**	0.305	0.7	ug/L	82	Standard
	Cd	111	108927.2	1.0	**47.0605**	0.163	0.3	mg/L	7	Standard
	Cd	114	263052.0	1.9	**47.1909**	0.546	1.2	ug/L	21	Standard
>	In	115	593751.2	0.8				ug/L	619035	Standard
	Sn	118	850.0	1.8	**0.0328**	0.003	9.1	ug/L	508	Standard
	Sb	123	237149.8	1.1	**46.6930**	0.618	1.3	ug/L	86	Standard
	Ba	135	126318.4	0.3	**57.5882**	0.301	0.5	ug/L	79	Standard
	Ce	140	1838.4	16.1				ug/L	68	Standard
>	Tb	159	963825.5	0.9				ug/L	986982	Standard
	Ho	165	66.7	11.5				ug/L	10	Standard
	Tl	203	416503.8	1.0	**48.0712**	0.216	0.4	ug/L	13	Standard
	Tl	205	364432.7	1.0	**49.2380**	0.756	1.5	ug/L	10	Standard
	Pb	206	277275.5	0.4	**49.8264**	0.163	0.3	ug/L	264	Standard
	Pb	207	240482.5	0.7	**47.8168**	0.618	1.3	ug/L	227	Standard
	Pb	208	944780.0	0.6	**48.7174**	0.550	1.1	ug/L	868	Standard
	U	238	449702.3	0.7	**62.7382**	0.887	1.4	ug/L	8	Standard
>	Bi	209	513434.3	0.7				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	167045.9	1.0	**182.0647**	3.413	1.9	mg/L	53	Standard
K	39	685.0	5.1	**1.0865**	0.051	4.7	mg/L	53	Standard
Ca	43	726.7	3.3	**39.4999**	1.706	4.3	mg/L	28	Standard
Fe	54	191.1	19.7	**0.0113**	0.024	215.3	mg/L	181	Standard
Fe	57	611.7	9.9	**0.9585**	0.173	18.1	mg/L	257	Standard
> **Sc-1**	45	55210.4	0.9				mg/L	55220	Standard
Cl	35	51236.5	0.7				ug/L	35504	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	36838.1	1.4				ug/L	2040	Standard
P	31	25471.4	2.3				ug/L	20435	Standard
S	34	2350.2	6.0				ug/L	2430	Standard
Sr	88	1250.1	5.2				ug/L	75	Standard
C	12	160.0	43.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	90.3	45.9				mg/L	9	Standard
Ho-1	165	66.7	11.5				mg/L	10	Standard
Er	166	63.3	18.2				mg/L	23	Standard
I	127	224161.3	1.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		120.169	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.669	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.916
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.902
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606123802SDL WG574742-02
Sample Date/Time: Thursday, June 30, 2016 12:35:51
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78422.5	2.5				ug/L	74916	Standard
	Be	9	26.7	54.1	**0.0204**	0.013	62.5	ug/L	10	Standard
	Al	27	7894596.4	0.6	**43.4738**	1.073	2.5	ug/L	1822	Standard
	Sc	45	50880.3	1.7				ug/L	55220	Standard
	Ti	47	93.3	15.0	**0.1657**	0.036	22.0	ug/L	34	Standard
	V	51	13858.3	1.7	**1.3644**	0.019	1.4	ug/L	1938	Standard
	Cr	52	12210.9	1.6	**0.3763**	0.020	5.3	ug/L	9522	Standard
	Cr	53	6824.9	3.0	**5.9924**	0.168	2.8	ug/L	395	Standard
	Mn	55	1982.8	2.7	**0.1353**	0.008	5.6	ug/L	902	Standard
	Co	59	409.3	8.6	**0.0296**	0.005	16.0	ug/L	262	Standard
	Ni	60	855.7	2.2	**0.2525**	0.010	4.1	ug/L	371	Standard
	Cu	65	595.7	3.8	**0.2228**	0.009	4.2	ug/L	106	Standard
	Zn	66	1650.8	2.8	**0.9781**	0.040	4.1	ug/L	398	Standard
>	**Ge**	72	513253.1	0.5				ug/L	535147	Standard
	As	75	704.2	3.4	**0.6034**	0.021	3.5	ug/L	-43	Standard
	Se	82	253.3	1.6	**1.8520**	0.037	2.0	ug/L	14	Standard
	Se-1	77	538.0	7.6	**5.6470**	0.495	8.8	ug/L	65	Standard
>	**Ga**	71	78.3	35.2				mg/L	97	Standard
	Rb	85	4115.6	0.1				ug/L	15	Standard
	Y	89	440141.7	0.8				ug/L	465704	Standard
>	**Rh**	103	96.7	7.9				ug/L	10	Standard
	Mo	98	2789.6	1.1	**0.9561**	0.010	1.1	ug/L	9	Standard
	Ag	107	1217.4	41.0	**0.1640**	0.069	42.2	ug/L	82	Standard
	Cd	111	12.7	36.1	**0.0134**	0.002	14.7	mg/L	7	Standard
	Cd	114	22.3	33.6	**0.0130**	0.001	10.3	ug/L	21	Standard
>	**In**	115	586501.7	0.5				ug/L	619035	Standard
	Sn	118	471.7	13.0	**-0.0269**	0.010	35.8	ug/L	508	Standard
	Sb	123	997.7	34.2	**0.2031**	0.067	33.1	ug/L	86	Standard
	Ba	135	4696.7	0.6	**2.1488**	0.020	0.9	ug/L	79	Standard
	Ce	140	410.0	20.1				ug/L	68	Standard
>	**Tb**	159	933616.4	0.4				ug/L	986982	Standard
	Ho	165	13.3	43.3				ug/L	10	Standard
	Tl	203	145.3	15.9	**0.0226**	0.003	12.3	ug/L	13	Standard
	Tl	205	143.3	16.5	**0.0269**	0.003	11.1	ug/L	10	Standard
	Pb	206	439.7	6.2	**0.0406**	0.005	13.4	ug/L	264	Standard
	Pb	207	372.7	3.4	**0.0403**	0.002	5.6	ug/L	227	Standard
	Pb	208	1457.4	0.9	**0.0362**	0.001	1.6	ug/L	868	Standard
	U	238	16942.1	0.5	**2.3501**	0.026	1.1	ug/L	8	Standard
>	**Bi**	209	518073.0	1.1				ug/L	541014	Standard

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Na	23	5.0	0.0	**30.5280**	0.517	1.7	mg/L	2	Standard
Mg	24	31290.6	1.2	**36.9770**	0.268	0.7	mg/L	53	Standard
K	39	196.7	12.8	**0.2861**	0.044	15.2	mg/L	53	Standard
Ca	43	151.7	14.9	**7.6575**	1.462	19.1	mg/L	28	Standard
Fe	54	77.0	4.2	**-0.0618**	0.002	3.0	mg/L	181	Standard
Fe	57	371.7	22.4	**0.4076**	0.254	62.4	mg/L	257	Standard
> **Sc-1**	45	50880.3	1.7				mg/L	55220	Standard
Cl	35	45617.9	1.5				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	8455.7	2.8				ug/L	2040	Standard
P	31	10917.3	3.3				ug/L	20435	Standard
S	34	2505.2	2.7				ug/L	2430	Standard
Sr	88	308.3	21.6				ug/L	75	Standard
C	12	96.7	26.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	47.6	1.0				mg/L	9	Standard
Ho-1	165	13.3	43.3				mg/L	10	Standard
Er	166	50.0	20.0				mg/L	23	Standard
I	127	59592.1	3.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.680	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.909	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.745
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.760
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606123802SDL WG574742-02
Sample Date/Time: Thursday, June 30, 2016 12:39:03
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75372.2	4.0				ug/L	74916	Standard
	Be	9	30.0	72.6	**0.0245**	0.020	83.7	ug/L	10	Standard
	Al	27	1600639.2	0.2	**9.1751**	0.352	3.8	ug/L	1822	Standard
	Sc	45	50582.7	2.6				ug/L	55220	Standard
	Ti	47	58.0	22.6	**0.0771**	0.033	42.3	ug/L	34	Standard
	V	51	4717.2	3.0	**0.3382**	0.019	5.5	ug/L	1938	Standard
	Cr	52	9867.5	1.6	**0.1115**	0.021	19.2	ug/L	9522	Standard
	Cr	53	2166.8	4.2	**1.6508**	0.095	5.8	ug/L	395	Standard
	Mn	55	821.4	7.8	**-0.0049**	0.008	164.9	ug/L	902	Standard
	Co	59	285.3	8.5	**0.0140**	0.003	23.1	ug/L	262	Standard
	Ni	60	404.0	1.0	**0.0435**	0.001	2.2	ug/L	371	Standard
	Cu	65	238.7	6.0	**0.0547**	0.007	13.1	ug/L	106	Standard
	Zn	66	1106.4	4.4	**0.5465**	0.041	7.4	ug/L	398	Standard
>	**Ge**	72	510181.7	0.5				ug/L	535147	Standard
	As	75	100.9	42.8	**0.1342**	0.034	25.0	ug/L	-43	Standard
	Se	82	61.7	16.0	**0.3807**	0.077	20.3	ug/L	14	Standard
	Se-1	77	146.7	6.6	**1.1261**	0.104	9.2	ug/L	65	Standard
>	**Ga**	71	45.0	38.5				mg/L	97	Standard
	Rb	85	865.0	3.5				ug/L	15	Standard
	Y	89	433642.8	2.8				ug/L	465704	Standard
>	**Rh**	103	33.3	34.6				ug/L	10	Standard
	Mo	98	535.4	7.6	**0.1938**	0.015	7.6	ug/L	9	Standard
	Ag	107	569.3	32.2	**0.0736**	0.026	34.7	ug/L	82	Standard
	Cd	111	6.7	46.2	**0.0108**	0.001	12.6	mg/L	7	Standard
	Cd	114	18.0	67.5	**0.0122**	0.002	18.1	ug/L	21	Standard
>	**In**	115	585624.8	0.6				ug/L	619035	Standard
	Sn	118	200.0	9.0	**-0.0709**	0.003	4.1	ug/L	508	Standard
	Sb	123	260.8	21.9	**0.0565**	0.011	20.1	ug/L	86	Standard
	Ba	135	967.7	4.5	**0.4279**	0.022	5.2	ug/L	79	Standard
	Ce	140	76.7	26.4				ug/L	68	Standard
>	**Tb**	159	921991.9	1.3				ug/L	986982	Standard
	Ho	165	16.7	17.3				ug/L	10	Standard
	Tl	203	123.0	10.0	**0.0199**	0.001	6.8	ug/L	13	Standard
	Tl	205	121.7	45.3	**0.0238**	0.007	30.5	ug/L	10	Standard
	Pb	206	323.0	1.2	**0.0190**	0.000	2.6	ug/L	264	Standard
	Pb	207	289.0	4.0	**0.0230**	0.002	10.7	ug/L	227	Standard
	Pb	208	1206.4	16.5	**0.0225**	0.010	44.0	ug/L	868	Standard
	U	238	3304.4	1.2	**0.4586**	0.005	1.0	ug/L	8	Standard
>	**Bi**	209	525074.7	0.4				ug/L	541014	Standard

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Na	23	3.3	86.6	**20.3518**	17.635	86.7	mg/L	2	Standard
Mg	24	6017.9	1.4	**7.1295**	0.269	3.8	mg/L	53	Standard
K	39	73.3	37.6	**0.0607**	0.054	88.7	mg/L	53	Standard
Ca	43	56.7	33.4	**1.8502**	1.244	67.2	mg/L	28	Standard
Fe	54	74.1	7.0	**-0.0637**	0.003	4.3	mg/L	181	Standard
Fe	57	323.3	0.9	**0.2726**	0.032	11.8	mg/L	257	Standard
> **Sc-1**	45	50582.7	2.6				mg/L	55220	Standard
Cl	35	46106.0	1.0				ug/L	35504	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	3507.1	3.6				ug/L	2040	Standard
P	31	7600.2	0.1				ug/L	20435	Standard
S	34	2533.5	3.1				ug/L	2430	Standard
Sr	88	113.3	29.4				ug/L	75	Standard
C	12	116.7	26.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	15.4	95.6				mg/L	9	Standard
Ho-1	165	16.7	17.3				mg/L	10	Standard
Er	166	26.7	57.3				mg/L	23	Standard
I	127	45802.5	1.6				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		100.608	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.335	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.603
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.054
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 12:42:16
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77730.6	1.0				ug/L	74916	Standard
	Be	9	55872.9	2.6	**51.0301**	0.838	1.6	ug/L	10	Standard
	Al	27	8818314.5	1.2	**48.9746**	0.498	1.0	ug/L	1822	Standard
	Sc	45	53661.6	3.0				ug/L	55220	Standard
	Ti	47	41807.6	2.3	**99.7069**	2.778	2.8	ug/L	34	Standard
	V	51	469384.7	2.2	**49.7616**	1.319	2.7	ug/L	1938	Standard
	Cr	52	463904.9	1.3	**49.7905**	0.855	1.7	ug/L	9522	Standard
	Cr	53	57698.0	1.0	**50.5840**	0.668	1.3	ug/L	395	Standard
	Mn	55	431644.5	2.1	**49.3591**	1.304	2.6	ug/L	902	Standard
	Co	59	418478.5	3.1	**50.6270**	1.835	3.6	ug/L	262	Standard
	Ni	60	114350.9	0.9	**50.1243**	0.603	1.2	ug/L	371	Standard
	Cu	65	113158.0	1.0	**50.4839**	0.666	1.3	ug/L	106	Standard
	Zn	66	66443.1	1.6	**50.0419**	1.022	2.0	ug/L	398	Standard
>	Ge	72	543150.6	0.7				ug/L	535147	Standard
	As	75	67490.4	1.3	**49.7017**	0.938	1.9	ug/L	-43	Standard
	Se	82	6792.4	0.9	**49.2836**	0.563	1.1	ug/L	14	Standard
	Se-1	77	4663.4	3.0	**50.4291**	1.813	3.6	ug/L	65	Standard
>	Ga	71	68.3	40.3				mg/L	97	Standard
	Rb	85	936.7	6.3				ug/L	15	Standard
	Y	89	469758.9	1.6				ug/L	465704	Standard
>	Rh	103	28.3	27.0				ug/L	10	Standard
	Mo	98	307857.4	1.2	**96.4230**	1.296	1.3	ug/L	9	Standard
	Ag	107	379112.3	1.0	**49.0635**	0.518	1.1	ug/L	82	Standard
	Cd	111	121432.1	1.0	**49.1667**	0.548	1.1	mg/L	7	Standard
	Cd	114	297834.1	2.1	**50.0762**	1.086	2.2	ug/L	21	Standard
>	In	115	633565.8	0.1				ug/L	619035	Standard
	Sn	118	328806.4	1.1	**49.2628**	0.581	1.2	ug/L	508	Standard
	Sb	123	266594.0	0.8	**49.1899**	0.443	0.9	ug/L	86	Standard
	Ba	135	113121.8	1.5	**48.3272**	0.793	1.6	ug/L	79	Standard
	Ce	140	240.0	16.5				ug/L	68	Standard
>	Tb	159	981551.7	1.4				ug/L	986982	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	466879.4	0.1	**50.2861**	0.324	0.6	ug/L	13	Standard
	Tl	205	410945.2	0.6	**51.8097**	0.429	0.8	ug/L	10	Standard
	Pb	206	296756.7	0.8	**49.7637**	0.390	0.8	ug/L	264	Standard
	Pb	207	268967.1	0.7	**49.9087**	0.694	1.4	ug/L	227	Standard
	Pb	208	1065082.8	0.6	**51.2536**	0.698	1.4	ug/L	868	Standard
	U	238	392731.7	0.9	**51.1307**	0.815	1.6	ug/L	8	Standard
>	Bi	209	550204.1	0.8				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.9874**	17.290	173.1	mg/L	2	Standard
Mg	24	4752.4	2.6	**5.2959**	0.091	1.7	mg/L	53	Standard
K	39	2363.5	6.0	**4.0498**	0.162	4.0	mg/L	53	Standard
Ca	43	123.3	6.2	**5.5087**	0.243	4.4	mg/L	28	Standard
Fe	54	7245.6	3.9	**4.9629**	0.195	3.9	mg/L	181	Standard
Fe	57	2031.8	2.2	**4.8789**	0.223	4.6	mg/L	257	Standard
Sc-1	45	53661.6	3.0				mg/L	55220	Standard
Cl	35	43630.8	3.7				ug/L	35504	Standard
Kr	83	2.7	86.6				ug/L	2	Standard
Br	81	2263.5	7.1				ug/L	2040	Standard
P	31	23681.8	1.1				ug/L	20435	Standard
S	34	2846.9	4.6				ug/L	2430	Standard
Sr	88	75.0	6.7				ug/L	75	Standard
C	12	113.3	20.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	12.5	41.8				mg/L	9	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	16.7	91.7				mg/L	23	Standard
I	127	16178.7	6.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.060		
Al	27	97.949		
Sc	45			
Ti	47	99.707		
V	51	99.523		
Cr	52	99.581		
Cr	53			
Mn	55	98.718		
Co	59	101.254		
Ni	60	100.249		
Cu	65	100.968		
Zn	66	100.084		
Ge	72		101.496	
As	75	99.403		
Se	82	98.567		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	96.423		
Ag	107	98.127		
Cd	111	98.333		
Cd	114			
In	115			102.347
Sn	118	98.526		
Sb	123	98.380		
Ba	135	96.654		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.572		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.507		
U	238	102.261		
Bi	209			101.699
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 12:45:27
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77417.4	3.5				ug/L	74916	Standard
	Be	9	31.7	9.1	**0.0255**	0.003	12.9	ug/L	10	Standard
	Al	27	4240.7	47.8	**0.0211**	0.010	48.9	ug/L	1822	Standard
	Sc	45	55407.8	0.6				ug/L	55220	Standard
	Ti	47	36.0	20.0	**0.0157**	0.016	101.7	ug/L	34	Standard
	V	51	1596.0	4.9	**-0.0263**	0.006	23.6	ug/L	1938	Standard
	Cr	52	8222.6	1.2	**-0.1370**	0.021	15.5	ug/L	9522	Standard
	Cr	53	661.7	6.4	**0.1982**	0.039	19.6	ug/L	395	Standard
	Mn	55	1028.0	4.8	**0.0128**	0.005	42.4	ug/L	902	Standard
	Co	59	346.3	6.7	**0.0191**	0.002	11.5	ug/L	262	Standard
	Ni	60	276.0	2.5	**-0.0241**	0.004	15.7	ug/L	371	Standard
	Cu	65	182.7	11.5	**0.0229**	0.009	38.9	ug/L	106	Standard
	Zn	66	445.0	4.2	**-0.0088**	0.009	99.3	ug/L	398	Standard
>	Ge	72	542321.0	1.6				ug/L	535147	Standard
	As	75	-31.6	107.4	**0.0321**	0.025	77.0	ug/L	-43	Standard
	Se	82	18.9	31.9	**0.0405**	0.042	104.1	ug/L	14	Standard
	Se-1	77	62.7	19.2	**0.1064**	0.142	133.5	ug/L	65	Standard
>	Ga	71	90.0	11.1				mg/L	97	Standard
	Rb	85	33.3	8.7				ug/L	15	Standard
	Y	89	470192.8	2.1				ug/L	465704	Standard
>	Rh	103	20.0	25.0				ug/L	10	Standard
	Mo	98	190.1	19.8	**0.0713**	0.011	15.7	ug/L	9	Standard
	Ag	107	372.7	4.1	**0.0418**	0.002	5.4	ug/L	82	Standard
	Cd	111	16.6	60.6	**0.0145**	0.004	27.3	mg/L	7	Standard
	Cd	114	35.0	68.8	**0.0147**	0.004	26.8	ug/L	21	Standard
>	In	115	639140.0	0.9				ug/L	619035	Standard
	Sn	118	995.0	15.0	**0.0448**	0.023	52.0	ug/L	508	Standard
	Sb	123	844.2	29.0	**0.1590**	0.046	28.8	ug/L	86	Standard
	Ba	135	51.7	22.7	**0.0022**	0.005	213.6	ug/L	79	Standard
	Ce	140	45.0	58.8				ug/L	68	Standard
>	Tb	159	987254.5	1.0				ug/L	986982	Standard
	Ho	165	13.3	78.1				ug/L	10	Standard
	Tl	203	117.7	28.5	**0.0185**	0.003	18.9	ug/L	13	Standard
	Tl	205	120.0	18.2	**0.0226**	0.003	11.6	ug/L	10	Standard
	Pb	206	372.3	4.1	**0.0237**	0.002	9.3	ug/L	264	Standard
	Pb	207	300.3	6.7	**0.0217**	0.003	15.9	ug/L	227	Standard
	Pb	208	1211.4	10.7	**0.0191**	0.006	30.6	ug/L	868	Standard
	U	238	72.7	61.6	**0.0172**	0.006	33.0	ug/L	8	Standard
>	Bi	209	558803.9	0.6				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.2851**	16.074	173.1	mg/L	2	Standard
Mg	24	46.7	27.0	**0.0161**	0.013	83.2	mg/L	53	Standard
K	39	41.7	36.7	**-0.0055**	0.026	464.8	mg/L	53	Standard
Ca	43	38.3	71.8	**0.4831**	1.537	318.2	mg/L	28	Standard
Fe	54	144.3	15.9	**-0.0207**	0.016	77.5	mg/L	181	Standard
Fe	57	238.3	11.6	**-0.0334**	0.076	227.3	mg/L	257	Standard
Sc-1	45	55407.8	0.6				mg/L	55220	Standard
Cl	35	41950.7	1.1				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	2033.5	3.2				ug/L	2040	Standard
P	31	22096.1	1.2				ug/L	20435	Standard
S	34	2886.9	1.7				ug/L	2430	Standard
Sr	88	81.7	24.7				ug/L	75	Standard
C	12	63.3	24.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	573.3	4.2				mg/L	9	Standard
Ho-1	165	13.3	78.1				mg/L	10	Standard
Er	166	70.0	28.6				mg/L	23	Standard
I	127	15613.0	3.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.341	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.248
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.288
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122903 WG573868-02
Sample Date/Time: Thursday, June 30, 2016 12:48:40
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	94380.1	4.5				ug/L	74916	Standard
	Be	9	91.7	46.4	**0.0649**	0.030	46.7	ug/L	10	Standard
	Al	27	56152566.3	1.4	**257.2159**	12.825	5.0	ug/L	1822	Standard
	Sc	45	62458.5	1.2				ug/L	55220	Standard
	Ti	47	6162.3	1.2	**15.3008**	0.117	0.8	ug/L	34	Standard
	V	51	-1368040.2	24.0	**-152.4696**	37.213	24.4	ug/L	1938	Standard
	Cr	52	303770668.6	0.3	**34789.2143**	189.541	0.5	ug/L	9522	Standard
	Cr	53	37580913.2	1.3	**34701.2797**	393.777	1.1	ug/L	395	Standard
	Mn	55	935139.8	1.8	**111.8980**	1.925	1.7	ug/L	902	Standard
	Co	59	8549.4	1.5	**1.0587**	0.020	1.9	ug/L	262	Standard
	Ni	60	57727.8	0.7	**26.3802**	0.080	0.3	ug/L	371	Standard
	Cu	65	923440.4	1.1	**431.0563**	3.244	0.8	ug/L	106	Standard
	Zn	66	28421.6	0.6	**22.1821**	0.114	0.5	ug/L	398	Standard
>	Ge	72	519619.4	0.5				ug/L	535147	Standard
	As	75	2730.2	5.0	**2.1547**	0.113	5.2	ug/L	-43	Standard
	Se	82	284.1	19.2	**2.0630**	0.425	20.6	ug/L	14	Standard
	Se-1	77	149.3	6.3	**1.1260**	0.111	9.9	ug/L	65	Standard
>	Ga	71	1333.4	6.8				mg/L	97	Standard
	Rb	85	9376.2	2.7				ug/L	15	Standard
	Y	89	468015.9	2.4				ug/L	465704	Standard
>	Rh	103	323.3	26.4				ug/L	10	Standard
	Mo	98	16962.4	0.8	**5.5363**	0.107	1.9	ug/L	9	Standard
	Ag	107	8753.2	2.7	**1.1721**	0.038	3.2	ug/L	82	Standard
	Cd	111	125.5	27.5	**0.0608**	0.015	24.4	mg/L	7	Standard
	Cd	114	1547.5	12.5	**0.2792**	0.031	11.2	ug/L	21	Standard
>	In	115	609353.2	1.3				ug/L	619035	Standard
	Sn	118	416991.6	1.9	**65.0044**	1.914	2.9	ug/L	508	Standard
	Sb	123	15244.9	1.6	**2.9290**	0.048	1.7	ug/L	86	Standard
	Ba	135	18235.3	1.1	**8.0851**	0.190	2.4	ug/L	79	Standard
	Ce	140	12727.0	2.4				ug/L	68	Standard
>	Tb	159	990288.0	1.8				ug/L	986982	Standard
	Ho	165	530.0	9.6				ug/L	10	Standard
	Tl	203	209.3	34.5	**0.0291**	0.008	26.5	ug/L	13	Standard
	Tl	205	321.7	99.2	**0.0491**	0.041	83.1	ug/L	10	Standard
	Pb	206	50254.9	1.5	**8.6142**	0.134	1.6	ug/L	264	Standard
	Pb	207	41617.8	1.8	**7.8938**	0.131	1.7	ug/L	227	Standard
	Pb	208	169789.1	1.6	**8.3491**	0.099	1.2	ug/L	868	Standard
	U	238	5823.1	6.5	**0.7851**	0.041	5.2	ug/L	8	Standard
>	Bi	209	536398.7	2.1				ug/L	541014	Standard

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Na	23	6.7	86.6	**33.3226**	28.857	86.6	mg/L	2	Standard
Mg	24	147252.4	2.8	**141.8564**	4.249	3.0	mg/L	53	Standard
K	39	266.7	7.6	**0.3241**	0.030	9.1	mg/L	53	Standard
Ca	43	1293.4	2.0	**63.1046**	2.005	3.2	mg/L	28	Standard
Fe	54	297.2	172.5	**0.0616**	0.311	504.8	mg/L	181	Standard
Fe	57	1773.4	1.2	**3.4905**	0.068	2.0	mg/L	257	Standard
> **Sc-1**	45	62458.5	1.2				mg/L	55220	Standard
Cl	35	78157.1	1.3				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	33710.8	0.9				ug/L	2040	Standard
P	31	48081.3	5.7				ug/L	20435	Standard
S	34	2281.8	3.8				ug/L	2430	Standard
Sr	88	218.3	16.6				ug/L	75	Standard
C	12	343.3	14.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	53.3	28.6				mg/L	7	Standard
Dy	164	582.4	13.8				mg/L	9	Standard
Ho-1	165	530.0	9.6				mg/L	10	Standard
Er	166	506.7	16.8				mg/L	23	Standard
I	127	9578.1	12.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		125.981	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.098	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.436	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.147	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
V 51 Lower	V	51	

Sample ID: L1606122903 WG573868-02
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Cr 52 Upper, S, EEE	Cr	52
Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Cu 65 Upper, S, EEE	Cu	65

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122903DP WG573868-07
Sample Date/Time: Thursday, June 30, 2016 12:51:52
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	102134.9	2.7				ug/L	74916	Standard
	Be	9	65.0	7.7	**0.0416**	0.003	6.2	ug/L	10	Standard
	Al	27	63183038.5	1.4	**267.1354**	4.535	1.7	ug/L	1822	Standard
	Sc	45	61847.6	0.8				ug/L	55220	Standard
	Ti	47	6523.1	1.8	**16.3700**	0.289	1.8	ug/L	34	Standard
	V	51	-1546049.9	24.4	**-174.0618**	43.049	24.7	ug/L	1938	Standard
	Cr	52	322112934.4	0.5	**37272.4484**	238.200	0.6	ug/L	9522	Standard
	Cr	53	40248349.1	2.6	**37550.7455**	1017.902	2.7	ug/L	395	Standard
	Mn	55	991053.0	0.6	**119.8276**	0.634	0.5	ug/L	902	Standard
	Co	59	9179.1	1.7	**1.1504**	0.025	2.2	ug/L	262	Standard
	Ni	60	61487.9	1.0	**28.4024**	0.406	1.4	ug/L	371	Standard
	Cu	65	986874.2	0.3	**465.4613**	2.052	0.4	ug/L	106	Standard
	Zn	66	29767.2	0.6	**23.4933**	0.092	0.4	ug/L	398	Standard
>	Ge	72	514287.8	0.6				ug/L	535147	Standard
	As	75	2574.5	2.7	**2.0554**	0.064	3.1	ug/L	-43	Standard
	Se	82	170.7	18.5	**1.2147**	0.250	20.5	ug/L	14	Standard
	Se-1	77	129.7	5.8	**0.9161**	0.078	8.5	ug/L	65	Standard
>	Ga	71	1410.1	8.2				mg/L	97	Standard
	Rb	85	10441.9	2.4				ug/L	15	Standard
	Y	89	466018.5	0.9				ug/L	465704	Standard
>	Rh	103	426.7	22.7				ug/L	10	Standard
	Mo	98	18201.3	0.8	**5.9257**	0.036	0.6	ug/L	9	Standard
	Ag	107	9323.9	0.4	**1.2459**	0.006	0.5	ug/L	82	Standard
	Cd	111	110.5	8.8	**0.0543**	0.004	7.4	mg/L	7	Standard
	Cd	114	1615.9	15.1	**0.2908**	0.043	14.8	ug/L	21	Standard
>	In	115	610696.5	0.2				ug/L	619035	Standard
	Sn	118	452746.6	0.6	**70.4160**	0.471	0.7	ug/L	508	Standard
	Sb	123	16308.6	1.8	**3.1260**	0.057	1.8	ug/L	86	Standard
	Ba	135	19306.3	0.3	**8.5405**	0.036	0.4	ug/L	79	Standard
	Ce	140	13217.4	1.5				ug/L	68	Standard
>	Tb	159	985335.9	1.7				ug/L	986982	Standard
	Ho	165	581.7	8.6				ug/L	10	Standard
	Tl	203	112.3	1.9	**0.0185**	0.000	0.7	ug/L	13	Standard
	Tl	205	83.3	44.2	**0.0185**	0.005	25.2	ug/L	10	Standard
	Pb	206	55262.3	0.5	**9.5451**	0.116	1.2	ug/L	264	Standard
	Pb	207	45375.2	0.7	**8.6726**	0.152	1.8	ug/L	227	Standard
	Pb	208	184377.7	1.0	**9.1363**	0.157	1.7	ug/L	868	Standard
	U	238	6422.7	5.7	**0.8719**	0.053	6.0	ug/L	8	Standard
>	Bi	209	532502.1	1.0				ug/L	541014	Standard

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Na	23	11.7	24.7	**58.6291**	14.787	25.2	mg/L	2	Standard
Mg	24	164201.8	1.9	**159.7280**	1.904	1.2	mg/L	53	Standard
K	39	261.7	31.1	**0.3212**	0.126	39.2	mg/L	53	Standard
Ca	43	1280.1	10.5	**63.0199**	6.216	9.9	mg/L	28	Standard
Fe	54	-649.5	82.1	**-0.5146**	0.327	63.5	mg/L	181	Standard
Fe	57	1908.5	2.3	**3.8509**	0.127	3.3	mg/L	257	Standard
> **Sc-1**	45	61847.6	0.8				mg/L	55220	Standard
Cl	35	81436.9	0.5				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	5651.1	3.4				ug/L	2040	Standard
P	31	51477.3	1.5				ug/L	20435	Standard
S	34	2203.5	4.6				ug/L	2430	Standard
Sr	88	213.3	3.6				ug/L	75	Standard
C	12	343.3	19.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	57.3				mg/L	7	Standard
Dy	164	753.9	5.1				mg/L	9	Standard
Ho-1	165	581.7	8.6				mg/L	10	Standard
Er	166	476.7	7.9				mg/L	23	Standard
I	127	8432.3	4.1				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		136.332	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.102	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.653
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.427
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
V 51 Lower	V	51	

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Cr 52 Upper, S, EEE	Cr	52
Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Cu 65 Upper, S, EEE	Cu	65

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Method 6020 - Summary Report

Sample ID: L1606122701
Sample Date/Time: Thursday, June 30, 2016 12:55:03
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	102041.0	2.8				ug/L	74916	Standard
	Be	9	35.0	51.5	**0.0206**	0.012	57.3	ug/L	10	Standard
	Al	27	877585.3	5.4	**3.7089**	0.106	2.9	ug/L	1822	Standard
	Sc	45	57673.0	4.5				ug/L	55220	Standard
	Ti	47	923.7	10.3	**2.2096**	0.231	10.4	ug/L	34	Standard
	V	51	280479.4	0.6	**30.6810**	0.258	0.8	ug/L	1938	Standard
	Cr	52	412149.7	45.4	**45.6590**	21.122	46.3	ug/L	9522	Standard
	Cr	53	51894.5	42.9	**47.0217**	20.264	43.1	ug/L	395	Standard
	Mn	55	8554.1	4.7	**0.9087**	0.046	5.1	ug/L	902	Standard
	Co	59	3701.5	3.9	**0.4405**	0.018	4.1	ug/L	262	Standard
	Ni	60	5324.9	0.7	**2.2758**	0.025	1.1	ug/L	371	Standard
	Cu	65	4018.2	14.3	**1.7976**	0.265	14.7	ug/L	106	Standard
	Zn	66	3367.4	2.2	**2.2947**	0.059	2.6	ug/L	398	Standard
>	Ge	72	525083.9	0.3				ug/L	535147	Standard
	As	75	2675.8	0.8	**2.0911**	0.017	0.8	ug/L	-43	Standard
	Se	82	317.4	3.1	**2.2898**	0.080	3.5	ug/L	14	Standard
	Se-1	77	341.7	12.7	**3.2841**	0.491	15.0	ug/L	65	Standard
>	Ga	71	5656.1	0.7				mg/L	97	Standard
	Rb	85	72886.6	1.0				ug/L	15	Standard
	Y	89	468551.4	0.6				ug/L	465704	Standard
>	Rh	103	1286.7	17.9				ug/L	10	Standard
	Mo	98	5009.6	1.7	**1.5899**	0.024	1.5	ug/L	9	Standard
	Ag	107	213.0	12.1	**0.0217**	0.003	15.6	ug/L	82	Standard
	Cd	111	122.6	10.7	**0.0578**	0.005	9.1	mg/L	7	Standard
	Cd	114	318.0	10.0	**0.0627**	0.005	8.6	ug/L	21	Standard
>	In	115	630059.3	0.2				ug/L	619035	Standard
	Sn	118	2871.9	7.6	**0.3302**	0.034	10.2	ug/L	508	Standard
	Sb	123	786.4	8.9	**0.1503**	0.013	8.8	ug/L	86	Standard
	Ba	135	330955.0	1.0	**142.2106**	1.127	0.8	ug/L	79	Standard
	Ce	140	2098.5	1.9				ug/L	68	Standard
>	Tb	159	1001039.4	1.3				ug/L	986982	Standard
	Ho	165	38.3	39.8				ug/L	10	Standard
	Tl	203	173.7	17.6	**0.0248**	0.003	12.9	ug/L	13	Standard
	Tl	205	130.0	20.0	**0.0242**	0.003	13.1	ug/L	10	Standard
	Pb	206	1142.7	8.1	**0.1552**	0.014	8.9	ug/L	264	Standard
	Pb	207	990.7	5.6	**0.1520**	0.010	6.4	ug/L	227	Standard
	Pb	208	3988.2	2.6	**0.1550**	0.003	2.2	ug/L	868	Standard
	U	238	1917.5	4.2	**0.2592**	0.011	4.2	ug/L	8	Standard
>	Bi	209	546503.3	1.0				ug/L	541014	Standard

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Na	23	8.3	91.7	**45.9105**	41.804	91.1	mg/L	2	Standard
Mg	24	22995.8	4.3	**23.9915**	1.464	6.1	mg/L	53	Standard
K	39	1361.7	7.2	**2.1440**	0.254	11.8	mg/L	53	Standard
Ca	43	1233.4	0.5	**65.2887**	2.661	4.1	mg/L	28	Standard
Fe	54	200.5	26.1	**0.0125**	0.036	289.4	mg/L	181	Standard
Fe	57	838.4	5.4	**1.4641**	0.099	6.7	mg/L	257	Standard
> **Sc-1**	45	57673.0	4.5				mg/L	55220	Standard
Cl	35	40206.6	2.3				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	36911.7	6.6				ug/L	2040	Standard
P	31	38662.6	2.7				ug/L	20435	Standard
S	34	2288.5	1.5				ug/L	2430	Standard
Sr	88	4789.1	4.8				ug/L	75	Standard
C	12	1030.0	20.9				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	88.2				mg/L	7	Standard
Dy	164	58.4	35.1				mg/L	9	Standard
Ho-1	165	38.3	39.8				mg/L	10	Standard
Er	166	33.3	75.5				mg/L	23	Standard
I	127	81289.4	3.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		136.206	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.120	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	101.781
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.015
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606122701
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Method 6020 - Summary Report

Sample ID: L1606122703
Sample Date/Time: Thursday, June 30, 2016 12:58:15
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	98106.7	2.3				ug/L	74916	Standard
	Be	9	41.7	18.3	**0.0266**	0.006	21.6	ug/L	10	Standard
	Al	27	5810039.6	1.6	**25.5754**	0.828	3.2	ug/L	1822	Standard
	Sc	45	59551.8	1.0				ug/L	55220	Standard
	Ti	47	617.0	1.7	**1.4056**	0.024	1.7	ug/L	34	Standard
	V	51	2392.4	22.7	**0.0588**	0.058	98.6	ug/L	1938	Standard
	Cr	52	22416.9	23.9	**1.4217**	0.586	41.2	ug/L	9522	Standard
	Cr	53	5614.4	11.2	**4.5831**	0.554	12.1	ug/L	395	Standard
	Mn	55	913432.0	1.5	**104.7943**	1.499	1.4	ug/L	902	Standard
	Co	59	617.7	4.3	**0.0521**	0.003	6.1	ug/L	262	Standard
	Ni	60	965.7	2.7	**0.2799**	0.012	4.3	ug/L	371	Standard
	Cu	65	623.3	6.9	**0.2203**	0.019	8.7	ug/L	106	Standard
	Zn	66	5970.5	1.7	**4.1910**	0.074	1.8	ug/L	398	Standard
>	**Ge**	72	541927.7	0.1				ug/L	535147	Standard
	As	75	449.9	5.6	**0.3869**	0.018	4.8	ug/L	-43	Standard
	Se	82	197.0	3.3	**1.3386**	0.047	3.5	ug/L	14	Standard
	Se-1	77	248.0	4.4	**2.1371**	0.119	5.6	ug/L	65	Standard
>	**Ga**	71	100.0	30.0				mg/L	97	Standard
	Rb	85	7907.1	1.3				ug/L	15	Standard
	Y	89	476065.1	1.9				ug/L	465704	Standard
>	**Rh**	103	83.3	15.1				ug/L	10	Standard
	Mo	98	66.3	20.6	**0.0328**	0.004	12.6	ug/L	9	Standard
	Ag	107	168.7	5.1	**0.0154**	0.001	6.8	ug/L	82	Standard
	Cd	111	68.6	10.2	**0.0352**	0.003	8.0	mg/L	7	Standard
	Cd	114	201.3	8.0	**0.0422**	0.003	6.1	ug/L	21	Standard
>	**In**	115	644446.3	0.4				ug/L	619035	Standard
	Sn	118	1071.7	18.0	**0.0549**	0.029	53.2	ug/L	508	Standard
	Sb	123	213.7	27.5	**0.0432**	0.011	25.0	ug/L	86	Standard
	Ba	135	271145.0	0.5	**113.9061**	0.186	0.2	ug/L	79	Standard
	Ce	140	188.3	15.1				ug/L	68	Standard
>	**Tb**	159	1013875.1	0.8				ug/L	986982	Standard
	Ho	165	15.0	0.0				ug/L	10	Standard
	Tl	203	102.3	14.0	**0.0167**	0.002	9.1	ug/L	13	Standard
	Tl	205	103.3	26.6	**0.0203**	0.003	16.3	ug/L	10	Standard
	Pb	206	355.0	8.5	**0.0198**	0.005	24.1	ug/L	264	Standard
	Pb	207	281.7	6.3	**0.0173**	0.003	17.1	ug/L	227	Standard
	Pb	208	1217.4	4.7	**0.0183**	0.003	15.0	ug/L	868	Standard
	U	238	30.7	15.1	**0.0117**	0.001	4.8	ug/L	8	Standard
>	**Bi**	209	569392.8	0.7				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	11045.7	0.8	**11.1276**	0.030	0.3	mg/L	53	Standard
K	39	341.7	6.1	**0.4615**	0.027	6.0	mg/L	53	Standard
Ca	43	123.3	8.4	**4.7990**	0.478	10.0	mg/L	28	Standard
Fe	54	4422.1	3.5	**2.6747**	0.078	2.9	mg/L	181	Standard
Fe	57	1381.7	8.6	**2.7305**	0.286	10.5	mg/L	257	Standard
> **Sc-1**	45	59551.8	1.0				mg/L	55220	Standard
Cl	35	40835.6	1.8				ug/L	35504	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	38221.7	8.1				ug/L	2040	Standard
P	31	36084.6	1.8				ug/L	20435	Standard
S	34	2403.5	2.3				ug/L	2430	Standard
Sr	88	328.3	5.8				ug/L	75	Standard
C	12	643.3	16.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	12.9	44.9				mg/L	9	Standard
Ho-1	165	15.0	0.0				mg/L	10	Standard
Er	166	10.0					mg/L	23	Standard
I	127	25898.8	2.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		130.955	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.267	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.105
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.245
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606122705
Sample Date/Time: Thursday, June 30, 2016 13:01:26
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	96506.5	2.9				ug/L	74916	Standard
	Be	9	36.7	7.9	**0.0234**	0.001	6.3	ug/L	10	Standard
	Al	27	5814534.7	1.0	**26.0187**	0.549	2.1	ug/L	1822	Standard
	Sc	45	59138.6	2.8				ug/L	55220	Standard
	Ti	47	595.3	2.1	**1.3327**	0.069	5.2	ug/L	34	Standard
	V	51	2547.8	6.4	**0.0710**	0.011	15.2	ug/L	1938	Standard
	Cr	52	16464.5	19.5	**0.7433**	0.369	49.6	ug/L	9522	Standard
	Cr	53	4032.2	4.4	**3.1302**	0.228	7.3	ug/L	395	Standard
	Mn	55	875048.2	0.7	**98.8596**	2.763	2.8	ug/L	902	Standard
	Co	59	594.3	2.9	**0.0482**	0.003	6.6	ug/L	262	Standard
	Ni	60	892.4	4.9	**0.2413**	0.014	5.8	ug/L	371	Standard
	Cu	65	427.7	5.9	**0.1296**	0.006	4.5	ug/L	106	Standard
	Zn	66	5518.3	4.4	**3.7857**	0.265	7.0	ug/L	398	Standard
>	**Ge**	72	550577.4	2.9				ug/L	535147	Standard
	As	75	469.6	4.0	**0.3963**	0.019	4.9	ug/L	-43	Standard
	Se	82	206.6	5.7	**1.3866**	0.118	8.5	ug/L	14	Standard
	Se-1	77	232.0	11.2	**1.9274**	0.337	17.5	ug/L	65	Standard
>	**Ga**	71	91.7	32.0				mg/L	97	Standard
	Rb	85	7670.3	2.1				ug/L	15	Standard
	Y	89	479075.3	1.4				ug/L	465704	Standard
>	**Rh**	103	90.0	38.5				ug/L	10	Standard
	Mo	98	31.3	29.0	**0.0219**	0.003	12.6	ug/L	9	Standard
	Ag	107	144.7	4.6	**0.0121**	0.001	6.5	ug/L	82	Standard
	Cd	111	65.9	4.6	**0.0338**	0.001	3.7	mg/L	7	Standard
	Cd	114	199.2	12.6	**0.0414**	0.004	9.7	ug/L	21	Standard
>	**In**	115	652958.1	0.4				ug/L	619035	Standard
	Sn	118	963.4	13.3	**0.0370**	0.019	51.8	ug/L	508	Standard
	Sb	123	203.8	29.6	**0.0409**	0.011	26.5	ug/L	86	Standard
	Ba	135	265341.0	0.7	**110.0166**	1.085	1.0	ug/L	79	Standard
	Ce	140	121.7	4.7				ug/L	68	Standard
>	**Tb**	159	1011433.0	1.5				ug/L	986982	Standard
	Ho	165	21.7	53.3				ug/L	10	Standard
	Tl	203	92.3	7.8	**0.0155**	0.001	4.8	ug/L	13	Standard
	Tl	205	78.3	25.8	**0.0172**	0.003	14.9	ug/L	10	Standard
	Pb	206	346.3	1.6	**0.0180**	0.001	3.8	ug/L	264	Standard
	Pb	207	288.0	8.7	**0.0181**	0.004	22.3	ug/L	227	Standard
	Pb	208	1142.0	2.8	**0.0144**	0.001	5.8	ug/L	868	Standard
	U	238	12.0	30.0	**0.0094**	0.000	4.6	ug/L	8	Standard
>	**Bi**	209	573608.2	1.2				ug/L	541014	Standard

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Na	23	5.0	100.0	**26.7481**	26.895	100.6	mg/L	2	Standard
Mg	24	10548.7	1.0	**10.7032**	0.190	1.8	mg/L	53	Standard
K	39	330.0	18.4	**0.4476**	0.100	22.4	mg/L	53	Standard
Ca	43	113.3	22.2	**4.2973**	1.158	26.9	mg/L	28	Standard
Fe	54	4122.2	2.3	**2.5063**	0.133	5.3	mg/L	181	Standard
Fe	57	1295.1	5.7	**2.5384**	0.096	3.8	mg/L	257	Standard
> **Sc-1**	45	59138.6	2.8				mg/L	55220	Standard
Cl	35	40393.1	1.6				ug/L	35504	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	37803.8	3.7				ug/L	2040	Standard
P	31	37417.9	4.6				ug/L	20435	Standard
S	34	2318.5	3.4				ug/L	2430	Standard
Sr	88	295.0	9.0				ug/L	75	Standard
C	12	586.7	12.6				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	2.4	243.9				mg/L	9	Standard
Ho-1	165	21.7	53.3				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	23	Standard
I	127	24688.5	5.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.819	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.883	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.480
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.025
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606122705
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Method 6020 - Summary Report

Sample ID: L1606122706
Sample Date/Time: Thursday, June 30, 2016 13:04:38
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	103189.4	6.0				ug/L	74916	Standard
	Be	9	78.3	22.4	**0.0508**	0.014	28.2	ug/L	10	Standard
	Al	27	157081868.9	2.1	**658.2050**	26.291	4.0	ug/L	1822	Standard
	Sc	45	54901.0	0.9				ug/L	55220	Standard
	Ti	47	1394.7	5.0	**3.6738**	0.174	4.7	ug/L	34	Standard
	V	51	12108.3	4.2	**1.2535**	0.069	5.5	ug/L	1938	Standard
	Cr	52	50501.1	3.4	**5.1868**	0.274	5.3	ug/L	9522	Standard
	Cr	53	39827.3	3.4	**39.1856**	0.945	2.4	ug/L	395	Standard
	Mn	55	8765989.5	1.5	**1129.8039**	8.440	0.7	ug/L	902	Standard
	Co	59	67581.4	0.8	**9.1778**	0.069	0.8	ug/L	262	Standard
	Ni	60	22113.8	2.0	**10.7894**	0.112	1.0	ug/L	371	Standard
	Cu	65	2237.8	4.4	**1.0654**	0.040	3.8	ug/L	106	Standard
	Zn	66	8636.1	3.9	**7.0189**	0.198	2.8	ug/L	398	Standard
>	**Ge**	72	482829.1	1.2				ug/L	535147	Standard
	As	75	7723.0	1.7	**6.4468**	0.173	2.7	ug/L	-43	Standard
	Se	82	2488.9	2.3	**20.2630**	0.714	3.5	ug/L	14	Standard
	Se-1	77	4611.4	5.0	**56.1401**	2.313	4.1	ug/L	65	Standard
>	**Ga**	71	616.7	10.3				mg/L	97	Standard
	Rb	85	83239.7	1.6				ug/L	15	Standard
	Y	89	441272.2	0.8				ug/L	465704	Standard
>	**Rh**	103	1876.8	2.2				ug/L	10	Standard
	Mo	98	400.8	3.8	**0.1543**	0.004	2.9	ug/L	9	Standard
	Ag	107	193.3	2.6	**0.0222**	0.001	4.5	ug/L	82	Standard
	Cd	111	149.9	12.0	**0.0766**	0.009	11.3	mg/L	7	Standard
	Cd	114	385.7	11.9	**0.0822**	0.008	10.1	ug/L	21	Standard
>	**In**	115	560210.1	1.0				ug/L	619035	Standard
	Sn	118	2025.1	7.5	**0.2406**	0.029	12.0	ug/L	508	Standard
	Sb	123	366.2	10.2	**0.0809**	0.009	10.5	ug/L	86	Standard
	Ba	135	599986.5	1.1	**290.0146**	5.707	2.0	ug/L	79	Standard
	Ce	140	48873.7	0.5				ug/L	68	Standard
>	**Tb**	159	930027.9	1.3				ug/L	986982	Standard
	Ho	165	370.0	19.9				ug/L	10	Standard
	Tl	203	317.7	4.5	**0.0458**	0.002	3.9	ug/L	13	Standard
	Tl	205	268.3	14.5	**0.0471**	0.006	11.8	ug/L	10	Standard
	Pb	206	1015.4	2.5	**0.1606**	0.004	2.5	ug/L	264	Standard
	Pb	207	852.4	2.5	**0.1510**	0.005	3.3	ug/L	227	Standard
	Pb	208	3285.5	3.6	**0.1458**	0.007	4.7	ug/L	868	Standard
	U	238	64724.3	1.1	**9.8156**	0.160	1.6	ug/L	8	Standard
>	**Bi**	209	472641.5	0.5				ug/L	541014	Standard

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Na	23	15.0	33.3	**84.9355**	28.778	33.9	mg/L	2	Standard
Mg	24	364289.1	2.5	**399.2375**	6.419	1.6	mg/L	53	Standard
K	39	1398.4	2.4	**2.3110**	0.059	2.5	mg/L	53	Standard
Ca	43	2235.2	4.9	**125.6306**	5.283	4.2	mg/L	28	Standard
Fe	54	1417.5	4.9	**0.8526**	0.043	5.0	mg/L	181	Standard
Fe	57	1791.8	4.1	**4.1118**	0.229	5.6	mg/L	257	Standard
> **Sc-1**	45	54901.0	0.9				mg/L	55220	Standard
Cl	35	43736.4	0.7				ug/L	35504	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	643090.2	1.8				ug/L	2040	Standard
P	31	32297.7	2.1				ug/L	20435	Standard
S	34	2658.6	4.5				ug/L	2430	Standard
Sr	88	5339.3	3.0				ug/L	75	Standard
C	12	726.7	12.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	540.1	10.6				mg/L	9	Standard
Ho-1	165	370.0	19.9				mg/L	10	Standard
Er	166	346.7	6.0				mg/L	23	Standard
I	127	615711.5	8.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		137.739	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.224	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	90.497
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	87.362
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606122707
Sample Date/Time: Thursday, June 30, 2016 13:07:49
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90026.7	0.8				ug/L	74916	Standard
	Be	9	63.3	46.3	**0.0463**	0.023	49.7	ug/L	10	Standard
	Al	27	22111709.1	2.8	**106.0268**	2.597	2.4	ug/L	1822	Standard
	Sc	45	58884.2	2.2				ug/L	55220	Standard
	Ti	47	569.0	6.3	**1.2718**	0.095	7.5	ug/L	34	Standard
	V	51	3560.4	9.4	**0.1782**	0.038	21.4	ug/L	1938	Standard
	Cr	52	14246.9	22.2	**0.5041**	0.353	70.0	ug/L	9522	Standard
	Cr	53	11462.7	6.7	**9.6195**	0.734	7.6	ug/L	395	Standard
	Mn	55	5192834.3	1.2	**587.7850**	12.002	2.0	ug/L	902	Standard
	Co	59	1334.4	2.6	**0.1367**	0.003	2.0	ug/L	262	Standard
	Ni	60	46100.4	1.9	**19.8780**	0.544	2.7	ug/L	371	Standard
	Cu	65	1099.7	5.6	**0.4266**	0.030	7.1	ug/L	106	Standard
	Zn	66	4252.3	1.5	**2.8393**	0.076	2.7	ug/L	398	Standard
>	**Ge**	72	549794.8	0.8				ug/L	535147	Standard
	As	75	2904.0	2.8	**2.1652**	0.041	1.9	ug/L	-43	Standard
	Se	82	568.7	1.4	**3.9870**	0.030	0.7	ug/L	14	Standard
	Se-1	77	817.0	3.1	**8.2479**	0.326	4.0	ug/L	65	Standard
>	**Ga**	71	196.7	8.9				mg/L	97	Standard
	Rb	85	24827.0	1.2				ug/L	15	Standard
	Y	89	478508.6	0.4				ug/L	465704	Standard
>	**Rh**	103	468.3	13.2				ug/L	10	Standard
	Mo	98	430.7	1.8	**0.1478**	0.005	3.5	ug/L	9	Standard
	Ag	107	156.0	11.2	**0.0142**	0.002	13.2	ug/L	82	Standard
	Cd	111	89.1	5.9	**0.0441**	0.002	3.6	mg/L	7	Standard
	Cd	114	247.5	23.5	**0.0506**	0.009	18.3	ug/L	21	Standard
>	**In**	115	631239.9	2.0				ug/L	619035	Standard
	Sn	118	1025.0	5.8	**0.0511**	0.011	21.1	ug/L	508	Standard
	Sb	123	219.0	11.9	**0.0450**	0.005	12.2	ug/L	86	Standard
	Ba	135	919087.1	0.8	**394.2935**	4.746	1.2	ug/L	79	Standard
	Ce	140	1991.8	1.0				ug/L	68	Standard
>	**Tb**	159	999394.7	1.6				ug/L	986982	Standard
	Ho	165	48.3	29.9				ug/L	10	Standard
	Tl	203	86.7	8.7	**0.0155**	0.001	4.5	ug/L	13	Standard
	Tl	205	88.3	26.1	**0.0190**	0.003	14.9	ug/L	10	Standard
	Pb	206	364.3	2.5	**0.0245**	0.001	5.9	ug/L	264	Standard
	Pb	207	309.7	1.7	**0.0254**	0.002	6.2	ug/L	227	Standard
	Pb	208	1253.4	0.3	**0.0231**	0.001	3.4	ug/L	868	Standard
	U	238	58.7	15.8	**0.0157**	0.001	7.5	ug/L	8	Standard
>	**Bi**	209	540168.7	1.4				ug/L	541014	Standard

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Na	23	5.0	100.0	**26.2781**	25.903	98.6	mg/L	2	Standard
Mg	24	53879.0	2.6	**55.0404**	1.546	2.8	mg/L	53	Standard
K	39	575.0	9.2	**0.8404**	0.102	12.1	mg/L	53	Standard
Ca	43	341.7	4.5	**16.4847**	1.095	6.6	mg/L	28	Standard
Fe	54	40703.3	2.2	**25.8984**	0.856	3.3	mg/L	181	Standard
Fe	57	10752.1	1.3	**26.0580**	0.936	3.6	mg/L	257	Standard
Sc-1	45	58884.2	2.2				mg/L	55220	Standard
Cl	35	40587.7	3.8				ug/L	35504	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	120692.1	0.4				ug/L	2040	Standard
P	31	34541.0	0.8				ug/L	20435	Standard
S	34	2881.9	4.0				ug/L	2430	Standard
Sr	88	800.0	10.7				ug/L	75	Standard
C	12	423.3	20.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	7	Standard
Dy	164	84.0	14.1				mg/L	9	Standard
Ho-1	165	48.3	29.9				mg/L	10	Standard
Er	166	56.7	36.7				mg/L	23	Standard
I	127	191486.3	2.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		120.169	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.737	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.972	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.844	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606112901
Sample Date/Time: Thursday, June 30, 2016 13:11:01
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84503.5	2.9				ug/L	74916	Standard
	Be	9	21.7	53.3	**0.0147**	0.010	68.3	ug/L	10	Standard
	Al	27	16220096.8	1.2	**82.9137**	2.826	3.4	ug/L	1822	Standard
	Sc	45	57890.4	2.0				ug/L	55220	Standard
	Ti	47	277.3	7.3	**0.5737**	0.044	7.7	ug/L	34	Standard
	V	51	4780.4	3.2	**0.2988**	0.019	6.5	ug/L	1938	Standard
	Cr	52	21846.1	18.6	**1.2922**	0.456	35.3	ug/L	9522	Standard
	Cr	53	5070.9	10.0	**3.9738**	0.470	11.8	ug/L	395	Standard
	Mn	55	476221.8	2.4	**52.9921**	1.410	2.7	ug/L	902	Standard
	Co	59	1995.8	4.6	**0.2122**	0.011	5.2	ug/L	262	Standard
	Ni	60	3903.8	4.2	**1.5242**	0.069	4.6	ug/L	371	Standard
	Cu	65	2599.9	4.7	**1.0712**	0.055	5.1	ug/L	106	Standard
	Zn	66	4040.2	0.5	**2.6346**	0.043	1.6	ug/L	398	Standard
>	**Ge**	72	558230.7	0.9				ug/L	535147	Standard
	As	75	429.9	0.7	**0.3629**	0.002	0.5	ug/L	-43	Standard
	Se	82	53.3	9.3	**0.2803**	0.036	12.9	ug/L	14	Standard
	Se-1	77	312.3	6.8	**2.7435**	0.245	8.9	ug/L	65	Standard
>	**Ga**	71	161.7	7.1				mg/L	97	Standard
	Rb	85	10201.8	1.2				ug/L	15	Standard
	Y	89	483396.8	0.2				ug/L	465704	Standard
>	**Rh**	103	161.7	17.6				ug/L	10	Standard
	Mo	98	174.3	4.4	**0.0663**	0.003	4.5	ug/L	9	Standard
	Ag	107	141.3	8.2	**0.0120**	0.001	11.0	ug/L	82	Standard
	Cd	111	74.3	11.3	**0.0376**	0.003	8.3	mg/L	7	Standard
	Cd	114	171.0	24.5	**0.0373**	0.007	17.8	ug/L	21	Standard
>	**In**	115	641638.0	1.2				ug/L	619035	Standard
	Sn	118	1328.4	11.2	**0.0934**	0.020	21.3	ug/L	508	Standard
	Sb	123	3845.7	1.8	**0.7050**	0.005	0.7	ug/L	86	Standard
	Ba	135	27836.9	0.8	**11.7294**	0.230	2.0	ug/L	79	Standard
	Ce	140	16030.1	2.6				ug/L	68	Standard
>	**Tb**	159	1018893.0	1.0				ug/L	986982	Standard
	Ho	165	438.3	9.3				ug/L	10	Standard
	Tl	203	96.3	8.6	**0.0163**	0.001	5.7	ug/L	13	Standard
	Tl	205	76.7	18.8	**0.0173**	0.002	10.7	ug/L	10	Standard
	Pb	206	2082.1	3.5	**0.3098**	0.014	4.4	ug/L	264	Standard
	Pb	207	1675.8	3.3	**0.2763**	0.011	3.9	ug/L	227	Standard
	Pb	208	7081.3	3.8	**0.3009**	0.014	4.6	ug/L	868	Standard
	U	238	1271.1	2.6	**0.1725**	0.005	2.8	ug/L	8	Standard
>	**Bi**	209	553112.0	0.5				ug/L	541014	Standard

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Na	23	6.7	86.6	**36.1091**	31.274	86.6	mg/L	2	Standard
Mg	24	29747.5	1.6	**30.8906**	0.128	0.4	mg/L	53	Standard
K	39	685.0	9.5	**1.0344**	0.125	12.1	mg/L	53	Standard
Ca	43	770.0	9.0	**39.9826**	4.567	11.4	mg/L	28	Standard
Fe	54	700.4	9.7	**0.3361**	0.038	11.2	mg/L	181	Standard
Fe	57	773.4	13.1	**1.2886**	0.222	17.2	mg/L	257	Standard
Sc-1	45	57890.4	2.0				mg/L	55220	Standard
Cl	35	44774.8	2.3				ug/L	35504	Standard
Kr	83	3.3	17.3				ug/L	2	Standard
Br	81	8082.2	5.4				ug/L	2040	Standard
P	31	26997.4	2.1				ug/L	20435	Standard
S	34	2950.3	2.8				ug/L	2430	Standard
Sr	88	258.3	7.8				ug/L	75	Standard
C	12	320.0	5.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	589.4	11.7				mg/L	9	Standard
Ho-1	165	438.3	9.3				mg/L	10	Standard
Er	166	430.0	16.8				mg/L	23	Standard
I	127	41294.5	1.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		112.797	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		104.314	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.651
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.236
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606112902
Sample Date/Time: Thursday, June 30, 2016 13:14:12
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85505.7	2.3				ug/L	74916	Standard
	Be	9	33.3	22.9	**0.0242**	0.007	28.1	ug/L	10	Standard
	Al	27	16102936.0	1.9	**81.3052**	0.536	0.7	ug/L	1822	Standard
	Sc	45	57932.2	1.6				ug/L	55220	Standard
	Ti	47	2060.8	3.3	**4.7290**	0.220	4.7	ug/L	34	Standard
	V	51	4721.3	7.2	**0.2934**	0.027	9.1	ug/L	1938	Standard
	Cr	52	35568.7	1.9	**2.7621**	0.066	2.4	ug/L	9522	Standard
	Cr	53	8937.6	4.2	**7.3181**	0.424	5.8	ug/L	395	Standard
	Mn	55	1621057.9	0.9	**181.0990**	2.157	1.2	ug/L	902	Standard
	Co	59	1572.7	3.6	**0.1628**	0.004	2.6	ug/L	262	Standard
	Ni	60	5510.0	0.7	**2.2174**	0.036	1.6	ug/L	371	Standard
	Cu	65	2590.2	3.6	**1.0697**	0.035	3.3	ug/L	106	Standard
	Zn	66	3882.5	2.8	**2.5247**	0.020	0.8	ug/L	398	Standard
>	**Ge**	72	556858.5	2.1				ug/L	535147	Standard
	As	75	211.6	19.7	**0.2074**	0.033	15.7	ug/L	-43	Standard
	Se	82	51.6	4.8	**0.2690**	0.017	6.5	ug/L	14	Standard
	Se-1	77	366.0	5.3	**3.3266**	0.275	8.3	ug/L	65	Standard
>	**Ga**	71	345.0	9.5				mg/L	97	Standard
	Rb	85	15703.1	3.3				ug/L	15	Standard
	Y	89	488405.3	0.2				ug/L	465704	Standard
>	**Rh**	103	76.7	16.4				ug/L	10	Standard
	Mo	98	790.6	4.1	**0.2527**	0.010	4.0	ug/L	9	Standard
	Ag	107	120.7	4.1	**0.0091**	0.001	7.2	ug/L	82	Standard
	Cd	111	117.9	12.2	**0.0543**	0.006	10.8	mg/L	7	Standard
	Cd	114	308.0	18.6	**0.0592**	0.009	15.8	ug/L	21	Standard
>	**In**	115	652556.8	0.6				ug/L	619035	Standard
	Sn	118	1316.7	6.5	**0.0886**	0.014	15.5	ug/L	508	Standard
	Sb	123	21644.9	1.1	**3.8815**	0.026	0.7	ug/L	86	Standard
	Ba	135	14730.5	1.3	**6.0925**	0.048	0.8	ug/L	79	Standard
	Ce	140	14029.8	0.5				ug/L	68	Standard
>	**Tb**	159	1019421.4	0.9				ug/L	986982	Standard
	Ho	165	286.7	1.0				ug/L	10	Standard
	Tl	203	75.0	13.1	**0.0138**	0.001	7.2	ug/L	13	Standard
	Tl	205	75.0	24.0	**0.0168**	0.002	13.3	ug/L	10	Standard
	Pb	206	7804.7	3.4	**1.2275**	0.036	2.9	ug/L	264	Standard
	Pb	207	6506.7	1.9	**1.1340**	0.015	1.3	ug/L	227	Standard
	Pb	208	26754.3	1.1	**1.2065**	0.021	1.7	ug/L	868	Standard
	U	238	142.7	8.3	**0.0258**	0.001	5.4	ug/L	8	Standard
>	**Bi**	209	569462.3	0.6				ug/L	541014	Standard

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Na	23	6.7	43.3	**35.5921**	14.804	41.6	mg/L	2	Standard
Mg	24	12573.6	3.7	**13.0310**	0.597	4.6	mg/L	53	Standard
K	39	395.0	17.5	**0.5640**	0.121	21.5	mg/L	53	Standard
Ca	43	470.0	8.0	**23.7149**	2.271	9.6	mg/L	28	Standard
Fe	54	715.7	12.6	**0.3456**	0.052	15.2	mg/L	181	Standard
Fe	57	633.3	9.1	**0.9355**	0.130	13.9	mg/L	257	Standard
> **Sc-1**	45	57932.2	1.6				mg/L	55220	Standard
Cl	35	45353.8	0.9				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	7928.7	1.2				ug/L	2040	Standard
P	31	25888.8	1.3				ug/L	20435	Standard
S	34	2683.6	7.3				ug/L	2430	Standard
Sr	88	223.3	12.3				ug/L	75	Standard
C	12	250.0	24.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	477.4	5.5				mg/L	9	Standard
Ho-1	165	286.7	1.0				mg/L	10	Standard
Er	166	263.3	4.4				mg/L	23	Standard
I	127	15045.8	4.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.135	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.057	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.415
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.258
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606112903
Sample Date/Time: Thursday, June 30, 2016 13:17:24
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82633.1	1.9				ug/L	74916	Standard
	Be	9	20.0	25.0	**0.0136**	0.005	33.2	ug/L	10	Standard
	Al	27	18202343.0	1.2	**95.1067**	1.298	1.4	ug/L	1822	Standard
	Sc	45	55814.3	0.5				ug/L	55220	Standard
	Ti	47	223.7	14.6	**0.4591**	0.076	16.7	ug/L	34	Standard
	V	51	4195.5	5.9	**0.2465**	0.028	11.6	ug/L	1938	Standard
	Cr	52	27579.5	15.9	**1.9555**	0.460	23.5	ug/L	9522	Standard
	Cr	53	5416.0	8.1	**4.3562**	0.370	8.5	ug/L	395	Standard
	Mn	55	392743.5	2.6	**44.5235**	1.406	3.2	ug/L	902	Standard
	Co	59	1595.1	5.5	**0.1686**	0.011	6.8	ug/L	262	Standard
	Ni	60	3333.0	3.6	**1.3071**	0.044	3.3	ug/L	371	Standard
	Cu	65	1548.7	3.7	**0.6272**	0.027	4.3	ug/L	106	Standard
	Zn	66	2008.1	1.8	**1.1634**	0.033	2.8	ug/L	398	Standard
>	**Ge**	72	547762.6	0.7				ug/L	535147	Standard
	As	75	427.4	24.0	**0.3670**	0.075	20.5	ug/L	-43	Standard
	Se	82	64.6	10.5	**0.3686**	0.052	14.1	ug/L	14	Standard
	Se-1	77	228.0	3.9	**1.8916**	0.108	5.7	ug/L	65	Standard
>	**Ga**	71	103.3	31.5				mg/L	97	Standard
	Rb	85	1483.4	6.2				ug/L	15	Standard
	Y	89	490402.3	1.1				ug/L	465704	Standard
>	**Rh**	103	81.7	14.1				ug/L	10	Standard
	Mo	98	101.9	43.0	**0.0443**	0.014	31.9	ug/L	9	Standard
	Ag	107	130.3	13.8	**0.0108**	0.002	23.0	ug/L	82	Standard
	Cd	111	69.2	11.0	**0.0359**	0.003	8.1	mg/L	7	Standard
	Cd	114	161.1	11.1	**0.0359**	0.003	7.2	ug/L	21	Standard
>	**In**	115	634377.7	1.8				ug/L	619035	Standard
	Sn	118	768.4	11.6	**0.0118**	0.014	115.6	ug/L	508	Standard
	Sb	123	460.4	5.5	**0.0893**	0.006	6.9	ug/L	86	Standard
	Ba	135	20721.8	1.8	**8.8253**	0.041	0.5	ug/L	79	Standard
	Ce	140	2230.2	1.6				ug/L	68	Standard
>	**Tb**	159	984576.1	0.8				ug/L	986982	Standard
	Ho	165	148.3	30.6				ug/L	10	Standard
	Tl	203	120.0	9.5	**0.0191**	0.001	6.1	ug/L	13	Standard
	Tl	205	143.3	31.3	**0.0260**	0.006	21.9	ug/L	10	Standard
	Pb	206	464.0	15.1	**0.0412**	0.012	28.7	ug/L	264	Standard
	Pb	207	399.3	27.5	**0.0420**	0.021	49.1	ug/L	227	Standard
	Pb	208	1631.7	10.6	**0.0414**	0.008	19.8	ug/L	868	Standard
	U	238	1095.4	6.1	**0.1526**	0.009	5.6	ug/L	8	Standard
>	**Bi**	209	542130.4	0.7				ug/L	541014	Standard

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Na	23	3.3	86.6	**18.5012**	16.018	86.6	mg/L	2	Standard
Mg	24	20070.0	1.5	**21.6062**	0.429	2.0	mg/L	53	Standard
K	39	331.7	13.6	**0.4809**	0.076	15.8	mg/L	53	Standard
Ca	43	756.7	4.0	**40.7258**	1.691	4.2	mg/L	28	Standard
Fe	54	718.9	5.9	**0.3658**	0.026	7.2	mg/L	181	Standard
Fe	57	738.4	9.3	**1.2715**	0.173	13.6	mg/L	257	Standard
> **Sc-1**	45	55814.3	0.5				mg/L	55220	Standard
Cl	35	48250.7	0.2				ug/L	35504	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	8635.8	2.1				ug/L	2040	Standard
P	31	28111.1	1.2				ug/L	20435	Standard
S	34	3018.6	3.5				ug/L	2430	Standard
Sr	88	258.3	19.9				ug/L	75	Standard
C	12	273.3	27.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	198.8	15.4				mg/L	9	Standard
Ho-1	165	148.3	30.6				mg/L	10	Standard
Er	166	163.3	3.5				mg/L	23	Standard
I	127	31669.8	6.8				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		110.300	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		102.357	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.479
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.206
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 13:20:37
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79900.1	1.3				ug/L	74916	Standard
	Be	9	57147.7	3.5	**50.7735**	1.148	2.3	ug/L	10	Standard
	Al	27	8732343.3	1.3	**47.1819**	0.598	1.3	ug/L	1822	Standard
	Sc	45	54700.3	2.6				ug/L	55220	Standard
	Ti	47	41369.1	1.0	**97.4428**	1.470	1.5	ug/L	34	Standard
	V	51	465247.6	2.0	**48.7108**	1.117	2.3	ug/L	1938	Standard
	Cr	52	469969.5	3.8	**49.7995**	0.789	1.6	ug/L	9522	Standard
	Cr	53	58365.7	5.2	**50.5062**	1.411	2.8	ug/L	395	Standard
	Mn	55	432273.8	1.1	**48.8242**	1.117	2.3	ug/L	902	Standard
	Co	59	416250.9	0.9	**49.7343**	0.779	1.6	ug/L	262	Standard
	Ni	60	113064.7	1.4	**48.9451**	0.549	1.1	ug/L	371	Standard
	Cu	65	110972.6	1.3	**48.8962**	0.559	1.1	ug/L	106	Standard
	Zn	66	65922.5	1.5	**49.0279**	0.565	1.2	ug/L	398	Standard
>	Ge	72	550016.3	2.5				ug/L	535147	Standard
	As	75	66744.8	1.7	**48.5447**	0.633	1.3	ug/L	-43	Standard
	Se	82	6814.9	1.8	**48.8345**	0.706	1.4	ug/L	14	Standard
	Se-1	77	4558.7	4.2	**48.6414**	0.883	1.8	ug/L	65	Standard
>	Ga	71	101.7	15.0				mg/L	97	Standard
	Rb	85	965.0	6.3				ug/L	15	Standard
	Y	89	475534.6	1.4				ug/L	465704	Standard
>	Rh	103	45.0	57.7				ug/L	10	Standard
	Mo	98	309899.2	0.8	**95.8767**	0.846	0.9	ug/L	9	Standard
	Ag	107	376812.4	1.5	**48.1670**	0.339	0.7	ug/L	82	Standard
	Cd	111	120977.0	0.1	**48.3850**	0.394	0.8	mg/L	7	Standard
	Cd	114	290674.6	2.4	**48.2748**	1.126	2.3	ug/L	21	Standard
>	In	115	641413.4	0.8				ug/L	619035	Standard
	Sn	118	325899.3	0.0	**48.2296**	0.409	0.8	ug/L	508	Standard
	Sb	123	264734.5	1.7	**48.2480**	0.637	1.3	ug/L	86	Standard
	Ba	135	113119.7	1.1	**47.7337**	0.198	0.4	ug/L	79	Standard
	Ce	140	205.0	7.3				ug/L	68	Standard
>	Tb	159	985502.5	1.0				ug/L	986982	Standard
	Ho	165	11.7	49.5				ug/L	10	Standard
	Tl	203	463987.5	1.7	**49.3714**	0.337	0.7	ug/L	13	Standard
	Tl	205	412712.2	0.6	**51.4082**	0.207	0.4	ug/L	10	Standard
	Pb	206	293514.0	1.2	**48.6270**	0.208	0.4	ug/L	264	Standard
	Pb	207	268313.2	1.4	**49.1873**	0.628	1.3	ug/L	227	Standard
	Pb	208	1073164.4	0.3	**51.0218**	0.412	0.8	ug/L	868	Standard
	U	238	392652.3	0.9	**50.5036**	0.130	0.3	ug/L	8	Standard
>	Bi	209	556886.0	1.0				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.2171**	15.956	173.1	mg/L	2	Standard
Mg	24	4832.4	1.8	**5.2834**	0.116	2.2	mg/L	53	Standard
K	39	2306.8	5.1	**3.8800**	0.278	7.2	mg/L	53	Standard
Ca	43	108.3	10.7	**4.5322**	0.800	17.7	mg/L	28	Standard
Fe	54	7100.8	3.3	**4.7668**	0.174	3.6	mg/L	181	Standard
Fe	57	1925.1	9.0	**4.4864**	0.474	10.6	mg/L	257	Standard
Sc-1	45	54700.3	2.6				mg/L	55220	Standard
Cl	35	45320.4	2.2				ug/L	35504	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	2546.9	7.9				ug/L	2040	Standard
P	31	25962.2	1.5				ug/L	20435	Standard
S	34	3140.3	2.5				ug/L	2430	Standard
Sr	88	63.3	19.9				ug/L	75	Standard
C	12	110.0	55.3				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	22.9	66.2				mg/L	9	Standard
Ho-1	165	11.7	49.5				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	13801.3	1.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	101.547		
Al	27	94.364		
Sc	45			
Ti	47	97.443		
V	51	97.422		
Cr	52	99.599		
Cr	53			
Mn	55	97.648		
Co	59	99.469		
Ni	60	97.890		
Cu	65	97.792		
Zn	66	98.056		
Ge	72		102.779	
As	75	97.089		
Se	82	97.669		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	95.877		
Ag	107	96.334		
Cd	111	96.770		
Cd	114			
In	115			103.615
Sn	118	96.459		
Sb	123	96.496		
Ba	135	95.467		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.743		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.044		
U	238	101.007		
Bi	209			102.934
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 13:23:48
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77613.3	1.9				ug/L	74916	Standard
	Be	9	26.7	43.3	**0.0209**	0.011	53.1	ug/L	10	Standard
	Al	27	4013.9	16.5	**0.0200**	0.004	17.8	ug/L	1822	Standard
	Sc	45	53790.4	4.1				ug/L	55220	Standard
	Ti	47	40.3	9.4	**0.0270**	0.008	30.9	ug/L	34	Standard
	V	51	1570.4	7.2	**-0.0277**	0.011	39.7	ug/L	1938	Standard
	Cr	52	9530.3	6.1	**0.0150**	0.066	439.7	ug/L	9522	Standard
	Cr	53	931.7	7.4	**0.4437**	0.060	13.6	ug/L	395	Standard
	Mn	55	1144.7	6.3	**0.0273**	0.008	28.2	ug/L	902	Standard
	Co	59	305.7	2.6	**0.0145**	0.001	6.6	ug/L	262	Standard
	Ni	60	276.0	3.8	**-0.0231**	0.005	19.8	ug/L	371	Standard
	Cu	65	184.3	7.4	**0.0244**	0.006	25.2	ug/L	106	Standard
	Zn	66	412.0	4.9	**-0.0312**	0.015	47.5	ug/L	398	Standard
>	**Ge**	72	537897.6	0.8				ug/L	535147	Standard
	As	75	-29.0	115.0	**0.0336**	0.025	73.8	ug/L	-43	Standard
	Se	82	25.6	45.5	**0.0905**	0.084	93.0	ug/L	14	Standard
	Se-1	77	72.3	17.8	**0.2171**	0.138	63.7	ug/L	65	Standard
>	**Ga**	71	76.7	30.8				mg/L	97	Standard
	Rb	85	48.3	29.9				ug/L	15	Standard
	Y	89	473909.1	0.5				ug/L	465704	Standard
>	**Rh**	103	26.7	39.0				ug/L	10	Standard
	Mo	98	194.3	6.6	**0.0724**	0.004	5.0	ug/L	9	Standard
	Ag	107	137.3	5.8	**0.0115**	0.001	9.8	ug/L	82	Standard
	Cd	111	16.0	28.2	**0.0143**	0.002	12.6	mg/L	7	Standard
	Cd	114	32.7	50.4	**0.0143**	0.003	18.9	ug/L	21	Standard
>	**In**	115	642024.4	0.6				ug/L	619035	Standard
	Sn	118	1080.0	19.1	**0.0567**	0.031	55.0	ug/L	508	Standard
	Sb	123	653.6	26.6	**0.1235**	0.032	26.0	ug/L	86	Standard
	Ba	135	66.0	27.6	**0.0082**	0.008	92.5	ug/L	79	Standard
	Ce	140	51.7	64.4				ug/L	68	Standard
>	**Tb**	159	985804.8	1.4				ug/L	986982	Standard
	Ho	165	10.0					ug/L	10	Standard
	Tl	203	80.7	0.7	**0.0145**	0.000	0.6	ug/L	13	Standard
	Tl	205	80.0	48.8	**0.0176**	0.005	27.3	ug/L	10	Standard
	Pb	206	345.7	6.1	**0.0191**	0.003	17.6	ug/L	264	Standard
	Pb	207	300.0	5.8	**0.0215**	0.003	15.2	ug/L	227	Standard
	Pb	208	1211.7	4.6	**0.0189**	0.002	12.6	ug/L	868	Standard
	U	238	57.7	11.5	**0.0153**	0.001	5.4	ug/L	8	Standard
>	**Bi**	209	560751.9	0.5				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.8776**	17.100	173.1	mg/L	2	Standard
Mg	24	55.0	32.8	**0.0275**	0.022	80.3	mg/L	53	Standard
K	39	63.3	22.8	**0.0338**	0.020	59.7	mg/L	53	Standard
Ca	43	26.7	57.3	**-0.1261**	0.902	714.8	mg/L	28	Standard
Fe	54	179.2	2.8	**0.0067**	0.003	42.6	mg/L	181	Standard
Fe	57	313.3	24.0	**0.1951**	0.234	119.7	mg/L	257	Standard
Sc-1	45	53790.4	4.1				mg/L	55220	Standard
Cl	35	43643.5	2.6				ug/L	35504	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	2146.8	4.3				ug/L	2040	Standard
P	31	24579.9	2.6				ug/L	20435	Standard
S	34	3047.0	2.1				ug/L	2430	Standard
Sr	88	68.3	34.6				ug/L	75	Standard
C	12	106.7	21.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	506.5	5.5				mg/L	9	Standard
Ho-1	165	10.0					mg/L	10	Standard
Er	166	73.3	43.8				mg/L	23	Standard
I	127	13424.3	1.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.514	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.714
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.648
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 13:26:05
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Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606112904
Sample Date/Time: Thursday, June 30, 2016 13:27:01
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77697.1	2.0				ug/L	74916	Standard
	Be	9	33.3	8.7	**0.0269**	0.003	11.5	ug/L	10	Standard
	Al	27	16310108.0	0.1	**90.6465**	1.855	2.0	ug/L	1822	Standard
	Sc	45	54240.3	1.9				ug/L	55220	Standard
	Ti	47	2684.6	9.0	**6.4077**	0.517	8.1	ug/L	34	Standard
	V	51	5386.0	5.4	**0.3834**	0.027	7.0	ug/L	1938	Standard
	Cr	52	59624.2	3.8	**5.5699**	0.256	4.6	ug/L	9522	Standard
	Cr	53	11434.3	7.4	**9.8353**	0.821	8.3	ug/L	395	Standard
	Mn	55	2048984.2	1.0	**237.4175**	0.335	0.1	ug/L	902	Standard
	Co	59	2103.5	0.9	**0.2347**	0.004	1.6	ug/L	262	Standard
	Ni	60	8758.5	1.6	**3.7494**	0.024	0.6	ug/L	371	Standard
	Cu	65	3653.8	1.9	**1.5923**	0.032	2.0	ug/L	106	Standard
	Zn	66	5799.1	0.9	**4.1028**	0.085	2.1	ug/L	398	Standard
>	**Ge**	72	536880.0	1.0				ug/L	535147	Standard
	As	75	231.4	23.5	**0.2276**	0.042	18.4	ug/L	-43	Standard
	Se	82	45.8	24.7	**0.2394**	0.081	33.8	ug/L	14	Standard
	Se-1	77	363.0	9.0	**3.4362**	0.377	11.0	ug/L	65	Standard
>	**Ga**	71	441.7	11.8				mg/L	97	Standard
	Rb	85	19058.6	2.2				ug/L	15	Standard
	Y	89	472702.6	0.9				ug/L	465704	Standard
>	**Rh**	103	60.0	25.0				ug/L	10	Standard
	Mo	98	1134.3	1.4	**0.3728**	0.006	1.7	ug/L	9	Standard
	Ag	107	154.7	13.8	**0.0142**	0.003	19.3	ug/L	82	Standard
	Cd	111	242.3	0.5	**0.1074**	0.000	0.4	mg/L	7	Standard
	Cd	114	593.2	7.6	**0.1101**	0.008	7.4	ug/L	21	Standard
>	**In**	115	624500.1	0.5				ug/L	619035	Standard
	Sn	118	1746.8	10.4	**0.1627**	0.028	17.3	ug/L	508	Standard
	Sb	123	35311.2	0.7	**6.6139**	0.066	1.0	ug/L	86	Standard
	Ba	135	17076.0	0.7	**7.3843**	0.040	0.5	ug/L	79	Standard
	Ce	140	16609.1	2.5				ug/L	68	Standard
>	**Tb**	159	963913.5	0.7				ug/L	986982	Standard
	Ho	165	328.3	17.7				ug/L	10	Standard
	Tl	203	125.0	8.4	**0.0197**	0.001	6.1	ug/L	13	Standard
	Tl	205	111.7	21.2	**0.0220**	0.003	13.4	ug/L	10	Standard
	Pb	206	11629.5	2.3	**1.9498**	0.046	2.4	ug/L	264	Standard
	Pb	207	9793.5	1.8	**1.8187**	0.034	1.9	ug/L	227	Standard
	Pb	208	40243.5	0.8	**1.9354**	0.028	1.5	ug/L	868	Standard
	U	238	155.3	6.0	**0.0285**	0.001	4.4	ug/L	8	Standard
>	**Bi**	209	540255.5	0.7				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	13307.5	0.8	**14.7349**	0.397	2.7	mg/L	53	Standard
K	39	520.0	18.8	**0.8223**	0.165	20.1	mg/L	53	Standard
Ca	43	530.0	5.3	**28.8936**	1.711	5.9	mg/L	28	Standard
Fe	54	887.4	6.5	**0.4967**	0.036	7.2	mg/L	181	Standard
Fe	57	678.3	10.1	**1.1688**	0.216	18.4	mg/L	257	Standard
> **Sc-1**	45	54240.3	1.9				mg/L	55220	Standard
Cl	35	47467.6	0.6				ug/L	35504	Standard
Kr	83	3.7	83.3				ug/L	2	Standard
Br	81	6017.9	4.8				ug/L	2040	Standard
P	31	26616.7	1.5				ug/L	20435	Standard
S	34	2893.6	3.7				ug/L	2430	Standard
Sr	88	215.0	14.0				ug/L	75	Standard
C	12	130.0	15.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	514.2	11.9				mg/L	9	Standard
Ho-1	165	328.3	17.7				mg/L	10	Standard
Er	166	330.0	3.0				mg/L	23	Standard
I	127	12760.4	2.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.712	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.324	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.883
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.860
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606112905
Sample Date/Time: Thursday, June 30, 2016 13:30:13
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76432.3	1.6				ug/L	74916	Standard
	Be	9	20.0	50.0	**0.0149**	0.009	60.7	ug/L	10	Standard
	Al	27	21059.7	6.5	**0.1166**	0.006	5.1	ug/L	1822	Standard
	Sc	45	55068.2	0.9				ug/L	55220	Standard
	Ti	47	71.3	78.5	**0.1025**	0.137	134.1	ug/L	34	Standard
	V	51	2275.4	3.5	**0.0479**	0.011	22.5	ug/L	1938	Standard
	Cr	52	12553.5	2.2	**0.3476**	0.018	5.2	ug/L	9522	Standard
	Cr	53	1180.0	9.4	**0.6649**	0.110	16.6	ug/L	395	Standard
	Mn	55	2619.6	6.4	**0.1975**	0.017	8.4	ug/L	902	Standard
	Co	59	251.3	8.1	**0.0079**	0.003	32.9	ug/L	262	Standard
	Ni	60	534.3	6.1	**0.0914**	0.016	17.5	ug/L	371	Standard
	Cu	65	1121.4	3.9	**0.4466**	0.026	5.8	ug/L	106	Standard
	Zn	66	2738.6	2.1	**1.7481**	0.056	3.2	ug/L	398	Standard
>	**Ge**	72	538551.7	1.2				ug/L	535147	Standard
	As	75	-45.8	92.9	**0.0214**	0.032	147.1	ug/L	-43	Standard
	Se	82	21.1	26.0	**0.0570**	0.038	67.1	ug/L	14	Standard
	Se-1	77	67.0	15.7	**0.1572**	0.111	70.4	ug/L	65	Standard
>	**Ga**	71	81.7	19.7				mg/L	97	Standard
	Rb	85	188.3	17.7				ug/L	15	Standard
	Y	89	473580.7	1.9				ug/L	465704	Standard
>	**Rh**	103	18.3	41.7				ug/L	10	Standard
	Mo	98	50.8	10.6	**0.0283**	0.002	6.1	ug/L	9	Standard
	Ag	107	104.3	14.0	**0.0074**	0.002	25.2	ug/L	82	Standard
	Cd	111	60.2	6.3	**0.0322**	0.002	4.8	mg/L	7	Standard
	Cd	114	143.9	6.1	**0.0331**	0.001	4.2	ug/L	21	Standard
>	**In**	115	634449.3	0.3				ug/L	619035	Standard
	Sn	118	2651.9	5.9	**0.2942**	0.025	8.3	ug/L	508	Standard
	Sb	123	239.5	12.9	**0.0486**	0.006	12.0	ug/L	86	Standard
	Ba	135	1220.7	4.5	**0.5013**	0.023	4.6	ug/L	79	Standard
	Ce	140	88.3	3.3				ug/L	68	Standard
>	**Tb**	159	971722.3	0.5				ug/L	986982	Standard
	Ho	165	18.3	15.7				ug/L	10	Standard
	Tl	203	37.0	9.7	**0.0100**	0.000	3.9	ug/L	13	Standard
	Tl	205	21.7	53.3	**0.0104**	0.001	14.0	ug/L	10	Standard
	Pb	206	308.7	3.9	**0.0141**	0.002	13.9	ug/L	264	Standard
	Pb	207	282.7	6.0	**0.0193**	0.003	16.1	ug/L	227	Standard
	Pb	208	1180.0	5.4	**0.0185**	0.003	16.1	ug/L	868	Standard
	U	238	13.7	33.0	**0.0097**	0.001	6.0	ug/L	8	Standard
>	**Bi**	209	549756.7	0.3				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	105.0	28.6	**0.0803**	0.033	41.2	mg/L	53	Standard
K	39	48.3	33.3	**0.0064**	0.028	435.5	mg/L	53	Standard
Ca	43	25.0	40.0	**-0.2535**	0.571	225.2	mg/L	28	Standard
Fe	54	191.9	18.9	**0.0123**	0.024	193.0	mg/L	181	Standard
Fe	57	288.3	10.5	**0.1032**	0.082	79.8	mg/L	257	Standard
> **Sc-1**	45	55068.2	0.9				mg/L	55220	Standard
Cl	35	49489.4	0.8				ug/L	35504	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	2563.6	6.4				ug/L	2040	Standard
P	31	25469.7	2.1				ug/L	20435	Standard
S	34	2828.6	6.1				ug/L	2430	Standard
Sr	88	71.7	4.0				ug/L	75	Standard
C	12	150.0	26.7				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	19.2	2.9				mg/L	9	Standard
Ho-1	165	18.3	15.7				mg/L	10	Standard
Er	166	16.7	69.3				mg/L	23	Standard
I	127	2351.9	22.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.023	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.636	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.490
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.616
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606113001
Sample Date/Time: Thursday, June 30, 2016 13:33:24
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	76874.5	1.2				ug/L	74916	Standard
	Be	9	26.7	10.8	**0.0210**	0.002	11.3	ug/L	10	Standard
	Al	27	12263160.4	0.1	**68.8716**	0.858	1.2	ug/L	1822	Standard
	Sc	45	57164.3	2.3				ug/L	55220	Standard
	Ti	47	1058.4	44.6	**2.4597**	1.148	46.7	ug/L	34	Standard
	V	51	3268.4	50.6	**0.1520**	0.179	117.7	ug/L	1938	Standard
	Cr	52	382346.8	1.5	**40.8212**	0.179	0.4	ug/L	9522	Standard
	Cr	53	51346.9	1.0	**44.9410**	0.414	0.9	ug/L	395	Standard
	Mn	55	630931.5	0.9	**72.1420**	0.853	1.2	ug/L	902	Standard
	Co	59	4405.0	2.3	**0.5098**	0.007	1.4	ug/L	262	Standard
	Ni	60	48386.1	1.4	**21.1104**	0.303	1.4	ug/L	371	Standard
	Cu	65	3249.3	1.8	**1.3918**	0.043	3.1	ug/L	106	Standard
	Zn	66	4252.3	1.2	**2.8756**	0.019	0.6	ug/L	398	Standard
>	Ge	72	543540.1	1.2				ug/L	535147	Standard
	As	75	1132.6	1.7	**0.8878**	0.020	2.2	ug/L	-43	Standard
	Se	82	40.0	4.8	**0.1938**	0.012	6.2	ug/L	14	Standard
	Se-1	77	291.7	2.4	**2.6072**	0.110	4.2	ug/L	65	Standard
>	Ga	71	198.3	15.2				mg/L	97	Standard
	Rb	85	8367.3	3.6				ug/L	15	Standard
	Y	89	471596.4	1.6				ug/L	465704	Standard
>	Rh	103	86.7	3.3				ug/L	10	Standard
	Mo	98	3531.2	1.4	**1.1178**	0.027	2.4	ug/L	9	Standard
	Ag	107	112.0	10.7	**0.0084**	0.002	20.0	ug/L	82	Standard
	Cd	111	203.8	12.5	**0.0903**	0.009	10.1	mg/L	7	Standard
	Cd	114	530.5	18.4	**0.0979**	0.015	15.1	ug/L	21	Standard
>	In	115	633938.3	1.8				ug/L	619035	Standard
	Sn	118	1660.1	48.1	**0.1459**	0.120	82.6	ug/L	508	Standard
	Sb	123	21130.8	0.3	**3.9014**	0.063	1.6	ug/L	86	Standard
	Ba	135	17189.4	1.0	**7.3234**	0.083	1.1	ug/L	79	Standard
	Ce	140	2903.6	0.7				ug/L	68	Standard
>	Tb	159	976943.8	0.9				ug/L	986982	Standard
	Ho	165	68.3	23.5				ug/L	10	Standard
	Tl	203	64.0	8.3	**0.0129**	0.001	4.6	ug/L	13	Standard
	Tl	205	63.3	18.2	**0.0157**	0.001	9.3	ug/L	10	Standard
	Pb	206	10722.5	1.0	**1.7726**	0.017	1.0	ug/L	264	Standard
	Pb	207	8993.7	2.1	**1.6468**	0.032	1.9	ug/L	227	Standard
	Pb	208	37818.9	1.6	**1.7939**	0.033	1.8	ug/L	868	Standard
	U	238	31.3	24.4	**0.0120**	0.001	8.3	ug/L	8	Standard
>	Bi	209	546875.5	0.4				ug/L	541014	Standard

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Na	23	1.7	173.2	**8.8932**	15.395	173.1	mg/L	2	Standard
Mg	24	10813.9	0.6	**11.3543**	0.313	2.8	mg/L	53	Standard
K	39	456.7	9.6	**0.6723**	0.064	9.5	mg/L	53	Standard
Ca	43	280.0	11.7	**13.6756**	2.132	15.6	mg/L	28	Standard
Fe	54	698.7	8.5	**0.3411**	0.036	10.6	mg/L	181	Standard
Fe	57	571.7	2.7	**0.8008**	0.066	8.2	mg/L	257	Standard
> **Sc-1**	45	57164.3	2.3				mg/L	55220	Standard
Cl	35	47684.3	0.4				ug/L	35504	Standard
Kr	83	3.3	34.6				ug/L	2	Standard
Br	81	5371.0	10.5				ug/L	2040	Standard
P	31	29385.2	3.0				ug/L	20435	Standard
S	34	3042.0	6.9				ug/L	2430	Standard
Sr	88	291.7	13.0				ug/L	75	Standard
C	12	226.7	24.3				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	126.8	13.5				mg/L	9	Standard
Ho-1	165	68.3	23.5				mg/L	10	Standard
Er	166	66.7	31.2				mg/L	23	Standard
I	127	23603.4	6.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.614	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.568	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.408
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.083
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606113002
Sample Date/Time: Thursday, June 30, 2016 13:36:36
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75750.7	3.6				ug/L	74916	Standard
	Be	9	26.7	10.8	**0.0214**	0.003	12.3	ug/L	10	Standard
	Al	27	11634446.9	1.1	**66.3450**	1.758	2.7	ug/L	1822	Standard
	Sc	45	56353.0	3.1				ug/L	55220	Standard
	Ti	47	431.3	4.2	**0.9744**	0.043	4.4	ug/L	34	Standard
	V	51	3495.9	3.5	**0.1812**	0.014	7.5	ug/L	1938	Standard
	Cr	52	11350.3	2.8	**0.2223**	0.028	12.7	ug/L	9522	Standard
	Cr	53	1553.4	8.7	**1.0047**	0.114	11.3	ug/L	395	Standard
	Mn	55	4216711.0	2.3	**490.1772**	10.857	2.2	ug/L	902	Standard
	Co	59	3782.5	2.5	**0.4416**	0.009	2.1	ug/L	262	Standard
	Ni	60	2748.2	4.1	**1.0802**	0.044	4.1	ug/L	371	Standard
	Cu	65	535.3	3.2	**0.1839**	0.009	4.8	ug/L	106	Standard
	Zn	66	3704.1	0.8	**2.5036**	0.016	0.6	ug/L	398	Standard
>	**Ge**	72	535262.1	0.6				ug/L	535147	Standard
	As	75	2494.4	2.2	**1.9171**	0.042	2.2	ug/L	-43	Standard
	Se	82	35.6	7.5	**0.1655**	0.020	12.1	ug/L	14	Standard
	Se-1	77	139.7	14.2	**0.9686**	0.220	22.7	ug/L	65	Standard
>	**Ga**	71	176.7	9.1				mg/L	97	Standard
	Rb	85	16689.2	1.7				ug/L	15	Standard
	Y	89	462143.9	0.4				ug/L	465704	Standard
>	**Rh**	103	81.7	36.9				ug/L	10	Standard
	Mo	98	207.5	9.5	**0.0780**	0.006	7.8	ug/L	9	Standard
	Ag	107	137.0	4.1	**0.0118**	0.001	6.3	ug/L	82	Standard
	Cd	111	22.6	13.2	**0.0171**	0.001	6.7	mg/L	7	Standard
	Cd	114	39.1	90.4	**0.0155**	0.006	38.5	ug/L	21	Standard
>	**In**	115	627598.6	0.8				ug/L	619035	Standard
	Sn	118	1151.7	9.3	**0.0712**	0.018	24.9	ug/L	508	Standard
	Sb	123	245.7	16.9	**0.0502**	0.008	16.1	ug/L	86	Standard
	Ba	135	33514.4	0.9	**14.4409**	0.208	1.4	ug/L	79	Standard
	Ce	140	2736.9	4.6				ug/L	68	Standard
>	**Tb**	159	967343.4	0.5				ug/L	986982	Standard
	Ho	165	148.3	25.5				ug/L	10	Standard
	Tl	203	52.0	5.8	**0.0118**	0.000	3.3	ug/L	13	Standard
	Tl	205	51.7	39.1	**0.0144**	0.003	17.8	ug/L	10	Standard
	Pb	206	383.3	6.7	**0.0284**	0.004	14.3	ug/L	264	Standard
	Pb	207	326.7	5.6	**0.0292**	0.004	13.2	ug/L	227	Standard
	Pb	208	1332.4	2.3	**0.0277**	0.002	6.0	ug/L	868	Standard
	U	238	25.0	6.9	**0.0112**	0.000	2.3	ug/L	8	Standard
>	**Bi**	209	534662.1	1.0				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	16000.1	0.9	**17.0625**	0.541	3.2	mg/L	53	Standard
K	39	658.3	3.2	**1.0198**	0.059	5.8	mg/L	53	Standard
Ca	43	578.3	5.6	**30.4220**	1.440	4.7	mg/L	28	Standard
Fe	54	23523.9	1.9	**15.5957**	0.506	3.2	mg/L	181	Standard
Fe	57	6413.0	2.7	**15.9835**	0.084	0.5	mg/L	257	Standard
> **Sc-1**	45	56353.0	3.1				mg/L	55220	Standard
Cl	35	44150.9	2.7				ug/L	35504	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	6244.6	1.0				ug/L	2040	Standard
P	31	30246.8	2.0				ug/L	20435	Standard
S	34	3203.7	4.2				ug/L	2430	Standard
Sr	88	215.0	8.1				ug/L	75	Standard
C	12	320.0	13.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	223.4	21.9				mg/L	9	Standard
Ho-1	165	148.3	25.5				mg/L	10	Standard
Er	166	206.7	34.0				mg/L	23	Standard
I	127	27950.8	5.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.114	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.022	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.383	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.826	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606113003
Sample Date/Time: Thursday, June 30, 2016 13:39:47
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74740.6	1.1				ug/L	74916	Standard
	Be	9	16.7	34.6	**0.0122**	0.005	44.6	ug/L	10	Standard
	Al	27	13368183.3	1.6	**77.2132**	0.803	1.0	ug/L	1822	Standard
	Sc	45	55762.4	1.9				ug/L	55220	Standard
	Ti	47	527.3	8.8	**1.2065**	0.109	9.1	ug/L	34	Standard
	V	51	3916.1	16.0	**0.2266**	0.069	30.3	ug/L	1938	Standard
	Cr	52	268317.4	0.8	**28.7872**	0.180	0.6	ug/L	9522	Standard
	Cr	53	35839.0	3.9	**31.7355**	1.282	4.0	ug/L	395	Standard
	Mn	55	1553349.7	1.3	**180.4784**	2.032	1.1	ug/L	902	Standard
	Co	59	3514.1	2.0	**0.4086**	0.008	1.9	ug/L	262	Standard
	Ni	60	33947.0	1.5	**14.9951**	0.229	1.5	ug/L	371	Standard
	Cu	65	2559.5	1.0	**1.1011**	0.014	1.3	ug/L	106	Standard
	Zn	66	4152.6	2.2	**2.8481**	0.062	2.2	ug/L	398	Standard
>	**Ge**	72	535340.3	0.2				ug/L	535147	Standard
	As	75	424.2	19.4	**0.3718**	0.061	16.5	ug/L	-43	Standard
	Se	82	47.2	17.3	**0.2512**	0.061	24.1	ug/L	14	Standard
	Se-1	77	298.3	8.0	**2.7294**	0.271	9.9	ug/L	65	Standard
>	**Ga**	71	196.7	3.9				mg/L	97	Standard
	Rb	85	8317.3	3.6				ug/L	15	Standard
	Y	89	467785.5	1.3				ug/L	465704	Standard
>	**Rh**	103	95.0	18.2				ug/L	10	Standard
	Mo	98	2007.8	2.4	**0.6473**	0.017	2.5	ug/L	9	Standard
	Ag	107	133.7	2.3	**0.0114**	0.000	3.3	ug/L	82	Standard
	Cd	111	151.4	8.0	**0.0698**	0.005	7.0	mg/L	7	Standard
	Cd	114	336.2	22.3	**0.0660**	0.013	19.1	ug/L	21	Standard
>	**In**	115	627458.4	0.3				ug/L	619035	Standard
	Sn	118	1385.1	8.9	**0.1066**	0.019	18.0	ug/L	508	Standard
	Sb	123	5747.5	1.5	**1.0752**	0.019	1.8	ug/L	86	Standard
	Ba	135	21568.7	1.5	**9.2884**	0.155	1.7	ug/L	79	Standard
	Ce	140	2366.9	7.4				ug/L	68	Standard
>	**Tb**	159	959954.6	0.2				ug/L	986982	Standard
	Ho	165	168.3	12.0				ug/L	10	Standard
	Tl	203	81.7	11.9	**0.0150**	0.001	6.6	ug/L	13	Standard
	Tl	205	88.3	36.4	**0.0191**	0.004	22.1	ug/L	10	Standard
	Pb	206	3173.3	0.5	**0.5063**	0.006	1.1	ug/L	264	Standard
	Pb	207	2755.9	3.1	**0.4897**	0.019	4.0	ug/L	227	Standard
	Pb	208	11492.7	0.7	**0.5271**	0.004	0.8	ug/L	868	Standard
	U	238	31.7	14.9	**0.0121**	0.001	5.5	ug/L	8	Standard
>	**Bi**	209	538551.6	1.2				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	19093.7	2.4	**20.5730**	0.433	2.1	mg/L	53	Standard
K	39	375.0	7.1	**0.5539**	0.037	6.6	mg/L	53	Standard
Ca	43	406.7	8.6	**21.1628**	2.370	11.2	mg/L	28	Standard
Fe	54	1312.8	4.1	**0.7668**	0.019	2.5	mg/L	181	Standard
Fe	57	795.0	14.9	**1.4192**	0.269	18.9	mg/L	257	Standard
> **Sc-1**	45	55762.4	1.9				mg/L	55220	Standard
Cl	35	45442.7	1.1				ug/L	35504	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	6418.0	8.0				ug/L	2040	Standard
P	31	27555.0	2.1				ug/L	20435	Standard
S	34	2735.2	2.3				ug/L	2430	Standard
Sr	88	291.7	1.0				ug/L	75	Standard
C	12	200.0	10.0				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	195.0	15.6				mg/L	9	Standard
Ho-1	165	168.3	12.0				mg/L	10	Standard
Er	166	243.3	16.6				mg/L	23	Standard
I	127	20867.7	4.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.765	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.036	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.361	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.545	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606113004
Sample Date/Time: Thursday, June 30, 2016 13:42:59
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74399.0	3.1				ug/L	74916	Standard
	Be	9	23.3	44.6	**0.0189**	0.011	56.8	ug/L	10	Standard
	Al	27	10856638.5	1.5	**63.0208**	1.392	2.2	ug/L	1822	Standard
	Sc	45	56719.3	2.1				ug/L	55220	Standard
	Ti	47	289.3	2.4	**0.6229**	0.017	2.7	ug/L	34	Standard
	V	51	2332.0	5.7	**0.0527**	0.013	25.2	ug/L	1938	Standard
	Cr	52	18336.1	70.5	**0.9802**	1.432	146.1	ug/L	9522	Standard
	Cr	53	2213.5	70.4	**1.5784**	1.391	88.2	ug/L	395	Standard
	Mn	55	3385468.4	0.9	**389.2475**	3.227	0.8	ug/L	902	Standard
	Co	59	20336.3	2.5	**2.4471**	0.048	2.0	ug/L	262	Standard
	Ni	60	6018.2	2.5	**2.5095**	0.053	2.1	ug/L	371	Standard
	Cu	65	683.7	4.2	**0.2478**	0.014	5.7	ug/L	106	Standard
	Zn	66	2766.9	0.8	**1.7594**	0.028	1.6	ug/L	398	Standard
>	**Ge**	72	541153.6	0.5				ug/L	535147	Standard
	As	75	4598.6	0.6	**3.4503**	0.025	0.7	ug/L	-43	Standard
	Se	82	72.3	2.2	**0.4309**	0.014	3.2	ug/L	14	Standard
	Se-1	77	125.7	8.0	**0.7981**	0.109	13.6	ug/L	65	Standard
>	**Ga**	71	170.0	5.9				mg/L	97	Standard
	Rb	85	5877.8	6.1				ug/L	15	Standard
	Y	89	480882.2	0.7				ug/L	465704	Standard
>	**Rh**	103	90.0	44.4				ug/L	10	Standard
	Mo	98	176.8	20.1	**0.0686**	0.011	15.6	ug/L	9	Standard
	Ag	107	142.3	33.1	**0.0126**	0.006	47.4	ug/L	82	Standard
	Cd	111	30.0	68.4	**0.0202**	0.008	41.1	mg/L	7	Standard
	Cd	114	64.9	65.0	**0.0200**	0.007	35.5	ug/L	21	Standard
>	**In**	115	623102.8	1.4				ug/L	619035	Standard
	Sn	118	1121.7	18.6	**0.0677**	0.031	45.2	ug/L	508	Standard
	Sb	123	309.3	18.9	**0.0624**	0.011	17.1	ug/L	86	Standard
	Ba	135	39415.9	0.4	**17.1108**	0.208	1.2	ug/L	79	Standard
	Ce	140	28894.2	0.7				ug/L	68	Standard
>	**Tb**	159	964868.0	0.6				ug/L	986982	Standard
	Ho	165	706.7	6.7				ug/L	10	Standard
	Tl	203	147.0	43.1	**0.0222**	0.007	31.4	ug/L	13	Standard
	Tl	205	111.7	18.6	**0.0221**	0.003	12.0	ug/L	10	Standard
	Pb	206	529.0	2.6	**0.0530**	0.002	3.5	ug/L	264	Standard
	Pb	207	469.3	7.6	**0.0559**	0.006	11.5	ug/L	227	Standard
	Pb	208	1889.4	2.0	**0.0547**	0.002	4.3	ug/L	868	Standard
	U	238	168.3	8.3	**0.0303**	0.002	5.9	ug/L	8	Standard
>	**Bi**	209	538123.0	0.8				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	7290.1	2.6	**7.7040**	0.321	4.2	mg/L	53	Standard
K	39	425.0	5.4	**0.6269**	0.052	8.4	mg/L	53	Standard
Ca	43	673.3	11.7	**35.4983**	4.811	13.6	mg/L	28	Standard
Fe	54	38438.3	1.9	**25.3833**	0.501	2.0	mg/L	181	Standard
Fe	57	10161.7	2.0	**25.5443**	0.445	1.7	mg/L	257	Standard
> **Sc-1**	45	56719.3	2.1				mg/L	55220	Standard
Cl	35	42442.1	2.9				ug/L	35504	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	11864.7	6.7				ug/L	2040	Standard
P	31	30823.0	1.5				ug/L	20435	Standard
S	34	3190.3	5.5				ug/L	2430	Standard
Sr	88	306.7	12.2				ug/L	75	Standard
C	12	283.3	5.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	1112.5	6.7				mg/L	9	Standard
Ho-1	165	706.7	6.7				mg/L	10	Standard
Er	166	783.4	12.8				mg/L	23	Standard
I	127	26803.8	6.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.309	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.122	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.657
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.466
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606138001
Sample Date/Time: Thursday, June 30, 2016 13:46:10
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66387.0	4.2				ug/L	74916	Standard
	Be	9	23.3	53.9	**0.0211**	0.013	59.7	ug/L	10	Standard
	Al	27	474015.9	0.8	**3.0843**	0.149	4.8	ug/L	1822	Standard
	Sc	45	49494.0	0.4				ug/L	55220	Standard
	Ti	47	793.4	2.4	**1.9681**	0.061	3.1	ug/L	34	Standard
	V	51	4262.8	2.5	**0.2920**	0.015	5.2	ug/L	1938	Standard
	Cr	52	8768.2	4.3	**-0.0054**	0.043	793.3	ug/L	9522	Standard
	Cr	53	776.7	11.5	**0.3512**	0.085	24.3	ug/L	395	Standard
	Mn	55	107808.6	1.7	**13.1935**	0.309	2.3	ug/L	902	Standard
	Co	59	1257.7	3.9	**0.1410**	0.006	4.0	ug/L	262	Standard
	Ni	60	924.7	1.2	**0.2920**	0.007	2.5	ug/L	371	Standard
	Cu	65	658.7	3.7	**0.2580**	0.013	5.0	ug/L	106	Standard
	Zn	66	5538.7	2.4	**4.1749**	0.133	3.2	ug/L	398	Standard
>	**Ge**	72	504580.1	0.6				ug/L	535147	Standard
	As	75	106.1	35.6	**0.1391**	0.029	21.1	ug/L	-43	Standard
	Se	82	23.2	11.2	**0.0848**	0.020	23.6	ug/L	14	Standard
	Se-1	77	60.7	8.3	**0.1327**	0.055	41.4	ug/L	65	Standard
>	**Ga**	71	403.3	13.0				mg/L	97	Standard
	Rb	85	5115.9	3.3				ug/L	15	Standard
	Y	89	435874.1	0.5				ug/L	465704	Standard
>	**Rh**	103	26.7	28.6				ug/L	10	Standard
	Mo	98	145.8	11.1	**0.0616**	0.005	8.8	ug/L	9	Standard
	Ag	107	85.0	3.1	**0.0058**	0.000	4.6	ug/L	82	Standard
	Cd	111	7.4	15.9	**0.0111**	0.000	4.4	mg/L	7	Standard
	Cd	114	25.0	106.1	**0.0135**	0.005	36.4	ug/L	21	Standard
>	**In**	115	587323.3	1.4				ug/L	619035	Standard
	Sn	118	246.7	18.7	**-0.0635**	0.007	11.4	ug/L	508	Standard
	Sb	123	113.1	13.5	**0.0269**	0.003	11.9	ug/L	86	Standard
	Ba	135	5777.8	2.5	**2.6441**	0.052	2.0	ug/L	79	Standard
	Ce	140	18709.9	0.8				ug/L	68	Standard
>	**Tb**	159	897694.4	1.4				ug/L	986982	Standard
	Ho	165	320.0	15.4				ug/L	10	Standard
	Tl	203	53.7	11.4	**0.0121**	0.001	5.5	ug/L	13	Standard
	Tl	205	31.7	59.8	**0.0119**	0.003	21.2	ug/L	10	Standard
	Pb	206	1993.5	2.0	**0.3137**	0.004	1.2	ug/L	264	Standard
	Pb	207	1692.8	5.1	**0.2972**	0.020	6.7	ug/L	227	Standard
	Pb	208	6900.0	0.7	**0.3108**	0.005	1.7	ug/L	868	Standard
	U	238	131.3	1.9	**0.0259**	0.000	0.7	ug/L	8	Standard
>	**Bi**	209	523640.4	1.0				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	76.7	21.0	**0.0587**	0.020	33.9	mg/L	53	Standard
K	39	73.3	23.9	**0.0629**	0.034	53.6	mg/L	53	Standard
Ca	43	31.7	9.1	**0.3261**	0.183	56.0	mg/L	28	Standard
Fe	54	350.6	2.1	**0.1478**	0.007	4.4	mg/L	181	Standard
Fe	57	360.0	23.6	**0.4013**	0.253	63.0	mg/L	257	Standard
> **Sc-1**	45	49494.0	0.4				mg/L	55220	Standard
Cl	35	38474.1	1.0				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1776.8	4.7				ug/L	2040	Standard
P	31	8579.1	1.3				ug/L	20435	Standard
S	34	2888.6	5.6				ug/L	2430	Standard
Sr	88	68.3	25.7				ug/L	75	Standard
C	12	90.0	22.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	509.3	4.1				mg/L	9	Standard
Ho-1	165	320.0	15.4				mg/L	10	Standard
Er	166	293.3	2.0				mg/L	23	Standard
I	127	34252.0	1.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.615	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.288	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.877
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.789
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606138002
Sample Date/Time: Thursday, June 30, 2016 13:49:22
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64661.1	2.8				ug/L	74916	Standard
	Be	9	26.7	10.8	**0.0256**	0.002	9.4	ug/L	10	Standard
	Al	27	495451.4	1.5	**3.3071**	0.100	3.0	ug/L	1822	Standard
	Sc	45	48776.7	0.9				ug/L	55220	Standard
	Ti	47	742.0	0.2	**1.8391**	0.000	0.0	ug/L	34	Standard
	V	51	4463.4	1.4	**0.3158**	0.008	2.5	ug/L	1938	Standard
	Cr	52	8324.3	1.7	**-0.0561**	0.015	27.6	ug/L	9522	Standard
	Cr	53	671.7	3.0	**0.2524**	0.018	7.3	ug/L	395	Standard
	Mn	55	108883.9	0.8	**13.3471**	0.085	0.6	ug/L	902	Standard
	Co	59	1323.4	2.1	**0.1499**	0.003	2.2	ug/L	262	Standard
	Ni	60	977.4	1.6	**0.3176**	0.007	2.3	ug/L	371	Standard
	Cu	65	833.7	3.1	**0.3427**	0.011	3.3	ug/L	106	Standard
	Zn	66	7284.8	2.1	**5.6095**	0.112	2.0	ug/L	398	Standard
>	Ge	72	503742.7	0.2				ug/L	535147	Standard
	As	75	106.0	30.1	**0.1393**	0.026	18.3	ug/L	-43	Standard
	Se	82	20.2	50.4	**0.0616**	0.080	130.3	ug/L	14	Standard
	Se-1	77	55.3	13.6	**0.0712**	0.088	123.9	ug/L	65	Standard
>	Ga	71	383.3	15.1				mg/L	97	Standard
	Rb	85	5436.0	3.7				ug/L	15	Standard
	Y	89	434664.1	1.5				ug/L	465704	Standard
>	Rh	103	23.3	44.6				ug/L	10	Standard
	Mo	98	161.8	10.2	**0.0673**	0.006	8.5	ug/L	9	Standard
	Ag	107	84.7	21.5	**0.0058**	0.003	44.3	ug/L	82	Standard
	Cd	111	7.0	16.1	**0.0110**	0.001	4.6	mg/L	7	Standard
	Cd	114	16.7	21.5	**0.0120**	0.001	5.5	ug/L	21	Standard
>	In	115	583990.8	0.3				ug/L	619035	Standard
	Sn	118	248.3	18.7	**-0.0630**	0.007	11.9	ug/L	508	Standard
	Sb	123	91.7	16.4	**0.0228**	0.003	13.0	ug/L	86	Standard
	Ba	135	5793.1	1.4	**2.6664**	0.038	1.4	ug/L	79	Standard
	Ce	140	20100.0	3.3				ug/L	68	Standard
>	Tb	159	899230.7	0.5				ug/L	986982	Standard
	Ho	165	273.3	23.9				ug/L	10	Standard
	Tl	203	40.3	14.5	**0.0106**	0.001	6.1	ug/L	13	Standard
	Tl	205	30.0	72.6	**0.0117**	0.003	24.7	ug/L	10	Standard
	Pb	206	2067.1	0.3	**0.3277**	0.002	0.5	ug/L	264	Standard
	Pb	207	1625.1	2.8	**0.2847**	0.008	2.9	ug/L	227	Standard
	Pb	208	7094.0	1.0	**0.3216**	0.006	1.8	ug/L	868	Standard
	U	238	139.3	5.8	**0.0270**	0.001	4.5	ug/L	8	Standard
>	Bi	209	522174.4	0.6				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	128.3	9.8	**0.1239**	0.017	13.7	mg/L	53	Standard
K	39	65.0	20.4	**0.0490**	0.026	53.8	mg/L	53	Standard
Ca	43	36.7	20.8	**0.6732**	0.466	69.2	mg/L	28	Standard
Fe	54	429.0	3.1	**0.2121**	0.009	4.3	mg/L	181	Standard
Fe	57	321.7	18.0	**0.3028**	0.182	60.2	mg/L	257	Standard
> **Sc-1**	45	48776.7	0.9				mg/L	55220	Standard
Cl	35	39347.0	2.0				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1716.8	13.9				ug/L	2040	Standard
P	31	8409.0	1.8				ug/L	20435	Standard
S	34	2855.3	5.2				ug/L	2430	Standard
Sr	88	81.7	7.1				ug/L	75	Standard
C	12	90.0	11.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	575.7	17.1				mg/L	9	Standard
Ho-1	165	273.3	23.9				mg/L	10	Standard
Er	166	230.0	22.6				mg/L	23	Standard
I	127	34921.9	3.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		86.311	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.132	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.339
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.518
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 13:52:34
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	70351.3	1.5				ug/L	74916	Standard
	Be	9	53402.3	3.1	**53.8872**	0.854	1.6	ug/L	10	Standard
	Al	27	8536698.5	1.6	**52.3825**	0.048	0.1	ug/L	1822	Standard
	Sc	45	54668.5	1.7				ug/L	55220	Standard
	Ti	47	42118.1	1.1	**99.2640**	0.592	0.6	ug/L	34	Standard
	V	51	468509.2	1.7	**49.0833**	0.889	1.8	ug/L	1938	Standard
	Cr	52	469374.8	1.2	**49.7880**	0.672	1.3	ug/L	9522	Standard
	Cr	53	57157.6	1.3	**49.5191**	0.959	1.9	ug/L	395	Standard
	Mn	55	435423.3	1.0	**49.2040**	0.253	0.5	ug/L	902	Standard
	Co	59	416954.7	1.7	**49.8454**	0.726	1.5	ug/L	262	Standard
	Ni	60	115262.5	1.0	**49.9318**	0.466	0.9	ug/L	371	Standard
	Cu	65	113776.3	0.6	**50.1650**	0.265	0.5	ug/L	106	Standard
	Zn	66	67512.8	0.9	**50.2512**	0.160	0.3	ug/L	398	Standard
>	Ge	72	549568.6	0.6				ug/L	535147	Standard
	As	75	67559.3	2.0	**49.1657**	0.725	1.5	ug/L	-43	Standard
	Se	82	6897.1	2.3	**49.4551**	0.984	2.0	ug/L	14	Standard
	Se-1	77	4799.8	3.4	**51.2947**	1.457	2.8	ug/L	65	Standard
>	Ga	71	81.7	35.3				mg/L	97	Standard
	Rb	85	1100.0	8.1				ug/L	15	Standard
	Y	89	472317.5	0.9				ug/L	465704	Standard
>	Rh	103	28.3	56.7				ug/L	10	Standard
	Mo	98	311318.4	1.2	**96.8405**	0.751	0.8	ug/L	9	Standard
	Ag	107	375352.2	0.6	**48.2459**	0.186	0.4	ug/L	82	Standard
	Cd	111	121680.2	1.5	**48.9299**	0.512	1.0	mg/L	7	Standard
	Cd	114	295402.6	1.0	**49.3283**	0.334	0.7	ug/L	21	Standard
>	In	115	637918.9	0.9				ug/L	619035	Standard
	Sn	118	329220.1	0.8	**48.9878**	0.167	0.3	ug/L	508	Standard
	Sb	123	266012.3	1.4	**48.7461**	0.223	0.5	ug/L	86	Standard
	Ba	135	113369.9	1.1	**48.1056**	0.773	1.6	ug/L	79	Standard
	Ce	140	228.3	8.3				ug/L	68	Standard
>	Tb	159	969024.1	1.7				ug/L	986982	Standard
	Ho	165	15.0	33.3				ug/L	10	Standard
	Tl	203	459036.6	1.0	**50.0510**	0.294	0.6	ug/L	13	Standard
	Tl	205	406627.8	0.8	**51.9013**	0.775	1.5	ug/L	10	Standard
	Pb	206	289135.8	0.6	**49.0844**	0.241	0.5	ug/L	264	Standard
	Pb	207	262963.0	0.7	**49.3945**	0.173	0.4	ug/L	227	Standard
	Pb	208	1066285.7	1.0	**51.9429**	0.371	0.7	ug/L	868	Standard
	U	238	384760.4	0.1	**50.7102**	0.365	0.7	ug/L	8	Standard
>	Bi	209	543486.8	0.8				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.5241**	16.488	173.1	mg/L	2	Standard
Mg	24	4477.3	3.3	**4.8941**	0.142	2.9	mg/L	53	Standard
K	39	2273.5	4.9	**3.8219**	0.208	5.4	mg/L	53	Standard
Ca	43	113.3	2.5	**4.8087**	0.120	2.5	mg/L	28	Standard
Fe	54	7203.2	2.1	**4.8406**	0.177	3.7	mg/L	181	Standard
Fe	57	2146.8	2.6	**5.0804**	0.063	1.2	mg/L	257	Standard
Sc-1	45	54668.5	1.7				mg/L	55220	Standard
Cl	35	43784.5	1.4				ug/L	35504	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	2276.8	5.5				ug/L	2040	Standard
P	31	25897.1	0.8				ug/L	20435	Standard
S	34	3145.3	2.1				ug/L	2430	Standard
Sr	88	68.3	40.3				ug/L	75	Standard
C	12	126.7	18.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	5.4	118.7				mg/L	9	Standard
Ho-1	165	15.0	33.3				mg/L	10	Standard
Er	166	26.7	86.6				mg/L	23	Standard
I	127	12495.2	4.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	107.774		
Al	27	104.765		
Sc	45			
Ti	47	99.264		
V	51	98.167		
Cr	52	99.576		
Cr	53			
Mn	55	98.408		
Co	59	99.691		
Ni	60	99.864		
Cu	65	100.330		
Zn	66	100.502		
Ge	72		102.695	
As	75	98.331		
Se	82	98.910		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	96.840		
Ag	107	96.492		
Cd	111	97.860		
Cd	114			
In	115			103.051
Sn	118	97.976		
Sb	123	97.492		
Ba	135	96.211		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.102		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.886		
U	238	101.420		
Bi	209			100.457
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 13:55:46
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68432.6	2.4				ug/L	74916	Standard
	Be	9	28.3	53.9	**0.0256**	0.015	58.8	ug/L	10	Standard
	Al	27	2561.9	32.4	**0.0138**	0.005	34.8	ug/L	1822	Standard
	Sc	45	53586.3	0.9				ug/L	55220	Standard
	Ti	47	42.3	12.1	**0.0323**	0.013	39.8	ug/L	34	Standard
	V	51	1520.6	0.6	**-0.0323**	0.002	6.2	ug/L	1938	Standard
	Cr	52	8093.5	1.4	**-0.1406**	0.009	6.2	ug/L	9522	Standard
	Cr	53	538.3	14.4	**0.0944**	0.066	69.8	ug/L	395	Standard
	Mn	55	1064.7	10.1	**0.0185**	0.012	62.7	ug/L	902	Standard
	Co	59	307.0	14.2	**0.0148**	0.005	34.3	ug/L	262	Standard
	Ni	60	268.3	6.5	**-0.0260**	0.008	31.4	ug/L	371	Standard
	Cu	65	165.0	7.9	**0.0159**	0.005	33.7	ug/L	106	Standard
	Zn	66	438.3	7.7	**-0.0099**	0.023	238.2	ug/L	398	Standard
>	Ge	72	535819.1	0.7				ug/L	535147	Standard
	As	75	6.6	376.3	**0.0602**	0.018	30.6	ug/L	-43	Standard
	Se	82	29.3	22.0	**0.1194**	0.049	40.9	ug/L	14	Standard
	Se-1	77	62.3	8.8	**0.1100**	0.066	59.7	ug/L	65	Standard
>	Ga	71	78.3	3.7				mg/L	97	Standard
	Rb	85	63.3	4.6				ug/L	15	Standard
	Y	89	473768.5	2.1				ug/L	465704	Standard
>	Rh	103	23.3	24.7				ug/L	10	Standard
	Mo	98	199.2	14.8	**0.0746**	0.009	11.9	ug/L	9	Standard
	Ag	107	161.7	32.4	**0.0148**	0.007	44.5	ug/L	82	Standard
	Cd	111	30.9	74.3	**0.0203**	0.009	45.0	mg/L	7	Standard
	Cd	114	72.9	104.0	**0.0211**	0.013	59.7	ug/L	21	Standard
>	In	115	634159.9	0.7				ug/L	619035	Standard
	Sn	118	1073.4	13.8	**0.0577**	0.023	40.3	ug/L	508	Standard
	Sb	123	669.6	26.7	**0.1280**	0.034	26.4	ug/L	86	Standard
	Ba	135	70.3	49.0	**0.0103**	0.014	139.7	ug/L	79	Standard
	Ce	140	51.7	14.8				ug/L	68	Standard
>	Tb	159	954941.3	1.5				ug/L	986982	Standard
	Ho	165	5.0	100.0				ug/L	10	Standard
	Tl	203	115.0	46.4	**0.0185**	0.006	31.0	ug/L	13	Standard
	Tl	205	83.3	39.0	**0.0183**	0.004	22.3	ug/L	10	Standard
	Pb	206	359.0	17.2	**0.0229**	0.010	44.1	ug/L	264	Standard
	Pb	207	292.3	15.1	**0.0215**	0.008	37.8	ug/L	227	Standard
	Pb	208	1243.7	10.1	**0.0220**	0.006	26.7	ug/L	868	Standard
	U	238	65.7	33.2	**0.0165**	0.003	17.1	ug/L	8	Standard
>	Bi	209	546073.6	0.7				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	40.0	21.7	**0.0104**	0.010	95.4	mg/L	53	Standard
K	39	33.3	37.7	**-0.0178**	0.022	121.3	mg/L	53	Standard
Ca	43	18.3	31.5	**-0.6058**	0.332	54.7	mg/L	28	Standard
Fe	54	221.0	21.5	**0.0364**	0.033	90.5	mg/L	181	Standard
Fe	57	250.0	10.4	**0.0200**	0.078	387.9	mg/L	257	Standard
> **Sc-1**	45	53586.3	0.9				mg/L	55220	Standard
Cl	35	43438.9	0.9				ug/L	35504	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1990.1	6.9				ug/L	2040	Standard
P	31	24860.4	1.5				ug/L	20435	Standard
S	34	3005.3	2.2				ug/L	2430	Standard
Sr	88	78.3	30.2				ug/L	75	Standard
C	12	70.0	24.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	486.3	15.6				mg/L	9	Standard
Ho-1	165	5.0	100.0				mg/L	10	Standard
Er	166	76.7	7.5				mg/L	23	Standard
I	127	11689.5	2.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.126	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.443
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.935
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, June 30, 2016 13:58:59
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	66356.7	2.1				ug/L	74916	Standard
	Be	9	215.0	30.2	**0.2261**	0.067	29.5	ug/L	10	Standard
	Al	27	2230.2	26.9	**0.0121**	0.004	30.1	ug/L	1822	Standard
	Sc	45	51398.8	4.2				ug/L	55220	Standard
	Ti	47	25.3	9.1	**-0.0071**	0.006	81.8	ug/L	34	Standard
	V	51	4800.2	0.2	**0.3361**	0.003	1.0	ug/L	1938	Standard
	Cr	52	15323.7	1.7	**0.7106**	0.037	5.2	ug/L	9522	Standard
	Cr	53	1368.4	10.2	**0.8729**	0.133	15.2	ug/L	395	Standard
	Mn	55	4821.4	3.0	**0.4707**	0.018	3.9	ug/L	902	Standard
	Co	59	3207.7	2.8	**0.3818**	0.013	3.3	ug/L	262	Standard
	Ni	60	3628.8	1.0	**1.5172**	0.022	1.5	ug/L	371	Standard
	Cu	65	1815.4	2.8	**0.7865**	0.027	3.5	ug/L	106	Standard
	Zn	66	8275.6	1.0	**6.1944**	0.041	0.7	ug/L	398	Standard
>	Ge	72	521093.1	0.5				ug/L	535147	Standard
	As	75	460.0	12.9	**0.4079**	0.046	11.2	ug/L	-43	Standard
	Se	82	70.4	16.5	**0.4369**	0.090	20.5	ug/L	14	Standard
	Se-1	77	95.3	6.1	**0.5056**	0.071	14.1	ug/L	65	Standard
>	Ga	71	38.3	15.1				mg/L	97	Standard
	Rb	85	53.3	32.9				ug/L	15	Standard
	Y	89	448899.9	1.0				ug/L	465704	Standard
>	Rh	103	10.0	50.0				ug/L	10	Standard
	Mo	98	59.4	30.1	**0.0318**	0.006	18.4	ug/L	9	Standard
	Ag	107	2890.9	2.6	**0.3858**	0.015	3.8	ug/L	82	Standard
	Cd	111	552.2	6.1	**0.2421**	0.017	7.1	mg/L	7	Standard
	Cd	114	1357.9	4.8	**0.2480**	0.014	5.6	ug/L	21	Standard
>	In	115	605194.8	1.2				ug/L	619035	Standard
	Sn	118	515.0	7.9	**-0.0225**	0.006	26.7	ug/L	508	Standard
	Sb	123	2078.3	0.9	**0.4059**	0.008	1.9	ug/L	86	Standard
	Ba	135	1558.4	3.6	**0.6779**	0.033	4.9	ug/L	79	Standard
	Ce	140	20.0	50.0				ug/L	68	Standard
>	Tb	159	919439.0	1.0				ug/L	986982	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	723.7	5.0	**0.0865**	0.004	4.4	ug/L	13	Standard
	Tl	205	610.0	5.0	**0.0871**	0.004	4.3	ug/L	10	Standard
	Pb	206	1404.1	3.4	**0.2056**	0.009	4.2	ug/L	264	Standard
	Pb	207	1193.0	5.7	**0.1956**	0.014	6.9	ug/L	227	Standard
	Pb	208	4933.3	1.7	**0.2070**	0.004	2.0	ug/L	868	Standard
	U	238	2866.6	0.7	**0.3932**	0.004	0.9	ug/L	8	Standard
>	Bi	209	532763.8	0.3				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	37.1	**0.0158**	0.017	109.9	mg/L	53	Standard
K	39	51.7	20.1	**0.0188**	0.023	119.9	mg/L	53	Standard
Ca	43	20.0	25.0	**-0.4483**	0.353	78.6	mg/L	28	Standard
Fe	54	110.3	26.1	**-0.0377**	0.022	58.6	mg/L	181	Standard
Fe	57	295.0	19.3	**0.1805**	0.189	104.9	mg/L	257	Standard
> **Sc-1**	45	51398.8	4.2				mg/L	55220	Standard
Cl	35	41676.6	0.2				ug/L	35504	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	1763.4	7.5				ug/L	2040	Standard
P	31	16789.3	2.3				ug/L	20435	Standard
S	34	2972.0	1.4				ug/L	2430	Standard
Sr	88	86.7	37.1				ug/L	75	Standard
C	12	83.3	56.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	26.2	77.7				mg/L	9	Standard
Ho-1	165	8.3	91.7				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	1693.4	6.1				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	113.025		
	Al	27			
	Sc	45			
	Ti	47			
	V	51	84.035		
	Cr	52	88.826		
	Cr	53			
	Mn	55	94.146		
	Co	59	95.456		
	Ni	60	94.822		
	Cu	65	98.312		
	Zn	66	99.111		
>	Ge	72		97.374	
	As	75	101.977		
	Se	82	109.236		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	96.443		
Cd	111	100.863		
Cd	114			
> In	115			97.764
Sn	118			
Sb	123	101.469		
Ba	135	90.385		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	108.104		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.497		
U	238	98.309		
> Bi	209			98.475
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBS H1 WG574262-01
Sample Date/Time: Thursday, June 30, 2016 14:04:45
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	111427.1	4.3				ug/L	74916	Standard
	Be	9	20.0	50.0	**0.0091**	0.006	66.0	ug/L	10	Standard
	Al	27	34110.0	3.0	**0.1301**	0.010	7.5	ug/L	1822	Standard
	Sc	45	55491.4	1.6				ug/L	55220	Standard
	Ti	47	93.7	9.9	**0.1555**	0.021	13.4	ug/L	34	Standard
	V	51	44354.0	10.5	**4.5741**	0.536	11.7	ug/L	1938	Standard
	Cr	52	24972.9	1.3	**1.7243**	0.040	2.3	ug/L	9522	Standard
	Cr	53	206771.4	0.9	**184.1210**	2.288	1.2	ug/L	395	Standard
	Mn	55	2545.9	11.7	**0.1894**	0.034	17.7	ug/L	902	Standard
	Co	59	293.3	5.8	**0.0131**	0.002	18.0	ug/L	262	Standard
	Ni	60	590.0	1.9	**0.1164**	0.005	4.0	ug/L	371	Standard
	Cu	65	308.7	4.1	**0.0805**	0.005	6.0	ug/L	106	Standard
	Zn	66	2132.5	3.9	**1.2865**	0.055	4.3	ug/L	398	Standard
>	Ge	72	537728.3	0.8				ug/L	535147	Standard
	As	75	-342.5	41.1	**-0.1988**	0.103	51.7	ug/L	-43	Standard
	Se	82	13.2	70.1	**0.0001**	0.068	64311.6	ug/L	14	Standard
	Se-1	77	13334.2	2.7	**146.7115**	2.985	2.0	ug/L	65	Standard
>	Ga	71	400.0	17.7				mg/L	97	Standard
	Rb	85	110.0	7.9				ug/L	15	Standard
	Y	89	464081.2	3.2				ug/L	465704	Standard
>	Rh	103	21.7	26.6				ug/L	10	Standard
	Mo	98	72.0	26.8	**0.0362**	0.006	16.8	ug/L	9	Standard
	Ag	107	244.3	35.1	**0.0275**	0.012	44.4	ug/L	82	Standard
	Cd	111	11.2	43.6	**0.0127**	0.002	15.9	mg/L	7	Standard
	Cd	114	31.3	132.5	**0.0144**	0.007	50.8	ug/L	21	Standard
>	In	115	598667.1	1.4				ug/L	619035	Standard
	Sn	118	1255.1	7.6	**0.0959**	0.014	14.1	ug/L	508	Standard
	Sb	123	515.3	19.6	**0.1048**	0.018	17.4	ug/L	86	Standard
	Ba	135	222.0	9.0	**0.0808**	0.010	12.4	ug/L	79	Standard
	Ce	140	90.0	5.6				ug/L	68	Standard
>	Tb	159	1033304.5	1.5				ug/L	986982	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	164.0	23.2	**0.0228**	0.004	16.5	ug/L	13	Standard
	Tl	205	150.0	32.8	**0.0257**	0.006	22.3	ug/L	10	Standard
	Pb	206	730.0	3.3	**0.0790**	0.004	4.7	ug/L	264	Standard
	Pb	207	653.0	3.6	**0.0824**	0.003	3.7	ug/L	227	Standard
	Pb	208	2412.7	7.2	**0.0724**	0.007	9.6	ug/L	868	Standard
	U	238	18.0	34.7	**0.0101**	0.001	7.7	ug/L	8	Standard
>	Bi	209	576949.5	1.0				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	173.3	12.0	**0.1533**	0.021	13.6	mg/L	53	Standard
K	39	86.7	14.5	**0.0706**	0.023	32.6	mg/L	53	Standard
Ca	43	38.3	39.8	**0.4775**	0.824	172.5	mg/L	28	Standard
Fe	54	234.1	8.4	**0.0399**	0.011	27.2	mg/L	181	Standard
Fe	57	311.7	11.6	**0.1597**	0.107	67.0	mg/L	257	Standard
> **Sc-1**	45	55491.4	1.6				mg/L	55220	Standard
Cl	35	48185.2	0.8				ug/L	35504	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	3143.7	18.1				ug/L	2040	Standard
P	31	26150.9	3.2				ug/L	20435	Standard
S	34	3633.8	3.2				ug/L	2430	Standard
Sr	88	83.3	38.1				ug/L	75	Standard
C	12	210.0	17.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	18.9	88.9				mg/L	9	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	23.3	99.0				mg/L	23	Standard
I	127	4142.2	20.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		148.735	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.482	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	96.710	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	106.642	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cr 53 Upper, S, EEE	Cr	53	
Se-1 77 Upper, S, EEE	Se-1	77	

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Method 6020 - Summary Report

Sample ID: LCSS H1 WG574262-02
Sample Date/Time: Thursday, June 30, 2016 14:07:56
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	118705.1	2.8				ug/L	74916	Standard
	Be	9	30489.0	1.7	**18.2429**	0.579	3.2	ug/L	10	Standard
	Al	27	43652.8	2.8	**0.1565**	0.004	2.8	ug/L	1822	Standard
	Sc	45	57107.4	1.6				ug/L	55220	Standard
	Ti	47	126.0	33.1	**0.2335**	0.102	43.6	ug/L	34	Standard
	V	51	282984.6	2.3	**30.1957**	0.715	2.4	ug/L	1938	Standard
	Cr	52	267745.2	1.3	**28.5638**	0.368	1.3	ug/L	9522	Standard
	Cr	53	268659.4	1.0	**239.1157**	2.898	1.2	ug/L	395	Standard
	Mn	55	234777.4	0.6	**27.0428**	0.266	1.0	ug/L	902	Standard
	Co	59	209564.0	0.3	**25.5696**	0.025	0.1	ug/L	262	Standard
	Ni	60	59639.5	0.6	**26.3110**	0.073	0.3	ug/L	371	Standard
	Cu	65	58354.2	1.2	**26.2421**	0.236	0.9	ug/L	106	Standard
	Zn	66	35510.6	0.8	**26.8274**	0.127	0.5	ug/L	398	Standard
>	**Ge**	72	538233.9	0.4				ug/L	535147	Standard
	As	75	33844.9	1.4	**25.1769**	0.299	1.2	ug/L	-43	Standard
	Se	82	3497.5	1.2	**25.5605**	0.204	0.8	ug/L	14	Standard
	Se-1	77	17979.3	2.3	**197.8649**	5.115	2.6	ug/L	65	Standard
>	**Ga**	71	533.3	3.8				mg/L	97	Standard
	Rb	85	116.7	16.2				ug/L	15	Standard
	Y	89	475379.4	0.9				ug/L	465704	Standard
>	**Rh**	103	73.3	15.7				ug/L	10	Standard
	Mo	98	117.3	1.7	**0.0504**	0.001	2.0	ug/L	9	Standard
	Ag	107	196226.5	0.5	**26.3032**	0.390	1.5	ug/L	82	Standard
	Cd	111	59719.2	0.8	**25.0507**	0.363	1.4	mg/L	7	Standard
	Cd	114	142846.1	1.2	**24.8855**	0.615	2.5	ug/L	21	Standard
>	**In**	115	611695.2	1.3				ug/L	619035	Standard
	Sn	118	1348.4	18.1	**0.1062**	0.037	35.0	ug/L	508	Standard
	Sb	123	130294.2	0.5	**24.9051**	0.309	1.2	ug/L	86	Standard
	Ba	135	59084.0	0.8	**26.1372**	0.352	1.3	ug/L	79	Standard
	Ce	140	145.0	12.4				ug/L	68	Standard
>	**Tb**	159	1051581.5	1.7				ug/L	986982	Standard
	Ho	165	3.3	86.6				ug/L	10	Standard
	Tl	203	245132.2	1.0	**25.0319**	0.229	0.9	ug/L	13	Standard
	Tl	205	199766.7	0.8	**23.8798**	0.208	0.9	ug/L	10	Standard
	Pb	206	167820.3	0.1	**26.6612**	0.130	0.5	ug/L	264	Standard
	Pb	207	146254.2	0.5	**25.7104**	0.260	1.0	ug/L	227	Standard
	Pb	208	546991.8	0.5	**24.9321**	0.005	0.0	ug/L	868	Standard
	U	238	197816.1	1.2	**24.4178**	0.329	1.3	ug/L	8	Standard
>	**Bi**	209	580382.8	0.5				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	166.7	19.1	**0.1411**	0.034	24.0	mg/L	53	Standard
K	39	66.7	37.0	**0.0338**	0.042	125.4	mg/L	53	Standard
Ca	43	25.0	34.6	**-0.3097**	0.453	146.2	mg/L	28	Standard
Fe	54	238.6	14.6	**0.0384**	0.022	57.8	mg/L	181	Standard
Fe	57	386.7	7.1	**0.3279**	0.077	23.5	mg/L	257	Standard
> **Sc-1**	45	57107.4	1.6				mg/L	55220	Standard
Cl	35	50166.9	1.4				ug/L	35504	Standard
Kr	83	4.0	43.3				ug/L	2	Standard
Br	81	2546.9	4.7				ug/L	2040	Standard
P	31	28042.6	1.7				ug/L	20435	Standard
S	34	4057.2	1.9				ug/L	2430	Standard
Sr	88	80.0	43.8				ug/L	75	Standard
C	12	186.7	21.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	12.9	41.7				mg/L	9	Standard
Ho-1	165	3.3	86.6				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	2561.9	7.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		158.450	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.577	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.814	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	107.277	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cr 53 Upper, S, EEE	Cr	53	
Se-1 77 Upper, S, EEE	Se-1	77	

Sample ID: LCSS H1 WG574262-02
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Method 6020 - Summary Report

Sample ID: LCSS DP WG574262-03
Sample Date/Time: Thursday, June 30, 2016 14:11:08
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	114514.6	2.6				ug/L	74916	Standard
	Be	9	30086.5	2.3	**18.6673**	0.911	4.9	ug/L	10	Standard
	Al	27	129250.6	0.9	**0.4851**	0.012	2.4	ug/L	1822	Standard
	Sc	45	57239.6	2.3				ug/L	55220	Standard
	Ti	47	1106.0	4.7	**2.5727**	0.127	4.9	ug/L	34	Standard
	V	51	289939.1	2.5	**30.6971**	0.593	1.9	ug/L	1938	Standard
	Cr	52	264631.1	0.9	**27.9911**	0.161	0.6	ug/L	9522	Standard
	Cr	53	289850.1	4.7	**255.9465**	10.660	4.2	ug/L	395	Standard
	Mn	55	238961.9	1.3	**27.3127**	0.531	1.9	ug/L	902	Standard
	Co	59	201360.2	1.9	**24.3779**	0.587	2.4	ug/L	262	Standard
	Ni	60	58898.3	1.1	**25.7800**	0.411	1.6	ug/L	371	Standard
	Cu	65	56438.9	1.1	**25.1818**	0.356	1.4	ug/L	106	Standard
	Zn	66	35755.5	0.8	**26.8015**	0.156	0.6	ug/L	398	Standard
>	Ge	72	542467.4	0.7				ug/L	535147	Standard
	As	75	33447.4	0.4	**24.6888**	0.116	0.5	ug/L	-43	Standard
	Se	82	3346.9	2.1	**24.2654**	0.536	2.2	ug/L	14	Standard
	Se-1	77	17587.9	2.2	**192.0071**	3.086	1.6	ug/L	65	Standard
>	Ga	71	565.0	4.9				mg/L	97	Standard
	Rb	85	913.4	4.6				ug/L	15	Standard
	Y	89	475199.5	1.5				ug/L	465704	Standard
>	Rh	103	48.3	11.9				ug/L	10	Standard
	Mo	98	76.0	14.5	**0.0371**	0.003	9.2	ug/L	9	Standard
	Ag	107	188124.0	0.2	**25.2909**	0.357	1.4	ug/L	82	Standard
	Cd	111	57273.6	1.5	**24.0990**	0.674	2.8	mg/L	7	Standard
	Cd	114	134913.9	4.3	**23.5802**	1.336	5.7	ug/L	21	Standard
>	In	115	609922.1	1.6				ug/L	619035	Standard
	Sn	118	1498.4	2.2	**0.1303**	0.003	2.6	ug/L	508	Standard
	Sb	123	125319.3	0.3	**24.0264**	0.455	1.9	ug/L	86	Standard
	Ba	135	58846.4	1.1	**26.1123**	0.678	2.6	ug/L	79	Standard
	Ce	140	3812.1	2.8				ug/L	68	Standard
>	Tb	159	1052434.7	0.3				ug/L	986982	Standard
	Ho	165	50.0	17.3				ug/L	10	Standard
	Tl	203	234636.2	0.2	**24.0570**	0.089	0.4	ug/L	13	Standard
	Tl	205	196194.2	2.2	**23.5474**	0.544	2.3	ug/L	10	Standard
	Pb	206	161998.1	0.3	**25.8385**	0.086	0.3	ug/L	264	Standard
	Pb	207	140338.3	0.2	**24.7681**	0.109	0.4	ug/L	227	Standard
	Pb	208	529789.6	0.6	**24.2446**	0.181	0.7	ug/L	868	Standard
	U	238	192680.1	0.7	**23.8795**	0.155	0.6	ug/L	8	Standard
>	Bi	209	578052.1	0.4				ug/L	541014	Standard

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Na	23	3.3	86.6	**18.3214**	15.864	86.6	mg/L	2	Standard
Mg	24	131.7	13.3	**0.1041**	0.020	19.5	mg/L	53	Standard
K	39	91.7	6.3	**0.0743**	0.013	17.0	mg/L	53	Standard
Ca	43	28.3	10.2	**-0.1281**	0.135	105.5	mg/L	28	Standard
Fe	54	380.9	6.7	**0.1319**	0.022	16.6	mg/L	181	Standard
Fe	57	421.7	3.0	**0.4155**	0.056	13.5	mg/L	257	Standard
> **Sc-1**	45	57239.6	2.3				mg/L	55220	Standard
Cl	35	49730.2	1.6				ug/L	35504	Standard
Kr	83	4.3	48.0				ug/L	2	Standard
Br	81	2426.9	6.4				ug/L	2040	Standard
P	31	26623.4	1.6				ug/L	20435	Standard
S	34	3945.5	4.4				ug/L	2430	Standard
Sr	88	90.0	27.8				ug/L	75	Standard
C	12	146.7	35.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	107.4	41.5				mg/L	9	Standard
Ho-1	165	50.0	17.3				mg/L	10	Standard
Er	166	53.3	57.3				mg/L	23	Standard
I	127	2481.9	7.5				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		152.857	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.368	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.528	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	106.846	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cr 53 Upper, S, EEE	Cr	53	
Se-1 77 Upper, S, EEE	Se-1	77	

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Method 6020 - Summary Report

Sample ID: L1606129101
Sample Date/Time: Thursday, June 30, 2016 14:14:19
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	136791.5	2.0				ug/L	74916	Standard
	Be	9	410.0	7.3	**0.2095**	0.020	9.4	ug/L	10	Standard
	Al	27	3957239.7	0.8	**12.4898**	0.265	2.1	ug/L	1822	Standard
	Sc	45	64274.4	0.7				ug/L	55220	Standard
	Ti	47	37116.7	1.5	**82.1121**	2.399	2.9	ug/L	34	Standard
	V	51	159473.8	6.8	**15.5386**	0.866	5.6	ug/L	1938	Standard
	Cr	52	194818.3	1.3	**18.7600**	0.052	0.3	ug/L	9522	Standard
	Cr	53	485561.2	9.7	**397.1547**	32.903	8.3	ug/L	395	Standard
	Mn	55	4685341.6	1.1	**497.9063**	5.101	1.0	ug/L	902	Standard
	Co	59	14989.7	0.8	**1.6600**	0.023	1.4	ug/L	262	Standard
	Ni	60	22506.0	2.0	**9.0310**	0.065	0.7	ug/L	371	Standard
	Cu	65	1154642.9	0.3	**478.3618**	6.685	1.4	ug/L	106	Standard
	Zn	66	719355.1	0.7	**505.7123**	7.702	1.5	ug/L	398	Standard
>	**Ge**	72	585562.6	1.5				ug/L	535147	Standard
	As	75	27055.7	0.9	**18.5158**	0.109	0.6	ug/L	-43	Standard
	Se	82	499.7	4.6	**3.2713**	0.105	3.2	ug/L	14	Standard
	Se-1	77	28362.9	7.1	**286.9992**	16.378	5.7	ug/L	65	Standard
>	**Ga**	71	48631.3	1.2				mg/L	97	Standard
	Rb	85	34325.5	2.8				ug/L	15	Standard
	Y	89	546871.9	2.0				ug/L	465704	Standard
>	**Rh**	103	260.0	20.4				ug/L	10	Standard
	Mo	98	23134.5	1.9	**7.2534**	0.176	2.4	ug/L	9	Standard
	Ag	107	13335.2	0.3	**1.7191**	0.035	2.0	ug/L	82	Standard
	Cd	111	1545.2	1.1	**0.6331**	0.012	1.9	mg/L	7	Standard
	Cd	114	4005.6	5.5	**0.6822**	0.045	6.6	ug/L	21	Standard
>	**In**	115	634028.9	1.9				ug/L	619035	Standard
	Sn	118	103292.6	1.9	**15.3936**	0.108	0.7	ug/L	508	Standard
	Sb	123	23726.3	0.7	**4.3794**	0.067	1.5	ug/L	86	Standard
	Ba	135	1097968.8	1.1	**468.9492**	5.140	1.1	ug/L	79	Standard
	Ce	140	189814.9	0.4				ug/L	68	Standard
>	**Tb**	159	1115555.5	1.1				ug/L	986982	Standard
	Ho	165	3177.0	3.1				ug/L	10	Standard
	Tl	203	398.0	13.3	**0.0298**	0.003	11.3	ug/L	13	Standard
	Tl	205	275.0	1.8	**0.0269**	0.000	1.3	ug/L	10	Standard
	Pb	206	135768.6	0.4	**12.6181**	0.185	1.5	ug/L	264	Standard
	Pb	207	111855.0	0.8	**11.5025**	0.175	1.5	ug/L	227	Standard
	Pb	208	420883.1	1.5	**11.2180**	0.045	0.4	ug/L	868	Standard
	U	238	83413.0	0.8	**6.0384**	0.067	1.1	ug/L	8	Standard
>	**Bi**	209	990639.1	1.2				ug/L	541014	Standard

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Na	23	3.3	86.6	**16.0553**	13.900	86.6	mg/L	2	Standard
Mg	24	1075.0	2.8	**0.9719**	0.023	2.3	mg/L	53	Standard
K	39	608.3	6.4	**0.8109**	0.056	6.9	mg/L	53	Standard
Ca	43	246.7	25.8	**10.3407**	3.184	30.8	mg/L	28	Standard
Fe	54	11770.2	2.4	**6.7715**	0.174	2.6	mg/L	181	Standard
Fe	57	3402.0	3.7	**7.0779**	0.244	3.5	mg/L	257	Standard
> **Sc-1**	45	64274.4	0.7				mg/L	55220	Standard
Cl	35	50261.9	0.4				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	6027.9	5.6				ug/L	2040	Standard
P	31	27798.8	3.8				ug/L	20435	Standard
S	34	3652.1	2.9				ug/L	2430	Standard
Sr	88	426.7	4.9				ug/L	75	Standard
C	12	2326.8	12.0				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	1986.8	9.0				mg/L	7	Standard
Dy	164	5283.4	7.8				mg/L	9	Standard
Ho-1	165	3177.0	3.1				mg/L	10	Standard
Er	166	3080.3	6.2				mg/L	23	Standard
I	127	363370.9	6.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		182.592	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.421	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.422	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	183.108	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

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Cu 65 Upper, S, EEE	Cu	65	
Zn 66 Upper, S, EEE	Zn	66	
Se-1 77 Upper, S, EEE	Se-1	77	
Ba 135 Upper, S, EEE	Ba	135	
Bi 209 Int Std for sample	Bi	209	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606129101PS WG574807-01
Sample Date/Time: Thursday, June 30, 2016 14:17:31
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	137356.6	1.7				ug/L	74916	Standard
	Be	9	73022.2	1.5	**37.7466**	0.373	1.0	ug/L	10	Standard
	Al	27	3943616.7	1.3	**12.3930**	0.084	0.7	ug/L	1822	Standard
	Sc	45	65189.9	0.9				ug/L	55220	Standard
	Ti	47	36612.5	0.8	**81.3955**	1.449	1.8	ug/L	34	Standard
	V	51	693082.3	3.3	**68.5607**	1.598	2.3	ug/L	1938	Standard
	Cr	52	704324.1	2.0	**70.9025**	1.024	1.4	ug/L	9522	Standard
	Cr	53	593558.0	2.1	**488.4612**	9.661	2.0	ug/L	395	Standard
	Mn	55	5186923.2	0.6	**554.0487**	8.324	1.5	ug/L	902	Standard
	Co	59	457572.6	0.9	**51.6104**	1.113	2.2	ug/L	262	Standard
	Ni	60	146331.3	1.2	**59.8276**	0.645	1.1	ug/L	371	Standard
	Cu	65	1261675.7	0.8	**525.3316**	5.515	1.0	ug/L	106	Standard
	Zn	66	790446.1	0.9	**558.4915**	2.109	0.4	ug/L	398	Standard
>	Ge	72	582600.4	1.2				ug/L	535147	Standard
	As	75	100050.5	1.0	**68.6729**	1.245	1.8	ug/L	-43	Standard
	Se	82	8037.2	0.3	**54.3795**	0.650	1.2	ug/L	14	Standard
	Se-1	77	34422.7	1.2	**350.4177**	3.188	0.9	ug/L	65	Standard
>	Ga	71	48439.0	1.5				mg/L	97	Standard
	Rb	85	34302.1	0.7				ug/L	15	Standard
	Y	89	560244.3	1.3				ug/L	465704	Standard
>	Rh	103	265.0	6.8				ug/L	10	Standard
	Mo	98	23546.3	1.5	**7.2772**	0.183	2.5	ug/L	9	Standard
	Ag	107	402679.1	0.9	**51.3383**	0.793	1.5	ug/L	82	Standard
	Cd	111	124289.9	0.8	**49.5788**	1.072	2.2	mg/L	7	Standard
	Cd	114	296329.0	2.2	**49.0902**	1.678	3.4	ug/L	21	Standard
>	In	115	643202.9	1.3				ug/L	619035	Standard
	Sn	118	103962.4	3.2	**15.2770**	0.682	4.5	ug/L	508	Standard
	Sb	123	282944.1	1.2	**51.4255**	0.352	0.7	ug/L	86	Standard
	Ba	135	1219389.4	0.7	**513.4112**	10.544	2.1	ug/L	79	Standard
	Ce	140	188144.4	1.0				ug/L	68	Standard
>	Tb	159	1119010.8	0.9				ug/L	986982	Standard
	Ho	165	3330.4	3.1				ug/L	10	Standard
	Tl	203	501006.2	0.8	**29.6691**	0.152	0.5	ug/L	13	Standard
	Tl	205	410582.2	0.7	**28.4622**	0.185	0.7	ug/L	10	Standard
	Pb	206	478829.8	0.2	**44.1422**	0.371	0.8	ug/L	264	Standard
	Pb	207	409096.7	0.2	**41.7280**	0.339	0.8	ug/L	227	Standard
	Pb	208	1506380.0	0.6	**39.8439**	0.360	0.9	ug/L	868	Standard
	U	238	493440.1	1.0	**35.3203**	0.414	1.2	ug/L	8	Standard
>	Bi	209	1000776.7	1.0				ug/L	541014	Standard

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Na	23	1.7	173.2	**7.9268**	13.721	173.1	mg/L	2	Standard
Mg	24	1058.4	10.0	**0.9421**	0.092	9.7	mg/L	53	Standard
K	39	655.0	4.0	**0.8658**	0.046	5.3	mg/L	53	Standard
Ca	43	301.7	12.7	**12.8093**	1.958	15.3	mg/L	28	Standard
Fe	54	12093.5	1.4	**6.8610**	0.073	1.1	mg/L	181	Standard
Fe	57	3442.1	2.4	**7.0600**	0.173	2.4	mg/L	257	Standard
> **Sc-1**	45	65189.9	0.9				mg/L	55220	Standard
Cl	35	50684.0	1.4				ug/L	35504	Standard
Kr	83	4.7	12.4				ug/L	2	Standard
Br	81	6251.3	6.5				ug/L	2040	Standard
P	31	28184.5	3.4				ug/L	20435	Standard
S	34	3433.7	8.7				ug/L	2430	Standard
Sr	88	411.7	1.4				ug/L	75	Standard
C	12	2223.5	8.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	2036.8	4.9				mg/L	7	Standard
Dy	164	5113.6	4.0				mg/L	9	Standard
Ho-1	165	3330.4	3.1				mg/L	10	Standard
Er	166	3213.7	9.7				mg/L	23	Standard
I	127	366302.3	5.6				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		183.346	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		108.867	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.904
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	184.982
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

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Cu 65 Upper, S, EEE	Cu	65	
Zn 66 Upper, S, EEE	Zn	66	
Se-1 77 Upper, S, EEE	Se-1	77	
Ba 135 Upper, S, EEE	Ba	135	
Bi 209 Int Std for sample	Bi	209	Rerun sample

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606129101SDL WG574807-02
Sample Date/Time: Thursday, June 30, 2016 14:20:42
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84778.3	2.6				ug/L	74916	Standard
	Be	9	85.0	20.4	**0.0674**	0.013	19.8	ug/L	10	Standard
	Al	27	784608.7	4.3	**3.9933**	0.151	3.8	ug/L	1822	Standard
	Sc	45	56118.8	3.1				ug/L	55220	Standard
	Ti	47	7615.9	4.4	**18.3302**	0.823	4.5	ug/L	34	Standard
	V	51	41825.9	2.6	**4.3105**	0.135	3.1	ug/L	1938	Standard
	Cr	52	46751.4	2.9	**4.1463**	0.146	3.5	ug/L	9522	Standard
	Cr	53	151049.7	3.3	**134.6990**	4.336	3.2	ug/L	395	Standard
	Mn	55	1013716.5	2.5	**117.4885**	2.767	2.4	ug/L	902	Standard
	Co	59	3251.0	2.2	**0.3755**	0.009	2.4	ug/L	262	Standard
	Ni	60	5095.2	1.9	**2.1218**	0.025	1.2	ug/L	371	Standard
	Cu	65	253476.6	2.6	**114.5518**	2.601	2.3	ug/L	106	Standard
	Zn	66	171185.0	2.4	**131.0753**	3.077	2.3	ug/L	398	Standard
>	**Ge**	72	536506.8	0.7				ug/L	535147	Standard
	As	75	5955.2	2.7	**4.4894**	0.086	1.9	ug/L	-43	Standard
	Se	82	125.7	8.1	**0.8282**	0.081	9.7	ug/L	14	Standard
	Se-1	77	6593.1	2.1	**72.4177**	1.202	1.7	ug/L	65	Standard
>	**Ga**	71	10615.4	4.2				mg/L	97	Standard
	Rb	85	7655.3	7.1				ug/L	15	Standard
	Y	89	475904.2	2.9				ug/L	465704	Standard
>	**Rh**	103	76.7	22.9				ug/L	10	Standard
	Mo	98	5094.8	3.1	**1.6733**	0.029	1.8	ug/L	9	Standard
	Ag	107	2964.0	1.4	**0.3933**	0.002	0.5	ug/L	82	Standard
	Cd	111	386.8	5.4	**0.1708**	0.006	3.4	mg/L	7	Standard
	Cd	114	995.4	1.9	**0.1832**	0.006	3.0	ug/L	21	Standard
>	**In**	115	608564.8	1.9				ug/L	619035	Standard
	Sn	118	22663.6	0.3	**3.4400**	0.079	2.3	ug/L	508	Standard
	Sb	123	6417.2	8.6	**1.2360**	0.085	6.9	ug/L	86	Standard
	Ba	135	241358.8	2.2	**107.3691**	0.797	0.7	ug/L	79	Standard
	Ce	140	40357.0	2.8				ug/L	68	Standard
>	**Tb**	159	999005.0	0.9				ug/L	986982	Standard
	Ho	165	710.0	6.7				ug/L	10	Standard
	Tl	203	184.0	3.8	**0.0230**	0.001	4.1	ug/L	13	Standard
	Tl	205	153.3	5.0	**0.0243**	0.001	5.1	ug/L	10	Standard
	Pb	206	28820.1	1.7	**4.1128**	0.036	0.9	ug/L	264	Standard
	Pb	207	23942.6	2.0	**3.7816**	0.020	0.5	ug/L	227	Standard
	Pb	208	95916.8	3.1	**3.9247**	0.050	1.3	ug/L	868	Standard
	U	238	17748.4	3.2	**1.9900**	0.014	0.7	ug/L	8	Standard
>	**Bi**	209	641212.3	2.5				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.0341**	15.639	173.1	mg/L	2	Standard
Mg	24	218.3	8.0	**0.1994**	0.013	6.7	mg/L	53	Standard
K	39	170.0	17.6	**0.2082**	0.051	24.5	mg/L	53	Standard
Ca	43	78.3	9.8	**2.6961**	0.479	17.8	mg/L	28	Standard
Fe	54	2573.4	1.9	**1.6074**	0.052	3.2	mg/L	181	Standard
Fe	57	951.7	4.5	**1.8193**	0.139	7.6	mg/L	257	Standard
> **Sc-1**	45	56118.8	3.1				mg/L	55220	Standard
Cl	35	41388.5	2.2				ug/L	35504	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	2593.6	6.0				ug/L	2040	Standard
P	31	11646.1	0.6				ug/L	20435	Standard
S	34	2718.6	6.0				ug/L	2430	Standard
Sr	88	143.3	23.2				ug/L	75	Standard
C	12	423.3	13.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	493.3	9.6				mg/L	7	Standard
Dy	164	1023.2	11.7				mg/L	9	Standard
Ho-1	165	710.0	6.7				mg/L	10	Standard
Er	166	630.0	11.4				mg/L	23	Standard
I	127	124802.9	5.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.164	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.254	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.309
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	118.520
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	
Cu 65 Upper, S, EEE	Cu	65	

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Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606129101SDL WG574807-02
Sample Date/Time: Thursday, June 30, 2016 14:23:54
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63330.4	1.3				ug/L	74916	Standard
	Be	9	35.0	28.6	**0.0356**	0.011	31.3	ug/L	10	Standard
	Al	27	99549.4	1.6	**0.6763**	0.005	0.8	ug/L	1822	Standard
	Sc	45	51612.8	1.8				ug/L	55220	Standard
	Ti	47	1006.4	1.1	**2.4929**	0.034	1.4	ug/L	34	Standard
	V	51	8517.7	5.7	**0.7710**	0.055	7.2	ug/L	1938	Standard
	Cr	52	12355.0	0.7	**0.4051**	0.008	2.1	ug/L	9522	Standard
	Cr	53	32528.3	6.5	**30.2729**	1.833	6.1	ug/L	395	Standard
	Mn	55	137959.7	1.8	**16.7647**	0.258	1.5	ug/L	902	Standard
	Co	59	665.0	5.6	**0.0631**	0.004	6.8	ug/L	262	Standard
	Ni	60	946.7	3.1	**0.2985**	0.014	4.6	ug/L	371	Standard
	Cu	65	35169.4	0.7	**16.7056**	0.215	1.3	ug/L	106	Standard
	Zn	66	25495.4	0.9	**20.2867**	0.240	1.2	ug/L	398	Standard
>	**Ge**	72	508951.4	0.6				ug/L	535147	Standard
	As	75	790.5	1.3	**0.6758**	0.007	1.1	ug/L	-43	Standard
	Se	82	35.4	16.1	**0.1781**	0.046	25.8	ug/L	14	Standard
	Se-1	77	1243.1	9.7	**13.9220**	1.318	9.5	ug/L	65	Standard
>	**Ga**	71	1495.1	12.1				mg/L	97	Standard
	Rb	85	1045.0	0.5				ug/L	15	Standard
	Y	89	449338.0	1.4				ug/L	465704	Standard
>	**Rh**	103	15.0	33.3				ug/L	10	Standard
	Mo	98	650.9	6.9	**0.2299**	0.012	5.0	ug/L	9	Standard
	Ag	107	513.3	5.0	**0.0649**	0.003	4.5	ug/L	82	Standard
	Cd	111	59.7	4.3	**0.0337**	0.001	3.8	mg/L	7	Standard
	Cd	114	106.1	28.4	**0.0279**	0.005	18.6	ug/L	21	Standard
>	**In**	115	593483.3	1.6				ug/L	619035	Standard
	Sn	118	2942.0	7.5	**0.3679**	0.029	7.8	ug/L	508	Standard
	Sb	123	1026.7	7.2	**0.2068**	0.018	8.5	ug/L	86	Standard
	Ba	135	32307.1	0.7	**14.7222**	0.195	1.3	ug/L	79	Standard
	Ce	140	5164.2	2.0				ug/L	68	Standard
>	**Tb**	159	921813.6	1.0				ug/L	986982	Standard
	Ho	165	81.7	12.7				ug/L	10	Standard
	Tl	203	97.7	17.9	**0.0168**	0.002	12.0	ug/L	13	Standard
	Tl	205	90.0	48.1	**0.0193**	0.005	28.2	ug/L	10	Standard
	Pb	206	4051.5	1.7	**0.6581**	0.018	2.8	ug/L	264	Standard
	Pb	207	3282.4	3.0	**0.5904**	0.011	1.9	ug/L	227	Standard
	Pb	208	13848.5	1.0	**0.6441**	0.002	0.3	ug/L	868	Standard
	U	238	2342.2	3.0	**0.3198**	0.007	2.1	ug/L	8	Standard
>	**Bi**	209	537647.1	1.3				ug/L	541014	Standard

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Na	23	1.7	173.2	**10.2440**	17.735	173.1	mg/L	2	Standard
Mg	24	55.0	24.1	**0.0296**	0.016	52.8	mg/L	53	Standard
K	39	53.3	35.5	**0.0206**	0.033	161.7	mg/L	53	Standard
Ca	43	36.7	39.4	**0.5519**	0.889	161.1	mg/L	28	Standard
Fe	54	390.8	3.9	**0.1663**	0.015	9.2	mg/L	181	Standard
Fe	57	398.3	18.2	**0.4684**	0.225	48.0	mg/L	257	Standard
> **Sc-1**	45	51612.8	1.8				mg/L	55220	Standard
Cl	35	38530.3	1.2				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1890.1	1.6				ug/L	2040	Standard
P	31	7296.8	0.9				ug/L	20435	Standard
S	34	2378.5	3.4				ug/L	2430	Standard
Sr	88	105.0	20.8				ug/L	75	Standard
C	12	113.3	5.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	93.3	12.4				mg/L	7	Standard
Dy	164	131.2	34.9				mg/L	9	Standard
Ho-1	165	81.7	12.7				mg/L	10	Standard
Er	166	113.3	18.4				mg/L	23	Standard
I	127	52358.7	3.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		84.535	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.105	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.872
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.378
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 14:27:07
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68343.8	2.4				ug/L	74916	Standard
	Be	9	56163.9	2.0	**58.3572**	1.048	1.8	ug/L	10	Standard
	Al	27	8830999.9	0.8	**55.7964**	1.064	1.9	ug/L	1822	Standard
	Sc	45	58071.1	2.8				ug/L	55220	Standard
	Ti	47	45017.8	1.7	**105.7692**	1.704	1.6	ug/L	34	Standard
	V	51	497045.5	1.8	**51.9188**	0.868	1.7	ug/L	1938	Standard
	Cr	52	495709.7	1.9	**52.4701**	1.037	2.0	ug/L	9522	Standard
	Cr	53	70055.1	4.3	**60.5778**	2.429	4.0	ug/L	395	Standard
	Mn	55	462411.6	0.5	**52.0973**	0.505	1.0	ug/L	902	Standard
	Co	59	424961.0	1.2	**50.6465**	0.859	1.7	ug/L	262	Standard
	Ni	60	121622.6	1.9	**52.5260**	0.778	1.5	ug/L	371	Standard
	Cu	65	118686.2	2.0	**52.1658**	0.919	1.8	ug/L	106	Standard
	Zn	66	69781.7	0.6	**51.7876**	0.302	0.6	ug/L	398	Standard
>	Ge	72	551326.3	1.2				ug/L	535147	Standard
	As	75	70449.1	0.9	**51.1091**	0.602	1.2	ug/L	-43	Standard
	Se	82	7143.6	1.1	**51.0674**	0.624	1.2	ug/L	14	Standard
	Se-1	77	5368.0	2.2	**57.2636**	1.497	2.6	ug/L	65	Standard
>	Ga	71	118.3	2.4				mg/L	97	Standard
	Rb	85	1088.4	7.6				ug/L	15	Standard
	Y	89	480107.6	2.5				ug/L	465704	Standard
>	Rh	103	30.0	72.6				ug/L	10	Standard
	Mo	98	318527.8	2.0	**98.2098**	1.420	1.4	ug/L	9	Standard
	Ag	107	387998.0	1.7	**49.4315**	0.536	1.1	ug/L	82	Standard
	Cd	111	126141.1	1.3	**50.2785**	0.366	0.7	mg/L	7	Standard
	Cd	114	307281.4	1.2	**50.8610**	0.443	0.9	ug/L	21	Standard
>	In	115	643557.7	0.6				ug/L	619035	Standard
	Sn	118	339017.2	3.5	**50.0007**	1.537	3.1	ug/L	508	Standard
	Sb	123	274626.2	1.2	**49.8837**	0.350	0.7	ug/L	86	Standard
	Ba	135	117839.2	0.8	**49.5604**	0.140	0.3	ug/L	79	Standard
	Ce	140	300.0	6.7				ug/L	68	Standard
>	Tb	159	984962.7	1.4				ug/L	986982	Standard
	Ho	165	13.3	94.4				ug/L	10	Standard
	Tl	203	472528.9	1.5	**51.1647**	0.526	1.0	ug/L	13	Standard
	Tl	205	414817.5	1.4	**52.5782**	0.784	1.5	ug/L	10	Standard
	Pb	206	301319.0	1.2	**50.7986**	0.331	0.7	ug/L	264	Standard
	Pb	207	273907.5	1.1	**51.0948**	0.336	0.7	ug/L	227	Standard
	Pb	208	1090776.5	0.6	**52.7697**	0.252	0.5	ug/L	868	Standard
	U	238	393854.7	0.3	**51.5487**	0.145	0.3	ug/L	8	Standard
>	Bi	209	547266.1	0.6				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4749.1	4.8	**4.8851**	0.096	2.0	mg/L	53	Standard
K	39	2540.2	4.0	**4.0230**	0.115	2.8	mg/L	53	Standard
Ca	43	111.7	38.6	**4.3113**	2.199	51.0	mg/L	28	Standard
Fe	54	7412.1	3.0	**4.6841**	0.099	2.1	mg/L	181	Standard
Fe	57	2123.5	3.1	**4.6907**	0.294	6.3	mg/L	257	Standard
> **Sc-1**	45	58071.1	2.8				mg/L	55220	Standard
Cl	35	44907.8	1.0				ug/L	35504	Standard
Kr	83	2.3	99.0				ug/L	2	Standard
Br	81	2173.5	4.5				ug/L	2040	Standard
P	31	23653.5	2.5				ug/L	20435	Standard
S	34	3143.7	3.9				ug/L	2430	Standard
Sr	88	71.7	31.5				ug/L	75	Standard
C	12	93.3	27.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	12.7	40.1				mg/L	9	Standard
Ho-1	165	13.3	94.4				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	13696.2	3.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	116.714		
Al	27	111.593		
Sc	45			
Ti	47	105.769		
V	51	103.838		
Cr	52	104.940		
Cr	53			
Mn	55	104.195		
Co	59	101.293		
Ni	60	105.052		
Cu	65	104.332		
Zn	66	103.575		
> Ge	72		103.023	
As	75	102.218		
Se	82	102.135		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.210		
Ag	107	98.863		
Cd	111	100.557		
Cd	114			
> In	115		103.961	
Sn	118	100.001		
Sb	123	99.767		
Ba	135	99.121		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	102.329		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.539		
U	238	103.097		
> Bi	209		101.156	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 14:30:19
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68849.4	1.0				ug/L	74916	Standard
	Be	9	15.0	57.7	**0.0118**	0.009	74.9	ug/L	10	Standard
	Al	27	2420.2	16.4	**0.0129**	0.003	20.5	ug/L	1822	Standard
	Sc	45	57243.0	2.9				ug/L	55220	Standard
	Ti	47	47.3	29.6	**0.0406**	0.033	81.0	ug/L	34	Standard
	V	51	2278.3	14.7	**0.0415**	0.036	86.5	ug/L	1938	Standard
	Cr	52	8862.6	0.5	**-0.0873**	0.009	10.2	ug/L	9522	Standard
	Cr	53	4424.0	2.9	**3.4446**	0.093	2.7	ug/L	395	Standard
	Mn	55	1178.0	6.8	**0.0272**	0.008	31.0	ug/L	902	Standard
	Co	59	321.3	5.0	**0.0153**	0.002	11.4	ug/L	262	Standard
	Ni	60	306.3	4.9	**-0.0136**	0.006	43.3	ug/L	371	Standard
	Cu	65	168.7	6.5	**0.0151**	0.005	30.0	ug/L	106	Standard
	Zn	66	485.3	2.1	**0.0142**	0.006	41.5	ug/L	398	Standard
>	**Ge**	72	553907.6	0.5				ug/L	535147	Standard
	As	75	-16.9	53.1	**0.0430**	0.006	15.1	ug/L	-43	Standard
	Se	82	16.0	5.1	**0.0173**	0.006	36.6	ug/L	14	Standard
	Se-1	77	229.0	12.9	**1.8737**	0.305	16.3	ug/L	65	Standard
>	**Ga**	71	66.7	21.7				mg/L	97	Standard
	Rb	85	46.7	27.0				ug/L	15	Standard
	Y	89	490579.9	1.4				ug/L	465704	Standard
>	**Rh**	103	11.7	65.5				ug/L	10	Standard
	Mo	98	229.1	14.3	**0.0822**	0.010	12.1	ug/L	9	Standard
	Ag	107	158.3	1.6	**0.0139**	0.000	3.0	ug/L	82	Standard
	Cd	111	11.9	34.7	**0.0126**	0.002	12.8	mg/L	7	Standard
	Cd	114	37.6	66.1	**0.0151**	0.004	26.8	ug/L	21	Standard
>	**In**	115	650758.6	0.5				ug/L	619035	Standard
	Sn	118	1208.4	21.8	**0.0732**	0.039	52.8	ug/L	508	Standard
	Sb	123	885.2	32.8	**0.1635**	0.052	32.0	ug/L	86	Standard
	Ba	135	75.0	19.2	**0.0116**	0.006	50.8	ug/L	79	Standard
	Ce	140	85.0	40.8				ug/L	68	Standard
>	**Tb**	159	989894.2	0.6				ug/L	986982	Standard
	Ho	165	16.7	45.8				ug/L	10	Standard
	Tl	203	140.0	14.3	**0.0209**	0.002	10.4	ug/L	13	Standard
	Tl	205	108.3	13.3	**0.0212**	0.002	8.1	ug/L	10	Standard
	Pb	206	351.7	5.1	**0.0207**	0.003	15.3	ug/L	264	Standard
	Pb	207	323.0	8.8	**0.0262**	0.005	20.8	ug/L	227	Standard
	Pb	208	1309.7	7.2	**0.0242**	0.005	20.1	ug/L	868	Standard
	U	238	69.0	10.9	**0.0168**	0.001	6.1	ug/L	8	Standard
>	**Bi**	209	555329.7	0.6				ug/L	541014	Standard

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Na	23	1.7	173.2	**8.8680**	15.351	173.1	mg/L	2	Standard
Mg	24	30.0	16.7	**-0.0031**	0.005	148.3	mg/L	53	Standard
K	39	38.3	27.2	**-0.0129**	0.019	148.3	mg/L	53	Standard
Ca	43	31.7	24.1	**0.0538**	0.398	740.6	mg/L	28	Standard
Fe	54	182.6	11.1	**0.0013**	0.013	999.6	mg/L	181	Standard
Fe	57	265.0	1.9	**0.0147**	0.025	169.8	mg/L	257	Standard
Sc-1	45	57243.0	2.9				mg/L	55220	Standard
Cl	35	44938.6	1.8				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1873.4	1.9				ug/L	2040	Standard
P	31	23655.1	0.6				ug/L	20435	Standard
S	34	2910.3	4.5				ug/L	2430	Standard
Sr	88	90.0	28.9				ug/L	75	Standard
C	12	113.3	35.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	508.4	17.1				mg/L	9	Standard
Ho-1	165	16.7	45.8				mg/L	10	Standard
Er	166	103.3	39.1				mg/L	23	Standard
I	127	12196.6	4.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.506	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.125
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.646
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606122903 WG573868-02
Sample Date/Time: Thursday, June 30, 2016 14:36:30
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 1000
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71002.7	1.3				ug/L	74916	Standard
	Be	9	110.0	13.6	**0.1065**	0.016	15.4	ug/L	10	Standard
	Al	27	60587.6	0.3	**0.3661**	0.006	1.7	ug/L	1822	Standard
	Sc	45	57154.3	2.4				ug/L	55220	Standard
	Ti	47	49.7	4.6	**0.0452**	0.006	12.3	ug/L	34	Standard
	V	51	2081.7	41.8	**0.0190**	0.089	470.9	ug/L	1938	Standard
	Cr	52	346396.8	0.8	**35.8869**	0.159	0.4	ug/L	9522	Standard
	Cr	53	45784.1	2.4	**38.9623**	0.821	2.1	ug/L	395	Standard
	Mn	55	59947.8	3.6	**6.5779**	0.223	3.4	ug/L	902	Standard
	Co	59	915.7	3.6	**0.0850**	0.004	5.0	ug/L	262	Standard
	Ni	60	812.7	5.7	**0.2020**	0.021	10.2	ug/L	371	Standard
	Cu	65	1727.4	1.0	**0.6919**	0.010	1.5	ug/L	106	Standard
	Zn	66	13300.5	3.0	**9.4660**	0.258	2.7	ug/L	398	Standard
>	**Ge**	72	558242.0	0.4				ug/L	535147	Standard
	As	75	65.8	23.6	**0.1023**	0.011	11.0	ug/L	-43	Standard
	Se	82	32.9	6.0	**0.1355**	0.014	10.2	ug/L	14	Standard
	Se-1	77	178.0	8.3	**1.3130**	0.161	12.3	ug/L	65	Standard
>	**Ga**	71	481.7	9.6				mg/L	97	Standard
	Rb	85	121.7	24.8				ug/L	15	Standard
	Y	89	491956.7	1.3				ug/L	465704	Standard
>	**Rh**	103	28.3	10.2				ug/L	10	Standard
	Mo	98	708.5	1.9	**0.2258**	0.004	1.8	ug/L	9	Standard
	Ag	107	255.7	1.4	**0.0258**	0.000	1.8	ug/L	82	Standard
	Cd	111	186.7	8.9	**0.0806**	0.007	8.1	mg/L	7	Standard
	Cd	114	502.9	6.7	**0.0902**	0.005	6.0	ug/L	21	Standard
>	**In**	115	658594.5	0.1				ug/L	619035	Standard
	Sn	118	3992.2	4.0	**0.4732**	0.023	4.8	ug/L	508	Standard
	Sb	123	704.6	13.7	**0.1294**	0.017	13.2	ug/L	86	Standard
	Ba	135	280.0	7.2	**0.0955**	0.008	8.8	ug/L	79	Standard
	Ce	140	160.0	17.4				ug/L	68	Standard
>	**Tb**	159	987064.7	0.5				ug/L	986982	Standard
	Ho	165	13.3	114.6				ug/L	10	Standard
	Tl	203	732.7	2.9	**0.0833**	0.003	3.4	ug/L	13	Standard
	Tl	205	638.3	8.7	**0.0866**	0.007	8.2	ug/L	10	Standard
	Pb	206	3147.7	1.8	**0.4799**	0.013	2.6	ug/L	264	Standard
	Pb	207	2938.3	1.9	**0.5014**	0.008	1.6	ug/L	227	Standard
	Pb	208	11735.4	1.5	**0.5154**	0.012	2.3	ug/L	868	Standard
	U	238	27.7	44.9	**0.0114**	0.002	13.9	ug/L	8	Standard
>	**Bi**	209	561516.9	1.0				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	218.3	14.0	**0.1956**	0.034	17.5	mg/L	53	Standard
K	39	48.3	11.9	**0.0034**	0.011	334.1	mg/L	53	Standard
Ca	43	26.7	28.6	**-0.2176**	0.401	184.1	mg/L	28	Standard
Fe	54	154.6	2.8	**-0.0169**	0.005	31.7	mg/L	181	Standard
Fe	57	288.3	11.3	**0.0751**	0.082	108.7	mg/L	257	Standard
Sc-1	45	57154.3	2.4				mg/L	55220	Standard
Cl	35	44364.2	1.0				ug/L	35504	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	1986.8	12.1				ug/L	2040	Standard
P	31	23139.3	3.0				ug/L	20435	Standard
S	34	2735.2	5.6				ug/L	2430	Standard
Sr	88	70.0	28.6				ug/L	75	Standard
C	12	96.7	33.3				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	16.3	38.7				mg/L	9	Standard
Ho-1	165	13.3	114.6				mg/L	10	Standard
Er	166	6.7	173.2				mg/L	23	Standard
I	127	17933.9	2.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		94.776	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		104.316	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.391
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.790
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122903DP WG573868-07
Sample Date/Time: Thursday, June 30, 2016 14:39:42
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 1000
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70982.6	0.4				ug/L	74916	Standard
	Be	9	78.3	3.7	**0.0748**	0.003	3.9	ug/L	10	Standard
	Al	27	58663.4	0.8	**0.3545**	0.004	1.2	ug/L	1822	Standard
	Sc	45	54899.3	2.2				ug/L	55220	Standard
	Ti	47	42.0	20.3	**0.0291**	0.021	71.9	ug/L	34	Standard
	V	51	1986.2	67.7	**0.0123**	0.141	1143.9	ug/L	1938	Standard
	Cr	52	368969.5	1.4	**38.9458**	0.615	1.6	ug/L	9522	Standard
	Cr	53	47358.9	1.3	**40.9908**	0.314	0.8	ug/L	395	Standard
	Mn	55	2494.5	1.0	**0.1776**	0.003	2.0	ug/L	902	Standard
	Co	59	853.7	4.1	**0.0794**	0.004	5.4	ug/L	262	Standard
	Ni	60	516.0	2.0	**0.0787**	0.003	3.9	ug/L	371	Standard
	Cu	65	1366.4	1.5	**0.5448**	0.003	0.6	ug/L	106	Standard
	Zn	66	1813.8	2.6	**1.0140**	0.049	4.9	ug/L	398	Standard
>	**Ge**	72	549160.2	1.0				ug/L	535147	Standard
	As	75	46.3	32.0	**0.0889**	0.011	12.0	ug/L	-43	Standard
	Se	82	26.7	16.3	**0.0953**	0.032	33.7	ug/L	14	Standard
	Se-1	77	149.3	11.4	**1.0347**	0.194	18.7	ug/L	65	Standard
>	**Ga**	71	50.0	30.0				mg/L	97	Standard
	Rb	85	33.3	48.2				ug/L	15	Standard
	Y	89	479449.5	0.7				ug/L	465704	Standard
>	**Rh**	103	15.0	57.7				ug/L	10	Standard
	Mo	98	48.2	16.0	**0.0272**	0.002	8.7	ug/L	9	Standard
	Ag	107	307.3	5.2	**0.0331**	0.002	6.4	ug/L	82	Standard
	Cd	111	175.3	12.3	**0.0777**	0.009	11.4	mg/L	7	Standard
	Cd	114	457.7	16.6	**0.0845**	0.012	14.3	ug/L	21	Standard
>	**In**	115	644130.8	0.8				ug/L	619035	Standard
	Sn	118	1141.7	10.3	**0.0651**	0.016	25.2	ug/L	508	Standard
	Sb	123	451.3	16.0	**0.0863**	0.012	14.5	ug/L	86	Standard
	Ba	135	215.0	11.9	**0.0707**	0.010	14.2	ug/L	79	Standard
	Ce	140	68.3	18.4				ug/L	68	Standard
>	**Tb**	159	972427.1	1.7				ug/L	986982	Standard
	Ho	165	20.0	0.0				ug/L	10	Standard
	Tl	203	724.0	1.3	**0.0829**	0.001	1.0	ug/L	13	Standard
	Tl	205	615.0	10.6	**0.0841**	0.007	8.9	ug/L	10	Standard
	Pb	206	746.7	2.4	**0.0858**	0.004	4.4	ug/L	264	Standard
	Pb	207	647.3	1.0	**0.0853**	0.002	2.5	ug/L	227	Standard
	Pb	208	2717.1	0.5	**0.0907**	0.001	1.6	ug/L	868	Standard
	U	238	17.7	21.4	**0.0102**	0.000	4.9	ug/L	8	Standard
>	**Bi**	209	557965.7	0.8				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.6831**	16.763	173.1	mg/L	2	Standard
Mg	24	153.3	12.3	**0.1335**	0.020	14.8	mg/L	53	Standard
K	39	50.0	10.0	**0.0093**	0.007	74.0	mg/L	53	Standard
Ca	43	20.0	25.0	**-0.5355**	0.280	52.3	mg/L	28	Standard
Fe	54	168.8	9.1	**-0.0030**	0.011	377.3	mg/L	181	Standard
Fe	57	223.3	12.9	**-0.0670**	0.085	126.8	mg/L	257	Standard
Sc-1	45	54899.3	2.2				mg/L	55220	Standard
Cl	35	43575.9	0.9				ug/L	35504	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	2043.5	8.3				ug/L	2040	Standard
P	31	21959.2	2.7				ug/L	20435	Standard
S	34	2773.6	3.8				ug/L	2430	Standard
Sr	88	75.0	48.1				ug/L	75	Standard
C	12	73.3	43.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	2.4	262.3				mg/L	9	Standard
Ho-1	165	20.0	0.0				mg/L	10	Standard
Er	166	20.0	86.6				mg/L	23	Standard
I	127	17311.6	2.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.749	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.619	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.054
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.133
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606122701
Sample Date/Time: Thursday, June 30, 2016 14:42:53
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 20
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64442.1	6.0				ug/L	74916	Standard
	Be	9	23.3	44.6	**0.0225**	0.013	55.8	ug/L	10	Standard
	Al	27	35175.8	1.1	**0.2340**	0.016	6.9	ug/L	1822	Standard
	Sc	45	50300.1	3.5				ug/L	55220	Standard
	Ti	47	56.7	10.6	**0.0742**	0.016	21.5	ug/L	34	Standard
	V	51	14543.2	1.3	**1.4556**	0.051	3.5	ug/L	1938	Standard
	Cr	52	16900.1	1.3	**0.9376**	0.092	9.8	ug/L	9522	Standard
	Cr	53	4118.9	6.8	**3.4933**	0.222	6.4	ug/L	395	Standard
	Mn	55	789.4	1.1	**-0.0086**	0.004	47.1	ug/L	902	Standard
	Co	59	369.0	1.5	**0.0249**	0.002	7.9	ug/L	262	Standard
	Ni	60	498.7	1.5	**0.0883**	0.007	7.9	ug/L	371	Standard
	Cu	65	272.3	6.6	**0.0713**	0.013	17.7	ug/L	106	Standard
	Zn	66	1142.7	4.6	**0.5789**	0.068	11.7	ug/L	398	Standard
>	**Ge**	72	509231.3	3.4				ug/L	535147	Standard
	As	75	106.3	53.1	**0.1395**	0.046	33.0	ug/L	-43	Standard
	Se	82	31.1	9.4	**0.1446**	0.027	18.8	ug/L	14	Standard
	Se-1	77	158.7	4.8	**1.2722**	0.136	10.7	ug/L	65	Standard
>	**Ga**	71	300.0	13.3				mg/L	97	Standard
	Rb	85	3572.1	5.2				ug/L	15	Standard
	Y	89	437515.1	1.9				ug/L	465704	Standard
>	**Rh**	103	71.7	10.7				ug/L	10	Standard
	Mo	98	198.8	4.5	**0.0792**	0.004	5.4	ug/L	9	Standard
	Ag	107	89.3	7.3	**0.0064**	0.001	17.9	ug/L	82	Standard
	Cd	111	8.3	13.6	**0.0115**	0.001	4.7	mg/L	7	Standard
	Cd	114	18.2	68.8	**0.0122**	0.002	18.7	ug/L	21	Standard
>	**In**	115	590604.5	2.1				ug/L	619035	Standard
	Sn	118	255.0	10.9	**-0.0623**	0.005	8.3	ug/L	508	Standard
	Sb	123	116.1	9.8	**0.0274**	0.003	9.8	ug/L	86	Standard
	Ba	135	15449.5	1.2	**7.0659**	0.187	2.7	ug/L	79	Standard
	Ce	140	106.7	7.2				ug/L	68	Standard
>	**Tb**	159	903950.3	1.9				ug/L	986982	Standard
	Ho	165	21.7	35.3				ug/L	10	Standard
	Tl	203	50.3	8.0	**0.0117**	0.000	3.4	ug/L	13	Standard
	Tl	205	38.3	45.8	**0.0127**	0.002	18.4	ug/L	10	Standard
	Pb	206	305.7	8.4	**0.0157**	0.004	23.6	ug/L	264	Standard
	Pb	207	250.0	2.2	**0.0152**	0.001	9.4	ug/L	227	Standard
	Pb	208	1046.3	3.9	**0.0142**	0.001	8.1	ug/L	868	Standard
	U	238	78.7	9.6	**0.0186**	0.001	6.5	ug/L	8	Standard
>	**Bi**	209	527486.6	1.9				ug/L	541014	Standard

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Na	23	1.7	173.2	**10.7038**	18.531	173.1	mg/L	2	Standard
Mg	24	1011.7	4.5	**1.1779**	0.093	7.9	mg/L	53	Standard
K	39	111.7	29.8	**0.1312**	0.056	42.9	mg/L	53	Standard
Ca	43	86.7	26.0	**3.6971**	1.306	35.3	mg/L	28	Standard
Fe	54	57.1	5.7	**-0.0760**	0.003	4.3	mg/L	181	Standard
Fe	57	325.0	12.3	**0.2811**	0.098	34.8	mg/L	257	Standard
Sc-1	45	50300.1	3.5				mg/L	55220	Standard
Cl	35	38597.1	1.2				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	3163.7	4.8				ug/L	2040	Standard
P	31	8620.8	3.4				ug/L	20435	Standard
S	34	2843.6	2.8				ug/L	2430	Standard
Sr	88	275.0	7.9				ug/L	75	Standard
C	12	80.0	25.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	7	Standard
Dy	164	15.9	34.8				mg/L	9	Standard
Ho-1	165	21.7	35.3				mg/L	10	Standard
Er	166	16.7	69.3				mg/L	23	Standard
I	127	41971.4	3.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		86.019	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.157	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.407
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.500
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122703
Sample Date/Time: Thursday, June 30, 2016 14:46:05
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 20
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63872.8	3.9				ug/L	74916	Standard
	Be	9	23.3	24.7	**0.0225**	0.007	31.7	ug/L	10	Standard
	Al	27	262731.8	0.7	**1.7750**	0.062	3.5	ug/L	1822	Standard
	Sc	45	50567.6	1.4				ug/L	55220	Standard
	Ti	47	69.3	15.9	**0.1109**	0.030	26.6	ug/L	34	Standard
	V	51	2022.9	3.1	**0.0391**	0.010	24.6	ug/L	1938	Standard
	Cr	52	7400.1	4.1	**-0.1526**	0.044	28.8	ug/L	9522	Standard
	Cr	53	2908.6	10.0	**2.4248**	0.310	12.8	ug/L	395	Standard
	Mn	55	46636.0	2.9	**5.7392**	0.181	3.2	ug/L	902	Standard
	Co	59	313.3	27.7	**0.0187**	0.012	62.9	ug/L	262	Standard
	Ni	60	333.7	4.3	**0.0149**	0.008	57.2	ug/L	371	Standard
	Cu	65	411.3	45.3	**0.1419**	0.091	63.9	ug/L	106	Standard
	Zn	66	1541.7	7.1	**0.9319**	0.091	9.7	ug/L	398	Standard
>	Ge	72	496662.3	1.1				ug/L	535147	Standard
	As	75	3.0	487.9	**0.0576**	0.012	20.3	ug/L	-43	Standard
	Se	82	30.5	8.2	**0.1453**	0.022	15.3	ug/L	14	Standard
	Se-1	77	151.7	4.4	**1.2325**	0.068	5.5	ug/L	65	Standard
>	Ga	71	56.7	43.5				mg/L	97	Standard
	Rb	85	436.7	11.5				ug/L	15	Standard
	Y	89	430441.7	1.9				ug/L	465704	Standard
>	Rh	103	13.3	57.3				ug/L	10	Standard
	Mo	98	41.9	29.5	**0.0266**	0.004	15.8	ug/L	9	Standard
	Ag	107	143.3	22.7	**0.0141**	0.005	33.0	ug/L	82	Standard
	Cd	111	32.9	51.0	**0.0224**	0.007	33.2	mg/L	7	Standard
	Cd	114	121.0	17.4	**0.0310**	0.004	12.5	ug/L	21	Standard
>	In	115	584144.8	1.3				ug/L	619035	Standard
	Sn	118	585.0	3.1	**-0.0082**	0.002	22.4	ug/L	508	Standard
	Sb	123	122.5	19.2	**0.0289**	0.005	16.2	ug/L	86	Standard
	Ba	135	13459.0	1.0	**6.2201**	0.123	2.0	ug/L	79	Standard
	Ce	140	33.3	70.9				ug/L	68	Standard
>	Tb	159	898212.6	0.3				ug/L	986982	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	141.3	39.5	**0.0219**	0.006	28.4	ug/L	13	Standard
	Tl	205	166.7	95.7	**0.0296**	0.021	70.6	ug/L	10	Standard
	Pb	206	307.3	15.5	**0.0162**	0.008	50.6	ug/L	264	Standard
	Pb	207	261.7	12.6	**0.0177**	0.006	35.9	ug/L	227	Standard
	Pb	208	1296.0	32.2	**0.0269**	0.021	77.0	ug/L	868	Standard
	U	238	118.7	114.1	**0.0240**	0.018	76.4	ug/L	8	Standard
>	Bi	209	525541.8	0.4				ug/L	541014	Standard

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Na	23	1.7	173.2	**10.0978**	17.481	173.1	mg/L	2	Standard
Mg	24	535.0	18.8	**0.6015**	0.115	19.1	mg/L	53	Standard
K	39	66.7	18.9	**0.0477**	0.025	51.7	mg/L	53	Standard
Ca	43	23.3	53.9	**-0.2274**	0.784	344.8	mg/L	28	Standard
Fe	54	255.7	31.1	**0.0710**	0.056	79.3	mg/L	181	Standard
Fe	57	321.7	7.0	**0.2673**	0.059	22.0	mg/L	257	Standard
Sc-1	45	50567.6	1.4				mg/L	55220	Standard
Cl	35	40072.9	1.5				ug/L	35504	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	3260.4	4.3				ug/L	2040	Standard
P	31	8352.3	6.8				ug/L	20435	Standard
S	34	2655.2	6.2				ug/L	2430	Standard
Sr	88	96.7	7.9				ug/L	75	Standard
C	12	113.3	18.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	6.0	193.9				mg/L	9	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	39451.3	3.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		85.259	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		92.809	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.364
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.140
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122705
Sample Date/Time: Thursday, June 30, 2016 14:49:17
Number of Replicates: 3
Autosampler Position: 227
Sample Description: 20
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63382.3	2.1				ug/L	74916	Standard
	Be	9	8.3	34.6	**0.0058**	0.003	58.5	ug/L	10	Standard
	Al	27	247230.8	0.5	**1.6820**	0.028	1.7	ug/L	1822	Standard
	Sc	45	49723.1	1.2				ug/L	55220	Standard
	Ti	47	51.0	13.6	**0.0595**	0.017	28.9	ug/L	34	Standard
	V	51	2118.9	4.8	**0.0438**	0.011	24.7	ug/L	1938	Standard
	Cr	52	7443.8	2.2	**-0.1708**	0.014	8.1	ug/L	9522	Standard
	Cr	53	2696.9	4.2	**2.1505**	0.105	4.9	ug/L	395	Standard
	Mn	55	42329.4	0.7	**5.0615**	0.004	0.1	ug/L	902	Standard
	Co	59	228.7	1.8	**0.0067**	0.000	7.3	ug/L	262	Standard
	Ni	60	308.3	7.9	**-0.0013**	0.011	847.7	ug/L	371	Standard
	Cu	65	124.0	4.3	**0.0002**	0.002	938.4	ug/L	106	Standard
	Zn	66	1239.4	3.7	**0.6545**	0.038	5.8	ug/L	398	Standard
>	**Ge**	72	509892.2	0.6				ug/L	535147	Standard
	As	75	-21.0	156.3	**0.0386**	0.026	66.7	ug/L	-43	Standard
	Se	82	22.8	3.9	**0.0799**	0.006	7.4	ug/L	14	Standard
	Se-1	77	129.3	5.0	**0.9258**	0.084	9.0	ug/L	65	Standard
>	**Ga**	71	36.7	43.8				mg/L	97	Standard
	Rb	85	353.3	8.3				ug/L	15	Standard
	Y	89	434937.9	2.2				ug/L	465704	Standard
>	**Rh**	103	18.3	78.7				ug/L	10	Standard
	Mo	98	13.3	4.9	**0.0169**	0.000	1.3	ug/L	9	Standard
	Ag	107	93.3	9.6	**0.0069**	0.001	17.6	ug/L	82	Standard
	Cd	111	5.6	41.0	**0.0104**	0.001	9.7	mg/L	7	Standard
	Cd	114	19.8	80.0	**0.0125**	0.003	23.0	ug/L	21	Standard
>	**In**	115	588399.0	0.2				ug/L	619035	Standard
	Sn	118	255.0	18.9	**-0.0622**	0.008	12.6	ug/L	508	Standard
	Sb	123	79.2	9.4	**0.0201**	0.002	7.5	ug/L	86	Standard
	Ba	135	12570.5	1.2	**5.7652**	0.070	1.2	ug/L	79	Standard
	Ce	140	25.0	34.6				ug/L	68	Standard
>	**Tb**	159	905028.5	0.8				ug/L	986982	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	44.3	15.4	**0.0110**	0.001	7.0	ug/L	13	Standard
	Tl	205	45.0	22.2	**0.0136**	0.001	9.7	ug/L	10	Standard
	Pb	206	333.3	5.0	**0.0203**	0.003	14.2	ug/L	264	Standard
	Pb	207	266.3	5.4	**0.0181**	0.003	14.7	ug/L	227	Standard
	Pb	208	1164.0	1.9	**0.0198**	0.001	6.0	ug/L	868	Standard
	U	238	8.7	24.0	**0.0091**	0.000	3.0	ug/L	8	Standard
>	**Bi**	209	530144.0	0.4				ug/L	541014	Standard

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Na	23	1.7	173.2	**10.3550**	17.927	173.1	mg/L	2	Standard
Mg	24	483.3	4.3	**0.5506**	0.030	5.5	mg/L	53	Standard
K	39	80.0	16.5	**0.0747**	0.024	32.2	mg/L	53	Standard
Ca	43	26.7	10.8	**0.0040**	0.203	5081.3	mg/L	28	Standard
Fe	54	226.1	14.7	**0.0524**	0.025	48.2	mg/L	181	Standard
Fe	57	310.0	11.3	**0.2484**	0.095	38.1	mg/L	257	Standard
Sc-1	45	49723.1	1.2				mg/L	55220	Standard
Cl	35	40435.9	0.5				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	3133.7	7.1				ug/L	2040	Standard
P	31	8177.2	1.9				ug/L	20435	Standard
S	34	2473.5	1.8				ug/L	2430	Standard
Sr	88	75.0	52.9				ug/L	75	Standard
C	12	90.0	44.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	2.7	221.0				mg/L	9	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	38071.1	2.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		84.604	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.281	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.051
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.991
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122706
Sample Date/Time: Thursday, June 30, 2016 14:52:28
Number of Replicates: 3
Autosampler Position: 228
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63995.1	4.9				ug/L	74916	Standard
	Be	9	25.0	20.0	**0.0243**	0.007	27.2	ug/L	10	Standard
	Al	27	1452158.4	1.3	**9.8063**	0.384	3.9	ug/L	1822	Standard
	Sc	45	49316.8	2.6				ug/L	55220	Standard
	Ti	47	38.0	22.8	**0.0277**	0.023	81.9	ug/L	34	Standard
	V	51	2307.6	6.8	**0.0683**	0.017	24.7	ug/L	1938	Standard
	Cr	52	7271.4	1.4	**-0.1808**	0.007	3.7	ug/L	9522	Standard
	Cr	53	3968.9	5.0	**3.3927**	0.215	6.3	ug/L	395	Standard
	Mn	55	91787.5	1.0	**11.2317**	0.163	1.5	ug/L	902	Standard
	Co	59	876.0	4.6	**0.0915**	0.006	6.4	ug/L	262	Standard
	Ni	60	474.7	3.4	**0.0793**	0.009	11.3	ug/L	371	Standard
	Cu	65	164.7	34.4	**0.0207**	0.028	135.8	ug/L	106	Standard
	Zn	66	988.0	6.5	**0.4611**	0.057	12.4	ug/L	398	Standard
>	**Ge**	72	503918.8	0.8				ug/L	535147	Standard
	As	75	46.2	85.3	**0.0918**	0.031	33.8	ug/L	-43	Standard
	Se	82	41.0	23.8	**0.2246**	0.078	34.8	ug/L	14	Standard
	Se-1	77	170.7	3.4	**1.4303**	0.053	3.7	ug/L	65	Standard
>	**Ga**	71	73.3	25.8				mg/L	97	Standard
	Rb	85	820.0	1.8				ug/L	15	Standard
	Y	89	428133.2	0.9				ug/L	465704	Standard
>	**Rh**	103	33.3	56.8				ug/L	10	Standard
	Mo	98	14.7	37.7	**0.0174**	0.002	10.6	ug/L	9	Standard
	Ag	107	85.0	6.2	**0.0059**	0.001	12.3	ug/L	82	Standard
	Cd	111	6.3	105.4	**0.0107**	0.003	27.8	mg/L	7	Standard
	Cd	114	17.2	88.0	**0.0121**	0.003	23.1	ug/L	21	Standard
>	**In**	115	582185.3	1.1				ug/L	619035	Standard
	Sn	118	228.3	17.7	**-0.0661**	0.006	9.7	ug/L	508	Standard
	Sb	123	73.7	18.3	**0.0192**	0.003	13.8	ug/L	86	Standard
	Ba	135	6171.3	2.4	**2.8508**	0.076	2.7	ug/L	79	Standard
	Ce	140	311.7	26.7				ug/L	68	Standard
>	**Tb**	159	900041.5	0.2				ug/L	986982	Standard
	Ho	165	11.7	49.5				ug/L	10	Standard
	Tl	203	78.0	18.9	**0.0149**	0.002	11.2	ug/L	13	Standard
	Tl	205	86.7	37.5	**0.0192**	0.004	22.2	ug/L	10	Standard
	Pb	206	268.7	7.4	**0.0099**	0.004	38.8	ug/L	264	Standard
	Pb	207	237.7	0.5	**0.0135**	0.000	1.2	ug/L	227	Standard
	Pb	208	982.0	12.1	**0.0117**	0.006	49.8	ug/L	868	Standard
	U	238	573.7	13.6	**0.0868**	0.010	12.0	ug/L	8	Standard
>	**Bi**	209	520191.7	0.7				ug/L	541014	Standard

Sample ID: L1606122706
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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3188.7	3.7	**3.8557**	0.044	1.1	mg/L	53	Standard
K	39	53.3	28.6	**0.0251**	0.027	108.2	mg/L	53	Standard
Ca	43	46.7	27.0	**1.2792**	0.771	60.3	mg/L	28	Standard
Fe	54	69.3	57.6	**-0.0655**	0.032	48.3	mg/L	181	Standard
Fe	57	315.0	11.1	**0.2703**	0.086	31.9	mg/L	257	Standard
> **Sc-1**	45	49316.8	2.6				mg/L	55220	Standard
Cl	35	40068.9	0.3				ug/L	35504	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	6631.5	4.6				ug/L	2040	Standard
P	31	7241.7	2.9				ug/L	20435	Standard
S	34	2561.9	3.4				ug/L	2430	Standard
Sr	88	133.3	36.4				ug/L	75	Standard
C	12	60.0					mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	19.8	51.6				mg/L	9	Standard
Ho-1	165	11.7	49.5				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	23	Standard
I	127	44420.0	2.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		85.422	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.165	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.047
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.151
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122707
Sample Date/Time: Thursday, June 30, 2016 14:55:40
Number of Replicates: 3
Autosampler Position: 229
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62577.4	3.3				ug/L	74916	Standard
	Be	9	6.7	86.6	**0.0039**	0.007	166.0	ug/L	10	Standard
	Al	27	198944.4	1.5	**1.3707**	0.026	1.9	ug/L	1822	Standard
	Sc	45	50035.9	2.6				ug/L	55220	Standard
	Ti	47	30.0	20.8	**0.0075**	0.015	197.5	ug/L	34	Standard
	V	51	2013.9	5.4	**0.0366**	0.012	33.1	ug/L	1938	Standard
	Cr	52	7046.6	1.7	**-0.2000**	0.028	13.8	ug/L	9522	Standard
	Cr	53	2293.5	0.8	**1.8158**	0.076	4.2	ug/L	395	Standard
	Mn	55	50488.3	0.7	**6.1844**	0.145	2.3	ug/L	902	Standard
	Co	59	221.0	2.5	**0.0063**	0.001	23.6	ug/L	262	Standard
	Ni	60	712.4	1.1	**0.1948**	0.006	2.9	ug/L	371	Standard
	Cu	65	141.3	12.8	**0.0098**	0.008	84.8	ug/L	106	Standard
	Zn	66	1168.4	4.0	**0.6160**	0.014	2.2	ug/L	398	Standard
>	**Ge**	72	499784.8	2.6				ug/L	535147	Standard
	As	75	-33.5	115.4	**0.0280**	0.031	111.0	ug/L	-43	Standard
	Se	82	22.8	19.0	**0.0842**	0.039	46.9	ug/L	14	Standard
	Se-1	77	125.0	5.8	**0.9050**	0.091	10.1	ug/L	65	Standard
>	**Ga**	71	46.7	50.6				mg/L	97	Standard
	Rb	85	270.0	11.6				ug/L	15	Standard
	Y	89	429135.1	1.7				ug/L	465704	Standard
>	**Rh**	103	16.7	45.8				ug/L	10	Standard
	Mo	98	13.7	25.0	**0.0170**	0.001	6.4	ug/L	9	Standard
	Ag	107	80.0	11.9	**0.0051**	0.001	26.5	ug/L	82	Standard
	Cd	111	5.0	40.2	**0.0101**	0.001	9.0	mg/L	7	Standard
	Cd	114	10.0	53.1	**0.0107**	0.001	8.9	ug/L	21	Standard
>	**In**	115	585198.1	1.8				ug/L	619035	Standard
	Sn	118	186.7	13.5	**-0.0730**	0.005	6.3	ug/L	508	Standard
	Sb	123	75.9	10.6	**0.0196**	0.002	8.4	ug/L	86	Standard
	Ba	135	8760.9	0.3	**4.0349**	0.067	1.7	ug/L	79	Standard
	Ce	140	36.7	7.9				ug/L	68	Standard
>	**Tb**	159	899376.2	1.9				ug/L	986982	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	44.3	10.7	**0.0110**	0.001	5.1	ug/L	13	Standard
	Tl	205	46.7	24.7	**0.0139**	0.001	10.7	ug/L	10	Standard
	Pb	206	244.3	3.1	**0.0053**	0.002	35.8	ug/L	264	Standard
	Pb	207	230.3	8.7	**0.0118**	0.004	32.8	ug/L	227	Standard
	Pb	208	925.0	2.8	**0.0085**	0.001	11.3	ug/L	868	Standard
	U	238	3.7	56.8	**0.0084**	0.000	3.3	ug/L	8	Standard
>	**Bi**	209	523201.8	1.3				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	508.3	2.8	**0.5773**	0.030	5.2	mg/L	53	Standard
K	39	55.0	18.2	**0.0274**	0.021	77.1	mg/L	53	Standard
Ca	43	28.3	36.7	**0.1031**	0.676	655.6	mg/L	28	Standard
Fe	54	462.6	3.9	**0.2290**	0.007	3.0	mg/L	181	Standard
Fe	57	376.7	12.0	**0.4365**	0.105	24.0	mg/L	257	Standard
> **Sc-1**	45	50035.9	2.6				mg/L	55220	Standard
Cl	35	40185.2	1.9				ug/L	35504	Standard
Kr	83	1.7	124.9				ug/L	2	Standard
Br	81	2750.3	5.5				ug/L	2040	Standard
P	31	7351.8	4.8				ug/L	20435	Standard
S	34	2616.9	2.6				ug/L	2430	Standard
Sr	88	65.0	15.4				ug/L	75	Standard
C	12	113.3	27.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	2.5	239.4				mg/L	9	Standard
Ho-1	165	8.3	69.3				mg/L	10	Standard
Er	166	16.7	69.3				mg/L	23	Standard
I	127	39342.7	1.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		83.530	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.392	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.534
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.708
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 14:58:53
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64391.5	0.8				ug/L	74916	Standard
	Be	9	49959.0	3.9	**55.0785**	1.704	3.1	ug/L	10	Standard
	Al	27	8042298.7	3.0	**53.9109**	1.197	2.2	ug/L	1822	Standard
	Sc	45	52713.3	3.1				ug/L	55220	Standard
	Ti	47	40282.8	2.2	**100.6643**	0.597	0.6	ug/L	34	Standard
	V	51	449362.5	2.0	**49.9229**	0.786	1.6	ug/L	1938	Standard
	Cr	52	448068.9	1.4	**50.4103**	0.341	0.7	ug/L	9522	Standard
	Cr	53	56742.8	3.7	**52.1353**	1.373	2.6	ug/L	395	Standard
	Mn	55	411079.3	2.0	**49.2603**	0.827	1.7	ug/L	902	Standard
	Co	59	391313.5	1.8	**49.6052**	0.544	1.1	ug/L	262	Standard
	Ni	60	110525.4	1.2	**50.7752**	0.447	0.9	ug/L	371	Standard
	Cu	65	108521.4	2.5	**50.7316**	0.511	1.0	ug/L	106	Standard
	Zn	66	64187.3	0.5	**50.6710**	0.790	1.6	ug/L	398	Standard
>	Ge	72	518300.5	1.9				ug/L	535147	Standard
	As	75	65315.7	1.3	**50.4052**	0.285	0.6	ug/L	-43	Standard
	Se	82	6637.9	2.0	**50.4718**	0.221	0.4	ug/L	14	Standard
	Se-1	77	4485.7	1.7	**50.8352**	0.703	1.4	ug/L	65	Standard
>	Ga	71	66.7	30.3				mg/L	97	Standard
	Rb	85	938.4	3.4				ug/L	15	Standard
	Y	89	452750.4	1.1				ug/L	465704	Standard
>	Rh	103	43.3	58.1				ug/L	10	Standard
	Mo	98	290978.1	1.9	**95.9061**	1.779	1.9	ug/L	9	Standard
	Ag	107	359437.5	1.1	**48.9522**	0.523	1.1	ug/L	82	Standard
	Cd	111	116831.1	2.1	**49.7787**	0.939	1.9	mg/L	7	Standard
	Cd	114	283363.8	1.4	**50.1376**	0.775	1.5	ug/L	21	Standard
>	In	115	602055.6	0.7				ug/L	619035	Standard
	Sn	118	319610.8	2.7	**50.3915**	1.220	2.4	ug/L	508	Standard
	Sb	123	254703.1	1.5	**49.4555**	0.671	1.4	ug/L	86	Standard
	Ba	135	109175.3	1.2	**49.0837**	0.702	1.4	ug/L	79	Standard
	Ce	140	180.0	7.3				ug/L	68	Standard
>	Tb	159	909220.9	1.0				ug/L	986982	Standard
	Ho	165	13.3	21.7				ug/L	10	Standard
	Tl	203	443311.4	0.8	**50.2200**	0.968	1.9	ug/L	13	Standard
	Tl	205	389649.1	1.6	**51.6702**	1.301	2.5	ug/L	10	Standard
	Pb	206	277554.0	1.2	**48.9549**	1.120	2.3	ug/L	264	Standard
	Pb	207	252521.8	1.1	**49.2813**	1.032	2.1	ug/L	227	Standard
	Pb	208	1029674.4	0.9	**52.1136**	0.991	1.9	ug/L	868	Standard
	U	238	368061.3	1.2	**50.3996**	1.185	2.4	ug/L	8	Standard
>	Bi	209	523176.7	1.1				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4247.3	2.1	**4.8159**	0.107	2.2	mg/L	53	Standard
K	39	2163.5	3.7	**3.7700**	0.073	1.9	mg/L	53	Standard
Ca	43	123.3	16.9	**5.6653**	1.407	24.8	mg/L	28	Standard
Fe	54	7090.0	0.4	**4.9449**	0.156	3.2	mg/L	181	Standard
Fe	57	1908.5	4.2	**4.6381**	0.337	7.3	mg/L	257	Standard
Sc-1	45	52713.3	3.1				mg/L	55220	Standard
Cl	35	43291.8	1.4				ug/L	35504	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1943.5	0.8				ug/L	2040	Standard
P	31	22641.9	1.4				ug/L	20435	Standard
S	34	3180.3	0.4				ug/L	2430	Standard
Sr	88	60.0	33.3				ug/L	75	Standard
C	12	106.7	21.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	12.7	46.6				mg/L	9	Standard
Ho-1	165	13.3	21.7				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	10243.5	6.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	110.157		
Al	27	107.822		
Sc	45			
Ti	47	100.664		
V	51	99.846		
Cr	52	100.821		
Cr	53			
Mn	55	98.521		
Co	59	99.210		
Ni	60	101.550		
Cu	65	101.463		
Zn	66	101.342		
Ge	72		96.852	
As	75	100.810		
Se	82	100.944		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	95.906		
Ag	107	97.904		
Cd	111	99.557		
Cd	114			
In	115		97.257	
Sn	118	100.783		
Sb	123	98.911		
Ba	135	98.167		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.440		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.227		
U	238	100.799		
Bi	209		96.703	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 15:02:04
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64908.8	2.4				ug/L	74916	Standard
	Be	9	33.3	70.9	**0.0325**	0.025	76.1	ug/L	10	Standard
	Al	27	5675.1	97.0	**0.0349**	0.035	101.2	ug/L	1822	Standard
	Sc	45	52479.1	1.7				ug/L	55220	Standard
	Ti	47	57.0	36.8	**0.0705**	0.052	73.1	ug/L	34	Standard
	V	51	1708.7	5.1	**-0.0083**	0.009	105.1	ug/L	1938	Standard
	Cr	52	8255.6	3.6	**-0.1041**	0.031	29.6	ug/L	9522	Standard
	Cr	53	1440.1	4.9	**0.9282**	0.060	6.5	ug/L	395	Standard
	Mn	55	1694.5	64.0	**0.0955**	0.128	134.1	ug/L	902	Standard
	Co	59	484.7	54.7	**0.0378**	0.033	87.5	ug/L	262	Standard
	Ni	60	327.0	14.6	**0.0030**	0.021	704.8	ug/L	371	Standard
	Cu	65	269.7	59.2	**0.0657**	0.073	111.8	ug/L	106	Standard
	Zn	66	495.3	20.2	**0.0417**	0.078	186.4	ug/L	398	Standard
>	Ge	72	525176.3	0.7				ug/L	535147	Standard
	As	75	14.9	238.4	**0.0664**	0.027	40.6	ug/L	-43	Standard
	Se	82	26.6	22.2	**0.1030**	0.043	42.0	ug/L	14	Standard
	Se-1	77	111.7	16.6	**0.6809**	0.202	29.7	ug/L	65	Standard
>	Ga	71	71.7	24.5				mg/L	97	Standard
	Rb	85	48.3	15.8				ug/L	15	Standard
	Y	89	456993.2	1.0				ug/L	465704	Standard
>	Rh	103	21.7	58.1				ug/L	10	Standard
	Mo	98	281.0	44.7	**0.1038**	0.041	39.5	ug/L	9	Standard
	Ag	107	192.3	43.4	**0.0198**	0.011	56.9	ug/L	82	Standard
	Cd	111	40.5	99.9	**0.0249**	0.017	68.3	mg/L	7	Standard
	Cd	114	98.3	87.3	**0.0261**	0.015	57.5	ug/L	21	Standard
>	In	115	609890.0	0.3				ug/L	619035	Standard
	Sn	118	1120.0	5.0	**0.0713**	0.008	11.7	ug/L	508	Standard
	Sb	123	687.4	14.9	**0.1361**	0.019	14.3	ug/L	86	Standard
	Ba	135	123.0	77.9	**0.0350**	0.043	121.7	ug/L	79	Standard
	Ce	140	38.3	32.8				ug/L	68	Standard
>	Tb	159	927551.9	2.0				ug/L	986982	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	179.3	52.1	**0.0260**	0.010	40.3	ug/L	13	Standard
	Tl	205	265.0	97.2	**0.0423**	0.034	79.6	ug/L	10	Standard
	Pb	206	399.3	16.9	**0.0316**	0.012	37.7	ug/L	264	Standard
	Pb	207	341.0	19.1	**0.0323**	0.013	39.3	ug/L	227	Standard
	Pb	208	1776.4	50.1	**0.0502**	0.045	88.7	ug/L	868	Standard
	U	238	255.0	121.7	**0.0423**	0.042	99.0	ug/L	8	Standard
>	Bi	209	531848.0	0.6				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	33.3	**0.0150**	0.016	104.4	mg/L	53	Standard
K	39	43.3	40.5	**0.0013**	0.031	2462.6	mg/L	53	Standard
Ca	43	21.7	81.0	**-0.3788**	1.065	281.3	mg/L	28	Standard
Fe	54	192.3	23.9	**0.0189**	0.031	166.4	mg/L	181	Standard
Fe	57	313.3	16.0	**0.2091**	0.125	59.8	mg/L	257	Standard
Sc-1	45	52479.1	1.7				mg/L	55220	Standard
Cl	35	43387.4	1.0				ug/L	35504	Standard
Kr	83	3.3	75.5				ug/L	2	Standard
Br	81	1960.1	2.6				ug/L	2040	Standard
P	31	23142.7	2.3				ug/L	20435	Standard
S	34	3065.3	5.7				ug/L	2430	Standard
Sr	88	78.3	20.5				ug/L	75	Standard
C	12	70.0	24.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	540.6	19.0				mg/L	9	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	56.7	53.9				mg/L	23	Standard
I	127	9673.1	2.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.137	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.523	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.306	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, June 30, 2016 15:05:17
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64547.2	0.8				ug/L	74916	Standard
	Be	9	225.0	18.2	**0.2441**	0.046	19.0	ug/L	10	Standard
	Al	27	1113.4	11.1	**0.0051**	0.001	15.2	ug/L	1822	Standard
	Sc	45	51576.0	1.5				ug/L	55220	Standard
	Ti	47	25.3	14.9	**-0.0066**	0.009	139.6	ug/L	34	Standard
	V	51	4935.8	2.7	**0.3561**	0.015	4.2	ug/L	1938	Standard
	Cr	52	14861.3	0.5	**0.6731**	0.027	4.0	ug/L	9522	Standard
	Cr	53	2343.5	4.8	**1.7902**	0.113	6.3	ug/L	395	Standard
	Mn	55	4597.0	1.4	**0.4488**	0.007	1.5	ug/L	902	Standard
	Co	59	3194.0	4.3	**0.3837**	0.017	4.4	ug/L	262	Standard
	Ni	60	3611.4	1.8	**1.5243**	0.046	3.0	ug/L	371	Standard
	Cu	65	1778.8	1.1	**0.7768**	0.003	0.4	ug/L	106	Standard
	Zn	66	8315.3	1.6	**6.2844**	0.025	0.4	ug/L	398	Standard
>	**Ge**	72	516477.7	1.2				ug/L	535147	Standard
	As	75	460.5	11.9	**0.4113**	0.041	10.0	ug/L	-43	Standard
	Se	82	69.8	4.3	**0.4368**	0.024	5.5	ug/L	14	Standard
	Se-1	77	131.3	8.7	**0.9301**	0.143	15.4	ug/L	65	Standard
>	**Ga**	71	43.3	58.1				mg/L	97	Standard
	Rb	85	33.3	22.9				ug/L	15	Standard
	Y	89	450395.4	2.4				ug/L	465704	Standard
>	**Rh**	103	21.7	13.3				ug/L	10	Standard
	Mo	98	72.5	11.1	**0.0360**	0.002	6.1	ug/L	9	Standard
	Ag	107	2867.6	1.4	**0.3815**	0.008	2.2	ug/L	82	Standard
	Cd	111	535.5	0.4	**0.2343**	0.005	2.3	mg/L	7	Standard
	Cd	114	1336.0	8.1	**0.2432**	0.015	6.0	ug/L	21	Standard
>	**In**	115	606832.4	2.2				ug/L	619035	Standard
	Sn	118	650.0	14.7	**-0.0017**	0.013	760.6	ug/L	508	Standard
	Sb	123	2113.1	2.9	**0.4114**	0.005	1.3	ug/L	86	Standard
	Ba	135	1618.8	1.5	**0.7028**	0.007	1.0	ug/L	79	Standard
	Ce	140	13.3	94.4				ug/L	68	Standard
>	**Tb**	159	927835.7	0.6				ug/L	986982	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	710.0	3.9	**0.0853**	0.003	3.4	ug/L	13	Standard
	Tl	205	648.3	3.6	**0.0925**	0.003	3.6	ug/L	10	Standard
	Pb	206	1383.7	2.8	**0.2032**	0.006	2.9	ug/L	264	Standard
	Pb	207	1185.7	2.7	**0.1952**	0.005	2.7	ug/L	227	Standard
	Pb	208	4940.3	2.3	**0.2085**	0.005	2.3	ug/L	868	Standard
	U	238	2890.9	1.4	**0.3984**	0.007	1.8	ug/L	8	Standard
>	**Bi**	209	530205.9	0.5				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	30.0	44.1	**0.0005**	0.016	3421.5	mg/L	53	Standard
K	39	45.0	11.1	**0.0058**	0.010	165.5	mg/L	53	Standard
Ca	43	26.7	57.3	**-0.0502**	0.938	1867.4	mg/L	28	Standard
Fe	54	103.5	36.2	**-0.0433**	0.027	62.6	mg/L	181	Standard
Fe	57	285.0	9.3	**0.1447**	0.062	43.1	mg/L	257	Standard
Sc-1	45	51576.0	1.5				mg/L	55220	Standard
Cl	35	41973.4	2.1				ug/L	35504	Standard
Kr	83	0.0					ug/L	2	Standard
Br	81	1820.1	12.4				ug/L	2040	Standard
P	31	16265.4	2.1				ug/L	20435	Standard
S	34	2886.9	1.2				ug/L	2430	Standard
Sr	88	58.3	4.9				ug/L	75	Standard
C	12	63.3	9.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	9.2	103.5				mg/L	9	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	16.7	69.3				mg/L	23	Standard
I	127	1938.5	24.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	122.033		
Al	27			
Sc	45			
Ti	47			
V	51	89.021		
Cr	52	84.133		
Cr	53			
Mn	55	89.765		
Co	59	95.918		
Ni	60	95.267		
Cu	65	97.095		
Zn	66	100.550		
Ge	72		96.511	
As	75	102.824		
Se	82	109.192		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	95.385		
Cd	111	97.634		
Cd	114			
> In	115			98.029
Sn	118			
Sb	123	102.852		
Ba	135	93.700		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	106.681		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.258		
U	238	99.600		
> Bi	209			98.002
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW A1 WG573728-03
Sample Date/Time: Thursday, June 30, 2016 15:14:48
Number of Replicates: 3
Autosampler Position: 230
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63953.1	2.1				ug/L	74916	Standard
	Be	9	18.3	56.8	**0.0169**	0.012	71.1	ug/L	10	Standard
	Al	27	6076.2	2.5	**0.0387**	0.001	3.8	ug/L	1822	Standard
	Sc	45	51092.7	3.3				ug/L	55220	Standard
	Ti	47	34.0	12.8	**0.0177**	0.013	71.0	ug/L	34	Standard
	V	51	1827.5	7.0	**0.0140**	0.018	130.2	ug/L	1938	Standard
	Cr	52	8456.0	0.5	**-0.0382**	0.019	49.8	ug/L	9522	Standard
	Cr	53	1518.4	1.3	**1.0626**	0.043	4.0	ug/L	395	Standard
	Mn	55	964.0	3.9	**0.0142**	0.005	32.9	ug/L	902	Standard
	Co	59	219.3	2.5	**0.0059**	0.001	14.0	ug/L	262	Standard
	Ni	60	319.7	1.5	**0.0062**	0.000	6.3	ug/L	371	Standard
	Cu	65	205.3	3.5	**0.0404**	0.005	12.4	ug/L	106	Standard
	Zn	66	994.0	3.0	**0.4683**	0.037	7.9	ug/L	398	Standard
>	**Ge**	72	502641.9	1.7				ug/L	535147	Standard
	As	75	-49.4	116.2	**0.0160**	0.046	287.1	ug/L	-43	Standard
	Se	82	19.2	30.7	**0.0534**	0.045	84.3	ug/L	14	Standard
	Se-1	77	89.0	25.4	**0.4682**	0.250	53.5	ug/L	65	Standard
>	**Ga**	71	48.3	15.8				mg/L	97	Standard
	Rb	85	38.3	45.8				ug/L	15	Standard
	Y	89	435665.6	1.4				ug/L	465704	Standard
>	**Rh**	103	18.3	56.8				ug/L	10	Standard
	Mo	98	138.2	11.7	**0.0588**	0.005	8.0	ug/L	9	Standard
	Ag	107	81.0	9.9	**0.0052**	0.001	17.5	ug/L	82	Standard
	Cd	111	3.1	49.7	**0.0092**	0.001	7.2	mg/L	7	Standard
	Cd	114	20.0	81.9	**0.0125**	0.003	23.8	ug/L	21	Standard
>	**In**	115	590439.5	1.9				ug/L	619035	Standard
	Sn	118	560.0	26.7	**-0.0135**	0.022	164.8	ug/L	508	Standard
	Sb	123	160.9	21.8	**0.0362**	0.006	17.9	ug/L	86	Standard
	Ba	135	36.3	1.6	**-0.0030**	0.001	18.2	ug/L	79	Standard
	Ce	140	40.0	54.5				ug/L	68	Standard
>	**Tb**	159	901092.5	1.7				ug/L	986982	Standard
	Ho	165	10.0	132.3				ug/L	10	Standard
	Tl	203	21.7	14.8	**0.0084**	0.000	4.1	ug/L	13	Standard
	Tl	205	16.7	45.8	**0.0099**	0.001	10.0	ug/L	10	Standard
	Pb	206	270.3	3.4	**0.0096**	0.002	19.5	ug/L	264	Standard
	Pb	207	243.7	5.8	**0.0141**	0.003	19.2	ug/L	227	Standard
	Pb	208	961.0	2.2	**0.0100**	0.001	12.7	ug/L	868	Standard
	U	238	8.7	37.1	**0.0091**	0.000	4.9	ug/L	8	Standard
>	**Bi**	209	526478.0	0.7				ug/L	541014	Standard

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Na	23	1.7	173.2	**10.2562**	17.756	173.1	mg/L	2	Standard
Mg	24	31.7	32.9	**0.0025**	0.011	445.9	mg/L	53	Standard
K	39	40.0		**-0.0026**	0.002	93.9	mg/L	53	Standard
Ca	43	16.7	17.3	**-0.6528**	0.190	29.1	mg/L	28	Standard
Fe	54	89.1	10.9	**-0.0529**	0.009	17.4	mg/L	181	Standard
Fe	57	250.0	2.0	**0.0530**	0.011	20.7	mg/L	257	Standard
Sc-1	45	51092.7	3.3				mg/L	55220	Standard
Cl	35	41081.0	0.6				ug/L	35504	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	2020.1	6.0				ug/L	2040	Standard
P	31	12546.9	2.1				ug/L	20435	Standard
S	34	2720.2	2.7				ug/L	2430	Standard
Sr	88	58.3	34.6				ug/L	75	Standard
C	12	103.3	14.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	16.2	38.3				mg/L	9	Standard
Ho-1	165	10.0	132.3				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	26366.3	0.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		85.366	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.926	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.381
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.313
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW A1 WG573728-04
Sample Date/Time: Thursday, June 30, 2016 15:18:00
Number of Replicates: 3
Autosampler Position: 231
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67086.6	1.9				ug/L	74916	Standard
	Be	9	52004.2	3.6	**55.0288**	1.102	2.0	ug/L	10	Standard
	Al	27	19120.2	42.5	**0.1206**	0.052	42.9	ug/L	1822	Standard
	Sc	45	54313.9	2.0				ug/L	55220	Standard
	Ti	47	54.3	36.2	**0.0615**	0.047	76.8	ug/L	34	Standard
	V	51	458407.9	1.0	**49.3763**	0.378	0.8	ug/L	1938	Standard
	Cr	52	472124.0	3.2	**51.5201**	1.504	2.9	ug/L	9522	Standard
	Cr	53	58969.6	3.5	**52.5404**	1.552	3.0	ug/L	395	Standard
	Mn	55	441488.7	1.2	**51.2972**	0.389	0.8	ug/L	902	Standard
	Co	59	406379.7	1.4	**49.9477**	0.441	0.9	ug/L	262	Standard
	Ni	60	114871.8	0.8	**51.1656**	0.153	0.3	ug/L	371	Standard
	Cu	65	114058.0	0.4	**51.7070**	0.416	0.8	ug/L	106	Standard
	Zn	66	67996.2	0.9	**52.0496**	0.635	1.2	ug/L	398	Standard
>	**Ge**	72	534529.3	0.6				ug/L	535147	Standard
	As	75	67804.4	0.8	**50.7332**	0.210	0.4	ug/L	-43	Standard
	Se	82	6788.7	1.1	**50.0521**	0.627	1.3	ug/L	14	Standard
	Se-1	77	4642.0	1.2	**51.0109**	0.869	1.7	ug/L	65	Standard
>	**Ga**	71	63.3	18.2				mg/L	97	Standard
	Rb	85	53.3	10.8				ug/L	15	Standard
	Y	89	465214.1	0.4				ug/L	465704	Standard
>	**Rh**	103	33.3	37.7				ug/L	10	Standard
	Mo	98	49.8	4.8	**0.0281**	0.001	2.5	ug/L	9	Standard
	Ag	107	380273.7	0.6	**49.6011**	0.481	1.0	ug/L	82	Standard
	Cd	111	120281.8	0.6	**49.0834**	0.359	0.7	mg/L	7	Standard
	Cd	114	291528.7	1.2	**49.4009**	0.657	1.3	ug/L	21	Standard
>	**In**	115	628631.6	0.4				ug/L	619035	Standard
	Sn	118	995.0	12.2	**0.0471**	0.018	38.6	ug/L	508	Standard
	Sb	123	267507.3	0.0	**49.7461**	0.194	0.4	ug/L	86	Standard
	Ba	135	112861.8	0.6	**48.5948**	0.377	0.8	ug/L	79	Standard
	Ce	140	156.7	16.1				ug/L	68	Standard
>	**Tb**	159	955141.2	1.4				ug/L	986982	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	458925.6	0.3	**50.0906**	0.546	1.1	ug/L	13	Standard
	Tl	205	395986.2	0.4	**50.5921**	0.578	1.1	ug/L	10	Standard
	Pb	206	296512.1	1.1	**50.3892**	0.789	1.6	ug/L	264	Standard
	Pb	207	258480.9	0.5	**48.6004**	0.300	0.6	ug/L	227	Standard
	Pb	208	1067449.1	0.0	**52.0525**	0.416	0.8	ug/L	868	Standard
	U	238	376134.4	0.8	**49.6201**	0.107	0.2	ug/L	8	Standard
>	**Bi**	209	542955.6	0.8				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	58.3	48.7	**0.0301**	0.031	103.9	mg/L	53	Standard
K	39	45.0	29.4	**0.0015**	0.022	1442.6	mg/L	53	Standard
Ca	43	13.3	57.3	**-0.9037**	0.451	49.9	mg/L	28	Standard
Fe	54	183.7	5.0	**0.0086**	0.009	100.9	mg/L	181	Standard
Fe	57	281.7	19.8	**0.0947**	0.141	148.5	mg/L	257	Standard
Sc-1	45	54313.9	2.0				mg/L	55220	Standard
Cl	35	43485.7	1.5				ug/L	35504	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	13933.1	10.0				ug/L	2040	Standard
P	31	22263.0	3.5				ug/L	20435	Standard
S	34	2703.6	1.7				ug/L	2430	Standard
Sr	88	86.7	13.3				ug/L	75	Standard
C	12	143.3	10.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	12.5	48.3				mg/L	9	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	16.7	34.6				mg/L	23	Standard
I	127	1948.5	33.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		89.549	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.885	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.550
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.359
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606099601 WG573728-01
Sample Date/Time: Thursday, June 30, 2016 15:21:11
Number of Replicates: 3
Autosampler Position: 232
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68291.9	1.3				ug/L	74916	Standard
	Be	9	28.3	66.8	**0.0257**	0.019	74.7	ug/L	10	Standard
	Al	27	18880570.9	2.2	**119.3426**	1.083	0.9	ug/L	1822	Standard
	Sc	45	56550.3	0.6				ug/L	55220	Standard
	Ti	47	199.7	6.4	**0.4065**	0.032	7.9	ug/L	34	Standard
	V	51	3186.4	2.3	**0.1428**	0.006	4.0	ug/L	1938	Standard
	Cr	52	15293.0	2.0	**0.6365**	0.040	6.3	ug/L	9522	Standard
	Cr	53	2076.8	2.7	**1.4480**	0.064	4.4	ug/L	395	Standard
	Mn	55	7278.7	1.9	**0.7290**	0.013	1.8	ug/L	902	Standard
	Co	59	936.0	3.1	**0.0905**	0.004	4.9	ug/L	262	Standard
	Ni	60	2428.9	2.8	**0.9224**	0.033	3.5	ug/L	371	Standard
	Cu	65	491.3	2.0	**0.1607**	0.003	2.0	ug/L	106	Standard
	Zn	66	1815.4	2.9	**1.0305**	0.051	4.9	ug/L	398	Standard
>	**Ge**	72	543038.8	0.8				ug/L	535147	Standard
	As	75	1683.9	5.9	**1.2940**	0.069	5.3	ug/L	-43	Standard
	Se	82	733.4	4.8	**5.2358**	0.250	4.8	ug/L	14	Standard
	Se-1	77	105.7	3.0	**0.5744**	0.026	4.5	ug/L	65	Standard
>	**Ga**	71	63.3	16.4				mg/L	97	Standard
	Rb	85	1220.0	3.5				ug/L	15	Standard
	Y	89	463241.7	0.6				ug/L	465704	Standard
>	**Rh**	103	35.0	14.3				ug/L	10	Standard
	Mo	98	59.8	4.4	**0.0313**	0.001	3.0	ug/L	9	Standard
	Ag	107	163.3	11.0	**0.0153**	0.002	14.7	ug/L	82	Standard
	Cd	111	50.6	15.0	**0.0286**	0.003	10.8	mg/L	7	Standard
	Cd	114	105.0	22.2	**0.0267**	0.004	14.6	ug/L	21	Standard
>	**In**	115	627040.8	1.0				ug/L	619035	Standard
	Sn	118	806.7	5.9	**0.0190**	0.008	42.7	ug/L	508	Standard
	Sb	123	257.7	17.6	**0.0525**	0.009	16.9	ug/L	86	Standard
	Ba	135	7603.2	0.4	**3.2639**	0.042	1.3	ug/L	79	Standard
	Ce	140	580.0	1.7				ug/L	68	Standard
>	**Tb**	159	960608.0	1.5				ug/L	986982	Standard
	Ho	165	45.0	0.0				ug/L	10	Standard
	Tl	203	590.7	38.6	**0.0712**	0.025	35.2	ug/L	13	Standard
	Tl	205	546.7	36.1	**0.0783**	0.025	32.4	ug/L	10	Standard
	Pb	206	366.0	2.4	**0.0252**	0.002	6.1	ug/L	264	Standard
	Pb	207	330.3	12.5	**0.0297**	0.008	26.7	ug/L	227	Standard
	Pb	208	1408.4	7.6	**0.0312**	0.005	17.2	ug/L	868	Standard
	U	238	478.7	3.5	**0.0718**	0.002	3.0	ug/L	8	Standard
>	**Bi**	209	536561.7	0.1				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	1728.4	2.5	**1.8049**	0.054	3.0	mg/L	53	Standard
K	39	103.3	7.4	**0.0953**	0.014	14.4	mg/L	53	Standard
Ca	43	473.3	5.2	**24.5092**	1.516	6.2	mg/L	28	Standard
Fe	54	206.7	15.5	**0.0188**	0.022	114.8	mg/L	181	Standard
Fe	57	471.7	6.2	**0.5573**	0.080	14.4	mg/L	257	Standard
> **Sc-1**	45	56550.3	0.6				mg/L	55220	Standard
Cl	35	49410.4	1.6				ug/L	35504	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	141239.5	4.6				ug/L	2040	Standard
P	31	24261.1	3.2				ug/L	20435	Standard
S	34	2875.3	3.8				ug/L	2430	Standard
Sr	88	131.7	18.7				ug/L	75	Standard
C	12	210.0	20.8				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	57.8	28.3				mg/L	9	Standard
Ho-1	165	45.0	0.0				mg/L	10	Standard
Er	166	46.7	53.9				mg/L	23	Standard
I	127	5429.3	1.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.157	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.475	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.293	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.177	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606099602S WG573728-05
Sample Date/Time: Thursday, June 30, 2016 15:24:23
Number of Replicates: 3
Autosampler Position: 233
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	69534.2	1.4				ug/L	74916	Standard
	Be	9	52693.2	3.1	**53.7987**	1.123	2.1	ug/L	10	Standard
	Al	27	18046739.9	1.3	**112.0655**	2.753	2.5	ug/L	1822	Standard
	Sc	45	55386.1	1.5				ug/L	55220	Standard
	Ti	47	175.3	7.1	**0.3486**	0.028	8.2	ug/L	34	Standard
	V	51	467682.0	0.4	**49.6221**	0.237	0.5	ug/L	1938	Standard
	Cr	52	466630.2	1.1	**50.1322**	0.425	0.8	ug/L	9522	Standard
	Cr	53	58007.5	2.3	**50.9027**	1.216	2.4	ug/L	395	Standard
	Mn	55	440702.3	1.3	**50.4380**	0.631	1.3	ug/L	902	Standard
	Co	59	400447.4	1.3	**48.4823**	0.666	1.4	ug/L	262	Standard
	Ni	60	114183.3	0.8	**50.0946**	0.387	0.8	ug/L	371	Standard
	Cu	65	109435.5	0.9	**48.8635**	0.353	0.7	ug/L	106	Standard
	Zn	66	67439.4	0.5	**50.8415**	0.459	0.9	ug/L	398	Standard
>	Ge	72	542657.5	0.4				ug/L	535147	Standard
	As	75	68318.6	1.2	**50.3522**	0.481	1.0	ug/L	-43	Standard
	Se	82	6810.7	0.7	**49.4600**	0.454	0.9	ug/L	14	Standard
	Se-1	77	4705.1	1.1	**50.9251**	0.579	1.1	ug/L	65	Standard
>	Ga	71	60.0	28.9				mg/L	97	Standard
	Rb	85	1110.0	1.8				ug/L	15	Standard
	Y	89	469941.9	0.8				ug/L	465704	Standard
>	Rh	103	56.7	39.8				ug/L	10	Standard
	Mo	98	72.7	12.4	**0.0352**	0.003	8.3	ug/L	9	Standard
	Ag	107	368953.1	1.0	**47.8031**	0.661	1.4	ug/L	82	Standard
	Cd	111	120061.4	1.0	**48.6669**	0.625	1.3	mg/L	7	Standard
	Cd	114	288235.3	0.9	**48.5174**	0.631	1.3	ug/L	21	Standard
>	In	115	632863.0	0.4				ug/L	619035	Standard
	Sn	118	848.4	8.8	**0.0241**	0.011	45.0	ug/L	508	Standard
	Sb	123	260105.2	1.3	**48.0476**	0.775	1.6	ug/L	86	Standard
	Ba	135	119215.2	0.6	**50.9874**	0.185	0.4	ug/L	79	Standard
	Ce	140	488.3	8.7				ug/L	68	Standard
>	Tb	159	969085.8	0.9				ug/L	986982	Standard
	Ho	165	61.7	28.5				ug/L	10	Standard
	Tl	203	454990.6	1.0	**49.7114**	0.424	0.9	ug/L	13	Standard
	Tl	205	400819.2	0.5	**51.2626**	0.436	0.9	ug/L	10	Standard
	Pb	206	289476.2	0.7	**49.2439**	0.528	1.1	ug/L	264	Standard
	Pb	207	253387.6	0.7	**47.6936**	0.544	1.1	ug/L	227	Standard
	Pb	208	1047648.0	0.8	**51.1394**	0.430	0.8	ug/L	868	Standard
	U	238	375994.5	0.5	**49.6560**	0.421	0.8	ug/L	8	Standard
>	Bi	209	542372.6	0.4				ug/L	541014	Standard

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Na	23	3.3	173.2	**18.8346**	32.614	173.2	mg/L	2	Standard
Mg	24	1690.1	1.5	**1.8023**	0.055	3.0	mg/L	53	Standard
K	39	70.0	31.1	**0.0421**	0.035	82.8	mg/L	53	Standard
Ca	43	493.3	5.8	**26.1715**	1.201	4.6	mg/L	28	Standard
Fe	54	219.2	11.1	**0.0301**	0.016	52.7	mg/L	181	Standard
Fe	57	555.0	8.6	**0.8025**	0.120	15.0	mg/L	257	Standard
> **Sc-1**	45	55386.1	1.5				mg/L	55220	Standard
Cl	35	50690.7	0.6				ug/L	35504	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	10120.1	13.0				ug/L	2040	Standard
P	31	24778.6	2.5				ug/L	20435	Standard
S	34	3147.0	5.5				ug/L	2430	Standard
Sr	88	123.3	6.2				ug/L	75	Standard
C	12	190.0	9.1				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	54.8	71.8				mg/L	9	Standard
Ho-1	165	61.7	28.5				mg/L	10	Standard
Er	166	40.0	66.1				mg/L	23	Standard
I	127	6076.2	4.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.816	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.403	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.234
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.251
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606099603SD WG573728-05
Sample Date/Time: Thursday, June 30, 2016 15:27:34
Number of Replicates: 3
Autosampler Position: 234
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69961.2	1.4				ug/L	74916	Standard
	Be	9	53945.9	1.9	**54.7452**	0.405	0.7	ug/L	10	Standard
	Al	27	18653584.9	0.9	**115.1220**	2.287	2.0	ug/L	1822	Standard
	Sc	45	56466.7	1.1				ug/L	55220	Standard
	Ti	47	199.0	12.0	**0.4023**	0.058	14.3	ug/L	34	Standard
	V	51	472536.7	1.2	**49.8306**	0.700	1.4	ug/L	1938	Standard
	Cr	52	478928.8	1.2	**51.1603**	0.702	1.4	ug/L	9522	Standard
	Cr	53	59648.9	1.2	**52.0306**	0.727	1.4	ug/L	395	Standard
	Mn	55	449264.4	1.6	**51.1046**	0.889	1.7	ug/L	902	Standard
	Co	59	408055.5	1.0	**49.1007**	0.567	1.2	ug/L	262	Standard
	Ni	60	115830.7	0.7	**50.5068**	0.402	0.8	ug/L	371	Standard
	Cu	65	112174.4	0.3	**49.7804**	0.170	0.3	ug/L	106	Standard
	Zn	66	68689.4	0.3	**51.4692**	0.201	0.4	ug/L	398	Standard
>	**Ge**	72	546008.7	0.2				ug/L	535147	Standard
	As	75	69065.1	0.3	**50.5905**	0.233	0.5	ug/L	-43	Standard
	Se	82	6889.2	0.9	**49.7234**	0.503	1.0	ug/L	14	Standard
	Se-1	77	4739.7	3.6	**50.9864**	1.857	3.6	ug/L	65	Standard
>	**Ga**	71	73.3	21.9				mg/L	97	Standard
	Rb	85	1075.0	5.7				ug/L	15	Standard
	Y	89	470734.4	2.1				ug/L	465704	Standard
>	**Rh**	103	43.3	6.7				ug/L	10	Standard
	Mo	98	111.0	13.4	**0.0473**	0.005	10.4	ug/L	9	Standard
	Ag	107	376890.2	1.0	**48.9233**	0.298	0.6	ug/L	82	Standard
	Cd	111	122069.6	1.2	**49.5773**	0.825	1.7	mg/L	7	Standard
	Cd	114	293598.8	0.4	**49.5146**	0.392	0.8	ug/L	21	Standard
>	**In**	115	631650.0	0.6				ug/L	619035	Standard
	Sn	118	958.4	7.0	**0.0409**	0.010	23.4	ug/L	508	Standard
	Sb	123	259515.9	2.0	**48.0341**	1.271	2.6	ug/L	86	Standard
	Ba	135	121213.3	0.4	**51.9434**	0.429	0.8	ug/L	79	Standard
	Ce	140	640.0	4.3				ug/L	68	Standard
>	**Tb**	159	965792.9	0.7				ug/L	986982	Standard
	Ho	165	28.3	27.0				ug/L	10	Standard
	Tl	203	464038.3	0.6	**50.7914**	0.508	1.0	ug/L	13	Standard
	Tl	205	403235.4	0.5	**51.6643**	0.627	1.2	ug/L	10	Standard
	Pb	206	296855.0	1.0	**50.5921**	0.885	1.7	ug/L	264	Standard
	Pb	207	258402.6	0.8	**48.7261**	0.763	1.6	ug/L	227	Standard
	Pb	208	1060861.7	0.8	**51.8784**	0.664	1.3	ug/L	868	Standard
	U	238	381780.9	1.2	**50.5117**	0.896	1.8	ug/L	8	Standard
>	**Bi**	209	541419.0	0.8				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.2826**	16.069	173.1	mg/L	2	Standard
Mg	24	1868.4	2.5	**1.9568**	0.048	2.5	mg/L	53	Standard
K	39	120.0	8.3	**0.1233**	0.018	14.8	mg/L	53	Standard
Ca	43	530.0	15.8	**27.6998**	4.765	17.2	mg/L	28	Standard
Fe	54	159.3	27.4	**-0.0125**	0.029	231.7	mg/L	181	Standard
Fe	57	513.3	2.2	**0.6671**	0.042	6.3	mg/L	257	Standard
> **Sc-1**	45	56466.7	1.1				mg/L	55220	Standard
Cl	35	51310.1	1.2				ug/L	35504	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	3180.3	3.0				ug/L	2040	Standard
P	31	26316.3	7.9				ug/L	20435	Standard
S	34	3025.3	7.4				ug/L	2430	Standard
Sr	88	130.0	20.4				ug/L	75	Standard
C	12	173.3	23.3				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	47.1	21.7				mg/L	9	Standard
Ho-1	165	28.3	27.0				mg/L	10	Standard
Er	166	60.0	16.7				mg/L	23	Standard
I	127	6022.9	1.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.386	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.030	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.038
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.075
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606099603SD WG573728-05
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Method 6020 - Summary Report

Sample ID: L1606114801
Sample Date/Time: Thursday, June 30, 2016 15:30:46
Number of Replicates: 3
Autosampler Position: 235
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69385.3	2.8				ug/L	74916	Standard
	Be	9	68.3	25.7	**0.0663**	0.017	26.3	ug/L	10	Standard
	Al	27	13382964.5	1.3	**83.3247**	3.301	4.0	ug/L	1822	Standard
	Sc	45	56610.6	1.5				ug/L	55220	Standard
	Ti	47	3988.2	1.6	**9.5598**	0.160	1.7	ug/L	34	Standard
	V	51	27071.1	1.9	**2.7187**	0.051	1.9	ug/L	1938	Standard
	Cr	52	21116.0	3.1	**1.3011**	0.053	4.1	ug/L	9522	Standard
	Cr	53	5205.9	4.1	**4.2645**	0.131	3.1	ug/L	395	Standard
	Mn	55	137023.2	1.4	**15.7833**	0.378	2.4	ug/L	902	Standard
	Co	59	2697.2	4.0	**0.3074**	0.009	2.8	ug/L	262	Standard
	Ni	60	3470.4	4.0	**1.3976**	0.040	2.9	ug/L	371	Standard
	Cu	65	2221.8	3.0	**0.9456**	0.043	4.5	ug/L	106	Standard
	Zn	66	5981.5	2.6	**4.2437**	0.160	3.8	ug/L	398	Standard
>	**Ge**	72	536829.4	1.4				ug/L	535147	Standard
	As	75	2382.3	2.0	**1.8286**	0.053	2.9	ug/L	-43	Standard
	Se	82	261.3	5.1	**1.8253**	0.111	6.1	ug/L	14	Standard
	Se-1	77	229.7	8.8	**1.9613**	0.241	12.3	ug/L	65	Standard
>	**Ga**	71	1473.4	14.4				mg/L	97	Standard
	Rb	85	48947.3	0.9				ug/L	15	Standard
	Y	89	472065.0	1.1				ug/L	465704	Standard
>	**Rh**	103	75.0	35.3				ug/L	10	Standard
	Mo	98	2018.4	1.7	**0.6566**	0.014	2.1	ug/L	9	Standard
	Ag	107	198.3	9.6	**0.0201**	0.003	13.2	ug/L	82	Standard
	Cd	111	74.8	29.3	**0.0387**	0.009	23.4	mg/L	7	Standard
	Cd	114	198.7	19.5	**0.0430**	0.007	15.6	ug/L	21	Standard
>	**In**	115	621679.0	1.3				ug/L	619035	Standard
	Sn	118	916.7	7.9	**0.0369**	0.011	31.0	ug/L	508	Standard
	Sb	123	4696.0	17.7	**0.8869**	0.151	17.1	ug/L	86	Standard
	Ba	135	102992.2	0.2	**44.8453**	0.700	1.6	ug/L	79	Standard
	Ce	140	26710.2	2.2				ug/L	68	Standard
>	**Tb**	159	959294.1	0.8				ug/L	986982	Standard
	Ho	165	378.3	19.8				ug/L	10	Standard
	Tl	203	275.7	1.5	**0.0368**	0.001	1.6	ug/L	13	Standard
	Tl	205	273.3	4.2	**0.0434**	0.001	3.2	ug/L	10	Standard
	Pb	206	2842.9	1.5	**0.4571**	0.006	1.3	ug/L	264	Standard
	Pb	207	2333.5	1.2	**0.4162**	0.007	1.6	ug/L	227	Standard
	Pb	208	9849.9	1.7	**0.4537**	0.010	2.2	ug/L	868	Standard
	U	238	5425.6	1.4	**0.7405**	0.013	1.7	ug/L	8	Standard
>	**Bi**	209	530404.9	0.4				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	32277.7	1.4	**34.2819**	0.620	1.8	mg/L	53	Standard
K	39	1353.4	4.1	**2.1637**	0.058	2.7	mg/L	53	Standard
Ca	43	298.3	4.8	**14.8059**	0.718	4.9	mg/L	28	Standard
Fe	54	711.7	5.2	**0.3546**	0.032	9.0	mg/L	181	Standard
Fe	57	595.0	21.3	**0.8781**	0.354	40.3	mg/L	257	Standard
> **Sc-1**	45	56610.6	1.5				mg/L	55220	Standard
Cl	35	47826.7	3.1				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	45294.3	2.0				ug/L	2040	Standard
P	31	25608.3	2.2				ug/L	20435	Standard
S	34	2995.3	1.7				ug/L	2430	Standard
Sr	88	291.7	4.9				ug/L	75	Standard
C	12	240.0	37.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	508.2	11.9				mg/L	9	Standard
Ho-1	165	378.3	19.8				mg/L	10	Standard
Er	166	316.7	9.6				mg/L	23	Standard
I	127	242809.3	7.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.617	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.314	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.427
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.039
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606114802
Sample Date/Time: Thursday, June 30, 2016 15:33:57
Number of Replicates: 3
Autosampler Position: 236
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73343.8	2.3				ug/L	74916	Standard
	Be	9	36.7	20.8	**0.0318**	0.007	20.7	ug/L	10	Standard
	Al	27	39865885.0	1.0	**234.7683**	7.638	3.3	ug/L	1822	Standard
	Sc	45	56650.7	0.3				ug/L	55220	Standard
	Ti	47	366.7	8.2	**0.8136**	0.076	9.3	ug/L	34	Standard
	V	51	42007.3	1.9	**4.3184**	0.122	2.8	ug/L	1938	Standard
	Cr	52	29051.8	1.5	**2.1749**	0.071	3.3	ug/L	9522	Standard
	Cr	53	8153.9	4.5	**6.8871**	0.365	5.3	ug/L	395	Standard
	Mn	55	29371.4	1.1	**3.2931**	0.013	0.4	ug/L	902	Standard
	Co	59	2064.1	1.7	**0.2294**	0.002	1.0	ug/L	262	Standard
	Ni	60	4963.1	3.4	**2.0578**	0.090	4.4	ug/L	371	Standard
	Cu	65	2302.8	3.2	**0.9800**	0.040	4.1	ug/L	106	Standard
	Zn	66	8387.7	1.3	**6.0765**	0.138	2.3	ug/L	398	Standard
>	**Ge**	72	537915.2	0.8				ug/L	535147	Standard
	As	75	1882.3	2.7	**1.4535**	0.047	3.3	ug/L	-43	Standard
	Se	82	460.8	5.7	**3.2863**	0.218	6.6	ug/L	14	Standard
	Se-1	77	487.0	5.2	**4.7975**	0.290	6.0	ug/L	65	Standard
>	**Ga**	71	151.7	8.3				mg/L	97	Standard
	Rb	85	15017.4	0.7				ug/L	15	Standard
	Y	89	469088.3	1.3				ug/L	465704	Standard
>	**Rh**	103	120.0	26.0				ug/L	10	Standard
	Mo	98	1940.6	1.7	**0.6336**	0.005	0.8	ug/L	9	Standard
	Ag	107	135.7	14.7	**0.0119**	0.002	20.9	ug/L	82	Standard
	Cd	111	83.6	10.2	**0.0425**	0.004	9.3	mg/L	7	Standard
	Cd	114	232.4	5.3	**0.0488**	0.002	3.2	ug/L	21	Standard
>	**In**	115	619836.2	2.0				ug/L	619035	Standard
	Sn	118	905.0	8.9	**0.0357**	0.015	42.4	ug/L	508	Standard
	Sb	123	1696.7	16.9	**0.3252**	0.060	18.5	ug/L	86	Standard
	Ba	135	155475.6	0.5	**67.9173**	1.375	2.0	ug/L	79	Standard
	Ce	140	1150.0	5.9				ug/L	68	Standard
>	**Tb**	159	966263.7	2.7				ug/L	986982	Standard
	Ho	165	68.3	25.7				ug/L	10	Standard
	Tl	203	177.0	9.9	**0.0261**	0.002	8.3	ug/L	13	Standard
	Tl	205	150.0	6.7	**0.0276**	0.001	4.5	ug/L	10	Standard
	Pb	206	690.3	2.9	**0.0841**	0.003	3.7	ug/L	264	Standard
	Pb	207	561.0	6.9	**0.0764**	0.008	10.1	ug/L	227	Standard
	Pb	208	2261.4	3.2	**0.0763**	0.003	4.4	ug/L	868	Standard
	U	238	14407.5	0.3	**1.9818**	0.012	0.6	ug/L	8	Standard
>	**Bi**	209	522746.9	0.9				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	53151.4	1.8	**56.4275**	1.028	1.8	mg/L	53	Standard
K	39	618.3	5.4	**0.9467**	0.052	5.5	mg/L	53	Standard
Ca	43	466.7	9.1	**24.0926**	2.415	10.0	mg/L	28	Standard
Fe	54	229.1	9.2	**0.0334**	0.014	40.5	mg/L	181	Standard
Fe	57	538.3	7.2	**0.7273**	0.104	14.4	mg/L	257	Standard
> **Sc-1**	45	56650.7	0.3				mg/L	55220	Standard
Cl	35	52351.0	1.2				ug/L	35504	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	65016.0	4.2				ug/L	2040	Standard
P	31	25988.9	2.7				ug/L	20435	Standard
S	34	2898.6	3.2				ug/L	2430	Standard
Sr	88	400.0	15.2				ug/L	75	Standard
C	12	300.0	8.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	65.5	28.8				mg/L	9	Standard
Ho-1	165	68.3	25.7				mg/L	10	Standard
Er	166	93.3	34.4				mg/L	23	Standard
I	127	177926.1	3.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.901	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.517	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.129	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.624	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606114802PS WG574806-01
Sample Date/Time: Thursday, June 30, 2016 15:37:09
Number of Replicates: 3
Autosampler Position: 237
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73739.0	1.9				ug/L	74916	Standard
	Be	9	54417.6	3.5	**52.3946**	1.365	2.6	ug/L	10	Standard
	Al	27	39247361.2	1.1	**229.7986**	2.118	0.9	ug/L	1822	Standard
	Sc	45	56950.2	2.8				ug/L	55220	Standard
	Ti	47	367.7	2.9	**0.8081**	0.024	3.0	ug/L	34	Standard
	V	51	505314.0	0.9	**53.6430**	1.115	2.1	ug/L	1938	Standard
	Cr	52	480659.8	0.9	**51.6795**	0.671	1.3	ug/L	9522	Standard
	Cr	53	64282.8	1.2	**56.4552**	0.246	0.4	ug/L	395	Standard
	Mn	55	460538.3	1.7	**52.7210**	1.043	2.0	ug/L	902	Standard
	Co	59	400762.5	0.8	**48.5257**	0.353	0.7	ug/L	262	Standard
	Ni	60	117749.1	0.6	**51.6704**	0.485	0.9	ug/L	371	Standard
	Cu	65	109931.1	1.2	**49.0902**	0.462	0.9	ug/L	106	Standard
	Zn	66	91227.5	0.7	**68.9095**	1.187	1.7	ug/L	398	Standard
>	Ge	72	542618.3	1.2				ug/L	535147	Standard
	As	75	69426.1	0.8	**51.1768**	0.749	1.5	ug/L	-43	Standard
	Se	82	7178.4	1.6	**52.1429**	0.991	1.9	ug/L	14	Standard
	Se-1	77	4969.5	0.6	**53.8312**	0.990	1.8	ug/L	65	Standard
>	Ga	71	151.7	18.2				mg/L	97	Standard
	Rb	85	15104.2	2.1				ug/L	15	Standard
	Y	89	473952.1	1.9				ug/L	465704	Standard
>	Rh	103	126.7	21.7				ug/L	10	Standard
	Mo	98	1955.0	1.7	**0.6317**	0.011	1.7	ug/L	9	Standard
	Ag	107	341042.7	1.4	**44.6484**	0.717	1.6	ug/L	82	Standard
	Cd	111	119331.3	1.6	**48.8732**	0.434	0.9	mg/L	7	Standard
	Cd	114	283552.8	3.0	**48.2253**	1.320	2.7	ug/L	21	Standard
>	In	115	626330.3	1.1				ug/L	619035	Standard
	Sn	118	1168.4	4.4	**0.0741**	0.009	12.8	ug/L	508	Standard
	Sb	123	255007.1	2.2	**47.6011**	1.260	2.6	ug/L	86	Standard
	Ba	135	266477.6	0.5	**115.1938**	1.488	1.3	ug/L	79	Standard
	Ce	140	2081.8	32.8				ug/L	68	Standard
>	Tb	159	960668.0	1.0				ug/L	986982	Standard
	Ho	165	70.0	18.9				ug/L	10	Standard
	Tl	203	450205.8	0.4	**50.2373**	0.703	1.4	ug/L	13	Standard
	Tl	205	391691.8	0.7	**51.1622**	0.808	1.6	ug/L	10	Standard
	Pb	206	290403.7	0.7	**50.4549**	0.842	1.7	ug/L	264	Standard
	Pb	207	253726.6	1.1	**48.7769**	1.023	2.1	ug/L	227	Standard
	Pb	208	1033949.6	0.4	**51.5458**	0.656	1.3	ug/L	868	Standard
	U	238	392544.5	1.2	**52.9480**	1.174	2.2	ug/L	8	Standard
>	Bi	209	531104.0	1.0				ug/L	541014	Standard

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Na	23	3.3	86.6	**18.0264**	15.619	86.6	mg/L	2	Standard
Mg	24	51765.0	1.9	**54.7079**	2.408	4.4	mg/L	53	Standard
K	39	630.0	7.6	**0.9625**	0.105	10.9	mg/L	53	Standard
Ca	43	441.7	10.5	**22.6115**	2.886	12.8	mg/L	28	Standard
Fe	54	202.4	2.0	**0.0151**	0.006	41.5	mg/L	181	Standard
Fe	57	538.3	5.7	**0.7218**	0.114	15.8	mg/L	257	Standard
> **Sc-1**	45	56950.2	2.8				mg/L	55220	Standard
Cl	35	53220.7	1.5				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	65718.9	1.0				ug/L	2040	Standard
P	31	25209.3	1.7				ug/L	20435	Standard
S	34	3057.0	2.8				ug/L	2430	Standard
Sr	88	331.7	9.7				ug/L	75	Standard
C	12	233.3	19.8				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	85.8	42.2				mg/L	9	Standard
Ho-1	165	70.0	18.9				mg/L	10	Standard
Er	166	86.7	13.3				mg/L	23	Standard
I	127	181175.5	2.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.428	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.396	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606114802PS WG574806-01
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.179	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.168	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606114802SDL WG574806-02
Sample Date/Time: Thursday, June 30, 2016 15:40:20
Number of Replicates: 3
Autosampler Position: 238
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67563.7	2.3				ug/L	74916	Standard
	Be	9	18.3	41.7	**0.0157**	0.008	51.7	ug/L	10	Standard
	Al	27	7469662.9	0.3	**47.7405**	0.938	2.0	ug/L	1822	Standard
	Sc	45	52594.5	1.3				ug/L	55220	Standard
	Ti	47	86.0	9.2	**0.1438**	0.020	13.6	ug/L	34	Standard
	V	51	10002.6	2.6	**0.9133**	0.036	3.9	ug/L	1938	Standard
	Cr	52	13316.9	1.4	**0.4814**	0.031	6.5	ug/L	9522	Standard
	Cr	53	2925.3	1.6	**2.3063**	0.058	2.5	ug/L	395	Standard
	Mn	55	6250.6	3.1	**0.6413**	0.019	3.0	ug/L	902	Standard
	Co	59	635.7	4.6	**0.0574**	0.004	6.9	ug/L	262	Standard
	Ni	60	1430.4	0.6	**0.5098**	0.008	1.5	ug/L	371	Standard
	Cu	65	733.4	1.6	**0.2827**	0.008	2.8	ug/L	106	Standard
	Zn	66	2918.6	3.6	**1.9606**	0.098	5.0	ug/L	398	Standard
>	**Ge**	72	521117.4	0.7				ug/L	535147	Standard
	As	75	354.4	15.0	**0.3267**	0.039	12.0	ug/L	-43	Standard
	Se	82	103.1	2.3	**0.6843**	0.018	2.6	ug/L	14	Standard
	Se-1	77	171.3	10.3	**1.3721**	0.205	14.9	ug/L	65	Standard
>	**Ga**	71	60.0	28.9				mg/L	97	Standard
	Rb	85	2775.3	8.1				ug/L	15	Standard
	Y	89	435237.1	1.6				ug/L	465704	Standard
>	**Rh**	103	20.0	66.1				ug/L	10	Standard
	Mo	98	360.0	5.2	**0.1332**	0.006	4.8	ug/L	9	Standard
	Ag	107	249.7	3.1	**0.0286**	0.001	3.5	ug/L	82	Standard
	Cd	111	33.0	33.9	**0.0222**	0.005	21.8	mg/L	7	Standard
	Cd	114	69.1	29.2	**0.0214**	0.004	17.0	ug/L	21	Standard
>	**In**	115	591194.5	0.2				ug/L	619035	Standard
	Sn	118	343.3	13.1	**-0.0482**	0.007	14.9	ug/L	508	Standard
	Sb	123	1623.4	29.5	**0.3253**	0.094	28.9	ug/L	86	Standard
	Ba	135	29618.9	2.1	**13.5463**	0.286	2.1	ug/L	79	Standard
	Ce	140	233.3	8.1				ug/L	68	Standard
>	**Tb**	159	916411.8	1.4				ug/L	986982	Standard
	Ho	165	16.7	75.5				ug/L	10	Standard
	Tl	203	164.0	7.4	**0.0245**	0.001	5.3	ug/L	13	Standard
	Tl	205	153.3	9.4	**0.0280**	0.002	6.6	ug/L	10	Standard
	Pb	206	452.3	2.8	**0.0418**	0.003	6.2	ug/L	264	Standard
	Pb	207	393.3	7.5	**0.0434**	0.006	13.6	ug/L	227	Standard
	Pb	208	1569.4	6.7	**0.0409**	0.005	12.6	ug/L	868	Standard
	U	238	2803.6	2.3	**0.3904**	0.007	1.8	ug/L	8	Standard
>	**Bi**	209	524925.3	0.4				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	9916.6	3.7	**11.3168**	0.564	5.0	mg/L	53	Standard
K	39	163.3	7.1	**0.2151**	0.021	9.8	mg/L	53	Standard
Ca	43	110.0	25.3	**4.8532**	1.571	32.4	mg/L	28	Standard
Fe	54	113.4	15.9	**-0.0376**	0.013	34.6	mg/L	181	Standard
Fe	57	321.7	3.2	**0.2320**	0.037	16.1	mg/L	257	Standard
> **Sc-1**	45	52594.5	1.3				mg/L	55220	Standard
Cl	35	50654.5	0.8				ug/L	35504	Standard
Kr	83	3.3	45.8				ug/L	2	Standard
Br	81	13766.3	1.7				ug/L	2040	Standard
P	31	11045.7	1.4				ug/L	20435	Standard
S	34	2928.6	0.6				ug/L	2430	Standard
Sr	88	118.3	33.9				ug/L	75	Standard
C	12	100.0	26.5				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	32.4	99.3				mg/L	9	Standard
Ho-1	165	16.7	75.5				mg/L	10	Standard
Er	166	20.0	0.0				mg/L	23	Standard
I	127	64641.0	1.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.185	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.378	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.503
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.026
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606114802SDL WG574806-02
Sample Date/Time: Thursday, June 30, 2016 15:43:32
Number of Replicates: 3
Autosampler Position: 239
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64564.1	4.0				ug/L	74916	Standard
	Be	9	21.7	35.3	**0.0201**	0.008	39.4	ug/L	10	Standard
	Al	27	1491927.4	0.5	**9.9834**	0.370	3.7	ug/L	1822	Standard
	Sc	45	49999.1	4.2				ug/L	55220	Standard
	Ti	47	34.7	13.3	**0.0188**	0.013	66.8	ug/L	34	Standard
	V	51	4042.0	5.2	**0.2658**	0.027	10.2	ug/L	1938	Standard
	Cr	52	10343.9	0.9	**0.1779**	0.002	1.3	ug/L	9522	Standard
	Cr	53	1346.7	6.7	**0.8906**	0.086	9.6	ug/L	395	Standard
	Mn	55	1524.7	2.2	**0.0825**	0.003	4.1	ug/L	902	Standard
	Co	59	305.7	7.8	**0.0169**	0.003	16.8	ug/L	262	Standard
	Ni	60	472.0	2.7	**0.0773**	0.004	5.8	ug/L	371	Standard
	Cu	65	262.0	7.5	**0.0669**	0.009	12.9	ug/L	106	Standard
	Zn	66	1226.7	3.6	**0.6524**	0.029	4.5	ug/L	398	Standard
>	**Ge**	72	505648.6	0.7				ug/L	535147	Standard
	As	75	50.9	17.9	**0.0954**	0.007	7.3	ug/L	-43	Standard
	Se	82	36.8	18.2	**0.1905**	0.051	26.6	ug/L	14	Standard
	Se-1	77	105.7	7.7	**0.6606**	0.105	15.9	ug/L	65	Standard
>	**Ga**	71	55.0	41.7				mg/L	97	Standard
	Rb	85	618.3	12.5				ug/L	15	Standard
	Y	89	430100.5	1.9				ug/L	465704	Standard
>	**Rh**	103	18.3	83.3				ug/L	10	Standard
	Mo	98	84.8	5.3	**0.0413**	0.001	3.5	ug/L	9	Standard
	Ag	107	187.3	11.8	**0.0204**	0.003	16.0	ug/L	82	Standard
	Cd	111	14.2	42.3	**0.0142**	0.003	18.6	mg/L	7	Standard
	Cd	114	33.2	60.8	**0.0150**	0.004	24.5	ug/L	21	Standard
>	**In**	115	580789.9	0.7				ug/L	619035	Standard
	Sn	118	190.0	7.0	**-0.0723**	0.002	2.8	ug/L	508	Standard
	Sb	123	368.7	19.1	**0.0787**	0.015	18.6	ug/L	86	Standard
	Ba	135	5896.1	0.9	**2.7294**	0.036	1.3	ug/L	79	Standard
	Ce	140	55.0	18.2				ug/L	68	Standard
>	**Tb**	159	901658.2	1.0				ug/L	986982	Standard
	Ho	165	13.3	78.1				ug/L	10	Standard
	Tl	203	79.0	12.1	**0.0150**	0.001	7.2	ug/L	13	Standard
	Tl	205	78.3	44.8	**0.0181**	0.005	25.8	ug/L	10	Standard
	Pb	206	290.0	6.2	**0.0136**	0.003	23.6	ug/L	264	Standard
	Pb	207	233.3	1.7	**0.0125**	0.001	6.0	ug/L	227	Standard
	Pb	208	1074.7	3.5	**0.0163**	0.002	11.8	ug/L	868	Standard
	U	238	543.0	2.0	**0.0825**	0.001	1.7	ug/L	8	Standard
>	**Bi**	209	521078.1	0.1				ug/L	541014	Standard

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Na	23	1.7	173.2	**10.6993**	18.523	173.1	mg/L	2	Standard
Mg	24	1928.5	1.3	**2.2885**	0.073	3.2	mg/L	53	Standard
K	39	60.0	22.0	**0.0367**	0.026	71.3	mg/L	53	Standard
Ca	43	33.3	8.7	**0.4175**	0.262	62.8	mg/L	28	Standard
Fe	54	77.4	18.8	**-0.0607**	0.008	13.8	mg/L	181	Standard
Fe	57	326.7	3.2	**0.2947**	0.070	23.6	mg/L	257	Standard
> **Sc-1**	45	49999.1	4.2				mg/L	55220	Standard
Cl	35	49910.7	0.4				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	4307.3	7.8				ug/L	2040	Standard
P	31	8710.9	14.5				ug/L	20435	Standard
S	34	2932.0	5.4				ug/L	2430	Standard
Sr	88	100.0	26.0				ug/L	75	Standard
C	12	100.0	62.5				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	9.4	107.0				mg/L	9	Standard
Ho-1	165	13.3	78.1				mg/L	10	Standard
Er	166	13.3	86.6				mg/L	23	Standard
I	127	40771.5	0.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		86.181	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.488	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.822
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.315
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 15:46:45
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65648.6	1.2				ug/L	74916	Standard
	Be	9	52089.4	3.2	**56.3287**	1.251	2.2	ug/L	10	Standard
	Al	27	8382474.3	2.0	**55.1221**	0.938	1.7	ug/L	1822	Standard
	Sc	45	53922.5	1.2				ug/L	55220	Standard
	Ti	47	42402.9	1.4	**102.4543**	1.478	1.4	ug/L	34	Standard
	V	51	465387.0	1.0	**49.9862**	0.574	1.1	ug/L	1938	Standard
	Cr	52	469228.1	1.6	**51.0504**	0.895	1.8	ug/L	9522	Standard
	Cr	53	59473.3	3.8	**52.8395**	1.876	3.6	ug/L	395	Standard
	Mn	55	432583.6	0.9	**50.1157**	0.430	0.9	ug/L	902	Standard
	Co	59	410961.4	1.0	**50.3659**	0.420	0.8	ug/L	262	Standard
	Ni	60	114268.4	2.0	**50.7489**	1.027	2.0	ug/L	371	Standard
	Cu	65	112915.6	2.0	**51.0392**	1.019	2.0	ug/L	106	Standard
	Zn	66	66348.0	0.7	**50.6301**	0.393	0.8	ug/L	398	Standard
>	Ge	72	536080.5	0.4				ug/L	535147	Standard
	As	75	67443.3	1.3	**50.3166**	0.509	1.0	ug/L	-43	Standard
	Se	82	6849.4	0.6	**50.3529**	0.349	0.7	ug/L	14	Standard
	Se-1	77	4694.7	0.6	**51.4430**	0.420	0.8	ug/L	65	Standard
>	Ga	71	101.7	15.8				mg/L	97	Standard
	Rb	85	925.0	9.2				ug/L	15	Standard
	Y	89	470576.4	1.1				ug/L	465704	Standard
>	Rh	103	33.3	52.7				ug/L	10	Standard
	Mo	98	305436.2	1.2	**96.4896**	0.744	0.8	ug/L	9	Standard
	Ag	107	373900.7	2.0	**48.8034**	0.544	1.1	ug/L	82	Standard
	Cd	111	120993.1	0.1	**49.4148**	0.539	1.1	mg/L	7	Standard
	Cd	114	298857.5	0.7	**50.6847**	0.681	1.3	ug/L	21	Standard
>	In	115	628148.6	1.0				ug/L	619035	Standard
	Sn	118	330694.9	0.4	**49.9794**	0.746	1.5	ug/L	508	Standard
	Sb	123	266870.7	1.3	**49.6669**	0.635	1.3	ug/L	86	Standard
	Ba	135	114715.0	0.9	**49.4327**	0.539	1.1	ug/L	79	Standard
	Ce	140	148.3	30.2				ug/L	68	Standard
>	Tb	159	952045.6	0.7				ug/L	986982	Standard
	Ho	165	15.0	66.7				ug/L	10	Standard
	Tl	203	463255.3	1.5	**50.7530**	0.545	1.1	ug/L	13	Standard
	Tl	205	407629.0	0.5	**52.2795**	0.723	1.4	ug/L	10	Standard
	Pb	206	290785.0	1.1	**49.6010**	0.312	0.6	ug/L	264	Standard
	Pb	207	262146.4	0.7	**49.4786**	0.370	0.7	ug/L	227	Standard
	Pb	208	1078322.1	0.7	**52.7887**	1.009	1.9	ug/L	868	Standard
	U	238	388498.2	1.3	**51.4471**	0.537	1.0	ug/L	8	Standard
>	Bi	209	540906.6	1.3				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4492.3	1.5	**4.9799**	0.123	2.5	mg/L	53	Standard
K	39	2275.2	1.6	**3.8778**	0.020	0.5	mg/L	53	Standard
Ca	43	88.3	11.8	**3.4537**	0.669	19.4	mg/L	28	Standard
Fe	54	7294.4	2.9	**4.9718**	0.177	3.6	mg/L	181	Standard
Fe	57	2060.1	7.2	**4.9236**	0.362	7.4	mg/L	257	Standard
Sc-1	45	53922.5	1.2				mg/L	55220	Standard
Cl	35	47549.3	4.4				ug/L	35504	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	2193.5	8.6				ug/L	2040	Standard
P	31	25055.7	0.6				ug/L	20435	Standard
S	34	3182.0	0.1				ug/L	2430	Standard
Sr	88	88.3	28.5				ug/L	75	Standard
C	12	110.0	15.7				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	19.8	50.4				mg/L	9	Standard
Ho-1	165	15.0	66.7				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	23	Standard
I	127	6643.1	12.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	112.657		
Al	27	110.244		
Sc	45			
Ti	47	102.454		
V	51	99.972		
Cr	52	102.101		
Cr	53			
Mn	55	100.231		
Co	59	100.732		
Ni	60	101.498		
Cu	65	102.078		
Zn	66	101.260		
Ge	72		100.174	
As	75	100.633		
Se	82	100.706		
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
Rh	103		
Mo	98	96.490	
Ag	107	97.607	
Cd	111	98.830	
Cd	114		
In	115		101.472
Sn	118	99.959	
Sb	123	99.334	
Ba	135	98.865	
Ce	140		
Tb	159		
Ho	165		
Tl	203	101.506	
Tl	205		
Pb	206		
Pb	207		
Pb	208	105.577	
U	238	102.894	
Bi	209		99.980
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 15:49:56
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	66639.6	2.5				ug/L	74916	Standard
	Be	9	33.3	60.6	**0.0321**	0.022	69.6	ug/L	10	Standard
	Al	27	3542.1	35.4	**0.0205**	0.008	36.9	ug/L	1822	Standard
	Sc	45	54986.3	1.0				ug/L	55220	Standard
	Ti	47	40.7	21.5	**0.0270**	0.021	78.9	ug/L	34	Standard
	V	51	1615.0	9.3	**-0.0245**	0.015	60.9	ug/L	1938	Standard
	Cr	52	8524.4	1.1	**-0.1054**	0.015	14.2	ug/L	9522	Standard
	Cr	53	1090.0	5.6	**0.5753**	0.043	7.5	ug/L	395	Standard
	Mn	55	884.7	10.0	**-0.0038**	0.010	252.5	ug/L	902	Standard
	Co	59	311.7	13.4	**0.0149**	0.005	31.0	ug/L	262	Standard
	Ni	60	266.3	3.4	**-0.0285**	0.003	12.2	ug/L	371	Standard
	Cu	65	144.7	13.4	**0.0058**	0.008	135.4	ug/L	106	Standard
	Zn	66	414.3	6.4	**-0.0324**	0.022	66.8	ug/L	398	Standard
>	Ge	72	543124.4	1.3				ug/L	535147	Standard
	As	75	-41.8	54.1	**0.0245**	0.017	68.0	ug/L	-43	Standard
	Se	82	21.7	29.1	**0.0613**	0.047	76.4	ug/L	14	Standard
	Se-1	77	87.7	8.4	**0.3783**	0.093	24.5	ug/L	65	Standard
>	Ga	71	50.0	20.0				mg/L	97	Standard
	Rb	85	35.0	37.8				ug/L	15	Standard
	Y	89	472361.0	1.4				ug/L	465704	Standard
>	Rh	103	10.0	50.0				ug/L	10	Standard
	Mo	98	282.6	18.8	**0.0997**	0.015	15.5	ug/L	9	Standard
	Ag	107	310.0	3.9	**0.0336**	0.001	3.2	ug/L	82	Standard
	Cd	111	18.2	51.7	**0.0151**	0.004	24.3	mg/L	7	Standard
	Cd	114	70.6	60.9	**0.0206**	0.007	34.5	ug/L	21	Standard
>	In	115	641519.0	1.3				ug/L	619035	Standard
	Sn	118	1156.7	11.1	**0.0682**	0.021	30.4	ug/L	508	Standard
	Sb	123	968.5	30.9	**0.1813**	0.056	30.9	ug/L	86	Standard
	Ba	135	64.3	15.1	**0.0075**	0.004	49.9	ug/L	79	Standard
	Ce	140	31.7	48.2				ug/L	68	Standard
>	Tb	159	964944.2	1.7				ug/L	986982	Standard
	Ho	165	6.7	173.2				ug/L	10	Standard
	Tl	203	115.0	23.5	**0.0183**	0.003	15.4	ug/L	13	Standard
	Tl	205	113.3	36.7	**0.0218**	0.005	23.4	ug/L	10	Standard
	Pb	206	340.7	14.1	**0.0188**	0.008	40.8	ug/L	264	Standard
	Pb	207	281.0	12.0	**0.0185**	0.006	32.3	ug/L	227	Standard
	Pb	208	1211.7	16.6	**0.0194**	0.009	47.7	ug/L	868	Standard
	U	238	81.7	46.4	**0.0184**	0.005	26.2	ug/L	8	Standard
>	Bi	209	555377.0	0.5				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.3685**	16.218	173.1	mg/L	2	Standard
Mg	24	35.0	24.7	**0.0038**	0.010	255.2	mg/L	53	Standard
K	39	31.7	24.1	**-0.0219**	0.014	61.8	mg/L	53	Standard
Ca	43	16.7	45.8	**-0.7275**	0.430	59.1	mg/L	28	Standard
Fe	54	160.7	15.7	**-0.0086**	0.018	213.4	mg/L	181	Standard
Fe	57	270.0	16.5	**0.0561**	0.126	223.8	mg/L	257	Standard
> **Sc-1**	45	54986.3	1.0				mg/L	55220	Standard
Cl	35	45581.8	1.4				ug/L	35504	Standard
Kr	83	2.7	43.3				ug/L	2	Standard
Br	81	2123.5	7.6				ug/L	2040	Standard
P	31	24367.9	2.6				ug/L	20435	Standard
S	34	3195.3	1.8				ug/L	2430	Standard
Sr	88	85.0	20.4				ug/L	75	Standard
C	12	100.0	52.9				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	138.7	12.7				mg/L	9	Standard
Ho-1	165	6.7	173.2				mg/L	10	Standard
Er	166	26.7	21.7				mg/L	23	Standard
I	127	4657.4	11.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.491	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.632
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.655
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606115001
Sample Date/Time: Thursday, June 30, 2016 15:53:09
Number of Replicates: 3
Autosampler Position: 240
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69448.8	1.7				ug/L	74916	Standard
	Be	9	58.3	48.7	**0.0563**	0.030	52.9	ug/L	10	Standard
	Al	27	19098580.6	1.6	**118.7603**	3.782	3.2	ug/L	1822	Standard
	Sc	45	55650.4	2.4				ug/L	55220	Standard
	Ti	47	3432.1	3.3	**8.2642**	0.310	3.7	ug/L	34	Standard
	V	51	42258.5	0.6	**4.3797**	0.011	0.2	ug/L	1938	Standard
	Cr	52	19237.2	0.4	**1.1052**	0.018	1.6	ug/L	9522	Standard
	Cr	53	9361.2	7.9	**8.0257**	0.644	8.0	ug/L	395	Standard
	Mn	55	244442.6	1.2	**28.3961**	0.499	1.8	ug/L	902	Standard
	Co	59	2880.3	1.8	**0.3319**	0.007	2.2	ug/L	262	Standard
	Ni	60	3429.7	1.5	**1.3885**	0.022	1.6	ug/L	371	Standard
	Cu	65	2716.6	2.8	**1.1758**	0.033	2.8	ug/L	106	Standard
	Zn	66	7591.2	0.7	**5.5106**	0.012	0.2	ug/L	398	Standard
>	**Ge**	72	533808.2	0.7				ug/L	535147	Standard
	As	75	2296.3	2.9	**1.7741**	0.060	3.4	ug/L	-43	Standard
	Se	82	359.0	1.7	**2.5586**	0.060	2.3	ug/L	14	Standard
	Se-1	77	426.3	4.8	**4.1634**	0.233	5.6	ug/L	65	Standard
>	**Ga**	71	968.4	6.5				mg/L	97	Standard
	Rb	85	26389.6	1.0				ug/L	15	Standard
	Y	89	472663.4	1.3				ug/L	465704	Standard
>	**Rh**	103	78.3	7.4				ug/L	10	Standard
	Mo	98	5034.9	1.4	**1.6224**	0.008	0.5	ug/L	9	Standard
	Ag	107	266.0	13.8	**0.0291**	0.005	17.4	ug/L	82	Standard
	Cd	111	130.9	11.9	**0.0620**	0.007	10.8	mg/L	7	Standard
	Cd	114	377.1	26.4	**0.0737**	0.017	23.2	ug/L	21	Standard
>	**In**	115	620464.9	1.3				ug/L	619035	Standard
	Sn	118	1413.4	10.5	**0.1135**	0.026	22.6	ug/L	508	Standard
	Sb	123	1646.3	9.2	**0.3148**	0.032	10.3	ug/L	86	Standard
	Ba	135	121578.6	1.5	**53.0407**	0.755	1.4	ug/L	79	Standard
	Ce	140	29600.6	0.9				ug/L	68	Standard
>	**Tb**	159	964507.4	1.4				ug/L	986982	Standard
	Ho	165	411.7	13.4				ug/L	10	Standard
	Tl	203	212.3	34.2	**0.0298**	0.008	27.0	ug/L	13	Standard
	Tl	205	173.3	23.5	**0.0305**	0.005	17.3	ug/L	10	Standard
	Pb	206	6350.7	0.5	**1.0737**	0.007	0.7	ug/L	264	Standard
	Pb	207	5312.6	0.8	**0.9955**	0.008	0.8	ug/L	227	Standard
	Pb	208	22281.1	1.2	**1.0806**	0.011	1.0	ug/L	868	Standard
	U	238	13222.1	0.6	**1.8027**	0.018	1.0	ug/L	8	Standard
>	**Bi**	209	527588.8	0.4				ug/L	541014	Standard

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Na	23	6.7	43.3	**37.4623**	17.162	45.8	mg/L	2	Standard
Mg	24	54078.0	0.9	**58.4711**	1.764	3.0	mg/L	53	Standard
K	39	603.3	6.7	**0.9395**	0.053	5.6	mg/L	53	Standard
Ca	43	305.0	10.2	**15.4711**	1.773	11.5	mg/L	28	Standard
Fe	54	731.9	3.1	**0.3764**	0.022	6.0	mg/L	181	Standard
Fe	57	566.7	6.0	**0.8265**	0.082	9.9	mg/L	257	Standard
> **Sc-1**	45	55650.4	2.4				mg/L	55220	Standard
Cl	35	49211.1	0.6				ug/L	35504	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	58559.7	2.6				ug/L	2040	Standard
P	31	26145.9	0.7				ug/L	20435	Standard
S	34	2950.3	3.8				ug/L	2430	Standard
Sr	88	243.3	12.4				ug/L	75	Standard
C	12	220.0	29.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	7	Standard
Dy	164	649.1	9.9				mg/L	9	Standard
Ho-1	165	411.7	13.4				mg/L	10	Standard
Er	166	366.7	9.6				mg/L	23	Standard
I	127	437609.2	7.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.702	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.750	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.231	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.518	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606115002
Sample Date/Time: Thursday, June 30, 2016 15:56:21
Number of Replicates: 3
Autosampler Position: 241
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71421.3	1.6				ug/L	74916	Standard
	Be	9	38.3	41.9	**0.0343**	0.016	45.2	ug/L	10	Standard
	Al	27	4797413.4	1.7	**28.9985**	0.514	1.8	ug/L	1822	Standard
	Sc	45	57023.8	2.0				ug/L	55220	Standard
	Ti	47	2029.8	1.6	**4.7502**	0.136	2.9	ug/L	34	Standard
	V	51	31492.8	2.0	**3.1383**	0.061	2.0	ug/L	1938	Standard
	Cr	52	16465.9	1.6	**0.7554**	0.015	2.0	ug/L	9522	Standard
	Cr	53	2970.3	6.2	**2.2222**	0.131	5.9	ug/L	395	Standard
	Mn	55	75113.4	1.3	**8.4578**	0.011	0.1	ug/L	902	Standard
	Co	59	1569.1	2.4	**0.1661**	0.002	1.4	ug/L	262	Standard
	Ni	60	1930.8	1.8	**0.6990**	0.023	3.3	ug/L	371	Standard
	Cu	65	1792.1	3.2	**0.7376**	0.024	3.2	ug/L	106	Standard
	Zn	66	6166.3	1.8	**4.3057**	0.077	1.8	ug/L	398	Standard
>	**Ge**	72	545929.0	1.3				ug/L	535147	Standard
	As	75	1087.1	3.4	**0.8507**	0.023	2.7	ug/L	-43	Standard
	Se	82	175.6	2.3	**1.1729**	0.025	2.1	ug/L	14	Standard
	Se-1	77	148.0	13.5	**1.0280**	0.205	19.9	ug/L	65	Standard
>	**Ga**	71	653.3	9.9				mg/L	97	Standard
	Rb	85	46049.9	2.1				ug/L	15	Standard
	Y	89	476995.8	1.0				ug/L	465704	Standard
>	**Rh**	103	53.3	14.3				ug/L	10	Standard
	Mo	98	796.8	2.4	**0.2623**	0.007	2.6	ug/L	9	Standard
	Ag	107	140.3	2.9	**0.0121**	0.000	3.6	ug/L	82	Standard
	Cd	111	49.8	18.3	**0.0281**	0.004	13.4	mg/L	7	Standard
	Cd	114	123.2	30.8	**0.0296**	0.006	21.2	ug/L	21	Standard
>	**In**	115	632511.4	0.5				ug/L	619035	Standard
	Sn	118	1000.0	3.6	**0.0470**	0.006	11.8	ug/L	508	Standard
	Sb	123	4032.4	3.6	**0.7496**	0.028	3.7	ug/L	86	Standard
	Ba	135	50380.0	1.5	**21.5471**	0.216	1.0	ug/L	79	Standard
	Ce	140	16629.1	0.9				ug/L	68	Standard
>	**Tb**	159	968713.2	1.4				ug/L	986982	Standard
	Ho	165	263.3	23.6				ug/L	10	Standard
	Tl	203	95.7	12.0	**0.0164**	0.001	7.7	ug/L	13	Standard
	Tl	205	76.7	19.9	**0.0174**	0.002	11.2	ug/L	10	Standard
	Pb	206	2363.9	1.7	**0.3622**	0.006	1.7	ug/L	264	Standard
	Pb	207	1924.1	2.9	**0.3270**	0.010	3.0	ug/L	227	Standard
	Pb	208	8281.6	1.5	**0.3638**	0.007	1.8	ug/L	868	Standard
	U	238	3906.2	1.8	**0.5205**	0.010	1.9	ug/L	8	Standard
>	**Bi**	209	545694.0	0.2				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	17430.0	1.5	**18.3641**	0.418	2.3	mg/L	53	Standard
K	39	1168.4	9.0	**1.8461**	0.201	10.9	mg/L	53	Standard
Ca	43	183.3	1.6	**8.3818**	0.186	2.2	mg/L	28	Standard
Fe	54	452.3	21.5	**0.1801**	0.067	37.4	mg/L	181	Standard
Fe	57	478.3	10.5	**0.5644**	0.133	23.6	mg/L	257	Standard
> **Sc-1**	45	57023.8	2.0				mg/L	55220	Standard
Cl	35	48759.0	3.0				ug/L	35504	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	26419.7	2.9				ug/L	2040	Standard
P	31	23984.0	4.7				ug/L	20435	Standard
S	34	2903.6	6.4				ug/L	2430	Standard
Sr	88	143.3	17.2				ug/L	75	Standard
C	12	193.3	38.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	319.1	7.7				mg/L	9	Standard
Ho-1	165	263.3	23.6				mg/L	10	Standard
Er	166	226.7	31.9				mg/L	23	Standard
I	127	274664.0	5.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.335	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.015	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.177
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.865
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606099604
Sample Date/Time: Thursday, June 30, 2016 15:59:32
Number of Replicates: 3
Autosampler Position: 242
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69961.2	0.6				ug/L	74916	Standard
	Be	9	28.3	44.4	**0.0252**	0.013	51.3	ug/L	10	Standard
	Al	27	19425781.4	1.6	**119.8632**	1.268	1.1	ug/L	1822	Standard
	Sc	45	56475.1	2.4				ug/L	55220	Standard
	Ti	47	262.7	6.3	**0.5661**	0.035	6.2	ug/L	34	Standard
	V	51	2779.8	5.1	**0.1041**	0.016	15.8	ug/L	1938	Standard
	Cr	52	12190.2	1.9	**0.3167**	0.027	8.6	ug/L	9522	Standard
	Cr	53	4825.8	5.1	**3.9420**	0.240	6.1	ug/L	395	Standard
	Mn	55	5701701.5	0.7	**663.2941**	6.907	1.0	ug/L	902	Standard
	Co	59	11754.6	1.3	**1.4216**	0.014	1.0	ug/L	262	Standard
	Ni	60	7372.1	1.0	**3.1451**	0.031	1.0	ug/L	371	Standard
	Cu	65	803.4	1.9	**0.3056**	0.005	1.6	ug/L	106	Standard
	Zn	66	2560.2	1.0	**1.6248**	0.030	1.8	ug/L	398	Standard
>	**Ge**	72	534918.8	0.8				ug/L	535147	Standard
	As	75	1357.7	6.6	**1.0696**	0.075	7.0	ug/L	-43	Standard
	Se	82	88.6	10.8	**0.5572**	0.074	13.3	ug/L	14	Standard
	Se-1	77	289.7	7.7	**2.6368**	0.271	10.3	ug/L	65	Standard
>	**Ga**	71	195.0	23.1				mg/L	97	Standard
	Rb	85	6686.5	2.4				ug/L	15	Standard
	Y	89	464786.7	1.0				ug/L	465704	Standard
>	**Rh**	103	205.0	4.2				ug/L	10	Standard
	Mo	98	826.4	4.1	**0.2776**	0.013	4.8	ug/L	9	Standard
	Ag	107	114.7	5.6	**0.0091**	0.001	8.8	ug/L	82	Standard
	Cd	111	186.2	3.7	**0.0851**	0.003	3.5	mg/L	7	Standard
	Cd	114	479.9	16.5	**0.0915**	0.013	14.2	ug/L	21	Standard
>	**In**	115	618323.1	1.1				ug/L	619035	Standard
	Sn	118	810.0	8.9	**0.0212**	0.011	52.1	ug/L	508	Standard
	Sb	123	314.7	22.7	**0.0639**	0.013	20.4	ug/L	86	Standard
	Ba	135	187252.0	0.4	**81.9858**	0.624	0.8	ug/L	79	Standard
	Ce	140	5165.9	2.9				ug/L	68	Standard
>	**Tb**	159	962521.7	0.2				ug/L	986982	Standard
	Ho	165	113.3	10.2				ug/L	10	Standard
	Tl	203	260.0	5.5	**0.0351**	0.001	4.1	ug/L	13	Standard
	Tl	205	283.3	27.4	**0.0449**	0.011	23.6	ug/L	10	Standard
	Pb	206	485.3	3.4	**0.0469**	0.003	7.0	ug/L	264	Standard
	Pb	207	410.0	1.1	**0.0459**	0.001	1.8	ug/L	227	Standard
	Pb	208	1780.4	10.3	**0.0508**	0.010	20.2	ug/L	868	Standard
	U	238	896.7	6.4	**0.1292**	0.009	7.0	ug/L	8	Standard
>	**Bi**	209	529472.6	1.3				ug/L	541014	Standard

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Na	23	5.0	0.0	**27.5091**	0.643	2.3	mg/L	2	Standard
Mg	24	28273.0	1.0	**30.1001**	0.507	1.7	mg/L	53	Standard
K	39	1395.1	3.9	**2.2385**	0.055	2.5	mg/L	53	Standard
Ca	43	991.7	11.7	**53.1667**	5.071	9.5	mg/L	28	Standard
Fe	54	5117.6	1.9	**3.2912**	0.059	1.8	mg/L	181	Standard
Fe	57	1863.4	1.4	**4.1644**	0.091	2.2	mg/L	257	Standard
Sc-1	45	56475.1	2.4				mg/L	55220	Standard
Cl	35	47688.3	1.9				ug/L	35504	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	14860.6	1.2				ug/L	2040	Standard
P	31	27715.3	0.8				ug/L	20435	Standard
S	34	3085.3	5.7				ug/L	2430	Standard
Sr	88	611.7	3.7				ug/L	75	Standard
C	12	206.7	17.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	150.4	14.1				mg/L	9	Standard
Ho-1	165	113.3	10.2				mg/L	10	Standard
Er	166	130.0	23.1				mg/L	23	Standard
I	127	154687.6	2.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		93.386	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.957	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.885
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.867
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606099605
Sample Date/Time: Thursday, June 30, 2016 16:02:43
Number of Replicates: 3
Autosampler Position: 243
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69855.7	2.4				ug/L	74916	Standard
	Be	9	30.0	16.7	**0.0270**	0.006	21.6	ug/L	10	Standard
	Al	27	25298682.7	0.3	**156.4064**	3.966	2.5	ug/L	1822	Standard
	Sc	45	56075.3	2.8				ug/L	55220	Standard
	Ti	47	338.7	2.0	**0.7516**	0.018	2.5	ug/L	34	Standard
	V	51	3001.7	4.8	**0.1285**	0.018	13.9	ug/L	1938	Standard
	Cr	52	12584.6	0.7	**0.3623**	0.002	0.6	ug/L	9522	Standard
	Cr	53	5834.5	2.3	**4.8522**	0.084	1.7	ug/L	395	Standard
	Mn	55	2623286.7	0.8	**305.5121**	4.757	1.6	ug/L	902	Standard
	Co	59	15465.9	0.6	**1.8800**	0.016	0.8	ug/L	262	Standard
	Ni	60	6197.6	0.3	**2.6243**	0.013	0.5	ug/L	371	Standard
	Cu	65	2478.2	0.8	**1.0666**	0.013	1.3	ug/L	106	Standard
	Zn	66	7697.6	1.2	**5.5884**	0.116	2.1	ug/L	398	Standard
>	**Ge**	72	534251.5	0.8				ug/L	535147	Standard
	As	75	1974.2	4.3	**1.5314**	0.058	3.8	ug/L	-43	Standard
	Se	82	78.5	7.3	**0.4834**	0.046	9.5	ug/L	14	Standard
	Se-1	77	351.3	1.7	**3.3251**	0.044	1.3	ug/L	65	Standard
>	**Ga**	71	205.0	25.5				mg/L	97	Standard
	Rb	85	5237.6	3.5				ug/L	15	Standard
	Y	89	469644.5	0.7				ug/L	465704	Standard
>	**Rh**	103	150.0	26.0				ug/L	10	Standard
	Mo	98	1144.9	1.6	**0.3788**	0.004	1.1	ug/L	9	Standard
	Ag	107	102.0	8.4	**0.0074**	0.001	16.1	ug/L	82	Standard
	Cd	111	1652.0	2.2	**0.6914**	0.017	2.4	mg/L	7	Standard
	Cd	114	4129.0	3.7	**0.7182**	0.022	3.1	ug/L	21	Standard
>	**In**	115	619962.0	0.5				ug/L	619035	Standard
	Sn	118	1053.4	26.1	**0.0583**	0.043	73.2	ug/L	508	Standard
	Sb	123	326.9	12.9	**0.0660**	0.008	11.8	ug/L	86	Standard
	Ba	135	161983.3	0.3	**70.7294**	0.370	0.5	ug/L	79	Standard
	Ce	140	5751.1	4.0				ug/L	68	Standard
>	**Tb**	159	963142.2	0.8				ug/L	986982	Standard
	Ho	165	166.7	9.2				ug/L	10	Standard
	Tl	203	314.3	1.9	**0.0413**	0.001	1.6	ug/L	13	Standard
	Tl	205	290.0	12.1	**0.0458**	0.005	10.1	ug/L	10	Standard
	Pb	206	1740.4	1.2	**0.2666**	0.002	0.7	ug/L	264	Standard
	Pb	207	1409.4	1.4	**0.2395**	0.005	2.2	ug/L	227	Standard
	Pb	208	5876.8	1.0	**0.2566**	0.002	0.7	ug/L	868	Standard
	U	238	1185.0	1.4	**0.1687**	0.003	2.0	ug/L	8	Standard
>	**Bi**	209	527930.9	0.7				ug/L	541014	Standard

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Na	23	6.7	43.3	**36.6702**	14.812	40.4	mg/L	2	Standard
Mg	24	25957.2	2.0	**27.8323**	0.729	2.6	mg/L	53	Standard
K	39	1290.1	1.7	**2.0816**	0.095	4.6	mg/L	53	Standard
Ca	43	816.7	4.0	**43.9174**	2.717	6.2	mg/L	28	Standard
Fe	54	4281.2	3.8	**2.7565**	0.170	6.2	mg/L	181	Standard
Fe	57	1635.1	10.3	**3.5996**	0.392	10.9	mg/L	257	Standard
> **Sc-1**	45	56075.3	2.8				mg/L	55220	Standard
Cl	35	47329.8	0.8				ug/L	35504	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	13232.4	3.8				ug/L	2040	Standard
P	31	28035.9	1.3				ug/L	20435	Standard
S	34	3043.6	7.4				ug/L	2430	Standard
Sr	88	438.3	13.2				ug/L	75	Standard
C	12	256.7	31.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	7	Standard
Dy	164	199.3	28.2				mg/L	9	Standard
Ho-1	165	166.7	9.2				mg/L	10	Standard
Er	166	153.3	18.8				mg/L	23	Standard
I	127	169123.3	4.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.245	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.833	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.150
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.582
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606099606
Sample Date/Time: Thursday, June 30, 2016 16:05:55
Number of Replicates: 3
Autosampler Position: 244
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70334.6	1.5				ug/L	74916	Standard
	Be	9	38.3	49.4	**0.0352**	0.020	55.6	ug/L	10	Standard
	Al	27	25573073.5	2.7	**156.9735**	4.152	2.6	ug/L	1822	Standard
	Sc	45	56620.6	1.2				ug/L	55220	Standard
	Ti	47	326.7	6.1	**0.7228**	0.051	7.0	ug/L	34	Standard
	V	51	3018.6	3.6	**0.1304**	0.013	9.7	ug/L	1938	Standard
	Cr	52	12679.3	1.7	**0.3733**	0.027	7.4	ug/L	9522	Standard
	Cr	53	5749.4	2.4	**4.7779**	0.131	2.7	ug/L	395	Standard
	Mn	55	2623375.0	1.1	**305.5981**	3.639	1.2	ug/L	902	Standard
	Co	59	15436.5	1.3	**1.8770**	0.025	1.3	ug/L	262	Standard
	Ni	60	6020.2	2.8	**2.5457**	0.069	2.7	ug/L	371	Standard
	Cu	65	1658.8	4.6	**0.6948**	0.038	5.5	ug/L	106	Standard
	Zn	66	6334.0	1.2	**4.5379**	0.038	0.8	ug/L	398	Standard
>	**Ge**	72	534086.7	0.6				ug/L	535147	Standard
	As	75	1720.4	3.8	**1.3423**	0.053	4.0	ug/L	-43	Standard
	Se	82	76.2	11.8	**0.4665**	0.070	14.9	ug/L	14	Standard
	Se-1	77	341.0	8.1	**3.2125**	0.324	10.1	ug/L	65	Standard
>	**Ga**	71	150.0	6.7				mg/L	97	Standard
	Rb	85	5017.5	2.9				ug/L	15	Standard
	Y	89	460333.3	1.9				ug/L	465704	Standard
>	**Rh**	103	160.0	15.6				ug/L	10	Standard
	Mo	98	1159.9	2.1	**0.3857**	0.007	1.9	ug/L	9	Standard
	Ag	107	207.3	84.7	**0.0215**	0.023	108.6	ug/L	82	Standard
	Cd	111	1273.0	4.1	**0.5376**	0.022	4.2	mg/L	7	Standard
	Cd	114	3184.2	4.3	**0.5591**	0.023	4.1	ug/L	21	Standard
>	**In**	115	616398.5	0.2				ug/L	619035	Standard
	Sn	118	851.7	11.9	**0.0280**	0.016	56.5	ug/L	508	Standard
	Sb	123	420.7	41.3	**0.0842**	0.033	39.2	ug/L	86	Standard
	Ba	135	159545.0	0.6	**70.0658**	0.337	0.5	ug/L	79	Standard
	Ce	140	4699.1	1.6				ug/L	68	Standard
>	**Tb**	159	960648.2	1.0				ug/L	986982	Standard
	Ho	165	116.7	25.1				ug/L	10	Standard
	Tl	203	478.0	50.7	**0.0598**	0.027	45.7	ug/L	13	Standard
	Tl	205	370.0	32.5	**0.0565**	0.016	28.1	ug/L	10	Standard
	Pb	206	1075.7	12.0	**0.1509**	0.023	15.2	ug/L	264	Standard
	Pb	207	893.4	13.8	**0.1402**	0.024	17.1	ug/L	227	Standard
	Pb	208	3590.5	9.6	**0.1424**	0.017	12.3	ug/L	868	Standard
	U	238	1264.4	10.4	**0.1799**	0.018	10.0	ug/L	8	Standard
>	**Bi**	209	526401.5	0.2				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.1445**	15.830	173.1	mg/L	2	Standard
Mg	24	26034.0	1.2	**27.6407**	0.661	2.4	mg/L	53	Standard
K	39	1291.7	4.5	**2.0624**	0.110	5.3	mg/L	53	Standard
Ca	43	728.4	12.3	**38.5487**	4.806	12.5	mg/L	28	Standard
Fe	54	4004.2	3.4	**2.5420**	0.079	3.1	mg/L	181	Standard
Fe	57	1421.7	2.8	**3.0102**	0.115	3.8	mg/L	257	Standard
> **Sc-1**	45	56620.6	1.2				mg/L	55220	Standard
Cl	35	47091.1	1.5				ug/L	35504	Standard
Kr	83	3.3	62.4				ug/L	2	Standard
Br	81	12705.3	3.4				ug/L	2040	Standard
P	31	27217.8	1.2				ug/L	20435	Standard
S	34	3183.7	0.9				ug/L	2430	Standard
Sr	88	466.7	7.3				ug/L	75	Standard
C	12	233.3	22.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	147.1	4.2				mg/L	9	Standard
Ho-1	165	116.7	25.1				mg/L	10	Standard
Er	166	130.0	13.3				mg/L	23	Standard
I	127	166708.5	4.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.884	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.802	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.574	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.299	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606099607
Sample Date/Time: Thursday, June 30, 2016 16:09:06
Number of Replicates: 3
Autosampler Position: 245
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70116.9	1.0				ug/L	74916	Standard
	Be	9	10.0	50.0	**0.0065**	0.005	76.3	ug/L	10	Standard
	Al	27	19484010.1	0.8	**119.9707**	1.788	1.5	ug/L	1822	Standard
	Sc	45	56406.5	2.4				ug/L	55220	Standard
	Ti	47	205.0	2.4	**0.4191**	0.013	3.1	ug/L	34	Standard
	V	51	2940.0	2.1	**0.1165**	0.008	6.7	ug/L	1938	Standard
	Cr	52	15036.8	1.8	**0.6080**	0.037	6.2	ug/L	9522	Standard
	Cr	53	4282.3	0.5	**3.3954**	0.032	0.9	ug/L	395	Standard
	Mn	55	23551.6	2.3	**2.5932**	0.049	1.9	ug/L	902	Standard
	Co	59	903.4	6.4	**0.0865**	0.007	8.0	ug/L	262	Standard
	Ni	60	2782.6	1.3	**1.0776**	0.018	1.7	ug/L	371	Standard
	Cu	65	721.7	3.7	**0.2636**	0.013	5.0	ug/L	106	Standard
	Zn	66	2321.8	1.0	**1.4139**	0.018	1.2	ug/L	398	Standard
>	**Ge**	72	543181.9	0.5				ug/L	535147	Standard
	As	75	-0.1	61796.7	**0.0553**	0.039	70.5	ug/L	-43	Standard
	Se	82	37.3	3.2	**0.1744**	0.007	4.2	ug/L	14	Standard
	Se-1	77	228.0	4.5	**1.9126**	0.123	6.4	ug/L	65	Standard
>	**Ga**	71	105.0	17.2				mg/L	97	Standard
	Rb	85	1916.8	7.9				ug/L	15	Standard
	Y	89	473426.1	0.7				ug/L	465704	Standard
>	**Rh**	103	55.0	18.2				ug/L	10	Standard
	Mo	98	1137.2	3.5	**0.3746**	0.013	3.4	ug/L	9	Standard
	Ag	107	86.0	10.1	**0.0053**	0.001	21.9	ug/L	82	Standard
	Cd	111	110.6	8.1	**0.0534**	0.004	7.0	mg/L	7	Standard
	Cd	114	282.5	7.7	**0.0572**	0.004	6.6	ug/L	21	Standard
>	**In**	115	622869.2	0.1				ug/L	619035	Standard
	Sn	118	778.4	11.1	**0.0154**	0.013	84.2	ug/L	508	Standard
	Sb	123	258.9	21.0	**0.0530**	0.010	19.3	ug/L	86	Standard
	Ba	135	28644.1	0.6	**12.4326**	0.096	0.8	ug/L	79	Standard
	Ce	140	530.0	1.6				ug/L	68	Standard
>	**Tb**	159	966795.0	1.1				ug/L	986982	Standard
	Ho	165	28.3	40.8				ug/L	10	Standard
	Tl	203	79.7	11.9	**0.0148**	0.001	7.4	ug/L	13	Standard
	Tl	205	60.0	33.3	**0.0155**	0.003	16.9	ug/L	10	Standard
	Pb	206	402.3	7.1	**0.0317**	0.005	14.3	ug/L	264	Standard
	Pb	207	358.3	3.9	**0.0353**	0.002	6.5	ug/L	227	Standard
	Pb	208	1516.0	3.6	**0.0368**	0.002	6.3	ug/L	868	Standard
	U	238	1327.4	2.2	**0.1858**	0.004	2.0	ug/L	8	Standard
>	**Bi**	209	534294.5	0.6				ug/L	541014	Standard

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Na	23	3.3	86.6	**18.2896**	15.847	86.6	mg/L	2	Standard
Mg	24	16824.3	1.1	**17.9246**	0.605	3.4	mg/L	53	Standard
K	39	213.3	28.2	**0.2790**	0.104	37.2	mg/L	53	Standard
Ca	43	591.7	12.0	**31.1277**	3.829	12.3	mg/L	28	Standard
Fe	54	212.4	20.3	**0.0229**	0.028	124.6	mg/L	181	Standard
Fe	57	545.0	15.4	**0.7481**	0.193	25.8	mg/L	257	Standard
> **Sc-1**	45	56406.5	2.4				mg/L	55220	Standard
Cl	35	50090.0	0.6				ug/L	35504	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	4580.7	3.0				ug/L	2040	Standard
P	31	26423.0	1.3				ug/L	20435	Standard
S	34	3012.0	4.9				ug/L	2430	Standard
Sr	88	228.3	12.1				ug/L	75	Standard
C	12	143.3	29.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	7	Standard
Dy	164	29.2	60.3				mg/L	9	Standard
Ho-1	165	28.3	40.8				mg/L	10	Standard
Er	166	16.7	124.9				mg/L	23	Standard
I	127	18783.4	8.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.593	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.501	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.619
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.758
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606099608
Sample Date/Time: Thursday, June 30, 2016 16:12:18
Number of Replicates: 3
Autosampler Position: 246
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70543.9	1.8				ug/L	74916	Standard
	Be	9	15.0	66.7	**0.0116**	0.010	88.6	ug/L	10	Standard
	Al	27	22711632.2	0.7	**139.0134**	2.390	1.7	ug/L	1822	Standard
	Sc	45	57522.4	2.5				ug/L	55220	Standard
	Ti	47	207.0	5.1	**0.4278**	0.029	6.7	ug/L	34	Standard
	V	51	2735.9	11.5	**0.0971**	0.034	35.0	ug/L	1938	Standard
	Cr	52	13832.0	1.0	**0.4877**	0.005	1.1	ug/L	9522	Standard
	Cr	53	2311.8	2.6	**1.6707**	0.052	3.1	ug/L	395	Standard
	Mn	55	6443.0	0.6	**0.6388**	0.001	0.2	ug/L	902	Standard
	Co	59	926.4	2.1	**0.0902**	0.002	2.5	ug/L	262	Standard
	Ni	60	3521.7	0.7	**1.4145**	0.010	0.7	ug/L	371	Standard
	Cu	65	752.7	1.6	**0.2800**	0.006	2.2	ug/L	106	Standard
	Zn	66	2242.5	1.0	**1.3670**	0.024	1.8	ug/L	398	Standard
>	**Ge**	72	538990.2	0.6				ug/L	535147	Standard
	As	75	37.1	21.4	**0.0827**	0.006	7.0	ug/L	-43	Standard
	Se	82	41.4	4.3	**0.2064**	0.015	7.2	ug/L	14	Standard
	Se-1	77	141.3	6.0	**0.9761**	0.087	8.9	ug/L	65	Standard
>	**Ga**	71	86.7	17.6				mg/L	97	Standard
	Rb	85	4118.9	3.5				ug/L	15	Standard
	Y	89	476168.4	0.6				ug/L	465704	Standard
>	**Rh**	103	86.7	8.8				ug/L	10	Standard
	Mo	98	438.6	5.5	**0.1506**	0.008	5.2	ug/L	9	Standard
	Ag	107	104.0	20.1	**0.0075**	0.003	36.9	ug/L	82	Standard
	Cd	111	101.6	17.7	**0.0493**	0.007	14.5	mg/L	7	Standard
	Cd	114	228.0	17.1	**0.0475**	0.007	13.7	ug/L	21	Standard
>	**In**	115	629533.9	0.4				ug/L	619035	Standard
	Sn	118	818.4	4.9	**0.0202**	0.006	31.1	ug/L	508	Standard
	Sb	123	185.0	17.5	**0.0388**	0.006	15.9	ug/L	86	Standard
	Ba	135	43526.4	1.4	**18.7021**	0.263	1.4	ug/L	79	Standard
	Ce	140	235.0	5.6				ug/L	68	Standard
>	**Tb**	159	965281.9	1.5				ug/L	986982	Standard
	Ho	165	25.0	69.3				ug/L	10	Standard
	Tl	203	71.7	14.9	**0.0139**	0.001	8.0	ug/L	13	Standard
	Tl	205	46.7	27.0	**0.0137**	0.002	11.4	ug/L	10	Standard
	Pb	206	309.7	0.5	**0.0155**	0.001	4.7	ug/L	264	Standard
	Pb	207	267.0	9.4	**0.0176**	0.004	25.4	ug/L	227	Standard
	Pb	208	1122.3	2.1	**0.0171**	0.002	9.7	ug/L	868	Standard
	U	238	1061.4	2.9	**0.1496**	0.003	1.8	ug/L	8	Standard
>	**Bi**	209	536286.4	1.0				ug/L	541014	Standard

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Na	23	1.7	173.2	**8.7738**	15.188	173.1	mg/L	2	Standard
Mg	24	5964.5	3.7	**6.2055**	0.174	2.8	mg/L	53	Standard
K	39	355.0	11.2	**0.5027**	0.068	13.5	mg/L	53	Standard
Ca	43	778.4	4.5	**40.6775**	2.577	6.3	mg/L	28	Standard
Fe	54	170.4	9.8	**-0.0071**	0.012	174.8	mg/L	181	Standard
Fe	57	601.7	16.8	**0.8634**	0.218	25.3	mg/L	257	Standard
Sc-1	45	57522.4	2.5				mg/L	55220	Standard
Cl	35	50187.0	1.2				ug/L	35504	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	4597.4	6.9				ug/L	2040	Standard
P	31	26302.9	6.9				ug/L	20435	Standard
S	34	3048.6	5.1				ug/L	2430	Standard
Sr	88	291.7	3.6				ug/L	75	Standard
C	12	176.7	3.3				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	7	Standard
Dy	164	28.9	33.2				mg/L	9	Standard
Ho-1	165	25.0	69.3				mg/L	10	Standard
Er	166	23.3	107.9				mg/L	23	Standard
I	127	83376.0	6.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.163	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.718	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.696	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.126	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606099609
Sample Date/Time: Thursday, June 30, 2016 16:15:29
Number of Replicates: 3
Autosampler Position: 247
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69845.6	0.9				ug/L	74916	Standard
	Be	9	16.7	96.4	**0.0133**	0.016	122.4	ug/L	10	Standard
	Al	27	21005224.6	0.5	**129.8402**	1.843	1.4	ug/L	1822	Standard
	Sc	45	56552.1	2.6				ug/L	55220	Standard
	Ti	47	228.0	3.9	**0.4775**	0.018	3.7	ug/L	34	Standard
	V	51	2703.5	12.7	**0.0933**	0.037	39.7	ug/L	1938	Standard
	Cr	52	13913.4	0.5	**0.4950**	0.006	1.3	ug/L	9522	Standard
	Cr	53	3350.4	0.8	**2.5921**	0.039	1.5	ug/L	395	Standard
	Mn	55	377039.5	0.8	**43.3828**	0.058	0.1	ug/L	902	Standard
	Co	59	1768.4	1.9	**0.1926**	0.003	1.3	ug/L	262	Standard
	Ni	60	3728.1	1.9	**1.5042**	0.035	2.3	ug/L	371	Standard
	Cu	65	882.4	2.6	**0.3379**	0.007	2.2	ug/L	106	Standard
	Zn	66	3312.7	1.9	**2.1819**	0.032	1.4	ug/L	398	Standard
>	**Ge**	72	539583.6	0.8				ug/L	535147	Standard
	As	75	211.7	19.5	**0.2119**	0.030	14.3	ug/L	-43	Standard
	Se	82	44.3	2.0	**0.2271**	0.007	3.0	ug/L	14	Standard
	Se-1	77	164.3	5.5	**1.2281**	0.103	8.4	ug/L	65	Standard
>	**Ga**	71	81.7	24.7				mg/L	97	Standard
	Rb	85	4610.7	3.0				ug/L	15	Standard
	Y	89	467092.7	1.0				ug/L	465704	Standard
>	**Rh**	103	156.7	9.8				ug/L	10	Standard
	Mo	98	4088.4	2.0	**1.3255**	0.024	1.8	ug/L	9	Standard
	Ag	107	151.7	8.6	**0.0141**	0.002	12.4	ug/L	82	Standard
	Cd	111	530.2	3.4	**0.2280**	0.007	3.0	mg/L	7	Standard
	Cd	114	1263.2	4.5	**0.2267**	0.009	4.2	ug/L	21	Standard
>	**In**	115	617728.7	0.2				ug/L	619035	Standard
	Sn	118	1375.1	33.7	**0.1082**	0.071	65.5	ug/L	508	Standard
	Sb	123	301.9	1.0	**0.0615**	0.001	1.0	ug/L	86	Standard
	Ba	135	43249.0	1.1	**18.9381**	0.206	1.1	ug/L	79	Standard
	Ce	140	308.3	12.2				ug/L	68	Standard
>	**Tb**	159	955749.7	1.1				ug/L	986982	Standard
	Ho	165	30.0	28.9				ug/L	10	Standard
	Tl	203	109.7	13.8	**0.0182**	0.002	9.5	ug/L	13	Standard
	Tl	205	103.3	34.0	**0.0212**	0.005	21.6	ug/L	10	Standard
	Pb	206	534.7	2.3	**0.0552**	0.002	3.4	ug/L	264	Standard
	Pb	207	441.3	2.8	**0.0517**	0.003	5.1	ug/L	227	Standard
	Pb	208	1853.7	3.0	**0.0542**	0.003	4.9	ug/L	868	Standard
	U	238	762.0	2.3	**0.1107**	0.003	2.5	ug/L	8	Standard
>	**Bi**	209	530937.1	0.4				ug/L	541014	Standard

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Na	23	5.0	100.0	**27.1983**	27.396	100.7	mg/L	2	Standard
Mg	24	7133.3	3.1	**7.5562**	0.118	1.6	mg/L	53	Standard
K	39	415.0	10.3	**0.6114**	0.064	10.5	mg/L	53	Standard
Ca	43	686.7	4.0	**36.3056**	1.365	3.8	mg/L	28	Standard
Fe	54	1208.6	8.4	**0.6860**	0.076	11.1	mg/L	181	Standard
Fe	57	823.4	2.3	**1.4684**	0.104	7.1	mg/L	257	Standard
> **Sc-1**	45	56552.1	2.6				mg/L	55220	Standard
Cl	35	50053.9	2.1				ug/L	35504	Standard
Kr	83	3.7	15.7				ug/L	2	Standard
Br	81	7205.1	9.6				ug/L	2040	Standard
P	31	26600.0	1.7				ug/L	20435	Standard
S	34	2965.3	2.8				ug/L	2430	Standard
Sr	88	376.7	10.1				ug/L	75	Standard
C	12	183.3	16.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	22.5	25.0				mg/L	9	Standard
Ho-1	165	30.0	28.9				mg/L	10	Standard
Er	166	16.7	34.6				mg/L	23	Standard
I	127	44396.6	1.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.231	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.829	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.789
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.137
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606099609
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Method 6020 - Summary Report

Sample ID: L1606103002
Sample Date/Time: Thursday, June 30, 2016 16:18:40
Number of Replicates: 3
Autosampler Position: 248
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69760.3	2.4				ug/L	74916	Standard
	Be	9	13.3	86.6	**0.0101**	0.012	117.4	ug/L	10	Standard
	Al	27	740653.6	2.0	**4.5836**	0.173	3.8	ug/L	1822	Standard
	Sc	45	56779.5	1.3				ug/L	55220	Standard
	Ti	47	352.0	6.0	**0.7588**	0.067	8.8	ug/L	34	Standard
	V	51	3517.2	3.2	**0.1726**	0.008	4.9	ug/L	1938	Standard
	Cr	52	13903.4	3.0	**0.4622**	0.042	9.0	ug/L	9522	Standard
	Cr	53	2013.5	2.9	**1.3664**	0.059	4.4	ug/L	395	Standard
	Mn	55	55706.2	1.6	**6.1883**	0.152	2.5	ug/L	902	Standard
	Co	59	1079.7	0.9	**0.1060**	0.002	2.2	ug/L	262	Standard
	Ni	60	1229.0	0.4	**0.3871**	0.010	2.6	ug/L	371	Standard
	Cu	65	533.7	9.3	**0.1760**	0.017	9.9	ug/L	106	Standard
	Zn	66	3869.5	1.0	**2.5467**	0.076	3.0	ug/L	398	Standard
>	**Ge**	72	551015.3	2.1				ug/L	535147	Standard
	As	75	98.2	11.1	**0.1264**	0.007	5.5	ug/L	-43	Standard
	Se	82	54.6	6.8	**0.2946**	0.030	10.2	ug/L	14	Standard
	Se-1	77	78.3	5.2	**0.2634**	0.045	17.3	ug/L	65	Standard
>	**Ga**	71	133.3	13.2				mg/L	97	Standard
	Rb	85	4482.3	4.1				ug/L	15	Standard
	Y	89	487384.7	2.5				ug/L	465704	Standard
>	**Rh**	103	13.3	21.7				ug/L	10	Standard
	Mo	98	79.3	5.3	**0.0369**	0.001	3.8	ug/L	9	Standard
	Ag	107	110.3	7.7	**0.0080**	0.001	13.7	ug/L	82	Standard
	Cd	111	13.9	7.2	**0.0134**	0.000	3.0	mg/L	7	Standard
	Cd	114	54.8	20.1	**0.0180**	0.002	10.1	ug/L	21	Standard
>	**In**	115	642536.0	0.9				ug/L	619035	Standard
	Sn	118	813.4	8.4	**0.0170**	0.011	62.4	ug/L	508	Standard
	Sb	123	143.8	24.4	**0.0306**	0.006	21.1	ug/L	86	Standard
	Ba	135	10242.1	2.0	**4.2969**	0.104	2.4	ug/L	79	Standard
	Ce	140	11245.8	1.1				ug/L	68	Standard
>	**Tb**	159	974036.2	1.2				ug/L	986982	Standard
	Ho	165	155.0	23.3				ug/L	10	Standard
	Tl	203	30.0	5.8	**0.0092**	0.000	2.1	ug/L	13	Standard
	Tl	205	23.3	65.5	**0.0106**	0.002	18.2	ug/L	10	Standard
	Pb	206	1023.7	2.5	**0.1315**	0.002	1.9	ug/L	264	Standard
	Pb	207	847.0	4.7	**0.1218**	0.006	4.7	ug/L	227	Standard
	Pb	208	3461.5	0.8	**0.1259**	0.001	0.4	ug/L	868	Standard
	U	238	63.3	7.9	**0.0160**	0.001	3.8	ug/L	8	Standard
>	**Bi**	209	558238.3	1.1				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	700.0	10.4	**0.7068**	0.068	9.6	mg/L	53	Standard
K	39	126.7	12.7	**0.1329**	0.024	18.3	mg/L	53	Standard
Ca	43	31.7	36.5	**0.0684**	0.631	922.5	mg/L	28	Standard
Fe	54	408.8	4.5	**0.1521**	0.009	6.0	mg/L	181	Standard
Fe	57	358.3	8.9	**0.2610**	0.094	35.8	mg/L	257	Standard
> **Sc-1**	45	56779.5	1.3				mg/L	55220	Standard
Cl	35	48396.5	2.0				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	8715.8	6.7				ug/L	2040	Standard
P	31	25454.7	3.1				ug/L	20435	Standard
S	34	2967.0	5.2				ug/L	2430	Standard
Sr	88	95.0	13.9				ug/L	75	Standard
C	12	143.3	26.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	7	Standard
Dy	164	300.0	13.4				mg/L	9	Standard
Ho-1	165	155.0	23.3				mg/L	10	Standard
Er	166	140.0	25.8				mg/L	23	Standard
I	127	23847.1	3.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.117	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.965	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.796
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.184
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606103005
Sample Date/Time: Thursday, June 30, 2016 16:21:52
Number of Replicates: 3
Autosampler Position: 249
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71014.4	1.4				ug/L	74916	Standard
	Be	9	36.7	55.1	**0.0329**	0.020	60.1	ug/L	10	Standard
	Al	27	717718.3	2.7	**4.3622**	0.171	3.9	ug/L	1822	Standard
	Sc	45	58608.3	4.0				ug/L	55220	Standard
	Ti	47	356.7	10.5	**0.7684**	0.093	12.1	ug/L	34	Standard
	V	51	3250.2	2.0	**0.1443**	0.006	4.2	ug/L	1938	Standard
	Cr	52	13800.9	1.1	**0.4496**	0.006	1.2	ug/L	9522	Standard
	Cr	53	1710.1	0.8	**1.1004**	0.000	0.0	ug/L	395	Standard
	Mn	55	53809.4	0.9	**5.9671**	0.056	0.9	ug/L	902	Standard
	Co	59	1072.7	2.4	**0.1050**	0.004	3.7	ug/L	262	Standard
	Ni	60	1245.1	3.8	**0.3933**	0.017	4.2	ug/L	371	Standard
	Cu	65	488.3	4.9	**0.1561**	0.012	7.7	ug/L	106	Standard
	Zn	66	4184.6	0.6	**2.7785**	0.022	0.8	ug/L	398	Standard
>	**Ge**	72	551518.7	0.8				ug/L	535147	Standard
	As	75	30.2	104.8	**0.0772**	0.023	29.8	ug/L	-43	Standard
	Se	82	28.0	24.6	**0.1034**	0.050	48.7	ug/L	14	Standard
	Se-1	77	77.3	8.3	**0.2515**	0.067	26.5	ug/L	65	Standard
>	**Ga**	71	118.3	27.5				mg/L	97	Standard
	Rb	85	4068.9	5.6				ug/L	15	Standard
	Y	89	482786.2	0.5				ug/L	465704	Standard
>	**Rh**	103	13.3	43.3				ug/L	10	Standard
	Mo	98	68.4	19.7	**0.0333**	0.004	12.0	ug/L	9	Standard
	Ag	107	143.7	25.9	**0.0121**	0.005	37.8	ug/L	82	Standard
	Cd	111	28.2	75.9	**0.0190**	0.008	44.0	mg/L	7	Standard
	Cd	114	64.3	75.6	**0.0195**	0.008	40.6	ug/L	21	Standard
>	**In**	115	647732.5	0.7				ug/L	619035	Standard
	Sn	118	833.4	12.9	**0.0190**	0.016	84.0	ug/L	508	Standard
	Sb	123	159.5	29.5	**0.0332**	0.008	25.1	ug/L	86	Standard
	Ba	135	9910.6	2.3	**4.1231**	0.071	1.7	ug/L	79	Standard
	Ce	140	11327.6	1.9				ug/L	68	Standard
>	**Tb**	159	970710.1	0.2				ug/L	986982	Standard
	Ho	165	156.7	7.4				ug/L	10	Standard
	Tl	203	65.3	101.0	**0.0129**	0.007	54.3	ug/L	13	Standard
	Tl	205	46.7	37.6	**0.0135**	0.002	16.3	ug/L	10	Standard
	Pb	206	1011.0	5.5	**0.1282**	0.010	8.1	ug/L	264	Standard
	Pb	207	823.0	5.9	**0.1162**	0.008	6.8	ug/L	227	Standard
	Pb	208	3448.2	2.5	**0.1240**	0.005	4.1	ug/L	868	Standard
	U	238	82.7	18.8	**0.0184**	0.002	11.2	ug/L	8	Standard
>	**Bi**	209	562677.9	0.7				ug/L	541014	Standard

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Na	23	3.3	173.2	**17.7615**	30.755	173.2	mg/L	2	Standard
Mg	24	670.0	4.2	**0.6549**	0.055	8.5	mg/L	53	Standard
K	39	98.3	10.6	**0.0811**	0.012	14.9	mg/L	53	Standard
Ca	43	48.3	26.0	**0.8897**	0.576	64.7	mg/L	28	Standard
Fe	54	422.0	23.4	**0.1541**	0.074	47.7	mg/L	181	Standard
Fe	57	358.3	7.9	**0.2330**	0.089	38.0	mg/L	257	Standard
> **Sc-1**	45	58608.3	4.0				mg/L	55220	Standard
Cl	35	47519.1	2.1				ug/L	35504	Standard
Kr	83	3.3	17.3				ug/L	2	Standard
Br	81	3033.6	9.1				ug/L	2040	Standard
P	31	25564.9	4.9				ug/L	20435	Standard
S	34	2915.3	4.9				ug/L	2430	Standard
Sr	88	93.3	35.7				ug/L	75	Standard
C	12	126.7	31.9				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	250.9	22.7				mg/L	9	Standard
Ho-1	165	156.7	7.4				mg/L	10	Standard
Er	166	120.0	14.4				mg/L	23	Standard
I	127	18065.8	5.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.791	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.059	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.636
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.004
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 16:25:05
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68409.2	3.0				ug/L	74916	Standard
	Be	9	52770.2	5.1	**54.7618**	1.986	3.6	ug/L	10	Standard
	Al	27	8495126.3	2.5	**53.6326**	1.834	3.4	ug/L	1822	Standard
	Sc	45	55150.2	3.0				ug/L	55220	Standard
	Ti	47	42922.7	1.8	**102.7322**	1.643	1.6	ug/L	34	Standard
	V	51	470082.4	0.9	**50.0153**	0.422	0.8	ug/L	1938	Standard
	Cr	52	473487.4	0.8	**51.0277**	0.278	0.5	ug/L	9522	Standard
	Cr	53	59402.9	1.8	**52.2791**	0.810	1.5	ug/L	395	Standard
	Mn	55	439411.4	1.3	**50.4278**	0.536	1.1	ug/L	902	Standard
	Co	59	415321.2	1.6	**50.4208**	0.645	1.3	ug/L	262	Standard
	Ni	60	115571.1	0.7	**50.8447**	0.188	0.4	ug/L	371	Standard
	Cu	65	113338.0	1.1	**50.7471**	0.414	0.8	ug/L	106	Standard
	Zn	66	66667.7	0.4	**50.3945**	0.324	0.6	ug/L	398	Standard
>	Ge	72	541166.6	0.3				ug/L	535147	Standard
	As	75	67552.5	0.5	**49.9255**	0.120	0.2	ug/L	-43	Standard
	Se	82	6820.0	2.0	**49.6629**	0.906	1.8	ug/L	14	Standard
	Se-1	77	4680.1	1.7	**50.7942**	1.014	2.0	ug/L	65	Standard
>	Ga	71	88.3	11.8				mg/L	97	Standard
	Rb	85	988.4	2.8				ug/L	15	Standard
	Y	89	475342.9	0.3				ug/L	465704	Standard
>	Rh	103	28.3	20.4				ug/L	10	Standard
	Mo	98	308161.4	1.1	**96.6686**	2.040	2.1	ug/L	9	Standard
	Ag	107	378642.8	1.0	**49.0786**	0.942	1.9	ug/L	82	Standard
	Cd	111	122873.2	0.7	**49.8265**	0.844	1.7	mg/L	7	Standard
	Cd	114	299328.2	0.9	**50.4045**	0.935	1.9	ug/L	21	Standard
>	In	115	632664.3	1.1				ug/L	619035	Standard
	Sn	118	332294.9	1.6	**49.8630**	1.097	2.2	ug/L	508	Standard
	Sb	123	268364.2	0.7	**49.5926**	0.839	1.7	ug/L	86	Standard
	Ba	135	114660.2	0.5	**49.0565**	0.431	0.9	ug/L	79	Standard
	Ce	140	131.7	35.9				ug/L	68	Standard
>	Tb	159	965300.2	0.9				ug/L	986982	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	465432.8	0.6	**50.6040**	0.185	0.4	ug/L	13	Standard
	Tl	205	408743.6	0.9	**52.0229**	0.823	1.6	ug/L	10	Standard
	Pb	206	293608.2	0.5	**49.7024**	0.334	0.7	ug/L	264	Standard
	Pb	207	265313.8	0.4	**49.6947**	0.197	0.4	ug/L	227	Standard
	Pb	208	1077488.9	0.3	**52.3406**	0.343	0.7	ug/L	868	Standard
	U	238	391420.8	0.1	**51.4409**	0.405	0.8	ug/L	8	Standard
>	Bi	209	545041.9	0.8				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4614.0	2.3	**5.0053**	0.264	5.3	mg/L	53	Standard
K	39	2398.5	2.1	**4.0028**	0.184	4.6	mg/L	53	Standard
Ca	43	113.3	12.7	**4.7722**	1.026	21.5	mg/L	28	Standard
Fe	54	7252.1	4.5	**4.8280**	0.125	2.6	mg/L	181	Standard
Fe	57	2030.1	4.0	**4.7230**	0.221	4.7	mg/L	257	Standard
Sc-1	45	55150.2	3.0				mg/L	55220	Standard
Cl	35	45835.2	2.1				ug/L	35504	Standard
Kr	83	3.0	57.7				ug/L	2	Standard
Br	81	1923.5	9.2				ug/L	2040	Standard
P	31	25456.4	2.5				ug/L	20435	Standard
S	34	3473.7	4.0				ug/L	2430	Standard
Sr	88	76.7	13.6				ug/L	75	Standard
C	12	90.0	0.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	9.0	113.3				mg/L	9	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	23	Standard
I	127	5842.8	18.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	109.524		
Al	27	107.265		
Sc	45			
Ti	47	102.732		
V	51	100.031		
Cr	52	102.055		
Cr	53			
Mn	55	100.856		
Co	59	100.842		
Ni	60	101.689		
Cu	65	101.494		
Zn	66	100.789		
Ge	72		101.125	
As	75	99.851		
Se	82	99.326		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	96.669		
Ag	107	98.157		
Cd	111	99.653		
Cd	114			
> In	115			102.202
Sn	118	99.726		
Sb	123	99.185		
Ba	135	98.113		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.208		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.681		
U	238	102.882		
> Bi	209			100.744
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 16:28:16
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67131.8	2.8				ug/L	74916	Standard
	Be	9	28.3	40.8	**0.0262**	0.012	45.2	ug/L	10	Standard
	Al	27	2920.3	34.7	**0.0163**	0.006	36.2	ug/L	1822	Standard
	Sc	45	56267.7	3.6				ug/L	55220	Standard
	Ti	47	38.0	2.6	**0.0210**	0.004	16.8	ug/L	34	Standard
	V	51	1661.2	5.6	**-0.0188**	0.009	47.1	ug/L	1938	Standard
	Cr	52	8418.7	1.4	**-0.1130**	0.019	16.9	ug/L	9522	Standard
	Cr	53	883.4	4.8	**0.3966**	0.043	10.8	ug/L	395	Standard
	Mn	55	915.7	3.3	**0.0002**	0.003	1118.4	ug/L	902	Standard
	Co	59	280.3	8.3	**0.0113**	0.003	23.7	ug/L	262	Standard
	Ni	60	270.3	5.6	**-0.0262**	0.007	28.6	ug/L	371	Standard
	Cu	65	136.3	8.6	**0.0024**	0.006	231.2	ug/L	106	Standard
	Zn	66	465.7	3.7	**0.0080**	0.015	185.4	ug/L	398	Standard
>	**Ge**	72	540817.2	1.3				ug/L	535147	Standard
	As	75	-34.0	85.0	**0.0299**	0.022	73.2	ug/L	-43	Standard
	Se	82	21.5	42.4	**0.0591**	0.065	109.7	ug/L	14	Standard
	Se-1	77	70.3	7.2	**0.1909**	0.046	24.3	ug/L	65	Standard
>	**Ga**	71	63.3	19.9				mg/L	97	Standard
	Rb	85	45.0	29.4				ug/L	15	Standard
	Y	89	468523.8	0.5				ug/L	465704	Standard
>	**Rh**	103	15.0	33.3				ug/L	10	Standard
	Mo	98	291.3	18.3	**0.1025**	0.015	14.9	ug/L	9	Standard
	Ag	107	139.7	15.6	**0.0118**	0.003	21.7	ug/L	82	Standard
	Cd	111	16.4	55.4	**0.0145**	0.004	24.7	mg/L	7	Standard
	Cd	114	48.7	43.6	**0.0170**	0.003	20.4	ug/L	21	Standard
>	**In**	115	639875.7	1.4				ug/L	619035	Standard
	Sn	118	1166.7	8.1	**0.0701**	0.016	22.8	ug/L	508	Standard
	Sb	123	660.1	27.5	**0.1253**	0.035	27.6	ug/L	86	Standard
	Ba	135	57.3	38.1	**0.0045**	0.009	195.0	ug/L	79	Standard
	Ce	140	36.7	20.8				ug/L	68	Standard
>	**Tb**	159	969041.7	1.0				ug/L	986982	Standard
	Ho	165	13.3	43.3				ug/L	10	Standard
	Tl	203	78.3	14.8	**0.0144**	0.001	8.4	ug/L	13	Standard
	Tl	205	63.3	52.6	**0.0156**	0.004	26.4	ug/L	10	Standard
	Pb	206	295.0	18.9	**0.0113**	0.009	80.3	ug/L	264	Standard
	Pb	207	276.3	20.0	**0.0177**	0.010	56.3	ug/L	227	Standard
	Pb	208	1191.7	6.8	**0.0186**	0.004	19.5	ug/L	868	Standard
	U	238	60.3	49.7	**0.0157**	0.004	24.5	ug/L	8	Standard
>	**Bi**	209	554738.2	0.5				ug/L	541014	Standard

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Na	23	1.7	173.2	**8.8353**	15.295	173.1	mg/L	2	Standard
Mg	24	35.0	42.9	**0.0026**	0.015	574.6	mg/L	53	Standard
K	39	45.0	29.4	**-0.0007**	0.024	3568.2	mg/L	53	Standard
Ca	43	20.0	25.0	**-0.5678**	0.244	42.9	mg/L	28	Standard
Fe	54	167.8	9.1	**-0.0064**	0.012	182.5	mg/L	181	Standard
Fe	57	263.3	17.1	**0.0197**	0.094	478.7	mg/L	257	Standard
Sc-1	45	56267.7	3.6				mg/L	55220	Standard
Cl	35	46157.5	0.4				ug/L	35504	Standard
Kr	83	3.3	34.6				ug/L	2	Standard
Br	81	2056.8	3.2				ug/L	2040	Standard
P	31	24833.7	3.8				ug/L	20435	Standard
S	34	3113.7	3.7				ug/L	2430	Standard
Sr	88	50.0	26.5				ug/L	75	Standard
C	12	90.0	11.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	168.7	37.2				mg/L	9	Standard
Ho-1	165	13.3	43.3				mg/L	10	Standard
Er	166	26.7	43.3				mg/L	23	Standard
I	127	4048.9	10.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.060	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.367
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.537
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606103008
Sample Date/Time: Thursday, June 30, 2016 16:31:29
Number of Replicates: 3
Autosampler Position: 250
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67414.7	2.6				ug/L	74916	Standard
	Be	9	23.3	24.7	**0.0211**	0.007	31.0	ug/L	10	Standard
	Al	27	697703.1	1.5	**4.4665**	0.053	1.2	ug/L	1822	Standard
	Sc	45	56883.3	3.1				ug/L	55220	Standard
	Ti	47	374.3	11.3	**0.8209**	0.099	12.1	ug/L	34	Standard
	V	51	3031.5	6.1	**0.1256**	0.021	17.0	ug/L	1938	Standard
	Cr	52	13310.2	0.8	**0.4153**	0.020	4.7	ug/L	9522	Standard
	Cr	53	1890.1	4.4	**1.2785**	0.079	6.2	ug/L	395	Standard
	Mn	55	49832.8	1.5	**5.5910**	0.086	1.5	ug/L	902	Standard
	Co	59	881.4	5.0	**0.0836**	0.005	5.8	ug/L	262	Standard
	Ni	60	1075.7	3.9	**0.3261**	0.016	4.9	ug/L	371	Standard
	Cu	65	445.3	2.7	**0.1397**	0.005	3.6	ug/L	106	Standard
	Zn	66	3558.4	0.9	**2.3451**	0.015	0.6	ug/L	398	Standard
>	**Ge**	72	544476.9	0.6				ug/L	535147	Standard
	As	75	37.1	82.1	**0.0823**	0.022	27.1	ug/L	-43	Standard
	Se	82	25.7	9.9	**0.0891**	0.018	19.8	ug/L	14	Standard
	Se-1	77	81.7	9.9	**0.3096**	0.087	28.2	ug/L	65	Standard
>	**Ga**	71	90.0	22.2				mg/L	97	Standard
	Rb	85	3642.1	3.5				ug/L	15	Standard
	Y	89	476384.2	2.4				ug/L	465704	Standard
>	**Rh**	103	21.7	74.2				ug/L	10	Standard
	Mo	98	124.4	15.8	**0.0511**	0.006	12.0	ug/L	9	Standard
	Ag	107	111.3	7.2	**0.0082**	0.001	12.5	ug/L	82	Standard
	Cd	111	22.8	8.9	**0.0171**	0.001	4.8	mg/L	7	Standard
	Cd	114	58.8	19.4	**0.0187**	0.002	10.1	ug/L	21	Standard
>	**In**	115	637810.6	0.1				ug/L	619035	Standard
	Sn	118	851.7	7.3	**0.0236**	0.009	39.2	ug/L	508	Standard
	Sb	123	241.7	16.4	**0.0487**	0.007	15.0	ug/L	86	Standard
	Ba	135	9792.2	0.8	**4.1375**	0.040	1.0	ug/L	79	Standard
	Ce	140	7248.4	1.1				ug/L	68	Standard
>	**Tb**	159	972412.9	0.5				ug/L	986982	Standard
	Ho	165	118.3	14.8				ug/L	10	Standard
	Tl	203	47.0	27.2	**0.0111**	0.001	12.5	ug/L	13	Standard
	Tl	205	40.0	12.5	**0.0127**	0.001	4.9	ug/L	10	Standard
	Pb	206	772.0	3.0	**0.0916**	0.004	4.5	ug/L	264	Standard
	Pb	207	671.7	2.4	**0.0914**	0.003	3.0	ug/L	227	Standard
	Pb	208	2701.1	2.6	**0.0916**	0.004	4.0	ug/L	868	Standard
	U	238	61.7	16.6	**0.0159**	0.001	8.3	ug/L	8	Standard
>	**Bi**	209	550857.6	0.2				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	663.3	5.7	**0.6669**	0.021	3.2	mg/L	53	Standard
K	39	96.7	6.0	**0.0832**	0.007	9.0	mg/L	53	Standard
Ca	43	33.3	8.7	**0.1622**	0.212	130.8	mg/L	28	Standard
Fe	54	363.8	6.2	**0.1221**	0.018	14.7	mg/L	181	Standard
Fe	57	288.3	10.5	**0.0801**	0.094	117.2	mg/L	257	Standard
> **Sc-1**	45	56883.3	3.1				mg/L	55220	Standard
Cl	35	46234.4	1.6				ug/L	35504	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	3327.0	3.1				ug/L	2040	Standard
P	31	24850.4	2.2				ug/L	20435	Standard
S	34	2960.3	3.4				ug/L	2430	Standard
Sr	88	66.7	24.1				ug/L	75	Standard
C	12	120.0	44.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	124.3	19.8				mg/L	9	Standard
Ho-1	165	118.3	14.8				mg/L	10	Standard
Er	166	120.0	33.3				mg/L	23	Standard
I	127	13813.0	2.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.987	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.743	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.033
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.819
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606103013 WG573728-02
Sample Date/Time: Thursday, June 30, 2016 16:34:40
Number of Replicates: 3
Autosampler Position: 251
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67988.9	0.4				ug/L	74916	Standard
	Be	9	13.3	94.4	**0.0104**	0.013	127.2	ug/L	10	Standard
	Al	27	820817.4	1.2	**5.2095**	0.042	0.8	ug/L	1822	Standard
	Sc	45	58102.9	0.4				ug/L	55220	Standard
	Ti	47	348.7	6.4	**0.7490**	0.042	5.6	ug/L	34	Standard
	V	51	3037.8	4.0	**0.1221**	0.014	11.5	ug/L	1938	Standard
	Cr	52	13485.0	2.0	**0.4159**	0.029	6.9	ug/L	9522	Standard
	Cr	53	1880.1	4.5	**1.2495**	0.097	7.7	ug/L	395	Standard
	Mn	55	48555.0	1.2	**5.3761**	0.139	2.6	ug/L	902	Standard
	Co	59	705.7	1.6	**0.0613**	0.002	3.3	ug/L	262	Standard
	Ni	60	823.7	3.3	**0.2110**	0.010	4.6	ug/L	371	Standard
	Cu	65	477.7	3.8	**0.1514**	0.008	5.4	ug/L	106	Standard
	Zn	66	2294.5	2.6	**1.3677**	0.067	4.9	ug/L	398	Standard
>	**Ge**	72	551432.0	1.3				ug/L	535147	Standard
	As	75	61.7	53.3	**0.1002**	0.025	24.5	ug/L	-43	Standard
	Se	82	25.1	14.7	**0.0831**	0.029	34.7	ug/L	14	Standard
	Se-1	77	81.3	5.1	**0.2948**	0.041	13.8	ug/L	65	Standard
>	**Ga**	71	106.7	23.1				mg/L	97	Standard
	Rb	85	3122.0	4.7				ug/L	15	Standard
	Y	89	476977.3	1.4				ug/L	465704	Standard
>	**Rh**	103	23.3	53.9				ug/L	10	Standard
	Mo	98	80.0	20.0	**0.0372**	0.005	13.7	ug/L	9	Standard
	Ag	107	90.0	10.9	**0.0055**	0.001	24.8	ug/L	82	Standard
	Cd	111	8.2	7.2	**0.0112**	0.000	1.8	mg/L	7	Standard
	Cd	114	12.6	96.2	**0.0110**	0.002	18.1	ug/L	21	Standard
>	**In**	115	639996.7	2.1				ug/L	619035	Standard
	Sn	118	836.7	12.0	**0.0208**	0.013	62.4	ug/L	508	Standard
	Sb	123	169.8	31.7	**0.0353**	0.009	26.2	ug/L	86	Standard
	Ba	135	10432.3	1.4	**4.3955**	0.116	2.6	ug/L	79	Standard
	Ce	140	5774.4	3.1				ug/L	68	Standard
>	**Tb**	159	976928.2	1.0				ug/L	986982	Standard
	Ho	165	96.7	23.3				ug/L	10	Standard
	Tl	203	29.7	12.8	**0.0092**	0.000	4.1	ug/L	13	Standard
	Tl	205	30.0	44.1	**0.0115**	0.002	14.7	ug/L	10	Standard
	Pb	206	595.0	6.4	**0.0616**	0.006	9.8	ug/L	264	Standard
	Pb	207	524.7	2.4	**0.0638**	0.001	2.3	ug/L	227	Standard
	Pb	208	2121.1	2.9	**0.0633**	0.002	3.3	ug/L	868	Standard
	U	238	43.3	13.9	**0.0135**	0.001	5.9	ug/L	8	Standard
>	**Bi**	209	552576.0	0.9				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	903.4	7.9	**0.9013**	0.077	8.5	mg/L	53	Standard
K	39	136.7	7.6	**0.1445**	0.018	12.2	mg/L	53	Standard
Ca	43	45.0	40.1	**0.7451**	0.962	129.2	mg/L	28	Standard
Fe	54	370.4	5.4	**0.1211**	0.012	10.2	mg/L	181	Standard
Fe	57	331.7	15.5	**0.1724**	0.132	76.7	mg/L	257	Standard
> **Sc-1**	45	58102.9	0.4				mg/L	55220	Standard
Cl	35	45958.3	0.9				ug/L	35504	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	3450.4	5.0				ug/L	2040	Standard
P	31	26236.1	5.3				ug/L	20435	Standard
S	34	2760.3	4.3				ug/L	2430	Standard
Sr	88	101.7	11.4				ug/L	75	Standard
C	12	123.3	30.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	220.1	21.3				mg/L	9	Standard
Ho-1	165	96.7	23.3				mg/L	10	Standard
Er	166	66.7	17.3				mg/L	23	Standard
I	127	17006.2	5.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.753	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.043	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606103013 WG573728-02
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.386
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.137
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606103014S WG573728-07
Sample Date/Time: Thursday, June 30, 2016 16:37:52
Number of Replicates: 3
Autosampler Position: 252
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68017.4	2.0				ug/L	74916	Standard
	Be	9	52571.1	2.8	**54.8746**	0.821	1.5	ug/L	10	Standard
	Al	27	884621.2	0.8	**5.6134**	0.073	1.3	ug/L	1822	Standard
	Sc	45	57954.0	0.7				ug/L	55220	Standard
	Ti	47	382.3	7.1	**0.8317**	0.058	7.0	ug/L	34	Standard
	V	51	465045.2	1.2	**48.7359**	0.671	1.4	ug/L	1938	Standard
	Cr	52	472423.2	0.7	**50.1344**	0.252	0.5	ug/L	9522	Standard
	Cr	53	57743.2	0.8	**50.0432**	0.144	0.3	ug/L	395	Standard
	Mn	55	488346.3	1.0	**55.2189**	0.761	1.4	ug/L	902	Standard
	Co	59	406334.6	1.8	**48.5919**	0.790	1.6	ug/L	262	Standard
	Ni	60	115552.7	1.0	**50.0738**	0.232	0.5	ug/L	371	Standard
	Cu	65	114149.7	0.6	**50.3465**	0.021	0.0	ug/L	106	Standard
	Zn	66	68167.7	1.0	**50.7601**	0.485	1.0	ug/L	398	Standard
>	Ge	72	549382.7	0.6				ug/L	535147	Standard
	As	75	67432.6	1.3	**49.0917**	0.378	0.8	ug/L	-43	Standard
	Se	82	6675.7	1.0	**47.8820**	0.199	0.4	ug/L	14	Standard
	Se-1	77	4509.0	1.5	**48.1752**	0.774	1.6	ug/L	65	Standard
>	Ga	71	138.3	18.2				mg/L	97	Standard
	Rb	85	3512.1	1.5				ug/L	15	Standard
	Y	89	477860.5	2.0				ug/L	465704	Standard
>	Rh	103	38.3	41.9				ug/L	10	Standard
	Mo	98	89.1	17.4	**0.0398**	0.005	11.5	ug/L	9	Standard
	Ag	107	377521.2	0.7	**48.0780**	0.610	1.3	ug/L	82	Standard
	Cd	111	120236.4	0.9	**47.9064**	0.701	1.5	mg/L	7	Standard
	Cd	114	288334.3	2.5	**47.7095**	1.480	3.1	ug/L	21	Standard
>	In	115	643866.4	0.7				ug/L	619035	Standard
	Sn	118	865.0	13.7	**0.0243**	0.017	68.5	ug/L	508	Standard
	Sb	123	254042.3	1.7	**46.1289**	1.092	2.4	ug/L	86	Standard
	Ba	135	122514.7	0.7	**51.5064**	0.720	1.4	ug/L	79	Standard
	Ce	140	6418.0	1.5				ug/L	68	Standard
>	Tb	159	971839.6	1.4				ug/L	986982	Standard
	Ho	165	113.3	29.4				ug/L	10	Standard
	Tl	203	461326.3	0.5	**49.0175**	0.465	0.9	ug/L	13	Standard
	Tl	205	409190.2	0.5	**50.8922**	0.391	0.8	ug/L	10	Standard
	Pb	206	298682.3	0.5	**49.4115**	0.539	1.1	ug/L	264	Standard
	Pb	207	258990.8	0.6	**47.4056**	0.459	1.0	ug/L	227	Standard
	Pb	208	1072240.4	0.4	**50.8994**	0.435	0.9	ug/L	868	Standard
	U	238	379514.5	1.0	**48.7426**	0.751	1.5	ug/L	8	Standard
>	Bi	209	557731.9	0.6				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	893.4	2.6	**0.8930**	0.020	2.2	mg/L	53	Standard
K	39	115.0	34.8	**0.1103**	0.066	59.8	mg/L	53	Standard
Ca	43	55.0		**1.2933**	0.021	1.6	mg/L	28	Standard
Fe	54	390.4	4.9	**0.1347**	0.011	8.2	mg/L	181	Standard
Fe	57	333.3	10.0	**0.1788**	0.089	49.6	mg/L	257	Standard
> **Sc-1**	45	57954.0	0.7				mg/L	55220	Standard
Cl	35	44711.9	2.2				ug/L	35504	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	9322.9	2.7				ug/L	2040	Standard
P	31	26069.1	1.5				ug/L	20435	Standard
S	34	2676.9	0.7				ug/L	2430	Standard
Sr	88	95.0	19.0				ug/L	75	Standard
C	12	133.3	21.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	242.2	12.0				mg/L	9	Standard
Ho-1	165	113.3	29.4				mg/L	10	Standard
Er	166	93.3	34.4				mg/L	23	Standard
I	127	30041.6	8.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.791	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.660	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.011
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.090
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606103015SD WG573728-08
Sample Date/Time: Thursday, June 30, 2016 16:41:03
Number of Replicates: 3
Autosampler Position: 253
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67875.1	2.1				ug/L	74916	Standard
	Be	9	54554.7	1.2	**57.0744**	0.504	0.9	ug/L	10	Standard
	Al	27	838737.2	2.0	**5.3339**	0.157	2.9	ug/L	1822	Standard
	Sc	45	58265.2	2.7				ug/L	55220	Standard
	Ti	47	412.3	3.3	**0.9165**	0.047	5.2	ug/L	34	Standard
	V	51	473565.2	1.0	**50.3192**	0.324	0.6	ug/L	1938	Standard
	Cr	52	480110.1	0.9	**51.6869**	0.596	1.2	ug/L	9522	Standard
	Cr	53	59545.1	0.6	**52.3429**	1.066	2.0	ug/L	395	Standard
	Mn	55	496384.2	1.0	**56.9038**	0.381	0.7	ug/L	902	Standard
	Co	59	417941.4	1.2	**50.6714**	0.393	0.8	ug/L	262	Standard
	Ni	60	118225.1	0.4	**51.9492**	0.656	1.3	ug/L	371	Standard
	Cu	65	116537.8	0.5	**52.1164**	0.812	1.6	ug/L	106	Standard
	Zn	66	69765.3	0.6	**52.6823**	0.565	1.1	ug/L	398	Standard
>	**Ge**	72	541933.8	1.6				ug/L	535147	Standard
	As	75	68942.8	1.1	**50.8879**	0.915	1.8	ug/L	-43	Standard
	Se	82	6922.4	1.2	**50.3465**	0.857	1.7	ug/L	14	Standard
	Se-1	77	4676.4	2.8	**50.6984**	2.081	4.1	ug/L	65	Standard
>	**Ga**	71	123.3	11.7				mg/L	97	Standard
	Rb	85	3528.7	4.8				ug/L	15	Standard
	Y	89	475192.3	2.2				ug/L	465704	Standard
>	**Rh**	103	30.0	33.3				ug/L	10	Standard
	Mo	98	122.2	2.5	**0.0500**	0.001	2.7	ug/L	9	Standard
	Ag	107	382714.4	1.3	**48.7537**	1.201	2.5	ug/L	82	Standard
	Cd	111	123349.9	0.8	**49.1552**	0.647	1.3	mg/L	7	Standard
	Cd	114	297106.9	0.9	**49.1645**	0.530	1.1	ug/L	21	Standard
>	**In**	115	643770.2	1.2				ug/L	619035	Standard
	Sn	118	871.7	14.1	**0.0254**	0.018	71.1	ug/L	508	Standard
	Sb	123	262546.4	2.1	**47.6862**	1.532	3.2	ug/L	86	Standard
	Ba	135	127056.2	0.5	**53.4280**	0.875	1.6	ug/L	79	Standard
	Ce	140	6346.3	1.8				ug/L	68	Standard
>	**Tb**	159	973181.1	1.9				ug/L	986982	Standard
	Ho	165	133.3	20.7				ug/L	10	Standard
	Tl	203	470669.9	1.0	**50.3691**	1.346	2.7	ug/L	13	Standard
	Tl	205	417244.6	1.5	**52.2657**	1.466	2.8	ug/L	10	Standard
	Pb	206	303673.3	0.1	**50.5928**	0.859	1.7	ug/L	264	Standard
	Pb	207	264554.7	0.6	**48.7688**	0.992	2.0	ug/L	227	Standard
	Pb	208	1097482.5	0.3	**52.4671**	0.888	1.7	ug/L	868	Standard
	U	238	389241.3	1.7	**50.3480**	1.440	2.9	ug/L	8	Standard
>	**Bi**	209	553900.9	1.6				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	865.0	7.4	**0.8583**	0.047	5.4	mg/L	53	Standard
K	39	138.3	19.9	**0.1469**	0.047	31.9	mg/L	53	Standard
Ca	43	51.7	14.8	**1.1028**	0.453	41.0	mg/L	28	Standard
Fe	54	385.4	8.6	**0.1300**	0.019	14.7	mg/L	181	Standard
Fe	57	286.7	1.0	**0.0570**	0.013	21.9	mg/L	257	Standard
> **Sc-1**	45	58265.2	2.7				mg/L	55220	Standard
Cl	35	44248.5	1.6				ug/L	35504	Standard
Kr	83	2.0	132.3				ug/L	2	Standard
Br	81	16452.3	2.0				ug/L	2040	Standard
P	31	25105.8	2.2				ug/L	20435	Standard
S	34	2581.9	7.2				ug/L	2430	Standard
Sr	88	71.7	28.2				ug/L	75	Standard
C	12	160.0	12.5				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	221.6	21.3				mg/L	9	Standard
Ho-1	165	133.3	20.7				mg/L	10	Standard
Er	166	106.7	14.3				mg/L	23	Standard
I	127	27847.3	6.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.601	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.268	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.996
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.382
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606103020
Sample Date/Time: Thursday, June 30, 2016 16:44:15
Number of Replicates: 3
Autosampler Position: 254
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67717.7	1.6				ug/L	74916	Standard
	Be	9	31.7	55.5	**0.0296**	0.019	62.9	ug/L	10	Standard
	Al	27	18491.3	2.9	**0.1156**	0.005	4.0	ug/L	1822	Standard
	Sc	45	57242.9	0.8				ug/L	55220	Standard
	Ti	47	66.0	12.9	**0.0864**	0.020	23.2	ug/L	34	Standard
	V	51	2032.2	8.1	**0.0187**	0.019	103.0	ug/L	1938	Standard
	Cr	52	12676.3	1.6	**0.3406**	0.022	6.4	ug/L	9522	Standard
	Cr	53	1410.1	13.3	**0.8516**	0.178	20.9	ug/L	395	Standard
	Mn	55	2390.5	1.9	**0.1670**	0.004	2.5	ug/L	902	Standard
	Co	59	400.0	5.6	**0.0253**	0.002	9.8	ug/L	262	Standard
	Ni	60	453.3	1.7	**0.0524**	0.002	2.9	ug/L	371	Standard
	Cu	65	1268.4	3.5	**0.5041**	0.018	3.5	ug/L	106	Standard
	Zn	66	1962.1	0.6	**1.1318**	0.007	0.6	ug/L	398	Standard
>	**Ge**	72	546628.1	1.1				ug/L	535147	Standard
	As	75	-22.1	178.4	**0.0388**	0.029	75.1	ug/L	-43	Standard
	Se	82	22.8	7.2	**0.0680**	0.010	15.1	ug/L	14	Standard
	Se-1	77	71.3	6.3	**0.1942**	0.057	29.2	ug/L	65	Standard
>	**Ga**	71	41.7	36.7				mg/L	97	Standard
	Rb	85	108.3	25.4				ug/L	15	Standard
	Y	89	478150.4	1.6				ug/L	465704	Standard
>	**Rh**	103	8.3	34.6				ug/L	10	Standard
	Mo	98	29.5	24.1	**0.0215**	0.002	9.9	ug/L	9	Standard
	Ag	107	170.0	12.2	**0.0157**	0.003	17.2	ug/L	82	Standard
	Cd	111	31.9	35.5	**0.0207**	0.005	21.9	mg/L	7	Standard
	Cd	114	83.7	51.2	**0.0228**	0.007	30.7	ug/L	21	Standard
>	**In**	115	641678.7	0.9				ug/L	619035	Standard
	Sn	118	920.0	3.8	**0.0329**	0.004	12.7	ug/L	508	Standard
	Sb	123	3097.0	31.5	**0.5680**	0.176	30.9	ug/L	86	Standard
	Ba	135	1108.0	1.5	**0.4480**	0.008	1.8	ug/L	79	Standard
	Ce	140	60.0	25.0				ug/L	68	Standard
>	**Tb**	159	980127.5	0.7				ug/L	986982	Standard
	Ho	165	5.0	0.0				ug/L	10	Standard
	Tl	203	200.0	29.5	**0.0275**	0.006	23.1	ug/L	13	Standard
	Tl	205	186.7	29.5	**0.0312**	0.007	22.3	ug/L	10	Standard
	Pb	206	522.0	6.9	**0.0496**	0.006	12.3	ug/L	264	Standard
	Pb	207	476.3	8.8	**0.0551**	0.008	14.1	ug/L	227	Standard
	Pb	208	1956.0	3.0	**0.0557**	0.003	5.3	ug/L	868	Standard
	U	238	100.3	29.1	**0.0209**	0.004	18.2	ug/L	8	Standard
>	**Bi**	209	551371.4	0.1				ug/L	541014	Standard

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Na	23	3.3	86.6	**18.0048**	15.588	86.6	mg/L	2	Standard
Mg	24	676.7	6.7	**0.6767**	0.044	6.4	mg/L	53	Standard
K	39	40.0	33.1	**-0.0106**	0.021	201.8	mg/L	53	Standard
Ca	43	20.0	43.3	**-0.5833**	0.468	80.3	mg/L	28	Standard
Fe	54	171.4	3.1	**-0.0061**	0.003	50.1	mg/L	181	Standard
Fe	57	270.0	8.1	**0.0269**	0.052	193.9	mg/L	257	Standard
Sc-1	45	57242.9	0.8				mg/L	55220	Standard
Cl	35	44467.2	1.4				ug/L	35504	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	2603.6	5.0				ug/L	2040	Standard
P	31	23429.8	1.3				ug/L	20435	Standard
S	34	2785.3	4.1				ug/L	2430	Standard
Sr	88	71.7	8.1				ug/L	75	Standard
C	12	156.7	25.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	19.8	50.4				mg/L	9	Standard
Ho-1	165	5.0	0.0				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	23	Standard
I	127	2625.2	29.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.391	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.145	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.658
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.914
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606103023
Sample Date/Time: Thursday, June 30, 2016 17:02:07
Number of Replicates: 3
Autosampler Position: 260
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63782.3	1.2				ug/L	74916	Standard
	Be	9	10.0	50.0	**0.0075**	0.006	73.8	ug/L	10	Standard
	Al	27	21553.7	3.8	**0.1436**	0.007	4.9	ug/L	1822	Standard
	Sc	45	53141.4	2.4				ug/L	55220	Standard
	Ti	47	62.3	15.2	**0.0841**	0.024	28.6	ug/L	34	Standard
	V	51	1922.2	10.9	**0.0157**	0.023	148.6	ug/L	1938	Standard
	Cr	52	11950.0	1.2	**0.3174**	0.013	4.0	ug/L	9522	Standard
	Cr	53	1446.7	3.8	**0.9371**	0.045	4.8	ug/L	395	Standard
	Mn	55	1521.4	1.0	**0.0755**	0.003	3.6	ug/L	902	Standard
	Co	59	290.7	3.0	**0.0136**	0.001	9.6	ug/L	262	Standard
	Ni	60	439.0	5.6	**0.0544**	0.012	21.6	ug/L	371	Standard
	Cu	65	1254.4	3.8	**0.5219**	0.022	4.3	ug/L	106	Standard
	Zn	66	2074.8	3.1	**1.2840**	0.054	4.2	ug/L	398	Standard
>	**Ge**	72	524092.0	0.7				ug/L	535147	Standard
	As	75	297.5	25.4	**0.2818**	0.056	19.8	ug/L	-43	Standard
	Se	82	160.0	13.1	**1.1075**	0.150	13.6	ug/L	14	Standard
	Se-1	77	81.3	3.8	**0.3406**	0.037	10.7	ug/L	65	Standard
>	**Ga**	71	43.3	6.7				mg/L	97	Standard
	Rb	85	115.0	19.9				ug/L	15	Standard
	Y	89	459127.5	0.2				ug/L	465704	Standard
>	**Rh**	103	13.3	43.3				ug/L	10	Standard
	Mo	98	28.3	20.3	**0.0216**	0.002	8.1	ug/L	9	Standard
	Ag	107	113.3	10.8	**0.0092**	0.001	15.9	ug/L	82	Standard
	Cd	111	10.6	35.6	**0.0124**	0.002	12.8	mg/L	7	Standard
	Cd	114	7.7	60.4	**0.0103**	0.001	8.1	ug/L	21	Standard
>	**In**	115	609200.4	1.8				ug/L	619035	Standard
	Sn	118	1141.7	8.1	**0.0747**	0.012	15.6	ug/L	508	Standard
	Sb	123	1005.9	32.6	**0.1969**	0.061	30.9	ug/L	86	Standard
	Ba	135	1059.0	1.3	**0.4512**	0.012	2.8	ug/L	79	Standard
	Ce	140	61.7	20.4				ug/L	68	Standard
>	**Tb**	159	932555.9	1.8				ug/L	986982	Standard
	Ho	165	13.3	43.3				ug/L	10	Standard
	Tl	203	35.7	18.2	**0.0100**	0.001	6.7	ug/L	13	Standard
	Tl	205	33.3	37.7	**0.0121**	0.002	14.2	ug/L	10	Standard
	Pb	206	284.0	7.9	**0.0117**	0.003	27.8	ug/L	264	Standard
	Pb	207	253.0	6.7	**0.0155**	0.003	16.6	ug/L	227	Standard
	Pb	208	1027.7	2.8	**0.0130**	0.001	5.3	ug/L	868	Standard
	U	238	10.3	22.3	**0.0093**	0.000	3.2	ug/L	8	Standard
>	**Bi**	209	529997.9	1.5				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.5487**	16.530	173.1	mg/L	2	Standard
Mg	24	645.0	4.7	**0.6963**	0.042	6.1	mg/L	53	Standard
K	39	45.0	22.2	**0.0036**	0.019	534.5	mg/L	53	Standard
Ca	43	33.3	31.2	**0.2833**	0.596	210.3	mg/L	28	Standard
Fe	54	148.6	19.1	**-0.0131**	0.023	172.7	mg/L	181	Standard
Fe	57	245.0	7.1	**0.0124**	0.064	512.5	mg/L	257	Standard
Sc-1	45	53141.4	2.4				mg/L	55220	Standard
Cl	35	44686.5	0.9				ug/L	35504	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	29882.8	4.2				ug/L	2040	Standard
P	31	23481.5	1.6				ug/L	20435	Standard
S	34	2808.6	5.2				ug/L	2430	Standard
Sr	88	83.3	6.9				ug/L	75	Standard
C	12	106.7	39.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	26.2	45.7				mg/L	9	Standard
Ho-1	165	13.3	43.3				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	9686.4	4.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		85.138	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.934	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.411
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.964
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 17:05:19
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63849.3	3.2				ug/L	74916	Standard
	Be	9	49356.9	1.6	**54.9095**	1.251	2.3	ug/L	10	Standard
	Al	27	8088490.1	1.6	**54.7076**	1.005	1.8	ug/L	1822	Standard
	Sc	45	53355.5	2.2				ug/L	55220	Standard
	Ti	47	41943.3	0.2	**100.6143**	0.393	0.4	ug/L	34	Standard
	V	51	462586.4	1.2	**49.3276**	0.830	1.7	ug/L	1938	Standard
	Cr	52	460362.3	0.6	**49.6985**	0.340	0.7	ug/L	9522	Standard
	Cr	53	57448.8	3.1	**50.6666**	1.791	3.5	ug/L	395	Standard
	Mn	55	437257.5	0.7	**50.2932**	0.228	0.5	ug/L	902	Standard
	Co	59	407514.6	0.3	**49.5851**	0.254	0.5	ug/L	262	Standard
	Ni	60	112856.8	0.5	**49.7588**	0.040	0.1	ug/L	371	Standard
	Cu	65	110957.8	0.5	**49.7932**	0.409	0.8	ug/L	106	Standard
	Zn	66	66373.7	0.9	**50.2844**	0.584	1.2	ug/L	398	Standard
>	Ge	72	539959.0	0.4				ug/L	535147	Standard
	As	75	65894.6	0.6	**48.8109**	0.285	0.6	ug/L	-43	Standard
	Se	82	6708.7	1.0	**48.9625**	0.610	1.2	ug/L	14	Standard
	Se-1	77	4564.0	1.3	**49.6319**	0.771	1.6	ug/L	65	Standard
>	Ga	71	60.0	38.2				mg/L	97	Standard
	Rb	85	991.7	7.3				ug/L	15	Standard
	Y	89	461440.3	2.3				ug/L	465704	Standard
>	Rh	103	25.0	34.6				ug/L	10	Standard
	Mo	98	299758.4	0.9	**95.3056**	1.188	1.2	ug/L	9	Standard
	Ag	107	368040.6	0.9	**48.3525**	0.807	1.7	ug/L	82	Standard
	Cd	111	118857.8	1.6	**48.8478**	0.437	0.9	mg/L	7	Standard
	Cd	114	294881.5	2.1	**50.3254**	0.867	1.7	ug/L	21	Standard
>	In	115	624167.7	1.1				ug/L	619035	Standard
	Sn	118	320651.0	1.0	**48.7698**	0.986	2.0	ug/L	508	Standard
	Sb	123	261017.7	0.8	**48.8877**	0.350	0.7	ug/L	86	Standard
	Ba	135	112221.4	0.2	**48.6682**	0.594	1.2	ug/L	79	Standard
	Ce	140	108.3	19.2				ug/L	68	Standard
>	Tb	159	953179.7	0.3				ug/L	986982	Standard
	Ho	165	15.0	57.7				ug/L	10	Standard
	Tl	203	451684.9	1.1	**49.9622**	0.209	0.4	ug/L	13	Standard
	Tl	205	402076.6	2.1	**52.0628**	1.208	2.3	ug/L	10	Standard
	Pb	206	286059.5	0.5	**49.2676**	0.522	1.1	ug/L	264	Standard
	Pb	207	259413.7	0.9	**49.4369**	0.743	1.5	ug/L	227	Standard
	Pb	208	1045434.4	0.6	**51.6654**	0.223	0.4	ug/L	868	Standard
	U	238	381876.9	0.6	**51.0597**	0.529	1.0	ug/L	8	Standard
>	Bi	209	535721.3	0.7				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4462.3	3.0	**4.9989**	0.129	2.6	mg/L	53	Standard
K	39	2393.5	1.6	**4.1281**	0.026	0.6	mg/L	53	Standard
Ca	43	101.7	19.9	**4.2731**	1.076	25.2	mg/L	28	Standard
Fe	54	7194.1	2.2	**4.9576**	0.224	4.5	mg/L	181	Standard
Fe	57	2128.5	5.2	**5.1769**	0.405	7.8	mg/L	257	Standard
> **Sc-1**	45	53355.5	2.2				mg/L	55220	Standard
Cl	35	44134.9	1.1				ug/L	35504	Standard
Kr	83	3.3	34.6				ug/L	2	Standard
Br	81	2123.5	11.5				ug/L	2040	Standard
P	31	25097.4	2.7				ug/L	20435	Standard
S	34	3133.7	1.4				ug/L	2430	Standard
Sr	88	83.3	18.3				ug/L	75	Standard
C	12	53.3	28.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	7	Standard
Dy	164	6.2	87.4				mg/L	9	Standard
Ho-1	165	15.0	57.7				mg/L	10	Standard
Er	166	10.0	173.2				mg/L	23	Standard
I	127	17556.8	1.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	109.819		
Al	27	109.415		
Sc	45			
Ti	47	100.614		
V	51	98.655		
Cr	52	99.397		
Cr	53			
Mn	55	100.586		
Co	59	99.170		
Ni	60	99.518		
Cu	65	99.586		
Zn	66	100.569		
> Ge	72		100.899	
As	75	97.622		
Se	82	97.925		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	95.306		
Ag	107	96.705		
Cd	111	97.696		
Cd	114			
In	115		100.829	
Sn	118	97.540		
Sb	123	97.775		
Ba	135	97.336		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.924		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.331		
U	238	102.119		
Bi	209		99.022	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 17:08:31
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64853.5	1.7				ug/L	74916	Standard
	Be	9	11.7	49.5	**0.0092**	0.006	70.0	ug/L	10	Standard
	Al	27	2441.9	26.4	**0.0139**	0.004	28.7	ug/L	1822	Standard
	Sc	45	55307.4	1.7				ug/L	55220	Standard
	Ti	47	39.3	16.9	**0.0231**	0.017	73.0	ug/L	34	Standard
	V	51	1667.1	3.6	**-0.0203**	0.008	40.7	ug/L	1938	Standard
	Cr	52	8265.9	0.8	**-0.1408**	0.008	5.6	ug/L	9522	Standard
	Cr	53	790.0	9.9	**0.3047**	0.061	20.2	ug/L	395	Standard
	Mn	55	874.0	4.5	**-0.0057**	0.006	96.3	ug/L	902	Standard
	Co	59	299.7	6.5	**0.0132**	0.003	20.8	ug/L	262	Standard
	Ni	60	269.0	3.5	**-0.0282**	0.005	18.6	ug/L	371	Standard
	Cu	65	120.0	19.6	**-0.0055**	0.011	201.6	ug/L	106	Standard
	Zn	66	403.7	3.9	**-0.0430**	0.010	24.3	ug/L	398	Standard
>	**Ge**	72	547396.9	1.1				ug/L	535147	Standard
	As	75	-23.1	181.6	**0.0385**	0.031	79.4	ug/L	-43	Standard
	Se	82	20.9	23.9	**0.0541**	0.036	66.4	ug/L	14	Standard
	Se-1	77	81.0	11.8	**0.2976**	0.102	34.1	ug/L	65	Standard
>	**Ga**	71	48.3	33.3				mg/L	97	Standard
	Rb	85	41.7	30.2				ug/L	15	Standard
	Y	89	475064.4	0.3				ug/L	465704	Standard
>	**Rh**	103	13.3	21.7				ug/L	10	Standard
	Mo	98	285.8	27.9	**0.1014**	0.024	24.0	ug/L	9	Standard
	Ag	107	160.3	23.1	**0.0146**	0.005	31.9	ug/L	82	Standard
	Cd	111	19.5	53.6	**0.0157**	0.004	26.4	mg/L	7	Standard
	Cd	114	57.3	51.9	**0.0185**	0.005	26.6	ug/L	21	Standard
>	**In**	115	636477.0	0.5				ug/L	619035	Standard
	Sn	118	1158.4	16.3	**0.0698**	0.029	41.4	ug/L	508	Standard
	Sb	123	730.1	29.4	**0.1386**	0.040	28.9	ug/L	86	Standard
	Ba	135	55.7	46.2	**0.0040**	0.011	269.0	ug/L	79	Standard
	Ce	140	30.0	28.9				ug/L	68	Standard
>	**Tb**	159	957058.2	1.0				ug/L	986982	Standard
	Ho	165	3.3	173.2				ug/L	10	Standard
	Tl	203	95.0	41.0	**0.0162**	0.004	25.7	ug/L	13	Standard
	Tl	205	71.7	33.0	**0.0167**	0.003	17.6	ug/L	10	Standard
	Pb	206	321.7	12.5	**0.0162**	0.007	41.2	ug/L	264	Standard
	Pb	207	271.0	17.9	**0.0171**	0.009	52.3	ug/L	227	Standard
	Pb	208	1145.0	12.1	**0.0168**	0.007	39.7	ug/L	868	Standard
	U	238	62.7	41.3	**0.0160**	0.003	20.9	ug/L	8	Standard
>	**Bi**	209	550463.7	0.4				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.3779**	16.234	173.1	mg/L	2	Standard
Mg	24	28.3	27.0	**-0.0037**	0.009	235.7	mg/L	53	Standard
K	39	41.7	61.6	**-0.0052**	0.044	841.2	mg/L	53	Standard
Ca	43	13.3	78.1	**-0.9220**	0.590	63.9	mg/L	28	Standard
Fe	54	174.2	10.0	**-0.0003**	0.010	3275.9	mg/L	181	Standard
Fe	57	268.3	11.2	**0.0460**	0.067	146.1	mg/L	257	Standard
Sc-1	45	55307.4	1.7				mg/L	55220	Standard
Cl	35	45000.1	2.4				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	2080.1	6.5				ug/L	2040	Standard
P	31	24610.0	2.1				ug/L	20435	Standard
S	34	3330.4	2.0				ug/L	2430	Standard
Sr	88	71.7	17.6				ug/L	75	Standard
C	12	130.0	30.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	128.6	20.1				mg/L	9	Standard
Ho-1	165	3.3	173.2				mg/L	10	Standard
Er	166	30.0	88.2				mg/L	23	Standard
I	127	6899.9	5.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.289	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.818
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.747
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW 2C WG573840-02
Sample Date/Time: Thursday, June 30, 2016 17:11:43
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60134.2	2.9				ug/L	74916	Standard
	Be	9	26.7	10.8	**0.0279**	0.004	13.9	ug/L	10	Standard
	Al	27	2303.5	2.7	**0.0142**	0.000	1.4	ug/L	1822	Standard
	Sc	45	52908.9	1.9				ug/L	55220	Standard
	Ti	47	32.7	61.9	**0.0123**	0.051	414.4	ug/L	34	Standard
	V	51	1551.2	8.5	**-0.0217**	0.015	69.8	ug/L	1938	Standard
	Cr	52	6813.9	1.4	**-0.2496**	0.013	5.2	ug/L	9522	Standard
	Cr	53	650.0	8.1	**0.2202**	0.049	22.4	ug/L	395	Standard
	Mn	55	521.7	1.8	**-0.0419**	0.001	2.6	ug/L	902	Standard
	Co	59	225.3	10.2	**0.0060**	0.003	47.7	ug/L	262	Standard
	Ni	60	258.3	15.9	**-0.0255**	0.019	74.1	ug/L	371	Standard
	Cu	65	124.3	5.4	**-0.0000**	0.000	210884.2	ug/L	106	Standard
	Zn	66	1158.0	4.1	**0.5824**	0.036	6.3	ug/L	398	Standard
>	**Ge**	72	513337.9	0.2				ug/L	535147	Standard
	As	75	-72.9	25.6	**-0.0015**	0.015	951.7	ug/L	-43	Standard
	Se	82	16.3	51.8	**0.0282**	0.065	229.6	ug/L	14	Standard
	Se-1	77	62.0	9.8	**0.1360**	0.069	50.7	ug/L	65	Standard
>	**Ga**	71	40.0	37.5				mg/L	97	Standard
	Rb	85	28.3	27.0				ug/L	15	Standard
	Y	89	442812.9	2.2				ug/L	465704	Standard
>	**Rh**	103	16.7	45.8				ug/L	10	Standard
	Mo	98	60.6	6.2	**0.0328**	0.001	3.7	ug/L	9	Standard
	Ag	107	98.7	12.8	**0.0077**	0.002	23.6	ug/L	82	Standard
	Cd	111	5.2	10.9	**0.0102**	0.000	2.5	mg/L	7	Standard
	Cd	114	16.2	115.2	**0.0119**	0.003	28.6	ug/L	21	Standard
>	**In**	115	588076.1	0.4				ug/L	619035	Standard
	Sn	118	390.0	24.7	**-0.0403**	0.016	38.6	ug/L	508	Standard
	Sb	123	152.7	23.1	**0.0348**	0.007	20.3	ug/L	86	Standard
	Ba	135	25.3	29.6	**-0.0080**	0.003	42.8	ug/L	79	Standard
	Ce	140	5.0	100.0				ug/L	68	Standard
>	**Tb**	159	902943.7	0.5				ug/L	986982	Standard
	Ho	165	15.0	66.7				ug/L	10	Standard
	Tl	203	33.3	39.2	**0.0098**	0.001	15.1	ug/L	13	Standard
	Tl	205	41.7	48.5	**0.0132**	0.003	20.2	ug/L	10	Standard
	Pb	206	263.0	1.5	**0.0084**	0.001	8.1	ug/L	264	Standard
	Pb	207	234.0	5.6	**0.0123**	0.003	21.2	ug/L	227	Standard
	Pb	208	980.7	3.9	**0.0111**	0.002	17.9	ug/L	868	Standard
	U	238	12.0	30.0	**0.0095**	0.000	5.2	ug/L	8	Standard
>	**Bi**	209	525698.7	0.1				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.9894**	17.293	173.1	mg/L	2	Standard
Mg	24	45.0	29.4	**0.0166**	0.015	89.5	mg/L	53	Standard
K	39	58.3	34.6	**0.0269**	0.034	125.5	mg/L	53	Standard
Ca	43	26.7	28.6	**-0.0940**	0.479	509.5	mg/L	28	Standard
Fe	54	89.3	21.9	**-0.0554**	0.013	23.0	mg/L	181	Standard
Fe	57	223.3	17.4	**-0.0467**	0.096	206.3	mg/L	257	Standard
> **Sc-1**	45	52908.9	1.9				mg/L	55220	Standard
Cl	35	41658.5	0.8				ug/L	35504	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	2276.8	4.6				ug/L	2040	Standard
P	31	11304.2	3.8				ug/L	20435	Standard
S	34	2982.0	1.4				ug/L	2430	Standard
Sr	88	63.3	4.6				ug/L	75	Standard
C	12	60.0	28.9				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	12.9	48.5				mg/L	9	Standard
Ho-1	165	15.0	66.7				mg/L	10	Standard
Er	166	10.0	173.2				mg/L	23	Standard
I	127	27787.1	2.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		80.268	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.925	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.999
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.169
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 2C WG573840-02
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Method 6020 - Summary Report

Sample ID: LCSW 2C WG573840-03
Sample Date/Time: Thursday, June 30, 2016 17:14:55
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64058.5	2.3				ug/L	74916	Standard
	Be	9	50870.3	3.1	**56.3929**	1.713	3.0	ug/L	10	Standard
	Al	27	13599.5	6.8	**0.0893**	0.006	7.0	ug/L	1822	Standard
	Sc	45	55821.0	2.8				ug/L	55220	Standard
	Ti	47	45.7	17.7	**0.0367**	0.018	49.2	ug/L	34	Standard
	V	51	483182.7	1.2	**50.2459**	0.127	0.3	ug/L	1938	Standard
	Cr	52	488742.8	1.3	**51.4889**	0.346	0.7	ug/L	9522	Standard
	Cr	53	60345.0	1.6	**51.9074**	0.879	1.7	ug/L	395	Standard
	Mn	55	457613.2	1.8	**51.3293**	0.603	1.2	ug/L	902	Standard
	Co	59	422454.4	1.2	**50.1274**	0.388	0.8	ug/L	262	Standard
	Ni	60	120601.1	1.4	**51.8594**	0.313	0.6	ug/L	371	Standard
	Cu	65	118799.3	1.3	**51.9910**	0.427	0.8	ug/L	106	Standard
	Zn	66	70445.7	1.1	**52.0559**	0.152	0.3	ug/L	398	Standard
>	**Ge**	72	553696.9	1.0				ug/L	535147	Standard
	As	75	67356.4	1.3	**48.6560**	0.417	0.9	ug/L	-43	Standard
	Se	82	6884.8	0.9	**49.0024**	0.551	1.1	ug/L	14	Standard
	Se-1	77	4835.4	1.6	**51.2958**	0.557	1.1	ug/L	65	Standard
>	**Ga**	71	53.3	28.6				mg/L	97	Standard
	Rb	85	113.3	21.8				ug/L	15	Standard
	Y	89	469203.9	2.5				ug/L	465704	Standard
>	**Rh**	103	38.3	19.9				ug/L	10	Standard
	Mo	98	79.6	14.3	**0.0370**	0.003	8.5	ug/L	9	Standard
	Ag	107	391921.4	0.8	**50.2702**	0.420	0.8	ug/L	82	Standard
	Cd	111	124239.8	0.9	**49.8552**	0.355	0.7	mg/L	7	Standard
	Cd	114	299345.2	1.9	**49.8798**	0.788	1.6	ug/L	21	Standard
>	**In**	115	639302.5	1.6				ug/L	619035	Standard
	Sn	118	836.7	4.5	**0.0211**	0.007	33.7	ug/L	508	Standard
	Sb	123	262807.0	2.6	**48.0511**	0.600	1.2	ug/L	86	Standard
	Ba	135	118153.6	1.3	**50.0298**	0.818	1.6	ug/L	79	Standard
	Ce	140	73.3	17.2				ug/L	68	Standard
>	**Tb**	159	964089.7	1.6				ug/L	986982	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	477074.5	0.5	**51.4398**	0.122	0.2	ug/L	13	Standard
	Tl	205	415235.0	1.1	**52.4076**	0.524	1.0	ug/L	10	Standard
	Pb	206	305633.8	1.2	**51.3093**	0.493	1.0	ug/L	264	Standard
	Pb	207	268222.4	0.6	**49.8228**	0.265	0.5	ug/L	227	Standard
	Pb	208	1106889.2	0.5	**53.3229**	0.200	0.4	ug/L	868	Standard
	U	238	390961.0	1.3	**50.9526**	0.530	1.0	ug/L	8	Standard
>	**Bi**	209	549588.4	0.3				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	31.7	32.9	**-0.0002**	0.012	6226.9	mg/L	53	Standard
K	39	75.0	33.3	**0.0507**	0.045	88.8	mg/L	53	Standard
Ca	43	25.0	20.0	**-0.2728**	0.293	107.4	mg/L	28	Standard
Fe	54	199.1	3.0	**0.0156**	0.007	47.8	mg/L	181	Standard
Fe	57	235.0	25.5	**-0.0464**	0.163	351.9	mg/L	257	Standard
> **Sc-1**	45	55821.0	2.8				mg/L	55220	Standard
Cl	35	44818.9	2.3				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	2590.2	4.5				ug/L	2040	Standard
P	31	24174.3	4.1				ug/L	20435	Standard
S	34	2943.6	1.1				ug/L	2430	Standard
Sr	88	83.3	18.3				ug/L	75	Standard
C	12	100.0	10.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	-0.5	173.2				mg/L	9	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	10.0	173.2				mg/L	23	Standard
I	127	2098.5	24.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		85.507	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.466	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.274
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.585
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606106813 WG573840-01
Sample Date/Time: Thursday, June 30, 2016 17:18:06
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	66825.4	2.4				ug/L	74916	Standard
	Be	9	133.3	4.3	**0.1380**	0.003	2.3	ug/L	10	Standard
	Al	27	4241117.0	1.3	**27.4025**	0.478	1.7	ug/L	1822	Standard
	Sc	45	59376.1	1.4				ug/L	55220	Standard
	Ti	47	6584.8	3.7	**16.1909**	0.531	3.3	ug/L	34	Standard
	V	51	39736.5	3.0	**4.1806**	0.143	3.4	ug/L	1938	Standard
	Cr	52	57987.8	0.9	**5.5358**	0.042	0.8	ug/L	9522	Standard
	Cr	53	28570.3	7.4	**25.7373**	2.017	7.8	ug/L	395	Standard
	Mn	55	1241189.6	1.3	**147.0826**	1.783	1.2	ug/L	902	Standard
	Co	59	29402.2	0.3	**3.6596**	0.010	0.3	ug/L	262	Standard
	Ni	60	55711.6	0.6	**25.2006**	0.129	0.5	ug/L	371	Standard
	Cu	65	3990.9	1.2	**1.7861**	0.030	1.7	ug/L	106	Standard
	Zn	66	25472.7	2.2	**19.6446**	0.438	2.2	ug/L	398	Standard
>	Ge	72	524817.3	0.4				ug/L	535147	Standard
	As	75	2992.7	2.8	**2.3334**	0.058	2.5	ug/L	-43	Standard
	Se	82	764.6	1.8	**5.6555**	0.104	1.8	ug/L	14	Standard
	Se-1	77	980.4	8.6	**10.5178**	0.994	9.4	ug/L	65	Standard
>	Ga	71	2516.9	4.2				mg/L	97	Standard
	Rb	85	45387.9	1.0				ug/L	15	Standard
	Y	89	471788.9	1.6				ug/L	465704	Standard
>	Rh	103	80.0	6.3				ug/L	10	Standard
	Mo	98	2138.6	3.5	**0.7142**	0.028	4.0	ug/L	9	Standard
	Ag	107	157.0	9.4	**0.0152**	0.002	14.0	ug/L	82	Standard
	Cd	111	2099.6	3.0	**0.8986**	0.033	3.6	mg/L	7	Standard
	Cd	114	5226.5	4.6	**0.9297**	0.049	5.2	ug/L	21	Standard
>	In	115	604671.8	0.7				ug/L	619035	Standard
	Sn	118	1033.4	9.5	**0.0592**	0.017	28.1	ug/L	508	Standard
	Sb	123	3055.1	27.0	**0.5957**	0.163	27.3	ug/L	86	Standard
	Ba	135	139944.7	1.3	**62.6537**	1.221	1.9	ug/L	79	Standard
	Ce	140	55800.9	2.4				ug/L	68	Standard
>	Tb	159	948910.8	2.6				ug/L	986982	Standard
	Ho	165	1046.7	5.9				ug/L	10	Standard
	Tl	203	390.3	7.2	**0.0509**	0.004	7.6	ug/L	13	Standard
	Tl	205	276.7	8.9	**0.0449**	0.003	7.7	ug/L	10	Standard
	Pb	206	5380.3	2.6	**0.9266**	0.031	3.4	ug/L	264	Standard
	Pb	207	4252.6	1.3	**0.8100**	0.016	1.9	ug/L	227	Standard
	Pb	208	18395.1	1.9	**0.9076**	0.011	1.2	ug/L	868	Standard
	U	238	1322.7	2.5	**0.1917**	0.002	1.1	ug/L	8	Standard
>	Bi	209	515245.5	1.5				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	85376.6	1.5	**86.4979**	0.694	0.8	mg/L	53	Standard
K	39	520.0	15.3	**0.7438**	0.115	15.4	mg/L	53	Standard
Ca	43	115.0	27.2	**4.3841**	1.643	37.5	mg/L	28	Standard
Fe	54	6737.0	2.5	**4.1500**	0.071	1.7	mg/L	181	Standard
Fe	57	1958.5	2.2	**4.1618**	0.107	2.6	mg/L	257	Standard
> **Sc-1**	45	59376.1	1.4				mg/L	55220	Standard
Cl	35	44962.0	1.2				ug/L	35504	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	154271.8	2.6				ug/L	2040	Standard
P	31	29709.1	1.2				ug/L	20435	Standard
S	34	2896.9	2.7				ug/L	2430	Standard
Sr	88	188.3	6.7				ug/L	75	Standard
C	12	266.7	21.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	173.2				mg/L	7	Standard
Dy	164	1604.1	12.5				mg/L	9	Standard
Ho-1	165	1046.7	5.9				mg/L	10	Standard
Er	166	1100.0	8.8				mg/L	23	Standard
I	127	327312.3	8.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.200	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.070	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.680
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.237
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606106815S WG573840-04
Sample Date/Time: Thursday, June 30, 2016 17:21:18
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67680.9	1.9				ug/L	74916	Standard
	Be	9	51052.5	0.1	**53.5693**	0.995	1.9	ug/L	10	Standard
	Al	27	3368816.2	1.1	**21.4929**	0.585	2.7	ug/L	1822	Standard
	Sc	45	58536.3	3.3				ug/L	55220	Standard
	Ti	47	5172.5	1.1	**12.4067**	0.155	1.3	ug/L	34	Standard
	V	51	488672.2	1.1	**52.3707**	0.516	1.0	ug/L	1938	Standard
	Cr	52	519795.4	1.0	**56.5266**	0.672	1.2	ug/L	9522	Standard
	Cr	53	80134.7	1.1	**71.1659**	0.792	1.1	ug/L	395	Standard
	Mn	55	1422478.1	1.3	**164.6477**	2.416	1.5	ug/L	902	Standard
	Co	59	415646.2	0.7	**50.8197**	0.346	0.7	ug/L	262	Standard
	Ni	60	153457.9	0.5	**68.0410**	0.220	0.3	ug/L	371	Standard
	Cu	65	110950.8	0.9	**50.0307**	0.453	0.9	ug/L	106	Standard
	Zn	66	84002.9	0.2	**64.0414**	0.177	0.3	ug/L	398	Standard
>	Ge	72	537355.1	0.2				ug/L	535147	Standard
	As	75	70214.5	0.8	**52.2590**	0.480	0.9	ug/L	-43	Standard
	Se	82	7282.6	0.6	**53.4169**	0.409	0.8	ug/L	14	Standard
	Se-1	77	5276.3	1.5	**57.7485**	0.932	1.6	ug/L	65	Standard
>	Ga	71	2600.2	1.0				mg/L	97	Standard
	Rb	85	34761.5	1.6				ug/L	15	Standard
	Y	89	471549.9	1.5				ug/L	465704	Standard
>	Rh	103	131.7	12.2				ug/L	10	Standard
	Mo	98	1846.2	2.7	**0.6134**	0.022	3.6	ug/L	9	Standard
	Ag	107	345199.2	0.6	**46.4387**	0.773	1.7	ug/L	82	Standard
	Cd	111	118493.6	1.5	**49.8650**	0.385	0.8	mg/L	7	Standard
	Cd	114	289951.9	1.8	**50.6671**	0.404	0.8	ug/L	21	Standard
>	In	115	609561.0	1.1				ug/L	619035	Standard
	Sn	118	1016.7	8.9	**0.0553**	0.014	26.2	ug/L	508	Standard
	Sb	123	244619.3	0.4	**46.9151**	0.346	0.7	ug/L	86	Standard
	Ba	135	220516.2	0.7	**97.9426**	1.108	1.1	ug/L	79	Standard
	Ce	140	48158.1	1.0				ug/L	68	Standard
>	Tb	159	947264.5	1.2				ug/L	986982	Standard
	Ho	165	921.7	8.3				ug/L	10	Standard
	Tl	203	434639.0	0.4	**49.9317**	0.347	0.7	ug/L	13	Standard
	Tl	205	380633.7	0.9	**51.1887**	0.936	1.8	ug/L	10	Standard
	Pb	206	288741.7	0.6	**51.6468**	0.449	0.9	ug/L	264	Standard
	Pb	207	251536.6	1.1	**49.7801**	0.446	0.9	ug/L	227	Standard
	Pb	208	1036183.7	0.5	**53.1850**	0.617	1.2	ug/L	868	Standard
	U	238	374057.3	1.4	**51.9465**	1.232	2.4	ug/L	8	Standard
>	Bi	209	515850.6	1.0				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.0953**	15.745	173.1	mg/L	2	Standard
Mg	24	66515.7	1.7	**68.3869**	2.109	3.1	mg/L	53	Standard
K	39	388.3	10.0	**0.5473**	0.079	14.4	mg/L	53	Standard
Ca	43	78.3	9.8	**2.5142**	0.451	17.9	mg/L	28	Standard
Fe	54	5869.1	3.9	**3.6575**	0.229	6.3	mg/L	181	Standard
Fe	57	1700.1	7.0	**3.5827**	0.199	5.6	mg/L	257	Standard
> **Sc-1**	45	58536.3	3.3				mg/L	55220	Standard
Cl	35	44802.2	3.0				ug/L	35504	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	127443.9	1.8				ug/L	2040	Standard
P	31	28511.8	1.0				ug/L	20435	Standard
S	34	2775.3	1.9				ug/L	2430	Standard
Sr	88	178.3	30.9				ug/L	75	Standard
C	12	230.0	19.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	7	Standard
Dy	164	1365.5	5.5				mg/L	9	Standard
Ho-1	165	921.7	8.3				mg/L	10	Standard
Er	166	930.0	6.7				mg/L	23	Standard
I	127	255438.3	5.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.342	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.413	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.470
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.349
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606106817SD WG573840-05
Sample Date/Time: Thursday, June 30, 2016 17:24:29
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	71317.5	0.5				ug/L	74916	Standard
	Be	9	52868.7	0.7	**52.6345**	0.351	0.7	ug/L	10	Standard
	Al	27	4849961.3	0.9	**29.3561**	0.184	0.6	ug/L	1822	Standard
	Sc	45	62463.5	1.2				ug/L	55220	Standard
	Ti	47	15053.8	0.9	**36.7934**	0.200	0.5	ug/L	34	Standard
	V	51	538418.4	0.4	**58.6061**	0.527	0.9	ug/L	1938	Standard
	Cr	52	650223.4	0.7	**72.0695**	0.889	1.2	ug/L	9522	Standard
	Cr	53	98390.1	1.1	**88.8086**	1.445	1.6	ug/L	395	Standard
	Mn	55	1763132.6	1.1	**207.2200**	3.342	1.6	ug/L	902	Standard
	Co	59	428512.3	1.2	**53.1932**	0.793	1.5	ug/L	262	Standard
	Ni	60	172907.0	0.5	**77.8539**	0.550	0.7	ug/L	371	Standard
	Cu	65	113260.4	0.2	**51.8526**	0.333	0.6	ug/L	106	Standard
	Zn	66	93640.5	0.5	**72.5211**	0.161	0.2	ug/L	398	Standard
>	Ge	72	529298.6	0.5				ug/L	535147	Standard
	As	75	70275.1	0.8	**53.0999**	0.493	0.9	ug/L	-43	Standard
	Se	82	7438.1	1.0	**55.3925**	0.719	1.3	ug/L	14	Standard
	Se-1	77	5341.3	1.2	**59.3683**	0.990	1.7	ug/L	65	Standard
>	Ga	71	7857.0	3.6				mg/L	97	Standard
	Rb	85	80878.6	1.0				ug/L	15	Standard
	Y	89	485637.4	2.2				ug/L	465704	Standard
>	Rh	103	135.0	12.8				ug/L	10	Standard
	Mo	98	2900.7	2.5	**0.9572**	0.026	2.7	ug/L	9	Standard
	Ag	107	343502.7	1.0	**46.2351**	0.223	0.5	ug/L	82	Standard
	Cd	111	120117.5	0.6	**50.5847**	0.556	1.1	mg/L	7	Standard
	Cd	114	292092.4	0.7	**51.0777**	0.183	0.4	ug/L	21	Standard
>	In	115	609154.8	0.5				ug/L	619035	Standard
	Sn	118	1316.7	6.3	**0.1022**	0.014	13.4	ug/L	508	Standard
	Sb	123	230647.1	1.3	**44.2618**	0.385	0.9	ug/L	86	Standard
	Ba	135	273668.5	0.7	**121.6298**	0.962	0.8	ug/L	79	Standard
	Ce	140	109752.8	1.4				ug/L	68	Standard
>	Tb	159	952644.8	0.6				ug/L	986982	Standard
	Ho	165	1935.1	9.2				ug/L	10	Standard
	Tl	203	436763.9	0.6	**50.0972**	0.134	0.3	ug/L	13	Standard
	Tl	205	378561.1	0.9	**50.8280**	0.601	1.2	ug/L	10	Standard
	Pb	206	295590.9	0.8	**52.7895**	0.146	0.3	ug/L	264	Standard
	Pb	207	255520.9	0.4	**50.4919**	0.303	0.6	ug/L	227	Standard
	Pb	208	1035519.8	0.6	**53.0684**	0.588	1.1	ug/L	868	Standard
	U	238	372267.1	1.1	**51.6142**	0.831	1.6	ug/L	8	Standard
>	Bi	209	516637.7	0.5				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	87984.8	1.4	**84.7490**	2.157	2.5	mg/L	53	Standard
K	39	573.3	13.5	**0.7848**	0.124	15.8	mg/L	53	Standard
Ca	43	141.7	10.2	**5.4143**	0.660	12.2	mg/L	28	Standard
Fe	54	10646.8	1.6	**6.2957**	0.178	2.8	mg/L	181	Standard
Fe	57	2967.0	0.4	**6.2851**	0.079	1.3	mg/L	257	Standard
> **Sc-1**	45	62463.5	1.2				mg/L	55220	Standard
Cl	35	43456.9	3.2				ug/L	35504	Standard
Kr	83	2.3	107.9				ug/L	2	Standard
Br	81	183975.0	4.4				ug/L	2040	Standard
P	31	35738.8	3.0				ug/L	20435	Standard
S	34	2516.9	2.9				ug/L	2430	Standard
Sr	88	236.7	13.6				ug/L	75	Standard
C	12	223.3	25.5				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	43.3				mg/L	7	Standard
Dy	164	3296.7	5.8				mg/L	9	Standard
Ho-1	165	1935.1	9.2				mg/L	10	Standard
Er	166	1886.8	7.5				mg/L	23	Standard
I	127	363130.0	8.1				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		95.196	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.907	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606106817SD WG573840-05
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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.404
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.494
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606122801
Sample Date/Time: Thursday, June 30, 2016 17:27:41
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70219.0	1.1				ug/L	74916	Standard
	Be	9	55.0	48.1	**0.0522**	0.028	52.7	ug/L	10	Standard
	Al	27	23221144.3	0.6	**142.7741**	1.838	1.3	ug/L	1822	Standard
	Sc	45	57070.6	2.2				ug/L	55220	Standard
	Ti	47	534.7	8.5	**1.2366**	0.117	9.5	ug/L	34	Standard
	V	51	7446.5	8.6	**0.6149**	0.067	10.9	ug/L	1938	Standard
	Cr	52	12430.1	1.9	**0.3548**	0.021	6.0	ug/L	9522	Standard
	Cr	53	7560.2	15.2	**6.4485**	1.018	15.8	ug/L	395	Standard
	Mn	55	2113807.9	0.6	**247.8805**	0.738	0.3	ug/L	902	Standard
	Co	59	1074.4	19.7	**0.1103**	0.026	23.6	ug/L	262	Standard
	Ni	60	2096.5	2.0	**0.7980**	0.018	2.2	ug/L	371	Standard
	Cu	65	989.4	3.5	**0.3937**	0.017	4.4	ug/L	106	Standard
	Zn	66	2275.2	1.6	**1.4198**	0.027	1.9	ug/L	398	Standard
>	**Ge**	72	530492.6	0.4				ug/L	535147	Standard
	As	75	1618.0	1.0	**1.2738**	0.017	1.3	ug/L	-43	Standard
	Se	82	532.9	5.0	**3.8697**	0.199	5.1	ug/L	14	Standard
	Se-1	77	405.0	3.4	**3.9543**	0.170	4.3	ug/L	65	Standard
>	**Ga**	71	131.7	28.5				mg/L	97	Standard
	Rb	85	1008.4	5.5				ug/L	15	Standard
	Y	89	463829.6	1.0				ug/L	465704	Standard
>	**Rh**	103	183.3	15.5				ug/L	10	Standard
	Mo	98	288.7	15.5	**0.1064**	0.014	12.8	ug/L	9	Standard
	Ag	107	262.7	61.3	**0.0292**	0.021	72.9	ug/L	82	Standard
	Cd	111	64.1	52.5	**0.0348**	0.014	39.8	mg/L	7	Standard
	Cd	114	151.5	64.1	**0.0353**	0.017	47.2	ug/L	21	Standard
>	**In**	115	608837.3	1.5				ug/L	619035	Standard
	Sn	118	688.3	15.3	**0.0040**	0.015	381.7	ug/L	508	Standard
	Sb	123	748.4	25.1	**0.1478**	0.034	23.1	ug/L	86	Standard
	Ba	135	323132.0	0.2	**143.7088**	1.894	1.3	ug/L	79	Standard
	Ce	140	1510.1	6.1				ug/L	68	Standard
>	**Tb**	159	942636.2	0.9				ug/L	986982	Standard
	Ho	165	71.7	42.1				ug/L	10	Standard
	Tl	203	221.7	39.3	**0.0318**	0.010	31.8	ug/L	13	Standard
	Tl	205	200.0	49.8	**0.0349**	0.014	38.7	ug/L	10	Standard
	Pb	206	3260.4	7.1	**0.5527**	0.041	7.5	ug/L	264	Standard
	Pb	207	2764.6	8.4	**0.5208**	0.046	8.8	ug/L	227	Standard
	Pb	208	11354.3	4.2	**0.5518**	0.024	4.4	ug/L	868	Standard
	U	238	6271.3	2.3	**0.8889**	0.020	2.2	ug/L	8	Standard
>	**Bi**	209	509768.6	0.1				ug/L	541014	Standard

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Na	23	5.0	100.0	**27.4457**	27.277	99.4	mg/L	2	Standard
Mg	24	105167.2	2.0	**110.8934**	3.210	2.9	mg/L	53	Standard
K	39	93.3	34.9	**0.0778**	0.055	70.6	mg/L	53	Standard
Ca	43	381.7	4.2	**19.2352**	0.454	2.4	mg/L	28	Standard
Fe	54	383.9	11.8	**0.1342**	0.028	21.1	mg/L	181	Standard
Fe	57	550.0	11.8	**0.7475**	0.173	23.1	mg/L	257	Standard
Sc-1	45	57070.6	2.2				mg/L	55220	Standard
Cl	35	45817.2	1.5				ug/L	35504	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	102824.5	2.2				ug/L	2040	Standard
P	31	27136.0	2.5				ug/L	20435	Standard
S	34	2881.9	4.6				ug/L	2430	Standard
Sr	88	315.0	13.0				ug/L	75	Standard
C	12	273.3	15.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	91.2	16.9				mg/L	9	Standard
Ho-1	165	71.7	42.1				mg/L	10	Standard
Er	166	113.3	13.5				mg/L	23	Standard
I	127	577318.3	6.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.730	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.130	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.353	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	94.225	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606122802
Sample Date/Time: Thursday, June 30, 2016 17:30:52
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84553.6	0.8				ug/L	74916	Standard
	Be	9	40.0	54.5	**0.0301**	0.019	61.7	ug/L	10	Standard
	Al	27	72687440.4	0.6	**371.1272**	1.759	0.5	ug/L	1822	Standard
	Sc	45	56028.5	3.6				ug/L	55220	Standard
	Ti	47	1271.7	12.9	**3.1264**	0.427	13.7	ug/L	34	Standard
	V	51	45357.8	2.5	**4.8857**	0.105	2.1	ug/L	1938	Standard
	Cr	52	27926.4	2.4	**2.1818**	0.066	3.0	ug/L	9522	Standard
	Cr	53	41080.8	6.8	**37.8153**	2.480	6.6	ug/L	395	Standard
	Mn	55	18342.1	1.0	**2.1077**	0.024	1.2	ug/L	902	Standard
	Co	59	1867.8	1.8	**0.2152**	0.003	1.5	ug/L	262	Standard
	Ni	60	5585.0	3.9	**2.4394**	0.105	4.3	ug/L	371	Standard
	Cu	65	2253.2	2.2	**1.0007**	0.019	1.9	ug/L	106	Standard
	Zn	66	5947.8	1.6	**4.4020**	0.073	1.7	ug/L	398	Standard
>	**Ge**	72	515884.0	0.5				ug/L	535147	Standard
	As	75	4431.5	3.5	**3.4872**	0.124	3.6	ug/L	-43	Standard
	Se	82	1759.9	1.3	**13.3742**	0.232	1.7	ug/L	14	Standard
	Se-1	77	4138.2	6.7	**47.0651**	3.039	6.5	ug/L	65	Standard
>	**Ga**	71	275.0	12.7				mg/L	97	Standard
	Rb	85	9714.8	2.0				ug/L	15	Standard
	Y	89	451972.4	0.7				ug/L	465704	Standard
>	**Rh**	103	713.4	15.1				ug/L	10	Standard
	Mo	98	14249.3	0.9	**4.8390**	0.048	1.0	ug/L	9	Standard
	Ag	107	130.3	28.3	**0.0122**	0.005	41.7	ug/L	82	Standard
	Cd	111	36.6	50.8	**0.0239**	0.008	33.8	mg/L	7	Standard
	Cd	114	111.4	48.8	**0.0291**	0.010	33.6	ug/L	21	Standard
>	**In**	115	585793.5	1.5				ug/L	619035	Standard
	Sn	118	695.0	14.0	**0.0094**	0.015	159.8	ug/L	508	Standard
	Sb	123	298.3	27.7	**0.0638**	0.016	24.8	ug/L	86	Standard
	Ba	135	17524.8	1.5	**8.0809**	0.009	0.1	ug/L	79	Standard
	Ce	140	4882.5	7.2				ug/L	68	Standard
>	**Tb**	159	939211.6	2.4				ug/L	986982	Standard
	Ho	165	90.0	20.0				ug/L	10	Standard
	Tl	203	117.0	31.8	**0.0200**	0.004	22.4	ug/L	13	Standard
	Tl	205	85.0	11.8	**0.0196**	0.001	7.6	ug/L	10	Standard
	Pb	206	1637.8	1.8	**0.2684**	0.004	1.3	ug/L	264	Standard
	Pb	207	1331.4	4.1	**0.2422**	0.012	4.8	ug/L	227	Standard
	Pb	208	5486.4	2.8	**0.2560**	0.008	3.1	ug/L	868	Standard
	U	238	60169.2	1.1	**8.7341**	0.107	1.2	ug/L	8	Standard
>	**Bi**	209	493823.0	0.7				ug/L	541014	Standard

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Na	23	6.7	43.3	**36.6454**	14.539	39.7	mg/L	2	Standard
Mg	24	244255.3	2.0	**262.4118**	4.079	1.6	mg/L	53	Standard
K	39	685.0	6.4	**1.0706**	0.082	7.6	mg/L	53	Standard
Ca	43	993.4	8.8	**53.9378**	6.881	12.8	mg/L	28	Standard
Fe	54	260.7	6.9	**0.0567**	0.018	32.0	mg/L	181	Standard
Fe	57	821.7	9.3	**1.4845**	0.220	14.8	mg/L	257	Standard
> **Sc-1**	45	56028.5	3.6				mg/L	55220	Standard
Cl	35	59927.6	0.3				ug/L	35504	Standard
Kr	83	3.3	45.8				ug/L	2	Standard
Br	81	52735.1	4.5				ug/L	2040	Standard
P	31	28319.8	2.2				ug/L	20435	Standard
S	34	2893.6	4.6				ug/L	2430	Standard
Sr	88	1485.1	3.7				ug/L	75	Standard
C	12	193.3	24.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	129.7	23.0				mg/L	9	Standard
Ho-1	165	90.0	20.0				mg/L	10	Standard
Er	166	76.7	19.9				mg/L	23	Standard
I	127	106629.1	3.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.864	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.400	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.630
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.277
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606122802PS WG574804-01
Sample Date/Time: Thursday, June 30, 2016 17:34:03
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	86437.6	1.7				ug/L	74916	Standard
	Be	9	56613.9	1.0	**46.5070**	0.399	0.9	ug/L	10	Standard
	Al	27	75487495.4	1.1	**377.0591**	5.028	1.3	ug/L	1822	Standard
	Sc	45	58174.8	1.4				ug/L	55220	Standard
	Ti	47	1182.0	2.8	**2.8538**	0.084	2.9	ug/L	34	Standard
	V	51	506511.3	0.9	**55.6793**	0.488	0.9	ug/L	1938	Standard
	Cr	52	468582.8	0.8	**52.1771**	0.411	0.8	ug/L	9522	Standard
	Cr	53	98380.1	1.2	**89.6982**	1.261	1.4	ug/L	395	Standard
	Mn	55	437615.2	0.5	**51.8710**	0.153	0.3	ug/L	902	Standard
	Co	59	384345.6	1.3	**48.1889**	0.577	1.2	ug/L	262	Standard
	Ni	60	109797.1	1.5	**49.8850**	0.779	1.6	ug/L	371	Standard
	Cu	65	103193.2	1.1	**47.7166**	0.590	1.2	ug/L	106	Standard
	Zn	66	67753.5	1.0	**52.9106**	0.608	1.1	ug/L	398	Standard
>	Ge	72	523997.6	0.2				ug/L	535147	Standard
	As	75	70632.2	0.6	**53.9078**	0.320	0.6	ug/L	-43	Standard
	Se	82	8300.6	0.5	**62.4519**	0.357	0.6	ug/L	14	Standard
	Se-1	77	8649.5	1.4	**97.4766**	1.453	1.5	ug/L	65	Standard
>	Ga	71	280.0	25.2				mg/L	97	Standard
	Rb	85	9468.0	1.9				ug/L	15	Standard
	Y	89	467656.1	0.8				ug/L	465704	Standard
>	Rh	103	703.3	13.1				ug/L	10	Standard
	Mo	98	14547.0	0.8	**4.8010**	0.023	0.5	ug/L	9	Standard
	Ag	107	298779.8	0.3	**40.6443**	0.013	0.0	ug/L	82	Standard
	Cd	111	110559.1	0.6	**47.0556**	0.428	0.9	mg/L	7	Standard
	Cd	114	270298.7	1.3	**47.7731**	0.754	1.6	ug/L	21	Standard
>	In	115	602726.9	0.3				ug/L	619035	Standard
	Sn	118	4093.9	2.1	**0.5427**	0.016	2.9	ug/L	508	Standard
	Sb	123	242329.1	0.5	**47.0003**	0.122	0.3	ug/L	86	Standard
	Ba	135	123107.1	0.7	**55.2866**	0.431	0.8	ug/L	79	Standard
	Ce	140	5095.9	1.4				ug/L	68	Standard
>	Tb	159	959859.0	1.9				ug/L	986982	Standard
	Ho	165	75.0	30.6				ug/L	10	Standard
	Tl	203	419623.5	0.5	**49.1426**	0.528	1.1	ug/L	13	Standard
	Tl	205	367995.8	1.3	**50.4422**	0.282	0.6	ug/L	10	Standard
	Pb	206	277925.9	0.4	**50.6764**	0.491	1.0	ug/L	264	Standard
	Pb	207	242544.6	0.3	**48.9335**	0.558	1.1	ug/L	227	Standard
	Pb	208	972336.7	0.8	**50.8744**	0.701	1.4	ug/L	868	Standard
	U	238	429336.0	0.6	**60.7713**	0.490	0.8	ug/L	8	Standard
>	Bi	209	506035.4	0.9				ug/L	541014	Standard

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Na	23	16.7	62.4	**88.6640**	54.789	61.8	mg/L	2	Standard
Mg	24	250054.9	0.8	**258.6884**	5.747	2.2	mg/L	53	Standard
K	39	701.7	10.7	**1.0553**	0.133	12.6	mg/L	53	Standard
Ca	43	950.0	7.6	**49.4071**	4.026	8.1	mg/L	28	Standard
Fe	54	280.5	29.8	**0.0629**	0.056	88.2	mg/L	181	Standard
Fe	57	826.7	0.9	**1.4157**	0.014	1.0	mg/L	257	Standard
> **Sc-1**	45	58174.8	1.4				mg/L	55220	Standard
Cl	35	60997.2	1.1				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	53979.4	3.0				ug/L	2040	Standard
P	31	27292.9	1.1				ug/L	20435	Standard
S	34	2830.3	11.9				ug/L	2430	Standard
Sr	88	1463.4	6.1				ug/L	75	Standard
C	12	156.7	9.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	110.9	27.4				mg/L	9	Standard
Ho-1	165	75.0	30.6				mg/L	10	Standard
Er	166	50.0	34.6				mg/L	23	Standard
I	127	137947.1	7.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.379	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.917	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	97.366	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	93.535	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606122802SDL WG574804-02
Sample Date/Time: Thursday, June 30, 2016 17:37:15
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73360.5	0.4				ug/L	74916	Standard
	Be	9	36.7	28.4	**0.0319**	0.010	31.8	ug/L	10	Standard
	Al	27	14509056.2	0.6	**85.3818**	0.806	0.9	ug/L	1822	Standard
	Sc	45	53337.1	1.3				ug/L	55220	Standard
	Ti	47	286.3	19.2	**0.6411**	0.136	21.2	ug/L	34	Standard
	V	51	11459.1	1.9	**1.0730**	0.021	2.0	ug/L	1938	Standard
	Cr	52	13335.2	2.1	**0.4814**	0.035	7.2	ug/L	9522	Standard
	Cr	53	12733.7	2.1	**11.3211**	0.206	1.8	ug/L	395	Standard
	Mn	55	4720.1	19.9	**0.4581**	0.114	24.9	ug/L	902	Standard
	Co	59	731.4	36.8	**0.0694**	0.034	49.4	ug/L	262	Standard
	Ni	60	1482.7	3.8	**0.5329**	0.028	5.2	ug/L	371	Standard
	Cu	65	730.7	5.4	**0.2810**	0.019	6.8	ug/L	106	Standard
	Zn	66	2863.9	0.8	**1.9140**	0.025	1.3	ug/L	398	Standard
>	Ge	72	521806.3	0.3				ug/L	535147	Standard
	As	75	1017.6	2.9	**0.8344**	0.023	2.8	ug/L	-43	Standard
	Se	82	430.4	3.6	**3.1599**	0.109	3.4	ug/L	14	Standard
	Se-1	77	993.7	4.8	**10.7325**	0.584	5.4	ug/L	65	Standard
>	Ga	71	96.7	20.9				mg/L	97	Standard
	Rb	85	1926.8	6.7				ug/L	15	Standard
	Y	89	447616.0	1.0				ug/L	465704	Standard
>	Rh	103	160.0	13.6				ug/L	10	Standard
	Mo	98	2746.4	1.1	**0.9278**	0.002	0.2	ug/L	9	Standard
	Ag	107	402.0	70.3	**0.0495**	0.039	79.7	ug/L	82	Standard
	Cd	111	119.5	146.0	**0.0597**	0.076	126.8	mg/L	7	Standard
	Cd	114	348.7	133.0	**0.0717**	0.084	116.6	ug/L	21	Standard
>	In	115	595231.3	1.1				ug/L	619035	Standard
	Sn	118	358.3	13.7	**-0.0462**	0.007	15.6	ug/L	508	Standard
	Sb	123	1318.5	18.5	**0.2630**	0.045	17.1	ug/L	86	Standard
	Ba	135	3850.8	7.3	**1.7328**	0.140	8.1	ug/L	79	Standard
	Ce	140	1061.7	17.4				ug/L	68	Standard
>	Tb	159	941612.4	1.0				ug/L	986982	Standard
	Ho	165	26.7	47.2				ug/L	10	Standard
	Tl	203	404.7	120.4	**0.0518**	0.055	106.0	ug/L	13	Standard
	Tl	205	258.3	86.3	**0.0420**	0.029	69.9	ug/L	10	Standard
	Pb	206	715.7	32.4	**0.0890**	0.040	44.9	ug/L	264	Standard
	Pb	207	616.7	41.1	**0.0876**	0.049	55.4	ug/L	227	Standard
	Pb	208	2314.4	25.3	**0.0794**	0.029	36.2	ug/L	868	Standard
	U	238	12021.4	3.5	**1.6624**	0.041	2.5	ug/L	8	Standard
>	Bi	209	520254.4	1.0				ug/L	541014	Standard

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Na	23	5.0	100.0	**28.8752**	28.736	99.5	mg/L	2	Standard
Mg	24	47109.8	2.2	**53.1337**	1.841	3.5	mg/L	53	Standard
K	39	183.3	6.9	**0.2463**	0.025	10.1	mg/L	53	Standard
Ca	43	235.0	10.6	**12.1008**	1.406	11.6	mg/L	28	Standard
Fe	54	82.5	6.4	**-0.0605**	0.004	6.3	mg/L	181	Standard
Fe	57	368.3	12.6	**0.3480**	0.137	39.4	mg/L	257	Standard
> **Sc-1**	45	53337.1	1.3				mg/L	55220	Standard
Cl	35	51990.4	1.9				ug/L	35504	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	12571.9	2.3				ug/L	2040	Standard
P	31	11519.4	2.2				ug/L	20435	Standard
S	34	2808.6	3.0				ug/L	2430	Standard
Sr	88	361.7	8.4				ug/L	75	Standard
C	12	96.7	31.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	34.1	18.0				mg/L	9	Standard
Ho-1	165	26.7	47.2				mg/L	10	Standard
Er	166	53.3	39.0				mg/L	23	Standard
I	127	50790.0	2.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.923	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.507	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.155
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.163
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606122802SDL WG574804-02
Sample Date/Time: Thursday, June 30, 2016 17:40:26
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71461.5	2.2				ug/L	74916	Standard
	Be	9	26.7	47.2	**0.0228**	0.012	52.7	ug/L	10	Standard
	Al	27	2806825.1	1.4	**16.9567**	0.202	1.2	ug/L	1822	Standard
	Sc	45	52559.4	2.1				ug/L	55220	Standard
	Ti	47	72.0	6.4	**0.1108**	0.011	9.9	ug/L	34	Standard
	V	51	4274.9	5.1	**0.2826**	0.022	7.9	ug/L	1938	Standard
	Cr	52	10369.5	1.5	**0.1568**	0.015	9.6	ug/L	9522	Standard
	Cr	53	3978.9	3.6	**3.3142**	0.151	4.6	ug/L	395	Standard
	Mn	55	1206.4	7.1	**0.0403**	0.008	21.0	ug/L	902	Standard
	Co	59	303.7	11.1	**0.0159**	0.004	25.6	ug/L	262	Standard
	Ni	60	502.7	11.1	**0.0869**	0.023	26.1	ug/L	371	Standard
	Cu	65	277.0	15.4	**0.0714**	0.019	26.4	ug/L	106	Standard
	Zn	66	1164.0	1.9	**0.5827**	0.010	1.7	ug/L	398	Standard
>	**Ge**	72	515849.3	1.3				ug/L	535147	Standard
	As	75	184.2	24.2	**0.1976**	0.033	16.5	ug/L	-43	Standard
	Se	82	106.6	2.9	**0.7192**	0.027	3.7	ug/L	14	Standard
	Se-1	77	263.0	1.7	**2.4473**	0.021	0.8	ug/L	65	Standard
>	**Ga**	71	55.0	18.2				mg/L	97	Standard
	Rb	85	421.7	3.8				ug/L	15	Standard
	Y	89	442472.4	1.7				ug/L	465704	Standard
>	**Rh**	103	45.0	19.2				ug/L	10	Standard
	Mo	98	520.7	1.7	**0.1853**	0.004	2.0	ug/L	9	Standard
	Ag	107	154.3	12.7	**0.0151**	0.003	17.8	ug/L	82	Standard
	Cd	111	12.3	92.1	**0.0132**	0.005	36.7	mg/L	7	Standard
	Cd	114	44.3	52.1	**0.0168**	0.004	24.1	ug/L	21	Standard
>	**In**	115	597577.3	0.8				ug/L	619035	Standard
	Sn	118	213.3	23.6	**-0.0694**	0.008	11.7	ug/L	508	Standard
	Sb	123	262.1	15.7	**0.0557**	0.008	14.9	ug/L	86	Standard
	Ba	135	716.7	2.2	**0.3051**	0.005	1.5	ug/L	79	Standard
	Ce	140	191.7	15.7				ug/L	68	Standard
>	**Tb**	159	921013.3	2.2				ug/L	986982	Standard
	Ho	165	13.3	43.3				ug/L	10	Standard
	Tl	203	102.3	27.2	**0.0174**	0.003	17.1	ug/L	13	Standard
	Tl	205	156.7	95.9	**0.0281**	0.019	68.9	ug/L	10	Standard
	Pb	206	348.0	6.3	**0.0228**	0.003	15.2	ug/L	264	Standard
	Pb	207	266.7	6.0	**0.0182**	0.003	14.2	ug/L	227	Standard
	Pb	208	1386.0	20.7	**0.0309**	0.014	44.1	ug/L	868	Standard
	U	238	2294.8	6.4	**0.3179**	0.016	5.2	ug/L	8	Standard
>	**Bi**	209	529934.8	1.1				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	9147.8	1.6	**10.4409**	0.172	1.6	mg/L	53	Standard
K	39	70.0	28.6	**0.0490**	0.037	75.3	mg/L	53	Standard
Ca	43	71.7	21.3	**2.5839**	0.860	33.3	mg/L	28	Standard
Fe	54	76.1	10.2	**-0.0643**	0.006	8.7	mg/L	181	Standard
Fe	57	308.3	5.7	**0.1952**	0.046	23.6	mg/L	257	Standard
> **Sc-1**	45	52559.4	2.1				mg/L	55220	Standard
Cl	35	50844.5	1.6				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	4347.3	5.7				ug/L	2040	Standard
P	31	8237.2	1.9				ug/L	20435	Standard
S	34	2880.3	4.6				ug/L	2430	Standard
Sr	88	123.3	26.1				ug/L	75	Standard
C	12	56.7	40.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	12.4	43.3				mg/L	9	Standard
Ho-1	165	13.3	43.3				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	23	Standard
I	127	38066.1	1.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.388	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.394	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.534
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.952
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 17:43:40
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72258.6	1.9				ug/L	74916	Standard
	Be	9	57037.2	1.8	**56.0506**	0.953	1.7	ug/L	10	Standard
	Al	27	9091492.0	2.1	**54.3234**	1.304	2.4	ug/L	1822	Standard
	Sc	45	56784.6	2.3				ug/L	55220	Standard
	Ti	47	44286.6	0.4	**103.4553**	1.782	1.7	ug/L	34	Standard
	V	51	485675.3	0.3	**50.4329**	0.546	1.1	ug/L	1938	Standard
	Cr	52	490309.2	1.8	**51.5847**	1.331	2.6	ug/L	9522	Standard
	Cr	53	61139.8	2.4	**52.5078**	0.692	1.3	ug/L	395	Standard
	Mn	55	447615.4	1.9	**50.1306**	0.806	1.6	ug/L	902	Standard
	Co	59	428562.6	1.7	**50.7726**	0.436	0.9	ug/L	262	Standard
	Ni	60	119106.3	1.0	**51.1440**	1.025	2.0	ug/L	371	Standard
	Cu	65	116860.6	1.3	**51.0638**	0.517	1.0	ug/L	106	Standard
	Zn	66	68880.9	0.3	**50.8192**	0.775	1.5	ug/L	398	Standard
>	Ge	72	554559.8	1.3				ug/L	535147	Standard
	As	75	69238.1	0.3	**49.9414**	0.660	1.3	ug/L	-43	Standard
	Se	82	6963.6	0.6	**49.4910**	0.758	1.5	ug/L	14	Standard
	Se-1	77	4796.4	3.0	**50.7976**	1.329	2.6	ug/L	65	Standard
>	Ga	71	75.0	24.0				mg/L	97	Standard
	Rb	85	1118.4	7.6				ug/L	15	Standard
	Y	89	481212.4	0.6				ug/L	465704	Standard
>	Rh	103	43.3	24.0				ug/L	10	Standard
	Mo	98	315125.8	0.5	**97.1128**	1.487	1.5	ug/L	9	Standard
	Ag	107	386205.1	0.9	**49.1797**	0.968	2.0	ug/L	82	Standard
	Cd	111	125400.2	0.7	**49.9571**	0.795	1.6	mg/L	7	Standard
	Cd	114	304281.3	0.4	**50.3344**	0.343	0.7	ug/L	21	Standard
>	In	115	643980.7	1.1				ug/L	619035	Standard
	Sn	118	345428.6	1.3	**50.9205**	0.539	1.1	ug/L	508	Standard
	Sb	123	275057.7	1.1	**49.9373**	1.011	2.0	ug/L	86	Standard
	Ba	135	118011.5	0.9	**49.6017**	0.296	0.6	ug/L	79	Standard
	Ce	140	126.7	32.9				ug/L	68	Standard
>	Tb	159	982270.0	1.2				ug/L	986982	Standard
	Ho	165	6.7	114.6				ug/L	10	Standard
	Tl	203	481075.9	0.7	**51.0955**	0.420	0.8	ug/L	13	Standard
	Tl	205	420488.3	0.5	**52.2771**	0.384	0.7	ug/L	10	Standard
	Pb	206	300589.6	1.1	**49.7077**	0.665	1.3	ug/L	264	Standard
	Pb	207	271260.3	0.3	**49.6331**	0.176	0.4	ug/L	227	Standard
	Pb	208	1111622.2	0.7	**52.7489**	0.293	0.6	ug/L	868	Standard
	U	238	405342.1	0.3	**52.0374**	0.347	0.7	ug/L	8	Standard
>	Bi	209	557941.2	0.4				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4927.5	4.8	**5.1899**	0.290	5.6	mg/L	53	Standard
K	39	2308.5	3.7	**3.7365**	0.212	5.7	mg/L	53	Standard
Ca	43	113.3	16.7	**4.5567**	0.927	20.3	mg/L	28	Standard
Fe	54	7483.3	2.8	**4.8432**	0.248	5.1	mg/L	181	Standard
Fe	57	2221.8	7.9	**5.0628**	0.482	9.5	mg/L	257	Standard
Sc-1	45	56784.6	2.3				mg/L	55220	Standard
Cl	35	48383.9	3.9				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2723.6	12.6				ug/L	2040	Standard
P	31	25431.3	1.5				ug/L	20435	Standard
S	34	3180.3	4.3				ug/L	2430	Standard
Sr	88	90.0	33.3				ug/L	75	Standard
C	12	123.3	20.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	19.4	50.5				mg/L	9	Standard
Ho-1	165	6.7	114.6				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	18646.5	4.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	112.101		
Al	27	108.647		
Sc	45			
Ti	47	103.455		
V	51	100.866		
Cr	52	103.169		
Cr	53			
Mn	55	100.261		
Co	59	101.545		
Ni	60	102.288		
Cu	65	102.128		
Zn	66	101.638		
Ge	72		103.628	
As	75	99.883		
Se	82	98.982		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	97.113		
Ag	107	98.359		
Cd	111	99.914		
Cd	114			
In	115			104.030
Sn	118	101.841		
Sb	123	99.875		
Ba	135	99.203		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.191		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.498		
U	238	104.075		
Bi	209			103.129
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 17:46:51
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71546.9	1.6				ug/L	74916	Standard
	Be	9	70.0	65.5	**0.0656**	0.045	68.4	ug/L	10	Standard
	Al	27	20191.3	127.2	**0.1188**	0.154	129.5	ug/L	1822	Standard
	Sc	45	56650.7	0.9				ug/L	55220	Standard
	Ti	47	55.3	41.9	**0.0588**	0.053	89.4	ug/L	34	Standard
	V	51	1898.8	4.3	**0.0014**	0.006	433.4	ug/L	1938	Standard
	Cr	52	8671.5	6.2	**-0.1096**	0.049	45.1	ug/L	9522	Standard
	Cr	53	1248.4	8.8	**0.6919**	0.084	12.2	ug/L	395	Standard
	Mn	55	1063.4	23.8	**0.0140**	0.027	193.5	ug/L	902	Standard
	Co	59	356.0	39.3	**0.0193**	0.016	83.4	ug/L	262	Standard
	Ni	60	347.3	30.1	**0.0036**	0.043	1191.3	ug/L	371	Standard
	Cu	65	223.7	29.9	**0.0389**	0.028	72.4	ug/L	106	Standard
	Zn	66	452.3	14.9	**-0.0111**	0.047	419.6	ug/L	398	Standard
>	**Ge**	72	554751.4	1.2				ug/L	535147	Standard
	As	75	-55.9	25.8	**0.0150**	0.010	68.9	ug/L	-43	Standard
	Se	82	21.4	11.6	**0.0557**	0.019	33.3	ug/L	14	Standard
	Se-1	77	90.0	12.2	**0.3821**	0.113	29.6	ug/L	65	Standard
>	**Ga**	71	58.3	27.6				mg/L	97	Standard
	Rb	85	45.0	19.2				ug/L	15	Standard
	Y	89	482380.1	2.6				ug/L	465704	Standard
>	**Rh**	103	40.0	37.5				ug/L	10	Standard
	Mo	98	322.1	29.1	**0.1093**	0.028	25.5	ug/L	9	Standard
	Ag	107	381.0	21.2	**0.0413**	0.010	23.7	ug/L	82	Standard
	Cd	111	46.7	121.4	**0.0260**	0.022	84.3	mg/L	7	Standard
	Cd	114	87.7	82.5	**0.0231**	0.012	50.3	ug/L	21	Standard
>	**In**	115	658696.5	1.3				ug/L	619035	Standard
	Sn	118	1141.7	4.6	**0.0615**	0.007	12.2	ug/L	508	Standard
	Sb	123	938.2	24.9	**0.1709**	0.041	24.1	ug/L	86	Standard
	Ba	135	89.7	82.5	**0.0172**	0.030	175.6	ug/L	79	Standard
	Ce	140	43.3	43.7				ug/L	68	Standard
>	**Tb**	159	992991.8	0.3				ug/L	986982	Standard
	Ho	165	10.0	100.0				ug/L	10	Standard
	Tl	203	200.3	77.5	**0.0268**	0.016	60.0	ug/L	13	Standard
	Tl	205	213.3	103.0	**0.0337**	0.027	79.3	ug/L	10	Standard
	Pb	206	385.0	24.3	**0.0247**	0.015	61.1	ug/L	264	Standard
	Pb	207	327.3	27.0	**0.0256**	0.016	61.6	ug/L	227	Standard
	Pb	208	1329.0	23.3	**0.0235**	0.014	60.8	ug/L	868	Standard
	U	238	207.7	109.3	**0.0340**	0.029	83.9	ug/L	8	Standard
>	**Bi**	209	568921.4	0.2				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	126.7	81.5	**0.1003**	0.111	110.3	mg/L	53	Standard
K	39	40.0	25.0	**-0.0098**	0.017	170.2	mg/L	53	Standard
Ca	43	23.3	32.7	**-0.3870**	0.423	109.2	mg/L	28	Standard
Fe	54	159.2	11.3	**-0.0131**	0.011	86.4	mg/L	181	Standard
Fe	57	273.3	4.6	**0.0429**	0.033	77.3	mg/L	257	Standard
Sc-1	45	56650.7	0.9				mg/L	55220	Standard
Cl	35	45940.2	1.2				ug/L	35504	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	2093.5	11.0				ug/L	2040	Standard
P	31	24581.6	1.1				ug/L	20435	Standard
S	34	3042.0	8.5				ug/L	2430	Standard
Sr	88	70.0	14.3				ug/L	75	Standard
C	12	76.7	30.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	172.7	9.0				mg/L	9	Standard
Ho-1	165	10.0	100.0				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	8235.6	8.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.663	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.407
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.158
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 17:49:08
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Method 6020 - Summary Report

Sample ID: L1606106501
Sample Date/Time: Thursday, June 30, 2016 17:50:04
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73635.2	0.9				ug/L	74916	Standard
	Be	9	30.0	16.7	**0.0253**	0.005	19.6	ug/L	10	Standard
	Al	27	16116931.3	0.8	**94.4932**	1.153	1.2	ug/L	1822	Standard
	Sc	45	57662.9	0.8				ug/L	55220	Standard
	Ti	47	336.7	9.7	**0.7312**	0.081	11.1	ug/L	34	Standard
	V	51	5982.0	43.5	**0.4395**	0.279	63.4	ug/L	1938	Standard
	Cr	52	611766.7	0.6	**65.8027**	0.537	0.8	ug/L	9522	Standard
	Cr	53	86462.7	0.9	**75.7804**	0.701	0.9	ug/L	395	Standard
	Mn	55	887838.0	0.5	**101.3493**	1.401	1.4	ug/L	902	Standard
	Co	59	4582.7	1.6	**0.5302**	0.006	1.1	ug/L	262	Standard
	Ni	60	41104.7	0.5	**17.8736**	0.095	0.5	ug/L	371	Standard
	Cu	65	2756.3	3.3	**1.1692**	0.052	4.4	ug/L	106	Standard
	Zn	66	17435.4	1.2	**12.8391**	0.252	2.0	ug/L	398	Standard
>	**Ge**	72	544681.4	1.0				ug/L	535147	Standard
	As	75	162.3	16.8	**0.1743**	0.020	11.4	ug/L	-43	Standard
	Se	82	40.0	22.7	**0.1928**	0.065	33.7	ug/L	14	Standard
	Se-1	77	588.7	14.2	**5.8405**	0.920	15.7	ug/L	65	Standard
>	**Ga**	71	186.7	6.7				mg/L	97	Standard
	Rb	85	47365.6	1.2				ug/L	15	Standard
	Y	89	471520.5	1.5				ug/L	465704	Standard
>	**Rh**	103	111.7	9.3				ug/L	10	Standard
	Mo	98	9357.1	1.9	**2.9396**	0.067	2.3	ug/L	9	Standard
	Ag	107	194.0	23.5	**0.0190**	0.006	31.8	ug/L	82	Standard
	Cd	111	169.3	4.2	**0.0764**	0.004	4.7	mg/L	7	Standard
	Cd	114	469.8	16.7	**0.0878**	0.013	14.9	ug/L	21	Standard
>	**In**	115	634293.5	1.1				ug/L	619035	Standard
	Sn	118	1250.1	5.7	**0.0841**	0.011	12.7	ug/L	508	Standard
	Sb	123	10516.4	0.9	**1.9427**	0.039	2.0	ug/L	86	Standard
	Ba	135	14835.6	0.8	**6.3138**	0.040	0.6	ug/L	79	Standard
	Ce	140	1355.1	1.3				ug/L	68	Standard
>	**Tb**	159	980205.4	1.5				ug/L	986982	Standard
	Ho	165	105.0	24.7				ug/L	10	Standard
	Tl	203	91.3	17.4	**0.0161**	0.002	11.0	ug/L	13	Standard
	Tl	205	81.7	33.7	**0.0182**	0.003	19.1	ug/L	10	Standard
	Pb	206	2801.3	0.6	**0.4427**	0.006	1.4	ug/L	264	Standard
	Pb	207	2407.5	0.5	**0.4237**	0.002	0.4	ug/L	227	Standard
	Pb	208	10014.6	0.8	**0.4546**	0.008	1.7	ug/L	868	Standard
	U	238	1288.7	2.6	**0.1794**	0.006	3.1	ug/L	8	Standard
>	**Bi**	209	538332.6	0.8				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.0499**	15.666	173.1	mg/L	2	Standard
Mg	24	46080.0	1.0	**48.0607**	0.867	1.8	mg/L	53	Standard
K	39	1136.7	6.1	**1.7713**	0.112	6.3	mg/L	53	Standard
Ca	43	476.7	19.5	**24.1522**	4.825	20.0	mg/L	28	Standard
Fe	54	806.2	1.9	**0.4073**	0.006	1.4	mg/L	181	Standard
Fe	57	648.3	5.1	**0.9822**	0.098	9.9	mg/L	257	Standard
> **Sc-1**	45	57662.9	0.8				mg/L	55220	Standard
Cl	35	49425.8	0.4				ug/L	35504	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	5294.3	1.6				ug/L	2040	Standard
P	31	27229.5	2.2				ug/L	20435	Standard
S	34	3085.3	3.6				ug/L	2430	Standard
Sr	88	235.0	9.3				ug/L	75	Standard
C	12	146.7	23.9				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	128.2	58.4				mg/L	9	Standard
Ho-1	165	105.0	24.7				mg/L	10	Standard
Er	166	106.7	19.5				mg/L	23	Standard
I	127	7078.3	4.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.290	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.782	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606106501
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.465	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.504	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606106502
Sample Date/Time: Thursday, June 30, 2016 17:53:16
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72146.4	2.3				ug/L	74916	Standard
	Be	9	33.3	69.3	**0.0291**	0.022	76.7	ug/L	10	Standard
	Al	27	9143805.5	1.7	**54.7197**	0.658	1.2	ug/L	1822	Standard
	Sc	45	57748.2	1.1				ug/L	55220	Standard
	Ti	47	387.0	7.8	**0.8501**	0.073	8.6	ug/L	34	Standard
	V	51	16858.0	80.2	**1.5917**	1.431	89.9	ug/L	1938	Standard
	Cr	52	4964026.3	0.6	**540.8487**	6.495	1.2	ug/L	9522	Standard
	Cr	53	629499.0	1.4	**553.7238**	13.816	2.5	ug/L	395	Standard
	Mn	55	883241.4	1.3	**100.7267**	1.452	1.4	ug/L	902	Standard
	Co	59	24044.4	1.3	**2.8764**	0.057	2.0	ug/L	262	Standard
	Ni	60	51740.2	1.0	**22.5158**	0.325	1.4	ug/L	371	Standard
	Cu	65	17579.9	1.8	**7.7639**	0.133	1.7	ug/L	106	Standard
	Zn	66	2765.6	0.3	**1.7428**	0.016	0.9	ug/L	398	Standard
>	Ge	72	545188.7	1.1				ug/L	535147	Standard
	As	75	735.7	13.4	**0.5948**	0.076	12.8	ug/L	-43	Standard
	Se	82	41.0	14.1	**0.2003**	0.044	22.2	ug/L	14	Standard
	Se-1	77	481.7	5.4	**4.6670**	0.276	5.9	ug/L	65	Standard
>	Ga	71	550.0	8.8				mg/L	97	Standard
	Rb	85	5659.4	1.5				ug/L	15	Standard
	Y	89	495236.8	0.4				ug/L	465704	Standard
>	Rh	103	58.3	34.6				ug/L	10	Standard
	Mo	98	53760.2	0.9	**16.9630**	0.070	0.4	ug/L	9	Standard
	Ag	107	191.3	10.8	**0.0189**	0.003	14.6	ug/L	82	Standard
	Cd	111	62.5	16.0	**0.0334**	0.004	11.9	mg/L	7	Standard
	Cd	114	293.6	17.4	**0.0586**	0.009	14.9	ug/L	21	Standard
>	In	115	629265.6	0.6				ug/L	619035	Standard
	Sn	118	2848.6	5.3	**0.3272**	0.024	7.4	ug/L	508	Standard
	Sb	123	804.0	3.9	**0.1538**	0.006	3.9	ug/L	86	Standard
	Ba	135	14742.2	1.9	**6.3237**	0.092	1.5	ug/L	79	Standard
	Ce	140	2671.9	4.0				ug/L	68	Standard
>	Tb	159	977403.9	1.3				ug/L	986982	Standard
	Ho	165	1240.1	9.1				ug/L	10	Standard
	Tl	203	196.7	16.2	**0.0277**	0.004	12.6	ug/L	13	Standard
	Tl	205	168.3	6.2	**0.0295**	0.001	4.2	ug/L	10	Standard
	Pb	206	866.4	7.6	**0.1114**	0.011	10.1	ug/L	264	Standard
	Pb	207	763.4	10.1	**0.1122**	0.014	12.8	ug/L	227	Standard
	Pb	208	3091.5	4.1	**0.1144**	0.006	5.3	ug/L	868	Standard
	U	238	383.7	7.3	**0.0591**	0.004	6.2	ug/L	8	Standard
>	Bi	209	536269.8	0.5				ug/L	541014	Standard

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Na	23	3.3	86.6	**17.8230**	15.431	86.6	mg/L	2	Standard
Mg	24	50808.4	2.5	**52.9253**	1.876	3.5	mg/L	53	Standard
K	39	263.3	23.9	**0.3507**	0.098	27.9	mg/L	53	Standard
Ca	43	335.0	14.2	**16.4838**	2.751	16.7	mg/L	28	Standard
Fe	54	3770.4	4.9	**2.3376**	0.113	4.8	mg/L	181	Standard
Fe	57	1288.4	9.4	**2.6008**	0.312	12.0	mg/L	257	Standard
> **Sc-1**	45	57748.2	1.1				mg/L	55220	Standard
Cl	35	47216.1	1.9				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	5644.4	5.9				ug/L	2040	Standard
P	31	28563.6	2.2				ug/L	20435	Standard
S	34	3062.0	5.7				ug/L	2430	Standard
Sr	88	153.3	16.4				ug/L	75	Standard
C	12	156.7	14.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	33.3				mg/L	7	Standard
Dy	164	1576.7	5.4				mg/L	9	Standard
Ho-1	165	1240.1	9.1				mg/L	10	Standard
Er	166	1183.4	13.0				mg/L	23	Standard
I	127	11782.9	3.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		96.303	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.876	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.653	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.123	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606106503
Sample Date/Time: Thursday, June 30, 2016 17:56:27
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72267.1	3.4				ug/L	74916	Standard
	Be	9	25.0	20.0	**0.0211**	0.005	25.9	ug/L	10	Standard
	Al	27	9609222.0	1.3	**57.4380**	1.746	3.0	ug/L	1822	Standard
	Sc	45	56719.3	1.4				ug/L	55220	Standard
	Ti	47	314.0	8.3	**0.6892**	0.070	10.2	ug/L	34	Standard
	V	51	9882.7	51.2	**0.8691**	0.548	63.1	ug/L	1938	Standard
	Cr	52	1188107.4	0.9	**130.8093**	1.119	0.9	ug/L	9522	Standard
	Cr	53	157236.7	1.1	**140.2942**	0.188	0.1	ug/L	395	Standard
	Mn	55	1593129.9	0.6	**184.7936**	1.923	1.0	ug/L	902	Standard
	Co	59	5302.6	0.8	**0.6272**	0.010	1.6	ug/L	262	Standard
	Ni	60	52859.7	0.7	**23.3912**	0.318	1.4	ug/L	371	Standard
	Cu	65	4676.1	1.5	**2.0568**	0.050	2.4	ug/L	106	Standard
	Zn	66	13695.9	1.8	**10.1747**	0.313	3.1	ug/L	398	Standard
>	**Ge**	72	536277.7	1.2				ug/L	535147	Standard
	As	75	582.2	21.2	**0.4890**	0.092	18.9	ug/L	-43	Standard
	Se	82	45.5	5.6	**0.2385**	0.021	8.7	ug/L	14	Standard
	Se-1	77	720.0	2.4	**7.3963**	0.270	3.6	ug/L	65	Standard
>	**Ga**	71	248.3	30.8				mg/L	97	Standard
	Rb	85	4008.9	1.2				ug/L	15	Standard
	Y	89	473754.3	0.1				ug/L	465704	Standard
>	**Rh**	103	110.0	7.9				ug/L	10	Standard
	Mo	98	4459.5	1.0	**1.4370**	0.027	1.9	ug/L	9	Standard
	Ag	107	169.7	20.5	**0.0163**	0.005	28.3	ug/L	82	Standard
	Cd	111	27.4	24.2	**0.0192**	0.003	14.6	mg/L	7	Standard
	Cd	114	98.3	29.5	**0.0258**	0.005	19.6	ug/L	21	Standard
>	**In**	115	621152.9	1.0				ug/L	619035	Standard
	Sn	118	1058.4	7.6	**0.0588**	0.014	23.7	ug/L	508	Standard
	Sb	123	419.5	13.7	**0.0834**	0.011	13.3	ug/L	86	Standard
	Ba	135	41508.4	0.6	**18.0760**	0.194	1.1	ug/L	79	Standard
	Ce	140	6071.2	3.4				ug/L	68	Standard
>	**Tb**	159	964455.2	0.8				ug/L	986982	Standard
	Ho	165	346.7	14.4				ug/L	10	Standard
	Tl	203	247.0	3.9	**0.0337**	0.001	3.3	ug/L	13	Standard
	Tl	205	235.0	9.8	**0.0386**	0.003	8.2	ug/L	10	Standard
	Pb	206	1431.7	0.2	**0.2128**	0.001	0.5	ug/L	264	Standard
	Pb	207	1231.7	1.9	**0.2053**	0.005	2.2	ug/L	227	Standard
	Pb	208	5055.0	0.8	**0.2155**	0.001	0.4	ug/L	868	Standard
	U	238	897.7	3.9	**0.1297**	0.005	3.8	ug/L	8	Standard
>	**Bi**	209	527610.6	0.5				ug/L	541014	Standard

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Na	23	5.0	100.0	**27.1787**	27.209	100.1	mg/L	2	Standard
Mg	24	76226.3	1.0	**80.8465**	0.780	1.0	mg/L	53	Standard
K	39	330.0	9.5	**0.4690**	0.047	10.1	mg/L	53	Standard
Ca	43	416.7	13.3	**21.2780**	2.769	13.0	mg/L	28	Standard
Fe	54	2258.1	2.4	**1.3795**	0.049	3.6	mg/L	181	Standard
Fe	57	981.7	1.6	**1.8687**	0.018	1.0	mg/L	257	Standard
> **Sc-1**	45	56719.3	1.4				mg/L	55220	Standard
Cl	35	47083.0	0.3				ug/L	35504	Standard
Kr	83	4.7	53.9				ug/L	2	Standard
Br	81	8569.1	2.3				ug/L	2040	Standard
P	31	27803.8	2.0				ug/L	20435	Standard
S	34	3010.3	4.7				ug/L	2430	Standard
Sr	88	171.7	11.0				ug/L	75	Standard
C	12	170.0	56.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	69.3				mg/L	7	Standard
Dy	164	380.7	13.5				mg/L	9	Standard
Ho-1	165	346.7	14.4				mg/L	10	Standard
Er	166	403.3	12.7				mg/L	23	Standard
I	127	14363.5	3.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		96.464	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.211	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.342	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.523	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606106504
Sample Date/Time: Thursday, June 30, 2016 17:59:39
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73044.0	0.7				ug/L	74916	Standard
	Be	9	20.0	66.1	**0.0158**	0.013	81.1	ug/L	10	Standard
	Al	27	14890059.6	1.9	**88.0112**	2.233	2.5	ug/L	1822	Standard
	Sc	45	56127.1	2.5				ug/L	55220	Standard
	Ti	47	684.7	0.3	**1.5842**	0.013	0.8	ug/L	34	Standard
	V	51	13946.2	28.3	**1.3048**	0.416	31.8	ug/L	1938	Standard
	Cr	52	1670670.6	1.4	**184.2918**	1.683	0.9	ug/L	9522	Standard
	Cr	53	217611.9	1.9	**194.2485**	3.221	1.7	ug/L	395	Standard
	Mn	55	1043368.4	2.0	**120.9446**	2.516	2.1	ug/L	902	Standard
	Co	59	41859.4	0.7	**5.1062**	0.013	0.3	ug/L	262	Standard
	Ni	60	94446.5	0.6	**41.8919**	0.141	0.3	ug/L	371	Standard
	Cu	65	5341.9	1.9	**2.3570**	0.039	1.7	ug/L	106	Standard
	Zn	66	14047.2	1.9	**10.4384**	0.166	1.6	ug/L	398	Standard
>	**Ge**	72	536441.4	0.6				ug/L	535147	Standard
	As	75	633.5	11.9	**0.5272**	0.058	11.0	ug/L	-43	Standard
	Se	82	31.7	5.9	**0.1362**	0.013	9.3	ug/L	14	Standard
	Se-1	77	649.7	1.0	**6.6130**	0.043	0.7	ug/L	65	Standard
>	**Ga**	71	410.0	14.8				mg/L	97	Standard
	Rb	85	132130.3	1.2				ug/L	15	Standard
	Y	89	474946.5	2.3				ug/L	465704	Standard
>	**Rh**	103	93.3	29.5				ug/L	10	Standard
	Mo	98	5272.3	2.4	**1.7093**	0.050	2.9	ug/L	9	Standard
	Ag	107	231.7	10.6	**0.0248**	0.003	13.3	ug/L	82	Standard
	Cd	111	395.6	5.6	**0.1725**	0.010	5.9	mg/L	7	Standard
	Cd	114	1048.3	2.6	**0.1900**	0.004	2.0	ug/L	21	Standard
>	**In**	115	616493.3	0.5				ug/L	619035	Standard
	Sn	118	1433.4	5.0	**0.1177**	0.011	9.0	ug/L	508	Standard
	Sb	123	13013.0	1.3	**2.4718**	0.035	1.4	ug/L	86	Standard
	Ba	135	13824.0	1.2	**6.0522**	0.083	1.4	ug/L	79	Standard
	Ce	140	7013.3	4.1				ug/L	68	Standard
>	**Tb**	159	964332.8	2.1				ug/L	986982	Standard
	Ho	165	1006.7	4.5				ug/L	10	Standard
	Tl	203	208.7	13.6	**0.0294**	0.003	10.0	ug/L	13	Standard
	Tl	205	180.0	43.3	**0.0314**	0.010	33.1	ug/L	10	Standard
	Pb	206	6744.2	1.3	**1.1438**	0.024	2.1	ug/L	264	Standard
	Pb	207	5755.1	0.8	**1.0824**	0.023	2.1	ug/L	227	Standard
	Pb	208	23463.1	0.3	**1.1412**	0.017	1.5	ug/L	868	Standard
	U	238	640.0	6.0	**0.0949**	0.006	6.0	ug/L	8	Standard
>	**Bi**	209	527082.8	1.3				ug/L	541014	Standard

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Na	23	8.3	69.3	**46.3620**	32.662	70.5	mg/L	2	Standard
Mg	24	54382.5	2.9	**58.2709**	0.521	0.9	mg/L	53	Standard
K	39	2045.1	8.2	**3.3436**	0.351	10.5	mg/L	53	Standard
Ca	43	306.7	14.2	**15.4474**	2.730	17.7	mg/L	28	Standard
Fe	54	2616.1	3.9	**1.6351**	0.060	3.7	mg/L	181	Standard
Fe	57	1056.7	7.6	**2.0939**	0.256	12.2	mg/L	257	Standard
> **Sc-1**	45	56127.1	2.5				mg/L	55220	Standard
Cl	35	46950.6	1.7				ug/L	35504	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	5627.7	2.5				ug/L	2040	Standard
P	31	28496.8	5.3				ug/L	20435	Standard
S	34	3097.0	2.4				ug/L	2430	Standard
Sr	88	225.0	25.6				ug/L	75	Standard
C	12	120.0	22.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	124.9				mg/L	7	Standard
Dy	164	1300.3	7.6				mg/L	9	Standard
Ho-1	165	1006.7	4.5				mg/L	10	Standard
Er	166	900.0	5.9				mg/L	23	Standard
I	127	8590.8	4.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.501	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.242	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.589
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.425
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606106505
Sample Date/Time: Thursday, June 30, 2016 18:02:50
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74521.2	1.6				ug/L	74916	Standard
	Be	9	11.7	89.2	**0.0075**	0.010	132.8	ug/L	10	Standard
	Al	27	21478597.1	0.8	**124.4554**	2.868	2.3	ug/L	1822	Standard
	Sc	45	57492.2	2.1				ug/L	55220	Standard
	Ti	47	252.3	5.2	**0.5312**	0.026	5.0	ug/L	34	Standard
	V	51	5121.6	17.5	**0.3486**	0.101	28.9	ug/L	1938	Standard
	Cr	52	70044.2	0.4	**6.6263**	0.112	1.7	ug/L	9522	Standard
	Cr	53	18946.8	3.0	**16.3331**	0.630	3.9	ug/L	395	Standard
	Mn	55	443945.6	0.8	**50.7064**	0.748	1.5	ug/L	902	Standard
	Co	59	1061.4	2.8	**0.1055**	0.005	4.7	ug/L	262	Standard
	Ni	60	12700.7	1.0	**5.4312**	0.085	1.6	ug/L	371	Standard
	Cu	65	1736.8	1.8	**0.7160**	0.009	1.3	ug/L	106	Standard
	Zn	66	3357.7	1.7	**2.1967**	0.054	2.5	ug/L	398	Standard
>	**Ge**	72	543813.6	1.1				ug/L	535147	Standard
	As	75	48.4	94.1	**0.0908**	0.034	37.0	ug/L	-43	Standard
	Se	82	48.8	16.1	**0.2573**	0.058	22.6	ug/L	14	Standard
	Se-1	77	599.7	2.9	**5.9687**	0.138	2.3	ug/L	65	Standard
>	**Ga**	71	270.0	25.7				mg/L	97	Standard
	Rb	85	463340.4	1.4				ug/L	15	Standard
	Y	89	469105.6	1.4				ug/L	465704	Standard
>	**Rh**	103	75.0	17.6				ug/L	10	Standard
	Mo	98	1754.4	2.2	**0.5694**	0.017	3.0	ug/L	9	Standard
	Ag	107	196.0	47.6	**0.0197**	0.012	62.6	ug/L	82	Standard
	Cd	111	159.1	1.3	**0.0732**	0.001	1.9	mg/L	7	Standard
	Cd	114	395.1	15.1	**0.0762**	0.010	12.9	ug/L	21	Standard
>	**In**	115	625024.6	0.8				ug/L	619035	Standard
	Sn	118	990.0	15.1	**0.0473**	0.023	48.5	ug/L	508	Standard
	Sb	123	5564.4	1.8	**1.0452**	0.025	2.4	ug/L	86	Standard
	Ba	135	10303.2	1.2	**4.4444**	0.086	1.9	ug/L	79	Standard
	Ce	140	1150.0	11.1				ug/L	68	Standard
>	**Tb**	159	978171.3	1.4				ug/L	986982	Standard
	Ho	165	78.3	13.3				ug/L	10	Standard
	Tl	203	125.3	56.3	**0.0199**	0.008	39.6	ug/L	13	Standard
	Tl	205	88.3	25.5	**0.0191**	0.003	15.4	ug/L	10	Standard
	Pb	206	1646.1	2.8	**0.2461**	0.009	3.7	ug/L	264	Standard
	Pb	207	1373.4	5.0	**0.2288**	0.014	6.2	ug/L	227	Standard
	Pb	208	5691.1	0.6	**0.2433**	0.003	1.2	ug/L	868	Standard
	U	238	70.0	35.1	**0.0173**	0.003	19.3	ug/L	8	Standard
>	**Bi**	209	535475.4	0.5				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	34121.7	1.4	**35.6859**	0.355	1.0	mg/L	53	Standard
K	39	9759.8	0.3	**15.8371**	0.382	2.4	mg/L	53	Standard
Ca	43	246.7	6.2	**11.7374**	0.613	5.2	mg/L	28	Standard
Fe	54	445.3	11.1	**0.1732**	0.039	22.4	mg/L	181	Standard
Fe	57	443.3	5.7	**0.4651**	0.060	13.0	mg/L	257	Standard
> **Sc-1**	45	57492.2	2.1				mg/L	55220	Standard
Cl	35	51043.8	0.6				ug/L	35504	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	7035.0	6.1				ug/L	2040	Standard
P	31	27479.9	4.1				ug/L	20435	Standard
S	34	2850.3	7.2				ug/L	2430	Standard
Sr	88	156.7	14.4				ug/L	75	Standard
C	12	150.0	33.3				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	7	Standard
Dy	164	57.0	65.8				mg/L	9	Standard
Ho-1	165	78.3	13.3				mg/L	10	Standard
Er	166	63.3	71.2				mg/L	23	Standard
I	127	8402.3	4.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.472	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.619	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.968
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.976
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606106506
Sample Date/Time: Thursday, June 30, 2016 18:06:02
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71069.7	2.2				ug/L	74916	Standard
	Be	9	30.0	33.3	**0.0265**	0.010	39.6	ug/L	10	Standard
	Al	27	11143825.1	2.6	**67.6893**	0.868	1.3	ug/L	1822	Standard
	Sc	45	56048.5	1.5				ug/L	55220	Standard
	Ti	47	477.7	3.5	**1.0979**	0.040	3.7	ug/L	34	Standard
	V	51	4437.6	7.8	**0.2877**	0.039	13.6	ug/L	1938	Standard
	Cr	52	45979.0	2.0	**4.1225**	0.083	2.0	ug/L	9522	Standard
	Cr	53	13444.3	4.2	**11.7831**	0.524	4.4	ug/L	395	Standard
	Mn	55	3575608.0	1.6	**419.7161**	4.801	1.1	ug/L	902	Standard
	Co	59	2220.8	1.8	**0.2526**	0.003	1.3	ug/L	262	Standard
	Ni	60	7995.4	0.2	**3.4561**	0.023	0.7	ug/L	371	Standard
	Cu	65	2743.2	1.7	**1.1967**	0.016	1.3	ug/L	106	Standard
	Zn	66	4451.7	1.5	**3.1126**	0.058	1.9	ug/L	398	Standard
>	**Ge**	72	530048.9	0.6				ug/L	535147	Standard
	As	75	2032.0	2.8	**1.5868**	0.042	2.6	ug/L	-43	Standard
	Se	82	76.9	9.6	**0.4758**	0.054	11.4	ug/L	14	Standard
	Se-1	77	672.7	3.2	**6.9571**	0.208	3.0	ug/L	65	Standard
>	**Ga**	71	185.0	9.7				mg/L	97	Standard
	Rb	85	7120.0	1.7				ug/L	15	Standard
	Y	89	462046.4	1.0				ug/L	465704	Standard
>	**Rh**	103	118.3	34.2				ug/L	10	Standard
	Mo	98	710.5	3.3	**0.2430**	0.007	3.1	ug/L	9	Standard
	Ag	107	224.0	3.1	**0.0240**	0.001	3.7	ug/L	82	Standard
	Cd	111	47.0	19.1	**0.0276**	0.004	13.4	mg/L	7	Standard
	Cd	114	113.0	29.7	**0.0286**	0.006	20.3	ug/L	21	Standard
>	**In**	115	611324.6	0.3				ug/L	619035	Standard
	Sn	118	1256.7	33.6	**0.0923**	0.066	71.8	ug/L	508	Standard
	Sb	123	729.4	5.3	**0.1439**	0.008	5.4	ug/L	86	Standard
	Ba	135	23684.8	0.9	**10.4710**	0.067	0.6	ug/L	79	Standard
	Ce	140	3487.1	5.2				ug/L	68	Standard
>	**Tb**	159	950376.7	0.4				ug/L	986982	Standard
	Ho	165	113.3	16.7				ug/L	10	Standard
	Tl	203	194.3	13.6	**0.0282**	0.003	10.7	ug/L	13	Standard
	Tl	205	166.7	7.5	**0.0300**	0.002	5.4	ug/L	10	Standard
	Pb	206	868.0	3.2	**0.1167**	0.005	4.3	ug/L	264	Standard
	Pb	207	745.7	6.4	**0.1136**	0.009	8.0	ug/L	227	Standard
	Pb	208	2985.1	1.3	**0.1141**	0.002	1.4	ug/L	868	Standard
	U	238	143.0	9.5	**0.0276**	0.002	6.8	ug/L	8	Standard
>	**Bi**	209	518904.1	0.3				ug/L	541014	Standard

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Na	23	5.0	100.0	**27.6637**	27.875	100.8	mg/L	2	Standard
Mg	24	64789.9	2.1	**69.5287**	0.838	1.2	mg/L	53	Standard
K	39	358.3	15.4	**0.5231**	0.092	17.6	mg/L	53	Standard
Ca	43	758.4	6.6	**40.6443**	2.815	6.9	mg/L	28	Standard
Fe	54	4937.5	1.5	**3.1958**	0.022	0.7	mg/L	181	Standard
Fe	57	1738.4	3.5	**3.8759**	0.222	5.7	mg/L	257	Standard
> **Sc-1**	45	56048.5	1.5				mg/L	55220	Standard
Cl	35	46920.6	2.0				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	14326.8	1.4				ug/L	2040	Standard
P	31	27583.5	4.6				ug/L	20435	Standard
S	34	3072.0	2.6				ug/L	2430	Standard
Sr	88	263.3	13.3				ug/L	75	Standard
C	12	206.7	12.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	7	Standard
Dy	164	203.6	27.1				mg/L	9	Standard
Ho-1	165	113.3	16.7				mg/L	10	Standard
Er	166	133.3	8.7				mg/L	23	Standard
I	127	19841.3	3.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.865	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.047	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.754
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.913
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606106804
Sample Date/Time: Thursday, June 30, 2016 18:09:13
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77459.2	1.8				ug/L	74916	Standard
	Be	9	18.3	68.6	**0.0131**	0.011	86.1	ug/L	10	Standard
	Al	27	41020836.0	0.1	**228.6660**	3.747	1.6	ug/L	1822	Standard
	Sc	45	58899.3	1.4				ug/L	55220	Standard
	Ti	47	683.7	2.2	**1.6300**	0.029	1.8	ug/L	34	Standard
	V	51	10480.9	2.8	**0.9661**	0.034	3.5	ug/L	1938	Standard
	Cr	52	17903.6	1.0	**1.0049**	0.037	3.7	ug/L	9522	Standard
	Cr	53	28528.6	6.8	**25.8846**	1.981	7.7	ug/L	395	Standard
	Mn	55	109383.8	1.1	**12.9559**	0.037	0.3	ug/L	902	Standard
	Co	59	3379.4	2.6	**0.4033**	0.008	2.0	ug/L	262	Standard
	Ni	60	4055.2	0.8	**1.7121**	0.017	1.0	ug/L	371	Standard
	Cu	65	1283.7	4.3	**0.5389**	0.030	5.6	ug/L	106	Standard
	Zn	66	4828.4	1.2	**3.4689**	0.012	0.4	ug/L	398	Standard
>	**Ge**	72	521209.6	0.9				ug/L	535147	Standard
	As	75	2211.0	8.9	**1.7504**	0.158	9.0	ug/L	-43	Standard
	Se	82	893.2	6.4	**6.6723**	0.493	7.4	ug/L	14	Standard
	Se-1	77	1913.1	8.8	**21.2303**	2.028	9.6	ug/L	65	Standard
>	**Ga**	71	136.7	5.6				mg/L	97	Standard
	Rb	85	8235.6	0.7				ug/L	15	Standard
	Y	89	458447.5	0.6				ug/L	465704	Standard
>	**Rh**	103	401.7	9.0				ug/L	10	Standard
	Mo	98	249.5	8.0	**0.0959**	0.007	7.1	ug/L	9	Standard
	Ag	107	181.3	9.8	**0.0190**	0.002	13.0	ug/L	82	Standard
	Cd	111	300.2	7.7	**0.1378**	0.009	6.7	mg/L	7	Standard
	Cd	114	734.2	11.4	**0.1410**	0.016	11.2	ug/L	21	Standard
>	**In**	115	592465.9	1.1				ug/L	619035	Standard
	Sn	118	775.0	11.8	**0.0209**	0.013	64.4	ug/L	508	Standard
	Sb	123	603.9	4.2	**0.1235**	0.004	3.4	ug/L	86	Standard
	Ba	135	545541.8	0.5	**249.3393**	4.016	1.6	ug/L	79	Standard
	Ce	140	2048.5	7.3				ug/L	68	Standard
>	**Tb**	159	949095.6	1.2				ug/L	986982	Standard
	Ho	165	88.3	18.2				ug/L	10	Standard
	Tl	203	97.3	8.7	**0.0173**	0.001	5.4	ug/L	13	Standard
	Tl	205	90.0	16.7	**0.0199**	0.002	10.1	ug/L	10	Standard
	Pb	206	978.0	0.7	**0.1390**	0.001	0.7	ug/L	264	Standard
	Pb	207	802.4	6.7	**0.1273**	0.011	8.8	ug/L	227	Standard
	Pb	208	3285.1	1.3	**0.1321**	0.002	1.4	ug/L	868	Standard
	U	238	1121.4	2.1	**0.1651**	0.002	1.4	ug/L	8	Standard
>	**Bi**	209	510708.2	0.8				ug/L	541014	Standard

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Na	23	5.0	100.0	**26.2857**	26.048	99.1	mg/L	2	Standard
Mg	24	118017.9	1.0	**120.5636**	2.169	1.8	mg/L	53	Standard
K	39	473.3	3.2	**0.6774**	0.033	4.9	mg/L	53	Standard
Ca	43	628.3	1.2	**31.6956**	0.741	2.3	mg/L	28	Standard
Fe	54	284.4	4.9	**0.0630**	0.011	17.3	mg/L	181	Standard
Fe	57	583.3	4.1	**0.7864**	0.079	10.0	mg/L	257	Standard
Sc-1	45	58899.3	1.4				mg/L	55220	Standard
Cl	35	47927.0	0.5				ug/L	35504	Standard
Kr	83	2.7	43.3				ug/L	2	Standard
Br	81	177183.7	2.3				ug/L	2040	Standard
P	31	33166.3	1.4				ug/L	20435	Standard
S	34	3038.6	3.6				ug/L	2430	Standard
Sr	88	1120.0	5.8				ug/L	75	Standard
C	12	333.3	41.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	78.9	41.1				mg/L	9	Standard
Ho-1	165	88.3	18.2				mg/L	10	Standard
Er	166	93.3	16.4				mg/L	23	Standard
I	127	490251.5	7.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.394	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.396	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.708
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.398
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606106805
Sample Date/Time: Thursday, June 30, 2016 18:12:25
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78762.6	2.6				ug/L	74916	Standard
	Be	9	20.0	50.0	**0.0144**	0.009	60.4	ug/L	10	Standard
	Al	27	41204374.5	1.8	**225.9730**	8.404	3.7	ug/L	1822	Standard
	Sc	45	61672.0	2.2				ug/L	55220	Standard
	Ti	47	674.3	4.5	**1.5812**	0.070	4.5	ug/L	34	Standard
	V	51	11529.2	6.0	**1.0631**	0.082	7.7	ug/L	1938	Standard
	Cr	52	18039.7	0.8	**0.9888**	0.007	0.7	ug/L	9522	Standard
	Cr	53	31686.4	2.6	**28.3390**	0.782	2.8	ug/L	395	Standard
	Mn	55	109122.6	0.6	**12.7266**	0.120	0.9	ug/L	902	Standard
	Co	59	3320.0	3.2	**0.3895**	0.012	3.0	ug/L	262	Standard
	Ni	60	4079.5	2.0	**1.6947**	0.030	1.7	ug/L	371	Standard
	Cu	65	1241.4	3.2	**0.5103**	0.020	4.0	ug/L	106	Standard
	Zn	66	4815.1	1.9	**3.4002**	0.053	1.5	ug/L	398	Standard
>	**Ge**	72	529274.8	0.6				ug/L	535147	Standard
	As	75	2209.6	7.3	**1.7236**	0.131	7.6	ug/L	-43	Standard
	Se	82	896.1	1.4	**6.5882**	0.124	1.9	ug/L	14	Standard
	Se-1	77	2079.1	4.3	**22.7577**	1.102	4.8	ug/L	65	Standard
>	**Ga**	71	145.0	12.4				mg/L	97	Standard
	Rb	85	8400.7	1.3				ug/L	15	Standard
	Y	89	462821.0	0.8				ug/L	465704	Standard
>	**Rh**	103	420.0	13.3				ug/L	10	Standard
	Mo	98	221.4	13.0	**0.0855**	0.010	11.2	ug/L	9	Standard
	Ag	107	161.0	24.1	**0.0159**	0.005	33.2	ug/L	82	Standard
	Cd	111	299.9	12.1	**0.1359**	0.015	11.3	mg/L	7	Standard
	Cd	114	712.8	9.3	**0.1352**	0.011	8.5	ug/L	21	Standard
>	**In**	115	600962.3	0.2				ug/L	619035	Standard
	Sn	118	703.3	5.7	**0.0079**	0.006	79.0	ug/L	508	Standard
	Sb	123	530.9	6.4	**0.1077**	0.006	6.0	ug/L	86	Standard
	Ba	135	542029.2	0.7	**244.1998**	1.171	0.5	ug/L	79	Standard
	Ce	140	1825.1	4.0				ug/L	68	Standard
>	**Tb**	159	958625.4	0.8				ug/L	986982	Standard
	Ho	165	46.7	16.4				ug/L	10	Standard
	Tl	203	87.3	19.7	**0.0161**	0.002	12.5	ug/L	13	Standard
	Tl	205	65.0	20.4	**0.0165**	0.002	10.9	ug/L	10	Standard
	Pb	206	1118.4	2.4	**0.1631**	0.005	2.8	ug/L	264	Standard
	Pb	207	947.7	3.3	**0.1551**	0.006	4.1	ug/L	227	Standard
	Pb	208	3928.5	2.1	**0.1641**	0.004	2.3	ug/L	868	Standard
	U	238	1138.7	0.9	**0.1665**	0.002	1.1	ug/L	8	Standard
>	**Bi**	209	514052.9	0.4				ug/L	541014	Standard

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Na	23	6.7	114.6	**34.1484**	39.564	115.9	mg/L	2	Standard
Mg	24	120082.3	0.4	**117.1865**	3.113	2.7	mg/L	53	Standard
K	39	458.3	18.1	**0.6225**	0.142	22.8	mg/L	53	Standard
Ca	43	670.0	12.3	**32.3531**	4.666	14.4	mg/L	28	Standard
Fe	54	211.5	10.0	**0.0101**	0.010	102.2	mg/L	181	Standard
Fe	57	595.0	16.8	**0.7476**	0.225	30.2	mg/L	257	Standard
> **Sc-1**	45	61672.0	2.2				mg/L	55220	Standard
Cl	35	48429.3	0.5				ug/L	35504	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	177803.9	0.6				ug/L	2040	Standard
P	31	34178.5	1.4				ug/L	20435	Standard
S	34	3103.7	2.6				ug/L	2430	Standard
Sr	88	1121.7	7.1				ug/L	75	Standard
C	12	310.0	12.9				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	98.9	29.5				mg/L	9	Standard
Ho-1	165	46.7	16.4				mg/L	10	Standard
Er	166	93.3	12.4				mg/L	23	Standard
I	127	532134.0	7.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.134	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.903	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	97.081	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	95.017	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606106811
Sample Date/Time: Thursday, June 30, 2016 18:15:36
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	78749.2	2.6				ug/L	74916	Standard
	Be	9	3210.3	2.9	**2.8931**	0.138	4.8	ug/L	10	Standard
	Al	27	8276123.8	2.0	**45.3731**	0.379	0.8	ug/L	1822	Standard
	Sc	45	110165.8	2.1				ug/L	55220	Standard
	Ti	47	71798.4	1.1	**163.8727**	1.830	1.1	ug/L	34	Standard
	V	51	597395.3	2.2	**60.6469**	1.875	3.1	ug/L	1938	Standard
	Cr	52	454287.2	0.3	**46.5886**	0.601	1.3	ug/L	9522	Standard
	Cr	53	59023.1	2.1	**49.5051**	1.218	2.5	ug/L	395	Standard
	Mn	55	4104131.7	1.4	**449.9024**	9.422	2.1	ug/L	902	Standard
	Co	59	94928.8	1.1	**10.9690**	0.039	0.4	ug/L	262	Standard
	Ni	60	95168.6	0.3	**39.8855**	0.353	0.9	ug/L	371	Standard
	Cu	65	119473.9	0.7	**50.9995**	0.248	0.5	ug/L	106	Standard
	Zn	66	542722.9	0.9	**393.4429**	2.381	0.6	ug/L	398	Standard
>	Ge	72	567664.4	0.9				ug/L	535147	Standard
	As	75	7285.2	0.6	**5.1825**	0.021	0.4	ug/L	-43	Standard
	Se	82	272.3	1.4	**1.7973**	0.037	2.1	ug/L	14	Standard
	Se-1	77	303.7	6.5	**2.5954**	0.179	6.9	ug/L	65	Standard
>	Ga	71	56776.2	2.2				mg/L	97	Standard
	Rb	85	477870.7	0.6				ug/L	15	Standard
	Y	89	822359.5	0.5				ug/L	465704	Standard
>	Rh	103	91.7	11.4				ug/L	10	Standard
	Mo	98	1727.7	2.3	**0.5395**	0.015	2.9	ug/L	9	Standard
	Ag	107	1194.0	7.9	**0.1445**	0.011	7.9	ug/L	82	Standard
	Cd	111	5005.8	0.8	**1.9818**	0.018	0.9	mg/L	7	Standard
	Cd	114	12202.2	2.0	**2.0071**	0.047	2.3	ug/L	21	Standard
>	In	115	650434.8	0.8				ug/L	619035	Standard
	Sn	118	1160.0	0.4	**0.0662**	0.001	1.3	ug/L	508	Standard
	Sb	123	470.0	9.1	**0.0889**	0.008	8.8	ug/L	86	Standard
	Ba	135	653420.0	0.4	**272.0161**	3.332	1.2	ug/L	79	Standard
	Ce	140	1323543.4	0.9				ug/L	68	Standard
>	Tb	159	1024977.1	0.6				ug/L	986982	Standard
	Ho	165	25294.4	0.4				ug/L	10	Standard
	Tl	203	3087.0	0.8	**0.3285**	0.001	0.2	ug/L	13	Standard
	Tl	205	2636.9	5.2	**0.3302**	0.020	5.9	ug/L	10	Standard
	Pb	206	174438.4	0.1	**28.3571**	0.235	0.8	ug/L	264	Standard
	Pb	207	142402.4	0.8	**25.6126**	0.261	1.0	ug/L	227	Standard
	Pb	208	605823.5	0.5	**28.2596**	0.349	1.2	ug/L	868	Standard
	U	238	20875.4	0.8	**2.6436**	0.041	1.5	ug/L	8	Standard
>	Bi	209	567257.9	0.9				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	7990.4	1.6	**4.3309**	0.069	1.6	mg/L	53	Standard
K	39	1378.4	4.7	**1.0972**	0.070	6.4	mg/L	53	Standard
Ca	43	161.7	15.3	**2.9254**	0.802	27.4	mg/L	28	Standard
Fe	54	40769.5	0.5	**13.8094**	0.314	2.3	mg/L	181	Standard
Fe	57	10608.7	0.8	**13.4263**	0.334	2.5	mg/L	257	Standard
Sc-1	45	110165.8	2.1				mg/L	55220	Standard
Cl	35	42049.6	2.4				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	8065.5	16.8				ug/L	2040	Standard
P	31	76226.3	1.5				ug/L	20435	Standard
S	34	2406.9	13.6				ug/L	2430	Standard
Sr	88	263.3	4.8				ug/L	75	Standard
C	12	300.0	8.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	330.0	8.0				mg/L	7	Standard
Dy	164	39232.4	1.8				mg/L	9	Standard
Ho-1	165	25294.4	0.4				mg/L	10	Standard
Er	166	23965.6	1.4				mg/L	23	Standard
I	127	64313.6	9.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		105.116	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.076	
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	105.072
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	104.851
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606122803
Sample Date/Time: Thursday, June 30, 2016 18:18:47
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75779.1	1.5				ug/L	74916	Standard
	Be	9	38.3	58.8	**0.0323**	0.021	65.8	ug/L	10	Standard
	Al	27	3674175.9	1.4	**20.9293**	0.040	0.2	ug/L	1822	Standard
	Sc	45	59863.0	1.4				ug/L	55220	Standard
	Ti	47	3033.0	2.3	**6.9943**	0.222	3.2	ug/L	34	Standard
	V	51	34608.1	1.8	**3.3978**	0.044	1.3	ug/L	1938	Standard
	Cr	52	15251.3	1.0	**0.5912**	0.011	1.9	ug/L	9522	Standard
	Cr	53	2611.9	4.9	**1.8640**	0.098	5.3	ug/L	395	Standard
	Mn	55	71329.9	1.8	**7.8706**	0.081	1.0	ug/L	902	Standard
	Co	59	2238.5	2.9	**0.2415**	0.006	2.5	ug/L	262	Standard
	Ni	60	3339.7	0.4	**1.2872**	0.012	1.0	ug/L	371	Standard
	Cu	65	1994.5	2.1	**0.8106**	0.016	2.0	ug/L	106	Standard
	Zn	66	26090.8	0.0	**18.9622**	0.156	0.8	ug/L	398	Standard
>	**Ge**	72	556570.8	0.8				ug/L	535147	Standard
	As	75	428.1	4.3	**0.3626**	0.015	4.1	ug/L	-43	Standard
	Se	82	54.7	2.8	**0.2909**	0.008	2.8	ug/L	14	Standard
	Se-1	77	100.3	12.7	**0.4889**	0.128	26.1	ug/L	65	Standard
>	**Ga**	71	608.3	10.3				mg/L	97	Standard
	Rb	85	60132.4	1.0				ug/L	15	Standard
	Y	89	491612.9	1.6				ug/L	465704	Standard
>	**Rh**	103	56.7	13.5				ug/L	10	Standard
	Mo	98	1351.1	5.5	**0.4221**	0.022	5.3	ug/L	9	Standard
	Ag	107	131.3	13.4	**0.0104**	0.002	21.4	ug/L	82	Standard
	Cd	111	30.5	14.2	**0.0198**	0.002	8.5	mg/L	7	Standard
	Cd	114	65.9	55.0	**0.0196**	0.006	29.6	ug/L	21	Standard
>	**In**	115	654259.7	0.8				ug/L	619035	Standard
	Sn	118	898.4	13.5	**0.0271**	0.017	61.8	ug/L	508	Standard
	Sb	123	278.2	7.9	**0.0541**	0.004	6.7	ug/L	86	Standard
	Ba	135	59563.9	1.2	**24.6321**	0.281	1.1	ug/L	79	Standard
	Ce	140	17551.8	3.2				ug/L	68	Standard
>	**Tb**	159	989788.8	0.3				ug/L	986982	Standard
	Ho	165	365.0	9.6				ug/L	10	Standard
	Tl	203	48.7	12.0	**0.0112**	0.001	6.0	ug/L	13	Standard
	Tl	205	31.7	32.9	**0.0117**	0.001	10.9	ug/L	10	Standard
	Pb	206	2053.5	2.8	**0.3045**	0.009	2.9	ug/L	264	Standard
	Pb	207	1720.8	1.5	**0.2842**	0.004	1.3	ug/L	227	Standard
	Pb	208	7157.7	1.4	**0.3040**	0.006	1.8	ug/L	868	Standard
	U	238	756.0	3.0	**0.1056**	0.002	1.7	ug/L	8	Standard
>	**Bi**	209	553931.3	1.3				ug/L	541014	Standard

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Na	23	3.3	173.2	**17.5709**	30.425	173.2	mg/L	2	Standard
Mg	24	1763.4	6.2	**1.7389**	0.124	7.2	mg/L	53	Standard
K	39	2405.2	5.0	**3.6880**	0.142	3.8	mg/L	53	Standard
Ca	43	323.3	6.2	**15.2296**	1.297	8.5	mg/L	28	Standard
Fe	54	694.0	3.8	**0.3175**	0.017	5.4	mg/L	181	Standard
Fe	57	510.0	14.8	**0.5849**	0.200	34.1	mg/L	257	Standard
> **Sc-1**	45	59863.0	1.4				mg/L	55220	Standard
Cl	35	43270.4	1.0				ug/L	35504	Standard
Kr	83	3.3	45.8				ug/L	2	Standard
Br	81	5717.7	4.6				ug/L	2040	Standard
P	31	27109.2	1.6				ug/L	20435	Standard
S	34	2391.9	8.1				ug/L	2430	Standard
Sr	88	230.0	4.3				ug/L	75	Standard
C	12	243.3	15.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	7	Standard
Dy	164	578.5	3.4				mg/L	9	Standard
Ho-1	165	365.0	9.6				mg/L	10	Standard
Er	166	310.0	8.5				mg/L	23	Standard
I	127	16976.2	8.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.151	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.003	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.690
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.388
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 18:22:01
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73578.2	1.0				ug/L	74916	Standard
	Be	9	56436.6	1.3	**54.4597**	0.400	0.7	ug/L	10	Standard
	Al	27	8718982.3	2.0	**51.1525**	0.630	1.2	ug/L	1822	Standard
	Sc	45	57758.2	1.5				ug/L	55220	Standard
	Ti	47	42985.6	0.8	**101.1406**	1.072	1.1	ug/L	34	Standard
	V	51	473388.7	2.1	**49.5193**	1.553	3.1	ug/L	1938	Standard
	Cr	52	474882.2	1.7	**50.3019**	1.317	2.6	ug/L	9522	Standard
	Cr	53	59704.1	2.5	**51.6666**	2.064	4.0	ug/L	395	Standard
	Mn	55	443343.2	1.1	**50.0227**	1.138	2.3	ug/L	902	Standard
	Co	59	419267.7	1.3	**50.0452**	1.250	2.5	ug/L	262	Standard
	Ni	60	115798.5	1.3	**50.0800**	0.779	1.6	ug/L	371	Standard
	Cu	65	112988.1	1.7	**49.7307**	0.715	1.4	ug/L	106	Standard
	Zn	66	67467.2	1.8	**50.1266**	0.166	0.3	ug/L	398	Standard
>	**Ge**	72	550545.3	1.5				ug/L	535147	Standard
	As	75	67527.8	0.8	**49.0676**	0.992	2.0	ug/L	-43	Standard
	Se	82	6913.0	1.7	**49.4991**	1.588	3.2	ug/L	14	Standard
	Se-1	77	4680.4	2.0	**49.9384**	1.760	3.5	ug/L	65	Standard
>	**Ga**	71	65.0	13.3				mg/L	97	Standard
	Rb	85	991.7	6.3				ug/L	15	Standard
	Y	89	482982.4	0.6				ug/L	465704	Standard
>	**Rh**	103	33.3	17.3				ug/L	10	Standard
	Mo	98	313121.3	1.1	**96.7874**	0.451	0.5	ug/L	9	Standard
	Ag	107	378687.7	0.4	**48.3701**	0.519	1.1	ug/L	82	Standard
	Cd	111	123318.4	0.8	**49.2782**	0.374	0.8	mg/L	7	Standard
	Cd	114	303262.6	0.8	**50.3224**	0.349	0.7	ug/L	21	Standard
>	**In**	115	641990.0	1.5				ug/L	619035	Standard
	Sn	118	335969.9	1.8	**49.6749**	0.360	0.7	ug/L	508	Standard
	Sb	123	267416.7	1.1	**48.6961**	0.330	0.7	ug/L	86	Standard
	Ba	135	114466.8	0.3	**48.2658**	0.663	1.4	ug/L	79	Standard
	Ce	140	326.7	13.7				ug/L	68	Standard
>	**Tb**	159	988094.4	1.2				ug/L	986982	Standard
	Ho	165	20.0	75.0				ug/L	10	Standard
	Tl	203	462310.9	1.0	**50.1285**	0.295	0.6	ug/L	13	Standard
	Tl	205	410772.5	1.1	**52.1362**	0.458	0.9	ug/L	10	Standard
	Pb	206	293921.2	0.6	**49.6204**	0.144	0.3	ug/L	264	Standard
	Pb	207	267372.5	0.4	**49.9456**	0.275	0.6	ug/L	227	Standard
	Pb	208	1079740.5	0.7	**52.3080**	0.393	0.8	ug/L	868	Standard
	U	238	394495.8	0.5	**51.7037**	0.139	0.3	ug/L	8	Standard
>	**Bi**	209	546511.9	0.6				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4735.7	5.0	**4.8993**	0.220	4.5	mg/L	53	Standard
K	39	2316.8	4.3	**3.6831**	0.157	4.3	mg/L	53	Standard
Ca	43	126.7	26.3	**5.2012**	1.908	36.7	mg/L	28	Standard
Fe	54	7170.8	0.5	**4.5533**	0.090	2.0	mg/L	181	Standard
Fe	57	2145.2	10.2	**4.7726**	0.596	12.5	mg/L	257	Standard
Sc-1	45	57758.2	1.5				mg/L	55220	Standard
Cl	35	43470.3	1.1				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2583.6	3.3				ug/L	2040	Standard
P	31	22620.2	1.5				ug/L	20435	Standard
S	34	2977.0	2.9				ug/L	2430	Standard
Sr	88	95.0	27.3				ug/L	75	Standard
C	12	76.7	15.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	7	Standard
Dy	164	23.3	49.5				mg/L	9	Standard
Ho-1	165	20.0	75.0				mg/L	10	Standard
Er	166	0.0					mg/L	23	Standard
I	127	17932.3	2.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	108.919		
Al	27	102.305		
Sc	45			
Ti	47	101.141		
V	51	99.039		
Cr	52	100.604		
Cr	53			
Mn	55	100.045		
Co	59	100.090		
Ni	60	100.160		
Cu	65	99.461		
Zn	66	100.253		
Ge	72		102.877	
As	75	98.135		
Se	82	98.998		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	96.787		
Ag	107	96.740		
Cd	111	98.556		
Cd	114			
In	115			103.708
Sn	118	99.350		
Sb	123	97.392		
Ba	135	96.532		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.257		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.616		
U	238	103.407		
Bi	209			101.016
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 18:25:12
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72625.4	2.0				ug/L	74916	Standard
	Be	9	35.0	37.8	**0.0306**	0.013	41.6	ug/L	10	Standard
	Al	27	5221.2	75.4	**0.0289**	0.024	83.2	ug/L	1822	Standard
	Sc	45	56361.3	2.2				ug/L	55220	Standard
	Ti	47	43.7	24.3	**0.0330**	0.026	77.4	ug/L	34	Standard
	V	51	1667.3	7.1	**-0.0209**	0.013	60.6	ug/L	1938	Standard
	Cr	52	8464.0	0.3	**-0.1225**	0.003	2.7	ug/L	9522	Standard
	Cr	53	1203.4	5.2	**0.6637**	0.049	7.4	ug/L	395	Standard
	Mn	55	1135.4	33.1	**0.0236**	0.043	182.8	ug/L	902	Standard
	Co	59	286.0	2.4	**0.0114**	0.001	7.5	ug/L	262	Standard
	Ni	60	298.3	5.7	**-0.0159**	0.008	48.2	ug/L	371	Standard
	Cu	65	147.7	21.4	**0.0065**	0.014	218.6	ug/L	106	Standard
	Zn	66	427.7	12.3	**-0.0259**	0.041	158.3	ug/L	398	Standard
>	**Ge**	72	549268.9	0.5				ug/L	535147	Standard
	As	75	-50.0	72.3	**0.0189**	0.026	137.7	ug/L	-43	Standard
	Se	82	24.5	32.5	**0.0791**	0.056	71.3	ug/L	14	Standard
	Se-1	77	77.3	5.8	**0.2550**	0.048	18.7	ug/L	65	Standard
>	**Ga**	71	38.3	52.7				mg/L	97	Standard
	Rb	85	70.0	50.0				ug/L	15	Standard
	Y	89	475993.8	1.4				ug/L	465704	Standard
>	**Rh**	103	10.0	100.0				ug/L	10	Standard
	Mo	98	316.0	18.8	**0.1102**	0.018	16.8	ug/L	9	Standard
	Ag	107	191.0	14.7	**0.0184**	0.004	20.1	ug/L	82	Standard
	Cd	111	15.8	57.1	**0.0142**	0.004	25.5	mg/L	7	Standard
	Cd	114	106.5	47.8	**0.0266**	0.009	32.0	ug/L	21	Standard
>	**In**	115	641247.5	0.4				ug/L	619035	Standard
	Sn	118	1061.7	14.0	**0.0541**	0.022	41.0	ug/L	508	Standard
	Sb	123	624.1	28.9	**0.1182**	0.033	27.9	ug/L	86	Standard
	Ba	135	118.7	74.4	**0.0306**	0.037	122.6	ug/L	79	Standard
	Ce	140	183.3	31.6				ug/L	68	Standard
>	**Tb**	159	974124.5	0.5				ug/L	986982	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	104.0	35.3	**0.0171**	0.004	23.3	ug/L	13	Standard
	Tl	205	90.0	45.5	**0.0190**	0.005	27.4	ug/L	10	Standard
	Pb	206	345.0	10.3	**0.0196**	0.006	30.4	ug/L	264	Standard
	Pb	207	284.3	1.6	**0.0192**	0.001	5.0	ug/L	227	Standard
	Pb	208	1190.4	5.2	**0.0185**	0.003	17.1	ug/L	868	Standard
	U	238	79.3	52.6	**0.0181**	0.005	29.9	ug/L	8	Standard
>	**Bi**	209	554720.3	0.6				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	51.7	31.1	**0.0208**	0.018	88.3	mg/L	53	Standard
K	39	43.3	48.0	**-0.0038**	0.035	936.1	mg/L	53	Standard
Ca	43	30.0	16.7	**-0.0077**	0.294	3799.4	mg/L	28	Standard
Fe	54	184.1	9.6	**0.0040**	0.009	229.0	mg/L	181	Standard
Fe	57	265.0	3.3	**0.0254**	0.037	145.9	mg/L	257	Standard
Sc-1	45	56361.3	2.2				mg/L	55220	Standard
Cl	35	42936.1	1.9				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	2356.9	5.5				ug/L	2040	Standard
P	31	21977.6	2.3				ug/L	20435	Standard
S	34	2853.6	3.4				ug/L	2430	Standard
Sr	88	71.7	16.1				ug/L	75	Standard
C	12	63.3	18.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	101.3	25.6				mg/L	9	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	43.3	48.0				mg/L	23	Standard
I	127	8230.6	10.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.639	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.588
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.533
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606123101
Sample Date/Time: Thursday, June 30, 2016 18:28:25
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73708.9	1.2				ug/L	74916	Standard
	Be	9	23.3	24.7	**0.0189**	0.006	29.4	ug/L	10	Standard
	Al	27	21182916.8	0.4	**124.0736**	1.102	0.9	ug/L	1822	Standard
	Sc	45	55145.2	2.0				ug/L	55220	Standard
	Ti	47	356.7	5.4	**0.8173**	0.044	5.4	ug/L	34	Standard
	V	51	77183.8	0.8	**8.3694**	0.088	1.1	ug/L	1938	Standard
	Cr	52	15236.3	0.8	**0.7013**	0.022	3.1	ug/L	9522	Standard
	Cr	53	5759.4	6.2	**4.9190**	0.351	7.1	ug/L	395	Standard
	Mn	55	155667.6	0.4	**18.4949**	0.121	0.7	ug/L	902	Standard
	Co	59	787.7	0.8	**0.0766**	0.000	0.6	ug/L	262	Standard
	Ni	60	2258.8	3.8	**0.8898**	0.039	4.4	ug/L	371	Standard
	Cu	65	1302.1	4.1	**0.5477**	0.026	4.7	ug/L	106	Standard
	Zn	66	2771.6	0.7	**1.8449**	0.007	0.4	ug/L	398	Standard
>	**Ge**	72	520875.8	0.5				ug/L	535147	Standard
	As	75	4494.6	3.5	**3.5023**	0.105	3.0	ug/L	-43	Standard
	Se	82	1105.2	3.5	**8.2806**	0.249	3.0	ug/L	14	Standard
	Se-1	77	364.3	11.2	**3.5731**	0.452	12.7	ug/L	65	Standard
>	**Ga**	71	78.3	9.8				mg/L	97	Standard
	Rb	85	3303.7	4.4				ug/L	15	Standard
	Y	89	460451.9	0.5				ug/L	465704	Standard
>	**Rh**	103	130.0	34.2				ug/L	10	Standard
	Mo	98	529.4	5.8	**0.1869**	0.011	6.0	ug/L	9	Standard
	Ag	107	127.3	19.5	**0.0113**	0.003	29.3	ug/L	82	Standard
	Cd	111	29.7	34.4	**0.0205**	0.004	21.3	mg/L	7	Standard
	Cd	114	78.1	54.1	**0.0227**	0.007	32.8	ug/L	21	Standard
>	**In**	115	602147.0	0.8				ug/L	619035	Standard
	Sn	118	753.4	10.9	**0.0155**	0.012	78.4	ug/L	508	Standard
	Sb	123	275.0	25.5	**0.0577**	0.013	22.9	ug/L	86	Standard
	Ba	135	65480.9	0.3	**29.4275**	0.311	1.1	ug/L	79	Standard
	Ce	140	2970.3	9.9				ug/L	68	Standard
>	**Tb**	159	936456.7	0.9				ug/L	986982	Standard
	Ho	165	58.3	50.2				ug/L	10	Standard
	Tl	203	145.7	21.0	**0.0233**	0.004	15.7	ug/L	13	Standard
	Tl	205	150.0	5.8	**0.0285**	0.001	4.1	ug/L	10	Standard
	Pb	206	385.3	9.6	**0.0336**	0.007	21.0	ug/L	264	Standard
	Pb	207	324.3	3.1	**0.0332**	0.002	5.0	ug/L	227	Standard
	Pb	208	1371.0	3.4	**0.0345**	0.002	5.9	ug/L	868	Standard
	U	238	12005.1	0.6	**1.7315**	0.001	0.1	ug/L	8	Standard
>	**Bi**	209	498820.7	0.6				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.3575**	16.199	173.1	mg/L	2	Standard
Mg	24	165723.2	1.4	**180.8485**	3.237	1.8	mg/L	53	Standard
K	39	150.0	26.5	**0.1787**	0.066	36.9	mg/L	53	Standard
Ca	43	341.7	28.9	**17.7757**	6.017	33.8	mg/L	28	Standard
Fe	54	356.7	11.8	**0.1243**	0.024	19.5	mg/L	181	Standard
Fe	57	510.0	18.9	**0.6879**	0.236	34.2	mg/L	257	Standard
> **Sc-1**	45	55145.2	2.0				mg/L	55220	Standard
Cl	35	47507.0	1.1				ug/L	35504	Standard
Kr	83	3.3	75.5				ug/L	2	Standard
Br	81	197000.1	3.5				ug/L	2040	Standard
P	31	26680.1	1.8				ug/L	20435	Standard
S	34	2485.2	5.2				ug/L	2430	Standard
Sr	88	211.7	3.6				ug/L	75	Standard
C	12	373.3	13.5				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	69.5	16.6				mg/L	9	Standard
Ho-1	165	58.3	50.2				mg/L	10	Standard
Er	166	80.0	0.0				mg/L	23	Standard
I	127	132259.0	4.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.388	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.333	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.272
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.201
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606123701
Sample Date/Time: Thursday, June 30, 2016 18:31:36
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73556.5	1.2				ug/L	74916	Standard
	Be	9	58.3	32.5	**0.0528**	0.019	35.9	ug/L	10	Standard
	Al	27	4324633.9	1.0	**25.3836**	0.546	2.1	ug/L	1822	Standard
	Sc	45	59757.6	2.1				ug/L	55220	Standard
	Ti	47	3697.1	2.8	**8.5949**	0.280	3.3	ug/L	34	Standard
	V	51	30410.5	0.4	**2.9820**	0.028	0.9	ug/L	1938	Standard
	Cr	52	16342.1	1.7	**0.7189**	0.031	4.3	ug/L	9522	Standard
	Cr	53	2475.2	0.7	**1.7600**	0.025	1.4	ug/L	395	Standard
	Mn	55	379098.1	1.5	**42.5563**	0.890	2.1	ug/L	902	Standard
	Co	59	3754.1	1.8	**0.4234**	0.010	2.3	ug/L	262	Standard
	Ni	60	3304.0	1.2	**1.2808**	0.026	2.0	ug/L	371	Standard
	Cu	65	2883.3	0.8	**1.2059**	0.010	0.8	ug/L	106	Standard
	Zn	66	7248.1	0.7	**5.0510**	0.037	0.7	ug/L	398	Standard
>	**Ge**	72	553085.4	0.6				ug/L	535147	Standard
	As	75	1716.7	1.4	**1.2953**	0.018	1.4	ug/L	-43	Standard
	Se	82	81.3	6.0	**0.4831**	0.033	6.9	ug/L	14	Standard
	Se-1	77	107.0	12.4	**0.5683**	0.148	26.0	ug/L	65	Standard
>	**Ga**	71	810.0	1.9				mg/L	97	Standard
	Rb	85	16889.4	2.8				ug/L	15	Standard
	Y	89	489914.2	2.5				ug/L	465704	Standard
>	**Rh**	103	76.7	22.9				ug/L	10	Standard
	Mo	98	1118.4	2.5	**0.3544**	0.012	3.4	ug/L	9	Standard
	Ag	107	270.0	17.0	**0.0280**	0.005	19.1	ug/L	82	Standard
	Cd	111	122.3	24.0	**0.0562**	0.011	19.7	mg/L	7	Standard
	Cd	114	310.2	20.0	**0.0598**	0.010	16.0	ug/L	21	Standard
>	**In**	115	648962.0	1.2				ug/L	619035	Standard
	Sn	118	985.0	7.7	**0.0409**	0.010	23.4	ug/L	508	Standard
	Sb	123	515.7	10.8	**0.0972**	0.009	9.2	ug/L	86	Standard
	Ba	135	122438.4	1.1	**51.0753**	1.105	2.2	ug/L	79	Standard
	Ce	140	33540.4	1.4				ug/L	68	Standard
>	**Tb**	159	977369.7	0.8				ug/L	986982	Standard
	Ho	165	413.3	5.7				ug/L	10	Standard
	Tl	203	119.7	46.0	**0.0187**	0.006	30.3	ug/L	13	Standard
	Tl	205	90.0	0.0	**0.0189**	0.000	0.7	ug/L	10	Standard
	Pb	206	5921.8	1.6	**0.9478**	0.023	2.4	ug/L	264	Standard
	Pb	207	4892.8	0.9	**0.8677**	0.011	1.2	ug/L	227	Standard
	Pb	208	20732.2	0.4	**0.9517**	0.016	1.7	ug/L	868	Standard
	U	238	400.3	10.4	**0.0596**	0.005	9.1	ug/L	8	Standard
>	**Bi**	209	554872.4	1.2				ug/L	541014	Standard

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Na	23	1.7	173.2	**8.8665**	15.349	173.1	mg/L	2	Standard
Mg	24	3070.3	3.5	**3.0576**	0.096	3.2	mg/L	53	Standard
K	39	1061.7	12.7	**1.5864**	0.179	11.3	mg/L	53	Standard
Ca	43	296.7	9.7	**13.8539**	1.502	10.8	mg/L	28	Standard
Fe	54	956.9	9.5	**0.4831**	0.045	9.3	mg/L	181	Standard
Fe	57	635.0	5.2	**0.8916**	0.078	8.7	mg/L	257	Standard
Sc-1	45	59757.6	2.1				mg/L	55220	Standard
Cl	35	44313.4	1.9				ug/L	35504	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	10370.3	12.9				ug/L	2040	Standard
P	31	28954.3	0.4				ug/L	20435	Standard
S	34	2603.6	2.1				ug/L	2430	Standard
Sr	88	181.7	10.4				ug/L	75	Standard
C	12	193.3	35.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	668.5	3.4				mg/L	9	Standard
Ho-1	165	413.3	5.7				mg/L	10	Standard
Er	166	310.0	11.2				mg/L	23	Standard
I	127	85175.8	4.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		98.185	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.352	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.834
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.562
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606123702
Sample Date/Time: Thursday, June 30, 2016 18:34:48
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73352.1	1.1				ug/L	74916	Standard
	Be	9	26.7	84.5	**0.0223**	0.022	99.0	ug/L	10	Standard
	Al	27	7425346.7	1.3	**43.7005**	0.575	1.3	ug/L	1822	Standard
	Sc	45	57823.5	1.1				ug/L	55220	Standard
	Ti	47	1820.8	1.7	**4.3369**	0.098	2.3	ug/L	34	Standard
	V	51	80652.9	0.8	**8.5090**	0.056	0.7	ug/L	1938	Standard
	Cr	52	12307.0	0.7	**0.3281**	0.011	3.2	ug/L	9522	Standard
	Cr	53	4964.1	4.9	**4.0597**	0.199	4.9	ug/L	395	Standard
	Mn	55	1685034.1	0.2	**195.7157**	0.610	0.3	ug/L	902	Standard
	Co	59	7064.0	1.4	**0.8442**	0.013	1.5	ug/L	262	Standard
	Ni	60	5946.2	2.4	**2.5055**	0.069	2.8	ug/L	371	Standard
	Cu	65	5548.3	1.0	**2.4546**	0.034	1.4	ug/L	106	Standard
	Zn	66	9347.5	1.2	**6.8425**	0.092	1.3	ug/L	398	Standard
>	**Ge**	72	535545.9	0.5				ug/L	535147	Standard
	As	75	3482.5	0.9	**2.6532**	0.030	1.1	ug/L	-43	Standard
	Se	82	238.3	4.8	**1.6603**	0.091	5.5	ug/L	14	Standard
	Se-1	77	234.0	3.7	**2.0146**	0.108	5.3	ug/L	65	Standard
>	**Ga**	71	255.0	7.8				mg/L	97	Standard
	Rb	85	5642.7	7.3				ug/L	15	Standard
	Y	89	471263.7	0.8				ug/L	465704	Standard
>	**Rh**	103	85.0	25.6				ug/L	10	Standard
	Mo	98	13076.1	0.6	**4.1371**	0.046	1.1	ug/L	9	Standard
	Ag	107	263.3	11.3	**0.0283**	0.004	14.8	ug/L	82	Standard
	Cd	111	497.9	3.4	**0.2109**	0.005	2.3	mg/L	7	Standard
	Cd	114	1167.5	7.5	**0.2067**	0.017	8.2	ug/L	21	Standard
>	**In**	115	629037.3	1.1				ug/L	619035	Standard
	Sn	118	780.0	7.1	**0.0146**	0.010	65.8	ug/L	508	Standard
	Sb	123	581.4	7.1	**0.1125**	0.009	7.6	ug/L	86	Standard
	Ba	135	116448.2	1.3	**50.1063**	0.307	0.6	ug/L	79	Standard
	Ce	140	12521.8	1.9				ug/L	68	Standard
>	**Tb**	159	952242.5	1.2				ug/L	986982	Standard
	Ho	165	245.0	12.4				ug/L	10	Standard
	Tl	203	124.0	10.8	**0.0197**	0.001	7.4	ug/L	13	Standard
	Tl	205	106.7	25.8	**0.0215**	0.003	16.3	ug/L	10	Standard
	Pb	206	1649.1	1.4	**0.2467**	0.003	1.2	ug/L	264	Standard
	Pb	207	1450.7	3.9	**0.2437**	0.011	4.5	ug/L	227	Standard
	Pb	208	5966.8	1.9	**0.2570**	0.004	1.6	ug/L	868	Standard
	U	238	7288.1	1.1	**0.9830**	0.017	1.7	ug/L	8	Standard
>	**Bi**	209	535292.5	0.6				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	22827.2	2.1	**23.7220**	0.371	1.6	mg/L	53	Standard
K	39	1010.0	3.9	**1.5614**	0.080	5.1	mg/L	53	Standard
Ca	43	435.0	10.0	**21.8568**	2.379	10.9	mg/L	28	Standard
Fe	54	340.7	1.7	**0.1030**	0.002	2.1	mg/L	181	Standard
Fe	57	453.3	2.5	**0.4839**	0.031	6.4	mg/L	257	Standard
> **Sc-1**	45	57823.5	1.1				mg/L	55220	Standard
Cl	35	45303.6	1.3				ug/L	35504	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	41754.2	3.5				ug/L	2040	Standard
P	31	25987.3	4.3				ug/L	20435	Standard
S	34	2758.6	5.7				ug/L	2430	Standard
Sr	88	278.3	12.7				ug/L	75	Standard
C	12	160.0	34.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	57.3				mg/L	7	Standard
Dy	164	280.6	10.5				mg/L	9	Standard
Ho-1	165	245.0	12.4				mg/L	10	Standard
Er	166	266.7	5.7				mg/L	23	Standard
I	127	176316.0	8.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.912	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.075	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.616	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.942	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606123703
Sample Date/Time: Thursday, June 30, 2016 18:37:59
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72498.1	1.7				ug/L	74916	Standard
	Be	9	26.7	39.0	**0.0226**	0.011	46.6	ug/L	10	Standard
	Al	27	6795709.4	1.3	**40.4705**	0.708	1.7	ug/L	1822	Standard
	Sc	45	57423.7	3.0				ug/L	55220	Standard
	Ti	47	1820.1	1.8	**4.3278**	0.121	2.8	ug/L	34	Standard
	V	51	78659.2	1.4	**8.2782**	0.041	0.5	ug/L	1938	Standard
	Cr	52	12166.2	1.2	**0.3100**	0.009	2.9	ug/L	9522	Standard
	Cr	53	5002.5	3.4	**4.0874**	0.181	4.4	ug/L	395	Standard
	Mn	55	1702026.4	1.6	**197.3278**	1.748	0.9	ug/L	902	Standard
	Co	59	7405.1	1.8	**0.8844**	0.008	0.9	ug/L	262	Standard
	Ni	60	5681.7	2.6	**2.3836**	0.093	3.9	ug/L	371	Standard
	Cu	65	5142.5	1.2	**2.2667**	0.036	1.6	ug/L	106	Standard
	Zn	66	6961.3	1.2	**4.9979**	0.091	1.8	ug/L	398	Standard
>	**Ge**	72	536520.8	1.2				ug/L	535147	Standard
	As	75	3464.6	2.2	**2.6350**	0.044	1.7	ug/L	-43	Standard
	Se	82	269.5	3.6	**1.8872**	0.094	5.0	ug/L	14	Standard
	Se-1	77	236.7	10.7	**2.0415**	0.311	15.3	ug/L	65	Standard
>	**Ga**	71	298.3	5.4				mg/L	97	Standard
	Rb	85	5194.2	1.7				ug/L	15	Standard
	Y	89	463947.8	0.3				ug/L	465704	Standard
>	**Rh**	103	70.0	14.3				ug/L	10	Standard
	Mo	98	12098.0	1.5	**3.8608**	0.077	2.0	ug/L	9	Standard
	Ag	107	294.0	6.8	**0.0326**	0.003	8.0	ug/L	82	Standard
	Cd	111	385.0	8.6	**0.1662**	0.014	8.5	mg/L	7	Standard
	Cd	114	1056.2	4.6	**0.1893**	0.009	4.9	ug/L	21	Standard
>	**In**	115	623767.0	0.6				ug/L	619035	Standard
	Sn	118	825.0	8.5	**0.0224**	0.010	45.0	ug/L	508	Standard
	Sb	123	491.1	2.7	**0.0964**	0.003	3.1	ug/L	86	Standard
	Ba	135	110200.0	1.0	**47.8191**	0.607	1.3	ug/L	79	Standard
	Ce	140	11742.9	0.5				ug/L	68	Standard
>	**Tb**	159	959960.3	0.5				ug/L	986982	Standard
	Ho	165	215.0	15.2				ug/L	10	Standard
	Tl	203	112.0	12.3	**0.0185**	0.001	8.1	ug/L	13	Standard
	Tl	205	103.3	15.6	**0.0212**	0.002	10.0	ug/L	10	Standard
	Pb	206	1564.7	1.6	**0.2337**	0.004	1.6	ug/L	264	Standard
	Pb	207	1332.7	0.8	**0.2227**	0.002	0.9	ug/L	227	Standard
	Pb	208	5440.7	0.5	**0.2326**	0.001	0.5	ug/L	868	Standard
	U	238	6741.8	1.0	**0.9153**	0.006	0.6	ug/L	8	Standard
>	**Bi**	209	532066.3	0.4				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	21246.6	2.8	**22.2476**	1.022	4.6	mg/L	53	Standard
K	39	896.7	3.2	**1.3874**	0.024	1.7	mg/L	53	Standard
Ca	43	366.7	13.0	**18.3580**	3.195	17.4	mg/L	28	Standard
Fe	54	347.3	8.8	**0.1093**	0.026	24.1	mg/L	181	Standard
Fe	57	465.0	9.9	**0.5199**	0.082	15.8	mg/L	257	Standard
> **Sc-1**	45	57423.7	3.0				mg/L	55220	Standard
Cl	35	45819.2	1.3				ug/L	35504	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	41774.3	5.0				ug/L	2040	Standard
P	31	25414.6	2.7				ug/L	20435	Standard
S	34	2805.3	1.7				ug/L	2430	Standard
Sr	88	228.3	2.5				ug/L	75	Standard
C	12	220.0	12.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	0.0				mg/L	7	Standard
Dy	164	388.8	30.1				mg/L	9	Standard
Ho-1	165	215.0	15.2				mg/L	10	Standard
Er	166	233.3	21.1				mg/L	23	Standard
I	127	161422.8	6.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		96.772	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.257	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.764
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.346
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606123704
Sample Date/Time: Thursday, June 30, 2016 18:41:11
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74700.4	1.5				ug/L	74916	Standard
	Be	9	25.0	34.6	**0.0202**	0.008	41.6	ug/L	10	Standard
	Al	27	15133453.9	0.8	**87.4746**	1.860	2.1	ug/L	1822	Standard
	Sc	45	57433.7	3.1				ug/L	55220	Standard
	Ti	47	1116.0	5.6	**2.6964**	0.124	4.6	ug/L	34	Standard
	V	51	43724.0	1.3	**4.6399**	0.118	2.6	ug/L	1938	Standard
	Cr	52	15434.2	1.7	**0.7179**	0.043	6.0	ug/L	9522	Standard
	Cr	53	7095.0	3.2	**6.1276**	0.285	4.7	ug/L	395	Standard
	Mn	55	24493.4	0.5	**2.8116**	0.050	1.8	ug/L	902	Standard
	Co	59	1370.4	1.3	**0.1495**	0.002	1.5	ug/L	262	Standard
	Ni	60	4008.2	1.6	**1.6853**	0.020	1.2	ug/L	371	Standard
	Cu	65	1042.4	0.5	**0.4251**	0.007	1.6	ug/L	106	Standard
	Zn	66	3012.6	1.2	**2.0275**	0.051	2.5	ug/L	398	Standard
>	Ge	72	522710.1	1.2				ug/L	535147	Standard
	As	75	1352.2	5.0	**1.0884**	0.041	3.7	ug/L	-43	Standard
	Se	82	371.1	3.5	**2.7067**	0.122	4.5	ug/L	14	Standard
	Se-1	77	381.0	2.0	**3.7490**	0.094	2.5	ug/L	65	Standard
>	Ga	71	253.3	13.4				mg/L	97	Standard
	Rb	85	4595.7	5.5				ug/L	15	Standard
	Y	89	464468.4	0.3				ug/L	465704	Standard
>	Rh	103	88.3	8.6				ug/L	10	Standard
	Mo	98	1006.4	1.0	**0.3415**	0.002	0.7	ug/L	9	Standard
	Ag	107	123.0	6.5	**0.0106**	0.001	10.7	ug/L	82	Standard
	Cd	111	26.8	11.4	**0.0192**	0.001	6.6	mg/L	7	Standard
	Cd	114	58.4	32.7	**0.0192**	0.003	17.6	ug/L	21	Standard
>	In	115	606613.6	0.4				ug/L	619035	Standard
	Sn	118	680.0	9.7	**0.0032**	0.011	331.8	ug/L	508	Standard
	Sb	123	230.7	6.4	**0.0489**	0.003	5.9	ug/L	86	Standard
	Ba	135	49480.7	1.3	**22.0679**	0.363	1.6	ug/L	79	Standard
	Ce	140	11719.5	2.2				ug/L	68	Standard
>	Tb	159	942397.8	0.6				ug/L	986982	Standard
	Ho	165	170.0	24.1				ug/L	10	Standard
	Tl	203	103.0	13.1	**0.0178**	0.002	8.6	ug/L	13	Standard
	Tl	205	86.7	23.3	**0.0193**	0.003	13.9	ug/L	10	Standard
	Pb	206	883.7	2.1	**0.1195**	0.002	2.1	ug/L	264	Standard
	Pb	207	732.4	2.3	**0.1110**	0.003	2.8	ug/L	227	Standard
	Pb	208	3144.5	0.5	**0.1223**	0.001	1.2	ug/L	868	Standard
	U	238	11938.4	1.8	**1.6560**	0.021	1.3	ug/L	8	Standard
>	Bi	209	518732.9	0.6				ug/L	541014	Standard

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Na	23	5.0	100.0	**26.5771**	26.100	98.2	mg/L	2	Standard
Mg	24	58492.7	1.9	**61.2716**	0.950	1.6	mg/L	53	Standard
K	39	303.3	9.7	**0.4202**	0.062	14.8	mg/L	53	Standard
Ca	43	820.0	3.2	**42.9785**	0.015	0.0	mg/L	28	Standard
Fe	54	269.9	23.5	**0.0573**	0.035	61.8	mg/L	181	Standard
Fe	57	703.3	12.9	**1.1251**	0.179	15.9	mg/L	257	Standard
> **Sc-1**	45	57433.7	3.1				mg/L	55220	Standard
Cl	35	47952.4	0.9				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	58556.3	2.6				ug/L	2040	Standard
P	31	27825.5	1.9				ug/L	20435	Standard
S	34	2730.2	2.0				ug/L	2430	Standard
Sr	88	346.7	24.6				ug/L	75	Standard
C	12	183.3	38.3				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	7	Standard
Dy	164	293.3	8.9				mg/L	9	Standard
Ho-1	165	170.0	24.1				mg/L	10	Standard
Er	166	140.0	12.4				mg/L	23	Standard
I	127	160434.3	4.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.712	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.676	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.993
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.882
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606123705
Sample Date/Time: Thursday, June 30, 2016 18:44:22
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75807.6	2.4				ug/L	74916	Standard
	Be	9	15.0	57.7	**0.0105**	0.008	78.4	ug/L	10	Standard
	Al	27	16819757.9	1.0	**95.8103**	1.874	2.0	ug/L	1822	Standard
	Sc	45	56911.8	3.1				ug/L	55220	Standard
	Ti	47	333.7	8.3	**0.7492**	0.070	9.3	ug/L	34	Standard
	V	51	26190.8	1.8	**2.6713**	0.044	1.7	ug/L	1938	Standard
	Cr	52	11710.2	0.4	**0.2805**	0.003	1.1	ug/L	9522	Standard
	Cr	53	8892.6	3.9	**7.6943**	0.295	3.8	ug/L	395	Standard
	Mn	55	750738.1	1.3	**88.3994**	1.378	1.6	ug/L	902	Standard
	Co	59	3620.4	4.0	**0.4280**	0.018	4.3	ug/L	262	Standard
	Ni	60	5830.8	1.3	**2.4915**	0.033	1.3	ug/L	371	Standard
	Cu	65	3275.0	2.4	**1.4462**	0.037	2.6	ug/L	106	Standard
	Zn	66	11576.1	3.0	**8.6847**	0.271	3.1	ug/L	398	Standard
>	**Ge**	72	527929.6	0.2				ug/L	535147	Standard
	As	75	1507.7	7.3	**1.1960**	0.081	6.8	ug/L	-43	Standard
	Se	82	264.0	5.2	**1.8774**	0.098	5.2	ug/L	14	Standard
	Se-1	77	452.3	3.8	**4.5083**	0.185	4.1	ug/L	65	Standard
>	**Ga**	71	91.7	8.3				mg/L	97	Standard
	Rb	85	1790.1	1.5				ug/L	15	Standard
	Y	89	459787.3	0.7				ug/L	465704	Standard
>	**Rh**	103	98.3	10.6				ug/L	10	Standard
	Mo	98	7598.5	2.3	**2.4593**	0.046	1.9	ug/L	9	Standard
	Ag	107	107.7	23.2	**0.0083**	0.003	39.7	ug/L	82	Standard
	Cd	111	203.4	9.7	**0.0926**	0.008	9.0	mg/L	7	Standard
	Cd	114	563.4	13.5	**0.1064**	0.014	12.7	ug/L	21	Standard
>	**In**	115	616088.9	0.4				ug/L	619035	Standard
	Sn	118	741.7	6.4	**0.0111**	0.007	65.9	ug/L	508	Standard
	Sb	123	228.7	4.8	**0.0478**	0.002	4.0	ug/L	86	Standard
	Ba	135	72026.8	1.1	**31.6368**	0.353	1.1	ug/L	79	Standard
	Ce	140	1040.0	1.0				ug/L	68	Standard
>	**Tb**	159	950323.7	0.5				ug/L	986982	Standard
	Ho	165	100.0	8.7				ug/L	10	Standard
	Tl	203	79.0	12.8	**0.0150**	0.001	7.3	ug/L	13	Standard
	Tl	205	88.3	55.8	**0.0194**	0.007	33.7	ug/L	10	Standard
	Pb	206	683.0	11.0	**0.0831**	0.013	16.0	ug/L	264	Standard
	Pb	207	594.0	10.8	**0.0831**	0.012	14.6	ug/L	227	Standard
	Pb	208	2416.7	6.3	**0.0844**	0.008	9.2	ug/L	868	Standard
	U	238	5401.0	1.5	**0.7494**	0.012	1.6	ug/L	8	Standard
>	**Bi**	209	521632.3	0.7				ug/L	541014	Standard

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Na	23	3.3	86.6	**18.0428**	15.638	86.7	mg/L	2	Standard
Mg	24	60197.7	2.6	**63.6892**	3.459	5.4	mg/L	53	Standard
K	39	146.7	5.2	**0.1657**	0.016	9.6	mg/L	53	Standard
Ca	43	673.3	4.4	**35.3839**	2.707	7.6	mg/L	28	Standard
Fe	54	201.8	23.4	**0.0146**	0.031	210.5	mg/L	181	Standard
Fe	57	551.7	4.6	**0.7557**	0.075	9.9	mg/L	257	Standard
> **Sc-1**	45	56911.8	3.1				mg/L	55220	Standard
Cl	35	51354.2	2.0				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	48855.3	1.4				ug/L	2040	Standard
P	31	27864.0	4.9				ug/L	20435	Standard
S	34	2916.9	4.4				ug/L	2430	Standard
Sr	88	280.0	3.1				ug/L	75	Standard
C	12	166.7	21.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	7	Standard
Dy	164	92.8	23.1				mg/L	9	Standard
Ho-1	165	100.0	8.7				mg/L	10	Standard
Er	166	150.0	23.1				mg/L	23	Standard
I	127	215352.8	3.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.190	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.651	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.524
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.417
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606123706
Sample Date/Time: Thursday, June 30, 2016 18:47:34
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74487.7	1.5				ug/L	74916	Standard
	Be	9	13.3	86.6	**0.0092**	0.011	120.4	ug/L	10	Standard
	Al	27	11820936.1	1.6	**68.5203**	1.611	2.4	ug/L	1822	Standard
	Sc	45	55595.2	2.1				ug/L	55220	Standard
	Ti	47	326.7	7.2	**0.7343**	0.060	8.2	ug/L	34	Standard
	V	51	44071.1	2.3	**4.6430**	0.103	2.2	ug/L	1938	Standard
	Cr	52	11553.4	1.3	**0.2666**	0.021	8.0	ug/L	9522	Standard
	Cr	53	8779.2	2.1	**7.6152**	0.191	2.5	ug/L	395	Standard
	Mn	55	39929.6	1.2	**4.6157**	0.059	1.3	ug/L	902	Standard
	Co	59	1062.0	2.5	**0.1098**	0.004	3.7	ug/L	262	Standard
	Ni	60	1866.1	1.2	**0.7008**	0.009	1.3	ug/L	371	Standard
	Cu	65	1098.0	1.4	**0.4473**	0.010	2.2	ug/L	106	Standard
	Zn	66	3754.1	1.4	**2.5907**	0.036	1.4	ug/L	398	Standard
>	**Ge**	72	526406.1	0.6				ug/L	535147	Standard
	As	75	1178.8	3.3	**0.9500**	0.034	3.6	ug/L	-43	Standard
	Se	82	190.1	10.6	**1.3289**	0.156	11.7	ug/L	14	Standard
	Se-1	77	429.0	5.7	**4.2598**	0.267	6.3	ug/L	65	Standard
>	**Ga**	71	83.3	3.5				mg/L	97	Standard
	Rb	85	1408.4	8.6				ug/L	15	Standard
	Y	89	458293.2	0.9				ug/L	465704	Standard
>	**Rh**	103	70.0	31.1				ug/L	10	Standard
	Mo	98	14819.1	1.5	**4.8262**	0.045	0.9	ug/L	9	Standard
	Ag	107	103.3	12.6	**0.0078**	0.002	21.3	ug/L	82	Standard
	Cd	111	10.4	71.6	**0.0123**	0.003	26.0	mg/L	7	Standard
	Cd	114	89.6	37.9	**0.0245**	0.006	23.5	ug/L	21	Standard
>	**In**	115	610793.1	1.1				ug/L	619035	Standard
	Sn	118	760.0	10.3	**0.0149**	0.011	73.7	ug/L	508	Standard
	Sb	123	308.5	0.3	**0.0634**	0.001	0.8	ug/L	86	Standard
	Ba	135	63587.8	1.8	**28.1686**	0.196	0.7	ug/L	79	Standard
	Ce	140	1448.4	6.8				ug/L	68	Standard
>	**Tb**	159	948916.9	1.3				ug/L	986982	Standard
	Ho	165	36.7	7.9				ug/L	10	Standard
	Tl	203	79.3	4.1	**0.0150**	0.000	2.3	ug/L	13	Standard
	Tl	205	61.7	12.4	**0.0158**	0.001	6.1	ug/L	10	Standard
	Pb	206	411.0	2.8	**0.0344**	0.002	7.0	ug/L	264	Standard
	Pb	207	364.0	2.9	**0.0376**	0.002	5.3	ug/L	227	Standard
	Pb	208	1486.0	1.0	**0.0366**	0.000	1.1	ug/L	868	Standard
	U	238	7610.9	2.4	**1.0452**	0.021	2.0	ug/L	8	Standard
>	**Bi**	209	525407.3	0.6				ug/L	541014	Standard

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Na	23	5.0	0.0	**27.9422**	0.578	2.1	mg/L	2	Standard
Mg	24	52755.1	2.4	**57.0711**	0.842	1.5	mg/L	53	Standard
K	39	150.0	8.8	**0.1772**	0.027	15.2	mg/L	53	Standard
Ca	43	313.3	20.8	**15.9633**	3.778	23.7	mg/L	28	Standard
Fe	54	212.3	15.3	**0.0252**	0.024	97.0	mg/L	181	Standard
Fe	57	398.3	20.7	**0.3868**	0.230	59.5	mg/L	257	Standard
> **Sc-1**	45	55595.2	2.1				mg/L	55220	Standard
Cl	35	49423.8	1.2				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	35855.7	2.9				ug/L	2040	Standard
P	31	26942.3	1.6				ug/L	20435	Standard
S	34	3012.0	1.5				ug/L	2430	Standard
Sr	88	220.0	11.8				ug/L	75	Standard
C	12	180.0	25.5				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	40.5	37.0				mg/L	9	Standard
Ho-1	165	36.7	7.9				mg/L	10	Standard
Er	166	60.0	16.7				mg/L	23	Standard
I	127	561335.4	4.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.428	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.367	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.669
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.115
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 18:50:46
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	71687.5	1.4				ug/L	74916	Standard
	Be	9	56212.4	2.2	**55.6744**	0.981	1.8	ug/L	10	Standard
	Al	27	8771268.2	2.9	**52.8124**	0.842	1.6	ug/L	1822	Standard
	Sc	45	55598.5	1.4				ug/L	55220	Standard
	Ti	47	42411.0	2.0	**101.9404**	1.750	1.7	ug/L	34	Standard
	V	51	469521.3	1.1	**50.1684**	0.092	0.2	ug/L	1938	Standard
	Cr	52	465815.6	1.0	**50.4026**	0.203	0.4	ug/L	9522	Standard
	Cr	53	56885.0	2.2	**50.2601**	0.777	1.5	ug/L	395	Standard
	Mn	55	437945.4	1.3	**50.4742**	0.337	0.7	ug/L	902	Standard
	Co	59	417548.6	1.4	**50.9095**	0.645	1.3	ug/L	262	Standard
	Ni	60	114353.6	1.4	**50.5212**	0.176	0.3	ug/L	371	Standard
	Cu	65	111446.1	0.9	**50.1133**	0.291	0.6	ug/L	106	Standard
	Zn	66	66488.2	1.0	**50.4769**	0.800	1.6	ug/L	398	Standard
>	Ge	72	538875.7	1.1				ug/L	535147	Standard
	As	75	67522.2	0.5	**50.1175**	0.341	0.7	ug/L	-43	Standard
	Se	82	6846.0	0.7	**50.0674**	0.209	0.4	ug/L	14	Standard
	Se-1	77	4653.4	1.8	**50.7142**	0.391	0.8	ug/L	65	Standard
>	Ga	71	71.7	28.2				mg/L	97	Standard
	Rb	85	916.7	4.0				ug/L	15	Standard
	Y	89	469799.8	1.4				ug/L	465704	Standard
>	Rh	103	31.7	32.9				ug/L	10	Standard
	Mo	98	311161.5	0.9	**97.3135**	1.276	1.3	ug/L	9	Standard
	Ag	107	375662.4	1.9	**48.5477**	1.199	2.5	ug/L	82	Standard
	Cd	111	121621.4	0.4	**49.1707**	0.522	1.1	mg/L	7	Standard
	Cd	114	296179.2	0.5	**49.7223**	0.142	0.3	ug/L	21	Standard
>	In	115	634529.9	0.8				ug/L	619035	Standard
	Sn	118	329929.0	3.1	**49.3536**	1.344	2.7	ug/L	508	Standard
	Sb	123	267054.5	1.3	**49.2021**	0.782	1.6	ug/L	86	Standard
	Ba	135	113140.9	0.4	**48.2634**	0.467	1.0	ug/L	79	Standard
	Ce	140	128.3	20.0				ug/L	68	Standard
>	Tb	159	957418.9	1.2				ug/L	986982	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	464958.9	0.7	**50.5990**	0.829	1.6	ug/L	13	Standard
	Tl	205	415202.1	0.2	**52.8880**	0.585	1.1	ug/L	10	Standard
	Pb	206	294687.8	1.3	**49.9241**	0.223	0.4	ug/L	264	Standard
	Pb	207	268350.0	0.9	**50.3058**	0.452	0.9	ug/L	227	Standard
	Pb	208	1083165.8	0.6	**52.6601**	0.325	0.6	ug/L	868	Standard
	U	238	400940.3	0.4	**52.7360**	0.496	0.9	ug/L	8	Standard
>	Bi	209	544596.2	1.1				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4615.7	1.6	**4.9627**	0.144	2.9	mg/L	53	Standard
K	39	2171.8	4.6	**3.5842**	0.149	4.2	mg/L	53	Standard
Ca	43	113.3	19.9	**4.6898**	1.182	25.2	mg/L	28	Standard
Fe	54	7351.4	3.6	**4.8564**	0.179	3.7	mg/L	181	Standard
Fe	57	2108.5	1.8	**4.8855**	0.174	3.6	mg/L	257	Standard
Sc-1	45	55598.5	1.4				mg/L	55220	Standard
Cl	35	45959.6	2.2				ug/L	35504	Standard
Kr	83	1.0	173.2				ug/L	2	Standard
Br	81	3020.3	12.7				ug/L	2040	Standard
P	31	25206.0	4.0				ug/L	20435	Standard
S	34	3005.3	2.9				ug/L	2430	Standard
Sr	88	63.3	24.1				ug/L	75	Standard
C	12	83.3	48.5				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	9.0	105.7				mg/L	9	Standard
Ho-1	165	8.3	34.6				mg/L	10	Standard
Er	166	20.0	100.0				mg/L	23	Standard
I	127	27561.4	28.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	111.349		
Al	27	105.625		
Sc	45			
Ti	47	101.940		
V	51	100.337		
Cr	52	100.805		
Cr	53			
Mn	55	100.948		
Co	59	101.819		
Ni	60	101.042		
Cu	65	100.227		
Zn	66	100.954		
Ge	72		100.697	
As	75	100.235		
Se	82	100.135		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	97.314		
Ag	107	97.095		
Cd	111	98.341		
Cd	114			
In	115		102.503	
Sn	118	98.707		
Sb	123	98.404		
Ba	135	96.527		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.198		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.320		
U	238	105.472		
Bi	209		100.662	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 18:53:58
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70564.0	1.3				ug/L	74916	Standard
	Be	9	15.0	33.3	**0.0115**	0.005	43.9	ug/L	10	Standard
	Al	27	2650.2	30.0	**0.0138**	0.005	33.3	ug/L	1822	Standard
	Sc	45	55267.3	1.7				ug/L	55220	Standard
	Ti	47	37.0	13.5	**0.0193**	0.013	65.6	ug/L	34	Standard
	V	51	1576.6	11.5	**-0.0265**	0.021	77.8	ug/L	1938	Standard
	Cr	52	7930.7	1.2	**-0.1603**	0.016	10.0	ug/L	9522	Standard
	Cr	53	933.4	10.2	**0.4468**	0.083	18.5	ug/L	395	Standard
	Mn	55	838.0	6.3	**-0.0080**	0.007	83.7	ug/L	902	Standard
	Co	59	260.3	20.6	**0.0091**	0.007	74.5	ug/L	262	Standard
	Ni	60	289.7	5.8	**-0.0167**	0.008	49.3	ug/L	371	Standard
	Cu	65	145.0	9.6	**0.0068**	0.007	97.5	ug/L	106	Standard
	Zn	66	383.3	2.1	**-0.0525**	0.008	14.8	ug/L	398	Standard
>	**Ge**	72	536805.7	0.6				ug/L	535147	Standard
	As	75	-7.0	257.8	**0.0500**	0.013	26.7	ug/L	-43	Standard
	Se	82	26.0	21.0	**0.0939**	0.039	41.6	ug/L	14	Standard
	Se-1	77	74.7	11.4	**0.2452**	0.098	39.8	ug/L	65	Standard
>	**Ga**	71	61.7	9.4				mg/L	97	Standard
	Rb	85	28.3	40.8				ug/L	15	Standard
	Y	89	474941.0	0.9				ug/L	465704	Standard
>	**Rh**	103	26.7	43.3				ug/L	10	Standard
	Mo	98	254.5	24.8	**0.0910**	0.019	21.1	ug/L	9	Standard
	Ag	107	150.0	15.4	**0.0131**	0.003	21.8	ug/L	82	Standard
	Cd	111	14.2	26.1	**0.0136**	0.001	10.7	mg/L	7	Standard
	Cd	114	40.6	40.8	**0.0157**	0.003	17.7	ug/L	21	Standard
>	**In**	115	641699.1	0.5				ug/L	619035	Standard
	Sn	118	1158.4	8.6	**0.0683**	0.015	22.5	ug/L	508	Standard
	Sb	123	594.0	22.6	**0.1127**	0.025	22.0	ug/L	86	Standard
	Ba	135	49.7	37.8	**0.0013**	0.008	600.3	ug/L	79	Standard
	Ce	140	31.7	9.1				ug/L	68	Standard
>	**Tb**	159	966472.8	1.2				ug/L	986982	Standard
	Ho	165	6.7	173.2				ug/L	10	Standard
	Tl	203	80.0	13.5	**0.0146**	0.001	8.2	ug/L	13	Standard
	Tl	205	70.0	44.6	**0.0165**	0.004	24.0	ug/L	10	Standard
	Pb	206	303.7	8.6	**0.0128**	0.004	35.1	ug/L	264	Standard
	Pb	207	290.3	16.5	**0.0204**	0.009	44.6	ug/L	227	Standard
	Pb	208	1089.7	9.1	**0.0138**	0.005	35.9	ug/L	868	Standard
	U	238	63.3	36.3	**0.0161**	0.003	18.6	ug/L	8	Standard
>	**Bi**	209	554130.2	0.5				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.2510**	16.015	173.1	mg/L	2	Standard
Mg	24	65.0	27.7	**0.0364**	0.020	56.2	mg/L	53	Standard
K	39	26.7	47.2	**-0.0306**	0.022	72.6	mg/L	53	Standard
Ca	43	23.3	53.9	**-0.3468**	0.734	211.7	mg/L	28	Standard
Fe	54	170.8	15.9	**-0.0024**	0.019	821.1	mg/L	181	Standard
Fe	57	275.0	25.8	**0.0671**	0.202	300.2	mg/L	257	Standard
Sc-1	45	55267.3	1.7				mg/L	55220	Standard
Cl	35	45791.8	1.4				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2516.9	9.5				ug/L	2040	Standard
P	31	24761.9	0.5				ug/L	20435	Standard
S	34	3220.3	7.0				ug/L	2430	Standard
Sr	88	55.0	15.7				ug/L	75	Standard
C	12	86.7	24.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	188.9	23.3				mg/L	9	Standard
Ho-1	165	6.7	173.2				mg/L	10	Standard
Er	166	23.3	65.5				mg/L	23	Standard
I	127	10310.2	12.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.310	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.661
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.424
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW V WG574593-02
Sample Date/Time: Thursday, June 30, 2016 18:57:10
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65124.7	1.8				ug/L	74916	Standard
	Be	9	11.7	65.5	**0.0092**	0.009	93.5	ug/L	10	Standard
	Al	27	3680.5	10.6	**0.0221**	0.002	10.9	ug/L	1822	Standard
	Sc	45	50311.7	1.8				ug/L	55220	Standard
	Ti	47	25.7	4.5	**-0.0034**	0.003	74.9	ug/L	34	Standard
	V	51	1415.1	5.7	**-0.0324**	0.008	25.8	ug/L	1938	Standard
	Cr	52	6107.2	3.0	**-0.3108**	0.016	5.2	ug/L	9522	Standard
	Cr	53	671.7	16.0	**0.2590**	0.104	40.1	ug/L	395	Standard
	Mn	55	484.7	5.0	**-0.0447**	0.003	6.4	ug/L	902	Standard
	Co	59	221.0	5.2	**0.0063**	0.001	21.0	ug/L	262	Standard
	Ni	60	295.3	4.9	**-0.0042**	0.006	140.7	ug/L	371	Standard
	Cu	65	138.0	4.5	**0.0084**	0.003	37.2	ug/L	106	Standard
	Zn	66	1155.7	3.5	**0.6080**	0.040	6.5	ug/L	398	Standard
>	**Ge**	72	498696.9	0.9				ug/L	535147	Standard
	As	75	-30.1	128.0	**0.0313**	0.031	98.7	ug/L	-43	Standard
	Se	82	15.4	57.0	**0.0257**	0.071	276.7	ug/L	14	Standard
	Se-1	77	65.3	19.4	**0.1978**	0.158	79.8	ug/L	65	Standard
>	**Ga**	71	40.0	12.5				mg/L	97	Standard
	Rb	85	30.0	60.1				ug/L	15	Standard
	Y	89	430247.5	1.6				ug/L	465704	Standard
>	**Rh**	103	13.3	57.3				ug/L	10	Standard
	Mo	98	65.4	31.6	**0.0347**	0.007	20.3	ug/L	9	Standard
	Ag	107	108.0	15.3	**0.0092**	0.002	24.8	ug/L	82	Standard
	Cd	111	4.6	83.0	**0.0099**	0.002	16.8	mg/L	7	Standard
	Cd	114	17.9	60.7	**0.0122**	0.002	16.5	ug/L	21	Standard
>	**In**	115	580808.3	0.9				ug/L	619035	Standard
	Sn	118	326.7	5.4	**-0.0499**	0.002	4.8	ug/L	508	Standard
	Sb	123	160.5	9.7	**0.0367**	0.003	7.8	ug/L	86	Standard
	Ba	135	36.3	21.4	**-0.0027**	0.003	127.5	ug/L	79	Standard
	Ce	140	20.0	66.1				ug/L	68	Standard
>	**Tb**	159	893130.6	0.7				ug/L	986982	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	31.0	11.6	**0.0095**	0.000	4.3	ug/L	13	Standard
	Tl	205	31.7	63.8	**0.0119**	0.003	22.4	ug/L	10	Standard
	Pb	206	260.7	7.5	**0.0079**	0.003	43.1	ug/L	264	Standard
	Pb	207	227.0	12.1	**0.0108**	0.005	49.4	ug/L	227	Standard
	Pb	208	965.7	3.1	**0.0102**	0.002	14.8	ug/L	868	Standard
	U	238	17.7	34.1	**0.0103**	0.001	8.0	ug/L	8	Standard
>	**Bi**	209	526979.7	0.1				ug/L	541014	Standard

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Na	23	3.3	86.6	**20.3871**	17.653	86.6	mg/L	2	Standard
Mg	24	35.0	65.5	**0.0070**	0.027	380.2	mg/L	53	Standard
K	39	43.3	13.3	**0.0049**	0.012	251.2	mg/L	53	Standard
Ca	43	28.3	27.0	**0.0854**	0.465	544.9	mg/L	28	Standard
Fe	54	62.8	35.8	**-0.0719**	0.016	22.9	mg/L	181	Standard
Fe	57	288.3	11.5	**0.1765**	0.108	61.2	mg/L	257	Standard
> **Sc-1**	45	50311.7	1.8				mg/L	55220	Standard
Cl	35	42044.3	0.6				ug/L	35504	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1890.1	2.3				ug/L	2040	Standard
P	31	9644.7	4.6				ug/L	20435	Standard
S	34	2881.9	2.9				ug/L	2430	Standard
Sr	88	75.0	13.3				ug/L	75	Standard
C	12	90.0	19.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	6.0	88.0				mg/L	9	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	13.3	173.2				mg/L	23	Standard
I	127	31466.0	4.3				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		86.930	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		93.189	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.825
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.406
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW V WG574593-02
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Method 6020 - Summary Report

Sample ID: LCSW V WG574593-03
Sample Date/Time: Thursday, June 30, 2016 19:00:21
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69562.7	1.6				ug/L	74916	Standard
	Be	9	55881.3	3.5	**57.0358**	1.690	3.0	ug/L	10	Standard
	Al	27	38980.1	2.0	**0.2396**	0.002	0.8	ug/L	1822	Standard
	Sc	45	55707.3	3.2				ug/L	55220	Standard
	Ti	47	72.0	69.8	**0.0984**	0.116	117.8	ug/L	34	Standard
	V	51	471085.8	1.2	**49.2051**	0.573	1.2	ug/L	1938	Standard
	Cr	52	475883.4	0.8	**50.3369**	0.146	0.3	ug/L	9522	Standard
	Cr	53	57898.8	2.5	**50.0104**	1.177	2.4	ug/L	395	Standard
	Mn	55	437440.5	1.3	**49.2849**	0.589	1.2	ug/L	902	Standard
	Co	59	411129.2	1.4	**49.0012**	0.470	1.0	ug/L	262	Standard
	Ni	60	115394.5	1.9	**49.8345**	0.439	0.9	ug/L	371	Standard
	Cu	65	114293.6	1.9	**50.2386**	0.553	1.1	ug/L	106	Standard
	Zn	66	68137.2	1.6	**50.5638**	0.366	0.7	ug/L	398	Standard
>	**Ge**	72	551232.8	1.0				ug/L	535147	Standard
	As	75	67324.2	1.0	**48.8502**	0.240	0.5	ug/L	-43	Standard
	Se	82	6755.6	1.9	**48.2934**	0.688	1.4	ug/L	14	Standard
	Se-1	77	4626.4	0.4	**49.2779**	0.338	0.7	ug/L	65	Standard
>	**Ga**	71	48.3	11.9				mg/L	97	Standard
	Rb	85	60.0	8.3				ug/L	15	Standard
	Y	89	471884.7	1.3				ug/L	465704	Standard
>	**Rh**	103	28.3	44.4				ug/L	10	Standard
	Mo	98	78.0	23.1	**0.0363**	0.006	15.3	ug/L	9	Standard
	Ag	107	382843.9	0.7	**48.5758**	0.339	0.7	ug/L	82	Standard
	Cd	111	121706.1	1.5	**48.3134**	0.813	1.7	mg/L	7	Standard
	Cd	114	293415.4	2.3	**48.3681**	1.191	2.5	ug/L	21	Standard
>	**In**	115	646223.1	0.3				ug/L	619035	Standard
	Sn	118	735.0	7.2	**0.0048**	0.008	161.7	ug/L	508	Standard
	Sb	123	258744.8	2.4	**46.8067**	1.129	2.4	ug/L	86	Standard
	Ba	135	113648.3	0.8	**47.6009**	0.461	1.0	ug/L	79	Standard
	Ce	140	66.7	21.7				ug/L	68	Standard
>	**Tb**	159	978173.5	0.6				ug/L	986982	Standard
	Ho	165	13.3	21.7				ug/L	10	Standard
	Tl	203	464890.4	0.6	**49.4533**	0.267	0.5	ug/L	13	Standard
	Tl	205	415961.1	0.9	**51.7944**	0.478	0.9	ug/L	10	Standard
	Pb	206	301601.6	0.3	**49.9520**	0.137	0.3	ug/L	264	Standard
	Pb	207	262116.2	0.6	**48.0334**	0.260	0.5	ug/L	227	Standard
	Pb	208	1097299.1	0.6	**52.1501**	0.236	0.5	ug/L	868	Standard
	U	238	389833.0	0.4	**50.1241**	0.175	0.3	ug/L	8	Standard
>	**Bi**	209	557069.2	0.1				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	56.7	13.5	**0.0267**	0.008	31.7	mg/L	53	Standard
K	39	53.3	32.9	**0.0139**	0.031	220.8	mg/L	53	Standard
Ca	43	15.0	66.7	**-0.8437**	0.534	63.2	mg/L	28	Standard
Fe	54	206.4	18.6	**0.0203**	0.023	111.4	mg/L	181	Standard
Fe	57	230.0	7.8	**-0.0594**	0.033	54.8	mg/L	257	Standard
Sc-1	45	55707.3	3.2				mg/L	55220	Standard
Cl	35	46169.6	0.9				ug/L	35504	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	2390.2	11.5				ug/L	2040	Standard
P	31	24085.8	0.8				ug/L	20435	Standard
S	34	3070.3	3.9				ug/L	2430	Standard
Sr	88	66.7	30.3				ug/L	75	Standard
C	12	90.0	44.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	8.6	117.2				mg/L	9	Standard
Ho-1	165	13.3	21.7				mg/L	10	Standard
Er	166	30.0	57.7				mg/L	23	Standard
I	127	17955.6	2.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		92.854	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.006	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.392
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.968
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: F BLANK WG574519-01
Sample Date/Time: Thursday, June 30, 2016 19:03:33
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68901.4	2.7				ug/L	74916	Standard
	Be	9	35.0	0.0	**0.0325**	0.001	3.0	ug/L	10	Standard
	Al	27	13376.7	44.8	**0.0815**	0.037	45.8	ug/L	1822	Standard
	Sc	45	56279.3	1.3				ug/L	55220	Standard
	Ti	47	49.0	26.8	**0.0449**	0.030	66.9	ug/L	34	Standard
	V	51	1904.9	20.7	**0.0032**	0.040	1261.0	ug/L	1938	Standard
	Cr	52	10709.8	1.1	**0.1165**	0.013	11.0	ug/L	9522	Standard
	Cr	53	1201.7	3.2	**0.6585**	0.031	4.7	ug/L	395	Standard
	Mn	55	2313.5	41.6	**0.1557**	0.107	68.9	ug/L	902	Standard
	Co	59	426.0	48.2	**0.0279**	0.024	86.7	ug/L	262	Standard
	Ni	60	451.0	5.0	**0.0498**	0.011	22.6	ug/L	371	Standard
	Cu	65	885.0	3.9	**0.3307**	0.016	4.9	ug/L	106	Standard
	Zn	66	2763.6	4.2	**1.7184**	0.104	6.0	ug/L	398	Standard
>	**Ge**	72	551340.8	0.9				ug/L	535147	Standard
	As	75	68.9	33.8	**0.1051**	0.017	15.8	ug/L	-43	Standard
	Se	82	69.5	11.0	**0.4005**	0.051	12.7	ug/L	14	Standard
	Se-1	77	56.7	8.2	**0.0295**	0.055	187.8	ug/L	65	Standard
>	**Ga**	71	41.7	13.9				mg/L	97	Standard
	Rb	85	55.0	24.1				ug/L	15	Standard
	Y	89	480211.7	1.0				ug/L	465704	Standard
>	**Rh**	103	6.7	114.6				ug/L	10	Standard
	Mo	98	108.4	79.8	**0.0458**	0.027	59.7	ug/L	9	Standard
	Ag	107	229.0	50.7	**0.0230**	0.015	66.8	ug/L	82	Standard
	Cd	111	25.6	32.6	**0.0180**	0.003	17.7	mg/L	7	Standard
	Cd	114	68.1	31.3	**0.0200**	0.003	16.5	ug/L	21	Standard
>	**In**	115	649486.2	1.9				ug/L	619035	Standard
	Sn	118	630.0	14.3	**-0.0111**	0.013	120.8	ug/L	508	Standard
	Sb	123	2763.7	29.7	**0.5029**	0.152	30.2	ug/L	86	Standard
	Ba	135	521.0	3.5	**0.1976**	0.008	4.3	ug/L	79	Standard
	Ce	140	36.7	15.7				ug/L	68	Standard
>	**Tb**	159	966307.5	1.5				ug/L	986982	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	189.7	17.5	**0.0262**	0.004	13.7	ug/L	13	Standard
	Tl	205	248.3	56.4	**0.0386**	0.017	45.1	ug/L	10	Standard
	Pb	206	868.4	21.3	**0.1061**	0.031	28.8	ug/L	264	Standard
	Pb	207	771.7	25.0	**0.1083**	0.035	32.6	ug/L	227	Standard
	Pb	208	3058.8	10.1	**0.1071**	0.015	13.6	ug/L	868	Standard
	U	238	127.3	60.3	**0.0243**	0.010	40.6	ug/L	8	Standard
>	**Bi**	209	557094.5	0.3				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.1066**	15.764	173.1	mg/L	2	Standard
Mg	24	351.7	14.8	**0.3415**	0.055	16.2	mg/L	53	Standard
K	39	33.3	22.9	**-0.0204**	0.013	64.6	mg/L	53	Standard
Ca	43	13.3	57.3	**-0.9375**	0.417	44.5	mg/L	28	Standard
Fe	54	189.3	9.4	**0.0079**	0.013	163.4	mg/L	181	Standard
Fe	57	275.0	14.2	**0.0511**	0.094	183.1	mg/L	257	Standard
Sc-1	45	56279.3	1.3				mg/L	55220	Standard
Cl	35	45061.6	0.5				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	10497.0	6.0				ug/L	2040	Standard
P	31	23987.3	1.8				ug/L	20435	Standard
S	34	2932.0	0.8				ug/L	2430	Standard
Sr	88	76.7	15.1				ug/L	75	Standard
C	12	106.7	10.8				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	16.0	72.9				mg/L	9	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	29338.4	1.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.971	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.026	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.919
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.972
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: F BLANK WG574519-01
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Method 6020 - Summary Report

Sample ID: L1606153601 WG574593-01
Sample Date/Time: Thursday, June 30, 2016 19:06:44
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	122673.1	2.2				ug/L	74916	Standard
	Be	9	31.7	55.5	**0.0146**	0.010	66.7	ug/L	10	Standard
	Al	27	18994381.1	0.9	**66.8555**	0.955	1.4	ug/L	1822	Standard
	Sc	45	46431.0	0.5				ug/L	55220	Standard
	Ti	47	683.3	6.3	**1.9112**	0.129	6.8	ug/L	34	Standard
	V	51	30052.2	22.2	**3.6833**	0.821	22.3	ug/L	1938	Standard
	Cr	52	21130.7	1.8	**1.7730**	0.033	1.8	ug/L	9522	Standard
	Cr	53	14517.2	22.9	**15.1703**	3.419	22.5	ug/L	395	Standard
	Mn	55	85596.1	0.7	**11.8105**	0.088	0.7	ug/L	902	Standard
	Co	59	116786.7	0.4	**17.1478**	0.141	0.8	ug/L	262	Standard
	Ni	60	17742.0	0.6	**9.3298**	0.063	0.7	ug/L	371	Standard
	Cu	65	20615.4	1.5	**11.1291**	0.283	2.5	ug/L	106	Standard
	Zn	66	13403.6	4.3	**12.0053**	0.643	5.4	ug/L	398	Standard
>	Ge	72	447096.6	1.2				ug/L	535147	Standard
	As	75	6308.4	1.3	**5.6928**	0.101	1.8	ug/L	-43	Standard
	Se	82	571.1	6.9	**4.9502**	0.406	8.2	ug/L	14	Standard
	Se-1	77	1142.4	10.9	**14.5869**	1.497	10.3	ug/L	65	Standard
>	Ga	71	756.7	6.7				mg/L	97	Standard
	Rb	85	264851.7	1.4				ug/L	15	Standard
	Y	89	428599.5	1.0				ug/L	465704	Standard
>	Rh	103	428.3	16.9				ug/L	10	Standard
	Mo	98	1248169.6	0.3	**472.3040**	4.038	0.9	ug/L	9	Standard
	Ag	107	334.0	12.0	**0.0462**	0.007	14.2	ug/L	82	Standard
	Cd	111	-881.1	2.5	**-0.4230**	0.010	2.3	mg/L	7	Standard
	Cd	114	2092.7	7.3	**0.4339**	0.031	7.1	ug/L	21	Standard
>	In	115	524373.9	0.6				ug/L	619035	Standard
	Sn	118	1396.7	7.2	**0.1500**	0.019	12.5	ug/L	508	Standard
	Sb	123	2763.9	2.3	**0.6205**	0.015	2.4	ug/L	86	Standard
	Ba	135	74756.0	0.3	**38.5832**	0.154	0.4	ug/L	79	Standard
	Ce	140	973.4	5.1				ug/L	68	Standard
>	Tb	159	853344.7	1.3				ug/L	986982	Standard
	Ho	165	58.3	32.5				ug/L	10	Standard
	Tl	203	937.0	32.6	**0.1350**	0.042	31.4	ug/L	13	Standard
	Tl	205	240.0	27.2	**0.0464**	0.011	23.2	ug/L	10	Standard
	Pb	206	737.0	5.6	**0.1202**	0.009	7.3	ug/L	264	Standard
	Pb	207	643.7	9.2	**0.1195**	0.015	12.3	ug/L	227	Standard
	Pb	208	2580.4	7.6	**0.1204**	0.013	10.9	ug/L	868	Standard
	U	238	2118.5	4.2	**0.3601**	0.017	4.6	ug/L	8	Standard
>	Bi	209	430851.9	0.7				ug/L	541014	Standard

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Na	23	25.0	69.3	**167.1204**	115.560	69.1	mg/L	2	Standard
Mg	24	1041469.6	1.5	**1349.8898**	27.206	2.0	mg/L	53	Standard
K	39	1346.7	6.5	**2.6416**	0.167	6.3	mg/L	53	Standard
Ca	43	1193.4	7.9	**78.6907**	5.988	7.6	mg/L	28	Standard
Fe	54	146.8	27.2	**0.0001**	0.032	25226.5	mg/L	181	Standard
Fe	57	1303.4	10.9	**3.4417**	0.428	12.4	mg/L	257	Standard
> **Sc-1**	45	46431.0	0.5				mg/L	55220	Standard
Cl	35	221401.2	0.1				ug/L	35504	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	60055.9	7.2				ug/L	2040	Standard
P	31	21758.9	1.5				ug/L	20435	Standard
S	34	2653.6	2.7				ug/L	2430	Standard
Sr	88	396.7	13.9				ug/L	75	Standard
C	12	190.0	18.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	52377.1	40.9				mg/L	7	Standard
Dy	164	11.9	128.4				mg/L	9	Standard
Ho-1	165	58.3	32.5				mg/L	10	Standard
Er	166	30.0	0.0				mg/L	23	Standard
I	127	199806.6	8.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		163.747	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		83.547	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		84.708
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		79.638
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

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Method 6020 - Summary Report

Sample ID: L1606153601DP WG574593-04
Sample Date/Time: Thursday, June 30, 2016 19:09:56
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	145131.3	5.2				ug/L	74916	Standard
	Be	9	38.3	78.6	**0.0153**	0.015	95.1	ug/L	10	Standard
	Al	27	20839638.7	6.3	**61.9647**	1.121	1.8	ug/L	1822	Standard
	Sc	45	51571.0	4.0				ug/L	55220	Standard
	Ti	47	849.0	9.4	**2.1919**	0.167	7.6	ug/L	34	Standard
	V	51	36447.2	16.7	**4.1501**	0.825	19.9	ug/L	1938	Standard
	Cr	52	21907.5	2.6	**1.6433**	0.067	4.1	ug/L	9522	Standard
	Cr	53	10825.5	4.5	**10.3076**	0.649	6.3	ug/L	395	Standard
	Mn	55	90738.7	2.8	**11.5133**	0.066	0.6	ug/L	902	Standard
	Co	59	125381.0	4.5	**16.9279**	0.346	2.0	ug/L	262	Standard
	Ni	60	18867.8	4.3	**9.1206**	0.188	2.1	ug/L	371	Standard
	Cu	65	22283.4	4.1	**11.0610**	0.229	2.1	ug/L	106	Standard
	Zn	66	14870.3	6.1	**12.2488**	0.518	4.2	ug/L	398	Standard
>	Ge	72	486033.9	2.5				ug/L	535147	Standard
	As	75	6634.4	6.0	**5.5055**	0.197	3.6	ug/L	-43	Standard
	Se	82	622.2	14.5	**4.9508**	0.649	13.1	ug/L	14	Standard
	Se-1	77	954.7	5.1	**11.0985**	0.821	7.4	ug/L	65	Standard
>	Ga	71	735.0	6.2				mg/L	97	Standard
	Rb	85	280985.0	3.3				ug/L	15	Standard
	Y	89	467730.0	3.9				ug/L	465704	Standard
>	Rh	103	991.7	26.1				ug/L	10	Standard
	Mo	98	1366675.1	3.4	**465.0197**	2.989	0.6	ug/L	9	Standard
	Ag	107	341.7	18.3	**0.0422**	0.010	24.6	ug/L	82	Standard
	Cd	111	-916.3	0.9	**-0.3953**	0.011	2.8	mg/L	7	Standard
	Cd	114	2215.8	6.2	**0.4142**	0.035	8.4	ug/L	21	Standard
>	In	115	583122.3	3.2				ug/L	619035	Standard
	Sn	118	1590.1	4.2	**0.1562**	0.015	9.4	ug/L	508	Standard
	Sb	123	2817.7	3.8	**0.5692**	0.005	0.8	ug/L	86	Standard
	Ba	135	79167.7	3.0	**36.7444**	0.151	0.4	ug/L	79	Standard
	Ce	140	1018.4	6.7				ug/L	68	Standard
>	Tb	159	945728.6	2.5				ug/L	986982	Standard
	Ho	165	63.3	52.6				ug/L	10	Standard
	Tl	203	1194.7	26.8	**0.1568**	0.046	29.2	ug/L	13	Standard
	Tl	205	235.0	25.1	**0.0424**	0.010	23.6	ug/L	10	Standard
	Pb	206	779.7	7.0	**0.1149**	0.016	13.8	ug/L	264	Standard
	Pb	207	712.7	3.3	**0.1211**	0.010	8.5	ug/L	227	Standard
	Pb	208	2715.1	2.2	**0.1140**	0.006	5.4	ug/L	868	Standard
	U	238	2279.8	3.7	**0.3534**	0.005	1.4	ug/L	8	Standard
>	Bi	209	472522.9	3.5				ug/L	541014	Standard

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Na	23	11.7	99.0	**69.7203**	68.154	97.8	mg/L	2	Standard
Mg	24	1137339.3	3.2	**1327.4723**	16.520	1.2	mg/L	53	Standard
K	39	1246.7	8.6	**2.1884**	0.146	6.7	mg/L	53	Standard
Ca	43	1193.4	9.8	**70.6867**	6.151	8.7	mg/L	28	Standard
Fe	54	172.3	23.9	**0.0064**	0.026	410.4	mg/L	181	Standard
Fe	57	1273.4	6.7	**2.9462**	0.106	3.6	mg/L	257	Standard
Sc-1	45	51571.0	4.0				mg/L	55220	Standard
Cl	35	236472.8	3.0				ug/L	35504	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	63175.0	5.0				ug/L	2040	Standard
P	31	23453.2	4.9				ug/L	20435	Standard
S	34	2768.6	5.1				ug/L	2430	Standard
Sr	88	461.7	3.3				ug/L	75	Standard
C	12	266.7	15.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	71212.3	32.9				mg/L	7	Standard
Dy	164	41.9	56.1				mg/L	9	Standard
Ho-1	165	63.3	52.6				mg/L	10	Standard
Er	166	30.0	33.3				mg/L	23	Standard
I	127	118564.9	6.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		193.724	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.823	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.199
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.340
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

Sample ID: L1606153601DP WG574593-04
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Method 6020 - Summary Report

Sample ID: L1606153601S WG574593-05
Sample Date/Time: Thursday, June 30, 2016 19:13:07
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	143015.1	0.4				ug/L	74916	Standard
	Be	9	64930.5	1.9	**32.2330**	0.549	1.7	ug/L	10	Standard
	Al	27	19624790.6	1.8	**59.2354**	0.841	1.4	ug/L	1822	Standard
	Sc	45	46411.0	0.4				ug/L	55220	Standard
	Ti	47	889.0	11.4	**2.4697**	0.264	10.7	ug/L	34	Standard
	V	51	363710.8	13.8	**46.1270**	5.796	12.6	ug/L	1938	Standard
	Cr	52	383056.0	1.4	**49.2423**	0.433	0.9	ug/L	9522	Standard
	Cr	53	54581.5	1.5	**57.3821**	0.914	1.6	ug/L	395	Standard
	Mn	55	429579.9	1.5	**58.8649**	0.091	0.2	ug/L	902	Standard
	Co	59	480081.2	1.5	**69.5797**	0.229	0.3	ug/L	262	Standard
	Ni	60	101825.7	0.5	**53.4866**	0.655	1.2	ug/L	371	Standard
	Cu	65	103347.9	0.3	**55.2467**	0.559	1.0	ug/L	106	Standard
	Zn	66	65133.7	0.7	**58.8316**	0.616	1.0	ug/L	398	Standard
>	Ge	72	453366.3	1.4				ug/L	535147	Standard
	As	75	67998.6	1.4	**59.9775**	0.350	0.6	ug/L	-43	Standard
	Se	82	8004.7	1.5	**69.6196**	0.663	1.0	ug/L	14	Standard
	Se-1	77	5747.1	0.6	**74.7297**	0.858	1.1	ug/L	65	Standard
>	Ga	71	700.0	7.7				mg/L	97	Standard
	Rb	85	262612.4	2.7				ug/L	15	Standard
	Y	89	431755.5	0.9				ug/L	465704	Standard
>	Rh	103	1180.0	12.1				ug/L	10	Standard
	Mo	98	1268678.8	1.5	**462.4618**	7.325	1.6	ug/L	9	Standard
	Ag	107	289362.3	0.2	**43.5874**	0.122	0.3	ug/L	82	Standard
	Cd	111	94792.1	0.8	**44.6737**	0.366	0.8	mg/L	7	Standard
	Cd	114	230907.1	2.6	**45.1893**	1.189	2.6	ug/L	21	Standard
>	In	115	544320.7	0.1				ug/L	619035	Standard
	Sn	118	1760.1	2.7	**0.2042**	0.008	3.9	ug/L	508	Standard
	Sb	123	233383.2	0.4	**50.1222**	0.236	0.5	ug/L	86	Standard
	Ba	135	165124.3	0.9	**82.1221**	0.708	0.9	ug/L	79	Standard
	Ce	140	966.7	8.2				ug/L	68	Standard
>	Tb	159	884416.1	0.7				ug/L	986982	Standard
	Ho	165	73.3	38.8				ug/L	10	Standard
	Tl	203	384991.2	0.4	**50.4813**	0.655	1.3	ug/L	13	Standard
	Tl	205	341869.1	1.1	**52.4681**	0.385	0.7	ug/L	10	Standard
	Pb	206	255668.8	0.9	**52.1981**	0.879	1.7	ug/L	264	Standard
	Pb	207	224089.7	0.5	**50.6200**	0.634	1.3	ug/L	227	Standard
	Pb	208	888698.2	0.6	**52.0591**	0.157	0.3	ug/L	868	Standard
	U	238	358665.5	0.3	**56.8418**	0.316	0.6	ug/L	8	Standard
>	Bi	209	451966.0	0.9				ug/L	541014	Standard

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Na	23	16.7	34.6	**111.6222**	38.965	34.9	mg/L	2	Standard
Mg	24	1057684.2	1.3	**1371.3823**	13.464	1.0	mg/L	53	Standard
K	39	1123.4	9.3	**2.1927**	0.220	10.0	mg/L	53	Standard
Ca	43	1163.4	6.7	**76.7147**	5.120	6.7	mg/L	28	Standard
Fe	54	172.0	23.7	**0.0208**	0.033	160.7	mg/L	181	Standard
Fe	57	1135.0	4.0	**2.9145**	0.156	5.4	mg/L	257	Standard
Sc-1	45	46411.0	0.4				mg/L	55220	Standard
Cl	35	218214.2	0.7				ug/L	35504	Standard
Kr	83	1.7	124.9				ug/L	2	Standard
Br	81	60607.7	2.8				ug/L	2040	Standard
P	31	22690.3	1.8				ug/L	20435	Standard
S	34	2575.2	6.7				ug/L	2430	Standard
Sr	88	481.7	15.9				ug/L	75	Standard
C	12	266.7	14.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	103574.1	22.0				mg/L	7	Standard
Dy	164	22.2	113.4				mg/L	9	Standard
Ho-1	165	73.3	38.8				mg/L	10	Standard
Er	166	23.3	24.7				mg/L	23	Standard
I	127	121412.0	5.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		190.900	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		84.718	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	87.931	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	83.541	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	

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Method 6020 - Summary Report

Sample ID: L1606153601SD WG574593-06
Sample Date/Time: Thursday, June 30, 2016 19:16:19
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	144320.8	1.4				ug/L	74916	Standard
	Be	9	67036.4	2.5	**32.9766**	0.573	1.7	ug/L	10	Standard
	Al	27	19028383.5	1.6	**56.9163**	0.252	0.4	ug/L	1822	Standard
	Sc	45	45364.5	1.2				ug/L	55220	Standard
	Ti	47	864.0	14.8	**2.4561**	0.339	13.8	ug/L	34	Standard
	V	51	409554.8	7.4	**53.2416**	3.343	6.3	ug/L	1938	Standard
	Cr	52	373963.3	2.3	**49.2139**	0.515	1.0	ug/L	9522	Standard
	Cr	53	52440.6	1.0	**56.4442**	1.146	2.0	ug/L	395	Standard
	Mn	55	414320.5	2.9	**58.1196**	1.024	1.8	ug/L	902	Standard
	Co	59	481049.2	2.9	**71.3749**	1.274	1.8	ug/L	262	Standard
	Ni	60	100627.5	1.8	**54.1113**	0.263	0.5	ug/L	371	Standard
	Cu	65	101353.6	1.2	**55.4683**	0.248	0.4	ug/L	106	Standard
	Zn	66	63976.8	1.0	**59.1634**	0.288	0.5	ug/L	398	Standard
>	Ge	72	442808.8	1.3				ug/L	535147	Standard
	As	75	65657.0	1.0	**59.2943**	0.212	0.4	ug/L	-43	Standard
	Se	82	7691.2	2.1	**68.4817**	0.661	1.0	ug/L	14	Standard
	Se-1	77	5384.6	1.6	**71.6561**	0.754	1.1	ug/L	65	Standard
>	Ga	71	658.3	9.6				mg/L	97	Standard
	Rb	85	255749.5	2.4				ug/L	15	Standard
	Y	89	419777.3	0.4				ug/L	465704	Standard
>	Rh	103	1070.0	9.0				ug/L	10	Standard
	Mo	98	1236104.0	2.4	**461.4124**	4.988	1.1	ug/L	9	Standard
	Ag	107	281437.4	2.3	**43.4126**	0.448	1.0	ug/L	82	Standard
	Cd	111	91534.3	1.0	**44.1809**	0.328	0.7	mg/L	7	Standard
	Cd	114	225320.4	3.6	**45.1561**	1.335	3.0	ug/L	21	Standard
>	In	115	531495.6	1.3				ug/L	619035	Standard
	Sn	118	1726.8	2.8	**0.2057**	0.012	6.1	ug/L	508	Standard
	Sb	123	227797.6	2.3	**50.0991**	0.600	1.2	ug/L	86	Standard
	Ba	135	161039.8	1.6	**82.0212**	0.257	0.3	ug/L	79	Standard
	Ce	140	906.7	5.3				ug/L	68	Standard
>	Tb	159	880141.6	0.9				ug/L	986982	Standard
	Ho	165	85.0	65.5				ug/L	10	Standard
	Tl	203	378471.8	2.5	**50.0289**	0.587	1.2	ug/L	13	Standard
	Tl	205	343724.7	2.2	**53.1854**	0.518	1.0	ug/L	10	Standard
	Pb	206	251355.3	1.3	**51.7382**	0.295	0.6	ug/L	264	Standard
	Pb	207	219297.8	1.2	**49.9444**	0.068	0.1	ug/L	227	Standard
	Pb	208	870795.0	1.8	**51.4295**	0.358	0.7	ug/L	868	Standard
	U	238	351344.4	2.1	**56.1378**	0.462	0.8	ug/L	8	Standard
>	Bi	209	448252.8	1.3				ug/L	541014	Standard

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Na	23	13.3	43.3	**91.5778**	40.783	44.5	mg/L	2	Standard
Mg	24	1030234.6	3.5	**1366.3947**	31.771	2.3	mg/L	53	Standard
K	39	1185.0	3.3	**2.3727**	0.105	4.4	mg/L	53	Standard
Ca	43	1123.4	8.6	**75.7793**	6.723	8.9	mg/L	28	Standard
Fe	54	146.6	6.0	**0.0029**	0.008	282.1	mg/L	181	Standard
Fe	57	1080.0	9.4	**2.8172**	0.286	10.2	mg/L	257	Standard
> **Sc-1**	45	45364.5	1.2				mg/L	55220	Standard
Cl	35	210550.8	2.6				ug/L	35504	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	57964.0	1.3				ug/L	2040	Standard
P	31	21213.2	2.6				ug/L	20435	Standard
S	34	2423.5	4.0				ug/L	2430	Standard
Sr	88	468.3	4.4				ug/L	75	Standard
C	12	256.7	25.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	116534.2	19.4				mg/L	7	Standard
Dy	164	45.4	89.4				mg/L	9	Standard
Ho-1	165	85.0	65.5				mg/L	10	Standard
Er	166	26.7	57.3				mg/L	23	Standard
I	127	133412.5	5.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		192.642	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		82.745	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	85.859
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	82.854
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	

Sample ID: L1606153601SD WG574593-06
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Method 6020 - Summary Report

Sample ID: L1606149602
Sample Date/Time: Thursday, June 30, 2016 19:19:30
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	104772.7	1.5				ug/L	74916	Standard
	Be	9	263.3	12.2	**0.1749**	0.022	12.8	ug/L	10	Standard
	Al	27	2327206.5	2.0	**9.5886**	0.259	2.7	ug/L	1822	Standard
	Sc	45	53544.5	2.5				ug/L	55220	Standard
	Ti	47	16761.3	1.7	**42.3552**	0.341	0.8	ug/L	34	Standard
	V	51	72697.7	4.2	**8.0120**	0.394	4.9	ug/L	1938	Standard
	Cr	52	31803.0	2.2	**2.6563**	0.048	1.8	ug/L	9522	Standard
	Cr	53	4635.7	2.8	**3.9573**	0.155	3.9	ug/L	395	Standard
	Mn	55	461938.0	0.8	**56.0400**	0.179	0.3	ug/L	902	Standard
	Co	59	7731.6	1.0	**0.9697**	0.004	0.4	ug/L	262	Standard
	Ni	60	5444.3	1.5	**2.3929**	0.012	0.5	ug/L	371	Standard
	Cu	65	244497.6	1.7	**115.7696**	0.937	0.8	ug/L	106	Standard
	Zn	66	95689.3	2.3	**76.6174**	1.133	1.5	ug/L	398	Standard
>	**Ge**	72	512059.6	1.0				ug/L	535147	Standard
	As	75	8368.8	9.3	**6.5821**	0.557	8.5	ug/L	-43	Standard
	Se	82	699.3	44.3	**5.2835**	2.351	44.5	ug/L	14	Standard
	Se-1	77	162.7	7.3	**1.3050**	0.119	9.1	ug/L	65	Standard
>	**Ga**	71	4504.0	7.0				mg/L	97	Standard
	Rb	85	91165.1	0.7				ug/L	15	Standard
	Y	89	475204.6	1.4				ug/L	465704	Standard
>	**Rh**	103	323.3	28.1				ug/L	10	Standard
	Mo	98	9970.5	0.6	**3.1545**	0.012	0.4	ug/L	9	Standard
	Ag	107	1999.8	4.1	**0.2544**	0.011	4.2	ug/L	82	Standard
	Cd	111	985.7	2.2	**0.4094**	0.008	1.8	mg/L	7	Standard
	Cd	114	2510.2	4.6	**0.4335**	0.018	4.3	ug/L	21	Standard
>	**In**	115	629593.3	0.4				ug/L	619035	Standard
	Sn	118	8885.9	1.2	**1.2391**	0.014	1.1	ug/L	508	Standard
	Sb	123	35324.6	0.9	**6.5627**	0.043	0.7	ug/L	86	Standard
	Ba	135	56638.7	0.7	**24.3393**	0.085	0.3	ug/L	79	Standard
	Ce	140	132589.5	2.3				ug/L	68	Standard
>	**Tb**	159	989187.3	1.2				ug/L	986982	Standard
	Ho	165	2191.8	5.2				ug/L	10	Standard
	Tl	203	653.7	11.2	**0.0726**	0.007	9.8	ug/L	13	Standard
	Tl	205	521.7	4.9	**0.0699**	0.003	3.8	ug/L	10	Standard
	Pb	206	450058.3	0.7	**71.4171**	0.502	0.7	ug/L	264	Standard
	Pb	207	375040.1	0.8	**65.8445**	0.305	0.5	ug/L	227	Standard
	Pb	208	1541570.9	0.9	**70.1911**	0.206	0.3	ug/L	868	Standard
	U	238	768.7	10.1	**0.1025**	0.009	8.9	ug/L	8	Standard
>	**Bi**	209	581585.4	1.2				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.4621**	16.380	173.1	mg/L	2	Standard
Mg	24	17518.5	1.6	**19.6574**	0.180	0.9	mg/L	53	Standard
K	39	1336.7	7.1	**2.2625**	0.136	6.0	mg/L	53	Standard
Ca	43	150.0	29.6	**7.1161**	2.698	37.9	mg/L	28	Standard
Fe	54	2445.9	4.8	**1.6003**	0.084	5.2	mg/L	181	Standard
Fe	57	911.7	10.0	**1.8244**	0.187	10.3	mg/L	257	Standard
> **Sc-1**	45	53544.5	2.5				mg/L	55220	Standard
Cl	35	39591.0	3.0				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	8435.7	4.1				ug/L	2040	Standard
P	31	32474.8	3.9				ug/L	20435	Standard
S	34	1970.1	2.2				ug/L	2430	Standard
Sr	88	191.7	12.9				ug/L	75	Standard
C	12	316.7	11.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6454.7	14.8				mg/L	7	Standard
Dy	164	3364.1	3.4				mg/L	9	Standard
Ho-1	165	2191.8	5.2				mg/L	10	Standard
Er	166	2080.1	5.8				mg/L	23	Standard
I	127	47278.7	1.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		139.853	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.686	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.706	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	107.499	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: L1606149602PS WG574849-01
Sample Date/Time: Thursday, June 30, 2016 19:22:42
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	103109.8	2.5				ug/L	74916	Standard
	Be	9	77933.4	3.7	**53.6569**	0.981	1.8	ug/L	10	Standard
	Al	27	2281277.1	0.1	**9.5530**	0.236	2.5	ug/L	1822	Standard
	Sc	45	55926.4	2.7				ug/L	55220	Standard
	Ti	47	16573.4	0.4	**41.7070**	0.077	0.2	ug/L	34	Standard
	V	51	525181.9	0.5	**58.8445**	0.516	0.9	ug/L	1938	Standard
	Cr	52	452407.5	2.1	**51.3173**	0.938	1.8	ug/L	9522	Standard
	Cr	53	55755.8	1.8	**51.6383**	0.780	1.5	ug/L	395	Standard
	Mn	55	853926.6	1.8	**103.2487**	1.685	1.6	ug/L	902	Standard
	Co	59	433237.1	1.5	**55.3580**	0.766	1.4	ug/L	262	Standard
	Ni	60	108738.9	1.6	**50.3458**	0.626	1.2	ug/L	371	Standard
	Cu	65	348102.0	1.0	**164.1687**	1.118	0.7	ug/L	106	Standard
	Zn	66	154688.6	0.4	**123.5626**	0.566	0.5	ug/L	398	Standard
>	Ge	72	514197.3	0.4				ug/L	535147	Standard
	As	75	72841.3	0.6	**56.6505**	0.211	0.4	ug/L	-43	Standard
	Se	82	6978.0	1.8	**53.4868**	0.860	1.6	ug/L	14	Standard
	Se-1	77	4469.7	1.0	**51.0555**	0.341	0.7	ug/L	65	Standard
>	Ga	71	4263.9	4.0				mg/L	97	Standard
	Rb	85	89092.9	2.1				ug/L	15	Standard
	Y	89	475816.2	1.0				ug/L	465704	Standard
>	Rh	103	153.3	18.0				ug/L	10	Standard
	Mo	98	8345.8	1.9	**2.6468**	0.068	2.6	ug/L	9	Standard
	Ag	107	375316.3	0.2	**48.9550**	0.354	0.7	ug/L	82	Standard
	Cd	111	119990.1	0.1	**48.9662**	0.427	0.9	mg/L	7	Standard
	Cd	114	291500.4	1.2	**49.4012**	1.030	2.1	ug/L	21	Standard
>	In	115	628633.7	0.9				ug/L	619035	Standard
	Sn	118	9141.1	1.5	**1.2797**	0.012	0.9	ug/L	508	Standard
	Sb	123	292476.1	1.8	**54.3852**	0.550	1.0	ug/L	86	Standard
	Ba	135	165631.8	0.7	**71.3277**	0.810	1.1	ug/L	79	Standard
	Ce	140	132476.6	0.4				ug/L	68	Standard
>	Tb	159	983495.9	0.8				ug/L	986982	Standard
	Ho	165	2075.1	6.5				ug/L	10	Standard
	Tl	203	481149.5	0.7	**49.1296**	0.206	0.4	ug/L	13	Standard
	Tl	205	428530.6	0.3	**51.2204**	0.373	0.7	ug/L	10	Standard
	Pb	206	759727.2	0.9	**120.8333**	0.725	0.6	ug/L	264	Standard
	Pb	207	644523.9	0.7	**113.4180**	0.527	0.5	ug/L	227	Standard
	Pb	208	2619689.3	1.3	**119.5658**	2.190	1.8	ug/L	868	Standard
	U	238	425453.5	0.8	**52.5108**	0.557	1.1	ug/L	8	Standard
>	Bi	209	580355.7	0.8				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.5408**	16.516	173.1	mg/L	2	Standard
Mg	24	17336.6	1.6	**18.6304**	0.635	3.4	mg/L	53	Standard
K	39	1470.1	3.9	**2.3880**	0.102	4.3	mg/L	53	Standard
Ca	43	176.7	13.4	**8.1890**	1.121	13.7	mg/L	28	Standard
Fe	54	2425.7	5.9	**1.5136**	0.097	6.4	mg/L	181	Standard
Fe	57	908.4	11.3	**1.7168**	0.315	18.3	mg/L	257	Standard
> **Sc-1**	45	55926.4	2.7				mg/L	55220	Standard
Cl	35	38868.5	1.9				ug/L	35504	Standard
Kr	83	2.0	132.3				ug/L	2	Standard
Br	81	6991.6	0.9				ug/L	2040	Standard
P	31	33233.1	4.0				ug/L	20435	Standard
S	34	2060.1	7.2				ug/L	2430	Standard
Sr	88	165.0	22.9				ug/L	75	Standard
C	12	266.7	16.9				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3680.5	18.4				mg/L	7	Standard
Dy	164	3273.9	7.2				mg/L	9	Standard
Ho-1	165	2075.1	6.5				mg/L	10	Standard
Er	166	1943.5	5.4				mg/L	23	Standard
I	127	42986.0	4.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		137.633	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.085	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.551
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.272
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Cu 65 Upper, S, EEE	Cu	65	

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Zn 66 Upper, S, EEE	Zn	66
Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1606149602SDL WG574849-02
Sample Date/Time: Thursday, June 30, 2016 19:25:53
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	93955.5	2.3				ug/L	74916	Standard
	Be	9	91.7	17.5	**0.0655**	0.010	15.9	ug/L	10	Standard
	Al	27	435016.7	0.6	**1.9970**	0.036	1.8	ug/L	1822	Standard
	Sc	45	46536.4	2.0				ug/L	55220	Standard
	Ti	47	3197.0	1.4	**8.6280**	0.173	2.0	ug/L	34	Standard
	V	51	13935.8	2.3	**1.4943**	0.029	1.9	ug/L	1938	Standard
	Cr	52	10481.3	2.0	**0.2696**	0.018	6.9	ug/L	9522	Standard
	Cr	53	1375.1	5.2	**0.9976**	0.076	7.6	ug/L	395	Standard
	Mn	55	87248.2	0.4	**11.2920**	0.055	0.5	ug/L	902	Standard
	Co	59	1639.4	0.1	**0.2034**	0.002	0.8	ug/L	262	Standard
	Ni	60	1658.1	1.3	**0.6854**	0.012	1.8	ug/L	371	Standard
	Cu	65	48737.9	1.7	**24.7594**	0.542	2.2	ug/L	106	Standard
	Zn	66	20637.7	1.3	**17.4959**	0.332	1.9	ug/L	398	Standard
>	**Ge**	72	476439.4	0.6				ug/L	535147	Standard
	As	75	1518.5	3.9	**1.3286**	0.052	3.9	ug/L	-43	Standard
	Se	82	100.8	12.1	**0.7385**	0.104	14.1	ug/L	14	Standard
	Se-1	77	79.3	11.4	**0.4075**	0.109	26.8	ug/L	65	Standard
>	**Ga**	71	933.4	1.6				mg/L	97	Standard
	Rb	85	17089.6	2.7				ug/L	15	Standard
	Y	89	412058.7	1.4				ug/L	465704	Standard
>	**Rh**	103	76.7	16.4				ug/L	10	Standard
	Mo	98	2801.6	5.5	**0.9655**	0.045	4.6	ug/L	9	Standard
	Ag	107	478.7	1.2	**0.0613**	0.001	1.1	ug/L	82	Standard
	Cd	111	212.2	7.2	**0.1012**	0.005	5.3	mg/L	7	Standard
	Cd	114	512.0	11.8	**0.1024**	0.010	10.1	ug/L	21	Standard
>	**In**	115	583106.0	1.4				ug/L	619035	Standard
	Sn	118	1851.8	10.2	**0.1986**	0.029	14.8	ug/L	508	Standard
	Sb	123	7851.0	3.4	**1.5782**	0.048	3.0	ug/L	86	Standard
	Ba	135	10949.6	1.5	**5.0661**	0.131	2.6	ug/L	79	Standard
	Ce	140	25568.2	2.5				ug/L	68	Standard
>	**Tb**	159	919967.3	0.8				ug/L	986982	Standard
	Ho	165	418.3	9.0				ug/L	10	Standard
	Tl	203	262.3	17.9	**0.0346**	0.006	15.9	ug/L	13	Standard
	Tl	205	165.0	10.5	**0.0287**	0.002	7.8	ug/L	10	Standard
	Pb	206	87208.3	0.6	**14.7596**	0.282	1.9	ug/L	264	Standard
	Pb	207	73088.5	0.1	**13.6871**	0.203	1.5	ug/L	227	Standard
	Pb	208	296893.6	0.2	**14.4164**	0.196	1.4	ug/L	868	Standard
	U	238	176.3	3.2	**0.0311**	0.001	3.2	ug/L	8	Standard
>	**Bi**	209	544255.4	1.3				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3300.4	1.0	**4.2345**	0.101	2.4	mg/L	53	Standard
K	39	323.3	12.4	**0.5743**	0.069	12.0	mg/L	53	Standard
Ca	43	48.3	21.5	**1.5801**	0.742	46.9	mg/L	28	Standard
Fe	54	545.8	9.2	**0.3226**	0.042	13.0	mg/L	181	Standard
Fe	57	365.0	2.7	**0.4843**	0.015	3.2	mg/L	257	Standard
> **Sc-1**	45	46536.4	2.0				mg/L	55220	Standard
Cl	35	36777.9	2.4				ug/L	35504	Standard
Kr	83	2.0	132.3				ug/L	2	Standard
Br	81	2873.6	9.8				ug/L	2040	Standard
P	31	12638.6	1.3				ug/L	20435	Standard
S	34	2045.1	7.4				ug/L	2430	Standard
Sr	88	75.0	6.7				ug/L	75	Standard
C	12	160.0	39.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6728.2	24.0				mg/L	7	Standard
Dy	164	640.1	13.9				mg/L	9	Standard
Ho-1	165	418.3	9.0				mg/L	10	Standard
Er	166	416.7	9.7				mg/L	23	Standard
I	127	34769.9	1.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		125.414	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		89.030	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.196
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.599
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 19:29:06
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	95961.4	2.2				ug/L	74916	Standard
	Be	9	71707.6	1.6	**53.0606**	0.339	0.6	ug/L	10	Standard
	Al	27	9500292.9	1.0	**42.7499**	0.969	2.3	ug/L	1822	Standard
	Sc	45	50089.4	2.7				ug/L	55220	Standard
	Ti	47	38126.9	2.2	**97.2767**	2.761	2.8	ug/L	34	Standard
	V	51	450805.6	0.8	**51.1303**	0.535	1.0	ug/L	1938	Standard
	Cr	52	420207.7	1.8	**48.2152**	0.947	2.0	ug/L	9522	Standard
	Cr	53	53022.6	1.5	**49.7332**	1.518	3.1	ug/L	395	Standard
	Mn	55	391804.7	0.8	**47.9236**	0.476	1.0	ug/L	902	Standard
	Co	59	416314.6	0.9	**53.8746**	0.457	0.8	ug/L	262	Standard
	Ni	60	103681.5	0.6	**48.6168**	0.702	1.4	ug/L	371	Standard
	Cu	65	103376.1	0.5	**49.3415**	0.927	1.9	ug/L	106	Standard
	Zn	66	61988.9	0.5	**49.9450**	0.714	1.4	ug/L	398	Standard
>	Ge	72	507763.0	1.8				ug/L	535147	Standard
	As	75	63276.7	1.7	**49.8427**	0.076	0.2	ug/L	-43	Standard
	Se	82	6646.2	1.2	**51.5894**	0.295	0.6	ug/L	14	Standard
	Se-1	77	4399.3	1.0	**50.9034**	1.388	2.7	ug/L	65	Standard
>	Ga	71	58.3	13.1				mg/L	97	Standard
	Rb	85	1000.0	0.9				ug/L	15	Standard
	Y	89	450523.8	1.1				ug/L	465704	Standard
>	Rh	103	90.0	11.1				ug/L	10	Standard
	Mo	98	316138.3	1.2	**100.4613**	1.010	1.0	ug/L	9	Standard
	Ag	107	370934.7	1.2	**48.7051**	0.350	0.7	ug/L	82	Standard
	Cd	111	116910.7	0.9	**48.0288**	0.583	1.2	mg/L	7	Standard
	Cd	114	288182.6	1.1	**49.1611**	0.548	1.1	ug/L	21	Standard
>	In	115	624446.9	0.6				ug/L	619035	Standard
	Sn	118	331269.7	1.8	**50.3563**	0.616	1.2	ug/L	508	Standard
	Sb	123	262483.0	1.1	**49.1376**	0.313	0.6	ug/L	86	Standard
	Ba	135	107920.0	0.7	**46.7768**	0.061	0.1	ug/L	79	Standard
	Ce	140	183.3	21.2				ug/L	68	Standard
>	Tb	159	959700.8	0.1				ug/L	986982	Standard
	Ho	165	10.0	86.6				ug/L	10	Standard
	Tl	203	468303.5	0.6	**50.0474**	0.369	0.7	ug/L	13	Standard
	Tl	205	420837.0	1.6	**52.6432**	0.744	1.4	ug/L	10	Standard
	Pb	206	303018.9	0.9	**50.4205**	0.564	1.1	ug/L	264	Standard
	Pb	207	273947.8	0.7	**50.4360**	0.330	0.7	ug/L	227	Standard
	Pb	208	1103991.7	0.7	**52.7123**	0.440	0.8	ug/L	868	Standard
	U	238	418677.6	1.5	**54.0799**	0.566	1.0	ug/L	8	Standard
>	Bi	209	554524.6	1.2				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4905.8	6.0	**5.8628**	0.392	6.7	mg/L	53	Standard
K	39	1735.1	5.2	**3.1692**	0.112	3.5	mg/L	53	Standard
Ca	43	81.7	18.7	**3.4095**	0.825	24.2	mg/L	28	Standard
Fe	54	6899.3	0.6	**5.0657**	0.116	2.3	mg/L	181	Standard
Fe	57	1910.1	3.7	**4.9138**	0.067	1.4	mg/L	257	Standard
> **Sc-1**	45	50089.4	2.7				mg/L	55220	Standard
Cl	35	40319.6	2.9				ug/L	35504	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	2363.5	4.5				ug/L	2040	Standard
P	31	24077.5	2.6				ug/L	20435	Standard
S	34	2363.5	3.5				ug/L	2430	Standard
Sr	88	58.3	13.1				ug/L	75	Standard
C	12	160.0	25.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1323.4	28.0				mg/L	7	Standard
Dy	164	12.5	48.3				mg/L	9	Standard
Ho-1	165	10.0	86.6				mg/L	10	Standard
Er	166	16.7	34.6				mg/L	23	Standard
I	127	14271.7	4.4				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	106.121		
	Al	27	85.500		
	Sc	45			
	Ti	47	97.277		
	V	51	102.261		
	Cr	52	96.430		
	Cr	53			
	Mn	55	95.847		
	Co	59	107.749		
	Ni	60	97.234		
	Cu	65	98.683		
	Zn	66	99.890		
>	Ge	72		94.883	
	As	75	99.685		
	Se	82	103.179		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	100.461		
Ag	107	97.410		
Cd	111	96.058		
Cd	114			
In	115		100.874	
Sn	118	100.713		
Sb	123	98.275		
Ba	135	93.554		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.095		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.425		
U	238	108.160		
Bi	209		102.497	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 19:32:17
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	94958.3	1.5				ug/L	74916	Standard
	Be	9	71.7	82.6	**0.0499**	0.044	88.3	ug/L	10	Standard
	Al	27	9098.7	74.8	**0.0390**	0.031	78.9	ug/L	1822	Standard
	Sc	45	49644.5	1.0				ug/L	55220	Standard
	Ti	47	45.7	39.5	**0.0472**	0.046	97.8	ug/L	34	Standard
	V	51	2791.6	18.3	**0.1237**	0.059	47.6	ug/L	1938	Standard
	Cr	52	7193.7	1.7	**-0.1906**	0.014	7.3	ug/L	9522	Standard
	Cr	53	800.0	4.9	**0.3739**	0.038	10.1	ug/L	395	Standard
	Mn	55	1181.1	42.2	**0.0406**	0.061	151.1	ug/L	902	Standard
	Co	59	509.7	61.6	**0.0436**	0.041	93.5	ug/L	262	Standard
	Ni	60	774.4	5.5	**0.2210**	0.020	8.8	ug/L	371	Standard
	Cu	65	680.7	12.0	**0.2687**	0.039	14.4	ug/L	106	Standard
	Zn	66	686.0	7.0	**0.2136**	0.039	18.3	ug/L	398	Standard
>	**Ge**	72	504271.2	0.2				ug/L	535147	Standard
	As	75	83.8	41.5	**0.1215**	0.027	22.6	ug/L	-43	Standard
	Se	82	62.6	2.3	**0.3930**	0.012	3.2	ug/L	14	Standard
	Se-1	77	70.0	16.5	**0.2432**	0.135	55.5	ug/L	65	Standard
>	**Ga**	71	45.0	50.9				mg/L	97	Standard
	Rb	85	325.0	113.3				ug/L	15	Standard
	Y	89	445052.8	1.6				ug/L	465704	Standard
>	**Rh**	103	61.7	4.7				ug/L	10	Standard
	Mo	98	1074.0	56.8	**0.3517**	0.190	54.0	ug/L	9	Standard
	Ag	107	419.0	95.5	**0.0485**	0.052	106.6	ug/L	82	Standard
	Cd	111	151.8	148.4	**0.0696**	0.091	131.3	mg/L	7	Standard
	Cd	114	348.7	131.1	**0.0678**	0.077	113.4	ug/L	21	Standard
>	**In**	115	626263.5	0.8				ug/L	619035	Standard
	Sn	118	1168.4	25.1	**0.0739**	0.043	58.7	ug/L	508	Standard
	Sb	123	1254.8	36.8	**0.2384**	0.085	35.8	ug/L	86	Standard
	Ba	135	263.3	119.9	**0.0935**	0.135	144.4	ug/L	79	Standard
	Ce	140	171.7	100.3				ug/L	68	Standard
>	**Tb**	159	957711.4	0.6				ug/L	986982	Standard
	Ho	165	13.3	21.7				ug/L	10	Standard
	Tl	203	528.0	116.8	**0.0611**	0.064	104.7	ug/L	13	Standard
	Tl	205	238.3	87.9	**0.0368**	0.025	68.8	ug/L	10	Standard
	Pb	206	736.4	72.7	**0.0822**	0.086	104.7	ug/L	264	Standard
	Pb	207	625.4	66.7	**0.0796**	0.074	93.2	ug/L	227	Standard
	Pb	208	2292.7	50.7	**0.0690**	0.053	77.3	ug/L	868	Standard
	U	238	238.0	86.6	**0.0379**	0.026	67.9	ug/L	8	Standard
>	**Bi**	209	564278.1	1.0				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	300.0	91.6	**0.3285**	0.332	101.1	mg/L	53	Standard
K	39	25.0	20.0	**-0.0288**	0.009	32.0	mg/L	53	Standard
Ca	43	23.3	65.5	**-0.1997**	0.980	490.8	mg/L	28	Standard
Fe	54	159.1	21.8	**0.0019**	0.027	1411.1	mg/L	181	Standard
Fe	57	241.7	30.5	**0.0479**	0.210	438.9	mg/L	257	Standard
Sc-1	45	49644.5	1.0				mg/L	55220	Standard
Cl	35	39558.9	1.4				ug/L	35504	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	2310.2	6.8				ug/L	2040	Standard
P	31	23586.7	1.9				ug/L	20435	Standard
S	34	2100.1	9.6				ug/L	2430	Standard
Sr	88	58.3	27.6				ug/L	75	Standard
C	12	140.0	21.4				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	1126.7	22.7				mg/L	7	Standard
Dy	164	149.2	23.8				mg/L	9	Standard
Ho-1	165	13.3	21.7				mg/L	10	Standard
Er	166	16.7	91.7				mg/L	23	Standard
I	127	6298.0	6.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		94.230	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.168	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	104.300	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Se	82	
QC Std 7	Sb	123	
QC Std 7	Tl	203	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606149602SDL WG574849-02
Sample Date/Time: Thursday, June 30, 2016 19:35:30
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86523.1	2.7				ug/L	74916	Standard
	Be	9	51.7	20.1	**0.0388**	0.009	22.1	ug/L	10	Standard
	Al	27	85953.1	1.3	**0.4266**	0.006	1.4	ug/L	1822	Standard
	Sc	45	44204.4	2.0				ug/L	55220	Standard
	Ti	47	638.0	1.7	**1.7181**	0.027	1.6	ug/L	34	Standard
	V	51	3723.6	3.4	**0.2691**	0.016	6.1	ug/L	1938	Standard
	Cr	52	5946.2	3.6	**-0.2743**	0.028	10.1	ug/L	9522	Standard
	Cr	53	650.0	6.7	**0.2870**	0.043	15.0	ug/L	395	Standard
	Mn	55	17352.3	1.1	**2.2302**	0.028	1.3	ug/L	902	Standard
	Co	59	498.7	4.3	**0.0481**	0.003	6.5	ug/L	262	Standard
	Ni	60	834.7	0.4	**0.2854**	0.001	0.5	ug/L	371	Standard
	Cu	65	9780.8	1.7	**5.0724**	0.097	1.9	ug/L	106	Standard
	Zn	66	4901.1	2.1	**4.0187**	0.097	2.4	ug/L	398	Standard
>	**Ge**	72	462436.6	0.3				ug/L	535147	Standard
	As	75	327.6	12.6	**0.3383**	0.036	10.7	ug/L	-43	Standard
	Se	82	51.2	11.5	**0.3404**	0.050	14.5	ug/L	14	Standard
	Se-1	77	60.0	8.7	**0.1895**	0.069	36.3	ug/L	65	Standard
>	**Ga**	71	176.7	1.6				mg/L	97	Standard
	Rb	85	3545.4	4.6				ug/L	15	Standard
	Y	89	406227.1	0.6				ug/L	465704	Standard
>	**Rh**	103	36.7	34.3				ug/L	10	Standard
	Mo	98	2525.0	10.4	**0.8922**	0.089	10.0	ug/L	9	Standard
	Ag	107	182.0	6.8	**0.0201**	0.002	8.7	ug/L	82	Standard
	Cd	111	42.0	26.3	**0.0268**	0.005	18.8	mg/L	7	Standard
	Cd	114	102.8	20.6	**0.0281**	0.004	13.9	ug/L	21	Standard
>	**In**	115	569300.6	0.3				ug/L	619035	Standard
	Sn	118	516.7	3.0	**-0.0171**	0.003	16.4	ug/L	508	Standard
	Sb	123	1444.7	2.0	**0.3011**	0.007	2.3	ug/L	86	Standard
	Ba	135	1949.5	3.3	**0.9076**	0.031	3.4	ug/L	79	Standard
	Ce	140	2333.5	42.9				ug/L	68	Standard
>	**Tb**	159	887901.9	0.9				ug/L	986982	Standard
	Ho	165	38.3	49.4				ug/L	10	Standard
	Tl	203	180.7	33.0	**0.0262**	0.007	25.5	ug/L	13	Standard
	Tl	205	65.0	7.7	**0.0162**	0.001	4.1	ug/L	10	Standard
	Pb	206	12240.0	6.5	**2.0913**	0.139	6.6	ug/L	264	Standard
	Pb	207	10224.5	8.0	**1.9345**	0.157	8.1	ug/L	227	Standard
	Pb	208	42832.7	7.1	**2.0996**	0.152	7.2	ug/L	868	Standard
	U	238	39.0	11.2	**0.0132**	0.001	4.5	ug/L	8	Standard
>	**Bi**	209	530821.4	0.2				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	690.0	6.2	**0.9057**	0.074	8.2	mg/L	53	Standard
K	39	100.0	13.2	**0.1364**	0.033	23.8	mg/L	53	Standard
Ca	43	25.0	40.0	**0.0946**	0.702	741.5	mg/L	28	Standard
Fe	54	134.2	3.6	**-0.0044**	0.006	141.6	mg/L	181	Standard
Fe	57	263.3	10.5	**0.2076**	0.076	36.8	mg/L	257	Standard
> **Sc-1**	45	44204.4	2.0				mg/L	55220	Standard
Cl	35	36845.4	0.7				ug/L	35504	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	2000.1	11.3				ug/L	2040	Standard
P	31	8230.6	2.2				ug/L	20435	Standard
S	34	2098.5	4.7				ug/L	2430	Standard
Sr	88	76.7	26.4				ug/L	75	Standard
C	12	116.7	52.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	7835.6	37.8				mg/L	7	Standard
Dy	164	81.3	50.6				mg/L	9	Standard
Ho-1	165	38.3	49.4				mg/L	10	Standard
Er	166	43.3	48.0				mg/L	23	Standard
I	127	27107.6	5.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.493	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		86.413	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.966
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.116
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606149801
Sample Date/Time: Thursday, June 30, 2016 19:38:41
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92592.1	1.4				ug/L	74916	Standard
	Be	9	475.0	12.8	**0.3603**	0.042	11.6	ug/L	10	Standard
	Al	27	2387958.6	1.4	**11.1329**	0.209	1.9	ug/L	1822	Standard
	Sc	45	53171.6	4.4				ug/L	55220	Standard
	Ti	47	1016.4	8.9	**2.5223**	0.237	9.4	ug/L	34	Standard
	V	51	9109.0	1.7	**0.8397**	0.021	2.5	ug/L	1938	Standard
	Cr	52	15164.6	1.4	**0.7361**	0.022	3.0	ug/L	9522	Standard
	Cr	53	2218.5	3.8	**1.7070**	0.078	4.6	ug/L	395	Standard
	Mn	55	3141097.9	0.7	**384.5503**	5.509	1.4	ug/L	902	Standard
	Co	59	3810.1	1.2	**0.4700**	0.010	2.1	ug/L	262	Standard
	Ni	60	3766.5	3.0	**1.6237**	0.049	3.0	ug/L	371	Standard
	Cu	65	12779.1	1.2	**6.0408**	0.064	1.1	ug/L	106	Standard
	Zn	66	24001.7	0.6	**19.1045**	0.183	1.0	ug/L	398	Standard
>	**Ge**	72	508257.5	0.8				ug/L	535147	Standard
	As	75	18152.4	1.0	**14.3247**	0.198	1.4	ug/L	-43	Standard
	Se	82	412.3	6.1	**3.1067**	0.212	6.8	ug/L	14	Standard
	Se-1	77	116.7	10.0	**0.7827**	0.142	18.2	ug/L	65	Standard
>	**Ga**	71	261.7	14.1				mg/L	97	Standard
	Rb	85	55121.8	2.1				ug/L	15	Standard
	Y	89	489107.7	0.8				ug/L	465704	Standard
>	**Rh**	103	106.7	5.4				ug/L	10	Standard
	Mo	98	1661.3	4.5	**0.5375**	0.026	4.9	ug/L	9	Standard
	Ag	107	107.0	20.9	**0.0079**	0.003	37.3	ug/L	82	Standard
	Cd	111	37.4	15.9	**0.0232**	0.002	10.7	mg/L	7	Standard
	Cd	114	92.1	17.7	**0.0245**	0.003	11.0	ug/L	21	Standard
>	**In**	115	627819.2	0.5				ug/L	619035	Standard
	Sn	118	976.7	4.1	**0.0446**	0.007	14.9	ug/L	508	Standard
	Sb	123	512.0	14.1	**0.0998**	0.014	13.9	ug/L	86	Standard
	Ba	135	49828.5	0.8	**21.4712**	0.164	0.8	ug/L	79	Standard
	Ce	140	95005.3	0.3				ug/L	68	Standard
>	**Tb**	159	963158.8	1.0				ug/L	986982	Standard
	Ho	165	2865.3	5.4				ug/L	10	Standard
	Tl	203	114.7	11.1	**0.0182**	0.001	7.6	ug/L	13	Standard
	Tl	205	115.0	19.9	**0.0220**	0.003	12.7	ug/L	10	Standard
	Pb	206	7845.0	1.2	**1.2640**	0.010	0.8	ug/L	264	Standard
	Pb	207	6721.5	1.1	**1.2009**	0.019	1.6	ug/L	227	Standard
	Pb	208	28270.4	0.7	**1.3079**	0.016	1.2	ug/L	868	Standard
	U	238	1735.4	2.9	**0.2313**	0.006	2.6	ug/L	8	Standard
>	**Bi**	209	556405.3	0.5				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	9029.4	2.0	**10.2038**	0.653	6.4	mg/L	53	Standard
K	39	611.7	14.2	**1.0024**	0.150	15.0	mg/L	53	Standard
Ca	43	315.0	3.2	**16.8679**	0.705	4.2	mg/L	28	Standard
Fe	54	5107.8	1.9	**3.5012**	0.205	5.9	mg/L	181	Standard
Fe	57	1653.4	5.6	**3.8905**	0.307	7.9	mg/L	257	Standard
> **Sc-1**	45	53171.6	4.4				mg/L	55220	Standard
Cl	35	41246.7	1.0				ug/L	35504	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	75966.9	4.8				ug/L	2040	Standard
P	31	30046.4	2.6				ug/L	20435	Standard
S	34	2270.2	2.0				ug/L	2430	Standard
Sr	88	276.7	15.2				ug/L	75	Standard
C	12	276.7	8.3				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1063.4	31.5				mg/L	7	Standard
Dy	164	3847.0	8.9				mg/L	9	Standard
Ho-1	165	2865.3	5.4				mg/L	10	Standard
Er	166	2716.9	5.5				mg/L	23	Standard
I	127	73848.4	6.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.594	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.975	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	101.419
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.845
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606152901
Sample Date/Time: Thursday, June 30, 2016 19:41:53
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	91623.0	2.3				ug/L	74916	Standard
	Be	9	86.7	16.7	**0.0635**	0.010	16.5	ug/L	10	Standard
	Al	27	4709098.2	0.6	**22.1945**	0.581	2.6	ug/L	1822	Standard
	Sc	45	51331.9	3.4				ug/L	55220	Standard
	Ti	47	1675.8	1.3	**4.2896**	0.030	0.7	ug/L	34	Standard
	V	51	11556.6	2.3	**1.1447**	0.038	3.4	ug/L	1938	Standard
	Cr	52	17512.1	1.2	**1.0523**	0.009	0.8	ug/L	9522	Standard
	Cr	53	6754.8	3.1	**6.1208**	0.292	4.8	ug/L	395	Standard
	Mn	55	746180.8	1.6	**93.1169**	1.892	2.0	ug/L	902	Standard
	Co	59	8081.8	1.5	**1.0435**	0.010	1.0	ug/L	262	Standard
	Ni	60	4978.8	0.9	**2.2406**	0.017	0.8	ug/L	371	Standard
	Cu	65	6989.9	0.8	**3.3456**	0.078	2.3	ug/L	106	Standard
	Zn	66	20923.8	0.6	**16.9547**	0.359	2.1	ug/L	398	Standard
>	Ge	72	498217.9	1.5				ug/L	535147	Standard
	As	75	1319.8	6.1	**1.1135**	0.062	5.6	ug/L	-43	Standard
	Se	82	63.1	11.7	**0.4025**	0.053	13.2	ug/L	14	Standard
	Se-1	77	328.3	1.7	**3.3348**	0.125	3.7	ug/L	65	Standard
>	Ga	71	1348.4	1.4				mg/L	97	Standard
	Rb	85	12897.2	1.9				ug/L	15	Standard
	Y	89	461979.9	1.5				ug/L	465704	Standard
>	Rh	103	55.0	32.8				ug/L	10	Standard
	Mo	98	459.3	18.5	**0.1621**	0.026	16.2	ug/L	9	Standard
	Ag	107	773.7	5.2	**0.0982**	0.004	4.6	ug/L	82	Standard
	Cd	111	127.2	6.3	**0.0616**	0.004	6.3	mg/L	7	Standard
	Cd	114	327.6	9.9	**0.0663**	0.006	8.9	ug/L	21	Standard
>	In	115	608144.3	1.0				ug/L	619035	Standard
	Sn	118	1706.8	6.6	**0.1634**	0.015	9.3	ug/L	508	Standard
	Sb	123	406.4	11.1	**0.0825**	0.008	9.7	ug/L	86	Standard
	Ba	135	76054.7	0.3	**33.8456**	0.317	0.9	ug/L	79	Standard
	Ce	140	91810.7	1.2				ug/L	68	Standard
>	Tb	159	945758.0	1.2				ug/L	986982	Standard
	Ho	165	2055.1	5.3				ug/L	10	Standard
	Tl	203	176.0	6.7	**0.0254**	0.001	5.0	ug/L	13	Standard
	Tl	205	150.0	26.7	**0.0271**	0.005	19.0	ug/L	10	Standard
	Pb	206	15554.6	0.9	**2.6358**	0.029	1.1	ug/L	264	Standard
	Pb	207	12984.9	1.6	**2.4360**	0.034	1.4	ug/L	227	Standard
	Pb	208	54505.7	0.9	**2.6500**	0.024	0.9	ug/L	868	Standard
	U	238	2232.5	0.5	**0.3055**	0.001	0.3	ug/L	8	Standard
>	Bi	209	537187.0	0.3				ug/L	541014	Standard

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Na	23	3.3	86.6	**20.2016**	17.522	86.7	mg/L	2	Standard
Mg	24	27080.8	0.6	**31.7349**	0.931	2.9	mg/L	53	Standard
K	39	478.3	11.6	**0.8002**	0.131	16.3	mg/L	53	Standard
Ca	43	121.7	30.8	**5.7176**	2.206	38.6	mg/L	28	Standard
Fe	54	2158.6	4.4	**1.4639**	0.066	4.5	mg/L	181	Standard
Fe	57	796.7	8.5	**1.6086**	0.202	12.6	mg/L	257	Standard
> **Sc-1**	45	51331.9	3.4				mg/L	55220	Standard
Cl	35	38716.7	1.3				ug/L	35504	Standard
Kr	83	4.3	13.3				ug/L	2	Standard
Br	81	6661.5	7.7				ug/L	2040	Standard
P	31	25903.8	4.0				ug/L	20435	Standard
S	34	2286.8	0.8				ug/L	2430	Standard
Sr	88	106.7	13.5				ug/L	75	Standard
C	12	213.3	11.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1103.4	22.2				mg/L	7	Standard
Dy	164	3539.8	4.8				mg/L	9	Standard
Ho-1	165	2055.1	5.3				mg/L	10	Standard
Er	166	1753.4	7.2				mg/L	23	Standard
I	127	24299.5	0.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		122.300	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.099	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.241
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.293
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606152902
Sample Date/Time: Thursday, June 30, 2016 19:45:06
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89491.9	2.0				ug/L	74916	Standard
	Be	9	40.0	37.5	**0.0283**	0.012	43.3	ug/L	10	Standard
	Al	27	3621131.6	1.0	**17.4718**	0.464	2.7	ug/L	1822	Standard
	Sc	45	50005.7	0.5				ug/L	55220	Standard
	Ti	47	186.0	5.7	**0.4056**	0.025	6.1	ug/L	34	Standard
	V	51	2851.9	15.6	**0.1288**	0.049	37.7	ug/L	1938	Standard
	Cr	52	10083.7	2.1	**0.1447**	0.018	12.3	ug/L	9522	Standard
	Cr	53	4102.2	8.9	**3.4960**	0.321	9.2	ug/L	395	Standard
	Mn	55	1495187.5	0.6	**183.5547**	1.977	1.1	ug/L	902	Standard
	Co	59	626.3	5.8	**0.0585**	0.005	8.5	ug/L	262	Standard
	Ni	60	2963.0	0.3	**1.2507**	0.009	0.7	ug/L	371	Standard
	Cu	65	1204.4	3.7	**0.5179**	0.024	4.6	ug/L	106	Standard
	Zn	66	3026.3	1.7	**2.1136**	0.057	2.7	ug/L	398	Standard
>	**Ge**	72	506688.0	0.6				ug/L	535147	Standard
	As	75	90.5	44.9	**0.1266**	0.032	25.5	ug/L	-43	Standard
	Se	82	35.5	16.2	**0.1801**	0.046	25.7	ug/L	14	Standard
	Se-1	77	219.0	2.5	**1.9866**	0.080	4.0	ug/L	65	Standard
>	**Ga**	71	131.7	11.0				mg/L	97	Standard
	Rb	85	958.4	12.3				ug/L	15	Standard
	Y	89	439630.2	0.1				ug/L	465704	Standard
>	**Rh**	103	50.0	36.1				ug/L	10	Standard
	Mo	98	275.6	14.7	**0.1016**	0.014	13.4	ug/L	9	Standard
	Ag	107	112.0	14.9	**0.0089**	0.002	26.1	ug/L	82	Standard
	Cd	111	187.9	10.7	**0.0866**	0.009	10.5	mg/L	7	Standard
	Cd	114	408.8	6.5	**0.0799**	0.004	4.8	ug/L	21	Standard
>	**In**	115	612882.5	1.2				ug/L	619035	Standard
	Sn	118	851.7	4.8	**0.0288**	0.008	26.8	ug/L	508	Standard
	Sb	123	226.6	12.9	**0.0477**	0.006	12.5	ug/L	86	Standard
	Ba	135	40616.4	0.3	**17.9264**	0.197	1.1	ug/L	79	Standard
	Ce	140	943.4	9.0				ug/L	68	Standard
>	**Tb**	159	940407.6	1.0				ug/L	986982	Standard
	Ho	165	56.7	28.4				ug/L	10	Standard
	Tl	203	106.3	8.9	**0.0176**	0.001	5.9	ug/L	13	Standard
	Tl	205	98.3	20.5	**0.0203**	0.003	13.0	ug/L	10	Standard
	Pb	206	909.7	3.7	**0.1168**	0.005	4.4	ug/L	264	Standard
	Pb	207	833.4	5.4	**0.1235**	0.008	6.5	ug/L	227	Standard
	Pb	208	3440.5	1.6	**0.1295**	0.003	2.6	ug/L	868	Standard
	U	238	49.0	17.4	**0.0144**	0.001	8.0	ug/L	8	Standard
>	**Bi**	209	543200.5	0.4				ug/L	541014	Standard

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Na	23	1.7	173.2	**10.3002**	17.832	173.1	mg/L	2	Standard
Mg	24	16630.8	0.5	**19.9803**	0.197	1.0	mg/L	53	Standard
K	39	245.0	9.4	**0.3831**	0.042	11.1	mg/L	53	Standard
Ca	43	105.0	39.0	**4.8835**	2.523	51.7	mg/L	28	Standard
Fe	54	242.6	15.8	**0.0637**	0.028	44.2	mg/L	181	Standard
Fe	57	298.3	17.0	**0.2102**	0.151	72.1	mg/L	257	Standard
> **Sc-1**	45	50005.7	0.5				mg/L	55220	Standard
Cl	35	40569.6	2.3				ug/L	35504	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	3843.8	4.3				ug/L	2040	Standard
P	31	24364.6	0.7				ug/L	20435	Standard
S	34	2188.5	1.6				ug/L	2430	Standard
Sr	88	121.7	10.3				ug/L	75	Standard
C	12	146.7	21.9				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	760.0	11.8				mg/L	7	Standard
Dy	164	64.0	46.2				mg/L	9	Standard
Ho-1	165	56.7	28.4				mg/L	10	Standard
Er	166	56.7	27.0				mg/L	23	Standard
I	127	16871.1	2.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.456	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.682	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.006
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.404
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606152903
Sample Date/Time: Thursday, June 30, 2016 19:48:17
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88668.7	1.5				ug/L	74916	Standard
	Be	9	25.0	34.6	**0.0165**	0.007	42.9	ug/L	10	Standard
	Al	27	2429020.7	0.7	**11.8263**	0.241	2.0	ug/L	1822	Standard
	Sc	45	50766.6	1.1				ug/L	55220	Standard
	Ti	47	147.3	12.6	**0.3072**	0.051	16.7	ug/L	34	Standard
	V	51	2755.9	8.9	**0.1183**	0.031	26.5	ug/L	1938	Standard
	Cr	52	10269.1	0.8	**0.1669**	0.008	4.5	ug/L	9522	Standard
	Cr	53	1963.5	3.7	**1.4731**	0.090	6.1	ug/L	395	Standard
	Mn	55	759929.8	0.9	**93.2604**	0.396	0.4	ug/L	902	Standard
	Co	59	556.0	7.1	**0.0494**	0.006	12.2	ug/L	262	Standard
	Ni	60	1145.7	1.5	**0.3945**	0.015	3.8	ug/L	371	Standard
	Cu	65	965.7	2.3	**0.4038**	0.016	4.0	ug/L	106	Standard
	Zn	66	2386.2	0.8	**1.5936**	0.017	1.1	ug/L	398	Standard
>	**Ge**	72	506574.4	1.3				ug/L	535147	Standard
	As	75	89.2	7.4	**0.1255**	0.005	3.7	ug/L	-43	Standard
	Se	82	36.5	5.9	**0.1873**	0.019	9.9	ug/L	14	Standard
	Se-1	77	120.7	5.8	**0.8332**	0.065	7.8	ug/L	65	Standard
>	**Ga**	71	70.0	37.8				mg/L	97	Standard
	Rb	85	908.4	21.5				ug/L	15	Standard
	Y	89	439406.6	1.6				ug/L	465704	Standard
>	**Rh**	103	51.7	20.1				ug/L	10	Standard
	Mo	98	233.6	20.0	**0.0875**	0.014	16.3	ug/L	9	Standard
	Ag	107	88.7	7.9	**0.0057**	0.001	18.5	ug/L	82	Standard
	Cd	111	24.3	42.4	**0.0180**	0.004	24.2	mg/L	7	Standard
	Cd	114	70.1	12.6	**0.0211**	0.002	7.9	ug/L	21	Standard
>	**In**	115	615742.1	1.2				ug/L	619035	Standard
	Sn	118	678.3	9.2	**0.0014**	0.010	728.8	ug/L	508	Standard
	Sb	123	346.9	9.1	**0.0702**	0.006	8.1	ug/L	86	Standard
	Ba	135	55523.6	0.7	**24.3984**	0.182	0.7	ug/L	79	Standard
	Ce	140	605.0	45.8				ug/L	68	Standard
>	**Tb**	159	948538.7	0.6				ug/L	986982	Standard
	Ho	165	45.0	11.1				ug/L	10	Standard
	Tl	203	70.3	11.4	**0.0136**	0.001	6.2	ug/L	13	Standard
	Tl	205	48.3	6.0	**0.0138**	0.000	2.8	ug/L	10	Standard
	Pb	206	1011.0	4.4	**0.1313**	0.008	5.9	ug/L	264	Standard
	Pb	207	869.4	2.6	**0.1276**	0.004	3.4	ug/L	227	Standard
	Pb	208	3745.8	1.5	**0.1414**	0.002	1.5	ug/L	868	Standard
	U	238	63.3	4.0	**0.0161**	0.000	1.9	ug/L	8	Standard
>	**Bi**	209	552170.5	0.3				ug/L	541014	Standard

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Na	23	1.7	173.2	**10.1205**	17.521	173.1	mg/L	2	Standard
Mg	24	3732.1	6.2	**4.3881**	0.232	5.3	mg/L	53	Standard
K	39	163.3	11.6	**0.2258**	0.039	17.1	mg/L	53	Standard
Ca	43	71.7	10.7	**2.7382**	0.440	16.1	mg/L	28	Standard
Fe	54	167.4	12.3	**0.0054**	0.017	305.4	mg/L	181	Standard
Fe	57	313.3	14.5	**0.2407**	0.138	57.5	mg/L	257	Standard
> **Sc-1**	45	50766.6	1.1				mg/L	55220	Standard
Cl	35	41918.6	1.0				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	3617.1	7.3				ug/L	2040	Standard
P	31	24186.0	2.2				ug/L	20435	Standard
S	34	2338.5	5.2				ug/L	2430	Standard
Sr	88	80.0	12.5				ug/L	75	Standard
C	12	133.3	15.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	543.3	6.5				mg/L	7	Standard
Dy	164	61.9	49.6				mg/L	9	Standard
Ho-1	165	45.0	11.1				mg/L	10	Standard
Er	166	30.0	33.3				mg/L	23	Standard
I	127	16812.7	1.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.357	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.661	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.468	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	102.062	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606152904
Sample Date/Time: Thursday, June 30, 2016 19:51:29
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88900.1	1.3				ug/L	74916	Standard
	Be	9	21.7	35.3	**0.0138**	0.006	45.8	ug/L	10	Standard
	Al	27	3998039.8	0.6	**19.4159**	0.368	1.9	ug/L	1822	Standard
	Sc	45	49693.0	1.5				ug/L	55220	Standard
	Ti	47	194.3	21.7	**0.4277**	0.108	25.3	ug/L	34	Standard
	V	51	2612.2	1.6	**0.1020**	0.005	5.3	ug/L	1938	Standard
	Cr	52	11628.5	1.2	**0.3279**	0.013	3.9	ug/L	9522	Standard
	Cr	53	2001.8	3.5	**1.5108**	0.071	4.7	ug/L	395	Standard
	Mn	55	10984.6	3.3	**1.2459**	0.048	3.8	ug/L	902	Standard
	Co	59	463.7	6.9	**0.0374**	0.004	11.5	ug/L	262	Standard
	Ni	60	1092.7	5.1	**0.3700**	0.027	7.3	ug/L	371	Standard
	Cu	65	737.0	3.4	**0.2946**	0.013	4.4	ug/L	106	Standard
	Zn	66	2118.5	2.2	**1.3776**	0.043	3.1	ug/L	398	Standard
>	**Ge**	72	506051.1	0.3				ug/L	535147	Standard
	As	75	112.3	24.9	**0.1439**	0.022	15.3	ug/L	-43	Standard
	Se	82	40.3	12.6	**0.2177**	0.039	18.1	ug/L	14	Standard
	Se-1	77	104.3	9.6	**0.6436**	0.121	18.8	ug/L	65	Standard
>	**Ga**	71	90.0	9.6				mg/L	97	Standard
	Rb	85	821.7	18.7				ug/L	15	Standard
	Y	89	444347.1	1.2				ug/L	465704	Standard
>	**Rh**	103	38.3	7.5				ug/L	10	Standard
	Mo	98	243.7	25.7	**0.0907**	0.020	22.2	ug/L	9	Standard
	Ag	107	114.7	8.7	**0.0092**	0.001	13.7	ug/L	82	Standard
	Cd	111	19.3	16.3	**0.0159**	0.001	8.2	mg/L	7	Standard
	Cd	114	30.1	71.3	**0.0141**	0.004	26.1	ug/L	21	Standard
>	**In**	115	617612.1	0.5				ug/L	619035	Standard
	Sn	118	616.7	15.4	**-0.0084**	0.015	178.7	ug/L	508	Standard
	Sb	123	212.8	12.7	**0.0447**	0.005	11.4	ug/L	86	Standard
	Ba	135	14500.9	0.4	**6.3380**	0.042	0.7	ug/L	79	Standard
	Ce	140	393.3	3.9				ug/L	68	Standard
>	**Tb**	159	944897.7	0.4				ug/L	986982	Standard
	Ho	165	25.0	34.6				ug/L	10	Standard
	Tl	203	86.7	13.4	**0.0153**	0.001	7.9	ug/L	13	Standard
	Tl	205	90.0	38.9	**0.0190**	0.004	22.9	ug/L	10	Standard
	Pb	206	664.7	9.3	**0.0737**	0.010	13.8	ug/L	264	Standard
	Pb	207	565.7	6.5	**0.0718**	0.007	9.8	ug/L	227	Standard
	Pb	208	2395.1	4.9	**0.0769**	0.005	6.9	ug/L	868	Standard
	U	238	50.0	29.9	**0.0144**	0.002	13.3	ug/L	8	Standard
>	**Bi**	209	550432.3	0.4				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	1671.8	5.6	**1.9912**	0.140	7.0	mg/L	53	Standard
K	39	100.0	10.0	**0.1127**	0.021	18.2	mg/L	53	Standard
Ca	43	96.7	24.4	**4.3968**	1.414	32.2	mg/L	28	Standard
Fe	54	166.7	18.4	**0.0074**	0.022	304.6	mg/L	181	Standard
Fe	57	231.7	12.3	**0.0184**	0.075	407.9	mg/L	257	Standard
> **Sc-1**	45	49693.0	1.5				mg/L	55220	Standard
Cl	35	43809.9	1.0				ug/L	35504	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	4597.4	0.6				ug/L	2040	Standard
P	31	24069.1	1.8				ug/L	20435	Standard
S	34	2253.5	3.8				ug/L	2430	Standard
Sr	88	86.7	17.6				ug/L	75	Standard
C	12	156.7	44.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	386.7	23.5				mg/L	7	Standard
Dy	164	25.2	56.3				mg/L	9	Standard
Ho-1	165	25.0	34.6				mg/L	10	Standard
Er	166	30.0	88.2				mg/L	23	Standard
I	127	5777.8	11.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.666	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.563	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.770	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	101.741	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606152905
Sample Date/Time: Thursday, June 30, 2016 19:54:40
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88234.5	1.5				ug/L	74916	Standard
	Be	9	30.0	28.9	**0.0206**	0.007	34.9	ug/L	10	Standard
	Al	27	9752429.2	0.2	**47.7217**	0.808	1.7	ug/L	1822	Standard
	Sc	45	51669.7	2.6				ug/L	55220	Standard
	Ti	47	350.0	16.4	**0.8315**	0.150	18.0	ug/L	34	Standard
	V	51	3730.5	9.1	**0.2322**	0.039	17.0	ug/L	1938	Standard
	Cr	52	10952.0	1.4	**0.2556**	0.021	8.3	ug/L	9522	Standard
	Cr	53	5461.0	1.8	**4.8193**	0.089	1.8	ug/L	395	Standard
	Mn	55	47373.3	0.6	**5.7534**	0.020	0.3	ug/L	902	Standard
	Co	59	1253.7	0.7	**0.1409**	0.001	0.6	ug/L	262	Standard
	Ni	60	2141.2	3.2	**0.8702**	0.031	3.6	ug/L	371	Standard
	Cu	65	1030.7	3.9	**0.4381**	0.020	4.7	ug/L	106	Standard
	Zn	66	2315.8	0.5	**1.5487**	0.011	0.7	ug/L	398	Standard
>	**Ge**	72	503246.7	0.2				ug/L	535147	Standard
	As	75	161.2	14.7	**0.1832**	0.019	10.3	ug/L	-43	Standard
	Se	82	43.0	18.6	**0.2408**	0.064	26.4	ug/L	14	Standard
	Se-1	77	266.3	6.2	**2.5624**	0.191	7.4	ug/L	65	Standard
>	**Ga**	71	105.0	26.5				mg/L	97	Standard
	Rb	85	1428.4	7.3				ug/L	15	Standard
	Y	89	446734.5	1.6				ug/L	465704	Standard
>	**Rh**	103	60.0	38.2				ug/L	10	Standard
	Mo	98	183.5	11.0	**0.0713**	0.006	8.8	ug/L	9	Standard
	Ag	107	94.0	23.0	**0.0064**	0.003	46.3	ug/L	82	Standard
	Cd	111	28.0	21.5	**0.0195**	0.002	12.3	mg/L	7	Standard
	Cd	114	70.6	28.1	**0.0211**	0.003	16.2	ug/L	21	Standard
>	**In**	115	617799.5	0.9				ug/L	619035	Standard
	Sn	118	660.0	5.3	**-0.0018**	0.004	243.1	ug/L	508	Standard
	Sb	123	178.8	10.8	**0.0382**	0.003	8.9	ug/L	86	Standard
	Ba	135	61705.1	1.0	**27.0252**	0.152	0.6	ug/L	79	Standard
	Ce	140	2460.2	6.7				ug/L	68	Standard
>	**Tb**	159	954272.1	1.0				ug/L	986982	Standard
	Ho	165	108.3	27.0				ug/L	10	Standard
	Tl	203	105.3	13.3	**0.0175**	0.001	8.4	ug/L	13	Standard
	Tl	205	90.0	20.0	**0.0192**	0.002	12.1	ug/L	10	Standard
	Pb	206	1384.4	2.5	**0.1982**	0.006	2.8	ug/L	264	Standard
	Pb	207	1158.0	4.5	**0.1852**	0.009	4.6	ug/L	227	Standard
	Pb	208	4790.0	0.8	**0.1959**	0.003	1.7	ug/L	868	Standard
	U	238	78.7	1.5	**0.0183**	0.000	0.7	ug/L	8	Standard
>	**Bi**	209	541699.6	0.6				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	14490.3	0.8	**16.8507**	0.519	3.1	mg/L	53	Standard
K	39	288.3	22.6	**0.4455**	0.109	24.4	mg/L	53	Standard
Ca	43	256.7	12.7	**13.9005**	2.373	17.1	mg/L	28	Standard
Fe	54	272.4	10.1	**0.0800**	0.025	31.8	mg/L	181	Standard
Fe	57	385.0	5.7	**0.4270**	0.055	12.8	mg/L	257	Standard
> **Sc-1**	45	51669.7	2.6				mg/L	55220	Standard
Cl	35	43979.7	0.5				ug/L	35504	Standard
Kr	83	3.0	88.2				ug/L	2	Standard
Br	81	5497.7	7.6				ug/L	2040	Standard
P	31	25977.3	3.5				ug/L	20435	Standard
S	34	2546.9	1.9				ug/L	2430	Standard
Sr	88	131.7	36.5				ug/L	75	Standard
C	12	196.7	22.9				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	430.0	6.2				mg/L	7	Standard
Dy	164	205.8	13.7				mg/L	9	Standard
Ho-1	165	108.3	27.0				mg/L	10	Standard
Er	166	86.7	56.9				mg/L	23	Standard
I	127	28657.1	4.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.777	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.039	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.800	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.127	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606152906
Sample Date/Time: Thursday, June 30, 2016 19:57:52
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88056.9	2.0				ug/L	74916	Standard
	Be	9	15.0	57.7	**0.0084**	0.007	81.7	ug/L	10	Standard
	Al	27	7293528.8	3.4	**35.7503**	0.696	1.9	ug/L	1822	Standard
	Sc	45	51325.1	1.9				ug/L	55220	Standard
	Ti	47	171.0	28.9	**0.3652**	0.123	33.6	ug/L	34	Standard
	V	51	2943.0	7.9	**0.1382**	0.027	19.3	ug/L	1938	Standard
	Cr	52	10991.3	1.7	**0.2469**	0.029	11.7	ug/L	9522	Standard
	Cr	53	4732.4	3.5	**4.0787**	0.184	4.5	ug/L	395	Standard
	Mn	55	122498.9	0.8	**14.8876**	0.143	1.0	ug/L	902	Standard
	Co	59	819.7	2.4	**0.0832**	0.003	3.8	ug/L	262	Standard
	Ni	60	2285.5	3.4	**0.9274**	0.030	3.2	ug/L	371	Standard
	Cu	65	1080.4	6.5	**0.4565**	0.030	6.6	ug/L	106	Standard
	Zn	66	2925.3	2.5	**2.0226**	0.047	2.3	ug/L	398	Standard
>	**Ge**	72	508515.8	0.7				ug/L	535147	Standard
	As	75	134.3	28.3	**0.1607**	0.029	18.2	ug/L	-43	Standard
	Se	82	79.0	16.8	**0.5164**	0.106	20.5	ug/L	14	Standard
	Se-1	77	251.3	2.3	**2.3551**	0.087	3.7	ug/L	65	Standard
>	**Ga**	71	68.3	8.4				mg/L	97	Standard
	Rb	85	355.0	7.3				ug/L	15	Standard
	Y	89	444542.1	0.1				ug/L	465704	Standard
>	**Rh**	103	30.0	44.1				ug/L	10	Standard
	Mo	98	287.9	12.2	**0.1049**	0.011	10.7	ug/L	9	Standard
	Ag	107	119.0	11.7	**0.0098**	0.002	19.3	ug/L	82	Standard
	Cd	111	50.9	20.7	**0.0291**	0.004	14.9	mg/L	7	Standard
	Cd	114	87.9	23.8	**0.0241**	0.004	14.8	ug/L	21	Standard
>	**In**	115	616933.2	0.3				ug/L	619035	Standard
	Sn	118	1260.1	2.9	**0.0909**	0.006	6.7	ug/L	508	Standard
	Sb	123	189.4	11.8	**0.0403**	0.004	10.3	ug/L	86	Standard
	Ba	135	52065.6	0.7	**22.8327**	0.232	1.0	ug/L	79	Standard
	Ce	140	241.7	4.3				ug/L	68	Standard
>	**Tb**	159	941735.5	0.8				ug/L	986982	Standard
	Ho	165	46.7	12.4				ug/L	10	Standard
	Tl	203	87.0	11.0	**0.0155**	0.001	7.3	ug/L	13	Standard
	Tl	205	80.0	25.0	**0.0179**	0.003	14.8	ug/L	10	Standard
	Pb	206	587.3	5.7	**0.0619**	0.005	8.7	ug/L	264	Standard
	Pb	207	507.7	1.5	**0.0621**	0.002	3.2	ug/L	227	Standard
	Pb	208	2102.1	1.1	**0.0640**	0.001	1.5	ug/L	868	Standard
	U	238	41.0	12.2	**0.0133**	0.001	5.4	ug/L	8	Standard
>	**Bi**	209	544076.0	1.0				ug/L	541014	Standard

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Na	23	3.3	173.2	**20.1139**	34.830	173.2	mg/L	2	Standard
Mg	24	12645.3	2.6	**14.7908**	0.138	0.9	mg/L	53	Standard
K	39	298.3	26.8	**0.4670**	0.136	29.1	mg/L	53	Standard
Ca	43	208.3	9.1	**11.0229**	1.168	10.6	mg/L	28	Standard
Fe	54	180.7	11.0	**0.0136**	0.013	92.2	mg/L	181	Standard
Fe	57	301.7	11.8	**0.1964**	0.095	48.2	mg/L	257	Standard
> **Sc-1**	45	51325.1	1.9				mg/L	55220	Standard
Cl	35	45896.7	0.8				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	13415.9	5.3				ug/L	2040	Standard
P	31	24930.5	1.7				ug/L	20435	Standard
S	34	2516.9	2.2				ug/L	2430	Standard
Sr	88	135.0	20.6				ug/L	75	Standard
C	12	196.7	28.9				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	456.7	20.2				mg/L	7	Standard
Dy	164	40.9	56.4				mg/L	9	Standard
Ho-1	165	46.7	12.4				mg/L	10	Standard
Er	166	50.0	20.0				mg/L	23	Standard
I	127	36985.1	2.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.540	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.024	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.660
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.566
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606152907
Sample Date/Time: Thursday, June 30, 2016 20:01:03
Number of Replicates: 3
Autosampler Position: 346
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86590.1	1.5				ug/L	74916	Standard
	Be	9	23.3	32.7	**0.0156**	0.007	41.8	ug/L	10	Standard
	Al	27	7288041.0	1.9	**36.3329**	0.405	1.1	ug/L	1822	Standard
	Sc	45	51350.2	1.2				ug/L	55220	Standard
	Ti	47	157.7	3.1	**0.3305**	0.011	3.3	ug/L	34	Standard
	V	51	3007.3	5.0	**0.1445**	0.016	10.9	ug/L	1938	Standard
	Cr	52	10947.0	1.6	**0.2378**	0.018	7.6	ug/L	9522	Standard
	Cr	53	4819.1	2.2	**4.1468**	0.112	2.7	ug/L	395	Standard
	Mn	55	107294.6	0.9	**12.9884**	0.118	0.9	ug/L	902	Standard
	Co	59	789.7	3.4	**0.0790**	0.004	5.0	ug/L	262	Standard
	Ni	60	2216.5	1.5	**0.8921**	0.015	1.7	ug/L	371	Standard
	Cu	65	856.4	2.4	**0.3486**	0.008	2.2	ug/L	106	Standard
	Zn	66	3147.3	0.8	**2.1952**	0.028	1.3	ug/L	398	Standard
>	**Ge**	72	509995.2	0.5				ug/L	535147	Standard
	As	75	109.6	15.3	**0.1411**	0.013	9.1	ug/L	-43	Standard
	Se	82	74.9	2.1	**0.4827**	0.010	2.1	ug/L	14	Standard
	Se-1	77	253.7	10.3	**2.3725**	0.290	12.2	ug/L	65	Standard
>	**Ga**	71	65.0	13.3				mg/L	97	Standard
	Rb	85	353.3	31.5				ug/L	15	Standard
	Y	89	444447.1	1.6				ug/L	465704	Standard
>	**Rh**	103	51.7	29.6				ug/L	10	Standard
	Mo	98	174.2	8.5	**0.0687**	0.004	6.4	ug/L	9	Standard
	Ag	107	114.7	15.4	**0.0093**	0.002	24.6	ug/L	82	Standard
	Cd	111	47.1	5.2	**0.0276**	0.001	3.6	mg/L	7	Standard
	Cd	114	112.5	18.8	**0.0284**	0.004	12.7	ug/L	21	Standard
>	**In**	115	613045.3	0.7				ug/L	619035	Standard
	Sn	118	715.0	9.8	**0.0075**	0.010	135.8	ug/L	508	Standard
	Sb	123	161.1	10.6	**0.0351**	0.003	8.8	ug/L	86	Standard
	Ba	135	53387.2	0.8	**23.5616**	0.255	1.1	ug/L	79	Standard
	Ce	140	331.7	4.4				ug/L	68	Standard
>	**Tb**	159	944449.4	0.4				ug/L	986982	Standard
	Ho	165	43.3	59.2				ug/L	10	Standard
	Tl	203	92.3	8.8	**0.0161**	0.001	5.4	ug/L	13	Standard
	Tl	205	83.3	12.5	**0.0184**	0.001	7.5	ug/L	10	Standard
	Pb	206	592.3	4.9	**0.0632**	0.005	7.5	ug/L	264	Standard
	Pb	207	542.0	8.1	**0.0691**	0.008	12.0	ug/L	227	Standard
	Pb	208	2230.1	0.4	**0.0708**	0.001	1.1	ug/L	868	Standard
	U	238	38.7	24.4	**0.0130**	0.001	9.5	ug/L	8	Standard
>	**Bi**	209	541519.6	0.4				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	12728.7	2.0	**14.8819**	0.155	1.0	mg/L	53	Standard
K	39	308.3	6.1	**0.4867**	0.034	7.0	mg/L	53	Standard
Ca	43	193.3	38.9	**10.0877**	4.505	44.7	mg/L	28	Standard
Fe	54	165.4	7.7	**0.0025**	0.010	409.5	mg/L	181	Standard
Fe	57	355.0	2.8	**0.3486**	0.041	11.7	mg/L	257	Standard
> **Sc-1**	45	51350.2	1.2				mg/L	55220	Standard
Cl	35	46325.4	1.2				ug/L	35504	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	11614.5	3.1				ug/L	2040	Standard
P	31	24781.9	0.8				ug/L	20435	Standard
S	34	2535.2	2.6				ug/L	2430	Standard
Sr	88	126.7	18.7				ug/L	75	Standard
C	12	233.3	36.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	473.3	22.2				mg/L	7	Standard
Dy	164	27.4	75.5				mg/L	9	Standard
Ho-1	165	43.3	59.2				mg/L	10	Standard
Er	166	53.3	39.0				mg/L	23	Standard
I	127	36998.5	2.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.582	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.300	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.032	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.093	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606152908
Sample Date/Time: Thursday, June 30, 2016 20:04:15
Number of Replicates: 3
Autosampler Position: 347
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	87356.1	0.7				ug/L	74916	Standard
	Be	9	16.7	124.9	**0.0100**	0.017	170.0	ug/L	10	Standard
	Al	27	5800884.1	0.6	**28.6654**	0.017	0.1	ug/L	1822	Standard
	Sc	45	51183.0	1.5				ug/L	55220	Standard
	Ti	47	397.3	11.7	**0.9365**	0.122	13.0	ug/L	34	Standard
	V	51	2921.7	9.2	**0.1337**	0.032	23.8	ug/L	1938	Standard
	Cr	52	11373.6	0.2	**0.2830**	0.010	3.5	ug/L	9522	Standard
	Cr	53	3103.7	1.4	**2.5224**	0.030	1.2	ug/L	395	Standard
	Mn	55	14821.9	0.6	**1.6973**	0.005	0.3	ug/L	902	Standard
	Co	59	1000.7	2.1	**0.1057**	0.003	3.1	ug/L	262	Standard
	Ni	60	2624.2	2.0	**1.0787**	0.027	2.5	ug/L	371	Standard
	Cu	65	1039.0	1.7	**0.4338**	0.011	2.4	ug/L	106	Standard
	Zn	66	2372.5	1.6	**1.5627**	0.032	2.0	ug/L	398	Standard
>	**Ge**	72	511783.4	0.6				ug/L	535147	Standard
	As	75	213.0	16.3	**0.2214**	0.026	11.8	ug/L	-43	Standard
	Se	82	74.1	2.2	**0.4750**	0.010	2.1	ug/L	14	Standard
	Se-1	77	150.3	2.8	**1.1637**	0.050	4.3	ug/L	65	Standard
>	**Ga**	71	95.0	13.9				mg/L	97	Standard
	Rb	85	968.4	2.5				ug/L	15	Standard
	Y	89	451673.5	0.3				ug/L	465704	Standard
>	**Rh**	103	30.0	28.9				ug/L	10	Standard
	Mo	98	173.2	5.3	**0.0678**	0.003	4.0	ug/L	9	Standard
	Ag	107	91.7	12.4	**0.0061**	0.001	24.3	ug/L	82	Standard
	Cd	111	17.7	27.9	**0.0152**	0.002	13.4	mg/L	7	Standard
	Cd	114	48.1	60.1	**0.0172**	0.005	29.0	ug/L	21	Standard
>	**In**	115	619434.4	0.4				ug/L	619035	Standard
	Sn	118	753.4	10.6	**0.0123**	0.012	98.4	ug/L	508	Standard
	Sb	123	177.3	16.5	**0.0378**	0.005	14.3	ug/L	86	Standard
	Ba	135	31784.0	0.8	**13.8741**	0.090	0.6	ug/L	79	Standard
	Ce	140	6034.7	39.1				ug/L	68	Standard
>	**Tb**	159	948600.3	1.0				ug/L	986982	Standard
	Ho	165	146.7	17.5				ug/L	10	Standard
	Tl	203	81.0	4.3	**0.0148**	0.000	3.0	ug/L	13	Standard
	Tl	205	66.7	37.7	**0.0162**	0.003	19.4	ug/L	10	Standard
	Pb	206	958.0	0.9	**0.1252**	0.002	1.4	ug/L	264	Standard
	Pb	207	787.0	3.2	**0.1149**	0.003	3.0	ug/L	227	Standard
	Pb	208	3386.1	2.7	**0.1270**	0.005	3.8	ug/L	868	Standard
	U	238	520.7	2.4	**0.0766**	0.002	2.8	ug/L	8	Standard
>	**Bi**	209	542764.0	0.9				ug/L	541014	Standard

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Na	23	3.3	86.6	**20.2036**	17.498	86.6	mg/L	2	Standard
Mg	24	10431.9	4.4	**12.2290**	0.439	3.6	mg/L	53	Standard
K	39	275.0	13.7	**0.4279**	0.073	17.1	mg/L	53	Standard
Ca	43	170.0	16.4	**8.6979**	1.544	17.7	mg/L	28	Standard
Fe	54	239.2	0.3	**0.0571**	0.002	3.7	mg/L	181	Standard
Fe	57	291.7	20.7	**0.1691**	0.160	94.5	mg/L	257	Standard
> **Sc-1**	45	51183.0	1.5				mg/L	55220	Standard
Cl	35	47035.6	1.5				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	13913.1	0.7				ug/L	2040	Standard
P	31	24708.5	3.0				ug/L	20435	Standard
S	34	2581.9	2.1				ug/L	2430	Standard
Sr	88	108.3	18.7				ug/L	75	Standard
C	12	163.3	18.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	420.0	10.9				mg/L	7	Standard
Dy	164	173.5	54.2				mg/L	9	Standard
Ho-1	165	146.7	17.5				mg/L	10	Standard
Er	166	136.7	46.5				mg/L	23	Standard
I	127	34858.4	3.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.605	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.634	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.065
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.323
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 20:07:28
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85472.1	1.7				ug/L	74916	Standard
	Be	9	65108.0	3.0	**54.0823**	1.154	2.1	ug/L	10	Standard
	Al	27	9105473.5	0.5	**45.9972**	0.825	1.8	ug/L	1822	Standard
	Sc	45	49731.5	2.5				ug/L	55220	Standard
	Ti	47	38285.3	0.5	**97.9042**	1.148	1.2	ug/L	34	Standard
	V	51	442931.2	1.2	**50.3540**	0.833	1.7	ug/L	1938	Standard
	Cr	52	426545.4	1.3	**49.0741**	0.566	1.2	ug/L	9522	Standard
	Cr	53	52663.1	2.1	**49.4989**	1.008	2.0	ug/L	395	Standard
	Mn	55	386900.6	0.1	**47.4345**	0.333	0.7	ug/L	902	Standard
	Co	59	401578.1	1.0	**52.0897**	0.499	1.0	ug/L	262	Standard
	Ni	60	104374.0	1.3	**49.0555**	0.650	1.3	ug/L	371	Standard
	Cu	65	102991.9	0.9	**49.2674**	0.136	0.3	ug/L	106	Standard
	Zn	66	61809.5	1.0	**49.9152**	0.561	1.1	ug/L	398	Standard
>	**Ge**	72	506525.9	0.8				ug/L	535147	Standard
	As	75	62357.5	1.0	**49.2419**	0.735	1.5	ug/L	-43	Standard
	Se	82	6465.3	1.5	**50.3023**	0.653	1.3	ug/L	14	Standard
	Se-1	77	4276.3	1.3	**49.5714**	0.657	1.3	ug/L	65	Standard
>	**Ga**	71	65.0	40.0				mg/L	97	Standard
	Rb	85	945.0	8.0				ug/L	15	Standard
	Y	89	445522.7	1.3				ug/L	465704	Standard
>	**Rh**	103	31.7	9.1				ug/L	10	Standard
	Mo	98	306532.4	0.5	**98.3988**	0.768	0.8	ug/L	9	Standard
	Ag	107	364777.1	1.0	**48.3842**	0.587	1.2	ug/L	82	Standard
	Cd	111	115886.4	1.0	**48.0888**	0.315	0.7	mg/L	7	Standard
	Cd	114	282581.5	2.0	**48.6942**	0.954	2.0	ug/L	21	Standard
>	**In**	115	618174.7	0.4				ug/L	619035	Standard
	Sn	118	319592.1	0.3	**49.0738**	0.056	0.1	ug/L	508	Standard
	Sb	123	258837.8	1.5	**48.9487**	0.795	1.6	ug/L	86	Standard
	Ba	135	107239.8	0.2	**46.9543**	0.164	0.3	ug/L	79	Standard
	Ce	140	115.0	41.9				ug/L	68	Standard
>	**Tb**	159	940862.5	1.3				ug/L	986982	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	460304.9	0.5	**50.0911**	0.197	0.4	ug/L	13	Standard
	Tl	205	410842.8	1.2	**52.3373**	1.020	1.9	ug/L	10	Standard
	Pb	206	293474.6	0.0	**49.7248**	0.447	0.9	ug/L	264	Standard
	Pb	207	266458.3	0.3	**49.9548**	0.482	1.0	ug/L	227	Standard
	Pb	208	1078784.7	0.3	**52.4507**	0.478	0.9	ug/L	868	Standard
	U	238	405046.7	0.5	**53.2776**	0.329	0.6	ug/L	8	Standard
>	**Bi**	209	544562.5	0.9				ug/L	541014	Standard

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Na	23	3.3	86.6	**21.1233**	18.289	86.6	mg/L	2	Standard
Mg	24	4860.8	2.2	**5.8517**	0.266	4.5	mg/L	53	Standard
K	39	1825.1	0.7	**3.3646**	0.096	2.9	mg/L	53	Standard
Ca	43	85.0	15.6	**3.6635**	0.753	20.6	mg/L	28	Standard
Fe	54	6850.5	3.8	**5.0682**	0.296	5.8	mg/L	181	Standard
Fe	57	1940.1	1.6	**5.0449**	0.134	2.7	mg/L	257	Standard
> **Sc-1**	45	49731.5	2.5				mg/L	55220	Standard
Cl	35	43548.5	1.9				ug/L	35504	Standard
Kr	83	2.3	99.0				ug/L	2	Standard
Br	81	2076.8	5.4				ug/L	2040	Standard
P	31	25009.0	3.0				ug/L	20435	Standard
S	34	2823.6	2.3				ug/L	2430	Standard
Sr	88	101.7	5.7				ug/L	75	Standard
C	12	100.0	50.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	343.3	14.4				mg/L	7	Standard
Dy	164	2.2	267.0				mg/L	9	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	23.3	24.7				mg/L	23	Standard
I	127	12311.7	2.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	108.165		
Al	27	91.994		
Sc	45			
Ti	47	97.904		
V	51	100.708		
Cr	52	98.148		
Cr	53			
Mn	55	94.869		
Co	59	104.179		
Ni	60	98.111		
Cu	65	98.535		
Zn	66	99.830		
> Ge	72		94.652	
As	75	98.484		
Se	82	100.605		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	98.399		
Ag	107	96.768		
Cd	111	96.178		
Cd	114			
In	115			99.861
Sn	118	98.148		
Sb	123	97.897		
Ba	135	93.909		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.182		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.901		
U	238	106.555		
Bi	209			100.656
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 20:10:39
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84508.4	1.1				ug/L	74916	Standard
	Be	9	33.3	8.7	**0.0244**	0.002	10.1	ug/L	10	Standard
	Al	27	4085.6	35.3	**0.0185**	0.007	39.4	ug/L	1822	Standard
	Sc	45	51201.4	1.2				ug/L	55220	Standard
	Ti	47	49.3	13.5	**0.0547**	0.017	31.7	ug/L	34	Standard
	V	51	1705.1	7.3	**-0.0039**	0.015	396.5	ug/L	1938	Standard
	Cr	52	7223.1	1.3	**-0.2003**	0.017	8.7	ug/L	9522	Standard
	Cr	53	643.3	12.9	**0.2153**	0.078	36.3	ug/L	395	Standard
	Mn	55	817.4	1.3	**-0.0058**	0.002	33.6	ug/L	902	Standard
	Co	59	278.0	3.7	**0.0129**	0.001	11.6	ug/L	262	Standard
	Ni	60	472.0	2.2	**0.0744**	0.006	7.9	ug/L	371	Standard
	Cu	65	242.0	9.3	**0.0559**	0.012	20.6	ug/L	106	Standard
	Zn	66	406.0	4.9	**-0.0203**	0.014	69.6	ug/L	398	Standard
>	**Ge**	72	512276.8	0.7				ug/L	535147	Standard
	As	75	-39.3	24.4	**0.0246**	0.008	30.9	ug/L	-43	Standard
	Se	82	24.7	25.4	**0.0935**	0.047	50.3	ug/L	14	Standard
	Se-1	77	61.7	4.7	**0.1339**	0.036	27.1	ug/L	65	Standard
>	**Ga**	71	40.0	21.7				mg/L	97	Standard
	Rb	85	40.0	33.1				ug/L	15	Standard
	Y	89	451013.8	2.6				ug/L	465704	Standard
>	**Rh**	103	33.3	75.5				ug/L	10	Standard
	Mo	98	337.7	6.2	**0.1193**	0.006	5.0	ug/L	9	Standard
	Ag	107	160.7	20.3	**0.0149**	0.004	27.5	ug/L	82	Standard
	Cd	111	17.1	27.4	**0.0149**	0.002	12.5	mg/L	7	Standard
	Cd	114	56.9	45.7	**0.0186**	0.004	23.4	ug/L	21	Standard
>	**In**	115	626686.9	1.0				ug/L	619035	Standard
	Sn	118	1108.4	17.2	**0.0649**	0.029	45.4	ug/L	508	Standard
	Sb	123	719.1	31.0	**0.1386**	0.041	29.9	ug/L	86	Standard
	Ba	135	66.7	26.7	**0.0091**	0.008	82.3	ug/L	79	Standard
	Ce	140	33.3	52.7				ug/L	68	Standard
>	**Tb**	159	951647.1	1.9				ug/L	986982	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	116.3	23.3	**0.0185**	0.003	15.8	ug/L	13	Standard
	Tl	205	81.7	12.7	**0.0179**	0.001	7.3	ug/L	10	Standard
	Pb	206	355.3	7.9	**0.0215**	0.005	21.8	ug/L	264	Standard
	Pb	207	296.0	5.5	**0.0215**	0.003	14.0	ug/L	227	Standard
	Pb	208	1251.0	8.8	**0.0216**	0.005	24.5	ug/L	868	Standard
	U	238	86.3	22.6	**0.0191**	0.003	13.3	ug/L	8	Standard
>	**Bi**	209	553114.9	0.1				ug/L	541014	Standard

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Na	23	1.7	173.2	**10.0447**	17.389	173.1	mg/L	2	Standard
Mg	24	65.0	30.8	**0.0419**	0.023	55.9	mg/L	53	Standard
K	39	46.7	22.3	**0.0095**	0.020	207.6	mg/L	53	Standard
Ca	43	30.0	33.3	**0.1622**	0.633	390.4	mg/L	28	Standard
Fe	54	137.1	20.9	**-0.0179**	0.021	119.5	mg/L	181	Standard
Fe	57	260.0	20.1	**0.0806**	0.154	191.3	mg/L	257	Standard
Sc-1	45	51201.4	1.2				mg/L	55220	Standard
Cl	35	42811.7	0.8				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2026.8	15.5				ug/L	2040	Standard
P	31	24645.0	3.2				ug/L	20435	Standard
S	34	2743.6	4.8				ug/L	2430	Standard
Sr	88	56.7	28.4				ug/L	75	Standard
C	12	133.3	24.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	330.0	15.2				mg/L	7	Standard
Dy	164	142.7	35.5				mg/L	9	Standard
Ho-1	165	8.3	91.7				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	5080.9	5.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.726	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.236
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.237
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606152909
Sample Date/Time: Thursday, June 30, 2016 20:13:52
Number of Replicates: 3
Autosampler Position: 348
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84981.0	1.6				ug/L	74916	Standard
	Be	9	46.7	55.0	**0.0355**	0.022	61.8	ug/L	10	Standard
	Al	27	2649760.5	1.0	**13.4599**	0.154	1.1	ug/L	1822	Standard
	Sc	45	50823.5	2.2				ug/L	55220	Standard
	Ti	47	621.0	35.7	**1.4839**	0.544	36.6	ug/L	34	Standard
	V	51	3519.7	4.6	**0.1968**	0.015	7.5	ug/L	1938	Standard
	Cr	52	11065.7	1.5	**0.2335**	0.024	10.4	ug/L	9522	Standard
	Cr	53	2253.5	7.1	**1.7037**	0.164	9.6	ug/L	395	Standard
	Mn	55	69223.4	0.5	**8.2230**	0.056	0.7	ug/L	902	Standard
	Co	59	1262.7	2.4	**0.1376**	0.003	2.2	ug/L	262	Standard
	Ni	60	1836.1	2.2	**0.7020**	0.028	4.0	ug/L	371	Standard
	Cu	65	1478.1	2.8	**0.6345**	0.023	3.6	ug/L	106	Standard
	Zn	66	2676.9	1.2	**1.7846**	0.014	0.8	ug/L	398	Standard
>	**Ge**	72	517327.5	1.1				ug/L	535147	Standard
	As	75	137.8	11.9	**0.1615**	0.012	7.3	ug/L	-43	Standard
	Se	82	34.2	7.9	**0.1643**	0.022	13.6	ug/L	14	Standard
	Se-1	77	107.3	5.7	**0.6510**	0.064	9.8	ug/L	65	Standard
>	**Ga**	71	211.7	15.4				mg/L	97	Standard
	Rb	85	3202.0	8.6				ug/L	15	Standard
	Y	89	457604.0	1.9				ug/L	465704	Standard
>	**Rh**	103	46.7	43.3				ug/L	10	Standard
	Mo	98	197.3	18.3	**0.0741**	0.012	16.5	ug/L	9	Standard
	Ag	107	138.3	23.5	**0.0118**	0.004	37.8	ug/L	82	Standard
	Cd	111	22.7	32.9	**0.0171**	0.003	18.4	mg/L	7	Standard
	Cd	114	85.9	11.7	**0.0233**	0.002	8.1	ug/L	21	Standard
>	**In**	115	635294.3	1.4				ug/L	619035	Standard
	Sn	118	773.4	8.1	**0.0124**	0.011	85.2	ug/L	508	Standard
	Sb	123	378.6	23.7	**0.0742**	0.017	23.5	ug/L	86	Standard
	Ba	135	24337.9	0.6	**10.3548**	0.129	1.2	ug/L	79	Standard
	Ce	140	2685.2	8.1				ug/L	68	Standard
>	**Tb**	159	947650.0	0.1				ug/L	986982	Standard
	Ho	165	105.0	4.8				ug/L	10	Standard
	Tl	203	119.3	21.9	**0.0188**	0.003	15.5	ug/L	13	Standard
	Tl	205	95.0	24.1	**0.0196**	0.003	14.9	ug/L	10	Standard
	Pb	206	1284.1	2.8	**0.1765**	0.004	2.5	ug/L	264	Standard
	Pb	207	1133.4	4.1	**0.1762**	0.011	6.0	ug/L	227	Standard
	Pb	208	4625.6	1.4	**0.1833**	0.005	2.8	ug/L	868	Standard
	U	238	95.0	19.5	**0.0202**	0.002	12.2	ug/L	8	Standard
>	**Bi**	209	553131.1	1.0				ug/L	541014	Standard

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Na	23	1.7	173.2	**10.1205**	17.521	173.1	mg/L	2	Standard
Mg	24	4830.8	0.8	**5.6868**	0.096	1.7	mg/L	53	Standard
K	39	253.3	8.9	**0.3908**	0.035	8.9	mg/L	53	Standard
Ca	43	75.0	37.1	**2.9439**	1.706	58.0	mg/L	28	Standard
Fe	54	370.2	13.4	**0.1556**	0.039	25.3	mg/L	181	Standard
Fe	57	308.3	7.7	**0.2243**	0.061	27.3	mg/L	257	Standard
> **Sc-1**	45	50823.5	2.2				mg/L	55220	Standard
Cl	35	43236.9	0.7				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	5484.3	4.6				ug/L	2040	Standard
P	31	25227.7	0.7				ug/L	20435	Standard
S	34	2473.5	6.7				ug/L	2430	Standard
Sr	88	61.7	9.4				ug/L	75	Standard
C	12	146.7	28.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	313.3	32.0				mg/L	7	Standard
Dy	164	144.7	24.7				mg/L	9	Standard
Ho-1	165	105.0	4.8				mg/L	10	Standard
Er	166	110.0	18.2				mg/L	23	Standard
I	127	10783.8	0.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.434	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.670	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		102.627
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		102.240
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606152910
Sample Date/Time: Thursday, June 30, 2016 20:17:04
Number of Replicates: 3
Autosampler Position: 349
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85247.6	3.1				ug/L	74916	Standard
	Be	9	43.3	74.2	**0.0327**	0.027	84.0	ug/L	10	Standard
	Al	27	8510555.6	2.4	**43.1028**	0.408	0.9	ug/L	1822	Standard
	Sc	45	51932.2	1.1				ug/L	55220	Standard
	Ti	47	1029.0	29.8	**2.5664**	0.783	30.5	ug/L	34	Standard
	V	51	4367.2	5.7	**0.3028**	0.026	8.6	ug/L	1938	Standard
	Cr	52	12079.8	6.1	**0.3817**	0.071	18.7	ug/L	9522	Standard
	Cr	53	7580.2	7.2	**6.8071**	0.547	8.0	ug/L	395	Standard
	Mn	55	83482.7	1.3	**10.1707**	0.156	1.5	ug/L	902	Standard
	Co	59	1517.7	1.1	**0.1745**	0.002	1.4	ug/L	262	Standard
	Ni	60	2542.5	1.9	**1.0552**	0.032	3.0	ug/L	371	Standard
	Cu	65	1783.1	4.1	**0.7965**	0.026	3.3	ug/L	106	Standard
	Zn	66	3302.0	2.8	**2.3428**	0.055	2.3	ug/L	398	Standard
>	**Ge**	72	505645.1	1.0				ug/L	535147	Standard
	As	75	610.8	2.8	**0.5379**	0.016	2.9	ug/L	-43	Standard
	Se	82	184.7	4.6	**1.3451**	0.069	5.2	ug/L	14	Standard
	Se-1	77	372.3	2.8	**3.7934**	0.138	3.6	ug/L	65	Standard
>	**Ga**	71	258.3	14.8				mg/L	97	Standard
	Rb	85	3520.4	5.7				ug/L	15	Standard
	Y	89	444968.3	1.2				ug/L	465704	Standard
>	**Rh**	103	56.7	22.2				ug/L	10	Standard
	Mo	98	154.0	19.6	**0.0625**	0.010	15.9	ug/L	9	Standard
	Ag	107	132.7	1.6	**0.0118**	0.000	1.4	ug/L	82	Standard
	Cd	111	45.0	32.2	**0.0268**	0.006	22.7	mg/L	7	Standard
	Cd	114	116.9	9.5	**0.0293**	0.002	7.0	ug/L	21	Standard
>	**In**	115	609907.5	0.7				ug/L	619035	Standard
	Sn	118	613.3	11.5	**-0.0077**	0.012	151.4	ug/L	508	Standard
	Sb	123	344.4	18.6	**0.0705**	0.013	18.0	ug/L	86	Standard
	Ba	135	83944.9	0.2	**37.2499**	0.298	0.8	ug/L	79	Standard
	Ce	140	3115.3	6.4				ug/L	68	Standard
>	**Tb**	159	935811.2	1.5				ug/L	986982	Standard
	Ho	165	168.3	13.4				ug/L	10	Standard
	Tl	203	140.0	23.9	**0.0216**	0.004	16.7	ug/L	13	Standard
	Tl	205	133.3	16.9	**0.0251**	0.003	12.1	ug/L	10	Standard
	Pb	206	1608.8	2.7	**0.2416**	0.006	2.4	ug/L	264	Standard
	Pb	207	1470.7	2.8	**0.2494**	0.006	2.4	ug/L	227	Standard
	Pb	208	5963.5	0.4	**0.2589**	0.002	0.8	ug/L	868	Standard
	U	238	80.7	14.5	**0.0188**	0.001	8.0	ug/L	8	Standard
>	**Bi**	209	531560.9	0.7				ug/L	541014	Standard

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Na	23	3.3	173.2	**19.8680**	34.404	173.2	mg/L	2	Standard
Mg	24	21381.8	3.6	**24.7466**	1.006	4.1	mg/L	53	Standard
K	39	523.3	2.0	**0.8684**	0.016	1.9	mg/L	53	Standard
Ca	43	270.0	6.4	**14.5888**	1.106	7.6	mg/L	28	Standard
Fe	54	425.4	9.3	**0.1894**	0.028	14.9	mg/L	181	Standard
Fe	57	405.0	10.1	**0.4787**	0.128	26.8	mg/L	257	Standard
> **Sc-1**	45	51932.2	1.1				mg/L	55220	Standard
Cl	35	45101.7	0.8				ug/L	35504	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	35307.8	3.0				ug/L	2040	Standard
P	31	25357.9	2.1				ug/L	20435	Standard
S	34	2631.9	4.1				ug/L	2430	Standard
Sr	88	215.0	14.5				ug/L	75	Standard
C	12	140.0	25.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	256.7	22.5				mg/L	7	Standard
Dy	164	243.1	25.1				mg/L	9	Standard
Ho-1	165	168.3	13.4				mg/L	10	Standard
Er	166	143.3	8.1				mg/L	23	Standard
I	127	21702.2	1.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.790	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.487	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606152910
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.526
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.253
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606152911
Sample Date/Time: Thursday, June 30, 2016 20:20:16
Number of Replicates: 3
Autosampler Position: 350
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83573.2	1.5				ug/L	74916	Standard
	Be	9	33.3	31.2	**0.0246**	0.008	34.0	ug/L	10	Standard
	Al	27	6861949.3	1.6	**35.4458**	0.495	1.4	ug/L	1822	Standard
	Sc	45	51285.0	2.1				ug/L	55220	Standard
	Ti	47	288.0	39.4	**0.6733**	0.294	43.6	ug/L	34	Standard
	V	51	5266.7	5.9	**0.4099**	0.037	9.1	ug/L	1938	Standard
	Cr	52	11325.9	1.0	**0.3025**	0.009	2.9	ug/L	9522	Standard
	Cr	53	11184.1	2.5	**10.2982**	0.304	3.0	ug/L	395	Standard
	Mn	55	786461.8	1.3	**97.3526**	1.294	1.3	ug/L	902	Standard
	Co	59	906.4	7.2	**0.0958**	0.008	8.5	ug/L	262	Standard
	Ni	60	1758.4	4.4	**0.6903**	0.035	5.1	ug/L	371	Standard
	Cu	65	1982.8	0.9	**0.8990**	0.012	1.3	ug/L	106	Standard
	Zn	66	4952.8	2.7	**3.7149**	0.093	2.5	ug/L	398	Standard
>	**Ge**	72	502233.2	0.4				ug/L	535147	Standard
	As	75	80.3	74.3	**0.1190**	0.047	39.6	ug/L	-43	Standard
	Se	82	58.8	12.4	**0.3655**	0.056	15.3	ug/L	14	Standard
	Se-1	77	491.7	3.9	**5.2344**	0.231	4.4	ug/L	65	Standard
>	**Ga**	71	93.3	34.4				mg/L	97	Standard
	Rb	85	896.7	7.1				ug/L	15	Standard
	Y	89	441710.6	1.7				ug/L	465704	Standard
>	**Rh**	103	41.7	42.1				ug/L	10	Standard
	Mo	98	608.7	10.2	**0.2107**	0.020	9.6	ug/L	9	Standard
	Ag	107	240.0	4.4	**0.0262**	0.001	5.4	ug/L	82	Standard
	Cd	111	212.4	8.7	**0.0973**	0.008	8.0	mg/L	7	Standard
	Cd	114	534.1	15.2	**0.1023**	0.014	13.8	ug/L	21	Standard
>	**In**	115	609038.8	0.0				ug/L	619035	Standard
	Sn	118	1090.0	7.3	**0.0668**	0.012	18.5	ug/L	508	Standard
	Sb	123	607.9	4.4	**0.1211**	0.005	4.2	ug/L	86	Standard
	Ba	135	74342.3	1.0	**33.0325**	0.340	1.0	ug/L	79	Standard
	Ce	140	740.0	10.4				ug/L	68	Standard
>	**Tb**	159	934924.8	1.9				ug/L	986982	Standard
	Ho	165	50.0	36.1				ug/L	10	Standard
	Tl	203	320.3	3.0	**0.0420**	0.001	2.9	ug/L	13	Standard
	Tl	205	230.0	20.7	**0.0379**	0.006	16.2	ug/L	10	Standard
	Pb	206	1171.7	7.8	**0.1672**	0.015	9.1	ug/L	264	Standard
	Pb	207	1041.0	6.0	**0.1683**	0.011	6.6	ug/L	227	Standard
	Pb	208	4335.9	3.1	**0.1793**	0.006	3.4	ug/L	868	Standard
	U	238	130.3	27.9	**0.0256**	0.005	19.0	ug/L	8	Standard
>	**Bi**	209	527772.3	0.4				ug/L	541014	Standard

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Na	23	5.0	0.0	**30.2905**	0.643	2.1	mg/L	2	Standard
Mg	24	32406.3	1.7	**37.9987**	0.770	2.0	mg/L	53	Standard
K	39	553.3	8.6	**0.9359**	0.099	10.6	mg/L	53	Standard
Ca	43	206.7	9.8	**10.9494**	1.494	13.6	mg/L	28	Standard
Fe	54	231.8	8.1	**0.0516**	0.017	33.5	mg/L	181	Standard
Fe	57	361.7	9.7	**0.3683**	0.092	24.9	mg/L	257	Standard
> **Sc-1**	45	51285.0	2.1				mg/L	55220	Standard
Cl	35	45860.6	1.0				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	8892.6	1.4				ug/L	2040	Standard
P	31	25207.6	2.0				ug/L	20435	Standard
S	34	2685.2	1.5				ug/L	2430	Standard
Sr	88	123.3	8.4				ug/L	75	Standard
C	12	156.7	40.5				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	290.0	15.0				mg/L	7	Standard
Dy	164	82.7	18.2				mg/L	9	Standard
Ho-1	165	50.0	36.1				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	22520.1	0.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.555	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.850	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.385
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.552
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606152912
Sample Date/Time: Thursday, June 30, 2016 20:23:27
Number of Replicates: 3
Autosampler Position: 351
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83561.5	0.3				ug/L	74916	Standard
	Be	9	28.3	71.3	**0.0204**	0.017	83.8	ug/L	10	Standard
	Al	27	1142457.6	1.7	**5.8999**	0.089	1.5	ug/L	1822	Standard
	Sc	45	51276.7	3.0				ug/L	55220	Standard
	Ti	47	232.3	25.2	**0.5169**	0.147	28.4	ug/L	34	Standard
	V	51	2883.0	4.8	**0.1286**	0.017	12.9	ug/L	1938	Standard
	Cr	52	11199.8	2.3	**0.2601**	0.034	13.3	ug/L	9522	Standard
	Cr	53	1680.1	8.8	**1.1848**	0.143	12.1	ug/L	395	Standard
	Mn	55	43442.2	2.6	**5.1670**	0.156	3.0	ug/L	902	Standard
	Co	59	648.0	14.5	**0.0603**	0.012	20.5	ug/L	262	Standard
	Ni	60	894.4	4.8	**0.2708**	0.022	8.0	ug/L	371	Standard
	Cu	65	891.7	2.5	**0.3630**	0.011	3.0	ug/L	106	Standard
	Zn	66	2132.8	2.9	**1.3664**	0.058	4.3	ug/L	398	Standard
>	**Ge**	72	512862.3	0.5				ug/L	535147	Standard
	As	75	81.9	16.5	**0.1190**	0.010	8.6	ug/L	-43	Standard
	Se	82	28.4	3.0	**0.1217**	0.006	5.1	ug/L	14	Standard
	Se-1	77	79.0	9.1	**0.3340**	0.087	26.1	ug/L	65	Standard
>	**Ga**	71	108.3	23.7				mg/L	97	Standard
	Rb	85	1580.1	11.7				ug/L	15	Standard
	Y	89	444358.6	0.5				ug/L	465704	Standard
>	**Rh**	103	28.3	27.0				ug/L	10	Standard
	Mo	98	213.2	48.6	**0.0802**	0.032	40.5	ug/L	9	Standard
	Ag	107	93.3	6.1	**0.0062**	0.001	13.2	ug/L	82	Standard
	Cd	111	14.1	53.6	**0.0137**	0.003	22.4	mg/L	7	Standard
	Cd	114	58.8	32.6	**0.0190**	0.003	16.9	ug/L	21	Standard
>	**In**	115	622593.9	0.6				ug/L	619035	Standard
	Sn	118	730.0	4.8	**0.0081**	0.006	69.0	ug/L	508	Standard
	Sb	123	256.5	2.9	**0.0526**	0.002	3.0	ug/L	86	Standard
	Ba	135	10960.0	1.4	**4.7469**	0.041	0.9	ug/L	79	Standard
	Ce	140	2988.7	39.7				ug/L	68	Standard
>	**Tb**	159	943687.8	0.6				ug/L	986982	Standard
	Ho	165	93.3	3.1				ug/L	10	Standard
	Tl	203	49.0	26.8	**0.0113**	0.001	12.1	ug/L	13	Standard
	Tl	205	68.3	69.5	**0.0163**	0.006	36.2	ug/L	10	Standard
	Pb	206	812.7	1.1	**0.0982**	0.002	2.2	ug/L	264	Standard
	Pb	207	747.4	8.3	**0.1051**	0.010	9.4	ug/L	227	Standard
	Pb	208	3105.8	7.7	**0.1107**	0.010	8.9	ug/L	868	Standard
	U	238	95.0	67.5	**0.0202**	0.008	40.4	ug/L	8	Standard
>	**Bi**	209	551731.2	1.1				ug/L	541014	Standard

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Na	23	1.7	173.2	**10.0978**	17.481	173.1	mg/L	2	Standard
Mg	24	1641.8	2.8	**1.8923**	0.008	0.4	mg/L	53	Standard
K	39	116.7	8.9	**0.1376**	0.024	17.2	mg/L	53	Standard
Ca	43	55.0	27.3	**1.6998**	1.016	59.7	mg/L	28	Standard
Fe	54	252.5	19.8	**0.0659**	0.031	47.4	mg/L	181	Standard
Fe	57	290.0	8.6	**0.1634**	0.047	28.6	mg/L	257	Standard
Sc-1	45	51276.7	3.0				mg/L	55220	Standard
Cl	35	45886.1	2.5				ug/L	35504	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	2533.5	8.3				ug/L	2040	Standard
P	31	24920.5	1.8				ug/L	20435	Standard
S	34	2648.6	4.3				ug/L	2430	Standard
Sr	88	91.7	31.5				ug/L	75	Standard
C	12	140.0	56.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	296.7	10.3				mg/L	7	Standard
Dy	164	126.3	16.4				mg/L	9	Standard
Ho-1	165	93.3	3.1				mg/L	10	Standard
Er	166	76.7	19.9				mg/L	23	Standard
I	127	12023.1	1.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		111.540	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.836	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.575
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.981
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606152913
Sample Date/Time: Thursday, June 30, 2016 20:26:39
Number of Replicates: 3
Autosampler Position: 352
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83144.2	1.2				ug/L	74916	Standard
	Be	9	203.3	14.4	**0.1702**	0.026	15.4	ug/L	10	Standard
	Al	27	3075507.5	1.9	**15.9662**	0.187	1.2	ug/L	1822	Standard
	Sc	45	53502.6	0.3				ug/L	55220	Standard
	Ti	47	4717.7	9.5	**11.9495**	1.106	9.3	ug/L	34	Standard
	V	51	34500.2	1.6	**3.7245**	0.081	2.2	ug/L	1938	Standard
	Cr	52	39833.6	0.7	**3.6208**	0.008	0.2	ug/L	9522	Standard
	Cr	53	5310.9	1.3	**4.6226**	0.076	1.6	ug/L	395	Standard
	Mn	55	1581170.6	1.4	**193.3537**	1.958	1.0	ug/L	902	Standard
	Co	59	20948.8	1.4	**2.6842**	0.032	1.2	ug/L	262	Standard
	Ni	60	12333.4	1.4	**5.6440**	0.100	1.8	ug/L	371	Standard
	Cu	65	14731.2	0.9	**6.9673**	0.099	1.4	ug/L	106	Standard
	Zn	66	35391.6	1.1	**28.3108**	0.153	0.5	ug/L	398	Standard
>	**Ge**	72	508664.2	0.9				ug/L	535147	Standard
	As	75	3470.9	0.5	**2.7815**	0.034	1.2	ug/L	-43	Standard
	Se	82	38.3	17.2	**0.2009**	0.054	26.8	ug/L	14	Standard
	Se-1	77	81.7	12.7	**0.3727**	0.124	33.3	ug/L	65	Standard
>	**Ga**	71	4624.0	2.2				mg/L	97	Standard
	Rb	85	73009.0	3.5				ug/L	15	Standard
	Y	89	476478.1	0.8				ug/L	465704	Standard
>	**Rh**	103	26.7	10.8				ug/L	10	Standard
	Mo	98	302.0	8.4	**0.1093**	0.009	8.6	ug/L	9	Standard
	Ag	107	240.0	5.1	**0.0258**	0.002	6.4	ug/L	82	Standard
	Cd	111	64.8	9.4	**0.0348**	0.003	8.2	mg/L	7	Standard
	Cd	114	166.0	9.3	**0.0375**	0.003	7.6	ug/L	21	Standard
>	**In**	115	618372.2	1.3				ug/L	619035	Standard
	Sn	118	1020.0	3.8	**0.0535**	0.006	10.7	ug/L	508	Standard
	Sb	123	609.5	9.9	**0.1196**	0.012	9.8	ug/L	86	Standard
	Ba	135	96258.1	0.3	**42.1337**	0.419	1.0	ug/L	79	Standard
	Ce	140	67600.5	0.7				ug/L	68	Standard
>	**Tb**	159	945334.0	0.5				ug/L	986982	Standard
	Ho	165	2460.2	3.8				ug/L	10	Standard
	Tl	203	331.0	2.6	**0.0419**	0.001	1.8	ug/L	13	Standard
	Tl	205	320.0	12.4	**0.0483**	0.005	10.3	ug/L	10	Standard
	Pb	206	22992.8	0.9	**3.8513**	0.058	1.5	ug/L	264	Standard
	Pb	207	19230.5	1.0	**3.5656**	0.061	1.7	ug/L	227	Standard
	Pb	208	81163.7	0.4	**3.9008**	0.028	0.7	ug/L	868	Standard
	U	238	1044.7	1.1	**0.1449**	0.002	1.4	ug/L	8	Standard
>	**Bi**	209	545921.2	0.7				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	1895.1	5.1	**2.0969**	0.103	4.9	mg/L	53	Standard
K	39	446.7	21.3	**0.7061**	0.165	23.3	mg/L	53	Standard
Ca	43	40.0	33.1	**0.6617**	0.767	115.9	mg/L	28	Standard
Fe	54	7059.5	3.4	**4.8453**	0.151	3.1	mg/L	181	Standard
Fe	57	1893.5	2.2	**4.5135**	0.117	2.6	mg/L	257	Standard
> **Sc-1**	45	53502.6	0.3				mg/L	55220	Standard
Cl	35	40968.1	5.2				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	5170.9	1.0				ug/L	2040	Standard
P	31	28127.8	1.6				ug/L	20435	Standard
S	34	2423.5	2.4				ug/L	2430	Standard
Sr	88	96.7	16.6				ug/L	75	Standard
C	12	116.7	9.9				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	356.7	18.7				mg/L	7	Standard
Dy	164	4073.6	6.6				mg/L	9	Standard
Ho-1	165	2460.2	3.8				mg/L	10	Standard
Er	166	2093.5	6.5				mg/L	23	Standard
I	127	13008.9	1.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.983	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.051	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.893
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.907
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606153201
Sample Date/Time: Thursday, June 30, 2016 20:29:50
Number of Replicates: 3
Autosampler Position: 353
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	89644.5	2.1				ug/L	74916	Standard
	Be	9	1925.1	4.6	**1.5220**	0.084	5.5	ug/L	10	Standard
	Al	27	33731374.7	1.7	**162.4486**	0.616	0.4	ug/L	1822	Standard
	Sc	45	75308.4	0.7				ug/L	55220	Standard
	Ti	47	72764.3	0.8	**185.9893**	1.903	1.0	ug/L	34	Standard
	V	51	344344.8	0.6	**39.0709**	0.350	0.9	ug/L	1938	Standard
	Cr	52	198511.1	1.2	**22.2654**	0.288	1.3	ug/L	9522	Standard
	Cr	53	24231.0	2.1	**22.5510**	0.638	2.8	ug/L	395	Standard
	Mn	55	8234177.7	0.9	**1010.8489**	9.075	0.9	ug/L	902	Standard
	Co	59	97114.6	1.1	**12.5705**	0.202	1.6	ug/L	262	Standard
	Ni	60	61192.7	0.5	**28.6787**	0.338	1.2	ug/L	371	Standard
	Cu	65	39756.1	0.2	**18.9676**	0.120	0.6	ug/L	106	Standard
	Zn	66	80311.0	0.5	**64.9085**	0.202	0.3	ug/L	398	Standard
>	Ge	72	506918.0	0.7				ug/L	535147	Standard
	As	75	9147.0	1.2	**7.2641**	0.054	0.7	ug/L	-43	Standard
	Se	82	190.4	12.1	**1.3851**	0.168	12.1	ug/L	14	Standard
	Se-1	77	196.3	6.5	**1.7188**	0.132	7.7	ug/L	65	Standard
>	Ga	71	30931.6	3.2				mg/L	97	Standard
	Rb	85	428695.1	2.1				ug/L	15	Standard
	Y	89	798406.2	0.4				ug/L	465704	Standard
>	Rh	103	131.7	21.6				ug/L	10	Standard
	Mo	98	12612.1	2.1	**4.1093**	0.084	2.0	ug/L	9	Standard
	Ag	107	391.7	4.3	**0.0465**	0.002	4.6	ug/L	82	Standard
	Cd	111	394.2	3.5	**0.1734**	0.005	3.1	mg/L	7	Standard
	Cd	114	1131.0	10.9	**0.2061**	0.021	10.3	ug/L	21	Standard
>	In	115	610796.2	0.3				ug/L	619035	Standard
	Sn	118	1331.7	3.0	**0.1040**	0.007	6.6	ug/L	508	Standard
	Sb	123	931.7	3.6	**0.1827**	0.007	3.6	ug/L	86	Standard
	Ba	135	545599.0	0.7	**241.8530**	1.754	0.7	ug/L	79	Standard
	Ce	140	1545043.5	0.7				ug/L	68	Standard
>	Tb	159	969755.6	0.5				ug/L	986982	Standard
	Ho	165	30089.9	1.2				ug/L	10	Standard
	Tl	203	1941.8	1.7	**0.2255**	0.004	1.9	ug/L	13	Standard
	Tl	205	1686.8	1.8	**0.2309**	0.003	1.3	ug/L	10	Standard
	Pb	206	82334.1	0.7	**14.4679**	0.157	1.1	ug/L	264	Standard
	Pb	207	67724.4	0.4	**13.1675**	0.052	0.4	ug/L	227	Standard
	Pb	208	285782.6	1.0	**14.4086**	0.082	0.6	ug/L	868	Standard
	U	238	14378.2	1.4	**1.9726**	0.018	0.9	ug/L	8	Standard
>	Bi	209	524096.0	0.5				ug/L	541014	Standard

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Na	23	5.0	100.0	**20.6926**	20.779	100.4	mg/L	2	Standard
Mg	24	3587.1	4.9	**2.8326**	0.159	5.6	mg/L	53	Standard
K	39	1336.7	2.1	**1.5875**	0.046	2.9	mg/L	53	Standard
Ca	43	956.7	5.7	**38.0674**	2.553	6.7	mg/L	28	Standard
Fe	54	24191.2	1.4	**11.9678**	0.197	1.6	mg/L	181	Standard
Fe	57	6944.9	2.7	**12.8265**	0.406	3.2	mg/L	257	Standard
> **Sc-1**	45	75308.4	0.7				mg/L	55220	Standard
Cl	35	41309.6	1.0				ug/L	35504	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	13139.1	8.9				ug/L	2040	Standard
P	31	56287.7	1.7				ug/L	20435	Standard
S	34	2321.8	4.4				ug/L	2430	Standard
Sr	88	488.3	4.8				ug/L	75	Standard
C	12	296.7	22.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	476.7	37.7				mg/L	7	Standard
Dy	164	49979.9	0.8				mg/L	9	Standard
Ho-1	165	30089.9	1.2				mg/L	10	Standard
Er	166	27070.8	2.7				mg/L	23	Standard
I	127	56145.8	6.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.659	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.725	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.669
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.873
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 20:33:03
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	82411.9	2.0				ug/L	74916	Standard
	Be	9	63501.2	2.9	**54.7156**	1.591	2.9	ug/L	10	Standard
	Al	27	8936275.0	1.1	**46.8272**	1.363	2.9	ug/L	1822	Standard
	Sc	45	50709.8	2.6				ug/L	55220	Standard
	Ti	47	38704.7	1.1	**97.1505**	0.850	0.9	ug/L	34	Standard
	V	51	446648.8	0.9	**49.8380**	0.325	0.7	ug/L	1938	Standard
	Cr	52	432283.2	1.8	**48.8135**	0.759	1.6	ug/L	9522	Standard
	Cr	53	54529.6	1.8	**50.3157**	0.783	1.6	ug/L	395	Standard
	Mn	55	397792.4	1.2	**47.8745**	0.756	1.6	ug/L	902	Standard
	Co	59	408707.4	1.0	**52.0384**	0.389	0.7	ug/L	262	Standard
	Ni	60	106814.3	1.7	**49.2774**	0.643	1.3	ug/L	371	Standard
	Cu	65	105225.1	1.0	**49.4116**	0.576	1.2	ug/L	106	Standard
	Zn	66	62698.8	0.8	**49.7004**	0.463	0.9	ug/L	398	Standard
>	Ge	72	516010.1	0.4				ug/L	535147	Standard
	As	75	64411.7	0.4	**49.9261**	0.328	0.7	ug/L	-43	Standard
	Se	82	6628.1	1.4	**50.6222**	0.759	1.5	ug/L	14	Standard
	Se-1	77	4396.6	2.5	**50.0358**	1.361	2.7	ug/L	65	Standard
>	Ga	71	61.7	28.5				mg/L	97	Standard
	Rb	85	996.7	10.1				ug/L	15	Standard
	Y	89	456681.8	1.9				ug/L	465704	Standard
>	Rh	103	46.7	6.2				ug/L	10	Standard
	Mo	98	310943.7	0.9	**98.7097**	0.997	1.0	ug/L	9	Standard
	Ag	107	368163.3	0.1	**48.2932**	0.364	0.8	ug/L	82	Standard
	Cd	111	118493.3	0.3	**48.6275**	0.278	0.6	mg/L	7	Standard
	Cd	114	292362.7	1.4	**49.8198**	0.391	0.8	ug/L	21	Standard
>	In	115	625098.4	0.7				ug/L	619035	Standard
	Sn	118	328088.5	2.1	**49.8247**	1.168	2.3	ug/L	508	Standard
	Sb	123	260509.7	0.6	**48.7212**	0.650	1.3	ug/L	86	Standard
	Ba	135	109479.1	0.8	**47.4058**	0.586	1.2	ug/L	79	Standard
	Ce	140	758.4	29.4				ug/L	68	Standard
>	Tb	159	940749.3	1.4				ug/L	986982	Standard
	Ho	165	26.7	60.3				ug/L	10	Standard
	Tl	203	458765.3	0.6	**50.6626**	0.208	0.4	ug/L	13	Standard
	Tl	205	413032.5	0.8	**53.3915**	0.514	1.0	ug/L	10	Standard
	Pb	206	292542.6	0.8	**50.2992**	0.212	0.4	ug/L	264	Standard
	Pb	207	262126.4	0.9	**49.8679**	0.237	0.5	ug/L	227	Standard
	Pb	208	1068253.8	1.0	**52.7083**	0.744	1.4	ug/L	868	Standard
	U	238	400138.0	0.8	**53.4122**	0.638	1.2	ug/L	8	Standard
>	Bi	209	536606.7	0.4				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.9269**	17.185	173.1	mg/L	2	Standard
Mg	24	4815.8	3.0	**5.6803**	0.067	1.2	mg/L	53	Standard
K	39	1883.5	5.5	**3.4038**	0.145	4.3	mg/L	53	Standard
Ca	43	110.0	12.0	**5.1122**	0.842	16.5	mg/L	28	Standard
Fe	54	6834.6	1.8	**4.9544**	0.153	3.1	mg/L	181	Standard
Fe	57	1956.8	6.8	**4.9772**	0.240	4.8	mg/L	257	Standard
Sc-1	45	50709.8	2.6				mg/L	55220	Standard
Cl	35	41202.0	1.9				ug/L	35504	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	2030.1	11.2				ug/L	2040	Standard
P	31	23463.2	2.4				ug/L	20435	Standard
S	34	2733.6	7.5				ug/L	2430	Standard
Sr	88	60.0	22.0				ug/L	75	Standard
C	12	116.7	47.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	220.0	41.7				mg/L	7	Standard
Dy	164	31.9	43.5				mg/L	9	Standard
Ho-1	165	26.7	60.3				mg/L	10	Standard
Er	166	30.0	100.0				mg/L	23	Standard
I	127	12453.5	8.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	109.431		
Al	27	93.654		
Sc	45			
Ti	47	97.150		
V	51	99.676		
Cr	52	97.627		
Cr	53			
Mn	55	95.749		
Co	59	104.077		
Ni	60	98.555		
Cu	65	98.823		
Zn	66	99.401		
Ge	72		96.424	
As	75	99.852		
Se	82	101.244		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.710		
Ag	107	96.586		
Cd	111	97.255		
Cd	114			
> In	115			100.980
Sn	118	99.649		
Sb	123	97.442		
Ba	135	94.812		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.325		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.417		
U	238	106.824		
> Bi	209			99.185
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 20:36:14
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82128.7	1.1				ug/L	74916	Standard
	Be	9	30.0	16.7	**0.0223**	0.004	18.3	ug/L	10	Standard
	Al	27	5192.6	9.2	**0.0250**	0.002	9.1	ug/L	1822	Standard
	Sc	45	51186.4	3.6				ug/L	55220	Standard
	Ti	47	43.3	23.6	**0.0390**	0.025	64.9	ug/L	34	Standard
	V	51	1718.2	4.9	**-0.0032**	0.009	291.6	ug/L	1938	Standard
	Cr	52	7393.1	1.8	**-0.1840**	0.014	7.8	ug/L	9522	Standard
	Cr	53	693.3	17.3	**0.2598**	0.114	43.8	ug/L	395	Standard
	Mn	55	1321.1	4.6	**0.0547**	0.007	13.5	ug/L	902	Standard
	Co	59	293.7	10.4	**0.0147**	0.004	27.4	ug/L	262	Standard
	Ni	60	410.0	7.5	**0.0448**	0.015	32.9	ug/L	371	Standard
	Cu	65	188.3	4.3	**0.0301**	0.004	13.0	ug/L	106	Standard
	Zn	66	383.3	1.0	**-0.0397**	0.004	10.4	ug/L	398	Standard
>	**Ge**	72	514250.8	0.4				ug/L	535147	Standard
	As	75	-54.4	100.9	**0.0129**	0.043	331.1	ug/L	-43	Standard
	Se	82	19.7	51.7	**0.0538**	0.077	143.9	ug/L	14	Standard
	Se-1	77	63.0	5.7	**0.1465**	0.044	30.1	ug/L	65	Standard
>	**Ga**	71	55.0	36.4				mg/L	97	Standard
	Rb	85	68.3	22.4				ug/L	15	Standard
	Y	89	449659.4	1.7				ug/L	465704	Standard
>	**Rh**	103	23.3	24.7				ug/L	10	Standard
	Mo	98	335.6	19.0	**0.1188**	0.020	16.7	ug/L	9	Standard
	Ag	107	154.3	7.0	**0.0142**	0.001	9.5	ug/L	82	Standard
	Cd	111	22.4	30.8	**0.0171**	0.003	16.3	mg/L	7	Standard
	Cd	114	51.4	43.4	**0.0177**	0.004	21.3	ug/L	21	Standard
>	**In**	115	625232.6	0.5				ug/L	619035	Standard
	Sn	118	1065.0	15.1	**0.0587**	0.025	42.6	ug/L	508	Standard
	Sb	123	705.8	28.7	**0.1365**	0.038	28.0	ug/L	86	Standard
	Ba	135	108.3	3.0	**0.0273**	0.001	4.4	ug/L	79	Standard
	Ce	140	348.3	13.3				ug/L	68	Standard
>	**Tb**	159	943281.6	0.4				ug/L	986982	Standard
	Ho	165	11.7	107.9				ug/L	10	Standard
	Tl	203	113.3	12.2	**0.0182**	0.001	8.2	ug/L	13	Standard
	Tl	205	100.0	30.0	**0.0203**	0.004	18.7	ug/L	10	Standard
	Pb	206	363.3	6.5	**0.0234**	0.004	17.0	ug/L	264	Standard
	Pb	207	296.3	6.8	**0.0220**	0.004	17.0	ug/L	227	Standard
	Pb	208	1320.0	5.6	**0.0254**	0.004	14.1	ug/L	868	Standard
	U	238	99.0	19.9	**0.0208**	0.003	12.3	ug/L	8	Standard
>	**Bi**	209	548536.9	0.0				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	75.0	48.1	**0.0541**	0.045	82.5	mg/L	53	Standard
K	39	33.3	31.2	**-0.0153**	0.017	109.6	mg/L	53	Standard
Ca	43	23.3	32.7	**-0.2522**	0.460	182.3	mg/L	28	Standard
Fe	54	165.6	21.1	**0.0031**	0.027	859.8	mg/L	181	Standard
Fe	57	250.0	23.1	**0.0548**	0.181	330.7	mg/L	257	Standard
Sc-1	45	51186.4	3.6				mg/L	55220	Standard
Cl	35	41182.6	1.6				ug/L	35504	Standard
Kr	83	2.3	107.9				ug/L	2	Standard
Br	81	1913.5	4.1				ug/L	2040	Standard
P	31	22580.1	1.2				ug/L	20435	Standard
S	34	2533.5	8.6				ug/L	2430	Standard
Sr	88	78.3	30.2				ug/L	75	Standard
C	12	96.7	52.1				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	230.0	4.3				mg/L	7	Standard
Dy	164	171.3	13.6				mg/L	9	Standard
Ho-1	165	11.7	107.9				mg/L	10	Standard
Er	166	43.3	58.1				mg/L	23	Standard
I	127	5109.2	12.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.095	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.001
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.390
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, June 30, 2016 20:39:27
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80112.9	1.5				ug/L	74916	Standard
	Be	9	261.7	14.3	**0.2284**	0.034	15.1	ug/L	10	Standard
	Al	27	1921.8	14.3	**0.0080**	0.001	16.8	ug/L	1822	Standard
	Sc	45	48402.2	0.5				ug/L	55220	Standard
	Ti	47	27.3	11.8	**0.0013**	0.008	664.7	ug/L	34	Standard
	V	51	4894.0	1.7	**0.3738**	0.012	3.1	ug/L	1938	Standard
	Cr	52	13943.7	1.3	**0.6328**	0.015	2.4	ug/L	9522	Standard
	Cr	53	1380.1	5.0	**0.9470**	0.060	6.3	ug/L	395	Standard
	Mn	55	4302.6	2.0	**0.4346**	0.013	2.9	ug/L	902	Standard
	Co	59	3213.7	1.7	**0.4029**	0.007	1.8	ug/L	262	Standard
	Ni	60	3515.4	1.2	**1.5461**	0.028	1.8	ug/L	371	Standard
	Cu	65	1705.1	1.9	**0.7749**	0.015	2.0	ug/L	106	Standard
	Zn	66	7760.7	0.6	**6.0954**	0.054	0.9	ug/L	398	Standard
>	Ge	72	496193.5	0.5				ug/L	535147	Standard
	As	75	427.1	10.4	**0.3992**	0.036	9.1	ug/L	-43	Standard
	Se	82	66.0	22.5	**0.4286**	0.118	27.6	ug/L	14	Standard
	Se-1	77	89.7	9.7	**0.4918**	0.099	20.1	ug/L	65	Standard
>	Ga	71	40.0	33.1				mg/L	97	Standard
	Rb	85	45.0	11.1				ug/L	15	Standard
	Y	89	428520.5	0.7				ug/L	465704	Standard
>	Rh	103	26.7	47.2				ug/L	10	Standard
	Mo	98	135.3	10.3	**0.0568**	0.005	8.2	ug/L	9	Standard
	Ag	107	2893.9	2.4	**0.3865**	0.009	2.3	ug/L	82	Standard
	Cd	111	514.8	5.0	**0.2263**	0.011	4.7	mg/L	7	Standard
	Cd	114	1337.4	8.6	**0.2445**	0.020	8.1	ug/L	21	Standard
>	In	115	604537.0	0.2				ug/L	619035	Standard
	Sn	118	533.3	11.2	**-0.0195**	0.010	49.0	ug/L	508	Standard
	Sb	123	1880.2	1.4	**0.3679**	0.005	1.3	ug/L	86	Standard
	Ba	135	1521.1	0.6	**0.6617**	0.004	0.6	ug/L	79	Standard
	Ce	140	56.7	48.6				ug/L	68	Standard
>	Tb	159	922348.4	0.4				ug/L	986982	Standard
	Ho	165	10.0	100.0				ug/L	10	Standard
	Tl	203	698.7	3.6	**0.0831**	0.002	2.8	ug/L	13	Standard
	Tl	205	633.3	15.8	**0.0896**	0.013	14.7	ug/L	10	Standard
	Pb	206	1409.4	1.3	**0.2047**	0.004	2.1	ug/L	264	Standard
	Pb	207	1194.0	0.4	**0.1941**	0.002	0.9	ug/L	227	Standard
	Pb	208	5007.3	0.9	**0.2089**	0.001	0.3	ug/L	868	Standard
	U	238	2975.6	1.6	**0.4051**	0.008	2.0	ug/L	8	Standard
>	Bi	209	536583.7	0.6				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	50.0	52.0	**0.0277**	0.033	118.0	mg/L	53	Standard
K	39	30.0	60.1	**-0.0180**	0.035	192.8	mg/L	53	Standard
Ca	43	25.0	20.0	**-0.0605**	0.317	523.5	mg/L	28	Standard
Fe	54	115.1	13.0	**-0.0293**	0.011	38.4	mg/L	181	Standard
Fe	57	271.7	24.0	**0.1575**	0.193	122.6	mg/L	257	Standard
Sc-1	45	48402.2	0.5				mg/L	55220	Standard
Cl	35	40155.8	1.0				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1830.1	7.5				ug/L	2040	Standard
P	31	15689.8	3.7				ug/L	20435	Standard
S	34	2581.9	4.2				ug/L	2430	Standard
Sr	88	76.7	16.4				ug/L	75	Standard
C	12	103.3	43.6				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	213.3	35.5				mg/L	7	Standard
Dy	164	11.7	90.2				mg/L	9	Standard
Ho-1	165	10.0	100.0				mg/L	10	Standard
Er	166	33.3	62.5				mg/L	23	Standard
I	127	1745.1	30.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	114.223		
Al	27			
Sc	45			
Ti	47			
V	51	93.449		
Cr	52	79.097		
Cr	53			
Mn	55	86.911		
Co	59	100.725		
Ni	60	96.630		
Cu	65	96.860		
Zn	66	97.527		
Ge	72		92.721	
As	75	99.789		
Se	82	107.150		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	96.620		
Cd	111	94.287		
Cd	114			
> In	115			97.658
Sn	118			
Sb	123	91.986		
Ba	135	88.222		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	103.934		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.449		
U	238	101.266		
> Bi	209			99.181
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606036203
Sample Date/Time: Thursday, June 30, 2016 20:42:40
Number of Replicates: 3
Autosampler Position: 354
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76651.8	1.2				ug/L	74916	Standard
	Be	9	28.3	50.9	**0.0227**	0.014	60.0	ug/L	10	Standard
	Al	27	640328.6	1.2	**3.6044**	0.062	1.7	ug/L	1822	Standard
	Sc	45	43241.6	2.8				ug/L	55220	Standard
	Ti	47	248.0	8.7	**0.6477**	0.062	9.5	ug/L	34	Standard
	V	51	2583.8	3.1	**0.1372**	0.011	7.8	ug/L	1938	Standard
	Cr	52	5507.0	1.7	**-0.3077**	0.014	4.4	ug/L	9522	Standard
	Cr	53	3593.8	14.6	**3.4628**	0.558	16.1	ug/L	395	Standard
	Mn	55	5635941.5	0.8	**783.1928**	7.420	0.9	ug/L	902	Standard
	Co	59	6792.5	0.8	**0.9742**	0.006	0.6	ug/L	262	Standard
	Ni	60	2130.5	1.5	**0.9904**	0.019	1.9	ug/L	371	Standard
	Cu	65	2467.9	3.3	**1.2782**	0.046	3.6	ug/L	106	Standard
	Zn	66	6137.2	2.5	**5.2984**	0.146	2.8	ug/L	398	Standard
>	**Ge**	72	447801.7	0.2				ug/L	535147	Standard
	As	75	1508.3	2.0	**1.4009**	0.025	1.8	ug/L	-43	Standard
	Se	82	238.5	5.9	**2.0064**	0.127	6.3	ug/L	14	Standard
	Se-1	77	249.0	8.1	**2.7217**	0.263	9.7	ug/L	65	Standard
>	**Ga**	71	240.0	4.2				mg/L	97	Standard
	Rb	85	63461.0	2.7				ug/L	15	Standard
	Y	89	391275.2	1.5				ug/L	465704	Standard
>	**Rh**	103	106.7	13.5				ug/L	10	Standard
	Mo	98	1073579.5	0.4	**401.7377**	3.626	0.9	ug/L	9	Standard
	Ag	107	87.3	13.7	**0.0074**	0.002	25.3	ug/L	82	Standard
	Cd	111	-818.3	3.2	**-0.3880**	0.016	4.0	mg/L	7	Standard
	Cd	114	1651.3	10.4	**0.3409**	0.038	11.2	ug/L	21	Standard
>	**In**	115	530268.9	1.2				ug/L	619035	Standard
	Sn	118	203.3	18.1	**-0.0670**	0.006	9.2	ug/L	508	Standard
	Sb	123	1149.6	6.1	**0.2577**	0.013	5.0	ug/L	86	Standard
	Ba	135	3359.0	0.8	**1.6958**	0.031	1.8	ug/L	79	Standard
	Ce	140	3432.1	5.6				ug/L	68	Standard
>	**Tb**	159	837304.0	0.6				ug/L	986982	Standard
	Ho	165	81.7	27.6				ug/L	10	Standard
	Tl	203	136.7	19.4	**0.0233**	0.004	15.2	ug/L	13	Standard
	Tl	205	88.3	23.6	**0.0208**	0.003	15.2	ug/L	10	Standard
	Pb	206	550.7	4.5	**0.0708**	0.005	7.7	ug/L	264	Standard
	Pb	207	451.7	9.0	**0.0654**	0.010	14.9	ug/L	227	Standard
	Pb	208	1928.7	2.6	**0.0708**	0.004	5.7	ug/L	868	Standard
	U	238	98.0	36.2	**0.0229**	0.006	24.4	ug/L	8	Standard
>	**Bi**	209	468325.2	1.1				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	119319.7	0.6	**166.1256**	5.606	3.4	mg/L	53	Standard
K	39	5299.3	3.8	**11.4085**	0.316	2.8	mg/L	53	Standard
Ca	43	215.0	20.9	**13.8398**	2.992	21.6	mg/L	28	Standard
Fe	54	637.3	4.6	**0.4356**	0.010	2.3	mg/L	181	Standard
Fe	57	536.7	4.4	**1.1520**	0.042	3.7	mg/L	257	Standard
> **Sc-1**	45	43241.6	2.8				mg/L	55220	Standard
Cl	35	58098.5	1.3				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	34676.3	1.4				ug/L	2040	Standard
P	31	6889.9	4.6				ug/L	20435	Standard
S	34	2093.5	2.2				ug/L	2430	Standard
Sr	88	331.7	15.3				ug/L	75	Standard
C	12	116.7	54.4				mg/L	293	Standard
N	14	6.7	173.2				mg/L	0	Standard
Hg	202	3307.0	25.9				mg/L	7	Standard
Dy	164	130.0	8.2				mg/L	9	Standard
Ho-1	165	81.7	27.6				mg/L	10	Standard
Er	166	70.0	24.7				mg/L	23	Standard
I	127	366229.6	3.2				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		102.316	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		83.678	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	85.661
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	86.564
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 20:45:53
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83990.5	1.6				ug/L	74916	Standard
	Be	9	65171.5	1.4	**55.0945**	0.393	0.7	ug/L	10	Standard
	Al	27	8906533.3	1.1	**45.7799**	0.406	0.9	ug/L	1822	Standard
	Sc	45	48572.8	1.9				ug/L	55220	Standard
	Ti	47	37751.3	1.5	**97.3003**	0.891	0.9	ug/L	34	Standard
	V	51	436290.7	1.3	**49.9895**	0.349	0.7	ug/L	1938	Standard
	Cr	52	422974.4	1.0	**49.0536**	0.698	1.4	ug/L	9522	Standard
	Cr	53	52040.9	1.9	**49.3027**	0.910	1.8	ug/L	395	Standard
	Mn	55	384063.1	1.2	**47.4615**	0.495	1.0	ug/L	902	Standard
	Co	59	398080.6	0.9	**52.0523**	0.925	1.8	ug/L	262	Standard
	Ni	60	103678.2	0.6	**49.1206**	0.741	1.5	ug/L	371	Standard
	Cu	65	102993.3	1.5	**49.6596**	0.307	0.6	ug/L	106	Standard
	Zn	66	61365.7	1.8	**49.9467**	0.087	0.2	ug/L	398	Standard
>	Ge	72	502569.8	2.0				ug/L	535147	Standard
	As	75	61842.1	1.6	**49.2214**	0.636	1.3	ug/L	-43	Standard
	Se	82	6409.0	1.2	**50.2632**	0.606	1.2	ug/L	14	Standard
	Se-1	77	4323.6	1.1	**50.5321**	0.649	1.3	ug/L	65	Standard
>	Ga	71	70.0	43.4				mg/L	97	Standard
	Rb	85	973.4	6.4				ug/L	15	Standard
	Y	89	445280.6	2.4				ug/L	465704	Standard
>	Rh	103	56.7	13.5				ug/L	10	Standard
	Mo	98	305918.8	0.8	**98.0968**	1.357	1.4	ug/L	9	Standard
	Ag	107	361617.9	0.6	**47.9187**	1.063	2.2	ug/L	82	Standard
	Cd	111	115336.2	1.8	**47.8055**	0.563	1.2	mg/L	7	Standard
	Cd	114	283581.1	0.5	**48.8167**	0.800	1.6	ug/L	21	Standard
>	In	115	618947.1	2.1				ug/L	619035	Standard
	Sn	118	321189.0	1.3	**49.2793**	1.581	3.2	ug/L	508	Standard
	Sb	123	254680.3	1.4	**48.1148**	1.181	2.5	ug/L	86	Standard
	Ba	135	105862.2	0.1	**46.3075**	1.051	2.3	ug/L	79	Standard
	Ce	140	278.3	15.3				ug/L	68	Standard
>	Tb	159	931972.9	1.4				ug/L	986982	Standard
	Ho	165	15.0	33.3				ug/L	10	Standard
	Tl	203	450548.5	1.4	**49.5430**	0.196	0.4	ug/L	13	Standard
	Tl	205	402706.3	2.1	**51.8449**	1.535	3.0	ug/L	10	Standard
	Pb	206	286824.8	0.4	**49.1101**	0.587	1.2	ug/L	264	Standard
	Pb	207	262479.7	0.1	**49.7276**	0.566	1.1	ug/L	227	Standard
	Pb	208	1067833.3	1.0	**52.4694**	1.100	2.1	ug/L	868	Standard
	U	238	395668.2	0.7	**52.5954**	0.841	1.6	ug/L	8	Standard
>	Bi	209	538895.0	1.1				ug/L	541014	Standard

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Na	23	1.7	173.2	**10.4524**	18.095	173.1	mg/L	2	Standard
Mg	24	4662.4	2.7	**5.7440**	0.220	3.8	mg/L	53	Standard
K	39	1790.1	8.6	**3.3791**	0.319	9.4	mg/L	53	Standard
Ca	43	108.3	7.1	**5.2962**	0.370	7.0	mg/L	28	Standard
Fe	54	6691.4	1.9	**5.0646**	0.058	1.1	mg/L	181	Standard
Fe	57	1865.1	3.8	**4.9539**	0.208	4.2	mg/L	257	Standard
Sc-1	45	48572.8	1.9				mg/L	55220	Standard
Cl	35	40060.9	1.3				ug/L	35504	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	2233.5	7.2				ug/L	2040	Standard
P	31	22233.0	3.1				ug/L	20435	Standard
S	34	2528.5	7.9				ug/L	2430	Standard
Sr	88	91.7	8.3				ug/L	75	Standard
C	12	140.0	32.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	850.0	27.5				mg/L	7	Standard
Dy	164	19.4	103.3				mg/L	9	Standard
Ho-1	165	15.0	33.3				mg/L	10	Standard
Er	166	13.3	86.6				mg/L	23	Standard
I	127	15705.0	17.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	110.189		
Al	27	91.560		
Sc	45			
Ti	47	97.300		
V	51	99.979		
Cr	52	98.107		
Cr	53			
Mn	55	94.923		
Co	59	104.105		
Ni	60	98.241		
Cu	65	99.319		
Zn	66	99.893		
Ge	72		93.912	
As	75	98.443		
Se	82	100.526		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	98.097		
Ag	107	95.837		
Cd	111	95.611		
Cd	114			
In	115			99.986
Sn	118	98.559		
Sb	123	96.230		
Ba	135	92.615		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.086		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.939		
U	238	105.191		
Bi	209			99.608
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 20:49:04
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81895.8	2.0				ug/L	74916	Standard
	Be	9	26.7	39.0	**0.0195**	0.009	45.9	ug/L	10	Standard
	Al	27	3003.6	21.0	**0.0135**	0.003	23.7	ug/L	1822	Standard
	Sc	45	48704.8	1.8				ug/L	55220	Standard
	Ti	47	37.3	15.5	**0.0267**	0.015	54.4	ug/L	34	Standard
	V	51	1722.1	9.7	**0.0031**	0.020	658.5	ug/L	1938	Standard
	Cr	52	6815.5	0.8	**-0.2272**	0.010	4.5	ug/L	9522	Standard
	Cr	53	573.3	10.8	**0.1635**	0.057	35.1	ug/L	395	Standard
	Mn	55	1172.7	8.8	**0.0410**	0.012	29.7	ug/L	902	Standard
	Co	59	290.0	11.9	**0.0153**	0.004	28.6	ug/L	262	Standard
	Ni	60	366.0	6.0	**0.0294**	0.010	34.3	ug/L	371	Standard
	Cu	65	230.7	7.0	**0.0533**	0.008	14.8	ug/L	106	Standard
	Zn	66	407.3	7.7	**-0.0106**	0.027	252.5	ug/L	398	Standard
>	Ge	72	499312.8	0.6				ug/L	535147	Standard
	As	75	-29.2	59.1	**0.0319**	0.014	43.1	ug/L	-43	Standard
	Se	82	22.7	5.9	**0.0825**	0.012	14.0	ug/L	14	Standard
	Se-1	77	47.0	27.2	**-0.0227**	0.150	659.5	ug/L	65	Standard
>	Ga	71	36.7	28.4				mg/L	97	Standard
	Rb	85	51.7	29.6				ug/L	15	Standard
	Y	89	445183.0	1.4				ug/L	465704	Standard
>	Rh	103	50.0	43.6				ug/L	10	Standard
	Mo	98	1174.7	4.2	**0.3885**	0.018	4.5	ug/L	9	Standard
	Ag	107	153.3	11.2	**0.0142**	0.002	15.5	ug/L	82	Standard
	Cd	111	17.6	18.0	**0.0152**	0.001	8.4	mg/L	7	Standard
	Cd	114	83.5	22.5	**0.0233**	0.003	13.5	ug/L	21	Standard
>	In	115	619708.4	0.7				ug/L	619035	Standard
	Sn	118	988.4	8.9	**0.0483**	0.013	27.6	ug/L	508	Standard
	Sb	123	746.5	30.0	**0.1454**	0.043	29.6	ug/L	86	Standard
	Ba	135	57.7	13.9	**0.0055**	0.003	60.4	ug/L	79	Standard
	Ce	140	110.0	20.8				ug/L	68	Standard
>	Tb	159	926404.8	1.4				ug/L	986982	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	111.0	16.0	**0.0181**	0.002	10.0	ug/L	13	Standard
	Tl	205	75.0	11.5	**0.0173**	0.001	5.8	ug/L	10	Standard
	Pb	206	345.0	8.6	**0.0210**	0.005	24.9	ug/L	264	Standard
	Pb	207	301.0	12.6	**0.0235**	0.007	27.7	ug/L	227	Standard
	Pb	208	1232.7	3.5	**0.0219**	0.002	9.1	ug/L	868	Standard
	U	238	74.3	13.5	**0.0177**	0.001	7.2	ug/L	8	Standard
>	Bi	209	541724.9	1.0				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	81.7	30.8	**0.0665**	0.032	48.4	mg/L	53	Standard
K	39	30.0	60.1	**-0.0186**	0.034	180.1	mg/L	53	Standard
Ca	43	16.7	34.6	**-0.6009**	0.384	63.8	mg/L	28	Standard
Fe	54	179.0	19.4	**0.0193**	0.025	127.5	mg/L	181	Standard
Fe	57	233.3	32.7	**0.0373**	0.225	603.1	mg/L	257	Standard
> **Sc-1**	45	48704.8	1.8				mg/L	55220	Standard
Cl	35	39728.7	1.2				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1956.8	2.4				ug/L	2040	Standard
P	31	21510.3	0.9				ug/L	20435	Standard
S	34	2288.5	1.5				ug/L	2430	Standard
Sr	88	70.0	32.7				ug/L	75	Standard
C	12	173.3	17.6				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	363.3	43.9				mg/L	7	Standard
Dy	164	148.9	37.7				mg/L	9	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	23.3	89.2				mg/L	23	Standard
I	127	6463.1	9.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.304	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.109
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.131
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 20:52:16
Number of Replicates: 3
Autosampler Position: 115
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74727.2	2.6				ug/L	74916	Standard
	Be	9	25.0	80.0	**0.0199**	0.018	92.2	ug/L	10	Standard
	Al	27	5329.3	24.9	**0.0285**	0.008	27.8	ug/L	1822	Standard
	Sc	45	43377.0	2.4				ug/L	55220	Standard
	Ti	47	95.7	19.0	**0.2005**	0.047	23.3	ug/L	34	Standard
	V	51	4034.0	3.0	**0.3136**	0.012	4.0	ug/L	1938	Standard
	Cr	52	16438.9	5.2	**1.0993**	0.075	6.8	ug/L	9522	Standard
	Cr	53	685.0	9.8	**0.3309**	0.059	17.8	ug/L	395	Standard
	Mn	55	2971.0	23.2	**0.3001**	0.100	33.3	ug/L	902	Standard
	Co	59	289.7	6.6	**0.0189**	0.003	18.3	ug/L	262	Standard
	Ni	60	402.7	3.2	**0.0647**	0.006	10.0	ug/L	371	Standard
	Cu	65	334.0	2.3	**0.1185**	0.004	3.2	ug/L	106	Standard
	Zn	66	962.7	2.9	**0.5205**	0.017	3.3	ug/L	398	Standard
>	**Ge**	72	457222.8	1.7				ug/L	535147	Standard
	As	75	-15.7	124.6	**0.0417**	0.017	40.7	ug/L	-43	Standard
	Se	82	18.9	33.3	**0.0666**	0.057	85.8	ug/L	14	Standard
	Se-1	77	54.0	10.3	**0.1196**	0.060	50.6	ug/L	65	Standard
>	**Ga**	71	70.0	31.1				mg/L	97	Standard
	Rb	85	136.7	13.9				ug/L	15	Standard
	Y	89	396044.5	2.4				ug/L	465704	Standard
>	**Rh**	103	15.0	0.0				ug/L	10	Standard
	Mo	98	6104.3	29.3	**2.1953**	0.662	30.2	ug/L	9	Standard
	Ag	107	146.0	16.1	**0.0155**	0.003	22.0	ug/L	82	Standard
	Cd	111	22.1	12.0	**0.0181**	0.001	7.5	mg/L	7	Standard
	Cd	114	72.7	19.8	**0.0229**	0.003	12.7	ug/L	21	Standard
>	**In**	115	556161.3	1.4				ug/L	619035	Standard
	Sn	118	1453.4	5.0	**0.1451**	0.011	7.5	ug/L	508	Standard
	Sb	123	235.3	31.1	**0.0540**	0.016	29.5	ug/L	86	Standard
	Ba	135	137.3	10.9	**0.0472**	0.007	14.8	ug/L	79	Standard
	Ce	140	118.3	17.6				ug/L	68	Standard
>	**Tb**	159	853667.4	0.8				ug/L	986982	Standard
	Ho	165	16.7	45.8				ug/L	10	Standard
	Tl	203	839.7	20.5	**0.1050**	0.021	20.1	ug/L	13	Standard
	Tl	205	71.7	33.0	**0.0176**	0.003	18.3	ug/L	10	Standard
	Pb	206	351.7	6.0	**0.0268**	0.004	16.6	ug/L	264	Standard
	Pb	207	304.0	1.1	**0.0285**	0.001	4.5	ug/L	227	Standard
	Pb	208	1256.4	10.7	**0.0278**	0.007	25.6	ug/L	868	Standard
	U	238	77.3	38.0	**0.0189**	0.004	22.5	ug/L	8	Standard
>	**Bi**	209	503236.8	1.0				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	275.0	13.7	**0.3470**	0.051	14.8	mg/L	53	Standard
K	39	20.0	25.0	**-0.0326**	0.012	36.3	mg/L	53	Standard
Ca	43	31.7	50.8	**0.6274**	1.227	195.5	mg/L	28	Standard
Fe	54	68.3	18.4	**-0.0594**	0.012	19.5	mg/L	181	Standard
Fe	57	256.7	12.4	**0.2034**	0.114	56.2	mg/L	257	Standard
> **Sc-1**	45	43377.0	2.4				mg/L	55220	Standard
Cl	35	35122.0	1.2				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1736.8	10.5				ug/L	2040	Standard
P	31	8842.6	4.7				ug/L	20435	Standard
S	34	2135.2	4.7				ug/L	2430	Standard
Sr	88	68.3	18.4				ug/L	75	Standard
C	12	3483.7	8.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	57892.0	25.9				mg/L	7	Standard
Dy	164	3.2	186.4				mg/L	9	Standard
Ho-1	165	16.7	45.8				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	23	Standard
I	127	2947.0	35.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.747	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		85.439	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.843
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.017
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L
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Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 20:55:28
Number of Replicates: 3
Autosampler Position: 115
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74107.6	3.4				ug/L	74916	Standard
	Be	9	18.3	31.5	**0.0141**	0.006	42.8	ug/L	10	Standard
	Al	27	4844.5	86.9	**0.0263**	0.026	97.1	ug/L	1822	Standard
	Sc	45	44092.4	0.2				ug/L	55220	Standard
	Ti	47	70.3	15.9	**0.1280**	0.034	26.6	ug/L	34	Standard
	V	51	4108.2	2.7	**0.3192**	0.020	6.3	ug/L	1938	Standard
	Cr	52	16358.2	1.0	**1.0734**	0.017	1.6	ug/L	9522	Standard
	Cr	53	638.3	11.9	**0.2775**	0.078	28.3	ug/L	395	Standard
	Mn	55	3246.8	71.9	**0.3361**	0.323	96.1	ug/L	902	Standard
	Co	59	336.3	57.6	**0.0254**	0.028	112.0	ug/L	262	Standard
	Ni	60	401.7	10.9	**0.0628**	0.025	40.4	ug/L	371	Standard
	Cu	65	302.7	3.1	**0.1006**	0.005	4.6	ug/L	106	Standard
	Zn	66	958.0	2.9	**0.5097**	0.017	3.3	ug/L	398	Standard
>	**Ge**	72	460737.3	1.2				ug/L	535147	Standard
	As	75	-51.4	19.2	**0.0107**	0.008	79.3	ug/L	-43	Standard
	Se	82	17.6	15.9	**0.0542**	0.026	47.9	ug/L	14	Standard
	Se-1	77	52.0	10.7	**0.0890**	0.070	78.3	ug/L	65	Standard
>	**Ga**	71	48.3	15.8				mg/L	97	Standard
	Rb	85	86.7	23.3				ug/L	15	Standard
	Y	89	392306.0	1.1				ug/L	465704	Standard
>	**Rh**	103	26.7	75.8				ug/L	10	Standard
	Mo	98	3317.0	55.2	**1.2027**	0.666	55.4	ug/L	9	Standard
	Ag	107	87.3	8.1	**0.0068**	0.001	17.4	ug/L	82	Standard
	Cd	111	7.2	41.2	**0.0112**	0.001	11.8	mg/L	7	Standard
	Cd	114	32.4	63.2	**0.0151**	0.004	26.2	ug/L	21	Standard
>	**In**	115	555514.4	1.5				ug/L	619035	Standard
	Sn	118	1463.4	7.7	**0.1472**	0.019	12.7	ug/L	508	Standard
	Sb	123	120.8	37.8	**0.0299**	0.010	33.0	ug/L	86	Standard
	Ba	135	91.7	10.3	**0.0250**	0.004	16.5	ug/L	79	Standard
	Ce	140	56.7	58.8				ug/L	68	Standard
>	**Tb**	159	847707.0	2.4				ug/L	986982	Standard
	Ho	165	16.7	86.6				ug/L	10	Standard
	Tl	203	394.0	52.5	**0.0527**	0.025	47.6	ug/L	13	Standard
	Tl	205	63.3	139.1	**0.0165**	0.012	74.7	ug/L	10	Standard
	Pb	206	291.3	3.6	**0.0157**	0.003	16.4	ug/L	264	Standard
	Pb	207	294.3	19.3	**0.0266**	0.012	46.6	ug/L	227	Standard
	Pb	208	1276.7	28.9	**0.0290**	0.020	70.5	ug/L	868	Standard
	U	238	51.3	151.3	**0.0153**	0.011	73.4	ug/L	8	Standard
>	**Bi**	209	503355.5	1.6				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	240.0	22.0	**0.2930**	0.072	24.6	mg/L	53	Standard
K	39	33.3	17.3	**-0.0052**	0.012	235.9	mg/L	53	Standard
Ca	43	15.0	33.3	**-0.6108**	0.355	58.1	mg/L	28	Standard
Fe	54	49.8	55.4	**-0.0762**	0.024	30.8	mg/L	181	Standard
Fe	57	285.0	10.7	**0.2825**	0.101	35.6	mg/L	257	Standard
> **Sc-1**	45	44092.4	0.2				mg/L	55220	Standard
Cl	35	35796.9	0.4				ug/L	35504	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	1746.8	6.3				ug/L	2040	Standard
P	31	8695.8	2.3				ug/L	20435	Standard
S	34	2180.2	3.8				ug/L	2430	Standard
Sr	88	55.0	41.7				ug/L	75	Standard
C	12	3950.5	2.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	28517.7	48.5				mg/L	7	Standard
Dy	164	5.7	108.5				mg/L	9	Standard
Ho-1	165	16.7	86.6				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	23	Standard
I	127	1731.8	10.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.920	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		86.095	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.739
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.039
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L
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Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 20:58:40
Number of Replicates: 3
Autosampler Position: 115
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72422.8	2.6				ug/L	74916	Standard
	Be	9	18.3	56.8	**0.0142**	0.010	68.2	ug/L	10	Standard
	Al	27	2110.1	8.4	**0.0102**	0.001	9.1	ug/L	1822	Standard
	Sc	45	43602.7	1.2				ug/L	55220	Standard
	Ti	47	62.3	13.8	**0.1046**	0.022	21.3	ug/L	34	Standard
	V	51	4028.3	2.4	**0.3078**	0.013	4.3	ug/L	1938	Standard
	Cr	52	16458.3	3.4	**1.0804**	0.041	3.8	ug/L	9522	Standard
	Cr	53	546.7	4.5	**0.1805**	0.026	14.2	ug/L	395	Standard
	Mn	55	1820.4	5.7	**0.1401**	0.013	9.1	ug/L	902	Standard
	Co	59	213.3	4.3	**0.0075**	0.001	16.9	ug/L	262	Standard
	Ni	60	381.0	3.9	**0.0513**	0.005	10.6	ug/L	371	Standard
	Cu	65	257.7	3.0	**0.0766**	0.006	8.0	ug/L	106	Standard
	Zn	66	935.0	3.8	**0.4873**	0.039	8.0	ug/L	398	Standard
>	**Ge**	72	461930.2	1.5				ug/L	535147	Standard
	As	75	-37.3	19.8	**0.0230**	0.006	26.4	ug/L	-43	Standard
	Se	82	18.4	28.2	**0.0606**	0.045	74.8	ug/L	14	Standard
	Se-1	77	54.7	14.7	**0.1228**	0.114	93.0	ug/L	65	Standard
>	**Ga**	71	36.7	34.3				mg/L	97	Standard
	Rb	85	78.3	20.5				ug/L	15	Standard
	Y	89	395553.6	0.8				ug/L	465704	Standard
>	**Rh**	103	25.0	40.0				ug/L	10	Standard
	Mo	98	1932.5	55.0	**0.7046**	0.386	54.7	ug/L	9	Standard
	Ag	107	81.0	10.1	**0.0059**	0.001	18.7	ug/L	82	Standard
	Cd	111	4.7	45.9	**0.0100**	0.001	10.0	mg/L	7	Standard
	Cd	114	20.4	173.1	**0.0128**	0.007	52.5	ug/L	21	Standard
>	**In**	115	555907.9	1.0				ug/L	619035	Standard
	Sn	118	1288.4	3.8	**0.1170**	0.006	5.4	ug/L	508	Standard
	Sb	123	110.1	37.8	**0.0276**	0.009	32.4	ug/L	86	Standard
	Ba	135	80.7	1.9	**0.0197**	0.001	5.7	ug/L	79	Standard
	Ce	140	45.0	19.2				ug/L	68	Standard
>	**Tb**	159	849258.9	2.2				ug/L	986982	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	249.3	55.6	**0.0354**	0.017	46.9	ug/L	13	Standard
	Tl	205	13.3	43.3	**0.0095**	0.001	8.6	ug/L	10	Standard
	Pb	206	280.0	3.7	**0.0134**	0.002	17.0	ug/L	264	Standard
	Pb	207	248.0	10.3	**0.0169**	0.005	27.4	ug/L	227	Standard
	Pb	208	1027.7	1.3	**0.0156**	0.001	3.2	ug/L	868	Standard
	U	238	6.7	62.4	**0.0088**	0.001	6.7	ug/L	8	Standard
>	**Bi**	209	504972.6	1.1				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	248.3	7.6	**0.3084**	0.030	9.7	mg/L	53	Standard
K	39	43.3	13.3	**0.0172**	0.013	78.0	mg/L	53	Standard
Ca	43	26.7	10.8	**0.2394**	0.228	95.3	mg/L	28	Standard
Fe	54	66.3	9.6	**-0.0616**	0.006	9.0	mg/L	181	Standard
Fe	57	245.0	13.4	**0.1599**	0.120	74.9	mg/L	257	Standard
> **Sc-1**	45	43602.7	1.2				mg/L	55220	Standard
Cl	35	35767.5	0.9				ug/L	35504	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	1663.4	4.1				ug/L	2040	Standard
P	31	8655.8	4.9				ug/L	20435	Standard
S	34	2086.8	3.5				ug/L	2430	Standard
Sr	88	85.0	5.9				ug/L	75	Standard
C	12	3550.4	2.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	17669.1	55.9				mg/L	7	Standard
Dy	164	16.2	33.1				mg/L	9	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	1548.4	10.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		96.671	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		86.318	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	89.802	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	93.338	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 21:01:53
Number of Replicates: 3
Autosampler Position: 115
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70967.6	3.2				ug/L	74916	Standard
	Be	9	10.0	50.0	**0.0065**	0.005	81.8	ug/L	10	Standard
	Al	27	1825.1	2.1	**0.0088**	0.001	6.7	ug/L	1822	Standard
	Sc	45	43183.1	1.3				ug/L	55220	Standard
	Ti	47	46.3	10.0	**0.0615**	0.015	24.5	ug/L	34	Standard
	V	51	4031.9	5.4	**0.3136**	0.018	5.7	ug/L	1938	Standard
	Cr	52	16465.3	2.4	**1.1053**	0.012	1.1	ug/L	9522	Standard
	Cr	53	573.3	5.6	**0.2154**	0.045	21.0	ug/L	395	Standard
	Mn	55	1795.8	0.8	**0.1395**	0.003	1.9	ug/L	902	Standard
	Co	59	228.3	2.0	**0.0100**	0.000	2.6	ug/L	262	Standard
	Ni	60	389.7	3.5	**0.0581**	0.009	14.9	ug/L	371	Standard
	Cu	65	286.3	12.8	**0.0934**	0.020	21.5	ug/L	106	Standard
	Zn	66	959.7	10.4	**0.5177**	0.074	14.3	ug/L	398	Standard
>	**Ge**	72	456824.0	1.9				ug/L	535147	Standard
	As	75	-60.5	32.8	**0.0024**	0.017	692.6	ug/L	-43	Standard
	Se	82	14.4	53.7	**0.0273**	0.066	241.8	ug/L	14	Standard
	Se-1	77	56.3	14.3	**0.1501**	0.094	62.3	ug/L	65	Standard
>	**Ga**	71	46.7	22.3				mg/L	97	Standard
	Rb	85	66.7	8.7				ug/L	15	Standard
	Y	89	394406.6	2.8				ug/L	465704	Standard
>	**Rh**	103	28.3	81.5				ug/L	10	Standard
	Mo	98	1379.0	55.6	**0.5084**	0.282	55.5	ug/L	9	Standard
	Ag	107	93.3	14.9	**0.0077**	0.002	24.1	ug/L	82	Standard
	Cd	111	2.7	63.5	**0.0091**	0.001	8.5	mg/L	7	Standard
	Cd	114	13.3	104.0	**0.0114**	0.003	22.5	ug/L	21	Standard
>	**In**	115	555788.7	2.3				ug/L	619035	Standard
	Sn	118	1306.7	4.4	**0.1202**	0.006	5.3	ug/L	508	Standard
	Sb	123	85.1	34.7	**0.0224**	0.007	29.2	ug/L	86	Standard
	Ba	135	84.7	11.8	**0.0216**	0.005	23.1	ug/L	79	Standard
	Ce	140	26.7	43.3				ug/L	68	Standard
>	**Tb**	159	844220.8	1.6				ug/L	986982	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	157.7	52.2	**0.0247**	0.010	40.0	ug/L	13	Standard
	Tl	205	8.3	69.3	**0.0088**	0.001	8.9	ug/L	10	Standard
	Pb	206	291.7	1.0	**0.0159**	0.001	6.1	ug/L	264	Standard
	Pb	207	254.3	4.8	**0.0186**	0.002	11.0	ug/L	227	Standard
	Pb	208	1047.3	0.4	**0.0170**	0.000	2.4	ug/L	868	Standard
	U	238	3.7	15.7	**0.0084**	0.000	1.0	ug/L	8	Standard
>	**Bi**	209	501630.8	0.9				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	171.7	16.0	**0.2049**	0.040	19.6	mg/L	53	Standard
K	39	36.7	7.9	**0.0036**	0.007	182.4	mg/L	53	Standard
Ca	43	20.0	43.3	**-0.2251**	0.633	281.0	mg/L	28	Standard
Fe	54	62.0	32.2	**-0.0648**	0.017	25.9	mg/L	181	Standard
Fe	57	311.7	15.6	**0.3918**	0.153	39.0	mg/L	257	Standard
> **Sc-1**	45	43183.1	1.3				mg/L	55220	Standard
Cl	35	36534.0	0.8				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1630.1	4.4				ug/L	2040	Standard
P	31	8617.5	1.2				ug/L	20435	Standard
S	34	2181.8	2.4				ug/L	2430	Standard
Sr	88	70.0	7.1				ug/L	75	Standard
C	12	3767.1	7.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	12269.4	57.6				mg/L	7	Standard
Dy	164	9.4	117.2				mg/L	9	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	13.3	173.2				mg/L	23	Standard
I	127	1266.7	12.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.729	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		85.364	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.783
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.720
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 21:05:05
Number of Replicates: 3
Autosampler Position: 115
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71520.1	2.1				ug/L	74916	Standard
	Be	9	11.7	65.5	**0.0081**	0.008	97.6	ug/L	10	Standard
	Al	27	1998.5	3.6	**0.0097**	0.001	7.1	ug/L	1822	Standard
	Sc	45	44115.8	2.0				ug/L	55220	Standard
	Ti	47	47.7	12.6	**0.0657**	0.019	28.6	ug/L	34	Standard
	V	51	4000.4	3.0	**0.3117**	0.010	3.2	ug/L	1938	Standard
	Cr	52	16493.6	3.3	**1.1165**	0.023	2.1	ug/L	9522	Standard
	Cr	53	511.7	6.5	**0.1519**	0.031	20.7	ug/L	395	Standard
	Mn	55	1810.4	3.6	**0.1425**	0.010	6.8	ug/L	902	Standard
	Co	59	200.3	4.5	**0.0061**	0.001	16.1	ug/L	262	Standard
	Ni	60	365.0	4.2	**0.0460**	0.012	26.4	ug/L	371	Standard
	Cu	65	258.7	3.1	**0.0791**	0.002	2.4	ug/L	106	Standard
	Zn	66	938.4	6.5	**0.5027**	0.058	11.5	ug/L	398	Standard
>	**Ge**	72	455193.4	2.3				ug/L	535147	Standard
	As	75	-21.6	123.1	**0.0365**	0.023	63.2	ug/L	-43	Standard
	Se	82	21.3	13.5	**0.0879**	0.025	28.1	ug/L	14	Standard
	Se-1	77	54.0	21.0	**0.1214**	0.131	107.7	ug/L	65	Standard
>	**Ga**	71	41.7	36.7				mg/L	97	Standard
	Rb	85	68.3	29.6				ug/L	15	Standard
	Y	89	395254.2	2.3				ug/L	465704	Standard
>	**Rh**	103	31.7	9.1				ug/L	10	Standard
	Mo	98	1044.1	52.0	**0.3862**	0.198	51.3	ug/L	9	Standard
	Ag	107	86.3	9.3	**0.0066**	0.001	15.4	ug/L	82	Standard
	Cd	111	1.5	101.2	**0.0086**	0.001	8.3	mg/L	7	Standard
	Cd	114	22.1	38.8	**0.0131**	0.002	12.5	ug/L	21	Standard
>	**In**	115	556687.6	1.3				ug/L	619035	Standard
	Sn	118	1351.7	12.8	**0.1278**	0.032	25.1	ug/L	508	Standard
	Sb	123	82.0	27.7	**0.0217**	0.005	23.0	ug/L	86	Standard
	Ba	135	86.0	10.1	**0.0222**	0.005	20.9	ug/L	79	Standard
	Ce	140	31.7	59.8				ug/L	68	Standard
>	**Tb**	159	840648.0	0.2				ug/L	986982	Standard
	Ho	165	1.7	173.2				ug/L	10	Standard
	Tl	203	128.7	56.4	**0.0213**	0.009	41.0	ug/L	13	Standard
	Tl	205	13.3	43.3	**0.0095**	0.001	8.7	ug/L	10	Standard
	Pb	206	282.3	1.0	**0.0143**	0.001	9.6	ug/L	264	Standard
	Pb	207	227.7	8.2	**0.0133**	0.005	34.0	ug/L	227	Standard
	Pb	208	1009.3	4.5	**0.0151**	0.003	19.8	ug/L	868	Standard
	U	238	9.0	29.4	**0.0092**	0.000	4.0	ug/L	8	Standard
>	**Bi**	209	500253.7	1.7				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	211.7	3.6	**0.2541**	0.005	2.0	mg/L	53	Standard
K	39	25.0	40.0	**-0.0231**	0.020	87.4	mg/L	53	Standard
Ca	43	18.3	15.7	**-0.3774**	0.183	48.6	mg/L	28	Standard
Fe	54	62.0	25.1	**-0.0660**	0.012	18.6	mg/L	181	Standard
Fe	57	230.0	10.0	**0.0993**	0.068	68.3	mg/L	257	Standard
Sc-1	45	44115.8	2.0				mg/L	55220	Standard
Cl	35	36965.0	0.6				ug/L	35504	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	1676.8	11.7				ug/L	2040	Standard
P	31	8922.6	3.5				ug/L	20435	Standard
S	34	2015.1	2.7				ug/L	2430	Standard
Sr	88	75.0	24.0				ug/L	75	Standard
C	12	3437.1	3.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	8963.2	57.5				mg/L	7	Standard
Dy	164	6.0	93.6				mg/L	9	Standard
Ho-1	165	1.7	173.2				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	1223.4	8.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.467	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		85.060	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.928
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.466
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 21:08:17
Number of Replicates: 3
Autosampler Position: 115
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79091.8	20.9				ug/L	74916	Standard
	Be	9	11.7	89.2	**0.0084**	0.011	129.8	ug/L	10	Standard
	Al	27	2535.3	65.2	**0.0130**	0.012	88.5	ug/L	1822	Standard
	Sc	45	46831.6	14.3				ug/L	55220	Standard
	Ti	47	69.7	56.4	**0.1207**	0.113	93.8	ug/L	34	Standard
	V	51	2046.5	53.7	**0.0549**	0.148	270.3	ug/L	1938	Standard
	Cr	52	8324.7	51.7	**0.0115**	0.602	5252.2	ug/L	9522	Standard
	Cr	53	435.0	32.0	**0.0505**	0.173	343.3	ug/L	395	Standard
	Mn	55	1487.1	61.3	**0.0934**	0.137	146.6	ug/L	902	Standard
	Co	59	228.0	22.1	**0.0085**	0.010	121.0	ug/L	262	Standard
	Ni	60	318.3	14.8	**0.0117**	0.033	284.7	ug/L	371	Standard
	Cu	65	185.0	23.0	**0.0347**	0.028	81.3	ug/L	106	Standard
	Zn	66	569.7	56.9	**0.1528**	0.310	203.0	ug/L	398	Standard
>	**Ge**	72	489383.6	10.3				ug/L	535147	Standard
	As	75	12.9	27.7	**0.0660**	0.004	5.6	ug/L	-43	Standard
	Se	82	28.6	46.2	**0.1408**	0.122	86.4	ug/L	14	Standard
	Se-1	77	40.0	7.5	**-0.0938**	0.040	42.9	ug/L	65	Standard
>	**Ga**	71	38.3	27.2				mg/L	97	Standard
	Rb	85	101.7	56.8				ug/L	15	Standard
	Y	89	433042.0	13.5				ug/L	465704	Standard
>	**Rh**	103	33.3	56.8				ug/L	10	Standard
	Mo	98	897.2	72.7	**0.3249**	0.253	77.9	ug/L	9	Standard
	Ag	107	121.0	8.1	**0.0105**	0.004	35.8	ug/L	82	Standard
	Cd	111	8.3	145.2	**0.0119**	0.006	50.5	mg/L	7	Standard
	Cd	114	50.3	126.0	**0.0188**	0.013	70.7	ug/L	21	Standard
>	**In**	115	612202.9	13.4				ug/L	619035	Standard
	Sn	118	860.0	54.7	**0.0372**	0.087	234.5	ug/L	508	Standard
	Sb	123	103.8	56.3	**0.0253**	0.013	52.6	ug/L	86	Standard
	Ba	135	77.7	64.8	**0.0170**	0.027	158.0	ug/L	79	Standard
	Ce	140	131.7	91.5				ug/L	68	Standard
>	**Tb**	159	976671.3	15.8				ug/L	986982	Standard
	Ho	165	13.3	57.3				ug/L	10	Standard
	Tl	203	125.3	82.5	**0.0201**	0.013	66.3	ug/L	13	Standard
	Tl	205	36.7	90.8	**0.0126**	0.005	40.2	ug/L	10	Standard
	Pb	206	330.0	2.8	**0.0154**	0.009	56.4	ug/L	264	Standard
	Pb	207	286.0	5.8	**0.0176**	0.007	41.7	ug/L	227	Standard
	Pb	208	1154.7	6.9	**0.0148**	0.007	44.9	ug/L	868	Standard
	U	238	30.3	130.6	**0.0122**	0.006	48.8	ug/L	8	Standard
>	**Bi**	209	583026.9	16.2				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	126.7	59.8	**0.1391**	0.115	82.4	mg/L	53	Standard
K	39	33.3	56.8	**-0.0074**	0.041	553.5	mg/L	53	Standard
Ca	43	25.0	52.9	**0.0888**	1.136	1278.0	mg/L	28	Standard
Fe	54	85.7	21.5	**-0.0476**	0.024	49.4	mg/L	181	Standard
Fe	57	338.3	4.3	**0.4110**	0.186	45.2	mg/L	257	Standard
> **Sc-1**	45	46831.6	14.3				mg/L	55220	Standard
Cl	35	23783.5	26.5				ug/L	35504	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	970.0	32.6				ug/L	2040	Standard
P	31	9866.7	27.4				ug/L	20435	Standard
S	34	1328.4	29.5				ug/L	2430	Standard
Sr	88	88.3	25.5				ug/L	75	Standard
C	12	1143.4	80.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6285.3	85.7				mg/L	7	Standard
Dy	164	19.4	2.9				mg/L	9	Standard
Ho-1	165	13.3	57.3				mg/L	10	Standard
Er	166	13.3	86.6				mg/L	23	Standard
I	127	1403.4	57.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.573	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		91.448	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.896	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	107.766	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 21:11:29
Number of Replicates: 3
Autosampler Position: 116
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68032.5	2.4				ug/L	74916	Standard
	Be	9	15.0	33.3	**0.0121**	0.005	44.8	ug/L	10	Standard
	Al	27	1520.1	11.9	**0.0073**	0.001	12.3	ug/L	1822	Standard
	Sc	45	44854.6	1.7				ug/L	55220	Standard
	Ti	47	28.3	13.4	**0.0111**	0.011	99.2	ug/L	34	Standard
	V	51	1373.4	4.7	**-0.0209**	0.006	27.4	ug/L	1938	Standard
	Cr	52	6353.7	0.6	**-0.2036**	0.017	8.4	ug/L	9522	Standard
	Cr	53	455.0	13.2	**0.0946**	0.057	59.7	ug/L	395	Standard
	Mn	55	597.0	2.1	**-0.0230**	0.002	9.0	ug/L	902	Standard
	Co	59	202.7	3.0	**0.0066**	0.001	9.2	ug/L	262	Standard
	Ni	60	304.3	5.9	**0.0151**	0.011	70.9	ug/L	371	Standard
	Cu	65	150.7	0.8	**0.0220**	0.001	3.9	ug/L	106	Standard
	Zn	66	281.0	12.5	**-0.0907**	0.034	37.1	ug/L	398	Standard
>	**Ge**	72	452431.5	1.5				ug/L	535147	Standard
	As	75	-52.0	87.3	**0.0089**	0.041	462.8	ug/L	-43	Standard
	Se	82	17.7	69.0	**0.0566**	0.104	184.5	ug/L	14	Standard
	Se-1	77	45.3	9.9	**0.0146**	0.068	469.5	ug/L	65	Standard
>	**Ga**	71	31.7	9.1				mg/L	97	Standard
	Rb	85	43.3	56.9				ug/L	15	Standard
	Y	89	399241.3	2.0				ug/L	465704	Standard
>	**Rh**	103	28.3	20.4				ug/L	10	Standard
	Mo	98	105.1	18.7	**0.0502**	0.008	15.0	ug/L	9	Standard
	Ag	107	88.0	11.0	**0.0070**	0.001	18.6	ug/L	82	Standard
	Cd	111	2.8	95.0	**0.0092**	0.001	13.5	mg/L	7	Standard
	Cd	114	12.9	40.7	**0.0114**	0.001	8.9	ug/L	21	Standard
>	**In**	115	552377.7	1.3				ug/L	619035	Standard
	Sn	118	451.7	11.2	**-0.0256**	0.010	37.7	ug/L	508	Standard
	Sb	123	75.5	18.8	**0.0204**	0.003	15.3	ug/L	86	Standard
	Ba	135	23.0	26.4	**-0.0084**	0.003	34.2	ug/L	79	Standard
	Ce	140	28.3	27.0				ug/L	68	Standard
>	**Tb**	159	829888.8	1.2				ug/L	986982	Standard
	Ho	165	6.7	173.2				ug/L	10	Standard
	Tl	203	11.3	5.1	**0.0074**	0.000	1.0	ug/L	13	Standard
	Tl	205	6.7	43.3	**0.0086**	0.000	4.8	ug/L	10	Standard
	Pb	206	245.0	4.9	**0.0084**	0.002	26.2	ug/L	264	Standard
	Pb	207	199.0	4.6	**0.0083**	0.002	29.5	ug/L	227	Standard
	Pb	208	835.0	4.7	**0.0068**	0.002	35.3	ug/L	868	Standard
	U	238	6.3	24.1	**0.0088**	0.000	2.4	ug/L	8	Standard
>	**Bi**	209	490010.4	1.3				ug/L	541014	Standard

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Na	23	3.3	173.2	**23.0691**	39.948	173.2	mg/L	2	Standard
Mg	24	63.3	39.7	**0.0506**	0.034	67.3	mg/L	53	Standard
K	39	40.0	33.1	**0.0078**	0.029	370.2	mg/L	53	Standard
Ca	43	28.3	50.9	**0.2915**	0.970	332.9	mg/L	28	Standard
Fe	54	92.7	32.9	**-0.0409**	0.026	63.3	mg/L	181	Standard
Fe	57	283.3	28.6	**0.2638**	0.276	104.6	mg/L	257	Standard
Sc-1	45	44854.6	1.7				mg/L	55220	Standard
Cl	35	38032.3	1.6				ug/L	35504	Standard
Kr	83	1.7	124.9				ug/L	2	Standard
Br	81	1593.4	9.4				ug/L	2040	Standard
P	31	12683.6	1.9				ug/L	20435	Standard
S	34	2303.5	2.6				ug/L	2430	Standard
Sr	88	75.0	40.6				ug/L	75	Standard
C	12	130.0	23.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	7	Standard
Dy	164	9.5	100.0				mg/L	9	Standard
Ho-1	165	6.7	173.2				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	7281.8	4.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		90.811	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		84.543	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.232
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.573
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 21:14:41
Number of Replicates: 3
Autosampler Position: 116
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68866.2	2.2				ug/L	74916	Standard
	Be	9	16.7	69.3	**0.0137**	0.012	89.8	ug/L	10	Standard
	Al	27	1236.7	3.0	**0.0054**	0.000	5.6	ug/L	1822	Standard
	Sc	45	44744.3	1.5				ug/L	55220	Standard
	Ti	47	30.0	20.3	**0.0150**	0.018	118.2	ug/L	34	Standard
	V	51	1428.1	4.2	**-0.0156**	0.010	66.8	ug/L	1938	Standard
	Cr	52	6350.3	0.8	**-0.2124**	0.008	3.9	ug/L	9522	Standard
	Cr	53	480.0	13.8	**0.1161**	0.062	53.6	ug/L	395	Standard
	Mn	55	557.7	5.1	**-0.0292**	0.003	9.3	ug/L	902	Standard
	Co	59	199.3	4.1	**0.0059**	0.002	26.9	ug/L	262	Standard
	Ni	60	314.0	9.2	**0.0186**	0.016	87.6	ug/L	371	Standard
	Cu	65	165.7	14.8	**0.0292**	0.013	43.5	ug/L	106	Standard
	Zn	66	281.7	4.8	**-0.0928**	0.011	11.9	ug/L	398	Standard
>	**Ge**	72	456950.4	1.7				ug/L	535147	Standard
	As	75	-61.8	37.2	**0.0010**	0.021	1957.9	ug/L	-43	Standard
	Se	82	14.6	27.6	**0.0286**	0.033	115.8	ug/L	14	Standard
	Se-1	77	52.0	10.7	**0.0956**	0.084	88.0	ug/L	65	Standard
>	**Ga**	71	45.0	33.3				mg/L	97	Standard
	Rb	85	35.0	37.8				ug/L	15	Standard
	Y	89	396910.4	1.2				ug/L	465704	Standard
>	**Rh**	103	31.7	32.9				ug/L	10	Standard
	Mo	98	81.1	8.9	**0.0413**	0.003	7.1	ug/L	9	Standard
	Ag	107	76.0	10.8	**0.0051**	0.001	22.4	ug/L	82	Standard
	Cd	111	3.5	58.0	**0.0095**	0.001	10.0	mg/L	7	Standard
	Cd	114	10.4	54.7	**0.0109**	0.001	10.0	ug/L	21	Standard
>	**In**	115	555953.8	1.2				ug/L	619035	Standard
	Sn	118	483.3	6.3	**-0.0208**	0.004	20.6	ug/L	508	Standard
	Sb	123	61.7	27.5	**0.0174**	0.004	21.0	ug/L	86	Standard
	Ba	135	17.7	31.2	**-0.0110**	0.003	25.3	ug/L	79	Standard
	Ce	140	28.3	66.8				ug/L	68	Standard
>	**Tb**	159	835275.0	2.0				ug/L	986982	Standard
	Ho	165	3.3	173.2				ug/L	10	Standard
	Tl	203	9.3	27.0	**0.0071**	0.000	4.1	ug/L	13	Standard
	Tl	205	10.0	50.0	**0.0091**	0.001	7.6	ug/L	10	Standard
	Pb	206	244.3	4.5	**0.0079**	0.002	19.6	ug/L	264	Standard
	Pb	207	203.3	6.9	**0.0089**	0.003	36.3	ug/L	227	Standard
	Pb	208	837.0	0.4	**0.0066**	0.000	5.6	ug/L	868	Standard
	U	238	3.7	41.7	**0.0084**	0.000	2.6	ug/L	8	Standard
>	**Bi**	209	493679.8	1.1				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	55.0	39.6	**0.0391**	0.028	71.6	mg/L	53	Standard
K	39	40.0	21.7	**0.0077**	0.018	229.4	mg/L	53	Standard
Ca	43	25.0	52.9	**0.0694**	0.922	1328.8	mg/L	28	Standard
Fe	54	86.2	14.3	**-0.0462**	0.011	23.1	mg/L	181	Standard
Fe	57	240.0	17.8	**0.1228**	0.148	120.6	mg/L	257	Standard
> **Sc-1**	45	44744.3	1.5				mg/L	55220	Standard
Cl	35	38930.6	1.7				ug/L	35504	Standard
Kr	83	2.7	43.3				ug/L	2	Standard
Br	81	1423.4	8.1				ug/L	2040	Standard
P	31	13542.8	9.7				ug/L	20435	Standard
S	34	2230.2	9.6				ug/L	2430	Standard
Sr	88	63.3	9.1				ug/L	75	Standard
C	12	106.7	30.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	2.9	203.0				mg/L	9	Standard
Ho-1	165	3.3	173.2				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	6659.8	6.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.924	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		85.388	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.810
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.251
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 21:17:53
Number of Replicates: 3
Autosampler Position: 116
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70512.1	1.9				ug/L	74916	Standard
	Be	9	13.3	43.3	**0.0099**	0.006	60.9	ug/L	10	Standard
	Al	27	1230.1	5.1	**0.0052**	0.000	6.2	ug/L	1822	Standard
	Sc	45	44657.4	2.0				ug/L	55220	Standard
	Ti	47	30.3	8.3	**0.0141**	0.007	48.4	ug/L	34	Standard
	V	51	1454.2	3.5	**-0.0161**	0.007	40.6	ug/L	1938	Standard
	Cr	52	6462.0	1.0	**-0.2150**	0.011	5.0	ug/L	9522	Standard
	Cr	53	418.3	0.7	**0.0430**	0.002	3.9	ug/L	395	Standard
	Mn	55	584.3	4.9	**-0.0272**	0.004	13.4	ug/L	902	Standard
	Co	59	213.0	12.1	**0.0072**	0.004	49.4	ug/L	262	Standard
	Ni	60	312.0	8.6	**0.0141**	0.013	94.7	ug/L	371	Standard
	Cu	65	165.7	5.6	**0.0274**	0.005	16.7	ug/L	106	Standard
	Zn	66	335.7	3.3	**-0.0503**	0.010	20.4	ug/L	398	Standard
>	**Ge**	72	466403.1	0.3				ug/L	535147	Standard
	As	75	-67.3	42.7	**-0.0024**	0.024	1031.7	ug/L	-43	Standard
	Se	82	8.0	106.3	**-0.0291**	0.072	247.4	ug/L	14	Standard
	Se-1	77	52.3	11.7	**0.0854**	0.080	93.8	ug/L	65	Standard
>	**Ga**	71	36.7	15.7				mg/L	97	Standard
	Rb	85	40.0	45.1				ug/L	15	Standard
	Y	89	406679.9	1.7				ug/L	465704	Standard
>	**Rh**	103	23.3	32.7				ug/L	10	Standard
	Mo	98	61.6	19.4	**0.0342**	0.004	12.7	ug/L	9	Standard
	Ag	107	80.7	11.5	**0.0057**	0.002	26.5	ug/L	82	Standard
	Cd	111	1.5	73.6	**0.0086**	0.001	6.0	mg/L	7	Standard
	Cd	114	20.3	46.0	**0.0128**	0.002	14.3	ug/L	21	Standard
>	**In**	115	560994.2	1.3				ug/L	619035	Standard
	Sn	118	548.3	9.6	**-0.0104**	0.009	90.2	ug/L	508	Standard
	Sb	123	47.7	27.8	**0.0144**	0.003	19.7	ug/L	86	Standard
	Ba	135	21.3	18.9	**-0.0093**	0.002	22.4	ug/L	79	Standard
	Ce	140	30.0	28.9				ug/L	68	Standard
>	**Tb**	159	855592.5	2.2				ug/L	986982	Standard
	Ho	165	6.7	114.6				ug/L	10	Standard
	Tl	203	5.7	97.2	**0.0067**	0.001	9.7	ug/L	13	Standard
	Tl	205	5.0	100.0	**0.0084**	0.001	8.3	ug/L	10	Standard
	Pb	206	239.0	2.2	**0.0064**	0.001	19.4	ug/L	264	Standard
	Pb	207	213.7	6.3	**0.0105**	0.003	29.4	ug/L	227	Standard
	Pb	208	840.3	4.1	**0.0062**	0.002	26.2	ug/L	868	Standard
	U	238	2.0	86.6	**0.0082**	0.000	3.1	ug/L	8	Standard
>	**Bi**	209	499713.5	0.8				ug/L	541014	Standard

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Na	23	1.7	173.2	**11.8358**	20.492	173.1	mg/L	2	Standard
Mg	24	53.3	51.6	**0.0373**	0.037	99.4	mg/L	53	Standard
K	39	40.0	45.1	**0.0081**	0.038	469.6	mg/L	53	Standard
Ca	43	18.3	78.7	**-0.3787**	1.044	275.8	mg/L	28	Standard
Fe	54	101.0	12.3	**-0.0336**	0.011	33.4	mg/L	181	Standard
Fe	57	258.3	8.1	**0.1828**	0.058	31.5	mg/L	257	Standard
Sc-1	45	44657.4	2.0				mg/L	55220	Standard
Cl	35	39868.4	0.5				ug/L	35504	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	1683.4	14.1				ug/L	2040	Standard
P	31	12468.5	0.6				ug/L	20435	Standard
S	34	2168.5	4.3				ug/L	2430	Standard
Sr	88	93.3	15.5				ug/L	75	Standard
C	12	116.7	60.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	-0.3	86.6				mg/L	9	Standard
Ho-1	165	6.7	114.6				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	23	Standard
I	127	5404.3	1.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		94.121	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		87.154	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.624
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.366
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 21:21:05
Number of Replicates: 3
Autosampler Position: 116
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69532.6	2.0				ug/L	74916	Standard
	Be	9	11.7	107.9	**0.0085**	0.013	155.7	ug/L	10	Standard
	Al	27	1261.7	3.6	**0.0055**	0.000	2.4	ug/L	1822	Standard
	Sc	45	44276.3	1.0				ug/L	55220	Standard
	Ti	47	26.3	4.4	**0.0035**	0.004	105.2	ug/L	34	Standard
	V	51	1388.4	2.7	**-0.0233**	0.006	24.3	ug/L	1938	Standard
	Cr	52	6486.7	0.7	**-0.2072**	0.012	5.7	ug/L	9522	Standard
	Cr	53	405.0	7.7	**0.0316**	0.032	101.9	ug/L	395	Standard
	Mn	55	617.7	1.1	**-0.0223**	0.002	7.0	ug/L	902	Standard
	Co	59	191.7	5.3	**0.0043**	0.001	28.3	ug/L	262	Standard
	Ni	60	323.7	12.1	**0.0210**	0.020	95.1	ug/L	371	Standard
	Cu	65	161.0	6.1	**0.0255**	0.006	22.4	ug/L	106	Standard
	Zn	66	333.3	4.6	**-0.0507**	0.012	23.5	ug/L	398	Standard
>	**Ge**	72	463825.0	0.7				ug/L	535147	Standard
	As	75	-56.2	16.5	**0.0068**	0.008	122.5	ug/L	-43	Standard
	Se	82	14.4	38.9	**0.0256**	0.047	183.0	ug/L	14	Standard
	Se-1	77	48.3	14.7	**0.0375**	0.088	235.9	ug/L	65	Standard
>	**Ga**	71	38.3	15.1				mg/L	97	Standard
	Rb	85	58.3	40.5				ug/L	15	Standard
	Y	89	397444.4	1.5				ug/L	465704	Standard
>	**Rh**	103	26.7	10.8				ug/L	10	Standard
	Mo	98	51.9	31.6	**0.0306**	0.006	18.6	ug/L	9	Standard
	Ag	107	86.0	9.9	**0.0065**	0.001	19.9	ug/L	82	Standard
	Cd	111	4.9	70.0	**0.0101**	0.002	15.3	mg/L	7	Standard
	Cd	114	3.6	328.3	**0.0096**	0.002	23.6	ug/L	21	Standard
>	**In**	115	562767.5	0.4				ug/L	619035	Standard
	Sn	118	671.7	10.1	**0.0101**	0.011	112.0	ug/L	508	Standard
	Sb	123	46.8	27.2	**0.0141**	0.003	18.5	ug/L	86	Standard
	Ba	135	23.7	6.5	**-0.0082**	0.001	9.0	ug/L	79	Standard
	Ce	140	21.7	35.3				ug/L	68	Standard
>	**Tb**	159	855180.1	0.4				ug/L	986982	Standard
	Ho	165	15.0	0.0				ug/L	10	Standard
	Tl	203	4.3	53.3	**0.0065**	0.000	4.2	ug/L	13	Standard
	Tl	205	5.0	100.0	**0.0084**	0.001	8.3	ug/L	10	Standard
	Pb	206	232.0	5.4	**0.0050**	0.002	45.1	ug/L	264	Standard
	Pb	207	201.0	15.5	**0.0079**	0.006	81.5	ug/L	227	Standard
	Pb	208	859.0	5.1	**0.0072**	0.002	32.4	ug/L	868	Standard
	U	238	1.3	43.3	**0.0081**	0.000	1.0	ug/L	8	Standard
>	**Bi**	209	500150.3	0.1				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	45.0	11.1	**0.0266**	0.006	23.2	mg/L	53	Standard
K	39	30.0	16.7	**-0.0125**	0.010	81.0	mg/L	53	Standard
Ca	43	8.3	91.7	**-1.0898**	0.535	49.1	mg/L	28	Standard
Fe	54	107.5	47.5	**-0.0271**	0.044	162.7	mg/L	181	Standard
Fe	57	278.3	8.5	**0.2562**	0.070	27.4	mg/L	257	Standard
> **Sc-1**	45	44276.3	1.0				mg/L	55220	Standard
Cl	35	39463.3	1.3				ug/L	35504	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1523.4	10.0				ug/L	2040	Standard
P	31	12618.6	4.2				ug/L	20435	Standard
S	34	2155.2	2.4				ug/L	2430	Standard
Sr	88	71.7	16.1				ug/L	75	Standard
C	12	113.3	5.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	9.4	114.5				mg/L	9	Standard
Ho-1	165	15.0	0.0				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	4117.2	7.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.814	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		86.672	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.910
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.447
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 21:24:18
Number of Replicates: 3
Autosampler Position: 116
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70078.4	0.8				ug/L	74916	Standard
	Be	9	13.3	21.7	**0.0099**	0.003	28.6	ug/L	10	Standard
	Al	27	1280.1	5.4	**0.0056**	0.000	7.4	ug/L	1822	Standard
	Sc	45	43723.0	1.0				ug/L	55220	Standard
	Ti	47	22.0	27.3	**-0.0089**	0.017	187.8	ug/L	34	Standard
	V	51	1515.7	2.4	**-0.0081**	0.005	58.8	ug/L	1938	Standard
	Cr	52	6681.5	1.2	**-0.1853**	0.011	5.9	ug/L	9522	Standard
	Cr	53	398.3	6.2	**0.0232**	0.024	105.4	ug/L	395	Standard
	Mn	55	625.7	3.4	**-0.0215**	0.002	11.4	ug/L	902	Standard
	Co	59	201.3	5.6	**0.0056**	0.002	30.5	ug/L	262	Standard
	Ni	60	326.3	2.3	**0.0218**	0.004	17.5	ug/L	371	Standard
	Cu	65	154.3	1.5	**0.0217**	0.001	6.3	ug/L	106	Standard
	Zn	66	362.7	5.5	**-0.0257**	0.019	73.1	ug/L	398	Standard
>	**Ge**	72	465484.6	0.4				ug/L	535147	Standard
	As	75	-39.2	24.9	**0.0216**	0.008	39.2	ug/L	-43	Standard
	Se	82	20.1	13.2	**0.0734**	0.022	30.6	ug/L	14	Standard
	Se-1	77	53.7	1.1	**0.1036**	0.010	10.0	ug/L	65	Standard
>	**Ga**	71	48.3	43.1				mg/L	97	Standard
	Rb	85	31.7	32.9				ug/L	15	Standard
	Y	89	401219.7	0.7				ug/L	465704	Standard
>	**Rh**	103	23.3	24.7				ug/L	10	Standard
	Mo	98	48.8	19.7	**0.0296**	0.003	11.4	ug/L	9	Standard
	Ag	107	74.7	8.6	**0.0048**	0.001	19.9	ug/L	82	Standard
	Cd	111	0.9	187.5	**0.0083**	0.001	9.4	mg/L	7	Standard
	Cd	114	23.8	79.8	**0.0134**	0.004	26.8	ug/L	21	Standard
>	**In**	115	561226.5	0.2				ug/L	619035	Standard
	Sn	118	665.0	10.1	**0.0093**	0.011	121.3	ug/L	508	Standard
	Sb	123	39.5	34.5	**0.0126**	0.003	22.4	ug/L	86	Standard
	Ba	135	21.0	21.8	**-0.0095**	0.002	23.5	ug/L	79	Standard
	Ce	140	16.7	34.6				ug/L	68	Standard
>	**Tb**	159	856155.5	0.8				ug/L	986982	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	3.7	15.7	**0.0064**	0.000	1.1	ug/L	13	Standard
	Tl	205	6.7	43.3	**0.0086**	0.000	4.6	ug/L	10	Standard
	Pb	206	233.3	6.1	**0.0051**	0.003	54.7	ug/L	264	Standard
	Pb	207	213.0	0.5	**0.0101**	0.000	2.5	ug/L	227	Standard
	Pb	208	875.7	2.1	**0.0079**	0.001	9.3	ug/L	868	Standard
	U	238	1.7	34.6	**0.0081**	0.000	1.0	ug/L	8	Standard
>	**Bi**	209	502169.3	0.6				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	48.3	21.5	**0.0320**	0.015	46.4	mg/L	53	Standard
K	39	40.0	33.1	**0.0099**	0.029	291.7	mg/L	53	Standard
Ca	43	8.3	69.3	**-1.0765**	0.420	39.0	mg/L	28	Standard
Fe	54	107.5	10.9	**-0.0263**	0.009	35.6	mg/L	181	Standard
Fe	57	255.0	17.0	**0.1894**	0.137	72.3	mg/L	257	Standard
Sc-1	45	43723.0	1.0				mg/L	55220	Standard
Cl	35	39852.4	2.0				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1556.7	12.4				ug/L	2040	Standard
P	31	12406.7	1.2				ug/L	20435	Standard
S	34	2413.5	4.0				ug/L	2430	Standard
Sr	88	101.7	15.8				ug/L	75	Standard
C	12	100.0	55.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	5.7	195.1				mg/L	9	Standard
Ho-1	165	8.3	69.3				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	23	Standard
I	127	3485.4	2.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.542	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		86.983	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.662
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.820
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 21:27:30
Number of Replicates: 3
Autosampler Position: 116
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70600.8	1.5				ug/L	74916	Standard
	Be	9	20.0	50.0	**0.0165**	0.010	61.3	ug/L	10	Standard
	Al	27	1301.7	8.3	**0.0056**	0.001	9.6	ug/L	1822	Standard
	Sc	45	43522.4	1.4				ug/L	55220	Standard
	Ti	47	21.0	16.5	**-0.0110**	0.010	89.8	ug/L	34	Standard
	V	51	1508.1	3.3	**-0.0070**	0.007	95.9	ug/L	1938	Standard
	Cr	52	6601.4	1.0	**-0.1862**	0.010	5.4	ug/L	9522	Standard
	Cr	53	400.0	3.3	**0.0296**	0.015	49.5	ug/L	395	Standard
	Mn	55	637.0	2.8	**-0.0190**	0.002	13.1	ug/L	902	Standard
	Co	59	213.0	3.3	**0.0076**	0.001	13.6	ug/L	262	Standard
	Ni	60	333.3	8.7	**0.0272**	0.015	54.0	ug/L	371	Standard
	Cu	65	145.7	8.0	**0.0180**	0.006	32.9	ug/L	106	Standard
	Zn	66	331.0	7.1	**-0.0506**	0.021	41.5	ug/L	398	Standard
>	**Ge**	72	460390.3	0.2				ug/L	535147	Standard
	As	75	-39.3	50.2	**0.0211**	0.017	80.5	ug/L	-43	Standard
	Se	82	18.5	30.7	**0.0620**	0.049	79.1	ug/L	14	Standard
	Se-1	77	51.3	11.4	**0.0811**	0.077	94.7	ug/L	65	Standard
>	**Ga**	71	43.3	6.7				mg/L	97	Standard
	Rb	85	43.3	35.3				ug/L	15	Standard
	Y	89	401358.3	0.8				ug/L	465704	Standard
>	**Rh**	103	31.7	63.8				ug/L	10	Standard
	Mo	98	50.7	21.3	**0.0304**	0.004	13.2	ug/L	9	Standard
	Ag	107	75.7	9.7	**0.0051**	0.001	19.9	ug/L	82	Standard
	Cd	111	3.3	17.8	**0.0094**	0.000	3.0	mg/L	7	Standard
	Cd	114	20.2	20.8	**0.0128**	0.001	6.2	ug/L	21	Standard
>	**In**	115	557303.8	1.0				ug/L	619035	Standard
	Sn	118	676.7	8.9	**0.0121**	0.010	86.8	ug/L	508	Standard
	Sb	123	37.0	29.8	**0.0122**	0.002	19.2	ug/L	86	Standard
	Ba	135	17.7	17.3	**-0.0110**	0.002	14.1	ug/L	79	Standard
	Ce	140	11.7	107.9				ug/L	68	Standard
>	**Tb**	159	848865.5	0.9				ug/L	986982	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	2.3	49.5	**0.0063**	0.000	2.2	ug/L	13	Standard
	Tl	205	6.7	114.6	**0.0086**	0.001	12.4	ug/L	10	Standard
	Pb	206	256.3	4.3	**0.0096**	0.001	15.5	ug/L	264	Standard
	Pb	207	197.3	10.3	**0.0072**	0.005	64.2	ug/L	227	Standard
	Pb	208	847.7	4.4	**0.0067**	0.002	30.4	ug/L	868	Standard
	U	238	2.0	100.0	**0.0082**	0.000	3.5	ug/L	8	Standard
>	**Bi**	209	499010.5	1.3				ug/L	541014	Standard

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Na	23	1.7	173.2	**11.7084**	20.271	173.1	mg/L	2	Standard
Mg	24	63.3	19.9	**0.0529**	0.016	30.8	mg/L	53	Standard
K	39	20.0	66.1	**-0.0329**	0.029	87.3	mg/L	53	Standard
Ca	43	28.3	56.7	**0.3528**	1.137	322.2	mg/L	28	Standard
Fe	54	82.7	9.2	**-0.0473**	0.006	11.9	mg/L	181	Standard
Fe	57	270.0	16.7	**0.2433**	0.139	57.0	mg/L	257	Standard
> **Sc-1**	45	43522.4	1.4				mg/L	55220	Standard
Cl	35	39770.1	1.0				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1510.1	10.0				ug/L	2040	Standard
P	31	12520.2	3.3				ug/L	20435	Standard
S	34	2190.2	0.6				ug/L	2430	Standard
Sr	88	75.0	46.7				ug/L	75	Standard
C	12	93.3	44.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	2.9	202.3				mg/L	9	Standard
Ho-1	165	8.3	34.6				mg/L	10	Standard
Er	166	10.0					mg/L	23	Standard
I	127	3380.4	5.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.239	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		86.031	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.028
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.236
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 21:30:42
Number of Replicates: 3
Autosampler Position: 116
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69370.1	1.4				ug/L	74916	Standard
	Be	9	21.7	58.1	**0.0186**	0.013	70.4	ug/L	10	Standard
	Al	27	1571.8	27.3	**0.0074**	0.003	34.1	ug/L	1822	Standard
	Sc	45	44480.2	0.8				ug/L	55220	Standard
	Ti	47	21.7	19.2	**-0.0093**	0.012	124.9	ug/L	34	Standard
	V	51	1499.6	0.8	**-0.0084**	0.002	24.0	ug/L	1938	Standard
	Cr	52	6590.4	1.1	**-0.1892**	0.009	4.5	ug/L	9522	Standard
	Cr	53	373.3	4.7	**0.0010**	0.019	1762.9	ug/L	395	Standard
	Mn	55	653.0	18.5	**-0.0170**	0.016	94.4	ug/L	902	Standard
	Co	59	211.3	7.9	**0.0073**	0.002	31.5	ug/L	262	Standard
	Ni	60	313.3	3.1	**0.0166**	0.005	29.3	ug/L	371	Standard
	Cu	65	154.0	8.0	**0.0222**	0.006	28.1	ug/L	106	Standard
	Zn	66	375.0	3.1	**-0.0118**	0.011	92.9	ug/L	398	Standard
>	**Ge**	72	461224.5	0.2				ug/L	535147	Standard
	As	75	-46.0	23.6	**0.0154**	0.009	60.6	ug/L	-43	Standard
	Se	82	16.5	5.6	**0.0443**	0.008	17.8	ug/L	14	Standard
	Se-1	77	46.7	16.2	**0.0196**	0.097	493.7	ug/L	65	Standard
>	**Ga**	71	41.7	30.2				mg/L	97	Standard
	Rb	85	48.3	93.9				ug/L	15	Standard
	Y	89	394283.2	1.4				ug/L	465704	Standard
>	**Rh**	103	41.7	56.7				ug/L	10	Standard
	Mo	98	53.6	27.3	**0.0317**	0.005	16.9	ug/L	9	Standard
	Ag	107	102.3	32.4	**0.0091**	0.005	54.6	ug/L	82	Standard
	Cd	111	13.2	154.6	**0.0140**	0.009	67.7	mg/L	7	Standard
	Cd	114	40.7	92.9	**0.0168**	0.007	43.7	ug/L	21	Standard
>	**In**	115	552172.5	0.5				ug/L	619035	Standard
	Sn	118	720.0	11.5	**0.0206**	0.014	67.3	ug/L	508	Standard
	Sb	123	47.0	26.3	**0.0144**	0.003	18.5	ug/L	86	Standard
	Ba	135	50.7	104.9	**0.0053**	0.026	496.0	ug/L	79	Standard
	Ce	140	40.0	86.6				ug/L	68	Standard
>	**Tb**	159	844324.6	0.6				ug/L	986982	Standard
	Ho	165	6.7	86.6				ug/L	10	Standard
	Tl	203	37.7	143.5	**0.0105**	0.006	61.4	ug/L	13	Standard
	Tl	205	6.7	43.3	**0.0086**	0.000	4.7	ug/L	10	Standard
	Pb	206	266.7	10.1	**0.0118**	0.005	42.1	ug/L	264	Standard
	Pb	207	223.7	12.9	**0.0128**	0.006	46.1	ug/L	227	Standard
	Pb	208	861.0	3.8	**0.0076**	0.002	22.5	ug/L	868	Standard
	U	238	6.7	96.4	**0.0089**	0.001	10.5	ug/L	8	Standard
>	**Bi**	209	496597.9	0.1				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	70.0	32.7	**0.0603**	0.032	52.9	mg/L	53	Standard
K	39	43.3	6.7	**0.0153**	0.007	43.0	mg/L	53	Standard
Ca	43	20.0	66.1	**-0.2660**	0.936	352.0	mg/L	28	Standard
Fe	54	87.5	28.3	**-0.0447**	0.021	47.5	mg/L	181	Standard
Fe	57	265.0	11.5	**0.2083**	0.096	45.9	mg/L	257	Standard
> **Sc-1**	45	44480.2	0.8				mg/L	55220	Standard
Cl	35	39214.7	1.5				ug/L	35504	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1540.1	12.0				ug/L	2040	Standard
P	31	12109.8	3.8				ug/L	20435	Standard
S	34	2268.5	5.2				ug/L	2430	Standard
Sr	88	85.0	17.6				ug/L	75	Standard
C	12	106.7	46.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	7	Standard
Dy	164	8.7	192.2				mg/L	9	Standard
Ho-1	165	6.7	86.6				mg/L	10	Standard
Er	166	26.7	43.3				mg/L	23	Standard
I	127	3217.0	6.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.597	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		86.187	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.199
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.790
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 21:33:54
Number of Replicates: 3
Autosampler Position: 116
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	90450.1	20.6				ug/L	74916	Standard
	Be	9	5.0	0.0	**0.0004**	0.001	173.7	ug/L	10	Standard
	Al	27	775.0	31.7	**0.0016**	0.002	112.9	ug/L	1822	Standard
	Sc	45	50978.4	13.8				ug/L	55220	Standard
	Ti	47	26.0	7.7	**-0.0042**	0.020	469.4	ug/L	34	Standard
	V	51	784.9	9.1	**-0.1080**	0.026	24.3	ug/L	1938	Standard
	Cr	52	4060.9	14.4	**-0.5718**	0.120	21.0	ug/L	9522	Standard
	Cr	53	301.7	12.0	**-0.1069**	0.079	74.2	ug/L	395	Standard
	Mn	55	609.3	28.1	**-0.0297**	0.032	107.2	ug/L	902	Standard
	Co	59	219.7	9.5	**0.0048**	0.004	91.0	ug/L	262	Standard
	Ni	60	252.3	20.8	**-0.0270**	0.042	155.2	ug/L	371	Standard
	Cu	65	108.7	4.1	**-0.0076**	0.013	170.5	ug/L	106	Standard
	Zn	66	183.3	13.9	**-0.2033**	0.019	9.2	ug/L	398	Standard
>	Ge	72	535510.2	22.8				ug/L	535147	Standard
	As	75	37.6	99.0	**0.0872**	0.030	34.3	ug/L	-43	Standard
	Se	82	42.1	65.8	**0.2494**	0.250	100.3	ug/L	14	Standard
	Se-1	77	40.0	31.9	**-0.1439**	0.061	42.7	ug/L	65	Standard
>	Ga	71	35.0	0.0				mg/L	97	Standard
	Rb	85	48.3	33.3				ug/L	15	Standard
	Y	89	411465.1	30.1				ug/L	465704	Standard
>	Rh	103	28.3	36.7				ug/L	10	Standard
	Mo	98	125.1	60.3	**0.0647**	0.038	58.9	ug/L	9	Standard
	Ag	107	83.3	17.1	**0.0065**	0.002	37.8	ug/L	82	Standard
	Cd	111	2.1	24.7	**0.0090**	0.001	6.1	mg/L	7	Standard
	Cd	114	-0.7	1078.9	**0.0089**	0.002	18.4	ug/L	21	Standard
>	In	115	564958.1	33.0				ug/L	619035	Standard
	Sn	118	335.0	22.6	**-0.0453**	0.011	24.3	ug/L	508	Standard
	Sb	123	18.4	50.3	**0.0089**	0.003	36.4	ug/L	86	Standard
	Ba	135	15.7	9.8	**-0.0117**	0.002	17.4	ug/L	79	Standard
	Ce	140	20.0	25.0				ug/L	68	Standard
>	Tb	159	950315.9	31.4				ug/L	986982	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	8.3	73.3	**0.0070**	0.001	13.0	ug/L	13	Standard
	Tl	205	10.0	100.0	**0.0091**	0.001	14.1	ug/L	10	Standard
	Pb	206	274.0	27.4	**0.0059**	0.002	29.0	ug/L	264	Standard
	Pb	207	238.7	22.5	**0.0093**	0.001	16.0	ug/L	227	Standard
	Pb	208	974.0	15.7	**0.0072**	0.005	71.7	ug/L	868	Standard
	U	238	2.3	49.5	**0.0082**	0.000	1.4	ug/L	8	Standard
>	Bi	209	577512.8	26.0				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	18.3	**0.0162**	0.017	104.0	mg/L	53	Standard
K	39	18.3	15.7	**-0.0423**	0.002	4.5	mg/L	53	Standard
Ca	43	20.0	25.0	**-0.4400**	0.295	67.1	mg/L	28	Standard
Fe	54	111.2	48.2	**-0.0326**	0.048	147.4	mg/L	181	Standard
Fe	57	305.0	8.5	**0.2171**	0.057	26.1	mg/L	257	Standard
Sc-1	45	50978.4	13.8				mg/L	55220	Standard
Cl	35	19130.1	4.6				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	666.7	5.7				ug/L	2040	Standard
P	31	12328.9	39.2				ug/L	20435	Standard
S	34	1113.4	14.8				ug/L	2430	Standard
Sr	88	68.3	15.2				ug/L	75	Standard
C	12	93.3	55.0				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	290.0	88.7				mg/L	7	Standard
Dy	164	12.9	45.1				mg/L	9	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	1068.4	17.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		120.735	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.068	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	91.264	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	106.746	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cr 52 Lower	Cr	52	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 21:37:07
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67431.4	0.9				ug/L	74916	Standard
	Be	9	53817.1	2.2	**56.6770**	1.756	3.1	ug/L	10	Standard
	Al	27	7915196.4	0.8	**50.6766**	0.779	1.5	ug/L	1822	Standard
	Sc	45	47487.7	2.6				ug/L	55220	Standard
	Ti	47	35585.1	0.5	**95.4658**	2.604	2.7	ug/L	34	Standard
	V	51	402119.5	0.8	**47.9478**	1.257	2.6	ug/L	1938	Standard
	Cr	52	400703.0	0.9	**48.3435**	0.787	1.6	ug/L	9522	Standard
	Cr	53	48943.9	1.1	**48.2440**	0.640	1.3	ug/L	395	Standard
	Mn	55	360303.0	0.3	**46.3376**	1.024	2.2	ug/L	902	Standard
	Co	59	357130.9	0.5	**48.6003**	1.378	2.8	ug/L	262	Standard
	Ni	60	97761.7	1.2	**48.1917**	0.589	1.2	ug/L	371	Standard
	Cu	65	97541.7	1.0	**48.9446**	0.765	1.6	ug/L	106	Standard
	Zn	66	58233.7	1.4	**49.3295**	1.243	2.5	ug/L	398	Standard
>	**Ge**	72	482994.3	2.4				ug/L	535147	Standard
	As	75	58332.8	0.8	**48.3177**	0.741	1.5	ug/L	-43	Standard
	Se	82	5861.9	0.6	**47.8385**	0.901	1.9	ug/L	14	Standard
	Se-1	77	3960.9	1.5	**48.1496**	1.207	2.5	ug/L	65	Standard
>	**Ga**	71	76.7	26.4				mg/L	97	Standard
	Rb	85	853.4	5.7				ug/L	15	Standard
	Y	89	414125.8	1.6				ug/L	465704	Standard
>	**Rh**	103	40.0	43.3				ug/L	10	Standard
	Mo	98	272355.1	0.4	**93.5687**	1.700	1.8	ug/L	9	Standard
	Ag	107	332621.4	0.0	**47.2188**	0.947	2.0	ug/L	82	Standard
	Cd	111	107165.6	0.8	**47.5953**	0.983	2.1	mg/L	7	Standard
	Cd	114	257847.8	1.0	**47.5584**	1.267	2.7	ug/L	21	Standard
>	**In**	115	577731.0	1.9				ug/L	619035	Standard
	Sn	118	300594.3	0.7	**49.4050**	1.294	2.6	ug/L	508	Standard
	Sb	123	236808.1	0.3	**47.9277**	0.854	1.8	ug/L	86	Standard
	Ba	135	99562.7	0.8	**46.6609**	1.297	2.8	ug/L	79	Standard
	Ce	140	140.0	35.2				ug/L	68	Standard
>	**Tb**	159	867654.4	1.3				ug/L	986982	Standard
	Ho	165	11.7	89.2				ug/L	10	Standard
	Tl	203	416289.5	1.3	**48.9625**	1.155	2.4	ug/L	13	Standard
	Tl	205	366754.2	0.8	**50.4878**	0.642	1.3	ug/L	10	Standard
	Pb	206	263152.9	0.6	**48.1874**	0.951	2.0	ug/L	264	Standard
	Pb	207	238074.2	0.7	**48.2372**	0.963	2.0	ug/L	227	Standard
	Pb	208	984369.0	1.0	**51.7197**	0.568	1.1	ug/L	868	Standard
	U	238	358515.6	1.0	**50.9636**	0.777	1.5	ug/L	8	Standard
>	**Bi**	209	503932.6	1.4				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4042.2	2.5	**5.0922**	0.253	5.0	mg/L	53	Standard
K	39	1623.4	6.5	**3.1316**	0.276	8.8	mg/L	53	Standard
Ca	43	90.0	9.6	**4.2482**	0.483	11.4	mg/L	28	Standard
Fe	54	5975.1	4.2	**4.6170**	0.222	4.8	mg/L	181	Standard
Fe	57	1913.5	4.0	**5.2334**	0.291	5.6	mg/L	257	Standard
> **Sc-1**	45	47487.7	2.6				mg/L	55220	Standard
Cl	35	39379.1	1.8				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1633.4	6.7				ug/L	2040	Standard
P	31	21400.1	1.3				ug/L	20435	Standard
S	34	2506.9	6.2				ug/L	2430	Standard
Sr	88	65.0	23.1				ug/L	75	Standard
C	12	90.0	29.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	20.0				mg/L	7	Standard
Dy	164	13.2	117.5				mg/L	9	Standard
Ho-1	165	11.7	89.2				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	23	Standard
I	127	8260.6	4.5				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	113.354		
	Al	27	101.353		
	Sc	45			
	Ti	47	95.466		
	V	51	95.896		
	Cr	52	96.687		
	Cr	53			
	Mn	55	92.675		
	Co	59	97.201		
	Ni	60	96.383		
	Cu	65	97.889		
	Zn	66	98.659		
>	Ge	72		90.255	
	As	75	96.635		
	Se	82	95.677		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	93.569		
Ag	107	94.438		
Cd	111	95.191		
Cd	114			
> In	115		93.328	
Sn	118	98.810		
Sb	123	95.855		
Ba	135	93.322		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	97.925		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.439		
U	238	101.927		
> Bi	209		93.146	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 21:40:19
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71900.2	1.6				ug/L	74916	Standard
	Be	9	21.7	35.3	**0.0178**	0.007	41.7	ug/L	10	Standard
	Al	27	2898.6	45.2	**0.0150**	0.008	50.6	ug/L	1822	Standard
	Sc	45	47536.1	1.4				ug/L	55220	Standard
	Ti	47	35.0	11.4	**0.0223**	0.010	42.7	ug/L	34	Standard
	V	51	1200.3	7.6	**-0.0548**	0.011	19.7	ug/L	1938	Standard
	Cr	52	6500.4	2.4	**-0.2503**	0.022	8.8	ug/L	9522	Standard
	Cr	53	503.3	12.8	**0.1049**	0.058	55.7	ug/L	395	Standard
	Mn	55	738.0	10.0	**-0.0115**	0.009	80.1	ug/L	902	Standard
	Co	59	292.0	26.9	**0.0163**	0.010	63.6	ug/L	262	Standard
	Ni	60	263.0	4.6	**-0.0175**	0.005	26.1	ug/L	371	Standard
	Cu	65	174.0	18.1	**0.0273**	0.015	54.7	ug/L	106	Standard
	Zn	66	341.7	8.5	**-0.0597**	0.023	38.4	ug/L	398	Standard
>	**Ge**	72	490224.0	1.2				ug/L	535147	Standard
	As	75	-42.6	38.6	**0.0204**	0.014	66.6	ug/L	-43	Standard
	Se	82	20.2	27.9	**0.0662**	0.046	69.7	ug/L	14	Standard
	Se-1	77	49.7	18.7	**0.0213**	0.119	560.0	ug/L	65	Standard
>	**Ga**	71	36.7	43.8				mg/L	97	Standard
	Rb	85	28.3	44.4				ug/L	15	Standard
	Y	89	430929.4	1.2				ug/L	465704	Standard
>	**Rh**	103	25.0	80.0				ug/L	10	Standard
	Mo	98	240.0	28.0	**0.0921**	0.022	24.4	ug/L	9	Standard
	Ag	107	163.3	39.5	**0.0164**	0.009	54.4	ug/L	82	Standard
	Cd	111	16.9	26.3	**0.0152**	0.002	12.7	mg/L	7	Standard
	Cd	114	59.4	58.0	**0.0195**	0.006	31.5	ug/L	21	Standard
>	**In**	115	597612.9	0.2				ug/L	619035	Standard
	Sn	118	955.0	17.0	**0.0486**	0.026	53.0	ug/L	508	Standard
	Sb	123	608.2	26.3	**0.1233**	0.031	25.2	ug/L	86	Standard
	Ba	135	47.3	46.9	**0.0018**	0.010	554.4	ug/L	79	Standard
	Ce	140	30.0	28.9				ug/L	68	Standard
>	**Tb**	159	896744.8	0.6				ug/L	986982	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	106.0	37.4	**0.0180**	0.004	24.3	ug/L	13	Standard
	Tl	205	63.3	40.5	**0.0161**	0.003	20.7	ug/L	10	Standard
	Pb	206	303.7	6.4	**0.0158**	0.003	18.7	ug/L	264	Standard
	Pb	207	270.0	14.7	**0.0195**	0.007	37.4	ug/L	227	Standard
	Pb	208	1117.7	11.7	**0.0182**	0.006	33.3	ug/L	868	Standard
	U	238	78.7	54.5	**0.0186**	0.006	30.9	ug/L	8	Standard
>	**Bi**	209	523387.9	0.9				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	40.0	76.0	**0.0164**	0.039	240.4	mg/L	53	Standard
K	39	20.0	90.1	**-0.0368**	0.035	96.4	mg/L	53	Standard
Ca	43	15.0	115.5	**-0.6879**	1.140	165.7	mg/L	28	Standard
Fe	54	175.7	28.7	**0.0207**	0.042	202.0	mg/L	181	Standard
Fe	57	243.3	3.1	**0.0857**	0.013	15.5	mg/L	257	Standard
> **Sc-1**	45	47536.1	1.4				mg/L	55220	Standard
Cl	35	37912.7	0.7				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1596.8	8.8				ug/L	2040	Standard
P	31	20108.3	2.8				ug/L	20435	Standard
S	34	2458.5	3.7				ug/L	2430	Standard
Sr	88	83.3	3.5				ug/L	75	Standard
C	12	106.7	10.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	100.0				mg/L	7	Standard
Dy	164	112.2	18.7				mg/L	9	Standard
Ho-1	165	8.3	69.3				mg/L	10	Standard
Er	166	23.3	49.5				mg/L	23	Standard
I	127	3290.4	8.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		91.605	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.539
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.742
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606036203
Sample Date/Time: Friday, July 01, 2016 08:32:04
Number of Replicates: 3
Autosampler Position: 354
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	93006.3	1.1				ug/L	74916	Standard
	Be	9	20.0	25.0	**0.0116**	0.004	31.7	ug/L	10	Standard
	Al	27	1552992.1	1.0	**7.2064**	0.052	0.7	ug/L	1822	Standard
	Sc	45	39419.6	2.0				ug/L	55220	Standard
	Ti	47	501.0	4.3	**1.5380**	0.050	3.3	ug/L	34	Standard
	V	51	2620.2	6.3	**0.1790**	0.027	14.9	ug/L	1938	Standard
	Cr	52	5440.0	0.8	**-0.2376**	0.005	2.2	ug/L	9522	Standard
	Cr	53	2233.5	15.4	**2.2669**	0.406	17.9	ug/L	395	Standard
	Mn	55	12884096.7	1.2	**1986.1988**	24.888	1.3	ug/L	902	Standard
	Co	59	14555.7	5.3	**2.3470**	0.122	5.2	ug/L	262	Standard
	Ni	60	4131.6	1.3	**2.2980**	0.028	1.2	ug/L	371	Standard
	Cu	65	3742.1	7.4	**2.1908**	0.182	8.3	ug/L	106	Standard
	Zn	66	6948.6	3.1	**6.7442**	0.282	4.2	ug/L	398	Standard
>	Ge	72	403717.5	1.3				ug/L	535147	Standard
	As	75	3272.2	1.7	**3.2933**	0.019	0.6	ug/L	-43	Standard
	Se	82	468.8	5.1	**4.4884**	0.233	5.2	ug/L	14	Standard
	Se-1	77	300.0	5.5	**3.8347**	0.277	7.2	ug/L	65	Standard
>	Ga	71	398.3	16.6				mg/L	97	Standard
	Rb	85	145071.3	1.5				ug/L	15	Standard
	Y	89	367799.2	1.0				ug/L	465704	Standard
>	Rh	103	268.3	26.2				ug/L	10	Standard
	Mo	98	2447721.3	1.3	**1045.0964**	23.451	2.2	ug/L	9	Standard
	Ag	107	96.3	15.8	**0.0109**	0.002	22.8	ug/L	82	Standard
	Cd	111	-2684.4	2.0	**-1.4735**	0.029	2.0	mg/L	7	Standard
	Cd	114	3116.6	4.8	**0.7235**	0.043	6.0	ug/L	21	Standard
>	In	115	464778.6	1.3				ug/L	619035	Standard
	Sn	118	200.0	24.6	**-0.0626**	0.010	15.4	ug/L	508	Standard
	Sb	123	1153.1	15.2	**0.2941**	0.041	13.9	ug/L	86	Standard
	Ba	135	7861.0	1.3	**4.5603**	0.044	1.0	ug/L	79	Standard
	Ce	140	10441.9	1.0				ug/L	68	Standard
>	Tb	159	822223.0	0.9				ug/L	986982	Standard
	Ho	165	268.3	15.6				ug/L	10	Standard
	Tl	203	82.3	15.6	**0.0175**	0.002	10.1	ug/L	13	Standard
	Tl	205	100.0	25.0	**0.0241**	0.004	17.6	ug/L	10	Standard
	Pb	206	1074.0	1.8	**0.1970**	0.007	3.8	ug/L	264	Standard
	Pb	207	905.4	2.5	**0.1858**	0.006	3.3	ug/L	227	Standard
	Pb	208	3476.2	0.7	**0.1797**	0.005	2.7	ug/L	868	Standard
	U	238	205.3	7.0	**0.0427**	0.002	4.1	ug/L	8	Standard
>	Bi	209	422495.5	2.5				ug/L	541014	Standard

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Na	23	3.3	173.2	**25.7144**	44.530	173.2	mg/L	2	Standard
Mg	24	307341.0	3.0	**469.1675**	11.229	2.4	mg/L	53	Standard
K	39	16730.9	4.5	**39.6882**	1.267	3.2	mg/L	53	Standard
Ca	43	478.3	5.8	**36.2580**	1.470	4.1	mg/L	28	Standard
Fe	54	1582.4	11.9	**1.3903**	0.161	11.6	mg/L	181	Standard
Fe	57	835.0	11.0	**2.4319**	0.278	11.5	mg/L	257	Standard
> **Sc-1**	45	39419.6	2.0				mg/L	55220	Standard
Cl	35	63976.8	1.8				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	84877.1	1.1				ug/L	2040	Standard
P	31	5806.1	1.9				ug/L	20435	Standard
S	34	1706.8	4.3				ug/L	2430	Standard
Sr	88	715.0	4.9				ug/L	75	Standard
C	12	340.0	5.9				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	150.0	63.6				mg/L	7	Standard
Dy	164	347.7	31.7				mg/L	9	Standard
Ho-1	165	268.3	15.6				mg/L	10	Standard
Er	166	186.7	25.3				mg/L	23	Standard
I	127	685083.8	4.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.147	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		75.440	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	75.081	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	78.093	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Mo 98 Upper, S, EEE	Mo	98	

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Cd 111 Lower	Cd	111

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 08:35:16
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	104652.1	3.1				ug/L	74916	Standard
	Be	9	65190.0	1.7	**44.2562**	1.577	3.6	ug/L	10	Standard
	Al	27	8981432.3	0.8	**37.0663**	0.908	2.4	ug/L	1822	Standard
	Sc	45	43714.6	1.6				ug/L	55220	Standard
	Ti	47	31848.4	0.7	**91.2042**	0.432	0.5	ug/L	34	Standard
	V	51	397692.8	1.5	**50.6325**	0.695	1.4	ug/L	1938	Standard
	Cr	52	364036.8	0.6	**46.8611**	0.164	0.3	ug/L	9522	Standard
	Cr	53	44369.9	2.1	**46.6840**	0.901	1.9	ug/L	395	Standard
	Mn	55	343511.4	1.2	**47.1649**	0.503	1.1	ug/L	902	Standard
	Co	59	365301.7	0.5	**53.0684**	0.242	0.5	ug/L	262	Standard
	Ni	60	88054.5	0.3	**46.3416**	0.215	0.5	ug/L	371	Standard
	Cu	65	88641.2	0.7	**47.4878**	0.316	0.7	ug/L	106	Standard
	Zn	66	53665.6	1.4	**48.5266**	0.608	1.3	ug/L	398	Standard
>	Ge	72	452264.7	0.2				ug/L	535147	Standard
	As	75	54576.0	1.2	**48.2651**	0.498	1.0	ug/L	-43	Standard
	Se	82	5913.9	1.8	**51.5338**	0.825	1.6	ug/L	14	Standard
	Se-1	77	3667.1	0.9	**47.5865**	0.510	1.1	ug/L	65	Standard
>	Ga	71	155.0	28.1				mg/L	97	Standard
	Rb	85	930.0	4.1				ug/L	15	Standard
	Y	89	421703.0	0.5				ug/L	465704	Standard
>	Rh	103	63.3	70.8				ug/L	10	Standard
	Mo	98	269466.6	0.9	**95.0402**	0.819	0.9	ug/L	9	Standard
	Ag	107	324401.6	1.1	**47.2760**	0.478	1.0	ug/L	82	Standard
	Cd	111	100577.6	0.8	**45.8578**	0.287	0.6	mg/L	7	Standard
	Cd	114	250730.0	1.0	**47.4721**	0.488	1.0	ug/L	21	Standard
>	In	115	562623.8	0.4				ug/L	619035	Standard
	Sn	118	281805.1	1.3	**47.5397**	0.439	0.9	ug/L	508	Standard
	Sb	123	224039.7	0.6	**46.5502**	0.156	0.3	ug/L	86	Standard
	Ba	135	98585.4	0.5	**47.4267**	0.184	0.4	ug/L	79	Standard
	Ce	140	163.3	18.5				ug/L	68	Standard
>	Tb	159	931867.2	1.5				ug/L	986982	Standard
	Ho	165	13.3	21.7				ug/L	10	Standard
	Tl	203	411636.8	0.3	**47.3597**	0.319	0.7	ug/L	13	Standard
	Tl	205	368917.7	1.2	**49.6846**	0.789	1.6	ug/L	10	Standard
	Pb	206	265065.5	0.3	**47.4786**	0.117	0.2	ug/L	264	Standard
	Pb	207	240273.2	0.7	**47.6208**	0.337	0.7	ug/L	227	Standard
	Pb	208	920376.8	1.1	**47.3047**	0.501	1.1	ug/L	868	Standard
	U	238	372261.0	0.4	**51.7673**	0.178	0.3	ug/L	8	Standard
>	Bi	209	515073.7	0.4				ug/L	541014	Standard

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Na	23	3.3	173.2	**23.6206**	40.903	173.2	mg/L	2	Standard
Mg	24	4920.8	2.5	**6.7416**	0.245	3.6	mg/L	53	Standard
K	39	1953.5	3.3	**4.1118**	0.137	3.3	mg/L	53	Standard
Ca	43	80.0	47.2	**4.0631**	2.720	67.0	mg/L	28	Standard
Fe	54	6442.0	0.3	**5.4265**	0.076	1.4	mg/L	181	Standard
Fe	57	1820.1	1.5	**5.4286**	0.169	3.1	mg/L	257	Standard
Sc-1	45	43714.6	1.6				mg/L	55220	Standard
Cl	35	25342.5	0.5				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	2553.5	7.8				ug/L	2040	Standard
P	31	17611.9	2.0				ug/L	20435	Standard
S	34	1886.8	9.4				ug/L	2430	Standard
Sr	88	51.7	22.3				ug/L	75	Standard
C	12	216.7	11.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	7	Standard
Dy	164	12.9	41.7				mg/L	9	Standard
Ho-1	165	13.3	21.7				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	9761.8	38.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	88.512		
Al	27	74.133		
Sc	45			
Ti	47	91.204		
V	51	101.265		
Cr	52	93.722		
Cr	53			
Mn	55	94.330		
Co	59	106.137		
Ni	60	92.683		
Cu	65	94.976		
Zn	66	97.053		
Ge	72		84.512	
As	75	96.530		
Se	82	103.068		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	95.040		
Ag	107	94.552		
Cd	111	91.716		
Cd	114			
In	115		90.887	
Sn	118	95.079		
Sb	123	93.100		
Ba	135	94.853		
Ce	140			
Tb	159			
Ho	165			
Tl	203	94.719		
Tl	205			
Pb	206			
Pb	207			
Pb	208	94.609		
U	238	103.535		
Bi	209		95.205	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 08:38:28
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	101832.7	0.1				ug/L	74916	Standard
	Be	9	21.7	13.3	**0.0115**	0.002	17.5	ug/L	10	Standard
	Al	27	3402.1	40.5	**0.0121**	0.006	48.4	ug/L	1822	Standard
	Sc	45	43323.5	1.5				ug/L	55220	Standard
	Ti	47	47.7	4.4	**0.0655**	0.006	9.3	ug/L	34	Standard
	V	51	1261.5	5.2	**-0.0363**	0.008	22.4	ug/L	1938	Standard
	Cr	52	6090.9	1.2	**-0.2438**	0.011	4.7	ug/L	9522	Standard
	Cr	53	543.3	24.4	**0.1852**	0.141	76.1	ug/L	395	Standard
	Mn	55	2328.9	74.2	**0.2134**	0.237	111.1	ug/L	902	Standard
	Co	59	267.0	18.5	**0.0157**	0.007	45.9	ug/L	262	Standard
	Ni	60	619.0	4.8	**0.1789**	0.016	9.1	ug/L	371	Standard
	Cu	65	403.7	9.0	**0.1563**	0.020	12.8	ug/L	106	Standard
	Zn	66	491.7	4.3	**0.0979**	0.020	20.8	ug/L	398	Standard
>	**Ge**	72	455524.9	0.3				ug/L	535147	Standard
	As	75	-12.5	248.3	**0.0443**	0.027	61.6	ug/L	-43	Standard
	Se	82	35.3	18.1	**0.2092**	0.056	26.8	ug/L	14	Standard
	Se-1	77	57.3	1.0	**0.1663**	0.008	4.8	ug/L	65	Standard
>	**Ga**	71	73.3	53.0				mg/L	97	Standard
	Rb	85	48.3	21.5				ug/L	15	Standard
	Y	89	420800.7	2.5				ug/L	465704	Standard
>	**Rh**	103	48.3	41.8				ug/L	10	Standard
	Mo	98	1359.7	4.4	**0.4956**	0.020	4.1	ug/L	9	Standard
	Ag	107	96.0	1.0	**0.0080**	0.000	3.1	ug/L	82	Standard
	Cd	111	11.8	64.2	**0.0133**	0.003	26.1	mg/L	7	Standard
	Cd	114	49.1	54.7	**0.0183**	0.005	27.7	ug/L	21	Standard
>	**In**	115	558184.5	0.7				ug/L	619035	Standard
	Sn	118	840.0	13.6	**0.0398**	0.020	49.3	ug/L	508	Standard
	Sb	123	615.3	27.1	**0.1333**	0.035	26.4	ug/L	86	Standard
	Ba	135	41.3	38.6	**0.0004**	0.008	1923.8	ug/L	79	Standard
	Ce	140	33.3	22.9				ug/L	68	Standard
>	**Tb**	159	919868.1	0.7				ug/L	986982	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	70.7	36.4	**0.0141**	0.003	20.9	ug/L	13	Standard
	Tl	205	83.3	59.2	**0.0189**	0.007	35.1	ug/L	10	Standard
	Pb	206	296.0	10.7	**0.0150**	0.006	38.5	ug/L	264	Standard
	Pb	207	242.3	9.3	**0.0146**	0.004	30.4	ug/L	227	Standard
	Pb	208	1060.7	19.5	**0.0159**	0.011	66.8	ug/L	868	Standard
	U	238	73.7	80.7	**0.0181**	0.008	45.5	ug/L	8	Standard
>	**Bi**	209	518253.1	0.4				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	108.3	23.2	**0.1158**	0.034	29.3	mg/L	53	Standard
K	39	28.3	44.4	**-0.0145**	0.028	192.8	mg/L	53	Standard
Ca	43	16.7	17.3	**-0.4722**	0.203	43.0	mg/L	28	Standard
Fe	54	122.7	13.1	**-0.0120**	0.015	126.5	mg/L	181	Standard
Fe	57	215.0	22.4	**0.0615**	0.153	249.0	mg/L	257	Standard
Sc-1	45	43323.5	1.5				mg/L	55220	Standard
Cl	35	25651.0	2.4				ug/L	35504	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	1796.8	2.2				ug/L	2040	Standard
P	31	17269.8	0.2				ug/L	20435	Standard
S	34	1768.4	7.7				ug/L	2430	Standard
Sr	88	51.7	11.2				ug/L	75	Standard
C	12	190.0	36.5				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	0.0				mg/L	7	Standard
Dy	164	125.4	30.1				mg/L	9	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	26.7	21.7				mg/L	23	Standard
I	127	4757.4	13.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		85.121	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	90.170	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	95.793	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Se	82	
QC Std 7	Mo	98	

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MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Friday, July 01, 2016 10:13:04

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1329	2024	0.709	
Mg	23.985	23.975	4503	2020	0.696	
Co	58.933	58.925	11692	2022	0.691	
In	114.904	114.875	22859	2028	0.686	
U	238.050	238.025	47457	2043	0.687	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	3.598
5.575	4.718
5.625	3.789
5.675	2.527
5.725	1.318
5.775	1.142
5.825	2.913
5.875	3.428
5.925	4.580
5.975	3.116
6.025	1.509
6.075	2.372
6.125	1.519
6.175	1.841
6.225	5.064
6.275	40.937
6.325	69.722
6.375	49.793
6.425	63.949
6.475	46.187
6.525	18.017
6.575	4.888
6.625	1.946
6.675	3.206
6.725	1.995
6.775	2.218
6.825	1.690

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6.875	1.781
6.925	1.186
6.975	1.328
7.025	1.344
7.075	1.081
7.125	0.453
7.175	2.067
7.225	2.391
7.275	2.950
7.325	17.639
7.375	57.735
7.425	72.436
7.475	223.607
7.525	61.237
7.575	61.237
7.625	74.689
7.675	43.853
7.725	81.441
7.775	70.711
7.825	49.793
7.875	81.441
7.925	71.261
7.975	63.888
8.025	108.327
8.075	69.722
8.125	100.000
8.175	69.722
8.225	63.191
8.275	46.481
8.325	59.265
8.375	94.786
8.425	43.853
8.475	35.355
22.525	100.000
22.575	24.845
22.625	11.877
22.675	14.821
22.725	27.507
22.775	16.675
22.825	18.109
22.875	27.152
22.925	12.748
22.975	17.626
23.025	12.284
23.075	17.138
23.125	22.852
23.175	24.755

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23.225	27.794
23.275	13.465
23.325	28.287
23.375	27.216
23.425	29.613
23.475	25.156
23.525	5.738
23.575	3.240
23.625	2.912
23.675	3.295
23.725	2.834
23.775	3.434
23.825	2.694
23.875	2.849
23.925	2.371
23.975	2.335
24.025	3.002
24.075	2.407
24.125	2.590
24.175	2.561
24.225	3.038
24.275	3.732
24.325	13.243
24.375	46.291
24.425	31.044
24.475	3.900
24.525	3.690
24.575	1.518
24.625	2.041
24.675	1.011
24.725	0.948
24.775	1.552
24.825	1.240
24.875	0.999
24.925	2.206
24.975	1.206
25.025	1.519
25.075	1.903
25.125	0.579
25.175	1.714
25.225	2.460
25.275	18.990
25.325	26.352
25.375	57.810
25.425	13.305
25.475	13.731
57.525	8.299

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57.575	3.825
57.625	2.379
57.675	1.810
57.725	1.941
57.775	3.194
57.825	3.753
57.875	1.813
57.925	1.247
57.975	2.156
58.025	1.826
58.075	1.503
58.125	1.715
58.175	3.179
58.225	2.838
58.275	20.250
58.325	47.507
58.375	33.055
58.425	7.046
58.475	7.950
58.525	1.298
58.575	2.456
58.625	0.689
58.675	2.468
58.725	2.353
58.775	0.839
58.825	1.215
58.875	1.050
58.925	1.190
58.975	1.362
59.025	1.477
59.075	1.339
59.125	2.122
59.175	2.562
59.225	3.714
59.275	10.687
59.325	73.193
59.375	43.301
59.425	29.315
59.475	15.449
59.525	9.592
59.575	4.491
59.625	3.077
59.675	2.739
59.725	2.974
59.775	4.607
59.825	3.985
59.875	2.185

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59.925	2.525
59.975	1.104
60.025	3.006
60.075	3.085
60.125	2.240
60.175	5.388
60.225	7.934
60.275	43.006
60.325	15.215
60.375	46.351
60.425	85.267
60.475	44.721
113.525	8.024
113.575	2.930
113.625	3.520
113.675	3.350
113.725	2.512
113.775	1.897
113.825	2.146
113.875	1.417
113.925	2.337
113.975	2.849
114.025	1.596
114.075	1.757
114.125	1.986
114.175	3.937
114.225	7.420
114.275	16.156
114.325	23.697
114.375	19.422
114.425	6.964
114.475	6.194
114.525	3.847
114.575	1.824
114.625	1.449
114.675	1.397
114.725	1.117
114.775	1.853
114.825	0.668
114.875	1.048
114.925	1.062
114.975	0.807
115.025	1.604
115.075	0.617
115.125	0.990
115.175	1.502
115.225	4.478

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115.275	6.474
115.325	39.891
115.375	63.816
115.425	37.630
115.475	30.031
115.525	14.465
115.575	9.978
115.625	2.212
115.675	2.597
115.725	4.004
115.775	4.700
115.825	2.647
115.875	1.521
115.925	0.934
115.975	2.944
116.025	2.211
116.075	6.400
116.125	6.342
116.175	7.120
116.225	10.108
116.275	16.197
116.325	46.481
116.375	69.722
116.425	51.349
116.475	37.029
236.525	
236.575	29.186
236.625	24.495
236.675	29.186
236.725	31.126
236.775	17.430
236.825	21.320
236.875	35.016
236.925	29.487
236.975	22.480
237.025	20.328
237.075	5.167
237.125	26.770
237.175	39.033
237.225	35.209
237.275	32.070
237.325	18.731
237.375	19.628
237.425	26.854
237.475	32.050
237.525	17.891
237.575	10.999

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237.625	4.356
237.675	1.280
237.725	1.988
237.775	1.816
237.825	1.251
237.875	1.667
237.925	1.057
237.975	0.998
238.025	0.960
238.075	1.070
238.125	0.734
238.175	2.008
238.225	0.722
238.275	1.413
238.325	1.849
238.375	2.376
238.425	2.444
238.475	2.524
238.525	19.935
238.575	20.360
238.625	13.507
238.675	21.195
238.725	21.155
238.775	6.804
238.825	10.080
238.875	12.811
238.925	23.344
238.975	11.513
239.025	14.758
239.075	30.366
239.125	18.763
239.175	14.417
239.225	4.027
239.275	13.280
239.325	20.761
239.375	27.288
239.425	21.246
239.475	21.217

Approved: July 02, 2016

SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 7/1/2016 10:17:38 AM
End Time: 7/1/2016 10:19:50 AM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 6753.37
        Obtained Intensity (Mg 23.985): 350422.63
        Obtained Intensity (In 114.904): 74054.21
        Obtained Intensity (U 238.05): 161864.28
        Obtained Intensity (Bkgd 220): 0.13
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.020 (=4067.61 / 207928.14)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.011 (=2367.92 / 207928.14)
```

Report Date/Time: Friday, July 01, 2016 10:19:50
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SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 7/1/2016 10:17:38 AM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 6753.37
                Obtained Intensity (Mg 23.985): 350422.63
                Obtained Intensity (In 114.904): 74054.21
                Obtained Intensity (U 238.05): 161864.28
                Obtained Intensity (Bkgd 220): 0.13
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.020 (=4067.61 / 207928.14)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.011 (=2367.92 / 207928.14)
[Passed]  Optimum value(s): N/A

End Time: 7/1/2016 10:19:50 AM
```


Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Friday, July 01, 2016 10:27:28
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76455.8	1.4				ug/L		Standard
	Be	9	20.0	50.0				ug/L		Standard
	Al	27	1306.7	8.4				ug/L		Standard
	Sc	45	41174.2	1.3				ug/L		Standard
	Ti	47	27.3	20.1				ug/L		Standard
	V	51	1434.3	4.1				ug/L		Standard
	Cr	52	7733.0	1.4				ug/L		Standard
	Cr	53	441.7	6.2				ug/L		Standard
	Mn	55	722.7	2.8				ug/L		Standard
	Co	59	217.3	3.4				ug/L		Standard
	Ni	60	304.3	3.8				ug/L		Standard
	Cu	65	181.0	9.6				ug/L		Standard
	Zn	66	214.7	7.4				ug/L		Standard
>	**Ge**	72	520809.4	1.3				ug/L		Standard
	As	75	-51.8	28.3				ug/L		Standard
	Se	82	16.9	16.8				ug/L		Standard
	Se-1	77	56.0	13.9				ug/L		Standard
>	**Ga**	71	25.0	34.6				mg/L		Standard
	Rb	85	28.3	71.3				ug/L		Standard
	Y	89	447394.9	1.2				ug/L		Standard
>	**Rh**	103	15.0	0.0				ug/L		Standard
	Mo	98	112.7	27.3				ug/L		Standard
	Ag	107	108.0	3.2				ug/L		Standard
	Cd	111	3.1	49.9				mg/L		Standard
	Cd	114	19.8	49.9				ug/L		Standard
>	**In**	115	625727.9	1.1				ug/L		Standard
	Sn	118	568.3	11.1				ug/L		Standard
	Sb	123	611.9	31.5				ug/L		Standard
	Ba	135	21.0	20.8				ug/L		Standard
	Ce	140	245.0	41.7				ug/L		Standard
>	**Tb**	159	950397.3	0.8				ug/L		Standard
	Ho	165	6.7	114.6				ug/L		Standard
	Tl	203	15.0	17.6				ug/L		Standard
	Tl	205	13.3	57.3				ug/L		Standard
	Pb	206	263.7	1.3				ug/L		Standard
	Pb	207	221.7	2.3				ug/L		Standard
	Pb	208	958.7	0.3				ug/L		Standard
	U	238	9.3	30.9				ug/L		Standard
>	**Bi**	209	552820.8	0.2				ug/L		Standard

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Na	23	1.7	173.2	mg/L	Standard
Mg	24	55.0	15.7	mg/L	Standard
K	39	28.3	27.0	mg/L	Standard
Ca	43	26.7	47.2	mg/L	Standard
Fe	54	147.3	8.3	mg/L	Standard
Fe	57	268.3	12.1	mg/L	Standard
Sc-1	45	41174.2	1.3	mg/L	Standard
Cl	35	69550.0	1.7	ug/L	Standard
Kr	83	0.7	86.6	ug/L	Standard
Br	81	1950.1	7.9	ug/L	Standard
P	31	21156.4	1.5	ug/L	Standard
S	34	3418.7	4.4	ug/L	Standard
Sr	88	71.7	49.5	ug/L	Standard
C	12	163.3	19.7	mg/L	Standard
N	14	0.0		mg/L	Standard
Hg	202	16.7	69.3	mg/L	Standard
Dy	164	16.3	91.8	mg/L	Standard
Ho-1	165	6.7	114.6	mg/L	Standard
Er	166	6.7	86.6	mg/L	Standard
I	127	19499.2	0.9	mg/L	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Friday, July 01, 2016 10:30:40
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76115.8	2.8				ug/L	76456	Standard
	Be	9	13.3	21.7				ug/L	20	Standard
	Al	27	1265.1	6.9				ug/L	1307	Standard
	Sc	45	40428.9	1.7				ug/L	41174	Standard
	Ti	47	21.7	32.4				ug/L	27	Standard
	V	51	1555.0	2.9				ug/L	1434	Standard
	Cr	52	7686.3	1.0				ug/L	7733	Standard
	Cr	53	466.7	11.8				ug/L	442	Standard
	Mn	55	715.0	5.0				ug/L	723	Standard
	Co	59	200.7	6.9				ug/L	217	Standard
	Ni	60	335.0	2.6				ug/L	304	Standard
	Cu	65	166.7	3.3				ug/L	181	Standard
	Zn	66	240.0	2.6				ug/L	215	Standard
>	**Ge**	72	524095.0	0.6				ug/L	520809	Standard
	As	75	-59.9	59.9				ug/L	-52	Standard
	Se	82	13.2	52.5				ug/L	17	Standard
	Se-1	77	54.7	18.5				ug/L	56	Standard
>	**Ga**	71	33.3	45.8				mg/L	25	Standard
	Rb	85	11.7	89.2				ug/L	28	Standard
	Y	89	451430.1	1.0				ug/L	447395	Standard
>	**Rh**	103	13.3	142.0				ug/L	15	Standard
	Mo	98	59.2	36.8				ug/L	113	Standard
	Ag	107	83.3	15.2				ug/L	108	Standard
	Cd	111	2.6	60.3				mg/L	3	Standard
	Cd	114	6.8	257.6				ug/L	20	Standard
>	**In**	115	626754.1	0.5				ug/L	625728	Standard
	Sn	118	553.3	6.0				ug/L	568	Standard
	Sb	123	259.4	31.5				ug/L	612	Standard
	Ba	135	20.7	14.8				ug/L	21	Standard
	Ce	140	71.7	8.1				ug/L	245	Standard
>	**Tb**	159	970231.2	1.1				ug/L	950397	Standard
	Ho	165	3.3	173.2				ug/L	7	Standard
	Tl	203	7.7	32.8				ug/L	15	Standard
	Tl	205	6.7	43.3				ug/L	13	Standard
	Pb	206	273.7	9.4				ug/L	264	Standard
	Pb	207	216.3	5.9				ug/L	222	Standard
	Pb	208	930.0	2.3				ug/L	959	Standard
	U	238	2.3	24.7				ug/L	9	Standard
>	**Bi**	209	552479.9	0.9				ug/L	552821	Standard

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	Na	23	0.0		mg/L	2	Standard
	Mg	24	65.0	20.4	mg/L	55	Standard
	K	39	38.3	19.9	mg/L	28	Standard
	Ca	43	28.3	53.9	mg/L	27	Standard
	Fe	54	142.9	16.5	mg/L	147	Standard
	Fe	57	211.7	5.9	mg/L	268	Standard
>	**Sc-1**	45	40428.9	1.7	mg/L	41174	Standard
	Cl	35	69484.3	2.2	ug/L	69550	Standard
	Kr	83	1.0	0.0	ug/L	1	Standard
	Br	81	2066.8	4.1	ug/L	1950	Standard
	P	31	21174.8	5.7	ug/L	21156	Standard
	S	34	3378.7	3.5	ug/L	3419	Standard
	Sr	88	91.7	20.7	ug/L	72	Standard
	C	12	160.0	28.6	mg/L	163	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	16.7	91.7	mg/L	17	Standard
	Dy	164	6.3	93.2	mg/L	16	Standard
	Ho-1	165	3.3	173.2	mg/L	7	Standard
	Er	166	6.7	86.6	mg/L	7	Standard
	I	127	19828.0	1.1	mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 1
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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Friday, July 01, 2016 10:33:51
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74986.8	1.6				ug/L	76456	Standard
	Be	9	76.7	43.4				ug/L	20	Standard
	Al	27	10110.0	3.2				ug/L	1307	Standard
	Sc	45	40704.6	1.5				ug/L	41174	Standard
	Ti	47	59.7	6.8				ug/L	27	Standard
	V	51	2028.1	3.7				ug/L	1434	Standard
	Cr	52	8189.5	1.1				ug/L	7733	Standard
	Cr	53	468.3	4.9				ug/L	442	Standard
	Mn	55	1137.0	2.8				ug/L	723	Standard
	Co	59	604.0	2.0				ug/L	217	Standard
	Ni	60	418.3	1.4				ug/L	304	Standard
	Cu	65	251.3	1.9				ug/L	181	Standard
	Zn	66	280.0	1.2				ug/L	215	Standard
>	**Ge**	72	516908.5	0.1				ug/L	520809	Standard
	As	75	5.9	557.4				ug/L	-52	Standard
	Se	82	22.1	63.4				ug/L	17	Standard
	Se-1	77	62.3	6.5				ug/L	56	Standard
>	**Ga**	71	28.3	62.0				mg/L	25	Standard
	Rb	85	13.3	142.0				ug/L	28	Standard
	Y	89	452397.3	1.6				ug/L	447395	Standard
>	**Rh**	103	8.3	91.7				ug/L	15	Standard
	Mo	98	371.2	3.3				ug/L	113	Standard
	Ag	107	447.0	1.8				ug/L	108	Standard
	Cd	111	119.4	7.1				mg/L	3	Standard
	Cd	114	282.1	4.3				ug/L	20	Standard
>	**In**	115	619630.9	0.5				ug/L	625728	Standard
	Sn	118	855.0	13.6				ug/L	568	Standard
	Sb	123	428.3	12.3				ug/L	612	Standard
	Ba	135	146.3	3.9				ug/L	21	Standard
	Ce	140	45.0	50.9				ug/L	245	Standard
>	**Tb**	159	965634.3	1.4				ug/L	950397	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	454.3	3.7				ug/L	15	Standard
	Tl	205	475.0	1.1				ug/L	13	Standard
	Pb	206	529.3	1.0				ug/L	264	Standard
	Pb	207	492.7	3.7				ug/L	222	Standard
	Pb	208	2058.4	0.9				ug/L	959	Standard
	U	238	404.0	3.6				ug/L	9	Standard
>	**Bi**	209	551272.3	0.2				ug/L	552821	Standard

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Na	23	0.0		mg/L	2	Standard
Mg	24	55.0	39.6	mg/L	55	Standard
K	39	35.0	51.5	mg/L	28	Standard
Ca	43	26.7	28.6	mg/L	27	Standard
Fe	54	131.1	29.5	mg/L	147	Standard
Fe	57	260.0	13.9	mg/L	268	Standard
> **Sc-1**	45	40704.6	1.5	mg/L	41174	Standard
Cl	35	69075.1	1.1	ug/L	69550	Standard
Kr	83	2.0	50.0	ug/L	1	Standard
Br	81	2083.5	5.5	ug/L	1950	Standard
P	31	20977.8	1.6	ug/L	21156	Standard
S	34	3237.0	8.2	ug/L	3419	Standard
Sr	88	66.7	30.3	ug/L	72	Standard
C	12	120.0	16.7	mg/L	163	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	16.7	34.6	mg/L	17	Standard
Dy	164	19.5	0.0	mg/L	16	Standard
Ho-1	165	8.3	69.3	mg/L	7	Standard
Er	166	10.0		mg/L	7	Standard
I	127	19168.8	3.3	mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 2
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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Friday, July 01, 2016 10:37:02
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74971.7	1.7				ug/L	76456	Standard
	Be	9	54860.9	3.6	**50.0000**	1.210	2.4	ug/L	20	Standard
	Al	27	8440082.6	0.7	**50.0000**	0.980	2.0	ug/L	1307	Standard
	Sc	45	40865.0	1.5				ug/L	41174	Standard
	Ti	47	32329.8	0.6	**100.0000**	0.832	0.8	ug/L	27	Standard
	V	51	412896.9	0.3	**50.0000**	0.270	0.5	ug/L	1434	Standard
	Cr	52	411678.8	0.9	**50.0000**	0.611	1.2	ug/L	7733	Standard
	Cr	53	51159.6	0.9	**50.0000**	0.580	1.2	ug/L	442	Standard
	Mn	55	380443.4	1.4	**50.0000**	0.789	1.6	ug/L	723	Standard
	Co	59	384667.7	0.9	**50.0000**	0.374	0.7	ug/L	217	Standard
	Ni	60	104566.9	0.5	**50.0000**	0.292	0.6	ug/L	304	Standard
	Cu	65	103056.3	0.1	**50.0000**	0.150	0.3	ug/L	181	Standard
	Zn	66	61622.7	0.7	**50.0000**	0.151	0.3	ug/L	215	Standard
>	**Ge**	72	520018.0	0.4				ug/L	520809	Standard
	As	75	61417.5	0.3	**50.0000**	0.279	0.6	ug/L	-52	Standard
	Se	82	6337.3	1.0	**50.0000**	0.692	1.4	ug/L	17	Standard
	Se-1	77	4335.3	1.3	**50.0000**	0.572	1.1	ug/L	56	Standard
>	**Ga**	71	61.7	40.0				mg/L	25	Standard
	Rb	85	878.4	2.6				ug/L	28	Standard
	Y	89	444837.1	3.4				ug/L	447395	Standard
>	**Rh**	103	30.0	44.1				ug/L	15	Standard
	Mo	98	294287.0	0.6	**100.0000**	0.409	0.4	ug/L	113	Standard
	Ag	107	351901.5	1.0	**50.0000**	0.404	0.8	ug/L	108	Standard
	Cd	111	112966.0	0.5	**50.0000**	0.196	0.4	mg/L	3	Standard
	Cd	114	280940.2	0.5	**50.0000**	0.110	0.2	ug/L	20	Standard
>	**In**	115	612769.1	0.4				ug/L	625728	Standard
	Sn	118	314258.0	2.0	**50.0000**	1.163	2.3	ug/L	568	Standard
	Sb	123	250330.0	0.3	**50.0000**	0.094	0.2	ug/L	612	Standard
	Ba	135	107237.2	0.5	**50.0000**	0.330	0.7	ug/L	21	Standard
	Ce	140	96.7	19.6				ug/L	245	Standard
>	**Tb**	159	945727.5	1.1				ug/L	950397	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	443860.6	0.2	**50.0000**	0.306	0.6	ug/L	15	Standard
	Tl	205	392135.3	1.5	**50.0000**	0.676	1.4	ug/L	13	Standard
	Pb	206	280519.3	0.4	**50.0000**	0.226	0.5	ug/L	264	Standard
	Pb	207	254589.8	0.6	**50.0000**	0.448	0.9	ug/L	222	Standard
	Pb	208	1037250.6	0.5	**50.0000**	0.611	1.2	ug/L	959	Standard
	U	238	392629.2	0.3	**50.0000**	0.515	1.0	ug/L	9	Standard
>	**Bi**	209	544795.2	0.7				ug/L	552821	Standard

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Na	23	3.3	86.6	**5.0000**	4.327	86.5	mg/L	2	Standard
Mg	24	4290.6	8.9	**5.0000**	0.514	10.3	mg/L	55	Standard
K	39	1336.7	14.8	**5.0000**	0.680	13.6	mg/L	28	Standard
Ca	43	78.3	9.8	**5.0000**	0.715	14.3	mg/L	27	Standard
Fe	54	6652.7	2.6	**5.0000**	0.189	3.8	mg/L	147	Standard
Fe	57	1848.4	3.7	**5.0000**	0.193	3.9	mg/L	268	Standard
Sc-1	45	40865.0	1.5				mg/L	41174	Standard
Cl	35	67370.1	1.9				ug/L	69550	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	1980.1	7.8				ug/L	1950	Standard
P	31	22366.5	1.7				ug/L	21156	Standard
S	34	3632.1	4.0				ug/L	3419	Standard
Sr	88	68.3	33.8				ug/L	72	Standard
C	12	116.7	13.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	120.2				mg/L	17	Standard
Dy	164	5.7	108.5				mg/L	16	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	24309.5	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 3
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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Friday, July 01, 2016 10:40:14
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74573.1	2.4				ug/L	76456	Standard
	Be	9	109282.8	1.9	**100.0980**	2.509	2.5	ug/L	20	Standard
	Al	27	16601431.1	0.9	**99.4425**	1.710	1.7	ug/L	1307	Standard
	Sc	45	41180.9	0.8				ug/L	41174	Standard
	Ti	47	65332.6	0.8	**201.3970**	0.318	0.2	ug/L	27	Standard
	V	51	817909.9	1.4	**99.7804**	1.578	1.6	ug/L	1434	Standard
	Cr	52	812246.8	1.3	**99.9568**	0.856	0.9	ug/L	7733	Standard
	Cr	53	100426.9	3.2	**99.4382**	3.780	3.8	ug/L	442	Standard
	Mn	55	750652.7	0.8	**99.5323**	0.364	0.4	ug/L	723	Standard
	Co	59	758624.4	0.2	**99.4757**	0.655	0.7	ug/L	217	Standard
	Ni	60	205495.5	0.6	**99.3580**	0.343	0.3	ug/L	304	Standard
	Cu	65	201186.2	0.4	**98.9880**	0.686	0.7	ug/L	181	Standard
	Zn	66	121678.0	0.3	**99.6126**	1.153	1.2	ug/L	215	Standard
>	**Ge**	72	518357.9	0.9				ug/L	520809	Standard
	As	75	123132.9	0.9	**100.2583**	0.732	0.7	ug/L	-52	Standard
	Se	82	12560.6	0.3	**99.7710**	0.579	0.6	ug/L	17	Standard
	Se-1	77	8548.4	1.2	**99.7880**	1.005	1.0	ug/L	56	Standard
>	**Ga**	71	40.0	45.1				mg/L	25	Standard
	Rb	85	1701.8	13.2				ug/L	28	Standard
	Y	89	451914.9	2.5				ug/L	447395	Standard
>	**Rh**	103	40.0	25.0				ug/L	15	Standard
	Mo	98	592109.5	0.9	**201.3215**	2.481	1.2	ug/L	113	Standard
	Ag	107	698129.6	0.3	**99.9561**	0.390	0.4	ug/L	108	Standard
	Cd	111	223398.5	0.3	**99.7914**	0.348	0.3	mg/L	3	Standard
	Cd	114	550589.1	2.0	**99.3411**	2.205	2.2	ug/L	20	Standard
>	**In**	115	608447.5	0.3				ug/L	625728	Standard
	Sn	118	629099.1	1.2	**100.4410**	1.420	1.4	ug/L	568	Standard
	Sb	123	508420.5	1.6	**101.1418**	1.887	1.9	ug/L	612	Standard
	Ba	135	210242.6	0.2	**99.3661**	0.116	0.1	ug/L	21	Standard
	Ce	140	141.7	20.7				ug/L	245	Standard
>	**Tb**	159	939885.9	0.8				ug/L	950397	Standard
	Ho	165	13.3	21.7				ug/L	7	Standard
	Tl	203	872285.6	0.1	**99.6647**	0.211	0.2	ug/L	15	Standard
	Tl	205	778762.6	2.1	**100.1937**	1.912	1.9	ug/L	13	Standard
	Pb	206	549521.0	0.7	**99.5257**	0.453	0.5	ug/L	264	Standard
	Pb	207	499379.9	0.5	**99.5919**	0.286	0.3	ug/L	222	Standard
	Pb	208	2044680.9	0.3	**99.8400**	0.419	0.4	ug/L	959	Standard
	U	238	794936.5	0.3	**101.1523**	0.190	0.2	ug/L	9	Standard
>	**Bi**	209	538915.4	0.3				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	8624.1	2.7	**10.0117**	0.211	2.1	mg/L	55	Standard
K	39	2628.6	4.6	**9.9475**	0.505	5.1	mg/L	28	Standard
Ca	43	143.3	11.2	**10.5644**	1.388	13.1	mg/L	27	Standard
Fe	54	12475.4	2.0	**9.6818**	0.117	1.2	mg/L	147	Standard
Fe	57	3570.4	3.6	**10.1632**	0.334	3.3	mg/L	268	Standard
Sc-1	45	41180.9	0.8				mg/L	41174	Standard
Cl	35	66505.0	1.1				ug/L	69550	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	1963.5	9.6				ug/L	1950	Standard
P	31	23055.9	3.6				ug/L	21156	Standard
S	34	3625.4	3.4				ug/L	3419	Standard
Sr	88	81.7	21.5				ug/L	72	Standard
C	12	133.3	30.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	17	Standard
Dy	164	12.1	43.5				mg/L	16	Standard
Ho-1	165	13.3	21.7				mg/L	7	Standard
Er	166	26.7	57.3				mg/L	7	Standard
I	127	3062.0	8.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Friday, July 01, 2016 10:43:27
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73226.6	2.1				ug/L	76456	Standard
	Be	9	55138.5	1.1	51.4232	1.173	2.3	ug/L	20	Standard
	Al	27	8364287.3	0.8	51.0145	0.701	1.4	ug/L	1307	Standard
	Sc	45	42051.6	1.4				ug/L	41174	Standard
	Ti	47	32632.1	1.2	99.6299	0.273	0.3	ug/L	27	Standard
	V	51	416986.8	1.2	50.3040	0.153	0.3	ug/L	1434	Standard
	Cr	52	416377.2	0.8	50.2986	0.675	1.3	ug/L	7733	Standard
	Cr	53	51450.5	1.0	50.2662	0.513	1.0	ug/L	442	Standard
	Mn	55	390114.9	0.6	51.2101	0.808	1.6	ug/L	723	Standard
	Co	59	391917.0	0.9	50.9056	0.274	0.5	ug/L	217	Standard
	Ni	60	105069.4	0.7	50.2680	0.977	1.9	ug/L	304	Standard
	Cu	65	103770.8	0.9	50.5551	0.555	1.1	ug/L	181	Standard
	Zn	66	63280.5	0.6	51.2430	0.408	0.8	ug/L	215	Standard
>	Ge	72	523154.7	1.4				ug/L	520809	Standard
	As	75	62592.0	0.8	50.5289	1.093	2.2	ug/L	-52	Standard
	Se	82	6421.3	0.7	50.4779	0.451	0.9	ug/L	17	Standard
	Se-1	77	4421.6	3.1	50.8264	2.224	4.4	ug/L	56	Standard
>	Ga	71	38.3	30.1				mg/L	25	Standard
	Rb	85	941.7	14.7				ug/L	28	Standard
	Y	89	448213.9	1.5				ug/L	447395	Standard
>	Rh	103	35.0	49.5				ug/L	15	Standard
	Mo	98	294940.7	1.4	96.3152	0.728	0.8	ug/L	113	Standard
	Ag	107	357502.4	1.0	49.1663	0.717	1.5	ug/L	108	Standard
	Cd	111	115768.3	0.2	49.6787	0.607	1.2	mg/L	3	Standard
	Cd	114	281209.7	0.6	48.7423	0.787	1.6	ug/L	20	Standard
>	In	115	633404.9	1.1				ug/L	625728	Standard
	Sn	118	321628.0	0.8	49.2868	0.611	1.2	ug/L	568	Standard
	Sb	123	258956.5	0.4	49.4694	0.480	1.0	ug/L	612	Standard
	Ba	135	108217.8	0.6	49.1275	0.780	1.6	ug/L	21	Standard
	Ce	140	141.7	45.4				ug/L	245	Standard
>	Tb	159	959365.6	0.2				ug/L	950397	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	443048.1	0.6	49.6569	0.744	1.5	ug/L	15	Standard
	Tl	205	398039.0	0.4	50.2306	0.560	1.1	ug/L	13	Standard
	Pb	206	281925.4	0.1	50.0662	0.613	1.2	ug/L	264	Standard
	Pb	207	256662.1	1.0	50.1891	0.845	1.7	ug/L	222	Standard
	Pb	208	1053544.2	0.4	50.4385	0.548	1.1	ug/L	959	Standard
	U	238	395989.8	1.3	49.4226	0.077	0.2	ug/L	9	Standard
>	Bi	209	549436.2	1.2				ug/L	552821	Standard

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Na	23	1.7	173.2	**4.9322**	8.534	173.0	mg/L	2	Standard
Mg	24	4375.6	3.8	**4.9437**	0.134	2.7	mg/L	55	Standard
K	39	1525.1	4.3	**5.5930**	0.165	3.0	mg/L	28	Standard
Ca	43	100.0	13.2	**6.4519**	1.261	19.5	mg/L	27	Standard
Fe	54	6527.6	4.7	**4.9145**	0.265	5.4	mg/L	147	Standard
Fe	57	1855.1	8.5	**4.7782**	0.491	10.3	mg/L	268	Standard
> **Sc-1**	45	42051.6	1.4				mg/L	41174	Standard
Cl	35	67170.6	2.2				ug/L	69550	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	1903.5	10.0				ug/L	1950	Standard
P	31	22763.8	0.6				ug/L	21156	Standard
S	34	3593.8	4.0				ug/L	3419	Standard
Sr	88	85.0	40.8				ug/L	72	Standard
C	12	133.3	15.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	132.3				mg/L	17	Standard
Dy	164	16.5	70.8				mg/L	16	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	23309.6	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	102.846		
Al	27	102.029		
Sc	45			
Ti	47	99.630		
V	51	100.608		
Cr	52	100.597		
Cr	53			
Mn	55	102.420		
Co	59	101.811		
Ni	60	100.536		
Cu	65	101.110		
Zn	66	102.486		
> Ge	72		100.450	
As	75	101.058		
Se	82	100.956		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	96.315		
Ag	107	98.333		
Cd	111	99.357		
Cd	114			
> In	115		101.227	
Sn	118	98.574		
Sb	123	98.939		
Ba	135	98.255		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.314		
Tl	205			
Pb	206	100.132		
Pb	207	100.378		
Pb	208	100.877		
U	238	98.845		
> Bi	209		99.388	
Na	23	98.644		
Mg	24	98.874		
K	39	111.859		
Ca	43	129.039		
Fe	54	98.290		
Fe	57	95.564		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	K	39	
QC Std 1	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Friday, July 01, 2016 10:46:40
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73082.5	1.7				ug/L	76456	Standard
	Be	9	35.0	65.5	**0.0129**	0.022	168.2	ug/L	20	Standard
	Al	27	2900.3	16.4	**0.0075**	0.003	39.6	ug/L	1307	Standard
	Sc	45	41413.2	2.8				ug/L	41174	Standard
	Ti	47	35.3	18.8	**0.0225**	0.019	85.6	ug/L	27	Standard
	V	51	1420.2	5.2	**-0.0279**	0.008	27.9	ug/L	1434	Standard
	Cr	52	6961.6	2.3	**-0.1197**	0.018	14.9	ug/L	7733	Standard
	Cr	53	446.7	2.3	**0.0198**	0.006	30.4	ug/L	442	Standard
	Mn	55	849.7	3.5	**0.0096**	0.004	44.1	ug/L	723	Standard
	Co	59	304.7	6.6	**0.0099**	0.003	30.2	ug/L	217	Standard
	Ni	60	329.3	2.5	**0.0037**	0.005	136.9	ug/L	304	Standard
	Cu	65	206.0	9.7	**0.0257**	0.010	38.8	ug/L	181	Standard
	Zn	66	265.3	8.1	**0.0337**	0.016	46.4	ug/L	215	Standard
>	**Ge**	72	527031.7	1.0				ug/L	520809	Standard
	As	75	-62.3	20.0	**-0.0048**	0.010	219.6	ug/L	-52	Standard
	Se	82	14.1	36.1	**-0.0165**	0.039	235.1	ug/L	17	Standard
	Se-1	77	48.7	10.1	**-0.1219**	0.059	48.3	ug/L	56	Standard
>	**Ga**	71	25.0	20.0				mg/L	25	Standard
	Rb	85	26.7	84.5				ug/L	28	Standard
	Y	89	456491.7	1.0				ug/L	447395	Standard
>	**Rh**	103	26.7	57.3				ug/L	15	Standard
	Mo	98	335.9	6.6	**0.0861**	0.007	7.7	ug/L	113	Standard
	Ag	107	180.3	7.4	**0.0120**	0.002	16.2	ug/L	108	Standard
	Cd	111	27.1	26.6	**0.0093**	0.003	33.3	mg/L	3	Standard
	Cd	114	66.3	29.5	**0.0115**	0.003	29.4	ug/L	20	Standard
>	**In**	115	631231.9	0.6				ug/L	625728	Standard
	Sn	118	1070.0	25.4	**0.0807**	0.043	52.8	ug/L	568	Standard
	Sb	123	986.7	28.6	**0.1557**	0.055	35.3	ug/L	612	Standard
	Ba	135	49.3	8.4	**0.0046**	0.002	42.1	ug/L	21	Standard
	Ce	140	21.7	58.1				ug/L	245	Standard
>	**Tb**	159	958993.9	0.7				ug/L	950397	Standard
	Ho	165	1.7	173.2				ug/L	7	Standard
	Tl	203	132.3	25.5	**0.0140**	0.004	27.2	ug/L	15	Standard
	Tl	205	123.3	29.3	**0.0057**	0.005	80.1	ug/L	13	Standard
	Pb	206	354.7	6.4	**0.0189**	0.004	22.4	ug/L	264	Standard
	Pb	207	298.7	4.5	**0.0120**	0.003	23.0	ug/L	222	Standard
	Pb	208	1215.7	2.5	**0.0096**	0.002	16.0	ug/L	959	Standard
	U	238	110.7	12.5	**0.0135**	0.002	13.1	ug/L	9	Standard
>	**Bi**	209	552384.0	0.3				ug/L	552821	Standard

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Na	23	1.7	173.2	**5.1172**	8.855	173.0	mg/L	2	Standard
Mg	24	61.7	49.5	**0.0114**	0.035	305.2	mg/L	55	Standard
K	39	43.3	29.0	**0.0349**	0.052	149.9	mg/L	28	Standard
Ca	43	15.0	66.7	**-1.1126**	0.876	78.7	mg/L	27	Standard
Fe	54	155.9	11.0	**0.0227**	0.013	57.8	mg/L	147	Standard
Fe	57	246.7	5.1	**-0.0507**	0.023	46.3	mg/L	268	Standard
> **Sc-1**	45	41413.2	2.8				mg/L	41174	Standard
Cl	35	67081.5	1.7				ug/L	69550	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	1926.8	4.5				ug/L	1950	Standard
P	31	22241.3	1.7				ug/L	21156	Standard
S	34	3415.4	3.5				ug/L	3419	Standard
Sr	88	56.7	39.8				ug/L	72	Standard
C	12	120.0	30.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	17	Standard
Dy	164	12.7	43.5				mg/L	16	Standard
Ho-1	165	1.7	173.2				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	18017.4	0.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.195	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.880	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.921	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Na	23	
QC Std 2	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Friday, July 01, 2016 10:49:53
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71014.5	3.1				ug/L	76456	Standard
	Be	9	276.7	13.7	**0.2467**	0.041	16.7	ug/L	20	Standard
	Al	27	1433.4	19.2	**-0.0012**	0.001	117.3	ug/L	1307	Standard
	Sc	45	40355.3	1.3				ug/L	41174	Standard
	Ti	47	21.0	29.7	**-0.0191**	0.020	103.3	ug/L	27	Standard
	V	51	4354.1	2.4	**0.3388**	0.016	4.6	ug/L	1434	Standard
	Cr	52	13385.9	0.6	**0.7089**	0.010	1.4	ug/L	7733	Standard
	Cr	53	1290.1	5.1	**0.8778**	0.062	7.0	ug/L	442	Standard
	Mn	55	4164.2	0.5	**0.4567**	0.004	0.8	ug/L	723	Standard
	Co	59	3022.0	3.5	**0.3708**	0.015	4.0	ug/L	217	Standard
	Ni	60	3422.7	3.0	**1.5204**	0.058	3.8	ug/L	304	Standard
	Cu	65	1708.4	1.3	**0.7752**	0.014	1.9	ug/L	181	Standard
	Zn	66	7949.4	1.3	**6.4016**	0.063	1.0	ug/L	215	Standard
>	**Ge**	72	513410.3	0.5				ug/L	520809	Standard
	As	75	420.2	2.0	**0.3904**	0.006	1.5	ug/L	-52	Standard
	Se	82	57.4	15.1	**0.3348**	0.072	21.4	ug/L	17	Standard
	Se-1	77	86.3	6.6	**0.3399**	0.069	20.2	ug/L	56	Standard
>	**Ga**	71	38.3	7.5				mg/L	25	Standard
	Rb	85	15.0	115.5				ug/L	28	Standard
	Y	89	441603.6	1.2				ug/L	447395	Standard
>	**Rh**	103	16.7	17.3				ug/L	15	Standard
	Mo	98	125.5	7.4	**0.0191**	0.003	17.3	ug/L	113	Standard
	Ag	107	2803.6	3.0	**0.3918**	0.011	2.9	ug/L	108	Standard
	Cd	111	534.5	1.7	**0.2383**	0.004	1.8	mg/L	3	Standard
	Cd	114	1340.9	4.1	**0.2439**	0.009	3.8	ug/L	20	Standard
>	**In**	115	603601.4	0.4				ug/L	625728	Standard
	Sn	118	588.3	20.4	**0.0106**	0.020	185.6	ug/L	568	Standard
	Sb	123	1982.0	3.1	**0.3639**	0.013	3.7	ug/L	612	Standard
	Ba	135	1500.1	4.2	**0.6970**	0.033	4.7	ug/L	21	Standard
	Ce	140	13.3	57.3				ug/L	245	Standard
>	**Tb**	159	923552.7	1.3				ug/L	950397	Standard
	Ho	165	18.3	41.7				ug/L	7	Standard
	Tl	203	722.4	6.5	**0.0815**	0.005	6.2	ug/L	15	Standard
	Tl	205	658.3	9.8	**0.0746**	0.008	10.9	ug/L	13	Standard
	Pb	206	1350.7	0.3	**0.2001**	0.002	0.8	ug/L	264	Standard
	Pb	207	1167.0	2.9	**0.1859**	0.007	3.6	ug/L	222	Standard
	Pb	208	4949.3	2.3	**0.1926**	0.005	2.7	ug/L	959	Standard
	U	238	3051.6	1.8	**0.3866**	0.007	1.9	ug/L	9	Standard
>	**Bi**	209	540899.0	0.4				ug/L	552821	Standard

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Na	23	3.3	86.6	**10.1911**	8.823	86.6	mg/L	2	Standard
Mg	24	73.3	17.2	**0.0273**	0.016	58.3	mg/L	55	Standard
K	39	43.3	17.6	**0.0384**	0.030	78.8	mg/L	28	Standard
Ca	43	21.7	13.3	**-0.4451**	0.256	57.4	mg/L	27	Standard
Fe	54	112.1	10.4	**-0.0092**	0.008	90.3	mg/L	147	Standard
Fe	57	220.0	10.4	**-0.1144**	0.071	61.7	mg/L	268	Standard
Sc-1	45	40355.3	1.3				mg/L	41174	Standard
Cl	35	64985.1	1.0				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	1890.1	8.2				ug/L	1950	Standard
P	31	15399.5	2.8				ug/L	21156	Standard
S	34	3492.1	3.5				ug/L	3419	Standard
Sr	88	78.3	3.7				ug/L	72	Standard
C	12	140.0	14.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	17	Standard
Dy	164	12.9	182.9				mg/L	16	Standard
Ho-1	165	18.3	41.7				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	2308.5	15.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	123.368		
Al	27	-0.122		
Sc	45			
Ti	47			
V	51	84.694		
Cr	52	88.608		
Cr	53			
Mn	55	91.340		
Co	59	92.690		
Ni	60	95.026		
Cu	65	96.904		
Zn	66	102.426		
Ge	72		98.579	
As	75	97.610		
Se	82	83.691		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	97.953		
Cd	111	99.297		
Cd	114			
> In	115			96.464
Sn	118			
Sb	123	90.972		
Ba	135	92.929		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.839		
Tl	205			
Pb	206			
Pb	207			
Pb	208	96.295		
U	238	96.660		
> Bi	209			97.843
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

Sample ID: QC Std 3
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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Friday, July 01, 2016 10:53:04
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72812.9	1.2				ug/L	76456	Standard
	Be	9	36.7	20.8	**0.0145**	0.007	47.6	ug/L	20	Standard
	Al	27	8248243.5	1.3	**50.5822**	0.139	0.3	ug/L	1307	Standard
	Sc	45	42120.1	1.9				ug/L	41174	Standard
	Ti	47	35838.7	1.4	**108.8763**	0.923	0.8	ug/L	27	Standard
	V	51	1796.6	6.7	**0.0180**	0.017	92.8	ug/L	1434	Standard
	Cr	52	8717.2	1.4	**0.0974**	0.005	5.1	ug/L	7733	Standard
	Cr	53	5294.3	3.4	**4.7714**	0.146	3.1	ug/L	442	Standard
	Mn	55	1499.1	2.5	**0.0949**	0.007	6.9	ug/L	723	Standard
	Co	59	500.3	4.2	**0.0353**	0.003	8.8	ug/L	217	Standard
	Ni	60	1153.7	2.9	**0.3978**	0.021	5.4	ug/L	304	Standard
	Cu	65	743.0	1.9	**0.2866**	0.009	3.1	ug/L	181	Standard
	Zn	66	1750.4	2.4	**1.2353**	0.049	3.9	ug/L	215	Standard
>	Ge	72	525789.4	1.1				ug/L	520809	Standard
	As	75	-56.5	78.0	**0.0000**	0.035	94213.4	ug/L	-52	Standard
	Se	82	21.9	13.2	**0.0450**	0.024	52.9	ug/L	17	Standard
	Se-1	77	369.0	3.8	**3.5902**	0.118	3.3	ug/L	56	Standard
>	Ga	71	190.0	4.6				mg/L	25	Standard
	Rb	85	1346.7	12.1				ug/L	28	Standard
	Y	89	446130.3	1.4				ug/L	447395	Standard
>	Rh	103	20.0	66.1				ug/L	15	Standard
	Mo	98	294809.8	0.7	**99.0666**	0.826	0.8	ug/L	113	Standard
	Ag	107	518.7	43.1	**0.0605**	0.032	52.1	ug/L	108	Standard
	Cd	111	-203.1	6.2	**-0.0920**	0.006	6.1	mg/L	3	Standard
	Cd	114	646.5	2.5	**0.1153**	0.003	2.6	ug/L	20	Standard
>	In	115	615550.0	0.1				ug/L	625728	Standard
	Sn	118	1126.7	15.8	**0.0937**	0.028	29.8	ug/L	568	Standard
	Sb	123	769.4	36.4	**0.1176**	0.055	46.8	ug/L	612	Standard
	Ba	135	907.7	4.8	**0.4062**	0.020	4.9	ug/L	21	Standard
	Ce	140	310.0	5.6				ug/L	245	Standard
>	Tb	159	945278.1	1.3				ug/L	950397	Standard
	Ho	165	18.3	41.7				ug/L	7	Standard
	Tl	203	340.3	40.4	**0.0383**	0.016	41.1	ug/L	15	Standard
	Tl	205	238.3	11.6	**0.0211**	0.004	17.6	ug/L	13	Standard
	Pb	206	679.7	9.3	**0.0799**	0.011	14.4	ug/L	264	Standard
	Pb	207	580.3	10.0	**0.0701**	0.011	16.1	ug/L	222	Standard
	Pb	208	2295.1	2.9	**0.0642**	0.002	3.2	ug/L	959	Standard
	U	238	77.3	37.1	**0.0096**	0.004	37.6	ug/L	9	Standard
>	Bi	209	536774.2	1.2				ug/L	552821	Standard

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Na	23	3.3	173.2	**9.7734**	16.919	173.1	mg/L	2	Standard
Mg	24	10777.2	2.6	**12.2531**	0.537	4.4	mg/L	55	Standard
K	39	1383.4	9.9	**5.0519**	0.468	9.3	mg/L	28	Standard
Ca	43	138.3	7.5	**9.8265**	0.682	6.9	mg/L	27	Standard
Fe	54	16161.2	1.3	**12.2930**	0.303	2.5	mg/L	147	Standard
Fe	57	4369.0	2.7	**12.3260**	0.594	4.8	mg/L	268	Standard
> **Sc-1**	45	42120.1	1.9				mg/L	41174	Standard
Cl	35	65421.7	2.5				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	1906.8	13.4				ug/L	1950	Standard
P	31	21114.7	2.7				ug/L	21156	Standard
S	34	3085.3	2.7				ug/L	3419	Standard
Sr	88	60.0	33.3				ug/L	72	Standard
C	12	210.0	31.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	106.7	54.9				mg/L	17	Standard
Dy	164	19.7	50.8				mg/L	16	Standard
Ho-1	165	18.3	41.7				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	3048.6	5.5				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27	1.012		
	Sc	45			
	Ti	47	108.876		
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.956	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	99.067		
Ag	107			
Cd	111			
Cd	114			
> In	115			98.373
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209			97.097
Na	23	78.187		
Mg	24	245.062		
K	39	101.039		
Ca	43	65.510		
Fe	54	98.344		
Fe	57	98.608		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Ba	135	
QC Std 4	Na	23	

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QC Std 4	Mg	24
QC Std 4	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Friday, July 01, 2016 10:56:16
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75903.0	2.2				ug/L	76456	Standard
	Be	9	113931.8	1.0	**102.5442**	3.204	3.1	ug/L	20	Standard
	Al	27	7231990.8	1.8	**42.5454**	0.182	0.4	ug/L	1307	Standard
	Sc	45	42432.7	2.4				ug/L	41174	Standard
	Ti	47	30737.8	1.0	**92.8199**	0.734	0.8	ug/L	27	Standard
	V	51	833696.6	0.9	**99.6740**	0.237	0.2	ug/L	1434	Standard
	Cr	52	810709.3	1.6	**97.7572**	1.161	1.2	ug/L	7733	Standard
	Cr	53	105220.8	1.3	**102.1011**	1.018	1.0	ug/L	442	Standard
	Mn	55	763205.2	1.1	**99.1800**	1.093	1.1	ug/L	723	Standard
	Co	59	765446.7	1.5	**98.3652**	1.221	1.2	ug/L	217	Standard
	Ni	60	204863.4	0.8	**97.0735**	0.398	0.4	ug/L	304	Standard
	Cu	65	204176.2	1.0	**98.4523**	0.417	0.4	ug/L	181	Standard
	Zn	66	128188.4	1.6	**102.8491**	1.339	1.3	ug/L	215	Standard
>	Ge	72	528896.0	0.7				ug/L	520809	Standard
	As	75	125724.6	1.1	**100.3319**	1.466	1.5	ug/L	-52	Standard
	Se	82	12709.7	1.6	**98.9446**	1.879	1.9	ug/L	17	Standard
	Se-1	77	8838.2	1.3	**101.1222**	0.967	1.0	ug/L	56	Standard
>	Ga	71	141.7	2.0				mg/L	25	Standard
	Rb	85	858.4	8.2				ug/L	28	Standard
	Y	89	450945.0	1.6				ug/L	447395	Standard
>	Rh	103	58.3	17.8				ug/L	15	Standard
	Mo	98	252063.2	0.9	**84.2200**	0.957	1.1	ug/L	113	Standard
	Ag	107	620939.1	2.7	**87.3716**	1.954	2.2	ug/L	108	Standard
	Cd	111	226578.4	0.5	**99.4783**	0.760	0.8	mg/L	3	Standard
	Cd	114	558953.6	2.4	**99.1106**	1.789	1.8	ug/L	20	Standard
>	In	115	619069.3	0.8				ug/L	625728	Standard
	Sn	118	1101.7	13.0	**0.0889**	0.024	26.9	ug/L	568	Standard
	Sb	123	495062.3	2.0	**96.7840**	1.258	1.3	ug/L	612	Standard
	Ba	135	212436.2	0.4	**98.6825**	0.524	0.5	ug/L	21	Standard
	Ce	140	106.7	5.4				ug/L	245	Standard
>	Tb	159	965012.6	0.9				ug/L	950397	Standard
	Ho	165	11.7	89.2				ug/L	7	Standard
	Tl	203	877864.5	0.6	**98.2340**	0.597	0.6	ug/L	15	Standard
	Tl	205	786061.6	0.2	**99.0500**	0.141	0.1	ug/L	13	Standard
	Pb	206	570990.7	1.2	**101.2826**	1.116	1.1	ug/L	264	Standard
	Pb	207	499235.8	0.8	**97.5091**	0.551	0.6	ug/L	222	Standard
	Pb	208	2063776.1	0.5	**98.6933**	0.341	0.3	ug/L	959	Standard
	U	238	778595.3	0.8	**97.0297**	0.672	0.7	ug/L	9	Standard
>	Bi	209	550260.8	0.2				ug/L	552821	Standard

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Na	23	5.0	100.0	**14.6626**	14.607	99.6	mg/L	2	Standard
Mg	24	9379.6	3.3	**10.5777**	0.497	4.7	mg/L	55	Standard
K	39	1123.4	14.5	**4.0598**	0.702	17.3	mg/L	28	Standard
Ca	43	151.7	14.9	**10.9556**	2.287	20.9	mg/L	27	Standard
Fe	54	13756.2	0.9	**10.3738**	0.327	3.2	mg/L	147	Standard
Fe	57	3798.8	1.3	**10.5253**	0.250	2.4	mg/L	268	Standard
Sc-1	45	42432.7	2.4				mg/L	41174	Standard
Cl	35	63162.8	2.2				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	2016.8	12.5				ug/L	1950	Standard
P	31	19924.8	3.7				ug/L	21156	Standard
S	34	3145.3	1.7				ug/L	3419	Standard
Sr	88	73.3	10.4				ug/L	72	Standard
C	12	216.7	17.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	17	Standard
Dy	164	29.4	59.5				mg/L	16	Standard
Ho-1	165	11.7	89.2				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	7	Standard
I	127	3137.0	10.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.544		
Al	27	0.851		
Sc	45			
Ti	47	92.820		
V	51	99.674		
Cr	52	97.757		
Cr	53			
Mn	55	99.180		
Co	59	98.365		
Ni	60	97.073		
Cu	65	98.452		
Zn	66	102.849		
Ge	72		101.553	
As	75	100.332		
Se	82	98.945		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	84.220		
Ag	107	87.372		
Cd	111	99.478		
Cd	114			
> In	115		98.936	
Sn	118			
Sb	123	96.784		
Ba	135	98.683		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.234		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.693		
U	238	97.030		
> Bi	209		99.537	
Na	23	117.301		
Mg	24	211.554		
K	39	81.196		
Ca	43	73.037		
Fe	54	82.990		
Fe	57	84.202		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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QC Std 5	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 10:59:29
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76397.1	0.4				ug/L	76456	Standard
	Be	9	56429.9	0.6	**50.4288**	0.323	0.6	ug/L	20	Standard
	Al	27	8608329.7	1.2	**50.3148**	0.658	1.3	ug/L	1307	Standard
	Sc	45	41418.2	1.5				ug/L	41174	Standard
	Ti	47	32560.9	0.4	**99.6282**	1.278	1.3	ug/L	27	Standard
	V	51	420616.9	0.3	**50.8527**	0.410	0.8	ug/L	1434	Standard
	Cr	52	416237.8	1.3	**50.3856**	0.640	1.3	ug/L	7733	Standard
	Cr	53	51529.2	2.3	**50.4433**	0.671	1.3	ug/L	442	Standard
	Mn	55	384144.6	2.2	**50.5271**	1.192	2.4	ug/L	723	Standard
	Co	59	391365.2	2.6	**50.9408**	1.337	2.6	ug/L	217	Standard
	Ni	60	104660.9	0.3	**50.1718**	0.419	0.8	ug/L	304	Standard
	Cu	65	103744.3	0.5	**50.6474**	0.422	0.8	ug/L	181	Standard
	Zn	66	61920.9	0.7	**50.2420**	0.301	0.6	ug/L	215	Standard
>	**Ge**	72	522053.0	1.0				ug/L	520809	Standard
	As	75	62496.7	0.9	**50.5498**	0.506	1.0	ug/L	-52	Standard
	Se	82	6394.4	1.6	**50.3673**	0.526	1.0	ug/L	17	Standard
	Se-1	77	4303.6	0.6	**49.5434**	0.744	1.5	ug/L	56	Standard
>	**Ga**	71	55.0	9.1				mg/L	25	Standard
	Rb	85	888.4	10.1				ug/L	28	Standard
	Y	89	456826.7	1.0				ug/L	447395	Standard
>	**Rh**	103	20.0	66.1				ug/L	15	Standard
	Mo	98	297194.2	1.6	**98.9144**	2.943	3.0	ug/L	113	Standard
	Ag	107	358131.2	0.8	**50.1903**	1.051	2.1	ug/L	108	Standard
	Cd	111	114353.1	0.3	**50.0023**	0.782	1.6	mg/L	3	Standard
	Cd	114	281397.0	1.0	**49.6948**	0.508	1.0	ug/L	20	Standard
>	**In**	115	621643.5	1.3				ug/L	625728	Standard
	Sn	118	312305.8	0.1	**48.7658**	0.722	1.5	ug/L	568	Standard
	Sb	123	262685.9	0.2	**51.1341**	0.568	1.1	ug/L	612	Standard
	Ba	135	107196.2	0.5	**49.5868**	0.878	1.8	ug/L	21	Standard
	Ce	140	91.7	19.2				ug/L	245	Standard
>	**Tb**	159	949369.3	0.9				ug/L	950397	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	446446.9	0.3	**50.5283**	0.234	0.5	ug/L	15	Standard
	Tl	205	397524.5	2.6	**50.6566**	1.177	2.3	ug/L	13	Standard
	Pb	206	283032.1	0.6	**50.7560**	0.110	0.2	ug/L	264	Standard
	Pb	207	256737.6	0.4	**50.6961**	0.167	0.3	ug/L	222	Standard
	Pb	208	1049117.6	0.6	**50.7200**	0.161	0.3	ug/L	959	Standard
	U	238	395685.5	0.4	**49.8743**	0.152	0.3	ug/L	9	Standard
>	**Bi**	209	544048.8	0.4				ug/L	552821	Standard

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Na	23	3.3	173.2	**9.9687**	17.258	173.1	mg/L	2	Standard
Mg	24	4517.3	2.2	**5.1854**	0.050	1.0	mg/L	55	Standard
K	39	1296.7	2.0	**4.8131**	0.164	3.4	mg/L	28	Standard
Ca	43	80.0	16.5	**4.7867**	1.292	27.0	mg/L	27	Standard
Fe	54	6442.2	3.1	**4.9235**	0.148	3.0	mg/L	147	Standard
Fe	57	1841.8	2.1	**4.8233**	0.186	3.8	mg/L	268	Standard
Sc-1	45	41418.2	1.5				mg/L	41174	Standard
Cl	35	65714.2	0.5				ug/L	69550	Standard
Kr	83	3.0	33.3				ug/L	1	Standard
Br	81	1946.8	7.2				ug/L	1950	Standard
P	31	21396.8	2.5				ug/L	21156	Standard
S	34	3327.0	3.8				ug/L	3419	Standard
Sr	88	70.0	18.9				ug/L	72	Standard
C	12	130.0	20.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	17	Standard
Dy	164	9.5	107.6				mg/L	16	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	23620.1	0.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	100.858		
Al	27	100.630		
Sc	45			
Ti	47	99.628		
V	51	101.705		
Cr	52	100.771		
Cr	53			
Mn	55	101.054		
Co	59	101.882		
Ni	60	100.344		
Cu	65	101.295		
Zn	66	100.484		
Ge	72		100.239	
As	75	101.100		
Se	82	100.735		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.914		
Ag	107	100.381		
Cd	111	100.005		
Cd	114			
> In	115			99.347
Sn	118	97.532		
Sb	123	102.268		
Ba	135	99.174		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.057		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.440		
U	238	99.749		
> Bi	209			98.413
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 11:02:41
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76638.3	0.9				ug/L	76456	Standard
	Be	9	45.0	69.4	**0.0201**	0.027	136.2	ug/L	20	Standard
	Al	27	2771.9	19.2	**0.0059**	0.003	49.8	ug/L	1307	Standard
	Sc	45	41874.5	1.3				ug/L	41174	Standard
	Ti	47	34.3	22.6	**0.0199**	0.023	116.0	ug/L	27	Standard
	V	51	1314.7	3.0	**-0.0400**	0.005	13.2	ug/L	1434	Standard
	Cr	52	7063.3	2.5	**-0.1041**	0.024	23.4	ug/L	7733	Standard
	Cr	53	583.3	6.1	**0.1556**	0.035	22.3	ug/L	442	Standard
	Mn	55	795.7	2.1	**0.0029**	0.003	97.4	ug/L	723	Standard
	Co	59	301.0	14.0	**0.0095**	0.006	58.4	ug/L	217	Standard
	Ni	60	322.3	4.2	**0.0009**	0.006	613.3	ug/L	304	Standard
	Cu	65	188.3	9.4	**0.0175**	0.009	51.5	ug/L	181	Standard
	Zn	66	246.3	14.0	**0.0191**	0.028	144.2	ug/L	215	Standard
>	**Ge**	72	525121.4	0.6				ug/L	520809	Standard
	As	75	-40.2	86.9	**0.0130**	0.028	214.4	ug/L	-52	Standard
	Se	82	15.7	75.3	**-0.0027**	0.093	3488.1	ug/L	17	Standard
	Se-1	77	53.7	18.4	**-0.0615**	0.118	192.4	ug/L	56	Standard
>	**Ga**	71	31.7	18.2				mg/L	25	Standard
	Rb	85	18.3	15.7				ug/L	28	Standard
	Y	89	447115.8	1.8				ug/L	447395	Standard
>	**Rh**	103	16.7	17.3				ug/L	15	Standard
	Mo	98	330.0	12.1	**0.0850**	0.013	15.3	ug/L	113	Standard
	Ag	107	352.0	8.7	**0.0361**	0.004	11.5	ug/L	108	Standard
	Cd	111	29.4	26.4	**0.0104**	0.003	32.2	mg/L	3	Standard
	Cd	114	71.8	39.3	**0.0126**	0.005	39.2	ug/L	20	Standard
>	**In**	115	626402.7	0.2				ug/L	625728	Standard
	Sn	118	865.0	27.7	**0.0501**	0.037	74.4	ug/L	568	Standard
	Sb	123	1603.3	32.0	**0.2763**	0.100	36.1	ug/L	612	Standard
	Ba	135	44.0	23.9	**0.0023**	0.005	210.3	ug/L	21	Standard
	Ce	140	16.7	34.6				ug/L	245	Standard
>	**Tb**	159	964218.0	1.0				ug/L	950397	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	134.0	19.6	**0.0140**	0.003	21.2	ug/L	15	Standard
	Tl	205	110.0	16.4	**0.0039**	0.002	58.2	ug/L	13	Standard
	Pb	206	338.3	8.4	**0.0154**	0.006	35.8	ug/L	264	Standard
	Pb	207	297.0	6.8	**0.0111**	0.004	39.6	ug/L	222	Standard
	Pb	208	1217.7	7.2	**0.0091**	0.005	50.4	ug/L	959	Standard
	U	238	104.0	26.4	**0.0125**	0.003	27.7	ug/L	9	Standard
>	**Bi**	209	558778.4	1.0				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	40.0	45.1	**-0.0142**	0.021	147.6	mg/L	55	Standard
K	39	25.0	72.1	**-0.0375**	0.066	177.3	mg/L	28	Standard
Ca	43	30.0	33.3	**0.2279**	0.902	395.6	mg/L	27	Standard
Fe	54	134.1	12.9	**0.0047**	0.015	308.3	mg/L	147	Standard
Fe	57	221.7	27.3	**-0.1357**	0.173	127.8	mg/L	268	Standard
> **Sc-1**	45	41874.5	1.3				mg/L	41174	Standard
Cl	35	67946.0	1.7				ug/L	69550	Standard
Kr	83	1.0	173.2				ug/L	1	Standard
Br	81	1943.5	9.7				ug/L	1950	Standard
P	31	20762.6	2.5				ug/L	21156	Standard
S	34	3392.0	1.6				ug/L	3419	Standard
Sr	88	48.3	36.3				ug/L	72	Standard
C	12	116.7	42.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	89.2				mg/L	17	Standard
Dy	164	15.9	71.9				mg/L	16	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	7	Standard
I	127	17685.3	1.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.828	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.108
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.078
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

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Method 6020 - Summary Report

Sample ID: PBW 78 WG574416-04
Sample Date/Time: Friday, July 01, 2016 11:05:53
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76067.2	2.6				ug/L	76456	Standard
	Be	9	91.7	22.0	**0.0624**	0.018	28.1	ug/L	20	Standard
	Al	27	9900.0	18.4	**0.0479**	0.010	21.7	ug/L	1307	Standard
	Sc	45	42185.3	1.2				ug/L	41174	Standard
	Ti	47	37.3	6.7	**0.0291**	0.007	24.8	ug/L	27	Standard
	V	51	1740.2	8.5	**0.0114**	0.018	156.7	ug/L	1434	Standard
	Cr	52	8205.6	2.3	**0.0360**	0.018	50.7	ug/L	7733	Standard
	Cr	53	613.3	22.1	**0.1846**	0.130	70.5	ug/L	442	Standard
	Mn	55	2289.5	4.2	**0.1986**	0.011	5.7	ug/L	723	Standard
	Co	59	620.0	11.0	**0.0508**	0.009	16.8	ug/L	217	Standard
	Ni	60	519.3	1.9	**0.0951**	0.005	5.1	ug/L	304	Standard
	Cu	65	329.0	6.1	**0.0858**	0.009	10.4	ug/L	181	Standard
	Zn	66	3237.3	0.8	**2.4406**	0.012	0.5	ug/L	215	Standard
>	**Ge**	72	525088.2	0.5				ug/L	520809	Standard
	As	75	30.8	108.7	**0.0699**	0.027	38.5	ug/L	-52	Standard
	Se	82	25.8	16.5	**0.0760**	0.033	43.0	ug/L	17	Standard
	Se-1	77	68.3	8.1	**0.1083**	0.066	60.6	ug/L	56	Standard
>	**Ga**	71	20.0	66.1				mg/L	25	Standard
	Rb	85	38.3	7.5				ug/L	28	Standard
	Y	89	448293.9	2.2				ug/L	447395	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	197.6	7.0	**0.0411**	0.005	11.2	ug/L	113	Standard
	Ag	107	356.3	27.8	**0.0365**	0.014	37.3	ug/L	108	Standard
	Cd	111	135.0	20.3	**0.0560**	0.012	21.0	mg/L	3	Standard
	Cd	114	292.8	13.1	**0.0511**	0.007	12.9	ug/L	20	Standard
>	**In**	115	628756.6	0.3				ug/L	625728	Standard
	Sn	118	890.0	6.8	**0.0534**	0.009	17.4	ug/L	568	Standard
	Sb	123	903.8	20.1	**0.1404**	0.035	25.1	ug/L	612	Standard
	Ba	135	176.0	12.6	**0.0626**	0.010	15.9	ug/L	21	Standard
	Ce	140	53.3	61.0				ug/L	245	Standard
>	**Tb**	159	955139.7	2.0				ug/L	950397	Standard
	Ho	165	11.7	49.5				ug/L	7	Standard
	Tl	203	548.0	21.5	**0.0598**	0.012	20.5	ug/L	15	Standard
	Tl	205	510.0	24.7	**0.0537**	0.015	27.8	ug/L	13	Standard
	Pb	206	677.0	11.7	**0.0750**	0.013	16.8	ug/L	264	Standard
	Pb	207	544.7	11.6	**0.0591**	0.011	18.5	ug/L	222	Standard
	Pb	208	2290.4	8.0	**0.0601**	0.007	12.3	ug/L	959	Standard
	U	238	102.7	66.1	**0.0123**	0.008	66.3	ug/L	9	Standard
>	**Bi**	209	556043.1	1.2				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	61.7	46.1	**0.0100**	0.032	319.9	mg/L	55	Standard
K	39	35.0	57.1	**0.0003**	0.076	23783.0	mg/L	28	Standard
Ca	43	23.3	32.7	**-0.3783**	0.697	184.3	mg/L	27	Standard
Fe	54	175.9	11.5	**0.0357**	0.014	38.5	mg/L	147	Standard
Fe	57	216.7	10.7	**-0.1545**	0.066	42.5	mg/L	268	Standard
> **Sc-1**	45	42185.3	1.2				mg/L	41174	Standard
Cl	35	67744.4	0.4				ug/L	69550	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	2090.1	1.7				ug/L	1950	Standard
P	31	21226.5	2.4				ug/L	21156	Standard
S	34	3468.7	3.7				ug/L	3419	Standard
Sr	88	66.7	18.9				ug/L	72	Standard
C	12	106.7	51.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	17	Standard
Dy	164	6.2	100.1				mg/L	16	Standard
Ho-1	165	11.7	49.5				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	2538.5	15.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.492	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.822	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: PBW 78 WG574416-04
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.484
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.583
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 78 WG574416-05
Sample Date/Time: Friday, July 01, 2016 11:09:04
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76480.9	1.3				ug/L	76456	Standard
	Be	9	57299.8	1.8	**51.1515**	0.782	1.5	ug/L	20	Standard
	Al	27	13893.0	5.9	**0.0710**	0.006	8.3	ug/L	1307	Standard
	Sc	45	41525.2	3.0				ug/L	41174	Standard
	Ti	47	50.0	14.4	**0.0663**	0.021	31.6	ug/L	27	Standard
	V	51	423867.5	0.4	**50.5009**	0.287	0.6	ug/L	1434	Standard
	Cr	52	423554.6	0.4	**50.5309**	0.121	0.2	ug/L	7733	Standard
	Cr	53	51463.9	0.2	**49.6485**	0.215	0.4	ug/L	442	Standard
	Mn	55	395604.7	0.2	**51.2819**	0.431	0.8	ug/L	723	Standard
	Co	59	393078.4	0.7	**50.4221**	0.467	0.9	ug/L	217	Standard
	Ni	60	106911.2	0.9	**50.5097**	0.714	1.4	ug/L	304	Standard
	Cu	65	106870.6	0.8	**51.4201**	0.725	1.4	ug/L	181	Standard
	Zn	66	64695.2	1.1	**51.7405**	0.880	1.7	ug/L	215	Standard
>	**Ge**	72	529720.7	0.6				ug/L	520809	Standard
	As	75	63865.6	0.7	**50.9077**	0.332	0.7	ug/L	-52	Standard
	Se	82	6442.1	1.2	**50.0074**	0.423	0.8	ug/L	17	Standard
	Se-1	77	4460.3	1.4	**50.6149**	0.735	1.5	ug/L	56	Standard
>	**Ga**	71	33.3	48.2				mg/L	25	Standard
	Rb	85	51.7	53.3				ug/L	28	Standard
	Y	89	451210.1	0.7				ug/L	447395	Standard
>	**Rh**	103	28.3	10.2				ug/L	15	Standard
	Mo	98	211.5	58.2	**0.0455**	0.040	88.5	ug/L	113	Standard
	Ag	107	371127.1	0.8	**51.3096**	0.429	0.8	ug/L	108	Standard
	Cd	111	117429.0	0.6	**50.6559**	0.197	0.4	mg/L	3	Standard
	Cd	114	286369.4	2.1	**49.8969**	1.108	2.2	ug/L	20	Standard
>	**In**	115	630039.4	0.2				ug/L	625728	Standard
	Sn	118	975.0	11.8	**0.0662**	0.017	26.4	ug/L	568	Standard
	Sb	123	249155.3	2.4	**47.8470**	1.151	2.4	ug/L	612	Standard
	Ba	135	109490.5	0.6	**49.9659**	0.356	0.7	ug/L	21	Standard
	Ce	140	110.0	22.7				ug/L	245	Standard
>	**Tb**	159	961658.5	1.2				ug/L	950397	Standard
	Ho	165	8.3	124.9				ug/L	7	Standard
	Tl	203	456267.9	0.6	**50.3461**	0.267	0.5	ug/L	15	Standard
	Tl	205	402501.7	1.2	**50.0083**	0.617	1.2	ug/L	13	Standard
	Pb	206	293954.8	0.6	**51.3969**	0.546	1.1	ug/L	264	Standard
	Pb	207	256579.6	0.1	**49.3966**	0.497	1.0	ug/L	222	Standard
	Pb	208	1074330.1	0.6	**50.6396**	0.527	1.0	ug/L	959	Standard
	U	238	394562.7	0.9	**48.4869**	0.395	0.8	ug/L	9	Standard
>	**Bi**	209	558043.6	1.1				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	61.7	20.4	**0.0111**	0.013	120.9	mg/L	55	Standard
K	39	35.0	37.8	**0.0010**	0.048	4646.6	mg/L	28	Standard
Ca	43	28.3	36.7	**0.0919**	0.886	964.6	mg/L	27	Standard
Fe	54	169.1	21.5	**0.0325**	0.027	81.8	mg/L	147	Standard
Fe	57	220.0	8.2	**-0.1334**	0.058	43.3	mg/L	268	Standard
> **Sc-1**	45	41525.2	3.0				mg/L	41174	Standard
Cl	35	67082.2	2.2				ug/L	69550	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	2023.5	3.3				ug/L	1950	Standard
P	31	22251.3	1.9				ug/L	21156	Standard
S	34	3218.7	6.1				ug/L	3419	Standard
Sr	88	76.7	10.0				ug/L	72	Standard
C	12	130.0	27.7				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	17	Standard
Dy	164	12.2	119.1				mg/L	16	Standard
Ho-1	165	8.3	124.9				mg/L	7	Standard
Er	166	23.3	65.5				mg/L	7	Standard
I	127	1945.1	18.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.033	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.711	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.689
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.945
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606141705 WG574416-01
Sample Date/Time: Friday, July 01, 2016 11:12:16
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78995.4	1.2				ug/L	76456	Standard
	Be	9	58.3	4.9	**0.0306**	0.003	9.8	ug/L	20	Standard
	Al	27	21381126.3	0.9	**120.8920**	2.463	2.0	ug/L	1307	Standard
	Sc	45	41005.4	0.8				ug/L	41174	Standard
	Ti	47	385.7	14.4	**1.1313**	0.162	14.4	ug/L	27	Standard
	V	51	37880.1	0.4	**4.5394**	0.067	1.5	ug/L	1434	Standard
	Cr	52	15651.7	0.4	**1.0197**	0.032	3.2	ug/L	7733	Standard
	Cr	53	6074.6	20.3	**5.7629**	1.265	22.0	ug/L	442	Standard
	Mn	55	15005.4	0.7	**1.9367**	0.029	1.5	ug/L	723	Standard
	Co	59	1426.7	2.3	**0.1620**	0.002	1.4	ug/L	217	Standard
	Ni	60	3377.0	1.1	**1.5203**	0.032	2.1	ug/L	304	Standard
	Cu	65	1905.1	1.9	**0.8856**	0.009	1.0	ug/L	181	Standard
	Zn	66	4588.7	1.0	**3.6704**	0.063	1.7	ug/L	215	Standard
>	**Ge**	72	506618.0	1.2				ug/L	520809	Standard
	As	75	2080.8	8.4	**1.7774**	0.135	7.6	ug/L	-52	Standard
	Se	82	818.2	2.3	**6.5307**	0.077	1.2	ug/L	17	Standard
	Se-1	77	895.7	3.3	**10.0889**	0.428	4.2	ug/L	56	Standard
>	**Ga**	71	153.3	31.3				mg/L	25	Standard
	Rb	85	3665.4	2.3				ug/L	28	Standard
	Y	89	429409.0	1.3				ug/L	447395	Standard
>	**Rh**	103	178.3	12.6				ug/L	15	Standard
	Mo	98	683.2	5.3	**0.2157**	0.014	6.4	ug/L	113	Standard
	Ag	107	300.3	34.9	**0.0315**	0.016	49.6	ug/L	108	Standard
	Cd	111	82.5	7.8	**0.0356**	0.003	8.6	mg/L	3	Standard
	Cd	114	158.8	23.9	**0.0295**	0.007	23.3	ug/L	20	Standard
>	**In**	115	590046.0	0.5				ug/L	625728	Standard
	Sn	118	975.0	8.9	**0.0764**	0.014	18.3	ug/L	568	Standard
	Sb	123	2972.1	30.5	**0.5762**	0.187	32.4	ug/L	612	Standard
	Ba	135	67195.3	0.7	**32.7370**	0.271	0.8	ug/L	21	Standard
	Ce	140	5165.9	1.6				ug/L	245	Standard
>	**Tb**	159	918152.8	1.4				ug/L	950397	Standard
	Ho	165	105.0	29.7				ug/L	7	Standard
	Tl	203	363.0	14.1	**0.0439**	0.007	15.0	ug/L	15	Standard
	Tl	205	258.3	37.0	**0.0260**	0.013	51.2	ug/L	13	Standard
	Pb	206	917.4	3.4	**0.1351**	0.007	5.1	ug/L	264	Standard
	Pb	207	764.4	2.1	**0.1180**	0.005	4.0	ug/L	222	Standard
	Pb	208	3197.8	4.0	**0.1198**	0.007	5.7	ug/L	959	Standard
	U	238	29042.1	0.6	**3.9760**	0.053	1.3	ug/L	9	Standard
>	**Bi**	209	500900.4	0.8				ug/L	552821	Standard

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Na	23	6.7	43.3	**19.9855**	8.657	43.3	mg/L	2	Standard
Mg	24	126521.1	1.0	**148.3441**	0.501	0.3	mg/L	55	Standard
K	39	181.7	30.9	**0.5679**	0.214	37.7	mg/L	28	Standard
Ca	43	465.0	16.3	**40.0054**	7.184	18.0	mg/L	27	Standard
Fe	54	240.2	12.6	**0.0904**	0.025	28.1	mg/L	147	Standard
Fe	57	603.3	4.8	**1.0579**	0.102	9.7	mg/L	268	Standard
> **Sc-1**	45	41005.4	0.8				mg/L	41174	Standard
Cl	35	90433.8	0.8				ug/L	69550	Standard
Kr	83	2.7	43.3				ug/L	1	Standard
Br	81	57739.9	3.1				ug/L	1950	Standard
P	31	24640.0	1.7				ug/L	21156	Standard
S	34	3010.3	1.4				ug/L	3419	Standard
Sr	88	401.7	14.4				ug/L	72	Standard
C	12	506.7	3.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	132.3				mg/L	17	Standard
Dy	164	121.7	25.2				mg/L	16	Standard
Ho-1	165	105.0	29.7				mg/L	7	Standard
Er	166	103.3	29.6				mg/L	7	Standard
I	127	25413.0	5.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.322	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.275	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.298
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.608
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606141706S WG574416-06
Sample Date/Time: Friday, July 01, 2016 11:15:27
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	82487.3	1.1				ug/L	76456	Standard
	Be	9	59434.7	2.0	**49.1890**	0.474	1.0	ug/L	20	Standard
	Al	27	21126866.6	0.7	**114.3857**	1.245	1.1	ug/L	1307	Standard
	Sc	45	42071.7	1.5				ug/L	41174	Standard
	Ti	47	445.7	9.0	**1.3272**	0.106	8.0	ug/L	27	Standard
	V	51	448794.0	1.2	**56.1906**	0.338	0.6	ug/L	1434	Standard
	Cr	52	405302.2	0.8	**50.8030**	0.762	1.5	ug/L	7733	Standard
	Cr	53	55872.8	0.8	**56.6886**	1.157	2.0	ug/L	442	Standard
	Mn	55	376409.4	1.7	**51.2605**	1.187	2.3	ug/L	723	Standard
	Co	59	371466.0	0.9	**50.0608**	1.026	2.0	ug/L	217	Standard
	Ni	60	100340.5	1.4	**49.7984**	1.011	2.0	ug/L	304	Standard
	Cu	65	97977.1	1.5	**49.5201**	1.028	2.1	ug/L	181	Standard
	Zn	66	64249.3	1.5	**53.9822**	0.650	1.2	ug/L	215	Standard
>	Ge	72	504287.9	1.5				ug/L	520809	Standard
	As	75	64736.7	1.2	**54.2084**	0.977	1.8	ug/L	-52	Standard
	Se	82	7105.9	2.4	**57.9770**	1.906	3.3	ug/L	17	Standard
	Se-1	77	5081.5	1.0	**60.7211**	1.522	2.5	ug/L	56	Standard
>	Ga	71	93.3	21.7				mg/L	25	Standard
	Rb	85	3385.4	7.7				ug/L	28	Standard
	Y	89	437587.9	1.2				ug/L	447395	Standard
>	Rh	103	133.3	19.2				ug/L	15	Standard
	Mo	98	712.0	6.4	**0.2258**	0.015	6.5	ug/L	113	Standard
	Ag	107	254706.8	0.6	**37.6267**	0.420	1.1	ug/L	108	Standard
	Cd	111	107324.5	0.5	**49.4721**	0.054	0.1	mg/L	3	Standard
	Cd	114	266264.7	1.6	**49.5778**	1.034	2.1	ug/L	20	Standard
>	In	115	589608.9	0.6				ug/L	625728	Standard
	Sn	118	1198.4	5.9	**0.1134**	0.011	9.9	ug/L	568	Standard
	Sb	123	255276.2	0.1	**52.3884**	0.301	0.6	ug/L	612	Standard
	Ba	135	166458.1	0.3	**81.1840**	0.412	0.5	ug/L	21	Standard
	Ce	140	2188.5	3.6				ug/L	245	Standard
>	Tb	159	935892.6	1.8				ug/L	950397	Standard
	Ho	165	80.0	12.5				ug/L	7	Standard
	Tl	203	416301.7	0.5	**50.3128**	0.740	1.5	ug/L	15	Standard
	Tl	205	372797.3	0.4	**50.7287**	0.513	1.0	ug/L	13	Standard
	Pb	206	269916.3	0.3	**51.6884**	0.658	1.3	ug/L	264	Standard
	Pb	207	235694.4	0.5	**49.6950**	0.399	0.8	ug/L	222	Standard
	Pb	208	976732.6	0.6	**50.4213**	0.371	0.7	ug/L	959	Standard
	U	238	405996.3	0.5	**54.6443**	0.642	1.2	ug/L	9	Standard
>	Bi	209	509531.8	1.0				ug/L	552821	Standard

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Na	23	6.7	86.6	**19.6383**	17.003	86.6	mg/L	2	Standard
Mg	24	124588.6	1.9	**142.3700**	0.938	0.7	mg/L	55	Standard
K	39	133.3	31.9	**0.3687**	0.159	43.1	mg/L	28	Standard
Ca	43	506.7	5.0	**42.5935**	1.641	3.9	mg/L	27	Standard
Fe	54	191.0	18.5	**0.0477**	0.027	55.6	mg/L	147	Standard
Fe	57	573.3	0.5	**0.9203**	0.025	2.7	mg/L	268	Standard
> **Sc-1**	45	42071.7	1.5				mg/L	41174	Standard
Cl	35	93134.7	1.1				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	57294.9	3.7				ug/L	1950	Standard
P	31	24481.4	0.9				ug/L	21156	Standard
S	34	3050.3	2.6				ug/L	3419	Standard
Sr	88	351.7	17.1				ug/L	72	Standard
C	12	470.0	15.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	17	Standard
Dy	164	66.5	44.7				mg/L	16	Standard
Ho-1	165	80.0	12.5				mg/L	7	Standard
Er	166	73.3	92.8				mg/L	7	Standard
I	127	27035.8	3.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.889	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.828	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.228
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.169
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606141706S WG574416-06
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Method 6020 - Summary Report

Sample ID: L1606141707SD WG574416-07
Sample Date/Time: Friday, July 01, 2016 11:18:39
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83771.0	2.5				ug/L	76456	Standard
	Be	9	60537.4	1.9	**49.3442**	0.599	1.2	ug/L	20	Standard
	Al	27	20909187.8	2.0	**111.4909**	2.320	2.1	ug/L	1307	Standard
	Sc	45	42178.7	2.5				ug/L	41174	Standard
	Ti	47	385.0	17.2	**1.1368**	0.214	18.9	ug/L	27	Standard
	V	51	446877.6	0.6	**55.9631**	0.571	1.0	ug/L	1434	Standard
	Cr	52	407703.5	1.0	**51.1164**	0.567	1.1	ug/L	7733	Standard
	Cr	53	57269.7	0.1	**58.1199**	0.209	0.4	ug/L	442	Standard
	Mn	55	373320.3	1.2	**50.8451**	0.769	1.5	ug/L	723	Standard
	Co	59	374639.0	0.7	**50.4931**	0.593	1.2	ug/L	217	Standard
	Ni	60	102269.7	0.8	**50.7649**	0.500	1.0	ug/L	304	Standard
	Cu	65	98211.9	0.3	**49.6447**	0.334	0.7	ug/L	181	Standard
	Zn	66	63211.9	0.4	**53.1189**	0.394	0.7	ug/L	215	Standard
>	Ge	72	504167.3	0.4				ug/L	520809	Standard
	As	75	65436.1	0.6	**54.8009**	0.553	1.0	ug/L	-52	Standard
	Se	82	7107.1	0.1	**57.9877**	0.247	0.4	ug/L	17	Standard
	Se-1	77	5193.9	0.7	**62.0795**	0.521	0.8	ug/L	56	Standard
>	Ga	71	93.3	56.3				mg/L	25	Standard
	Rb	85	2987.0	1.6				ug/L	28	Standard
	Y	89	428781.1	0.8				ug/L	447395	Standard
>	Rh	103	146.7	3.9				ug/L	15	Standard
	Mo	98	634.9	1.7	**0.2009**	0.001	0.6	ug/L	113	Standard
	Ag	107	261558.3	0.6	**39.0020**	0.323	0.8	ug/L	108	Standard
	Cd	111	107761.1	1.2	**50.1421**	0.734	1.5	mg/L	3	Standard
	Cd	114	265170.0	1.2	**49.8331**	0.062	0.1	ug/L	20	Standard
>	In	115	584141.3	1.3				ug/L	625728	Standard
	Sn	118	778.4	10.9	**0.0453**	0.014	30.6	ug/L	568	Standard
	Sb	123	253357.3	0.7	**52.4833**	0.432	0.8	ug/L	612	Standard
	Ba	135	164823.3	0.7	**81.1417**	0.473	0.6	ug/L	21	Standard
	Ce	140	1715.1	1.1				ug/L	245	Standard
>	Tb	159	919374.0	0.5				ug/L	950397	Standard
	Ho	165	48.3	26.0				ug/L	7	Standard
	Tl	203	415993.7	1.0	**50.5326**	0.446	0.9	ug/L	15	Standard
	Tl	205	377462.4	0.7	**51.6305**	0.656	1.3	ug/L	13	Standard
	Pb	206	269578.4	0.3	**51.8894**	0.298	0.6	ug/L	264	Standard
	Pb	207	236101.7	0.1	**50.0395**	0.358	0.7	ug/L	222	Standard
	Pb	208	981599.1	1.3	**50.9367**	0.779	1.5	ug/L	959	Standard
	U	238	408604.0	0.1	**55.2799**	0.488	0.9	ug/L	9	Standard
>	Bi	209	506896.7	0.8				ug/L	552821	Standard

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Na	23	6.7	86.6	**19.7141**	17.069	86.6	mg/L	2	Standard
Mg	24	123424.1	1.3	**140.7631**	4.816	3.4	mg/L	55	Standard
K	39	126.7	21.7	**0.3448**	0.114	32.9	mg/L	28	Standard
Ca	43	478.3	6.3	**39.9606**	1.868	4.7	mg/L	27	Standard
Fe	54	159.8	26.4	**0.0241**	0.035	144.2	mg/L	147	Standard
Fe	57	558.3	4.0	**0.8725**	0.108	12.4	mg/L	268	Standard
> **Sc-1**	45	42178.7	2.5				mg/L	41174	Standard
Cl	35	93263.5	1.5				ug/L	69550	Standard
Kr	83	3.0	33.3				ug/L	1	Standard
Br	81	55210.4	0.6				ug/L	1950	Standard
P	31	24391.3	2.2				ug/L	21156	Standard
S	34	2932.0	3.7				ug/L	3419	Standard
Sr	88	386.7	9.1				ug/L	72	Standard
C	12	800.0	2.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	17	Standard
Dy	164	64.1	17.0				mg/L	16	Standard
Ho-1	165	48.3	26.0				mg/L	7	Standard
Er	166	53.3	39.0				mg/L	7	Standard
I	127	27236.1	1.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.568	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.805	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	93.354
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	91.693
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606141701
Sample Date/Time: Friday, July 01, 2016 11:21:50
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83420.7	1.6				ug/L	76456	Standard
	Be	9	53.3	21.7	**0.0237**	0.009	37.8	ug/L	20	Standard
	Al	27	31084082.3	1.3	**166.4192**	1.988	1.2	ug/L	1307	Standard
	Sc	45	42130.2	2.0				ug/L	41174	Standard
	Ti	47	170.3	8.2	**0.4375**	0.044	10.0	ug/L	27	Standard
	V	51	22939.6	1.3	**2.5877**	0.032	1.2	ug/L	1434	Standard
	Cr	52	13097.0	1.3	**0.6468**	0.025	3.9	ug/L	7733	Standard
	Cr	53	1960.1	6.9	**1.5196**	0.135	8.9	ug/L	442	Standard
	Mn	55	3766.5	0.8	**0.3954**	0.005	1.2	ug/L	723	Standard
	Co	59	709.0	6.9	**0.0630**	0.006	10.1	ug/L	217	Standard
	Ni	60	2223.2	1.0	**0.9167**	0.012	1.3	ug/L	304	Standard
	Cu	65	739.0	2.4	**0.2875**	0.008	2.9	ug/L	181	Standard
	Zn	66	2322.5	1.8	**1.7125**	0.036	2.1	ug/L	215	Standard
>	Ge	72	521624.8	0.2				ug/L	520809	Standard
	As	75	515.4	8.1	**0.4620**	0.033	7.2	ug/L	-52	Standard
	Se	82	150.1	4.3	**1.0601**	0.051	4.8	ug/L	17	Standard
	Se-1	77	163.7	3.7	**1.2270**	0.071	5.8	ug/L	56	Standard
>	Ga	71	35.0	42.9				mg/L	25	Standard
	Rb	85	1295.1	7.1				ug/L	28	Standard
	Y	89	450422.8	1.4				ug/L	447395	Standard
>	Rh	103	130.0	23.4				ug/L	15	Standard
	Mo	98	654.1	6.4	**0.1969**	0.014	7.3	ug/L	113	Standard
	Ag	107	196.0	12.7	**0.0150**	0.004	24.0	ug/L	108	Standard
	Cd	111	38.8	25.3	**0.0149**	0.004	28.8	mg/L	3	Standard
	Cd	114	102.9	24.1	**0.0184**	0.004	23.7	ug/L	20	Standard
>	In	115	612771.9	0.4				ug/L	625728	Standard
	Sn	118	700.0	1.2	**0.0268**	0.002	5.6	ug/L	568	Standard
	Sb	123	677.6	31.8	**0.1003**	0.043	43.0	ug/L	612	Standard
	Ba	135	79352.9	0.7	**37.2291**	0.386	1.0	ug/L	21	Standard
	Ce	140	398.3	12.2				ug/L	245	Standard
>	Tb	159	943156.7	0.8				ug/L	950397	Standard
	Ho	165	36.7	20.8				ug/L	7	Standard
	Tl	203	227.0	14.0	**0.0253**	0.004	14.6	ug/L	15	Standard
	Tl	205	246.7	13.8	**0.0221**	0.004	19.4	ug/L	13	Standard
	Pb	206	454.7	7.7	**0.0390**	0.006	16.7	ug/L	264	Standard
	Pb	207	363.0	3.8	**0.0266**	0.003	11.0	ug/L	222	Standard
	Pb	208	1563.4	3.8	**0.0284**	0.003	10.4	ug/L	959	Standard
	U	238	20328.0	1.2	**2.5974**	0.039	1.5	ug/L	9	Standard
>	Bi	209	536649.8	0.3				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	14153.3	4.2	**16.0944**	0.416	2.6	mg/L	55	Standard
K	39	73.3	50.3	**0.1418**	0.131	92.5	mg/L	28	Standard
Ca	43	301.7	14.5	**24.2946**	3.319	13.7	mg/L	27	Standard
Fe	54	192.1	16.5	**0.0481**	0.021	43.9	mg/L	147	Standard
Fe	57	448.3	3.9	**0.5433**	0.078	14.4	mg/L	268	Standard
> **Sc-1**	45	42130.2	2.0				mg/L	41174	Standard
Cl	35	78637.6	2.5				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	17710.4	7.6				ug/L	1950	Standard
P	31	24940.5	2.0				ug/L	21156	Standard
S	34	3180.3	5.3				ug/L	3419	Standard
Sr	88	363.3	6.9				ug/L	72	Standard
C	12	386.7	16.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	17	Standard
Dy	164	45.1	46.6				mg/L	16	Standard
Ho-1	165	36.7	20.8				mg/L	7	Standard
Er	166	33.3	17.3				mg/L	7	Standard
I	127	17748.8	7.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.110	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.157	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.929
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.075
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606141702
Sample Date/Time: Friday, July 01, 2016 11:25:02
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	84178.2	0.8				ug/L	76456	Standard
	Be	9	68.3	33.0	**0.0357**	0.019	52.5	ug/L	20	Standard
	Al	27	21395590.4	1.7	**113.5091**	1.891	1.7	ug/L	1307	Standard
	Sc	45	40557.5	1.2				ug/L	41174	Standard
	Ti	47	235.3	3.5	**0.6749**	0.030	4.5	ug/L	27	Standard
	V	51	30102.8	0.4	**3.6510**	0.042	1.2	ug/L	1434	Standard
	Cr	52	20877.7	0.2	**1.7436**	0.023	1.3	ug/L	7733	Standard
	Cr	53	13953.1	1.5	**14.0948**	0.198	1.4	ug/L	442	Standard
	Mn	55	6869.6	2.0	**0.8525**	0.013	1.6	ug/L	723	Standard
	Co	59	1049.0	2.3	**0.1145**	0.004	3.2	ug/L	217	Standard
	Ni	60	3023.6	1.9	**1.3787**	0.032	2.3	ug/L	304	Standard
	Cu	65	1353.7	2.9	**0.6232**	0.017	2.7	ug/L	181	Standard
	Zn	66	2790.6	0.7	**2.2139**	0.010	0.4	ug/L	215	Standard
>	Ge	72	495483.9	0.7				ug/L	520809	Standard
	As	75	1494.2	7.1	**1.3177**	0.098	7.4	ug/L	-52	Standard
	Se	82	1155.8	1.9	**9.4896**	0.142	1.5	ug/L	17	Standard
	Se-1	77	1366.7	2.9	**16.1232**	0.600	3.7	ug/L	56	Standard
>	Ga	71	65.0	46.8				mg/L	25	Standard
	Rb	85	1118.4	6.5				ug/L	28	Standard
	Y	89	431041.5	1.8				ug/L	447395	Standard
>	Rh	103	106.7	2.7				ug/L	15	Standard
	Mo	98	636.9	5.4	**0.2018**	0.013	6.3	ug/L	113	Standard
	Ag	107	175.7	31.4	**0.0134**	0.008	62.4	ug/L	108	Standard
	Cd	111	69.9	26.7	**0.0302**	0.009	28.8	mg/L	3	Standard
	Cd	114	141.9	41.1	**0.0267**	0.011	41.2	ug/L	20	Standard
>	In	115	583855.1	0.8				ug/L	625728	Standard
	Sn	118	985.0	7.5	**0.0798**	0.012	15.3	ug/L	568	Standard
	Sb	123	469.0	23.7	**0.0635**	0.023	35.9	ug/L	612	Standard
	Ba	135	16891.1	0.4	**8.3035**	0.096	1.2	ug/L	21	Standard
	Ce	140	950.0	9.1				ug/L	245	Standard
>	Tb	159	915987.8	1.1				ug/L	950397	Standard
	Ho	165	58.3	13.1				ug/L	7	Standard
	Tl	203	239.0	33.8	**0.0285**	0.010	35.2	ug/L	15	Standard
	Tl	205	226.7	28.0	**0.0215**	0.009	41.6	ug/L	13	Standard
	Pb	206	491.0	11.7	**0.0515**	0.012	22.7	ug/L	264	Standard
	Pb	207	417.3	7.3	**0.0430**	0.007	16.1	ug/L	222	Standard
	Pb	208	1796.4	4.5	**0.0456**	0.005	10.2	ug/L	959	Standard
	U	238	24911.1	0.1	**3.3908**	0.016	0.5	ug/L	9	Standard
>	Bi	209	503762.9	0.6				ug/L	552821	Standard

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Na	23	3.3	86.6	**10.0444**	8.695	86.6	mg/L	2	Standard
Mg	24	132735.6	1.2	**157.3747**	3.155	2.0	mg/L	55	Standard
K	39	131.7	11.6	**0.3818**	0.065	17.1	mg/L	28	Standard
Ca	43	436.7	8.3	**37.8132**	2.966	7.8	mg/L	27	Standard
Fe	54	188.4	13.0	**0.0512**	0.020	39.7	mg/L	147	Standard
Fe	57	626.7	13.5	**1.1530**	0.288	25.0	mg/L	268	Standard
> **Sc-1**	45	40557.5	1.2				mg/L	41174	Standard
Cl	35	95111.1	2.9				ug/L	69550	Standard
Kr	83	2.0	132.3				ug/L	1	Standard
Br	81	69814.0	4.5				ug/L	1950	Standard
P	31	24122.5	3.6				ug/L	21156	Standard
S	34	3262.0	2.8				ug/L	3419	Standard
Sr	88	431.7	9.9				ug/L	72	Standard
C	12	460.0	22.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	17	Standard
Dy	164	50.5	77.6				mg/L	16	Standard
Ho-1	165	58.3	13.1				mg/L	7	Standard
Er	166	60.0	44.1				mg/L	7	Standard
I	127	37230.7	1.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.101	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.137	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.308
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.126
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606141702PS WG574808-01
Sample Date/Time: Friday, July 01, 2016 11:28:13
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	84706.2	1.4				ug/L	76456	Standard
	Be	9	61248.6	0.7	**49.3719**	0.771	1.6	ug/L	20	Standard
	Al	27	21521134.5	1.9	**113.4962**	3.763	3.3	ug/L	1307	Standard
	Sc	45	40794.9	2.7				ug/L	41174	Standard
	Ti	47	240.0	10.1	**0.6796**	0.085	12.5	ug/L	27	Standard
	V	51	455261.1	1.0	**57.2107**	0.562	1.0	ug/L	1434	Standard
	Cr	52	426443.6	1.0	**53.6956**	0.415	0.8	ug/L	7733	Standard
	Cr	53	63767.3	2.8	**64.9856**	1.904	2.9	ug/L	442	Standard
	Mn	55	385209.5	0.8	**52.6493**	0.868	1.6	ug/L	723	Standard
	Co	59	385929.7	0.6	**52.1919**	0.293	0.6	ug/L	217	Standard
	Ni	60	103771.2	0.7	**51.6879**	0.282	0.5	ug/L	304	Standard
	Cu	65	101476.7	1.4	**51.4688**	0.149	0.3	ug/L	181	Standard
	Zn	66	65028.6	0.8	**54.8362**	0.235	0.4	ug/L	215	Standard
>	Ge	72	502470.5	1.2				ug/L	520809	Standard
	As	75	66227.4	1.6	**55.6481**	0.524	0.9	ug/L	-52	Standard
	Se	82	7664.8	0.5	**62.7619**	0.423	0.7	ug/L	17	Standard
	Se-1	77	5635.0	2.2	**67.6351**	0.810	1.2	ug/L	56	Standard
>	Ga	71	56.7	41.7				mg/L	25	Standard
	Rb	85	1151.7	5.5				ug/L	28	Standard
	Y	89	435252.0	2.3				ug/L	447395	Standard
>	Rh	103	131.7	9.6				ug/L	15	Standard
	Mo	98	659.3	4.3	**0.2083**	0.012	5.6	ug/L	113	Standard
	Ag	107	333584.9	1.2	**49.4501**	0.303	0.6	ug/L	108	Standard
	Cd	111	111317.0	0.6	**51.4929**	0.677	1.3	mg/L	3	Standard
	Cd	114	272508.8	2.4	**50.9184**	1.531	3.0	ug/L	20	Standard
>	In	115	587582.2	0.8				ug/L	625728	Standard
	Sn	118	1173.4	7.2	**0.1100**	0.015	13.8	ug/L	568	Standard
	Sb	123	246884.2	2.4	**50.8360**	0.942	1.9	ug/L	612	Standard
	Ba	135	121048.6	0.4	**59.2388**	0.725	1.2	ug/L	21	Standard
	Ce	140	995.0	2.7				ug/L	245	Standard
>	Tb	159	924930.3	1.0				ug/L	950397	Standard
	Ho	165	51.7	39.1				ug/L	7	Standard
	Tl	203	432904.6	0.1	**52.3301**	0.247	0.5	ug/L	15	Standard
	Tl	205	391263.3	1.6	**53.2578**	1.128	2.1	ug/L	13	Standard
	Pb	206	282728.2	0.5	**54.1561**	0.449	0.8	ug/L	264	Standard
	Pb	207	246312.6	0.2	**51.9491**	0.256	0.5	ug/L	222	Standard
	Pb	208	1022028.0	0.9	**52.7764**	0.638	1.2	ug/L	959	Standard
	U	238	421958.1	0.7	**56.8072**	0.698	1.2	ug/L	9	Standard
>	Bi	209	509385.6	0.5				ug/L	552821	Standard

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Na	23	10.0	50.0	**29.8847**	14.237	47.6	mg/L	2	Standard
Mg	24	133593.1	0.8	**157.5206**	4.134	2.6	mg/L	55	Standard
K	39	128.3	35.1	**0.3678**	0.182	49.5	mg/L	28	Standard
Ca	43	420.0	20.7	**36.0275**	7.706	21.4	mg/L	27	Standard
Fe	54	180.1	10.8	**0.0439**	0.018	40.9	mg/L	147	Standard
Fe	57	538.3	4.2	**0.8651**	0.032	3.7	mg/L	268	Standard
> **Sc-1**	45	40794.9	2.7				mg/L	41174	Standard
Cl	35	96279.6	0.7				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	71609.1	5.3				ug/L	1950	Standard
P	31	24898.8	2.0				ug/L	21156	Standard
S	34	3225.3	2.1				ug/L	3419	Standard
Sr	88	406.7	4.3				ug/L	72	Standard
C	12	440.0	36.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	17	Standard
Dy	164	27.8	36.1				mg/L	16	Standard
Ho-1	165	51.7	39.1				mg/L	7	Standard
Er	166	46.7	24.7				mg/L	7	Standard
I	127	36331.8	0.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.791	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.479	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.904
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.143
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606141702SDL WG574808-02
Sample Date/Time: Friday, July 01, 2016 11:31:25
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79270.2	1.4				ug/L	76456	Standard
	Be	9	48.3	15.8	**0.0218**	0.006	29.8	ug/L	20	Standard
	Al	27	4222516.4	1.3	**23.7801**	0.015	0.1	ug/L	1307	Standard
	Sc	45	38916.6	1.8				ug/L	41174	Standard
	Ti	47	59.3	17.5	**0.1088**	0.035	32.6	ug/L	27	Standard
	V	51	7243.4	2.3	**0.7359**	0.026	3.5	ug/L	1434	Standard
	Cr	52	10348.9	1.0	**0.3868**	0.014	3.5	ug/L	7733	Standard
	Cr	53	3842.2	2.6	**3.6141**	0.077	2.1	ug/L	442	Standard
	Mn	55	1712.4	2.4	**0.1385**	0.004	3.2	ug/L	723	Standard
	Co	59	414.7	3.6	**0.0280**	0.003	9.0	ug/L	217	Standard
	Ni	60	921.4	5.7	**0.3179**	0.030	9.6	ug/L	304	Standard
	Cu	65	476.3	6.6	**0.1735**	0.018	10.2	ug/L	181	Standard
	Zn	66	1250.7	2.0	**0.9024**	0.030	3.3	ug/L	215	Standard
>	Ge	72	491133.0	0.8				ug/L	520809	Standard
	As	75	262.0	15.9	**0.2704**	0.037	13.9	ug/L	-52	Standard
	Se	82	270.1	2.3	**2.1408**	0.063	2.9	ug/L	17	Standard
	Se-1	77	339.3	3.5	**3.5247**	0.142	4.0	ug/L	56	Standard
>	Ga	71	25.0	20.0				mg/L	25	Standard
	Rb	85	250.0	13.1				ug/L	28	Standard
	Y	89	411909.2	0.7				ug/L	447395	Standard
>	Rh	103	60.0	30.0				ug/L	15	Standard
	Mo	98	158.0	15.1	**0.0328**	0.008	25.5	ug/L	113	Standard
	Ag	107	268.7	10.2	**0.0278**	0.004	15.6	ug/L	108	Standard
	Cd	111	28.7	19.4	**0.0112**	0.003	23.8	mg/L	3	Standard
	Cd	114	92.0	14.0	**0.0176**	0.002	14.2	ug/L	20	Standard
>	In	115	575454.3	0.4				ug/L	625728	Standard
	Sn	118	298.3	6.8	**-0.0338**	0.003	9.9	ug/L	568	Standard
	Sb	123	1720.4	31.0	**0.3280**	0.111	33.8	ug/L	612	Standard
	Ba	135	3347.4	3.0	**1.6553**	0.056	3.4	ug/L	21	Standard
	Ce	140	181.7	6.9				ug/L	245	Standard
>	Tb	159	890346.9	0.6				ug/L	950397	Standard
	Ho	165	23.3	32.7				ug/L	7	Standard
	Tl	203	214.3	9.6	**0.0249**	0.002	9.4	ug/L	15	Standard
	Tl	205	275.0	41.2	**0.0273**	0.015	55.9	ug/L	13	Standard
	Pb	206	399.7	2.6	**0.0322**	0.002	4.9	ug/L	264	Standard
	Pb	207	322.7	4.0	**0.0214**	0.002	11.0	ug/L	222	Standard
	Pb	208	1435.0	2.3	**0.0252**	0.002	7.2	ug/L	959	Standard
	U	238	5076.5	3.7	**0.6771**	0.028	4.1	ug/L	9	Standard
>	Bi	209	514021.2	0.5				ug/L	552821	Standard

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Na	23	6.7	114.6	**21.2259**	24.589	115.8	mg/L	2	Standard
Mg	24	26095.8	2.9	**32.1961**	0.941	2.9	mg/L	55	Standard
K	39	48.3	21.5	**0.0648**	0.042	64.9	mg/L	28	Standard
Ca	43	73.3	25.8	**4.5982**	1.826	39.7	mg/L	27	Standard
Fe	54	79.1	19.4	**-0.0333**	0.012	34.7	mg/L	147	Standard
Fe	57	293.3	4.3	**0.1499**	0.049	32.9	mg/L	268	Standard
Sc-1	45	38916.6	1.8				mg/L	41174	Standard
Cl	35	81436.9	1.0				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	16265.4	2.3				ug/L	1950	Standard
P	31	10428.6	1.9				ug/L	21156	Standard
S	34	3263.7	1.5				ug/L	3419	Standard
Sr	88	118.3	30.0				ug/L	72	Standard
C	12	173.3	3.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	17	Standard
Dy	164	22.2	71.3				mg/L	16	Standard
Ho-1	165	23.3	32.7				mg/L	7	Standard
Er	166	23.3	107.9				mg/L	7	Standard
I	127	34272.1	2.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		103.681	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		94.302	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.966
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.982
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606141702SDL WG574808-02
Sample Date/Time: Friday, July 01, 2016 11:34:36
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75492.7	3.2				ug/L	76456	Standard
	Be	9	23.3	12.4	**0.0012**	0.002	197.6	ug/L	20	Standard
	Al	27	829607.4	2.3	**4.8996**	0.125	2.6	ug/L	1307	Standard
	Sc	45	37073.7	3.1				ug/L	41174	Standard
	Ti	47	28.0	12.9	**0.0070**	0.012	174.3	ug/L	27	Standard
	V	51	3170.1	5.9	**0.2118**	0.020	9.4	ug/L	1434	Standard
	Cr	52	8461.0	1.1	**0.1435**	0.006	4.5	ug/L	7733	Standard
	Cr	53	1218.4	12.8	**0.8668**	0.167	19.3	ug/L	442	Standard
	Mn	55	694.0	1.2	**-0.0037**	0.001	25.0	ug/L	723	Standard
	Co	59	224.0	8.2	**0.0017**	0.003	168.9	ug/L	217	Standard
	Ni	60	457.0	4.9	**0.0814**	0.014	16.9	ug/L	304	Standard
	Cu	65	221.3	9.3	**0.0415**	0.012	28.9	ug/L	181	Standard
	Zn	66	1093.0	3.6	**0.7694**	0.029	3.8	ug/L	215	Standard
>	**Ge**	72	489217.1	1.1				ug/L	520809	Standard
	As	75	21.5	96.2	**0.0638**	0.018	28.2	ug/L	-52	Standard
	Se	82	69.4	5.3	**0.4582**	0.034	7.4	ug/L	17	Standard
	Se-1	77	109.3	5.9	**0.6765**	0.067	9.8	ug/L	56	Standard
>	**Ga**	71	15.0	33.3				mg/L	25	Standard
	Rb	85	76.7	16.4				ug/L	28	Standard
	Y	89	405198.5	2.3				ug/L	447395	Standard
>	**Rh**	103	26.7	60.3				ug/L	15	Standard
	Mo	98	142.2	38.6	**0.0281**	0.020	72.6	ug/L	113	Standard
	Ag	107	112.7	10.2	**0.0045**	0.002	36.8	ug/L	108	Standard
	Cd	111	8.1	48.9	**0.0015**	0.002	126.2	mg/L	3	Standard
	Cd	114	16.9	33.2	**0.0033**	0.001	33.5	ug/L	20	Standard
>	**In**	115	566627.7	0.7				ug/L	625728	Standard
	Sn	118	178.3	10.6	**-0.0536**	0.003	6.2	ug/L	568	Standard
	Sb	123	679.8	12.9	**0.1116**	0.020	17.6	ug/L	612	Standard
	Ba	135	676.7	1.6	**0.3256**	0.006	1.8	ug/L	21	Standard
	Ce	140	45.0	61.9				ug/L	245	Standard
>	**Tb**	159	881967.0	0.2				ug/L	950397	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	116.0	4.3	**0.0131**	0.001	4.5	ug/L	15	Standard
	Tl	205	140.0	3.6	**0.0090**	0.001	6.9	ug/L	13	Standard
	Pb	206	294.0	3.6	**0.0118**	0.002	17.2	ug/L	264	Standard
	Pb	207	254.0	8.5	**0.0068**	0.004	64.3	ug/L	222	Standard
	Pb	208	1072.0	4.7	**0.0063**	0.003	41.6	ug/L	959	Standard
	U	238	957.7	4.8	**0.1269**	0.006	4.8	ug/L	9	Standard
>	**Bi**	209	516500.7	0.3				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4970.8	4.5	**6.3914**	0.307	4.8	mg/L	55	Standard
K	39	25.0	0.0	**-0.0247**	0.003	13.3	mg/L	28	Standard
Ca	43	50.0	34.6	**2.6288**	1.919	73.0	mg/L	27	Standard
Fe	54	54.5	0.1	**-0.0513**	0.002	3.0	mg/L	147	Standard
Fe	57	253.3	6.3	**0.0613**	0.067	109.5	mg/L	268	Standard
> **Sc-1**	45	37073.7	3.1				mg/L	41174	Standard
Cl	35	80495.3	1.6				ug/L	69550	Standard
Kr	83	3.3	75.5				ug/L	1	Standard
Br	81	5040.8	9.7				ug/L	1950	Standard
P	31	7305.1	3.6				ug/L	21156	Standard
S	34	3295.4	6.8				ug/L	3419	Standard
Sr	88	108.3	11.6				ug/L	72	Standard
C	12	146.7	3.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	43.3	35.3				mg/L	17	Standard
Dy	164	-1.1	89.2				mg/L	16	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	23.3	89.2				mg/L	7	Standard
I	127	33724.2	0.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.740	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.934	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.555
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.430
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 11:37:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79886.8	2.4				ug/L	76456	Standard
	Be	9	60216.2	2.8	**51.4590**	0.417	0.8	ug/L	20	Standard
	Al	27	8658161.3	1.0	**48.4053**	0.695	1.4	ug/L	1307	Standard
	Sc	45	41946.3	1.7				ug/L	41174	Standard
	Ti	47	32783.8	1.1	**99.4934**	0.341	0.3	ug/L	27	Standard
	V	51	421947.6	0.5	**50.6006**	0.209	0.4	ug/L	1434	Standard
	Cr	52	415783.8	0.5	**49.9191**	0.677	1.4	ug/L	7733	Standard
	Cr	53	52323.5	0.7	**50.8163**	0.079	0.2	ug/L	442	Standard
	Mn	55	383488.2	0.5	**50.0327**	0.303	0.6	ug/L	723	Standard
	Co	59	396921.5	0.3	**51.2480**	0.300	0.6	ug/L	217	Standard
	Ni	60	105550.0	0.7	**50.1916**	0.654	1.3	ug/L	304	Standard
	Cu	65	104187.0	0.3	**50.4533**	0.298	0.6	ug/L	181	Standard
	Zn	66	62119.1	0.9	**49.9953**	0.242	0.5	ug/L	215	Standard
>	Ge	72	526287.7	0.8				ug/L	520809	Standard
	As	75	62653.6	0.5	**50.2687**	0.288	0.6	ug/L	-52	Standard
	Se	82	6502.0	0.1	**50.8075**	0.476	0.9	ug/L	17	Standard
	Se-1	77	4394.6	2.3	**50.1962**	1.546	3.1	ug/L	56	Standard
>	Ga	71	41.7	34.6				mg/L	25	Standard
	Rb	85	811.7	7.3				ug/L	28	Standard
	Y	89	449443.8	0.8				ug/L	447395	Standard
>	Rh	103	28.3	20.4				ug/L	15	Standard
	Mo	98	299240.3	0.5	**98.3551**	0.449	0.5	ug/L	113	Standard
	Ag	107	359054.0	0.7	**49.6967**	0.335	0.7	ug/L	108	Standard
	Cd	111	115287.0	0.4	**49.7893**	0.202	0.4	mg/L	3	Standard
	Cd	114	284203.9	0.6	**49.5756**	0.249	0.5	ug/L	20	Standard
>	In	115	629316.2	0.1				ug/L	625728	Standard
	Sn	118	316403.3	1.4	**48.7968**	0.695	1.4	ug/L	568	Standard
	Sb	123	257145.7	0.4	**49.4396**	0.256	0.5	ug/L	612	Standard
	Ba	135	107880.7	0.2	**49.2873**	0.099	0.2	ug/L	21	Standard
	Ce	140	80.0	12.5				ug/L	245	Standard
>	Tb	159	959375.1	0.6				ug/L	950397	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	446456.6	0.5	**49.7300**	0.195	0.4	ug/L	15	Standard
	Tl	205	404447.0	0.4	**50.7263**	0.364	0.7	ug/L	13	Standard
	Pb	206	281579.7	0.3	**49.6971**	0.317	0.6	ug/L	264	Standard
	Pb	207	257039.7	0.6	**49.9528**	0.358	0.7	ug/L	222	Standard
	Pb	208	1065428.7	1.4	**50.6922**	0.446	0.9	ug/L	959	Standard
	U	238	401590.9	0.5	**49.8178**	0.056	0.1	ug/L	9	Standard
>	Bi	209	552793.0	0.6				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4465.7	1.7	**5.0623**	0.170	3.4	mg/L	55	Standard
K	39	1175.0	4.1	**4.2914**	0.166	3.9	mg/L	28	Standard
Ca	43	80.0	12.5	**4.6810**	0.869	18.6	mg/L	27	Standard
Fe	54	6475.2	2.0	**4.8865**	0.136	2.8	mg/L	147	Standard
Fe	57	1960.1	2.3	**5.1091**	0.183	3.6	mg/L	268	Standard
> **Sc-1**	45	41946.3	1.7				mg/L	41174	Standard
Cl	35	79383.6	3.3				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	2656.9	5.2				ug/L	1950	Standard
P	31	23768.6	2.4				ug/L	21156	Standard
S	34	4000.5	6.6				ug/L	3419	Standard
Sr	88	80.0	43.3				ug/L	72	Standard
C	12	120.0	25.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	69.3				mg/L	17	Standard
Dy	164	12.4	100.1				mg/L	16	Standard
Ho-1	165	8.3	69.3				mg/L	7	Standard
Er	166	20.0	100.0				mg/L	7	Standard
I	127	22111.1	1.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	102.918		
Al	27	96.811		
Sc	45			
Ti	47	99.493		
V	51	101.201		
Cr	52	99.838		
Cr	53			
Mn	55	100.065		
Co	59	102.496		
Ni	60	100.383		
Cu	65	100.907		
Zn	66	99.991		
> Ge	72		101.052	
As	75	100.537		
Se	82	101.615		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.355		
Ag	107	99.393		
Cd	111	99.579		
Cd	114			
> In	115			100.573
Sn	118	97.594		
Sb	123	98.879		
Ba	135	98.575		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.460		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.384		
U	238	99.636		
> Bi	209			99.995
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 11:41:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79854.9	1.2				ug/L	76456	Standard
	Be	9	28.3	44.4	**0.0043**	0.011	247.6	ug/L	20	Standard
	Al	27	4860.8	30.8	**0.0170**	0.009	51.0	ug/L	1307	Standard
	Sc	45	40828.3	2.4				ug/L	41174	Standard
	Ti	47	33.7	26.8	**0.0170**	0.026	153.3	ug/L	27	Standard
	V	51	1448.8	4.8	**-0.0250**	0.010	39.6	ug/L	1434	Standard
	Cr	52	7320.1	2.9	**-0.0792**	0.016	19.8	ug/L	7733	Standard
	Cr	53	573.3	8.4	**0.1415**	0.043	30.2	ug/L	442	Standard
	Mn	55	774.7	1.8	**-0.0006**	0.001	182.2	ug/L	723	Standard
	Co	59	305.0	4.6	**0.0098**	0.001	15.1	ug/L	217	Standard
	Ni	60	339.0	2.3	**0.0078**	0.005	67.4	ug/L	304	Standard
	Cu	65	197.7	11.1	**0.0212**	0.010	48.2	ug/L	181	Standard
	Zn	66	269.3	7.5	**0.0362**	0.017	46.8	ug/L	215	Standard
>	**Ge**	72	528956.5	1.1				ug/L	520809	Standard
	As	75	-45.6	52.3	**0.0087**	0.019	224.1	ug/L	-52	Standard
	Se	82	23.2	12.4	**0.0547**	0.023	42.1	ug/L	17	Standard
	Se-1	77	56.7	21.6	**-0.0309**	0.148	479.3	ug/L	56	Standard
>	**Ga**	71	35.0	62.3				mg/L	25	Standard
	Rb	85	25.0	34.6				ug/L	28	Standard
	Y	89	451349.1	0.6				ug/L	447395	Standard
>	**Rh**	103	21.7	48.0				ug/L	15	Standard
	Mo	98	237.5	8.6	**0.0541**	0.007	13.2	ug/L	113	Standard
	Ag	107	234.7	5.8	**0.0196**	0.002	10.5	ug/L	108	Standard
	Cd	111	27.2	17.4	**0.0094**	0.002	21.1	mg/L	3	Standard
	Cd	114	66.4	34.3	**0.0116**	0.004	34.4	ug/L	20	Standard
>	**In**	115	629965.8	0.8				ug/L	625728	Standard
	Sn	118	940.0	21.0	**0.0607**	0.029	48.4	ug/L	568	Standard
	Sb	123	1092.2	32.6	**0.1759**	0.067	38.2	ug/L	612	Standard
	Ba	135	59.0	17.7	**0.0090**	0.005	54.2	ug/L	21	Standard
	Ce	140	21.7	70.5				ug/L	245	Standard
>	**Tb**	159	955018.0	0.8				ug/L	950397	Standard
	Ho	165	13.3	43.3				ug/L	7	Standard
	Tl	203	126.3	20.6	**0.0132**	0.003	22.7	ug/L	15	Standard
	Tl	205	113.3	18.4	**0.0043**	0.003	62.2	ug/L	13	Standard
	Pb	206	346.7	4.9	**0.0167**	0.003	20.4	ug/L	264	Standard
	Pb	207	322.3	7.2	**0.0158**	0.005	30.9	ug/L	222	Standard
	Pb	208	1248.7	4.5	**0.0104**	0.003	28.9	ug/L	959	Standard
	U	238	111.7	26.1	**0.0134**	0.004	27.1	ug/L	9	Standard
>	**Bi**	209	560384.3	0.8				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	55.0	59.6	**0.0047**	0.039	831.6	mg/L	55	Standard
K	39	35.0	37.8	**0.0039**	0.051	1305.2	mg/L	28	Standard
Ca	43	11.7	24.7	**-1.3816**	0.279	20.2	mg/L	27	Standard
Fe	54	175.9	8.8	**0.0403**	0.012	30.1	mg/L	147	Standard
Fe	57	250.0	2.0	**-0.0293**	0.009	29.6	mg/L	268	Standard
> **Sc-1**	45	40828.3	2.4				mg/L	41174	Standard
Cl	35	77022.6	1.0				ug/L	69550	Standard
Kr	83	3.3	34.6				ug/L	1	Standard
Br	81	2493.5	3.8				ug/L	1950	Standard
P	31	23044.2	2.3				ug/L	21156	Standard
S	34	3880.5	1.7				ug/L	3419	Standard
Sr	88	65.0	33.5				ug/L	72	Standard
C	12	130.0	40.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	17	Standard
Dy	164	9.0	113.3				mg/L	16	Standard
Ho-1	165	13.3	43.3				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	16675.8	0.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.564	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.677
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.368
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606141703
Sample Date/Time: Friday, July 01, 2016 11:44:14
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81889.0	0.6				ug/L	76456	Standard
	Be	9	25.0	91.7	**0.0010**	0.019	1981.7	ug/L	20	Standard
	Al	27	20848394.4	0.7	**113.6982**	1.012	0.9	ug/L	1307	Standard
	Sc	45	42434.3	1.1				ug/L	41174	Standard
	Ti	47	234.7	10.2	**0.6592**	0.078	11.8	ug/L	27	Standard
	V	51	28681.8	1.4	**3.4038**	0.038	1.1	ug/L	1434	Standard
	Cr	52	19756.9	2.1	**1.5522**	0.054	3.5	ug/L	7733	Standard
	Cr	53	14119.9	6.2	**14.0078**	0.905	6.5	ug/L	442	Standard
	Mn	55	3334.7	3.0	**0.3535**	0.012	3.4	ug/L	723	Standard
	Co	59	938.4	1.3	**0.0970**	0.001	0.7	ug/L	217	Standard
	Ni	60	2864.9	3.9	**1.2722**	0.046	3.6	ug/L	304	Standard
	Cu	65	1854.4	2.7	**0.8643**	0.032	3.7	ug/L	181	Standard
	Zn	66	2610.6	1.0	**2.0198**	0.039	1.9	ug/L	215	Standard
>	**Ge**	72	504450.0	0.8				ug/L	520809	Standard
	As	75	1324.6	1.2	**1.1530**	0.022	1.9	ug/L	-52	Standard
	Se	82	1104.4	0.5	**8.8990**	0.094	1.1	ug/L	17	Standard
	Se-1	77	1261.1	5.7	**14.5449**	0.840	5.8	ug/L	56	Standard
>	**Ga**	71	50.0	43.6				mg/L	25	Standard
	Rb	85	1121.7	4.1				ug/L	28	Standard
	Y	89	436048.7	1.9				ug/L	447395	Standard
>	**Rh**	103	121.7	29.7				ug/L	15	Standard
	Mo	98	645.7	3.5	**0.2020**	0.005	2.6	ug/L	113	Standard
	Ag	107	223.7	26.2	**0.0200**	0.008	40.7	ug/L	108	Standard
	Cd	111	51.2	16.5	**0.0212**	0.004	16.8	mg/L	3	Standard
	Cd	114	113.2	6.3	**0.0210**	0.002	7.4	ug/L	20	Standard
>	**In**	115	591186.7	1.3				ug/L	625728	Standard
	Sn	118	875.0	14.2	**0.0597**	0.021	34.7	ug/L	568	Standard
	Sb	123	602.8	25.4	**0.0895**	0.030	33.5	ug/L	612	Standard
	Ba	135	16459.3	1.1	**7.9899**	0.039	0.5	ug/L	21	Standard
	Ce	140	880.0	5.0				ug/L	245	Standard
>	**Tb**	159	920155.8	2.2				ug/L	950397	Standard
	Ho	165	50.0	34.6				ug/L	7	Standard
	Tl	203	157.7	7.1	**0.0182**	0.001	6.2	ug/L	15	Standard
	Tl	205	155.0	27.9	**0.0113**	0.006	51.8	ug/L	13	Standard
	Pb	206	453.0	2.5	**0.0428**	0.002	4.5	ug/L	264	Standard
	Pb	207	378.7	4.5	**0.0335**	0.003	9.5	ug/L	222	Standard
	Pb	208	1616.4	3.0	**0.0349**	0.002	5.2	ug/L	959	Standard
	U	238	24675.7	1.0	**3.3100**	0.026	0.8	ug/L	9	Standard
>	**Bi**	209	511192.5	1.2				ug/L	552821	Standard

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Na	23	5.0	100.0	**14.4476**	14.513	100.4	mg/L	2	Standard
Mg	24	129302.7	0.5	**146.5117**	1.623	1.1	mg/L	55	Standard
K	39	120.0	31.5	**0.3147**	0.137	43.6	mg/L	28	Standard
Ca	43	443.3	15.8	**36.6451**	6.259	17.1	mg/L	27	Standard
Fe	54	170.0	14.6	**0.0304**	0.017	57.5	mg/L	147	Standard
Fe	57	581.7	5.3	**0.9302**	0.090	9.7	mg/L	268	Standard
> **Sc-1**	45	42434.3	1.1				mg/L	41174	Standard
Cl	35	97340.4	1.2				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	68893.1	4.4				ug/L	1950	Standard
P	31	25483.1	3.6				ug/L	21156	Standard
S	34	3482.1	6.0				ug/L	3419	Standard
Sr	88	398.3	9.6				ug/L	72	Standard
C	12	456.7	3.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	17	Standard
Dy	164	44.0	27.1				mg/L	16	Standard
Ho-1	165	50.0	34.6				mg/L	7	Standard
Er	166	56.7	53.9				mg/L	7	Standard
I	127	49472.4	4.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.106	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.859	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.480
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.470
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606141704
Sample Date/Time: Friday, July 01, 2016 11:47:26
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	84196.6	0.3				ug/L	76456	Standard
	Be	9	33.3	22.9	**0.0072**	0.006	86.7	ug/L	20	Standard
	Al	27	15514677.9	3.0	**82.2819**	2.194	2.7	ug/L	1307	Standard
	Sc	45	43039.4	2.0				ug/L	41174	Standard
	Ti	47	214.3	5.1	**0.5706**	0.026	4.6	ug/L	27	Standard
	V	51	104787.8	1.3	**12.4991**	0.095	0.8	ug/L	1434	Standard
	Cr	52	15259.3	0.7	**0.9095**	0.033	3.7	ug/L	7733	Standard
	Cr	53	5951.2	3.9	**5.4474**	0.187	3.4	ug/L	442	Standard
	Mn	55	4057.5	2.5	**0.4326**	0.014	3.2	ug/L	723	Standard
	Co	59	713.7	6.2	**0.0633**	0.005	7.8	ug/L	217	Standard
	Ni	60	1861.4	2.8	**0.7406**	0.029	3.9	ug/L	304	Standard
	Cu	65	1343.1	2.6	**0.5817**	0.025	4.2	ug/L	181	Standard
	Zn	66	2743.6	1.9	**2.0501**	0.019	0.9	ug/L	215	Standard
>	Ge	72	522881.1	1.2				ug/L	520809	Standard
	As	75	2151.6	2.6	**1.7810**	0.033	1.9	ug/L	-52	Standard
	Se	82	460.2	1.1	**3.5021**	0.008	0.2	ug/L	17	Standard
	Se-1	77	457.3	2.7	**4.6435**	0.083	1.8	ug/L	56	Standard
>	Ga	71	48.3	41.8				mg/L	25	Standard
	Rb	85	1016.7	4.8				ug/L	28	Standard
	Y	89	448180.4	0.4				ug/L	447395	Standard
>	Rh	103	61.7	28.5				ug/L	15	Standard
	Mo	98	2950.5	2.8	**0.9697**	0.025	2.6	ug/L	113	Standard
	Ag	107	125.3	5.6	**0.0049**	0.001	22.3	ug/L	108	Standard
	Cd	111	47.4	9.4	**0.0186**	0.002	10.0	mg/L	3	Standard
	Cd	114	120.7	5.3	**0.0216**	0.001	5.2	ug/L	20	Standard
>	In	115	614296.5	0.6				ug/L	625728	Standard
	Sn	118	906.7	10.1	**0.0592**	0.014	23.4	ug/L	568	Standard
	Sb	123	614.0	19.1	**0.0872**	0.022	25.7	ug/L	612	Standard
	Ba	135	28748.9	0.6	**13.4426**	0.042	0.3	ug/L	21	Standard
	Ce	140	528.3	5.7				ug/L	245	Standard
>	Tb	159	947954.0	1.2				ug/L	950397	Standard
	Ho	165	23.3	12.4				ug/L	7	Standard
	Tl	203	129.3	12.8	**0.0142**	0.002	13.1	ug/L	15	Standard
	Tl	205	116.7	9.9	**0.0055**	0.002	28.8	ug/L	13	Standard
	Pb	206	445.0	3.2	**0.0379**	0.002	6.0	ug/L	264	Standard
	Pb	207	341.0	4.4	**0.0228**	0.003	12.0	ug/L	222	Standard
	Pb	208	1493.7	0.5	**0.0256**	0.000	1.6	ug/L	959	Standard
	U	238	70565.6	0.2	**9.0963**	0.034	0.4	ug/L	9	Standard
>	Bi	209	531969.0	0.4				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	88574.8	1.4	**98.9343**	0.707	0.7	mg/L	55	Standard
K	39	85.0	11.8	**0.1808**	0.038	21.2	mg/L	28	Standard
Ca	43	236.7	3.2	**18.1358**	1.082	6.0	mg/L	27	Standard
Fe	54	139.8	11.5	**0.0060**	0.011	187.7	mg/L	147	Standard
Fe	57	440.0	15.9	**0.4880**	0.189	38.8	mg/L	268	Standard
> **Sc-1**	45	43039.4	2.0				mg/L	41174	Standard
Cl	35	92305.0	1.1				ug/L	69550	Standard
Kr	83	2.7	57.3				ug/L	1	Standard
Br	81	47838.7	1.5				ug/L	1950	Standard
P	31	25832.0	1.0				ug/L	21156	Standard
S	34	3398.7	3.3				ug/L	3419	Standard
Sr	88	276.7	16.4				ug/L	72	Standard
C	12	396.7	10.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	17	Standard
Dy	164	28.9	100.6				mg/L	16	Standard
Ho-1	165	23.3	12.4				mg/L	7	Standard
Er	166	23.3	89.2				mg/L	7	Standard
I	127	50935.5	2.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.125	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.398	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.173
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.228
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606141708
Sample Date/Time: Friday, July 01, 2016 11:50:37
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	89411.4	1.5				ug/L	76456	Standard
	Be	9	40.0	65.0	**0.0106**	0.020	184.8	ug/L	20	Standard
	Al	27	22078727.0	1.3	**110.2973**	2.573	2.3	ug/L	1307	Standard
	Sc	45	45105.4	2.6				ug/L	41174	Standard
	Ti	47	320.0	7.2	**0.8822**	0.060	6.8	ug/L	27	Standard
	V	51	99984.6	2.1	**11.7774**	0.066	0.6	ug/L	1434	Standard
	Cr	52	21104.0	1.8	**1.5998**	0.060	3.7	ug/L	7733	Standard
	Cr	53	17553.5	0.8	**16.6868**	0.266	1.6	ug/L	442	Standard
	Mn	55	6430.0	0.9	**0.7351**	0.014	1.9	ug/L	723	Standard
	Co	59	852.7	2.7	**0.0802**	0.004	4.4	ug/L	217	Standard
	Ni	60	2949.0	1.3	**1.2465**	0.031	2.4	ug/L	304	Standard
	Cu	65	1272.1	1.7	**0.5397**	0.010	1.8	ug/L	181	Standard
	Zn	66	3425.7	3.7	**2.5723**	0.060	2.3	ug/L	215	Standard
>	Ge	72	528948.8	1.6				ug/L	520809	Standard
	As	75	3475.1	1.0	**2.8171**	0.043	1.5	ug/L	-52	Standard
	Se	82	859.6	2.0	**6.5725**	0.024	0.4	ug/L	17	Standard
	Se-1	77	1345.7	4.1	**14.8113**	0.393	2.7	ug/L	56	Standard
>	Ga	71	66.7	11.5				mg/L	25	Standard
	Rb	85	4762.4	2.0				ug/L	28	Standard
	Y	89	458548.0	1.5				ug/L	447395	Standard
>	Rh	103	130.0	17.6				ug/L	15	Standard
	Mo	98	5253.1	0.6	**1.7250**	0.023	1.4	ug/L	113	Standard
	Ag	107	143.3	4.2	**0.0072**	0.001	7.4	ug/L	108	Standard
	Cd	111	26.0	42.6	**0.0090**	0.005	53.4	mg/L	3	Standard
	Cd	114	74.8	31.1	**0.0133**	0.004	31.5	ug/L	20	Standard
>	In	115	621514.7	1.7				ug/L	625728	Standard
	Sn	118	2120.1	10.2	**0.2472**	0.030	12.0	ug/L	568	Standard
	Sb	123	722.8	13.7	**0.1069**	0.018	16.5	ug/L	612	Standard
	Ba	135	16530.7	1.8	**7.6319**	0.034	0.4	ug/L	21	Standard
	Ce	140	651.7	0.4				ug/L	245	Standard
>	Tb	159	970516.7	2.5				ug/L	950397	Standard
	Ho	165	30.0	28.9				ug/L	7	Standard
	Tl	203	115.3	7.9	**0.0125**	0.001	8.0	ug/L	15	Standard
	Tl	205	93.3	21.7	**0.0024**	0.003	115.8	ug/L	13	Standard
	Pb	206	443.0	3.9	**0.0372**	0.003	8.7	ug/L	264	Standard
	Pb	207	377.3	5.1	**0.0298**	0.003	10.5	ug/L	222	Standard
	Pb	208	1645.4	1.3	**0.0327**	0.002	5.5	ug/L	959	Standard
	U	238	38430.4	2.4	**4.9290**	0.066	1.3	ug/L	9	Standard
>	Bi	209	534585.3	1.1				ug/L	552821	Standard

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Na	23	3.3	173.2	**9.3062**	16.110	173.1	mg/L	2	Standard
Mg	24	132828.1	1.2	**141.6540**	4.533	3.2	mg/L	55	Standard
K	39	191.7	1.5	**0.5400**	0.021	3.8	mg/L	28	Standard
Ca	43	260.0	27.1	**19.0243**	5.272	27.7	mg/L	27	Standard
Fe	54	173.3	10.7	**0.0254**	0.016	61.2	mg/L	147	Standard
Fe	57	418.3	15.9	**0.3725**	0.215	57.6	mg/L	268	Standard
> **Sc-1**	45	45105.4	2.6				mg/L	41174	Standard
Cl	35	100939.1	0.9				ug/L	69550	Standard
Kr	83	1.0	0.0				ug/L	1	Standard
Br	81	47925.8	4.8				ug/L	1950	Standard
P	31	29869.4	2.0				ug/L	21156	Standard
S	34	3397.0	1.1				ug/L	3419	Standard
Sr	88	423.3	25.1				ug/L	72	Standard
C	12	363.3	14.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	17	Standard
Dy	164	21.9	26.4				mg/L	16	Standard
Ho-1	165	30.0	28.9				mg/L	7	Standard
Er	166	30.0	0.0				mg/L	7	Standard
I	127	41419.9	2.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.945	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.563	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.327
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.701
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606141709
Sample Date/Time: Friday, July 01, 2016 11:53:49
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89000.7	1.7				ug/L	76456	Standard
	Be	9	21.7	53.3	**-0.0032**	0.009	283.0	ug/L	20	Standard
	Al	27	81398.6	19.6	**0.3975**	0.073	18.3	ug/L	1307	Standard
	Sc	45	44555.4	0.6				ug/L	41174	Standard
	Ti	47	68.3	11.1	**0.1083**	0.021	19.5	ug/L	27	Standard
	V	51	3436.2	9.0	**0.1857**	0.034	18.2	ug/L	1434	Standard
	Cr	52	29812.6	1.5	**2.4193**	0.055	2.3	ug/L	7733	Standard
	Cr	53	3683.8	3.4	**2.9342**	0.118	4.0	ug/L	442	Standard
	Mn	55	6681.5	2.0	**0.7101**	0.015	2.0	ug/L	723	Standard
	Co	59	555.0	20.9	**0.0372**	0.014	37.4	ug/L	217	Standard
	Ni	60	3463.7	2.0	**1.3816**	0.031	2.2	ug/L	304	Standard
	Cu	65	1056.0	4.0	**0.4017**	0.019	4.6	ug/L	181	Standard
	Zn	66	4593.4	1.7	**3.2666**	0.053	1.6	ug/L	215	Standard
>	**Ge**	72	566488.4	0.2				ug/L	520809	Standard
	As	75	-5.4	928.8	**0.0411**	0.038	91.4	ug/L	-52	Standard
	Se	82	29.8	40.3	**0.0905**	0.087	96.5	ug/L	17	Standard
	Se-1	77	89.0	15.9	**0.2724**	0.151	55.6	ug/L	56	Standard
>	**Ga**	71	38.3	15.1				mg/L	25	Standard
	Rb	85	258.3	31.9				ug/L	28	Standard
	Y	89	491649.6	0.6				ug/L	447395	Standard
>	**Rh**	103	20.0	0.0				ug/L	15	Standard
	Mo	98	1080.6	3.0	**0.3054**	0.011	3.5	ug/L	113	Standard
	Ag	107	233.3	81.3	**0.0171**	0.024	142.6	ug/L	108	Standard
	Cd	111	62.5	42.8	**0.0227**	0.011	47.4	mg/L	3	Standard
	Cd	114	173.3	77.7	**0.0281**	0.022	77.8	ug/L	20	Standard
>	**In**	115	678768.0	0.3				ug/L	625728	Standard
	Sn	118	3542.1	5.1	**0.4232**	0.027	6.3	ug/L	568	Standard
	Sb	123	458.8	15.3	**0.0481**	0.013	26.4	ug/L	612	Standard
	Ba	135	1179.0	5.3	**0.4817**	0.027	5.6	ug/L	21	Standard
	Ce	140	250.0	8.7				ug/L	245	Standard
>	**Tb**	159	1017740.7	0.9				ug/L	950397	Standard
	Ho	165	16.7	62.4				ug/L	7	Standard
	Tl	203	186.0	120.6	**0.0185**	0.023	124.9	ug/L	15	Standard
	Tl	205	108.3	94.3	**0.0029**	0.012	410.9	ug/L	13	Standard
	Pb	206	582.3	26.2	**0.0521**	0.024	46.8	ug/L	264	Standard
	Pb	207	512.3	24.2	**0.0467**	0.022	46.6	ug/L	222	Standard
	Pb	208	1988.1	15.4	**0.0399**	0.013	32.1	ug/L	959	Standard
	U	238	126.0	91.3	**0.0142**	0.013	92.3	ug/L	9	Standard
>	**Bi**	209	592807.4	1.2				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	260.0	26.4	**0.2207**	0.075	34.1	mg/L	55	Standard
K	39	20.0	25.0	**-0.0603**	0.018	29.6	mg/L	28	Standard
Ca	43	25.0	40.0	**-0.3533**	0.844	239.0	mg/L	27	Standard
Fe	54	209.5	1.2	**0.0530**	0.003	4.8	mg/L	147	Standard
Fe	57	231.7	15.2	**-0.1465**	0.097	65.9	mg/L	268	Standard
> **Sc-1**	45	44555.4	0.6				mg/L	41174	Standard
Cl	35	92666.6	2.2				ug/L	69550	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	3473.7	14.7				ug/L	1950	Standard
P	31	23892.2	1.7				ug/L	21156	Standard
S	34	3687.1	4.5				ug/L	3419	Standard
Sr	88	46.7	37.6				ug/L	72	Standard
C	12	203.3	12.4				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	17	Standard
Dy	164	32.1	49.0				mg/L	16	Standard
Ho-1	165	16.7	62.4				mg/L	7	Standard
Er	166	26.7	43.3				mg/L	7	Standard
I	127	2500.2	19.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.408	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.771	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.477
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.233
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144101
Sample Date/Time: Friday, July 01, 2016 11:57:01
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	90118.9	1.7				ug/L	76456	Standard
	Be	9	590.0	6.6	**0.4275**	0.033	7.7	ug/L	20	Standard
	Al	27	41637732.7	0.8	**206.3623**	2.003	1.0	ug/L	1307	Standard
	Sc	45	52748.3	1.3				ug/L	41174	Standard
	Ti	47	25849.4	0.9	**75.9425**	0.582	0.8	ug/L	27	Standard
	V	51	119191.4	0.7	**13.6962**	0.128	0.9	ug/L	1434	Standard
	Cr	52	206171.6	0.2	**23.4624**	0.147	0.6	ug/L	7733	Standard
	Cr	53	26030.7	3.1	**24.2644**	0.827	3.4	ug/L	442	Standard
	Mn	55	3362426.1	1.3	**425.5410**	6.574	1.5	ug/L	723	Standard
	Co	59	45394.2	0.9	**5.6490**	0.060	1.1	ug/L	217	Standard
	Ni	60	38170.7	0.8	**17.4748**	0.075	0.4	ug/L	304	Standard
	Cu	65	32375.9	0.9	**15.1289**	0.102	0.7	ug/L	181	Standard
	Zn	66	132720.1	0.4	**103.6234**	0.326	0.3	ug/L	215	Standard
>	Ge	72	543517.2	0.4				ug/L	520809	Standard
	As	75	40511.0	0.4	**31.4895**	0.240	0.8	ug/L	-52	Standard
	Se	82	271.3	7.7	**1.9305**	0.150	7.7	ug/L	17	Standard
	Se-1	77	159.7	0.7	**1.1051**	0.008	0.7	ug/L	56	Standard
>	Ga	71	10717.1	0.7				mg/L	25	Standard
	Rb	85	127736.4	2.6				ug/L	28	Standard
	Y	89	566400.0	1.2				ug/L	447395	Standard
>	Rh	103	230.0	10.0				ug/L	15	Standard
	Mo	98	19958.9	0.3	**6.3798**	0.036	0.6	ug/L	113	Standard
	Ag	107	307.3	4.7	**0.0287**	0.002	7.3	ug/L	108	Standard
	Cd	111	352.1	11.3	**0.1461**	0.017	11.5	mg/L	3	Standard
	Cd	114	941.3	14.8	**0.1602**	0.023	14.2	ug/L	20	Standard
>	In	115	644859.8	0.7				ug/L	625728	Standard
	Sn	118	2065.1	2.2	**0.2271**	0.006	2.7	ug/L	568	Standard
	Sb	123	1536.5	9.5	**0.2547**	0.026	10.2	ug/L	612	Standard
	Ba	135	755795.9	0.3	**337.0929**	2.903	0.9	ug/L	21	Standard
	Ce	140	578983.3	0.3				ug/L	245	Standard
>	Tb	159	997623.6	0.4				ug/L	950397	Standard
	Ho	165	8542.4	1.8				ug/L	7	Standard
	Tl	203	679.7	2.4	**0.0742**	0.002	2.6	ug/L	15	Standard
	Tl	205	551.7	3.8	**0.0587**	0.002	3.1	ug/L	13	Standard
	Pb	206	82465.5	0.5	**14.3726**	0.198	1.4	ug/L	264	Standard
	Pb	207	67377.8	0.6	**12.9242**	0.183	1.4	ug/L	222	Standard
	Pb	208	291536.5	0.2	**13.6926**	0.174	1.3	ug/L	959	Standard
	U	238	4078.5	1.0	**0.5004**	0.006	1.2	ug/L	9	Standard
>	Bi	209	558632.4	1.1				ug/L	552821	Standard

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Na	23	6.7	43.3	**15.4842**	6.494	41.9	mg/L	2	Standard
Mg	24	15246.0	1.4	**13.8434**	0.267	1.9	mg/L	55	Standard
K	39	708.3	3.5	**1.9891**	0.079	4.0	mg/L	28	Standard
Ca	43	650.0	13.5	**43.6069**	5.619	12.9	mg/L	27	Standard
Fe	54	24640.5	1.6	**14.9863**	0.360	2.4	mg/L	147	Standard
Fe	57	6984.9	0.7	**15.9501**	0.213	1.3	mg/L	268	Standard
Sc-1	45	52748.3	1.3				mg/L	41174	Standard
Cl	35	77949.4	2.2				ug/L	69550	Standard
Kr	83	4.0	50.0				ug/L	1	Standard
Br	81	47491.0	0.5				ug/L	1950	Standard
P	31	44155.9	1.6				ug/L	21156	Standard
S	34	4003.9	3.1				ug/L	3419	Standard
Sr	88	953.4	8.4				ug/L	72	Standard
C	12	680.0	10.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	56.8				mg/L	17	Standard
Dy	164	14685.5	3.1				mg/L	16	Standard
Ho-1	165	8542.4	1.8				mg/L	7	Standard
Er	166	7695.3	3.1				mg/L	7	Standard
I	127	857640.2	8.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.871	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.360	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.058
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.051
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606144102
Sample Date/Time: Friday, July 01, 2016 12:00:12
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	98658.5	1.5				ug/L	76456	Standard
	Be	9	2670.2	2.5	**1.8290**	0.053	2.9	ug/L	20	Standard
	Al	27	100018655.9	1.5	**452.7643**	1.271	0.3	ug/L	1307	Standard
	Sc	45	67269.1	3.4				ug/L	41174	Standard
	Ti	47	65558.9	1.5	**191.1007**	3.376	1.8	ug/L	27	Standard
	V	51	394103.6	0.8	**45.3542**	0.603	1.3	ug/L	1434	Standard
	Cr	52	244910.5	0.4	**27.8063**	0.223	0.8	ug/L	7733	Standard
	Cr	53	30011.4	1.8	**27.7958**	0.566	2.0	ug/L	442	Standard
	Mn	55	9446087.0	0.8	**1185.4895**	15.339	1.3	ug/L	723	Standard
	Co	59	127992.0	0.5	**15.8451**	0.159	1.0	ug/L	217	Standard
	Ni	60	80262.0	0.9	**36.5997**	0.485	1.3	ug/L	304	Standard
	Cu	65	41760.1	1.2	**19.3697**	0.328	1.7	ug/L	181	Standard
	Zn	66	117095.1	0.6	**90.6239**	0.738	0.8	ug/L	215	Standard
>	Ge	72	548186.8	0.5				ug/L	520809	Standard
	As	75	12213.4	1.0	**9.4446**	0.140	1.5	ug/L	-52	Standard
	Se	82	168.5	1.4	**1.1404**	0.019	1.7	ug/L	17	Standard
	Se-1	77	183.7	6.1	**1.3567**	0.128	9.4	ug/L	56	Standard
>	Ga	71	38156.3	0.9				mg/L	25	Standard
	Rb	85	401776.2	1.3				ug/L	28	Standard
	Y	89	977933.0	0.9				ug/L	447395	Standard
>	Rh	103	285.0	6.1				ug/L	15	Standard
	Mo	98	2398.4	0.8	**0.7441**	0.003	0.4	ug/L	113	Standard
	Ag	107	404.7	5.9	**0.0417**	0.003	8.1	ug/L	108	Standard
	Cd	111	528.3	1.5	**0.2199**	0.003	1.2	mg/L	3	Standard
	Cd	114	1302.9	4.8	**0.2213**	0.008	3.8	ug/L	20	Standard
>	In	115	646109.7	1.1				ug/L	625728	Standard
	Sn	118	1073.4	7.7	**0.0773**	0.012	15.1	ug/L	568	Standard
	Sb	123	1069.4	22.8	**0.1664**	0.044	26.2	ug/L	612	Standard
	Ba	135	1753079.8	0.5	**780.4145**	5.897	0.8	ug/L	21	Standard
	Ce	140	2444826.3	0.9				ug/L	245	Standard
>	Tb	159	1048030.7	0.8				ug/L	950397	Standard
	Ho	165	43214.9	0.3				ug/L	7	Standard
	Tl	203	1815.1	1.2	**0.2022**	0.002	1.2	ug/L	15	Standard
	Tl	205	1641.8	6.8	**0.1969**	0.014	6.9	ug/L	13	Standard
	Pb	206	125036.8	0.6	**22.1250**	0.076	0.3	ug/L	264	Standard
	Pb	207	102892.9	0.5	**20.0422**	0.120	0.6	ug/L	222	Standard
	Pb	208	445404.9	0.2	**21.2431**	0.093	0.4	ug/L	959	Standard
	U	238	8589.4	1.3	**1.0692**	0.015	1.4	ug/L	9	Standard
>	Bi	209	550757.7	0.3				ug/L	552821	Standard

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Na	23	15.0	33.3	**27.3614**	8.722	31.9	mg/L	2	Standard
Mg	24	11512.7	3.2	**8.1734**	0.184	2.3	mg/L	55	Standard
K	39	1368.4	5.6	**3.0793**	0.098	3.2	mg/L	28	Standard
Ca	43	1295.1	4.3	**69.6682**	4.720	6.8	mg/L	27	Standard
Fe	54	38707.5	2.1	**18.4898**	0.545	2.9	mg/L	147	Standard
Fe	57	11109.1	1.4	**20.0998**	0.536	2.7	mg/L	268	Standard
> **Sc-1**	45	67269.1	3.4				mg/L	41174	Standard
Cl	35	76892.0	1.5				ug/L	69550	Standard
Kr	83	0.0					ug/L	1	Standard
Br	81	13365.9	1.5				ug/L	1950	Standard
P	31	63609.9	1.5				ug/L	21156	Standard
S	34	3752.1	6.7				ug/L	3419	Standard
Sr	88	1298.4	6.6				ug/L	72	Standard
C	12	780.0	10.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	20.4				mg/L	17	Standard
Dy	164	72319.7	1.0				mg/L	16	Standard
Ho-1	165	43214.9	0.3				mg/L	7	Standard
Er	166	38789.6	1.4				mg/L	7	Standard
I	127	200464.2	1.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.040	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.257	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.257	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.627	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ti 47 Upper, S, EEE	Ti	47	

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Mn 55 Upper, S, EEE	Mn	55
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606144201 WG574416-02
Sample Date/Time: Friday, July 01, 2016 12:03:24
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	91136.7	2.7				ug/L	76456	Standard
	Be	9	201.7	10.3	**0.1314**	0.018	13.5	ug/L	20	Standard
	Al	27	21905405.8	1.2	**107.3706**	1.869	1.7	ug/L	1307	Standard
	Sc	45	50086.0	0.8				ug/L	41174	Standard
	Ti	47	9316.5	1.4	**26.0675**	0.608	2.3	ug/L	27	Standard
	V	51	52523.0	0.3	**5.6447**	0.076	1.3	ug/L	1434	Standard
	Cr	52	28573.6	1.1	**2.2609**	0.041	1.8	ug/L	7733	Standard
	Cr	53	3023.6	5.3	**2.3192**	0.157	6.8	ug/L	442	Standard
	Mn	55	526886.3	1.1	**63.5454**	0.695	1.1	ug/L	723	Standard
	Co	59	12298.0	1.4	**1.4386**	0.020	1.4	ug/L	217	Standard
	Ni	60	9400.9	1.0	**3.9901**	0.052	1.3	ug/L	304	Standard
	Cu	65	4207.6	2.8	**1.8116**	0.065	3.6	ug/L	181	Standard
	Zn	66	23172.4	0.3	**17.1155**	0.171	1.0	ug/L	215	Standard
>	Ge	72	569574.4	1.1				ug/L	520809	Standard
	As	75	2039.6	1.1	**1.5560**	0.025	1.6	ug/L	-52	Standard
	Se	82	85.8	3.3	**0.4942**	0.015	3.0	ug/L	17	Standard
	Se-1	77	88.7	8.5	**0.2643**	0.088	33.1	ug/L	56	Standard
>	Ga	71	3267.0	3.2				mg/L	25	Standard
	Rb	85	51683.0	1.3				ug/L	28	Standard
	Y	89	529527.6	0.3				ug/L	447395	Standard
>	Rh	103	150.0	5.8				ug/L	15	Standard
	Mo	98	1541.7	1.1	**0.4475**	0.001	0.3	ug/L	113	Standard
	Ag	107	153.0	7.4	**0.0069**	0.002	23.0	ug/L	108	Standard
	Cd	111	40.7	6.3	**0.0140**	0.001	8.1	mg/L	3	Standard
	Cd	114	102.3	14.8	**0.0166**	0.003	15.4	ug/L	20	Standard
>	In	115	676532.0	0.8				ug/L	625728	Standard
	Sn	118	971.7	4.9	**0.0555**	0.008	14.3	ug/L	568	Standard
	Sb	123	639.0	14.8	**0.0807**	0.018	21.8	ug/L	612	Standard
	Ba	135	197467.2	0.8	**83.9345**	0.680	0.8	ug/L	21	Standard
	Ce	140	158462.8	1.7				ug/L	245	Standard
>	Tb	159	1025960.2	1.0				ug/L	950397	Standard
	Ho	165	2715.2	3.4				ug/L	7	Standard
	Tl	203	280.3	9.2	**0.0292**	0.003	9.9	ug/L	15	Standard
	Tl	205	271.7	10.1	**0.0229**	0.003	13.4	ug/L	13	Standard
	Pb	206	9533.7	0.7	**1.5691**	0.011	0.7	ug/L	264	Standard
	Pb	207	7883.1	1.1	**1.4223**	0.009	0.6	ug/L	222	Standard
	Pb	208	34084.4	0.9	**1.5063**	0.007	0.5	ug/L	959	Standard
	U	238	20271.2	0.7	**2.4081**	0.030	1.3	ug/L	9	Standard
>	Bi	209	577230.0	0.8				ug/L	552821	Standard

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Na	23	10.0	86.6	**24.6403**	21.507	87.3	mg/L	2	Standard
Mg	24	4422.3	4.5	**4.1870**	0.202	4.8	mg/L	55	Standard
K	39	186.7	8.6	**0.4573**	0.052	11.3	mg/L	28	Standard
Ca	43	566.7	10.9	**39.8634**	4.346	10.9	mg/L	27	Standard
Fe	54	2666.0	2.2	**1.6199**	0.041	2.5	mg/L	147	Standard
Fe	57	1331.7	5.5	**2.5595**	0.178	6.9	mg/L	268	Standard
> **Sc-1**	45	50086.0	0.8				mg/L	41174	Standard
Cl	35	83929.2	1.1				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	13155.7	1.8				ug/L	1950	Standard
P	31	31337.4	1.4				ug/L	21156	Standard
S	34	3528.7	1.1				ug/L	3419	Standard
Sr	88	476.7	5.8				ug/L	72	Standard
C	12	400.0	7.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	17	Standard
Dy	164	4673.5	1.6				mg/L	16	Standard
Ho-1	165	2715.2	3.4				mg/L	7	Standard
Er	166	2656.9	8.5				mg/L	7	Standard
I	127	16687.6	14.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.202	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.363	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.119
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.415
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606144202
Sample Date/Time: Friday, July 01, 2016 12:06:35
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	90507.9	1.9				ug/L	76456	Standard
	Be	9	248.3	5.8	**0.1675**	0.008	4.9	ug/L	20	Standard
	Al	27	22277088.2	0.8	**109.9375**	1.745	1.6	ug/L	1307	Standard
	Sc	45	50101.1	3.7				ug/L	41174	Standard
	Ti	47	12264.6	1.2	**34.7196**	0.584	1.7	ug/L	27	Standard
	V	51	62744.3	1.8	**6.8585**	0.146	2.1	ug/L	1434	Standard
	Cr	52	32463.4	1.9	**2.7415**	0.091	3.3	ug/L	7733	Standard
	Cr	53	3775.5	3.5	**3.0371**	0.138	4.6	ug/L	442	Standard
	Mn	55	731304.2	2.1	**89.2163**	2.199	2.5	ug/L	723	Standard
	Co	59	14984.4	2.2	**1.7791**	0.048	2.7	ug/L	217	Standard
	Ni	60	11028.3	1.8	**4.7605**	0.068	1.4	ug/L	304	Standard
	Cu	65	5131.2	1.5	**2.2507**	0.042	1.9	ug/L	181	Standard
	Zn	66	19672.8	1.3	**14.6652**	0.250	1.7	ug/L	215	Standard
>	Ge	72	563354.5	0.6				ug/L	520809	Standard
	As	75	2285.7	4.9	**1.7571**	0.090	5.1	ug/L	-52	Standard
	Se	82	78.7	24.0	**0.4498**	0.141	31.2	ug/L	17	Standard
	Se-1	77	96.3	4.2	**0.3571**	0.042	11.8	ug/L	56	Standard
>	Ga	71	4088.9	0.8				mg/L	25	Standard
	Rb	85	66167.5	0.6				ug/L	28	Standard
	Y	89	527047.3	1.0				ug/L	447395	Standard
>	Rh	103	133.3	20.7				ug/L	15	Standard
	Mo	98	1560.3	2.2	**0.4569**	0.008	1.8	ug/L	113	Standard
	Ag	107	236.0	37.0	**0.0178**	0.011	63.3	ug/L	108	Standard
	Cd	111	70.9	65.6	**0.0263**	0.019	71.1	mg/L	3	Standard
	Cd	114	182.9	70.7	**0.0299**	0.021	70.2	ug/L	20	Standard
>	In	115	671365.1	1.0				ug/L	625728	Standard
	Sn	118	1011.7	2.2	**0.0623**	0.004	5.8	ug/L	568	Standard
	Sb	123	671.0	17.2	**0.0874**	0.022	24.8	ug/L	612	Standard
	Ba	135	208248.7	0.6	**89.2003**	0.372	0.4	ug/L	21	Standard
	Ce	140	195369.9	1.1				ug/L	245	Standard
>	Tb	159	1017569.8	0.3				ug/L	950397	Standard
	Ho	165	3448.7	3.2				ug/L	7	Standard
	Tl	203	464.3	26.6	**0.0488**	0.013	26.2	ug/L	15	Standard
	Tl	205	373.3	2.0	**0.0351**	0.001	2.1	ug/L	13	Standard
	Pb	206	11404.0	0.3	**1.8871**	0.014	0.7	ug/L	264	Standard
	Pb	207	9244.8	0.8	**1.6776**	0.026	1.6	ug/L	222	Standard
	Pb	208	39660.1	0.9	**1.7621**	0.018	1.0	ug/L	959	Standard
	U	238	20504.2	1.2	**2.4376**	0.012	0.5	ug/L	9	Standard
>	Bi	209	576748.8	0.8				ug/L	552821	Standard

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Na	23	8.3	34.6	**20.5955**	7.569	36.8	mg/L	2	Standard
Mg	24	4662.4	4.9	**4.4148**	0.085	1.9	mg/L	55	Standard
K	39	218.3	22.9	**0.5540**	0.135	24.3	mg/L	28	Standard
Ca	43	601.7	7.9	**42.4925**	3.322	7.8	mg/L	27	Standard
Fe	54	3310.4	1.9	**2.0364**	0.082	4.1	mg/L	147	Standard
Fe	57	1525.1	5.8	**3.0549**	0.352	11.5	mg/L	268	Standard
> **Sc-1**	45	50101.1	3.7				mg/L	41174	Standard
Cl	35	83923.1	0.7				ug/L	69550	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	11030.7	1.9				ug/L	1950	Standard
P	31	32000.4	1.7				ug/L	21156	Standard
S	34	3522.1	3.8				ug/L	3419	Standard
Sr	88	531.7	5.7				ug/L	72	Standard
C	12	333.3	12.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	17	Standard
Dy	164	5934.4	7.8				mg/L	16	Standard
Ho-1	165	3448.7	3.2				mg/L	7	Standard
Er	166	3343.7	6.8				mg/L	7	Standard
I	127	14929.0	2.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.379	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.169	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.293
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.328
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606144203S WG574416-08
Sample Date/Time: Friday, July 01, 2016 12:09:47
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90030.2	2.8				ug/L	76456	Standard
	Be	9	67451.5	0.8	**51.1736**	1.267	2.5	ug/L	20	Standard
	Al	27	22083553.0	1.2	**109.5762**	1.952	1.8	ug/L	1307	Standard
	Sc	45	48706.5	1.6				ug/L	41174	Standard
	Ti	47	11744.6	3.0	**33.6397**	0.840	2.5	ug/L	27	Standard
	V	51	504596.4	0.3	**57.2364**	0.479	0.8	ug/L	1434	Standard
	Cr	52	455560.7	0.5	**51.7411**	0.108	0.2	ug/L	7733	Standard
	Cr	53	56769.5	0.3	**52.1372**	0.385	0.7	ug/L	442	Standard
	Mn	55	1036346.8	0.7	**127.9850**	0.471	0.4	ug/L	723	Standard
	Co	59	423691.1	0.7	**51.7179**	0.252	0.5	ug/L	217	Standard
	Ni	60	117301.3	0.2	**52.7412**	0.343	0.7	ug/L	304	Standard
	Cu	65	109232.0	1.3	**50.0075**	0.589	1.2	ug/L	181	Standard
	Zn	66	89717.5	1.0	**68.3316**	0.407	0.6	ug/L	215	Standard
>	**Ge**	72	556663.9	0.5				ug/L	520809	Standard
	As	75	68119.8	0.9	**51.6696**	0.438	0.8	ug/L	-52	Standard
	Se	82	6698.0	0.6	**49.4767**	0.038	0.1	ug/L	17	Standard
	Se-1	77	4484.0	0.7	**48.3919**	0.526	1.1	ug/L	56	Standard
>	**Ga**	71	4812.4	3.6				mg/L	25	Standard
	Rb	85	61444.3	0.8				ug/L	28	Standard
	Y	89	517239.3	0.8				ug/L	447395	Standard
>	**Rh**	103	106.7	32.9				ug/L	15	Standard
	Mo	98	1731.4	0.3	**0.5186**	0.008	1.5	ug/L	113	Standard
	Ag	107	354175.3	0.9	**46.7205**	0.584	1.2	ug/L	108	Standard
	Cd	111	119010.3	1.4	**48.9848**	0.748	1.5	mg/L	3	Standard
	Cd	114	293416.8	0.7	**48.7814**	0.554	1.1	ug/L	20	Standard
>	**In**	115	660339.6	1.1				ug/L	625728	Standard
	Sn	118	1475.1	6.5	**0.1329**	0.012	9.2	ug/L	568	Standard
	Sb	123	188284.4	1.5	**34.4893**	0.374	1.1	ug/L	612	Standard
	Ba	135	310505.8	0.4	**135.2331**	0.887	0.7	ug/L	21	Standard
	Ce	140	169550.1	0.7				ug/L	245	Standard
>	**Tb**	159	1009819.6	1.8				ug/L	950397	Standard
	Ho	165	3057.0	3.5				ug/L	7	Standard
	Tl	203	459336.1	0.3	**49.1469**	0.484	1.0	ug/L	15	Standard
	Tl	205	419582.5	1.2	**50.5538**	1.161	2.3	ug/L	13	Standard
	Pb	206	306250.8	0.1	**51.9221**	0.623	1.2	ug/L	264	Standard
	Pb	207	267507.5	0.3	**49.9387**	0.751	1.5	ug/L	222	Standard
	Pb	208	1116297.0	0.4	**51.0219**	0.722	1.4	ug/L	959	Standard
	U	238	433722.1	0.8	**51.6863**	1.022	2.0	ug/L	9	Standard
>	**Bi**	209	575528.3	1.2				ug/L	552821	Standard

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Na	23	16.7	75.5	**41.7692**	31.215	74.7	mg/L	2	Standard
Mg	24	4830.8	1.7	**4.7112**	0.123	2.6	mg/L	55	Standard
K	39	223.3	5.2	**0.5924**	0.027	4.5	mg/L	28	Standard
Ca	43	666.7	3.0	**48.7692**	1.740	3.6	mg/L	27	Standard
Fe	54	3420.8	4.4	**2.1691**	0.101	4.6	mg/L	147	Standard
Fe	57	1528.4	2.8	**3.1654**	0.056	1.8	mg/L	268	Standard
Sc-1	45	48706.5	1.6				mg/L	41174	Standard
Cl	35	82992.7	2.0				ug/L	69550	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	7521.9	4.9				ug/L	1950	Standard
P	31	32994.2	3.4				ug/L	21156	Standard
S	34	3745.5	4.1				ug/L	3419	Standard
Sr	88	541.7	13.3				ug/L	72	Standard
C	12	350.0	24.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	62.5				mg/L	17	Standard
Dy	164	4986.9	2.7				mg/L	16	Standard
Ho-1	165	3057.0	3.5				mg/L	7	Standard
Er	166	2656.9	3.8				mg/L	7	Standard
I	127	14203.3	3.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.755	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.884	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	105.531	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	104.108	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144204SD WG574416-09
Sample Date/Time: Friday, July 01, 2016 12:12:58
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	90070.3	0.3				ug/L	76456	Standard
	Be	9	67068.2	2.3	**50.8355**	1.023	2.0	ug/L	20	Standard
	Al	27	22820326.8	1.6	**113.1467**	1.840	1.6	ug/L	1307	Standard
	Sc	45	48614.5	1.1				ug/L	41174	Standard
	Ti	47	12429.8	0.9	**35.6977**	0.390	1.1	ug/L	27	Standard
	V	51	500213.8	0.9	**56.8738**	0.256	0.4	ug/L	1434	Standard
	Cr	52	457920.4	0.8	**52.1452**	0.679	1.3	ug/L	7733	Standard
	Cr	53	55433.0	3.5	**51.0119**	1.142	2.2	ug/L	442	Standard
	Mn	55	1032001.7	0.7	**127.7596**	0.851	0.7	ug/L	723	Standard
	Co	59	426181.5	0.6	**52.1492**	0.363	0.7	ug/L	217	Standard
	Ni	60	115745.8	0.4	**52.1679**	0.569	1.1	ug/L	304	Standard
	Cu	65	108435.6	0.5	**49.7650**	0.481	1.0	ug/L	181	Standard
	Zn	66	83122.4	0.9	**63.4509**	0.540	0.9	ug/L	215	Standard
>	Ge	72	555340.6	1.3				ug/L	520809	Standard
	As	75	68386.4	1.0	**51.9966**	0.210	0.4	ug/L	-52	Standard
	Se	82	6617.0	1.4	**48.9951**	0.511	1.0	ug/L	17	Standard
	Se-1	77	4553.0	1.4	**49.2655**	0.470	1.0	ug/L	56	Standard
>	Ga	71	4989.2	4.2				mg/L	25	Standard
	Rb	85	63782.3	0.6				ug/L	28	Standard
	Y	89	508585.3	3.2				ug/L	447395	Standard
>	Rh	103	155.0	16.8				ug/L	15	Standard
	Mo	98	1690.9	2.2	**0.5065**	0.021	4.1	ug/L	113	Standard
	Ag	107	359804.6	1.4	**47.4968**	0.270	0.6	ug/L	108	Standard
	Cd	111	119520.8	0.7	**49.2344**	0.563	1.1	mg/L	3	Standard
	Cd	114	293080.3	1.6	**48.7653**	1.035	2.1	ug/L	20	Standard
>	In	115	659870.1	1.8				ug/L	625728	Standard
	Sn	118	1175.0	5.3	**0.0889**	0.010	10.9	ug/L	568	Standard
	Sb	123	180927.8	2.0	**33.1631**	0.062	0.2	ug/L	612	Standard
	Ba	135	313663.8	0.6	**136.7260**	2.307	1.7	ug/L	21	Standard
	Ce	140	181386.0	0.5				ug/L	245	Standard
>	Tb	159	1008393.6	0.8				ug/L	950397	Standard
	Ho	165	2945.3	1.9				ug/L	7	Standard
	Tl	203	461671.8	0.2	**49.9891**	0.298	0.6	ug/L	15	Standard
	Tl	205	421242.1	0.2	**51.3576**	0.369	0.7	ug/L	13	Standard
	Pb	206	307820.1	0.5	**52.8142**	0.466	0.9	ug/L	264	Standard
	Pb	207	267725.9	1.2	**50.5746**	0.254	0.5	ug/L	222	Standard
	Pb	208	1118569.9	0.5	**51.7383**	0.472	0.9	ug/L	959	Standard
	U	238	435363.6	0.2	**52.5003**	0.385	0.7	ug/L	9	Standard
>	Bi	209	568683.1	0.8				ug/L	552821	Standard

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Na	23	10.0	50.0	**25.2590**	12.492	49.5	mg/L	2	Standard
Mg	24	4682.4	0.4	**4.5730**	0.070	1.5	mg/L	55	Standard
K	39	196.7	12.8	**0.5079**	0.086	17.0	mg/L	28	Standard
Ca	43	620.0	2.8	**45.2717**	1.537	3.4	mg/L	27	Standard
Fe	54	3578.4	8.9	**2.2770**	0.195	8.6	mg/L	147	Standard
Fe	57	1561.7	1.9	**3.2607**	0.102	3.1	mg/L	268	Standard
> **Sc-1**	45	48614.5	1.1				mg/L	41174	Standard
Cl	35	83140.8	0.7				ug/L	69550	Standard
Kr	83	1.3	86.6				ug/L	1	Standard
Br	81	7508.5	3.6				ug/L	1950	Standard
P	31	33216.4	1.3				ug/L	21156	Standard
S	34	3633.8	2.2				ug/L	3419	Standard
Sr	88	566.7	11.0				ug/L	72	Standard
C	12	476.7	6.7				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	62.5				mg/L	17	Standard
Dy	164	4984.3	2.5				mg/L	16	Standard
Ho-1	165	2945.3	1.9				mg/L	7	Standard
Er	166	2850.3	2.1				mg/L	7	Standard
I	127	15054.2	4.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.807	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.630	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.456
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.869
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144204SD WG574416-09
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 12:16:11
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	87445.1	3.4				ug/L	76456	Standard
	Be	9	64070.2	0.9	**50.0545**	1.445	2.9	ug/L	20	Standard
	Al	27	9240352.4	0.8	**47.2275**	1.909	4.0	ug/L	1307	Standard
	Sc	45	44832.9	2.4				ug/L	41174	Standard
	Ti	47	34259.7	1.0	**97.1606**	1.714	1.8	ug/L	27	Standard
	V	51	451230.5	0.6	**50.5628**	0.294	0.6	ug/L	1434	Standard
	Cr	52	441549.7	0.7	**49.5261**	0.488	1.0	ug/L	7733	Standard
	Cr	53	54047.9	0.8	**49.0333**	0.166	0.3	ug/L	442	Standard
	Mn	55	409600.5	0.8	**49.9366**	0.757	1.5	ug/L	723	Standard
	Co	59	429332.5	1.0	**51.7968**	0.540	1.0	ug/L	217	Standard
	Ni	60	111250.6	0.3	**49.4298**	0.556	1.1	ug/L	304	Standard
	Cu	65	109537.2	0.3	**49.5637**	0.351	0.7	ug/L	181	Standard
	Zn	66	65566.2	0.7	**49.3061**	0.180	0.4	ug/L	215	Standard
>	Ge	72	563235.2	0.9				ug/L	520809	Standard
	As	75	66627.6	0.4	**49.9511**	0.273	0.5	ug/L	-52	Standard
	Se	82	6922.5	0.6	**50.5422**	0.157	0.3	ug/L	17	Standard
	Se-1	77	4596.0	1.5	**49.0283**	0.390	0.8	ug/L	56	Standard
>	Ga	71	40.0	21.7				mg/L	25	Standard
	Rb	85	993.4	8.3				ug/L	28	Standard
	Y	89	482225.9	1.1				ug/L	447395	Standard
>	Rh	103	20.0	66.1				ug/L	15	Standard
	Mo	98	318941.8	1.3	**98.3261**	1.568	1.6	ug/L	113	Standard
	Ag	107	382282.6	0.5	**49.6279**	0.362	0.7	ug/L	108	Standard
	Cd	111	122482.8	0.3	**49.6133**	0.042	0.1	mg/L	3	Standard
	Cd	114	296548.6	0.8	**48.5180**	0.351	0.7	ug/L	20	Standard
>	In	115	670966.5	0.3				ug/L	625728	Standard
	Sn	118	338852.8	1.5	**49.0149**	0.673	1.4	ug/L	568	Standard
	Sb	123	274306.5	0.2	**49.4654**	0.232	0.5	ug/L	612	Standard
	Ba	135	113482.1	0.5	**48.6277**	0.189	0.4	ug/L	21	Standard
	Ce	140	308.3	9.8				ug/L	245	Standard
>	Tb	159	1016008.3	2.4				ug/L	950397	Standard
	Ho	165	16.7	45.8				ug/L	7	Standard
	Tl	203	473547.1	1.1	**49.9959**	0.041	0.1	ug/L	15	Standard
	Tl	205	428096.0	1.4	**50.8923**	0.684	1.3	ug/L	13	Standard
	Pb	206	298789.4	0.8	**49.9841**	0.126	0.3	ug/L	264	Standard
	Pb	207	271570.2	0.6	**50.0267**	0.582	1.2	ug/L	222	Standard
	Pb	208	1117926.1	0.2	**50.4203**	0.478	0.9	ug/L	959	Standard
	U	238	428309.5	0.4	**50.3630**	0.285	0.6	ug/L	9	Standard
>	Bi	209	583209.8	1.0				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4910.8	1.7	**5.2115**	0.207	4.0	mg/L	55	Standard
K	39	1366.7	7.2	**4.6780**	0.226	4.8	mg/L	28	Standard
Ca	43	96.7	13.0	**5.6017**	0.863	15.4	mg/L	27	Standard
Fe	54	7079.3	0.6	**5.0021**	0.155	3.1	mg/L	147	Standard
Fe	57	2068.5	8.1	**5.0303**	0.399	7.9	mg/L	268	Standard
> **Sc-1**	45	44832.9	2.4				mg/L	41174	Standard
Cl	35	82615.3	1.2				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	2370.2	6.2				ug/L	1950	Standard
P	31	24917.1	2.0				ug/L	21156	Standard
S	34	4207.3	4.1				ug/L	3419	Standard
Sr	88	65.0	33.5				ug/L	72	Standard
C	12	150.0	30.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	69.3				mg/L	17	Standard
Dy	164	25.7	41.7				mg/L	16	Standard
Ho-1	165	16.7	45.8				mg/L	7	Standard
Er	166	20.0	100.0				mg/L	7	Standard
I	127	20977.9	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	100.109		
Al	27	94.455		
Sc	45			
Ti	47	97.161		
V	51	101.126		
Cr	52	99.052		
Cr	53			
Mn	55	99.873		
Co	59	103.594		
Ni	60	98.860		
Cu	65	99.127		
Zn	66	98.612		
> Ge	72		108.146	
As	75	99.902		
Se	82	101.084		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	98.326		
Ag	107	99.256		
Cd	111	99.227		
Cd	114			
In	115			107.230
Sn	118	98.030		
Sb	123	98.931		
Ba	135	97.255		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.992		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.841		
U	238	100.726		
Bi	209			105.497
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 12:19:23
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86888.4	1.2				ug/L	76456	Standard
	Be	9	43.3	6.7	**0.0142**	0.002	14.4	ug/L	20	Standard
	Al	27	10504.4	54.9	**0.0440**	0.030	68.3	ug/L	1307	Standard
	Sc	45	44657.4	2.0				ug/L	41174	Standard
	Ti	47	39.3	11.5	**0.0270**	0.014	53.3	ug/L	27	Standard
	V	51	1529.0	2.6	**-0.0269**	0.007	25.9	ug/L	1434	Standard
	Cr	52	7711.0	1.1	**-0.0906**	0.015	16.9	ug/L	7733	Standard
	Cr	53	511.7	5.7	**0.0505**	0.033	65.1	ug/L	442	Standard
	Mn	55	1157.7	24.7	**0.0401**	0.037	91.8	ug/L	723	Standard
	Co	59	342.7	7.9	**0.0119**	0.004	32.6	ug/L	217	Standard
	Ni	60	345.0	7.1	**0.0004**	0.013	3536.3	ug/L	304	Standard
	Cu	65	196.7	14.8	**0.0150**	0.014	96.7	ug/L	181	Standard
	Zn	66	265.3	6.8	**0.0197**	0.016	82.6	ug/L	215	Standard
>	**Ge**	72	564532.3	1.4				ug/L	520809	Standard
	As	75	-63.0	4.9	**-0.0020**	0.003	148.8	ug/L	-52	Standard
	Se	82	13.5	49.1	**-0.0274**	0.049	178.6	ug/L	17	Standard
	Se-1	77	66.7	9.6	**0.0356**	0.080	224.7	ug/L	56	Standard
>	**Ga**	71	36.7	34.3				mg/L	25	Standard
	Rb	85	50.0	17.3				ug/L	28	Standard
	Y	89	485264.3	1.4				ug/L	447395	Standard
>	**Rh**	103	23.3	65.5				ug/L	15	Standard
	Mo	98	248.2	9.5	**0.0519**	0.007	13.4	ug/L	113	Standard
	Ag	107	217.7	28.5	**0.0151**	0.008	51.7	ug/L	108	Standard
	Cd	111	38.2	50.7	**0.0130**	0.008	59.2	mg/L	3	Standard
	Cd	114	103.6	56.8	**0.0168**	0.009	56.1	ug/L	20	Standard
>	**In**	115	676839.2	0.6				ug/L	625728	Standard
	Sn	118	985.0	18.1	**0.0572**	0.025	43.7	ug/L	568	Standard
	Sb	123	1289.0	34.6	**0.1967**	0.079	40.2	ug/L	612	Standard
	Ba	135	163.7	48.0	**0.0515**	0.033	64.0	ug/L	21	Standard
	Ce	140	190.0	43.5				ug/L	245	Standard
>	**Tb**	159	1027800.2	0.9				ug/L	950397	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	185.7	43.6	**0.0185**	0.008	45.3	ug/L	15	Standard
	Tl	205	140.0	34.4	**0.0066**	0.006	85.8	ug/L	13	Standard
	Pb	206	391.7	5.7	**0.0205**	0.004	17.4	ug/L	264	Standard
	Pb	207	348.0	8.5	**0.0168**	0.005	31.6	ug/L	222	Standard
	Pb	208	1428.4	8.6	**0.0149**	0.005	36.0	ug/L	959	Standard
	U	238	152.0	24.6	**0.0173**	0.004	24.9	ug/L	9	Standard
>	**Bi**	209	594942.4	0.2				ug/L	552821	Standard

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Na	23	1.7	173.2	**4.6930**	8.120	173.0	mg/L	2	Standard
Mg	24	61.7	4.7	**0.0063**	0.004	70.3	mg/L	55	Standard
K	39	21.7	58.1	**-0.0541**	0.046	85.2	mg/L	28	Standard
Ca	43	16.7	45.8	**-1.0495**	0.670	63.8	mg/L	27	Standard
Fe	54	185.9	12.3	**0.0354**	0.014	39.9	mg/L	147	Standard
Fe	57	231.7	7.6	**-0.1482**	0.038	25.4	mg/L	268	Standard
> **Sc-1**	45	44657.4	2.0				mg/L	41174	Standard
Cl	35	83476.7	1.5				ug/L	69550	Standard
Kr	83	1.0	173.2				ug/L	1	Standard
Br	81	2133.5	9.1				ug/L	1950	Standard
P	31	25304.5	3.5				ug/L	21156	Standard
S	34	4207.3	4.6				ug/L	3419	Standard
Sr	88	80.0	16.5				ug/L	72	Standard
C	12	116.7	44.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	17	Standard
Dy	164	15.7	39.4				mg/L	16	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	16377.2	4.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.395	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.168
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.619
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606144601
Sample Date/Time: Friday, July 01, 2016 12:22:36
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85066.5	1.2				ug/L	76456	Standard
	Be	9	16.7	45.8	**-0.0065**	0.006	94.4	ug/L	20	Standard
	Al	27	9710029.6	1.9	**50.9822**	1.574	3.1	ug/L	1307	Standard
	Sc	45	45336.1	0.8				ug/L	41174	Standard
	Ti	47	130.7	11.5	**0.2865**	0.040	13.8	ug/L	27	Standard
	V	51	2965.5	17.4	**0.1358**	0.062	45.7	ug/L	1434	Standard
	Cr	52	10925.6	1.4	**0.2804**	0.032	11.4	ug/L	7733	Standard
	Cr	53	6674.8	19.2	**5.7008**	1.204	21.1	ug/L	442	Standard
	Mn	55	17608.9	0.7	**2.0519**	0.031	1.5	ug/L	723	Standard
	Co	59	843.4	6.2	**0.0725**	0.007	9.6	ug/L	217	Standard
	Ni	60	3752.8	1.2	**1.5211**	0.029	1.9	ug/L	304	Standard
	Cu	65	735.7	3.5	**0.2597**	0.015	5.9	ug/L	181	Standard
	Zn	66	4713.1	0.8	**3.3806**	0.039	1.2	ug/L	215	Standard
>	**Ge**	72	562685.3	1.1				ug/L	520809	Standard
	As	75	331.7	14.1	**0.2942**	0.038	12.9	ug/L	-52	Standard
	Se	82	169.7	3.4	**1.1168**	0.055	5.0	ug/L	17	Standard
	Se-1	77	298.3	16.2	**2.5437**	0.506	19.9	ug/L	56	Standard
>	**Ga**	71	43.3	17.6				mg/L	25	Standard
	Rb	85	1375.1	8.1				ug/L	28	Standard
	Y	89	479863.0	1.4				ug/L	447395	Standard
>	**Rh**	103	75.0	23.1				ug/L	15	Standard
	Mo	98	184.0	20.7	**0.0331**	0.012	35.3	ug/L	113	Standard
	Ag	107	187.7	22.7	**0.0116**	0.006	47.6	ug/L	108	Standard
	Cd	111	61.4	13.6	**0.0226**	0.003	14.9	mg/L	3	Standard
	Cd	114	163.1	19.9	**0.0268**	0.005	19.9	ug/L	20	Standard
>	**In**	115	667538.0	0.2				ug/L	625728	Standard
	Sn	118	1128.4	13.7	**0.0801**	0.022	27.7	ug/L	568	Standard
	Sb	123	642.2	32.3	**0.0827**	0.037	45.2	ug/L	612	Standard
	Ba	135	124733.7	0.4	**53.7257**	0.253	0.5	ug/L	21	Standard
	Ce	140	376.7	16.7				ug/L	245	Standard
>	**Tb**	159	1007994.8	2.0				ug/L	950397	Standard
	Ho	165	16.7	45.8				ug/L	7	Standard
	Tl	203	197.3	10.9	**0.0203**	0.002	12.2	ug/L	15	Standard
	Tl	205	216.7	21.8	**0.0163**	0.006	35.8	ug/L	13	Standard
	Pb	206	891.0	6.5	**0.1071**	0.008	7.9	ug/L	264	Standard
	Pb	207	795.4	2.4	**0.1022**	0.003	2.6	ug/L	222	Standard
	Pb	208	3278.5	4.0	**0.1014**	0.007	7.1	ug/L	959	Standard
	U	238	85.3	43.4	**0.0099**	0.004	45.2	ug/L	9	Standard
>	**Bi**	209	576617.3	0.8				ug/L	552821	Standard

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Na	23	5.0	0.0	**13.5582**	0.108	0.8	mg/L	2	Standard
Mg	24	5319.3	4.2	**5.5837**	0.252	4.5	mg/L	55	Standard
K	39	98.3	41.1	**0.2120**	0.143	67.6	mg/L	28	Standard
Ca	43	363.3	7.8	**27.5274**	2.210	8.0	mg/L	27	Standard
Fe	54	179.0	5.5	**0.0286**	0.006	20.9	mg/L	147	Standard
Fe	57	463.3	13.0	**0.4888**	0.165	33.8	mg/L	268	Standard
> **Sc-1**	45	45336.1	0.8				mg/L	41174	Standard
Cl	35	89142.8	0.6				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	30834.8	6.1				ug/L	1950	Standard
P	31	26140.9	1.9				ug/L	21156	Standard
S	34	4027.2	2.4				ug/L	3419	Standard
Sr	88	260.0	15.3				ug/L	72	Standard
C	12	170.0	10.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	17	Standard
Dy	164	38.6	3.3				mg/L	16	Standard
Ho-1	165	16.7	45.8				mg/L	7	Standard
Er	166	30.0	88.2				mg/L	7	Standard
I	127	3538.7	10.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.262	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.041	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.682
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.305
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606144701 WG574416-03
Sample Date/Time: Friday, July 01, 2016 12:25:48
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88482.7	2.3				ug/L	76456	Standard
	Be	9	38.3	39.8	**0.0099**	0.012	125.1	ug/L	20	Standard
	Al	27	11359959.6	1.4	**57.3517**	1.667	2.9	ug/L	1307	Standard
	Sc	45	45563.4	2.6				ug/L	41174	Standard
	Ti	47	479.3	13.4	**1.2787**	0.172	13.4	ug/L	27	Standard
	V	51	3530.4	7.8	**0.1998**	0.034	17.3	ug/L	1434	Standard
	Cr	52	12134.2	0.3	**0.4209**	0.011	2.6	ug/L	7733	Standard
	Cr	53	7648.6	5.0	**6.6019**	0.407	6.2	ug/L	442	Standard
	Mn	55	16091.5	2.0	**1.8699**	0.055	2.9	ug/L	723	Standard
	Co	59	1173.0	4.1	**0.1126**	0.006	5.8	ug/L	217	Standard
	Ni	60	3889.5	2.3	**1.5848**	0.031	1.9	ug/L	304	Standard
	Cu	65	1317.7	0.5	**0.5246**	0.003	0.5	ug/L	181	Standard
	Zn	66	3687.1	0.9	**2.6100**	0.006	0.2	ug/L	215	Standard
>	**Ge**	72	561722.8	0.8				ug/L	520809	Standard
	As	75	1392.1	5.5	**1.0905**	0.054	4.9	ug/L	-52	Standard
	Se	82	606.7	3.3	**4.3252**	0.116	2.7	ug/L	17	Standard
	Se-1	77	418.0	2.5	**3.8492**	0.119	3.1	ug/L	56	Standard
>	**Ga**	71	115.0	8.7				mg/L	25	Standard
	Rb	85	5234.2	9.4				ug/L	28	Standard
	Y	89	487944.7	1.1				ug/L	447395	Standard
>	**Rh**	103	568.3	20.1				ug/L	15	Standard
	Mo	98	1044.2	2.3	**0.3054**	0.008	2.6	ug/L	113	Standard
	Ag	107	187.3	42.9	**0.0121**	0.011	91.2	ug/L	108	Standard
	Cd	111	55.0	27.2	**0.0204**	0.006	30.3	mg/L	3	Standard
	Cd	114	135.5	6.2	**0.0227**	0.001	5.1	ug/L	20	Standard
>	**In**	115	656101.2	1.3				ug/L	625728	Standard
	Sn	118	1038.4	15.8	**0.0699**	0.026	37.7	ug/L	568	Standard
	Sb	123	573.4	30.4	**0.0724**	0.034	46.6	ug/L	612	Standard
	Ba	135	501979.0	0.4	**220.0552**	2.127	1.0	ug/L	21	Standard
	Ce	140	2408.5	3.7				ug/L	245	Standard
>	**Tb**	159	999721.2	1.2				ug/L	950397	Standard
	Ho	165	475.0	13.8				ug/L	7	Standard
	Tl	203	180.7	18.9	**0.0191**	0.004	19.9	ug/L	15	Standard
	Tl	205	181.7	18.3	**0.0127**	0.004	33.1	ug/L	13	Standard
	Pb	206	1433.1	5.5	**0.2055**	0.013	6.5	ug/L	264	Standard
	Pb	207	1269.4	7.4	**0.1971**	0.019	9.6	ug/L	222	Standard
	Pb	208	5249.0	0.8	**0.1978**	0.003	1.5	ug/L	959	Standard
	U	238	833.4	3.5	**0.1015**	0.003	3.3	ug/L	9	Standard
>	**Bi**	209	561437.9	0.5				ug/L	552821	Standard

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Na	23	3.3	86.6	**9.1266**	7.900	86.6	mg/L	2	Standard
Mg	24	22316.4	4.6	**23.4898**	0.474	2.0	mg/L	55	Standard
K	39	291.7	17.2	**0.8820**	0.191	21.6	mg/L	28	Standard
Ca	43	361.7	17.8	**27.2179**	4.974	18.3	mg/L	27	Standard
Fe	54	219.1	19.9	**0.0560**	0.027	47.8	mg/L	147	Standard
Fe	57	508.3	13.1	**0.6052**	0.153	25.3	mg/L	268	Standard
> **Sc-1**	45	45563.4	2.6				mg/L	41174	Standard
Cl	35	95139.1	0.6				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	117746.0	3.1				ug/L	1950	Standard
P	31	26077.4	3.3				ug/L	21156	Standard
S	34	3920.5	3.9				ug/L	3419	Standard
Sr	88	1768.4	4.8				ug/L	72	Standard
C	12	193.3	38.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	89.2				mg/L	17	Standard
Dy	164	700.0	19.1				mg/L	16	Standard
Ho-1	165	475.0	13.8				mg/L	7	Standard
Er	166	486.7	19.4				mg/L	7	Standard
I	127	22775.4	2.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.731	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.856	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.854
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.559
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144701DP WG574416-10
Sample Date/Time: Friday, July 01, 2016 12:28:59
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	88142.4	1.7				ug/L	76456	Standard
	Be	9	40.0	37.5	**0.0111**	0.011	101.8	ug/L	20	Standard
	Al	27	11494838.5	2.0	**58.2408**	1.266	2.2	ug/L	1307	Standard
	Sc	45	46242.2	2.8				ug/L	41174	Standard
	Ti	47	491.0	28.0	**1.3133**	0.392	29.8	ug/L	27	Standard
	V	51	4065.2	7.6	**0.2601**	0.033	12.8	ug/L	1434	Standard
	Cr	52	12264.0	1.3	**0.4365**	0.008	1.9	ug/L	7733	Standard
	Cr	53	8637.5	5.6	**7.5132**	0.490	6.5	ug/L	442	Standard
	Mn	55	16026.8	1.0	**1.8627**	0.011	0.6	ug/L	723	Standard
	Co	59	1127.4	3.0	**0.1071**	0.004	3.8	ug/L	217	Standard
	Ni	60	3889.8	1.2	**1.5861**	0.030	1.9	ug/L	304	Standard
	Cu	65	1351.4	4.3	**0.5403**	0.027	5.0	ug/L	181	Standard
	Zn	66	3072.3	1.9	**2.1459**	0.033	1.5	ug/L	215	Standard
>	Ge	72	561430.2	0.7				ug/L	520809	Standard
	As	75	1450.6	6.2	**1.1355**	0.075	6.6	ug/L	-52	Standard
	Se	82	626.4	4.3	**4.4737**	0.217	4.8	ug/L	17	Standard
	Se-1	77	446.7	4.4	**4.1629**	0.222	5.3	ug/L	56	Standard
>	Ga	71	118.3	21.3				mg/L	25	Standard
	Rb	85	5335.9	4.4				ug/L	28	Standard
	Y	89	485232.7	0.7				ug/L	447395	Standard
>	Rh	103	503.3	5.6				ug/L	15	Standard
	Mo	98	890.3	4.1	**0.2555**	0.010	3.8	ug/L	113	Standard
	Ag	107	130.0	4.8	**0.0043**	0.001	19.6	ug/L	108	Standard
	Cd	111	38.1	10.0	**0.0134**	0.002	12.3	mg/L	3	Standard
	Cd	114	93.0	28.3	**0.0155**	0.004	28.0	ug/L	20	Standard
>	In	115	659077.6	0.9				ug/L	625728	Standard
	Sn	118	881.7	14.6	**0.0459**	0.019	42.5	ug/L	568	Standard
	Sb	123	507.6	19.6	**0.0596**	0.019	31.6	ug/L	612	Standard
	Ba	135	515199.9	0.5	**224.8243**	2.217	1.0	ug/L	21	Standard
	Ce	140	2820.3	8.4				ug/L	245	Standard
>	Tb	159	1000855.8	0.8				ug/L	950397	Standard
	Ho	165	511.7	6.7				ug/L	7	Standard
	Tl	203	145.0	5.2	**0.0151**	0.001	5.3	ug/L	15	Standard
	Tl	205	140.0	29.2	**0.0075**	0.005	66.5	ug/L	13	Standard
	Pb	206	896.0	1.8	**0.1117**	0.003	2.6	ug/L	264	Standard
	Pb	207	768.4	3.7	**0.1007**	0.005	5.0	ug/L	222	Standard
	Pb	208	3189.1	0.1	**0.1009**	0.001	0.5	ug/L	959	Standard
	U	238	824.4	5.0	**0.1002**	0.005	5.0	ug/L	9	Standard
>	Bi	209	562695.6	0.4				ug/L	552821	Standard

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Na	23	8.3	34.6	**22.1713**	7.744	34.9	mg/L	2	Standard
Mg	24	23199.4	1.6	**24.0879**	0.996	4.1	mg/L	55	Standard
K	39	276.7	2.8	**0.8134**	0.006	0.8	mg/L	28	Standard
Ca	43	471.7	6.8	**35.7746**	3.568	10.0	mg/L	27	Standard
Fe	54	212.8	23.2	**0.0499**	0.035	69.4	mg/L	147	Standard
Fe	57	470.0	11.3	**0.4850**	0.177	36.5	mg/L	268	Standard
> **Sc-1**	45	46242.2	2.8				mg/L	41174	Standard
Cl	35	96975.4	1.3				ug/L	69550	Standard
Kr	83	2.3	137.8				ug/L	1	Standard
Br	81	120957.8	2.8				ug/L	1950	Standard
P	31	25446.4	2.8				ug/L	21156	Standard
S	34	3975.5	1.0				ug/L	3419	Standard
Sr	88	1878.4	2.6				ug/L	72	Standard
C	12	223.3	38.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	17	Standard
Dy	164	658.1	9.2				mg/L	16	Standard
Ho-1	165	511.7	6.7				mg/L	7	Standard
Er	166	526.7	11.0				mg/L	7	Standard
I	127	23127.6	2.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.285	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.800	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.330
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.786
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144701DP WG574416-10
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Method 6020 - Summary Report

Sample ID: L1606128901
Sample Date/Time: Friday, July 01, 2016 12:32:11
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	100202.1	2.7				ug/L	76456	Standard
	Be	9	85.0	61.4	**0.0383**	0.036	94.9	ug/L	20	Standard
	Al	27	121494771.0	1.8	**541.6309**	8.514	1.6	ug/L	1307	Standard
	Sc	45	48803.5	2.8				ug/L	41174	Standard
	Ti	47	545.3	5.0	**1.5278**	0.038	2.5	ug/L	27	Standard
	V	51	10661.2	18.0	**1.0481**	0.197	18.8	ug/L	1434	Standard
	Cr	52	662482.0	2.6	**77.9794**	0.550	0.7	ug/L	7733	Standard
	Cr	53	138513.8	2.3	**131.6729**	2.729	2.1	ug/L	442	Standard
	Mn	55	5966787.8	1.9	**759.5704**	10.887	1.4	ug/L	723	Standard
	Co	59	181210.6	0.8	**22.7724**	0.421	1.8	ug/L	217	Standard
	Ni	60	645750.8	2.4	**299.7645**	3.348	1.1	ug/L	304	Standard
	Cu	65	22297.4	3.7	**10.4538**	0.196	1.9	ug/L	181	Standard
	Zn	66	11919.4	2.6	**9.1948**	0.114	1.2	ug/L	215	Standard
>	**Ge**	72	540486.8	2.6				ug/L	520809	Standard
	As	75	4102.0	1.8	**3.2473**	0.027	0.8	ug/L	-52	Standard
	Se	82	1886.5	4.1	**14.2618**	0.413	2.9	ug/L	17	Standard
	Se-1	77	4801.8	0.7	**53.4605**	1.123	2.1	ug/L	56	Standard
>	**Ga**	71	275.0	24.6				mg/L	25	Standard
	Rb	85	16008.5	1.9				ug/L	28	Standard
	Y	89	482574.6	0.5				ug/L	447395	Standard
>	**Rh**	103	891.7	13.1				ug/L	15	Standard
	Mo	98	6427.1	1.7	**2.1501**	0.036	1.7	ug/L	113	Standard
	Ag	107	215.3	42.5	**0.0178**	0.013	73.5	ug/L	108	Standard
	Cd	111	1192.8	4.2	**0.5277**	0.023	4.3	mg/L	3	Standard
	Cd	114	2955.5	4.3	**0.5305**	0.024	4.6	ug/L	20	Standard
>	**In**	115	611635.6	0.3				ug/L	625728	Standard
	Sn	118	1171.7	1.6	**0.1020**	0.003	2.8	ug/L	568	Standard
	Sb	123	952.5	13.3	**0.1549**	0.025	16.4	ug/L	612	Standard
	Ba	135	5659971.5	1.5	**2661.5360**	36.316	1.4	ug/L	21	Standard
	Ce	140	34602.8	2.7				ug/L	245	Standard
>	**Tb**	159	987729.2	0.4				ug/L	950397	Standard
	Ho	165	555.0	3.6				ug/L	7	Standard
	Tl	203	271.3	38.8	**0.0315**	0.013	40.1	ug/L	15	Standard
	Tl	205	228.3	29.2	**0.0208**	0.009	43.4	ug/L	13	Standard
	Pb	206	682.3	7.9	**0.0848**	0.010	12.2	ug/L	264	Standard
	Pb	207	562.7	4.7	**0.0706**	0.006	7.9	ug/L	222	Standard
	Pb	208	2400.7	5.1	**0.0736**	0.007	9.1	ug/L	959	Standard
	U	238	485.7	17.4	**0.0640**	0.011	17.8	ug/L	9	Standard
>	**Bi**	209	518402.7	0.8				ug/L	552821	Standard

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Na	23	6.7	43.3	**16.7312**	6.981	41.7	mg/L	2	Standard
Mg	24	234951.0	0.3	**231.6239**	7.038	3.0	mg/L	55	Standard
K	39	286.7	15.7	**0.7989**	0.169	21.2	mg/L	28	Standard
Ca	43	935.0	7.2	**69.1820**	3.528	5.1	mg/L	27	Standard
Fe	54	758.4	8.2	**0.4032**	0.043	10.6	mg/L	147	Standard
Fe	57	1138.4	6.9	**2.1447**	0.127	5.9	mg/L	268	Standard
> **Sc-1**	45	48803.5	2.8				mg/L	41174	Standard
Cl	35	88877.9	0.3				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	391239.0	2.6				ug/L	1950	Standard
P	31	37070.3	1.2				ug/L	21156	Standard
S	34	4178.9	3.9				ug/L	3419	Standard
Sr	88	2831.9	1.5				ug/L	72	Standard
C	12	466.7	21.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	17.3				mg/L	17	Standard
Dy	164	667.5	12.4				mg/L	16	Standard
Ho-1	165	555.0	3.6				mg/L	7	Standard
Er	166	540.0	8.5				mg/L	7	Standard
I	127	188266.3	8.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		131.059	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.778	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	97.748	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	93.774	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Cr 53 Upper, S, EEE	Cr	53	

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Mn 55 Upper, S, EEE	Mn	55
Ni 60 Upper, S, EEE	Ni	60
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606128904
Sample Date/Time: Friday, July 01, 2016 12:35:23
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80174.9	0.5				ug/L	76456	Standard
	Be	9	53.3	27.1	**0.0255**	0.012	47.2	ug/L	20	Standard
	Al	27	1032791.8	1.6	**5.7430**	0.086	1.5	ug/L	1307	Standard
	Sc	45	47549.6	3.6				ug/L	41174	Standard
	Ti	47	1435.7	2.3	**3.8643**	0.058	1.5	ug/L	27	Standard
	V	51	10110.4	0.9	**0.9038**	0.025	2.8	ug/L	1434	Standard
	Cr	52	20122.7	4.1	**1.2588**	0.042	3.3	ug/L	7733	Standard
	Cr	53	3665.5	16.0	**2.8260**	0.446	15.8	ug/L	442	Standard
	Mn	55	288289.9	2.5	**34.0207**	0.139	0.4	ug/L	723	Standard
	Co	59	1477.7	1.3	**0.1434**	0.004	2.6	ug/L	217	Standard
	Ni	60	4239.3	2.2	**1.6775**	0.005	0.3	ug/L	304	Standard
	Cu	65	5707.4	2.9	**2.4318**	0.022	0.9	ug/L	181	Standard
	Zn	66	6174.6	2.5	**4.3354**	0.036	0.8	ug/L	215	Standard
>	Ge	72	581260.9	2.3				ug/L	520809	Standard
	As	75	447.8	4.7	**0.3704**	0.019	5.1	ug/L	-52	Standard
	Se	82	65.6	5.7	**0.3388**	0.024	6.9	ug/L	17	Standard
	Se-1	77	141.0	9.5	**0.7917**	0.108	13.6	ug/L	56	Standard
>	Ga	71	390.0	12.2				mg/L	25	Standard
	Rb	85	14513.6	3.3				ug/L	28	Standard
	Y	89	508182.1	0.9				ug/L	447395	Standard
>	Rh	103	35.0	14.3				ug/L	15	Standard
	Mo	98	3302.1	0.9	**0.9834**	0.006	0.6	ug/L	113	Standard
	Ag	107	192.0	6.8	**0.0118**	0.002	15.7	ug/L	108	Standard
	Cd	111	79.5	7.9	**0.0295**	0.002	7.8	mg/L	3	Standard
	Cd	114	220.0	7.1	**0.0356**	0.003	7.0	ug/L	20	Standard
>	In	115	678248.4	0.8				ug/L	625728	Standard
	Sn	118	933.4	10.8	**0.0496**	0.015	30.5	ug/L	568	Standard
	Sb	123	584.6	1.8	**0.0706**	0.002	3.0	ug/L	612	Standard
	Ba	135	45177.6	1.6	**19.1408**	0.317	1.7	ug/L	21	Standard
	Ce	140	30016.4	0.4				ug/L	245	Standard
>	Tb	159	1007751.2	0.8				ug/L	950397	Standard
	Ho	165	761.7	12.8				ug/L	7	Standard
	Tl	203	113.3	7.1	**0.0112**	0.001	7.0	ug/L	15	Standard
	Tl	205	111.7	14.4	**0.0035**	0.002	52.8	ug/L	13	Standard
	Pb	206	3404.0	3.3	**0.5260**	0.017	3.3	ug/L	264	Standard
	Pb	207	2818.6	2.1	**0.4734**	0.010	2.1	ug/L	222	Standard
	Pb	208	12328.3	2.3	**0.5080**	0.010	2.0	ug/L	959	Standard
	U	238	374.0	2.0	**0.0437**	0.001	1.8	ug/L	9	Standard
>	Bi	209	583367.9	0.5				ug/L	552821	Standard

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Na	23	1.7	173.2	**4.1425**	7.166	173.0	mg/L	2	Standard
Mg	24	5377.6	1.9	**5.3817**	0.098	1.8	mg/L	55	Standard
K	39	255.0	12.2	**0.7172**	0.121	16.8	mg/L	28	Standard
Ca	43	56.7	51.7	**1.9556**	2.109	107.9	mg/L	27	Standard
Fe	54	965.3	12.0	**0.5554**	0.055	10.0	mg/L	147	Standard
Fe	57	456.7	2.8	**0.4120**	0.054	13.1	mg/L	268	Standard
Sc-1	45	47549.6	3.6				mg/L	41174	Standard
Cl	35	89186.5	3.0				ug/L	69550	Standard
Kr	83	2.3	89.2				ug/L	1	Standard
Br	81	9616.5	21.7				ug/L	1950	Standard
P	31	24750.2	1.9				ug/L	21156	Standard
S	34	3972.2	3.0				ug/L	3419	Standard
Sr	88	126.7	22.8				ug/L	72	Standard
C	12	306.7	35.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	89.2				mg/L	17	Standard
Dy	164	1037.0	4.9				mg/L	16	Standard
Ho-1	165	761.7	12.8				mg/L	7	Standard
Er	166	690.0	14.7				mg/L	7	Standard
I	127	33632.4	5.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		104.864	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		111.607	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85	
Y	89	
> Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
> In	115	108.393
Sn	118	
Sb	123	
Ba	135	
Ce	140	
> Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
> Bi	209	105.526
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
> Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129003
Sample Date/Time: Friday, July 01, 2016 12:38:34
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	84017.4	2.6				ug/L	76456	Standard
	Be	9	56.7	41.7	**0.0265**	0.020	76.1	ug/L	20	Standard
	Al	27	11410287.5	2.4	**60.6815**	2.547	4.2	ug/L	1307	Standard
	Sc	45	47460.9	2.7				ug/L	41174	Standard
	Ti	47	632.0	2.0	**1.7083**	0.053	3.1	ug/L	27	Standard
	V	51	4979.6	9.0	**0.3608**	0.043	11.9	ug/L	1434	Standard
	Cr	52	16733.9	1.7	**0.9422**	0.057	6.1	ug/L	7733	Standard
	Cr	53	16242.1	5.6	**14.4384**	0.968	6.7	ug/L	442	Standard
	Mn	55	2106790.2	0.3	**257.0785**	2.759	1.1	ug/L	723	Standard
	Co	59	32596.4	0.7	**3.9025**	0.026	0.7	ug/L	217	Standard
	Ni	60	16570.4	1.9	**7.2264**	0.135	1.9	ug/L	304	Standard
	Cu	65	821.7	5.9	**0.2979**	0.020	6.6	ug/L	181	Standard
	Zn	66	15799.9	1.0	**11.7367**	0.172	1.5	ug/L	215	Standard
>	Ge	72	563660.3	1.3				ug/L	520809	Standard
	As	75	8280.0	0.5	**6.2429**	0.078	1.2	ug/L	-52	Standard
	Se	82	523.6	3.6	**3.7022**	0.090	2.4	ug/L	17	Standard
	Se-1	77	661.3	8.7	**6.4700**	0.719	11.1	ug/L	56	Standard
>	Ga	71	153.3	26.4				mg/L	25	Standard
	Rb	85	22955.7	2.8				ug/L	28	Standard
	Y	89	481907.4	0.8				ug/L	447395	Standard
>	Rh	103	116.7	21.1				ug/L	15	Standard
	Mo	98	609.0	1.0	**0.1691**	0.001	0.8	ug/L	113	Standard
	Ag	107	122.3	6.1	**0.0035**	0.001	30.0	ug/L	108	Standard
	Cd	111	546.6	6.3	**0.2253**	0.014	6.3	mg/L	3	Standard
	Cd	114	1227.9	3.1	**0.2066**	0.006	2.8	ug/L	20	Standard
>	In	115	652572.6	0.4				ug/L	625728	Standard
	Sn	118	2255.2	0.8	**0.2518**	0.004	1.5	ug/L	568	Standard
	Sb	123	396.5	22.6	**0.0398**	0.016	41.0	ug/L	612	Standard
	Ba	135	362353.4	0.4	**159.6881**	0.037	0.0	ug/L	21	Standard
	Ce	140	11014.0	2.2				ug/L	245	Standard
>	Tb	159	996583.7	1.1				ug/L	950397	Standard
	Ho	165	233.3	12.4				ug/L	7	Standard
	Tl	203	149.3	13.7	**0.0157**	0.002	13.7	ug/L	15	Standard
	Tl	205	146.7	18.8	**0.0085**	0.003	39.2	ug/L	13	Standard
	Pb	206	578.7	5.4	**0.0575**	0.005	8.6	ug/L	264	Standard
	Pb	207	484.0	0.4	**0.0472**	0.000	0.8	ug/L	222	Standard
	Pb	208	2033.4	0.6	**0.0477**	0.001	2.3	ug/L	959	Standard
	U	238	110.3	15.4	**0.0133**	0.002	15.3	ug/L	9	Standard
>	Bi	209	557686.0	0.7				ug/L	552821	Standard

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Na	23	1.7	173.2	**4.4332**	7.670	173.0	mg/L	2	Standard
Mg	24	51897.1	1.5	**52.5721**	2.174	4.1	mg/L	55	Standard
K	39	418.3	15.8	**1.2584**	0.193	15.3	mg/L	28	Standard
Ca	43	125.0	28.0	**7.4017**	2.760	37.3	mg/L	27	Standard
Fe	54	21570.7	2.6	**14.5894**	0.772	5.3	mg/L	147	Standard
Fe	57	5684.4	0.4	**14.3563**	0.459	3.2	mg/L	268	Standard
Sc-1	45	47460.9	2.7				mg/L	41174	Standard
Cl	35	86591.4	1.7				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	106345.6	3.6				ug/L	1950	Standard
P	31	31901.9	1.3				ug/L	21156	Standard
S	34	4255.6	0.8				ug/L	3419	Standard
Sr	88	460.0	1.1				ug/L	72	Standard
C	12	313.3	22.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	17	Standard
Dy	164	343.4	18.1				mg/L	16	Standard
Ho-1	165	233.3	12.4				mg/L	7	Standard
Er	166	276.7	12.7				mg/L	7	Standard
I	127	558531.1	6.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		109.890	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		108.228	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.290
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.880
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129005
Sample Date/Time: Friday, July 01, 2016 12:41:45
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	85192.2	0.8				ug/L	76456	Standard
	Be	9	115.0	19.0	**0.0724**	0.018	24.9	ug/L	20	Standard
	Al	27	1289763.0	0.8	**6.7519**	0.110	1.6	ug/L	1307	Standard
	Sc	45	49773.3	2.8				ug/L	41174	Standard
	Ti	47	6020.5	2.3	**16.8263**	0.429	2.6	ug/L	27	Standard
	V	51	26156.2	0.5	**2.7133**	0.015	0.6	ug/L	1434	Standard
	Cr	52	22253.3	0.9	**1.5480**	0.025	1.6	ug/L	7733	Standard
	Cr	53	3922.2	9.7	**3.1342**	0.341	10.9	ug/L	442	Standard
	Mn	55	93436.0	2.3	**11.1943**	0.294	2.6	ug/L	723	Standard
	Co	59	5246.2	1.4	**0.5973**	0.011	1.8	ug/L	217	Standard
	Ni	60	3873.2	3.3	**1.5552**	0.062	4.0	ug/L	304	Standard
	Cu	65	2052.1	1.1	**0.8462**	0.011	1.3	ug/L	181	Standard
	Zn	66	6978.9	2.8	**5.0326**	0.156	3.1	ug/L	215	Standard
>	Ge	72	569140.4	0.4				ug/L	520809	Standard
	As	75	675.9	4.5	**0.5462**	0.024	4.5	ug/L	-52	Standard
	Se	82	122.4	11.2	**0.7599**	0.101	13.3	ug/L	17	Standard
	Se-1	77	130.3	23.7	**0.7102**	0.329	46.3	ug/L	56	Standard
>	Ga	71	1996.8	2.2				mg/L	25	Standard
	Rb	85	22308.1	1.4				ug/L	28	Standard
	Y	89	509803.9	1.2				ug/L	447395	Standard
>	Rh	103	36.7	31.5				ug/L	15	Standard
	Mo	98	326.9	4.2	**0.0762**	0.004	5.1	ug/L	113	Standard
	Ag	107	126.0	4.2	**0.0034**	0.001	17.4	ug/L	108	Standard
	Cd	111	98.1	1.5	**0.0371**	0.001	1.9	mg/L	3	Standard
	Cd	114	296.0	9.7	**0.0481**	0.005	9.6	ug/L	20	Standard
>	In	115	675122.4	0.6				ug/L	625728	Standard
	Sn	118	1330.1	3.9	**0.1073**	0.007	6.6	ug/L	568	Standard
	Sb	123	517.6	11.1	**0.0591**	0.010	16.6	ug/L	612	Standard
	Ba	135	76309.4	0.8	**32.4918**	0.196	0.6	ug/L	21	Standard
	Ce	140	95146.2	1.3				ug/L	245	Standard
>	Tb	159	1016001.4	1.3				ug/L	950397	Standard
	Ho	165	1441.7	4.0				ug/L	7	Standard
	Tl	203	251.7	11.3	**0.0262**	0.003	11.5	ug/L	15	Standard
	Tl	205	263.3	19.1	**0.0220**	0.006	26.3	ug/L	13	Standard
	Pb	206	4604.0	0.8	**0.7379**	0.007	1.0	ug/L	264	Standard
	Pb	207	3793.5	2.8	**0.6632**	0.027	4.1	ug/L	222	Standard
	Pb	208	16401.2	0.5	**0.7024**	0.005	0.7	ug/L	959	Standard
	U	238	755.4	2.7	**0.0898**	0.002	2.3	ug/L	9	Standard
>	Bi	209	575207.2	1.1				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	11827.9	2.0	**11.3730**	0.250	2.2	mg/L	55	Standard
K	39	63.3	12.1	**0.0696**	0.022	31.4	mg/L	28	Standard
Ca	43	26.7	39.0	**-0.4604**	0.739	160.5	mg/L	27	Standard
Fe	54	2263.3	3.3	**1.3710**	0.089	6.5	mg/L	147	Standard
Fe	57	798.4	7.3	**1.2235**	0.092	7.5	mg/L	268	Standard
> **Sc-1**	45	49773.3	2.8				mg/L	41174	Standard
Cl	35	80793.5	1.2				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	20093.3	2.4				ug/L	1950	Standard
P	31	35491.5	0.9				ug/L	21156	Standard
S	34	3435.4	2.3				ug/L	3419	Standard
Sr	88	86.7	16.7				ug/L	72	Standard
C	12	120.0	16.7				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	56.8				mg/L	17	Standard
Dy	164	2283.5	2.5				mg/L	16	Standard
Ho-1	165	1441.7	4.0				mg/L	7	Standard
Er	166	1253.4	17.9				mg/L	7	Standard
I	127	29910.2	19.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.427	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.280	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.894
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.049
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 12:44:58
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83031.9	1.8				ug/L	76456	Standard
	Be	9	62607.4	1.8	**51.4790**	0.092	0.2	ug/L	20	Standard
	Al	27	9205440.0	1.0	**49.5101**	0.482	1.0	ug/L	1307	Standard
	Sc	45	45279.2	0.9				ug/L	41174	Standard
	Ti	47	35616.8	0.8	**99.7569**	0.384	0.4	ug/L	27	Standard
	V	51	453381.0	1.3	**50.1773**	0.834	1.7	ug/L	1434	Standard
	Cr	52	454717.9	0.4	**50.3900**	0.329	0.7	ug/L	7733	Standard
	Cr	53	56792.9	2.0	**50.9006**	0.670	1.3	ug/L	442	Standard
	Mn	55	417865.9	1.4	**50.3140**	0.768	1.5	ug/L	723	Standard
	Co	59	427490.0	0.8	**50.9392**	0.677	1.3	ug/L	217	Standard
	Ni	60	114502.7	0.7	**50.2468**	0.055	0.1	ug/L	304	Standard
	Cu	65	113283.0	1.3	**50.6253**	0.452	0.9	ug/L	181	Standard
	Zn	66	67088.2	1.2	**49.8311**	0.666	1.3	ug/L	215	Standard
>	Ge	72	570265.5	0.7				ug/L	520809	Standard
	As	75	66940.7	0.7	**49.5659**	0.028	0.1	ug/L	-52	Standard
	Se	82	6904.8	0.9	**49.7902**	0.542	1.1	ug/L	17	Standard
	Se-1	77	4848.4	1.0	**51.1131**	0.306	0.6	ug/L	56	Standard
>	Ga	71	33.3	34.6				mg/L	25	Standard
	Rb	85	945.0	6.5				ug/L	28	Standard
	Y	89	486567.9	0.8				ug/L	447395	Standard
>	Rh	103	36.7	43.8				ug/L	15	Standard
	Mo	98	321546.8	0.2	**99.1357**	1.367	1.4	ug/L	113	Standard
	Ag	107	383263.2	0.3	**49.7591**	0.678	1.4	ug/L	108	Standard
	Cd	111	123447.9	0.3	**50.0091**	0.713	1.4	mg/L	3	Standard
	Cd	114	300381.5	2.0	**49.1538**	1.432	2.9	ug/L	20	Standard
>	In	115	670977.0	1.2				ug/L	625728	Standard
	Sn	118	339655.3	1.3	**49.1307**	0.150	0.3	ug/L	568	Standard
	Sb	123	274538.6	0.7	**49.5136**	0.951	1.9	ug/L	612	Standard
	Ba	135	114656.9	0.7	**49.1372**	0.870	1.8	ug/L	21	Standard
	Ce	140	131.7	33.2				ug/L	245	Standard
>	Tb	159	1007430.4	0.6				ug/L	950397	Standard
	Ho	165	15.0	88.2				ug/L	7	Standard
	Tl	203	470169.7	1.1	**50.6935**	0.361	0.7	ug/L	15	Standard
	Tl	205	427547.4	1.3	**51.9072**	0.778	1.5	ug/L	13	Standard
	Pb	206	295170.9	0.9	**50.4289**	0.577	1.1	ug/L	264	Standard
	Pb	207	268434.7	0.6	**50.4969**	0.171	0.3	ug/L	222	Standard
	Pb	208	1104478.8	0.4	**50.8716**	0.540	1.1	ug/L	959	Standard
	U	238	418715.2	0.4	**50.2797**	0.305	0.6	ug/L	9	Standard
>	Bi	209	571081.7	0.7				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4769.1	1.8	**5.0062**	0.108	2.1	mg/L	55	Standard
K	39	1336.7	4.6	**4.5306**	0.241	5.3	mg/L	28	Standard
Ca	43	75.0	17.6	**3.7457**	1.100	29.4	mg/L	27	Standard
Fe	54	7200.7	4.3	**5.0367**	0.239	4.8	mg/L	147	Standard
Fe	57	2128.5	4.4	**5.1427**	0.247	4.8	mg/L	268	Standard
> **Sc-1**	45	45279.2	0.9				mg/L	41174	Standard
Cl	35	81839.8	0.8				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	3040.3	8.6				ug/L	1950	Standard
P	31	24877.1	2.1				ug/L	21156	Standard
S	34	3887.2	7.0				ug/L	3419	Standard
Sr	88	81.7	7.1				ug/L	72	Standard
C	12	123.3	12.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	100.0				mg/L	17	Standard
Dy	164	9.4	3.0				mg/L	16	Standard
Ho-1	165	15.0	88.2				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	7	Standard
I	127	21875.8	2.3				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	102.958		
	Al	27	99.020		
	Sc	45			
	Ti	47	99.757		
	V	51	100.355		
	Cr	52	100.780		
	Cr	53			
	Mn	55	100.628		
	Co	59	101.878		
	Ni	60	100.494		
	Cu	65	101.251		
	Zn	66	99.662		
>	Ge	72		109.496	
	As	75	99.132		
	Se	82	99.580		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	99.136		
Ag	107	99.518		
Cd	111	100.018		
Cd	114			
> In	115			107.231
Sn	118	98.261		
Sb	123	99.027		
Ba	135	98.274		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.387		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.743		
U	238	100.559		
> Bi	209			103.303
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 12:48:10
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79667.3	2.3				ug/L	76456	Standard
	Be	9	48.3	39.2	**0.0215**	0.016	74.4	ug/L	20	Standard
	Al	27	13667.3	103.9	**0.0663**	0.079	119.0	ug/L	1307	Standard
	Sc	45	44725.9	0.8				ug/L	41174	Standard
	Ti	47	40.3	36.1	**0.0282**	0.040	143.2	ug/L	27	Standard
	V	51	1800.6	20.7	**0.0010**	0.041	3971.4	ug/L	1434	Standard
	Cr	52	8069.5	1.6	**-0.0611**	0.005	7.9	ug/L	7733	Standard
	Cr	53	805.0	12.6	**0.3085**	0.086	27.9	ug/L	442	Standard
	Mn	55	1891.2	86.3	**0.1261**	0.196	155.3	ug/L	723	Standard
	Co	59	402.0	57.1	**0.0183**	0.027	148.1	ug/L	217	Standard
	Ni	60	380.0	16.0	**0.0137**	0.026	190.1	ug/L	304	Standard
	Cu	65	200.3	16.4	**0.0153**	0.014	94.0	ug/L	181	Standard
	Zn	66	277.3	5.9	**0.0260**	0.012	46.5	ug/L	215	Standard
>	**Ge**	72	571534.4	1.1				ug/L	520809	Standard
	As	75	-32.7	47.9	**0.0211**	0.011	53.6	ug/L	-52	Standard
	Se	82	21.0	34.3	**0.0252**	0.052	206.6	ug/L	17	Standard
	Se-1	77	64.3	8.6	**0.0008**	0.051	6596.2	ug/L	56	Standard
>	**Ga**	71	30.0	16.7				mg/L	25	Standard
	Rb	85	26.7	75.8				ug/L	28	Standard
	Y	89	488434.0	1.5				ug/L	447395	Standard
>	**Rh**	103	18.3	56.8				ug/L	15	Standard
	Mo	98	360.1	51.7	**0.0867**	0.057	65.8	ug/L	113	Standard
	Ag	107	301.7	75.6	**0.0262**	0.029	112.6	ug/L	108	Standard
	Cd	111	35.8	64.4	**0.0121**	0.009	76.9	mg/L	3	Standard
	Cd	114	93.7	41.3	**0.0153**	0.006	41.1	ug/L	20	Standard
>	**In**	115	672952.0	0.6				ug/L	625728	Standard
	Sn	118	2098.5	22.4	**0.2192**	0.070	31.8	ug/L	568	Standard
	Sb	123	1021.0	31.2	**0.1501**	0.058	38.5	ug/L	612	Standard
	Ba	135	296.3	92.5	**0.1088**	0.117	107.6	ug/L	21	Standard
	Ce	140	101.7	62.5				ug/L	245	Standard
>	**Tb**	159	1018483.3	2.2				ug/L	950397	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	228.7	95.2	**0.0235**	0.023	98.1	ug/L	15	Standard
	Tl	205	170.0	71.4	**0.0105**	0.014	137.1	ug/L	13	Standard
	Pb	206	473.7	49.2	**0.0358**	0.039	109.0	ug/L	264	Standard
	Pb	207	396.7	45.3	**0.0273**	0.033	121.3	ug/L	222	Standard
	Pb	208	1490.7	28.8	**0.0193**	0.019	100.6	ug/L	959	Standard
	U	238	168.7	71.3	**0.0196**	0.014	72.1	ug/L	9	Standard
>	**Bi**	209	580702.6	1.0				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	85.0	38.6	**0.0310**	0.035	111.2	mg/L	55	Standard
K	39	35.0	37.8	**-0.0077**	0.046	604.4	mg/L	28	Standard
Ca	43	16.7	105.4	**-1.0542**	1.482	140.5	mg/L	27	Standard
Fe	54	153.9	28.2	**0.0123**	0.031	255.3	mg/L	147	Standard
Fe	57	300.0	3.3	**0.0447**	0.032	71.4	mg/L	268	Standard
Sc-1	45	44725.9	0.8				mg/L	41174	Standard
Cl	35	82881.4	0.4				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	2540.2	1.8				ug/L	1950	Standard
P	31	24578.3	4.0				ug/L	21156	Standard
S	34	4135.6	7.4				ug/L	3419	Standard
Sr	88	55.0	27.3				ug/L	72	Standard
C	12	116.7	21.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	17	Standard
Dy	164	16.5	36.7				mg/L	16	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	16210.3	1.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		109.740	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.547
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.044
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW 07 WG574419-03
Sample Date/Time: Friday, July 01, 2016 12:58:36
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81259.0	1.7				ug/L	76456	Standard
	Be	9	25.0	52.9	**0.0011**	0.011	980.8	ug/L	20	Standard
	Al	27	43520.8	2.0	**0.2290**	0.003	1.2	ug/L	1307	Standard
	Sc	45	45160.6	1.8				ug/L	41174	Standard
	Ti	47	37.3	12.7	**0.0196**	0.013	67.8	ug/L	27	Standard
	V	51	1890.1	0.3	**0.0103**	0.002	20.9	ug/L	1434	Standard
	Cr	52	10254.5	1.2	**0.1819**	0.016	8.6	ug/L	7733	Standard
	Cr	53	800.0	8.4	**0.3021**	0.055	18.2	ug/L	442	Standard
	Mn	55	1844.4	0.9	**0.1201**	0.001	0.9	ug/L	723	Standard
	Co	59	227.3	7.0	**-0.0025**	0.002	69.8	ug/L	217	Standard
	Ni	60	435.3	6.3	**0.0376**	0.014	36.1	ug/L	304	Standard
	Cu	65	169.0	18.5	**0.0011**	0.014	1207.4	ug/L	181	Standard
	Zn	66	2605.6	4.5	**1.7518**	0.074	4.2	ug/L	215	Standard
>	**Ge**	72	573164.6	0.8				ug/L	520809	Standard
	As	75	-74.5	34.0	**-0.0097**	0.019	192.2	ug/L	-52	Standard
	Se	82	11.5	10.8	**-0.0437**	0.008	19.0	ug/L	17	Standard
	Se-1	77	70.7	5.9	**0.0666**	0.045	68.1	ug/L	56	Standard
>	**Ga**	71	35.0	65.5				mg/L	25	Standard
	Rb	85	83.3	9.2				ug/L	28	Standard
	Y	89	497110.0	0.3				ug/L	447395	Standard
>	**Rh**	103	13.3	43.3				ug/L	15	Standard
	Mo	98	63.4	20.9	**-0.0047**	0.004	88.1	ug/L	113	Standard
	Ag	107	104.7	2.9	**0.0005**	0.001	97.2	ug/L	108	Standard
	Cd	111	8.9	29.5	**0.0012**	0.001	90.2	mg/L	3	Standard
	Cd	114	20.2	129.3	**0.0033**	0.004	129.2	ug/L	20	Standard
>	**In**	115	681820.3	1.0				ug/L	625728	Standard
	Sn	118	1671.8	12.8	**0.1542**	0.031	19.9	ug/L	568	Standard
	Sb	123	510.3	25.3	**0.0569**	0.023	40.1	ug/L	612	Standard
	Ba	135	135.7	5.5	**0.0393**	0.003	7.0	ug/L	21	Standard
	Ce	140	68.3	33.0				ug/L	245	Standard
>	**Tb**	159	1025294.3	0.6				ug/L	950397	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	44.0	21.7	**0.0039**	0.001	25.6	ug/L	15	Standard
	Tl	205	40.0	25.0	**-0.0050**	0.001	25.0	ug/L	13	Standard
	Pb	206	314.3	3.7	**0.0090**	0.002	26.0	ug/L	264	Standard
	Pb	207	276.7	9.5	**0.0051**	0.005	106.7	ug/L	222	Standard
	Pb	208	1132.0	1.7	**0.0030**	0.001	48.7	ug/L	959	Standard
	U	238	26.0	17.6	**0.0028**	0.001	20.4	ug/L	9	Standard
>	**Bi**	209	581506.6	1.1				ug/L	552821	Standard

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Na	23	1.7	173.2	**4.6090**	7.974	173.0	mg/L	2	Standard
Mg	24	81.7	9.4	**0.0269**	0.009	33.7	mg/L	55	Standard
K	39	40.0	21.7	**0.0086**	0.030	348.4	mg/L	28	Standard
Ca	43	30.0	33.3	**0.0262**	0.793	3031.4	mg/L	27	Standard
Fe	54	180.2	26.2	**0.0304**	0.036	118.2	mg/L	147	Standard
Fe	57	258.3	6.2	**-0.0804**	0.042	52.2	mg/L	268	Standard
> **Sc-1**	45	45160.6	1.8				mg/L	41174	Standard
Cl	35	85551.6	2.1				ug/L	69550	Standard
Kr	83	1.0	173.2				ug/L	1	Standard
Br	81	2493.5	7.2				ug/L	1950	Standard
P	31	25546.6	9.0				ug/L	21156	Standard
S	34	4053.9	0.5				ug/L	3419	Standard
Sr	88	75.0	13.3				ug/L	72	Standard
C	12	136.7	53.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	69.3				mg/L	17	Standard
Dy	164	19.4	51.7				mg/L	16	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	10762.2	1.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.282	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.053	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.964
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.189
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 07 WG574419-04
Sample Date/Time: Friday, July 01, 2016 13:03:34
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80883.7	2.2				ug/L	76456	Standard
	Be	9	63273.5	1.3	**53.4233**	1.134	2.1	ug/L	20	Standard
	Al	27	15556.3	4.2	**0.0758**	0.006	7.3	ug/L	1307	Standard
	Sc	45	46230.4	2.2				ug/L	41174	Standard
	Ti	47	48.3	18.7	**0.0475**	0.025	52.8	ug/L	27	Standard
	V	51	465592.0	1.2	**50.1984**	0.441	0.9	ug/L	1434	Standard
	Cr	52	471783.2	1.2	**50.9433**	0.486	1.0	ug/L	7733	Standard
	Cr	53	57119.2	2.3	**49.8721**	1.291	2.6	ug/L	442	Standard
	Mn	55	436781.1	0.8	**51.2372**	0.113	0.2	ug/L	723	Standard
	Co	59	434567.5	1.2	**50.4450**	0.373	0.7	ug/L	217	Standard
	Ni	60	118551.0	1.3	**50.6835**	0.443	0.9	ug/L	304	Standard
	Cu	65	119119.1	1.3	**51.8651**	0.602	1.2	ug/L	181	Standard
	Zn	66	71172.1	1.7	**51.5055**	0.595	1.2	ug/L	215	Standard
>	**Ge**	72	585340.9	0.6				ug/L	520809	Standard
	As	75	69945.5	1.2	**50.4563**	0.545	1.1	ug/L	-52	Standard
	Se	82	7094.3	1.4	**49.8362**	0.433	0.9	ug/L	17	Standard
	Se-1	77	4867.8	0.7	**49.9806**	0.170	0.3	ug/L	56	Standard
>	**Ga**	71	31.7	24.1				mg/L	25	Standard
	Rb	85	36.7	41.7				ug/L	28	Standard
	Y	89	498458.5	0.8				ug/L	447395	Standard
>	**Rh**	103	18.3	41.7				ug/L	15	Standard
	Mo	98	78.0	18.4	**-0.0003**	0.004	1563.8	ug/L	113	Standard
	Ag	107	402127.6	1.2	**51.3787**	0.778	1.5	ug/L	108	Standard
	Cd	111	126507.9	1.2	**50.4309**	0.392	0.8	mg/L	3	Standard
	Cd	114	308784.3	0.8	**49.7196**	0.327	0.7	ug/L	20	Standard
>	**In**	115	681801.9	1.3				ug/L	625728	Standard
	Sn	118	1796.8	16.1	**0.1722**	0.043	25.0	ug/L	568	Standard
	Sb	123	288724.4	0.5	**51.2448**	0.727	1.4	ug/L	612	Standard
	Ba	135	116686.9	0.7	**49.2097**	0.376	0.8	ug/L	21	Standard
	Ce	140	85.0	38.6				ug/L	245	Standard
>	**Tb**	159	1014866.4	0.7				ug/L	950397	Standard
	Ho	165	16.7	45.8				ug/L	7	Standard
	Tl	203	482185.7	0.8	**50.5384**	0.275	0.5	ug/L	15	Standard
	Tl	205	444917.2	1.5	**52.5153**	1.373	2.6	ug/L	13	Standard
	Pb	206	312986.7	0.5	**51.9814**	0.469	0.9	ug/L	264	Standard
	Pb	207	271686.9	0.6	**49.6820**	0.381	0.8	ug/L	222	Standard
	Pb	208	1142411.3	0.4	**51.1494**	0.415	0.8	ug/L	959	Standard
	U	238	421119.4	1.0	**49.1551**	0.103	0.2	ug/L	9	Standard
>	**Bi**	209	587494.5	1.1				ug/L	552821	Standard

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Na	23	3.3	86.6	**8.7572**	7.580	86.6	mg/L	2	Standard
Mg	24	76.7	21.0	**0.0195**	0.016	83.2	mg/L	55	Standard
K	39	21.7	26.6	**-0.0575**	0.018	32.0	mg/L	28	Standard
Ca	43	18.3	83.3	**-0.9528**	1.279	134.3	mg/L	27	Standard
Fe	54	147.9	28.9	**0.0041**	0.028	686.0	mg/L	147	Standard
Fe	57	245.0	10.8	**-0.1326**	0.084	63.2	mg/L	268	Standard
> **Sc-1**	45	46230.4	2.2				mg/L	41174	Standard
Cl	35	86090.6	2.1				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	2420.2	0.7				ug/L	1950	Standard
P	31	25546.5	4.4				ug/L	21156	Standard
S	34	3980.5	6.3				ug/L	3419	Standard
Sr	88	56.7	20.4				ug/L	72	Standard
C	12	156.7	16.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	88.2				mg/L	17	Standard
Dy	164	19.7	89.4				mg/L	16	Standard
Ho-1	165	16.7	45.8				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	4735.7	3.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.792	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		112.391	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.961
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.272
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606140006 WG574419-01
Sample Date/Time: Friday, July 01, 2016 13:06:46
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80758.0	0.8				ug/L	76456	Standard
	Be	9	41.7	6.9	**0.0154**	0.002	16.2	ug/L	20	Standard
	Al	27	11868534.0	1.1	**65.6266**	0.514	0.8	ug/L	1307	Standard
	Sc	45	45759.0	1.2				ug/L	41174	Standard
	Ti	47	2320.2	10.4	**6.5166**	0.703	10.8	ug/L	27	Standard
	V	51	6253.1	3.7	**0.5063**	0.022	4.3	ug/L	1434	Standard
	Cr	52	20690.1	0.7	**1.4009**	0.007	0.5	ug/L	7733	Standard
	Cr	53	7241.7	4.8	**6.2224**	0.278	4.5	ug/L	442	Standard
	Mn	55	361893.7	0.6	**44.2063**	0.556	1.3	ug/L	723	Standard
	Co	59	1899.1	4.5	**0.2003**	0.011	5.6	ug/L	217	Standard
	Ni	60	3188.7	2.0	**1.2710**	0.022	1.8	ug/L	304	Standard
	Cu	65	3204.0	1.0	**1.3811**	0.024	1.8	ug/L	181	Standard
	Zn	66	3650.1	1.8	**2.5809**	0.057	2.2	ug/L	215	Standard
>	Ge	72	561976.5	0.7				ug/L	520809	Standard
	As	75	349.0	10.2	**0.3073**	0.028	9.1	ug/L	-52	Standard
	Se	82	95.4	7.6	**0.5731**	0.052	9.1	ug/L	17	Standard
	Se-1	77	310.3	6.8	**2.6788**	0.206	7.7	ug/L	56	Standard
>	Ga	71	306.7	3.4				mg/L	25	Standard
	Rb	85	9304.5	4.6				ug/L	28	Standard
	Y	89	479158.2	2.5				ug/L	447395	Standard
>	Rh	103	63.3	19.9				ug/L	15	Standard
	Mo	98	462.6	2.2	**0.1212**	0.004	3.1	ug/L	113	Standard
	Ag	107	229.3	10.2	**0.0174**	0.003	18.1	ug/L	108	Standard
	Cd	111	314.9	4.8	**0.1274**	0.007	5.3	mg/L	3	Standard
	Cd	114	778.8	0.7	**0.1296**	0.002	1.2	ug/L	20	Standard
>	In	115	659596.7	0.4				ug/L	625728	Standard
	Sn	118	3462.1	8.7	**0.4262**	0.046	10.8	ug/L	568	Standard
	Sb	123	25160.0	1.7	**4.5846**	0.068	1.5	ug/L	612	Standard
	Ba	135	24755.2	1.0	**10.7771**	0.149	1.4	ug/L	21	Standard
	Ce	140	10733.8	0.6				ug/L	245	Standard
>	Tb	159	997525.3	0.9				ug/L	950397	Standard
	Ho	165	248.3	11.4				ug/L	7	Standard
	Tl	203	323.7	9.0	**0.0349**	0.003	8.9	ug/L	15	Standard
	Tl	205	295.0	13.5	**0.0268**	0.005	17.8	ug/L	13	Standard
	Pb	206	13733.6	1.1	**2.3523**	0.014	0.6	ug/L	264	Standard
	Pb	207	11541.7	1.2	**2.1713**	0.021	1.0	ug/L	222	Standard
	Pb	208	49582.7	0.8	**2.2840**	0.012	0.5	ug/L	959	Standard
	U	238	794.4	5.3	**0.0971**	0.005	5.3	ug/L	9	Standard
>	Bi	209	559684.2	0.5				ug/L	552821	Standard

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Na	23	5.0	100.0	**13.3851**	13.441	100.4	mg/L	2	Standard
Mg	24	23146.0	2.0	**24.2692**	0.405	1.7	mg/L	55	Standard
K	39	161.7	7.1	**0.4263**	0.034	7.9	mg/L	28	Standard
Ca	43	226.7	16.0	**16.1036**	3.136	19.5	mg/L	27	Standard
Fe	54	423.4	7.8	**0.1999**	0.022	10.8	mg/L	147	Standard
Fe	57	503.3	8.4	**0.5885**	0.131	22.2	mg/L	268	Standard
> **Sc-1**	45	45759.0	1.2				mg/L	41174	Standard
Cl	35	89790.6	1.3				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	17466.7	4.8				ug/L	1950	Standard
P	31	27324.6	2.0				ug/L	21156	Standard
S	34	4078.9	2.0				ug/L	3419	Standard
Sr	88	211.7	20.1				ug/L	72	Standard
C	12	163.3	9.4				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	17	Standard
Dy	164	363.3	15.2				mg/L	16	Standard
Ho-1	165	248.3	11.4				mg/L	7	Standard
Er	166	280.0	3.6				mg/L	7	Standard
I	127	49912.2	3.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.627	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.904	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.413
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.242
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606140007S WG574419-05
Sample Date/Time: Friday, July 01, 2016 13:09:57
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80711.1	0.9				ug/L	76456	Standard
	Be	9	64078.6	1.3	54.2065	0.745	1.4	ug/L	20	Standard
	Al	27	12211012.4	1.5	67.5580	0.517	0.8	ug/L	1307	Standard
	Sc	45	44934.9	0.8				ug/L	41174	Standard
	Ti	47	2064.8	6.8	5.8866	0.415	7.1	ug/L	27	Standard
	V	51	459064.1	0.1	52.4156	0.397	0.8	ug/L	1434	Standard
	Cr	52	459452.2	0.5	52.5615	0.550	1.0	ug/L	7733	Standard
	Cr	53	62920.4	1.2	58.2380	1.104	1.9	ug/L	442	Standard
	Mn	55	774817.1	0.6	96.3273	0.870	0.9	ug/L	723	Standard
	Co	59	418465.0	0.9	51.4354	0.672	1.3	ug/L	217	Standard
	Ni	60	114181.6	0.7	51.6930	0.726	1.4	ug/L	304	Standard
	Cu	65	110934.3	0.7	51.1428	0.660	1.3	ug/L	181	Standard
	Zn	66	70146.7	0.6	53.7582	0.090	0.2	ug/L	215	Standard
>	Ge	72	552840.2	0.7				ug/L	520809	Standard
	As	75	68517.6	0.7	52.3310	0.386	0.7	ug/L	-52	Standard
	Se	82	6918.4	0.6	51.4649	0.420	0.8	ug/L	17	Standard
	Se-1	77	5005.2	0.2	54.4756	0.506	0.9	ug/L	56	Standard
>	Ga	71	246.7	21.7				mg/L	25	Standard
	Rb	85	8369.0	3.4				ug/L	28	Standard
	Y	89	475828.1	0.8				ug/L	447395	Standard
>	Rh	103	60.0	8.3				ug/L	15	Standard
	Mo	98	444.1	3.8	0.1178	0.005	4.5	ug/L	113	Standard
	Ag	107	373105.8	0.7	50.1488	0.527	1.1	ug/L	108	Standard
	Cd	111	121300.2	0.5	50.8704	0.210	0.4	mg/L	3	Standard
	Cd	114	296777.5	0.3	50.2713	0.199	0.4	ug/L	20	Standard
>	In	115	648070.4	0.4				ug/L	625728	Standard
	Sn	118	3198.7	11.7	0.3955	0.054	13.6	ug/L	568	Standard
	Sb	123	305348.9	0.8	57.0152	0.685	1.2	ug/L	612	Standard
	Ba	135	127151.7	1.1	56.4152	0.853	1.5	ug/L	21	Standard
	Ce	140	10170.1	11.9				ug/L	245	Standard
>	Tb	159	984910.5	1.3				ug/L	950397	Standard
	Ho	165	243.3	11.3				ug/L	7	Standard
	Tl	203	460227.9	0.5	50.9164	0.584	1.1	ug/L	15	Standard
	Tl	205	419164.2	0.8	52.2197	1.079	2.1	ug/L	13	Standard
	Pb	206	308797.4	0.7	54.1380	1.001	1.8	ug/L	264	Standard
	Pb	207	269438.3	0.3	52.0122	0.916	1.8	ug/L	222	Standard
	Pb	208	1139591.7	0.5	53.8600	0.817	1.5	ug/L	959	Standard
	U	238	412122.6	0.9	50.7770	0.583	1.1	ug/L	9	Standard
>	Bi	209	556623.0	1.5				ug/L	552821	Standard

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Na	23	5.0	0.0	**13.6792**	0.103	0.8	mg/L	2	Standard
Mg	24	24264.4	1.3	**25.9117**	0.145	0.6	mg/L	55	Standard
K	39	138.3	27.1	**0.3549**	0.133	37.4	mg/L	28	Standard
Ca	43	288.3	17.1	**21.5709**	4.241	19.7	mg/L	27	Standard
Fe	54	394.0	6.5	**0.1843**	0.018	9.9	mg/L	147	Standard
Fe	57	461.7	10.0	**0.4961**	0.134	27.1	mg/L	268	Standard
> **Sc-1**	45	44934.9	0.8				mg/L	41174	Standard
Cl	35	90855.7	2.0				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	11284.2	7.1				ug/L	1950	Standard
P	31	27506.6	4.3				ug/L	21156	Standard
S	34	4052.2	3.2				ug/L	3419	Standard
Sr	88	215.0	8.1				ug/L	72	Standard
C	12	163.3	9.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	17.3				mg/L	17	Standard
Dy	164	319.9	13.5				mg/L	16	Standard
Ho-1	165	243.3	11.3				mg/L	7	Standard
Er	166	280.0	25.8				mg/L	7	Standard
I	127	66618.3	7.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.566	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.150	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.571
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.688
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140008SD WG574419-06
Sample Date/Time: Friday, July 01, 2016 13:13:09
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79700.7	0.7				ug/L	76456	Standard
	Be	9	61700.4	1.6	**52.8560**	0.961	1.8	ug/L	20	Standard
	Al	27	12099353.2	1.1	**67.7900**	0.341	0.5	ug/L	1307	Standard
	Sc	45	46046.6	2.1				ug/L	41174	Standard
	Ti	47	1942.8	6.7	**5.5490**	0.345	6.2	ug/L	27	Standard
	V	51	439192.0	0.4	**50.2950**	0.725	1.4	ug/L	1434	Standard
	Cr	52	444362.9	0.8	**50.9606**	0.244	0.5	ug/L	7733	Standard
	Cr	53	61436.0	0.3	**57.0274**	0.463	0.8	ug/L	442	Standard
	Mn	55	751669.2	0.7	**93.7402**	1.592	1.7	ug/L	723	Standard
	Co	59	399707.3	0.9	**49.2832**	0.963	2.0	ug/L	217	Standard
	Ni	60	109770.2	0.4	**49.8430**	0.612	1.2	ug/L	304	Standard
	Cu	65	108323.5	0.5	**50.0917**	0.642	1.3	ug/L	181	Standard
	Zn	66	68554.1	0.3	**52.6985**	0.620	1.2	ug/L	215	Standard
>	Ge	72	551156.5	1.1				ug/L	520809	Standard
	As	75	66401.2	0.7	**50.8743**	0.706	1.4	ug/L	-52	Standard
	Se	82	6730.1	0.5	**50.2159**	0.522	1.0	ug/L	17	Standard
	Se-1	77	4856.1	2.0	**53.0004**	1.342	2.5	ug/L	56	Standard
>	Ga	71	258.3	16.5				mg/L	25	Standard
	Rb	85	8118.8	3.8				ug/L	28	Standard
	Y	89	478755.4	1.4				ug/L	447395	Standard
>	Rh	103	76.7	3.8				ug/L	15	Standard
	Mo	98	512.6	9.1	**0.1403**	0.015	10.9	ug/L	113	Standard
	Ag	107	359474.2	1.7	**48.4964**	0.550	1.1	ug/L	108	Standard
	Cd	111	117797.3	1.3	**49.5872**	0.214	0.4	mg/L	3	Standard
	Cd	114	286908.0	1.1	**48.7832**	0.247	0.5	ug/L	20	Standard
>	In	115	645632.6	1.1				ug/L	625728	Standard
	Sn	118	3095.3	10.7	**0.3822**	0.054	14.0	ug/L	568	Standard
	Sb	123	295379.5	0.9	**55.3607**	0.341	0.6	ug/L	612	Standard
	Ba	135	123159.2	0.4	**54.8524**	0.674	1.2	ug/L	21	Standard
	Ce	140	9327.9	2.1				ug/L	245	Standard
>	Tb	159	983378.7	0.8				ug/L	950397	Standard
	Ho	165	230.0	2.2				ug/L	7	Standard
	Tl	203	446759.8	0.8	**49.4389**	0.212	0.4	ug/L	15	Standard
	Tl	205	408461.1	0.9	**50.8970**	0.668	1.3	ug/L	13	Standard
	Pb	206	301254.5	0.8	**52.8246**	0.290	0.5	ug/L	264	Standard
	Pb	207	261947.7	0.8	**50.5743**	0.209	0.4	ug/L	222	Standard
	Pb	208	1104059.4	0.6	**52.1919**	0.419	0.8	ug/L	959	Standard
	U	238	402584.9	0.8	**49.6175**	0.619	1.2	ug/L	9	Standard
>	Bi	209	556417.0	0.4				ug/L	552821	Standard

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Na	23	5.0	100.0	**13.3094**	13.444	101.0	mg/L	2	Standard
Mg	24	23635.1	1.3	**24.6326**	0.412	1.7	mg/L	55	Standard
K	39	136.7	2.1	**0.3374**	0.002	0.7	mg/L	28	Standard
Ca	43	218.3	2.6	**15.2980**	0.780	5.1	mg/L	27	Standard
Fe	54	402.8	5.8	**0.1835**	0.012	6.4	mg/L	147	Standard
Fe	57	453.3	11.2	**0.4438**	0.163	36.7	mg/L	268	Standard
> **Sc-1**	45	46046.6	2.1				mg/L	41174	Standard
Cl	35	91583.3	0.2				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	12164.9	6.2				ug/L	1950	Standard
P	31	27852.3	5.0				ug/L	21156	Standard
S	34	4047.2	6.0				ug/L	3419	Standard
Sr	88	165.0	13.2				ug/L	72	Standard
C	12	173.3	28.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	17	Standard
Dy	164	272.5	13.7				mg/L	16	Standard
Ho-1	165	230.0	2.2				mg/L	7	Standard
Er	166	296.7	5.1				mg/L	7	Standard
I	127	59372.8	2.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.244	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.827	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.181
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.651
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606142701 WG574419-02
Sample Date/Time: Friday, July 01, 2016 13:16:20
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	94406.8	3.4				ug/L	76456	Standard
	Be	9	85.0	35.3	**0.0412**	0.020	47.7	ug/L	20	Standard
	Al	27	56617238.2	4.0	**267.8022**	1.372	0.5	ug/L	1307	Standard
	Sc	45	46416.0	2.3				ug/L	41174	Standard
	Ti	47	884.0	4.8	**2.5428**	0.066	2.6	ug/L	27	Standard
	V	51	553940.5	2.9	**65.0728**	0.307	0.5	ug/L	1434	Standard
	Cr	52	299233.7	2.3	**34.8806**	0.725	2.1	ug/L	7733	Standard
	Cr	53	52044.3	2.2	**49.4662**	0.542	1.1	ug/L	442	Standard
	Mn	55	240351.0	1.7	**30.6595**	0.508	1.7	ug/L	723	Standard
	Co	59	198012.4	2.6	**25.0083**	0.182	0.7	ug/L	217	Standard
	Ni	60	153480.0	2.1	**71.5090**	1.345	1.9	ug/L	304	Standard
	Cu	65	58814.7	2.8	**27.8441**	0.424	1.5	ug/L	181	Standard
	Zn	66	154855.3	2.4	**122.2558**	1.271	1.0	ug/L	215	Standard
>	Ge	72	537771.5	3.3				ug/L	520809	Standard
	As	75	14927.7	4.1	**11.7537**	0.103	0.9	ug/L	-52	Standard
	Se	82	5918.7	4.3	**45.2355**	0.439	1.0	ug/L	17	Standard
	Se-1	77	1154.4	4.7	**12.3907**	0.295	2.4	ug/L	56	Standard
>	Ga	71	381.7	7.4				mg/L	25	Standard
	Rb	85	99551.2	2.9				ug/L	28	Standard
	Y	89	473605.3	2.9				ug/L	447395	Standard
>	Rh	103	343.3	14.9				ug/L	15	Standard
	Mo	98	2403599.9	3.3	**789.6820**	1.502	0.2	ug/L	113	Standard
	Ag	107	348.7	11.5	**0.0353**	0.004	11.4	ug/L	108	Standard
	Cd	111	-1248.7	2.3	**-0.5414**	0.006	1.1	mg/L	3	Standard
	Cd	114	4967.3	3.8	**0.8659**	0.009	1.0	ug/L	20	Standard
>	In	115	629706.1	3.1				ug/L	625728	Standard
	Sn	118	2805.3	14.7	**0.3479**	0.050	14.4	ug/L	568	Standard
	Sb	123	2974.2	8.0	**0.5376**	0.028	5.2	ug/L	612	Standard
	Ba	135	206845.8	2.1	**94.4794**	0.976	1.0	ug/L	21	Standard
	Ce	140	2191.8	6.3				ug/L	245	Standard
>	Tb	159	977368.8	3.8				ug/L	950397	Standard
	Ho	165	160.0	22.5				ug/L	7	Standard
	Tl	203	430.0	2.3	**0.0496**	0.002	4.9	ug/L	15	Standard
	Tl	205	390.0	8.0	**0.0417**	0.005	11.7	ug/L	13	Standard
	Pb	206	8083.8	1.9	**1.4566**	0.015	1.0	ug/L	264	Standard
	Pb	207	6744.5	3.2	**1.3320**	0.010	0.7	ug/L	222	Standard
	Pb	208	28675.7	2.4	**1.3865**	0.012	0.8	ug/L	959	Standard
	U	238	878.7	4.2	**0.1143**	0.007	5.7	ug/L	9	Standard
>	Bi	209	526224.9	2.9				ug/L	552821	Standard

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Na	23	10.0	100.0	**26.3285**	25.935	98.5	mg/L	2	Standard
Mg	24	138231.5	3.2	**143.1647**	1.819	1.3	mg/L	55	Standard
K	39	2051.8	3.6	**6.8480**	0.212	3.1	mg/L	28	Standard
Ca	43	1005.0	4.6	**78.6144**	4.822	6.1	mg/L	27	Standard
Fe	54	1298.8	6.4	**0.8054**	0.072	8.9	mg/L	147	Standard
Fe	57	1345.1	6.6	**2.8597**	0.164	5.7	mg/L	268	Standard
> **Sc-1**	45	46416.0	2.3				mg/L	41174	Standard
Cl	35	167690.5	2.1				ug/L	69550	Standard
Kr	83	3.0	66.7				ug/L	1	Standard
Br	81	1167966.9	3.9				ug/L	1950	Standard
P	31	32757.0	0.7				ug/L	21156	Standard
S	34	3867.2	4.1				ug/L	3419	Standard
Sr	88	1343.4	2.4				ug/L	72	Standard
C	12	240.0	12.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1276.7	2.5				mg/L	17	Standard
Dy	164	1123.0	11.7				mg/L	16	Standard
Ho-1	165	160.0	22.5				mg/L	7	Standard
Er	166	146.7	14.2				mg/L	7	Standard
I	127	116304.4	6.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.479	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.257	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.636	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	95.189	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Zn 66 Upper, S, EEE	Zn	66	

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Mo 98 Upper, S, EEE	Mo	98
Cd 111 Lower	Cd	111

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Method 6020 - Summary Report

Sample ID: L1606142701DP WG574419-07
Sample Date/Time: Friday, July 01, 2016 13:19:32
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	104046.1	2.0				ug/L	76456	Standard
	Be	9	46.7	34.4	**0.0108**	0.011	98.8	ug/L	20	Standard
	Al	27	58682132.6	0.8	**251.9338**	4.223	1.7	ug/L	1307	Standard
	Sc	45	49029.2	0.9				ug/L	41174	Standard
	Ti	47	887.4	3.2	**2.4062**	0.089	3.7	ug/L	27	Standard
	V	51	572508.3	0.6	**63.4877**	0.191	0.3	ug/L	1434	Standard
	Cr	52	308728.3	0.4	**33.9428**	0.266	0.8	ug/L	7733	Standard
	Cr	53	52407.2	1.8	**46.9988**	0.886	1.9	ug/L	442	Standard
	Mn	55	248854.2	1.2	**29.9599**	0.484	1.6	ug/L	723	Standard
	Co	59	205279.2	0.1	**24.4744**	0.076	0.3	ug/L	217	Standard
	Ni	60	157071.7	0.8	**69.0682**	0.457	0.7	ug/L	304	Standard
	Cu	65	60395.8	1.4	**26.9893**	0.358	1.3	ug/L	181	Standard
	Zn	66	157884.7	1.0	**117.6566**	1.110	0.9	ug/L	215	Standard
>	Ge	72	569569.1	0.4				ug/L	520809	Standard
	As	75	17073.6	1.5	**12.6909**	0.145	1.1	ug/L	-52	Standard
	Se	82	6774.5	1.0	**48.9062**	0.303	0.6	ug/L	17	Standard
	Se-1	77	1068.4	1.0	**10.7433**	0.123	1.1	ug/L	56	Standard
>	Ga	71	446.7	9.5				mg/L	25	Standard
	Rb	85	100812.6	1.2				ug/L	28	Standard
	Y	89	506159.4	0.9				ug/L	447395	Standard
>	Rh	103	378.3	6.5				ug/L	15	Standard
	Mo	98	2476607.9	0.6	**769.3094**	6.421	0.8	ug/L	113	Standard
	Ag	107	277.0	7.6	**0.0234**	0.003	11.5	ug/L	108	Standard
	Cd	111	-1309.7	3.6	**-0.5367**	0.015	2.9	mg/L	3	Standard
	Cd	114	4986.9	3.4	**0.8220**	0.028	3.4	ug/L	20	Standard
>	In	115	666048.1	0.7				ug/L	625728	Standard
	Sn	118	2695.2	8.4	**0.3091**	0.031	9.9	ug/L	568	Standard
	Sb	123	2859.3	3.8	**0.4860**	0.016	3.4	ug/L	612	Standard
	Ba	135	211685.9	0.6	**91.3948**	0.192	0.2	ug/L	21	Standard
	Ce	140	2868.6	2.4				ug/L	245	Standard
>	Tb	159	1029121.0	0.5				ug/L	950397	Standard
	Ho	165	185.0	14.3				ug/L	7	Standard
	Tl	203	334.0	8.3	**0.0363**	0.003	8.5	ug/L	15	Standard
	Tl	205	321.7	4.7	**0.0304**	0.002	6.7	ug/L	13	Standard
	Pb	206	8239.2	0.3	**1.4051**	0.008	0.6	ug/L	264	Standard
	Pb	207	6707.8	0.3	**1.2527**	0.005	0.4	ug/L	222	Standard
	Pb	208	28813.8	0.3	**1.3177**	0.005	0.4	ug/L	959	Standard
	U	238	815.7	5.7	**0.1005**	0.006	5.9	ug/L	9	Standard
>	Bi	209	555326.9	0.6				ug/L	552821	Standard

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Na	23	11.7	89.2	**29.1295**	26.033	89.4	mg/L	2	Standard
Mg	24	145830.2	1.6	**142.9963**	1.122	0.8	mg/L	55	Standard
K	39	1910.1	4.3	**6.0209**	0.304	5.1	mg/L	28	Standard
Ca	43	1011.7	3.6	**74.7713**	3.380	4.5	mg/L	27	Standard
Fe	54	1358.4	2.2	**0.7959**	0.027	3.4	mg/L	147	Standard
Fe	57	1346.7	4.5	**2.6702**	0.125	4.7	mg/L	268	Standard
> **Sc-1**	45	49029.2	0.9				mg/L	41174	Standard
Cl	35	174677.8	0.8				ug/L	69550	Standard
Kr	83	3.3	45.8				ug/L	1	Standard
Br	81	1284910.2	3.2				ug/L	1950	Standard
P	31	34656.3	1.1				ug/L	21156	Standard
S	34	3823.8	7.2				ug/L	3419	Standard
Sr	88	1511.7	7.3				ug/L	72	Standard
C	12	326.7	14.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1320.1	5.5				mg/L	17	Standard
Dy	164	1289.7	16.2				mg/L	16	Standard
Ho-1	165	185.0	14.3				mg/L	7	Standard
Er	166	146.7	50.3				mg/L	7	Standard
I	127	128302.1	5.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		136.087	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.362	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.444
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.453
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Zn 66 Upper, S, EEE	Zn	66	

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Mo 98 Upper, S, EEE	Mo	98
Cd 111 Lower	Cd	111

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Method 6020 - Summary Report

Sample ID: L1606146801
Sample Date/Time: Friday, July 01, 2016 13:22:43
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	95246.8	1.7				ug/L	76456	Standard
	Be	9	60.0	36.3	**0.0230**	0.015	65.8	ug/L	20	Standard
	Al	27	35472226.0	0.8	**166.3429**	2.244	1.3	ug/L	1307	Standard
	Sc	45	46670.1	1.2				ug/L	41174	Standard
	Ti	47	140.0	21.5	**0.3094**	0.088	28.6	ug/L	27	Standard
	V	51	4190.3	5.3	**0.2681**	0.025	9.2	ug/L	1434	Standard
	Cr	52	13346.9	2.4	**0.5405**	0.016	3.1	ug/L	7733	Standard
	Cr	53	6873.2	1.9	**5.8101**	0.177	3.1	ug/L	442	Standard
	Mn	55	19772.6	3.3	**2.2894**	0.049	2.1	ug/L	723	Standard
	Co	59	1288.4	10.2	**0.1244**	0.014	11.2	ug/L	217	Standard
	Ni	60	3544.7	6.0	**1.4102**	0.074	5.2	ug/L	304	Standard
	Cu	65	6205.3	5.0	**2.7088**	0.103	3.8	ug/L	181	Standard
	Zn	66	22108.8	2.9	**16.3375**	0.265	1.6	ug/L	215	Standard
>	Ge	72	568906.9	1.3				ug/L	520809	Standard
	As	75	543.4	5.2	**0.4480**	0.017	3.7	ug/L	-52	Standard
	Se	82	262.1	5.1	**1.7720**	0.073	4.1	ug/L	17	Standard
	Se-1	77	440.0	5.3	**4.0275**	0.247	6.1	ug/L	56	Standard
>	Ga	71	158.3	3.6				mg/L	25	Standard
	Rb	85	31255.6	3.8				ug/L	28	Standard
	Y	89	486688.8	1.2				ug/L	447395	Standard
>	Rh	103	48.3	15.8				ug/L	15	Standard
	Mo	98	2311.5	33.1	**0.6846**	0.225	32.9	ug/L	113	Standard
	Ag	107	184.3	31.5	**0.0110**	0.007	66.0	ug/L	108	Standard
	Cd	111	67.6	38.4	**0.0249**	0.010	40.7	mg/L	3	Standard
	Cd	114	137.0	32.2	**0.0223**	0.007	31.3	ug/L	20	Standard
>	In	115	673094.9	1.4				ug/L	625728	Standard
	Sn	118	1788.4	15.0	**0.1745**	0.042	24.3	ug/L	568	Standard
	Sb	123	351.8	14.1	**0.0296**	0.010	32.6	ug/L	612	Standard
	Ba	135	56024.1	0.9	**23.9231**	0.201	0.8	ug/L	21	Standard
	Ce	140	3798.8	2.1				ug/L	245	Standard
>	Tb	159	1033945.4	1.1				ug/L	950397	Standard
	Ho	165	101.7	7.5				ug/L	7	Standard
	Tl	203	1144.4	9.6	**0.1229**	0.010	8.3	ug/L	15	Standard
	Tl	205	953.4	4.2	**0.1063**	0.005	4.8	ug/L	13	Standard
	Pb	206	1672.1	2.6	**0.2429**	0.007	2.7	ug/L	264	Standard
	Pb	207	1423.7	2.4	**0.2227**	0.003	1.2	ug/L	222	Standard
	Pb	208	6035.8	3.4	**0.2307**	0.005	2.3	ug/L	959	Standard
	U	238	4452.3	3.5	**0.5357**	0.011	2.0	ug/L	9	Standard
>	Bi	209	569516.4	1.6				ug/L	552821	Standard

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Na	23	8.3	34.6	**21.9971**	7.770	35.3	mg/L	2	Standard
Mg	24	21678.8	1.3	**22.2848**	0.435	2.0	mg/L	55	Standard
K	39	2645.2	6.0	**8.8196**	0.578	6.6	mg/L	28	Standard
Ca	43	443.3	15.1	**33.0787**	5.254	15.9	mg/L	27	Standard
Fe	54	243.9	19.5	**0.0697**	0.031	44.8	mg/L	147	Standard
Fe	57	548.3	7.8	**0.6829**	0.122	17.9	mg/L	268	Standard
> **Sc-1**	45	46670.1	1.2				mg/L	41174	Standard
Cl	35	103993.1	1.8				ug/L	69550	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	45849.6	8.7				ug/L	1950	Standard
P	31	27049.2	4.2				ug/L	21156	Standard
S	34	3738.8	3.2				ug/L	3419	Standard
Sr	88	155.0	11.6				ug/L	72	Standard
C	12	323.3	23.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	32.7				mg/L	17	Standard
Dy	164	114.1	9.2				mg/L	16	Standard
Ho-1	165	101.7	7.5				mg/L	7	Standard
Er	166	123.3	9.4				mg/L	7	Standard
I	127	41777.5	0.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.578	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.235	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.570
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.020
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606146801PS WG574824-01
Sample Date/Time: Friday, July 01, 2016 13:25:55
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	90108.8	0.5				ug/L	76456	Standard
	Be	9	70249.2	1.7	**53.2245**	0.671	1.3	ug/L	20	Standard
	Al	27	34044331.9	1.0	**168.7325**	2.084	1.2	ug/L	1307	Standard
	Sc	45	45399.6	0.8				ug/L	41174	Standard
	Ti	47	138.7	17.3	**0.3148**	0.070	22.1	ug/L	27	Standard
	V	51	476317.0	1.0	**54.1491**	0.294	0.5	ug/L	1434	Standard
	Cr	52	466031.0	0.5	**53.0857**	0.077	0.1	ug/L	7733	Standard
	Cr	53	63049.2	0.3	**58.0938**	0.175	0.3	ug/L	442	Standard
	Mn	55	440401.5	1.9	**54.4612**	0.687	1.3	ug/L	723	Standard
	Co	59	434977.5	1.9	**53.2245**	0.684	1.3	ug/L	217	Standard
	Ni	60	116940.2	0.8	**52.7068**	0.130	0.2	ug/L	304	Standard
	Cu	65	117328.2	0.6	**53.8548**	0.631	1.2	ug/L	181	Standard
	Zn	66	90120.9	0.2	**68.8123**	0.512	0.7	ug/L	215	Standard
>	Ge	72	555295.5	0.6				ug/L	520809	Standard
	As	75	70805.4	0.6	**53.8379**	0.372	0.7	ug/L	-52	Standard
	Se	82	7397.3	0.8	**54.7911**	0.368	0.7	ug/L	17	Standard
	Se-1	77	5164.9	2.2	**55.9837**	1.347	2.4	ug/L	56	Standard
>	Ga	71	125.0	14.4				mg/L	25	Standard
	Rb	85	30505.7	1.7				ug/L	28	Standard
	Y	89	478605.6	2.2				ug/L	447395	Standard
>	Rh	103	46.7	43.3				ug/L	15	Standard
	Mo	98	839.0	9.3	**0.2402**	0.025	10.4	ug/L	113	Standard
	Ag	107	377133.6	0.1	**49.9818**	0.291	0.6	ug/L	108	Standard
	Cd	111	125097.0	1.5	**51.7283**	0.533	1.0	mg/L	3	Standard
	Cd	114	305450.5	0.6	**51.0188**	0.497	1.0	ug/L	20	Standard
>	In	115	657251.3	0.6				ug/L	625728	Standard
	Sn	118	2133.5	27.9	**0.2313**	0.087	37.7	ug/L	568	Standard
	Sb	123	274150.2	2.6	**50.4698**	1.311	2.6	ug/L	612	Standard
	Ba	135	169708.2	1.1	**74.2483**	0.737	1.0	ug/L	21	Standard
	Ce	140	3655.4	2.8				ug/L	245	Standard
>	Tb	159	997893.3	1.3				ug/L	950397	Standard
	Ho	165	96.7	3.0				ug/L	7	Standard
	Tl	203	479768.6	1.3	**52.5300**	0.668	1.3	ug/L	15	Standard
	Tl	205	441867.2	0.2	**54.4752**	0.081	0.1	ug/L	13	Standard
	Pb	206	307910.6	0.5	**53.4209**	0.305	0.6	ug/L	264	Standard
	Pb	207	270893.2	0.6	**51.7493**	0.347	0.7	ug/L	222	Standard
	Pb	208	1132008.2	0.1	**52.9464**	0.115	0.2	ug/L	959	Standard
	U	238	437881.5	0.7	**53.3944**	0.388	0.7	ug/L	9	Standard
>	Bi	209	562372.5	0.1				ug/L	552821	Standard

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Na	23	3.3	173.2	**9.0238**	15.621	173.1	mg/L	2	Standard
Mg	24	21021.2	2.0	**22.2136**	0.609	2.7	mg/L	55	Standard
K	39	2403.5	9.2	**8.2292**	0.795	9.7	mg/L	28	Standard
Ca	43	463.3	6.3	**35.7330**	2.393	6.7	mg/L	27	Standard
Fe	54	243.1	16.8	**0.0741**	0.029	39.0	mg/L	147	Standard
Fe	57	501.7	6.6	**0.5936**	0.084	14.1	mg/L	268	Standard
> **Sc-1**	45	45399.6	0.8				mg/L	41174	Standard
Cl	35	103755.4	0.3				ug/L	69550	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	34723.1	4.1				ug/L	1950	Standard
P	31	26186.0	3.6				ug/L	21156	Standard
S	34	3878.8	0.5				ug/L	3419	Standard
Sr	88	156.7	22.4				ug/L	72	Standard
C	12	250.0	6.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	24.7				mg/L	17	Standard
Dy	164	122.0	12.6				mg/L	16	Standard
Ho-1	165	96.7	3.0				mg/L	7	Standard
Er	166	96.7	21.5				mg/L	7	Standard
I	127	39521.5	2.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.857	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.622	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.038
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.728
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606146801PS WG574824-01
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Method 6020 - Summary Report

Sample ID: L1606146801SDL WG574824-02
Sample Date/Time: Friday, July 01, 2016 13:29:06
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81934.4	2.4				ug/L	76456	Standard
	Be	9	23.3	12.4	**-0.0004**	0.002	528.6	ug/L	20	Standard
	Al	27	6372058.3	0.6	**34.7368**	0.867	2.5	ug/L	1307	Standard
	Sc	45	41202.6	2.0				ug/L	41174	Standard
	Ti	47	41.3	2.8	**0.0406**	0.003	7.7	ug/L	27	Standard
	V	51	2837.9	5.4	**0.1420**	0.017	12.0	ug/L	1434	Standard
	Cr	52	10022.3	0.9	**0.2524**	0.016	6.4	ug/L	7733	Standard
	Cr	53	2263.5	3.6	**1.7926**	0.079	4.4	ug/L	442	Standard
	Mn	55	3961.5	5.6	**0.4150**	0.030	7.3	ug/L	723	Standard
	Co	59	455.7	11.3	**0.0293**	0.007	23.1	ug/L	217	Standard
	Ni	60	945.7	5.5	**0.2966**	0.026	8.9	ug/L	304	Standard
	Cu	65	1313.7	2.7	**0.5610**	0.018	3.2	ug/L	181	Standard
	Zn	66	5244.2	0.6	**4.0427**	0.043	1.1	ug/L	215	Standard
>	**Ge**	72	527921.1	0.4				ug/L	520809	Standard
	As	75	85.0	19.3	**0.1131**	0.013	11.5	ug/L	-52	Standard
	Se	82	67.2	5.5	**0.3985**	0.027	6.7	ug/L	17	Standard
	Se-1	77	133.3	10.0	**0.8545**	0.159	18.6	ug/L	56	Standard
>	**Ga**	71	51.7	34.0				mg/L	25	Standard
	Rb	85	5692.7	3.6				ug/L	28	Standard
	Y	89	450949.6	1.2				ug/L	447395	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	345.8	14.9	**0.0912**	0.015	16.7	ug/L	113	Standard
	Ag	107	237.3	15.4	**0.0205**	0.005	24.9	ug/L	108	Standard
	Cd	111	35.8	40.8	**0.0133**	0.006	46.9	mg/L	3	Standard
	Cd	114	93.4	10.0	**0.0165**	0.001	8.4	ug/L	20	Standard
>	**In**	115	620231.7	1.6				ug/L	625728	Standard
	Sn	118	866.7	12.4	**0.0518**	0.019	35.8	ug/L	568	Standard
	Sb	123	1735.5	30.3	**0.3061**	0.107	34.9	ug/L	612	Standard
	Ba	135	10779.2	0.9	**4.9812**	0.056	1.1	ug/L	21	Standard
	Ce	140	791.7	4.9				ug/L	245	Standard
>	**Tb**	159	942729.5	1.8				ug/L	950397	Standard
	Ho	165	28.3	36.7				ug/L	7	Standard
	Tl	203	339.3	13.7	**0.0372**	0.005	12.3	ug/L	15	Standard
	Tl	205	293.3	14.5	**0.0272**	0.005	18.3	ug/L	13	Standard
	Pb	206	612.0	8.4	**0.0647**	0.008	11.7	ug/L	264	Standard
	Pb	207	519.7	9.7	**0.0553**	0.008	14.9	ug/L	222	Standard
	Pb	208	2221.7	7.6	**0.0579**	0.007	11.9	ug/L	959	Standard
	U	238	900.0	3.6	**0.1118**	0.003	3.1	ug/L	9	Standard
>	**Bi**	209	550585.9	1.6				ug/L	552821	Standard

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Na	23	1.7	173.2	**5.0521**	8.742	173.0	mg/L	2	Standard
Mg	24	4062.2	4.3	**4.6808**	0.132	2.8	mg/L	55	Standard
K	39	498.3	11.6	**1.7809**	0.252	14.1	mg/L	28	Standard
Ca	43	101.7	7.5	**6.7726**	0.507	7.5	mg/L	27	Standard
Fe	54	107.3	30.2	**-0.0145**	0.026	180.3	mg/L	147	Standard
Fe	57	291.7	13.3	**0.0919**	0.123	133.6	mg/L	268	Standard
> **Sc-1**	45	41202.6	2.0				mg/L	41174	Standard
Cl	35	96829.8	0.1				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	10183.4	2.4				ug/L	1950	Standard
P	31	11094.1	2.9				ug/L	21156	Standard
S	34	3683.8	0.7				ug/L	3419	Standard
Sr	88	95.0	24.1				ug/L	72	Standard
C	12	163.3	7.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	17	Standard
Dy	164	29.5	32.3				mg/L	16	Standard
Ho-1	165	28.3	36.7				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	35264.3	1.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.166	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.366	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.122
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.596
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 13:32:18
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83467.6	1.4				ug/L	76456	Standard
	Be	9	63718.7	0.7	**52.1231**	0.475	0.9	ug/L	20	Standard
	Al	27	9062605.1	0.9	**48.4842**	0.275	0.6	ug/L	1307	Standard
	Sc	45	44059.0	1.3				ug/L	41174	Standard
	Ti	47	34404.0	1.1	**99.0094**	0.671	0.7	ug/L	27	Standard
	V	51	443244.1	0.4	**50.4051**	0.454	0.9	ug/L	1434	Standard
	Cr	52	434951.0	1.6	**49.5050**	0.344	0.7	ug/L	7733	Standard
	Cr	53	55258.9	0.5	**50.8922**	0.303	0.6	ug/L	442	Standard
	Mn	55	403371.8	0.9	**49.9032**	0.315	0.6	ug/L	723	Standard
	Co	59	418724.4	1.0	**51.2643**	0.239	0.5	ug/L	217	Standard
	Ni	60	110119.8	2.0	**49.6473**	0.559	1.1	ug/L	304	Standard
	Cu	65	108317.9	1.6	**49.7353**	0.387	0.8	ug/L	181	Standard
	Zn	66	65643.9	0.2	**50.1012**	0.420	0.8	ug/L	215	Standard
>	Ge	72	555003.0	0.9				ug/L	520809	Standard
	As	75	65592.7	0.9	**49.9040**	0.350	0.7	ug/L	-52	Standard
	Se	82	6752.9	1.3	**50.0327**	0.319	0.6	ug/L	17	Standard
	Se-1	77	4634.4	1.8	**50.1857**	0.510	1.0	ug/L	56	Standard
>	Ga	71	43.3	43.7				mg/L	25	Standard
	Rb	85	895.0	1.7				ug/L	28	Standard
	Y	89	470300.0	1.3				ug/L	447395	Standard
>	Rh	103	21.7	53.3				ug/L	15	Standard
	Mo	98	316268.1	0.4	**99.0881**	0.889	0.9	ug/L	113	Standard
	Ag	107	376354.5	0.2	**49.6535**	0.293	0.6	ug/L	108	Standard
	Cd	111	120441.8	1.1	**49.5792**	0.292	0.6	mg/L	3	Standard
	Cd	114	295637.4	1.1	**49.1550**	0.340	0.7	ug/L	20	Standard
>	In	115	660227.7	0.5				ug/L	625728	Standard
	Sn	118	331178.7	0.6	**48.6841**	0.135	0.3	ug/L	568	Standard
	Sb	123	273404.4	0.5	**50.1048**	0.039	0.1	ug/L	612	Standard
	Ba	135	110185.5	0.7	**47.9831**	0.253	0.5	ug/L	21	Standard
	Ce	140	71.7	8.1				ug/L	245	Standard
>	Tb	159	984792.3	0.6				ug/L	950397	Standard
	Ho	165	13.3	78.1				ug/L	7	Standard
	Tl	203	462531.1	0.4	**50.2621**	0.297	0.6	ug/L	15	Standard
	Tl	205	421818.4	1.3	**51.6134**	0.810	1.6	ug/L	13	Standard
	Pb	206	290494.8	0.7	**50.0181**	0.451	0.9	ug/L	264	Standard
	Pb	207	263168.3	0.9	**49.8939**	0.483	1.0	ug/L	222	Standard
	Pb	208	1101207.6	0.2	**51.1172**	0.228	0.4	ug/L	959	Standard
	U	238	418119.7	0.4	**50.6018**	0.328	0.6	ug/L	9	Standard
>	Bi	209	566634.4	0.3				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4939.1	6.4	**5.3310**	0.320	6.0	mg/L	55	Standard
K	39	1245.1	5.8	**4.3288**	0.211	4.9	mg/L	28	Standard
Ca	43	85.0	25.6	**4.7651**	1.854	38.9	mg/L	27	Standard
Fe	54	6867.9	1.6	**4.9353**	0.136	2.8	mg/L	147	Standard
Fe	57	2071.8	2.6	**5.1454**	0.157	3.1	mg/L	268	Standard
> **Sc-1**	45	44059.0	1.3				mg/L	41174	Standard
Cl	35	90383.1	4.1				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	4354.0	6.6				ug/L	1950	Standard
P	31	26625.0	1.6				ug/L	21156	Standard
S	34	4595.7	0.9				ug/L	3419	Standard
Sr	88	73.3	21.9				ug/L	72	Standard
C	12	80.0	25.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	17	Standard
Dy	164	9.7	105.8				mg/L	16	Standard
Ho-1	165	13.3	78.1				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	17566.9	5.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	104.246		
Al	27	96.968		
Sc	45			
Ti	47	99.009		
V	51	100.810		
Cr	52	99.010		
Cr	53			
Mn	55	99.806		
Co	59	102.529		
Ni	60	99.295		
Cu	65	99.471		
Zn	66	100.202		
> Ge	72		106.565	
As	75	99.808		
Se	82	100.065		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	99.088		
Ag	107	99.307		
Cd	111	99.158		
Cd	114			
> In	115			105.514
Sn	118	97.368		
Sb	123	100.210		
Ba	135	95.966		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.524		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.234		
U	238	101.204		
> Bi	209			102.499
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 13:35:30
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81907.5	2.0				ug/L	76456	Standard
	Be	9	33.3	37.7	**0.0081**	0.011	136.7	ug/L	20	Standard
	Al	27	3658.8	6.2	**0.0097**	0.001	9.1	ug/L	1307	Standard
	Sc	45	43395.4	0.6				ug/L	41174	Standard
	Ti	47	24.0	4.2	**-0.0151**	0.003	16.8	ug/L	27	Standard
	V	51	1486.9	6.2	**-0.0280**	0.012	41.3	ug/L	1434	Standard
	Cr	52	7626.6	0.2	**-0.0811**	0.008	9.6	ug/L	7733	Standard
	Cr	53	623.3	4.9	**0.1647**	0.029	17.3	ug/L	442	Standard
	Mn	55	758.4	6.6	**-0.0069**	0.006	85.9	ug/L	723	Standard
	Co	59	258.3	7.6	**0.0024**	0.003	111.1	ug/L	217	Standard
	Ni	60	313.7	6.6	**-0.0106**	0.010	91.1	ug/L	304	Standard
	Cu	65	185.7	9.2	**0.0117**	0.008	71.7	ug/L	181	Standard
	Zn	66	252.7	5.5	**0.0142**	0.012	81.1	ug/L	215	Standard
>	**Ge**	72	552319.3	0.7				ug/L	520809	Standard
	As	75	-27.0	147.4	**0.0246**	0.030	123.9	ug/L	-52	Standard
	Se	82	28.2	27.0	**0.0839**	0.058	69.1	ug/L	17	Standard
	Se-1	77	72.0	11.0	**0.1099**	0.092	83.3	ug/L	56	Standard
>	**Ga**	71	16.7	62.4				mg/L	25	Standard
	Rb	85	41.7	61.6				ug/L	28	Standard
	Y	89	471686.6	0.8				ug/L	447395	Standard
>	**Rh**	103	6.7	114.6				ug/L	15	Standard
	Mo	98	354.1	7.5	**0.0877**	0.008	9.3	ug/L	113	Standard
	Ag	107	160.0	3.9	**0.0084**	0.001	9.7	ug/L	108	Standard
	Cd	111	21.1	31.9	**0.0064**	0.003	43.8	mg/L	3	Standard
	Cd	114	42.3	49.2	**0.0071**	0.003	48.8	ug/L	20	Standard
>	**In**	115	656112.9	0.3				ug/L	625728	Standard
	Sn	118	1841.8	22.7	**0.1887**	0.062	32.7	ug/L	568	Standard
	Sb	123	1164.1	37.2	**0.1810**	0.080	44.0	ug/L	612	Standard
	Ba	135	49.7	23.3	**0.0039**	0.005	131.8	ug/L	21	Standard
	Ce	140	23.3	81.1				ug/L	245	Standard
>	**Tb**	159	980631.2	1.7				ug/L	950397	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	97.0	22.3	**0.0098**	0.002	24.1	ug/L	15	Standard
	Tl	205	98.3	10.6	**0.0022**	0.001	58.4	ug/L	13	Standard
	Pb	206	329.0	7.5	**0.0127**	0.004	31.8	ug/L	264	Standard
	Pb	207	298.7	13.9	**0.0104**	0.008	73.2	ug/L	222	Standard
	Pb	208	1210.7	3.3	**0.0078**	0.002	20.2	ug/L	959	Standard
	U	238	84.3	9.6	**0.0099**	0.001	9.3	ug/L	9	Standard
>	**Bi**	209	568472.1	0.5				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	38.3	32.8	**-0.0177**	0.014	79.8	mg/L	55	Standard
K	39	20.0	43.3	**-0.0585**	0.031	53.1	mg/L	28	Standard
Ca	43	10.0	50.0	**-1.5919**	0.429	27.0	mg/L	27	Standard
Fe	54	159.5	25.8	**0.0198**	0.030	153.3	mg/L	147	Standard
Fe	57	218.3	15.2	**-0.1678**	0.094	56.0	mg/L	268	Standard
Sc-1	45	43395.4	0.6				mg/L	41174	Standard
Cl	35	88102.1	0.5				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	3323.7	4.5				ug/L	1950	Standard
P	31	24955.5	2.9				ug/L	21156	Standard
S	34	4405.6	3.7				ug/L	3419	Standard
Sr	88	81.7	3.5				ug/L	72	Standard
C	12	120.0	8.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	17	Standard
Dy	164	-1.1	49.5				mg/L	16	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	23.3	49.5				mg/L	7	Standard
I	127	13129.0	1.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.050	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.856
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.831
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606147001
Sample Date/Time: Friday, July 01, 2016 13:38:42
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81631.0	0.4				ug/L	76456	Standard
	Be	9	53.3	51.6	**0.0248**	0.023	93.4	ug/L	20	Standard
	Al	27	1267924.9	0.3	**6.9269**	0.012	0.2	ug/L	1307	Standard
	Sc	45	44398.3	2.2				ug/L	41174	Standard
	Ti	47	2584.6	3.5	**7.4850**	0.306	4.1	ug/L	27	Standard
	V	51	6589.9	3.8	**0.5661**	0.025	4.4	ug/L	1434	Standard
	Cr	52	17924.3	2.1	**1.1443**	0.040	3.5	ug/L	7733	Standard
	Cr	53	3320.4	0.9	**2.7174**	0.024	0.9	ug/L	442	Standard
	Mn	55	64462.5	1.4	**8.0226**	0.071	0.9	ug/L	723	Standard
	Co	59	2066.5	2.4	**0.2279**	0.005	2.1	ug/L	217	Standard
	Ni	60	3389.4	1.0	**1.4053**	0.013	0.9	ug/L	304	Standard
	Cu	65	36919.6	0.8	**17.1868**	0.112	0.7	ug/L	181	Standard
	Zn	66	100190.5	0.7	**77.8387**	0.507	0.7	ug/L	215	Standard
>	Ge	72	545904.9	0.6				ug/L	520809	Standard
	As	75	297.3	18.2	**0.2747**	0.041	14.8	ug/L	-52	Standard
	Se	82	57.3	13.9	**0.3062**	0.059	19.1	ug/L	17	Standard
	Se-1	77	123.0	8.6	**0.6885**	0.126	18.3	ug/L	56	Standard
>	Ga	71	431.7	8.5				mg/L	25	Standard
	Rb	85	29366.8	1.1				ug/L	28	Standard
	Y	89	475138.4	0.5				ug/L	447395	Standard
>	Rh	103	50.0	45.8				ug/L	15	Standard
	Mo	98	2283.8	2.0	**0.7046**	0.016	2.2	ug/L	113	Standard
	Ag	107	471.3	8.2	**0.0505**	0.006	10.9	ug/L	108	Standard
	Cd	111	442.4	4.4	**0.1831**	0.009	4.8	mg/L	3	Standard
	Cd	114	1113.8	8.0	**0.1885**	0.014	7.5	ug/L	20	Standard
>	In	115	648548.7	0.6				ug/L	625728	Standard
	Sn	118	6074.6	8.1	**0.8267**	0.078	9.5	ug/L	568	Standard
	Sb	123	3585.4	3.4	**0.6357**	0.026	4.1	ug/L	612	Standard
	Ba	135	28482.1	1.1	**12.6131**	0.063	0.5	ug/L	21	Standard
	Ce	140	9227.8	4.3				ug/L	245	Standard
>	Tb	159	980514.4	0.6				ug/L	950397	Standard
	Ho	165	175.0	22.7				ug/L	7	Standard
	Tl	203	154.0	7.9	**0.0159**	0.001	7.9	ug/L	15	Standard
	Tl	205	146.7	61.1	**0.0082**	0.011	135.5	ug/L	13	Standard
	Pb	206	300241.0	0.6	**51.5086**	0.588	1.1	ug/L	264	Standard
	Pb	207	251797.0	0.4	**47.5618**	0.476	1.0	ug/L	222	Standard
	Pb	208	1082895.4	0.4	**50.0819**	0.392	0.8	ug/L	959	Standard
	U	238	477.3	8.6	**0.0573**	0.005	9.4	ug/L	9	Standard
>	Bi	209	568731.4	0.7				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4449.0	1.5	**4.7618**	0.165	3.5	mg/L	55	Standard
K	39	216.7	12.7	**0.6389**	0.091	14.3	mg/L	28	Standard
Ca	43	100.0	13.2	**5.9773**	1.125	18.8	mg/L	27	Standard
Fe	54	785.4	6.3	**0.4720**	0.024	5.1	mg/L	147	Standard
Fe	57	430.0	12.3	**0.4211**	0.144	34.2	mg/L	268	Standard
> **Sc-1**	45	44398.3	2.2				mg/L	41174	Standard
Cl	35	84373.7	2.1				ug/L	69550	Standard
Kr	83	2.0	132.3				ug/L	1	Standard
Br	81	8569.1	5.7				ug/L	1950	Standard
P	31	27454.9	2.2				ug/L	21156	Standard
S	34	3758.8	6.0				ug/L	3419	Standard
Sr	88	151.7	5.0				ug/L	72	Standard
C	12	163.3	44.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	436.7	46.5				mg/L	17	Standard
Dy	164	239.6	2.7				mg/L	16	Standard
Ho-1	165	175.0	22.7				mg/L	7	Standard
Er	166	146.7	15.7				mg/L	7	Standard
I	127	165778.6	7.4				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		106.769	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		104.819	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.647
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.878
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606147101
Sample Date/Time: Friday, July 01, 2016 13:41:54
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	82165.6	1.5				ug/L	76456	Standard
	Be	9	25.0	60.0	**0.0010**	0.013	1235.0	ug/L	20	Standard
	Al	27	7420176.1	1.8	**40.3263**	0.745	1.8	ug/L	1307	Standard
	Sc	45	43403.8	1.8				ug/L	41174	Standard
	Ti	47	118.3	2.1	**0.2622**	0.007	2.8	ug/L	27	Standard
	V	51	2485.8	8.9	**0.0901**	0.026	28.6	ug/L	1434	Standard
	Cr	52	11852.6	4.6	**0.4290**	0.067	15.6	ug/L	7733	Standard
	Cr	53	3065.3	10.5	**2.4783**	0.300	12.1	ug/L	442	Standard
	Mn	55	13532.4	4.2	**1.6054**	0.074	4.6	ug/L	723	Standard
	Co	59	973.4	27.9	**0.0919**	0.034	37.1	ug/L	217	Standard
	Ni	60	2788.9	4.3	**1.1302**	0.057	5.1	ug/L	304	Standard
	Cu	65	167698.1	1.5	**78.3834**	1.378	1.8	ug/L	181	Standard
	Zn	66	18490.9	1.1	**14.2285**	0.192	1.3	ug/L	215	Standard
>	Ge	72	545541.7	0.2				ug/L	520809	Standard
	As	75	56.9	102.5	**0.0892**	0.045	50.6	ug/L	-52	Standard
	Se	82	46.0	7.1	**0.2215**	0.025	11.4	ug/L	17	Standard
	Se-1	77	165.0	10.0	**1.1579**	0.182	15.8	ug/L	56	Standard
>	Ga	71	40.0	45.1				mg/L	25	Standard
	Rb	85	1635.1	4.7				ug/L	28	Standard
	Y	89	467449.1	1.6				ug/L	447395	Standard
>	Rh	103	46.7	27.0				ug/L	15	Standard
	Mo	98	638.2	33.3	**0.1798**	0.068	38.0	ug/L	113	Standard
	Ag	107	803.4	8.9	**0.0950**	0.010	10.3	ug/L	108	Standard
	Cd	111	142.8	28.8	**0.0575**	0.017	29.9	mg/L	3	Standard
	Cd	114	382.8	34.4	**0.0647**	0.022	33.9	ug/L	20	Standard
>	In	115	648871.9	1.3				ug/L	625728	Standard
	Sn	118	1820.1	16.8	**0.1889**	0.050	26.3	ug/L	568	Standard
	Sb	123	517.0	31.6	**0.0630**	0.032	50.1	ug/L	612	Standard
	Ba	135	105021.4	1.0	**46.5367**	0.469	1.0	ug/L	21	Standard
	Ce	140	176.7	12.8				ug/L	245	Standard
>	Tb	159	974106.7	1.7				ug/L	950397	Standard
	Ho	165	20.0	43.3				ug/L	7	Standard
	Tl	203	182.7	61.2	**0.0196**	0.013	64.0	ug/L	15	Standard
	Tl	205	260.0	110.0	**0.0228**	0.036	157.4	ug/L	13	Standard
	Pb	206	1477.4	2.4	**0.2162**	0.008	3.6	ug/L	264	Standard
	Pb	207	1248.7	8.1	**0.1959**	0.021	10.5	ug/L	222	Standard
	Pb	208	5698.4	18.4	**0.2221**	0.051	22.9	ug/L	959	Standard
	U	238	669.4	46.7	**0.0825**	0.039	47.3	ug/L	9	Standard
>	Bi	209	555056.3	0.6				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	8267.3	1.5	**9.1027**	0.178	2.0	mg/L	55	Standard
K	39	178.3	20.3	**0.5189**	0.142	27.4	mg/L	28	Standard
Ca	43	265.0	15.0	**20.3615**	3.046	15.0	mg/L	27	Standard
Fe	54	255.7	20.5	**0.0914**	0.039	42.6	mg/L	147	Standard
Fe	57	411.7	6.1	**0.3970**	0.095	23.9	mg/L	268	Standard
> **Sc-1**	45	43403.8	1.8				mg/L	41174	Standard
Cl	35	91879.7	0.6				ug/L	69550	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	5647.7	9.0				ug/L	1950	Standard
P	31	26070.8	4.0				ug/L	21156	Standard
S	34	4028.9	4.5				ug/L	3419	Standard
Sr	88	183.3	6.3				ug/L	72	Standard
C	12	180.0	24.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	53.3	57.3				mg/L	17	Standard
Dy	164	38.6	26.6				mg/L	16	Standard
Ho-1	165	20.0	43.3				mg/L	7	Standard
Er	166	30.0	33.3				mg/L	7	Standard
I	127	15740.0	17.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.468	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.749	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.699
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.404
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606153601 WG574593-01
Sample Date/Time: Friday, July 01, 2016 13:45:05
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	105632.1	2.8				ug/L	76456	Standard
	Be	9	31.7	39.7	**0.0005**	0.008	1597.2	ug/L	20	Standard
	Al	27	9212844.4	2.9	**38.9423**	0.330	0.8	ug/L	1307	Standard
	Sc	45	37845.6	1.8				ug/L	41174	Standard
	Ti	47	303.7	8.6	**0.9123**	0.111	12.1	ug/L	27	Standard
	V	51	24245.6	11.6	**2.9541**	0.410	13.9	ug/L	1434	Standard
	Cr	52	16917.1	2.1	**1.2643**	0.091	7.2	ug/L	7733	Standard
	Cr	53	9354.6	13.4	**9.4775**	1.472	15.5	ug/L	442	Standard
	Mn	55	60166.6	2.3	**8.3838**	0.064	0.8	ug/L	723	Standard
	Co	59	59968.5	3.2	**8.3264**	0.059	0.7	ug/L	217	Standard
	Ni	60	11329.9	3.4	**5.6751**	0.056	1.0	ug/L	304	Standard
	Cu	65	10538.7	5.5	**5.4379**	0.239	4.4	ug/L	181	Standard
	Zn	66	77341.6	1.9	**67.2161**	0.503	0.7	ug/L	215	Standard
>	Ge	72	487884.6	2.6				ug/L	520809	Standard
	As	75	3262.4	6.3	**2.8666**	0.175	6.1	ug/L	-52	Standard
	Se	82	371.0	19.1	**3.0068**	0.587	19.5	ug/L	17	Standard
	Se-1	77	623.3	8.4	**7.1096**	0.803	11.3	ug/L	56	Standard
>	Ga	71	1885.1	4.1				mg/L	25	Standard
	Rb	85	131658.3	3.5				ug/L	28	Standard
	Y	89	431897.9	2.3				ug/L	447395	Standard
>	Rh	103	143.3	38.9				ug/L	15	Standard
	Mo	98	627591.1	3.5	**227.1784**	5.050	2.2	ug/L	113	Standard
	Ag	107	276.3	2.5	**0.0293**	0.001	4.0	ug/L	108	Standard
	Cd	111	-404.3	7.2	**-0.1947**	0.015	7.6	mg/L	3	Standard
	Cd	114	1007.4	4.4	**0.1935**	0.003	1.7	ug/L	20	Standard
>	In	115	571506.3	2.8				ug/L	625728	Standard
	Sn	118	2893.6	2.8	**0.4084**	0.024	5.8	ug/L	568	Standard
	Sb	123	6941.9	4.4	**1.4365**	0.025	1.7	ug/L	612	Standard
	Ba	135	39683.6	1.8	**19.9579**	0.305	1.5	ug/L	21	Standard
	Ce	140	421.7	17.2				ug/L	245	Standard
>	Tb	159	912620.2	2.1				ug/L	950397	Standard
	Ho	165	31.7	24.1				ug/L	7	Standard
	Tl	203	8399.3	2.5	**1.0755**	0.030	2.8	ug/L	15	Standard
	Tl	205	7106.7	3.1	**1.0155**	0.022	2.2	ug/L	13	Standard
	Pb	206	2580.9	3.9	**0.4804**	0.009	1.9	ug/L	264	Standard
	Pb	207	2297.2	1.5	**0.4679**	0.011	2.3	ug/L	222	Standard
	Pb	208	9454.2	3.4	**0.4694**	0.008	1.7	ug/L	959	Standard
	U	238	1115.7	2.4	**0.1590**	0.005	3.3	ug/L	9	Standard
>	Bi	209	480711.3	2.7				ug/L	552821	Standard

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Na	23	8.3	34.6	**27.1734**	9.738	35.8	mg/L	2	Standard
Mg	24	507921.7	2.6	**645.4329**	9.385	1.5	mg/L	55	Standard
K	39	415.0	4.8	**1.6014**	0.114	7.1	mg/L	28	Standard
Ca	43	481.7	12.6	**45.2243**	6.627	14.7	mg/L	27	Standard
Fe	54	127.9	17.8	**0.0101**	0.018	174.2	mg/L	147	Standard
Fe	57	770.0	11.3	**1.7671**	0.242	13.7	mg/L	268	Standard
Sc-1	45	37845.6	1.8				mg/L	41174	Standard
Cl	35	383189.3	2.3				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	30317.0	3.7				ug/L	1950	Standard
P	31	15528.0	3.6				ug/L	21156	Standard
S	34	3745.5	2.5				ug/L	3419	Standard
Sr	88	250.0	23.1				ug/L	72	Standard
C	12	176.7	14.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26862.7	37.9				mg/L	17	Standard
Dy	164	21.9	26.7				mg/L	16	Standard
Ho-1	165	31.7	24.1				mg/L	7	Standard
Er	166	30.0	66.7				mg/L	7	Standard
I	127	123380.9	8.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		138.161	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.678	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.335
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		86.956
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

Sample ID: L1606153601 WG574593-01
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Method 6020 - Summary Report

Sample ID: L1606153601DP WG574593-04
Sample Date/Time: Friday, July 01, 2016 13:48:17
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	113476.7	0.3				ug/L	76456	Standard
	Be	9	31.7	39.7	**-0.0008**	0.008	933.9	ug/L	20	Standard
	Al	27	9155815.3	1.0	**36.0246**	0.289	0.8	ug/L	1307	Standard
	Sc	45	38106.2	3.0				ug/L	41174	Standard
	Ti	47	317.7	11.6	**0.9598**	0.126	13.2	ug/L	27	Standard
	V	51	23799.7	13.5	**2.9030**	0.438	15.1	ug/L	1434	Standard
	Cr	52	15774.9	0.6	**1.1182**	0.010	0.9	ug/L	7733	Standard
	Cr	53	7253.4	7.9	**7.2700**	0.659	9.1	ug/L	442	Standard
	Mn	55	54277.4	0.5	**7.5755**	0.086	1.1	ug/L	723	Standard
	Co	59	56802.6	1.1	**7.9092**	0.067	0.8	ug/L	217	Standard
	Ni	60	10522.3	1.7	**5.2767**	0.120	2.3	ug/L	304	Standard
	Cu	65	10358.5	2.3	**5.3602**	0.097	1.8	ug/L	181	Standard
	Zn	66	63839.2	1.1	**55.6043**	0.258	0.5	ug/L	215	Standard
>	Ge	72	486471.3	0.9				ug/L	520809	Standard
	As	75	3361.1	6.7	**2.9591**	0.174	5.9	ug/L	-52	Standard
	Se	82	440.0	19.1	**3.5994**	0.683	19.0	ug/L	17	Standard
	Se-1	77	548.0	6.3	**6.1810**	0.486	7.9	ug/L	56	Standard
>	Ga	71	1580.1	9.0				mg/L	25	Standard
	Rb	85	128497.6	0.7				ug/L	28	Standard
	Y	89	437852.1	1.2				ug/L	447395	Standard
>	Rh	103	195.0	13.3				ug/L	15	Standard
	Mo	98	610817.8	0.2	**219.3028**	1.490	0.7	ug/L	113	Standard
	Ag	107	270.0	5.4	**0.0280**	0.002	7.9	ug/L	108	Standard
	Cd	111	-435.5	5.5	**-0.2078**	0.012	5.8	mg/L	3	Standard
	Cd	114	1008.9	7.4	**0.1923**	0.015	7.6	ug/L	20	Standard
>	In	115	576209.6	0.5				ug/L	625728	Standard
	Sn	118	2962.0	1.1	**0.4156**	0.007	1.7	ug/L	568	Standard
	Sb	123	5993.6	0.1	**1.2257**	0.006	0.5	ug/L	612	Standard
	Ba	135	37997.3	1.1	**18.9491**	0.250	1.3	ug/L	21	Standard
	Ce	140	438.3	13.3				ug/L	245	Standard
>	Tb	159	912922.8	0.6				ug/L	950397	Standard
	Ho	165	23.3	44.6				ug/L	7	Standard
	Tl	203	7035.6	2.0	**0.8846**	0.019	2.1	ug/L	15	Standard
	Tl	205	6231.3	4.9	**0.8732**	0.041	4.7	ug/L	13	Standard
	Pb	206	2197.2	4.0	**0.3947**	0.019	4.9	ug/L	264	Standard
	Pb	207	1945.1	0.8	**0.3813**	0.005	1.2	ug/L	222	Standard
	Pb	208	7974.8	0.5	**0.3808**	0.004	1.1	ug/L	959	Standard
	U	238	1110.0	6.5	**0.1553**	0.010	6.5	ug/L	9	Standard
>	Bi	209	489368.4	0.9				ug/L	552821	Standard

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Na	23	1.7	173.2	**5.3506**	9.259	173.0	mg/L	2	Standard
Mg	24	497934.2	1.5	**628.6633**	12.777	2.0	mg/L	55	Standard
K	39	386.7	13.3	**1.4712**	0.210	14.3	mg/L	28	Standard
Ca	43	468.3	8.9	**43.5651**	4.343	10.0	mg/L	27	Standard
Fe	54	108.4	32.3	**-0.0071**	0.029	411.5	mg/L	147	Standard
Fe	57	688.3	12.0	**1.4795**	0.238	16.1	mg/L	268	Standard
> **Sc-1**	45	38106.2	3.0				mg/L	41174	Standard
Cl	35	369584.8	0.9				ug/L	69550	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	29598.9	3.8				ug/L	1950	Standard
P	31	15125.9	2.3				ug/L	21156	Standard
S	34	3780.5	5.9				ug/L	3419	Standard
Sr	88	230.0	13.6				ug/L	72	Standard
C	12	213.3	38.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30656.1	29.8				mg/L	17	Standard
Dy	164	16.0	70.4				mg/L	16	Standard
Ho-1	165	23.3	44.6				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	76869.6	2.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		148.421	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.407	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		92.086
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		88.522
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

Sample ID: L1606153601DP WG574593-04
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Method 6020 - Summary Report

Sample ID: L1606153601S WG574593-05
Sample Date/Time: Friday, July 01, 2016 13:51:28
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	114783.5	3.4				ug/L	76456	Standard
	Be	9	31472.7	2.0	**18.7219**	0.754	4.0	ug/L	20	Standard
	Al	27	8967809.3	2.2	**34.8925**	0.413	1.2	ug/L	1307	Standard
	Sc	45	36838.1	2.1				ug/L	41174	Standard
	Ti	47	293.0	5.4	**0.9041**	0.043	4.8	ug/L	27	Standard
	V	51	144707.0	17.5	**19.1390**	3.192	16.7	ug/L	1434	Standard
	Cr	52	181657.1	2.0	**23.7324**	0.270	1.1	ug/L	7733	Standard
	Cr	53	26979.0	1.6	**28.9363**	0.245	0.8	ug/L	442	Standard
	Mn	55	196630.4	2.3	**28.4601**	0.390	1.4	ug/L	723	Standard
	Co	59	229358.7	1.0	**32.8948**	0.071	0.2	ug/L	217	Standard
	Ni	60	50822.4	1.0	**26.7818**	0.048	0.2	ug/L	304	Standard
	Cu	65	50564.2	0.8	**27.1746**	0.164	0.6	ug/L	181	Standard
	Zn	66	34538.3	0.8	**30.8215**	0.391	1.3	ug/L	215	Standard
>	Ge	72	473620.3	1.0				ug/L	520809	Standard
	As	75	32972.2	0.9	**29.4152**	0.246	0.8	ug/L	-52	Standard
	Se	82	3843.3	1.0	**33.3303**	0.606	1.8	ug/L	17	Standard
	Se-1	77	2661.6	3.4	**33.5483**	0.893	2.7	ug/L	56	Standard
>	Ga	71	381.7	15.1				mg/L	25	Standard
	Rb	85	125348.3	2.7				ug/L	28	Standard
	Y	89	429677.9	2.4				ug/L	447395	Standard
>	Rh	103	226.7	13.3				ug/L	15	Standard
	Mo	98	605966.7	1.3	**219.9601**	1.216	0.6	ug/L	113	Standard
	Ag	107	143805.9	1.0	**21.9725**	0.186	0.8	ug/L	108	Standard
	Cd	111	47375.9	2.4	**22.5887**	0.138	0.6	mg/L	3	Standard
	Cd	114	117916.6	2.4	**22.7105**	0.229	1.0	ug/L	20	Standard
>	In	115	569946.5	1.8				ug/L	625728	Standard
	Sn	118	2151.8	16.9	**0.2836**	0.068	23.8	ug/L	568	Standard
	Sb	123	117947.9	1.3	**25.0246**	0.247	1.0	ug/L	612	Standard
	Ba	135	80315.6	0.5	**40.5194**	0.565	1.4	ug/L	21	Standard
	Ce	140	525.0	16.6				ug/L	245	Standard
>	Tb	159	909446.5	2.1				ug/L	950397	Standard
	Ho	165	18.3	56.8				ug/L	7	Standard
	Tl	203	188663.7	0.8	**24.0492**	0.050	0.2	ug/L	15	Standard
	Tl	205	172066.6	1.3	**24.6917**	0.238	1.0	ug/L	13	Standard
	Pb	206	123402.9	1.1	**24.9025**	0.136	0.5	ug/L	264	Standard
	Pb	207	107579.3	1.1	**23.9013**	0.073	0.3	ug/L	222	Standard
	Pb	208	446533.6	1.0	**24.2893**	0.091	0.4	ug/L	959	Standard
	U	238	179675.3	1.7	**25.5069**	0.325	1.3	ug/L	9	Standard
>	Bi	209	483038.3	0.9				ug/L	552821	Standard

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Na	23	13.3	21.7	**44.4001**	9.083	20.5	mg/L	2	Standard
Mg	24	482486.9	1.9	**629.9240**	1.410	0.2	mg/L	55	Standard
K	39	456.7	2.3	**1.8260**	0.024	1.3	mg/L	28	Standard
Ca	43	443.3	6.2	**42.6201**	3.595	8.4	mg/L	27	Standard
Fe	54	107.2	30.6	**-0.0052**	0.027	515.1	mg/L	147	Standard
Fe	57	646.7	6.6	**1.4187**	0.179	12.6	mg/L	268	Standard
> **Sc-1**	45	36838.1	2.1				mg/L	41174	Standard
Cl	35	363789.4	1.4				ug/L	69550	Standard
Kr	83	0.3	173.2				ug/L	1	Standard
Br	81	29438.6	3.1				ug/L	1950	Standard
P	31	15032.5	1.4				ug/L	21156	Standard
S	34	3710.5	3.9				ug/L	3419	Standard
Sr	88	215.0	4.7				ug/L	72	Standard
C	12	186.7	18.8				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	44900.2	29.0				mg/L	17	Standard
Dy	164	12.5	117.7				mg/L	16	Standard
Ho-1	165	18.3	56.8				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	7	Standard
I	127	80914.0	3.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		150.131	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.939	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606153601S WG574593-05
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.085
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.377
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	

Sample ID: L1606153601S WG574593-05
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Method 6020 - Summary Report

Sample ID: L1606153601SD WG574593-06
Sample Date/Time: Friday, July 01, 2016 13:54:40
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	112397.1	1.9				ug/L	76456	Standard
	Be	9	31070.2	1.4	**18.8667**	0.550	2.9	ug/L	20	Standard
	Al	27	8839135.1	2.6	**35.1153**	0.794	2.3	ug/L	1307	Standard
	Sc	45	36505.6	0.6				ug/L	41174	Standard
	Ti	47	313.3	8.2	**0.9879**	0.083	8.4	ug/L	27	Standard
	V	51	166809.7	7.9	**22.4386**	1.861	8.3	ug/L	1434	Standard
	Cr	52	176635.7	0.7	**23.3939**	0.040	0.2	ug/L	7733	Standard
	Cr	53	26448.1	1.1	**28.7705**	0.310	1.1	ug/L	442	Standard
	Mn	55	190612.1	1.7	**27.9819**	0.319	1.1	ug/L	723	Standard
	Co	59	229904.6	2.0	**33.4420**	0.439	1.3	ug/L	217	Standard
	Ni	60	50248.2	1.0	**26.8570**	0.085	0.3	ug/L	304	Standard
	Cu	65	50373.6	1.7	**27.4578**	0.363	1.3	ug/L	181	Standard
	Zn	66	32810.8	2.5	**29.6880**	0.646	2.2	ug/L	215	Standard
>	Ge	72	466958.0	0.7				ug/L	520809	Standard
	As	75	31818.9	1.7	**28.7902**	0.285	1.0	ug/L	-52	Standard
	Se	82	3739.0	3.2	**32.8806**	0.943	2.9	ug/L	17	Standard
	Se-1	77	2572.6	1.3	**32.8825**	0.665	2.0	ug/L	56	Standard
>	Ga	71	335.0	0.0				mg/L	25	Standard
	Rb	85	123842.4	1.0				ug/L	28	Standard
	Y	89	424204.0	1.6				ug/L	447395	Standard
>	Rh	103	250.0	19.1				ug/L	15	Standard
	Mo	98	596887.3	1.2	**220.8114**	1.891	0.9	ug/L	113	Standard
	Ag	107	140477.5	2.4	**21.8716**	0.278	1.3	ug/L	108	Standard
	Cd	111	46478.5	0.9	**22.5882**	0.134	0.6	mg/L	3	Standard
	Cd	114	114740.4	2.4	**22.5229**	0.416	1.8	ug/L	20	Standard
>	In	115	559219.9	1.1				ug/L	625728	Standard
	Sn	118	2036.8	20.6	**0.2701**	0.075	27.8	ug/L	568	Standard
	Sb	123	115612.8	1.8	**24.9963**	0.192	0.8	ug/L	612	Standard
	Ba	135	78486.8	0.7	**40.3510**	0.202	0.5	ug/L	21	Standard
	Ce	140	446.7	6.2				ug/L	245	Standard
>	Tb	159	894070.3	0.6				ug/L	950397	Standard
	Ho	165	23.3	24.7				ug/L	7	Standard
	Tl	203	185499.3	0.6	**23.8373**	0.171	0.7	ug/L	15	Standard
	Tl	205	169836.9	2.3	**24.5659**	0.283	1.2	ug/L	13	Standard
	Pb	206	121903.1	0.8	**24.7990**	0.171	0.7	ug/L	264	Standard
	Pb	207	105852.8	0.4	**23.7090**	0.262	1.1	ug/L	222	Standard
	Pb	208	438929.8	1.6	**24.0671**	0.200	0.8	ug/L	959	Standard
	U	238	177358.8	1.6	**25.3810**	0.202	0.8	ug/L	9	Standard
>	Bi	209	479179.3	1.2				ug/L	552821	Standard

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Na	23	6.7	86.6	**22.4621**	19.450	86.6	mg/L	2	Standard
Mg	24	471196.6	0.7	**620.7791**	4.974	0.8	mg/L	55	Standard
K	39	408.3	16.7	**1.6356**	0.302	18.5	mg/L	28	Standard
Ca	43	436.7	18.5	**42.2777**	8.047	19.0	mg/L	27	Standard
Fe	54	118.9	19.0	**0.0063**	0.019	307.7	mg/L	147	Standard
Fe	57	681.7	4.2	**1.5588**	0.115	7.4	mg/L	268	Standard
> **Sc-1**	45	36505.6	0.6				mg/L	41174	Standard
Cl	35	356982.4	1.5				ug/L	69550	Standard
Kr	83	1.3	86.6				ug/L	1	Standard
Br	81	28717.2	3.6				ug/L	1950	Standard
P	31	15301.1	0.8				ug/L	21156	Standard
S	34	3565.4	1.6				ug/L	3419	Standard
Sr	88	228.3	25.6				ug/L	72	Standard
C	12	156.7	38.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50532.6	17.8				mg/L	17	Standard
Dy	164	15.4	96.7				mg/L	16	Standard
Ho-1	165	23.3	24.7				mg/L	7	Standard
Er	166	26.7	78.1				mg/L	7	Standard
I	127	86335.9	6.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		147.009	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		89.660	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	89.371	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	86.679	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	

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Method 6020 - Summary Report

Sample ID: L1606106804
Sample Date/Time: Friday, July 01, 2016 13:57:51
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92136.1	2.7				ug/L	76456	Standard
	Be	9	31.7	32.9	**0.0036**	0.008	216.5	ug/L	20	Standard
	Al	27	859023.9	1.9	**4.1545**	0.040	1.0	ug/L	1307	Standard
	Sc	45	36834.7	2.5				ug/L	41174	Standard
	Ti	47	40.0	19.5	**0.0448**	0.025	54.9	ug/L	27	Standard
	V	51	5203.8	19.0	**0.4694**	0.132	28.1	ug/L	1434	Standard
	Cr	52	6735.2	1.8	**-0.0924**	0.015	16.5	ug/L	7733	Standard
	Cr	53	918.4	10.2	**0.5415**	0.104	19.3	ug/L	442	Standard
	Mn	55	2241.8	1.6	**0.2108**	0.003	1.6	ug/L	723	Standard
	Co	59	300.7	9.6	**0.0119**	0.004	33.8	ug/L	217	Standard
	Ni	60	672.3	1.0	**0.1885**	0.006	3.2	ug/L	304	Standard
	Cu	65	1685.8	29.1	**0.7955**	0.246	31.0	ug/L	181	Standard
	Zn	66	3230.4	18.8	**2.5967**	0.499	19.2	ug/L	215	Standard
>	**Ge**	72	494044.1	0.8				ug/L	520809	Standard
	As	75	465.2	37.5	**0.4417**	0.146	33.1	ug/L	-52	Standard
	Se	82	234.7	30.5	**1.8293**	0.582	31.8	ug/L	17	Standard
	Se-1	77	90.3	10.8	**0.4300**	0.128	29.8	ug/L	56	Standard
>	**Ga**	71	38.3	39.8				mg/L	25	Standard
	Rb	85	223.3	18.1				ug/L	28	Standard
	Y	89	421894.0	1.5				ug/L	447395	Standard
>	**Rh**	103	131.7	22.3				ug/L	15	Standard
	Mo	98	5006.3	9.4	**1.7140**	0.193	11.2	ug/L	113	Standard
	Ag	107	126.3	16.6	**0.0056**	0.003	50.1	ug/L	108	Standard
	Cd	111	16.1	25.5	**0.0049**	0.002	35.5	mg/L	3	Standard
	Cd	114	61.4	11.1	**0.0113**	0.001	10.9	ug/L	20	Standard
>	**In**	115	596688.0	1.6				ug/L	625728	Standard
	Sn	118	568.3	15.2	**0.0085**	0.015	181.1	ug/L	568	Standard
	Sb	123	246.2	18.9	**0.0163**	0.010	61.8	ug/L	612	Standard
	Ba	135	7350.5	3.5	**3.5247**	0.082	2.3	ug/L	21	Standard
	Ce	140	23.3	32.7				ug/L	245	Standard
>	**Tb**	159	916453.6	1.2				ug/L	950397	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	304.7	24.9	**0.0334**	0.008	23.6	ug/L	15	Standard
	Tl	205	111.7	6.8	**0.0044**	0.001	16.4	ug/L	13	Standard
	Pb	206	327.7	8.6	**0.0145**	0.004	27.3	ug/L	264	Standard
	Pb	207	301.0	9.8	**0.0128**	0.005	36.7	ug/L	222	Standard
	Pb	208	1200.4	8.2	**0.0093**	0.004	42.0	ug/L	959	Standard
	U	238	75.7	24.1	**0.0092**	0.002	23.9	ug/L	9	Standard
>	**Bi**	209	548664.2	1.8				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	2398.5	7.1	**3.0753**	0.279	9.1	mg/L	55	Standard
K	39	18.3	56.8	**-0.0529**	0.044	83.5	mg/L	28	Standard
Ca	43	20.0	43.3	**-0.4071**	0.939	230.7	mg/L	27	Standard
Fe	54	72.6	4.6	**-0.0352**	0.002	4.7	mg/L	147	Standard
Fe	57	226.7	6.4	**-0.0245**	0.066	267.2	mg/L	268	Standard
> **Sc-1**	45	36834.7	2.5				mg/L	41174	Standard
Cl	35	83689.9	2.1				ug/L	69550	Standard
Kr	83	3.3	17.3				ug/L	1	Standard
Br	81	5874.5	1.4				ug/L	1950	Standard
P	31	8095.5	4.0				ug/L	21156	Standard
S	34	3318.7	0.5				ug/L	3419	Standard
Sr	88	98.3	10.6				ug/L	72	Standard
C	12	110.0	9.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	12785.7	29.7				mg/L	17	Standard
Dy	164	19.7	89.4				mg/L	16	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	43990.5	2.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		120.509	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.861	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.359
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.248
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606106805
Sample Date/Time: Friday, July 01, 2016 14:01:03
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	88670.5	2.3				ug/L	76456	Standard
	Be	9	28.3	53.9	**0.0021**	0.012	582.5	ug/L	20	Standard
	Al	27	846462.5	1.2	**4.2550**	0.126	3.0	ug/L	1307	Standard
	Sc	45	36754.5	1.7				ug/L	41174	Standard
	Ti	47	37.0	14.0	**0.0369**	0.018	47.7	ug/L	27	Standard
	V	51	2755.7	12.5	**0.1599**	0.048	29.8	ug/L	1434	Standard
	Cr	52	6950.6	2.2	**-0.0520**	0.020	37.7	ug/L	7733	Standard
	Cr	53	901.7	5.0	**0.5360**	0.035	6.6	ug/L	442	Standard
	Mn	55	2061.5	1.0	**0.1896**	0.005	2.5	ug/L	723	Standard
	Co	59	262.3	1.3	**0.0071**	0.000	6.4	ug/L	217	Standard
	Ni	60	603.3	3.0	**0.1577**	0.014	9.0	ug/L	304	Standard
	Cu	65	649.0	15.6	**0.2657**	0.052	19.6	ug/L	181	Standard
	Zn	66	1686.8	6.3	**1.2909**	0.094	7.3	ug/L	215	Standard
>	Ge	72	487470.5	1.6				ug/L	520809	Standard
	As	75	91.9	24.0	**0.1249**	0.020	16.4	ug/L	-52	Standard
	Se	82	68.6	9.5	**0.4538**	0.061	13.4	ug/L	17	Standard
	Se-1	77	88.7	15.6	**0.4255**	0.192	45.1	ug/L	56	Standard
>	Ga	71	20.0	25.0				mg/L	25	Standard
	Rb	85	151.7	6.9				ug/L	28	Standard
	Y	89	408691.1	1.5				ug/L	447395	Standard
>	Rh	103	55.0	47.2				ug/L	15	Standard
	Mo	98	2038.3	34.8	**0.7007**	0.261	37.3	ug/L	113	Standard
	Ag	107	89.7	17.4	**0.0005**	0.003	460.6	ug/L	108	Standard
	Cd	111	8.9	44.4	**0.0018**	0.002	101.9	mg/L	3	Standard
	Cd	114	22.8	93.4	**0.0043**	0.004	93.2	ug/L	20	Standard
>	In	115	583988.4	1.5				ug/L	625728	Standard
	Sn	118	641.7	21.4	**0.0228**	0.025	107.3	ug/L	568	Standard
	Sb	123	149.4	23.6	**-0.0027**	0.008	291.8	ug/L	612	Standard
	Ba	135	7693.6	5.0	**3.7701**	0.138	3.7	ug/L	21	Standard
	Ce	140	23.3	32.7				ug/L	245	Standard
>	Tb	159	893255.5	0.4				ug/L	950397	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	160.7	5.8	**0.0177**	0.001	6.5	ug/L	15	Standard
	Tl	205	106.7	47.9	**0.0040**	0.007	165.6	ug/L	13	Standard
	Pb	206	280.3	10.7	**0.0072**	0.005	74.5	ug/L	264	Standard
	Pb	207	240.3	4.9	**0.0020**	0.003	130.9	ug/L	222	Standard
	Pb	208	1064.0	7.7	**0.0038**	0.004	108.8	ug/L	959	Standard
	U	238	55.7	89.2	**0.0069**	0.006	93.0	ug/L	9	Standard
>	Bi	209	537449.2	0.6				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	2241.8	5.9	**2.8723**	0.129	4.5	mg/L	55	Standard
K	39	31.7	48.2	**0.0047**	0.065	1378.1	mg/L	28	Standard
Ca	43	28.3	53.9	**0.4489**	1.610	358.7	mg/L	27	Standard
Fe	54	77.8	24.1	**-0.0306**	0.015	50.4	mg/L	147	Standard
Fe	57	243.3	20.8	**0.0319**	0.163	509.9	mg/L	268	Standard
> **Sc-1**	45	36754.5	1.7				mg/L	41174	Standard
Cl	35	86917.3	0.6				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	5100.9	3.4				ug/L	1950	Standard
P	31	8162.2	1.3				ug/L	21156	Standard
S	34	3385.4	1.8				ug/L	3419	Standard
Sr	88	96.7	14.9				ug/L	72	Standard
C	12	130.0	13.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	4313.9	5.0				mg/L	17	Standard
Dy	164	12.7	43.5				mg/L	16	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	41831.0	1.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.976	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.599	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.329
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.219
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606106811
Sample Date/Time: Friday, July 01, 2016 14:04:14
Number of Replicates: 3
Autosampler Position: 346
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	87384.7	2.1				ug/L	76456	Standard
	Be	9	386.7	6.4	**0.2826**	0.024	8.6	ug/L	20	Standard
	Al	27	801461.1	1.1	**4.0865**	0.037	0.9	ug/L	1307	Standard
	Sc	45	38134.6	2.7				ug/L	41174	Standard
	Ti	47	4667.1	1.1	**15.1502**	0.207	1.4	ug/L	27	Standard
	V	51	48516.8	1.5	**6.0786**	0.102	1.7	ug/L	1434	Standard
	Cr	52	40220.3	0.9	**4.3195**	0.059	1.4	ug/L	7733	Standard
	Cr	53	4720.7	0.9	**4.5507**	0.057	1.3	ug/L	442	Standard
	Mn	55	311842.6	1.0	**43.7090**	0.370	0.8	ug/L	723	Standard
	Co	59	8423.7	2.0	**1.1400**	0.022	1.9	ug/L	217	Standard
	Ni	60	8146.2	0.4	**4.0222**	0.012	0.3	ug/L	304	Standard
	Cu	65	10805.5	1.3	**5.5573**	0.061	1.1	ug/L	181	Standard
	Zn	66	50531.5	0.7	**43.6829**	0.260	0.6	ug/L	215	Standard
>	Ge	72	489720.8	0.2				ug/L	520809	Standard
	As	75	655.4	1.6	**0.6098**	0.008	1.3	ug/L	-52	Standard
	Se	82	60.2	5.5	**0.3806**	0.029	7.6	ug/L	17	Standard
	Se-1	77	67.3	4.5	**0.1530**	0.036	23.8	ug/L	56	Standard
>	Ga	71	4829.1	0.8				mg/L	25	Standard
	Rb	85	40306.9	0.9				ug/L	28	Standard
	Y	89	441421.4	0.7				ug/L	447395	Standard
>	Rh	103	40.0	54.5				ug/L	15	Standard
	Mo	98	794.4	11.9	**0.2560**	0.030	11.9	ug/L	113	Standard
	Ag	107	205.0	13.7	**0.0176**	0.004	24.9	ug/L	108	Standard
	Cd	111	469.4	3.6	**0.2151**	0.008	3.7	mg/L	3	Standard
	Cd	114	1178.5	4.6	**0.2206**	0.012	5.5	ug/L	20	Standard
>	In	115	586618.1	1.1				ug/L	625728	Standard
	Sn	118	1050.0	35.8	**0.0894**	0.061	68.0	ug/L	568	Standard
	Sb	123	166.1	12.7	**0.0005**	0.004	734.3	ug/L	612	Standard
	Ba	135	56741.7	0.9	**27.8031**	0.108	0.4	ug/L	21	Standard
	Ce	140	116496.1	0.3				ug/L	245	Standard
>	Tb	159	902035.2	0.5				ug/L	950397	Standard
	Ho	165	2190.2	5.6				ug/L	7	Standard
	Tl	203	356.0	5.6	**0.0396**	0.002	5.7	ug/L	15	Standard
	Tl	205	270.0	10.3	**0.0247**	0.004	14.6	ug/L	13	Standard
	Pb	206	16366.5	1.5	**2.8988**	0.049	1.7	ug/L	264	Standard
	Pb	207	13229.8	1.5	**2.5731**	0.042	1.6	ug/L	222	Standard
	Pb	208	57216.2	0.2	**2.7252**	0.006	0.2	ug/L	959	Standard
	U	238	2067.8	1.8	**0.2608**	0.005	1.9	ug/L	9	Standard
>	Bi	209	543128.9	0.1				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	836.7	5.2	**0.9955**	0.059	5.9	mg/L	55	Standard
K	39	96.7	23.3	**0.2695**	0.095	35.1	mg/L	28	Standard
Ca	43	25.0	52.9	**-0.0121**	1.244	10273.4	mg/L	27	Standard
Fe	54	3385.4	5.7	**2.7677**	0.147	5.3	mg/L	147	Standard
Fe	57	1086.7	6.1	**2.8007**	0.187	6.7	mg/L	268	Standard
Sc-1	45	38134.6	2.7				mg/L	41174	Standard
Cl	35	72343.0	2.0				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	2266.8	11.8				ug/L	1950	Standard
P	31	15112.5	3.0				ug/L	21156	Standard
S	34	3132.0	3.9				ug/L	3419	Standard
Sr	88	90.0	11.1				ug/L	72	Standard
C	12	160.0	39.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1193.4	7.9				mg/L	17	Standard
Dy	164	3446.2	2.4				mg/L	16	Standard
Ho-1	165	2190.2	5.6				mg/L	7	Standard
Er	166	2036.8	6.1				mg/L	7	Standard
I	127	34445.8	1.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		114.294	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		94.031	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.750
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.247
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606106813 ~~WG574840-01~~ WG573840-01
Sample Date/Time: Friday, July 01, 2016 14:07:25
Number of Replicates: 3
Autosampler Position: 347
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85735.2	1.3				ug/L	76456	Standard
	Be	9	26.7	28.6	**0.0014**	0.006	443.3	ug/L	20	Standard
	Al	27	449795.7	0.8	**2.3331**	0.023	1.0	ug/L	1307	Standard
	Sc	45	35930.9	1.1				ug/L	41174	Standard
	Ti	47	472.3	1.7	**1.4707**	0.057	3.8	ug/L	27	Standard
	V	51	4534.5	3.6	**0.3927**	0.010	2.6	ug/L	1434	Standard
	Cr	52	9314.9	0.9	**0.2650**	0.027	10.0	ug/L	7733	Standard
	Cr	53	2433.5	4.4	**2.1645**	0.092	4.2	ug/L	442	Standard
	Mn	55	102294.5	0.4	**14.3920**	0.341	2.4	ug/L	723	Standard
	Co	59	3018.3	3.5	**0.3929**	0.007	1.8	ug/L	217	Standard
	Ni	60	5415.6	1.7	**2.6457**	0.041	1.6	ug/L	304	Standard
	Cu	65	743.0	9.7	**0.3169**	0.044	14.0	ug/L	181	Standard
	Zn	66	3480.1	1.7	**2.8660**	0.076	2.6	ug/L	215	Standard
>	**Ge**	72	485745.7	2.0				ug/L	520809	Standard
	As	75	242.8	9.7	**0.2563**	0.025	9.6	ug/L	-52	Standard
	Se	82	97.2	2.1	**0.6986**	0.030	4.2	ug/L	17	Standard
	Se-1	77	117.0	14.6	**0.7818**	0.201	25.7	ug/L	56	Standard
>	**Ga**	71	268.3	10.3				mg/L	25	Standard
	Rb	85	4108.9	5.5				ug/L	28	Standard
	Y	89	416309.3	1.5				ug/L	447395	Standard
>	**Rh**	103	45.0	50.9				ug/L	15	Standard
	Mo	98	680.6	19.4	**0.2163**	0.043	19.7	ug/L	113	Standard
	Ag	107	83.7	9.0	**-0.0004**	0.001	316.0	ug/L	108	Standard
	Cd	111	203.5	6.4	**0.0922**	0.005	5.5	mg/L	3	Standard
	Cd	114	545.9	14.8	**0.1025**	0.015	14.8	ug/L	20	Standard
>	**In**	115	585054.4	1.7				ug/L	625728	Standard
	Sn	118	836.7	33.0	**0.0543**	0.043	80.0	ug/L	568	Standard
	Sb	123	125.9	11.8	**-0.0077**	0.003	35.5	ug/L	612	Standard
	Ba	135	12781.1	0.9	**6.2667**	0.128	2.0	ug/L	21	Standard
	Ce	140	5152.5	0.8				ug/L	245	Standard
>	**Tb**	159	900548.7	1.5				ug/L	950397	Standard
	Ho	165	100.0	10.0				ug/L	7	Standard
	Tl	203	107.7	11.0	**0.0117**	0.001	10.8	ug/L	15	Standard
	Tl	205	76.7	10.0	**0.0002**	0.001	348.4	ug/L	13	Standard
	Pb	206	778.4	4.5	**0.0993**	0.008	7.9	ug/L	264	Standard
	Pb	207	661.0	3.8	**0.0876**	0.005	5.2	ug/L	222	Standard
	Pb	208	2799.8	2.1	**0.0904**	0.002	2.4	ug/L	959	Standard
	U	238	156.0	3.6	**0.0199**	0.000	2.4	ug/L	9	Standard
>	**Bi**	209	531551.0	1.5				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	8015.5	3.4	**10.6709**	0.401	3.8	mg/L	55	Standard
K	39	28.3	50.9	**-0.0070**	0.062	882.4	mg/L	28	Standard
Ca	43	31.7	36.5	**0.8382**	1.170	139.6	mg/L	27	Standard
Fe	54	628.6	3.1	**0.4660**	0.014	3.0	mg/L	147	Standard
Fe	57	371.7	8.1	**0.5046**	0.104	20.5	mg/L	268	Standard
> **Sc-1**	45	35930.9	1.1				mg/L	41174	Standard
Cl	35	72947.2	1.3				ug/L	69550	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	16705.9	1.9				ug/L	1950	Standard
P	31	9869.9	4.0				ug/L	21156	Standard
S	34	3002.0	2.0				ug/L	3419	Standard
Sr	88	73.3	38.8				ug/L	72	Standard
C	12	123.3	24.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	670.0	12.2				mg/L	17	Standard
Dy	164	162.7	37.8				mg/L	16	Standard
Ho-1	165	100.0	10.0				mg/L	7	Standard
Er	166	83.3	25.0				mg/L	7	Standard
I	127	64636.1	5.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.137	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.267	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.500
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.152
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
WG573840-01			

Sample ID: L1606106813 ~~WG574840-01~~
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 14:10:39
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	88849.8	2.1				ug/L	76456	Standard
	Be	9	66753.5	2.5	**51.2959**	0.926	1.8	ug/L	20	Standard
	Al	27	8854426.6	1.6	**44.5025**	0.510	1.1	ug/L	1307	Standard
	Sc	45	39063.7	3.7				ug/L	41174	Standard
	Ti	47	30764.2	0.5	**94.6692**	0.333	0.4	ug/L	27	Standard
	V	51	413476.1	0.1	**50.2774**	0.192	0.4	ug/L	1434	Standard
	Cr	52	400969.6	0.9	**48.7893**	0.334	0.7	ug/L	7733	Standard
	Cr	53	49330.2	1.0	**48.5611**	0.384	0.8	ug/L	442	Standard
	Mn	55	368164.8	0.7	**48.7020**	0.201	0.4	ug/L	723	Standard
	Co	59	403506.1	0.3	**52.8271**	0.036	0.1	ug/L	217	Standard
	Ni	60	101394.2	1.2	**48.8833**	0.523	1.1	ug/L	304	Standard
	Cu	65	100114.0	0.9	**49.1563**	0.410	0.8	ug/L	181	Standard
	Zn	66	60654.2	0.4	**49.4979**	0.106	0.2	ug/L	215	Standard
>	Ge	72	519017.5	0.3				ug/L	520809	Standard
	As	75	61466.0	0.5	**50.0055**	0.153	0.3	ug/L	-52	Standard
	Se	82	6464.5	2.4	**51.2180**	1.098	2.1	ug/L	17	Standard
	Se-1	77	4373.3	1.3	**50.6496**	0.533	1.1	ug/L	56	Standard
>	Ga	71	66.7	18.9				mg/L	25	Standard
	Rb	85	861.7	5.9				ug/L	28	Standard
	Y	89	449328.6	2.0				ug/L	447395	Standard
>	Rh	103	36.7	31.5				ug/L	15	Standard
	Mo	98	305460.5	0.7	**100.5610**	1.227	1.2	ug/L	113	Standard
	Ag	107	357889.2	0.5	**49.6167**	0.755	1.5	ug/L	108	Standard
	Cd	111	115251.7	0.3	**49.8541**	0.558	1.1	mg/L	3	Standard
	Cd	114	285891.9	1.9	**49.9459**	0.709	1.4	ug/L	20	Standard
>	In	115	628352.9	1.0				ug/L	625728	Standard
	Sn	118	322603.7	1.4	**49.8300**	0.182	0.4	ug/L	568	Standard
	Sb	123	256839.4	0.5	**49.4582**	0.316	0.6	ug/L	612	Standard
	Ba	135	105057.6	0.5	**48.0726**	0.299	0.6	ug/L	21	Standard
	Ce	140	361.7	34.4				ug/L	245	Standard
>	Tb	159	960077.3	1.9				ug/L	950397	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	452676.3	0.7	**49.9830**	0.213	0.4	ug/L	15	Standard
	Tl	205	410938.2	0.4	**51.0915**	0.351	0.7	ug/L	13	Standard
	Pb	206	286259.6	0.4	**50.0826**	0.130	0.3	ug/L	264	Standard
	Pb	207	259240.1	0.9	**49.9407**	0.356	0.7	ug/L	222	Standard
	Pb	208	1080903.3	0.1	**50.9831**	0.221	0.4	ug/L	959	Standard
	U	238	414937.8	0.7	**51.0249**	0.218	0.4	ug/L	9	Standard
>	Bi	209	557647.7	0.3				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4484.0	1.2	**5.4671**	0.257	4.7	mg/L	55	Standard
K	39	1023.4	3.3	**4.0066**	0.130	3.2	mg/L	28	Standard
Ca	43	43.3	53.3	**1.7517**	2.400	137.0	mg/L	27	Standard
Fe	54	6523.2	1.6	**5.2995**	0.275	5.2	mg/L	147	Standard
Fe	57	1890.1	7.4	**5.3143**	0.301	5.7	mg/L	268	Standard
> **Sc-1**	45	39063.7	3.7				mg/L	41174	Standard
Cl	35	79213.9	1.2				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	2563.6	1.5				ug/L	1950	Standard
P	31	24057.4	1.2				ug/L	21156	Standard
S	34	3523.7	3.2				ug/L	3419	Standard
Sr	88	65.0	7.7				ug/L	72	Standard
C	12	140.0	57.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	940.0	34.1				mg/L	17	Standard
Dy	164	25.2	57.6				mg/L	16	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	30.0	88.2				mg/L	7	Standard
I	127	15756.5	3.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	102.592		
Al	27	89.005		
Sc	45			
Ti	47	94.669		
V	51	100.555		
Cr	52	97.579		
Cr	53			
Mn	55	97.404		
Co	59	105.654		
Ni	60	97.767		
Cu	65	98.313		
Zn	66	98.996		
> Ge	72		99.656	
As	75	100.011		
Se	82	102.436		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	100.561		
Ag	107	99.233		
Cd	111	99.708		
Cd	114			
In	115			100.420
Sn	118	99.660		
Sb	123	98.916		
Ba	135	96.145		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.966		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.966		
U	238	102.050		
Bi	209			100.873
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 14:12:56
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 14:13:50
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	88888.4	2.2				ug/L	76456	Standard
	Be	9	38.3	52.7	**0.0094**	0.015	161.5	ug/L	20	Standard
	Al	27	2825.3	17.3	**0.0040**	0.002	53.4	ug/L	1307	Standard
	Sc	45	39005.1	1.5				ug/L	41174	Standard
	Ti	47	28.0	19.9	**0.0028**	0.016	582.3	ug/L	27	Standard
	V	51	2415.4	18.1	**0.1010**	0.058	57.8	ug/L	1434	Standard
	Cr	52	6917.2	0.7	**-0.0998**	0.014	13.7	ug/L	7733	Standard
	Cr	53	555.0	5.9	**0.1417**	0.025	17.3	ug/L	442	Standard
	Mn	55	752.7	2.2	**-0.0001**	0.003	2090.7	ug/L	723	Standard
	Co	59	252.7	11.5	**0.0041**	0.003	85.1	ug/L	217	Standard
	Ni	60	429.7	6.2	**0.0575**	0.011	18.3	ug/L	304	Standard
	Cu	65	263.0	14.8	**0.0569**	0.017	30.5	ug/L	181	Standard
	Zn	66	279.3	0.5	**0.0518**	0.003	5.0	ug/L	215	Standard
>	Ge	72	511815.0	1.6				ug/L	520809	Standard
	As	75	-18.1	92.8	**0.0301**	0.014	46.4	ug/L	-52	Standard
	Se	82	24.7	15.0	**0.0723**	0.029	39.9	ug/L	17	Standard
	Se-1	77	58.0	10.8	**0.0062**	0.079	1288.4	ug/L	56	Standard
>	Ga	71	13.3	78.1				mg/L	25	Standard
	Rb	85	38.3	7.5				ug/L	28	Standard
	Y	89	444682.5	1.8				ug/L	447395	Standard
>	Rh	103	18.3	15.7				ug/L	15	Standard
	Mo	98	598.8	12.4	**0.1734**	0.026	14.8	ug/L	113	Standard
	Ag	107	140.0	4.0	**0.0066**	0.001	12.4	ug/L	108	Standard
	Cd	111	12.3	61.1	**0.0030**	0.003	109.1	mg/L	3	Standard
	Cd	114	49.0	43.7	**0.0086**	0.004	42.9	ug/L	20	Standard
>	In	115	628245.6	0.7				ug/L	625728	Standard
	Sn	118	1961.8	30.2	**0.2198**	0.093	42.5	ug/L	568	Standard
	Sb	123	904.2	34.2	**0.1408**	0.061	43.0	ug/L	612	Standard
	Ba	135	57.3	10.7	**0.0083**	0.003	31.6	ug/L	21	Standard
	Ce	140	128.3	30.3				ug/L	245	Standard
>	Tb	159	944365.6	0.9				ug/L	950397	Standard
	Ho	165	13.3	94.4				ug/L	7	Standard
	Tl	203	108.0	13.0	**0.0111**	0.001	13.5	ug/L	15	Standard
	Tl	205	96.7	15.8	**0.0022**	0.002	85.6	ug/L	13	Standard
	Pb	206	339.7	1.4	**0.0152**	0.001	5.3	ug/L	264	Standard
	Pb	207	305.3	7.3	**0.0122**	0.004	33.7	ug/L	222	Standard
	Pb	208	1308.0	3.7	**0.0129**	0.002	16.1	ug/L	959	Standard
	U	238	87.3	40.5	**0.0104**	0.004	41.2	ug/L	9	Standard
>	Bi	209	562720.5	0.3				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	75.0	23.1	**0.0324**	0.022	69.0	mg/L	55	Standard
K	39	33.3	45.8	**0.0031**	0.060	1894.0	mg/L	28	Standard
Ca	43	15.0	33.3	**-1.0175**	0.462	45.4	mg/L	27	Standard
Fe	54	165.7	9.2	**0.0385**	0.014	37.1	mg/L	147	Standard
Fe	57	250.0	12.0	**0.0061**	0.086	1418.1	mg/L	268	Standard
> **Sc-1**	45	39005.1	1.5				mg/L	41174	Standard
Cl	35	79585.8	1.1				ug/L	69550	Standard
Kr	83	3.0	33.3				ug/L	1	Standard
Br	81	2136.8	1.9				ug/L	1950	Standard
P	31	23918.9	4.5				ug/L	21156	Standard
S	34	3433.7	5.0				ug/L	3419	Standard
Sr	88	81.7	12.7				ug/L	72	Standard
C	12	130.0	20.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	723.4	38.9				mg/L	17	Standard
Dy	164	12.1	100.4				mg/L	16	Standard
Ho-1	165	13.3	94.4				mg/L	7	Standard
Er	166	26.7	57.3				mg/L	7	Standard
I	127	11843.0	2.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.273	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.402
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.791
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

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Sample ID: L1606106815S ~~WG574840-04~~
Sample Date/Time: Friday, July 01, 2016 14:17:03
Number of Replicates: 3
Autosampler Position: 348
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83265.1	4.4				ug/L	76456	Standard
	Be	9	6339.7	3.7	5.1828	0.150	2.9	ug/L	20	Standard
	Al	27	349898.6	2.2	1.8682	0.063	3.4	ug/L	1307	Standard
	Sc	45	36113.0	0.7				ug/L	41174	Standard
	Ti	47	374.0	5.7	1.1636	0.064	5.5	ug/L	27	Standard
	V	51	40708.6	1.1	5.1868	0.031	0.6	ug/L	1434	Standard
	Cr	52	46718.3	0.7	5.3127	0.067	1.3	ug/L	7733	Standard
	Cr	53	6618.1	2.8	6.7048	0.239	3.6	ug/L	442	Standard
	Mn	55	114395.6	0.5	16.3321	0.067	0.4	ug/L	723	Standard
	Co	59	38195.1	1.8	5.3924	0.078	1.4	ug/L	217	Standard
	Ni	60	13663.5	1.3	7.0078	0.080	1.1	ug/L	304	Standard
	Cu	65	9944.3	1.7	5.2251	0.077	1.5	ug/L	181	Standard
	Zn	66	9492.0	1.6	8.2445	0.108	1.3	ug/L	215	Standard
>	Ge	72	478934.2	0.5				ug/L	520809	Standard
	As	75	6298.1	2.1	5.5931	0.137	2.4	ug/L	-52	Standard
	Se	82	745.3	1.6	6.2890	0.131	2.1	ug/L	17	Standard
	Se-1	77	565.0	3.4	6.5031	0.256	3.9	ug/L	56	Standard
>	Ga	71	210.0	14.9				mg/L	25	Standard
	Rb	85	3015.3	2.7				ug/L	28	Standard
	Y	89	406713.6	1.2				ug/L	447395	Standard
>	Rh	103	30.0	44.1				ug/L	15	Standard
	Mo	98	643.2	26.9	0.2086	0.062	29.9	ug/L	113	Standard
	Ag	107	33003.9	0.1	5.0128	0.031	0.6	ug/L	108	Standard
	Cd	111	11239.0	0.3	5.3366	0.046	0.9	mg/L	3	Standard
	Cd	114	27301.6	1.5	5.2380	0.071	1.4	ug/L	20	Standard
>	In	115	572178.3	0.7				ug/L	625728	Standard
	Sn	118	856.7	28.9	0.0614	0.042	68.6	ug/L	568	Standard
	Sb	123	23676.7	0.6	4.9767	0.063	1.3	ug/L	612	Standard
	Ba	135	19520.2	0.7	9.7948	0.108	1.1	ug/L	21	Standard
	Ce	140	4247.3	5.7				ug/L	245	Standard
>	Tb	159	879458.6	1.4				ug/L	950397	Standard
	Ho	165	76.7	30.1				ug/L	7	Standard
	Tl	203	41384.8	1.8	4.8673	0.052	1.1	ug/L	15	Standard
	Tl	205	37817.2	2.3	4.9998	0.080	1.6	ug/L	13	Standard
	Pb	206	27923.4	1.8	5.1651	0.060	1.2	ug/L	264	Standard
	Pb	207	24211.0	1.2	4.9273	0.030	0.6	ug/L	222	Standard
	Pb	208	101923.3	0.8	5.0783	0.055	1.1	ug/L	959	Standard
	U	238	37622.7	0.8	4.9287	0.050	1.0	ug/L	9	Standard
>	Bi	209	523442.8	0.7				ug/L	552821	Standard

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	Na	23	1.7	173.2	**5.6795**	9.828	173.1	mg/L	2	Standard
	Mg	24	6323.0	5.1	**8.3634**	0.482	5.8	mg/L	55	Standard
	K	39	55.0	24.1	**0.1095**	0.059	54.3	mg/L	28	Standard
	Ca	43	28.3	83.4	**0.4924**	2.471	501.8	mg/L	27	Standard
	Fe	54	574.3	6.7	**0.4148**	0.038	9.1	mg/L	147	Standard
	Fe	57	356.7	11.3	**0.4458**	0.147	32.9	mg/L	268	Standard
>	**Sc-1**	45	36113.0	0.7				mg/L	41174	Standard
	Cl	35	72434.1	0.7				ug/L	69550	Standard
	Kr	83	2.0	0.0				ug/L	1	Standard
	Br	81	13466.0	3.1				ug/L	1950	Standard
	P	31	9684.8	1.1				ug/L	21156	Standard
	S	34	3162.0	7.4				ug/L	3419	Standard
	Sr	88	88.3	6.5				ug/L	72	Standard
	C	12	126.7	19.9				mg/L	163	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	493.3	11.2				mg/L	17	Standard
	Dy	164	135.8	20.6				mg/L	16	Standard
	Ho-1	165	76.7	30.1				mg/L	7	Standard
	Er	166	86.7	40.5				mg/L	7	Standard
	I	127	53586.4	4.2				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		108.906	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		91.960	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.442
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.686
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Sample ID: L1606106815S ~~WG574840-04~~
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Method 6020 - Summary Report

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Sample ID: L1606106817SD ~~WG574840-05~~
Sample Date/Time: Friday, July 01, 2016 14:20:15
Number of Replicates: 3
Autosampler Position: 349
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81106.5	1.7				ug/L	76456	Standard
	Be	9	6459.7	2.4	**5.4224**	0.225	4.2	ug/L	20	Standard
	Al	27	501960.4	2.3	**2.7550**	0.103	3.7	ug/L	1307	Standard
	Sc	45	36201.5	0.9				ug/L	41174	Standard
	Ti	47	1052.0	1.1	**3.4327**	0.017	0.5	ug/L	27	Standard
	V	51	46082.9	1.9	**5.9078**	0.087	1.5	ug/L	1434	Standard
	Cr	52	58550.9	1.6	**6.9166**	0.078	1.1	ug/L	7733	Standard
	Cr	53	8594.1	3.3	**8.8449**	0.268	3.0	ug/L	442	Standard
	Mn	55	145669.8	2.3	**20.8582**	0.361	1.7	ug/L	723	Standard
	Co	59	40340.0	2.3	**5.7063**	0.097	1.7	ug/L	217	Standard
	Ni	60	15750.9	2.0	**8.1157**	0.154	1.9	ug/L	304	Standard
	Cu	65	10601.7	1.3	**5.5848**	0.040	0.7	ug/L	181	Standard
	Zn	66	10298.5	1.1	**8.9757**	0.069	0.8	ug/L	215	Standard
>	Ge	72	478135.2	0.6				ug/L	520809	Standard
	As	75	6490.3	1.3	**5.7717**	0.072	1.2	ug/L	-52	Standard
	Se	82	783.8	3.6	**6.6313**	0.232	3.5	ug/L	17	Standard
	Se-1	77	575.7	8.4	**6.6484**	0.573	8.6	ug/L	56	Standard
>	Ga	71	653.3	4.4				mg/L	25	Standard
	Rb	85	7186.7	2.7				ug/L	28	Standard
	Y	89	409741.2	2.1				ug/L	447395	Standard
>	Rh	103	31.7	18.2				ug/L	15	Standard
	Mo	98	998.2	56.5	**0.3366**	0.205	60.9	ug/L	113	Standard
	Ag	107	33931.3	1.3	**5.1521**	0.034	0.7	ug/L	108	Standard
	Cd	111	11629.2	3.5	**5.5186**	0.109	2.0	mg/L	3	Standard
	Cd	114	28711.5	1.0	**5.5071**	0.084	1.5	ug/L	20	Standard
>	In	115	572419.1	1.9				ug/L	625728	Standard
	Sn	118	771.7	35.0	**0.0463**	0.043	93.9	ug/L	568	Standard
	Sb	123	22618.6	1.5	**4.7509**	0.051	1.1	ug/L	612	Standard
	Ba	135	24808.3	0.6	**12.4494**	0.172	1.4	ug/L	21	Standard
	Ce	140	9864.9	1.2				ug/L	245	Standard
>	Tb	159	882133.3	1.2				ug/L	950397	Standard
	Ho	165	175.0	13.1				ug/L	7	Standard
	Tl	203	43094.9	1.3	**5.0490**	0.012	0.2	ug/L	15	Standard
	Tl	205	38782.9	1.4	**5.1088**	0.109	2.1	ug/L	13	Standard
	Pb	206	28842.8	0.9	**5.3164**	0.076	1.4	ug/L	264	Standard
	Pb	207	24928.5	1.0	**5.0552**	0.065	1.3	ug/L	222	Standard
	Pb	208	104803.4	1.3	**5.2025**	0.040	0.8	ug/L	959	Standard
	U	238	38305.0	0.8	**4.9987**	0.028	0.6	ug/L	9	Standard
>	Bi	209	525482.1	1.1				ug/L	552821	Standard

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Na	23	3.3	173.2	**11.2046**	19.398	173.1	mg/L	2	Standard
Mg	24	8434.0	5.4	**11.1454**	0.594	5.3	mg/L	55	Standard
K	39	58.3	13.1	**0.1234**	0.036	28.8	mg/L	28	Standard
Ca	43	20.0	75.0	**-0.3837**	1.563	407.4	mg/L	27	Standard
Fe	54	968.4	3.8	**0.7651**	0.040	5.3	mg/L	147	Standard
Fe	57	503.3	13.7	**0.9549**	0.241	25.2	mg/L	268	Standard
> **Sc-1**	45	36201.5	0.9				mg/L	41174	Standard
Cl	35	71982.6	1.3				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	18638.1	5.1				ug/L	1950	Standard
P	31	10710.5	1.0				ug/L	21156	Standard
S	34	3345.4	0.8				ug/L	3419	Standard
Sr	88	73.3	27.6				ug/L	72	Standard
C	12	120.0	57.7				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	436.7	13.4				mg/L	17	Standard
Dy	164	280.4	13.3				mg/L	16	Standard
Ho-1	165	175.0	13.1				mg/L	7	Standard
Er	166	200.0	13.2				mg/L	7	Standard
I	127	66018.7	4.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.083	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		91.806	
As	75			
Se	82			
Se-1	77			
> Ga	71	WG573840-05		

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.481
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.055
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Sample ID: L1606106817SD ~~**WG574840-05**~~
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Method 6020 - Summary Report

Sample ID: L1606106502
Sample Date/Time: Friday, July 01, 2016 14:23:26
Number of Replicates: 3
Autosampler Position: 350
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80066.0	1.1				ug/L	76456	Standard
	Be	9	30.0	115.5	**0.0056**	0.029	520.4	ug/L	20	Standard
	Al	27	180778.3	4.1	**0.9982**	0.041	4.1	ug/L	1307	Standard
	Sc	45	36360.3	2.0				ug/L	41174	Standard
	Ti	47	27.3	18.4	**0.0052**	0.016	312.3	ug/L	27	Standard
	V	51	1588.1	11.5	**0.0081**	0.023	286.5	ug/L	1434	Standard
	Cr	52	81053.1	3.8	**9.7557**	0.368	3.8	ug/L	7733	Standard
	Cr	53	9971.6	2.0	**10.1419**	0.234	2.3	ug/L	442	Standard
	Mn	55	13954.4	0.7	**1.8714**	0.017	0.9	ug/L	723	Standard
	Co	59	649.0	8.3	**0.0612**	0.008	12.7	ug/L	217	Standard
	Ni	60	1447.4	0.9	**0.5934**	0.004	0.6	ug/L	304	Standard
	Cu	65	486.7	11.5	**0.1810**	0.028	15.4	ug/L	181	Standard
	Zn	66	1353.4	2.5	**1.0020**	0.034	3.4	ug/L	215	Standard
>	**Ge**	72	486676.1	0.5				ug/L	520809	Standard
	As	75	-22.0	245.7	**0.0260**	0.047	179.9	ug/L	-52	Standard
	Se	82	18.1	72.4	**0.0263**	0.110	418.7	ug/L	17	Standard
	Se-1	77	60.7	2.5	**0.0749**	0.022	28.9	ug/L	56	Standard
>	**Ga**	71	25.0	20.0				mg/L	25	Standard
	Rb	85	138.3	26.6				ug/L	28	Standard
	Y	89	406376.2	1.0				ug/L	447395	Standard
>	**Rh**	103	16.7	69.3				ug/L	15	Standard
	Mo	98	1770.7	17.5	**0.6016**	0.111	18.5	ug/L	113	Standard
	Ag	107	129.0	37.0	**0.0063**	0.007	112.2	ug/L	108	Standard
	Cd	111	16.9	116.6	**0.0055**	0.009	166.8	mg/L	3	Standard
	Cd	114	59.1	100.8	**0.0111**	0.011	100.7	ug/L	20	Standard
>	**In**	115	585828.3	0.2				ug/L	625728	Standard
	Sn	118	591.7	24.5	**0.0140**	0.024	173.1	ug/L	568	Standard
	Sb	123	173.5	26.1	**0.0021**	0.009	438.7	ug/L	612	Standard
	Ba	135	254.0	14.4	**0.1068**	0.018	16.8	ug/L	21	Standard
	Ce	140	36.7	55.1				ug/L	245	Standard
>	**Tb**	159	883738.0	0.6				ug/L	950397	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	137.0	50.5	**0.0151**	0.008	51.9	ug/L	15	Standard
	Tl	205	130.0	90.1	**0.0071**	0.015	211.0	ug/L	13	Standard
	Pb	206	304.3	19.3	**0.0122**	0.010	84.1	ug/L	264	Standard
	Pb	207	261.0	10.0	**0.0068**	0.005	70.4	ug/L	222	Standard
	Pb	208	1149.7	15.1	**0.0087**	0.008	92.0	ug/L	959	Standard
	U	238	112.0	113.8	**0.0141**	0.016	115.0	ug/L	9	Standard
>	**Bi**	209	530616.0	1.0				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	1146.7	22.2	**1.4533**	0.307	21.1	mg/L	55	Standard
K	39	28.3	44.4	**-0.0074**	0.057	769.4	mg/L	28	Standard
Ca	43	26.7	54.1	**0.3104**	1.522	490.2	mg/L	27	Standard
Fe	54	101.6	8.0	**-0.0086**	0.008	94.5	mg/L	147	Standard
Fe	57	255.0	17.0	**0.0854**	0.166	194.4	mg/L	268	Standard
> **Sc-1**	45	36360.3	2.0				mg/L	41174	Standard
Cl	35	73712.2	1.2				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	2090.1	10.3				ug/L	1950	Standard
P	31	7825.4	0.6				ug/L	21156	Standard
S	34	3022.0	4.6				ug/L	3419	Standard
Sr	88	71.7	8.1				ug/L	72	Standard
C	12	96.7	23.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1313.4	4.6				mg/L	17	Standard
Dy	164	22.1	25.6				mg/L	16	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	26.7	21.7				mg/L	7	Standard
I	127	28513.5	2.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.722	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.446	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.623
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.983
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606106503
Sample Date/Time: Friday, July 01, 2016 14:26:37
Number of Replicates: 3
Autosampler Position: 351
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79132.8	1.3				ug/L	76456	Standard
	Be	9	20.0	90.1	**-0.0027**	0.015	566.6	ug/L	20	Standard
	Al	27	183681.8	1.0	**1.0266**	0.021	2.0	ug/L	1307	Standard
	Sc	45	35984.4	2.9				ug/L	41174	Standard
	Ti	47	20.7	12.2	**-0.0167**	0.009	53.6	ug/L	27	Standard
	V	51	1554.3	4.0	**0.0034**	0.007	204.4	ug/L	1434	Standard
	Cr	52	22825.5	4.8	**2.0452**	0.152	7.4	ug/L	7733	Standard
	Cr	53	2823.6	3.2	**2.5679**	0.111	4.3	ug/L	442	Standard
	Mn	55	25588.9	0.9	**3.5097**	0.037	1.1	ug/L	723	Standard
	Co	59	286.3	4.8	**0.0105**	0.002	16.3	ug/L	217	Standard
	Ni	60	1267.4	3.9	**0.4993**	0.024	4.9	ug/L	304	Standard
	Cu	65	240.7	4.8	**0.0519**	0.005	9.1	ug/L	181	Standard
	Zn	66	1398.4	2.4	**1.0389**	0.016	1.6	ug/L	215	Standard
>	**Ge**	72	487565.1	1.1				ug/L	520809	Standard
	As	75	-30.6	81.1	**0.0187**	0.022	115.7	ug/L	-52	Standard
	Se	82	20.5	30.4	**0.0466**	0.051	110.3	ug/L	17	Standard
	Se-1	77	71.3	18.1	**0.2061**	0.156	75.5	ug/L	56	Standard
>	**Ga**	71	30.0	33.3				mg/L	25	Standard
	Rb	85	90.0	53.6				ug/L	28	Standard
	Y	89	411794.3	0.5				ug/L	447395	Standard
>	**Rh**	103	21.7	13.3				ug/L	15	Standard
	Mo	98	702.5	37.7	**0.2235**	0.093	41.6	ug/L	113	Standard
	Ag	107	100.7	6.4	**0.0021**	0.001	44.2	ug/L	108	Standard
	Cd	111	3.1	64.7	**-0.0009**	0.001	98.3	mg/L	3	Standard
	Cd	114	10.2	126.7	**0.0019**	0.002	125.3	ug/L	20	Standard
>	**In**	115	587395.6	0.4				ug/L	625728	Standard
	Sn	118	551.7	28.8	**0.0071**	0.026	370.3	ug/L	568	Standard
	Sb	123	119.5	11.5	**-0.0091**	0.003	31.3	ug/L	612	Standard
	Ba	135	603.3	5.0	**0.2775**	0.015	5.3	ug/L	21	Standard
	Ce	140	43.3	40.5				ug/L	245	Standard
>	**Tb**	159	891615.0	1.6				ug/L	950397	Standard
	Ho	165	15.0	66.7				ug/L	7	Standard
	Tl	203	80.7	10.3	**0.0085**	0.001	11.1	ug/L	15	Standard
	Tl	205	53.3	57.3	**-0.0028**	0.004	140.3	ug/L	13	Standard
	Pb	206	274.3	3.4	**0.0064**	0.002	26.4	ug/L	264	Standard
	Pb	207	227.0	9.3	**-0.0004**	0.004	980.7	ug/L	222	Standard
	Pb	208	977.7	5.7	**-0.0001**	0.003	2332.0	ug/L	959	Standard
	U	238	23.7	16.0	**0.0028**	0.000	17.0	ug/L	9	Standard
>	**Bi**	209	534397.5	0.8				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	1421.7	2.1	**1.8418**	0.090	4.9	mg/L	55	Standard
K	39	28.3	40.8	**-0.0067**	0.051	756.8	mg/L	28	Standard
Ca	43	21.7	35.3	**-0.2051**	0.778	379.2	mg/L	27	Standard
Fe	54	96.5	16.4	**-0.0124**	0.012	96.4	mg/L	147	Standard
Fe	57	246.7	7.7	**0.0625**	0.044	71.0	mg/L	268	Standard
Sc-1	45	35984.4	2.9				mg/L	41174	Standard
Cl	35	75787.1	1.4				ug/L	69550	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	1940.1	11.4				ug/L	1950	Standard
P	31	7708.6	3.3				ug/L	21156	Standard
S	34	3283.7	7.0				ug/L	3419	Standard
Sr	88	81.7	3.5				ug/L	72	Standard
C	12	93.3	6.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	810.0	7.7				mg/L	17	Standard
Dy	164	19.4	51.7				mg/L	16	Standard
Ho-1	165	15.0	66.7				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	28069.3	3.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.501	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.617	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.874
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.667
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606106504
Sample Date/Time: Friday, July 01, 2016 14:29:49
Number of Replicates: 3
Autosampler Position: 352
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79397.5	1.7				ug/L	76456	Standard
	Be	9	16.7	45.8	**-0.0055**	0.007	119.4	ug/L	20	Standard
	Al	27	291025.7	1.9	**1.6271**	0.036	2.2	ug/L	1307	Standard
	Sc	45	36009.4	0.8				ug/L	41174	Standard
	Ti	47	26.7	15.2	**0.0019**	0.013	690.9	ug/L	27	Standard
	V	51	1704.2	12.5	**0.0204**	0.028	139.1	ug/L	1434	Standard
	Cr	52	30766.6	4.8	**3.0469**	0.189	6.2	ug/L	7733	Standard
	Cr	53	3653.8	5.4	**3.4005**	0.215	6.3	ug/L	442	Standard
	Mn	55	17036.6	2.3	**2.2748**	0.050	2.2	ug/L	723	Standard
	Co	59	958.7	6.2	**0.1027**	0.008	8.2	ug/L	217	Standard
	Ni	60	2008.1	1.5	**0.8687**	0.014	1.6	ug/L	304	Standard
	Cu	65	251.7	3.4	**0.0561**	0.005	9.3	ug/L	181	Standard
	Zn	66	1482.7	0.2	**1.0976**	0.010	0.9	ug/L	215	Standard
>	**Ge**	72	493269.0	0.6				ug/L	520809	Standard
	As	75	-44.8	49.5	**0.0068**	0.019	282.1	ug/L	-52	Standard
	Se	82	18.7	10.9	**0.0294**	0.017	58.4	ug/L	17	Standard
	Se-1	77	64.3	6.3	**0.1099**	0.049	45.0	ug/L	56	Standard
>	**Ga**	71	26.7	43.3				mg/L	25	Standard
	Rb	85	2356.8	1.6				ug/L	28	Standard
	Y	89	413880.0	0.1				ug/L	447395	Standard
>	**Rh**	103	25.0	0.0				ug/L	15	Standard
	Mo	98	624.4	36.8	**0.1955**	0.081	41.4	ug/L	113	Standard
	Ag	107	92.7	17.9	**0.0009**	0.003	292.7	ug/L	108	Standard
	Cd	111	11.5	37.2	**0.0030**	0.002	67.8	mg/L	3	Standard
	Cd	114	45.1	23.2	**0.0084**	0.002	22.0	ug/L	20	Standard
>	**In**	115	588539.3	1.1				ug/L	625728	Standard
	Sn	118	616.7	20.1	**0.0176**	0.020	114.5	ug/L	568	Standard
	Sb	123	351.6	3.8	**0.0386**	0.003	9.0	ug/L	612	Standard
	Ba	135	231.7	10.0	**0.0953**	0.011	11.7	ug/L	21	Standard
	Ce	140	43.3	88.1				ug/L	245	Standard
>	**Tb**	159	885756.3	0.8				ug/L	950397	Standard
	Ho	165	16.7	34.6				ug/L	7	Standard
	Tl	203	73.3	2.8	**0.0077**	0.000	3.3	ug/L	15	Standard
	Tl	205	65.0	13.3	**-0.0013**	0.001	87.3	ug/L	13	Standard
	Pb	206	322.7	5.3	**0.0151**	0.003	19.7	ug/L	264	Standard
	Pb	207	256.3	3.1	**0.0054**	0.001	26.7	ug/L	222	Standard
	Pb	208	1164.0	5.3	**0.0090**	0.003	33.0	ug/L	959	Standard
	U	238	19.0	34.5	**0.0022**	0.001	38.3	ug/L	9	Standard
>	**Bi**	209	534942.7	0.4				ug/L	552821	Standard

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Na	23	3.3	86.6	**11.3879**	9.859	86.6	mg/L	2	Standard
Mg	24	1060.0	6.8	**1.3559**	0.099	7.3	mg/L	55	Standard
K	39	55.0	32.8	**0.1095**	0.077	70.3	mg/L	28	Standard
Ca	43	21.7	48.0	**-0.2024**	1.077	531.9	mg/L	27	Standard
Fe	54	98.8	37.3	**-0.0103**	0.032	312.2	mg/L	147	Standard
Fe	57	268.3	7.1	**0.1387**	0.065	46.8	mg/L	268	Standard
> **Sc-1**	45	36009.4	0.8				mg/L	41174	Standard
Cl	35	77523.2	0.3				ug/L	69550	Standard
Kr	83	2.7	114.6				ug/L	1	Standard
Br	81	2113.5	9.3				ug/L	1950	Standard
P	31	7710.3	3.6				ug/L	21156	Standard
S	34	3393.7	3.0				ug/L	3419	Standard
Sr	88	65.0	23.1				ug/L	72	Standard
C	12	106.7	28.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	623.3	9.8				mg/L	17	Standard
Dy	164	15.7	70.9				mg/L	16	Standard
Ho-1	165	16.7	34.6				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	28194.6	4.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.848	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.712	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.057
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.766
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 14:33:02
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	84479.9	0.6				ug/L	76456	Standard
	Be	9	65431.0	1.7	**52.8839**	1.234	2.3	ug/L	20	Standard
	Al	27	9107293.6	1.3	**48.1391**	0.761	1.6	ug/L	1307	Standard
	Sc	45	41221.0	1.1				ug/L	41174	Standard
	Ti	47	32532.9	2.1	**96.4064**	2.590	2.7	ug/L	27	Standard
	V	51	430170.6	0.9	**50.3648**	0.150	0.3	ug/L	1434	Standard
	Cr	52	419842.9	0.7	**49.1999**	0.629	1.3	ug/L	7733	Standard
	Cr	53	51666.3	1.8	**48.9792**	1.063	2.2	ug/L	442	Standard
	Mn	55	386049.1	1.6	**49.1731**	0.734	1.5	ug/L	723	Standard
	Co	59	420011.6	1.0	**52.9472**	0.520	1.0	ug/L	217	Standard
	Ni	60	107142.5	0.5	**49.7412**	0.431	0.9	ug/L	304	Standard
	Cu	65	106376.5	0.2	**50.2954**	0.371	0.7	ug/L	181	Standard
	Zn	66	63768.9	0.5	**50.1114**	0.441	0.9	ug/L	215	Standard
>	Ge	72	539029.9	0.6				ug/L	520809	Standard
	As	75	63720.4	0.2	**49.9158**	0.187	0.4	ug/L	-52	Standard
	Se	82	6616.1	1.4	**50.4720**	0.409	0.8	ug/L	17	Standard
	Se-1	77	4538.7	1.1	**50.6161**	0.744	1.5	ug/L	56	Standard
>	Ga	71	41.7	36.7				mg/L	25	Standard
	Rb	85	886.7	6.2				ug/L	28	Standard
	Y	89	466133.9	1.1				ug/L	447395	Standard
>	Rh	103	45.0	48.4				ug/L	15	Standard
	Mo	98	316079.0	1.2	**100.9623**	1.590	1.6	ug/L	113	Standard
	Ag	107	372581.7	1.1	**50.1169**	0.847	1.7	ug/L	108	Standard
	Cd	111	118352.7	0.1	**49.6717**	0.324	0.7	mg/L	3	Standard
	Cd	114	294028.3	2.4	**49.8404**	1.066	2.1	ug/L	20	Standard
>	In	115	647595.9	0.6				ug/L	625728	Standard
	Sn	118	333519.2	0.4	**49.9888**	0.512	1.0	ug/L	568	Standard
	Sb	123	262566.9	2.8	**49.0609**	1.554	3.2	ug/L	612	Standard
	Ba	135	108230.2	0.7	**48.0518**	0.424	0.9	ug/L	21	Standard
	Ce	140	185.0	15.0				ug/L	245	Standard
>	Tb	159	963986.1	0.6				ug/L	950397	Standard
	Ho	165	15.0	115.5				ug/L	7	Standard
	Tl	203	457975.8	1.0	**50.2126**	0.379	0.8	ug/L	15	Standard
	Tl	205	420042.8	0.3	**51.8564**	0.350	0.7	ug/L	13	Standard
	Pb	206	291174.6	0.8	**50.5849**	0.394	0.8	ug/L	264	Standard
	Pb	207	263877.7	0.4	**50.4775**	0.161	0.3	ug/L	222	Standard
	Pb	208	1113044.3	0.4	**52.1318**	0.466	0.9	ug/L	959	Standard
	U	238	419550.2	0.5	**51.2295**	0.115	0.2	ug/L	9	Standard
>	Bi	209	561599.8	0.5				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4695.7	3.2	**5.4185**	0.141	2.6	mg/L	55	Standard
K	39	1080.0	1.9	**4.0059**	0.102	2.5	mg/L	28	Standard
Ca	43	58.3	9.9	**2.8430**	0.540	19.0	mg/L	27	Standard
Fe	54	6681.6	1.6	**5.1353**	0.107	2.1	mg/L	147	Standard
Fe	57	1935.1	3.8	**5.1339**	0.159	3.1	mg/L	268	Standard
> **Sc-1**	45	41221.0	1.1				mg/L	41174	Standard
Cl	35	86136.9	2.1				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	2180.2	1.6				ug/L	1950	Standard
P	31	25733.5	2.6				ug/L	21156	Standard
S	34	4153.9	3.6				ug/L	3419	Standard
Sr	88	75.0	13.3				ug/L	72	Standard
C	12	106.7	28.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	720.0	29.7				mg/L	17	Standard
Dy	164	22.7	24.3				mg/L	16	Standard
Ho-1	165	15.0	115.5				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	15117.5	1.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	105.768		
Al	27	96.278		
Sc	45			
Ti	47	96.406		
V	51	100.730		
Cr	52	98.400		
Cr	53			
Mn	55	98.346		
Co	59	105.894		
Ni	60	99.482		
Cu	65	100.591		
Zn	66	100.223		
> Ge	72		103.499	
As	75	99.832		
Se	82	100.944		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	100.962		
Ag	107	100.234		
Cd	111	99.343		
Cd	114			
> In	115			103.495
Sn	118	99.978		
Sb	123	98.122		
Ba	135	96.104		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.425		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.264		
U	238	102.459		
> Bi	209			101.588
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 14:36:13
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84748.1	2.2				ug/L	76456	Standard
	Be	9	28.3	27.0	**0.0029**	0.006	204.3	ug/L	20	Standard
	Al	27	2800.3	34.3	**0.0045**	0.005	111.4	ug/L	1307	Standard
	Sc	45	41077.3	1.7				ug/L	41174	Standard
	Ti	47	26.0	26.6	**-0.0072**	0.021	288.8	ug/L	27	Standard
	V	51	1826.7	11.6	**0.0166**	0.026	154.1	ug/L	1434	Standard
	Cr	52	7089.7	2.6	**-0.1215**	0.019	15.7	ug/L	7733	Standard
	Cr	53	518.3	19.4	**0.0795**	0.095	119.0	ug/L	442	Standard
	Mn	55	744.0	2.7	**-0.0062**	0.002	40.3	ug/L	723	Standard
	Co	59	250.7	12.3	**0.0022**	0.004	175.9	ug/L	217	Standard
	Ni	60	366.0	4.1	**0.0177**	0.007	39.1	ug/L	304	Standard
	Cu	65	215.0	5.8	**0.0279**	0.006	21.4	ug/L	181	Standard
	Zn	66	258.3	5.8	**0.0239**	0.012	50.5	ug/L	215	Standard
>	**Ge**	72	537853.0	0.3				ug/L	520809	Standard
	As	75	-50.7	30.0	**0.0054**	0.012	222.4	ug/L	-52	Standard
	Se	82	23.4	28.3	**0.0526**	0.050	95.5	ug/L	17	Standard
	Se-1	77	56.3	13.3	**-0.0464**	0.086	185.9	ug/L	56	Standard
>	**Ga**	71	38.3	66.9				mg/L	25	Standard
	Rb	85	33.3	67.6				ug/L	28	Standard
	Y	89	471394.3	0.7				ug/L	447395	Standard
>	**Rh**	103	18.3	63.0				ug/L	15	Standard
	Mo	98	398.2	17.4	**0.1019**	0.023	22.4	ug/L	113	Standard
	Ag	107	141.3	16.6	**0.0060**	0.003	53.5	ug/L	108	Standard
	Cd	111	18.0	20.7	**0.0051**	0.002	31.3	mg/L	3	Standard
	Cd	114	51.0	12.7	**0.0086**	0.001	12.0	ug/L	20	Standard
>	**In**	115	655049.2	0.7				ug/L	625728	Standard
	Sn	118	1826.8	33.6	**0.1873**	0.093	49.6	ug/L	568	Standard
	Sb	123	1005.7	35.1	**0.1525**	0.066	43.6	ug/L	612	Standard
	Ba	135	50.7	11.6	**0.0043**	0.003	59.6	ug/L	21	Standard
	Ce	140	55.0	18.2				ug/L	245	Standard
>	**Tb**	159	963692.0	2.2				ug/L	950397	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	91.3	32.5	**0.0091**	0.003	36.2	ug/L	15	Standard
	Tl	205	100.0	20.0	**0.0024**	0.003	107.2	ug/L	13	Standard
	Pb	206	358.7	4.9	**0.0174**	0.003	18.6	ug/L	264	Standard
	Pb	207	299.3	9.7	**0.0101**	0.006	57.2	ug/L	222	Standard
	Pb	208	1241.0	6.1	**0.0088**	0.004	42.7	ug/L	959	Standard
	U	238	67.3	26.7	**0.0078**	0.002	28.5	ug/L	9	Standard
>	**Bi**	209	572676.0	1.1				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	58.3	27.6	**0.0080**	0.018	227.2	mg/L	55	Standard
K	39	31.7	24.1	**-0.0097**	0.028	287.6	mg/L	28	Standard
Ca	43	30.0	60.1	**0.2757**	1.623	588.8	mg/L	27	Standard
Fe	54	132.3	15.7	**0.0051**	0.015	299.1	mg/L	147	Standard
Fe	57	226.7	3.4	**-0.1060**	0.019	17.5	mg/L	268	Standard
Sc-1	45	41077.3	1.7				mg/L	41174	Standard
Cl	35	85337.0	1.5				ug/L	69550	Standard
Kr	83	3.3	17.3				ug/L	1	Standard
Br	81	2146.8	7.1				ug/L	1950	Standard
P	31	24845.4	3.5				ug/L	21156	Standard
S	34	4015.5	0.7				ug/L	3419	Standard
Sr	88	58.3	27.6				ug/L	72	Standard
C	12	116.7	9.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	523.3	24.3				mg/L	17	Standard
Dy	164	6.0	187.1				mg/L	16	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	11185.8	0.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.273	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.686
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.592
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Friday, July 01, 2016 14:39:26
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82750.5	2.9				ug/L	76456	Standard
	Be	9	285.0	17.8	**0.2151**	0.039	18.0	ug/L	20	Standard
	Al	27	1818.4	16.8	**-0.0004**	0.002	418.1	ug/L	1307	Standard
	Sc	45	39031.9	2.5				ug/L	41174	Standard
	Ti	47	23.0	28.5	**-0.0130**	0.020	154.9	ug/L	27	Standard
	V	51	4531.3	0.6	**0.3599**	0.004	1.1	ug/L	1434	Standard
	Cr	52	13097.3	0.4	**0.6705**	0.008	1.2	ug/L	7733	Standard
	Cr	53	1321.7	4.4	**0.9081**	0.059	6.5	ug/L	442	Standard
	Mn	55	3958.5	1.2	**0.4284**	0.005	1.2	ug/L	723	Standard
	Co	59	3194.7	3.0	**0.3931**	0.014	3.5	ug/L	217	Standard
	Ni	60	3472.1	3.0	**1.5421**	0.046	3.0	ug/L	304	Standard
	Cu	65	1723.1	3.0	**0.7813**	0.023	3.0	ug/L	181	Standard
	Zn	66	8776.2	0.9	**7.0769**	0.052	0.7	ug/L	215	Standard
>	**Ge**	72	514072.5	0.3				ug/L	520809	Standard
	As	75	450.1	8.8	**0.4145**	0.032	7.7	ug/L	-52	Standard
	Se	82	70.4	7.3	**0.4383**	0.043	9.7	ug/L	17	Standard
	Se-1	77	94.3	4.8	**0.4334**	0.056	12.9	ug/L	56	Standard
>	**Ga**	71	21.7	35.3				mg/L	25	Standard
	Rb	85	21.7	53.3				ug/L	28	Standard
	Y	89	438183.2	1.3				ug/L	447395	Standard
>	**Rh**	103	16.7	105.4				ug/L	15	Standard
	Mo	98	167.4	18.5	**0.0314**	0.011	34.8	ug/L	113	Standard
	Ag	107	2856.9	3.2	**0.3846**	0.011	2.9	ug/L	108	Standard
	Cd	111	543.4	2.2	**0.2335**	0.007	3.2	mg/L	3	Standard
	Cd	114	1301.0	2.4	**0.2280**	0.003	1.3	ug/L	20	Standard
>	**In**	115	626288.8	1.2				ug/L	625728	Standard
	Sn	118	1146.7	25.4	**0.0941**	0.047	50.1	ug/L	568	Standard
	Sb	123	2055.0	1.9	**0.3637**	0.012	3.3	ug/L	612	Standard
	Ba	135	1475.7	2.5	**0.6597**	0.010	1.5	ug/L	21	Standard
	Ce	140	10.0	50.0				ug/L	245	Standard
>	**Tb**	159	937003.8	0.8				ug/L	950397	Standard
	Ho	165	13.3	94.4				ug/L	7	Standard
	Tl	203	742.4	3.9	**0.0813**	0.003	3.9	ug/L	15	Standard
	Tl	205	635.0	7.6	**0.0693**	0.006	9.0	ug/L	13	Standard
	Pb	206	1423.4	1.3	**0.2057**	0.004	1.8	ug/L	264	Standard
	Pb	207	1222.7	2.7	**0.1898**	0.007	3.5	ug/L	222	Standard
	Pb	208	5238.4	1.7	**0.1992**	0.005	2.7	ug/L	959	Standard
	U	238	3209.7	2.1	**0.3947**	0.010	2.6	ug/L	9	Standard
>	**Bi**	209	557268.2	0.5				ug/L	552821	Standard

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Na	23	1.7	173.2	**5.3145**	9.196	173.0	mg/L	2	Standard
Mg	24	45.0	11.1	**-0.0048**	0.005	106.0	mg/L	55	Standard
K	39	16.7	45.8	**-0.0643**	0.029	45.1	mg/L	28	Standard
Ca	43	28.3	40.8	**0.2822**	1.159	410.5	mg/L	27	Standard
Fe	54	125.5	27.9	**0.0049**	0.029	586.2	mg/L	147	Standard
Fe	57	236.7	18.2	**-0.0367**	0.142	386.3	mg/L	268	Standard
> **Sc-1**	45	39031.9	2.5				mg/L	41174	Standard
Cl	35	80966.5	1.6				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	2093.5	4.3				ug/L	1950	Standard
P	31	17104.7	1.6				ug/L	21156	Standard
S	34	3810.5	3.5				ug/L	3419	Standard
Sr	88	53.3	51.6				ug/L	72	Standard
C	12	146.7	52.1				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	223.3	40.6				mg/L	17	Standard
Dy	164	5.7	102.5				mg/L	16	Standard
Ho-1	165	13.3	94.4				mg/L	7	Standard
Er	166	20.0	100.0				mg/L	7	Standard
I	127	1610.1	16.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	107.542		
Al	27			
Sc	45			
Ti	47			
V	51	89.972		
Cr	52	83.818		
Cr	53			
Mn	55	85.687		
Co	59	98.272		
Ni	60	96.381		
Cu	65	97.667		
Zn	66	113.230		
> Ge	72		98.706	
As	75	103.620		
Se	82	109.583		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	96.144		
Cd	111	97.300		
Cd	114			
> In	115			100.090
Sn	118			
Sb	123	90.914		
Ba	135	87.967		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.600		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.596		
U	238	98.687		
> Bi	209			100.804
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
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Method 6020 - Summary Report

Sample ID: L1606136001
Sample Date/Time: Friday, July 01, 2016 15:11:12
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	102032.6	2.7				ug/L	76456	Standard
	Be	9	25.0	34.6	**-0.0031**	0.006	188.0	ug/L	20	Standard
	Al	27	55269386.4	1.6	**242.0065**	6.248	2.6	ug/L	1307	Standard
	Sc	45	42982.6	3.7				ug/L	41174	Standard
	Ti	47	671.0	5.7	**1.9148**	0.128	6.7	ug/L	27	Standard
	V	51	4267.5	6.4	**0.3052**	0.033	10.8	ug/L	1434	Standard
	Cr	52	10596.7	1.5	**0.3014**	0.025	8.3	ug/L	7733	Standard
	Cr	53	1925.1	6.6	**1.4310**	0.107	7.5	ug/L	442	Standard
	Mn	55	5430678.9	1.0	**696.1378**	12.327	1.8	ug/L	723	Standard
	Co	59	2218.2	2.4	**0.2516**	0.009	3.5	ug/L	217	Standard
	Ni	60	4312.3	3.2	**1.8641**	0.080	4.3	ug/L	304	Standard
	Cu	65	798.0	4.6	**0.3054**	0.016	5.3	ug/L	181	Standard
	Zn	66	2494.5	0.6	**1.7957**	0.026	1.4	ug/L	215	Standard
>	Ge	72	536693.6	0.8				ug/L	520809	Standard
	As	75	4266.7	1.8	**3.3992**	0.072	2.1	ug/L	-52	Standard
	Se	82	495.3	5.2	**3.6793**	0.225	6.1	ug/L	17	Standard
	Se-1	77	148.7	2.7	**1.0032**	0.054	5.4	ug/L	56	Standard
>	Ga	71	150.0	23.3				mg/L	25	Standard
	Rb	85	52107.8	0.6				ug/L	28	Standard
	Y	89	450964.8	1.0				ug/L	447395	Standard
>	Rh	103	411.7	6.2				ug/L	15	Standard
	Mo	98	1387.0	5.2	**0.4385**	0.030	6.9	ug/L	113	Standard
	Ag	107	200.3	32.4	**0.0153**	0.009	61.2	ug/L	108	Standard
	Cd	111	14.4	26.9	**0.0039**	0.002	40.7	mg/L	3	Standard
	Cd	114	17.5	189.3	**0.0031**	0.006	189.4	ug/L	20	Standard
>	In	115	620931.3	1.4				ug/L	625728	Standard
	Sn	118	1585.1	13.6	**0.1643**	0.037	22.3	ug/L	568	Standard
	Sb	123	1484.9	28.1	**0.2566**	0.085	33.0	ug/L	612	Standard
	Ba	135	185434.9	0.7	**85.8822**	0.643	0.7	ug/L	21	Standard
	Ce	140	220.0	14.2				ug/L	245	Standard
>	Tb	159	948217.7	1.1				ug/L	950397	Standard
	Ho	165	31.7	9.1				ug/L	7	Standard
	Tl	203	125.3	17.6	**0.0138**	0.003	19.7	ug/L	15	Standard
	Tl	205	88.3	14.2	**0.0018**	0.002	100.1	ug/L	13	Standard
	Pb	206	400.7	10.7	**0.0298**	0.009	29.3	ug/L	264	Standard
	Pb	207	353.0	2.8	**0.0252**	0.002	8.1	ug/L	222	Standard
	Pb	208	1381.0	1.8	**0.0200**	0.002	10.5	ug/L	959	Standard
	U	238	1004.0	3.9	**0.1291**	0.007	5.4	ug/L	9	Standard
>	Bi	209	532629.6	1.5				ug/L	552821	Standard

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Na	23	15.0	33.3	**42.5757**	12.711	29.9	mg/L	2	Standard
Mg	24	49159.6	0.3	**55.0024**	2.117	3.8	mg/L	55	Standard
K	39	1461.7	10.0	**5.2295**	0.334	6.4	mg/L	28	Standard
Ca	43	601.7	4.7	**50.0156**	4.072	8.1	mg/L	27	Standard
Fe	54	4574.4	1.8	**3.3398**	0.110	3.3	mg/L	147	Standard
Fe	57	1803.4	3.2	**4.5113**	0.320	7.1	mg/L	268	Standard
> **Sc-1**	45	42982.6	3.7				mg/L	41174	Standard
Cl	35	94962.0	0.7				ug/L	69550	Standard
Kr	83	2.0	0.0				ug/L	1	Standard
Br	81	95694.6	1.2				ug/L	1950	Standard
P	31	33902.9	0.5				ug/L	21156	Standard
S	34	4128.9	1.2				ug/L	3419	Standard
Sr	88	1591.8	1.7				ug/L	72	Standard
C	12	436.7	25.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	510.0	42.5				mg/L	17	Standard
Dy	164	37.8	54.9				mg/L	16	Standard
Ho-1	165	31.7	9.1				mg/L	7	Standard
Er	166	46.7	32.7				mg/L	7	Standard
I	127	121671837.9	2.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		133.453	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.050	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.233
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.348
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606136002
Sample Date/Time: Friday, July 01, 2016 15:14:23
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85581.0	1.5				ug/L	76456	Standard
	Be	9	25.0	60.0	**0.0002**	0.012	7141.4	ug/L	20	Standard
	Al	27	55900.2	24.1	**0.2811**	0.067	23.9	ug/L	1307	Standard
	Sc	45	42536.3	1.1				ug/L	41174	Standard
	Ti	47	133.7	20.6	**0.3028**	0.078	25.8	ug/L	27	Standard
	V	51	2309.2	3.2	**0.0668**	0.010	14.4	ug/L	1434	Standard
	Cr	52	10748.5	0.6	**0.2852**	0.003	0.9	ug/L	7733	Standard
	Cr	53	1006.7	5.2	**0.5242**	0.053	10.1	ug/L	442	Standard
	Mn	55	5954.9	24.0	**0.6413**	0.175	27.3	ug/L	723	Standard
	Co	59	262.0	8.2	**0.0029**	0.003	90.0	ug/L	217	Standard
	Ni	60	497.3	9.2	**0.0733**	0.022	29.6	ug/L	304	Standard
	Cu	65	2911.9	5.2	**1.2738**	0.065	5.1	ug/L	181	Standard
	Zn	66	1381.4	5.9	**0.8847**	0.058	6.6	ug/L	215	Standard
>	**Ge**	72	551341.1	0.5				ug/L	520809	Standard
	As	75	-21.8	42.5	**0.0285**	0.007	24.8	ug/L	-52	Standard
	Se	82	22.1	22.3	**0.0391**	0.037	95.8	ug/L	17	Standard
	Se-1	77	66.7	24.4	**0.0515**	0.176	341.9	ug/L	56	Standard
>	**Ga**	71	61.7	33.8				mg/L	25	Standard
	Rb	85	408.3	7.2				ug/L	28	Standard
	Y	89	470361.2	0.7				ug/L	447395	Standard
>	**Rh**	103	16.7	45.8				ug/L	15	Standard
	Mo	98	156.0	25.9	**0.0252**	0.013	53.1	ug/L	113	Standard
	Ag	107	109.0	5.1	**0.0016**	0.001	52.8	ug/L	108	Standard
	Cd	111	14.4	21.7	**0.0036**	0.001	37.8	mg/L	3	Standard
	Cd	114	35.6	84.3	**0.0060**	0.005	83.9	ug/L	20	Standard
>	**In**	115	658802.4	1.3				ug/L	625728	Standard
	Sn	118	3085.3	1.9	**0.3711**	0.008	2.1	ug/L	568	Standard
	Sb	123	348.5	35.2	**0.0306**	0.023	76.5	ug/L	612	Standard
	Ba	135	1852.8	5.0	**0.7908**	0.032	4.1	ug/L	21	Standard
	Ce	140	210.0	16.5				ug/L	245	Standard
>	**Tb**	159	984012.0	1.0				ug/L	950397	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	41.3	6.1	**0.0037**	0.000	7.2	ug/L	15	Standard
	Tl	205	46.7	68.9	**-0.0041**	0.004	94.4	ug/L	13	Standard
	Pb	206	460.7	0.7	**0.0345**	0.001	2.0	ug/L	264	Standard
	Pb	207	404.0	4.8	**0.0295**	0.003	11.6	ug/L	222	Standard
	Pb	208	1690.4	3.1	**0.0292**	0.002	7.9	ug/L	959	Standard
	U	238	26.3	7.9	**0.0029**	0.000	8.7	ug/L	9	Standard
>	**Bi**	209	574438.2	0.4				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	250.0	12.5	**0.2227**	0.038	16.8	mg/L	55	Standard
K	39	21.7	48.0	**-0.0507**	0.039	76.8	mg/L	28	Standard
Ca	43	33.3	45.8	**0.4827**	1.350	279.7	mg/L	27	Standard
Fe	54	174.0	19.0	**0.0332**	0.024	72.4	mg/L	147	Standard
Fe	57	240.0	20.1	**-0.0912**	0.137	149.9	mg/L	268	Standard
> **Sc-1**	45	42536.3	1.1				mg/L	41174	Standard
Cl	35	95107.6	2.0				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	2680.2	5.4				ug/L	1950	Standard
P	31	27181.0	2.6				ug/L	21156	Standard
S	34	4080.5	2.6				ug/L	3419	Standard
Sr	88	60.0	8.3				ug/L	72	Standard
C	12	186.7	8.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	346.7	61.6				mg/L	17	Standard
Dy	164	25.7	79.6				mg/L	16	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	835274.3	37.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.935	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.862	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.286
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.910
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606140001
Sample Date/Time: Friday, July 01, 2016 15:17:35
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83445.8	0.6				ug/L	76456	Standard
	Be	9	45.0	29.4	**0.0170**	0.011	63.9	ug/L	20	Standard
	Al	27	7040110.3	1.1	**37.6724**	0.642	1.7	ug/L	1307	Standard
	Sc	45	41625.4	2.0				ug/L	41174	Standard
	Ti	47	4285.9	4.9	**12.7764**	0.570	4.5	ug/L	27	Standard
	V	51	7078.2	1.9	**0.6435**	0.022	3.4	ug/L	1434	Standard
	Cr	52	21057.0	0.1	**1.5759**	0.026	1.6	ug/L	7733	Standard
	Cr	53	3443.7	1.2	**2.9149**	0.056	1.9	ug/L	442	Standard
	Mn	55	883702.1	0.7	**114.0510**	1.835	1.6	ug/L	723	Standard
	Co	59	2499.5	0.8	**0.2896**	0.004	1.4	ug/L	217	Standard
	Ni	60	4161.2	2.0	**1.8082**	0.061	3.4	ug/L	304	Standard
	Cu	65	3327.7	0.9	**1.5204**	0.005	0.4	ug/L	181	Standard
	Zn	66	4188.9	1.5	**3.1626**	0.022	0.7	ug/L	215	Standard
>	Ge	72	532673.4	1.1				ug/L	520809	Standard
	As	75	1321.1	0.2	**1.0915**	0.014	1.3	ug/L	-52	Standard
	Se	82	41.1	15.2	**0.1918**	0.049	25.5	ug/L	17	Standard
	Se-1	77	114.0	7.6	**0.6197**	0.107	17.2	ug/L	56	Standard
>	Ga	71	1218.4	5.9				mg/L	25	Standard
	Rb	85	38403.6	2.5				ug/L	28	Standard
	Y	89	469727.3	1.0				ug/L	447395	Standard
>	Rh	103	41.7	25.0				ug/L	15	Standard
	Mo	98	855.3	9.6	**0.2517**	0.030	12.0	ug/L	113	Standard
	Ag	107	118.0	3.1	**0.0031**	0.000	8.0	ug/L	108	Standard
	Cd	111	168.9	5.8	**0.0690**	0.003	4.5	mg/L	3	Standard
	Cd	114	422.3	16.9	**0.0721**	0.011	15.8	ug/L	20	Standard
>	In	115	642729.5	1.7				ug/L	625728	Standard
	Sn	118	2336.8	13.7	**0.2695**	0.050	18.6	ug/L	568	Standard
	Sb	123	10092.5	4.2	**1.8672**	0.060	3.2	ug/L	612	Standard
	Ba	135	14880.6	0.5	**6.6421**	0.083	1.2	ug/L	21	Standard
	Ce	140	38117.9	1.2				ug/L	245	Standard
>	Tb	159	971949.7	2.4				ug/L	950397	Standard
	Ho	165	766.7	0.8				ug/L	7	Standard
	Tl	203	84.7	11.9	**0.0086**	0.001	13.1	ug/L	15	Standard
	Tl	205	65.0	26.6	**-0.0017**	0.002	121.5	ug/L	13	Standard
	Pb	206	5500.7	2.1	**0.9180**	0.006	0.6	ug/L	264	Standard
	Pb	207	4505.0	2.1	**0.8213**	0.015	1.9	ug/L	222	Standard
	Pb	208	19667.7	0.6	**0.8791**	0.020	2.3	ug/L	959	Standard
	U	238	150.0	6.0	**0.0182**	0.001	7.7	ug/L	9	Standard
>	Bi	209	558473.2	1.6				ug/L	552821	Standard

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Na	23	1.7	173.2	**4.9489**	8.563	173.0	mg/L	2	Standard
Mg	24	2895.3	5.1	**3.2866**	0.193	5.9	mg/L	55	Standard
K	39	586.7	6.5	**2.0948**	0.159	7.6	mg/L	28	Standard
Ca	43	126.7	13.9	**8.9443**	1.703	19.0	mg/L	27	Standard
Fe	54	1267.9	7.9	**0.8860**	0.097	10.9	mg/L	147	Standard
Fe	57	600.0	6.3	**1.0204**	0.129	12.6	mg/L	268	Standard
> **Sc-1**	45	41625.4	2.0				mg/L	41174	Standard
Cl	35	87177.5	2.1				ug/L	69550	Standard
Kr	83	2.0	173.2				ug/L	1	Standard
Br	81	7248.4	5.5				ug/L	1950	Standard
P	31	28932.6	1.2				ug/L	21156	Standard
S	34	4053.9	3.3				ug/L	3419	Standard
Sr	88	248.3	11.1				ug/L	72	Standard
C	12	190.0	13.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	326.7	32.7				mg/L	17	Standard
Dy	164	1103.7	6.9				mg/L	16	Standard
Ho-1	165	766.7	0.8				mg/L	7	Standard
Er	166	690.0	9.5				mg/L	7	Standard
I	127	358932.7	7.2				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		109.143	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		102.278	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.717
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.022
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606140002
Sample Date/Time: Friday, July 01, 2016 15:20:46
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83243.1	1.8				ug/L	76456	Standard
	Be	9	40.0	66.1	**0.0127**	0.021	164.7	ug/L	20	Standard
	Al	27	20806325.7	1.5	**111.6281**	1.089	1.0	ug/L	1307	Standard
	Sc	45	42705.1	1.7				ug/L	41174	Standard
	Ti	47	521.0	4.2	**1.4841**	0.067	4.5	ug/L	27	Standard
	V	51	3344.5	4.3	**0.2005**	0.017	8.4	ug/L	1434	Standard
	Cr	52	11575.8	0.5	**0.4337**	0.008	1.8	ug/L	7733	Standard
	Cr	53	3380.4	6.9	**2.8639**	0.226	7.9	ug/L	442	Standard
	Mn	55	948881.0	1.2	**122.8502**	1.452	1.2	ug/L	723	Standard
	Co	59	2088.1	1.4	**0.2379**	0.004	1.7	ug/L	217	Standard
	Ni	60	3829.2	1.0	**1.6570**	0.016	1.0	ug/L	304	Standard
	Cu	65	1020.7	3.6	**0.4165**	0.018	4.3	ug/L	181	Standard
	Zn	66	1711.1	3.0	**1.1897**	0.044	3.7	ug/L	215	Standard
>	Ge	72	530967.7	0.1				ug/L	520809	Standard
	As	75	120.6	26.2	**0.1410**	0.025	17.8	ug/L	-52	Standard
	Se	82	48.6	18.0	**0.2506**	0.068	27.3	ug/L	17	Standard
	Se-1	77	180.0	11.7	**1.3805**	0.238	17.3	ug/L	56	Standard
>	Ga	71	128.3	39.0				mg/L	25	Standard
	Rb	85	2536.9	2.3				ug/L	28	Standard
	Y	89	459396.3	1.3				ug/L	447395	Standard
>	Rh	103	68.3	16.9				ug/L	15	Standard
	Mo	98	164.7	11.0	**0.0301**	0.006	21.2	ug/L	113	Standard
	Ag	107	87.7	14.4	**-0.0008**	0.002	218.3	ug/L	108	Standard
	Cd	111	68.1	9.8	**0.0269**	0.003	10.0	mg/L	3	Standard
	Cd	114	155.0	26.9	**0.0270**	0.007	27.3	ug/L	20	Standard
>	In	115	631529.9	1.1				ug/L	625728	Standard
	Sn	118	1490.1	25.7	**0.1455**	0.061	42.2	ug/L	568	Standard
	Sb	123	888.6	10.6	**0.1367**	0.019	13.9	ug/L	612	Standard
	Ba	135	26458.7	0.5	**12.0331**	0.137	1.1	ug/L	21	Standard
	Ce	140	9911.6	1.3				ug/L	245	Standard
>	Tb	159	958775.7	0.7				ug/L	950397	Standard
	Ho	165	208.3	2.8				ug/L	7	Standard
	Tl	203	123.7	9.6	**0.0132**	0.001	9.6	ug/L	15	Standard
	Tl	205	103.3	42.3	**0.0034**	0.005	161.1	ug/L	13	Standard
	Pb	206	646.3	4.8	**0.0721**	0.004	5.3	ug/L	264	Standard
	Pb	207	521.7	7.3	**0.0568**	0.007	11.5	ug/L	222	Standard
	Pb	208	2324.1	2.2	**0.0641**	0.003	5.2	ug/L	959	Standard
	U	238	1352.7	2.4	**0.1701**	0.003	1.9	ug/L	9	Standard
>	Bi	209	544667.8	1.5				ug/L	552821	Standard

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Na	23	3.3	173.2	**9.5374**	16.511	173.1	mg/L	2	Standard
Mg	24	12897.2	1.9	**14.4668**	0.241	1.7	mg/L	55	Standard
K	39	143.3	40.4	**0.3966**	0.206	52.0	mg/L	28	Standard
Ca	43	550.0	11.0	**45.7421**	5.294	11.6	mg/L	27	Standard
Fe	54	409.1	1.1	**0.2106**	0.008	3.9	mg/L	147	Standard
Fe	57	643.3	9.1	**1.1039**	0.202	18.3	mg/L	268	Standard
> **Sc-1**	45	42705.1	1.7				mg/L	41174	Standard
Cl	35	94915.1	1.1				ug/L	69550	Standard
Kr	83	2.0	0.0				ug/L	1	Standard
Br	81	7108.3	0.6				ug/L	1950	Standard
P	31	28478.4	1.9				ug/L	21156	Standard
S	34	4015.5	4.7				ug/L	3419	Standard
Sr	88	310.0	10.1				ug/L	72	Standard
C	12	300.0	17.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	246.7	10.2				mg/L	17	Standard
Dy	164	399.0	15.6				mg/L	16	Standard
Ho-1	165	208.3	2.8				mg/L	7	Standard
Er	166	230.0	11.5				mg/L	7	Standard
I	127	149991.1	7.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.877	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.950	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.927	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.525	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606140003
Sample Date/Time: Friday, July 01, 2016 15:23:58
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82504.1	1.6				ug/L	76456	Standard
	Be	9	21.7	48.0	**-0.0018**	0.009	480.2	ug/L	20	Standard
	Al	27	13452706.7	0.5	**72.8294**	1.526	2.1	ug/L	1307	Standard
	Sc	45	41709.0	1.4				ug/L	41174	Standard
	Ti	47	2378.5	5.3	**7.0809**	0.376	5.3	ug/L	27	Standard
	V	51	7214.8	5.3	**0.6629**	0.045	6.8	ug/L	1434	Standard
	Cr	52	13978.1	0.6	**0.7263**	0.017	2.4	ug/L	7733	Standard
	Cr	53	7091.7	6.1	**6.4687**	0.376	5.8	ug/L	442	Standard
	Mn	55	62406.3	0.1	**7.9906**	0.075	0.9	ug/L	723	Standard
	Co	59	1446.4	2.2	**0.1559**	0.006	3.6	ug/L	217	Standard
	Ni	60	2083.8	4.2	**0.8328**	0.047	5.6	ug/L	304	Standard
	Cu	65	965.4	1.3	**0.3903**	0.010	2.5	ug/L	181	Standard
	Zn	66	2028.5	1.9	**1.4450**	0.043	3.0	ug/L	215	Standard
>	**Ge**	72	530627.2	0.9				ug/L	520809	Standard
	As	75	140.1	24.4	**0.1567**	0.028	17.9	ug/L	-52	Standard
	Se	82	39.3	18.1	**0.1786**	0.052	29.4	ug/L	17	Standard
	Se-1	77	316.3	5.9	**2.9476**	0.217	7.4	ug/L	56	Standard
>	**Ga**	71	366.7	8.0				mg/L	25	Standard
	Rb	85	8984.3	2.4				ug/L	28	Standard
	Y	89	458813.5	0.8				ug/L	447395	Standard
>	**Rh**	103	51.7	39.1				ug/L	15	Standard
	Mo	98	313.7	15.4	**0.0798**	0.016	20.1	ug/L	113	Standard
	Ag	107	93.7	11.2	**0.0002**	0.001	781.2	ug/L	108	Standard
	Cd	111	28.1	20.3	**0.0099**	0.002	24.9	mg/L	3	Standard
	Cd	114	65.8	57.7	**0.0116**	0.007	57.4	ug/L	20	Standard
>	**In**	115	625934.2	0.5				ug/L	625728	Standard
	Sn	118	1398.4	16.4	**0.1329**	0.035	26.4	ug/L	568	Standard
	Sb	123	422.7	21.1	**0.0480**	0.017	35.9	ug/L	612	Standard
	Ba	135	6793.5	0.6	**3.1038**	0.028	0.9	ug/L	21	Standard
	Ce	140	15908.3	1.9				ug/L	245	Standard
>	**Tb**	159	944178.7	1.1				ug/L	950397	Standard
	Ho	165	355.0	16.2				ug/L	7	Standard
	Tl	203	120.3	15.9	**0.0130**	0.002	16.8	ug/L	15	Standard
	Tl	205	111.7	23.0	**0.0046**	0.003	71.8	ug/L	13	Standard
	Pb	206	1028.4	3.3	**0.1425**	0.006	4.1	ug/L	264	Standard
	Pb	207	909.0	1.6	**0.1352**	0.003	2.4	ug/L	222	Standard
	Pb	208	3805.2	1.1	**0.1376**	0.002	1.8	ug/L	959	Standard
	U	238	790.4	10.0	**0.1003**	0.010	10.2	ug/L	9	Standard
>	**Bi**	209	538993.4	0.2				ug/L	552821	Standard

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Na	23	3.3	86.6	**9.8709**	8.546	86.6	mg/L	2	Standard
Mg	24	22061.0	0.3	**25.3844**	0.436	1.7	mg/L	55	Standard
K	39	113.3	9.2	**0.2976**	0.036	12.0	mg/L	28	Standard
Ca	43	235.0	16.1	**18.6613**	3.690	19.8	mg/L	27	Standard
Fe	54	444.8	12.4	**0.2457**	0.044	17.8	mg/L	147	Standard
Fe	57	475.0	1.1	**0.6368**	0.010	1.6	mg/L	268	Standard
> **Sc-1**	45	41709.0	1.4				mg/L	41174	Standard
Cl	35	94012.8	1.3				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	5417.6	1.0				ug/L	1950	Standard
P	31	27702.0	0.2				ug/L	21156	Standard
S	34	3952.2	4.7				ug/L	3419	Standard
Sr	88	203.3	6.2				ug/L	72	Standard
C	12	180.0	5.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	206.7	46.0				mg/L	17	Standard
Dy	164	524.4	5.0				mg/L	16	Standard
Ho-1	165	355.0	16.2				mg/L	7	Standard
Er	166	326.7	23.8				mg/L	7	Standard
I	127	92501.9	4.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.911	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.885	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.033
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.499
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606140004
Sample Date/Time: Friday, July 01, 2016 15:27:09
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81751.7	2.2				ug/L	76456	Standard
	Be	9	135.0	7.4	**0.0930**	0.010	10.5	ug/L	20	Standard
	Al	27	16409591.9	0.7	**89.6714**	2.399	2.7	ug/L	1307	Standard
	Sc	45	43657.8	2.3				ug/L	41174	Standard
	Ti	47	15858.0	1.7	**48.2292**	0.843	1.7	ug/L	27	Standard
	V	51	24903.7	1.5	**2.8088**	0.058	2.1	ug/L	1434	Standard
	Cr	52	24554.9	2.0	**2.0436**	0.044	2.1	ug/L	7733	Standard
	Cr	53	8734.2	4.6	**8.1598**	0.352	4.3	ug/L	442	Standard
	Mn	55	321581.9	1.2	**42.0644**	0.335	0.8	ug/L	723	Standard
	Co	59	9091.1	1.5	**1.1485**	0.011	1.0	ug/L	217	Standard
	Ni	60	4968.8	2.8	**2.2237**	0.057	2.6	ug/L	304	Standard
	Cu	65	4956.5	2.1	**2.3370**	0.063	2.7	ug/L	181	Standard
	Zn	66	24116.8	0.6	**19.3591**	0.218	1.1	ug/L	215	Standard
>	Ge	72	524703.9	0.5				ug/L	520809	Standard
	As	75	614.6	10.2	**0.5395**	0.053	9.9	ug/L	-52	Standard
	Se	82	60.0	7.2	**0.3447**	0.037	10.6	ug/L	17	Standard
	Se-1	77	320.0	6.3	**3.0305**	0.221	7.3	ug/L	56	Standard
>	Ga	71	2358.5	3.8				mg/L	25	Standard
	Rb	85	29106.3	0.5				ug/L	28	Standard
	Y	89	488820.8	1.3				ug/L	447395	Standard
>	Rh	103	41.7	36.7				ug/L	15	Standard
	Mo	98	207.5	20.0	**0.0449**	0.014	31.5	ug/L	113	Standard
	Ag	107	157.7	11.6	**0.0091**	0.002	27.1	ug/L	108	Standard
	Cd	111	394.0	4.6	**0.1692**	0.008	4.7	mg/L	3	Standard
	Cd	114	994.3	3.1	**0.1748**	0.005	2.7	ug/L	20	Standard
>	In	115	624414.0	0.6				ug/L	625728	Standard
	Sn	118	1828.4	12.1	**0.2006**	0.036	17.9	ug/L	568	Standard
	Sb	123	719.7	13.7	**0.1059**	0.020	18.8	ug/L	612	Standard
	Ba	135	28855.8	0.8	**13.2740**	0.137	1.0	ug/L	21	Standard
	Ce	140	181035.3	1.7				ug/L	245	Standard
>	Tb	159	950705.2	0.6				ug/L	950397	Standard
	Ho	165	3198.7	2.4				ug/L	7	Standard
	Tl	203	267.3	11.5	**0.0298**	0.004	11.9	ug/L	15	Standard
	Tl	205	255.0	10.9	**0.0230**	0.004	15.5	ug/L	13	Standard
	Pb	206	5712.7	1.8	**0.9909**	0.019	1.9	ug/L	264	Standard
	Pb	207	4766.7	1.5	**0.9045**	0.014	1.5	ug/L	222	Standard
	Pb	208	20771.3	1.3	**0.9660**	0.013	1.3	ug/L	959	Standard
	U	238	597.3	5.0	**0.0757**	0.004	5.0	ug/L	9	Standard
>	Bi	209	539160.5	0.0				ug/L	552821	Standard

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Na	23	3.3	86.6	**9.3434**	8.093	86.6	mg/L	2	Standard
Mg	24	23045.8	1.2	**25.3403**	0.746	2.9	mg/L	55	Standard
K	39	200.0	16.4	**0.5941**	0.134	22.5	mg/L	28	Standard
Ca	43	263.3	19.5	**20.1662**	4.729	23.5	mg/L	27	Standard
Fe	54	2633.0	5.5	**1.8499**	0.135	7.3	mg/L	147	Standard
Fe	57	1085.0	6.4	**2.3396**	0.175	7.5	mg/L	268	Standard
Sc-1	45	43657.8	2.3				mg/L	41174	Standard
Cl	35	89531.9	3.2				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	8986.0	7.5				ug/L	1950	Standard
P	31	30121.6	2.2				ug/L	21156	Standard
S	34	4117.2	5.6				ug/L	3419	Standard
Sr	88	208.3	27.6				ug/L	72	Standard
C	12	203.3	12.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	336.7	30.9				mg/L	17	Standard
Dy	164	4587.9	2.0				mg/L	16	Standard
Ho-1	165	3198.7	2.4				mg/L	7	Standard
Er	166	3260.4	5.8				mg/L	7	Standard
I	127	86340.3	0.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.927	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.748	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.790
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.529
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606140005
Sample Date/Time: Friday, July 01, 2016 15:30:21
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81575.7	1.3				ug/L	76456	Standard
	Be	9	31.7	45.6	**0.0067**	0.012	182.8	ug/L	20	Standard
	Al	27	11361131.6	0.7	**62.2005**	1.160	1.9	ug/L	1307	Standard
	Sc	45	41289.5	1.9				ug/L	41174	Standard
	Ti	47	446.7	4.2	**1.2710**	0.064	5.1	ug/L	27	Standard
	V	51	6339.2	1.7	**0.5637**	0.005	0.9	ug/L	1434	Standard
	Cr	52	14053.8	0.9	**0.7478**	0.031	4.1	ug/L	7733	Standard
	Cr	53	3397.0	0.8	**2.9061**	0.060	2.1	ug/L	442	Standard
	Mn	55	91180.2	0.3	**11.8062**	0.126	1.1	ug/L	723	Standard
	Co	59	1636.1	3.3	**0.1817**	0.006	3.3	ug/L	217	Standard
	Ni	60	2420.2	3.0	**0.9998**	0.030	3.0	ug/L	304	Standard
	Cu	65	1115.7	0.8	**0.4664**	0.010	2.1	ug/L	181	Standard
	Zn	66	4102.9	4.8	**3.1313**	0.189	6.0	ug/L	215	Standard
>	Ge	72	526864.0	1.0				ug/L	520809	Standard
	As	75	209.1	23.9	**0.2126**	0.040	18.9	ug/L	-52	Standard
	Se	82	44.2	19.7	**0.2192**	0.067	30.8	ug/L	17	Standard
	Se-1	77	143.0	9.9	**0.9701**	0.178	18.4	ug/L	56	Standard
>	Ga	71	123.3	14.2				mg/L	25	Standard
	Rb	85	2268.5	7.3				ug/L	28	Standard
	Y	89	460843.6	0.6				ug/L	447395	Standard
>	Rh	103	38.3	7.5				ug/L	15	Standard
	Mo	98	138.6	17.2	**0.0223**	0.008	37.4	ug/L	113	Standard
	Ag	107	89.7	12.2	**-0.0003**	0.002	618.7	ug/L	108	Standard
	Cd	111	119.1	4.0	**0.0498**	0.002	3.9	mg/L	3	Standard
	Cd	114	332.6	23.3	**0.0590**	0.014	24.0	ug/L	20	Standard
>	In	115	620430.9	1.0				ug/L	625728	Standard
	Sn	118	1270.1	10.3	**0.1149**	0.022	19.3	ug/L	568	Standard
	Sb	123	506.5	10.9	**0.0652**	0.012	17.9	ug/L	612	Standard
	Ba	135	12723.7	1.4	**5.8806**	0.073	1.2	ug/L	21	Standard
	Ce	140	16098.5	0.3				ug/L	245	Standard
>	Tb	159	949690.5	1.0				ug/L	950397	Standard
	Ho	165	733.4	8.1				ug/L	7	Standard
	Tl	203	89.0	5.8	**0.0094**	0.001	6.1	ug/L	15	Standard
	Tl	205	71.7	4.0	**-0.0005**	0.000	65.6	ug/L	13	Standard
	Pb	206	791.4	4.4	**0.0994**	0.006	5.9	ug/L	264	Standard
	Pb	207	690.7	3.6	**0.0915**	0.005	5.0	ug/L	222	Standard
	Pb	208	2860.4	1.4	**0.0912**	0.002	1.7	ug/L	959	Standard
	U	238	438.0	6.5	**0.0554**	0.003	6.2	ug/L	9	Standard
>	Bi	209	539820.6	0.5				ug/L	552821	Standard

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Na	23	3.3	173.2	**9.8050**	16.974	173.1	mg/L	2	Standard
Mg	24	7792.0	1.0	**9.0186**	0.177	2.0	mg/L	55	Standard
K	39	263.3	14.7	**0.8766**	0.155	17.6	mg/L	28	Standard
Ca	43	330.0	19.8	**27.4186**	5.627	20.5	mg/L	27	Standard
Fe	54	735.5	15.2	**0.4767**	0.090	18.9	mg/L	147	Standard
Fe	57	581.7	10.7	**0.9796**	0.205	21.0	mg/L	268	Standard
> **Sc-1**	45	41289.5	1.9				mg/L	41174	Standard
Cl	35	92233.2	0.5				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	7218.4	8.8				ug/L	1950	Standard
P	31	25119.1	2.5				ug/L	21156	Standard
S	34	4015.5	4.2				ug/L	3419	Standard
Sr	88	198.3	12.9				ug/L	72	Standard
C	12	296.7	7.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	153.3	29.4				mg/L	17	Standard
Dy	164	946.6	5.7				mg/L	16	Standard
Ho-1	165	733.4	8.1				mg/L	7	Standard
Er	166	766.7	15.2				mg/L	7	Standard
I	127	70972.5	1.4				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		106.697	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.163	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.153
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.648
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606140009
Sample Date/Time: Friday, July 01, 2016 15:33:32
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81176.9	1.8				ug/L	76456	Standard
	Be	9	121.7	33.5	**0.0827**	0.035	42.4	ug/L	20	Standard
	Al	27	9588194.5	0.1	**52.7539**	0.999	1.9	ug/L	1307	Standard
	Sc	45	43500.7	0.9				ug/L	41174	Standard
	Ti	47	16231.4	1.0	**49.4700**	1.142	2.3	ug/L	27	Standard
	V	51	27177.8	1.2	**3.0895**	0.018	0.6	ug/L	1434	Standard
	Cr	52	30590.2	0.3	**2.7921**	0.043	1.5	ug/L	7733	Standard
	Cr	53	15214.3	3.9	**14.5584**	0.723	5.0	ug/L	442	Standard
	Mn	55	419736.2	0.6	**55.0489**	1.027	1.9	ug/L	723	Standard
	Co	59	9146.8	1.6	**1.1580**	0.019	1.6	ug/L	217	Standard
	Ni	60	5875.8	2.7	**2.6630**	0.065	2.4	ug/L	304	Standard
	Cu	65	6513.4	1.0	**3.1007**	0.066	2.1	ug/L	181	Standard
	Zn	66	26692.5	0.5	**21.4893**	0.375	1.7	ug/L	215	Standard
>	Ge	72	523713.8	1.4				ug/L	520809	Standard
	As	75	573.5	19.4	**0.5079**	0.095	18.7	ug/L	-52	Standard
	Se	82	88.9	5.9	**0.5739**	0.045	7.8	ug/L	17	Standard
	Se-1	77	673.7	3.9	**7.1522**	0.285	4.0	ug/L	56	Standard
>	Ga	71	2611.9	4.8				mg/L	25	Standard
	Rb	85	28024.2	1.3				ug/L	28	Standard
	Y	89	508019.1	1.4				ug/L	447395	Standard
>	Rh	103	75.0	11.5				ug/L	15	Standard
	Mo	98	440.1	11.3	**0.1259**	0.017	13.3	ug/L	113	Standard
	Ag	107	293.3	3.4	**0.0292**	0.001	4.2	ug/L	108	Standard
	Cd	111	123.6	12.9	**0.0529**	0.007	13.0	mg/L	3	Standard
	Cd	114	259.6	1.9	**0.0469**	0.001	2.3	ug/L	20	Standard
>	In	115	607695.5	0.5				ug/L	625728	Standard
	Sn	118	1815.1	15.8	**0.2060**	0.044	21.6	ug/L	568	Standard
	Sb	123	1181.5	5.3	**0.2017**	0.012	6.1	ug/L	612	Standard
	Ba	135	44851.3	1.2	**21.2102**	0.264	1.2	ug/L	21	Standard
	Ce	140	233746.2	1.6				ug/L	245	Standard
>	Tb	159	940005.0	0.9				ug/L	950397	Standard
	Ho	165	4862.4	3.3				ug/L	7	Standard
	Tl	203	294.3	3.6	**0.0336**	0.001	3.3	ug/L	15	Standard
	Tl	205	293.3	8.4	**0.0288**	0.003	10.7	ug/L	13	Standard
	Pb	206	14978.4	0.2	**2.7295**	0.019	0.7	ug/L	264	Standard
	Pb	207	12667.6	1.3	**2.5366**	0.044	1.7	ug/L	222	Standard
	Pb	208	54283.9	0.6	**2.6615**	0.029	1.1	ug/L	959	Standard
	U	238	853.7	3.9	**0.1108**	0.005	4.3	ug/L	9	Standard
>	Bi	209	527415.0	0.5				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	58944.5	2.4	**65.1233**	1.989	3.1	mg/L	55	Standard
K	39	308.3	15.9	**0.9880**	0.180	18.2	mg/L	28	Standard
Ca	43	298.3	31.7	**23.1691**	7.979	34.4	mg/L	27	Standard
Fe	54	3472.7	3.0	**2.4787**	0.071	2.9	mg/L	147	Standard
Fe	57	1280.1	3.7	**2.9195**	0.164	5.6	mg/L	268	Standard
> **Sc-1**	45	43500.7	0.9				mg/L	41174	Standard
Cl	35	88358.4	3.5				ug/L	69550	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	13829.7	7.0				ug/L	1950	Standard
P	31	28925.9	0.9				ug/L	21156	Standard
S	34	3962.2	5.0				ug/L	3419	Standard
Sr	88	261.7	17.1				ug/L	72	Standard
C	12	160.0	39.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	233.3	49.3				mg/L	17	Standard
Dy	164	7255.6	1.4				mg/L	16	Standard
Ho-1	165	4862.4	3.3				mg/L	7	Standard
Er	166	4654.0	5.4				mg/L	7	Standard
I	127	97026.7	3.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.175	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.558	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85	
Y	89	
> Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
> In	115	97.118
Sn	118	
Sb	123	
Ba	135	
Ce	140	
> Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
> Bi	209	95.404
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
> Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606140010
Sample Date/Time: Friday, July 01, 2016 15:36:43
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81063.0	2.2				ug/L	76456	Standard
	Be	9	45.0	40.1	**0.0179**	0.015	82.9	ug/L	20	Standard
	Al	27	11177331.1	2.6	**61.5680**	0.262	0.4	ug/L	1307	Standard
	Sc	45	42046.6	2.8				ug/L	41174	Standard
	Ti	47	3513.4	4.8	**10.6195**	0.508	4.8	ug/L	27	Standard
	V	51	6549.3	3.1	**0.5923**	0.026	4.4	ug/L	1434	Standard
	Cr	52	28159.1	0.6	**2.4863**	0.028	1.1	ug/L	7733	Standard
	Cr	53	13474.3	4.4	**12.8172**	0.601	4.7	ug/L	442	Standard
	Mn	55	64803.6	1.2	**8.3962**	0.117	1.4	ug/L	723	Standard
	Co	59	2906.3	2.0	**0.3471**	0.007	2.1	ug/L	217	Standard
	Ni	60	4725.7	1.8	**2.1076**	0.036	1.7	ug/L	304	Standard
	Cu	65	5144.9	0.4	**2.4285**	0.010	0.4	ug/L	181	Standard
	Zn	66	4108.2	1.9	**3.1482**	0.066	2.1	ug/L	215	Standard
>	Ge	72	524692.7	0.2				ug/L	520809	Standard
	As	75	145.9	6.5	**0.1625**	0.008	4.8	ug/L	-52	Standard
	Se	82	112.8	12.6	**0.7595**	0.112	14.8	ug/L	17	Standard
	Se-1	77	626.7	4.9	**6.5924**	0.373	5.7	ug/L	56	Standard
>	Ga	71	708.3	9.6				mg/L	25	Standard
	Rb	85	114385.2	1.8				ug/L	28	Standard
	Y	89	451161.9	0.3				ug/L	447395	Standard
>	Rh	103	126.7	19.5				ug/L	15	Standard
	Mo	98	337.8	3.9	**0.0889**	0.005	5.8	ug/L	113	Standard
	Ag	107	99.0	14.6	**0.0011**	0.002	190.6	ug/L	108	Standard
	Cd	111	210.4	3.4	**0.0899**	0.004	4.2	mg/L	3	Standard
	Cd	114	526.0	13.1	**0.0932**	0.013	13.7	ug/L	20	Standard
>	In	115	619724.1	0.7				ug/L	625728	Standard
	Sn	118	3008.6	5.9	**0.3878**	0.029	7.5	ug/L	568	Standard
	Sb	123	32833.7	1.0	**6.3811**	0.045	0.7	ug/L	612	Standard
	Ba	135	22694.3	1.2	**10.5145**	0.070	0.7	ug/L	21	Standard
	Ce	140	24100.8	3.3				ug/L	245	Standard
>	Tb	159	942819.0	1.4				ug/L	950397	Standard
	Ho	165	435.0	17.4				ug/L	7	Standard
	Tl	203	173.7	3.3	**0.0194**	0.001	3.9	ug/L	15	Standard
	Tl	205	150.0	13.3	**0.0098**	0.003	26.2	ug/L	13	Standard
	Pb	206	11753.6	0.5	**2.1162**	0.005	0.2	ug/L	264	Standard
	Pb	207	9878.9	1.2	**1.9529**	0.015	0.8	ug/L	222	Standard
	Pb	208	42950.0	0.3	**2.0797**	0.006	0.3	ug/L	959	Standard
	U	238	632.3	2.5	**0.0814**	0.002	2.7	ug/L	9	Standard
>	Bi	209	531366.5	0.5				ug/L	552821	Standard

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Na	23	3.3	173.2	**10.0447**	17.389	173.1	mg/L	2	Standard
Mg	24	54402.5	1.7	**62.2231**	2.757	4.4	mg/L	55	Standard
K	39	598.3	6.5	**2.1139**	0.085	4.0	mg/L	28	Standard
Ca	43	330.0	10.9	**26.8723**	2.438	9.1	mg/L	27	Standard
Fe	54	560.8	9.0	**0.3316**	0.032	9.6	mg/L	147	Standard
Fe	57	588.3	6.5	**0.9662**	0.103	10.6	mg/L	268	Standard
> **Sc-1**	45	42046.6	2.8				mg/L	41174	Standard
Cl	35	90806.6	0.2				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	18608.1	1.3				ug/L	1950	Standard
P	31	26292.8	1.7				ug/L	21156	Standard
S	34	4085.6	2.8				ug/L	3419	Standard
Sr	88	385.0	14.8				ug/L	72	Standard
C	12	186.7	30.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	136.7	27.7				mg/L	17	Standard
Dy	164	734.0	6.8				mg/L	16	Standard
Ho-1	165	435.0	17.4				mg/L	7	Standard
Er	166	403.3	10.0				mg/L	7	Standard
I	127	125158.4	2.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.026	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.746	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.041
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.119
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606144411
Sample Date/Time: Friday, July 01, 2016 15:39:55
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81448.4	1.6				ug/L	76456	Standard
	Be	9	11.7	65.5	**-0.0101**	0.006	63.9	ug/L	20	Standard
	Al	27	21525.3	7.9	**0.1077**	0.007	6.9	ug/L	1307	Standard
	Sc	45	43096.2	1.6				ug/L	41174	Standard
	Ti	47	91.7	3.5	**0.1831**	0.008	4.3	ug/L	27	Standard
	V	51	5715.4	7.0	**0.4625**	0.039	8.5	ug/L	1434	Standard
	Cr	52	72666.9	1.2	**7.5774**	0.036	0.5	ug/L	7733	Standard
	Cr	53	9179.5	6.4	**8.2203**	0.500	6.1	ug/L	442	Standard
	Mn	55	17987.3	2.4	**2.1587**	0.042	2.0	ug/L	723	Standard
	Co	59	1272.7	1.0	**0.1286**	0.001	0.4	ug/L	217	Standard
	Ni	60	1771.4	2.8	**0.6589**	0.022	3.3	ug/L	304	Standard
	Cu	65	890.7	4.0	**0.3410**	0.015	4.4	ug/L	181	Standard
	Zn	66	2169.2	1.7	**1.5037**	0.020	1.3	ug/L	215	Standard
>	**Ge**	72	547560.2	1.1				ug/L	520809	Standard
	As	75	-25.7	84.9	**0.0255**	0.017	64.8	ug/L	-52	Standard
	Se	82	30.2	19.3	**0.1012**	0.046	45.5	ug/L	17	Standard
	Se-1	77	82.7	3.0	**0.2352**	0.029	12.5	ug/L	56	Standard
>	**Ga**	71	61.7	16.9				mg/L	25	Standard
	Rb	85	225.0	18.2				ug/L	28	Standard
	Y	89	463078.5	0.6				ug/L	447395	Standard
>	**Rh**	103	16.7	34.6				ug/L	15	Standard
	Mo	98	9345.0	1.0	**2.9323**	0.025	0.9	ug/L	113	Standard
	Ag	107	88.3	4.7	**-0.0011**	0.001	50.3	ug/L	108	Standard
	Cd	111	4.7	106.3	**-0.0004**	0.002	489.8	mg/L	3	Standard
	Cd	114	53.3	48.8	**0.0090**	0.004	49.5	ug/L	20	Standard
>	**In**	115	654026.5	1.0				ug/L	625728	Standard
	Sn	118	6959.9	4.7	**0.9503**	0.045	4.8	ug/L	568	Standard
	Sb	123	309.2	21.8	**0.0236**	0.013	55.3	ug/L	612	Standard
	Ba	135	560.7	1.9	**0.2287**	0.006	2.5	ug/L	21	Standard
	Ce	140	275.0	28.4				ug/L	245	Standard
>	**Tb**	159	972057.0	0.8				ug/L	950397	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	71.3	7.7	**0.0070**	0.001	9.6	ug/L	15	Standard
	Tl	205	56.7	27.0	**-0.0028**	0.002	64.9	ug/L	13	Standard
	Pb	206	408.7	2.4	**0.0268**	0.002	8.8	ug/L	264	Standard
	Pb	207	323.7	7.4	**0.0155**	0.005	32.9	ug/L	222	Standard
	Pb	208	1481.0	2.8	**0.0207**	0.002	11.3	ug/L	959	Standard
	U	238	26.3	21.6	**0.0029**	0.001	22.8	ug/L	9	Standard
>	**Bi**	209	565291.9	1.0				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	118.3	31.7	**0.0714**	0.040	55.7	mg/L	55	Standard
K	39	33.3	8.7	**-0.0090**	0.012	135.9	mg/L	28	Standard
Ca	43	25.0	20.0	**-0.2843**	0.417	146.5	mg/L	27	Standard
Fe	54	653.3	3.0	**0.3905**	0.007	1.8	mg/L	147	Standard
Fe	57	318.3	7.9	**0.1302**	0.066	51.0	mg/L	268	Standard
> **Sc-1**	45	43096.2	1.6				mg/L	41174	Standard
Cl	35	93637.8	1.2				ug/L	69550	Standard
Kr	83	2.7	57.3				ug/L	1	Standard
Br	81	4000.5	7.9				ug/L	1950	Standard
P	31	25331.2	1.4				ug/L	21156	Standard
S	34	4190.6	5.7				ug/L	3419	Standard
Sr	88	63.3	25.4				ug/L	72	Standard
C	12	126.7	19.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	170.0	56.1				mg/L	17	Standard
Dy	164	16.0	67.7				mg/L	16	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	7	Standard
I	127	17883.9	8.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.530	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.136	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.523
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.256
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 15:43:08
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79848.2	1.4				ug/L	76456	Standard
	Be	9	61340.6	1.3	**52.4607**	1.344	2.6	ug/L	20	Standard
	Al	27	8840196.9	1.7	**49.4449**	1.243	2.5	ug/L	1307	Standard
	Sc	45	42292.3	2.5				ug/L	41174	Standard
	Ti	47	33237.8	0.4	**98.6642**	0.509	0.5	ug/L	27	Standard
	V	51	434298.1	1.3	**50.9427**	0.727	1.4	ug/L	1434	Standard
	Cr	52	424946.0	0.9	**49.8972**	0.200	0.4	ug/L	7733	Standard
	Cr	53	51918.8	0.3	**49.3069**	0.192	0.4	ug/L	442	Standard
	Mn	55	396032.4	2.3	**50.5349**	0.943	1.9	ug/L	723	Standard
	Co	59	408091.6	1.9	**51.5332**	0.754	1.5	ug/L	217	Standard
	Ni	60	107986.8	0.7	**50.2226**	0.157	0.3	ug/L	304	Standard
	Cu	65	107294.9	0.3	**50.8210**	0.440	0.9	ug/L	181	Standard
	Zn	66	64441.1	1.0	**50.7299**	0.295	0.6	ug/L	215	Standard
>	Ge	72	538072.4	0.6				ug/L	520809	Standard
	As	75	64224.3	0.8	**50.3990**	0.228	0.5	ug/L	-52	Standard
	Se	82	6653.0	0.9	**50.8468**	0.498	1.0	ug/L	17	Standard
	Se-1	77	4539.7	1.5	**50.7170**	0.744	1.5	ug/L	56	Standard
>	Ga	71	38.3	19.9				mg/L	25	Standard
	Rb	85	878.4	4.8				ug/L	28	Standard
	Y	89	464875.9	0.9				ug/L	447395	Standard
>	Rh	103	28.3	56.7				ug/L	15	Standard
	Mo	98	306641.4	1.5	**98.6937**	1.489	1.5	ug/L	113	Standard
	Ag	107	367901.9	1.4	**49.8620**	0.492	1.0	ug/L	108	Standard
	Cd	111	117489.0	1.1	**49.6867**	0.641	1.3	mg/L	3	Standard
	Cd	114	291631.0	1.7	**49.8103**	0.297	0.6	ug/L	20	Standard
>	In	115	642695.4	1.1				ug/L	625728	Standard
	Sn	118	325840.7	2.1	**49.2102**	1.100	2.2	ug/L	568	Standard
	Sb	123	265299.9	1.4	**49.9473**	0.644	1.3	ug/L	612	Standard
	Ba	135	109451.6	0.3	**48.9670**	0.439	0.9	ug/L	21	Standard
	Ce	140	91.7	17.5				ug/L	245	Standard
>	Tb	159	960139.4	0.5				ug/L	950397	Standard
	Ho	165	13.3	43.3				ug/L	7	Standard
	Tl	203	455308.6	0.4	**50.2176**	0.333	0.7	ug/L	15	Standard
	Tl	205	418174.0	0.6	**51.9308**	0.055	0.1	ug/L	13	Standard
	Pb	206	287949.4	0.0	**50.3217**	0.263	0.5	ug/L	264	Standard
	Pb	207	261570.9	0.7	**50.3350**	0.638	1.3	ug/L	222	Standard
	Pb	208	1088813.8	0.8	**51.2998**	0.701	1.4	ug/L	959	Standard
	U	238	413789.6	1.0	**50.8288**	0.805	1.6	ug/L	9	Standard
>	Bi	209	558286.7	0.5				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4697.4	5.9	**5.2790**	0.180	3.4	mg/L	55	Standard
K	39	1176.7	4.0	**4.2662**	0.289	6.8	mg/L	28	Standard
Ca	43	75.0	40.6	**4.2243**	2.811	66.5	mg/L	27	Standard
Fe	54	6836.4	1.2	**5.1227**	0.153	3.0	mg/L	147	Standard
Fe	57	1986.8	1.5	**5.1413**	0.153	3.0	mg/L	268	Standard
> **Sc-1**	45	42292.3	2.5				mg/L	41174	Standard
Cl	35	87844.6	1.1				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	2156.8	5.6				ug/L	1950	Standard
P	31	26853.8	2.9				ug/L	21156	Standard
S	34	4549.0	3.6				ug/L	3419	Standard
Sr	88	63.3	24.1				ug/L	72	Standard
C	12	106.7	10.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	173.3	43.3				mg/L	17	Standard
Dy	164	9.0	191.8				mg/L	16	Standard
Ho-1	165	13.3	43.3				mg/L	7	Standard
Er	166	20.0	100.0				mg/L	7	Standard
I	127	21254.9	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	104.921		
Al	27	98.890		
Sc	45			
Ti	47	98.664		
V	51	101.885		
Cr	52	99.794		
Cr	53			
Mn	55	101.070		
Co	59	103.066		
Ni	60	100.445		
Cu	65	101.642		
Zn	66	101.460		
> Ge	72		103.315	
As	75	100.798		
Se	82	101.694		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.694		
Ag	107	99.724		
Cd	111	99.373		
Cd	114			
> In	115			102.712
Sn	118	98.420		
Sb	123	99.895		
Ba	135	97.934		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.435		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.600		
U	238	101.658		
> Bi	209			100.989
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 15:46:19
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79389.1	1.5				ug/L	76456	Standard
	Be	9	21.7	58.1	**-0.0012**	0.011	924.7	ug/L	20	Standard
	Al	27	2653.6	26.5	**0.0047**	0.004	80.6	ug/L	1307	Standard
	Sc	45	42380.9	4.0				ug/L	41174	Standard
	Ti	47	29.7	33.8	**0.0025**	0.028	1148.4	ug/L	27	Standard
	V	51	1542.6	6.8	**-0.0189**	0.014	72.9	ug/L	1434	Standard
	Cr	52	7249.7	1.4	**-0.1121**	0.006	5.1	ug/L	7733	Standard
	Cr	53	556.7	17.0	**0.1098**	0.084	76.1	ug/L	442	Standard
	Mn	55	781.0	5.8	**-0.0026**	0.005	178.6	ug/L	723	Standard
	Co	59	230.7	5.2	**-0.0006**	0.001	192.9	ug/L	217	Standard
	Ni	60	287.0	3.3	**-0.0207**	0.003	16.9	ug/L	304	Standard
	Cu	65	178.0	9.4	**0.0094**	0.008	88.1	ug/L	181	Standard
	Zn	66	241.3	7.8	**0.0083**	0.014	168.4	ug/L	215	Standard
>	**Ge**	72	544000.0	1.1				ug/L	520809	Standard
	As	75	-38.4	128.5	**0.0152**	0.039	254.8	ug/L	-52	Standard
	Se	82	20.0	53.3	**0.0245**	0.079	323.1	ug/L	17	Standard
	Se-1	77	71.7	19.7	**0.1170**	0.150	127.9	ug/L	56	Standard
>	**Ga**	71	30.0	16.7				mg/L	25	Standard
	Rb	85	31.7	9.1				ug/L	28	Standard
	Y	89	461634.5	1.4				ug/L	447395	Standard
>	**Rh**	103	13.3	21.7				ug/L	15	Standard
	Mo	98	249.2	9.7	**0.0550**	0.007	12.4	ug/L	113	Standard
	Ag	107	132.3	12.7	**0.0048**	0.002	45.5	ug/L	108	Standard
	Cd	111	16.9	42.6	**0.0047**	0.003	63.4	mg/L	3	Standard
	Cd	114	56.7	84.7	**0.0095**	0.008	83.3	ug/L	20	Standard
>	**In**	115	653131.6	1.3				ug/L	625728	Standard
	Sn	118	1488.4	26.0	**0.1378**	0.060	43.6	ug/L	568	Standard
	Sb	123	795.3	31.1	**0.1141**	0.047	41.5	ug/L	612	Standard
	Ba	135	49.7	33.1	**0.0039**	0.007	180.6	ug/L	21	Standard
	Ce	140	41.7	13.9				ug/L	245	Standard
>	**Tb**	159	951623.8	1.5				ug/L	950397	Standard
	Ho	165	3.3	173.2				ug/L	7	Standard
	Tl	203	77.3	16.4	**0.0077**	0.001	17.6	ug/L	15	Standard
	Tl	205	83.3	27.7	**0.0005**	0.003	538.8	ug/L	13	Standard
	Pb	206	329.3	15.7	**0.0134**	0.008	63.3	ug/L	264	Standard
	Pb	207	295.3	8.1	**0.0104**	0.004	40.0	ug/L	222	Standard
	Pb	208	1227.0	6.3	**0.0091**	0.003	35.4	ug/L	959	Standard
	U	238	66.0	40.1	**0.0078**	0.003	40.9	ug/L	9	Standard
>	**Bi**	209	562277.6	0.8				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	61.7	16.9	**0.0099**	0.013	128.3	mg/L	55	Standard
K	39	20.0	25.0	**-0.0563**	0.020	35.8	mg/L	28	Standard
Ca	43	20.0	25.0	**-0.6925**	0.397	57.4	mg/L	27	Standard
Fe	54	164.3	3.0	**0.0265**	0.005	17.4	mg/L	147	Standard
Fe	57	226.7	11.3	**-0.1282**	0.057	44.8	mg/L	268	Standard
> **Sc-1**	45	42380.9	4.0				mg/L	41174	Standard
Cl	35	88109.5	1.2				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	2156.8	5.0				ug/L	1950	Standard
P	31	25852.0	1.3				ug/L	21156	Standard
S	34	4487.3	2.3				ug/L	3419	Standard
Sr	88	56.7	5.1				ug/L	72	Standard
C	12	96.7	39.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	113.3	10.2				mg/L	17	Standard
Dy	164	6.2	100.1				mg/L	16	Standard
Ho-1	165	3.3	173.2				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	15996.8	2.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.453	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.379
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.711
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606145201
Sample Date/Time: Friday, July 01, 2016 15:49:32
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	94816.0	3.6				ug/L	76456	Standard
	Be	9	25.0	40.0	**-0.0020**	0.007	332.6	ug/L	20	Standard
	Al	27	21072085.0	1.8	**99.2963**	2.302	2.3	ug/L	1307	Standard
	Sc	45	43716.3	1.4				ug/L	41174	Standard
	Ti	47	397.0	3.2	**1.1396**	0.053	4.7	ug/L	27	Standard
	V	51	4169.6	18.7	**0.3116**	0.101	32.4	ug/L	1434	Standard
	Cr	52	31233.8	0.8	**2.9091**	0.081	2.8	ug/L	7733	Standard
	Cr	53	20687.6	10.5	**20.1582**	2.403	11.9	ug/L	442	Standard
	Mn	55	2658788.2	0.4	**352.6307**	4.074	1.2	ug/L	723	Standard
	Co	59	29637.6	0.8	**3.8558**	0.023	0.6	ug/L	217	Standard
	Ni	60	6462.7	2.0	**2.9745**	0.037	1.3	ug/L	304	Standard
	Cu	65	861.0	3.9	**0.3497**	0.019	5.5	ug/L	181	Standard
	Zn	66	6645.5	1.6	**5.2668**	0.080	1.5	ug/L	215	Standard
>	**Ge**	72	518645.6	1.3				ug/L	520809	Standard
	As	75	3126.8	4.4	**2.5897**	0.143	5.5	ug/L	-52	Standard
	Se	82	664.6	4.5	**5.1588**	0.301	5.8	ug/L	17	Standard
	Se-1	77	930.7	11.1	**10.2587**	1.337	13.0	ug/L	56	Standard
>	**Ga**	71	203.3	20.9				mg/L	25	Standard
	Rb	85	1041748.9	1.1				ug/L	28	Standard
	Y	89	448254.4	0.8				ug/L	447395	Standard
>	**Rh**	103	201.7	17.6				ug/L	15	Standard
	Mo	98	637.0	2.3	**0.1927**	0.005	2.4	ug/L	113	Standard
	Ag	107	163.3	33.8	**0.0105**	0.008	72.2	ug/L	108	Standard
	Cd	111	106.6	9.0	**0.0453**	0.005	10.1	mg/L	3	Standard
	Cd	114	259.2	18.0	**0.0469**	0.009	19.3	ug/L	20	Standard
>	**In**	115	608292.3	1.4				ug/L	625728	Standard
	Sn	118	1770.1	23.1	**0.1984**	0.063	31.6	ug/L	568	Standard
	Sb	123	609.0	15.5	**0.0875**	0.018	20.6	ug/L	612	Standard
	Ba	135	570406.1	1.3	**269.6937**	1.874	0.7	ug/L	21	Standard
	Ce	140	4143.9	0.7				ug/L	245	Standard
>	**Tb**	159	943834.4	0.3				ug/L	950397	Standard
	Ho	165	73.3	37.6				ug/L	7	Standard
	Tl	203	318.3	4.1	**0.0368**	0.002	4.3	ug/L	15	Standard
	Tl	205	295.0	13.5	**0.0294**	0.005	17.1	ug/L	13	Standard
	Pb	206	463.0	0.4	**0.0429**	0.001	1.6	ug/L	264	Standard
	Pb	207	397.7	5.2	**0.0359**	0.005	12.9	ug/L	222	Standard
	Pb	208	1684.0	4.4	**0.0367**	0.004	11.5	ug/L	959	Standard
	U	238	1098.4	2.7	**0.1441**	0.005	3.4	ug/L	9	Standard
>	**Bi**	209	521779.5	0.6				ug/L	552821	Standard

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Na	23	1.7	173.2	**4.7590**	8.234	173.0	mg/L	2	Standard
Mg	24	80860.2	1.3	**88.9060**	0.128	0.1	mg/L	55	Standard
K	39	8253.9	2.9	**29.6886**	1.293	4.4	mg/L	28	Standard
Ca	43	198.3	3.9	**14.5226**	0.636	4.4	mg/L	27	Standard
Fe	54	1838.9	5.0	**1.2589**	0.053	4.2	mg/L	147	Standard
Fe	57	841.7	4.0	**1.6326**	0.120	7.3	mg/L	268	Standard
Sc-1	45	43716.3	1.4				mg/L	41174	Standard
Cl	35	88622.4	0.4				ug/L	69550	Standard
Kr	83	1.0	0.0				ug/L	1	Standard
Br	81	138083.1	1.2				ug/L	1950	Standard
P	31	31377.5	0.7				ug/L	21156	Standard
S	34	4085.6	4.2				ug/L	3419	Standard
Sr	88	866.7	4.6				ug/L	72	Standard
C	12	386.7	12.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	150.0	63.6				mg/L	17	Standard
Dy	164	120.3	12.9				mg/L	16	Standard
Ho-1	165	73.3	37.6				mg/L	7	Standard
Er	166	63.3	9.1				mg/L	7	Standard
I	127	189740.0	7.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		124.014	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.585	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.214
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.385
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606145301
Sample Date/Time: Friday, July 01, 2016 15:52:44
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	89907.9	3.9				ug/L	76456	Standard
	Be	9	211.7	15.2	**0.1412**	0.026	18.7	ug/L	20	Standard
	Al	27	42254036.6	2.1	**209.9919**	4.107	2.0	ug/L	1307	Standard
	Sc	45	48114.6	1.7				ug/L	41174	Standard
	Ti	47	742.0	6.1	**2.0824**	0.104	5.0	ug/L	27	Standard
	V	51	8101.4	4.4	**0.7396**	0.044	5.9	ug/L	1434	Standard
	Cr	52	57499.6	0.2	**5.7989**	0.111	1.9	ug/L	7733	Standard
	Cr	53	37860.6	3.1	**35.2327**	0.609	1.7	ug/L	442	Standard
	Mn	55	6394718.4	1.0	**803.9667**	4.505	0.6	ug/L	723	Standard
	Co	59	184000.3	2.5	**22.8310**	0.339	1.5	ug/L	217	Standard
	Ni	60	37990.6	1.7	**17.2738**	0.133	0.8	ug/L	304	Standard
	Cu	65	1519.1	2.8	**0.6345**	0.018	2.9	ug/L	181	Standard
	Zn	66	65750.7	0.3	**50.9054**	0.635	1.2	ug/L	215	Standard
>	Ge	72	547197.2	1.5				ug/L	520809	Standard
	As	75	6205.1	1.8	**4.8294**	0.085	1.7	ug/L	-52	Standard
	Se	82	411.3	4.6	**2.9717**	0.112	3.8	ug/L	17	Standard
	Se-1	77	1750.8	0.4	**18.8117**	0.357	1.9	ug/L	56	Standard
>	Ga	71	151.7	19.9				mg/L	25	Standard
	Rb	85	17248.1	1.6				ug/L	28	Standard
	Y	89	479799.4	2.3				ug/L	447395	Standard
>	Rh	103	326.7	3.2				ug/L	15	Standard
	Mo	98	555.5	3.1	**0.1551**	0.002	1.1	ug/L	113	Standard
	Ag	107	126.3	11.0	**0.0043**	0.002	53.3	ug/L	108	Standard
	Cd	111	138.7	16.3	**0.0566**	0.011	19.3	mg/L	3	Standard
	Cd	114	356.3	13.9	**0.0611**	0.010	15.7	ug/L	20	Standard
>	In	115	641727.3	2.7				ug/L	625728	Standard
	Sn	118	1815.1	14.3	**0.1914**	0.045	23.5	ug/L	568	Standard
	Sb	123	789.7	10.3	**0.1155**	0.018	15.5	ug/L	612	Standard
	Ba	135	2472744.3	1.1	**1108.6111**	20.421	1.8	ug/L	21	Standard
	Ce	140	34706.4	3.0				ug/L	245	Standard
>	Tb	159	985263.1	3.4				ug/L	950397	Standard
	Ho	165	401.7	6.3				ug/L	7	Standard
	Tl	203	117.7	8.7	**0.0126**	0.001	10.2	ug/L	15	Standard
	Tl	205	90.0	11.1	**0.0018**	0.001	56.0	ug/L	13	Standard
	Pb	206	577.0	6.7	**0.0602**	0.005	9.1	ug/L	264	Standard
	Pb	207	486.3	6.2	**0.0505**	0.006	11.6	ug/L	222	Standard
	Pb	208	2130.1	2.6	**0.0553**	0.003	5.9	ug/L	959	Standard
	U	238	158.7	10.2	**0.0198**	0.002	9.7	ug/L	9	Standard
>	Bi	209	541702.7	2.6				ug/L	552821	Standard

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Na	23	6.7	114.6	**17.2516**	19.854	115.1	mg/L	2	Standard
Mg	24	87429.9	0.9	**87.3596**	1.878	2.1	mg/L	55	Standard
K	39	405.0	18.3	**1.2003**	0.260	21.7	mg/L	28	Standard
Ca	43	375.0	6.7	**26.7244**	2.231	8.3	mg/L	27	Standard
Fe	54	4204.7	3.3	**2.7242**	0.135	5.0	mg/L	147	Standard
Fe	57	1598.4	2.6	**3.4000**	0.148	4.3	mg/L	268	Standard
Sc-1	45	48114.6	1.7				mg/L	41174	Standard
Cl	35	91040.7	1.1				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	68651.9	2.9				ug/L	1950	Standard
P	31	44045.6	3.3				ug/L	21156	Standard
S	34	4263.9	3.9				ug/L	3419	Standard
Sr	88	1216.7	5.1				ug/L	72	Standard
C	12	740.0	12.4				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	150.0	40.6				mg/L	17	Standard
Dy	164	420.2	5.3				mg/L	16	Standard
Ho-1	165	401.7	6.3				mg/L	7	Standard
Er	166	413.3	49.7				mg/L	7	Standard
I	127	1073738.4	7.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.595	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.067	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.557	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.989	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606145303
Sample Date/Time: Friday, July 01, 2016 15:55:55
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	86373.8	1.1				ug/L	76456	Standard
	Be	9	46.7	12.4	**0.0170**	0.005	27.0	ug/L	20	Standard
	Al	27	14145040.2	0.8	**73.1395**	1.317	1.8	ug/L	1307	Standard
	Sc	45	47950.8	2.8				ug/L	41174	Standard
	Ti	47	645.7	4.6	**1.7427**	0.078	4.5	ug/L	27	Standard
	V	51	5119.6	16.2	**0.3758**	0.094	25.1	ug/L	1434	Standard
	Cr	52	15660.8	1.2	**0.8154**	0.028	3.4	ug/L	7733	Standard
	Cr	53	17461.7	5.9	**15.5162**	0.994	6.4	ug/L	442	Standard
	Mn	55	1851750.9	0.7	**225.4523**	0.893	0.4	ug/L	723	Standard
	Co	59	6079.9	0.1	**0.7024**	0.002	0.3	ug/L	217	Standard
	Ni	60	3414.1	2.2	**1.3640**	0.029	2.1	ug/L	304	Standard
	Cu	65	716.4	2.9	**0.2496**	0.010	3.9	ug/L	181	Standard
	Zn	66	5607.0	0.9	**4.0396**	0.027	0.7	ug/L	215	Standard
>	Ge	72	564834.0	0.3				ug/L	520809	Standard
	As	75	9187.6	1.4	**6.9075**	0.115	1.7	ug/L	-52	Standard
	Se	82	374.5	2.3	**2.6072**	0.072	2.8	ug/L	17	Standard
	Se-1	77	677.0	5.1	**6.6170**	0.347	5.3	ug/L	56	Standard
>	Ga	71	156.7	12.9				mg/L	25	Standard
	Rb	85	67336.0	0.8				ug/L	28	Standard
	Y	89	479624.4	2.5				ug/L	447395	Standard
>	Rh	103	165.0	24.1				ug/L	15	Standard
	Mo	98	376.6	7.3	**0.0951**	0.009	9.5	ug/L	113	Standard
	Ag	107	95.7	7.7	**-0.0001**	0.001	907.0	ug/L	108	Standard
	Cd	111	85.6	10.8	**0.0332**	0.004	11.6	mg/L	3	Standard
	Cd	114	251.0	20.4	**0.0421**	0.008	19.8	ug/L	20	Standard
>	In	115	654613.0	0.6				ug/L	625728	Standard
	Sn	118	2261.8	11.1	**0.2519**	0.039	15.5	ug/L	568	Standard
	Sb	123	469.5	25.9	**0.0532**	0.023	43.1	ug/L	612	Standard
	Ba	135	790046.7	0.9	**347.1125**	3.141	0.9	ug/L	21	Standard
	Ce	140	7066.6	1.9				ug/L	245	Standard
>	Tb	159	995476.8	2.0				ug/L	950397	Standard
	Ho	165	136.7	9.2				ug/L	7	Standard
	Tl	203	120.3	3.1	**0.0125**	0.000	3.4	ug/L	15	Standard
	Tl	205	115.0	19.9	**0.0045**	0.003	61.6	ug/L	13	Standard
	Pb	206	675.0	1.7	**0.0742**	0.002	2.8	ug/L	264	Standard
	Pb	207	573.0	0.8	**0.0642**	0.001	1.0	ug/L	222	Standard
	Pb	208	2423.1	1.0	**0.0659**	0.001	2.1	ug/L	959	Standard
	U	238	289.7	4.3	**0.0353**	0.002	5.0	ug/L	9	Standard
>	Bi	209	558695.9	0.8				ug/L	552821	Standard

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Na	23	5.0	100.0	**12.9192**	12.771	98.9	mg/L	2	Standard
Mg	24	36766.2	0.7	**36.8431**	1.290	3.5	mg/L	55	Standard
K	39	516.7	3.4	**1.5703**	0.055	3.5	mg/L	28	Standard
Ca	43	131.7	25.3	**7.7852**	2.329	29.9	mg/L	27	Standard
Fe	54	27742.4	0.7	**18.5905**	0.497	2.7	mg/L	147	Standard
Fe	57	7620.3	4.0	**19.3167**	1.147	5.9	mg/L	268	Standard
> **Sc-1**	45	47950.8	2.8				mg/L	41174	Standard
Cl	35	87125.8	1.5				ug/L	69550	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	74331.9	2.0				ug/L	1950	Standard
P	31	38512.2	1.7				ug/L	21156	Standard
S	34	4447.3	3.4				ug/L	3419	Standard
Sr	88	553.3	7.8				ug/L	72	Standard
C	12	426.7	14.3				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	150.0	48.1				mg/L	17	Standard
Dy	164	179.8	21.5				mg/L	16	Standard
Ho-1	165	136.7	9.2				mg/L	7	Standard
Er	166	143.3	22.4				mg/L	7	Standard
I	127	215985.2	0.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.972	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.453	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.616
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.063
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606142701 WG574419-02
Sample Date/Time: Friday, July 01, 2016 15:59:07
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79441.0	0.3				ug/L	76456	Standard
	Be	9	21.7	96.1	**-0.0013**	0.018	1415.0	ug/L	20	Standard
	Al	27	10303389.4	2.0	**57.9147**	1.116	1.9	ug/L	1307	Standard
	Sc	45	40113.1	2.6				ug/L	41174	Standard
	Ti	47	184.0	9.4	**0.4748**	0.053	11.1	ug/L	27	Standard
	V	51	103393.4	0.6	**12.2581**	0.142	1.2	ug/L	1434	Standard
	Cr	52	60643.8	2.1	**6.4579**	0.232	3.6	ug/L	7733	Standard
	Cr	53	11869.6	1.2	**11.2148**	0.255	2.3	ug/L	442	Standard
	Mn	55	46538.0	1.1	**5.9867**	0.050	0.8	ug/L	723	Standard
	Co	59	37235.0	0.6	**4.7844**	0.072	1.5	ug/L	217	Standard
	Ni	60	30036.7	0.7	**14.1841**	0.259	1.8	ug/L	304	Standard
	Cu	65	12213.6	1.3	**5.8539**	0.146	2.5	ug/L	181	Standard
	Zn	66	33617.6	0.9	**26.9954**	0.533	2.0	ug/L	215	Standard
>	**Ge**	72	525941.0	1.1				ug/L	520809	Standard
	As	75	2649.6	1.8	**2.1706**	0.042	1.9	ug/L	-52	Standard
	Se	82	1059.1	1.9	**8.1767**	0.235	2.9	ug/L	17	Standard
	Se-1	77	280.3	4.4	**2.5625**	0.130	5.1	ug/L	56	Standard
>	**Ga**	71	101.7	18.6				mg/L	25	Standard
	Rb	85	18985.2	1.5				ug/L	28	Standard
	Y	89	446075.2	1.3				ug/L	447395	Standard
>	**Rh**	103	71.7	26.4				ug/L	15	Standard
	Mo	98	435588.8	0.8	**147.3741**	1.220	0.8	ug/L	113	Standard
	Ag	107	124.3	1.7	**0.0049**	0.000	10.0	ug/L	108	Standard
	Cd	111	-216.2	12.9	**-0.0985**	0.013	12.8	mg/L	3	Standard
	Cd	114	902.1	8.1	**0.1619**	0.011	7.0	ug/L	20	Standard
>	**In**	115	611441.0	1.1				ug/L	625728	Standard
	Sn	118	915.0	18.3	**0.0613**	0.027	44.2	ug/L	568	Standard
	Sb	123	652.5	5.8	**0.0955**	0.006	6.7	ug/L	612	Standard
	Ba	135	39982.7	1.2	**18.7899**	0.104	0.6	ug/L	21	Standard
	Ce	140	376.7	4.3				ug/L	245	Standard
>	**Tb**	159	929616.4	0.5				ug/L	950397	Standard
	Ho	165	33.3	48.2				ug/L	7	Standard
	Tl	203	136.7	9.3	**0.0150**	0.001	9.9	ug/L	15	Standard
	Tl	205	106.7	11.8	**0.0041**	0.002	39.6	ug/L	13	Standard
	Pb	206	1749.8	1.5	**0.2761**	0.005	1.9	ug/L	264	Standard
	Pb	207	1478.4	2.6	**0.2515**	0.008	3.1	ug/L	222	Standard
	Pb	208	6375.9	0.9	**0.2660**	0.002	0.9	ug/L	959	Standard
	U	238	161.7	12.3	**0.0205**	0.003	12.5	ug/L	9	Standard
>	**Bi**	209	534118.6	0.2				ug/L	552821	Standard

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Na	23	3.3	86.6	**10.0941**	8.741	86.6	mg/L	2	Standard
Mg	24	25695.1	1.2	**30.7602**	0.665	2.2	mg/L	55	Standard
K	39	365.0	11.7	**1.3075**	0.193	14.8	mg/L	28	Standard
Ca	43	230.0	14.3	**18.9742**	2.668	14.1	mg/L	27	Standard
Fe	54	302.2	7.9	**0.1442**	0.013	8.8	mg/L	147	Standard
Fe	57	455.0	18.2	**0.6271**	0.222	35.4	mg/L	268	Standard
> **Sc-1**	45	40113.1	2.6				mg/L	41174	Standard
Cl	35	98380.0	3.9				ug/L	69550	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	216720.0	3.3				ug/L	1950	Standard
P	31	13189.1	3.4				ug/L	21156	Standard
S	34	3895.5	7.2				ug/L	3419	Standard
Sr	88	283.3	22.8				ug/L	72	Standard
C	12	173.3	27.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	316.7	12.8				mg/L	17	Standard
Dy	164	233.8	13.8				mg/L	16	Standard
Ho-1	165	33.3	48.2				mg/L	7	Standard
Er	166	60.0	33.3				mg/L	7	Standard
I	127	62818.3	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.905	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.985	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606142701 WG574419-02
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	97.717	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.617	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mo 98 Upper, S, EEE	Mo	98	

Sample ID: L1606142701 WG574419-02
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Method 6020 - Summary Report

Sample ID: L1606142701DP WG574419-07
Sample Date/Time: Friday, July 01, 2016 16:02:18
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77749.0	1.6				ug/L	76456	Standard
	Be	9	6.7	43.3	**-0.0140**	0.002	17.3	ug/L	20	Standard
	Al	27	9817097.2	1.8	**56.3855**	0.837	1.5	ug/L	1307	Standard
	Sc	45	39810.6	1.5				ug/L	41174	Standard
	Ti	47	174.0	5.5	**0.4563**	0.027	5.9	ug/L	27	Standard
	V	51	99457.7	1.9	**12.0558**	0.214	1.8	ug/L	1434	Standard
	Cr	52	58802.6	0.7	**6.3951**	0.090	1.4	ug/L	7733	Standard
	Cr	53	11255.8	2.7	**10.8641**	0.366	3.4	ug/L	442	Standard
	Mn	55	43355.3	1.9	**5.6990**	0.079	1.4	ug/L	723	Standard
	Co	59	35792.9	1.2	**4.7027**	0.031	0.7	ug/L	217	Standard
	Ni	60	28593.6	0.6	**13.8042**	0.061	0.4	ug/L	304	Standard
	Cu	65	11425.0	1.5	**5.5962**	0.062	1.1	ug/L	181	Standard
	Zn	66	32386.6	1.1	**26.5937**	0.385	1.4	ug/L	215	Standard
>	Ge	72	514230.5	0.6				ug/L	520809	Standard
	As	75	2594.3	1.9	**2.1736**	0.050	2.3	ug/L	-52	Standard
	Se	82	1064.6	1.8	**8.4087**	0.182	2.2	ug/L	17	Standard
	Se-1	77	269.0	6.0	**2.5031**	0.207	8.3	ug/L	56	Standard
>	Ga	71	116.7	27.9				mg/L	25	Standard
	Rb	85	18095.8	1.8				ug/L	28	Standard
	Y	89	436440.0	0.3				ug/L	447395	Standard
>	Rh	103	98.3	34.6				ug/L	15	Standard
	Mo	98	417319.1	1.0	**143.2353**	2.296	1.6	ug/L	113	Standard
	Ag	107	105.3	7.0	**0.0024**	0.001	42.1	ug/L	108	Standard
	Cd	111	-221.7	8.5	**-0.1024**	0.009	8.7	mg/L	3	Standard
	Cd	114	915.2	5.7	**0.1667**	0.008	5.0	ug/L	20	Standard
>	In	115	602737.8	0.7				ug/L	625728	Standard
	Sn	118	925.0	27.3	**0.0648**	0.040	61.0	ug/L	568	Standard
	Sb	123	629.8	5.8	**0.0928**	0.007	7.1	ug/L	612	Standard
	Ba	135	37742.0	0.9	**17.9925**	0.177	1.0	ug/L	21	Standard
	Ce	140	530.0	15.0				ug/L	245	Standard
>	Tb	159	918022.5	0.6				ug/L	950397	Standard
	Ho	165	26.7	47.2				ug/L	7	Standard
	Tl	203	122.7	8.6	**0.0136**	0.001	8.7	ug/L	15	Standard
	Tl	205	120.0	23.2	**0.0061**	0.004	61.9	ug/L	13	Standard
	Pb	206	1673.8	3.7	**0.2676**	0.008	2.9	ug/L	264	Standard
	Pb	207	1385.7	3.3	**0.2377**	0.006	2.4	ug/L	222	Standard
	Pb	208	6038.1	1.4	**0.2546**	0.001	0.3	ug/L	959	Standard
	U	238	134.0	4.7	**0.0173**	0.001	3.8	ug/L	9	Standard
>	Bi	209	524841.4	1.3				ug/L	552821	Standard

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Na	23	3.3	86.6	**10.3333**	8.947	86.6	mg/L	2	Standard
Mg	24	24359.6	1.9	**29.3745**	0.694	2.4	mg/L	55	Standard
K	39	391.7	23.4	**1.4257**	0.389	27.3	mg/L	28	Standard
Ca	43	220.0	19.4	**18.2274**	4.000	21.9	mg/L	27	Standard
Fe	54	293.3	15.9	**0.1391**	0.037	26.9	mg/L	147	Standard
Fe	57	398.3	15.7	**0.4602**	0.182	39.6	mg/L	268	Standard
> **Sc-1**	45	39810.6	1.5				mg/L	41174	Standard
Cl	35	101579.4	0.9				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	218312.6	3.3				ug/L	1950	Standard
P	31	12735.4	2.4				ug/L	21156	Standard
S	34	3657.1	4.9				ug/L	3419	Standard
Sr	88	253.3	24.1				ug/L	72	Standard
C	12	143.3	20.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	270.0	11.1				mg/L	17	Standard
Dy	164	258.1	16.7				mg/L	16	Standard
Ho-1	165	26.7	47.2				mg/L	7	Standard
Er	166	40.0	25.0				mg/L	7	Standard
I	127	57368.4	1.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.691	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.737	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606142701DP WG574419-07
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.326
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.939
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mo 98 Upper, S, EEE	Mo	98	

Sample ID: L1606142701DP WG574419-07
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Method 6020 - Summary Report

Sample ID: L1606128901
Sample Date/Time: Friday, July 01, 2016 16:05:30
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76109.2	3.3				ug/L	76456	Standard
	Be	9	26.7	10.8	**0.0041**	0.003	75.2	ug/L	20	Standard
	Al	27	2157263.5	1.2	**12.6549**	0.272	2.1	ug/L	1307	Standard
	Sc	45	39362.7	1.0				ug/L	41174	Standard
	Ti	47	31.0	25.6	**0.0115**	0.025	213.1	ug/L	27	Standard
	V	51	2160.8	9.2	**0.0669**	0.026	39.1	ug/L	1434	Standard
	Cr	52	18224.3	3.5	**1.3053**	0.079	6.0	ug/L	7733	Standard
	Cr	53	3937.2	3.2	**3.5166**	0.125	3.6	ug/L	442	Standard
	Mn	55	109531.5	1.1	**14.5084**	0.090	0.6	ug/L	723	Standard
	Co	59	3522.7	2.0	**0.4349**	0.006	1.3	ug/L	217	Standard
	Ni	60	12809.7	0.5	**6.0810**	0.080	1.3	ug/L	304	Standard
	Cu	65	624.3	3.1	**0.2348**	0.009	4.0	ug/L	181	Standard
	Zn	66	2829.3	0.5	**2.1516**	0.027	1.3	ug/L	215	Standard
>	**Ge**	72	515809.2	1.0				ug/L	520809	Standard
	As	75	48.3	6.2	**0.0847**	0.002	2.4	ug/L	-52	Standard
	Se	82	67.8	11.0	**0.4157**	0.062	15.0	ug/L	17	Standard
	Se-1	77	139.0	6.9	**0.9565**	0.097	10.1	ug/L	56	Standard
>	**Ga**	71	33.3	31.2				mg/L	25	Standard
	Rb	85	320.0	16.9				ug/L	28	Standard
	Y	89	425911.6	0.3				ug/L	447395	Standard
>	**Rh**	103	23.3	61.9				ug/L	15	Standard
	Mo	98	1200.8	19.7	**0.3848**	0.082	21.3	ug/L	113	Standard
	Ag	107	75.3	7.8	**-0.0021**	0.001	36.3	ug/L	108	Standard
	Cd	111	25.6	20.9	**0.0091**	0.002	26.3	mg/L	3	Standard
	Cd	114	59.2	25.8	**0.0107**	0.003	26.4	ug/L	20	Standard
>	**In**	115	608157.1	1.0				ug/L	625728	Standard
	Sn	118	525.0	20.9	**-0.0004**	0.017	4881.3	ug/L	568	Standard
	Sb	123	165.4	19.3	**-0.0007**	0.007	874.9	ug/L	612	Standard
	Ba	135	100056.7	1.7	**47.3091**	1.176	2.5	ug/L	21	Standard
	Ce	140	223.3	64.9				ug/L	245	Standard
>	**Tb**	159	910863.8	0.3				ug/L	950397	Standard
	Ho	165	15.0	57.7				ug/L	7	Standard
	Tl	203	83.0	10.7	**0.0087**	0.001	10.8	ug/L	15	Standard
	Tl	205	80.0	31.3	**0.0005**	0.003	626.9	ug/L	13	Standard
	Pb	206	270.7	3.7	**0.0052**	0.002	42.5	ug/L	264	Standard
	Pb	207	242.0	6.8	**0.0021**	0.003	162.6	ug/L	222	Standard
	Pb	208	1024.7	1.6	**0.0016**	0.001	40.9	ug/L	959	Standard
	U	238	10.0	43.6	**0.0010**	0.001	55.3	ug/L	9	Standard
>	**Bi**	209	540336.1	0.9				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4055.5	6.4	**4.8960**	0.330	6.7	mg/L	55	Standard
K	39	15.0	66.7	**-0.0710**	0.040	57.0	mg/L	28	Standard
Ca	43	48.3	26.0	**2.1421**	1.207	56.4	mg/L	27	Standard
Fe	54	63.5	15.9	**-0.0467**	0.009	18.5	mg/L	147	Standard
Fe	57	253.3	5.0	**0.0103**	0.042	410.2	mg/L	268	Standard
> **Sc-1**	45	39362.7	1.0				mg/L	41174	Standard
Cl	35	90744.3	1.5				ug/L	69550	Standard
Kr	83	2.0	0.0				ug/L	1	Standard
Br	81	11220.8	7.7				ug/L	1950	Standard
P	31	8672.5	2.6				ug/L	21156	Standard
S	34	4007.2	6.6				ug/L	3419	Standard
Sr	88	146.7	20.0				ug/L	72	Standard
C	12	96.7	36.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	436.7	13.4				mg/L	17	Standard
Dy	164	6.5	179.6				mg/L	16	Standard
Ho-1	165	15.0	57.7				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	40273.5	3.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.547	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.040	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.192
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.742
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606129003
Sample Date/Time: Friday, July 01, 2016 16:08:41
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74300.1	2.3				ug/L	76456	Standard
	Be	9	33.3	70.9	**0.0108**	0.022	200.3	ug/L	20	Standard
	Al	27	1109788.9	1.6	**6.6634**	0.204	3.1	ug/L	1307	Standard
	Sc	45	38913.3	2.4				ug/L	41174	Standard
	Ti	47	72.3	13.4	**0.1384**	0.027	19.6	ug/L	27	Standard
	V	51	1833.5	12.2	**0.0257**	0.030	115.0	ug/L	1434	Standard
	Cr	52	6791.5	6.8	**-0.1263**	0.061	48.5	ug/L	7733	Standard
	Cr	53	2288.5	7.5	**1.8597**	0.192	10.3	ug/L	442	Standard
	Mn	55	199243.2	0.7	**26.3506**	0.434	1.6	ug/L	723	Standard
	Co	59	3319.7	2.1	**0.4061**	0.014	3.4	ug/L	217	Standard
	Ni	60	1865.1	2.1	**0.7502**	0.017	2.3	ug/L	304	Standard
	Cu	65	304.7	2.9	**0.0760**	0.006	7.4	ug/L	181	Standard
	Zn	66	5878.8	1.2	**4.6424**	0.117	2.5	ug/L	215	Standard
>	**Ge**	72	518291.1	1.3				ug/L	520809	Standard
	As	75	792.5	2.6	**0.6902**	0.010	1.5	ug/L	-52	Standard
	Se	82	76.5	13.2	**0.4817**	0.073	15.2	ug/L	17	Standard
	Se-1	77	129.3	15.3	**0.8357**	0.233	27.9	ug/L	56	Standard
>	**Ga**	71	50.0	26.5				mg/L	25	Standard
	Rb	85	2285.2	6.7				ug/L	28	Standard
	Y	89	427107.4	1.7				ug/L	447395	Standard
>	**Rh**	103	36.7	56.8				ug/L	15	Standard
	Mo	98	394.1	11.3	**0.1099**	0.015	13.4	ug/L	113	Standard
	Ag	107	108.3	28.6	**0.0026**	0.004	163.3	ug/L	108	Standard
	Cd	111	66.5	18.4	**0.0273**	0.005	18.9	mg/L	3	Standard
	Cd	114	176.4	7.1	**0.0318**	0.002	6.8	ug/L	20	Standard
>	**In**	115	609166.7	1.0				ug/L	625728	Standard
	Sn	118	880.0	21.8	**0.0564**	0.032	56.6	ug/L	568	Standard
	Sb	123	119.8	10.9	**-0.0099**	0.003	28.1	ug/L	612	Standard
	Ba	135	34816.0	1.5	**16.4201**	0.118	0.7	ug/L	21	Standard
	Ce	140	1188.4	1.5				ug/L	245	Standard
>	**Tb**	159	905742.5	1.6				ug/L	950397	Standard
	Ho	165	23.3	32.7				ug/L	7	Standard
	Tl	203	105.7	16.3	**0.0112**	0.002	15.9	ug/L	15	Standard
	Tl	205	100.0	22.9	**0.0030**	0.003	94.5	ug/L	13	Standard
	Pb	206	323.0	3.6	**0.0143**	0.002	17.0	ug/L	264	Standard
	Pb	207	282.3	3.6	**0.0098**	0.001	12.1	ug/L	222	Standard
	Pb	208	1225.0	3.7	**0.0111**	0.002	20.3	ug/L	959	Standard
	U	238	27.3	27.5	**0.0032**	0.001	29.6	ug/L	9	Standard
>	**Bi**	209	543356.0	1.6				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4887.5	0.8	**5.9826**	0.111	1.8	mg/L	55	Standard
K	39	70.0	31.1	**0.1543**	0.094	61.0	mg/L	28	Standard
Ca	43	26.7	78.1	**0.1318**	2.068	1569.3	mg/L	27	Standard
Fe	54	2091.2	5.6	**1.6384**	0.138	8.4	mg/L	147	Standard
Fe	57	790.0	3.5	**1.7657**	0.122	6.9	mg/L	268	Standard
> **Sc-1**	45	38913.3	2.4				mg/L	41174	Standard
Cl	35	85357.9	2.8				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	12818.8	1.9				ug/L	1950	Standard
P	31	10578.7	2.6				ug/L	21156	Standard
S	34	4063.9	1.6				ug/L	3419	Standard
Sr	88	108.3	11.6				ug/L	72	Standard
C	12	110.0	32.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	27.0				mg/L	17	Standard
Dy	164	55.7	26.3				mg/L	16	Standard
Ho-1	165	23.3	32.7				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	7	Standard
I	127	94261.3	5.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.181	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.516	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.353
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.288
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129003
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 16:11:55
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78995.5	2.2				ug/L	76456	Standard
	Be	9	60502.3	2.1	**52.2922**	0.491	0.9	ug/L	20	Standard
	Al	27	8989002.2	0.8	**50.8245**	0.985	1.9	ug/L	1307	Standard
	Sc	45	42305.6	0.7				ug/L	41174	Standard
	Ti	47	34061.9	1.0	**98.6488**	1.546	1.6	ug/L	27	Standard
	V	51	436960.5	1.1	**50.0001**	0.513	1.0	ug/L	1434	Standard
	Cr	52	437865.8	0.9	**50.1688**	0.753	1.5	ug/L	7733	Standard
	Cr	53	53937.5	1.4	**49.9817**	0.858	1.7	ug/L	442	Standard
	Mn	55	399271.1	0.3	**49.7080**	0.463	0.9	ug/L	723	Standard
	Co	59	415402.7	0.9	**51.1776**	0.121	0.2	ug/L	217	Standard
	Ni	60	110781.9	0.5	**50.2680**	0.560	1.1	ug/L	304	Standard
	Cu	65	108848.6	0.7	**50.2966**	0.042	0.1	ug/L	181	Standard
	Zn	66	65152.1	0.8	**50.0366**	0.239	0.5	ug/L	215	Standard
>	**Ge**	72	551526.5	0.7				ug/L	520809	Standard
	As	75	65288.4	0.5	**49.9868**	0.536	1.1	ug/L	-52	Standard
	Se	82	6767.7	1.1	**50.4635**	0.866	1.7	ug/L	17	Standard
	Se-1	77	4643.0	1.4	**50.6038**	0.550	1.1	ug/L	56	Standard
>	**Ga**	71	51.7	27.9				mg/L	25	Standard
	Rb	85	896.7	7.7				ug/L	28	Standard
	Y	89	469245.9	0.9				ug/L	447395	Standard
>	**Rh**	103	30.0	50.0				ug/L	15	Standard
	Mo	98	315176.0	0.7	**100.1655**	0.835	0.8	ug/L	113	Standard
	Ag	107	372454.9	1.5	**49.8448**	0.674	1.4	ug/L	108	Standard
	Cd	111	120309.5	0.5	**50.2390**	0.275	0.5	mg/L	3	Standard
	Cd	114	296771.3	0.4	**50.0551**	0.319	0.6	ug/L	20	Standard
>	**In**	115	650857.3	0.3				ug/L	625728	Standard
	Sn	118	332008.2	0.6	**49.5103**	0.318	0.6	ug/L	568	Standard
	Sb	123	262896.6	1.7	**48.8713**	0.775	1.6	ug/L	612	Standard
	Ba	135	110171.1	0.5	**48.6680**	0.323	0.7	ug/L	21	Standard
	Ce	140	123.3	16.9				ug/L	245	Standard
>	**Tb**	159	962981.5	0.4				ug/L	950397	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	457474.5	0.7	**50.4943**	0.334	0.7	ug/L	15	Standard
	Tl	205	418439.6	0.8	**52.0062**	0.714	1.4	ug/L	13	Standard
	Pb	206	289168.5	1.0	**50.5726**	0.399	0.8	ug/L	264	Standard
	Pb	207	263060.3	0.2	**50.6591**	0.254	0.5	ug/L	222	Standard
	Pb	208	1106275.9	0.6	**52.1627**	0.606	1.2	ug/L	959	Standard
	U	238	414349.5	1.0	**50.9359**	0.727	1.4	ug/L	9	Standard
>	**Bi**	209	557861.1	0.5				ug/L	552821	Standard

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Na	23	1.7	173.2	**4.8874**	8.457	173.0	mg/L	2	Standard
Mg	24	4582.4	2.1	**5.1503**	0.148	2.9	mg/L	55	Standard
K	39	1161.7	7.3	**4.2028**	0.289	6.9	mg/L	28	Standard
Ca	43	63.3	9.1	**3.1474**	0.494	15.7	mg/L	27	Standard
Fe	54	6769.4	2.9	**5.0672**	0.121	2.4	mg/L	147	Standard
Fe	57	2078.5	6.0	**5.4119**	0.382	7.1	mg/L	268	Standard
> **Sc-1**	45	42305.6	0.7				mg/L	41174	Standard
Cl	35	87401.4	1.9				ug/L	69550	Standard
Kr	83	0.3	173.2				ug/L	1	Standard
Br	81	3040.3	9.5				ug/L	1950	Standard
P	31	27000.7	1.2				ug/L	21156	Standard
S	34	4354.0	2.5				ug/L	3419	Standard
Sr	88	48.3	31.6				ug/L	72	Standard
C	12	120.0	22.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	296.7	25.3				mg/L	17	Standard
Dy	164	9.4	107.0				mg/L	16	Standard
Ho-1	165	8.3	69.3				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	16158.6	6.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	104.584		
Al	27	101.649		
Sc	45			
Ti	47	98.649		
V	51	100.000		
Cr	52	100.338		
Cr	53			
Mn	55	99.416		
Co	59	102.355		
Ni	60	100.536		
Cu	65	100.593		
Zn	66	100.073		
> Ge	72		105.898	
As	75	99.974		
Se	82	100.927		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	100.165		
Ag	107	99.690		
Cd	111	100.478		
Cd	114			
> In	115			104.016
Sn	118	99.021		
Sb	123	97.743		
Ba	135	97.336		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.989		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.325		
U	238	101.872		
> Bi	209			100.912
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 16:15:06
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79089.3	2.9				ug/L	76456	Standard
	Be	9	15.0	57.7	**-0.0068**	0.008	113.4	ug/L	20	Standard
	Al	27	2235.2	13.9	**0.0024**	0.001	57.8	ug/L	1307	Standard
	Sc	45	43469.0	3.3				ug/L	41174	Standard
	Ti	47	28.3	17.4	**-0.0019**	0.015	796.4	ug/L	27	Standard
	V	51	1493.4	3.9	**-0.0261**	0.008	30.6	ug/L	1434	Standard
	Cr	52	7368.5	3.1	**-0.1054**	0.021	19.8	ug/L	7733	Standard
	Cr	53	613.3	6.6	**0.1595**	0.042	26.4	ug/L	442	Standard
	Mn	55	787.0	3.1	**-0.0026**	0.002	90.1	ug/L	723	Standard
	Co	59	245.7	12.9	**0.0010**	0.004	377.8	ug/L	217	Standard
	Ni	60	277.3	6.7	**-0.0262**	0.009	35.5	ug/L	304	Standard
	Cu	65	184.0	15.4	**0.0115**	0.013	111.3	ug/L	181	Standard
	Zn	66	259.7	4.8	**0.0209**	0.009	40.6	ug/L	215	Standard
>	**Ge**	72	548531.1	0.8				ug/L	520809	Standard
	As	75	-66.9	12.4	**-0.0063**	0.007	105.6	ug/L	-52	Standard
	Se	82	22.1	15.5	**0.0395**	0.025	62.6	ug/L	17	Standard
	Se-1	77	54.7	22.1	**-0.0780**	0.131	167.8	ug/L	56	Standard
>	**Ga**	71	23.3	75.3				mg/L	25	Standard
	Rb	85	18.3	56.8				ug/L	28	Standard
	Y	89	474502.6	0.9				ug/L	447395	Standard
>	**Rh**	103	10.0					ug/L	15	Standard
	Mo	98	353.6	10.5	**0.0864**	0.011	12.8	ug/L	113	Standard
	Ag	107	117.0	12.6	**0.0025**	0.002	78.3	ug/L	108	Standard
	Cd	111	11.4	37.7	**0.0023**	0.002	74.6	mg/L	3	Standard
	Cd	114	48.0	51.5	**0.0079**	0.004	50.7	ug/L	20	Standard
>	**In**	115	662932.4	0.6				ug/L	625728	Standard
	Sn	118	1505.1	27.3	**0.1367**	0.061	44.7	ug/L	568	Standard
	Sb	123	848.9	30.9	**0.1215**	0.049	40.0	ug/L	612	Standard
	Ba	135	79.0	17.7	**0.0163**	0.006	35.9	ug/L	21	Standard
	Ce	140	31.7	24.1				ug/L	245	Standard
>	**Tb**	159	977903.3	1.9				ug/L	950397	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	71.7	6.3	**0.0070**	0.000	7.1	ug/L	15	Standard
	Tl	205	66.7	28.4	**-0.0016**	0.002	147.5	ug/L	13	Standard
	Pb	206	325.0	5.7	**0.0119**	0.003	21.2	ug/L	264	Standard
	Pb	207	293.0	9.6	**0.0091**	0.005	50.3	ug/L	222	Standard
	Pb	208	1180.4	1.4	**0.0062**	0.001	14.3	ug/L	959	Standard
	U	238	63.3	11.6	**0.0074**	0.001	11.2	ug/L	9	Standard
>	**Bi**	209	570093.4	1.3				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	13.3	**-0.0123**	0.005	38.9	mg/L	55	Standard
K	39	35.0	14.3	**-0.0036**	0.022	615.4	mg/L	28	Standard
Ca	43	20.0	25.0	**-0.7333**	0.424	57.9	mg/L	27	Standard
Fe	54	187.6	24.1	**0.0414**	0.038	91.6	mg/L	147	Standard
Fe	57	236.7	10.0	**-0.1153**	0.063	54.7	mg/L	268	Standard
> **Sc-1**	45	43469.0	3.3				mg/L	41174	Standard
Cl	35	86433.8	0.2				ug/L	69550	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	2503.5	3.8				ug/L	1950	Standard
P	31	25746.9	1.4				ug/L	21156	Standard
S	34	4332.3	3.9				ug/L	3419	Standard
Sr	88	76.7	27.2				ug/L	72	Standard
C	12	100.0	65.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	203.3	49.3				mg/L	17	Standard
Dy	164	6.3	86.6				mg/L	16	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	12004.8	4.7				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		105.323	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.946
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.124
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBS H2 WG574521-03
Sample Date/Time: Friday, July 01, 2016 16:37:08
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79271.8	0.3				ug/L	76456	Standard
	Be	9	20.0	66.1	**-0.0027**	0.011	426.9	ug/L	20	Standard
	Al	27	18129.4	51.1	**0.0920**	0.053	57.1	ug/L	1307	Standard
	Sc	45	43671.2	1.7				ug/L	41174	Standard
	Ti	47	42.0	27.0	**0.0356**	0.031	88.1	ug/L	27	Standard
	V	51	1815.5	7.2	**0.0075**	0.013	168.1	ug/L	1434	Standard
	Cr	52	9893.9	1.4	**0.1721**	0.017	10.1	ug/L	7733	Standard
	Cr	53	775.0	10.2	**0.2997**	0.080	26.8	ug/L	442	Standard
	Mn	55	2337.2	54.3	**0.1861**	0.154	82.5	ug/L	723	Standard
	Co	59	338.7	60.7	**0.0117**	0.025	210.3	ug/L	217	Standard
	Ni	60	460.3	4.6	**0.0540**	0.007	13.4	ug/L	304	Standard
	Cu	65	246.0	5.3	**0.0385**	0.005	13.8	ug/L	181	Standard
	Zn	66	1190.0	1.7	**0.7267**	0.005	0.6	ug/L	215	Standard
>	**Ge**	72	557757.5	1.2				ug/L	520809	Standard
	As	75	-45.2	46.1	**0.0109**	0.016	146.4	ug/L	-52	Standard
	Se	82	21.5	16.2	**0.0326**	0.024	74.5	ug/L	17	Standard
	Se-1	77	60.7	14.0	**-0.0215**	0.097	452.0	ug/L	56	Standard
>	**Ga**	71	30.0	33.3				mg/L	25	Standard
	Rb	85	78.3	35.2				ug/L	28	Standard
	Y	89	482555.7	1.9				ug/L	447395	Standard
>	**Rh**	103	8.3	91.7				ug/L	15	Standard
	Mo	98	332.0	91.4	**0.0799**	0.095	118.5	ug/L	113	Standard
	Ag	107	123.7	31.0	**0.0035**	0.005	145.5	ug/L	108	Standard
	Cd	111	20.3	82.0	**0.0060**	0.007	114.1	mg/L	3	Standard
	Cd	114	52.4	144.8	**0.0087**	0.013	144.6	ug/L	20	Standard
>	**In**	115	660410.5	0.4				ug/L	625728	Standard
	Sn	118	1340.1	28.5	**0.1130**	0.056	49.2	ug/L	568	Standard
	Sb	123	501.3	30.5	**0.0581**	0.028	47.8	ug/L	612	Standard
	Ba	135	141.0	74.3	**0.0434**	0.045	104.7	ug/L	21	Standard
	Ce	140	65.0	13.3				ug/L	245	Standard
>	**Tb**	159	984326.5	0.5				ug/L	950397	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	36.3	87.4	**0.0032**	0.003	108.0	ug/L	15	Standard
	Tl	205	81.7	141.4	**0.0002**	0.014	6303.1	ug/L	13	Standard
	Pb	206	357.0	4.6	**0.0175**	0.003	15.4	ug/L	264	Standard
	Pb	207	301.0	13.7	**0.0108**	0.008	73.3	ug/L	222	Standard
	Pb	208	1410.0	25.6	**0.0170**	0.017	98.8	ug/L	959	Standard
	U	238	79.0	155.7	**0.0093**	0.015	160.0	ug/L	9	Standard
>	**Bi**	209	568547.7	0.3				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	83.3	70.3	**0.0311**	0.063	203.4	mg/L	55	Standard
K	39	26.7	47.2	**-0.0352**	0.044	125.3	mg/L	28	Standard
Ca	43	13.3	43.3	**-1.3140**	0.480	36.5	mg/L	27	Standard
Fe	54	179.3	22.8	**0.0338**	0.030	89.2	mg/L	147	Standard
Fe	57	248.3	6.5	**-0.0850**	0.036	42.0	mg/L	268	Standard
> **Sc-1**	45	43671.2	1.7				mg/L	41174	Standard
Cl	35	94694.4	1.8				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	2446.9	5.5				ug/L	1950	Standard
P	31	26514.9	2.3				ug/L	21156	Standard
S	34	4310.6	3.2				ug/L	3419	Standard
Sr	88	95.0	13.9				ug/L	72	Standard
C	12	123.3	28.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	223.3	40.1				mg/L	17	Standard
Dy	164	6.2	193.4				mg/L	16	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	20320.3	3.3				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		103.683	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		107.094	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.543
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.845
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBS H2 WG574521-03
Report Date/Time: Friday, July 01, 2016 16:39:25
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Method 6020 - Summary Report

Sample ID: LCSS H2 WG574521-04
Sample Date/Time: Friday, July 01, 2016 16:40:19
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	78206.3	1.2				ug/L	76456	Standard
	Be	9	30357.1	1.3	**26.4935**	0.412	1.6	ug/L	20	Standard
	Al	27	14527.0	3.3	**0.0727**	0.002	2.4	ug/L	1307	Standard
	Sc	45	43500.7	0.4				ug/L	41174	Standard
	Ti	47	50.0	23.1	**0.0598**	0.033	54.4	ug/L	27	Standard
	V	51	219978.8	0.3	**24.9959**	0.252	1.0	ug/L	1434	Standard
	Cr	52	227773.4	1.1	**25.5491**	0.376	1.5	ug/L	7733	Standard
	Cr	53	27710.3	2.0	**25.3978**	0.708	2.8	ug/L	442	Standard
	Mn	55	209603.4	1.5	**25.9644**	0.258	1.0	ug/L	723	Standard
	Co	59	210851.5	1.3	**25.8831**	0.352	1.4	ug/L	217	Standard
	Ni	60	56751.8	1.2	**25.5968**	0.369	1.4	ug/L	304	Standard
	Cu	65	56217.4	1.4	**25.8605**	0.261	1.0	ug/L	181	Standard
	Zn	66	34071.3	0.3	**26.0003**	0.170	0.7	ug/L	215	Standard
>	Ge	72	553234.9	0.8				ug/L	520809	Standard
	As	75	33169.4	0.5	**25.3389**	0.170	0.7	ug/L	-52	Standard
	Se	82	3351.8	0.3	**24.8507**	0.232	0.9	ug/L	17	Standard
	Se-1	77	2368.9	3.2	**25.4071**	1.040	4.1	ug/L	56	Standard
>	Ga	71	33.3	31.2				mg/L	25	Standard
	Rb	85	63.3	32.9				ug/L	28	Standard
	Y	89	471256.9	0.9				ug/L	447395	Standard
>	Rh	103	23.3	75.3				ug/L	15	Standard
	Mo	98	151.2	23.7	**0.0237**	0.012	48.5	ug/L	113	Standard
	Ag	107	190870.7	0.3	**25.3271**	0.087	0.3	ug/L	108	Standard
	Cd	111	60282.1	0.5	**24.9635**	0.019	0.1	mg/L	3	Standard
	Cd	114	147909.0	1.0	**24.7417**	0.334	1.4	ug/L	20	Standard
>	In	115	656276.3	0.4				ug/L	625728	Standard
	Sn	118	1236.7	17.5	**0.0991**	0.033	33.0	ug/L	568	Standard
	Sb	123	139998.4	0.5	**25.7951**	0.218	0.8	ug/L	612	Standard
	Ba	135	55761.4	0.2	**24.4204**	0.141	0.6	ug/L	21	Standard
	Ce	140	101.7	7.5				ug/L	245	Standard
>	Tb	159	982894.1	0.9				ug/L	950397	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	233767.2	0.4	**25.3362**	0.353	1.4	ug/L	15	Standard
	Tl	205	211866.2	1.4	**25.8487**	0.316	1.2	ug/L	13	Standard
	Pb	206	151902.3	0.4	**26.0680**	0.572	2.2	ug/L	264	Standard
	Pb	207	132458.5	0.8	**25.0234**	0.298	1.2	ug/L	222	Standard
	Pb	208	562733.9	0.2	**26.0307**	0.442	1.7	ug/L	959	Standard
	U	238	206496.7	1.0	**24.9238**	0.246	1.0	ug/L	9	Standard
>	Bi	209	568206.0	1.8				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	58.3	26.2	**0.0044**	0.017	394.1	mg/L	55	Standard
K	39	25.0	20.0	**-0.0405**	0.018	44.5	mg/L	28	Standard
Ca	43	28.3	10.2	**-0.0167**	0.239	1431.0	mg/L	27	Standard
Fe	54	163.4	6.9	**0.0225**	0.008	36.3	mg/L	147	Standard
Fe	57	255.0	14.8	**-0.0621**	0.113	181.2	mg/L	268	Standard
Sc-1	45	43500.7	0.4				mg/L	41174	Standard
Cl	35	91778.5	1.5				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	5150.9	3.9				ug/L	1950	Standard
P	31	26144.2	2.1				ug/L	21156	Standard
S	34	4105.6	2.0				ug/L	3419	Standard
Sr	88	88.3	25.5				ug/L	72	Standard
C	12	90.0	19.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	216.7	38.7				mg/L	17	Standard
Dy	164	12.1	119.9				mg/L	16	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	26.7	86.6				mg/L	7	Standard
I	127	5989.5	2.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		102.290	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.226	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.882
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.783
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606144504 WG574521-01
Sample Date/Time: Friday, July 01, 2016 16:43:31
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82711.9	1.7				ug/L	76456	Standard
	Be	9	1393.4	1.7	**1.1308**	0.019	1.7	ug/L	20	Standard
	Al	27	12446064.6	0.4	**67.2063**	1.063	1.6	ug/L	1307	Standard
	Sc	45	49798.4	0.9				ug/L	41174	Standard
	Ti	47	3275.7	2.4	**9.3815**	0.258	2.8	ug/L	27	Standard
	V	51	187113.3	0.3	**21.2321**	0.189	0.9	ug/L	1434	Standard
	Cr	52	137212.2	0.9	**15.0050**	0.153	1.0	ug/L	7733	Standard
	Cr	53	16570.7	1.1	**15.0184**	0.113	0.8	ug/L	442	Standard
	Mn	55	3185070.4	0.3	**396.0143**	1.958	0.5	ug/L	723	Standard
	Co	59	91536.7	1.1	**11.2200**	0.101	0.9	ug/L	217	Standard
	Ni	60	45707.8	1.2	**20.5854**	0.156	0.8	ug/L	304	Standard
	Cu	65	23258.8	1.9	**10.6559**	0.153	1.4	ug/L	181	Standard
	Zn	66	46036.5	0.5	**35.1961**	0.406	1.2	ug/L	215	Standard
>	**Ge**	72	553218.9	0.6				ug/L	520809	Standard
	As	75	5739.6	2.8	**4.4216**	0.100	2.3	ug/L	-52	Standard
	Se	82	54.0	18.0	**0.2758**	0.072	26.2	ug/L	17	Standard
	Se-1	77	126.7	3.9	**0.7105**	0.061	8.6	ug/L	56	Standard
>	**Ga**	71	21134.7	1.1				mg/L	25	Standard
	Rb	85	212914.0	1.2				ug/L	28	Standard
	Y	89	733052.8	0.4				ug/L	447395	Standard
>	**Rh**	103	31.7	50.8				ug/L	15	Standard
	Mo	98	356.5	15.7	**0.0888**	0.017	19.2	ug/L	113	Standard
	Ag	107	670.0	12.8	**0.0764**	0.011	14.4	ug/L	108	Standard
	Cd	111	132.6	4.8	**0.0528**	0.002	4.3	mg/L	3	Standard
	Cd	114	355.4	28.0	**0.0597**	0.017	27.7	ug/L	20	Standard
>	**In**	115	653864.1	0.7				ug/L	625728	Standard
	Sn	118	1290.1	26.4	**0.1075**	0.050	46.3	ug/L	568	Standard
	Sb	123	594.8	48.0	**0.0762**	0.052	68.5	ug/L	612	Standard
	Ba	135	574692.3	0.9	**252.7729**	0.765	0.3	ug/L	21	Standard
	Ce	140	1393840.8	0.9				ug/L	245	Standard
>	**Tb**	159	1000230.3	1.3				ug/L	950397	Standard
	Ho	165	21410.1	1.0				ug/L	7	Standard
	Tl	203	1416.4	11.1	**0.1555**	0.018	11.5	ug/L	15	Standard
	Tl	205	1253.4	9.7	**0.1459**	0.016	10.8	ug/L	13	Standard
	Pb	206	71530.8	0.4	**12.4648**	0.067	0.5	ug/L	264	Standard
	Pb	207	58749.0	0.7	**11.2666**	0.094	0.8	ug/L	222	Standard
	Pb	208	258108.7	0.1	**12.1209**	0.070	0.6	ug/L	959	Standard
	U	238	3402.4	1.9	**0.4176**	0.009	2.1	ug/L	9	Standard
>	**Bi**	209	558413.2	0.5				ug/L	552821	Standard

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Na	23	1.7	173.2	**4.0919**	7.079	173.0	mg/L	2	Standard
Mg	24	115.0	19.0	**0.0509**	0.021	40.8	mg/L	55	Standard
K	39	340.0	8.9	**0.9470**	0.101	10.7	mg/L	28	Standard
Ca	43	83.3	24.2	**3.8084**	1.512	39.7	mg/L	27	Standard
Fe	54	19898.8	3.5	**12.8021**	0.403	3.1	mg/L	147	Standard
Fe	57	5240.9	4.1	**12.5122**	0.602	4.8	mg/L	268	Standard
> **Sc-1**	45	49798.4	0.9				mg/L	41174	Standard
Cl	35	83679.2	2.8				ug/L	69550	Standard
Kr	83	2.0	132.3				ug/L	1	Standard
Br	81	3150.3	10.3				ug/L	1950	Standard
P	31	25890.4	3.1				ug/L	21156	Standard
S	34	4145.6	3.5				ug/L	3419	Standard
Sr	88	115.0	15.1				ug/L	72	Standard
C	12	180.0	25.5				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	210.0	42.3				mg/L	17	Standard
Dy	164	35643.1	1.6				mg/L	16	Standard
Ho-1	165	21410.1	1.0				mg/L	7	Standard
Er	166	18878.4	2.2				mg/L	7	Standard
I	127	27002.4	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.183	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.223	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.497
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.012
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144505S WG574521-05
Sample Date/Time: Friday, July 01, 2016 16:46:42
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81052.9	2.1				ug/L	76456	Standard
	Be	9	30676.0	2.4	**25.8290**	0.259	1.0	ug/L	20	Standard
	Al	27	13294166.7	2.5	**73.2465**	1.294	1.8	ug/L	1307	Standard
	Sc	45	48179.8	2.6				ug/L	41174	Standard
	Ti	47	6953.9	1.9	**20.0934**	0.295	1.5	ug/L	27	Standard
	V	51	398485.1	1.1	**45.6308**	0.280	0.6	ug/L	1434	Standard
	Cr	52	346453.3	0.7	**39.5366**	0.280	0.7	ug/L	7733	Standard
	Cr	53	41902.9	1.3	**38.7788**	0.379	1.0	ug/L	442	Standard
	Mn	55	3061942.5	1.0	**382.3072**	4.386	1.1	ug/L	723	Standard
	Co	59	255934.9	0.7	**31.5572**	0.332	1.1	ug/L	217	Standard
	Ni	60	90655.7	0.5	**41.1541**	0.349	0.8	ug/L	304	Standard
	Cu	65	74619.0	0.4	**34.4964**	0.137	0.4	ug/L	181	Standard
	Zn	66	75694.3	0.6	**58.2286**	0.173	0.3	ug/L	215	Standard
>	Ge	72	550897.8	0.5				ug/L	520809	Standard
	As	75	34828.9	0.1	**26.7169**	0.137	0.5	ug/L	-52	Standard
	Se	82	2635.3	1.9	**19.5943**	0.381	1.9	ug/L	17	Standard
	Se-1	77	1869.4	1.0	**19.9893**	0.095	0.5	ug/L	56	Standard
>	Ga	71	20570.6	1.4				mg/L	25	Standard
	Rb	85	177643.7	0.9				ug/L	28	Standard
	Y	89	691746.1	1.0				ug/L	447395	Standard
>	Rh	103	35.0	37.8				ug/L	15	Standard
	Mo	98	1110.7	3.0	**0.3333**	0.010	3.0	ug/L	113	Standard
	Ag	107	178239.6	0.1	**24.1330**	0.242	1.0	ug/L	108	Standard
	Cd	111	58613.6	0.8	**24.7671**	0.188	0.8	mg/L	3	Standard
	Cd	114	143184.7	2.0	**24.4376**	0.381	1.6	ug/L	20	Standard
>	In	115	643190.5	1.0				ug/L	625728	Standard
	Sn	118	1398.4	22.6	**0.1275**	0.050	39.0	ug/L	568	Standard
	Sb	123	4282.3	1.0	**0.7725**	0.016	2.0	ug/L	612	Standard
	Ba	135	345608.0	0.5	**154.5433**	2.126	1.4	ug/L	21	Standard
	Ce	140	1299122.5	1.1				ug/L	245	Standard
>	Tb	159	990488.4	0.8				ug/L	950397	Standard
	Ho	165	18067.4	1.7				ug/L	7	Standard
	Tl	203	217125.4	0.9	**24.1291**	0.277	1.1	ug/L	15	Standard
	Tl	205	198577.9	0.6	**24.8432**	0.213	0.9	ug/L	13	Standard
	Pb	206	259935.7	1.5	**45.7680**	0.825	1.8	ug/L	264	Standard
	Pb	207	221787.2	1.0	**42.9961**	0.567	1.3	ug/L	222	Standard
	Pb	208	955436.3	0.5	**45.3507**	0.360	0.8	ug/L	959	Standard
	U	238	203540.4	0.9	**25.1914**	0.306	1.2	ug/L	9	Standard
>	Bi	209	554076.2	0.3				ug/L	552821	Standard

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Na	23	3.3	173.2	**8.7132**	15.083	173.1	mg/L	2	Standard
Mg	24	123.3	10.2	**0.0629**	0.011	18.2	mg/L	55	Standard
K	39	401.7	6.9	**1.1840**	0.057	4.8	mg/L	28	Standard
Ca	43	85.0	17.6	**4.1392**	1.063	25.7	mg/L	27	Standard
Fe	54	19135.8	0.4	**12.7297**	0.274	2.2	mg/L	147	Standard
Fe	57	5282.6	2.0	**13.0758**	0.572	4.4	mg/L	268	Standard
> **Sc-1**	45	48179.8	2.6				mg/L	41174	Standard
Cl	35	81193.7	1.4				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	3463.7	11.3				ug/L	1950	Standard
P	31	25893.8	3.3				ug/L	21156	Standard
S	34	3793.8	6.6				ug/L	3419	Standard
Sr	88	98.3	7.8				ug/L	72	Standard
C	12	150.0	24.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	203.3	31.6				mg/L	17	Standard
Dy	164	30043.9	1.0				mg/L	16	Standard
Ho-1	165	18067.4	1.7				mg/L	7	Standard
Er	166	16368.8	2.5				mg/L	7	Standard
I	127	31820.1	1.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.013	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.777	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.791
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.227
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144505S WG574521-05
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Method 6020 - Summary Report

Sample ID: L1606144506SD WG574521-06
Sample Date/Time: Friday, July 01, 2016 16:49:54
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80097.9	2.8				ug/L	76456	Standard
	Be	9	30038.1	2.5	25.6081	1.007	3.9	ug/L	20	Standard
	Al	27	25838350.2	1.3	144.1079	2.593	1.8	ug/L	1307	Standard
	Sc	45	47559.6	2.9				ug/L	41174	Standard
	Ti	47	6556.4	1.8	19.3875	0.685	3.5	ug/L	27	Standard
	V	51	371950.4	0.9	43.5770	0.897	2.1	ug/L	1434	Standard
	Cr	52	331664.7	2.0	38.7230	1.629	4.2	ug/L	7733	Standard
	Cr	53	41130.8	1.7	38.9560	1.095	2.8	ug/L	442	Standard
	Mn	55	3596932.1	1.0	459.6785	15.165	3.3	ug/L	723	Standard
	Co	59	263231.1	1.3	33.2200	1.092	3.3	ug/L	217	Standard
	Ni	60	95938.5	1.6	44.5917	1.721	3.9	ug/L	304	Standard
	Cu	65	74284.7	1.9	35.1502	1.281	3.6	ug/L	181	Standard
	Zn	66	76677.6	1.5	60.3810	2.186	3.6	ug/L	215	Standard
>	Ge	72	538522.8	2.5				ug/L	520809	Standard
	As	75	31096.8	1.3	24.4196	0.873	3.6	ug/L	-52	Standard
	Se	82	2411.7	1.1	18.3435	0.519	2.8	ug/L	17	Standard
	Se-1	77	1751.1	3.2	19.1315	0.710	3.7	ug/L	56	Standard
>	Ga	71	19424.1	1.9				mg/L	25	Standard
	Rb	85	183661.6	1.6				ug/L	28	Standard
	Y	89	704841.2	2.1				ug/L	447395	Standard
>	Rh	103	36.7	20.8				ug/L	15	Standard
	Mo	98	611.4	5.3	0.1763	0.010	5.6	ug/L	113	Standard
	Ag	107	174143.9	1.6	24.0046	0.280	1.2	ug/L	108	Standard
	Cd	111	57620.6	0.9	24.7920	0.490	2.0	mg/L	3	Standard
	Cd	114	139765.7	1.6	24.2901	0.536	2.2	ug/L	20	Standard
>	In	115	631733.1	1.1				ug/L	625728	Standard
	Sn	118	1106.7	20.2	0.0862	0.035	40.7	ug/L	568	Standard
	Sb	123	5971.0	2.3	1.1106	0.013	1.2	ug/L	612	Standard
	Ba	135	389506.4	0.2	177.3323	1.766	1.0	ug/L	21	Standard
	Ce	140	1279386.9	0.6				ug/L	245	Standard
>	Tb	159	976334.8	1.3				ug/L	950397	Standard
	Ho	165	21239.9	2.3				ug/L	7	Standard
	Tl	203	212476.8	0.4	24.3917	0.306	1.3	ug/L	15	Standard
	Tl	205	190802.6	2.3	24.6603	0.758	3.1	ug/L	13	Standard
	Pb	206	194049.7	0.6	35.2833	0.374	1.1	ug/L	264	Standard
	Pb	207	165998.7	0.6	33.2303	0.156	0.5	ug/L	222	Standard
	Pb	208	711047.9	1.1	34.8555	0.746	2.1	ug/L	959	Standard
	U	238	196776.4	1.6	25.1602	0.659	2.6	ug/L	9	Standard
>	Bi	209	536411.2	1.1				ug/L	552821	Standard

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Na	23	5.0	0.0	**12.9314**	0.378	2.9	mg/L	2	Standard
Mg	24	121.7	21.1	**0.0630**	0.027	42.3	mg/L	55	Standard
K	39	396.7	12.8	**1.1837**	0.137	11.6	mg/L	28	Standard
Ca	43	198.3	9.5	**13.1529**	1.459	11.1	mg/L	27	Standard
Fe	54	17265.4	3.0	**11.6302**	0.519	4.5	mg/L	147	Standard
Fe	57	5002.5	1.8	**12.5110**	0.483	3.9	mg/L	268	Standard
> **Sc-1**	45	47559.6	2.9				mg/L	41174	Standard
Cl	35	82047.6	0.3				ug/L	69550	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	2713.6	16.2				ug/L	1950	Standard
P	31	26575.0	0.8				ug/L	21156	Standard
S	34	4360.6	2.1				ug/L	3419	Standard
Sr	88	131.7	17.9				ug/L	72	Standard
C	12	140.0	31.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	120.0	25.0				mg/L	17	Standard
Dy	164	35523.7	1.8				mg/L	16	Standard
Ho-1	165	21239.9	2.3				mg/L	7	Standard
Er	166	19068.7	0.7				mg/L	7	Standard
I	127	21363.4	3.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.764	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.401	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.960
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.032
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606145101
Sample Date/Time: Friday, July 01, 2016 16:53:05
Number of Replicates: 3
Autosampler Position: 227
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77083.9	1.4				ug/L	76456	Standard
	Be	9	475.0	1.1	**0.4010**	0.005	1.3	ug/L	20	Standard
	Al	27	2237415.9	0.9	**12.9552**	0.241	1.9	ug/L	1307	Standard
	Sc	45	46143.5	0.6				ug/L	41174	Standard
	Ti	47	14229.3	1.3	**40.3569**	0.503	1.2	ug/L	27	Standard
	V	51	81926.5	1.2	**9.0305**	0.138	1.5	ug/L	1434	Standard
	Cr	52	71884.8	0.5	**7.2617**	0.092	1.3	ug/L	7733	Standard
	Cr	53	8222.2	3.8	**7.1184**	0.362	5.1	ug/L	442	Standard
	Mn	55	1326114.2	0.7	**162.1111**	1.014	0.6	ug/L	723	Standard
	Co	59	18265.0	0.3	**2.1786**	0.035	1.6	ug/L	217	Standard
	Ni	60	14421.9	1.4	**6.2826**	0.026	0.4	ug/L	304	Standard
	Cu	65	20275.6	1.0	**9.1261**	0.043	0.5	ug/L	181	Standard
	Zn	66	84084.7	0.5	**63.3707**	0.506	0.8	ug/L	215	Standard
>	Ge	72	562486.4	1.3				ug/L	520809	Standard
	As	75	12273.7	0.0	**9.2515**	0.118	1.3	ug/L	-52	Standard
	Se	82	80.8	6.1	**0.4662**	0.041	8.7	ug/L	17	Standard
	Se-1	77	117.0	7.4	**0.5834**	0.109	18.6	ug/L	56	Standard
>	Ga	71	7775.3	1.7				mg/L	25	Standard
	Rb	85	53367.2	1.6				ug/L	28	Standard
	Y	89	546880.1	0.9				ug/L	447395	Standard
>	Rh	103	25.0	34.6				ug/L	15	Standard
	Mo	98	1997.9	3.1	**0.5987**	0.021	3.5	ug/L	113	Standard
	Ag	107	409.7	7.2	**0.0409**	0.004	9.7	ug/L	108	Standard
	Cd	111	850.8	2.0	**0.3460**	0.009	2.5	mg/L	3	Standard
	Cd	114	2106.8	7.8	**0.3483**	0.025	7.1	ug/L	20	Standard
>	In	115	663939.9	0.6				ug/L	625728	Standard
	Sn	118	2050.1	14.8	**0.2160**	0.045	20.8	ug/L	568	Standard
	Sb	123	671.1	9.1	**0.0887**	0.011	12.6	ug/L	612	Standard
	Ba	135	107917.7	1.0	**46.7326**	0.441	0.9	ug/L	21	Standard
	Ce	140	627825.8	0.9				ug/L	245	Standard
>	Tb	159	987128.9	0.6				ug/L	950397	Standard
	Ho	165	5104.2	2.7				ug/L	7	Standard
	Tl	203	689.0	1.9	**0.0742**	0.001	1.8	ug/L	15	Standard
	Tl	205	618.3	5.7	**0.0660**	0.005	7.0	ug/L	13	Standard
	Pb	206	276291.1	0.7	**47.6167**	0.411	0.9	ug/L	264	Standard
	Pb	207	230628.0	0.7	**43.7624**	0.472	1.1	ug/L	222	Standard
	Pb	208	1006911.8	0.1	**46.7816**	0.251	0.5	ug/L	959	Standard
	U	238	4725.7	2.3	**0.5722**	0.012	2.1	ug/L	9	Standard
>	Bi	209	566085.1	0.4				ug/L	552821	Standard

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Na	23	8.3	124.9	**22.1583**	27.707	125.0	mg/L	2	Standard
Mg	24	85.0	11.8	**0.0284**	0.010	35.7	mg/L	55	Standard
K	39	100.0	15.0	**0.2109**	0.050	23.9	mg/L	28	Standard
Ca	43	75.0	6.7	**3.6275**	0.385	10.6	mg/L	27	Standard
Fe	54	8171.7	3.6	**5.6200**	0.239	4.3	mg/L	147	Standard
Fe	57	2388.5	3.0	**5.7441**	0.167	2.9	mg/L	268	Standard
> **Sc-1**	45	46143.5	0.6				mg/L	41174	Standard
Cl	35	81155.5	2.1				ug/L	69550	Standard
Kr	83	0.3	173.2				ug/L	1	Standard
Br	81	3463.7	7.7				ug/L	1950	Standard
P	31	25539.9	4.4				ug/L	21156	Standard
S	34	3917.2	3.0				ug/L	3419	Standard
Sr	88	76.7	18.8				ug/L	72	Standard
C	12	486.7	15.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	256.7	4.5				mg/L	17	Standard
Dy	164	8760.5	4.1				mg/L	16	Standard
Ho-1	165	5104.2	2.7				mg/L	7	Standard
Er	166	4777.4	5.8				mg/L	7	Standard
I	127	36602.6	6.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.822	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.002	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.107
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.399
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606145102
Sample Date/Time: Friday, July 01, 2016 16:56:17
Number of Replicates: 3
Autosampler Position: 228
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78477.8	2.4				ug/L	76456	Standard
	Be	9	601.7	8.2	**0.5033**	0.031	6.2	ug/L	20	Standard
	Al	27	4781763.5	1.4	**27.2109**	0.622	2.3	ug/L	1307	Standard
	Sc	45	48186.5	2.1				ug/L	41174	Standard
	Ti	47	26915.6	1.4	**75.8086**	1.495	2.0	ug/L	27	Standard
	V	51	170171.2	0.3	**18.8187**	0.180	1.0	ug/L	1434	Standard
	Cr	52	138418.5	1.4	**14.7553**	0.301	2.0	ug/L	7733	Standard
	Cr	53	16907.8	0.5	**14.9504**	0.076	0.5	ug/L	442	Standard
	Mn	55	4385050.3	0.1	**532.0225**	4.124	0.8	ug/L	723	Standard
	Co	59	55284.7	0.4	**6.6001**	0.055	0.8	ug/L	217	Standard
	Ni	60	30764.2	0.1	**13.4670**	0.097	0.7	ug/L	304	Standard
	Cu	65	65698.5	1.0	**29.5008**	0.365	1.2	ug/L	181	Standard
	Zn	66	217089.2	0.9	**162.5825**	0.761	0.5	ug/L	215	Standard
>	**Ge**	72	566980.9	0.7				ug/L	520809	Standard
	As	75	11103.7	0.8	**8.3069**	0.047	0.6	ug/L	-52	Standard
	Se	82	132.6	4.8	**0.8380**	0.046	5.5	ug/L	17	Standard
	Se-1	77	150.3	12.7	**0.9313**	0.212	22.8	ug/L	56	Standard
>	**Ga**	71	15192.6	2.9				mg/L	25	Standard
	Rb	85	155948.5	0.6				ug/L	28	Standard
	Y	89	601495.0	1.4				ug/L	447395	Standard
>	**Rh**	103	23.3	32.7				ug/L	15	Standard
	Mo	98	5496.7	0.9	**1.6857**	0.006	0.4	ug/L	113	Standard
	Ag	107	775.4	2.6	**0.0887**	0.002	2.3	ug/L	108	Standard
	Cd	111	1034.2	3.3	**0.4202**	0.011	2.7	mg/L	3	Standard
	Cd	114	2656.7	6.0	**0.4384**	0.024	5.5	ug/L	20	Standard
>	**In**	115	665198.2	0.6				ug/L	625728	Standard
	Sn	118	1311.7	13.8	**0.1076**	0.028	25.7	ug/L	568	Standard
	Sb	123	507.6	23.3	**0.0588**	0.022	37.4	ug/L	612	Standard
	Ba	135	246404.5	0.4	**106.5243**	0.535	0.5	ug/L	21	Standard
	Ce	140	708985.8	1.9				ug/L	245	Standard
>	**Tb**	159	1000873.3	0.7				ug/L	950397	Standard
	Ho	165	8867.6	1.0				ug/L	7	Standard
	Tl	203	1805.8	2.5	**0.1960**	0.004	2.0	ug/L	15	Standard
	Tl	205	1731.8	4.2	**0.2027**	0.009	4.2	ug/L	13	Standard
	Pb	206	179680.5	0.2	**31.0013**	0.201	0.6	ug/L	264	Standard
	Pb	207	147967.3	0.2	**28.1058**	0.174	0.6	ug/L	222	Standard
	Pb	208	649286.1	0.4	**30.1982**	0.309	1.0	ug/L	959	Standard
	U	238	11590.8	1.2	**1.4062**	0.023	1.6	ug/L	9	Standard
>	**Bi**	209	565178.3	0.6				ug/L	552821	Standard

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Na	23	3.3	173.2	**8.3775**	14.502	173.1	mg/L	2	Standard
Mg	24	161.7	21.7	**0.1008**	0.032	31.7	mg/L	55	Standard
K	39	290.0	13.0	**0.8193**	0.124	15.2	mg/L	28	Standard
Ca	43	116.7	13.8	**6.5999**	1.152	17.5	mg/L	27	Standard
Fe	54	19162.0	2.8	**12.7406**	0.220	1.7	mg/L	147	Standard
Fe	57	5199.2	1.1	**12.8525**	0.447	3.5	mg/L	268	Standard
> **Sc-1**	45	48186.5	2.1				mg/L	41174	Standard
Cl	35	81627.3	0.9				ug/L	69550	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	4627.4	6.5				ug/L	1950	Standard
P	31	26000.6	1.2				ug/L	21156	Standard
S	34	3977.2	4.8				ug/L	3419	Standard
Sr	88	111.7	18.6				ug/L	72	Standard
C	12	856.7	2.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	230.0	17.4				mg/L	17	Standard
Dy	164	14613.4	2.0				mg/L	16	Standard
Ho-1	165	8867.6	1.0				mg/L	7	Standard
Er	166	8085.5	6.9				mg/L	7	Standard
I	127	50293.4	2.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.645	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.865	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.308
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.235
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606145102PS WG575057-01
Sample Date/Time: Friday, July 01, 2016 16:59:28
Number of Replicates: 3
Autosampler Position: 229
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79385.8	1.3				ug/L	76456	Standard
	Be	9	66132.4	2.2	**56.8900**	1.804	3.2	ug/L	20	Standard
	Al	27	4677646.6	0.6	**26.3080**	0.258	1.0	ug/L	1307	Standard
	Sc	45	48036.1	2.2				ug/L	41174	Standard
	Ti	47	26404.3	1.4	**75.0881**	1.235	1.6	ug/L	27	Standard
	V	51	638356.3	0.3	**71.8329**	0.463	0.6	ug/L	1434	Standard
	Cr	52	595924.0	0.5	**67.3875**	0.498	0.7	ug/L	7733	Standard
	Cr	53	74037.1	1.4	**67.5313**	1.159	1.7	ug/L	442	Standard
	Mn	55	4772659.1	0.6	**584.6747**	1.033	0.2	ug/L	723	Standard
	Co	59	500476.8	0.3	**60.5691**	0.409	0.7	ug/L	217	Standard
	Ni	60	148905.8	0.4	**66.4112**	0.102	0.2	ug/L	304	Standard
	Cu	65	183049.8	0.4	**83.1281**	0.455	0.5	ug/L	181	Standard
	Zn	66	287669.1	1.1	**217.6035**	2.596	1.2	ug/L	215	Standard
>	Ge	72	561514.3	0.4				ug/L	520809	Standard
	As	75	82895.8	0.4	**62.3258**	0.436	0.7	ug/L	-52	Standard
	Se	82	7441.1	0.8	**54.5039**	0.359	0.7	ug/L	17	Standard
	Se-1	77	5169.2	1.0	**55.4015**	0.590	1.1	ug/L	56	Standard
>	Ga	71	15267.7	1.1				mg/L	25	Standard
	Rb	85	154189.3	2.6				ug/L	28	Standard
	Y	89	603447.9	0.9				ug/L	447395	Standard
>	Rh	103	43.3	24.0				ug/L	15	Standard
	Mo	98	5476.6	2.0	**1.7012**	0.041	2.4	ug/L	113	Standard
	Ag	107	391731.6	0.9	**51.9492**	0.634	1.2	ug/L	108	Standard
	Cd	111	129263.1	1.2	**53.4846**	0.463	0.9	mg/L	3	Standard
	Cd	114	313124.4	0.6	**52.3315**	0.333	0.6	ug/L	20	Standard
>	In	115	656847.0	0.4				ug/L	625728	Standard
	Sn	118	1576.8	23.5	**0.1493**	0.056	37.2	ug/L	568	Standard
	Sb	123	282627.6	1.8	**52.0619**	0.839	1.6	ug/L	612	Standard
	Ba	135	360531.0	1.0	**157.8560**	2.191	1.4	ug/L	21	Standard
	Ce	140	708239.5	1.1				ug/L	245	Standard
>	Tb	159	993751.4	0.6				ug/L	950397	Standard
	Ho	165	9054.4	1.6				ug/L	7	Standard
	Tl	203	489986.8	0.9	**53.0644**	0.590	1.1	ug/L	15	Standard
	Tl	205	443077.3	1.1	**54.0276**	0.463	0.9	ug/L	13	Standard
	Pb	206	490668.3	0.8	**84.2254**	0.742	0.9	ug/L	264	Standard
	Pb	207	417558.3	0.6	**78.9219**	0.638	0.8	ug/L	222	Standard
	Pb	208	1796810.4	0.6	**83.1513**	0.452	0.5	ug/L	959	Standard
	U	238	437485.4	0.2	**52.7644**	0.211	0.4	ug/L	9	Standard
>	Bi	209	568575.4	0.3				ug/L	552821	Standard

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Na	23	1.7	173.2	**4.3123**	7.460	173.0	mg/L	2	Standard
Mg	24	195.0	13.6	**0.1353**	0.029	21.4	mg/L	55	Standard
K	39	278.3	18.2	**0.7825**	0.157	20.1	mg/L	28	Standard
Ca	43	116.7	21.1	**6.6089**	1.697	25.7	mg/L	27	Standard
Fe	54	18988.9	2.1	**12.6650**	0.048	0.4	mg/L	147	Standard
Fe	57	5222.6	2.2	**12.9542**	0.402	3.1	mg/L	268	Standard
> **Sc-1**	45	48036.1	2.2				mg/L	41174	Standard
Cl	35	79157.6	0.9				ug/L	69550	Standard
Kr	83	3.0	88.2				ug/L	1	Standard
Br	81	4567.4	7.8				ug/L	1950	Standard
P	31	25140.8	1.9				ug/L	21156	Standard
S	34	3993.9	5.1				ug/L	3419	Standard
Sr	88	141.7	14.7				ug/L	72	Standard
C	12	916.7	5.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	220.0	20.8				mg/L	17	Standard
Dy	164	14636.5	2.9				mg/L	16	Standard
Ho-1	165	9054.4	1.6				mg/L	7	Standard
Er	166	8719.2	6.2				mg/L	7	Standard
I	127	60985.9	3.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.832	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.816	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.973
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.850
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606145102SDL WG575057-02
Sample Date/Time: Friday, July 01, 2016 17:02:40
Number of Replicates: 3
Autosampler Position: 230
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72896.8	3.6				ug/L	76456	Standard
	Be	9	151.7	28.0	**0.1215**	0.035	28.7	ug/L	20	Standard
	Al	27	886084.1	1.1	**5.4244**	0.245	4.5	ug/L	1307	Standard
	Sc	45	40265.1	1.1				ug/L	41174	Standard
	Ti	47	4872.5	1.7	**14.8447**	0.431	2.9	ug/L	27	Standard
	V	51	31678.7	1.1	**3.6484**	0.093	2.5	ug/L	1434	Standard
	Cr	52	29443.9	1.3	**2.6645**	0.094	3.5	ug/L	7733	Standard
	Cr	53	3295.4	2.1	**2.8380**	0.099	3.5	ug/L	442	Standard
	Mn	55	811630.5	1.3	**106.9281**	2.799	2.6	ug/L	723	Standard
	Co	59	10016.3	0.5	**1.2757**	0.020	1.5	ug/L	217	Standard
	Ni	60	6049.9	1.8	**2.7576**	0.087	3.1	ug/L	304	Standard
	Cu	65	12638.9	1.7	**6.1089**	0.185	3.0	ug/L	181	Standard
	Zn	66	44343.1	2.3	**35.9528**	1.298	3.6	ug/L	215	Standard
>	Ge	72	521851.4	1.3				ug/L	520809	Standard
	As	75	2135.0	1.6	**1.7715**	0.050	2.8	ug/L	-52	Standard
	Se	82	32.7	15.9	**0.1321**	0.044	33.6	ug/L	17	Standard
	Se-1	77	80.0	15.4	**0.2505**	0.153	61.0	ug/L	56	Standard
>	Ga	71	2831.9	8.0				mg/L	25	Standard
	Rb	85	29441.9	2.0				ug/L	28	Standard
	Y	89	460347.3	0.7				ug/L	447395	Standard
>	Rh	103	23.3	44.6				ug/L	15	Standard
	Mo	98	1036.0	4.3	**0.3306**	0.018	5.5	ug/L	113	Standard
	Ag	107	240.3	7.9	**0.0218**	0.002	11.3	ug/L	108	Standard
	Cd	111	192.5	10.6	**0.0842**	0.009	10.8	mg/L	3	Standard
	Cd	114	501.8	24.8	**0.0913**	0.024	25.9	ug/L	20	Standard
>	In	115	604796.3	1.1				ug/L	625728	Standard
	Sn	118	678.3	14.5	**0.0250**	0.017	67.9	ug/L	568	Standard
	Sb	123	1577.0	34.7	**0.2828**	0.113	39.9	ug/L	612	Standard
	Ba	135	46358.8	0.3	**22.0307**	0.285	1.3	ug/L	21	Standard
	Ce	140	135977.5	1.1				ug/L	245	Standard
>	Tb	159	909731.4	0.9				ug/L	950397	Standard
	Ho	165	1651.8	7.4				ug/L	7	Standard
	Tl	203	404.7	3.9	**0.0462**	0.002	3.6	ug/L	15	Standard
	Tl	205	413.3	12.1	**0.0442**	0.006	14.3	ug/L	13	Standard
	Pb	206	34246.7	0.6	**6.2517**	0.027	0.4	ug/L	264	Standard
	Pb	207	28334.8	0.4	**5.6896**	0.033	0.6	ug/L	222	Standard
	Pb	208	122940.1	1.3	**6.0452**	0.111	1.8	ug/L	959	Standard
	U	238	2224.5	2.8	**0.2869**	0.007	2.3	ug/L	9	Standard
>	Bi	209	531198.7	0.5				ug/L	552821	Standard

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Na	23	1.7	173.2	**5.1506**	8.913	173.0	mg/L	2	Standard
Mg	24	81.7	18.7	**0.0373**	0.018	48.0	mg/L	55	Standard
K	39	76.7	26.4	**0.1697**	0.081	47.8	mg/L	28	Standard
Ca	43	40.0	25.0	**1.2573**	0.889	70.7	mg/L	27	Standard
Fe	54	3471.8	1.5	**2.6857**	0.073	2.7	mg/L	147	Standard
Fe	57	1143.4	4.3	**2.7898**	0.194	6.9	mg/L	268	Standard
> **Sc-1**	45	40265.1	1.1				mg/L	41174	Standard
Cl	35	70995.3	1.2				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	2253.5	3.8				ug/L	1950	Standard
P	31	10969.0	0.7				ug/L	21156	Standard
S	34	3750.5	0.4				ug/L	3419	Standard
Sr	88	80.0	12.5				ug/L	72	Standard
C	12	226.7	9.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	41.7				mg/L	17	Standard
Dy	164	2685.5	6.0				mg/L	16	Standard
Ho-1	165	1651.8	7.4				mg/L	7	Standard
Er	166	1560.1	5.1				mg/L	7	Standard
I	127	40504.1	2.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.345	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.200	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.655
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.089
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606145102SDL WG575057-02
Sample Date/Time: Friday, July 01, 2016 17:05:52
Number of Replicates: 3
Autosampler Position: 231
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70195.6	2.2				ug/L	76456	Standard
	Be	9	78.3	41.0	**0.0567**	0.033	57.8	ug/L	20	Standard
	Al	27	176403.2	5.8	**1.1130**	0.082	7.4	ug/L	1307	Standard
	Sc	45	38834.7	0.9				ug/L	41174	Standard
	Ti	47	931.7	5.0	**2.8080**	0.157	5.6	ug/L	27	Standard
	V	51	7219.8	2.6	**0.6896**	0.020	2.9	ug/L	1434	Standard
	Cr	52	9795.8	4.3	**0.2546**	0.049	19.3	ug/L	7733	Standard
	Cr	53	816.7	8.0	**0.4003**	0.064	16.0	ug/L	442	Standard
	Mn	55	156110.5	2.6	**20.7536**	0.477	2.3	ug/L	723	Standard
	Co	59	2209.5	13.5	**0.2622**	0.038	14.6	ug/L	217	Standard
	Ni	60	1399.1	2.2	**0.5287**	0.012	2.4	ug/L	304	Standard
	Cu	65	2640.2	2.1	**1.2343**	0.024	2.0	ug/L	181	Standard
	Zn	66	9656.7	1.3	**7.7908**	0.073	0.9	ug/L	215	Standard
>	**Ge**	72	514985.8	0.4				ug/L	520809	Standard
	As	75	413.0	1.8	**0.3835**	0.006	1.4	ug/L	-52	Standard
	Se	82	23.7	20.7	**0.0632**	0.039	61.2	ug/L	17	Standard
	Se-1	77	57.0	6.1	**-0.0104**	0.039	372.4	ug/L	56	Standard
>	**Ga**	71	518.3	3.7				mg/L	25	Standard
	Rb	85	5472.7	4.6				ug/L	28	Standard
	Y	89	432045.4	1.1				ug/L	447395	Standard
>	**Rh**	103	21.7	13.3				ug/L	15	Standard
	Mo	98	406.8	30.7	**0.1173**	0.043	37.1	ug/L	113	Standard
	Ag	107	155.3	56.4	**0.0098**	0.013	129.9	ug/L	108	Standard
	Cd	111	62.6	64.4	**0.0262**	0.018	70.2	mg/L	3	Standard
	Cd	114	167.6	61.4	**0.0309**	0.019	61.4	ug/L	20	Standard
>	**In**	115	596116.9	0.1				ug/L	625728	Standard
	Sn	118	588.3	26.0	**0.0117**	0.025	212.4	ug/L	568	Standard
	Sb	123	388.4	28.3	**0.0452**	0.022	49.6	ug/L	612	Standard
	Ba	135	8995.0	2.1	**4.3221**	0.097	2.2	ug/L	21	Standard
	Ce	140	24040.7	2.3				ug/L	245	Standard
>	**Tb**	159	895791.4	0.8				ug/L	950397	Standard
	Ho	165	243.3	11.3				ug/L	7	Standard
	Tl	203	146.7	64.0	**0.0163**	0.011	66.9	ug/L	15	Standard
	Tl	205	206.7	97.8	**0.0173**	0.026	152.8	ug/L	13	Standard
	Pb	206	6377.7	1.6	**1.1327**	0.021	1.9	ug/L	264	Standard
	Pb	207	5284.9	1.3	**1.0274**	0.015	1.5	ug/L	222	Standard
	Pb	208	23160.0	2.5	**1.1036**	0.032	2.9	ug/L	959	Standard
	U	238	525.7	30.5	**0.0678**	0.021	30.5	ug/L	9	Standard
>	**Bi**	209	529365.9	0.5				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	68.3	23.5	**0.0243**	0.019	79.3	mg/L	55	Standard
K	39	26.7	78.1	**-0.0227**	0.085	373.8	mg/L	28	Standard
Ca	43	28.3	36.7	**0.2726**	0.981	359.8	mg/L	27	Standard
Fe	54	762.6	6.6	**0.5352**	0.041	7.7	mg/L	147	Standard
Fe	57	421.7	1.8	**0.5696**	0.019	3.3	mg/L	268	Standard
> **Sc-1**	45	38834.7	0.9				mg/L	41174	Standard
Cl	35	69123.3	0.3				ug/L	69550	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	1883.5	2.0				ug/L	1950	Standard
P	31	7872.0	1.6				ug/L	21156	Standard
S	34	3360.4	5.9				ug/L	3419	Standard
Sr	88	80.0	32.5				ug/L	72	Standard
C	12	90.0	22.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	153.3	38.2				mg/L	17	Standard
Dy	164	420.7	27.3				mg/L	16	Standard
Ho-1	165	243.3	11.3				mg/L	7	Standard
Er	166	263.3	34.5				mg/L	7	Standard
I	127	37972.5	2.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.812	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.882	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.268
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.757
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 17:09:05
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74588.1	0.3				ug/L	76456	Standard
	Be	9	57897.1	2.0	**52.9977**	1.204	2.3	ug/L	20	Standard
	Al	27	8733198.2	1.7	**52.2835**	0.984	1.9	ug/L	1307	Standard
	Sc	45	42748.6	2.7				ug/L	41174	Standard
	Ti	47	34213.3	0.6	**98.3209**	0.421	0.4	ug/L	27	Standard
	V	51	442681.7	1.0	**50.2684**	0.638	1.3	ug/L	1434	Standard
	Cr	52	439186.0	0.4	**49.9273**	0.312	0.6	ug/L	7733	Standard
	Cr	53	53859.0	4.5	**49.5163**	2.076	4.2	ug/L	442	Standard
	Mn	55	408283.6	1.1	**50.4406**	0.633	1.3	ug/L	723	Standard
	Co	59	418347.3	1.1	**51.1465**	0.625	1.2	ug/L	217	Standard
	Ni	60	111527.3	0.5	**50.2172**	0.479	1.0	ug/L	304	Standard
	Cu	65	110380.0	1.0	**50.6153**	0.665	1.3	ug/L	181	Standard
	Zn	66	65800.9	0.7	**50.1493**	0.538	1.1	ug/L	215	Standard
>	Ge	72	555788.6	0.5				ug/L	520809	Standard
	As	75	65659.0	0.5	**49.8836**	0.337	0.7	ug/L	-52	Standard
	Se	82	6718.9	0.9	**49.7097**	0.395	0.8	ug/L	17	Standard
	Se-1	77	4636.4	0.7	**50.1376**	0.106	0.2	ug/L	56	Standard
>	Ga	71	43.3	35.3				mg/L	25	Standard
	Rb	85	1065.0	6.1				ug/L	28	Standard
	Y	89	468359.1	2.1				ug/L	447395	Standard
>	Rh	103	20.0	25.0				ug/L	15	Standard
	Mo	98	314455.9	1.0	**100.8766**	0.307	0.3	ug/L	113	Standard
	Ag	107	371694.7	0.4	**50.2132**	0.146	0.3	ug/L	108	Standard
	Cd	111	119048.0	0.9	**50.1804**	0.274	0.5	mg/L	3	Standard
	Cd	114	295369.7	1.4	**50.2861**	0.415	0.8	ug/L	20	Standard
>	In	115	644781.5	0.7				ug/L	625728	Standard
	Sn	118	326587.3	0.5	**49.1617**	0.446	0.9	ug/L	568	Standard
	Sb	123	269765.0	0.9	**50.6219**	0.112	0.2	ug/L	612	Standard
	Ba	135	109973.0	0.0	**49.0395**	0.330	0.7	ug/L	21	Standard
	Ce	140	1043.4	21.6				ug/L	245	Standard
>	Tb	159	966885.6	0.6				ug/L	950397	Standard
	Ho	165	16.7	45.8				ug/L	7	Standard
	Tl	203	449950.1	0.5	**50.5682**	0.198	0.4	ug/L	15	Standard
	Tl	205	409109.7	0.2	**51.7709**	0.214	0.4	ug/L	13	Standard
	Pb	206	284448.3	0.6	**50.6536**	0.284	0.6	ug/L	264	Standard
	Pb	207	258444.3	0.7	**50.6761**	0.292	0.6	ug/L	222	Standard
	Pb	208	1085344.7	0.3	**52.1064**	0.244	0.5	ug/L	959	Standard
	U	238	403930.8	0.4	**50.5574**	0.115	0.2	ug/L	9	Standard
>	Bi	209	547878.4	0.3				ug/L	552821	Standard

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Na	23	3.3	86.6	**9.4428**	8.174	86.6	mg/L	2	Standard
Mg	24	4510.7	2.8	**5.0184**	0.235	4.7	mg/L	55	Standard
K	39	1208.4	6.0	**4.3343**	0.305	7.0	mg/L	28	Standard
Ca	43	88.3	31.2	**5.2894**	2.418	45.7	mg/L	27	Standard
Fe	54	6821.5	2.8	**5.0554**	0.184	3.6	mg/L	147	Standard
Fe	57	2156.8	8.4	**5.5723**	0.370	6.6	mg/L	268	Standard
> **Sc-1**	45	42748.6	2.7				mg/L	41174	Standard
Cl	35	80981.2	1.3				ug/L	69550	Standard
Kr	83	1.3	86.6				ug/L	1	Standard
Br	81	2280.2	6.1				ug/L	1950	Standard
P	31	25067.4	1.4				ug/L	21156	Standard
S	34	4143.9	4.2				ug/L	3419	Standard
Sr	88	66.7	51.1				ug/L	72	Standard
C	12	116.7	24.7				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	173.3	61.7				mg/L	17	Standard
Dy	164	15.5	97.9				mg/L	16	Standard
Ho-1	165	16.7	45.8				mg/L	7	Standard
Er	166	23.3	24.7				mg/L	7	Standard
I	127	10653.7	0.8				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	105.995		
	Al	27	104.567		
	Sc	45			
	Ti	47	98.321		
	V	51	100.537		
	Cr	52	99.855		
	Cr	53			
	Mn	55	100.881		
	Co	59	102.293		
	Ni	60	100.434		
	Cu	65	101.231		
	Zn	66	100.299		
>	Ge	72		106.716	
	As	75	99.767		
	Se	82	99.419		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	100.877		
Ag	107	100.426		
Cd	111	100.361		
Cd	114			
> In	115			103.045
Sn	118	98.323		
Sb	123	101.244		
Ba	135	98.079		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.136		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.213		
U	238	101.115		
> Bi	209			99.106
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 17:12:17
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73740.8	2.8				ug/L	76456	Standard
	Be	9	30.0	16.7	**0.0079**	0.005	57.8	ug/L	20	Standard
	Al	27	2383.5	29.7	**0.0042**	0.004	92.9	ug/L	1307	Standard
	Sc	45	42364.1	1.1				ug/L	41174	Standard
	Ti	47	28.3	8.2	**-0.0020**	0.008	409.9	ug/L	27	Standard
	V	51	1463.8	6.3	**-0.0298**	0.010	33.6	ug/L	1434	Standard
	Cr	52	7082.7	1.2	**-0.1402**	0.009	6.6	ug/L	7733	Standard
	Cr	53	485.0	17.5	**0.0388**	0.087	223.5	ug/L	442	Standard
	Mn	55	856.7	6.3	**0.0059**	0.006	103.8	ug/L	723	Standard
	Co	59	239.7	17.2	**0.0002**	0.005	2435.9	ug/L	217	Standard
	Ni	60	264.7	3.4	**-0.0322**	0.006	18.2	ug/L	304	Standard
	Cu	65	171.0	2.0	**0.0054**	0.002	46.6	ug/L	181	Standard
	Zn	66	243.3	6.7	**0.0079**	0.011	133.5	ug/L	215	Standard
>	**Ge**	72	549483.2	1.7				ug/L	520809	Standard
	As	75	-74.2	16.4	**-0.0117**	0.009	74.0	ug/L	-52	Standard
	Se	82	18.9	27.4	**0.0161**	0.041	258.0	ug/L	17	Standard
	Se-1	77	51.3	15.1	**-0.1160**	0.081	69.5	ug/L	56	Standard
>	**Ga**	71	21.7	53.3				mg/L	25	Standard
	Rb	85	48.3	33.3				ug/L	28	Standard
	Y	89	469146.0	2.8				ug/L	447395	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	269.5	12.3	**0.0621**	0.010	15.8	ug/L	113	Standard
	Ag	107	131.3	8.8	**0.0048**	0.002	32.6	ug/L	108	Standard
	Cd	111	13.9	69.3	**0.0035**	0.004	115.1	mg/L	3	Standard
	Cd	114	67.3	28.0	**0.0114**	0.003	28.7	ug/L	20	Standard
>	**In**	115	647674.1	1.6				ug/L	625728	Standard
	Sn	118	1591.8	26.5	**0.1547**	0.062	40.2	ug/L	568	Standard
	Sb	123	1048.5	31.2	**0.1625**	0.061	37.8	ug/L	612	Standard
	Ba	135	62.3	27.9	**0.0097**	0.008	77.5	ug/L	21	Standard
	Ce	140	363.3	30.0				ug/L	245	Standard
>	**Tb**	159	949797.9	2.5				ug/L	950397	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	92.0	24.5	**0.0095**	0.002	24.5	ug/L	15	Standard
	Tl	205	60.0	22.0	**-0.0022**	0.002	85.3	ug/L	13	Standard
	Pb	206	340.0	6.2	**0.0166**	0.004	25.1	ug/L	264	Standard
	Pb	207	288.7	4.1	**0.0103**	0.002	15.3	ug/L	222	Standard
	Pb	208	1226.7	6.9	**0.0104**	0.004	37.3	ug/L	959	Standard
	U	238	77.0	45.5	**0.0093**	0.004	45.3	ug/L	9	Standard
>	**Bi**	209	550276.1	2.1				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	46.7	24.7	**-0.0073**	0.013	171.5	mg/L	55	Standard
K	39	21.7	48.0	**-0.0502**	0.039	78.2	mg/L	28	Standard
Ca	43	33.3	17.3	**0.4877**	0.477	97.9	mg/L	27	Standard
Fe	54	195.9	17.0	**0.0503**	0.024	47.6	mg/L	147	Standard
Fe	57	191.7	26.4	**-0.2314**	0.152	65.8	mg/L	268	Standard
> **Sc-1**	45	42364.1	1.1				mg/L	41174	Standard
Cl	35	80980.6	1.9				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	2003.5	11.5				ug/L	1950	Standard
P	31	23999.0	2.6				ug/L	21156	Standard
S	34	4252.3	5.6				ug/L	3419	Standard
Sr	88	71.7	21.3				ug/L	72	Standard
C	12	100.0	34.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	110.0	36.4				mg/L	17	Standard
Dy	164	16.5	70.8				mg/L	16	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	7548.5	1.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.506	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.507
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.540
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606145103
Sample Date/Time: Friday, July 01, 2016 17:18:25
Number of Replicates: 3
Autosampler Position: 232
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77464.3	3.3				ug/L	76456	Standard
	Be	9	561.7	8.9	**0.4749**	0.032	6.7	ug/L	20	Standard
	Al	27	1784965.6	1.0	**10.2905**	0.435	4.2	ug/L	1307	Standard
	Sc	45	46648.4	2.7				ug/L	41174	Standard
	Ti	47	18184.2	0.6	**50.8412**	0.521	1.0	ug/L	27	Standard
	V	51	103032.2	1.3	**11.2383**	0.206	1.8	ug/L	1434	Standard
	Cr	52	92595.8	0.6	**9.4776**	0.042	0.4	ug/L	7733	Standard
	Cr	53	11107.4	3.1	**9.6118**	0.373	3.9	ug/L	442	Standard
	Mn	55	2019437.5	1.0	**243.2931**	1.293	0.5	ug/L	723	Standard
	Co	59	22651.9	1.2	**2.6686**	0.043	1.6	ug/L	217	Standard
	Ni	60	16329.8	0.7	**7.0275**	0.020	0.3	ug/L	304	Standard
	Cu	65	24727.8	0.3	**10.9821**	0.036	0.3	ug/L	181	Standard
	Zn	66	127705.3	0.5	**94.9239**	0.754	0.8	ug/L	215	Standard
>	Ge	72	570830.0	0.6				ug/L	520809	Standard
	As	75	6011.6	0.9	**4.4881**	0.053	1.2	ug/L	-52	Standard
	Se	82	95.5	2.7	**0.5629**	0.016	2.8	ug/L	17	Standard
	Se-1	77	101.0	4.3	**0.3932**	0.042	10.6	ug/L	56	Standard
>	Ga	71	9259.5	1.6				mg/L	25	Standard
	Rb	85	72246.9	1.1				ug/L	28	Standard
	Y	89	547009.7	0.9				ug/L	447395	Standard
>	Rh	103	31.7	24.1				ug/L	15	Standard
	Mo	98	3914.2	0.5	**1.1794**	0.014	1.2	ug/L	113	Standard
	Ag	107	483.7	3.9	**0.0498**	0.002	4.8	ug/L	108	Standard
	Cd	111	987.4	2.0	**0.3964**	0.008	2.0	mg/L	3	Standard
	Cd	114	2496.5	1.3	**0.4073**	0.007	1.6	ug/L	20	Standard
>	In	115	673007.1	0.7				ug/L	625728	Standard
	Sn	118	1876.8	14.9	**0.1869**	0.040	21.4	ug/L	568	Standard
	Sb	123	1273.6	19.1	**0.1953**	0.043	22.1	ug/L	612	Standard
	Ba	135	110926.6	0.4	**47.3888**	0.135	0.3	ug/L	21	Standard
	Ce	140	529177.4	0.3				ug/L	245	Standard
>	Tb	159	1007132.0	0.8				ug/L	950397	Standard
	Ho	165	4118.9	3.9				ug/L	7	Standard
	Tl	203	1019.0	7.4	**0.1098**	0.008	7.6	ug/L	15	Standard
	Tl	205	931.7	3.7	**0.1041**	0.004	4.2	ug/L	13	Standard
	Pb	206	349755.5	0.5	**60.1201**	0.233	0.4	ug/L	264	Standard
	Pb	207	290008.2	0.8	**54.8870**	0.434	0.8	ug/L	222	Standard
	Pb	208	1256548.1	0.6	**58.2295**	0.582	1.0	ug/L	959	Standard
	U	238	5395.3	1.0	**0.6515**	0.003	0.5	ug/L	9	Standard
>	Bi	209	567672.3	0.6				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	71.7	26.4	**0.0141**	0.021	150.8	mg/L	55	Standard
K	39	116.7	6.5	**0.2640**	0.032	12.1	mg/L	28	Standard
Ca	43	40.0	33.1	**0.7666**	1.123	146.5	mg/L	27	Standard
Fe	54	10538.1	0.8	**7.1995**	0.244	3.4	mg/L	147	Standard
Fe	57	2908.6	5.3	**7.0806**	0.202	2.9	mg/L	268	Standard
Sc-1	45	46648.4	2.7				mg/L	41174	Standard
Cl	35	80143.5	2.5				ug/L	69550	Standard
Kr	83	2.7	78.1				ug/L	1	Standard
Br	81	3830.5	4.5				ug/L	1950	Standard
P	31	23700.2	1.3				ug/L	21156	Standard
S	34	3720.5	5.4				ug/L	3419	Standard
Sr	88	83.3	28.4				ug/L	72	Standard
C	12	560.0	12.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	286.7	34.2				mg/L	17	Standard
Dy	164	6970.4	6.6				mg/L	16	Standard
Ho-1	165	4118.9	3.9				mg/L	7	Standard
Er	166	3853.8	3.6				mg/L	7	Standard
I	127	33669.0	1.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		101.319	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		109.604	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.556
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.686
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606145104
Sample Date/Time: Friday, July 01, 2016 17:22:04
Number of Replicates: 3
Autosampler Position: 233
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75591.5	2.3				ug/L	76456	Standard
	Be	9	436.7	14.5	**0.3755**	0.064	17.2	ug/L	20	Standard
	Al	27	7695752.7	1.5	**45.4726**	1.098	2.4	ug/L	1307	Standard
	Sc	45	44985.0	2.4				ug/L	41174	Standard
	Ti	47	18604.1	2.8	**52.8354**	1.232	2.3	ug/L	27	Standard
	V	51	86248.0	1.1	**9.5259**	0.091	1.0	ug/L	1434	Standard
	Cr	52	84116.5	1.2	**8.6708**	0.090	1.0	ug/L	7733	Standard
	Cr	53	9486.3	1.6	**8.2820**	0.108	1.3	ug/L	442	Standard
	Mn	55	1964825.3	2.7	**240.4380**	5.305	2.2	ug/L	723	Standard
	Co	59	30224.8	2.1	**3.6271**	0.056	1.5	ug/L	217	Standard
	Ni	60	18384.5	0.8	**8.0589**	0.068	0.8	ug/L	304	Standard
	Cu	65	28824.7	1.7	**13.0170**	0.152	1.2	ug/L	181	Standard
	Zn	66	125736.6	1.1	**94.9340**	0.526	0.6	ug/L	215	Standard
>	Ge	72	561947.7	0.6				ug/L	520809	Standard
	As	75	5595.8	2.2	**4.2465**	0.119	2.8	ug/L	-52	Standard
	Se	82	88.4	10.6	**0.5221**	0.073	13.9	ug/L	17	Standard
	Se-1	77	109.0	11.9	**0.4966**	0.134	27.0	ug/L	56	Standard
>	Ga	71	7550.2	3.3				mg/L	25	Standard
	Rb	85	65005.8	0.9				ug/L	28	Standard
	Y	89	541545.4	1.1				ug/L	447395	Standard
>	Rh	103	25.0	34.6				ug/L	15	Standard
	Mo	98	5215.9	1.9	**1.6229**	0.033	2.0	ug/L	113	Standard
	Ag	107	406.7	7.0	**0.0412**	0.004	9.1	ug/L	108	Standard
	Cd	111	829.8	3.4	**0.3418**	0.009	2.5	mg/L	3	Standard
	Cd	114	1989.6	6.7	**0.3333**	0.022	6.7	ug/L	20	Standard
>	In	115	655315.6	1.0				ug/L	625728	Standard
	Sn	118	1885.1	5.0	**0.1955**	0.016	8.1	ug/L	568	Standard
	Sb	123	963.7	16.2	**0.1445**	0.030	21.0	ug/L	612	Standard
	Ba	135	109632.3	1.8	**48.0987**	0.601	1.2	ug/L	21	Standard
	Ce	140	540393.1	1.7				ug/L	245	Standard
>	Tb	159	980324.3	0.6				ug/L	950397	Standard
	Ho	165	4750.7	4.0				ug/L	7	Standard
	Tl	203	1323.7	5.2	**0.1446**	0.008	5.6	ug/L	15	Standard
	Tl	205	1150.0	7.8	**0.1324**	0.010	7.6	ug/L	13	Standard
	Pb	206	276145.9	0.9	**48.0493**	0.456	0.9	ug/L	264	Standard
	Pb	207	230196.6	0.9	**44.1005**	0.476	1.1	ug/L	222	Standard
	Pb	208	1005008.2	0.4	**47.1436**	0.504	1.1	ug/L	959	Standard
	U	238	6299.6	1.7	**0.7703**	0.019	2.4	ug/L	9	Standard
>	Bi	209	560704.1	0.8				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	86.7	31.8	**0.0328**	0.031	93.1	mg/L	55	Standard
K	39	151.7	23.2	**0.4031**	0.135	33.6	mg/L	28	Standard
Ca	43	201.7	16.5	**14.3695**	3.198	22.3	mg/L	27	Standard
Fe	54	9525.1	4.7	**6.7386**	0.306	4.5	mg/L	147	Standard
Fe	57	2743.6	3.6	**6.9108**	0.154	2.2	mg/L	268	Standard
> **Sc-1**	45	44985.0	2.4				mg/L	41174	Standard
Cl	35	83879.0	2.3				ug/L	69550	Standard
Kr	83	3.7	68.6				ug/L	1	Standard
Br	81	3460.4	7.8				ug/L	1950	Standard
P	31	24561.6	1.4				ug/L	21156	Standard
S	34	4369.0	1.4				ug/L	3419	Standard
Sr	88	116.7	25.8				ug/L	72	Standard
C	12	810.0	9.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	280.0	22.3				mg/L	17	Standard
Dy	164	8460.7	2.9				mg/L	16	Standard
Ho-1	165	4750.7	4.0				mg/L	7	Standard
Er	166	4977.5	6.3				mg/L	7	Standard
I	127	28665.4	1.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.870	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.899	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.729
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.426
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606145105
Sample Date/Time: Friday, July 01, 2016 17:25:16
Number of Replicates: 3
Autosampler Position: 234
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	76445.7	1.5				ug/L	76456	Standard
	Be	9	1478.4	3.1	**1.3014**	0.055	4.2	ug/L	20	Standard
	Al	27	1064223.2	1.9	**6.2082**	0.151	2.4	ug/L	1307	Standard
	Sc	45	47139.9	1.1				ug/L	41174	Standard
	Ti	47	53065.8	1.2	**150.6405**	1.848	1.2	ug/L	27	Standard
	V	51	112245.2	0.3	**12.4388**	0.221	1.8	ug/L	1434	Standard
	Cr	52	137183.3	1.2	**14.7291**	0.173	1.2	ug/L	7733	Standard
	Cr	53	16672.5	1.8	**14.8516**	0.459	3.1	ug/L	442	Standard
	Mn	55	332066.2	0.6	**40.4939**	0.573	1.4	ug/L	723	Standard
	Co	59	15191.9	1.6	**1.8061**	0.055	3.0	ug/L	217	Standard
	Ni	60	16308.4	0.5	**7.1212**	0.143	2.0	ug/L	304	Standard
	Cu	65	21255.2	1.0	**9.5654**	0.170	1.8	ug/L	181	Standard
	Zn	66	82188.0	0.4	**61.9044**	1.216	2.0	ug/L	215	Standard
>	Ge	72	562856.9	1.5				ug/L	520809	Standard
	As	75	14736.1	1.0	**11.0928**	0.282	2.5	ug/L	-52	Standard
	Se	82	116.4	6.1	**0.7268**	0.063	8.7	ug/L	17	Standard
	Se-1	77	132.3	7.3	**0.7485**	0.116	15.5	ug/L	56	Standard
>	Ga	71	12084.8	1.2				mg/L	25	Standard
	Rb	85	57895.4	0.4				ug/L	28	Standard
	Y	89	579341.1	3.7				ug/L	447395	Standard
>	Rh	103	25.0	52.9				ug/L	15	Standard
	Mo	98	3018.2	2.6	**0.9183**	0.011	1.2	ug/L	113	Standard
	Ag	107	450.3	2.5	**0.0464**	0.001	1.9	ug/L	108	Standard
	Cd	111	1161.6	1.5	**0.4742**	0.011	2.3	mg/L	3	Standard
	Cd	114	2894.3	3.4	**0.4797**	0.022	4.7	ug/L	20	Standard
>	In	115	662690.4	1.5				ug/L	625728	Standard
	Sn	118	2460.2	11.3	**0.2766**	0.040	14.4	ug/L	568	Standard
	Sb	123	1480.8	9.6	**0.2369**	0.027	11.6	ug/L	612	Standard
	Ba	135	103973.2	0.1	**45.1144**	0.613	1.4	ug/L	21	Standard
	Ce	140	278912.2	1.0				ug/L	245	Standard
>	Tb	159	988921.6	2.1				ug/L	950397	Standard
	Ho	165	6249.6	2.1				ug/L	7	Standard
	Tl	203	4793.4	0.3	**0.5229**	0.004	0.8	ug/L	15	Standard
	Tl	205	4507.3	1.9	**0.5447**	0.012	2.1	ug/L	13	Standard
	Pb	206	156846.0	1.0	**27.1285**	0.554	2.0	ug/L	264	Standard
	Pb	207	129940.5	0.3	**24.7412**	0.348	1.4	ug/L	222	Standard
	Pb	208	563558.5	1.1	**26.2711**	0.203	0.8	ug/L	959	Standard
	U	238	4562.4	2.7	**0.5547**	0.010	1.7	ug/L	9	Standard
>	Bi	209	563740.5	1.2				ug/L	552821	Standard

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Na	23	5.0	0.0	**13.0402**	0.148	1.1	mg/L	2	Standard
Mg	24	245.0	9.4	**0.1897**	0.021	11.0	mg/L	55	Standard
K	39	223.3	12.3	**0.6174**	0.098	15.9	mg/L	28	Standard
Ca	43	61.7	26.1	**2.4323**	1.213	49.9	mg/L	27	Standard
Fe	54	13777.8	1.0	**9.3394**	0.181	1.9	mg/L	147	Standard
Fe	57	3655.4	2.7	**9.0074**	0.309	3.4	mg/L	268	Standard
Sc-1	45	47139.9	1.1				mg/L	41174	Standard
Cl	35	79351.4	2.7				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	3307.0	6.7				ug/L	1950	Standard
P	31	25337.8	0.8				ug/L	21156	Standard
S	34	3845.5	8.8				ug/L	3419	Standard
Sr	88	98.3	15.5				ug/L	72	Standard
C	12	523.3	19.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	236.7	19.1				mg/L	17	Standard
Dy	164	9446.5	2.6				mg/L	16	Standard
Ho-1	165	6249.6	2.1				mg/L	7	Standard
Er	166	6261.3	4.0				mg/L	7	Standard
I	127	33405.2	4.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		99.987	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		108.073	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.907
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.975
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	

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Method 6020 - Summary Report

Sample ID: L1606145106 WG574521-02
Sample Date/Time: Friday, July 01, 2016 17:28:27
Number of Replicates: 3
Autosampler Position: 235
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77424.0	1.4				ug/L	76456	Standard
	Be	9	1420.1	5.3	**1.2334**	0.078	6.4	ug/L	20	Standard
	Al	27	3898597.3	2.1	**22.4779**	0.265	1.2	ug/L	1307	Standard
	Sc	45	51348.6	3.6				ug/L	41174	Standard
	Ti	47	30144.6	2.1	**85.8695**	0.856	1.0	ug/L	27	Standard
	V	51	531061.4	1.0	**59.8240**	0.037	0.1	ug/L	1434	Standard
	Cr	52	163422.1	1.8	**17.8054**	0.173	1.0	ug/L	7733	Standard
	Cr	53	19674.4	1.7	**17.6680**	0.130	0.7	ug/L	442	Standard
	Mn	55	2218244.0	2.3	**272.1177**	3.374	1.2	ug/L	723	Standard
	Co	59	32222.6	2.7	**3.8780**	0.063	1.6	ug/L	217	Standard
	Ni	60	47836.8	2.1	**21.2646**	0.223	1.0	ug/L	304	Standard
	Cu	65	112081.4	1.4	**50.9532**	0.215	0.4	ug/L	181	Standard
	Zn	66	110645.9	1.3	**83.7216**	0.252	0.3	ug/L	215	Standard
>	Ge	72	560589.7	1.1				ug/L	520809	Standard
	As	75	18364.3	1.7	**13.8646**	0.106	0.8	ug/L	-52	Standard
	Se	82	562.0	1.7	**4.0067**	0.091	2.3	ug/L	17	Standard
	Se-1	77	479.0	3.5	**4.5225**	0.226	5.0	ug/L	56	Standard
>	Ga	71	14325.1	2.5				mg/L	25	Standard
	Rb	85	53934.2	0.6				ug/L	28	Standard
	Y	89	962525.9	0.6				ug/L	447395	Standard
>	Rh	103	61.7	4.7				ug/L	15	Standard
	Mo	98	10152.0	1.8	**3.1844**	0.030	1.0	ug/L	113	Standard
	Ag	107	989.4	6.5	**0.1188**	0.009	7.5	ug/L	108	Standard
	Cd	111	5112.5	1.5	**2.1203**	0.021	1.0	mg/L	3	Standard
	Cd	114	12820.7	1.5	**2.1502**	0.050	2.3	ug/L	20	Standard
>	In	115	654652.2	1.1				ug/L	625728	Standard
	Sn	118	1108.4	23.7	**0.0806**	0.040	50.1	ug/L	568	Standard
	Sb	123	662.0	36.0	**0.0890**	0.045	50.9	ug/L	612	Standard
	Ba	135	290178.7	0.4	**127.4785**	1.030	0.8	ug/L	21	Standard
	Ce	140	1471841.9	0.9				ug/L	245	Standard
>	Tb	159	1014801.8	1.4				ug/L	950397	Standard
	Ho	165	35576.7	1.0				ug/L	7	Standard
	Tl	203	2282.2	3.2	**0.2479**	0.009	3.5	ug/L	15	Standard
	Tl	205	2125.1	5.8	**0.2510**	0.016	6.2	ug/L	13	Standard
	Pb	206	184986.8	1.0	**31.9104**	0.323	1.0	ug/L	264	Standard
	Pb	207	153794.0	1.0	**29.2069**	0.234	0.8	ug/L	222	Standard
	Pb	208	672139.8	1.3	**31.2540**	0.308	1.0	ug/L	959	Standard
	U	238	23718.9	1.7	**2.8769**	0.043	1.5	ug/L	9	Standard
>	Bi	209	565303.0	0.3				ug/L	552821	Standard

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Na	23	5.0	100.0	**12.1905**	12.475	102.3	mg/L	2	Standard
Mg	24	515.0	7.3	**0.4218**	0.020	4.8	mg/L	55	Standard
K	39	145.0	15.8	**0.3133**	0.055	17.6	mg/L	28	Standard
Ca	43	251.7	14.6	**15.9361**	3.051	19.1	mg/L	27	Standard
Fe	54	21541.2	1.4	**13.4547**	0.377	2.8	mg/L	147	Standard
Fe	57	6066.2	2.9	**14.1508**	0.552	3.9	mg/L	268	Standard
Sc-1	45	51348.6	3.6				mg/L	41174	Standard
Cl	35	83904.4	2.5				ug/L	69550	Standard
Kr	83	3.3	17.3				ug/L	1	Standard
Br	81	7455.2	1.0				ug/L	1950	Standard
P	31	24167.7	6.9				ug/L	21156	Standard
S	34	4078.9	4.5				ug/L	3419	Standard
Sr	88	178.3	24.5				ug/L	72	Standard
C	12	1733.4	9.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	446.7	14.4				mg/L	17	Standard
Dy	164	52369.2	4.0				mg/L	16	Standard
Ho-1	165	35576.7	1.0				mg/L	7	Standard
Er	166	35010.4	0.8				mg/L	7	Standard
I	127	69199.4	2.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.266	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.638	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145106 WG574521-02
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.623
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.258
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606145106 WG574521-02
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Method 6020 - Summary Report

Sample ID: L1606145107
Sample Date/Time: Friday, July 01, 2016 17:31:39
Number of Replicates: 3
Autosampler Position: 236
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77976.9	3.0				ug/L	76456	Standard
	Be	9	4238.9	1.2	**3.6947**	0.093	2.5	ug/L	20	Standard
	Al	27	6498898.5	1.0	**37.2377**	1.289	3.5	ug/L	1307	Standard
	Sc	45	49464.0	2.1				ug/L	41174	Standard
	Ti	47	128073.0	0.5	**363.1539**	6.490	1.8	ug/L	27	Standard
	V	51	349457.1	2.0	**39.0869**	1.161	3.0	ug/L	1434	Standard
	Cr	52	339178.2	1.4	**37.7839**	0.334	0.9	ug/L	7733	Standard
	Cr	53	41896.2	0.9	**37.8898**	0.902	2.4	ug/L	442	Standard
	Mn	55	1606512.7	1.3	**195.9725**	1.717	0.9	ug/L	723	Standard
	Co	59	54787.2	1.9	**6.5778**	0.027	0.4	ug/L	217	Standard
	Ni	60	49280.4	1.6	**21.7906**	0.290	1.3	ug/L	304	Standard
	Cu	65	58505.7	1.0	**26.4179**	0.486	1.8	ug/L	181	Standard
	Zn	66	199363.7	0.4	**150.1818**	2.763	1.8	ug/L	215	Standard
>	Ge	72	563783.0	2.2				ug/L	520809	Standard
	As	75	72841.2	1.2	**54.5595**	0.676	1.2	ug/L	-52	Standard
	Se	82	260.0	4.3	**1.7742**	0.048	2.7	ug/L	17	Standard
	Se-1	77	240.0	3.1	**1.9101**	0.113	5.9	ug/L	56	Standard
>	Ga	71	27433.2	2.3				mg/L	25	Standard
	Rb	85	214873.2	1.9				ug/L	28	Standard
	Y	89	688224.7	2.2				ug/L	447395	Standard
>	Rh	103	50.0	34.6				ug/L	15	Standard
	Mo	98	15750.9	1.3	**5.0545**	0.122	2.4	ug/L	113	Standard
	Ag	107	1137.7	4.6	**0.1417**	0.010	7.3	ug/L	108	Standard
	Cd	111	4595.8	1.9	**1.9447**	0.072	3.7	mg/L	3	Standard
	Cd	114	11753.0	1.4	**2.0112**	0.076	3.8	ug/L	20	Standard
>	In	115	641892.6	2.4				ug/L	625728	Standard
	Sn	118	2545.2	5.6	**0.3012**	0.016	5.3	ug/L	568	Standard
	Sb	123	1737.1	5.6	**0.2941**	0.021	7.1	ug/L	612	Standard
	Ba	135	236984.3	0.4	**106.2043**	2.197	2.1	ug/L	21	Standard
	Ce	140	773385.4	0.4				ug/L	245	Standard
>	Tb	159	984938.0	3.6				ug/L	950397	Standard
	Ho	165	16265.4	1.5				ug/L	7	Standard
	Tl	203	22667.3	0.8	**2.5566**	0.057	2.2	ug/L	15	Standard
	Tl	205	20584.0	2.7	**2.6047**	0.030	1.2	ug/L	13	Standard
	Pb	206	321586.0	1.4	**57.4914**	1.247	2.2	ug/L	264	Standard
	Pb	207	267373.6	0.8	**52.6407**	1.680	3.2	ug/L	222	Standard
	Pb	208	1175990.0	0.9	**56.6808**	1.299	2.3	ug/L	959	Standard
	U	238	16091.9	1.2	**2.0215**	0.038	1.9	ug/L	9	Standard
>	Bi	209	546013.7	3.1				ug/L	552821	Standard

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Na	23	3.3	173.2	**8.3896**	14.523	173.1	mg/L	2	Standard
Mg	24	313.3	12.2	**0.2450**	0.042	17.2	mg/L	55	Standard
K	39	578.3	4.1	**1.7142**	0.039	2.3	mg/L	28	Standard
Ca	43	190.0	22.5	**11.8882**	2.994	25.2	mg/L	27	Standard
Fe	54	47361.4	0.7	**30.8245**	0.629	2.0	mg/L	147	Standard
Fe	57	12388.4	2.6	**30.8824**	0.658	2.1	mg/L	268	Standard
> **Sc-1**	45	49464.0	2.1				mg/L	41174	Standard
Cl	35	79796.9	1.5				ug/L	69550	Standard
Kr	83	1.0	173.2				ug/L	1	Standard
Br	81	3437.1	6.8				ug/L	1950	Standard
P	31	26398.0	3.4				ug/L	21156	Standard
S	34	4072.2	2.6				ug/L	3419	Standard
Sr	88	165.0	6.1				ug/L	72	Standard
C	12	630.0	4.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	340.0	26.1				mg/L	17	Standard
Dy	164	25210.3	0.7				mg/L	16	Standard
Ho-1	165	16265.4	1.5				mg/L	7	Standard
Er	166	15487.9	0.9				mg/L	7	Standard
I	127	25923.8	3.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.990	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.251	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.583	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.769	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606145108
Sample Date/Time: Friday, July 01, 2016 17:34:50
Number of Replicates: 3
Autosampler Position: 237
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	78296.8	0.6				ug/L	76456	Standard
	Be	9	5035.8	1.1	**4.3730**	0.045	1.0	ug/L	20	Standard
	Al	27	8296103.3	2.9	**47.3081**	1.104	2.3	ug/L	1307	Standard
	Sc	45	51448.9	3.1				ug/L	41174	Standard
	Ti	47	143723.1	0.7	**413.9468**	6.279	1.5	ug/L	27	Standard
	V	51	366509.9	0.1	**41.6481**	0.419	1.0	ug/L	1434	Standard
	Cr	52	544163.4	1.5	**62.1923**	1.314	2.1	ug/L	7733	Standard
	Cr	53	66433.7	1.1	**61.2720**	0.593	1.0	ug/L	442	Standard
	Mn	55	1841665.0	0.6	**228.2274**	2.393	1.0	ug/L	723	Standard
	Co	59	60732.8	1.2	**7.4113**	0.113	1.5	ug/L	217	Standard
	Ni	60	55300.1	1.5	**24.8624**	0.580	2.3	ug/L	304	Standard
	Cu	65	53837.8	1.0	**24.6886**	0.479	1.9	ug/L	181	Standard
	Zn	66	206840.0	0.6	**158.2701**	2.252	1.4	ug/L	215	Standard
>	Ge	72	554963.2	0.9				ug/L	520809	Standard
	As	75	66893.4	0.9	**50.8958**	0.201	0.4	ug/L	-52	Standard
	Se	82	248.2	6.5	**1.7168**	0.104	6.0	ug/L	17	Standard
	Se-1	77	241.0	3.2	**1.9609**	0.071	3.6	ug/L	56	Standard
>	Ga	71	28399.9	2.1				mg/L	25	Standard
	Rb	85	238607.6	1.1				ug/L	28	Standard
	Y	89	727081.9	1.3				ug/L	447395	Standard
>	Rh	103	48.3	48.9				ug/L	15	Standard
	Mo	98	16138.3	0.6	**5.1475**	0.088	1.7	ug/L	113	Standard
	Ag	107	1178.0	3.1	**0.1461**	0.006	4.0	ug/L	108	Standard
	Cd	111	4690.3	1.4	**1.9722**	0.048	2.4	mg/L	3	Standard
	Cd	114	11637.8	1.7	**1.9789**	0.055	2.8	ug/L	20	Standard
>	In	115	645732.9	1.1				ug/L	625728	Standard
	Sn	118	2240.2	14.5	**0.2530**	0.048	19.0	ug/L	568	Standard
	Sb	123	1441.2	4.7	**0.2365**	0.011	4.5	ug/L	612	Standard
	Ba	135	274841.1	0.7	**122.4109**	1.640	1.3	ug/L	21	Standard
	Ce	140	887134.9	0.7				ug/L	245	Standard
>	Tb	159	985869.5	0.8				ug/L	950397	Standard
	Ho	165	18397.8	1.0				ug/L	7	Standard
	Tl	203	22726.7	1.1	**2.5470**	0.017	0.7	ug/L	15	Standard
	Tl	205	20669.1	0.8	**2.5996**	0.009	0.3	ug/L	13	Standard
	Pb	206	304509.2	0.5	**54.0918**	0.193	0.4	ug/L	264	Standard
	Pb	207	255448.0	0.1	**49.9624**	0.361	0.7	ug/L	222	Standard
	Pb	208	1107233.4	0.4	**53.0246**	0.467	0.9	ug/L	959	Standard
	U	238	17326.6	1.5	**2.1631**	0.047	2.2	ug/L	9	Standard
>	Bi	209	549274.6	0.7				ug/L	552821	Standard

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Na	23	3.3	173.2	**8.1301**	14.073	173.1	mg/L	2	Standard
Mg	24	360.0	2.4	**0.2767**	0.016	5.7	mg/L	55	Standard
K	39	590.0	10.2	**1.6839**	0.234	13.9	mg/L	28	Standard
Ca	43	221.7	16.9	**13.7026**	2.998	21.9	mg/L	27	Standard
Fe	54	51880.7	2.5	**32.4850**	1.445	4.4	mg/L	147	Standard
Fe	57	13546.1	1.6	**32.5153**	0.491	1.5	mg/L	268	Standard
> **Sc-1**	45	51448.9	3.1				mg/L	41174	Standard
Cl	35	79311.7	1.5				ug/L	69550	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	2893.6	2.1				ug/L	1950	Standard
P	31	26569.9	1.7				ug/L	21156	Standard
S	34	4178.9	3.2				ug/L	3419	Standard
Sr	88	200.0	24.6				ug/L	72	Standard
C	12	570.0	12.7				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	283.3	10.2				mg/L	17	Standard
Dy	164	28615.4	0.7				mg/L	16	Standard
Ho-1	165	18397.8	1.0				mg/L	7	Standard
Er	166	17950.6	1.5				mg/L	7	Standard
I	127	24543.2	0.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.408	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.558	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.197	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.359	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606145109S WG574521-07
Sample Date/Time: Friday, July 01, 2016 17:38:02
Number of Replicates: 3
Autosampler Position: 238
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77300.2	4.1				ug/L	76456	Standard
	Be	9	31013.4	0.9	**27.4058**	0.869	3.2	ug/L	20	Standard
	Al	27	4089154.1	3.2	**23.6238**	0.470	2.0	ug/L	1307	Standard
	Sc	45	51686.4	2.6				ug/L	41174	Standard
	Ti	47	34757.2	1.7	**100.2574**	1.039	1.0	ug/L	27	Standard
	V	51	798652.3	3.3	**91.1648**	1.278	1.4	ug/L	1434	Standard
	Cr	52	383358.6	3.0	**43.6124**	0.316	0.7	ug/L	7733	Standard
	Cr	53	46656.8	2.4	**42.9982**	0.311	0.7	ug/L	442	Standard
	Mn	55	2313030.1	2.9	**287.2366**	2.286	0.8	ug/L	723	Standard
	Co	59	229099.5	3.1	**28.0933**	0.227	0.8	ug/L	217	Standard
	Ni	60	103411.0	3.4	**46.7113**	0.544	1.2	ug/L	304	Standard
	Cu	65	167787.3	3.4	**77.2413**	0.870	1.1	ug/L	181	Standard
	Zn	66	148653.6	2.3	**113.9303**	0.817	0.7	ug/L	215	Standard
>	**Ge**	72	553789.9	2.3				ug/L	520809	Standard
	As	75	50674.7	3.7	**38.6402**	0.614	1.6	ug/L	-52	Standard
	Se	82	4006.1	3.7	**29.6916**	0.620	2.1	ug/L	17	Standard
	Se-1	77	2822.3	6.3	**30.3505**	1.406	4.6	ug/L	56	Standard
>	**Ga**	71	15926.7	1.8				mg/L	25	Standard
	Rb	85	61213.5	2.5				ug/L	28	Standard
	Y	89	995780.9	3.8				ug/L	447395	Standard
>	**Rh**	103	80.0	39.0				ug/L	15	Standard
	Mo	98	11202.2	1.3	**3.5351**	0.100	2.8	ug/L	113	Standard
	Ag	107	172476.6	3.4	**23.0491**	0.075	0.3	ug/L	108	Standard
	Cd	111	62525.5	2.9	**26.0819**	0.217	0.8	mg/L	3	Standard
	Cd	114	155090.1	3.1	**26.1298**	0.108	0.4	ug/L	20	Standard
>	**In**	115	651612.6	3.5				ug/L	625728	Standard
	Sn	118	1198.4	14.3	**0.0953**	0.032	33.2	ug/L	568	Standard
	Sb	123	13746.3	2.5	**2.5212**	0.035	1.4	ug/L	612	Standard
	Ba	135	355128.0	2.7	**156.7604**	1.139	0.7	ug/L	21	Standard
	Ce	140	1618154.9	2.5				ug/L	245	Standard
>	**Tb**	159	1001149.2	2.4				ug/L	950397	Standard
	Ho	165	38079.5	2.2				ug/L	7	Standard
	Tl	203	217506.4	3.1	**24.1924**	0.167	0.7	ug/L	15	Standard
	Tl	205	199413.9	1.5	**24.9766**	0.301	1.2	ug/L	13	Standard
	Pb	206	340199.5	1.6	**59.9805**	0.583	1.0	ug/L	264	Standard
	Pb	207	287102.8	2.6	**55.7262**	0.520	0.9	ug/L	222	Standard
	Pb	208	1239148.8	1.7	**58.8977**	0.622	1.1	ug/L	959	Standard
	U	238	215333.8	2.0	**26.6800**	0.294	1.1	ug/L	9	Standard
>	**Bi**	209	553529.4	2.5				ug/L	552821	Standard

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Na	23	3.3	86.6	**8.0461**	6.964	86.6	mg/L	2	Standard
Mg	24	420.0	23.2	**0.3305**	0.090	27.3	mg/L	55	Standard
K	39	140.0	12.9	**0.2971**	0.061	20.5	mg/L	28	Standard
Ca	43	243.3	22.2	**15.1089**	3.441	22.8	mg/L	27	Standard
Fe	54	22645.6	2.0	**14.0499**	0.221	1.6	mg/L	147	Standard
Fe	57	6007.9	4.3	**13.9009**	0.509	3.7	mg/L	268	Standard
Sc-1	45	51686.4	2.6				mg/L	41174	Standard
Cl	35	80429.2	4.3				ug/L	69550	Standard
Kr	83	2.7	86.6				ug/L	1	Standard
Br	81	13772.9	3.0				ug/L	1950	Standard
P	31	24882.1	4.1				ug/L	21156	Standard
S	34	3928.8	5.2				ug/L	3419	Standard
Sr	88	231.7	13.2				ug/L	72	Standard
C	12	2016.8	5.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	526.7	13.7				mg/L	17	Standard
Dy	164	57272.5	3.0				mg/L	16	Standard
Ho-1	165	38079.5	2.2				mg/L	7	Standard
Er	166	36791.3	0.3				mg/L	7	Standard
I	127	68461.0	1.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.105	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.333	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.137
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.128
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1606145109S WG574521-07
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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606145110SD WG574521-08
Sample Date/Time: Friday, July 01, 2016 17:41:13
Number of Replicates: 3
Autosampler Position: 239
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75000.2	2.3				ug/L	76456	Standard
	Be	9	30976.6	1.7	**28.1959**	0.613	2.2	ug/L	20	Standard
	Al	27	3439220.2	1.5	**20.4763**	0.514	2.5	ug/L	1307	Standard
	Sc	45	50167.9	0.3				ug/L	41174	Standard
	Ti	47	20331.3	1.6	**60.1182**	0.386	0.6	ug/L	27	Standard
	V	51	735011.2	1.2	**86.0697**	0.811	0.9	ug/L	1434	Standard
	Cr	52	348065.1	1.5	**40.5590**	0.525	1.3	ug/L	7733	Standard
	Cr	53	41963.1	3.7	**39.6270**	0.656	1.7	ug/L	442	Standard
	Mn	55	2126490.8	1.0	**270.9327**	3.985	1.5	ug/L	723	Standard
	Co	59	224148.6	1.1	**28.2013**	0.328	1.2	ug/L	217	Standard
	Ni	60	97510.5	1.6	**45.1854**	0.391	0.9	ug/L	304	Standard
	Cu	65	159657.8	0.8	**75.4140**	0.961	1.3	ug/L	181	Standard
	Zn	66	122702.2	1.2	**96.4430**	0.853	0.9	ug/L	215	Standard
>	Ge	72	539893.8	2.0				ug/L	520809	Standard
	As	75	43731.6	1.5	**34.2188**	0.207	0.6	ug/L	-52	Standard
	Se	82	3851.1	1.9	**29.2807**	0.182	0.6	ug/L	17	Standard
	Se-1	77	2693.2	3.6	**29.7006**	0.473	1.6	ug/L	56	Standard
>	Ga	71	10877.2	4.3				mg/L	25	Standard
	Rb	85	26646.7	1.9				ug/L	28	Standard
	Y	89	984741.5	1.3				ug/L	447395	Standard
>	Rh	103	75.0	23.1				ug/L	15	Standard
	Mo	98	12396.0	1.1	**4.0096**	0.009	0.2	ug/L	113	Standard
	Ag	107	167394.8	1.6	**22.9251**	0.326	1.4	ug/L	108	Standard
	Cd	111	61689.6	0.9	**26.3685**	0.182	0.7	mg/L	3	Standard
	Cd	114	150249.5	3.1	**25.9377**	0.589	2.3	ug/L	20	Standard
>	In	115	635843.6	1.2				ug/L	625728	Standard
	Sn	118	1905.1	12.7	**0.2074**	0.041	19.5	ug/L	568	Standard
	Sb	123	35922.0	1.1	**6.8066**	0.045	0.7	ug/L	612	Standard
	Ba	135	328480.5	1.3	**148.5677**	0.342	0.2	ug/L	21	Standard
	Ce	140	1483643.4	1.0				ug/L	245	Standard
>	Tb	159	980223.1	1.4				ug/L	950397	Standard
	Ho	165	36555.7	1.5				ug/L	7	Standard
	Tl	203	214476.5	1.2	**24.1754**	0.120	0.5	ug/L	15	Standard
	Tl	205	195033.9	0.4	**24.7497**	0.108	0.4	ug/L	13	Standard
	Pb	206	331178.4	0.7	**59.1601**	0.433	0.7	ug/L	264	Standard
	Pb	207	281134.0	0.6	**55.2947**	0.155	0.3	ug/L	222	Standard
	Pb	208	1213063.3	0.7	**58.4179**	0.082	0.1	ug/L	959	Standard
	U	238	215012.5	0.4	**26.9929**	0.177	0.7	ug/L	9	Standard
>	Bi	209	546245.7	0.8				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	401.7	8.7	**0.3249**	0.034	10.5	mg/L	55	Standard
K	39	65.0	53.8	**0.0732**	0.110	149.7	mg/L	28	Standard
Ca	43	258.3	8.9	**16.8169**	1.773	10.5	mg/L	27	Standard
Fe	54	18860.0	1.9	**12.0398**	0.263	2.2	mg/L	147	Standard
Fe	57	5239.2	5.1	**12.4090**	0.703	5.7	mg/L	268	Standard
Sc-1	45	50167.9	0.3				mg/L	41174	Standard
Cl	35	77473.7	3.0				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	7528.5	1.9				ug/L	1950	Standard
P	31	23025.8	3.4				ug/L	21156	Standard
S	34	3772.1	4.4				ug/L	3419	Standard
Sr	88	236.7	6.8				ug/L	72	Standard
C	12	2743.6	3.7				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	510.0	3.4				mg/L	17	Standard
Dy	164	54236.1	2.2				mg/L	16	Standard
Ho-1	165	36555.7	1.5				mg/L	7	Standard
Er	166	36333.5	1.9				mg/L	7	Standard
I	127	50945.5	2.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		98.096	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.664	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.617	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.811	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606145110SD WG574521-08
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Method 6020 - Summary Report

Sample ID: L1606144501
Sample Date/Time: Friday, July 01, 2016 17:44:25
Number of Replicates: 3
Autosampler Position: 240
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75614.9	1.3				ug/L	76456	Standard
	Be	9	616.7	9.4	**0.5370**	0.050	9.3	ug/L	20	Standard
	Al	27	13167988.3	1.5	**77.7749**	1.539	2.0	ug/L	1307	Standard
	Sc	45	44936.5	0.9				ug/L	41174	Standard
	Ti	47	2539.2	1.9	**7.5419**	0.159	2.1	ug/L	27	Standard
	V	51	86547.1	1.5	**10.1041**	0.180	1.8	ug/L	1434	Standard
	Cr	52	60907.8	0.8	**6.4000**	0.028	0.4	ug/L	7733	Standard
	Cr	53	7250.1	1.9	**6.6027**	0.158	2.4	ug/L	442	Standard
	Mn	55	1905061.9	1.8	**246.1332**	2.751	1.1	ug/L	723	Standard
	Co	59	36801.3	0.6	**4.6715**	0.060	1.3	ug/L	217	Standard
	Ni	60	21869.8	1.0	**10.1605**	0.108	1.1	ug/L	304	Standard
	Cu	65	17811.5	0.6	**8.4670**	0.104	1.2	ug/L	181	Standard
	Zn	66	27607.8	0.3	**21.8690**	0.071	0.3	ug/L	215	Standard
>	Ge	72	532269.5	0.7				ug/L	520809	Standard
	As	75	3673.7	1.1	**2.9570**	0.036	1.2	ug/L	-52	Standard
	Se	82	41.1	14.0	**0.1921**	0.043	22.6	ug/L	17	Standard
	Se-1	77	92.7	12.4	**0.3761**	0.133	35.3	ug/L	56	Standard
>	Ga	71	8445.7	4.3				mg/L	25	Standard
	Rb	85	79397.5	0.6				ug/L	28	Standard
	Y	89	617711.9	0.3				ug/L	447395	Standard
>	Rh	103	20.0	50.0				ug/L	15	Standard
	Mo	98	513.2	4.5	**0.1463**	0.008	5.2	ug/L	113	Standard
	Ag	107	411.0	5.4	**0.0445**	0.003	7.0	ug/L	108	Standard
	Cd	111	224.8	17.0	**0.0956**	0.017	17.3	mg/L	3	Standard
	Cd	114	528.5	15.3	**0.0930**	0.014	15.2	ug/L	20	Standard
>	In	115	623854.0	0.2				ug/L	625728	Standard
	Sn	118	1113.4	15.3	**0.0893**	0.027	30.1	ug/L	568	Standard
	Sb	123	402.5	19.7	**0.0444**	0.016	34.9	ug/L	612	Standard
	Ba	135	200643.8	0.9	**92.4876**	1.043	1.1	ug/L	21	Standard
	Ce	140	742147.0	0.8				ug/L	245	Standard
>	Tb	159	959744.7	0.8				ug/L	950397	Standard
	Ho	165	13928.1	1.6				ug/L	7	Standard
	Tl	203	447.0	8.8	**0.0505**	0.005	9.0	ug/L	15	Standard
	Tl	205	406.7	11.9	**0.0427**	0.006	14.6	ug/L	13	Standard
	Pb	206	40310.6	0.6	**7.2786**	0.040	0.5	ug/L	264	Standard
	Pb	207	33326.3	0.4	**6.6200**	0.027	0.4	ug/L	222	Standard
	Pb	208	145576.7	0.6	**7.0813**	0.040	0.6	ug/L	959	Standard
	U	238	2828.3	0.6	**0.3605**	0.002	0.6	ug/L	9	Standard
>	Bi	209	537569.5	0.1				ug/L	552821	Standard

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Na	23	3.3	86.6	**9.1104**	7.886	86.6	mg/L	2	Standard
Mg	24	76.7	7.5	**0.0219**	0.006	26.1	mg/L	55	Standard
K	39	218.3	9.5	**0.6363**	0.080	12.5	mg/L	28	Standard
Ca	43	151.7	22.0	**10.1772**	2.793	27.4	mg/L	27	Standard
Fe	54	7340.4	3.8	**5.1756**	0.204	3.9	mg/L	147	Standard
Fe	57	2196.8	7.0	**5.3817**	0.451	8.4	mg/L	268	Standard
Sc-1	45	44936.5	0.9				mg/L	41174	Standard
Cl	35	75625.0	1.8				ug/L	69550	Standard
Kr	83	2.3	89.2				ug/L	1	Standard
Br	81	2456.9	6.6				ug/L	1950	Standard
P	31	22234.7	4.3				ug/L	21156	Standard
S	34	3950.5	4.3				ug/L	3419	Standard
Sr	88	111.7	18.1				ug/L	72	Standard
C	12	203.3	42.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	103.3	36.6				mg/L	17	Standard
Dy	164	23311.5	2.8				mg/L	16	Standard
Ho-1	165	13928.1	1.6				mg/L	7	Standard
Er	166	12401.8	5.5				mg/L	7	Standard
I	127	16120.2	3.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		98.900	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.200	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.701
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.241
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606144502
Sample Date/Time: Friday, July 01, 2016 17:47:36
Number of Replicates: 3
Autosampler Position: 241
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80582.1	0.6				ug/L	76456	Standard
	Be	9	1050.0	6.5	**0.8699**	0.053	6.1	ug/L	20	Standard
	Al	27	10543226.3	2.9	**58.4275**	1.839	3.1	ug/L	1307	Standard
	Sc	45	50111.1	1.7				ug/L	41174	Standard
	Ti	47	7592.6	3.2	**21.5864**	0.745	3.5	ug/L	27	Standard
	V	51	232882.8	0.5	**26.1453**	0.088	0.3	ug/L	1434	Standard
	Cr	52	180590.6	0.7	**19.7971**	0.199	1.0	ug/L	7733	Standard
	Cr	53	21970.9	2.4	**19.7976**	0.515	2.6	ug/L	442	Standard
	Mn	55	4529682.0	0.5	**556.3104**	4.224	0.8	ug/L	723	Standard
	Co	59	72279.7	0.5	**8.7442**	0.060	0.7	ug/L	217	Standard
	Ni	60	42964.2	0.1	**19.1012**	0.022	0.1	ug/L	304	Standard
	Cu	65	47497.7	0.8	**21.5696**	0.226	1.0	ug/L	181	Standard
	Zn	66	105865.9	1.3	**80.1698**	1.221	1.5	ug/L	215	Standard
>	Ge	72	560104.1	0.3				ug/L	520809	Standard
	As	75	7808.3	0.8	**5.9264**	0.056	0.9	ug/L	-52	Standard
	Se	82	138.7	8.9	**0.8941**	0.089	9.9	ug/L	17	Standard
	Se-1	77	161.0	3.3	**1.0667**	0.061	5.7	ug/L	56	Standard
>	Ga	71	24149.2	0.8				mg/L	25	Standard
	Rb	85	233795.1	1.1				ug/L	28	Standard
	Y	89	725001.6	1.1				ug/L	447395	Standard
>	Rh	103	41.7	18.3				ug/L	15	Standard
	Mo	98	1317.7	5.6	**0.3993**	0.019	4.9	ug/L	113	Standard
	Ag	107	864.0	1.1	**0.1041**	0.002	2.4	ug/L	108	Standard
	Cd	111	1117.0	0.9	**0.4692**	0.009	1.8	mg/L	3	Standard
	Cd	114	2788.0	2.8	**0.4754**	0.015	3.1	ug/L	20	Standard
>	In	115	643922.1	1.0				ug/L	625728	Standard
	Sn	118	2010.1	12.1	**0.2191**	0.034	15.5	ug/L	568	Standard
	Sb	123	437.2	13.5	**0.0484**	0.010	21.4	ug/L	612	Standard
	Ba	135	1679042.7	0.5	**749.9950**	6.832	0.9	ug/L	21	Standard
	Ce	140	1471540.7	0.8				ug/L	245	Standard
>	Tb	159	984687.8	0.7				ug/L	950397	Standard
	Ho	165	20360.3	1.4				ug/L	7	Standard
	Tl	203	1212.7	2.5	**0.1370**	0.004	2.6	ug/L	15	Standard
	Tl	205	1158.4	9.0	**0.1384**	0.013	9.2	ug/L	13	Standard
	Pb	206	419173.3	0.5	**75.4515**	0.814	1.1	ug/L	264	Standard
	Pb	207	344138.4	0.6	**68.2056**	0.866	1.3	ug/L	222	Standard
	Pb	208	1506247.3	0.9	**73.0918**	0.807	1.1	ug/L	959	Standard
	U	238	5748.4	0.4	**0.7268**	0.007	1.0	ug/L	9	Standard
>	Bi	209	542199.4	0.6				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	146.7	3.9	**0.0806**	0.004	4.7	mg/L	55	Standard
K	39	706.7	5.1	**2.0968**	0.148	7.0	mg/L	28	Standard
Ca	43	91.7	22.0	**4.4031**	1.569	35.6	mg/L	27	Standard
Fe	54	24940.6	4.4	**15.9770**	0.842	5.3	mg/L	147	Standard
Fe	57	6641.5	3.9	**15.9699**	0.826	5.2	mg/L	268	Standard
> **Sc-1**	45	50111.1	1.7				mg/L	41174	Standard
Cl	35	76057.1	1.3				ug/L	69550	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	3847.2	5.3				ug/L	1950	Standard
P	31	23633.4	0.7				ug/L	21156	Standard
S	34	3662.1	4.5				ug/L	3419	Standard
Sr	88	171.7	11.8				ug/L	72	Standard
C	12	470.0	20.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	233.3	19.3				mg/L	17	Standard
Dy	164	34433.8	0.7				mg/L	16	Standard
Ho-1	165	20360.3	1.4				mg/L	7	Standard
Er	166	19082.0	1.0				mg/L	7	Standard
I	127	32727.0	1.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.397	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.545	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.908	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.079	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 17:50:49
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75660.1	1.1				ug/L	76456	Standard
	Be	9	60406.9	2.0	**54.5087**	0.731	1.3	ug/L	20	Standard
	Al	27	8901183.3	0.4	**52.5361**	0.439	0.8	ug/L	1307	Standard
	Sc	45	43571.0	4.5				ug/L	41174	Standard
	Ti	47	34622.5	2.0	**98.8044**	2.139	2.2	ug/L	27	Standard
	V	51	445398.2	1.1	**50.2213**	0.481	1.0	ug/L	1434	Standard
	Cr	52	446008.3	0.3	**50.3583**	0.638	1.3	ug/L	7733	Standard
	Cr	53	54342.3	1.8	**49.6105**	0.179	0.4	ug/L	442	Standard
	Mn	55	412872.1	1.4	**50.6530**	0.943	1.9	ug/L	723	Standard
	Co	59	423920.9	1.9	**51.4674**	1.144	2.2	ug/L	217	Standard
	Ni	60	112641.5	1.2	**50.3629**	0.567	1.1	ug/L	304	Standard
	Cu	65	112208.4	1.7	**51.0893**	0.402	0.8	ug/L	181	Standard
	Zn	66	66744.0	0.4	**50.5145**	0.608	1.2	ug/L	215	Standard
>	**Ge**	72	559742.9	1.5				ug/L	520809	Standard
	As	75	66794.1	0.6	**50.3914**	0.530	1.1	ug/L	-52	Standard
	Se	82	6873.9	1.4	**50.5047**	0.860	1.7	ug/L	17	Standard
	Se-1	77	4690.7	2.0	**50.3684**	0.411	0.8	ug/L	56	Standard
>	**Ga**	71	70.0	37.1				mg/L	25	Standard
	Rb	85	931.7	8.4				ug/L	28	Standard
	Y	89	472026.6	0.3				ug/L	447395	Standard
>	**Rh**	103	31.7	32.9				ug/L	15	Standard
	Mo	98	318819.4	0.9	**100.5497**	0.545	0.5	ug/L	113	Standard
	Ag	107	375898.4	1.4	**49.9218**	0.531	1.1	ug/L	108	Standard
	Cd	111	121191.8	0.6	**50.2220**	0.334	0.7	mg/L	3	Standard
	Cd	114	302196.5	1.8	**50.5816**	0.945	1.9	ug/L	20	Standard
>	**In**	115	655853.7	0.4				ug/L	625728	Standard
	Sn	118	335213.1	1.5	**49.6075**	0.708	1.4	ug/L	568	Standard
	Sb	123	270386.5	1.1	**49.8811**	0.362	0.7	ug/L	612	Standard
	Ba	135	111336.6	0.9	**48.8080**	0.417	0.9	ug/L	21	Standard
	Ce	140	1411.7	25.7				ug/L	245	Standard
>	**Tb**	159	970990.0	1.2				ug/L	950397	Standard
	Ho	165	26.7	71.0				ug/L	7	Standard
	Tl	203	450496.8	1.2	**50.6789**	0.648	1.3	ug/L	15	Standard
	Tl	205	413746.4	0.4	**52.4089**	0.448	0.9	ug/L	13	Standard
	Pb	206	283628.8	0.6	**50.5558**	0.102	0.2	ug/L	264	Standard
	Pb	207	257451.9	0.7	**50.5301**	0.341	0.7	ug/L	222	Standard
	Pb	208	1074344.6	0.3	**51.6273**	0.180	0.3	ug/L	959	Standard
	U	238	402853.9	0.7	**50.4710**	0.276	0.5	ug/L	9	Standard
>	**Bi**	209	547356.6	0.6				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4665.7	4.0	**5.1012**	0.401	7.9	mg/L	55	Standard
K	39	1318.4	2.8	**4.6563**	0.350	7.5	mg/L	28	Standard
Ca	43	68.3	16.9	**3.4315**	1.098	32.0	mg/L	27	Standard
Fe	54	7100.4	2.7	**5.1707**	0.292	5.6	mg/L	147	Standard
Fe	57	2145.2	7.2	**5.4299**	0.465	8.6	mg/L	268	Standard
> **Sc-1**	45	43571.0	4.5				mg/L	41174	Standard
Cl	35	80089.1	0.5				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	2080.1	5.8				ug/L	1950	Standard
P	31	24411.3	2.1				ug/L	21156	Standard
S	34	4227.3	2.4				ug/L	3419	Standard
Sr	88	76.7	45.8				ug/L	72	Standard
C	12	110.0	45.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	56.7				mg/L	17	Standard
Dy	164	54.4	29.0				mg/L	16	Standard
Ho-1	165	26.7	71.0				mg/L	7	Standard
Er	166	46.7	24.7				mg/L	7	Standard
I	127	7775.3	3.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	109.017		
Al	27	105.072		
Sc	45			
Ti	47	98.804		
V	51	100.443		
Cr	52	100.717		
Cr	53			
Mn	55	101.306		
Co	59	102.935		
Ni	60	100.726		
Cu	65	102.179		
Zn	66	101.029		
> Ge	72		107.476	
As	75	100.783		
Se	82	101.009		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	100.550		
Ag	107	99.844		
Cd	111	100.444		
Cd	114			
> In	115			104.815
Sn	118	99.215		
Sb	123	99.762		
Ba	135	97.616		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.358		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.255		
U	238	100.942		
> Bi	209			99.012
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 17:54:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76125.8	1.7				ug/L	76456	Standard
	Be	9	28.3	40.8	**0.0054**	0.010	184.7	ug/L	20	Standard
	Al	27	3772.2	25.1	**0.0119**	0.005	45.3	ug/L	1307	Standard
	Sc	45	44115.8	1.5				ug/L	41174	Standard
	Ti	47	36.0	36.4	**0.0190**	0.038	200.0	ug/L	27	Standard
	V	51	1432.6	3.3	**-0.0355**	0.004	12.4	ug/L	1434	Standard
	Cr	52	7275.4	1.9	**-0.1286**	0.011	8.9	ug/L	7733	Standard
	Cr	53	543.3	3.8	**0.0861**	0.017	20.2	ug/L	442	Standard
	Mn	55	1260.1	9.4	**0.0544**	0.014	25.4	ug/L	723	Standard
	Co	59	264.3	9.7	**0.0028**	0.003	106.4	ug/L	217	Standard
	Ni	60	263.3	2.3	**-0.0344**	0.002	7.2	ug/L	304	Standard
	Cu	65	186.3	1.1	**0.0113**	0.000	4.4	ug/L	181	Standard
	Zn	66	283.0	3.7	**0.0359**	0.009	24.2	ug/L	215	Standard
>	**Ge**	72	556594.5	0.6				ug/L	520809	Standard
	As	75	-80.7	20.9	**-0.0160**	0.013	82.1	ug/L	-52	Standard
	Se	82	15.4	35.3	**-0.0124**	0.040	323.4	ug/L	17	Standard
	Se-1	77	60.3	15.0	**-0.0241**	0.101	419.2	ug/L	56	Standard
>	**Ga**	71	31.7	63.8				mg/L	25	Standard
	Rb	85	60.0					ug/L	28	Standard
	Y	89	477190.1	1.0				ug/L	447395	Standard
>	**Rh**	103	8.3	124.9				ug/L	15	Standard
	Mo	98	226.0	18.3	**0.0476**	0.013	27.7	ug/L	113	Standard
	Ag	107	150.7	15.9	**0.0072**	0.003	44.5	ug/L	108	Standard
	Cd	111	16.6	57.3	**0.0046**	0.004	86.9	mg/L	3	Standard
	Cd	114	59.8	49.5	**0.0101**	0.005	49.3	ug/L	20	Standard
>	**In**	115	653461.3	0.4				ug/L	625728	Standard
	Sn	118	1496.7	19.9	**0.1384**	0.044	31.8	ug/L	568	Standard
	Sb	123	746.4	28.2	**0.1046**	0.039	37.1	ug/L	612	Standard
	Ba	135	171.7	17.2	**0.0577**	0.013	22.8	ug/L	21	Standard
	Ce	140	668.3	13.8				ug/L	245	Standard
>	**Tb**	159	971042.5	0.5				ug/L	950397	Standard
	Ho	165	16.7	62.4				ug/L	7	Standard
	Tl	203	88.3	25.2	**0.0090**	0.002	27.2	ug/L	15	Standard
	Tl	205	80.0	16.5	**0.0002**	0.002	912.8	ug/L	13	Standard
	Pb	206	378.0	7.1	**0.0223**	0.005	20.2	ug/L	264	Standard
	Pb	207	334.0	19.5	**0.0182**	0.012	68.6	ug/L	222	Standard
	Pb	208	1457.7	7.9	**0.0204**	0.005	25.7	ug/L	959	Standard
	U	238	80.3	16.8	**0.0096**	0.002	17.0	ug/L	9	Standard
>	**Bi**	209	558602.1	0.7				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	60.0	25.0	**0.0053**	0.017	313.2	mg/L	55	Standard
K	39	28.3	44.4	**-0.0302**	0.044	144.5	mg/L	28	Standard
Ca	43	16.7	75.5	**-1.0452**	1.061	101.5	mg/L	27	Standard
Fe	54	162.7	23.0	**0.0200**	0.026	130.3	mg/L	147	Standard
Fe	57	228.3	8.3	**-0.1492**	0.054	36.5	mg/L	268	Standard
> **Sc-1**	45	44115.8	1.5				mg/L	41174	Standard
Cl	35	79992.6	1.1				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	2276.8	13.7				ug/L	1950	Standard
P	31	23509.9	2.2				ug/L	21156	Standard
S	34	4122.2	2.6				ug/L	3419	Standard
Sr	88	61.7	24.8				ug/L	72	Standard
C	12	93.3	16.4				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	60.0	16.7				mg/L	17	Standard
Dy	164	41.6	40.0				mg/L	16	Standard
Ho-1	165	16.7	62.4				mg/L	7	Standard
Er	166	36.7	83.3				mg/L	7	Standard
I	127	5142.5	3.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.871	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.432
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.046
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606144503
Sample Date/Time: Friday, July 01, 2016 17:57:14
Number of Replicates: 3
Autosampler Position: 242
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81064.6	1.5				ug/L	76456	Standard
	Be	9	923.4	4.6	**0.7579**	0.026	3.5	ug/L	20	Standard
	Al	27	9265006.3	1.5	**51.0345**	0.228	0.4	ug/L	1307	Standard
	Sc	45	49278.4	2.1				ug/L	41174	Standard
	Ti	47	6532.7	0.9	**18.1480**	0.376	2.1	ug/L	27	Standard
	V	51	196838.4	1.2	**21.5756**	0.486	2.3	ug/L	1434	Standard
	Cr	52	144221.5	0.4	**15.2461**	0.132	0.9	ug/L	7733	Standard
	Cr	53	17702.0	4.1	**15.5134**	0.839	5.4	ug/L	442	Standard
	Mn	55	4322666.6	0.8	**519.0669**	3.003	0.6	ug/L	723	Standard
	Co	59	73004.8	0.8	**8.6351**	0.046	0.5	ug/L	217	Standard
	Ni	60	37595.6	1.2	**16.3200**	0.066	0.4	ug/L	304	Standard
	Cu	65	29226.2	0.6	**12.9475**	0.087	0.7	ug/L	181	Standard
	Zn	66	73620.1	0.4	**54.4550**	0.675	1.2	ug/L	215	Standard
>	Ge	72	572863.4	1.2				ug/L	520809	Standard
	As	75	5889.9	1.0	**4.3827**	0.015	0.3	ug/L	-52	Standard
	Se	82	131.9	5.2	**0.8223**	0.038	4.7	ug/L	17	Standard
	Se-1	77	184.3	3.7	**1.2757**	0.064	5.0	ug/L	56	Standard
>	Ga	71	19340.7	1.8				mg/L	25	Standard
	Rb	85	221404.3	0.5				ug/L	28	Standard
	Y	89	706877.6	0.9				ug/L	447395	Standard
>	Rh	103	30.0	72.6				ug/L	15	Standard
	Mo	98	2018.2	3.9	**0.6082**	0.025	4.1	ug/L	113	Standard
	Ag	107	770.7	2.0	**0.0888**	0.002	2.2	ug/L	108	Standard
	Cd	111	2871.4	1.3	**1.1792**	0.015	1.3	mg/L	3	Standard
	Cd	114	6981.1	2.4	**1.1603**	0.029	2.5	ug/L	20	Standard
>	In	115	660500.6	0.1				ug/L	625728	Standard
	Sn	118	1633.4	19.7	**0.1562**	0.047	30.4	ug/L	568	Standard
	Sb	123	766.2	17.6	**0.1067**	0.025	23.2	ug/L	612	Standard
	Ba	135	509530.1	0.7	**221.8605**	1.691	0.8	ug/L	21	Standard
	Ce	140	1234713.5	0.5				ug/L	245	Standard
>	Tb	159	1007837.3	0.4				ug/L	950397	Standard
	Ho	165	17965.6	2.4				ug/L	7	Standard
	Tl	203	1067.0	3.3	**0.1181**	0.003	2.2	ug/L	15	Standard
	Tl	205	1001.7	2.4	**0.1159**	0.004	3.7	ug/L	13	Standard
	Pb	206	195840.9	0.6	**34.5471**	0.280	0.8	ug/L	264	Standard
	Pb	207	161774.1	0.6	**31.4180**	0.202	0.6	ug/L	222	Standard
	Pb	208	705256.5	0.4	**33.5368**	0.236	0.7	ug/L	959	Standard
	U	238	5486.7	0.6	**0.6803**	0.004	0.5	ug/L	9	Standard
>	Bi	209	552878.3	1.1				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	775.0	0.6	**0.6965**	0.018	2.6	mg/L	55	Standard
K	39	456.7	20.3	**1.3315**	0.288	21.7	mg/L	28	Standard
Ca	43	66.7	11.5	**2.6050**	0.520	20.0	mg/L	27	Standard
Fe	54	19066.0	1.2	**12.3984**	0.367	3.0	mg/L	147	Standard
Fe	57	5245.9	1.7	**12.6645**	0.072	0.6	mg/L	268	Standard
> **Sc-1**	45	49278.4	2.1				mg/L	41174	Standard
Cl	35	75533.8	1.8				ug/L	69550	Standard
Kr	83	1.7	124.9				ug/L	1	Standard
Br	81	12581.9	2.8				ug/L	1950	Standard
P	31	23234.5	1.4				ug/L	21156	Standard
S	34	3415.4	8.9				ug/L	3419	Standard
Sr	88	155.0	8.5				ug/L	72	Standard
C	12	606.7	24.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	183.3	45.4				mg/L	17	Standard
Dy	164	30531.0	0.8				mg/L	16	Standard
Ho-1	165	17965.6	2.4				mg/L	7	Standard
Er	166	16101.9	2.4				mg/L	7	Standard
I	127	47399.3	7.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.028	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.995	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.557
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.010
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144503
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Method 6020 - Summary Report

Sample ID: L1606144507
Sample Date/Time: Friday, July 01, 2016 18:00:25
Number of Replicates: 3
Autosampler Position: 243
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81719.8	0.5				ug/L	76456	Standard
	Be	9	1150.0	3.4	**0.9414**	0.038	4.0	ug/L	20	Standard
	Al	27	19122972.5	1.5	**104.5075**	1.996	1.9	ug/L	1307	Standard
	Sc	45	50161.3	3.1				ug/L	41174	Standard
	Ti	47	4290.6	1.9	**12.0513**	0.158	1.3	ug/L	27	Standard
	V	51	176002.8	1.5	**19.5347**	0.381	2.0	ug/L	1434	Standard
	Cr	52	202519.5	0.7	**22.1111**	0.164	0.7	ug/L	7733	Standard
	Cr	53	24688.4	0.5	**22.0962**	0.312	1.4	ug/L	442	Standard
	Mn	55	3882576.5	0.7	**472.5626**	1.691	0.4	ug/L	723	Standard
	Co	59	74015.0	0.7	**8.8755**	0.153	1.7	ug/L	217	Standard
	Ni	60	49898.7	0.5	**22.0097**	0.116	0.5	ug/L	304	Standard
	Cu	65	49732.2	0.6	**22.3872**	0.351	1.6	ug/L	181	Standard
	Zn	66	114291.8	0.2	**85.7937**	1.009	1.2	ug/L	215	Standard
>	Ge	72	565157.3	1.0				ug/L	520809	Standard
	As	75	14435.4	1.1	**10.8205**	0.032	0.3	ug/L	-52	Standard
	Se	82	92.4	6.7	**0.5475**	0.040	7.3	ug/L	17	Standard
	Se-1	77	153.7	16.6	**0.9738**	0.293	30.1	ug/L	56	Standard
>	Ga	71	20582.3	3.6				mg/L	25	Standard
	Rb	85	203311.7	0.8				ug/L	28	Standard
	Y	89	751032.3	1.4				ug/L	447395	Standard
>	Rh	103	46.7	44.6				ug/L	15	Standard
	Mo	98	590.9	4.0	**0.1610**	0.008	5.2	ug/L	113	Standard
	Ag	107	615.7	5.5	**0.0683**	0.004	5.9	ug/L	108	Standard
	Cd	111	2075.5	3.1	**0.8510**	0.024	2.8	mg/L	3	Standard
	Cd	114	5077.8	10.1	**0.8428**	0.077	9.1	ug/L	20	Standard
>	In	115	661094.1	1.5				ug/L	625728	Standard
	Sn	118	1358.4	19.5	**0.1160**	0.042	36.3	ug/L	568	Standard
	Sb	123	1552.9	6.2	**0.2509**	0.021	8.4	ug/L	612	Standard
	Ba	135	403285.7	0.6	**175.4541**	1.609	0.9	ug/L	21	Standard
	Ce	140	1308604.3	1.2				ug/L	245	Standard
>	Tb	159	1004791.8	1.1				ug/L	950397	Standard
	Ho	165	21420.1	0.2				ug/L	7	Standard
	Tl	203	1393.7	1.3	**0.1546**	0.002	1.2	ug/L	15	Standard
	Tl	205	1293.4	6.5	**0.1525**	0.010	6.7	ug/L	13	Standard
	Pb	206	576456.5	0.6	**101.8203**	0.799	0.8	ug/L	264	Standard
	Pb	207	487118.2	0.8	**94.7368**	0.502	0.5	ug/L	222	Standard
	Pb	208	2107804.8	0.1	**100.3728**	0.432	0.4	ug/L	959	Standard
	U	238	4448.0	2.0	**0.5517**	0.009	1.6	ug/L	9	Standard
>	Bi	209	552606.6	0.3				ug/L	552821	Standard

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Na	23	1.7	173.2	**3.9605**	6.851	173.0	mg/L	2	Standard
Mg	24	146.7	22.7	**0.0801**	0.030	37.5	mg/L	55	Standard
K	39	540.0	0.9	**1.5696**	0.061	3.9	mg/L	28	Standard
Ca	43	96.7	3.0	**4.7655**	0.419	8.8	mg/L	27	Standard
Fe	54	17314.9	1.0	**11.0515**	0.258	2.3	mg/L	147	Standard
Fe	57	4700.7	3.1	**11.0529**	0.214	1.9	mg/L	268	Standard
> **Sc-1**	45	50161.3	3.1				mg/L	41174	Standard
Cl	35	76662.1	1.5				ug/L	69550	Standard
Kr	83	3.0	57.7				ug/L	1	Standard
Br	81	3767.1	7.9				ug/L	1950	Standard
P	31	23611.7	2.9				ug/L	21156	Standard
S	34	3682.1	3.0				ug/L	3419	Standard
Sr	88	63.3	31.9				ug/L	72	Standard
C	12	343.3	8.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	210.0	26.5				mg/L	17	Standard
Dy	164	35453.0	4.2				mg/L	16	Standard
Ho-1	165	21420.1	0.2				mg/L	7	Standard
Er	166	19218.8	0.6				mg/L	7	Standard
I	127	28176.2	1.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.885	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.515	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	105.652	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.961	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Pb 206 Upper, S, EEE	Pb	206
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1606144508
Sample Date/Time: Friday, July 01, 2016 18:03:37
Number of Replicates: 3
Autosampler Position: 244
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80067.7	0.8				ug/L	76456	Standard
	Be	9	1216.7	3.5	**1.0182**	0.042	4.1	ug/L	20	Standard
	Al	27	26828418.5	2.0	**149.6306**	1.983	1.3	ug/L	1307	Standard
	Sc	45	50947.2	1.6				ug/L	41174	Standard
	Ti	47	5410.0	2.3	**15.2604**	0.406	2.7	ug/L	27	Standard
	V	51	186134.5	1.5	**20.7252**	0.259	1.2	ug/L	1434	Standard
	Cr	52	142957.3	0.4	**15.3665**	0.097	0.6	ug/L	7733	Standard
	Cr	53	17178.1	1.5	**15.2891**	0.249	1.6	ug/L	442	Standard
	Mn	55	4606939.6	1.4	**562.2720**	9.197	1.6	ug/L	723	Standard
	Co	59	80106.5	0.8	**9.6337**	0.111	1.2	ug/L	217	Standard
	Ni	60	49331.5	0.8	**21.8172**	0.266	1.2	ug/L	304	Standard
	Cu	65	27262.5	1.2	**12.2715**	0.190	1.6	ug/L	181	Standard
	Zn	66	50487.3	0.6	**37.8990**	0.363	1.0	ug/L	215	Standard
>	Ge	72	563626.3	0.4				ug/L	520809	Standard
	As	75	5127.9	0.4	**3.8833**	0.025	0.7	ug/L	-52	Standard
	Se	82	63.4	13.7	**0.3372**	0.065	19.3	ug/L	17	Standard
	Se-1	77	127.0	8.8	**0.6885**	0.125	18.2	ug/L	56	Standard
>	Ga	71	20874.4	1.1				mg/L	25	Standard
	Rb	85	200244.6	0.8				ug/L	28	Standard
	Y	89	753887.4	1.4				ug/L	447395	Standard
>	Rh	103	23.3	24.7				ug/L	15	Standard
	Mo	98	546.6	7.3	**0.1509**	0.014	9.6	ug/L	113	Standard
	Ag	107	629.3	8.8	**0.0718**	0.007	9.6	ug/L	108	Standard
	Cd	111	214.4	9.4	**0.0877**	0.009	10.1	mg/L	3	Standard
	Cd	114	474.4	3.2	**0.0805**	0.003	3.5	ug/L	20	Standard
>	In	115	647228.9	1.0				ug/L	625728	Standard
	Sn	118	1141.7	25.6	**0.0873**	0.044	50.2	ug/L	568	Standard
	Sb	123	347.3	21.7	**0.0313**	0.014	45.5	ug/L	612	Standard
	Ba	135	428959.8	0.0	**190.6168**	1.771	0.9	ug/L	21	Standard
	Ce	140	1454827.7	0.7				ug/L	245	Standard
>	Tb	159	993072.0	0.4				ug/L	950397	Standard
	Ho	165	23219.4	1.9				ug/L	7	Standard
	Tl	203	1106.7	1.7	**0.1248**	0.002	1.9	ug/L	15	Standard
	Tl	205	985.0	10.2	**0.1162**	0.014	11.7	ug/L	13	Standard
	Pb	206	63645.1	1.2	**11.4085**	0.083	0.7	ug/L	264	Standard
	Pb	207	52266.7	0.7	**10.3105**	0.095	0.9	ug/L	222	Standard
	Pb	208	232091.9	0.7	**11.2123**	0.155	1.4	ug/L	959	Standard
	U	238	4568.7	1.3	**0.5771**	0.011	1.9	ug/L	9	Standard
>	Bi	209	542669.3	0.8				ug/L	552821	Standard

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Na	23	1.7	173.2	**4.0478**	7.002	173.0	mg/L	2	Standard
Mg	24	115.0	7.5	**0.0484**	0.008	16.3	mg/L	55	Standard
K	39	411.7	8.1	**1.1441**	0.093	8.1	mg/L	28	Standard
Ca	43	256.7	13.7	**16.4263**	2.858	17.4	mg/L	27	Standard
Fe	54	19822.2	2.5	**12.4655**	0.367	2.9	mg/L	147	Standard
Fe	57	5277.6	3.2	**12.3025**	0.438	3.6	mg/L	268	Standard
> **Sc-1**	45	50947.2	1.6				mg/L	41174	Standard
Cl	35	80549.5	0.6				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	2766.9	10.3				ug/L	1950	Standard
P	31	24564.9	2.5				ug/L	21156	Standard
S	34	4093.9	1.0				ug/L	3419	Standard
Sr	88	131.7	11.6				ug/L	72	Standard
C	12	213.3	21.7				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	70.0	37.8				mg/L	17	Standard
Dy	164	39354.5	1.1				mg/L	16	Standard
Ho-1	165	23219.4	1.9				mg/L	7	Standard
Er	166	20997.9	3.9				mg/L	7	Standard
I	127	17520.1	0.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.724	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.221	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.436	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.164	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144509
Sample Date/Time: Friday, July 01, 2016 18:06:48
Number of Replicates: 3
Autosampler Position: 245
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79442.8	2.3				ug/L	76456	Standard
	Be	9	943.4	17.8	**0.7923**	0.154	19.4	ug/L	20	Standard
	Al	27	24668673.1	1.9	**138.6963**	2.466	1.8	ug/L	1307	Standard
	Sc	45	50062.6	1.9				ug/L	41174	Standard
	Ti	47	4807.4	4.3	**13.5672**	0.456	3.4	ug/L	27	Standard
	V	51	136414.7	0.2	**15.1594**	0.132	0.9	ug/L	1434	Standard
	Cr	52	121344.3	1.1	**12.9168**	0.132	1.0	ug/L	7733	Standard
	Cr	53	14567.0	3.2	**12.9202**	0.381	2.9	ug/L	442	Standard
	Mn	55	3584400.6	1.7	**438.0976**	8.663	2.0	ug/L	723	Standard
	Co	59	62786.5	0.8	**7.5554**	0.042	0.6	ug/L	217	Standard
	Ni	60	42141.2	1.3	**18.6419**	0.218	1.2	ug/L	304	Standard
	Cu	65	21722.6	0.6	**9.7770**	0.072	0.7	ug/L	181	Standard
	Zn	66	42178.0	0.8	**31.6788**	0.359	1.1	ug/L	215	Standard
>	**Ge**	72	562814.6	1.1				ug/L	520809	Standard
	As	75	3148.0	1.0	**2.4049**	0.028	1.2	ug/L	-52	Standard
	Se	82	55.8	21.4	**0.2824**	0.087	30.8	ug/L	17	Standard
	Se-1	77	111.3	15.0	**0.5195**	0.168	32.3	ug/L	56	Standard
>	**Ga**	71	17067.9	0.7				mg/L	25	Standard
	Rb	85	155458.5	0.3				ug/L	28	Standard
	Y	89	728811.9	0.2				ug/L	447395	Standard
>	**Rh**	103	40.0	21.7				ug/L	15	Standard
	Mo	98	532.8	6.7	**0.1442**	0.009	6.6	ug/L	113	Standard
	Ag	107	508.0	7.7	**0.0547**	0.005	9.0	ug/L	108	Standard
	Cd	111	168.7	12.8	**0.0676**	0.009	13.2	mg/L	3	Standard
	Cd	114	363.5	9.1	**0.0610**	0.006	10.1	ug/L	20	Standard
>	**In**	115	655174.8	1.1				ug/L	625728	Standard
	Sn	118	1111.7	18.9	**0.0808**	0.031	38.4	ug/L	568	Standard
	Sb	123	305.1	22.1	**0.0226**	0.012	54.1	ug/L	612	Standard
	Ba	135	334401.7	0.7	**146.7912**	1.362	0.9	ug/L	21	Standard
	Ce	140	1157016.3	1.7				ug/L	245	Standard
>	**Tb**	159	995793.1	2.4				ug/L	950397	Standard
	Ho	165	19706.1	2.6				ug/L	7	Standard
	Tl	203	788.7	4.8	**0.0883**	0.005	5.9	ug/L	15	Standard
	Tl	205	705.0	5.8	**0.0799**	0.004	5.3	ug/L	13	Standard
	Pb	206	52940.3	0.9	**9.4349**	0.070	0.7	ug/L	264	Standard
	Pb	207	43455.2	0.3	**8.5217**	0.073	0.9	ug/L	222	Standard
	Pb	208	192505.6	0.3	**9.2450**	0.110	1.2	ug/L	959	Standard
	U	238	3706.1	1.6	**0.4657**	0.006	1.4	ug/L	9	Standard
>	**Bi**	209	545400.8	1.1				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	125.0	18.3	**0.0601**	0.024	39.7	mg/L	55	Standard
K	39	280.0	4.7	**0.7524**	0.056	7.4	mg/L	28	Standard
Ca	43	271.7	13.1	**17.8657**	2.769	15.5	mg/L	27	Standard
Fe	54	13853.2	3.1	**8.8410**	0.431	4.9	mg/L	147	Standard
Fe	57	3842.2	1.2	**8.9061**	0.079	0.9	mg/L	268	Standard
> **Sc-1**	45	50062.6	1.9				mg/L	41174	Standard
Cl	35	80728.5	0.4				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	3187.0	4.9				ug/L	1950	Standard
P	31	24401.3	1.1				ug/L	21156	Standard
S	34	4165.6	2.7				ug/L	3419	Standard
Sr	88	115.0	7.5				ug/L	72	Standard
C	12	200.0	13.2				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	93.3	32.7				mg/L	17	Standard
Dy	164	33342.9	1.0				mg/L	16	Standard
Ho-1	165	19706.1	2.6				mg/L	7	Standard
Er	166	17443.4	2.1				mg/L	7	Standard
I	127	18624.8	0.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.907	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.065	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	104.706	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.658	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144509
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Method 6020 - Summary Report

Sample ID: L1606144510
Sample Date/Time: Friday, July 01, 2016 18:10:00
Number of Replicates: 3
Autosampler Position: 246
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79271.9	1.9				ug/L	76456	Standard
	Be	9	960.0	8.0	**0.8081**	0.079	9.8	ug/L	20	Standard
	Al	27	12161180.8	1.6	**68.5142**	1.144	1.7	ug/L	1307	Standard
	Sc	45	48484.1	1.3				ug/L	41174	Standard
	Ti	47	2552.9	3.2	**7.1191**	0.297	4.2	ug/L	27	Standard
	V	51	134266.7	0.5	**14.8155**	0.217	1.5	ug/L	1434	Standard
	Cr	52	132714.7	0.2	**14.1160**	0.211	1.5	ug/L	7733	Standard
	Cr	53	15915.0	2.5	**14.0541**	0.174	1.2	ug/L	442	Standard
	Mn	55	2692161.6	0.9	**326.7761**	3.297	1.0	ug/L	723	Standard
	Co	59	60946.7	0.7	**7.2843**	0.165	2.3	ug/L	217	Standard
	Ni	60	37036.2	0.7	**16.2553**	0.354	2.2	ug/L	304	Standard
	Cu	65	25813.0	0.6	**11.5528**	0.129	1.1	ug/L	181	Standard
	Zn	66	59196.1	0.9	**44.2314**	0.719	1.6	ug/L	215	Standard
>	Ge	72	566689.9	1.6				ug/L	520809	Standard
	As	75	6333.8	0.9	**4.7613**	0.105	2.2	ug/L	-52	Standard
	Se	82	64.1	11.3	**0.3404**	0.060	17.7	ug/L	17	Standard
	Se-1	77	129.7	6.6	**0.7103**	0.107	15.1	ug/L	56	Standard
>	Ga	71	16113.6	0.3				mg/L	25	Standard
	Rb	85	159279.6	1.1				ug/L	28	Standard
	Y	89	713422.0	1.5				ug/L	447395	Standard
>	Rh	103	25.0	60.0				ug/L	15	Standard
	Mo	98	950.0	4.7	**0.2755**	0.014	5.2	ug/L	113	Standard
	Ag	107	562.7	10.8	**0.0618**	0.008	12.5	ug/L	108	Standard
	Cd	111	481.0	9.3	**0.1967**	0.017	8.8	mg/L	3	Standard
	Cd	114	1249.3	10.0	**0.2089**	0.020	9.7	ug/L	20	Standard
>	In	115	656399.0	0.7				ug/L	625728	Standard
	Sn	118	1210.0	13.0	**0.0951**	0.024	25.2	ug/L	568	Standard
	Sb	123	969.1	5.8	**0.1450**	0.010	7.1	ug/L	612	Standard
	Ba	135	317720.7	1.4	**139.1962**	1.098	0.8	ug/L	21	Standard
	Ce	140	1155794.9	1.0				ug/L	245	Standard
>	Tb	159	984841.2	0.9				ug/L	950397	Standard
	Ho	165	19197.2	4.8				ug/L	7	Standard
	Tl	203	845.0	15.2	**0.0944**	0.014	15.2	ug/L	15	Standard
	Tl	205	828.4	29.5	**0.0953**	0.031	32.1	ug/L	13	Standard
	Pb	206	243494.3	0.6	**43.4500**	0.261	0.6	ug/L	264	Standard
	Pb	207	203498.1	0.4	**39.9806**	0.200	0.5	ug/L	222	Standard
	Pb	208	891072.1	0.5	**42.8651**	0.261	0.6	ug/L	959	Standard
	U	238	4045.9	6.6	**0.5073**	0.034	6.6	ug/L	9	Standard
>	Bi	209	546682.6	0.7				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	171.7	38.0	**0.1098**	0.063	57.3	mg/L	55	Standard
K	39	336.7	16.4	**0.9661**	0.187	19.4	mg/L	28	Standard
Ca	43	73.3	23.9	**3.2010**	1.330	41.6	mg/L	27	Standard
Fe	54	13407.2	1.8	**8.8316**	0.255	2.9	mg/L	147	Standard
Fe	57	3832.2	1.2	**9.1972**	0.235	2.6	mg/L	268	Standard
> **Sc-1**	45	48484.1	1.3				mg/L	41174	Standard
Cl	35	75838.8	2.7				ug/L	69550	Standard
Kr	83	1.3	86.6				ug/L	1	Standard
Br	81	3700.5	4.5				ug/L	1950	Standard
P	31	23035.9	5.5				ug/L	21156	Standard
S	34	3642.1	4.8				ug/L	3419	Standard
Sr	88	118.3	23.3				ug/L	72	Standard
C	12	246.7	10.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	110.0	39.6				mg/L	17	Standard
Dy	164	31661.9	4.0				mg/L	16	Standard
Ho-1	165	19197.2	4.8				mg/L	7	Standard
Er	166	17109.7	2.4				mg/L	7	Standard
I	127	24686.8	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.683	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.809	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	104.902	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.890	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144511
Sample Date/Time: Friday, July 01, 2016 18:13:11
Number of Replicates: 3
Autosampler Position: 247
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81056.3	1.5				ug/L	76456	Standard
	Be	9	1300.1	7.1	**1.0750**	0.063	5.9	ug/L	20	Standard
	Al	27	14087735.3	1.0	**77.6176**	0.555	0.7	ug/L	1307	Standard
	Sc	45	51079.3	2.3				ug/L	41174	Standard
	Ti	47	4050.2	1.8	**11.4166**	0.113	1.0	ug/L	27	Standard
	V	51	160903.7	0.9	**17.9135**	0.308	1.7	ug/L	1434	Standard
	Cr	52	157358.9	0.5	**17.0353**	0.148	0.9	ug/L	7733	Standard
	Cr	53	18739.9	2.5	**16.7418**	0.591	3.5	ug/L	442	Standard
	Mn	55	3983343.0	1.3	**486.7711**	7.837	1.6	ug/L	723	Standard
	Co	59	83282.3	0.9	**10.0291**	0.055	0.6	ug/L	217	Standard
	Ni	60	47596.6	1.1	**21.0730**	0.432	2.1	ug/L	304	Standard
	Cu	65	29877.1	1.6	**13.4740**	0.341	2.5	ug/L	181	Standard
	Zn	66	86877.7	1.2	**65.4276**	0.744	1.1	ug/L	215	Standard
>	**Ge**	72	562928.2	1.0				ug/L	520809	Standard
	As	75	5744.5	1.7	**4.3502**	0.061	1.4	ug/L	-52	Standard
	Se	82	56.4	20.2	**0.2867**	0.086	29.8	ug/L	17	Standard
	Se-1	77	130.3	3.1	**0.7263**	0.056	7.7	ug/L	56	Standard
>	**Ga**	71	21874.1	2.3				mg/L	25	Standard
	Rb	85	221462.0	1.4				ug/L	28	Standard
	Y	89	734796.1	0.6				ug/L	447395	Standard
>	**Rh**	103	31.7	24.1				ug/L	15	Standard
	Mo	98	474.5	3.0	**0.1270**	0.006	4.5	ug/L	113	Standard
	Ag	107	695.0	1.5	**0.0803**	0.002	2.7	ug/L	108	Standard
	Cd	111	1334.9	2.9	**0.5556**	0.015	2.7	mg/L	3	Standard
	Cd	114	3103.4	3.0	**0.5239**	0.011	2.1	ug/L	20	Standard
>	**In**	115	650267.1	1.0				ug/L	625728	Standard
	Sn	118	1253.4	12.9	**0.1031**	0.024	22.9	ug/L	568	Standard
	Sb	123	352.0	10.4	**0.0318**	0.006	20.1	ug/L	612	Standard
	Ba	135	635709.1	1.1	**281.1732**	3.369	1.2	ug/L	21	Standard
	Ce	140	1385894.9	1.0				ug/L	245	Standard
>	**Tb**	159	992786.2	1.1				ug/L	950397	Standard
	Ho	165	21371.7	1.6				ug/L	7	Standard
	Tl	203	1170.7	2.5	**0.1317**	0.002	1.8	ug/L	15	Standard
	Tl	205	1111.7	6.4	**0.1319**	0.009	7.1	ug/L	13	Standard
	Pb	206	547145.1	0.5	**98.1007**	0.480	0.5	ug/L	264	Standard
	Pb	207	460226.0	0.7	**90.8567**	0.149	0.2	ug/L	222	Standard
	Pb	208	1990544.8	1.0	**96.2154**	0.264	0.3	ug/L	959	Standard
	U	238	4825.8	2.0	**0.6077**	0.015	2.5	ug/L	9	Standard
>	**Bi**	209	544394.6	0.9				ug/L	552821	Standard

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Na	23	5.0	100.0	**11.9370**	12.019	100.7	mg/L	2	Standard
Mg	24	136.7	11.2	**0.0686**	0.016	23.2	mg/L	55	Standard
K	39	338.3	18.4	**0.9175**	0.216	23.5	mg/L	28	Standard
Ca	43	100.0	10.0	**4.8632**	0.562	11.6	mg/L	27	Standard
Fe	54	19768.1	3.7	**12.3944**	0.190	1.5	mg/L	147	Standard
Fe	57	5529.3	1.5	**12.8981**	0.490	3.8	mg/L	268	Standard
Sc-1	45	51079.3	2.3				mg/L	41174	Standard
Cl	35	74695.0	1.8				ug/L	69550	Standard
Kr	83	2.3	49.5				ug/L	1	Standard
Br	81	3833.8	5.0				ug/L	1950	Standard
P	31	23369.7	3.5				ug/L	21156	Standard
S	34	3573.8	8.7				ug/L	3419	Standard
Sr	88	135.0	7.4				ug/L	72	Standard
C	12	190.0	24.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	156.7	38.5				mg/L	17	Standard
Dy	164	36620.1	2.1				mg/L	16	Standard
Ho-1	165	21371.7	1.6				mg/L	7	Standard
Er	166	19966.5	1.7				mg/L	7	Standard
I	127	25928.9	6.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		106.017	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		108.087	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.922	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.476	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144512
Sample Date/Time: Friday, July 01, 2016 18:16:23
Number of Replicates: 3
Autosampler Position: 248
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80562.0	2.1				ug/L	76456	Standard
	Be	9	1056.7	6.8	**0.8755**	0.044	5.0	ug/L	20	Standard
	Al	27	20325479.9	1.3	**112.6812**	0.924	0.8	ug/L	1307	Standard
	Sc	45	51024.2	3.8				ug/L	41174	Standard
	Ti	47	4124.6	2.4	**11.6241**	0.214	1.8	ug/L	27	Standard
	V	51	179971.8	1.0	**20.0519**	0.111	0.6	ug/L	1434	Standard
	Cr	52	122094.3	0.7	**12.9955**	0.054	0.4	ug/L	7733	Standard
	Cr	53	14728.8	1.7	**13.0624**	0.219	1.7	ug/L	442	Standard
	Mn	55	2566086.0	1.4	**313.4230**	2.590	0.8	ug/L	723	Standard
	Co	59	71959.5	1.0	**8.6588**	0.038	0.4	ug/L	217	Standard
	Ni	60	44539.0	0.4	**19.7019**	0.201	1.0	ug/L	304	Standard
	Cu	65	25837.7	1.3	**11.6371**	0.150	1.3	ug/L	181	Standard
	Zn	66	46860.0	0.7	**35.1959**	0.095	0.3	ug/L	215	Standard
>	Ge	72	563090.4	0.6				ug/L	520809	Standard
	As	75	4748.6	0.5	**3.6029**	0.030	0.8	ug/L	-52	Standard
	Se	82	50.2	5.5	**0.2414**	0.021	8.8	ug/L	17	Standard
	Se-1	77	123.7	5.2	**0.6532**	0.062	9.5	ug/L	56	Standard
>	Ga	71	18362.8	1.6				mg/L	25	Standard
	Rb	85	168707.6	2.0				ug/L	28	Standard
	Y	89	736703.2	2.4				ug/L	447395	Standard
>	Rh	103	25.0	52.9				ug/L	15	Standard
	Mo	98	488.2	3.8	**0.1323**	0.005	4.0	ug/L	113	Standard
	Ag	107	511.0	3.1	**0.0560**	0.002	3.4	ug/L	108	Standard
	Cd	111	253.2	7.3	**0.1041**	0.008	7.3	mg/L	3	Standard
	Cd	114	604.4	7.2	**0.1026**	0.007	6.9	ug/L	20	Standard
>	In	115	646543.9	0.3				ug/L	625728	Standard
	Sn	118	893.4	21.7	**0.0501**	0.029	58.0	ug/L	568	Standard
	Sb	123	312.5	6.0	**0.0248**	0.004	14.8	ug/L	612	Standard
	Ba	135	248072.4	0.5	**110.3400**	0.769	0.7	ug/L	21	Standard
	Ce	140	1301357.0	1.2				ug/L	245	Standard
>	Tb	159	989062.4	0.6				ug/L	950397	Standard
	Ho	165	20744.2	1.0				ug/L	7	Standard
	Tl	203	836.4	5.3	**0.0943**	0.005	5.4	ug/L	15	Standard
	Tl	205	765.0	4.3	**0.0882**	0.004	4.8	ug/L	13	Standard
	Pb	206	112087.8	1.3	**20.1669**	0.259	1.3	ug/L	264	Standard
	Pb	207	94165.7	0.9	**18.6506**	0.174	0.9	ug/L	222	Standard
	Pb	208	412221.0	0.6	**19.9915**	0.120	0.6	ug/L	959	Standard
	U	238	4509.7	0.8	**0.5708**	0.005	0.8	ug/L	9	Standard
>	Bi	209	541556.4	0.0				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	148.3	8.5	**0.0799**	0.015	18.6	mg/L	55	Standard
K	39	408.3	5.1	**1.1318**	0.019	1.7	mg/L	28	Standard
Ca	43	105.0	12.6	**5.2550**	1.011	19.2	mg/L	27	Standard
Fe	54	15896.3	3.5	**9.9615**	0.123	1.2	mg/L	147	Standard
Fe	57	4270.6	7.1	**9.8107**	1.132	11.5	mg/L	268	Standard
> **Sc-1**	45	51024.2	3.8				mg/L	41174	Standard
Cl	35	77017.9	0.8				ug/L	69550	Standard
Kr	83	1.7	124.9				ug/L	1	Standard
Br	81	2873.6	4.9				ug/L	1950	Standard
P	31	23741.9	3.7				ug/L	21156	Standard
S	34	3792.1	2.1				ug/L	3419	Standard
Sr	88	118.3	26.8				ug/L	72	Standard
C	12	150.0	24.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	66.7	31.2				mg/L	17	Standard
Dy	164	35215.7	0.8				mg/L	16	Standard
Ho-1	165	20744.2	1.0				mg/L	7	Standard
Er	166	18591.4	0.2				mg/L	7	Standard
I	127	15219.3	3.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.371	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.118	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.327	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.962	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144512
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Method 6020 - Summary Report

Sample ID: L1606145101
Sample Date/Time: Friday, July 01, 2016 18:19:34
Number of Replicates: 3
Autosampler Position: 249
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70388.2	2.1				ug/L	76456	Standard
	Be	9	61.7	23.4	**0.0400**	0.014	34.9	ug/L	20	Standard
	Al	27	209415.6	0.4	**1.3190**	0.033	2.5	ug/L	1307	Standard
	Sc	45	39780.5	3.1				ug/L	41174	Standard
	Ti	47	1335.7	4.5	**4.0093**	0.186	4.6	ug/L	27	Standard
	V	51	9011.5	1.4	**0.8961**	0.016	1.8	ug/L	1434	Standard
	Cr	52	11942.0	0.5	**0.5043**	0.017	3.5	ug/L	7733	Standard
	Cr	53	965.0	9.9	**0.5365**	0.094	17.4	ug/L	442	Standard
	Mn	55	122738.2	0.8	**16.0893**	0.228	1.4	ug/L	723	Standard
	Co	59	1833.1	0.9	**0.2095**	0.004	1.9	ug/L	217	Standard
	Ni	60	1543.4	2.6	**0.5897**	0.025	4.3	ug/L	304	Standard
	Cu	65	2084.5	3.4	**0.9460**	0.041	4.4	ug/L	181	Standard
	Zn	66	9962.3	1.5	**7.9386**	0.062	0.8	ug/L	215	Standard
>	**Ge**	72	521595.8	0.8				ug/L	520809	Standard
	As	75	1195.1	0.9	**1.0118**	0.011	1.1	ug/L	-52	Standard
	Se	82	24.1	17.0	**0.0642**	0.032	49.3	ug/L	17	Standard
	Se-1	77	62.0	12.6	**0.0393**	0.087	222.5	ug/L	56	Standard
>	**Ga**	71	756.7	9.6				mg/L	25	Standard
	Rb	85	4860.8	2.7				ug/L	28	Standard
	Y	89	439023.6	1.3				ug/L	447395	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	289.5	25.4	**0.0755**	0.025	33.7	ug/L	113	Standard
	Ag	107	108.0	4.2	**0.0028**	0.001	24.8	ug/L	108	Standard
	Cd	111	86.5	15.6	**0.0367**	0.006	16.4	mg/L	3	Standard
	Cd	114	262.8	23.2	**0.0479**	0.011	23.5	ug/L	20	Standard
>	**In**	115	602493.1	0.2				ug/L	625728	Standard
	Sn	118	640.0	28.2	**0.0191**	0.029	153.5	ug/L	568	Standard
	Sb	123	159.0	14.4	**-0.0017**	0.005	267.5	ug/L	612	Standard
	Ba	135	10231.8	1.1	**4.8666**	0.057	1.2	ug/L	21	Standard
	Ce	140	59325.9	0.4				ug/L	245	Standard
>	**Tb**	159	901387.3	1.6				ug/L	950397	Standard
	Ho	165	468.3	19.0				ug/L	7	Standard
	Tl	203	67.3	15.2	**0.0072**	0.001	16.6	ug/L	15	Standard
	Tl	205	53.3	56.5	**-0.0027**	0.004	151.9	ug/L	13	Standard
	Pb	206	25545.5	0.9	**4.7304**	0.064	1.3	ug/L	264	Standard
	Pb	207	21325.3	0.3	**4.3424**	0.022	0.5	ug/L	222	Standard
	Pb	208	92265.3	0.3	**4.6006**	0.019	0.4	ug/L	959	Standard
	U	238	418.3	2.9	**0.0547**	0.002	3.4	ug/L	9	Standard
>	**Bi**	209	522518.3	0.5				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	45.0	0.0	**-0.0057**	0.002	29.9	mg/L	55	Standard
K	39	30.0	28.9	**-0.0116**	0.036	313.3	mg/L	28	Standard
Ca	43	28.3	50.9	**0.2419**	1.466	606.3	mg/L	27	Standard
Fe	54	830.6	5.4	**0.5751**	0.021	3.7	mg/L	147	Standard
Fe	57	475.0	3.8	**0.7085**	0.100	14.1	mg/L	268	Standard
> **Sc-1**	45	39780.5	3.1				mg/L	41174	Standard
Cl	35	69290.7	0.6				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	2023.5	4.8				ug/L	1950	Standard
P	31	8517.4	4.8				ug/L	21156	Standard
S	34	3302.0	4.3				ug/L	3419	Standard
Sr	88	81.7	7.1				ug/L	72	Standard
C	12	106.7	19.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	43.3				mg/L	17	Standard
Dy	164	723.4	6.0				mg/L	16	Standard
Ho-1	165	468.3	19.0				mg/L	7	Standard
Er	166	416.7	9.7				mg/L	7	Standard
I	127	33121.2	4.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.064	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.151	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.287
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.519
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606145102
Sample Date/Time: Friday, July 01, 2016 18:22:46
Number of Replicates: 3
Autosampler Position: 250
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	69181.0	2.1				ug/L	76456	Standard
	Be	9	58.3	32.5	**0.0378**	0.019	50.7	ug/L	20	Standard
	Al	27	441238.9	1.7	**2.8389**	0.059	2.1	ug/L	1307	Standard
	Sc	45	40783.2	1.8				ug/L	41174	Standard
	Ti	47	2459.5	1.5	**7.4205**	0.178	2.4	ug/L	27	Standard
	V	51	16925.1	1.2	**1.8483**	0.038	2.1	ug/L	1434	Standard
	Cr	52	18122.2	1.5	**1.2572**	0.011	0.8	ug/L	7733	Standard
	Cr	53	1788.4	11.0	**1.3411**	0.181	13.5	ug/L	442	Standard
	Mn	55	409161.8	0.6	**53.6291**	0.654	1.2	ug/L	723	Standard
	Co	59	5121.9	2.3	**0.6351**	0.012	1.9	ug/L	217	Standard
	Ni	60	3165.0	1.3	**1.3633**	0.033	2.4	ug/L	304	Standard
	Cu	65	6880.2	2.6	**3.2772**	0.073	2.2	ug/L	181	Standard
	Zn	66	23732.9	1.1	**19.0745**	0.015	0.1	ug/L	215	Standard
>	Ge	72	523960.3	1.1				ug/L	520809	Standard
	As	75	1016.3	2.7	**0.8637**	0.031	3.5	ug/L	-52	Standard
	Se	82	21.9	9.7	**0.0461**	0.018	39.0	ug/L	17	Standard
	Se-1	77	60.7	6.2	**0.0211**	0.052	244.3	ug/L	56	Standard
>	Ga	71	1423.4	6.3				mg/L	25	Standard
	Rb	85	14632.1	2.4				ug/L	28	Standard
	Y	89	450617.7	0.3				ug/L	447395	Standard
>	Rh	103	8.3	69.3				ug/L	15	Standard
	Mo	98	554.2	6.5	**0.1661**	0.012	7.3	ug/L	113	Standard
	Ag	107	138.0	6.6	**0.0071**	0.001	19.2	ug/L	108	Standard
	Cd	111	114.3	13.8	**0.0491**	0.007	14.2	mg/L	3	Standard
	Cd	114	241.5	19.5	**0.0440**	0.009	19.7	ug/L	20	Standard
>	In	115	603273.3	0.3				ug/L	625728	Standard
	Sn	118	566.7	21.3	**0.0071**	0.019	272.0	ug/L	568	Standard
	Sb	123	143.4	25.7	**-0.0049**	0.007	148.6	ug/L	612	Standard
	Ba	135	23042.5	1.3	**10.9682**	0.165	1.5	ug/L	21	Standard
	Ce	140	67983.9	1.1				ug/L	245	Standard
>	Tb	159	906786.3	1.4				ug/L	950397	Standard
	Ho	165	761.7	6.0				ug/L	7	Standard
	Tl	203	182.7	10.3	**0.0207**	0.002	11.4	ug/L	15	Standard
	Tl	205	140.0	10.7	**0.0088**	0.002	22.7	ug/L	13	Standard
	Pb	206	16671.2	1.2	**3.0640**	0.050	1.6	ug/L	264	Standard
	Pb	207	13875.7	1.0	**2.8020**	0.007	0.2	ug/L	222	Standard
	Pb	208	60739.5	0.7	**3.0044**	0.029	1.0	ug/L	959	Standard
	U	238	1048.7	0.5	**0.1370**	0.000	0.3	ug/L	9	Standard
>	Bi	209	523858.2	0.8				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	55.0		**0.0047**	0.001	24.2	mg/L	55	Standard
K	39	31.7	48.2	**-0.0079**	0.061	772.0	mg/L	28	Standard
Ca	43	26.7	92.5	**0.0138**	2.317	16826.1	mg/L	27	Standard
Fe	54	1768.8	1.5	**1.3016**	0.007	0.5	mg/L	147	Standard
Fe	57	735.0	6.2	**1.4753**	0.115	7.8	mg/L	268	Standard
> **Sc-1**	45	40783.2	1.8				mg/L	41174	Standard
Cl	35	69789.0	1.4				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	1950.1	1.4				ug/L	1950	Standard
P	31	8389.0	2.9				ug/L	21156	Standard
S	34	3198.7	3.3				ug/L	3419	Standard
Sr	88	73.3	17.2				ug/L	72	Standard
C	12	130.0	27.7				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	20.8				mg/L	17	Standard
Dy	164	1484.1	12.1				mg/L	16	Standard
Ho-1	165	761.7	6.0				mg/L	7	Standard
Er	166	820.0	8.5				mg/L	7	Standard
I	127	32808.8	1.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.485	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.605	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.411
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.761
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606145102PS WG575057-01
Sample Date/Time: Friday, July 01, 2016 18:25:57
Number of Replicates: 3
Autosampler Position: 251
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68702.1	2.1				ug/L	76456	Standard
	Be	9	54558.1	0.5	**54.2325**	1.076	2.0	ug/L	20	Standard
	Al	27	435359.5	0.4	**2.8209**	0.068	2.4	ug/L	1307	Standard
	Sc	45	39865.7	0.5				ug/L	41174	Standard
	Ti	47	2435.2	3.0	**7.3862**	0.145	2.0	ug/L	27	Standard
	V	51	420388.1	0.9	**50.9256**	0.275	0.5	ug/L	1434	Standard
	Cr	52	419034.6	1.2	**50.8325**	0.081	0.2	ug/L	7733	Standard
	Cr	53	51908.8	1.8	**50.9245**	0.712	1.4	ug/L	442	Standard
	Mn	55	776755.3	1.1	**102.4737**	0.893	0.9	ug/L	723	Standard
	Co	59	378685.6	0.4	**49.3890**	0.417	0.8	ug/L	217	Standard
	Ni	60	108298.4	0.9	**52.0251**	0.585	1.1	ug/L	304	Standard
	Cu	65	113206.4	0.7	**55.3835**	0.277	0.5	ug/L	181	Standard
	Zn	66	96400.4	0.9	**78.4751**	0.327	0.4	ug/L	215	Standard
>	Ge	72	521011.3	1.1				ug/L	520809	Standard
	As	75	67285.7	0.6	**54.5295**	0.414	0.8	ug/L	-52	Standard
	Se	82	7236.2	0.6	**57.1362**	0.906	1.6	ug/L	17	Standard
	Se-1	77	4996.5	1.7	**57.7421**	0.807	1.4	ug/L	56	Standard
>	Ga	71	1458.4	7.9				mg/L	25	Standard
	Rb	85	14268.4	1.9				ug/L	28	Standard
	Y	89	451572.6	1.0				ug/L	447395	Standard
>	Rh	103	11.7	65.5				ug/L	15	Standard
	Mo	98	552.6	6.3	**0.1658**	0.011	6.4	ug/L	113	Standard
	Ag	107	351874.8	0.5	**50.8757**	0.454	0.9	ug/L	108	Standard
	Cd	111	117424.6	1.2	**52.9718**	0.394	0.7	mg/L	3	Standard
	Cd	114	288020.9	0.5	**52.4815**	0.298	0.6	ug/L	20	Standard
>	In	115	602467.1	0.7				ug/L	625728	Standard
	Sn	118	795.0	18.9	**0.0440**	0.023	53.3	ug/L	568	Standard
	Sb	123	215335.2	6.0	**43.2556**	2.906	6.7	ug/L	612	Standard
	Ba	135	125031.8	0.4	**59.6735**	0.233	0.4	ug/L	21	Standard
	Ce	140	66756.7	0.9				ug/L	245	Standard
>	Tb	159	900882.6	0.1				ug/L	950397	Standard
	Ho	165	808.4	8.4				ug/L	7	Standard
	Tl	203	420669.9	0.3	**49.6255**	0.118	0.2	ug/L	15	Standard
	Tl	205	380791.1	1.2	**50.5823**	0.852	1.7	ug/L	13	Standard
	Pb	206	285006.3	0.5	**53.2753**	0.097	0.2	ug/L	264	Standard
	Pb	207	249618.4	0.3	**51.3775**	0.277	0.5	ug/L	222	Standard
	Pb	208	1065809.7	0.5	**53.7118**	0.481	0.9	ug/L	959	Standard
	U	238	362717.7	0.5	**47.6544**	0.373	0.8	ug/L	9	Standard
>	Bi	209	521960.5	0.5				ug/L	552821	Standard

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Na	23	3.3	173.2	**10.3171**	17.861	173.1	mg/L	2	Standard
Mg	24	45.0	11.1	**-0.0059**	0.006	106.3	mg/L	55	Standard
K	39	41.7	36.7	**0.0338**	0.061	179.3	mg/L	28	Standard
Ca	43	31.7	39.7	**0.5190**	1.184	228.2	mg/L	27	Standard
Fe	54	1881.8	1.4	**1.4253**	0.028	2.0	mg/L	147	Standard
Fe	57	691.7	14.6	**1.3919**	0.331	23.7	mg/L	268	Standard
> **Sc-1**	45	39865.7	0.5				mg/L	41174	Standard
Cl	35	69700.6	0.3				ug/L	69550	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	2040.1	6.7				ug/L	1950	Standard
P	31	8364.0	2.5				ug/L	21156	Standard
S	34	3095.3	6.1				ug/L	3419	Standard
Sr	88	78.3	13.3				ug/L	72	Standard
C	12	143.3	45.4				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	76.7	27.2				mg/L	17	Standard
Dy	164	1201.3	2.6				mg/L	16	Standard
Ho-1	165	808.4	8.4				mg/L	7	Standard
Er	166	740.0	7.2				mg/L	7	Standard
I	127	33642.3	3.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.859	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.039	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145102PS WG575057-01
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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.283
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.418
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 18:29:10
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	58021.1	45.4				ug/L	76456	Standard
	Be	9	6020.3	96.8	**8.3334**	6.673	80.1	ug/L	20	Standard
	Al	27	1011614.4	93.0	**9.3377**	7.369	78.9	ug/L	1307	Standard
	Sc	45	36951.3	31.6				ug/L	41174	Standard
	Ti	47	4070.2	92.8	**14.0397**	11.313	80.6	ug/L	27	Standard
	V	51	57472.3	77.9	**8.2250**	6.608	80.3	ug/L	1434	Standard
	Cr	52	54950.0	85.4	**6.7134**	5.707	85.0	ug/L	7733	Standard
	Cr	53	6442.1	89.3	**6.7802**	5.559	82.0	ug/L	442	Standard
	Mn	55	56604.6	81.4	**8.6926**	6.701	77.1	ug/L	723	Standard
	Co	59	53000.8	82.9	**8.1234**	6.317	77.8	ug/L	217	Standard
	Ni	60	12997.1	88.3	**6.9634**	5.472	78.6	ug/L	304	Standard
	Cu	65	12947.1	88.8	**7.1426**	5.586	78.2	ug/L	181	Standard
	Zn	66	7783.4	89.0	**6.9746**	5.495	78.8	ug/L	215	Standard
>	Ge	72	483616.6	27.5				ug/L	520809	Standard
	As	75	8453.5	94.9	**7.7122**	6.230	80.8	ug/L	-52	Standard
	Se	82	939.4	85.8	**8.3049**	6.310	76.0	ug/L	17	Standard
	Se-1	77	622.0	88.3	**7.4670**	6.184	82.8	ug/L	56	Standard
>	Ga	71	31.7	18.2				mg/L	25	Standard
	Rb	85	225.0	67.8				ug/L	28	Standard
	Y	89	466261.8	17.1				ug/L	447395	Standard
>	Rh	103	20.0	25.0				ug/L	15	Standard
	Mo	98	38601.8	81.6	**16.0710**	14.394	89.6	ug/L	113	Standard
	Ag	107	46584.8	78.1	**8.1335**	7.118	87.5	ug/L	108	Standard
	Cd	111	17137.6	87.9	**9.4386**	9.351	99.1	mg/L	3	Standard
	Cd	114	41205.7	85.8	**9.1450**	8.904	97.4	ug/L	20	Standard
>	In	115	568605.0	21.6				ug/L	625728	Standard
	Sn	118	45202.2	81.7	**8.7560**	8.318	95.0	ug/L	568	Standard
	Sb	123	37304.6	74.8	**8.9935**	7.626	84.8	ug/L	612	Standard
	Ba	135	15451.6	84.3	**8.9549**	8.599	96.0	ug/L	21	Standard
	Ce	140	933.4	35.7				ug/L	245	Standard
>	Tb	159	834241.1	25.5				ug/L	950397	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	59816.1	84.3	**8.9067**	8.400	94.3	ug/L	15	Standard
	Tl	205	54932.9	85.7	**9.2244**	8.777	95.1	ug/L	13	Standard
	Pb	206	36885.4	75.9	**8.5933**	7.372	85.8	ug/L	264	Standard
	Pb	207	34161.2	77.5	**8.7804**	7.649	87.1	ug/L	222	Standard
	Pb	208	153924.2	83.6	**9.7508**	9.146	93.8	ug/L	959	Standard
	U	238	54480.0	85.8	**9.0581**	8.618	95.1	ug/L	9	Standard
>	Bi	209	483651.3	25.0				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	588.3	82.1	**0.7880**	0.634	80.5	mg/L	55	Standard
K	39	178.3	67.8	**0.7306**	0.604	82.7	mg/L	28	Standard
Ca	43	45.0	40.1	**2.8887**	3.750	129.8	mg/L	27	Standard
Fe	54	989.8	78.7	**0.8883**	0.763	85.9	mg/L	147	Standard
Fe	57	551.7	36.3	**1.2806**	1.046	81.6	mg/L	268	Standard
> **Sc-1**	45	36951.3	31.6				mg/L	41174	Standard
Cl	35	32002.2	14.3				ug/L	69550	Standard
Kr	83	3.3	75.5				ug/L	1	Standard
Br	81	793.4	7.2				ug/L	1950	Standard
P	31	12486.0	48.7				ug/L	21156	Standard
S	34	1356.7	20.0				ug/L	3419	Standard
Sr	88	81.7	21.5				ug/L	72	Standard
C	12	106.7	35.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	246.7	83.3				mg/L	17	Standard
Dy	164	12.1	44.0				mg/L	16	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	26.7	86.6				mg/L	7	Standard
I	127	4540.7	35.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	16.667		
Al	27	18.675		
Sc	45			
Ti	47	14.040		
V	51	16.450		
Cr	52	13.427		
Cr	53			
Mn	55	17.385		
Co	59	16.247		
Ni	60	13.927		
Cu	65	14.285		
Zn	66	13.949		
> Ge	72		92.859	
As	75	15.424		
Se	82	16.610		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	16.071		
Ag	107	16.267		
Cd	111	18.877		
Cd	114			
In	115		90.871	
Sn	118	17.512		
Sb	123	17.987		
Ba	135	17.910		
Ce	140			
Tb	159			
Ho	165			
Tl	203	17.813		
Tl	205			
Pb	206			
Pb	207			
Pb	208	19.502		
U	238	18.116		
Bi	209		87.488	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	
QC Std 6	Ti	47	

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QC Std 6	V	51
QC Std 6	Cr	52
QC Std 6	Mn	55
QC Std 6	Co	59
QC Std 6	Ni	60
QC Std 6	Cu	65
QC Std 6	Zn	66
QC Std 6	As	75
QC Std 6	Se	82
QC Std 6	Mo	98
QC Std 6	Ag	107
QC Std 6	Cd	111
QC Std 6	Sb	123
QC Std 6	Ba	135
QC Std 6	Tl	203
QC Std 6	Pb	208
QC Std 6	U	238

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 18:32:22
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73071.2	5.8				ug/L	76456	Standard
	Be	9	8.3	34.6	**-0.0120**	0.003	24.3	ug/L	20	Standard
	Al	27	2066.8	22.2	**0.0025**	0.003	126.6	ug/L	1307	Standard
	Sc	45	38902.0	12.0				ug/L	41174	Standard
	Ti	47	28.7	14.1	**0.0029**	0.006	212.7	ug/L	27	Standard
	V	51	892.2	10.9	**-0.0904**	0.007	8.2	ug/L	1434	Standard
	Cr	52	3594.8	10.0	**-0.5264**	0.046	8.8	ug/L	7733	Standard
	Cr	53	233.3	24.1	**-0.1899**	0.023	11.9	ug/L	442	Standard
	Mn	55	789.0	24.3	**0.0021**	0.023	1087.1	ug/L	723	Standard
	Co	59	303.0	15.4	**0.0101**	0.007	68.9	ug/L	217	Standard
	Ni	60	205.0	9.3	**-0.0541**	0.015	27.0	ug/L	304	Standard
	Cu	65	106.0	5.3	**-0.0215**	0.011	50.6	ug/L	181	Standard
	Zn	66	184.7	6.5	**-0.0287**	0.024	81.9	ug/L	215	Standard
>	Ge	72	527063.8	18.3				ug/L	520809	Standard
	As	75	45.7	91.0	**0.0818**	0.037	44.8	ug/L	-52	Standard
	Se	82	44.8	44.7	**0.2236**	0.160	71.7	ug/L	17	Standard
	Se-1	77	43.0	11.6	**-0.1831**	0.048	26.1	ug/L	56	Standard
>	Ga	71	36.7	7.9				mg/L	25	Standard
	Rb	85	58.3	40.5				ug/L	28	Standard
	Y	89	504597.8	24.2				ug/L	447395	Standard
>	Rh	103	18.3	83.3				ug/L	15	Standard
	Mo	98	262.6	10.7	**0.0552**	0.011	19.4	ug/L	113	Standard
	Ag	107	185.3	19.2	**0.0107**	0.005	48.4	ug/L	108	Standard
	Cd	111	28.5	36.7	**0.0089**	0.004	43.7	mg/L	3	Standard
	Cd	114	81.6	56.2	**0.0129**	0.006	47.4	ug/L	20	Standard
>	In	115	700695.8	22.4				ug/L	625728	Standard
	Sn	118	6341.5	38.7	**0.7820**	0.237	30.3	ug/L	568	Standard
	Sb	123	763.9	43.6	**0.0944**	0.040	42.0	ug/L	612	Standard
	Ba	135	62.7	16.0	**0.0082**	0.003	42.5	ug/L	21	Standard
	Ce	140	145.0	79.5				ug/L	245	Standard
>	Tb	159	1042763.2	15.4				ug/L	950397	Standard
	Ho	165	1.7	173.2				ug/L	7	Standard
	Tl	203	182.0	22.0	**0.0180**	0.002	11.1	ug/L	15	Standard
	Tl	205	148.3	9.7	**0.0076**	0.002	25.0	ug/L	13	Standard
	Pb	206	414.0	16.3	**0.0241**	0.004	18.3	ug/L	264	Standard
	Pb	207	348.0	9.0	**0.0172**	0.006	37.6	ug/L	222	Standard
	Pb	208	1430.4	10.4	**0.0153**	0.006	41.0	ug/L	959	Standard
	U	238	124.7	10.8	**0.0142**	0.002	12.8	ug/L	9	Standard
>	Bi	209	596038.7	14.4				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	26.7	65.8	**-0.0280**	0.021	73.8	mg/L	55	Standard
K	39	30.0	60.1	**-0.0132**	0.067	507.4	mg/L	28	Standard
Ca	43	28.3	10.2	**0.2774**	0.122	44.0	mg/L	27	Standard
Fe	54	104.6	43.7	**-0.0136**	0.033	242.5	mg/L	147	Standard
Fe	57	286.7	7.0	**0.1321**	0.048	36.6	mg/L	268	Standard
Sc-1	45	38902.0	12.0				mg/L	41174	Standard
Cl	35	29524.2	6.8				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	630.0	34.9				ug/L	1950	Standard
P	31	11456.4	38.3				ug/L	21156	Standard
S	34	1375.1	3.3				ug/L	3419	Standard
Sr	88	53.3	37.9				ug/L	72	Standard
C	12	66.7	48.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	77.5				mg/L	17	Standard
Dy	164	13.0	179.6				mg/L	16	Standard
Ho-1	165	1.7	173.2				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	7	Standard
I	127	2638.6	27.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.201	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	111.981	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	107.818	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Se	82	
QC Std 7	Sn	118	

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Method 6020 - Summary Report

Sample ID: L1606145102SDL WG575057-02
Sample Date/Time: Friday, July 01, 2016 18:35:35
Number of Replicates: 3
Autosampler Position: 252
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62174.0	2.2				ug/L	76456	Standard
	Be	9	20.0	25.0	**0.0022**	0.006	269.5	ug/L	20	Standard
	Al	27	84546.9	0.4	**0.5973**	0.011	1.9	ug/L	1307	Standard
	Sc	45	38149.7	3.1				ug/L	41174	Standard
	Ti	47	483.3	4.9	**1.4725**	0.081	5.5	ug/L	27	Standard
	V	51	4248.5	1.3	**0.3438**	0.006	1.8	ug/L	1434	Standard
	Cr	52	8109.2	1.0	**0.0820**	0.013	16.2	ug/L	7733	Standard
	Cr	53	496.7	23.7	**0.0992**	0.125	126.0	ug/L	442	Standard
	Mn	55	78567.9	0.9	**10.7900**	0.016	0.2	ug/L	723	Standard
	Co	59	1117.0	0.8	**0.1236**	0.000	0.1	ug/L	217	Standard
	Ni	60	775.4	3.9	**0.2391**	0.018	7.4	ug/L	304	Standard
	Cu	65	1369.4	4.4	**0.6302**	0.035	5.5	ug/L	181	Standard
	Zn	66	5157.9	1.7	**4.2377**	0.083	2.0	ug/L	215	Standard
>	**Ge**	72	496310.3	0.7				ug/L	520809	Standard
	As	75	145.9	13.8	**0.1691**	0.016	9.6	ug/L	-52	Standard
	Se	82	21.4	35.8	**0.0511**	0.064	125.1	ug/L	17	Standard
	Se-1	77	46.7	8.7	**-0.1116**	0.053	47.6	ug/L	56	Standard
>	**Ga**	71	255.0	16.8				mg/L	25	Standard
	Rb	85	2703.6	4.1				ug/L	28	Standard
	Y	89	417509.6	1.1				ug/L	447395	Standard
>	**Rh**	103	16.7	69.3				ug/L	15	Standard
	Mo	98	345.0	36.3	**0.1002**	0.045	45.1	ug/L	113	Standard
	Ag	107	125.3	22.2	**0.0061**	0.004	68.7	ug/L	108	Standard
	Cd	111	34.3	46.4	**0.0139**	0.008	54.2	mg/L	3	Standard
	Cd	114	42.7	17.1	**0.0082**	0.001	17.1	ug/L	20	Standard
>	**In**	115	575196.5	0.1				ug/L	625728	Standard
	Sn	118	706.7	42.9	**0.0352**	0.051	145.6	ug/L	568	Standard
	Sb	123	527.1	13.9	**0.0772**	0.015	20.0	ug/L	612	Standard
	Ba	135	4163.9	5.4	**2.0642**	0.113	5.5	ug/L	21	Standard
	Ce	140	7787.1	30.7				ug/L	245	Standard
>	**Tb**	159	864381.3	0.7				ug/L	950397	Standard
	Ho	165	85.0	63.6				ug/L	7	Standard
	Tl	203	83.3	41.3	**0.0096**	0.004	45.0	ug/L	15	Standard
	Tl	205	73.3	55.1	**0.0005**	0.006	1188.2	ug/L	13	Standard
	Pb	206	2545.5	9.1	**0.4551**	0.047	10.4	ug/L	264	Standard
	Pb	207	2088.8	9.3	**0.4046**	0.043	10.7	ug/L	222	Standard
	Pb	208	9232.8	9.4	**0.4395**	0.047	10.7	ug/L	959	Standard
	U	238	222.7	20.7	**0.0304**	0.006	21.2	ug/L	9	Standard
>	**Bi**	209	498353.7	0.7				ug/L	552821	Standard

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Na	23	1.7	173.2	**5.2196**	9.032	173.0	mg/L	2	Standard
Mg	24	50.0	30.0	**0.0033**	0.021	637.4	mg/L	55	Standard
K	39	31.7	32.9	**-0.0007**	0.041	5467.5	mg/L	28	Standard
Ca	43	28.3	50.9	**0.3254**	1.410	433.3	mg/L	27	Standard
Fe	54	321.0	6.6	**0.1731**	0.021	12.0	mg/L	147	Standard
Fe	57	343.3	20.8	**0.3318**	0.218	65.6	mg/L	268	Standard
> **Sc-1**	45	38149.7	3.1				mg/L	41174	Standard
Cl	35	66614.8	2.2				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	1683.4	14.0				ug/L	1950	Standard
P	31	6868.2	3.4				ug/L	21156	Standard
S	34	2993.6	2.7				ug/L	3419	Standard
Sr	88	78.3	16.1				ug/L	72	Standard
C	12	60.0					mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	190.0	34.5				mg/L	17	Standard
Dy	164	136.6	41.3				mg/L	16	Standard
Ho-1	165	85.0	63.6				mg/L	7	Standard
Er	166	140.0	70.3				mg/L	7	Standard
I	127	27162.7	3.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		81.320	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.296	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145102SDL WG575057-02
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.924
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.147
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606145103
Sample Date/Time: Friday, July 01, 2016 18:38:46
Number of Replicates: 3
Autosampler Position: 253
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63245.1	2.3				ug/L	76456	Standard
	Be	9	45.0	29.4	**0.0289**	0.015	52.5	ug/L	20	Standard
	Al	27	154217.6	1.4	**1.0792**	0.028	2.6	ug/L	1307	Standard
	Sc	45	38011.0	1.7				ug/L	41174	Standard
	Ti	47	1647.1	2.7	**5.2249**	0.166	3.2	ug/L	27	Standard
	V	51	10217.6	1.1	**1.1067**	0.009	0.8	ug/L	1434	Standard
	Cr	52	13566.7	1.7	**0.7914**	0.021	2.7	ug/L	7733	Standard
	Cr	53	1203.4	4.0	**0.8334**	0.047	5.6	ug/L	442	Standard
	Mn	55	179485.2	0.5	**24.7976**	0.092	0.4	ug/L	723	Standard
	Co	59	2042.5	2.9	**0.2506**	0.009	3.7	ug/L	217	Standard
	Ni	60	1701.1	1.2	**0.7078**	0.006	0.9	ug/L	304	Standard
	Cu	65	2602.9	0.6	**1.2654**	0.012	0.9	ug/L	181	Standard
	Zn	66	13566.1	2.3	**11.4481**	0.299	2.6	ug/L	215	Standard
>	**Ge**	72	495954.1	0.5				ug/L	520809	Standard
	As	75	526.1	8.4	**0.4926**	0.036	7.4	ug/L	-52	Standard
	Se	82	19.2	20.2	**0.0327**	0.031	96.0	ug/L	17	Standard
	Se-1	77	60.7	19.3	**0.0602**	0.141	233.6	ug/L	56	Standard
>	**Ga**	71	858.4	5.0				mg/L	25	Standard
	Rb	85	6271.3	6.6				ug/L	28	Standard
	Y	89	419752.0	1.1				ug/L	447395	Standard
>	**Rh**	103	16.7	45.8				ug/L	15	Standard
	Mo	98	384.6	7.0	**0.1144**	0.010	8.4	ug/L	113	Standard
	Ag	107	109.3	5.4	**0.0037**	0.001	23.4	ug/L	108	Standard
	Cd	111	94.6	7.9	**0.0424**	0.003	8.2	mg/L	3	Standard
	Cd	114	251.8	5.8	**0.0481**	0.003	5.6	ug/L	20	Standard
>	**In**	115	575203.1	0.2				ug/L	625728	Standard
	Sn	118	680.0	22.3	**0.0307**	0.025	82.8	ug/L	568	Standard
	Sb	123	333.6	22.9	**0.0365**	0.016	43.9	ug/L	612	Standard
	Ba	135	10023.6	1.9	**4.9942**	0.091	1.8	ug/L	21	Standard
	Ce	140	48280.1	1.0				ug/L	245	Standard
>	**Tb**	159	860542.4	0.9				ug/L	950397	Standard
	Ho	165	373.3	17.4				ug/L	7	Standard
	Tl	203	98.7	6.5	**0.0114**	0.001	7.5	ug/L	15	Standard
	Tl	205	111.7	22.1	**0.0057**	0.003	56.6	ug/L	13	Standard
	Pb	206	31345.7	1.0	**6.0875**	0.078	1.3	ug/L	264	Standard
	Pb	207	25979.9	0.2	**5.5497**	0.058	1.0	ug/L	222	Standard
	Pb	208	113055.9	0.8	**5.9143**	0.107	1.8	ug/L	959	Standard
	U	238	480.3	2.8	**0.0657**	0.001	2.2	ug/L	9	Standard
>	**Bi**	209	499251.2	1.0				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	46.7	6.2	**-0.0011**	0.005	417.9	mg/L	55	Standard
K	39	40.0	50.0	**0.0355**	0.084	236.7	mg/L	28	Standard
Ca	43	20.0	43.3	**-0.4832**	0.857	177.3	mg/L	27	Standard
Fe	54	979.0	3.0	**0.7328**	0.021	2.8	mg/L	147	Standard
Fe	57	456.7	4.4	**0.7168**	0.091	12.6	mg/L	268	Standard
Sc-1	45	38011.0	1.7				mg/L	41174	Standard
Cl	35	67610.5	0.8				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	1716.8	12.9				ug/L	1950	Standard
P	31	8008.8	5.2				ug/L	21156	Standard
S	34	2928.6	6.6				ug/L	3419	Standard
Sr	88	71.7	26.4				ug/L	72	Standard
C	12	106.7	54.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	68.6				mg/L	17	Standard
Dy	164	644.2	14.1				mg/L	16	Standard
Ho-1	165	373.3	17.4				mg/L	7	Standard
Er	166	400.0	22.2				mg/L	7	Standard
I	127	30482.3	1.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		82.721	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.228	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.925
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.310
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145104
Sample Date/Time: Friday, July 01, 2016 18:41:58
Number of Replicates: 3
Autosampler Position: 254
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63385.7	2.2				ug/L	76456	Standard
	Be	9	50.0	26.5	**0.0338**	0.013	38.3	ug/L	20	Standard
	Al	27	725235.3	1.5	**5.1021**	0.166	3.3	ug/L	1307	Standard
	Sc	45	39148.9	2.8				ug/L	41174	Standard
	Ti	47	1767.4	1.7	**5.5568**	0.163	2.9	ug/L	27	Standard
	V	51	9435.8	2.3	**0.9951**	0.038	3.8	ug/L	1434	Standard
	Cr	52	13141.4	0.9	**0.7193**	0.019	2.6	ug/L	7733	Standard
	Cr	53	1133.4	1.8	**0.7491**	0.025	3.3	ug/L	442	Standard
	Mn	55	184948.0	0.3	**25.3023**	0.378	1.5	ug/L	723	Standard
	Co	59	2891.6	3.9	**0.3629**	0.009	2.4	ug/L	217	Standard
	Ni	60	1981.8	1.1	**0.8399**	0.007	0.8	ug/L	304	Standard
	Cu	65	2972.3	0.4	**1.4404**	0.025	1.7	ug/L	181	Standard
	Zn	66	14124.9	1.1	**11.8061**	0.091	0.8	ug/L	215	Standard
>	**Ge**	72	500981.4	1.8				ug/L	520809	Standard
	As	75	525.3	4.0	**0.4878**	0.024	5.0	ug/L	-52	Standard
	Se	82	27.2	11.1	**0.0974**	0.029	29.5	ug/L	17	Standard
	Se-1	77	60.0	10.4	**0.0461**	0.088	191.5	ug/L	56	Standard
>	**Ga**	71	815.0	2.8				mg/L	25	Standard
	Rb	85	6224.6	2.3				ug/L	28	Standard
	Y	89	425374.4	1.5				ug/L	447395	Standard
>	**Rh**	103	25.0	40.0				ug/L	15	Standard
	Mo	98	520.6	8.2	**0.1605**	0.013	8.3	ug/L	113	Standard
	Ag	107	111.7	7.6	**0.0038**	0.001	37.5	ug/L	108	Standard
	Cd	111	92.7	8.2	**0.0408**	0.003	7.6	mg/L	3	Standard
	Cd	114	200.3	11.6	**0.0377**	0.005	12.6	ug/L	20	Standard
>	**In**	115	583569.6	1.1				ug/L	625728	Standard
	Sn	118	673.3	18.0	**0.0279**	0.019	69.1	ug/L	568	Standard
	Sb	123	316.8	22.4	**0.0319**	0.014	44.3	ug/L	612	Standard
	Ba	135	10430.3	1.6	**5.1226**	0.027	0.5	ug/L	21	Standard
	Ce	140	51980.7	2.3				ug/L	245	Standard
>	**Tb**	159	866344.8	1.0				ug/L	950397	Standard
	Ho	165	438.3	11.9				ug/L	7	Standard
	Tl	203	128.0	6.4	**0.0149**	0.001	5.7	ug/L	15	Standard
	Tl	205	108.3	13.3	**0.0051**	0.002	35.3	ug/L	13	Standard
	Pb	206	26433.4	1.2	**5.0710**	0.132	2.6	ug/L	264	Standard
	Pb	207	22121.5	0.6	**4.6673**	0.113	2.4	ug/L	222	Standard
	Pb	208	95760.1	0.8	**4.9468**	0.074	1.5	ug/L	959	Standard
	U	238	579.3	5.3	**0.0785**	0.005	6.6	ug/L	9	Standard
>	**Bi**	209	504799.5	1.9				ug/L	552821	Standard

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Na	23	1.7	173.2	**5.2809**	9.138	173.0	mg/L	2	Standard
Mg	24	46.7	27.0	**-0.0030**	0.014	461.6	mg/L	55	Standard
K	39	46.7	6.2	**0.0571**	0.014	24.3	mg/L	28	Standard
Ca	43	46.7	16.4	**2.0216**	0.845	41.8	mg/L	27	Standard
Fe	54	948.7	5.1	**0.6833**	0.021	3.0	mg/L	147	Standard
Fe	57	496.7	2.9	**0.8012**	0.035	4.4	mg/L	268	Standard
> **Sc-1**	45	39148.9	2.8				mg/L	41174	Standard
Cl	35	69866.8	2.4				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	1733.4	3.8				ug/L	1950	Standard
P	31	8088.8	1.5				ug/L	21156	Standard
S	34	3277.0	4.5				ug/L	3419	Standard
Sr	88	95.0	27.9				ug/L	72	Standard
C	12	93.3	49.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	17	Standard
Dy	164	709.7	12.9				mg/L	16	Standard
Ho-1	165	438.3	11.9				mg/L	7	Standard
Er	166	493.3	16.5				mg/L	7	Standard
I	127	31300.6	1.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		82.905	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.193	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.263
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.313
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606145105
Sample Date/Time: Friday, July 01, 2016 18:45:09
Number of Replicates: 3
Autosampler Position: 255
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64614.2	2.4				ug/L	76456	Standard
	Be	9	185.0	11.8	**0.1761**	0.027	15.5	ug/L	20	Standard
	Al	27	102955.3	1.3	**0.7016**	0.016	2.3	ug/L	1307	Standard
	Sc	45	38894.9	1.6				ug/L	41174	Standard
	Ti	47	5095.2	2.9	**16.0563**	0.595	3.7	ug/L	27	Standard
	V	51	12093.5	2.4	**1.3198**	0.050	3.8	ug/L	1434	Standard
	Cr	52	18515.6	1.7	**1.3928**	0.062	4.4	ug/L	7733	Standard
	Cr	53	1865.1	14.6	**1.4862**	0.264	17.8	ug/L	442	Standard
	Mn	55	32921.4	0.8	**4.3867**	0.071	1.6	ug/L	723	Standard
	Co	59	1608.8	2.8	**0.1873**	0.008	4.3	ug/L	217	Standard
	Ni	60	1860.4	4.4	**0.7722**	0.043	5.6	ug/L	304	Standard
	Cu	65	2193.8	2.2	**1.0354**	0.028	2.7	ug/L	181	Standard
	Zn	66	9716.8	1.5	**8.0047**	0.192	2.4	ug/L	215	Standard
>	**Ge**	72	504722.0	1.0				ug/L	520809	Standard
	As	75	1470.5	3.8	**1.2746**	0.057	4.4	ug/L	-52	Standard
	Se	82	28.8	14.7	**0.1088**	0.036	32.9	ug/L	17	Standard
	Se-1	77	55.7	13.5	**-0.0132**	0.085	641.5	ug/L	56	Standard
>	**Ga**	71	1173.4	4.0				mg/L	25	Standard
	Rb	85	5657.7	5.6				ug/L	28	Standard
	Y	89	430091.6	2.7				ug/L	447395	Standard
>	**Rh**	103	10.0	100.0				ug/L	15	Standard
	Mo	98	330.9	6.7	**0.0921**	0.006	6.8	ug/L	113	Standard
	Ag	107	127.3	16.8	**0.0060**	0.003	57.0	ug/L	108	Standard
	Cd	111	132.1	1.6	**0.0585**	0.002	2.8	mg/L	3	Standard
	Cd	114	337.6	10.3	**0.0629**	0.007	11.3	ug/L	20	Standard
>	**In**	115	589920.6	1.4				ug/L	625728	Standard
	Sn	118	773.4	25.8	**0.0430**	0.031	72.7	ug/L	568	Standard
	Sb	123	374.2	12.0	**0.0430**	0.008	19.0	ug/L	612	Standard
	Ba	135	10208.8	2.5	**4.9590**	0.061	1.2	ug/L	21	Standard
	Ce	140	28101.1	3.0				ug/L	245	Standard
>	**Tb**	159	866375.5	1.2				ug/L	950397	Standard
	Ho	165	575.0	13.6				ug/L	7	Standard
	Tl	203	486.0	6.3	**0.0582**	0.003	5.7	ug/L	15	Standard
	Tl	205	386.7	8.6	**0.0431**	0.004	8.7	ug/L	13	Standard
	Pb	206	15320.4	2.2	**2.9057**	0.025	0.9	ug/L	264	Standard
	Pb	207	12702.3	2.1	**2.6467**	0.028	1.1	ug/L	222	Standard
	Pb	208	55482.0	1.8	**2.8316**	0.013	0.4	ug/L	959	Standard
	U	238	430.7	1.5	**0.0580**	0.000	0.2	ug/L	9	Standard
>	**Bi**	209	507193.8	1.5				ug/L	552821	Standard

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Na	23	1.7	173.2	**5.2063**	9.009	173.0	mg/L	2	Standard
Mg	24	56.7	27.0	**0.0097**	0.018	185.7	mg/L	55	Standard
K	39	65.0	33.5	**0.1320**	0.085	64.4	mg/L	28	Standard
Ca	43	21.7	13.3	**-0.3705**	0.255	68.8	mg/L	27	Standard
Fe	54	1363.7	6.4	**1.0335**	0.073	7.1	mg/L	147	Standard
Fe	57	556.7	6.9	**1.0056**	0.095	9.5	mg/L	268	Standard
Sc-1	45	38894.9	1.6				mg/L	41174	Standard
Cl	35	69609.5	0.8				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	1780.1	1.7				ug/L	1950	Standard
P	31	8205.6	2.3				ug/L	21156	Standard
S	34	3335.4	2.7				ug/L	3419	Standard
Sr	88	61.7	20.4				ug/L	72	Standard
C	12	93.3	6.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	50.0				mg/L	17	Standard
Dy	164	880.2	8.3				mg/L	16	Standard
Ho-1	165	575.0	13.6				mg/L	7	Standard
Er	166	553.3	3.8				mg/L	7	Standard
I	127	31464.3	3.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		84.512	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.911	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.277
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.747
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606145106 WG574521-02
Sample Date/Time: Friday, July 01, 2016 18:48:21
Number of Replicates: 3
Autosampler Position: 256
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64025.1	3.2				ug/L	76456	Standard
	Be	9	150.0	10.0	**0.1401**	0.015	10.9	ug/L	20	Standard
	Al	27	373954.4	3.8	**2.6005**	0.138	5.3	ug/L	1307	Standard
	Sc	45	39992.7	0.8				ug/L	41174	Standard
	Ti	47	2911.6	0.9	**9.0743**	0.125	1.4	ug/L	27	Standard
	V	51	51458.1	1.3	**6.2169**	0.098	1.6	ug/L	1434	Standard
	Cr	52	21030.6	1.9	**1.6951**	0.060	3.5	ug/L	7733	Standard
	Cr	53	2078.5	6.6	**1.6910**	0.147	8.7	ug/L	442	Standard
	Mn	55	214722.6	3.4	**28.9695**	1.071	3.7	ug/L	723	Standard
	Co	59	3170.7	6.3	**0.3948**	0.028	7.2	ug/L	217	Standard
	Ni	60	4965.8	2.8	**2.2998**	0.080	3.5	ug/L	304	Standard
	Cu	65	11632.1	2.0	**5.7677**	0.126	2.2	ug/L	181	Standard
	Zn	66	12643.6	1.6	**10.3959**	0.197	1.9	ug/L	215	Standard
>	**Ge**	72	508214.5	0.5				ug/L	520809	Standard
	As	75	1760.7	0.9	**1.5067**	0.007	0.5	ug/L	-52	Standard
	Se	82	70.2	4.5	**0.4430**	0.026	5.8	ug/L	17	Standard
	Se-1	77	108.3	3.0	**0.6142**	0.044	7.2	ug/L	56	Standard
>	**Ga**	71	1403.4	6.8				mg/L	25	Standard
	Rb	85	5152.5	5.6				ug/L	28	Standard
	Y	89	465204.1	0.9				ug/L	447395	Standard
>	**Rh**	103	8.3	34.6				ug/L	15	Standard
	Mo	98	986.2	8.1	**0.3241**	0.024	7.4	ug/L	113	Standard
	Ag	107	197.7	29.4	**0.0165**	0.008	50.2	ug/L	108	Standard
	Cd	111	516.3	5.7	**0.2371**	0.011	4.7	mg/L	3	Standard
	Cd	114	1344.3	1.8	**0.2519**	0.006	2.5	ug/L	20	Standard
>	**In**	115	585874.6	1.3				ug/L	625728	Standard
	Sn	118	588.3	39.7	**0.0131**	0.038	286.1	ug/L	568	Standard
	Sb	123	350.0	28.7	**0.0385**	0.020	51.5	ug/L	612	Standard
	Ba	135	28617.3	1.6	**14.0306**	0.052	0.4	ug/L	21	Standard
	Ce	140	147578.6	1.0				ug/L	245	Standard
>	**Tb**	159	879044.3	0.3				ug/L	950397	Standard
	Ho	165	3460.4	5.6				ug/L	7	Standard
	Tl	203	284.7	28.0	**0.0338**	0.010	29.0	ug/L	15	Standard
	Tl	205	251.7	41.0	**0.0246**	0.014	57.8	ug/L	13	Standard
	Pb	206	17853.2	2.3	**3.3893**	0.091	2.7	ug/L	264	Standard
	Pb	207	14882.6	2.2	**3.1053**	0.081	2.6	ug/L	222	Standard
	Pb	208	65337.9	2.2	**3.3392**	0.088	2.6	ug/L	959	Standard
	U	238	2254.5	5.6	**0.3042**	0.018	6.0	ug/L	9	Standard
>	**Bi**	209	507833.7	0.4				ug/L	552821	Standard

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Na	23	1.7	173.2	**5.0936**	8.814	173.0	mg/L	2	Standard
Mg	24	113.3	21.8	**0.0760**	0.029	37.9	mg/L	55	Standard
K	39	38.3	27.2	**0.0199**	0.040	200.6	mg/L	28	Standard
Ca	43	53.3	27.1	**2.5349**	1.339	52.8	mg/L	27	Standard
Fe	54	2059.6	7.3	**1.5638**	0.117	7.5	mg/L	147	Standard
Fe	57	870.0	4.0	**1.9479**	0.099	5.1	mg/L	268	Standard
> **Sc-1**	45	39992.7	0.8				mg/L	41174	Standard
Cl	35	70901.6	2.0				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	2260.2	4.2				ug/L	1950	Standard
P	31	8212.2	3.0				ug/L	21156	Standard
S	34	3600.4	1.9				ug/L	3419	Standard
Sr	88	90.0	9.6				ug/L	72	Standard
C	12	176.7	19.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	40.0				mg/L	17	Standard
Dy	164	5100.9	5.6				mg/L	16	Standard
Ho-1	165	3460.4	5.6				mg/L	7	Standard
Er	166	3200.3	6.8				mg/L	7	Standard
I	127	34541.0	3.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		83.741	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.582	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.631
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.862
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606145107
Sample Date/Time: Friday, July 01, 2016 18:51:32
Number of Replicates: 3
Autosampler Position: 257
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64661.0	1.8				ug/L	76456	Standard
	Be	9	435.0	25.2	**0.4383**	0.108	24.7	ug/L	20	Standard
	Al	27	688124.2	2.3	**4.7442**	0.162	3.4	ug/L	1307	Standard
	Sc	45	39658.5	2.4				ug/L	41174	Standard
	Ti	47	13864.7	2.7	**43.2019**	1.047	2.4	ug/L	27	Standard
	V	51	37809.2	1.4	**4.4801**	0.052	1.2	ug/L	1434	Standard
	Cr	52	41323.6	2.8	**4.2278**	0.133	3.1	ug/L	7733	Standard
	Cr	53	4789.1	2.3	**4.4030**	0.102	2.3	ug/L	442	Standard
	Mn	55	173827.6	1.4	**23.2563**	0.280	1.2	ug/L	723	Standard
	Co	59	5908.8	1.9	**0.7552**	0.015	2.0	ug/L	217	Standard
	Ni	60	5550.3	1.2	**2.5679**	0.031	1.2	ug/L	304	Standard
	Cu	65	7217.7	3.4	**3.5237**	0.120	3.4	ug/L	181	Standard
	Zn	66	24798.3	1.6	**20.4085**	0.308	1.5	ug/L	215	Standard
>	**Ge**	72	512004.2	0.3				ug/L	520809	Standard
	As	75	8113.7	1.3	**6.7304**	0.082	1.2	ug/L	-52	Standard
	Se	82	47.8	17.9	**0.2581**	0.069	26.7	ug/L	17	Standard
	Se-1	77	78.3	7.5	**0.2474**	0.068	27.6	ug/L	56	Standard
>	**Ga**	71	2850.3	1.2				mg/L	25	Standard
	Rb	85	22646.9	3.8				ug/L	28	Standard
	Y	89	456860.0	1.6				ug/L	447395	Standard
>	**Rh**	103	15.0	57.7				ug/L	15	Standard
	Mo	98	1709.2	2.3	**0.5713**	0.010	1.8	ug/L	113	Standard
	Ag	107	176.7	8.5	**0.0131**	0.002	17.8	ug/L	108	Standard
	Cd	111	527.4	1.5	**0.2390**	0.005	2.0	mg/L	3	Standard
	Cd	114	1273.9	8.3	**0.2354**	0.018	7.7	ug/L	20	Standard
>	**In**	115	594063.6	0.5				ug/L	625728	Standard
	Sn	118	725.0	18.7	**0.0344**	0.022	63.4	ug/L	568	Standard
	Sb	123	399.2	21.2	**0.0476**	0.017	35.7	ug/L	612	Standard
	Ba	135	25921.5	1.4	**12.5319**	0.140	1.1	ug/L	21	Standard
	Ce	140	84609.0	2.8				ug/L	245	Standard
>	**Tb**	159	884122.7	1.5				ug/L	950397	Standard
	Ho	165	1811.8	3.2				ug/L	7	Standard
	Tl	203	2382.2	2.0	**0.2851**	0.004	1.5	ug/L	15	Standard
	Tl	205	2155.2	0.8	**0.2815**	0.002	0.8	ug/L	13	Standard
	Pb	206	34780.5	0.5	**6.5761**	0.037	0.6	ug/L	264	Standard
	Pb	207	29105.6	0.4	**6.0542**	0.048	0.8	ug/L	222	Standard
	Pb	208	126449.0	1.6	**6.4404**	0.086	1.3	ug/L	959	Standard
	U	238	1711.1	3.8	**0.2285**	0.010	4.3	ug/L	9	Standard
>	**Bi**	209	513045.7	0.5				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	66.7	21.7	**0.0208**	0.018	87.5	mg/L	55	Standard
K	39	66.7	33.8	**0.1333**	0.086	64.5	mg/L	28	Standard
Ca	43	33.3	8.7	**0.6944**	0.305	44.0	mg/L	27	Standard
Fe	54	5014.4	0.7	**3.9857**	0.129	3.2	mg/L	147	Standard
Fe	57	1586.7	5.6	**4.2576**	0.247	5.8	mg/L	268	Standard
> **Sc-1**	45	39658.5	2.4				mg/L	41174	Standard
Cl	35	72080.4	1.0				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	1970.1	9.5				ug/L	1950	Standard
P	31	8810.9	5.8				ug/L	21156	Standard
S	34	3717.1	6.6				ug/L	3419	Standard
Sr	88	71.7	22.4				ug/L	72	Standard
C	12	120.0	16.7				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	43.3	13.3				mg/L	17	Standard
Dy	164	2375.7	6.5				mg/L	16	Standard
Ho-1	165	1811.8	3.2				mg/L	7	Standard
Er	166	1693.4	3.3				mg/L	7	Standard
I	127	32022.1	0.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		84.573	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.309	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.940
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.805
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606145108
Sample Date/Time: Friday, July 01, 2016 18:54:44
Number of Replicates: 3
Autosampler Position: 258
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65516.4	2.1				ug/L	76456	Standard
	Be	9	508.3	16.0	**0.5110**	0.092	17.9	ug/L	20	Standard
	Al	27	800380.4	1.8	**5.4489**	0.215	3.9	ug/L	1307	Standard
	Sc	45	41087.3	0.8				ug/L	41174	Standard
	Ti	47	14067.5	1.7	**43.1737**	0.244	0.6	ug/L	27	Standard
	V	51	35953.7	1.5	**4.1835**	0.016	0.4	ug/L	1434	Standard
	Cr	52	58594.1	1.0	**6.2897**	0.017	0.3	ug/L	7733	Standard
	Cr	53	6973.3	2.0	**6.4961**	0.144	2.2	ug/L	442	Standard
	Mn	55	180922.6	1.7	**23.8431**	0.175	0.7	ug/L	723	Standard
	Co	59	6047.5	0.4	**0.7616**	0.011	1.5	ug/L	217	Standard
	Ni	60	5785.8	2.5	**2.6404**	0.042	1.6	ug/L	304	Standard
	Cu	65	5630.4	0.4	**2.6905**	0.031	1.2	ug/L	181	Standard
	Zn	66	23391.7	1.5	**18.9480**	0.094	0.5	ug/L	215	Standard
>	Ge	72	519833.8	1.1				ug/L	520809	Standard
	As	75	6871.0	0.9	**5.6213**	0.013	0.2	ug/L	-52	Standard
	Se	82	36.9	12.8	**0.1662**	0.040	24.4	ug/L	17	Standard
	Se-1	77	75.7	12.8	**0.2017**	0.109	53.9	ug/L	56	Standard
>	Ga	71	2690.2	10.4				mg/L	25	Standard
	Rb	85	22987.4	0.8				ug/L	28	Standard
	Y	89	454979.6	1.6				ug/L	447395	Standard
>	Rh	103	13.3	78.1				ug/L	15	Standard
	Mo	98	1493.9	2.8	**0.4956**	0.012	2.5	ug/L	113	Standard
	Ag	107	175.0	7.7	**0.0128**	0.002	15.5	ug/L	108	Standard
	Cd	111	498.3	4.3	**0.2253**	0.011	4.8	mg/L	3	Standard
	Cd	114	1246.2	5.5	**0.2300**	0.012	5.2	ug/L	20	Standard
>	In	115	594885.0	1.0				ug/L	625728	Standard
	Sn	118	763.4	27.5	**0.0404**	0.033	82.5	ug/L	568	Standard
	Sb	123	358.6	20.7	**0.0392**	0.014	36.9	ug/L	612	Standard
	Ba	135	27274.9	0.9	**13.1693**	0.072	0.5	ug/L	21	Standard
	Ce	140	89319.2	2.1				ug/L	245	Standard
>	Tb	159	880456.6	1.2				ug/L	950397	Standard
	Ho	165	2008.5	5.9				ug/L	7	Standard
	Tl	203	2224.8	1.1	**0.2667**	0.002	0.9	ug/L	15	Standard
	Tl	205	2000.1	8.4	**0.2612**	0.026	9.8	ug/L	13	Standard
	Pb	206	30072.5	0.9	**5.6895**	0.126	2.2	ug/L	264	Standard
	Pb	207	25200.3	0.2	**5.2438**	0.069	1.3	ug/L	222	Standard
	Pb	208	108593.2	0.7	**5.5329**	0.068	1.2	ug/L	959	Standard
	U	238	1657.1	2.7	**0.2215**	0.003	1.4	ug/L	9	Standard
>	Bi	209	512295.4	1.3				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	71.7	51.4	**0.0236**	0.043	182.4	mg/L	55	Standard
K	39	88.3	14.2	**0.2082**	0.048	23.2	mg/L	28	Standard
Ca	43	35.0	42.9	**0.7276**	1.340	184.1	mg/L	27	Standard
Fe	54	5032.2	2.8	**3.8559**	0.118	3.1	mg/L	147	Standard
Fe	57	1495.1	12.3	**3.7984**	0.557	14.7	mg/L	268	Standard
Sc-1	45	41087.3	0.8				mg/L	41174	Standard
Cl	35	70479.6	1.8				ug/L	69550	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	1836.8	12.0				ug/L	1950	Standard
P	31	8665.8	3.6				ug/L	21156	Standard
S	34	3460.4	4.7				ug/L	3419	Standard
Sr	88	80.0	18.8				ug/L	72	Standard
C	12	90.0	22.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	20.0				mg/L	17	Standard
Dy	164	2628.5	8.2				mg/L	16	Standard
Ho-1	165	2008.5	5.9				mg/L	7	Standard
Er	166	1706.8	7.3				mg/L	7	Standard
I	127	30609.2	2.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		85.692	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.813	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.071
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.669
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145109S WG574521-07
Sample Date/Time: Friday, July 01, 2016 18:57:55
Number of Replicates: 3
Autosampler Position: 259
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66169.2	2.4				ug/L	76456	Standard
	Be	9	2845.3	1.4	**2.9179**	0.070	2.4	ug/L	20	Standard
	Al	27	402052.1	1.7	**2.7039**	0.037	1.4	ug/L	1307	Standard
	Sc	45	40838.3	0.3				ug/L	41174	Standard
	Ti	47	3598.8	1.2	**10.9719**	0.146	1.3	ug/L	27	Standard
	V	51	79956.8	0.6	**9.5376**	0.034	0.4	ug/L	1434	Standard
	Cr	52	43849.7	0.5	**4.4576**	0.028	0.6	ug/L	7733	Standard
	Cr	53	4982.5	0.8	**4.5178**	0.059	1.3	ug/L	442	Standard
	Mn	55	232874.6	0.3	**30.6911**	0.183	0.6	ug/L	723	Standard
	Co	59	22573.1	0.9	**2.9200**	0.017	0.6	ug/L	217	Standard
	Ni	60	11202.5	1.2	**5.2509**	0.054	1.0	ug/L	304	Standard
	Cu	65	17763.4	0.2	**8.6391**	0.027	0.3	ug/L	181	Standard
	Zn	66	17798.8	0.5	**14.3610**	0.032	0.2	ug/L	215	Standard
>	**Ge**	72	520328.1	0.5				ug/L	520809	Standard
	As	75	5212.0	2.2	**4.2712**	0.111	2.6	ug/L	-52	Standard
	Se	82	460.7	3.7	**3.5240**	0.138	3.9	ug/L	17	Standard
	Se-1	77	349.3	2.1	**3.4060**	0.106	3.1	ug/L	56	Standard
>	**Ga**	71	1643.4	2.5				mg/L	25	Standard
	Rb	85	6298.0	3.7				ug/L	28	Standard
	Y	89	489232.3	1.4				ug/L	447395	Standard
>	**Rh**	103	18.3	15.7				ug/L	15	Standard
	Mo	98	1075.7	0.6	**0.3442**	0.006	1.8	ug/L	113	Standard
	Ag	107	17796.8	1.4	**2.5517**	0.014	0.5	ug/L	108	Standard
	Cd	111	6560.4	0.7	**2.9469**	0.016	0.6	mg/L	3	Standard
	Cd	114	16108.1	2.8	**2.9255**	0.113	3.9	ug/L	20	Standard
>	**In**	115	604614.2	1.1				ug/L	625728	Standard
	Sn	118	576.7	20.9	**0.0084**	0.019	221.8	ug/L	568	Standard
	Sb	123	1529.4	1.9	**0.2726**	0.009	3.4	ug/L	612	Standard
	Ba	135	36016.4	1.8	**17.1151**	0.222	1.3	ug/L	21	Standard
	Ce	140	166971.8	1.4				ug/L	245	Standard
>	**Tb**	159	893545.7	0.7				ug/L	950397	Standard
	Ho	165	3838.8	4.6				ug/L	7	Standard
	Tl	203	21813.4	0.5	**2.5793**	0.005	0.2	ug/L	15	Standard
	Tl	205	20096.7	2.1	**2.6671**	0.046	1.7	ug/L	13	Standard
	Pb	206	33592.2	0.8	**6.2573**	0.064	1.0	ug/L	264	Standard
	Pb	207	28855.8	0.9	**5.9141**	0.073	1.2	ug/L	222	Standard
	Pb	208	125010.5	0.5	**6.2737**	0.013	0.2	ug/L	959	Standard
	U	238	20841.0	0.6	**2.7450**	0.006	0.2	ug/L	9	Standard
>	**Bi**	209	520594.3	0.4				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	78.3	32.1	**0.0321**	0.030	93.3	mg/L	55	Standard
K	39	38.3	30.1	**0.0170**	0.045	263.0	mg/L	28	Standard
Ca	43	36.7	7.9	**0.9069**	0.276	30.5	mg/L	27	Standard
Fe	54	2344.4	2.1	**1.7548**	0.045	2.6	mg/L	147	Standard
Fe	57	823.4	10.1	**1.7471**	0.264	15.1	mg/L	268	Standard
Sc-1	45	40838.3	0.3				mg/L	41174	Standard
Cl	35	72934.5	2.0				ug/L	69550	Standard
Kr	83	1.0	0.0				ug/L	1	Standard
Br	81	2890.3	3.7				ug/L	1950	Standard
P	31	8855.9	3.2				ug/L	21156	Standard
S	34	3612.1	4.5				ug/L	3419	Standard
Sr	88	103.3	32.9				ug/L	72	Standard
C	12	236.7	17.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	20.8				mg/L	17	Standard
Dy	164	5672.6	5.0				mg/L	16	Standard
Ho-1	165	3838.8	4.6				mg/L	7	Standard
Er	166	3727.1	2.9				mg/L	7	Standard
I	127	35476.5	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		86.546	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.908	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.626
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.171
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606145110SD WG574521-08
Sample Date/Time: Friday, July 01, 2016 19:01:07
Number of Replicates: 3
Autosampler Position: 260
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67019.7	4.1				ug/L	76456	Standard
	Be	9	2773.6	7.8	**2.8076**	0.211	7.5	ug/L	20	Standard
	Al	27	343053.6	0.5	**2.2782**	0.082	3.6	ug/L	1307	Standard
	Sc	45	40390.5	2.4				ug/L	41174	Standard
	Ti	47	2125.1	3.6	**6.3589**	0.289	4.5	ug/L	27	Standard
	V	51	73913.9	1.7	**8.6823**	0.187	2.2	ug/L	1434	Standard
	Cr	52	39647.8	1.1	**3.8723**	0.091	2.4	ug/L	7733	Standard
	Cr	53	4390.6	6.6	**3.8749**	0.313	8.1	ug/L	442	Standard
	Mn	55	211704.6	1.1	**27.5205**	0.540	2.0	ug/L	723	Standard
	Co	59	22138.2	1.1	**2.8248**	0.052	1.9	ug/L	217	Standard
	Ni	60	10229.1	2.4	**4.7164**	0.156	3.3	ug/L	304	Standard
	Cu	65	16797.3	0.8	**8.0558**	0.132	1.6	ug/L	181	Standard
	Zn	66	14601.7	0.9	**11.5899**	0.103	0.9	ug/L	215	Standard
>	Ge	72	527370.0	0.8				ug/L	520809	Standard
	As	75	4454.0	0.3	**3.6083**	0.041	1.1	ug/L	-52	Standard
	Se	82	433.6	3.6	**3.2627**	0.107	3.3	ug/L	17	Standard
	Se-1	77	342.3	4.4	**3.2706**	0.183	5.6	ug/L	56	Standard
>	Ga	71	1086.7	7.6				mg/L	25	Standard
	Rb	85	2715.2	5.0				ug/L	28	Standard
	Y	89	495479.9	0.9				ug/L	447395	Standard
>	Rh	103	16.7	45.8				ug/L	15	Standard
	Mo	98	1199.6	3.2	**0.3822**	0.017	4.5	ug/L	113	Standard
	Ag	107	16994.5	0.8	**2.4097**	0.040	1.7	ug/L	108	Standard
	Cd	111	6581.3	0.3	**2.9241**	0.026	0.9	mg/L	3	Standard
	Cd	114	16115.1	1.4	**2.8941**	0.037	1.3	ug/L	20	Standard
>	In	115	611286.5	1.2				ug/L	625728	Standard
	Sn	118	688.3	30.3	**0.0255**	0.034	134.7	ug/L	568	Standard
	Sb	123	3492.9	2.6	**0.6580**	0.010	1.5	ug/L	612	Standard
	Ba	135	33066.0	1.8	**15.5404**	0.233	1.5	ug/L	21	Standard
	Ce	140	153693.9	0.5				ug/L	245	Standard
>	Tb	159	899836.2	0.9				ug/L	950397	Standard
	Ho	165	3548.7	3.5				ug/L	7	Standard
	Tl	203	21026.9	1.7	**2.4700**	0.040	1.6	ug/L	15	Standard
	Tl	205	19092.0	1.1	**2.5170**	0.051	2.0	ug/L	13	Standard
	Pb	206	32793.8	0.3	**6.0676**	0.075	1.2	ug/L	264	Standard
	Pb	207	27703.0	0.3	**5.6387**	0.064	1.1	ug/L	222	Standard
	Pb	208	120754.5	1.4	**6.0193**	0.142	2.4	ug/L	959	Standard
	U	238	20391.4	0.6	**2.6683**	0.017	0.6	ug/L	9	Standard
>	Bi	209	524030.2	1.0				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	73.3	17.2	**0.0271**	0.015	54.1	mg/L	55	Standard
K	39	33.3	22.9	**-0.0010**	0.029	2803.3	mg/L	28	Standard
Ca	43	38.3	52.7	**1.0972**	1.891	172.3	mg/L	27	Standard
Fe	54	1833.3	6.8	**1.3677**	0.115	8.4	mg/L	147	Standard
Fe	57	725.0	5.5	**1.4696**	0.176	12.0	mg/L	268	Standard
> **Sc-1**	45	40390.5	2.4				mg/L	41174	Standard
Cl	35	74325.2	0.8				ug/L	69550	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	2540.2	14.3				ug/L	1950	Standard
P	31	8757.5	2.9				ug/L	21156	Standard
S	34	3718.8	1.1				ug/L	3419	Standard
Sr	88	85.0					ug/L	72	Standard
C	12	270.0	14.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	63.3	32.9				mg/L	17	Standard
Dy	164	5206.1	3.7				mg/L	16	Standard
Ho-1	165	3548.7	3.5				mg/L	7	Standard
Er	166	3510.4	5.0				mg/L	7	Standard
I	127	34255.4	2.5				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		87.658	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.260	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606145110SD WG574521-08
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.692
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.792
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606145110SD WG574521-08
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 19:04:19
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73296.1	8.8				ug/L	76456	Standard
	Be	9	3.3	86.6	**-0.0168**	0.003	15.9	ug/L	20	Standard
	Al	27	943.4	25.1	**-0.0045**	0.001	28.6	ug/L	1307	Standard
	Sc	45	42173.6	2.9				ug/L	41174	Standard
	Ti	47	21.7	46.5	**-0.0224**	0.026	115.7	ug/L	27	Standard
	V	51	784.0	11.8	**-0.1085**	0.008	7.8	ug/L	1434	Standard
	Cr	52	3455.1	8.0	**-0.5654**	0.042	7.4	ug/L	7733	Standard
	Cr	53	226.7	14.2	**-0.2044**	0.032	15.6	ug/L	442	Standard
	Mn	55	689.7	25.5	**-0.0155**	0.019	124.5	ug/L	723	Standard
	Co	59	203.0	2.5	**-0.0043**	0.002	53.5	ug/L	217	Standard
	Ni	60	207.7	13.9	**-0.0589**	0.005	8.9	ug/L	304	Standard
	Cu	65	99.0	11.2	**-0.0283**	0.002	6.7	ug/L	181	Standard
	Zn	66	182.3	13.6	**-0.0400**	0.008	19.1	ug/L	215	Standard
>	**Ge**	72	551871.4	10.1				ug/L	520809	Standard
	As	75	90.2	75.8	**0.1123**	0.046	40.9	ug/L	-52	Standard
	Se	82	68.2	54.7	**0.3731**	0.233	62.5	ug/L	17	Standard
	Se-1	77	38.3	14.4	**-0.2548**	0.102	40.0	ug/L	56	Standard
>	**Ga**	71	36.7	7.9				mg/L	25	Standard
	Rb	85	36.7	39.4				ug/L	28	Standard
	Y	89	441182.6	6.0				ug/L	447395	Standard
>	**Rh**	103	10.0	50.0				ug/L	15	Standard
	Mo	98	46.2	9.0	**-0.0083**	0.001	14.8	ug/L	113	Standard
	Ag	107	129.7	15.8	**0.0056**	0.002	35.3	ug/L	108	Standard
	Cd	111	10.6	19.3	**0.0023**	0.001	28.9	mg/L	3	Standard
	Cd	114	32.4	13.3	**0.0058**	0.001	9.2	ug/L	20	Standard
>	**In**	115	611252.6	5.3				ug/L	625728	Standard
	Sn	118	5131.0	39.9	**0.7226**	0.283	39.2	ug/L	568	Standard
	Sb	123	96.0	32.5	**-0.0149**	0.005	34.0	ug/L	612	Standard
	Ba	135	116.3	18.2	**0.0366**	0.007	20.0	ug/L	21	Standard
	Ce	140	506.7	18.4				ug/L	245	Standard
>	**Tb**	159	937034.7	2.8				ug/L	950397	Standard
	Ho	165	13.3	78.1				ug/L	7	Standard
	Tl	203	55.7	37.9	**0.0055**	0.002	44.3	ug/L	15	Standard
	Tl	205	48.3	15.8	**-0.0037**	0.001	24.8	ug/L	13	Standard
	Pb	206	388.7	9.1	**0.0251**	0.008	30.5	ug/L	264	Standard
	Pb	207	329.7	11.1	**0.0183**	0.008	44.7	ug/L	222	Standard
	Pb	208	1314.7	9.8	**0.0144**	0.005	32.0	ug/L	959	Standard
	U	238	44.3	33.9	**0.0053**	0.002	35.7	ug/L	9	Standard
>	**Bi**	209	551718.3	2.9				ug/L	552821	Standard

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Na	23	1.7	173.2	**4.9772**	8.612	173.0	mg/L	2	Standard
Mg	24	23.3	12.4	**-0.0336**	0.003	9.5	mg/L	55	Standard
K	39	23.3	12.4	**-0.0439**	0.009	21.3	mg/L	28	Standard
Ca	43	31.7	24.1	**0.3653**	0.722	197.6	mg/L	27	Standard
Fe	54	110.7	37.7	**-0.0145**	0.030	207.1	mg/L	147	Standard
Fe	57	338.3	3.4	**0.2110**	0.026	12.2	mg/L	268	Standard
> **Sc-1**	45	42173.6	2.9				mg/L	41174	Standard
Cl	35	30776.6	3.7				ug/L	69550	Standard
Kr	83	3.3	45.8				ug/L	1	Standard
Br	81	663.3	12.3				ug/L	1950	Standard
P	31	11284.4	27.3				ug/L	21156	Standard
S	34	1555.1	2.6				ug/L	3419	Standard
Sr	88	83.3	25.0				ug/L	72	Standard
C	12	73.3	15.7				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	44.4				mg/L	17	Standard
Dy	164	28.9	93.2				mg/L	16	Standard
Ho-1	165	13.3	78.1				mg/L	7	Standard
Er	166	23.3	65.5				mg/L	7	Standard
I	127	2166.8	15.3				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	-0.034		
	Al	27	-0.009		
	Sc	45			
	Ti	47	-0.022		
	V	51	-0.217		
	Cr	52	-1.131		
	Cr	53			
	Mn	55	-0.031		
	Co	59	-0.009		
	Ni	60	-0.118		
	Cu	65	-0.057		
	Zn	66	-0.080		
>	Ge	72		105.964	
	As	75	0.225		
	Se	82	0.746		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	-0.008		
Ag	107	0.011		
Cd	111	0.005		
Cd	114			
> In	115		97.687	
Sn	118	1.445		
Sb	123	-0.030		
Ba	135	0.073		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	0.011		
Tl	205			
Pb	206			
Pb	207			
Pb	208	0.029		
U	238	0.011		
> Bi	209		99.801	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	
QC Std 6	Ti	47	

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QC Std 6	V	51
QC Std 6	Cr	52
QC Std 6	Mn	55
QC Std 6	Co	59
QC Std 6	Ni	60
QC Std 6	Cu	65
QC Std 6	Zn	66
QC Std 6	As	75
QC Std 6	Se	82
QC Std 6	Mo	98
QC Std 6	Ag	107
QC Std 6	Cd	111
QC Std 6	Sb	123
QC Std 6	Ba	135
QC Std 6	Tl	203
QC Std 6	Pb	208
QC Std 6	U	238

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 19:07:31
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63162.0	21.4				ug/L	76456	Standard
	Be	9	3.3	86.6	**-0.0166**	0.003	17.1	ug/L	20	Standard
	Al	27	735.0	20.4	**-0.0048**	0.002	36.2	ug/L	1307	Standard
	Sc	45	35650.7	12.8				ug/L	41174	Standard
	Ti	47	25.7	17.6	**-0.0049**	0.017	351.0	ug/L	27	Standard
	V	51	759.8	6.3	**-0.1049**	0.017	16.4	ug/L	1434	Standard
	Cr	52	3500.7	6.1	**-0.5352**	0.034	6.4	ug/L	7733	Standard
	Cr	53	196.7	21.6	**-0.2204**	0.047	21.1	ug/L	442	Standard
	Mn	55	654.0	15.9	**-0.0132**	0.024	180.8	ug/L	723	Standard
	Co	59	209.0	9.3	**-0.0019**	0.004	213.5	ug/L	217	Standard
	Ni	60	214.3	6.6	**-0.0494**	0.006	12.6	ug/L	304	Standard
	Cu	65	67.0	1.5	**-0.0410**	0.004	9.4	ug/L	181	Standard
	Zn	66	162.0	9.0	**-0.0461**	0.027	57.9	ug/L	215	Standard
>	**Ge**	72	520650.3	11.0				ug/L	520809	Standard
	As	75	34.9	127.0	**0.0765**	0.042	54.6	ug/L	-52	Standard
	Se	82	46.9	39.0	**0.2593**	0.198	76.5	ug/L	17	Standard
	Se-1	77	47.0	7.4	**-0.1317**	0.051	38.8	ug/L	56	Standard
>	**Ga**	71	33.3	37.7				mg/L	25	Standard
	Rb	85	20.0	0.0				ug/L	28	Standard
	Y	89	481329.7	5.0				ug/L	447395	Standard
>	**Rh**	103	10.0	50.0				ug/L	15	Standard
	Mo	98	40.1	16.4	**-0.0110**	0.002	22.0	ug/L	113	Standard
	Ag	107	85.7	14.5	**-0.0013**	0.001	114.3	ug/L	108	Standard
	Cd	111	7.3	15.9	**0.0008**	0.001	101.5	mg/L	3	Standard
	Cd	114	33.4	55.5	**0.0060**	0.004	67.7	ug/L	20	Standard
>	**In**	115	646206.1	11.6				ug/L	625728	Standard
	Sn	118	4905.8	30.1	**0.6479**	0.164	25.3	ug/L	568	Standard
	Sb	123	55.7	59.6	**-0.0232**	0.006	25.1	ug/L	612	Standard
	Ba	135	35.0	22.9	**-0.0022**	0.004	171.6	ug/L	21	Standard
	Ce	140	271.7	45.9				ug/L	245	Standard
>	**Tb**	159	974497.4	20.4				ug/L	950397	Standard
	Ho	165	18.3	41.7				ug/L	7	Standard
	Tl	203	26.0	40.2	**0.0024**	0.002	88.7	ug/L	15	Standard
	Tl	205	23.3	32.7	**-0.0066**	0.002	26.3	ug/L	13	Standard
	Pb	206	286.0	20.6	**0.0054**	0.003	50.2	ug/L	264	Standard
	Pb	207	250.0	14.9	**0.0018**	0.006	349.2	ug/L	222	Standard
	Pb	208	1018.7	14.9	**-0.0005**	0.007	1419.7	ug/L	959	Standard
	U	238	28.0	71.2	**0.0037**	0.004	102.7	ug/L	9	Standard
>	**Bi**	209	573676.7	25.6				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	33.3	31.2	**-0.0144**	0.017	121.3	mg/L	55	Standard
K	39	30.0	44.1	**-0.0003**	0.051	19938.3	mg/L	28	Standard
Ca	43	26.7	47.2	**0.2749**	0.978	355.7	mg/L	27	Standard
Fe	54	97.7	28.6	**-0.0085**	0.033	388.9	mg/L	147	Standard
Fe	57	278.3	18.1	**0.2066**	0.281	136.1	mg/L	268	Standard
Sc-1	45	35650.7	12.8				mg/L	41174	Standard
Cl	35	30318.5	8.6				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	573.3	9.6				ug/L	1950	Standard
P	31	10907.3	13.1				ug/L	21156	Standard
S	34	1410.1	10.3				ug/L	3419	Standard
Sr	88	83.3	36.7				ug/L	72	Standard
C	12	66.7	60.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	90.0	38.5				mg/L	17	Standard
Dy	164	2.1	274.3				mg/L	16	Standard
Ho-1	165	18.3	41.7				mg/L	7	Standard
Er	166	26.7	21.7				mg/L	7	Standard
I	127	2056.8	3.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.969	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.273	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	103.773	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Se	82	
QC Std 7	Sn	118	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Friday, July 01, 2016 19:10:44
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	61946.4	1.9				ug/L	76456	Standard
	Be	9	210.0	10.4	**0.2115**	0.020	9.6	ug/L	20	Standard
	Al	27	790.0	4.9	**-0.0045**	0.000	4.1	ug/L	1307	Standard
	Sc	45	40494.0	1.1				ug/L	41174	Standard
	Ti	47	28.3	17.8	**0.0022**	0.015	682.7	ug/L	27	Standard
	V	51	4636.0	0.9	**0.3641**	0.011	3.1	ug/L	1434	Standard
	Cr	52	14316.1	1.4	**0.7957**	0.001	0.1	ug/L	7733	Standard
	Cr	53	1240.1	3.8	**0.8075**	0.059	7.3	ug/L	442	Standard
	Mn	55	4264.3	2.5	**0.4605**	0.007	1.5	ug/L	723	Standard
	Co	59	3130.7	5.2	**0.3781**	0.017	4.5	ug/L	217	Standard
	Ni	60	3450.1	1.6	**1.5055**	0.006	0.4	ug/L	304	Standard
	Cu	65	1721.8	1.7	**0.7678**	0.026	3.4	ug/L	181	Standard
	Zn	66	8860.9	0.9	**7.0348**	0.045	0.6	ug/L	215	Standard
>	Ge	72	522095.7	1.4				ug/L	520809	Standard
	As	75	448.5	11.8	**0.4078**	0.044	10.9	ug/L	-52	Standard
	Se	82	67.9	14.5	**0.4100**	0.082	20.0	ug/L	17	Standard
	Se-1	77	86.0	19.1	**0.3190**	0.193	60.5	ug/L	56	Standard
>	Ga	71	40.0	37.5				mg/L	25	Standard
	Rb	85	30.0	28.9				ug/L	28	Standard
	Y	89	446341.0	1.0				ug/L	447395	Standard
>	Rh	103	11.7	65.5				ug/L	15	Standard
	Mo	98	31.0	24.0	**-0.0133**	0.003	19.1	ug/L	113	Standard
	Ag	107	2769.6	1.6	**0.3865**	0.006	1.6	ug/L	108	Standard
	Cd	111	511.0	7.5	**0.2275**	0.017	7.5	mg/L	3	Standard
	Cd	114	1362.0	6.3	**0.2474**	0.016	6.3	ug/L	20	Standard
>	In	115	604305.4	0.0				ug/L	625728	Standard
	Sn	118	1045.0	27.9	**0.0839**	0.047	56.0	ug/L	568	Standard
	Sb	123	1800.2	6.2	**0.3270**	0.022	6.8	ug/L	612	Standard
	Ba	135	1494.4	2.1	**0.6933**	0.015	2.2	ug/L	21	Standard
	Ce	140	240.0	28.9				ug/L	245	Standard
>	Tb	159	892072.4	1.2				ug/L	950397	Standard
	Ho	165	18.3	41.7				ug/L	7	Standard
	Tl	203	655.0	0.9	**0.0773**	0.001	1.2	ug/L	15	Standard
	Tl	205	608.3	6.1	**0.0719**	0.005	7.4	ug/L	13	Standard
	Pb	206	1282.4	3.9	**0.1986**	0.006	3.2	ug/L	264	Standard
	Pb	207	1103.0	2.6	**0.1835**	0.003	1.7	ug/L	222	Standard
	Pb	208	4828.3	0.4	**0.1978**	0.004	2.3	ug/L	959	Standard
	U	238	2919.9	3.2	**0.3875**	0.018	4.7	ug/L	9	Standard
>	Bi	209	516591.6	1.5				ug/L	552821	Standard

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Na	23	1.7	173.2	**5.0546**	8.746	173.0	mg/L	2	Standard
Mg	24	45.0	50.9	**-0.0067**	0.027	406.4	mg/L	55	Standard
K	39	28.3	71.3	**-0.0210**	0.078	373.7	mg/L	28	Standard
Ca	43	15.0	33.3	**-1.0703**	0.448	41.8	mg/L	27	Standard
Fe	54	120.9	25.4	**-0.0025**	0.024	952.7	mg/L	147	Standard
Fe	57	251.7	19.1	**-0.0185**	0.145	784.6	mg/L	268	Standard
Sc-1	45	40494.0	1.1				mg/L	41174	Standard
Cl	35	72851.4	0.8				ug/L	69550	Standard
Kr	83	2.3	99.0				ug/L	1	Standard
Br	81	1900.1	5.1				ug/L	1950	Standard
P	31	14266.7	2.8				ug/L	21156	Standard
S	34	3213.7	2.6				ug/L	3419	Standard
Sr	88	90.0	16.7				ug/L	72	Standard
C	12	96.7	57.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	50.0				mg/L	17	Standard
Dy	164	16.2	35.8				mg/L	16	Standard
Ho-1	165	18.3	41.7				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	1820.1	14.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	105.733		
Al	27			
Sc	45			
Ti	47			
V	51	91.026		
Cr	52	99.459		
Cr	53			
Mn	55	92.107		
Co	59	94.532		
Ni	60	94.095		
Cu	65	95.977		
Zn	66	112.556		
Ge	72		100.247	
As	75	101.941		
Se	82	102.498		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	96.613		
Cd	111	94.773		
Cd	114			
> In	115			96.576
Sn	118			
Sb	123	81.741		
Ba	135	92.447		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	96.671		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.904		
U	238	96.884		
> Bi	209			93.446
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
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2.3.3 Metals CVAA Data (Mercury)

2.3.3.1 Summary Data

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-04	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	C01-061716	**Prep Method:**	7470A	**Prep Date:**	06/21/2016 07:12
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/30/2016 17:42
Workgroup #:	WG573638	**Analyst:**	AMA	**Run Date:**	06/30/2016 18:31
Collect Date:	06/17/2016 08:35	**Dilution:**	1	**File ID:**	M7.063016.183105
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-05	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	C01FD-061716	**Prep Method:**	7470A	**Prep Date:**	06/21/2016 07:12
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/30/2016 17:42
Workgroup #:	WG573638	**Analyst:**	AMA	**Run Date:**	06/30/2016 18:33
Collect Date:	06/17/2016 08:35	**Dilution:**	1	**File ID:**	M7.063016.183335
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-11	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW19F-061716	**Prep Method:**	7470A	**Prep Date:**	06/21/2016 07:12
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/30/2016 17:42
Workgroup #:	WG573638	**Analyst:**	AMA	**Run Date:**	06/30/2016 18:36
Collect Date:	06/17/2016 13:10	**Dilution:**	1	**File ID:**	M7.063016.183606
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000381	J	0.000400	0.000200	0.000100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-13	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW18F-061716	**Prep Method:**	7470A	**Prep Date:**	06/21/2016 07:12
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/30/2016 17:42
Workgroup #:	WG573638	**Analyst:**	AMA	**Run Date:**	06/30/2016 18:38
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	M7.063016.183837
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061068
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061068-15	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW18FMS-061716	**Prep Method:**	7470A	**Prep Date:**	06/21/2016 07:12
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/30/2016 17:42
Workgroup #:	WG573638	**Analyst:**	AMA	**Run Date:**	06/30/2016 18:41
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	M7.063016.184109
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.00481		0.000444	0.000222	0.000111

Certificate of Analysis

Sample #:	L16061068-17	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW18FMSD-061716	**Prep Method:**	7470A	**Prep Date:**	06/21/2016 07:12
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/30/2016 17:42
Workgroup #:	WG573638	**Analyst:**	AMA	**Run Date:**	06/30/2016 18:43
Collect Date:	06/17/2016 14:20	**Dilution:**	1	**File ID:**	M7.063016.184340
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.00483		0.000444	0.000222	0.000111

2.3.3.2 QC Summary

Example Cold Vapor Mercury Calculations
Hydra AA Mercury Analyzer / CETAC M-7600 Quick Trace Mercury Analyzer

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and five standards.

2.0 Calculating the concentration (C) of an element in water using data from run log and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to Volume (mL)	40
Vi = Aliquot Volume (mL)	40
D = Manual dilution factor, if required (10X = 10)	1
Cx = Concentration of element in ppb (ug/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Ws} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to volume (mL)	40
Ws = Aliquot weight (g)	0.6
D = Manual dilution factor	1
Cx = Concentration of element in ug/kg	6.67

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

1 Cx = Concentration calculated as received (wet basis)	6.67
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	8.33

8.33 ug/kg = 0.00833 mg/kg

Microbac Laboratories Inc.
Metals Digest Log

Workgroup: WG573482
Analyst: REK
Spike Analyst: REK
Method: 7470A
Run Date: 06/21/2016 07:12
Hotblock Start Temp: 95.1 @ 07:05
Hotblock End Temp: 95 @ 09:05
Instrument: HB2

SOP: ME404 Revison 17
Spike Solution: STD76725
Spike Witness: ERP
H2SO4 Lot #: COA18359
HNO3 Lot #: COA18905
40 & 50 ML. DIGESTION TU COA18987
K2S2O8 1:1 Lot #: RGT37046
KMnO4 1:1 Lot #: RGT37082
Mercury Water ICV Lot #: STD76727
HG H2O STDS 10PPM Lot #: STD76733

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Spike Amount	Due Date
1	WG573482-03	BLANK	1	40 mL	40 mL		
2	WG573482-04	LCS	1	40 mL	40 mL	4 mL	
3	WG573482-01	REF	1	40 mL	40 mL		
4	L16060996-01	RS01	1	40 mL	40 mL		07/01/16
5	WG573482-05	MS	1	36 mL	40 mL	4 mL	
6	L16060996-02	MS01	1	36 mL	40 mL	4 mL	07/01/16
7	WG573482-06	MSD	1	36 mL	40 mL	4 mL	
8	L16060996-03	SD01	1	36 mL	40 mL	4 mL	07/01/16
9	L16060996-04	SAMP	1	40 mL	40 mL		07/01/16
10	L16060996-05	SAMP	1	40 mL	40 mL		07/01/16
11	L16060996-06	SAMP	1	40 mL	40 mL		07/01/16
12	L16060996-07	SAMP	1	40 mL	40 mL		07/01/16
13	L16060996-08	SAMP	1	40 mL	40 mL		07/01/16
14	L16060996-09	SAMP	1	40 mL	40 mL		07/01/16
15	L16061068-04	SAMP	1	40 mL	40 mL		07/01/16
16	L16061068-05	SAMP	1	40 mL	40 mL		07/01/16
17	L16061068-11	SAMP	1	40 mL	40 mL		07/01/16
18	WG573482-02	REF	1	40 mL	40 mL		
19	L16061068-13	RS04	1	40 mL	40 mL		07/01/16
20	WG573482-07	MS	1	36 mL	40 mL	4 mL	
21	L16061068-15	MS04	1	36 mL	40 mL	4 mL	07/01/16
22	WG573482-08	MSD	1	36 mL	40 mL	4 mL	
23	L16061068-17	SD04	1	36 mL	40 mL	4 mL	07/01/16

Analyst: [signature]

Reviewer: Erin Potter

* All calibration and check standards are prepared and digested with sample batch following the procedures in section 7.0 of SOP ME404/ME405.

HB_DIG - Modified 07/26/2012
PDF ID: 4816714
Report generated: 06/21/2016 13:09

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 063016E.CSV

Analyst1: AMA Analyst2: N/A

Method: 7470A/245.1 SOP: ME404 Rev: 17

Maintenance Log ID:

Calibration Std: STD76733 ICV Std: STD76727 Post Spike: STD76733

ICSA: N/A ICSAB: N/A Int. Std:

CCV: LLCCV: Tuning Sol :

Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 573638

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	M7.063016.173011	WG574912-01	Calibration Point		1		06/30/16 17:30
2	M7.063016.173243	WG574912-02	Calibration Point		1		06/30/16 17:32
3	M7.063016.173514	WG574912-03	Calibration Point		1		06/30/16 17:35
4	M7.063016.173747	WG574912-04	Calibration Point		1		06/30/16 17:37
5	M7.063016.174020	WG574912-05	Calibration Point		1		06/30/16 17:40
6	M7.063016.174254	WG574912-06	Calibration Point		1		06/30/16 17:42
7	M7.063016.174528	WG574912-07	Initial Calibration Verification		1		06/30/16 17:45
8	M7.063016.174759	WG574912-08	Initial Calib Blank		1		06/30/16 17:47
9	M7.063016.175031	WG574912-09	CCV		1		06/30/16 17:50
10	M7.063016.175302	WG574912-10	CCB		1		06/30/16 17:53
11	M7.063016.175533	WG573482-03	Method/Prep Blank	40/40	1		06/30/16 17:55
12	M7.063016.175804	WG573482-04	Laboratory Control S	40/40	1		06/30/16 17:58
13	M7.063016.180036	WG573482-01	Reference Sample	40/40	1	L16060996-01	06/30/16 18:00
14	M7.063016.180307	L16060996-02	MW-21-007 MS	36/40	1	WG573482-05	06/30/16 18:03
15	M7.063016.180539	L16060996-03	MW-21-007 MSD	36/40	1	WG573482-06	06/30/16 18:05
16	M7.063016.180812	L16060996-04	MW-21-006	40/40	1		06/30/16 18:08
17	M7.063016.181044	L16060996-05	MW-21-002	40/40	1		06/30/16 18:10
18	M7.063016.181317	WG573638-01	Post Digestion Spike		1	L16060996-05	06/30/16 18:13
19	M7.063016.181550	L16060996-06	FD-061516-21	40/40	1		06/30/16 18:15
20	M7.063016.181823	L16060996-07	MW-21-009	40/40	1		06/30/16 18:18
21	M7.063016.182056	WG574912-11	CCV		1		06/30/16 18:20
22	M7.063016.182327	WG574912-12	CCB		1		06/30/16 18:23
23	M7.063016.182600	L16060996-08	MW-21-005	40/40	1		06/30/16 18:26
24	M7.063016.182834	L16060996-09	MW-21-004	40/40	1		06/30/16 18:28
25	M7.063016.183105	L16061068-04	C01-061716	40/40	1		06/30/16 18:31
26	M7.063016.183335	L16061068-05	C01FD-061716	40/40	1		06/30/16 18:33
27	M7.063016.183606	L16061068-11	MW19F-061716	40/40	1		06/30/16 18:36
28	M7.063016.183837	WG573482-02	Reference Sample	40/40	1	L16061068-13	06/30/16 18:38
29	M7.063016.184109	L16061068-15	MW18FMS-061716	36/40	1	WG573482-07	06/30/16 18:41
30	M7.063016.184340	L16061068-17	MW18FMSD-061716	36/40	1	WG573482-08	06/30/16 18:43
31	M7.063016.184613	WG574912-13	CCV		1		06/30/16 18:46
32	M7.063016.184844	WG574912-14	CCB		1		06/30/16 18:48

Page: 1 Approved: July 01, 2016

Microbac Laboratories Inc.

Data Checklist

Date: 30-JUN-2016
Analyst: AMA
Analyst: NA
Method: 7470A/245.1
Instrument: CVAA1
Curve Workgroup: 574912
Runlog ID: 76065
Analytical Workgroups: 573638

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	0996, 1068
Client Forms	X
Level X	
Level 3	0996
Level 4	1068
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	AMA
Secondary Reviewer	BKT
Comments	

Primary Reviewer:
01-JUL-2016
Alexandra M. Alfred

Secondary Reviewer:
01-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-01-2016 10:11:35

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 7470A

AAB#: WG573638

Login Number: L16061068

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
C01-061716	04	06/17/16					06/21/2016	3.9	28		06/30/16	13.4	28	
C01FD-061716	05	06/17/16					06/21/2016	3.9	28		06/30/16	13.4	28	
MW19F-061716	11	06/17/16					06/21/2016	3.8	28		06/30/16	13.2	28	
MW18F-061716	13	06/17/16					06/21/2016	3.7	28		06/30/16	13.2	28	
MW18FMS-061716	15	06/17/16					06/21/2016	3.7	28		06/30/16	13.2	28	
MW18FMSD-061716	17	06/17/16					06/21/2016	3.7	28		06/30/16	13.2	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4834548
Report generated 07/01/2016 08:48

METHOD BLANK SUMMARY

Login Number: L16061068
Blank File ID: M7.063016.175533
Prep Date: 06/21/16 07:12
Analyzed Date: 06/30/16 17:55
Analyst: AMA

Work Group: WG573638
Blank Sample ID: WG573482-03
Instrument ID: CVAA1
Method: 7470A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573482-04	M7.063016.175804	06/30/16 17:58	01
C01-061716	L16061068-04	M7.063016.183105	06/30/16 18:31	01
C01FD-061716	L16061068-05	M7.063016.183335	06/30/16 18:33	01
MW19F-061716	L16061068-11	M7.063016.183606	06/30/16 18:36	01
MW18F-061716	L16061068-13	M7.063016.183837	06/30/16 18:38	01
MW18FMS-061716	L16061068-15	M7.063016.184109	06/30/16 18:41	01
MW18FMSD-061716	L16061068-17	M7.063016.184340	06/30/16 18:43	01

Report Name: BLANK_SUMMARY
PDF File ID: 4834549
Report generated 07/01/2016 08:48

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061068 Prep Date: 06/21/16 07:12 Sample ID: WG573482-03
Instrument ID: CVAA1 Run Date: 06/30/16 17:55 Prep Method: 7470A
File ID: M7.063016.175533 Analyst: AMA Method: 7470A
Workgroup (AAB#): WG573638 Matrix: Water Units: mg/L
Contract #: Cal ID: CVAA1-30-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Mercury	0.000100	0.000400	0.000100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4834550
01-JUL-2016 08:48

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061068 Run Date: 06/30/2016 Sample ID: WG573482-04
Instrument ID: CVAA1 Run Time: 17:58 Prep Method: 7470A
File ID: M7.063016.175804 Analyst: AMA Method: 7470A
Workgroup (AAB#): WG573638 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76725 Cal ID: CVAA1-30-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Mercury	0.00400	0.00428	107	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4834551
Report generated: 07/01/2016 08:48

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16061068 Cal ID: CVAA1- 30-JUN-16 Worknum: WG573638
Instrument ID: CVAA1 Contract #: Prep Method: 7470A
Parent ID: L16061068-13 File ID: M7.063016.183837 Dil: 1 Method: 7470A
Sample ID: L16061068-15 MS File ID: M7.063016.184109 Dil: 1 Matrix: Water
Sample ID: L16061068-17 MSD File ID: M7.063016.184340 Dil: 1 Units: mg/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Mercury	U	0.00444	0.00481	108	0.00444	0.00483	109	0.346	80 - 120	20	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4834552
Report generated 07/01/2016 08:48

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061068 **Worknum:** WG573638
Instrument ID: CVAA1 **Method:** 7470A
Post Spike ID: WG573638-01 **File ID:** M7.063016.181317 **Dil:** 1 **Units:** ug/L
Sample ID: L16060996-05 **File ID:** M7.063016.181044 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MERCURY	1.05		0	U	1	105.4	85 - 115	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4834547
Report generated: 07/01/2016 08:48

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061068
Analytical Method: 7470A
ICAL Worknum: WG574912

Workgroup (AAB#): WG573638
Instrument ID: CVAA1
Initial Calibration Date: 06/30/2016 17:42

Analyte	WG574912-01		WG574912-02		WG574912-03		WG574912-04		WG574912-05		WG574912-06	
	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT
Mercury	0	-97.12	0.200	2076	1.00	11120	2.00	22170	5.00	55370	10.0	108200

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4834553
Report generated 07/01/2016 08:48

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061068
Analytical Method: 7470A
ICAL Worknum: WG574912

Workgroup (AAB#): WG573638
Instrument ID: CVAA1
Initial Calibration Date: 06/30/2016 17:42

Analyte	R	Q
Mercury	1.000	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4834553
Report generated 07/01/2016 08:48

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061068
Instrument ID: CVAA1
File ID: M7.063016.174759
Workgroup (AAB#): WG573638
Matrix: WATER

Run Date: 06/30/2016
Run Time: 17:47
Analyst: AMA
Cal ID: CVAA1 - 30-JUN-16

Sample ID: WG574912-08
Method: 7470A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
MERCURY	.1	.4	.1	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4834555
Report generated 07/01/2016 08:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574912-10
Instrument ID: CVAA1
Run Time: 17:53
Method: 7470A
File ID: M7.063016.175302
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG573638
Cal ID: CVAA1 - 30-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4834557
Report generated 07/01/2016 08:48

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574912-12
Instrument ID: CVAA1
Run Time: 18:23
Method: 7470A
File ID: M7.063016.182327
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG573638
Cal ID: CVAA1 - 30-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4834557
Report generated 07/01/2016 08:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574912-14
Instrument ID: CVAA1
Run Time: 18:48
Method: 7470A
File ID: M7.063016.184844
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG573638
Cal ID: CVAA1 - 30-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4834557
Report generated 07/01/2016 08:48

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061068 Run Date: 06/30/2016 Sample ID: WG574912-07
Instrument ID: CVAA1 Run Time: 17:45 Method: 7470A
File ID: M7.063016.174528 Analyst: AMA Units: ug/L
Workgroup (AAB#): WG573638 Cal ID: CVAA1 - 30-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Mercury		2	2.13	106	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4834554
Report generated 07/01/2016 08:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574912-09
Instrument ID: CVAA1
Run Time: 17:50
Method: 7470A
File ID: M7.063016.175031
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG573638
Cal ID: CVAA1 - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00210	mg/L	105	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4834556
Report generated 07/01/2016 08:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574912-11
Instrument ID: CVAA1
Run Time: 18:20
Method: 7470A
File ID: M7.063016.182056
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG573638
Cal ID: CVAA1 - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00217	mg/L	109	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4834556
Report generated 07/01/2016 08:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061068
Run Date: 06/30/2016
Sample ID: WG574912-13
Instrument ID: CVAA1
Run Time: 18:46
Method: 7470A
File ID: M7.063016.184613
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG573638
Cal ID: CVAA1 - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00219	mg/L	109	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4834556
Report generated 07/01/2016 08:48

2.3.3.3 Raw Data

PDM CVAA1 245.1/7470/7471

Report Generated By CETAC QuickTrace
Analyst: VOA
Worksheet file: C:\Program Files (x86)\QuickTrace\Worksheets\063016E.wsz
Date Started: 6/30/2016 5:05:33 PM
Comment:

Results

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
Standard #0					STD	06/30/16 05:30:11 pm	0.0000	-97	13.55		1.00
Replicates	-92.1	-93.0	-116.5	-87.0							
Standard #1 (0.2 ug/L)					STD	06/30/16 05:32:43 pm	0.2000	2076	0.60		1.00
Replicates	2067.3	2090.7	2081.5	2063.9							
Standard #2 (1.0 ug/L)					STD	06/30/16 05:35:14 pm	1.0000	11121	0.29		1.00
Replicates	11133.6	11156.0	11078.9	11114.7							
Standard #3 (2.0 ug/L)					STD	06/30/16 05:37:47 pm	2.0000	22166	0.16		1.00
Replicates	22200.7	22191.1	22139.3	22133.8							
Standard #4 (5.0 ug/L)					STD	06/30/16 05:40:20 pm	5.0000	55369	0.20		1.00
Replicates	55491.3	55436.3	55294.1	55255.6							
Standard #5 (10.0 ug/L)					STD	06/30/16 05:42:54 pm	10.0000	108246	0.39		1.00
Replicates	108660.1	108527.5	108064.0	107732.8							

Calibration

Equation: A = 236.766 + 10849.480C
R2: 0.99985
SEE: 568.8621
Flags:

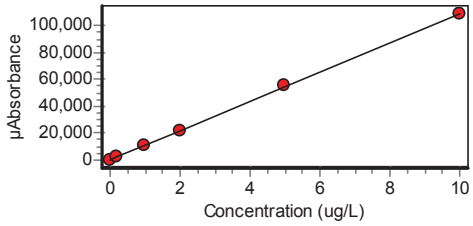

ICV					ICV	06/30/16 05:45:28 pm	2.1250	23292	0.30		1.00
Replicates	23369.4	23328.2	23258.0	23211.0							
% Recovery	106.25										

Approved: July 01, 2016
Alexandra M. Alpred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
ICB					ICB	06/30/16 05:47:59 pm	-0.0379	-175	3.96		1.00
Replicates	-172.2	-169.6	-172.1	-185.0							
CCV					CCV	06/30/16 05:50:31 pm	2.0990	23006	0.14		1.00
Replicates	23028.4	23038.1	22990.7	22968.7							
% Recovery	104.93										
CCB					CCB	06/30/16 05:53:02 pm	-0.0365	-160	3.88		1.00
Replicates	-156.8	-167.8	-161.3	-153.5							
WG573482-03					MB	06/30/16 05:55:33 pm	-0.0355	-148	13.50		1.00
Replicates	-128.4	-174.8	-150.3	-138.6							
WG573482-04					LCS	06/30/16 05:58:04 pm	4.2810	46687	0.13		1.00
Replicates	46598.6	46718.3	46699.8	46730.1							
% Recovery	107.03										
L1606099601					UNK	06/30/16 06:00:36 pm	-0.0389	-185	4.55		1.00
Replicates	-196.1	-175.6	-183.9	-185.7							
WG573482-05					UNK	06/30/16 06:03:07 pm	4.2830	46701	0.05		1.00
Replicates	46682.8	46734.3	46687.4	46699.1							
WG573482-06					UNK	06/30/16 06:05:39 pm	4.2550	46399	0.11		1.00
Replicates	46328.2	46401.6	46425.3	46439.0							
L1606099604					UNK	06/30/16 06:08:12 pm	-0.0398	-195	4.80		1.00
Replicates	-185.7	-189.3	-206.0	-200.0							
L1606099605					UNK	06/30/16 06:10:44 pm	-0.0274	-61	32.67		1.00
Replicates	-78.7	-34.0	-58.2	-72.7							
WG573638-01					SPK	06/30/16 06:13:17 pm	1.0540	11671	0.09		1.00
Replicates	11656.5	11670.8	11675.6	11682.1							
% Recovery	108.14										
L1606099606					UNK	06/30/16 06:15:50 pm	-0.0303	-92	21.38		1.00
Replicates	-72.8	-102.9	-78.6	-114.3							

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Alexandra M. Alpred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1606099607					UNK	06/30/16 06:18:23 pm	-0.0358	-151	10.41		1.00
Replicates	-171.8	-143.5	-154.5	-135.4							
CCV					CCV	06/30/16 06:20:56 pm	2.1730	23815	0.17		1.00
Replicates	23759.1	23847.9	23807.4	23843.8							
% Recovery	108.66										
CCB					CCB	06/30/16 06:23:27 pm	-0.0373	-168	5.70		1.00
Replicates	-169.9	-153.9	-173.4	-174.5							
L1606099608					UNK	06/30/16 06:26:00 pm	-0.0355	-148	4.66		1.00
Replicates	-152.6	-153.0	-138.2	-147.4							
L1606099609					UNK	06/30/16 06:28:34 pm	-0.0348	-140	12.43		1.00
Replicates	-132.3	-166.3	-128.7	-134.3							
L1606106804					UNK	06/30/16 06:31:05 pm	-0.0319	-109	16.96		1.00
Replicates	-127.1	-114.6	-110.3	-83.3							
L1606106805					UNK	06/30/16 06:33:35 pm	-0.0314	-103	10.43		1.00
Replicates	-101.7	-105.4	-116.4	-90.3							
L1606106811					UNK	06/30/16 06:36:06 pm	0.3805	4365	0.31		1.00
Replicates	4364.5	4358.7	4351.7	4383.4							
L1606106813					UNK	06/30/16 06:38:37 pm	-0.0182	40	36.98		1.00
Replicates	57.2	41.0	21.3	39.0							
WG573482-07					UNK	06/30/16 06:41:09 pm	4.3280	47189	0.23		1.00
Replicates	47040.6	47192.9	47228.4	47292.2							
WG573482-08					UNK	06/30/16 06:43:40 pm	4.3430	47356	0.19		1.00
Replicates	47227.3	47356.6	47414.6	47427.4							
CCV					CCV	06/30/16 06:46:13 pm	2.1850	23946	0.18		1.00
Replicates	23886.2	23955.2	23991.4	23951.5							
% Recovery	109.26										

Approved: July 01, 2016
Alexandra M. Alpred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
CCB					CCB	06/30/16 06:48:44 pm	-0.0378	-173	12.82		1.00
	Replicates	-161.4	-192.2	-191.6	-147.9						

Approved: July 01, 2016

Alexandra M. Alpred

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
July 12, 2016

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BNB - Brandi N. Bentley
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJQ - Cameron J. Quick
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
CV - Carl Volkman
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
EMW - ERIC M. WILKEN
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
HDC - Hanah D. Coe
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LJH - Lacey J. Hendershot
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
NPH - Natalie P. Hart
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
July 12, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
July 12, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Debra Richmann
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD	pH:	
Project Name/Location:	Longhorn		
Project Number:	60274185.0013BH 1824 MR10		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Total Metals	1,4 - DIOXANE	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 18/24	MW23-061716			6/17/16	0730		✓	W	4	✓	✓							
	MW23MS-061716			6/17/16	0730		✓	W	4	✓	✓							
	MW23MSD-061716			6/17/16	0730		✓	W	4	✓	✓							
	EQ1-061716			6/17/16	0835		✓	W	5	✓	✓	✓						
	EQ1FD-061716			6/17/16	0835		✓	W	5	✓	✓	✓						
	MW13-061716			6/17/16	0945		✓	W	4	✓	✓							
	CO2-061716			6/17/16	1045		✓	W	4	✓	✓							
	CO2MS-061716			6/17/16	1045		✓	W	4	✓	✓							
	CO2MSD-061716			6/17/16	1045		✓	W	4	✓	✓							
	MW19-061716			6/17/16	1310		✓	W	4	✓	✓							
	MW19F-061716			6/17/16	1310		✓	W	1			✓						
	MW18-061716			6/17/16	1420		✓	W	4	✓	✓							
	MW18F-061716			6/17/16	1420		✓	W	1			✓						
	MW18MS-061716			6/17/16	1420		✓	W	4									

Comments: **STANDARD TAT**

Microbac OVD
Received: 06/18/2016 10:41
By: CARA STRICKLER 221000087419
Cara Strickler

	Date	Time	Received	Time	Relinquished by: (Signature)
Relinquished by: (Signature) Scott Beesinger	6/17/16	1600			
Relinquished by: (Signature)	Date	Time	Received (Signature)	Time	Remarks:

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Debra Richmann
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD	pH:	
Project Name/Location:	Longhorn		
Project Number:	60274185.0013BH 1824 MR10		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Total Metals	1,4 - DIOXANE	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 18/24	MW18FMS-061716			6/17/16	1420		✓	W	1			✓						
	MW18MSD-061716			6/17/16	1420		✓	W	4	✓	✓							
	MW18FMSD-061716			6/17/16	1420		✓	W	1			✓						
	TRip Blank			6/17/16			✓	W	2	✓								

Comments: **STANDARD TAT**

	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature) Scott Beesinger	6/17/16	1600	
Relinquished by: (Signature)			

Microbac OVD
Received: 06/18/2016 10:41
By: CARA STRICKLER
221000087419

Cara Strickler

Date | Time | Relinquished by: (Signature)

Time | Remarks:

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

00680596

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061068
Account: 2551
Project: 2551.096
Samples: 18
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061068-01	763054	6850 826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Samplenum	Container ID	Products
L16061068-01	763055	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-JUN-2016 10:19	CLS		
2	ANALYZ	W1	SEM	29-JUN-2016 13:23	JWR	CLS	
Comments:Products cancelled.							
3	STORE	SEM	A1	30-JUN-2016 15:32	CLS	JWR	
Comments:Products cancelled.							

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061068
Account: 2551
Project: 2551.096
Samples: 18
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061068-02	763056	6850 826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	ORG4	20-JUN-2016 10:19	CLS		
2	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	ORG4	20-JUN-2016 10:19	CLS		
2	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Samplenum	Container ID	Products
L16061068-02	763057	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-JUN-2016 10:19	CLS		
2	ANALYZ	W1	SEM	29-JUN-2016 13:23	JWR	CLS	
Comments:Products cancelled.							
3	STORE	SEM	A1	30-JUN-2016 15:32	CLS	JWR	
Comments:Products cancelled.							

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061068
Account: 2551
Project: 2551.096
Samples: 18
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061068-03	763058	6850 826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	ORG4	20-JUN-2016 10:19	CLS		
2	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Samplenum	Container ID	Products
L16061068-03	763059	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-JUN-2016 10:19	CLS		
2	ANALYZ	W1	SEM	29-JUN-2016 13:23	JWR	CLS	
Comments:Products cancelled.							
3	STORE	SEM	A1	30-JUN-2016 15:32	CLS	JWR	
Comments:Products cancelled.							

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061068
Account: 2551
Project: 2551.096
Samples: 18
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061068-04	763060	6850 826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	ORG4	20-JUN-2016 10:19	CLS		
2	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Samplenum	Container ID	Products
L16061068-04	763061	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-JUN-2016 10:19	CLS		
2	ANALYZ	W1	SEM	29-JUN-2016 13:23	JWR	CLS	
Comments:Products cancelled.							
3	STORE	SEM	A1	30-JUN-2016 15:32	CLS	JWR	
Comments:Products cancelled.							

Samplenum	Container ID	Products
L16061068-04	763062	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-JUN-2016 10:19	CLS		
2	PREP	W1	DIG	20-JUN-2016 15:07	ERP	CLS	
3	ANALYZ*	DIG	METALS	21-JUN-2016 16:43	AMA	ERP	
4	STORE	DIG	A1	23-JUN-2016 12:54	CLS	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061068
Account: 2551
Project: 2551.096
Samples: 18
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061068-05	763063	6850 826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Samplenum	Container ID	Products
L16061068-05	763064	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-JUN-2016 10:19	CLS		
2	ANALYZ	W1	SEM	29-JUN-2016 13:23	JWR	CLS	
Comments:Products cancelled.							
3	STORE	SEM	A1	30-JUN-2016 15:32	CLS	JWR	
Comments:Products cancelled.							

Samplenum	Container ID	Products
L16061068-05	763065	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-JUN-2016 10:19	CLS		
2	PREP	W1	DIG	20-JUN-2016 15:07	ERP	CLS	
3	ANALYZ*	DIG	METALS	21-JUN-2016 16:43	AMA	ERP	
4	STORE	DIG	A1	23-JUN-2016 12:54	CLS	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061068
Account: 2551
Project: 2551.096
Samples: 18
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061068-06	763066	6850 826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Samplenum	Container ID	Products
L16061068-06	763067	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-JUN-2016 10:19	CLS		
2	ANALYZ	W1	SEM	29-JUN-2016 13:23	JWR	CLS	
Comments:Products cancelled.							
3	STORE	SEM	A1	30-JUN-2016 15:32	CLS	JWR	
Comments:Products cancelled.							

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061068
Account: 2551
Project: 2551.096
Samples: 18
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061068-07	763068	6850 826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Samplenum	Container ID	Products
L16061068-07	763069	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-JUN-2016 10:19	CLS		
2	ANALYZ	W1	SEM	29-JUN-2016 13:23	JWR	CLS	
Comments:Products cancelled.							
3	STORE	SEM	A1	30-JUN-2016 15:32	CLS	JWR	
Comments:Products cancelled.							

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061068
Account: 2551
Project: 2551.096
Samples: 18
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061068-08	763070	6850 826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Samplenum	Container ID	Products
L16061068-08	763071	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-JUN-2016 10:19	CLS		
2	ANALYZ	W1	SEM	29-JUN-2016 13:23	JWR	CLS	
Comments:Products cancelled.							
3	STORE	SEM	A1	30-JUN-2016 15:32	CLS	JWR	
Comments:Products cancelled.							

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061068
Account: 2551
Project: 2551.096
Samples: 18
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061068-09	763072	6850 826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Samplenum	Container ID	Products
L16061068-09	763073	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-JUN-2016 10:19	CLS		
2	ANALYZ	W1	SEM	29-JUN-2016 13:23	JWR	CLS	
Comments:Products cancelled.							
3	STORE	SEM	A1	30-JUN-2016 15:32	CLS	JWR	
Comments:Products cancelled.							

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061068
Account: 2551
Project: 2551.096
Samples: 18
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061068-10	763074	6850 826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Samplenum	Container ID	Products
L16061068-10	763075	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-JUN-2016 10:19	CLS		
2	ANALYZ	W1	SEM	29-JUN-2016 13:24	JWR	CLS	
Comments:Products cancelled.							
3	STORE	SEM	A1	30-JUN-2016 15:32	CLS	JWR	
Comments:Products cancelled.							

Samplenum	Container ID	Products
L16061068-11	763076	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-JUN-2016 10:19	CLS		
2	PREP	W1	DIG	20-JUN-2016 15:07	ERP	CLS	
3	ANALYZ*	DIG	METALS	21-JUN-2016 16:43	AMA	ERP	
4	STORE	DIG	A1	23-JUN-2016 12:54	CLS	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061068
Account: 2551
Project: 2551.096
Samples: 18
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061068-12	763077	6850 826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Samplenum	Container ID	Products
L16061068-12	763078	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-JUN-2016 10:19	CLS		
2	ANALYZ	W1	SEM	29-JUN-2016 13:24	JWR	CLS	
Comments:Products cancelled.							
3	STORE	SEM	A1	30-JUN-2016 15:32	CLS	JWR	
Comments:Products cancelled.							

Samplenum	Container ID	Products
L16061068-13	763079	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-JUN-2016 10:19	CLS		
2	PREP	W1	DIG	20-JUN-2016 15:07	ERP	CLS	
3	ANALYZ*	DIG	METALS	21-JUN-2016 16:43	AMA	ERP	
4	STORE	DIG	A1	23-JUN-2016 12:54	CLS	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061068
Account: 2551
Project: 2551.096
Samples: 18
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061068-14	763080	6850 826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Samplenum	Container ID	Products
L16061068-14	763081	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-JUN-2016 10:19	CLS		
2	ANALYZ	W1	SEM	29-JUN-2016 13:24	JWR	CLS	
Comments:Products cancelled.							
3	STORE	SEM	A1	30-JUN-2016 15:32	CLS	JWR	
Comments:Products cancelled.							

Samplenum	Container ID	Products
L16061068-15	763082	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-JUN-2016 10:19	CLS		
2	PREP	W1	DIG	20-JUN-2016 15:07	ERP	CLS	
3	ANALYZ*	DIG	METALS	21-JUN-2016 16:43	AMA	ERP	
4	STORE	DIG	A1	23-JUN-2016 12:54	CLS	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061068
Account: 2551
Project: 2551.096
Samples: 18
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061068-16	763083	6850 826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Samplenum	Container ID	Products
L16061068-16	763084	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-JUN-2016 10:19	CLS		
2	ANALYZ	W1	SEM	29-JUN-2016 13:24	JWR	CLS	
Comments:Products cancelled.							
3	STORE	SEM	A1	30-JUN-2016 15:32	CLS	JWR	
Comments:Products cancelled.							

Samplenum	Container ID	Products
L16061068-17	763085	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	20-JUN-2016 10:19	CLS		
2	PREP	W1	DIG	20-JUN-2016 15:07	ERP	CLS	
3	ANALYZ*	DIG	METALS	21-JUN-2016 16:43	AMA	ERP	
4	STORE	DIG	A1	23-JUN-2016 12:54	CLS	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061068
Account: 2551
Project: 2551.096
Samples: 18
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061068-18	763086	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:31	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	20-JUN-2016 10:19	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 07:30	AWE	CLS	
3	STORE	ORG4	A1	05-JUL-2016 07:57	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac REPORT L16061142
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.0 Summary Data

1.1 Narratives

Microbac Laboratories
Case Narrative

Login Number: L16061142
Department: Volatiles
Analyst: Franci Bolden

METHOD

Preparation SW-846 5030C/5035A

Analysis SW-846 8260B

HOLDING TIMES

Sample Preparation: The reanalysis of sample 07 was performed 23 days after collection.

Sample Analysis: The reanalysis of sample 07 was performed 23 days after collection.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: For all compounds that yielded a %RSD greater than 15%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Continuing Calibration and Tune: Recoveries out of range were observed for the following analytes: 1,1,1-Trichloroethane, 2,2-Dichloropropane, Carbon Tetrachloride, Trichlorofluoromethane. These failures were high which would normally represent a bias high sample result, however all samples were non-detect for the previously mention analytes.
Recoveries out of range were observed for the following analytes in the reanalysis off sample 07 for SMI confirmation:1,2-Dibromo-3-Chloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: Recoveries out of range were observed for the following analytes: 1,2-Dichloroethane, Bromodichloromethane. Please see the applicable QC report for a detailed presentation of the failures.

Sample #	Analyte	Date	Result	Lower	Upper	Type
WG574190-02	1,2-Dichloroethane	2016-06-24 20:32:00	133	70	130	Recovery
WG574190-02	Bromodichloromethane	2016-06-24 20:32:00	123	75	120	Recovery

Matrix Spikes: The MS/MSD results were not associated with this sample delivery group (SDG), due to insufficient volume of sample. The laboratory included an LCS and LCS duplicate in the preparation batch in lieu of the NELAC prescribed MS/MSD. Microbac Laboratories recommends site specific MS/MSD samples to avoid possible data qualifications.

SAMPLES

Internal Standards: All acceptance criteria were met.

Surrogates: Recoveries out of range were observed for the following surrogates: 1,2-Dichloroethane-d4. Normally this would represent a bias high in the sample result, however samples 02 and 06 were non-detect for all target analytes so no further action was taken.

Sample 07 was reanalyzed out of hold for sample matrix interference. All acceptance criteria was met for surrogate recovery upon reanalysis.

Sample #	Analyte	Date	Result	Lower	Upper	Type
L16061142-02	1,2-Dichloroethane-d4	2016-06-25 01:21:00	122	70	120	Recovery
L16061142-06	1,2-Dichloroethane-d4	2016-06-25 02:19:00	122	70	120	Recovery
L16061142-07	1,2-Dichloroethane-d4	2016-06-25 02:48:00	121	70	120	Recovery

Other: The reanalysis of sample 07 was performed 23 days after collection for sample matrix interference with the surrogate. Reanalysis did not confirm sample matrix interference.

Manual Integration Reason Codes

Reason #1: Data System Fails to Select Correct Peak. In some cases the chromatography system selects and integrates the 'wrong peak'. In this case the analyst must correct the selection and force the system to integrate the proper peak. Other times the system may miss the peak completely.

Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak. This phenomena is common at low concentrations where the signal:noise ratio is low. A single compound (peak) is incorrectly split into multiple peaks or integrated as a main peak with one or more rider peaks resulting in low area counts for the target compound.

Reason #3: Improperly Integrated Isomers and/or coeluting compounds. This system often fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations are wrong, and they must be corrected by manual integration. Prime examples are benzo(k)fluoranthene and benzo(b)fluoranthene which are often unresolved and integrated improperly when both are present at low concentrations in standards or samples.

Reason #4: System Establishes Incorrect Baseline. There are numerous situations in chromatography where the system establishes the baseline incorrectly. Some baseline errors will be obvious to the analyst and should be corrected via manual procedures.

Reason #5: Miscellaneous. Other situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the laboratory management. If the form of manual integration

is not clearly covered by these four cases, then review and approval by the Managing Director or the QAO will be required.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 115128
Approved By: Anthony Canter

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG574190, WG576236	**Reviewer Name:**	Anthony Canter
LRC Date:	2016-07-14 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Anthony Canter	Anthony Canter	Analyst I	2016-07-14 19:28:07

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG574190, WG576236	**Reviewer Name:**	Anthony Canter
LRC Date:	2016-07-14 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?		X			1
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?		X			4
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG574190, WG576236	**Reviewer Name:**	Anthony Canter
LRC Date:	2016-07-14 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		X			2
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG574190, WG576236	**Reviewer Name:**	Anthony Canter
LRC Date:	2016-07-14 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			3
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG574190, WG576236	**Reviewer Name:**	Anthony Canter
LRC Date:	2016-07-14 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG574190, WG576236	**Reviewer Name:**	Anthony Canter
LRC Date:	2016-07-14 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1)The reanalysis of sample 07 was performed 23 days after collection on HPMS11 on 07/13/16.

2) 1,2-Dichloroethane and Bromodichloromethane exceeded the UCL in the LCS analyzed 06/24/16 on HPMS11.

3) Carbon Tetrachloride, 2,2-Dichloropropane, 1,1,1-Trichloroethane, and Trichlorofluoromethane exceeded the UCL in the CCV analyzed 06/24/16 on HPMS8. 1,2-Dibromo-3-Chloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone were below the LCL in the CCV analyzed 07/13/16 on HPMS11.

4)1,2-Dichloroethane-d4 exceeded the upper surrogate limit in samples 02, 06, and 07 on 6/24/16. Samples 02 and 06 were non-detect and no further action was taken. Sample 07 was reanalyzed to confirm sample matrix interference.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573812	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Wade DeLong	Wade DeLong	Chemist I	2016-06-28 18:17:56

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573812	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573812	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?		X			ER1
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573812	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573812	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573812	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER1 The LCS/LCSD exceeded RPD criteria.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574101	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Wade DeLong	Wade DeLong	Chemist I	2016-06-28 17:54:25

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574101	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574101	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X		X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574101	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574101	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574101	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573828	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Maren Beery	Maren Beery	Metals Supervisor	2016-07-11 15:37:34

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573828	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573828	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573828	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			ER#1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573828	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

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Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573828	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - The closing low level calibration check analyzed on 28-Jun-2016 at 15:56 yielded a noncompliant result for selenium. All client samples and batch QA/QC samples were reanalyzed on a later calibration which was compliant for selenium.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG573751	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Maren Beery	Maren Beery	Metals Supervisor	2016-07-11 15:31:54

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG573751	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				ER#1
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?		X			ER#2
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG573751	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG573751	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG573751	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG573751	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - Client sample 01 required dilution analysis in order to obtain a result for manganese within the calibration range.

ER#2 - The initial calibration blank analyzed on 28-JUN-2016 at 13:22 yielded a result for antimony greater than the LOD and less than the LOQ. All client samples were non-detect for antimony. With permission from the project manager, antimony was reported and no further action was taken.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG573654	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Maren Beery	Maren Beery	Metals Supervisor	2016-07-11 15:28:11

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG573654	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG573654	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG573654	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG573654	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061142
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG573654	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18WW20-062016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574190	**Analyst:**	FJB	**Run Date:**	06/25/2016 00:52
Collect Date:	06/20/2016 07:55	**Dilution:**	1	**File ID:**	8M413232
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	120	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	99.8	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18WW20-062016	**Prep Method:**	3520C	**Prep Date:**	06/22/2016 13:51
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574301	**Analyst:**	MES	**Run Date:**	06/27/2016 17:23
Collect Date:	06/20/2016 07:55	**Dilution:**	1	**File ID:**	15M18605
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	41.7	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW20-062016	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 02:28
Collect Date:	06/20/2016 07:55	**Dilution:**	1	**File ID:**	1LM.LM35483
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW20-062016	**Prep Method:**	3015	**Prep Date:**	06/23/2016 08:03
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/28/2016 09:31
Workgroup #:	WG574350	**Analyst:**	JYH	**Run Date:**	06/28/2016 13:57
Collect Date:	06/20/2016 07:55	**Dilution:**	1	**File ID:**	T3.062816.135712
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.0733	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	2.78		0.500	0.250	0.125
Iron, Total	7439-89-6	5.75		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	2.14		1.00	0.500	0.250
Potassium, Total	7440-09-7	1.32	J	2.00	1.00	0.500
Sodium, Total	7440-23-5	24.6		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW20-062016	**Prep Method:**	3015	**Prep Date:**	06/23/2016 08:03
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/29/2016 10:07
Workgroup #:	WG574350	**Analyst:**	JYH	**Run Date:**	06/29/2016 10:56
Collect Date:	06/20/2016 07:55	**Dilution:**	1	**File ID:**	T3.062916.105622
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW20-062016	**Prep Method:**	3015	**Prep Date:**	06/22/2016 13:25
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/28/2016 13:15
Workgroup #:	WG574522	**Analyst:**	BKT	**Run Date:**	06/28/2016 16:41
Collect Date:	06/20/2016 07:55	**Dilution:**	1	**File ID:**	NI.062816.164105
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00100	U	0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.0918		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00274	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00808		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00200	U	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.00996		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW20-062016	**Prep Method:**	3015	**Prep Date:**	06/22/2016 13:25
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/28/2016 13:15
Workgroup #:	WG574522	**Analyst:**	BKT	**Run Date:**	06/28/2016 18:46
Collect Date:	06/20/2016 07:55	**Dilution:**	10	**File ID:**	NI.062816.184632
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Total	7439-96-5	0.279		0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-01	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18WW20-062016	**Prep Method:**	7470A	**Prep Date:**	06/22/2016 07:32
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/29/2016 12:57
Workgroup #:	WG573906	**Analyst:**	AMA	**Run Date:**	06/29/2016 13:26
Collect Date:	06/20/2016 07:55	**Dilution:**	1	**File ID:**	M7.062916.132604
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18WW19-062016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574190	**Analyst:**	FJB	**Run Date:**	06/25/2016 01:21
Collect Date:	06/20/2016 08:55	**Dilution:**	1	**File ID:**	8M413233
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	Q	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	Q	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	Q	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	Q	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	Q	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	Q	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	Q	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	Q	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	Q	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	Q	2.00	1.00	0.500
Chloroform	67-66-3	0.250	Q	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	Q	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	Q	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	Q	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	Q	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	Q	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	Q	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	Q	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	Q	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	Q	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	Q	1.00	0.500	0.250

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	Q	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	Q	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	Q	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	Q	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	Q	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	Q	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	Q	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	Q	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	Q	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	Q	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	Q	1.00	0.250	0.125
Styrene	100-42-5	0.250	Q	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	Q	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	Q	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	Q	1.00	0.500	0.250
Toluene	108-88-3	0.500	Q	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	Q	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	Q	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	Q	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	Q	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	Q	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	Q	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	Q	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	Q	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	Q	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	Q	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	114	85	115	
1,2-Dichloroethane-d4	122	70	120	*
Toluene-d8	101	85	120	
4-Bromofluorobenzene	101	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW19-062016	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 02:47
Collect Date:	06/20/2016 08:55	**Dilution:**	1	**File ID:**	1LM.LM35484
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW19F-062016	**Prep Method:**	3015	**Prep Date:**	06/23/2016 08:03
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/29/2016 10:07
Workgroup #:	WG574350	**Analyst:**	JYH	**Run Date:**	06/29/2016 11:00
Collect Date:	06/20/2016 08:55	**Dilution:**	1	**File ID:**	T3.062916.110017
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW19F-062016	**Prep Method:**	3015	**Prep Date:**	06/23/2016 08:03
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/28/2016 09:31
Workgroup #:	WG574350	**Analyst:**	JYH	**Run Date:**	06/28/2016 14:01
Collect Date:	06/20/2016 08:55	**Dilution:**	1	**File ID:**	T3.062816.140107
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.342		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	8.66		0.500	0.250	0.125
Iron, Total	7439-89-6	4.86		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	1.59		1.00	0.500	0.250
Potassium, Total	7440-09-7	1.85	J	2.00	1.00	0.500
Sodium, Total	7440-23-5	5.07		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW19F-062016	**Prep Method:**	3015	**Prep Date:**	06/22/2016 13:25
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/28/2016 13:15
Workgroup #:	WG574522	**Analyst:**	BKT	**Run Date:**	06/28/2016 16:44
Collect Date:	06/20/2016 08:55	**Dilution:**	1	**File ID:**	NI.062816.164417
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.000865	J	0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.0557		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00184	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00116	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00117	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.221		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00429	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00170	J	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-03	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18WW19F-062016	**Prep Method:**	7470A	**Prep Date:**	06/22/2016 07:32
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/29/2016 12:57
Workgroup #:	WG573906	**Analyst:**	AMA	**Run Date:**	06/29/2016 13:28
Collect Date:	06/20/2016 08:55	**Dilution:**	1	**File ID:**	M7.062916.132836
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18WW19FD-062016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574190	**Analyst:**	FJB	**Run Date:**	06/25/2016 01:50
Collect Date:	06/20/2016 08:55	**Dilution:**	1	**File ID:**	8M413234
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	120	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	99.9	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW19FD-062016	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 03:06
Collect Date:	06/20/2016 08:55	**Dilution:**	1	**File ID:**	1LM.LM35485
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW19FFD-062016	**Prep Method:**	3015	**Prep Date:**	06/23/2016 08:03
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/29/2016 10:07
Workgroup #:	WG574350	**Analyst:**	JYH	**Run Date:**	06/29/2016 11:04
Collect Date:	06/20/2016 08:55	**Dilution:**	1	**File ID:**	T3.062916.110411
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW19FFD-062016	**Prep Method:**	3015	**Prep Date:**	06/23/2016 08:03
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/28/2016 09:31
Workgroup #:	WG574350	**Analyst:**	JYH	**Run Date:**	06/28/2016 14:05
Collect Date:	06/20/2016 08:55	**Dilution:**	1	**File ID:**	T3.062816.140501
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.369		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	8.45		0.500	0.250	0.125
Iron, Total	7439-89-6	4.92		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	1.46		1.00	0.500	0.250
Potassium, Total	7440-09-7	1.74	J	2.00	1.00	0.500
Sodium, Total	7440-23-5	4.86		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW19FFD-062016	**Prep Method:**	3015	**Prep Date:**	06/22/2016 13:25
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/28/2016 13:15
Workgroup #:	WG574522	**Analyst:**	BKT	**Run Date:**	06/28/2016 16:47
Collect Date:	06/20/2016 08:55	**Dilution:**	1	**File ID:**	NI.062816.164728
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.000910	J	0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.0588		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00219	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00119	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00131	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.221		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00449	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00184	J	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-05	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18WW19FFD-062016	**Prep Method:**	7470A	**Prep Date:**	06/22/2016 07:32
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/29/2016 12:57
Workgroup #:	WG573906	**Analyst:**	AMA	**Run Date:**	06/29/2016 13:31
Collect Date:	06/20/2016 08:55	**Dilution:**	1	**File ID:**	M7.062916.133109
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18WW08-062016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574190	**Analyst:**	FJB	**Run Date:**	06/25/2016 02:19
Collect Date:	06/20/2016 10:10	**Dilution:**	1	**File ID:**	8M413235
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	Q	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	Q	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	Q	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	Q	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	Q	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	Q	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	Q	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	Q	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	Q	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	Q	2.00	1.00	0.500
Chloroform	67-66-3	0.250	Q	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	Q	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	Q	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	Q	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	Q	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	Q	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	Q	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	Q	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	Q	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	Q	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	Q	1.00	0.500	0.250

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	Q	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	Q	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	Q	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	Q	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	Q	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	Q	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	Q	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	Q	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	Q	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	Q	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	Q	1.00	0.250	0.125
Styrene	100-42-5	0.250	Q	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	Q	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	Q	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	Q	1.00	0.500	0.250
Toluene	108-88-3	0.500	Q	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	Q	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	Q	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	Q	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	Q	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	Q	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	Q	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	Q	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	Q	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	Q	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	Q	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	122	70	120	*
Toluene-d8	103	85	120	
4-Bromofluorobenzene	101	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18WW08-062016	**Prep Method:**	3520C	**Prep Date:**	06/22/2016 13:51
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574301	**Analyst:**	MES	**Run Date:**	06/27/2016 17:46
Collect Date:	06/20/2016 10:10	**Dilution:**	1	**File ID:**	15M18606
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	52.6	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW08-062016	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 20:37
Collect Date:	06/20/2016 10:10	**Dilution:**	1	**File ID:**	1LM.LM35506
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	18WW09-062016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG576236	**Analyst:**	TMB	**Run Date:**	07/13/2016 14:40
Collect Date:	06/20/2016 11:10	**Dilution:**	1	**File ID:**	11M13228
Sample Tag:	02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	3.57	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	1.38		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	88.3	70	120	
Toluene-d8	98.3	85	120	
4-Bromofluorobenzene	93.9	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18WW09-062016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574190	**Analyst:**	FJB	**Run Date:**	06/25/2016 02:48
Collect Date:	06/20/2016 11:10	**Dilution:**	1	**File ID:**	8M413236
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	Q	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	Q	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	Q	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	Q	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	Q	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	Q	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	Q	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	Q	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	Q	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	Q	2.00	1.00	0.500
Chloroform	67-66-3	0.250	Q	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	Q	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	Q	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	Q	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	Q	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	Q	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	Q	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	Q	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	Q	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	Q	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	Q	1.00	0.500	0.250

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Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	Q	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	Q	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	Q	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	Q	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	Q	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	Q	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	Q	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	Q	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	Q	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	Q	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	Q	1.00	0.250	0.125
Styrene	100-42-5	0.250	Q	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	Q	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	Q	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	Q	1.00	0.500	0.250
Toluene	108-88-3	1.30	J	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	Q	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	Q	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	Q	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	Q	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	Q	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	Q	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	Q	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	Q	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	Q	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	Q	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	121	70	120	*
Toluene-d8	104	85	120	
4-Bromofluorobenzene	103	75	120	

J	The reported result is an estimated value.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18WW09-062016	**Prep Method:**	3520C	**Prep Date:**	06/22/2016 13:51
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574301	**Analyst:**	MES	**Run Date:**	06/27/2016 18:09
Collect Date:	06/20/2016 11:10	**Dilution:**	1	**File ID:**	15M18607
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	56.4	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW09-062016	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 03:44
Collect Date:	06/20/2016 11:10	**Dilution:**	1	**File ID:**	1LM.LM35487
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574190	**Analyst:**	FJB	**Run Date:**	06/24/2016 23:25
Collect Date:	06/20/2016 00:01	**Dilution:**	1	**File ID:**	8M413229
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	118	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	100	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac Laboratories
Case Narrative

Login Number: L16061142
Department: Volatiles
Analyst: Franci Bolden

METHOD

Preparation SW-846 5030C/5035A

Analysis SW-846 8260B

HOLDING TIMES

Sample Preparation: The reanalysis of sample 07 was performed 23 days after collection.

Sample Analysis: The reanalysis of sample 07 was performed 23 days after collection.

PREPARATION

Sample preparation proceeded normally.

CALIBRATION

Initial Calibration: For all compounds that yielded a %RSD greater than 15%, linear or higher order equations were applied. All acceptance criteria were met.

Alternate Source Standards: All acceptance criteria were met.

Continuing Calibration and Tune: Recoveries out of range were observed for the following analytes: 1,1,1-Trichloroethane, 2,2-Dichloropropane, Carbon Tetrachloride, Trichlorofluoromethane. These failures were high which would normally represent a bias high sample result, however all samples were non-detect for the previously mention analytes.
Recoveries out of range were observed for the following analytes in the reanalysis off sample 07 for SMI confirmation:1,2-Dibromo-3-Chloropropane, 2-Butanone, 2-Hexanone, 4-Methyl-2-Pentanone, Acetone.

BATCH QA/QC

Method Blank: All acceptance criteria were met.

Laboratory Control Sample: Recoveries out of range were observed for the following analytes: 1,2-Dichloroethane, Bromodichloromethane. Please see the applicable QC report for a detailed presentation of the failures.

Sample #	Analyte	Date	Result	Lower	Upper	Type
WG574190-02	1,2-Dichloroethane	2016-06-24 20:32:00	133	70	130	Recovery
WG574190-02	Bromodichloromethane	2016-06-24 20:32:00	123	75	120	Recovery

Matrix Spikes: The MS/MSD results were not associated with this sample delivery group (SDG), due to insufficient volume of sample. The laboratory included an LCS and LCS duplicate in the preparation batch in lieu of the NELAC prescribed MS/MSD. Microbac Laboratories recommends site specific MS/MSD samples to avoid possible data qualifications.

SAMPLES

Internal Standards: All acceptance criteria were met.

Surrogates: Recoveries out of range were observed for the following surrogates: 1,2-Dichloroethane-d4. Normally this would represent a bias high in the sample result, however samples 02 and 06 were non-detect for all target analytes so no further action was taken.

Sample 07 was reanalyzed out of hold for sample matrix interference. All acceptance criteria was met for surrogate recovery upon reanalysis.

Sample #	Analyte	Date	Result	Lower	Upper	Type
L16061142-02	1,2-Dichloroethane-d4	2016-06-25 01:21:00	122	70	120	Recovery
L16061142-06	1,2-Dichloroethane-d4	2016-06-25 02:19:00	122	70	120	Recovery
L16061142-07	1,2-Dichloroethane-d4	2016-06-25 02:48:00	121	70	120	Recovery

Other: The reanalysis of sample 07 was performed 23 days after collection for sample matrix interference with the surrogate. Reanalysis did not confirm sample matrix interference.

Manual Integration Reason Codes

Reason #1: Data System Fails to Select Correct Peak. In some cases the chromatography system selects and integrates the 'wrong peak'. In this case the analyst must correct the selection and force the system to integrate the proper peak. Other times the system may miss the peak completely.

Reason #2: Data System Splits the Peak Incorrectly or Integrates a False Peak as a Rider Peak. This phenomena is common at low concentrations where the signal:noise ratio is low. A single compound (peak) is incorrectly split into multiple peaks or integrated as a main peak with one or more rider peaks resulting in low area counts for the target compound.

Reason #3: Improperly Integrated Isomers and/or coeluting compounds. This system often fails to distinguish coeluting compounds and or isomers. The integration areas and concentrations are wrong, and they must be corrected by manual integration. Prime examples are benzo(k)fluoranthene and benzo(b)fluoranthene which are often unresolved and integrated improperly when both are present at low concentrations in standards or samples.

Reason #4: System Establishes Incorrect Baseline. There are numerous situations in chromatography where the system establishes the baseline incorrectly. Some baseline errors will be obvious to the analyst and should be corrected via manual procedures.

Reason #5: Miscellaneous. Other situations involving integration errors may require in-depth review and technical judgment. These cases should be brought to the attention of the laboratory management. If the form of manual integration

is not clearly covered by these four cases, then review and approval by the Managing Director or the QAO will be required.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Microbac Laboratories Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

Narrative ID: 115128
Approved By: Anthony Canter

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18WW20-062016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574190	**Analyst:**	FJB	**Run Date:**	06/25/2016 00:52
Collect Date:	06/20/2016 07:55	**Dilution:**	1	**File ID:**	8M413232
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	120	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	99.8	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18WW19-062016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574190	**Analyst:**	FJB	**Run Date:**	06/25/2016 01:21
Collect Date:	06/20/2016 08:55	**Dilution:**	1	**File ID:**	8M413233
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	Q	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	Q	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	Q	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	Q	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	Q	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	Q	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	Q	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	Q	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	Q	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	Q	2.00	1.00	0.500
Chloroform	67-66-3	0.250	Q	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	Q	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	Q	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	Q	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	Q	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	Q	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	Q	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	Q	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	Q	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	Q	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	Q	1.00	0.500	0.250

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	Q	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	Q	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	Q	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	Q	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	Q	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	Q	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	Q	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	Q	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	Q	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	Q	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	Q	1.00	0.250	0.125
Styrene	100-42-5	0.250	Q	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	Q	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	Q	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	Q	1.00	0.500	0.250
Toluene	108-88-3	0.500	Q	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	Q	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	Q	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	Q	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	Q	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	Q	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	Q	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	Q	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	Q	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	Q	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	Q	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	114	85	115	
1,2-Dichloroethane-d4	122	70	120	*
Toluene-d8	101	85	120	
4-Bromofluorobenzene	101	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18WW19FD-062016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574190	**Analyst:**	FJB	**Run Date:**	06/25/2016 01:50
Collect Date:	06/20/2016 08:55	**Dilution:**	1	**File ID:**	8M413234
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	120	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	99.9	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18WW08-062016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574190	**Analyst:**	FJB	**Run Date:**	06/25/2016 02:19
Collect Date:	06/20/2016 10:10	**Dilution:**	1	**File ID:**	8M413235
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	Q	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	Q	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	Q	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	Q	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	Q	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	Q	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	Q	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	Q	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	Q	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	Q	2.00	1.00	0.500
Chloroform	67-66-3	0.250	Q	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	Q	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	Q	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	Q	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	Q	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	Q	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	Q	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	Q	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	Q	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	Q	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	Q	1.00	0.500	0.250

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	Q	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	Q	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	Q	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	Q	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	Q	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	Q	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	Q	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	Q	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	Q	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	Q	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	Q	1.00	0.250	0.125
Styrene	100-42-5	0.250	Q	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	Q	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	Q	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	Q	1.00	0.500	0.250
Toluene	108-88-3	0.500	Q	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	Q	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	Q	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	Q	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	Q	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	Q	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	Q	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	Q	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	Q	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	Q	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	Q	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	122	70	120	*
Toluene-d8	103	85	120	
4-Bromofluorobenzene	101	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	18WW09-062016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG576236	**Analyst:**	TMB	**Run Date:**	07/13/2016 14:40
Collect Date:	06/20/2016 11:10	**Dilution:**	1	**File ID:**	11M13228
Sample Tag:	02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	3.57	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	1.38		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	88.3	70	120	
Toluene-d8	98.3	85	120	
4-Bromofluorobenzene	93.9	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18WW09-062016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574190	**Analyst:**	FJB	**Run Date:**	06/25/2016 02:48
Collect Date:	06/20/2016 11:10	**Dilution:**	1	**File ID:**	8M413236
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	Q	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	Q	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	Q	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	Q	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	Q	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	Q	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	Q	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	Q	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	Q	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	Q	2.00	1.00	0.500
Chloroform	67-66-3	0.250	Q	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	Q	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	Q	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	Q	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	Q	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	Q	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	Q	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	Q	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	Q	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	Q	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	Q	1.00	0.500	0.250

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	Q	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	Q	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	Q	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	Q	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	Q	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	Q	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	Q	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	Q	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	Q	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	Q	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	Q	1.00	0.250	0.125
Styrene	100-42-5	0.250	Q	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	Q	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	Q	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	Q	1.00	0.500	0.250
Toluene	108-88-3	1.30	J	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	Q	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	Q	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	Q	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	Q	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	Q	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	Q	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	Q	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	Q	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	Q	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	Q	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	121	70	120	*
Toluene-d8	104	85	120	
4-Bromofluorobenzene	103	75	120	

J	The reported result is an estimated value.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574190	**Analyst:**	FJB	**Run Date:**	06/24/2016 23:25
Collect Date:	06/20/2016 00:01	**Dilution:**	1	**File ID:**	8M413229
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	118	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	100	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

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Instrument Run Log

Instrument: HPMS8 Dataset: 051316
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53752

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG568561

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412209	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 08:38
8M412210	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 08:57
8M412211	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 09:29
8M412212	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 09:56
8M412213	WG568561-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/13/16 10:19
8M412214	WG568561-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/13/16 10:51
8M412215	WG568565-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76072	05/13/16 11:36
8M412216	BFB CHECK	NA	1	1	STD76034	05/13/16 12:04
8M412217	BFB CHECK	NA	1	1	STD76034	05/13/16 12:18
8M412218	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 12:36
8M412219	RINSE	NA	1	1		05/13/16 13:00
8M412220	WG568561-02 0.3ug/L STD 8260	NA	1	1	STD76127	05/13/16 13:29
8M412221	WG568561-03 0.4ug/L STD 8260	NA	1	1	STD76127	05/13/16 13:58
8M412222	WG568561-04 1ug/L STD 8260	NA	1	1	STD76127	05/13/16 14:27
8M412223	WG568561-05 2ug/L STD 8260	NA	1	1	STD76127	05/13/16 14:56
8M412224	WG568561-06 5ug/L STD 8260	NA	1	1	STD76127	05/13/16 15:25
8M412225	WG568561-07 20ug/L STD 8260	NA	1	1	STD76127	05/13/16 15:54
8M412226	WG568561-08 50ug/L STD 8260	NA	1	1	STD76127	05/13/16 16:23
8M412227	WG568561-09 100ug/L STD 8260	NA	1	1	STD76127	05/13/16 16:52
8M412228	WG568561-10 200ug/L STD 8260	NA	1	1	STD76127	05/13/16 17:21
8M412229	WG568561-11 300ug/L STD 8260	NA	1	1	STD76127	05/13/16 17:50
8M412230	RINSE	NA	1	1		05/13/16 18:19
8M412231	RINSE	NA	1	1		05/13/16 18:49
8M412232	WG568561-12 50ug/L ALT SRC STD 8260	NA	1	1	STD76109	05/13/16 19:17
8M412233	RINSE	NA	1	1		05/13/16 19:46

Comments

Seq.	Rerun	Dil.	Reason	Analytes
5	X			
File ID: 8M412213				
	Several compounds were low, DNR.			
6				
File ID: 8M412214				

Approved: May 20, 2016

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Instrument Run Log

Instrument:	HPMS8	Dataset:	051316		
Analyst1:	TMB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	23
Method:	624	SOP:	MSV10	Rev:	14
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:	53752				

Internal Standard: STD75899 Surrogate Standard: STD75899

CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG568561

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			Two C compounds failed. DNR. Run a curve.	
7 File ID: 8M412215				
			DNR.	

Approved: May 20, 2016

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Instrument Run Log

Instrument: HPMS11 Dataset: 051316
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 / OVAP MSV01 Rev: 23 / 0
Method: 5030B/5030C/5035A SOP: PAT01 / OVAP PAT01 Rev: 18 / 0
Method: 624 SOP: MSV10 Rev: 14
Maintenance Log ID:

Internal Standard: STD76110 Surrogate Standard: STD75929
CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG568769

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M11835	RINSE	NA	1	1		05/13/16 11:59
11M11836	WG568769-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 14:15
11M11837	WG568769-02 0.3ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 14:40
11M11838	WG568769-03 0.4ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 15:12
11M11839	WG568769-04 1.0ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 15:43
11M11840	WG568769-05 2.0ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 16:15
11M11841	WG568769-06 5.0ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 16:47
11M11842	WG568769-07 20ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 17:19
11M11843	WG568769-08 50ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 17:51
11M11844	WG568769-09 100ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 18:22
11M11845	WG568769-10 200ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 18:54
11M11846	WG568769-11 300ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 19:26
11M11847	RINSE	NA	1	1		05/13/16 19:58
11M11848	WG568769-12 50ug/L ALT SRC STD 8260	NA	1	1	STD76109	05/13/16 20:30
11M11849	RINSE	NA	1	1		05/13/16 21:02
11M11850	RINSE	NA	1	1		05/13/16 21:34

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Instrument Run Log

Instrument: HPMS8 Dataset: 051716
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76072; STD76127 LCS: STD76109; STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG569079; WG569083

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412319	WG569084-01 50ng BFB STD 8260	NA	1	1	STD76034	05/17/16 08:53
8M412320	WG569084-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/17/16 09:18
8M412321	WG569079-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76072	05/17/16 09:47
8M412322	WG569079-03 50ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 10:16
8M412323	WG569079-04 20ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 10:44
8M412324	WG569079-05 5ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 11:13
8M412325	WG569079-06 200ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 11:42
8M412326	WG569079-07 300ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 12:40
8M412327	WG569079-08 400ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 13:10
8M412328	WG569079-09 500ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 13:39
8M412329	RINSE	NA	1	1		05/17/16 14:08
8M412330	RINSE	NA	1	1		05/17/16 14:37
8M412331	WG569079-10 100ug/L ALT SRC STD 826	NA	1	1	STD75801	05/17/16 15:06
8M412332	WG569259-01 BFB 50ng 8260	NA	1	1	STD76034	05/17/16 18:27
8M412333	WG569259-02 50ug/L CCV 8260	NA	1	1	STD76034	05/17/16 18:53
8M412334	WG569260-01 100ug/L CCV A9	NA	1	1	STD76072	05/17/16 19:22
8M412335	WG569083-01 VBLK0517 BLANK 8260	NA	1	1		05/17/16 19:51
8M412336	WG569083-02 20ug/L LCS 8260	NA	1	1	STD76109	05/17/16 20:20
8M412337	WG569083-03 20ug/L LCS2 8260	NA	1	1	STD76109	05/17/16 20:49
8M412338	WG569083-04 100ug/L LCS A9	NA	1	1	STD75801	05/17/16 21:18
8M412339	WG569083-05 100ug/L LCS2 A9	NA	1	1	STD75801	05/17/16 21:46
8M412340	L16050844-01 TB A 826-A9-SPE	5	1	1		05/17/16 22:16
8M412341	L16050844-07 EB A 826-A9-SPE	5	1	1		05/17/16 22:45
8M412342	L16050844-11 AB A 826-A9-SPE	5	1	1		05/17/16 23:14
8M412343	L16050844-02 A 826-A9-SPE	6	1	1		05/17/16 23:43
8M412344	L16050844-05 A 826-A9-SPE	6	1	1		05/18/16 00:12
8M412345	L16050844-06 A 826-A9-SPE	6	1	1		05/18/16 00:41
8M412346	L16050844-12 A 826-A9-SPE	6	1	1		05/18/16 01:10
8M412347	L16050840-01 A 826-A9-SPE	7	1	1		05/18/16 01:38
8M412348	L16050844-08 A 826-A9-SPE	7	1	1		05/18/16 02:07
8M412349	L16050844-13 A 826-A9-SPE	7	1	1		05/18/16 02:36
8M412350	L16050844-15 A 826-A9-SPE	7	1	1		05/18/16 03:05
8M412351	L16050839-01 A 826-A9-SPE	7	1	1		05/18/16 03:33
8M412352	L16050844-03 2.5X A 826-A9-SPE	7	1	2.5		05/18/16 04:02

Approved: May 20, 2016

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Instrument Run Log

Instrument: HPMS8 Dataset: 051716
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76072; STD76127 LCS: STD76109; STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG569079; WG569083

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412353	L16050844-04 5X A 826-A9-SPE	7	1	5		05/18/16 04:31
8M412354	L16050844-09 5X A 826-A9-SPE	7	1	5		05/18/16 05:01
8M412355	L16050844-10 5X A 826-A9-SPE	7	1	5		05/18/16 05:30
8M412356	L16050844-14 50X A 826-A9-SPE	7	1	50		05/18/16 05:59
8M412357	RINSE	NA	1	1		05/18/16 06:28

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
File ID: 8M412320				
	DNR. Running an a9/foo curve.			
32	X	10	Over Calibration Range	CIS12-DCE
File ID: 8M412350				
40	X	2.5	Analyzed too dilute	
File ID: 8M412353				
	DNR.			
37	X	25	Over Calibration Range	TCE
File ID: 8M412355				
38	X	20	Analyzed too dilute	
File ID: 8M412356				
	DNR.			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 062416
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD76370 Surrogate Standard: STD76370
CCV: STD76578 LCS: STD76744 MS/MSD: STD76744

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG574190

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M413218	WG574189-01 BFB 50ng 8260	NA	1	1	STD76496	06/24/16 18:19
8M413219	WG574189-01 BFB 50ng 8260	NA	1	1	STD76496	06/24/16 18:32
8M413220	WG574189-02 50ug/L CCV 8260	NA	1	1	STD76578	06/24/16 19:02
8M413221	WG574XXX-01 100ug/L CCV A9	NA	1	1	STD7XXXX	06/24/16 19:31
8M413222	WG574190-01 BLANK 8260	NA	1	1		06/24/16 20:03
8M413223	WG574190-02 20ug/L LCS 8260	NA	1	1	STD76744	06/24/16 20:32
8M413224	L16060978-03 100X B 826-SPE D1	NA	1	100		06/24/16 21:01
8M413225	L16060974-10 TB A 826-SPE	<2	1	1		06/24/16 21:30
8M413226	L16060986-45 TB A 826-SPE	<2	1	1		06/24/16 21:58
8M413227	L16060986-46 TB A 826-SPE	<2	1	1		06/24/16 22:27
8M413228	L16060986-47 TB A 826-SPE	<2	1	1		06/24/16 22:56
8M413229	L16061142-08 TB A 826-LOW	<2	1	1		06/24/16 23:25
8M413230	L16060974-07 A 826-SPE	<2	1	1		06/24/16 23:54
8M413231	L16060974-08 A 826-SPE	<2	1	1		06/25/16 00:23
8M413232	L16061142-01 A 826-LOW	<2	1	1		06/25/16 00:52
8M413233	L16061142-02 A 826-LOW	<2	1	1		06/25/16 01:21
8M413234	L16061142-04 A 826-LOW	<2	1	1		06/25/16 01:50
8M413235	L16061142-06 A 826-LOW	<2	1	1		06/25/16 02:19
8M413236	L16061142-07 A 826-LOW	<2	1	1		06/25/16 02:48
8M413237	L16060986-23 REF A 826-SPE	NA	1	1		06/25/16 03:17
8M413238	L16060986-35 MS A 826-SPE	NA	1	1	STD76744	06/25/16 03:46
8M413239	L16060986-37 MSD A 826-SPE	NA	1	1	STD76744	06/25/16 04:15
8M413240	L16060986-15 5X A 826-SPE	<2	1	5		06/25/16 04:44
8M413241	L16061055-04 100X A 826-SPE	<2	1	100		06/25/16 05:13
8M413242	L16061055-07 10X A 826-SPE	<2	1	10		06/25/16 05:42
8M413243	L16061096-01 A 826-SPE	<2	1	1		06/25/16 06:11
8M413244	CCV	NA	1	1		06/25/16 06:40
8M413245	RINSE	NA	1	1		06/25/16 07:09
8M413246	RINSE	NA	1	1		06/25/16 07:38

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1	X			

Approved: June 29, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 062416
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD76370 Surrogate Standard: STD76370
CCV: STD76578 LCS: STD76744 MS/MSD: STD76744

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG574190

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
File ID: 8M413218				
	Tune failed, DNR.			
4				
File ID: 8M413221				
	Not needed, DNR.			
7				
File ID: 8M413224				
	Could not read the pH due to dark sample matrix.			
8	X	1	Carry-over contamination	
File ID: 8M413225				
	DNR.			
19	X	1	Surrogate standard failure	
File ID: 8M413236				
24	X	1000	Over Calibration Range	BEN, TOL
File ID: 8M413241				
25	X	100	Over Calibration Range	BEN, CB
File ID: 8M413242				
26	X	1	Carry-over contamination	
File ID: 8M413243				
	DNR.			

Approved: June 29, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 071316
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD76881 Surrogate Standard: STD76782
CCV: STD76892 LCS: STD77015 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG576236

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M13221	RINSE	NA	1	1		07/13/16 08:58
11M13222	WG576234-01 50ng BFB STD 8260	NA	1	1	STD77013	07/13/16 11:45
11M13223	WG576234-01 50ng BFB STD 8260	NA	1	1	STD77013	07/13/16 11:57
11M13224	WG576234-02 50ug/L CCV STD 8260	NA	1	1	STD76892	07/13/16 12:30
11M13225	WG576234-02 50ug/L CCV STD 8260	NA	1	1	STD76892	07/13/16 13:04
11M13226	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76943	07/13/16 13:36
11M13227	WG576236-01 VBLK0713 BLANK STD 826	NA	1	1		07/13/16 14:08
11M13228	L16061142-07 B 826-LOW	<2	1	1		07/13/16 14:40
11M13229	WG576236-02 20ug/L LCS STD 8260	NA	1	1	STD77015	07/13/16 15:12
11M13230	WG576236-03 20ug/L LCS2 STD 8260	NA	1	1	STD77015	07/13/16 15:44

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 11M13222				
			Tune failed, DNR.	
4				
File ID: 11M13224				
			Ketones were low, DNR.	
6				
File ID: 11M13226				
			Not needed, DNR.	

Approved: July 13, 2016

Page: 1

Microbac Laboratories Inc.

Data Checklist

Date: 13-MAY-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75126
Analytical Workgroups: WG568561

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	TMB
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
17-MAY-2016
Tiffany Bailey

Secondary Reviewer:
20-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2016 11:18:36

Microbac Laboratories Inc.

Data Checklist

Date: 13-MAY-2016
Analyst: JDS
Analyst: NA
Method: 8260B
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 75133
Analytical Workgroups: WG568769

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	X
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
23-MAY-2016

Secondary Reviewer:
23-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-23-2016 15:39:32

Microbac Laboratories Inc.

Data Checklist

Date: 17-MAY-2016
Analyst: TMB
Analyst: FJB
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75174
Analytical Workgroups: WG569079; WG569083

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
19-MAY-2016
Tiffany Bailey

Secondary Reviewer:
20-MAY-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2016 11:05:37

Microbac Laboratories Inc.

Data Checklist

Date: 24-JUN-2016
Analyst: FJB
Analyst: NA
Method: 8260B
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 76006
Analytical Workgroups: WG574190

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	WTD
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
29-JUN-2016
Tiffany Bailey

Secondary Reviewer:
29-JUN-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-29-2016 15:06:09

Microbac Laboratories Inc.

Data Checklist

Date: 13-JUL-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 76296
Analytical Workgroups: WG576236

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	ADC
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
13-JUL-2016
Tiffany Bailey

Secondary Reviewer:
13-JUL-2016
Cathy Cater

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-13-2016 17:15:33

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG574190

Login Number: L16061142

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW20-062016	01	06/20/16					06/25/2016	4.7	14		06/25/16	4.7	14	
18WW19-062016	02	06/20/16					06/25/2016	4.7	14		06/25/16	4.7	14	
18WW19FD-062016	04	06/20/16					06/25/2016	4.7	14		06/25/16	4.7	14	
18WW08-062016	06	06/20/16					06/25/2016	4.7	14		06/25/16	4.7	14	
18WW09-062016	07	06/20/16					06/25/2016	4.7	14		06/25/16	4.7	14	
TRIP BLANK	08	06/20/16					06/24/2016	5	14		06/24/16	5	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4831226
Report generated 07/13/2016 17:10

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG576236

Login Number: L16061142

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW09-062016	07	06/20/16					07/13/2016	23.1	14	*	07/13/16	23.1	14	*

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4831226
Report generated 07/13/2016 17:10

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061142
Instrument Id: HPMS8
Workgroup (AAB#): WG574190

Method: 8260
CAL ID: HPMS8-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16061142-01	1.00	01	120	113	99.8	104
L16061142-02	1.00	01	122	114	101	101
L16061142-04	1.00	01	120	113	99.9	103
L16061142-06	1.00	01	122	113	101	103
L16061142-07	1.00	01	121	113	103	104
L16061142-08	1.00	01	118	113	100	103
WG574190-01	1.00	01	115	113	101	102
WG574190-02	1.00	01	119	110	101	102

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4831232
Report generated: 07/13/2016 17:11

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061142
Instrument Id: HPMS11
Workgroup (AAB#): WG576236

Method: 8260
CAL ID: HPMS11-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16061142-07	1.00	02	88.3	102	93.9	98.3
WG576236-01	1.00	01	83.6	96.6	92.2	96.3
WG576236-02	1.00	01	88.9	102	90.2	95.9
WG576236-03	1.00	01	85.5	100	92.6	96.4

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4831232
Report generated: 07/13/2016 17:11

METHOD BLANK SUMMARY

Login Number: L16061142
Blank File ID: 11M13227
Prep Date: 07/13/16 14:08
Analyzed Date: 07/13/16 14:08
Analyst: TMB

Work Group: WG576236
Blank Sample ID: WG576236-01
Instrument ID: HPMS11
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
18WW09-062016	L16061142-07	11M13228	07/13/16 14:40	02
LCS	WG576236-02	11M13229	07/13/16 15:12	01
LCS2	WG576236-03	11M13230	07/13/16 15:44	01

Report Name: BLANK_SUMMARY
PDF File ID: 4853003
Report generated 07/13/2016 17:10

METHOD BLANK SUMMARY

Login Number: L16061142
Blank File ID: 8M413222
Prep Date: 06/24/16 20:03
Analyzed Date: 06/24/16 20:03
Analyst: FJB

Work Group: WG574190
Blank Sample ID: WG574190-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG574190-02	8M413223	06/24/16 20:32	01
TRIP BLANK	L16061142-08	8M413229	06/24/16 23:25	01
18WW20-062016	L16061142-01	8M413232	06/25/16 00:52	01
18WW19-062016	L16061142-02	8M413233	06/25/16 01:21	01
18WW19FD-062016	L16061142-04	8M413234	06/25/16 01:50	01
18WW08-062016	L16061142-06	8M413235	06/25/16 02:19	01
18WW09-062016	L16061142-07	8M413236	06/25/16 02:48	01

Report Name: BLANK_SUMMARY
PDF File ID: 4853003
Report generated 07/13/2016 17:10

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061142 Prep Date: 07/13/16 14:08 Sample ID: WG576236-01
Instrument ID: HPMS11 Run Date: 07/13/16 14:08 Prep Method: 5030B/5030C/503
File ID: 11M13227 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG576236 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 4831227
13-JUL-2016 17:10

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061142 Prep Date: 07/13/16 14:08 Sample ID: WG576236-01
Instrument ID: HPMS11 Run Date: 07/13/16 14:08 Prep Method: 5030B/5030C/503
File ID: 11M13227 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG576236 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	96.6	85 - 115	PASS
1,2-Dichloroethane-d4	83.6	70 - 120	PASS
Toluene-d8	96.3	85 - 120	PASS
4-Bromofluorobenzene	92.2	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4831227
13-JUL-2016 17:10

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16061142 Prep Date: 06/24/16 20:03 Sample ID: WG574190-01
Instrument ID: HPMS8 Run Date: 06/24/16 20:03 Prep Method: 5030B/5030C/503
File ID: 8M413222 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG574190 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4831227
13-JUL-2016 17:10

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061142 Prep Date: 06/24/16 20:03 Sample ID: WG574190-01
Instrument ID: HPMS8 Run Date: 06/24/16 20:03 Prep Method: 5030B/5030C/503
File ID: 8M413222 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG574190 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	113	85 - 115	PASS
1,2-Dichloroethane-d4	115	70 - 120	PASS
Toluene-d8	102	85 - 120	PASS
4-Bromofluorobenzene	101	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4831227
13-JUL-2016 17:10

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061142 | Run Date: 06/24/2016 | Sample ID: WG574190-02
Instrument ID: HPMS8 | Run Time: 20:32 | Prep Method: 5030B/5030C/503
File ID: 8M413223 | Analyst: FJB | Method: 8260B
Workgroup (AAB#): WG574190 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD76744 | Cal ID: HPMS8-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	22.5	113	40 - 140	
Benzene	20.0	22.9	115	80 - 120	
Bromobenzene	20.0	20.9	104	75 - 125	
Bromochloromethane	20.0	23.1	115	65 - 130	
Bromodichloromethane	20.0	24.7	123	75 - 120	*
Bromoform	20.0	20.8	104	70 - 130	
Bromomethane	20.0	16.9	84.6	30 - 145	
2-Butanone	20.0	20.2	101	30 - 150	
n-Butylbenzene	20.0	20.1	101	70 - 135	
sec-Butylbenzene	20.0	21.2	106	70 - 125	
tert-Butylbenzene	20.0	21.7	108	70 - 130	
Carbon disulfide	20.0	21.0	105	35 - 160	
Carbon tetrachloride	20.0	25.6	128	65 - 140	
Chlorobenzene	20.0	21.4	107	80 - 120	
Chlorodibromomethane	20.0	21.8	109	60 - 135	
Chloroethane	20.0	23.3	117	60 - 135	
Chloroform	20.0	23.9	119	65 - 135	
Chloromethane	20.0	22.6	113	40 - 125	
2-Chlorotoluene	20.0	21.9	109	75 - 125	
4-Chlorotoluene	20.0	20.6	103	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	19.1	95.3	50 - 130	
1,2-Dibromoethane	20.0	20.9	105	80 - 120	
Dibromomethane	20.0	22.1	110	75 - 125	
1,2-Dichlorobenzene	20.0	20.4	102	70 - 120	
1,3-Dichlorobenzene	20.0	21.3	106	75 - 125	
1,4-Dichlorobenzene	20.0	21.0	105	75 - 125	
Dichlorodifluoromethane	20.0	28.8	144	30 - 155	
1,1-Dichloroethane	20.0	22.4	112	70 - 135	
1,2-Dichloroethane	20.0	26.6	133	70 - 130	*
1,1-Dichloroethene	20.0	22.8	114	70 - 130	
cis-1,2-Dichloroethene	20.0	23.3	117	70 - 125	
trans-1,2-Dichloroethene	20.0	22.9	115	60 - 140	
1,2-Dichloropropane	20.0	22.0	110	75 - 125	
1,3-Dichloropropane	20.0	22.0	110	75 - 125	
2,2-Dichloropropane	20.0	25.5	127	70 - 135	
cis-1,3-Dichloropropene	20.0	25.5	127	70 - 130	
trans-1,3-Dichloropropene	20.0	22.1	111	55 - 140	
1,1-Dichloropropene	20.0	23.2	116	75 - 130	
Ethylbenzene	20.0	20.4	102	75 - 125	
2-Hexanone	20.0	18.0	90.1	55 - 130	
Hexachlorobutadiene	20.0	21.0	105	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4831228
Report generated: 06/29/2016 12:26

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061142 | Run Date: 06/24/2016 | Sample ID: WG574190-02
Instrument ID: HPMS8 | Run Time: 20:32 | Prep Method: 5030B/5030C/503
File ID: 8M413223 | Analyst: FJB | Method: 8260B
Workgroup (AAB#): WG574190 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD76744 | Cal ID: HPMS8-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	22.4	112	75 - 125	
p-Isopropyltoluene	20.0	21.1	105	75 - 130	
4-Methyl-2-pentanone	20.0	21.0	105	60 - 135	
Methylene chloride	20.0	22.3	111	55 - 140	
Naphthalene	20.0	16.6	82.9	55 - 140	
n-Propylbenzene	20.0	21.6	108	70 - 130	
Styrene	20.0	21.8	109	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	22.2	111	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	18.2	91.0	65 - 130	
Tetrachloroethene	20.0	21.7	108	45 - 150	
Toluene	20.0	21.0	105	75 - 120	
1,2,3-Trichlorobenzene	20.0	18.3	91.4	55 - 140	
1,2,4-Trichlorobenzene	20.0	19.8	98.9	65 - 135	
1,1,1-Trichloroethane	20.0	25.8	129	65 - 130	
1,1,2-Trichloroethane	20.0	19.8	98.9	75 - 125	
Trichloroethene	20.0	24.3	122	70 - 125	
Trichlorofluoromethane	20.0	25.1	126	60 - 145	
1,2,3-Trichloropropane	20.0	19.8	99.2	75 - 125	
1,2,4-Trimethylbenzene	20.0	20.8	104	75 - 130	
1,3,5-Trimethylbenzene	20.0	21.7	108	75 - 130	
Vinyl chloride	20.0	26.7	134	50 - 145	
o-Xylene	20.0	21.9	110	80 - 120	
m-,p-Xylene	40.0	43.3	108	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	110	85 - 115	PASS
1,2-Dichloroethane-d4	119	70 - 120	PASS
Toluene-d8	102	85 - 120	PASS
4-Bromofluorobenzene	101	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4831228
Report generated: 06/29/2016 12:26

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061142 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS11 Matrix: Water Method: 8260B
Workgroup (AAB#): WG576236 Units: ug/L
QC Key: DOD4 Lot #: STD77015

Sample ID: WG576236-02 LCS File ID: 11M13229 Run Date: 07/13/2016 15:12
Sample ID: WG576236-03 LCS2 File ID: 11M13230 Run Date: 07/13/2016 15:44

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	20.2	101	20.0	19.6	97.9	3.06	80 - 130	30	
1,1,1-Trichloroethane	20.0	20.3	101	20.0	19.3	96.3	5.11	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	17.7	88.5	20.0	16.9	84.7	4.41	65 - 130	30	
1,1,2-Trichloroethane	20.0	19.8	99.2	20.0	18.8	93.8	5.64	75 - 125	30	
1,1-Dichloroethane	20.0	19.4	97.0	20.0	18.8	93.9	3.25	70 - 135	30	
1,1-Dichloroethene	20.0	18.3	91.3	20.0	17.5	87.7	4.05	70 - 130	30	
1,1-Dichloropropene	20.0	20.0	99.9	20.0	19.0	95.2	4.86	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	18.1	90.3	20.0	17.4	86.9	3.88	55 - 140	30	
1,2,3-Trichloropropane	20.0	18.4	91.9	20.0	17.9	89.7	2.38	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	18.1	90.5	20.0	18.3	91.5	1.13	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	19.4	96.9	20.0	19.4	97.1	0.181	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	16.5	82.6	20.0	15.5	77.5	6.38	50 - 130	30	
1,2-Dibromoethane	20.0	20.0	99.9	20.0	18.5	92.7	7.50	80 - 120	30	
1,2-Dichlorobenzene	20.0	20.0	99.8	20.0	19.3	96.6	3.26	70 - 120	30	
1,2-Dichloroethane	20.0	19.7	98.6	20.0	18.7	93.3	5.57	70 - 130	30	
1,2-Dichloropropane	20.0	21.4	107	20.0	20.3	101	5.32	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	19.3	96.3	20.0	19.2	96.0	0.320	75 - 130	30	
1,3-Dichlorobenzene	20.0	19.6	97.9	20.0	19.5	97.5	0.411	75 - 125	30	
1,3-Dichloropropane	20.0	20.5	102	20.0	19.3	96.5	5.77	75 - 125	30	
1,4-Dichlorobenzene	20.0	19.7	98.5	20.0	19.6	97.8	0.713	75 - 125	30	
2,2-Dichloropropane	20.0	19.3	96.6	20.0	20.3	102	5.04	70 - 135	30	
2-Butanone	20.0	17.4	87.0	20.0	16.0	80.0	8.34	30 - 150	30	
2-Chlorotoluene	20.0	19.4	97.2	20.0	19.6	97.8	0.571	75 - 125	30	
2-Hexanone	20.0	15.0	75.1	20.0	13.5	67.5	10.8	55 - 130	30	
4-Chlorotoluene	20.0	19.0	95.0	20.0	19.1	95.5	0.447	75 - 130	30	
4-Methyl-2-pentanone	20.0	18.7	93.4	20.0	17.3	86.7	7.50	60 - 135	30	
Acetone	20.0	16.5	82.3	20.0	15.8	79.2	3.80	40 - 140	30	
Benzene	20.0	20.5	102	20.0	20.1	101	1.74	80 - 120	30	
Bromobenzene	20.0	19.1	95.4	20.0	18.9	94.3	1.12	75 - 125	30	
Bromochloromethane	20.0	22.7	113	20.0	21.6	108	4.88	65 - 130	30	
Bromodichloromethane	20.0	20.4	102	20.0	19.5	97.5	4.48	75 - 120	30	
Bromoform	20.0	19.1	95.4	20.0	17.2	85.9	10.4	70 - 130	30	
Bromomethane	20.0	17.3	86.3	20.0	17.3	86.4	0.119	30 - 145	30	
Carbon disulfide	20.0	16.9	84.6	20.0	17.1	85.4	0.925	35 - 160	30	
Carbon tetrachloride	20.0	20.7	104	20.0	19.4	97.1	6.49	65 - 140	30	
Chlorobenzene	20.0	20.6	103	20.0	20.1	100	2.58	80 - 120	30	
Chloroethane	20.0	21.1	106	20.0	21.1	106	0.0130	60 - 135	30	
Chloroform	20.0	19.8	98.8	20.0	19.1	95.7	3.18	65 - 135	30	
Chloromethane	20.0	16.2	81.2	20.0	16.6	83.2	2.46	40 - 125	30	
cis-1,2-Dichloroethene	20.0	22.2	111	20.0	21.1	105	4.92	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4852937
Report generated: 07/13/2016 17:11

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061142 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS11 Matrix: Water Method: 8260B
Workgroup (AAB#): WG576236 Units: ug/L
QC Key: DOD4 Lot #: STD77015

Sample ID: WG576236-02 LCS File ID: 11M13229 Run Date: 07/13/2016 15:12
Sample ID: WG576236-03 LCS2 File ID: 11M13230 Run Date: 07/13/2016 15:44

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	22.4	112	20.0	21.9	109	2.59	70 - 130	30	
Chlorodibromomethane	20.0	20.2	101	20.0	18.9	94.7	6.61	60 - 135	30	
Dibromomethane	20.0	20.0	100	20.0	18.8	93.8	6.58	75 - 125	30	
Dichlorodifluoromethane	20.0	17.1	85.7	20.0	16.3	81.7	4.69	30 - 155	30	
Ethylbenzene	20.0	19.6	98.2	20.0	19.2	96.1	2.25	75 - 125	30	
Hexachlorobutadiene	20.0	15.8	79.1	20.0	15.6	77.8	1.66	50 - 140	30	
Isopropylbenzene	20.0	19.9	99.5	20.0	19.6	98.1	1.43	75 - 125	30	
m-,p-Xylene	40.0	40.2	100	40.0	39.9	99.7	0.831	75 - 130	30	
Methylene chloride	20.0	20.8	104	20.0	20.2	101	2.89	55 - 140	30	
n-Butylbenzene	20.0	17.3	86.4	20.0	17.4	87.1	0.817	70 - 135	30	
n-Propylbenzene	20.0	19.4	97.1	20.0	19.5	97.4	0.279	70 - 130	30	
Naphthalene	20.0	16.5	82.3	20.0	15.6	78.2	5.04	55 - 140	30	
o-Xylene	20.0	20.2	101	20.0	19.7	98.6	2.62	80 - 120	30	
p-Isopropyltoluene	20.0	18.7	93.7	20.0	18.7	93.7	0.0353	75 - 130	30	
sec-Butylbenzene	20.0	19.0	95.2	20.0	18.9	94.6	0.649	70 - 125	30	
Styrene	20.0	20.6	103	20.0	20.1	100	2.67	65 - 135	30	
tert-Butylbenzene	20.0	20.2	101	20.0	19.7	98.7	2.54	70 - 130	30	
Tetrachloroethene	20.0	20.0	100	20.0	19.2	96.2	4.00	45 - 150	30	
Toluene	20.0	19.9	99.6	20.0	19.4	96.9	2.67	75 - 120	30	
trans-1,2-Dichloroethene	20.0	21.0	105	20.0	20.3	101	3.40	60 - 140	30	
trans-1,3-Dichloropropene	20.0	18.8	94.0	20.0	17.9	89.4	5.02	55 - 140	30	
Trichloroethene	20.0	23.2	116	20.0	21.8	109	6.38	70 - 125	30	
Trichlorofluoromethane	20.0	19.5	97.6	20.0	18.6	93.0	4.85	60 - 145	30	
Vinyl chloride	20.0	20.6	103	20.0	19.5	97.6	5.43	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	88.9	85.5	70 - 120	PASS
Dibromofluoromethane	102	100	85 - 115	PASS
4-Bromofluorobenzene	90.2	92.6	75 - 120	PASS
Toluene-d8	95.9	96.4	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4852937
Report generated: 07/13/2016 17:11

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061142
Instrument: HPMS11
Analyst: JDS
Workgroup: WG568769

Tune ID: WG568769-01
Run Date: 05/13/2016
Run Time: 14:15
File ID: 11M11836
Cal ID: HPMS11 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	24.2	11638	PASS
75.0	95.0	30.0	60.0	50.2	24088	PASS
95.0	95.0	100	100	100	48016	PASS
96.0	95.0	5.00	9.00	6.26	3008	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	86.2	41402	PASS
175	174	5.00	9.00	8.26	3421	PASS
176	174	95.0	101	97.3	40288	PASS
177	176	5.00	9.00	6.92	2789	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG568769-02	STD	01	05/13/2016 14:40	
WG568769-03	STD	01	05/13/2016 15:12	
WG568769-04	STD	01	05/13/2016 15:43	
WG568769-05	STD	01	05/13/2016 16:15	
WG568769-06	STD	01	05/13/2016 16:47	
WG568769-07	STD	01	05/13/2016 17:19	
WG568769-08	STD-CCV	01	05/13/2016 17:51	
WG568769-09	STD	01	05/13/2016 18:22	
WG568769-10	STD	01	05/13/2016 18:54	
WG568769-11	STD	01	05/13/2016 19:26	
WG568769-12	SSCV	01	05/13/2016 20:30	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4831230
Report generated 07/13/2016 17:11

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061142
Instrument: HPMS11
Analyst: TMB
Workgroup: WG576234

Tune ID: WG576234-01
Run Date: 07/13/2016
Run Time: 11:57
File ID: 11M13223
Cal ID: HPMS11 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.2	4243	PASS
75.0	95.0	30.0	60.0	45.7	10096	PASS
95.0	95.0	100	100	100	22097	PASS
96.0	95.0	5.00	9.00	7.01	1550	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	87.1	19238	PASS
175	174	5.00	9.00	7.51	1445	PASS
176	174	95.0	101	97.2	18706	PASS
177	176	5.00	9.00	6.98	1305	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG576234-02	CCV	01	07/13/2016 13:04	
WG576236-01	BLANK	01	07/13/2016 14:08	
L16061142-07	18WW09-062016	02	07/13/2016 14:40	
WG576236-02	LCS	01	07/13/2016 15:12	
WG576236-03	LCS2	01	07/13/2016 15:44	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4831230
Report generated 07/13/2016 17:11

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061142
Instrument: HPMS8
Analyst: TMB
Workgroup: WG568561

Tune ID: WG568561-01
Run Date: 05/13/2016
Run Time: 12:36
File ID: 8M412218
Cal ID: HPMS8 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	16.7	6575	PASS
75.0	95.0	30.0	60.0	51.3	20171	PASS
95.0	95.0	100	100	100	39312	PASS
96.0	95.0	5.00	9.00	6.74	2649	PASS
173	174	0	2.00	0.363	122	PASS
174	95.0	50.0	100	85.5	33616	PASS
175	174	5.00	9.00	8.17	2746	PASS
176	174	95.0	101	99.2	33360	PASS
177	176	5.00	9.00	6.80	2267	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG568561-02	STD	01	05/13/2016 13:29	
WG568561-03	STD	01	05/13/2016 13:58	
WG568561-04	STD	01	05/13/2016 14:27	
WG568561-05	STD	01	05/13/2016 14:56	
WG568561-06	STD	01	05/13/2016 15:25	
WG568561-07	STD	01	05/13/2016 15:54	
WG568561-08	STD-CCV	01	05/13/2016 16:23	
WG568561-09	STD	01	05/13/2016 16:52	
WG568561-10	STD	01	05/13/2016 17:21	
WG568561-11	STD	01	05/13/2016 17:50	
WG568561-12	SSCV	01	05/13/2016 19:17	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4831230
Report generated 07/13/2016 17:11

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061142
Instrument: HPMS8
Analyst: TMB
Workgroup: WG569084

Tune ID: WG569084-01
Run Date: 05/17/2016
Run Time: 08:53
File ID: 8M412319
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.1	6316	PASS
75.0	95.0	30.0	60.0	54.7	18130	PASS
95.0	95.0	100	100	100	33138	PASS
96.0	95.0	5.00	9.00	6.76	2241	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	72.2	23934	PASS
175	174	5.00	9.00	7.88	1886	PASS
176	174	95.0	101	96.8	23159	PASS
177	176	5.00	9.00	7.15	1655	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG569079-01	STD-CCV	01	05/17/2016 09:47	
WG569079-03	STD	01	05/17/2016 10:16	
WG569079-04	STD	01	05/17/2016 10:44	
WG569079-05	STD	01	05/17/2016 11:13	
WG569079-06	STD	01	05/17/2016 11:42	
WG569079-07	STD	01	05/17/2016 12:40	
WG569079-08	STD	01	05/17/2016 13:10	
WG569079-09	STD	01	05/17/2016 13:39	
WG569079-10	SSCV	01	05/17/2016 15:06	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4831230
Report generated 07/13/2016 17:11

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061142
Instrument: HPMS8
Analyst: FJB
Workgroup: WG574189

Tune ID: WG574189-01
Run Date: 06/24/2016
Run Time: 18:32
File ID: 8M413219
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	18.4	9741	PASS
75.0	95.0	30.0	60.0	54.9	29109	PASS
95.0	95.0	100	100	100	53042	PASS
96.0	95.0	5.00	9.00	5.99	3179	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	79.5	42146	PASS
175	174	5.00	9.00	7.65	3223	PASS
176	174	95.0	101	96.3	40586	PASS
177	176	5.00	9.00	6.45	2619	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG574189-02	CCV	01	06/24/2016 19:02	
WG574190-01	BLANK	01	06/24/2016 20:03	
WG574190-02	LCS	01	06/24/2016 20:32	
L16061142-08	TRIP BLANK	01	06/24/2016 23:25	
L16061142-01	18WW20-062016	01	06/25/2016 00:52	
L16061142-02	18WW19-062016	01	06/25/2016 01:21	
L16061142-04	18WW19FD-062016	01	06/25/2016 01:50	
L16061142-06	18WW08-062016	01	06/25/2016 02:19	
L16061142-07	18WW09-062016	01	06/25/2016 02:48	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4831230
Report generated 07/13/2016 17:11

Calibration Table Report
Method: 8260WT.M
Title: 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Calibration: Sat May 14 18:45:57 2016
Curve: WG568769
Calibration Files

	Compound	0.3 11M11837.D	0.4 11M11838.D	1 11M11839.D	2 11M11840.D	5 11M11841.D	20 11M11842.D	50 11M11843.D	100 11M11844.D	200 11M11845.D	300 11M11846.D	Avg	%RSD	Linear	Quadratic
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.345	0.368	0.326	0.431	0.400	0.424	0.417	0.424	0.392	10.308		
P	Chloromethane			0.348	0.363	0.289	0.310	0.276	0.296	0.305	0.324	0.314	9.474		
C	Vinyl Chloride		0.275	0.241	0.249	0.244	0.268	0.250	0.271	0.271	0.276	0.261	5.458		
T	1,3-Butadiene					0.242	0.284	0.269	0.264	0.256	0.240	0.259	6.530		
T	Bromomethane			0.167	0.174	0.164	0.180	0.165	0.182	0.194	0.206	0.179	8.292		
T	Chloroethane			0.164	0.165	0.151	0.174	0.161	0.171	0.173	0.181	0.167	5.524		
T	Trichlorofluoromethane		0.514	0.523	0.537	0.496	0.552	0.498	0.524	0.514	0.514	0.519	3.376		
T	Diethyl ether			0.189	0.191	0.195	0.196	0.188	0.193		0.192	0.192	1.552		
T	Isoprene					0.299	0.331	0.317	0.323	0.325	0.325	0.320	3.522		
T	Acrolein			0.013	0.022	0.024	0.024	0.024	0.025		0.027	0.023	19.436	0.999	
T	1,1,2-Trichloro-1,2,2-Trifluor			0.261	0.245	0.234	0.268	0.245	0.252	0.254	0.257	0.252	4.225		
T	Acetone					0.063	0.067	0.058	0.057	0.057	0.054	0.059	7.931		
C	1,1-Dichloroethene		0.459	0.452	0.460	0.429	0.492	0.441	0.464	0.461	0.461	0.458	3.810		
T	Tert-Butyl Alcohol			0.014	0.015	0.017	0.018	0.017	0.017		0.017	0.016	9.673		
T	Dimethyl Sulfide					0.169	0.185	0.186	0.185	0.188	0.184	0.183	3.765		
T	Iodomethane				0.043	0.072	0.164	0.206	0.217	0.219	0.208	0.162	45.603		0.999
T	Methyl acetate				0.182	0.317	0.215	0.178	0.176	0.169	0.168	0.201	26.745		1.000
T	Methylene Chloride			0.239	0.256	0.230	0.243	0.224	0.232	0.234	0.238	0.237	4.076		
T	Carbon Disulfide			0.737	0.762	0.714	0.798	0.783	0.783	0.782	0.770	0.766	3.624		
T	Acrylonitrile			0.072	0.069	0.075	0.085	0.081	0.085		0.090	0.080	9.576		
T	Methyl Tert Butyl Ether			0.568	0.546	0.564	0.650	0.585	0.606	0.612	0.595	0.591	5.543		
T	trans-1,2-Dichloroethene		0.288	0.230	0.264	0.229	0.263	0.242	0.251	0.254	0.260	0.253	7.263		
T	n-Hexane				0.424	0.377	0.450	0.431	0.426	0.424	0.422	0.422	5.186		
T	Diisopropyl ether			1.034	1.075	1.083	1.055	1.046	1.062		1.015	1.053	2.218		
T	Vinyl Acetate					0.235	0.391	0.393	0.395	0.430	0.431	0.379	19.260	0.999	
P	1,1-Dichloroethane		0.463	0.517	0.527	0.505	0.535	0.495	0.513	0.511	0.508	0.508	4.023		
T	Ethyl-Tert-Butyl ether			0.815	0.854	0.881	0.876	0.855	0.873		0.844	0.857	2.667		
T	2-Butanone					0.079	0.097	0.087	0.092	0.092	0.091	0.090	6.720		
T	Propionitrile			0.023	0.025	0.026	0.029	0.027	0.027		0.027	0.026	7.381		
T	2,2-Dichloropropane		0.325	0.372	0.435	0.395	0.406	0.386	0.422	0.418	0.419	0.398	8.479		
T	cis-1,2-Dichloroethene		0.276	0.266	0.289	0.269	0.294	0.271	0.280	0.284	0.285	0.279	3.456		
C	Chloroform	0.587	0.483	0.491	0.514	0.480	0.509	0.470	0.486	0.489	0.482	0.499	6.767		
T	1-Bromopropane			0.014	0.041	0.045	0.047	0.048	0.049	0.050	0.050	0.043	28.190	1.000	
T	Bromochloromethane		0.115	0.140	0.169	0.167	0.188	0.172	0.179	0.180	0.181	0.166	14.065		
T	Tetrahydrofuran			0.074	0.061	0.058	0.067	0.061	0.062		0.059	0.063	8.769		
S	Dibromofluoromethane				0.251	0.266	0.284	0.268	0.284	0.285	0.278	0.274	4.605		
T	1,1,1-Trichloroethane		0.475	0.478	0.508	0.471	0.515	0.477	0.502	0.499	0.495	0.491	3.293		
T	Cyclohexane		0.477	0.485	0.547	0.509	0.574	0.551	0.560	0.558	0.556	0.535	6.606		
T	1,1-Dichloropropene		0.342	0.350	0.346	0.332	0.370	0.339	0.358	0.359	0.362	0.351	3.562		
T	Carbon Tetrachloride		0.409	0.457	0.522	0.465	0.518	0.473	0.496	0.492	0.486	0.480	7.177		
T	Tert-Amyl-Methyl ether			0.565	0.596	0.603	0.611	0.588	0.605		0.6	0.59537	2.5818		
S	1,2-Dichloroethane-d4			0.315	0.304	0.32	0.326	0.303	0.319	0.31	0.298	0.31197	3.15125		
T	1,2-Dichloroethane		0.388	0.391	0.419	0.395	0.441	0.402	0.413	0.409	0.391	0.40536	4.2274		
T	Benzene		1.058	0.952	1.016	0.923	0.996	0.908	0.943	0.931	0.914	0.96002	5.38884		
T	Trichloroethene		0.308	0.317	0.329	0.306	0.322	0.294	0.313	0.309	0.311	0.31204	3.21019		
T	Methylcyclohexane		0.332	0.37	0.389	0.35	0.411	0.401	0.4	0.405	0.407	0.3851	7.28708		
C	1,2-Dichloropropane		0.259	0.262	0.273	0.254	0.276	0.257	0.268	0.27	0.273	0.26575	2.95636		
T	1,4-Dioxane				0.001	0.001	0.002	0.001	0.002		0.002	0.0014	19.4617	0.999	
T	Bromodichloromethane		0.346	0.346	0.373	0.362	0.4	0.369	0.387	0.389	0.385	0.37307	5.09783		
T	Dibromomethane		0.118	0.136	0.135	0.137	0.149	0.137	0.146	0.145	0.144	0.13848	6.69192		
T	2-Chloroethyl Vinyl Ether					0.112	0.138	0.128	0.136	0.138	0.135	0.13098	7.7176		
T	4-Methyl-2-Pentanone					0.06	0.08	0.073	0.076	0.077	0.077	0.07387	9.67651		
T	cis-1,3-Dichloropropene		0.326	0.338	0.358	0.357	0.406	0.379	0.395	0.401	0.399	0.37315	7.91395		
T	Dimethyl Disulfide					0.185	0.229	0.227	0.233	0.238	0.235	0.22454	8.74309		

I	Chlorobenzene-d5	ISTD												
S	Toluene-d8				1.101	1.093	1.115	1.056	1.103	1.092	1.044	1.08625	2.42896	
C	Toluene		1.309	1.253	1.287	1.269	1.347	1.249	1.287	1.241	1.149	1.2656	4.33323	
T	Ethyl Methacrylate			0.234	0.233	0.25	0.299	0.285	0.289	0.291	0.281	0.27024	9.93745	
T	trans-1,3-Dichloropropene			0.335	0.388	0.387	0.448	0.418	0.432	0.43	0.412	0.40623	8.82781	
T	1,1,2-Trichloroethane		0.222	0.201	0.243	0.21	0.246	0.221	0.228	0.227	0.221	0.22442	6.30977	
T	2-Hexanone					0.137	0.179	0.165	0.172	0.172	0.165	0.16482	8.91224	
T	1,3-Dichloropropane		0.337	0.338	0.351	0.355	0.396	0.361	0.374	0.373	0.358	0.36039	5.16222	
T	Tetrachloroethene		0.274	0.287	0.317	0.286	0.306	0.286	0.3	0.299	0.294	0.29431	4.41886	
T	Dibromochloromethane		0.283	0.297	0.336	0.33	0.378	0.354	0.372	0.372	0.359	0.3423	9.88235	
T	1,2-Dibromoethane		0.232	0.182	0.228	0.214	0.243	0.224	0.233	0.235	0.232	0.22485	7.92714	
T	1-Chlorohexane		0.37	0.399	0.414	0.391	0.442	0.429	0.44	0.438	0.432	0.41726	6.09034	
P	Chlorobenzene		0.927	0.917	0.998	0.932	0.976	0.909	0.93	0.902	0.853	0.92715	4.48215	
T	1,1,1,2-Tetrachloroethane		0.341	0.361	0.405	0.366	0.388	0.371	0.384	0.385	0.376	0.37515	4.87731	
C	Ethylbenzene		0.453	0.457	0.512	0.463	0.495	0.466	0.482	0.479	0.472	0.47542	3.94078	
T	m-,p-Xylene		0.619	0.583	0.605	0.564	0.604	0.568	0.579	0.559	0.522	0.57798	5.08853	
T	o-Xylene		0.539	0.549	0.574	0.539	0.6	0.561	0.574	0.57	0.557	0.56249	3.43829	
T	Styrene		0.865	0.848	0.897	0.918	1.018	0.955	0.985	0.959	0.917	0.92933	5.96246	
P	Bromoform			0.172	0.189	0.185	0.226	0.21	0.225	0.226	0.228	0.20747	10.9157	
T	Isopropylbenzene		1.515	1.456	1.567	1.46	1.592	1.493	1.534	1.449	1.323	1.48754	5.34769	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.288	0.357	0.369	0.371	0.441	0.396	0.412	0.428	0.442	0.38931	12.6902	
S	p-Bromofluorobenzene				0.772	0.784	0.794	0.716	0.767	0.789	0.773	0.77065	3.38935	
T	1,2,3-Trichloropropane			0.087	0.129	0.138	0.151	0.137	0.142	0.148	0.148	0.13515	15.3522	0.999
T	trans-1,4-Dichloro-2-Butene			0.105	0.117	0.124	0.177	0.178	0.184	0.192	0.193	0.15883	23.0996	0.999
T	n-Propylbenzene		2.87	2.8	3.077	2.949	3.134	2.886	2.979	2.836	2.526	2.89527	6.10377	
T	Bromobenzene	0.663	0.778	0.81	0.798	0.765	0.784	0.718	0.752	0.769	0.76	0.75973	5.57443	
T	1,3,5-Trimethylbenzene		2.338	2.056	2.263	2.172	2.357	2.166	2.252	2.223	2.059	2.20939	4.86261	
T	2-Chlorotoluene		2.158	2.096	2.122	2.033	2.128	1.936	2.002	1.954	1.82	2.0279	5.4704	
T	4-Chlorotoluene		1.782	1.755	1.937	1.808	1.916	1.763	1.832	1.838	1.717	1.8165	4.03452	
T	a-Methylstyrene			1	1.066	1.101	1.241	1.231	1.235	1.242	1.208	1.16555	8.18507	
T	tert-Butylbenzene		0.378	0.44	0.48	0.489	0.498	0.458	0.483	0.49	0.497	0.46809	8.31778	
T	1,2,4-Trimethylbenzene		2.159	2.195	2.274	2.295	2.472	2.234	2.309	2.244	2.067	2.24981	4.97706	
T	sec-Butylbenzene			2.593	2.734	2.647	2.87	2.634	2.723	2.617	2.404	2.65291	5.05975	
T	p-Isopropyltoluene			2.247	2.592	2.45	2.641	2.43	2.506	2.404	2.226	2.43674	6.05243	
T	1,3-Dichlorobenzene		1.487	1.488	1.538	1.46	1.53	1.398	1.451	1.446	1.406	1.46732	3.33475	
T	1,4-Dichlorobenzene	1.482	1.601	1.511	1.569	1.484	1.538	1.404	1.456	1.434	1.395	1.4873	4.59741	
T	n-Butylbenzene		2.048	2.099	2.295	2.049	2.32	2.134	2.224	2.136	2.021	2.14721	5.09289	
T	1,2-Dichlorobenzene	1.33	1.26	1.333	1.432	1.33	1.406	1.296	1.343	1.326	1.31	1.33665	3.71841	
T	1,2-Dibromo-3-Chloropropane				0.057	0.079	0.096	0.081	0.086	0.087	0.091	0.08248	15.3444	0.999
T	1,2,4-Trichlorobenzene		0.927	0.903	0.957	0.956	1.042	0.972	0.998	1.002	1.047	0.97808	4.96993	
T	Hexachlorobutadiene		0.393	0.381	0.451	0.418	0.447	0.415	0.441	0.442	0.49	0.43089	7.64497	
T	Naphthalene		1.885	1.633	1.765	1.712	2.026	1.824	1.878	1.821	1.794	1.81543	6.15168	
T	1,2,3-Trichlorobenzene	0.854	0.957	0.865	0.918	0.834	0.946	0.86	0.889	0.912	0.943	0.89764	4.8559	

Tue May 17 13:57:02 2016

Calibration Table Report
Method: 8260WT.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Calibration: Sat May 14 18:08:06 2016
Curve: WG568561
Calibration Files

	Compound	0.3 8M412220.D	0.4 8M412221.D	1 8M412222.D	2 8M412223.D	5 8M412224.D	20 8M412225.D	50 8M412226.D	100 8M412227.D	200 8M412228.D	300 8M412229.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane		0.427	0.390	0.397	0.364	0.468	0.439	0.452	0.427	0.408	0.419	7.751		
P	Chloromethane			0.264	0.257	0.223	0.253	0.240	0.240	0.239	0.241	0.245	5.336		
C	Vinyl Chloride		0.274	0.296	0.297	0.277	0.299	0.292	0.299	0.292	0.288	0.290	3.191		
T	1,3-Butadiene				0.218	0.208	0.242	0.251	0.277	0.254	0.254	0.243	9.644		
T	Bromomethane			0.129	0.133	0.127	0.162	0.167	0.187	0.205	0.212	0.165	20.449		1.000
T	Chloroethane		0.173	0.157	0.153	0.143	0.164	0.157	0.163	0.164	0.164	0.160	5.354		
T	Trichlorofluoromethane		0.544	0.538	0.559	0.506	0.570	0.538	0.551	0.531	0.525	0.540	3.520		
T	Diethyl ether			0.130	0.138	0.123	0.132	0.125	0.128		0.127	0.129	3.866		
T	Isoprene		0.335	0.351	0.334	0.293	0.334	0.320	0.334	0.322	0.329	0.328	4.867		
T	Acrolein				0.012	0.010	0.010	0.011	0.012		0.014	0.012	12.987		
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.256	0.269	0.240	0.260	0.249	0.257	0.251	0.250	0.254	3.397		
T	Acetone					0.023	0.030	0.029	0.030	0.028	0.028	0.028	9.132		
C	1,1-Dichloroethene		0.424	0.407	0.406	0.387	0.416	0.398	0.409	0.400	0.393	0.404	2.830		
T	Tert-Butyl Alcohol				0.010	0.009	0.009	0.009	0.009		0.009	0.009	2.872		
T	Dimethyl Sulfide		0.133	0.142	0.152	0.137	0.145	0.142	0.151	0.147	0.151	0.145	4.534		
T	Iodomethane				0.019	0.024	0.066	0.101	0.129	0.135	0.131	0.087	58.244		0.998
T	Methyl acetate					0.075	0.076	0.074	0.078	0.076	0.078	0.076	2.221		
T	Methylene Chloride			0.274	0.265	0.244	0.263	0.250	0.255	0.254	0.252	0.257	3.686		
T	Carbon Disulfide			0.888	0.922	0.801	0.873	0.816	0.854	0.813	0.802	0.846	5.346		
T	Acrylonitrile			0.027	0.035	0.033	0.038	0.038	0.039		0.044	0.036	14.671		
T	Methyl Tert Butyl Ether			0.534	0.543	0.521	0.586	0.579	0.585	0.560	0.546	0.557	4.455		
T	trans-1,2-Dichloroethene		0.389	0.395	0.364	0.352	0.381	0.367	0.372	0.364	0.358	0.371	3.858		
T	n-Hexane					0.265	0.280	0.270	0.286	0.275	0.279	0.276	2.732		
T	Diisopropyl ether			0.600	0.607	0.548	0.588	0.572	0.571		0.567	0.579	3.559		
T	Vinyl Acetate				0.256	0.243	0.270	0.275	0.266	0.271	0.275	0.265	4.509		
P	1,1-Dichloroethane		0.441	0.463	0.486	0.434	0.488	0.464	0.470	0.459	0.447	0.461	4.012		
T	Ethyl-Tert-Butyl ether			0.616	0.645	0.590	0.641	0.628	0.619		0.603	0.620	3.188		
T	2-Butanone					0.035	0.042	0.043	0.045	0.041	0.043	0.041	8.268		
T	Propionitrile			0.010	0.012	0.012	0.013	0.012	0.013		0.013	0.012	8.354		
T	2,2-Dichloropropane		0.471	0.462	0.520	0.476	0.503	0.494	0.497	0.483	0.470	0.486	3.839		
T	cis-1,2-Dichloroethene		0.299	0.298	0.291	0.267	0.295	0.282	0.289	0.283	0.277	0.287	3.685		
C	Chloroform	0.563	0.567	0.581	0.536	0.509	0.566	0.543	0.546	0.529	0.506	0.545	4.619		
T	1-Bromopropane			0.034	0.040	0.040	0.043	0.041	0.043	0.043	0.044	0.041	7.649		
T	Bromochloromethane		0.131	0.164	0.147	0.137	0.154	0.148	0.151	0.148	0.145	0.147	6.598		
T	Tetrahydrofuran			0.034	0.028	0.025	0.026	0.026	0.026		0.026	0.027	11.724		
S	Dibromofluoromethane			0.249	0.261	0.257	0.280	0.271	0.284	0.271	0.275	0.269	4.465		
T	1,1,1-Trichloroethane		0.492	0.537	0.515	0.496	0.545	0.525	0.533	0.515	0.499	0.517	3.660		
T	Cyclohexane			0.373	0.369	0.335	0.359	0.344	0.366	0.356	0.364	0.358	3.619		
T	1,1-Dichloropropene			0.414	0.399	0.369	0.403	0.395	0.399	0.392	0.382	0.394	3.488		
T	Tert-Amyl-Methyl ether			0.567	0.587	0.534	0.576	0.568	0.561		0.549	0.563	3.077		
T	Carbon Tetrachloride		0.444	0.456	0.462	0.441	0.481	0.465	0.474	0.462	0.448	0.4594	2.92173		
S	1,2-Dichloroethane-d4			0.241	0.309	0.276	0.312	0.295	0.301	0.284	0.286	0.288	7.93644		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.347	0.335	0.354	0.336	0.371	0.36	0.364	0.349	0.338	0.3505	3.65503		
T	Benzene		1.128	1.084	1.071	0.977	1.085	1.033	1.019	0.963	0.883	1.0269	7.39343		
T	Trichloroethene		0.285	0.275	0.276	0.251	0.283	0.273	0.279	0.273	0.27	0.2739	3.66126		
T	Methylcyclohexane					0.396	0.426	0.408	0.429	0.416	0.422	0.4161	2.94153		
C	1,2-Dichloropropane		0.239	0.222	0.233	0.207	0.238	0.226	0.233	0.231	0.229	0.2286	4.30096		
T	Bromodichloromethane		0.369	0.382	0.412	0.385	0.426	0.421	0.417	0.41	0.395	0.4018	4.93305		
T	1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.0011	14.5817		
T	Dibromomethane		0.141	0.13	0.137	0.128	0.141	0.134	0.137	0.136	0.133	0.1353	3.26799		
T	2-Chloroethyl Vinyl Ether				0.1	0.084	0.103	0.104	0.103	0.095	0.098	0.0983	7.09792		
T	4-Methyl-2-Pentanone					0.033	0.042	0.042	0.043	0.04	0.041	0.0401	8.66859		
T	cis-1,3-Dichloropropene		0.391	0.393	0.386	0.398	0.431	0.428	0.428	0.42	0.405	0.409	4.41527		

T	Dimethyl Disulfide					0.182	0.218	0.221	0.23	0.229	0.23	0.2183	8.49419	
I	Chlorobenzene-d5	ISTD												
S	Toluene-d8			1.282	1.295	1.228	1.385	1.333	1.378	1.289	1.278	1.3084	4.07746	
C	Toluene		1.653	1.696	1.678	1.507	1.647	1.554	1.545	1.418	1.27	1.552	8.98325	
T	Ethyl Methacrylate			0.251	0.293	0.268	0.314	0.314	0.327	0.309	0.31	0.2981	8.76897	
T	Paraldehyde											0	0	
T	trans-1,3-Dichloropropene			0.472	0.51	0.466	0.561	0.552	0.553	0.533	0.515	0.5201	7.01006	
T	1,1,2-Trichloroethane		0.261	0.241	0.242	0.222	0.254	0.249	0.252	0.243	0.241	0.2449	4.54209	
T	2-Hexanone					0.042	0.053	0.053	0.056	0.051	0.053	0.0515	9.50479	
T	1,3-Dichloropropane		0.355	0.442	0.465	0.42	0.468	0.454	0.457	0.437	0.428	0.436	7.93348	
T	Tetrachloroethene		0.355	0.337	0.336	0.306	0.333	0.325	0.337	0.334	0.33	0.3325	3.83886	
T	Dibromochloromethane		0.349	0.336	0.338	0.328	0.373	0.372	0.383	0.373	0.367	0.3576	5.60043	
T	1,2-Dibromoethane		0.233	0.234	0.234	0.227	0.259	0.254	0.258	0.251	0.247	0.2441	5.04151	
T	1-Chlorohexane		0.532	0.584	0.505	0.502	0.54	0.52	0.547	0.521	0.516	0.5298	4.7826	
P	Chlorobenzene		1.029	1.173	1.09	1.007	1.099	1.037	1.043	1.002	0.939	1.0466	6.41465	
T	1,1,1,2-Tetrachloroethane		0.392	0.399	0.403	0.357	0.431	0.414	0.424	0.417	0.413	0.4055	5.39495	
C	Ethylbenzene		0.6	0.594	0.59	0.532	0.586	0.559	0.57	0.564	0.558	0.5726	3.7769	
T	m-,p-Xylene		0.744	0.696	0.691	0.643	0.713	0.67	0.673	0.634	0.581	0.6716	7.12586	
T	o-Xylene			0.691	0.651	0.614	0.692	0.658	0.667	0.65	0.63	0.6567	4.11758	
T	Styrene		1.05	1.06	1.096	1.043	1.159	1.124	1.12	1.061	0.98	1.077	4.96781	
P	Bromoform			0.177	0.21	0.181	0.226	0.221	0.232	0.227	0.223	0.2121	10.0546	
T	Isopropylbenzene		1.853	1.891	1.871	1.708	1.897	1.781	1.75	1.573	1.377	1.7444	9.92447	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.426	0.492	0.503	0.486	0.543	0.51	0.527	0.513	0.514	0.5018	6.60291	
S	p-Bromofluorobenzene				1.054	0.976	1.071	1.016	1.053	1.031	1.046	1.0352	3.05136	
T	1,2,3-Trichloropropane			0.119	0.158	0.161	0.162	0.155	0.162	0.16	0.158	0.1545	9.40789	
T	trans-1,4-Dichloro-2-Butene			0.085	0.118	0.12	0.149	0.151	0.16	0.159	0.161	0.1376	19.9543	1.000
T	n-Propylbenzene		4.139	4.239	4.243	4.051	4.241	3.953	3.882	3.419	2.935	3.9003	11.4439	
T	Bromobenzene	0.796	0.708	0.843	0.837	0.778	0.84	0.798	0.817	0.803	0.803	0.8022	4.93253	
T	1,3,5-Trimethylbenzene		2.941	2.93	2.941	2.839	3.053	2.882	2.871	2.689	2.423	2.8411	6.50391	
T	2-Chlorotoluene		2.917	2.935	2.929	2.712	2.861	2.795	2.682	2.533	2.145	2.7231	9.37022	
T	4-Chlorotoluene		2.681	2.596	2.581	2.474	2.625	2.326	2.447	2.286	2.121	2.4597	7.49558	
T	a-Methylstyrene					1.257	1.406	1.34	1.384	1.35	1.351	1.3479	3.77654	
T	tert-Butylbenzene			0.587	0.555	0.53	0.571	0.533	0.552	0.561	0.558	0.5558	3.34508	
T	1,2,4-Trimethylbenzene		2.955	3.168	3.127	2.936	3.12	2.914	2.937	2.709	2.427	2.9214	7.97314	
T	sec-Butylbenzene			3.701	3.536	3.487	3.607	3.34	3.332	3.045	2.69	3.3424	9.93324	
T	p-Isopropyltoluene			3.112	3.062	2.903	2.988	2.813	2.809	2.634	2.382	2.8379	8.45265	
T	1,3-Dichlorobenzene		1.484	1.617	1.627	1.53	1.605	1.531	1.549	1.51	1.45	1.5448	3.95774	
T	1,4-Dichlorobenzene	1.713	1.524	1.672	1.594	1.503	1.6	1.511	1.535	1.49	1.431	1.5574	5.56562	
T	n-Butylbenzene			3.143	2.96	2.895	3.002	2.791	2.792	2.571	2.292	2.8056	9.55812	
T	1,2-Dichlorobenzene	1.59	1.307	1.415	1.41	1.322	1.404	1.333	1.356	1.315	1.286	1.3739	6.4618	
T	1,2-Dibromo-3-Chloropropane				0.085	0.103	0.102	0.103	0.106	0.104	0.103	0.1007	6.86771	
T	1,2,4-Trichlorobenzene		1.074	1.01	1.028	0.982	1.069	1.013	1.036	1.029	1.002	1.0269	2.90829	
T	Hexachlorobutadiene		0.516	0.476	0.483	0.447	0.487	0.459	0.48	0.485	0.485	0.4798	4.00465	
T	Naphthalene		1.594	1.457	1.574	1.455	1.63	1.552	1.564	1.485	1.422	1.5258	4.75891	
T	1,2,3-Trichlorobenzene	0.913	0.934	0.905	0.862	0.805	0.877	0.824	0.862	0.846	0.835	0.8664	4.7474	

Tue May 17 11:49:41 2016

Calibration Table Report
Method: A9FOOWT.M
Title: A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Calibration: Thu May 19 08:54:31 2016
Curve: WG569079
Calibration Files

	Compound	5 8M412324.D	20 8M412323.D	50 8M412322.D	100 8M412321.D	200 8M412325.D	300 8M412326.D	400 8M412327.D	500 8M412328.D	Avg	%RSD
I	Fluorobenzene	ISTD									
T	Acetonitrile		0.009	0.010	0.010	0.010	0.010	0.010	0.010	0.010	2.076
T	3-Chloro-1-propene	0.306	0.330	0.335	0.331	0.324	0.307	0.304	0.304	0.318	4.307
T	2-Chloro-1,3-butadiene	0.368	0.420	0.420	0.419	0.419	0.392	0.389	0.387	0.402	5.022
T	Ethyl Acetate	0.080	0.096	0.097	0.100	0.099	0.098	0.100	0.095	0.096	6.751
T	Methacrylonitrile	0.041	0.054	0.055	0.055	0.055	0.054	0.055	0.052	0.053	9.227
T	Isobutyl Alcohol			0.003	0.003	0.003	0.003	0.003	0.003	0.003	3.599
T	1-Butanol									0.000	0.000
T	Methyl methacrylate	0.089	0.106	0.106	0.105	0.106	0.105	0.107	0.102	0.103	5.868
T	2-Nitropropane		0.041	0.042	0.043	0.046	0.047	0.048	0.046	0.045	5.992
I	Chlorobenzene-d5	ISTD									
I	1,4-Dichlorobenzene-d4	ISTD									
T	Cyclohexanone		0.011	0.010	0.010	0.009	0.010	0.011	0.010	0.010	4.971

Thu May 19 09:04:52 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061142 Run Date: 05/13/2016 Sample ID: WG568769-12
Instrument ID: HPMS11 Run Time: 20:30 Method: 8260B
File ID: 11M11848 Analyst: JDS QC Key: DOD4
ICal Workgroup: WG568769 Cal ID: HPMS11 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.6	ug/L	0.475	4.80	20	
1,1-Dichloroethene	CCC	50.0	47.5	ug/L	0.435	4.90	20	
1,2-Dichloropropane	CCC	50.0	52.8	ug/L	0.281	5.60	20	
Ethylbenzene	CCC	50.0	52.4	ug/L	0.498	4.80	20	
Toluene	CCC	50.0	53.8	ug/L	1.36	7.50	20	
Vinyl Chloride	CCC	50.0	56.1	ug/L	0.292	12.2	20	
Bromoform	SPCC	50.0	49.8	ug/L	0.207	0.300	20	
Chlorobenzene	SPCC	50.0	53.3	ug/L	0.988	6.60	20	
Chloromethane	SPCC	50.0	55.1	ug/L	0.346	10.2	20	
1,1-Dichloroethane	SPCC	50.0	48.5	ug/L	0.493	3.00	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	54.9	ug/L	0.428	9.90	20	
Acetone		50.0	49.7	ug/L	0.0590	0.700	20	
Benzene		50.0	51.2	ug/L	0.983	2.40	20	
Bromobenzene		50.0	51.6	ug/L	0.785	3.30	20	
Bromochloromethane		50.0	53.9	ug/L	0.179	7.80	20	
Bromodichloromethane		50.0	49.5	ug/L	0.370	0.900	20	
Bromomethane		50.0	50.5	ug/L	0.181	1.00	20	
2-Butanone		50.0	50.3	ug/L	0.0904	0.700	20	
n-Butylbenzene		50.0	53.9	ug/L	2.31	7.80	20	
sec-Butylbenzene		50.0	55.9	ug/L	2.97	11.8	20	
tert-Butylbenzene		50.0	56.5	ug/L	0.529	13.1	20	
Carbon Disulfide		50.0	44.7	ug/L	0.685	10.6	20	
Carbon Tetrachloride		50.0	47.3	ug/L	0.454	5.30	20	
Dibromochloromethane		50.0	52.5	ug/L	0.360	5.10	20	
Chloroethane		50.0	58.9	ug/L	0.197	17.7	20	
2-Chlorotoluene		50.0	52.8	ug/L	2.14	5.50	20	
4-Chlorotoluene		50.0	55.4	ug/L	2.01	10.8	20	
1,2-Dibromo-3-Chloropropane		50.0	48.1	ug/L	0.0844	3.80	20	
1,2-Dibromoethane		50.0	52.6	ug/L	0.237	5.30	20	
Dibromomethane		50.0	48.0	ug/L	0.133	3.90	20	
1,2-Dichlorobenzene		50.0	53.6	ug/L	1.43	7.20	20	
1,3-Dichlorobenzene		50.0	52.7	ug/L	1.55	5.40	20	
1,4-Dichlorobenzene		50.0	53.0	ug/L	1.58	6.10	20	
Dichlorodifluoromethane		50.0	56.6	ug/L	0.443	13.2	20	
1,2-Dichloroethane		50.0	47.9	ug/L	0.388	4.20	20	
cis-1,2-Dichloroethene		50.0	53.2	ug/L	0.297	6.30	20	
trans-1,2-Dichloroethene		50.0	52.1	ug/L	0.264	4.30	20	
1,3-Dichloropropane		50.0	56.3	ug/L	0.406	12.6	20	
2,2-Dichloropropane		50.0	45.6	ug/L	0.362	8.90	20	
cis-1,3-Dichloropropene		50.0	57.6	ug/L	0.430	15.2	20	
trans-1,3-Dichloropropene		50.0	52.1	ug/L	0.423	4.20	20	
1,1-Dichloropropene		50.0	50.1	ug/L	0.352	0.200	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4831229
Report generated 07/13/2016 17:11

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061142 Run Date: 05/13/2016 Sample ID: WG568769-12
Instrument ID: HPMS11 Run Time: 20:30 Method: 8260B
File ID: 11M11848 Analyst: JDS QC Key: DOD4
ICal Workgroup: WG568769 Cal ID: HPMS11 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	52.2	ug/L	0.172	4.40	20	
Hexachlorobutadiene		50.0	55.9	ug/L	0.482	11.8	20	
Isopropylbenzene		50.0	54.2	ug/L	1.61	8.50	20	
p-Isopropyltoluene		50.0	54.7	ug/L	2.67	9.40	20	
4-Methyl-2-Pentanone		50.0	52.6	ug/L	0.0777	5.10	20	
Methylene Chloride		50.0	52.0	ug/L	0.246	4.00	20	
Naphthalene		50.0	51.1	ug/L	1.86	2.30	20	
n-Propylbenzene		50.0	56.6	ug/L	3.28	13.2	20	
Styrene		50.0	55.0	ug/L	1.02	9.90	20	
1,1,1,2-Tetrachloroethane		50.0	51.0	ug/L	0.383	2.10	20	
Tetrachloroethene		50.0	52.2	ug/L	0.307	4.40	20	
1,2,3-Trichlorobenzene		50.0	54.1	ug/L	0.971	8.10	20	
1,2,4-Trichlorobenzene		50.0	55.4	ug/L	1.08	10.9	20	
1,1,1-Trichloroethane		50.0	48.1	ug/L	0.472	3.90	20	
1,1,2-Trichloroethane		50.0	52.8	ug/L	0.237	5.50	20	
Trichloroethene		50.0	52.3	ug/L	0.327	4.60	20	
Trichlorofluoromethane		50.0	47.5	ug/L	0.494	4.90	20	
1,2,3-Trichloropropane		50.0	50.1	ug/L	0.147	0.300	20	
1,2,4-Trimethylbenzene		50.0	53.8	ug/L	2.42	7.70	20	
1,3,5-Trimethylbenzene		50.0	55.1	ug/L	2.44	10.3	20	
o-Xylene		50.0	54.7	ug/L	0.615	9.40	20	
m-,p-Xylene		100	107	ug/L	0.620	7.20	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4831229
Report generated 07/13/2016 17:11

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061142 Run Date: 05/13/2016 Sample ID: WG568561-12
Instrument ID: HPMS8 Run Time: 19:17 Method: 8260B
File ID: 8M412232 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG568561 Cal ID: HPMS8 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.1	ug/L	0.513	5.70	20	
1,1-Dichloroethene	CCC	50.0	46.0	ug/L	0.372	8.10	20	
1,2-Dichloropropane	CCC	50.0	51.0	ug/L	0.233	1.90	20	
Ethylbenzene	CCC	50.0	48.2	ug/L	0.552	3.60	20	
Toluene	CCC	50.0	49.1	ug/L	1.52	1.80	20	
Vinyl Chloride	CCC	50.0	52.4	ug/L	0.304	4.80	20	
Bromoform	SPCC	50.0	48.2	ug/L	0.205	3.60	20	
Chlorobenzene	SPCC	50.0	50.2	ug/L	1.05	0.400	20	
Chloromethane	SPCC	50.0	50.7	ug/L	0.248	1.40	20	
1,1-Dichloroethane	SPCC	50.0	46.7	ug/L	0.431	6.60	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.6	ug/L	0.498	0.800	20	
Acetone		50.0	57.5	ug/L	0.0324	15.1	20	
Benzene		50.0	48.5	ug/L	0.997	3.00	20	
Bromobenzene		50.0	49.5	ug/L	0.794	1.10	20	
Bromochloromethane		50.0	47.5	ug/L	0.140	4.90	20	
Bromodichloromethane		50.0	48.3	ug/L	0.388	3.40	20	
Bromomethane		50.0	46.4	ug/L	0.162	7.20	20	
2-Butanone		50.0	53.0	ug/L	0.0438	6.00	20	
n-Butylbenzene		50.0	49.7	ug/L	2.79	0.700	20	
sec-Butylbenzene		50.0	51.3	ug/L	3.43	2.70	20	
tert-Butylbenzene		50.0	50.9	ug/L	0.566	1.90	20	
Carbon Disulfide		50.0	42.3	ug/L	0.716	15.4	20	
Carbon Tetrachloride		50.0	46.2	ug/L	0.425	7.50	20	
Dibromochloromethane		50.0	49.7	ug/L	0.355	0.700	20	
Chloroethane		50.0	53.3	ug/L	0.170	6.70	20	
2-Chlorotoluene		50.0	51.6	ug/L	2.81	3.10	20	
4-Chlorotoluene		50.0	48.3	ug/L	2.37	3.50	20	
1,2-Dibromo-3-Chloropropane		50.0	48.5	ug/L	0.0977	3.00	20	
1,2-Dibromoethane		50.0	51.1	ug/L	0.250	2.20	20	
Dibromomethane		50.0	45.8	ug/L	0.124	8.40	20	
1,2-Dichlorobenzene		50.0	50.5	ug/L	1.39	1.00	20	
1,3-Dichlorobenzene		50.0	50.9	ug/L	1.57	1.80	20	
1,4-Dichlorobenzene		50.0	50.5	ug/L	1.57	0.900	20	
Dichlorodifluoromethane		50.0	54.2	ug/L	0.455	8.40	20	
1,2-Dichloroethane		50.0	49.0	ug/L	0.344	2.00	20	
cis-1,2-Dichloroethene		50.0	48.9	ug/L	0.281	2.20	20	
trans-1,2-Dichloroethene		50.0	48.1	ug/L	0.357	3.90	20	
1,3-Dichloropropane		50.0	53.7	ug/L	0.468	7.30	20	
2,2-Dichloropropane		50.0	47.9	ug/L	0.466	4.20	20	
cis-1,3-Dichloropropene		50.0	53.9	ug/L	0.441	7.80	20	
trans-1,3-Dichloropropene		50.0	50.7	ug/L	0.527	1.30	20	
1,1-Dichloropropene		50.0	47.5	ug/L	0.374	5.10	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4831229
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Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061142 Run Date: 05/13/2016 Sample ID: WG568561-12
Instrument ID: HPMS8 Run Time: 19:17 Method: 8260B
File ID: 8M412232 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG568561 Cal ID: HPMS8 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	53.6	ug/L	0.0552	7.20	20	
Hexachlorobutadiene		50.0	52.1	ug/L	0.500	4.20	20	
Isopropylbenzene		50.0	51.1	ug/L	1.78	2.20	20	
p-Isopropyltoluene		50.0	50.1	ug/L	2.85	0.300	20	
4-Methyl-2-Pentanone		50.0	51.9	ug/L	0.0416	3.70	20	
Methylene Chloride		50.0	48.4	ug/L	0.249	3.10	20	
Naphthalene		50.0	45.8	ug/L	1.40	8.40	20	
n-Propylbenzene		50.0	51.9	ug/L	4.05	3.80	20	
Styrene		50.0	51.5	ug/L	1.11	3.00	20	
1,1,1,2-Tetrachloroethane		50.0	49.4	ug/L	0.400	1.20	20	
Tetrachloroethene		50.0	47.8	ug/L	0.318	4.40	20	
1,2,3-Trichlorobenzene		50.0	47.7	ug/L	0.827	4.50	20	
1,2,4-Trichlorobenzene		50.0	50.1	ug/L	1.03	0.200	20	
1,1,1-Trichloroethane		50.0	47.6	ug/L	0.492	4.80	20	
1,1,2-Trichloroethane		50.0	49.0	ug/L	0.240	1.90	20	
Trichloroethene		50.0	51.1	ug/L	0.280	2.10	20	
Trichlorofluoromethane		50.0	46.9	ug/L	0.507	6.10	20	
1,2,3-Trichloropropane		50.0	50.1	ug/L	0.155	0.200	20	
1,2,4-Trimethylbenzene		50.0	49.7	ug/L	2.90	0.700	20	
1,3,5-Trimethylbenzene		50.0	51.6	ug/L	2.93	3.30	20	
o-Xylene		50.0	50.6	ug/L	0.664	1.10	20	
m-,p-Xylene		100	101	ug/L	0.679	1.10	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

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Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142 Run Date: 06/24/2016 Sample ID: WG574189-02
Instrument ID: HPMS8 Run Time: 19:02 Method: 8260B
File ID: 8M413220 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG574190 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	57.9	ug/L	0.631	15.8	20	
1,1-Dichloroethene	CCC	50.0	57.6	ug/L	0.465	15.1	20	
1,2-Dichloropropane	CCC	50.0	51.0	ug/L	0.233	1.90	20	
Ethylbenzene	CCC	50.0	51.2	ug/L	0.587	2.43	20	
Toluene	CCC	50.0	51.9	ug/L	1.61	3.90	20	
Vinyl Chloride	CCC	50.0	56.4	ug/L	0.327	12.8	20	
Bromoform	SPCC	50.0	52.6	ug/L	0.223	5.26	20	
Chlorobenzene	SPCC	50.0	51.8	ug/L	1.09	3.70	20	
Chloromethane	SPCC	50.0	46.7	ug/L	0.229	6.59	20	
1,1-Dichloroethane	SPCC	50.0	55.9	ug/L	0.516	11.8	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	41.4	ug/L	0.415	17.2	20	
Xylenes		150	157	ug/L	0.697	5.00	20	
Acetone		50.0	55.2	ug/L	0.0311	10.5	20	
Benzene		50.0	55.0	ug/L	1.13	10.0	20	
Bromobenzene		50.0	49.6	ug/L	0.795	0.899	20	
Bromochloromethane		50.0	53.9	ug/L	0.159	7.81	20	
Bromodichloromethane		50.0	58.2	ug/L	0.468	16.5	20	
Bromomethane		50.0	43.5	ug/L	0.152	13.1	20	
2-Butanone		50.0	46.7	ug/L	0.0386	6.66	20	
n-Butylbenzene		50.0	50.7	ug/L	2.85	1.46	20	
sec-Butylbenzene		50.0	51.1	ug/L	3.42	2.18	20	
tert-Butylbenzene		50.0	49.6	ug/L	0.552	0.720	20	
Carbon Disulfide		50.0	58.3	ug/L	0.986	16.6	20	
Carbon Tetrachloride		50.0	63.7	ug/L	0.586	27.5	20	*
Dibromochloromethane		50.0	51.6	ug/L	0.369	3.14	20	
Chloroethane		50.0	51.8	ug/L	0.166	3.64	20	
2-Chlorotoluene		50.0	50.6	ug/L	2.76	1.28	20	
4-Chlorotoluene		50.0	49.2	ug/L	2.42	1.54	20	
1,2-Dibromo-3-Chloropropane		50.0	44.2	ug/L	0.0890	11.6	20	
1,2-Dibromoethane		50.0	48.0	ug/L	0.234	4.08	20	
Dibromomethane		50.0	51.4	ug/L	0.139	2.86	20	
1,2-Dichlorobenzene		50.0	47.7	ug/L	1.31	4.67	20	
1,3-Dichlorobenzene		50.0	50.2	ug/L	1.55	0.331	20	
1,4-Dichlorobenzene		50.0	48.8	ug/L	1.52	2.32	20	
Dichlorodifluoromethane		50.0	53.8	ug/L	0.451	7.50	20	
1,2-Dichloroethane		50.0	59.9	ug/L	0.420	19.9	20	
cis-1,2-Dichloroethene		50.0	54.5	ug/L	0.313	9.01	20	
trans-1,2-Dichloroethene		50.0	55.8	ug/L	0.414	11.5	20	
1,3-Dichloropropane		50.0	47.6	ug/L	0.415	4.84	20	
2,2-Dichloropropane		50.0	63.6	ug/L	0.618	27.1	20	*
cis-1,3-Dichloropropene		50.0	55.6	ug/L	0.455	11.2	20	
trans-1,3-Dichloropropene		50.0	51.8	ug/L	0.539	3.56	20	

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142 Run Date: 06/24/2016 Sample ID: WG574189-02
Instrument ID: HPMS8 Run Time: 19:02 Method: 8260B
File ID: 8M413220 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG574190 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	58.3	ug/L	0.460	16.5	20	
2-Hexanone		50.0	40.4	ug/L	0.0416	19.1	20	
Hexachlorobutadiene		50.0	53.6	ug/L	0.514	7.20	20	
Isopropylbenzene		50.0	55.1	ug/L	1.92	10.2	20	
p-Isopropyltoluene		50.0	51.6	ug/L	2.93	3.15	20	
4-Methyl-2-Pentanone		50.0	45.1	ug/L	0.0362	9.78	20	
Methylene Chloride		50.0	52.0	ug/L	0.268	4.07	20	
Naphthalene		50.0	40.9	ug/L	1.25	18.2	20	
n-Propylbenzene		50.0	50.4	ug/L	3.93	0.877	20	
Styrene		50.0	53.1	ug/L	1.14	6.10	20	
1,1,1,2-Tetrachloroethane		50.0	53.2	ug/L	0.432	6.49	20	
Tetrachloroethene		50.0	55.3	ug/L	0.368	10.7	20	
1,2,3-Trichlorobenzene		50.0	42.6	ug/L	0.739	14.7	20	
1,2,4-Trichlorobenzene		50.0	46.7	ug/L	0.958	6.67	20	
1,1,1-Trichloroethane		50.0	63.1	ug/L	0.653	26.2	20	*
1,1,2-Trichloroethane		50.0	46.6	ug/L	0.228	6.78	20	
Trichloroethene		50.0	58.1	ug/L	0.318	16.2	20	
Trichlorofluoromethane		50.0	61.6	ug/L	0.665	23.1	20	*
1,2,3-Trichloropropane		50.0	44.5	ug/L	0.137	11.1	20	
1,2,4-Trimethylbenzene		50.0	51.3	ug/L	3.00	2.53	20	
1,3,5-Trimethylbenzene		50.0	51.9	ug/L	2.95	3.71	20	
o-Xylene		50.0	52.4	ug/L	0.689	4.89	20	
m-,p-Xylene		100	105	ug/L	0.706	5.05	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

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Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142 Run Date: 07/13/2016 Sample ID: WG576234-02
Instrument ID: HPMS11 Run Time: 13:04 Method: 8260B
File ID: 11M13225 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG576236 Cal ID: HPMS11 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	49.6	ug/L	0.495	0.837	20	
1,1-Dichloroethene	CCC	50.0	49.6	ug/L	0.454	0.871	20	
1,2-Dichloropropane	CCC	50.0	51.1	ug/L	0.271	2.14	20	
Ethylbenzene	CCC	50.0	51.5	ug/L	0.490	2.98	20	
Toluene	CCC	50.0	51.6	ug/L	1.30	3.10	20	
Vinyl Chloride	CCC	50.0	53.9	ug/L	0.281	7.88	20	
Bromoform	SPCC	50.0	47.3	ug/L	0.196	5.32	20	
Chlorobenzene	SPCC	50.0	51.5	ug/L	0.955	2.95	20	
Chloromethane	SPCC	50.0	53.9	ug/L	0.338	7.78	20	
1,1-Dichloroethane	SPCC	50.0	51.3	ug/L	0.522	2.68	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	43.7	ug/L	0.341	12.5	20	
Xylenes		150	154	ug/L	0.585	2.49	20	
Acetone		50.0	34.3	ug/L	0.0408	31.3	20	*
Benzene		50.0	53.2	ug/L	1.02	6.34	20	
Bromobenzene		50.0	50.2	ug/L	0.762	0.317	20	
Bromochloromethane		50.0	57.5	ug/L	0.191	14.9	20	
Bromodichloromethane		50.0	50.9	ug/L	0.380	1.82	20	
Bromomethane		50.0	52.1	ug/L	0.187	4.16	20	
2-Butanone		50.0	35.4	ug/L	0.0635	29.3	20	*
n-Butylbenzene		50.0	46.5	ug/L	2.00	6.92	20	
sec-Butylbenzene		50.0	48.7	ug/L	2.58	2.60	20	
tert-Butylbenzene		50.0	50.6	ug/L	0.474	1.28	20	
Carbon Disulfide		50.0	51.0	ug/L	0.782	2.03	20	
Carbon Tetrachloride		50.0	52.4	ug/L	0.502	4.76	20	
Dibromochloromethane		50.0	49.2	ug/L	0.337	1.61	20	
Chloroethane		50.0	54.2	ug/L	0.182	8.48	20	
2-Chlorotoluene		50.0	49.9	ug/L	2.03	0.126	20	
4-Chlorotoluene		50.0	47.6	ug/L	1.73	4.77	20	
1,2-Dibromo-3-Chloropropane		50.0	35.5	ug/L	0.0620	29.0	20	*
1,2-Dibromoethane		50.0	47.1	ug/L	0.212	5.87	20	
Dibromomethane		50.0	49.7	ug/L	0.138	0.626	20	
1,2-Dichlorobenzene		50.0	48.2	ug/L	1.29	3.51	20	
1,3-Dichlorobenzene		50.0	49.5	ug/L	1.45	0.933	20	
1,4-Dichlorobenzene		50.0	48.7	ug/L	1.45	2.59	20	
Dichlorodifluoromethane		50.0	53.4	ug/L	0.418	6.82	20	
1,2-Dichloroethane		50.0	45.0	ug/L	0.365	9.97	20	
cis-1,2-Dichloroethene		50.0	54.7	ug/L	0.305	9.32	20	
trans-1,2-Dichloroethene		50.0	54.2	ug/L	0.275	8.48	20	
1,3-Dichloropropane		50.0	46.4	ug/L	0.334	7.21	20	
2,2-Dichloropropane		50.0	54.6	ug/L	0.434	9.19	20	
cis-1,3-Dichloropropene		50.0	52.8	ug/L	0.394	5.52	20	
trans-1,3-Dichloropropene		50.0	46.7	ug/L	0.380	6.52	20	

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142 Run Date: 07/13/2016 Sample ID: WG576234-02
Instrument ID: HPMS11 Run Time: 13:04 Method: 8260B
File ID: 11M13225 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG576236 Cal ID: HPMS11 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	52.9	ug/L	0.371	5.73	20	
2-Hexanone		50.0	33.7	ug/L	0.111	32.6	20	*
Hexachlorobutadiene		50.0	40.3	ug/L	0.347	19.4	20	
Isopropylbenzene		50.0	51.3	ug/L	1.53	2.56	20	
p-Isopropyltoluene		50.0	49.0	ug/L	2.39	2.05	20	
4-Methyl-2-Pentanone		50.0	39.9	ug/L	0.0590	20.1	20	*
Methylene Chloride		50.0	52.2	ug/L	0.247	4.43	20	
Naphthalene		50.0	42.9	ug/L	1.56	14.1	20	
n-Propylbenzene		50.0	50.3	ug/L	2.91	0.627	20	
Styrene		50.0	52.5	ug/L	0.976	4.98	20	
1,1,1,2-Tetrachloroethane		50.0	50.7	ug/L	0.380	1.40	20	
Tetrachloroethene		50.0	53.2	ug/L	0.313	6.36	20	
1,2,3-Trichlorobenzene		50.0	43.8	ug/L	0.787	12.3	20	
1,2,4-Trichlorobenzene		50.0	47.0	ug/L	0.919	6.08	20	
1,1,1-Trichloroethane		50.0	50.9	ug/L	0.500	1.79	20	
1,1,2-Trichloroethane		50.0	47.1	ug/L	0.211	5.81	20	
Trichloroethene		50.0	55.7	ug/L	0.348	11.4	20	
Trichlorofluoromethane		50.0	50.0	ug/L	0.519	0.0632	20	
1,2,3-Trichloropropane		50.0	42.0	ug/L	0.122	16.1	20	
1,2,4-Trimethylbenzene		50.0	50.1	ug/L	2.26	0.269	20	
1,3,5-Trimethylbenzene		50.0	49.6	ug/L	2.19	0.888	20	
o-Xylene		50.0	51.4	ug/L	0.578	2.71	20	
m-,p-Xylene		100	102	ug/L	0.592	2.39	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061142
Instrument ID: HPMS8
Workgroup (AAB#): WG574190

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	288225	539116	778260
Upper Limit	NA	NA	576450	1078232	1556520
Lower Limit	NA	NA	144113	269558	389130
L16061142-01	1.00	01	280328	506258	638165
L16061142-02	1.00	01	280194	510630	647008
L16061142-04	1.00	01	282859	502865	639618
L16061142-06	1.00	01	281936	499951	637545
L16061142-07	1.00	01	274027	490669	626269
L16061142-08	1.00	01	287925	515232	653067
WG574190-01	1.00	01	292790	530947	663634
WG574190-02	1.00	01	297555	534450	690687

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
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Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061142
Instrument ID: HPMS11
Workgroup (AAB#): WG576236

ICAL CCV Number: WG568769-08
CAL ID: HPMS11-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568769-08	NA	NA	263885	438582	521583
Upper Limit	NA	NA	527770	877164	1043166
Lower Limit	NA	NA	131943	219291	260792
L16061142-07	1.00	02	249799	426121	475011
WG576236-01	1.00	01	256130	441422	488586
WG576236-02	1.00	01	275472	451735	490613
WG576236-03	1.00	01	271926	455887	498141

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4853004
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Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061142
Instrument ID: HPMS8
Workgroup (AAB#): WG574190

ICAL CCV Number: WG568561-08
CAL ID: HPMS8-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	17.6	14.58	10.71
Upper Limit	NA	NA	18.1	15.08	11.21
Lower Limit	NA	NA	17.1	14.08	10.21
L16061142-01	1.00	01	17.6	14.57	10.71
L16061142-02	1.00	01	17.6	14.57	10.71
L16061142-04	1.00	01	17.6	14.57	10.71
L16061142-06	1.00	01	17.6	14.57	10.71
L16061142-07	1.00	01	17.6	14.57	10.71
L16061142-08	1.00	01	17.6	14.57	10.71
WG574190-01	1.00	01	17.6	14.57	10.71
WG574190-02	1.00	01	17.6	14.57	10.71

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4853005
Report generated: 07/13/2016 17:11

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061142
Instrument ID: HPMS11
Workgroup (AAB#): WG576236

ICAL CCV Number: WG568769-08
CAL ID: HPMS11-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568769-08	NA	NA	17.06	14.25	10.61
Upper Limit	NA	NA	17.56	14.75	11.11
Lower Limit	NA	NA	16.56	13.75	10.11
L16061142-07	1.00	02	17.06	14.25	10.61
WG576236-01	1.00	01	17.06	14.25	10.61
WG576236-02	1.00	01	17.06	14.25	10.61
WG576236-03	1.00	01	17.06	14.25	10.61

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4853005
Report generated: 07/13/2016 17:11

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413232.D Vial: 14
Acq On : 25 Jun 2016 00:52 Operator: FJB
Sample : L16061142-01 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 25 01:14:43 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	638165	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	506258	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	280328	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	193689	28.2488 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 113.00%		
43) 1,2-Dichloroethane-d4	10.30	65	219761	29.8916 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 119.56%		
58) Toluene-d8	12.68	98	685829	25.8850 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.56%		
80) p-Bromofluorobenzene	16.08	95	289741	24.9614 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.84%		
Target Compounds					Qvalue
13) Acetone	6.25	43	694	0.9666 ug/L #	50

(#) = qualifier out of range (m) = manual integration
8M413232.D 8260WT.M Mon Jun 27 12:43:44 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413232.D Vial: 14
Acq On : 25 Jun 2016 00:52 Operator: FJB
Sample : L16061142-01 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 26 15:23 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

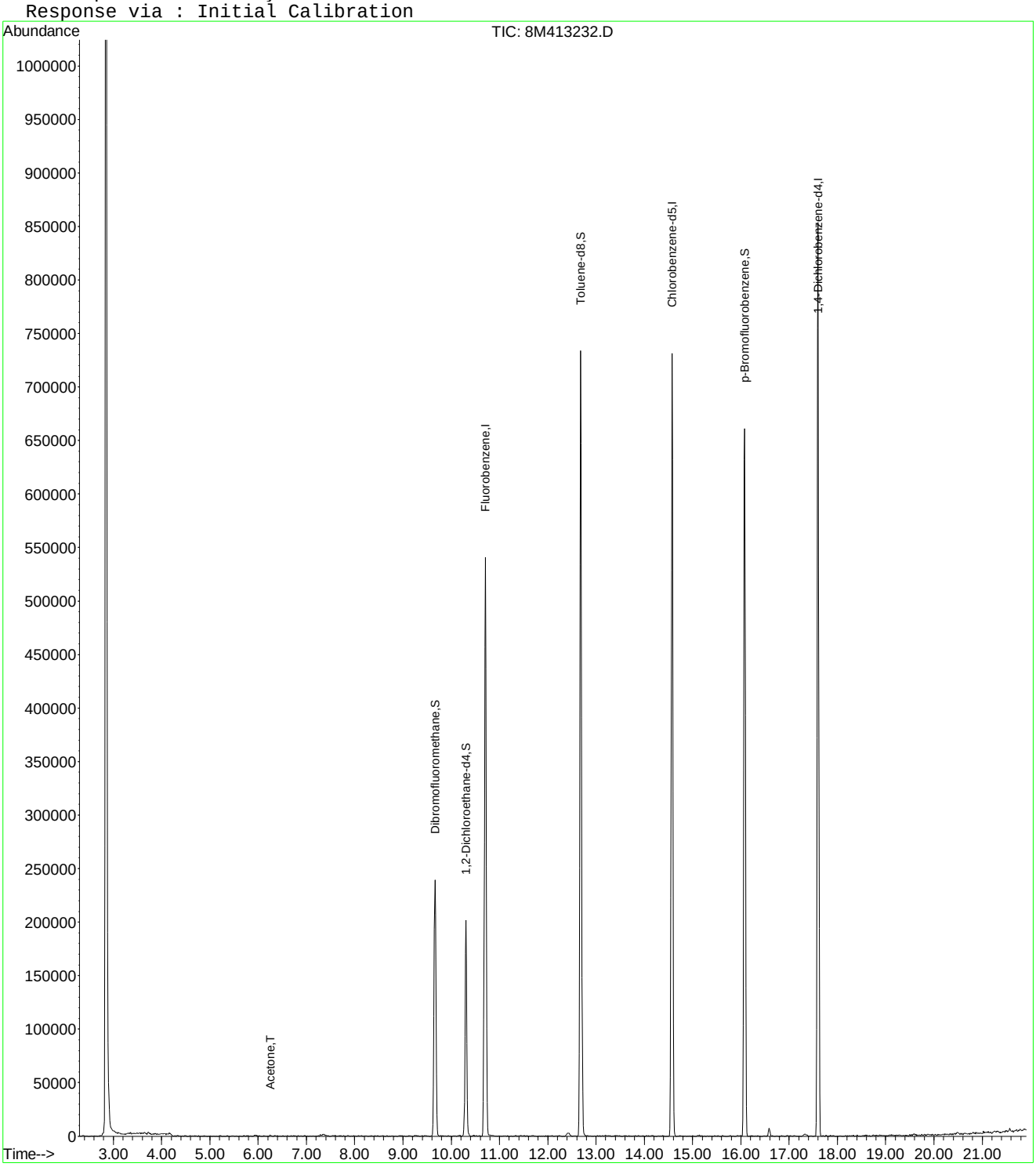

8M413232.D 8260WT.M Mon Jun 27 12:43:45 2016 Page 2

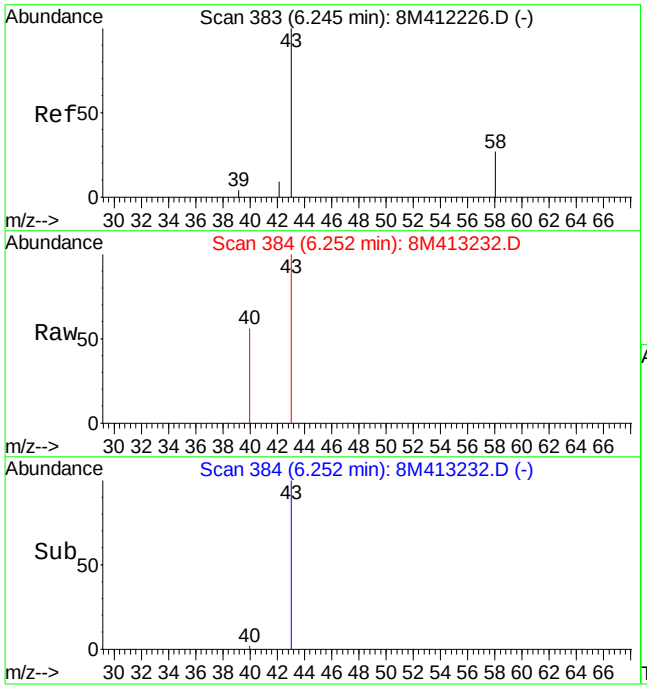

#13
Acetone
Concen: 0.97 ug/L
RT: 6.25 min Scan# 384
Delta R.T. 0.01 min
Lab File: 8M413232.D
Acq: 25 Jun 2016 00:52

Tgt Ion: 43 Resp: 694

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.2	35.4#

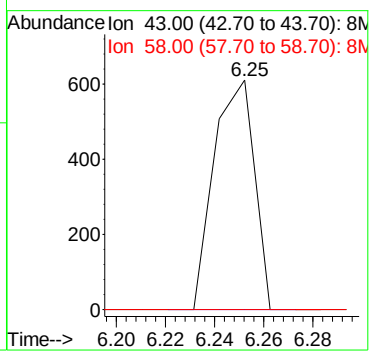

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413233.D Vial: 15
Acq On : 25 Jun 2016 1:21 Operator: FJB
Sample : L16061142-02 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 25 01:43:47 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	647008	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	510630	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	280194	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	198779	28.5949 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 114.36%		
43) 1,2-Dichloroethane-d4	10.30	65	227066	30.4631 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 121.84%#		
58) Toluene-d8	12.68	98	673911	25.2174 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.88%		
80) p-Bromofluorobenzene	16.08	95	293915	25.3331 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.32%		

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
8M413233.D 8260WT.M Mon Jun 27 12:43:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413233.D Vial: 15
Acq On : 25 Jun 2016 1:21 Operator: FJB
Sample : L16061142-02 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 26 15:23 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

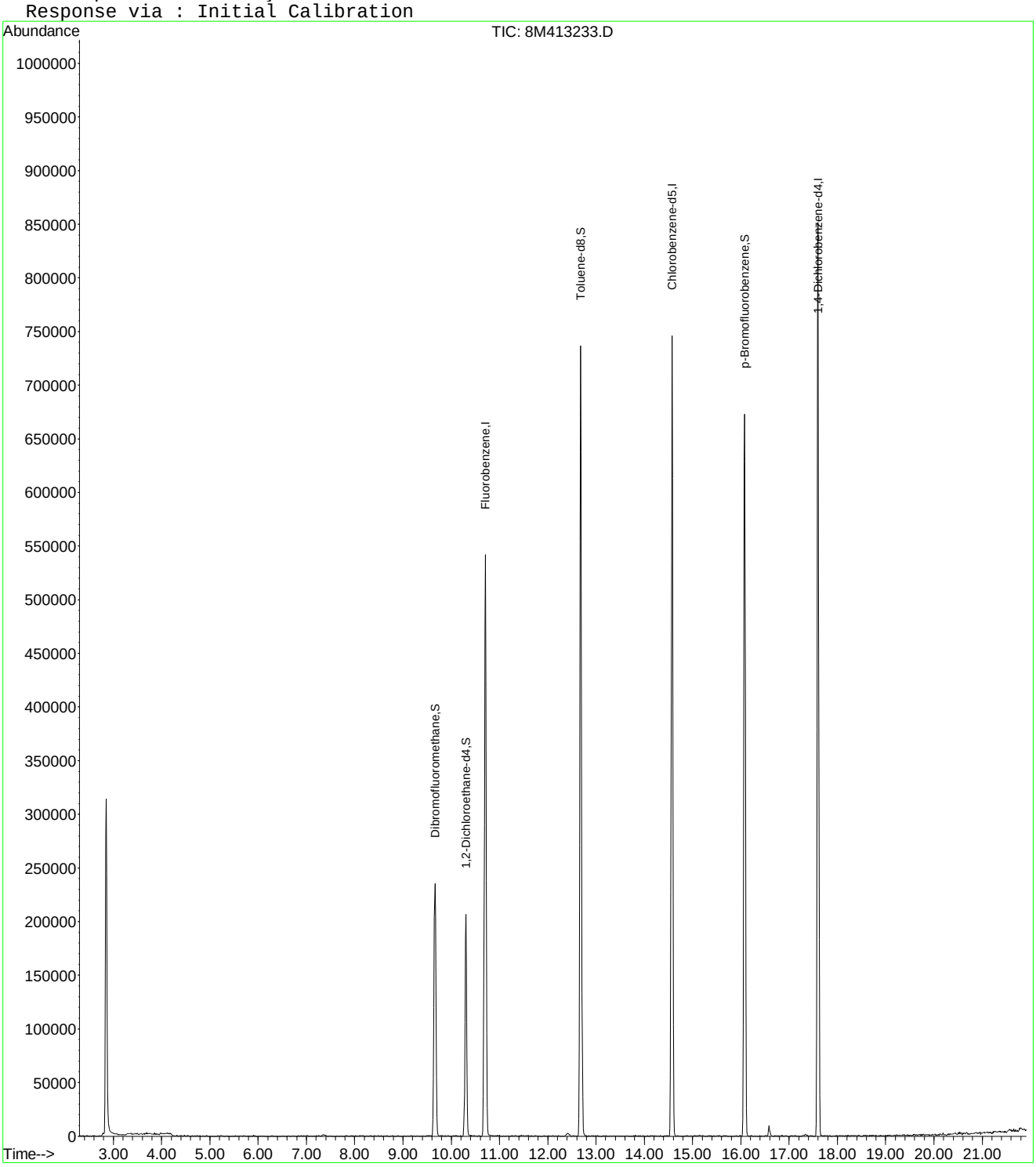

8M413233.D 8260WT.M Mon Jun 27 12:43:49 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413234.D Vial: 16
Acq On : 25 Jun 2016 1:50 Operator: FJB
Sample : L16061142-04 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 25 02:12:42 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	639618	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	502865	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	282859	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	193956	28.2235 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 112.88%		
43) 1,2-Dichloroethane-d4	10.30	65	221400	30.0462 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 120.20%#		
58) Toluene-d8	12.68	98	674585	25.6324 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.52%		
80) p-Bromofluorobenzene	16.07	95	292444	24.9688 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.88%		

Target Compounds					Qvalue
13) Acetone	6.27	43	977	1.3576 ug/L #	50

(#) = qualifier out of range (m) = manual integration
8M413234.D 8260WT.M Mon Jun 27 12:43:53 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413234.D Vial: 16
Acq On : 25 Jun 2016 1:50 Operator: FJB
Sample : L16061142-04 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 26 15:23 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

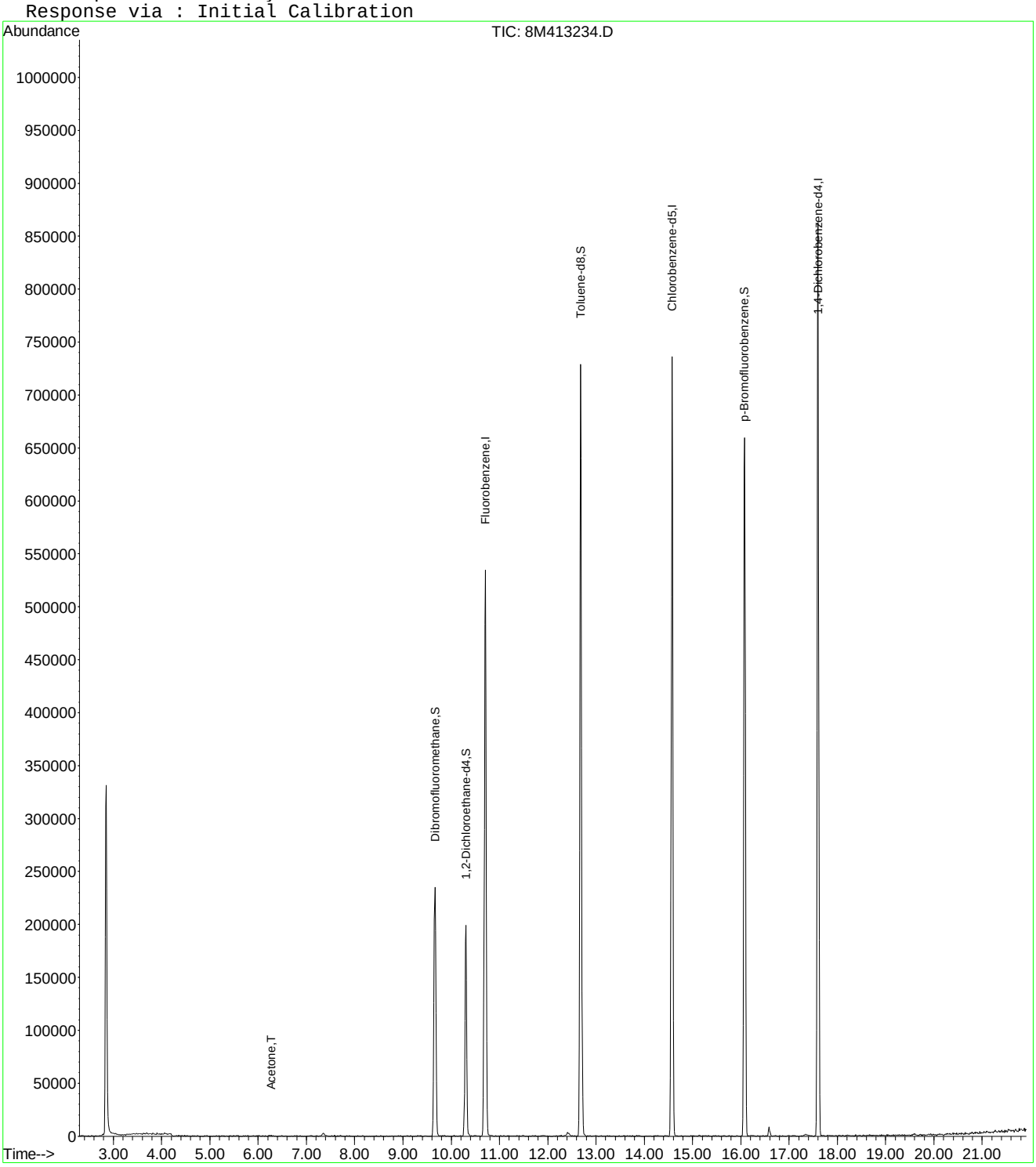

8M413234.D 8260WT.M Mon Jun 27 12:43:53 2016 Page 2

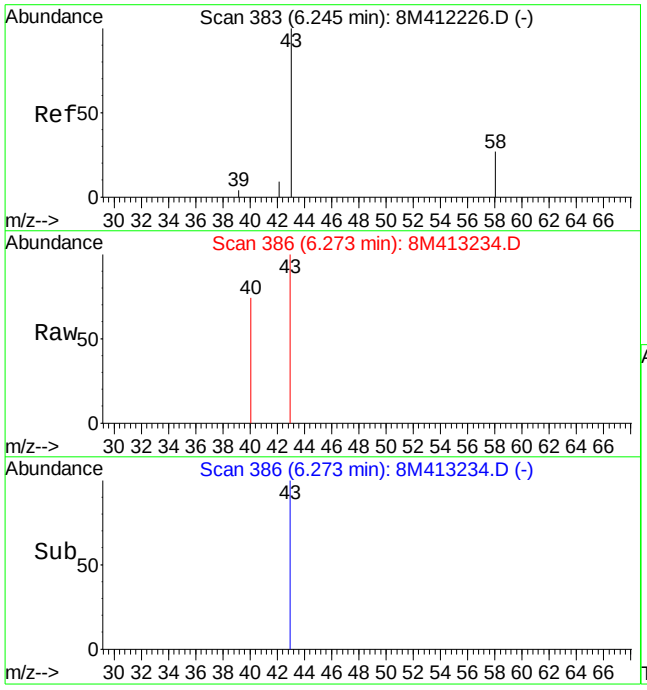

#13
Acetone
Concen: 1.36 ug/L
RT: 6.27 min Scan# 386
Delta R.T. 0.03 min
Lab File: 8M413234.D
Acq: 25 Jun 2016 1:50

Tgt Ion: 43 Resp: 977

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.2	35.4#

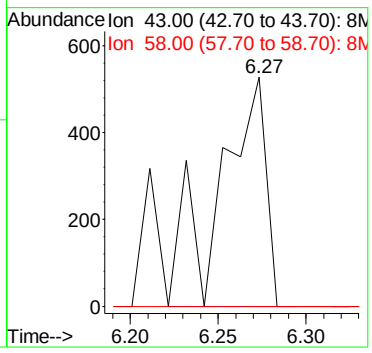

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413235.D Vial: 17
Acq On : 25 Jun 2016 2:19 Operator: FJB
Sample : L16061142-06 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 25 02:41:40 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	637545	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	499951	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	281936	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	193873	28.3031 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 113.20%		
43) 1,2-Dichloroethane-d4	10.30	65	223330	30.4066 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 121.64%#		
58) Toluene-d8	12.68	98	672325	25.6955 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.80%		
80) p-Bromofluorobenzene	16.07	95	293918	25.1768 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.72%		

Target Compounds					Qvalue
13) Acetone	6.23	43	1586	2.2111 ug/L #	50

(#) = qualifier out of range (m) = manual integration
8M413235.D 8260WT.M Mon Jun 27 12:43:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413235.D Vial: 17
Acq On : 25 Jun 2016 2:19 Operator: FJB
Sample : L16061142-06 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 26 15:24 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

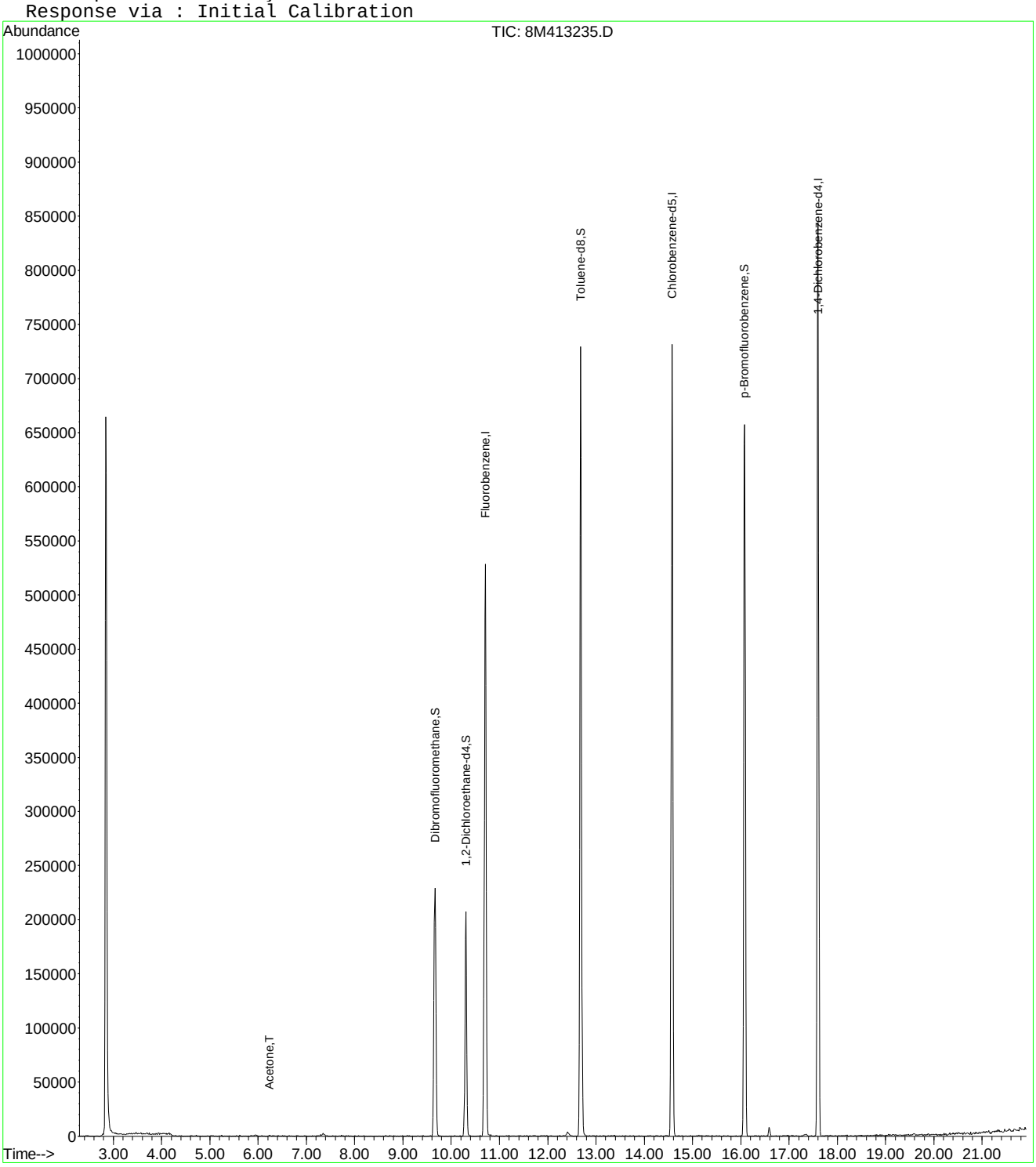

8M413235.D 8260WT.M Mon Jun 27 12:43:58 2016 Page 2

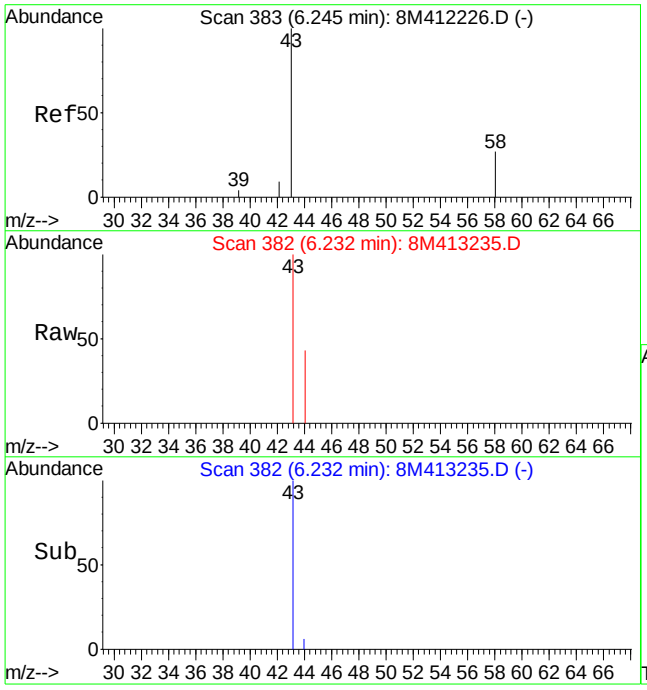

#13
Acetone
Concen: 2.21 ug/L
RT: 6.23 min Scan# 382
Delta R.T. -0.01 min
Lab File: 8M413235.D
Acq: 25 Jun 2016 2:19

Tgt Ion: 43 Resp: 1586

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.2	35.4#

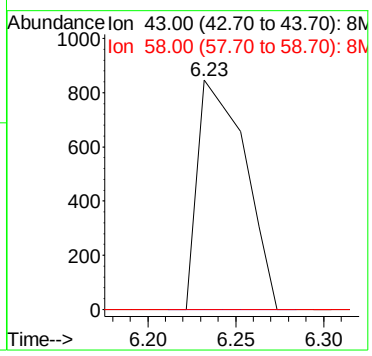

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413236.D Vial: 18
Acq On : 25 Jun 2016 2:48 Operator: FJB
Sample : L16061142-07 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 25 03:10:46 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	626269	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	490669	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	274027	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	190223	28.2703 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 113.08%		
43) 1,2-Dichloroethane-d4	10.30	65	218601	30.2987 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 121.20%#		
58) Toluene-d8	12.68	98	665855	25.9296 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.72%		
80) p-Bromofluorobenzene	16.07	95	292289	25.7599 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.04%		

Target Compounds					Qvalue
13) Acetone	6.24	43	1604	2.2764 ug/L #	50
59) Toluene	12.78	91	39449	1.2950 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413236.D 8260WT.M Mon Jun 27 12:44:02 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413236.D Vial: 18
Acq On : 25 Jun 2016 2:48 Operator: FJB
Sample : L16061142-07 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 26 15:24 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

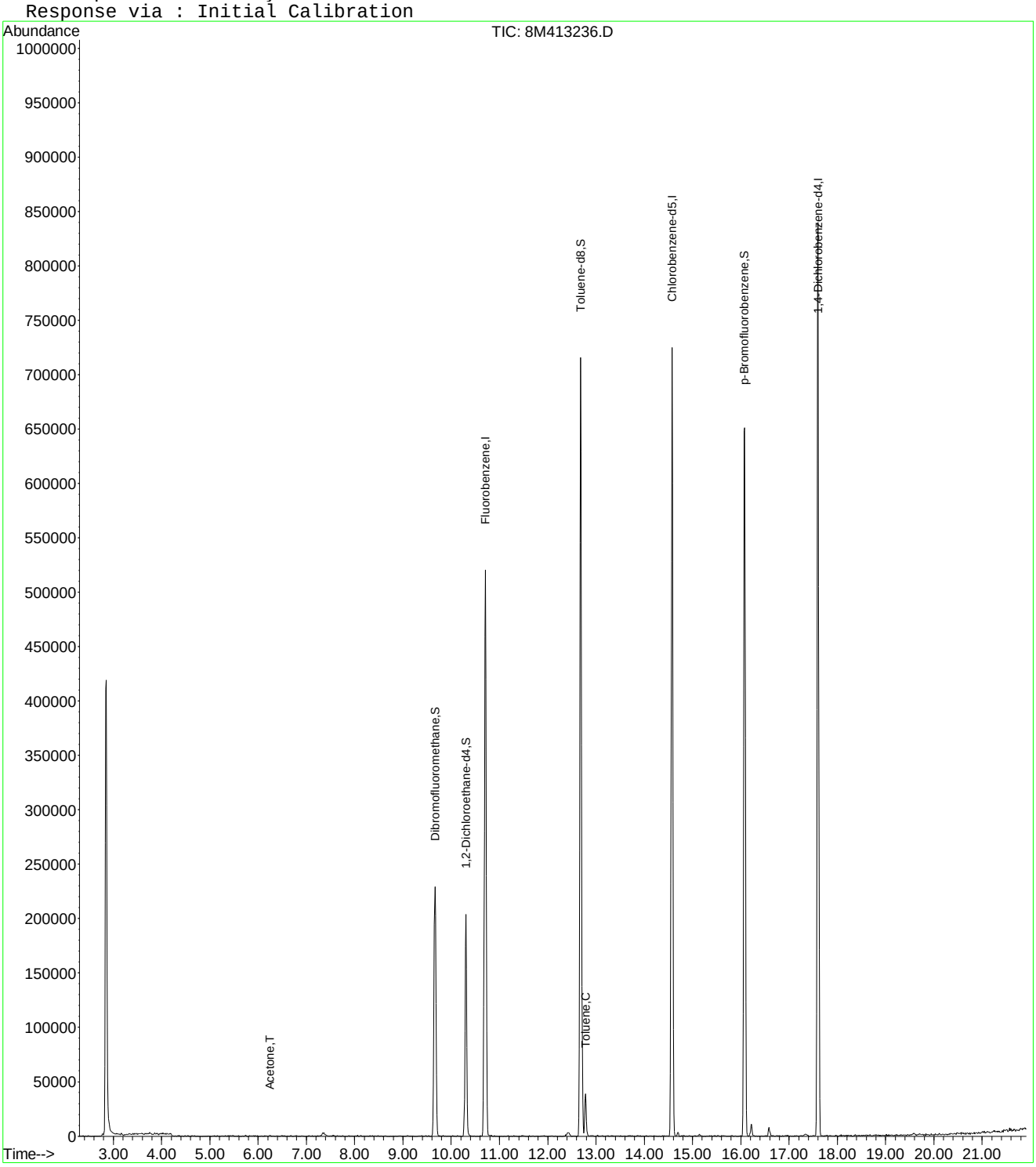

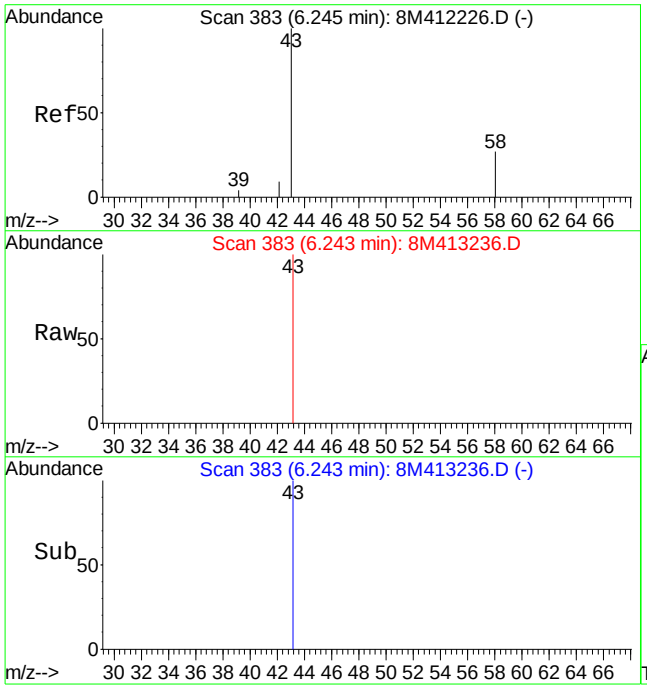

#13
Acetone
Concen: 2.28 ug/L
RT: 6.24 min Scan# 383
Delta R.T. -0.00 min
Lab File: 8M413236.D
Acq: 25 Jun 2016 2:48

Tgt Ion: 43 Resp: 1604

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.2	35.4#

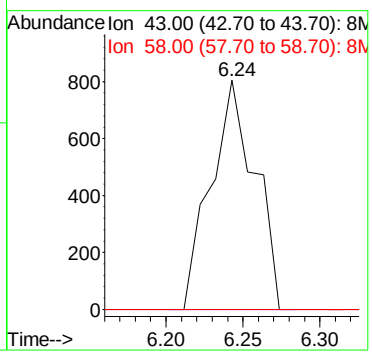

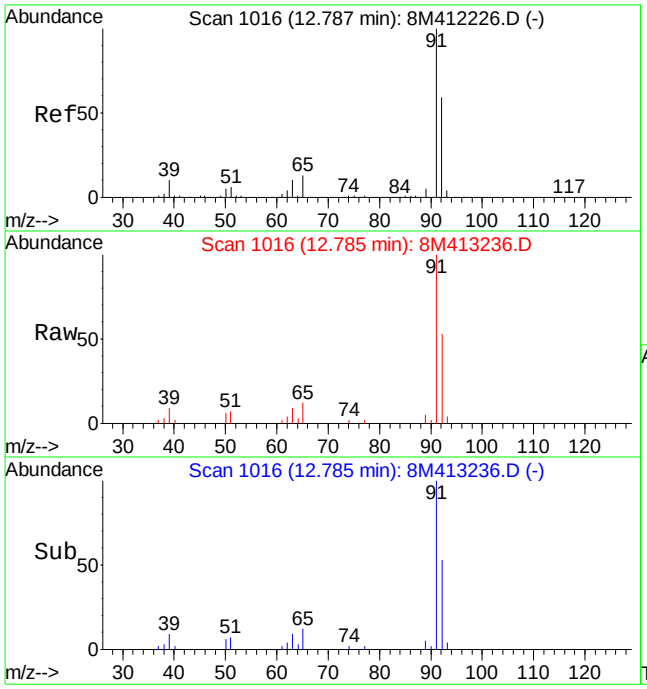

#59
Toluene
Concen: 1.30 ug/L
RT: 12.78 min Scan# 1016
Delta R.T. -0.00 min
Lab File: 8M413236.D
Acq: 25 Jun 2016 2:48

Tgt Ion: 91 Resp: 39449

Ion	Ratio	Lower	Upper
91	100		
92	58.4	35.5	82.7

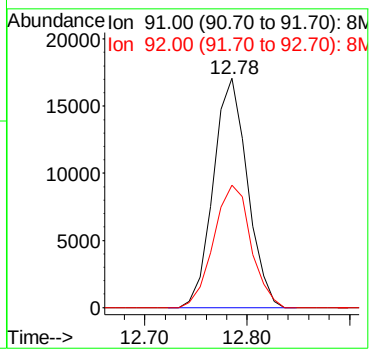

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\071316\11M13228.D Vial: 6
Acq On : 13 Jul 2016 14:40 Operator: TMB
Sample : L16061142-07 B 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 13 16:20:00 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Thu Jul 07 15:06:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	475011	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	426121	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	249799	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	132417	25.4717 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.88%		
43) 1,2-Dichloroethane-d4	10.23	65	130882	22.0802 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 88.32%		
57) Toluene-d8	12.47	98	455224	24.5868 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.36%		
78) p-Bromofluorobenzene	15.64	95	180671	23.4628 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.84%		

Target Compounds					Qvalue
3) Chloromethane	3.68	50	846	0.1419 ug/L	80
13) Acetone	6.34	43	4022	3.5658 ug/L #	78
20) Carbon Disulfide	7.36	76	4256	0.2923 ug/L #	75
58) Toluene	12.56	91	29738	1.3785 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M13228.D 8260WT.M Wed Jul 13 16:20:02 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\071316\11M13228.D Vial: 6
Acq On : 13 Jul 2016 14:40 Operator: TMB
Sample : L16061142-07 B 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 13 16:20 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Thu Jul 07 15:06:07 2016
Response via : Initial Calibration

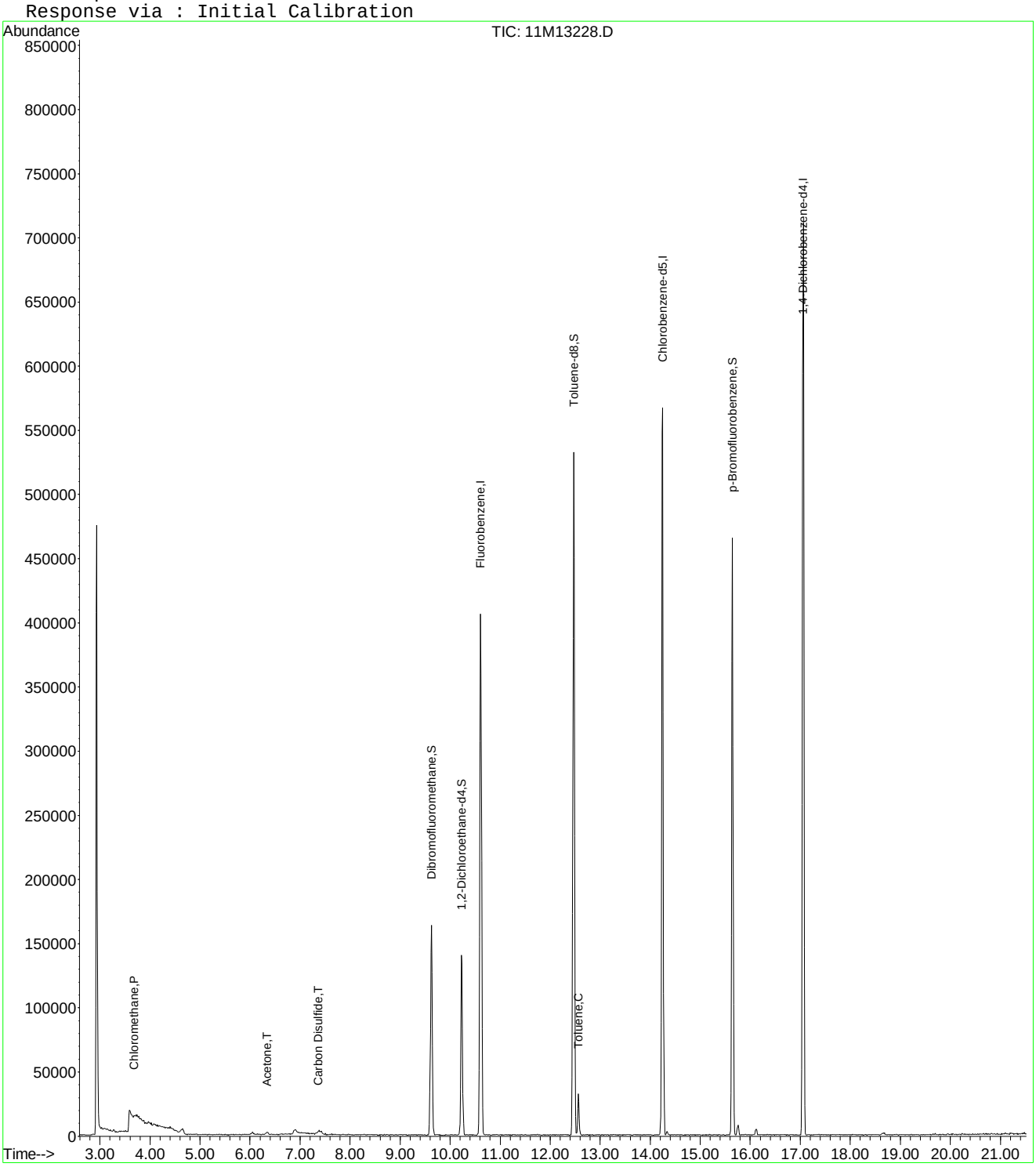

11M13228.D 8260WT.M Wed Jul 13 16:20:02 2016 Page 2

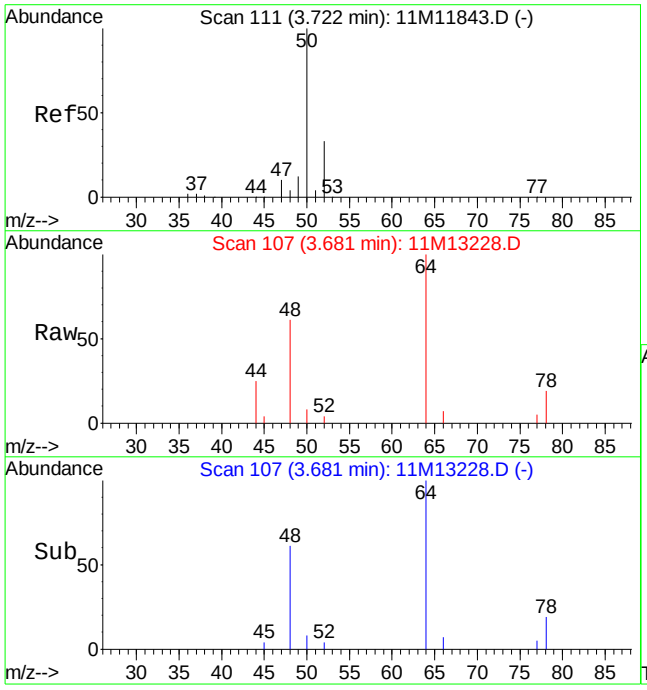

#3
Chloromethane
Concen: 0.14 ug/L
RT: 3.68 min Scan# 107
Delta R.T. -0.04 min
Lab File: 11M13228.D
Acq: 13 Jul 2016 14:40

Tgt Ion: 50 Resp: 846

Ion	Ratio	Lower	Upper
50	100		
52	44.7	20.0	46.6

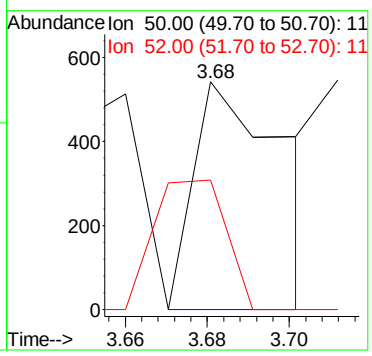

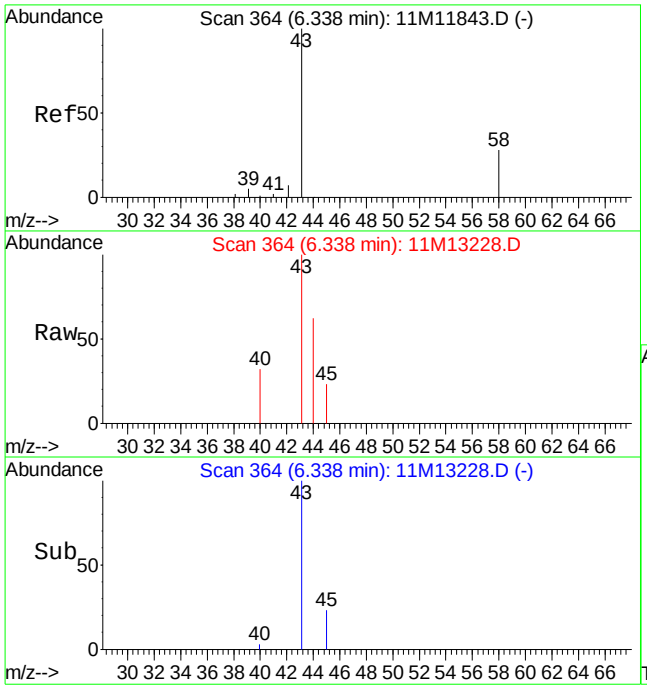

#13
Acetone
Concen: 3.57 ug/L
RT: 6.34 min Scan# 364
Delta R.T. -0.00 min
Lab File: 11M13228.D
Acq: 13 Jul 2016 14:40

Tgt Ion: 43 Resp: 4022

Ion	Ratio	Lower	Upper
43	100		
58	37.6	15.8	36.8#

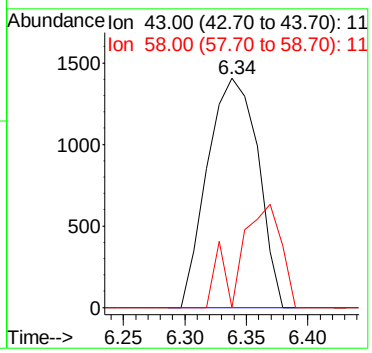

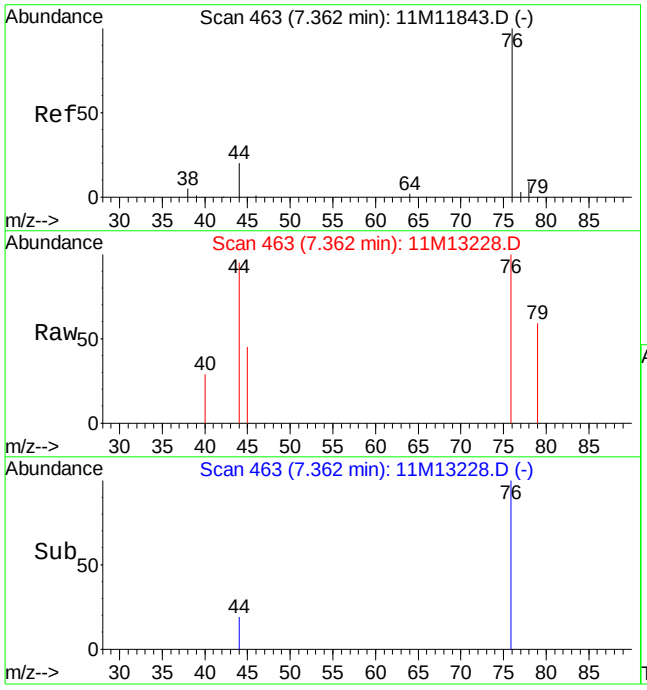

#20
Carbon Disulfide
Concen: 0.29 ug/L
RT: 7.36 min Scan# 463
Delta R.T. -0.00 min
Lab File: 11M13228.D
Acq: 13 Jul 2016 14:40

Tgt Ion: 76 Resp: 4256

Ion	Ratio	Lower	Upper
76	100		
78	0.0	5.5	12.9#

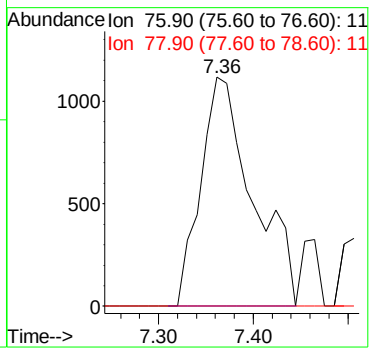

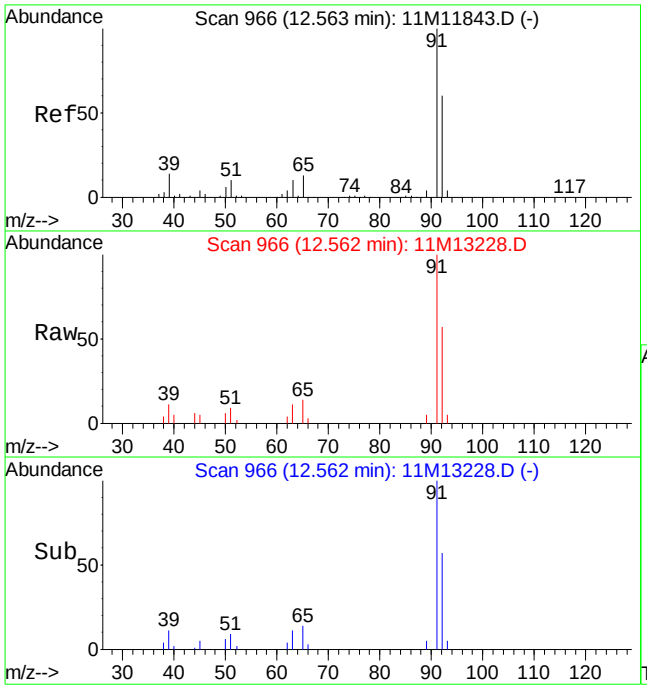

#58
Toluene
Concen: 1.38 ug/L
RT: 12.56 min Scan# 966
Delta R.T. -0.00 min
Lab File: 11M13228.D
Acq: 13 Jul 2016 14:40

Tgt Ion: 91 Resp: 29738

Ion	Ratio	Lower	Upper
91	100		
92	57.7	35.7	83.3

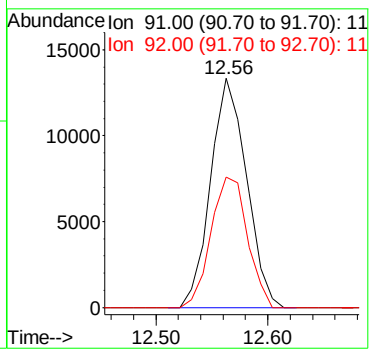

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413229.D Vial: 11
Acq On : 24 Jun 2016 23:25 Operator: FJB
Sample : L16061142-08 TB A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 24 23:47:29 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	653067	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	515232	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	287925	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	198898	28.3466 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 113.40%		
43) 1,2-Dichloroethane-d4	10.30	65	222411	29.5618 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 118.24%		
58) Toluene-d8	12.68	98	693693	25.7258 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.92%		
80) p-Bromofluorobenzene	16.08	95	298270	25.0181 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.08%		

Target Compounds					Qvalue
13) Acetone	6.24	43	1995	2.7152 ug/L #	50
36) Tetrahydrofuran	9.62	42	1050	1.4768 ug/L #	24

(#) = qualifier out of range (m) = manual integration
8M413229.D 8260WT.M Mon Jun 27 12:43:31 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413229.D Vial: 11
Acq On : 24 Jun 2016 23:25 Operator: FJB
Sample : L16061142-08 TB A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 26 15:23 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

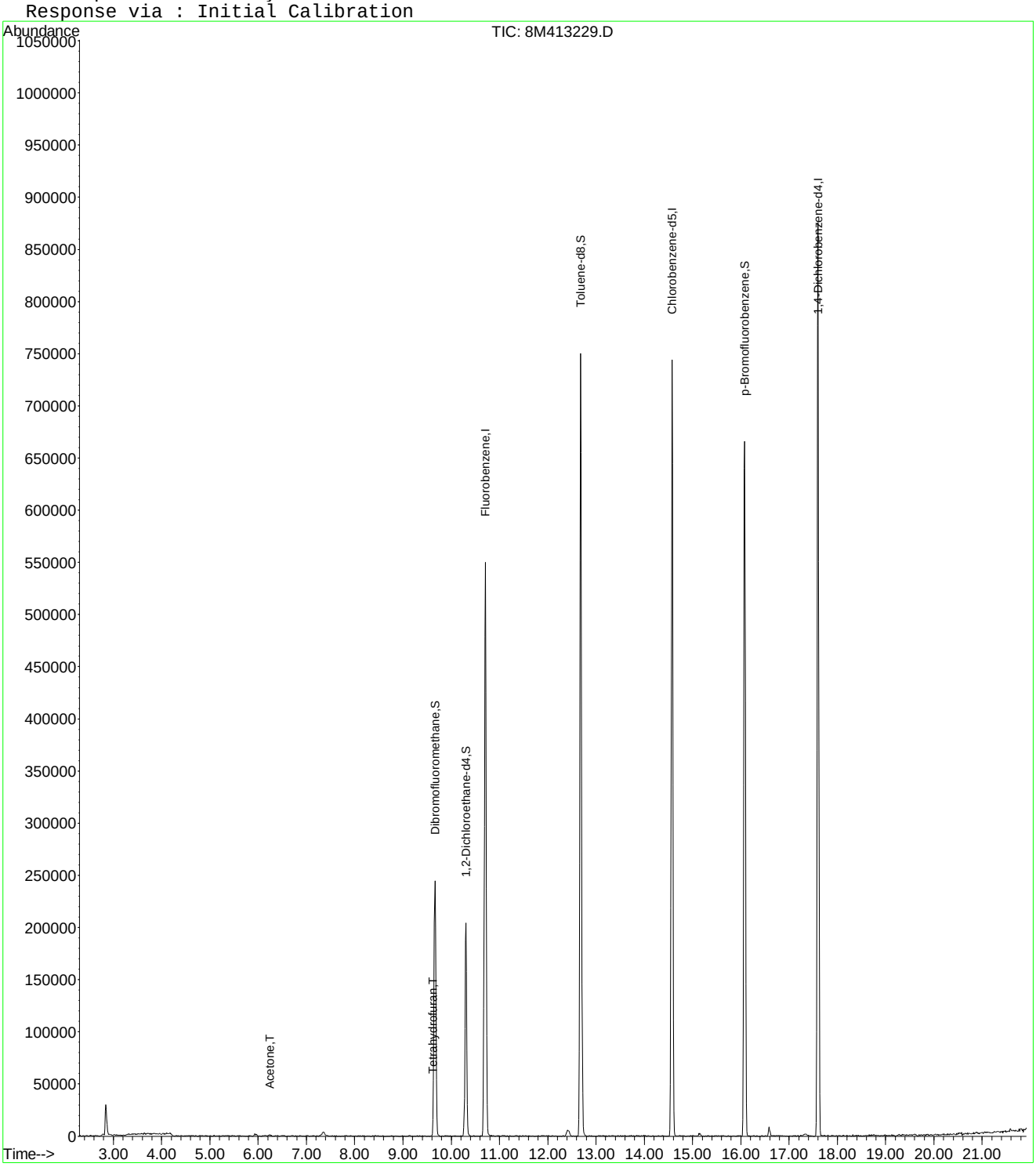

8M413229.D 8260WT.M Mon Jun 27 12:43:32 2016 Page 2

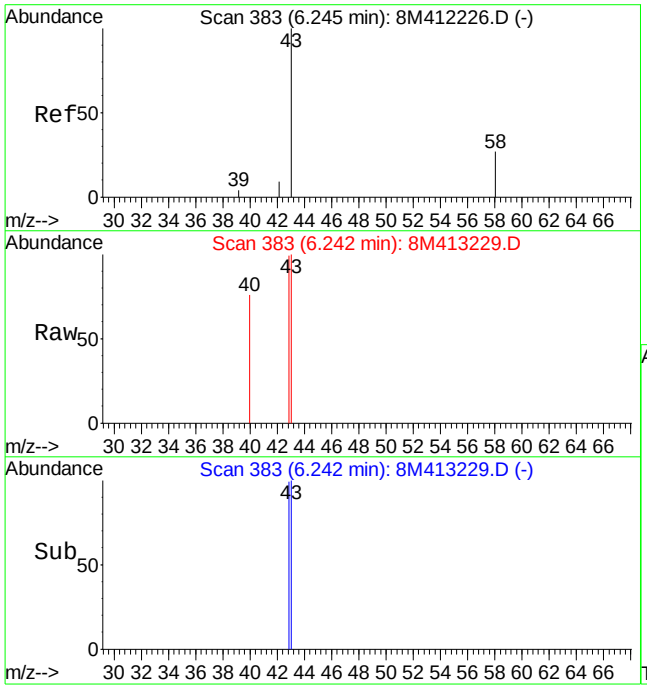

#13
Acetone
Concen: 2.72 ug/L
RT: 6.24 min Scan# 383
Delta R.T. -0.00 min
Lab File: 8M413229.D
Acq: 24 Jun 2016 23:25

Tgt Ion: 43 Resp: 1995

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.2	35.4#

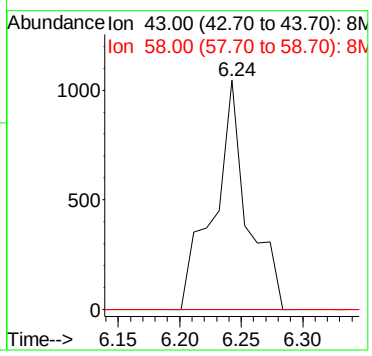

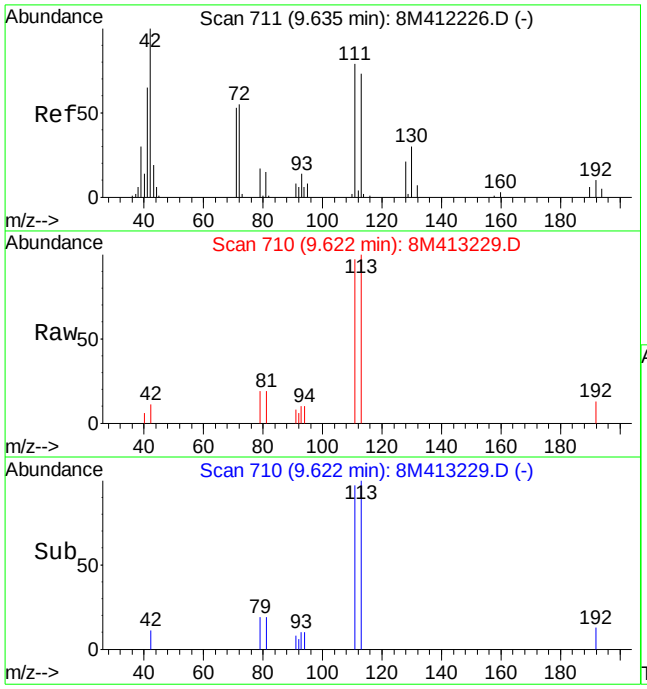

#36
Tetrahydrofuran
Concen: 1.48 ug/L
RT: 9.62 min Scan# 710
Delta R.T. -0.01 min
Lab File: 8M413229.D
Acq: 24 Jun 2016 23:25

Tgt Ion: 42 Resp: 1050

Ion	Ratio	Lower	Upper
42	100		
72	0.0	33.8	78.8#
71	0.0	32.0	74.8#

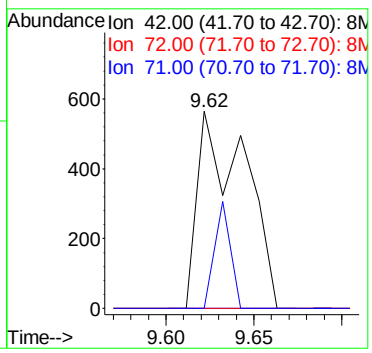

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:20 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	538041	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	450050	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	251600	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
57) Toluene-d8	12.47	98	210	0.0099 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.04%#	
78) p-Bromofluorobenzene	15.64	95	566	0.0689 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	2475	0.3135 ug/L #	66
3) Chloromethane	3.72	50	4639	0.6471 ug/L	91
4) Vinyl Chloride	3.96	62	1882	0.3288 ug/L #	44
5) 1,3-Butadiene	4.01	54	1564	0.2900 ug/L #	19
6) Bromomethane	4.84	94	1717	0.4723 ug/L	83
7) Chloroethane	5.00	64	616	0.1589 ug/L #	45
8) Trichlorofluoromethane	5.49	101	3531	0.3330 ug/L	97
10) Isoprene	6.04	67	1746	0.2381 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	1344	0.2515 ug/L	96
13) Acetone	6.34	43	2389	1.4850 ug/L #	45
14) 1,1-Dichloroethene	6.56	61	3780	0.3817 ug/L	78
16) Dimethyl Sulfide	6.80	62	762	0.1697 ug/L	78
18) Methyl acetate	7.02	43	24685	4.4975 ug/L #	70
19) Methylene Chloride	7.31	84	1766	0.3184 ug/L	74
20) Carbon Disulfide	7.36	76	5848	0.3373 ug/L	92
22) Methyl Tert Butyl Ether	7.54	73	3068	0.2131 ug/L #	48
23) trans-1,2-Dichloroethene	7.75	96	1449	0.2556 ug/L	91
24) n-Hexane	7.82	57	3745	0.4031 ug/L #	73
26) Vinyl Acetate	8.30	43	2410	0.6995 ug/L #	78
27) 1,1-Dichloroethane	8.35	63	3312	0.2969 ug/L #	76
31) 2,2-Dichloropropane	9.10	77	2449	0.3040 ug/L #	42
32) cis-1,2-Dichloroethene	9.15	96	1729	0.2748 ug/L	96
33) Chloroform	9.35	83	3792	0.3639 ug/L	92
35) Bromochloromethane	9.56	130	948	0.2355 ug/L #	68
38) 1,1,1-Trichloroethane	9.85	97	3449	0.3423 ug/L #	79
39) Cyclohexane	9.88	56	3639	0.2986 ug/L #	84
40) 1,1-Dichloropropene	10.04	75	2365	0.3106 ug/L #	53
41) Carbon Tetrachloride	10.17	117	2613	0.2748 ug/L	87
44) 1,2-Dichloroethane	10.35	62	2493	0.2788 ug/L #	73
45) Benzene	10.38	78	7133	0.3275 ug/L	99
46) Trichloroethene	11.09	130	1973	0.2780 ug/L	93
47) Methylcyclohexane	11.17	83	2570	0.2986 ug/L	84
48) 1,2-Dichloropropane	11.29	63	1665	0.2692 ug/L	87
50) Bromodichloromethane	11.57	83	2418	0.2950 ug/L #	82
51) Dibromomethane	11.65	93	756	0.2331 ug/L	88
54) cis-1,3-Dichloropropene	12.17	75	1869	0.2166 ug/L #	82
55) Dimethyl Disulfide	12.42	79	1028	0.1910 ug/L	95
58) Toluene	12.57	91	7355	0.3156 ug/L	91
59) Ethyl Methacrylate	12.64	69	1041	0.1887 ug/L	88
60) trans-1,3-Dichloropropene	12.72	75	1951	0.2556 ug/L #	51

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:20 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
61) 1,1,2-Trichloroethane	12.92	97	1087	0.2492 ug/L	87
62) 2-Hexanone	12.86	43	687	0.1910 ug/L #	29
63) 1,3-Dichloropropane	13.21	76	1673	0.2309 ug/L	94
64) Tetrachloroethene	13.34	164	1703	0.3238 ug/L	94
65) Dibromochloromethane	13.59	129	1515	0.2406 ug/L	92
66) 1,2-Dibromoethane	13.82	107	966	0.2181 ug/L	98
67) 1-Chlorohexane	13.89	91	2128	0.2784 ug/L	97
68) Chlorobenzene	14.29	112	5248	0.3062 ug/L	99
69) 1,1,1,2-Tetrachloroethane	14.32	131	2025	0.3082 ug/L	98
70) Ethylbenzene	14.31	106	2602	0.2992 ug/L	88
71) m-,p-Xylene	14.40	106	6296	0.6083 ug/L	82
72) o-Xylene	14.92	106	3032	0.2937 ug/L	95
73) Styrene	14.95	104	4953	0.2828 ug/L	95
75) Isopropylbenzene	15.31	105	7848	0.3006 ug/L	93
77) 1,1,2,2-Tetrachloroethane	15.52	83	1145	0.2759 ug/L	68
81) n-Propylbenzene	15.79	91	9421	0.3332 ug/L	94
82) Bromobenzene	15.92	156	2002	0.2551 ug/L	66
83) 1,3,5-Trimethylbenzene	15.95	105	6742	0.3138 ug/L	91
84) 2-Chlorotoluene	16.05	91	6735	0.3228 ug/L	96
85) 4-Chlorotoluene	16.09	91	6023	0.3518 ug/L	99
86) a-Methylstyrene	16.34	118	2850	0.2387 ug/L	95
87) tert-Butylbenzene	16.39	134	1197	0.2539 ug/L	64
88) 1,2,4-Trimethylbenzene	16.44	105	6992	0.3180 ug/L	88
89) sec-Butylbenzene	16.65	105	8335	0.3278 ug/L	97
90) p-Isopropyltoluene	16.79	119	7094	0.3065 ug/L	96
91) 1,3-Dichlorobenzene	16.98	146	4505	0.3090 ug/L	96
92) 1,4-Dichlorobenzene	17.10	146	4475	0.3006 ug/L #	1
93) n-Butylbenzene	17.28	91	7076	0.3396 ug/L #	93
94) 1,2-Dichlorobenzene	17.56	146	4016	0.2922 ug/L	100
96) 1,2,4-Trichlorobenzene	19.55	180	2964	0.2902 ug/L	99
97) Hexachlorobutadiene	19.69	225	1160	0.2796 ug/L #	71
98) Naphthalene	19.90	128	4679	0.2394 ug/L #	93
99) 1,2,3-Trichlorobenzene	20.19	180	2578	0.2696 ug/L	87

(#) = qualifier out of range (m) = manual integration
11M11837.D 8260WT.M Fri May 13 17:04:21 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration

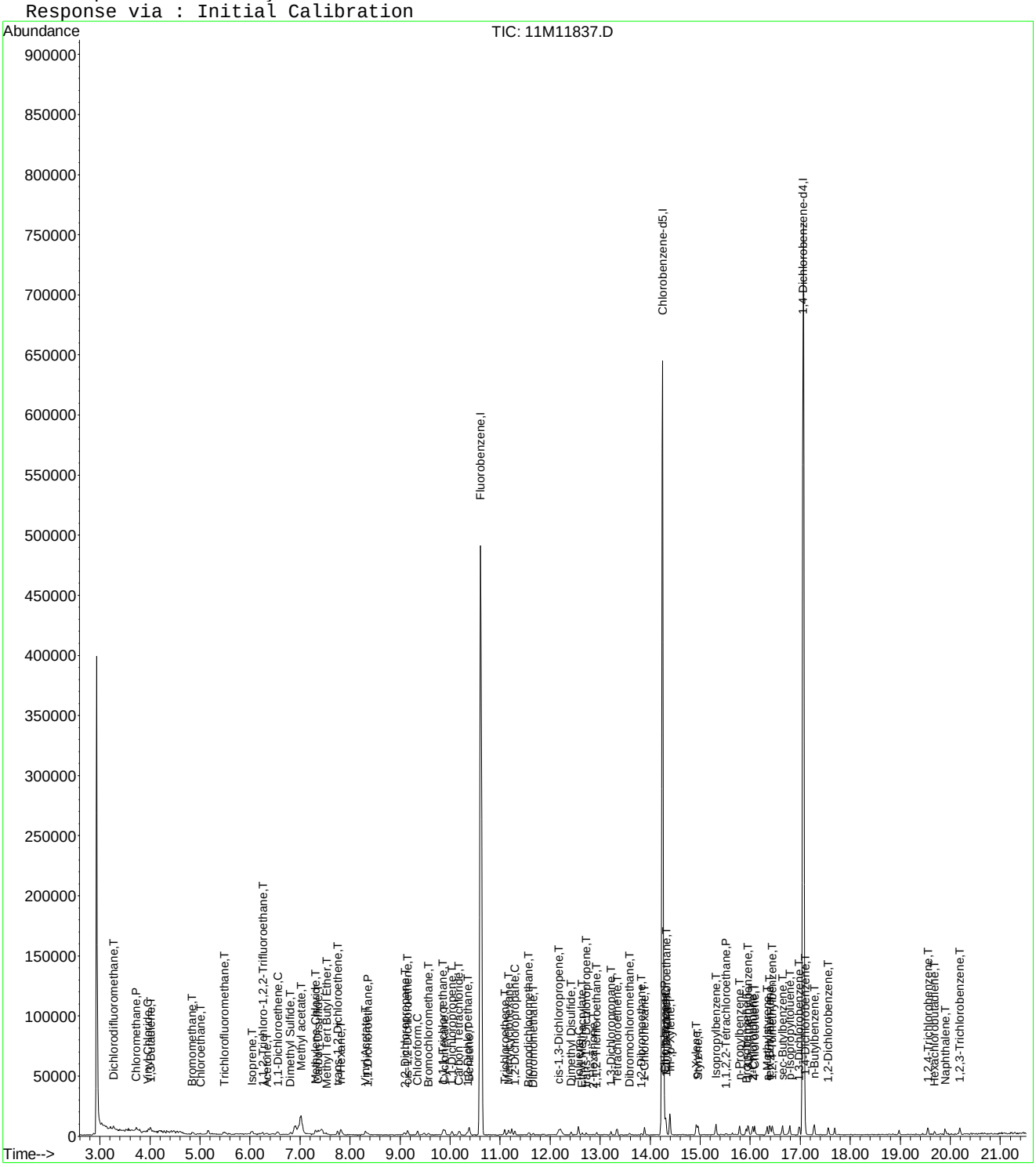

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:40:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2936	0.0	0	0.00
3	P	Chloromethane	-1.0000	0.6871	0.0	0	0.00
4	C	Vinyl Chloride	-1.0000	0.3357	0.0	0	0.00
5	T	1,3-Butadiene	-1.0000	0.2805	0.0	0	0.01
6	T	Bromomethane	-1.0000	0.4454	0.0	0	-0.01
7	T	Chloroethane	-1.0000	0.1710	0.0	0	0.00
8	T	Trichlorofluoromethane	-1.0000	0.3160	0.0	0	0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.01#
10	T	Isoprene	-1.0000	0.2535	0.0	0	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.23#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2478	0.0	0	0.01
13	T	Acetone	-1.0000	1.8699	0.0	0	0.00
14	C	1,1-Dichloroethene	-1.0000	0.3838	0.0	0	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.66#
16	T	Dimethyl Sulfide	-1.0000	0.1937	0.0	0	-0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.06#
18	T	Methyl acetate	-1.0000	5.1442	0.0	0	-0.04
19	T	Methylene Chloride	-1.0000	0.3464	0.0	0	0.00
20	T	Carbon Disulfide	-1.0000	0.3546	0.0	0	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.49#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2413	0.0	0	0.02
23	T	trans-1,2-Dichloroethene	-1.0000	0.2658	0.0	0	0.01
24	T	n-Hexane	-1.0000	0.4125	0.0	0	0.00
25	T	Diisopropyl ether	-1.0000	0.0083	0.0	0	0.08
26	T	Vinyl Acetate	-1.0000	2.6933	0.0	0	-0.01
27	P	1,1-Dichloroethane	-1.0000	0.3028	0.0	0	0.01
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.70#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.87#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.97#
31	T	2,2-Dichloropropane	-1.0000	0.2862	0.0	0	0.01
32	T	cis-1,2-Dichloroethene	-1.0000	0.2877	0.0	0	0.00
33	C	Chloroform	0.3000	0.3530	-17.7	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.48#
35	T	Bromochloromethane	-1.0000	0.2656	0.0	0	-0.01
36	T	Tetrahydrofuran	-1.0000	0.0000	0.0	0	-9.60#
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.63#
38	T	1,1,1-Trichloroethane	-1.0000	0.3263	0.0	0	0.00
39	T	Cyclohexane	-1.0000	0.3159	0.0	0	0.00
40	T	1,1-Dichloropropene	-1.0000	0.3134	0.0	0	0.00
41	T	Carbon Tetrachloride	-1.0000	0.2532	0.0	0	-0.01
42	T	Tert-Amyl-Methyl ether	-1.0000	0.0152	0.0	0	-0.09
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.23#
44	T	1,2-Dichloroethane	-1.0000	0.2858	0.0	0	0.01
45	T	Benzene	-1.0000	0.3452	0.0	0	0.00
46	T	Trichloroethene	-1.0000	0.2938	0.0	0	0.00
47	T	Methylcyclohexane	-1.0000	0.3101	0.0	0	0.00
48	C	1,2-Dichloropropane	-1.0000	0.2911	0.0	0	0.00
49	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.55#
50	T	Bromodichloromethane	-1.0000	0.3012	0.0	0	0.00
51	T	Dibromomethane	-1.0000	0.2537	0.0	0	0.00
52	T	2-Chloroethyl Vinyl Ether	-1.0000	0.0000	0.0	0	-11.84#
53	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-11.87#
54	T	cis-1,3-Dichloropropene	-1.0000	0.2327	0.0	0	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:40:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	-1.0000	0.2127	0.0	0	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	-1.0000	0.0107	0.0	0	0.00
58	C	Toluene	-1.0000	0.3228	0.0	0	0.01
59	T	Ethyl Methacrylate	-1.0000	0.2140	0.0	0	-0.01
60	T	trans-1,3-Dichloropropene	-1.0000	0.2668	0.0	0	-0.01
61	T	1,1,2-Trichloroethane	-1.0000	0.2691	0.0	0	-0.01
62	T	2-Hexanone	-1.0000	0.2315	0.0	0	0.00
63	T	1,3-Dichloropropane	-1.0000	0.2579	0.0	0	0.00
64	T	Tetrachloroethene	-1.0000	0.3214	0.0	0	0.00
65	T	Dibromochloromethane	-1.0000	0.2459	0.0	0	0.00
66	T	1,2-Dibromoethane	-1.0000	0.2387	0.0	0	0.00
67	T	1-Chlorohexane	-1.0000	0.2833	0.0	0	0.00
68	P	Chlorobenzene	-1.0000	0.3144	0.0	0	0.00
69	T	1,1,1,2-Tetrachloroethane	-1.0000	0.2998	0.0	0	0.00
70	C	Ethylbenzene	-1.0000	0.3040	0.0	0	0.00
71	T	m-,p-Xylene	-1.0000	0.6051	0.0	0	0.01
72	T	o-Xylene	-1.0000	0.2994	0.0	0	0.00
73	T	Styrene	-1.0000	0.2961	0.0	0	0.00
74	P	Bromoform	-1.0000	0.0798	0.0	0	-0.01
75	T	Isopropylbenzene	-1.0000	0.2931	0.0	0	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2922	0.0	0	0.00
78	S	p-Bromofluorobenzene	-1.0000	0.0730	0.0	0	0.00
79	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-15.70#
80	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-15.74#
81	T	n-Propylbenzene	-1.0000	0.3233	0.0	0	0.00
82	T	Bromobenzene	0.3000	0.2618	12.7	100	0.00
83	T	1,3,5-Trimethylbenzene	-1.0000	0.3032	0.0	0	-0.01
84	T	2-Chlorotoluene	-1.0000	0.3300	0.0	0	0.00
85	T	4-Chlorotoluene	-1.0000	0.3295	0.0	0	0.00
86	T	a-Methylstyrene	-1.0000	0.2430	0.0	0	0.00
87	T	tert-Butylbenzene	-1.0000	0.2541	0.0	0	-0.01
88	T	1,2,4-Trimethylbenzene	-1.0000	0.3088	0.0	0	0.00
89	T	sec-Butylbenzene	-1.0000	0.3122	0.0	0	0.00
90	T	p-Isopropyltoluene	-1.0000	0.2893	0.0	0	0.00
91	T	1,3-Dichlorobenzene	-1.0000	0.3051	0.0	0	0.00
92	T	1,4-Dichlorobenzene	0.3000	0.2990	0.3	100	0.00
93	T	n-Butylbenzene	-1.0000	0.3274	0.0	0	0.00
94	T	1,2-Dichlorobenzene	0.3000	0.2985	0.5	100	-0.01
95	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-18.49#
96	T	1,2,4-Trichlorobenzene	-1.0000	0.3011	0.0	0	0.00
97	T	Hexachlorobutadiene	-1.0000	0.2675	0.0	0	0.00
98	T	Naphthalene	-1.0000	0.2561	0.0	0	0.00
99	T	1,2,3-Trichlorobenzene	0.3000	0.2854	4.9	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11837.D 8260WT.M Sat May 14 18:41:07 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11838.D Vial: 4
Acq On : 13 May 2016 15:12 Operator: JDS
Sample : WG568769-03 0.4ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:23 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	515473	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	435266	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	244818	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
57) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
78) p-Bromofluorobenzene	15.64	95	236	0.0295 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	2765	0.3656 ug/L #	66
3) Chloromethane	3.72	50	4021	0.5854 ug/L #	77
4) Vinyl Chloride	3.96	62	2267	0.4134 ug/L #	64
5) 1,3-Butadiene	4.01	54	2044	0.3956 ug/L #	18
6) Bromomethane	4.85	94	1571	0.4511 ug/L	89
7) Chloroethane	5.01	64	1496	0.4029 ug/L #	45
8) Trichlorofluoromethane	5.49	101	4241	0.4175 ug/L	96
10) Isoprene	6.03	67	2394	0.3408 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	1439	0.2811 ug/L #	23
13) Acetone	6.33	43	1125	0.7299 ug/L #	45
14) 1,1-Dichloroethene	6.56	61	3786	0.3990 ug/L	77
16) Dimethyl Sulfide	6.80	62	1622	0.3769 ug/L	59
18) Methyl acetate	7.01	43	21364	4.0629 ug/L #	70
19) Methylene Chloride	7.32	84	2266	0.4265 ug/L	97
20) Carbon Disulfide	7.35	76	6628	0.3991 ug/L #	82
22) Methyl Tert Butyl Ether	7.52	73	4808	0.3486 ug/L #	74
23) trans-1,2-Dichloroethene	7.74	96	2372	0.4368 ug/L	93
24) n-Hexane	7.83	57	4212	0.4732 ug/L #	73
26) Vinyl Acetate	8.34	43	434	0.1315 ug/L #	78
27) 1,1-Dichloroethane	8.34	63	3822	0.3576 ug/L #	89
29) 2-Butanone	8.88	43	484	0.2099 ug/L #	60
31) 2,2-Dichloropropane	9.09	77	2680	0.3472 ug/L #	55
32) cis-1,2-Dichloroethene	9.15	96	2277	0.3777 ug/L	91
33) Chloroform	9.35	83	3981	0.3988 ug/L	89
35) Bromochloromethane	9.57	130	952	0.2468 ug/L	57
36) Tetrahydrofuran	9.59	42	212	0.1340 ug/L #	46
38) 1,1,1-Trichloroethane	9.85	97	3917	0.4058 ug/L #	84
39) Cyclohexane	9.88	56	3935	0.3371 ug/L #	80
40) 1,1-Dichloropropene	10.04	75	2817	0.3862 ug/L	82
41) Carbon Tetrachloride	10.18	117	3373	0.3702 ug/L #	88
44) 1,2-Dichloroethane	10.35	62	3201	0.3737 ug/L #	78
45) Benzene	10.39	78	8729	0.4184 ug/L	90
46) Trichloroethene	11.08	130	2537	0.3731 ug/L	93
47) Methylcyclohexane	11.17	83	2742	0.3325 ug/L	90
48) 1,2-Dichloropropane	11.29	63	2133	0.3600 ug/L	84
50) Bromodichloromethane	11.58	83	2857	0.3638 ug/L #	84
51) Dibromomethane	11.65	93	972	0.3128 ug/L	81
52) 2-Chloroethyl Vinyl Ether	11.85	63	791	0.2560 ug/L #	50
54) cis-1,3-Dichloropropene	12.17	75	2689	0.3253 ug/L	99
55) Dimethyl Disulfide	12.42	79	1113	0.2158 ug/L	74

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11838.D Vial: 4
Acq On : 13 May 2016 15:12 Operator: JDS
Sample : WG568769-03 0.4ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:23 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
58)	Toluene	12.56	91	9113	0.4043 ug/L		99
59)	Ethyl Methacrylate	12.65	69	1556	0.2916 ug/L		96
60)	trans-1,3-Dichloropropene	12.73	75	2303	0.3119 ug/L		86
61)	1,1,2-Trichloroethane	12.94	97	1549	0.3672 ug/L		85
62)	2-Hexanone	12.86	43	840	0.2415 ug/L	#	11
63)	1,3-Dichloropropane	13.21	76	2345	0.3346 ug/L		82
64)	Tetrachloroethene	13.34	164	1905	0.3745 ug/L		88
65)	Dibromochloromethane	13.59	129	1972	0.3238 ug/L		89
66)	1,2-Dibromoethane	13.82	107	1617	0.3776 ug/L		69
67)	1-Chlorohexane	13.89	91	2578	0.3487 ug/L		77
68)	Chlorobenzene	14.29	112	6458	0.3896 ug/L		93
69)	1,1,1,2-Tetrachloroethane	14.31	131	2374	0.3736 ug/L		98
70)	Ethylbenzene	14.31	106	3158	0.3754 ug/L		79
71)	m-,p-Xylene	14.39	106	8621	0.8613 ug/L		93
72)	o-Xylene	14.93	106	3752	0.3758 ug/L		96
73)	Styrene	14.95	104	6027	0.3558 ug/L		90
74)	Bromoform	15.44	173	931	0.2454 ug/L		87
75)	Isopropylbenzene	15.31	105	10551	0.4179 ug/L		95
77)	1,1,2,2-Tetrachloroethane	15.52	83	1129	0.2796 ug/L		84
79)	1,2,3-Trichloropropane	15.71	110	200	0.1341 ug/L	#	28
81)	n-Propylbenzene	15.79	91	11244	0.4087 ug/L		98
82)	Bromobenzene	15.91	156	3048	0.3991 ug/L		95
83)	1,3,5-Trimethylbenzene	15.96	105	9158	0.4381 ug/L		92
84)	2-Chlorotoluene	16.05	91	8455	0.4164 ug/L		96
85)	4-Chlorotoluene	16.09	91	6979	0.4189 ug/L		92
86)	a-Methylstyrene	16.34	118	4052	0.3488 ug/L		74
87)	tert-Butylbenzene	16.40	134	1479	0.3224 ug/L		63
88)	1,2,4-Trimethylbenzene	16.45	105	8457	0.3953 ug/L		95
89)	sec-Butylbenzene	16.65	105	10479	0.4236 ug/L		93
90)	p-Isopropyltoluene	16.79	119	9613	0.4269 ug/L		93
91)	1,3-Dichlorobenzene	16.98	146	5826	0.4107 ug/L		93
92)	1,4-Dichlorobenzene	17.10	146	6273	0.4331 ug/L	#	74
93)	n-Butylbenzene	17.28	91	8021	0.3956 ug/L	#	91
94)	1,2-Dichlorobenzene	17.57	146	4937	0.3691 ug/L		97
96)	1,2,4-Trichlorobenzene	19.55	180	3632	0.3655 ug/L		95
97)	Hexachlorobutadiene	19.69	225	1539	0.3812 ug/L		96
98)	Naphthalene	19.90	128	7383	0.3882 ug/L		97
99)	1,2,3-Trichlorobenzene	20.19	180	3748	0.4028 ug/L		84

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11838.D Vial: 4
Acq On : 13 May 2016 15:12 Operator: JDS
Sample : WG568769-03 0.4ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration

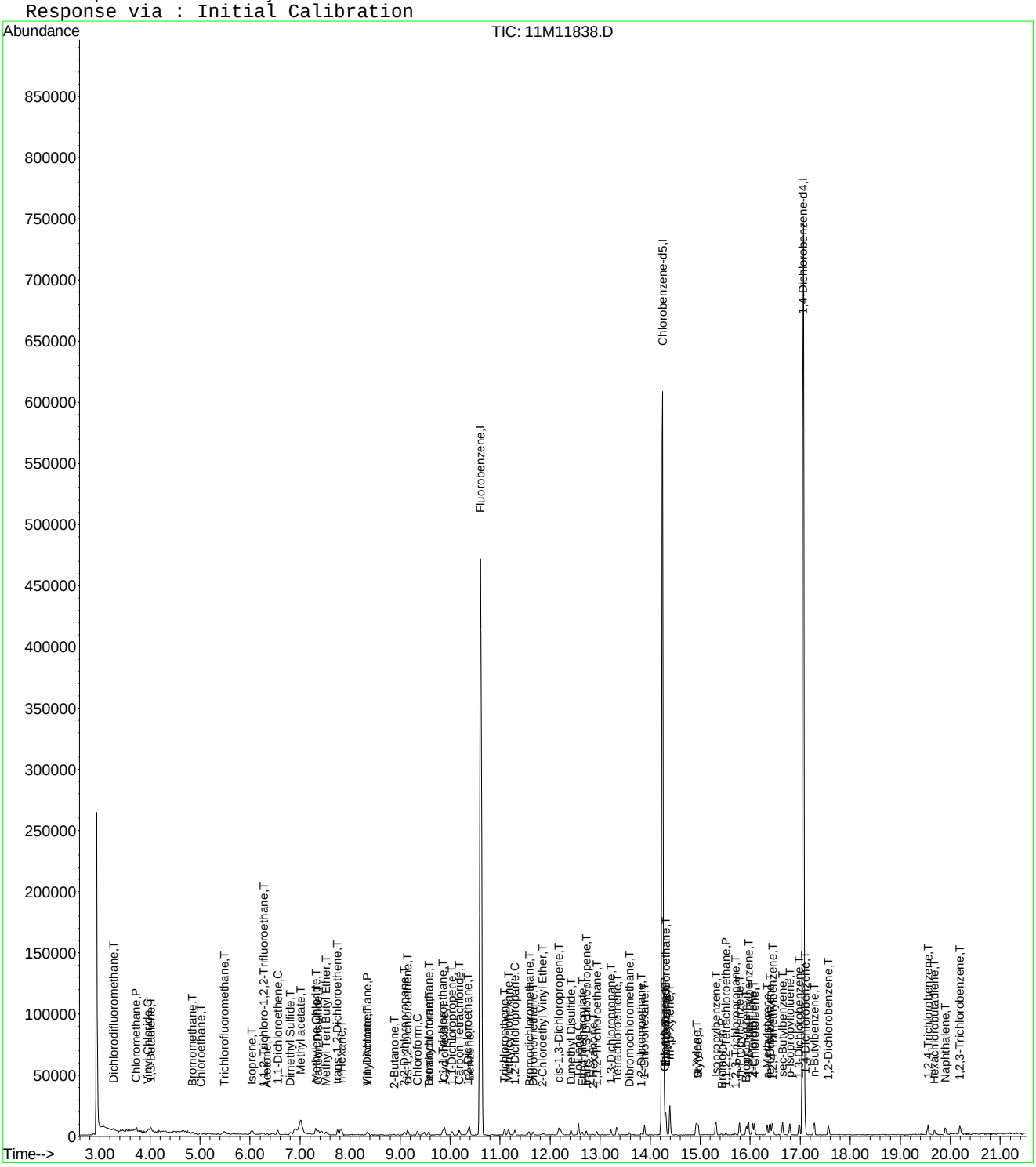

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:25 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	523425	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	440574	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	249989	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	1729	0.2910 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.16%#	
43) 1,2-Dichloroethane-d4	10.23	65	3301	0.4585 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	1.84%#	
57) Toluene-d8	12.47	98	9307	0.4494 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	1.80%#	
78) p-Bromofluorobenzene	15.64	95	4047	0.4956 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	7215	0.9394 ug/L	98
3) Chloromethane	3.72	50	7292	1.0455 ug/L	80
4) Vinyl Chloride	3.96	62	5040	0.9051 ug/L	92
5) 1,3-Butadiene	4.02	54	5876	1.1198 ug/L #	76
6) Bromomethane	4.85	94	3488	0.9862 ug/L	94
7) Chloroethane	4.99	64	3425	0.9083 ug/L #	57
8) Trichlorofluoromethane	5.49	101	10960	1.0625 ug/L	95
9) Diethyl ether	6.01	59	19830	4.2253 ug/L	90
10) Isoprene	6.04	67	6121	0.8582 ug/L	94
11) Acrolein	6.25	56	697	1.2730 ug/L	65
12) 1,1,2-Trichloro-1,2,2-Trif	6.27	101	5456	1.0497 ug/L	90
13) Acetone	6.34	43	1782	1.1386 ug/L #	45
14) 1,1-Dichloroethene	6.55	61	9456	0.9814 ug/L	91
15) Tert-Butyl Alcohol	6.67	59	2848	6.8484 ug/L #	67
16) Dimethyl Sulfide	6.80	62	3631	0.8310 ug/L	93
18) Methyl acetate	7.01	43	20953	3.9242 ug/L #	70
19) Methylene Chloride	7.31	84	5001	0.9270 ug/L	97
20) Carbon Disulfide	7.36	76	15438	0.9154 ug/L	99
21) Acrylonitrile	7.50	53	3780	1.8795 ug/L	89
22) Methyl Tert Butyl Ether	7.53	73	11891	0.8490 ug/L	90
23) trans-1,2-Dichloroethene	7.75	96	4815	0.8732 ug/L	95
24) n-Hexane	7.82	57	9213	1.0194 ug/L #	81
25) Diisopropyl ether	8.15	45	108233	4.5267 ug/L	99
26) Vinyl Acetate	8.31	43	1723	0.5141 ug/L #	78
27) 1,1-Dichloroethane	8.34	63	10818	0.9968 ug/L	95
28) Ethyl-Tert-Butyl ether	8.70	59	85288	4.3548 ug/L	99
29) 2-Butanone	8.88	43	1368	0.5844 ug/L #	60
30) Propionitrile	8.99	54	2406	3.5185 ug/L #	60
31) 2,2-Dichloropropane	9.09	77	7787	0.9935 ug/L	90
32) cis-1,2-Dichloroethene	9.15	96	5567	0.9095 ug/L	94
33) Chloroform	9.35	83	10278	1.0139 ug/L	96
34) 1-Bromopropane	9.48	122	295	0.2934 ug/L	49
35) Bromochloromethane	9.57	130	2941	0.7509 ug/L	88
36) Tetrahydrofuran	9.60	42	7790	4.8493 ug/L	92
38) 1,1,1-Trichloroethane	9.85	97	10000	1.0202 ug/L #	90
39) Cyclohexane	9.88	56	10164	0.8574 ug/L	98
40) 1,1-Dichloropropene	10.04	75	7321	0.9884 ug/L	92
41) Carbon Tetrachloride	10.18	117	9558	1.0331 ug/L	98
42) Tert-Amyl-Methyl ether	10.13	73	59107	4.2417 ug/L	97
44) 1,2-Dichloroethane	10.34	62	8181	0.9406 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:25 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	Benzene	10.38	78	19924	0.9404 ug/L		95
46)	Trichloroethene	11.08	130	6636	0.9611 ug/L		92
47)	Methylcyclohexane	11.18	83	7740	0.9243 ug/L		94
48)	1,2-Dichloropropane	11.29	63	5477	0.9103 ug/L		99
49)	1,4-Dioxane	11.55	88	187	5.1264 ug/L	#	10
50)	Bromodichloromethane	11.57	83	7238	0.9076 ug/L		94
51)	Dibromomethane	11.65	93	2839	0.8997 ug/L		97
52)	2-Chloroethyl Vinyl Ether	11.84	63	1934	0.6164 ug/L	#	72
53)	4-Methyl-2-Pentanone	11.87	58	1016	0.5282 ug/L	#	42
54)	cis-1,3-Dichloropropene	12.17	75	7078	0.8432 ug/L		99
55)	Dimethyl Disulfide	12.42	79	3514	0.6710 ug/L		93
58)	Toluene	12.56	91	22074	0.9676 ug/L		96
59)	Ethyl Methacrylate	12.64	69	4130	0.7646 ug/L		88
60)	trans-1,3-Dichloropropene	12.73	75	5897	0.7891 ug/L		90
61)	1,1,2-Trichloroethane	12.94	97	3547	0.8307 ug/L		96
62)	2-Hexanone	12.87	43	2461	0.6990 ug/L	#	63
63)	1,3-Dichloropropane	13.21	76	5965	0.8410 ug/L		87
64)	Tetrachloroethene	13.34	164	5050	0.9809 ug/L		94
65)	Dibromochloromethane	13.59	129	5237	0.8497 ug/L		90
66)	1,2-Dibromoethane	13.82	107	3214	0.7414 ug/L		91
67)	1-Chlorohexane	13.89	91	7025	0.9387 ug/L		91
68)	Chlorobenzene	14.29	112	16160	0.9630 ug/L		95
69)	1,1,1,2-Tetrachloroethane	14.32	131	6361	0.9889 ug/L		97
70)	Ethylbenzene	14.31	106	8050	0.9455 ug/L		93
71)	m-,p-Xylene	14.39	106	20545	2.0278 ug/L		95
72)	o-Xylene	14.92	106	9683	0.9581 ug/L		96
73)	Styrene	14.96	104	14946	0.8716 ug/L		98
74)	Bromoform	15.43	173	3024	0.7876 ug/L		97
75)	Isopropylbenzene	15.31	105	25656	1.0039 ug/L		92
77)	1,1,2,2-Tetrachloroethane	15.52	83	3569	0.8655 ug/L		89
79)	1,2,3-Trichloropropane	15.71	110	872	0.5724 ug/L		84
80)	trans-1,4-Dichloro-2-Buten	15.74	53	1048	0.6163 ug/L	#	44
81)	n-Propylbenzene	15.79	91	27998	0.9967 ug/L		98
82)	Bromobenzene	15.92	156	8101	1.0388 ug/L		89
83)	1,3,5-Trimethylbenzene	15.96	105	20563	0.9633 ug/L		98
84)	2-Chlorotoluene	16.05	91	20962	1.0111 ug/L		96
85)	4-Chlorotoluene	16.09	91	17553	1.0318 ug/L		100
86)	a-Methylstyrene	16.34	118	10002	0.8431 ug/L		97
87)	tert-Butylbenzene	16.40	134	4396	0.9384 ug/L		84
88)	1,2,4-Trimethylbenzene	16.44	105	21945	1.0045 ug/L		96
89)	sec-Butylbenzene	16.65	105	25927	1.0263 ug/L		100
90)	p-Isopropyltoluene	16.79	119	22467	0.9771 ug/L		96
91)	1,3-Dichlorobenzene	16.98	146	14883	1.0274 ug/L		96
92)	1,4-Dichlorobenzene	17.10	146	15106	1.0213 ug/L	#	67
93)	n-Butylbenzene	17.28	91	20991	1.0139 ug/L		98
94)	1,2-Dichlorobenzene	17.57	146	13331	0.9762 ug/L		99
95)	1,2-Dibromo-3-Chloropropan	18.49	75	493	0.5750 ug/L		75
96)	1,2,4-Trichlorobenzene	19.55	180	9030	0.8899 ug/L		96
97)	Hexachlorobutadiene	19.69	225	3810	0.9242 ug/L		95
98)	Naphthalene	19.90	128	16333	0.8410 ug/L		99
99)	1,2,3-Trichlorobenzene	20.19	180	8645	0.9098 ug/L		88

(#) = qualifier out of range (m) = manual integration
11M11839.D 8260WT.M Fri May 13 17:04:25 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration

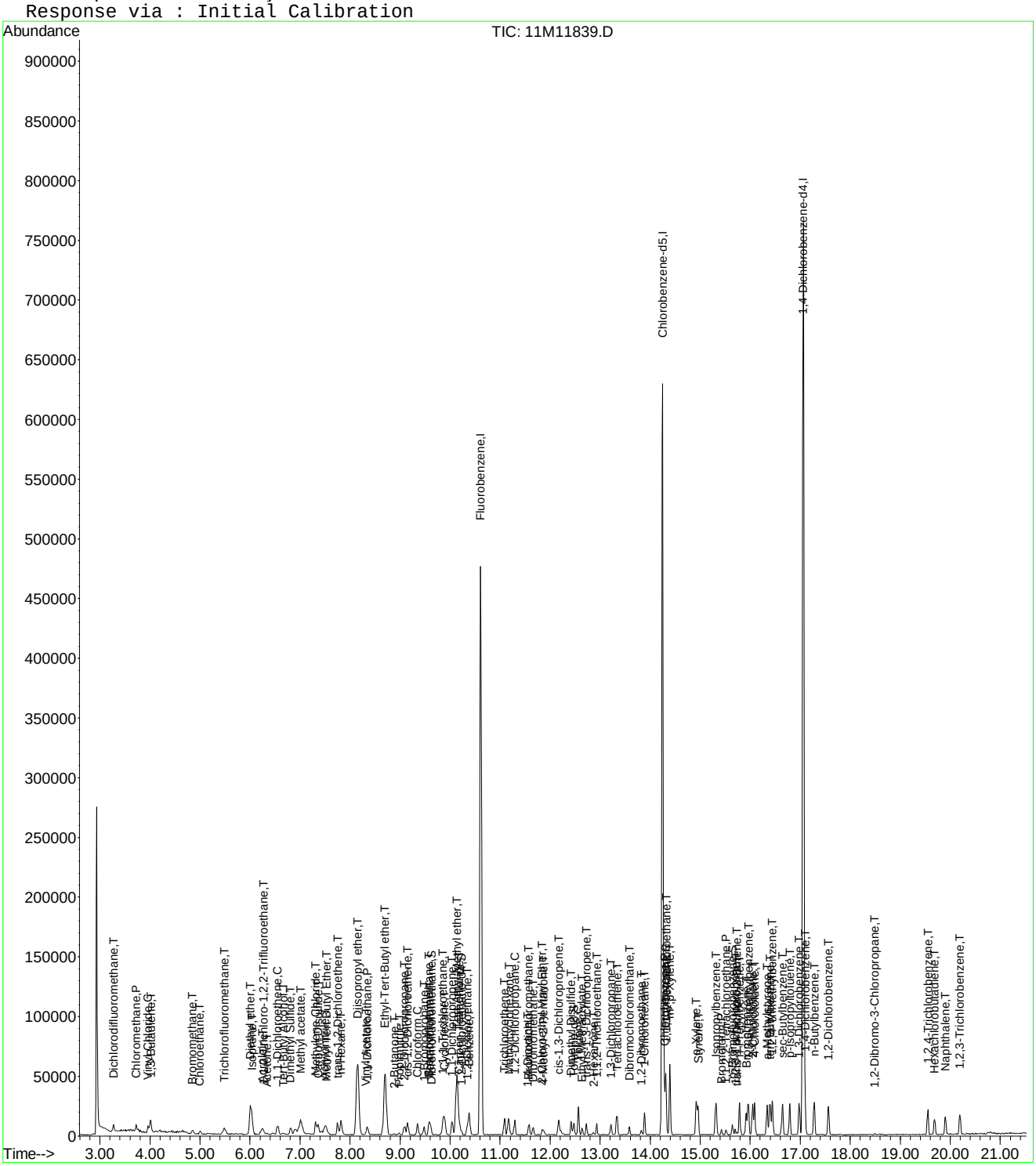

11M11839.D 8260WT.M Fri May 13 17:04:26 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:40:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.8798	12.0	100	0.00
3	P	Chloromethane	1.0000	1.1102	-11.0	100	0.00
4	C	Vinyl Chloride	1.0000	0.9240	7.6	100	0.00
5	T	1,3-Butadiene	-1.0000	1.0834	0.0	100	0.02
6	T	Bromomethane	1.0000	0.9301	7.0	100	0.00
7	T	Chloroethane	1.0000	0.9773	2.3	100	-0.01
8	T	Trichlorofluoromethane	1.0000	1.0081	-0.8	100	0.01
9	T	Diethyl ether	5.0000	4.9318	1.4	100	0.00
10	T	Isoprene	-1.0000	0.9134	0.0	100	0.00
11	T	Acrolein	2.5000	2.7854	-11.4	100	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0342	-3.4	100	0.02
13	T	Acetone	-1.0000	1.4337	0.0	0	0.00
14	C	1,1-Dichloroethene	1.0000	0.9868	1.3	100	-0.01
15	T	Tert-Butyl Alcohol	10.0000	8.2841	17.2	100	0.01
16	T	Dimethyl Sulfide	-1.0000	0.9488	0.0	100	-0.01
17	T	Iodomethane	-1.0000	2.2962	0.0	0	0.01
18	T	Methyl acetate	-1.0000	4.2835	0.0	0	-0.05
19	T	Methylene Chloride	1.0000	1.0084	-0.8	100	0.00
20	T	Carbon Disulfide	1.0000	0.9624	3.8	100	0.00
21	T	Acrylonitrile	2.5000	2.2683	9.3	100	0.01
22	T	Methyl Tert Butyl Ether	1.0000	0.9614	3.9	100	0.01
23	T	trans-1,2-Dichloroethene	1.0000	0.9079	9.2	100	0.01
24	T	n-Hexane	-1.0000	1.0430	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	4.9106	1.8	100	0.00
26	T	Vinyl Acetate	-1.0000	2.6242	0.0	0	0.00
27	P	1,1-Dichloroethane	1.0000	1.0166	-1.7	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.7543	4.9	100	0.00
29	T	2-Butanone	-1.0000	0.7280	0.0	0	0.01
30	T	Propionitrile	5.0000	4.3718	12.6	100	0.01
31	T	2,2-Dichloropropane	1.0000	0.9353	6.5	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	0.9520	4.8	100	0.00
33	C	Chloroform	1.0000	0.9836	1.6	100	0.00
34	T	1-Bromopropane	1.0000	0.9106	8.9	100	0.00
35	T	Bromochloromethane	1.0000	0.8469	15.3	100	0.00
36	T	Tetrahydrofuran	5.0000	5.8710	-17.4	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.3018	0.0	100	0.00
38	T	1,1,1-Trichloroethane	1.0000	0.9725	2.8	100	0.00
39	T	Cyclohexane	1.0000	0.9069	9.3	100	0.00
40	T	1,1-Dichloropropene	1.0000	0.9971	0.3	100	0.00
41	T	Carbon Tetrachloride	1.0000	0.9518	4.8	100	0.00
42	T	Tert-Amyl-Methyl ether	5.0000	4.7417	5.2	100	0.00
43	S	1,2-Dichloroethane-d4	0.5000	0.5054	-1.1	100	0.00
44	T	1,2-Dichloroethane	1.0000	0.9639	3.6	100	0.00
45	T	Benzene	1.0000	0.9912	0.9	100	0.00
46	T	Trichloroethene	1.0000	1.0157	-1.6	100	-0.01
47	T	Methylcyclohexane	1.0000	0.9600	4.0	100	0.01
48	C	1,2-Dichloropropane	1.0000	0.9844	1.6	100	0.00
49	T	1,4-Dioxane	-1.0000	28.5532	0.0	0	0.00
50	T	Bromodichloromethane	1.0000	0.9266	7.3	100	0.00
51	T	Dibromomethane	1.0000	0.9792	2.1	100	0.00
52	T	2-Chloroethyl Vinyl Ether	-1.0000	0.7053	0.0	100	0.00
53	T	4-Methyl-2-Pentanone	-1.0000	0.6569	0.0	0	0.00
54	T	cis-1,3-Dichloropropene	1.0000	0.9060	9.4	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:40:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	-1.0000	0.7475	0.0	100	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	-1.0000	0.4862	0.0	100	0.00
58	C	Toluene	1.0000	0.9897	1.0	100	0.00
59	T	Ethyl Methacrylate	1.0000	0.8672	13.3	100	-0.01
60	T	trans-1,3-Dichloropropene	1.0000	0.8237	17.6	100	0.00
61	T	1,1,2-Trichloroethane	1.0000	0.8969	10.3	100	0.00
62	T	2-Hexanone	-1.0000	0.8473	0.0	100	0.01
63	T	1,3-Dichloropropane	1.0000	0.9392	6.1	100	0.00
64	T	Tetrachloroethene	1.0000	0.9737	2.6	100	0.00
65	T	Dibromochloromethane	1.0000	0.8681	13.2	100	0.00
66	T	1,2-Dibromoethane	1.0000	0.8111	18.9	100	0.00
67	T	1-Chlorohexane	1.0000	0.9554	4.5	100	0.00
68	P	Chlorobenzene	1.0000	0.9890	1.1	100	0.00
69	T	1,1,1,2-Tetrachloroethane	1.0000	0.9621	3.8	100	0.00
70	C	Ethylbenzene	1.0000	0.9608	3.9	100	0.00
71	T	m-,p-Xylene	2.0000	2.0170	-0.9	100	0.00
72	T	o-Xylene	1.0000	0.9768	2.3	100	0.00
73	T	Styrene	1.0000	0.9126	8.7	100	0.01
74	P	Bromoform	1.0000	0.8271	17.3	100	0.00
75	T	Isopropylbenzene	1.0000	0.9787	2.1	100	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	1.0000	0.9168	8.3	100	0.00
78	S	p-Bromofluorobenzene	-1.0000	0.5252	0.0	100	0.00
79	T	1,2,3-Trichloropropane	1.0000	0.9573	4.3	100	0.01
80	T	trans-1,4-Dichloro-2-Butene	1.0000	1.2934	-29.3#	100	0.00
81	T	n-Propylbenzene	1.0000	0.9671	3.3	100	0.00
82	T	Bromobenzene	1.0000	1.0663	-6.6	100	0.00
83	T	1,3,5-Trimethylbenzene	1.0000	0.9307	6.9	100	0.00
84	T	2-Chlorotoluene	1.0000	1.0337	-3.4	100	0.00
85	T	4-Chlorotoluene	1.0000	0.9664	3.4	100	0.00
86	T	a-Methylstyrene	1.0000	0.8582	14.2	100	0.00
87	T	tert-Butylbenzene	1.0000	0.9392	6.1	100	0.00
88	T	1,2,4-Trimethylbenzene	1.0000	0.9755	2.5	100	0.00
89	T	sec-Butylbenzene	1.0000	0.9774	2.3	100	0.00
90	T	p-Isopropyltoluene	1.0000	0.9221	7.8	100	0.00
91	T	1,3-Dichlorobenzene	1.0000	1.0144	-1.4	100	0.00
92	T	1,4-Dichlorobenzene	1.0000	1.0157	-1.6	100	0.00
93	T	n-Butylbenzene	1.0000	0.9776	2.2	100	0.00
94	T	1,2-Dichlorobenzene	1.0000	0.9974	0.3	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.1961	0.0	100	0.00
96	T	1,2,4-Trichlorobenzene	1.0000	0.9233	7.7	100	0.00
97	T	Hexachlorobutadiene	1.0000	0.8843	11.6	100	0.00
98	T	Naphthalene	1.0000	0.8997	10.0	100	0.00
99	T	1,2,3-Trichlorobenzene	1.0000	0.9631	3.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11839.D 8260WT.M Sat May 14 18:41:49 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:26 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	504626	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	418265	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	241104	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	5067	0.8846 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.52%#	
43) 1,2-Dichloroethane-d4	10.23	65	6143	0.8851 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.56%#	
57) Toluene-d8	12.47	98	18425	0.9371 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	3.76%#	
78) p-Bromofluorobenzene	15.64	95	7442	0.9449 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	3.76%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	14866	2.0077 ug/L	98
3) Chloromethane	3.72	50	14641	2.1775 ug/L	94
4) Vinyl Chloride	3.96	62	10045	1.8711 ug/L	99
5) 1,3-Butadiene	4.01	54	10590	2.0934 ug/L	82
6) Bromomethane	4.85	94	7024	2.0600 ug/L	94
7) Chloroethane	4.99	64	6661	1.8324 ug/L	97
8) Trichlorofluoromethane	5.49	101	21690	2.1811 ug/L	99
9) Diethyl ether	6.01	59	96350	21.2945 ug/L	97
10) Isoprene	6.04	67	12682	1.8443 ug/L	94
11) Acrolein	6.23	56	5531	10.4784 ug/L	91
12) 1,1,2-Trichloro-1,2,2-Trif	6.23	101	9909	1.9774 ug/L	96
13) Acetone	6.35	43	3346	2.2176 ug/L #	68
14) 1,1-Dichloroethene	6.56	61	18584	2.0007 ug/L	98
15) Tert-Butyl Alcohol	6.66	59	15203	37.9194 ug/L #	93
16) Dimethyl Sulfide	6.81	62	7308	1.7348 ug/L	98
17) Iodomethane	7.06	142	1747	0.4335 ug/L #	49
18) Methyl acetate	7.01	43	17794	3.4567 ug/L #	75
19) Methylene Chloride	7.31	84	10330	1.9861 ug/L	99
20) Carbon Disulfide	7.36	76	30745	1.8910 ug/L	99
21) Acrylonitrile	7.49	53	17499	9.0252 ug/L	91
22) Methyl Tert Butyl Ether	7.52	73	22031	1.6315 ug/L	97
23) trans-1,2-Dichloroethene	7.74	96	10660	2.0051 ug/L	95
24) n-Hexane	7.82	57	17125	1.9654 ug/L #	94
25) Diisopropyl ether	8.15	45	542272	23.5246 ug/L	99
26) Vinyl Acetate	8.31	43	6813	2.1084 ug/L #	84
27) 1,1-Dichloroethane	8.34	63	21278	2.0336 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	431080	22.8311 ug/L	100
29) 2-Butanone	8.87	43	3175	1.4068 ug/L #	60
30) Propionitrile	8.99	54	12529	19.0049 ug/L	98
31) 2,2-Dichloropropane	9.09	77	17576	2.3259 ug/L	94
32) cis-1,2-Dichloroethene	9.15	96	11652	1.9746 ug/L	96
33) Chloroform	9.35	83	20769	2.1252 ug/L	96
34) 1-Bromopropane	9.48	122	1648	1.7003 ug/L	70
35) Bromochloromethane	9.57	130	6812	1.8040 ug/L	100
36) Tetrahydrofuran	9.60	42	30834	19.9093 ug/L	96
38) 1,1,1-Trichloroethane	9.84	97	20518	2.1713 ug/L #	94
39) Cyclohexane	9.88	56	22087	1.9325 ug/L	98
40) 1,1-Dichloropropene	10.04	75	13954	1.9542 ug/L	98
41) Carbon Tetrachloride	10.18	117	21054	2.3604 ug/L	98
42) Tert-Amyl-Methyl ether	10.13	73	300593	22.3753 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:26 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
44)	1,2-Dichloroethane	10.34	62	16928	2.0188 ug/L		98
45)	Benzene	10.38	78	41004	2.0075 ug/L		97
46)	Trichloroethene	11.08	130	13283	1.9954 ug/L		96
47)	Methylcyclohexane	11.17	83	15711	1.9461 ug/L		95
48)	1,2-Dichloropropane	11.29	63	11010	1.8980 ug/L		91
49)	1,4-Dioxane	11.55	88	898	25.5347 ug/L		88
50)	Bromodichloromethane	11.57	83	15058	1.9584 ug/L		100
51)	Dibromomethane	11.66	93	5461	1.7952 ug/L		97
52)	2-Chloroethyl Vinyl Ether	11.84	63	4894	1.6180 ug/L		83
53)	4-Methyl-2-Pentanone	11.87	58	2173	1.1717 ug/L	#	65
54)	cis-1,3-Dichloropropene	12.17	75	14440	1.7842 ug/L		91
55)	Dimethyl Disulfide	12.42	79	7378	1.4613 ug/L		97
58)	Toluene	12.56	91	43051	1.9877 ug/L		98
59)	Ethyl Methacrylate	12.64	69	7792	1.5195 ug/L		95
60)	trans-1,3-Dichloropropene	12.73	75	12991	1.8310 ug/L		98
61)	1,1,2-Trichloroethane	12.93	97	8138	2.0075 ug/L		91
62)	2-Hexanone	12.86	43	4715	1.4106 ug/L	#	61
63)	1,3-Dichloropropane	13.21	76	11740	1.7434 ug/L		95
64)	Tetrachloroethene	13.34	164	10610	2.1708 ug/L		90
65)	Dibromochloromethane	13.59	129	11236	1.9202 ug/L		96
66)	1,2-Dibromoethane	13.82	107	7613	1.8499 ug/L		99
67)	1-Chlorohexane	13.89	91	13853	1.9499 ug/L		96
68)	Chlorobenzene	14.29	112	33381	2.0954 ug/L		99
69)	1,1,1,2-Tetrachloroethane	14.32	131	13541	2.2175 ug/L		97
70)	Ethylbenzene	14.31	106	17116	2.1175 ug/L		98
71)	m-,p-Xylene	14.39	106	40469	4.2073 ug/L		95
72)	o-Xylene	14.92	106	19196	2.0006 ug/L		99
73)	Styrene	14.96	104	30019	1.8440 ug/L		92
74)	Bromoform	15.43	173	6309	1.7308 ug/L		96
75)	Isopropylbenzene	15.31	105	52419	2.1605 ug/L		98
77)	1,1,2,2-Tetrachloroethane	15.51	83	7118	1.7898 ug/L		100
79)	1,2,3-Trichloropropane	15.70	110	2487	1.6927 ug/L		98
80)	trans-1,4-Dichloro-2-Buten	15.74	53	2265	1.3810 ug/L		68
81)	n-Propylbenzene	15.79	91	59353	2.1908 ug/L		100
82)	Bromobenzene	15.91	156	15393	2.0465 ug/L		97
83)	1,3,5-Trimethylbenzene	15.95	105	43641	2.1197 ug/L		98
84)	2-Chlorotoluene	16.05	91	40923	2.0467 ug/L		96
85)	4-Chlorotoluene	16.09	91	37360	2.2771 ug/L		97
86)	a-Methylstyrene	16.34	118	20567	1.7976 ug/L		92
87)	tert-Butylbenzene	16.40	134	9253	2.0481 ug/L		89
88)	1,2,4-Trimethylbenzene	16.44	105	43857	2.0815 ug/L		99
89)	sec-Butylbenzene	16.65	105	52733	2.1643 ug/L		99
90)	p-Isopropyltoluene	16.79	119	49990	2.2541 ug/L		98
91)	1,3-Dichlorobenzene	16.98	146	29674	2.1240 ug/L		99
92)	1,4-Dichlorobenzene	17.10	146	30258	2.1211 ug/L		87
93)	n-Butylbenzene	17.28	91	44260	2.2167 ug/L		98
94)	1,2-Dichlorobenzene	17.57	146	27619	2.0969 ug/L		95
95)	1,2-Dibromo-3-Chloropropan	18.49	75	1094	1.3229 ug/L		60
96)	1,2,4-Trichlorobenzene	19.55	180	18455	1.8857 ug/L		98
97)	Hexachlorobutadiene	19.69	225	8691	2.1858 ug/L		89
98)	Naphthalene	19.90	128	34041	1.8174 ug/L	#	95
99)	1,2,3-Trichlorobenzene	20.19	180	17703	1.9318 ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration

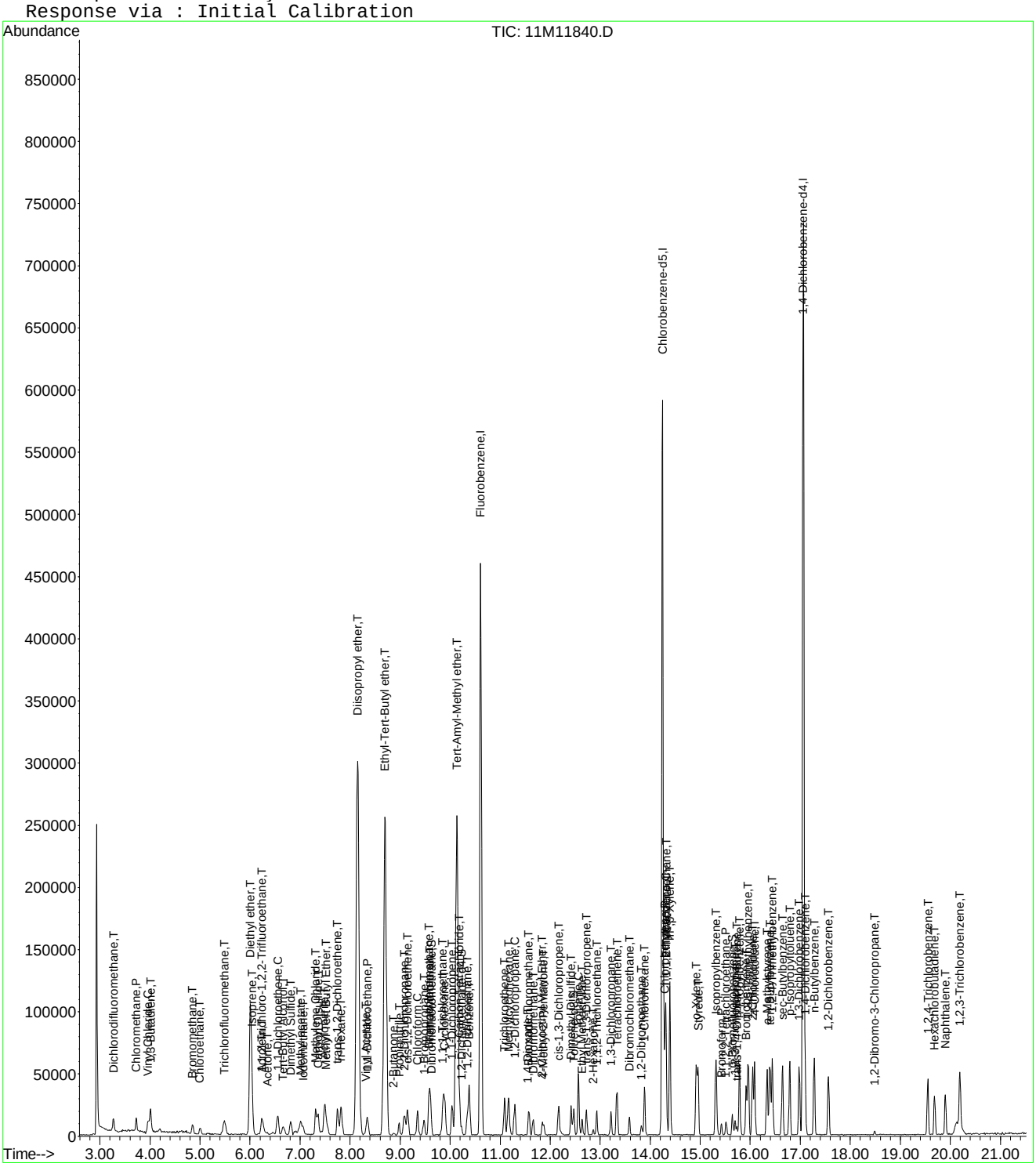

11M11840.D 8260WT.M Fri May 13 17:04:28 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.8802	6.0	100	0.00
3	P	Chloromethane	2.0000	2.3121	-15.6	100	0.00
4	C	Vinyl Chloride	2.0000	1.9102	4.5	100	0.00
5	T	1,3-Butadiene	-1.0000	2.0253	0.0	100	0.01
6	T	Bromomethane	2.0000	1.9427	2.9	100	0.00
7	T	Chloroethane	2.0000	1.9714	1.4	100	-0.01
8	T	Trichlorofluoromethane	2.0000	2.0694	-3.5	100	0.01
9	T	Diethyl ether	25.0000	24.8555	0.6	100	0.00
10	T	Isoprene	-1.0000	1.9630	0.0	100	0.00
11	T	Acrolein	12.5000	12.0322	3.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.9483	2.6	100	-0.01
13	T	Acetone	-1.0000	2.7924	0.0	100	0.01
14	C	1,1-Dichloroethene	2.0000	2.0117	-0.6	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	45.8688	8.3	100	0.00
16	T	Dimethyl Sulfide	-1.0000	1.9809	0.0	100	0.00
17	T	Iodomethane	2.0000	2.6580	-32.9#	100	0.00
18	T	Methyl acetate	2.0000	0.8555	57.2#	100	0.00
19	T	Methylene Chloride	2.0000	2.1606	-8.0	100	0.00
20	T	Carbon Disulfide	2.0000	1.9879	0.6	100	0.00
21	T	Acrylonitrile	12.5000	10.8919	12.9	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.8475	7.6	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	2.0850	-4.2	100	0.00
24	T	n-Hexane	2.0000	2.0110	-0.6	100	0.00
25	T	Diisopropyl ether	25.0000	25.5200	-2.1	100	0.00
26	T	Vinyl Acetate	-1.0000	3.2184	0.0	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.0741	-3.7	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	24.9254	0.3	100	0.00
29	T	2-Butanone	-1.0000	1.7527	0.0	0	0.00
30	T	Propionitrile	25.0000	23.6140	5.5	100	0.01
31	T	2,2-Dichloropropane	2.0000	2.1897	-9.5	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0669	-3.3	100	0.00
33	C	Chloroform	2.0000	2.0616	-3.1	100	0.00
34	T	1-Bromopropane	2.0000	2.2551	-12.8	100	0.00
35	T	Bromochloromethane	2.0000	2.0347	-1.7	100	0.00
36	T	Tetrahydrofuran	25.0000	24.1040	3.6	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9175	8.3	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	2.0696	-3.5	100	-0.01
39	T	Cyclohexane	2.0000	2.0442	-2.2	100	0.00
40	T	1,1-Dichloropropene	2.0000	1.9713	1.4	100	0.00
41	T	Carbon Tetrachloride	2.0000	2.1748	-8.7	100	0.00
42	T	Tert-Amyl-Methyl ether	25.0000	25.0128	-0.1	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	0.9755	2.4	100	0.00
44	T	1,2-Dichloroethane	2.0000	2.0689	-3.4	100	0.00
45	T	Benzene	2.0000	2.1160	-5.8	100	0.00
46	T	Trichloroethene	2.0000	2.1089	-5.4	100	-0.01
47	T	Methylcyclohexane	2.0000	2.0212	-1.1	100	0.00
48	C	1,2-Dichloropropane	2.0000	2.0525	-2.6	100	0.00
49	T	1,4-Dioxane	50.0000	49.5313	0.9	100	0.00
50	T	Bromodichloromethane	2.0000	1.9996	0.0	100	0.00
51	T	Dibromomethane	2.0000	1.9537	2.3	100	0.01
52	T	2-Chloroethyl Vinyl Ether	-1.0000	1.8512	0.0	100	0.00
53	T	4-Methyl-2-Pentanone	-1.0000	1.4573	0.0	100	0.00
54	T	cis-1,3-Dichloropropene	2.0000	1.9172	4.1	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	-1.0000	1.6278	0.0	100	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	1.0000	1.0138	-1.4	100	0.00
58	C	Toluene	2.0000	2.0332	-1.7	100	0.00
59	T	Ethyl Methacrylate	2.0000	1.7234	13.8	100	-0.01
60	T	trans-1,3-Dichloropropene	2.0000	1.9114	4.4	100	0.00
61	T	1,1,2-Trichloroethane	2.0000	2.1674	-8.4	100	0.00
62	T	2-Hexanone	-1.0000	1.7098	0.0	100	0.00
63	T	1,3-Dichloropropane	2.0000	1.9471	2.6	100	0.00
64	T	Tetrachloroethene	2.0000	2.1547	-7.7	100	0.00
65	T	Dibromochloromethane	2.0000	1.9620	1.9	100	0.00
66	T	1,2-Dibromoethane	2.0000	2.0238	-1.2	100	0.00
67	T	1-Chlorohexane	2.0000	1.9844	0.8	100	0.00
68	P	Chlorobenzene	2.0000	2.1520	-7.6	100	0.00
69	T	1,1,1,2-Tetrachloroethane	2.0000	2.1574	-7.9	100	0.00
70	C	Ethylbenzene	2.0000	2.1518	-7.6	100	0.00
71	T	m-,p-Xylene	4.0000	4.1851	-4.6	100	0.00
72	T	o-Xylene	2.0000	2.0398	-2.0	100	0.00
73	T	Styrene	2.0000	1.9307	3.5	100	0.01
74	P	Bromoform	2.0000	1.8176	9.1	100	0.00
75	T	Isopropylbenzene	2.0000	2.1063	-5.3	100	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	2.0000	1.8958	5.2	100	-0.01
78	S	p-Bromofluorobenzene	1.0000	1.0013	-0.1	100	0.00
79	T	1,2,3-Trichloropropane	2.0000	2.1172	-5.9	100	0.00
80	T	trans-1,4-Dichloro-2-Butene	2.0000	1.9762	1.2	100	0.00
81	T	n-Propylbenzene	2.0000	2.1256	-6.3	100	0.00
82	T	Bromobenzene	2.0000	2.1009	-5.0	100	-0.01
83	T	1,3,5-Trimethylbenzene	2.0000	2.0481	-2.4	100	-0.01
84	T	2-Chlorotoluene	2.0000	2.0925	-4.6	100	0.00
85	T	4-Chlorotoluene	2.0000	2.1326	-6.6	100	0.00
86	T	a-Methylstyrene	2.0000	1.8297	8.5	100	0.00
87	T	tert-Butylbenzene	2.0000	2.0497	-2.5	100	0.00
88	T	1,2,4-Trimethylbenzene	2.0000	2.0213	-1.1	100	0.00
89	T	sec-Butylbenzene	2.0000	2.0611	-3.1	100	0.00
90	T	p-Isopropyltoluene	2.0000	2.1272	-6.4	100	0.00
91	T	1,3-Dichlorobenzene	2.0000	2.0970	-4.8	100	0.00
92	T	1,4-Dichlorobenzene	2.0000	2.1095	-5.5	100	0.00
93	T	n-Butylbenzene	2.0000	2.1373	-6.9	100	0.00
94	T	1,2-Dichlorobenzene	2.0000	2.1425	-7.1	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	2.0000	1.9175	4.1	100	0.00
96	T	1,2,4-Trichlorobenzene	2.0000	1.9565	2.2	100	0.00
97	T	Hexachlorobutadiene	2.0000	2.0914	-4.6	100	0.00
98	T	Naphthalene	2.0000	1.9443	2.8	100	0.00
99	T	1,2,3-Trichlorobenzene	2.0000	2.0449	-2.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11840.D 8260WT.M Sat May 14 18:46:53 2016 Page 2

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:46 2016 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Single Level Calibration

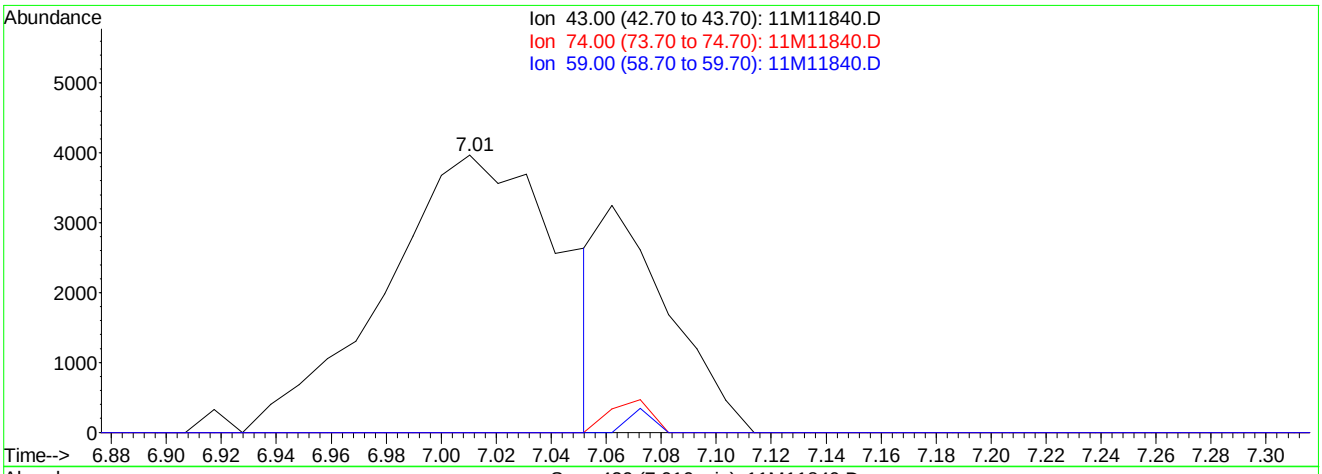

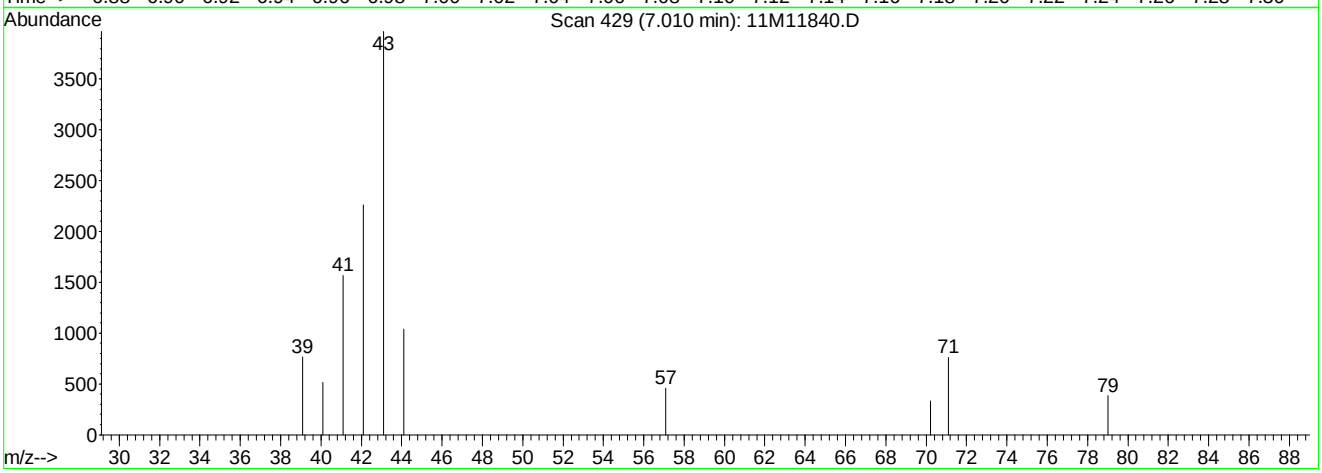

TIC: 11M11840.D

(18) Methyl acetate (T)

7.01min 3.69ug/L

response 17794

Ion	Exp%	Act%
43.00	100	100
74.00	13.60	2.82#
59.00	6.50	1.21#
0.00	0.00	0.00

11M11840.D 8260WT.M Sat May 14 18:46:34 2016

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:46 2016 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Single Level Calibration

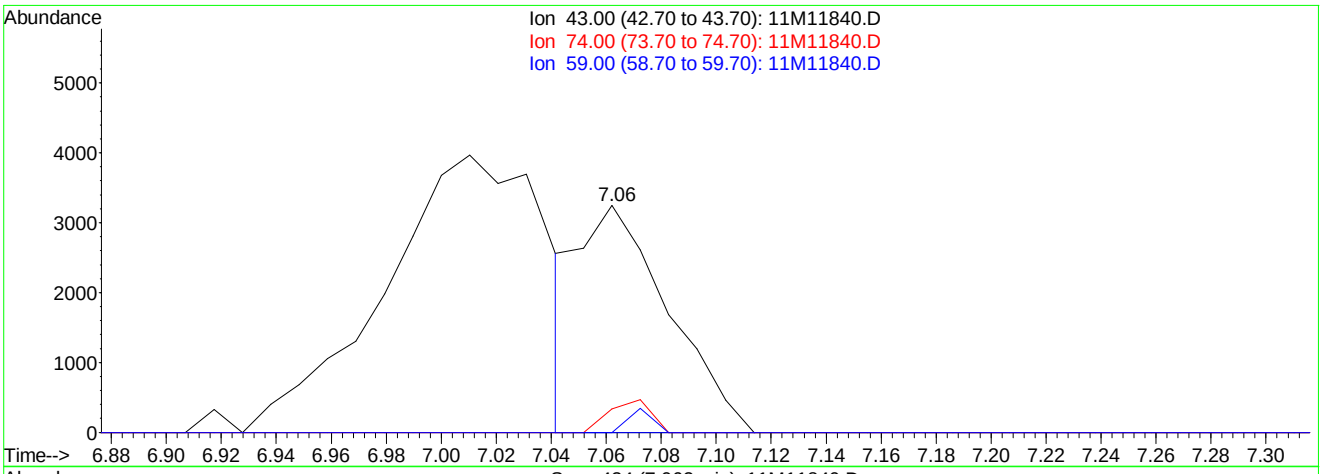

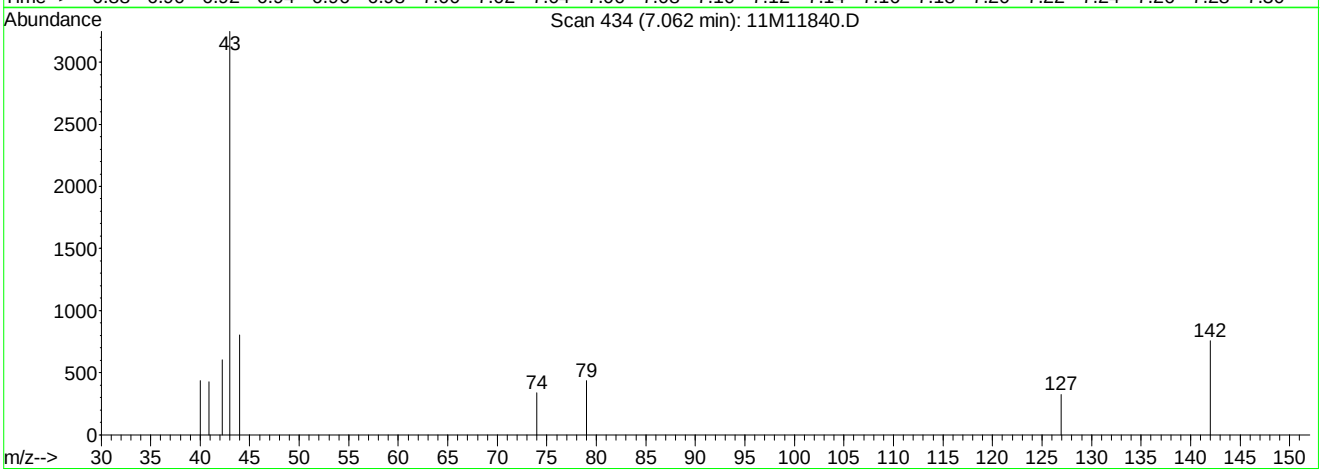

TIC: 11M11840.D

(18) Methyl acetate (T)

7.06min 0.86ug/L mint

response 7344

Ion	Exp%	Act%
43.00	100	100
74.00	13.60	6.84#
59.00	6.50	2.93#
0.00	0.00	0.00

11M11840.D 8260WT.M Sat May 14 18:46:39 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:12:58 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 17:07:56 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	510485	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	424113	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	244127	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	13577	2.3093 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	9.24%#	
43) 1,2-Dichloroethane-d4	10.23	65	16340	2.3640 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	9.44%#	
57) Toluene-d8	12.47	98	46369	2.3570 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	9.44%#	
78) p-Bromofluorobenzene	15.64	95	19139	2.4218 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	9.68%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	33260	4.2909 ug/L	97
3) Chloromethane	3.72	50	29484	4.2588 ug/L	100
4) Vinyl Chloride	3.96	62	24947	4.6446 ug/L	98
5) 1,3-Butadiene	4.00	54	24704	4.8274 ug/L	87
6) Bromomethane	4.85	94	16794	4.7876 ug/L	96
7) Chloroethane	5.00	64	15417	4.1982 ug/L	96
8) Trichlorofluoromethane	5.48	101	50663	4.8750 ug/L	98
9) Diethyl ether	6.01	59	199353	45.0064 ug/L	100
10) Isoprene	6.04	67	30513	4.3864 ug/L	99
11) Acrolein	6.25	56	12345	23.3877 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	23865	4.5585 ug/L	97
13) Acetone	6.35	43	6439	4.2186 ug/L	86
14) 1,1-Dichloroethene	6.56	61	43769	4.6158 ug/L	96
15) Tert-Butyl Alcohol	6.66	59	34212	87.4805 ug/L	100
16) Dimethyl Sulfide	6.81	62	17251	4.0482 ug/L	99
17) Iodomethane	7.06	142	7385	2.0684 ug/L	94
18) Methyl acetate	7.06	43	32363	5.4250 ug/L #	83
19) Methylene Chloride	7.31	84	23476	4.4707 ug/L	98
20) Carbon Disulfide	7.36	76	72931	4.4715 ug/L	98
21) Acrylonitrile	7.49	53	38039	20.0847 ug/L	96
22) Methyl Tert Butyl Ether	7.52	73	57597	4.3071 ug/L	98
23) trans-1,2-Dichloroethene	7.74	96	23369	4.3390 ug/L	99
24) n-Hexane	7.82	57	38507	4.3615 ug/L	99
25) Diisopropyl ether	8.15	45	1105208	48.2180 ug/L	99
26) Vinyl Acetate	8.31	43	24007	7.3442 ug/L	97
27) 1,1-Dichloroethane	8.34	63	51535	4.8316 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	899266	48.1312 ug/L	99
29) 2-Butanone	8.88	43	8098	3.5469 ug/L	98
30) Propionitrile	8.98	54	26204	41.2561 ug/L	97
31) 2,2-Dichloropropane	9.09	77	40285	5.2526 ug/L	97
32) cis-1,2-Dichloroethene	9.15	96	27456	4.6081 ug/L	91
33) Chloroform	9.35	83	48958	4.7306 ug/L	97
34) 1-Bromopropane	9.47	122	4632	4.9482 ug/L	88
35) Bromochloromethane	9.57	130	17073	4.6807 ug/L	99
36) Tetrahydrofuran	9.60	42	59638	39.6839 ug/L	99
38) 1,1,1-Trichloroethane	9.85	97	48123	4.8983 ug/L	100
39) Cyclohexane	9.88	56	51945	4.5931 ug/L	98
40) 1,1-Dichloropropene	10.04	75	33867	4.6344 ug/L	99
41) Carbon Tetrachloride	10.17	117	47434	5.0851 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	615710	46.3601 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M11841.D 8260WT.M Fri May 13 17:12:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:12:58 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 17:07:56 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.34	62	40281	4.6727 ug/L	99
45) Benzene	10.38	78	94223	4.6151 ug/L	99
46) Trichloroethene	11.08	130	31195	4.7740 ug/L	96
47) Methylcyclohexane	11.17	83	35731	4.4100 ug/L	96
48) 1,2-Dichloropropane	11.29	63	25973	4.4921 ug/L	93
49) 1,4-Dioxane	11.56	88	2747	80.2363 ug/L	93
50) Bromodichloromethane	11.57	83	36997	4.7467 ug/L	99
51) Dibromomethane	11.65	93	13963	4.5774 ug/L	97
52) 2-Chloroethyl Vinyl Ether	11.84	63	11417	3.7313 ug/L	95
53) 4-Methyl-2-Pentanone	11.87	58	6133	3.2690 ug/L	90
54) cis-1,3-Dichloropropene	12.17	75	36461	4.5343 ug/L	100
55) Dimethyl Disulfide	12.42	79	18914	3.7032 ug/L	99
58) Toluene	12.56	91	107617	4.9467 ug/L	100
59) Ethyl Methacrylate	12.65	69	21187	4.1021 ug/L	99
60) trans-1,3-Dichloropropene	12.73	75	32824	4.5778 ug/L	99
61) 1,1,2-Trichloroethane	12.94	97	17791	4.3060 ug/L	98
62) 2-Hexanone	12.86	43	11606	3.4244 ug/L	99
63) 1,3-Dichloropropane	13.21	76	30121	4.5460 ug/L	97
64) Tetrachloroethene	13.33	164	24241	4.8819 ug/L	95
65) Dibromochloromethane	13.59	129	27989	4.7024 ug/L	95
66) 1,2-Dibromoethane	13.82	107	18147	4.4382 ug/L	96
67) 1-Chlorohexane	13.89	91	33195	4.6591 ug/L	97
68) Chlorobenzene	14.29	112	79059	4.9583 ug/L	98
69) 1,1,1,2-Tetrachloroethane	14.32	131	31047	4.8956 ug/L	97
70) Ethylbenzene	14.31	106	39304	4.8168 ug/L	95
71) m-,p-Xylene	14.39	106	95751	9.7273 ug/L	95
72) o-Xylene	14.92	106	45759	4.7228 ug/L	96
73) Styrene	14.95	104	77900	4.8227 ug/L	98
74) Bromoform	15.43	173	15663	4.1856 ug/L	97
75) Isopropylbenzene	15.31	105	123883	4.9827 ug/L	99
77) 1,1,2,2-Tetrachloroethane	15.51	83	18105	4.4049 ug/L	100
79) 1,2,3-Trichloropropane	15.70	110	6717	4.7266 ug/L	85
80) trans-1,4-Dichloro-2-Buten	15.74	53	6067	3.6507 ug/L	69
81) n-Propylbenzene	15.79	91	143972	5.2435 ug/L	99
82) Bromobenzene	15.92	156	37345	4.9800 ug/L	93
83) 1,3,5-Trimethylbenzene	15.95	105	106030	5.0309 ug/L	100
84) 2-Chlorotoluene	16.05	91	99279	4.9734 ug/L	100
85) 4-Chlorotoluene	16.09	91	88275	5.1992 ug/L	98
86) a-Methylstyrene	16.34	118	53766	4.7153 ug/L	98
87) tert-Butylbenzene	16.39	134	23868	5.2956 ug/L	97
88) 1,2,4-Trimethylbenzene	16.44	105	112072	5.2401 ug/L	99
89) sec-Butylbenzene	16.65	105	129249	5.1810 ug/L	99
90) p-Isopropyltoluene	16.79	119	119605	5.2524 ug/L	98
91) 1,3-Dichlorobenzene	16.98	146	71265	5.0271 ug/L	99
92) 1,4-Dichlorobenzene	17.10	146	72437	5.0122 ug/L	96
93) n-Butylbenzene	17.28	91	100062	4.9277 ug/L	99
94) 1,2-Dichlorobenzene	17.57	146	64925	4.9520 ug/L	98
95) 1,2-Dibromo-3-Chloropropan	18.49	75	3875	4.6567 ug/L	87
96) 1,2,4-Trichlorobenzene	19.55	180	46664	4.8629 ug/L	97
97) Hexachlorobutadiene	19.69	225	20419	5.1319 ug/L	96
98) Naphthalene	19.90	128	83612	4.4869 ug/L	99
99) 1,2,3-Trichlorobenzene	20.19	180	40714	4.5323 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M11841.D 8260WT.M Fri May 13 17:12:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:12 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 17:07:56 2016
Response via : Initial Calibration

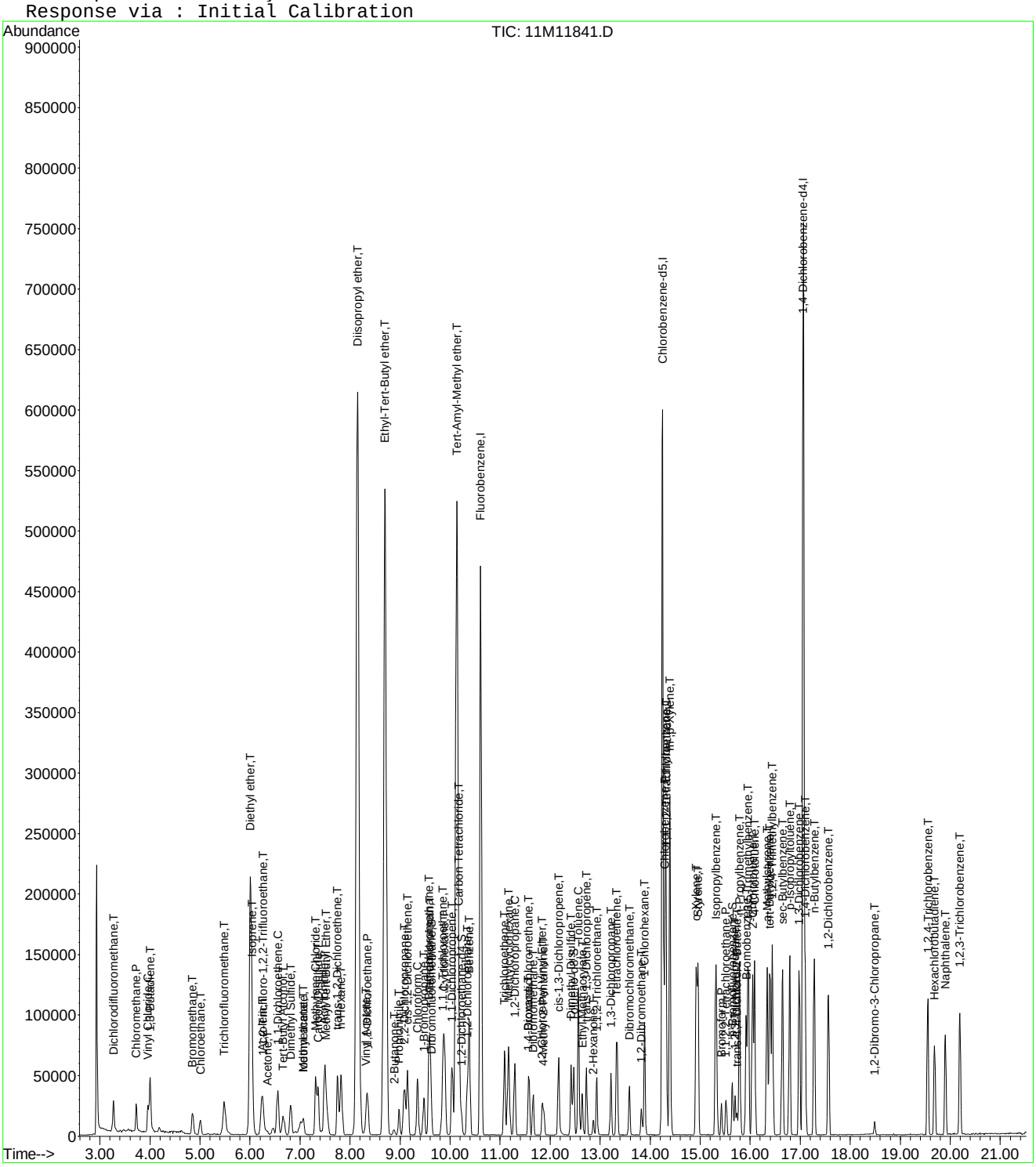

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.1584	16.8	100	0.00
3	P	Chloromethane	5.0000	4.6027	7.9	100	0.00
4	C	Vinyl Chloride	5.0000	4.6895	6.2	100	0.00
5	T	1,3-Butadiene	5.0000	4.6702	6.6	100	0.00
6	T	Bromomethane	5.0000	4.5915	8.2	100	0.00
7	T	Chloroethane	5.0000	4.5105	9.8	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.7781	4.4	100	0.00
9	T	Diethyl ether	50.0000	50.8371	-1.7	100	0.00
10	T	Isoprene	5.0000	4.6688	6.6	100	0.00
11	T	Acrolein	25.0000	24.7297	1.1	100	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.6385	7.2	100	0.01
13	T	Acetone	5.0000	5.3120	-6.2	100	0.01
14	C	1,1-Dichloroethene	5.0000	4.6835	6.3	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	102.0360	-2.0	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.6223	7.6	100	0.00
17	T	Iodomethane	5.0000	3.9124	21.8	100	0.00
18	T	Methyl acetate	5.0000	7.5474	-50.9#	100	0.00
19	T	Methylene Chloride	5.0000	4.8539	2.9	100	0.00
20	T	Carbon Disulfide	5.0000	4.6615	6.8	100	0.00
21	T	Acrylonitrile	25.0000	23.4049	6.4	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.7747	4.5	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.5182	9.6	100	0.00
24	T	n-Hexane	5.0000	4.4700	10.6	100	0.00
25	T	Diisopropyl ether	50.0000	51.4154	-2.8	100	0.00
26	T	Vinyl Acetate	5.0000	5.1698	-3.4	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.9658	0.7	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	51.3996	-2.8	100	0.00
29	T	2-Butanone	5.0000	4.4190	11.6	100	0.01
30	T	Propionitrile	50.0000	48.8210	2.4	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.9614	0.8	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.8145	3.7	100	0.00
33	C	Chloroform	5.0000	4.8039	3.9	100	0.00
34	T	1-Bromopropane	5.0000	5.1449	-2.9	100	0.00
35	T	Bromochloromethane	5.0000	5.0410	-0.8	100	0.00
36	T	Tetrahydrofuran	50.0000	46.0861	7.8	100	0.00
37	S	Dibromofluoromethane	2.5000	2.4302	2.8	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.7984	4.0	100	0.00
39	T	Cyclohexane	5.0000	4.7526	4.9	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.7295	5.4	100	0.00
41	T	Carbon Tetrachloride	5.0000	4.8435	3.1	100	-0.01
42	T	Tert-Amyl-Methyl ether	50.0000	50.6462	-1.3	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.5650	-2.6	100	0.00
44	T	1,2-Dichloroethane	5.0000	4.8665	2.7	100	0.00
45	T	Benzene	5.0000	4.8065	3.9	100	0.00
46	T	Trichloroethene	5.0000	4.8959	2.1	100	-0.01
47	T	Methylcyclohexane	5.0000	4.5439	9.1	100	0.00
48	C	1,2-Dichloropropane	5.0000	4.7864	4.3	100	0.00
49	T	1,4-Dioxane	100.0000	102.6541	-2.7	100	0.01
50	T	Bromodichloromethane	5.0000	4.8566	2.9	100	0.00
51	T	Dibromomethane	5.0000	4.9379	1.2	100	0.00
52	T	2-Chloroethyl Vinyl Ether	5.0000	4.2689	14.6	100	0.00
53	T	4-Methyl-2-Pentanone	5.0000	4.0658	18.7	100	0.00
54	T	cis-1,3-Dichloropropene	5.0000	4.7853	4.3	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	5.0000	4.1252	17.5	100	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	2.5000	2.5163	-0.7	100	0.00
58	C	Toluene	5.0000	5.0124	-0.2	100	0.00
59	T	Ethyl Methacrylate	5.0000	4.6214	7.6	100	0.00
60	T	trans-1,3-Dichloropropene	5.0000	4.7629	4.7	100	0.00
61	T	1,1,2-Trichloroethane	5.0000	4.6730	6.5	100	0.00
62	T	2-Hexanone	5.0000	4.1507	17.0	100	0.00
63	T	1,3-Dichloropropane	5.0000	4.9267	1.5	100	0.00
64	T	Tetrachloroethene	5.0000	4.8551	2.9	100	-0.01
65	T	Dibromochloromethane	5.0000	4.8199	3.6	100	0.00
66	T	1,2-Dibromoethane	5.0000	4.7575	4.8	100	0.00
67	T	1-Chlorohexane	5.0000	4.6895	6.2	100	0.00
68	P	Chlorobenzene	5.0000	5.0264	-0.5	100	0.00
69	T	1,1,1,2-Tetrachloroethane	5.0000	4.8783	2.4	100	0.00
70	C	Ethylbenzene	5.0000	4.8732	2.5	100	0.00
71	T	m-,p-Xylene	10.0000	9.7654	2.3	100	0.00
72	T	o-Xylene	5.0000	4.7954	4.1	100	0.00
73	T	Styrene	5.0000	4.9411	1.2	100	0.00
74	P	Bromoform	5.0000	4.4503	11.0	100	0.00
75	T	Isopropylbenzene	5.0000	4.9091	1.8	100	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	5.0000	4.7624	4.8	100	-0.01
78	S	p-Bromofluorobenzene	2.5000	2.5432	-1.7	100	0.00
79	T	1,2,3-Trichloropropane	5.0000	5.0393	-0.8	100	0.00
80	T	trans-1,4-Dichloro-2-Butene	5.0000	4.0050	19.9	100	0.00
81	T	n-Propylbenzene	5.0000	5.0923	-1.8	100	0.00
82	T	Bromobenzene	5.0000	5.0338	-0.7	100	0.00
83	T	1,3,5-Trimethylbenzene	5.0000	4.9145	1.7	100	-0.01
84	T	2-Chlorotoluene	5.0000	5.0134	-0.3	100	0.00
85	T	4-Chlorotoluene	5.0000	4.9765	0.5	100	0.00
86	T	a-Methylstyrene	5.0000	4.7239	5.5	100	0.00
87	T	tert-Butylbenzene	5.0000	5.2217	-4.4	100	-0.01
88	T	1,2,4-Trimethylbenzene	5.0000	5.1012	-2.0	100	0.00
89	T	sec-Butylbenzene	5.0000	4.9892	0.2	100	0.00
90	T	p-Isopropyltoluene	5.0000	5.0265	-0.5	100	0.00
91	T	1,3-Dichlorobenzene	5.0000	4.9737	0.5	100	0.00
92	T	1,4-Dichlorobenzene	5.0000	4.9875	0.2	100	0.00
93	T	n-Butylbenzene	5.0000	4.7722	4.6	100	0.00
94	T	1,2-Dichlorobenzene	5.0000	4.9741	0.5	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	5.0000	5.1051	-2.1	100	0.00
96	T	1,2,4-Trichlorobenzene	5.0000	4.8858	2.3	100	0.00
97	T	Hexachlorobutadiene	5.0000	4.8528	2.9	100	0.00
98	T	Naphthalene	5.0000	4.7164	5.7	100	0.00
99	T	1,2,3-Trichlorobenzene	5.0000	4.6448	7.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11841.D 8260WT.M Sat May 14 18:48:20 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11842.D Vial: 7
Acq On : 13 May 2016 17:19 Operator: JDS
Sample : WG568769-07 20ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:53 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	512017	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	433937	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	255524	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	58089	10.3664 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 41.48%#		
43) 1,2-Dichloroethane-d4	10.23	65	66804	10.4555 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 41.84%#		
57) Toluene-d8	12.47	98	193532	10.2645 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 41.04%#		
78) p-Bromofluorobenzene	15.64	95	81186	10.3070 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 41.24%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	176636	22.0179 ug/L	99
3) Chloromethane	3.72	50	126901	19.7510 ug/L	98
4) Vinyl Chloride	3.96	62	109592	20.5394 ug/L	98
5) 1,3-Butadiene	4.00	54	116317	21.9237 ug/L	96
6) Bromomethane	4.85	94	73878	20.1380 ug/L	93
7) Chloroethane	5.00	64	71103	20.7401 ug/L	100
8) Trichlorofluoromethane	5.49	101	225913	21.2425 ug/L	99
9) Diethyl ether	6.01	59	321203	81.6650 ug/L	99
10) Isoprene	6.04	67	135641	20.6925 ug/L	98
11) Acrolein	6.24	56	19366	37.8284 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	109792	21.2757 ug/L	99
13) Acetone	6.34	43	27399	22.5356 ug/L	96
14) 1,1-Dichloroethene	6.56	61	201658	21.5139 ug/L	98
15) Tert-Butyl Alcohol	6.67	59	60081	178.6532 ug/L	99
16) Dimethyl Sulfide	6.81	62	75759	20.2383 ug/L	97
17) Iodomethane	7.06	142	67280	17.2594 ug/L	97
18) Methyl acetate	7.07	43	87945	22.4983 ug/L	96
19) Methylene Chloride	7.31	84	99453	20.5013 ug/L	100
20) Carbon Disulfide	7.36	76	327043	20.8410 ug/L	100
21) Acrylonitrile	7.49	53	69618	42.7070 ug/L	95
22) Methyl Tert Butyl Ether	7.52	73	266288	22.0086 ug/L	99
23) trans-1,2-Dichloroethene	7.75	96	107858	20.7912 ug/L	99
24) n-Hexane	7.82	57	184135	21.3111 ug/L	99
25) Diisopropyl ether	8.15	45	1729257	80.2062 ug/L	99
26) Vinyl Acetate	8.31	43	160029	20.6235 ug/L	99
27) 1,1-Dichloroethane	8.34	63	218994	21.0387 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1435318	81.7933 ug/L	100
29) 2-Butanone	8.87	43	39878	21.6958 ug/L	99
30) Propionitrile	8.97	54	47221	87.7149 ug/L	99
31) 2,2-Dichloropropane	9.09	77	166427	20.4352 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	120620	21.0877 ug/L	99
33) Chloroform	9.35	83	208615	20.4085 ug/L	99
34) 1-Bromopropane	9.48	122	19153	19.2424 ug/L	96
35) Bromochloromethane	9.57	130	77189	22.7226 ug/L	99
36) Tetrahydrofuran	9.60	42	109362	84.2581 ug/L	100
38) 1,1,1-Trichloroethane	9.85	97	210871	20.9631 ug/L	98
39) Cyclohexane	9.88	56	235071	21.4428 ug/L	99
40) 1,1-Dichloropropene	10.04	75	151682	21.1188 ug/L	99
41) Carbon Tetrachloride	10.17	117	212111	21.5941 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	1001790	82.1572 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11842.D Vial: 7
Acq On : 13 May 2016 17:19 Operator: JDS
Sample : WG568769-07 20ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:53 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	180438	21.7339	ug/L	99
45)	Benzene	10.38	78	407777	20.7394	ug/L	100
46)	Trichloroethene	11.08	130	132094	20.6692	ug/L	99
47)	Methylcyclohexane	11.17	83	168355	21.3455	ug/L	98
48)	1,2-Dichloropropane	11.29	63	112875	20.7388	ug/L	99
49)	1,4-Dioxane	11.56	88	4948	165.8209	ug/L	99
50)	Bromodichloromethane	11.57	83	163762	21.4329	ug/L	98
51)	Dibromomethane	11.65	93	61028	21.5174	ug/L	98
52)	2-Chloroethyl Vinyl Ether	11.84	63	56664	21.1238	ug/L	99
53)	4-Methyl-2-Pentanone	11.87	58	32621	21.5609	ug/L	99
54)	cis-1,3-Dichloropropene	12.17	75	166399	21.7735	ug/L	100
55)	Dimethyl Disulfide	12.42	79	93808	20.3984	ug/L	99
58)	Toluene	12.56	91	467769	21.2936	ug/L	99
59)	Ethyl Methacrylate	12.64	69	103892	22.1484	ug/L	98
60)	trans-1,3-Dichloropropene	12.73	75	155661	22.0759	ug/L	100
61)	1,1,2-Trichloroethane	12.94	97	85297	21.8971	ug/L	100
62)	2-Hexanone	12.86	43	62113	21.7109	ug/L	99
63)	1,3-Dichloropropane	13.21	76	137448	21.9726	ug/L	98
64)	Tetrachloroethene	13.34	164	106368	20.8217	ug/L	99
65)	Dibromochloromethane	13.59	129	131143	22.0723	ug/L	99
66)	1,2-Dibromoethane	13.82	107	84381	21.6209	ug/L	99
67)	1-Chlorohexane	13.89	91	153420	21.1830	ug/L	100
68)	Chlorobenzene	14.29	112	338669	21.0446	ug/L	99
69)	1,1,1,2-Tetrachloroethane	14.32	131	134571	20.6660	ug/L	98
70)	Ethylbenzene	14.31	106	171752	20.8130	ug/L	97
71)	m-,p-Xylene	14.39	106	419228	41.7882	ug/L	99
72)	o-Xylene	14.92	106	208125	21.3170	ug/L	99
73)	Styrene	14.95	104	353452	21.9116	ug/L	98
74)	Bromoform	15.43	173	78592	21.8247	ug/L	100
75)	Isopropylbenzene	15.31	105	552747	21.4078	ug/L	99
77)	1,1,2,2-Tetrachloroethane	15.52	83	90122	22.6486	ug/L	98
79)	1,2,3-Trichloropropane	15.70	110	30969	20.9562	ug/L	97
80)	trans-1,4-Dichloro-2-Buten	15.74	53	36190	19.3325	ug/L	86
81)	n-Propylbenzene	15.79	91	640711	21.6512	ug/L	100
82)	Bromobenzene	15.92	156	160227	20.6340	ug/L	100
83)	1,3,5-Trimethylbenzene	15.95	105	481759	21.3337	ug/L	100
84)	2-Chlorotoluene	16.05	91	435100	20.9919	ug/L	99
85)	4-Chlorotoluene	16.09	91	391759	21.1004	ug/L	100
86)	a-Methylstyrene	16.34	118	253642	21.2911	ug/L	99
87)	tert-Butylbenzene	16.39	134	101859	21.2903	ug/L	99
88)	1,2,4-Trimethylbenzene	16.44	105	505239	21.9714	ug/L	98
89)	sec-Butylbenzene	16.65	105	586770	21.6398	ug/L	100
90)	p-Isopropyltoluene	16.79	119	539795	21.6735	ug/L	100
91)	1,3-Dichlorobenzene	16.98	146	312832	20.8591	ug/L	99
92)	1,4-Dichlorobenzene	17.10	146	314339	20.6779	ug/L	99
93)	n-Butylbenzene	17.28	91	474312	21.6121	ug/L	99
94)	1,2-Dichlorobenzene	17.57	146	287316	21.0305	ug/L	100
95)	1,2-Dibromo-3-Chloropropan	18.49	75	19607	22.2193	ug/L	89
96)	1,2,4-Trichlorobenzene	19.55	180	212916	21.2982	ug/L	100
97)	Hexachlorobutadiene	19.69	225	91388	20.7507	ug/L	99
98)	Naphthalene	19.90	128	414073	22.3154	ug/L	99
99)	1,2,3-Trichlorobenzene	20.19	180	193437	21.0836	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11842.D Vial: 7
Acq On : 13 May 2016 17:19 Operator: JDS
Sample : WG568769-07 20ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

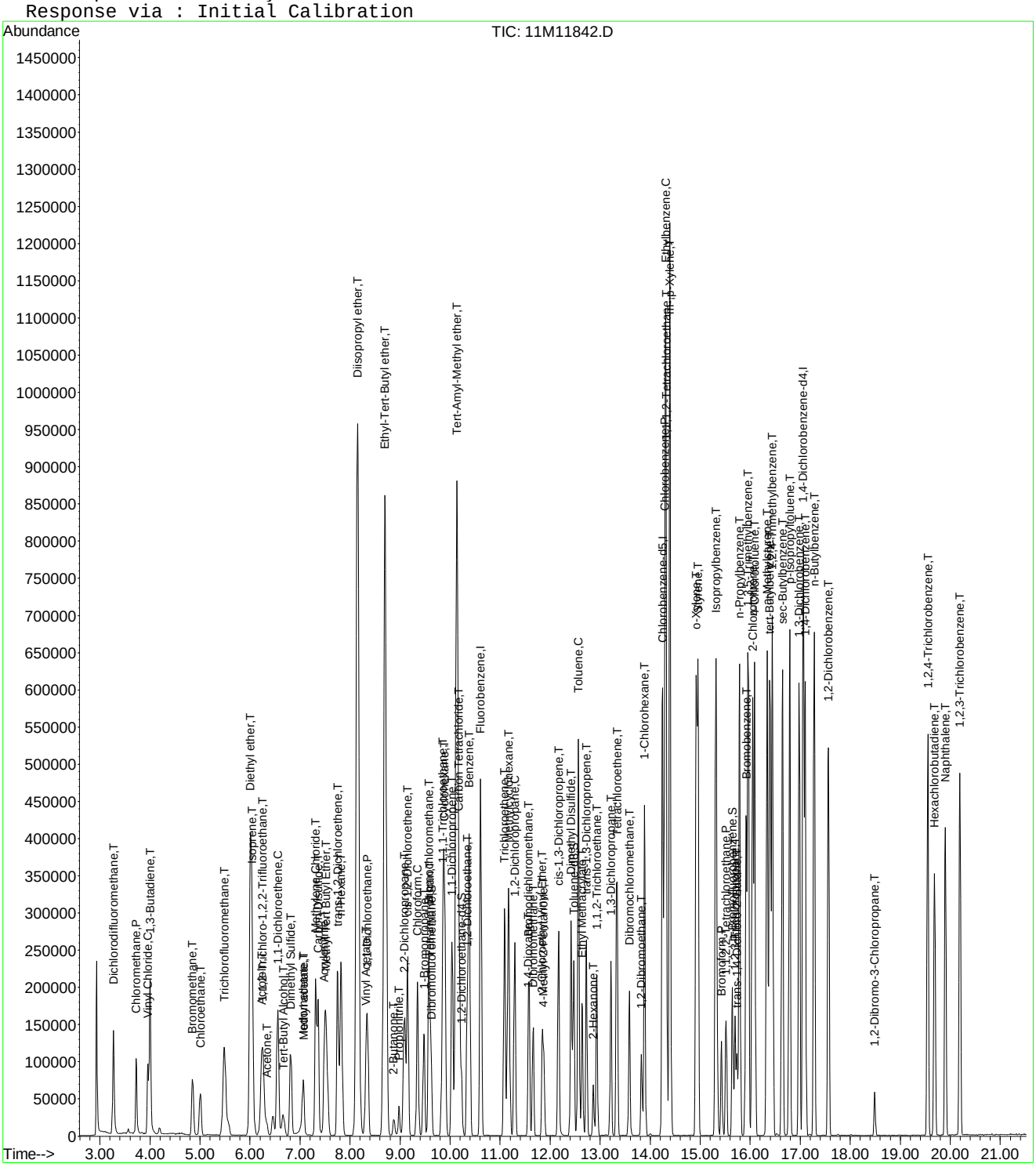

11M11842.D 8260WT.M Sat May 14 18:50:55 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11843.D Vial: 8
Acq On : 13 May 2016 17:51 Operator: JDS
Sample : WG568769-08 50ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:56 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	521583	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	438582	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	263885	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	139784	24.4879 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.96%		
43) 1,2-Dichloroethane-d4	10.23	65	158200	24.3058 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.24%		
57) Toluene-d8	12.47	98	462969	24.2947 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.16%		
78) p-Bromofluorobenzene	15.64	95	188875	23.2189 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.88%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	416971	51.0228 ug/L	100
3) Chloromethane	3.72	50	287508	43.9273 ug/L	100
4) Vinyl Chloride	3.96	62	261024	48.0232 ug/L	100
5) 1,3-Butadiene	4.00	54	280913	51.9760 ug/L	100
6) Bromomethane	4.85	94	172294	46.1032 ug/L	100
7) Chloroethane	5.00	64	167978	48.0991 ug/L	100
8) Trichlorofluoromethane	5.48	101	519806	47.9806 ug/L	100
9) Diethyl ether	6.01	59	391891	97.8098 ug/L	100
10) Isoprene	6.04	67	331169	49.5943 ug/L	100
11) Acrolein	6.23	56	25228	47.9550 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	255341	48.5730 ug/L	100
13) Acetone	6.34	43	57896	46.7459 ug/L	98
14) 1,1-Dichloroethene	6.56	61	459793	48.1534 ug/L	100
15) Tert-Butyl Alcohol	6.66	59	69395	202.5643 ug/L	100
16) Dimethyl Sulfide	6.81	62	193959	50.8640 ug/L	100
17) Iodomethane	7.06	142	214554	49.3519 ug/L	100
18) Methyl acetate	7.06	43	185465	48.1983 ug/L	100
19) Methylene Chloride	7.31	84	233601	47.2715 ug/L	100
20) Carbon Disulfide	7.36	76	816514	51.0786 ug/L	100
21) Acrylonitrile	7.49	53	84821	51.0789 ug/L	100
22) Methyl Tert Butyl Ether	7.52	73	610666	49.5457 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	252405	47.7624 ug/L	100
24) n-Hexane	7.82	57	449694	51.0913 ug/L	100
25) Diisopropyl ether	8.15	45	2181723	99.3365 ug/L	100
26) Vinyl Acetate	8.31	43	410275	48.2141 ug/L	100
27) 1,1-Dichloroethane	8.34	63	516691	48.7281 ug/L	100
28) Ethyl-Tert-Butyl ether	8.70	59	1783350	99.7625 ug/L	100
29) 2-Butanone	8.87	43	91238	48.7281 ug/L	100
30) Propionitrile	8.97	54	56538	103.0954 ug/L	100
31) 2,2-Dichloropropane	9.09	77	402511	48.5170 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	282222	48.4353 ug/L	100
33) Chloroform	9.35	83	489993	47.0562 ug/L	100
34) 1-Bromopropane	9.48	122	50180	48.4991 ug/L	100
35) Bromochloromethane	9.57	130	179921	51.9932 ug/L	100
36) Tetrahydrofuran	9.60	42	127999	96.8083 ug/L	100
38) 1,1,1-Trichloroethane	9.85	97	497667	48.5667 ug/L	100
39) Cyclohexane	9.88	56	575045	51.4928 ug/L	100
40) 1,1-Dichloropropene	10.04	75	353148	48.2674 ug/L	100
41) Carbon Tetrachloride	10.18	117	493225	49.2921 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	1227500	98.8215 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11843.D Vial: 8
Acq On : 13 May 2016 17:51 Operator: JDS
Sample : WG568769-08 50ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:56 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.34	62	419000	49.5434 ug/L	100
45) Benzene	10.38	78	947514	47.3064 ug/L	100
46) Trichloroethene	11.09	130	307211	47.1888 ug/L	100
47) Methylcyclohexane	11.17	83	418631	52.1043 ug/L	100
48) 1,2-Dichloropropane	11.29	63	268423	48.4136 ug/L	100
49) 1,4-Dioxane	11.55	88	5866	189.1665 ug/L	100
50) Bromodichloromethane	11.57	83	385292	49.5015 ug/L	100
51) Dibromomethane	11.65	93	142910	49.4635 ug/L	100
52) 2-Chloroethyl Vinyl Ether	11.84	63	133225	48.7541 ug/L	100
53) 4-Methyl-2-Pentanone	11.87	58	75720	49.1295 ug/L	100
54) cis-1,3-Dichloropropene	12.17	75	394857	50.7199 ug/L	100
55) Dimethyl Disulfide	12.42	79	236984	50.5867 ug/L	100
58) Toluene	12.56	91	1095397	49.3360 ug/L	100
59) Ethyl Methacrylate	12.65	69	249821	52.6944 ug/L	100
60) trans-1,3-Dichloropropene	12.73	75	366443	51.4187 ug/L	100
61) 1,1,2-Trichloroethane	12.93	97	194150	49.3135 ug/L	100
62) 2-Hexanone	12.86	43	144364	49.9264 ug/L	100
63) 1,3-Dichloropropane	13.21	76	316783	50.1049 ug/L	100
64) Tetrachloroethene	13.34	164	251037	48.6205 ug/L	100
65) Dibromochloromethane	13.59	129	310662	51.7330 ug/L	100
66) 1,2-Dibromoethane	13.82	107	196704	49.8676 ug/L	100
67) 1-Chlorohexane	13.89	91	376690	51.4596 ug/L	100
68) Chlorobenzene	14.29	112	797442	49.0276 ug/L	100
69) 1,1,1,2-Tetrachloroethane	14.32	131	325801	49.5033 ug/L	100
70) Ethylbenzene	14.31	106	408749	49.0078 ug/L	100
71) m-,p-Xylene	14.39	106	996141	98.2427 ug/L	100
72) o-Xylene	14.92	106	492043	49.8632 ug/L	100
73) Styrene	14.95	104	838125	51.4077 ug/L	100
74) Bromoform	15.43	173	184100	50.5823 ug/L	100
75) Isopropylbenzene	15.31	105	1309383	50.1751 ug/L	100
77) 1,1,2,2-Tetrachloroethane	15.52	83	208930	50.8426 ug/L	100
79) 1,2,3-Trichloropropane	15.70	110	72411	46.9859 ug/L	100
80) trans-1,4-Dichloro-2-Buten	15.74	53	94075	47.5347 ug/L	100
81) n-Propylbenzene	15.79	91	1522917	49.8325 ug/L	100
82) Bromobenzene	15.92	156	379178	47.2834 ug/L	100
83) 1,3,5-Trimethylbenzene	15.96	105	1143246	49.0221 ug/L	100
84) 2-Chlorotoluene	16.05	91	1021921	47.7415 ug/L	100
85) 4-Chlorotoluene	16.09	91	930690	48.5394 ug/L	100
86) a-Methylstyrene	16.34	118	649847	52.8208 ug/L	100
87) tert-Butylbenzene	16.40	134	241955	48.9705 ug/L	100
88) 1,2,4-Trimethylbenzene	16.44	105	1178963	49.6454 ug/L	100
89) sec-Butylbenzene	16.65	105	1390388	49.6522 ug/L	100
90) p-Isopropyltoluene	16.79	119	1282252	49.8529 ug/L	100
91) 1,3-Dichlorobenzene	16.98	146	737967	47.6473 ug/L	100
92) 1,4-Dichlorobenzene	17.10	146	740977	47.1987 ug/L	100
93) n-Butylbenzene	17.28	91	1126170	49.6883 ug/L	100
94) 1,2-Dichlorobenzene	17.57	146	684016	48.4812 ug/L	100
95) 1,2-Dibromo-3-Chloropropan	18.49	75	42848	46.3023 ug/L	100
96) 1,2,4-Trichlorobenzene	19.55	180	512927	49.6830 ug/L	100
97) Hexachlorobutadiene	19.69	225	219129	48.1793 ug/L	100
98) Naphthalene	19.90	128	962852	50.2463 ug/L	100
99) 1,2,3-Trichlorobenzene	20.19	180	453828	47.8975 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11843.D Vial: 8
Acq On : 13 May 2016 17:51 Operator: JDS
Sample : WG568769-08 50ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

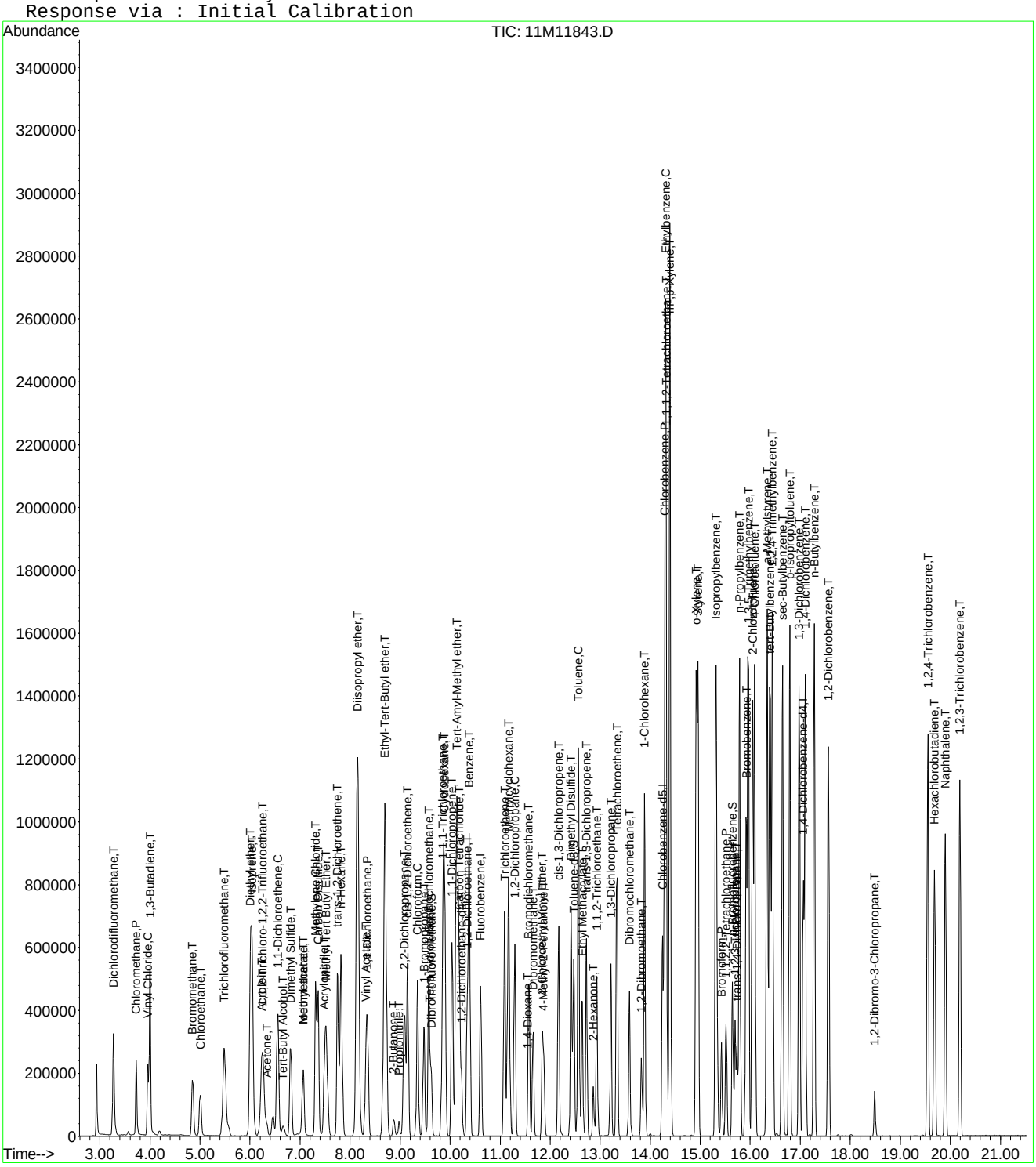

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11844.D Vial: 9
Acq On : 13 May 2016 18:22 Operator: JDS
Sample : WG568769-09 100ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:57 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	541540	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	458522	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	275719	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	307700	51.9175 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 207.68%#		
43) 1,2-Dichloroethane-d4	10.23	65	345779	51.1676 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 204.68%#		
57) Toluene-d8	12.47	98	1011334	50.7627 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 203.04%#		
78) p-Bromofluorobenzene	15.64	95	423157	49.7872 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 199.16%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	918088	108.2020 ug/L	100
3) Chloromethane	3.72	50	641242	94.3625 ug/L	99
4) Vinyl Chloride	3.95	62	586615	103.9481 ug/L	100
5) 1,3-Butadiene	3.99	54	571156	101.7838 ug/L	99
6) Bromomethane	4.85	94	394826	101.7560 ug/L	99
7) Chloroethane	5.00	64	370541	102.1913 ug/L	99
8) Trichlorofluoromethane	5.48	101	1135647	100.9627 ug/L	98
9) Diethyl ether	6.01	59	836495	201.0821 ug/L	99
10) Isoprene	6.04	67	699724	100.9257 ug/L	100
11) Acrolein	6.24	56	55228	99.4421 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	545013	99.8560 ug/L	100
13) Acetone	6.34	43	123799	96.2731 ug/L	95
14) 1,1-Dichloroethene	6.56	61	1004294	101.3022 ug/L	100
15) Tert-Butyl Alcohol	6.66	59	148134	416.4687 ug/L	98
16) Dimethyl Sulfide	6.81	62	401237	101.3432 ug/L	100
17) Iodomethane	7.06	142	471112	102.3553 ug/L	100
18) Methyl acetate	7.07	43	381031	98.0957 ug/L	99
19) Methylene Chloride	7.31	84	501609	97.7649 ug/L	99
20) Carbon Disulfide	7.36	76	1695322	102.1458 ug/L	100
21) Acrylonitrile	7.49	53	184461	106.9881 ug/L	99
22) Methyl Tert Butyl Ether	7.52	73	1312901	102.5951 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	542907	98.9478 ug/L	98
24) n-Hexane	7.82	57	921942	100.8849 ug/L	99
25) Diisopropyl ether	8.15	45	4599625	201.7086 ug/L	99
26) Vinyl Acetate	8.31	43	855488	94.3763 ug/L	99
27) 1,1-Dichloroethane	8.34	63	1111115	100.9254 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	3780769	203.7060 ug/L	100
29) 2-Butanone	8.87	43	198511	102.1130 ug/L	100
30) Propionitrile	8.98	54	118699	208.4678 ug/L	97
31) 2,2-Dichloropropane	9.09	77	914695	106.1904 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	606774	100.2977 ug/L	99
33) Chloroform	9.35	83	1053766	97.4685 ug/L	100
34) 1-Bromopropane	9.48	122	106914	98.8615 ug/L	100
35) Bromochloromethane	9.57	130	387239	107.7795 ug/L	100
36) Tetrahydrofuran	9.60	42	270148	196.7890 ug/L	99
38) 1,1,1-Trichloroethane	9.85	97	1088263	102.2884 ug/L	99
39) Cyclohexane	9.88	56	1213186	104.6320 ug/L	100
40) 1,1-Dichloropropene	10.04	75	775674	102.1101 ug/L	98
41) Carbon Tetrachloride	10.18	117	1074698	103.4456 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	2619501	203.1147 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11844.D Vial: 9
Acq On : 13 May 2016 18:22 Operator: JDS
Sample : WG568769-09 100ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:57 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	895394	101.9714	ug/L	100
45)	Benzene	10.38	78	2041856	98.1867	ug/L	100
46)	Trichloroethene	11.08	130	677193	100.1861	ug/L	99
47)	Methylcyclohexane	11.17	83	867487	103.9915	ug/L	100
48)	1,2-Dichloropropane	11.29	63	580562	100.8530	ug/L	98
49)	1,4-Dioxane	11.56	88	13651	395.0901	ug/L	100
50)	Bromodichloromethane	11.57	83	837797	103.6717	ug/L	99
51)	Dibromomethane	11.65	93	315786	105.2707	ug/L	99
52)	2-Chloroethyl Vinyl Ether	11.84	63	293822	103.5626	ug/L	100
53)	4-Methyl-2-Pentanone	11.87	58	164890	103.0430	ug/L	98
54)	cis-1,3-Dichloropropene	12.17	75	854611	105.7305	ug/L	99
55)	Dimethyl Disulfide	12.42	79	505463	103.9202	ug/L	99
58)	Toluene	12.56	91	2361378	101.7300	ug/L	100
59)	Ethyl Methacrylate	12.65	69	529740	106.8782	ug/L	98
60)	trans-1,3-Dichloropropene	12.73	75	793063	106.4420	ug/L	99
61)	1,1,2-Trichloroethane	12.94	97	418327	101.6330	ug/L	99
62)	2-Hexanone	12.86	43	314588	104.0648	ug/L	99
63)	1,3-Dichloropropane	13.21	76	685844	103.7610	ug/L	100
64)	Tetrachloroethene	13.34	164	550335	101.9528	ug/L	99
65)	Dibromochloromethane	13.59	129	681591	108.5659	ug/L	100
66)	1,2-Dibromoethane	13.82	107	427945	103.7729	ug/L	99
67)	1-Chlorohexane	13.89	91	807177	105.4730	ug/L	98
68)	Chlorobenzene	14.29	112	1705646	100.3046	ug/L	99
69)	1,1,1,2-Tetrachloroethane	14.32	131	704959	102.4557	ug/L	100
70)	Ethylbenzene	14.31	106	883839	101.3614	ug/L	99
71)	m-,p-Xylene	14.39	106	2123651	200.3333	ug/L	98
72)	o-Xylene	14.92	106	1053682	102.1356	ug/L	100
73)	Styrene	14.95	104	1807222	106.0282	ug/L	99
74)	Bromoform	15.43	173	412378	108.3755	ug/L	100
75)	Isopropylbenzene	15.31	105	2813193	103.1127	ug/L	99
77)	1,1,2,2-Tetrachloroethane	15.52	83	454052	105.7501	ug/L	99
79)	1,2,3-Trichloropropane	15.70	110	156532	96.8210	ug/L	100
80)	trans-1,4-Dichloro-2-Buten	15.74	53	203327	97.5343	ug/L	96
81)	n-Propylbenzene	15.79	91	3285915	102.9061	ug/L	99
82)	Bromobenzene	15.92	156	828973	98.9359	ug/L	99
83)	1,3,5-Trimethylbenzene	15.96	105	2483230	101.9102	ug/L	100
84)	2-Chlorotoluene	16.05	91	2208423	98.7437	ug/L	100
85)	4-Chlorotoluene	16.09	91	2020827	100.8710	ug/L	100
86)	a-Methylstyrene	16.34	118	1361545	105.9190	ug/L	99
87)	tert-Butylbenzene	16.40	134	532522	103.1540	ug/L	98
88)	1,2,4-Trimethylbenzene	16.44	105	2546912	102.6457	ug/L	100
89)	sec-Butylbenzene	16.65	105	3003570	102.6569	ug/L	99
90)	p-Isopropyltoluene	16.79	119	2763313	102.8241	ug/L	99
91)	1,3-Dichlorobenzene	16.98	146	1600684	98.9134	ug/L	100
92)	1,4-Dichlorobenzene	17.10	146	1605475	97.8762	ug/L	100
93)	n-Butylbenzene	17.28	91	2452438	103.5609	ug/L	100
94)	1,2-Dichlorobenzene	17.57	146	1481276	100.4827	ug/L	100
95)	1,2-Dibromo-3-Chloropropan	18.49	75	95062	97.5959	ug/L	99
96)	1,2,4-Trichlorobenzene	19.55	180	1100416	102.0133	ug/L	100
97)	Hexachlorobutadiene	19.69	225	486893	102.4572	ug/L	100
98)	Naphthalene	19.90	128	2071229	103.4477	ug/L	100
99)	1,2,3-Trichlorobenzene	20.19	180	980181	99.0092	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11844.D Vial: 9
Acq On : 13 May 2016 18:22 Operator: JDS
Sample : WG568769-09 100ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

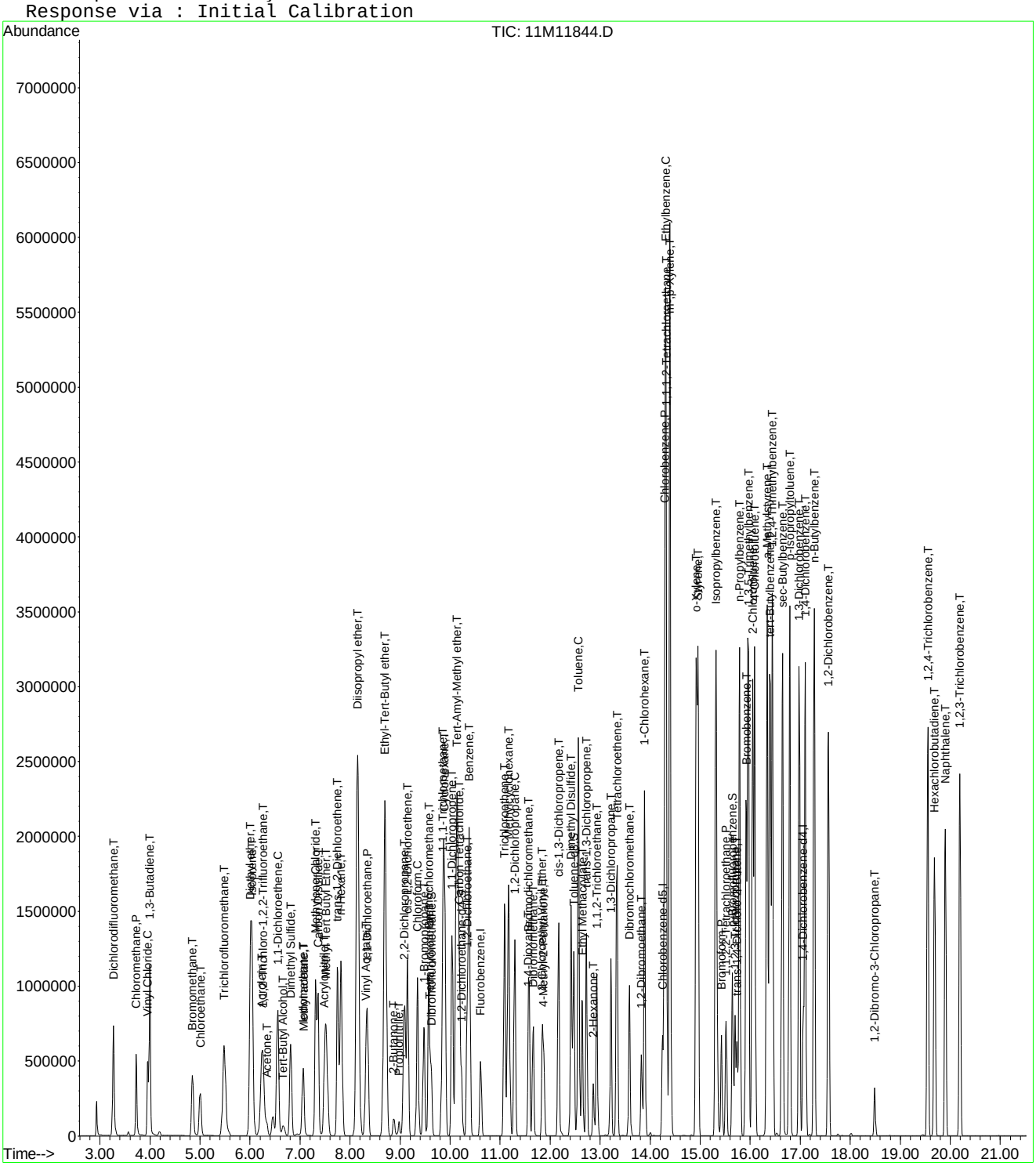

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11845.D Vial: 10
Acq On : 13 May 2016 18:54 Operator: JDS
Sample : WG568769-10 200ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:59 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	552905	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	473364	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	274188	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	629894	104.0960 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 416.40%#		
43) 1,2-Dichloroethane-d4	10.23	65	684792	99.2511 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 397.00%#		
57) Toluene-d8	12.47	98	2068111	100.5516 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 402.20%#		
78) p-Bromofluorobenzene	15.64	95	864999	102.3411 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 409.36%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	1843265	212.7741 ug/L	99
3) Chloromethane	3.72	50	1346993	194.1434 ug/L	100
4) Vinyl Chloride	3.95	62	1199147	208.1209 ug/L	100
5) 1,3-Butadiene	3.99	54	1131910	197.5677 ug/L	97
6) Bromomethane	4.85	94	859963	217.0771 ug/L	100
7) Chloroethane	5.00	64	764060	206.3883 ug/L	100
8) Trichlorofluoromethane	5.48	101	2275404	198.1327 ug/L	100
9) Diethyl ether	6.03	59	2592	0.6103 ug/L #	21
10) Isoprene	6.04	67	1435794	202.8369 ug/L	97
11) Acrolein	6.25	56	3061	6.8231 ug/L	88
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	1123889	201.6837 ug/L	99
13) Acetone	6.34	43	254053	193.5049 ug/L	96
14) 1,1-Dichloroethene	6.56	61	2040432	201.5858 ug/L	99
15) Tert-Butyl Alcohol	6.67	59	7729	21.2829 ug/L #	82
16) Dimethyl Sulfide	6.81	62	830179	205.3739 ug/L	99
17) Iodomethane	7.06	142	969857	206.1133 ug/L	99
18) Methyl acetate	7.07	43	749575	196.5068 ug/L	97
19) Methylene Chloride	7.31	84	1035656	197.7029 ug/L	97
20) Carbon Disulfide	7.36	76	3459748	204.1704 ug/L	99
21) Acrylonitrile	7.52	53	35662	20.2589 ug/L #	39
22) Methyl Tert Butyl Ether	7.52	73	2706665	207.1616 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	1121963	200.2808 ug/L	99
24) n-Hexane	7.82	57	1873652	200.8128 ug/L	99
25) Diisopropyl ether	8.16	45	16567	0.7116 ug/L #	87
26) Vinyl Acetate	8.31	43	1904053	202.8645 ug/L	100
27) 1,1-Dichloroethane	8.34	63	2261904	201.2314 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	9063	0.4783 ug/L	90
29) 2-Butanone	8.87	43	407543	205.3288 ug/L	99
30) Propionitrile	8.97	54	4182	7.1938 ug/L #	60
31) 2,2-Dichloropropane	9.09	77	1850091	210.3692 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	1257477	203.5843 ug/L	100
33) Chloroform	9.35	83	2160999	195.7739 ug/L	100
34) 1-Bromopropane	9.48	122	222798	201.1267 ug/L	98
35) Bromochloromethane	9.57	130	798076	217.5612 ug/L	99
36) Tetrahydrofuran	9.60	42	9110	6.4998 ug/L	97
38) 1,1,1-Trichloroethane	9.85	97	2208198	203.2875 ug/L	99
39) Cyclohexane	9.88	56	2467804	208.4625 ug/L	100
40) 1,1-Dichloropropene	10.04	75	1587009	204.6205 ug/L	99
41) Carbon Tetrachloride	10.18	117	2174730	205.0269 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	6538	0.4965 ug/L #	83

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11845.D Vial: 10
Acq On : 13 May 2016 18:54 Operator: JDS
Sample : WG568769-10 200ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:59 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
44)	1,2-Dichloroethane	10.34	62	1808450	201.7209 ug/L		99
45)	Benzene	10.38	78	4119227	194.0096 ug/L		99
46)	Trichloroethene	11.09	130	1367103	198.0963 ug/L		100
47)	Methylcyclohexane	11.17	83	1789256	210.0812 ug/L		99
48)	1,2-Dichloropropane	11.29	63	1196100	203.5109 ug/L		99
49)	1,4-Dioxane	11.57	88	2656	94.1370 ug/L	#	31
50)	Bromodichloromethane	11.58	83	1721733	208.6734 ug/L		99
51)	Dibromomethane	11.66	93	641583	209.4825 ug/L		100
52)	2-Chloroethyl Vinyl Ether	11.84	63	608231	209.9748 ug/L		99
53)	4-Methyl-2-Pentanone	11.87	58	342251	209.4831 ug/L		99
54)	cis-1,3-Dichloropropene	12.17	75	1772737	214.8108 ug/L		100
55)	Dimethyl Disulfide	12.42	79	1052498	211.9395 ug/L		98
58)	Toluene	12.56	91	4699240	196.0993 ug/L		98
59)	Ethyl Methacrylate	12.65	69	1101451	215.2567 ug/L		97
60)	trans-1,3-Dichloropropene	12.73	75	1627488	211.5866 ug/L		99
61)	1,1,2-Trichloroethane	12.93	97	860113	202.4133 ug/L		99
62)	2-Hexanone	12.86	43	651287	208.6888 ug/L		99
63)	1,3-Dichloropropane	13.21	76	1412360	206.9756 ug/L		99
64)	Tetrachloroethene	13.34	164	1133410	203.3874 ug/L		99
65)	Dibromochloromethane	13.59	129	1409248	217.4313 ug/L		99
66)	1,2-Dibromoethane	13.82	107	889951	209.0389 ug/L		99
67)	1-Chlorohexane	13.89	91	1659272	210.0173 ug/L		97
68)	Chlorobenzene	14.29	112	3416597	194.6214 ug/L		98
69)	1,1,1,2-Tetrachloroethane	14.32	131	1457008	205.1158 ug/L		100
70)	Ethylbenzene	14.31	106	1814385	201.5551 ug/L		91
71)	m-,p-Xylene	14.39	106	4230307	386.5510 ug/L		85
72)	o-Xylene	14.92	106	2156790	202.5071 ug/L		96
73)	Styrene	14.96	104	3630570	206.3240 ug/L		98
74)	Bromoform	15.43	173	854308	217.4778 ug/L		100
75)	Isopropylbenzene	15.31	105	5485636	194.7621 ug/L		97
77)	1,1,2,2-Tetrachloroethane	15.52	83	939708	220.0830 ug/L		98
79)	1,2,3-Trichloropropane	15.70	110	325518	202.0716 ug/L		99
80)	trans-1,4-Dichloro-2-Buten	15.74	53	421012	202.2796 ug/L		97
81)	n-Propylbenzene	15.79	91	6220435	195.8952 ug/L		95
82)	Bromobenzene	15.92	156	1685980	202.3412 ug/L		99
83)	1,3,5-Trimethylbenzene	15.96	105	4875063	201.1866 ug/L		97
84)	2-Chlorotoluene	16.05	91	4287026	192.7532 ug/L		98
85)	4-Chlorotoluene	16.09	91	4030756	202.3214 ug/L		98
86)	a-Methylstyrene	16.34	118	2724122	213.1015 ug/L		98
87)	tert-Butylbenzene	16.40	134	1075661	209.5280 ug/L		96
88)	1,2,4-Trimethylbenzene	16.44	105	4921395	199.4496 ug/L		97
89)	sec-Butylbenzene	16.65	105	5740919	197.3104 ug/L		97
90)	p-Isopropyltoluene	16.79	119	5274037	197.3451 ug/L		95
91)	1,3-Dichlorobenzene	16.98	146	3171808	197.0945 ug/L		99
92)	1,4-Dichlorobenzene	17.10	146	3145357	192.8244 ug/L		99
93)	n-Butylbenzene	17.28	91	4684496	198.9203 ug/L		97
94)	1,2-Dichlorobenzene	17.57	146	2909224	198.4498 ug/L		99
95)	1,2-Dibromo-3-Chloropropan	18.49	75	191088	196.6217 ug/L		99
96)	1,2,4-Trichlorobenzene	19.55	180	2198003	204.9021 ug/L		99
97)	Hexachlorobutadiene	19.69	225	969160	205.0797 ug/L		99
98)	Naphthalene	19.90	128	3994903	200.6399 ug/L		98
99)	1,2,3-Trichlorobenzene	20.19	180	1999949	203.1452 ug/L		99

(#) = qualifier out of range (m) = manual integration
11M11845.D 8260WT.M Sat May 14 18:51:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11845.D Vial: 10
Acq On : 13 May 2016 18:54 Operator: JDS
Sample : WG568769-10 200ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

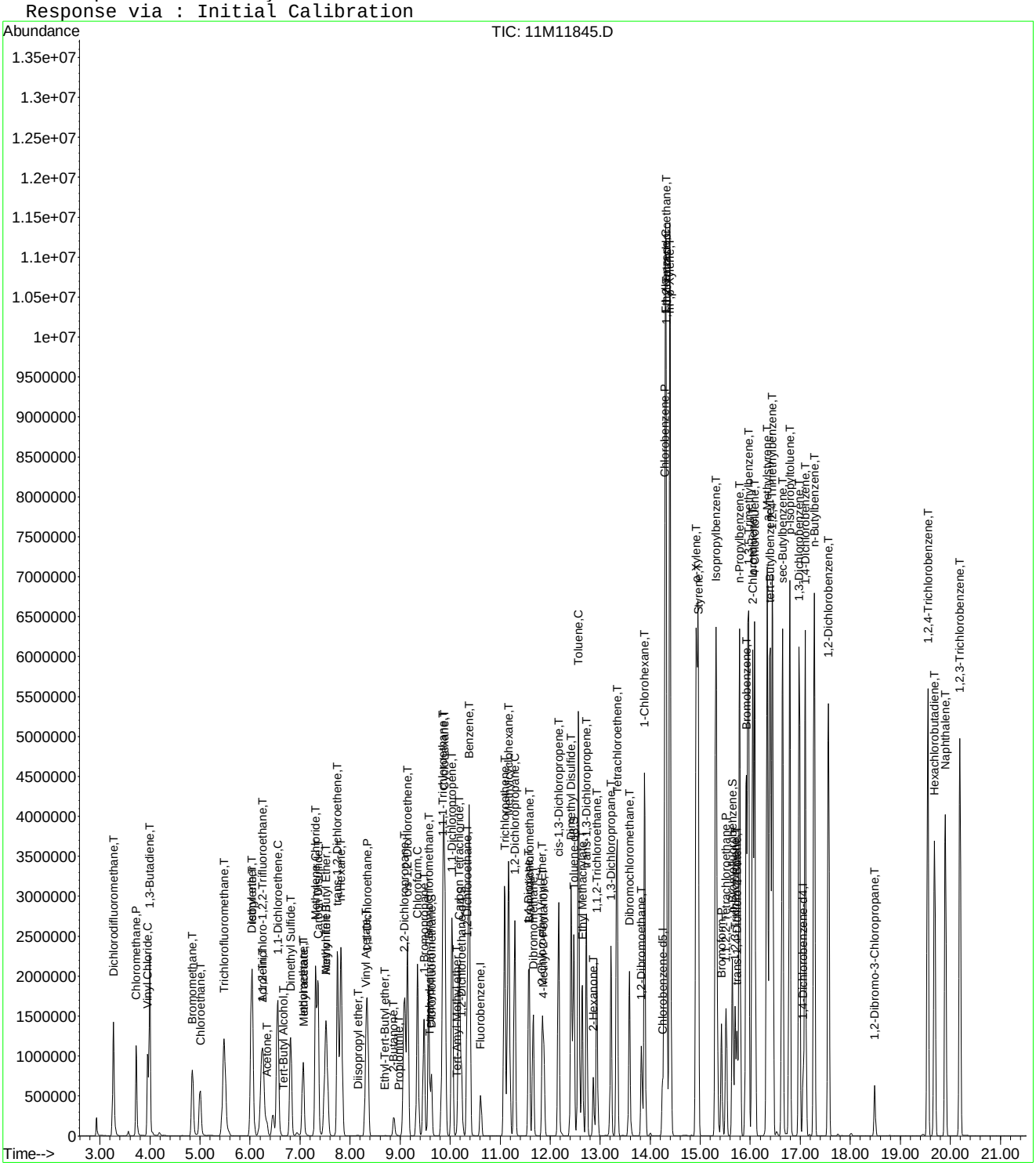

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11846.D Vial: 11
Acq On : 13 May 2016 19:26 Operator: JDS
Sample : WG568769-11 300ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:51:01 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	543599	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	479542	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	277309	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	905755	152.2472 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 609.00%#		
43) 1,2-Dichloroethane-d4	10.23	65	970758	143.1066 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 572.44%#		
57) Toluene-d8	12.47	98	3002456	144.0987 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 576.40%#		
78) p-Bromofluorobenzene	15.64	95	1285822	150.4179 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 601.68%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	2762707	324.3678 ug/L	99
3) Chloromethane	3.72	50	2113477	309.8323 ug/L	100
4) Vinyl Chloride	3.95	62	1802126	318.1269 ug/L	100
5) 1,3-Butadiene	3.99	54	1562377	277.3715 ug/L	98
6) Bromomethane	4.85	94	1341865	344.5204 ug/L	100
7) Chloroethane	5.00	64	1181546	324.6236 ug/L	100
8) Trichlorofluoromethane	5.48	101	3351045	296.7904 ug/L	99
9) Diethyl ether	6.01	59	1250668	299.5049 ug/L	97
10) Isoprene	6.04	67	2121830	304.8859 ug/L	97
11) Acrolein	6.23	56	87016	155.2272 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	1679276	306.5076 ug/L	99
13) Acetone	6.34	43	352141	272.8074 ug/L	95
14) 1,1-Dichloroethene	6.56	61	3009080	302.3733 ug/L	98
15) Tert-Butyl Alcohol	6.67	59	227782	637.9680 ug/L	97
16) Dimethyl Sulfide	6.81	62	1199487	301.8151 ug/L	96
17) Iodomethane	7.06	142	1359092	295.3515 ug/L	96
18) Methyl acetate	7.07	43	1093862	303.3719 ug/L	97
19) Methylene Chloride	7.31	84	1550974	301.1438 ug/L	91
20) Carbon Disulfide	7.36	76	5025219	301.6304 ug/L	99
21) Acrylonitrile	7.49	53	292311	168.8994 ug/L	94
22) Methyl Tert Butyl Ether	7.52	73	3880019	302.0512 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	1693308	307.4459 ug/L	98
24) n-Hexane	7.82	57	2752540	300.0599 ug/L	99
25) Diisopropyl ether	8.15	45	6621718	289.2841 ug/L	99
26) Vinyl Acetate	8.31	43	2814279	303.7518 ug/L	99
27) 1,1-Dichloroethane	8.34	63	3313473	299.8312 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	5508427	295.6672 ug/L	99
29) 2-Butanone	8.87	43	590742	302.7235 ug/L	97
30) Propionitrile	8.99	54	177454	310.4771 ug/L	98
31) 2,2-Dichloropropane	9.09	77	2735421	316.3626 ug/L	99
32) cis-1,2-Dichloroethene	9.15	96	1856543	305.7181 ug/L	98
33) Chloroform	9.35	83	3144758	289.7739 ug/L	100
34) 1-Bromopropane	9.48	122	329211	301.9597 ug/L	98
35) Bromochloromethane	9.57	130	1179409	327.0194 ug/L	97
36) Tetrahydrofuran	9.60	42	386389	280.3985 ug/L	96
38) 1,1,1-Trichloroethane	9.85	97	3227247	302.1877 ug/L	99
39) Cyclohexane	9.88	56	3625895	311.5332 ug/L	99
40) 1,1-Dichloropropene	10.04	75	2360605	309.5743 ug/L	100
41) Carbon Tetrachloride	10.18	117	3172921	304.2542 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	3912691	302.2388 ug/L	97

(#) = qualifier out of range (m) = manual integration
11M11846.D 8260WT.M Sat May 14 18:51:02 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11846.D Vial: 11
Acq On : 13 May 2016 19:26 Operator: JDS
Sample : WG568769-11 300ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:51:01 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
44)	1,2-Dichloroethane	10.34	62	2551762	289.5052 ug/L		98
45)	Benzene	10.38	78	5961793	285.5987 ug/L		97
46)	Trichloroethene	11.09	130	2025948	298.5901 ug/L		99
47)	Methylcyclohexane	11.17	83	2657028	317.3092 ug/L		98
48)	1,2-Dichloropropane	11.29	63	1781372	308.2809 ug/L		96
49)	1,4-Dioxane	11.56	88	21540	607.7372 ug/L		100
50)	Bromodichloromethane	11.57	83	2511276	309.5762 ug/L		100
51)	Dibromomethane	11.65	93	939605	312.0413 ug/L		99
52)	2-Chloroethyl Vinyl Ether	11.84	63	879534	308.8327 ug/L		100
53)	4-Methyl-2-Pentanone	11.87	58	505191	314.5081 ug/L		99
54)	cis-1,3-Dichloropropene	12.17	75	2604960	321.0589 ug/L		99
55)	Dimethyl Disulfide	12.42	79	1529785	313.3234 ug/L		99
58)	Toluene	12.56	91	6613670	272.4329 ug/L		95
59)	Ethyl Methacrylate	12.65	69	1618015	312.1351 ug/L		94
60)	trans-1,3-Dichloropropene	12.73	75	2369133	304.0383 ug/L		98
61)	1,1,2-Trichloroethane	12.93	97	1271039	295.2644 ug/L		98
62)	2-Hexanone	12.86	43	950079	300.5074 ug/L		97
63)	1,3-Dichloropropane	13.21	76	2062188	298.3119 ug/L		97
64)	Tetrachloroethene	13.34	164	1691190	299.5697 ug/L		98
65)	Dibromochloromethane	13.59	129	2065480	314.5750 ug/L		100
66)	1,2-Dibromoethane	13.82	107	1334668	309.4588 ug/L		99
67)	1-Chlorohexane	13.89	91	2483371	310.2757 ug/L		95
68)	Chlorobenzene	14.29	112	4911463	276.1698 ug/L		96
69)	1,1,1,2-Tetrachloroethane	14.32	131	2161701	300.4009 ug/L		100
70)	Ethylbenzene	14.31	106	2715675	297.7904 ug/L		79
71)	m-,p-Xylene	14.39	106	6004062	541.5626 ug/L		73
72)	o-Xylene	14.92	106	3202500	296.8179 ug/L		90
73)	Styrene	14.96	104	5278134	296.0902 ug/L		96
74)	Bromoform	15.43	173	1313245	330.0007 ug/L		100
75)	Isopropylbenzene	15.31	105	7610374	266.7178 ug/L		92
77)	1,1,2,2-Tetrachloroethane	15.52	83	1470787	340.5868 ug/L		97
79)	1,2,3-Trichloropropane	15.70	110	494041	303.0514 ug/L		98
80)	trans-1,4-Dichloro-2-Buten	15.74	53	640812	304.0444 ug/L		94
81)	n-Propylbenzene	15.79	91	8405785	261.7374 ug/L		88
82)	Bromobenzene	15.92	156	2530711	300.3025 ug/L		98
83)	1,3,5-Trimethylbenzene	15.96	105	6851753	279.5793 ug/L		93
84)	2-Chlorotoluene	16.05	91	6055423	269.1996 ug/L		95
85)	4-Chlorotoluene	16.09	91	5712933	283.5299 ug/L		94
86)	a-Methylstyrene	16.34	118	4020347	310.9625 ug/L		96
87)	tert-Butylbenzene	16.40	134	1654009	318.5583 ug/L		89
88)	1,2,4-Trimethylbenzene	16.44	105	6879061	275.6504 ug/L		91
89)	sec-Butylbenzene	16.65	105	7999374	271.8373 ug/L		92
90)	p-Isopropyltoluene	16.79	119	7406083	274.0036 ug/L		90
91)	1,3-Dichlorobenzene	16.98	146	4679194	287.4903 ug/L		97
92)	1,4-Dichlorobenzene	17.10	146	4642399	281.3967 ug/L		96
93)	n-Butylbenzene	17.28	91	6723928	282.3084 ug/L		93
94)	1,2-Dichlorobenzene	17.57	146	4360022	294.0672 ug/L		96
95)	1,2-Dibromo-3-Chloropropan	18.49	75	302346	307.2381 ug/L		100
96)	1,2,4-Trichlorobenzene	19.55	180	3482946	321.0328 ug/L		97
97)	Hexachlorobutadiene	19.69	225	1629665	340.9652 ug/L		98
98)	Naphthalene	19.90	128	5970381	296.4815 ug/L	#	96
99)	1,2,3-Trichlorobenzene	20.19	180	3137470	315.1025 ug/L		98

(#) = qualifier out of range (m) = manual integration
11M11846.D 8260WT.M Sat May 14 18:51:02 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11846.D Vial: 11
Acq On : 13 May 2016 19:26 Operator: JDS
Sample : WG568769-11 300ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:51 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

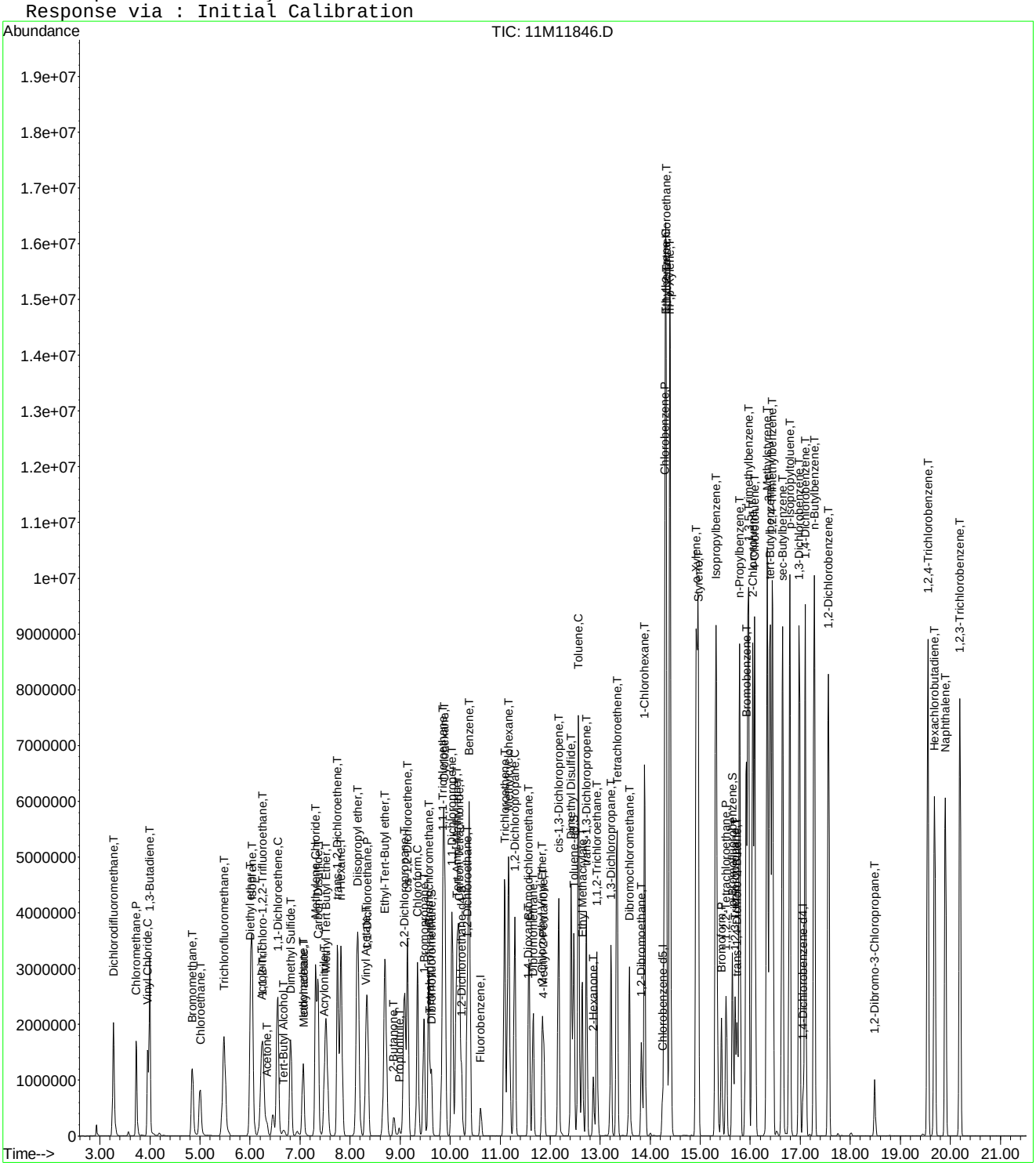

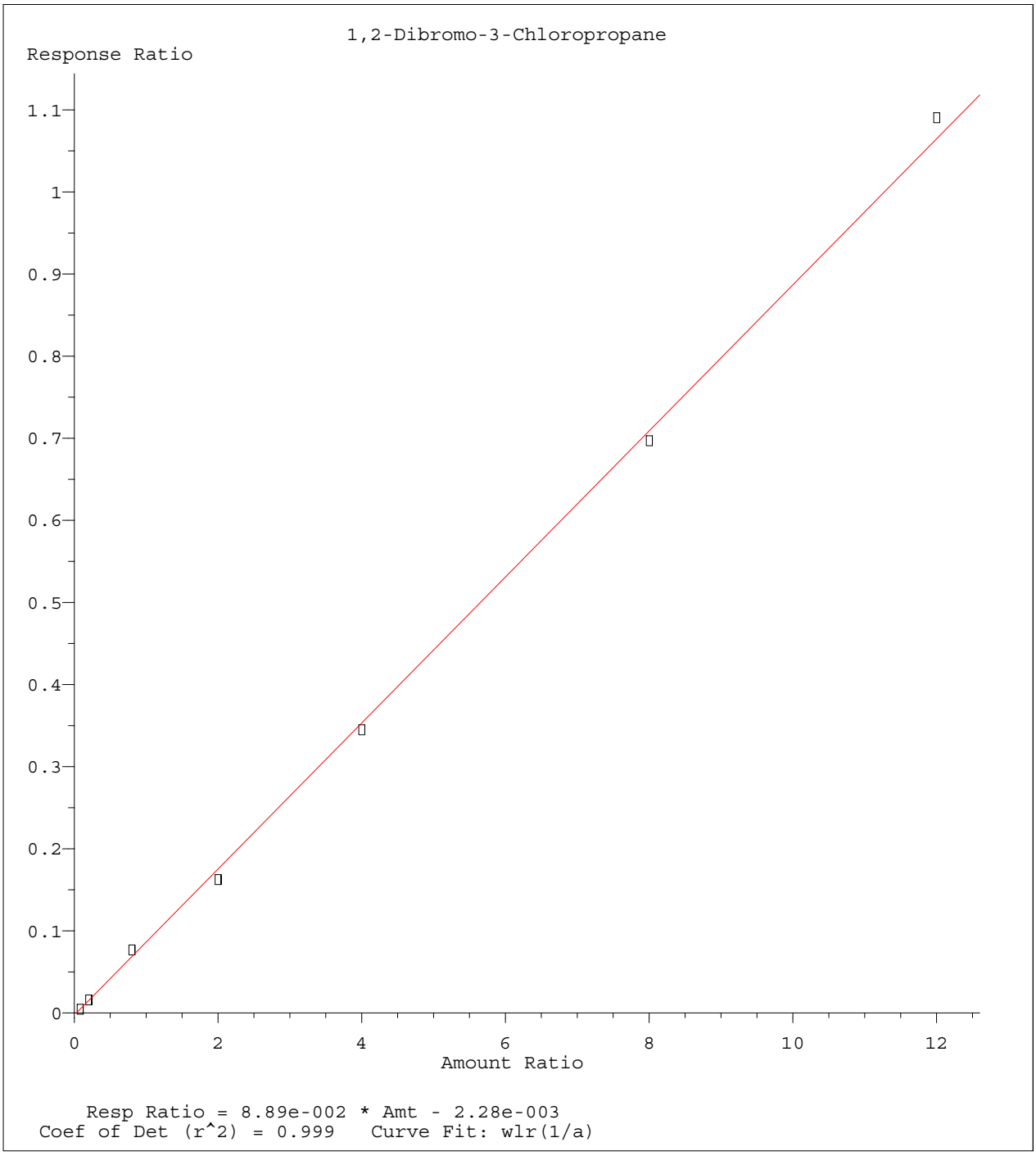

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

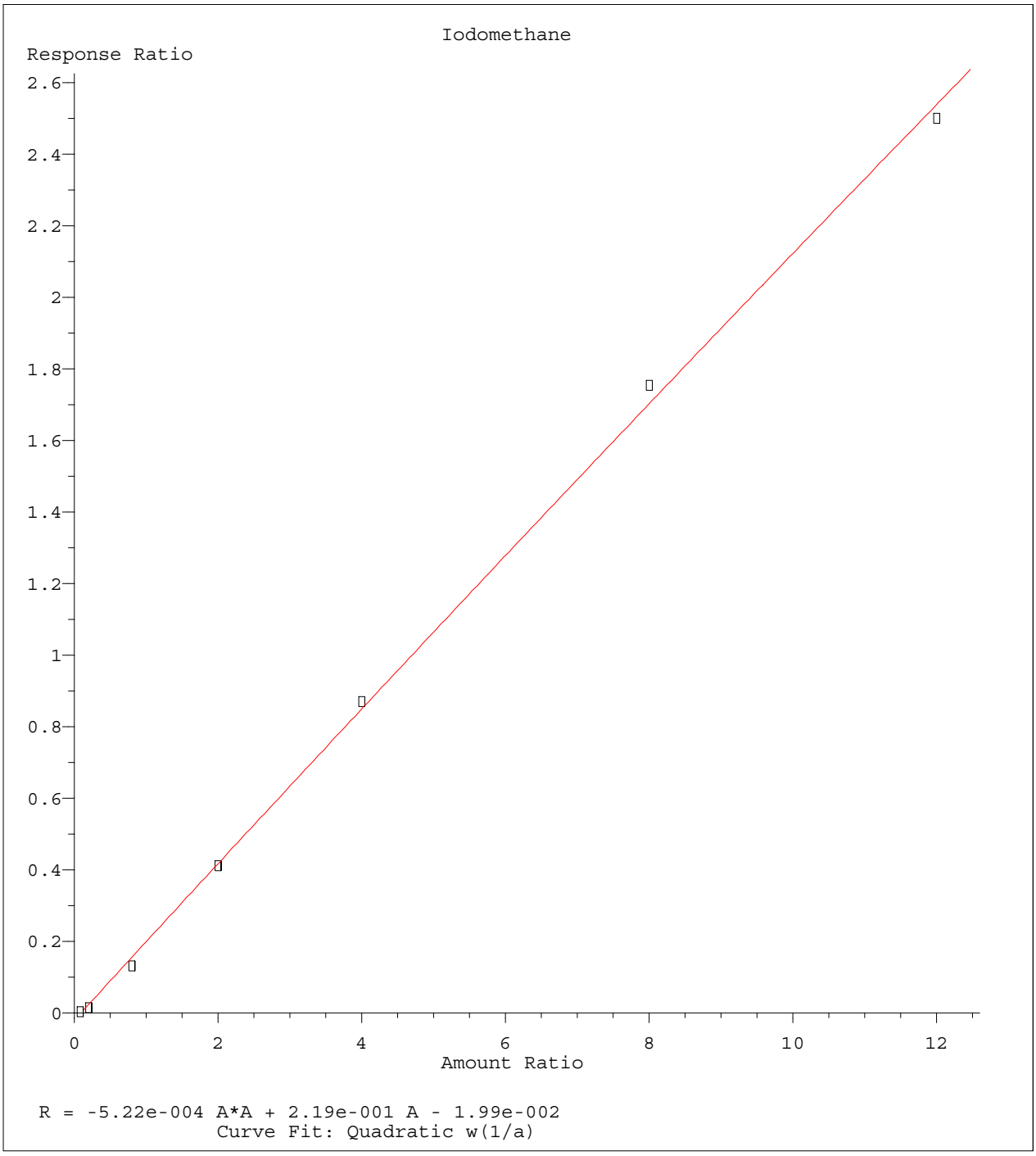

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

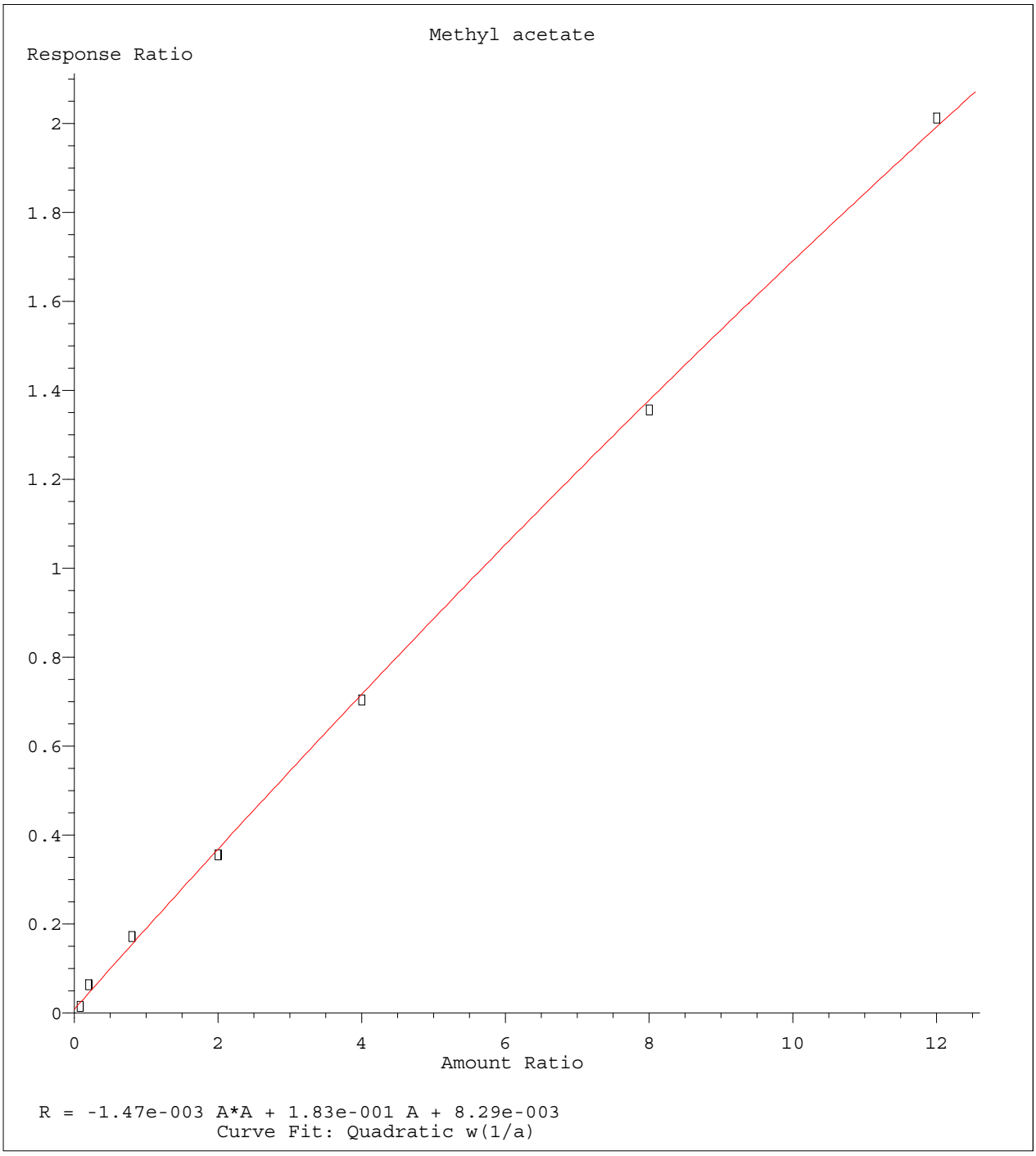

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

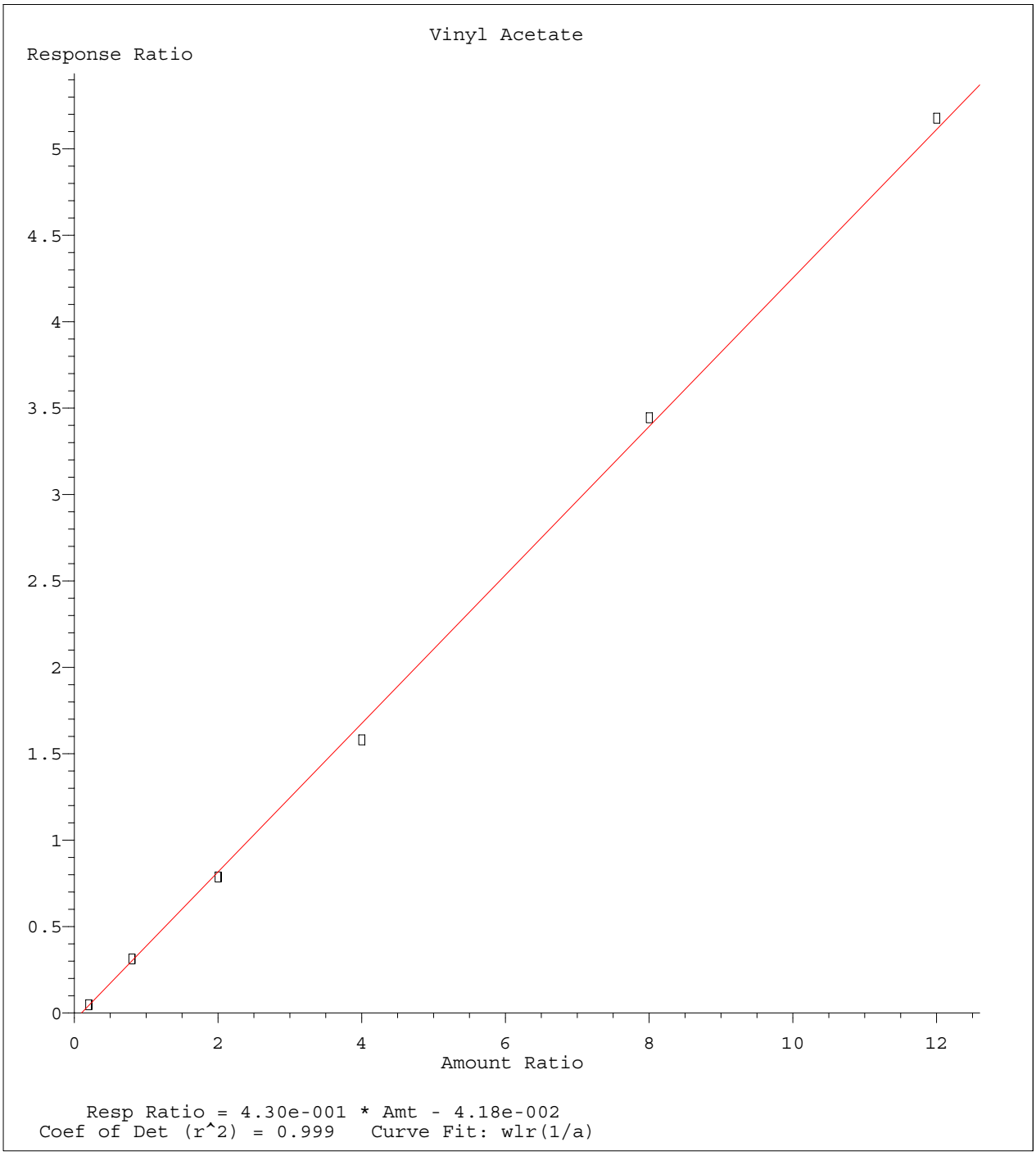

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

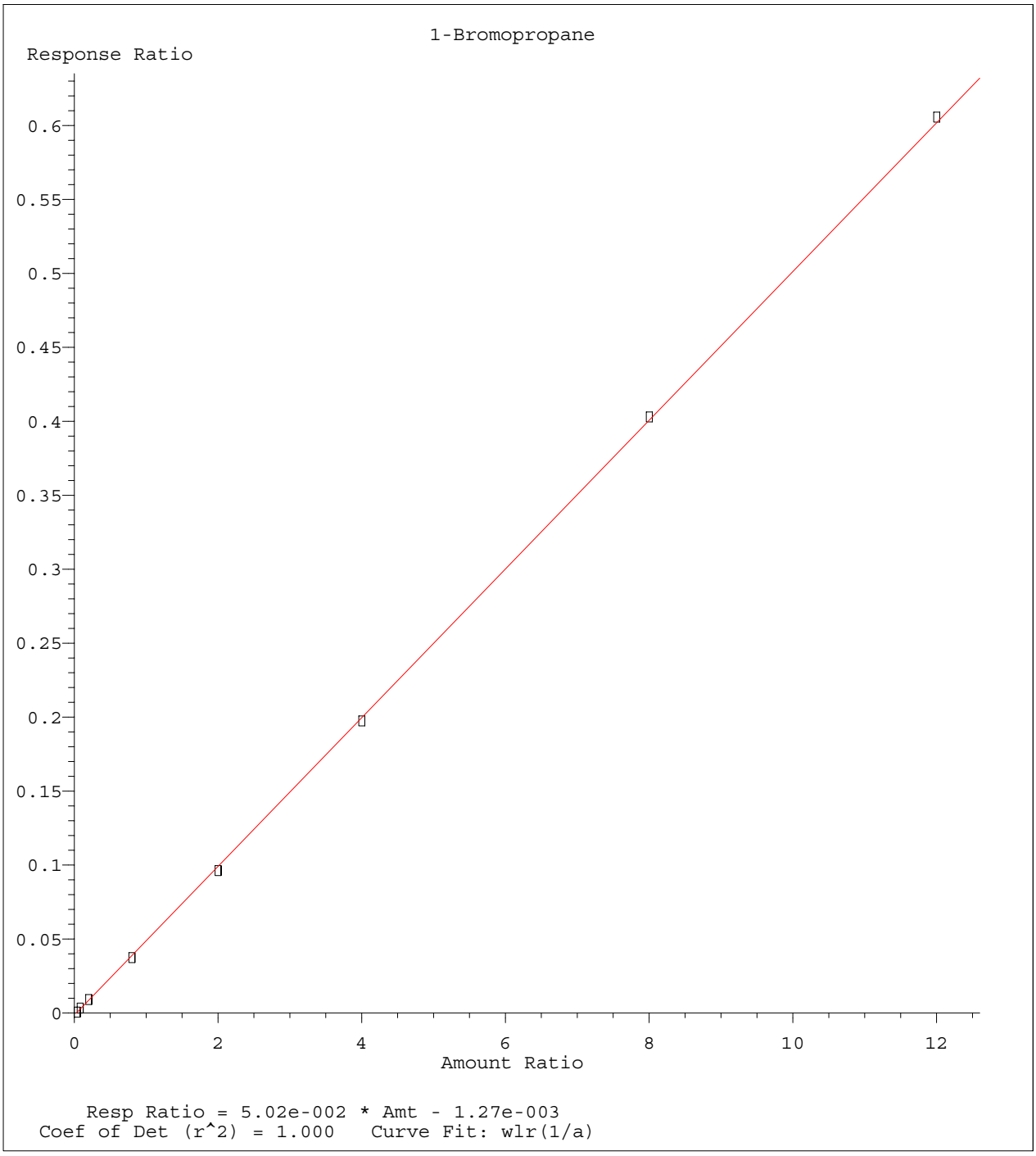

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

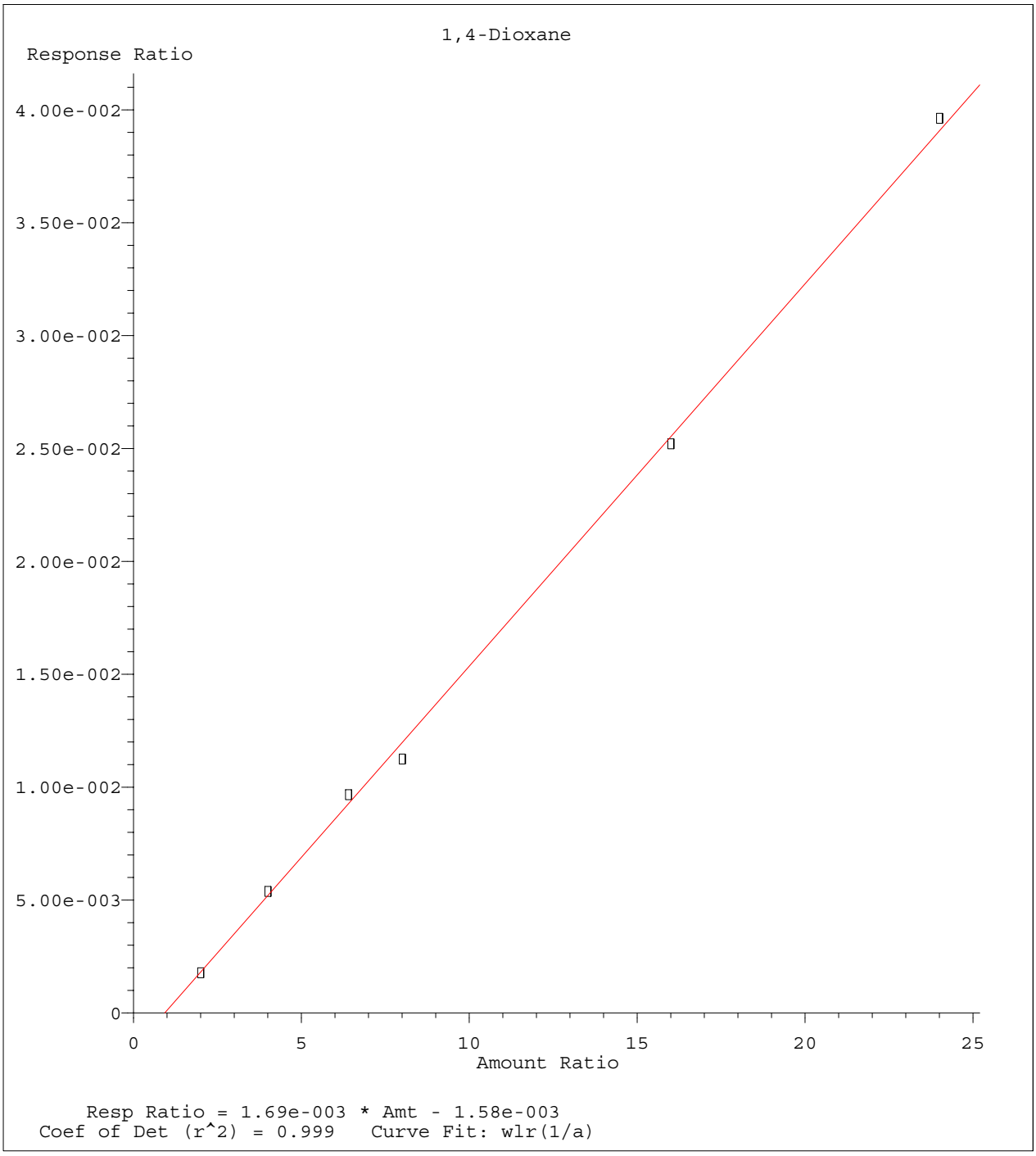

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

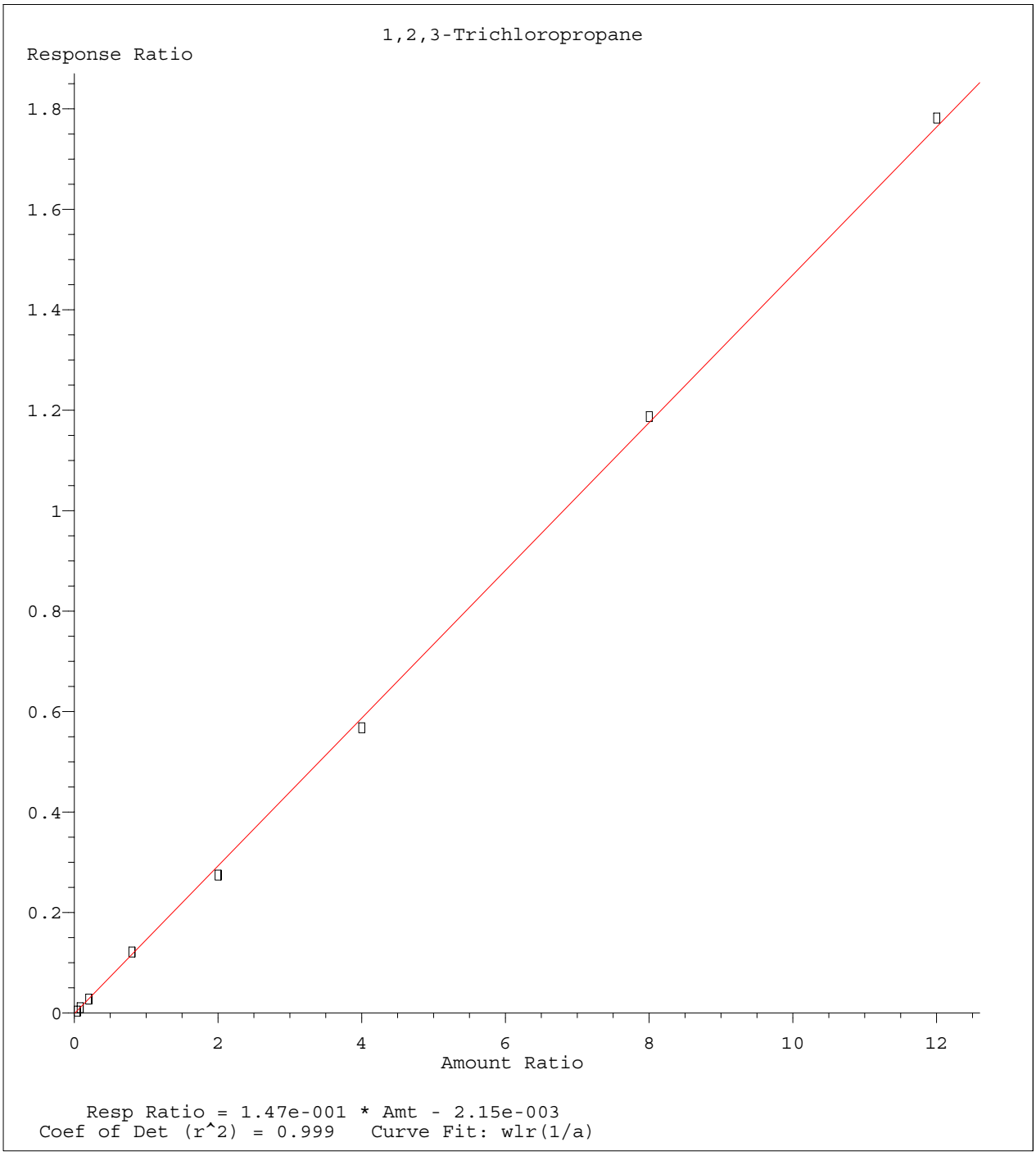

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

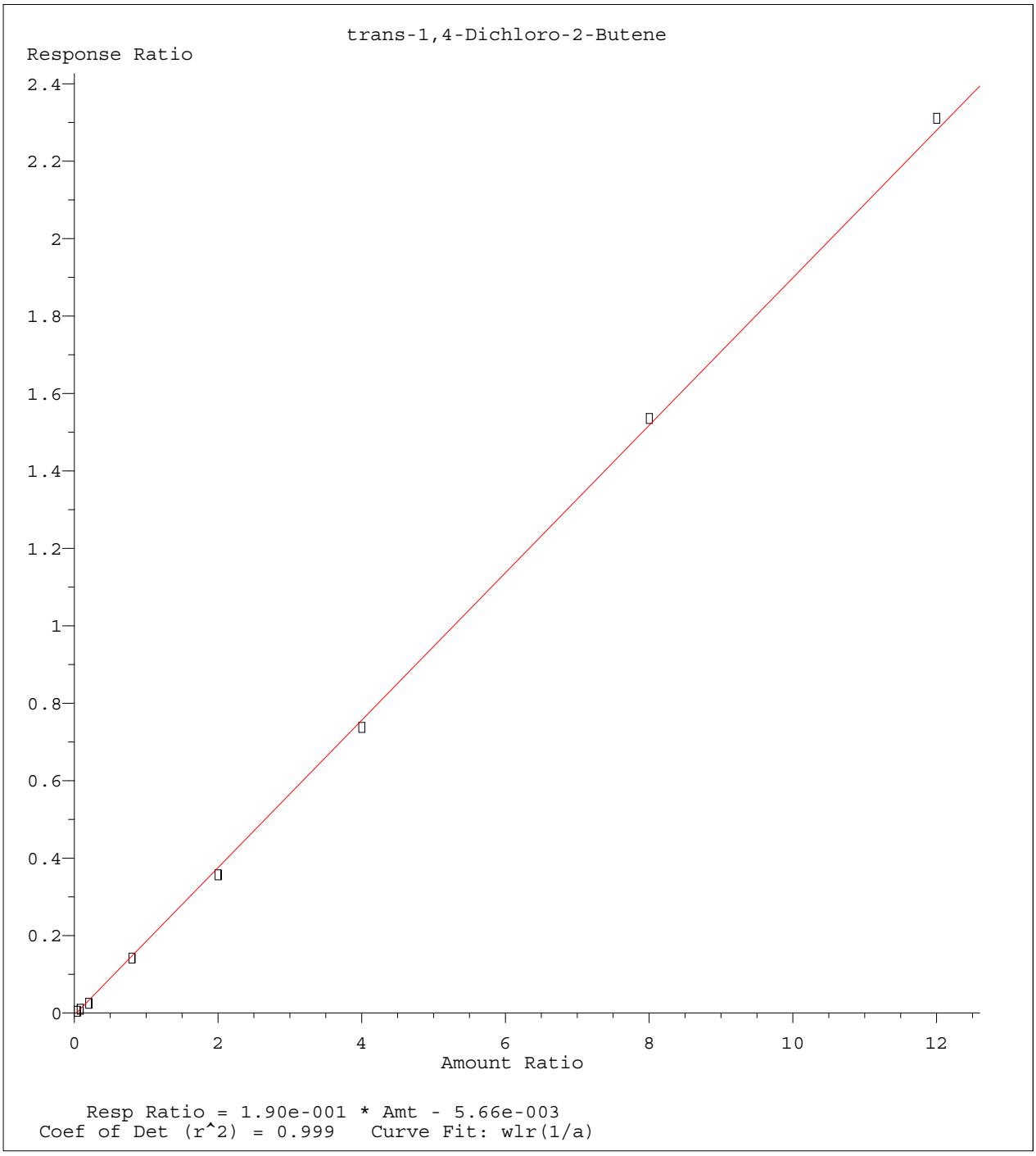

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

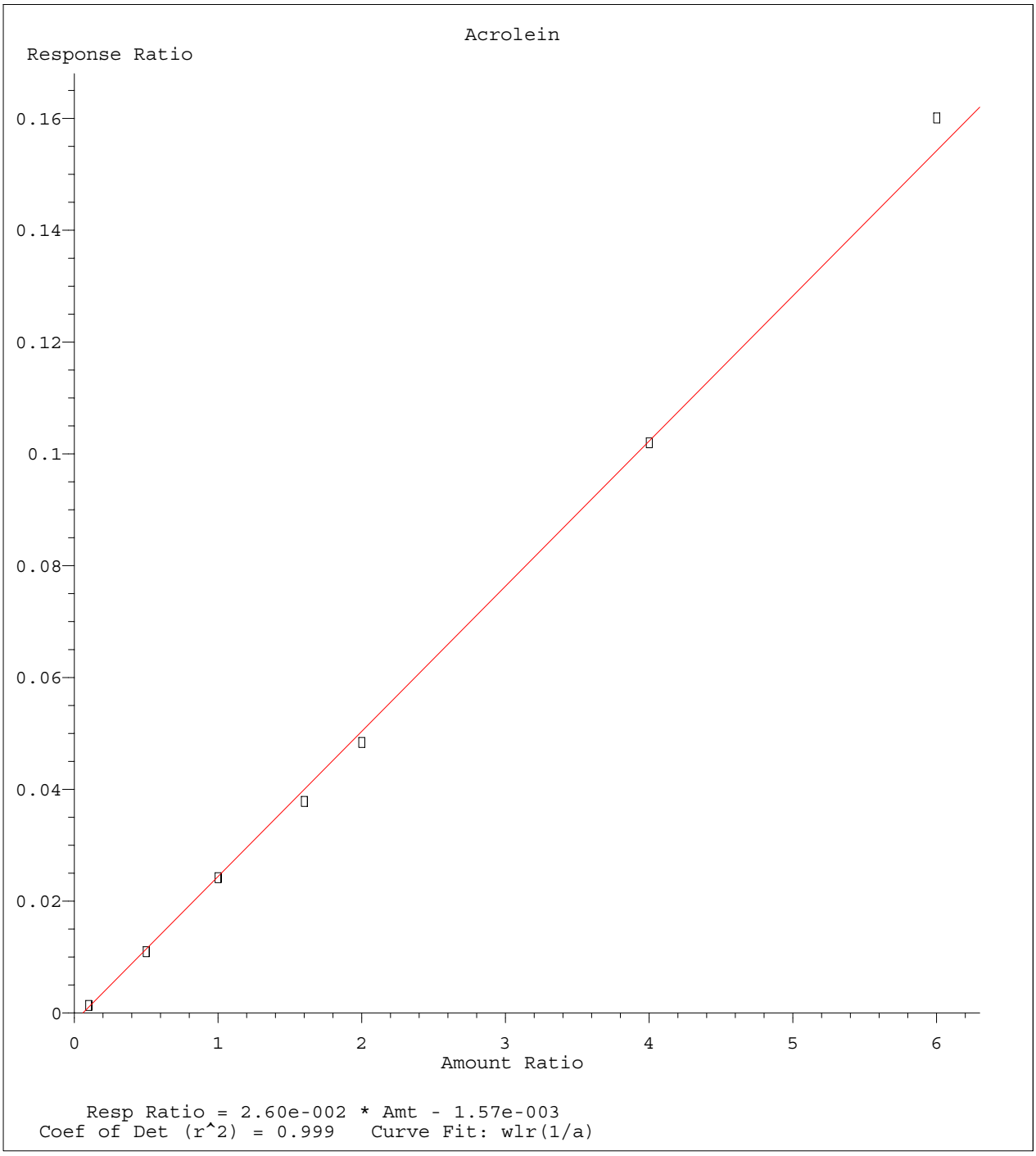

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:47:09 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	559172	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	461765	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	267551	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	155853	25.4675 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.88%		
43) 1,2-Dichloroethane-d4	10.23	65	160000	22.9299 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 91.72%		
57) Toluene-d8	12.47	98	531547	26.4930 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.96%		
78) p-Bromofluorobenzene	15.64	95	203747	24.7040 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.80%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	495777	56.5878 ug/L	98
3) Chloromethane	3.72	50	386673	55.1069 ug/L	100
4) Vinyl Chloride	3.95	62	326996	56.1165 ug/L	100
5) 1,3-Butadiene	3.99	54	212443	36.6650 ug/L	98
6) Bromomethane	4.84	94	202280	50.4885 ug/L	99
7) Chloroethane	5.00	64	220373	58.8601 ug/L	99
8) Trichlorofluoromethane	5.48	101	552017	47.5286 ug/L	99
9) Diethyl ether	6.01	59	453011	105.4639 ug/L	97
10) Isoprene	6.04	67	388108	54.2141 ug/L	93
11) Acrolein	6.23	56	56029	97.7296 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	292836	51.9609 ug/L	99
13) Acetone	6.35	43	65954	49.6723 ug/L	97
14) 1,1-Dichloroethene	6.55	61	486567	47.5319 ug/L	96
15) Tert-Butyl Alcohol	6.67	59	79387	216.1534 ug/L	96
16) Dimethyl Sulfide	6.81	62	290204	70.9875 ug/L	94
17) Iodomethane	7.06	142	176766	38.4128 ug/L	92
18) Methyl acetate	7.07	43	200985	48.7416 ug/L	98
19) Methylene Chloride	7.31	84	275442	51.9916 ug/L	91
20) Carbon Disulfide	7.35	76	765803	44.6859 ug/L	99
21) Acrylonitrile	7.49	53	93674	52.6181 ug/L	100
22) Methyl Tert Butyl Ether	7.52	73	687029	51.9942 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	295337	52.1295 ug/L	97
24) n-Hexane	7.82	57	420811	44.5959 ug/L	99
25) Diisopropyl ether	8.15	45	2449232	104.0201 ug/L	98
26) Vinyl Acetate	8.31	43	395913	43.6417 ug/L	99
27) 1,1-Dichloroethane	8.34	63	551372	48.5033 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1884917	98.3560 ug/L	99
29) 2-Butanone	8.87	43	101045	50.3380 ug/L	98
30) Propionitrile	8.99	54	62190	105.7785 ug/L	98
31) 2,2-Dichloropropane	9.09	77	405332	45.5727 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	332086	53.1618 ug/L	94
33) Chloroform	9.35	83	531122	47.5773 ug/L	100
34) 1-Bromopropane	9.48	122	76460	68.6656 ug/L	96
35) Bromochloromethane	9.57	130	199933	53.8923 ug/L	96
36) Tetrahydrofuran	9.60	42	131835	93.0068 ug/L	96
38) 1,1,1-Trichloroethane	9.85	97	527857	48.0501 ug/L	99
39) Cyclohexane	9.88	56	601180	50.2142 ug/L	99
40) 1,1-Dichloropropene	10.04	75	393057	50.1107 ug/L	100
41) Carbon Tetrachloride	10.18	117	507914	47.3479 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	1406419	105.6143 ug/L	97

(#) = qualifier out of range (m) = manual integration
11M11848.D 8260WT.M Sat May 14 18:47:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:47:09 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	434117	47.8802	ug/L	99
45)	Benzene	10.38	78	1098993	51.1808	ug/L	100
46)	Trichloroethene	11.08	130	365193	52.3242	ug/L	99
47)	Methylcyclohexane	11.17	83	450581	52.3110	ug/L	97
48)	1,2-Dichloropropane	11.29	63	313901	52.8102	ug/L	94
49)	1,4-Dioxane	11.56	88	6366	191.2043	ug/L	95
50)	Bromodichloromethane	11.57	83	413329	49.5339	ug/L	99
51)	Dibromomethane	11.65	93	148822	48.0471	ug/L	97
52)	2-Chloroethyl Vinyl Ether	11.84	63	152083	51.9140	ug/L	99
53)	4-Methyl-2-Pentanone	11.87	58	86849	52.5623	ug/L	99
54)	cis-1,3-Dichloropropene	12.17	75	480729	57.5993	ug/L	99
55)	Dimethyl Disulfide	12.42	79	261188	52.0055	ug/L	96
58)	Toluene	12.56	91	1256481	53.7500	ug/L	100
59)	Ethyl Methacrylate	12.65	69	284944	57.0854	ug/L	90
60)	trans-1,3-Dichloropropene	12.73	75	391013	52.1118	ug/L	97
61)	1,1,2-Trichloroethane	12.93	97	218717	52.7643	ug/L	99
62)	2-Hexanone	12.86	43	158873	52.1857	ug/L	98
63)	1,3-Dichloropropane	13.21	76	374611	56.2767	ug/L	95
64)	Tetrachloroethene	13.34	164	283714	52.1906	ug/L	97
65)	Dibromochloromethane	13.59	129	332092	52.5252	ug/L	99
66)	1,2-Dibromoethane	13.82	107	218604	52.6373	ug/L	99
67)	1-Chlorohexane	13.89	91	420217	54.5237	ug/L	92
68)	Chlorobenzene	14.29	112	912650	53.2936	ug/L	100
69)	1,1,1,2-Tetrachloroethane	14.32	131	353663	51.0389	ug/L	98
70)	Ethylbenzene	14.31	106	460093	52.3943	ug/L	99
71)	m-,p-Xylene	14.39	106	1144896	107.2445	ug/L	98
72)	o-Xylene	14.92	106	568307	54.7003	ug/L	100
73)	Styrene	14.95	104	943635	54.9735	ug/L	98
74)	Bromoform	15.43	173	190959	49.8328	ug/L	99
75)	Isopropylbenzene	15.31	105	1490416	54.2449	ug/L	100
77)	1,1,2,2-Tetrachloroethane	15.52	83	228913	54.9422	ug/L	100
79)	1,2,3-Trichloropropane	15.70	110	78385	50.1407	ug/L	92
80)	trans-1,4-Dichloro-2-Buten	15.74	53	73730	36.9129	ug/L	62
81)	n-Propylbenzene	15.79	91	1753049	56.5769	ug/L	99
82)	Bromobenzene	15.92	156	419932	51.6479	ug/L	99
83)	1,3,5-Trimethylbenzene	15.95	105	1303495	55.1277	ug/L	99
84)	2-Chlorotoluene	16.05	91	1145029	52.7599	ug/L	99
85)	4-Chlorotoluene	16.09	91	1077116	55.4064	ug/L	99
86)	a-Methylstyrene	16.34	118	741671	59.4584	ug/L	99
87)	tert-Butylbenzene	16.40	134	283244	56.5417	ug/L	95
88)	1,2,4-Trimethylbenzene	16.44	105	1296091	53.8297	ug/L	99
89)	sec-Butylbenzene	16.65	105	1586978	55.8961	ug/L	100
90)	p-Isopropyltoluene	16.79	119	1426648	54.7069	ug/L	99
91)	1,3-Dichlorobenzene	16.98	146	827515	52.6969	ug/L	98
92)	1,4-Dichlorobenzene	17.10	146	844174	53.0354	ug/L	98
93)	n-Butylbenzene	17.28	91	1238500	53.8957	ug/L	99
94)	1,2-Dichlorobenzene	17.57	146	766416	53.5772	ug/L	98
95)	1,2-Dibromo-3-Chloropropan	18.49	75	45158	48.1046	ug/L	97
96)	1,2,4-Trichlorobenzene	19.55	180	580278	55.4365	ug/L	99
97)	Hexachlorobutadiene	19.69	225	257859	55.9180	ug/L	98
98)	Naphthalene	19.90	128	993390	51.1296	ug/L	100
99)	1,2,3-Trichlorobenzene	20.19	180	519374	54.0642	ug/L	99

(#) = qualifier out of range (m) = manual integration
11M11848.D 8260WT.M Sat May 14 18:47:10 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:47 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

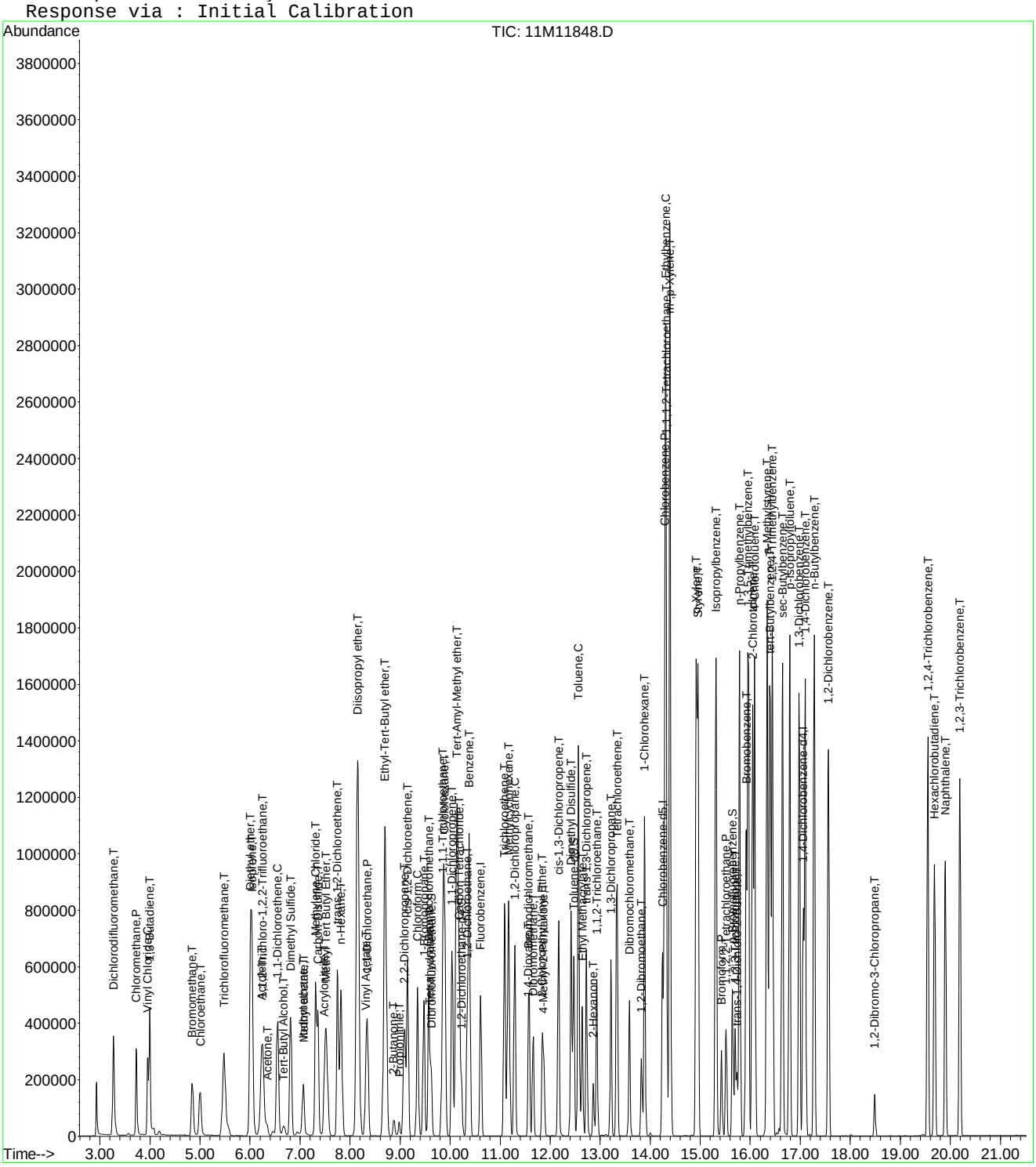

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	107	0.00
2	T	Dichlorodifluoromethane	50.0000	56.5878	-13.2	119	0.00
3	P	Chloromethane	50.0000	55.1069	-10.2	134	0.00
4	C	Vinyl Chloride	50.0000	56.1165	-12.2	125	-0.01
5	T	1,3-Butadiene	50.0000	36.6650	26.7#	76	-0.01
6	T	Bromomethane	50.0000	50.4885	-1.0	117	-0.01
7	T	Chloroethane	50.0000	58.8601	-17.7	131	0.00
8	T	Trichlorofluoromethane	50.0000	47.5286	4.9	106	0.00
9	T	Diethyl ether	100.0000	105.4639	-5.5	116	0.00
10	T	Isoprene	50.0000	54.2141	-8.4	117	0.00
11	T	Acrolein	50.0000	97.7296	-95.5#	222	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	51.9609	-3.9	115	0.00
13	T	Acetone	50.0000	49.6723	0.7	110	0.01
14	C	1,1-Dichloroethene	50.0000	47.5320	4.9	106	-0.01
15	T	Tert-Butyl Alcohol	200.0000	216.1534	-8.1	114	0.01
16	T	Dimethyl Sulfide	50.0000	70.9875	-42.0#	150	0.00
17	T	Iodomethane	50.0000	38.4128	23.2	82	0.00
18	T	Methyl acetate	50.0000	48.7416	2.5	108	0.01
19	T	Methylene Chloride	50.0000	51.9916	-4.0	118	0.00
20	T	Carbon Disulfide	50.0000	44.6859	10.6	94	-0.01
21	T	Acrylonitrile	50.0000	52.6181	-5.2	110	0.00
22	T	Methyl Tert Butyl Ether	50.0000	51.9942	-4.0	113	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.1295	-4.3	117	0.00
24	T	n-Hexane	50.0000	44.5959	10.8	94	0.00
25	T	Diisopropyl ether	100.0000	104.0201	-4.0	112	0.00
26	T	Vinyl Acetate	50.0000	43.6417	12.7	96	0.00
27	P	1,1-Dichloroethane	50.0000	48.5033	3.0	107	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.3560	1.6	106	0.00
29	T	2-Butanone	50.0000	50.3381	-0.7	111	0.00
30	T	Propionitrile	100.0000	105.7786	-5.8	110	0.01
31	T	2,2-Dichloropropane	50.0000	45.5727	8.9	101	0.00
32	T	cis-1,2-Dichloroethene	50.0000	53.1618	-6.3	118	0.00
33	C	Chloroform	50.0000	47.5773	4.8	108	0.00
34	T	1-Bromopropane	50.0000	68.6656	-37.3#	152	0.00
35	T	Bromochloromethane	50.0000	53.8923	-7.8	111	0.00
36	T	Tetrahydrofuran	100.0000	93.0068	7.0	103	0.00
37	S	Dibromofluoromethane	25.0000	25.4675	-1.9	111	0.00
38	T	1,1,1-Trichloroethane	50.0000	48.0501	3.9	106	0.00
39	T	Cyclohexane	50.0000	50.2142	-0.4	105	0.00
40	T	1,1-Dichloropropene	50.0000	50.1107	-0.2	111	0.00
41	T	Carbon Tetrachloride	50.0000	47.3479	5.3	103	0.00
42	T	Tert-Amyl-Methyl ether	100.0000	105.6143	-5.6	115	0.00
43	S	1,2-Dichloroethane-d4	25.0000	22.9299	8.3	101	0.00
44	T	1,2-Dichloroethane	50.0000	47.8802	4.2	104	0.00
45	T	Benzene	50.0000	51.1809	-2.4	116	0.00
46	T	Trichloroethene	50.0000	52.3242	-4.6	119	-0.01
47	T	Methylcyclohexane	50.0000	52.3110	-4.6	108	0.00
48	C	1,2-Dichloropropane	50.0000	52.8102	-5.6	117	0.00
49	T	1,4-Dioxane	200.0000	191.2043	4.4	109	0.01
50	T	Bromodichloromethane	50.0000	49.5339	0.9	107	0.00
51	T	Dibromomethane	50.0000	48.0471	3.9	104	0.00
52	T	2-Chloroethyl Vinyl Ether	50.0000	51.9140	-3.8	114	0.00
53	T	4-Methyl-2-Pentanone	50.0000	52.5623	-5.1	115	0.00
54	T	cis-1,3-Dichloropropene	50.0000	57.5993	-15.2	122	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	50.0000	52.0055	-4.0	110	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	105	0.00
57	S	Toluene-d8	25.0000	26.4930	-6.0	115	0.00
58	C	Toluene	50.0000	53.7500	-7.5	115	0.00
59	T	Ethyl Methacrylate	50.0000	57.0854	-14.2	114	0.00
60	T	trans-1,3-Dichloropropene	50.0000	52.1118	-4.2	107	0.00
61	T	1,1,2-Trichloroethane	50.0000	52.7643	-5.5	113	0.00
62	T	2-Hexanone	50.0000	52.1857	-4.4	110	0.00
63	T	1,3-Dichloropropane	50.0000	56.2767	-12.6	118	0.00
64	T	Tetrachloroethene	50.0000	52.1906	-4.4	113	0.00
65	T	Dibromochloromethane	50.0000	52.5251	-5.1	107	0.00
66	T	1,2-Dibromoethane	50.0000	52.6373	-5.3	111	0.00
67	T	1-Chlorohexane	50.0000	54.5237	-9.0	112	0.00
68	P	Chlorobenzene	50.0000	53.2936	-6.6	114	0.00
69	T	1,1,1,2-Tetrachloroethane	50.0000	51.0388	-2.1	109	0.00
70	C	Ethylbenzene	50.0000	52.3943	-4.8	113	0.00
71	T	m-,p-Xylene	100.0000	107.2445	-7.2	115	0.00
72	T	o-Xylene	50.0000	54.7003	-9.4	115	0.00
73	T	Styrene	50.0000	54.9735	-9.9	113	0.00
74	P	Bromoform	50.0000	49.8327	0.3	104	0.00
75	T	Isopropylbenzene	50.0000	54.2449	-8.5	114	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	101	0.00
77	P	1,1,2,2-Tetrachloroethane	50.0000	54.9422	-9.9	110	0.00
78	S	p-Bromofluorobenzene	25.0000	24.7040	1.2	108	0.00
79	T	1,2,3-Trichloropropane	50.0000	50.1407	-0.3	108	0.00
80	T	trans-1,4-Dichloro-2-Butene	50.0000	36.9129	26.2#	78	0.00
81	T	n-Propylbenzene	50.0000	56.5769	-13.2	115	0.00
82	T	Bromobenzene	50.0000	51.6479	-3.3	111	0.00
83	T	1,3,5-Trimethylbenzene	50.0000	55.1277	-10.3	114	-0.01
84	T	2-Chlorotoluene	50.0000	52.7599	-5.5	112	0.00
85	T	4-Chlorotoluene	50.0000	55.4064	-10.8	116	0.00
86	T	a-Methylstyrene	50.0000	59.4584	-18.9	114	0.00
87	T	tert-Butylbenzene	50.0000	56.5417	-13.1	117	0.00
88	T	1,2,4-Trimethylbenzene	50.0000	53.8297	-7.7	110	0.00
89	T	sec-Butylbenzene	50.0000	55.8961	-11.8	114	0.00
90	T	p-Isopropyltoluene	50.0000	54.7069	-9.4	111	0.00
91	T	1,3-Dichlorobenzene	50.0000	52.6969	-5.4	112	0.00
92	T	1,4-Dichlorobenzene	50.0000	53.0354	-6.1	114	0.00
93	T	n-Butylbenzene	50.0000	53.8957	-7.8	110	0.00
94	T	1,2-Dichlorobenzene	50.0000	53.5772	-7.2	112	0.00
95	T	1,2-Dibromo-3-Chloropropane	50.0000	48.1046	3.8	105	0.00
96	T	1,2,4-Trichlorobenzene	50.0000	55.4365	-10.9	113	0.00
97	T	Hexachlorobutadiene	50.0000	55.9180	-11.8	118	0.00
98	T	Naphthalene	50.0000	51.1296	-2.3	103	0.00
99	T	1,2,3-Trichlorobenzene	50.0000	54.0642	-8.1	114	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11848.D 8260WT.M Sat May 14 18:47:20 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:40:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	823748	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	571926	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	299321	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	12.68	98	567	0.0189 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.08%#	
80) p-Bromofluorobenzene	16.08	95	313	0.0253 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	3836	0.2778 ug/L	91
3) Chloromethane	3.62	50	3658	0.4537 ug/L	95
4) Vinyl Chloride	3.85	62	2516	0.2630 ug/L #	58
5) 1,3-Butadiene	3.91	54	2079	0.2592 ug/L	71
6) Bromomethane	4.73	94	1152	0.6530 ug/L #	55
7) Chloroethane	4.90	64	1112	0.2113 ug/L #	72
8) Trichlorofluoromethane	5.35	101	2706	0.1520 ug/L #	53
10) Isoprene	5.93	67	2147	0.1987 ug/L	85
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1746	0.2087 ug/L	97
14) 1,1-Dichloroethene	6.48	61	3332	0.2501 ug/L	75
16) Dimethyl Sulfide	6.73	62	1099	0.2308 ug/L	95
19) Methylene Chloride	7.26	84	3414	0.4028 ug/L	88
20) Carbon Disulfide	7.30	76	10739	0.3853 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	4927	0.2686 ug/L #	60
23) trans-1,2-Dichloroethene	7.70	61	3879	0.3170 ug/L	98
24) n-Hexane	7.78	57	2794	0.3075 ug/L	85
26) Vinyl Acetate	8.30	43	1973	0.2259 ug/L #	70
27) 1,1-Dichloroethane	8.33	63	4881	0.3212 ug/L #	88
31) 2,2-Dichloropropane	9.11	77	4966	0.3101 ug/L	89
32) cis-1,2-Dichloroethene	9.17	96	2958	0.3128 ug/L	87
33) Chloroform	9.37	83	5564	0.3101 ug/L	95
34) 1-Bromopropane	9.52	122	210	0.1551 ug/L #	1
35) Bromochloromethane	9.60	130	1386	0.2858 ug/L	76
36) Tetrahydrofuran	9.62	42	1849	2.0617 ug/L #	60
38) 1,1,1-Trichloroethane	9.91	97	4978	0.2921 ug/L	95
39) Cyclohexane	9.93	56	3120	0.2644 ug/L #	85
40) 1,1-Dichloropropene	10.11	75	3779	0.2909 ug/L	97
42) Carbon Tetrachloride	10.24	117	4835	0.3194 ug/L #	74
45) 1,2-Dichloroethane	10.43	62	3295	0.2853 ug/L #	81
46) Benzene	10.46	78	11279	0.3333 ug/L	93
47) Trichloroethene	11.20	130	2410	0.2670 ug/L	97
48) Methylcyclohexane	11.31	83	3936	0.2871 ug/L	84
49) 1,2-Dichloropropane	11.42	63	2136	0.2836 ug/L	88
50) Bromodichloromethane	11.73	83	3767	0.2845 ug/L #	91
52) Dibromomethane	11.82	93	700	0.1570 ug/L #	59
53) 2-Chloroethyl Vinyl Ether	12.02	63	847	0.2616 ug/L #	47
55) cis-1,3-Dichloropropene	12.36	75	4763	0.3535 ug/L	84
56) Dimethyl Disulfide	12.63	79	1647	0.2290 ug/L	82
59) Toluene	12.78	91	11513	0.3243 ug/L	92
60) Ethyl Methacrylate	12.89	69	1631	0.2392 ug/L #	64

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:40:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
62)	trans-1,3-Dichloropropene	12.96	75	3626	0.3047 ug/L		82
63)	1,1,2-Trichloroethane	13.18	97	1409	0.2515 ug/L		98
65)	1,3-Dichloropropane	13.49	76	2584	0.2590 ug/L		93
66)	Tetrachloroethene	13.61	164	2678	0.3520 ug/L	#	75
67)	Dibromochloromethane	13.87	129	2126	0.2599 ug/L		79
68)	1,2-Dibromoethane	14.12	107	1895	0.3394 ug/L		91
69)	1-Chlorohexane	14.21	91	3835	0.3164 ug/L		99
70)	Chlorobenzene	14.62	112	7968	0.3328 ug/L		88
71)	1,1,1,2-Tetrachloroethane	14.67	131	2872	0.3096 ug/L		87
72)	Ethylbenzene	14.64	106	3844	0.2934 ug/L		81
73)	m-,p-Xylene	14.75	106	10447	0.6799 ug/L		96
74)	o-Xylene	15.31	106	4577	0.3047 ug/L		97
75)	Styrene	15.35	104	7545	0.3062 ug/L		95
76)	Bromoform	15.84	173	1301	0.2681 ug/L	#	51
77)	Isopropylbenzene	15.74	105	13119	0.3287 ug/L		90
79)	1,1,2,2-Tetrachloroethane	15.96	83	1714	0.2853 ug/L	#	85
83)	n-Propylbenzene	16.24	91	15676	0.3357 ug/L		92
84)	Bromobenzene	16.38	156	2859	0.2977 ug/L		90
85)	1,3,5-Trimethylbenzene	16.43	105	10873	0.3196 ug/L		99
86)	2-Chlorotoluene	16.52	91	11133	0.3415 ug/L		96
87)	4-Chlorotoluene	16.56	91	10305	0.3499 ug/L		97
88)	a-Methylstyrene	16.83	118	4090	0.2534 ug/L		86
89)	tert-Butylbenzene	16.90	134	1734	0.2606 ug/L		72
90)	1,2,4-Trimethylbenzene	16.95	105	10734	0.3069 ug/L		89
91)	sec-Butylbenzene	17.16	105	13749	0.3436 ug/L		97
92)	p-Isopropyltoluene	17.32	119	10847	0.3192 ug/L		95
93)	1,3-Dichlorobenzene	17.52	146	6023	0.3257 ug/L		99
94)	1,4-Dichlorobenzene	17.65	146	6152	0.3299 ug/L	#	60
95)	n-Butylbenzene	17.85	91	11161	0.3323 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	5711	0.3472 ug/L		92
98)	1,2,4-Trichlorobenzene	20.29	180	4203	0.3418 ug/L		91
99)	Hexachlorobutadiene	20.43	225	1894	0.3297 ug/L		84
100)	Naphthalene	20.65	128	6039	0.3306 ug/L		91
101)	1,2,3-Trichlorobenzene	20.96	180	3279	0.3161 ug/L		86

(#) = qualifier out of range (m) = manual integration
8M412220.D 8260WT.M Tue May 17 11:40:55 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2778	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.4537	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.2630	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	0.2592	0.0	100	0.03
6	T	Bromomethane	-1.0000	0.9911	0.0	100	0.00
7	T	Chloroethane	-1.0000	0.2113	0.0	100	0.00
8	T	Trichlorofluoromethane	-1.0000	0.1520	0.0	100	-0.02
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.90#
10	T	Isoprene	-1.0000	0.1987	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.13#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2087	0.0	100	0.00
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	-1.0000	0.2501	0.0	100	0.02
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.58#
16	T	Dimethyl Sulfide	-1.0000	0.2308	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.0000	0.0	0	-7.00#
19	T	Methylene Chloride	-1.0000	0.4028	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.3853	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.43#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2686	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	-1.0000	0.3170	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.3075	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.2259	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.3212	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.98#
31	T	2,2-Dichloropropane	-1.0000	0.3101	0.0	100	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.3128	0.0	100	0.00
33	C	Chloroform	0.3000	0.3101	-3.4	100	0.00
34		1-Bromopropane	-1.0000	0.1551	0.0	100	0.00
35	T	Bromochloromethane	-1.0000	0.2858	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	2.0617	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	-1.0000	0.2921	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.2644	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.2909	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	-1.0000	0.3194	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	-1.0000	0.2853	0.0	100	0.00
46	T	Benzene	-1.0000	0.3333	0.0	100	0.00
47	T	Trichloroethene	-1.0000	0.2670	0.0	100	-0.01
48	T	Methylcyclohexane	-1.0000	0.2871	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2836	0.0	100	0.00
50	T	Bromodichloromethane	-1.0000	0.2845	0.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	-1.0000	0.1570	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2616	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.05#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.3535	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2290	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0189	0.0	100	0.00
59	C	Toluene	-1.0000	0.3243	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2392	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3047	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.2515	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	-1.0000	0.2590	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.3520	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.2599	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.3394	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.3164	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.3328	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.3096	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.2934	0.0	100	-0.01
73	T	m-,p-Xylene	-1.0000	0.6799	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.3047	0.0	100	0.00
75	T	Styrene	-1.0000	0.3062	0.0	100	0.00
76	P	Bromoform	-1.0000	0.2681	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.3287	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2853	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0253	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.1103	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	-1.0000	0.3357	0.0	100	0.00
84	T	Bromobenzene	0.3000	0.2977	0.8	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.3196	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.3415	0.0	100	0.00
87	T	4-Chlorotoluene	-1.0000	0.3499	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2534	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.2606	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.3069	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3436	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.3192	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.3257	0.0	100	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.3299	-10.0	100	0.00
95	T	n-Butylbenzene	-1.0000	0.3323	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.3472	-15.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.3418	0.0	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.3297	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.3306	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.3161	-5.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412220.D 8260WT.M Sat May 14 18:03:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	801173	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	557498	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	293108	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
80) p-Bromofluorobenzene	16.08	95	343	0.0286 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	5478	0.3262 ug/L	79
3) Chloromethane	3.63	50	3930	0.2484 ug/L	85
4) Vinyl Chloride	3.84	62	3512	0.3288 ug/L	97
5) 1,3-Butadiene	3.90	54	2479	0.2375 ug/L #	75
6) Bromomethane	4.73	94	1343	0.9497 ug/L	85
7) Chloroethane	4.90	64	2219	0.3174 ug/L #	43
8) Trichlorofluoromethane	5.36	101	6974	0.3289 ug/L #	93
10) Isoprene	5.94	67	4288	0.3952 ug/L #	62
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	3168	0.3263 ug/L #	40
14) 1,1-Dichloroethene	6.47	61	5431	0.2882 ug/L	92
16) Dimethyl Sulfide	6.74	62	1708	0.2453 ug/L	64
19) Methylene Chloride	7.24	84	3785	0.4239 ug/L #	43
20) Carbon Disulfide	7.29	76	12437	0.4565 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	6580	0.3336 ug/L #	76
23) trans-1,2-Dichloroethene	7.71	61	4990	0.2928 ug/L	96
24) n-Hexane	7.79	57	3110	0.2011 ug/L	99
26) Vinyl Acetate	8.31	43	2753	0.1566 ug/L	100
27) 1,1-Dichloroethane	8.32	63	5655	0.2774 ug/L #	92
31) 2,2-Dichloropropane	9.10	77	6035	0.3360 ug/L	82
32) cis-1,2-Dichloroethene	9.16	96	3837	0.3762 ug/L	74
33) Chloroform	9.37	83	7267	0.3842 ug/L	100
34) 1-Bromopropane	9.50	122	234	0.1456 ug/L #	1
35) Bromochloromethane	9.60	130	1674	0.3137 ug/L	62
36) Tetrahydrofuran	9.62	42	447	0.2146 ug/L #	41
38) 1,1,1-Trichloroethane	9.91	97	6304	0.3305 ug/L	90
39) Cyclohexane	9.94	56	4658	0.2238 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	5172	0.3768 ug/L	80
42) Carbon Tetrachloride	10.25	117	5692	0.3172 ug/L	95
45) 1,2-Dichloroethane	10.43	62	4443	0.2796 ug/L #	63
46) Benzene	10.46	78	14456	0.4134 ug/L #	77
47) Trichloroethene	11.21	130	3659	0.3626 ug/L	98
48) Methylcyclohexane	11.29	83	5025	0.3562 ug/L	84
49) 1,2-Dichloropropane	11.42	63	3060	0.3007 ug/L	98
50) Bromodichloromethane	11.73	83	4734	0.3343 ug/L #	93
52) Dibromomethane	11.82	93	1805	0.3767 ug/L	84
55) cis-1,3-Dichloropropene	12.36	75	5008	0.3514 ug/L	90
56) Dimethyl Disulfide	12.63	79	1921	0.2573 ug/L	85
59) Toluene	12.78	91	14742	0.4416 ug/L	98
60) Ethyl Methacrylate	12.90	69	2062	0.3292 ug/L	66
62) trans-1,3-Dichloropropene	12.96	75	3693	0.3171 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
63)	1,1,2-Trichloroethane	13.18	97	2326	0.4391 ug/L		70
65)	1,3-Dichloropropane	13.49	76	3163	0.3219 ug/L		88
66)	Tetrachloroethene	13.61	164	3164	0.4185 ug/L		93
67)	Dibromochloromethane	13.87	129	3113	0.3727 ug/L		86
68)	1,2-Dibromoethane	14.12	107	2076	0.3760 ug/L		90
69)	1-Chlorohexane	14.21	91	4746	0.4174 ug/L		80
70)	Chlorobenzene	14.62	112	9180	0.3960 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.66	131	3501	0.3876 ug/L		95
72)	Ethylbenzene	14.65	106	5348	0.4066 ug/L		84
73)	m-,p-Xylene	14.75	106	13269	0.8757 ug/L		89
74)	o-Xylene	15.31	106	6019	0.3943 ug/L		97
75)	Styrene	15.35	104	9370	0.3849 ug/L		95
76)	Bromoform	15.83	173	1198	0.2500 ug/L	#	76
77)	Isopropylbenzene	15.73	105	16528	0.4270 ug/L		92
79)	1,1,2,2-Tetrachloroethane	15.96	83	1999	0.3419 ug/L	#	83
83)	n-Propylbenzene	16.25	91	19410	0.4297 ug/L		95
84)	Bromobenzene	16.37	156	3319	0.3524 ug/L		75
85)	1,3,5-Trimethylbenzene	16.42	105	13794	0.4127 ug/L		95
86)	2-Chlorotoluene	16.51	91	13678	0.4729 ug/L		90
87)	4-Chlorotoluene	16.56	91	12572	0.4219 ug/L		98
88)	a-Methylstyrene	16.84	118	5739	0.3485 ug/L		96
89)	tert-Butylbenzene	16.90	134	2254	0.3403 ug/L		55
90)	1,2,4-Trimethylbenzene	16.95	105	13859	0.4051 ug/L		90
91)	sec-Butylbenzene	17.17	105	17612	0.4382 ug/L		90
92)	p-Isopropyltoluene	17.32	119	13616	0.3968 ug/L		90
93)	1,3-Dichlorobenzene	17.52	146	6961	0.3724 ug/L		86
94)	1,4-Dichlorobenzene	17.64	146	7149	0.3832 ug/L	#	1
95)	n-Butylbenzene	17.85	91	15223	0.4664 ug/L		91
96)	1,2-Dichlorobenzene	18.14	146	6129	0.3742 ug/L		92
98)	1,2,4-Trichlorobenzene	20.28	180	5035	0.3969 ug/L		97
99)	Hexachlorobutadiene	20.44	225	2420	0.4122 ug/L		83
100)	Naphthalene	20.65	128	7474	0.3874 ug/L	#	84
101)	1,2,3-Trichlorobenzene	20.96	180	4378	0.4056 ug/L	#	78

(#) = qualifier out of range (m) = manual integration
8M412221.D 8260WT.M Fri May 13 14:20:39 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

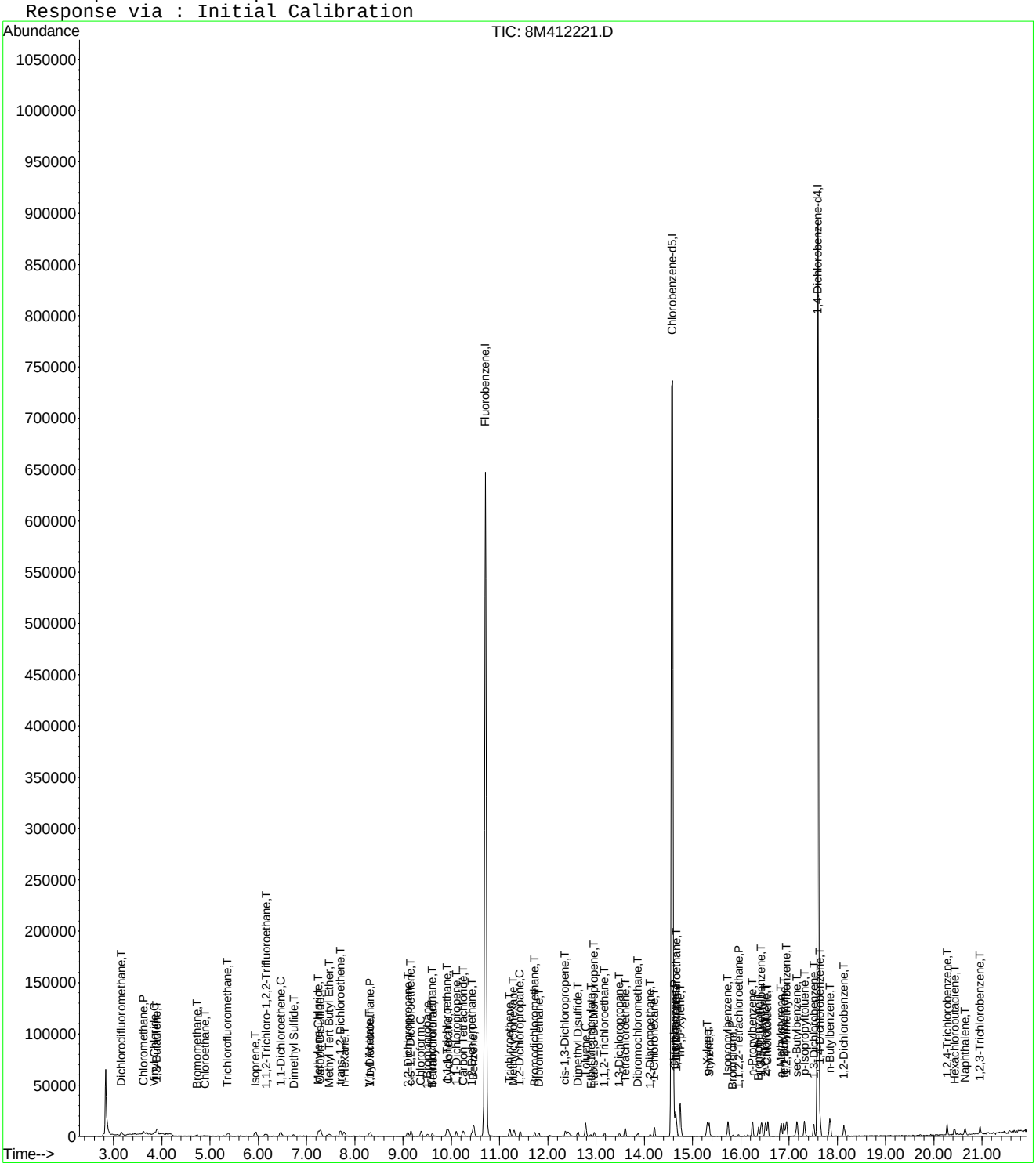

8M412221.D 8260WT.M Fri May 13 14:20:40 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	0.4000	0.4078	-2.0	100	0.00
3	P	Chloromethane	-1.0000	0.5012	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.3775	5.6	100	0.00
5	T	1,3-Butadiene	-1.0000	0.3178	0.0	100	0.02
6	T	Bromomethane	-1.0000	1.0253	0.0	100	0.00
7	T	Chloroethane	0.4000	0.4335	-8.4	100	0.00
8	T	Trichlorofluoromethane	0.4000	0.4029	-0.7	100	-0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.90#
10	T	Isoprene	0.4000	0.4079	-2.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.13#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3894	0.0	100	0.02
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	0.4000	0.4192	-4.8	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.58#
16	T	Dimethyl Sulfide	0.4000	0.3687	7.8	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.2179	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4591	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4587	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.43#
22	T	Methyl Tert Butyl Ether	-1.0000	0.3688	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.4193	-4.8	100	0.00
24	T	n-Hexane	-1.0000	0.3519	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.3241	0.0	100	0.02
27	P	1,1-Dichloroethane	0.4000	0.3826	4.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.98#
31	T	2,2-Dichloropropane	0.4000	0.3874	3.1	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.4172	-4.3	100	-0.01
33	C	Chloroform	0.4000	0.4164	-4.1	100	0.00
34		1-Bromopropane	-1.0000	0.1776	0.0	100	-0.01
35	T	Bromochloromethane	0.4000	0.3550	11.3	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.5125	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	0.4000	0.3803	4.9	100	0.00
39	T	Cyclohexane	-1.0000	0.4058	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4093	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	0.4000	0.3867	3.3	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	0.4000	0.3955	1.1	100	0.00
46	T	Benzene	0.4000	0.4393	-9.8	100	0.00
47	T	Trichloroethene	0.4000	0.4169	-4.2	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3768	0.0	100	-0.01
49	C	1,2-Dichloropropane	0.4000	0.4177	-4.4	100	0.00
50	T	Bromodichloromethane	0.4000	0.3676	8.1	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	0.4000	0.4162	-4.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1401	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.05#

(#) = Out of Range

8M412221.D 8260WT.M Sat May 14 18:03:54 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3821	4.5	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2746	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0000	0.0	0	-12.68#
59	C	Toluene	0.4000	0.4259	-6.5	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3102	0.0	100	0.02
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3184	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.4259	-6.5	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	0.4000	0.3253	18.7	100	0.00
66	T	Tetrachloroethene	0.4000	0.4267	-6.7	100	0.00
67	T	Dibromochloromethane	0.4000	0.3904	2.4	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.3814	4.6	100	0.00
69	T	1-Chlorohexane	0.4000	0.4017	-0.4	100	0.00
70	P	Chlorobenzene	0.4000	0.3933	1.7	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3872	3.2	100	0.00
72	C	Ethylbenzene	0.4000	0.4188	-4.7	100	0.00
73	T	m-,p-Xylene	0.8000	0.8859	-10.7	100	0.00
74	T	o-Xylene	-1.0000	0.4110	0.0	100	0.00
75	T	Styrene	0.4000	0.3901	2.5	100	0.00
76	P	Bromoform	-1.0000	0.2533	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.4249	-6.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.3398	15.1	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0283	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.14#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	0.4000	0.4245	-6.1	100	0.00
84	T	Bromobenzene	0.4000	0.3529	11.8	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.4141	-3.5	100	0.00
86	T	2-Chlorotoluene	0.4000	0.4284	-7.1	100	0.00
87	T	4-Chlorotoluene	0.4000	0.4359	-9.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.3631	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3459	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	0.4000	0.4046	-1.2	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.4494	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4092	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.3844	3.9	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.3915	2.1	100	0.00
95	T	n-Butylbenzene	-1.0000	0.4628	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.3805	4.9	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	0.4000	0.4182	-4.5	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.4302	-7.5	100	0.00
100	T	Naphthalene	0.4000	0.4178	-4.5	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.4310	-7.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412221.D 8260WT.M Sat May 14 18:03:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	795577	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	547129	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	284579	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.65	111	3962	0.3966 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery	= 1.60%#	
43) 1,2-Dichloroethane-d4	10.31	65	3835	0.3356 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery	= 1.36%#	
58) Toluene-d8	12.68	98	14023	0.4957 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 2.00%#	
80) p-Bromofluorobenzene	16.08	95	6483	0.5565 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery	= 2.24%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	12402	0.7438 ug/L	97
3) Chloromethane	3.62	50	8415	0.5357 ug/L #	75
4) Vinyl Chloride	3.84	62	9412	0.8873 ug/L	89
5) 1,3-Butadiene	3.90	54	6974	0.6729 ug/L	81
6) Bromomethane	4.73	94	4114	1.3123 ug/L	92
7) Chloroethane	4.90	64	4983	0.7178 ug/L #	80
8) Trichlorofluoromethane	5.38	101	17133	0.8136 ug/L #	96
9) Diethyl ether	5.90	59	20707	3.2140 ug/L	84
10) Isoprene	5.94	67	11176	1.0373 ug/L	76
11) Acrolein	6.14	56	246	0.4300 ug/L #	15
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	8135	0.8438 ug/L	96
13) Acetone	6.24	43	413	0.2115 ug/L #	48
14) 1,1-Dichloroethene	6.46	61	12947	0.6919 ug/L	91
15) Tert-Butyl Alcohol	6.59	59	3316	7.3747 ug/L #	55
16) Dimethyl Sulfide	6.72	62	4505	0.6515 ug/L	79
18) Methyl acetate	7.00	43	2119	0.3630 ug/L #	66
19) Methylene Chloride	7.24	84	8723	0.9837 ug/L #	43
20) Carbon Disulfide	7.29	76	28246	1.0441 ug/L	100
21) Acrylonitrile	7.43	53	2164	0.8620 ug/L	76
22) Methyl Tert Butyl Ether	7.47	73	16998	0.8678 ug/L	84
23) trans-1,2-Dichloroethene	7.70	61	12571	0.7427 ug/L	100
24) n-Hexane	7.78	57	9382	0.6109 ug/L	82
25) Diisopropyl ether	8.12	45	95400	2.1939 ug/L #	91
26) Vinyl Acetate	8.30	43	6750	0.3867 ug/L #	89
27) 1,1-Dichloroethane	8.32	63	14721	0.7271 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	97972	3.2102 ug/L	88
29) 2-Butanone	8.88	43	380	0.1215 ug/L #	57
30) Propionitrile	8.99	54	1593	2.0138 ug/L #	56
31) 2,2-Dichloropropane	9.09	77	14691	0.8236 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	9482	0.9362 ug/L	72
33) Chloroform	9.37	83	18494	0.9845 ug/L	94
34) 1-Bromopropane	9.50	122	1092	0.6844 ug/L	80
35) Bromochloromethane	9.61	130	5234	0.9877 ug/L #	55
36) Tetrahydrofuran	9.63	42	5415	2.6185 ug/L #	68
38) 1,1,1-Trichloroethane	9.91	97	17074	0.9016 ug/L	92
39) Cyclohexane	9.94	56	11865	0.5740 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	13172	0.9663 ug/L	87
41) Tert-Amyl-Methyl ether	10.21	73	90255	4.6173 ug/L #	88
42) Carbon Tetrachloride	10.25	117	14515	0.8146 ug/L	95
45) 1,2-Dichloroethane	10.42	62	10675	0.6766 ug/L	85

(#) = qualifier out of range (m) = manual integration
8M412222.D 8260WT.M Fri May 13 14:49:47 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	10.47	78	34504	0.9938 ug/L		84
47)	Trichloroethene	11.21	130	8752	0.8735 ug/L		93
48)	Methylcyclohexane	11.30	83	13513	0.9646 ug/L		79
49)	1,2-Dichloropropane	11.43	63	7057	0.6982 ug/L	#	67
50)	Bromodichloromethane	11.73	83	12147	0.8638 ug/L		96
52)	Dibromomethane	11.81	93	4130	0.8681 ug/L		95
53)	2-Chloroethyl Vinyl Ether	12.03	63	2694	0.6366 ug/L		86
54)	4-Methyl-2-Pentanone	12.06	58	848	0.3671 ug/L	#	41
55)	cis-1,3-Dichloropropene	12.36	75	12521	0.8847 ug/L		97
56)	Dimethyl Disulfide	12.63	79	5799	0.7821 ug/L		96
59)	Toluene	12.79	91	37114	1.1328 ug/L		95
60)	Ethyl Methacrylate	12.88	69	5490	0.8930 ug/L		69
62)	trans-1,3-Dichloropropene	12.96	75	10328	0.9035 ug/L		92
63)	1,1,2-Trichloroethane	13.18	97	5274	1.0144 ug/L		93
64)	2-Hexanone	13.10	58	397	0.2127 ug/L	#	1
65)	1,3-Dichloropropane	13.49	76	9673	1.0032 ug/L		73
66)	Tetrachloroethene	13.61	164	7373	0.9937 ug/L		95
67)	Dibromochloromethane	13.87	129	7358	0.8977 ug/L		95
68)	1,2-Dibromoethane	14.13	107	5123	0.9454 ug/L		95
69)	1-Chlorohexane	14.21	91	12790	1.1461 ug/L		79
70)	Chlorobenzene	14.62	112	25662	1.1281 ug/L		89
71)	1,1,1,2-Tetrachloroethane	14.66	131	8722	0.9838 ug/L		94
72)	Ethylbenzene	14.65	106	13009	1.0078 ug/L		87
73)	m-,p-Xylene	14.75	106	30465	2.0486 ug/L		84
74)	o-Xylene	15.31	106	15133	1.0101 ug/L		84
75)	Styrene	15.35	104	23191	0.9707 ug/L		91
76)	Bromoform	15.84	173	3875	0.8240 ug/L		96
77)	Isopropylbenzene	15.74	105	41382	1.0895 ug/L		95
79)	1,1,2,2-Tetrachloroethane	15.95	83	5604	0.9873 ug/L	#	93
81)	1,2,3-Trichloropropane	16.15	110	1355	0.7428 ug/L	#	1
82)	trans-1,4-Dichloro-2-Buten	16.19	53	962	0.3479 ug/L	#	1
83)	n-Propylbenzene	16.25	91	48249	1.1002 ug/L		99
84)	Bromobenzene	16.37	156	9598	1.0497 ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	33355	1.0278 ug/L		96
86)	2-Chlorotoluene	16.51	91	33408	1.1895 ug/L		94
87)	4-Chlorotoluene	16.56	91	29548	1.0213 ug/L		95
88)	a-Methylstyrene	16.84	118	14414	0.9014 ug/L		91
89)	tert-Butylbenzene	16.89	134	6686	1.0398 ug/L		86
90)	1,2,4-Trimethylbenzene	16.95	105	36066	1.0857 ug/L		96
91)	sec-Butylbenzene	17.16	105	42128	1.0796 ug/L		96
92)	p-Isopropyltoluene	17.32	119	35424	1.0633 ug/L		94
93)	1,3-Dichlorobenzene	17.52	146	18409	1.0144 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	19031	1.0506 ug/L	#	62
95)	n-Butylbenzene	17.85	91	35772	1.1288 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	16104	1.0126 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.14	75	1262	1.0152 ug/L	#	53
98)	1,2,4-Trichlorobenzene	20.28	180	11494	0.9331 ug/L		98
99)	Hexachlorobutadiene	20.43	225	5421	0.9510 ug/L		98
100)	Naphthalene	20.65	128	16581	0.8853 ug/L		100
101)	1,2,3-Trichlorobenzene	20.96	180	10306	0.9835 ug/L		94

(#) = qualifier out of range (m) = manual integration
8M412222.D 8260WT.M Fri May 13 14:49:48 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

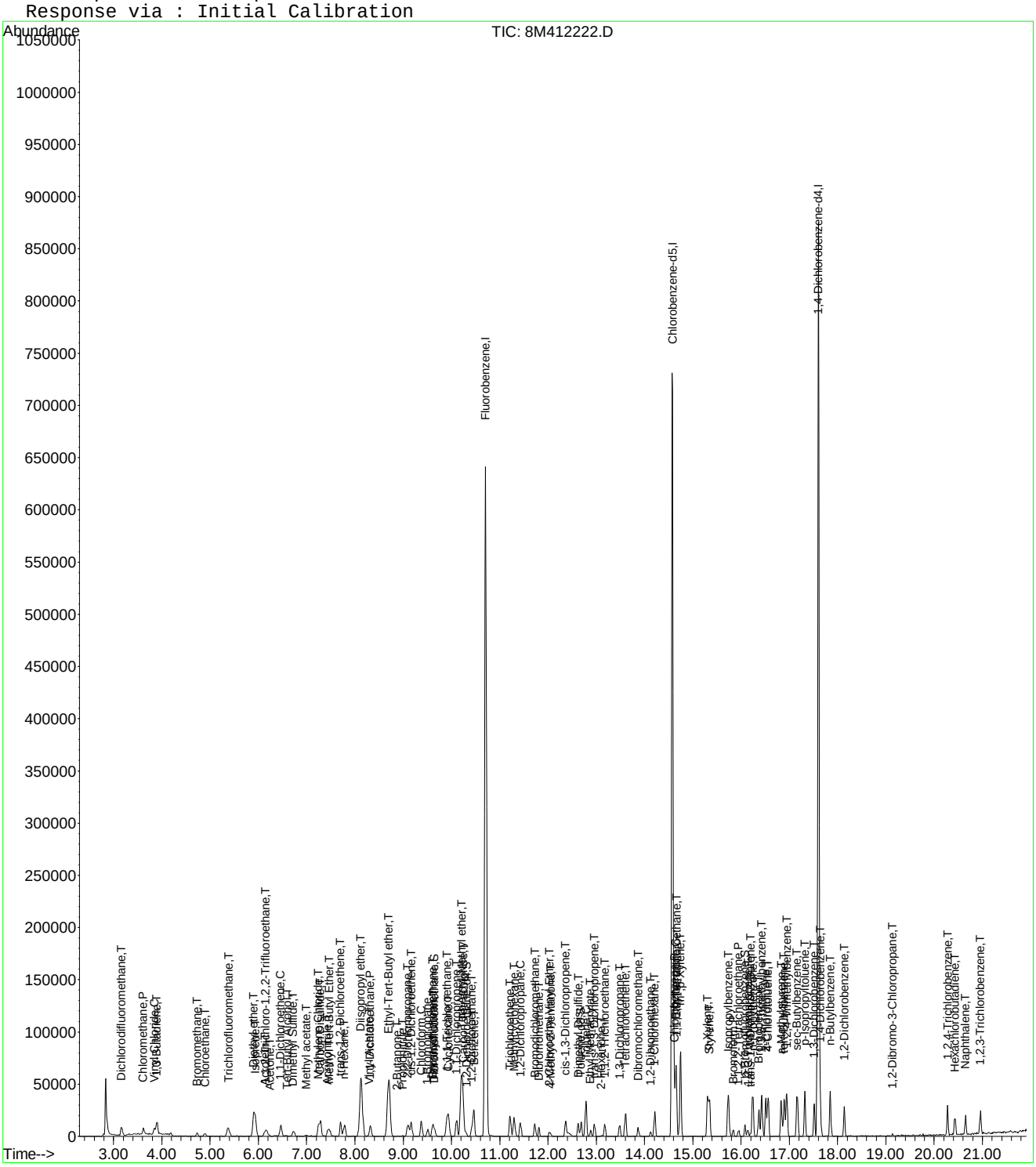

8M412222.D 8260WT.M Fri May 13 14:49:48 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:05:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9298	7.0	100	0.00
3	P	Chloromethane	1.0000	1.0808	-8.1	100	0.00
4	C	Vinyl Chloride	1.0000	1.0189	-1.9	100	0.00
5	T	1,3-Butadiene	-1.0000	0.9002	0.0	100	0.02
6	T	Bromomethane	1.0000	1.2082	-20.8	100	0.00
7	T	Chloroethane	1.0000	0.9803	2.0	100	0.00
8	T	Trichlorofluoromethane	1.0000	0.9968	0.3	100	0.00
9	T	Diethyl ether	5.0000	5.0462	-0.9	100	0.00
10	T	Isoprene	1.0000	1.0707	-7.1	100	0.00
11	T	Acrolein	-1.0000	0.6696	0.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0069	-0.7	100	0.00
13	T	Acetone	-1.0000	0.4614	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	1.0064	-0.6	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	11.5604	0.0	0	0.02
16	T	Dimethyl Sulfide	1.0000	0.9794	2.1	100	-0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.8758	0.0	100	0.00
19	T	Methylene Chloride	1.0000	1.0655	-6.5	100	0.00
20	T	Carbon Disulfide	1.0000	1.0492	-4.9	100	0.00
21	T	Acrylonitrile	2.5000	1.8633	25.5#	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9593	4.1	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	1.0636	-6.4	100	0.00
24	T	n-Hexane	-1.0000	1.0690	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	5.1784	-3.6	100	0.00
26	T	Vinyl Acetate	-1.0000	0.8002	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0029	-0.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.9635	0.7	100	0.00
29	T	2-Butanone	-1.0000	0.2889	0.0	100	0.00
30	T	Propionitrile	5.0000	4.1566	16.9	100	0.00
31	T	2,2-Dichloropropane	1.0000	0.9498	5.0	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	1.0383	-3.8	100	0.00
33	C	Chloroform	1.0000	1.0671	-6.7	100	0.00
34		1-Bromopropane	1.0000	0.8348	16.5	100	-0.01
35	T	Bromochloromethane	1.0000	1.1177	-11.8	100	0.00
36	T	Tetrahydrofuran	5.0000	6.2516	-25.0#	100	0.00
37	S	Dibromofluoromethane	0.5000	0.4635	7.3	100	-0.01
38	T	1,1,1-Trichloroethane	1.0000	1.0372	-3.7	100	0.00
39	T	Cyclohexane	1.0000	1.0411	-4.1	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0498	-5.0	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	5.0344	-0.7	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.9930	0.7	100	0.00
43	S	1,2-Dichloroethane-d4	0.5000	0.4184	16.3	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	1.0000	0.9570	4.3	100	0.00
46	T	Benzene	1.0000	1.0558	-5.6	100	0.00
47	T	Trichloroethene	1.0000	1.0041	-0.4	100	0.00
48	T	Methylcyclohexane	-1.0000	1.0205	0.0	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.9700	3.0	100	0.00
50	T	Bromodichloromethane	1.0000	0.9500	5.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	1.0000	0.9590	4.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.8616	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.6639	0.0	100	0.00

(#) = Out of Range
8M412222.D 8260WT.M Sat May 14 18:05:49 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:05:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9621	3.8	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.8348	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	0.5000	0.4897	2.1	100	0.00
59	C	Toluene	1.0000	1.0927	-9.3	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.8416	15.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	1.0000	0.9073	9.3	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.9840	1.6	100	0.00
64	T	2-Hexanone	-1.0000	0.3525	0.0	100	-0.01
65	T	1,3-Dichloropropane	1.0000	1.0137	-1.4	100	0.00
66	T	Tetrachloroethene	1.0000	1.0132	-1.3	100	0.00
67	T	Dibromochloromethane	1.0000	0.9402	6.0	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.9590	4.1	100	0.00
69	T	1-Chlorohexane	1.0000	1.1031	-10.3	100	0.00
70	P	Chlorobenzene	1.0000	1.1204	-12.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.9829	1.7	100	0.00
72	C	Ethylbenzene	1.0000	1.0381	-3.8	100	0.00
73	T	m-,p-Xylene	2.0000	2.0726	-3.6	100	0.00
74	T	o-Xylene	1.0000	1.0530	-5.3	100	0.00
75	T	Styrene	1.0000	0.9839	1.6	100	0.00
76	P	Bromoform	1.0000	0.8348	16.5	100	0.00
77	T	Isopropylbenzene	1.0000	1.0840	-8.4	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	0.9810	1.9	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5502	0.0	100	0.00
81	T	1,2,3-Trichloropropane	1.0000	0.7703	23.0	100	0.02
82	T	trans-1,4-Dichloro-2-Butene	1.0000	1.1443	-14.4	100	0.00
83	T	n-Propylbenzene	1.0000	1.0868	-8.7	100	0.00
84	T	Bromobenzene	1.0000	1.0510	-5.1	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	1.0314	-3.1	100	0.00
86	T	2-Chlorotoluene	1.0000	1.0778	-7.8	100	0.00
87	T	4-Chlorotoluene	1.0000	1.0553	-5.5	100	0.00
88	T	a-Methylstyrene	-1.0000	0.9394	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	1.0567	-5.7	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	1.0845	-8.5	100	0.00
91	T	sec-Butylbenzene	1.0000	1.1073	-10.7	100	0.00
92	T	p-Isopropyltoluene	1.0000	1.0966	-9.7	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0469	-4.7	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	1.0735	-7.3	100	0.00
95	T	n-Butylbenzene	1.0000	1.1201	-12.0	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0297	-3.0	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.1006	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	1.0000	0.9832	1.7	100	0.00
99	T	Hexachlorobutadiene	1.0000	0.9925	0.7	100	0.00
100	T	Naphthalene	1.0000	0.9547	4.5	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	1.0450	-4.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	782460	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	543252	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	286450	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	8161	0.8307 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.32%#	
43) 1,2-Dichloroethane-d4	10.30	65	9681	0.8613 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.44%#	
58) Toluene-d8	12.68	98	28135	1.0016 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.00%#	
80) p-Bromofluorobenzene	16.08	95	12079	1.0302 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	24870	1.5166 ug/L	98
3) Chloromethane	3.62	50	16106	1.0425 ug/L	93
4) Vinyl Chloride	3.85	62	18562	1.7792 ug/L	94
5) 1,3-Butadiene	3.90	54	13617	1.3360 ug/L	92
6) Bromomethane	4.73	94	8329	1.8804 ug/L	94
7) Chloroethane	4.90	64	9562	1.4006 ug/L	86
8) Trichlorofluoromethane	5.39	101	34970	1.6885 ug/L	97
9) Diethyl ether	5.90	59	107986	17.0420 ug/L	79
10) Isoprene	5.93	67	20936	1.9757 ug/L	73
11) Acrolein	6.14	56	4864	8.6444 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	16832	1.7751 ug/L	99
13) Acetone	6.23	43	1519	0.7908 ug/L #	48
14) 1,1-Dichloroethene	6.47	61	25394	1.3798 ug/L	89
15) Tert-Butyl Alcohol	6.58	59	14891	33.6725 ug/L	85
16) Dimethyl Sulfide	6.73	62	9489	1.3953 ug/L	79
17) Iodomethane	6.98	142	1211	1.3472 ug/L #	60
18) Methyl acetate	7.01	43	5064	0.8821 ug/L #	79
19) Methylene Chloride	7.25	84	16579	1.9010 ug/L	52
20) Carbon Disulfide	7.29	76	57693	2.1683 ug/L	98
21) Acrylonitrile	7.43	53	13848	5.6089 ug/L	93
22) Methyl Tert Butyl Ether	7.47	73	33991	1.7644 ug/L	84
23) trans-1,2-Dichloroethene	7.70	61	22786	1.3688 ug/L	88
24) n-Hexane	7.79	57	18282	1.2105 ug/L	84
25) Diisopropyl ether	8.12	45	475271	11.1128 ug/L #	92
26) Vinyl Acetate	8.29	43	15998	0.9318 ug/L	93
27) 1,1-Dichloroethane	8.32	63	30419	1.5277 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	505010	16.8250 ug/L	89
29) 2-Butanone	8.90	43	2250	0.7313 ug/L #	57
30) Propionitrile	8.99	54	9373	12.0479 ug/L	86
31) 2,2-Dichloropropane	9.10	77	32521	1.8538 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	18238	1.8309 ug/L	91
33) Chloroform	9.37	83	33543	1.8156 ug/L	99
34) 1-Bromopropane	9.52	122	2513	1.6014 ug/L	88
35) Bromochloromethane	9.60	130	9189	1.7632 ug/L	67
36) Tetrahydrofuran	9.63	42	22074	10.8529 ug/L #	66
38) 1,1,1-Trichloroethane	9.90	97	32268	1.7324 ug/L	96
39) Cyclohexane	9.93	56	23097	1.1362 ug/L #	65
40) 1,1-Dichloropropene	10.10	75	24988	1.8639 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	459535	23.9029 ug/L	87
42) Carbon Tetrachloride	10.24	117	28935	1.6512 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412223.D 8260WT.M Fri May 13 15:18:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.42	62	22142	1.4270 ug/L #	83
46)	Benzene	10.46	78	67028	1.9629 ug/L	83
47)	Trichloroethene	11.21	130	17287	1.7543 ug/L	96
48)	Methylcyclohexane	11.30	83	26050	1.8907 ug/L	84
49)	1,2-Dichloropropane	11.42	63	14582	1.4670 ug/L	77
50)	Bromodichloromethane	11.73	83	25794	1.8651 ug/L	93
51)	1,4-Dioxane	11.73	88	1282	32.3515 ug/L	74
52)	Dibromomethane	11.81	93	8575	1.8325 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.02	63	6234	1.4979 ug/L	100
54)	4-Methyl-2-Pentanone	12.06	58	2139	0.9416 ug/L	84
55)	cis-1,3-Dichloropropene	12.37	75	24153	1.7353 ug/L	98
56)	Dimethyl Disulfide	12.62	79	12288	1.6851 ug/L	99
59)	Toluene	12.79	91	72944	2.2423 ug/L	95
60)	Ethyl Methacrylate	12.88	69	12716	2.0832 ug/L	71
62)	trans-1,3-Dichloropropene	12.96	75	22163	1.9527 ug/L	100
63)	1,1,2-Trichloroethane	13.18	97	10537	2.0412 ug/L	99
64)	2-Hexanone	13.13	58	2200	1.1873 ug/L #	65
65)	1,3-Dichloropropane	13.49	76	20212	2.1112 ug/L	72
66)	Tetrachloroethene	13.60	164	14595	1.9811 ug/L	90
67)	Dibromochloromethane	13.87	129	14698	1.8061 ug/L	98
68)	1,2-Dibromoethane	14.12	107	10152	1.8869 ug/L	95
69)	1-Chlorohexane	14.21	91	21960	1.9818 ug/L	89
70)	Chlorobenzene	14.62	112	47376	2.0974 ug/L	81
71)	1,1,1,2-Tetrachloroethane	14.66	131	17526	1.9910 ug/L	97
72)	Ethylbenzene	14.66	106	25628	1.9996 ug/L	92
73)	m-,p-Xylene	14.74	106	60087	4.0693 ug/L	84
74)	o-Xylene	15.31	106	28289	1.9017 ug/L	79
75)	Styrene	15.35	104	47644	2.0086 ug/L	92
76)	Bromoform	15.84	173	9145	1.9585 ug/L	95
77)	Isopropylbenzene	15.73	105	81301	2.1557 ug/L	97
79)	1,1,2,2-Tetrachloroethane	15.95	83	11538	2.0194 ug/L	95
81)	1,2,3-Trichloropropane	16.13	110	3630	1.9770 ug/L	94
82)	trans-1,4-Dichloro-2-Buten	16.19	53	2699	0.9698 ug/L #	36
83)	n-Propylbenzene	16.24	91	97233	2.2026 ug/L	96
84)	Bromobenzene	16.37	156	19174	2.0834 ug/L	92
85)	1,3,5-Trimethylbenzene	16.42	105	67395	2.0631 ug/L	97
86)	2-Chlorotoluene	16.51	91	67110	2.3739 ug/L	94
87)	4-Chlorotoluene	16.56	91	59154	2.0313 ug/L	92
88)	a-Methylstyrene	16.84	118	29415	1.8275 ug/L	86
89)	tert-Butylbenzene	16.89	134	12716	1.9647 ug/L	67
90)	1,2,4-Trimethylbenzene	16.95	105	71669	2.1435 ug/L	94
91)	sec-Butylbenzene	17.17	105	81038	2.0632 ug/L	98
92)	p-Isopropyltoluene	17.32	119	70170	2.0924 ug/L	92
93)	1,3-Dichlorobenzene	17.52	146	37289	2.0413 ug/L	93
94)	1,4-Dichlorobenzene	17.64	146	36528	2.0034 ug/L #	73
95)	n-Butylbenzene	17.85	91	67823	2.1262 ug/L	96
96)	1,2-Dichlorobenzene	18.14	146	32322	2.0190 ug/L	92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	1955	1.5624 ug/L	94
98)	1,2,4-Trichlorobenzene	20.28	180	23558	1.9000 ug/L	98
99)	Hexachlorobutadiene	20.43	225	11066	1.9286 ug/L	99
100)	Naphthalene	20.65	128	36066	1.9130 ug/L	99
101)	1,2,3-Trichlorobenzene	20.96	180	19765	1.8738 ug/L	95

(#) = qualifier out of range (m) = manual integration
8M412223.D 8260WT.M Fri May 13 15:18:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

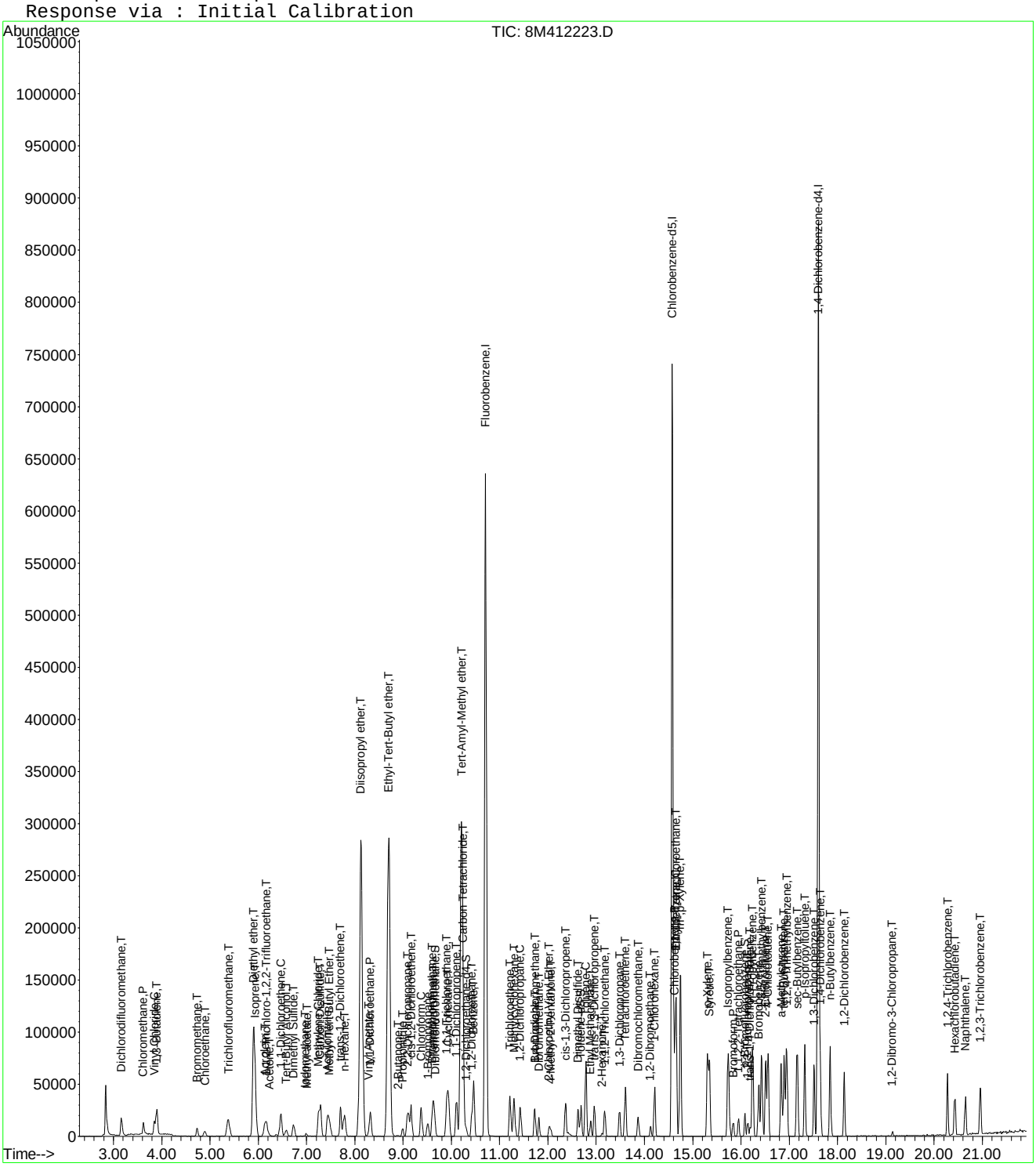

8M412223.D 8260WT.M Fri May 13 15:18:37 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.8958	5.2	100	0.00
3	P	Chloromethane	2.0000	2.1033	-5.2	100	0.00
4	C	Vinyl Chloride	2.0000	2.0431	-2.2	100	0.00
5	T	1,3-Butadiene	2.0000	1.7872	10.6	100	0.02
6	T	Bromomethane	2.0000	2.0126	-0.6	100	0.00
7	T	Chloroethane	2.0000	1.9127	4.4	100	0.00
8	T	Trichlorofluoromethane	2.0000	2.0686	-3.4	100	0.00
9	T	Diethyl ether	25.0000	26.7567	-7.0	100	0.00
10	T	Isoprene	2.0000	2.0394	-2.0	100	0.00
11	T	Acrolein	12.5000	13.4606	-7.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	2.1182	-5.9	100	0.02
13	T	Acetone	-1.0000	1.7255	0.0	100	-0.01
14	C	1,1-Dichloroethene	2.0000	2.0070	-0.4	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	52.7840	-5.6	100	0.00
16	T	Dimethyl Sulfide	2.0000	2.0975	-4.9	100	0.00
17	T	Iodomethane	2.0000	3.0680	-53.4#	100	0.00
18	T	Methyl acetate	-1.0000	2.1281	0.0	100	0.00
19	T	Methylene Chloride	2.0000	2.0590	-3.0	100	0.00
20	T	Carbon Disulfide	2.0000	2.1789	-8.9	100	0.00
21	T	Acrylonitrile	12.5000	12.1237	3.0	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.9505	2.5	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.9603	2.0	100	0.00
24	T	n-Hexane	-1.0000	2.1181	0.0	100	0.00
25	T	Diisopropyl ether	25.0000	26.2305	-4.9	100	0.00
26	T	Vinyl Acetate	2.0000	1.9284	3.6	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.1072	-5.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	26.0139	-4.1	100	0.00
29	T	2-Butanone	-1.0000	1.7396	0.0	100	0.02
30	T	Propionitrile	25.0000	24.8668	0.5	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1378	-6.9	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0306	-1.5	100	0.00
33	C	Chloroform	2.0000	1.9679	1.6	100	0.00
34		1-Bromopropane	2.0000	1.9533	2.3	100	0.00
35	T	Bromochloromethane	2.0000	1.9951	0.2	100	0.00
36	T	Tetrahydrofuran	25.0000	25.9117	-3.6	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9708	2.9	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.9930	0.3	100	0.00
39	T	Cyclohexane	2.0000	2.0605	-3.0	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0248	-1.2	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	26.0627	-4.3	100	0.00
42	T	Carbon Tetrachloride	2.0000	2.0126	-0.6	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0740	-7.4	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	2.0000	2.0183	-0.9	100	0.00
46	T	Benzene	2.0000	2.0854	-4.3	100	0.00
47	T	Trichloroethene	2.0000	2.0166	-0.8	100	0.00
48	T	Methylcyclohexane	-1.0000	2.0003	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0380	-1.9	100	0.00
50	T	Bromodichloromethane	2.0000	2.0511	-2.6	100	0.00
51	T	1,4-Dioxane	-1.0000	35.6688	0.0	100	0.02
52	T	Dibromomethane	2.0000	2.0246	-1.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	2.0271	-1.4	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.7027	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.8869	5.7	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.7986	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	0.9896	1.0	100	0.00
59	C	Toluene	2.0000	2.1628	-8.1	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.9633	1.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	2.0000	1.9609	2.0	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.9800	1.0	100	0.00
64	T	2-Hexanone	-1.0000	1.9672	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.1332	-6.7	100	0.00
66	T	Tetrachloroethene	2.0000	2.0198	-1.0	100	0.00
67	T	Dibromochloromethane	2.0000	1.8915	5.4	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.9141	4.3	100	0.00
69	T	1-Chlorohexane	2.0000	1.9075	4.6	100	0.00
70	P	Chlorobenzene	2.0000	2.0831	-4.2	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.9892	0.5	100	0.00
72	C	Ethylbenzene	2.0000	2.0596	-3.0	100	0.00
73	T	m-,p-Xylene	4.0000	4.1170	-2.9	100	0.00
74	T	o-Xylene	2.0000	1.9825	0.9	100	0.00
75	T	Styrene	2.0000	2.0358	-1.8	100	0.00
76	P	Bromoform	2.0000	1.9841	0.8	100	0.00
77	T	Isopropylbenzene	2.0000	2.1448	-7.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	2.0066	-0.3	100	0.00
80	S	p-Bromofluorobenzene	1.0000	1.0184	-1.8	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	2.0501	-2.5	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	2.0915	-4.6	100	0.00
83	T	n-Propylbenzene	2.0000	2.1757	-8.8	100	0.00
84	T	Bromobenzene	2.0000	2.0859	-4.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.0703	-3.5	100	0.00
86	T	2-Chlorotoluene	2.0000	2.1509	-7.5	100	0.00
87	T	4-Chlorotoluene	2.0000	2.0989	-4.9	100	0.00
88	T	a-Methylstyrene	-1.0000	1.9045	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	1.9967	0.2	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.1411	-7.1	100	0.00
91	T	sec-Butylbenzene	2.0000	2.1161	-5.8	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.1579	-7.9	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.1067	-5.3	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.0470	-2.4	100	0.00
95	T	n-Butylbenzene	2.0000	2.1098	-5.5	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0532	-2.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.6938	15.3	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	2.0021	-0.1	100	0.00
99	T	Hexachlorobutadiene	2.0000	2.0128	-0.6	100	0.00
100	T	Naphthalene	2.0000	2.0630	-3.2	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9910	0.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412223.D 8260WT.M Sat May 14 18:08:14 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	768397	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	534372	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	274234	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	19775	2.0496 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	8.20%#	
43) 1,2-Dichloroethane-d4	10.30	65	21200	1.9207 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	7.68%#	
58) Toluene-d8	12.68	98	65647	2.3758 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	9.52%#	
80) p-Bromofluorobenzene	16.08	95	26759	2.3838 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	9.52%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	55961	3.4750 ug/L	99
3) Chloromethane	3.62	50	34194	2.2538 ug/L	100
4) Vinyl Chloride	3.84	62	42506	4.1488 ug/L	99
5) 1,3-Butadiene	3.89	54	32006	3.1976 ug/L	93
6) Bromomethane	4.72	94	19582	3.4204 ug/L	94
7) Chloroethane	4.90	64	22000	3.2814 ug/L	84
8) Trichlorofluoromethane	5.37	101	77715	3.8212 ug/L	96
9) Diethyl ether	5.90	59	188516	30.2955 ug/L	79
10) Isoprene	5.94	67	44975	4.3218 ug/L	78
11) Acrolein	6.15	56	7712	13.9568 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	36867	3.9591 ug/L	99
13) Acetone	6.24	43	3578	1.8967 ug/L	85
14) 1,1-Dichloroethene	6.47	61	59405	3.2870 ug/L	95
15) Tert-Butyl Alcohol	6.58	59	27833	64.0897 ug/L #	82
16) Dimethyl Sulfide	6.73	62	21102	3.1597 ug/L	77
17) Iodomethane	6.99	142	3667	1.8964 ug/L	95
18) Methyl acetate	7.00	43	11500	2.0398 ug/L #	86
19) Methylene Chloride	7.24	84	37533	4.3823 ug/L	52
20) Carbon Disulfide	7.29	76	123060	4.7097 ug/L	100
21) Acrylonitrile	7.43	53	25653	10.5804 ug/L	99
22) Methyl Tert Butyl Ether	7.47	73	80005	4.2289 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	54124	3.3108 ug/L	94
24) n-Hexane	7.78	57	40758	2.7480 ug/L	82
25) Diisopropyl ether	8.12	45	841400	20.0337 ug/L #	91
26) Vinyl Acetate	8.30	43	37284	2.2113 ug/L #	90
27) 1,1-Dichloroethane	8.32	63	66711	3.4116 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	907423	30.7852 ug/L	89
29) 2-Butanone	8.89	43	5359	1.7738 ug/L #	82
30) Propionitrile	8.99	54	17933	23.4726 ug/L	100
31) 2,2-Dichloropropane	9.10	77	73150	4.2462 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	41036	4.1950 ug/L	89
33) Chloroform	9.37	83	78227	4.3116 ug/L	99
34) 1-Bromopropane	9.52	122	6162	3.9986 ug/L	99
35) Bromochloromethane	9.60	130	20988	4.1009 ug/L #	62
36) Tetrahydrofuran	9.62	42	38098	19.0742 ug/L #	62
38) 1,1,1-Trichloroethane	9.91	97	76152	4.1633 ug/L	97
39) Cyclohexane	9.94	56	51439	2.5767 ug/L #	66
40) 1,1-Dichloropropene	10.11	75	56645	4.3027 ug/L	93
41) Tert-Amyl-Methyl ether	10.21	73	821180	43.4958 ug/L	87
42) Carbon Tetrachloride	10.25	117	67831	3.9416 ug/L	96

(#) = qualifier out of range (m) = manual integration
8M412224.D 8260WT.M Fri May 13 15:47:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	51708	3.3934 ug/L		85
46)	Benzene	10.46	78	150204	4.4792 ug/L		86
47)	Trichloroethene	11.21	130	38500	3.9784 ug/L		94
48)	Methylcyclohexane	11.30	83	60897	4.5008 ug/L		81
49)	1,2-Dichloropropane	11.43	63	31773	3.2549 ug/L		77
50)	Bromodichloromethane	11.73	83	59127	4.3535 ug/L		94
51)	1,4-Dioxane	11.71	88	2719	69.8702 ug/L	#	62
52)	Dibromomethane	11.81	93	19711	4.2894 ug/L		96
53)	2-Chloroethyl Vinyl Ether	12.03	63	12946	3.1676 ug/L		98
54)	4-Methyl-2-Pentanone	12.05	58	5129	2.2991 ug/L	#	78
55)	cis-1,3-Dichloropropene	12.36	75	61169	4.4752 ug/L		94
56)	Dimethyl Disulfide	12.62	79	27966	3.9053 ug/L		98
59)	Toluene	12.78	91	161007	5.0316 ug/L		97
60)	Ethyl Methacrylate	12.88	69	28595	4.7624 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	49791	4.4599 ug/L		97
63)	1,1,2-Trichloroethane	13.18	97	23678	4.6631 ug/L		99
64)	2-Hexanone	13.11	58	4499	2.4685 ug/L	#	97
65)	1,3-Dichloropropane	13.49	76	44838	4.7614 ug/L		73
66)	Tetrachloroethene	13.60	164	32715	4.5144 ug/L		97
67)	Dibromochloromethane	13.87	129	35009	4.3734 ug/L		98
68)	1,2-Dibromoethane	14.13	107	24247	4.5815 ug/L		99
69)	1-Chlorohexane	14.21	91	53599	4.9176 ug/L		84
70)	Chlorobenzene	14.62	112	107618	4.8437 ug/L		95
71)	1,1,1,2-Tetrachloroethane	14.65	131	38120	4.4025 ug/L		96
72)	Ethylbenzene	14.65	106	56905	4.5138 ug/L		91
73)	m-,p-Xylene	14.75	106	137390	9.4592 ug/L		86
74)	o-Xylene	15.31	106	65650	4.4866 ug/L		85
75)	Styrene	15.35	104	111433	4.7758 ug/L		91
76)	Bromoform	15.84	173	19346	4.2121 ug/L		97
77)	Isopropylbenzene	15.73	105	182523	4.9200 ug/L		96
79)	1,1,2,2-Tetrachloroethane	15.95	83	26655	4.8730 ug/L		99
81)	1,2,3-Trichloropropane	16.13	110	8840	5.0289 ug/L		81
82)	trans-1,4-Dichloro-2-Buten	16.19	53	6584	2.4712 ug/L	#	51
83)	n-Propylbenzene	16.24	91	222196	5.2576 ug/L		96
84)	Bromobenzene	16.37	156	42665	4.8423 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	155714	4.9790 ug/L		93
86)	2-Chlorotoluene	16.52	91	148764	5.4968 ug/L		94
87)	4-Chlorotoluene	16.56	91	135679	4.8666 ug/L		94
88)	a-Methylstyrene	16.84	118	68945	4.4743 ug/L		91
89)	tert-Butylbenzene	16.89	134	29069	4.6914 ug/L		77
90)	1,2,4-Trimethylbenzene	16.95	105	161016	5.0301 ug/L		94
91)	sec-Butylbenzene	17.17	105	191273	5.0866 ug/L		94
92)	p-Isopropyltoluene	17.32	119	159232	4.9597 ug/L		93
93)	1,3-Dichlorobenzene	17.52	146	83896	4.7972 ug/L		95
94)	1,4-Dichlorobenzene	17.64	146	82462	4.7242 ug/L		86
95)	n-Butylbenzene	17.85	91	158787	5.1996 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	72524	4.7321 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	5629	4.6990 ug/L		76
98)	1,2,4-Trichlorobenzene	20.28	180	53855	4.5369 ug/L		98
99)	Hexachlorobutadiene	20.43	225	24504	4.4608 ug/L		93
100)	Naphthalene	20.65	128	79806	4.4217 ug/L		98
101)	1,2,3-Trichlorobenzene	20.96	180	44150	4.3720 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412224.D 8260WT.M Fri May 13 15:47:44 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

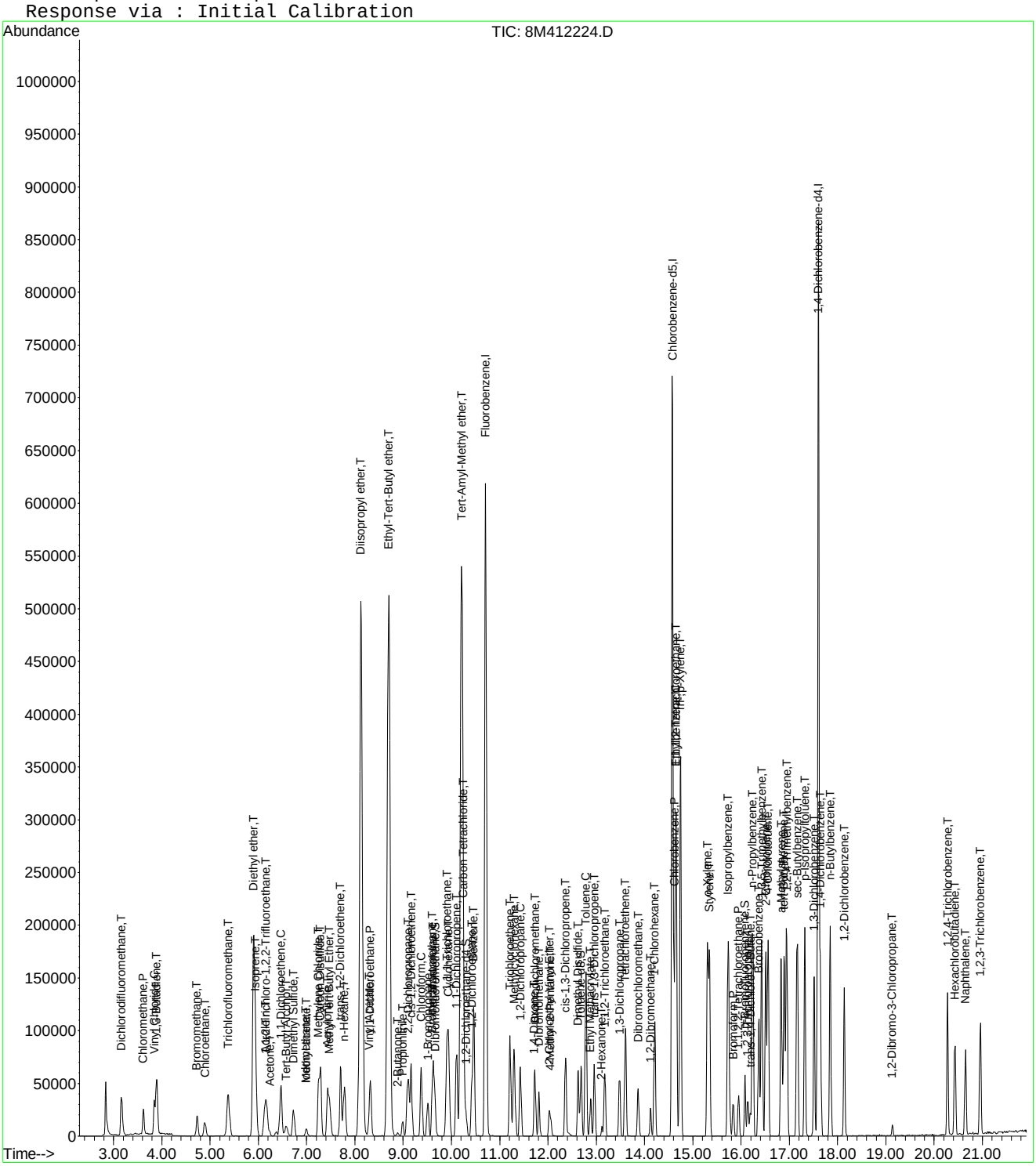

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.3438	13.1	100	0.00
3	P	Chloromethane	5.0000	4.5471	9.1	100	0.00
4	C	Vinyl Chloride	5.0000	4.7641	4.7	100	0.00
5	T	1,3-Butadiene	5.0000	4.2777	14.4	100	0.00
6	T	Bromomethane	5.0000	4.1880	16.2	100	-0.01
7	T	Chloroethane	5.0000	4.4813	10.4	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.6812	6.4	100	0.00
9	T	Diethyl ether	50.0000	47.5652	4.9	100	0.00
10	T	Isoprene	5.0000	4.4611	10.8	100	0.00
11	T	Acrolein	25.0000	21.7328	13.1	100	0.02
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.7244	5.5	100	0.00
13	T	Acetone	5.0000	4.1387	17.2	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.7810	4.4	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	100.4650	-0.5	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.7499	5.0	100	0.00
17	T	Iodomethane	5.0000	3.7634	24.7	100	0.00
18	T	Methyl acetate	5.0000	4.9211	1.6	100	0.00
19	T	Methylene Chloride	5.0000	4.7467	5.1	100	0.00
20	T	Carbon Disulfide	5.0000	4.7328	5.3	100	0.00
21	T	Acrylonitrile	25.0000	22.8698	8.5	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.6750	6.5	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.7415	5.2	100	0.00
24	T	n-Hexane	5.0000	4.8084	3.8	100	0.00
25	T	Diisopropyl ether	50.0000	47.2872	5.4	100	0.00
26	T	Vinyl Acetate	5.0000	4.5766	8.5	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.7058	5.9	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	47.5984	4.8	100	0.00
29	T	2-Butanone	5.0000	4.2191	15.6	100	0.00
30	T	Propionitrile	50.0000	48.4475	3.1	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.8965	2.1	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.6525	7.0	100	0.00
33	C	Chloroform	5.0000	4.6735	6.5	100	0.00
34		1-Bromopropane	5.0000	4.8774	2.5	100	0.00
35	T	Bromochloromethane	5.0000	4.6403	7.2	100	0.00
36	T	Tetrahydrofuran	50.0000	45.5400	8.9	100	-0.01
37	S	Dibromofluoromethane	2.5000	2.3953	4.2	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.7896	4.2	100	0.00
39	T	Cyclohexane	5.0000	4.6730	6.5	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.6741	6.5	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	47.6211	4.8	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.8044	3.9	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.3949	4.2	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	5.0000	4.7996	4.0	100	0.00
46	T	Benzene	5.0000	4.7588	4.8	100	0.00
47	T	Trichloroethene	5.0000	4.5733	8.5	100	0.00
48	T	Methylcyclohexane	5.0000	4.7616	4.8	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.5219	9.6	100	0.00
50	T	Bromodichloromethane	5.0000	4.7878	4.2	100	0.00
51	T	1,4-Dioxane	100.0000	77.0346	23.0	100	0.00
52	T	Dibromomethane	5.0000	4.7390	5.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.2867	14.3	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.1576	16.8	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.8662	2.7	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.1683	16.6	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.3473	6.1	100	0.00
59	C	Toluene	5.0000	4.8533	2.9	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.4883	10.2	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	5.0000	4.4786	10.4	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.5231	9.5	100	0.00
64	T	2-Hexanone	5.0000	4.0898	18.2	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.8109	3.8	100	0.00
66	T	Tetrachloroethene	5.0000	4.6028	7.9	100	0.00
67	T	Dibromochloromethane	5.0000	4.5802	8.4	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.6475	7.1	100	0.00
69	T	1-Chlorohexane	5.0000	4.7331	5.3	100	0.00
70	P	Chlorobenzene	5.0000	4.8107	3.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.3984	12.0	100	0.00
72	C	Ethylbenzene	5.0000	4.6492	7.0	100	0.00
73	T	m-,p-Xylene	10.0000	9.5700	4.3	100	0.00
74	T	o-Xylene	5.0000	4.6773	6.5	100	0.00
75	T	Styrene	5.0000	4.8405	3.2	100	0.00
76	P	Bromoform	5.0000	4.2672	14.7	100	0.00
77	T	Isopropylbenzene	5.0000	4.8951	2.1	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	4.8422	3.2	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.3565	5.7	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.2150	-4.3	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.3781	12.4	100	0.00
83	T	n-Propylbenzene	5.0000	5.1935	-3.9	100	0.00
84	T	Bromobenzene	5.0000	4.8483	3.0	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	4.9964	0.1	100	0.00
86	T	2-Chlorotoluene	5.0000	4.9803	0.4	100	0.00
87	T	4-Chlorotoluene	5.0000	5.0286	-0.6	100	0.00
88	T	a-Methylstyrene	5.0000	4.6629	6.7	100	0.00
89	T	tert-Butylbenzene	5.0000	4.7677	4.6	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.0245	-0.5	100	0.00
91	T	sec-Butylbenzene	5.0000	5.2170	-4.3	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.1150	-2.3	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	4.9511	1.0	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	4.8270	3.5	100	0.00
95	T	n-Butylbenzene	5.0000	5.1595	-3.2	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	4.8122	3.8	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	5.0942	-1.9	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.7808	4.4	100	0.00
99	T	Hexachlorobutadiene	5.0000	4.6555	6.9	100	0.00
100	T	Naphthalene	5.0000	4.7684	4.6	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.6455	7.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412224.D 8260WT.M Sat May 14 18:08:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	770027	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	531490	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	283594	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	86295	10.9569 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 43.84%#		
43) 1,2-Dichloroethane-d4	10.30	65	96239	11.3450 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 45.36%#		
58) Toluene-d8	12.68	98	294491	10.9223 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 43.68%#		
80) p-Bromofluorobenzene	16.08	95	121459	10.5490 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 42.20%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	288235	23.7135 ug/L	99
3) Chloromethane	3.62	50	155712	20.3784 ug/L	98
4) Vinyl Chloride	3.84	62	184250	20.9368 ug/L	95
5) 1,3-Butadiene	3.89	54	149348	22.7750 ug/L	96
6) Bromomethane	4.73	94	100098	25.0143 ug/L	99
7) Chloroethane	4.89	64	100876	20.9404 ug/L	91
8) Trichlorofluoromethane	5.37	101	351299	21.2512 ug/L	98
9) Diethyl ether	5.90	59	324317	80.8265 ug/L	78
10) Isoprene	5.94	67	205842	20.3622 ug/L	77
11) Acrolein	6.14	56	12049	34.8201 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	159996	20.3859 ug/L	97
13) Acetone	6.25	43	18459	25.7405 ug/L	98
14) 1,1-Dichloroethene	6.47	61	256241	20.5065 ug/L	92
15) Tert-Butyl Alcohol	6.57	59	43922	153.5712 ug/L	93
16) Dimethyl Sulfide	6.73	62	89456	20.6087 ug/L	83
17) Iodomethane	6.99	142	40622	61.0474 ug/L	93
18) Methyl acetate	7.00	43	46598	20.2171 ug/L #	85
19) Methylene Chloride	7.25	84	161897	20.1338 ug/L	52
20) Carbon Disulfide	7.30	76	538090	20.0802 ug/L	98
21) Acrylonitrile	7.43	53	46305	46.9889 ug/L	100
22) Methyl Tert Butyl Ether	7.47	73	361116	22.0137 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	234754	20.3175 ug/L	90
24) n-Hexane	7.78	57	172498	21.1165 ug/L	84
25) Diisopropyl ether	8.12	45	1447822	80.3755 ug/L #	91
26) Vinyl Acetate	8.30	43	166501	21.7017 ug/L #	88
27) 1,1-Dichloroethane	8.33	63	300321	21.3849 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	1579265	83.0733 ug/L	89
29) 2-Butanone	8.88	43	25681	23.9099 ug/L	87
30) Propionitrile	8.98	54	30953	89.5673 ug/L	94
31) 2,2-Dichloropropane	9.10	77	309575	20.8527 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	181973	20.4488 ug/L	89
33) Chloroform	9.37	83	348925	20.5535 ug/L	96
34) 1-Bromopropane	9.52	122	26723	22.7206 ug/L	96
35) Bromochloromethane	9.61	130	94952	21.3181 ug/L	65
36) Tetrahydrofuran	9.63	42	63066	70.5772 ug/L #	57
38) 1,1,1-Trichloroethane	9.91	97	335486	21.3640 ug/L	99
39) Cyclohexane	9.94	56	221040	19.9984 ug/L #	64
40) 1,1-Dichloropropene	10.11	75	248373	20.4717 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1418183	81.7883 ug/L	88
42) Carbon Tetrachloride	10.25	117	296471	21.3449 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412225.D 8260WT.M Fri May 13 16:16:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	228665	21.6403	ug/L		85
46)	Benzene	10.46	78	668449	20.3769	ug/L		86
47)	Trichloroethene	11.21	130	174107	20.7980	ug/L		96
48)	Methylcyclohexane	11.29	83	262275	21.4887	ug/L		82
49)	1,2-Dichloropropane	11.43	63	146868	21.1883	ug/L	#	72
50)	Bromodichloromethane	11.73	83	262192	21.9986	ug/L		98
51)	1,4-Dioxane	11.71	88	5351	196.3837	ug/L		76
52)	Dibromomethane	11.81	93	86951	21.0734	ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	63586	22.4600	ug/L		91
54)	4-Methyl-2-Pentanone	12.05	58	25754	25.0531	ug/L	#	73
55)	cis-1,3-Dichloropropene	12.36	75	265439	21.9841	ug/L		99
56)	Dimethyl Disulfide	12.63	79	134192	23.9412	ug/L		100
59)	Toluene	12.78	91	700473	20.1722	ug/L		99
60)	Ethyl Methacrylate	12.88	69	133361	23.2046	ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	238585	23.2548	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	107901	21.0216	ug/L		99
64)	2-Hexanone	13.11	58	22561	25.2093	ug/L	#	85
65)	1,3-Dichloropropane	13.49	76	198804	22.2491	ug/L		74
66)	Tetrachloroethene	13.60	164	141791	20.0055	ug/L		94
67)	Dibromochloromethane	13.87	129	158465	22.0695	ug/L		99
68)	1,2-Dibromoethane	14.13	107	110085	22.3366	ug/L		100
69)	1-Chlorohexane	14.21	91	229753	20.3591	ug/L		83
70)	Chlorobenzene	14.62	112	467492	20.4613	ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.65	131	183079	22.2095	ug/L		96
72)	Ethylbenzene	14.65	106	249016	20.2289	ug/L		90
73)	m-,p-Xylene	14.75	106	606381	41.1308	ug/L		88
74)	o-Xylene	15.30	106	294106	21.2106	ug/L		90
75)	Styrene	15.35	104	492781	21.8207	ug/L		89
76)	Bromoform	15.83	173	95911	23.8070	ug/L		99
77)	Isopropylbenzene	15.73	105	806678	20.7280	ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	123253	22.7779	ug/L		95
81)	1,2,3-Trichloropropane	16.14	110	36712	22.1354	ug/L		94
82)	trans-1,4-Dichloro-2-Buten	16.18	53	33702	27.6513	ug/L	#	56
83)	n-Propylbenzene	16.24	91	962196	20.3511	ug/L		97
84)	Bromobenzene	16.37	156	190566	21.2033	ug/L		94
85)	1,3,5-Trimethylbenzene	16.43	105	692633	20.9615	ug/L		94
86)	2-Chlorotoluene	16.51	91	649077	19.9155	ug/L		96
87)	4-Chlorotoluene	16.56	91	595446	20.3225	ug/L		95
88)	a-Methylstyrene	16.83	118	318960	22.3680	ug/L		92
89)	tert-Butylbenzene	16.90	134	129440	20.4705	ug/L		83
90)	1,2,4-Trimethylbenzene	16.95	105	707749	20.4783	ug/L		94
91)	sec-Butylbenzene	17.17	105	818359	20.1802	ug/L		97
92)	p-Isopropyltoluene	17.32	119	677859	19.7492	ug/L		96
93)	1,3-Dichlorobenzene	17.52	146	364065	20.5126	ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	363066	19.9874	ug/L		92
95)	n-Butylbenzene	17.85	91	681055	20.0187	ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	318612	19.9358	ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	23070	21.6419	ug/L		93
98)	1,2,4-Trichlorobenzene	20.28	180	242455	20.8863	ug/L		98
99)	Hexachlorobutadiene	20.43	225	110384	20.2523	ug/L		96
100)	Naphthalene	20.65	128	369849	21.4526	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	198876	19.8356	ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration

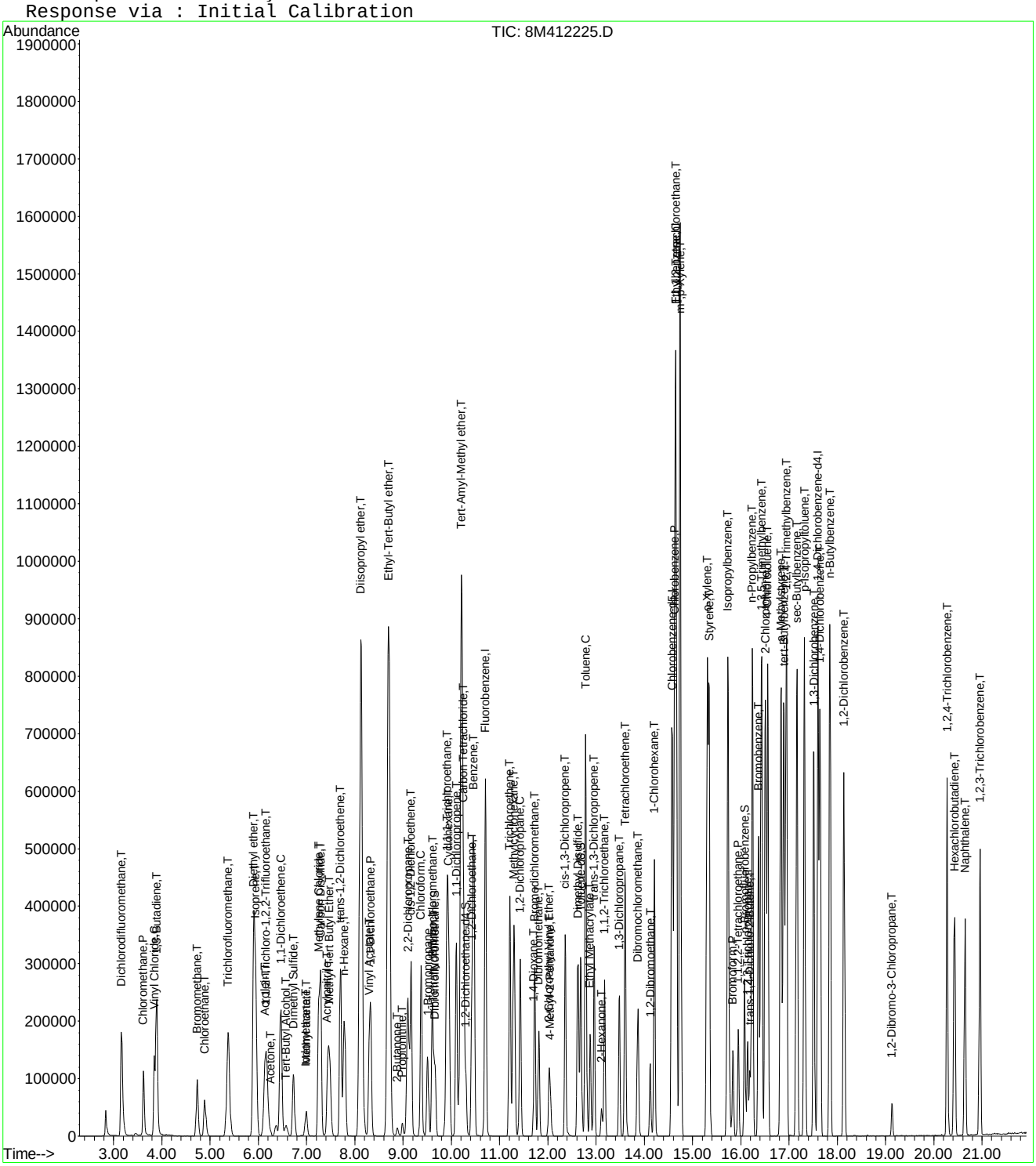

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45:30 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	778260	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	539116	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	288225	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	211053	26.5139 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.04%		
43) 1,2-Dichloroethane-d4	10.31	65	229348	26.7504 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.00%		
58) Toluene-d8	12.68	98	718491	26.2709 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.08%		
80) p-Bromofluorobenzene	16.07	95	292755	25.0180 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.08%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	682745	55.5761 ug/L	100
3) Chloromethane	3.62	50	372858	48.2806 ug/L	98
4) Vinyl Chloride	3.85	62	453905	51.0328 ug/L	96
5) 1,3-Butadiene	3.88	54	390501	58.9199 ug/L	99
6) Bromomethane	4.74	94	260493	64.4080 ug/L	97
7) Chloroethane	4.89	64	244336	50.1840 ug/L	91
8) Trichlorofluoromethane	5.38	101	837676	50.1376 ug/L	99
9) Diethyl ether	5.90	59	389327	96.0019 ug/L	79
10) Isoprene	5.94	67	498060	48.7477 ug/L	76
11) Acrolein	6.13	56	17644	50.4496 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	387643	48.8691 ug/L	97
13) Acetone	6.25	43	45901	63.3305 ug/L	97
14) 1,1-Dichloroethene	6.46	61	619744	49.0724 ug/L	94
15) Tert-Butyl Alcohol	6.58	59	53656	185.6211 ug/L	91
16) Dimethyl Sulfide	6.73	62	221107	50.3993 ug/L	82
17) Iodomethane	6.98	142	157872	234.7428 ug/L	94
18) Methyl acetate	7.00	43	114759	49.2629 ug/L #	81
19) Methylene Chloride	7.25	84	389653	47.9453 ug/L	52
20) Carbon Disulfide	7.29	76	1269941	46.8897 ug/L	99
21) Acrylonitrile	7.43	53	59882	60.1236 ug/L	97
22) Methyl Tert Butyl Ether	7.46	73	901668	54.3843 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	571507	48.9396 ug/L	93
24) n-Hexane	7.79	57	419656	50.8290 ug/L	83
25) Diisopropyl ether	8.13	45	1781012	97.8265 ug/L #	90
26) Vinyl Acetate	8.29	43	428708	55.2866 ug/L #	89
27) 1,1-Dichloroethane	8.32	63	722574	50.9078 ug/L	96
28) Ethyl-Tert-Butyl ether	8.71	59	1955100	101.7552 ug/L	89
29) 2-Butanone	8.88	43	66579	61.3316 ug/L #	82
30) Propionitrile	8.98	54	38235	109.4684 ug/L	95
31) 2,2-Dichloropropane	9.10	77	768496	51.2175 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	439590	48.8754 ug/L	91
33) Chloroform	9.38	83	844564	49.2230 ug/L	97
34) 1-Bromopropane	9.51	122	63442	53.3693 ug/L	99
35) Bromochloromethane	9.60	130	230119	51.1185 ug/L	66
36) Tetrahydrofuran	9.64	42	79437	87.9575 ug/L #	62
38) 1,1,1-Trichloroethane	9.90	97	817606	51.5150 ug/L	99
39) Cyclohexane	9.93	56	535882	47.9707 ug/L #	65
40) 1,1-Dichloropropene	10.10	75	615439	50.1899 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1769381	100.9628 ug/L	88
42) Carbon Tetrachloride	10.24	117	724058	51.5782 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412226.D 8260WT.M Fri May 13 16:45:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45:30 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	561107	52.5401 ug/L		85
46)	Benzene	10.46	78	1607407	48.4816 ug/L		86
47)	Trichloroethene	11.22	130	424998	50.2312 ug/L		96
48)	Methylcyclohexane	11.30	83	635339	51.5040 ug/L		83
49)	1,2-Dichloropropane	11.42	63	351908	50.2320 ug/L	#	71
50)	Bromodichloromethane	11.72	83	654943	54.3701 ug/L		97
51)	1,4-Dioxane	11.71	88	7573	274.9918 ug/L		73
52)	Dibromomethane	11.82	93	209167	50.1574 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	162319	56.7281 ug/L		93
54)	4-Methyl-2-Pentanone	12.05	58	64928	62.4928 ug/L		80
55)	cis-1,3-Dichloropropene	12.36	75	666861	54.6463 ug/L		98
56)	Dimethyl Disulfide	12.62	79	343446	60.6260 ug/L		96
59)	Toluene	12.79	91	1676069	47.5846 ug/L		100
60)	Ethyl Methacrylate	12.88	69	338996	58.1503 ug/L		69
62)	trans-1,3-Dichloropropene	12.96	75	594749	57.1499 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	268432	51.5570 ug/L		98
64)	2-Hexanone	13.12	58	56859	62.6347 ug/L	#	83
65)	1,3-Dichloropropane	13.48	76	489226	53.9770 ug/L		75
66)	Tetrachloroethene	13.60	164	350332	48.7296 ug/L		95
67)	Dibromochloromethane	13.86	129	401149	55.0780 ug/L		100
68)	1,2-Dibromoethane	14.12	107	273580	54.7252 ug/L		99
69)	1-Chlorohexane	14.21	91	560883	48.9984 ug/L		82
70)	Chlorobenzene	14.63	112	1117812	48.2326 ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	446892	53.4462 ug/L		99
72)	Ethylbenzene	14.66	106	603074	48.2980 ug/L		91
73)	m-,p-Xylene	14.74	106	1443780	96.5463 ug/L		90
74)	o-Xylene	15.31	106	709244	50.4265 ug/L		90
75)	Styrene	15.34	104	1212099	52.9133 ug/L		91
76)	Bromoform	15.84	173	238354	58.3272 ug/L		100
77)	Isopropylbenzene	15.73	105	1919993	48.6372 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	294266	53.5083 ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	89279	52.9656 ug/L		93
82)	trans-1,4-Dichloro-2-Buten	16.19	53	86829	70.0956 ug/L	#	53
83)	n-Propylbenzene	16.24	91	2278994	47.4277 ug/L		98
84)	Bromobenzene	16.37	156	459959	50.3549 ug/L		93
85)	1,3,5-Trimethylbenzene	16.43	105	1661486	49.4745 ug/L		95
86)	2-Chlorotoluene	16.51	91	1611031	48.6367 ug/L		97
87)	4-Chlorotoluene	16.56	91	1341051	45.0344 ug/L		95
88)	a-Methylstyrene	16.83	118	772611	53.3111 ug/L		90
89)	tert-Butylbenzene	16.89	134	307503	47.8493 ug/L		81
90)	1,2,4-Trimethylbenzene	16.94	105	1679809	47.8234 ug/L		95
91)	sec-Butylbenzene	17.16	105	1925411	46.7166 ug/L		97
92)	p-Isopropyltoluene	17.32	119	1621383	46.4795 ug/L		95
93)	1,3-Dichlorobenzene	17.51	146	882656	48.9327 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	871210	47.1909 ug/L		92
95)	n-Butylbenzene	17.85	91	1608832	46.5296 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	768548	47.3159 ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	59586	54.9992 ug/L		86
98)	1,2,4-Trichlorobenzene	20.28	180	583880	49.4902 ug/L		100
99)	Hexachlorobutadiene	20.44	225	264699	47.7844 ug/L		98
100)	Naphthalene	20.65	128	894629	51.0579 ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	475246	46.6387 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412226.D 8260WT.M Fri May 13 16:45:33 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration

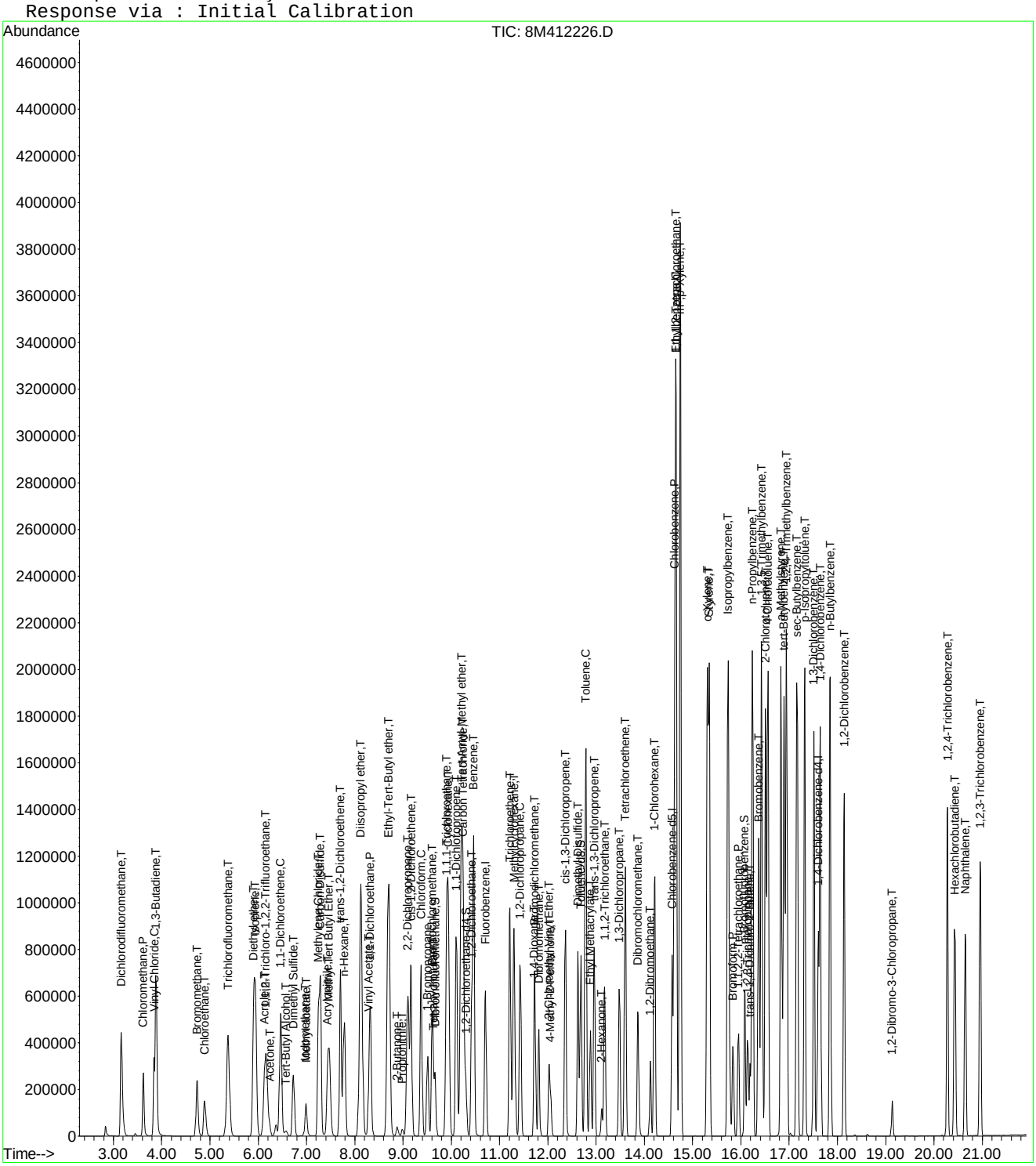

8M412226.D 8260WT.M Fri May 13 16:45:33 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	809533	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	559075	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	296193	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	460283	53.9056 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 215.64%#		
43) 1,2-Dichloroethane-d4	10.30	65	488116	52.5821 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 210.32%#		
58) Toluene-d8	12.68	98	1540572	52.8075 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 211.24%#		
80) p-Bromofluorobenzene	16.08	95	623735	51.1573 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 204.64%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	1463283	109.1068 ug/L	100
3) Chloromethane	3.62	50	778702	97.2380 ug/L	98
4) Vinyl Chloride	3.84	62	968312	103.4979 ug/L	95
5) 1,3-Butadiene	3.88	54	896569	120.4972 ug/L	95
6) Bromomethane	4.73	94	605228	129.8677 ug/L	99
7) Chloroethane	4.89	64	528153	103.4126 ug/L	90
8) Trichlorofluoromethane	5.37	101	1782726	101.4754 ug/L	99
9) Diethyl ether	5.90	59	828091	197.4770 ug/L	79
10) Isoprene	5.94	67	1080684	101.8037 ug/L	78
11) Acrolein	6.14	56	38655	109.5572 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	833546	101.0906 ug/L	97
13) Acetone	6.24	43	97515	109.1944 ug/L	100
14) 1,1-Dichloroethene	6.46	61	1323999	100.6729 ug/L	93
15) Tert-Butyl Alcohol	6.57	59	114220	387.5328 ug/L	91
16) Dimethyl Sulfide	6.73	62	489571	106.5996 ug/L	82
17) Iodomethane	6.99	142	416890	244.5557 ug/L	97
18) Methyl acetate	7.00	43	252444	104.3161 ug/L #	81
19) Methylene Chloride	7.24	84	827241	98.5346 ug/L	53
20) Carbon Disulfide	7.29	76	2766110	99.3432 ug/L	100
21) Acrylonitrile	7.43	53	126153	113.2272 ug/L	98
22) Methyl Tert Butyl Ether	7.46	73	1894494	105.8643 ug/L	87
23) trans-1,2-Dichloroethene	7.70	61	1203701	99.1822 ug/L	93
24) n-Hexane	7.78	57	926226	105.3097 ug/L	84
25) Diisopropyl ether	8.12	45	3699807	196.0386 ug/L #	90
26) Vinyl Acetate	8.29	43	860820	101.8643 ug/L #	88
27) 1,1-Dichloroethane	8.32	63	1521237	101.5567 ug/L	96
28) Ethyl-Tert-Butyl ether	8.70	59	4005676	198.2271 ug/L	89
29) 2-Butanone	8.88	43	145126	112.6698 ug/L #	81
30) Propionitrile	8.98	54	83038	219.1648 ug/L	97
31) 2,2-Dichloropropane	9.11	77	1610615	102.0557 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	935490	99.9944 ug/L	89
33) Chloroform	9.37	83	1766988	98.8341 ug/L	98
34) 1-Bromopropane	9.51	122	139657	108.5299 ug/L	100
35) Bromochloromethane	9.61	130	488678	102.8480 ug/L	66
36) Tetrahydrofuran	9.63	42	167812	187.5699 ug/L #	61
38) 1,1,1-Trichloroethane	9.91	97	1724504	102.7713 ug/L	100
39) Cyclohexane	9.94	56	1185537	102.8628 ug/L #	66
40) 1,1-Dichloropropene	10.11	75	1293224	100.8377 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	3634806	198.1264 ug/L	88
42) Carbon Tetrachloride	10.25	117	1534696	103.3979 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412227.D 8260WT.M Fri May 13 17:14:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	1177876	103.7352	ug/L		85
46)	Benzene	10.46	78	3298928	95.8405	ug/L		87
47)	Trichloroethene	11.21	130	903490	101.9036	ug/L		97
48)	Methylcyclohexane	11.30	83	1389528	104.6454	ug/L		83
49)	1,2-Dichloropropane	11.43	63	755128	102.5297	ug/L		73
50)	Bromodichloromethane	11.73	83	1351612	104.6036	ug/L		99
51)	1,4-Dioxane	11.72	88	16303	473.9624	ug/L		68
52)	Dibromomethane	11.81	93	445130	101.6543	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.02	63	333977	105.4228	ug/L		92
54)	4-Methyl-2-Pentanone	12.05	58	138980	110.1494	ug/L	#	77
55)	cis-1,3-Dichloropropene	12.36	75	1387475	105.9136	ug/L		100
56)	Dimethyl Disulfide	12.62	79	745504	111.3169	ug/L		97
59)	Toluene	12.78	91	3455614	95.2346	ug/L		99
60)	Ethyl Methacrylate	12.88	69	731009	113.5760	ug/L		70
62)	trans-1,3-Dichloropropene	12.96	75	1236182	107.9445	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	564076	103.0604	ug/L		99
64)	2-Hexanone	13.12	58	126268	114.5366	ug/L	#	79
65)	1,3-Dichloropropane	13.48	76	1021082	105.2672	ug/L		74
66)	Tetrachloroethene	13.60	164	752835	101.4023	ug/L		95
67)	Dibromochloromethane	13.87	129	856499	109.6525	ug/L		100
68)	1,2-Dibromoethane	14.12	107	577701	107.6426	ug/L		98
69)	1-Chlorohexane	14.21	91	1222720	103.0385	ug/L		82
70)	Chlorobenzene	14.62	112	2332247	97.2408	ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	947925	106.1463	ug/L		99
72)	Ethylbenzene	14.66	106	1275519	98.8771	ug/L		97
73)	m-,p-Xylene	14.75	106	3009424	194.2602	ug/L		98
74)	o-Xylene	15.31	106	1490638	100.8068	ug/L		93
75)	Styrene	15.35	104	2503721	102.8373	ug/L		88
76)	Bromoform	15.83	173	517827	114.0520	ug/L		100
77)	Isopropylbenzene	15.73	105	3913141	95.4433	ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	624965	106.8610	ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	192087	107.3268	ug/L		97
82)	trans-1,4-Dichloro-2-Buten	16.18	53	189214	128.4818	ug/L	#	59
83)	n-Propylbenzene	16.24	91	4599057	93.6644	ug/L		100
84)	Bromobenzene	16.37	156	968011	102.1426	ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	3401719	97.9556	ug/L		97
86)	2-Chlorotoluene	16.52	91	3177047	93.8267	ug/L		98
87)	4-Chlorotoluene	16.56	91	2899171	96.0712	ug/L		96
88)	a-Methylstyrene	16.84	118	1639166	103.6811	ug/L		90
89)	tert-Butylbenzene	16.90	134	654025	99.4199	ug/L		85
90)	1,2,4-Trimethylbenzene	16.95	105	3479295	96.7054	ug/L		97
91)	sec-Butylbenzene	17.17	105	3947832	94.2785	ug/L		98
92)	p-Isopropyltoluene	17.32	119	3328450	94.4148	ug/L		97
93)	1,3-Dichlorobenzene	17.52	146	1834740	98.9074	ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	1818309	96.6271	ug/L		92
95)	n-Butylbenzene	17.85	91	3308330	94.4002	ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	1606254	97.0179	ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	125368	107.7020	ug/L		87
98)	1,2,4-Trichlorobenzene	20.28	180	1227926	100.7076	ug/L		99
99)	Hexachlorobutadiene	20.43	225	569213	100.5231	ug/L		97
100)	Naphthalene	20.65	128	1852486	101.2968	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	1021163	98.5794	ug/L		100

(#) = qualifier out of range (m) = manual integration
8M412227.D 8260WT.M Fri May 13 17:14:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration

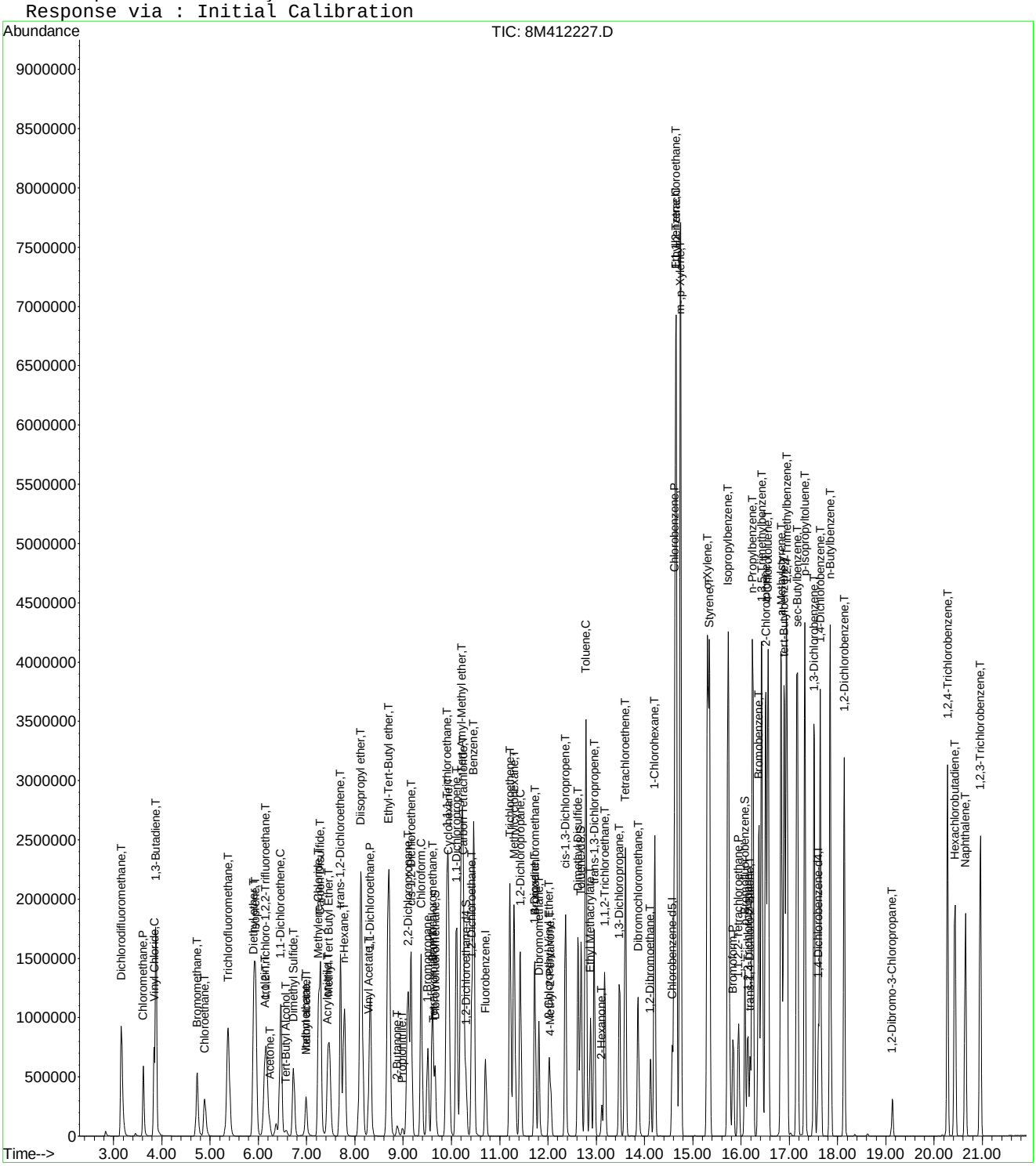

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	828540	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	578848	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	301401	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	898145	101.4517 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 405.80%#		
43) 1,2-Dichloroethane-d4	10.30	65	939848	98.0779 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 392.32%#		
58) Toluene-d8	12.68	98	2984162	97.8805 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 391.52%#		
80) p-Bromofluorobenzene	16.08	95	1242720	99.7023 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 398.80%#		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.16	85	2830517	203.5621 ug/L	98
3) Chloromethane	3.62	50	1586058	194.4056 ug/L	97
4) Vinyl Chloride	3.83	62	1935009	201.0738 ug/L	94
5) 1,3-Butadiene	3.88	54	1684964	212.5477 ug/L	94
6) Bromomethane	4.72	94	1358068	271.2231 ug/L	99
7) Chloroethane	4.89	64	1084803	206.5255 ug/L	90
8) Trichlorofluoromethane	5.37	101	3516760	195.1756 ug/L	99
10) Isoprene	5.94	67	2136665	196.1573 ug/L	78
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1662142	196.5993 ug/L	95
13) Acetone	6.24	43	187748	200.7963 ug/L	97
14) 1,1-Dichloroethene	6.46	61	2649821	196.6732 ug/L	92
15) Tert-Butyl Alcohol	6.58	59	6024	20.0950 ug/L #	87
16) Dimethyl Sulfide	6.73	62	976862	205.8822 ug/L	82
17) Iodomethane	6.99	142	896947	398.7987 ug/L	100
18) Methyl acetate	7.00	43	504293	201.4324 ug/L #	81
19) Methylene Chloride	7.25	84	1684780	196.5546 ug/L	52
20) Carbon Disulfide	7.29	76	5386210	189.2120 ug/L	99
21) Acrylonitrile	7.45	53	30354	26.0447 ug/L #	32
22) Methyl Tert Butyl Ether	7.46	73	3711011	200.6529 ug/L	87
23) trans-1,2-Dichloroethene	7.70	61	2410498	194.2902 ug/L	92
24) n-Hexane	7.78	57	1821777	199.7288 ug/L	84
26) Vinyl Acetate	8.29	43	1796217	206.9060 ug/L #	88
27) 1,1-Dichloroethane	8.32	63	3042055	197.9863 ug/L	95
29) 2-Butanone	8.88	43	271767	199.8193 ug/L #	77
30) Propionitrile	8.90	54	208	0.5280 ug/L #	1
31) 2,2-Dichloropropane	9.11	77	3202633	197.6970 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	1875631	195.8883 ug/L	89
33) Chloroform	9.37	83	3506648	191.9199 ug/L	99
34) 1-Bromopropane	9.51	122	286158	214.2313 ug/L	99
35) Bromochloromethane	9.60	130	980373	200.7807 ug/L	66
36) Tetrahydrofuran	9.62	42	2381	2.6275 ug/L	87
38) 1,1,1-Trichloroethane	9.91	97	3410306	197.7909 ug/L	99
39) Cyclohexane	9.94	56	2357393	198.8974 ug/L #	66
40) 1,1-Dichloropropene	10.10	75	2601175	197.8946 ug/L	96
42) Carbon Tetrachloride	10.25	117	3062767	200.6417 ug/L	99
45) 1,2-Dichloroethane	10.42	62	2313662	198.0324 ug/L	85
46) Benzene	10.46	78	6379817	182.1771 ug/L	89
47) Trichloroethene	11.21	130	1810459	198.9741 ug/L	97
48) Methylcyclohexane	11.30	83	2755373	200.4193 ug/L	83
49) 1,2-Dichloropropane	11.43	63	1528407	202.0331 ug/L	74

(#) = qualifier out of range (m) = manual integration
8M412228.D 8260WT.M Fri May 13 17:43:34 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
50)	Bromodichloromethane	11.73	83	2716764	204.0895 ug/L		99
51)	1,4-Dioxane	11.73	88	3865	104.9352 ug/L	#	18
52)	Dibromomethane	11.81	93	898971	200.1154 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.02	63	631656	192.7236 ug/L		90
54)	4-Methyl-2-Pentanone	12.05	58	262702	198.3957 ug/L	#	75
55)	cis-1,3-Dichloropropene	12.36	75	2784162	205.9153 ug/L		99
56)	Dimethyl Disulfide	12.62	79	1518705	215.4711 ug/L		95
59)	Toluene	12.78	91	6564353	175.9274 ug/L		96
60)	Ethyl Methacrylate	12.88	69	1429837	209.8161 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	2468609	205.4771 ug/L		98
63)	1,1,2-Trichloroethane	13.18	97	1124672	197.6019 ug/L		100
64)	2-Hexanone	13.12	58	237678	200.9290 ug/L	#	81
65)	1,3-Dichloropropane	13.48	76	2023247	199.9545 ug/L		76
66)	Tetrachloroethene	13.60	164	1546618	200.8018 ug/L		97
67)	Dibromochloromethane	13.87	129	1726523	210.5823 ug/L		100
68)	1,2-Dibromoethane	14.12	107	1163160	207.0667 ug/L		99
69)	1-Chlorohexane	14.21	91	2414147	195.6413 ug/L		83
70)	Chlorobenzene	14.62	112	4641169	187.6386 ug/L		94
71)	1,1,1,2-Tetrachloroethane	14.66	131	1929251	206.8372 ug/L		99
72)	Ethylbenzene	14.66	106	2611321	195.8267 ug/L		88
73)	m-,p-Xylene	14.75	106	5876234	367.8657 ug/L		83
74)	o-Xylene	15.31	106	3012318	196.4899 ug/L		98
75)	Styrene	15.35	104	4913204	194.1235 ug/L		86
76)	Bromoform	15.83	173	1052629	218.7989 ug/L		100
77)	Isopropylbenzene	15.73	105	7284624	172.7305 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	1237171	205.8673 ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	386738	209.7906 ug/L	#	54
82)	trans-1,4-Dichloro-2-Buten	16.19	53	382467	243.6526 ug/L		76
83)	n-Propylbenzene	16.24	91	8244387	166.5110 ug/L		93
84)	Bromobenzene	16.37	156	1935166	200.1305 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	6482975	183.9948 ug/L		98
86)	2-Chlorotoluene	16.52	91	6108308	178.8549 ug/L		99
87)	4-Chlorotoluene	16.56	91	5513221	180.5508 ug/L		99
88)	a-Methylstyrene	16.84	118	3255254	200.4995 ug/L		89
89)	tert-Butylbenzene	16.90	134	1351569	202.1005 ug/L		92
90)	1,2,4-Trimethylbenzene	16.95	105	6531416	179.2445 ug/L		97
91)	sec-Butylbenzene	17.17	105	7342730	173.9814 ug/L		97
92)	p-Isopropyltoluene	17.32	119	6352010	178.7315 ug/L		99
93)	1,3-Dichlorobenzene	17.52	146	3640547	193.1654 ug/L		90
94)	1,4-Dichlorobenzene	17.64	146	3593548	188.4603 ug/L		91
95)	n-Butylbenzene	17.85	91	6198060	175.4375 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	3171699	188.9651 ug/L		89
97)	1,2-Dibromo-3-Chloropropan	19.13	75	249646	207.5645 ug/L		88
98)	1,2,4-Trichlorobenzene	20.28	180	2480626	199.7296 ug/L		99
99)	Hexachlorobutadiene	20.43	225	1169411	202.7981 ug/L		98
100)	Naphthalene	20.65	128	3580198	192.0323 ug/L		97
101)	1,2,3-Trichlorobenzene	20.96	180	2040570	193.9298 ug/L		100

(#) = qualifier out of range (m) = manual integration
8M412228.D 8260WT.M Fri May 13 17:43:35 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration

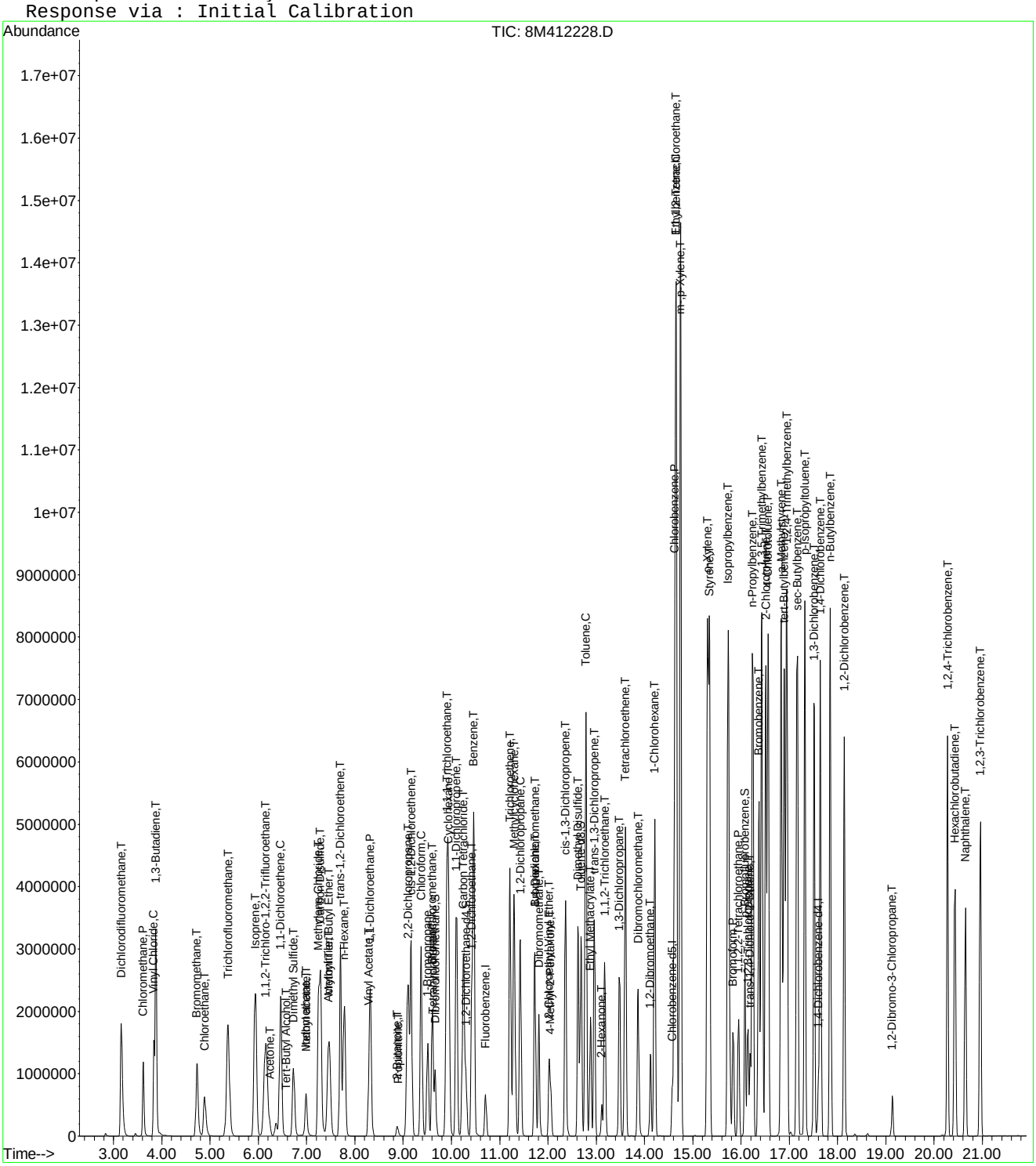

8M412228.D 8260WT.M Fri May 13 17:43:35 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	855409	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	599314	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	305726	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	1411837	154.4674 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 617.88%#		
43) 1,2-Dichloroethane-d4	10.30	65	1466019	148.1811 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 592.72%#		
58) Toluene-d8	12.69	98	4594713	145.5601 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 582.24%#		
80) p-Bromofluorobenzene	16.08	95	1918996	151.7813 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 607.12%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	4191932	292.0014 ug/L	97
3) Chloromethane	3.62	50	2474035	293.7212 ug/L	97
4) Vinyl Chloride	3.83	62	2956347	297.5552 ug/L	94
5) 1,3-Butadiene	3.87	54	2605506	318.3447 ug/L	94
6) Bromomethane	4.72	94	2177550	421.2239 ug/L	98
7) Chloroethane	4.89	64	1688005	311.2693 ug/L	90
8) Trichlorofluoromethane	5.37	101	5387662	289.6161 ug/L	99
9) Diethyl ether	5.90	59	1306432	295.4610 ug/L	80
10) Isoprene	5.93	67	3377164	300.3032 ug/L	78
11) Acrolein	6.14	56	70572	185.7401 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	2563878	293.7317 ug/L	94
13) Acetone	6.24	43	283185	293.3529 ug/L	90
14) 1,1-Dichloroethene	6.46	61	4031745	289.8421 ug/L	91
15) Tert-Butyl Alcohol	6.58	59	181796	587.3907 ug/L	90
16) Dimethyl Sulfide	6.73	62	1553493	317.1280 ug/L	81
17) Iodomethane	6.99	142	1347307	580.2206 ug/L	98
18) Methyl acetate	7.00	43	800046	309.5287 ug/L #	80
19) Methylene Chloride	7.24	84	2587731	292.4144 ug/L	52
20) Carbon Disulfide	7.29	76	8228181	279.9683 ug/L	98
21) Acrylonitrile	7.43	53	228227	189.6753 ug/L	94
22) Methyl Tert Butyl Ether	7.46	73	5605924	293.5892 ug/L	88
23) trans-1,2-Dichloroethene	7.70	61	3678699	287.1957 ug/L	92
24) n-Hexane	7.78	57	2863434	304.0691 ug/L	86
25) Diisopropyl ether	8.12	45	5819647	292.7898 ug/L #	89
26) Vinyl Acetate	8.30	43	2819503	314.5767 ug/L #	87
27) 1,1-Dichloroethane	8.32	63	4586531	289.1293 ug/L	94
28) Ethyl-Tert-Butyl ether	8.70	59	6190206	290.3321 ug/L	89
29) 2-Butanone	8.88	43	439359	312.8959 ug/L #	76
30) Propionitrile	8.99	54	133197	327.4673 ug/L	95
31) 2,2-Dichloropropane	9.10	77	4821388	288.2735 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	2847005	287.9976 ug/L	89
33) Chloroform	9.37	83	5197860	275.5447 ug/L	100
34) 1-Bromopropane	9.51	122	450012	326.3179 ug/L	100
35) Bromochloromethane	9.61	130	1490221	295.6112 ug/L	66
36) Tetrahydrofuran	9.63	42	271736	290.4491 ug/L #	62
38) 1,1,1-Trichloroethane	9.91	97	5126354	287.9792 ug/L	98
39) Cyclohexane	9.94	56	3733392	305.0987 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	3923871	289.1471 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	5639573	291.3713 ug/L	88
42) Carbon Tetrachloride	10.25	117	4598150	291.7629 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412229.D 8260WT.M Fri May 13 18:12:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	3468738	287.5726	ug/L		86
46)	Benzene	10.46	78	9065861	250.7462	ug/L		93
47)	Trichloroethene	11.21	130	2772282	295.1106	ug/L		97
48)	Methylcyclohexane	11.30	83	4327357	304.8748	ug/L		84
49)	1,2-Dichloropropane	11.43	63	2350729	300.9718	ug/L		74
50)	Bromodichloromethane	11.73	83	4051493	294.7973	ug/L		99
51)	1,4-Dioxane	11.72	88	26614	699.8767	ug/L		67
52)	Dibromomethane	11.81	93	1369945	295.3776	ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.03	63	1006317	297.3917	ug/L		90
54)	4-Methyl-2-Pentanone	12.06	58	424684	310.6522	ug/L	#	76
55)	cis-1,3-Dichloropropene	12.36	75	4156310	297.7431	ug/L		97
56)	Dimethyl Disulfide	12.63	79	2359825	324.2911	ug/L		94
59)	Toluene	12.78	91	9135213	236.4669	ug/L		90
60)	Ethyl Methacrylate	12.88	69	2228037	315.7801	ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	3700845	297.5240	ug/L		96
63)	1,1,2-Trichloroethane	13.18	97	1730199	293.6104	ug/L		100
64)	2-Hexanone	13.11	58	381967	311.8816	ug/L	#	78
65)	1,3-Dichloropropane	13.49	76	3080177	294.0141	ug/L		76
66)	Tetrachloroethene	13.60	164	2374435	297.7522	ug/L		96
67)	Dibromochloromethane	13.87	129	2638145	310.7838	ug/L		100
68)	1,2-Dibromoethane	14.13	107	1778561	305.8085	ug/L		99
69)	1-Chlorohexane	14.21	91	3712592	290.5924	ug/L		84
70)	Chlorobenzene	14.63	112	6754240	263.7433	ug/L		90
71)	1,1,1,2-Tetrachloroethane	14.65	131	2967650	307.3001	ug/L		100
72)	Ethylbenzene	14.65	106	4014412	290.7661	ug/L		70
73)	m-,p-Xylene	14.75	106	8357822	505.3514	ug/L		70
74)	o-Xylene	15.31	106	4530840	285.4488	ug/L		88
75)	Styrene	15.35	104	7050702	269.0641	ug/L		82
76)	Bromoform	15.84	173	1602587	321.7373	ug/L		99
77)	Isopropylbenzene	15.73	105	9900817	226.7477	ug/L		90
79)	1,1,2,2-Tetrachloroethane	15.95	83	1885953	309.3861	ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	581198	310.8176	ug/L		61
82)	trans-1,4-Dichloro-2-Buten	16.18	53	589705	370.3601	ug/L		82
83)	n-Propylbenzene	16.25	91	10768378	214.4110	ug/L		86
84)	Bromobenzene	16.37	156	2947671	300.5290	ug/L		99
85)	1,3,5-Trimethylbenzene	16.43	105	8890651	248.7580	ug/L		92
86)	2-Chlorotoluene	16.51	91	7868844	227.1449	ug/L		92
87)	4-Chlorotoluene	16.57	91	7782731	251.2687	ug/L		93
88)	a-Methylstyrene	16.84	118	4955768	300.9205	ug/L		86
89)	tert-Butylbenzene	16.90	134	2046401	301.6701	ug/L		95
90)	1,2,4-Trimethylbenzene	16.95	105	8903769	240.8932	ug/L		89
91)	sec-Butylbenzene	17.17	105	9867862	230.5051	ug/L		91
92)	p-Isopropyltoluene	17.32	119	8738927	242.4155	ug/L		94
93)	1,3-Dichlorobenzene	17.52	146	5319954	278.2806	ug/L		87
94)	1,4-Dichlorobenzene	17.64	146	5248511	271.3593	ug/L		88
95)	n-Butylbenzene	17.85	91	8408157	234.6279	ug/L		92
96)	1,2-Dichlorobenzene	18.14	146	4717385	277.0787	ug/L		87
97)	1,2-Dibromo-3-Chloropropan	19.13	75	377070	309.0741	ug/L		91
98)	1,2,4-Trichlorobenzene	20.28	180	3677657	291.9206	ug/L		98
99)	Hexachlorobutadiene	20.43	225	1780695	304.4378	ug/L		96
100)	Naphthalene	20.65	128	5216751	275.8542	ug/L		95
101)	1,2,3-Trichlorobenzene	20.96	180	3064908	287.1593	ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration

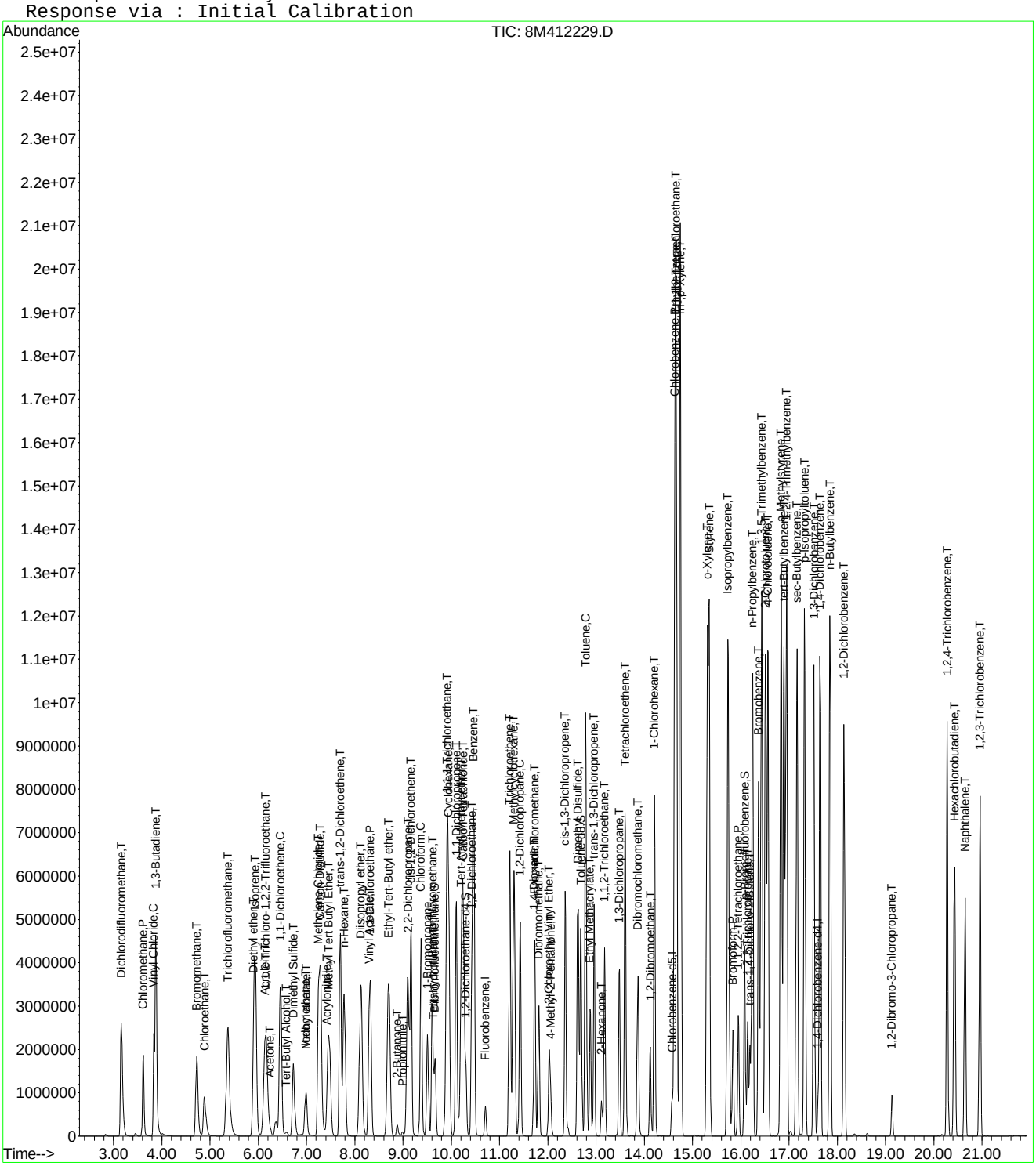

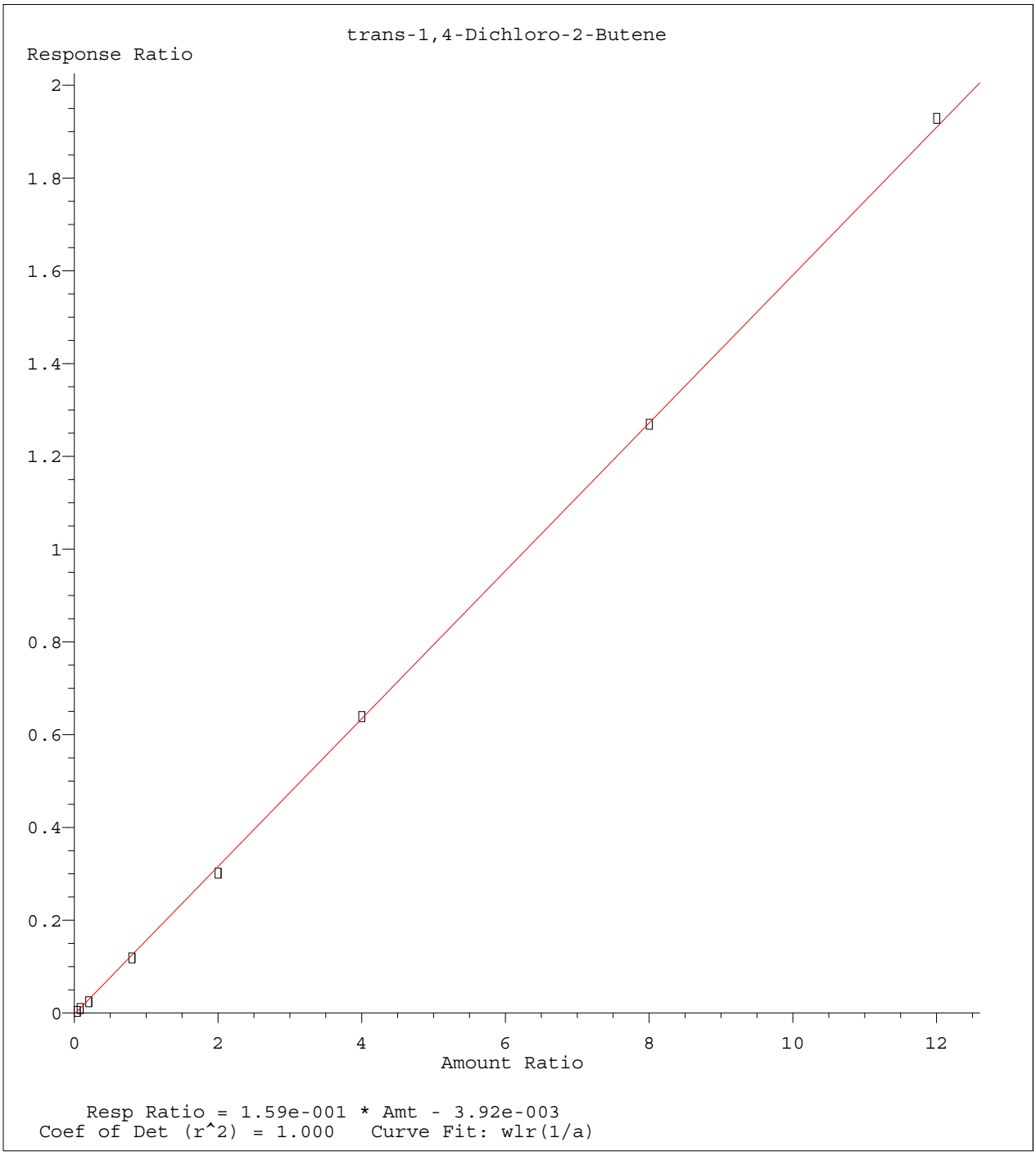

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

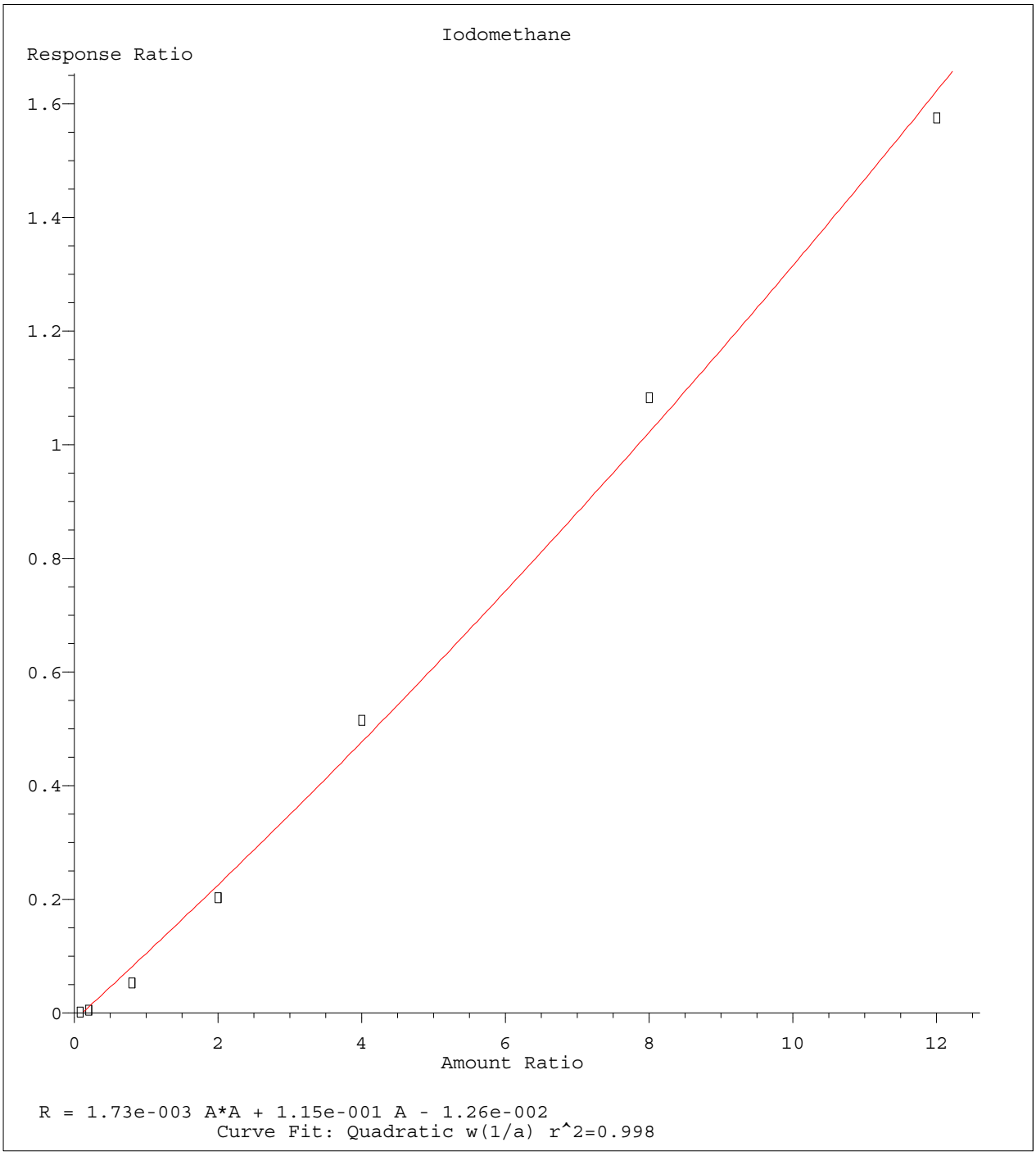

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

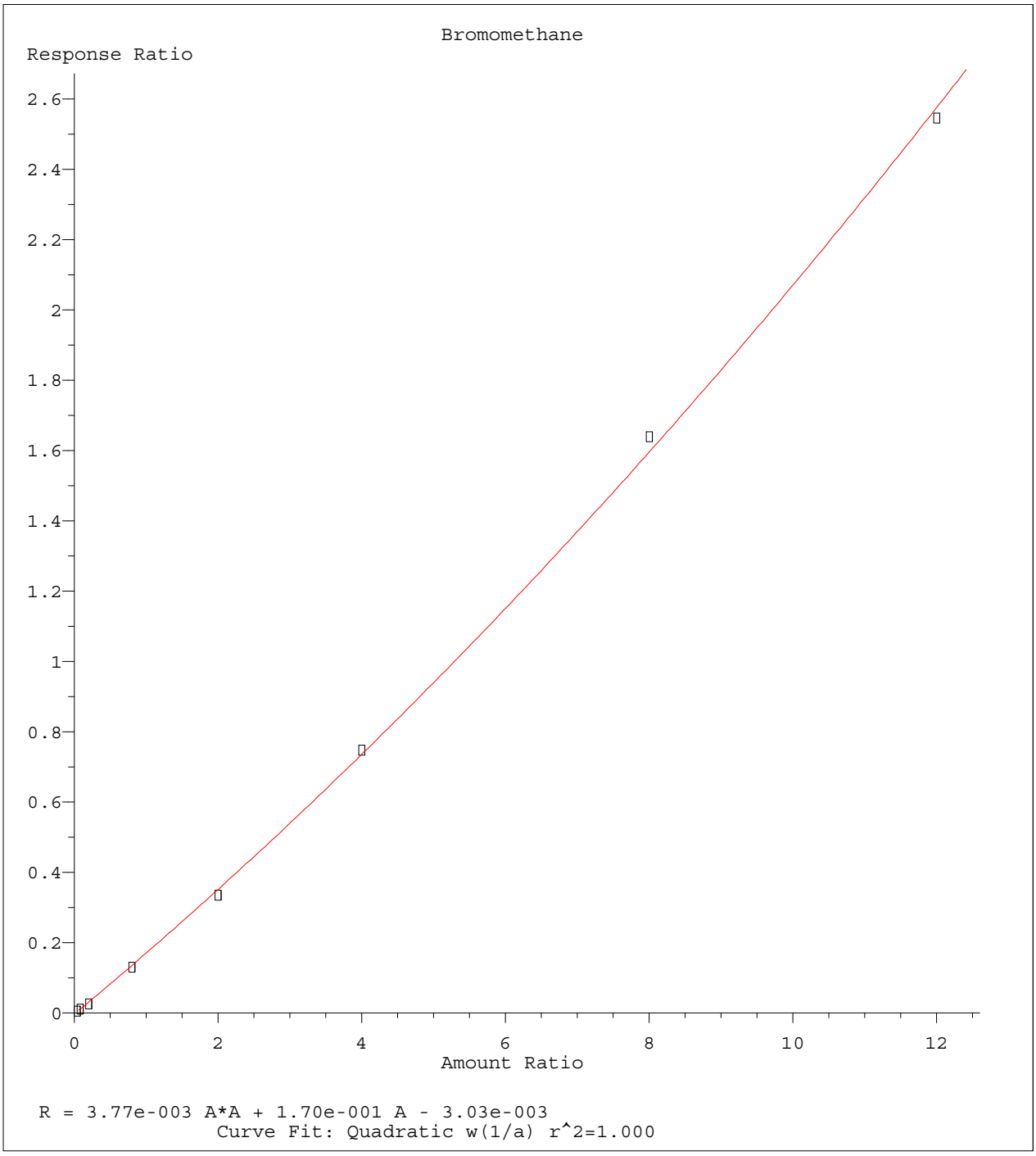

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:44:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Tue May 17 11:43:20 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	837879	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	574720	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	304324	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	229742	25.5204 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.08%		
43) 1,2-Dichloroethane-d4	10.31	65	238672	24.7259 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.92%		
58) Toluene-d8	12.68	98	776362	25.8115 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.24%		
80) p-Bromofluorobenzene	16.07	95	315683	25.0519 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.20%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	761591	54.2141 ug/L	99
3) Chloromethane	3.62	50	415589	50.6814 ug/L	100
4) Vinyl Chloride	3.84	62	509607	52.3810 ug/L	100
5) 1,3-Butadiene	3.88	54	347562	42.6002 ug/L	97
6) Bromomethane	4.73	94	272060	46.3924 ug/L	99
7) Chloroethane	4.88	64	285509	53.3336 ug/L	98
8) Trichlorofluoromethane	5.37	101	849580	46.9313 ug/L	100
9) Diethyl ether	5.90	59	451307	104.4282 ug/L	99
10) Isoprene	5.93	67	582863	53.0208 ug/L	99
11) Acrolein	6.13	56	38877	100.4722 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	419584	49.3091 ug/L	97
13) Acetone	6.23	43	54234	57.5310 ug/L	94
14) 1,1-Dichloroethene	6.46	61	622831	45.9700 ug/L	99
15) Tert-Butyl Alcohol	6.59	59	59797	197.9422 ug/L	97
16) Dimethyl Sulfide	6.73	62	351814	72.6234 ug/L	98
17) Iodomethane	6.99	142	92716	26.2832 ug/L	99
18) Methyl acetate	7.00	43	127540	50.0514 ug/L	98
19) Methylene Chloride	7.25	84	417642	48.4385 ug/L	99
20) Carbon Disulfide	7.29	76	1199899	42.3200 ug/L	100
21) Acrylonitrile	7.43	53	65324	53.4074 ug/L	93
22) Methyl Tert Butyl Ether	7.46	73	949572	50.8859 ug/L	97
23) trans-1,2-Dichloroethene	7.70	61	598296	48.0666 ug/L	99
24) n-Hexane	7.77	57	425106	45.9930 ug/L	99
25) Diisopropyl ether	8.13	45	2040382	105.1615 ug/L	98
26) Vinyl Acetate	8.29	43	415568	46.7802 ug/L	99
27) 1,1-Dichloroethane	8.32	63	721661	46.6846 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	2040020	98.1343 ug/L	99
29) 2-Butanone	8.88	43	73394	52.9905 ug/L	99
30) Propionitrile	8.98	54	42290	104.7756 ug/L	100
31) 2,2-Dichloropropane	9.10	77	780073	47.8861 ug/L	99
32) cis-1,2-Dichloroethene	9.16	96	470465	48.9162 ug/L	98
33) Chloroform	9.38	83	860252	47.1317 ug/L	100
34) 1-Bromopropane	9.51	122	98585	71.5615 ug/L	98
35) Bromochloromethane	9.60	130	234493	47.5456 ug/L	99
36) Tetrahydrofuran	9.62	42	86049	94.3281 ug/L	99
38) 1,1,1-Trichloroethane	9.90	97	825167	47.5949 ug/L	100
39) Cyclohexane	9.93	56	586721	48.8808 ug/L	97
40) 1,1-Dichloropropene	10.10	75	627217	47.4632 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1962875	103.9618 ug/L	99
42) Carbon Tetrachloride	10.24	117	711823	46.2363 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M412232.D 8260WT.M Tue May 17 11:44:38 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	108	0.00
2	T	Dichlorodifluoromethane	50.0000	54.2141	-8.4	112	0.00
3	P	Chloromethane	50.0000	50.6814	-1.4	111	0.00
4	C	Vinyl Chloride	50.0000	52.3811	-4.8	112	-0.01
5	T	1,3-Butadiene	50.0000	42.6002	14.8	89	0.00
6	T	Bromomethane	50.0000	46.3924	7.2	104	-0.01
7	T	Chloroethane	50.0000	53.3336	-6.7	117	-0.01
8	T	Trichlorofluoromethane	50.0000	46.9313	6.1	101	-0.01
9	T	Diethyl ether	100.0000	104.4282	-4.4	116	0.00
10	T	Isoprene	50.0000	53.0208	-6.0	117	0.00
11	T	Acrolein	50.0000	100.4722	-100.9#	220	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	49.3091	1.4	108	0.00
13	T	Acetone	50.0000	57.5310	-15.1	118	-0.01
14	C	1,1-Dichloroethene	50.0000	45.9700	8.1	100	0.00
15	T	Tert-Butyl Alcohol	200.0000	197.9423	1.0	108	0.01
16	T	Dimethyl Sulfide	50.0000	72.6234	-45.2#	159	0.00
17	T	Iodomethane	50.0000	26.2832	47.4#	59	0.01
18	T	Methyl acetate	50.0000	50.0514	-0.1	111	0.00
19	T	Methylene Chloride	50.0000	48.4385	3.1	107	0.00
20	T	Carbon Disulfide	50.0000	42.3200	15.4	94	0.00
21	T	Acrylonitrile	50.0000	53.4074	-6.8	109	0.00
22	T	Methyl Tert Butyl Ether	50.0000	50.8859	-1.8	105	0.00
23	T	trans-1,2-Dichloroethene	50.0000	48.0666	3.9	105	0.00
24	T	n-Hexane	50.0000	45.9930	8.0	101	-0.01
25	T	Diisopropyl ether	100.0000	105.1615	-5.2	115	0.00
26	T	Vinyl Acetate	50.0000	46.7802	6.4	97	0.00
27	P	1,1-Dichloroethane	50.0000	46.6846	6.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.1343	1.9	104	0.00
29	T	2-Butanone	50.0000	52.9905	-6.0	110	0.00
30	T	Propionitrile	100.0000	104.7756	-4.8	111	0.00
31	T	2,2-Dichloropropane	50.0000	47.8861	4.2	102	0.00
32	T	cis-1,2-Dichloroethene	50.0000	48.9162	2.2	107	-0.01
33	C	Chloroform	50.0000	47.1317	5.7	102	0.00
34		1-Bromopropane	50.0000	71.5615	-43.1#	155	0.00
35	T	Bromochloromethane	50.0000	47.5456	4.9	102	0.00
36	T	Tetrahydrofuran	100.0000	94.3281	5.7	108	-0.01
37	S	Dibromofluoromethane	25.0000	25.5204	-2.1	109	0.00
38	T	1,1,1-Trichloroethane	50.0000	47.5949	4.8	101	0.00
39	T	Cyclohexane	50.0000	48.8808	2.2	109	0.00
40	T	1,1-Dichloropropene	50.0000	47.4632	5.1	102	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	103.9618	-4.0	111	0.00
42	T	Carbon Tetrachloride	50.0000	46.2363	7.5	98	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.7259	1.1	104	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	49.0148	2.0	103	0.00
46	T	Benzene	50.0000	48.5232	3.0	104	0.00
47	T	Trichloroethene	50.0000	51.0658	-2.1	110	0.00
48	T	Methylcyclohexane	50.0000	49.8573	0.3	109	0.00
49	C	1,2-Dichloropropane	50.0000	50.9747	-1.9	111	0.00
50	T	Bromodichloromethane	50.0000	48.3053	3.4	99	0.00
51	T	1,4-Dioxane	200.0000	216.9538	-8.5	110	0.01
52	T	Dibromomethane	50.0000	45.8126	8.4	99	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	51.2623	-2.5	104	0.00
54	T	4-Methyl-2-Pentanone	50.0000	51.8715	-3.7	107	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.8979	-7.8	111	0.00
56	T	Dimethyl Disulfide	50.0000	52.2714	-4.5	111	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	107	0.00
58	S	Toluene-d8	25.0000	25.8115	-3.2	108	0.00
59	C	Toluene	50.0000	49.0912	1.8	105	0.00
60	T	Ethyl Methacrylate	50.0000	55.9509	-11.9	113	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	50.6740	-1.3	102	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.0377	1.9	103	0.00
64	T	2-Hexanone	50.0000	53.6057	-7.2	112	0.00
65	T	1,3-Dichloropropane	50.0000	53.6720	-7.3	110	0.00
66	T	Tetrachloroethene	50.0000	47.8053	4.4	104	0.00
67	T	Dibromochloromethane	50.0000	49.6585	0.7	102	0.00
68	T	1,2-Dibromoethane	50.0000	51.1121	-2.2	105	0.00
69	T	1-Chlorohexane	50.0000	51.0611	-2.1	111	0.00
70	P	Chlorobenzene	50.0000	50.1844	-0.4	108	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	49.3793	1.2	103	0.00
72	C	Ethylbenzene	50.0000	48.2013	3.6	105	0.00
73	T	m-,p-Xylene	100.0000	101.1341	-1.1	108	0.00
74	T	o-Xylene	50.0000	50.5675	-1.1	108	0.00
75	T	Styrene	50.0000	51.5086	-3.0	105	0.00
76	P	Bromoform	50.0000	48.2227	3.6	99	0.00
77	T	Isopropylbenzene	50.0000	51.1140	-2.2	107	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	106	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	49.6172	0.8	103	0.00
80	S	p-Bromofluorobenzene	25.0000	25.0519	-0.2	108	0.00
81	T	1,2,3-Trichloropropane	50.0000	50.0849	-0.2	106	0.01
82	T	trans-1,4-Dichloro-2-Butene	50.0000	39.2043	21.6	86	0.00
83	T	n-Propylbenzene	50.0000	51.9237	-3.8	108	0.00
84	T	Bromobenzene	50.0000	49.4648	1.1	105	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	51.6344	-3.3	107	0.00
86	T	2-Chlorotoluene	50.0000	51.5639	-3.1	106	0.00
87	T	4-Chlorotoluene	50.0000	48.2650	3.5	108	0.00
88	T	a-Methylstyrene	50.0000	56.4132	-12.8	120	0.00
89	T	tert-Butylbenzene	50.0000	50.9494	-1.9	112	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	49.6617	0.7	105	0.00
91	T	sec-Butylbenzene	50.0000	51.3386	-2.7	108	0.00
92	T	p-Isopropyltoluene	50.0000	50.1261	-0.3	107	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.8943	-1.8	108	0.00
94	T	1,4-Dichlorobenzene	50.0000	50.4742	-0.9	110	0.00
95	T	n-Butylbenzene	50.0000	49.6520	0.7	105	0.00
96	T	1,2-Dichlorobenzene	50.0000	50.4907	-1.0	110	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	48.4851	3.0	100	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	50.1129	-0.2	107	0.00
99	T	Hexachlorobutadiene	50.0000	52.0919	-4.2	115	0.00
100	T	Naphthalene	50.0000	45.8047	8.4	95	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	47.7353	4.5	106	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412232.D 8260WT.M Sat May 14 18:09:03 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:21 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	709364	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	505399	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	272922	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	27428	100.2132 ug/L	99
3) 3-Chloro-1-propene	7.07	41	940418	104.3259 ug/L	82
4) 2-Chloro-1,3-butadiene	8.45	53	1188994	104.3183 ug/L	86
5) Ethyl Acetate	9.10	43	283167	104.3264 ug/L	95
6) Methacrylonitrile	9.25	67	155775	104.5365 ug/L #	63
7) Isobutyl Alcohol	9.25	43	17893	197.3629 ug/L #	96
9) Methyl methacrylate	11.42	41	298802	102.0346 ug/L	70
10) 2-Nitropropane	11.75	43	121321	95.8263 ug/L	97
13) Cyclohexanone	15.84	55	11401	102.1363 ug/L #	70

(#) = qualifier out of range (m) = manual integration
8M412321.D A9FOOWT.M Thu May 19 09:01:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

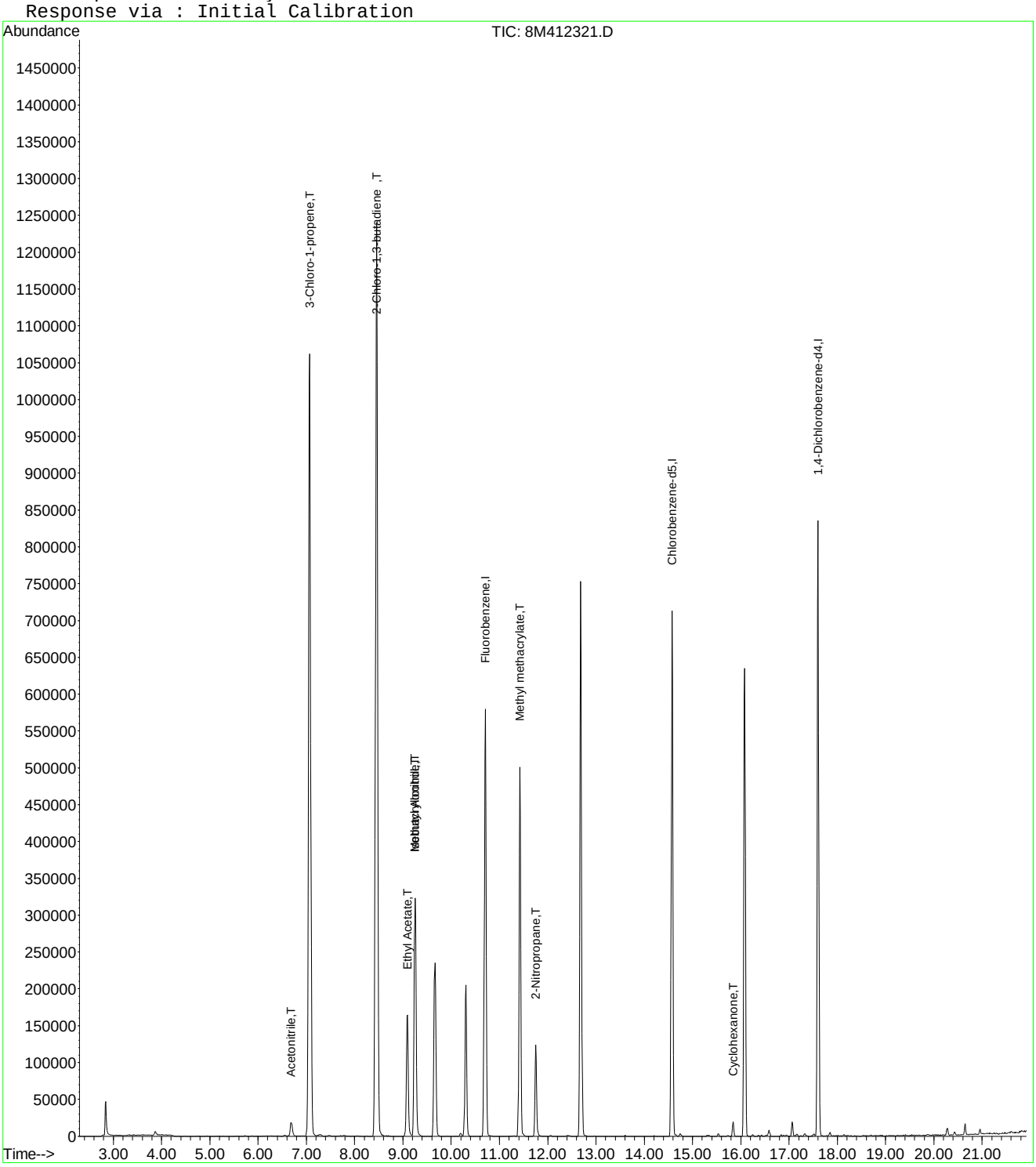

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	100.2132	-0.2	100	0.00
3	T	3-Chloro-1-propene	100.0000	104.3259	-4.3	100	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	104.3183	-4.3	100	0.00
5	T	Ethyl Acetate	100.0000	104.3264	-4.3	100	0.00
6	T	Methacrylonitrile	100.0000	104.5365	-4.5	100	0.00
7	T	Isobutyl Alcohol	200.0000	197.3629	1.3	100	-0.01
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.02
9	T	Methyl methacrylate	100.0000	102.0346	-2.0	100	0.00
10	T	2-Nitropropane	100.0000	95.8263	4.2	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	100.0000	102.1363	-2.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412321.D A9FOOWT.M Thu May 19 09:02:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:20:35 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	677339	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	488377	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	260939	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	13323	50.9795 ug/L	98
3) 3-Chloro-1-propene	7.07	41	453655	52.7060 ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	568765	52.2609 ug/L	87
5) Ethyl Acetate	9.09	43	131636	50.7913 ug/L	97
6) Methacrylonitrile	9.25	67	74064	52.0523 ug/L #	62
7) Isobutyl Alcohol	9.26	43	8483	97.9930 ug/L	95
9) Methyl methacrylate	11.42	41	143892	51.4593 ug/L	70
10) 2-Nitropropane	11.75	43	56559	46.7858 ug/L	95
13) Cyclohexanone	15.84	55	5225	48.9579 ug/L	83

(#) = qualifier out of range (m) = manual integration
8M412322.D A9FOOWT.M Thu May 19 09:20:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:19 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

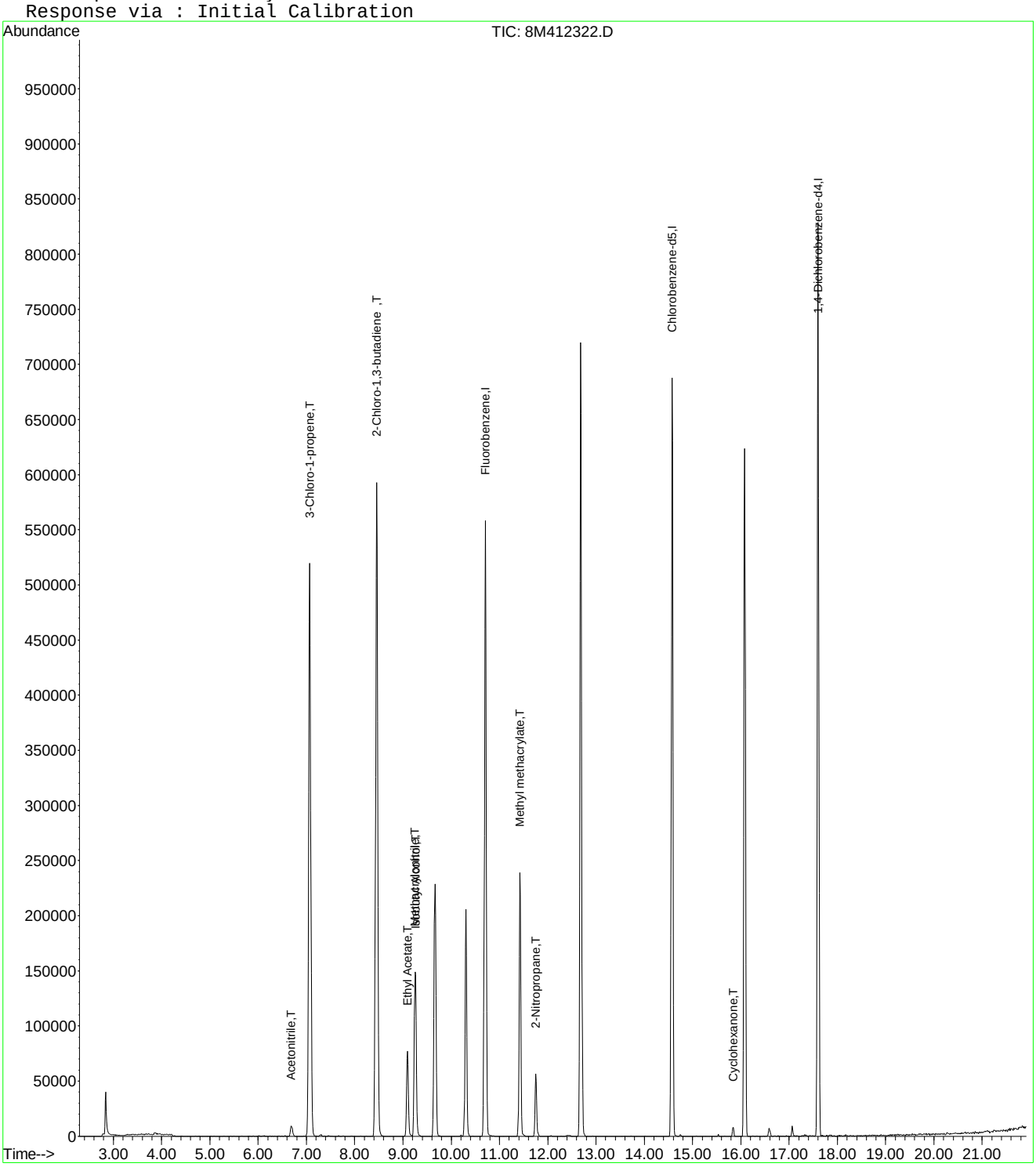

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	50.9795	-2.0	100	0.00
3	T	3-Chloro-1-propene	50.0000	52.7060	-5.4	100	0.00
4	T	2-Chloro-1,3-butadiene	50.0000	52.2609	-4.5	100	0.00
5	T	Ethyl Acetate	50.0000	50.7913	-1.6	100	0.00
6	T	Methacrylonitrile	50.0000	52.0523	-4.1	100	0.00
7	T	Isobutyl Alcohol	100.0000	97.9929	2.0	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.02
9	T	Methyl methacrylate	50.0000	51.4592	-2.9	100	0.00
10	T	2-Nitropropane	50.0000	46.7858	6.4	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	50.0000	48.9579	2.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412322.D A9FOOWT.M Thu May 19 09:02:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:22:33 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	652985	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	476539	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	256082	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	4873	19.3416 ug/L	80
3) 3-Chloro-1-propene	7.07	41	172467	20.7847 ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	219296	20.9015 ug/L	87
5) Ethyl Acetate	9.09	43	50385	20.1659 ug/L	100
6) Methacrylonitrile	9.26	67	28119	20.4992 ug/L #	63
7) Isobutyl Alcohol	9.27	43	2774	33.2395 ug/L #	8
9) Methyl methacrylate	11.42	41	55309	20.5176 ug/L	73
10) 2-Nitropropane	11.75	43	21584	18.5202 ug/L	99
13) Cyclohexanone	15.84	55	2230	21.2913 ug/L	87

(#) = qualifier out of range (m) = manual integration
8M412323.D A9FOOWT.M Thu May 19 09:22:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:21 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

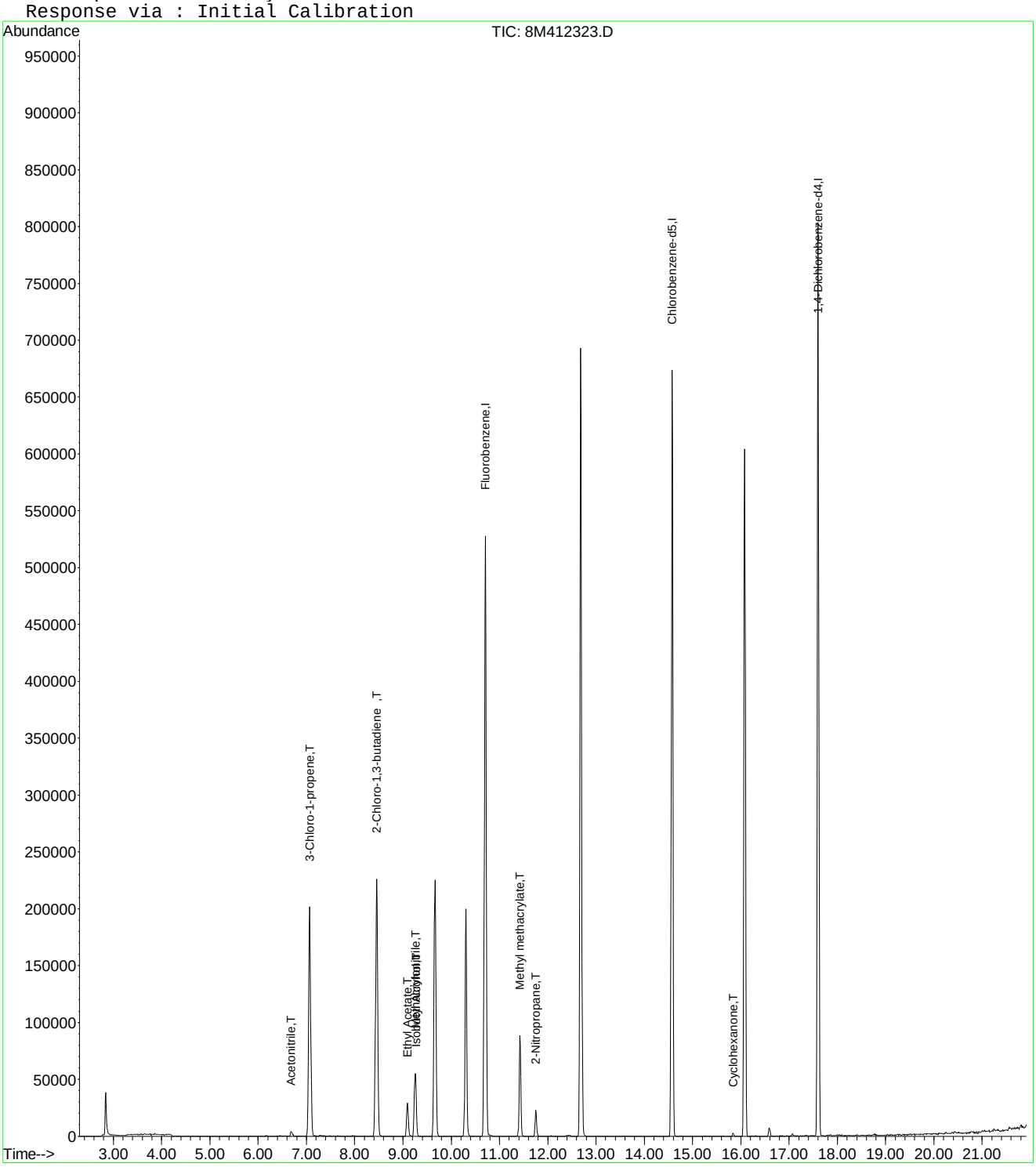

8M412323.D A9FOOWT.M Thu May 19 09:22:34 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	19.3416	3.3	100	0.00
3	T	3-Chloro-1-propene	20.0000	20.7847	-3.9	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	20.9015	-4.5	100	0.00
5	T	Ethyl Acetate	20.0000	20.1659	-0.8	100	0.00
6	T	Methacrylonitrile	20.0000	20.4992	-2.5	100	0.00
7	T	Isobutyl Alcohol	-1.0000	33.2395	0.0	0	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.18#
9	T	Methyl methacrylate	20.0000	20.5176	-2.6	100	0.00
10	T	2-Nitropropane	20.0000	18.5203	7.4	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	20.0000	21.2913	-6.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412323.D A9FOOWT.M Thu May 19 09:02:17 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:22:43 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	665645	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	483812	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	257678	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	405	1.5769 ug/L #	23
3) 3-Chloro-1-propene	7.07	41	40699	4.8115 ug/L	84
4) 2-Chloro-1,3-butadiene	8.45	53	48973	4.5789 ug/L	81
5) Ethyl Acetate	9.09	43	10675	4.1913 ug/L	95
6) Methacrylonitrile	9.26	67	5417	3.8740 ug/L #	72
7) Isobutyl Alcohol	9.27	43	441	5.1838 ug/L #	8
9) Methyl methacrylate	11.43	41	11811	4.2981 ug/L	65
10) 2-Nitropropane	11.76	43	4170	3.5100 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412324.D A9FOOWT.M Thu May 19 09:22:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:21 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

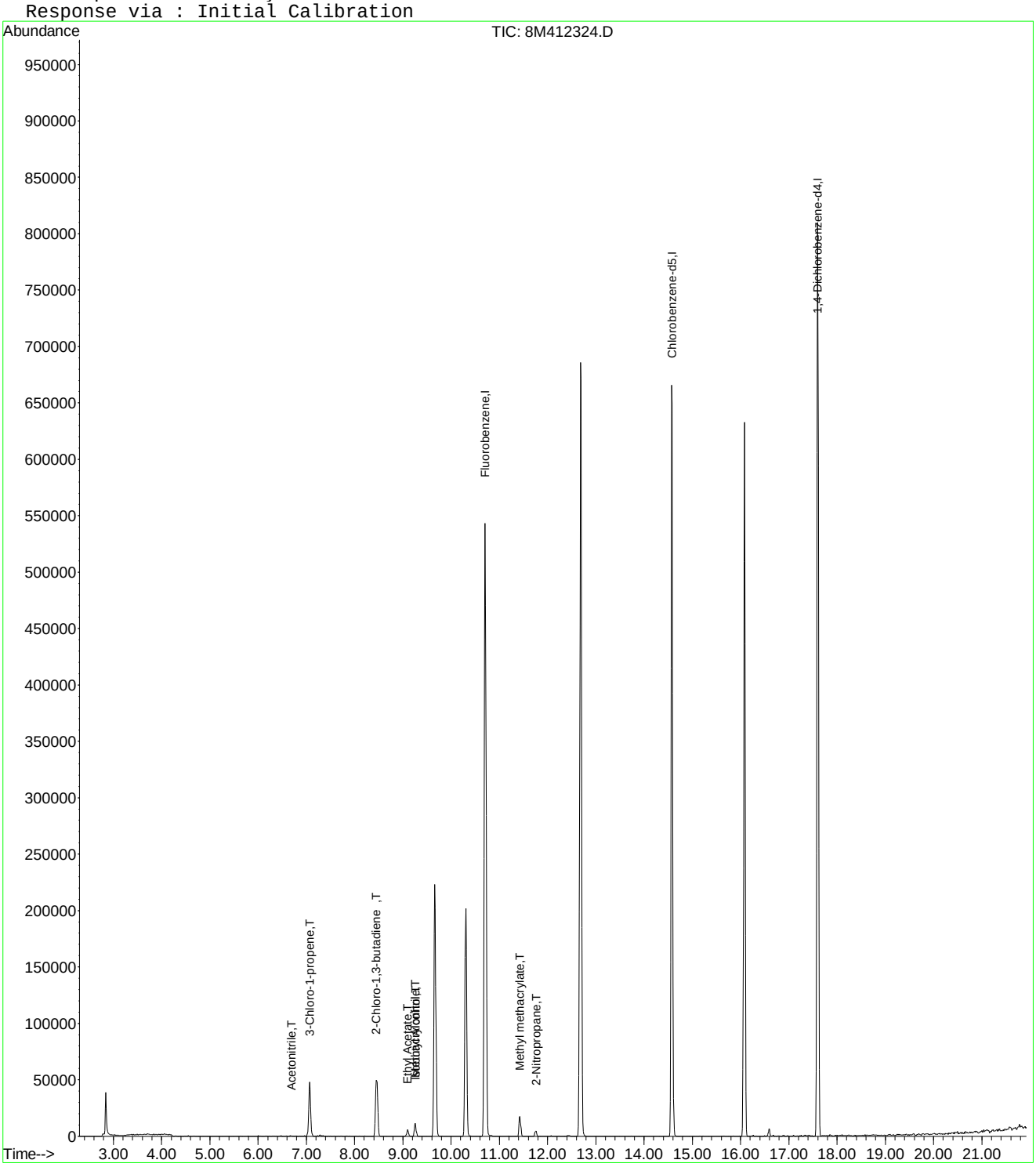

8M412324.D A9FOOWT.M Thu May 19 09:22:43 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	-1.0000	1.5769	0.0	0	0.00
3	T	3-Chloro-1-propene	5.0000	4.8115	3.8	100	0.00
4	T	2-Chloro-1,3-butadiene	5.0000	4.5789	8.4	100	0.00
5	T	Ethyl Acetate	5.0000	4.1913	16.2	100	0.00
6	T	Methacrylonitrile	5.0000	3.8740	22.5	100	0.00
7	T	Isobutyl Alcohol	-1.0000	5.1838	0.0	0	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.18#
9	T	Methyl methacrylate	5.0000	4.2981	14.0	100	0.00
10	T	2-Nitropropane	-1.0000	3.5100	0.0	0	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	0.0000	0.0	0	-15.84#

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412324.D A9FOOWT.M Thu May 19 09:02:03 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412325.D Vial: 7
Acq On : 17 May 2016 11:42 Operator: TMB
Sample : WG569079-06 200ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:27 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	682012	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	491515	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	261877	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.68	41	52022	197.6946 ug/L	97
3) 3-Chloro-1-propene	7.06	41	1768403	204.0468 ug/L	83
4) 2-Chloro-1,3-butadiene	8.46	53	2283706	208.4003 ug/L	87
5) Ethyl Acetate	9.09	43	537585	206.0040 ug/L	94
6) Methacrylonitrile	9.25	67	297408	207.5869 ug/L #	63
7) Isobutyl Alcohol	9.26	43	34441	395.1256 ug/L	95
9) Methyl methacrylate	11.42	41	577612	205.1526 ug/L	72
10) 2-Nitropropane	11.75	43	248395	204.0652 ug/L	95
13) Cyclohexanone	15.85	55	19752	184.4122 ug/L #	59

(#) = qualifier out of range (m) = manual integration
8M412325.D A9FOOWT.M Thu May 19 09:01:28 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412325.D Vial: 7
Acq On : 17 May 2016 11:42 Operator: TMB
Sample : WG569079-06 200ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

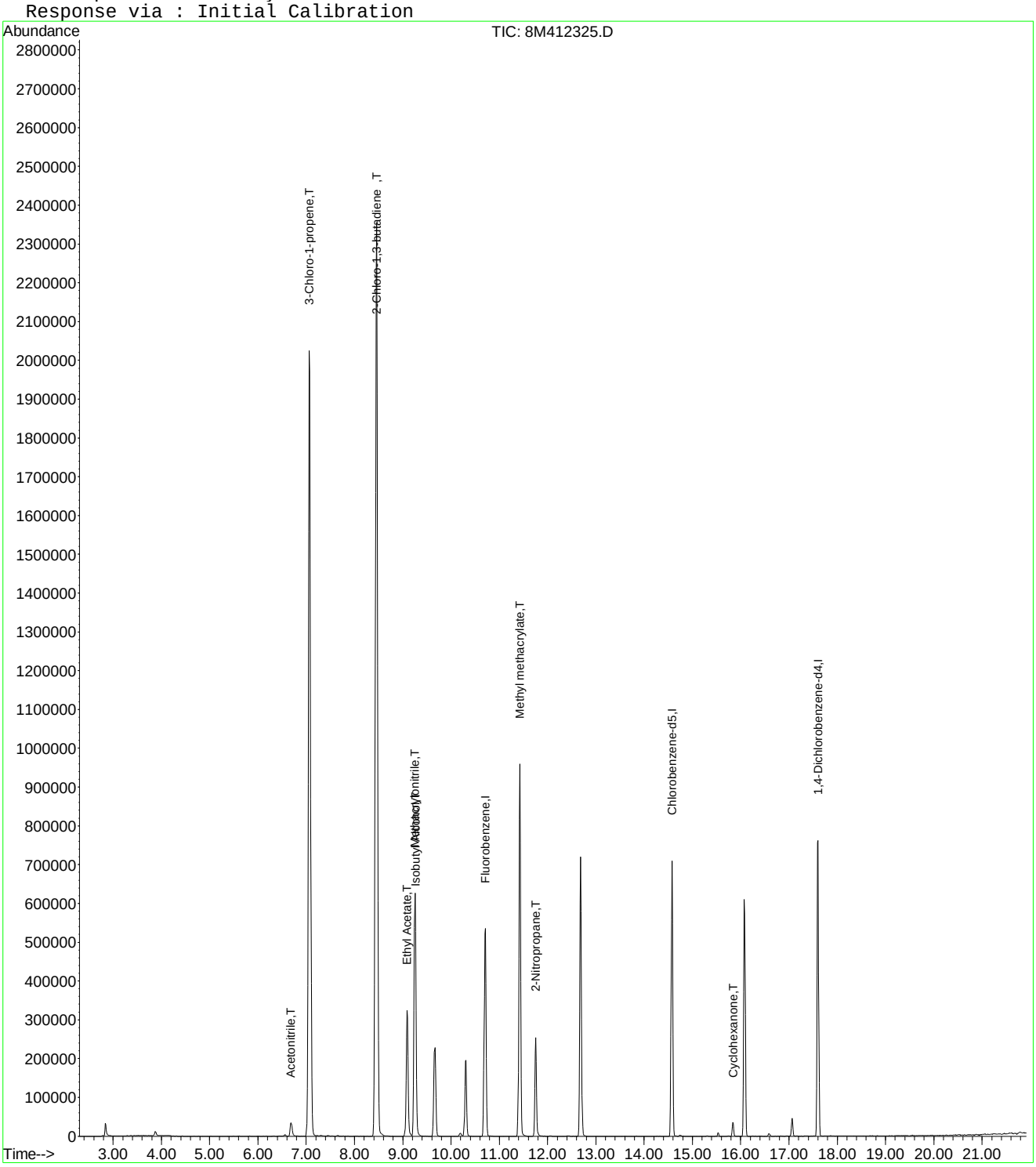

8M412325.D A9FOOWT.M Thu May 19 09:01:28 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412326.D Vial: 8
Acq On : 17 May 2016 12:40 Operator: TMB
Sample : WG569079-07 300ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:29 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	694903	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	496643	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	267309	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	81471	303.8636 ug/L	98
3) 3-Chloro-1-propene	7.06	41	2563559	290.3084 ug/L	83
4) 2-Chloro-1,3-butadiene	8.46	53	3270971	292.9562 ug/L	86
5) Ethyl Acetate	9.09	43	821184	308.8424 ug/L	95
6) Methacrylonitrile	9.25	67	451708	309.4374 ug/L #	62
7) Isobutyl Alcohol	9.26	43	55071	620.0836 ug/L	94
9) Methyl methacrylate	11.42	41	874430	304.8132 ug/L	70
10) 2-Nitropropane	11.75	43	392965	316.8456 ug/L	94
13) Cyclohexanone	15.84	55	33523	306.6233 ug/L #	61

(#) = qualifier out of range (m) = manual integration
8M412326.D A9FOOWT.M Thu May 19 09:01:29 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412326.D Vial: 8
Acq On : 17 May 2016 12:40 Operator: TMB
Sample : WG569079-07 300ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

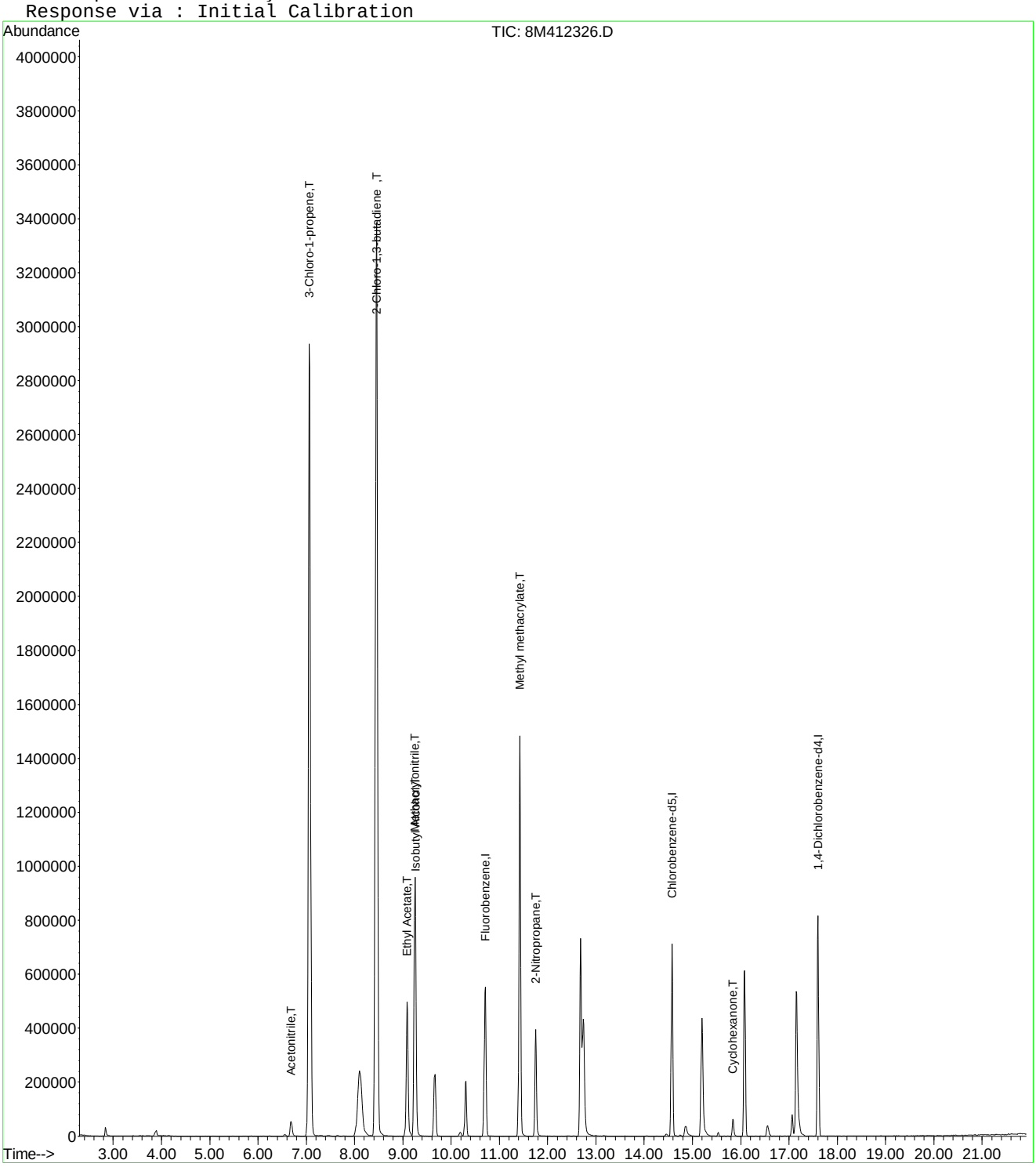

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412327.D Vial: 9
Acq On : 17 May 2016 13:10 Operator: TMB
Sample : WG569079-08 400ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:30 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	700514	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	502552	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	270883	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	110761	409.7980 ug/L	97
3) 3-Chloro-1-propene	7.07	41	3406131	382.6353 ug/L	82
4) 2-Chloro-1,3-butadiene	8.45	53	4356691	387.0705 ug/L	85
5) Ethyl Acetate	9.09	43	1116818	416.6642 ug/L	94
6) Methacrylonitrile	9.25	67	615482	418.2517 ug/L #	62
7) Isobutyl Alcohol	9.26	43	75472	842.9862 ug/L	97
9) Methyl methacrylate	11.42	41	1199317	414.7153 ug/L	71
10) 2-Nitropropane	11.75	43	538580	430.7760 ug/L	94
13) Cyclohexanone	15.84	55	45874	414.0575 ug/L #	55

(#) = qualifier out of range (m) = manual integration
8M412327.D A9FOOWT.M Thu May 19 09:01:31 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412327.D Vial: 9
Acq On : 17 May 2016 13:10 Operator: TMB
Sample : WG569079-08 400ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

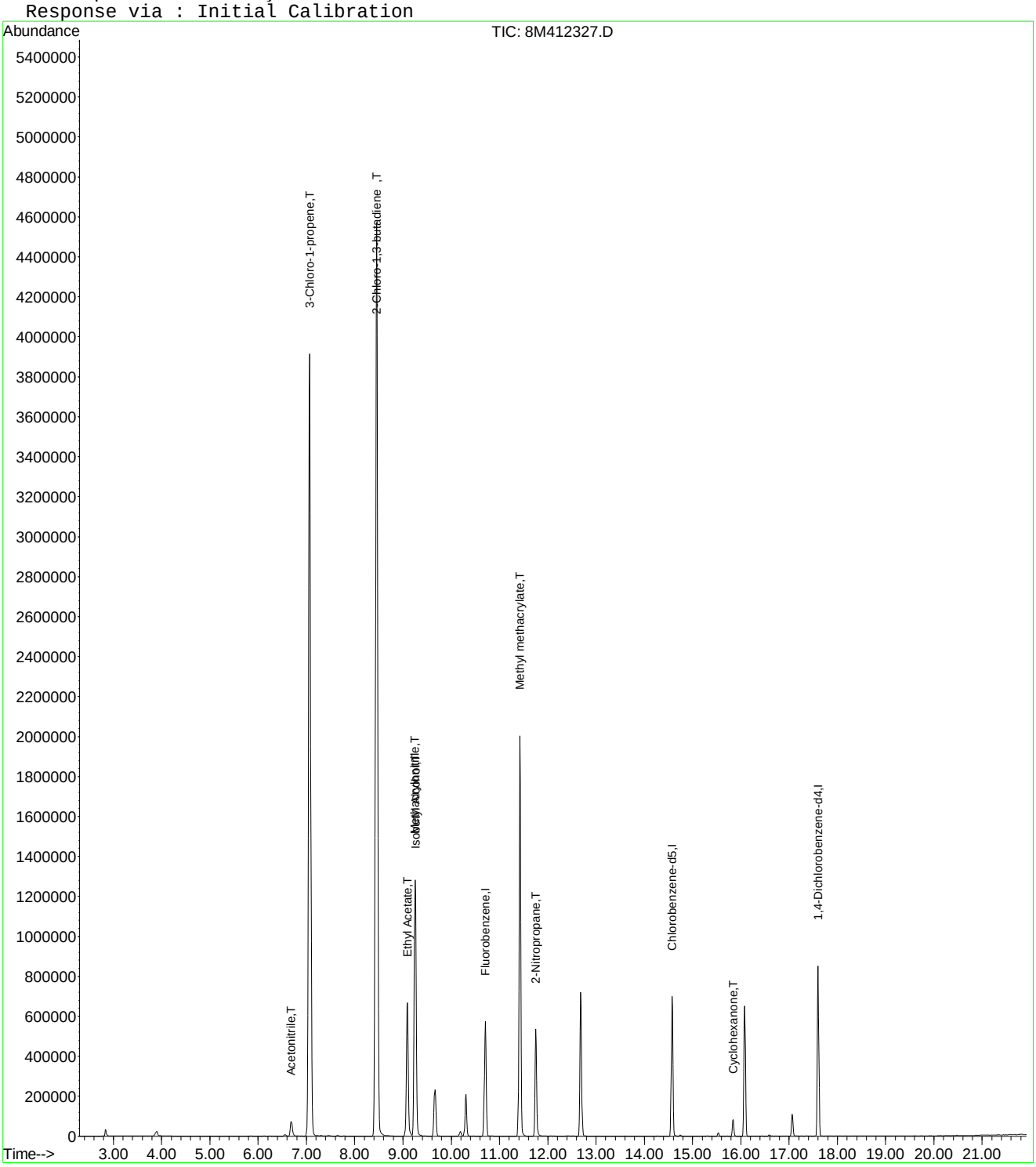

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412328.D Vial: 10
Acq On : 17 May 2016 13:39 Operator: TMB
Sample : WG569079-09 500ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:31 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	695694	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	495257	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	266442	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.69	41	132245	492.6753	ug/L	99
3) 3-Chloro-1-propene	7.06	41	4228273	478.2834	ug/L	82
4) 2-Chloro-1,3-butadiene	8.46	53	5390856	482.2693	ug/L	85
5) Ethyl Acetate	9.09	43	1321922	496.6017	ug/L	95
6) Methacrylonitrile	9.25	67	729852	499.4083	ug/L #	61
7) Isobutyl Alcohol	9.26	43	85200	958.2367	ug/L	96
9) Methyl methacrylate	11.42	41	1416438	493.1877	ug/L	72
10) 2-Nitropropane	11.75	43	637335	513.2956	ug/L	93
13) Cyclohexanone	15.84	55	52070	477.8160	ug/L #	61

(#) = qualifier out of range (m) = manual integration
8M412328.D A9FOOWT.M Thu May 19 09:01:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412328.D Vial: 10
Acq On : 17 May 2016 13:39 Operator: TMB
Sample : WG569079-09 500ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

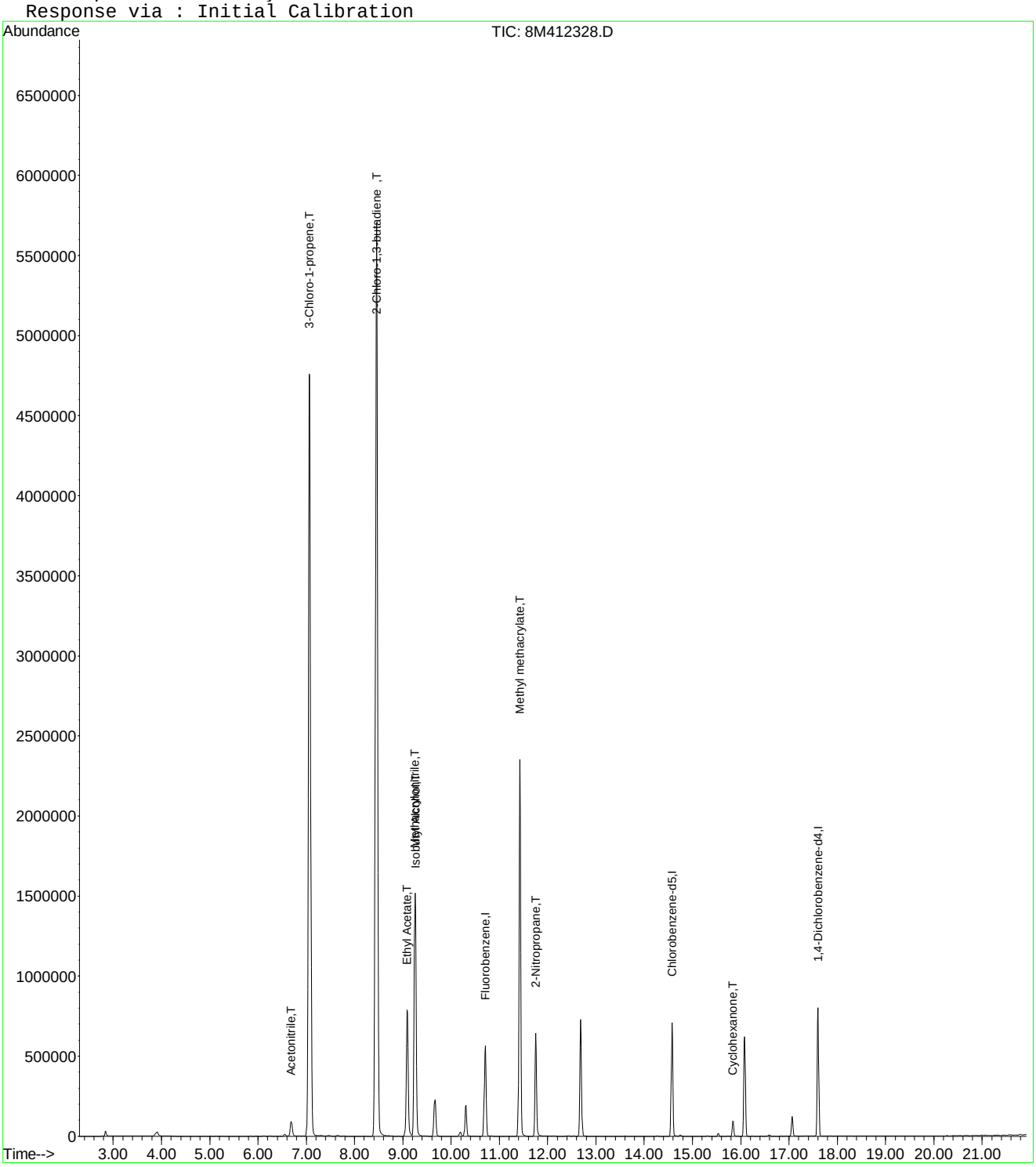

8M412328.D A9FOOWT.M Thu May 19 09:01:32 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:32 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	676765	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	486447	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	263036	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.69	41	29876	114.4154	ug/L	97
3) 3-Chloro-1-propene	7.07	41	858035	99.7718	ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	1224194	112.5803	ug/L	87
5) Ethyl Acetate	9.09	43	295545	114.1317	ug/L	96
6) Methacrylonitrile	9.25	67	161574	113.6509	ug/L #	63
7) Isobutyl Alcohol	9.26	43	19948	230.6285	ug/L	94
9) Methyl methacrylate	11.42	41	326465	116.8508	ug/L	72
10) 2-Nitropropane	11.75	43	131261	108.6716	ug/L	94
13) Cyclohexanone	15.83	55	10459	97.2189	ug/L #	74

(#) = qualifier out of range (m) = manual integration
8M412331.D A9FOOWT.M Thu May 19 09:01:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

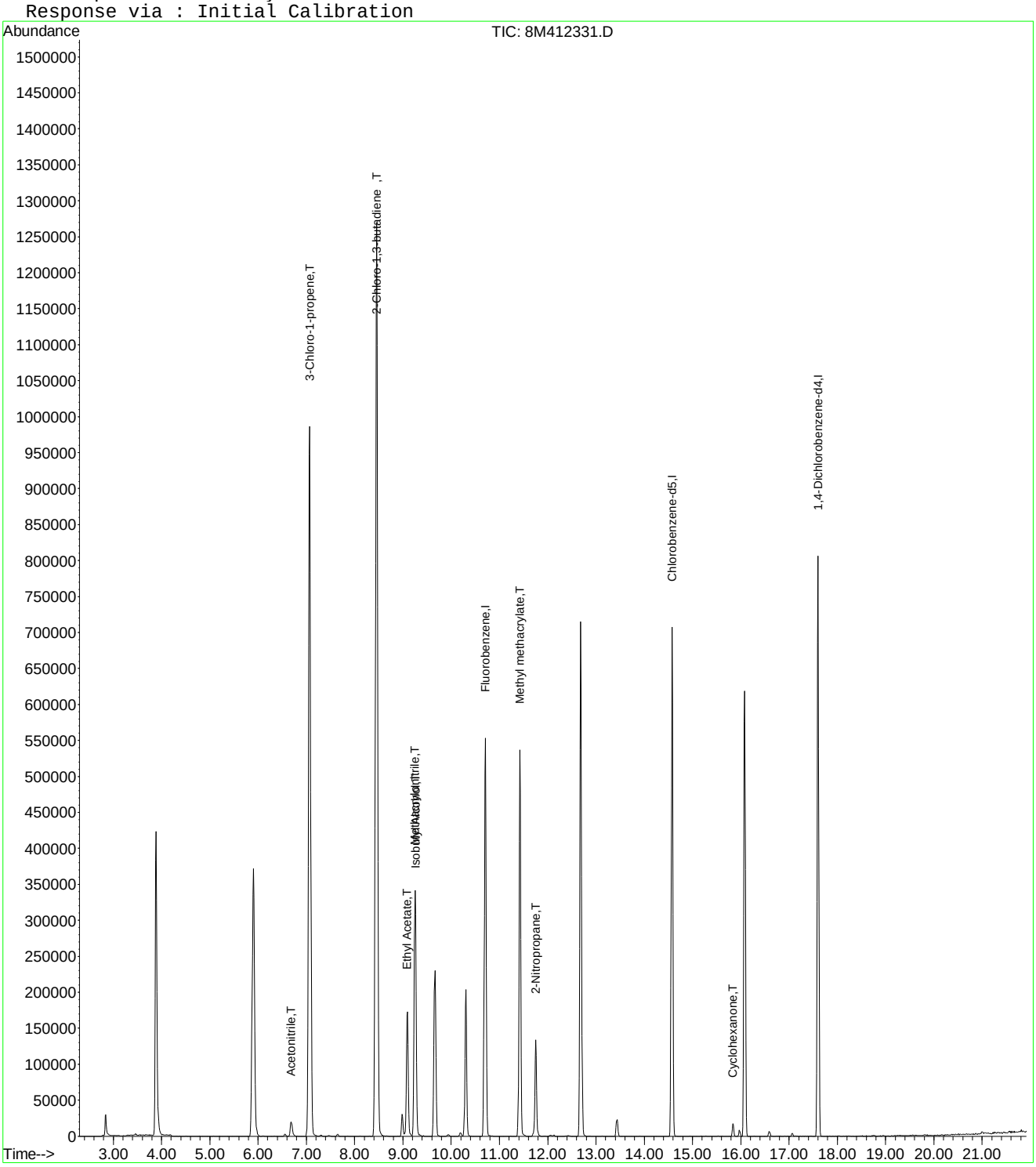

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	95	0.00
2	T	Acetonitrile	100.0000	114.4154	-14.4	109	0.00
3	T	3-Chloro-1-propene	100.0000	99.7718	0.2	91	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	112.5803	-12.6	103	0.00
5	T	Ethyl Acetate	100.0000	114.1317	-14.1	104	0.00
6	T	Methacrylonitrile	100.0000	113.6509	-13.7	104	0.00
7	T	Isobutyl Alcohol	200.0000	230.6285	-15.3	111	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.01
9	T	Methyl methacrylate	100.0000	116.8508	-16.9	109	0.00
10	T	2-Nitropropane	100.0000	108.6716	-8.7	108	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	96	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	96	0.00
13	T	Cyclohexanone	100.0000	97.2189	2.8	92	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412331.D A9FOOWT.M Thu May 19 09:03:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\071316\11M13225.D Vial: 3
Acq On : 13 Jul 2016 13:04 Operator: TMB
Sample : WG576234-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 13 16:31:02 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Thu Jul 07 15:06:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	540525	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	487764	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	289065	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	147210	24.8851 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.56%		
43) 1,2-Dichloroethane-d4	10.23	65	138484	20.5311 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 82.12%		
57) Toluene-d8	12.47	98	518026	24.4429 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.76%		
78) p-Bromofluorobenzene	15.64	95	204802	22.9838 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 91.92%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	452344	53.4115 ug/L	94
3) Chloromethane	3.72	50	365507	53.8875 ug/L	100
4) Vinyl Chloride	3.96	62	303827	53.9392 ug/L	99
5) 1,3-Butadiene	4.00	54	262017	46.7809 ug/L	98
6) Bromomethane	4.86	94	201697	52.0797 ug/L	99
7) Chloroethane	5.00	64	196297	54.2383 ug/L	100
8) Trichlorofluoromethane	5.48	101	561000	49.9684 ug/L	100
9) Diethyl ether	6.01	59	351369	84.6230 ug/L	91
10) Isoprene	6.04	67	319075	46.1086 ug/L	89
11) Acrolein	6.24	56	21175	39.1267 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	291783	53.5602 ug/L	94
13) Acetone	6.34	43	44076	34.3403 ug/L	93
14) 1,1-Dichloroethene	6.56	61	490453	49.5644 ug/L	93
15) Tert-Butyl Alcohol	6.66	59	46257	130.2926 ug/L	98
16) Dimethyl Sulfide	6.81	62	169760	42.9580 ug/L	88
17) Iodomethane	7.06	142	210858	46.9086 ug/L	94
18) Methyl acetate	7.06	43	136354	33.6998 ug/L	94
19) Methylene Chloride	7.31	84	267411	52.2170 ug/L	79
20) Carbon Disulfide	7.36	76	845140	51.0166 ug/L	100
21) Acrylonitrile	7.49	53	71433	41.5092 ug/L	96
22) Methyl Tert Butyl Ether	7.52	73	591958	46.3447 ug/L	96
23) trans-1,2-Dichloroethene	7.75	96	297037	54.2383 ug/L	91
24) n-Hexane	7.82	57	422132	46.2792 ug/L	97
25) Diisopropyl ether	8.15	45	1957457	86.0021 ug/L	97
26) Vinyl Acetate	8.31	43	285883	33.2156 ug/L	98
27) 1,1-Dichloroethane	8.34	63	564151	51.3395 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	1664382	89.8445 ug/L	98
29) 2-Butanone	8.87	43	68635	35.3718 ug/L	92
30) Propionitrile	8.98	54	46024	80.9825 ug/L	98
31) 2,2-Dichloropropane	9.09	77	469392	54.5958 ug/L	99
32) cis-1,2-Dichloroethene	9.15	96	330044	54.6576 ug/L	90
33) Chloroform	9.35	83	535036	49.5813 ug/L	99
34) 1-Bromopropane	9.48	122	56532	52.6687 ug/L	98
35) Bromochloromethane	9.57	130	206096	57.4700 ug/L	85
36) Tetrahydrofuran	9.60	42	90033	65.7076 ug/L	88
38) 1,1,1-Trichloroethane	9.85	97	540439	50.8925 ug/L	96
39) Cyclohexane	9.88	56	543750	46.9841 ug/L	93
40) 1,1-Dichloropropene	10.04	75	400828	52.8643 ug/L	98
41) Carbon Tetrachloride	10.18	117	543136	52.3780 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	1189576	92.4123 ug/L	97

(#) = qualifier out of range (m) = manual integration
11M13225.D 8260WT.M Wed Jul 13 16:31:04 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\071316\11M13225.D Vial: 3
Acq On : 13 Jul 2016 13:04 Operator: TMB
Sample : WG576234-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 13 16:31:02 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Thu Jul 07 15:06:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.34	62	394507	45.0126 ug/L	99
45) Benzene	10.38	78	1103657	53.1712 ug/L	99
46) Trichloroethene	11.08	130	375812	55.7033 ug/L	97
47) Methylcyclohexane	11.17	83	412640	49.5588 ug/L	93
48) 1,2-Dichloropropane	11.29	63	293444	51.0717 ug/L	96
49) 1,4-Dioxane	11.56	88	4986	159.3402 ug/L	85
50) Bromodichloromethane	11.57	83	410665	50.9124 ug/L	99
51) Dibromomethane	11.65	93	148769	49.6869 ug/L	96
52) 2-Chloroethyl Vinyl Ether	11.84	63	124935	44.1182 ug/L	99
53) 4-Methyl-2-Pentanone	11.87	58	63798	39.9435 ug/L	93
54) cis-1,3-Dichloropropene	12.17	75	425635	52.7575 ug/L	100
55) Dimethyl Disulfide	12.42	79	217836	44.8699 ug/L	94
58) Toluene	12.56	91	1272953	51.5521 ug/L	100
59) Ethyl Methacrylate	12.64	69	223138	42.3205 ug/L	83
60) trans-1,3-Dichloropropene	12.73	75	370439	46.7383 ug/L	97
61) 1,1,2-Trichloroethane	12.94	97	206218	47.0973 ug/L	100
62) 2-Hexanone	12.86	43	108340	33.6900 ug/L	93
63) 1,3-Dichloropropane	13.21	76	326210	46.3934 ug/L	85
64) Tetrachloroethene	13.34	164	305359	53.1781 ug/L	96
65) Dibromochloromethane	13.59	129	328555	49.1958 ug/L	99
66) 1,2-Dibromoethane	13.82	107	206469	47.0654 ug/L	98
67) 1-Chlorohexane	13.89	91	387875	47.6447 ug/L	89
68) Chlorobenzene	14.29	112	931120	51.4740 ug/L	100
69) 1,1,1,2-Tetrachloroethane	14.32	131	371112	50.7023 ug/L	99
70) Ethylbenzene	14.31	106	477611	51.4901 ug/L	96
71) m-,p-Xylene	14.39	106	1154569	102.3859 ug/L	96
72) o-Xylene	14.92	106	563598	51.3555 ug/L	97
73) Styrene	14.95	104	951759	52.4913 ug/L	95
74) Bromoform	15.43	173	191630	47.3423 ug/L	99
75) Isopropylbenzene	15.31	105	1488280	51.2800 ug/L	99
77) 1,1,2,2-Tetrachloroethane	15.51	83	196851	43.7305 ug/L	97
79) 1,2,3-Trichloropropane	15.70	110	70778	41.9650 ug/L	93
80) trans-1,4-Dichloro-2-Buten	15.74	53	54225	25.3645 ug/L	49
81) n-Propylbenzene	15.79	91	1684343	50.3137 ug/L	98
82) Bromobenzene	15.91	156	440614	50.1583 ug/L	89
83) 1,3,5-Trimethylbenzene	15.95	105	1265969	49.5558 ug/L	98
84) 2-Chlorotoluene	16.05	91	1170909	49.9369 ug/L	96
85) 4-Chlorotoluene	16.09	91	1000061	47.6140 ug/L	97
86) a-Methylstyrene	16.34	118	630796	46.8060 ug/L	95
87) tert-Butylbenzene	16.39	134	274080	50.6404 ug/L	91
88) 1,2,4-Trimethylbenzene	16.44	105	1304183	50.1345 ug/L	98
89) sec-Butylbenzene	16.64	105	1493851	48.7000 ug/L	99
90) p-Isopropyltoluene	16.79	119	1379875	48.9752 ug/L	98
91) 1,3-Dichlorobenzene	16.98	146	840382	49.5333 ug/L	97
92) 1,4-Dichlorobenzene	17.10	146	837600	48.7059 ug/L	97
93) n-Butylbenzene	17.28	91	1155511	46.5418 ug/L	97
94) 1,2-Dichlorobenzene	17.57	146	745668	48.2472 ug/L	98
95) 1,2-Dibromo-3-Chloropropan	18.49	75	35842	35.5093 ug/L	94
96) 1,2,4-Trichlorobenzene	19.54	180	531054	46.9580 ug/L	97
97) Hexachlorobutadiene	19.69	225	200785	40.3006 ug/L	96
98) Naphthalene	19.89	128	901451	42.9444 ug/L	100
99) 1,2,3-Trichlorobenzene	20.19	180	454977	43.8359 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\071316\11M13225.D Vial: 3
Acq On : 13 Jul 2016 13:04 Operator: TMB
Sample : WG576234-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 13 16:31 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Thu Jul 07 15:06:07 2016
Response via : Initial Calibration

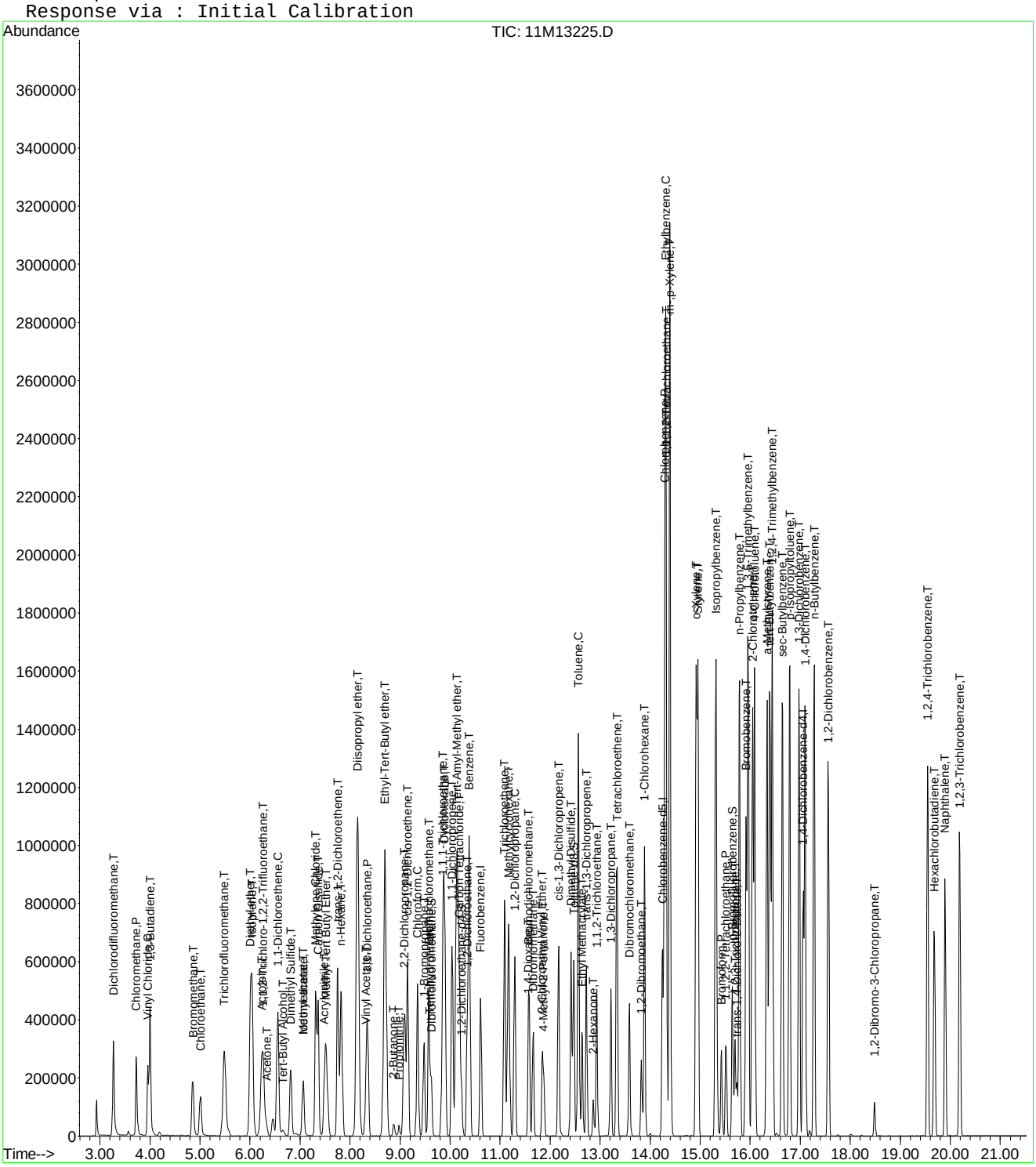

Continuing Calibration Area and RT check

Instrument: hpms11
Initial cal date: 13 May 2016 17:51
CCV date: 13 Jul 2016 13:04
CCV Filename: 11M13225.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	521583	10.61	438582	14.25	263885	17.06
CCV	540525	10.61	487764	14.25	289065	17.06

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\071316\11M13225.D Vial: 3
Acq On : 13 Jul 2016 13:04 Operator: TMB
Sample : WG576234-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Thu Jul 07 15:06:07 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	104	0.00
2	T	Dichlorodifluoromethane	0.3917	0.4184	-6.8	108	0.00
3	P	Chloromethane	0.3137	0.3381	-7.8	127	0.00
4	C	Vinyl Chloride	0.2605	0.2811	-7.9	116	0.00
5	T	1,3-Butadiene	0.2591	0.2424	6.4	93	0.00
6	T	Bromomethane	0.1791	0.1866	-4.2	117	0.01
7	T	Chloroethane	0.1674	0.1816	-8.5	117	0.00
8	T	Trichlorofluoromethane	0.5193	0.5189	0.1	108	0.00
9	T	Diethyl ether	0.1920	0.1625	15.4	90	0.00
10	T	Isoprene	0.3201	0.2952	7.8	96	0.00
11	T	Acrolein	0.0228	0.0196	14.0	84	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2520	0.2699	-7.1	114	0.01
13	T	Acetone	0.0594	0.0408	31.3#	73	0.00
14	C	1,1-Dichloroethene	0.4577	0.4537	0.9	107	0.00
15	T	Tert-Butyl Alcohol	0.0164	0.0107	34.8#	67	0.00
16	T	Dimethyl Sulfide	0.1828	0.1570	14.1	88	0.00
17	T	Iodomethane	0.1615	0.1951	-20.8	98	0.00
18	T	Methyl acetate	0.2006	0.1261	37.1#	74	0.00
19	T	Methylene Chloride	0.2369	0.2474	-4.4	114	0.00
20	T	Carbon Disulfide	0.7662	0.7818	-2.0	104	0.00
21	T	Acrylonitrile	0.0796	0.0661	17.0	84	0.00
22	T	Methyl Tert Butyl Ether	0.5908	0.5476	7.3	97	0.00
23	T	trans-1,2-Dichloroethene	0.2533	0.2748	-8.5	118	0.01
24	T	n-Hexane	0.4219	0.3905	7.4	94	0.00
25	T	Diisopropyl ether	1.0527	0.9053	14.0	90	0.00
26	T	Vinyl Acetate	0.3793	0.2645	30.3#	70	0.00
27	P	1,1-Dichloroethane	0.5082	0.5219	-2.7	109	0.00
28	T	Ethyl-Tert-Butyl ether	0.8568	0.7698	10.2	93	0.00
29	T	2-Butanone	0.0897	0.0635	29.3#	75	0.00
30	T	Propionitrile	0.0263	0.0213	19.0	81	0.00
31	T	2,2-Dichloropropane	0.3977	0.4342	-9.2	117	0.00
32	T	cis-1,2-Dichloroethene	0.2793	0.3053	-9.3	117	0.00
33	C	Chloroform	0.4991	0.4949	0.8	109	0.00
34	T	1-Bromopropane	0.0432	0.0523	-21.1	113	0.00
35	T	Bromochloromethane	0.1659	0.1906	-14.9	115	0.00
36	T	Tetrahydrofuran	0.0634	0.0416	34.3#	70	0.00
37	S	Dibromofluoromethane	0.2736	0.2723	0.5	105	0.00
38	T	1,1,1-Trichloroethane	0.4911	0.4999	-1.8	109	0.00
39	T	Cyclohexane	0.5353	0.5030	6.0	95	0.00
40	T	1,1-Dichloropropene	0.3507	0.3708	-5.7	114	0.00
41	T	Carbon Tetrachloride	0.4796	0.5024	-4.8	110	0.00
42	T	Tert-Amyl-Methyl ether	0.5954	0.5502	7.6	97	0.00
43	S	1,2-Dichloroethane-d4	0.3120	0.2562	17.9	88	0.00
44	T	1,2-Dichloroethane	0.4054	0.3649	10.0	94	0.00
45	T	Benzene	0.9600	1.0209	-6.3	116	0.00
46	T	Trichloroethene	0.3120	0.3476	-11.4	122	-0.01
47	T	Methylcyclohexane	0.3851	0.3817	0.9	99	0.00
48	C	1,2-Dichloropropane	0.2657	0.2714	-2.1	109	0.00
49	T	1,4-Dioxane	0.0014	0.0012	17.9	85	0.01
50	T	Bromodichloromethane	0.3731	0.3799	-1.8	107	0.00
51	T	Dibromomethane	0.1385	0.1376	0.6	104	0.00
52	T	2-Chloroethyl Vinyl Ether	0.1310	0.1156	11.8	94	0.00
53	T	4-Methyl-2-Pentanone	0.0739	0.0590	20.1	84	0.00
54	T	cis-1,3-Dichloropropene	0.3731	0.3937	-5.5	108	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\071316\11M13225.D Vial: 3
Acq On : 13 Jul 2016 13:04 Operator: TMB
Sample : WG576234-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Thu Jul 07 15:06:07 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	0.2245	0.2015	10.3	92	0.00
56	I	Chlorobenzene-d5	1.0000	1.0000	0.0	111	0.00
57	S	Toluene-d8	1.0862	1.0620	2.2	112	0.00
58	C	Toluene	1.2656	1.3049	-3.1	116	0.00
59	T	Ethyl Methacrylate	0.2702	0.2287	15.4	89	-0.01
60	T	trans-1,3-Dichloropropene	0.4062	0.3797	6.5	101	0.00
61	T	1,1,2-Trichloroethane	0.2244	0.2114	5.8	106	0.00
62	T	2-Hexanone	0.1648	0.1111	32.6#	75	0.00
63	T	1,3-Dichloropropane	0.3604	0.3344	7.2	103	0.00
64	T	Tetrachloroethene	0.2943	0.3130	-6.4	122	0.00
65	T	Dibromochloromethane	0.3423	0.3368	1.6	106	0.00
66	T	1,2-Dibromoethane	0.2248	0.2117	5.9	105	0.00
67	T	1-Chlorohexane	0.4173	0.3976	4.7	103	0.00
68	P	Chlorobenzene	0.9272	0.9545	-2.9	117	0.00
69	T	1,1,1,2-Tetrachloroethane	0.3751	0.3804	-1.4	114	0.00
70	C	Ethylbenzene	0.4754	0.4896	-3.0	117	0.00
71	T	m-,p-Xylene	0.5780	0.5918	-2.4	116	0.00
72	T	o-Xylene	0.5625	0.5777	-2.7	115	0.00
73	T	Styrene	0.9293	0.9756	-5.0	114	0.00
74	P	Bromoform	0.2075	0.1964	5.3	104	0.00
75	T	Isopropylbenzene	1.4875	1.5256	-2.6	114	0.00
76	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	110	0.00
77	P	1,1,2,2-Tetrachloroethane	0.3893	0.3405	12.5	94	-0.01
78	S	p-Bromofluorobenzene	0.7706	0.7085	8.1	108	0.00
79	T	1,2,3-Trichloropropane	0.1351	0.1224	9.4	98	0.00
80	T	trans-1,4-Dichloro-2-Butene	0.1588	0.0938	40.9#	58	0.00
81	T	n-Propylbenzene	2.8953	2.9134	-0.6	111	0.00
82	T	Bromobenzene	0.7597	0.7621	-0.3	116	-0.01
83	T	1,3,5-Trimethylbenzene	2.2094	2.1898	0.9	111	0.00
84	T	2-Chlorotoluene	2.0279	2.0253	0.1	115	0.00
85	T	4-Chlorotoluene	1.8165	1.7298	4.8	107	0.00
86	T	a-Methylstyrene	1.1656	1.0911	6.4	97	0.00
87	T	tert-Butylbenzene	0.4681	0.4741	-1.3	113	-0.01
88	T	1,2,4-Trimethylbenzene	2.2498	2.2559	-0.3	111	0.00
89	T	sec-Butylbenzene	2.6529	2.5839	2.6	107	-0.01
90	T	p-Isopropyltoluene	2.4367	2.3868	2.0	108	0.00
91	T	1,3-Dichlorobenzene	1.4673	1.4536	0.9	114	0.00
92	T	1,4-Dichlorobenzene	1.4873	1.4488	2.6	113	0.00
93	T	n-Butylbenzene	2.1472	1.9987	6.9	103	0.00
94	T	1,2-Dichlorobenzene	1.3366	1.2898	3.5	109	0.00
95	T	1,2-Dibromo-3-Chloropropane	0.0825	0.0620	24.8	84	0.00
96	T	1,2,4-Trichlorobenzene	0.9781	0.9186	6.1	104	-0.01
97	T	Hexachlorobutadiene	0.4309	0.3473	19.4	92	0.00
98	T	Naphthalene	1.8154	1.5593	14.1	94	-0.01
99	T	1,2,3-Trichlorobenzene	0.8976	0.7870	12.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M13225.D 8260WT.M Wed Jul 13 16:31:31 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\071316\11M13225.D Vial: 3
Acq On : 13 Jul 2016 13:04 Operator: TMB
Sample : WG576234-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Thu Jul 07 15:06:07 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	104	0.00
2	T	Dichlorodifluoromethane	50.0000	53.4115	-6.8	108	0.00
3	P	Chloromethane	50.0000	53.8875	-7.8	127	0.00
4	C	Vinyl Chloride	50.0000	53.9392	-7.9	116	0.00
5	T	1,3-Butadiene	50.0000	46.7809	6.4	93	0.00
6	T	Bromomethane	50.0000	52.0797	-4.2	117	0.01
7	T	Chloroethane	50.0000	54.2383	-8.5	117	0.00
8	T	Trichlorofluoromethane	50.0000	49.9684	0.1	108	0.00
9	T	Diethyl ether	100.0000	84.6230	15.4	90	0.00
10	T	Isoprene	50.0000	46.1086	7.8	96	0.00
11	T	Acrolein	50.0000	39.1266	21.7	84	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	53.5602	-7.1	114	0.01
13	T	Acetone	50.0000	34.3403	31.3#	73	0.00
14	C	1,1-Dichloroethene	50.0000	49.5644	0.9	107	0.00
15	T	Tert-Butyl Alcohol	200.0000	130.2926	34.9#	67	0.00
16	T	Dimethyl Sulfide	50.0000	42.9580	14.1	88	0.00
17	T	Iodomethane	50.0000	46.9086	6.2	98	0.00
18	T	Methyl acetate	50.0000	33.6998	32.6#	74	0.00
19	T	Methylene Chloride	50.0000	52.2170	-4.4	114	0.00
20	T	Carbon Disulfide	50.0000	51.0166	-2.0	104	0.00
21	T	Acrylonitrile	50.0000	41.5092	17.0	84	0.00
22	T	Methyl Tert Butyl Ether	50.0000	46.3447	7.3	97	0.00
23	T	trans-1,2-Dichloroethene	50.0000	54.2383	-8.5	118	0.01
24	T	n-Hexane	50.0000	46.2792	7.4	94	0.00
25	T	Diisopropyl ether	100.0000	86.0021	14.0	90	0.00
26	T	Vinyl Acetate	50.0000	33.2156	33.6#	70	0.00
27	P	1,1-Dichloroethane	50.0000	51.3395	-2.7	109	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	89.8445	10.2	93	0.00
29	T	2-Butanone	50.0000	35.3718	29.3#	75	0.00
30	T	Propionitrile	100.0000	80.9825	19.0	81	0.00
31	T	2,2-Dichloropropane	50.0000	54.5958	-9.2	117	0.00
32	T	cis-1,2-Dichloroethene	50.0000	54.6576	-9.3	117	0.00
33	C	Chloroform	50.0000	49.5813	0.8	109	0.00
34	T	1-Bromopropane	50.0000	52.6687	-5.3	113	0.00
35	T	Bromochloromethane	50.0000	57.4700	-14.9	115	0.00
36	T	Tetrahydrofuran	100.0000	65.7076	34.3#	70	0.00
37	S	Dibromofluoromethane	25.0000	24.8851	0.5	105	0.00
38	T	1,1,1-Trichloroethane	50.0000	50.8925	-1.8	109	0.00
39	T	Cyclohexane	50.0000	46.9841	6.0	95	0.00
40	T	1,1-Dichloropropene	50.0000	52.8643	-5.7	114	0.00
41	T	Carbon Tetrachloride	50.0000	52.3780	-4.8	110	0.00
42	T	Tert-Amyl-Methyl ether	100.0000	92.4123	7.6	97	0.00
43	S	1,2-Dichloroethane-d4	25.0000	20.5311	17.9	88	0.00
44	T	1,2-Dichloroethane	50.0000	45.0126	10.0	94	0.00
45	T	Benzene	50.0000	53.1712	-6.3	116	0.00
46	T	Trichloroethene	50.0000	55.7032	-11.4	122	-0.01
47	T	Methylcyclohexane	50.0000	49.5588	0.9	99	0.00
48	C	1,2-Dichloropropane	50.0000	51.0717	-2.1	109	0.00
49	T	1,4-Dioxane	200.0000	159.3402	20.3	85	0.01
50	T	Bromodichloromethane	50.0000	50.9124	-1.8	107	0.00
51	T	Dibromomethane	50.0000	49.6869	0.6	104	0.00
52	T	2-Chloroethyl Vinyl Ether	50.0000	44.1182	11.8	94	0.00
53	T	4-Methyl-2-Pentanone	50.0000	39.9435	20.1	84	0.00
54	T	cis-1,3-Dichloropropene	50.0000	52.7575	-5.5	108	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\071316\11M13225.D Vial: 3
Acq On : 13 Jul 2016 13:04 Operator: TMB
Sample : WG576234-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Thu Jul 07 15:06:07 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	50.0000	44.8699	10.3	92	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	111	0.00
57	S	Toluene-d8	25.0000	24.4429	2.2	112	0.00
58	C	Toluene	50.0000	51.5521	-3.1	116	0.00
59	T	Ethyl Methacrylate	50.0000	42.3205	15.4	89	-0.01
60	T	trans-1,3-Dichloropropene	50.0000	46.7383	6.5	101	0.00
61	T	1,1,2-Trichloroethane	50.0000	47.0973	5.8	106	0.00
62	T	2-Hexanone	50.0000	33.6900	32.6#	75	0.00
63	T	1,3-Dichloropropane	50.0000	46.3934	7.2	103	0.00
64	T	Tetrachloroethene	50.0000	53.1781	-6.4	122	0.00
65	T	Dibromochloromethane	50.0000	49.1958	1.6	106	0.00
66	T	1,2-Dibromoethane	50.0000	47.0654	5.9	105	0.00
67	T	1-Chlorohexane	50.0000	47.6447	4.7	103	0.00
68	P	Chlorobenzene	50.0000	51.4740	-2.9	117	0.00
69	T	1,1,1,2-Tetrachloroethane	50.0000	50.7023	-1.4	114	0.00
70	C	Ethylbenzene	50.0000	51.4902	-3.0	117	0.00
71	T	m-,p-Xylene	100.0000	102.3859	-2.4	116	0.00
72	T	o-Xylene	50.0000	51.3555	-2.7	115	0.00
73	T	Styrene	50.0000	52.4913	-5.0	114	0.00
74	P	Bromoform	50.0000	47.3423	5.3	104	0.00
75	T	Isopropylbenzene	50.0000	51.2799	-2.6	114	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	110	0.00
77	P	1,1,2,2-Tetrachloroethane	50.0000	43.7305	12.5	94	-0.01
78	S	p-Bromofluorobenzene	25.0000	22.9838	8.1	108	0.00
79	T	1,2,3-Trichloropropane	50.0000	41.9650	16.1	98	0.00
80	T	trans-1,4-Dichloro-2-Butene	50.0000	25.3645	49.3#	58	0.00
81	T	n-Propylbenzene	50.0000	50.3137	-0.6	111	0.00
82	T	Bromobenzene	50.0000	50.1583	-0.3	116	-0.01
83	T	1,3,5-Trimethylbenzene	50.0000	49.5558	0.9	111	0.00
84	T	2-Chlorotoluene	50.0000	49.9369	0.1	115	0.00
85	T	4-Chlorotoluene	50.0000	47.6140	4.8	107	0.00
86	T	a-Methylstyrene	50.0000	46.8060	6.4	97	0.00
87	T	tert-Butylbenzene	50.0000	50.6404	-1.3	113	-0.01
88	T	1,2,4-Trimethylbenzene	50.0000	50.1345	-0.3	111	0.00
89	T	sec-Butylbenzene	50.0000	48.7000	2.6	107	-0.01
90	T	p-Isopropyltoluene	50.0000	48.9752	2.0	108	0.00
91	T	1,3-Dichlorobenzene	50.0000	49.5333	0.9	114	0.00
92	T	1,4-Dichlorobenzene	50.0000	48.7059	2.6	113	0.00
93	T	n-Butylbenzene	50.0000	46.5418	6.9	103	0.00
94	T	1,2-Dichlorobenzene	50.0000	48.2472	3.5	109	0.00
95	T	1,2-Dibromo-3-Chloropropane	50.0000	35.5093	29.0#	84	0.00
96	T	1,2,4-Trichlorobenzene	50.0000	46.9580	6.1	104	-0.01
97	T	Hexachlorobutadiene	50.0000	40.3006	19.4	92	0.00
98	T	Naphthalene	50.0000	42.9444	14.1	94	-0.01
99	T	1,2,3-Trichlorobenzene	50.0000	43.8359	12.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M13225.D 8260WT.M Wed Jul 13 16:31:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413220.D Vial: 2
Acq On : 24 Jun 2016 19:02 Operator: FJB
Sample : WG574189-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 26 15:22:09 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	678100	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	510311	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	291689	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	200047	27.4578 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.84%		
43) 1,2-Dichloroethane-d4	10.30	65	220060	28.1695 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.68%		
58) Toluene-d8	12.68	98	704942	26.3951 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.60%		
80) p-Bromofluorobenzene	16.08	95	307880	25.4910 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.96%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	611083	53.7500 ug/L	99
3) Chloromethane	3.62	50	309943	46.7040 ug/L	99
4) Vinyl Chloride	3.84	62	443957	56.3855 ug/L	99
5) 1,3-Butadiene	3.89	54	456753	69.1748 ug/L	95
6) Bromomethane	4.73	94	205574	43.4526 ug/L	98
7) Chloroethane	4.89	64	224511	51.8211 ug/L	96
8) Trichlorofluoromethane	5.37	101	901792	61.5535 ug/L	99
9) Diethyl ether	5.90	59	315266	90.1385 ug/L	98
10) Isoprene	5.94	67	510341	57.3624 ug/L	98
11) Acrolein	6.14	56	11210	35.7970 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	391032	56.7817 ug/L	95
13) Acetone	6.23	43	42133	55.2256 ug/L	95
14) 1,1-Dichloroethene	6.47	61	631152	57.5607 ug/L	97
15) Tert-Butyl Alcohol	6.58	59	54453	222.7247 ug/L	98
16) Dimethyl Sulfide	6.73	62	207961	53.0436 ug/L	99
17) Iodomethane	6.98	142	125051	41.6279 ug/L	100
18) Methyl acetate	7.00	43	112868	54.7304 ug/L	98
19) Methylene Chloride	7.25	84	363084	52.0332 ug/L	99
20) Carbon Disulfide	7.29	76	1337241	58.2771 ug/L	100
21) Acrylonitrile	7.43	53	49125	49.6271 ug/L	100
22) Methyl Tert Butyl Ether	7.46	73	799267	52.9235 ug/L	98
23) trans-1,2-Dichloroethene	7.70	61	561767	55.7662 ug/L	100
24) n-Hexane	7.78	57	433995	58.0186 ug/L	99
25) Diisopropyl ether	8.12	45	1550679	98.7541 ug/L	96
26) Vinyl Acetate	8.30	43	245921	34.2061 ug/L	99
27) 1,1-Dichloroethane	8.32	63	699550	55.9174 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1751989	104.1371 ug/L	98
29) 2-Butanone	8.88	43	52311	46.6679 ug/L	95
30) Propionitrile	8.98	54	31496	96.4196 ug/L	97
31) 2,2-Dichloropropane	9.10	77	838119	63.5722 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	424258	54.5059 ug/L	99
33) Chloroform	9.37	83	855188	57.8944 ug/L	100
34) 1-Bromopropane	9.51	122	71808	64.4064 ug/L	100
35) Bromochloromethane	9.61	130	215162	53.9056 ug/L	96
36) Tetrahydrofuran	9.63	42	76236	103.2625 ug/L	97
38) 1,1,1-Trichloroethane	9.91	97	885465	63.1070 ug/L	100
39) Cyclohexane	9.94	56	535861	55.1628 ug/L	96
40) 1,1-Dichloropropene	10.11	75	623126	58.2643 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	1601595	104.8145 ug/L	100
42) Carbon Tetrachloride	10.25	117	794240	63.7456 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413220.D 8260WT.M Sun Jun 26 15:22:13 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413220.D Vial: 2
Acq On : 24 Jun 2016 19:02 Operator: FJB
Sample : WG574189-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 26 15:22:09 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	569948	59.9476	ug/L		98
46)	Benzene	10.46	78	1532030	55.0010	ug/L		99
47)	Trichloroethene	11.21	130	431606	58.0965	ug/L		99
48)	Methylcyclohexane	11.30	83	667270	59.1227	ug/L		98
49)	1,2-Dichloropropane	11.43	63	315929	50.9503	ug/L		87
50)	Bromodichloromethane	11.73	83	634708	58.2388	ug/L		99
51)	1,4-Dioxane	11.72	88	7999	256.8053	ug/L		93
52)	Dibromomethane	11.81	93	188769	51.4282	ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	120364	45.1623	ug/L		98
54)	4-Methyl-2-Pentanone	12.06	58	49109	45.1092	ug/L		93
55)	cis-1,3-Dichloropropene	12.36	75	616891	55.6108	ug/L		98
56)	Dimethyl Disulfide	12.62	79	335084	56.5949	ug/L		100
59)	Toluene	12.78	91	1645815	51.9497	ug/L		100
60)	Ethyl Methacrylate	12.88	69	293301	48.2070	ug/L		96
62)	trans-1,3-Dichloropropene	12.96	75	549731	51.7790	ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	233001	46.6082	ug/L		99
64)	2-Hexanone	13.11	58	42469	40.4263	ug/L	#	90
65)	1,3-Dichloropropane	13.49	76	423482	47.5797	ug/L		97
66)	Tetrachloroethene	13.60	164	375608	55.3372	ug/L		99
67)	Dibromochloromethane	13.87	129	376424	51.5691	ug/L		99
68)	1,2-Dibromoethane	14.13	107	238961	47.9619	ug/L		98
69)	1-Chlorohexane	14.21	91	584866	54.0823	ug/L		96
70)	Chlorobenzene	14.62	112	1107644	51.8477	ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.65	131	440680	53.2449	ug/L		97
72)	Ethylbenzene	14.65	106	598639	51.2160	ug/L		99
73)	m-,p-Xylene	14.75	106	1440207	105.0481	ug/L		98
74)	o-Xylene	15.31	106	702984	52.4463	ug/L		99
75)	Styrene	15.35	104	1166311	53.0516	ug/L		96
76)	Bromoform	15.83	173	227868	52.6307	ug/L		99
77)	Isopropylbenzene	15.73	105	1961430	55.0840	ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	242287	41.3806	ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	80185	44.4730	ug/L		86
82)	trans-1,4-Dichloro-2-Buten	16.18	53	84755	46.1654	ug/L		80
83)	n-Propylbenzene	16.24	91	2295280	50.4383	ug/L		99
84)	Bromobenzene	16.37	156	463801	49.5503	ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	1718880	51.8534	ug/L		99
86)	2-Chlorotoluene	16.51	91	1608923	50.6401	ug/L		99
87)	4-Chlorotoluene	16.56	91	1412920	49.2325	ug/L		99
88)	a-Methylstyrene	16.84	118	804873	51.1773	ug/L		99
89)	tert-Butylbenzene	16.90	134	321920	49.6398	ug/L		99
90)	1,2,4-Trimethylbenzene	16.94	105	1747403	51.2648	ug/L		100
91)	sec-Butylbenzene	17.17	105	1992286	51.0878	ug/L		99
92)	p-Isopropyltoluene	17.32	119	1707754	51.5754	ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	904162	50.1657	ug/L		100
94)	1,4-Dichlorobenzene	17.64	146	887446	48.8390	ug/L		99
95)	n-Butylbenzene	17.85	91	1660604	50.7294	ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	764075	47.6653	ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	51927	44.1818	ug/L		94
98)	1,2,4-Trichlorobenzene	20.28	180	559137	46.6650	ug/L		99
99)	Hexachlorobutadiene	20.43	225	300078	53.6005	ug/L		98
100)	Naphthalene	20.65	128	727970	40.8932	ug/L		100
101)	1,2,3-Trichlorobenzene	20.96	180	431106	42.6472	ug/L		99

(#) = qualifier out of range (m) = manual integration
8M413220.D 8260WT.M Sun Jun 26 15:22:13 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413220.D Vial: 2
Acq On : 24 Jun 2016 19:02 Operator: FJB
Sample : WG574189-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 26 15:22 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

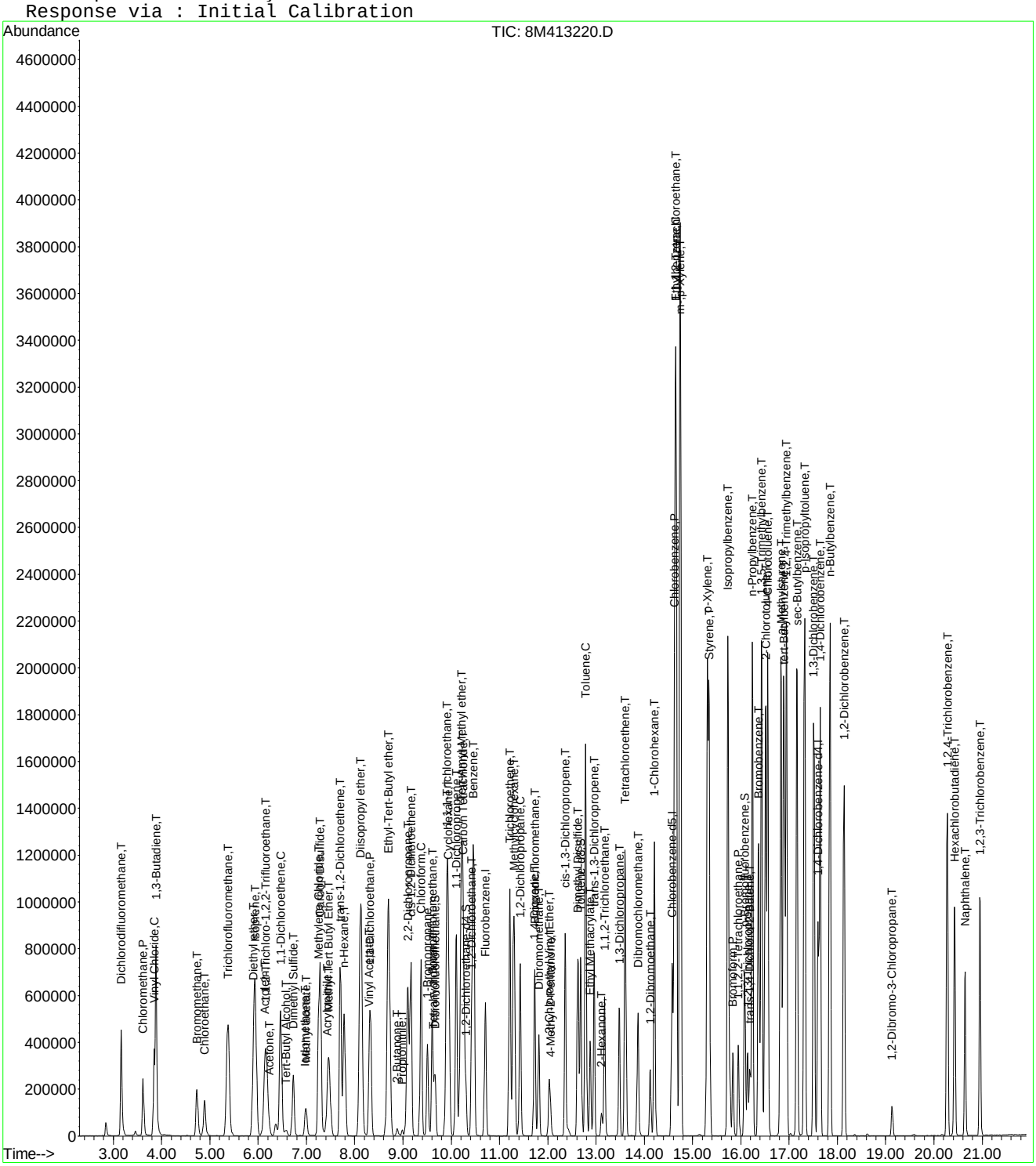

8M413220.D 8260WT.M Sun Jun 26 15:22:16 2016 Page 3

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413220.D Vial: 2
Acq On : 24 Jun 2016 19:02 Operator: FJB
Sample : WG574189-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	87	0.00
2	T	Dichlorodifluoromethane	0.4192	0.4506	-7.5	90	0.00
3	P	Chloromethane	0.2447	0.2285	6.6	83	0.00
4	C	Vinyl Chloride	0.2903	0.3273	-12.8	98	0.00
5	T	1,3-Butadiene	0.2434	0.3368	-38.4#	117	0.00
6	T	Bromomethane	0.1654	0.1516	8.4	79	0.00
7	T	Chloroethane	0.1597	0.1655	-3.6	92	0.00
8	T	Trichlorofluoromethane	0.5401	0.6649	-23.1	108	0.00
9	T	Diethyl ether	0.1290	0.1162	9.9	81	0.00
10	T	Isoprene	0.3280	0.3763	-14.7	102	0.00
11	T	Acrolein	0.0116	0.0083	28.4#	64	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2539	0.2883	-13.6	101	0.00
13	T	Acetone	0.0281	0.0311	-10.5	92	-0.01
14	C	1,1-Dichloroethene	0.4043	0.4654	-15.1	102	0.00
15	T	Tert-Butyl Alcohol	0.0090	0.0100	-11.4	98	0.00
16	T	Dimethyl Sulfide	0.1445	0.1533	-6.1	94	0.00
17	T	Iodomethane	0.0866	0.0922	-6.5	79	0.00
18	T	Methyl acetate	0.0760	0.0832	-9.5	98	0.00
19	T	Methylene Chloride	0.2573	0.2677	-4.1	93	0.00
20	T	Carbon Disulfide	0.8460	0.9860	-16.6	105	0.00
21	T	Acrylonitrile	0.0365	0.0362	0.7	82	0.00
22	T	Methyl Tert Butyl Ether	0.5568	0.5893	-5.8	89	0.00
23	T	trans-1,2-Dichloroethene	0.3714	0.4142	-11.5	98	0.00
24	T	n-Hexane	0.2758	0.3200	-16.0	103	0.00
25	T	Diisopropyl ether	0.5789	0.5717	1.2	87	0.00
26	T	Vinyl Acetate	0.2651	0.1813	31.6#	57	0.00
27	P	1,1-Dichloroethane	0.4612	0.5158	-11.8	97	0.00
28	T	Ethyl-Tert-Butyl ether	0.6203	0.6459	-4.1	90	0.00
29	T	2-Butanone	0.0413	0.0386	6.7	79	0.00
30	T	Propionitrile	0.0120	0.0116	3.6	82	0.00
31	T	2,2-Dichloropropane	0.4860	0.6180	-27.1#	109	0.00
32	T	cis-1,2-Dichloroethene	0.2870	0.3128	-9.0	97	0.00
33	C	Chloroform	0.5446	0.6306	-15.8	101	0.00
34		1-Bromopropane	0.0411	0.0529	-28.8#	113	0.00
35	T	Bromochloromethane	0.1472	0.1587	-7.8	94	0.00
36	T	Tetrahydrofuran	0.0272	0.0281	-3.3	96	0.00
37	S	Dibromofluoromethane	0.2686	0.2950	-9.8	95	0.00
38	T	1,1,1-Trichloroethane	0.5173	0.6529	-26.2#	108	0.00
39	T	Cyclohexane	0.3581	0.3951	-10.3	100	0.00
40	T	1,1-Dichloropropene	0.3943	0.4595	-16.5	101	0.00
41	T	Tert-Amyl-Methyl ether	0.5634	0.5905	-4.8	91	0.00
42	T	Carbon Tetrachloride	0.4593	0.5856	-27.5#	110	0.00
43	S	1,2-Dichloroethane-d4	0.2880	0.3245	-12.7	96	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.3505	0.4203	-19.9	102	0.00
46	T	Benzene	1.0269	1.1297	-10.0	95	0.00
47	T	Trichloroethene	0.2739	0.3182	-16.2	102	0.00
48	T	Methylcyclohexane	0.4161	0.4920	-18.2	105	0.00
49	C	1,2-Dichloropropane	0.2286	0.2329	-1.9	90	0.00
50	T	Bromodichloromethane	0.4018	0.4680	-16.5	97	0.00
51	T	1,4-Dioxane	0.0012	0.0015	-27.8#	106	0.00
52	T	Dibromomethane	0.1353	0.1392	-2.9	90	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0983	0.0887	9.7	74	0.00
54	T	4-Methyl-2-Pentanone	0.0401	0.0362	9.8	76	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413220.D Vial: 2
Acq On : 24 Jun 2016 19:02 Operator: FJB
Sample : WG574189-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4090	0.4549	-11.2	93	0.00
56	T	Dimethyl Disulfide	0.2183	0.2471	-13.2	98	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	95	0.00
58	S	Toluene-d8	1.3084	1.3814	-5.6	98	0.00
59	C	Toluene	1.5520	1.6126	-3.9	98	0.00
60	T	Ethyl Methacrylate	0.2981	0.2874	3.6	87	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.5201	0.5386	-3.6	92	0.00
63	T	1,1,2-Trichloroethane	0.2449	0.2283	6.8	87	0.00
64	T	2-Hexanone	0.0515	0.0416	19.2	75	0.00
65	T	1,3-Dichloropropane	0.4360	0.4149	4.8	87	0.00
66	T	Tetrachloroethene	0.3325	0.3680	-10.7	107	0.00
67	T	Dibromochloromethane	0.3576	0.3688	-3.1	94	0.00
68	T	1,2-Dibromoethane	0.2441	0.2341	4.1	87	0.00
69	T	1-Chlorohexane	0.5298	0.5730	-8.2	104	0.00
70	P	Chlorobenzene	1.0466	1.0853	-3.7	99	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4055	0.4318	-6.5	99	0.00
72	C	Ethylbenzene	0.5726	0.5865	-2.4	99	0.00
73	T	m-,p-Xylene	0.6716	0.7056	-5.0	100	0.00
74	T	o-Xylene	0.6566	0.6888	-4.9	99	0.00
75	T	Styrene	1.0770	1.1427	-6.1	96	0.00
76	P	Bromoform	0.2121	0.2233	-5.3	96	0.00
77	T	Isopropylbenzene	1.7444	1.9218	-10.2	102	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	101	0.00
79	P	1,1,2,2-Tetrachloroethane	0.5018	0.4153	17.2	82	0.00
80	S	p-Bromofluorobenzene	1.0352	1.0555	-2.0	105	0.00
81	T	1,2,3-Trichloropropane	0.1545	0.1374	11.1	90	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1376	0.1453	-5.6	98	0.00
83	T	n-Propylbenzene	3.9003	3.9345	-0.9	101	0.00
84	T	Bromobenzene	0.8022	0.7950	0.9	101	0.00
85	T	1,3,5-Trimethylbenzene	2.8411	2.9464	-3.7	103	0.00
86	T	2-Chlorotoluene	2.7231	2.7579	-1.3	100	0.00
87	T	4-Chlorotoluene	2.4597	2.4220	1.5	105	0.00
88	T	a-Methylstyrene	1.3479	1.3797	-2.4	104	0.00
89	T	tert-Butylbenzene	0.5558	0.5518	0.7	105	0.00
90	T	1,2,4-Trimethylbenzene	2.9214	2.9953	-2.5	104	0.00
91	T	sec-Butylbenzene	3.3424	3.4151	-2.2	103	0.00
92	T	p-Isopropyltoluene	2.8379	2.9274	-3.2	105	0.00
93	T	1,3-Dichlorobenzene	1.5448	1.5499	-0.3	102	0.00
94	T	1,4-Dichlorobenzene	1.5574	1.5212	2.3	102	0.00
95	T	n-Butylbenzene	2.8056	2.8465	-1.5	103	0.00
96	T	1,2-Dichlorobenzene	1.3739	1.3097	4.7	99	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1007	0.0890	11.6	87	0.00
98	T	1,2,4-Trichlorobenzene	1.0269	0.9585	6.7	96	0.00
99	T	Hexachlorobutadiene	0.4798	0.5144	-7.2	113	0.00
100	T	Naphthalene	1.5257	1.2478	18.2	81	0.00
101	T	1,2,3-Trichlorobenzene	0.8664	0.7390	14.7	91	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413220.D 8260WT.M Sun Jun 26 15:37:42 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413220.D Vial: 2
Acq On : 24 Jun 2016 19:02 Operator: FJB
Sample : WG574189-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	87	0.00
2	T	Dichlorodifluoromethane	50.0000	53.7500	-7.5	90	0.00
3	P	Chloromethane	50.0000	46.7040	6.6	83	0.00
4	C	Vinyl Chloride	50.0000	56.3855	-12.8	98	0.00
5	T	1,3-Butadiene	50.0000	69.1748	-38.3#	117	0.00
6	T	Bromomethane	50.0000	43.4526	13.1	79	0.00
7	T	Chloroethane	50.0000	51.8211	-3.6	92	0.00
8	T	Trichlorofluoromethane	50.0000	61.5534	-23.1	108	0.00
9	T	Diethyl ether	100.0000	90.1385	9.9	81	0.00
10	T	Isoprene	50.0000	57.3624	-14.7	102	0.00
11	T	Acrolein	50.0000	35.7970	28.4#	64	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	56.7817	-13.6	101	0.00
13	T	Acetone	50.0000	55.2256	-10.5	92	-0.01
14	C	1,1-Dichloroethene	50.0000	57.5607	-15.1	102	0.00
15	T	Tert-Butyl Alcohol	200.0000	222.7248	-11.4	98	0.00
16	T	Dimethyl Sulfide	50.0000	53.0436	-6.1	94	0.00
17	T	Iodomethane	50.0000	41.6279	16.7	79	0.00
18	T	Methyl acetate	50.0000	54.7304	-9.5	98	0.00
19	T	Methylene Chloride	50.0000	52.0332	-4.1	93	0.00
20	T	Carbon Disulfide	50.0000	58.2771	-16.6	105	0.00
21	T	Acrylonitrile	50.0000	49.6271	0.7	82	0.00
22	T	Methyl Tert Butyl Ether	50.0000	52.9235	-5.8	89	0.00
23	T	trans-1,2-Dichloroethene	50.0000	55.7662	-11.5	98	0.00
24	T	n-Hexane	50.0000	58.0186	-16.0	103	0.00
25	T	Diisopropyl ether	100.0000	98.7541	1.2	87	0.00
26	T	Vinyl Acetate	50.0000	34.2061	31.6#	57	0.00
27	P	1,1-Dichloroethane	50.0000	55.9174	-11.8	97	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	104.1371	-4.1	90	0.00
29	T	2-Butanone	50.0000	46.6679	6.7	79	0.00
30	T	Propionitrile	100.0000	96.4196	3.6	82	0.00
31	T	2,2-Dichloropropane	50.0000	63.5722	-27.1#	109	0.00
32	T	cis-1,2-Dichloroethene	50.0000	54.5059	-9.0	97	0.00
33	C	Chloroform	50.0000	57.8944	-15.8	101	0.00
34		1-Bromopropane	50.0000	64.4064	-28.8#	113	0.00
35	T	Bromochloromethane	50.0000	53.9056	-7.8	94	0.00
36	T	Tetrahydrofuran	100.0000	103.2625	-3.3	96	0.00
37	S	Dibromofluoromethane	25.0000	27.4578	-9.8	95	0.00
38	T	1,1,1-Trichloroethane	50.0000	63.1070	-26.2#	108	0.00
39	T	Cyclohexane	50.0000	55.1628	-10.3	100	0.00
40	T	1,1-Dichloropropene	50.0000	58.2643	-16.5	101	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	104.8145	-4.8	91	0.00
42	T	Carbon Tetrachloride	50.0000	63.7456	-27.5#	110	0.00
43	S	1,2-Dichloroethane-d4	25.0000	28.1695	-12.7	96	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	59.9476	-19.9	102	0.00
46	T	Benzene	50.0000	55.0010	-10.0	95	0.00
47	T	Trichloroethene	50.0000	58.0965	-16.2	102	0.00
48	T	Methylcyclohexane	50.0000	59.1228	-18.2	105	0.00
49	C	1,2-Dichloropropane	50.0000	50.9503	-1.9	90	0.00
50	T	Bromodichloromethane	50.0000	58.2388	-16.5	97	0.00
51	T	1,4-Dioxane	200.0000	256.8053	-28.4#	106	0.00
52	T	Dibromomethane	50.0000	51.4282	-2.9	90	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	45.1623	9.7	74	0.00
54	T	4-Methyl-2-Pentanone	50.0000	45.1092	9.8	76	0.00

(#) = Out of Range

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413220.D Vial: 2
Acq On : 24 Jun 2016 19:02 Operator: FJB
Sample : WG574189-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	55.6108	-11.2	93	0.00
56	T	Dimethyl Disulfide	50.0000	56.5949	-13.2	98	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	95	0.00
58	S	Toluene-d8	25.0000	26.3951	-5.6	98	0.00
59	C	Toluene	50.0000	51.9497	-3.9	98	0.00
60	T	Ethyl Methacrylate	50.0000	48.2070	3.6	87	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	51.7790	-3.6	92	0.00
63	T	1,1,2-Trichloroethane	50.0000	46.6082	6.8	87	0.00
64	T	2-Hexanone	50.0000	40.4263	19.1	75	0.00
65	T	1,3-Dichloropropane	50.0000	47.5797	4.8	87	0.00
66	T	Tetrachloroethene	50.0000	55.3372	-10.7	107	0.00
67	T	Dibromochloromethane	50.0000	51.5691	-3.1	94	0.00
68	T	1,2-Dibromoethane	50.0000	47.9619	4.1	87	0.00
69	T	1-Chlorohexane	50.0000	54.0823	-8.2	104	0.00
70	P	Chlorobenzene	50.0000	51.8477	-3.7	99	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	53.2449	-6.5	99	0.00
72	C	Ethylbenzene	50.0000	51.2160	-2.4	99	0.00
73	T	m-,p-Xylene	100.0000	105.0481	-5.0	100	0.00
74	T	o-Xylene	50.0000	52.4464	-4.9	99	0.00
75	T	Styrene	50.0000	53.0516	-6.1	96	0.00
76	P	Bromoform	50.0000	52.6307	-5.3	96	0.00
77	T	Isopropylbenzene	50.0000	55.0840	-10.2	102	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	101	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	41.3806	17.2	82	0.00
80	S	p-Bromofluorobenzene	25.0000	25.4910	-2.0	105	0.00
81	T	1,2,3-Trichloropropane	50.0000	44.4730	11.1	90	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	46.1654	7.7	98	0.00
83	T	n-Propylbenzene	50.0000	50.4383	-0.9	101	0.00
84	T	Bromobenzene	50.0000	49.5503	0.9	101	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	51.8534	-3.7	103	0.00
86	T	2-Chlorotoluene	50.0000	50.6401	-1.3	100	0.00
87	T	4-Chlorotoluene	50.0000	49.2325	1.5	105	0.00
88	T	a-Methylstyrene	50.0000	51.1773	-2.4	104	0.00
89	T	tert-Butylbenzene	50.0000	49.6398	0.7	105	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	51.2648	-2.5	104	0.00
91	T	sec-Butylbenzene	50.0000	51.0878	-2.2	103	0.00
92	T	p-Isopropyltoluene	50.0000	51.5754	-3.2	105	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.1657	-0.3	102	0.00
94	T	1,4-Dichlorobenzene	50.0000	48.8389	2.3	102	0.00
95	T	n-Butylbenzene	50.0000	50.7293	-1.5	103	0.00
96	T	1,2-Dichlorobenzene	50.0000	47.6653	4.7	99	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	44.1818	11.6	87	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	46.6650	6.7	96	0.00
99	T	Hexachlorobutadiene	50.0000	53.6005	-7.2	113	0.00
100	T	Naphthalene	50.0000	40.8932	18.2	81	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	42.6472	14.7	91	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413220.D 8260WT.M Sun Jun 26 15:37:38 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\2\DATA\051316\8M412218.D          Vial: 3
Acq On    : 13 May 2016  12:36                       Operator: TMB
Sample    : WG568561-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD76034                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

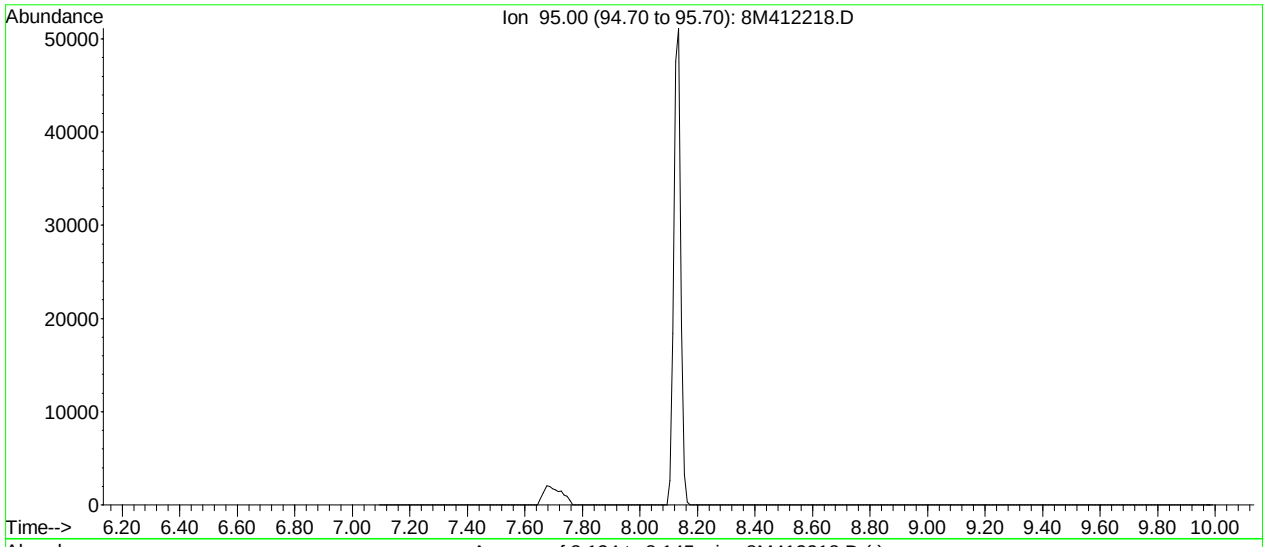

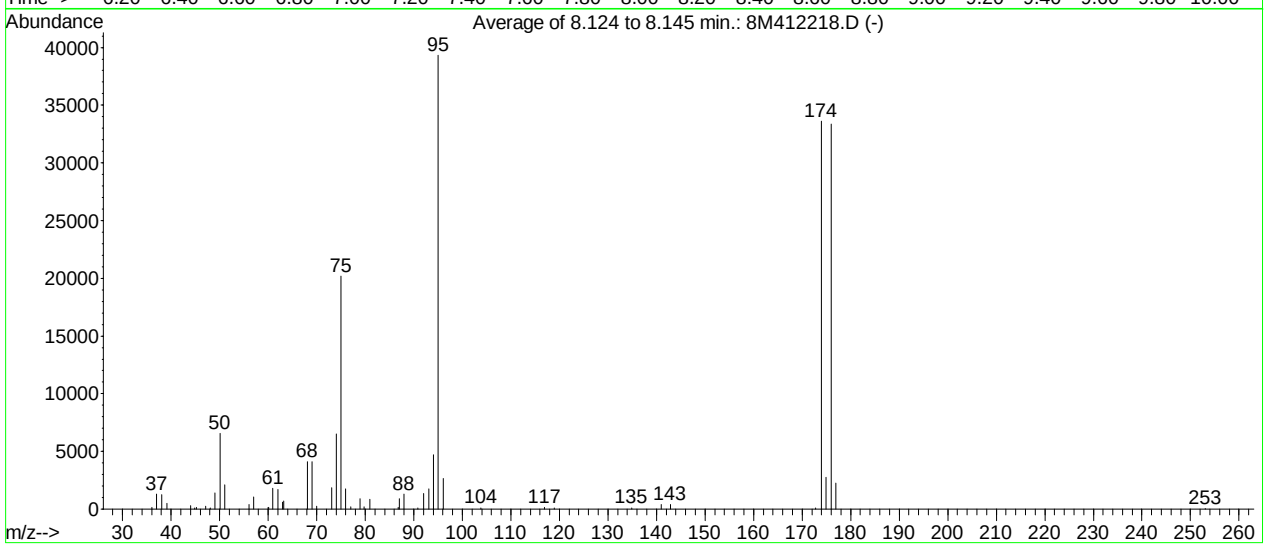

AutoFind: Scans 102, 103, 104; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.7	6575	PASS
75	95	30	60	51.3	20171	PASS
95	95	100	100	100.0	39312	PASS
96	95	5	9	6.7	2649	PASS
173	174	0.00	2	0.4	122	PASS
174	95	50	100	85.5	33616	PASS
175	174	5	9	8.2	2746	PASS
176	174	95	101	99.2	33360	PASS
177	176	5	9	6.8	2267	PASS

8M412218.D BFB.M Fri May 13 12:47:24 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\051316\11M11836.D          Vial: 2
Acq On    : 13 May 2016  14:15                        Operator: JDS
Sample    : WG568769-01 50ng BFB STD 8260             Inst    : hpms11
Misc      : 1,1 STD76034                              Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title     : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
```

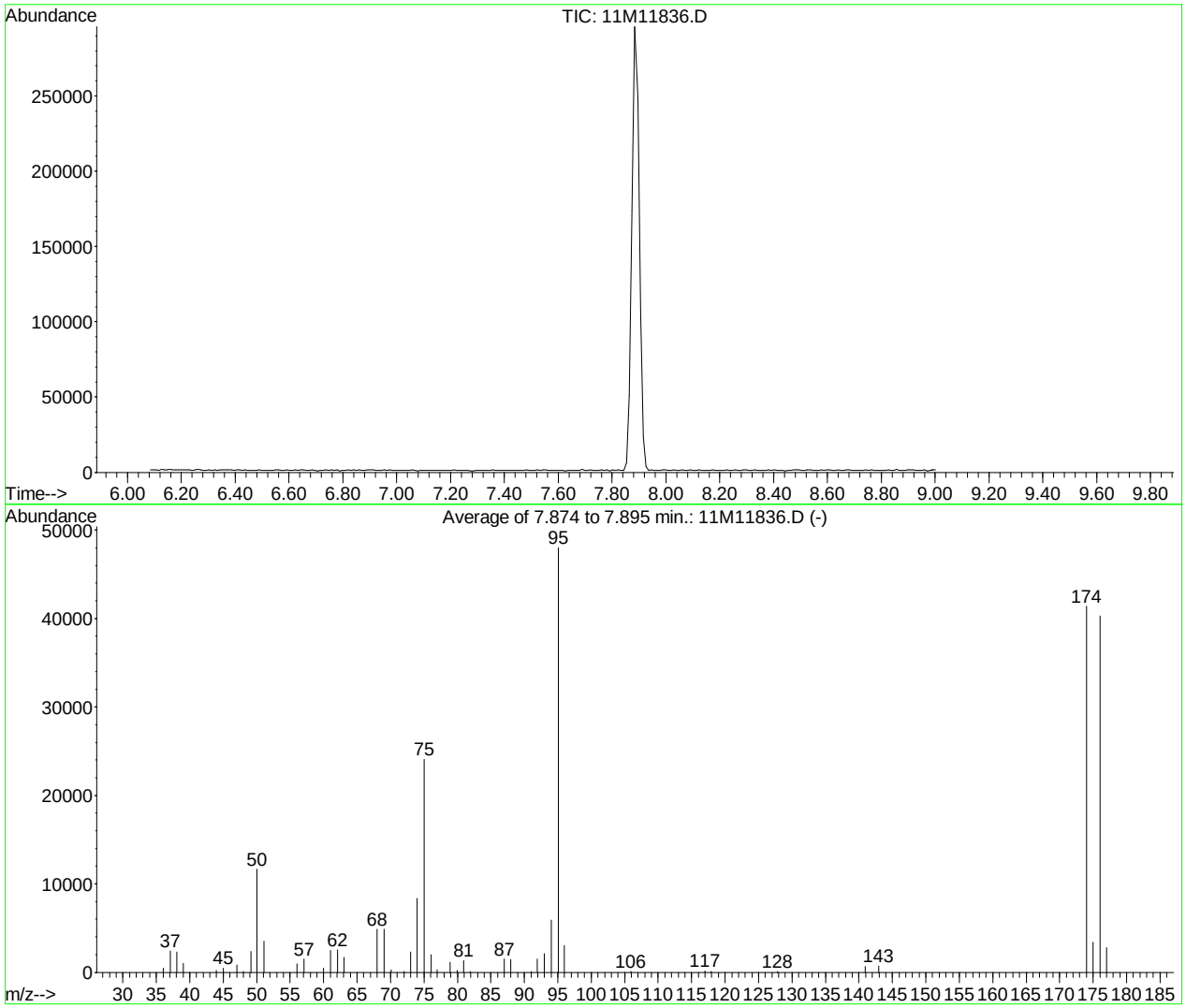

AutoFind: Scans 174, 175, 176; Background Corrected with Scan 169

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	24.2	11638	PASS
75	95	30	60	50.2	24088	PASS
95	95	100	100	100.0	48016	PASS
96	95	5	9	6.3	3008	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	86.2	41402	PASS
175	174	5	9	8.3	3421	PASS
176	174	95	101	97.3	40288	PASS
177	176	5	9	6.9	2789	PASS

11M11836.D 8260WT.M Tue May 17 14:18:03 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413219.D Vial: 1
Acq On    : 24 Jun 2016  18:32                        Operator: FJB
Sample    : WG574189-01 BFB 50ng 8260                 Inst    : HPMS8
Misc      : 1,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title     : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
```

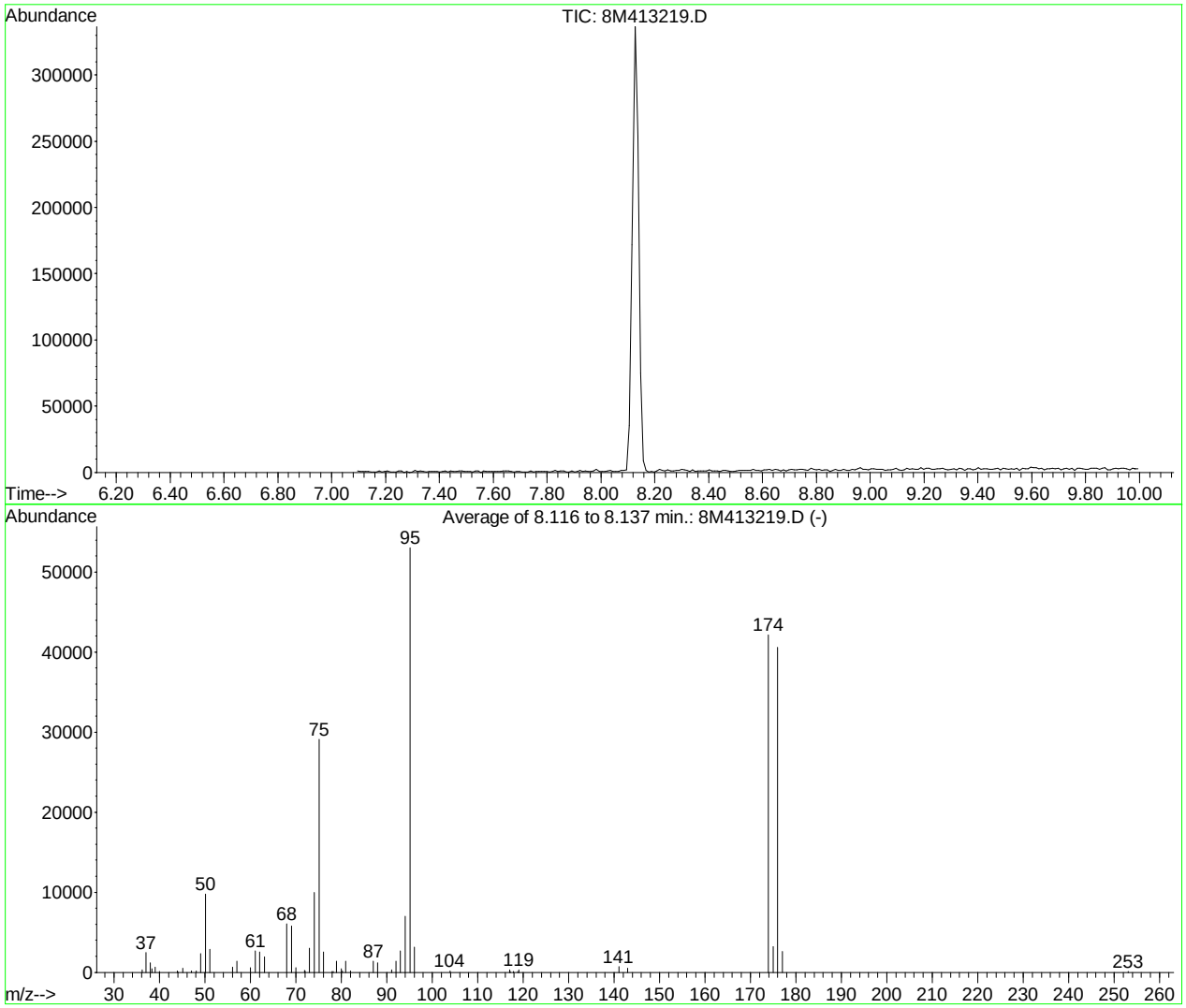

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 96

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.4	9741	PASS
75	95	30	60	54.9	29109	PASS
95	95	100	100	100.0	53042	PASS
96	95	5	9	6.0	3179	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	79.5	42146	PASS
175	174	5	9	7.6	3223	PASS
176	174	95	101	96.3	40586	PASS
177	176	5	9	6.5	2619	PASS

8M413219.D 8260WT.M Sun Jun 26 15:37:28 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\071316\11M13223.D          Vial: 2
Acq On    : 13 Jul 2016  11:57                       Operator: TMB
Sample    : WG576234-01 50ng BFB STD 8260            Inst    : hpms11
Misc      : 1,1 STD77013                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title     : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
```

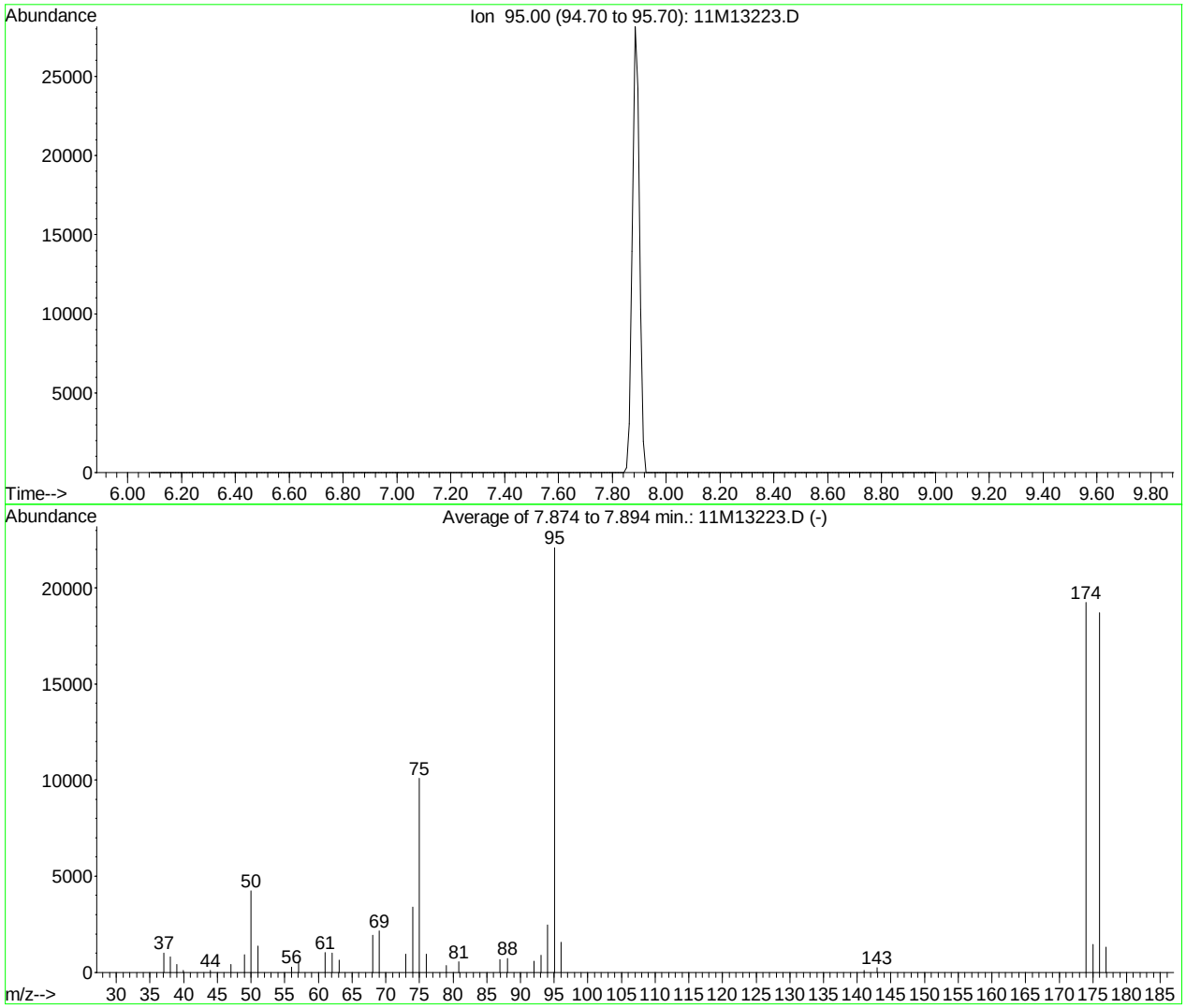

AutoFind: Scans 174, 175, 176; Background Corrected with Scan 169

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.2	4243	PASS
75	95	30	60	45.7	10096	PASS
95	95	100	100	100.0	22097	PASS
96	95	5	9	7.0	1550	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	87.1	19238	PASS
175	174	5	9	7.5	1445	PASS
176	174	95	101	97.2	18706	PASS
177	176	5	9	7.0	1305	PASS

11M13223.D 8260WT.M Wed Jul 13 16:32:20 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\071316\11M13227.D Vial: 5
Acq On : 13 Jul 2016 14:08 Operator: TMB
Sample : WG576236-01 VBLK0713 BLANK STD 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 13 16:19:57 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Thu Jul 07 15:06:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	488586	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	441422	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	256130	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	129095	24.1427 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.56%		
43) 1,2-Dichloroethane-d4	10.23	65	127492	20.9107 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 83.64%		
57) Toluene-d8	12.47	98	461598	24.0669 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.28%		
78) p-Bromofluorobenzene	15.64	95	181919	23.0409 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.16%		

Target Compounds					Qvalue
3) Chloromethane	3.73	50	858	0.1399 ug/L	82
36) Tetrahydrofuran	9.61	42	893	0.7210 ug/L #	47
97) Hexachlorobutadiene	19.68	225	645	0.1461 ug/L #	23

(#) = qualifier out of range (m) = manual integration
11M13227.D 8260WT.M Wed Jul 13 16:19:58 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\071316\11M13227.D Vial: 5
Acq On : 13 Jul 2016 14:08 Operator: TMB
Sample : WG576236-01 VBLK0713 BLANK STD 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 13 16:19 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Thu Jul 07 15:06:07 2016
Response via : Initial Calibration

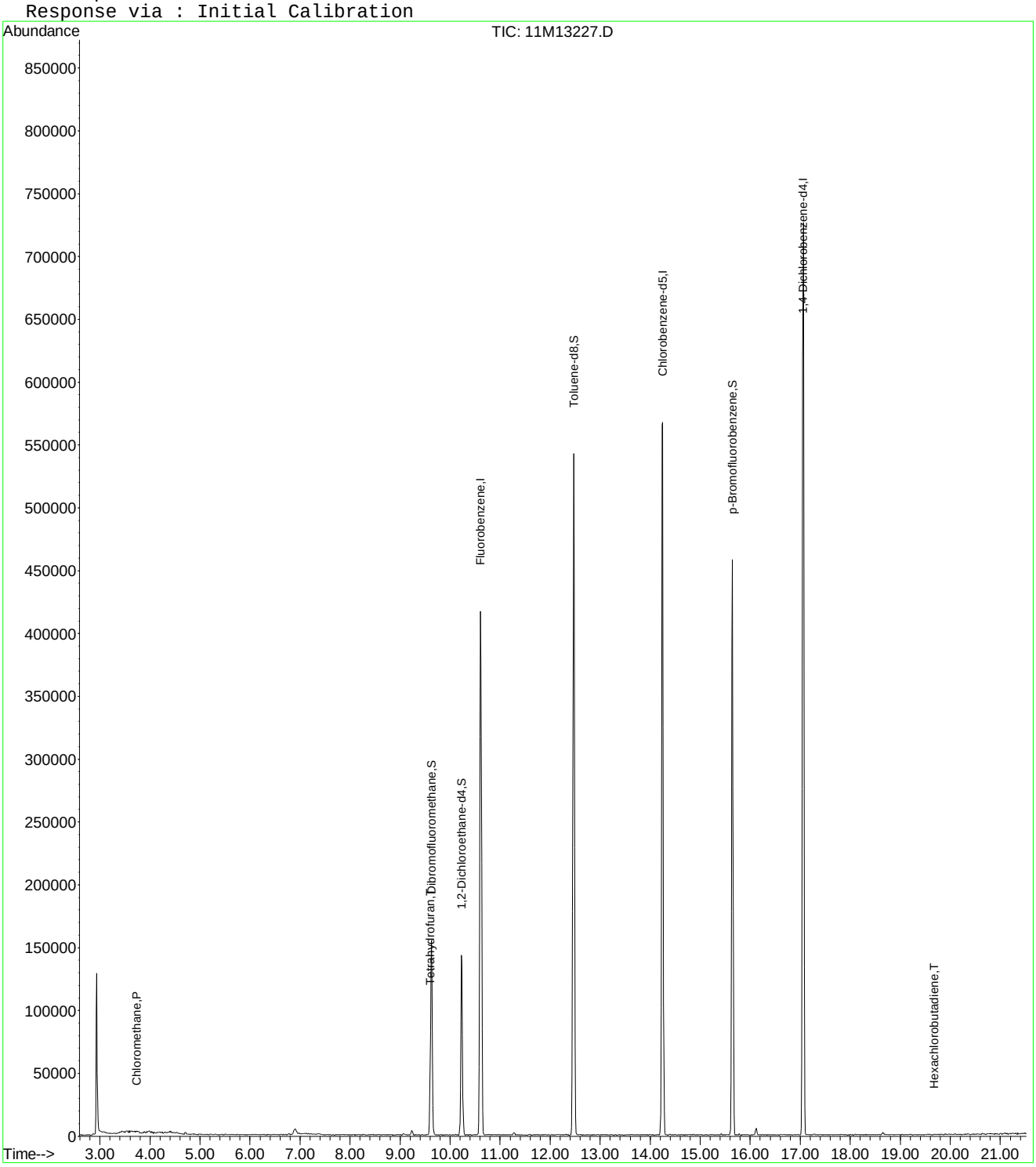

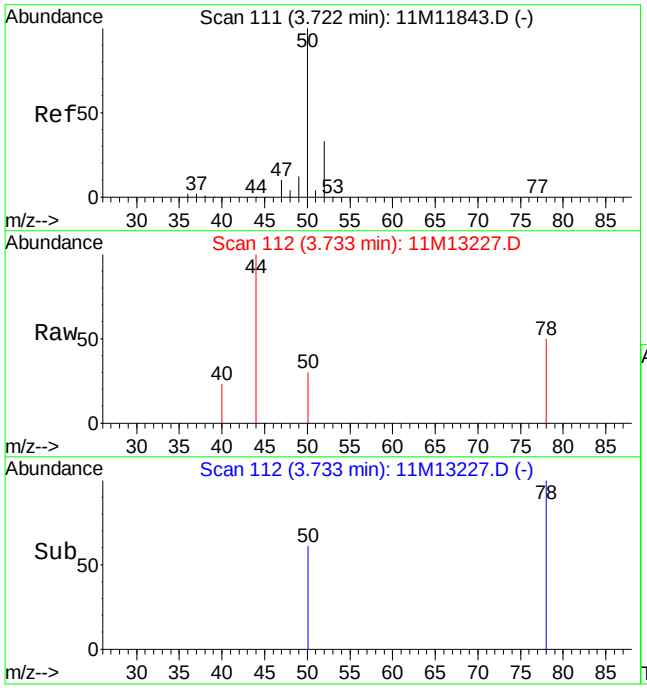

#3
Chloromethane
Concen: 0.14 ug/L
RT: 3.73 min Scan# 112
Delta R.T. 0.01 min
Lab File: 11M13227.D
Acq: 13 Jul 2016 14:08

Tgt Ion: 50 Resp: 858

Ion	Ratio	Lower	Upper
50	100		
52	23.3	20.0	46.6

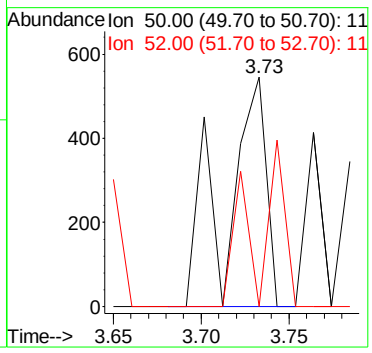

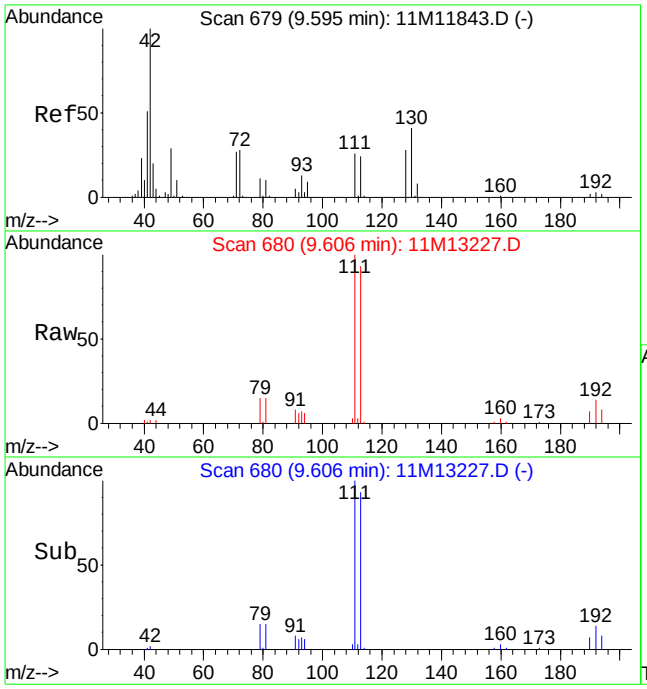

#36
Tetrahydrofuran
Concen: 0.72 ug/L
RT: 9.61 min Scan# 680
Delta R.T. 0.01 min
Lab File: 11M13227.D
Acq: 13 Jul 2016 14:08

Tgt Ion: 42 Resp: 893

Ion	Ratio	Lower	Upper
42	100		
71	0.0	16.4	38.2#
72	0.0	16.6	38.8#

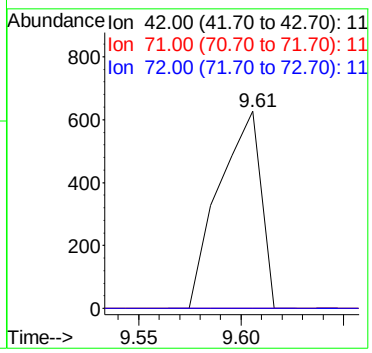

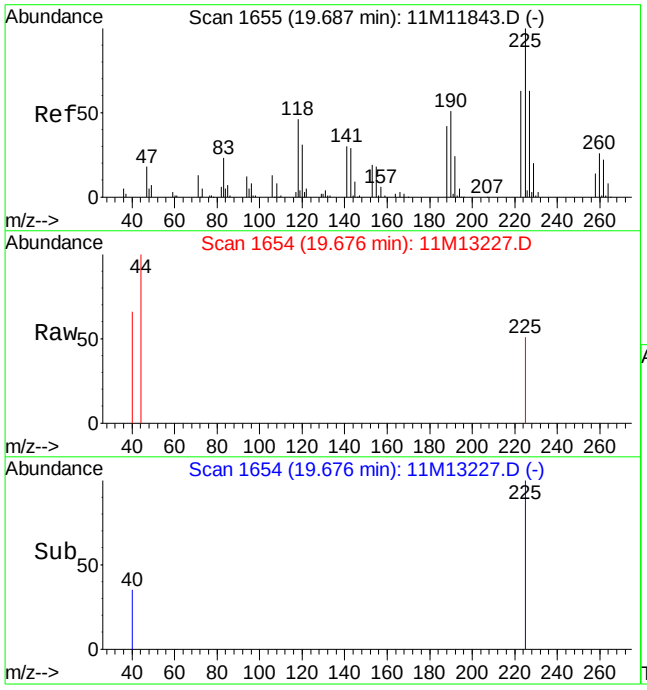

#97
Hexachlorobutadiene
Concen: 0.15 ug/L
RT: 19.68 min Scan# 1654
Delta R.T. -0.01 min
Lab File: 11M13227.D
Acq: 13 Jul 2016 14:08

Tgt Ion:225 Resp: 645

Ion	Ratio	Lower	Upper
225	100		
227	0.0	38.3	89.3#
118	0.0	28.7	66.9#

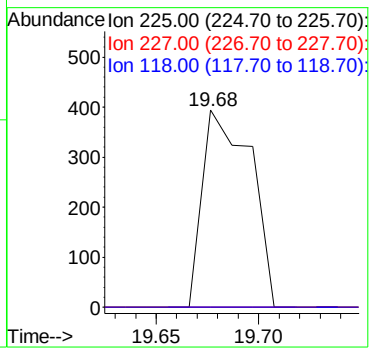

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413222.D Vial: 4
Acq On : 24 Jun 2016 20:03 Operator: FJB
Sample : WG574190-01 BLANK 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 24 20:25:26 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	663634	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	530947	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	292790	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	202308	28.3735 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 113.48%		
43) 1,2-Dichloroethane-d4	10.30	65	220146	28.7948 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 115.16%		
58) Toluene-d8	12.68	98	710913	25.5841 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.32%		
80) p-Bromofluorobenzene	16.08	95	304773	25.1388 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.56%		
Target Compounds					Qvalue
36) Tetrahydrofuran	9.63	42	644	0.8913 ug/L #	52

(#) = qualifier out of range (m) = manual integration
8M413222.D 8260WT.M Mon Jun 27 12:43:03 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413222.D Vial: 4
Acq On : 24 Jun 2016 20:03 Operator: FJB
Sample : WG574190-01 BLANK 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 26 15:22 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

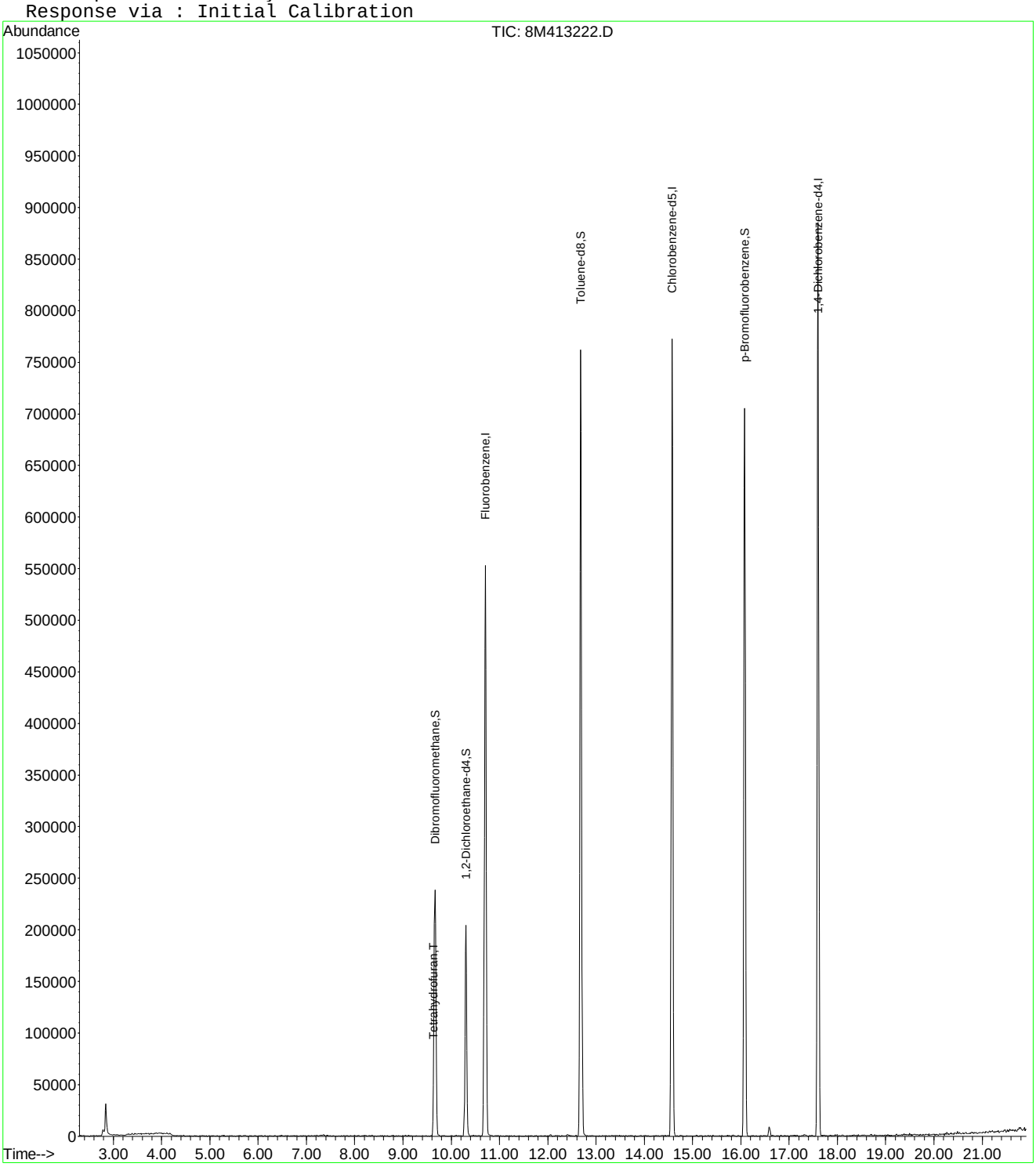

8M413222.D 8260WT.M Mon Jun 27 12:43:04 2016 Page 2

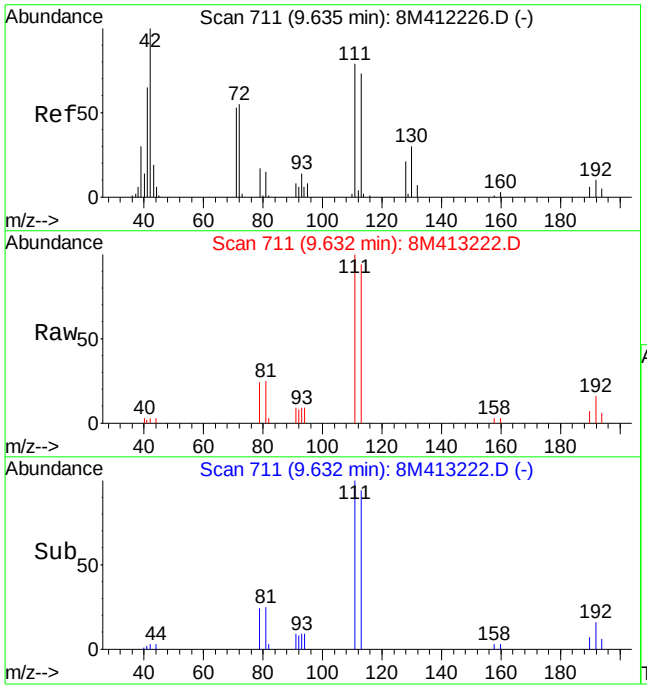

#36
Tetrahydrofuran
Concen: 0.89 ug/L
RT: 9.63 min Scan# 711
Delta R.T. -0.00 min
Lab File: 8M413222.D
Acq: 24 Jun 2016 20:03

Tgt Ion: 42 Resp: 644

Ion	Ratio	Lower	Upper
42	100		
72	0.0	33.8	78.8#
71	40.5	32.0	74.8

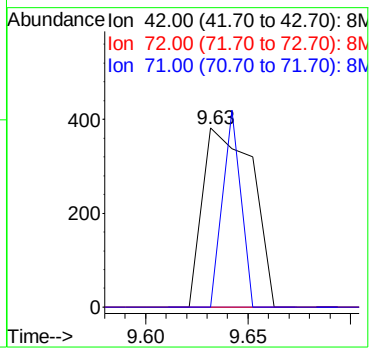

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\071316\11M13229.D Vial: 7
Acq On : 13 Jul 2016 15:12 Operator: TMB
Sample : WG576236-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD77015 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 13 15:33:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Thu Jul 07 15:06:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	490613	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	451735	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	275472	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	136704	25.4601 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.84%		
43) 1,2-Dichloroethane-d4	10.23	65	136088	22.2284 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 88.92%		
57) Toluene-d8	12.47	98	470792	23.9859 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 95.96%		
78) p-Bromofluorobenzene	15.64	95	191407	22.5405 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 90.16%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	131714	17.1346 ug/L	94
3) Chloromethane	3.72	50	99926	16.2311 ug/L	99
4) Vinyl Chloride	3.96	62	105362	20.6081 ug/L	89
5) 1,3-Butadiene	3.99	54	81409	16.0136 ug/L	98
6) Bromomethane	4.85	94	60651	17.2538 ug/L	100
7) Chloroethane	5.00	64	69464	21.1460 ug/L	99
8) Trichlorofluoromethane	5.48	101	199003	19.5285 ug/L	99
9) Diethyl ether	6.01	59	369117	97.9412 ug/L	93
10) Isoprene	6.04	67	124319	19.7926 ug/L	92
11) Acrolein	6.23	56	47525	94.5305 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	104696	21.1733 ug/L	95
13) Acetone	6.34	43	19172	16.4568 ug/L	91
14) 1,1-Dichloroethene	6.56	61	164060	18.2664 ug/L	95
15) Tert-Butyl Alcohol	6.66	59	49990	155.1323 ug/L	97
16) Dimethyl Sulfide	6.81	62	115960	32.3291 ug/L	87
17) Iodomethane	7.06	142	79242	20.7022 ug/L	94
18) Methyl acetate	7.07	43	53006	13.6892 ug/L	92
19) Methylene Chloride	7.31	84	96554	20.7720 ug/L	84
20) Carbon Disulfide	7.36	76	254515	16.9267 ug/L	100
21) Acrylonitrile	7.50	53	28954	18.5366 ug/L	98
22) Methyl Tert Butyl Ether	7.52	73	232109	20.0207 ug/L	97
23) trans-1,2-Dichloroethene	7.75	96	104187	20.9597 ug/L	94
24) n-Hexane	7.82	57	122827	14.8357 ug/L	99
25) Diisopropyl ether	8.15	45	1979851	95.8354 ug/L	98
26) Vinyl Acetate	8.31	43	112533	15.7826 ug/L	98
27) 1,1-Dichloroethane	8.34	63	193411	19.3916 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	1599221	95.1094 ug/L	98
29) 2-Butanone	8.87	43	30640	17.3971 ug/L	95
30) Propionitrile	8.97	54	44998	87.2322 ug/L	100
31) 2,2-Dichloropropane	9.09	77	150780	19.3217 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	121412	22.1522 ug/L	88
33) Chloroform	9.35	83	193620	19.7680 ug/L	100
34) 1-Bromopropane	9.48	122	29697	30.7477 ug/L	94
35) Bromochloromethane	9.57	130	73838	22.6845 ug/L	88
36) Tetrahydrofuran	9.60	42	98646	79.3177 ug/L	92
38) 1,1,1-Trichloroethane	9.85	97	195366	20.2690 ug/L	96
39) Cyclohexane	9.88	56	188713	17.9651 ug/L	95
40) 1,1-Dichloropropene	10.04	75	137494	19.9786 ug/L	98
41) Carbon Tetrachloride	10.18	117	195013	20.7196 ug/L	98
42) Tert-Amyl-Methyl ether	10.13	73	1232647	105.5001 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M13229.D 8260WT.M Wed Jul 13 15:33:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\071316\11M13229.D Vial: 7
Acq On : 13 Jul 2016 15:12 Operator: TMB
Sample : WG576236-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD77015 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 13 15:33:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Thu Jul 07 15:06:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.34	62	156926	19.7265 ug/L	97
45) Benzene	10.38	78	386098	20.4935 ug/L	99
46) Trichloroethene	11.08	130	142229	23.2260 ug/L	96
47) Methylcyclohexane	11.17	83	142934	18.9131 ug/L	95
48) 1,2-Dichloropropane	11.29	63	111436	21.3677 ug/L	96
49) 1,4-Dioxane	11.56	88	3172	118.6460 ug/L	98
50) Bromodichloromethane	11.57	83	149379	20.4034 ug/L	100
51) Dibromomethane	11.65	93	54434	20.0298 ug/L	96
52) 2-Chloroethyl Vinyl Ether	11.84	63	46400	18.0521 ug/L	100
53) 4-Methyl-2-Pentanone	11.87	58	27085	18.6829 ug/L	96
54) cis-1,3-Dichloropropene	12.17	75	164344	22.4428 ug/L	100
55) Dimethyl Disulfide	12.42	79	85509	19.4050 ug/L	90
58) Toluene	12.56	91	455347	19.9114 ug/L	100
59) Ethyl Methacrylate	12.64	69	90708	18.5758 ug/L	86
60) trans-1,3-Dichloropropene	12.73	75	138038	18.8053 ug/L	97
61) 1,1,2-Trichloroethane	12.94	97	80467	19.8433 ug/L	96
62) 2-Hexanone	12.86	43	44760	15.0289 ug/L	92
63) 1,3-Dichloropropane	13.21	76	133173	20.4504 ug/L	88
64) Tetrachloroethene	13.34	164	106439	20.0147 ug/L	97
65) Dibromochloromethane	13.59	129	125141	20.2323 ug/L	100
66) 1,2-Dibromoethane	13.82	107	81160	19.9763 ug/L	98
67) 1-Chlorohexane	13.89	91	138574	18.3794 ug/L	90
68) Chlorobenzene	14.29	112	344934	20.5894 ug/L	98
69) 1,1,1,2-Tetrachloroethane	14.32	131	136779	20.1775 ug/L	100
70) Ethylbenzene	14.31	106	168799	19.6492 ug/L	99
71) m-,p-Xylene	14.39	106	419760	40.1927 ug/L	98
72) o-Xylene	14.92	106	205806	20.2489 ug/L	98
73) Styrene	14.95	104	346380	20.6272 ug/L	95
74) Bromoform	15.43	173	71500	19.0730 ug/L	98
75) Isopropylbenzene	15.31	105	535115	19.9084 ug/L	99
77) 1,1,2,2-Tetrachloroethane	15.52	83	75928	17.6997 ug/L	97
79) 1,2,3-Trichloropropane	15.70	110	29194	18.3704 ug/L	82
80) trans-1,4-Dichloro-2-Buten	15.73	53	15713	8.2298 ug/L #	1
81) n-Propylbenzene	15.79	91	619789	19.4275 ug/L	98
82) Bromobenzene	15.91	156	159749	19.0828 ug/L	90
83) 1,3,5-Trimethylbenzene	15.95	105	468869	19.2593 ug/L	98
84) 2-Chlorotoluene	16.05	91	434610	19.4498 ug/L	96
85) 4-Chlorotoluene	16.09	91	380411	19.0055 ug/L	98
86) a-Methylstyrene	16.34	118	259636	20.2160 ug/L	95
87) tert-Butylbenzene	16.39	134	104429	20.2469 ug/L	90
88) 1,2,4-Trimethylbenzene	16.44	105	480479	19.3816 ug/L	99
89) sec-Butylbenzene	16.65	105	556453	19.0357 ug/L	100
90) p-Isopropyltoluene	16.79	119	503378	18.7477 ug/L	99
91) 1,3-Dichlorobenzene	16.98	146	316633	19.5837 ug/L	98
92) 1,4-Dichlorobenzene	17.10	146	322822	19.6982 ug/L	99
93) n-Butylbenzene	17.28	91	408884	17.2817 ug/L	97
94) 1,2-Dichlorobenzene	17.57	146	294021	19.9629 ug/L	97
95) 1,2-Dibromo-3-Chloropropan	18.49	75	15549	16.5143 ug/L	97
96) 1,2,4-Trichlorobenzene	19.54	180	195112	18.1039 ug/L	99
97) Hexachlorobutadiene	19.69	225	75124	15.8226 ug/L	95
98) Naphthalene	19.89	128	329099	16.4516 ug/L	99
99) 1,2,3-Trichlorobenzene	20.19	180	178700	18.0669 ug/L	97

(#) = qualifier out of range (m) = manual integration
11M13229.D 8260WT.M Wed Jul 13 15:33:54 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\071316\11M13229.D Vial: 7
Acq On : 13 Jul 2016 15:12 Operator: TMB
Sample : WG576236-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD77015 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 13 15:33 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Thu Jul 07 15:06:07 2016
Response via : Initial Calibration

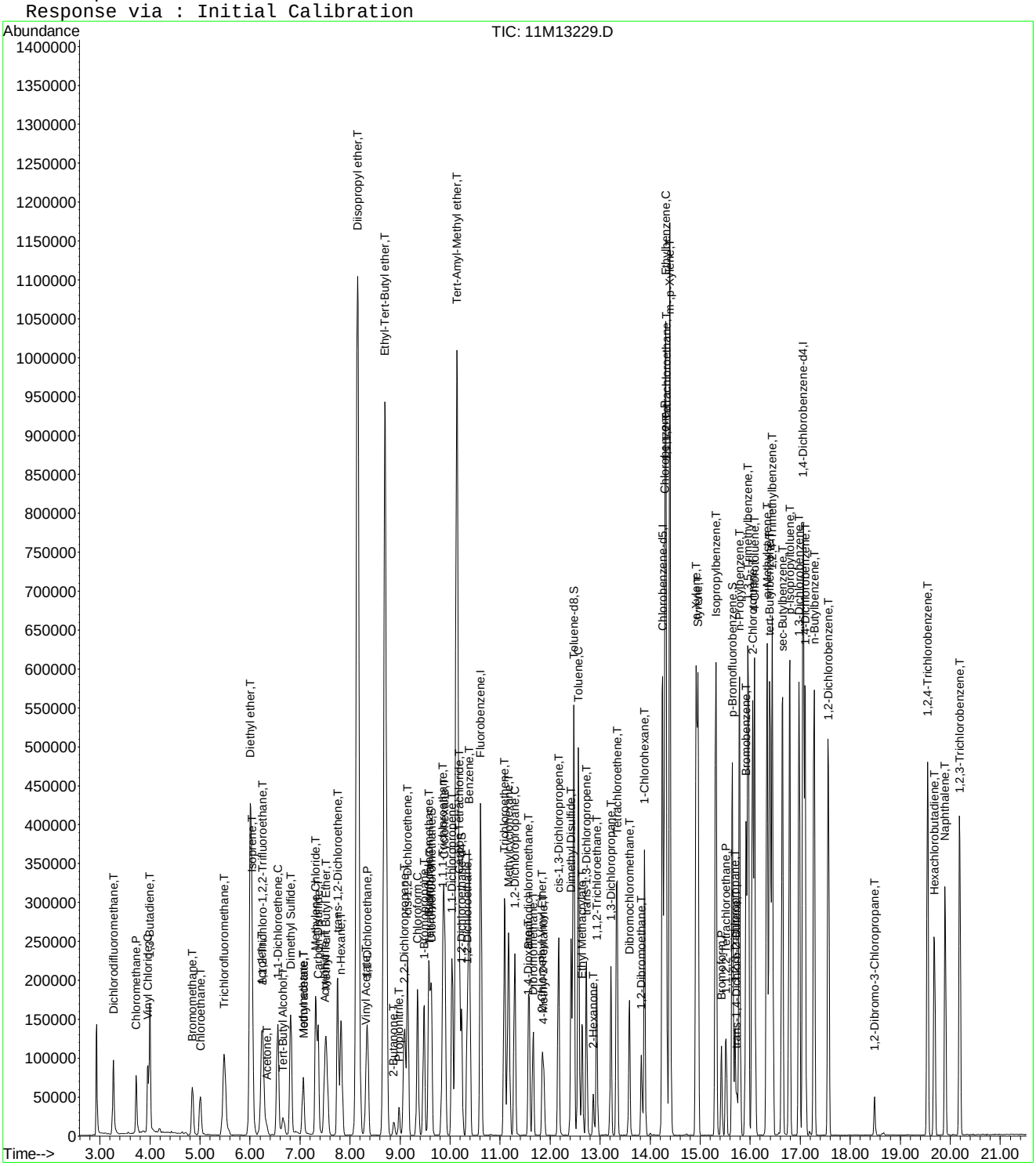

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413223.D Vial: 5
Acq On : 24 Jun 2016 20:32 Operator: FJB
Sample : WG574190-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 26 15:22:32 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	690687	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	534450	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	297555	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	204599	27.5708 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.28%		
43) 1,2-Dichloroethane-d4	10.30	65	235850	29.6406 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 118.56%		
58) Toluene-d8	12.68	98	714555	25.5466 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.20%		
80) p-Bromofluorobenzene	16.08	95	311535	25.2851 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.16%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	333913	28.8353 ug/L	99
3) Chloromethane	3.62	50	152865	22.6148 ug/L	99
4) Vinyl Chloride	3.84	62	214206	26.7098 ug/L	99
5) 1,3-Butadiene	3.88	54	126468	18.8044 ug/L	99
6) Bromomethane	4.73	94	78372	16.9178 ug/L	98
7) Chloroethane	4.89	64	102957	23.3312 ug/L	96
8) Trichlorofluoromethane	5.37	101	375276	25.1483 ug/L	99
9) Diethyl ether	5.90	59	363774	102.1121 ug/L	97
10) Isoprene	5.94	67	223401	24.6527 ug/L	97
11) Acrolein	6.14	56	21485	67.3579 ug/L	82
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	165358	23.5740 ug/L	94
13) Acetone	6.23	43	17509	22.5316 ug/L	99
14) 1,1-Dichloroethene	6.46	61	254737	22.8085 ug/L	97
15) Tert-Butyl Alcohol	6.58	59	33687	135.2762 ug/L	94
16) Dimethyl Sulfide	6.73	62	154810	38.7670 ug/L	99
17) Iodomethane	6.99	142	61237	21.6542 ug/L	100
18) Methyl acetate	7.00	43	44091	20.9904 ug/L	97
19) Methylene Chloride	7.24	84	158247	22.2649 ug/L	98
20) Carbon Disulfide	7.28	76	490903	21.0037 ug/L	100
21) Acrylonitrile	7.43	53	20580	20.4115 ug/L	92
22) Methyl Tert Butyl Ether	7.46	73	366537	23.8280 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	235371	22.9393 ug/L	99
24) n-Hexane	7.78	57	159391	20.9199 ug/L	99
25) Diisopropyl ether	8.12	45	1618888	101.2191 ug/L	96
26) Vinyl Acetate	8.30	43	119924	16.3767 ug/L	99
27) 1,1-Dichloroethane	8.32	63	286004	22.4446 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1771190	103.3598 ug/L	98
29) 2-Butanone	8.88	43	23037	20.1773 ug/L	98
30) Propionitrile	8.98	54	30874	92.7930 ug/L	97
31) 2,2-Dichloropropane	9.10	77	342106	25.4762 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	185058	23.3418 ug/L	100
33) Chloroform	9.37	83	359186	23.8730 ug/L	100
34) 1-Bromopropane	9.51	122	38385	33.8010 ug/L	93
35) Bromochloromethane	9.61	130	93802	23.0724 ug/L	95
36) Tetrahydrofuran	9.63	42	59777	79.4931 ug/L	93
38) 1,1,1-Trichloroethane	9.91	97	368334	25.7727 ug/L	98
39) Cyclohexane	9.94	56	212090	21.4352 ug/L	95
40) 1,1-Dichloropropene	10.11	75	253149	23.2389 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	1696552	109.0055 ug/L	100
42) Carbon Tetrachloride	10.25	117	325228	25.6271 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413223.D Vial: 5
Acq On : 24 Jun 2016 20:32 Operator: FJB
Sample : WG574190-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 26 15:22:32 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	257760	26.6173 ug/L		98
46)	Benzene	10.46	78	650058	22.9123 ug/L		99
47)	Trichloroethene	11.21	130	184227	24.3460 ug/L		98
48)	Methylcyclohexane	11.30	83	260878	22.6936 ug/L		98
49)	1,2-Dichloropropane	11.43	63	139137	22.0299 ug/L		87
50)	Bromodichloromethane	11.73	83	273665	24.6530 ug/L		100
51)	1,4-Dioxane	11.71	88	2615	82.4238 ug/L		94
52)	Dibromomethane	11.81	93	82569	22.0851 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.02	63	55406	20.4103 ug/L		97
54)	4-Methyl-2-Pentanone	12.05	58	23268	20.9834 ug/L		98
55)	cis-1,3-Dichloropropene	12.36	75	287987	25.4880 ug/L		100
56)	Dimethyl Disulfide	12.62	79	136136	22.5740 ug/L		93
59)	Toluene	12.78	91	696083	20.9793 ug/L		100
60)	Ethyl Methacrylate	12.88	69	132468	20.7891 ug/L		99
62)	trans-1,3-Dichloropropene	12.96	75	246156	22.1382 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	103525	19.7732 ug/L		96
64)	2-Hexanone	13.11	58	19834	18.0273 ug/L	#	98
65)	1,3-Dichloropropane	13.48	76	205147	22.0080 ug/L		97
66)	Tetrachloroethene	13.60	164	154145	21.6840 ug/L		99
67)	Dibromochloromethane	13.87	129	166272	21.7500 ug/L		99
68)	1,2-Dibromoethane	14.12	107	109169	20.9217 ug/L		100
69)	1-Chlorohexane	14.21	91	227316	20.0704 ug/L		98
70)	Chlorobenzene	14.62	112	477896	21.3595 ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.65	131	192714	22.2329 ug/L		99
72)	Ethylbenzene	14.65	106	250112	20.4316 ug/L		96
73)	m-,p-Xylene	14.75	106	621171	43.2616 ug/L		95
74)	o-Xylene	15.31	106	307995	21.9402 ug/L		98
75)	Styrene	15.35	104	502195	21.8115 ug/L		97
76)	Bromoform	15.83	173	94460	20.8320 ug/L		99
77)	Isopropylbenzene	15.73	105	834813	22.3857 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	108651	18.1909 ug/L		98
81)	1,2,3-Trichloropropane	16.13	110	36493	19.8411 ug/L	#	43
82)	trans-1,4-Dichloro-2-Buten	16.18	53	30366	16.6126 ug/L	#	20
83)	n-Propylbenzene	16.24	91	1004999	21.6493 ug/L		100
84)	Bromobenzene	16.37	156	199146	20.8564 ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	732888	21.6731 ug/L		99
86)	2-Chlorotoluene	16.50	91	709424	21.8886 ug/L		98
87)	4-Chlorotoluene	16.56	91	603610	20.6178 ug/L		99
88)	a-Methylstyrene	16.82	118	338030	21.0697 ug/L		100
89)	tert-Butylbenzene	16.89	134	143338	21.6669 ug/L		96
90)	1,2,4-Trimethylbenzene	16.94	105	722935	20.7911 ug/L		99
91)	sec-Butylbenzene	17.16	105	844707	21.2336 ug/L		100
92)	p-Isopropyltoluene	17.32	119	711462	21.0631 ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	390826	21.2568 ug/L		99
94)	1,4-Dichlorobenzene	17.64	146	389603	21.0184 ug/L		99
95)	n-Butylbenzene	17.85	91	672507	20.1392 ug/L		100
96)	1,2-Dichlorobenzene	18.14	146	333941	20.4216 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	22845	19.0544 ug/L		95
98)	1,2,4-Trichlorobenzene	20.28	180	241748	19.7783 ug/L		100
99)	Hexachlorobutadiene	20.43	225	119789	20.9751 ug/L		97
100)	Naphthalene	20.65	128	301191	16.5856 ug/L		100
101)	1,2,3-Trichlorobenzene	20.96	180	188432	18.2732 ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062416\8M413223.D Vial: 5
Acq On : 24 Jun 2016 20:32 Operator: FJB
Sample : WG574190-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 26 15:22 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

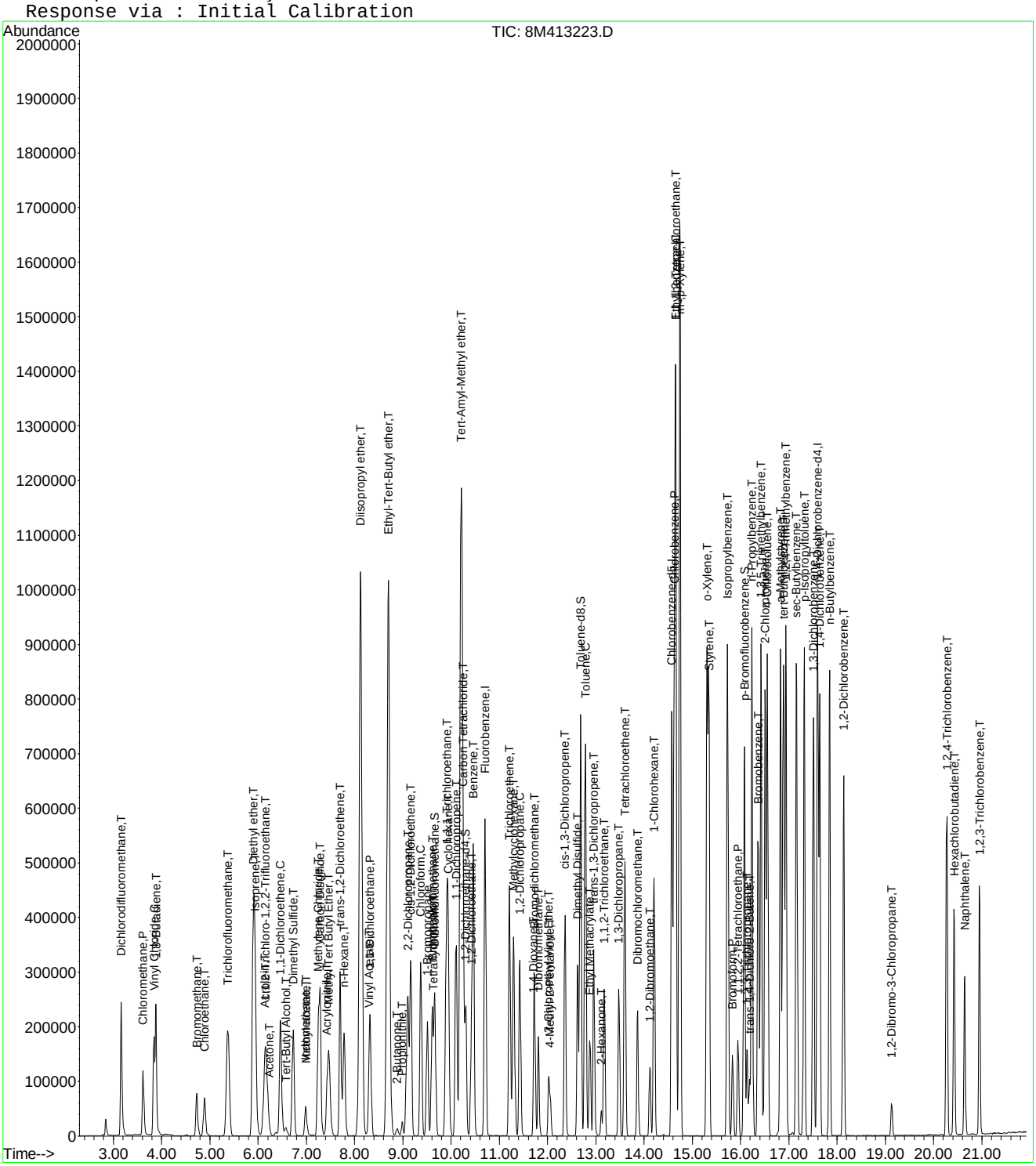

8M413223.D 8260WT.M Sun Jun 26 15:22:38 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\071316\11M13230.D Vial: 8
Acq On : 13 Jul 2016 15:44 Operator: TMB
Sample : WG576236-03 20ug/L LCS2 STD 8260 Inst : hpms11
Misc : 1,1 STD77015 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 13 16:06:10 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Thu Jul 07 15:06:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	498141	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	455887	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	271926	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	136418	25.0228 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.08%		
43) 1,2-Dichloroethane-d4	10.23	65	132934	21.3851 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 85.56%		
57) Toluene-d8	12.47	98	477462	24.1041 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.40%		
78) p-Bromofluorobenzene	15.64	95	194001	23.1439 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.56%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	127611	16.3500 ug/L	96
3) Chloromethane	3.72	50	103983	16.6348 ug/L	98
4) Vinyl Chloride	3.96	62	101319	19.5179 ug/L	92
5) 1,3-Butadiene	4.00	54	80885	15.6700 ug/L	97
6) Bromomethane	4.85	94	61655	17.2743 ug/L	99
7) Chloroethane	5.00	64	70539	21.1488 ug/L	97
8) Trichlorofluoromethane	5.49	101	192497	18.6046 ug/L	99
9) Diethyl ether	6.01	59	355894	93.0056 ug/L	93
10) Isoprene	6.04	67	119671	18.7647 ug/L	91
11) Acrolein	6.23	56	48062	94.1599 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.24	101	102846	20.4849 ug/L	96
13) Acetone	6.34	43	18740	15.8429 ug/L	94
14) 1,1-Dichloroethene	6.56	61	159966	17.5414 ug/L	94
15) Tert-Butyl Alcohol	6.67	59	50461	154.2275 ug/L	95
16) Dimethyl Sulfide	6.81	62	116154	31.8938 ug/L	88
17) Iodomethane	7.06	142	101828	25.6105 ug/L	97
18) Methyl acetate	7.07	43	50320	12.7212 ug/L	94
19) Methylene Chloride	7.31	84	95247	20.1812 ug/L	79
20) Carbon Disulfide	7.36	76	260822	17.0840 ug/L	100
21) Acrylonitrile	7.49	53	26610	16.7785 ug/L	95
22) Methyl Tert Butyl Ether	7.52	73	225678	19.1718 ug/L	95
23) trans-1,2-Dichloroethene	7.75	96	102251	20.2594 ug/L	92
24) n-Hexane	7.83	57	125982	14.9868 ug/L	97
25) Diisopropyl ether	8.15	45	1966434	93.7475 ug/L	97
26) Vinyl Acetate	8.31	43	125287	17.0710 ug/L	98
27) 1,1-Dichloroethane	8.34	63	190102	18.7718 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1547105	90.6195 ug/L	98
29) 2-Butanone	8.87	43	28619	16.0040 ug/L	94
30) Propionitrile	8.97	54	44246	84.4781 ug/L	98
31) 2,2-Dichloropropane	9.09	77	161008	20.3205 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	117360	21.0893 ug/L	92
33) Chloroform	9.35	83	190438	19.1493 ug/L	99
34) 1-Bromopropane	9.48	122	28354	28.9511 ug/L	100
35) Bromochloromethane	9.57	130	71399	21.6037 ug/L	87
36) Tetrahydrofuran	9.59	42	91738	72.6485 ug/L	92
38) 1,1,1-Trichloroethane	9.85	97	188471	19.2582 ug/L	97
39) Cyclohexane	9.88	56	186160	17.4543 ug/L	96
40) 1,1-Dichloropropene	10.04	75	132978	19.0304 ug/L	99
41) Carbon Tetrachloride	10.18	117	185559	19.4172 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	1182383	99.6688 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M13230.D 8260WT.M Wed Jul 13 16:06:12 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\071316\11M13230.D Vial: 8
Acq On : 13 Jul 2016 15:44 Operator: TMB
Sample : WG576236-03 20ug/L LCS2 STD 8260 Inst : hpms11
Misc : 1,1 STD77015 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 13 16:06:10 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Thu Jul 07 15:06:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	150702	18.6579 ug/L	98
45)	Benzene	10.38	78	385241	20.1390 ug/L	99
46)	Trichloroethene	11.09	130	135489	21.7910 ug/L	96
47)	Methylcyclohexane	11.17	83	139723	18.2088 ug/L	95
48)	1,2-Dichloropropane	11.29	63	107279	20.2597 ug/L	96
49)	1,4-Dioxane	11.56	88	4546	157.8883 ug/L	81
50)	Bromodichloromethane	11.57	83	145022	19.5089 ug/L	98
51)	Dibromomethane	11.65	93	51749	18.7540 ug/L	95
52)	2-Chloroethyl Vinyl Ether	11.84	63	45325	17.3674 ug/L	96
53)	4-Methyl-2-Pentanone	11.87	58	25512	17.3319 ug/L	99
54)	cis-1,3-Dichloropropene	12.17	75	162601	21.8692 ug/L	99
55)	Dimethyl Disulfide	12.42	79	82223	18.3773 ug/L	86
58)	Toluene	12.56	91	447421	19.3866 ug/L	100
59)	Ethyl Methacrylate	12.63	69	89687	18.1995 ug/L	82
60)	trans-1,3-Dichloropropene	12.73	75	132482	17.8840 ug/L	95
61)	1,1,2-Trichloroethane	12.93	97	76755	18.7555 ug/L	99
62)	2-Hexanone	12.86	43	40552	13.4920 ug/L	91
63)	1,3-Dichloropropane	13.21	76	126858	19.3032 ug/L	87
64)	Tetrachloroethene	13.34	164	103209	19.2306 ug/L	96
65)	Dibromochloromethane	13.59	129	118212	18.9380 ug/L	100
66)	1,2-Dibromoethane	13.82	107	75982	18.5315 ug/L	100
67)	1-Chlorohexane	13.89	91	139143	18.2868 ug/L	89
68)	Chlorobenzene	14.29	112	339253	20.0659 ug/L	100
69)	1,1,1,2-Tetrachloroethane	14.32	131	133881	19.5701 ug/L	97
70)	Ethylbenzene	14.31	106	166564	19.2125 ug/L	98
71)	m-,p-Xylene	14.39	106	420113	39.8602 ug/L	96
72)	o-Xylene	14.92	106	202328	19.7254 ug/L	98
73)	Styrene	14.95	104	340338	20.0828 ug/L	96
74)	Bromoform	15.43	173	65017	17.1856 ug/L	96
75)	Isopropylbenzene	15.31	105	532362	19.6256 ug/L	99
77)	1,1,2,2-Tetrachloroethane	15.51	83	71717	16.9361 ug/L	97
79)	1,2,3-Trichloropropane	15.70	110	28127	17.9385 ug/L	79
80)	trans-1,4-Dichloro-2-Buten	15.74	53	16289	8.6055 ug/L #	15
81)	n-Propylbenzene	15.79	91	613523	19.4819 ug/L	98
82)	Bromobenzene	15.91	156	155934	18.8699 ug/L	91
83)	1,3,5-Trimethylbenzene	15.95	105	461353	19.1977 ug/L	99
84)	2-Chlorotoluene	16.05	91	431472	19.5612 ug/L	97
85)	4-Chlorotoluene	16.09	91	377198	19.0907 ug/L	99
86)	a-Methylstyrene	16.34	118	260539	20.5509 ug/L	98
87)	tert-Butylbenzene	16.39	134	100496	19.7385 ug/L	94
88)	1,2,4-Trimethylbenzene	16.44	105	475151	19.4166 ug/L	99
89)	sec-Butylbenzene	16.65	105	545739	18.9126 ug/L	100
90)	p-Isopropyltoluene	16.79	119	496723	18.7411 ug/L	98
91)	1,3-Dichlorobenzene	16.98	146	311276	19.5034 ug/L	96
92)	1,4-Dichlorobenzene	17.10	146	316401	19.5581 ug/L	98
93)	n-Butylbenzene	17.28	91	406932	17.4235 ug/L	98
94)	1,2-Dichlorobenzene	17.57	146	280932	19.3229 ug/L	98
95)	1,2-Dibromo-3-Chloropropan	18.49	75	14362	15.4938 ug/L	99
96)	1,2,4-Trichlorobenzene	19.55	180	194781	18.3089 ug/L	98
97)	Hexachlorobutadiene	19.69	225	72939	15.5627 ug/L	97
98)	Naphthalene	19.89	128	308881	15.6423 ug/L	99
99)	1,2,3-Trichlorobenzene	20.19	180	169678	17.3784 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M13230.D 8260WT.M Wed Jul 13 16:06:13 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\071316\11M13230.D Vial: 8
Acq On : 13 Jul 2016 15:44 Operator: TMB
Sample : WG576236-03 20ug/L LCS2 STD 8260 Inst : hpms11
Misc : 1,1 STD77015 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 13 16:06 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Thu Jul 07 15:06:07 2016
Response via : Initial Calibration

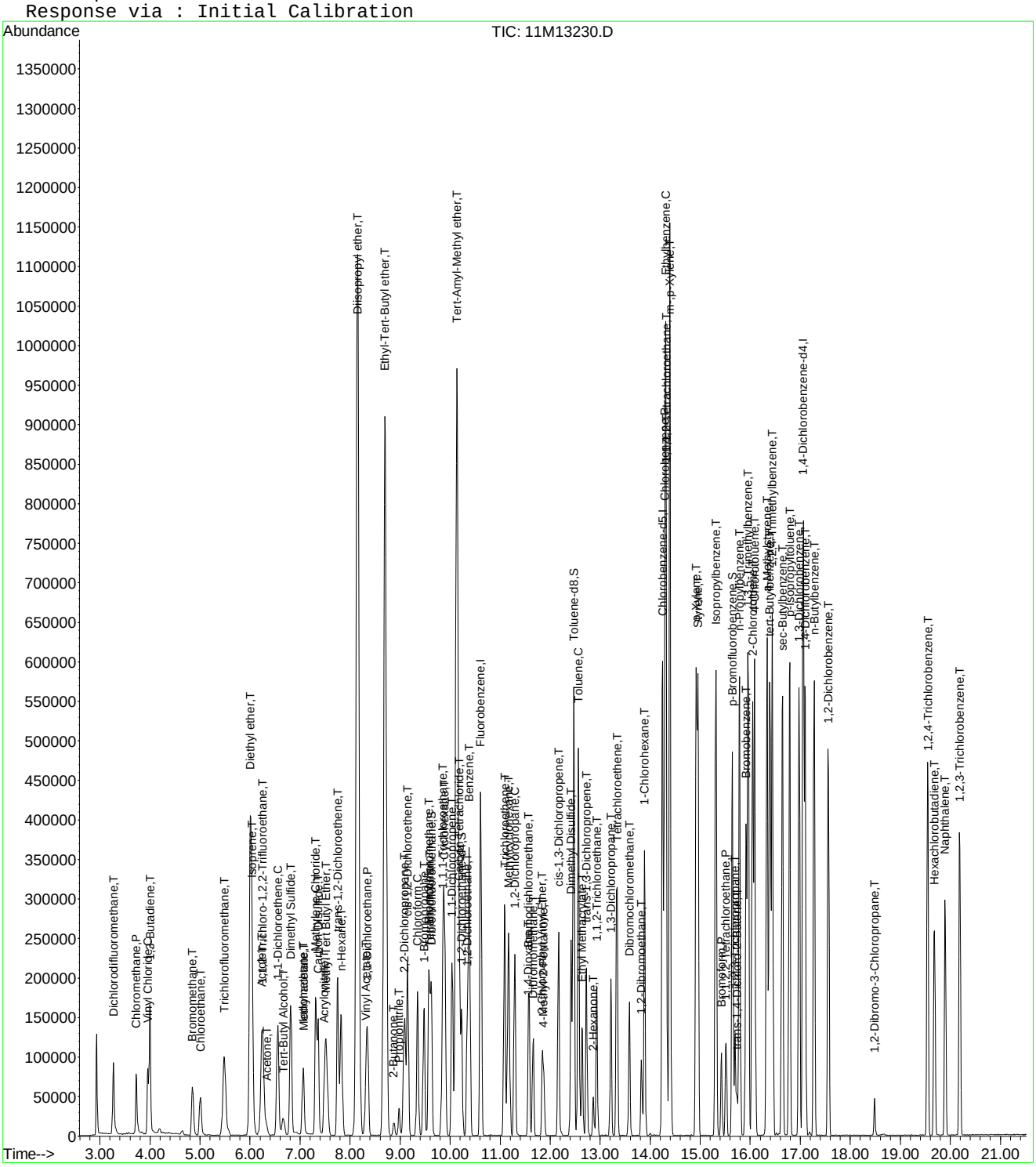

2.2 Semivolatiles Data

2.2.1 Semivolatiles GC/MS Data (Dioxane)

2.2.1.1 Summary Data

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18WW20-062016	**Prep Method:**	3520C	**Prep Date:**	06/22/2016 13:51
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574301	**Analyst:**	MES	**Run Date:**	06/27/2016 17:23
Collect Date:	06/20/2016 07:55	**Dilution:**	1	**File ID:**	15M18605
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	41.7	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18WW08-062016	**Prep Method:**	3520C	**Prep Date:**	06/22/2016 13:51
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574301	**Analyst:**	MES	**Run Date:**	06/27/2016 17:46
Collect Date:	06/20/2016 10:10	**Dilution:**	1	**File ID:**	15M18606
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	52.6	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18WW09-062016	**Prep Method:**	3520C	**Prep Date:**	06/22/2016 13:51
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574301	**Analyst:**	MES	**Run Date:**	06/27/2016 18:09
Collect Date:	06/20/2016 11:10	**Dilution:**	1	**File ID:**	15M18607
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	56.4	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.2.1.2 QC Summary Data

Example 8270 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	1261197
Cis = Concentration of the specific internal standard (ug/mL)	40
Ais = Area of the characteristic ion of the specific internal standard	608044
Cx = Concentration of the compound in the standard being measured (ug/mL)	50
RF = Calculated Response Factor	**1.65935**

2.0 Calculating the concentration (C) of a compound in water using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Vi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Vi = Initial volume of sample extracted from prep log (mL)	1021
Cx = Concentration of the compound in the sample being measured (ug/mL)	0.016947
Cx = Concentration of the compound in the sample being measured (ug/L)	**16.947**

3.0 Calculating the concentration (C) of a compound in soil using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Wi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Wi = Initial weight of sample extracted (g) from prep log	30
Cx = Concentration of the compound in the sample being measured (ug/g)	0.576763
Cx = Concentration of the compound in the sample being measured (ug/kg)	**576.7627**

Dry weight correction:

Percent solids (PCT_S)	50
Cd = (Cx) (100)/PCT_S	**1153.525** ug/kg

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve plot

b = intercept from curve plot

Step 2: Calculate y from Quantitation Report

y = 16790/784838 = 0.02139

Step 3: Solve for x

x = (y - b)/m = [(0.02139 -(- 0.0435)]/ 0.0783 = 0.829

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.829) = 20.72 ug/L

Example Spreadsheet Calculation:

Slope from curve, m:	0.0783	
Intercept from curve, b:	-0.0435	
Area of analyte, Ax:	16790	
Area of Internal Standard , Ais:	784484	
Concentration of IS, Cis	25.00	ug/L
Response Ratio (y) :	0.021403	
Amount Ratio:	0.828897	
Concentration (Cx):	20.72241	ug/L

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**0.0259**	
Value of B from plot:	**0.0596**	
Value of C from plot:	**-0.0165**	
Area of analyte from quantitation report:	**203233**	
Area of IS from quantiation report:	**1425653**	
Response ratio, y:	**0.142554**	
C - y:	**-0.15905**	
Root 1 - Computed amount ratio , X1:	**-3.88278**	
Root 2 - Computed amount ratio , X2:	**1.581623**	use this solution
Concentration of IS, Cis:	**40.00**	
Concentration of analyte, Cx:	**63.26**	ug/L

Microbac Laboratories Inc.
Continuous Sample Extract Log

Workgroup: WG573812
Analyst: CPD
Spike Analyst: 001
Method: 3520C
Run Date: 06/22/2016 13:51
SOP: EXB01 Revison 20
Spike Witness: JDH
Surr Solution: STD76628

TIME ON: 14:35 OFF: 09:00 ON: 14:30 OFF: 08:30

CH2CL2 Lot #: COA18982
1:1 H2SO4 Lot #: RGT36755
sodium sulfate Lot #: COA18814

	SAMPLE #	Type	Reference	Prod	pH	Init Amnt	Surr Amnt	Spike Amnt	Spike Sol	Final Vol	Color
1	L16061124-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
2	L16061142-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
3	L16061142-06	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
4	L16061142-07	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
5	L16061144-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
6	L16061144-02	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
7	L16061144-03	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
8	L16061227-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
9	L16061227-06	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
10	L16061227-07	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
11	L16061233-02	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
12	WG573812-01	BLANK		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
13	WG573812-02	LCS		827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD75256	1 mL	Transparent
14	WG573812-03	LCS2		827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD75256	1 mL	Transparent

Analyst: Chelsie Davis

Reviewer: Justin Hesson

EXTRACT - Modified 01/23/2009
PDF ID: 4825361
Report generated: 06/27/2016 08:29

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062116
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573365

Internal STD: STD76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: STD74214 MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18455	BAKEOUT	1	1		06/21/16 08:46
2	15M18456	WG573501-01 5PPM DFTPP STD	1	1	STD75016	06/21/16 09:05
3	15M18457	WG573501-01 5PPM DFTPP STD	1	1	STD75016	06/21/16 09:34
4	15M18458	WG573501-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 09:52
5	15M18459	WG573501-03 10 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 10:27
6	15M18460	WG573501-04 7.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 10:49
7	15M18461	WG573501-05 2.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:12
8	15M18462	WG573501-06 1 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:34
9	15M18463	WG573501-07 0.4 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:57
10	15M18464	WG573501-08 5PPM 1,4-DIOXANE ALT SRC	1	1	STD74214	06/21/16 12:20
11	15M18465	WG572806-01 BLANK 6/15	1	1		06/21/16 12:54
12	15M18466	WG572806-02 LCS 6/15	1	1		06/21/16 13:17
13	15M18467	WG572806-03 LCSDUP 6/15	1	1		06/21/16 13:40
14	15M18468	WG573008-01 BLANK 6/17	7	1	SOIL	06/21/16 14:03
15	15M18469	WG573008-02 LCS 6/17	7	1	SOIL	06/21/16 14:26
16	15M18470	WG573008-03 LCSDUP 6/17	7	1	SOIL	06/21/16 14:48
17	15M18471	L16060730-01	1	1		06/21/16 15:11
18	15M18472	L16060730-02	1	1		06/21/16 15:34
19	15M18473	L16060854-01	1	1		06/21/16 15:57
20	15M18474	L16060730-03	1	1		06/21/16 16:19
21	15M18475	L16060756-04 827-DIOX	1	1		06/21/16 16:46
22	15M18476	L16060822-01	1	1		06/21/16 17:08
23	15M18477	L16060822-03	1	1		06/21/16 17:31
24	15M18478	L16060822-04	1	1		06/21/16 17:54
25	15M18479	L16060822-05	1	1		06/21/16 18:17
26	15M18480	L16060823-01	1	1		06/21/16 18:40
27	15M18481	L16060823-03	1	1		06/21/16 19:02
28	15M18482	L16060823-04	1	1		06/21/16 19:25
29	15M18483	L16060809-03 827-DIOX	1	1		06/21/16 19:48
30	15M18484	L16060854-01 2X	1	2		06/21/16 20:10
31	15M18485	BAKEOUT	1	1		06/21/16 20:33
32	15M18486	BAKEOUT	1	1		06/21/16 20:55
33	15M18487	BAKEOUT	1	1		06/21/16 21:18

Page: 1 Approved: 22-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062116

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573365

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD: STD74214

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
	WG573501-01 5PPM DFTPP STD rerun DFTPP, pentachlorophenol tailing >2.			
14				
	WG573008-01 BLANK 6/17 DNR-not needed.			
15				
	WG573008-02 LCS DNR-not needed.			
16				
	WG573008-03 LCSDUP DNR-not needed.			
19	X	2	Over Calibration Range	
	L16060854-01			

Page: 2 Approved: 22-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062716
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574301,WG574187,WG574186,WG573853

Internal STD: STD76627 Surrogate STD: NA Calibration STD
CCV STD: STD74784 LCS STD: MS/MSD STD:

Comments: All samples associated with extraction workgroup WG573815 are being re-extracted due to low LCSDUP recovery: L16060637-02,756-01 to-03,809-01 and -02,930-01 and -02, 1213-01 to -06.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18584	BAKEOUT	1	1		06/27/16 08:21
13	15M18585	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 08:41
14	15M18586	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 08:58
2	15M18587	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 09:22
3	15M18588	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 09:38
4	15M18589	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 10:23
5	15M18590	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 11:15
6	15M18591	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 11:32
7	15M18592	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 12:20
8	15M18593	WG574241-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/27/16 12:37
9	15M18594	WG573975-03 LCSDUP 6/24 RR	7	1	SOIL	06/27/16 13:15
10	15M18595	WG573815-02 LCS 6/23 RR	7	1	SOIL	06/27/16 13:37
11	15M18596	WG573815-03 LCSDUP 6/23 RR	7	1	SOIL	06/27/16 13:59
12	15M18597	WG573812-01 BLANK 6/22	1	1		06/27/16 14:22
15	15M18598	WG573812-02 LCS 6/22	1	1		06/27/16 14:45
16	15M18599	WG573812-03 LCSDUP 6/22	1	1		06/27/16 15:07
17	15M18600	L16061026-05 40X	1	40		06/27/16 15:30
18	15M18601	L16061213-05 827-DIOX	7	1	SOIL	06/27/16 15:52
19	15M18602	L16061213-06 827-DIOX	7	1		06/27/16 16:15
20	15M18603	L16061233-02 827-DIOX	1	1		06/27/16 16:38
21	15M18604	L16061124-01	1	1		06/27/16 17:01
22	15M18605	L16061142-01	1	1		06/27/16 17:23
23	15M18606	L16061142-06	1	1		06/27/16 17:46
24	15M18607	L16061142-07	1	1		06/27/16 18:09
25	15M18608	L16061144-01	1	1		06/27/16 18:31
26	15M18609	L16061144-02	1	1		06/27/16 18:54
27	15M18610	L16061144-03	1	1		06/27/16 19:17
28	15M18611	L16061227-01	1	1		06/27/16 19:39
29	15M18612	L16061227-06	1	1		06/27/16 20:02
30	15M18613	L16061227-07	1	1		06/27/16 20:25
31	15M18614	L16061124-01 2X	1	2		06/27/16 20:47
32	15M18615	BAKEOUT	1	1		06/27/16 21:10
33	15M18616	BAKEOUT	1	1		06/27/16 21:32

Page: 1 Approved: 28-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062716

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574301,WG574187,WG574186,WG573853

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	15M18617	BAKEOUT	1	1		06/27/16 21:55

Comments

Seq.	Rerun	Dil.	Reason	Analytes
13				
	Rerun DFTPP, wrong standard was analyzed.			
14				
	Rerun DFTPP, wrong standard was analyzed.			
2				
	Rerun DFTPP, ion failures. Liner needs changed.			
3				
	Rerun DFTPP, degradation >20%.			
4				
	Rerun DFTPP, degradation >20%. Changed the gold seal.			
5				
	Rerun DFTPP, benzidine tailing >2.			
6				
	Rerun DFTPP, benzidine tailing >2. Clipped 5cm from the column.			
9				
	WG573975-03 LCSDUP 6/24 RR recovery is acceptable. Not reporting the run from 6/25/16.			
11				
	WG573815-03 LCSDUP 6/23 RR low recovery; confirms the original run.			
21	X	2	Over Calibration Range	
	L16061124-01			
28				
	L16061227-01 Needs re-extracted; surrogate recovery is low.			

Page: 2 Approved: 28-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 21-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75850
Analytical Workgroups: L16060730, 060756, 060809, 060822, 060823, 060854

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 22-JUN-2016

Secondary Reviewer: 22-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-22-2016 16:00:51

Microbac Laboratories Inc.

Data Checklist

Date: 27-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75949
Analytical Workgroups: L16061026,061213,WG573956-LCSDUP RR,061124,1142,1144,1227,123

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
28-JUN-2016

Secondary Reviewer:
28-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-28-2016 14:33:27

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8270D

AAB#: WG574301

Login Number: L16061142

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW20-062016	01	06/20/16					06/22/2016	2.2	7		06/27/16	5.1	40	
18WW08-062016	06	06/20/16					06/22/2016	2.2	7		06/27/16	5.2	40	
18WW09-062016	07	06/20/16					06/22/2016	2.1	7		06/27/16	5.2	40	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4828096
Report generated 06/29/2016 08:19

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061142
Instrument Id: HPMS15
Workgroup (AAB#): WG574301

Method: 827-DIOXANE
CAL ID: HPMS15-21-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1
L16061142-01	1.00	01	41.7
L16061142-06	1.00	01	52.6
L16061142-07	1.00	01	56.4
WG573812-01	1.00	01	29.1
WG573812-02	1.00	01	33.3
WG573812-03	1.00	01	61.4

Surrogates	Surrogate Limits		
1 - 1,4-Dioxane-d8	20	-	129

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4828109
Report generated: 06/29/2016 08:19

METHOD BLANK SUMMARY

Login Number: L16061142
Blank File ID: 15M18597
Prep Date: 06/22/16 13:51
Analyzed Date: 06/27/16 14:22
Analyst: MES

Work Group: WG574301
Blank Sample ID: WG573812-01
Instrument ID: HPMS15
Method: 8270D

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573812-02	15M18598	06/27/16 14:45	01
LCS2	WG573812-03	15M18599	06/27/16 15:07	01
18WW20-062016	L16061142-01	15M18605	06/27/16 17:23	01
18WW08-062016	L16061142-06	15M18606	06/27/16 17:46	01
18WW09-062016	L16061142-07	15M18607	06/27/16 18:09	01

Report Name: BLANK_SUMMARY
PDF File ID: 4828891
Report generated 06/29/2016 08:19

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061142 Prep Date: 06/22/16 13:51 Sample ID: WG573812-01
Instrument ID: HPMS15 Run Date: 06/27/16 14:22 Prep Method: 3520C
File ID: 15M18597 Analyst: MES Method: 8270D
Workgroup (AAB#): WG574301 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS15-21-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
1,4-Dioxane	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	29.1	20 - 129	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4828098
29-JUN-2016 08:19

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061142 Analyst: MES Prep Method: 3520C
Instrument ID: HPMS15 Matrix: Water Method: 8270D
Workgroup (AAB#): WG574301 Units: ug/L
QC Key: DOD4 Lot #: STD75256

Sample ID: WG573812-02 LCS File ID: 15M18598 Run Date: 06/27/2016 14:45
Sample ID: WG573812-03 LCS2 File ID: 15M18599 Run Date: 06/27/2016 15:07

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,4-Dioxane	5.00	1.59	31.8	5.00	3.00	60.0	61.5	30 - 104	30	#

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,4-Dioxane-d8	33.3	61.4	20 - 129	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4828101
Report generated: 06/29/2016 08:19

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16061142
Instrument: HPMS15
Analyst: MES
Workgroup: WG573501

Tune ID: WG573501-01
Run Date: 06/21/2016
Run Time: 09:34
File ID: 15M18457
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	38.8	34488	PASS
68.0	69.0	0	2.00	1.36	500	PASS
69.0	198	0	100	41.4	36833	PASS
70.0	69.0	0	2.00	0.467	172	PASS
127	198	40.0	60.0	51.9	46131	PASS
197	198	0	1.00	0	0	PASS
198	198	100	100	100	88880	PASS
199	198	5.00	9.00	6.66	5918	PASS
275	198	10.0	30.0	24.9	22090	PASS
365	198	1.00	100	2.65	2358	PASS
441	443	0.0100	100	75.7	9586	PASS
442	198	40.0	100	73.4	65261	PASS
443	442	17.0	23.0	19.4	12659	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573501-02	STD-CCV	01	06/21/2016 09:52	
WG573501-03	STD	01	06/21/2016 10:27	
WG573501-04	STD	01	06/21/2016 10:49	
WG573501-05	STD	01	06/21/2016 11:12	
WG573501-06	STD	01	06/21/2016 11:34	
WG573501-07	STD	01	06/21/2016 11:57	
WG573501-08	SSCV	01	06/21/2016 12:20	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4828106
Report generated 06/29/2016 08:19

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16061142
Instrument: HPMS15
Analyst: MES
Workgroup: WG574241

Tune ID: WG574241-01
Run Date: 06/27/2016
Run Time: 12:20
File ID: 15M18592
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	33.2	31989	PASS
68.0	69.0	0	2.00	1.61	580	PASS
69.0	198	0	100	37.4	35954	PASS
70.0	69.0	0	2.00	0.617	222	PASS
127	198	40.0	60.0	50.4	48459	PASS
197	198	0	1.00	0.425	409	PASS
198	198	100	100	100	96232	PASS
199	198	5.00	9.00	6.65	6399	PASS
275	198	10.0	30.0	25.2	24236	PASS
365	198	1.00	100	2.50	2410	PASS
441	443	0.0100	100	75.7	10371	PASS
442	198	40.0	100	73.9	71133	PASS
443	442	17.0	23.0	19.3	13708	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG574241-02	CCV	01	06/27/2016 12:37	
WG573812-01	BLANK	01	06/27/2016 14:22	
WG573812-02	LCS	01	06/27/2016 14:45	
WG573812-03	LCS2	01	06/27/2016 15:07	
L16061142-01	18WW20-062016	01	06/27/2016 17:23	
L16061142-06	18WW08-062016	01	06/27/2016 17:46	
L16061142-07	18WW09-062016	01	06/27/2016 18:09	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4828106
Report generated 06/29/2016 08:19

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061142
Analytical Method: 8270D
ICAL Workgroup: WG573501

Instrument ID: HPMS15
Initial Calibration Date: 21-JUN-16 11:57
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
1,4-Dioxane		0.3060	2.56		

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4828103
Report generated 06/29/2016 08:19

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061142

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 21-JUN-16 11:57

Column ID: F

Analyte	WG573501-02			WG573501-03			WG573501-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	5.00	60883.0000	0.3073	10.0	138820.000	0.3164	7.50	103182.000	0.3106

INT_CAL - Modified 03/06/2008
PDF File ID: 4828103
Report generated 06/29/2016 08:19

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061142

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 21-JUN-16 11:57

Column ID: F

Analyte	WG573501-05			WG573501-06			WG573501-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	2.50	26333.0000	0.2969	1.00	13250.0000	0.2966	0.400	5650.00000	0.3081

INT_CAL - Modified 03/06/2008
PDF File ID: 4828103
Report generated 06/29/2016 08:19

Calibration Table Report
Method: DIOXANE_D8.M
Title: OVD MSS01 SIM 1,4-dioxane ICAL 062116
Last Calibration: Tue Jun 21 12:51:17 2016
Curve:WG573501
Calibration Files

Compound	10 15M18459.D	7.5 15M18460.D	5 15M18458.D	2.5 15M18461.D	1 15M18462.D	0.4 15M18463.D	Avg	%RSD
1,4-Dichlorobenzene-d4	ISTD							
1,4-Dioxane	0.316	0.311	0.307	0.297	0.297	0.308	0.306	2.558
1,4-Dioxane-d8	0.426	0.418	0.417	0.402	0.395		0.411	3.044
Nitrobenzene-d5	1.202	1.173	1.128	1.002	0.927	0.906	1.056	12.163
2-Fluorobiphenyl	2.735	2.736	2.691	2.621	2.563	2.651	2.666	2.548
p-Terphenyl-d14	2.793	2.774	2.622	2.460	2.367	2.405	2.570	7.266

Wed Jun 22 12:17:33 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061142 Run Date: 06/21/2016 Sample ID: WG573501-08
Instrument ID: HPMS15 Run Time: 12:20 Method: 8270D
File ID: 15M18464 Analyst: MES QC Key: DOD4
ICal Workgroup: WG573501 Cal ID: HPMS15 - 21-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
1,4-Dioxane		5000	5050	ug/L	0.309	0.900	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4828104
Report generated 06/29/2016 08:19

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142
Run Date: 06/27/2016
Sample ID: WG574241-02
Instrument ID: HPMS15
Run Time: 12:37
Method: 8270D
File ID: 15M18593
Analyst: MES
QC Key: DOD4
Workgroup (AAB#): WG574301
Cal ID: HPMS15 - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,4-Dioxane		5000	4360	ug/L	0.267	12.8	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4828107
Report generated 06/29/2016 08:19

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061142
Instrument ID: HPMS15
Workgroup (AAB#): WG574301

ICAL CCV Number: WG573501-02
CAL ID: HPMS15-21-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG573501-02	NA	NA	39637
Upper Limit	NA	NA	79274
Lower Limit	NA	NA	19819
L16061142-01	1.00	01	47987
L16061142-06	1.00	01	46257
L16061142-07	1.00	01	37198
WG573812-01	1.00	01	38478
WG573812-02	1.00	01	47423
WG573812-03	1.00	01	50712

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4828108
Report generated 06/29/2016 08:19

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061142
Instrument ID: HPMS15
Workgroup (AAB#): WG574301

ICAL CCV Number: WG573501-02
CAL ID: HPMS15-21-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG573501-02	NA	NA	6.93
Upper Limit	NA	NA	7.43
Lower Limit	NA	NA	6.43
L16061142-01	1.00	01	6.896
L16061142-06	1.00	01	6.896
L16061142-07	1.00	01	6.896
WG573812-01	1.00	01	6.896
WG573812-02	1.00	01	6.896
WG573812-03	1.00	01	6.896

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4828892
Report generated: 06/29/2016 08:19

2.2.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18605.D
Acq On : 27 Jun 2016 17:23
Operator : MES
Sample : L16061142-01
Misc : 1,1
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jun 27 17:44:28 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.896	152	47987	1.0000	ug/mL	#-0.04
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.778	96	41217	2.0874	ug/L	-0.05
Spiked Amount 5.000			Recovery	=	41.80%	
4) Nitrobenzene-d5	7.404	82	2303	0.0454	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	1.00%	
5) 2-Fluorobiphenyl	8.860	172	4	0.0000	ug/L	-0.06
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.166	244	1615	0.0131	ug/L	-0.02
Spiked Amount 5.000			Recovery	=	0.20%	

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18605.D
Acq On : 27 Jun 2016 17:23
Operator : MES
Sample : L16061142-01
Misc : 1,1
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jun 27 17:44:28 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

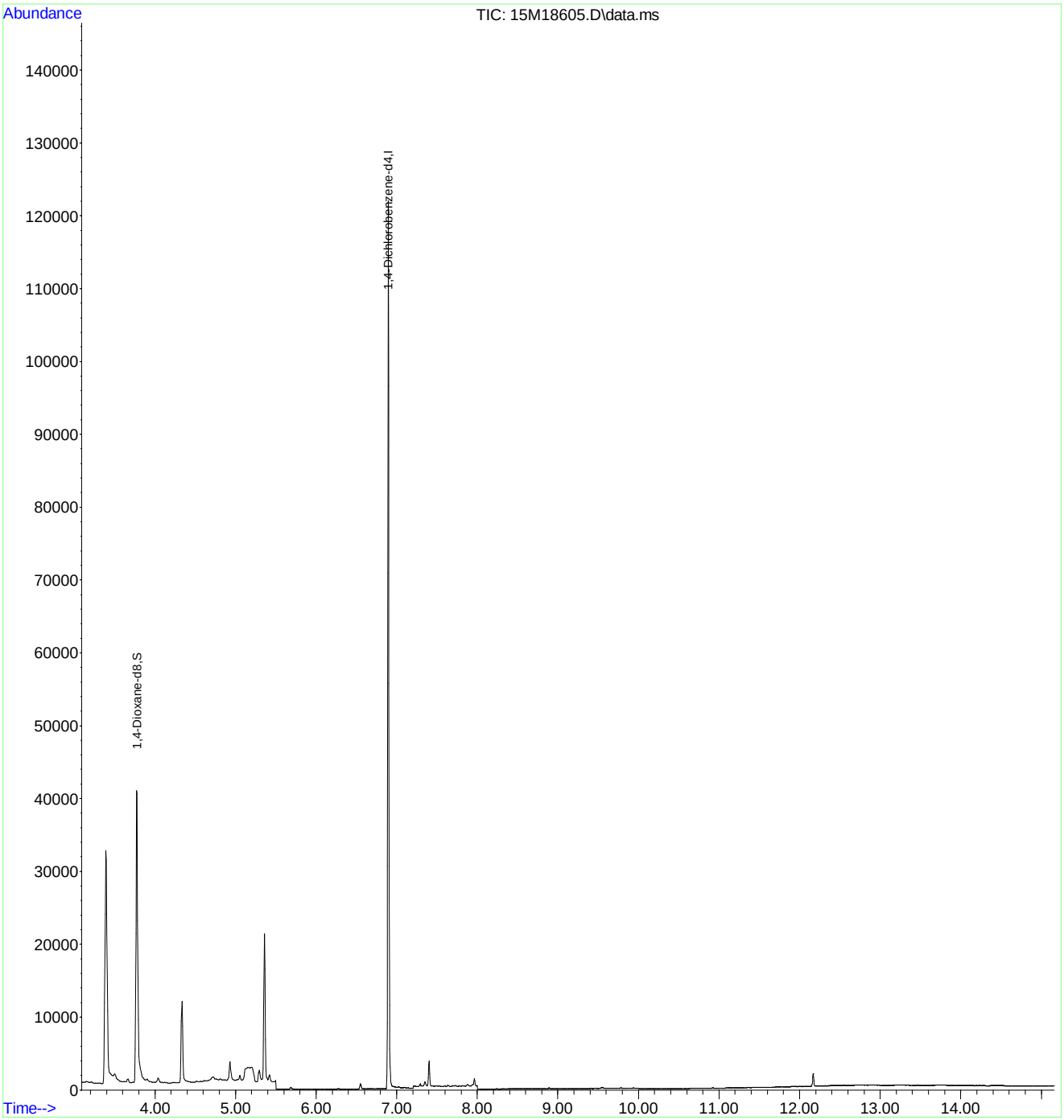

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18606.D
Acq On : 27 Jun 2016 17:46
Operator : MES
Sample : L16061142-06
Misc : 1,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 27 18:02:12 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.896	152	46257	1.0000	ug/mL	#-0.04
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.764	96	50090	2.6316	ug/L	-0.06
Spiked Amount 5.000			Recovery	=	52.60%	
4) Nitrobenzene-d5	7.404	82	1439	0.0295	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.60%	
5) 2-Fluorobiphenyl	8.889	172	88	0.0007	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.159	244	474	0.0040	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.00%	

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18606.D
Acq On : 27 Jun 2016 17:46
Operator : MES
Sample : L16061142-06
Misc : 1,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 27 18:02:12 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

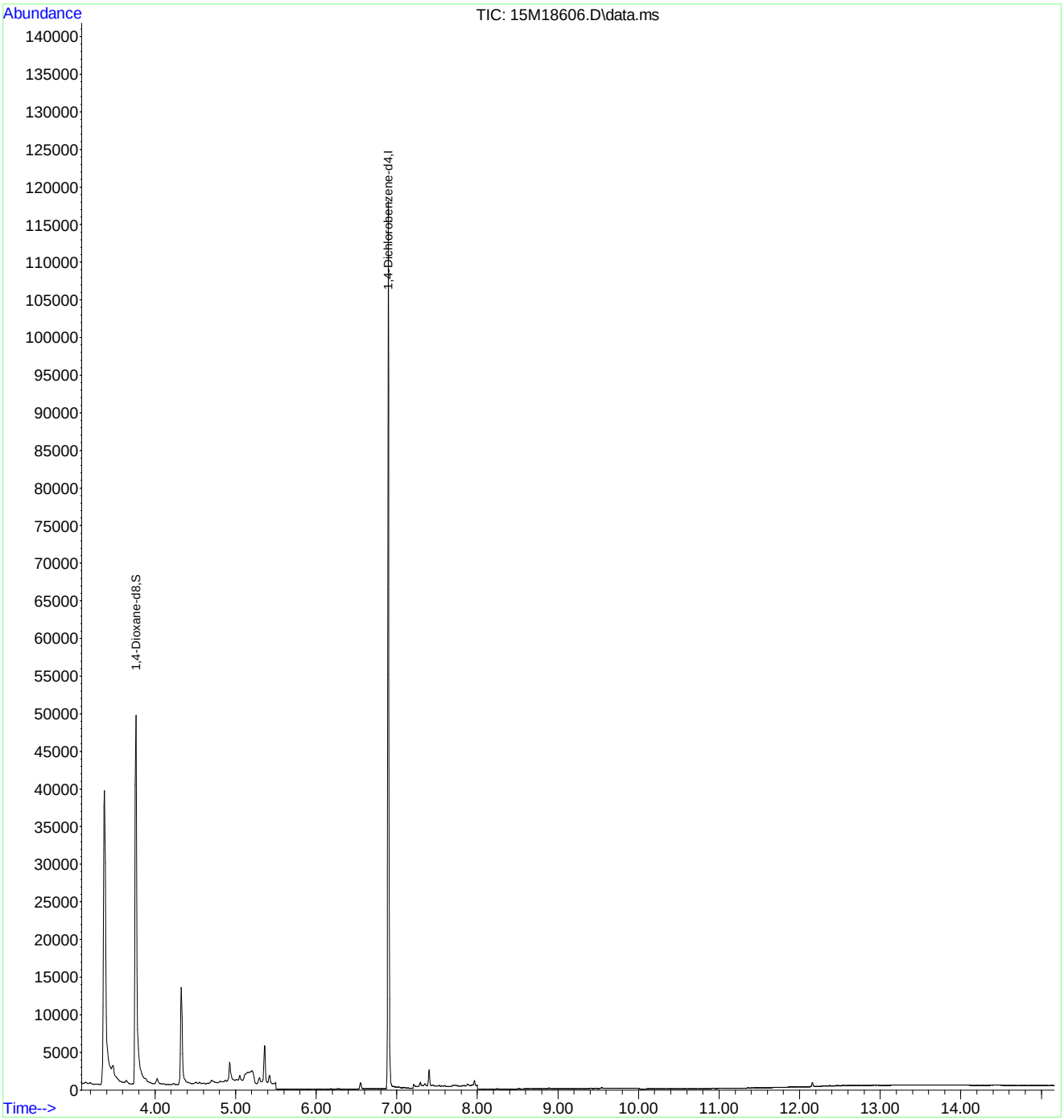

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18607.D
Acq On : 27 Jun 2016 18:09
Operator : MES
Sample : L16061142-07
Misc : 1,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jun 27 18:24:43 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.896	152	37198	1.0000	ug/mL	#-0.04
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.749	96	43134	2.8180	ug/L	-0.08
Spiked Amount 5.000			Recovery	=	56.40%	
4) Nitrobenzene-d5	7.404	82	1441	0.0367	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.80%	
5) 2-Fluorobiphenyl	8.890	172	137	0.0014	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.170	244	4292	0.0449	ug/L	-0.01
Spiked Amount 5.000			Recovery	=	0.80%	

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18607.D
Acq On : 27 Jun 2016 18:09
Operator : MES
Sample : L16061142-07
Misc : 1,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jun 27 18:24:43 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

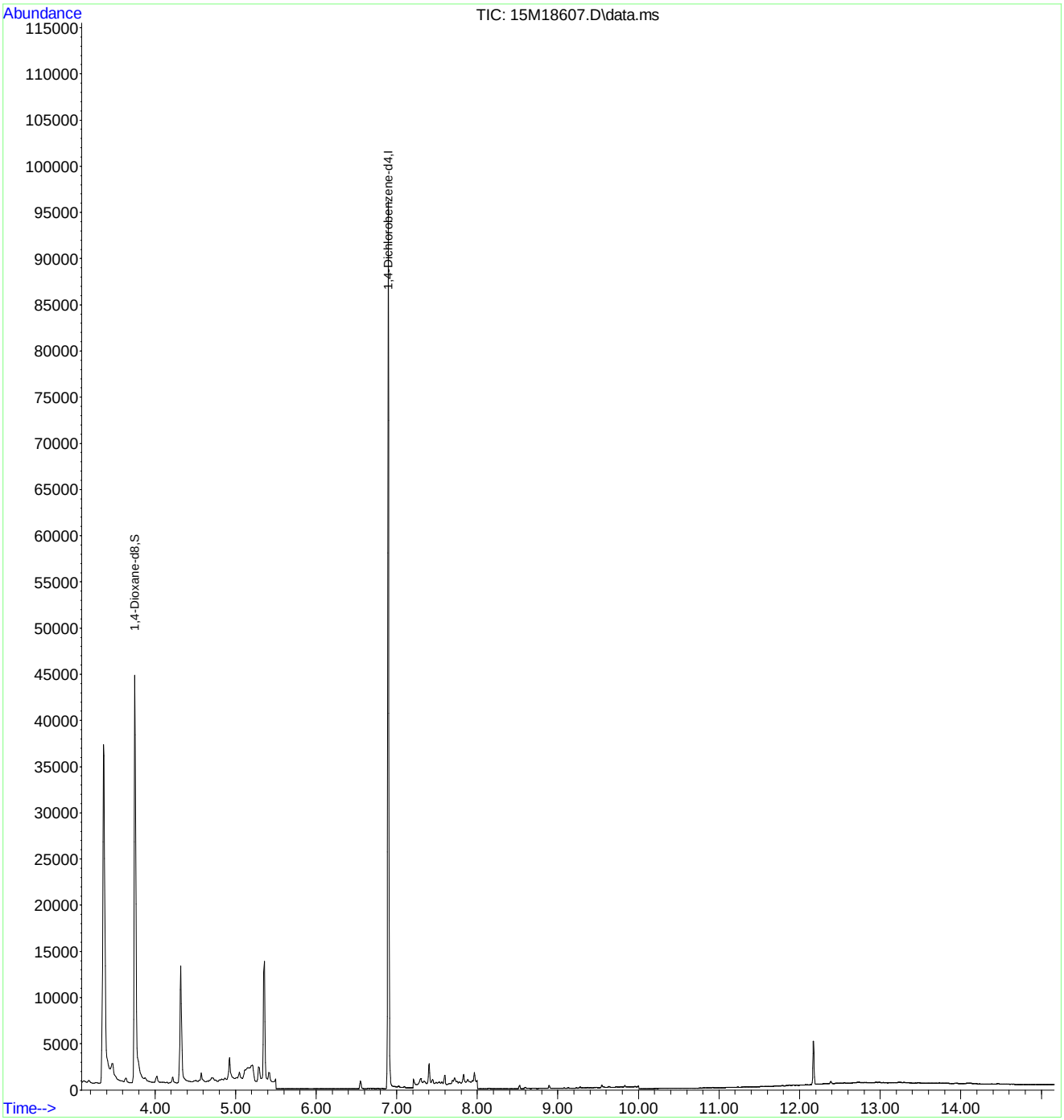

2.2.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 22 08:04:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	39637	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.827	96	82573	5.0627 ug/L	0.00
Spiked Amount 5.000			Recovery	= 101.20%	
4) Nitrobenzene-d5	7.431	82	223381	5.3353 ug/L	0.00
Spiked Amount 5.000			Recovery	= 106.80%	
5) 2-Fluorobiphenyl	8.922	172	533101	5.0444 ug/L	0.00
Spiked Amount 5.000			Recovery	= 100.80%	
6) p-Terphenyl-d14	12.184	244	519544	5.1003 ug/L	0.00
Spiked Amount 5.000			Recovery	= 102.00%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.862	58	60883	5.0202 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 22 08:04:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

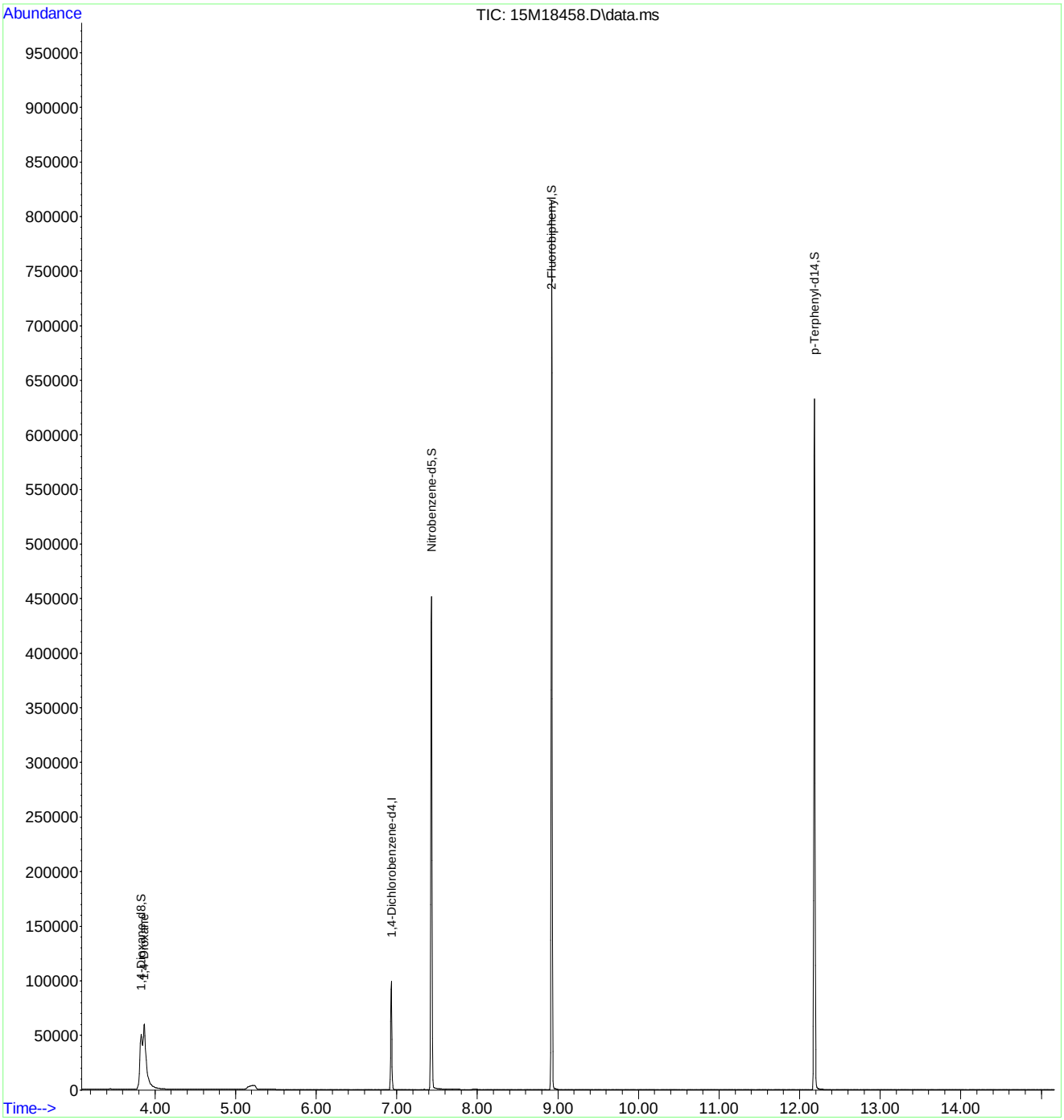

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18459.D
Acq On : 21 Jun 2016 10:27
Operator : MES
Sample : WG573501-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 22 08:04:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	43874	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	186767	10.3452	ug/L	0.00
Spiked Amount 5.000			Recovery = 207.00%			
4) Nitrobenzene-d5	7.431	82	527549	11.3834	ug/L	0.00
Spiked Amount 5.000			Recovery = 227.60%			
5) 2-Fluorobiphenyl	8.926	172	1199799	10.2565	ug/L	0.00
Spiked Amount 5.000			Recovery = 205.20%			
6) p-Terphenyl-d14	12.240	244	1225328	10.8672	ug/L	0.06
Spiked Amount 5.000			Recovery = 217.40%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	138820	10.3412	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18459.D
Acq On : 21 Jun 2016 10:27
Operator : MES
Sample : WG573501-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 22 08:04:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

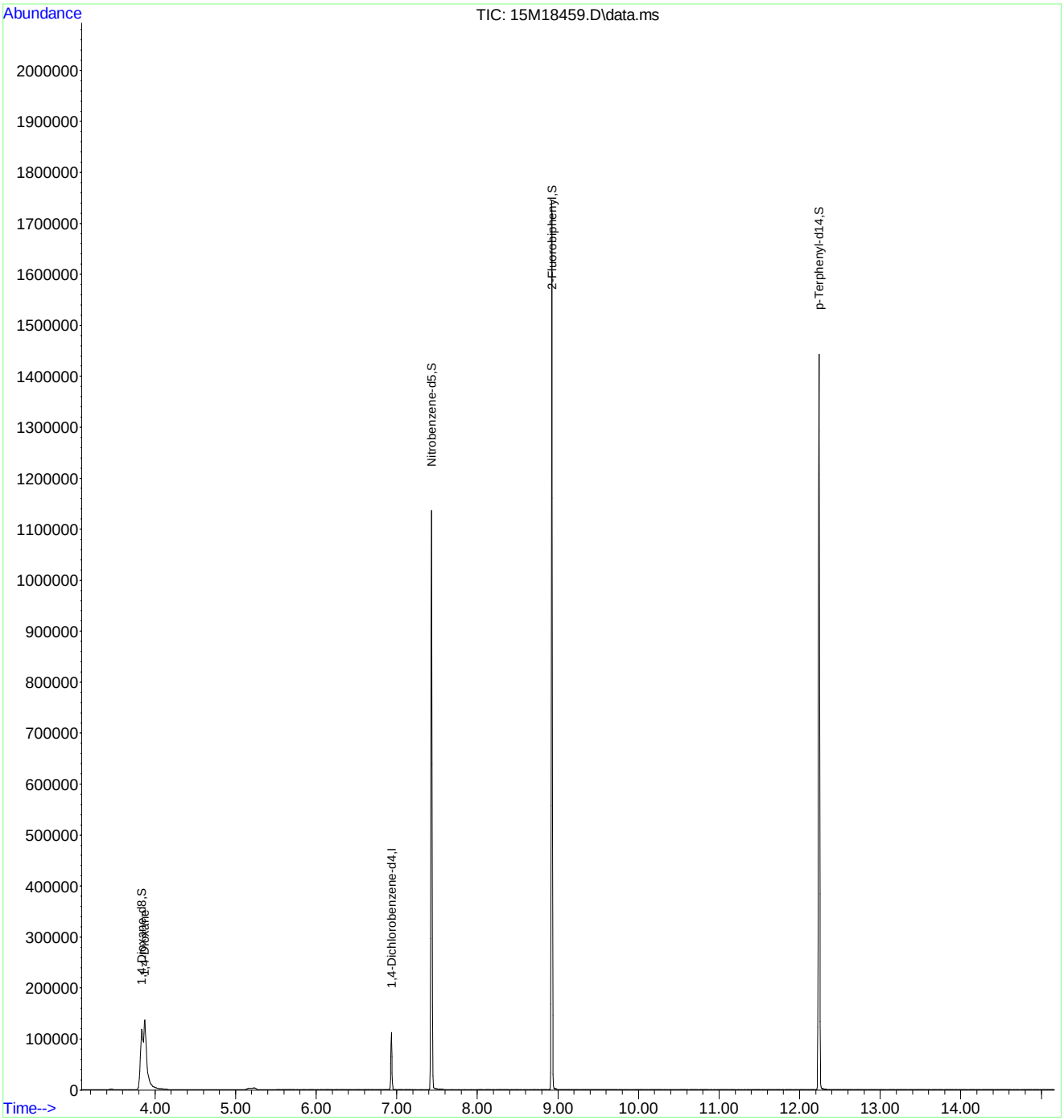

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18460.D
Acq On : 21 Jun 2016 10:49
Operator : MES
Sample : WG573501-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 22 08:04:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	44299	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.834	96	138833	7.6163 ug/L	0.00
Spiked Amount 5.000			Recovery	= 152.40%	
4) Nitrobenzene-d5	7.431	82	389810	8.3306 ug/L	0.00
Spiked Amount 5.000			Recovery	= 166.60%	
5) 2-Fluorobiphenyl	8.923	172	909050	7.6965 ug/L	0.00
Spiked Amount 5.000			Recovery	= 154.00%	
6) p-Terphenyl-d14	12.203	244	921380	8.0931 ug/L	0.02
Spiked Amount 5.000			Recovery	= 161.80%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.876	58	103182	7.6127 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18460.D
Acq On : 21 Jun 2016 10:49
Operator : MES
Sample : WG573501-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 22 08:04:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

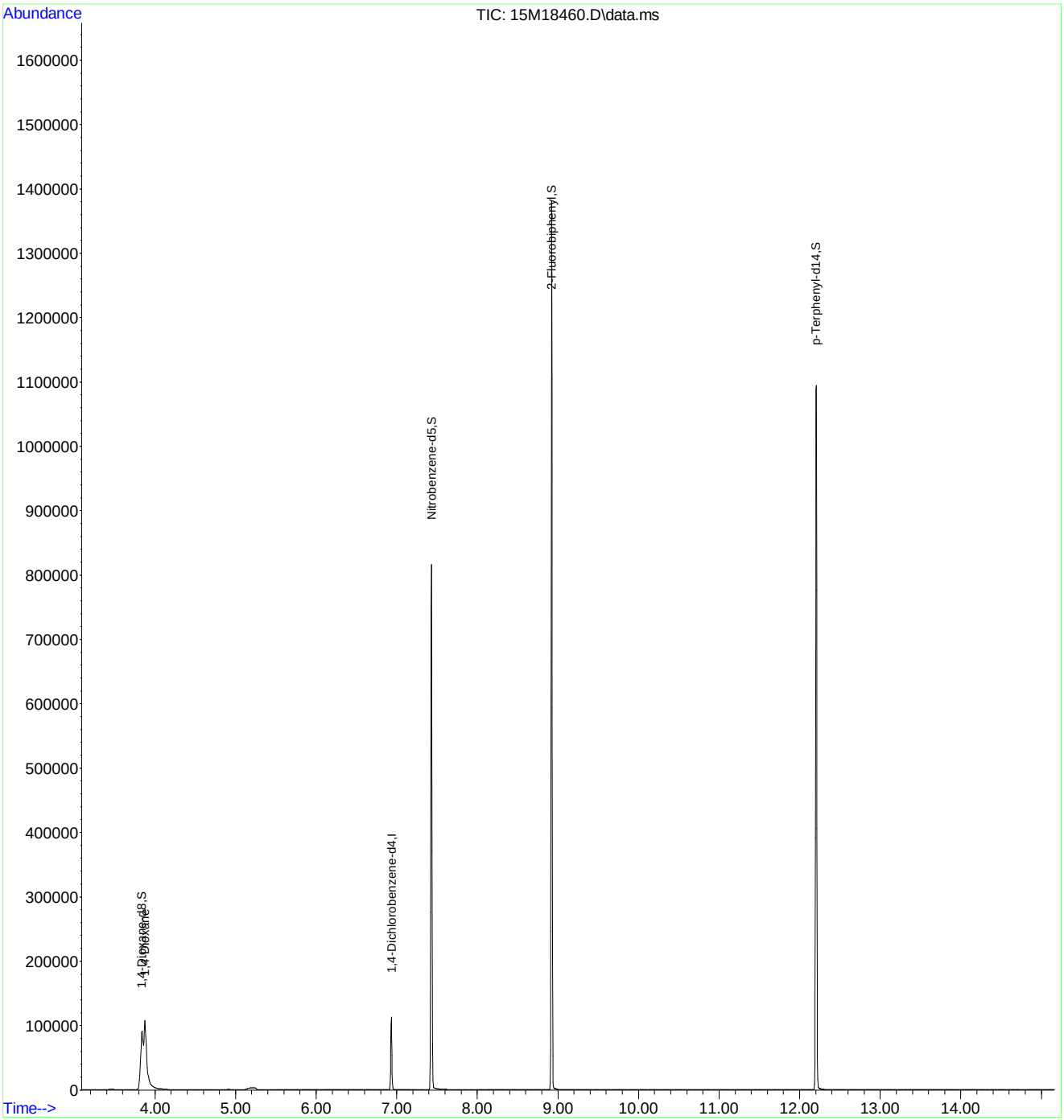

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18461.D
Acq On : 21 Jun 2016 11:12
Operator : MES
Sample : WG573501-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 22 08:04:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	35478	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.827	96	35630	2.4406 ug/L	0.00
Spiked Amount 5.000			Recovery	= 48.80%	
4) Nitrobenzene-d5	7.431	82	88869	2.3714 ug/L	0.00
Spiked Amount 5.000			Recovery	= 47.40%	
5) 2-Fluorobiphenyl	8.923	172	232500	2.4579 ug/L	0.00
Spiked Amount 5.000			Recovery	= 49.20%	
6) p-Terphenyl-d14	12.199	244	218191	2.3930 ug/L	0.02
Spiked Amount 5.000			Recovery	= 47.80%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.862	58	26333	2.4259 ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18461.D
Acq On : 21 Jun 2016 11:12
Operator : MES
Sample : WG573501-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 22 08:04:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

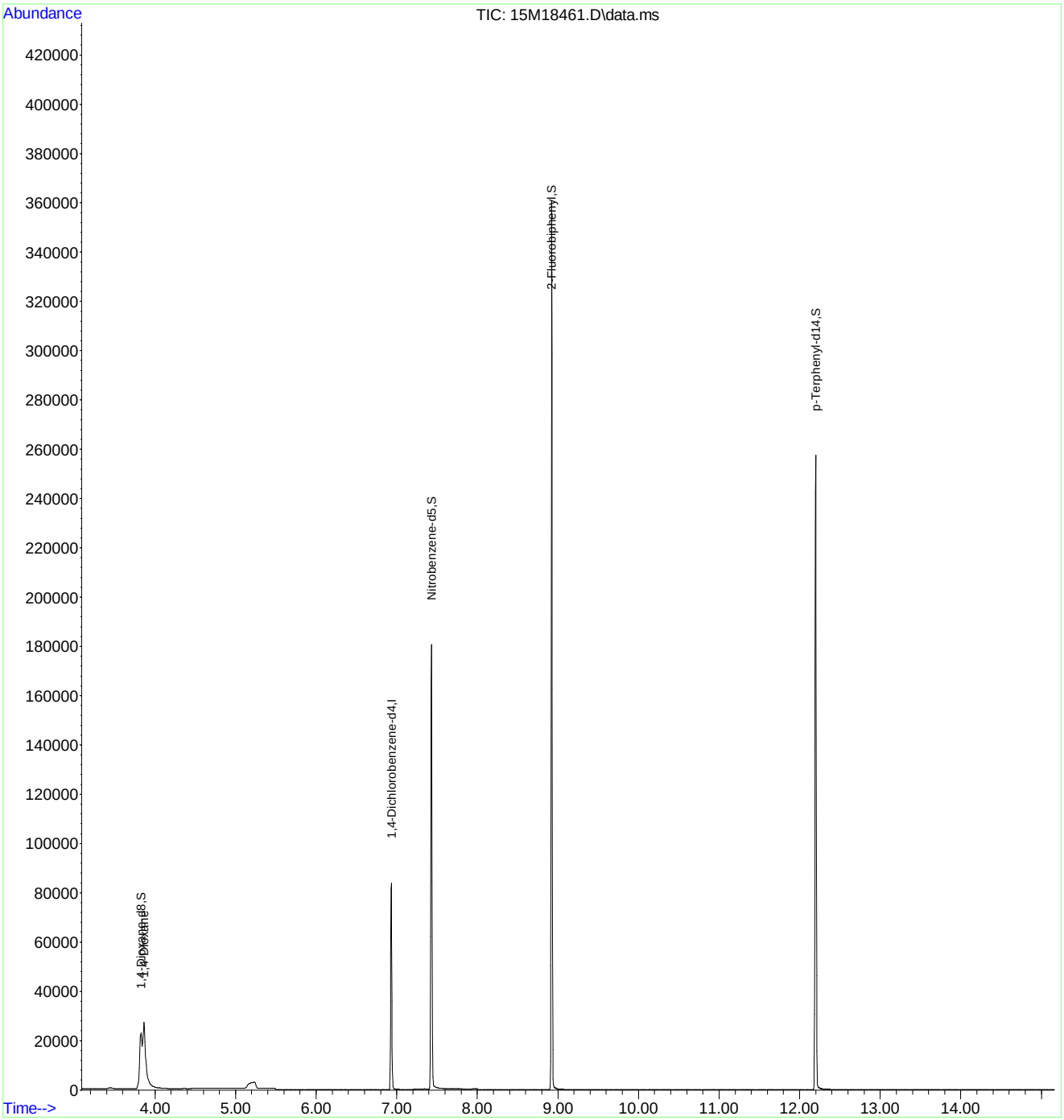

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18462.D
Acq On : 21 Jun 2016 11:34
Operator : MES
Sample : WG573501-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 22 08:04:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	44672	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.841	96	17660	0.9607 ug/L	0.01
Spiked Amount 5.000			Recovery	= 19.20%	
4) Nitrobenzene-d5	7.431	82	41409	0.8776 ug/L	0.00
Spiked Amount 5.000			Recovery	= 17.60%	
5) 2-Fluorobiphenyl	8.922	172	114491	0.9612 ug/L	0.00
Spiked Amount 5.000			Recovery	= 19.20%	
6) p-Terphenyl-d14	12.203	244	105713	0.9208 ug/L	0.02
Spiked Amount 5.000			Recovery	= 18.40%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.876	58	13250	0.9694 ug/L	82

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18462.D
Acq On : 21 Jun 2016 11:34
Operator : MES
Sample : WG573501-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 22 08:04:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

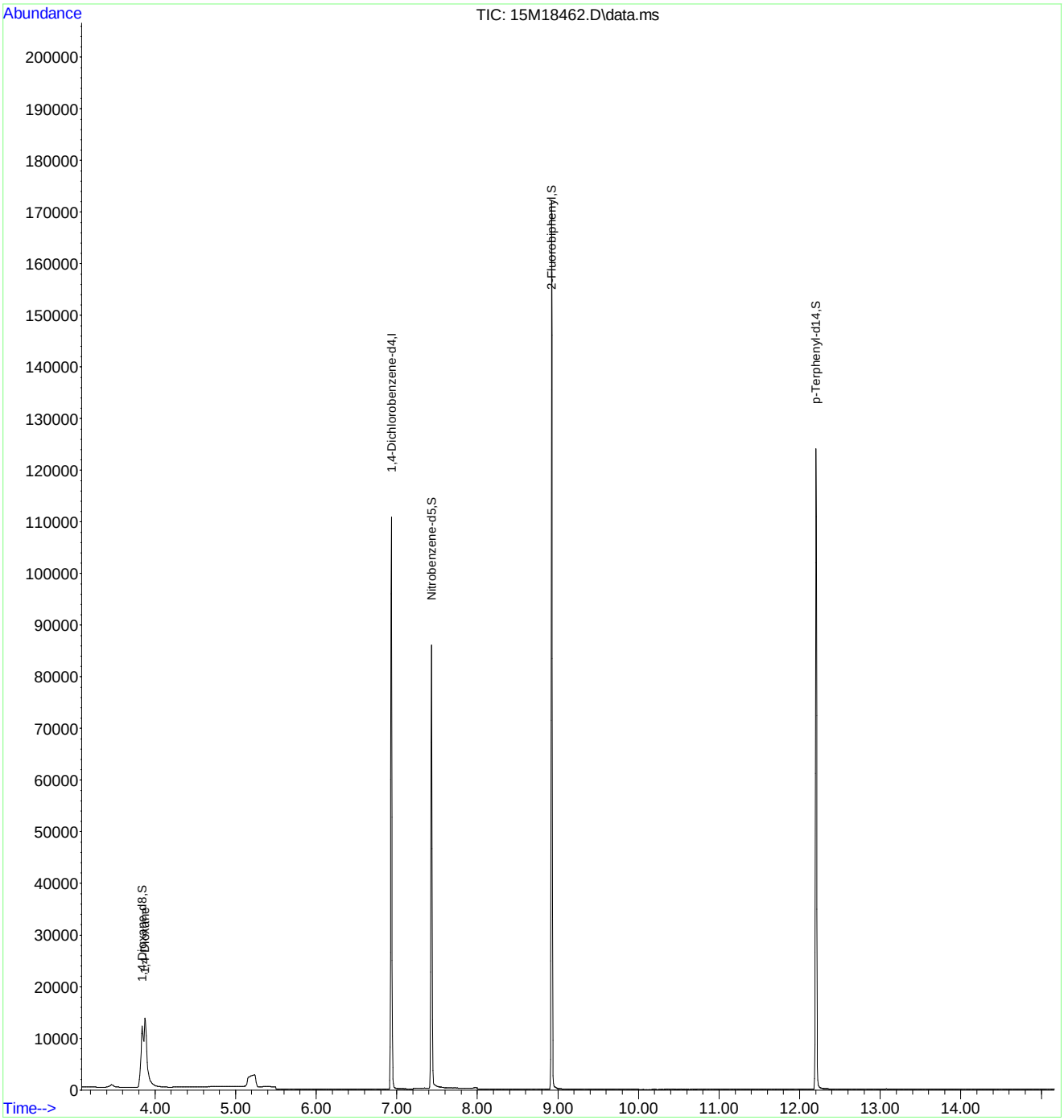

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18463.D
Acq On : 21 Jun 2016 11:57
Operator : MES
Sample : WG573501-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 22 08:04:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	45840	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.841	96	7629	0.4045	ug/L	0.01
Spiked Amount 5.000			Recovery	=	8.00%	
4) Nitrobenzene-d5	7.431	82	16604	0.3429	ug/L	0.00
Spiked Amount 5.000			Recovery	=	6.80%	
5) 2-Fluorobiphenyl	8.923	172	48617	0.3978	ug/L	0.00
Spiked Amount 5.000			Recovery	=	8.00%	
6) p-Terphenyl-d14	12.210	244	44097	0.3743	ug/L	0.03
Spiked Amount 5.000			Recovery	=	7.40%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.876	58	5650	0.4028	ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18463.D
Acq On : 21 Jun 2016 11:57
Operator : MES
Sample : WG573501-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 22 08:04:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

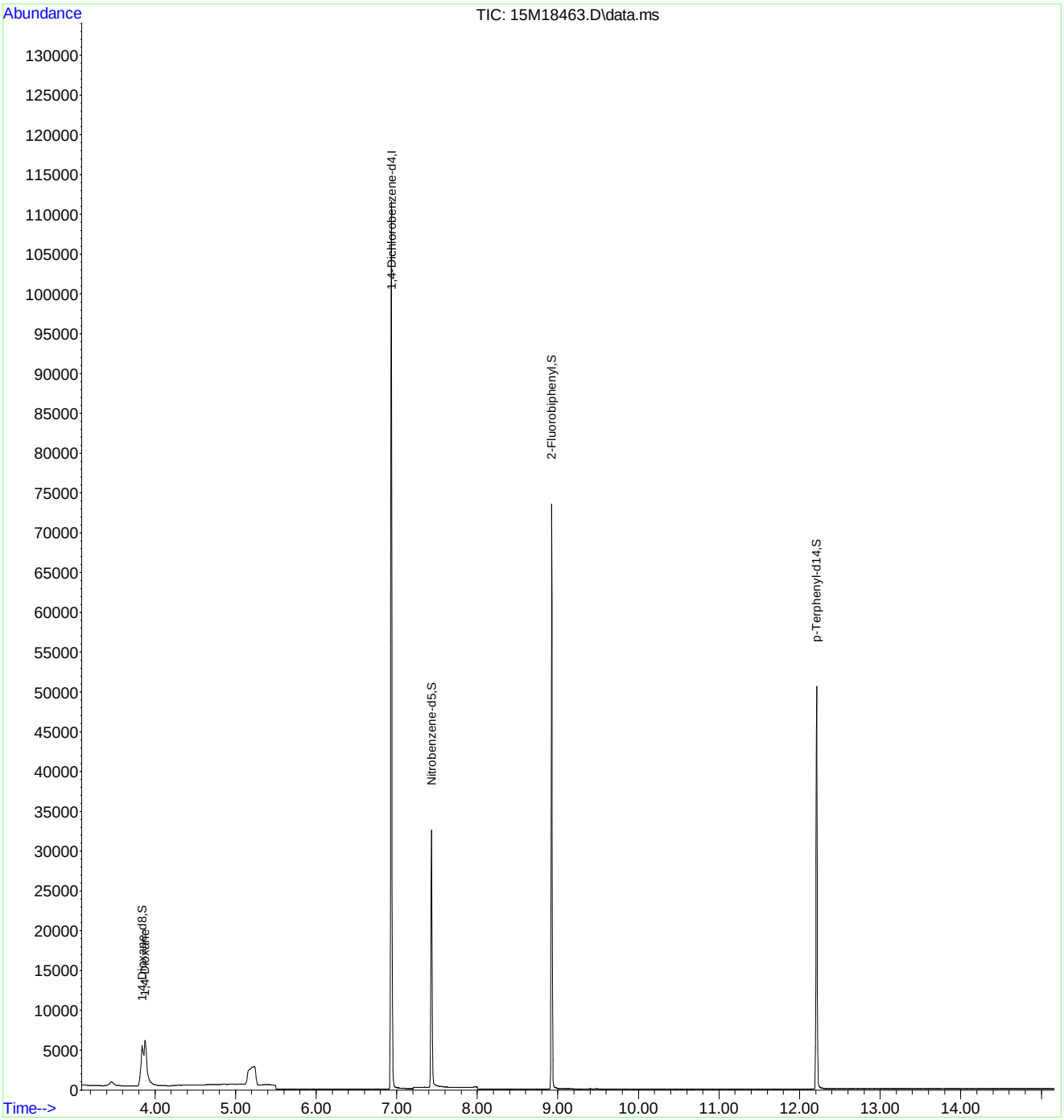

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	41944	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.792	96	22	0.0013	ug/L	-0.04
Spiked Amount 5.000			Recovery	=	0.00%	
4) Nitrobenzene-d5	7.436	82	56	0.0013	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
5) 2-Fluorobiphenyl	8.926	172	23	0.0002	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.214	244	128	0.0012	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	64750	5.0454	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

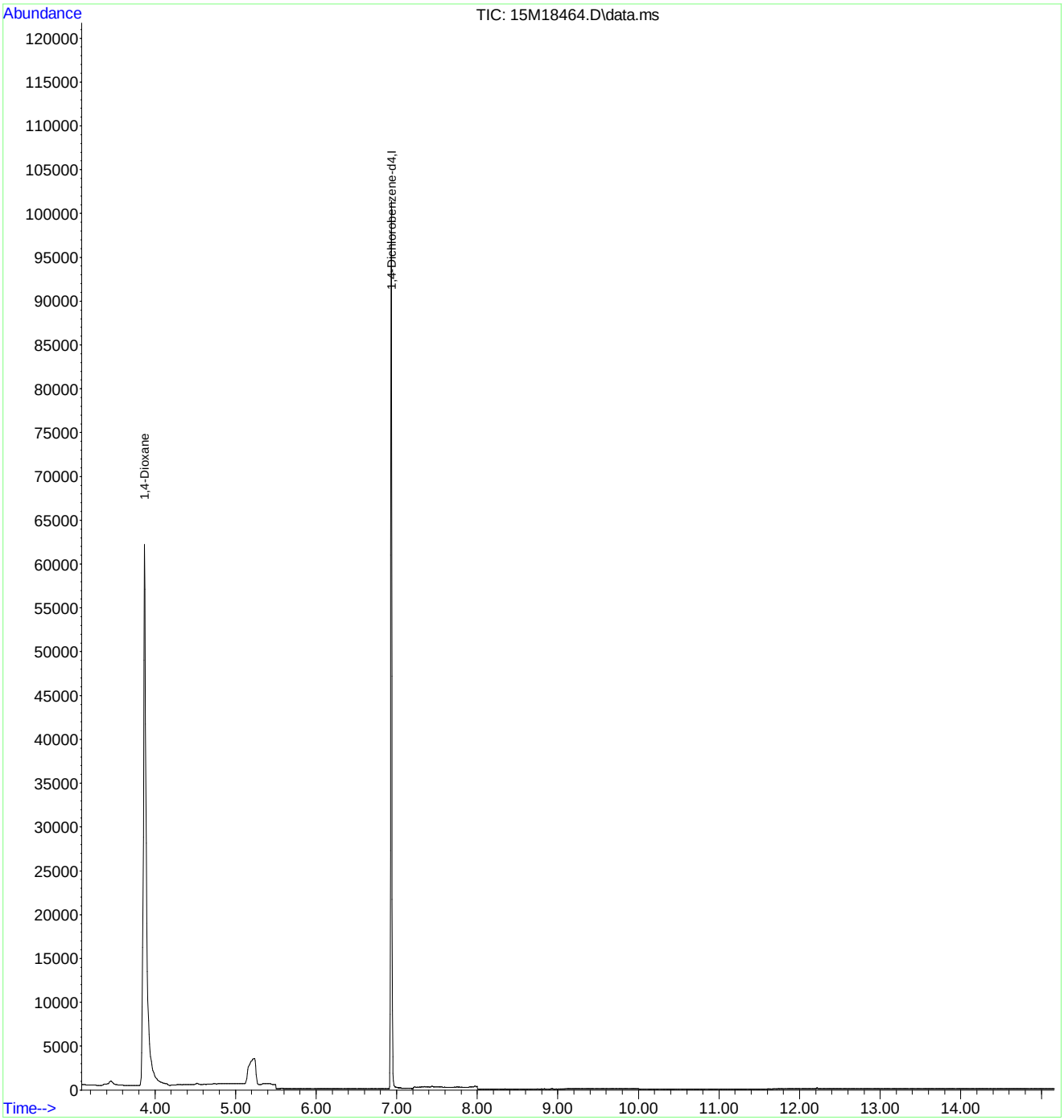

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	106	0.00
2		1,4-Dioxane	5.000	5.045	-0.9	106	0.00
3	S	1,4-Dioxane-d8	5.000	0.001	100.0#	0	-0.04
4	S	Nitrobenzene-d5	5.000	0.001	100.0#	0	0.00
5	S	2-Fluorobiphenyl	5.000	0.000	100.0#	0	0.00
6	S	p-Terphenyl-d14	5.000	0.001	100.0#	0	0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18593.D
Acq On : 27 Jun 2016 12:37
Operator : MES
Sample : WG574241-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 27 13:07:36 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.892	152	42974	1.0000 ug/mL	#-0.04
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.749	96	78711	4.4512 ug/L	-0.08
Spiked Amount 5.000			Recovery	= 89.00%	
4) Nitrobenzene-d5	7.393	82	235288	5.1833 ug/L	-0.04
Spiked Amount 5.000			Recovery	= 103.60%	
5) 2-Fluorobiphenyl	8.886	172	551093	4.8097 ug/L	-0.04
Spiked Amount 5.000			Recovery	= 96.20%	
6) p-Terphenyl-d14	12.170	244	561144	5.0809 ug/L	-0.01
Spiked Amount 5.000			Recovery	= 101.60%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.785	58	57358	4.3623 ug/L	88

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18593.D
Acq On : 27 Jun 2016 12:37
Operator : MES
Sample : WG574241-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 27 13:07:36 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

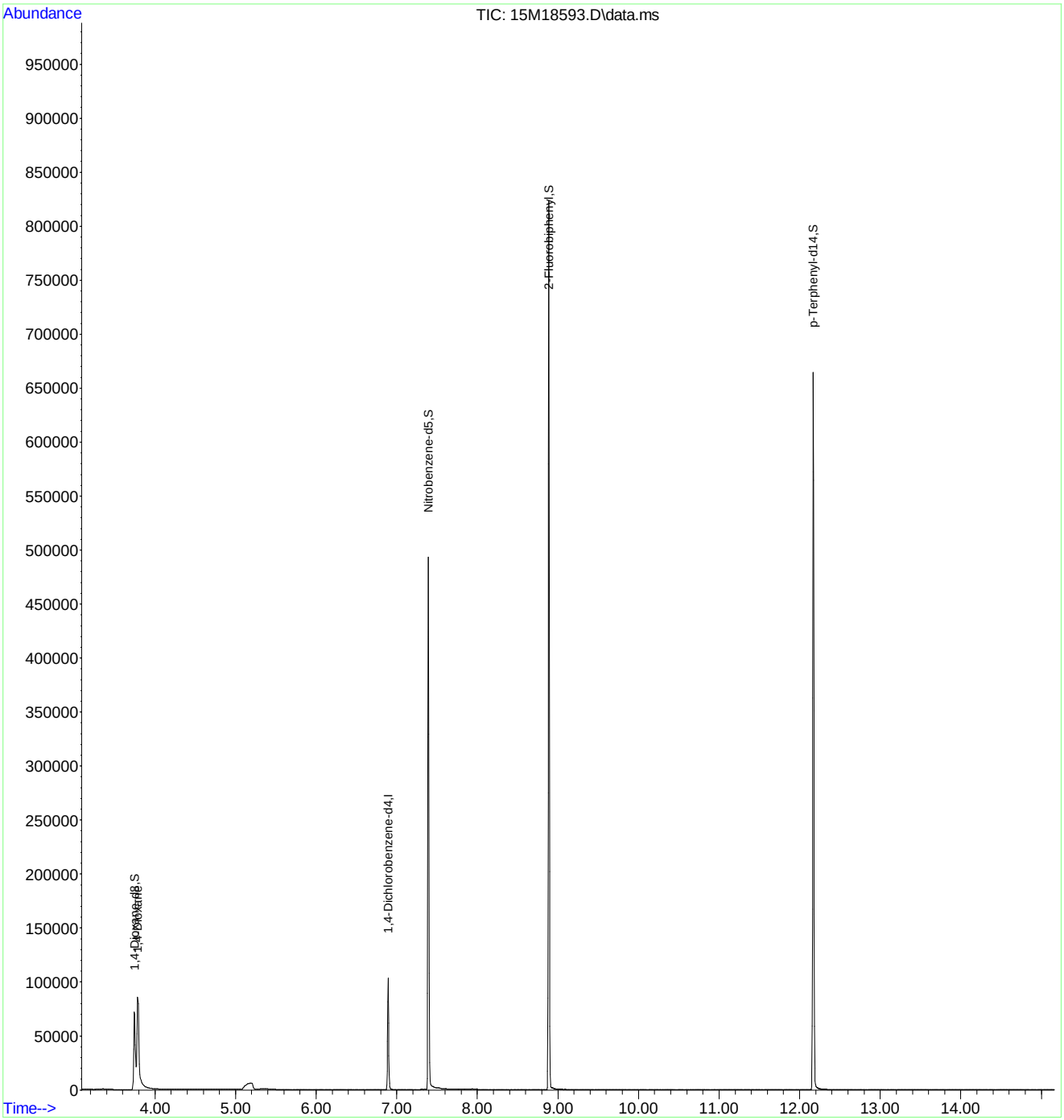

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18593.D
Acq On : 27 Jun 2016 12:37
Operator : MES
Sample : WG574241-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 27 13:07:36 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	108	-0.04
2	1,4-Dioxane	0.306	0.267	12.7	94	-0.08
3 S	1,4-Dioxane-d8	0.411	0.366	10.9	95	-0.08
4 S	Nitrobenzene-d5	1.056	1.095	-3.7	105	-0.04
5 S	2-Fluorobiphenyl	2.666	2.565	3.8	103	-0.04
6 S	p-Terphenyl-d14	2.570	2.612	-1.6	108	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18593.D
Acq On : 27 Jun 2016 12:37
Operator : MES
Sample : WG574241-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 27 13:07:36 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	108	-0.04
2	1,4-Dioxane	5.000	4.362	12.8	94	-0.08
3 S	1,4-Dioxane-d8	5.000	4.451	11.0	95	-0.08
4 S	Nitrobenzene-d5	5.000	5.183	-3.7	105	-0.04
5 S	2-Fluorobiphenyl	5.000	4.810	3.8	103	-0.04
6 S	p-Terphenyl-d14	5.000	5.081	-1.6	108	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

2.2.1.5 Raw QC Data

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

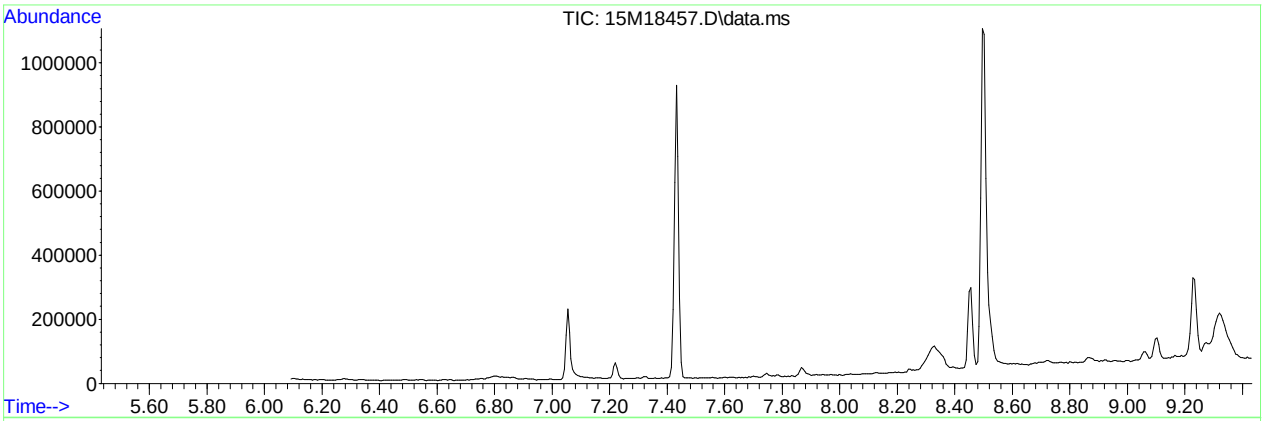

AutoFind: Scans 234, 235, 236; Background Corrected with Scan 228

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	38.8	34488	PASS
68	69	0.00	2	1.4	500	PASS
69	198	0.00	100	41.4	36833	PASS
70	69	0.00	2	0.5	172	PASS
127	198	40	60	51.9	46131	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	88880	PASS
199	198	5	9	6.7	5918	PASS
275	198	10	30	24.9	22090	PASS
365	198	1	100	2.7	2358	PASS
441	443	0.01	100	75.7	9586	PASS
442	198	40	100	73.4	65261	PASS
443	442	17	23	19.4	12659	PASS

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

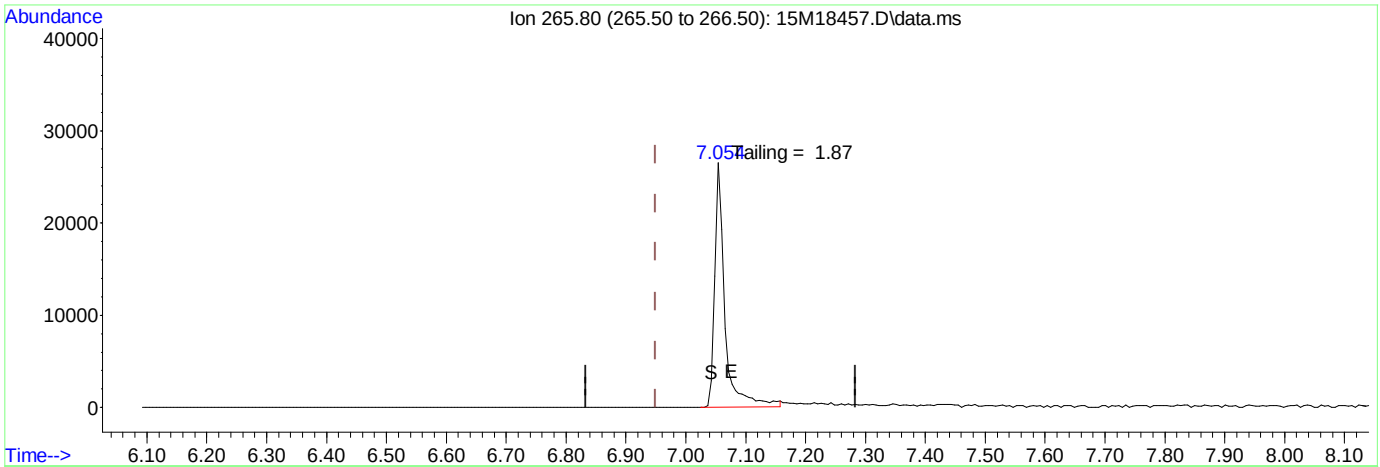

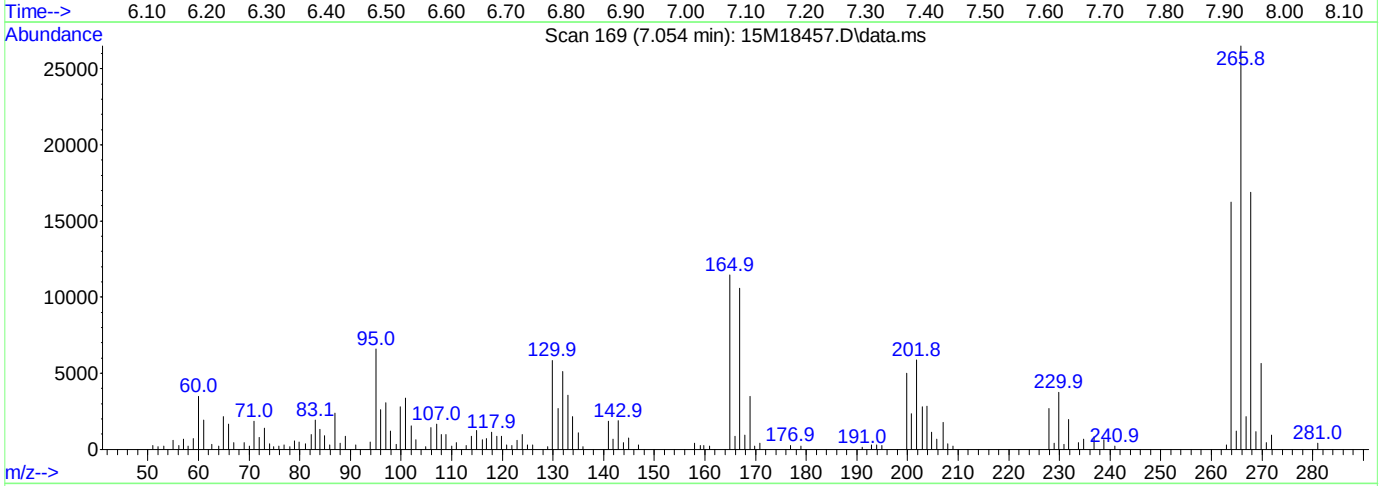

TIC: 15M18457.D\data.ms

(1) Pentachlorophenol

7.054min (+ 0.105) 0.00 ug/ml

response 30738

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

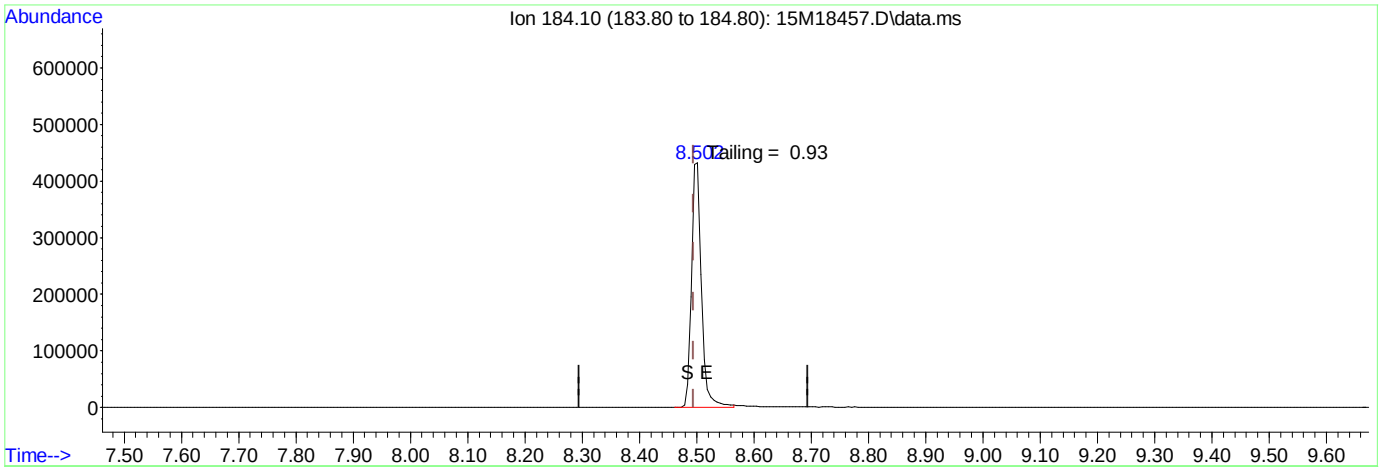

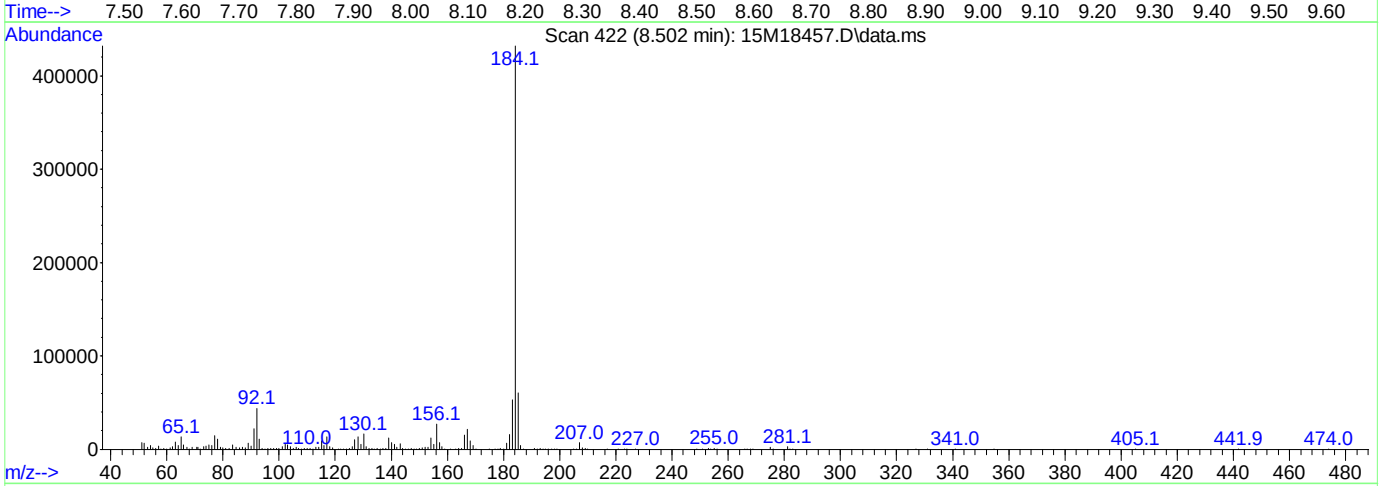

(2) Benzidine

8.502min (+ 0.008) 0.00 ug/ml

response 532770

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

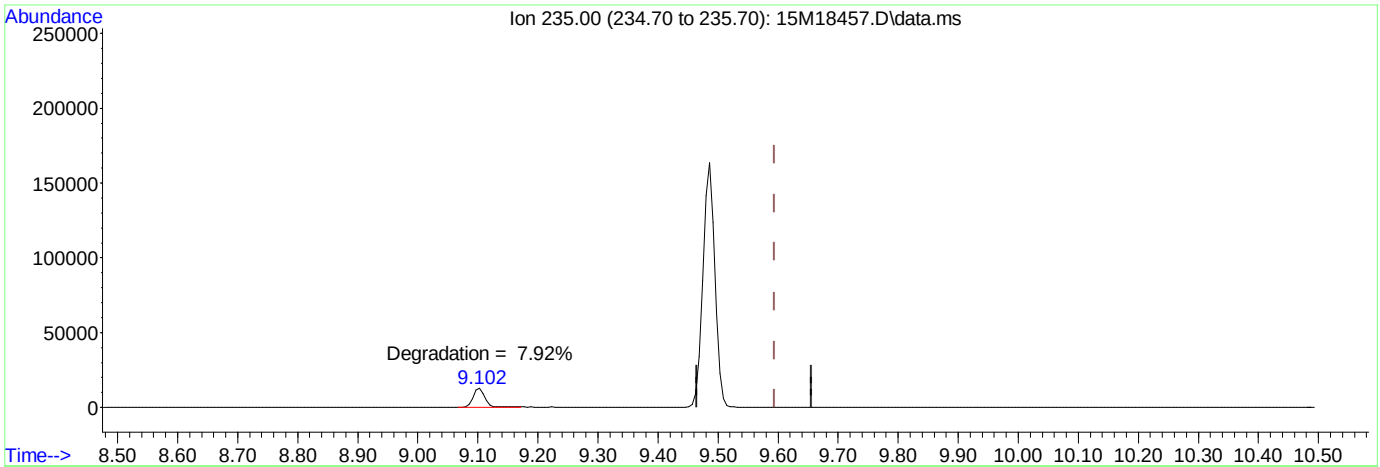

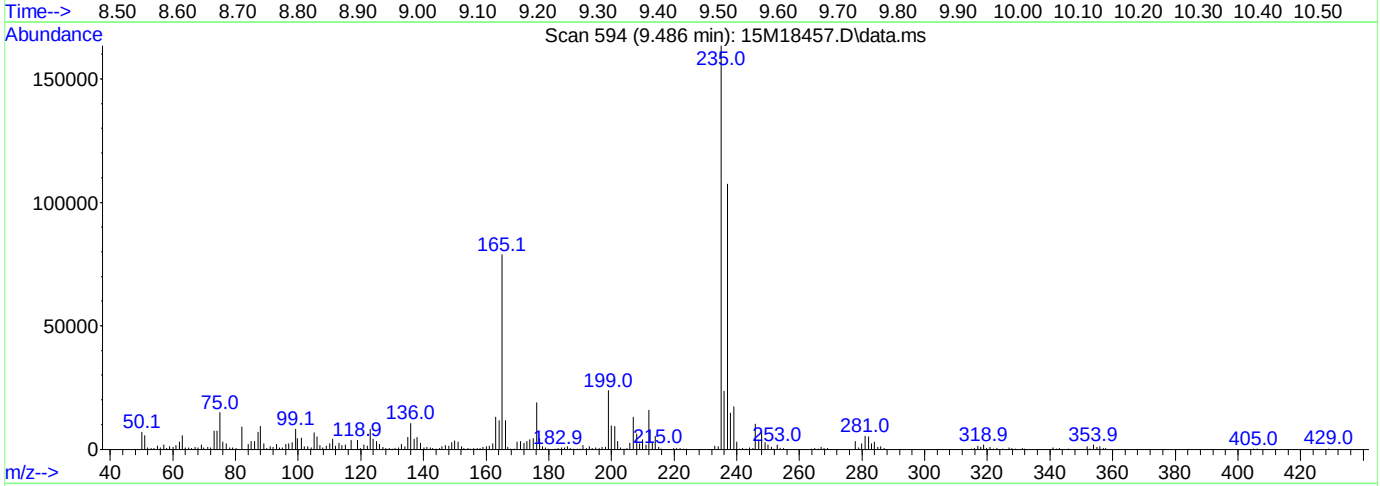

TIC: 15M18457.D\data.ms

(3) DDT

9.486min (-0.108) 0.00 ug/ml

response 180187

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18592.D
Acq On : 27 Jun 2016 12:20
Operator : MES
Sample : WG574241-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

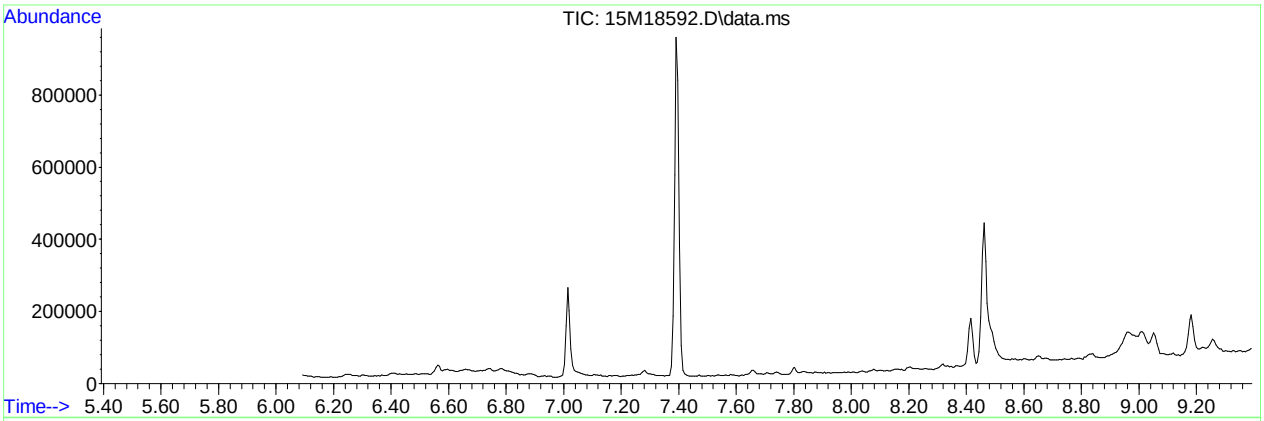

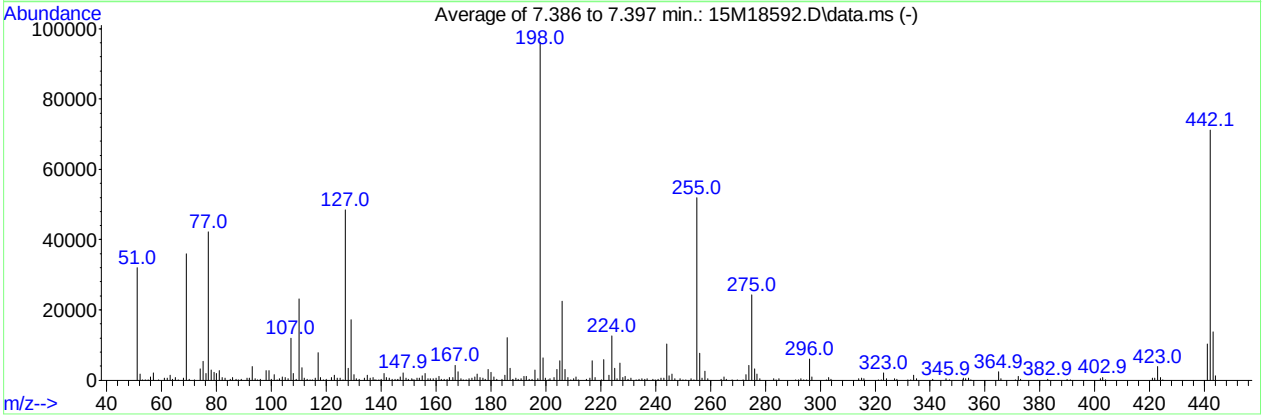

AutoFind: Scans 227, 228, 229; Background Corrected with Scan 221

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	33.2	31989	PASS
68	69	0.00	2	1.6	580	PASS
69	198	0.00	100	37.4	35954	PASS
70	69	0.00	2	0.6	222	PASS
127	198	40	60	50.4	48459	PASS
197	198	0.00	1	0.4	409	PASS
198	198	100	100	100.0	96232	PASS
199	198	5	9	6.6	6399	PASS
275	198	10	30	25.2	24236	PASS
365	198	1	100	2.5	2410	PASS
441	443	0.01	100	75.7	10371	PASS
442	198	40	100	73.9	71133	PASS
443	442	17	23	19.3	13708	PASS

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18592.D
Acq On : 27 Jun 2016 12:20
Operator : MES
Sample : WG574241-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 27 12:31:57 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

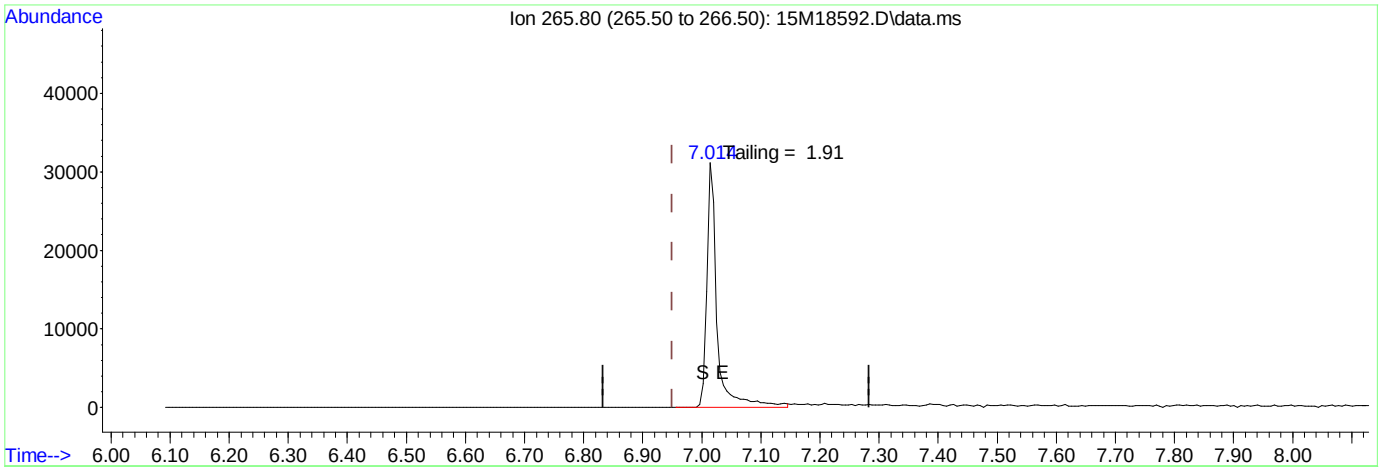

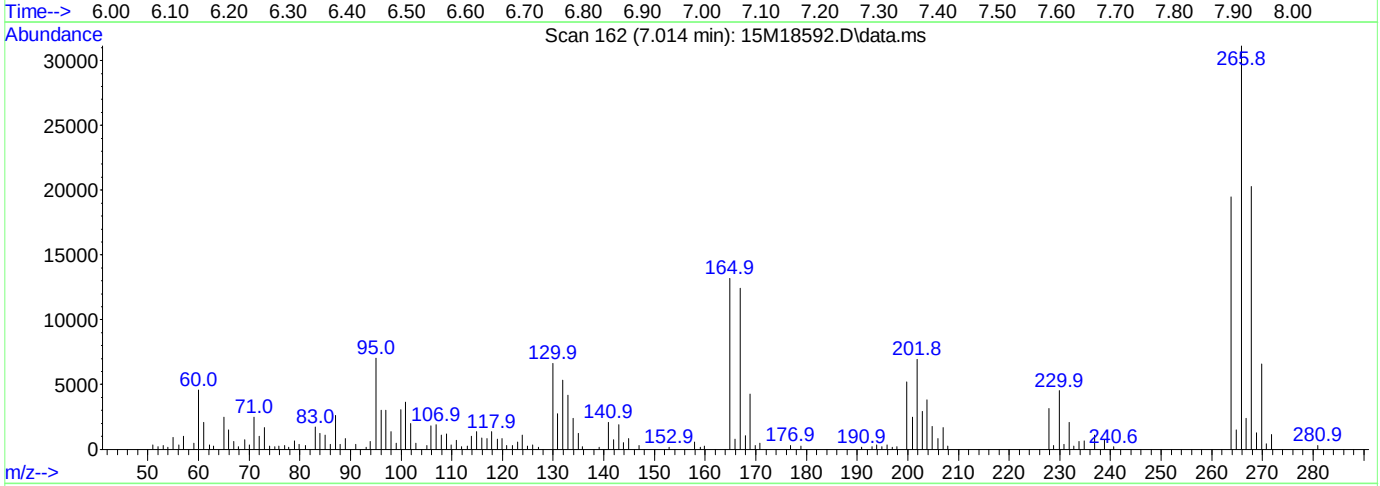

(1) Pentachlorophenol

7.014min (+ 0.065) 0.00 ug/ml

response 37276

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18592.D
Acq On : 27 Jun 2016 12:20
Operator : MES
Sample : WG574241-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 27 12:31:57 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

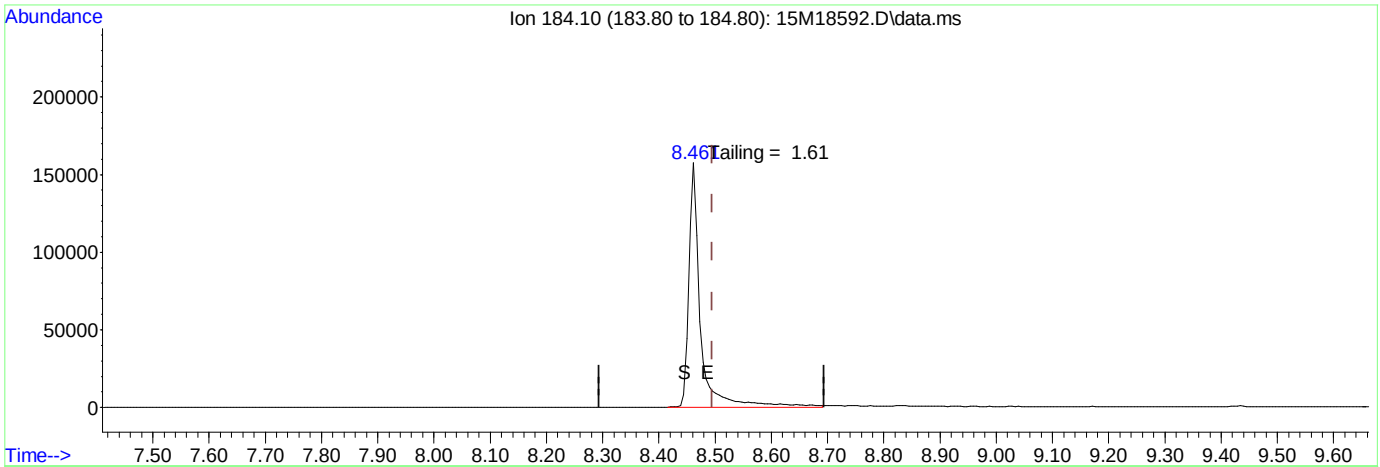

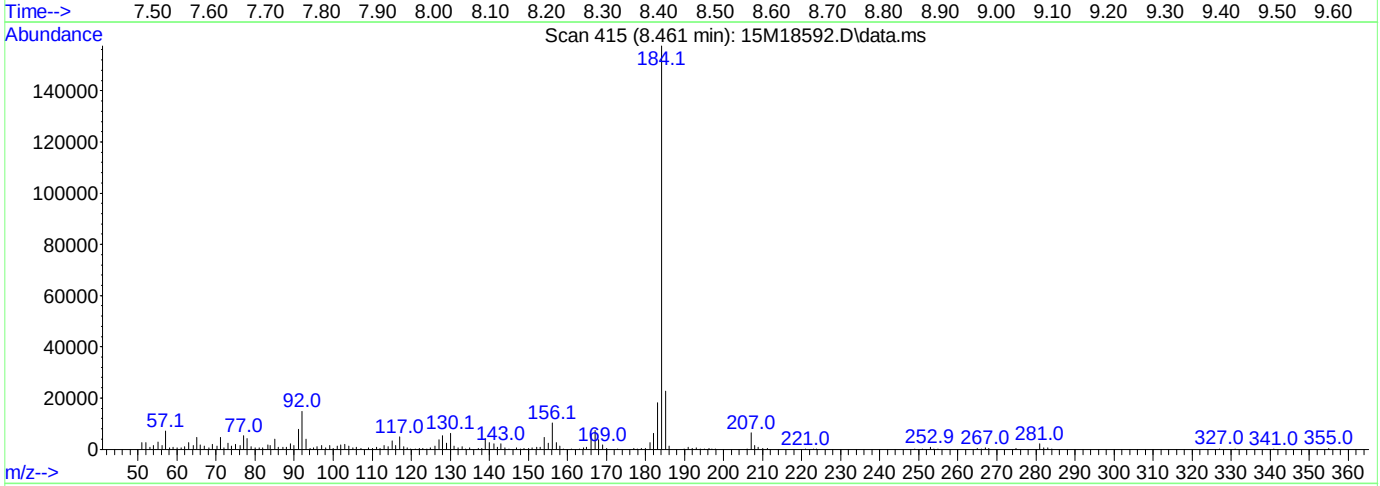

TIC: 15M18592.D\data.ms

(2) Benzidine

8.461min (-0.033) 0.00 ug/ml

response 225697

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18592.D
Acq On : 27 Jun 2016 12:20
Operator : MES
Sample : WG574241-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 27 12:31:57 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

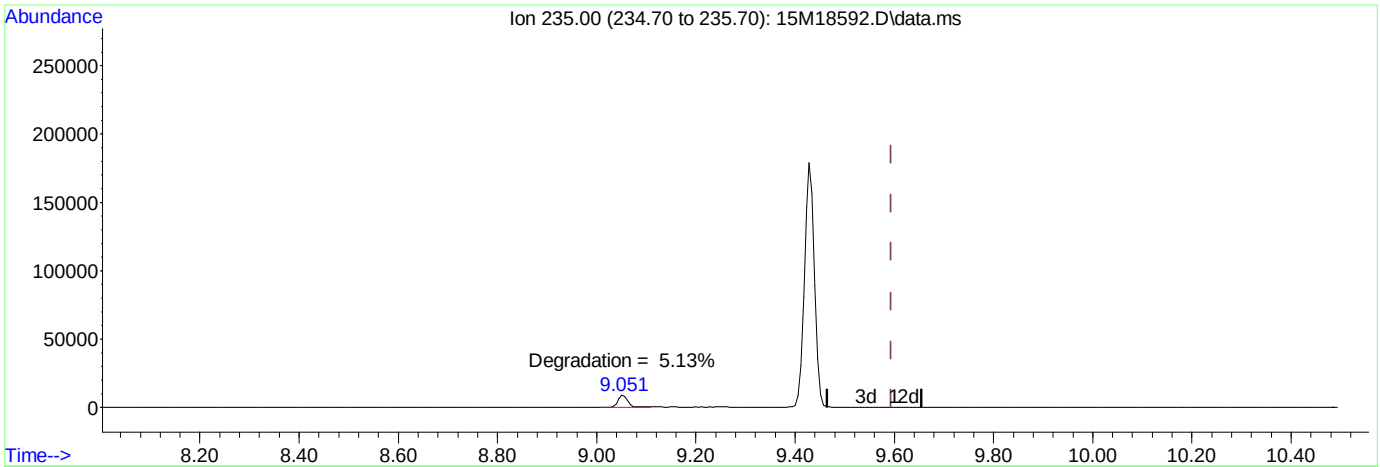

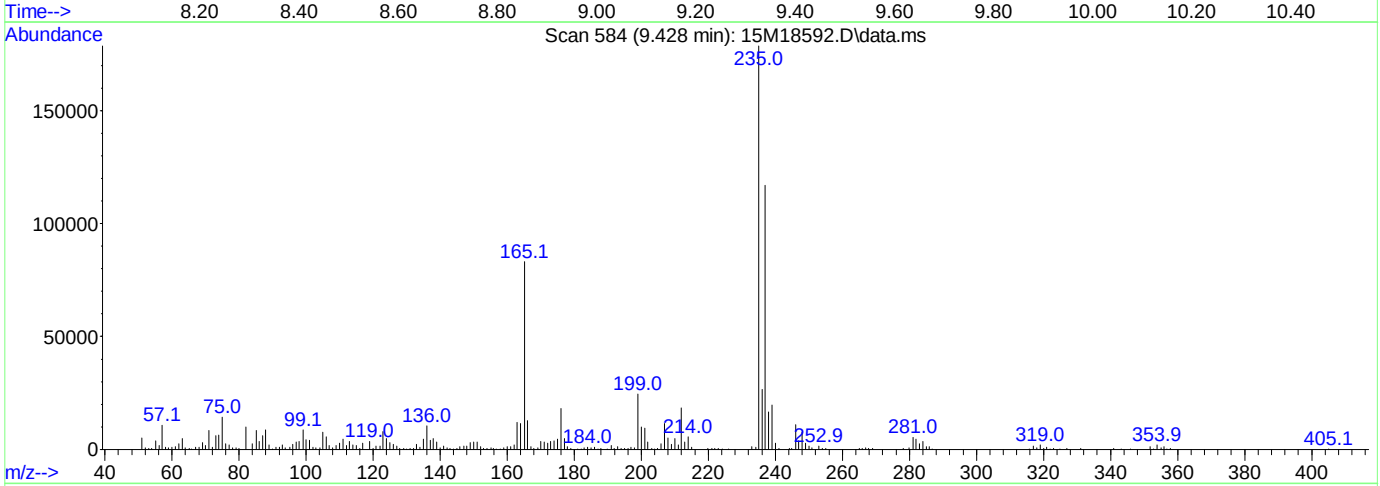

TIC: 15M18592.D\data.ms

(3) DDT

9.428min (-0.166) 0.00 ug/ml mint

response 273417

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18597.D
Acq On : 27 Jun 2016 14:22
Operator : MES
Sample : WG573812-01 BLANK 6/22
Misc : 1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 27 17:44:10 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.896	152	38478	1.0000	ug/mL	#-0.04
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.749	96	23026	1.4543	ug/L	-0.08
Spiked Amount 5.000			Recovery = 29.00%			
4) Nitrobenzene-d5	7.393	82	809059	19.9059	ug/L	-0.04
Spiked Amount 5.000			Recovery = 398.20%			
5) 2-Fluorobiphenyl	8.889	172	1650481	16.0878	ug/L	-0.03
Spiked Amount 5.000			Recovery = 321.80%			
6) p-Terphenyl-d14	12.184	244	3974204	40.1893	ug/L	0.00
Spiked Amount 5.000			Recovery = 803.80%			

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18597.D
Acq On : 27 Jun 2016 14:22
Operator : MES
Sample : WG573812-01 BLANK 6/22
Misc : 1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 27 17:44:10 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

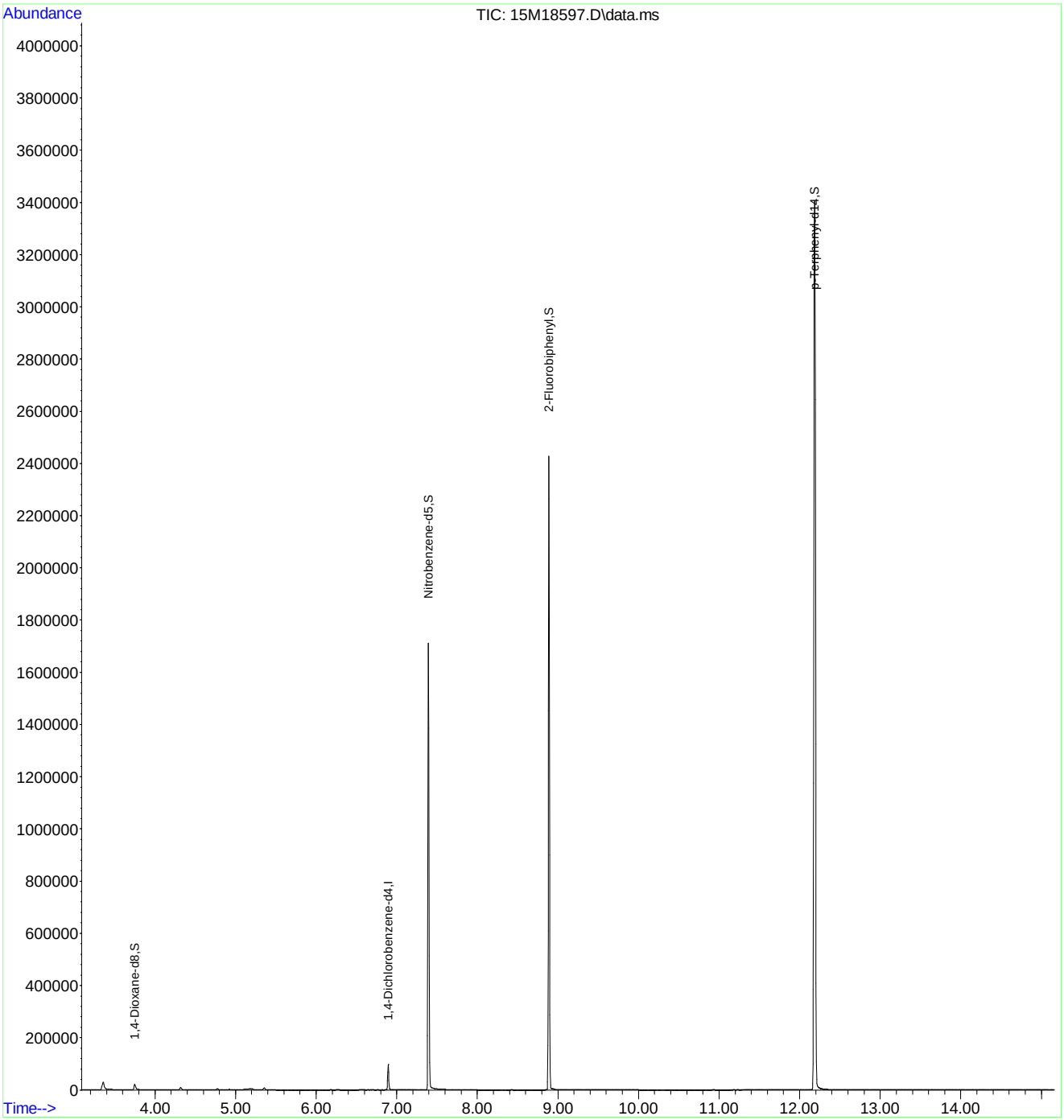

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18598.D
Acq On : 27 Jun 2016 14:45
Operator : MES
Sample : WG573812-02 LCS 6/22
Misc : 1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 27 17:47:18 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.896	152	47423	1.0000	ug/mL	#-0.04
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.764	96	32479	1.6644	ug/L	-0.06
Spiked Amount 5.000			Recovery	=	33.20%	
4) Nitrobenzene-d5	7.404	82	1302	0.0260	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.60%	
5) 2-Fluorobiphenyl	8.890	172	587	0.0046	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.199	244	733	0.0060	ug/L	0.02
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.806	58	23052	1.5887	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18598.D
Acq On : 27 Jun 2016 14:45
Operator : MES
Sample : WG573812-02 LCS 6/22
Misc : 1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 27 17:47:18 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

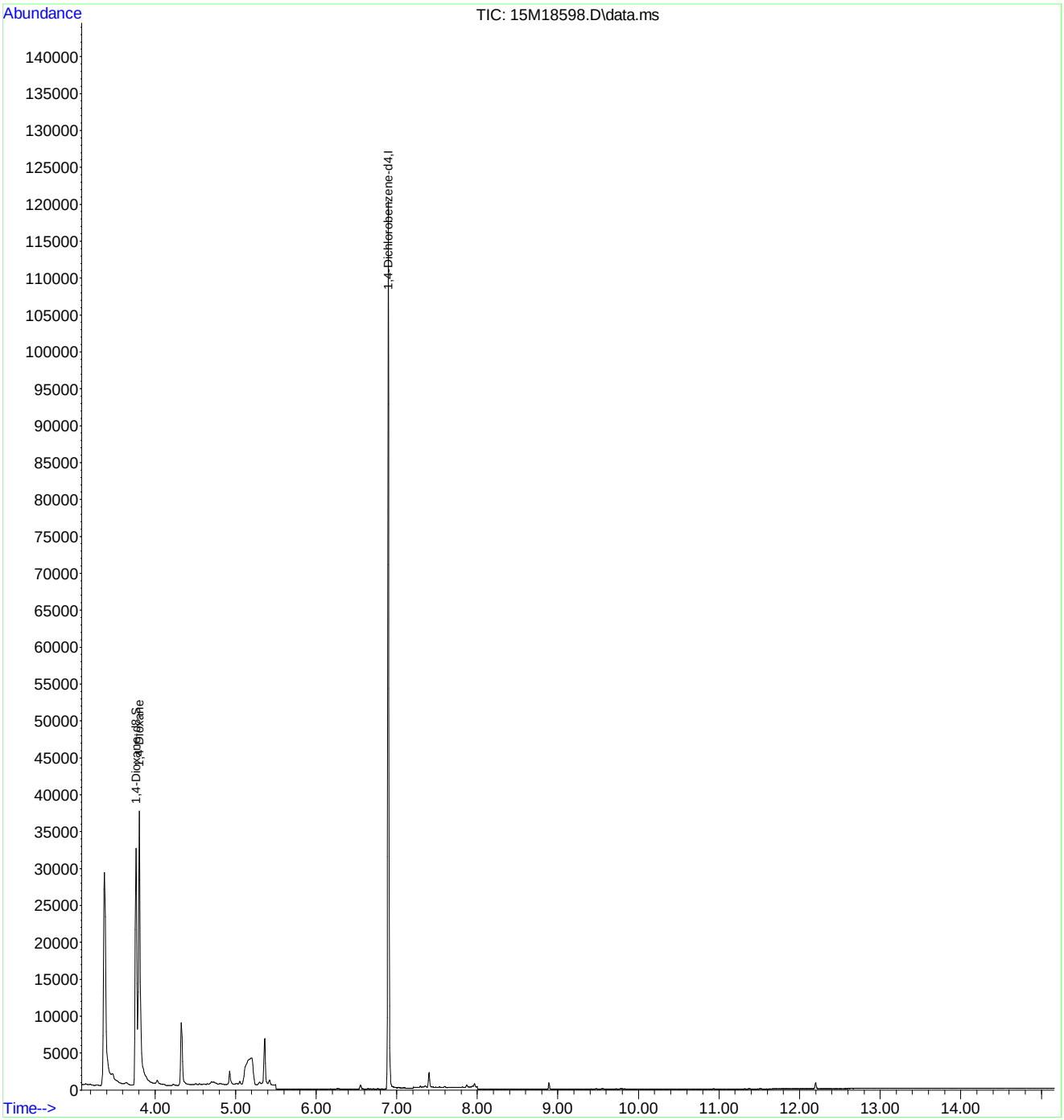

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18599.D
Acq On : 27 Jun 2016 15:07
Operator : MES
Sample : WG573812-03 LCSDUP 6/22
Misc : 1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 27 17:47:21 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.896	152	50712	1.0000	ug/mL	#-0.04
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.763	96	64077	3.0707	ug/L	-0.06
Spiked Amount 5.000			Recovery	=	61.40%	
4) Nitrobenzene-d5	7.404	82	2658	0.0496	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	1.00%	
5) 2-Fluorobiphenyl	8.889	172	2319	0.0172	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.40%	
6) p-Terphenyl-d14	12.195	244	557	0.0043	ug/L	0.01
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.806	58	46522	2.9983	ug/L	86

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18599.D
Acq On : 27 Jun 2016 15:07
Operator : MES
Sample : WG573812-03 LCSDUP 6/22
Misc : 1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 27 17:47:21 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

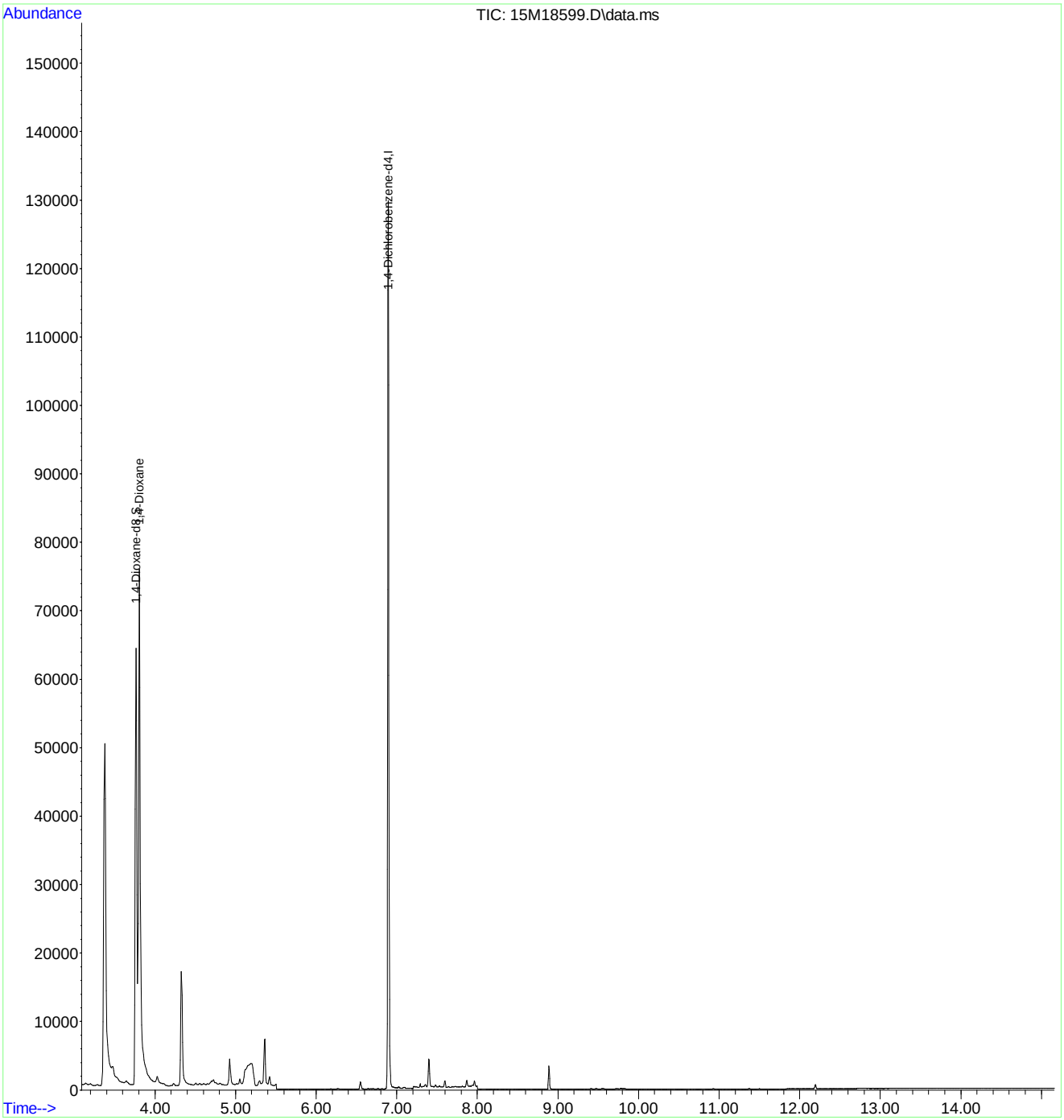

2.2 General Chromatography Data

2.2.2 6850 LC/MS Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW20-062016	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 02:28
Collect Date:	06/20/2016 07:55	**Dilution:**	1	**File ID:**	1LM.LM35483
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW19-062016	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 02:47
Collect Date:	06/20/2016 08:55	**Dilution:**	1	**File ID:**	1LM.LM35484
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW19FD-062016	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 03:06
Collect Date:	06/20/2016 08:55	**Dilution:**	1	**File ID:**	1LM.LM35485
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW08-062016	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 20:37
Collect Date:	06/20/2016 10:10	**Dilution:**	1	**File ID:**	1LM.LM35506
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW09-062016	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 03:44
Collect Date:	06/20/2016 11:10	**Dilution:**	1	**File ID:**	1LM.LM35487
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.2.2.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1380 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG574101-01 MCT	9,990.	
-02 Blank	0.33	
-03 LCS	0.48	
-04 LCS2	0.51	
L16060823-01	9,120.	
-03	7,440.	
-04	1,943.	
L16060927-01	750.	
-02	652.	
-03	446.	
-04	162.7	
L16061026-01	6,910.	
-03	238.	
-04	965.	
-05	1,526.	
-07	220.	
L16061142-01	165.3	
-02	81.1	
-04	83.1	
-06	728.	
-07	74.2	
L16061144-01	118.6	
-02	118.7	
-03	110.1	

Analyst: John Richards

Date/Time: 06/27/16 / 20:00

DCN#119317

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 062416_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG574101 (waters)

Internal STD: STD18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments: Samples initially analyzed at dilutions were done so based on their historical results. Samples tagged with (NR) did not conform to their historical results. These samples were reanalyzed on the end of the sequence as neat or at dilutions based on the results of their initial analysis.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35462	WG574102-01 CCB	1	1		06/24/16 19:50
2	1LM.LM35463	WG574102-02 CCV (1.0ug/L)	1	1	STD75510	06/24/16 20:09
3	1LM.LM35464	WG574101-05 MRL (0.2ug/L)	1	1	STD75510	06/24/16 20:28
4	1LM.LM35465	WG574101-01 MCT (0.2ug/L)	1	1	STD75512	06/24/16 20:47
5	1LM.LM35466	WG574101-02 BLANK	1	1		06/24/16 21:06
6	1LM.LM35467	WG574101-03 LCS (0.2ug/L)	1	1	STD75512	06/24/16 21:25
7	1LM.LM35468	L16060823-01	1	1		06/24/16 21:44
8	1LM.LM35469	L16060823-03	1	1		06/24/16 22:03
9	1LM.LM35470	L16060823-04 (10x)	1	10		06/24/16 22:22
10	1LM.LM35471	L16060927-01 (100x) (NR)	1	100		06/24/16 22:41
11	1LM.LM35472	L16060927-02 (100x) (NR)	1	100		06/24/16 23:00
12	1LM.LM35473	L16060927-03	1	1		06/24/16 23:18
13	1LM.LM35474	L16060927-04	1	1		06/24/16 23:37
14	1LM.LM35475	WG574102-03 CCV (1.0ug/L)	1	1	STD75510	06/24/16 23:56
15	1LM.LM35476	WG574101-06 MRL (0.2ug/L)	1	1	STD75510	06/25/16 00:15
16	1LM.LM35477	WG574102-04 CCB	1	1		06/25/16 00:34
17	1LM.LM35478	L16061026-01 (100x) (NR)	1	100		06/25/16 00:53
18	1LM.LM35479	L16061026-03 (100x)	1	100		06/25/16 01:12
19	1LM.LM35480	L16061026-04 (10,000x)	1	10000		06/25/16 01:31
20	1LM.LM35481	L16061026-05 (100,000x) (NR)	1	100000		06/25/16 01:50
21	1LM.LM35482	L16061026-07 (10x) (NR)	1	10		06/25/16 02:09
22	1LM.LM35483	L16061142-01	1	1		06/25/16 02:28
23	1LM.LM35484	L16061142-02	1	1		06/25/16 02:47
24	1LM.LM35485	L16061142-04	1	1		06/25/16 03:06
25	1LM.LM35486	L16061142-06 (10x) (NR)	1	10		06/25/16 03:25
26	1LM.LM35487	L16061142-07	1	1		06/25/16 03:44
27	1LM.LM35488	WG574102-05 CCV (1.0ug/L)	1	1	STD75510	06/25/16 04:03
28	1LM.LM35489	WG574101-07 MRL (0.2ug/L)	1	1	STD75510	06/25/16 04:22
29	1LM.LM35490	WG574102-06 CCB	1	1		06/25/16 04:40
30	1LM.LM35491	WG574101-04 LCS2 (0.2ug/L)	1	1	STD75512	06/25/16 04:59
31	1LM.LM35492	L16061144-01	1	1		06/25/16 05:18
32	1LM.LM35493	L16061144-02	1	1		06/25/16 05:37
33	1LM.LM35494	L16061144-03 (10x) (NR)	1	10		06/25/16 05:56

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 062416_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG574101 (waters)

Internal STD: STD18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 NA

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM35495	WG574102-07 CCV (1.0ug/L)	1	1	STD75510	06/25/16 06:15
35	1LM.LM35496	WG574101-08 MRL (0.2ug/L)	1	1	STD75510	06/25/16 06:34
36	1LM.LM35497	WG574102-08 CCB	1	1		06/25/16 06:53
37	1LM.LM35498	WG574102-09 CCV (1.0ug/L)	1	1	STD75510	06/25/16 18:06
38	1LM.LM35499	WG574101-09 MRL (0.2ug/L)	1	1	STD75510	06/25/16 18:25
39	1LM.LM35500	WG574102-10 CCB	1	1		06/25/16 18:44
40	1LM.LM35501	L16060927-01 (RR Neat)	1	1		06/25/16 19:02
41	1LM.LM35502	L16060927-02 (RR 1000x)	1	1000		06/25/16 19:21
42	1LM.LM35503	L16061026-01 (RR Neat)	1	1		06/25/16 19:40
43	1LM.LM35504	L16061026-05 (RR 10,000x)	1	10000		06/25/16 19:59
44	1LM.LM35505	L16061026-07 (RR 50x)	1	50		06/25/16 20:18
45	1LM.LM35506	L16061142-06 (RR Neat)	1	1		06/25/16 20:37
46	1LM.LM35507	L16061144-03 (RR Neat)	1	1		06/25/16 20:56
47	1LM.LM35508	WG574102-11 CCV (1.0ug/L)	1	1	STD75510	06/25/16 21:15
48	1LM.LM35509	WG574101-10 MRL (0.2ug/L)	1	1	STD75510	06/25/16 21:34
49	1LM.LM35510	WG574102-12 CCB	1	1		06/25/16 21:53

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 2 Approved: 28-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
04-MAY-2016
John Richards

Secondary Reviewer:
05-MAY-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 24-JUN-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 75960
Analytical Workgroups: L16060823, 0927, 1026, 1142, 1144

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
27-JUN-2016
John Richards

Secondary Reviewer:
28-JUN-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-28-2016 14:00:55

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG574101

Login Number: L16061142

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW20-062016	01	06/20/16					06/24/2016	4.5	28		06/25/16	.3	28	
18WW19-062016	02	06/20/16					06/24/2016	4.4	28		06/25/16	.3	28	
18WW19FD-062016	04	06/20/16					06/24/2016	4.4	28		06/25/16	.3	28	
18WW08-062016	06	06/20/16					06/24/2016	4.4	28		06/25/16	1.1	28	
18WW09-062016	07	06/20/16					06/24/2016	4.3	28		06/25/16	.4	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4827786
Report generated 06/28/2016 14:17

METHOD BLANK SUMMARY

Login Number: L16061142
Blank File ID: 1LM.LM35466
Prep Date: 06/24/16 19:00
Analyzed Date: 06/24/16 21:06
Analyst: JWR

Work Group: WG574101
Blank Sample ID: WG574101-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG574101-05	1LM.LM35464	06/24/16 20:28	01
MCT	WG574101-01	1LM.LM35465	06/24/16 20:47	01
LCS	WG574101-03	1LM.LM35467	06/24/16 21:25	01
QCMRL	WG574101-06	1LM.LM35476	06/25/16 00:15	01
18WW20-062016	L16061142-01	1LM.LM35483	06/25/16 02:28	01
18WW19-062016	L16061142-02	1LM.LM35484	06/25/16 02:47	01
18WW19FD-062016	L16061142-04	1LM.LM35485	06/25/16 03:06	01
18WW09-062016	L16061142-07	1LM.LM35487	06/25/16 03:44	01
QCMRL	WG574101-07	1LM.LM35489	06/25/16 04:22	01
LCS2	WG574101-04	1LM.LM35491	06/25/16 04:59	01
QCMRL	WG574101-08	1LM.LM35496	06/25/16 06:34	01
QCMRL	WG574101-09	1LM.LM35499	06/25/16 18:25	01
18WW08-062016	L16061142-06	1LM.LM35506	06/25/16 20:37	01
QCMRL	WG574101-10	1LM.LM35509	06/25/16 21:34	01

Report Name: BLANK_SUMMARY
PDF File ID: 4827787
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16061142 Prep Date: 06/24/16 19:00 Sample ID: WG574101-02
Instrument ID: LCMS1 Run Date: 06/24/16 21:06 Prep Method: 6850
File ID: 1LM.LM35466 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4827788
28-JUN-2016 14:17

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061142 Analyst: JWR Prep Method: 6850
Instrument ID: LCMS1 Matrix: Water Method: 6850
Workgroup (AAB#): WG574101 Units: ug/L
QC Key: DOD4 Lot #: STD75512

Sample ID: WG574101-03 LCS File ID: 1LM.LM35467 Run Date: 06/24/2016 21:25
Sample ID: WG574101-04 LCS2 File ID: 1LM.LM35491 Run Date: 06/25/2016 04:59

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Perchlorate	0.200	0.208	104	0.200	0.213	107	2.38	80 - 120	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4827789
Report generated: 06/28/2016 14:17

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061142
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4828752
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061142

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4828752
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061142

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4828752
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061142

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008
PDF File ID: 4828752
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061142 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4828753
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/24/2016
Sample ID: WG574102-01
Instrument ID: LCMS1
Run Time: 19:50
Method: 6850
File ID: 1LM.LM35462
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827792
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/25/2016
Sample ID: WG574102-04
Instrument ID: LCMS1
Run Time: 00:34
Method: 6850
File ID: 1LM.LM35477
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827792
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/25/2016
Sample ID: WG574102-06
Instrument ID: LCMS1
Run Time: 04:40
Method: 6850
File ID: 1LM.LM35490
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827792
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/25/2016
Sample ID: WG574102-08
Instrument ID: LCMS1
Run Time: 06:53
Method: 6850
File ID: 1LM.LM35497
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827792
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/25/2016
Sample ID: WG574102-10
Instrument ID: LCMS1
Run Time: 18:44
Method: 6850
File ID: 1LM.LM35500
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827792
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/25/2016
Sample ID: WG574102-12
Instrument ID: LCMS1
Run Time: 21:53
Method: 6850
File ID: 1LM.LM35510
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827792
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142 Run Date: 06/24/2016 Sample ID: WG574102-02
Instrument ID: LCMS1 Run Time: 20:09 Method: 6850
File ID: 1LM.LM35463 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG574101 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.70	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827791
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142 Run Date: 06/24/2016 Sample ID: WG574102-03
Instrument ID: LCMS1 Run Time: 23:56 Method: 6850
File ID: 1LM.LM35475 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG574101 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.70	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827791
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142
Run Date: 06/25/2016
Sample ID: WG574102-05
Instrument ID: LCMS1
Run Time: 04:03
Method: 6850
File ID: 1LM.LM35488
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.75	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827791
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142
Run Date: 06/25/2016
Sample ID: WG574102-07
Instrument ID: LCMS1
Run Time: 06:15
Method: 6850
File ID: 1LM.LM35495
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.72	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827791
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142 Run Date: 06/25/2016 Sample ID: WG574102-09
Instrument ID: LCMS1 Run Time: 18:06 Method: 6850
File ID: 1LM.LM35498 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG574101 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.76	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827791
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142 Run Date: 06/25/2016 Sample ID: WG574102-11
Instrument ID: LCMS1 Run Time: 21:15 Method: 6850
File ID: 1LM.LM35508 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG574101 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.73	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827791
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061142 Run Date: 06/24/2016 Sample ID: WG574101-05
Instrument ID: LCMS1 Run Time: 20:28 Prep Method: 6850
File ID: 1LM.LM35464 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827790
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061142 Run Date: 06/25/2016 Sample ID: WG574101-06
Instrument ID: LCMS1 Run Time: 00:15 Prep Method: 6850
File ID: 1LM.LM35476 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.198	99.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827790
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061142 Run Date: 06/25/2016 Sample ID: WG574101-07
Instrument ID: LCMS1 Run Time: 04:22 Prep Method: 6850
File ID: 1LM.LM35489 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.211	106	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827790
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061142 Run Date: 06/25/2016 Sample ID: WG574101-08
Instrument ID: LCMS1 Run Time: 06:34 Prep Method: 6850
File ID: 1LM.LM35496 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.201	101	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827790
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061142 Run Date: 06/25/2016 Sample ID: WG574101-09
Instrument ID: LCMS1 Run Time: 18:25 Prep Method: 6850
File ID: 1LM.LM35499 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.207	104	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827790
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061142 Run Date: 06/25/2016 Sample ID: WG574101-10
Instrument ID: LCMS1 Run Time: 21:34 Prep Method: 6850
File ID: 1LM.LM35509 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827790
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16061142
Instrument ID: LCMS1
Workgroup (AAB#): WG574101

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16061142-01	1.00	01	491000
L16061142-02	1.00	01	489000
L16061142-04	1.00	01	504000
L16061142-06	1.00	01	496000
L16061142-07	1.00	01	510000
WG574101-02	1.00	01	443000
WG574101-03	1.00	01	444000
WG574101-04	1.00	01	526000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4827793
Report generated 06/28/2016 14:17

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**	6850	**Samplenum:**	L16061142-01
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35483
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 02:28	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	2950	1360	2.17	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**	6850	**Samplenum:**	L16061142-02
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35484
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 02:47	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1600	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**	6850	**Samplenum:**	L16061142-04
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35485
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 03:06	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	5840	2820	2.07	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**	6850	**Samplenum:**	L16061142-06
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35506
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 20:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	7600	2750	2.76	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**	6850	**Samplenum:**	L16061142-07
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35487
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 03:44	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	2000	538	3.72	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**	6850	**Samplenum:**	WG574101-01
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35465
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 20:47	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	28100	10000	2.81	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**	6850	**Samplenum:**	WG574101-02
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35466
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 21:06	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**	6850	**Samplenum:**	WG574101-03
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35467
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 21:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	31600	11800	2.68	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**	6850	**Samplenum:**	WG574101-04
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35491
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 04:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38300	14000	2.74	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**	6850	**Samplenum:**	WG574101-05
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35464
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 20:28	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	31600	12100	2.61	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**	6850	**Samplenum:**	WG574101-06
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35476
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 00:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35000	13100	2.67	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**	6850	**Samplenum:**	WG574101-07
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35489
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 04:22	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38900	13400	2.90	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**	6850	**Samplenum:**	WG574101-08
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35496
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 06:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38000	14100	2.70	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**	6850	**Samplenum:**	WG574101-09
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35499
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 18:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32900	11500	2.86	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**	6850	**Samplenum:**	WG574101-10
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35509
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 21:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37900	14000	2.71	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**		**Samplenum:**	WG574102-01
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:50	**File ID:**	1LM.LM35462
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 19:50	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**		**Samplenum:**	WG574102-02
Instrument:	LCMS1	**Prep Date:**	06/24/2016 20:09	**File ID:**	1LM.LM35463
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 20:09	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	152000	55500	2.74	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**		**Samplenum:**	WG574102-03
Instrument:	LCMS1	**Prep Date:**	06/24/2016 23:56	**File ID:**	1LM.LM35475
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 23:56	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	170000	57500	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**		**Samplenum:**	WG574102-04
Instrument:	LCMS1	**Prep Date:**	06/25/2016 00:34	**File ID:**	1LM.LM35477
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 00:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	824	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**		**Samplenum:**	WG574102-05
Instrument:	LCMS1	**Prep Date:**	06/25/2016 04:03	**File ID:**	1LM.LM35488
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 04:03	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	179000	60200	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**		**Samplenum:**	WG574102-06
Instrument:	LCMS1	**Prep Date:**	06/25/2016 04:40	**File ID:**	1LM.LM35490
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 04:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**		**Samplenum:**	WG574102-07
Instrument:	LCMS1	**Prep Date:**	06/25/2016 06:15	**File ID:**	1LM.LM35495
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 06:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	189000	63400	2.98	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**		**Samplenum:**	WG574102-08
Instrument:	LCMS1	**Prep Date:**	06/25/2016 06:53	**File ID:**	1LM.LM35497
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 06:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	518	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**		**Samplenum:**	WG574102-09
Instrument:	LCMS1	**Prep Date:**	06/25/2016 18:06	**File ID:**	1LM.LM35498
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 18:06	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	161000	56700	2.84	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**		**Samplenum:**	WG574102-10
Instrument:	LCMS1	**Prep Date:**	06/25/2016 18:44	**File ID:**	1LM.LM35500
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 18:44	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**		**Samplenum:**	WG574102-11
Instrument:	LCMS1	**Prep Date:**	06/25/2016 21:15	**File ID:**	1LM.LM35508
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 21:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	176000	59300	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061142	**Prep Method:**		**Samplenum:**	WG574102-12
Instrument:	LCMS1	**Prep Date:**	06/25/2016 21:53	**File ID:**	1LM.LM35510
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 21:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

2.2.2.3 Sample Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:46 PM

Data File	LM35483.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 2:28:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061142-01	**Injection Vial**	20.00
Data File	LM35483.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 2:28:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	L16061142-01	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.910e+05	9.52	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.950e+03	9.53	N/A	0.014
Perchlorate conf	1.360e+03	9.52	N/A	0.0045

O18LP (Internal Standard)

RT (Exp. RT): 9.52(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

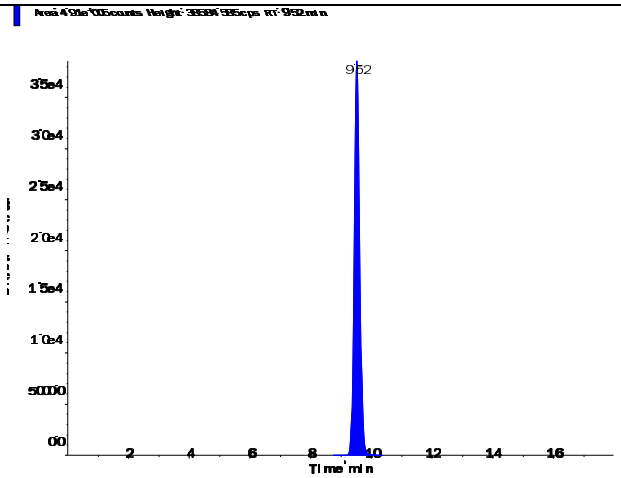

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.53 (9.84) min
Calculated conc:	0.014 ng/ml
Area Ratio:	0.006
Sample Type:	(Unknown)

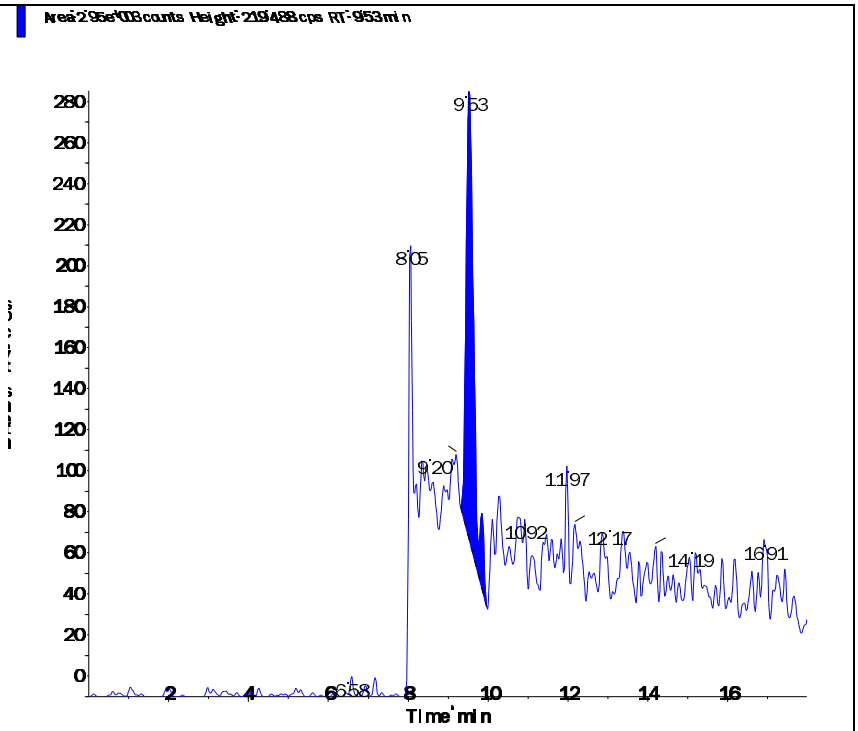

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.52 (9.84) min
Calculated conc:	0.0045 ng/ml
Area Ratio:	0.003
Sample Type:	(Unknown)

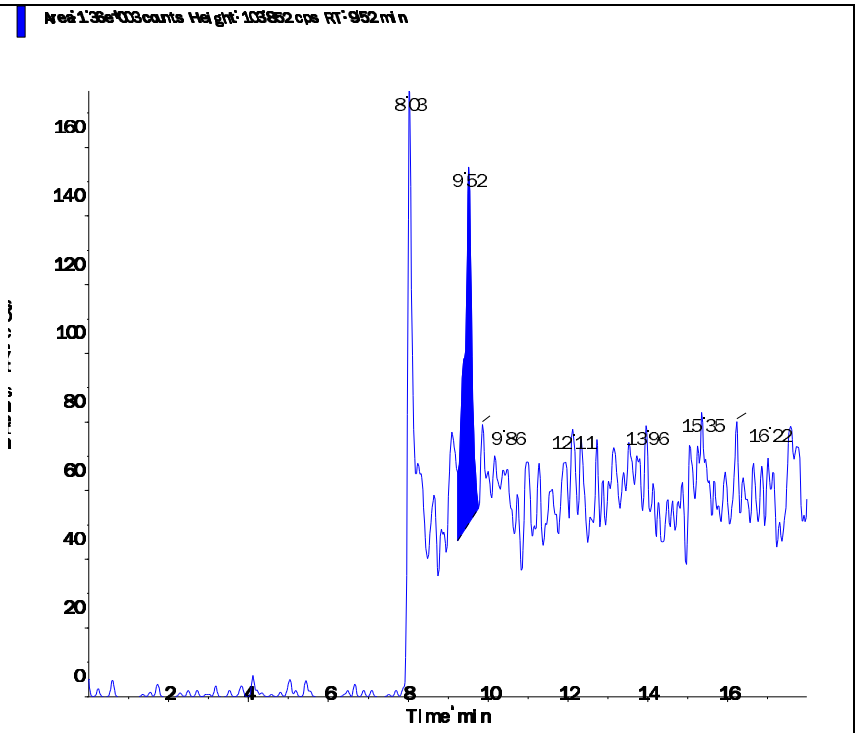

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:46 PM

Data File	LM35484.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 2:47:20 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061142-02	**Injection Vial**	21.00
Data File	LM35484.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 2:47:20 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	L16061142-02	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.890e+05	9.57	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.600e+03	9.59	N/A	0.0059
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.57(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

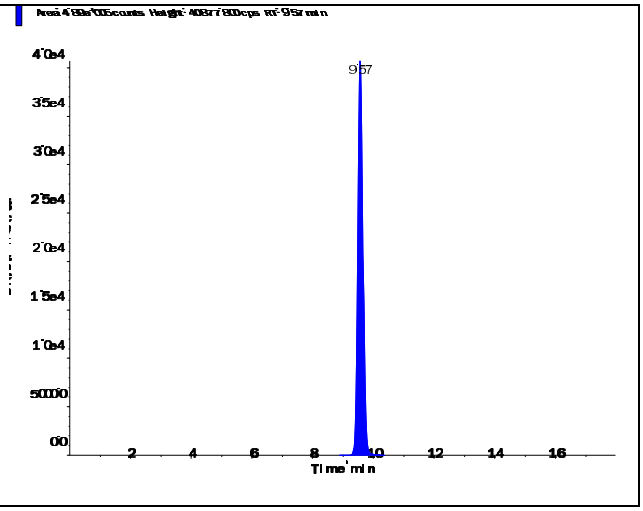

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.59 (9.84) min
Calculated conc:	0.0059 ng/ml
Area Ratio:	0.003
Sample Type:	(Unknown)

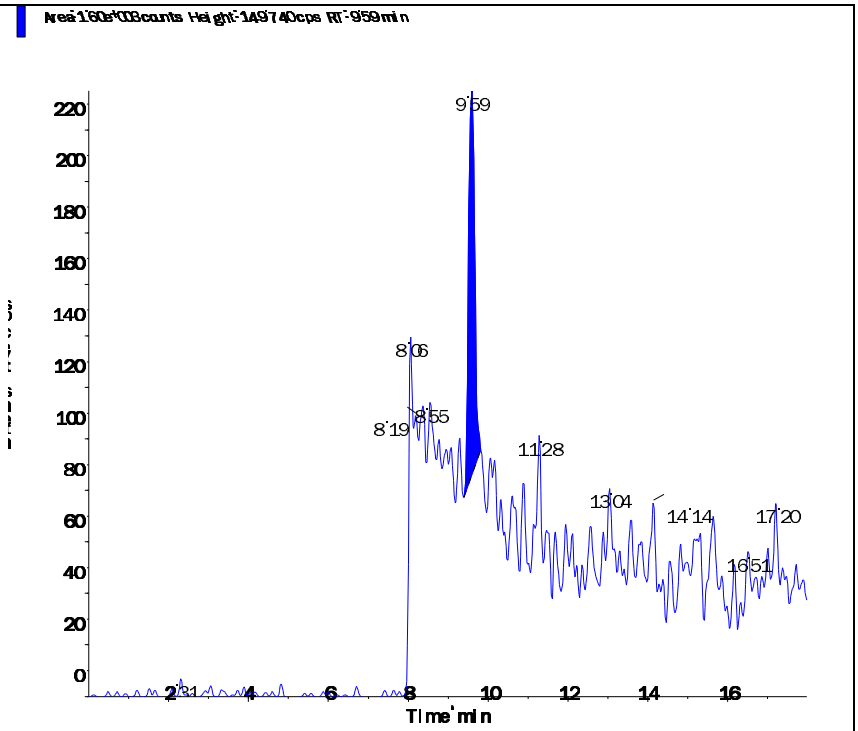

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

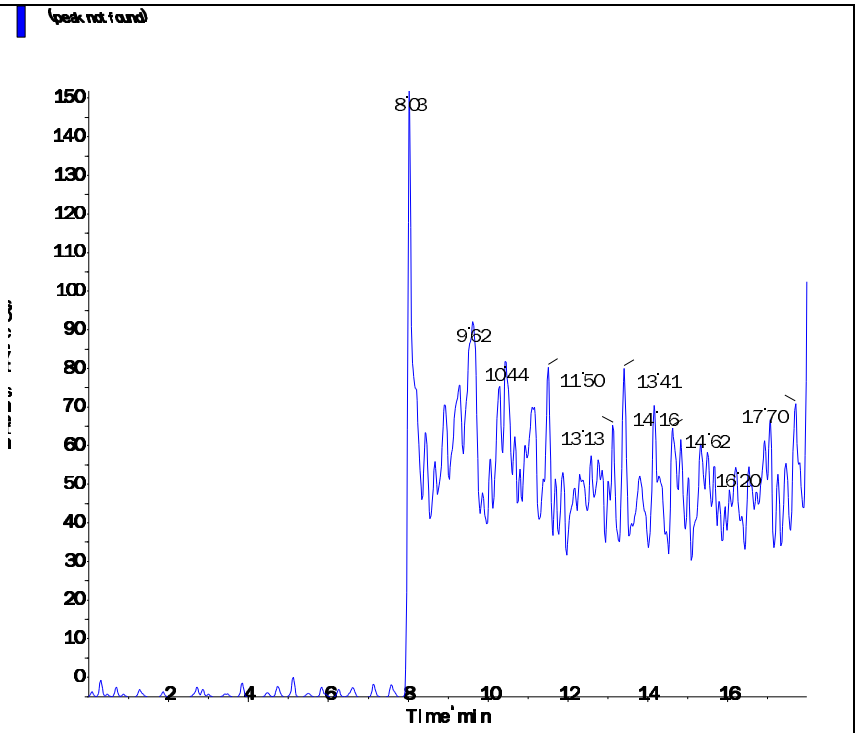

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Printed: 6/27/2016 7:46 PM

Data File	LM35485.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 3:06:16 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061142-04	**Injection Vial**	22.00
Data File	LM35485.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 3:06:16 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	L16061142-04	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.040e+05	9.57	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.840e+03	9.57	N/A	0.0306
Perchlorate conf	2.820e+03	9.55	N/A	0.0296

O18LP (Internal Standard)

RT (Exp. RT): 9.57(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

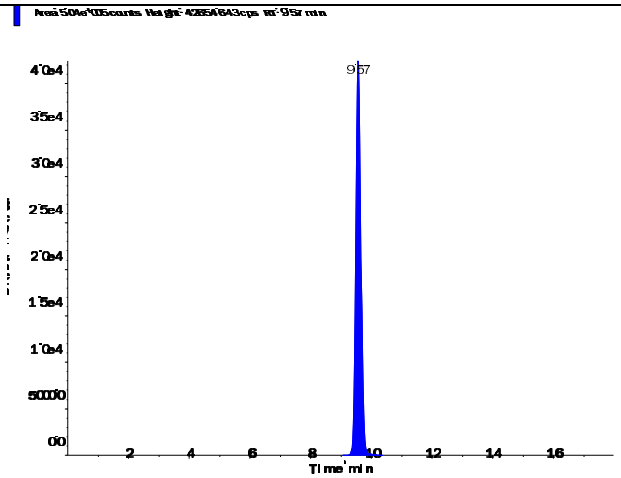

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.57 (9.84) min
Calculated conc:	0.0306 ng/ml
Area Ratio:	0.012
Sample Type:	(Unknown)

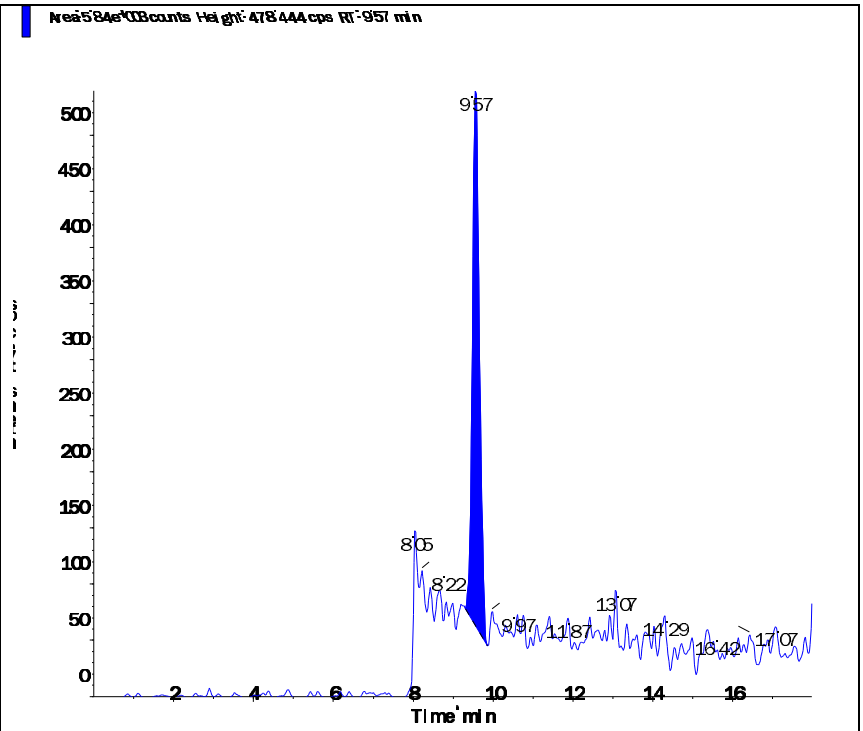

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.55 (9.84) min
Calculated conc:	0.0296 ng/ml
Area Ratio:	0.006
Sample Type:	(Unknown)

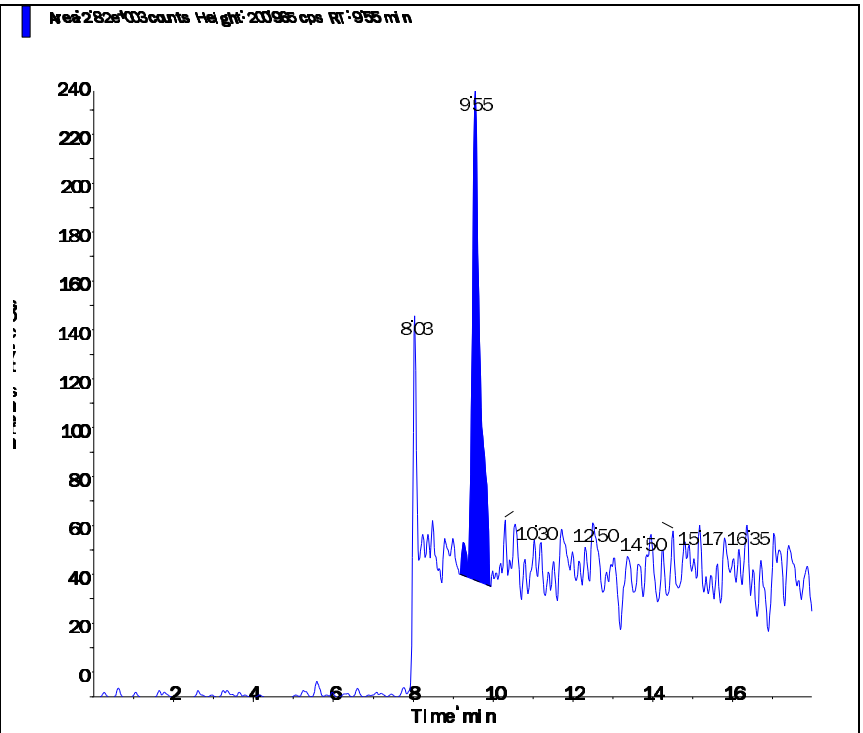

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Printed: 6/27/2016 7:54 PM

Data File	LM35506.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 8:37:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061142-06 (RR Neat)	**Injection Vial**	33.00
Data File	LM35506.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 8:37:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	L16061142-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.960e+05	9.44	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.600e+03	9.46	N/A	0.0418
Perchlorate conf	2.750e+03	9.44	N/A	0.0293

O18LP (Internal Standard)

RT (Exp. RT): 9.44(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

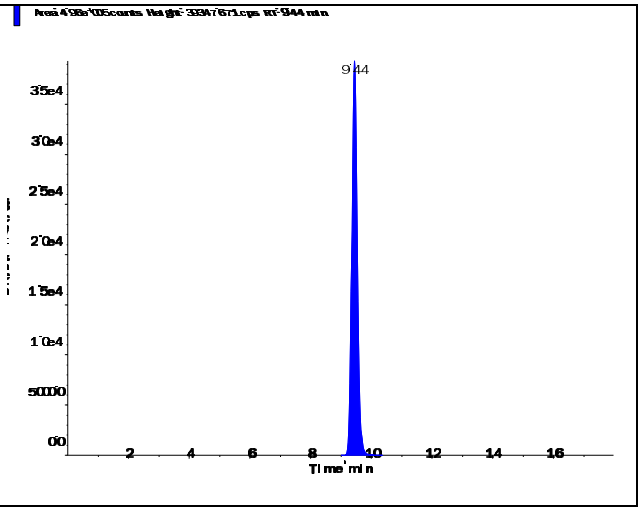

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.46 (9.84) min
Calculated conc:	0.0418 ng/ml
Area Ratio:	0.015
Sample Type:	(Unknown)

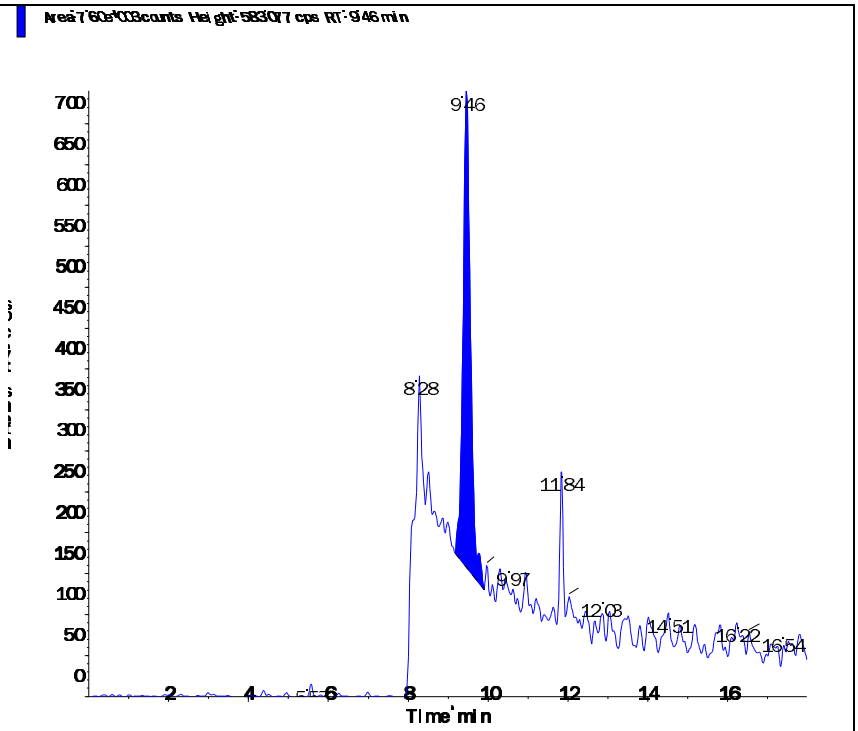

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	0.0293 ng/ml
Area Ratio:	0.006
Sample Type:	(Unknown)

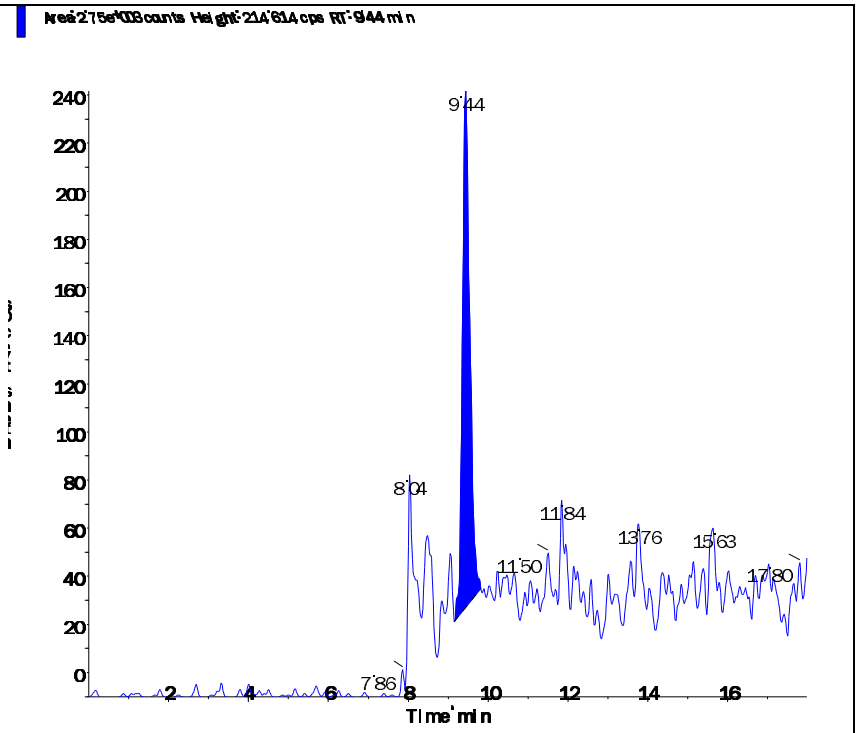

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Data File	LM35487.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 3:44:08 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061142-07	**Injection Vial**	24.00
Data File	LM35487.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 3:44:08 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	L16061142-07	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.100e+05	9.57	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.000e+03	9.58	N/A	0.0079
Perchlorate conf	5.380e+02	9.59	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.57(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

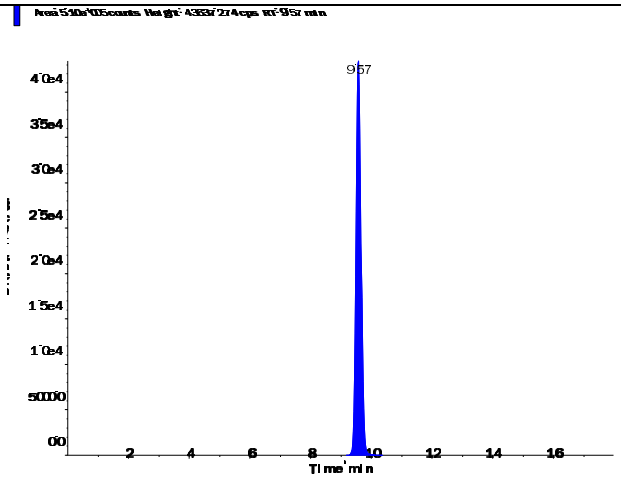

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.58 (9.84) min
Calculated conc:	0.0079 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)

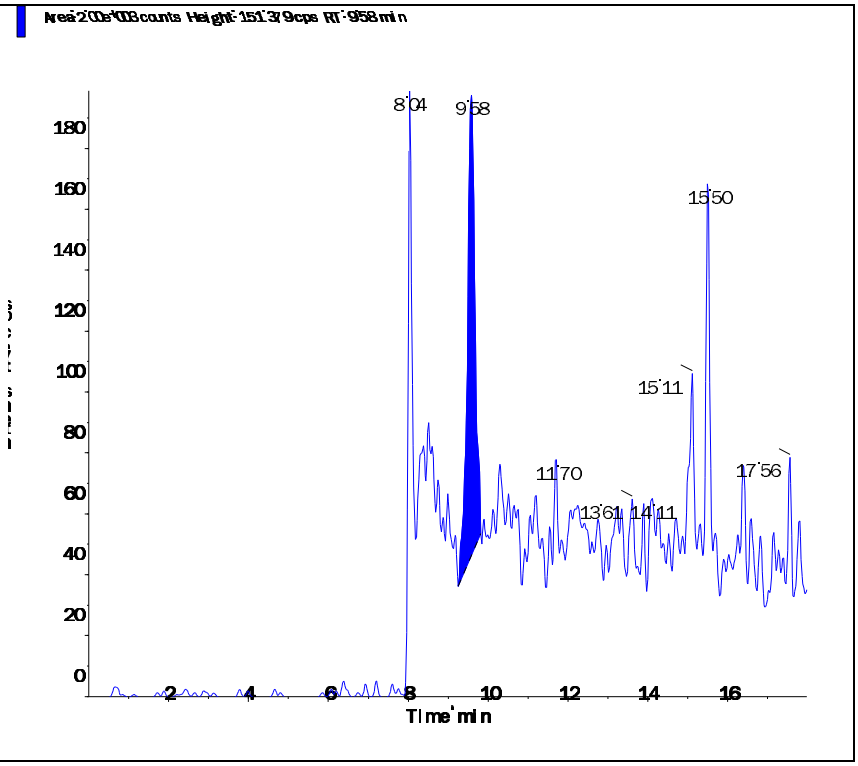

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.59 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

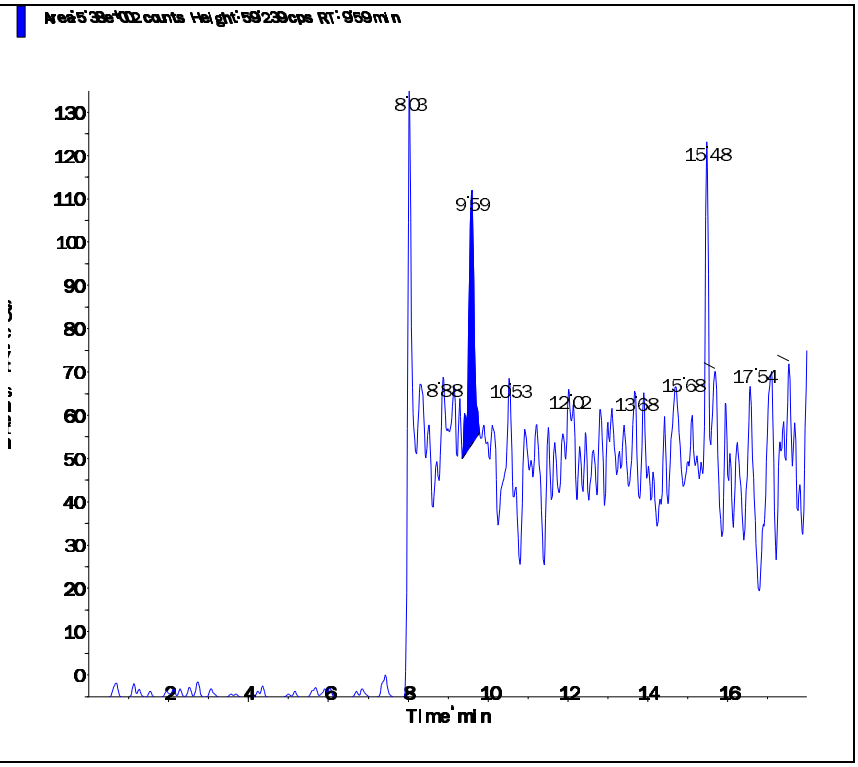

2.2.2.4 Standards Data

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Data File	LM34686.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

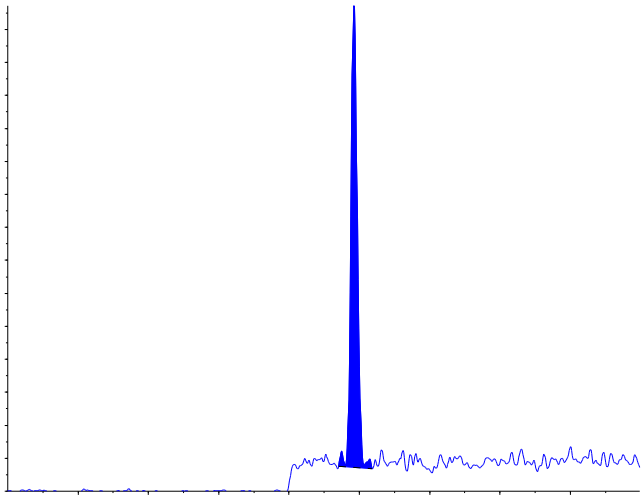

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

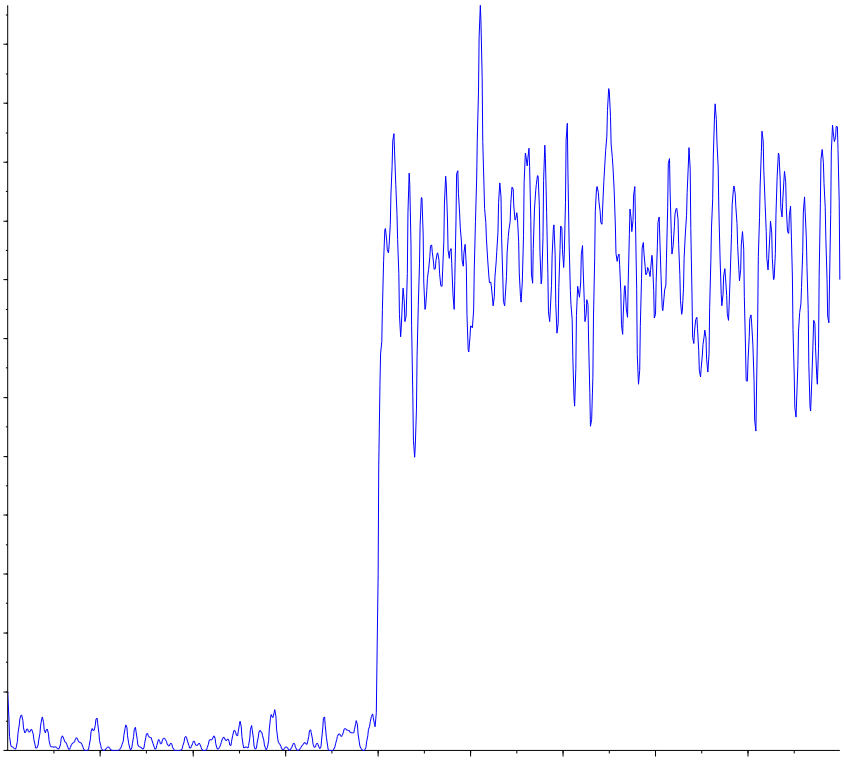

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

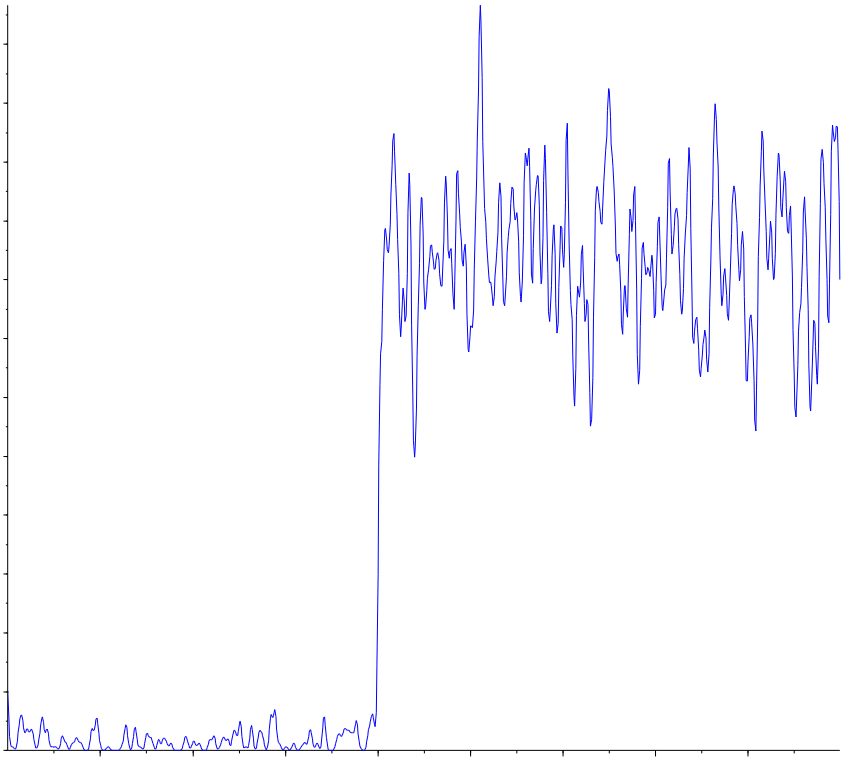

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Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

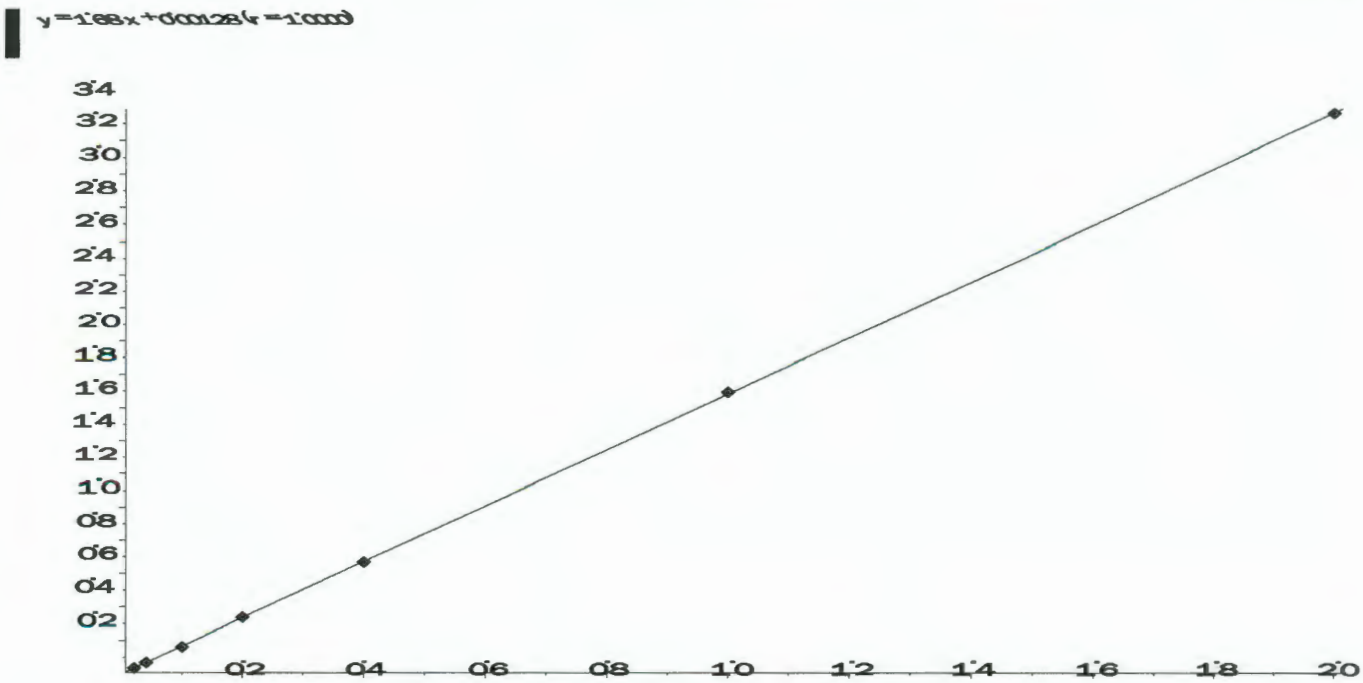

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Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

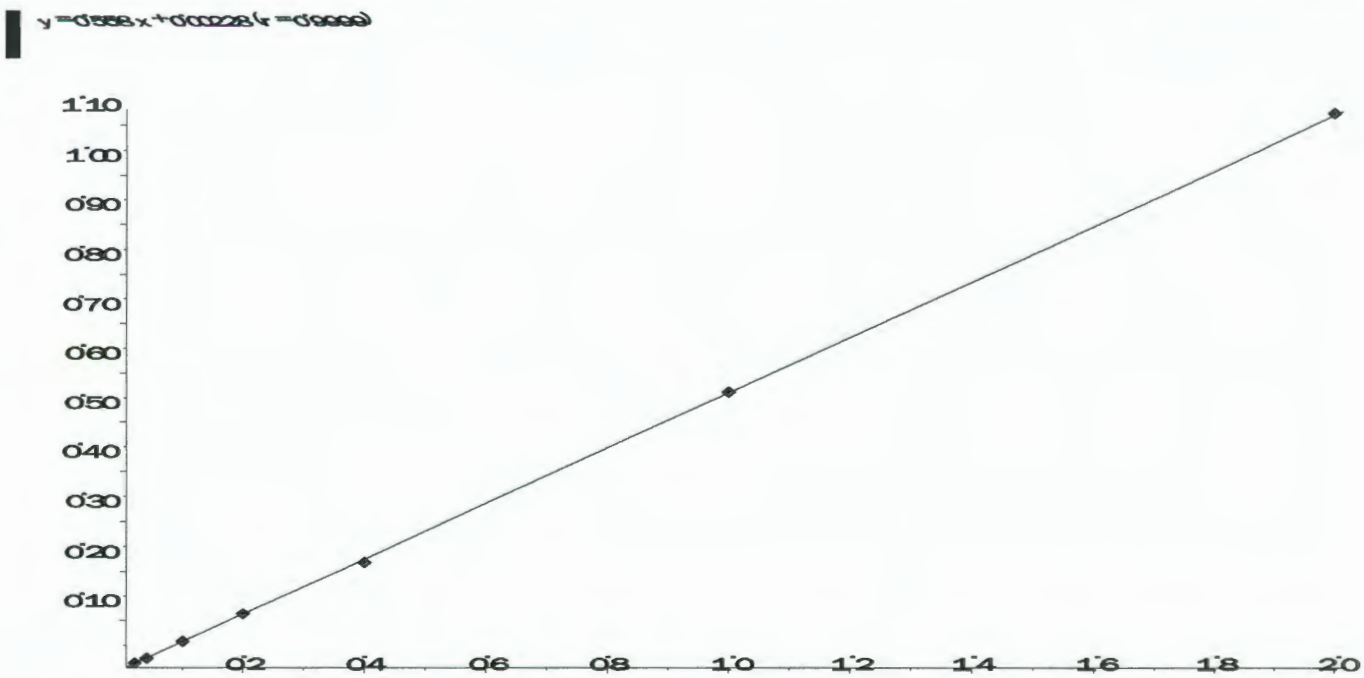

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Data File	LM34687.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

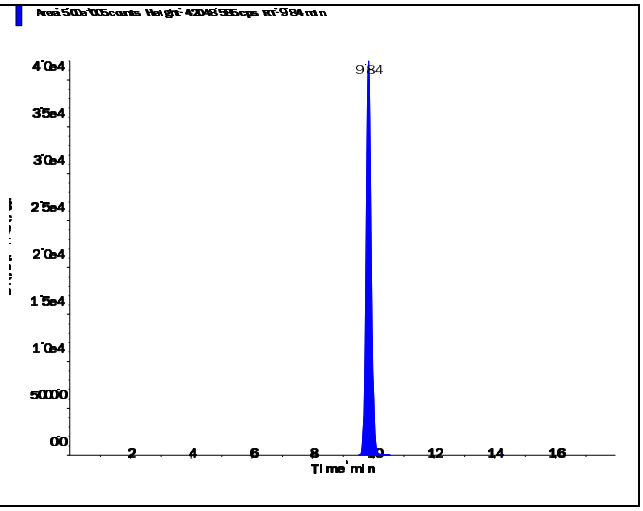

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.103 ng/ml
Area Ratio:	0.036
Sample Type:	(Standard)

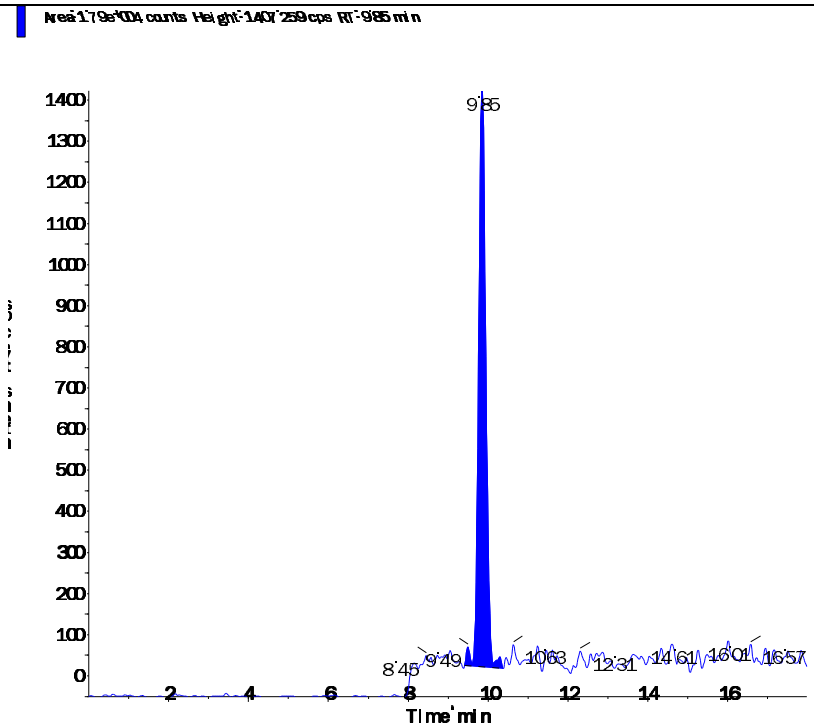

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.104 ng/ml
Area Ratio:	0.014
Sample Type:	(Standard)

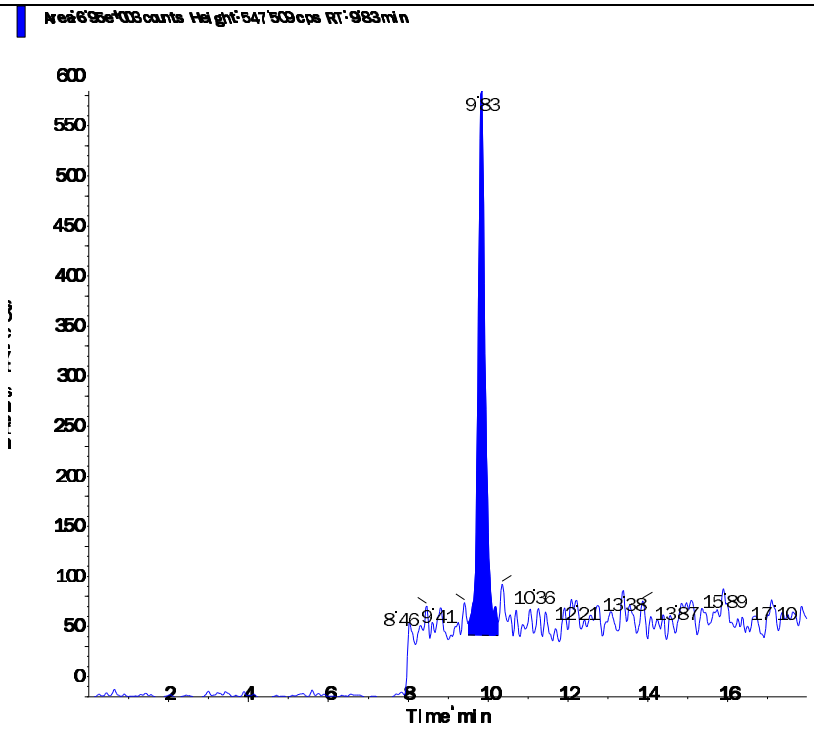

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Data File	LM34688.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

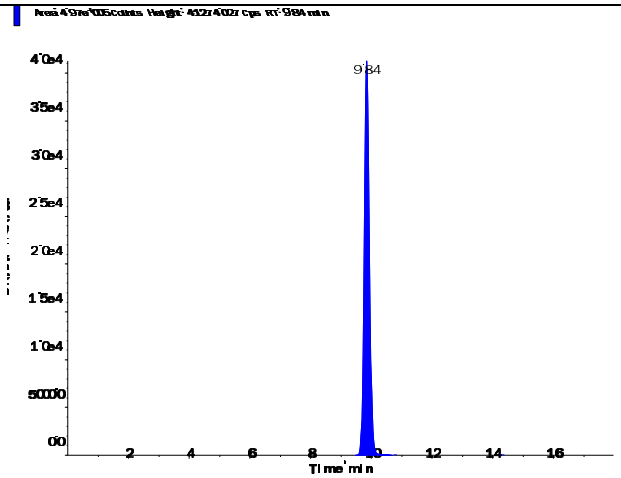

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

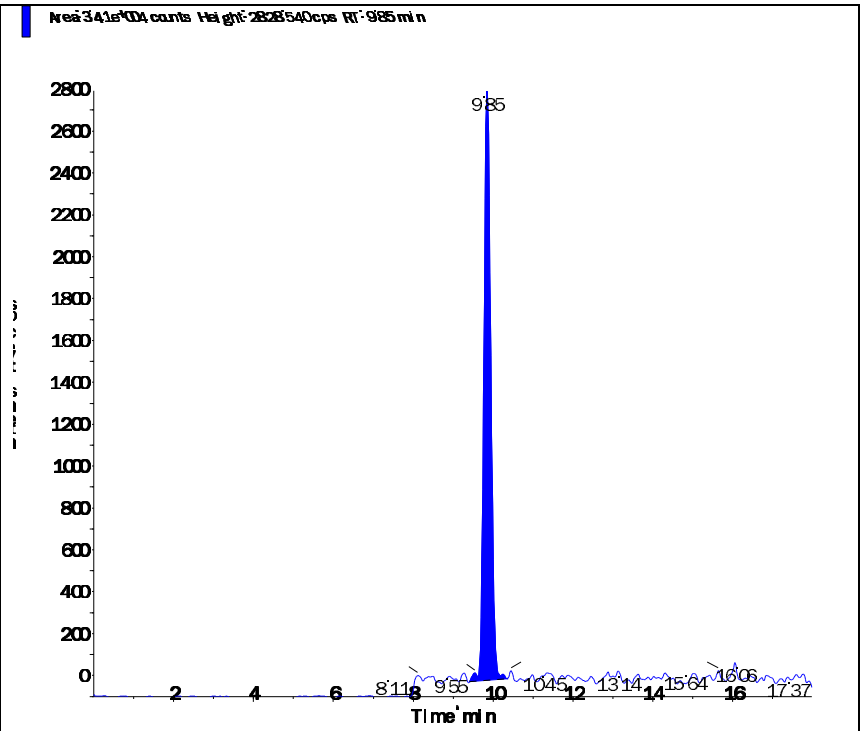

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

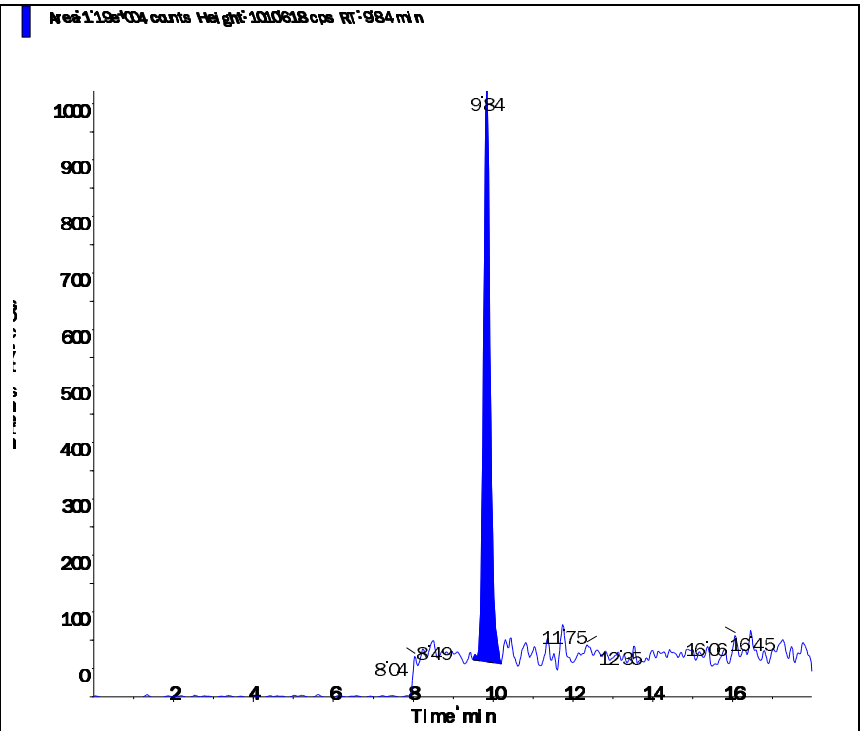

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Data File	LM34689.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

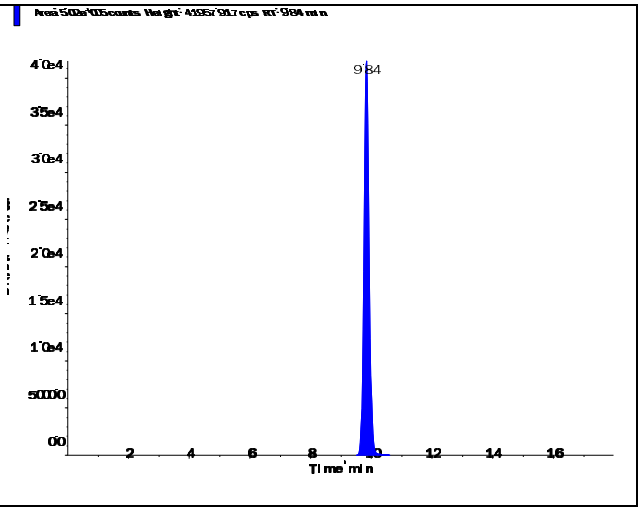

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.483 ng/ml
Area Ratio:	0.164
Sample Type:	(Standard)

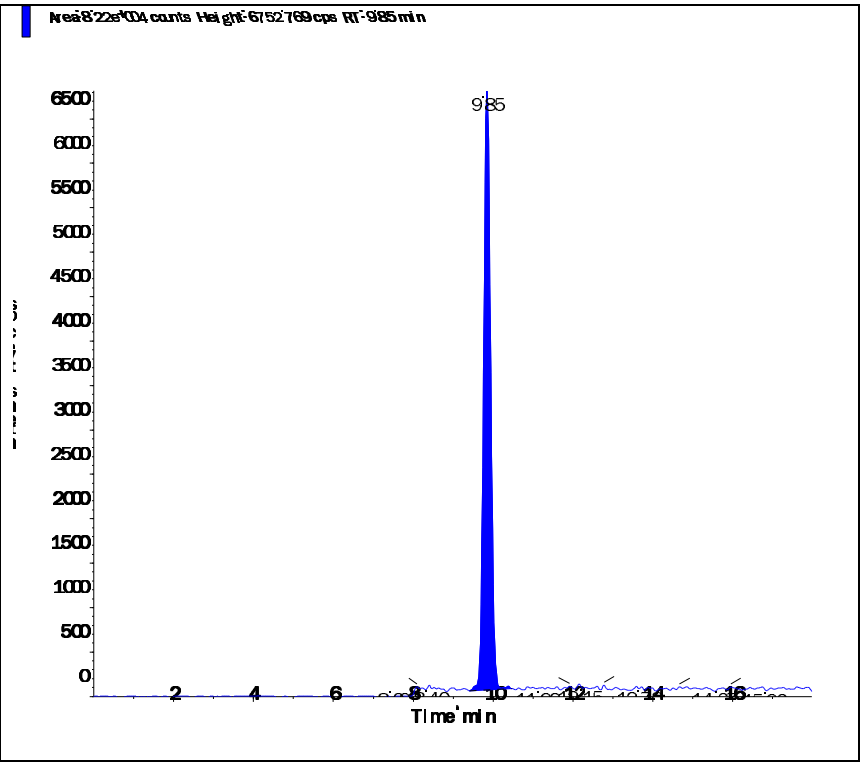

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.503 ng/ml
Area Ratio:	0.058
Sample Type:	(Standard)

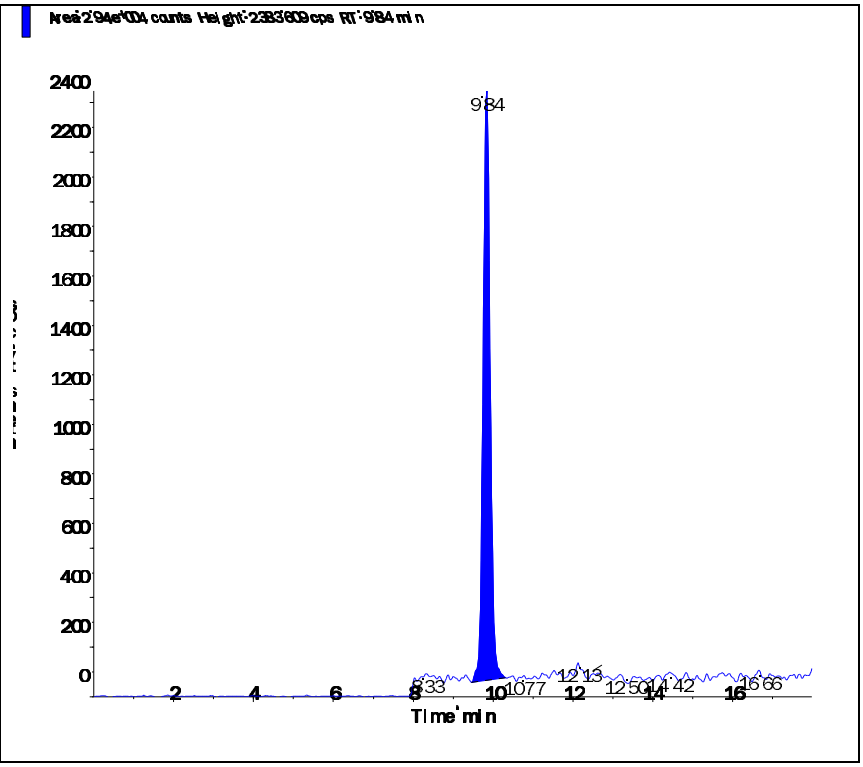

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Data File	LM34690.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

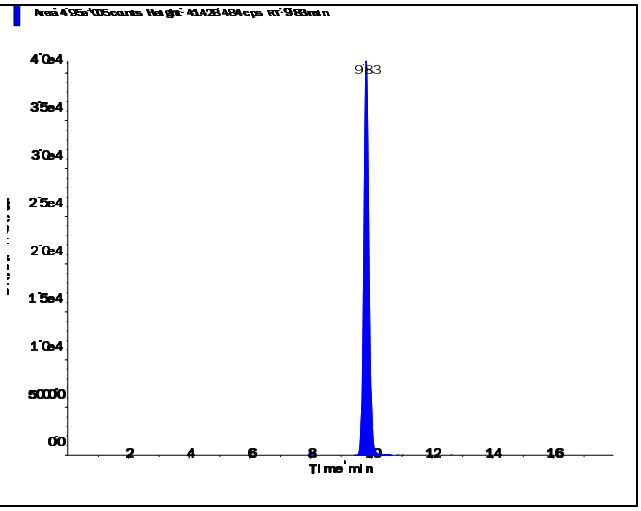

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

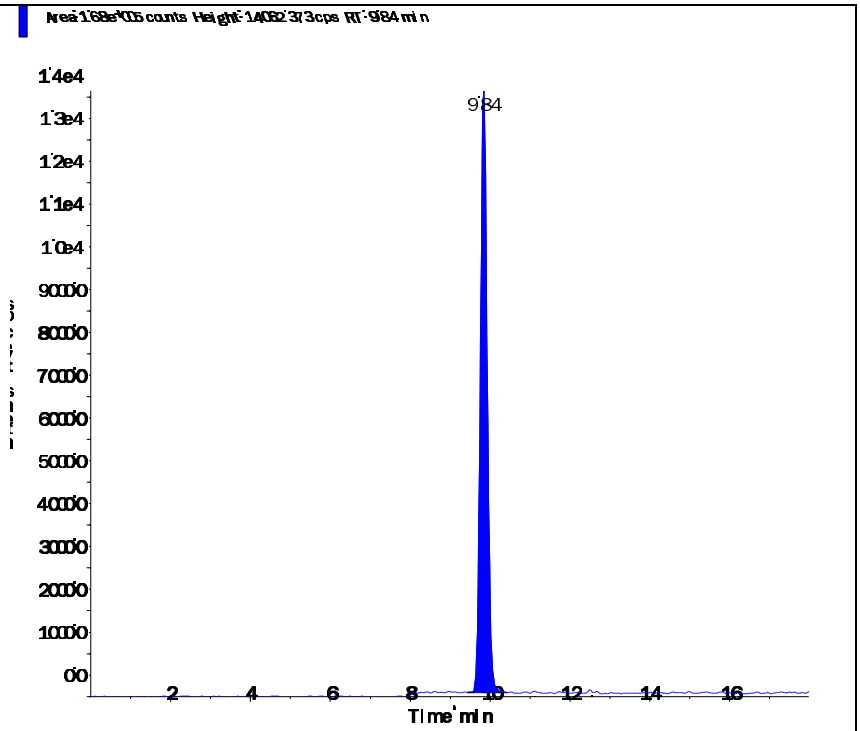

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

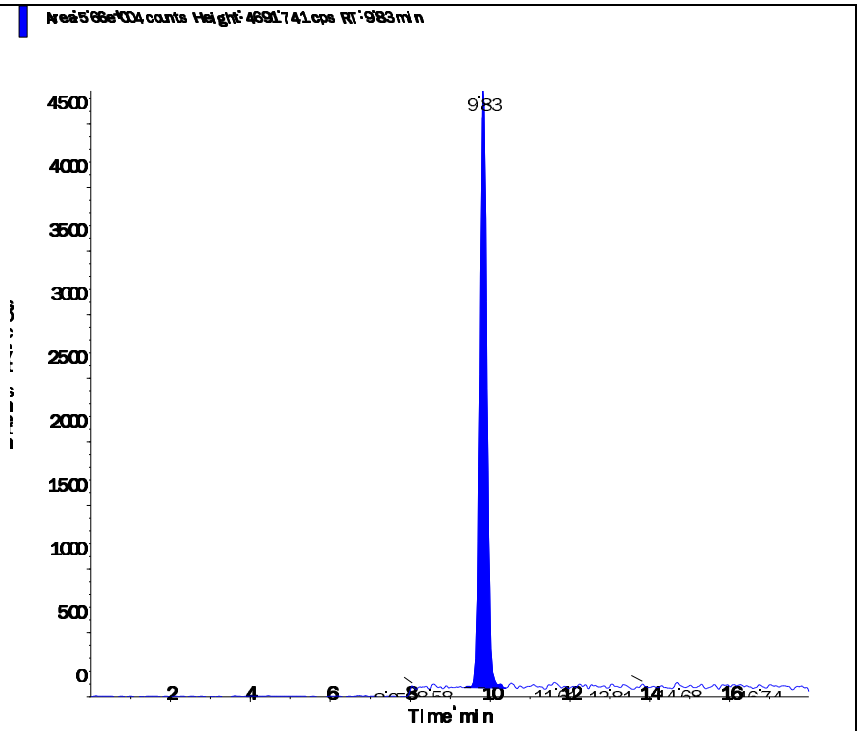

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Data File	LM34691.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

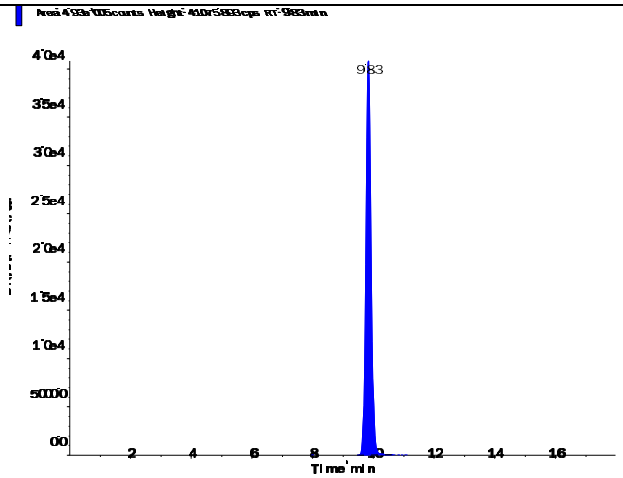

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.99 ng/ml
Area Ratio:	0.669
Sample Type:	(Standard)

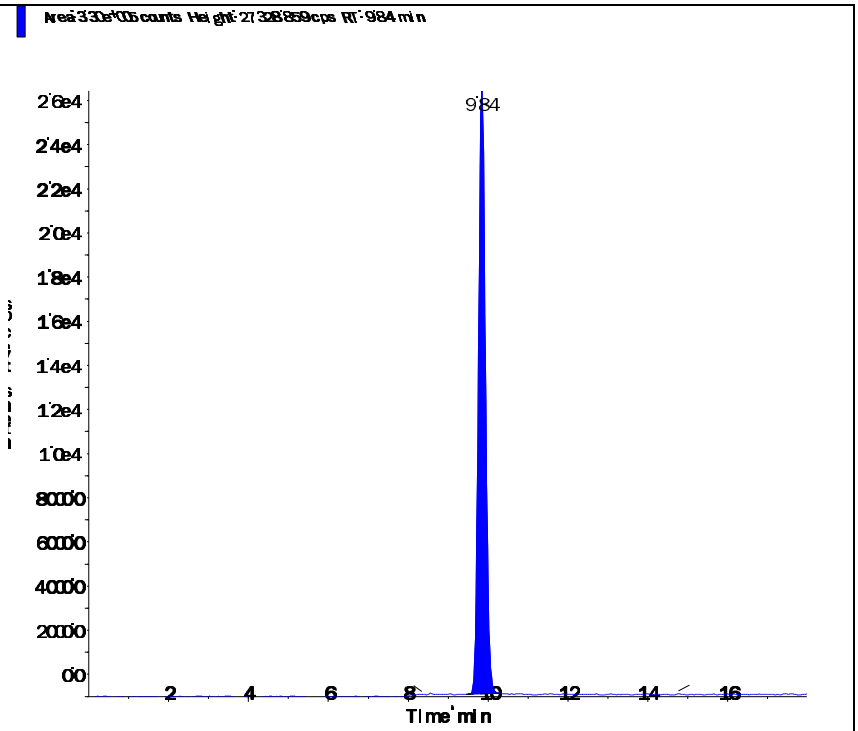

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.94 ng/ml
Area Ratio:	0.219
Sample Type:	(Standard)

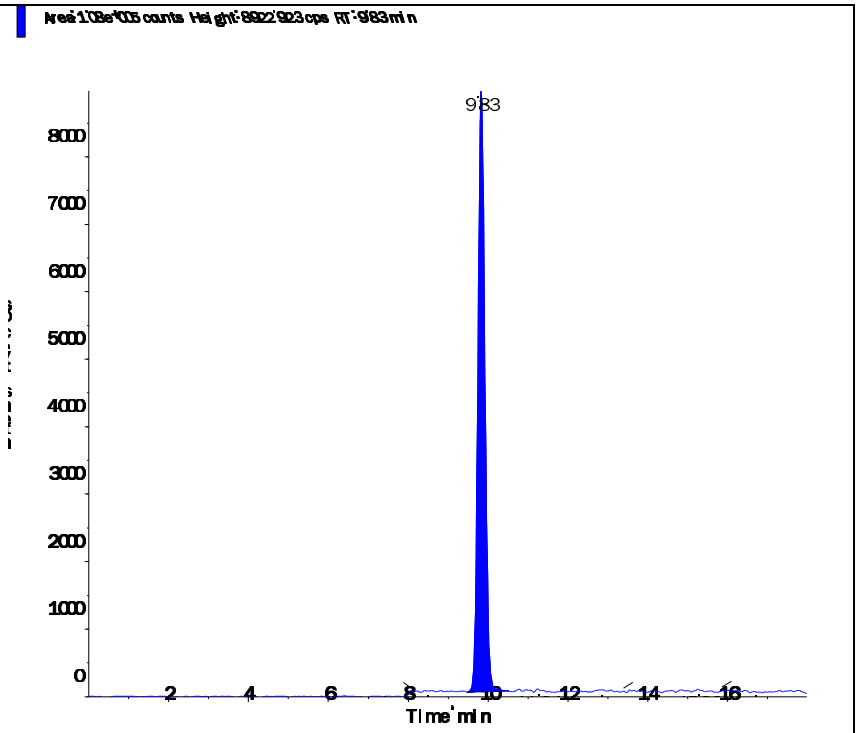

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Data File	LM34692.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

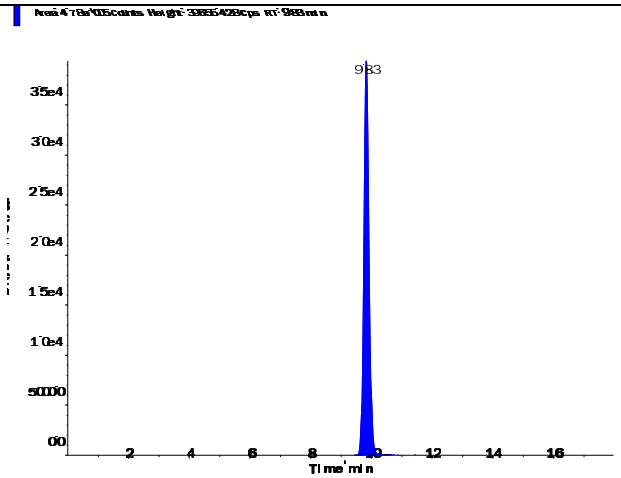

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

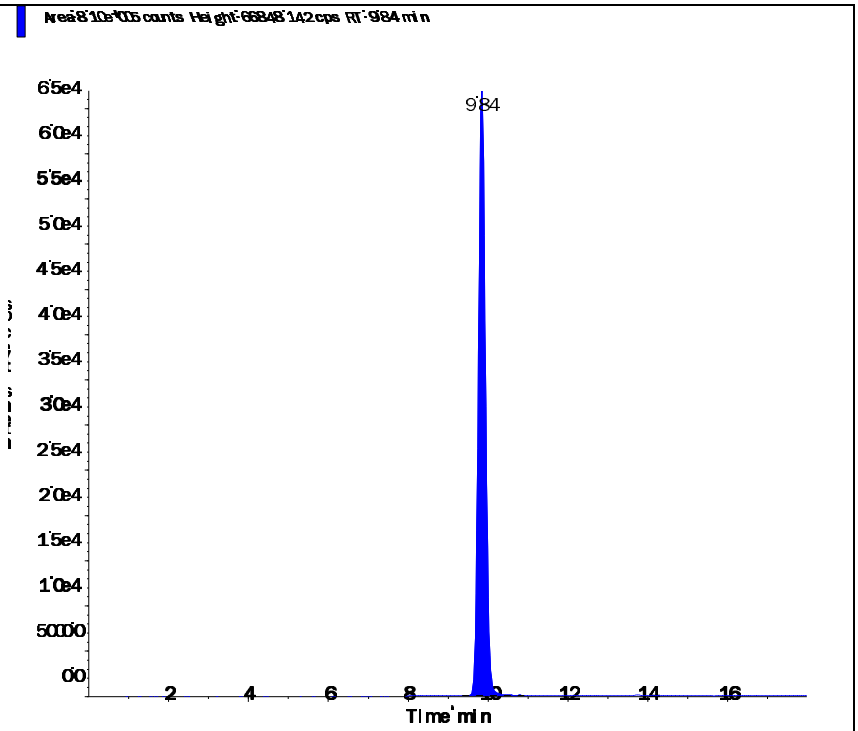

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

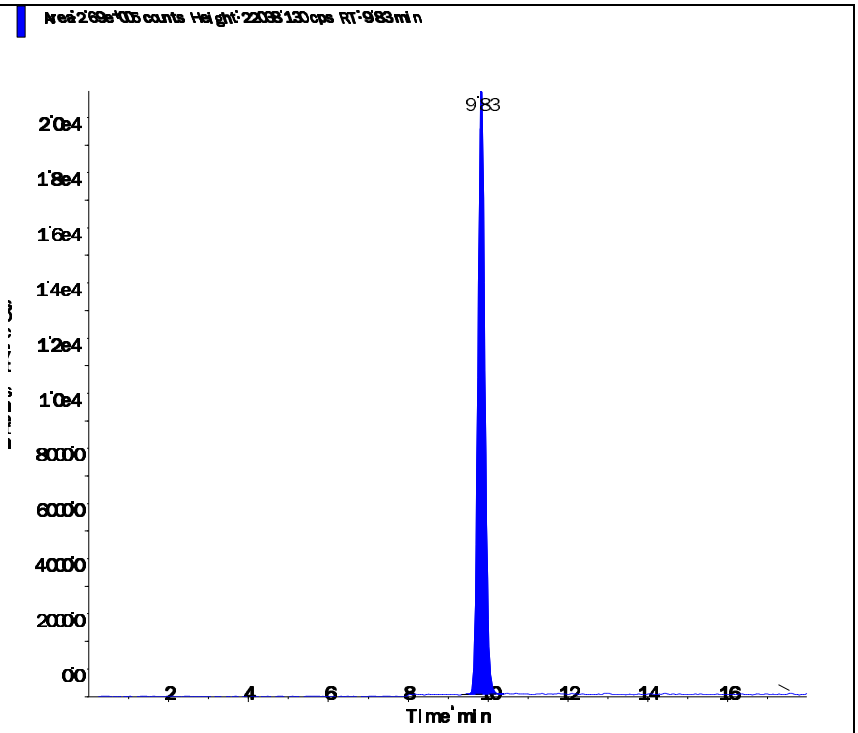

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Data File	LM34693.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

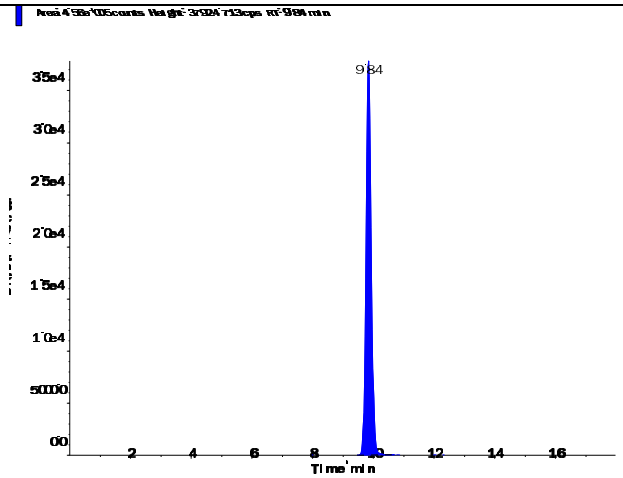

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	9.99 ng/ml
Area Ratio:	3.36
Sample Type:	(Standard)

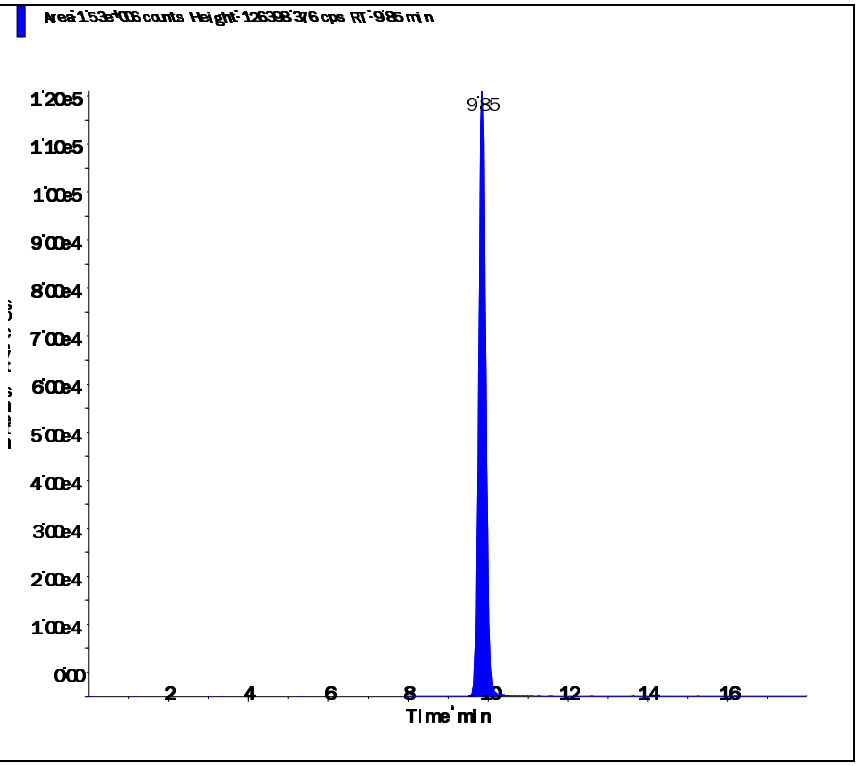

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	10.00 ng/ml
Area Ratio:	1.122
Sample Type:	(Standard)

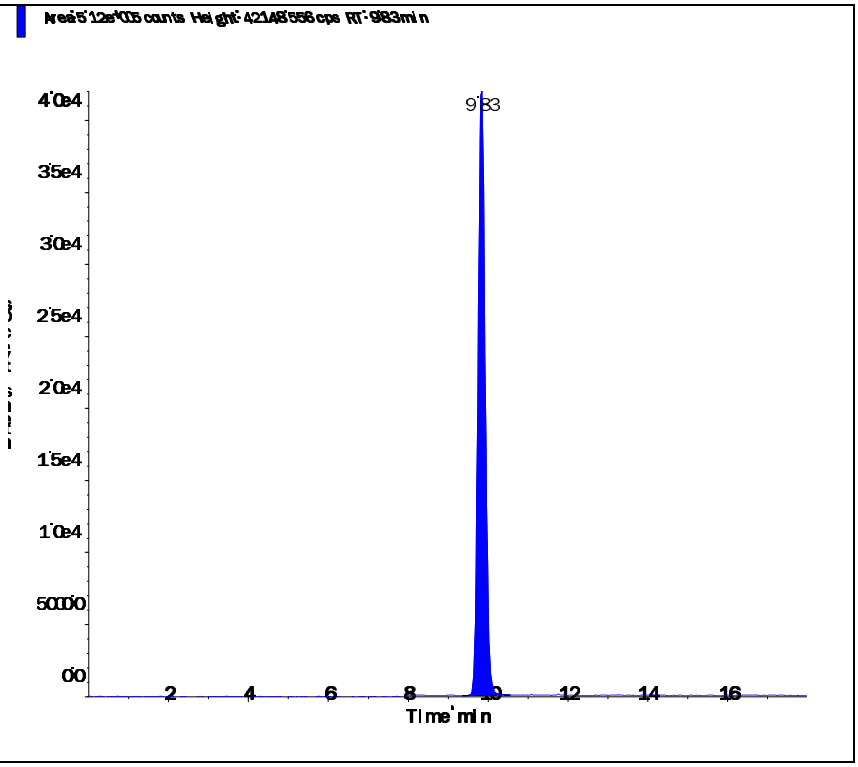

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Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

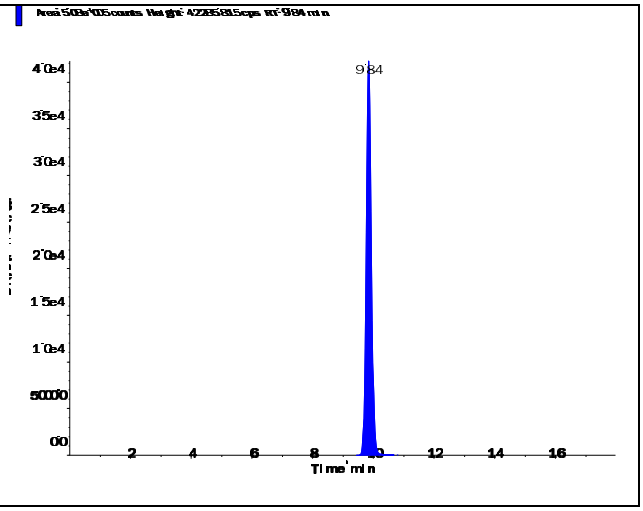

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.332
Sample Type:	(Quality Control)

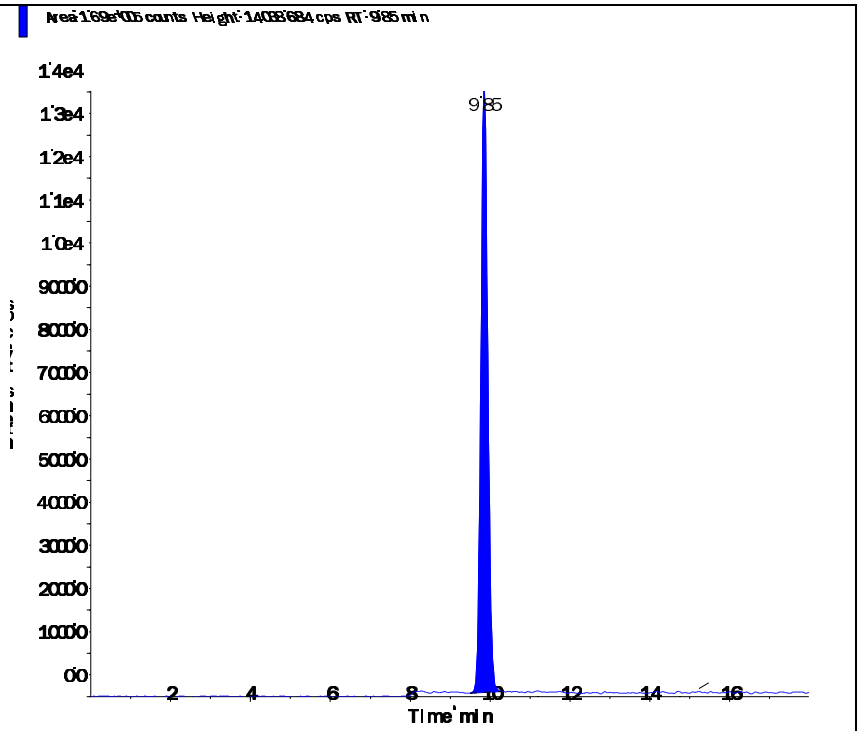

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

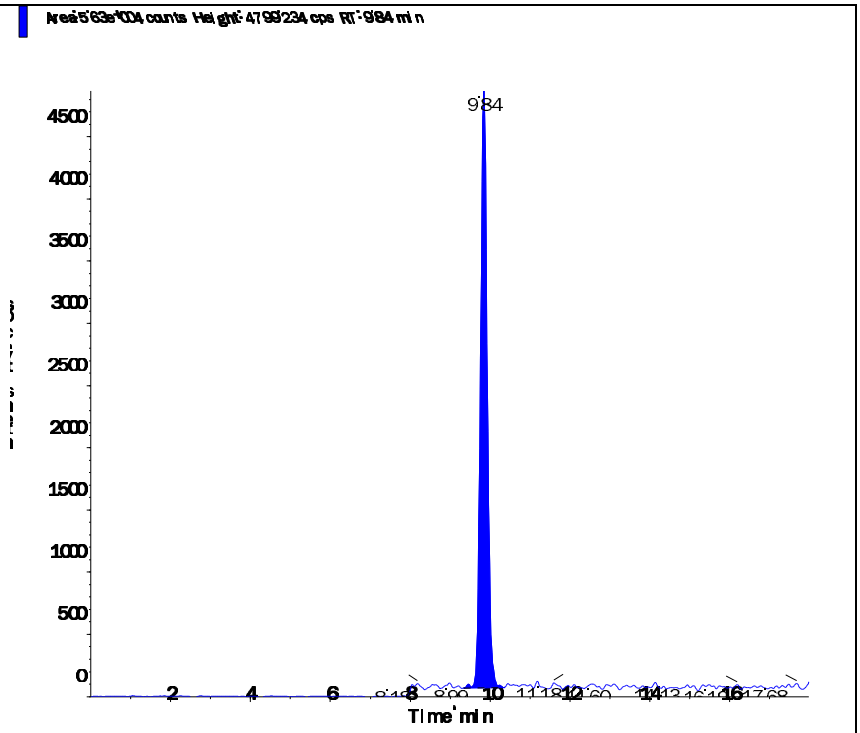

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Data File	LM35463.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 8:09:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35463.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 8:09:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.450e+05	9.34	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.520e+05	9.35	1.00	1.01
Perchlorate conf	5.550e+04	9.33	1.00	1.10

O18LP (Internal Standard)

RT (Exp. RT): 9.34(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

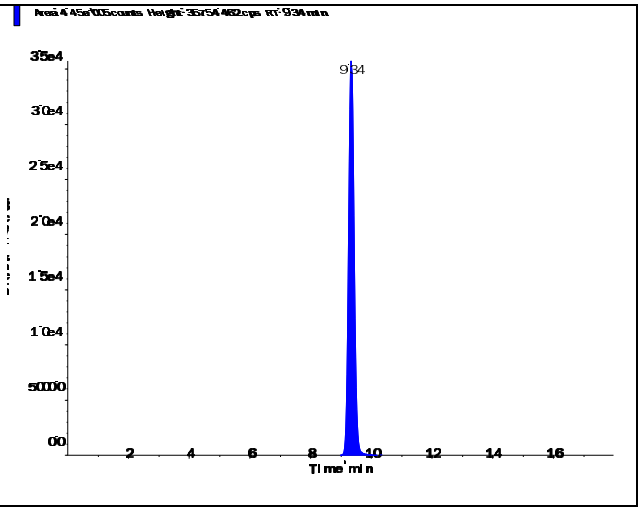

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.341
Sample Type:	(Quality Control)

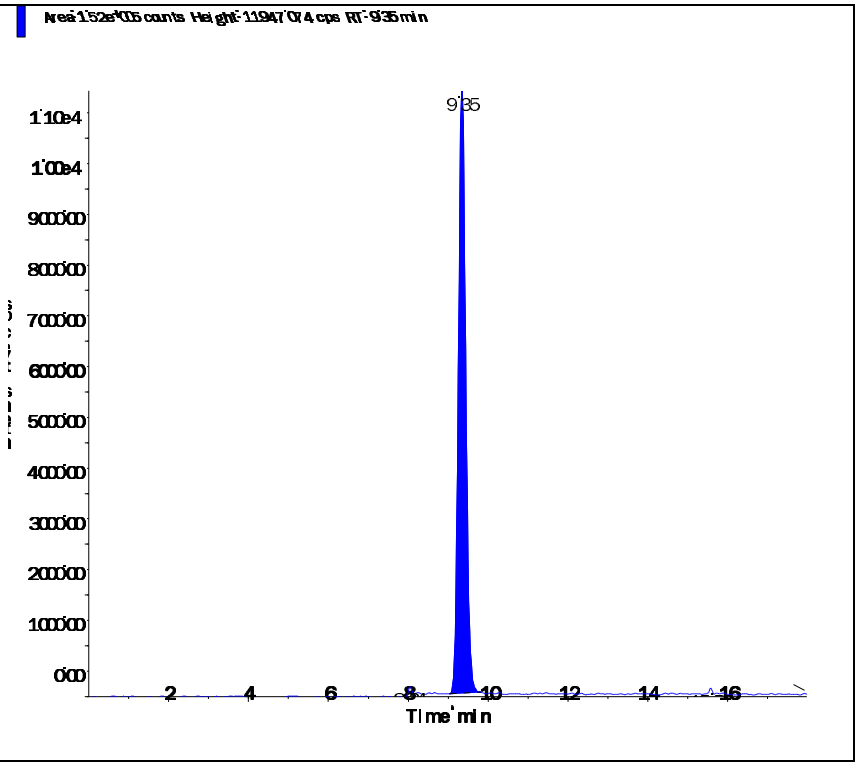

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.33 (9.84) min
Calculated conc:	1.10 ng/ml
Area Ratio:	0.125
Sample Type:	(Quality Control)

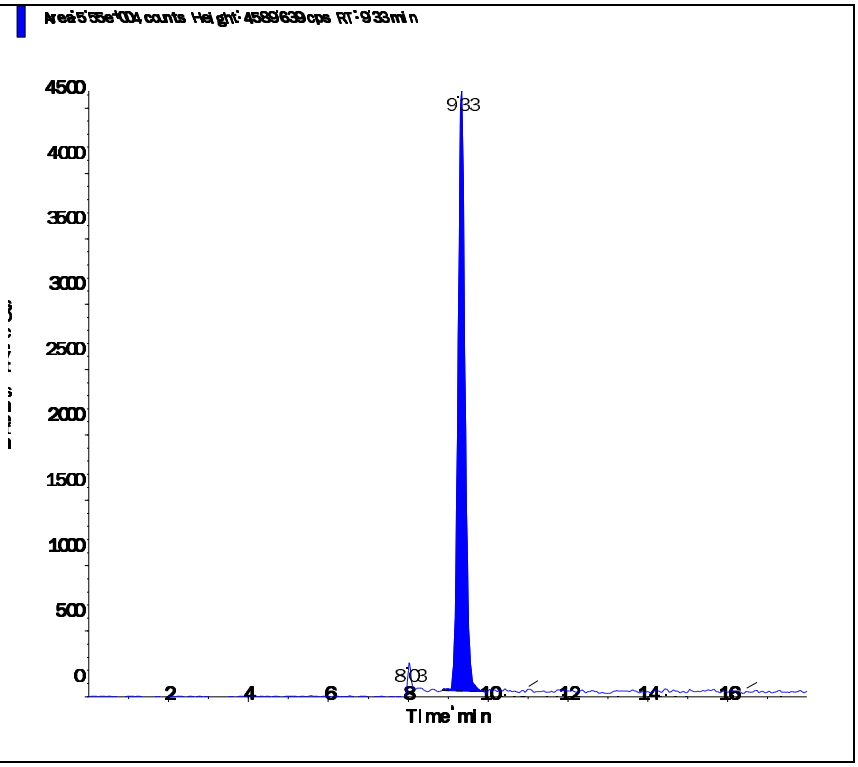

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Data File	LM35475.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 11:56:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35475.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 11:56:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.980e+05	9.32	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.700e+05	9.33	1.00	1.01
Perchlorate conf	5.750e+04	9.32	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.32(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

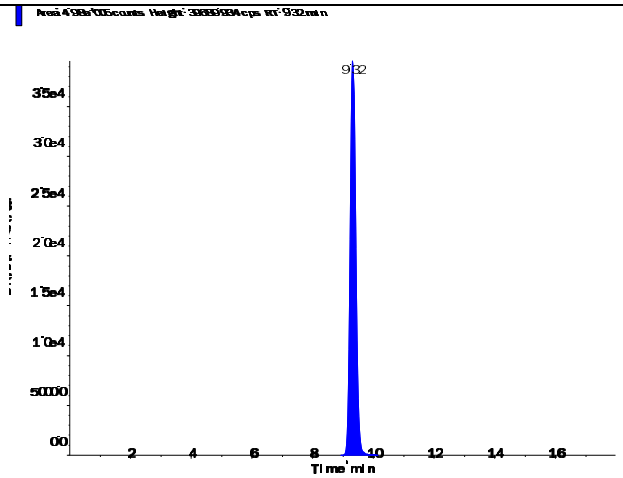

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.33 (9.84) min Calculated conc: 1.01 ng/ml Area Ratio: 0.34 Sample Type: (Quality Control)	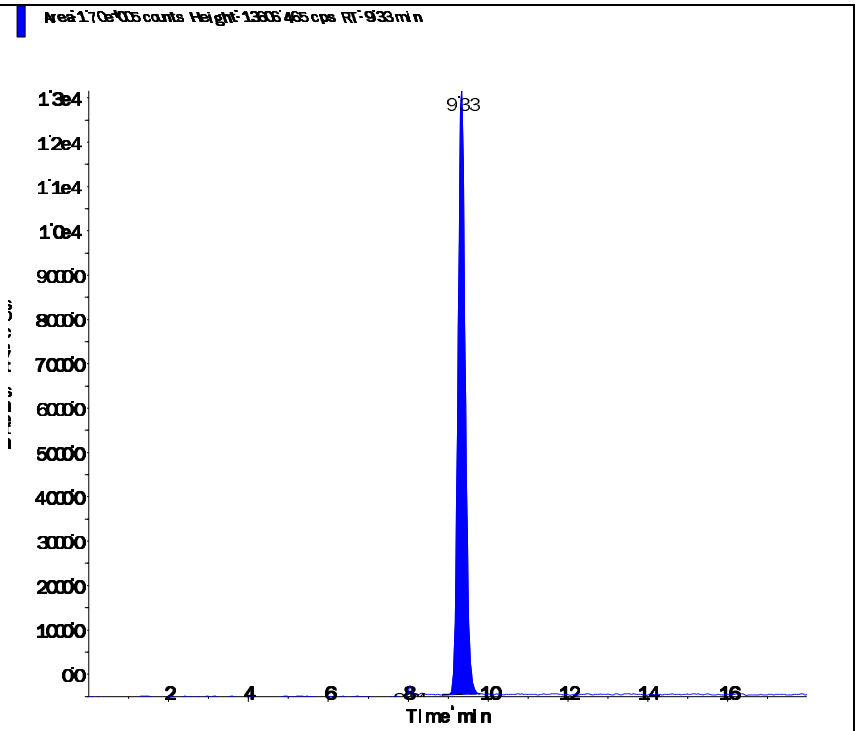
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.32 (9.84) min Calculated conc: 1.01 ng/ml Area Ratio: 0.115 Sample Type: (Quality Control)	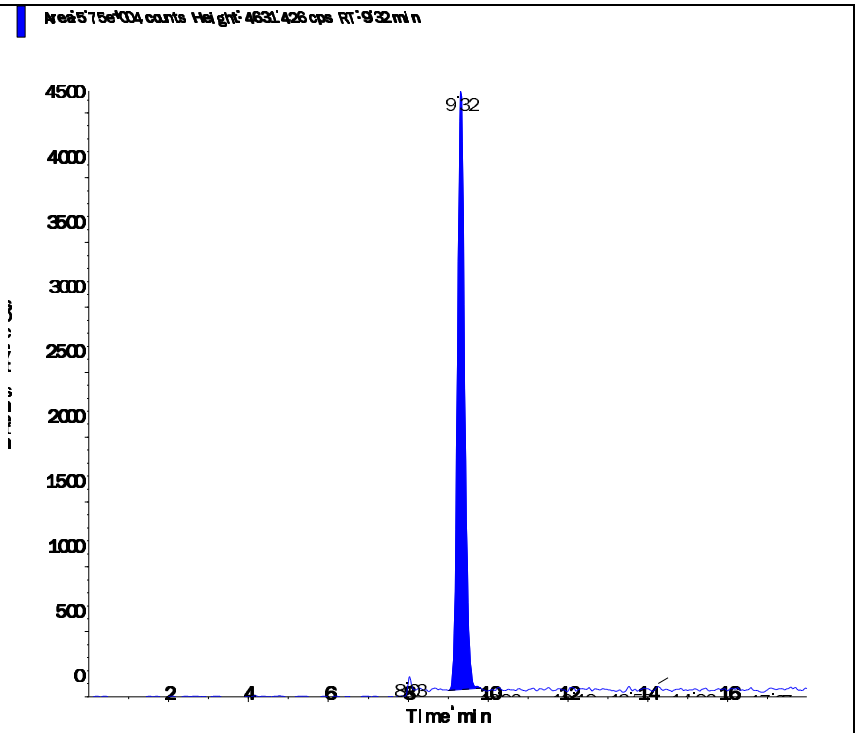

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Data File	LM35488.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 4:03:05 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35488.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 4:03:05 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.33	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+05	9.34	1.00	1.04
Perchlorate conf	6.020e+04	9.32	1.00	1.03

O18LP (Internal Standard)

RT (Exp. RT): 9.33(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

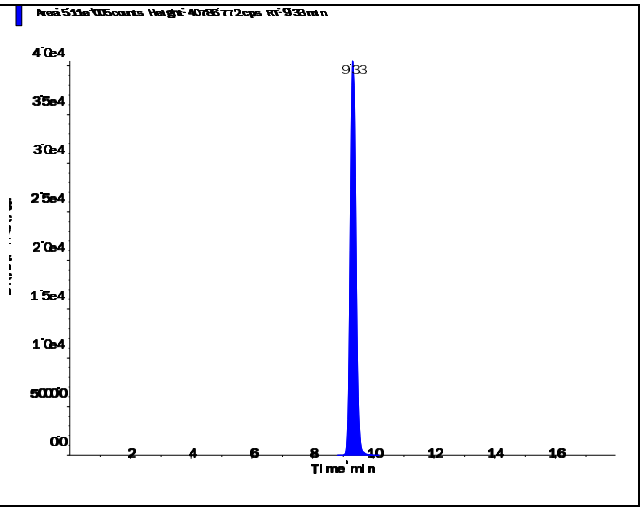

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.34 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.35
Sample Type:	(Quality Control)

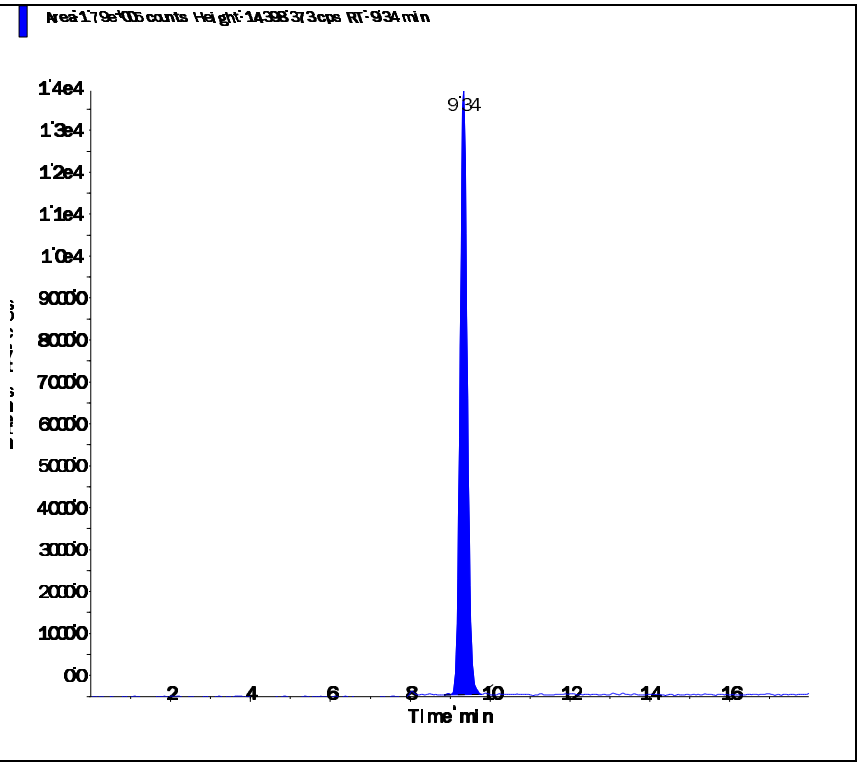

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.32 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.118
Sample Type:	(Quality Control)

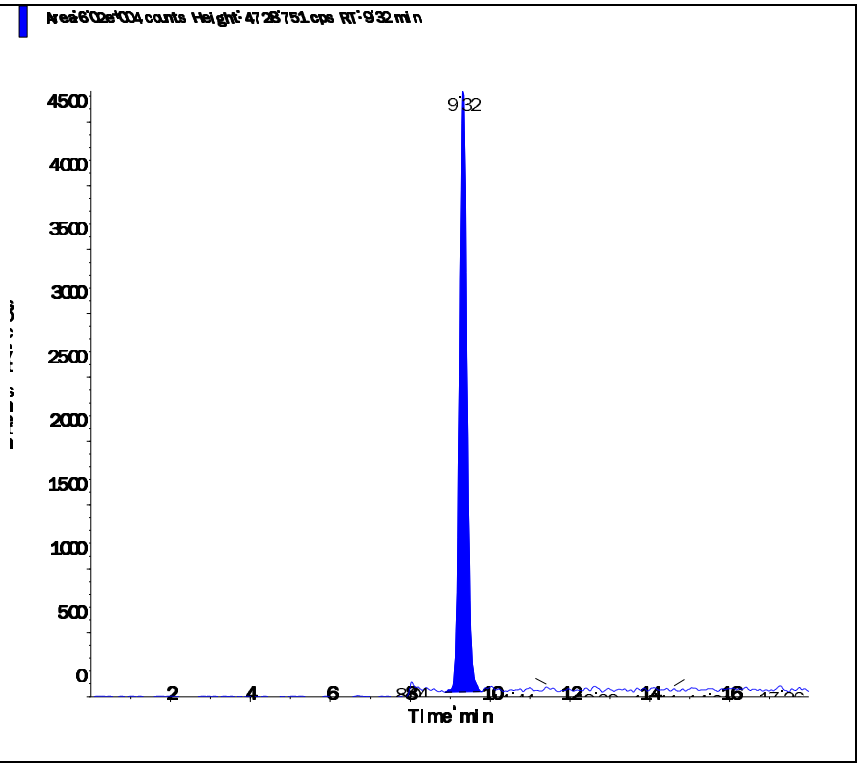

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Data File	LM35495.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:15:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35495.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:15:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.500e+05	9.33	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.890e+05	9.35	1.00	1.02
Perchlorate conf	6.340e+04	9.33	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.33(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

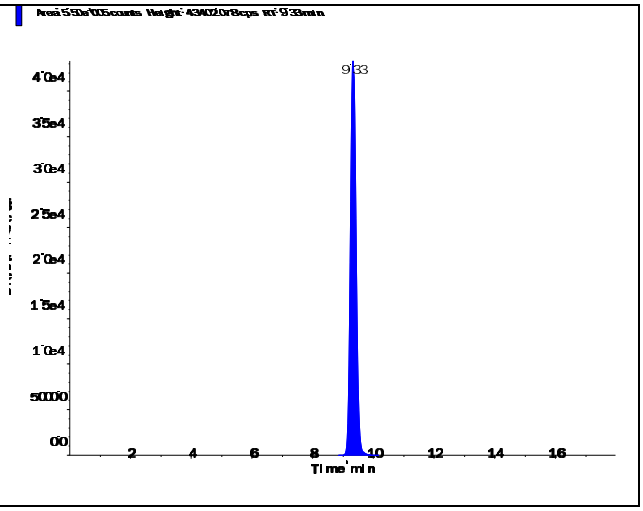

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.345
Sample Type:	(Quality Control)

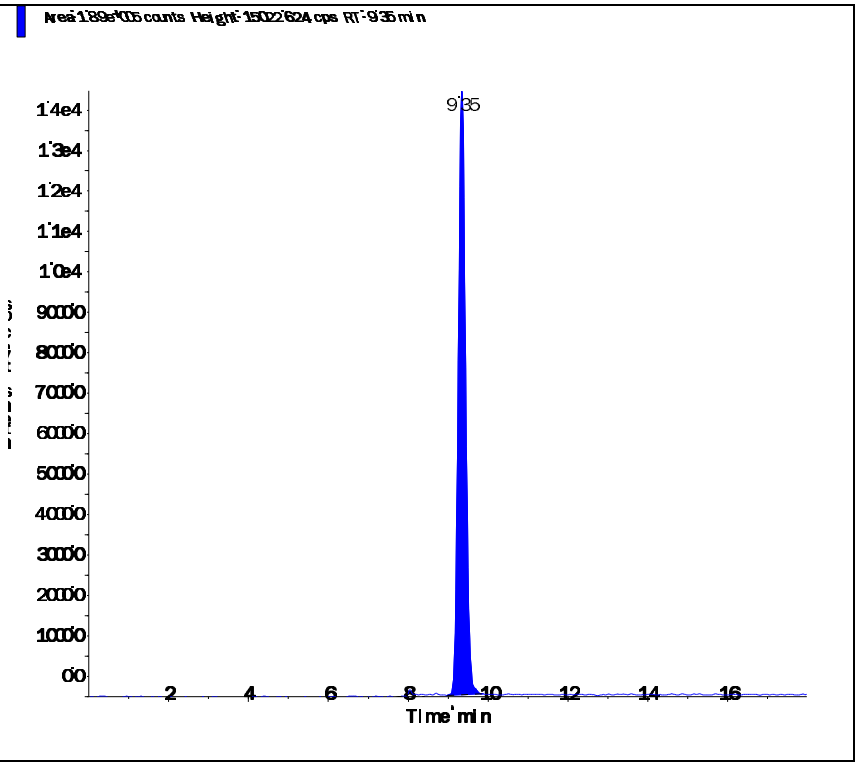

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.33 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.115
Sample Type:	(Quality Control)

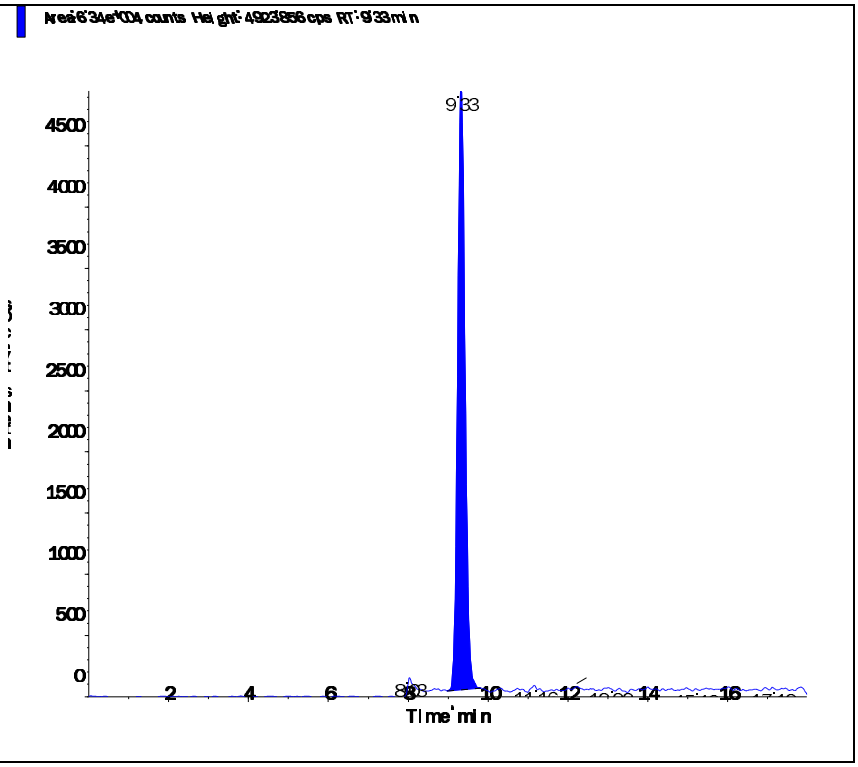

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Data File	LM35498.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:06:10 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35498.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:06:10 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.580e+05	9.34	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.610e+05	9.35	1.00	1.04
Perchlorate conf	5.670e+04	9.34	1.00	1.09

O18LP (Internal Standard)

RT (Exp. RT): 9.34(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

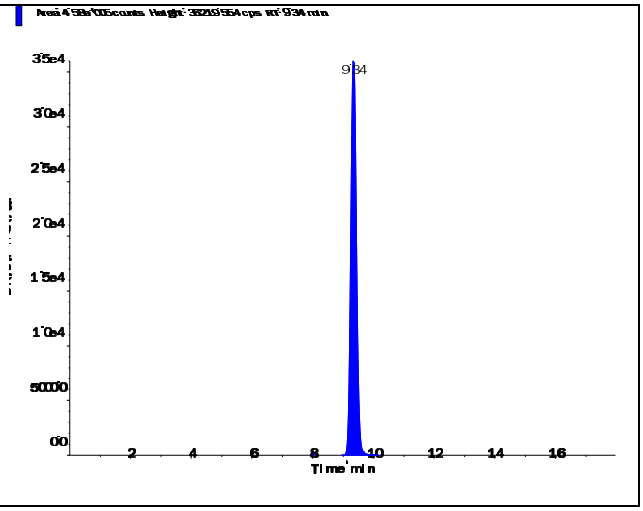

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.353
Sample Type:	(Quality Control)

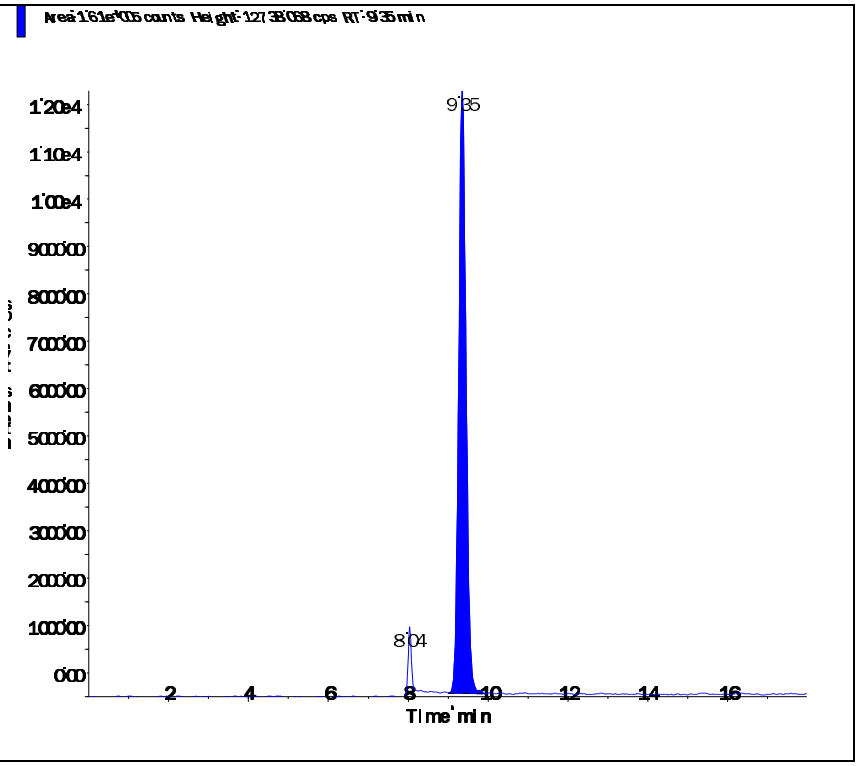

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.34 (9.84) min
Calculated conc:	1.09 ng/ml
Area Ratio:	0.124
Sample Type:	(Quality Control)

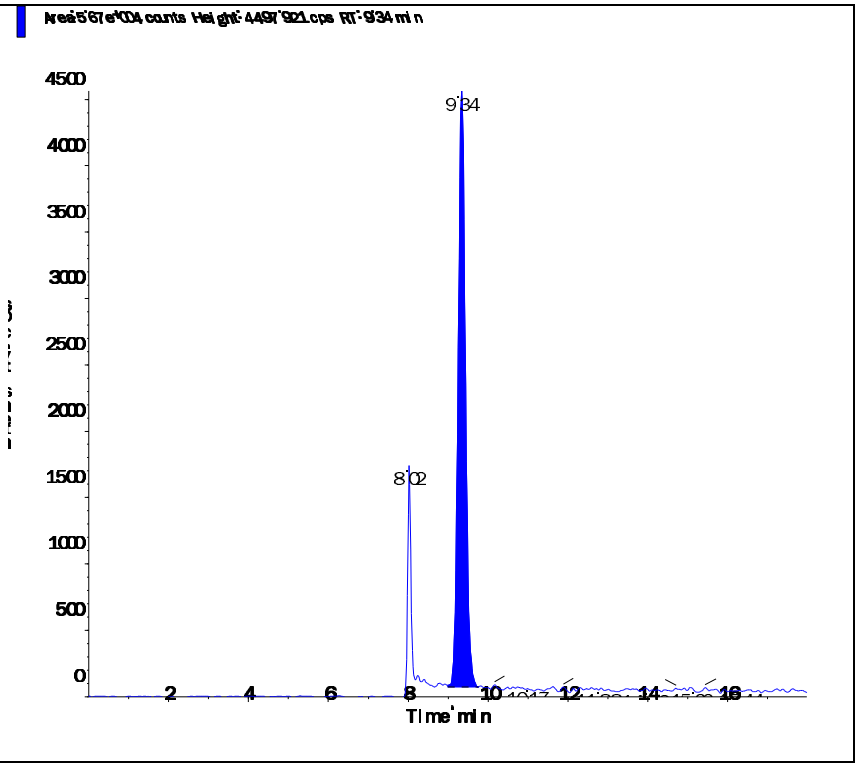

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Data File	LM35508.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 9:15:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-11 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35508.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 9:15:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.090e+05	9.35	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.760e+05	9.36	1.00	1.02
Perchlorate conf	5.930e+04	9.35	1.00	1.02

O18LP (Internal Standard)

RT (Exp. RT): 9.35(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

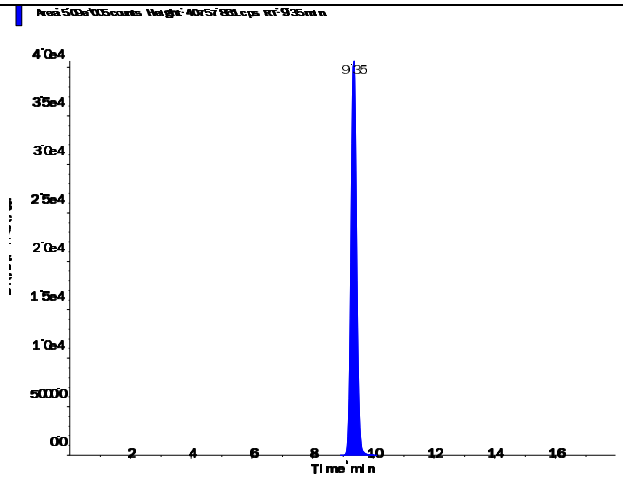

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.36 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.345
Sample Type:	(Quality Control)

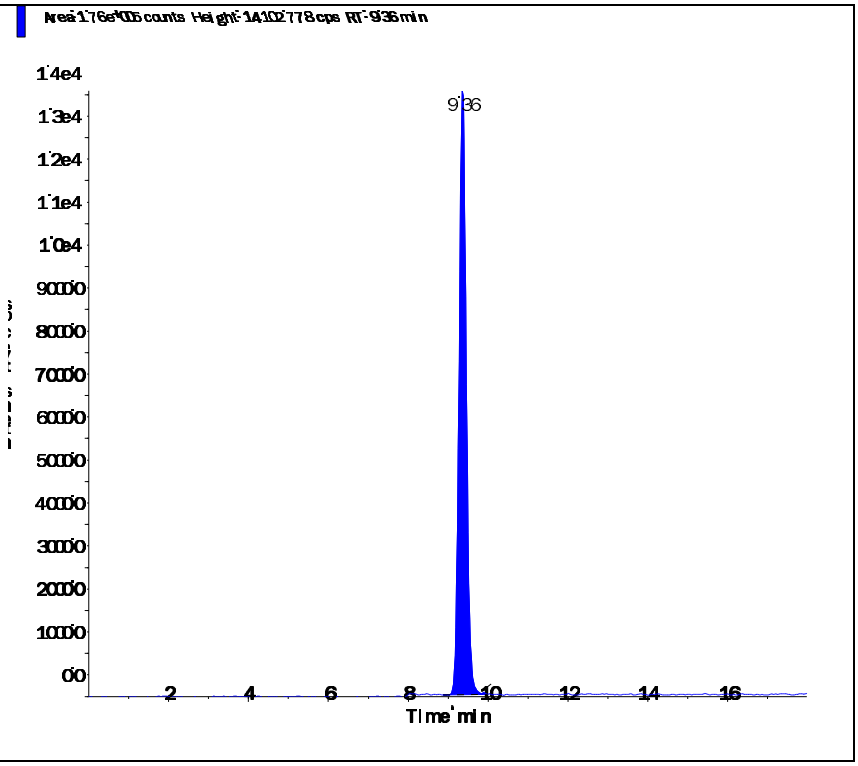

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.117
Sample Type:	(Quality Control)

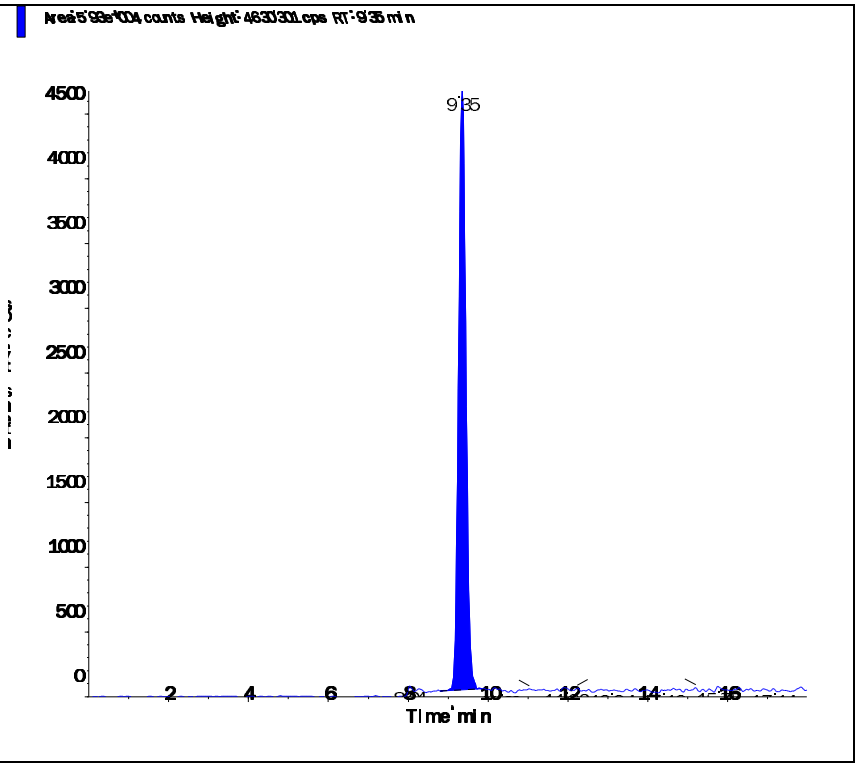

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Printed: 6/27/2016 7:39 PM

Data File	LM35464.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 8:28:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-05 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35464.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 8:28:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.490e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.160e+04	9.40	N/A	0.206
Perchlorate conf	1.210e+04	9.37	N/A	0.222

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

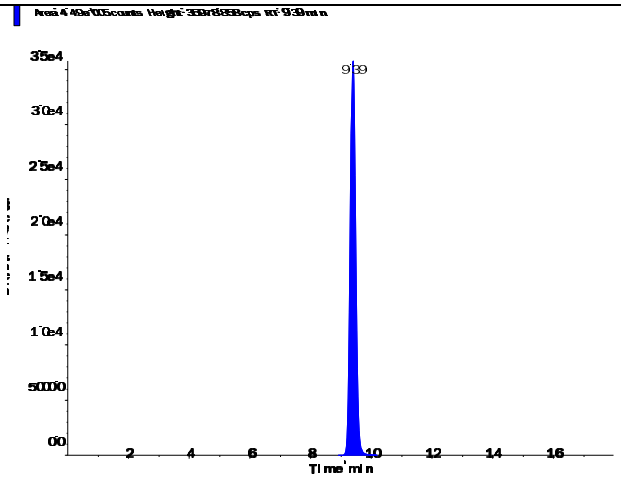

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

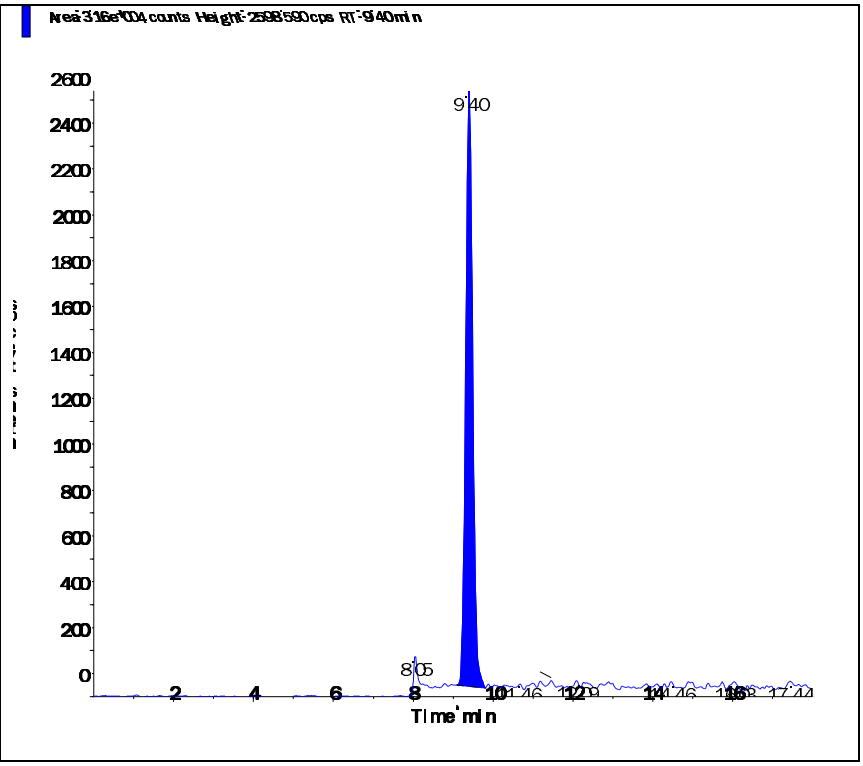

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.37 (9.84) min
Calculated conc:	0.222 ng/ml
Area Ratio:	0.027
Sample Type:	(Unknown)

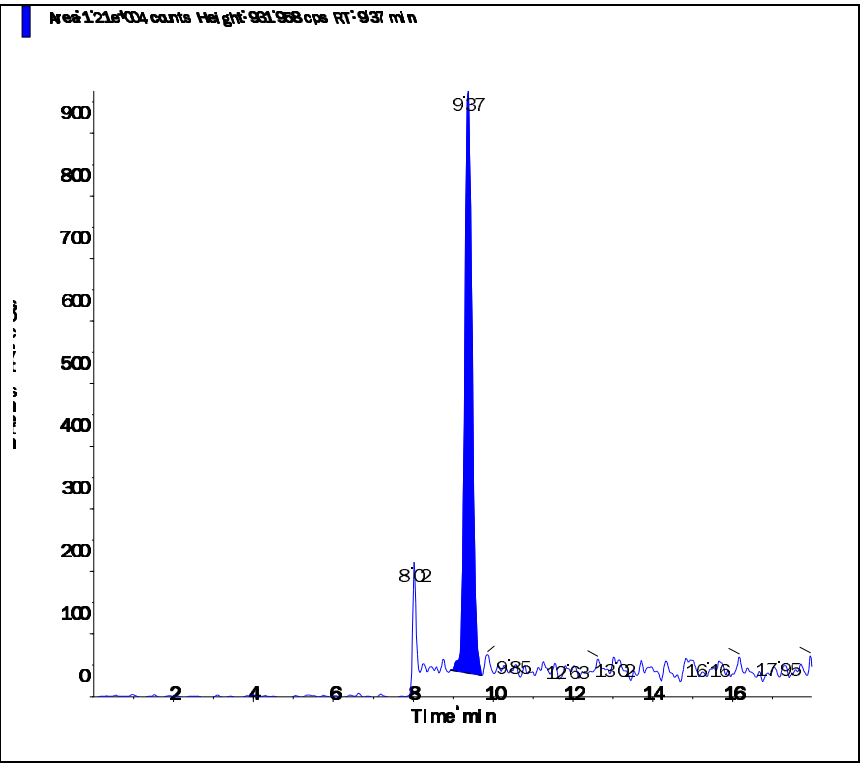

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Data File	LM35476.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 12:15:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-06 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35476.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 12:15:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.160e+05	9.36	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.500e+04	9.37	N/A	0.198
Perchlorate conf	1.310e+04	9.35	N/A	0.207

O18LP (Internal Standard)

RT (Exp. RT): 9.36(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

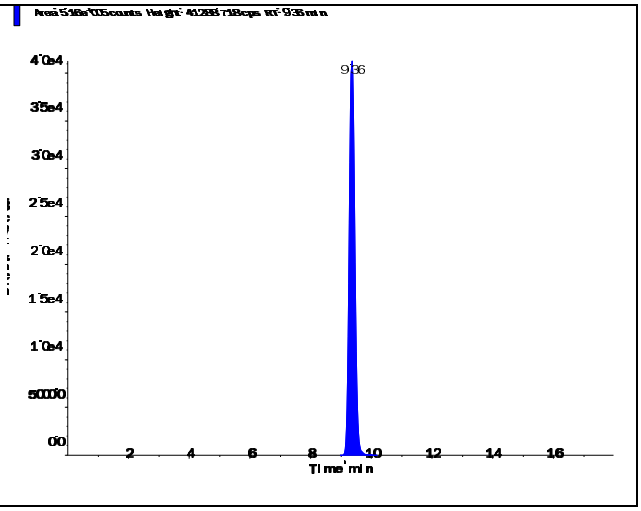

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.37 (9.84) min
Calculated conc:	0.198 ng/ml
Area Ratio:	0.068
Sample Type:	(Unknown)

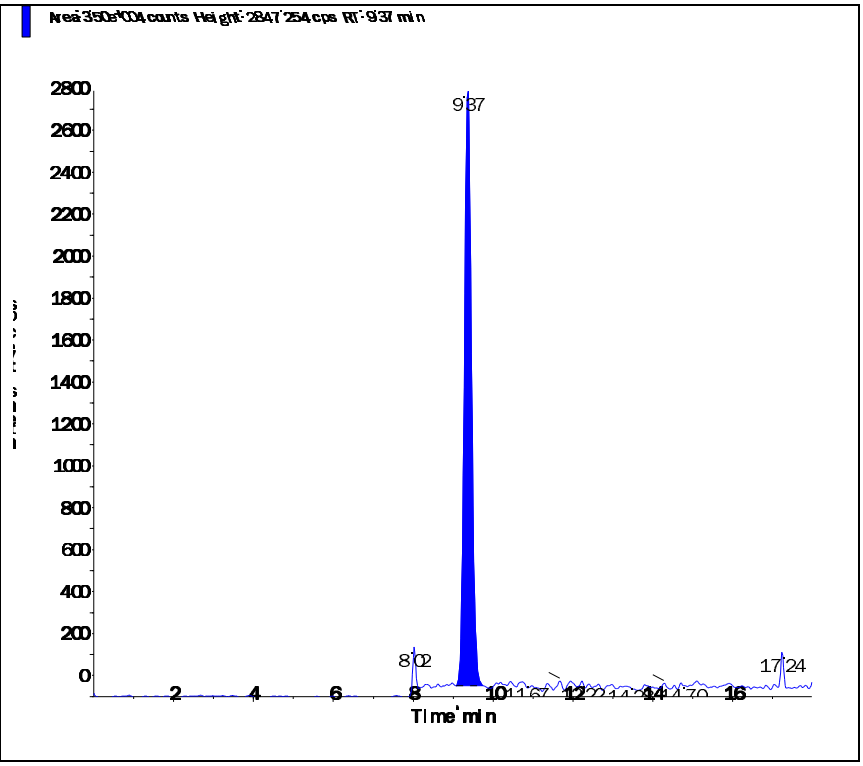

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

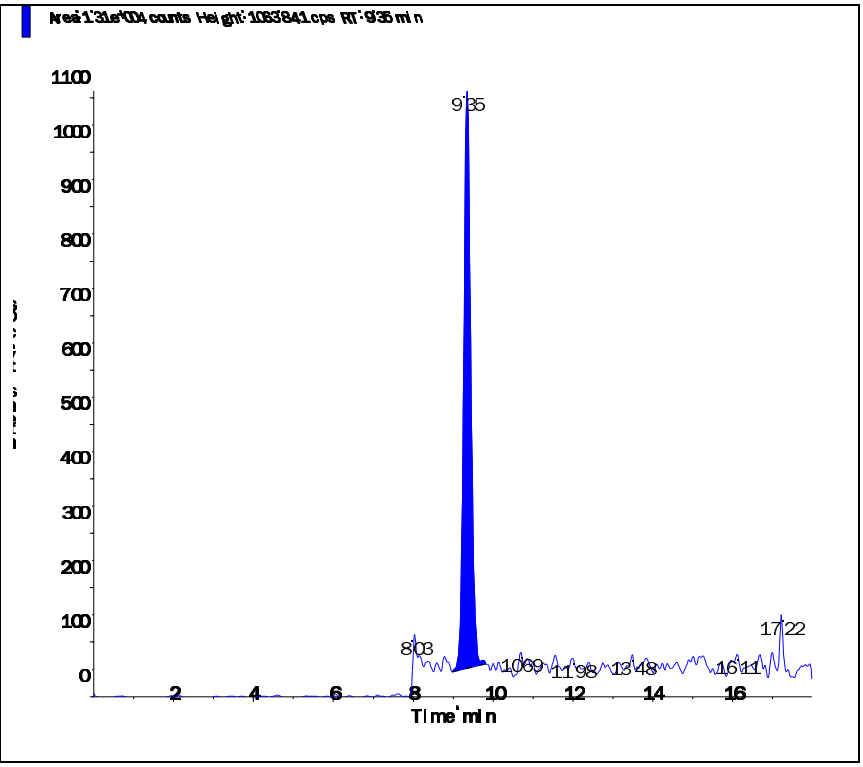

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Data File	LM35489.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 4:22:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35489.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 4:22:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.380e+05	9.37	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.890e+04	9.39	N/A	0.211
Perchlorate conf	1.340e+04	9.38	N/A	0.202

O18LP (Internal Standard)

RT (Exp. RT): 9.37(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

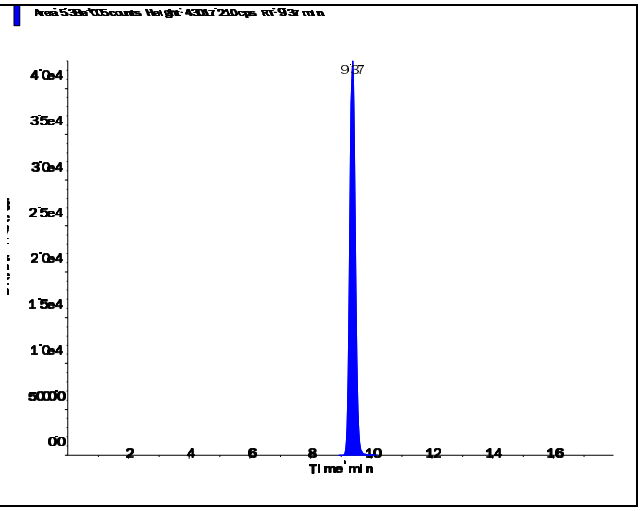

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	0.211 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

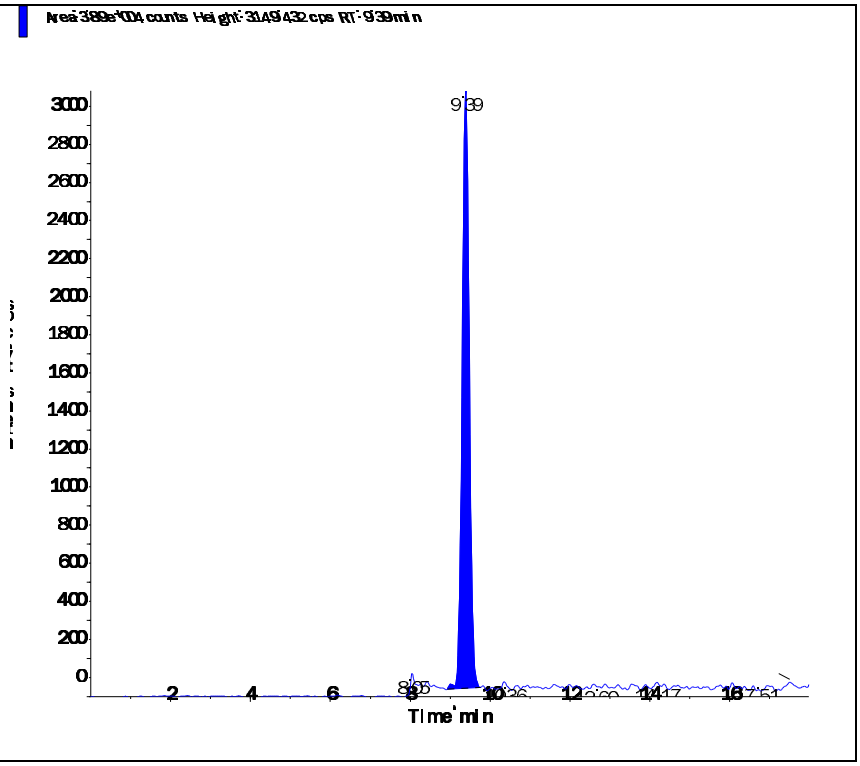

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	0.202 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

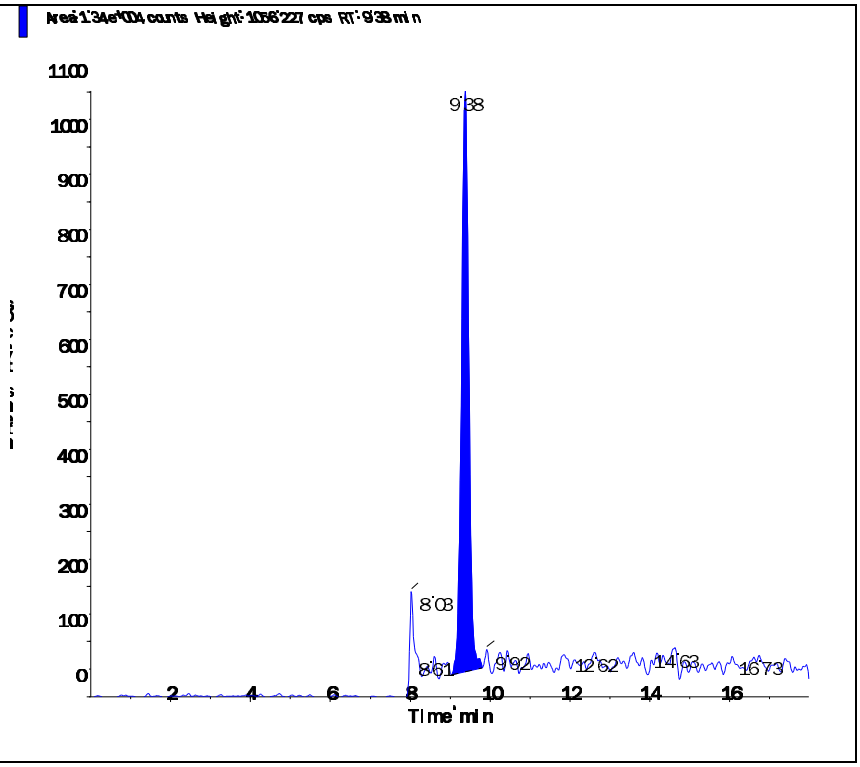

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Printed: 6/27/2016 7:50 PM

Data File	LM35496.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:34:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-08 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35496.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:34:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.520e+05	9.38	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.800e+04	9.39	N/A	0.201
Perchlorate conf	1.410e+04	9.38	N/A	0.208

O18LP (Internal Standard)

RT (Exp. RT): 9.38(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

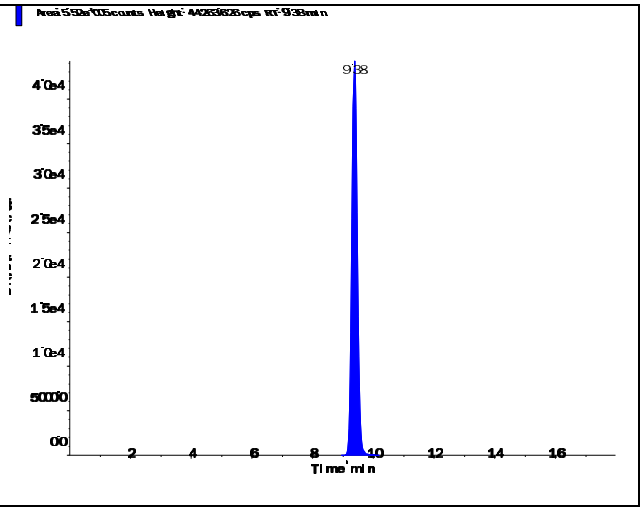

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

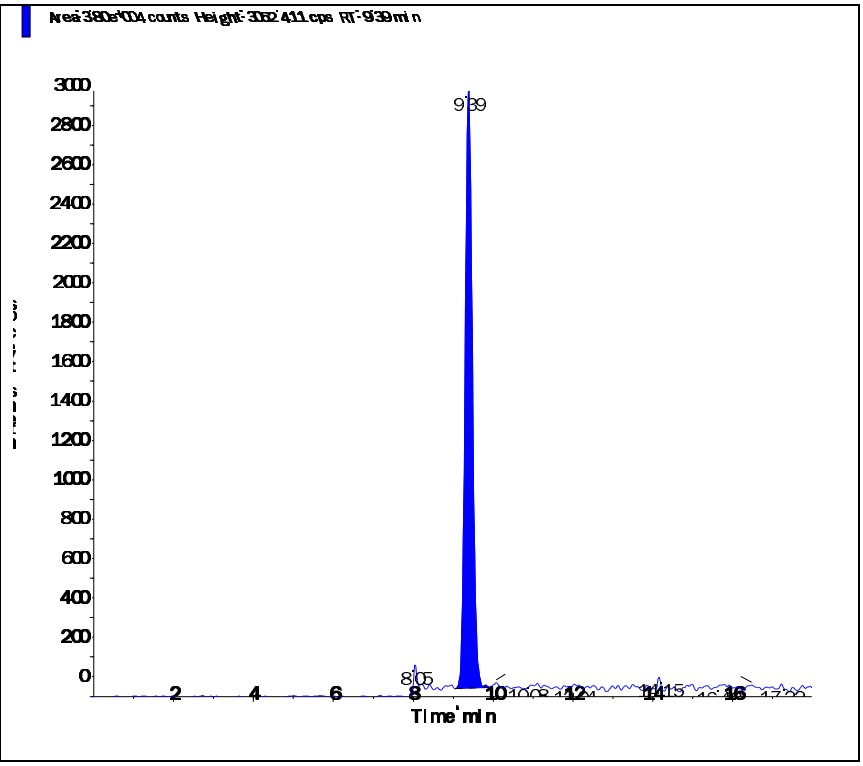

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	0.208 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

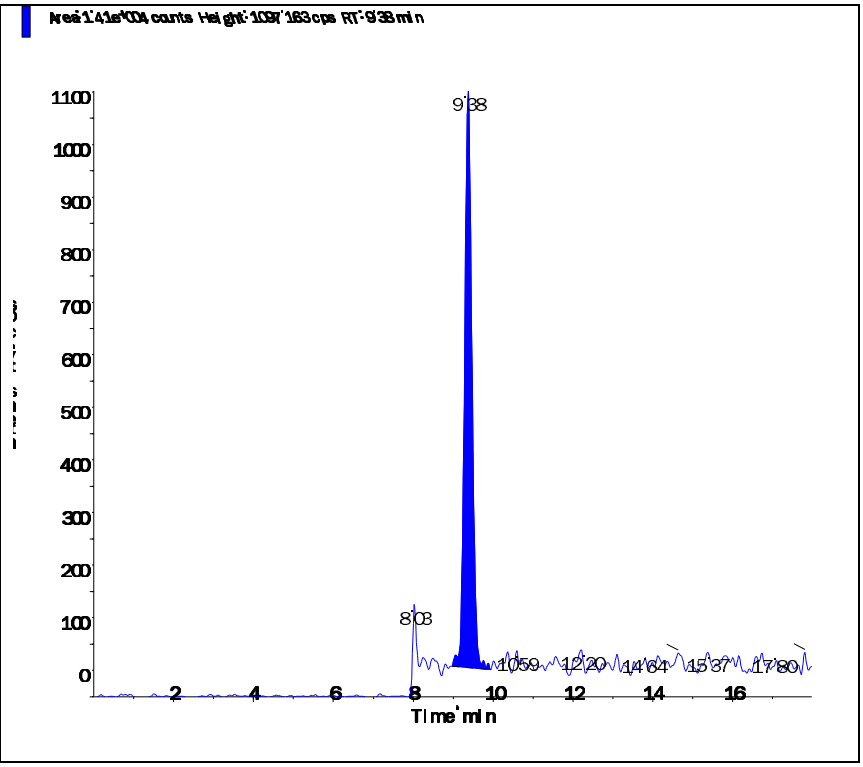

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Data File	LM35499.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:25:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-09 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35499.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:25:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.640e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.290e+04	9.40	N/A	0.207
Perchlorate conf	1.150e+04	9.38	N/A	0.201

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

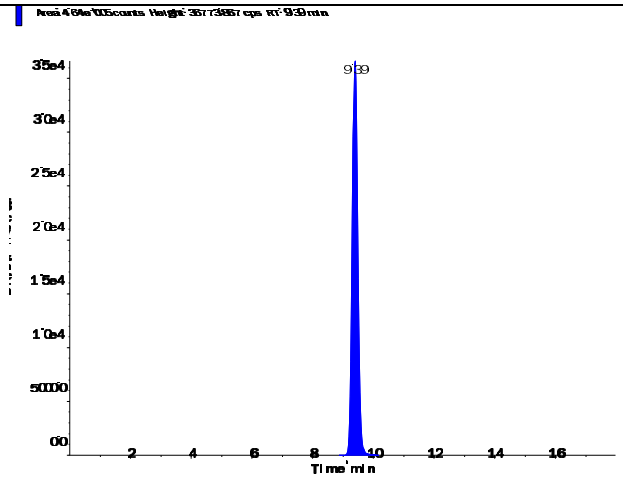

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

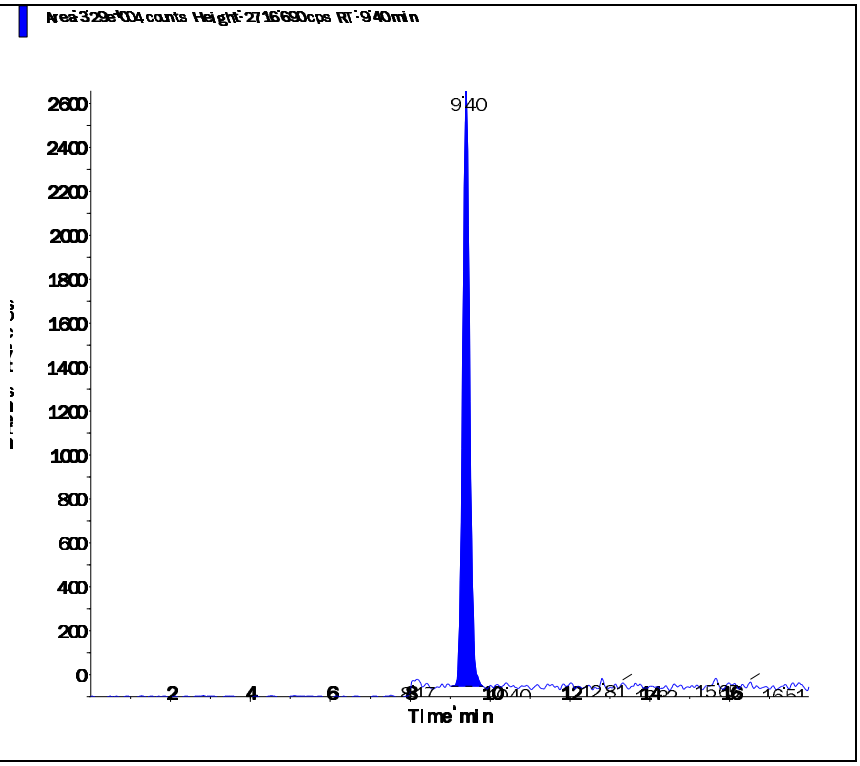

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

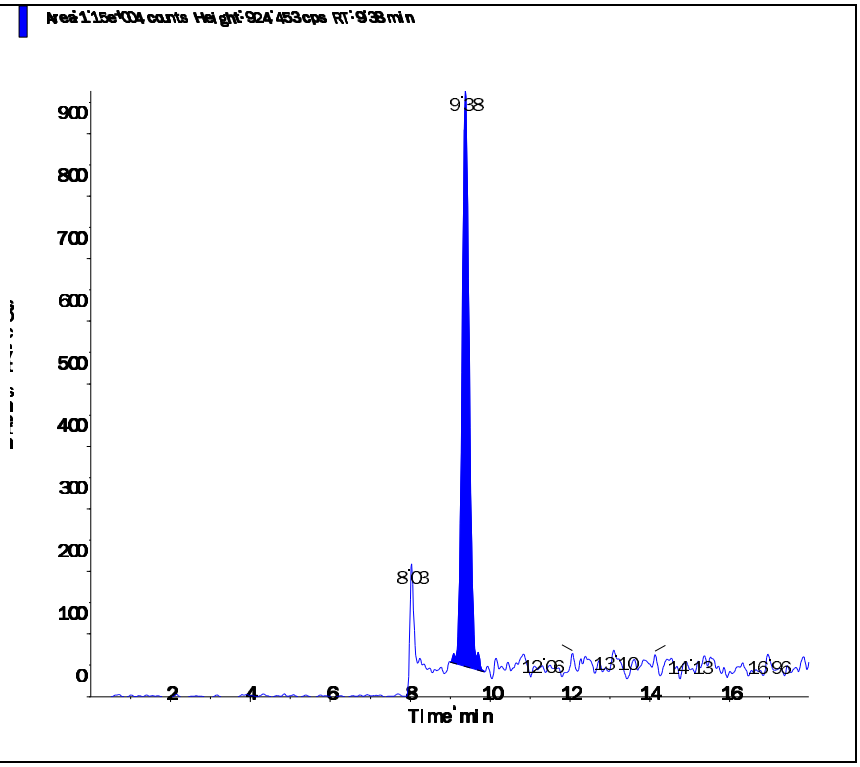

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Data File	LM35509.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 9:34:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-10 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35509.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 9:34:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-10	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.370e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.790e+04	9.40	N/A	0.206
Perchlorate conf	1.400e+04	9.39	N/A	0.214

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

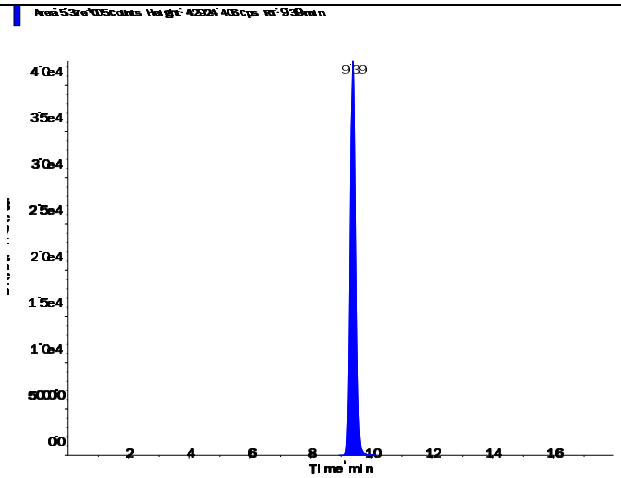

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

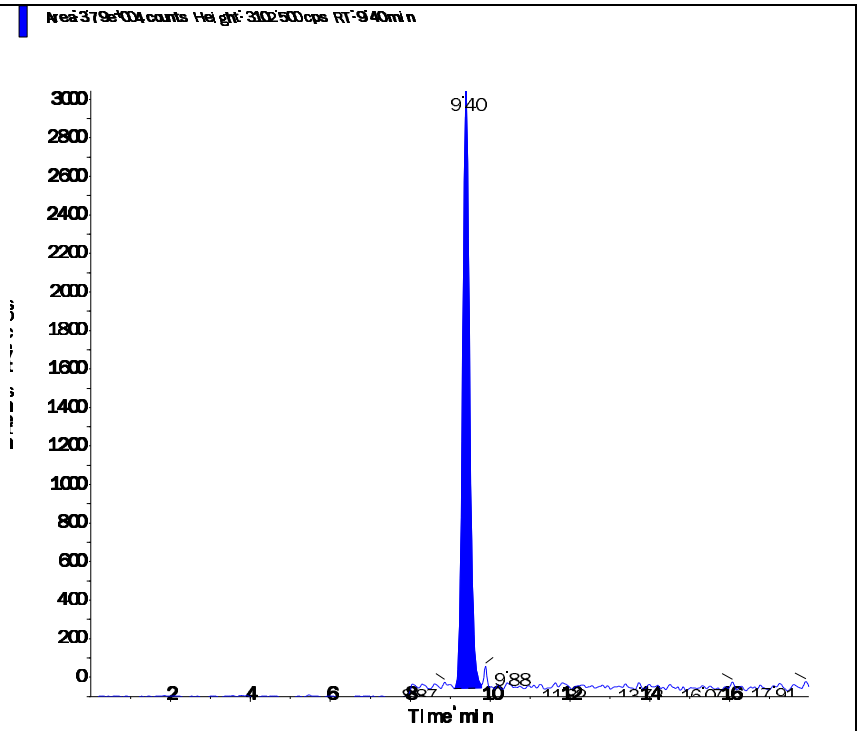

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	0.214 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

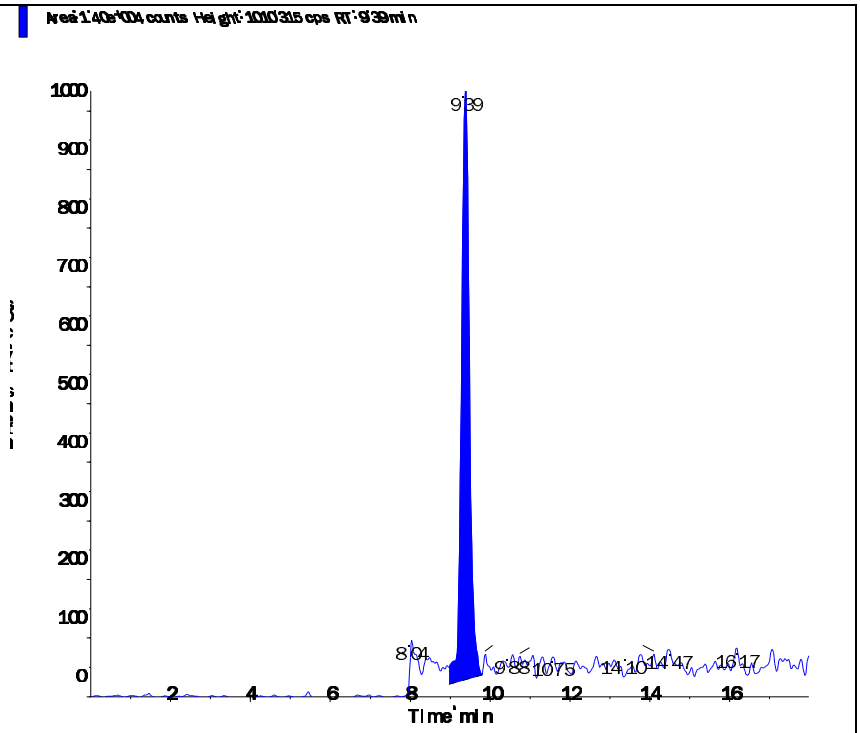

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Data File	LM35462.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 7:50:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-01 CCB	**Injection Vial**	1.00
Data File	LM35462.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 7:50:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.420e+05	9.58	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.58(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

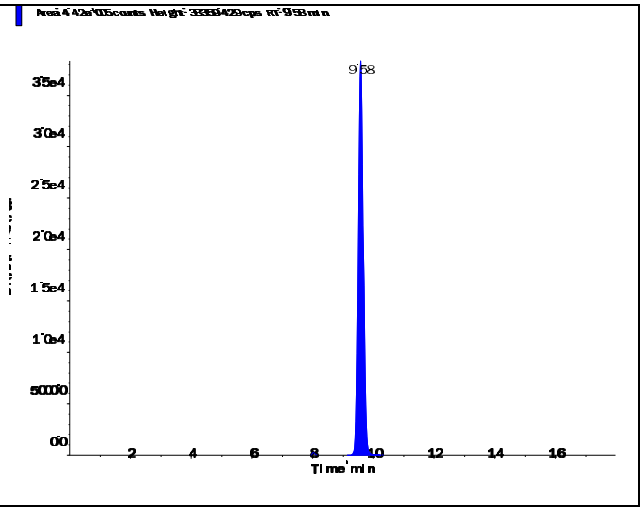

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	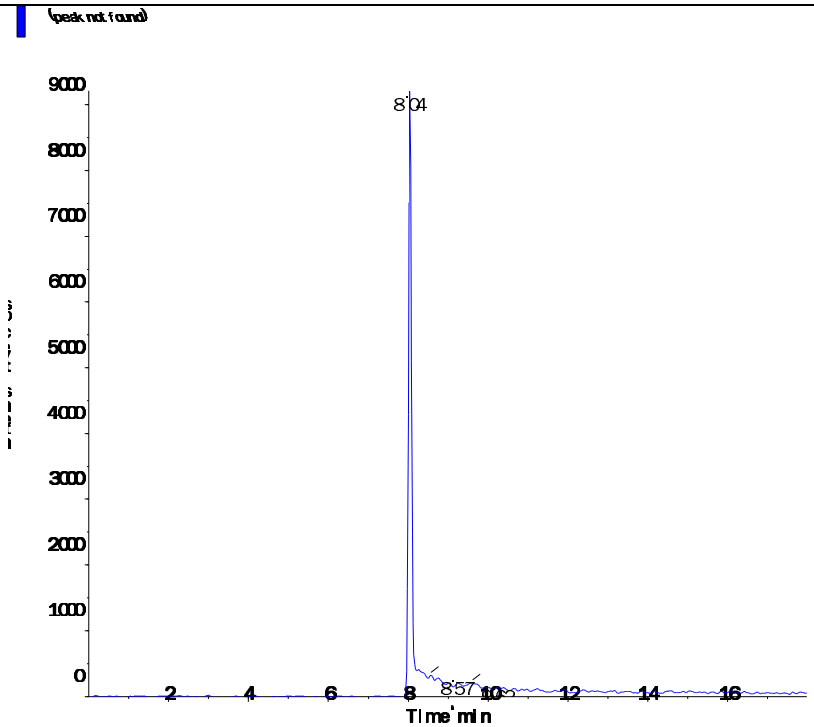
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	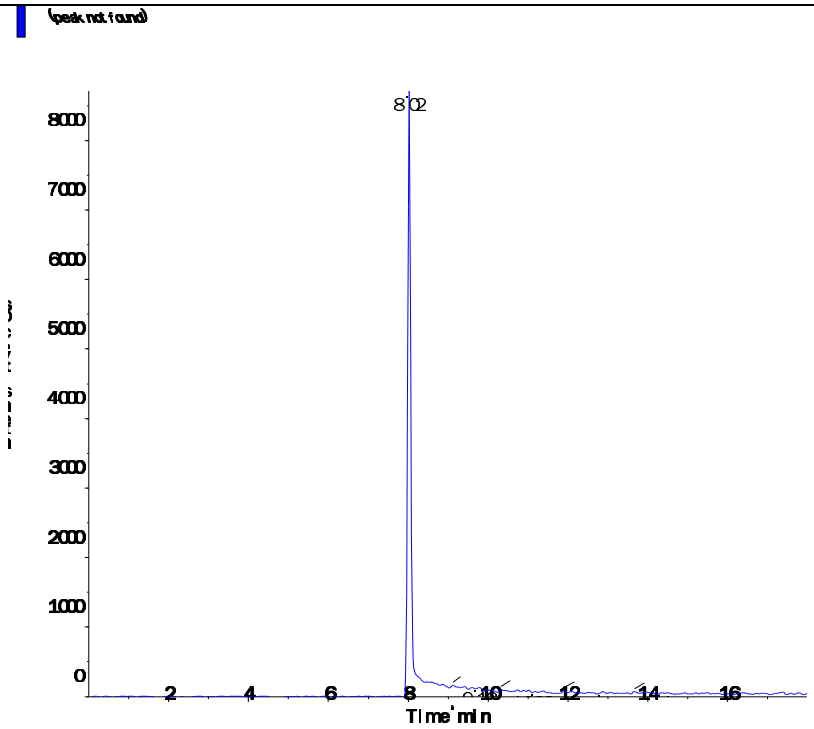

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Data File	LM35477.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 12:34:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-04 CCB	**Injection Vial**	1.00
Data File	LM35477.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 12:34:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.240e+05	9.57	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	8.240e+02	9.53	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.57(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

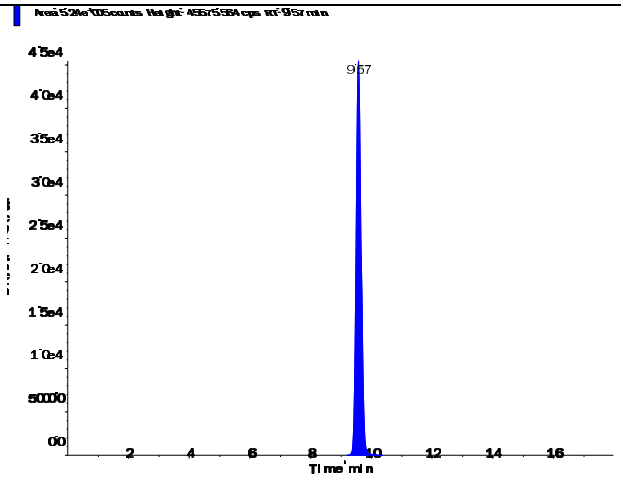

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

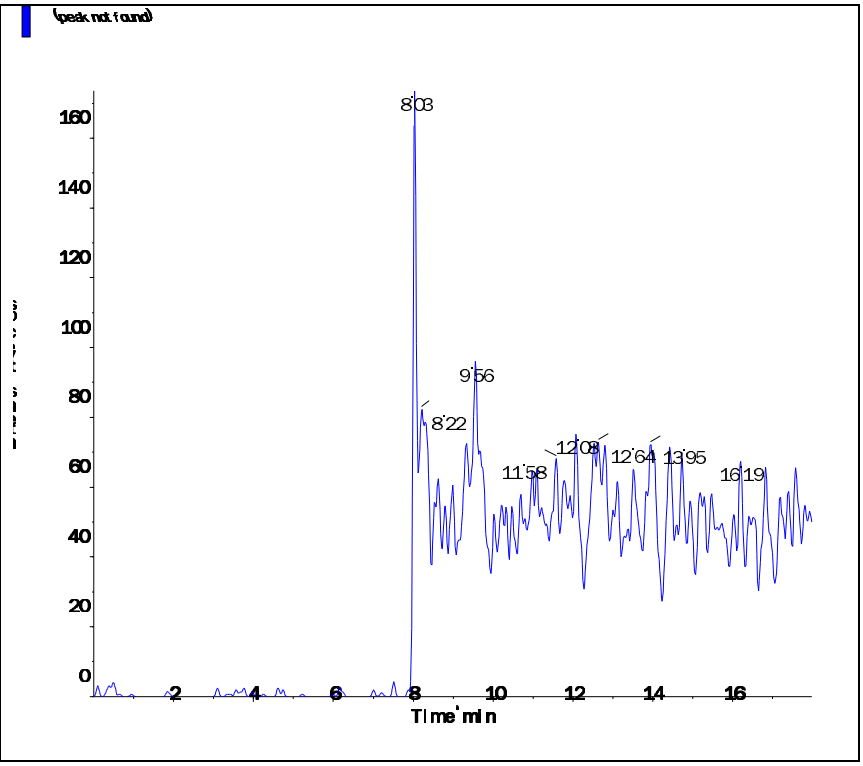

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.53 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

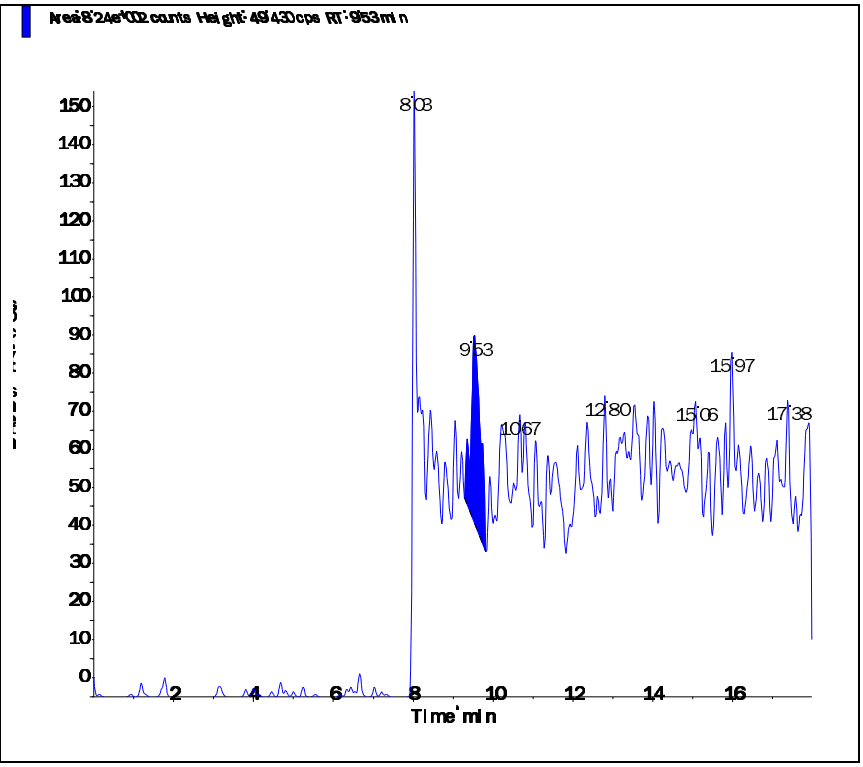

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Data File	LM35490.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 4:40:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-06 CCB	**Injection Vial**	1.00
Data File	LM35490.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 4:40:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.420e+05	9.59	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.59(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

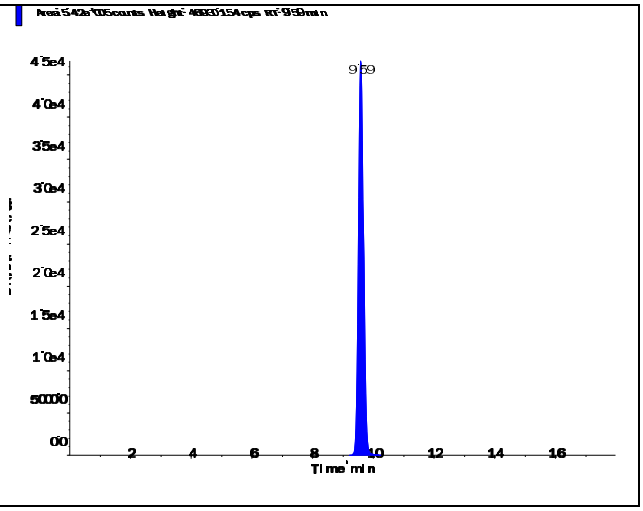

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

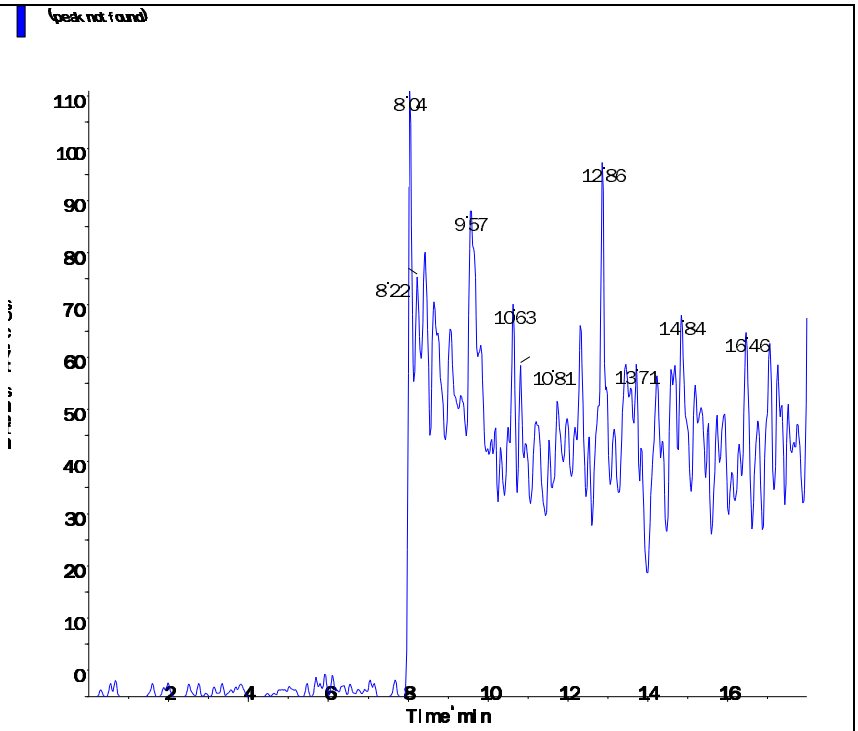

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

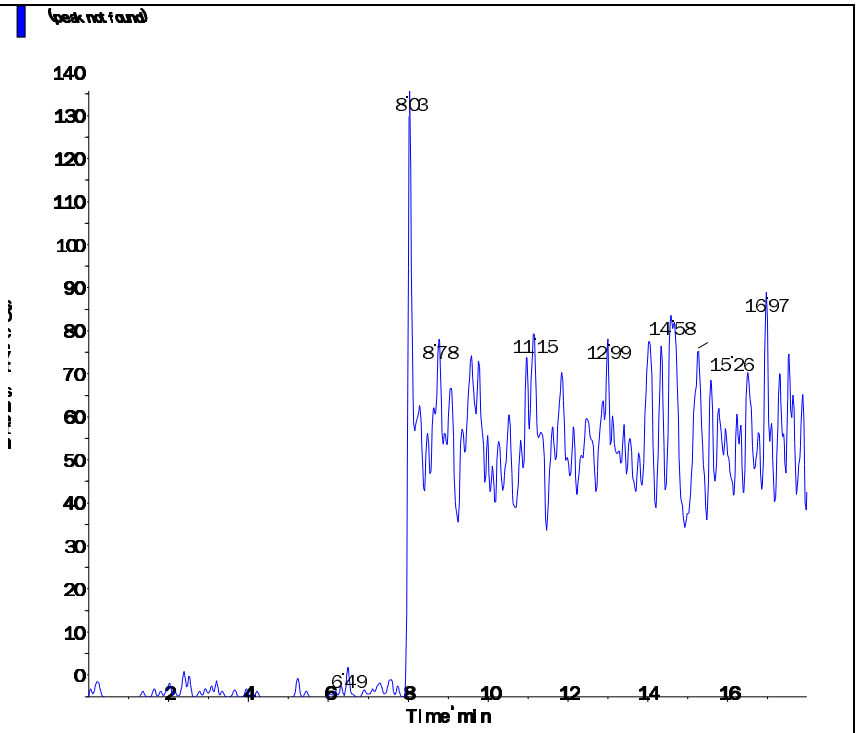

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Data File	LM35497.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:53:28 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-08 CCB	**Injection Vial**	1.00
Data File	LM35497.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:53:28 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.550e+05	9.59	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	5.180e+02	9.63	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.59(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

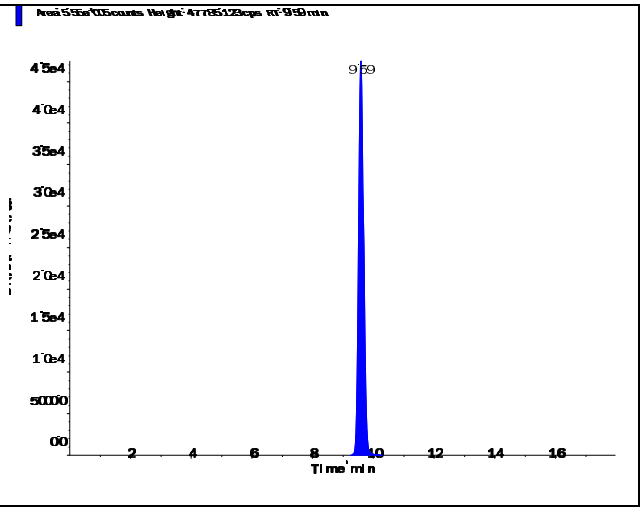

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	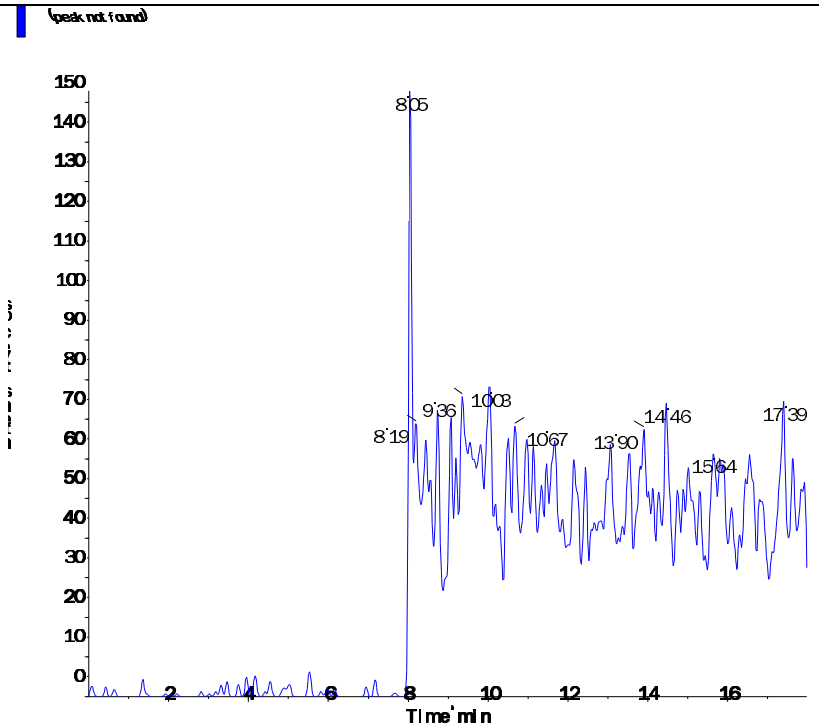
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.63 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	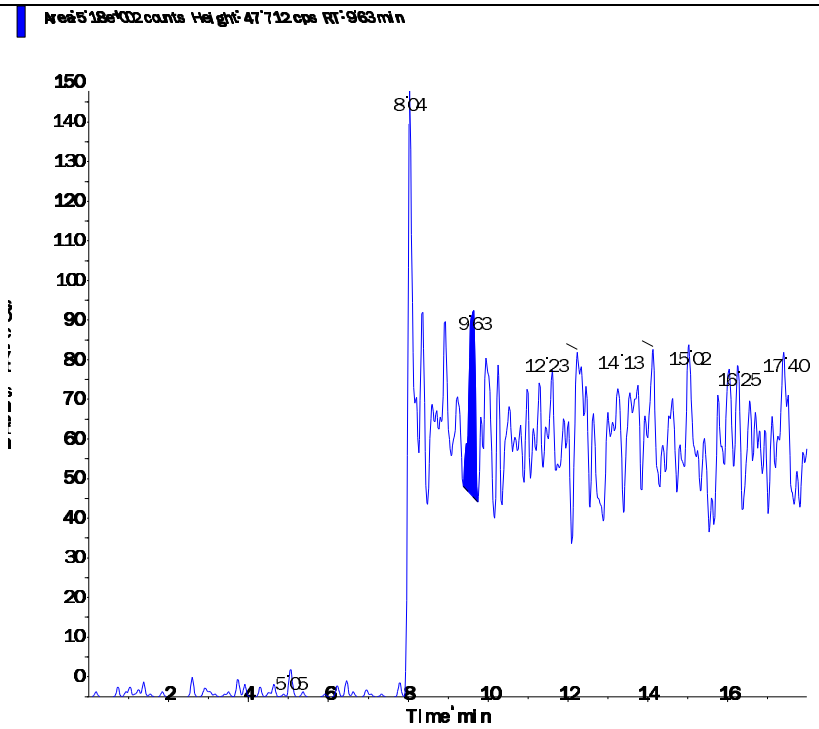

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Data File	LM35500.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:44:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-10 CCB	**Injection Vial**	1.00
Data File	LM35500.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:44:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.840e+05	9.61	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.61(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

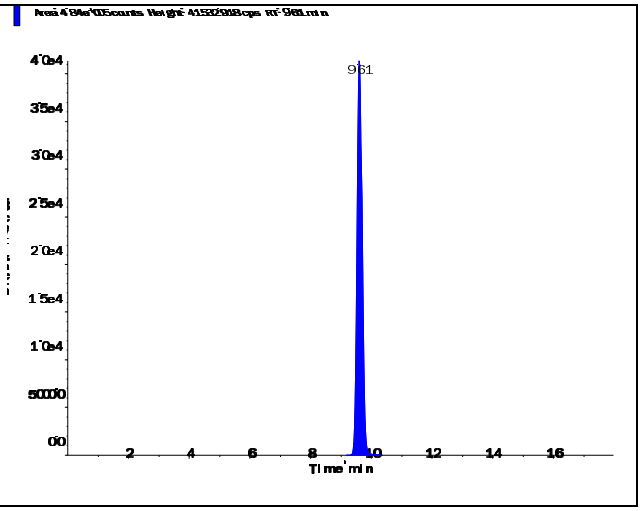

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	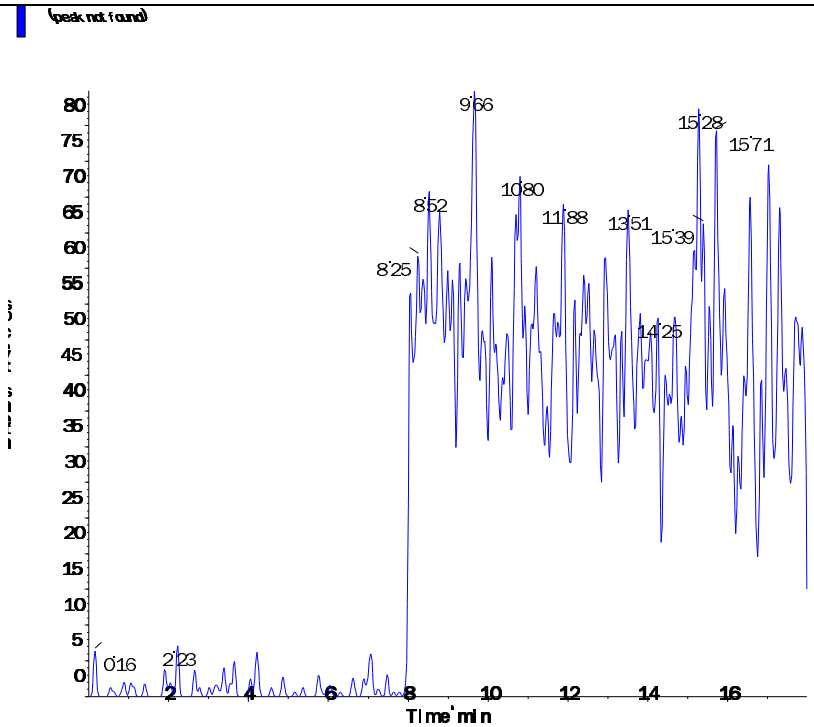
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	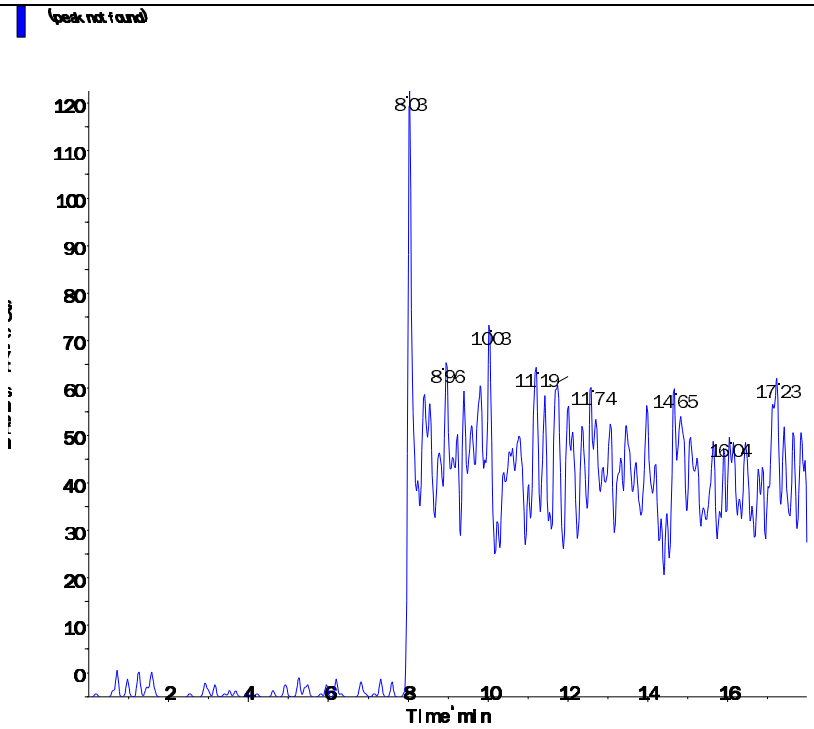

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Printed: 6/27/2016 7:56 PM

Data File	LM35510.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 9:53:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-12 CCB	**Injection Vial**	1.00
Data File	LM35510.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 9:53:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-12	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.380e+05	9.61	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.61(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

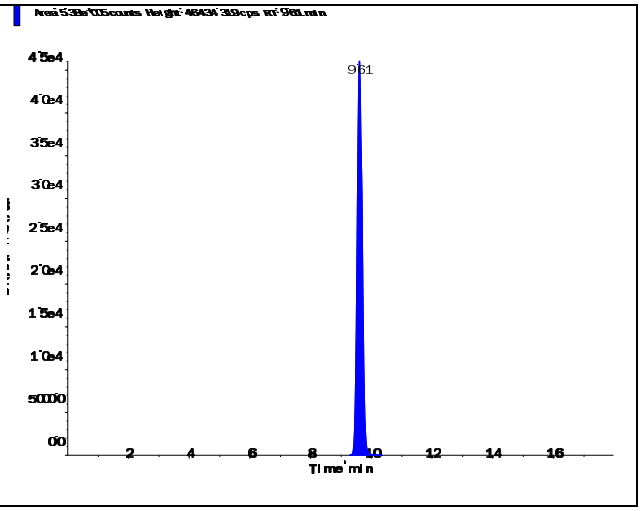

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

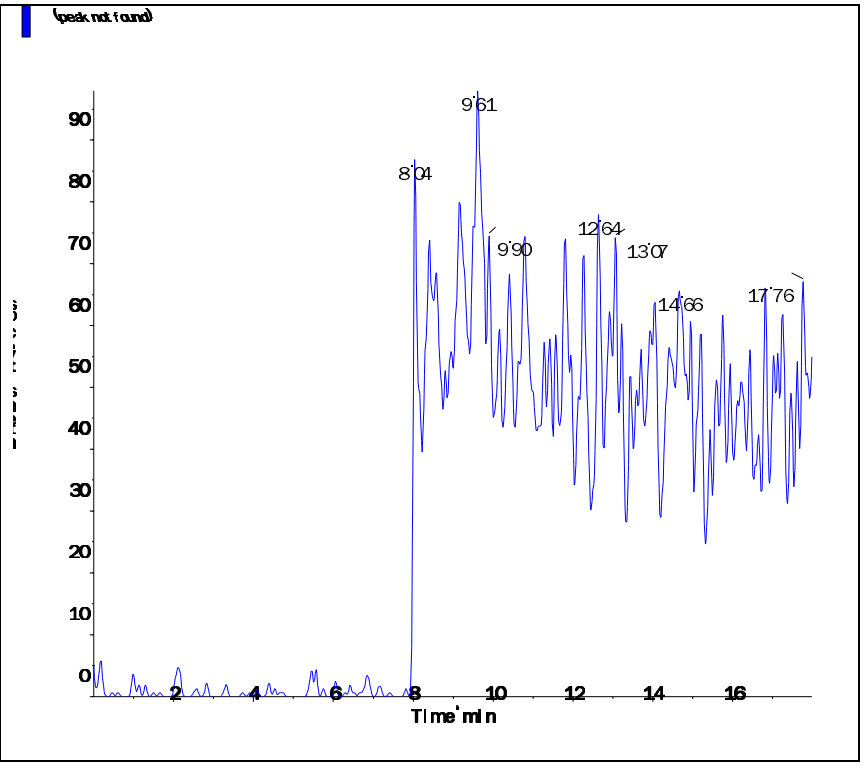

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

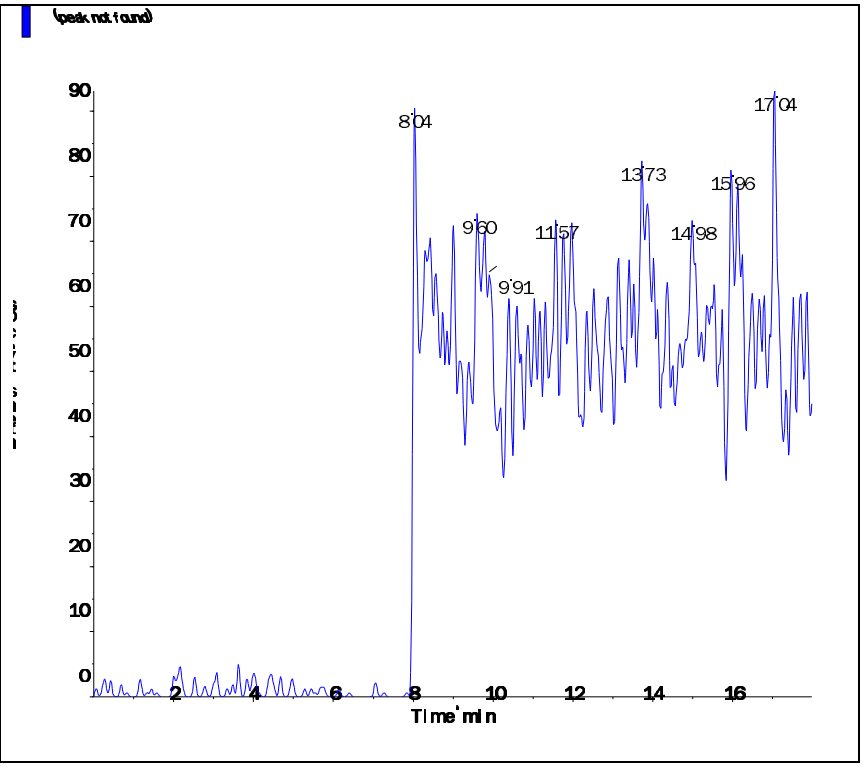

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Data File	LM35465.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 8:47:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM35465.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 8:47:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.320e+05	8.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.810e+04	8.97	N/A	0.19
Perchlorate conf	1.000e+04	8.95	N/A	0.188

O18LP (Internal Standard)

RT (Exp. RT): 8.95(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

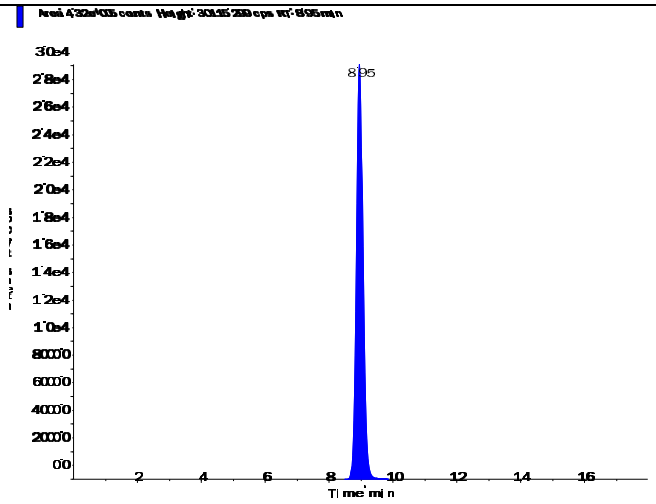

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Printed: 6/27/2016 7:39 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	8.97 (9.84) min
Calculated conc:	0.19 ng/ml
Area Ratio:	0.065
Sample Type:	(Unknown)

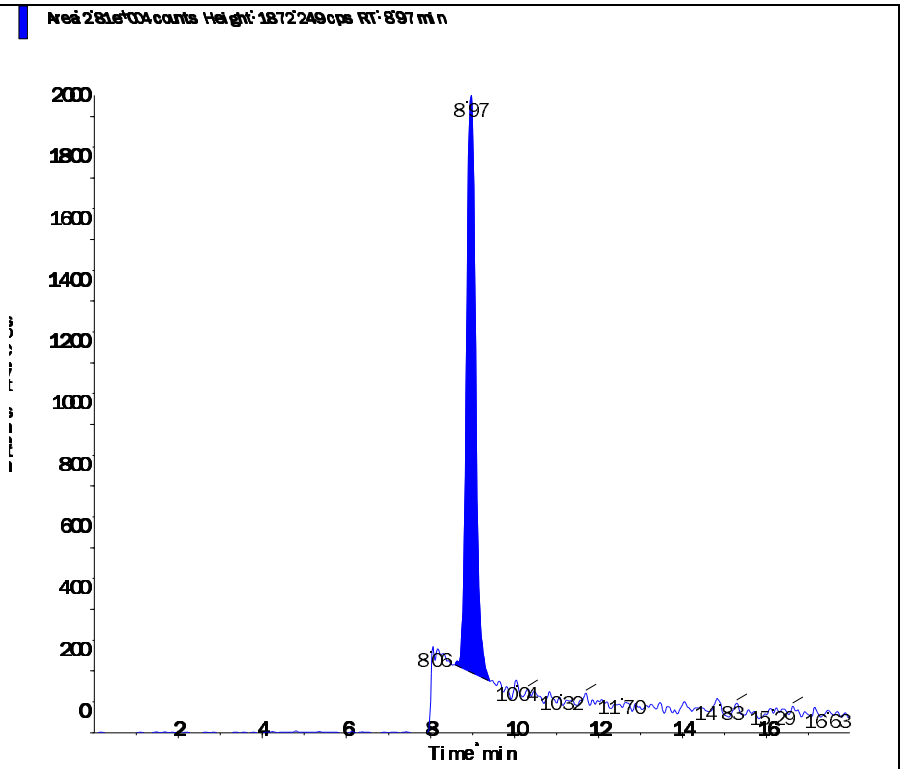

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	8.95 (9.84) min
Calculated conc:	0.188 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

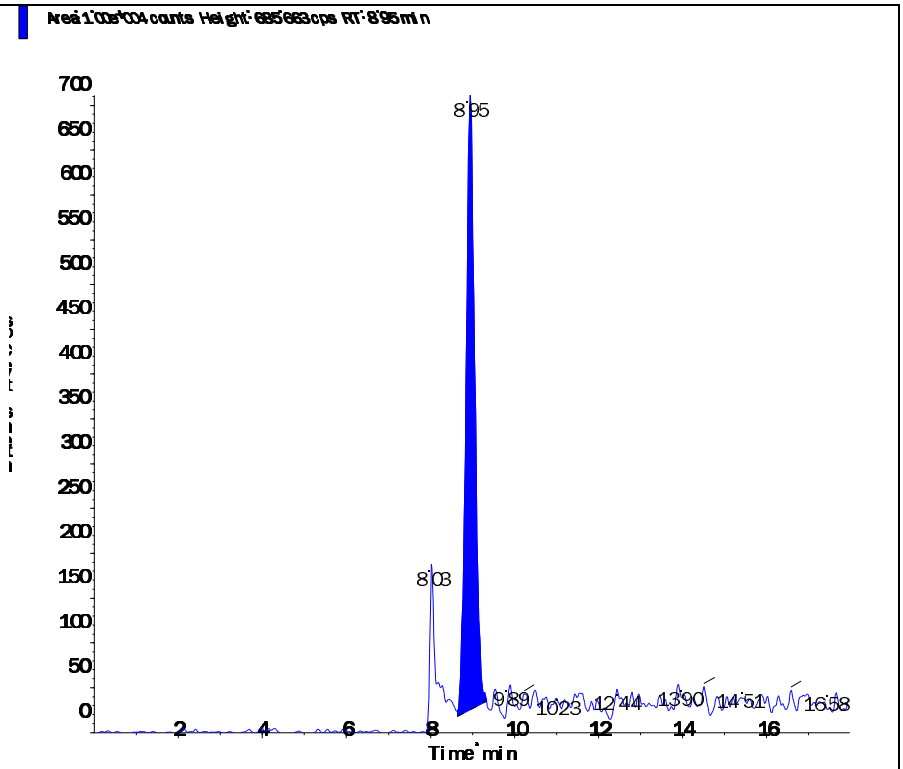

Printing Time: 4:34:28 PM
Printing Date: Saturday, June 25, 2016

Sample Name: "WG574101-01 MCT (0.2ug/L)" Sample ID: "WG574101-01" File: "LM35465.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.219 ug/L
Acq. Date:	6/24/2016
Acq. Time:	8:47:28 PM
Modified:	No
Proc. Algorithm:	Analyst Classic
Bunching Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Exp. Width:	0.20
Sep. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Valley
Retention Time:	8.97 min
Area:	3.23e+004 counts
Height:	1951.523 cps
Start Time:	8.526 min
End Time:	9.417 min

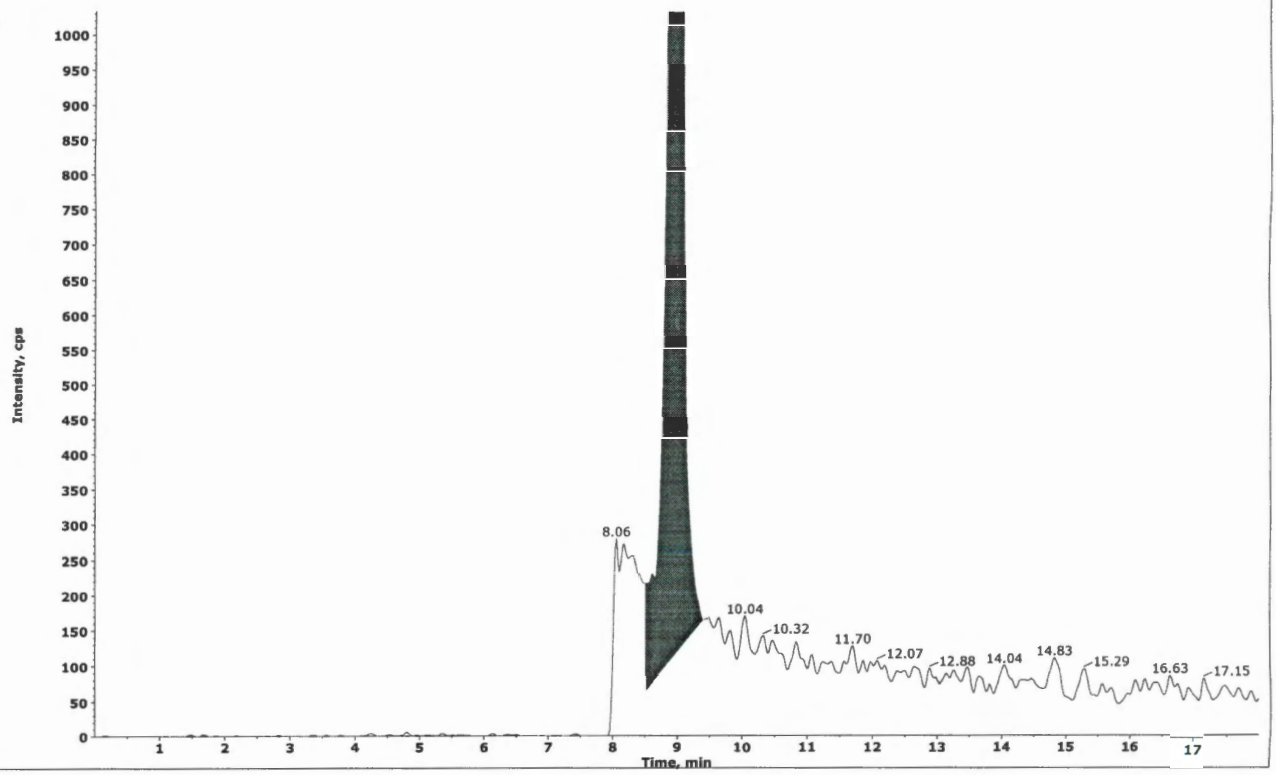

Collected by: N/A
Electronic Signature: no
Operator: lcmsl

Printing Time: 4:36:56 PM
Printing Date: Saturday, June 25, 2016

Sample Name: "WG574101-01 MCT (0.2ug/L)" Sample ID: "WG574101-01" File: "LM35465.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index: 1
Sample Type: Unknown
Concentration: N/A
Calculated Conc: 0.190 ug/L
Acq. Date: 6/24/2016
Acq. Time: 8:47:28 PM

Modified: Yes
Proc. Algorithm: Analyst Classic
Smoothing Factor: 2
Noise Threshold: 18.48 cps
Area Threshold: 92.40 cps
Num. Smooths: 5
Sep. Width: 0.20
Sep. Height: 0.01
Exp. Peak Ratio: 5.00
Exp. Adj. Ratio: 4.00
Exp. Val. Ratio: 3.00
RT Window: 30.000 sec
Expected RT: 9.84 min
Use Relative RT: Yes

Int. Type: Manual
Retention Time: 8.97 min
Area: 2.81e+004 counts
Height: 1872.249 cps
Start Time: 8.587 min
End Time: 9.417 min

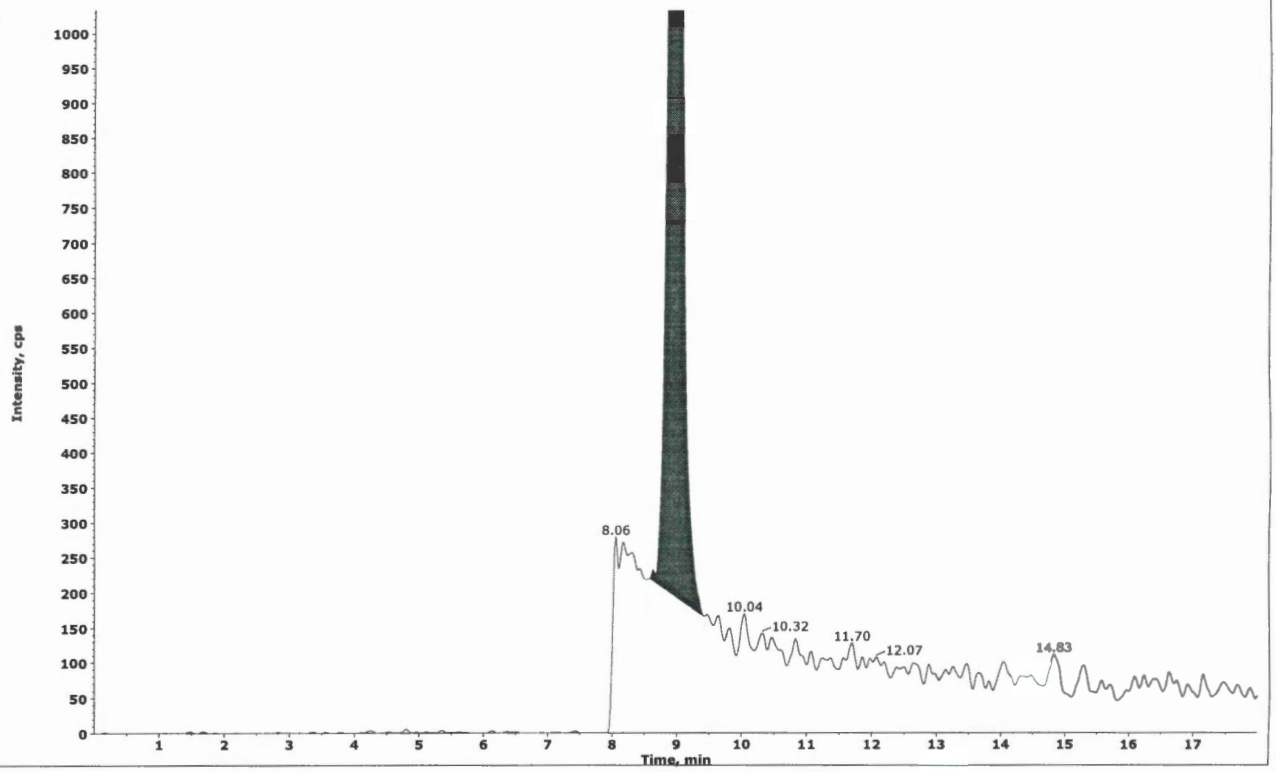

#4
JWR 06/25/16

✓ WTD
06-28-16

Collected by: N/A
Electronic Signature: no
Operator: lcms1

2.2.2.5 Raw QC Data

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Printed: 6/27/2016 7:40 PM

Data File	LM35466.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 9:06:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-02 BLANK	**Injection Vial**	5.00
Data File	LM35466.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 9:06:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.430e+05	9.50	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.50(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

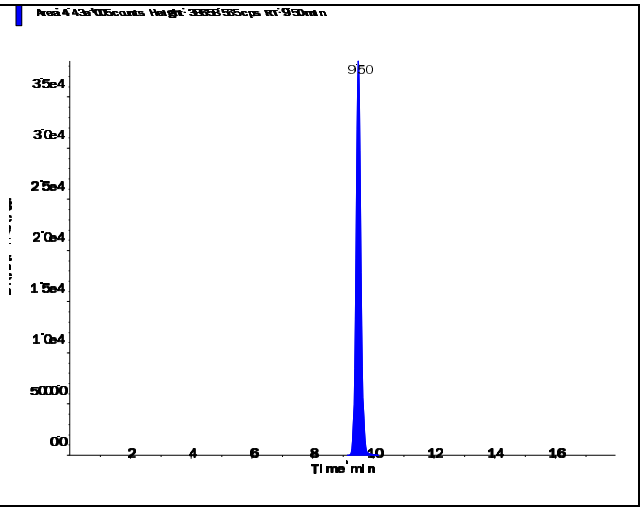

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Created with Analyst Reporter
Printed: 6/27/2016 7:40 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	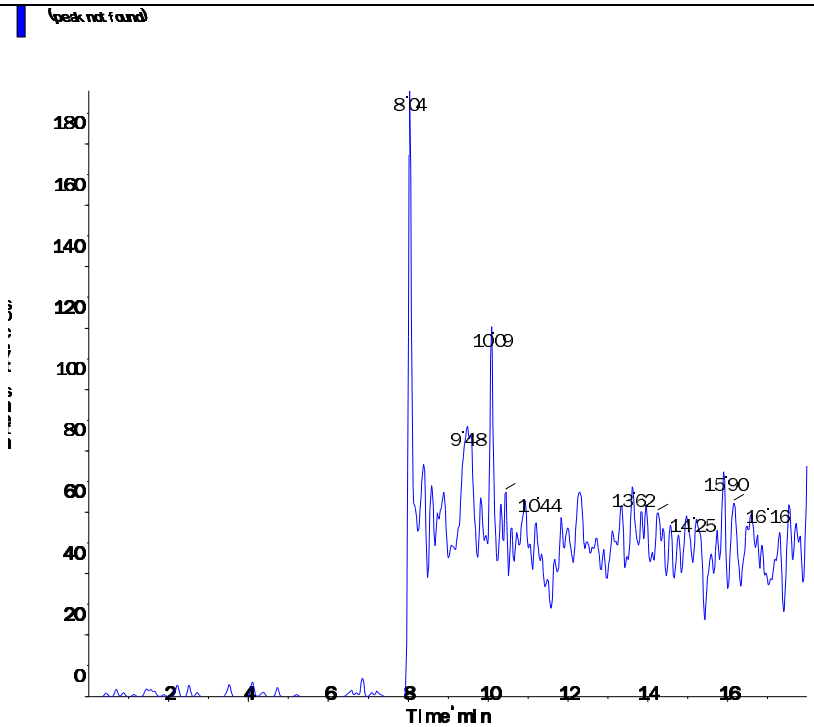
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	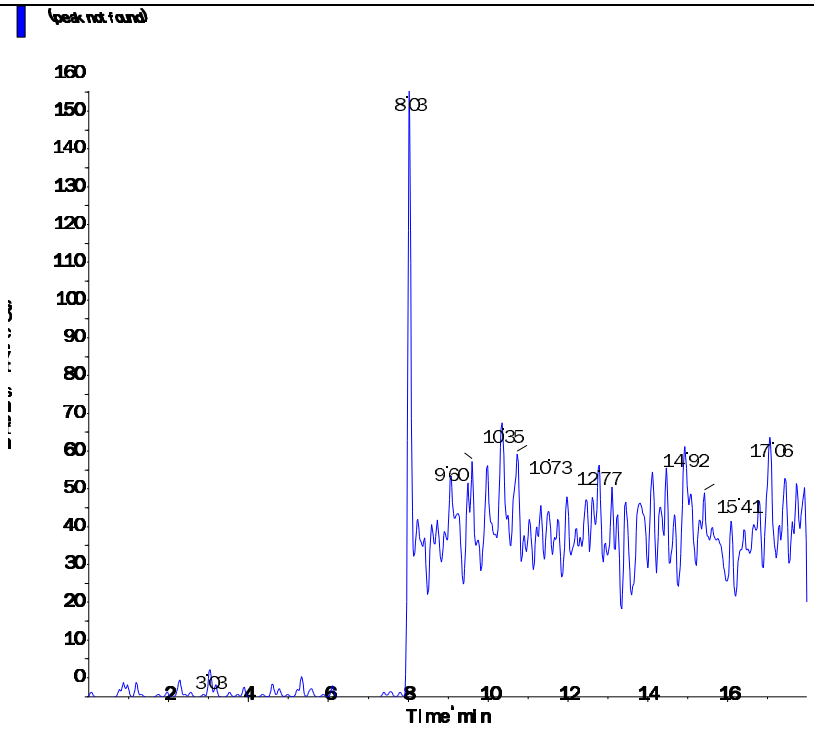

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Data File	LM35467.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 9:25:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM35467.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 9:25:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.440e+05	9.53	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.160e+04	9.54	N/A	0.208
Perchlorate conf	1.180e+04	9.53	N/A	0.217

O18LP (Internal Standard)

RT (Exp. RT): 9.53(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

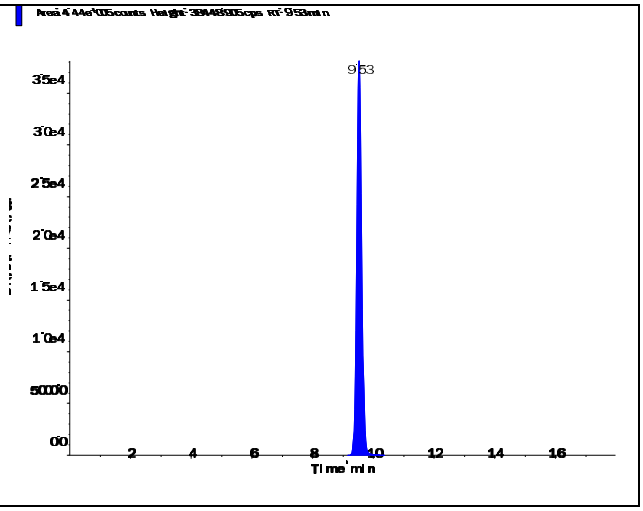

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.54 (9.84) min
Calculated conc:	0.208 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

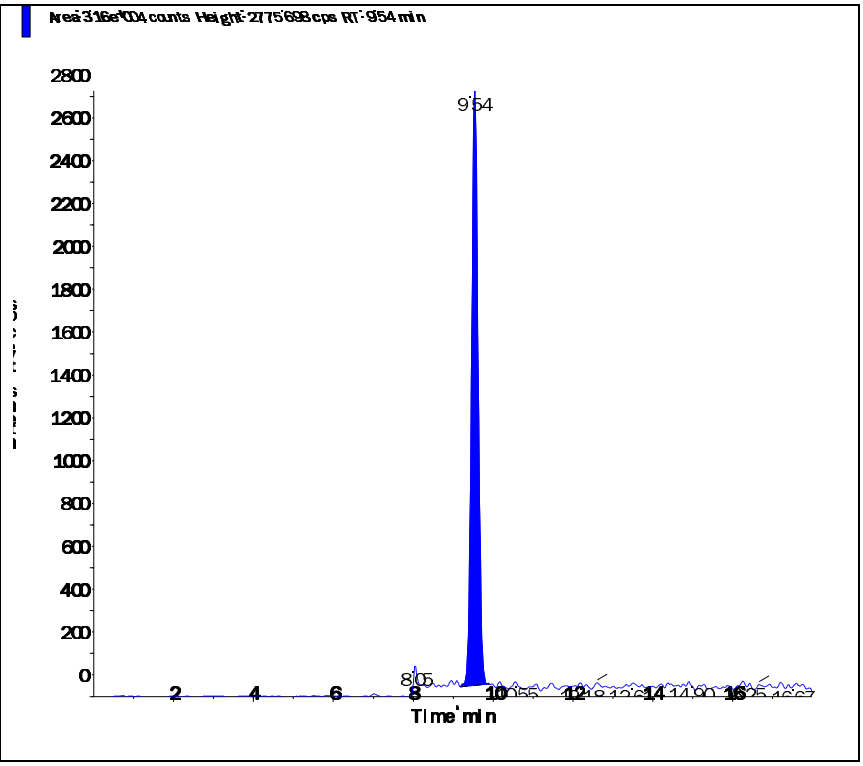

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.53 (9.84) min
Calculated conc:	0.217 ng/ml
Area Ratio:	0.027
Sample Type:	(Unknown)

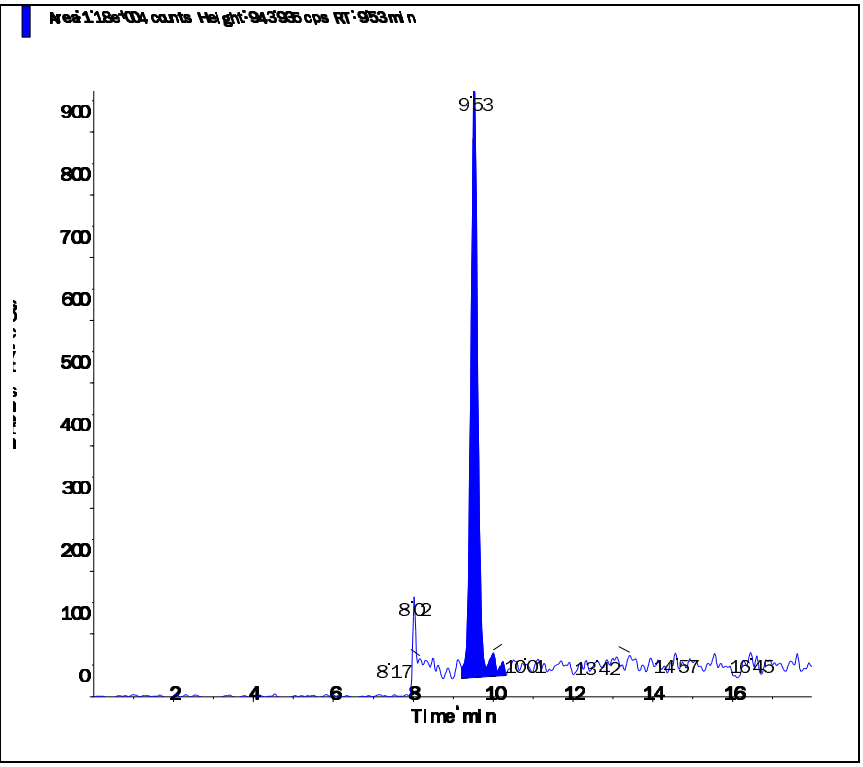

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Data File	LM35491.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 4:59:54 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-04 LCS2 (0.2ug/L)	**Injection Vial**	7.00
Data File	LM35491.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 4:59:54 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.260e+05	9.57	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.830e+04	9.59	N/A	0.213
Perchlorate conf	1.400e+04	9.57	N/A	0.218

O18LP (Internal Standard)

RT (Exp. RT): 9.57(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

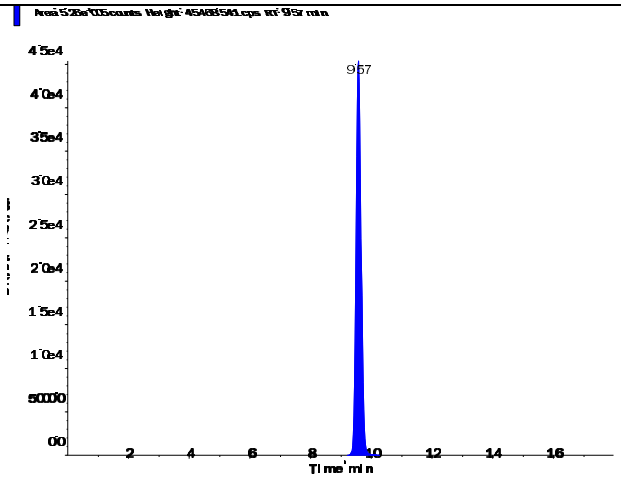

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Created with Analyst Reporter
Printed: 6/27/2016 7:48 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.59 (9.84) min
Calculated conc:	0.213 ng/ml
Area Ratio:	0.073
Sample Type:	(Unknown)

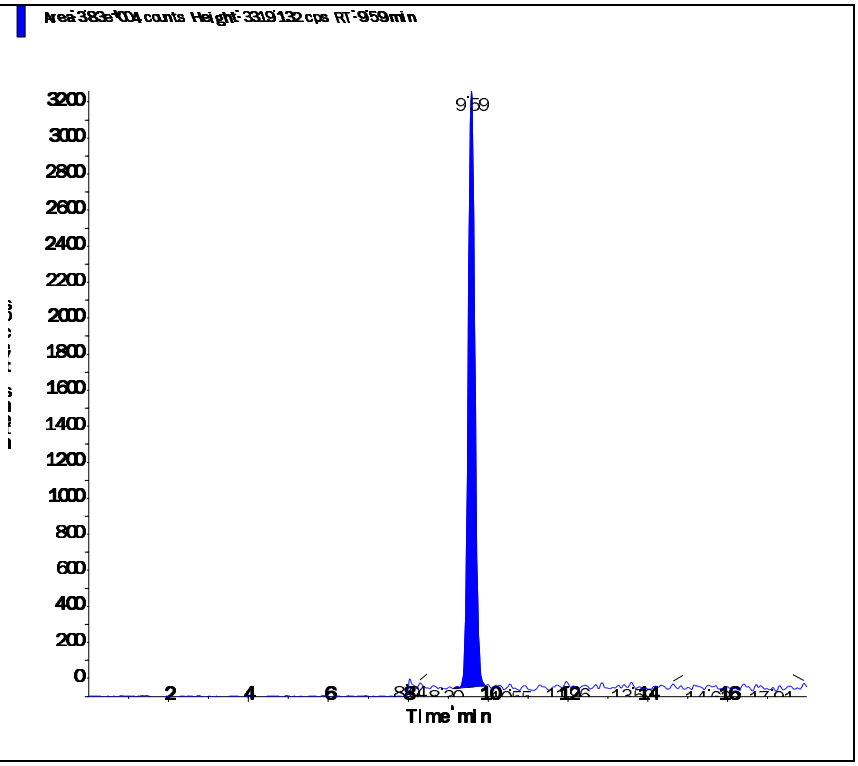

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.57 (9.84) min
Calculated conc:	0.218 ng/ml
Area Ratio:	0.027
Sample Type:	(Unknown)

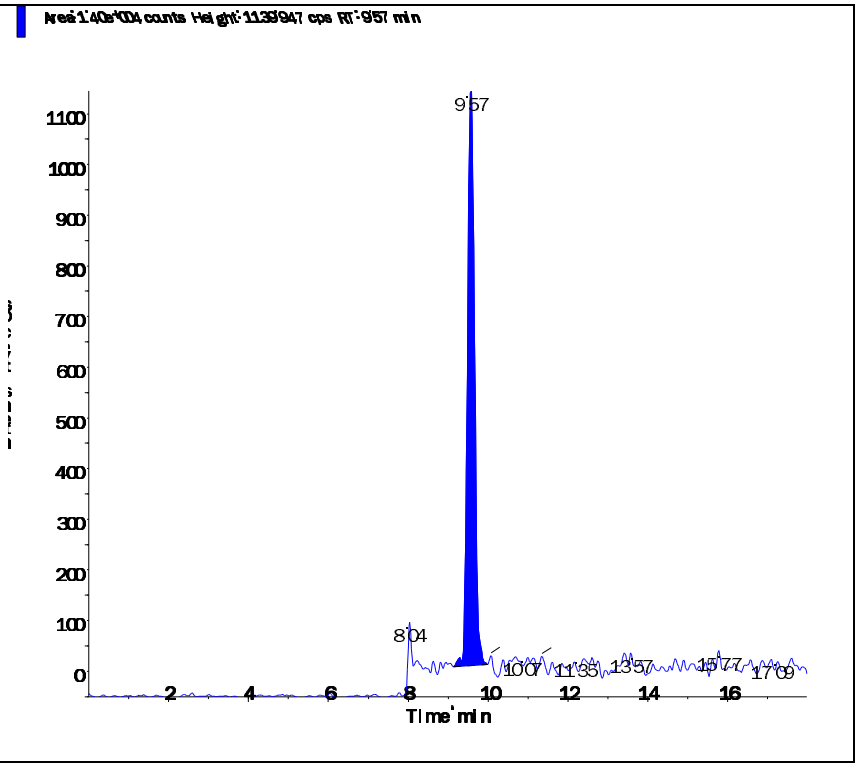

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2.3 Metals Data

2.3.1 Metals I C P Data

2.3.1.1 Summary Data

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW20-062016	**Prep Method:**	3015	**Prep Date:**	06/23/2016 08:03
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/29/2016 10:07
Workgroup #:	WG574350	**Analyst:**	JYH	**Run Date:**	06/29/2016 10:56
Collect Date:	06/20/2016 07:55	**Dilution:**	1	**File ID:**	T3.062916.105622
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW20-062016	**Prep Method:**	3015	**Prep Date:**	06/23/2016 08:03
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/28/2016 09:31
Workgroup #:	WG574350	**Analyst:**	JYH	**Run Date:**	06/28/2016 13:57
Collect Date:	06/20/2016 07:55	**Dilution:**	1	**File ID:**	T3.062816.135712
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.0733	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	2.78		0.500	0.250	0.125
Iron, Total	7439-89-6	5.75		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	2.14		1.00	0.500	0.250
Potassium, Total	7440-09-7	1.32	J	2.00	1.00	0.500
Sodium, Total	7440-23-5	24.6		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW19F-062016	**Prep Method:**	3015	**Prep Date:**	06/23/2016 08:03
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/29/2016 10:07
Workgroup #:	WG574350	**Analyst:**	JYH	**Run Date:**	06/29/2016 11:00
Collect Date:	06/20/2016 08:55	**Dilution:**	1	**File ID:**	T3.062916.110017
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW19F-062016	**Prep Method:**	3015	**Prep Date:**	06/23/2016 08:03
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/28/2016 09:31
Workgroup #:	WG574350	**Analyst:**	JYH	**Run Date:**	06/28/2016 14:01
Collect Date:	06/20/2016 08:55	**Dilution:**	1	**File ID:**	T3.062816.140107
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.342		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	8.66		0.500	0.250	0.125
Iron, Total	7439-89-6	4.86		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	1.59		1.00	0.500	0.250
Potassium, Total	7440-09-7	1.85	J	2.00	1.00	0.500
Sodium, Total	7440-23-5	5.07		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW19FFD-062016	**Prep Method:**	3015	**Prep Date:**	06/23/2016 08:03
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/28/2016 09:31
Workgroup #:	WG574350	**Analyst:**	JYH	**Run Date:**	06/28/2016 14:05
Collect Date:	06/20/2016 08:55	**Dilution:**	1	**File ID:**	T3.062816.140501
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.369		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	8.45		0.500	0.250	0.125
Iron, Total	7439-89-6	4.92		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	1.46		1.00	0.500	0.250
Potassium, Total	7440-09-7	1.74	J	2.00	1.00	0.500
Sodium, Total	7440-23-5	4.86		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW19FFD-062016	**Prep Method:**	3015	**Prep Date:**	06/23/2016 08:03
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/29/2016 10:07
Workgroup #:	WG574350	**Analyst:**	JYH	**Run Date:**	06/29/2016 11:04
Collect Date:	06/20/2016 08:55	**Dilution:**	1	**File ID:**	T3.062916.110411
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.1.2 QC Summary Data

Example 6010 Calculations
Thermo Scientific iCAP

1.0 Initial Calibration (ICAL) Parameters
For a multi-point calibration, the system performs linear regression from data consisting of a blank and four standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG573828
Analyst: ERP
Spike Analyst: ERP
Run Date: 06/23/2016 08:03
Method: 3015
Balance: BAL019
Instrument: MW-1
Instrument Start: 06/23/2016 08:54

SOP: ME407 Revison 19
Spike Solution: STD76576
Spike Witness: REK
HNO3 Lot #: COA18905
HCL Lot #: COA18769
40 & 50 ML. DIGESTION TU COA18987
ICP Filters- fisher-Lot# RGT35619

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG573828-02	BLANK	1	40 mL	50 mL	207.209 g	207.206 g		
2	WG573828-03	LCS	1	40 mL	50 mL	211.916 g	211.919 g	5 mL	
3	L16061142-01	SAMP	1	40 mL	50 mL	204.262 g	204.244 g		07/01/16
4	L16061142-03	SAMP	1	40 mL	50 mL	205.202 g	205.198 g		07/01/16
5	L16061142-05	SAMP	1	40 mL	50 mL	207.78 g	207.771 g		07/01/16
6	WG573828-01	REF	1	40 mL	50 mL	207.51 g	207.508 g		
7	L16061177-01	RS01	1	40 mL	50 mL	207.51 g	207.508 g		06/28/16
8	WG573828-04	MS	1	40 mL	50 mL	210.712 g	210.709 g	5 mL	
9	L16061177-02	MS01	1	40 mL	50 mL	210.712 g	210.709 g	5 mL	06/28/16
10	WG573828-05	MSD	1	40 mL	50 mL	212.905 g	212.92 g	5 mL	
11	L16061177-03	SD01	1	40 mL	50 mL	212.905 g	212.92 g	5 mL	06/28/16
12	L16061185-01	SAMP	1	40 mL	50 mL	203.692 g	203.699 g		06/29/16
13	L16061185-02	SAMP	1	40 mL	50 mL	204.217 g	204.21 g		06/29/16
14	L16061185-03	SAMP	1	40 mL	50 mL	205.262 g	205.267 g		06/29/16
15	L16061185-04	SAMP	1	40 mL	50 mL	207.112 g	207.122 g		06/29/16
16	L16061228-01	SAMP	1	40 mL	50 mL	207.875 g	207.873 g		06/29/16
17	L16061228-02	SAMP	1	40 mL	50 mL	205.684 g	205.688 g		06/29/16
18	L16061228-03	SAMP	1	40 mL	50 mL	206.291 g	206.292 g		06/29/16
19	L16061231-01	SAMP	1	40 mL	50 mL	205.351 g	205.351 g		06/29/16
20	L16061237-01	SAMP	1	40 mL	50 mL	206.015 g	206.015 g		06/29/16
21	L16061237-02	SAMP	1	40 mL	50 mL	205.838 g	205.835 g		06/29/16
22	L16061237-03	SAMP	1	40 mL	50 mL	206.006 g	205.992 g		06/29/16
23	L16061237-04	SAMP	1	40 mL	50 mL	204.76 g	204.75 g		06/29/16
24	L16061237-05	SAMP	1	40 mL	50 mL	207.397 g	207.39 g		06/29/16
25	L16061237-06	SAMP	1	40 mL	50 mL	207.603 g	207.599 g		06/29/16
26	L16061238-01	SAMP	1	40 mL	50 mL	203.998 g	203.991 g		06/29/16
27	L16061238-02	SAMP	1	40 mL	50 mL	205.965 g	205.959 g		06/29/16

Analyst: Erin Potter

Reviewer:

MW_DIG - Modified 09/30/2009
PDF ID: 4820021
Report generated: 06/23/2016 09:36

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062816T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574216,574276,574350,574351,574353,574357,574358

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.062816.091620	WG574512-01	Calibration Point		1		06/28/16 09:16
2	T3.062816.092018	WG574512-02	Calibration Point		1		06/28/16 09:20
3	T3.062816.092413	WG574512-03	Calibration Point		1		06/28/16 09:24
4	T3.062816.092811	WG574512-04	Calibration Point		1		06/28/16 09:28
5	T3.062816.093148	WG574512-05	Calibration Point		1		06/28/16 09:31
6	T3.062816.093524	WG574512-06	Initial Calibration Verification		1		06/28/16 09:35
7	T3.062816.093901	WG574512-07	Initial Calib Blank		1		06/28/16 09:39
8	T3.062816.094252	WG574512-08	Low Level Initial Calibration V		1		06/28/16 09:42
9	T3.062816.094645	WG574512-09	Interference Check		1		06/28/16 09:46
10	T3.062816.095036	WG574512-10	Interference Check		1		06/28/16 09:50
11	T3.062816.095416	WG574512-11	CCV		1		06/28/16 09:54
12	T3.062816.095753	WG574512-12	CCB		1		06/28/16 09:57
13	T3.062816.100445	L16060986-10	MW-03-11	40/50	1		06/28/16 10:04
14	T3.062816.100840	L16060986-12	MW-01-01	40/50	1		06/28/16 10:08
15	T3.062816.101220	L16060986-14	MW-03-09	40/50	1		06/28/16 10:12
16	T3.062816.101612	L16060986-16	MW-01-08	40/50	1		06/28/16 10:16
17	T3.062816.102001	L16060986-18	MW-03-06	40/50	1		06/28/16 10:20
18	T3.062816.102355	L16060986-20	MW-03-05	40/50	1		06/28/16 10:23
19	T3.062816.102749	WG573530-01	Reference Sample		1	L16060986-22	06/28/16 10:27
20	T3.062816.103142	WG573530-02	Reference Sample		1	L16060986-24	06/28/16 10:31
21	T3.062816.103535	L16060986-26	MW-01-02	40/50	1		06/28/16 10:35
22	T3.062816.103931	WG574512-13	CCV		1		06/28/16 10:39
23	T3.062816.104308	WG574512-14	CCB		1		06/28/16 10:43
24	T3.062816.104705	L16060986-28	DUP 1	40/50	1		06/28/16 10:47
25	T3.062816.105057	L16060986-30	DUP 2	40/50	1		06/28/16 10:50
26	T3.062816.105450	WG573530-06	Matrix Spike	40/50	1	L16060986-22	06/28/16 10:54
27	T3.062816.105829	WG573530-07	Matrix Spike Duplica	40/50	1	L16060986-22	06/28/16 10:58
28	T3.062816.110208	WG573530-08	Matrix Spike	40/50	1	L16060986-24	06/28/16 11:02
29	T3.062816.110547	WG573530-09	Matrix Spike Duplica	40/50	1	L16060986-24	06/28/16 11:05
30	T3.062816.110925	L16060986-40	EQUIP BLANK 1	40/50	1		06/28/16 11:09
31	T3.062816.111320	L16060986-42	EQUIP BLANK 2	40/50	1		06/28/16 11:13
32	T3.062816.111715	WG574512-15	CCV		1		06/28/16 11:17
33	T3.062816.112053	WG574512-16	CCB		1		06/28/16 11:20
34	T3.062816.112448	L16061190-01	USDA / 04/07/16		2		06/28/16 11:24

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Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062816T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574216,574276,574350,574351,574353,574357,574358

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.062816.112835	L16061190-02	USDA / 05/06/16		1		06/28/16 11:28
36	T3.062816.113223	L16061130-02	MW-23-003		5		06/28/16 11:32
37	T3.062816.113618	L16061130-03	MW-23-013		5		06/28/16 11:36
38	T3.062816.114012	L16061130-04	MW-23-001		5		06/28/16 11:40
39	T3.062816.114405	L16061130-05	EB (1) WATER A		1		06/28/16 11:44
40	T3.062816.114802	L16061164-11	16F1336-11		1		06/28/16 11:48
41	T3.062816.115153	L16061252-01	35006822000-W-1-06-22-16		1		06/28/16 11:51
42	T3.062816.115545	WG574476-01	L1606125201PS		1		06/28/16 11:55
43	T3.062816.115924	WG574476-02	L1606125201SDL		5		06/28/16 11:59
44	T3.062816.120319	WG574512-17	CCV		1		06/28/16 12:03
45	T3.062816.120656	WG574512-18	CCV		1		06/28/16 12:06
46	T3.062816.121034	L16061068-04	C01-061716		20		06/28/16 12:10
47	T3.062816.121735	WG574512-19	CCV		1		06/28/16 12:17
48	T3.062816.122110	WG574512-20	CCB		1		06/28/16 12:21
49	T3.062816.122507	L16061190-01	USDA / 04/07/16	40/50	2		06/28/16 12:25
50	T3.062816.122854	L16061190-02	USDA / 05/06/16	40/50	2		06/28/16 12:28
51	T3.062816.123240	L16061130-02	MW-23-003	40/50	5		06/28/16 12:32
52	T3.062816.123633	L16061130-03	MW-23-013	40/50	5		06/28/16 12:36
53	T3.062816.124025	L16061130-04	MW-23-001	40/50	5		06/28/16 12:40
54	T3.062816.124418	L16061130-05	EB (1) WATER A	40/50	1		06/28/16 12:44
55	T3.062816.124814	L16061164-11	16F1336-11	5/50	1		06/28/16 12:48
56	T3.062816.125207	L16061252-01	35006822000-W-1-06-22-16	40/50	1		06/28/16 12:52
57	T3.062816.125559	WG574276-01	Post Digestion Spike		1	L16061130-05	06/28/16 12:55
58	T3.062816.125938	WG574276-02	Serial Dilution		5	L16061130-05	06/28/16 12:59
59	T3.062816.130335	WG574512-21	CCV		1		06/28/16 13:03
60	T3.062816.130712	WG574512-22	CCB		1		06/28/16 13:07
61	T3.062816.131108	L16061068-04	C01-061716	40/50	20		06/28/16 13:11
62	T3.062816.131503	L16061068-05	C01FD-061716	40/50	20		06/28/16 13:15
63	T3.062816.131855	WG574276-01	Post Digestion Spike		1	L16061130-05	06/28/16 13:18
64	T3.062816.132234	L16061068-11	MW19F-061716	40/50	20		06/28/16 13:22
65	T3.062816.132628	WG573869-01	Reference Sample		20	L16061068-13	06/28/16 13:26
66	T3.062816.133023	WG573869-04	Matrix Spike	40/50	20	L16061068-13	06/28/16 13:30
67	T3.062816.133415	WG573869-05	Matrix Spike Duplica	40/50	20	L16061068-13	06/28/16 13:34
68	T3.062816.133809	WG574512-23	CCV		1		06/28/16 13:38

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062816T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574216,574276,574350,574351,574353,574357,574358

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.062816.134146	WG574512-24	CCB		1		06/28/16 13:41
70	T3.062816.134543	WG574512-25	Low Level Continuing Calibra		1		06/28/16 13:45
71	T3.062816.134937	WG573828-02	Method/Prep Blank	40/50	1		06/28/16 13:49
72	T3.062816.135333	WG573828-03	Laboratory Control S	40/50	1		06/28/16 13:53
73	T3.062816.135712	L16061142-01	18WW20-062016	40/50	1		06/28/16 13:57
74	T3.062816.140107	L16061142-03	18WW19F-062016	40/50	1		06/28/16 14:01
75	T3.062816.140501	L16061142-05	18WW19FFD-062016	40/50	1		06/28/16 14:05
76	T3.062816.140856	WG573828-01	Reference Sample		1	L16061177-01	06/28/16 14:08
77	T3.062816.141250	WG573828-04	Matrix Spike	40/50	1	L16061177-01	06/28/16 14:12
78	T3.062816.141630	WG573828-05	Matrix Spike Duplica	40/50	1	L16061177-01	06/28/16 14:16
79	T3.062816.142009	L16061185-01	2203-123 W1 (B)	40/50	1		06/28/16 14:20
80	T3.062816.142402	L16061185-02	2203-123 W1 (B)	40/50	1		06/28/16 14:24
81	T3.062816.142755	WG574512-26	CCV		1		06/28/16 14:27
82	T3.062816.143132	WG574512-27	CCB		1		06/28/16 14:31
83	T3.062816.143530	L16061185-03	2203-123 W1 (FF)	40/50	1		06/28/16 14:35
84	T3.062816.143922	L16061185-04	2203-123 W1 (FF)	40/50	1		06/28/16 14:39
85	T3.062816.144315	L16061228-01	SS007MWOB03-007	40/50	1		06/28/16 14:43
86	T3.062816.144709	L16061228-02	SS007MWN751-007	40/50	1		06/28/16 14:47
87	T3.062816.145057	L16061228-03	SS007MWN753-007	40/50	1		06/28/16 14:50
88	T3.062816.145448	L16061231-01	FT002MW0205-007	40/50	1		06/28/16 14:54
89	T3.062816.145841	L16061237-01	SS007MWN769-007	40/50	1		06/28/16 14:58
90	T3.062816.150234	L16061237-02	SS007MWN740-007	40/50	1		06/28/16 15:02
91	T3.062816.150626	L16061237-03	SS007MWN740-007 DUP	40/50	1		06/28/16 15:06
92	T3.062816.151019	L16061237-04	SS007MWN738-007	40/50	1		06/28/16 15:10
93	T3.062816.151411	WG574512-28	CCV		1		06/28/16 15:14
94	T3.062816.151749	WG574512-29	CCB		1		06/28/16 15:17
95	T3.062816.152146	L16061237-05	SS007MWN741-007	40/50	1		06/28/16 15:21
96	T3.062816.152539	L16061237-06	SS007MWNOB09-007	40/50	1		06/28/16 15:25
97	T3.062816.152932	L16061238-01	LF003MW0306-007	40/50	1		06/28/16 15:29
98	T3.062816.153324	L16061238-02	LF003MW0307-007	40/50	1		06/28/16 15:33
99	T3.062816.153717	WG574350-01	Post Digestion Spike		1	L16061238-01	06/28/16 15:37
100	T3.062816.154055	WG574350-02	Serial Dilution		5	L16061238-01	06/28/16 15:40
101	T3.062816.154446	WG574350-02	Serial Dilution		25	L16061238-01	06/28/16 15:44
102	T3.062816.154842	WG574512-30	CCV		1		06/28/16 15:48

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062816T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574216,574276,574350,574351,574353,574357,574358

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T3.062816.155209	WG574512-31	CCB		1		06/28/16 15:52
104	T3.062816.155606	WG574512-32	Low Level Continuing Calibra		1		06/28/16 15:56
105	T3.062816.160000	WG574197-02	Method/Prep Blank	40/50	1		06/28/16 16:00
106	T3.062816.160356	WG574197-03	Laboratory Control S	40/50	1		06/28/16 16:03
107	T3.062816.160736	L16061378-01	11002-G05-WQ-W0080	40/50	1		06/28/16 16:07
108	T3.062816.161133	L16061378-02	11103-G08-WQ-W0017	40/50	1		06/28/16 16:11
109	T3.062816.161529	L16061378-03	18311-G02-WQ-W0010	40/50	1		06/28/16 16:15
110	T3.062816.161925	L16061378-04	18416-L04-WQ-W0025	40/50	1		06/28/16 16:19
111	T3.062816.162323	L16061380-01	XU936TW003A	40/50	1		06/28/16 16:23
112	T3.062816.162711	L16061380-02	XU936TW003C	40/50	1		06/28/16 16:27
113	T3.062816.163057	L16061381-06	EB02	40/50	1		06/28/16 16:30
114	T3.062816.163455	L16061401-01	DP005MW0501-007	40/50	1		06/28/16 16:34
115	T3.062816.163852	WG574512-33	CCV		1		06/28/16 16:38
116	T3.062816.164230	WG574512-34	CCB		1		06/28/16 16:42
117	T3.062816.164626	L16061402-01	SS007MW0715-007	40/50	1		06/28/16 16:46
118	T3.062816.165019	L16061404-01	DP005MW0503-007	40/50	1		06/28/16 16:50
119	T3.062816.165410	L16061408-01	DP005MW0508-007	40/50	1		06/28/16 16:54
120	T3.062816.165803	L16061409-01	ST008MW0818-007	40/50	1		06/28/16 16:58
121	T3.062816.170156	L16061410-01	SS007MW0704-007	40/50	1		06/28/16 17:01
122	T3.062816.170548	L16061417-01	SS007MW0B04-007	40/50	1		06/28/16 17:05
123	T3.062816.170940	L16061417-02	SS007MW0B06-007	40/50	1		06/28/16 17:09
124	T3.062816.171335	L16061417-03	SS007MW0B06-007DUP	40/50	1		06/28/16 17:13
125	T3.062816.171728	L16061417-04	SS007MW0B13-007	40/50	1		06/28/16 17:17
126	T3.062816.172123	WG574197-01	Reference Sample		1	L16061417-05	06/28/16 17:21
127	T3.062816.172517	WG574512-35	CCV		1		06/28/16 17:25
128	T3.062816.172854	WG574512-36	CCB		1		06/28/16 17:28
129	T3.062816.173251	WG574197-04	Matrix Spike	40/50	1	L16061417-05	06/28/16 17:32
130	T3.062816.173629	WG574197-05	Matrix Spike Duplica	40/50	1	L16061417-05	06/28/16 17:36
131	T3.062816.174008	L16061417-09	FQC-RB06221601-CC	40/50	1		06/28/16 17:40
132	T3.062816.174405	L16061417-08	SS007MWN748-007	40/50	1		06/28/16 17:44
133	T3.062816.174800	WG574351-01	Post Digestion Spike		1	L16061417-04	06/28/16 17:48
134	T3.062816.175139	WG574351-02	Serial Dilution		5	L16061417-04	06/28/16 17:51
135	T3.062816.175533	WG574351-02	Serial Dilution		25	L16061417-04	06/28/16 17:55
136	T3.062816.175929	WG574512-37	CCV		1		06/28/16 17:59

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Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062816T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574216,574276,574350,574351,574353,574357,574358

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	T3.062816.180306	WG574512-38	CCB		1		06/28/16 18:03
138	T3.062816.180704	WG573861-03	Method/Prep Blank	40/50	1		06/28/16 18:07
139	T3.062816.181059	WG573861-04	Laboratory Control S	40/50	1		06/28/16 18:10
140	T3.062816.181438	L16061116-01	062016-PS-OF001	40/50	1		06/28/16 18:14
141	T3.062816.181827	L16061116-02	062016-PS-OF001	40/50	1		06/28/16 18:18
142	T3.062816.182218	L16061116-03	062016-PS-OF1BN	40/50	1		06/28/16 18:22
143	T3.062816.182609	L16061116-04	062016-PS-OF1BN	40/50	1		06/28/16 18:26
144	T3.062816.183001	L16061116-05	062016-PS-OF1BS	40/50	1		06/28/16 18:30
145	T3.062816.183352	L16061116-06	062016-PS-OF1BS	40/50	1		06/28/16 18:33
146	T3.062816.183743	L16061116-07	062016-PS-OF1BE	40/50	1		06/28/16 18:37
147	T3.062816.184134	L16061116-08	062016-PS-OF1BE	40/50	1		06/28/16 18:41
148	T3.062816.184525	WG574512-39	CCV		1		06/28/16 18:45
149	T3.062816.184903	WG574512-40	CCB		1		06/28/16 18:49
150	T3.062816.185258	L16061116-09	062016-PS-CB032	40/50	1		06/28/16 18:52
151	T3.062816.185648	L16061116-10	062016-PS-CB032	40/50	1		06/28/16 18:56
152	T3.062816.190038	WG573861-01	Reference Sample		1	L16061116-11	06/28/16 19:00
153	T3.062816.190429	WG573861-02	Reference Sample		1	L16061116-12	06/28/16 19:04
154	T3.062816.190819	WG573861-05	Matrix Spike	40/50	1	L16061116-11	06/28/16 19:08
155	T3.062816.191158	WG573861-06	Matrix Spike	40/50	1	L16061116-12	06/28/16 19:11
156	T3.062816.191537	WG573861-07	Matrix Spike Duplica	40/50	1	L16061116-11	06/28/16 19:15
157	T3.062816.191915	WG573861-08	Matrix Spike Duplica	40/50	1	L16061116-12	06/28/16 19:19
158	T3.062816.192255	L16061116-17	062016-PS-CB029	40/50	1		06/28/16 19:22
159	T3.062816.192645	L16061116-18	062016-PS-CB029	40/50	1		06/28/16 19:26
160	T3.062816.193036	WG574512-41	CCV		1		06/28/16 19:30
161	T3.062816.193413	WG574512-42	CCB		1		06/28/16 19:34
162	T3.062816.193810	L16061116-19	062016-PS-CB099	40/50	1		06/28/16 19:38
163	T3.062816.194200	L16061116-20	062016-PS-CB099	40/50	1		06/28/16 19:42
164	T3.062816.194549	L16061116-22	062016-PS-CB028	40/50	1		06/28/16 19:45
165	T3.062816.194939	L16061116-21	062016-PS-CB028	40/50	1		06/28/16 19:49
166	T3.062816.195330	WG574353-01	Post Digestion Spike		1	L16061116-21	06/28/16 19:53
167	T3.062816.195708	WG574353-02	Serial Dilution		5	L16061116-21	06/28/16 19:57
168	T3.062816.200100	WG574353-02	Serial Dilution		25	L16061116-21	06/28/16 20:01
169	T3.062816.200456	WG574512-43	CCV		1		06/28/16 20:04
170	T3.062816.200834	WG574512-44	CCB		1		06/28/16 20:08

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Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062816T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574216,574276,574350,574351,574353,574357,574358

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
171	T3.062816.201230	WG573661-02	Method/Prep Blank	40/50	1		06/28/16 20:12
172	T3.062816.201625	WG573661-03	Laboratory Control S	40/50	1		06/28/16 20:16
173	T3.062816.202004	L16061030-02	SW1A-322-14	40/50	1		06/28/16 20:20
174	T3.062816.202358	L16061030-05	SW1B-322-14	40/50	1		06/28/16 20:23
175	T3.062816.202753	L16061030-08	SW2A-322-14	40/50	1		06/28/16 20:27
176	T3.062816.203148	WG573661-01	Reference Sample		1	L16061030-13	06/28/16 20:31
177	T3.062816.203543	WG573661-04	Matrix Spike	40/50	1	L16061030-13	06/28/16 20:35
178	T3.062816.203922	WG573661-05	Matrix Spike Duplica	40/50	1	L16061030-13	06/28/16 20:39
179	T3.062816.204301	L16061030-20	SW4A-322-14	40/50	1		06/28/16 20:43
180	T3.062816.204657	L16061030-23	SW5A-322-14	40/50	1		06/28/16 20:46
181	T3.062816.205052	WG574512-45	CCV		1		06/28/16 20:50
182	T3.062816.205431	WG574512-46	CCB		1		06/28/16 20:54
183	T3.062816.205827	L16061065-01	MW-23-007	40/50	1		06/28/16 20:58
184	T3.062816.210220	L16061065-02	MW-23-006	40/50	1		06/28/16 21:02
185	T3.062816.210612	L16061065-03	MW-23-008	40/50	1		06/28/16 21:06
186	T3.062816.211004	L16061065-04	MW-23-009	40/50	1		06/28/16 21:10
187	T3.062816.211355	L16061065-05	MW-23-010	40/50	1		06/28/16 21:13
188	T3.062816.211749	L16061065-06	MW-23-011	40/50	1		06/28/16 21:17
189	T3.062816.212143	L16061066-01	ST1H16-SW-01	40/50	1		06/28/16 21:21
190	T3.062816.212535	L16061066-02	ST1H16-SW-05	40/50	1		06/28/16 21:25
191	T3.062816.212927	L16061066-03	ST1H16-SW-06	40/50	1		06/28/16 21:29
192	T3.062816.213320	L16061066-04	FB-	40/50	1		06/28/16 21:33
193	T3.062816.213718	WG574512-47	CCV		1		06/28/16 21:37
194	T3.062816.214055	WG574512-48	CCB		1		06/28/16 21:40
195	T3.062816.214452	L16061128-01	MW-23-104	40/50	1		06/28/16 21:44
196	T3.062816.214841	L16061128-02	MW-23-103	40/50	1		06/28/16 21:48
197	T3.062816.215232	L16061128-03	FD062016	40/50	1		06/28/16 21:52
198	T3.062816.215619	L16061128-04	EB WATER A	40/50	1		06/28/16 21:56
199	T3.062816.220016	WG574357-01	Post Digestion Spike		1	L16061128-03	06/28/16 22:00
200	T3.062816.220354	WG574357-02	Serial Dilution		5	L16061128-03	06/28/16 22:03
201	T3.062816.220747	WG574357-02	Serial Dilution		25	L16061128-03	06/28/16 22:07
202	T3.062816.221140	WG574512-49	CCV		1		06/28/16 22:11
203	T3.062816.221518	WG574512-50	CCB		1		06/28/16 22:15
204	T3.062816.221914	WG573685-03	Method/Prep Blank	40/50	1		06/28/16 22:19

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Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062816T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574216,574276,574350,574351,574353,574357,574358

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
205	T3.062816.222308	WG573685-04	Laboratory Control S	40/50	1		06/28/16 22:23
206	T3.062816.222647	L16060907-01	MW21-061516	40/50	5		06/28/16 22:26
207	T3.062816.223047	L16060907-02	MW21-061516	40/50	5		06/28/16 22:30
208	T3.062816.223447	L16060907-03	MW21-061516	40/50	5		06/28/16 22:34
209	T3.062816.223848	L16060907-04	MW35-061516	40/50	1		06/28/16 22:38
210	T3.062816.224241	L16060907-05	MW35-061516	40/50	1		06/28/16 22:42
211	T3.062816.224635	L16060907-06	MW35-061516	40/50	1		06/28/16 22:46
212	T3.062816.225029	L16060907-07	MW11S-061516	40/50	1		06/28/16 22:50
213	T3.062816.225430	L16060907-08	MW11S-061516	40/50	1		06/28/16 22:54
214	T3.062816.225832	WG574512-51	CCV		1		06/28/16 22:58
215	T3.062816.230210	WG574512-52	CCB		1		06/28/16 23:02
216	T3.062816.230607	L16060907-09	MW11S-061516	40/50	1		06/28/16 23:06
217	T3.062816.231008	L16060907-10	DUP-GW-061516	40/50	1		06/28/16 23:10
218	T3.062816.231410	L16060907-11	DUP-GW-061516	40/50	1		06/28/16 23:14
219	T3.062816.231813	L16060907-12	MW31-061516	40/50	5		06/28/16 23:18
220	T3.062816.232204	L16060907-13	MW31-061516	40/50	5		06/28/16 23:22
221	T3.062816.232555	L16060907-14	MW30-061516		1	WG573685-01	06/28/16 23:25
222	T3.062816.232948	L16060907-15	MW30-061516		1	WG573685-02	06/28/16 23:29
223	T3.062816.233341	L16060907-16	MW30-061516	40/50	1		06/28/16 23:33
224	T3.062816.233734	L16060907-17	MW30-061516-MS	40/50	1	WG573685-05	06/28/16 23:37
225	T3.062816.234116	L16060907-18	MW30-061516-MS	40/50	1	WG573685-07	06/28/16 23:41
226	T3.062816.234453	WG574512-53	CCV		1		06/28/16 23:44
227	T3.062816.234830	WG574512-54	CCB		1		06/28/16 23:48
228	T3.062816.235226	L16060907-19	MW30-061516-MSD	40/50	1	WG573685-06	06/28/16 23:52
229	T3.062816.235604	L16060907-20	MW30-061516-MSD	40/50	1	WG573685-08	06/28/16 23:56
230	T3.062816.235945	L16060907-21	MW36-061516	40/50	1		06/28/16 23:59
231	T3.062916.000336	WG574358-01	Post Digestion Spike		1	L16060907-22	06/29/16 00:03
232	T3.062916.000715	WG574358-02	Serial Dilution		5	L16060907-22	06/29/16 00:07
233	T3.062916.001107	WG574358-02	Serial Dilution		25	L16060907-22	06/29/16 00:11
234	T3.062916.001503	L16060907-22	MW36-061516	40/50	1		06/29/16 00:15
235	T3.062916.001856	L16060907-01	MW21-061516	40/50	500		06/29/16 00:18
236	T3.062916.002252	L16060907-02	MW21-061516		500		06/29/16 00:22
237	T3.062916.002650	L16060907-03	MW21-061516		500		06/29/16 00:26
238	T3.062916.003045	WG574512-55	CCV		1		06/29/16 00:30

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062816T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574216,574276,574350,574351,574353,574357,574358

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
239	T3.062916.003423	WG574512-56	CCB		1		06/29/16 00:34
240	T3.062916.003819	WG574512-57	Interference Check		1		06/29/16 00:38
241	T3.062916.004209	WG574512-58	Interference Check		1		06/29/16 00:42
242	T3.062916.004552	WG574512-59	CCV		1		06/29/16 00:45
243	T3.062916.004929	WG574512-60	CCB		1		06/29/16 00:49
244	T3.062916.005324	WG574512-61	Low Level Continuing Calibra		1		06/29/16 00:53

Comments

Seq.	Rerun	Dil.	Reason	Analytes
45			Operation error, CCB was not run. Rerun Seq.34-43 and 46. JYH	

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062916T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76882 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574350574358,574351,574076,574637

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.062916.095202	WG574675-01	Calibration Point		1		06/29/16 09:52
2	T3.062916.095558	WG574675-02	Calibration Point		1		06/29/16 09:55
3	T3.062916.095953	WG574675-03	Calibration Point		1		06/29/16 09:59
4	T3.062916.100348	WG574675-04	Calibration Point		1		06/29/16 10:03
5	T3.062916.100726	WG574675-05	Calibration Point		1		06/29/16 10:07
6	T3.062916.101102	WG574675-06	Initial Calibration Verification		1		06/29/16 10:11
7	T3.062916.101440	WG574675-07	Initial Calib Blank		1		06/29/16 10:14
8	T3.062916.101836	WG574675-08	Low Level Initial Calibration V		1		06/29/16 10:18
9	T3.062916.102229	WG574675-09	Interference Check		1		06/29/16 10:22
10	T3.062916.102611	WG574675-10	Interference Check		1		06/29/16 10:26
11	T3.062916.102953	WG574675-11	CCV		1		06/29/16 10:29
12	T3.062916.103333	WG574675-12	CCB		1		06/29/16 10:33
13	T3.062916.103731	WG573828-02	Method/Prep Blank	40/50	1		06/29/16 10:37
14	T3.062916.104127	WG573828-03	Laboratory Control S	40/50	1		06/29/16 10:41
15	T3.062916.104507	WG573828-01	Reference Sample		1	L16061177-01	06/29/16 10:45
16	T3.062916.104902	WG573828-04	Matrix Spike	40/50	1	L16061177-01	06/29/16 10:49
17	T3.062916.105243	WG573828-05	Matrix Spike Duplica	40/50	1	L16061177-01	06/29/16 10:52
18	T3.062916.105622	L160601142-01	L16060114201	40/50	1		06/29/16 10:56
19	T3.062916.110017	L160601142-03	L16060114203	40/50	1		06/29/16 11:00
20	T3.062916.110411	L160601142-05	L16060114205	40/50	1		06/29/16 11:04
21	T3.062916.110805	WG574350-03	Post Digestion Spike		1	L16061142-05	06/29/16 11:08
22	T3.062916.111145	WG574350-04	Serial Dilution		5	L16061142-05	06/29/16 11:11
23	T3.062916.111539	WG574675-13	CCV		1		06/29/16 11:15
24	T3.062916.111916	WG574675-14	CCB		1		06/29/16 11:19
25	T3.062916.112313	L16060907-07	MW11S-061516	40/50	100		06/29/16 11:23
26	T3.062916.112709	L16060907-10	DUP-GW-061516	40/50	100		06/29/16 11:27
27	T3.062916.113106	L16060907-12	MW31-061516	40/50	500		06/29/16 11:31
28	T3.062916.113502	WG573685-01	Reference Sample		100	L16060907-14	06/29/16 11:35
29	T3.062916.113857	WG573685-05	Matrix Spike	40/50	100	L16060907-14	06/29/16 11:38
30	T3.062916.114254	WG573685-06	Matrix Spike Duplica	40/50	100	L16060907-14	06/29/16 11:42
31	T3.062916.114650	L16061380-01	XU936TW003A	40/50	20		06/29/16 11:46
32	T3.062916.115043	L16061380-02	XU936TW003C	40/50	20		06/29/16 11:50
33	T3.062916.115438	L16061227-07	18WW18-062116	40/50	20		06/29/16 11:54
34	T3.062916.115833	WG574675-15	CCV		1		06/29/16 11:58

Page: 1 Approved: June 30, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062916T3.1R.TXT

Analyst1: JYH Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76882 ICSAB: STD76834 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 574350574358,574351,574076,574637

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.062916.120211	WG574675-16	CCB		1		06/29/16 12:02
36	T3.062916.120607	WG574675-17	Interference Check		1		06/29/16 12:06
37	T3.062916.120959	WG574675-18	Interference Check		1		06/29/16 12:09
38	T3.062916.121342	WG574675-19	CCV		1		06/29/16 12:13
39	T3.062916.121718	WG574675-20	CCB		1		06/29/16 12:17
40	T3.062916.122116	WG574675-21	Low Level Continuing Calibra		1		06/29/16 12:21
41	T3.062916.122508	WG572926-01	Method/Prep Blank	40/50	1		06/29/16 12:25
42	T3.062916.125108	L16060003-17	DOC-17	40/50	1		06/29/16 12:51
43	T3.062916.125443	L16060003-18	DOC-18	40/50	1		06/29/16 12:54
44	T3.062916.125818	L16060003-19	DOC-19	40/50	1		06/29/16 12:58
45	T3.062916.130153	L16060003-20	DOC-20	40/50	1		06/29/16 13:01
46	T3.062916.130527	WG574675-22	CCV		1		06/29/16 13:05
47	T3.062916.130900	WG574675-23	CCB		1		06/29/16 13:09
48	T3.062916.131252	WG574597-07	Method/Prep Blank		1		06/29/16 13:12
49	T3.062916.131644	WG574597-08	Laboratory Control S		1		06/29/16 13:16
50	T3.062916.132019	WG574515-01	Fluid Blank 1		1		06/29/16 13:20
51	T3.062916.132411	L16061539-01	27-12-9 RPW3		1		06/29/16 13:24
52	T3.062916.132758	WG574597-06	Reference Sample		1	L16061496-01	06/29/16 13:27
53	T3.062916.133144	WG574597-09	Matrix Spike		1	L16061496-01	06/29/16 13:31
54	T3.062916.133518	WG574597-10	Matrix Spike Duplica		1	L16061496-01	06/29/16 13:35
55	T3.062916.133852	WG574645-01	Post Digestion Spike		1	L16061539-01	06/29/16 13:38
56	T3.062916.134226	WG574645-02	Serial Dilution		5	L16061539-01	06/29/16 13:42
57	T3.062916.134616	WG574645-02	Serial Dilution		25	L16061539-01	06/29/16 13:46
58	T3.062916.135007	WG574675-24	CCV		1		06/29/16 13:50
59	T3.062916.135340	WG574675-25	CCB		1		06/29/16 13:53

Page: 2 Approved: June 30, 2016

Microbac Laboratories Inc.

Data Checklist

Date: 28-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 574512
Runlog ID: 75979
Analytical Workgroups: 574216,574276,574350,574351,574353,574357,574358

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1177,1380,1381,1065,1128
Level 4	986,1142,1228,1231,1237,1238
	1378,1401,1402,1404,1409,1410
	1417,907
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	BKT
Comments	

Primary Reviewer:
30-JUN-2016

Secondary Reviewer:
30-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-30-2016 14:08:10

Microbac Laboratories Inc.

Data Checklist

Date: 29-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 574675
Runlog ID: 76005
Analytical Workgroups: 574350574358,574351,574076,574637

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1380
Level 4	1142,907,1227,0003
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	BKT
Comments	

Primary Reviewer:
30-JUN-2016

Secondary Reviewer:
30-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-30-2016 10:49:34

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010C

AAB#: WG574350

Login Number: L16061142

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW20-062016	01	06/20/16					06/23/2016	3	180		06/29/16	9.1	180	
18WW20-062016	01	06/20/16					06/23/2016	3	180		06/28/16	8.3	180	
18WW19F-062016	03	06/20/16					06/23/2016	3	180		06/28/16	8.2	180	
18WW19F-062016	03	06/20/16					06/23/2016	3	180		06/29/16	9.1	180	
18WW19FFD-062016	05	06/20/16					06/23/2016	3	180		06/28/16	8.2	180	
18WW19FFD-062016	05	06/20/16					06/23/2016	3	180		06/29/16	9.1	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4830058
Report generated 06/29/2016 13:53

METHOD BLANK SUMMARY

Login Number: L16061142
Blank File ID: T3.062816.134937
Prep Date: 06/23/16 08:03
Analyzed Date: 06/28/16 13:49
Analyst: JYH

Work Group: WG574350
Blank Sample ID: WG573828-02
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573828-03	T3.062816.135333	06/28/16 13:53	01
18WW20-062016	L16061142-01	T3.062816.135712	06/28/16 13:57	01
18WW19F-062016	L16061142-03	T3.062816.140107	06/28/16 14:01	01
18WW19FFD-062016	L16061142-05	T3.062816.140501	06/28/16 14:05	01
LCS	WG573828-03	T3.062916.104127	06/29/16 10:41	02
18WW20-062016	L16061142-01	T3.062916.105622	06/29/16 10:56	02
18WW19F-062016	L16061142-03	T3.062916.110017	06/29/16 11:00	02
18WW19FFD-062016	L16061142-05	T3.062916.110411	06/29/16 11:04	02

Report Name: BLANK_SUMMARY
PDF File ID: 4830059
Report generated 06/29/2016 13:58

METHOD BLANK SUMMARY

Login Number: L16061142
Blank File ID: T3.062916.103731
Prep Date: 06/23/16 08:03
Analyzed Date: 06/29/16 10:37
Analyst: JYH

Work Group: WG574350
Blank Sample ID: WG573828-02
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573828-03	T3.062816.135333	06/28/16 13:53	01
18WW20-062016	L16061142-01	T3.062816.135712	06/28/16 13:57	01
18WW19F-062016	L16061142-03	T3.062816.140107	06/28/16 14:01	01
18WW19FFD-062016	L16061142-05	T3.062816.140501	06/28/16 14:05	01
LCS	WG573828-03	T3.062916.104127	06/29/16 10:41	02
18WW20-062016	L16061142-01	T3.062916.105622	06/29/16 10:56	02
18WW19F-062016	L16061142-03	T3.062916.110017	06/29/16 11:00	02
18WW19FFD-062016	L16061142-05	T3.062916.110411	06/29/16 11:04	02

Report Name: BLANK_SUMMARY
PDF File ID: 4830059
Report generated 06/29/2016 13:58

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061142 Prep Date: 06/23/16 08:03 Sample ID: WG573828-02
Instrument ID: ICP-THERMO3 Run Date: 06/28/16 13:49 Prep Method: 3015
File ID: T3.062816.134937 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG574350 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-28-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Aluminum, Total	0.0500	0.200	0.0500	1	U
Beryllium, Total	0.00500	0.0200	0.00500	1	U
Calcium, Total	0.125	0.500	0.125	1	U
Iron, Total	0.0500	0.200	0.0500	1	U
Magnesium, Total	0.250	1.00	0.250	1	U
Potassium, Total	0.500	2.00	0.500	1	U
Sodium, Total	0.250	1.00	0.250	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4830060
30-JUN-2016 10:59

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061142 Prep Date: 06/23/16 08:03 Sample ID: WG573828-02
Instrument ID: ICP-THERMO3 Run Date: 06/29/16 10:37 Prep Method: 3015
File ID: T3.062916.103731 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG574350 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-29-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Selenium, Total	0.00500	0.0200	0.00500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4830060
30-JUN-2016 10:59

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061142 Run Date: 06/28/2016 Sample ID: WG573828-03
Instrument ID: ICP-THERMO3 Run Time: 13:53 Prep Method: 3015
File ID: T3.062816.135333 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG574350 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76576 Cal ID: ICP-TH-28-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Aluminum, Total	6.25	6.28	100	80 - 120	
Beryllium, Total	0.0313	0.0306	97.8	80 - 120	
Calcium, Total	6.25	6.40	102	80 - 120	
Iron, Total	2.50	2.45	97.8	80 - 120	
Magnesium, Total	6.25	6.35	102	80 - 120	
Potassium, Total	31.3	31.4	101	80 - 120	
Sodium, Total	31.3	31.6	101	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4830061
Report generated: 06/30/2016 10:59

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061142 Run Date: 06/29/2016 Sample ID: WG573828-03
Instrument ID: ICP-THERMO3 Run Time: 10:41 Prep Method: 3015
File ID: T3.062916.104127 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG574350 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76576 Cal ID: ICP-TH-29-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Selenium, Total	0.250	0.243	97.2	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4830061
Report generated: 06/30/2016 10:59

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061142 Cal ID: ICP-THERMO3 - Worknum: WG574350
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG573828-01 File ID: T3.062816.140856 Dil: 1 Matrix: WATER
Sample ID: WG573828-04 MS File ID: T3.062816.141250 Dil: 1 Units: mg/L
Sample ID: WG573828-05 MSD File ID: T3.062816.141630 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Aluminum	ND	6.25	6.04	96.6	6.25	6.15	98.4	1.78	80 - 120	20	
Beryllium	ND	0.0313	0.0299	95.6	0.0313	0.0305	97.6	2.11	80 - 120	20	
Calcium	ND	6.25	6.11	97.8	6.25	6.21	99.4	1.60	80 - 120	20	
Iron	ND	2.50	2.43	97.2	2.50	2.48	99.2	2.05	80 - 120	20	
Magnesium	ND	6.25	6.09	97.5	6.25	6.14	98.2	0.736	80 - 120	20	
Potassium	ND	31.3	30.1	96.4	31.3	30.6	98.1	1.72	80 - 120	20	
Sodium	143	31.3	167	74.3	31.3	168	78.8	0.844	80 - 120	20	*

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4830062
Report generated 06/30/2016 10:59

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061142 Cal ID: ICP-THERMO3 - Worknum: WG574350
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG573828-01 File ID: T3.062916.104507 Dil: 1 Matrix: WATER
Sample ID: WG573828-04 MS File ID: T3.062916.104902 Dil: 1 Units: mg/L
Sample ID: WG573828-05 MSD File ID: T3.062916.105243 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Selenium	ND	0.250	0.235	93.9	0.250	0.234	93.6	0.379	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4830062
Report generated 06/30/2016 10:59

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16061142 **Worknum:** WG574350
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG574350-02 **File ID:** T3.062816.154055 **Dil:** 5 **Units:** ug/L
Sample: L16061238-01 **File ID:** T3.062816.152932 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	28.4		124		335.00	E
Beryllium	0.0900	X	0.250		178.00	
Calcium	101000		105000		3.79	
Iron	42.8		ND	U		
Magnesium	50700		54200		6.86	
Potassium	348		354		1.83	
Selenium	ND	U	ND	U		
Sodium	135000		139000		3.08	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4830056
06/29/2016 13:53

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16061142 **Worknum:** WG574350
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG574350-04 **File ID:** T3.062916.111145 **Dil:** 5 **Units:** ug/L
Sample: L16061142-05 **File ID:** T3.062916.110411 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	315		346		9.95	
Beryllium	0.0800	X	0.250		213.00	
Calcium	6920		7400		6.85	
Iron	3980		4170		4.85	
Magnesium	1110		1140		2.93	
Potassium	1480		2140		44.60	E
Selenium	ND	U	ND	U		
Sodium	3980		4290		7.89	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4830056
06/29/2016 13:53

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061142 **Worknum:** WG574350
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG574350-01 **File ID:** T3.062816.153717 **Dil:** 1 **Units:** ug/L
Sample ID: L16061238-01 **File ID:** T3.062816.152932 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	5260		0	U	5000	105.2	75 - 125	
BERYLLIUM	25.9		0	U	25	103.7	75 - 125	
CALCIUM	94900		101000		5000	82.4	75 - 125	
IRON	2070		42.8	F	2000	101.6	75 - 125	
MAGNESIUM	50000		50700		5000	87.8	75 - 125	
POTASSIUM	26300		0	U	25000	105.3	75 - 125	
SELENIUM	192		0	U	200	96.2	75 - 125	
SODIUM	146000		135000		25000	98.8	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4830057
Report generated: 06/29/2016 13:58

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061142 **Worknum:** WG574350
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG574350-03 **File ID:** T3.062916.110805 **Dil:** 1 **Units:** ug/L
Sample ID: L16061142-05 **File ID:** T3.062916.110411 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	5180		315		5000	98.0	75 - 125	
BERYLLIUM	24.2		0	U	25	96.8	75 - 125	
CALCIUM	11100		6920		5000	98.2	75 - 125	
IRON	5570		3980		2000	99.3	75 - 125	
MAGNESIUM	5960		1110		5000	99.2	75 - 125	
POTASSIUM	26100		1480	F	25000	99.3	75 - 125	
SELENIUM	192		0	U	200	96.1	75 - 125	
SODIUM	28500		3980		25000	99.7	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4830057
Report generated: 06/29/2016 13:58

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061142	Workgroup (AAB#):	WG574350
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG574512	Initial Calibration Date:	28-JUN-2016 09:31

	WG574512-01		WG574512-02		WG574512-03		WG574512-04		WG574512-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000630	.1	0.00126	.2	0.00193	10	0.0790	20	0.158	.999993	
BERYLLIUM	0	0.000750	.0005	0.00103	.001	0.00146	.05	0.0470	.1	0.0945	.999896	
CALCIUM	0	0.00165	.1	0.00358	.2	0.00723	10	0.437	20	0.881	.999618	
IRON	0	-0.000100	.04	0.000550	.08	0.00104	4	0.0851	8	0.170	.999924	
MAGNESIUM	0	-0.000900	NA	NA	.2	0.00127	10	0.0818	20	0.164	.998924	
POTASSIUM	0	-0.0173	.5	0.00427	1	0.0257	50	2.67	100	5.41	.999988	
SELENIUM	0	-0.000470	NA	NA	.008	-0.000390	.4	0.00576	.8	0.0121	.999816	
SODIUM	0	-0.0583	.5	0.0109	1	0.0824	50	8.61	100	17.5	.999988	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4830065
Report generated: 29-JUN-2016 13:53

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061142	Workgroup (AAB#):	WG574350
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG574675	Initial Calibration Date:	29-JUN-2016 10:07

	WG574675-01		WG574675-02		WG574675-03		WG574675-04		WG574675-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000900	.1	0.00149	.2	0.00216	10	0.0777	20	0.156	.99999	
BERYLLIUM	0	0.000140	.0005	0.000610	.001	0.000910	.05	0.0469	.1	0.0941	.999899	
CALCIUM	0	-0.000210	.1	0.00581	.2	0.00981	10	0.430	20	0.875	.998775	
IRON	0	-0.000420	.04	-0.0000800	.08	0.000850	4	0.0810	8	0.162	.999702	
MAGNESIUM	0	-0.000310	NA	NA	.2	0.000580	10	0.0800	20	0.161	.999747	
POTASSIUM	0	-0.0122	.5	0.0171	1	0.0387	50	3.21	100	6.51	.999964	
SELENIUM	0	-0.000300	NA	NA	.008	-0.000250	.4	0.00565	.8	0.0116	.999294	
SODIUM	0	-0.0579	.5	0.0179	1	0.0912	50	8.68	100	17.7	.999966	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4830065
Report generated: 29-JUN-2016 13:53

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574512-07
Instrument ID: ICP-THERMO3
Run Time: 09:39
Method: 6010C
File ID: T3.062816.093901
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574350
Cal ID: ICP-THERI - 28-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	.004	U
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4830067
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061142
Run Date: 06/29/2016
Sample ID: WG574675-07
Instrument ID: ICP-THERMO3
Run Time: 10:14
Method: 6010C
File ID: T3.062916.101440
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574350
Cal ID: ICP-THERI - 29-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	.004	U
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4830067
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574512-12
Instrument ID: ICP-THERMO3
Run Time: 09:57
Method: 6010C
File ID: T3.062816.095753
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4830070
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574512-24
Instrument ID: ICP-THERMO3
Run Time: 13:41
Method: 6010C
File ID: T3.062816.134146
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4830070
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574512-27
Instrument ID: ICP-THERMO3
Run Time: 14:31
Method: 6010C
File ID: T3.062816.143132
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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PDF File ID: 4830070
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574512-29
Instrument ID: ICP-THERMO3
Run Time: 15:17
Method: 6010C
File ID: T3.062816.151749
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	-0.00929	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4830070
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574512-31
Instrument ID: ICP-THERMO3
Run Time: 15:52
Method: 6010C
File ID: T3.062816.155209
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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PDF File ID: 4830070
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Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/29/2016
Sample ID: WG574512-56
Instrument ID: ICP-THERMO3
Run Time: 00:34
Method: 6010C
File ID: T3.062916.003423
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4830070
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/29/2016
Sample ID: WG574512-60
Instrument ID: ICP-THERMO3
Run Time: 00:49
Method: 6010C
File ID: T3.062916.004929
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	-0.00590	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4830070
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/29/2016
Sample ID: WG574675-12
Instrument ID: ICP-THERMO3
Run Time: 10:33
Method: 6010C
File ID: T3.062916.103333
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 29-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0438	F
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.101	F
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4830070
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/29/2016
Sample ID: WG574675-14
Instrument ID: ICP-THERMO3
Run Time: 11:19
Method: 6010C
File ID: T3.062916.111916
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 29-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4830070
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/29/2016
Sample ID: WG574675-16
Instrument ID: ICP-THERMO3
Run Time: 12:02
Method: 6010C
File ID: T3.062916.120211
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 29-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4830070
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/29/2016
Sample ID: WG574675-20
Instrument ID: ICP-THERMO3
Run Time: 12:17
Method: 6010C
File ID: T3.062916.121718
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 29-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4830070
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061142 Run Date: 06/29/2016 Sample ID: WG574675-06
Instrument ID: ICP-THERMO3 Run Time: 10:11 Method: 6010C
File ID: T3.062916.101102 Analyst: JYH Units: mg/L
Workgroup (AAB#): WG574350 Cal ID: ICP-TH - 29-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	10.3	103	90 - 110	
Beryllium		.05	0.0507	101	90 - 110	
Calcium		10	10.1	101	90 - 110	
Iron		4	4.09	102	90 - 110	
Magnesium		10	10.3	103	90 - 110	
Potassium		50	51.0	102	90 - 110	
Selenium		.4	0.408	102	90 - 110	
Sodium		50	50.9	102	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4830066
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061142 Run Date: 06/28/2016 Sample ID: WG574512-06
Instrument ID: ICP-THERMO3 Run Time: 09:35 Method: 6010C
File ID: T3.062816.093524 Analyst: JYH Units: mg/L
Workgroup (AAB#): WG574350 Cal ID: ICP-TH - 28-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	9.94	99.4	90 - 110	
Beryllium		.05	0.0494	98.9	90 - 110	
Calcium		10	9.88	98.8	90 - 110	
Iron		4	3.95	98.8	90 - 110	
Magnesium		10	10.0	100	90 - 110	
Potassium		50	49.4	98.7	90 - 110	
Selenium		.4	0.401	100	90 - 110	
Sodium		50	49.5	98.9	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4830066
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574512-11
Instrument ID: ICP-THERMO3
Run Time: 09:54
Method: 6010C
File ID: T3.062816.095416
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.6	mg/L	106	90 - 110		
Beryllium		0.0500	0.0510	mg/L	102	90 - 110		
Calcium		10.0	10.2	mg/L	102	90 - 110		
Iron		4.00	4.07	mg/L	102	90 - 110		
Magnesium		10.0	10.3	mg/L	103	90 - 110		
Potassium		50.0	50.2	mg/L	100	90 - 110		
Selenium		0.400	0.412	mg/L	103	90 - 110		
Sodium		50.0	50.2	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4830069
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574512-23
Instrument ID: ICP-THERMO3
Run Time: 13:38
Method: 6010C
File ID: T3.062816.133809
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.1	mg/L	101	90 - 110		
Beryllium		0.0500	0.0500	mg/L	100	90 - 110		
Calcium		10.0	9.99	mg/L	99.9	90 - 110		
Iron		4.00	4.01	mg/L	100	90 - 110		
Magnesium		10.0	10.2	mg/L	102	90 - 110		
Potassium		50.0	50.3	mg/L	101	90 - 110		
Selenium		0.400	0.409	mg/L	102	90 - 110		
Sodium		50.0	50.4	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4830069
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574512-26
Instrument ID: ICP-THERMO3
Run Time: 14:27
Method: 6010C
File ID: T3.062816.142755
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.2	mg/L	102	90 - 110		
Beryllium		0.0500	0.0501	mg/L	100	90 - 110		
Calcium		10.0	10.1	mg/L	101	90 - 110		
Iron		4.00	4.04	mg/L	101	90 - 110		
Magnesium		10.0	10.2	mg/L	102	90 - 110		
Potassium		50.0	50.6	mg/L	101	90 - 110		
Selenium		0.400	0.406	mg/L	101	90 - 110		
Sodium		50.0	51.1	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4830069
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574512-28
Instrument ID: ICP-THERMO3
Run Time: 15:14
Method: 6010C
File ID: T3.062816.151411
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.9	mg/L	109	90 - 110		
Beryllium		0.0500	0.0542	mg/L	108	90 - 110		
Calcium		10.0	10.6	mg/L	106	90 - 110		
Iron		4.00	4.24	mg/L	106	90 - 110		
Magnesium		10.0	10.8	mg/L	108	90 - 110		
Potassium		50.0	53.6	mg/L	107	90 - 110		
Selenium		0.400	0.425	mg/L	106	90 - 110		
Sodium		50.0	53.4	mg/L	107	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4830069
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574512-30
Instrument ID: ICP-THERMO3
Run Time: 15:48
Method: 6010C
File ID: T3.062816.154842
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.45	mg/L	94.5	90 - 110		
Beryllium		0.0500	0.0471	mg/L	94.2	90 - 110		
Calcium		10.0	9.35	mg/L	93.5	90 - 110		
Iron		4.00	3.71	mg/L	92.7	90 - 110		
Magnesium		10.0	9.47	mg/L	94.7	90 - 110		
Potassium		50.0	47.4	mg/L	94.8	90 - 110		
Selenium		0.400	0.379	mg/L	94.7	90 - 110		
Sodium		50.0	47.0	mg/L	94.0	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4830069
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142
Run Date: 06/29/2016
Sample ID: WG574512-55
Instrument ID: ICP-THERMO3
Run Time: 00:30
Method: 6010C
File ID: T3.062916.003045
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.70	mg/L	97.0	90 - 110		
Beryllium		0.0500	0.0476	mg/L	95.2	90 - 110		
Calcium		10.0	9.70	mg/L	97.0	90 - 110		
Iron		4.00	3.86	mg/L	96.4	90 - 110		
Magnesium		10.0	9.79	mg/L	97.9	90 - 110		
Potassium		50.0	48.9	mg/L	97.8	90 - 110		
Selenium		0.400	0.394	mg/L	98.5	90 - 110		
Sodium		50.0	49.6	mg/L	99.2	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Report generated 06/29/2016 13:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142
Run Date: 06/29/2016
Sample ID: WG574512-59
Instrument ID: ICP-THERMO3
Run Time: 00:45
Method: 6010C
File ID: T3.062916.004552
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.39	mg/L	93.9	90 - 110		
Beryllium		0.0500	0.0458	mg/L	91.6	90 - 110		
Calcium		10.0	9.34	mg/L	93.4	90 - 110		
Iron		4.00	3.74	mg/L	93.5	90 - 110		
Magnesium		10.0	9.42	mg/L	94.2	90 - 110		
Potassium		50.0	47.1	mg/L	94.2	90 - 110		
Selenium		0.400	0.381	mg/L	95.3	90 - 110		
Sodium		50.0	47.9	mg/L	95.7	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142
Run Date: 06/29/2016
Sample ID: WG574675-11
Instrument ID: ICP-THERMO3
Run Time: 10:29
Method: 6010C
File ID: T3.062916.102953
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.76	mg/L	97.6	90 - 110		
Beryllium		0.0500	0.0480	mg/L	96.0	90 - 110		
Calcium		10.0	9.76	mg/L	97.6	90 - 110		
Iron		4.00	3.96	mg/L	98.9	90 - 110		
Magnesium		10.0	9.96	mg/L	99.6	90 - 110		
Potassium		50.0	48.2	mg/L	96.4	90 - 110		
Selenium		0.400	0.384	mg/L	96.1	90 - 110		
Sodium		50.0	47.9	mg/L	95.8	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Report generated 06/29/2016 13:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142
Run Date: 06/29/2016
Sample ID: WG574675-13
Instrument ID: ICP-THERMO3
Run Time: 11:15
Method: 6010C
File ID: T3.062916.111539
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.90	mg/L	99.0	90 - 110		
Beryllium		0.0500	0.0492	mg/L	98.3	90 - 110		
Calcium		10.0	9.90	mg/L	99.0	90 - 110		
Iron		4.00	3.95	mg/L	98.8	90 - 110		
Magnesium		10.0	9.89	mg/L	98.9	90 - 110		
Potassium		50.0	49.9	mg/L	99.9	90 - 110		
Selenium		0.400	0.394	mg/L	98.5	90 - 110		
Sodium		50.0	49.8	mg/L	99.6	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142
Run Date: 06/29/2016
Sample ID: WG574675-15
Instrument ID: ICP-THERMO3
Run Time: 11:58
Method: 6010C
File ID: T3.062916.115833
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.85	mg/L	98.5	90 - 110		
Beryllium		0.0500	0.0488	mg/L	97.6	90 - 110		
Calcium		10.0	9.80	mg/L	98.0	90 - 110		
Iron		4.00	3.95	mg/L	98.7	90 - 110		
Magnesium		10.0	9.91	mg/L	99.1	90 - 110		
Potassium		50.0	49.4	mg/L	98.8	90 - 110		
Selenium		0.400	0.403	mg/L	101	90 - 110		
Sodium		50.0	49.3	mg/L	98.7	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4830069
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142
Run Date: 06/29/2016
Sample ID: WG574675-19
Instrument ID: ICP-THERMO3
Run Time: 12:13
Method: 6010C
File ID: T3.062916.121342
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.2	mg/L	102	90 - 110		
Beryllium		0.0500	0.0504	mg/L	101	90 - 110		
Calcium		10.0	10.1	mg/L	101	90 - 110		
Iron		4.00	4.04	mg/L	101	90 - 110		
Magnesium		10.0	10.2	mg/L	102	90 - 110		
Potassium		50.0	51.1	mg/L	102	90 - 110		
Selenium		0.400	0.403	mg/L	101	90 - 110		
Sodium		50.0	50.8	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4830069
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574512-08
Instrument ID: ICP-THERMO3
Run Time: 09:42
Method: 6010C
File ID: T3.062816.094252
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.178	mg/L	111	70 - 130		
Beryllium		0.00160	0.00148	mg/L	92.5	70 - 130		
Calcium		0.400	0.354	mg/L	88.6	70 - 130		
Iron		0.0800	0.0839	mg/L	105	70 - 130		
Magnesium		0.400	0.487	mg/L	122	70 - 130		
Potassium		0.800	0.762	mg/L	95.2	70 - 130		
Selenium		0.0160	0.0178	mg/L	111	70 - 130		
Sodium		0.400	0.434	mg/L	108	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4830071
Report generated 06/29/2016 13:58

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574512-25
Instrument ID: ICP-THERMO3
Run Time: 13:45
Method: 6010C
File ID: T3.062816.134543
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.191	mg/L	119	70 - 130		
Beryllium		0.00160	0.00173	mg/L	108	70 - 130		
Calcium		0.400	0.426	mg/L	106	70 - 130		
Iron		0.0800	0.0666	mg/L	83.2	70 - 130		
Magnesium		0.400	0.500	mg/L	125	70 - 130		
Potassium		0.800	0.922	mg/L	115	70 - 130		
Selenium		0.0160	0.0142	mg/L	88.8	70 - 130		
Sodium		0.400	0.400	mg/L	100	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4830071
Report generated 06/29/2016 13:58

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574512-32
Instrument ID: ICP-THERMO3
Run Time: 15:56
Method: 6010C
File ID: T3.062816.155606
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.166	mg/L	104	70 - 130		
Beryllium		0.00160	0.00151	mg/L	94.4	70 - 130		
Calcium		0.400	0.381	mg/L	95.1	70 - 130		
Iron		0.0800	0.0722	mg/L	90.3	70 - 130		
Magnesium		0.400	0.423	mg/L	106	70 - 130		
Potassium		0.800	0.888	mg/L	111	70 - 130		
Selenium		0.0160	0.0102	mg/L	64.0	70 - 130		*
Sodium		0.400	0.426	mg/L	107	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4830071
Report generated 06/29/2016 13:58

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061142
Run Date: 06/29/2016
Sample ID: WG574512-61
Instrument ID: ICP-THERMO3
Run Time: 00:53
Method: 6010C
File ID: T3.062916.005324
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.167	mg/L	105	70 - 130		
Beryllium		0.00160	0.00143	mg/L	89.4	70 - 130		
Calcium		0.400	0.359	mg/L	89.8	70 - 130		
Iron		0.0800	0.0859	mg/L	107	70 - 130		
Magnesium		0.400	0.421	mg/L	105	70 - 130		
Potassium		0.800	0.634	mg/L	79.3	70 - 130		
Selenium		0.0160	0.0133	mg/L	83.1	70 - 130		
Sodium		0.400	0.452	mg/L	113	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4830071
Report generated 06/29/2016 13:58

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061142
Run Date: 06/29/2016
Sample ID: WG574675-08
Instrument ID: ICP-THERMO3
Run Time: 10:18
Method: 6010C
File ID: T3.062916.101836
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.171	mg/L	107	70 - 130		
Beryllium		0.00160	0.00157	mg/L	98.1	70 - 130		
Calcium		0.400	0.421	mg/L	105	70 - 130		
Iron		0.0800	0.103	mg/L	128	70 - 130		
Magnesium		0.400	0.313	mg/L	78.3	70 - 130		
Selenium		0.0160	0.0143	mg/L	89.6	70 - 130		
Sodium		0.400	0.423	mg/L	106	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4830071
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Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061142
Run Date: 06/29/2016
Sample ID: WG574675-21
Instrument ID: ICP-THERMO3
Run Time: 12:21
Method: 6010C
File ID: T3.062916.122116
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574350
Cal ID: ICP-TH - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.185	mg/L	116	70 - 130		
Beryllium		0.00160	0.00161	mg/L	101	70 - 130		
Calcium		0.400	0.463	mg/L	116	70 - 130		
Iron		0.0800	0.0701	mg/L	87.6	70 - 130		
Magnesium		0.400	0.338	mg/L	84.5	70 - 130		
Selenium		0.0160	0.0132	mg/L	82.4	70 - 130		
Sodium		0.400	0.434	mg/L	108	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4830071
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Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061142
Instrument ID: ICP-THERMO3
Sol. A : WG574512-09 **File ID:** T3.062816.094645
Sol. AB : WG574512-10 **File ID:** T3.062816.095036

Workgroup (AAB#): WG574350
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	266	106	250	262	105	
Beryllium	NS	-0.0000500	NS	0.250	0.243	97.2	
Calcium	250	248	99.2	250	244	97.6	
Iron	100	98.7	98.7	100	95.1	95.1	
Magnesium	250	251	100	250	244	97.6	
Potassium	NS	0.0688	NS	5.00	5.25	105	
Selenium	NS	-0.00226	NS	0.250	0.249	99.6	
Sodium	NS	0.0593	NS	5.00	5.25	105	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

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Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061142
Instrument ID: ICP-THERMO3
Sol. A : WG574512-57 **File ID:** T3.062916.003819
Sol. AB : WG574512-58 **File ID:** T3.062916.004209

Workgroup (AAB#): WG574350
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	262	105	250	258	103	
Beryllium	NS	0	NS	0.250	0.234	93.6	
Calcium	250	250	100	250	249	99.6	
Iron	100	97.1	97.1	100	95.9	95.9	
Magnesium	250	247	98.8	250	244	97.6	
Potassium	NS	0.0493	NS	5.00	5.07	101	
Selenium	NS	-0.00153	NS	0.250	0.249	99.6	
Sodium	NS	0.0836	NS	5.00	5.51	110	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4830068
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Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061142
Instrument ID: ICP-THERMO3
Sol. A : WG574675-09 **File ID:** T3.062916.102229
Sol. AB : WG574675-10 **File ID:** T3.062916.102611

Workgroup (AAB#): WG574350
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	257	103	250	258	103	
Beryllium	NS	-0.0000700	NS	0.250	0.250	100	
Calcium	250	241	96.4	250	243	97.2	
Iron	100	96.2	96.2	100	95.0	95.0	
Magnesium	250	246	98.4	250	242	96.8	
Potassium	NS	0.182	NS	5.00	5.32	106	
Selenium	NS	0.00425	NS	0.250	0.257	103	
Sodium	NS	0.0105	NS	5.00	5.20	104	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4830068
Report generated 06/29/2016 13:53

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061142
Instrument ID: ICP-THERMO3
Sol. A : WG574675-17 **File ID:** T3.062916.120607
Sol. AB : WG574675-18 **File ID:** T3.062916.120959

Workgroup (AAB#): WG574350
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	256	102	250	258	103	
Beryllium	NS	-0.0000700	NS	0.250	0.251	100	
Calcium	250	243	97.2	250	241	96.4	
Iron	100	96.5	96.5	100	94.3	94.3	
Magnesium	250	246	98.4	250	241	96.4	
Potassium	NS	0.0274	NS	5.00	5.20	104	
Selenium	NS	0.00783	NS	0.250	0.264	106	
Sodium	NS	0.0111	NS	5.00	5.26	105	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061142 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	AG	AL	AS	B	BA
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000410	0	0	0
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0.0115	0	-0.0000800
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0.000260	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	-0.000289	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	-0.0000490	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.0000120	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0.0000300	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4830064
Report generated: 06/29/2016 13:53

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061142 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	BE	CA	CD	CO	CR
ALUMINUM	308.20	0	0	0	-0.000820	0
ANTIMONY	206.80	0	0	0	0	0.0200
ARSENIC	189.00	0	0	0	0	-0.00190
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0.00343	0
CADMIUM	228.80	0	0	0	-0.00390	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	-0.000200
COPPER	224.70	0	0	0	0.0000770	-0.00100
IRON	261.10	0	0	0	0	-0.00100
LEAD	220.30	0	0	0	-0.0000130	-0.000132
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.0000500
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	-0.000860	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0.00000500	0	0	0
THALLIUM	190.80	0	0	0	0.00240	0.000276
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	-0.00480
ZINC	206.20	0	0	0	0	-0.00180
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4830064
Report generated: 06/29/2016 13:53

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061142 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	CU	FE	K	LI	MG
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000560	0	0	0
ARSENIC	189.00	0	-0.0000500	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0.000300	0	0	0
CADMIUM	228.80	0	-0.0000190	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000500	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0.00160	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0.000609	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.00000300
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0.0000420	0	0	0
PHOSPHORUS	214.90	-0.323	0.000900	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000270	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000400	0	0	0
VANADIUM	292.40	0	0.00000700	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	-0.0000300	0	0	0

CORR_FACTORS - Modified 03/05/2008
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Report generated: 06/29/2016 13:53

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061142 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	MN	MO	NA	NI	P
ALUMINUM	308.20	0	0.0163	0	0	0
ANTIMONY	206.80	0	-0.00310	0	-0.00350	0
ARSENIC	189.00	0	0.00120	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	-0.00190	0	0	0
CADMIUM	228.80	0	0.0000320	0	-0.000770	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0.000360	0	0	0	0
COBALT	228.60	0	-0.00200	0	0.000100	0
COPPER	224.70	0	0.00160	0	-0.0123	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	-0.00210	0	0.000110	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	-0.00290	-0.0230	0	0	0
MANGANESE	257.60	0	0.0000300	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0.00710	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0.000600	0.000580	0	0	0
SILICON	212.40	0	0.0187	0	0	0
SILVER	328.00	0	-0.0000430	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0.00100	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000153	0	0	0
VANADIUM	292.40	-0.000200	-0.00830	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4830064
Report generated: 06/29/2016 13:53

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061142 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	PB	SB	SE	SI	SN
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0	0	0	-0.0220
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0.00440	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4830064
Report generated: 06/29/2016 13:53

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061142 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	SR	TI	TL	V	ZN
ALUMINUM	308.20	0	0	0	0.0950	0
ANTIMONY	206.80	0	0.00110	0	-0.00360	0
ARSENIC	189.00	0	0	0	0.000107	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	-0.00000700	0	0.000990	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0.000102	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000550	0	0	0
COBALT	228.60	0	0.00210	0	0.0000200	0
COPPER	224.70	0	0.000269	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	-0.000126	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	-0.00290	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	-0.000110	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	-0.00100	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000720	0	-0.000260	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.000800	0	-0.00490	0
TIN	189.90	0	-0.00190	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0.000820	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4830064
Report generated: 06/29/2016 13:53

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061142 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	ZR
ALUMINUM	308.20	0
ANTIMONY	206.80	0
ARSENIC	189.00	0
BARIUM	455.40	0
BERYLLIUM	313.10	0
BORON	249.60	0
CADMIUM	228.80	0
CALCIUM	422.60	0
CHROMIUM	267.70	0
COBALT	228.60	0
COPPER	224.70	0
IRON	261.10	0
LEAD	220.30	0
LITHIUM	670.70	0
MAGNESIUM	279.00	0
MANGANESE	257.60	0
MOLYBDENUM	202.00	0
NICKEL	231.60	0
PHOSPHORUS	214.90	0
POTASSIUM	766.40	0
SELENIUM	196.00	0
SILICON	212.40	0
SILVER	328.00	0
SODIUM	589.50	0
STRONTIUM	407.70	0
THALLIUM	190.80	0
TIN	189.90	0
TITANIUM	337.20	0
VANADIUM	292.40	0
ZINC	206.20	0
ZIRCONIUM	339.10	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4830064
Report generated: 06/29/2016 13:53

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16061142 **Date:** 04/29/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	900.0
Antimony	20.00	45.0
Arsenic	10.00	45.0
Barium	10.00	45.0
Beryllium	10.00	1.8
Boron	20.00	45.0
Cadmium	20.00	4.5
Calcium	5.00	270.0
Chromium	20.00	36.0
Cobalt	20.00	45.0
Copper	20.00	180.0
Iron	5.00	720.0
Lead	20.00	225.0
Lithium	5.00	36.0
Magnesium	5.00	900.0
Manganese	10.00	36.0
Molybdenum	20.00	27.0
Nickel	20.00	90.0
Phosphorus	20.00	180.0
Potassium	5.00	450.0
Selenium	20.00	90.0
Silicon	20.00	36.0
Silver	10.00	9.0
Sodium	5.00	270.0
Strontium	5.00	9.0
Thallium	20.00	18.0
Tin	20.00	45.0
Titanium	5.00	36.0
Vanadium	20.00	27.0
Zinc	20.00	45.0
Zirconium	10.00	45.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4830063
Report generated: 06/29/2016 13:53

2.3.1.3 Raw Data

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.000232	0.049165	0.000000	1.000000
Al 308.215 {109}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.000634	0.007803	0.000000	1.000000
As 189.042 {478}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.000040	0.022231	0.000000	1.000000
B 249.678 {135}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.000011	0.021528	0.000000	1.000000
Ba 455.403 { 74}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.057094	2.076352	0.000000	1.000000
Be 313.107 {108}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.000750	0.915011	0.000000	1.000000
Ca 422.673 { 80}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.001646	0.043727	0.000000	1.000000
Cd 228.802 {447}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.000087	0.541329	0.000000	1.000000
Co 228.616 {447}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.000124	0.345900	0.000000	1.000000
Cr 267.716 {126}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.000307	0.057253	0.000000	1.000000
Cu 224.700 {450}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.000095	0.121091	0.000000	1.000000
Fe 261.187 {129}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.000099	0.021228	0.000000	1.000000
K 766.490 { 44}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.017252	0.054111	0.000000	1.000000
Li 670.784 { 50}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.017716	1.541847	0.000000	1.000000
Mg 279.079 {121}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.000903	0.008313	0.000000	1.000000
Mn 257.610 {131}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.000352	0.261349	0.000000	1.000000
Mo 202.030 {467}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.000019	0.173301	0.000000	1.000000
Na 589.592 { 57}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.058329	0.174631	0.000000	1.000000
Ni 231.604 {446}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.000820	0.127033	0.000000	1.000000
P 214.914 {457}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.000118	0.012842	0.000000	1.000000
Pb 220.353 {453}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.001076	0.059382	0.000000	1.000000
Sb 206.833 {463}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.000235	0.028236	0.000000	1.000000
Se 196.090 {472}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.000467	0.015624	0.000000	1.000000
Si 212.412 {459}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.002275	0.036630	0.000000	1.000000
Sn 189.989 {477}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.000014	0.067208	0.000000	1.000000
Sr 407.771 { 83}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.002067	3.402056	0.000000	1.000000
Ti 337.280 {100}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.001900	0.093443	0.000000	1.000000
Tl 190.856 {477}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.000364	0.027650	0.000000	1.000000
V 292.402 {115}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.000001	0.067460	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	0.000143	0.395720	0.000000	1.000000
Zr 339.198 { 99}	6/28/2016 9:35:19	6/28/2016 9:35:19	Linear	1/Conc	-0.005896	3.544760	0.000000	1.000000

Approved: June 29, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999853	0.000002	0.002445	0.008150	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999993	0.000002	0.010657	0.035523	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999959	0.000001	0.003594	0.011982	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999958	0.000001	0.003317	0.011056	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999927	0.000159	0.001217	0.004057	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999896	0.000004	0.000106	0.000355	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999618	0.000077	0.047958	0.159859	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999881	0.000003	0.000300	0.001001	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999934	0.000005	0.000451	0.001504	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999876	0.000003	0.001342	0.004472	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999948	0.000004	0.001515	0.005051	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999924	0.000007	0.031406	0.104688	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999988	0.000084	0.134248	0.447494	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999873	0.000241	0.004399	0.014664	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.998924	0.000038	0.090376	0.301254	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999918	0.000011	0.002982	0.009941	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999968	0.000009	0.000477	0.001591	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999988	0.000275	0.036379	0.121263	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999979	0.000003	0.001305	0.004351	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999991	0.000003	0.008026	0.026754	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999140	0.000008	0.004059	0.013529	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999877	0.000003	0.005017	0.016722	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999816	0.000001	0.007504	0.025013	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999953	0.000011	0.002658	0.008861	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999971	0.000003	0.000978	0.003261	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999990	0.000095	0.000514	0.001713	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999983	0.000003	0.009263	0.030877	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999987	0.000001	0.003426	0.011421	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999951	0.000004	0.001103	0.003675	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999989	0.000012	0.000225	0.000751	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.999946	0.000234	0.000575	0.001916	OK.	1.000000	0.000000	1	0

Approved: June 29, 2016

Sample Name: S0 Acquired: 6/28/2016 9:16:20 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00023**	**.00063**	**.00004**	**.00001**	**.05709**	**.00075**	**.00165**
Stddev	.00004	.00000	.00006	.00004	.00140	.00001	.00175
%RSD	18.419	.66325	140.27	332.02	2.4545	1.9590	105.90
#1	-.00020	.00063	.00001	-.00001	.05868	.00075	.00362
#2	-.00028	.00063	.00011	.00005	.05658	.00077	.00103
#3	-.00021	.00064	.00001	-.00001	.05602	.00074	.00029

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00009**	**-.00012**	**.00031**	**.00009**	**-.00010**	**-.01725**	**-.01772**
Stddev	.00004	.00011	.00006	.00003	.00070	.00436	.00866
%RSD	42.371	86.096	18.227	29.654	708.02	25.277	48.862
#1	-.00013	-.00001	.00037	.00012	-.00045	-.02225	-.01094
#2	-.00006	-.00013	.00026	.00009	.00071	-.01424	-.01475
#3	-.00007	-.00022	.00029	.00007	-.00056	-.01526	-.02747

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00090**	**.00035**	**-.00002**	**-.05833**	**-.00082**	**-.00012**	**-.00108**
Stddev	.00031	.00041	.00003	.00617	.00011	.00009	.00011
%RSD	34.693	116.29	174.79	10.585	13.184	75.086	10.636
#1	-.00126	.00024	-.00001	-.06271	-.00070	-.00002	-.00106
#2	-.00067	.00001	-.00005	-.05127	-.00084	-.00018	-.00097
#3	-.00079	.00081	.00001	-.06101	-.00091	-.00016	-.00120

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00024**	**-.00047**	**.00228**	**.00001**	**.00207**	**-.00190**	**-.00036**
Stddev	.00009	.00015	.00006	.00003	.00122	.00047	.00004
%RSD	36.331	33.173	2.6350	196.75	58.814	24.571	11.950
#1	.00014	-.00032	.00223	-.00000	.00073	-.00184	-.00033
#2	.00029	-.00046	.00225	.00000	.00310	-.00239	-.00041
#3	.00027	-.00063	.00234	.00005	.00238	-.00147	-.00035

Approved: June 29, 2016

Sample Name: S0 Acquired: 6/28/2016 9:16:20 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00000	.00014	-.00589
Stddev	.00002	.00004	.00178
%RSD	4049.1	26.620	30.214
#1	.00001	.00014	-.00623
#2	.00002	.00018	-.00748
#3	-.00003	.00011	-.00397
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9714.8	58491.	2823.7
Stddev	16.7	110.	25.4
%RSD	.17193	.18886	.90073
#1	9720.2	58546.	2801.2
#2	9728.1	58564.	2818.6
#3	9696.1	58364.	2851.3

Approved: June 29, 2016

Sample Name: S1 Acquired: 6/28/2016 9:20:18 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00003**	**.00126**	**.07127**	**.00103**	**.00358**	**.00016**	**.00031**
Stddev	.00003	.00006	.00137	.00015	.00050	.00014	.00006
%RSD	125.85	5.1064	1.9277	14.298	14.086	85.616	20.693
#1	-.00003	.00132	.07141	.00093	.00380	.00017	.00036
#2	-.00006	.00119	.06983	.00097	.00300	.00002	.00024
#3	.00001	.00129	.07256	.00120	.00394	.00029	.00032

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00048**	**.00049**	**.00055**	**.00427**	**.00160**	**.00124**	**.01092**
Stddev	.00003	.00005	.00040	.00427	.00016	.00011	.00082
%RSD	5.3307	9.2632	73.814	99.979	9.7621	8.7281	7.5482
#1	.00050	.00044	.00022	-.00041	.00157	.00131	.01050
#2	.00048	.00050	.00100	.00797	.00147	.00129	.01187
#3	.00045	.00053	.00042	.00526	.00178	.00112	.01039

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00036**	**.00088**	**-.00103**	**.00046**	**.00356**	**.00049**	**.02743**
Stddev	.00012	.00002	.00015	.00009	.00009	.00003	.00119
%RSD	33.945	2.6105	14.271	18.586	2.5479	7.0434	4.3541
#1	-.00026	.00090	-.00097	.00039	.00354	.00052	.02869
#2	-.00032	.00085	-.00092	.00044	.00366	.00049	.02631
#3	-.00050	.00088	-.00120	.00055	.00348	.00045	.02730

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00122**	**.00048**	**.00307**	**.01800**
Stddev	.00014	.00002	.00019	.00142
%RSD	11.782	4.8775	6.2838	7.8748
#1	-.00137	.00048	.00311	.01754
#2	-.00108	.00050	.00324	.01687
#3	-.00121	.00046	.00286	.01959

Approved: June 29, 2016

Sample Name: S1 Acquired: 6/28/2016 9:20:18 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9700.9**	**58648.**	**2834.2**
Stddev	11.6	54.	2.3
%RSD	.11996	.09285	.08254
#1	9688.0	58595.	2831.5
#2	9710.7	58703.	2835.9
#3	9703.9	58646.	2835.0

Approved: June 29, 2016

Sample Name: S2 Acquired: 6/28/2016 9:24:13 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00009**	**.00193**	**.00017**	**.00017**	**.09454**	**.00146**	**.00723**
Stddev	.00008	.00006	.00006	.00004	.00278	.00004	.00160
%RSD	83.939	3.1358	35.753	24.828	2.9371	2.8533	22.087
#1	.00011	.00190	.00023	.00019	.09719	.00151	.00588
#2	.00016	.00200	.00011	.00012	.09477	.00143	.00900
#3	.00001	.00189	.00016	.00019	.09166	.00144	.00682

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00030**	**.00098**	**.00072**	**.00105**	**.00104**	**.02566**	**.01205**
Stddev	.00008	.00005	.00004	.00009	.00055	.01120	.00176
%RSD	26.659	5.3135	5.7558	8.1488	52.725	43.631	14.637
#1	.00039	.00103	.00070	.00107	.00130	.03847	.01331
#2	.00024	.00098	.00070	.00112	.00141	.02079	.01003
#3	.00028	.00092	.00077	.00096	.00041	.01773	.01281

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00127**	**.00261**	**.00256**	**.08239**	**.00025**	**.00182**	**-.00058**
Stddev	.00061	.00102	.00007	.00826	.00004	.00007	.00016
%RSD	48.074	39.234	2.6316	10.022	14.836	3.8680	28.275
#1	.00188	.00263	.00261	.07825	.00022	.00177	-.00077
#2	.00066	.00362	.00258	.09190	.00023	.00190	-.00050
#3	.00125	.00158	.00248	.07702	.00029	.00179	-.00047

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00067**	**-.00039**	**.00509**	**.00102**	**.05525**	**-.00033**	**-.00016**
Stddev	.00007	.00004	.00018	.00007	.00176	.00054	.00011
%RSD	10.832	9.8136	3.4524	6.4870	3.1861	162.21	68.603
#1	.00071	-.00038	.00503	.00109	.05600	-.00081	-.00013
#2	.00071	-.00036	.00529	.00102	.05324	-.00043	-.00028
#3	.00059	-.00044	.00495	.00096	.05652	.00025	-.00007

Approved: June 29, 2016

Sample Name: S2 Acquired: 6/28/2016 9:24:13 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00099	.00624	.04815
Stddev	.00002	.00020	.00347
%RSD	1.9896	3.2439	7.2147
#1	.00101	.00634	.05143
#2	.00097	.00637	.04451
#3	.00100	.00601	.04852
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9488.3	57374.	2740.7
Stddev	13.3	265.	16.1
%RSD	.14056	.46229	.58687
#1	9498.8	57303.	2735.4
#2	9492.7	57152.	2758.8
#3	9473.3	57668.	2728.0

Approved: June 29, 2016

Sample Name: S3 Acquired: 6/28/2016 9:28:11 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.01916	.07899	.00881	.01065	2.1276	.04704	.43747	.02939
Stddev	.00009	.00021	.00004	.00008	.0188	.00004	.00572	.00012
%RSD	.48290	.26798	.41949	.72661	.88345	.07530	1.3084	.39245
#1	.01915	.07889	.00878	.01070	2.1392	.04705	.43801	.02929
#2	.01907	.07924	.00885	.01056	2.1376	.04700	.44291	.02935
#3	.01926	.07886	.00880	.01070	2.1059	.04707	.43150	.02951

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.06899	.02881	.06128	.08514	2.6698	1.5114	.08181	.12999
Stddev	.00025	.00010	.00021	.00074	.0161	.0132	.00070	.00035
%RSD	.36800	.36413	.33638	.86441	.60241	.87096	.85392	.26989
#1	.06876	.02869	.06116	.08576	2.6757	1.5250	.08180	.13021
#2	.06894	.02886	.06152	.08533	2.6821	1.5103	.08252	.13017
#3	.06926	.02888	.06116	.08432	2.6516	1.4988	.08112	.12959

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.17433	8.6122	.06285	.12581	.02893	.03354	.00576	.18790
Stddev	.00031	.0732	.00005	.00024	.00024	.00003	.00001	.00028
%RSD	.17582	.84951	.08654	.19275	.83516	.09147	.09744	.15032
#1	.17399	8.6595	.06279	.12561	.02891	.03350	.00576	.18758
#2	.17443	8.6492	.06290	.12608	.02871	.03355	.00576	.18800
#3	.17457	8.5280	.06286	.12575	.02919	.03356	.00575	.18812

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.06712	3.3956	.09127	.01239	.06680	.39577	3.5688
Stddev	.00013	.0315	.00072	.00006	.00018	.00037	.0461
%RSD	.19851	.92688	.79280	.51421	.27024	.09319	1.2920
#1	.06699	3.4194	.09199	.01232	.06671	.39600	3.5820
#2	.06711	3.4075	.09128	.01243	.06669	.39597	3.6069
#3	.06726	3.3599	.09055	.01243	.06701	.39535	3.5176

Approved: June 29, 2016

Sample Name: S3 Acquired: 6/28/2016 9:28:11 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9241.9**	**55260.**	**2668.0**
Stddev	19.7	48.	33.4
%RSD	.21369	.08737	1.2509
#1	9229.8	55276.	2646.9
#2	9231.3	55298.	2650.6
#3	9264.7	55205.	2706.4

Approved: June 29, 2016

Sample Name: S4 Acquired: 6/28/2016 9:31:48 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.03898	.15838	.01780	.02157	4.2139	.09454	.88060	.05924
Stddev	.00003	.00023	.00001	.00010	.0233	.00025	.00662	.00020
%RSD	.08866	.14782	.07112	.46921	.55230	.26866	.75203	.34365
#1	.03894	.15829	.01779	.02152	4.1947	.09434	.87964	.05948
#2	.03900	.15864	.01780	.02151	4.2398	.09446	.88765	.05914
#3	.03900	.15820	.01781	.02169	4.2071	.09483	.87451	.05911

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13809	.05786	.12220	.16962	5.4128	3.0736	.16425	.26249
Stddev	.00033	.00011	.00045	.00080	.0435	.0280	.00229	.00125
%RSD	.24203	.19009	.36880	.47369	.80337	.91276	1.3953	.47581
#1	.13820	.05783	.12257	.16937	5.3823	3.0436	.16161	.26184
#2	.13836	.05797	.12233	.17052	5.4626	3.0991	.16579	.26393
#3	.13772	.05776	.12170	.16898	5.3936	3.0782	.16533	.26170

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.34580	17.465	.12606	.25335	.05863	.06689	.01208	.36847
Stddev	.00103	.089	.00054	.00060	.00028	.00018	.00008	.00027
%RSD	.29826	.51204	.42896	.23539	.46906	.26956	.69300	.07400
#1	.34674	17.386	.12620	.25381	.05870	.06700	.01218	.36872
#2	.34597	17.562	.12651	.25356	.05887	.06699	.01203	.36850
#3	.34470	17.448	.12546	.25268	.05833	.06668	.01204	.36818

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13428	6.8183	.18453	.02487	.13520	.79151	7.0595
Stddev	.00083	.0500	.00093	.00006	.00027	.00264	.0521
%RSD	.61918	.73271	.50222	.22755	.19752	.33404	.73814
#1	.13469	6.7844	.18348	.02491	.13496	.79350	7.0011
#2	.13482	6.8757	.18485	.02490	.13515	.79251	7.1011
#3	.13332	6.7948	.18525	.02481	.13549	.78851	7.0763

Approved: June 29, 2016

Sample Name: S4 Acquired: 6/28/2016 9:31:48 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9167.2**	**54335.**	**2654.7**
Stddev	38.1	122.	22.7
%RSD	.41612	.22434	.85400
#1	9143.1	54461.	2678.0
#2	9211.2	54218.	2632.7
#3	9147.4	54326.	2653.3

Approved: June 29, 2016

Sample Name: ICV Acquired: 6/28/2016 9:35:24 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39623	9.9377	.39889	.49732	.99363	.04944	9.8812	.04987
Stddev	.00106	.0076	.00708	.00191	.00263	.00011	.0536	.00024
%RSD	.26775	.07627	1.7741	.38466	.26478	.22215	.54207	.47368
#1	.39548	9.9303	.40454	.49713	.99097	.04941	9.8633	.05008
#2	.39577	9.9454	.39095	.49550	.99623	.04956	9.9414	.04961
#3	.39744	9.9373	.40117	.49932	.99370	.04935	9.8388	.04991
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19959	.49664	.50149	3.9513	49.374	.98661	10.034	.49580
Stddev	.00028	.00150	.00082	.0258	.237	.00181	.192	.00669
%RSD	.13960	.30233	.16435	.65329	.47968	.18320	1.9142	1.3487
#1	.19946	.49575	.50241	3.9273	49.179	.98559	9.9342	.48809
#2	.19940	.49837	.50124	3.9482	49.637	.98870	10.255	.49945
#3	.19991	.49580	.50081	3.9786	49.305	.98555	9.9118	.49988
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0065	49.454	.49982	9.9830	.50183	1.1963	.40103	5.0777
Stddev	.0002	.121	.00152	.0155	.00322	.0016	.00482	.0052
%RSD	.02228	.24557	.30431	.15537	.64110	.13254	1.2016	.10217
#1	1.0068	49.335	.49901	9.9766	.49881	1.1979	.40328	5.0825
#2	1.0063	49.578	.50157	10.001	.50521	1.1962	.40432	5.0786
#3	1.0065	49.448	.49887	9.9716	.50146	1.1947	.39550	5.0722
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: ICV Acquired: 6/28/2016 9:35:24 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0016**	**.99261**	**.99584**	**.50153**	**.98848**	**1.0048**	**.99997**
Stddev	.0014	.00354	.00789	.00098	.00445	.0012	.00652
%RSD	.13679	.35675	.79209	.19533	.45048	.12104	.65160
#1	1.0013	.98970	.98754	.50134	.98379	1.0059	.99456
#2	1.0032	.99655	1.0032	.50259	.98898	1.0050	1.0072
#3	1.0005	.99159	.99673	.50066	.99265	1.0035	.99814
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9250.5**	**55131.**	**2679.3**
Stddev	20.5	128.	17.4
%RSD	.22138	.23235	.64777
#1	9233.7	55045.	2687.8
#2	9273.3	55070.	2659.3
#3	9244.5	55278.	2690.7

Approved: June 29, 2016

Sample Name: ICB Acquired: 6/28/2016 9:39:01 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00132	.01180	-.00119	.00063	.00251	.00001	-.00918	.00008
Stddev	.00181	.00703	.00094	.00081	.00066	.00006	.02928	.00031
%RSD	136.70	59.632	79.494	126.97	26.308	597.53	319.03	386.11
#1	-.00000	.01298	-.00012	.00058	.00242	.00008	.02412	.00032
#2	.00059	.00425	-.00191	-.00014	.00322	-.00002	-.03090	.00018
#3	.00338	.01816	-.00154	.00147	.00191	-.00003	-.02076	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.00027	.00073	-.01933	.22486	.00161	-.02324	-.00042
Stddev	.00014	.00107	.00081	.05271	.09957	.00256	.03321	.00086
%RSD	166.85	404.59	111.23	272.68	44.280	159.67	142.93	202.90
#1	.00015	.00041	.00096	.00121	.27186	-.00060	-.05724	.00035
#2	.00017	.00126	.00140	.02002	.11049	.00442	.00912	-.00027
#3	-.00008	-.00087	-.00017	-.07922	.29222	.00100	-.02159	-.00135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	.04470	.00005	.00699	.00132	.00357	.00008	.01683
Stddev	.00109	.04154	.00064	.00960	.00083	.00638	.00236	.00483
%RSD	272.72	92.940	1291.7	137.41	63.029	178.79	2974.4	28.717
#1	.00158	-.00292	.00078	.01781	.00208	.00712	.00108	.02228
#2	.00021	.06349	-.00026	-.00050	.00043	-.00380	.00178	.01513
#3	-.00058	.07352	-.00037	.00365	.00143	.00739	-.00262	.01308
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: ICB Acquired: 6/28/2016 9:39:01 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00057**	**.00014**	**.00196**	**-.00125**	**-.00073**	**.00103**	**-.00010**
Stddev	.00135	.00023	.00632	.00329	.00106	.00089	.00055
%RSD	236.56	168.90	323.11	262.65	146.43	86.352	567.67
#1	.00210	.00040	.00249	-.00348	-.00093	.00203	.00036
#2	-.00046	.00003	.00799	.00252	.00042	.00071	-.00070
#3	.00007	-.00002	-.00462	-.00279	-.00168	.00034	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9447.3**	**56860.**	**2718.2**
Stddev	10.4	122.	12.5
%RSD	.11005	.21506	.45975
#1	9458.4	56769.	2709.1
#2	9437.8	56999.	2713.0
#3	9445.8	56813.	2732.4

Approved: June 29, 2016

Sample Name: LLICV Acquired: 6/28/2016 9:42:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00991	.17815	.00897	.07876	.00904	.00148	.35423	.00069
Stddev	.00104	.00704	.00226	.00139	.00049	.00009	.03506	.00011
%RSD	10.461	3.9500	25.189	1.7678	5.4305	6.3955	9.8986	16.368
#1	.01050	.18405	.01008	.07716	.00948	.00155	.38883	.00057
#2	.00871	.18003	.00637	.07946	.00851	.00152	.35515	.00072
#3	.01051	.17036	.01047	.07966	.00912	.00137	.31872	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00362	.00403	.00418	.08391	.76193	.08522	.48689	.00680
Stddev	.00017	.00112	.00111	.04090	.06478	.00043	.08244	.00161
%RSD	4.7207	27.688	26.526	48.748	8.5024	.50386	16.933	23.633
#1	.00366	.00518	.00483	.03807	.79397	.08473	.56288	.00695
#2	.00378	.00296	.00481	.11670	.68737	.08539	.39923	.00512
#3	.00344	.00395	.00290	.09695	.80445	.08554	.49855	.00832
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00769	.43375	.01599	.75966	.00664	.08175	.01775	.80263
Stddev	.00020	.02121	.00136	.01273	.00191	.00204	.01011	.01097
%RSD	2.5737	4.8901	8.5264	1.6756	28.742	2.5008	56.975	1.3672
#1	.00787	.45781	.01609	.77125	.00884	.08189	.01142	.80967
#2	.00748	.41776	.01730	.76168	.00573	.08373	.01242	.80822
#3	.00770	.42567	.01458	.74604	.00536	.07964	.02942	.78998
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LLICV Acquired: 6/28/2016 9:42:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39622**	**.04016**	**.02914**	**.14830**	**.00783**	**.01683**	**.04076**
Stddev	.01031	.00026	.01007	.00332	.00030	.00028	.00052
%RSD	2.6017	.65964	34.548	2.2355	3.7875	1.6572	1.2881
#1	.40211	.04028	.04047	.15075	.00751	.01695	.04117
#2	.40223	.03985	.02123	.14964	.00809	.01703	.04094
#3	.38431	.04033	.02572	.14453	.00790	.01651	.04016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9378.4**	**56347.**	**2705.9**
Stddev	26.7	218.	8.1
%RSD	.28463	.38711	.29918
#1	9402.3	56567.	2704.5
#2	9349.6	56344.	2698.6
#3	9383.4	56131.	2714.6

Approved: June 29, 2016

Sample Name: ICSA Acquired: 6/28/2016 9:46:45 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00050**	**266.36**	**-.00152**	**-.01712**	**.00324**	**-.00005**	**247.98**	**-.00027**
Stddev	.00037	.22	.00243	.00116	.00078	.00009	.43	.00011
%RSD	73.628	.08074	159.98	6.8032	24.071	185.53	.17248	39.233
#1	-.00041	266.18	-.00115	-.01623	.00235	.00002	248.46	-.00025
#2	-.00090	266.60	-.00411	-.01844	.00357	-.00002	247.82	-.00039
#3	-.00019	266.31	.00070	-.01669	.00379	-.00014	247.65	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00169**	**-.00144**	**.00013**	**98.701**	**.06883**	**.01603**	**250.89**	**-.00160**
Stddev	.00026	.00067	.00548	.311	.12623	.00270	.87	.00294
%RSD	15.267	46.704	4143.6	.31529	183.41	16.858	.34767	183.10
#1	-.00143	-.00069	.00362	98.701	.00013	.01708	251.87	.00066
#2	-.00170	-.00165	.00296	99.012	-.00816	.01805	250.59	-.00056
#3	-.00194	-.00199	-.00618	98.390	.21451	.01296	250.20	-.00492
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00105**	**.05927**	**.00061**	**.01849**	**-.00139**	**.00413**	**-.00226**	**.04009**
Stddev	.00038	.02841	.00031	.00445	.00749	.00506	.00450	.00578
%RSD	36.274	47.924	51.490	24.054	538.59	122.61	198.89	14.425
#1	-.00079	.07985	.00085	.02340	.00046	.00063	-.00723	.04658
#2	-.00149	.02686	.00025	.01473	.00500	.00182	-.00111	.03819
#3	-.00089	.07110	.00072	.01735	-.00963	.00993	.00155	.03549
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: ICSA Acquired: 6/28/2016 9:46:45 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00218	.00068	.00760	.00116	-.00333	-.00424	-.00339
Stddev	.00125	.00063	.00590	.00156	.00074	.00023	.00084
%RSD	57.532	93.689	77.648	134.06	22.180	5.4757	24.860
#1	.00360	.00138	.01052	.00203	-.00256	-.00418	-.00424
#2	.00168	.00049	.00081	.00210	-.00340	-.00449	-.00335
#3	.00125	.00016	.01147	-.00064	-.00403	-.00404	-.00256
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8775.1	51967.	2616.3
Stddev	20.6	83.	2.5
%RSD	.23472	.16025	.09692
#1	8795.9	51991.	2614.2
#2	8774.7	51875.	2619.1
#3	8754.7	52036.	2615.7

Approved: June 29, 2016

Sample Name: ICSAB Acquired: 6/28/2016 9:50:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50833	262.18	.25318	-.02181	.24986	.24306	244.26	.49106
Stddev	.00126	.58	.00122	.00145	.00044	.00020	.40	.00090
%RSD	.24874	.22306	.48164	6.6719	.17658	.08149	.16189	.18295
#1	.50757	261.68	.25459	-.02039	.25017	.24305	244.64	.49101
#2	.50979	262.82	.25250	-.02173	.25006	.24326	244.30	.49198
#3	.50763	262.05	.25246	-.02330	.24936	.24286	243.85	.49019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.23788	.25163	.25229	95.063	5.2464	.00919	243.78	.24277
Stddev	.00015	.00059	.00181	.158	.1191	.00381	.56	.00046
%RSD	.06168	.23621	.71702	.16578	2.2694	41.482	.22832	.18874
#1	.23792	.25213	.25258	94.883	5.3322	.01222	244.21	.24224
#2	.23772	.25179	.25393	95.178	5.2964	.01044	243.98	.24295
#3	.23800	.25098	.25035	95.128	5.1104	.00491	243.15	.24310
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00070	5.2460	.47642	.09011	.48731	.50360	.24875	-.01785
Stddev	.00037	.0122	.00205	.00129	.00428	.00481	.00501	.00607
%RSD	52.598	.23176	.42970	1.4289	.87800	.95448	2.0122	34.019
#1	-.00112	5.2480	.47501	.09145	.49090	.50915	.25453	-.01635
#2	-.00043	5.2330	.47877	.08998	.48258	.50104	.24582	-.01267
#3	-.00055	5.2571	.47549	.08889	.48845	.50062	.24591	-.02453
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: ICSAB Acquired: 6/28/2016 9:50:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.00034	.01432	.45770	.25003	.47450	-.00411
Stddev	.00066	.00044	.00471	.00381	.00123	.00039	.00022
%RSD	342.99	128.84	32.883	.83310	.49348	.08138	5.4415
#1	.00080	-.00016	.00974	.46183	.24862	.47464	-.00429
#2	.00027	.00065	.01408	.45695	.25056	.47407	-.00386
#3	-.00050	.00055	.01915	.45432	.25090	.47480	-.00418
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8832.1	52417.	2628.2
Stddev	21.0	68.	14.0
%RSD	.23726	.13011	.53298
#1	8814.6	52495.	2613.1
#2	8826.4	52369.	2631.0
#3	8855.3	52387.	2640.7

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 9:54:16 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40243**	**10.614**	**.40844**	**.50863**	**1.0121**	**.05102**	**10.217**	**.05116**
Stddev	.00112	.515	.00191	.00164	.0035	.00030	.043	.00068
%RSD	.27927	4.8494	.46671	.32182	.34959	.57927	.42277	1.3380
#1	.40130	11.204	.40953	.50971	1.0093	.05129	10.170	.05116
#2	.40355	10.382	.40955	.50943	1.0161	.05108	10.255	.05048
#3	.40244	10.257	.40624	.50675	1.0109	.05070	10.226	.05184
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20478**	**.51148**	**.51464**	**4.0677**	**50.173**	**1.0065**	**10.314**	**.50732**
Stddev	.00051	.00296	.00045	.0473	.353	.0072	.034	.00544
%RSD	.24945	.57908	.08841	1.1625	.70448	.71712	.33086	1.0728
#1	.20423	.51005	.51506	4.0134	50.081	1.0002	10.321	.50516
#2	.20489	.51489	.51415	4.0899	50.563	1.0144	10.277	.50329
#3	.20523	.50951	.51470	4.0998	49.875	1.0048	10.345	.51351
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0289**	**50.218**	**.51278**	**10.197**	**.51300**	**1.2267**	**.41248**	**5.1576**
Stddev	.0010	.142	.00154	.027	.00226	.0014	.00212	.0140
%RSD	.09444	.28181	.29952	.26129	.44099	.11533	.51455	.27050
#1	1.0300	50.065	.51438	10.173	.51371	1.2251	.41099	5.1524
#2	1.0287	50.345	.51264	10.193	.51047	1.2270	.41154	5.1469
#3	1.0281	50.245	.51132	10.226	.51482	1.2279	.41491	5.1734
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 9:54:16 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0271**	**1.0127**	**1.0140**	**.50854**	**1.0159**	**1.0260**	**1.0267**
Stddev	.0031	.0018	.0068	.00377	.0037	.0011	.0023
%RSD	.30094	.17428	.66974	.74115	.36573	.10367	.22623
#1	1.0299	1.0107	1.0170	.50547	1.0121	1.0262	1.0241
#2	1.0238	1.0132	1.0062	.51275	1.0195	1.0270	1.0274
#3	1.0277	1.0141	1.0187	.50742	1.0160	1.0249	1.0286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9112.2**	**54490.**	**2638.0**
Stddev	42.3	229.	4.9
%RSD	.46371	.42014	.18716
#1	9071.0	54716.	2643.2
#2	9110.2	54259.	2637.5
#3	9155.4	54496.	2633.3

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 9:57:53 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00107	.01265	.00066	-.00059	.00133	.00005	-.02321
Stddev	.00172	.00739	.00480	.00117	.00044	.00009	.07069
%RSD	161.38	58.442	725.98	199.74	32.707	205.84	304.56
#1	-.00291	.01146	.00037	.00041	.00178	.00010	-.07158
#2	-.00078	.02057	-.00398	-.00188	.00091	.00010	-.05598
#3	.00050	.00593	.00560	-.00029	.00130	-.00006	.05792
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	-.00001	.00070	.00064	-.01248	.01896	.00424
Stddev	.00008	.00024	.00052	.00024	.01697	.05567	.00356
%RSD	121.21	4578.5	75.209	37.753	135.92	293.58	84.012
#1	.00015	.00014	.00015	.00039	-.03204	-.04418	.00820
#2	.00001	-.00028	.00074	.00065	-.00181	.06099	.00129
#3	.00003	.00013	.00119	.00088	-.00359	.04008	.00323
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.07357	-.00184	.00007	-.01062	-.00011	F .01168	.00180
Stddev	.01112	.00228	.00054	.01276	.00016	.00984	.00196
%RSD	15.118	123.77	820.65	120.18	144.89	84.220	109.05
#1	.06409	.00072	.00068	-.02016	-.00025	.02234	.00377
#2	.07080	-.00365	-.00031	.00388	.00006	.00294	.00177
#3	.08581	-.00260	-.00018	-.01557	-.00014	.00977	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						.01000	
Low Limit						-.01000	

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 9:57:53 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v983) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00297	-.00339	.01205	.00075	.00021	.00075	.00120
Stddev	.00590	.00357	.00514	.00126	.00040	.00784	.00102
%RSD	198.90	105.27	42.636	167.85	194.47	1051.9	85.165
#1	-.00142	-.00368	.01797	.00186	.00063	.00837	.00235
#2	.00967	.00031	.00882	.00102	.00016	.00116	.00040
#3	.00064	-.00682	.00935	-.00062	-.00017	-.00730	.00085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00000	.00050	.00010
Stddev	.00121	.00044	.00035
%RSD	61027.	88.545	331.42
#1	.00084	.00101	.00002
#2	-.00139	.00027	-.00019
#3	.00055	.00022	.00049
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9271.3	55578.	2655.9
Stddev	51.6	74.	4.9
%RSD	.55665	.13326	.18372
#1	9329.9	55635.	2650.8
#2	9251.9	55603.	2660.5
#3	9232.3	55494.	2656.4

Approved: June 29, 2016

Sample Name: L1606098610 Acquired: 6/28/2016 10:04:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00145	.02181	-.00206	.00832	.01391	-.00004	122.67	.00047
Stddev	.00304	.00477	.00237	.00423	.00116	.00002	.55	.00028
%RSD	209.83	21.890	115.10	50.795	8.3057	52.478	.44893	58.626
#1	-.00139	.02678	-.00462	.01283	.01523	-.00006	123.13	.00055
#2	.00107	.01726	.00006	.00445	.01310	-.00005	122.82	.00016
#3	.00466	.02139	-.00162	.00768	.01340	-.00002	122.06	.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00028	.00086	.00144	.02058	.44789	.01086	31.049	.01682
Stddev	.00026	.00146	.00109	.06247	.10797	.00372	.048	.00056
%RSD	92.227	169.73	75.475	303.53	24.107	34.217	.15599	3.3113
#1	-.00039	.00185	.00045	.09233	.41216	.01516	31.103	.01727
#2	.00001	.00156	.00128	-.00884	.36231	.00882	31.011	.01699
#3	-.00048	-.00082	.00261	-.02175	.56920	.00862	31.031	.01620
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	15.548	.00143	.00778	-.00125	.00088	-.00317	3.9825
Stddev	.00023	.062	.00093	.00138	.00116	.00443	.00234	.0926
%RSD	286.52	.39917	65.076	17.789	92.731	502.50	73.634	2.3256
#1	-.00018	15.614	.00107	.00849	-.00230	-.00088	-.00329	4.0331
#2	-.00025	15.539	.00249	.00867	-.00001	.00592	-.00078	4.0388
#3	.00019	15.491	.00074	.00619	-.00142	-.00240	-.00545	3.8756
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606098610 Acquired: 6/28/2016 10:04:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00033	.56094	-.01734	-.00186	-.00096	.01161	.00025
Stddev	.00056	.00226	.00672	.00164	.00046	.00049	.00009
%RSD	168.92	.40254	38.781	88.193	48.332	4.1942	34.377
#1	-.00041	.56174	-.00995	-.00027	-.00069	.01210	.00033
#2	-.00084	.56269	-.01895	-.00176	-.00070	.01160	.00016
#3	.00026	.55839	-.02311	-.00354	-.00150	.01113	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8920.2	53798.	2606.1
Stddev	42.2	101.	6.7
%RSD	.47268	.18837	.25865
#1	8966.4	53714.	2598.6
#2	8910.3	53770.	2608.4
#3	8883.9	53911.	2611.5

Approved: June 29, 2016

Sample Name: L1606098612 Acquired: 6/28/2016 10:08:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00179**	**.01817**	**-.00173**	**.08964**	**.06989**	**.00028**	**149.00**
Stddev	.00100	.00210	.00123	.00064	.00163	.00007	1.41
%RSD	55.707	11.569	71.245	.71011	2.3276	25.194	.94738
#1	-.00244	.01934	-.00082	.08904	.07170	.00025	150.63
#2	-.00230	.01575	-.00313	.08958	.06943	.00036	148.08
#3	-.00064	.01943	-.00124	.09031	.06855	.00023	148.30
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00025**	**.00006**	**.00125**	**.04446**	F **-.02369**	**1.8466**	**.02203**
Stddev	.00018	.00028	.00145	.00051	.01758	.1274	.00321
%RSD	72.096	487.94	115.70	1.1501	74.200	6.9016	14.550
#1	.00022	.00027	.00182	.04416	-.01622	1.8634	.02058
#2	.00009	.00016	.00233	.04417	-.01108	1.7116	.02570
#3	.00045	-.00026	-.00039	.04505	-.04377	1.9648	.01981
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**45.103**	**.03621**	**.00100**	**28.222**	**.00213**	**.00959**	**-.00001**
Stddev	.458	.00247	.00050	.258	.00087	.00880	.00083
%RSD	1.0159	6.8101	49.623	.91303	41.036	91.728	5820.7
#1	45.621	.03657	.00045	28.519	.00307	.00506	-.00095
#2	44.936	.03358	.00142	28.060	.00196	.00398	.00025
#3	44.752	.03847	.00113	28.087	.00135	.01973	.00066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606098612 Acquired: 6/28/2016 10:08:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	-.00578	2.4372	.00007	1.8293	-.02770	-.00171
Stddev	.00228	.00496	.0114	.00086	.0170	.00834	.00180
%RSD	301.69	85.805	.46813	1170.9	.92968	30.114	105.59
#1	.00125	-.00555	2.4456	-.00089	1.8486	-.01895	.00027
#2	-.00173	-.01085	2.4418	.00034	1.8168	-.03557	-.00325
#3	.00274	-.00094	2.4242	.00076	1.8224	-.02859	-.00214
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00089	.05918	-.00043
Stddev	.00099	.00066	.00035
%RSD	111.24	1.1098	81.505
#1	-.00131	.05965	-.00004
#2	.00024	.05947	-.00071
#3	-.00160	.05843	-.00054
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9014.1	54047.	2633.3
Stddev	35.9	224.	16.2
%RSD	.39815	.41359	.61534
#1	8976.7	54004.	2620.2
#2	9017.5	54289.	2628.3
#3	9048.2	53848.	2651.4

Approved: June 29, 2016

Sample Name: L1606098614 Acquired: 6/28/2016 10:12:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.01902	.00012	.03801	.03323	.00008	204.88
Stddev	.00080	.00540	.00300	.00376	.00070	.00006	.99
%RSD	85.438	28.379	2423.6	9.8935	2.1045	69.928	.48308
#1	.00016	.02493	-.00300	.03753	.03371	.00002	204.76
#2	.00176	.01436	.00037	.03451	.03355	.00011	205.92
#3	.00089	.01776	.00299	.04199	.03243	.00011	203.95
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	-.00056	.00150	.00728	.02142	3.2615	.02265
Stddev	.00057	.00060	.00108	.00027	.01165	.0798	.00129
%RSD	264.86	107.81	72.286	3.7643	54.407	2.4470	5.6835
#1	.00030	-.00037	.00047	.00737	.00797	3.2001	.02170
#2	.00074	-.00123	.00263	.00698	.02785	3.2326	.02412
#3	-.00040	-.00007	.00140	.00751	.02843	3.3517	.02214
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	82.993	.04380	.00084	23.890	.00021	.01373	-.00122
Stddev	.436	.00413	.00032	.112	.00062	.00340	.00542
%RSD	.52569	9.4361	37.780	.47033	292.92	24.777	445.93
#1	82.807	.04136	.00050	23.898	-.00050	.01127	.00505
#2	83.491	.04857	.00113	23.997	.00047	.01231	-.00431
#3	82.680	.04147	.00090	23.773	.00067	.01761	-.00439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606098614 Acquired: 6/28/2016 10:12:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00546**	**-.00344**	**3.4759**	**.00042**	**2.4733**	F **-.03075**	**-.00468**
Stddev	.00377	.00065	.0206	.00043	.0126	.00530	.00102
%RSD	69.101	18.985	.59208	103.39	.51047	17.253	21.736
#1	.00255	-.00418	3.4966	.00056	2.4736	-.02749	-.00377
#2	.00410	-.00321	3.4757	.00077	2.4857	-.02789	-.00578
#3	.00971	-.00293	3.4554	-.00007	2.4605	-.03687	-.00450
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00073**	**.02393**	**-.00042**
Stddev	.00117	.00020	.00017
%RSD	159.68	.83679	38.969
#1	.00060	.02379	-.00032
#2	-.00161	.02385	-.00034
#3	-.00119	.02416	-.00062
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8696.6**	**53360.**	**2635.3**
Stddev	53.3	123.	4.7
%RSD	.61278	.23073	.17646
#1	8705.6	53481.	2630.0
#2	8744.8	53363.	2637.4
#3	8639.3	53235.	2638.5

Approved: June 29, 2016

Sample Name: L1606098616 Acquired: 6/28/2016 10:16:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.04206**	**-.00224**	**.11946**	**.01583**	**.00019**	**231.26**
Stddev	.00241	.00928	.00150	.00213	.00097	.00003	2.09
%RSD	1408.6	22.062	66.850	1.7822	6.1387	16.849	.90274
#1	.00048	.04133	-.00337	.11784	.01688	.00018	233.06
#2	.00184	.05168	-.00054	.12187	.01496	.00017	228.97
#3	-.00284	.03317	-.00280	.11866	.01564	.00023	231.75
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00031**	**-.00016**	**.00227**	**.06476**	**-.01272**	**3.3820**	**.03902**
Stddev	.00014	.00007	.00186	.00299	.00289	.1857	.00289
%RSD	45.106	42.884	81.857	4.6169	22.742	5.4901	7.4164
#1	.00019	-.00024	.00395	.06819	-.00990	3.5637	.04149
#2	.00027	-.00014	.00028	.06274	-.01258	3.3897	.03974
#3	.00046	-.00010	.00258	.06334	-.01569	3.1925	.03584
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**89.176**	**.29540**	**.00093**	**71.926**	**.00066**	**.02514**	**-.00152**
Stddev	.613	.00274	.00025	.659	.00227	.00577	.00426
%RSD	.68703	.92907	27.507	.91616	345.74	22.967	279.33
#1	89.667	.29671	.00072	72.457	-.00083	.02487	.00332
#2	88.490	.29224	.00085	71.188	.00327	.01951	-.00323
#3	89.371	.29724	.00121	72.131	-.00047	.03105	-.00466
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606098616 Acquired: 6/28/2016 10:16:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00078**	**-.00519**	**4.9238**	**-.00027**	**6.5296**	F **-.03371**	**-.00165**
Stddev	.00169	.00417	.0247	.00065	.0594	.00812	.00293
%RSD	216.35	80.222	.50103	244.32	.90963	24.078	177.80
#1	.00267	-.01000	4.9180	-.00088	6.5813	-.03699	.00082
#2	-.00061	-.00272	4.9024	-.00033	6.4647	-.03968	-.00088
#3	.00029	-.00285	4.9508	.00042	6.5427	-.02447	-.00488
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00235**	**.08965**	**.00001**
Stddev	.00114	.00063	.00046
%RSD	48.572	.70222	6097.3
#1	-.00339	.09001	-.00002
#2	-.00113	.09001	.00048
#3	-.00252	.08892	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8519.2**	**51220.**	**2477.0**
Stddev	81.7	146.	20.1
%RSD	.95935	.28481	.81146
#1	8551.6	51098.	2469.4
#2	8426.3	51180.	2499.8
#3	8579.8	51381.	2461.8

Approved: June 29, 2016

Sample Name: L1606098618 Acquired: 6/28/2016 10:20:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00278**	**.01446**	**.00065**	**.04414**	**.02803**	**.00003**	**62.939**	**.00005**
Stddev	.00132	.00733	.00348	.00493	.00138	.00006	.433	.00030
%RSD	47.733	50.692	534.45	11.174	4.9100	229.60	.68765	604.20
#1	-.00152	.00830	-.00263	.04725	.02745	.00008	62.838	-.00003
#2	-.00416	.02256	.00029	.04672	.02704	.00004	62.565	-.00021
#3	-.00264	.01251	.00429	.03845	.02960	-.00004	63.413	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.00082**	**.00223**	**-.00753**	**2.0170**	**.02393**	**21.554**	**.01082**
Stddev	.00031	.00057	.00204	.01101	.0505	.00515	.089	.00204
%RSD	220.03	69.016	91.162	146.17	2.5023	21.512	.41324	18.865
#1	-.00006	.00074	.00441	.00042	1.9589	.02045	21.554	.00997
#2	.00012	.00142	.00038	-.00291	2.0421	.02985	21.642	.01315
#3	-.00048	.00030	.00190	-.02010	2.0500	.02150	21.464	.00934
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00081**	**26.450**	**.00031**	**.00548**	**-.00155**	**.00176**	**.00395**	**3.0409**
Stddev	.00060	.129	.00015	.00670	.00328	.00355	.00393	.0829
%RSD	74.514	.48686	47.432	122.31	212.16	202.06	99.431	2.7275
#1	.00092	26.577	.00018	.00890	.00028	.00578	.00301	3.0910
#2	.00135	26.453	.00027	-.00224	.00041	-.00094	.00827	3.0866
#3	.00016	26.320	.00047	.00977	-.00534	.00043	.00058	2.9452
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606098618 Acquired: 6/28/2016 10:20:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	1.4649	-.02108	-.00228	-.00070	.00804	.00001
Stddev	.00065	.0081	.00355	.00310	.00029	.00035	.00069
%RSD	189.54	.55254	16.835	135.99	41.071	4.3066	10757.
#1	-.00024	1.4741	-.02257	-.00444	-.00038	.00819	-.00033
#2	.00023	1.4620	-.02365	-.00366	-.00094	.00828	-.00045
#3	.00104	1.4587	-.01703	.00127	-.00077	.00764	.00080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9023.1	54498.	2583.2
Stddev	14.4	184.	12.5
%RSD	.15969	.33755	.48540
#1	9006.5	54286.	2572.4
#2	9030.9	54590.	2580.1
#3	9032.0	54618.	2596.9

Approved: June 29, 2016

Sample Name: L1606098620 Acquired: 6/28/2016 10:23:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00081	.04817	-.00135	.07782	.03729	.00006	4.8405	.00006
Stddev	.00111	.00858	.00337	.00174	.00150	.00005	.2531	.00016
%RSD	136.72	17.805	248.80	2.2312	4.0209	85.004	5.2298	272.23
#1	-.00108	.04704	.00253	.07620	.03787	.00002	5.1119	.00014
#2	-.00176	.05726	-.00346	.07965	.03841	.00005	4.7988	.00016
#3	.00041	.04021	-.00313	.07760	.03559	.00012	4.6108	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	.00046	.00221	-.01377	.52680	.01239	2.0518	.01543
Stddev	.00035	.00041	.00041	.01525	.03562	.00363	.1072	.00237
%RSD	54.061	87.558	18.325	110.70	6.7607	29.289	5.2228	15.371
#1	.00030	.00060	.00268	-.00834	.49605	.00892	2.1754	.01476
#2	.00099	.00001	.00194	-.03099	.51851	.01616	1.9958	.01806
#3	.00063	.00078	.00201	-.00199	.56582	.01209	1.9843	.01346
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00122	258.51	.00049	.03608	-.00135	.00110	.00276	1.9678
Stddev	.00004	.62	.00088	.00106	.00357	.00320	.00409	.0632
%RSD	3.0038	.23936	179.30	2.9363	263.98	291.73	148.29	3.2116
#1	.00120	259.22	.00098	.03683	-.00547	-.00186	-.00133	2.0062
#2	.00121	258.20	-.00052	.03655	.00073	.00066	.00275	2.0024
#3	.00127	258.10	.00101	.03487	.00069	.00449	.00685	1.8949
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606098620 Acquired: 6/28/2016 10:23:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.15413	.00227	-.00087	-.00034	.02123	.00037
Stddev	.00049	.00610	.00348	.00169	.00126	.00088	.00059
%RSD	102.24	3.9587	153.49	194.91	370.40	4.1503	159.78
#1	-.00007	.16053	.00379	-.00050	-.00014	.02154	.00024
#2	.00066	.15347	.00472	-.00270	-.00169	.02192	-.00015
#3	.00086	.14838	-.00171	.00061	.00081	.02024	.00101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8915.1	52786.	2597.1
Stddev	45.8	164.	11.0
%RSD	.51429	.31058	.42540
#1	8885.2	52710.	2592.9
#2	8967.9	52674.	2609.6
#3	8892.2	52974.	2588.8

Approved: June 29, 2016

Sample Name: L1606098622 Acquired: 6/28/2016 10:27:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	.01654	-.00212	.05780	.02851	.00007	128.50
Stddev	.00221	.00540	.00112	.00139	.00140	.00008	.61
%RSD	309.11	32.673	53.037	2.3972	4.9093	109.84	.47424
#1	.00268	.01727	-.00108	.05667	.02774	.00013	128.79
#2	.00113	.01080	-.00331	.05935	.02767	.00011	127.80
#3	-.00167	.02153	-.00197	.05738	.03013	-.00002	128.91
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	-.00035	.00003	.00865	F -.02013	2.5823	.02626
Stddev	.00019	.00016	.00078	.00202	.02937	.0866	.00292
%RSD	53.805	45.705	2672.0	23.404	145.91	3.3518	11.104
#1	.00057	-.00046	-.00008	.00753	-.05397	2.5533	.02584
#2	.00019	-.00041	-.00070	.01099	-.00133	2.5140	.02357
#3	.00032	-.00017	.00086	.00744	-.00508	2.6797	.02936
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	34.597	.04887	.00126	48.333	.00152	.00681	.00163
Stddev	.218	.00218	.00027	.227	.00088	.00369	.00090
%RSD	.63072	4.4551	21.418	.46900	57.830	54.237	55.351
#1	34.383	.05123	.00152	48.447	.00051	.00489	.00144
#2	34.589	.04693	.00098	48.072	.00204	.01107	.00084
#3	34.819	.04846	.00127	48.480	.00202	.00448	.00261
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606098622 Acquired: 6/28/2016 10:27:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00300	-.00363	3.4283	-.00015	1.8035	-.01458	-.00022
Stddev	.00517	.00367	.0159	.00066	.0069	.00510	.00189
%RSD	172.02	101.31	.46354	431.28	.38479	35.008	872.11
#1	.00363	-.00181	3.4416	-.00081	1.8070	-.00945	-.00025
#2	.00783	-.00785	3.4326	.00051	1.7956	-.01462	.00169
#3	-.00245	-.00121	3.4107	-.00016	1.8081	-.01966	-.00209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00041	.00960	-.00053
Stddev	.00135	.00013	.00033
%RSD	325.34	1.3960	61.890
#1	-.00062	.00974	-.00080
#2	.00102	.00959	-.00064
#3	-.00165	.00947	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9009.7	53993.	2581.9
Stddev	49.8	532.	16.6
%RSD	.55257	.98445	.64409
#1	9066.2	53507.	2574.9
#2	8972.3	53911.	2600.9
#3	8990.7	54561.	2570.0

Approved: June 29, 2016

Sample Name: L1606098624 Acquired: 6/28/2016 10:31:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00211	.01815	-.00167	.41043	.02519	.00017	236.59
Stddev	.00165	.00860	.00049	.00361	.00225	.00005	1.75
%RSD	78.365	47.395	29.692	.87850	8.9284	28.538	.73841
#1	.00350	.00823	-.00192	.40698	.02636	.00020	238.49
#2	.00028	.02269	-.00199	.41417	.02260	.00012	236.21
#3	.00255	.02352	-.00110	.41015	.02661	.00021	235.06
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.00007	.00153	.02731	.01601	5.9761	.01623
Stddev	.00020	.00023	.00113	.00041	.03451	.1797	.00053
%RSD	49.211	326.20	73.951	1.5130	215.56	3.0065	3.2775
#1	.00029	-.00013	.00162	.02743	.05242	6.1344	.01570
#2	.00064	.00003	.00036	.02684	.01181	6.0132	.01623
#3	.00030	.00031	.00261	.02764	-.01621	5.7808	.01676
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	70.059	.32158	.00074	64.433	.00096	.01137	-.00087
Stddev	.188	.00511	.00049	.448	.00028	.00676	.00448
%RSD	.26817	1.5886	66.238	.69502	29.106	59.452	515.84
#1	70.206	.32391	.00122	64.934	.00127	.00901	.00428
#2	70.123	.32510	.00024	64.295	.00071	.00610	-.00300
#3	69.847	.31572	.00075	64.070	.00091	.01899	-.00388
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606098624 Acquired: 6/28/2016 10:31:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00110**	**.00013**	**3.2594**	**-.00019**	**1.6653**	F **-.04852**	**-.00220**
Stddev	.00114	.00630	.0380	.00073	.0105	.00857	.00107
%RSD	104.21	4773.5	1.1667	393.67	.63193	17.652	48.834
#1	-.00018	-.00673	3.2387	-.00082	1.6771	-.04225	-.00215
#2	.00203	.00564	3.2362	-.00035	1.6619	-.05828	-.00115
#3	.00144	.00149	3.3033	.00061	1.6569	-.04504	-.00329
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00178**	**.00879**	**-.00005**
Stddev	.00106	.00026	.00053
%RSD	59.569	2.9138	1129.9
#1	-.00264	.00862	-.00059
#2	-.00060	.00868	.00046
#3	-.00210	.00909	-.00000
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8997.1**	**53950.**	**2623.6**
Stddev	115.6	416.	17.2
%RSD	1.2846	.77044	.65487
#1	8946.4	53576.	2606.1
#2	8915.6	53878.	2640.4
#3	9129.4	54398.	2624.3

Approved: June 29, 2016

Sample Name: L1606098626 Acquired: 6/28/2016 10:35:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00028	.02934	-.00299	.04282	.02918	-.00008	122.59	.00031
Stddev	.00120	.01200	.00108	.00189	.00069	.00004	3.30	.00024
%RSD	428.74	40.885	35.969	4.4087	2.3809	49.214	2.6919	77.572
#1	-.00145	.03984	-.00192	.04492	.02875	-.00008	118.95	.00057
#2	-.00034	.03192	-.00408	.04224	.02881	-.00012	123.44	.00009
#3	.00095	.01627	-.00298	.04128	.02998	-.00004	125.38	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00006	.00038	.00374	.00620	1.8137	.01464	39.490	.00270
Stddev	.00028	.00100	.00067	.03925	.1385	.00311	.817	.00349
%RSD	438.71	263.65	17.855	633.53	7.6349	21.247	2.0694	129.32
#1	.00016	.00133	.00448	.05110	1.6558	.01155	38.561	.00059
#2	.00003	.00048	.00318	-.01091	1.9146	.01461	39.811	.00673
#3	-.00038	-.00067	.00356	-.02160	1.8706	.01777	40.098	.00078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00097	19.000	.00026	.00581	.00143	.00022	.00066	2.8563
Stddev	.00035	.513	.00086	.00438	.00335	.00426	.00443	.1067
%RSD	36.480	2.6998	327.05	75.398	234.01	1917.0	667.74	3.7341
#1	.00125	18.423	.00118	.00259	-.00228	.00258	.00540	2.9183
#2	.00109	19.169	.00011	.00403	.00234	.00279	-.00338	2.9176
#3	.00057	19.406	-.00051	.01080	.00423	-.00470	-.00003	2.7332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606098626 Acquired: 6/28/2016 10:35:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	1.0049	-.01768	-.00157	-.00079	.00650	-.00003
Stddev	.00125	.0273	.00276	.00082	.00042	.00016	.00045
%RSD	736.86	2.7217	15.631	52.392	53.276	2.3973	1567.8
#1	.00079	.97482	-.02087	-.00077	-.00110	.00664	-.00010
#2	-.00127	1.0117	-.01607	-.00241	-.00031	.00653	-.00044
#3	.00099	1.0283	-.01609	-.00153	-.00097	.00633	.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9200.3	55136.	2700.9
Stddev	51.6	162.	67.0
%RSD	.56114	.29336	2.4815
#1	9251.8	55033.	2629.7
#2	9200.4	55053.	2762.9
#3	9148.5	55323.	2710.0

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 10:39:31 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40316	10.167	.40001	.49776	1.0062	.05040	10.043	.05094
Stddev	.00469	.048	.00207	.00593	.0065	.00018	.026	.00025
%RSD	1.1625	.47037	.51652	1.1910	.64434	.35492	.25579	.48606
#1	.39929	10.121	.40159	.49635	.99979	.05020	10.020	.05080
#2	.40837	10.217	.40076	.50427	1.0061	.05053	10.038	.05080
#3	.40182	10.164	.39767	.49267	1.0128	.05048	10.071	.05123
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20379	.50933	.50963	3.9847	49.804	.99855	10.245	.49740
Stddev	.00075	.00518	.00117	.0199	.296	.00583	.114	.00646
%RSD	.36648	1.0175	.23038	.49825	.59527	.58364	1.1171	1.2985
#1	.20447	.50484	.51099	3.9622	49.552	.99411	10.313	.49230
#2	.20299	.51500	.50900	3.9996	49.731	.99638	10.112	.49523
#3	.20392	.50814	.50891	3.9924	50.131	1.0051	10.309	.50466
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0194	49.838	.50664	10.073	.50309	1.2101	.40117	5.0889
Stddev	.0025	.220	.00264	.006	.00460	.0036	.00581	.0083
%RSD	.24924	.44233	.52114	.06246	.91484	.29951	1.4477	.16335
#1	1.0223	49.626	.50960	10.070	.50141	1.2135	.39633	5.0972
#2	1.0176	49.821	.50452	10.070	.50829	1.2063	.40761	5.0805
#3	1.0182	50.066	.50581	10.081	.49956	1.2105	.39956	5.0889
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 10:39:31 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0195**	**1.0042**	**.99589**	**.50209**	**1.0096**	**1.0169**	**1.0180**
Stddev	.0017	.0067	.00461	.00153	.0035	.0027	.0027
%RSD	.16394	.66869	.46256	.30430	.34566	.26637	.26670
#1	1.0212	.99679	.99292	.50045	1.0057	1.0199	1.0193
#2	1.0196	1.0061	1.0012	.50348	1.0124	1.0159	1.0148
#3	1.0178	1.0098	.99355	.50234	1.0106	1.0148	1.0197
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8953.2**	**53239.**	**2577.6**
Stddev	23.4	339.	5.2
%RSD	.26092	.63651	.20155
#1	8926.2	53533.	2582.1
#2	8967.5	52869.	2578.9
#3	8965.8	53316.	2571.9

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 10:43:08 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00123**	**.00119**	**-.00233**	**.00197**	**.00081**	**-.00003**	**-.00118**	**-.00001**
Stddev	.00124	.00937	.00168	.00233	.00089	.00007	.03680	.00041
%RSD	101.18	784.56	72.249	118.43	110.25	242.13	3131.7	3937.7
#1	.00020	-.00943	-.00396	.00429	.00168	-.00010	.01949	-.00043
#2	-.00188	.00831	-.00241	.00200	-.00010	.00003	.02065	.00038
#3	-.00200	.00470	-.00060	-.00038	.00085	-.00002	-.04366	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**-.00032**	**-.00018**	**-.00841**	**-.05157**	**.00253**	**.10335**	**.00001**
Stddev	.00014	.00088	.00159	.02756	.08915	.00185	.07359	.00304
%RSD	112.37	271.26	897.41	327.75	172.89	73.129	71.209	38148.
#1	.00010	-.00096	.00052	-.01693	-.00526	.00052	.04788	-.00301
#2	.00028	-.00070	.00095	-.03070	.00491	.00415	.18683	-.00003
#3	.00000	.00068	-.00200	.02240	-.15434	.00291	.07532	.00306
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00026**	**.00291**	**.00020**	**.00111**	**.00124**	**.00025**	**-.00505**	**.00674**
Stddev	.00041	.04187	.00054	.00259	.00351	.00041	.00455	.00227
%RSD	156.26	1437.8	265.49	232.95	283.47	162.45	90.076	33.594
#1	.00004	.02857	.00067	.00385	.00454	.00007	-.00177	.00790
#2	.00074	-.04540	.00034	.00079	-.00245	.00072	-.01025	.00820
#3	.00002	.02557	-.00039	-.00130	.00163	-.00004	-.00314	.00413
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 10:43:08 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.00062	-.00008	-.00234	.00029	-.00011	.00048
Stddev	.00029	.00031	.00355	.00123	.00093	.00007	.00056
%RSD	94.778	49.380	4253.5	52.618	315.05	60.863	118.05
#1	.00048	.00088	-.00419	-.00246	.00016	-.00015	.00054
#2	-.00003	.00028	.00187	-.00105	-.00056	-.00003	-.00012
#3	.00045	.00070	.00207	-.00351	.00128	-.00015	.00100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9397.7	55798.	2684.8
Stddev	44.8	443.	24.5
%RSD	.47711	.79465	.91327
#1	9351.5	55593.	2688.7
#2	9400.6	55494.	2707.1
#3	9441.1	56307.	2658.6

Approved: June 29, 2016

Sample Name: L1606098628 Acquired: 6/28/2016 10:47:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	.01289	-.00450	.03718	.02822	.00000	209.02
Stddev	.00173	.00565	.00095	.00078	.00109	.00010	1.27
%RSD	229.23	43.846	21.152	2.0843	3.8710	5293.1	.60706
#1	-.00123	.01938	-.00381	.03806	.02943	-.00005	210.45
#2	.00156	.00899	-.00410	.03658	.02732	.00011	208.59
#3	.00195	.01032	-.00559	.03691	.02790	-.00005	208.03
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	-.00021	.00021	.00536	.02317	3.4262	.02729
Stddev	.00012	.00047	.00073	.00148	.01277	.1489	.00102
%RSD	44.425	218.43	358.22	27.667	55.118	4.3469	3.7448
#1	.00038	-.00004	.00086	.00388	.02959	3.3053	.02760
#2	.00027	.00014	-.00059	.00685	.03147	3.3808	.02615
#3	.00014	-.00074	.00035	.00535	.00846	3.5926	.02812
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	85.261	.03463	.00082	23.989	.00048	.00818	-.00223
Stddev	.205	.00172	.00021	.129	.00033	.00315	.00320
%RSD	.24047	4.9805	26.329	.53970	67.997	38.475	143.54
#1	85.478	.03271	.00090	24.123	.00028	.00681	-.00384
#2	85.071	.03605	.00097	23.979	.00031	.01177	.00146
#3	85.235	.03513	.00057	23.865	.00086	.00594	-.00430
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606098628 Acquired: 6/28/2016 10:47:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00183**	**-.00402**	**3.5345**	**-.00007**	**2.5328**	F **-.03692**	**-.00256**
Stddev	.00348	.00068	.0862	.00082	.0182	.00467	.00334
%RSD	190.40	16.928	2.4394	1141.0	.71790	12.653	130.28
#1	.00212	-.00480	3.5847	.00072	2.5529	-.03669	.00110
#2	.00515	-.00362	3.5839	-.00002	2.5280	-.03237	-.00334
#3	-.00179	-.00363	3.4349	-.00092	2.5174	-.04170	-.00545
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00175**	**.01366**	**.00039**
Stddev	.00082	.00040	.00061
%RSD	47.069	2.9163	156.65
#1	-.00224	.01395	.00082
#2	-.00220	.01381	.00067
#3	-.00080	.01320	-.00031
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9020.9**	**54213.**	**2666.2**
Stddev	63.0	332.	24.9
%RSD	.69874	.61196	.93493
#1	8948.2	53830.	2642.0
#2	9059.3	54396.	2664.8
#3	9055.2	54413.	2691.8

Approved: June 29, 2016

Sample Name: L1606098630 Acquired: 6/28/2016 10:50:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00112**	**.06305**	**-.00208**	**.14294**	**.01941**	**.00005**	**247.94**
Stddev	.00418	.00320	.00118	.00341	.00034	.00004	1.16
%RSD	374.44	5.0732	57.040	2.3857	1.7709	83.190	.46966
#1	-.00594	.06207	-.00172	.14395	.01911	.00002	248.74
#2	.00155	.06046	-.00111	.13914	.01934	.00002	248.48
#3	.00104	.06663	-.00340	.14573	.01978	.00009	246.60
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00037**	**.00009**	**.00160**	**.01136**	**-.00695**	**3.7319**	**.04659**
Stddev	.00054	.00031	.00100	.00046	.03558	.1216	.00224
%RSD	146.09	341.82	62.102	4.0522	512.15	3.2581	4.8143
#1	.00014	-.00027	.00197	.01085	-.04459	3.6608	.04457
#2	-.00002	.00027	.00237	.01175	-.00238	3.8723	.04620
#3	.00098	.00026	.00048	.01148	.02612	3.6627	.04901
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**99.425**	**.22627**	**.00078**	**83.428**	**.00189**	**.01477**	**.00041**
Stddev	.285	.00121	.00060	.359	.00084	.00647	.00324
%RSD	.28701	.53622	77.492	.43083	44.222	43.791	786.52
#1	99.365	.22489	.00068	83.673	.00183	.01186	-.00163
#2	99.736	.22719	.00143	83.596	.00276	.01026	-.00128
#3	99.175	.22671	.00023	83.016	.00109	.02218	.00415
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606098630 Acquired: 6/28/2016 10:50:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00057**	**-.00604**	**5.5242**	**-.00008**	**7.3387**	F **-.04842**	**-.00099**
Stddev	.00550	.00651	.1293	.00039	.0359	.00782	.00111
%RSD	956.70	107.88	2.3409	477.24	.48860	16.146	111.89
#1	-.00505	.00055	5.6118	.00017	7.3571	-.05406	.00009
#2	.00556	-.00619	5.5851	.00012	7.3615	-.05171	-.00094
#3	-.00223	-.01247	5.3757	-.00054	7.2973	-.03950	-.00212
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00124**	**.02012**	**.00029**
Stddev	.00033	.00104	.00012
%RSD	26.862	5.1684	42.853
#1	-.00086	.02074	.00038
#2	-.00135	.02071	.00015
#3	-.00150	.01892	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8910.3**	**53758.**	**2664.2**
Stddev	38.9	307.	8.4
%RSD	.43613	.57080	.31523
#1	8941.3	53508.	2654.7
#2	8922.9	53664.	2667.2
#3	8866.7	54100.	2670.6

Approved: June 29, 2016

Sample Name: L1606098632S Acquired: 6/28/2016 10:54:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.18846	4.8019	.19046	.99326	.50409	.02350	135.29	.02353
Stddev	.00068	.0071	.00255	.00360	.00221	.00005	.67	.00010
%RSD	.36110	.14839	1.3406	.36288	.43782	.20602	.49154	.44605
#1	.18832	4.8004	.18755	.99057	.50651	.02352	135.95	.02364
#2	.18786	4.7956	.19150	.99185	.50356	.02354	135.31	.02351
#3	.18920	4.8096	.19232	.99735	.50219	.02345	134.62	.02344
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09381	.23815	.24000	1.9130	26.640	.51162	39.895	.28319
Stddev	.00100	.00189	.00228	.0193	.074	.00286	.188	.00285
%RSD	1.0649	.79307	.95050	1.0075	.27942	.55998	.47192	1.0073
#1	.09414	.23597	.24247	1.9319	26.717	.50832	39.903	.28423
#2	.09460	.23915	.23954	1.8934	26.568	.51350	40.079	.27997
#3	.09269	.23933	.23798	1.9136	26.635	.51303	39.702	.28538
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48664	72.566	.23006	4.7722	.22970	.57011	.17961	5.9299
Stddev	.00164	.276	.00122	.0198	.00405	.00461	.00446	.0220
%RSD	.33708	.38027	.53077	.41398	1.7643	.80832	2.4833	.37111
#1	.48809	72.880	.23128	4.7950	.22929	.56933	.17995	5.9451
#2	.48697	72.458	.23005	4.7606	.22586	.57506	.17499	5.9047
#3	.48486	72.361	.22884	4.7610	.23394	.56595	.18389	5.9400
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606098632S Acquired: 6/28/2016 10:54:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48032	2.3017	.44242	.23394	.48469	.47339	.00132
Stddev	.00248	.0102	.00605	.00222	.00214	.00181	.00037
%RSD	.51666	.44364	1.3679	.95093	.44068	.38183	28.098
#1	.48314	2.3134	.43785	.23403	.48605	.47524	.00138
#2	.47932	2.2973	.44013	.23167	.48223	.47329	.00166
#3	.47849	2.2945	.44928	.23611	.48580	.47163	.00093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8688.7	52383.	2561.5
Stddev	20.4	122.	19.3
%RSD	.23454	.23294	.75227
#1	8695.7	52408.	2540.1
#2	8704.6	52491.	2567.0
#3	8665.7	52251.	2577.4

Approved: June 29, 2016

Sample Name: L1606098634SD Acquired: 6/28/2016 10:58:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19385**	**4.8954**	**.19343**	**1.0128**	**.51753**	**.02388**	**139.76**	**.02445**
Stddev	.00262	.0093	.00107	.0024	.00290	.00006	.52	.00008
%RSD	1.3538	.19080	.55216	.23927	.56012	.24808	.37032	.30805
#1	.19684	4.8863	.19374	1.0156	.52087	.02381	140.34	.02445
#2	.19279	4.8948	.19430	1.0111	.51582	.02391	139.58	.02437
#3	.19192	4.9050	.19224	1.0118	.51589	.02392	139.35	.02452
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09545**	**.24302**	**.24613**	**1.9627**	**27.284**	**.52635**	**41.619**	**.28310**
Stddev	.00064	.00064	.00329	.0225	.313	.00748	.406	.00352
%RSD	.67403	.26200	1.3360	1.1470	1.1482	1.4202	.97438	1.2446
#1	.09594	.24255	.24524	1.9887	27.508	.53175	41.826	.28499
#2	.09569	.24375	.24338	1.9514	27.417	.52947	41.880	.28528
#3	.09473	.24277	.24977	1.9481	26.926	.51782	41.152	.27904
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49748**	**77.859**	**.23713**	**4.8957**	**.23743**	**.58527**	**.18307**	**6.0698**
Stddev	.00174	.416	.00057	.0088	.00258	.00169	.00798	.0098
%RSD	.34891	.53439	.24187	.17976	1.0881	.28860	4.3602	.16074
#1	.49948	78.314	.23758	4.8994	.23444	.58557	.17919	6.0801
#2	.49658	77.767	.23648	4.8857	.23897	.58346	.19225	6.0608
#3	.49638	77.497	.23733	4.9021	.23886	.58679	.17777	6.0685
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606098634SD Acquired: 6/28/2016 10:58:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49219	2.3909	.46099	.23620	.49011	.49486	.00108
Stddev	.00112	.0136	.00414	.00270	.00213	.00031	.00019
%RSD	.22718	.56755	.89815	1.1447	.43392	.06172	17.459
#1	.49342	2.4057	.45931	.23351	.49185	.49518	.00110
#2	.49125	2.3880	.46570	.23892	.49073	.49457	.00126
#3	.49188	2.3790	.45795	.23618	.48774	.49484	.00088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8624.4	51785.	2507.5
Stddev	34.6	103.	7.8
%RSD	.40116	.19897	.31044
#1	8586.0	51883.	2498.6
#2	8634.1	51794.	2512.9
#3	8653.1	51678.	2511.1

Approved: June 29, 2016

Sample Name: L1606098636S Acquired: 6/28/2016 11:02:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19772**	**5.0127**	**.19966**	**1.3850**	**.51214**	**.02480**	**245.86**	**.02477**
Stddev	.00596	.1383	.00099	.0339	.00319	.00076	.17	.00011
%RSD	3.0140	2.7597	.49707	2.4504	.62221	3.0708	.06737	.45242
#1	.19402	4.9072	.19852	1.3612	.50849	.02423	245.76	.02490
#2	.19456	4.9616	.20011	1.3699	.51358	.02450	245.78	.02470
#3	.20460	5.1693	.20034	1.4238	.51436	.02566	246.05	.02471
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09581**	**.24802**	**.29870**	**1.9392**	**30.905**	**.51342**	**76.554**	**.61303**
Stddev	.00037	.00685	.00225	.0091	.082	.00243	.057	.00284
%RSD	.38833	2.7631	.75304	.46767	.26421	.47237	.07486	.46294
#1	.09581	.24194	.29785	1.9318	30.865	.51510	76.515	.60976
#2	.09544	.24668	.29700	1.9365	30.851	.51064	76.620	.61444
#3	.09618	.25545	.30125	1.9493	30.999	.51451	76.527	.61488
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50074**	**91.350**	**.23694**	**4.9730**	**.23904**	**.58934**	**.18488**	**6.0814**
Stddev	.00390	.151	.00117	.0362	.00508	.00409	.00290	.0627
%RSD	.77792	.16492	.49565	.72715	2.1269	.69342	1.5687	1.0313
#1	.49883	91.182	.23828	4.9726	.24049	.59260	.18219	6.0847
#2	.49816	91.394	.23610	4.9370	.23339	.58475	.18448	6.0172
#3	.50522	91.474	.23644	5.0093	.24324	.59066	.18795	6.1425
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606098636S Acquired: 6/28/2016 11:02:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49354	2.1681	.44779	.23586	.50155	.49646	.00080
Stddev	.00336	.0036	.01493	.00523	.01154	.00341	.00057
%RSD	.68125	.16648	3.3336	2.2166	2.3017	.68636	71.538
#1	.49311	2.1641	.44018	.24186	.49241	.49616	.00138
#2	.49041	2.1691	.46499	.23232	.49771	.49322	.00078
#3	.49709	2.1712	.43821	.23340	.51452	.50001	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8497.3	50908.	2509.3
Stddev	53.2	719.	14.0
%RSD	.62617	1.4115	.55736
#1	8555.0	51320.	2495.2
#2	8486.6	51326.	2509.5
#3	8450.3	50078.	2523.2

Approved: June 29, 2016

Sample Name: L1606098638SD Acquired: 6/28/2016 11:05:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-09

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19461	5.0104	.19785	1.3932	.51464	.02415	242.84	.02509
Stddev	.00205	.0136	.00122	.0024	.00243	.00017	.45	.00015
%RSD	1.0512	.27199	.61628	.17380	.47230	.71874	.18597	.59393
#1	.19352	5.0251	.19758	1.3915	.51540	.02406	242.69	.02519
#2	.19697	4.9981	.19918	1.3960	.51192	.02405	243.35	.02492
#3	.19334	5.0079	.19678	1.3921	.51660	.02436	242.49	.02515
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09681	.24640	.24874	1.9227	30.934	.51907	74.733	.61185
Stddev	.00041	.00117	.00213	.0127	.073	.00309	.315	.00169
%RSD	.41948	.47310	.85495	.66056	.23719	.59567	.42145	.27686
#1	.09707	.24697	.24714	1.9111	30.855	.51695	74.400	.61033
#2	.09701	.24718	.24794	1.9363	30.948	.51764	75.026	.61368
#3	.09634	.24506	.25116	1.9209	30.999	.52261	74.774	.61153
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50496	89.306	.23899	5.0248	.24132	.60097	.18640	6.1693
Stddev	.00099	.033	.00162	.0082	.00136	.00275	.00260	.0316
%RSD	.19543	.03715	.67633	.16292	.56193	.45730	1.3937	.51177
#1	.50490	89.343	.23842	5.0209	.24263	.60304	.18468	6.1440
#2	.50597	89.278	.24081	5.0342	.24141	.60202	.18939	6.1591
#3	.50400	89.298	.23773	5.0193	.23992	.59785	.18513	6.2046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606098638SD Acquired: 6/28/2016 11:05:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-09

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49778**	**2.1733**	**.44248**	**.23628**	**.49700**	**.48274**	**.00039**
Stddev	.00133	.0033	.00419	.00330	.00105	.00040	.00032
%RSD	.26806	.15241	.94725	1.3974	.21218	.08361	80.302
#1	.49916	2.1747	.44732	.23753	.49767	.48239	.00025
#2	.49766	2.1756	.44019	.23254	.49578	.48318	.00017
#3	.49650	2.1695	.43994	.23878	.49754	.48266	.00075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8832.1**	**52381.**	**2503.4**
Stddev	43.7	518.	14.9
%RSD	.49512	.98899	.59513
#1	8807.7	51789.	2505.9
#2	8806.1	52747.	2487.4
#3	8882.6	52609.	2516.9

Approved: June 29, 2016

Sample Name: L1606098640 Acquired: 6/28/2016 11:09:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**.00368**	**-.00222**	**.01141**	**.00216**	**-.00005**	**2.2430**
Stddev	.00288	.00455	.00278	.00149	.00149	.00004	.0120
%RSD	1876.7	123.61	125.40	13.107	68.951	89.131	.53399
#1	.00212	-.00155	.00099	.01182	.00231	.00000	2.2297
#2	.00149	.00669	-.00400	.01265	.00060	-.00007	2.2530
#3	-.00315	.00590	-.00364	.00975	.00356	-.00007	2.2463
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00000**	**-.00031**	**-.00074**	**.00067**	F **-.02010**	**.12601**	**.00716**
Stddev	.00037	.00033	.00115	.00024	.02550	.12950	.00076
%RSD	108380.	105.10	155.50	35.998	126.88	102.77	10.598
#1	-.00034	-.00043	.00014	.00085	-.03819	.06228	.00655
#2	.00040	-.00057	-.00204	.00039	-.03117	.27502	.00801
#3	-.00006	.00006	-.00032	.00076	.00907	.04072	.00691
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.91287**	**.00205**	**.00013**	**1.3571**	**.00020**	**.00323**	**.00041**
Stddev	.06200	.00215	.00012	.0399	.00066	.00482	.00096
%RSD	6.7914	104.57	86.770	2.9418	320.37	149.47	236.42
#1	.98438	.00035	.00001	1.3860	-.00004	.00798	-.00051
#2	.88005	.00447	.00014	1.3115	.00095	-.00166	.00141
#3	.87419	.00135	.00025	1.3737	-.00030	.00336	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606098640 Acquired: 6/28/2016 11:09:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00221	.00185	1.7777	.00057	.02861	-.00047	-.00375
Stddev	.00170	.00581	.0072	.00092	.00010	.00218	.00315
%RSD	76.838	313.71	.40541	163.27	.34066	460.98	84.031
#1	.00123	-.00324	1.7771	-.00035	.02870	-.00248	-.00217
#2	.00122	.00819	1.7852	.00150	.02863	.00184	-.00737
#3	.00417	.00061	1.7709	.00054	.02851	-.00078	-.00170
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00006	.00283	-.00030
Stddev	.00069	.00010	.00048
%RSD	1079.8	3.5427	163.06
#1	-.00026	.00293	.00025
#2	-.00064	.00284	-.00049
#3	.00070	.00273	-.00065
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9289.4	56423.	2690.4
Stddev	27.6	170.	4.0
%RSD	.29737	.30164	.14881
#1	9321.1	56618.	2691.8
#2	9276.4	56308.	2693.5
#3	9270.7	56341.	2685.9

Approved: June 29, 2016

Sample Name: L1606098642 Acquired: 6/28/2016 11:13:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00044	.00480	-.00226	.00604	.00443	.00001	2.2648	-.00002
Stddev	.00055	.00920	.00193	.00047	.00218	.00005	.0520	.00023
%RSD	123.65	191.72	85.371	7.7247	49.175	647.11	2.2956	994.00
#1	-.00030	.00393	-.00387	.00657	.00289	-.00004	2.2275	.00024
#2	.00002	.01441	-.00279	.00586	.00347	.00000	2.2427	-.00020
#3	-.00105	-.00394	-.00012	.00569	.00692	.00006	2.3242	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	-.00035	.00052	-.01163	.26316	-.00051	.80762	-.00038
Stddev	.00019	.00021	.00043	.02440	.11608	.00572	.03343	.00041
%RSD	387.22	60.889	84.163	209.79	44.110	1124.5	4.1388	108.83
#1	.00017	-.00048	.00015	.00199	.20693	-.00220	.77340	-.00048
#2	-.00012	-.00045	.00040	.00292	.39664	-.00520	.84019	.00008
#3	-.00019	-.00010	.00100	-.03980	.18589	.00587	.80927	-.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	1.3652	-.00037	-.00442	.00066	.00257	-.00014	1.8170
Stddev	.00002	.0250	.00097	.00540	.00267	.00332	.00546	.0049
%RSD	11.711	1.8350	262.18	122.21	406.64	129.03	3833.7	.27083
#1	.00022	1.3435	.00047	-.00429	.00358	.00628	.00485	1.8126
#2	.00018	1.3926	-.00143	.00091	-.00166	.00155	.00069	1.8223
#3	.00023	1.3596	-.00015	-.00989	.00005	-.00012	-.00597	1.8161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606098642 Acquired: 6/28/2016 11:13:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.02904**	**.00647**	**-.00118**	**-.00045**	**.00265**	**-.00055**
Stddev	.00078	.00075	.00403	.00186	.00068	.00009	.00024
%RSD	611.12	2.5787	62.343	157.68	153.74	3.2764	43.066
#1	-.00025	.02923	.01112	-.00164	-.00121	.00267	-.00035
#2	.00071	.02821	.00425	-.00276	.00011	.00273	-.00081
#3	-.00084	.02967	.00404	.00087	-.00024	.00256	-.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9188.1**	**55730.**	**2641.7**
Stddev	33.3	117.	26.1
%RSD	.36205	.20964	.98933
#1	9221.4	55818.	2623.5
#2	9188.1	55775.	2671.6
#3	9154.9	55598.	2630.0

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 11:17:15 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38793**	**9.8216**	**.38568**	**.48241**	**.97649**	**.04892**	**9.6575**	**.04905**
Stddev	.00173	.0104	.00606	.00258	.00599	.00017	.0817	.00054
%RSD	.44530	.10617	1.5701	.53397	.61359	.35505	.84634	1.1034
#1	.38989	9.8335	.38005	.48355	.98308	.04912	9.7295	.04916
#2	.38662	9.8141	.38489	.48422	.97502	.04879	9.6743	.04953
#3	.38729	9.8171	.39209	.47946	.97137	.04886	9.5686	.04846
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19642**	**.49210**	**.49159**	**3.8879**	**49.158**	**.97992**	**9.9365**	**.48176**
Stddev	.00062	.00133	.00208	.0465	.286	.01938	.0224	.00474
%RSD	.31488	.26994	.42282	1.1966	.58105	1.9777	.22529	.98319
#1	.19623	.49213	.49102	3.9206	49.268	1.0012	9.9456	.48577
#2	.19711	.49342	.49389	3.8346	49.372	.97517	9.9530	.48297
#3	.19592	.49076	.48986	3.9083	48.833	.96335	9.9111	.47653
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.98549**	**48.425**	**.48820**	**9.6834**	**.49219**	**1.1658**	**.39200**	**4.9060**
Stddev	.00189	.277	.00164	.0239	.00612	.0064	.00693	.0198
%RSD	.19203	.57139	.33676	.24696	1.2434	.54907	1.7666	.40262
#1	.98469	48.726	.48865	9.6700	.48522	1.1587	.39787	4.8842
#2	.98765	48.367	.48957	9.7110	.49669	1.1709	.39376	4.9228
#3	.98412	48.182	.48637	9.6693	.49465	1.1680	.38436	4.9109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 11:17:15 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98346	.97426	.97669	.49225	.97791	.97750	.99577
Stddev	.00532	.00518	.00473	.00251	.00190	.00255	.00695
%RSD	.54046	.53167	.48472	.51088	.19391	.26059	.69772
#1	.97812	.97975	.97533	.49200	.98010	.97761	.99790
#2	.98875	.97359	.98196	.49488	.97671	.98000	1.0014
#3	.98352	.96945	.97279	.48987	.97693	.97491	.98801
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9011.4	53420.	2554.4
Stddev	14.3	287.	21.0
%RSD	.15841	.53648	.82136
#1	9023.0	53101.	2539.8
#2	9015.8	53501.	2545.0
#3	8995.5	53657.	2578.4

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 11:20:53 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.01332	-.00300	.00111	.00410	.00008	-.01736	-.00010
Stddev	.00226	.00916	.00118	.00122	.00098	.00004	.05399	.00024
%RSD	699.99	68.781	39.157	109.28	23.888	50.210	311.03	239.48
#1	-.00228	.00555	-.00168	.00251	.00332	.00003	-.00609	-.00000
#2	.00145	.02343	-.00393	.00054	.00378	.00011	-.07609	-.00037
#3	.00179	.01099	-.00341	.00029	.00520	.00009	.03011	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	.00110	.00006	.01011	.09868	.00495	.07318	.00116
Stddev	.00025	.00108	.00079	.01784	.17501	.00447	.04292	.00196
%RSD	68.981	98.497	1300.8	176.39	177.35	90.362	58.654	169.29
#1	-.00043	.00034	.00081	.02055	.15066	.00125	.10534	-.00110
#2	-.00008	.00234	-.00076	.02028	-.09643	.00992	.08977	.00218
#3	-.00056	.00062	.00013	-.01049	.24181	.00367	.02444	.00240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	-.02000	-.00044	.00549	-.00016	.00387	-.00237	.01323
Stddev	.00029	.01349	.00065	.00222	.00288	.00267	.00270	.00241
%RSD	229.41	67.461	146.65	40.388	1830.6	69.139	113.99	18.207
#1	-.00016	-.02660	-.00048	.00468	-.00328	.00695	-.00095	.01375
#2	.00041	-.00448	.00023	.00379	.00041	.00244	-.00067	.01533
#3	.00012	-.02893	-.00107	.00800	.00240	.00221	-.00547	.01060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 11:20:53 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00065	.00010	-.00014	-.00111	.00009	.00013	.00028
Stddev	.00030	.00013	.00720	.00236	.00051	.00023	.00053
%RSD	46.135	130.04	5092.9	212.88	551.63	170.81	192.28
#1	.00099	.00011	-.00831	.00150	.00056	.00036	.00028
#2	.00056	.00023	.00527	-.00171	.00017	.00013	-.00025
#3	.00041	-.00004	.00262	-.00312	-.00045	-.00009	.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9053.5	54352.	2576.2
Stddev	33.1	114.	10.5
%RSD	.36561	.20997	.40893
#1	9016.7	54226.	2573.6
#2	9062.8	54383.	2567.2
#3	9080.9	54448.	2587.8

Approved: June 29, 2016

Sample Name: L1606119001 Acquired: 6/28/2016 11:24:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00000	4.0152	.00528	2.3259	.97175	.00033	76.368
Stddev	.00145	.0194	.00250	.0144	.00516	.00005	.270
%RSD	95608.	.48208	47.457	.61971	.53148	14.625	.35367
#1	-.00049	4.0240	.00561	2.3204	.97765	.00033	76.657
#2	.00163	3.9931	.00262	2.3150	.96956	.00039	76.325
#3	-.00113	4.0287	.00760	2.3422	.96804	.00029	76.122
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.28502	.00428	.01113	.78990	11.216	94.553	5.2188
Stddev	.00690	.00052	.00063	.02058	.061	.313	.0182
%RSD	2.4193	12.177	5.6284	2.6050	.54549	.33117	.34821
#1	.28852	.00403	.01182	.80121	11.248	94.859	5.2386
#2	.28946	.00488	.01097	.80233	11.145	94.233	5.2147
#3	.27708	.00393	.01060	.76615	11.255	94.567	5.2030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.3151	.43401	.00500	F 331.07	.03574	.54738	.24924
Stddev	.0468	.00253	.00007	1.32	.00213	.01964	.00568
%RSD	.63935	.58333	1.3949	.39954	5.9585	3.5886	2.2783
#1	7.2826	.43190	.00497	332.57	.03794	.56696	.24923
#2	7.3687	.43331	.00508	330.56	.03559	.54753	.25493
#3	7.2939	.43682	.00496	330.08	.03368	.52767	.24357
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606119001 Acquired: 6/28/2016 11:24:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00505	.00245	8.5723	.11492	.29561	.07288	-.00059
Stddev	.00259	.00222	.1258	.00299	.00020	.00814	.00245
%RSD	51.234	90.320	1.4673	2.6021	.06631	11.173	418.30
#1	.00505	.00304	8.6004	.11669	.29581	.06658	.00209
#2	.00763	.00432	8.6817	.11661	.29560	.08207	-.00273
#3	.00246	.00000	8.4349	.11147	.29542	.06998	-.00111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.01057	.54262	.00107
Stddev	.00081	.00978	.00031
%RSD	7.6255	1.8021	29.122
#1	.01026	.54683	.00071
#2	.00995	.54959	.00123
#3	.01148	.53144	.00128
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8964.1	52749.	2647.9
Stddev	10.0	121.	22.5
%RSD	.11182	.22893	.85076
#1	8961.3	52886.	2630.7
#2	8955.9	52660.	2639.6
#3	8975.3	52700.	2673.4

Approved: June 29, 2016

Sample Name: L1606119002 Acquired: 6/28/2016 11:28:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00226	9.5586	.00773	1.6559	.73068	.00051	257.60
Stddev	.00052	.0101	.00172	.0111	.00315	.00004	1.13
%RSD	22.844	.10580	22.192	.66996	.43173	8.0795	.43961
#1	.00168	9.5657	.00865	1.6683	.73423	.00052	258.78
#2	.00243	9.5631	.00575	1.6469	.72960	.00055	257.50
#3	.00267	9.5470	.00879	1.6525	.72821	.00047	256.52
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.27201	.01208	.15894	5.8326	29.202	56.914	.89923
Stddev	.00800	.00051	.00172	.1763	.137	.111	.00962
%RSD	2.9395	4.2506	1.0801	3.0229	.46817	.19512	1.0694
#1	.27750	.01242	.16039	5.9433	29.059	57.042	.90987
#2	.27569	.01234	.15938	5.9253	29.332	56.857	.89667
#3	.26284	.01149	.15704	5.6293	29.213	56.842	.89116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	26.114	4.0320	.02706	F 641.62	.13792	2.9803	.56145
Stddev	.234	.0137	.00074	.68	.00389	.0818	.01198
%RSD	.89502	.33980	2.7478	.10649	2.8189	2.7454	2.1345
#1	26.329	4.0439	.02755	642.37	.14139	3.0362	.56756
#2	26.147	4.0170	.02743	641.44	.13863	3.0183	.56915
#3	25.865	4.0350	.02621	641.04	.13372	2.8863	.54765
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606119002 Acquired: 6/28/2016 11:28:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00979	-.00034	14.513	.67159	1.9116	.14184	-.00066
Stddev	.00494	.00207	.288	.02476	.0087	.00052	.00174
%RSD	50.481	600.71	1.9859	3.6868	.45688	.36836	261.54
#1	.00442	.00077	14.679	.68753	1.9215	.14241	.00006
#2	.01414	.00093	14.679	.68417	1.9086	.14139	.00059
#3	.01081	-.00273	14.180	.64307	1.9048	.14170	-.00265
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.02758	.83818	.00313
Stddev	.00126	.02623	.00047
%RSD	4.5579	3.1291	15.093
#1	.02770	.85462	.00293
#2	.02877	.85200	.00279
#3	.02627	.80794	.00367
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8763.8	51691.	2636.9
Stddev	54.5	455.	6.1
%RSD	.62147	.88063	.23063
#1	8706.8	51253.	2642.2
#2	8769.1	51659.	2630.3
#3	8815.4	52162.	2638.2

Approved: June 29, 2016

Sample Name: L1606113002 Acquired: 6/28/2016 11:32:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00067	.01380	-.00240	.00864	.00926	.00006	15.171	-.00018
Stddev	.00307	.00691	.00324	.00121	.00165	.00002	1.078	.00030
%RSD	455.23	50.094	135.19	14.049	17.829	34.170	7.1085	168.95
#1	.00371	.01054	-.00132	.00990	.01087	.00005	16.216	.00013
#2	.00073	.02174	-.00604	.00857	.00757	.00005	14.062	-.00047
#3	-.00242	.00912	.00017	.00747	.00933	.00008	15.233	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	-.00078	.00175	7.4035	.65514	.00126	3.1114	.22587
Stddev	.00041	.00010	.00078	.5798	.12316	.00237	.1931	.01787
%RSD	103.82	12.531	44.704	7.8320	18.799	187.66	6.2047	7.9098
#1	-.00077	-.00083	.00095	7.9945	.79583	-.00145	3.3337	.24355
#2	.00004	-.00083	.00179	6.8355	.60273	.00229	3.0148	.20782
#3	-.00044	-.00067	.00251	7.3806	.56685	.00294	2.9857	.22623
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	7.8703	-.00110	.02647	.00010	.00317	-.00146	1.3559
Stddev	.00029	.5148	.00130	.00375	.00018	.00401	.00278	.0434
%RSD	105.72	6.5408	117.93	14.181	179.79	126.53	190.62	3.2002
#1	.00001	8.3807	.00026	.03049	.00025	.00397	.00071	1.3799
#2	.00057	7.3512	-.00123	.02306	.00015	-.00118	-.00460	1.3819
#3	.00023	7.8789	-.00233	.02587	-.00010	.00671	-.00049	1.3058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606113002 Acquired: 6/28/2016 11:32:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.04585	.00437	.00135	-.00004	.00151	-.00058
Stddev	.00032	.00370	.00161	.00255	.00053	.00030	.00048
%RSD	366.92	8.0609	36.855	189.29	1464.5	19.895	82.203
#1	-.00028	.04933	.00574	-.00050	.00009	.00168	-.00060
#2	.00024	.04197	.00260	.00028	-.00062	.00169	-.00105
#3	.00030	.04625	.00477	.00426	.00042	.00116	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8887.2	54480.	2588.1
Stddev	8.3	105.	124.4
%RSD	.09307	.19333	4.8069
#1	8877.7	54601.	2466.9
#2	8891.0	54436.	2715.4
#3	8892.9	54405.	2581.9

Approved: June 29, 2016

Sample Name: L1606113003 Acquired: 6/28/2016 11:36:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00199	.01185	.00153	.00484	.00664	.00004	9.9420	.00012
Stddev	.00057	.00418	.00300	.00411	.00234	.00009	.0992	.00025
%RSD	28.803	35.249	195.88	84.950	35.328	255.34	.99760	201.23
#1	-.00137	.01667	.00500	.00870	.00401	-.00007	9.8294	.00023
#2	-.00250	.00939	-.00016	.00531	.00737	.00008	9.9801	-.00016
#3	-.00209	.00948	-.00024	.00051	.00853	.00010	10.016	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	.02213	-.00028	.36601	.35983	.00751	3.5741	.08240
Stddev	.00036	.00055	.00099	.01258	.21039	.00239	.0830	.00265
%RSD	82.966	2.4851	349.65	3.4376	58.470	31.762	2.3219	3.2186
#1	.00005	.02193	-.00142	.36347	.26015	.00991	3.6265	.07933
#2	.00075	.02171	.00038	.35488	.21781	.00514	3.4784	.08395
#3	.00049	.02275	.00019	.37966	.60153	.00749	3.6174	.08391
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	8.7826	.01128	.03643	-.00299	.00077	.00315	1.0910
Stddev	.00028	.1122	.00042	.00453	.00296	.00304	.00520	.0093
%RSD	64.641	1.2779	3.7546	12.430	98.761	393.00	164.71	.84873
#1	.00031	8.6590	.01174	.03424	.00033	.00008	.00433	1.0822
#2	.00023	8.8782	.01120	.04164	-.00532	.00410	-.00253	1.0901
#3	.00075	8.8106	.01090	.03342	-.00399	-.00186	.00766	1.1007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606113003 Acquired: 6/28/2016 11:36:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00126**	**.05910**	**-.00486**	**-.00167**	**.00006**	**.00125**	**-.00028**
Stddev	.00101	.00068	.01199	.00195	.00033	.00009	.00031
%RSD	79.892	1.1523	246.70	116.87	522.92	7.2617	108.50
#1	-.00239	.05832	-.01255	.00057	.00043	.00116	-.00058
#2	-.00044	.05946	.00896	-.00295	-.00002	.00134	.00003
#3	-.00096	.05953	-.01099	-.00262	-.00022	.00124	-.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8931.3**	**53313.**	**2521.9**
Stddev	14.6	143.	15.7
%RSD	.16319	.26910	.62180
#1	8916.4	53341.	2539.7
#2	8945.5	53157.	2510.1
#3	8932.1	53440.	2516.0

Approved: June 29, 2016

Sample Name: L1606113004 Acquired: 6/28/2016 11:40:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00113	.02222	.00110	.00027	.01162	-.00003	18.226	-.00011
Stddev	.00136	.00709	.00170	.00161	.00137	.00004	.270	.00007
%RSD	119.92	31.895	155.12	594.93	11.803	130.22	1.4817	59.967
#1	-.00255	.01595	.00108	.00065	.01004	-.00002	18.002	-.00019
#2	-.00101	.02991	.00280	.00166	.01248	-.00007	18.526	-.00009
#3	.00016	.02079	-.00060	-.00150	.01235	.00000	18.151	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	.00113	.00050	12.248	.30126	.00680	2.9585	.18185
Stddev	.00033	.00029	.00150	.171	.15023	.00143	.1165	.00697
%RSD	47.931	25.751	303.47	1.3989	49.868	21.079	3.9387	3.8302
#1	.00103	.00109	.00212	12.067	.36563	.00839	2.8255	.17423
#2	.00063	.00143	.00021	12.407	.12957	.00562	3.0425	.18341
#3	.00039	.00085	-.00085	12.269	.40858	.00638	3.0074	.18790
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00054	3.5805	.00166	-.00089	.00199	.00216	-.00111	1.4748
Stddev	.00031	.0484	.00142	.01002	.00221	.00115	.00472	.0131
%RSD	56.104	1.3521	86.025	1120.2	111.08	53.382	426.06	.88890
#1	-.00024	3.5448	.00324	-.01222	-.00050	.00236	-.00656	1.4818
#2	-.00054	3.6356	.00047	.00271	.00273	.00319	.00167	1.4830
#3	-.00085	3.5610	.00126	.00683	.00373	.00092	.00156	1.4597
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606113004 Acquired: 6/28/2016 11:40:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.05971**	**.00554**	**-.00232**	**.00022**	**.00127**	**-.00119**
Stddev	.00077	.00117	.00381	.00169	.00059	.00013	.00052
%RSD	1033.9	1.9573	68.806	72.951	263.47	9.9627	43.812
#1	-.00086	.05843	.00447	-.00042	.00027	.00122	-.00179
#2	-.00005	.05996	.00238	-.00366	.00078	.00117	-.00100
#3	.00069	.06073	.00977	-.00287	-.00039	.00141	-.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8958.9**	**53683.**	**2529.9**
Stddev	18.8	182.	9.0
%RSD	.20935	.33875	.35708
#1	8940.1	53478.	2539.9
#2	8977.6	53746.	2527.6
#3	8959.1	53825.	2522.2

Approved: June 29, 2016

Sample Name: L1606113005 Acquired: 6/28/2016 11:44:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00182**	**.01311**	**.00051**	**.00299**	**.00274**	**.00002**	**.01783**	**.00015**
Stddev	.00166	.01606	.00127	.00175	.00219	.00006	.07620	.00018
%RSD	91.021	122.54	248.12	58.424	80.129	245.90	427.38	117.06
#1	.00009	.00017	.00177	.00119	.00493	.00004	.05273	-.00005
#2	-.00271	.03109	-.00078	.00468	.00054	-.00004	.07033	.00024
#3	-.00285	.00807	.00055	.00311	.00275	.00008	-.06957	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**.00095**	**.00149**	**.02702**	**.10837**	**.00321**	**.11311**	**-.00002**
Stddev	.00036	.00069	.00082	.03091	.04208	.00286	.07473	.00053
%RSD	129.07	72.480	55.118	114.41	38.834	89.276	66.068	2828.5
#1	-.00066	.00072	.00241	.01040	.11048	-.00009	.02883	.00056
#2	.00006	.00172	.00083	.06268	.14936	.00460	.17128	-.00048
#3	-.00024	.00040	.00123	.00797	.06527	.00511	.13923	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00004**	**.14703**	**-.00110**	**.00001**	**-.00405**	**.00493**	**-.00195**	**.00009**
Stddev	.00015	.00703	.00100	.00895	.00424	.00502	.00669	.00125
%RSD	397.74	4.7833	91.383	69819.	104.75	101.87	342.93	1350.1
#1	-.00013	.13899	-.00221	.00892	-.00839	.01054	-.00251	.00105
#2	.00007	.15007	-.00083	.00011	.00008	.00340	.00500	.00055
#3	.00017	.15203	-.00026	-.00899	-.00384	.00085	-.00835	-.00132
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606113005 Acquired: 6/28/2016 11:44:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	.00033	.00406	-.00662	-.00014	.00205	-.00081
Stddev	.00067	.00019	.00234	.00168	.00056	.00014	.00050
%RSD	289.31	57.588	57.746	25.401	396.40	6.6090	62.107
#1	.00035	.00053	.00524	-.00854	-.00067	.00221	-.00127
#2	.00084	.00030	.00136	-.00544	-.00020	.00198	-.00088
#3	-.00049	.00015	.00557	-.00587	.00045	.00197	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9124.4	55026.	2621.2
Stddev	17.1	95.	9.0
%RSD	.18749	.17295	.34452
#1	9106.9	54988.	2610.8
#2	9141.1	54956.	2626.5
#3	9125.3	55135.	2626.4

Approved: June 29, 2016

Sample Name: L1606116411 Acquired: 6/28/2016 11:48:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00116	.15574	-.00171	.03469	.02190	.00005	17.821	.00072
Stddev	.00249	.00517	.00262	.00295	.00047	.00004	.280	.00014
%RSD	214.69	3.3183	153.13	8.5097	2.1648	73.045	1.5685	20.189
#1	-.00013	.15599	.00126	.03787	.02218	.00010	18.080	.00083
#2	-.00400	.15045	-.00368	.03416	.02217	.00002	17.859	.00077
#3	.00065	.16078	-.00272	.03204	.02135	.00004	17.525	.00055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	.00035	.01227	-.00191	1.2161	.00565	4.5909	.05471
Stddev	.00038	.00143	.00159	.00993	.1817	.00134	.0709	.00378
%RSD	72.627	412.52	12.998	520.76	14.943	23.688	1.5437	6.9078
#1	.00010	-.00130	.01325	.00952	1.3973	.00718	4.6629	.05221
#2	.00063	.00107	.01313	-.00839	1.2171	.00474	4.5886	.05906
#3	.00085	.00127	.01043	-.00684	1.0339	.00502	4.5212	.05287
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	149.27	.00544	.18485	.00133	.00189	.00259	2.8294
Stddev	.00013	1.17	.00052	.00541	.00548	.00141	.00335	.0138
%RSD	244.26	.78109	9.5881	2.9257	410.94	74.968	129.26	.48586
#1	.00018	150.37	.00500	.18839	.00765	.00261	.00270	2.8383
#2	.00006	149.40	.00602	.18752	-.00158	.00279	.00589	2.8363
#3	-.00008	148.04	.00532	.17862	-.00207	.00026	-.00081	2.8135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606116411 Acquired: 6/28/2016 11:48:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.09608	-.00129	-.00451	-.00011	.28311	-.00011
Stddev	.00052	.00077	.00571	.00248	.00066	.00134	.00023
%RSD	725.00	.80553	444.09	55.074	621.07	.47167	205.12
#1	-.00008	.09641	-.00625	-.00208	.00066	.28404	.00010
#2	-.00058	.09664	-.00256	-.00704	-.00051	.28372	-.00008
#3	.00045	.09519	.00495	-.00441	-.00047	.28158	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8982.8	53771.	2629.9
Stddev	48.8	105.	30.6
%RSD	.54280	.19464	1.1632
#1	8959.8	53701.	2596.0
#2	8949.8	53720.	2638.3
#3	9038.8	53891.	2655.4

Approved: June 29, 2016

Sample Name: L1606125201 Acquired: 6/28/2016 11:51:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00044	.00808	.00092	.01736	.04150	-.00001	59.752	.00004
Stddev	.00109	.00569	.00477	.00370	.00024	.00002	.163	.00026
%RSD	249.64	70.512	516.83	21.331	.58544	204.06	.27226	661.60
#1	.00028	.01318	.00124	.01758	.04162	-.00002	59.723	-.00013
#2	.00010	.00912	-.00400	.02095	.04122	-.00002	59.926	.00034
#3	-.00170	.00193	.00552	.01356	.04165	.00001	59.605	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00024	.00105	.01353	.02848	.98155	.01054	12.132	.00186
Stddev	.00040	.00059	.00094	.00603	.11795	.00844	.120	.00147
%RSD	167.20	55.860	6.9174	21.168	12.016	80.068	.99227	78.733
#1	.00020	.00042	.01338	.02633	1.0139	.01791	12.003	.00351
#2	-.00057	.00157	.01453	.03529	1.0799	.00134	12.241	.00136
#3	-.00035	.00116	.01268	.02382	.85080	.01237	12.153	.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00154	12.528	-.00123	.00509	-.00134	-.00035	-.00136	4.3626
Stddev	.00032	.026	.00095	.01517	.00147	.00729	.00401	.1038
%RSD	20.620	.21109	76.599	298.19	110.07	2060.5	294.51	2.3803
#1	.00138	12.559	-.00213	-.00513	.00020	.00791	.00309	4.4196
#2	.00191	12.513	-.00025	-.00213	-.00274	-.00307	-.00249	4.4255
#3	.00134	12.513	-.00132	.02253	-.00148	-.00590	-.00469	4.2428
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606125201 Acquired: 6/28/2016 11:51:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.09497	-.00811	-.00165	-.00065	.14615	.00006
Stddev	.00084	.00057	.01110	.00179	.00026	.00541	.00097
%RSD	275.55	.59736	136.87	108.47	39.705	3.7017	1589.8
#1	-.00036	.09453	-.02080	-.00192	-.00082	.14952	-.00035
#2	.00002	.09561	-.00026	-.00330	-.00076	.14903	-.00064
#3	.00125	.09477	-.00326	.00026	-.00035	.13991	.00117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9050.9	54259.	2611.6
Stddev	24.4	120.	10.7
%RSD	.26996	.22034	.40861
#1	9055.7	54242.	2602.0
#2	9072.5	54149.	2609.9
#3	9024.4	54386.	2623.1

Approved: June 29, 2016

Sample Name: L1606125201PS Acquired: 6/28/2016 11:55:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574476-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19713**	**4.9850**	**.19938**	**.98259**	**.53606**	**.02430**	**58.735**	**.02467**
Stddev	.00252	.0319	.00165	.00595	.00044	.00011	.100	.00014
%RSD	1.2789	.63905	.82752	.60524	.08260	.44321	.17011	.54992
#1	.19699	5.0215	.20128	.98818	.53631	.02437	58.848	.02453
#2	.19468	4.9705	.19832	.97634	.53633	.02417	58.701	.02479
#3	.19971	4.9630	.19854	.98325	.53555	.02435	58.657	.02469
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09853**	**.24959**	**.25779**	**1.9940**	**25.955**	**.51235**	**15.607**	**.24725**
Stddev	.00015	.00271	.00101	.0002	.163	.00380	.184	.00385
%RSD	.14890	1.0852	.39099	.01202	.62623	.74157	1.1781	1.5551
#1	.09836	.25245	.25808	1.9940	26.102	.51077	15.685	.25049
#2	.09861	.24927	.25667	1.9942	25.780	.51669	15.739	.24827
#3	.09861	.24706	.25862	1.9938	25.981	.50960	15.397	.24300
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50641**	**36.138**	**.24471**	**4.9220**	**.24277**	**.59332**	**.18728**	**6.2893**
Stddev	.00201	.141	.00057	.0106	.00369	.00471	.00450	.0036
%RSD	.39673	.38951	.23146	.21453	1.5208	.79362	2.4037	.05782
#1	.50751	36.227	.24534	4.9234	.23851	.58972	.18452	6.2906
#2	.50763	36.211	.24424	4.9318	.24479	.59865	.19247	6.2920
#3	.50409	35.975	.24455	4.9109	.24500	.59159	.18484	6.2851
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606125201PS Acquired: 6/28/2016 11:55:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574476-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50287**	**.59203**	**.48462**	**.24484**	**.49847**	**.62032**	**.00031**
Stddev	.00348	.00235	.01112	.00246	.00062	.00139	.00056
%RSD	.69291	.39643	2.2946	1.0047	.12404	.22456	180.38
#1	.50407	.59317	.49567	.24405	.49892	.62057	.00088
#2	.50560	.59358	.47343	.24759	.49776	.62157	-.00025
#3	.49894	.58933	.48477	.24287	.49872	.61882	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8956.0**	**53595.**	**2586.0**
Stddev	7.2	179.	8.2
%RSD	.08052	.33342	.31697
#1	8962.8	53389.	2589.0
#2	8948.4	53695.	2576.8
#3	8956.9	53701.	2592.3

Approved: June 29, 2016

Sample Name: L1606125201SDL Acquired: 6/28/2016 11:59:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574476-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	.01671	-.00017	.00590	.01366	.00008	12.549	-.00003
Stddev	.00109	.00831	.00155	.00052	.00114	.00007	.147	.00014
%RSD	490.08	49.726	924.95	8.8632	8.3647	94.657	1.1712	436.97
#1	-.00120	.02324	.00142	.00599	.01298	.00012	12.397	-.00020
#2	-.00041	.00736	-.00168	.00637	.01498	-.00001	12.691	.00004
#3	.00095	.01951	-.00024	.00534	.01302	.00012	12.559	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	-.00055	.00330	.02155	.18221	.00169	2.6697	.00154
Stddev	.00046	.00062	.00153	.05047	.05382	.00357	.1664	.00168
%RSD	347.45	113.82	46.434	234.17	29.535	210.70	6.2340	108.73
#1	-.00043	.00016	.00428	.07981	.17328	.00202	2.4947	.00080
#2	-.00035	-.00077	.00409	-.00886	.13342	.00509	2.8260	.00036
#3	.00039	-.00103	.00153	-.00630	.23993	-.00203	2.6883	.00347
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	2.6194	-.00013	.00061	-.00141	.00494	-.00552	.91317
Stddev	.00033	.0355	.00106	.00742	.00364	.00102	.00604	.02111
%RSD	105.42	1.3554	806.80	1223.5	258.10	20.595	109.34	2.3117
#1	.00054	2.5862	-.00081	.00846	-.00288	.00400	-.00758	.92321
#2	.00047	2.6151	-.00067	-.00627	.00274	.00482	.00127	.92739
#3	-.00007	2.6568	.00109	-.00037	-.00409	.00602	-.01027	.88892
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606125201SDL Acquired: 6/28/2016 11:59:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574476-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.02020**	**-.00216**	**-.00071**	**.00054**	**.03260**	**-.00049**
Stddev	.00123	.00015	.01450	.00185	.00070	.00071	.00047
%RSD	952.10	.73452	670.38	260.03	131.19	2.1790	95.648
#1	.00112	.02029	-.00037	-.00281	-.00027	.03290	-.00001
#2	.00052	.02003	-.01747	.00063	.00085	.03311	-.00052
#3	-.00125	.02028	.01135	.00006	.00104	.03179	-.00094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8880.0**	**53367.**	**2505.0**
Stddev	8.8	162.	12.6
%RSD	.09890	.30282	.50213
#1	8876.4	53181.	2518.5
#2	8890.0	53447.	2493.6
#3	8873.6	53474.	2502.8

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 12:03:19 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39604	9.9338	.39063	.49129	.99294	.04901	9.8191	.04975
Stddev	.00115	.0144	.00305	.00317	.01061	.00012	.1615	.00008
%RSD	.29058	.14522	.78082	.64570	1.0682	.24533	1.6444	.16252
#1	.39472	9.9394	.39301	.48784	.98919	.04914	9.7373	.04966
#2	.39680	9.9174	.39169	.49407	1.0049	.04899	10.005	.04978
#3	.39661	9.9446	.38719	.49197	.98472	.04890	9.7148	.04982
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19938	.49368	.49836	3.9588	49.592	1.0011	10.136	.49600
Stddev	.00076	.00169	.00055	.0389	.495	.0160	.209	.00324
%RSD	.38333	.34266	.11061	.98134	.99848	1.5991	2.0667	.65357
#1	.19915	.49541	.49812	3.9156	49.268	1.0040	10.062	.49281
#2	.20024	.49360	.49899	3.9910	50.162	1.0155	10.372	.49929
#3	.19876	.49203	.49797	3.9698	49.346	.98384	9.9735	.49590
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99694	49.459	.49353	9.8429	.49371	1.1831	.39955	4.9585
Stddev	.00198	.418	.00311	.0260	.00213	.0043	.00974	.0151
%RSD	.19873	.84487	.62974	.26365	.43098	.36417	2.4372	.30413
#1	.99853	49.324	.49702	9.8721	.49533	1.1881	.41022	4.9686
#2	.99758	49.928	.49253	9.8341	.49450	1.1811	.39115	4.9656
#3	.99472	49.126	.49105	9.8225	.49130	1.1803	.39729	4.9411
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 12:03:19 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99925	.99620	.98765	.49522	.98406	.99406	.99798
Stddev	.00409	.01037	.01478	.00173	.00289	.00196	.01227
%RSD	.40928	1.0406	1.4963	.35024	.29354	.19682	1.2297
#1	1.0037	.99304	.99034	.49484	.98708	.99630	1.0021
#2	.99836	1.0078	1.0009	.49371	.98377	.99319	1.0076
#3	.99567	.98778	.97171	.49712	.98132	.99269	.98417
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8892.1	53022.	2559.8
Stddev	30.1	42.	27.6
%RSD	.33893	.07993	1.0776
#1	8879.1	53044.	2558.6
#2	8870.6	53049.	2532.8
#3	8926.5	52973.	2588.0

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 12:06:56 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .39465	F 9.9931	F .39555	F .49345	F 1.0003	F .04972	F 9.8499
Stddev	.00164	.0211	.00073	.00199	.0066	.00034	.0718
%RSD	.41653	.21167	.18546	.40249	.65578	.67878	.72872
#1	.39279	10.018	.39637	.49550	.99845	.05006	9.8255
#2	.39529	9.9815	.39494	.49331	.99483	.04970	9.7935
#3	.39589	9.9803	.39535	.49153	1.0076	.04939	9.9307
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
High Limit	.01000	.40000	.01000	.10000	.01000	.00050	.20000
Low Limit	-.01000	-.40000	-.01000	-.10000	-.01000	-.00050	-.20000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .04977	F .19951	F .49879	F .49849	F 3.9395	F 49.977	F .99931
Stddev	.00024	.00059	.00324	.00096	.0630	.291	.00350
%RSD	.48691	.29607	.64977	.19182	1.6002	.58270	.34995
#1	.04951	.19997	.50244	.49760	3.8939	50.029	.99545
#2	.04979	.19971	.49625	.49837	3.9132	49.664	1.0002
#3	.05000	.19884	.49769	.49950	4.0115	50.239	1.0023
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
High Limit	.00050	.00500	.00300	.00500	.06000	1.0000	.10000
Low Limit	-.00050	-.00500	-.00300	-.00500	-.06000	-1.0000	-.10000

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 10.183	F .49950	F .99809	F 49.556	F .49691	F 9.8570	F .49710
Stddev	.118	.00483	.00208	.300	.00135	.0031	.00340
%RSD	1.1579	.96758	.20882	.60573	.27181	.03173	.68461
#1	10.053	.49446	.99874	49.416	.49598	9.8551	.49386
#2	10.284	.49996	.99977	49.351	.49846	9.8552	.50064
#3	10.211	.50409	.99576	49.900	.49629	9.8606	.49679
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
High Limit	.50000	.01000	.03000	.50000	.04000	.01000	.00500
Low Limit	-.50000	-.01000	-.03000	-.50000	-.04000	-.01000	-.00500

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 12:06:56 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 1.1874	F .39718	F 4.9738	F .99992	F .99471	F .98567	F .49751
Stddev	.0050	.00732	.0146	.00106	.00668	.00514	.00393
%RSD	.42134	1.8429	.29372	.10565	.67114	.52154	.78948
#1	1.1930	.38926	4.9571	1.0004	.99317	.98490	.49328
#2	1.1832	.40370	4.9798	.99871	.98893	.98096	.50105
#3	1.1861	.39859	4.9845	1.0006	1.0020	.99115	.49819
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
High Limit	.02000	.02000	1.0000	.10000	.01000	.02000	.04000
Low Limit	-.02000	-.02000	-1.0000	-.10000	-.01000	-.02000	-.04000

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	F .99162	F .99392	F 1.0151
Stddev	.00177	.00034	.0047
%RSD	.17898	.03404	.46771
#1	.99365	.99368	1.0097
#2	.99037	.99430	1.0182
#3	.99084	.99377	1.0176
Check ?	Chk Fail	Chk Fail	Chk Fail
High Limit	.01000	.02000	.04000
Low Limit	-.01000	-.02000	-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8914.6	52945.	2529.2
Stddev	18.8	191.	6.1
%RSD	.21085	.36073	.24217
#1	8900.5	52726.	2535.8
#2	8907.5	53030.	2528.2
#3	8936.0	53078.	2523.7

Approved: June 29, 2016

Sample Name: L1606106804 Acquired: 6/28/2016 12:10:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.01338	-.00121	.00508	.03185	.00009	3.6877	.00017
Stddev	.00142	.00661	.00402	.00517	.00094	.00009	.0388	.00010
%RSD	287.71	49.409	332.18	101.76	2.9404	100.39	1.0532	57.471
#1	.00152	.00668	.00324	.00758	.03253	.00003	3.6435	.00017
#2	.00108	.01355	-.00456	-.00086	.03078	.00020	3.7163	.00027
#3	-.00113	.01990	-.00231	.00853	.03224	.00005	3.7035	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00005	-.00076	-.00822	.13727	.00256	2.7340	.00095
Stddev	.00016	.00066	.00166	.01850	.10390	.00635	.0183	.00367
%RSD	87.960	1442.0	217.75	225.20	75.690	248.06	.67093	387.13
#1	.00023	-.00018	.00101	-.00312	.24997	.00152	2.7317	-.00127
#2	.00000	-.00047	-.00227	-.02873	.11656	-.00321	2.7534	.00519
#3	.00030	.00079	-.00103	.00721	.04529	.00937	2.7169	-.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	13.446	-.00128	.00796	-.00240	.00107	-.00749	.89476
Stddev	.00012	.159	.00147	.00634	.00286	.00190	.00205	.03670
%RSD	59.407	1.1832	114.59	79.680	118.77	177.46	27.322	4.1020
#1	.00020	13.262	-.00199	.00652	-.00435	-.00100	-.00730	.93379
#2	.00031	13.548	-.00227	.01489	-.00374	.00273	-.00963	.88955
#3	.00008	13.526	.00041	.00246	.00087	.00148	-.00555	.86094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106804 Acquired: 6/28/2016 12:10:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	.07848	-.00729	-.00293	.00035	.00081	.00010
Stddev	.00072	.00144	.00861	.00420	.00095	.00031	.00071
%RSD	282.15	1.8402	118.03	143.58	272.65	37.884	750.18
#1	.00103	.07682	-.01705	-.00519	-.00013	.00046	.00016
#2	-.00038	.07946	-.00079	-.00551	-.00027	.00097	-.00065
#3	.00011	.07915	-.00403	.00192	.00145	.00101	.00077
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8391.9	52991.	2480.9
Stddev	209.3	303.	24.4
%RSD	2.4937	.57243	.98306
#1	8150.7	53076.	2506.3
#2	8526.1	52655.	2457.7
#3	8498.7	53243.	2478.7

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 12:17:35 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41677	10.617	.42173	.52317	1.0592	.05242	10.437	.05320
Stddev	.00494	.006	.00167	.00113	.0024	.00005	.036	.00038
%RSD	1.1855	.05241	.39551	.21611	.22327	.08862	.34169	.71563
#1	.41695	10.610	.42174	.52446	1.0569	.05239	10.436	.05292
#2	.42162	10.620	.42006	.52234	1.0617	.05239	10.473	.05363
#3	.41174	10.619	.42339	.52271	1.0591	.05247	10.402	.05304
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21389	.52863	.53349	4.1544	52.704	1.0582	10.637	.53232
Stddev	.00028	.00120	.00163	.0414	.159	.0081	.061	.00322
%RSD	.12990	.22697	.30630	.99750	.30078	.76528	.57767	.60508
#1	.21406	.52875	.53304	4.1924	52.536	1.0673	10.687	.53406
#2	.21405	.52737	.53531	4.1605	52.724	1.0519	10.655	.53429
#3	.21357	.52976	.53213	4.1102	52.851	1.0553	10.568	.52860
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0701	52.715	.53198	10.580	.52742	1.2754	.42001	5.3332
Stddev	.0021	.187	.00144	.031	.00604	.0052	.00192	.0057
%RSD	.19737	.35393	.27059	.29310	1.1458	.40749	.45755	.10679
#1	1.0717	52.536	.53285	10.596	.53320	1.2801	.42135	5.3376
#2	1.0708	52.909	.53032	10.599	.52791	1.2764	.42087	5.3352
#3	1.0677	52.701	.53278	10.544	.52114	1.2698	.41781	5.3267
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 12:17:35 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0702**	**1.0585**	**1.0486**	**.53559**	**1.0520**	**1.0670**	**1.0704**
Stddev	.0023	.0014	.0170	.00247	.0005	.0014	.0016
%RSD	.21754	.13581	1.6184	.46078	.04785	.13170	.14621
#1	1.0727	1.0578	1.0679	.53720	1.0518	1.0683	1.0710
#2	1.0698	1.0602	1.0416	.53275	1.0526	1.0673	1.0686
#3	1.0681	1.0576	1.0362	.53683	1.0516	1.0655	1.0716
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8530.1**	**50935.**	**2446.7**
Stddev	12.6	71.	7.1
%RSD	.14738	.13921	.28868
#1	8532.0	50877.	2439.2
#2	8516.7	50915.	2447.6
#3	8541.6	51014.	2453.3

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 12:21:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00052**	**.01757**	**.00051**	**.00060**	**.00555**	**.00009**	**-.03141**	**-.00004**
Stddev	.00210	.00687	.00034	.00273	.00052	.00012	.03206	.00025
%RSD	401.46	39.083	66.709	452.47	9.4128	140.54	102.06	654.37
#1	-.00295	.02310	.00088	-.00156	.00610	.00020	.00184	-.00018
#2	.00077	.01972	.00044	.00368	.00548	.00010	-.03394	.00026
#3	.00061	.00988	.00021	-.00031	.00506	-.00004	-.06212	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00006**	**-.00085**	**.00138**	**-.03182**	**.02086**	**.00079**	**.04251**	**-.00303**
Stddev	.00049	.00020	.00101	.01677	.06898	.00220	.02283	.00146
%RSD	858.17	23.008	73.388	52.718	330.70	279.06	53.713	48.237
#1	-.00026	-.00088	.00207	-.01272	.03691	-.00149	.04644	-.00330
#2	.00062	-.00065	.00022	-.03857	.08040	.00095	.01796	-.00145
#3	-.00019	-.00104	.00186	-.04417	-.05474	.00290	.06311	-.00434
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00032**	**.02638**	**-.00081**	**.00361**	**-.00013**	**.00136**	**-.00687**	**.00930**
Stddev	.00014	.01940	.00088	.00797	.00371	.00249	.00684	.00129
%RSD	43.475	73.535	108.60	220.58	2776.3	182.43	99.588	13.921
#1	.00044	.01661	-.00035	.01274	-.00311	.00320	.00102	.00948
#2	.00034	.01381	-.00025	.00014	.00403	-.00147	-.01039	.01050
#3	.00017	.04873	-.00183	-.00203	-.00132	.00237	-.01124	.00792
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 12:21:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	.00024	.00247	-.00209	.00076	-.00001	-.00016
Stddev	.00084	.00071	.00879	.00248	.00067	.00030	.00058
%RSD	360.61	300.56	355.79	118.51	88.280	3028.0	367.13
#1	.00120	.00076	-.00623	-.00494	.00143	.00027	-.00032
#2	-.00033	-.00057	.01135	-.00041	.00075	.00002	.00048
#3	-.00017	.00052	.00229	-.00093	.00009	-.00032	-.00064
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9061.7	52464.	2475.1
Stddev	58.5	188.	6.2
%RSD	.64581	.35783	.25222
#1	8996.0	52260.	2481.3
#2	9081.3	52501.	2468.8
#3	9108.0	52630.	2475.3

Approved: June 29, 2016

Sample Name: L1606119001 Acquired: 6/28/2016 12:25:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**3.7898**	**.00843**	**2.2113**	**.93713**	**.00029**	**73.518**
Stddev	.00241	.0251	.00321	.0173	.00590	.00011	.465
%RSD	579.81	.66230	38.057	.78270	.62931	37.980	.63263
#1	.00245	3.7774	.00479	2.1961	.93518	.00037	73.330
#2	-.00224	3.8186	.01084	2.2301	.94376	.00016	74.048
#3	.00104	3.7732	.00967	2.2078	.93246	.00033	73.177
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.26930**	**.00396**	**.01111**	**.74577**	**10.780**	**91.314**	**5.0388**
Stddev	.00689	.00019	.00105	.02017	.009	.389	.0316
%RSD	2.5572	4.6850	9.4166	2.7048	.08645	.42570	.62740
#1	.27369	.00414	.01045	.75841	10.787	91.342	5.0432
#2	.27284	.00377	.01232	.75638	10.785	91.689	5.0680
#3	.26136	.00397	.01057	.72250	10.770	90.913	5.0052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**6.9578**	**.41341**	**.00495**	F **322.00**	**.03245**	**.51167**	**.23733**
Stddev	.0388	.00209	.00010	1.98	.00092	.00738	.00526
%RSD	.55712	.50459	2.0546	.61452	2.8333	1.4421	2.2181
#1	6.9132	.41312	.00504	321.58	.03349	.51560	.24197
#2	6.9766	.41563	.00497	324.15	.03208	.51624	.23840
#3	6.9836	.41148	.00484	320.26	.03177	.50315	.23161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606119001 Acquired: 6/28/2016 12:25:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**-.00226**	**8.1164**	**.11006**	**.28460**	**.06459**	**.00103**
Stddev	.00474	.00305	.1340	.00508	.00251	.00944	.00141
%RSD	2924.3	135.05	1.6510	4.6133	.88362	14.611	136.61
#1	-.00531	.00126	8.1898	.11381	.28615	.07364	.00264
#2	.00284	-.00383	8.1977	.11208	.28594	.05481	.00043
#3	.00295	-.00421	7.9618	.10428	.28170	.06533	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.01031**	**.51297**	**.00088**
Stddev	.00146	.01667	.00015
%RSD	14.174	3.2493	16.646
#1	.01173	.52302	.00102
#2	.01039	.52215	.00073
#3	.00881	.49373	.00088
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9087.8**	**53911.**	**2652.7**
Stddev	11.1	101.	11.7
%RSD	.12235	.18748	.44077
#1	9076.3	53852.	2662.2
#2	9098.5	53854.	2639.7
#3	9088.6	54028.	2656.3

Approved: June 29, 2016

Sample Name: L1606119002 Acquired: 6/28/2016 12:28:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00050**	**4.7655**	**.00357**	**.82145**	**.35900**	**.00023**	**127.61**
Stddev	.00210	.0202	.00173	.00700	.00172	.00005	.83
%RSD	418.70	.42476	48.395	.85203	.47811	21.405	.64918
#1	-.00103	4.7888	.00554	.82869	.35756	.00023	127.22
#2	-.00228	4.7535	.00228	.82094	.36090	.00028	128.56
#3	.00181	4.7541	.00290	.81472	.35853	.00018	127.04
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.13601**	**.00630**	**.07860**	**2.9711**	**14.514**	**28.078**	**.44975**
Stddev	.00051	.00049	.00062	.0182	.129	.058	.00684
%RSD	.37797	7.8306	.79321	.61317	.88662	.20775	1.5205
#1	.13646	.00584	.07894	2.9863	14.410	28.114	.44275
#2	.13613	.00623	.07898	2.9761	14.658	28.010	.45641
#3	.13545	.00682	.07788	2.9509	14.474	28.108	.45009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**13.075**	**1.9805**	**.01310**	F **322.69**	**.06978**	**1.5045**	**.28408**
Stddev	.114	.0220	.00041	2.01	.00078	.0104	.00225
%RSD	.86971	1.1114	3.1207	.62252	1.1180	.69133	.79147
#1	12.950	1.9651	.01263	322.58	.07034	1.5043	.28667
#2	13.105	2.0058	.01333	324.75	.07012	1.5150	.28272
#3	13.171	1.9708	.01335	320.73	.06889	1.4942	.28283
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606119002 Acquired: 6/28/2016 12:28:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00351**	**-.00222**	**7.1567**	**.34122**	**.93711**	**.07983**	**-.00060**
Stddev	.00546	.00103	.0143	.00275	.00806	.00358	.00175
%RSD	155.33	46.531	.19985	.80486	.85994	4.4860	289.82
#1	-.00045	-.00104	7.1693	.34240	.93448	.07594	-.00003
#2	.00974	-.00267	7.1597	.34317	.94616	.08056	-.00257
#3	.00125	-.00296	7.1411	.33808	.93070	.08299	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.01322**	**.43603**	**.00171**
Stddev	.00064	.00396	.00089
%RSD	4.8731	.90805	51.957
#1	.01381	.43892	.00132
#2	.01331	.43765	.00108
#3	.01253	.43152	.00272
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8990.1**	**53592.**	**2679.4**
Stddev	12.6	181.	12.2
%RSD	.14029	.33827	.45474
#1	9004.5	53800.	2682.8
#2	8981.0	53465.	2665.9
#3	8984.8	53512.	2689.5

Approved: June 29, 2016

Sample Name: L1606113002 Acquired: 6/28/2016 12:32:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00054	.00964	.00218	.00589	.01061	.00005	14.366	.00022
Stddev	.00139	.00845	.00195	.00141	.00037	.00004	.110	.00037
%RSD	256.99	87.693	89.589	23.967	3.4831	65.158	.76837	164.56
#1	.00092	.00409	.00003	.00579	.01026	.00004	14.305	.00064
#2	-.00184	.01937	.00384	.00453	.01099	.00009	14.493	-.00002
#3	-.00070	.00546	.00265	.00735	.01059	.00003	14.299	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	-.00066	.00224	7.0016	.64344	-.00073	2.9261	.21249
Stddev	.00066	.00095	.00029	.0489	.12305	.00350	.1024	.00192
%RSD	1558.0	145.31	13.111	.69901	19.123	480.34	3.4986	.90146
#1	.00065	.00043	.00227	7.0215	.70582	.00331	2.9706	.21039
#2	-.00067	-.00136	.00251	7.0375	.50170	-.00263	2.9987	.21294
#3	-.00011	-.00104	.00193	6.9459	.72281	-.00287	2.8090	.21414
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	7.4084	-.00034	.02764	-.00033	.00328	.00636	1.2813
Stddev	.00029	.0264	.00110	.00512	.00225	.00261	.00547	.0008
%RSD	86.515	.35650	327.89	18.533	676.62	79.623	86.012	.06472
#1	.00064	7.4354	.00065	.03157	-.00206	.00234	.01173	1.2807
#2	.00006	7.3826	-.00152	.02951	-.00115	.00126	.00657	1.2823
#3	.00032	7.4072	-.00014	.02185	.00222	.00622	.00079	1.2810
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606113002 Acquired: 6/28/2016 12:32:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	.04316	-.00341	-.00137	-.00043	.00134	-.00077
Stddev	.00044	.00035	.01120	.00427	.00126	.00015	.00075
%RSD	82.014	.80151	328.08	310.71	293.00	11.021	96.860
#1	.00105	.04344	.00282	-.00628	-.00096	.00117	.00009
#2	.00036	.04327	.00329	.00066	-.00133	.00146	-.00120
#3	.00021	.04278	-.01634	.00150	.00101	.00138	-.00120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8907.6	53531.	2524.4
Stddev	10.1	60.	6.0
%RSD	.11391	.11183	.23739
#1	8900.1	53468.	2527.8
#2	8903.7	53587.	2528.0
#3	8919.2	53538.	2517.5

Approved: June 29, 2016

Sample Name: L1606113003 Acquired: 6/28/2016 12:36:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.01861	-.00206	.00558	.00707	.00003	10.328	.00010
Stddev	.00106	.01054	.00074	.00327	.00096	.00005	.166	.00003
%RSD	1760.8	56.650	35.759	58.620	13.649	170.04	1.6032	27.231
#1	.00106	.00767	-.00130	.00838	.00816	-.00001	10.139	.00008
#2	.00016	.01945	-.00211	.00637	.00671	.00001	10.398	.00013
#3	-.00105	.02870	-.00277	.00199	.00633	.00009	10.447	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	.02380	.00118	.43713	.30859	.00371	3.6737	.08669
Stddev	.00023	.00120	.00107	.03281	.13714	.00332	.0307	.00422
%RSD	110.49	5.0417	90.208	7.5052	44.440	89.431	.83598	4.8696
#1	-.00001	.02282	.00028	.47375	.37426	.00144	3.6555	.09075
#2	.00019	.02343	.00236	.42725	.40055	.00218	3.6565	.08700
#3	.00045	.02514	.00091	.41041	.15097	.00753	3.7092	.08232
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	9.1912	.01331	.04027	-.00006	.00344	-.00704	1.2782
Stddev	.00026	.1694	.00203	.00077	.00185	.00489	.00234	.0259
%RSD	38.989	1.8436	15.245	1.9193	3027.6	142.10	33.280	2.0280
#1	.00094	9.0018	.01267	.04079	-.00200	.00905	-.00906	1.2518
#2	.00068	9.2436	.01168	.04064	.00170	.00010	-.00758	1.2792
#3	.00042	9.3283	.01558	.03938	.00011	.00117	-.00447	1.3037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606113003 Acquired: 6/28/2016 12:36:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.06137	-.00305	-.00210	.00082	.00133	-.00058
Stddev	.00060	.00103	.00441	.00110	.00027	.00013	.00060
%RSD	439.98	1.6752	144.54	52.349	33.189	9.5496	104.64
#1	.00052	.06032	.00091	-.00241	.00105	.00145	-.00001
#2	-.00055	.06141	-.00226	-.00088	.00052	.00120	-.00050
#3	.00045	.06237	-.00781	-.00301	.00090	.00135	-.00122
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8946.2	53500.	2545.9
Stddev	7.6	202.	12.1
%RSD	.08522	.37788	.47674
#1	8939.8	53704.	2554.9
#2	8944.2	53497.	2532.1
#3	8954.6	53300.	2550.7

Approved: June 29, 2016

Sample Name: L1606113004 Acquired: 6/28/2016 12:40:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00024	.01809	-.00077	-.00297	.01150	-.00004	17.766	-.00020
Stddev	.00248	.00463	.00136	.00361	.00041	.00010	.240	.00018
%RSD	1046.0	25.617	176.90	121.87	3.5982	267.63	1.3496	89.328
#1	-.00243	.02260	-.00109	-.00662	.01167	-.00009	17.550	-.00001
#2	-.00073	.01334	-.00195	.00061	.01180	.00008	17.723	-.00036
#3	.00245	.01832	.00072	-.00289	.01103	-.00011	18.024	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	-.00049	.00113	11.978	.48918	.00583	2.9320	.17953
Stddev	.00016	.00104	.00263	.080	.02205	.00475	.1307	.00167
%RSD	29.412	210.00	231.85	.66571	4.5076	81.514	4.4592	.92948
#1	.00071	.00060	.00417	11.907	.46449	.00134	2.7961	.17819
#2	.00050	-.00062	-.00050	11.963	.50692	.01081	2.9429	.17900
#3	.00040	-.00146	-.00027	12.065	.49613	.00534	3.0569	.18140
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	3.4886	.00079	.00034	-.00084	.00008	-.00358	1.4319
Stddev	.00037	.0303	.00108	.00465	.00493	.00454	.00459	.0399
%RSD	6980.2	.86819	137.12	1365.6	589.47	5537.2	127.98	2.7882
#1	-.00042	3.5017	.00204	.00553	-.00257	-.00483	-.00318	1.4507
#2	.00014	3.5101	.00028	-.00346	.00472	.00097	.00079	1.4590
#3	.00027	3.4540	.00006	-.00104	-.00466	.00411	-.00836	1.3861
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606113004 Acquired: 6/28/2016 12:40:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.05790	.00930	.00016	-.00139	.00147	-.00089
Stddev	.00098	.00075	.00706	.00120	.00037	.00013	.00021
%RSD	272.08	1.2926	75.921	741.78	26.600	8.7062	23.335
#1	-.00025	.05719	.01138	-.00002	-.00134	.00155	-.00101
#2	-.00016	.05868	.01508	-.00094	-.00104	.00132	-.00102
#3	.00150	.05784	.00143	.00144	-.00178	.00153	-.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8934.7	53539.	2547.3
Stddev	11.4	243.	6.4
%RSD	.12800	.45343	.25275
#1	8922.9	53678.	2554.2
#2	8935.5	53681.	2546.3
#3	8945.8	53259.	2541.4

Approved: June 29, 2016

Sample Name: L1606113005 Acquired: 6/28/2016 12:44:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.01198	-.00210	-.00164	.00301	-.00000	-.01159	-.00004
Stddev	.00141	.01055	.00136	.00247	.00082	.00009	.02499	.00026
%RSD	8281.9	88.039	64.731	150.47	27.174	3406.6	215.61	657.73
#1	-.00151	-.00013	-.00110	.00120	.00210	.00010	-.03630	.00007
#2	.00029	.01695	-.00155	-.00327	.00325	-.00006	.01366	.00015
#3	.00127	.01913	-.00365	-.00286	.00368	-.00005	-.01213	-.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00029	.00072	-.00086	-.00681	.13612	.00452	-.00411	-.00268
Stddev	.00035	.00054	.00121	.03393	.13157	.00463	.09255	.00149
%RSD	121.46	74.302	141.19	498.06	96.661	102.38	2250.3	55.603
#1	-.00047	.00035	-.00226	.03226	.24020	-.00067	-.10321	-.00194
#2	.00012	.00134	-.00019	-.02389	-.01177	.00603	.01080	-.00439
#3	-.00051	.00048	-.00012	-.02881	.17993	.00821	.08007	-.00170
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	.00612	-.00010	-.00227	-.00119	.00203	.00281	-.01390
Stddev	.00016	.01574	.00083	.00326	.00065	.00303	.00207	.00142
%RSD	63.438	257.20	796.79	143.34	54.751	148.94	73.532	10.213
#1	-.00023	.01962	.00052	-.00416	-.00058	-.00145	.00097	-.01537
#2	-.00011	.00990	-.00104	-.00414	-.00188	.00405	.00505	-.01379
#3	-.00043	-.01116	.00021	.00149	-.00111	.00350	.00242	-.01254
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606113005 Acquired: 6/28/2016 12:44:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	.00024	.00598	-.00423	-.00105	.00062	-.00054
Stddev	.00042	.00049	.01065	.00088	.00086	.00015	.00071
%RSD	166.82	202.02	177.94	20.764	82.165	23.770	132.28
#1	.00003	.00079	-.00224	-.00322	-.00048	.00048	-.00061
#2	.00074	-.00014	.00218	-.00482	-.00203	.00077	.00021
#3	-.00001	.00007	.01801	-.00465	-.00062	.00061	-.00121
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9001.9	54024.	2557.5
Stddev	1.4	38.	4.0
%RSD	.01509	.07122	.15560
#1	9000.4	54033.	2562.1
#2	9002.0	54058.	2555.7
#3	9003.1	53982.	2554.8

Approved: June 29, 2016

Sample Name: L1606116411 Acquired: 6/28/2016 12:48:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.15451	-.00350	.03775	.01914	.00006	17.496	.00071
Stddev	.00064	.00207	.00555	.00311	.00096	.00006	.010	.00032
%RSD	895.05	1.3418	158.59	8.2436	5.0367	100.05	.05556	45.738
#1	.00036	.15691	-.00921	.03969	.01877	.00012	17.500	.00093
#2	.00023	.15334	-.00315	.03939	.02023	.00000	17.503	.00086
#3	-.00081	.15329	.00187	.03416	.01842	.00005	17.485	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00082	-.00079	.01211	.00467	1.2228	.00134	4.5617	.05182
Stddev	.00031	.00121	.00109	.02467	.0793	.00097	.0493	.00231
%RSD	37.826	152.51	8.9718	528.03	6.4818	72.554	1.0800	4.4566
#1	.00056	-.00158	.01238	.00794	1.2872	.00031	4.6166	.05236
#2	.00074	-.00139	.01092	-.02147	1.2470	.00223	4.5470	.04929
#3	.00116	.00060	.01304	.02754	1.1343	.00148	4.5214	.05381
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	147.55	.00517	.17885	.00030	-.00139	-.00110	2.8258
Stddev	.00053	.34	.00060	.01359	.00349	.00151	.00321	.0017
%RSD	327.61	.23187	11.605	7.6006	1182.6	109.29	291.30	.06077
#1	.00045	147.36	.00485	.16363	.00281	-.00253	.00244	2.8278
#2	-.00045	147.95	.00586	.18316	.00177	.00033	-.00382	2.8246
#3	-.00049	147.35	.00479	.18977	-.00369	-.00196	-.00192	2.8252
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606116411 Acquired: 6/28/2016 12:48:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.09596	-.00181	-.00373	.00021	.28203	.00032
Stddev	.00094	.00045	.00088	.00410	.00026	.00067	.00045
%RSD	349.19	.47142	48.709	109.75	123.26	.23930	138.59
#1	-.00080	.09544	-.00135	-.00237	.00002	.28265	.00011
#2	.00095	.09615	-.00283	-.00834	.00051	.28212	.00002
#3	.00066	.09628	-.00126	-.00049	.00011	.28131	.00084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9005.5	53766.	2640.9
Stddev	16.7	224.	2.5
%RSD	.18548	.41670	.09612
#1	8990.9	53512.	2638.5
#2	9002.0	53850.	2640.7
#3	9023.7	53936.	2643.6

Approved: June 29, 2016

Sample Name: L1606125201 Acquired: 6/28/2016 12:52:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00129	.02165	-.00248	.01692	.04160	-.00001	59.586	.00010
Stddev	.00123	.00416	.00137	.00291	.00115	.00005	.518	.00026
%RSD	95.801	19.216	55.265	17.215	2.7688	473.44	.86976	263.07
#1	.00051	.02261	-.00142	.02017	.04292	-.00004	60.152	.00021
#2	.00271	.01709	-.00199	.01606	.04104	-.00004	59.136	-.00020
#3	.00064	.02524	-.00402	.01454	.04083	.00005	59.469	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	.00013	.01444	.02703	1.0062	.00850	11.899	.00064
Stddev	.00032	.00079	.00036	.02181	.0699	.00671	.190	.00094
%RSD	142.92	594.81	2.5182	80.678	6.9428	78.943	1.5983	147.02
#1	.00011	-.00078	.01433	.04967	1.0334	.01527	12.058	.00007
#2	-.00025	.00050	.01414	.00617	.92685	.00185	11.688	.00012
#3	-.00054	.00067	.01484	.02525	1.0584	.00837	11.951	.00173
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00154	12.417	.00097	.00359	.00058	.00173	-.00540	4.4257
Stddev	.00023	.049	.00108	.00335	.00547	.00081	.00408	.0469
%RSD	14.809	.39598	110.69	93.301	945.36	46.838	75.601	1.0597
#1	.00130	12.360	.00206	.00037	-.00004	.00264	-.00697	4.4557
#2	.00176	12.443	.00096	.00706	.00633	.00146	-.00846	4.4497
#3	.00156	12.447	-.00010	.00334	-.00455	.00109	-.00076	4.3716
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606125201 Acquired: 6/28/2016 12:52:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.09375	-.01059	-.00376	-.00096	.14846	-.00009
Stddev	.00046	.00020	.00430	.00170	.00027	.00282	.00014
%RSD	889.88	.21863	40.616	45.127	27.765	1.8964	162.80
#1	.00053	.09352	-.01507	-.00509	-.00082	.15050	-.00010
#2	-.00039	.09382	-.01019	-.00185	-.00079	.14964	.00006
#3	.00001	.09390	-.00650	-.00435	-.00127	.14525	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9046.7	54426.	2639.5
Stddev	5.6	47.	11.7
%RSD	.06203	.08606	.44426
#1	9047.5	54470.	2646.7
#2	9040.7	54430.	2645.8
#3	9051.9	54377.	2626.0

Approved: June 29, 2016

Sample Name: L1606113005PS Acquired: 6/28/2016 12:55:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574276-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.23710**	**6.1119**	**.25853**	**1.1827**	**.56629**	**.02969**	**5.7632**	**.03235**
Stddev	.00531	.1115	.00359	.0243	.00883	.00056	.1133	.00088
%RSD	2.2382	1.8239	1.3873	2.0549	1.5587	1.8898	1.9662	2.7146
#1	.23205	6.0117	.25594	1.1589	.55772	.02914	5.6706	.03134
#2	.23663	6.0922	.26262	1.1819	.56578	.02965	5.7294	.03278
#3	.24263	6.2320	.25703	1.2075	.57535	.03026	5.8895	.03293
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.12838**	**.29825**	**.32424**	**2.2596**	**28.378**	**.57291**	**5.7557**	**.27905**
Stddev	.00240	.00576	.00674	.0769	.298	.00617	.1009	.00395
%RSD	1.8707	1.9317	2.0773	3.4010	1.0488	1.0767	1.7530	1.4157
#1	.12561	.29278	.31691	2.2190	28.035	.56580	5.7393	.27488
#2	.12963	.29770	.32564	2.2116	28.539	.57612	5.6641	.27953
#3	.12989	.30426	.33016	2.3482	28.561	.57681	5.8639	.28273
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.63702**	**28.482**	**.32021**	**6.3858**	**.32156**	**.76680**	**.26481**	**3.0255**
Stddev	.01158	.382	.00730	.1267	.00813	.01550	.00541	.0590
%RSD	1.8173	1.3412	2.2809	1.9843	2.5298	2.0212	2.0434	1.9491
#1	.62392	28.101	.31227	6.2466	.31241	.75013	.25870	2.9613
#2	.64128	28.479	.32173	6.4163	.32431	.76951	.26900	3.0381
#3	.64587	28.865	.32663	6.4945	.32797	.78077	.26672	3.0772
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606113005PS Acquired: 6/28/2016 12:55:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574276-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.63969**	**.57282**	**.56662**	**.32033**	**.59043**	**.65161**	**.00037**
Stddev	.01089	.00891	.00918	.00410	.01004	.01220	.00038
%RSD	1.7019	1.5563	1.6202	1.2812	1.6999	1.8719	104.40
#1	.62840	.56390	.56153	.31578	.58130	.63808	.00013
#2	.64053	.57283	.56111	.32376	.58880	.65498	.00081
#3	.65013	.58173	.57721	.32144	.60118	.66177	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8751.7**	**53132.**	**2528.1**
Stddev	60.4	53.	3.0
%RSD	.69033	.09944	.11892
#1	8820.8	53193.	2527.4
#2	8725.4	53105.	2525.4
#3	8708.9	53099.	2531.3

Approved: June 29, 2016

Sample Name: L1606113005SDL Acquired: 6/28/2016 12:59:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574276-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00103**	**.01796**	**-.00051**	**.00421**	**.00435**	**.00004**	**-.04891**
Stddev	.00215	.00108	.00203	.00129	.00070	.00007	.03888
%RSD	208.21	6.0021	400.75	30.574	16.137	155.88	79.499
#1	-.00349	.01733	.00035	.00562	.00513	-.00001	-.08125
#2	-.00014	.01921	-.00283	.00310	.00377	.00012	-.00577
#3	.00053	.01735	.00096	.00392	.00414	.00002	-.05970
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**-.00021**	**.00034**	**-.00130**	F **-.02855**	**.09256**	**-.00001**
Stddev	.00019	.00029	.00087	.00052	.03818	.11285	.00108
%RSD	135.21	139.53	256.35	40.003	133.73	121.92	12196.
#1	.00033	-.00017	.00003	-.00112	-.00187	-.03430	.00122
#2	.00015	.00006	-.00033	-.00089	-.07228	.18179	-.00043
#3	-.00005	-.00051	.00132	-.00188	-.01150	.13019	-.00082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04964**	**.00128**	**-.00009**	**-.03957**	**-.00092**	**.00133**	**.00059**
Stddev	.08575	.00365	.00020	.01448	.00047	.00474	.00362
%RSD	172.76	285.55	232.06	36.594	50.685	355.96	608.45
#1	-.01476	.00357	-.00013	-.03404	-.00146	.00407	-.00017
#2	.14698	-.00293	-.00026	-.02866	-.00064	-.00415	-.00258
#3	.01669	.00320	.00013	-.05599	-.00066	.00407	.00453
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606113005SDL Acquired: 6/28/2016 12:59:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574276-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00115	.00220	-.01924	-.00065	-.00003	.00117	-.00175
Stddev	.00111	.00032	.00072	.00026	.00026	.00353	.00064
%RSD	96.818	14.545	3.7264	40.121	751.34	302.16	36.404
#1	.00179	.00256	-.01991	-.00045	-.00033	.00149	-.00246
#2	.00179	.00208	-.01848	-.00056	.00003	.00452	-.00122
#3	-.00014	.00195	-.01932	-.00095	.00019	-.00251	-.00158
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00037	.00004	.00006
Stddev	.00133	.00016	.00091
%RSD	362.84	470.08	1572.9
#1	-.00190	.00017	.00111
#2	.00031	.00008	-.00050
#3	.00049	-.00015	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8934.0	53568.	2513.2
Stddev	29.7	195.	12.2
%RSD	.33241	.36323	.48531
#1	8968.0	53408.	2517.4
#2	8913.6	53784.	2499.4
#3	8920.3	53512.	2522.7

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 13:03:35 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39336	9.9130	.39284	.49276	.98996	.04913	9.7806	.04958
Stddev	.00206	.0250	.00280	.00453	.00775	.00022	.1020	.00017
%RSD	.52294	.25249	.71387	.91843	.78274	.45192	1.0426	.33908
#1	.39555	9.8943	.39549	.49271	.98476	.04924	9.7809	.04947
#2	.39146	9.9033	.39312	.48826	.99887	.04887	9.8824	.04950
#3	.39308	9.9415	.38991	.49731	.98626	.04928	9.6784	.04977
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19911	.49357	.49698	3.9417	49.290	.99570	10.037	.49012
Stddev	.00056	.00102	.00099	.0647	.405	.00934	.166	.00587
%RSD	.28371	.20597	.19976	1.6421	.82182	.93815	1.6489	1.1977
#1	.19976	.49455	.49812	3.8892	49.011	1.0015	9.9546	.48688
#2	.19874	.49365	.49630	4.0140	49.755	1.0007	10.228	.49689
#3	.19883	.49252	.49652	3.9218	49.104	.98492	9.9293	.48657
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99761	49.317	.49464	9.8819	.49704	1.1821	.39600	4.9694
Stddev	.00067	.437	.00153	.0272	.00775	.0053	.00447	.0102
%RSD	.06677	.88655	.30937	.27532	1.5587	.45187	1.1292	.20589
#1	.99834	49.066	.49637	9.8946	.49017	1.1760	.39998	4.9688
#2	.99747	49.822	.49411	9.9004	.50544	1.1860	.39116	4.9799
#3	.99703	49.064	.49345	9.8506	.49550	1.1842	.39685	4.9594
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 13:03:35 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99893	.98924	.97761	.49219	.98422	.99536	1.0005
Stddev	.00341	.00988	.00968	.00058	.00242	.00222	.0071
%RSD	.34152	.99831	.99030	.11778	.24579	.22340	.71326
#1	.99825	.98412	.97111	.49255	.98277	.99710	1.0023
#2	1.0026	1.0006	.98873	.49250	.98289	.99612	1.0065
#3	.99591	.98298	.97298	.49152	.98702	.99285	.99261
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8808.6	52540.	2520.5
Stddev	22.0	62.	15.2
%RSD	.24977	.11782	.60493
#1	8791.2	52557.	2515.2
#2	8801.3	52592.	2508.6
#3	8833.3	52472.	2537.7

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 13:07:12 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00082**	**.01053**	**-.00036**	**.00015**	**.00380**	**.00002**	**-.02913**	**.00012**
Stddev	.00164	.00730	.00278	.00170	.00038	.00004	.01234	.00023
%RSD	200.52	69.374	782.83	1134.5	9.9196	215.17	42.362	195.21
#1	-.00230	.01885	.00098	.00123	.00338	-.00001	-.02250	.00039
#2	.00094	.00755	-.00355	.00103	.00412	.00000	-.04337	.00002
#3	-.00109	.00518	.00151	-.00181	.00390	.00006	-.02152	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**-.00040**	**-.00056**	**-.03142**	**-.08528**	**.00138**	**.09579**	**.00138**
Stddev	.00026	.00054	.00111	.03234	.05121	.00380	.04905	.00114
%RSD	288.69	133.86	197.52	102.92	60.056	275.21	51.203	82.972
#1	.00039	.00012	.00067	.00375	-.10959	-.00091	.09891	.00250
#2	-.00005	-.00095	-.00089	-.03814	-.02643	.00576	.04526	.00142
#3	-.00007	-.00038	-.00146	-.05988	-.11980	-.00071	.14320	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.00034**	**-.00082**	**.00453**	**.00067**	**.00273**	**-.00634**	**.01081**
Stddev	.00046	.03322	.00172	.00246	.00130	.00263	.00099	.00066
%RSD	1443.9	9865.4	210.49	54.266	194.38	96.401	15.628	6.1253
#1	-.00027	-.03144	-.00223	.00385	.00158	.00481	-.00722	.01120
#2	-.00032	-.00239	.00110	.00726	-.00082	.00361	-.00654	.01118
#3	.00050	.03484	-.00133	.00249	.00126	-.00023	-.00526	.01004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 13:07:12 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	-.00004	-.00011	-.00239	.00051	-.00009	.00046
Stddev	.00048	.00052	.01049	.00287	.00057	.00022	.00015
%RSD	141.44	1176.3	9514.5	120.28	111.99	260.70	33.023
#1	-.00017	.00049	-.00485	.00091	-.00011	-.00034	.00063
#2	.00078	-.00055	-.00739	-.00378	.00102	.00002	.00034
#3	.00040	-.00008	.01191	-.00430	.00063	.00007	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8877.7	53504.	2525.8
Stddev	7.8	98.	6.9
%RSD	.08803	.18354	.27296
#1	8875.6	53546.	2517.8
#2	8871.1	53575.	2530.1
#3	8886.3	53392.	2529.4

Approved: June 29, 2016

Sample Name: L1606106804 Acquired: 6/28/2016 13:11:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00083**	**.01493**	**-.00423**	**.00176**	**.03015**	**-.00003**	**3.6405**
Stddev	.00270	.00745	.00413	.00110	.00128	.00004	.0379
%RSD	326.75	49.870	97.505	62.290	4.2618	148.88	1.0420
#1	.00091	.00665	-.00573	.00301	.03092	-.00007	3.6017
#2	.00055	.01707	.00043	.00096	.02867	.00002	3.6775
#3	-.00393	.02109	-.00740	.00132	.03086	-.00003	3.6422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00021**	**.00015**	**.00129**	**-.00149**	F **-.02186**	**.05820**	**.00564**
Stddev	.00033	.00012	.00022	.00079	.02615	.09648	.00301
%RSD	152.41	81.233	16.848	53.239	119.66	165.77	53.430
#1	.00056	.00029	.00112	-.00106	-.02018	.07061	.00912
#2	.00018	.00006	.00122	-.00240	.00342	-.04388	.00405
#3	-.00009	.00011	.00154	-.00100	-.04881	.14787	.00375
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.7402**	**.00088**	**-.00022**	**13.379**	**-.00112**	**.00621**	**-.00255**
Stddev	.0825	.00130	.00029	.125	.00063	.00226	.00432
%RSD	3.0123	147.46	130.54	.93109	55.815	36.397	169.94
#1	2.8157	.00026	.00011	13.280	-.00075	.00378	-.00737
#2	2.6521	.00001	-.00042	13.519	-.00185	.00825	.00097
#3	2.7529	.00238	-.00035	13.339	-.00077	.00660	-.00123
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606106804 Acquired: 6/28/2016 13:11:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.00140	.80989	.00026	.07823	.00230	-.00078
Stddev	.00354	.00473	.00437	.00092	.00095	.00620	.00164
%RSD	688.84	338.79	.53928	348.19	1.2119	269.39	209.76
#1	.00452	.00191	.80963	.00121	.07773	.00423	-.00129
#2	-.00219	-.00357	.80566	.00020	.07932	.00731	-.00210
#3	-.00078	.00585	.81439	-.00062	.07763	-.00464	.00105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00017	.00062	.00008
Stddev	.00072	.00005	.00089
%RSD	415.57	7.9078	1128.7
#1	.00052	.00060	-.00014
#2	-.00012	.00059	-.00068
#3	-.00092	.00068	.00106
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8814.1	52984.	2489.1
Stddev	14.5	171.	14.5
%RSD	.16454	.32216	.58377
#1	8813.1	52905.	2486.3
#2	8829.0	52867.	2476.2
#3	8800.1	53180.	2504.9

Approved: June 29, 2016

Sample Name: L1606106805 Acquired: 6/28/2016 13:15:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.01476	-.00335	.00279	.03196	.00016	3.6115	.00006
Stddev	.00013	.01355	.00295	.00275	.00100	.00003	.0684	.00038
%RSD	26.179	91.766	87.876	98.584	3.1228	20.664	1.8938	648.50
#1	.00036	.00536	-.00601	.00187	.03088	.00015	3.5339	-.00033
#2	.00061	.03030	-.00387	.00588	.03216	.00014	3.6376	.00008
#3	.00055	.00864	-.00018	.00062	.03285	.00020	3.6629	.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00124	-.00037	.00663	-.09688	.00565	2.6653	-.00201
Stddev	.00033	.00034	.00106	.05088	.15873	.00409	.0912	.00124
%RSD	108.45	27.910	282.74	767.75	163.84	72.409	3.4234	61.642
#1	.00054	.00159	.00005	.06285	.02031	.00145	2.7282	-.00343
#2	.00045	.00122	.00040	-.03623	-.27753	.00963	2.5606	-.00143
#3	-.00007	.00090	-.00158	-.00674	-.03343	.00587	2.7071	-.00117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	13.446	-.00011	.00621	-.00083	.00412	-.00378	.79854
Stddev	.00033	.084	.00067	.00374	.00294	.00421	.00411	.02914
%RSD	125.20	.62581	624.45	60.274	353.08	102.24	108.59	3.6487
#1	-.00051	13.385	.00031	.00824	-.00270	.00007	-.00672	.81403
#2	-.00038	13.412	.00025	.00851	.00255	.00381	.00091	.81667
#3	.00011	13.542	-.00087	.00189	-.00235	.00848	-.00555	.76493
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106805 Acquired: 6/28/2016 13:15:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00114	.07802	-.01175	-.00160	-.00071	.00064	-.00064
Stddev	.00080	.00057	.00450	.00481	.00018	.00029	.00100
%RSD	70.173	.73637	38.340	300.68	25.129	45.592	156.76
#1	.00154	.07777	-.01564	-.00402	-.00054	.00032	-.00059
#2	.00022	.07761	-.01279	-.00472	-.00068	.00071	-.00166
#3	.00167	.07867	-.00682	.00394	-.00090	.00089	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8812.1	52840.	2480.2
Stddev	18.2	110.	13.2
%RSD	.20629	.20796	.53284
#1	8829.9	52966.	2477.2
#2	8793.5	52795.	2494.7
#3	8813.1	52760.	2468.8

Approved: June 29, 2016

Sample Name: L1606113005PS Acquired: 6/28/2016 13:18:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574276-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21527**	**5.5207**	**.22885**	**1.0733**	**.53756**	**.02675**	**5.3843**	**.02798**
Stddev	.00177	.0241	.00604	.0068	.00866	.00017	.1256	.00062
%RSD	.82163	.43648	2.6407	.63358	1.6107	.62031	2.3326	2.2056
#1	.21494	5.4931	.22193	1.0693	.52821	.02656	5.2417	.02735
#2	.21370	5.5373	.23308	1.0694	.54530	.02683	5.4785	.02800
#3	.21719	5.5318	.23155	1.0812	.53918	.02687	5.4328	.02858
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.11240**	**.26779**	**.28467**	**2.1409**	**26.588**	**.54010**	**5.6370**	**.26559**
Stddev	.00134	.00204	.00370	.0435	.354	.00874	.0613	.00133
%RSD	1.1923	.76133	1.2984	2.0304	1.3318	1.6179	1.0880	.50041
#1	.11114	.26666	.28128	2.0918	26.179	.53071	5.5700	.26421
#2	.11225	.27014	.28413	2.1745	26.784	.54800	5.6903	.26569
#3	.11381	.26657	.28861	2.1565	26.800	.54160	5.6507	.26686
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.55583**	**27.010**	**.28072**	**5.5936**	**.27785**	**.67635**	**.23788**	**2.6476**
Stddev	.00678	.332	.00179	.0702	.00294	.01038	.00437	.0376
%RSD	1.2200	1.2287	.63745	1.2556	1.0594	1.5353	1.8390	1.4181
#1	.54951	26.631	.27867	5.5246	.27615	.66586	.23509	2.6120
#2	.55500	27.250	.28160	5.5913	.27615	.67657	.23563	2.6439
#3	.56299	27.148	.28190	5.6650	.28125	.68663	.24292	2.6868
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606113005PS Acquired: 6/28/2016 13:18:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574276-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.55961**	**.54418**	**.52610**	**.27731**	**.53391**	**.57796**	**.00002**
Stddev	.00665	.00642	.00644	.00532	.00205	.00443	.00061
%RSD	1.1882	1.1791	1.2246	1.9177	.38439	.76707	3254.2
#1	.55276	.53680	.51967	.27196	.53154	.57285	.00055
#2	.56005	.54842	.52608	.27737	.53509	.58036	-.00064
#3	.56603	.54733	.53256	.28260	.53511	.58068	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8721.8**	**52045.**	**2470.1**
Stddev	12.9	159.	19.9
%RSD	.14792	.30493	.80385
#1	8712.6	52146.	2491.7
#2	8716.2	51863.	2452.6
#3	8736.5	52127.	2466.0

Approved: June 29, 2016

Sample Name: L1606106811 Acquired: 6/28/2016 13:22:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	1.4251	.00175	.00444	.02966	.00019	.75379	.00014
Stddev	.00254	.0230	.00237	.00185	.00178	.00007	.01953	.00030
%RSD	372.28	1.6113	134.90	41.704	5.9999	38.159	2.5915	208.89
#1	.00086	1.4176	.00360	.00231	.03158	.00013	.73878	.00028
#2	.00313	1.4068	.00258	.00562	.02807	.00027	.77588	-.00020
#3	-.00194	1.4508	-.00091	.00540	.02931	.00016	.74672	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00092	.00335	.00482	1.9991	.20881	.00441	.50207	.04768
Stddev	.00034	.00085	.00089	.0268	.14239	.00363	.02928	.00189
%RSD	37.329	25.343	18.412	1.3414	68.193	82.227	5.8325	3.9582
#1	.00066	.00431	.00413	2.0299	.05656	.00851	.48210	.04617
#2	.00080	.00306	.00583	1.9868	.23117	.00309	.48842	.04709
#3	.00131	.00269	.00451	1.9806	.33870	.00163	.53568	.04980
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	.82682	.00345	.02528	.00114	.00172	.00203	1.9469
Stddev	.00016	.02518	.00063	.00984	.00435	.00064	.00703	.0392
%RSD	106.86	3.0448	18.143	38.938	380.81	36.954	346.34	2.0118
#1	-.00021	.83413	.00274	.02291	.00446	.00124	-.00577	1.9065
#2	.00003	.84753	.00372	.03609	.00275	.00148	.00399	1.9496
#3	-.00028	.79880	.00390	.01684	-.00378	.00244	.00788	1.9846
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106811 Acquired: 6/28/2016 13:22:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00043**	**.01264**	**.01238**	**-.00117**	**.00334**	**.01101**	**-.00003**
Stddev	.00138	.00046	.00941	.00358	.00072	.00018	.00085
%RSD	320.63	3.6366	75.984	305.85	21.543	1.6013	2670.1
#1	-.00017	.01307	.00337	-.00435	.00366	.01090	.00070
#2	-.00193	.01271	.02213	.00271	.00383	.01092	-.00097
#3	.00080	.01215	.01164	-.00188	.00251	.01122	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8900.9**	**53614.**	**2515.0**
Stddev	10.3	101.	14.4
%RSD	.11598	.18784	.57294
#1	8911.7	53726.	2520.3
#2	8899.7	53531.	2498.6
#3	8891.2	53585.	2525.9

Approved: June 29, 2016

Sample Name: L1606106813 Acquired: 6/28/2016 13:26:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573869-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00070**	**.08929**	**-.00063**	**.00006**	**.01168**	**.00007**	**.52951**
Stddev	.00235	.00667	.00336	.00302	.00069	.00007	.04393
%RSD	336.83	7.4648	536.52	4814.6	5.8717	106.69	8.2961
#1	.00033	.09297	.00116	-.00324	.01236	-.00001	.48000
#2	-.00338	.08159	.00146	.00268	.01099	.00008	.56380
#3	.00097	.09330	-.00450	.00075	.01168	.00014	.54475
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00024**	**.00014**	**-.00032**	**-.00089**	**.50487**	**.06610**	**.00543**
Stddev	.00013	.00013	.00098	.00076	.03701	.02572	.00316
%RSD	54.751	94.669	310.30	85.305	7.3296	38.914	58.115
#1	.00037	-.00001	-.00100	-.00177	.54463	.05677	.00370
#2	.00011	.00024	.00081	-.00040	.47144	.04634	.00352
#3	.00023	.00017	-.00075	-.00051	.49854	.09518	.00907
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.24782**	**.01542**	**-.00030**	**9.9493**	**.00196**	**.00299**	**-.00405**
Stddev	.06260	.00320	.00016	.0254	.00076	.00585	.00006
%RSD	25.260	20.782	55.007	.25544	38.518	195.64	1.5814
#1	.18176	.01748	-.00035	9.9649	.00283	-.00361	-.00412
#2	.30627	.01705	-.00011	9.9630	.00152	.00506	-.00399
#3	.25541	.01173	-.00043	9.9200	.00154	.00753	-.00403
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606106813 Acquired: 6/28/2016 13:26:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573869-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00147	F -.01043	.44265	.00053	.00826	.00460	-.00109
Stddev	.00413	.00452	.00364	.00082	.00054	.00453	.00264
%RSD	281.76	43.304	.82158	152.78	6.5812	98.520	242.23
#1	-.00330	-.01335	.43851	-.00016	.00889	.00897	.00195
#2	.00406	-.01271	.44534	.00033	.00796	.00490	-.00281
#3	.00364	-.00523	.44409	.00143	.00793	-.00007	-.00241
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		90.000					
Low Limit		-.01000					

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00066	.01438	-.00014
Stddev	.00142	.00018	.00049
%RSD	215.70	1.2745	349.23
#1	.00072	.01420	-.00057
#2	.00204	.01438	.00039
#3	-.00079	.01457	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8894.1	53345.	2527.6
Stddev	11.3	192.	9.0
%RSD	.12726	.35929	.35499
#1	8903.4	53287.	2524.9
#2	8897.4	53190.	2520.3
#3	8881.5	53560.	2537.6

Approved: June 29, 2016

Sample Name: L1606106815S Acquired: 6/28/2016 13:30:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573869-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01034	.48324	.01210	.05173	.03631	.00139	.81008	.00131
Stddev	.00168	.00913	.00454	.00211	.00077	.00002	.05542	.00034
%RSD	16.230	1.8901	37.543	4.0701	2.1243	1.7135	6.8408	26.091
#1	.00951	.48142	.01272	.04933	.03558	.00136	.84100	.00095
#2	.01227	.47515	.00728	.05327	.03711	.00140	.74610	.00163
#3	.00924	.49315	.01631	.05260	.03624	.00141	.84313	.00134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00589	.01431	.01389	.60245	1.2703	.02598	.65226	.02740
Stddev	.00010	.00080	.00059	.02997	.1236	.00403	.12231	.00108
%RSD	1.6235	5.5726	4.2518	4.9754	9.7328	15.510	18.751	3.9595
#1	.00594	.01410	.01335	.62519	1.3214	.03061	.51621	.02751
#2	.00578	.01519	.01452	.61367	1.3602	.02401	.68749	.02626
#3	.00595	.01364	.01381	.56848	1.1293	.02331	.75309	.02842
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02529	11.232	.01369	.25676	.01408	.03296	.00670	.76007
Stddev	.00074	.094	.00032	.00264	.00187	.00446	.00542	.01605
%RSD	2.9338	.83344	2.3164	1.0266	13.279	13.535	80.861	2.1112
#1	.02593	11.212	.01335	.25960	.01558	.03663	.00871	.76848
#2	.02547	11.334	.01397	.25627	.01467	.03425	.00057	.77017
#3	.02448	11.150	.01377	.25440	.01199	.02799	.01083	.74157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106815S Acquired: 6/28/2016 13:30:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573869-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02563**	**.03388**	**.01773**	**.01091**	**.02573**	**.03942**	**-.00028**
Stddev	.00095	.00028	.00659	.00373	.00028	.00077	.00015
%RSD	3.7070	.81921	37.144	34.158	1.0704	1.9567	52.633
#1	.02654	.03356	.02444	.01329	.02542	.03966	-.00019
#2	.02571	.03399	.01750	.01283	.02582	.04004	-.00020
#3	.02465	.03408	.01127	.00662	.02595	.03856	-.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8867.8**	**53225.**	**2534.6**
Stddev	20.8	148.	12.1
%RSD	.23412	.27882	.47921
#1	8887.9	53363.	2539.7
#2	8869.1	53068.	2520.7
#3	8846.4	53244.	2543.4

Approved: June 29, 2016

Sample Name: L1606106817SD Acquired: 6/28/2016 13:34:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573869-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00954	.55625	.00901	.04561	.03585	.00128	.75307	.00155
Stddev	.00085	.01106	.00306	.00213	.00056	.00014	.01847	.00025
%RSD	8.9440	1.9883	33.996	4.6764	1.5586	11.128	2.4524	16.149
#1	.00901	.54454	.01081	.04442	.03526	.00122	.75451	.00184
#2	.01052	.55769	.01075	.04434	.03593	.00144	.73392	.00139
#3	.00907	.56652	.00547	.04808	.03636	.00118	.77077	.00142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00549	.01478	.01221	.77846	1.4049	.02129	.61217	.02711
Stddev	.00032	.00163	.00076	.01528	.1399	.00335	.01573	.00179
%RSD	5.8665	11.047	6.2537	1.9633	9.9619	15.732	2.5687	6.5920
#1	.00530	.01663	.01247	.78322	1.5650	.02299	.61554	.02504
#2	.00586	.01356	.01135	.79080	1.3061	.02345	.62594	.02816
#3	.00531	.01413	.01280	.76136	1.3434	.01743	.59504	.02812
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02377	10.556	.01424	.23784	.01238	.03034	.00363	.87740
Stddev	.00044	.042	.00056	.00722	.00117	.00374	.01030	.00313
%RSD	1.8350	.39963	3.9141	3.0340	9.4640	12.322	283.48	.35703
#1	.02350	10.603	.01488	.24458	.01183	.02602	.00965	.87786
#2	.02427	10.521	.01398	.23870	.01159	.03248	-.00826	.88027
#3	.02354	10.545	.01386	.23023	.01373	.03252	.00951	.87406
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106817SD Acquired: 6/28/2016 13:34:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573869-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02422	.03180	.02657	.00958	.02469	.04759	-.00024
Stddev	.00037	.00023	.00522	.00222	.00019	.00022	.00034
%RSD	1.5338	.72534	19.663	23.212	.77692	.46605	142.47
#1	.02456	.03201	.02173	.01169	.02478	.04734	.00013
#2	.02383	.03182	.02587	.00726	.02483	.04775	-.00054
#3	.02427	.03156	.03211	.00977	.02447	.04768	-.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8832.1	53126.	2512.3
Stddev	9.4	250.	6.6
%RSD	.10606	.47116	.26253
#1	8823.5	53414.	2505.6
#2	8830.8	53002.	2518.8
#3	8842.1	52962.	2512.4

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 13:38:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39992	10.123	.40264	.50115	1.0119	.05004	9.9930	.05061
Stddev	.00156	.020	.00072	.00146	.0056	.00004	.0193	.00069
%RSD	.38920	.19439	.17777	.29040	.55589	.08201	.19290	1.3554
#1	.40151	10.135	.40191	.50084	1.0167	.05004	10.012	.05093
#2	.39840	10.100	.40268	.50273	1.0057	.05009	9.9739	.05107
#3	.39986	10.133	.40334	.49987	1.0133	.05000	9.9927	.04982
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20347	.50495	.51127	4.0051	50.272	1.0063	10.156	.50245
Stddev	.00106	.00087	.00229	.0192	.057	.0069	.244	.00203
%RSD	.51854	.17321	.44767	.47891	.11298	.68238	2.4046	.40338
#1	.20248	.50414	.51231	4.0230	50.215	1.0132	9.9480	.50011
#2	.20458	.50482	.51284	4.0074	50.329	1.0062	10.425	.50357
#3	.20337	.50588	.50864	3.9849	50.271	.99951	10.095	.50368
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0193	50.359	.50700	10.109	.50281	1.2148	.40917	5.0738
Stddev	.0035	.068	.00168	.015	.00071	.0017	.00995	.0074
%RSD	.34543	.13420	.33213	.14998	.14070	.14140	2.4316	.14602
#1	1.0203	50.417	.50661	10.106	.50215	1.2133	.40239	5.0667
#2	1.0222	50.285	.50884	10.125	.50356	1.2145	.42059	5.0815
#3	1.0154	50.374	.50554	10.095	.50271	1.2167	.40452	5.0731
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 13:38:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0180**	**1.0116**	**1.0030**	**.50319**	**1.0036**	**1.0198**	**1.0177**
Stddev	.0017	.0008	.0100	.00318	.0045	.0016	.0066
%RSD	.16741	.07569	.99288	.63294	.45095	.15795	.65127
#1	1.0172	1.0125	1.0037	.50161	.99881	1.0184	1.0253
#2	1.0200	1.0110	1.0126	.50686	1.0078	1.0216	1.0148
#3	1.0168	1.0113	.99273	.50111	1.0043	1.0194	1.0130
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8653.4**	**51777.**	**2497.9**
Stddev	13.9	203.	9.7
%RSD	.16072	.39139	.38989
#1	8647.5	52010.	2489.4
#2	8643.5	51649.	2495.7
#3	8669.3	51671.	2508.6

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 13:41:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00104	.00832	.00025	.00317	.00518	.00001	-.06282	-.00014
Stddev	.00113	.00232	.00379	.00237	.00098	.00007	.02008	.00018
%RSD	108.04	27.826	1523.1	74.803	18.875	1321.3	31.972	135.63
#1	-.00233	.00655	-.00397	.00515	.00475	.00008	-.08510	-.00031
#2	-.00027	.00747	.00339	.00383	.00450	-.00000	-.05722	.00006
#3	-.00052	.01094	.00133	.00054	.00631	-.00006	-.04612	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00005	.00000	.00765	.00800	.00105	.10373	-.00086
Stddev	.00041	.00054	.00032	.02751	.27697	.00210	.06003	.00167
%RSD	129.99	1044.3	24142.	359.43	3464.1	200.86	57.867	194.61
#1	-.00012	.00038	.00002	-.00198	-.22735	.00161	.13805	.00035
#2	.00037	-.00057	-.00033	-.01374	.31321	-.00128	.03442	-.00016
#3	.00069	.00035	.00032	.03868	-.06187	.00280	.13873	-.00277
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	-.01774	-.00085	.00022	-.00383	.00347	-.00358	.01133
Stddev	.00023	.00564	.00091	.00322	.00198	.00075	.00308	.00240
%RSD	290.90	31.796	106.50	1451.8	51.642	21.670	86.137	21.191
#1	-.00018	-.02016	.00006	.00100	-.00507	.00310	-.00378	.01213
#2	.00018	-.01129	-.00176	.00298	-.00155	.00434	-.00040	.00863
#3	.00023	-.02177	-.00087	-.00331	-.00487	.00298	-.00656	.01323
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 13:41:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	-.00020	-.00686	-.00117	-.00035	-.00007	-.00004
Stddev	.00093	.00056	.00673	.00291	.00054	.00018	.00058
%RSD	141.43	280.92	98.219	248.99	152.27	240.76	1409.3
#1	-.00040	-.00015	-.00234	.00198	.00011	-.00028	.00057
#2	.00138	-.00079	-.01460	-.00377	-.00094	.00005	-.00012
#3	.00100	.00034	-.00363	-.00172	-.00023	.00001	-.00057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8739.5	52609.	2487.4
Stddev	5.9	231.	25.7
%RSD	.06776	.43844	1.0317
#1	8738.4	52562.	2473.5
#2	8745.9	52406.	2471.8
#3	8734.2	52860.	2517.0

Approved: June 29, 2016

Sample Name: LLCCV Acquired: 6/28/2016 13:45:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00736	.19083	.00295	.08111	.01169	.00173	.42567	.00083
Stddev	.00215	.00749	.00324	.00095	.00258	.00011	.07147	.00024
%RSD	29.248	3.9252	110.04	1.1726	22.036	6.3725	16.791	28.962
#1	.00643	.18891	.00590	.08220	.01078	.00161	.36982	.00072
#2	.00982	.19909	.00347	.08061	.01460	.00176	.50622	.00066
#3	.00583	.18448	-.00053	.08050	.00970	.00182	.40099	.00110
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00405	.00421	.00347	.06656	.92169	.09021	.49979	.00778
Stddev	.00018	.00133	.00080	.01156	.07020	.00767	.10689	.00166
%RSD	4.4368	31.559	23.151	17.365	7.6164	8.4978	21.388	21.292
#1	.00387	.00286	.00290	.06880	.84213	.08382	.50249	.00852
#2	.00423	.00426	.00439	.05405	.97492	.09871	.60531	.00893
#3	.00404	.00551	.00313	.07683	.94800	.08810	.39157	.00588
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00824	.40026	.01713	.79167	.00734	.08280	.01420	.83284
Stddev	.00020	.05939	.00016	.00289	.00216	.00238	.00347	.00433
%RSD	2.4033	14.837	.95090	.36532	29.499	2.8801	24.464	.52024
#1	.00846	.37436	.01732	.79217	.00972	.08006	.01171	.83783
#2	.00811	.46821	.01704	.79429	.00549	.08442	.01272	.83000
#3	.00813	.35823	.01704	.78857	.00680	.08392	.01817	.83070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LLCCV Acquired: 6/28/2016 13:45:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41311**	**.04388**	**.02180**	**.15222**	**.00680**	**.01756**	**.04365**
Stddev	.00284	.00364	.00295	.00341	.00126	.00047	.00236
%RSD	.68722	8.3006	13.524	2.2432	18.554	2.6678	5.4105
#1	.41479	.04175	.01857	.15193	.00823	.01804	.04226
#2	.41472	.04809	.02246	.14896	.00635	.01755	.04638
#3	.40984	.04181	.02436	.15577	.00583	.01710	.04231
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8968.0**	**53610.**	**2478.4**
Stddev	17.5	218.	149.1
%RSD	.19522	.40702	6.0172
#1	8968.4	53836.	2571.5
#2	8985.3	53400.	2306.4
#3	8950.3	53594.	2557.4

Approved: June 29, 2016

Sample Name: PBW FB Acquired: 6/28/2016 13:49:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00087**	**.02038**	**.00047**	**-.00233**	**.00447**	**.00003**	**-.00809**
Stddev	.00077	.01026	.00092	.00070	.00161	.00010	.01414
%RSD	87.875	50.329	198.12	30.080	36.066	351.83	174.83
#1	.00102	.02586	.00110	-.00223	.00426	.00009	.00526
#2	.00004	.02673	.00089	-.00307	.00619	.00008	-.00661
#3	.00155	.00855	-.00059	-.00168	.00298	-.00009	-.02291
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**-.00013**	**-.00021**	**-.00020**	F **-.02980**	**-.06122**	**-.00080**
Stddev	.00011	.00037	.00090	.00203	.05319	.07805	.00227
%RSD	216.97	283.62	430.30	1027.0	178.53	127.49	282.96
#1	.00015	-.00011	-.00112	-.00202	-.00231	-.14344	-.00181
#2	-.00007	-.00051	-.00019	-.00056	.00403	-.05207	.00180
#3	.00007	.00023	.00068	.00199	-.09111	.01185	-.00240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05348**	**.00154**	**-.00031**	**-.01531**	**-.00101**	**.00072**	F **-.00564**
Stddev	.06861	.00047	.00024	.04577	.00073	.00883	.00089
%RSD	128.29	30.648	76.777	298.97	72.111	1223.2	15.852
#1	-.01835	.00108	-.00025	-.05048	-.00157	.01081	-.00509
#2	.06045	.00202	-.00011	-.03189	-.00019	-.00559	-.00667
#3	.11835	.00153	-.00058	.03644	-.00128	-.00306	-.00516
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							225.00
Low Limit							-.00500

Approved: June 29, 2016

Sample Name: PBW FB Acquired: 6/28/2016 13:49:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00065**	**-.00023**	**-.01671**	**.00024**	**-.00003**	**.00346**	**-.00227**
Stddev	.00348	.00224	.00217	.00048	.00014	.00679	.00206
%RSD	537.23	965.80	12.999	203.88	544.08	196.40	91.144
#1	-.00120	-.00236	-.01904	.00079	-.00017	.00308	-.00056
#2	.00308	.00211	-.01635	-.00008	.00010	.01042	-.00456
#3	-.00382	-.00045	-.01474	-.00000	-.00000	-.00313	-.00167
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00131**	**-.00013**	**-.00037**
Stddev	.00074	.00032	.00054
%RSD	56.570	254.87	146.28
#1	-.00205	.00008	-.00061
#2	-.00057	-.00049	.00025
#3	-.00132	.00003	-.00075
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8902.6**	**52766.**	**2457.8**
Stddev	27.6	121.	33.4
%RSD	.30966	.22861	1.3598
#1	8874.6	52650.	2470.0
#2	8929.8	52756.	2420.0
#3	8903.5	52891.	2483.4

Approved: June 29, 2016

Sample Name: LCSW FB Acquired: 6/28/2016 13:53:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19900**	**5.0246**	**.20339**	**.97761**	**.50424**	**.02444**	**5.1220**	**.02524**
Stddev	.00408	.0181	.00015	.00343	.00078	.00018	.0265	.00018
%RSD	2.0517	.36103	.07344	.35073	.15497	.73251	.51681	.72858
#1	.19842	5.0082	.20346	.97720	.50470	.02423	5.1241	.02527
#2	.20334	5.0441	.20349	.98122	.50468	.02453	5.0945	.02541
#3	.19524	5.0216	.20322	.97440	.50334	.02455	5.1473	.02505
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10172**	**.25359**	**.25466**	**1.9566**	**25.129**	**.51169**	**5.0823**	**.24884**
Stddev	.00117	.00149	.00174	.0183	.104	.00398	.0798	.00105
%RSD	1.1545	.58953	.68227	.93432	.41251	.77852	1.5695	.42348
#1	.10256	.25489	.25542	1.9763	25.248	.50761	5.1110	.24940
#2	.10222	.25196	.25590	1.9532	25.076	.51190	4.9922	.24950
#3	.10038	.25391	.25267	1.9402	25.063	.51556	5.1438	.24762
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51178**	**25.253**	**.25676**	**4.9088**	**.25422**	**.59597**	**.18860**	**2.4342**
Stddev	.00524	.095	.00268	.0320	.00217	.01042	.00956	.0116
%RSD	1.0231	.37434	1.0420	.65246	.85430	1.7492	5.0693	.47799
#1	.51545	25.322	.25712	4.9122	.25650	.60794	.19825	2.4390
#2	.51410	25.145	.25924	4.9390	.25400	.59103	.17913	2.4426
#3	.50578	25.293	.25392	4.8752	.25217	.58893	.18842	2.4209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LCSW FB Acquired: 6/28/2016 13:53:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50998	.51127	.49771	.25349	.50193	.50932	.00039
Stddev	.00635	.00050	.01112	.00112	.00034	.00540	.00060
%RSD	1.2450	.09829	2.2341	.44241	.06687	1.0610	152.55
#1	.51302	.51172	.51004	.25380	.50215	.51193	.00030
#2	.51424	.51073	.49468	.25443	.50209	.51292	.00103
#3	.50268	.51135	.48843	.25225	.50154	.50310	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9046.0	54533.	2638.4
Stddev	14.1	223.	12.5
%RSD	.15595	.40924	.47439
#1	9051.7	54651.	2624.5
#2	9030.0	54275.	2641.9
#3	9056.5	54672.	2648.8

Approved: June 29, 2016

Sample Name: L1606114201 Acquired: 6/28/2016 13:57:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	.05867	-.00226	.01052	.07923	.00004	2.2270	.00045
Stddev	.00191	.00845	.00118	.00102	.00159	.00009	.0352	.00028
%RSD	281.54	14.410	52.249	9.6741	2.0032	236.41	1.5789	62.236
#1	-.00129	.05427	-.00108	.01155	.07914	.00005	2.1919	.00032
#2	.00253	.06842	-.00345	.01051	.07769	.00013	2.2622	.00026
#3	.00079	.05332	-.00227	.00951	.08086	-.00006	2.2269	.00076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00611	.00086	.00022	4.6017	1.0549	.01036	1.7153	.22886
Stddev	.00021	.00091	.00108	.0366	.0934	.00385	.1156	.00109
%RSD	3.3884	105.55	488.55	.79525	8.8568	37.198	6.7381	.47751
#1	.00594	.00065	-.00085	4.5708	1.1252	.00825	1.8224	.23005
#2	.00634	.00008	.00131	4.5921	.94888	.01481	1.7306	.22791
#3	.00605	.00187	.00020	4.6421	1.0906	.00803	1.5928	.22861
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00067	19.649	.00742	.06001	.00256	.00190	-.00560	15.630
Stddev	.00025	.047	.00125	.00498	.00162	.00400	.00341	.024
%RSD	36.725	.24068	16.819	8.3002	62.980	210.77	60.813	.15501
#1	.00039	19.680	.00649	.06119	.00330	-.00159	-.00593	15.642
#2	.00086	19.594	.00884	.05455	.00071	.00627	-.00204	15.602
#3	.00077	19.673	.00692	.06430	.00368	.00102	-.00884	15.646
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606114201 Acquired: 6/28/2016 13:57:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.04045	.00831	-.00411	-.00073	.00996	-.00035
Stddev	.00045	.00014	.00359	.00080	.00037	.00006	.00052
%RSD	311.96	.33991	43.132	19.576	51.383	.64259	148.00
#1	.00050	.04035	.00782	-.00352	-.00043	.00996	.00021
#2	-.00036	.04061	.01212	-.00378	-.00114	.01002	-.00081
#3	.00029	.04040	.00500	-.00502	-.00061	.00990	-.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9162.3	55345.	2645.7
Stddev	10.7	90.	11.1
%RSD	.11628	.16311	.41823
#1	9165.6	55439.	2634.7
#2	9171.0	55259.	2656.9
#3	9150.4	55338.	2645.6

Approved: June 29, 2016

Sample Name: L1606114203 Acquired: 6/28/2016 14:01:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	.27324	.00028	.01119	.05232	.00009	6.9241	.00031
Stddev	.00101	.00614	.00251	.00136	.00133	.00010	.0879	.00018
%RSD	266.07	2.2463	905.28	12.143	2.5487	105.81	1.2689	57.110
#1	-.00028	.27239	.00087	.01128	.05314	.00018	6.9787	.00052
#2	-.00013	.27976	.00243	.00979	.05078	-.00001	6.8228	.00022
#3	.00154	.26758	-.00247	.01250	.05303	.00011	6.9709	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00078	.00109	.00195	3.8878	1.4786	.00534	1.2697	.19674
Stddev	.00032	.00129	.00126	.0500	.0652	.00341	.0789	.00271
%RSD	41.154	117.52	64.945	1.2853	4.4076	63.859	6.2160	1.3769
#1	.00045	.00238	.00086	3.9201	1.4084	.00927	1.1830	.19458
#2	.00080	-.00019	.00334	3.8303	1.4901	.00355	1.2887	.19586
#3	.00109	.00110	.00164	3.9131	1.5372	.00319	1.3374	.19978
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	4.0555	.00376	.09011	.00040	.00452	.00674	5.1074
Stddev	.00026	.0801	.00092	.00618	.00366	.00529	.00378	.0076
%RSD	43.606	1.9741	24.497	6.8539	912.10	116.99	56.046	.14975
#1	.00088	4.1283	.00348	.09257	-.00281	.00886	.01094	5.1157
#2	.00053	3.9698	.00480	.08308	-.00037	-.00137	.00566	5.1006
#3	.00037	4.0683	.00302	.09467	.00438	.00607	.00362	5.1060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606114203 Acquired: 6/28/2016 14:01:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.05564	.00818	-.00403	.00143	.00405	-.00066
Stddev	.00051	.00078	.00097	.00126	.00045	.00015	.00091
%RSD	99.768	1.3964	11.885	31.161	31.303	3.6828	139.20
#1	.00041	.05588	.00755	-.00404	.00187	.00404	-.00037
#2	.00106	.05477	.00930	-.00277	.00145	.00420	.00008
#3	.00006	.05627	.00769	-.00529	.00097	.00390	-.00168
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9201.0	55505.	2656.0
Stddev	2.7	216.	28.0
%RSD	.02917	.38837	1.0526
#1	9204.0	55434.	2638.8
#2	9200.5	55334.	2688.3
#3	9198.7	55747.	2641.0

Approved: June 29, 2016

Sample Name: L1606114205 Acquired: 6/28/2016 14:05:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	.29510	-.00399	.00877	.05188	-.00004	6.7570	.00011
Stddev	.00067	.00175	.00127	.00194	.00134	.00008	.0441	.00013
%RSD	252.45	.59391	31.797	22.120	2.5800	189.17	.65263	119.13
#1	.00002	.29353	-.00540	.01064	.05066	-.00012	6.7835	.00001
#2	.00022	.29699	-.00295	.00677	.05331	-.00003	6.7815	.00005
#3	-.00104	.29478	-.00362	.00890	.05166	.00003	6.7061	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	.00134	.00069	3.9328	1.3894	.00419	1.1700	.19925
Stddev	.00032	.00079	.00081	.0387	.1354	.00230	.0806	.00367
%RSD	36.699	59.423	117.74	.98304	9.7482	54.930	6.8871	1.8408
#1	.00124	.00156	.00082	3.9719	1.3019	.00307	1.2435	.19866
#2	.00081	.00045	-.00018	3.9318	1.5454	.00266	1.0838	.19590
#3	.00060	.00199	.00142	3.8946	1.3208	.00683	1.1826	.20317
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00083	3.8918	.00306	.08988	-.00133	.00008	.00151	5.0348
Stddev	.00026	.0463	.00151	.00143	.00236	.00278	.01136	.0439
%RSD	31.031	1.1889	49.164	1.5872	177.57	3618.7	749.90	.87231
#1	.00109	3.8662	.00383	.09149	.00045	.00019	-.00515	5.0503
#2	.00058	3.8641	.00133	.08876	-.00400	.00280	.01463	5.0688
#3	.00081	3.9452	.00403	.08939	-.00043	-.00276	-.00494	4.9852
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606114205 Acquired: 6/28/2016 14:05:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	.05416	.00822	-.00288	.00086	.00400	.00007
Stddev	.00016	.00040	.00287	.00338	.00029	.00007	.00049
%RSD	21.082	.73417	34.929	117.45	33.623	1.7284	732.53
#1	.00096	.05384	.01137	.00094	.00052	.00392	.00060
#2	.00065	.05403	.00754	-.00410	.00104	.00406	-.00038
#3	.00071	.05460	.00574	-.00548	.00100	.00401	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9201.1	55778.	2648.2
Stddev	37.4	65.	11.1
%RSD	.40596	.11714	.41951
#1	9204.5	55810.	2639.2
#2	9236.6	55821.	2660.6
#3	9162.1	55702.	2644.7

Approved: June 29, 2016

Sample Name: L1606117701 Acquired: 6/28/2016 14:08:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.02633	.00391	.09124	.00216	-.00001	.04445	.00021
Stddev	.00357	.00399	.00273	.00180	.00064	.00008	.02994	.00017
%RSD	633.00	15.134	69.874	1.9731	29.489	753.28	67.370	80.852
#1	.00209	.02913	.00092	.08925	.00161	-.00006	.02918	.00014
#2	-.00351	.02177	.00451	.09276	.00286	.00008	.02521	.00041
#3	.00311	.02809	.00628	.09171	.00201	-.00005	.07895	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.00061	.00088	-.00762	.14322	.00304	.00749	-.00130
Stddev	.00014	.00092	.00010	.01515	.07780	.00086	.11866	.00374
%RSD	135.34	149.59	11.631	198.87	54.324	28.196	1585.3	287.00
#1	-.00026	.00164	.00082	.00409	.16832	.00379	.14380	.00278
#2	-.00007	.00031	.00100	-.00221	.20536	.00324	-.04864	-.00213
#3	.00002	-.00012	.00083	-.02474	.05596	.00210	-.07270	-.00457
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00618	114.73	-.00098	.00713	-.00154	-.00199	-.00540	4.0889
Stddev	.00069	.24	.00089	.00359	.00371	.00107	.00275	.0405
%RSD	11.161	.20894	90.679	50.357	240.96	53.790	50.915	.99133
#1	.00671	114.98	-.00155	.00652	.00272	-.00177	-.00432	4.1112
#2	.00642	114.51	.00004	.00389	-.00331	-.00316	-.00853	4.1134
#3	.00540	114.71	-.00143	.01099	-.00403	-.00105	-.00335	4.0421
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606117701 Acquired: 6/28/2016 14:08:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00090	.00049	-.00033	-.00039	.00002	.04431	-.00003
Stddev	.00033	.00085	.00164	.00116	.00035	.00083	.00029
%RSD	37.100	171.33	490.65	296.81	2057.2	1.8684	1114.3
#1	.00128	-.00025	.00001	.00095	-.00011	.04496	-.00018
#2	.00068	.00031	.00110	-.00114	-.00025	.04459	-.00021
#3	.00074	.00142	-.00212	-.00098	.00042	.04338	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8994.7	53956.	2615.7
Stddev	16.7	185.	5.8
%RSD	.18524	.34302	.22052
#1	9004.1	53789.	2622.2
#2	8975.4	53925.	2611.4
#3	9004.5	54155.	2613.3

Approved: June 29, 2016

Sample Name: L1606117702S Acquired: 6/28/2016 14:12:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18856**	**4.8322**	**.19823**	**1.0372**	**.48497**	**.02389**	**4.8901**	**.02419**
Stddev	.00126	.0224	.00385	.0034	.00200	.00009	.0917	.00033
%RSD	.66628	.46355	1.9424	.32332	.41215	.38786	1.8745	1.3800
#1	.18738	4.8110	.20072	1.0333	.48716	.02398	4.9959	.02380
#2	.18843	4.8299	.20017	1.0396	.48325	.02391	4.8365	.02440
#3	.18988	4.8556	.19379	1.0386	.48450	.02379	4.8378	.02436
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09773**	**.24028**	**.24429**	**1.9433**	**24.096**	**.49868**	**4.8729**	**.24053**
Stddev	.00042	.00128	.00172	.0409	.182	.00260	.0127	.00377
%RSD	.42582	.53446	.70316	2.1030	.75545	.52233	.26047	1.5680
#1	.09729	.23949	.24430	1.9193	24.200	.50110	4.8876	.23932
#2	.09777	.23959	.24600	1.9905	24.203	.49592	4.8649	.23751
#3	.09812	.24176	.24257	1.9202	23.886	.49901	4.8663	.24476
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49903**	**133.30**	**.24372**	**4.7766**	**.24190**	**.58145**	**.19108**	**6.2503**
Stddev	.00177	.44	.00088	.0144	.00430	.00207	.00466	.0076
%RSD	.35510	.32916	.36129	.30177	1.7763	.35588	2.4370	.12137
#1	.49709	133.73	.24391	4.7678	.23751	.58233	.19481	6.2453
#2	.50057	133.32	.24450	4.7933	.24610	.58293	.19258	6.2590
#3	.49944	132.86	.24276	4.7689	.24208	.57908	.18586	6.2464
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606117702S Acquired: 6/28/2016 14:12:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49123**	**.49119**	**.47597**	**.23865**	**.48318**	**.53456**	**.00014**
Stddev	.00207	.00091	.01591	.00292	.00064	.00399	.00041
%RSD	.42144	.18556	3.3435	1.2227	.13247	.74582	297.24
#1	.48887	.49089	.46600	.23578	.48356	.53549	.00061
#2	.49273	.49048	.49433	.24161	.48244	.53800	-.00012
#3	.49210	.49222	.46759	.23856	.48353	.53019	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9062.2**	**54261.**	**2652.5**
Stddev	15.4	248.	3.2
%RSD	.16948	.45726	.12250
#1	9046.5	54417.	2651.6
#2	9063.0	54391.	2649.8
#3	9077.1	53975.	2656.1

Approved: June 29, 2016

Sample Name: L1606117703SD Acquired: 6/28/2016 14:16:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19356**	**4.9188**	**.20421**	**1.0578**	**.49216**	**.02440**	**4.9691**	**.02479**
Stddev	.00895	.1866	.00113	.0433	.00110	.00088	.0385	.00041
%RSD	4.6250	3.7942	.55157	4.0894	.22408	3.5915	.77489	1.6672
#1	.18329	4.7033	.20392	1.0080	.49332	.02338	4.9851	.02437
#2	.19968	5.0258	.20546	1.0792	.49113	.02490	4.9252	.02481
#3	.19771	5.0273	.20327	1.0862	.49201	.02491	4.9970	.02520
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10078**	**.24659**	**.25170**	**1.9836**	**24.515**	**.50071**	**4.9089**	**.24206**
Stddev	.00071	.00855	.00324	.0197	.194	.00317	.0729	.00081
%RSD	.70462	3.4653	1.2865	.99364	.79032	.63278	1.4848	.33473
#1	.09996	.23678	.24814	1.9956	24.736	.50021	4.8669	.24188
#2	.10125	.25241	.25448	1.9609	24.376	.50410	4.8667	.24135
#3	.10112	.25058	.25247	1.9944	24.433	.49782	4.9931	.24294
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51266**	**134.43**	**.24903**	**4.8929**	**.24866**	**.59669**	**.19110**	**6.3693**
Stddev	.00471	.21	.00178	.0290	.00195	.00618	.00196	.0537
%RSD	.91932	.15842	.71645	.59312	.78413	1.0357	1.0265	.84288
#1	.50722	134.58	.24697	4.8597	.24684	.59011	.19121	6.3079
#2	.51547	134.19	.24998	4.9131	.25072	.59760	.19300	6.3927
#3	.51529	134.54	.25013	4.9060	.24842	.60237	.18908	6.4074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606117703SD Acquired: 6/28/2016 14:16:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50534**	**.49778**	**.47860**	**.24351**	**.49461**	**.54919**	**.00063**
Stddev	.00438	.00222	.00954	.00352	.02044	.00714	.00039
%RSD	.86690	.44590	1.9934	1.4471	4.1324	1.2998	61.841
#1	.50028	.49612	.47958	.23954	.47101	.54095	.00098
#2	.50788	.49692	.46861	.24475	.50647	.55304	.00021
#3	.50786	.50030	.48762	.24625	.50636	.55358	.00071
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8931.1**	**53527.**	**2625.0**
Stddev	64.6	1463.	5.1
%RSD	.72334	2.7322	.19309
#1	9005.7	55214.	2624.2
#2	8895.3	52620.	2620.4
#3	8892.4	52747.	2630.5

Approved: June 29, 2016

Sample Name: L1606118501 Acquired: 6/28/2016 14:20:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**.01981**	**.00181**	**.02105**	**.20719**	**-.00013**	**36.631**	**-.00001**
Stddev	.00036	.00473	.00377	.00300	.00054	.00006	.042	.00033
%RSD	398.51	23.884	207.88	14.263	.26264	47.225	.11494	2546.0
#1	-.00016	.01435	-.00154	.02364	.20768	-.00019	36.658	.00036
#2	-.00041	.02230	.00590	.01776	.20660	-.00012	36.653	-.00025
#3	.00030	.02278	.00108	.02176	.20727	-.00007	36.583	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00032**	**.00085**	**.00210**	**.31623**	**1.4446**	**.01015**	**11.970**	**.18513**
Stddev	.00005	.00052	.00100	.01586	.0492	.00660	.209	.00173
%RSD	16.614	61.255	47.788	5.0151	3.4040	64.996	1.7496	.93595
#1	-.00038	.00138	.00318	.33404	1.4096	.01149	12.203	.18396
#2	-.00030	.00083	.00192	.30365	1.5008	.01598	11.910	.18712
#3	-.00028	.00034	.00120	.31100	1.4233	.00299	11.797	.18431
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00050**	**4.4335**	**-.00023**	**.01231**	**-.00295**	**.00236**	**-.00468**	**4.3495**
Stddev	.00021	.0505	.00048	.00514	.00078	.00525	.00740	.0503
%RSD	43.336	1.1395	208.73	41.760	26.533	222.86	158.18	1.1577
#1	.00045	4.4850	.00005	.01702	-.00294	-.00332	-.00133	4.3685
#2	.00031	4.4315	.00005	.01308	-.00218	.00703	-.01316	4.3876
#3	.00073	4.3840	-.00078	.00682	-.00375	.00336	.00045	4.2924
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606118501 Acquired: 6/28/2016 14:20:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.11439	-.00457	-.00192	-.00064	.00598	-.00008
Stddev	.00103	.00003	.00727	.00266	.00040	.00009	.00041
%RSD	320.31	.02290	159.11	138.96	63.165	1.5139	518.32
#1	.00044	.11442	-.01291	.00082	-.00076	.00593	-.00003
#2	-.00076	.11438	.00037	-.00206	-.00019	.00608	-.00051
#3	.00129	.11438	-.00116	-.00451	-.00097	.00592	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9080.6	54899.	2621.2
Stddev	26.5	80.	9.7
%RSD	.29154	.14617	.37101
#1	9071.9	54981.	2610.3
#2	9059.5	54897.	2628.8
#3	9110.3	54820.	2624.7

Approved: June 29, 2016

Sample Name: L1606118502 Acquired: 6/28/2016 14:24:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00183	.01781	-.00212	.01875	.20094	-.00005	36.701	.00026
Stddev	.00200	.00542	.00366	.00101	.00099	.00005	.201	.00011
%RSD	109.47	30.421	172.60	5.3632	.49395	109.70	.54766	41.230
#1	-.00099	.01285	-.00403	.01780	.20067	-.00004	36.930	.00018
#2	-.00038	.01699	-.00444	.01864	.20204	-.00010	36.622	.00038
#3	-.00412	.02359	.00210	.01980	.20011	-.00000	36.552	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	-.00029	.00156	-.00426	1.2802	.01013	12.015	.03565
Stddev	.00024	.00202	.00090	.01892	.1572	.00074	.100	.00090
%RSD	112.56	697.40	58.083	443.63	12.278	7.3510	.83356	2.5284
#1	-.00005	.00204	.00230	.01500	1.4475	.01081	12.082	.03464
#2	.00042	-.00155	.00182	-.02282	1.1357	.00933	11.900	.03639
#3	.00026	-.00136	.00055	-.00497	1.2574	.01025	12.063	.03591
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	4.3567	.00008	.01630	.00178	.00663	.00318	4.3819
Stddev	.00047	.0319	.00036	.00510	.00496	.00405	.01096	.0031
%RSD	39.998	.73095	427.54	31.262	278.16	61.058	344.17	.06952
#1	.00164	4.3274	-.00016	.01074	-.00009	.00272	.01572	4.3834
#2	.00071	4.3906	.00050	.02076	.00741	.01080	-.00457	4.3838
#3	.00116	4.3521	-.00009	.01740	-.00197	.00638	-.00160	4.3783
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606118502 Acquired: 6/28/2016 14:24:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	.11567	-.00542	-.00245	-.00068	.00475	-.00073
Stddev	.00075	.00034	.00321	.00261	.00124	.00014	.00075
%RSD	138.82	.29531	59.328	106.53	183.90	3.0145	102.93
#1	.00127	.11569	-.00887	-.00098	-.00123	.00461	-.00010
#2	-.00024	.11600	-.00251	-.00547	-.00155	.00490	-.00156
#3	.00060	.11532	-.00488	-.00091	.00075	.00475	-.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9004.4	54315.	2596.8
Stddev	6.0	163.	7.5
%RSD	.06714	.30096	.28851
#1	8998.9	54182.	2588.9
#2	9003.4	54266.	2597.7
#3	9010.9	54497.	2603.8

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 14:27:55 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40478**	**10.178**	**.40422**	**.50272**	**1.0182**	**.05010**	**10.117**	**.05116**
Stddev	.00143	.039	.00189	.00370	.0036	.00010	.084	.00013
%RSD	.35403	.38613	.46653	.73542	.35070	.20789	.83028	.24807
#1	.40641	10.169	.40280	.50476	1.0158	.05021	10.021	.05130
#2	.40420	10.144	.40349	.49845	1.0223	.05006	10.175	.05112
#3	.40372	10.221	.40636	.50495	1.0166	.05001	10.156	.05105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20477**	**.50603**	**.51383**	**4.0435**	**50.597**	**1.0187**	**10.217**	**.50703**
Stddev	.00037	.00132	.00209	.0422	.398	.0115	.070	.00204
%RSD	.18089	.26016	.40633	1.0446	.78750	1.1266	.68585	.40329
#1	.20497	.50590	.51513	4.0309	50.226	1.0132	10.286	.50533
#2	.20499	.50478	.51142	4.0906	51.018	1.0319	10.145	.50646
#3	.20434	.50740	.51493	4.0091	50.545	1.0110	10.219	.50930
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0275**	**51.068**	**.51117**	**10.186**	**.50920**	**1.2210**	**.40575**	**5.1330**
Stddev	.0029	.260	.00076	.004	.00283	.0039	.00479	.0071
%RSD	.28249	.50917	.14897	.03557	.55508	.32091	1.1813	.13907
#1	1.0300	50.879	.51205	10.187	.50593	1.2169	.40023	5.1345
#2	1.0243	51.364	.51075	10.181	.51093	1.2247	.40878	5.1252
#3	1.0281	50.959	.51071	10.188	.51072	1.2213	.40825	5.1392
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 14:27:55 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0262**	**1.0196**	**1.0035**	**.51029**	**1.0039**	**1.0274**	**1.0303**
Stddev	.0014	.0055	.0092	.00045	.0019	.0011	.0016
%RSD	.13372	.54345	.91866	.08898	.18612	.10889	.15402
#1	1.0260	1.0143	1.0059	.51073	1.0034	1.0271	1.0321
#2	1.0249	1.0254	1.0113	.51031	1.0024	1.0265	1.0292
#3	1.0277	1.0193	.99336	.50982	1.0060	1.0287	1.0296
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8845.5**	**52891.**	**2530.2**
Stddev	13.0	259.	2.3
%RSD	.14752	.48995	.09114
#1	8830.5	52920.	2531.0
#2	8853.6	53135.	2531.9
#3	8852.5	52619.	2527.6

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 14:31:32 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.01926	-.00013	.00341	.00468	-.00000	-.05543	-.00005
Stddev	.00124	.00642	.00202	.00053	.00158	.00004	.03472	.00018
%RSD	221.71	33.309	1579.8	15.620	33.778	1830.7	62.635	343.75
#1	.00075	.01319	-.00158	.00365	.00623	.00003	-.09510	-.00016
#2	-.00077	.01863	.00218	.00379	.00307	-.00005	-.04067	-.00015
#3	.00170	.02597	-.00098	.00280	.00476	.00001	-.03054	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	-.00003	.00065	-.03110	.00840	.00435	.07075	-.00353
Stddev	.00025	.00039	.00086	.05263	.04476	.00220	.05753	.00211
%RSD	170.85	1476.6	131.66	169.21	533.20	50.700	81.315	59.738
#1	-.00012	.00034	.00149	-.04084	-.04327	.00596	.13712	-.00186
#2	.00038	.00001	-.00022	-.07818	.03553	.00184	.03511	-.00590
#3	.00018	-.00043	.00068	.02571	.03293	.00525	.04002	-.00283
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	-.00211	-.00140	.00654	-.00110	.00555	-.00142	.01151
Stddev	.00020	.02131	.00149	.00778	.00433	.00338	.00909	.00299
%RSD	53.690	1009.3	106.58	118.96	393.61	60.927	639.97	25.955
#1	.00016	.01887	-.00251	.00779	-.00569	.00828	-.01172	.01441
#2	.00056	-.02373	.00030	-.00179	-.00050	.00177	.00552	.01167
#3	.00042	-.00147	-.00200	.01362	.00290	.00661	.00193	.00844
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 14:31:32 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.00035	.00367	-.00382	-.00046	-.00011	.00019
Stddev	.00063	.00026	.00803	.00073	.00113	.00004	.00026
%RSD	443.88	75.185	218.90	19.094	247.43	37.683	132.20
#1	.00085	.00054	-.00558	-.00315	.00076	-.00006	-.00004
#2	-.00032	.00005	.00769	-.00370	-.00064	-.00014	.00015
#3	-.00011	.00044	.00889	-.00460	-.00149	-.00012	.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8886.0	53560.	2532.4
Stddev	4.5	43.	39.0
%RSD	.05032	.07981	1.5390
#1	8890.3	53608.	2500.9
#2	8881.4	53525.	2520.3
#3	8886.2	53548.	2576.0

Approved: June 29, 2016

Sample Name: L1606118503 Acquired: 6/28/2016 14:35:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00202	.02161	.00180	.02007	.23617	-.00001	40.887	.00011
Stddev	.00099	.00769	.00222	.00262	.00121	.00007	.146	.00021
%RSD	48.705	35.578	123.21	13.077	.51256	1215.3	.35637	192.07
#1	.00244	.01680	.00349	.01716	.23640	.00004	41.054	-.00012
#2	.00090	.03047	.00262	.02077	.23725	-.00009	40.826	.00018
#3	.00273	.01755	-.00071	.02227	.23486	.00003	40.782	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00035	.00109	.00511	.34655	1.1428	.00647	13.092	.53400
Stddev	.00026	.00045	.00092	.03444	.1788	.00519	.108	.00237
%RSD	72.904	41.467	17.980	9.9383	15.642	80.280	.82692	.44381
#1	-.00021	.00100	.00602	.30680	1.3477	.01159	13.138	.53641
#2	-.00065	.00158	.00418	.36745	1.0183	.00121	13.170	.53167
#3	-.00020	.00069	.00514	.36540	1.0626	.00661	12.968	.53391
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	4.1492	-.00102	.01805	-.00349	.00349	.00192	5.3671
Stddev	.00011	.0311	.00076	.00623	.00340	.00523	.01036	.0746
%RSD	21.373	.74966	74.891	34.520	97.453	149.86	540.47	1.3897
#1	.00064	4.1661	-.00189	.02426	.00044	.00952	-.00363	5.3789
#2	.00041	4.1681	-.00053	.01807	-.00541	.00085	.01386	5.4352
#3	.00054	4.1133	-.00063	.01180	-.00550	.00011	-.00448	5.2874
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606118503 Acquired: 6/28/2016 14:35:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.13606	.00942	-.00266	-.00026	.00502	-.00020
Stddev	.00060	.00122	.00692	.00135	.00016	.00014	.00047
%RSD	357.61	.89434	73.452	50.899	63.957	2.8606	234.85
#1	-.00048	.13568	.00705	-.00366	-.00039	.00516	-.00074
#2	.00030	.13742	.01721	-.00112	-.00030	.00503	.00008
#3	.00069	.13508	.00399	-.00321	-.00007	.00487	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8985.1	54141.	2607.5
Stddev	68.9	113.	9.9
%RSD	.76704	.20860	.37944
#1	8959.9	54010.	2596.2
#2	8932.3	54202.	2614.5
#3	9063.1	54210.	2611.9

Approved: June 29, 2016

Sample Name: L1606118504 Acquired: 6/28/2016 14:39:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00281	.01231	-.00378	.01715	.18396	.00002	39.241	.00007
Stddev	.00284	.01379	.00266	.00198	.00123	.00005	.068	.00012
%RSD	101.00	111.99	70.399	11.565	.67073	292.22	.17321	167.01
#1	.00318	.00084	-.00177	.01844	.18277	.00007	39.281	-.00007
#2	.00544	.00848	-.00679	.01486	.18523	-.00001	39.279	.00017
#3	-.00020	.02761	-.00277	.01813	.18389	-.00001	39.162	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	.00041	.00009	.02781	1.1592	.00635	12.544	.03306
Stddev	.00039	.00039	.00050	.00876	.0640	.00197	.136	.00335
%RSD	188.82	92.921	540.86	31.508	5.5188	31.058	1.0804	10.119
#1	.00008	.00055	.00066	.03789	1.2110	.00841	12.549	.02924
#2	-.00064	.00071	-.00009	.02355	1.1790	.00616	12.405	.03545
#3	-.00005	-.00002	-.00029	.02200	1.0877	.00448	12.676	.03450
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	4.1142	-.00138	.00594	-.00243	.00156	-.00599	5.1014
Stddev	.00034	.0254	.00175	.00327	.00106	.00331	.00095	.0198
%RSD	45.159	.61799	126.82	55.033	43.497	212.54	15.883	.38751
#1	.00078	4.1406	-.00335	.00906	-.00309	.00514	-.00609	5.1189
#2	.00107	4.1121	-.00000	.00254	-.00299	-.00138	-.00499	5.1053
#3	.00040	4.0899	-.00079	.00621	-.00121	.00092	-.00688	5.0799
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606118504 Acquired: 6/28/2016 14:39:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.13051	.00208	-.00195	-.00027	.00509	.00059
Stddev	.00121	.00032	.00140	.00224	.00072	.00006	.00068
%RSD	369.81	.24768	67.178	114.92	265.56	1.1916	116.72
#1	-.00071	.13048	.00143	.00041	-.00103	.00516	.00001
#2	.00166	.13085	.00368	-.00404	-.00020	.00504	.00040
#3	.00003	.13021	.00112	-.00222	.00041	.00508	.00134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9024.1	54546.	2625.6
Stddev	23.0	44.	4.3
%RSD	.25529	.08000	.16349
#1	9001.2	54496.	2624.5
#2	9023.7	54565.	2622.0
#3	9047.3	54578.	2630.4

Approved: June 29, 2016

Sample Name: L1606122801 Acquired: 6/28/2016 14:43:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00043	.05529	-.00070	.36414	.30012	-.00001	46.892	.00009
Stddev	.00151	.00695	.00227	.00169	.00185	.00017	.188	.00014
%RSD	346.68	12.576	323.44	.46322	.61527	1421.4	.40185	155.59
#1	.00087	.04779	-.00274	.36355	.29800	-.00020	46.812	.00026
#2	-.00009	.06153	-.00112	.36605	.30092	.00002	46.756	-.00001
#3	-.00208	.05656	.00175	.36283	.30142	.00014	47.107	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.00032	.00146	.30139	.17266	.01007	27.595	.49689
Stddev	.00012	.00126	.00054	.02974	.11841	.00327	.189	.00972
%RSD	91.374	395.93	36.671	9.8684	68.580	32.469	.68458	1.9568
#1	.00001	-.00006	.00093	.33490	.15184	.00696	27.710	.49002
#2	.00013	-.00071	.00200	.27814	.30010	.01348	27.377	.49263
#3	.00024	.00172	.00146	.29113	.06604	.00977	27.698	.50801
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	237.01	-.00001	.02821	-.00020	.00213	-.00175	7.7102
Stddev	.00031	.46	.00127	.00726	.00178	.00151	.00237	.2440
%RSD	83.135	.19280	12415.	25.738	882.16	71.025	135.79	3.1645
#1	.00029	236.67	.00144	.02218	.00151	.00387	-.00385	7.8512
#2	.00072	236.84	-.00093	.03627	-.00204	.00139	.00083	7.8510
#3	.00012	237.53	-.00054	.02617	-.00007	.00113	-.00222	7.4285
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606122801 Acquired: 6/28/2016 14:43:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.34455**	**-.00087**	**-.00253**	**-.00056**	**.00291**	**.00028**
Stddev	.00021	.00144	.00857	.00209	.00024	.00016	.00019
%RSD	2796.0	.41714	985.87	82.630	43.945	5.4136	67.279
#1	-.00004	.34469	.00782	-.00199	-.00033	.00306	.00007
#2	-.00020	.34305	-.00111	-.00076	-.00082	.00291	.00033
#3	.00021	.34591	-.00931	-.00484	-.00053	.00275	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8828.3**	**52599.**	**2598.8**
Stddev	14.2	203.	6.7
%RSD	.16104	.38684	.25611
#1	8812.1	52510.	2599.4
#2	8834.0	52831.	2605.2
#3	8838.8	52454.	2591.9

Approved: June 29, 2016

Sample Name: L1606122802 Acquired: 6/28/2016 14:47:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00080**	**.24773**	**.00384**	**.73133**	**.01985**	**-.00002**	**122.11**
Stddev	.00047	.00814	.00183	.00266	.00172	.00008	.32
%RSD	59.094	3.2873	47.707	.36367	8.6676	533.02	.26379
#1	.00082	.25291	.00446	.72855	.02000	.00007	122.07
#2	.00127	.25194	.00178	.73385	.01805	-.00009	121.80
#3	.00032	.23835	.00528	.73160	.02148	-.00002	122.44
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.00061**	**.00364**	**.00024**	**.13406**	**2.9490**	**.06033**
Stddev	.00015	.00056	.00089	.00194	.02548	.0972	.00576
%RSD	117.68	90.548	24.400	804.45	19.009	3.2942	9.5438
#1	.00004	.00114	.00268	.00118	.11925	2.9091	.05431
#2	-.00018	.00003	.00380	-.00199	.16349	2.8781	.06090
#3	-.00025	.00067	.00443	.00154	.11945	3.0597	.06579
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**83.351**	**.00470**	**.00909**	F **494.48**	**.00080**	**.00391**	**-.00095**
Stddev	.200	.00054	.00063	6.35	.00043	.00506	.00498
%RSD	.23940	11.426	6.9165	1.2837	54.026	129.43	524.42
#1	83.122	.00411	.00921	489.88	.00098	.00975	-.00345
#2	83.439	.00515	.00964	491.83	.00112	.00093	.00479
#3	83.491	.00484	.00840	501.72	.00031	.00104	-.00419
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606122802 Acquired: 6/28/2016 14:47:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00358**	**.01899**	**6.7737**	**-.00038**	**1.8734**	**-.00742**	**-.00303**
Stddev	.00218	.00536	.3560	.00123	.0049	.00344	.00249
%RSD	60.879	28.229	5.2554	326.02	.26130	46.410	82.258
#1	.00385	.01350	6.9788	.00081	1.8729	-.00828	-.00125
#2	.00128	.02421	6.9797	-.00164	1.8688	-.01034	-.00196
#3	.00562	.01925	6.3627	-.00030	1.8786	-.00362	-.00587
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00623**	**.00598**	**.00041**
Stddev	.00042	.00040	.00025
%RSD	6.8000	6.6498	61.221
#1	.00579	.00621	.00070
#2	.00628	.00620	.00024
#3	.00663	.00552	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8633.2**	**51179.**	**2574.8**
Stddev	3.5	175.	6.3
%RSD	.04019	.34160	.24339
#1	8636.7	51327.	2574.2
#2	8629.7	50986.	2581.4
#3	8633.1	51225.	2568.9

Approved: June 29, 2016

Sample Name: L1606122803 Acquired: 6/28/2016 14:50:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	.70132	.00035	.02798	.05264	.00002	26.376	.00018
Stddev	.00162	.00440	.00311	.00147	.00140	.00003	.041	.00006
%RSD	184.77	.62782	894.60	5.2466	2.6558	152.86	.15454	34.633
#1	-.00094	.70274	-.00320	.02633	.05125	.00004	26.414	.00011
#2	.00141	.70484	.00260	.02849	.05405	-.00002	26.380	.00021
#3	.00217	.69638	.00165	.02913	.05261	.00004	26.333	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	.00205	.00225	.73691	10.431	.00316	4.0316	.01712
Stddev	.00044	.00223	.00120	.04104	.098	.00487	.0254	.00164
%RSD	87.419	109.09	53.600	5.5690	.94063	154.18	.63069	9.5496
#1	.00051	.00418	.00086	.72309	10.533	.00879	4.0148	.01636
#2	.00006	-.00027	.00302	.78307	10.423	.00024	4.0190	.01900
#3	.00093	.00223	.00287	.70456	10.338	.00045	4.0608	.01601
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	3.6299	.00133	1.2655	.00018	.00234	-.00022	8.3262
Stddev	.00034	.0325	.00036	.0046	.00169	.00165	.00811	.0240
%RSD	44.819	.89431	26.962	.36391	940.84	70.433	3610.5	.28865
#1	.00046	3.6655	.00158	1.2659	-.00144	.00203	.00041	8.3324
#2	.00114	3.6221	.00149	1.2607	.00004	.00412	-.00863	8.3466
#3	.00071	3.6020	.00092	1.2699	.00194	.00087	.00755	8.2997
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606122803 Acquired: 6/28/2016 14:50:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.16996	-.00049	-.00267	.00668	.02497	.00072
Stddev	.00041	.00057	.00459	.00213	.00167	.00013	.00052
%RSD	349.75	.33502	936.91	79.854	24.954	.51527	71.969
#1	-.00021	.16934	-.00062	-.00249	.00555	.02487	.00102
#2	-.00002	.17046	-.00501	-.00489	.00860	.02512	.00012
#3	.00058	.17007	.00416	-.00063	.00589	.02492	.00101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9083.7	54994.	2625.8
Stddev	32.1	280.	15.6
%RSD	.35308	.50892	.59429
#1	9098.6	54788.	2630.5
#2	9105.6	54881.	2608.4
#3	9046.9	55313.	2638.5

Approved: June 29, 2016

Sample Name: L1606123101 Acquired: 6/28/2016 14:54:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00130	.03358	.00504	.10022	.06249	-.00004	40.181
Stddev	.00232	.01017	.00297	.00077	.00087	.00007	.051
%RSD	178.17	30.295	58.852	.77176	1.3950	168.73	.12715
#1	-.00102	.02445	.00772	.10047	.06331	.00000	40.179
#2	.00086	.04455	.00186	.09935	.06257	-.00012	40.233
#3	-.00374	.03174	.00554	.10084	.06157	-.00000	40.131
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.00050	.00076	.00060	.30063	.48774	.01354
Stddev	.00020	.00048	.00020	.00057	.02412	.07259	.00046
%RSD	61.093	95.301	26.045	94.150	8.0217	14.882	3.3817
#1	.00041	.00018	.00054	.00046	.32254	.40562	.01388
#2	.00010	.00105	.00083	.00012	.27479	.51432	.01372
#3	.00049	.00027	.00092	.00123	.30457	.54330	.01302
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	24.461	.03824	.00059	F 356.14	.00012	.01554	-.00275
Stddev	.028	.00192	.00017	.68	.00104	.00351	.00164
%RSD	.11535	5.0184	29.467	.19191	857.75	22.597	59.838
#1	24.458	.03687	.00073	356.91	.00045	.01950	-.00190
#2	24.490	.03740	.00063	355.90	-.00104	.01431	-.00464
#3	24.434	.04043	.00040	355.61	.00096	.01280	-.00170
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606123101 Acquired: 6/28/2016 14:54:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00131	7.6287	-.00030	.19994	.00193	-.00240
Stddev	.00444	.00542	.0664	.00070	.00063	.00368	.00183
%RSD	1440.4	414.59	.87064	236.14	.31690	190.57	76.335
#1	-.00481	.00201	7.6562	.00049	.19949	.00094	-.00434
#2	.00299	.00635	7.6769	-.00085	.19966	-.00115	-.00216
#3	.00274	-.00443	7.5529	-.00053	.20066	.00600	-.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.01511	.00218	.00108
Stddev	.00115	.00003	.00059
%RSD	7.6271	1.5101	54.589
#1	.01378	.00217	.00040
#2	.01567	.00214	.00135
#3	.01587	.00221	.00148
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8764.2	51928.	2582.3
Stddev	13.1	149.	6.1
%RSD	.14999	.28773	.23656
#1	8779.2	52076.	2575.3
#2	8754.5	51777.	2586.0
#3	8759.0	51929.	2585.7

Approved: June 29, 2016

Sample Name: L1606123701 Acquired: 6/28/2016 14:58:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.86220	.00030	.02608	.10905	.00003	34.347	.00012
Stddev	.00174	.00170	.00301	.00186	.00127	.00006	.194	.00018
%RSD	564.65	.19754	1005.2	7.1209	1.1623	218.75	.56366	147.95
#1	-.00044	.86036	.00377	.02779	.11041	.00007	34.570	-.00000
#2	-.00093	.86249	-.00168	.02410	.10791	.00007	34.244	.00004
#3	.00230	.86373	-.00119	.02634	.10883	-.00004	34.227	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.00221	.00193	1.0236	4.3467	.00729	4.7415	.08453
Stddev	.00030	.00072	.00043	.0191	.1897	.00550	.1021	.00257
%RSD	57.812	32.448	22.265	1.8647	4.3649	75.413	2.1527	3.0439
#1	.00031	.00244	.00238	1.0286	4.3693	.01127	4.7874	.08637
#2	.00087	.00279	.00153	1.0397	4.5240	.00960	4.8126	.08159
#3	.00039	.00141	.00188	1.0025	4.1466	.00102	4.6246	.08563
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00114	6.7097	.00118	.75592	.00235	.00295	-.00415	8.7205
Stddev	.00023	.0742	.00086	.00849	.00308	.00098	.01006	.0164
%RSD	20.336	1.1057	73.223	1.1232	131.32	33.198	242.49	.18770
#1	.00107	6.7845	.00024	.76557	.00254	.00408	.00346	8.7339
#2	.00140	6.7083	.00193	.74963	-.00083	.00246	-.01555	8.7254
#3	.00096	6.6362	.00135	.75255	.00533	.00232	-.00036	8.7023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606123701 Acquired: 6/28/2016 14:58:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.11631	.00910	.00032	.00557	.01002	.00056
Stddev	.00036	.00123	.00292	.00117	.00030	.00021	.00026
%RSD	527.06	1.0585	32.124	361.94	5.3880	2.1043	46.899
#1	.00026	.11720	.01159	-.00065	.00522	.01006	.00074
#2	-.00045	.11490	.00984	-.00001	.00572	.01021	.00069
#3	-.00001	.11683	.00588	.00162	.00576	.00979	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9045.5	54231.	2595.0
Stddev	15.9	47.	9.4
%RSD	.17556	.08717	.36382
#1	9027.4	54250.	2589.5
#2	9057.2	54265.	2589.7
#3	9051.8	54177.	2605.9

Approved: June 29, 2016

Sample Name: L1606123702 Acquired: 6/28/2016 15:02:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	.35806	.00336	.05941	.10822	.00002	46.389	.00046
Stddev	.00125	.00967	.00137	.00155	.00090	.00006	.192	.00013
%RSD	482.05	2.7000	40.919	2.6148	.82997	317.17	.41342	27.749
#1	.00170	.36784	.00416	.05847	.10724	.00007	46.592	.00034
#2	-.00055	.34851	.00177	.05857	.10841	.00004	46.363	.00060
#3	-.00037	.35782	.00414	.06121	.10900	-.00005	46.212	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00145	-.00046	.00560	.25357	4.1249	.00811	8.4816	.40128
Stddev	.00040	.00126	.00080	.02259	.0851	.00405	.1416	.00234
%RSD	27.841	272.27	14.300	8.9081	2.0630	49.986	1.6691	.58357
#1	.00190	-.00083	.00652	.27800	4.0582	.00353	8.6301	.40195
#2	.00111	-.00150	.00510	.24927	4.2207	.01125	8.4664	.39868
#3	.00135	.00094	.00517	.23344	4.0957	.00953	8.3482	.40322
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00897	49.739	.00323	1.1073	-.00122	.00595	-.00099	5.6031
Stddev	.00051	.226	.00083	.0035	.00339	.00416	.00714	.0065
%RSD	5.6716	.45382	25.644	.31913	277.57	69.947	722.21	.11513
#1	.00839	49.978	.00408	1.1111	.00163	.00612	-.00288	5.6106
#2	.00931	49.708	.00243	1.1068	-.00033	.01001	-.00699	5.5999
#3	.00922	49.530	.00318	1.1041	-.00497	.00170	.00691	5.5990
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606123702 Acquired: 6/28/2016 15:02:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00042**	**.20899**	**-.00484**	**-.00144**	**.01646**	**.01361**	**.00051**
Stddev	.00087	.00138	.00675	.00158	.00136	.00002	.00021
%RSD	203.97	.66158	139.51	109.79	8.2556	.18253	41.907
#1	-.00125	.21009	.00106	-.00321	.01502	.01359	.00038
#2	-.00051	.20944	-.00337	-.00019	.01772	.01362	.00039
#3	.00048	.20744	-.01221	-.00091	.01665	.01364	.00075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8952.5**	**53938.**	**2591.9**
Stddev	13.8	60.	26.8
%RSD	.15432	.11034	1.0332
#1	8944.8	53877.	2561.4
#2	8944.3	53996.	2602.6
#3	8968.5	53941.	2611.7

Approved: June 29, 2016

Sample Name: L1606123703 Acquired: 6/28/2016 15:06:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00096	.59752	.00235	.05887	.10953	.00010	45.449	.00061
Stddev	.00188	.01442	.00188	.00217	.00084	.00004	.107	.00021
%RSD	196.78	2.4125	80.080	3.6777	.76588	42.343	.23638	33.550
#1	.00313	.58363	.00149	.05668	.11041	.00011	45.572	.00080
#2	-.00012	.59652	.00451	.05892	.10874	.00014	45.399	.00039
#3	-.00015	.61241	.00105	.06101	.10945	.00006	45.375	.00064
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00197	.00107	.00451	.49836	4.3315	.00593	8.2564	.42750
Stddev	.00043	.00053	.00112	.03371	.0594	.00283	.1112	.00160
%RSD	21.959	49.735	24.752	6.7645	1.3702	47.678	1.3470	.37326
#1	.00240	.00061	.00515	.52558	4.3292	.00740	8.1328	.42566
#2	.00199	.00166	.00515	.50884	4.2733	.00773	8.3484	.42847
#3	.00153	.00095	.00322	.46065	4.3920	.00267	8.2880	.42838
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00832	48.038	.00480	1.1170	.00156	.00449	.00211	5.9008
Stddev	.00018	.210	.00083	.0297	.00244	.00459	.00289	.1999
%RSD	2.1323	.43630	17.412	2.6556	156.67	102.18	136.97	3.3885
#1	.00840	48.278	.00408	1.1340	.00424	.00399	.00211	5.9955
#2	.00811	47.891	.00571	1.1343	.00096	.00932	.00500	6.0359
#3	.00843	47.944	.00459	1.0828	-.00053	.00018	-.00078	5.6711
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606123703 Acquired: 6/28/2016 15:06:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	.20626	.00356	-.00259	.01810	.01007	.00072
Stddev	.00090	.00051	.00462	.00066	.00064	.00040	.00057
%RSD	217.27	.24848	129.94	25.342	3.5305	4.0008	79.254
#1	-.00027	.20622	-.00030	-.00198	.01883	.01026	.00015
#2	.00008	.20577	.00229	-.00252	.01778	.01034	.00071
#3	.00144	.20680	.00868	-.00328	.01768	.00961	.00130
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8956.7	54106.	2597.5
Stddev	12.8	517.	14.5
%RSD	.14242	.95624	.55787
#1	8942.2	54146.	2581.2
#2	8966.2	54602.	2609.0
#3	8961.7	53569.	2602.4

Approved: June 29, 2016

Sample Name: L1606123704 Acquired: 6/28/2016 15:10:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	.30584	.00022	.07806	.04631	-.00007	86.838	.00042
Stddev	.00185	.00268	.00345	.00265	.00063	.00003	.629	.00015
%RSD	374.03	.87790	1532.5	3.3999	1.3692	39.237	.72380	35.608
#1	.00256	.30452	-.00375	.07670	.04704	-.00006	87.235	.00033
#2	-.00102	.30893	.00199	.08111	.04591	-.00004	86.113	.00033
#3	-.00005	.30407	.00243	.07636	.04597	-.00010	87.164	.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.00311	.00019	.19183	1.3796	.02014	16.870	.00347
Stddev	.00041	.00038	.00119	.02141	.0940	.00375	.172	.00343
%RSD	112.87	12.382	625.05	11.160	6.8113	18.636	1.0218	99.013
#1	.00069	.00287	-.00117	.18943	1.4866	.02403	16.673	.00364
#2	.00049	.00289	.00103	.17172	1.3417	.01985	16.946	.00681
#3	-.00010	.00355	.00071	.21434	1.3105	.01654	16.992	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00058	124.13	.00130	.01394	-.00088	.00294	-.00088	8.2953
Stddev	.00049	.75	.00059	.00298	.00182	.00383	.00750	.1384
%RSD	85.759	.60252	45.422	21.349	207.01	130.44	850.09	1.6682
#1	.00111	124.41	.00134	.01734	-.00106	.00099	-.00390	8.4027
#2	.00013	123.28	.00069	.01271	-.00260	.00735	.00766	8.3442
#3	.00050	124.70	.00187	.01178	.00102	.00047	-.00640	8.1392
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606123704 Acquired: 6/28/2016 15:10:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00144	.35168	-.01564	-.00152	.00864	.00392	.00056
Stddev	.00088	.00194	.00581	.00323	.00030	.00024	.00024
%RSD	61.207	.55033	37.169	212.41	3.4817	6.0324	43.195
#1	.00222	.35267	-.01694	-.00180	.00893	.00407	.00065
#2	.00162	.34945	-.00929	.00184	.00864	.00404	.00075
#3	.00048	.35293	-.02070	-.00461	.00833	.00365	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8830.3	52874.	2585.9
Stddev	30.5	305.	19.1
%RSD	.34580	.57739	.73803
#1	8801.9	53154.	2563.9
#2	8862.6	52918.	2596.7
#3	8826.4	52548.	2597.1

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 15:14:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.42851	10.904	.43202	.53365	1.0713	.05416	10.632	.05436
Stddev	.00833	.207	.00698	.01060	.0092	.00113	.051	.00087
%RSD	1.9443	1.8987	1.6150	1.9855	.86162	2.0806	.48126	1.5946
#1	.43201	10.956	.42597	.53474	1.0624	.05432	10.627	.05433
#2	.43451	11.081	.43965	.54367	1.0708	.05520	10.583	.05525
#3	.41900	10.676	.43045	.52256	1.0808	.05296	10.685	.05351
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21691	.54305	.54534	4.2422	53.589	1.0743	10.753	.53540
Stddev	.00265	.01079	.00663	.0250	.605	.0074	.243	.00955
%RSD	1.2229	1.9867	1.2161	.58983	1.1288	.68793	2.2611	1.7829
#1	.21785	.54548	.54617	4.2292	53.055	1.0693	10.485	.52508
#2	.21896	.55241	.55152	4.2264	53.466	1.0707	10.814	.54392
#3	.21391	.53125	.53833	4.2711	54.246	1.0827	10.959	.53721
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0888	53.402	.54101	10.808	.54113	1.2945	.42478	5.4312
Stddev	.0125	.411	.00747	.101	.00400	.0128	.00597	.0423
%RSD	1.1472	.76993	1.3802	.93509	.73884	.98633	1.4059	.77953
#1	1.0938	53.143	.54400	10.826	.54038	1.2910	.42653	5.4334
#2	1.0980	53.187	.54652	10.899	.54546	1.3087	.42968	5.4724
#3	1.0746	53.876	.53251	10.699	.53757	1.2839	.41813	5.3878
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 15:14:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0880**	**1.0698**	**1.0587**	**.53918**	**1.0803**	**1.0912**	**1.0905**
Stddev	.0165	.0081	.0156	.00244	.0234	.0149	.0071
%RSD	1.5142	.75461	1.4705	.45291	2.1646	1.3620	.64790
#1	1.0951	1.0636	1.0407	.54192	1.0838	1.0967	1.0880
#2	1.0997	1.0668	1.0667	.53723	1.1018	1.1025	1.0984
#3	1.0692	1.0789	1.0686	.53839	1.0554	1.0744	1.0849
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8324.0**	**49682.**	**2402.2**
Stddev	17.8	544.	12.3
%RSD	.21421	1.0943	.51191
#1	8331.2	49629.	2414.5
#2	8303.7	49167.	2402.2
#3	8337.1	50251.	2389.9

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 15:17:49 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.02128**	**-.00359**	**.00020**	**.00645**	**.00016**	**.03104**	**-.00001**
Stddev	.00368	.00954	.00134	.00133	.00115	.00007	.03317	.00021
%RSD	2417.2	44.820	37.242	679.78	17.837	43.650	106.87	1643.1
#1	.00382	.03228	-.00217	-.00019	.00525	.00009	.04970	-.00011
#2	-.00083	.01540	-.00483	.00168	.00754	.00023	-.00726	.00022
#3	-.00345	.01615	-.00378	-.00090	.00658	.00016	.05067	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00000**	**-.00009**	**.00060**	**-.00539**	**.06178**	**.00365**	**.11492**	**-.00042**
Stddev	.00027	.00249	.00114	.03062	.06298	.00114	.06730	.00281
%RSD	19519.	2863.7	188.91	568.14	101.95	31.357	58.557	670.16
#1	-.00023	-.00274	.00064	-.03327	.02851	.00462	.17314	-.00124
#2	-.00006	.00029	.00173	-.01028	.13442	.00395	.13040	-.00273
#3	.00029	.00220	-.00056	.02738	.02240	.00239	.04124	.00271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.01334**	**-.00085**	**.00345**	**-.00265**	**-.00015**	**-.00929**	**.01410**
Stddev	.00037	.04028	.00161	.01368	.00462	.00549	.00635	.00099
%RSD	1184.4	301.84	190.56	396.12	174.30	3544.8	68.343	7.0250
#1	-.00012	-.03144	-.00246	-.00423	-.00155	.00467	-.00204	.01504
#2	.00038	.02488	.00077	.01925	.00132	.00100	-.01384	.01419
#3	-.00035	.04660	-.00085	-.00466	-.00772	-.00613	-.01201	.01306
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 15:17:49 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	.00052	-.00203	-.00342	.00076	-.00006	-.00039
Stddev	.00127	.00033	.00700	.00165	.00110	.00011	.00067
%RSD	172.70	63.242	344.78	48.219	143.65	179.28	173.07
#1	.00181	.00076	.00234	-.00524	.00041	-.00010	.00036
#2	.00105	.00064	.00167	-.00201	.00199	.00006	-.00094
#3	-.00066	.00015	-.01010	-.00302	-.00011	-.00014	-.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8189.4	49088.	2337.5
Stddev	22.9	596.	43.0
%RSD	.28011	1.2145	1.8391
#1	8163.8	49132.	2317.2
#2	8196.5	48471.	2308.4
#3	8208.0	49661.	2386.9

Approved: June 29, 2016

Sample Name: L1606123705 Acquired: 6/28/2016 15:21:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00108	.04623	.00085	.21038	.07029	.00001	79.469	.00017
Stddev	.00222	.00535	.00227	.00117	.00065	.00009	.518	.00002
%RSD	204.79	11.577	266.22	.55809	.91995	677.50	.65241	13.277
#1	-.00065	.04058	.00026	.21146	.07103	.00002	80.066	.00020
#2	.00089	.05122	-.00106	.20913	.06992	.00010	79.135	.00015
#3	-.00348	.04691	.00336	.21054	.06991	-.00008	79.206	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00093	.00131	.00140	.02187	.23359	.01641	19.643	.17357
Stddev	.00058	.00117	.00106	.01644	.12348	.00424	.180	.00442
%RSD	62.558	89.144	75.582	75.195	52.861	25.842	.91849	2.5439
#1	.00116	.00119	.00047	.03944	.34002	.01444	19.847	.17668
#2	.00027	.00021	.00119	.01931	.26254	.02128	19.578	.16852
#3	.00135	.00254	.00256	.00685	.09821	.01352	19.504	.17552
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00508	130.27	.00168	.03531	-.00111	.00448	.00147	6.5007
Stddev	.00041	.61	.00031	.00544	.00373	.00088	.00174	.0441
%RSD	8.1653	.46503	18.265	15.412	336.79	19.641	118.95	.67865
#1	.00460	130.96	.00141	.03231	-.00538	.00518	.00241	6.5208
#2	.00530	130.06	.00163	.04159	.00057	.00349	.00254	6.5312
#3	.00533	129.80	.00202	.03203	.00149	.00478	-.00055	6.4501
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606123705 Acquired: 6/28/2016 15:21:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00044**	**.29132**	**-.00812**	**-.00078**	**.00450**	**.01669**	**.00021**
Stddev	.00083	.00110	.00185	.00384	.00049	.00043	.00026
%RSD	188.82	.37699	22.765	492.55	10.842	2.5630	124.73
#1	-.00001	.29259	-.00799	-.00430	.00476	.01696	.00036
#2	-.00139	.29065	-.00634	.00332	.00394	.01692	-.00009
#3	.00009	.29073	-.01003	-.00136	.00481	.01620	.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8582.9**	**51393.**	**2509.2**
Stddev	5.4	178.	27.4
%RSD	.06333	.34690	1.0927
#1	8588.2	51452.	2477.8
#2	8577.3	51534.	2521.9
#3	8583.3	51192.	2528.0

Approved: June 29, 2016

Sample Name: L1606123706 Acquired: 6/28/2016 15:25:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	.05590	-.00086	.15524	.06415	.00015	38.707	.00004
Stddev	.00068	.00750	.00333	.00467	.00118	.00008	.048	.00037
%RSD	120.74	13.417	386.55	3.0061	1.8367	51.500	.12271	1019.0
#1	.00007	.06166	.00220	.16020	.06535	.00010	38.737	-.00020
#2	-.00048	.05862	-.00037	.15094	.06300	.00024	38.653	-.00015
#3	-.00127	.04742	-.00441	.15457	.06411	.00011	38.732	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	.00124	.00088	.04193	.59026	.01156	14.181	.00907
Stddev	.00030	.00041	.00134	.00712	.11627	.00296	.079	.00052
%RSD	1211.0	33.302	152.35	16.990	19.697	25.640	.55724	5.7259
#1	-.00010	.00169	.00098	.03411	.69162	.00926	14.090	.00959
#2	.00031	.00116	-.00051	.04804	.46334	.01050	14.233	.00905
#3	-.00028	.00087	.00216	.04365	.61583	.01490	14.220	.00856
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01006	117.62	.00066	.02208	-.00217	.00519	-.00038	5.6043
Stddev	.00042	.67	.00047	.00386	.00193	.00564	.00551	.1074
%RSD	4.2259	.57374	71.751	17.493	88.780	108.55	1433.6	1.9158
#1	.01015	118.19	.00038	.02111	-.00386	-.00129	.00182	5.6411
#2	.01043	116.87	.00039	.02633	-.00257	.00795	-.00666	5.6884
#3	.00959	117.78	.00120	.01879	-.00007	.00892	.00368	5.4833
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606123706 Acquired: 6/28/2016 15:25:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**.22497**	**-.00316**	**-.00133**	**.00900**	**.00431**	**-.00007**
Stddev	.00019	.00151	.00967	.00273	.00049	.00016	.00052
%RSD	80.655	.67150	306.39	204.69	5.4393	3.8183	767.12
#1	-.00029	.22594	-.01079	-.00244	.00856	.00434	.00052
#2	-.00002	.22323	.00772	.00177	.00890	.00446	-.00046
#3	-.00038	.22574	-.00641	-.00334	.00952	.00413	-.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8541.3**	**51659.**	**2526.2**
Stddev	32.8	370.	23.2
%RSD	.38388	.71629	.91927
#1	8579.1	51926.	2501.9
#2	8523.7	51815.	2548.1
#3	8521.0	51237.	2528.6

Approved: June 29, 2016

Sample Name: L1606123801 Acquired: 6/28/2016 15:29:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	.02841	.00066	.32177	.09038	.00009	100.82	.00016
Stddev	.00404	.00560	.00333	.00725	.00172	.00003	.53	.00014
%RSD	31331.	19.726	502.38	2.2540	1.9010	27.369	.52928	84.386
#1	.00443	.03482	.00403	.31699	.08868	.00012	100.36	.00001
#2	-.00348	.02597	.00059	.33011	.09211	.00007	101.41	.00028
#3	-.00099	.02444	-.00263	.31820	.09034	.00009	100.71	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	.00165	-.00011	.04282	.34758	.02236	50.725	.10043
Stddev	.00006	.00110	.00050	.02588	.08170	.00650	.406	.00197
%RSD	8.7231	66.713	438.66	60.445	23.504	29.071	.80019	1.9636
#1	.00069	.00189	-.00059	.04711	.25812	.02918	50.261	.10255
#2	.00060	.00261	-.00015	.01506	.41822	.02165	51.011	.09864
#3	.00070	.00045	.00040	.06629	.36641	.01624	50.904	.10012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	135.14	-.00138	.02281	.00531	.00297	-.00440	7.8806
Stddev	.00015	.52	.00074	.00601	.00255	.00266	.00697	.1292
%RSD	39.646	.38483	53.444	26.359	47.957	89.611	158.44	1.6396
#1	.00055	134.83	-.00221	.02166	.00433	.00262	-.00926	7.9875
#2	.00030	135.74	-.00109	.01746	.00340	.00579	-.00753	7.9174
#3	.00028	134.84	-.00083	.02932	.00820	.00050	.00359	7.7370
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606123801 Acquired: 6/28/2016 15:29:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.69804**	**-.01792**	**-.00350**	**.00631**	**.00306**	**-.00006**
Stddev	.00089	.00322	.00937	.00240	.00064	.00010	.00062
%RSD	534.48	.46184	52.294	68.655	10.123	3.4173	981.45
#1	.00078	.69567	-.02467	-.00611	.00575	.00313	.00007
#2	-.00029	.70171	-.00722	-.00301	.00700	.00294	.00048
#3	-.00098	.69675	-.02186	-.00138	.00616	.00311	-.00074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8519.0**	**50868.**	**2492.0**
Stddev	24.4	171.	15.6
%RSD	.28672	.33552	.62561
#1	8492.6	50879.	2508.7
#2	8523.7	50692.	2489.6
#3	8540.8	51032.	2477.8

Approved: June 29, 2016

Sample Name: L1606123802 Acquired: 6/28/2016 15:33:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	.10980	.00392	.94724	.02557	.00003	77.218
Stddev	.00183	.00971	.00125	.00776	.00106	.00007	.742
%RSD	329.00	8.8394	31.885	.81970	4.1264	245.57	.96108
#1	-.00056	.11256	.00341	.95373	.02525	.00004	76.910
#2	.00128	.11783	.00534	.94934	.02472	.00009	76.680
#3	-.00238	.09902	.00300	.93864	.02675	-.00005	78.065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.00030	.00389	-.00035	.22634	2.6762	.04857
Stddev	.00016	.00014	.00093	.00186	.01305	.0714	.00761
%RSD	84.843	47.925	23.820	529.18	5.7658	2.6678	15.667
#1	.00027	.00025	.00485	-.00233	.22844	2.6021	.05624
#2	.00000	.00019	.00379	-.00009	.23821	2.6819	.04845
#3	.00030	.00046	.00301	.00137	.21237	2.7445	.04102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	46.632	.00252	.01010	F 345.47	-.00062	.00983	-.00176
Stddev	.509	.00191	.00020	2.85	.00048	.00266	.00080
%RSD	1.0915	75.779	1.9903	.82504	77.205	27.047	45.354
#1	46.118	.00384	.01033	344.78	-.00007	.00722	-.00125
#2	46.641	.00339	.00999	343.03	-.00083	.00973	-.00135
#3	47.136	.00033	.00998	348.60	-.00097	.01254	-.00267
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606123802 Acquired: 6/28/2016 15:33:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00328**	**.00554**	**6.7719**	**-.00021**	**1.5406**	**-.01434**	**-.00073**
Stddev	.00167	.00590	.0156	.00147	.0167	.00367	.00386
%RSD	50.891	106.49	.22993	707.84	1.0842	25.593	526.75
#1	.00142	-.00114	6.7795	.00002	1.5371	-.01055	-.00140
#2	.00377	.01005	6.7823	-.00177	1.5260	-.01461	.00342
#3	.00466	.00771	6.7540	.00113	1.5588	-.01787	-.00422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.01112**	**.00460**	**.00044**
Stddev	.00050	.00012	.00055
%RSD	4.4846	2.6197	123.27
#1	.01110	.00466	.00008
#2	.01163	.00446	.00107
#3	.01063	.00468	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8395.4**	**49805.**	**2522.8**
Stddev	34.6	239.	37.5
%RSD	.41206	.48030	1.4877
#1	8419.9	49616.	2519.8
#2	8410.5	49725.	2561.7
#3	8355.9	50074.	2486.8

Approved: June 29, 2016

Sample Name: L1606123801PS Acquired: 6/28/2016 15:37:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574350-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20566**	**5.2613**	**.20977**	**1.3242**	**.59672**	**.02593**	**94.859**	**.02633**
Stddev	.00128	.0235	.00601	.0130	.00240	.00012	.490	.00065
%RSD	.62377	.44726	2.8645	.98473	.40146	.45189	.51690	2.4555
#1	.20632	5.2753	.21194	1.3337	.59396	.02581	94.339	.02662
#2	.20419	5.2745	.21440	1.3296	.59799	.02605	94.923	.02678
#3	.20649	5.2342	.20298	1.3094	.59822	.02592	95.313	.02559
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10300**	**.26033**	**.25484**	**2.0703**	**26.313**	**.53993**	**50.042**	**.34483**
Stddev	.00282	.00213	.00508	.0309	.165	.00242	.323	.00158
%RSD	2.7370	.81790	1.9951	1.4940	.62590	.44906	.64515	.45837
#1	.10411	.26128	.25729	2.0499	26.123	.54130	49.789	.34643
#2	.10509	.26182	.25823	2.0552	26.411	.54136	49.932	.34327
#3	.09979	.25789	.24899	2.1059	26.406	.53713	50.406	.34477
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53067**	**146.32**	**.25190**	**5.2586**	**.25990**	**.62316**	**.19247**	**9.5907**
Stddev	.01382	.46	.00596	.1176	.00198	.01383	.00658	.1798
%RSD	2.6034	.31765	2.3647	2.2364	.76171	2.1199	3.4177	1.8743
#1	.53819	146.01	.25439	5.3290	.26193	.63457	.18659	9.6888
#2	.53909	146.08	.25620	5.3239	.25979	.62714	.19124	9.7000
#3	.51472	146.85	.24510	5.1228	.25797	.60777	.19957	9.3832
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606123801PS Acquired: 6/28/2016 15:37:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574350-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52525**	**1.1214**	**.49433**	**.25598**	**.53086**	**.51942**	**.00057**
Stddev	.01294	.0042	.01033	.00462	.00191	.01218	.00063
%RSD	2.4638	.36967	2.0899	1.8038	.35889	2.3458	110.78
#1	.53113	1.1189	.48240	.25460	.53295	.52541	.00036
#2	.53421	1.1192	.49999	.26112	.53042	.52746	.00007
#3	.51041	1.1262	.50059	.25220	.52921	.50540	.00128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8305.6**	**49994.**	**2441.9**
Stddev	60.9	85.	13.6
%RSD	.73304	.17028	.55805
#1	8315.5	49940.	2454.5
#2	8240.4	49950.	2443.9
#3	8360.9	50092.	2427.4

Approved: June 29, 2016

Sample Name: L1606123801SDL Acquired: 6/28/2016 15:40:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574350-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**.02473**	**-.00212**	**.07147**	**.02347**	**.00005**	**20.928**
Stddev	.00109	.00054	.00149	.00334	.00066	.00008	.186
%RSD	959.81	2.1896	70.454	4.6683	2.8226	151.78	.88836
#1	-.00121	.02419	-.00043	.06839	.02351	.00006	20.873
#2	.00098	.02528	-.00266	.07501	.02410	-.00003	20.775
#3	-.00011	.02472	-.00327	.07101	.02278	.00013	21.135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.00020**	**.00129**	**-.00091**	F **-.02170**	**.07079**	**.00330**
Stddev	.00020	.00019	.00149	.00070	.02117	.10620	.00513
%RSD	152.92	96.557	115.37	76.358	97.585	150.02	155.31
#1	.00028	.00042	-.00040	-.00157	-.03475	.08932	-.00056
#2	-.00010	.00010	.00240	-.00018	-.03307	.16651	.00912
#3	.00022	.00008	.00187	-.00098	.00273	-.04346	.00135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.841**	**.01654**	**-.00003**	**27.860**	**.00069**	**.00399**	**-.00141**
Stddev	.023	.00153	.00042	.220	.00116	.00351	.00048
%RSD	.21249	9.2697	1543.8	.79051	169.21	87.841	33.856
#1	10.864	.01533	-.00031	27.785	-.00065	.00007	-.00151
#2	10.840	.01604	-.00023	27.686	.00126	.00682	-.00183
#3	10.818	.01827	.00046	28.107	.00145	.00508	-.00089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606123801SDL Acquired: 6/28/2016 15:40:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574350-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00343**	**-.00608**	**1.6380**	**-.00029**	**.14366**	**-.00165**	**-.00327**
Stddev	.00269	.01052	.1152	.00086	.00186	.00409	.00319
%RSD	78.400	173.02	7.0326	294.81	1.2945	248.67	97.486
#1	.00612	-.01199	1.7682	-.00089	.14229	.00192	-.00269
#2	.00074	.00606	1.5494	.00069	.14292	-.00612	-.00041
#3	.00343	-.01230	1.5964	-.00067	.14578	-.00074	-.00670
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00179**	**.00210**	**-.00083**
Stddev	.00019	.00035	.00068
%RSD	10.525	16.568	81.540
#1	.00157	.00187	-.00059
#2	.00190	.00193	-.00160
#3	.00189	.00250	-.00031
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8980.6**	**51089.**	**2404.2**
Stddev	513.4	106.	3.2
%RSD	5.7168	.20814	.13357
#1	8390.5	50977.	2401.4
#2	9324.8	51188.	2403.4
#3	9226.6	51103.	2407.7

Approved: June 29, 2016

Sample Name: L1606123801SDL Acquired: 6/28/2016 15:44:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574350-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00100	.00544	-.00466	.01306	.00527	.00004	3.9791	-.00005
Stddev	.00192	.00294	.00175	.00317	.00104	.00003	.0275	.00007
%RSD	192.17	54.006	37.652	24.284	19.652	67.711	.69174	155.22
#1	.00265	.00880	-.00547	.01616	.00425	.00007	3.9526	.00002
#2	.00146	.00337	-.00586	.01321	.00523	.00005	4.0075	-.00005
#3	-.00111	.00414	-.00264	.00982	.00632	.00001	3.9771	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	-.00008	.00135	.00570	-.18715	-.00195	2.1695	.00167
Stddev	.00035	.00105	.00042	.01759	.08574	.00312	.1088	.00211
%RSD	329.62	1341.6	31.025	308.32	45.816	160.03	5.0156	125.86
#1	-.00043	-.00123	.00169	-.01195	-.20685	-.00263	2.0731	-.00042
#2	.00026	.00020	.00088	.02322	-.26133	.00145	2.2875	.00379
#3	-.00015	.00080	.00149	.00585	-.09327	-.00466	2.1479	.00165
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	5.4403	-.00105	.00422	.00008	.00091	-.00076	.31889
Stddev	.00014	.0432	.00018	.00137	.00143	.00279	.00380	.00752
%RSD	53.477	.79435	17.170	32.493	1733.1	305.96	502.20	2.3587
#1	-.00039	5.4024	-.00085	.00350	-.00067	.00351	.00289	.31022
#2	-.00012	5.4873	-.00118	.00336	.00173	.00127	-.00470	.32275
#3	-.00026	5.4311	-.00114	.00580	-.00081	-.00204	-.00046	.32370
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606123801SDL Acquired: 6/28/2016 15:44:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574350-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**.02709**	**-.00343**	**.00004**	**-.00020**	**.00057**	**-.00020**
Stddev	.00007	.00027	.00150	.00159	.00059	.00007	.00002
%RSD	30.681	.98959	43.744	4248.5	287.84	11.467	11.328
#1	-.00016	.02726	-.00241	.00171	.00045	.00064	-.00022
#2	-.00025	.02722	-.00516	-.00145	-.00070	.00056	-.00019
#3	-.00030	.02678	-.00273	-.00015	-.00037	.00051	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9310.6**	**56752.**	**2686.9**
Stddev	63.1	308.	17.7
%RSD	.67723	.54199	.65719
#1	9346.3	56469.	2690.1
#2	9347.7	57079.	2667.9
#3	9237.8	56710.	2702.7

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 15:48:42 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37803**	**9.4509**	**.37927**	**.47338**	**.93970**	**.04711**	**9.3479**	**.04781**
Stddev	.00060	.0265	.00353	.00198	.00337	.00046	.0483	.00035
%RSD	.15821	.28063	.93117	.41832	.35812	.97758	.51686	.74077
#1	.37812	9.4602	.37661	.47340	.93759	.04659	9.2929	.04782
#2	.37857	9.4210	.38328	.47139	.94358	.04729	9.3677	.04744
#3	.37739	9.4716	.37792	.47535	.93794	.04746	9.3833	.04815
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19084**	**.47601**	**.47860**	**3.7082**	**47.404**	**.94988**	**9.4725**	**.46603**
Stddev	.00018	.00437	.00180	.0182	.243	.00785	.0656	.00569
%RSD	.09392	.91738	.37524	.49034	.51322	.82606	.69243	1.2217
#1	.19064	.47138	.47677	3.7162	47.463	.95871	9.4046	.45960
#2	.19097	.47661	.48036	3.6874	47.613	.94719	9.5356	.47043
#3	.19092	.48005	.47868	3.7211	47.137	.94372	9.4773	.46806
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.95641**	**46.996**	**.47435**	**9.5039**	**.47492**	**1.1385**	**.37881**	**4.7730**
Stddev	.00103	.185	.00298	.0141	.00194	.0048	.00807	.0182
%RSD	.10794	.39464	.62734	.14807	.40903	.42443	2.1306	.38085
#1	.95599	46.794	.47098	9.4895	.47674	1.1343	.37621	4.7554
#2	.95758	47.158	.47546	9.5046	.47515	1.1438	.38785	4.7720
#3	.95565	47.035	.47662	9.5176	.47288	1.1374	.37235	4.7917
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 15:48:42 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.95895	.93858	.93355	.47987	.94590	.95388	.94289
Stddev	.00233	.00125	.00061	.00084	.00826	.00045	.00708
%RSD	.24329	.13351	.06579	.17523	.87309	.04728	.75040
#1	.95863	.93915	.93330	.48029	.94284	.95418	.93557
#2	.95678	.93945	.93311	.48041	.93960	.95408	.94341
#3	.96142	.93715	.93425	.47890	.95525	.95336	.94969
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9128.8	54572.	2652.9
Stddev	10.8	125.	12.9
%RSD	.11881	.22890	.48483
#1	9120.0	54520.	2667.7
#2	9125.3	54480.	2647.0
#3	9140.9	54714.	2644.1

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 15:52:09 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.01657	-.00127	.00115	.00250	-.00001	-.01570	-.00008
Stddev	.00036	.00130	.00303	.00289	.00094	.00001	.05663	.00022
%RSD	176.13	7.8679	239.02	251.46	37.681	146.04	360.65	289.87
#1	-.00012	.01564	.00223	.00292	.00336	-.00002	.04213	-.00032
#2	.00015	.01600	-.00298	.00271	.00149	.00001	-.01819	.00011
#3	.00058	.01806	-.00306	-.00219	.00266	-.00002	-.07104	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	-.00043	-.00012	-.00756	.11853	.00019	.11865	-.00072
Stddev	.00021	.00071	.00013	.01917	.08400	.00373	.04872	.00393
%RSD	170.38	164.98	107.35	253.73	70.863	1929.0	41.059	547.65
#1	-.00008	.00011	-.00028	-.00923	.10917	-.00410	.07959	.00173
#2	.00010	-.00017	-.00004	.01240	.20682	.00202	.10312	-.00525
#3	.00034	-.00124	-.00005	-.02583	.03961	.00266	.17324	.00137
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00000	.03861	-.00041	-.00107	-.00082	.00445	-.00040	.00468
Stddev	.00011	.02350	.00123	.00234	.00156	.00285	.00220	.00283
%RSD	12754.	60.879	299.90	219.01	189.95	64.010	547.51	60.452
#1	-.00002	.01230	.00092	.00084	.00098	.00164	-.00293	.00399
#2	-.00009	.04600	-.00152	-.00368	-.00166	.00734	.00063	.00778
#3	.00012	.05752	-.00063	-.00036	-.00178	.00437	.00110	.00225
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 15:52:09 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00014	-.00244	-.00182	-.00043	-.00006	.00022
Stddev	.00074	.00027	.01113	.00188	.00034	.00016	.00053
%RSD	275.25	191.71	456.10	103.32	79.604	249.56	242.25
#1	.00006	.00024	.00647	-.00399	-.00080	.00004	-.00010
#2	-.00034	.00035	-.01492	-.00065	-.00014	-.00025	.00084
#3	.00109	-.00016	.00112	-.00082	-.00034	.00002	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9233.0	55737.	2640.6
Stddev	13.3	35.	14.4
%RSD	.14406	.06308	.54390
#1	9239.5	55725.	2651.8
#2	9241.9	55777.	2645.7
#3	9217.7	55710.	2624.4

Approved: June 29, 2016

Sample Name: LLCCV Acquired: 6/28/2016 15:56:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00768	.16617	.00778	.07829	.00901	.00151	.38054	.00078
Stddev	.00059	.00295	.00193	.00097	.00103	.00007	.07318	.00003
%RSD	7.6710	1.7771	24.811	1.2403	11.419	4.7078	19.231	3.8071
#1	.00795	.16515	.00562	.07934	.01014	.00143	.38882	.00081
#2	.00809	.16949	.00841	.07742	.00877	.00153	.30357	.00075
#3	.00701	.16386	.00933	.07809	.00813	.00156	.44923	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00392	.00406	.00277	.07220	.88839	.07750	.42309	.00647
Stddev	.00041	.00101	.00161	.00675	.06165	.00672	.10881	.00245
%RSD	10.423	24.871	58.208	9.3419	6.9397	8.6651	25.717	37.928
#1	.00348	.00448	.00393	.06545	.94580	.07065	.50818	.00416
#2	.00428	.00291	.00346	.07222	.82323	.07776	.30049	.00620
#3	.00399	.00479	.00093	.07894	.89615	.08408	.46061	.00904
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00734	.42612	.01516	.74724	.00671	.07731	.01024	.78186
Stddev	.00014	.02288	.00056	.02937	.00279	.00543	.00225	.02095
%RSD	1.9299	5.3700	3.7208	3.9305	41.642	7.0266	22.010	2.6791
#1	.00738	.40444	.01558	.75304	.00961	.07477	.00846	.78889
#2	.00745	.42388	.01452	.77328	.00647	.07361	.00950	.79839
#3	.00718	.45004	.01539	.71540	.00404	.08355	.01278	.75830
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LLCCV Acquired: 6/28/2016 15:56:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38759**	**.03962**	**.02473**	**.14477**	**.00726**	**.01644**	**.04043**
Stddev	.01743	.00052	.00802	.00281	.00047	.00057	.00036
%RSD	4.4976	1.3110	32.414	1.9392	6.4568	3.4888	.88409
#1	.39748	.04019	.03053	.14368	.00780	.01686	.04002
#2	.39782	.03951	.02808	.14796	.00696	.01668	.04064
#3	.36746	.03916	.01558	.14267	.00701	.01579	.04063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9278.8**	**55862.**	**2662.5**
Stddev	17.4	75.	12.2
%RSD	.18739	.13429	.45669
#1	9298.8	55917.	2661.6
#2	9268.8	55892.	2650.8
#3	9268.6	55777.	2675.0

Approved: June 29, 2016

Sample Name: PBW E3 Acquired: 6/28/2016 16:00:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574197-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00067**	**.00550**	**-.00520**	**-.00061**	**.00284**	**-.00002**	**-.01393**	**.00001**
Stddev	.00056	.00246	.00322	.00129	.00065	.00007	.02787	.00025
%RSD	83.137	44.655	61.978	212.48	22.799	453.28	200.02	1981.0
#1	-.00080	.00747	-.00760	.00073	.00209	-.00004	-.03036	.00018
#2	-.00115	.00275	-.00154	-.00183	.00313	.00006	.01824	.00014
#3	-.00006	.00629	-.00646	-.00072	.00328	-.00007	-.02968	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**-.00175**	**-.00007**	**-.01889**	**-.01522**	**.00715**	**.05791**	**-.00024**
Stddev	.00026	.00044	.00113	.02013	.06900	.00186	.02945	.00354
%RSD	1112.4	25.112	1698.9	106.58	453.40	25.993	50.851	1450.7
#1	-.00014	-.00137	.00024	-.02736	-.08990	.00755	.04372	-.00331
#2	-.00020	-.00164	-.00131	-.03340	-.00194	.00878	.09176	.00364
#3	.00027	-.00223	.00088	.00410	.04618	.00513	.03824	-.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00033**	**.01548**	**.00101**	**-.00415**	**.00067**	**.00583**	**-.00128**	**.00641**
Stddev	.00066	.03272	.00114	.00104	.00400	.00217	.00175	.00141
%RSD	198.80	211.42	113.35	25.146	598.17	37.322	136.61	22.043
#1	.00000	-.00039	.00079	-.00336	-.00328	.00401	-.00289	.00803
#2	.00109	-.00628	.00224	-.00533	.00056	.00824	-.00152	.00541
#3	-.00010	.05311	-.00001	-.00375	.00473	.00523	.00058	.00580
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: PBW E3 Acquired: 6/28/2016 16:00:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574197-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	.00018	.00251	-.00111	-.00059	.00005	-.00000
Stddev	.00088	.00063	.00518	.00198	.00079	.00012	.00017
%RSD	418.04	345.63	206.19	177.70	134.04	250.99	18380.
#1	-.00080	.00059	-.00302	-.00206	-.00103	-.00003	-.00020
#2	.00081	-.00055	.00332	-.00244	-.00106	.00019	.00007
#3	.00062	.00051	.00724	.00116	.00032	-.00002	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9302.4	56171.	2670.9
Stddev	30.2	35.	11.1
%RSD	.32472	.06178	.41452
#1	9337.2	56185.	2670.8
#2	9286.1	56197.	2659.9
#3	9283.7	56132.	2682.0

Approved: June 29, 2016

Sample Name: LCSW E3 Acquired: 6/28/2016 16:03:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574197-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19164**	**4.8348**	**.19399**	**.96238**	**.48851**	**.02340**	**4.9583**	**.02409**
Stddev	.00070	.0039	.00200	.00191	.00160	.00019	.0273	.00005
%RSD	.36607	.08097	1.0288	.19845	.32724	.81759	.55135	.21374
#1	.19241	4.8320	.19461	.96035	.48786	.02338	4.9331	.02405
#2	.19147	4.8332	.19175	.96264	.49033	.02360	4.9545	.02415
#3	.19104	4.8393	.19560	.96414	.48733	.02321	4.9874	.02408
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09838**	**.24122**	**.24571**	**1.9415**	**24.306**	**.49959**	**5.0727**	**.23822**
Stddev	.00032	.00119	.00094	.0510	.052	.00122	.0794	.00107
%RSD	.32120	.49389	.38434	2.6263	.21259	.24402	1.5660	.44936
#1	.09855	.24092	.24516	1.9035	24.363	.49831	5.0865	.23888
#2	.09857	.24254	.24680	1.9995	24.262	.50073	5.1444	.23698
#3	.09802	.24022	.24517	1.9216	24.293	.49974	4.9873	.23879
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49267**	**24.636**	**.24311**	**4.7132**	**.24277**	**.57388**	**.18611**	**2.4298**
Stddev	.00071	.059	.00031	.0018	.00139	.00584	.00559	.0037
%RSD	.14398	.24026	.12844	.03776	.57264	1.0177	3.0019	.15241
#1	.49330	24.611	.24347	4.7116	.24222	.57387	.19001	2.4294
#2	.49280	24.594	.24294	4.7151	.24173	.56804	.18862	2.4264
#3	.49190	24.704	.24293	4.7129	.24435	.57973	.17971	2.4338
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LCSW E3 Acquired: 6/28/2016 16:03:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574197-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48900**	**.49567**	**.46962**	**.24399**	**.47814**	**.48958**	**.00062**
Stddev	.00125	.00161	.00327	.00133	.00046	.00034	.00090
%RSD	.25648	.32520	.69633	.54666	.09619	.06849	146.54
#1	.49015	.49753	.46715	.24325	.47797	.48939	.00087
#2	.48919	.49488	.46839	.24318	.47866	.48996	-.00039
#3	.48766	.49462	.47333	.24553	.47779	.48937	.00136
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9097.3**	**54813.**	**2632.8**
Stddev	16.7	109.	5.1
%RSD	.18401	.19922	.19486
#1	9101.7	54693.	2627.8
#2	9078.9	54840.	2638.1
#3	9111.5	54906.	2632.5

Approved: June 29, 2016

Sample Name: L1606137801 Acquired: 6/28/2016 16:07:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00133	.02995	-.00247	.00497	.00313	-.00004	.12563	.00022
Stddev	.00136	.01041	.00165	.00241	.00128	.00001	.07525	.00023
%RSD	102.23	34.771	66.713	48.415	40.906	37.046	59.900	104.72
#1	-.00291	.04066	-.00357	.00738	.00449	-.00003	.04003	.00049
#2	-.00050	.01986	-.00058	.00257	.00293	-.00005	.15547	.00013
#3	-.00059	.02933	-.00326	.00495	.00196	-.00004	.18138	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	.00067	.00962	.06701	.11243	.00301	.16999	-.00022
Stddev	.00042	.00098	.00044	.01189	.09990	.00323	.01565	.00390
%RSD	524.67	146.04	4.5944	17.737	88.858	107.10	9.2056	1768.4
#1	.00003	-.00046	.00945	.05635	.22726	.00117	.15968	.00351
#2	.00027	.00129	.01011	.06486	.04543	.00674	.18799	.00009
#3	-.00054	.00119	.00928	.07983	.06460	.00113	.16229	-.00427
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	.10552	.00028	.00468	.00047	.00320	-.00427	.00402
Stddev	.00036	.03871	.00041	.00975	.00165	.00377	.00708	.00338
%RSD	82.113	36.686	145.32	208.23	350.78	117.78	165.76	84.059
#1	.00083	.13385	.00075	-.00374	.00130	-.00089	-.01229	.00792
#2	.00032	.12132	-.00004	.01536	-.00143	.00652	-.00163	.00220
#3	.00015	.06141	.00014	.00242	.00155	.00397	.00111	.00194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606137801 Acquired: 6/28/2016 16:07:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.00119	.00220	-.00184	.00011	.00305	-.00009
Stddev	.00064	.00024	.00451	.00322	.00006	.00008	.00007
%RSD	1633.7	19.830	204.62	175.10	57.970	2.4756	76.127
#1	.00052	.00132	-.00187	-.00536	.00004	.00303	-.00003
#2	-.00069	.00133	.00704	-.00111	.00016	.00314	-.00016
#3	.00028	.00092	.00144	.00096	.00014	.00299	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9255.0	55896.	2662.5
Stddev	31.8	116.	12.9
%RSD	.34321	.20711	.48455
#1	9275.2	55940.	2674.4
#2	9271.5	55764.	2648.8
#3	9218.4	55982.	2664.3

Approved: June 29, 2016

Sample Name: L1606137802 Acquired: 6/28/2016 16:11:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00098	.24127	-.00216	.00978	.00727	-.00000	.91725	.00010
Stddev	.00151	.00761	.00236	.00115	.00053	.00003	.01367	.00033
%RSD	154.09	3.1538	109.31	11.785	7.2310	5360.9	1.4902	319.09
#1	.00169	.23297	.00049	.01008	.00771	.00001	.91395	.00028
#2	-.00075	.24791	-.00403	.00851	.00741	.00002	.93226	.00031
#3	.00200	.24294	-.00293	.01075	.00669	-.00003	.90553	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	-.00034	.02208	.19804	.10104	.00364	.28039	.00749
Stddev	.00057	.00062	.00090	.05727	.01689	.00502	.07826	.00133
%RSD	613.93	179.99	4.0773	28.920	16.719	137.96	27.912	17.702
#1	.00065	.00032	.02216	.21210	.11978	.00411	.20842	.00717
#2	.00012	-.00091	.02294	.13505	.09634	.00840	.36371	.00635
#3	-.00049	-.00043	.02114	.24698	.08699	-.00160	.26905	.00895
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.36176	.00023	.01940	.00079	.00029	-.00783	.41959
Stddev	.00014	.03222	.00168	.00181	.00348	.00484	.00345	.01536
%RSD	353.07	8.9077	738.46	9.3468	437.79	1683.6	44.023	3.6610
#1	.00018	.39404	.00214	.02073	.00068	.00448	-.00387	.42485
#2	.00004	.32959	-.00043	.02013	.00433	-.00501	-.00950	.43163
#3	-.00010	.36167	-.00103	.01733	-.00263	.00139	-.01012	.40229
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606137802 Acquired: 6/28/2016 16:11:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	.00639	.00238	-.00432	.00102	.00723	.00044
Stddev	.00074	.00025	.00737	.00078	.00072	.00034	.00043
%RSD	114.39	3.9538	310.16	18.130	70.551	4.6981	98.173
#1	.00125	.00616	.01079	-.00520	.00020	.00754	.00086
#2	-.00017	.00666	-.00073	-.00370	.00152	.00727	-.00001
#3	.00085	.00634	-.00293	-.00405	.00134	.00686	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9157.6	55840.	2649.1
Stddev	8.8	126.	16.6
%RSD	.09618	.22561	.62530
#1	9166.4	55974.	2664.8
#2	9157.6	55724.	2631.8
#3	9148.8	55822.	2650.6

Approved: June 29, 2016

Sample Name: L1606137803 Acquired: 6/28/2016 16:15:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00123	.03613	-.00107	.00717	.00261	.00001	.20229	.00004
Stddev	.00057	.00887	.00175	.00045	.00128	.00005	.03288	.00045
%RSD	46.612	24.549	164.26	6.2941	49.199	461.39	16.255	1093.4
#1	-.00154	.02644	-.00104	.00692	.00113	.00007	.18429	-.00031
#2	-.00158	.04384	.00067	.00689	.00338	-.00002	.24024	.00054
#3	-.00057	.03813	-.00284	.00769	.00331	-.00002	.18234	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	-.00125	.02974	.02446	.22250	.00496	.03287	.00243
Stddev	.00024	.00034	.00035	.03617	.07798	.00081	.11336	.00308
%RSD	66.571	27.354	1.1617	147.86	35.048	16.433	344.85	126.87
#1	.00058	-.00164	.02957	-.01471	.31086	.00411	.05459	.00539
#2	.00010	-.00107	.03014	.05658	.19336	.00574	.13379	-.00077
#3	.00041	-.00102	.02952	.03151	.16329	.00502	-.08977	.00267
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.32876	.00072	.01481	.00334	.00498	-.00272	.03276
Stddev	.00069	.00872	.00029	.00640	.00320	.00234	.00271	.00135
%RSD	2428.7	2.6516	40.869	43.182	95.766	46.923	99.661	4.1065
#1	.00029	.31874	.00103	.00985	.00172	.00230	-.00358	.03164
#2	.00054	.33460	.00067	.02203	.00702	.00601	.00032	.03238
#3	-.00075	.33295	.00045	.01256	.00127	.00662	-.00489	.03425
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606137803 Acquired: 6/28/2016 16:15:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.00147	.00034	-.00167	-.00043	.00872	-.00013
Stddev	.00054	.00056	.00466	.00220	.00123	.00025	.00095
%RSD	56.877	37.984	1386.8	131.84	288.10	2.8588	736.06
#1	.00095	.00178	-.00140	-.00136	.00013	.00853	.00094
#2	.00041	.00083	.00561	.00036	-.00184	.00862	-.00047
#3	.00148	.00180	-.00321	-.00401	.00043	.00900	-.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9279.4	55188.	2617.5
Stddev	5.8	62.	13.4
%RSD	.06281	.11260	.51339
#1	9277.1	55217.	2631.1
#2	9286.0	55116.	2617.1
#3	9275.0	55230.	2604.2

Approved: June 29, 2016

Sample Name: L1606137804 Acquired: 6/28/2016 16:19:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00033	.00583	-.00362	.00297	.00220	-.00003	.01525	.00015
Stddev	.00186	.01048	.00045	.00162	.00081	.00003	.03382	.00030
%RSD	567.99	179.69	12.428	54.580	36.950	109.52	221.79	195.99
#1	.00129	.00783	-.00389	.00475	.00158	-.00003	-.00321	.00012
#2	-.00236	.01516	-.00310	.00260	.00191	-.00005	.05427	-.00013
#3	.00008	-.00550	-.00387	.00157	.00312	.00001	-.00532	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.00006	.00038	-.00080	.11004	.00434	.10714	-.00234
Stddev	.00015	.00068	.00115	.02641	.13143	.00212	.11999	.00115
%RSD	120.12	1104.2	304.96	3316.9	119.44	48.731	111.99	49.262
#1	.00030	.00084	.00160	.00792	.21872	.00201	.24567	-.00135
#2	.00003	-.00025	.00020	-.03047	.14744	.00615	.03567	-.00360
#3	.00004	-.00041	-.00068	.02016	-.03603	.00487	.04008	-.00206
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	.07562	.00088	-.00216	-.00036	.00498	.00348	-.02142
Stddev	.00039	.01403	.00154	.00376	.00510	.00407	.00646	.00069
%RSD	153.47	18.559	175.49	173.82	1407.8	81.770	185.82	3.2242
#1	-.00003	.08160	.00250	.00183	-.00607	.00888	.00840	-.02216
#2	-.00003	.05959	-.00057	-.00267	.00126	.00532	.00587	-.02080
#3	-.00070	.08568	.00071	-.00565	.00373	.00075	-.00384	-.02131
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606137804 Acquired: 6/28/2016 16:19:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00029	.00515	-.00424	-.00024	.00234	.00012
Stddev	.00145	.00038	.00994	.00233	.00166	.00018	.00028
%RSD	2444.3	128.27	193.09	54.933	684.71	7.6940	243.78
#1	.00093	.00057	.01372	-.00155	.00160	.00213	.00004
#2	.00087	.00045	-.00575	-.00568	-.00070	.00247	-.00012
#3	-.00162	-.00014	.00748	-.00547	-.00163	.00241	.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9250.6	56270.	2671.7
Stddev	7.7	175.	15.8
%RSD	.08274	.31170	.59260
#1	9250.0	56071.	2667.9
#2	9258.6	56337.	2658.1
#3	9243.3	56403.	2689.1

Approved: June 29, 2016

Sample Name: L1606138001 Acquired: 6/28/2016 16:23:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	18.881	.01121	.04582	.29039	.00157	84.977	.00008
Stddev	.00214	.028	.00257	.00283	.00147	.00003	.069	.00009
%RSD	760.43	.15027	22.957	6.1732	.50732	2.0312	.08124	101.89
#1	.00044	18.907	.01411	.04268	.28883	.00155	84.906	.00014
#2	-.00194	18.851	.00920	.04662	.29058	.00155	85.044	.00013
#3	.00234	18.884	.01031	.04817	.29175	.00161	84.981	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01286	.02713	.02544	25.071	4.7884	.04041	29.287	1.3847
Stddev	.00023	.00057	.00272	.102	.0770	.00278	.109	.0090
%RSD	1.7707	2.0963	10.709	.40653	1.6080	6.8777	.37299	.64781
#1	.01290	.02753	.02636	25.088	4.8757	.03765	29.161	1.3860
#2	.01306	.02648	.02759	24.961	4.7300	.04036	29.341	1.3751
#3	.01261	.02739	.02238	25.163	4.7596	.04321	29.358	1.3929
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00487	6.5012	.02834	.77361	.03577	-.00040	-.00445	24.324
Stddev	.00048	.0395	.00143	.01408	.00193	.00077	.00299	.309
%RSD	9.7902	.60716	5.0582	1.8200	5.4033	194.49	67.253	1.2710
#1	.00474	6.4671	.02787	.77271	.03771	.00030	-.00208	24.356
#2	.00448	6.4920	.02995	.78811	.03385	-.00122	-.00346	24.616
#3	.00540	6.5445	.02721	.76000	.03574	-.00026	-.00782	24.000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606138001 Acquired: 6/28/2016 16:23:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00136**	**.32243**	**.11171**	**-.00130**	**.03430**	**.48738**	**.00279**
Stddev	.00095	.00109	.00577	.00271	.00009	.01023	.00049
%RSD	69.999	.33711	5.1618	208.64	.26249	2.0990	17.473
#1	.00224	.32130	.11837	-.00291	.03420	.49075	.00224
#2	.00148	.32253	.10821	.00183	.03437	.49550	.00298
#3	.00035	.32346	.10856	-.00282	.03432	.47589	.00316
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9127.1**	**55258.**	**2659.8**
Stddev	31.6	168.	9.9
%RSD	.34567	.30373	.37056
#1	9162.7	55122.	2666.0
#2	9102.6	55206.	2665.1
#3	9116.0	55446.	2648.5

Approved: June 29, 2016

Sample Name: L1606138002 Acquired: 6/28/2016 16:27:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00123	23.052	.01041	.04995	.27455	.00176	89.804	.00018
Stddev	.00155	.082	.00437	.00204	.00194	.00013	.487	.00012
%RSD	125.65	.35572	42.002	4.0787	.70771	7.3034	.54236	68.679
#1	.00299	23.127	.01537	.05225	.27502	.00178	89.890	.00009
#2	.00062	22.965	.00710	.04925	.27241	.00188	89.280	.00012
#3	.00009	23.063	.00876	.04836	.27621	.00162	90.243	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01514	.03329	.04031	30.770	5.4790	.04939	32.771	1.4662
Stddev	.00034	.00089	.00429	.139	.0866	.00299	.215	.0056
%RSD	2.2702	2.6859	10.637	.45045	1.5804	6.0611	.65743	.38355
#1	.01483	.03431	.04248	30.753	5.5759	.05008	32.805	1.4652
#2	.01507	.03264	.04307	30.640	5.4517	.05198	32.541	1.4611
#3	.01551	.03294	.03537	30.916	5.4093	.04611	32.968	1.4722
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00568	6.9225	.04829	.81670	.03824	.00474	-.00326	28.829
Stddev	.00022	.0247	.00159	.00954	.00261	.00036	.00176	.340
%RSD	3.8794	.35719	3.2983	1.1676	6.8251	7.6137	53.869	1.1781
#1	.00542	6.9011	.04906	.82661	.03980	.00485	-.00372	29.055
#2	.00582	6.9168	.04936	.81588	.03970	.00503	-.00474	28.994
#3	.00579	6.9496	.04646	.80759	.03523	.00433	-.00132	28.438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606138002 Acquired: 6/28/2016 16:27:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00159	.34526	.13497	-.00119	.04001	.16840	.00274
Stddev	.00067	.00143	.00550	.00167	.00032	.00291	.00035
%RSD	41.910	.41554	4.0771	139.98	.79480	1.7261	12.734
#1	.00103	.34567	.14130	-.00077	.04036	.16974	.00234
#2	.00142	.34366	.13131	-.00303	.03974	.17040	.00288
#3	.00233	.34644	.13231	.00023	.03992	.16507	.00299
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8969.2	53823.	2585.6
Stddev	28.5	121.	22.8
%RSD	.31768	.22430	.88148
#1	8943.3	53758.	2563.7
#2	8964.7	53962.	2609.2
#3	8999.7	53748.	2583.9

Approved: June 29, 2016

Sample Name: L1606138106 Acquired: 6/28/2016 16:30:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**.02671**	**-.00035**	**.00219**	**.00470**	**.00004**	**.11044**	**-.00004**
Stddev	.00038	.00978	.00157	.00132	.00024	.00006	.05141	.00009
%RSD	165.88	36.629	453.87	60.161	5.0940	180.89	46.554	218.04
#1	-.00009	.02052	-.00215	.00221	.00459	-.00002	.11853	.00006
#2	.00006	.03798	.00042	.00086	.00497	.00010	.15733	-.00007
#3	-.00066	.02162	.00070	.00350	.00453	.00002	.05546	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**.00005**	**.00232**	**.03313**	**-.06208**	**.00365**	**.11571**	**.00058**
Stddev	.00026	.00107	.00141	.04609	.12036	.00290	.06176	.00147
%RSD	301.01	2205.9	60.777	139.12	193.89	79.577	53.372	255.27
#1	.00021	-.00039	.00332	-.01338	-.04214	.00473	.04833	.00099
#2	-.00027	-.00073	.00071	.03397	-.19116	.00585	.16963	-.00106
#3	-.00021	.00127	.00293	.07879	.04707	.00036	.12917	.00179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00109**	**.24481**	**.00038**	**-.00234**	**-.00159**	**.00016**	**-.00878**	**.09592**
Stddev	.00097	.01784	.00090	.00446	.00039	.00135	.00458	.00474
%RSD	88.792	7.2876	235.47	190.19	24.402	834.50	52.202	4.9452
#1	-.00001	.23411	.00143	-.00495	-.00164	.00032	-.00992	.10032
#2	.00182	.23491	-.00009	-.00489	-.00194	-.00126	-.00373	.09654
#3	.00146	.26540	-.00018	.00280	-.00117	.00142	-.01269	.09090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606138106 Acquired: 6/28/2016 16:30:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.00062	.00178	-.00320	-.00041	.00111	.00044
Stddev	.00070	.00028	.00840	.00027	.00016	.00005	.00090
%RSD	1472.0	44.552	471.90	8.3543	38.969	4.6667	202.68
#1	.00057	.00039	.01143	-.00294	-.00023	.00107	.00025
#2	.00032	.00054	-.00218	-.00347	-.00044	.00117	.00143
#3	-.00075	.00092	-.00391	-.00320	-.00054	.00111	-.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9023.2	54420.	2586.9
Stddev	15.6	552.	19.1
%RSD	.17278	1.0141	.73711
#1	9027.4	54765.	2565.0
#2	9005.9	53783.	2600.1
#3	9036.3	54711.	2595.6

Approved: June 29, 2016

Sample Name: L1606140101 Acquired: 6/28/2016 16:34:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00218**	**.03485**	**-.00002**	**.15342**	**.05582**	**.00004**	**124.06**
Stddev	.00377	.00379	.00309	.00144	.00081	.00010	.59
%RSD	173.24	10.886	14926.	.93675	1.4530	248.52	.47866
#1	-.00649	.03170	-.00302	.15179	.05540	-.00004	124.70
#2	.00049	.03906	-.00019	.15398	.05530	.00001	123.52
#3	-.00053	.03380	.00315	.15449	.05676	.00015	123.97
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00037**	**.00081**	**.00157**	**.00148**	**-.00402**	**4.6678**	**.03748**
Stddev	.00028	.00030	.00094	.00090	.03288	.1961	.00193
%RSD	74.186	37.448	59.598	60.764	818.25	4.2000	5.1617
#1	.00032	.00047	.00131	.00240	-.04194	4.8019	.03666
#2	.00067	.00091	.00079	.00144	.01346	4.4428	.03610
#3	.00013	.00106	.00261	.00060	.01643	4.7587	.03969
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**68.192**	**.05341**	**.00048**	F **466.83**	**.00047**	**.03766**	**-.00231**
Stddev	.481	.00218	.00034	3.88	.00102	.00627	.00128
%RSD	.70585	4.0834	70.291	.83087	216.30	16.655	55.400
#1	68.743	.05536	.00077	470.23	-.00050	.04431	-.00303
#2	67.983	.05105	.00011	462.61	.00152	.03184	-.00308
#3	67.851	.05382	.00058	467.64	.00039	.03685	-.00083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606140101 Acquired: 6/28/2016 16:34:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00400**	**-.00182**	**8.1478**	**-.00033**	**.59118**	**-.01873**	**-.00283**
Stddev	.00606	.00359	.2322	.00009	.00171	.00223	.00229
%RSD	151.32	197.31	2.8496	28.393	.28995	11.927	80.664
#1	.00315	.00214	8.2785	-.00022	.59313	-.01787	-.00251
#2	.01044	-.00486	8.2851	-.00038	.58988	-.01706	-.00073
#3	-.00158	-.00274	7.8797	-.00039	.59054	-.02127	-.00526
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.01052**	**.00862**	**-.00010**
Stddev	.00054	.00045	.00005
%RSD	5.1636	5.2265	48.833
#1	.01088	.00862	-.00007
#2	.00990	.00907	-.00016
#3	.01079	.00817	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8570.3**	**50744.**	**2512.0**
Stddev	3.6	222.	16.8
%RSD	.04183	.43745	.66696
#1	8571.5	50750.	2499.4
#2	8573.2	50964.	2505.5
#3	8566.3	50520.	2531.0

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 16:38:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37743**	**9.5469**	**.37580**	**.46956**	**.96306**	**.04732**	**9.5900**	**.04763**
Stddev	.00032	.0457	.00153	.00617	.00655	.00061	.1412	.00029
%RSD	.08532	.47855	.40663	1.3148	.67978	1.2795	1.4727	.59955
#1	.37735	9.5820	.37757	.47612	.95760	.04798	9.4341	.04791
#2	.37715	9.4952	.37489	.46387	.97032	.04680	9.7095	.04764
#3	.37778	9.5634	.37495	.46868	.96126	.04718	9.6262	.04734
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19060**	**.47605**	**.47829**	**3.8107**	**47.965**	**.96689**	**9.5619**	**.47181**
Stddev	.00024	.00645	.00177	.0548	.355	.00545	.1009	.00470
%RSD	.12427	1.3544	.36908	1.4378	.74026	.56386	1.0554	.99639
#1	.19054	.48349	.47931	3.7975	47.711	.97312	9.5140	.46713
#2	.19086	.47251	.47932	3.7637	48.370	.96453	9.6779	.47176
#3	.19040	.47215	.47626	3.8709	47.812	.96301	9.4939	.47654
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.95597**	**48.254**	**.47535**	**9.4451**	**.47197**	**1.1388**	**.37546**	**4.7416**
Stddev	.00130	.258	.00091	.0048	.00087	.0031	.00351	.0044
%RSD	.13561	.53539	.19143	.05067	.18424	.27052	.93376	.09185
#1	.95741	48.008	.47561	9.4415	.47108	1.1390	.37327	4.7366
#2	.95559	48.523	.47610	9.4505	.47281	1.1357	.37950	4.7447
#3	.95491	48.230	.47434	9.4432	.47203	1.1419	.37360	4.7435
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 16:38:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.95500**	**.96146**	**.94728**	**.47529**	**.94833**	**.95572**	**.95903**
Stddev	.00332	.00652	.00706	.00206	.01224	.00202	.01434
%RSD	.34717	.67854	.74512	.43417	1.2902	.21119	1.4950
#1	.95726	.95688	.93938	.47767	.96203	.95768	.97550
#2	.95654	.96893	.95296	.47401	.93850	.95585	.95225
#3	.95119	.95858	.94951	.47419	.94446	.95365	.94934
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8735.1**	**52223.**	**2511.8**
Stddev	63.3	525.	1.7
%RSD	.72433	1.0049	.06962
#1	8662.4	52817.	2513.3
#2	8778.0	52030.	2509.9
#3	8764.8	51821.	2512.3

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 16:42:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.01470**	**-.00025**	**.00262**	**.00329**	**.00012**	**-.02149**	**-.00003**
Stddev	.00154	.00095	.00292	.00132	.00173	.00009	.02627	.00031
%RSD	1544.9	6.4296	1158.7	50.561	52.631	76.669	122.21	1035.2
#1	-.00164	.01568	-.00292	.00112	.00524	.00002	.00862	.00001
#2	.00145	.01379	.00286	.00311	.00269	.00015	-.03344	-.00036
#3	-.00011	.01463	-.00070	.00362	.00193	.00019	-.03967	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.00016**	**.00034**	**-.02214**	**.02979**	**.00145**	**.10931**	**.00271**
Stddev	.00051	.00066	.00090	.02571	.04548	.00077	.07392	.00140
%RSD	2067.0	426.18	262.93	116.12	152.66	52.848	67.621	51.511
#1	.00053	-.00060	-.00060	-.02698	.06941	.00057	.09763	.00431
#2	-.00012	.00064	.00044	.00564	-.01988	.00197	.04193	.00177
#3	-.00048	.00043	.00119	-.04508	.03985	.00181	.18838	.00204
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.03000**	**-.00064**	**.00171**	**-.00372**	**.00640**	**-.00145**	**.00449**
Stddev	.00010	.02671	.00081	.00257	.00221	.00555	.00310	.00229
%RSD	83.710	89.031	127.20	149.94	59.483	86.786	214.27	50.847
#1	.00001	.05832	-.00087	.00364	-.00239	.01032	.00214	.00691
#2	.00015	.02642	.00026	-.00120	-.00627	.00882	-.00323	.00237
#3	.00022	.00526	-.00130	.00270	-.00250	.00004	-.00325	.00420
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 16:42:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**.00049**	**-.01452**	**-.00036**	**-.00012**	**.00009**	**.00041**
Stddev	.00126	.00017	.00425	.00086	.00052	.00022	.00068
%RSD	855.56	34.806	29.266	240.24	446.61	242.31	167.64
#1	-.00110	.00067	-.01245	.00044	.00047	.00034	-.00033
#2	.00142	.00033	-.01941	-.00024	-.00053	-.00002	.00101
#3	.00012	.00048	-.01171	-.00127	-.00029	-.00005	.00055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8858.9**	**52799.**	**2450.2**
Stddev	49.1	64.	4.8
%RSD	.55389	.12185	.19423
#1	8802.7	52841.	2455.1
#2	8893.3	52831.	2449.9
#3	8880.6	52725.	2445.6

Approved: June 29, 2016

Sample Name: L1606140201 Acquired: 6/28/2016 16:46:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00181	.18513	.02928	.14134	.38651	.00004	73.568
Stddev	.00241	.01412	.00193	.00546	.00425	.00001	.573
%RSD	133.09	7.6297	6.5893	3.8601	1.0993	29.408	.77835
#1	.00291	.20114	.02830	.14308	.39084	.00005	74.208
#2	-.00095	.17441	.03150	.13522	.38635	.00004	73.392
#3	.00347	.17984	.02803	.14571	.38234	.00003	73.104
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00063	.00146	.00109	3.0011	.94204	.01461
Stddev	.00046	.00060	.00093	.00074	.0567	.07130	.00110
%RSD	261.16	95.173	63.756	68.332	1.8895	7.5684	7.5102
#1	-.00032	.00116	.00051	.00142	3.0614	.97099	.01585
#2	.00058	.00073	.00149	.00024	2.9931	.99432	.01377
#3	.00027	-.00002	.00237	.00161	2.9488	.86083	.01420
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	38.058	.43706	.00004	F 295.60	.00193	.05522	.01773
Stddev	.228	.00233	.00047	2.46	.00047	.00807	.00162
%RSD	.59975	.53242	1121.0	.83240	24.555	14.612	9.1557
#1	38.300	.43535	.00053	298.43	.00156	.06449	.01703
#2	37.846	.43971	-.00002	294.41	.00176	.05148	.01657
#3	38.030	.43611	-.00039	293.96	.00247	.04971	.01958
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606140201 Acquired: 6/28/2016 16:46:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	.00237	8.7308	.00015	.49039	-.00143	-.00119
Stddev	.00063	.00758	.1924	.00050	.00229	.01348	.00163
%RSD	85.658	319.42	2.2032	321.51	.46707	942.90	137.19
#1	.00129	.00959	8.8327	.00016	.49271	.00974	-.00033
#2	.00085	-.00552	8.8507	.00065	.48813	.00238	-.00306
#3	.00005	.00305	8.5089	-.00035	.49034	-.01641	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00028	.03320	.00085
Stddev	.00126	.00113	.00030
%RSD	444.68	3.4045	35.186
#1	.00111	.03408	.00089
#2	-.00135	.03360	.00053
#3	-.00061	.03193	.00112
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8382.1	49791.	2432.6
Stddev	7.8	183.	38.6
%RSD	.09266	.36744	1.5885
#1	8375.1	49580.	2390.7
#2	8380.9	49886.	2440.4
#3	8390.4	49908.	2466.7

Approved: June 29, 2016

Sample Name: L1606140401 Acquired: 6/28/2016 16:50:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**.03821**	**-.00140**	**.26467**	**.10202**	**.00005**	**50.693**
Stddev	.00024	.00694	.00356	.00502	.00099	.00006	.236
%RSD	804.72	18.151	253.62	1.8972	.97072	117.83	.46459
#1	.00030	.03117	.00222	.26303	.10113	.00002	50.662
#2	-.00006	.04503	-.00153	.26068	.10308	.00001	50.943
#3	-.00015	.03843	-.00490	.27031	.10184	.00011	50.475
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**-.00001**	**.00112**	**.06878**	F **-.02326**	**1.5239**	**.00630**
Stddev	.00003	.00031	.00147	.00150	.05164	.0926	.00419
%RSD	44.836	2286.3	131.16	2.1829	222.07	6.0793	66.532
#1	.00010	-.00018	.00053	.06940	-.04001	1.5675	.00989
#2	.00007	-.00020	.00280	.06987	-.06444	1.4175	.00733
#3	.00004	.00035	.00004	.06707	.03469	1.5866	.00169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**44.442**	**.00063**	**.00036**	**72.140**	**.00050**	**.05225**	**-.00268**
Stddev	.059	.00064	.00040	.335	.00098	.00445	.00289
%RSD	.13305	101.22	111.41	.46490	195.38	8.5261	107.94
#1	44.502	.00028	.00021	72.178	-.00051	.05651	-.00492
#2	44.384	.00024	.00005	72.455	.00146	.04762	-.00370
#3	44.442	.00137	.00081	71.788	.00057	.05261	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606140401 Acquired: 6/28/2016 16:50:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00458**	**.00271**	**7.5828**	**-.00004**	**.40719**	**-.00830**	**-.00459**
Stddev	.00339	.00160	.1230	.00105	.00129	.01300	.00404
%RSD	74.002	59.221	1.6221	2834.0	.31705	156.70	88.066
#1	.00766	.00090	7.6391	-.00054	.40835	-.01367	-.00740
#2	.00095	.00327	7.6675	.00116	.40742	.00653	.00004
#3	.00513	.00396	7.4417	-.00074	.40580	-.01775	-.00642
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00580**	**.09151**	**-.00012**
Stddev	.00045	.00280	.00032
%RSD	7.8121	3.0615	257.30
#1	.00536	.09306	.00004
#2	.00577	.09320	-.00049
#3	.00626	.08828	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8505.3**	**50949.**	**2448.3**
Stddev	4.7	97.	7.2
%RSD	.05529	.19049	.29577
#1	8510.2	50847.	2451.9
#2	8504.8	51040.	2439.9
#3	8500.9	50960.	2453.0

Approved: June 29, 2016

Sample Name: L1606140801 Acquired: 6/28/2016 16:54:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00269	.05550	.00124	.10441	.03467	.00011	48.037	.00033
Stddev	.00032	.00542	.00441	.00240	.00077	.00017	.480	.00014
%RSD	12.026	9.7675	356.84	2.2960	2.2111	152.00	.99969	41.534
#1	-.00273	.05194	.00607	.10284	.03551	.00004	48.584	.00021
#2	-.00235	.05283	.00021	.10717	.03401	.00031	47.685	.00029
#3	-.00299	.06174	-.00257	.10322	.03449	-.00001	47.842	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.00133	.00196	.02831	.61212	.01738	25.614	.03236
Stddev	.00024	.00079	.00030	.03168	.08741	.00355	.200	.00047
%RSD	139.58	59.723	15.107	111.90	14.280	20.412	.77912	1.4530
#1	.00039	.00162	.00174	-.00239	.54855	.01510	25.399	.03211
#2	-.00008	.00043	.00185	.02644	.57601	.01556	25.793	.03291
#3	.00020	.00194	.00230	.06087	.71180	.02146	25.650	.03207
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	206.01	-.00120	.01021	-.00101	.00550	.00259	8.6735
Stddev	.00042	.68	.00076	.00625	.00147	.00271	.00758	.1899
%RSD	138.54	.32826	63.036	61.251	146.18	49.218	292.32	2.1896
#1	.00029	206.21	-.00200	.00303	.00017	.00243	-.00099	8.8411
#2	.00073	205.26	-.00109	.01314	-.00266	.00755	-.00253	8.7122
#3	-.00011	206.57	-.00050	.01446	-.00053	.00651	.01130	8.4672
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606140801 Acquired: 6/28/2016 16:54:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00021**	**.27833**	**-.01037**	**-.00392**	**.01481**	**.00801**	**.00028**
Stddev	.00091	.00026	.01132	.00271	.00106	.00023	.00098
%RSD	440.50	.09448	109.12	69.013	7.1866	2.8324	351.91
#1	-.00123	.27804	.00144	-.00081	.01601	.00808	.00139
#2	.00012	.27839	-.02112	-.00572	.01398	.00819	-.00008
#3	.00049	.27855	-.01143	-.00524	.01444	.00775	-.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8483.8**	**50357.**	**2436.1**
Stddev	58.6	54.	14.0
%RSD	.69075	.10730	.57272
#1	8442.5	50404.	2437.2
#2	8550.9	50298.	2449.4
#3	8458.1	50369.	2421.6

Approved: June 29, 2016

Sample Name: L1606140901 Acquired: 6/28/2016 16:58:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00099	.04882	.00371	.20045	.03867	.00009	59.705	.00007
Stddev	.00072	.01173	.00262	.00323	.00088	.00009	.777	.00015
%RSD	72.631	24.027	70.725	1.6092	2.2861	93.237	1.3014	220.09
#1	.00019	.06057	.00264	.20394	.03863	.00006	60.594	-.00007
#2	.00118	.04879	.00670	.19758	.03957	.00003	59.158	.00005
#3	.00159	.03711	.00179	.19984	.03781	.00019	59.361	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00403	.00250	.01083	1.0006	.02725	29.385	-.00066
Stddev	.00047	.00069	.00086	.02070	.0638	.00443	.111	.00203
%RSD	152.21	17.223	34.415	191.17	6.3737	16.261	.37652	304.79
#1	.00046	.00463	.00157	.03441	1.0394	.02239	29.323	-.00206
#2	.00069	.00419	.00266	.00242	1.0354	.02829	29.320	-.00159
#3	-.00022	.00327	.00326	-.00435	.92699	.03107	29.513	.00166
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	217.82	.00187	.00952	-.00078	.00397	.00052	12.937
Stddev	.00043	.68	.00072	.00413	.00349	.00593	.00750	.288
%RSD	36.550	.31139	38.549	43.374	445.42	149.39	1452.8	2.2279
#1	.00074	218.59	.00267	.00652	.00255	.00869	.00583	13.115
#2	.00160	217.56	.00168	.01423	-.00442	-.00268	.00378	13.092
#3	.00118	217.31	.00126	.00781	-.00049	.00590	-.00806	12.605
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606140901 Acquired: 6/28/2016 16:58:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00070	.41800	-.01150	-.00534	.01663	.00273	-.00008
Stddev	.00115	.00113	.01412	.00229	.00053	.00022	.00050
%RSD	163.28	.27095	122.73	42.869	3.1942	7.9309	605.21
#1	.00042	.41714	.00226	-.00301	.01717	.00278	-.00039
#2	-.00028	.41928	-.01083	-.00542	.01611	.00292	-.00035
#3	.00197	.41759	-.02595	-.00759	.01661	.00250	.00049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8381.2	49920.	2427.7
Stddev	31.2	187.	3.4
%RSD	.37235	.37554	.13931
#1	8401.2	49725.	2426.3
#2	8397.2	50098.	2425.3
#3	8345.2	49937.	2431.6

Approved: June 29, 2016

Sample Name: L1606141001 Acquired: 6/28/2016 17:01:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**.02510**	**.00497**	**.20581**	**.20983**	**.00003**	**102.14**	**.00026**
Stddev	.00030	.00820	.00130	.00289	.00164	.00004	.41	.00020
%RSD	132.67	32.679	26.145	1.4058	.78174	121.97	.39842	78.906
#1	-.00038	.02965	.00419	.20299	.20986	-.00001	102.16	.00008
#2	-.00042	.03003	.00425	.20877	.21146	.00008	102.53	.00047
#3	.00012	.01563	.00647	.20568	.20818	.00003	101.72	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00216**	**.00155**	**.00164**	**3.1291**	**.47793**	**.01373**	**63.988**	**1.5385**
Stddev	.00048	.00052	.00154	.0242	.07621	.00416	.332	.0084
%RSD	22.492	33.181	93.521	.77254	15.946	30.274	.51854	.54910
#1	.00229	.00213	.00024	3.1377	.39525	.01480	63.844	1.5384
#2	.00256	.00113	.00328	3.1477	.49319	.01724	64.367	1.5470
#3	.00162	.00140	.00141	3.1017	.54536	.00914	63.752	1.5301
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00097**	**24.785**	**.00318**	**.06025**	**-.00071**	**.00159**	**-.00450**	**8.1780**
Stddev	.00021	.166	.00156	.01067	.00149	.00213	.00703	.0115
%RSD	21.778	.67072	48.863	17.704	209.43	133.71	156.14	.14010
#1	.00082	24.747	.00140	.05953	-.00225	.00279	-.01157	8.1903
#2	.00088	24.967	.00391	.07127	-.00060	.00285	.00248	8.1761
#3	.00122	24.640	.00424	.04997	.00072	-.00087	-.00441	8.1677
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606141001 Acquired: 6/28/2016 17:01:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.83498**	**-.01138**	**-.00652**	**-.00046**	**.00246**	**.00022**
Stddev	.00032	.01215	.00763	.00068	.00064	.00003	.00013
%RSD	732.85	1.4548	67.036	10.406	137.93	1.1193	58.335
#1	.00030	.84711	-.01222	-.00631	-.00099	.00248	.00014
#2	-.00009	.83502	-.00337	-.00728	-.00063	.00243	.00015
#3	-.00034	.82281	-.01855	-.00597	.00024	.00247	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8519.7**	**50943.**	**2455.8**
Stddev	41.5	104.	11.2
%RSD	.48695	.20482	.45529
#1	8476.0	50829.	2457.0
#2	8524.5	50968.	2444.1
#3	8558.5	51034.	2466.4

Approved: June 29, 2016

Sample Name: L1606141701 Acquired: 6/28/2016 17:05:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00052	.03393	-.00177	.10053	.08448	-.00004	53.590	.00002
Stddev	.00097	.00124	.00310	.00010	.00185	.00008	.041	.00011
%RSD	187.14	3.6575	175.63	.10167	2.1911	190.60	.07628	441.87
#1	-.00070	.03279	-.00174	.10063	.08240	-.00001	53.548	.00011
#2	.00053	.03374	.00132	.10054	.08594	-.00013	53.593	.00006
#3	-.00138	.03525	-.00488	.10042	.08511	.00002	53.630	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00024	.00044	.00128	-.00110	.33167	.01186	38.029	-.00243
Stddev	.00036	.00064	.00035	.02584	.15378	.00271	.064	.00614
%RSD	150.55	144.37	27.302	2350.8	46.367	22.894	.16857	253.12
#1	.00006	.00102	.00169	.02694	.15662	.01278	37.963	.00451
#2	-.00014	.00055	.00113	-.00629	.39337	.01399	38.033	-.00718
#3	-.00064	-.00024	.00104	-.02395	.44502	.00880	38.091	-.00460
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	33.333	-.00018	.03468	-.00253	.00442	-.00992	5.5877
Stddev	.00036	.145	.00111	.00200	.00379	.00454	.00714	.0097
%RSD	59.623	.43463	614.27	5.7635	149.78	102.72	72.013	.17278
#1	.00028	33.231	.00062	.03279	-.00669	-.00040	-.01801	5.5766
#2	.00098	33.270	.00028	.03677	-.00163	.00861	-.00730	5.5928
#3	.00052	33.499	-.00144	.03448	.00073	.00504	-.00446	5.5938
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606141701 Acquired: 6/28/2016 17:05:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**.44744**	**.00486**	**-.00242**	**.00397**	**.00215**	**-.00019**
Stddev	.00115	.00102	.01325	.00158	.00124	.00030	.00081
%RSD	273.06	.22830	272.58	65.278	31.160	14.124	423.65
#1	.00148	.44860	.01694	-.00104	.00255	.00245	.00001
#2	.00059	.44670	.00696	-.00207	.00454	.00184	-.00109
#3	-.00081	.44700	-.00931	-.00414	.00482	.00217	.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8516.7**	**51136.**	**2430.8**
Stddev	5.8	216.	3.4
%RSD	.06805	.42159	.13898
#1	8511.4	51374.	2427.1
#2	8515.8	50955.	2431.5
#3	8522.9	51079.	2433.8

Approved: June 29, 2016

Sample Name: L1606141702 Acquired: 6/28/2016 17:09:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00121**	**.03639**	**-.00063**	**.10512**	**.02263**	**.00004**	**92.101**
Stddev	.00265	.00570	.00129	.00214	.00133	.00009	.123
%RSD	218.85	15.676	205.46	2.0348	5.8751	237.61	.13318
#1	-.00148	.03441	-.00194	.10701	.02405	-.00003	92.180
#2	.00156	.04282	-.00060	.10554	.02243	.00000	91.959
#3	-.00372	.03194	.00065	.10280	.02142	.00015	92.163
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00026**	**.00043**	**.00230**	**.00145**	**.01095**	**.92150**	**.01897**
Stddev	.00016	.00030	.00101	.00055	.01537	.06607	.00536
%RSD	60.469	71.156	43.805	38.203	140.44	7.1694	28.272
#1	.00040	.00074	.00197	.00195	.00404	.99360	.01602
#2	.00009	.00013	.00344	.00085	.00024	.86385	.01572
#3	.00028	.00041	.00150	.00154	.02856	.90706	.02516
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**27.394**	**-.00128**	**.00072**	F **328.03**	**-.00024**	**.01343**	**-.00378**
Stddev	.208	.00450	.00025	.24	.00131	.00969	.00030
%RSD	.76042	352.14	34.308	.07448	557.20	72.100	7.9547
#1	27.591	.00141	.00093	327.78	-.00038	.02137	-.00366
#2	27.176	-.00648	.00078	328.27	-.00147	.00264	-.00356
#3	27.416	.00124	.00045	328.04	.00114	.01629	-.00413
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606141702 Acquired: 6/28/2016 17:09:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00068**	**.00807**	**6.3322**	**.00006**	**.43551**	**-.01380**	**-.00128**
Stddev	.00415	.00304	.0529	.00114	.00058	.00955	.00057
%RSD	614.28	37.628	.83619	2038.7	.13254	69.207	44.382
#1	-.00042	.00804	6.2743	.00129	.43554	-.01279	-.00131
#2	-.00282	.00505	6.3439	-.00094	.43492	-.00480	-.00070
#3	.00526	.01112	6.3783	-.00018	.43608	-.02382	-.00184
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00632**	**.00278**	**.00030**
Stddev	.00160	.00015	.00099
%RSD	25.307	5.4480	328.68
#1	.00451	.00293	.00136
#2	.00691	.00278	-.00061
#3	.00754	.00263	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8506.3**	**50580.**	**2460.8**
Stddev	18.6	37.	28.4
%RSD	.21858	.07230	1.1552
#1	8522.2	50576.	2432.4
#2	8485.9	50619.	2460.7
#3	8510.9	50546.	2489.2

Approved: June 29, 2016

Sample Name: L1606141703 Acquired: 6/28/2016 17:13:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	.06301	-.00157	.10756	.02273	.00003	93.540
Stddev	.00063	.00870	.00342	.00417	.00053	.00004	.787
%RSD	81.445	13.806	217.64	3.8746	2.3136	138.93	.84165
#1	.00056	.06732	.00238	.10359	.02331	.00007	94.370
#2	.00147	.06870	-.00350	.10719	.02260	-.00001	93.445
#3	.00027	.05299	-.00360	.11190	.02228	.00003	92.804
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	.00058	.00377	.00076	.04301	1.0274	.02683
Stddev	.00022	.00022	.00232	.00027	.02476	.0852	.00237
%RSD	83.493	38.162	61.441	35.871	57.574	8.2920	8.8258
#1	.00023	.00040	.00271	.00068	.03982	1.0581	.02443
#2	.00006	.00082	.00217	.00106	.06921	1.0929	.02690
#3	.00049	.00051	.00643	.00053	.02000	.93107	.02916
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	27.770	.00313	.00061	F 332.81	-.00044	.01690	-.00176
Stddev	.423	.00058	.00038	3.06	.00040	.00623	.00193
%RSD	1.5234	18.415	63.127	.91936	91.512	36.876	109.22
#1	28.198	.00356	.00025	336.04	.00001	.01696	-.00039
#2	27.758	.00247	.00101	332.45	-.00075	.02309	-.00397
#3	27.352	.00335	.00056	329.95	-.00058	.01063	-.00094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606141703 Acquired: 6/28/2016 17:13:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00858	.01098	6.5142	.00063	.44020	-.01426	-.00360
Stddev	.00279	.00554	.1057	.00026	.00270	.00856	.00203
%RSD	32.540	50.432	1.6223	41.814	.61389	60.018	56.525
#1	.00962	.01118	6.3931	.00093	.44308	-.01059	-.00516
#2	.01070	.00535	6.5621	.00043	.43979	-.02404	-.00433
#3	.00542	.01642	6.5875	.00053	.43772	-.00815	-.00130
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00669	.00204	-.00040
Stddev	.00083	.00018	.00060
%RSD	12.431	8.6576	149.18
#1	.00573	.00187	-.00046
#2	.00724	.00205	.00022
#3	.00709	.00222	-.00098
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8495.4	50392.	2471.0
Stddev	66.1	29.	28.9
%RSD	.77818	.05745	1.1711
#1	8420.9	50365.	2455.1
#2	8518.1	50387.	2453.4
#3	8547.1	50423.	2504.4

Approved: June 29, 2016

Sample Name: L1606141704 Acquired: 6/28/2016 17:17:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00131	.02482	-.00058	.24745	.03445	.00011	46.133	.00013
Stddev	.00193	.01764	.00214	.00411	.00146	.00007	.158	.00013
%RSD	147.77	71.076	366.90	1.6599	4.2502	65.051	.34241	99.279
#1	-.00177	.00897	-.00061	.25084	.03426	.00013	46.315	.00028
#2	.00081	.04383	-.00271	.24288	.03309	.00018	46.057	.00008
#3	-.00297	.02167	.00157	.24864	.03600	.00003	46.028	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	.00119	.00162	-.00306	.52222	.01059	18.887	-.00098
Stddev	.00017	.00069	.00127	.00742	.12961	.00196	.293	.00125
%RSD	37.399	57.908	78.405	242.24	24.820	18.472	1.5517	128.58
#1	.00027	.00063	.00172	-.01046	.43642	.00841	19.107	-.00051
#2	.00051	.00196	.00284	-.00310	.45891	.01218	18.554	-.00002
#3	.00061	.00099	.00030	.00437	.67132	.01118	18.999	-.00240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00251	211.55	.00005	.09692	-.00255	.00520	.00074	5.8088
Stddev	.00031	1.48	.00154	.00855	.00138	.00793	.00785	.0129
%RSD	12.444	.69803	3150.4	8.8176	54.182	152.43	1053.9	.22195
#1	.00230	213.19	-.00158	.08800	-.00410	-.00390	.00629	5.8189
#2	.00287	210.31	.00147	.10504	-.00145	.00891	-.00823	5.8132
#3	.00236	211.16	.00025	.09771	-.00210	.01060	.00418	5.7943
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606141704 Acquired: 6/28/2016 17:17:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00087**	**.24315**	**-.00010**	**.00005**	**.02598**	**.00233**	**-.00026**
Stddev	.00079	.00119	.00743	.00177	.00061	.00010	.00030
%RSD	90.563	.49112	7319.3	3564.4	2.3394	4.3126	117.95
#1	-.00043	.24447	-.00795	.00163	.02643	.00244	-.00018
#2	-.00040	.24280	.00683	-.00186	.02529	.00223	-.00059
#3	-.00178	.24216	.00082	.00037	.02622	.00233	.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8783.8**	**51975.**	**2512.3**
Stddev	55.8	116.	24.2
%RSD	.63563	.22378	.96215
#1	8722.3	51847.	2485.1
#2	8798.0	52074.	2520.4
#3	8831.2	52004.	2531.4

Approved: June 29, 2016

Sample Name: L1606141705 Acquired: 6/28/2016 17:21:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574197-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00054**	**.11762**	**.00112**	**.10521**	**.06752**	**.00001**	**96.827**
Stddev	.00144	.00687	.00475	.00641	.00069	.00009	.209
%RSD	266.03	5.8421	425.10	6.0937	1.0190	779.17	.21573
#1	.00025	.12457	.00638	.10747	.06826	-.00009	97.016
#2	-.00220	.11083	-.00017	.11018	.06690	.00006	96.862
#3	.00033	.11745	-.00286	.09797	.06740	.00006	96.602
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**.00042**	**.00173**	**.00085**	**.07794**	**1.1917**	**.02902**
Stddev	.00013	.00033	.00044	.00109	.03187	.0495	.00258
%RSD	266.30	77.268	25.434	127.96	40.886	4.1514	8.8807
#1	-.00005	.00044	.00124	.00186	.09460	1.1478	.03156
#2	.00000	.00009	.00207	.00099	.09803	1.1821	.02911
#3	.00019	.00074	.00190	-.00030	.04120	1.2453	.02640
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**26.446**	**.00090**	**.00036**	F **307.46**	**.00034**	**.04921**	**.00215**
Stddev	.192	.00233	.00015	.43	.00044	.00674	.00302
%RSD	.72707	257.45	43.349	.13955	128.77	13.697	140.25
#1	26.224	-.00095	.00040	307.47	.00021	.05695	.00186
#2	26.549	.00352	.00048	307.88	-.00002	.04463	-.00071
#3	26.565	.00014	.00018	307.02	.00082	.04604	.00531
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606141705 Acquired: 6/28/2016 17:21:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574197-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00223	.01012	6.7901	.00005	.42714	-.01174	-.00258
Stddev	.00151	.00578	.1318	.00082	.00162	.00247	.00377
%RSD	67.939	57.128	1.9417	1493.3	.37951	21.069	146.44
#1	.00395	.00984	6.8579	.00068	.42786	-.01002	.00062
#2	.00163	.00449	6.8743	-.00087	.42528	-.01457	-.00161
#3	.00110	.01604	6.6382	.00036	.42827	-.01063	-.00674
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00811	.00497	.00003
Stddev	.00068	.00032	.00018
%RSD	8.4177	6.3841	661.65
#1	.00813	.00521	.00024
#2	.00742	.00509	-.00009
#3	.00878	.00461	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9194.6	53158.	2688.0
Stddev	76.3	238.	10.9
%RSD	.83016	.44694	.40654
#1	9130.2	52915.	2686.1
#2	9174.7	53169.	2699.8
#3	9278.9	53389.	2678.2

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 17:25:17 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41063**	**10.434**	**.41428**	**.51216**	**1.0413**	**.05168**	**10.315**	**.05208**
Stddev	.00142	.012	.00197	.00241	.0092	.00008	.139	.00046
%RSD	.34482	.11024	.47507	.46985	.88353	.15858	1.3488	.87992
#1	.40968	10.421	.41378	.50971	1.0318	.05172	10.241	.05259
#2	.41226	10.438	.41644	.51224	1.0501	.05159	10.475	.05195
#3	.40996	10.443	.41260	.51453	1.0420	.05174	10.228	.05171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20970**	**.52123**	**.52471**	**4.0931**	**52.107**	**1.0384**	**10.427**	**.51647**
Stddev	.00019	.00093	.00318	.0350	.543	.0086	.193	.01133
%RSD	.09137	.17808	.60593	.85548	1.0418	.83105	1.8528	2.1946
#1	.20971	.52017	.52700	4.0605	51.502	1.0310	10.245	.50418
#2	.20989	.52190	.52606	4.1301	52.552	1.0479	10.630	.52652
#3	.20951	.52163	.52108	4.0888	52.265	1.0363	10.407	.51870
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0482**	**51.967**	**.51895**	**10.327**	**.51794**	**1.2481**	**.41250**	**5.1601**
Stddev	.0026	.422	.00111	.039	.00260	.0051	.00656	.0088
%RSD	.24430	.81231	.21458	.37322	.50188	.41057	1.5909	.16973
#1	1.0496	51.513	.51962	10.370	.52089	1.2510	.40521	5.1697
#2	1.0497	52.348	.51956	10.315	.51696	1.2512	.41433	5.1579
#3	1.0452	52.039	.51766	10.296	.51597	1.2422	.41795	5.1526
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 17:25:17 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0508**	**1.0412**	**1.0262**	**.51737**	**1.0382**	**1.0416**	**1.0509**
Stddev	.0050	.0079	.0142	.00345	.0016	.0036	.0045
%RSD	.47886	.76203	1.3860	.66661	.15530	.34623	.42861
#1	1.0543	1.0324	1.0107	.52109	1.0370	1.0443	1.0488
#2	1.0530	1.0478	1.0385	.51427	1.0400	1.0430	1.0561
#3	1.0450	1.0435	1.0296	.51675	1.0375	1.0375	1.0479
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8847.3**	**52671.**	**2540.6**
Stddev	20.9	44.	7.8
%RSD	.23606	.08261	.30650
#1	8856.9	52626.	2545.5
#2	8823.3	52713.	2531.6
#3	8861.6	52672.	2544.7

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 17:28:54 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00137	.00864	.00114	-.00129	.00127	-.00000	-.01842	.00016
Stddev	.00208	.01298	.00369	.00160	.00030	.00002	.02089	.00015
%RSD	151.69	150.30	323.38	123.51	23.213	416.07	113.36	96.218
#1	.00296	.01546	.00540	-.00214	.00094	.00000	-.03653	.00004
#2	.00212	-.00633	-.00086	.00055	.00137	.00001	.00443	.00033
#3	-.00098	.01679	-.00111	-.00229	.00151	-.00003	-.02317	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	.00001	-.00021	-.02327	.02556	.00089	.03301	-.00177
Stddev	.00011	.00022	.00156	.02043	.19953	.00092	.03673	.00050
%RSD	58.035	3375.3	728.02	87.786	780.71	103.42	111.26	28.440
#1	-.00007	-.00024	-.00110	-.02841	.00357	.00171	.07479	-.00121
#2	-.00029	.00018	-.00114	-.04064	.23518	-.00011	.00581	-.00190
#3	-.00022	.00008	.00159	-.00076	-.16207	.00108	.01843	-.00219
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.06157	-.00058	.00198	-.00199	.00000	.00086	.00395
Stddev	.00050	.00743	.00023	.00447	.00074	.00175	.00619	.00169
%RSD	183.95	12.061	39.085	225.38	37.403	67237.	719.77	42.864
#1	.00033	.06954	-.00076	.00470	-.00248	.00162	.00734	.00430
#2	-.00025	.05484	-.00065	-.00318	-.00235	.00025	.00023	.00543
#3	.00073	.06032	-.00032	.00443	-.00113	-.00186	-.00499	.00211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 17:28:54 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	-.00008	-.01040	-.00139	-.00079	.00004	.00033
Stddev	.00046	.00033	.00366	.00282	.00058	.00008	.00063
%RSD	63.012	430.45	35.254	202.56	72.599	178.70	188.25
#1	.00097	.00029	-.00635	-.00462	-.00069	.00001	.00060
#2	.00104	-.00036	-.01349	-.00012	-.00141	-.00001	.00078
#3	.00020	-.00016	-.01135	.00056	-.00027	.00013	-.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9498.1	57616.	2748.5
Stddev	20.5	444.	8.5
%RSD	.21556	.76995	.30872
#1	9518.0	57981.	2752.3
#2	9477.1	57746.	2754.4
#3	9499.4	57122.	2738.8

Approved: June 29, 2016

Sample Name: L1606141706S Acquired: 6/28/2016 17:32:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574197-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19808	5.1906	.20655	1.1063	.57218	.02520	102.15
Stddev	.00320	.0196	.00418	.0036	.00217	.00008	.64
%RSD	1.6176	.37720	2.0223	.32409	.37887	.32992	.62171
#1	.19656	5.2063	.20695	1.1061	.57455	.02521	102.72
#2	.20176	5.1967	.20219	1.1100	.57029	.02512	102.28
#3	.19591	5.1687	.21052	1.1028	.57171	.02528	101.46
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02536	.10182	.25402	.25166	2.0225	26.938	.54649
Stddev	.00023	.00059	.00225	.00113	.0134	.195	.00157
%RSD	.90274	.57849	.88493	.45019	.66474	.72444	.28645
#1	.02538	.10156	.25429	.25139	2.0225	26.994	.54509
#2	.02512	.10141	.25164	.25291	2.0090	26.721	.54621
#3	.02558	.10250	.25611	.25069	2.0359	27.099	.54818
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	31.531	.24839	.51920	F 332.57	.24791	5.1748	.24660
Stddev	.247	.00395	.00098	1.46	.00066	.0118	.00293
%RSD	.78179	1.5908	.18966	.43910	.26478	.22818	1.1879
#1	31.335	.25082	.52003	334.01	.24863	5.1884	.24946
#2	31.808	.25052	.51945	332.62	.24776	5.1669	.24361
#3	31.450	.24383	.51811	331.09	.24734	5.1692	.24672
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606141706S Acquired: 6/28/2016 17:32:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574197-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.61097**	**.20159**	**9.3307**	**.51429**	**.92047**	**.49095**	**.24148**
Stddev	.00187	.00312	.0070	.00177	.00593	.00874	.00358
%RSD	.30591	1.5463	.07478	.34390	.64371	1.7794	1.4806
#1	.61249	.20339	9.3354	.51622	.92365	.50103	.24486
#2	.60888	.20339	9.3340	.51274	.92414	.48612	.24184
#3	.61152	.19799	9.3227	.51392	.91364	.48569	.23774
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.51988**	**.50708**	**.00128**
Stddev	.00090	.00063	.00024
%RSD	.17257	.12519	18.835
#1	.51899	.50720	.00124
#2	.52079	.50640	.00105
#3	.51985	.50765	.00153
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8731.6**	**52119.**	**2623.8**
Stddev	22.2	108.	5.5
%RSD	.25407	.20627	.21124
#1	8715.2	51996.	2617.7
#2	8722.7	52171.	2625.3
#3	8756.8	52191.	2628.5

Approved: June 29, 2016

Sample Name: L1606141707SD Acquired: 6/28/2016 17:36:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574197-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19904**	**5.1577**	**.20660**	**1.1125**	**.57944**	**.02527**	**106.96**
Stddev	.00340	.0324	.00258	.0072	.00374	.00015	.93
%RSD	1.7077	.62831	1.2482	.64388	.64630	.60260	.86711
#1	.20153	5.1918	.20939	1.1207	.58341	.02544	107.96
#2	.19517	5.1540	.20430	1.1077	.57895	.02523	106.79
#3	.20043	5.1273	.20611	1.1090	.57596	.02514	106.12
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02530**	**.10083**	**.25465**	**.25033**	**2.0157**	**27.093**	**.55071**
Stddev	.00018	.00022	.00034	.00103	.0346	.134	.00560
%RSD	.70257	.22081	.13182	.41222	1.7175	.49434	1.0172
#1	.02513	.10089	.25485	.25054	2.0488	27.229	.55640
#2	.02549	.10058	.25426	.25124	2.0186	27.089	.55053
#3	.02527	.10101	.25483	.24921	1.9797	26.961	.54520
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**32.784**	**.25113**	**.51748**	F **347.90**	**.24681**	**5.1621**	**.24360**
Stddev	.318	.00113	.00098	2.92	.00070	.0064	.00204
%RSD	.96981	.45137	.18933	.83831	.28316	.12380	.83787
#1	33.099	.25131	.51706	350.96	.24677	5.1662	.24508
#2	32.463	.24992	.51678	347.61	.24753	5.1653	.24127
#3	32.791	.25217	.51860	345.15	.24614	5.1547	.24444
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606141707SD Acquired: 6/28/2016 17:36:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574197-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.60853	.20159	9.5063	.51055	.94598	.48772	.24112
Stddev	.00227	.00218	.0161	.00183	.00572	.00698	.00257
%RSD	.37335	1.0822	.16904	.35915	.60455	1.4306	1.0676
#1	.61075	.19909	9.5194	.50854	.95255	.48242	.24016
#2	.60861	.20252	9.5110	.51099	.94327	.49562	.23916
#3	.60621	.20315	9.4883	.51212	.94213	.48511	.24404
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.52390	.50579	.00079
Stddev	.00181	.00036	.00028
%RSD	.34515	.07203	35.877
#1	.52594	.50600	.00091
#2	.52251	.50601	.00100
#3	.52323	.50537	.00047
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8701.2	52153.	2588.8
Stddev	22.5	132.	32.1
%RSD	.25813	.25395	1.2418
#1	8722.7	52088.	2562.7
#2	8703.0	52067.	2578.9
#3	8677.9	52306.	2624.7

Approved: June 29, 2016

Sample Name: L1606141709 Acquired: 6/28/2016 17:40:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00103**	**.02204**	**-.00015**	**.00568**	**.00369**	**.00002**	**.47478**	**.00028**
Stddev	.00045	.00870	.00406	.00129	.00006	.00006	.02804	.00019
%RSD	43.527	39.495	2684.0	22.677	1.7207	230.26	5.9059	67.226
#1	-.00109	.03207	-.00068	.00707	.00366	.00007	.49930	.00006
#2	-.00145	.01651	.00415	.00452	.00376	.00004	.44421	.00040
#3	-.00056	.01753	-.00393	.00546	.00365	-.00004	.48083	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.02074**	**.00159**	**.09814**	**.12915**	**.00263**	**.17253**	**.00183**
Stddev	.00019	.00087	.00109	.02609	.10413	.00216	.05728	.00183
%RSD	330.23	4.1809	68.745	26.582	80.624	82.131	33.199	99.777
#1	.00015	.01977	.00259	.09334	.07504	.00025	.14881	.00162
#2	-.00024	.02105	.00042	.07478	.06322	.00447	.13091	.00012
#3	-.00009	.02142	.00176	.12629	.24919	.00317	.23785	.00376
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00330**	**.41183**	**.01258**	**.00202**	**.00096**	**-.00040**	**-.00693**	**.16243**
Stddev	.00024	.05071	.00143	.00577	.00237	.00111	.00365	.00635
%RSD	7.1652	12.314	11.384	285.46	247.83	277.45	52.696	3.9090
#1	.00340	.46553	.01410	-.00056	-.00071	-.00008	-.00639	.16499
#2	.00347	.40521	.01126	.00862	-.00009	-.00164	-.00357	.16710
#3	.00303	.36476	.01237	-.00200	.00367	.00051	-.01081	.15520
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606141709 Acquired: 6/28/2016 17:40:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00116	.00211	-.00432	-.00552	-.00015	.00799	.00005
Stddev	.00091	.00055	.00239	.00248	.00116	.00023	.00041
%RSD	78.681	25.991	55.399	44.889	756.12	2.9356	786.44
#1	.00192	.00181	-.00182	-.00838	-.00117	.00818	-.00009
#2	.00142	.00275	-.00659	-.00412	.00112	.00805	-.00027
#3	.00015	.00178	-.00454	-.00406	-.00041	.00773	.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9048.9	54685.	2582.3
Stddev	39.5	183.	15.2
%RSD	.43628	.33548	.58820
#1	9076.5	54575.	2577.5
#2	9066.5	54583.	2599.3
#3	9003.7	54897.	2570.1

Approved: June 29, 2016

Sample Name: L1606141708 Acquired: 6/28/2016 17:44:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00243	.04088	.00267	.26401	.02074	.00004	47.847
Stddev	.00156	.00747	.00452	.00205	.00069	.00006	.211
%RSD	64.389	18.266	169.40	.77531	3.3096	146.55	.44118
#1	.00245	.04279	-.00253	.26335	.02076	.00000	47.982
#2	.00398	.04720	.00490	.26237	.02005	.00001	47.955
#3	.00085	.03264	.00564	.26630	.02142	.00010	47.604
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	.00060	.00322	.00115	.00871	1.4455	.03114
Stddev	.00026	.00038	.00063	.00167	.01045	.0814	.00316
%RSD	92.339	63.370	19.723	144.37	119.94	5.6330	10.156
#1	.00029	.00050	.00255	.00254	.00807	1.5394	.02833
#2	.00053	.00102	.00329	.00161	.01948	1.3939	.03051
#3	.00002	.00028	.00381	-.00069	-.00140	1.4033	.03456
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	26.580	.00101	.00380	F 309.24	.00068	.01262	.00097
Stddev	.048	.00103	.00020	2.61	.00100	.00203	.00350
%RSD	.18102	102.63	5.2895	.84510	146.78	16.065	362.04
#1	26.525	-.00017	.00403	311.99	.00029	.01371	.00191
#2	26.602	.00179	.00375	308.94	-.00007	.01387	.00390
#3	26.613	.00140	.00364	306.79	.00182	.01028	-.00290
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606141708 Acquired: 6/28/2016 17:44:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00603**	**-.00211**	**10.769**	**-.00049**	**.45330**	**.00227**	**.00090**
Stddev	.00610	.00730	.105	.00096	.00324	.00961	.00040
%RSD	101.14	346.44	.97867	196.72	.71523	422.80	43.933
#1	.01107	-.00689	10.832	.00052	.45646	-.00118	.00055
#2	-.00075	.00629	10.827	-.00058	.45347	.01314	.00083
#3	.00777	-.00572	10.647	-.00140	.44998	-.00514	.00133
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.02416**	**.00349**	**-.00002**
Stddev	.00018	.00017	.00027
%RSD	.72781	4.8721	1121.0
#1	.02432	.00336	-.00019
#2	.02418	.00368	-.00016
#3	.02397	.00343	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8723.1**	**51951.**	**2551.9**
Stddev	8.7	67.	17.3
%RSD	.09932	.12929	.67853
#1	8714.7	51875.	2544.1
#2	8722.7	51978.	2539.9
#3	8732.0	52001.	2571.8

Approved: June 29, 2016

Sample Name: L1606141708PS Acquired: 6/28/2016 17:48:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574351-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20259**	**5.1687**	**.21063**	**1.2212**	**.54196**	**.02561**	**44.961**	**.02555**
Stddev	.00156	.0084	.00541	.0004	.00321	.00011	.062	.00021
%RSD	.77095	.16245	2.5702	.03511	.59146	.43676	.13812	.83840
#1	.20436	5.1784	.21685	1.2216	.54096	.02570	44.969	.02567
#2	.20201	5.1643	.20696	1.2207	.54555	.02549	45.019	.02531
#3	.20140	5.1635	.20807	1.2214	.53937	.02565	44.896	.02568
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10323**	**.25884**	**.25619**	**2.0636**	**26.644**	**.53793**	**21.729**	**.25488**
Stddev	.00046	.00092	.00047	.0109	.087	.00284	.132	.00399
%RSD	.44581	.35703	.18334	.52827	.32624	.52750	.60733	1.5672
#1	.10353	.25833	.25664	2.0633	26.595	.54042	21.633	.25244
#2	.10270	.25829	.25623	2.0528	26.745	.53851	21.880	.25949
#3	.10346	.25991	.25571	2.0746	26.593	.53484	21.675	.25271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52668**	**211.46**	**.25296**	**5.1993**	**.25070**	**.61175**	**.19559**	**7.5114**
Stddev	.00057	.61	.00083	.0189	.00209	.00406	.00531	.0237
%RSD	.10810	.29018	.32665	.36271	.83523	.66301	2.7154	.31540
#1	.52639	211.92	.25279	5.2151	.25160	.61155	.19173	7.5159
#2	.52734	211.69	.25223	5.1784	.24831	.60780	.20165	7.4857
#3	.52632	210.76	.25385	5.2044	.25219	.61590	.19340	7.5324
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606141708PS Acquired: 6/28/2016 17:48:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574351-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52241	.73587	.50781	.25087	.54413	.51477	.00060
Stddev	.00290	.00286	.00391	.00293	.00166	.00074	.00075
%RSD	.55542	.38921	.77060	1.1694	.30456	.14412	124.36
#1	.52548	.73778	.50331	.25358	.54423	.51470	-.00018
#2	.51972	.73725	.50974	.25127	.54243	.51407	.00132
#3	.52202	.73258	.51039	.24775	.54574	.51555	.00067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8718.0	52220.	2556.6
Stddev	23.7	196.	14.1
%RSD	.27134	.37526	.55135
#1	8736.2	52007.	2546.0
#2	8726.6	52260.	2551.3
#3	8691.3	52392.	2572.6

Approved: June 29, 2016

Sample Name: L1606141708SDL Acquired: 6/28/2016 17:51:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574351-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.01090	-.00177	.05174	.01000	.00001	8.8372	-.00021
Stddev	.00417	.00346	.00166	.00113	.00148	.00006	.1364	.00021
%RSD	5352.3	31.779	93.638	2.1803	14.756	761.48	1.5432	99.645
#1	.00017	.00731	-.00114	.05151	.01145	.00003	8.8881	-.00044
#2	.00421	.01117	-.00365	.05297	.00850	-.00006	8.6827	-.00014
#3	-.00414	.01422	-.00052	.05075	.01005	.00005	8.9409	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.00002	-.00037	.00887	.07836	.00595	3.7843	.00093
Stddev	.00016	.00091	.00083	.02803	.17140	.00666	.0653	.00243
%RSD	242.29	5773.0	224.03	316.15	218.73	111.94	1.7261	261.96
#1	.00012	.00086	.00008	.02549	.25974	-.00139	3.8020	-.00110
#2	-.00018	.00013	.00013	.02462	.05625	.01163	3.7120	.00361
#3	-.00014	-.00095	-.00132	-.02350	-.08091	.00762	3.8391	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	40.985	-.00098	.02316	-.00046	.00112	-.00399	1.1071
Stddev	.00050	.143	.00145	.00549	.00197	.00317	.00369	.0032
%RSD	158.02	.34971	148.07	23.714	432.35	283.73	92.483	.28900
#1	.00038	40.844	-.00095	.02909	-.00059	.00328	-.00185	1.1065
#2	.00079	41.130	-.00244	.01825	-.00236	-.00252	-.00825	1.1106
#3	-.00021	40.981	.00046	.02213	.00158	.00260	-.00187	1.1042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606141708SDL Acquired: 6/28/2016 17:51:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574351-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.04740	-.00415	.00232	.00509	.00125	.00026
Stddev	.00038	.00027	.00885	.00316	.00105	.00019	.00028
%RSD	55.625	.56719	213.10	136.27	20.717	14.844	108.09
#1	.00036	.04714	.00557	.00596	.00466	.00104	.00057
#2	.00059	.04739	-.01172	.00027	.00432	.00135	.00002
#3	.00110	.04768	-.00631	.00073	.00629	.00137	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9108.9	55839.	2680.3
Stddev	144.9	45.	11.8
%RSD	1.5908	.07970	.44130
#1	9276.0	55823.	2679.3
#2	9017.9	55805.	2669.0
#3	9032.9	55889.	2692.6

Approved: June 29, 2016

Sample Name: L1606141708SDL Acquired: 6/28/2016 17:55:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574351-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00126	.00679	-.00461	.01048	.00757	.00011	2.0282	.00002
Stddev	.00171	.00662	.00192	.00130	.00164	.00004	.0721	.00039
%RSD	135.72	97.538	41.786	12.376	21.676	33.161	3.5542	1576.6
#1	-.00322	.01267	-.00428	.00936	.00767	.00014	1.9808	-.00023
#2	-.00010	.00808	-.00667	.01019	.00916	.00013	1.9926	.00048
#3	-.00045	-.00038	-.00287	.01190	.00588	.00007	2.1111	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00006	-.00063	.00029	-.00169	-.06458	.00324	.94026	-.00186
Stddev	.00030	.00093	.00186	.00633	.11707	.00642	.04956	.00422
%RSD	519.60	146.77	651.58	374.87	181.27	198.03	5.2707	227.50
#1	-.00038	-.00149	.00071	-.00880	-.05117	.01066	.99743	.00249
#2	.00001	-.00076	-.00175	.00336	-.18778	-.00040	.90962	-.00211
#3	.00020	.00035	.00190	.00037	.04520	-.00053	.91371	-.00594
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	9.3983	.00052	.00643	-.00278	.00377	-.00358	.23575
Stddev	.00058	.0421	.00029	.00838	.00339	.00244	.00209	.00590
%RSD	5118.0	.44773	56.366	130.29	121.91	64.746	58.308	2.5017
#1	.00064	9.3497	.00078	.01272	-.00577	.00122	-.00340	.23326
#2	-.00047	9.4246	.00057	.00965	-.00346	.00609	-.00159	.24249
#3	-.00020	9.4204	.00020	-.00308	.00090	.00400	-.00576	.23152
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606141708SDL Acquired: 6/28/2016 17:55:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574351-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00025**	**.01067**	**-.00653**	**-.00309**	**.00097**	**.00051**	**-.00036**
Stddev	.00026	.00020	.00256	.00383	.00052	.00006	.00045
%RSD	104.08	1.8650	39.262	124.14	53.131	10.829	124.08
#1	-.00034	.01058	-.00528	-.00684	.00060	.00050	-.00083
#2	.00004	.01054	-.00948	-.00325	.00157	.00046	.00006
#3	-.00045	.01090	-.00483	.00082	.00076	.00057	-.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8810.1**	**51837.**	**2375.6**
Stddev	22.4	803.	12.2
%RSD	.25452	1.5500	.51506
#1	8798.7	50934.	2387.5
#2	8795.7	52105.	2376.5
#3	8835.9	52472.	2363.0

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 17:59:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40953	10.358	.40325	.50569	1.0377	.05127	10.173	.05163
Stddev	.00263	.030	.00244	.00340	.0049	.00005	.046	.00026
%RSD	.64327	.29367	.60614	.67192	.46748	.10702	.44991	.49526
#1	.41131	10.365	.40190	.50898	1.0429	.05127	10.218	.05188
#2	.41078	10.384	.40178	.50219	1.0369	.05133	10.173	.05137
#3	.40651	10.324	.40607	.50590	1.0333	.05122	10.126	.05164
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20801	.51774	.51845	4.0570	51.916	1.0358	10.380	.51050
Stddev	.00080	.00113	.00121	.0359	.257	.0087	.109	.00365
%RSD	.38296	.21789	.23327	.88438	.49446	.84111	1.0481	.71493
#1	.20753	.51704	.51738	4.0712	51.951	1.0448	10.412	.51462
#2	.20757	.51713	.51821	4.0836	52.154	1.0274	10.470	.50765
#3	.20893	.51904	.51976	4.0162	51.644	1.0352	10.259	.50923
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0353	51.313	.51142	10.168	.51109	1.2278	.40810	5.0792
Stddev	.0016	.308	.00212	.020	.00397	.0065	.00283	.0118
%RSD	.15321	.60001	.41391	.19194	.77733	.52512	.69386	.23247
#1	1.0334	51.668	.50929	10.152	.51162	1.2205	.41062	5.0661
#2	1.0361	51.140	.51353	10.163	.50688	1.2303	.40503	5.0828
#3	1.0362	51.129	.51144	10.190	.51477	1.2327	.40864	5.0889
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 17:59:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0405**	**1.0319**	**1.0258**	**.51595**	**1.0303**	**1.0251**	**1.0489**
Stddev	.0014	.0058	.0056	.00284	.0033	.0006	.0073
%RSD	.13748	.56547	.54363	.55091	.32022	.05544	.69634
#1	1.0389	1.0385	1.0307	.51844	1.0265	1.0248	1.0547
#2	1.0411	1.0296	1.0270	.51655	1.0327	1.0248	1.0513
#3	1.0416	1.0275	1.0197	.51285	1.0317	1.0258	1.0407
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8637.3**	**51278.**	**2447.4**
Stddev	8.2	60.	15.8
%RSD	.09533	.11663	.64353
#1	8627.9	51221.	2433.5
#2	8641.0	51271.	2444.2
#3	8643.1	51341.	2464.5

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 18:03:06 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	.01080	-.00271	.00248	.00477	.00007	-.01292	.00019
Stddev	.00093	.01033	.00298	.00158	.00062	.00003	.03053	.00023
%RSD	167.94	95.684	110.04	63.788	13.065	47.480	236.25	120.92
#1	-.00037	.02131	.00021	.00086	.00529	.00005	.01946	-.00005
#2	.00055	.00066	-.00259	.00256	.00494	.00011	-.01705	.00041
#3	.00149	.01043	-.00574	.00402	.00408	.00005	-.04118	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	.00071	-.00033	-.00673	.08495	.00461	-.03119	-.00165
Stddev	.00027	.00104	.00159	.02679	.11097	.00127	.02914	.00031
%RSD	626.90	146.32	486.02	398.01	130.63	27.579	93.428	18.937
#1	.00002	.00124	-.00155	-.03370	.21293	.00585	-.05176	-.00140
#2	.00019	-.00049	.00147	-.00638	.02640	.00467	-.04395	-.00200
#3	-.00034	.00140	-.00090	.01989	.01551	.00331	.00215	-.00155
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	.02578	-.00088	.00040	-.00098	-.00036	-.00052	.01027
Stddev	.00021	.03313	.00045	.00299	.00110	.00141	.00278	.00190
%RSD	46.697	128.47	50.984	754.22	112.15	395.94	532.06	18.530
#1	.00030	.06378	-.00037	-.00306	-.00117	-.00054	-.00113	.01167
#2	.00035	.01063	-.00119	.00206	-.00198	-.00167	-.00295	.01105
#3	.00068	.00295	-.00107	.00219	.00020	.00114	.00251	.00811
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 18:03:06 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.00044	.00810	-.00323	.00026	-.00003	-.00076
Stddev	.00017	.00061	.00298	.00109	.00047	.00016	.00056
%RSD	206.40	138.10	36.823	33.645	180.38	466.73	74.263
#1	.00022	.00021	.00523	-.00378	.00040	.00014	-.00039
#2	-.00011	.00113	.01118	-.00394	.00064	-.00017	-.00141
#3	.00015	-.00002	.00788	-.00198	-.00026	-.00007	-.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9036.2	53954.	2557.7
Stddev	26.9	80.	23.2
%RSD	.29811	.14859	.90574
#1	9037.5	53990.	2536.5
#2	9008.6	53862.	2554.3
#3	9062.4	54009.	2582.4

Approved: June 29, 2016

Sample Name: PBW B2 Acquired: 6/28/2016 18:07:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00170	.01043	-.00052	-.00011	.00401	.00007	-.00778	-.00022
Stddev	.00200	.00199	.00155	.00108	.00075	.00012	.01103	.00049
%RSD	117.21	19.061	298.33	973.04	18.651	166.11	141.79	229.43
#1	.00033	.01227	.00099	.00098	.00488	.00019	-.00668	-.00044
#2	-.00177	.01070	-.00043	-.00014	.00355	-.00004	.00266	-.00056
#3	-.00366	.00832	-.00211	-.00118	.00361	.00007	-.01931	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.00016	-.00003	-.00729	-.08053	.00362	.00599	-.00068
Stddev	.00020	.00072	.00044	.04593	.12257	.00210	.05243	.00472
%RSD	1586.2	448.35	1436.5	630.15	152.21	57.897	875.90	696.56
#1	.00025	-.00030	.00028	-.00464	.04618	.00556	-.04922	.00095
#2	-.00010	-.00021	.00017	-.05448	-.08928	.00391	.05511	.00302
#3	-.00011	.00099	-.00054	.03726	-.19848	.00140	.01207	-.00600
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	-.04423	-.00022	.00531	-.00089	-.00119	.00160	-.02066
Stddev	.00010	.03208	.00087	.00542	.00193	.00297	.00550	.00313
%RSD	415.26	72.525	401.96	101.93	217.31	249.65	344.45	15.170
#1	-.00009	-.00833	-.00050	.00397	-.00247	-.00230	.00628	-.01727
#2	.00010	-.05429	.00076	.01128	.00126	.00217	.00297	-.02345
#3	.00005	-.07006	-.00091	.00070	-.00146	-.00344	-.00446	-.02126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: PBW B2 Acquired: 6/28/2016 18:07:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	-.00015	-.00225	-.00154	-.00086	.00116	.00006
Stddev	.00083	.00033	.00560	.00109	.00062	.00019	.00059
%RSD	296.10	220.11	249.29	70.822	71.238	16.407	922.03
#1	.00057	-.00047	-.00793	-.00227	-.00023	.00104	-.00013
#2	.00092	.00019	-.00209	-.00207	-.00091	.00107	-.00041
#3	-.00066	-.00017	.00327	-.00029	-.00146	.00138	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9262.0	55509.	2596.5
Stddev	18.3	93.	16.0
%RSD	.19752	.16788	.61454
#1	9274.8	55517.	2609.7
#2	9270.0	55412.	2600.9
#3	9241.0	55598.	2578.7

Approved: June 29, 2016

Sample Name: LCSW B2 Acquired: 6/28/2016 18:10:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19908**	**5.0837**	**.19736**	**.97686**	**.51693**	**.02483**	**5.1160**	**.02576**
Stddev	.00333	.0233	.00330	.00209	.00312	.00008	.0362	.00019
%RSD	1.6735	.45847	1.6711	.21444	.60374	.33692	.70721	.74443
#1	.20187	5.1093	.19698	.97458	.51353	.02488	5.0743	.02555
#2	.19539	5.0782	.19426	.97732	.51761	.02473	5.1397	.02592
#3	.19996	5.0637	.20083	.97869	.51966	.02488	5.1340	.02583
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10460**	**.25742**	**.25769**	**2.0140**	**25.917**	**.52465**	**5.3350**	**.25267**
Stddev	.00067	.00235	.00084	.0526	.053	.00613	.0905	.00627
%RSD	.63742	.91298	.32425	2.6137	.20278	1.1691	1.6966	2.4834
#1	.10462	.25478	.25712	2.0495	25.966	.51774	5.4250	.24876
#2	.10392	.25819	.25865	1.9535	25.922	.52675	5.3359	.24934
#3	.10526	.25929	.25731	2.0391	25.861	.52946	5.2440	.25991
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51758**	**25.584**	**.25454**	**4.9065**	**.25584**	**.59881**	**.19289**	**2.4365**
Stddev	.00117	.139	.00175	.0056	.00447	.00308	.00511	.0047
%RSD	.22594	.54341	.68580	.11407	1.7469	.51446	2.6494	.19215
#1	.51794	25.441	.25346	4.9066	.25810	.60066	.18701	2.4311
#2	.51627	25.594	.25361	4.9121	.25069	.59525	.19551	2.4392
#3	.51853	25.718	.25655	4.9009	.25872	.60051	.19617	2.4392
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LCSW B2 Acquired: 6/28/2016 18:10:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51885**	**.51980**	**.51295**	**.25574**	**.51101**	**.50971**	**.00042**
Stddev	.00154	.00188	.00585	.00184	.00161	.00098	.00030
%RSD	.29738	.36262	1.1413	.71911	.31603	.19237	71.457
#1	.51820	.51785	.50904	.25411	.51259	.50924	.00060
#2	.51773	.51992	.51968	.25538	.51108	.50904	.00007
#3	.52061	.52162	.51013	.25773	.50936	.51083	.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8877.1**	**53509.**	**2551.3**
Stddev	31.9	97.	7.5
%RSD	.35911	.18077	.29508
#1	8840.7	53429.	2556.0
#2	8900.2	53617.	2555.2
#3	8890.4	53481.	2542.6

Approved: June 29, 2016

Sample Name: L1606111601 Acquired: 6/28/2016 18:14:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00175	.75194	-.00188	.32623	.17213	.00042	25.558	.00036
Stddev	.00238	.00520	.00227	.00208	.00077	.00003	.203	.00028
%RSD	136.60	.69204	120.67	.63750	.44552	6.9430	.79597	78.709
#1	.00443	.75721	-.00276	.32666	.17289	.00039	25.699	.00066
#2	.00095	.74680	-.00356	.32806	.17213	.00044	25.649	.00033
#3	-.00014	.75181	.00070	.32397	.17136	.00044	25.324	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	.00162	.00161	.43834	3.6149	.00818	8.6223	1.3794
Stddev	.00029	.00043	.00106	.01562	.1050	.00271	.0664	.0124
%RSD	66.289	26.509	65.893	3.5643	2.9055	33.115	.76954	.89552
#1	.00018	.00211	.00097	.42430	3.6132	.00657	8.6870	1.3840
#2	.00037	.00131	.00283	.43554	3.7208	.00667	8.5544	1.3888
#3	.00075	.00144	.00102	.45517	3.5108	.01131	8.6255	1.3654
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.82237	61.256	.01056	.10449	-.00054	.00079	-.00339	1.3032
Stddev	.01556	.433	.00155	.00880	.00214	.00072	.00094	.0137
%RSD	1.8916	.70641	14.638	8.4251	399.33	91.364	27.639	1.0523
#1	.82848	61.393	.00878	.10322	-.00275	-.00004	-.00252	1.3043
#2	.83394	61.603	.01153	.11386	.00153	.00114	-.00439	1.3164
#3	.80468	60.771	.01138	.09639	-.00039	.00126	-.00327	1.2890
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111601 Acquired: 6/28/2016 18:14:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.12519	.00073	.00973	.28446	.03296	.00120
Stddev	.00125	.00052	.01152	.00045	.00234	.00077	.00065
%RSD	240.46	.41609	1586.8	4.5963	.82348	2.3343	53.563
#1	.00060	.12497	.00089	.01024	.28676	.03326	.00114
#2	-.00077	.12578	-.01088	.00945	.28455	.03352	.00188
#3	.00173	.12482	.01216	.00948	.28207	.03208	.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8934.8	53164.	2570.5
Stddev	63.4	236.	32.6
%RSD	.70947	.44424	1.2681
#1	8865.2	53054.	2563.3
#2	8949.9	53003.	2542.1
#3	8989.3	53435.	2606.1

Approved: June 29, 2016

Sample Name: L1606111602 Acquired: 6/28/2016 18:18:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00167	.05684	-.00343	.33210	.01181	.00032	25.192	.00026
Stddev	.00070	.00702	.00218	.00119	.00056	.00011	.210	.00018
%RSD	41.704	12.357	63.446	.35804	4.7323	34.511	.83422	71.792
#1	-.00245	.04934	-.00499	.33083	.01149	.00038	24.963	.00046
#2	-.00144	.06326	-.00094	.33231	.01149	.00020	25.377	.00010
#3	-.00112	.05791	-.00437	.33318	.01246	.00039	25.236	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	.00054	.00098	.05399	3.4614	.00763	8.3315	1.1868
Stddev	.00037	.00050	.00047	.02106	.0611	.00138	.1473	.0089
%RSD	43.361	91.231	48.453	39.004	1.7663	18.129	1.7684	.75103
#1	.00123	.00086	.00114	.07669	3.4270	.00610	8.4685	1.1955
#2	.00088	.00080	.00135	.05019	3.5320	.00879	8.3503	1.1873
#3	.00048	-.00003	.00045	.03509	3.4252	.00801	8.1757	1.1777
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.77485	61.289	.00273	.00726	-.00250	.00670	-.00397	.99945
Stddev	.02513	.173	.00112	.00756	.00399	.00495	.00812	.02573
%RSD	3.2436	.28163	41.035	104.18	159.14	73.879	204.64	2.5740
#1	.78995	61.413	.00210	.01493	-.00616	.01227	-.00779	1.0114
#2	.78875	61.363	.00402	.00703	.00175	.00505	.00536	1.0171
#3	.74583	61.092	.00207	-.00019	-.00310	.00279	-.00947	.96993
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111602 Acquired: 6/28/2016 18:18:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.11618	-.00756	.00607	.22798	.00125	.00119
Stddev	.00051	.00073	.00385	.00060	.00039	.00028	.00063
%RSD	167.15	.62850	50.905	9.9696	.17155	22.072	53.253
#1	.00088	.11591	-.00950	.00538	.22834	.00093	.00056
#2	-.00010	.11563	-.01005	.00634	.22804	.00143	.00118
#3	.00014	.11701	-.00313	.00649	.22756	.00138	.00183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8986.7	53984.	2599.1
Stddev	18.2	25.	10.7
%RSD	.20235	.04593	.41189
#1	8972.4	53975.	2586.8
#2	8980.5	54013.	2604.3
#3	9007.1	53966.	2606.2

Approved: June 29, 2016

Sample Name: L1606111603 Acquired: 6/28/2016 18:22:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00223	1.1464	-.00441	.28841	.02792	.00827	8.9601	.00016
Stddev	.00052	.0149	.00268	.00355	.00152	.00004	.1383	.00022
%RSD	23.436	1.2979	60.747	1.2309	5.4320	.50015	1.5440	137.57
#1	.00165	1.1556	-.00488	.29186	.02923	.00831	8.9131	-.00009
#2	.00238	1.1543	-.00153	.28860	.02626	.00826	9.1158	.00031
#3	.00267	1.1292	-.00682	.28477	.02827	.00823	8.8514	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00109	-.00064	.00258	.07504	4.0785	.00681	3.0877	.00503
Stddev	.00006	.00074	.00165	.01492	.0121	.00176	.0490	.00383
%RSD	5.5066	116.09	64.203	19.881	.29670	25.819	1.5852	76.094
#1	.00112	-.00064	.00420	.07009	4.0833	.00756	3.1337	.00894
#2	.00102	.00010	.00263	.09181	4.0647	.00807	3.0931	.00128
#3	.00112	-.00138	.00089	.06323	4.0874	.00480	3.0363	.00488
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.0749	53.201	.00601	.03502	-.00442	.00758	.00168	.47187
Stddev	.0024	.169	.00041	.00508	.00342	.00227	.00368	.00413
%RSD	.11769	.31689	6.7944	14.494	77.276	29.913	219.34	.87606
#1	2.0777	53.286	.00597	.03074	-.00237	.00807	-.00232	.47663
#2	2.0732	53.311	.00644	.04063	-.00253	.00511	.00245	.46976
#3	2.0738	53.007	.00563	.03371	-.00837	.00956	.00491	.46922
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111603 Acquired: 6/28/2016 18:22:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00105**	**.07044**	**-.00406**	**.19724**	**5.3313**	**.00345**	**.00238**
Stddev	.00044	.00089	.00986	.00504	.0090	.00003	.00019
%RSD	41.969	1.2705	243.00	2.5534	.16898	.76249	7.7882
#1	.00085	.07098	.00719	.20246	5.3414	.00348	.00217
#2	.00155	.06941	-.01123	.19241	5.3281	.00342	.00253
#3	.00074	.07094	-.00814	.19686	5.3242	.00346	.00244
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9079.8**	**54344.**	**2576.4**
Stddev	20.1	201.	12.9
%RSD	.22108	.37061	.50181
#1	9060.8	54116.	2567.7
#2	9077.8	54415.	2570.1
#3	9100.8	54499.	2591.2

Approved: June 29, 2016

Sample Name: L1606111604 Acquired: 6/28/2016 18:26:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00128	1.0608	.00027	.29379	.02626	.00838	8.9222	.00022
Stddev	.00216	.0148	.00204	.00040	.00119	.00001	.1772	.00016
%RSD	168.06	1.3915	765.02	.13570	4.5474	.16575	1.9866	70.345
#1	.00245	1.0777	.00249	.29425	.02614	.00839	9.1266	.00005
#2	.00261	1.0543	-.00017	.29358	.02751	.00837	8.8113	.00036
#3	-.00121	1.0505	-.00152	.29355	.02513	.00837	8.8286	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00115	-.00107	.00202	.01618	4.0008	.00398	2.9400	.00197
Stddev	.00046	.00041	.00114	.04826	.0713	.00315	.1370	.00199
%RSD	39.980	38.272	56.060	298.24	1.7824	79.084	4.6586	101.16
#1	.00066	-.00124	.00325	.00768	3.9409	.00747	2.9887	.00363
#2	.00157	-.00060	.00101	.06812	3.9817	.00310	2.7854	.00251
#3	.00122	-.00135	.00181	-.02726	4.0797	.00137	3.0460	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.0707	53.672	.00227	.01864	.00250	.00843	.00429	.39329
Stddev	.0652	.416	.00124	.00348	.00202	.00309	.00847	.00926
%RSD	3.1464	.77539	54.674	18.645	80.869	36.635	197.40	2.3550
#1	2.1089	54.149	.00341	.01565	.00353	.01005	.01388	.39850
#2	2.1078	53.380	.00245	.02245	.00379	.01038	-.00217	.39878
#3	1.9955	53.488	.00095	.01781	.00017	.00487	.00116	.38260
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111604 Acquired: 6/28/2016 18:26:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00056**	**.07097**	**-.00020**	**.19980**	**5.4078**	**.00087**	**.00220**
Stddev	.00049	.00096	.00857	.00144	.0032	.00009	.00030
%RSD	88.077	1.3536	4391.4	.71878	.05937	10.899	13.574
#1	-.00002	.07208	.00167	.19930	5.4115	.00076	.00250
#2	-.00098	.07035	-.00954	.20141	5.4060	.00094	.00220
#3	-.00067	.07048	.00729	.19867	5.4059	.00090	.00190
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9098.1**	**54839.**	**2634.9**
Stddev	10.8	84.	19.7
%RSD	.11843	.15302	.74728
#1	9087.3	54934.	2612.4
#2	9098.3	54808.	2643.3
#3	9108.9	54775.	2649.1

Approved: June 29, 2016

Sample Name: L1606111605 Acquired: 6/28/2016 18:30:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	1.1046	-.00047	.29401	.02674	.00837	9.0902	.00018
Stddev	.00051	.0068	.00195	.00276	.00055	.00013	.1597	.00025
%RSD	183.66	.61449	418.42	.93718	2.0449	1.5797	1.7571	141.92
#1	.00052	1.1045	-.00089	.29719	.02618	.00851	9.2744	.00038
#2	.00062	1.1115	-.00216	.29244	.02678	.00825	9.0057	.00026
#3	-.00031	1.0979	.00166	.29240	.02727	.00833	8.9905	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00090	.00036	.00344	-.00021	4.1151	.00307	3.0707	.00584
Stddev	.00007	.00085	.00090	.00481	.0581	.00406	.0774	.00070
%RSD	7.8761	232.39	26.094	2293.5	1.4117	132.06	2.5207	12.039
#1	.00097	-.00039	.00248	-.00372	4.1757	.00772	3.0599	.00646
#2	.00083	.00021	.00426	-.00219	4.0599	.00023	3.1530	.00598
#3	.00090	.00128	.00357	.00528	4.1097	.00126	2.9993	.00507
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.1147	54.076	.00459	.02783	.00092	.00817	.00379	.45224
Stddev	.0030	.380	.00072	.00802	.00370	.00274	.00228	.00672
%RSD	.13986	.70301	15.787	28.835	402.73	33.495	60.194	1.4856
#1	2.1120	54.403	.00376	.02582	-.00328	.00502	.00533	.44893
#2	2.1143	54.165	.00509	.02100	.00372	.00962	.00117	.45997
#3	2.1179	53.659	.00493	.03667	.00232	.00988	.00488	.44781
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111605 Acquired: 6/28/2016 18:30:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.07120	-.00047	.19870	5.4024	.00245	.00289
Stddev	.00042	.00060	.00634	.00473	.0163	.00006	.00013
%RSD	119.85	.83776	1355.6	2.3784	.30238	2.3257	4.5179
#1	.00035	.07164	-.00580	.19939	5.4209	.00245	.00275
#2	-.00007	.07052	.00654	.19367	5.3901	.00251	.00301
#3	.00076	.07144	-.00215	.20304	5.3963	.00240	.00292
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9105.6	54691.	2624.7
Stddev	15.2	82.	15.9
%RSD	.16696	.14967	.60539
#1	9119.5	54648.	2613.5
#2	9108.0	54785.	2617.8
#3	9089.3	54640.	2642.9

Approved: June 29, 2016

Sample Name: L1606111606 Acquired: 6/28/2016 18:33:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00148	1.0362	.00000	.29254	.02502	.00843	8.7484	.00005
Stddev	.00312	.0077	.00375	.00301	.00132	.00005	.0697	.00043
%RSD	211.26	.74553	75583.	1.0288	5.2832	.58296	.79709	890.62
#1	.00415	1.0304	-.00385	.29524	.02349	.00848	8.6784	.00054
#2	.00222	1.0450	.00023	.29310	.02572	.00839	8.7490	-.00026
#3	-.00195	1.0333	.00364	.28930	.02584	.00841	8.8179	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00161	.00056	.00206	-.00926	3.9257	.00283	2.8857	.00118
Stddev	.00030	.00120	.00133	.03110	.1203	.00120	.1392	.00270
%RSD	18.711	214.76	64.670	335.83	3.0638	42.265	4.8225	229.65
#1	.00171	-.00081	.00219	.00883	3.9102	.00360	2.9016	-.00067
#2	.00185	.00144	.00067	-.04518	3.8138	.00345	3.0163	.00428
#3	.00127	.00105	.00332	.00856	4.0529	.00145	2.7393	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.0536	53.544	.00308	.01428	-.00163	.00492	.00033	.39787
Stddev	.0614	.064	.00025	.00557	.00089	.00226	.00282	.00762
%RSD	2.9907	.12002	8.0178	39.006	54.415	45.871	859.62	1.9160
#1	2.0891	53.487	.00286	.00796	-.00119	.00750	-.00270	.40196
#2	2.0891	53.531	.00335	.01849	-.00105	.00334	.00287	.40259
#3	1.9827	53.613	.00302	.01638	-.00266	.00392	.00082	.38908
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111606 Acquired: 6/28/2016 18:33:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.06946	.00006	.19289	5.3081	.00068	.00210
Stddev	.00064	.00041	.00383	.00136	.0126	.00024	.00069
%RSD	629.49	.59397	6372.8	.70403	.23798	34.528	32.797
#1	.00028	.06986	-.00421	.19344	5.3225	.00055	.00130
#2	-.00061	.06949	.00119	.19134	5.3025	.00054	.00247
#3	.00063	.06904	.00319	.19388	5.2992	.00096	.00252
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9170.7	54866.	2633.7
Stddev	6.0	273.	8.6
%RSD	.06522	.49683	.32757
#1	9164.6	54558.	2643.7
#2	9176.5	55078.	2628.0
#3	9171.0	54961.	2629.5

Approved: June 29, 2016

Sample Name: L1606111607 Acquired: 6/28/2016 18:37:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00211	1.1117	.00162	.28972	.02692	.00835	9.0280	.00021
Stddev	.00194	.0108	.00405	.00301	.00121	.00002	.1291	.00015
%RSD	92.265	.97432	250.36	1.0374	4.4977	.29176	1.4303	70.337
#1	.00010	1.1122	.00562	.28943	.02812	.00832	9.1025	.00016
#2	.00223	1.1223	.00172	.29286	.02570	.00836	8.8789	.00037
#3	.00398	1.1007	-.00249	.28687	.02693	.00836	9.1026	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00132	-.00114	.00389	.07623	4.0957	.00739	2.9495	.00442
Stddev	.00011	.00129	.00096	.01157	.0445	.00783	.0540	.00109
%RSD	8.1592	112.30	24.657	15.180	1.0873	106.06	1.8298	24.709
#1	.00140	-.00250	.00399	.08950	4.0447	.00034	2.9996	.00516
#2	.00120	-.00099	.00479	.06828	4.1157	.00599	2.8924	.00494
#3	.00137	.00006	.00288	.07090	4.1268	.01582	2.9566	.00317
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.0386	53.529	.00507	.03227	-.00061	.00632	.00043	.44078
Stddev	.0621	.302	.00017	.00294	.00248	.00399	.00658	.01514
%RSD	3.0463	.56438	3.4047	9.0970	405.64	63.116	1540.8	3.4349
#1	2.0762	53.822	.00487	.02889	.00186	.00185	-.00148	.44888
#2	2.0727	53.218	.00515	.03376	-.00310	.00759	.00775	.45015
#3	1.9669	53.546	.00518	.03416	-.00059	.00951	-.00499	.42332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111607 Acquired: 6/28/2016 18:37:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.07058	.00030	.20096	5.4024	.00417	.00203
Stddev	.00130	.00048	.01325	.00141	.0090	.00022	.00037
%RSD	1062.3	.67593	4477.7	.70349	.16631	5.2101	18.227
#1	-.00089	.07107	.00038	.19936	5.4094	.00435	.00234
#2	-.00033	.07054	.01350	.20205	5.4055	.00424	.00162
#3	.00158	.07012	-.01300	.20146	5.3923	.00393	.00212
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9201.6	55034.	2642.1
Stddev	7.1	79.	26.3
%RSD	.07703	.14385	.99526
#1	9205.8	54943.	2626.0
#2	9193.5	55085.	2672.5
#3	9205.7	55075.	2627.9

Approved: June 29, 2016

Sample Name: L1606111608 Acquired: 6/28/2016 18:41:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	1.0836	.00155	.29561	.02737	.00841	8.9137	-.00007
Stddev	.00156	.0090	.00338	.00146	.00064	.00008	.0643	.00007
%RSD	4624.4	.83043	217.43	.49435	2.3557	.95212	.72145	103.03
#1	.00100	1.0803	.00289	.29408	.02794	.00850	8.9526	-.00007
#2	-.00177	1.0767	-.00229	.29699	.02667	.00839	8.9490	.00000
#3	.00087	1.0938	.00407	.29576	.02749	.00834	8.8395	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00092	-.00027	.00315	-.00654	4.0822	.00491	2.9725	.00152
Stddev	.00045	.00163	.00123	.01841	.1560	.00365	.0835	.00117
%RSD	48.428	601.30	39.073	281.52	3.8212	74.269	2.8076	77.224
#1	.00143	.00001	.00352	.00348	4.1388	.00247	2.9149	.00036
#2	.00068	-.00203	.00414	-.02779	4.2020	.00911	3.0682	.00271
#3	.00064	.00120	.00177	.00468	3.9058	.00316	2.9344	.00149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.0716	54.124	.00334	.01569	-.00178	.00730	.00009	.38883
Stddev	.0672	.212	.00081	.00676	.00119	.00610	.00096	.00730
%RSD	3.2436	.39123	24.294	43.076	67.031	83.462	1099.7	1.8783
#1	2.1038	54.235	.00342	.00933	-.00315	.01434	-.00098	.39366
#2	2.1167	54.257	.00250	.01495	-.00107	.00369	.00088	.39241
#3	1.9944	53.880	.00412	.02278	-.00111	.00388	.00036	.38043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111608 Acquired: 6/28/2016 18:41:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.07040	-.00406	.20156	5.4999	.00103	.00270
Stddev	.00025	.00061	.01483	.00093	.0053	.00022	.00040
%RSD	48.871	.86374	364.91	.46232	.09575	21.050	14.848
#1	.00078	.06990	.01194	.20238	5.5013	.00078	.00314
#2	.00049	.07022	-.01733	.20055	5.5043	.00112	.00236
#3	.00028	.07108	-.00680	.20175	5.4940	.00118	.00259
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9087.9	54467.	2610.4
Stddev	38.8	90.	2.9
%RSD	.42699	.16539	.10989
#1	9131.5	54444.	2612.9
#2	9057.3	54566.	2611.1
#3	9074.7	54390.	2607.3

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 18:45:25 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39229	9.9415	.39105	.49054	.99686	.04957	9.8857	.04959
Stddev	.00335	.0095	.00513	.00388	.00176	.00023	.0395	.00014
%RSD	.85319	.09541	1.3130	.79016	.17667	.46681	.39949	.28298
#1	.39521	9.9524	.38973	.48964	.99784	.04938	9.8418	.04971
#2	.38864	9.9353	.39671	.48720	.99791	.04983	9.9182	.04961
#3	.39302	9.9368	.38670	.49479	.99482	.04950	9.8972	.04943
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19995	.49831	.49568	3.9005	50.426	1.0075	9.9621	.48878
Stddev	.00185	.00270	.00320	.0383	.052	.0078	.0603	.00225
%RSD	.92562	.54191	.64620	.98241	.10382	.77658	.60485	.46087
#1	.20112	.50117	.49741	3.9444	50.472	1.0071	9.9738	.49127
#2	.20092	.49581	.49765	3.8837	50.369	.99982	10.016	.48690
#3	.19782	.49794	.49199	3.8735	50.435	1.0155	9.8969	.48816
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99302	49.356	.49108	9.7656	.49096	1.1720	.39192	4.8719
Stddev	.00566	.139	.00280	.0493	.00323	.0138	.00972	.0103
%RSD	.57015	.28252	.57000	.50534	.65722	1.1784	2.4806	.21075
#1	.99726	49.251	.49381	9.7998	.49123	1.1824	.39913	4.8781
#2	.99521	49.515	.49123	9.7879	.48761	1.1774	.39576	4.8777
#3	.98659	49.303	.48822	9.7090	.49404	1.1564	.38086	4.8601
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 18:45:25 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99872	.99343	.98950	.50063	.99718	.98347	.99916
Stddev	.00591	.00326	.01354	.00208	.00090	.00598	.00568
%RSD	.59190	.32803	1.3679	.41514	.09036	.60831	.56812
#1	1.0032	.99072	.98506	.49978	.99708	.98808	.99430
#2	1.0009	.99705	.97874	.50300	.99813	.98561	.99778
#3	.99203	.99253	1.0047	.49911	.99633	.97671	1.0054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9221.9	54639.	2638.4
Stddev	13.6	202.	11.2
%RSD	.14695	.37013	.42347
#1	9211.2	54552.	2650.8
#2	9237.1	54495.	2629.1
#3	9217.4	54870.	2635.2

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 18:49:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	.00990	-.00013	.00158	.00622	.00015	-.03448	-.00005
Stddev	.00201	.00440	.00170	.00465	.00108	.00012	.06651	.00006
%RSD	284.08	44.487	1351.7	293.28	17.312	75.433	192.88	107.88
#1	-.00024	.01493	.00061	.00689	.00663	.00014	.00916	-.00005
#2	-.00065	.00802	-.00207	-.00177	.00703	.00028	-.11104	.00000
#3	.00301	.00675	.00108	-.00037	.00500	.00005	-.00158	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	-.00059	-.00069	-.03680	.10197	.00489	.05898	.00047
Stddev	.00049	.00057	.00083	.01990	.12028	.00273	.03828	.00209
%RSD	250.97	96.139	120.16	54.083	117.96	55.806	64.899	448.61
#1	.00032	-.00064	.00011	-.05829	.13290	.00716	.01495	.00055
#2	-.00024	-.00000	-.00063	-.01900	.20376	.00186	.07761	-.00167
#3	-.00065	-.00113	-.00155	-.03311	-.03076	.00564	.08437	.00251
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	-.03142	.00040	-.00674	.00048	.00402	.00227	.00817
Stddev	.00075	.00727	.00091	.00301	.00387	.00356	.00433	.00283
%RSD	299.38	23.154	227.74	44.575	805.42	88.468	190.77	34.630
#1	-.00012	-.03106	-.00003	-.01019	.00167	.00785	.00618	.01078
#2	-.00024	-.03887	.00145	-.00468	.00362	.00082	.00301	.00858
#3	.00112	-.02433	-.00022	-.00536	-.00385	.00340	-.00238	.00516
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 18:49:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00000**	**.00016**	**-.00514**	**-.00296**	**-.00003**	**-.00004**	**-.00000**
Stddev	.00082	.00022	.01243	.00218	.00079	.00006	.00076
%RSD	35165.	134.62	241.93	73.509	2857.6	158.73	314340.
#1	-.00095	.00039	-.01930	-.00352	.00021	-.00010	-.00021
#2	.00045	.00012	.00396	-.00481	-.00091	.00002	.00084
#3	.00049	-.00003	-.00008	-.00056	.00062	-.00004	-.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8657.8**	**52038.**	**2416.2**
Stddev	9.1	416.	5.6
%RSD	.10560	.80031	.23071
#1	8648.4	51987.	2418.7
#2	8666.6	52477.	2420.0
#3	8658.5	51649.	2409.8

Approved: June 29, 2016

Sample Name: L1606111609 Acquired: 6/28/2016 18:52:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00169	F -.24671	.00229	.31259	.02791	.01137	34.044
Stddev	.00182	.00332	.00272	.00627	.00207	.00015	.034
%RSD	108.17	1.3465	118.72	2.0066	7.4142	1.3347	.09998
#1	.00061	-.24434	.00262	.30730	.02980	.01136	34.020
#2	.00379	-.24528	-.00058	.31952	.02570	.01123	34.083
#3	.00066	-.25051	.00484	.31094	.02824	.01153	34.030
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		900.00					
Low Limit		-.10000					

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	.00211	-.00014	.01058	.02927	8.1895	.00744
Stddev	.00018	.00013	.00056	.00103	.01880	.0223	.00285
%RSD	63.443	5.9452	413.29	9.7235	64.214	.27208	38.275
#1	.00044	.00214	-.00068	.01172	.05095	8.1784	.00919
#2	.00030	.00221	.00044	.00972	.01751	8.2152	.00415
#3	.00009	.00197	-.00017	.01030	.01936	8.1750	.00898
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	13.085	.00986	3.4753	73.279	.01200	.10844	-.00023
Stddev	.146	.00193	.0933	.091	.00073	.01049	.00052
%RSD	1.1124	19.578	2.6833	.12431	6.1213	9.6747	220.87
#1	13.015	.01182	3.5272	73.382	.01266	.10696	.00034
#2	13.253	.00982	3.5310	73.212	.01121	.11959	-.00040
#3	12.988	.00796	3.3676	73.241	.01214	.09876	-.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606111609 Acquired: 6/28/2016 18:52:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01341**	**.00048**	**1.8767**	**.00012**	**.18806**	**-.01559**	**.26285**
Stddev	.00215	.00285	.0302	.00117	.00070	.00849	.00279
%RSD	16.054	593.98	1.6105	1001.4	.37260	54.468	1.0632
#1	.01137	.00362	1.9013	.00122	.18745	-.02478	.26486
#2	.01320	-.00195	1.8860	.00025	.18882	-.00803	.26404
#3	.01566	-.00023	1.8430	-.00111	.18791	-.01396	.25966
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**7.1565**	**.01706**	**.00390**
Stddev	.0080	.00047	.00028
%RSD	.11254	2.7742	7.1930
#1	7.1473	.01735	.00373
#2	7.1594	.01731	.00422
#3	7.1626	.01651	.00374
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8637.3**	**51686.**	**2438.8**
Stddev	25.5	111.	18.4
%RSD	.29499	.21405	.75414
#1	8657.6	51701.	2418.8
#2	8645.7	51569.	2442.5
#3	8608.7	51789.	2455.0

Approved: June 29, 2016

Sample Name: L1606111610 Acquired: 6/28/2016 18:56:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00186**	F **-.26089**	**.00361**	**.32094**	**.02805**	**.01175**	**34.227**
Stddev	.00286	.00497	.00209	.00164	.00119	.00004	.119
%RSD	153.61	1.9054	57.885	.50971	4.2395	.35073	.34827
#1	.00418	-.26319	.00600	.32229	.02668	.01176	34.342
#2	-.00133	-.25518	.00273	.32140	.02867	.01178	34.236
#3	.00273	-.26429	.00211	.31912	.02880	.01170	34.104
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		900.00					
Low Limit		-.10000					

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**.00133**	**.00023**	**.00630**	**.00366**	**8.0682**	**.00998**
Stddev	.00013	.00007	.00098	.00212	.02782	.0640	.00247
%RSD	59.800	5.5704	427.48	33.690	759.07	.79377	24.736
#1	.00035	.00141	-.00091	.00835	-.01455	8.1226	.00792
#2	.00022	.00127	.00077	.00411	-.01014	8.0843	.01271
#3	.00009	.00130	.00082	.00645	.03568	7.9976	.00929
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**13.124**	**.00493**	**3.5460**	**74.032**	**.00990**	**.11211**	**-.00262**
Stddev	.040	.00133	.0477	.229	.00101	.00704	.00448
%RSD	.30775	26.938	1.3453	.30869	10.165	6.2824	171.27
#1	13.104	.00643	3.5704	74.144	.01095	.11324	.00151
#2	13.170	.00443	3.5766	74.183	.00982	.10457	-.00739
#3	13.097	.00392	3.4910	73.769	.00894	.11852	-.00197
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606111610 Acquired: 6/28/2016 18:56:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01102**	**.00507**	**1.8845**	**.00126**	**.18824**	**.00050**	**.26949**
Stddev	.00429	.00618	.0149	.00056	.00018	.00574	.00545
%RSD	38.980	121.81	.79273	44.228	.09495	1156.8	2.0221
#1	.01018	.01016	1.8905	.00172	.18843	.00529	.26417
#2	.00720	-.00180	1.8955	.00064	.18807	.00206	.26925
#3	.01567	.00685	1.8675	.00140	.18821	-.00586	.27506
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**7.2308**	**.01161**	**.00445**
Stddev	.0079	.00013	.00036
%RSD	.10869	1.0937	8.2072
#1	7.2225	.01163	.00451
#2	7.2316	.01172	.00405
#3	7.2381	.01147	.00477
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8565.6**	**51126.**	**2443.1**
Stddev	32.1	49.	10.7
%RSD	.37452	.09590	.43979
#1	8602.6	51159.	2447.6
#2	8546.8	51149.	2430.8
#3	8547.3	51069.	2450.8

Approved: June 29, 2016

Sample Name: L1606111611 Acquired: 6/28/2016 19:00:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00104	.15531	.00139	.28793	.01827	.01349	24.276	.00009
Stddev	.00107	.01241	.00393	.00635	.00086	.00004	.280	.00036
%RSD	103.35	7.9927	283.58	2.2043	4.7272	.32117	1.1547	390.92
#1	.00070	.14804	-.00256	.29526	.01783	.01353	24.198	.00026
#2	.00018	.14825	.00142	.28441	.01927	.01344	24.587	-.00032
#3	.00224	.16965	.00531	.28413	.01772	.01350	24.043	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00157	.00300	.00201	.00864	6.5616	.01000	6.1571	.00075
Stddev	.00028	.00060	.00288	.05988	.1467	.00381	.1385	.00265
%RSD	17.628	19.937	142.86	693.02	2.2358	38.125	2.2501	355.75
#1	.00142	.00238	-.00123	.07744	6.6406	.01428	6.0978	-.00228
#2	.00141	.00307	.00426	-.01970	6.3924	.00877	6.0580	.00268
#3	.00189	.00357	.00301	-.03181	6.6519	.00695	6.3154	.00183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.7556	61.390	.01872	.08689	.00039	.00398	.00545	3.8083
Stddev	.0037	.059	.00102	.00595	.00183	.00284	.00115	.0067
%RSD	.13597	.09548	5.4741	6.8505	472.50	71.316	21.148	.17711
#1	2.7593	61.416	.01989	.09312	-.00124	.00695	.00540	3.8145
#2	2.7559	61.431	.01827	.08126	.00237	.00367	.00432	3.8011
#3	2.7518	61.323	.01799	.08629	.00003	.00131	.00662	3.8092
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111611 Acquired: 6/28/2016 19:00:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	.11645	-.00318	.29346	7.9427	.02210	.00268
Stddev	.00089	.00042	.00288	.00285	.0190	.00021	.00040
%RSD	424.15	.35948	90.314	.97028	.23929	.95091	14.963
#1	-.00007	.11631	-.00534	.29241	7.9282	.02188	.00233
#2	.00120	.11692	-.00429	.29668	7.9358	.02230	.00312
#3	-.00050	.11612	.00008	.29129	7.9642	.02211	.00259
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8640.4	51497.	2440.2
Stddev	.7	35.	3.8
%RSD	.00807	.06819	.15410
#1	8641.2	51534.	2436.1
#2	8640.2	51493.	2441.0
#3	8639.9	51464.	2443.5

Approved: June 29, 2016

Sample Name: L1606111612 Acquired: 6/28/2016 19:04:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00383	.04912	.00056	.28402	.01911	.01326	24.157	.00025
Stddev	.00060	.00917	.00387	.00359	.00131	.00019	.121	.00011
%RSD	15.694	18.661	688.23	1.2647	6.8730	1.4327	.50040	45.926
#1	.00354	.05967	-.00073	.28770	.01856	.01347	24.092	.00016
#2	.00452	.04305	.00491	.28053	.01816	.01310	24.082	.00038
#3	.00343	.04465	-.00250	.28382	.02061	.01321	24.296	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00126	.00207	.00162	.00171	6.7063	.01259	6.4107	-.00251
Stddev	.00050	.00113	.00240	.00914	.0591	.00141	.1102	.00295
%RSD	39.655	54.778	148.14	535.36	.88143	11.226	1.7192	117.53
#1	.00128	.00310	.00395	.01079	6.6558	.01417	6.3134	-.00541
#2	.00075	.00085	-.00084	-.00748	6.7713	.01145	6.5304	.00048
#3	.00174	.00226	.00174	.00181	6.6917	.01215	6.3883	-.00259
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.7810	60.169	.00746	.07950	-.00097	.00332	.01301	3.5713
Stddev	.0078	.217	.00129	.00746	.00078	.00182	.00602	.0121
%RSD	.28149	.36015	17.286	9.3799	80.451	54.684	46.276	.34028
#1	2.7863	60.279	.00610	.08231	-.00184	.00537	.00606	3.5680
#2	2.7847	60.308	.00763	.07105	-.00077	.00266	.01661	3.5847
#3	2.7720	59.919	.00866	.08515	-.00031	.00192	.01637	3.5611
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111612 Acquired: 6/28/2016 19:04:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	.11823	-.01269	.28756	7.9060	.00211	.00306
Stddev	.00060	.00069	.00639	.00445	.0044	.00031	.00049
%RSD	79.968	.58467	50.323	1.5482	.05612	14.573	16.027
#1	.00138	.11902	-.01137	.28902	7.9062	.00229	.00348
#2	.00018	.11773	-.01964	.28257	7.9103	.00227	.00320
#3	.00069	.11794	-.00707	.29111	7.9015	.00175	.00252
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8559.9	51268.	2442.1
Stddev	44.0	211.	7.2
%RSD	.51415	.41125	.29469
#1	8531.4	51489.	2434.3
#2	8537.7	51069.	2443.4
#3	8610.6	51245.	2448.5

Approved: June 29, 2016

Sample Name: L1606111613S Acquired: 6/28/2016 19:08:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19477**	**5.0228**	**.18939**	**1.2073**	**.49579**	**.03691**	**28.766**	**.02419**
Stddev	.00338	.0209	.00300	.0033	.00412	.00009	.267	.00009
%RSD	1.7336	.41639	1.5864	.27651	.83112	.24129	.92755	.35345
#1	.19088	5.0294	.18741	1.2112	.50051	.03686	29.074	.02421
#2	.19696	5.0396	.19284	1.2050	.49391	.03685	28.615	.02427
#3	.19647	4.9994	.18791	1.2058	.49294	.03701	28.608	.02410
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09931**	**.24662**	**.24317**	**1.8719**	**31.139**	**.50428**	**11.097**	**.23993**
Stddev	.00047	.00109	.00134	.0365	.322	.00060	.031	.00147
%RSD	.47574	.44006	.55302	1.9526	1.0333	.11928	.28144	.61370
#1	.09976	.24549	.24417	1.8725	31.459	.50401	11.061	.24152
#2	.09882	.24765	.24370	1.9082	30.816	.50497	11.121	.23964
#3	.09936	.24674	.24164	1.8351	31.142	.50386	11.108	.23862
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.2182**	**84.368**	**.25735**	**4.7443**	**.23955**	**.56662**	**.19040**	**6.0686**
Stddev	.0227	.847	.00146	.0198	.00289	.00283	.00282	.0236
%RSD	.70479	1.0036	.56858	.41773	1.2060	.49958	1.4787	.38948
#1	3.2303	85.345	.25712	4.7563	.23856	.56753	.19307	6.0767
#2	3.2323	83.860	.25891	4.7552	.23729	.56889	.19066	6.0871
#3	3.1921	83.897	.25601	4.7214	.24281	.56345	.18746	6.0419
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111613S Acquired: 6/28/2016 19:08:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48813	.60214	.48390	.53165	8.4149	.50011	.00340
Stddev	.00470	.00482	.00480	.00148	.0070	.00378	.00043
%RSD	.96282	.80038	.99193	.27906	.08316	.75545	12.759
#1	.49143	.60762	.48857	.52994	8.4205	.50262	.00309
#2	.49021	.59858	.48417	.53261	8.4071	.50196	.00321
#3	.48275	.60020	.47898	.53240	8.4172	.49577	.00389
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8510.8	50989.	2449.9
Stddev	6.3	114.	33.0
%RSD	.07397	.22271	1.3464
#1	8503.9	50891.	2415.0
#2	8512.3	50963.	2454.1
#3	8516.3	51114.	2480.6

Approved: June 29, 2016

Sample Name: L1606111614S Acquired: 6/28/2016 19:11:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19976**	**5.1117**	**.20033**	**1.2397**	**.51862**	**.03817**	**29.160**	**.02517**
Stddev	.00238	.0040	.00143	.0029	.00064	.00013	.036	.00013
%RSD	1.1919	.07822	.71462	.23398	.12376	.34613	.12271	.50966
#1	.19785	5.1103	.19976	1.2364	.51935	.03832	29.152	.02502
#2	.20243	5.1086	.20196	1.2408	.51837	.03812	29.199	.02526
#3	.19900	5.1163	.19927	1.2419	.51815	.03807	29.129	.02522
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10267**	**.25542**	**.25111**	**1.9749**	**32.092**	**.51979**	**11.538**	**.24636**
Stddev	.00038	.00140	.00135	.0226	.087	.00342	.033	.00382
%RSD	.36984	.54933	.53776	1.1454	.27022	.65811	.28987	1.5500
#1	.10308	.25694	.25257	2.0009	32.157	.51648	11.576	.24780
#2	.10260	.25514	.24991	1.9599	32.125	.52332	11.525	.24203
#3	.10233	.25417	.25084	1.9639	31.994	.51957	11.512	.24924
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.2930**	**85.625**	**.25474**	**4.9054**	**.24911**	**.58625**	**.19523**	**5.9056**
Stddev	.0102	.114	.00008	.0176	.00426	.00482	.00530	.0210
%RSD	.30930	.13280	.03193	.35965	1.7112	.82238	2.7172	.35590
#1	3.3047	85.748	.25482	4.9258	.24475	.58430	.19918	5.9288
#2	3.2880	85.523	.25466	4.8957	.25327	.59174	.18920	5.8877
#3	3.2862	85.605	.25475	4.8948	.24930	.58270	.19731	5.9004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111614S Acquired: 6/28/2016 19:11:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50712**	**.62989**	**.48967**	**.54077**	**8.4652**	**.49980**	**.00375**
Stddev	.00290	.00007	.00896	.00153	.0082	.00166	.00086
%RSD	.57187	.01071	1.8306	.28317	.09739	.33159	22.982
#1	.51044	.62981	.48549	.54245	8.4713	.50169	.00283
#2	.50507	.62993	.49996	.54041	8.4558	.49912	.00454
#3	.50584	.62992	.48355	.53945	8.4685	.49860	.00388
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8539.3**	**50582.**	**2414.9**
Stddev	42.3	178.	.8
%RSD	.49581	.35193	.03111
#1	8490.5	50389.	2414.0
#2	8561.9	50739.	2415.4
#3	8565.6	50619.	2415.2

Approved: June 29, 2016

Sample Name: L1606111615SD Acquired: 6/28/2016 19:15:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19483**	**5.0631**	**.19408**	**1.2283**	**.50358**	**.03725**	**28.794**	**.02439**
Stddev	.00134	.0103	.00311	.0052	.00068	.00010	.078	.00026
%RSD	.68665	.20360	1.6033	.42015	.13592	.27409	.26967	1.0469
#1	.19572	5.0522	.19292	1.2310	.50432	.03719	28.759	.02459
#2	.19329	5.0727	.19172	1.2223	.50297	.03737	28.739	.02448
#3	.19549	5.0645	.19761	1.2315	.50343	.03719	28.883	.02410
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10051**	**.25222**	**.24531**	**1.9227**	**31.387**	**.50736**	**11.086**	**.24417**
Stddev	.00036	.00165	.00180	.0406	.232	.00434	.198	.00465
%RSD	.35572	.65305	.73217	2.1114	.74000	.85470	1.7857	1.9034
#1	.10011	.25331	.24577	1.9166	31.361	.50253	10.859	.23883
#2	.10066	.25302	.24683	1.9661	31.168	.51091	11.218	.24727
#3	.10078	.25033	.24333	1.8856	31.631	.50863	11.182	.24642
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.2181**	**85.276**	**.26287**	**4.8382**	**.24342**	**.57943**	**.19535**	**6.0855**
Stddev	.0060	.153	.00086	.0107	.00115	.00114	.00430	.0514
%RSD	.18621	.17890	.32739	.22191	.47258	.19717	2.1988	.84430
#1	3.2234	85.200	.26251	4.8499	.24473	.58070	.19814	6.1440
#2	3.2191	85.176	.26386	4.8357	.24298	.57910	.19751	6.0647
#3	3.2116	85.451	.26226	4.8289	.24256	.57849	.19040	6.0477
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111615SD Acquired: 6/28/2016 19:15:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49741	.60939	.48961	.53564	8.4041	.50988	.00349
Stddev	.00079	.00397	.00999	.00166	.0095	.00077	.00075
%RSD	.15965	.65174	2.0396	.30908	.11341	.15171	21.486
#1	.49688	.60498	.48083	.53444	8.3943	.51072	.00337
#2	.49832	.61049	.50047	.53753	8.4133	.50974	.00280
#3	.49703	.61269	.48751	.53496	8.4047	.50919	.00429
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8539.4	50792.	2446.6
Stddev	44.7	29.	15.5
%RSD	.52366	.05646	.63223
#1	8497.6	50788.	2447.9
#2	8534.2	50765.	2461.4
#3	8586.5	50822.	2430.5

Approved: June 29, 2016

Sample Name: L1606111616SD Acquired: 6/28/2016 19:19:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19566**	**5.0340**	**.19553**	**1.2462**	**.51633**	**.03826**	**29.342**	**.02460**
Stddev	.00296	.0138	.00253	.0064	.00627	.00019	.244	.00026
%RSD	1.5107	.27370	1.2962	.51335	1.2136	.50612	.83044	1.0564
#1	.19547	5.0283	.19831	1.2494	.52271	.03808	29.613	.02477
#2	.19280	5.0497	.19492	1.2503	.51019	.03846	29.141	.02474
#3	.19870	5.0240	.19335	1.2388	.51609	.03824	29.271	.02430
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10113**	**.25397**	**.24998**	**1.9550**	**32.109**	**.51960**	**11.565**	**.24878**
Stddev	.00115	.00165	.00206	.0245	.390	.00560	.094	.00225
%RSD	1.1409	.65005	.82441	1.2540	1.2158	1.0784	.81447	.90305
#1	.10149	.25518	.24986	1.9783	32.535	.51825	11.457	.25104
#2	.10207	.25209	.25210	1.9294	31.767	.51479	11.631	.24655
#3	.09984	.25464	.24798	1.9572	32.026	.52575	11.608	.24874
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.2885**	**85.842**	**.25247**	**4.8800**	**.24597**	**.58377**	**.19459**	**5.8979**
Stddev	.0263	.672	.00277	.0334	.00227	.00367	.00306	.0457
%RSD	.80102	.78328	1.0953	.68517	.92218	.62874	1.5723	.77555
#1	3.2998	86.565	.25353	4.9123	.24665	.58202	.19353	5.9262
#2	3.3073	85.235	.25454	4.8822	.24782	.58799	.19220	5.9224
#3	3.2584	85.728	.24933	4.8456	.24344	.58131	.19804	5.8451
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111616SD Acquired: 6/28/2016 19:19:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573861-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50068**	**.62675**	**.49003**	**.54097**	**8.4762**	**.49546**	**.00325**
Stddev	.00490	.00349	.00592	.00219	.0243	.00502	.00063
%RSD	.97814	.55741	1.2076	.40406	.28687	1.0134	19.262
#1	.50340	.62999	.48564	.54178	8.4602	.49873	.00394
#2	.50361	.62305	.48768	.54264	8.5042	.49797	.00312
#3	.49503	.62722	.49676	.53850	8.4642	.48968	.00270
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8528.3**	**50976.**	**2438.2**
Stddev	27.5	232.	22.5
%RSD	.32190	.45566	.92424
#1	8510.6	51237.	2412.6
#2	8514.4	50792.	2454.8
#3	8559.9	50900.	2447.3

Approved: June 29, 2016

Sample Name: L1606111617 Acquired: 6/28/2016 19:22:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00125	1.0730	.00243	.94456	.02345	.00664	17.171	.00021
Stddev	.00060	.0107	.00330	.00310	.00170	.00011	.205	.00052
%RSD	48.268	.99365	135.53	.32796	7.2297	1.6862	1.1957	249.35
#1	.00156	1.0648	.00541	.94322	.02195	.00655	16.934	.00026
#2	.00163	1.0691	.00299	.94810	.02529	.00661	17.299	-.00034
#3	.00055	1.0851	-.00111	.94236	.02311	.00677	17.280	.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00108	.00191	.00281	.25427	4.8595	.00560	5.8034	.00933
Stddev	.00016	.00103	.00070	.00526	.1531	.00470	.0236	.00159
%RSD	14.503	53.864	25.013	2.0678	3.1508	83.930	.40616	17.040
#1	.00127	.00295	.00200	.25974	4.7953	.00368	5.8137	.01117
#2	.00101	.00187	.00320	.24926	4.7490	.00216	5.7764	.00848
#3	.00097	.00090	.00323	.25382	5.0343	.01095	5.8200	.00835
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.8732	108.42	.01899	.06575	.00152	.00875	-.00339	2.6514
Stddev	.0510	.52	.00065	.00357	.00326	.00209	.00602	.0593
%RSD	2.7232	.47845	3.4259	5.4245	214.84	23.862	177.37	2.2363
#1	1.9089	108.16	.01967	.06171	.00070	.00991	-.00992	2.6947
#2	1.8959	108.08	.01894	.06707	-.00126	.00999	-.00219	2.6757
#3	1.8147	109.02	.01837	.06847	.00511	.00634	.00193	2.5838
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111617 Acquired: 6/28/2016 19:22:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	.10483	.00185	.15786	4.3684	.01245	.00245
Stddev	.00024	.00064	.00471	.00205	.0215	.00016	.00037
%RSD	56.363	.60720	254.36	1.2973	.49093	1.2926	14.916
#1	.00019	.10503	.00197	.15899	4.3753	.01255	.00229
#2	.00043	.10411	-.00292	.15910	4.3855	.01252	.00287
#3	.00068	.10534	.00651	.15550	4.3443	.01226	.00219
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8650.9	51835.	2476.1
Stddev	44.0	196.	5.9
%RSD	.50891	.37736	.23711
#1	8623.8	51739.	2476.2
#2	8701.7	51706.	2482.0
#3	8627.2	52060.	2470.2

Approved: June 29, 2016

Sample Name: L1606111618 Acquired: 6/28/2016 19:26:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00084**	**.56274**	**.00067**	**.98109**	**.02095**	**.00642**	**16.310**
Stddev	.00331	.00447	.00274	.01353	.00114	.00010	.137
%RSD	394.10	.79427	408.71	1.3790	5.4340	1.4834	.83691
#1	-.00455	.55904	.00292	.97246	.02155	.00652	16.441
#2	.00181	.56149	.00148	.97414	.01964	.00642	16.322
#3	.00022	.56771	-.00238	.99669	.02167	.00633	16.169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**.00100**	**.00142**	**.00119**	F **-.03203**	**4.7407**	**.00634**
Stddev	.00008	.00008	.00165	.00103	.02107	.2217	.00377
%RSD	96.854	7.8871	116.18	86.889	65.774	4.6773	59.434
#1	-.00016	.00103	-.00048	.00236	-.03693	4.9721	.00557
#2	-.00000	.00106	.00229	.00077	-.05021	4.5301	.00302
#3	-.00007	.00091	.00247	.00043	-.00894	4.7199	.01044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.7406**	**-.00088**	**1.9276**	**110.50**	**.00879**	**.04672**	**-.00257**
Stddev	.0231	.00321	.0069	.44	.00089	.00711	.00272
%RSD	.40167	363.18	.35848	.39919	10.179	15.225	105.97
#1	5.7191	-.00006	1.9325	110.73	.00978	.05410	-.00278
#2	5.7650	-.00442	1.9306	110.77	.00855	.03990	-.00517
#3	5.7377	.00183	1.9197	109.99	.00803	.04617	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606111618 Acquired: 6/28/2016 19:26:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00562**	**.00319**	**2.4858**	**.00030**	**.10363**	**-.00481**	**.15781**
Stddev	.00632	.00265	.0011	.00117	.00034	.00601	.00138
%RSD	112.44	83.121	.04373	394.14	.32381	124.77	.87536
#1	-.00139	.00622	2.4870	.00161	.10345	-.00946	.15828
#2	.00737	.00205	2.4854	-.00063	.10401	.00197	.15625
#3	.01088	.00129	2.4849	-.00009	.10341	-.00695	.15889
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**4.3243**	**.00293**	**.00203**
Stddev	.0040	.00018	.00019
%RSD	.09253	6.0250	9.2239
#1	4.3200	.00309	.00196
#2	4.3251	.00274	.00224
#3	4.3278	.00296	.00188
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8649.2**	**51256.**	**2459.2**
Stddev	26.4	33.	12.7
%RSD	.30519	.06388	.51770
#1	8619.7	51249.	2448.1
#2	8670.6	51291.	2456.2
#3	8657.2	51227.	2473.1

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 19:30:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39393	9.9883	.38526	.48583	.99716	.04966	9.8788	.04935
Stddev	.00274	.0657	.00281	.00348	.00753	.00030	.0948	.00070
%RSD	.69453	.65784	.72864	.71673	.75560	.60690	.95943	1.4215
#1	.39152	9.9183	.38763	.48958	.99649	.04943	9.9453	.04941
#2	.39338	9.9981	.38600	.48519	1.0050	.04954	9.9209	.05002
#3	.39691	10.049	.38216	.48271	.98999	.05000	9.7703	.04862
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19983	.49932	.49547	3.9046	50.536	1.0022	10.054	.48961
Stddev	.00147	.00411	.00502	.0586	.237	.0052	.125	.00704
%RSD	.73720	.82307	1.0132	1.4999	.46996	.51863	1.2450	1.4380
#1	.20016	.49579	.49771	3.8488	50.432	1.0027	9.9795	.48796
#2	.20111	.49833	.49897	3.8995	50.808	1.0072	10.199	.49733
#3	.19822	.50383	.48972	3.9656	50.368	.99679	9.9842	.48355
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99313	49.311	.48871	9.7009	.48971	1.1713	.38503	4.8337
Stddev	.00735	.281	.00306	.0472	.00373	.0075	.00878	.0139
%RSD	.74006	.57071	.62643	.48696	.76211	.63694	2.2792	.28793
#1	.99583	49.366	.49104	9.7306	.49397	1.1682	.38711	4.8340
#2	.99875	49.561	.48985	9.7256	.48702	1.1798	.39257	4.8476
#3	.98481	49.006	.48524	9.6464	.48815	1.1659	.37540	4.8197
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 19:30:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99640	.99015	.99144	.49657	1.0014	.98139	1.0163
Stddev	.00750	.00955	.01096	.00546	.0032	.00618	.0028
%RSD	.75223	.96471	1.1057	1.1003	.32191	.62995	.27980
#1	.99975	.98887	.98824	.50220	.99790	.98458	1.0194
#2	1.0016	1.0003	1.0036	.49622	1.0022	.98533	1.0138
#3	.98781	.98130	.98243	.49129	1.0042	.97427	1.0157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8569.8	50820.	2413.3
Stddev	22.8	215.	10.0
%RSD	.26631	.42243	.41304
#1	8596.2	51061.	2401.8
#2	8557.1	50752.	2419.5
#3	8556.2	50649.	2418.7

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 19:34:13 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.01126	-.00191	.00369	.00601	.00008	-.03261	.00023
Stddev	.00083	.00295	.00043	.00344	.00076	.00009	.04958	.00007
%RSD	2485.5	26.217	22.615	93.254	12.676	109.00	152.07	30.275
#1	-.00036	.01071	-.00159	.00497	.00514	.00011	-.00746	.00016
#2	.00091	.00862	-.00240	.00631	.00653	.00015	-.08972	.00029
#3	-.00065	.01445	-.00173	-.00021	.00638	-.00002	-.00063	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00032	.00036	.00042	-.02542	.08850	.00754	.02716	-.00001
Stddev	.00032	.00072	.00077	.03243	.07274	.00155	.02996	.00286
%RSD	101.42	198.05	182.72	127.59	82.190	20.545	110.27	20010.
#1	-.00001	-.00045	-.00017	.00826	.17224	.00907	.06169	-.00167
#2	-.00065	.00061	.00129	-.05644	.05213	.00598	.01173	-.00167
#3	-.00029	.00093	.00014	-.02808	.04111	.00758	.00807	.00329
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	-.02218	-.00022	.00390	-.00185	.00471	-.00735	.00643
Stddev	.00026	.02297	.00070	.00522	.00292	.00099	.00270	.00027
%RSD	72.849	103.55	318.05	133.94	157.68	20.938	36.741	4.2724
#1	.00022	-.00188	.00014	-.00158	-.00179	.00386	-.00755	.00620
#2	.00020	-.04711	.00023	.00445	.00104	.00446	-.00455	.00635
#3	.00066	-.01756	-.00102	.00882	-.00480	.00579	-.00994	.00673
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 19:34:13 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**.00011**	**-.00295**	**-.00216**	**-.00011**	**-.00020**	**.00008**
Stddev	.00025	.00026	.01036	.00538	.00059	.00009	.00023
%RSD	103.56	243.90	351.50	249.36	558.75	45.397	304.65
#1	-.00048	.00011	-.01053	-.00797	-.00074	-.00021	.00016
#2	-.00025	-.00016	-.00717	-.00113	.00043	-.00010	-.00018
#3	.00001	.00036	.00886	.00263	-.00001	-.00028	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8584.9**	**51861.**	**2415.8**
Stddev	34.0	193.	3.9
%RSD	.39651	.37302	.16307
#1	8587.6	51689.	2412.4
#2	8617.5	51822.	2415.0
#3	8549.6	52070.	2420.1

Approved: June 29, 2016

Sample Name: L1606111619 Acquired: 6/28/2016 19:38:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00160	.68300	.00298	.94890	.02124	.00623	16.028	.00009
Stddev	.00153	.00929	.00216	.00311	.00159	.00004	.199	.00019
%RSD	95.469	1.3607	72.654	.32754	7.4787	.64700	1.2441	212.75
#1	-.00316	.69092	.00048	.94760	.02211	.00626	15.949	-.00013
#2	-.00154	.67277	.00421	.94665	.02219	.00618	16.255	.00019
#3	-.00011	.68530	.00424	.95245	.01940	.00624	15.880	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00083	.00146	.00101	.06660	4.6769	.00611	5.5653	.00232
Stddev	.00038	.00087	.00102	.04994	.1055	.00291	.0608	.00117
%RSD	45.388	59.327	101.31	74.984	2.2547	47.587	1.0918	50.494
#1	.00042	.00046	.00001	.11500	4.7788	.00549	5.5199	.00343
#2	.00116	.00202	.00096	.06957	4.5682	.00927	5.6344	.00110
#3	.00091	.00190	.00205	.01524	4.6836	.00356	5.5417	.00244
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.8655	106.18	.00945	.05932	-.00122	.00524	-.00087	2.5232
Stddev	.0051	.51	.00068	.00476	.00312	.00511	.00330	.0070
%RSD	.27431	.48054	7.1517	8.0194	256.67	97.554	378.34	.27855
#1	1.8613	105.69	.00978	.05706	-.00065	-.00032	.00289	2.5222
#2	1.8712	106.71	.00990	.05612	-.00459	.00631	-.00330	2.5307
#3	1.8639	106.14	.00867	.06479	.00159	.00973	-.00221	2.5168
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111619 Acquired: 6/28/2016 19:38:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00097	.10012	.00178	.15139	4.1196	.00540	.00233
Stddev	.00072	.00064	.00812	.00311	.0202	.00029	.00034
%RSD	74.194	.63498	455.71	2.0563	.49052	5.3242	14.549
#1	.00180	.09940	-.00592	.14827	4.1171	.00540	.00271
#2	.00065	.10061	.00100	.15450	4.1410	.00569	.00204
#3	.00047	.10035	.01027	.15138	4.1008	.00511	.00226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8557.6	51294.	2452.0
Stddev	21.8	241.	14.5
%RSD	.25502	.47029	.58949
#1	8579.3	51378.	2467.4
#2	8535.6	51022.	2438.8
#3	8557.8	51482.	2449.8

Approved: June 29, 2016

Sample Name: L1606111620 Acquired: 6/28/2016 19:42:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00295**	**.56244**	**.00280**	**.96687**	**.02135**	**.00630**	**16.074**
Stddev	.00131	.01105	.00379	.00718	.00109	.00014	.120
%RSD	44.380	1.9644	135.37	.74234	5.1103	2.2934	.74460
#1	.00309	.56666	.00701	.96071	.02019	.00645	16.211
#2	.00158	.54991	-.00033	.96515	.02236	.00617	15.989
#3	.00419	.57076	.00172	.97476	.02150	.00629	16.022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00004**	**.00106**	**.00163**	**.00111**	F **-.02581**	**4.8505**	**.00840**
Stddev	.00013	.00035	.00059	.00204	.01590	.1029	.00879
%RSD	305.99	32.498	35.872	184.93	61.610	2.1216	104.57
#1	-.00005	.00072	.00103	-.00124	-.02373	4.9502	.01854
#2	.00018	.00106	.00219	.00204	-.04264	4.7447	.00303
#3	-.00001	.00141	.00167	.00251	-.01105	4.8565	.00364
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.6738**	**.00004**	**1.9119**	**109.76**	**.00809**	**.05682**	**-.00029**
Stddev	.0837	.00164	.0022	.23	.00072	.00469	.00702
%RSD	1.4744	4418.1	.11247	.21081	8.8910	8.2569	2392.1
#1	5.5837	.00127	1.9095	109.90	.00791	.05158	.00755
#2	5.6886	-.00183	1.9135	109.49	.00889	.06062	-.00243
#3	5.7491	.00068	1.9128	109.89	.00748	.05828	-.00599
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606111620 Acquired: 6/28/2016 19:42:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00855	.00850	2.4320	.00016	.10308	-.00383	.15782
Stddev	.00505	.00431	.0076	.00051	.00112	.00965	.00176
%RSD	59.103	50.745	.31126	313.39	1.0892	251.80	1.1132
#1	.01045	.00709	2.4269	.00075	.10291	-.01059	.15635
#2	.00282	.00507	2.4407	-.00017	.10206	.00722	.15734
#3	.01237	.01334	2.4285	-.00009	.10428	-.00812	.15976
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	4.3294	.00391	.00237
Stddev	.0135	.00010	.00041
%RSD	.31202	2.6141	17.073
#1	4.3261	.00389	.00284
#2	4.3179	.00402	.00222
#3	4.3443	.00381	.00207
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8570.2	51185.	2431.1
Stddev	16.8	144.	4.2
%RSD	.19595	.28147	.17452
#1	8558.1	51035.	2427.6
#2	8563.2	51197.	2429.8
#3	8589.4	51322.	2435.8

Approved: June 29, 2016

Sample Name: L1606111622 Acquired: 6/28/2016 19:45:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	.87307	.00376	1.0028	.01970	.00516	16.701	.00008
Stddev	.00275	.01177	.00328	.0087	.00207	.00001	.349	.00017
%RSD	453.56	1.3482	87.385	.86913	10.519	.21170	2.0900	213.70
#1	.00209	.88302	.00024	1.0005	.02079	.00517	17.020	-.00007
#2	.00229	.87610	.00674	1.0124	.01731	.00514	16.328	.00027
#3	-.00256	.86008	.00430	.99542	.02099	.00516	16.755	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	.00168	.00105	-.01952	4.8292	.00792	5.5250	.00337
Stddev	.00071	.00046	.00224	.03206	.0356	.00332	.0079	.00274
%RSD	108.36	27.467	213.78	164.20	.73811	41.960	.14350	81.451
#1	.00145	.00177	.00318	-.03204	4.8246	.00856	5.5330	.00028
#2	.00045	.00209	.00123	-.04344	4.7960	.01087	5.5172	.00553
#3	.00007	.00118	-.00128	.01691	4.8668	.00432	5.5248	.00429
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.8436	107.62	.00865	.05049	.00159	.00599	.00234	3.1978
Stddev	.0496	.66	.00102	.00782	.00359	.00355	.00678	.0507
%RSD	2.6901	.60916	11.825	15.489	225.27	59.251	290.12	1.5846
#1	1.8729	108.36	.00855	.05950	.00195	.00379	.00343	3.2178
#2	1.8715	107.10	.00972	.04548	.00500	.01009	.00851	3.2354
#3	1.7863	107.41	.00768	.04648	-.00216	.00410	-.00492	3.1402
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111622 Acquired: 6/28/2016 19:45:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.10520	.00129	.12933	3.5297	.00382	.00225
Stddev	.00032	.00026	.00903	.00111	.0124	.00014	.00048
%RSD	92.272	.24564	702.47	.85816	.35251	3.5780	21.396
#1	.00031	.10501	-.00520	.13061	3.5439	.00398	.00258
#2	.00067	.10509	-.00254	.12863	3.5204	.00376	.00169
#3	.00004	.10549	.01159	.12875	3.5250	.00373	.00247
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8557.6	50978.	2435.4
Stddev	16.4	192.	22.1
%RSD	.19149	.37612	.90601
#1	8544.4	50773.	2411.3
#2	8575.9	51152.	2454.7
#3	8552.3	51009.	2440.1

Approved: June 29, 2016

Sample Name: L1606111621 Acquired: 6/28/2016 19:49:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00012**	**1.2480**	**.00198**	**1.0327**	**.02264**	**.00547**	**18.182**	**.00013**
Stddev	.00194	.0178	.00129	.0087	.00195	.00004	.071	.00017
%RSD	1582.9	1.4252	65.077	.84575	8.6101	.76334	.39323	128.92
#1	-.00236	1.2432	.00313	1.0426	.02486	.00547	18.264	.00009
#2	.00108	1.2677	.00059	1.0293	.02122	.00551	18.132	-.00001
#3	.00091	1.2332	.00222	1.0261	.02183	.00542	18.150	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00131**	**.00266**	**.00073**	**.14945**	**4.9265**	**.00587**	**5.7574**	**.00778**
Stddev	.00006	.00060	.00074	.03015	.0708	.00362	.0112	.00237
%RSD	4.8967	22.584	100.47	20.173	1.4368	61.782	.19527	30.414
#1	.00126	.00302	.00026	.16463	4.9515	.00548	5.7647	.00815
#2	.00138	.00197	.00035	.16899	4.8466	.00967	5.7445	.00525
#3	.00128	.00299	.00158	.11473	4.9815	.00245	5.7631	.00994
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.8844**	**110.24**	**.02602**	**.05230**	**-.00137**	**.00278**	**.00257**	**3.3575**
Stddev	.0044	.94	.00041	.00319	.00128	.00231	.00425	.0100
%RSD	.23212	.85470	1.5924	6.1014	93.257	83.383	164.92	.29688
#1	1.8827	111.32	.02618	.05018	-.00027	.00406	-.00182	3.3660
#2	1.8812	109.79	.02554	.05597	-.00278	.00416	.00665	3.3599
#3	1.8894	109.61	.02632	.05075	-.00107	.00010	.00289	3.3465
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111621 Acquired: 6/28/2016 19:49:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.10916**	**-.00035**	**.13194**	**3.5926**	**.02298**	**.00262**
Stddev	.00020	.00060	.00601	.00115	.0085	.00025	.00068
%RSD	658.00	.55090	1712.3	.87434	.23753	1.1059	25.841
#1	.00019	.10966	-.00350	.13204	3.5910	.02275	.00189
#2	-.00009	.10932	.00657	.13305	3.6018	.02325	.00322
#3	-.00019	.10849	-.00412	.13075	3.5849	.02293	.00276
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8585.5**	**51290.**	**2447.3**
Stddev	16.4	232.	31.9
%RSD	.19058	.45271	1.3052
#1	8593.8	51548.	2410.7
#2	8596.0	51097.	2470.0
#3	8566.6	51224.	2461.0

Approved: June 29, 2016

Sample Name: L1606111621PS Acquired: 6/28/2016 19:53:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574353-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19468**	**6.0660**	**.19521**	**1.8722**	**.51246**	**.02949**	**20.753**	**.02465**
Stddev	.00142	.0372	.00389	.0114	.00429	.00037	.018	.00028
%RSD	.73007	.61388	1.9931	.60821	.83688	1.2477	.08755	1.1435
#1	.19470	6.0400	.19605	1.8777	.51629	.02940	20.759	.02497
#2	.19609	6.1086	.19862	1.8798	.51325	.02989	20.733	.02442
#3	.19325	6.0492	.19097	1.8591	.50782	.02917	20.768	.02457
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10096**	**.25313**	**.24800**	**2.0910**	**29.458**	**.51484**	**10.216**	**.25050**
Stddev	.00033	.00389	.00199	.0653	.254	.00462	.022	.00499
%RSD	.32385	1.5373	.80283	3.1231	.86080	.89712	.21194	1.9907
#1	.10132	.25558	.25029	2.0630	29.743	.50967	10.211	.24512
#2	.10090	.25518	.24664	2.1657	29.378	.51857	10.240	.25143
#3	.10067	.24865	.24708	2.0444	29.255	.51628	10.197	.25496
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.1652**	**122.67**	**.26701**	**4.8421**	**.24685**	**.59094**	**.18681**	**5.2988**
Stddev	.0048	.55	.00141	.0071	.00697	.00238	.00199	.0076
%RSD	.22092	.45123	.52961	.14579	2.8222	.40196	1.0655	.14396
#1	2.1706	123.02	.26692	4.8361	.25240	.59112	.18463	5.3029
#2	2.1635	122.97	.26565	4.8499	.24912	.59322	.18854	5.3035
#3	2.1615	122.03	.26847	4.8402	.23904	.58848	.18724	5.2900
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111621PS Acquired: 6/28/2016 19:53:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574353-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50175**	**.59885**	**.49702**	**.36149**	**3.6922**	**.51455**	**.00306**
Stddev	.00351	.00245	.00463	.00462	.0323	.00120	.00082
%RSD	.70040	.40928	.93221	1.2780	.87500	.23340	26.856
#1	.50530	.60156	.49256	.36198	3.6891	.51562	.00379
#2	.50167	.59818	.50181	.36585	3.7259	.51478	.00321
#3	.49827	.59680	.49668	.35664	3.6616	.51325	.00217
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8416.7**	**50775.**	**2421.5**
Stddev	30.8	95.	12.5
%RSD	.36629	.18680	.51774
#1	8445.0	50804.	2409.6
#2	8421.4	50669.	2434.6
#3	8383.9	50852.	2420.4

Approved: June 29, 2016

Sample Name: L1606111621SDL Acquired: 6/28/2016 19:57:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574353-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00239**	**.31622**	**-.00231**	**.24437**	**.01409**	**.00137**	**4.1117**	**-.00020**
Stddev	.00194	.00515	.00245	.00449	.00108	.00004	.0487	.00022
%RSD	81.142	1.6301	106.06	1.8354	7.6473	2.7793	1.1848	106.31
#1	-.00074	.31773	-.00306	.24074	.01311	.00133	4.0568	-.00039
#2	-.00453	.31048	-.00429	.24299	.01392	.00138	4.1285	.00003
#3	-.00192	.32045	.00043	.24939	.01524	.00140	4.1497	-.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.00147**	**-.00005**	**.04410**	**1.1455**	**.00290**	**1.4672**	**.00303**
Stddev	.00040	.00051	.00157	.01165	.0954	.00211	.0292	.00333
%RSD	310.14	34.335	3202.6	26.411	8.3248	72.704	1.9920	110.07
#1	.00038	.00191	-.00187	.05253	1.2446	.00496	1.4876	.00346
#2	-.00033	.00092	.00084	.04895	1.1376	.00075	1.4804	-.00050
#3	.00033	.00158	.00088	.03081	1.0544	.00298	1.4337	.00612
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.44321**	**25.209**	**.00584**	**.01782**	**-.00254**	**.00758**	**-.00250**	**.77100**
Stddev	.00496	.261	.00097	.00869	.00142	.00840	.00573	.00711
%RSD	1.1184	1.0350	16.619	48.769	55.674	110.84	229.02	.92249
#1	.43981	24.910	.00677	.01707	-.00383	.00045	-.00909	.76316
#2	.44889	25.390	.00593	.02686	-.00103	.01683	.00129	.77702
#3	.44092	25.327	.00483	.00953	-.00278	.00544	.00030	.77283
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111621SDL Acquired: 6/28/2016 19:57:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574353-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00027**	**.02516**	**.00409**	**.02933**	**.84357**	**.00687**	**-.00052**
Stddev	.00046	.00033	.00903	.00490	.01043	.00013	.00018
%RSD	170.41	1.3067	221.08	16.711	1.2366	1.8237	34.157
#1	.00024	.02524	.00944	.03021	.84518	.00685	-.00063
#2	-.00039	.02544	-.00634	.02405	.83243	.00701	-.00032
#3	-.00066	.02480	.00916	.03373	.85310	.00676	-.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7962.9**	**47699.**	**2191.2**
Stddev	49.3	397.	19.0
%RSD	.61886	.83205	.86731
#1	8016.6	47547.	2212.4
#2	7952.4	48149.	2175.8
#3	7919.7	47400.	2185.5

Approved: June 29, 2016

Sample Name: L1606111621SDL Acquired: 6/28/2016 20:01:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574353-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00220	.08412	-.00098	.05898	.01353	.00054	.91615	.00008
Stddev	.00227	.00966	.00332	.00253	.00093	.00007	.00736	.00009
%RSD	102.97	11.484	337.90	4.2843	6.8634	12.877	.80313	114.45
#1	-.00454	.08593	-.00444	.06030	.01321	.00062	.91854	.00012
#2	-.00204	.09274	-.00069	.05606	.01457	.00052	.92201	-.00003
#3	-.00002	.07368	.00218	.06056	.01280	.00048	.90789	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00030	-.00003	.00020	.02649	.07159	-.00408	.31593	.00066
Stddev	.00029	.00145	.00079	.05924	.07718	.00166	.07825	.00318
%RSD	94.515	4957.5	402.59	223.60	107.81	40.645	24.770	481.89
#1	-.00055	.00121	-.00002	.02143	-.01732	-.00422	.38108	-.00178
#2	-.00037	-.00163	.00107	.08811	.11070	-.00567	.33757	.00425
#3	.00001	.00034	-.00046	-.03005	.12139	-.00236	.22913	-.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09882	5.7701	-.00007	.00258	-.00340	.00808	-.00626	.16219
Stddev	.00415	.0571	.00075	.01108	.00322	.00231	.00531	.00906
%RSD	4.2025	.99020	1059.0	429.05	94.662	28.564	84.871	5.5866
#1	.10108	5.7401	-.00079	-.00895	-.00365	.00648	-.00734	.16783
#2	.10135	5.8360	.00071	.00355	-.00007	.00703	-.00049	.16700
#3	.09403	5.7342	-.00014	.01314	-.00649	.01073	-.01095	.15174
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606111621SDL Acquired: 6/28/2016 20:01:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574353-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00540	-.00624	.00071	.19156	.00163	-.00080
Stddev	.00127	.00048	.01474	.00471	.00154	.00020	.00062
%RSD	695.58	8.9416	236.32	662.29	.80152	12.201	77.554
#1	-.00105	.00588	.01064	-.00385	.19251	.00153	-.00143
#2	.00148	.00492	-.01281	.00043	.18979	.00187	-.00018
#3	.00012	.00540	-.01655	.00555	.19238	.00151	-.00080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7627.8	45454.	2086.8
Stddev	55.0	364.	20.9
%RSD	.72101	.80095	.99922
#1	7592.7	45203.	2110.3
#2	7599.6	45872.	2070.5
#3	7691.2	45288.	2079.6

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 20:04:56 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39468	9.9919	.38524	.49000	.99891	.04984	9.8622	.04970
Stddev	.00284	.1069	.00529	.00663	.01100	.00082	.0586	.00006
%RSD	.72016	1.0695	1.3730	1.3520	1.1013	1.6424	.59433	.12719
#1	.39781	10.110	.38107	.49549	1.0050	.05079	9.8740	.04967
#2	.39225	9.9017	.39119	.49187	1.0056	.04935	9.9141	.04978
#3	.39399	9.9640	.38346	.48265	.98621	.04939	9.7986	.04966
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20024	.50366	.49874	3.9042	50.609	1.0132	10.196	.49110
Stddev	.00088	.00890	.00204	.0671	.360	.0175	.032	.00179
%RSD	.43996	1.7676	.40940	1.7179	.71095	1.7241	.31502	.36464
#1	.20059	.51378	.49900	3.9752	50.665	1.0320	10.174	.49303
#2	.20090	.50017	.50064	3.8956	50.938	1.0101	10.180	.49076
#3	.19924	.49703	.49658	3.8419	50.225	.99743	10.233	.48950
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99465	49.418	.48986	9.7317	.48767	1.1715	.38878	4.8485
Stddev	.00335	.439	.00143	.0238	.00502	.0005	.00867	.0081
%RSD	.33685	.88754	.29263	.24474	1.0289	.04616	2.2296	.16675
#1	.99612	49.767	.49149	9.7202	.48543	1.1710	.37885	4.8466
#2	.99702	49.562	.48882	9.7590	.49341	1.1720	.39482	4.8574
#3	.99082	48.926	.48926	9.7158	.48416	1.1714	.39268	4.8415
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 20:04:56 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0012**	**.99258**	**.98461**	**.49932**	**1.0047**	**.98518**	**1.0223**
Stddev	.0045	.00906	.01093	.00400	.0132	.00322	.0184
%RSD	.44880	.91273	1.1097	.80100	1.3181	.32655	1.8040
#1	1.0037	1.0004	.98097	.49605	1.0199	.98533	1.0410
#2	1.0040	.99468	.99690	.49812	.99898	.98832	1.0218
#3	.99605	.98265	.97597	.50378	.99532	.98189	1.0041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8343.7**	**49686.**	**2335.7**
Stddev	14.5	349.	32.0
%RSD	.17419	.70159	1.3697
#1	8333.7	49418.	2308.4
#2	8337.0	50080.	2327.9
#3	8360.4	49561.	2370.9

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 20:08:34 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.01307	.00097	.00455	.00820	.00010	-.02755	-.00021
Stddev	.00104	.01247	.00311	.00169	.00066	.00010	.03058	.00032
%RSD	296.10	95.448	320.02	37.046	8.0349	101.30	111.00	150.49
#1	.00149	.01497	-.00146	.00413	.00751	-.00001	-.02714	-.00053
#2	.00012	.02448	.00448	.00311	.00827	.00011	.00282	.00010
#3	-.00055	-.00025	-.00010	.00641	.00882	.00020	-.05835	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	-.00000	.00043	-.00987	-.13623	.00296	.02443	-.00127
Stddev	.00015	.00108	.00133	.02618	.16437	.00209	.07510	.00308
%RSD	37.578	222640.	306.60	265.31	120.65	70.680	307.46	241.97
#1	-.00035	-.00108	.00185	.01077	-.32571	.00231	.09619	-.00058
#2	-.00027	.00109	.00025	-.00105	-.03196	.00127	.03072	-.00464
#3	-.00056	-.00000	-.00079	-.03932	-.05103	.00530	-.05362	.00140
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	-.05415	-.00143	-.00451	-.00388	-.00043	.00021	.01035
Stddev	.00026	.03602	.00084	.00344	.00352	.00440	.01010	.00223
%RSD	51.899	66.528	58.470	76.294	90.757	1022.8	4717.4	21.569
#1	.00080	-.06463	-.00126	-.00419	-.00562	-.00551	-.00141	.01131
#2	.00032	-.01405	-.00234	-.00124	.00017	.00213	.01103	.00779
#3	.00038	-.08377	-.00070	-.00809	-.00620	.00209	-.00897	.01193
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 20:08:34 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00059**	**.00039**	**.00182**	**-.00334**	**-.00065**	**-.00015**	**-.00062**
Stddev	.00038	.00037	.00698	.00141	.00068	.00014	.00057
%RSD	65.200	93.117	384.19	42.173	104.96	95.152	92.632
#1	.00019	.00056	.00413	-.00255	-.00075	-.00020	-.00054
#2	.00096	.00065	.00734	-.00497	-.00127	.00001	-.00122
#3	.00061	-.00003	-.00603	-.00250	.00008	-.00025	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8377.9**	**50066.**	**2322.8**
Stddev	11.8	39.	3.8
%RSD	.14096	.07868	.16426
#1	8391.1	50022.	2322.0
#2	8374.2	50099.	2326.9
#3	8368.4	50077.	2319.4

Approved: June 29, 2016

Sample Name: PBW 99 Acquired: 6/28/2016 20:12:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573661-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	.00750	-.00134	-.00155	.00809	.00007	-.02153
Stddev	.00149	.00464	.00181	.00288	.00105	.00013	.04471
%RSD	169.29	61.817	134.89	186.22	12.953	183.95	207.73
#1	.00260	.00497	.00020	.00175	.00727	-.00007	-.01747
#2	-.00006	.00468	-.00089	-.00282	.00772	.00018	-.06813
#3	.00010	.01285	-.00333	-.00356	.00927	.00011	.02102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	-.00026	.00092	.00045	-.01278	-.04738	.00421
Stddev	.00009	.00055	.00029	.00138	.01257	.08734	.00306
%RSD	1683.4	210.81	31.581	306.14	98.384	184.34	72.672
#1	.00009	-.00085	.00096	-.00059	-.02606	-.10158	.00388
#2	-.00009	-.00016	.00061	-.00008	-.00106	-.09393	.00133
#3	-.00002	.00023	.00118	.00202	-.01122	.05337	.00743
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03706	-.00091	-.00010	-.03674	.00010	.00484	F -.00585
Stddev	.09839	.00348	.00042	.04472	.00066	.00464	.00307
%RSD	265.47	380.96	421.16	121.74	644.83	95.895	52.587
#1	.06275	.00046	-.00036	-.08692	.00085	.00827	-.00286
#2	.12006	.00167	.00039	-.00107	-.00011	.00670	-.00900
#3	-.07162	-.00487	-.00033	-.02223	-.00043	-.00044	-.00569
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							225.00
Low Limit							-.00500

Approved: June 29, 2016

Sample Name: PBW 99 Acquired: 6/28/2016 20:12:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573661-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00138	-.00579	-.02078	-.00075	.00054	-.01132	-.00160
Stddev	.00341	.00609	.00098	.00105	.00081	.01400	.00202
%RSD	246.45	105.24	4.6969	139.55	148.11	123.66	126.66
#1	-.00243	.00090	-.01984	-.00028	.00065	.00478	-.00303
#2	.00243	-.01101	-.02072	-.00003	-.00031	-.01809	-.00248
#3	.00414	-.00726	-.02179	-.00195	.00130	-.02066	.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00011	.00156	.00019
Stddev	.00141	.00019	.00025
%RSD	1303.5	12.265	129.05
#1	-.00167	.00153	.00046
#2	.00109	.00176	.00015
#3	.00025	.00138	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8356.4	50399.	2322.9
Stddev	8.3	118.	3.0
%RSD	.09907	.23470	.12985
#1	8347.2	50294.	2324.0
#2	8363.3	50377.	2325.3
#3	8358.7	50527.	2319.5

Approved: June 29, 2016

Sample Name: LCSW 99 Acquired: 6/28/2016 20:16:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573661-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19995	5.0912	.19748	.95968	.51139	.02486	5.1037	.02526
Stddev	.00032	.0354	.00084	.00286	.00382	.00010	.0403	.00037
%RSD	.15788	.69540	.42347	.29829	.74601	.41008	.78855	1.4664
#1	.19968	5.0507	.19653	.95642	.50904	.02497	5.0799	.02550
#2	.19986	5.1067	.19807	.96179	.50933	.02479	5.0811	.02546
#3	.20029	5.1162	.19785	.96084	.51579	.02480	5.1502	.02484
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10303	.25830	.25596	2.0188	25.751	.52228	5.1309	.25135
Stddev	.00022	.00109	.00033	.0408	.160	.00512	.1085	.00253
%RSD	.21109	.42113	.12736	2.0199	.62027	.98007	2.1152	1.0066
#1	.10303	.25833	.25623	2.0032	25.831	.52616	5.0847	.25064
#2	.10325	.25719	.25607	1.9882	25.567	.51648	5.0530	.24926
#3	.10282	.25937	.25560	2.0651	25.854	.52419	5.2548	.25416
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51177	25.309	.25293	4.8448	.25021	.59893	.18799	2.3541
Stddev	.00075	.047	.00239	.0104	.00425	.00108	.00919	.0027
%RSD	.14617	.18756	.94684	.21420	1.6966	.18076	4.8881	.11542
#1	.51116	25.262	.25394	4.8393	.24722	.59977	.17738	2.3529
#2	.51261	25.308	.25465	4.8568	.24835	.59930	.19305	2.3572
#3	.51156	25.357	.25020	4.8383	.25507	.59771	.19354	2.3522
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LCSW 99 Acquired: 6/28/2016 20:16:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573661-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51396**	**.51437**	**.50259**	**.25425**	**.51004**	**.50528**	**.00005**
Stddev	.00065	.00349	.00644	.00254	.00151	.00067	.00071
%RSD	.12647	.67931	1.2807	1.0005	.29615	.13296	1399.5
#1	.51408	.51338	.50618	.25171	.50839	.50499	.00085
#2	.51325	.51147	.50643	.25680	.51037	.50605	-.00049
#3	.51454	.51825	.49516	.25426	.51135	.50481	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8481.5**	**50727.**	**2391.5**
Stddev	11.9	137.	2.9
%RSD	.14054	.27002	.12169
#1	8473.9	50817.	2394.5
#2	8475.3	50570.	2388.7
#3	8495.2	50795.	2391.3

Approved: June 29, 2016

Sample Name: L1606103002 Acquired: 6/28/2016 20:20:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00086	.08224	.00197	.00534	.01469	.00012	1.9817	.00031
Stddev	.00055	.00471	.00244	.00304	.00144	.00010	.0399	.00021
%RSD	63.865	5.7266	123.81	56.929	9.8322	85.543	2.0151	68.281
#1	-.00059	.08517	-.00019	.00319	.01626	.00019	1.9365	.00050
#2	-.00050	.08474	.00148	.00401	.01343	.00016	1.9965	.00034
#3	-.00149	.07681	.00462	.00882	.01437	.00000	2.0122	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	-.00045	.00074	.30708	.34575	.00631	.89402	.01274
Stddev	.00014	.00051	.00098	.04097	.11046	.00210	.02638	.00322
%RSD	184.58	113.87	132.95	13.342	31.947	33.270	2.9503	25.299
#1	.00012	-.00029	.00089	.28127	.35693	.00620	.87221	.01522
#2	.00018	-.00004	.00163	.35432	.45019	.00847	.88652	.01390
#3	-.00008	-.00103	-.00031	.28565	.23013	.00427	.92334	.00910
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	1.3755	.00035	.00032	-.00145	.00301	-.00742	3.3833
Stddev	.00021	.0193	.00083	.00254	.00345	.00433	.00137	.0020
%RSD	539.25	1.4022	233.79	793.81	238.34	143.91	18.400	.05809
#1	.00010	1.3556	-.00060	-.00199	.00238	-.00106	-.00608	3.3841
#2	-.00020	1.3942	.00076	-.00009	-.00242	.00756	-.00881	3.3848
#3	.00021	1.3766	.00090	.00305	-.00430	.00253	-.00738	3.3811
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606103002 Acquired: 6/28/2016 20:20:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.01298	.00036	-.00177	-.00034	.00350	-.00071
Stddev	.00042	.00073	.01327	.00171	.00090	.00026	.00044
%RSD	81.181	5.6431	3661.7	96.392	259.96	7.4203	63.034
#1	.00034	.01321	.00513	-.00316	.00067	.00330	-.00071
#2	.00021	.01357	.01059	-.00230	-.00067	.00340	-.00115
#3	.00100	.01216	-.01464	.00014	-.00103	.00379	-.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8609.6	51561.	2393.0
Stddev	10.5	208.	9.5
%RSD	.12240	.40391	.39514
#1	8618.0	51346.	2384.4
#2	8597.8	51575.	2391.5
#3	8613.0	51762.	2403.2

Approved: June 29, 2016

Sample Name: L1606103005 Acquired: 6/28/2016 20:23:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00092	.07338	.00108	.00414	.01584	.00008	1.8416	.00020
Stddev	.00203	.00510	.00353	.00309	.00055	.00009	.0159	.00025
%RSD	220.00	6.9546	327.84	74.566	3.4564	105.80	.86203	127.67
#1	-.00182	.07796	-.00226	.00228	.01647	.00008	1.8588	.00043
#2	.00140	.07431	.00071	.00244	.01548	.00017	1.8275	-.00008
#3	-.00235	.06788	.00477	.00770	.01558	-.00000	1.8385	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.00090	.00159	.27024	.13061	-.00133	.82130	.01111
Stddev	.00022	.00107	.00044	.03951	.12301	.00128	.07164	.00263
%RSD	139.18	119.00	27.684	14.621	94.178	95.818	8.7221	23.653
#1	.00038	.00192	.00121	.24967	.00755	-.00155	.90350	.00969
#2	-.00007	-.00021	.00207	.24525	.13071	-.00249	.77217	.00951
#3	.00017	.00099	.00150	.31579	.25356	.00004	.78824	.01415
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	1.3092	-.00001	.00072	.00005	.00458	-.00378	3.3076
Stddev	.00020	.0283	.00086	.00100	.00271	.00195	.00824	.0156
%RSD	85.562	2.1605	12970.	139.93	5208.4	42.553	217.94	.47001
#1	.00023	1.3197	-.00058	.00088	-.00137	.00405	-.01271	3.3062
#2	.00003	1.3307	-.00042	-.00036	.00318	.00675	.00355	3.3238
#3	.00043	1.2772	.00098	.00162	-.00165	.00296	-.00220	3.2928
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606103005 Acquired: 6/28/2016 20:23:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	.01292	-.00204	-.00247	.00029	.00314	-.00035
Stddev	.00071	.00027	.00622	.00123	.00022	.00013	.00044
%RSD	152.45	2.1003	305.29	49.901	75.753	4.1400	124.35
#1	.00001	.01323	-.00350	-.00117	.00016	.00300	-.00025
#2	.00129	.01274	-.00740	-.00362	.00016	.00316	-.00084
#3	.00011	.01279	.00479	-.00262	.00054	.00326	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8591.7	51718.	2396.2
Stddev	32.8	139.	5.9
%RSD	.38213	.26800	.24697
#1	8553.8	51723.	2390.7
#2	8608.4	51854.	2395.5
#3	8612.8	51577.	2402.5

Approved: June 29, 2016

Sample Name: L1606103008 Acquired: 6/28/2016 20:27:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00248	.06335	-.00155	.00171	.01387	.00004	1.6732	.00015
Stddev	.00069	.00988	.00102	.00041	.00106	.00006	.0055	.00026
%RSD	27.761	15.595	65.691	24.128	7.6363	153.17	.32845	175.08
#1	-.00325	.07445	-.00144	.00165	.01367	-.00001	1.6770	-.00015
#2	-.00226	.06007	-.00261	.00215	.01292	.00003	1.6669	.00031
#3	-.00193	.05553	-.00059	.00133	.01501	.00011	1.6758	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00000	.00268	.00155	.25935	.21785	.00346	.90723	.00963
Stddev	.00047	.00094	.00044	.02869	.03338	.00211	.08643	.00343
%RSD	11692.	35.293	28.463	11.064	15.323	60.967	9.5265	35.627
#1	-.00015	.00179	.00186	.23014	.25226	.00217	.80749	.00585
#2	-.00037	.00256	.00176	.28750	.18560	.00232	.95414	.01255
#3	.00053	.00367	.00105	.26042	.21567	.00590	.96007	.01047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	1.6028	.00050	.00285	-.00172	.00432	-.00424	3.4372
Stddev	.00034	.0210	.00082	.00190	.00344	.00344	.00226	.0990
%RSD	117.08	1.3071	162.19	66.549	200.13	79.563	53.304	2.8817
#1	.00026	1.6264	.00111	.00504	-.00499	.00768	-.00276	3.4985
#2	-.00003	1.5953	-.00042	.00170	-.00202	.00447	-.00684	3.4902
#3	.00065	1.5866	.00082	.00181	.00186	.00081	-.00311	3.3230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606103008 Acquired: 6/28/2016 20:27:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	.01269	-.00096	-.00294	-.00047	.00324	-.00082
Stddev	.00041	.00020	.01187	.00205	.00058	.00036	.00004
%RSD	61.897	1.5519	1242.1	69.635	121.79	11.026	4.5093
#1	.00086	.01290	-.01258	-.00059	-.00094	.00364	-.00086
#2	.00019	.01251	.01115	-.00387	.00017	.00296	-.00080
#3	.00094	.01265	-.00143	-.00435	-.00065	.00312	-.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8606.8	51900.	2410.3
Stddev	16.7	132.	9.1
%RSD	.19431	.25415	.37944
#1	8598.2	51935.	2406.3
#2	8626.0	52011.	2420.8
#3	8596.0	51754.	2403.9

Approved: June 29, 2016

Sample Name: L1606103013 Acquired: 6/28/2016 20:31:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573661-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00122	.04624	-.00178	.00095	.01561	.00013	2.0066	.00029
Stddev	.00021	.00680	.00616	.00269	.00083	.00001	.0376	.00015
%RSD	16.871	14.707	345.25	283.48	5.3373	8.0351	1.8742	52.224
#1	.00114	.05286	.00318	.00378	.01466	.00012	1.9900	.00012
#2	.00107	.03927	.00014	-.00156	.01599	.00012	1.9801	.00033
#3	.00146	.04659	-.00868	.00062	.01619	.00014	2.0497	.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	.00029	.00151	.29221	.26761	.00398	1.1180	.00839
Stddev	.00019	.00101	.00091	.02806	.10146	.00258	.0551	.00336
%RSD	34.020	344.06	60.719	9.6032	37.912	64.760	4.9282	40.034
#1	-.00034	-.00082	.00255	.26127	.37672	.00184	1.1808	.00543
#2	-.00064	.00055	.00087	.31601	.17611	.00684	1.0778	.00769
#3	-.00069	.00115	.00110	.29936	.25000	.00325	1.0955	.01204
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	2.1231	-.00118	.00513	-.00473	.00222	-.00603	4.1440
Stddev	.00017	.0465	.00037	.00302	.00167	.00456	.00114	.1226
%RSD	44.300	2.1922	31.218	58.874	35.342	205.45	18.846	2.9593
#1	.00039	2.0706	-.00115	.00459	-.00336	-.00152	-.00552	4.2262
#2	.00021	2.1594	-.00082	.00839	-.00423	.00089	-.00733	4.2027
#3	.00054	2.1393	-.00156	.00242	-.00659	.00729	-.00523	4.0030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606103013 Acquired: 6/28/2016 20:31:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573661-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.01567	-.00061	-.00476	.00024	.00140	.00136
Stddev	.00090	.00032	.00297	.00325	.00067	.00012	.00036
%RSD	182.01	2.0296	488.92	68.203	279.71	8.5409	26.414
#1	.00112	.01532	-.00325	-.00849	.00036	.00144	.00160
#2	-.00054	.01594	-.00118	-.00260	-.00048	.00150	.00152
#3	.00089	.01575	.00260	-.00319	.00084	.00127	.00095
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8578.5	51693.	2409.2
Stddev	5.0	380.	28.4
%RSD	.05873	.73419	1.1788
#1	8583.0	51259.	2441.8
#2	8579.4	51855.	2395.8
#3	8573.1	51965.	2389.9

Approved: June 29, 2016

Sample Name: L1606103014S Acquired: 6/28/2016 20:35:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573661-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19712	5.1426	.19698	.95559	.52325	.02504	7.1364	.02503
Stddev	.00387	.0305	.00335	.00861	.00545	.00008	.1283	.00025
%RSD	1.9618	.59258	1.7000	.90073	1.0423	.33543	1.7978	1.0117
#1	.19423	5.1194	.19313	.94725	.52465	.02497	7.2805	.02505
#2	.20152	5.1771	.19856	.96444	.52787	.02513	7.0347	.02477
#3	.19563	5.1313	.19924	.95509	.51723	.02503	7.0939	.02528
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10214	.25928	.25338	2.3233	26.069	.52468	6.2318	.26664
Stddev	.00135	.00040	.00160	.0125	.190	.00255	.1325	.00172
%RSD	1.3220	.15466	.63168	.53830	.72708	.48682	2.1255	.64432
#1	.10357	.25975	.25477	2.3215	26.081	.52258	6.1381	.26856
#2	.10088	.25905	.25163	2.3367	26.253	.52752	6.3833	.26525
#3	.10197	.25905	.25375	2.3118	25.874	.52393	6.1739	.26611
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50844	27.294	.25043	4.7758	.25102	.58741	.18813	6.5890
Stddev	.00349	.254	.00206	.0281	.00585	.00436	.00782	.0469
%RSD	.68643	.93201	.82062	.58817	2.3315	.74208	4.1588	.71105
#1	.50968	27.367	.25075	4.8009	.25595	.59104	.19682	6.6036
#2	.50450	27.505	.24824	4.7455	.24455	.58257	.18596	6.5365
#3	.51115	27.012	.25231	4.7809	.25256	.58861	.18163	6.6267
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606103014S Acquired: 6/28/2016 20:35:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573661-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50967	.53343	.50624	.24971	.50892	.50235	.00030
Stddev	.00450	.00383	.00683	.00270	.00053	.00313	.00028
%RSD	.88259	.71764	1.3493	1.0831	.10449	.62256	93.438
#1	.51146	.53276	.51236	.24681	.50919	.50409	.00052
#2	.50455	.53755	.49887	.25015	.50927	.49874	.00041
#3	.51300	.52998	.50747	.25217	.50831	.50421	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8552.5	50892.	2386.8
Stddev	54.7	220.	25.0
%RSD	.63959	.43158	1.0478
#1	8521.9	50991.	2379.9
#2	8615.7	50640.	2366.0
#3	8519.9	51045.	2414.5

Approved: June 29, 2016

Sample Name: L1606103015SD Acquired: 6/28/2016 20:39:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573661-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19945	5.1587	.19596	.96938	.52400	.02505	7.0900	.02511
Stddev	.00173	.0276	.00166	.00022	.00923	.00012	.1630	.00023
%RSD	.86965	.53434	.84677	.02230	1.7606	.49890	2.2987	.89707
#1	.19757	5.1745	.19499	.96955	.51782	.02518	7.0286	.02491
#2	.20100	5.1748	.19501	.96947	.53460	.02502	7.2748	.02508
#3	.19978	5.1269	.19788	.96914	.51957	.02493	6.9667	.02535
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10337	.25841	.25831	2.3603	26.179	.52946	6.2591	.26435
Stddev	.00053	.00183	.00149	.0599	.253	.00794	.0416	.00468
%RSD	.51104	.70916	.57726	2.5380	.96484	1.4993	.66458	1.7695
#1	.10285	.25643	.25699	2.3235	25.984	.52081	6.3007	.26566
#2	.10390	.26004	.25993	2.4294	26.464	.53640	6.2175	.26822
#3	.10336	.25876	.25800	2.3280	26.088	.53118	6.2592	.25915
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51686	27.396	.25484	4.8687	.25758	.59782	.19383	6.6540
Stddev	.00352	.389	.00234	.0367	.00220	.00371	.00712	.0309
%RSD	.68063	1.4205	.91811	.75454	.85248	.62120	3.6739	.46516
#1	.51287	27.174	.25226	4.8340	.25694	.59358	.19131	6.6202
#2	.51954	27.845	.25683	4.9072	.25577	.59937	.20186	6.6810
#3	.51815	27.168	.25544	4.8648	.26002	.60051	.18830	6.6607
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606103015SD Acquired: 6/28/2016 20:39:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573661-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51888	.53421	.50143	.25567	.51178	.51917	-.00014
Stddev	.00271	.00813	.00412	.00076	.00169	.00325	.00025
%RSD	.52203	1.5219	.82169	.29775	.33018	.62683	177.03
#1	.51614	.52777	.50024	.25556	.51373	.51570	-.00031
#2	.52156	.54335	.50602	.25496	.51071	.52215	.00015
#3	.51894	.53152	.49804	.25648	.51089	.51968	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8578.1	51459.	2426.3
Stddev	28.4	147.	29.4
%RSD	.33082	.28491	1.2131
#1	8609.8	51467.	2430.4
#2	8555.2	51308.	2395.1
#3	8569.3	51601.	2453.5

Approved: June 29, 2016

Sample Name: L1606103020 Acquired: 6/28/2016 20:43:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00084	.00877	-.00460	.00734	.00651	.00012	-.01988	.00004
Stddev	.00095	.00655	.00314	.00147	.00132	.00008	.02973	.00023
%RSD	113.31	74.670	68.199	20.026	20.246	69.398	149.59	546.82
#1	.00026	.00462	-.00377	.00900	.00698	.00005	-.02899	-.00013
#2	-.00133	.00538	-.00807	.00684	.00753	.00010	.01335	-.00004
#3	-.00146	.01633	-.00196	.00619	.00502	.00021	-.04399	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.00085	.00015	-.01469	-.08758	-.00071	.02146	-.00067
Stddev	.00039	.00091	.00020	.03225	.15993	.00263	.03330	.00092
%RSD	722.61	106.86	135.15	219.57	182.60	369.20	155.19	138.50
#1	.00047	.00117	.00036	.01959	-.08635	-.00237	-.01567	-.00103
#2	-.00032	-.00018	-.00004	-.04444	-.24812	-.00209	.04870	.00038
#3	.00002	.00155	.00013	-.01922	.07172	.00232	.03135	-.00135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	1.4536	.00020	.00376	-.00365	.00289	-.00559	.47911
Stddev	.00033	.0476	.00046	.00579	.00477	.00166	.00612	.00016
%RSD	762.05	3.2713	232.76	153.90	130.81	57.274	109.47	.03278
#1	-.00021	1.4309	-.00026	.00280	-.00897	.00420	.00111	.47898
#2	.00042	1.4217	.00020	.00997	-.00221	.00344	-.00701	.47928
#3	-.00008	1.5083	.00065	-.00149	.00024	.00103	-.01088	.47906
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606103020 Acquired: 6/28/2016 20:43:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00110	.00023	.00531	-.00695	.00052	.00111	-.00094
Stddev	.00104	.00028	.00887	.00154	.00080	.00027	.00037
%RSD	94.401	122.88	167.05	22.192	152.73	24.492	38.941
#1	.00055	.00021	-.00034	-.00767	-.00026	.00097	-.00109
#2	.00045	.00052	.01554	-.00801	.00050	.00093	-.00122
#3	.00229	-.00004	.00074	-.00518	.00133	.00142	-.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8676.7	52192.	2438.5
Stddev	21.8	312.	21.6
%RSD	.25144	.59803	.88605
#1	8698.9	52061.	2422.8
#2	8655.3	52548.	2429.6
#3	8676.1	51966.	2463.1

Approved: June 29, 2016

Sample Name: L1606103023 Acquired: 6/28/2016 20:46:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00096	.03076	-.00276	.00673	.00671	.00004	.05475	.00017
Stddev	.00096	.00939	.00497	.00251	.00155	.00008	.07827	.00022
%RSD	99.279	30.538	179.87	37.370	23.180	233.89	142.96	130.78
#1	.00014	.03473	-.00086	.00447	.00515	-.00006	-.03529	.00042
#2	-.00159	.02004	.00098	.00628	.00671	.00008	.09300	-.00001
#3	-.00144	.03753	-.00840	.00943	.00826	.00009	.10653	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	.00042	.00160	.00802	-.07936	.00670	.15045	.00000
Stddev	.00034	.00040	.00030	.01615	.07275	.00052	.09119	.00197
%RSD	252.40	96.122	18.507	201.43	91.670	7.7603	60.608	39387.
#1	.00018	.00089	.00159	.00372	-.00710	.00612	.20505	-.00172
#2	-.00050	.00018	.00191	.02589	-.07840	.00713	.04519	.00215
#3	-.00009	.00019	.00131	-.00555	-.15259	.00684	.20113	-.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	1.4650	-.00008	-.00133	-.00359	.00243	-.00207	.48862
Stddev	.00012	.0168	.00079	.00979	.00280	.00016	.00574	.01993
%RSD	46.960	1.1474	959.93	737.61	77.930	6.5708	277.61	4.0787
#1	.00030	1.4786	-.00025	-.00456	-.00204	.00262	.00363	.50244
#2	.00036	1.4701	-.00078	.00967	-.00191	.00233	-.00784	.49764
#3	.00012	1.4462	.00078	-.00909	-.00683	.00235	-.00199	.46577
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606103023 Acquired: 6/28/2016 20:46:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00018**	**.00091**	**-.00161**	**-.00016**	**-.00030**	**.00149**	**-.00032**
Stddev	.00042	.00021	.00547	.00220	.00012	.00020	.00112
%RSD	227.16	23.373	338.87	1370.6	39.551	13.167	345.43
#1	-.00021	.00113	-.00777	.00081	-.00028	.00135	-.00141
#2	.00014	.00070	.00268	-.00268	-.00042	.00139	-.00038
#3	.00062	.00089	.00025	.00139	-.00019	.00171	.00082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8702.3**	**52447.**	**2432.2**
Stddev	19.4	88.	24.6
%RSD	.22259	.16845	1.0115
#1	8681.6	52435.	2433.5
#2	8720.0	52366.	2406.9
#3	8705.2	52541.	2456.1

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 20:50:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39387**	**10.025**	**.39209**	**.48927**	**.99341**	**.04979**	**9.8452**	**.05027**
Stddev	.00255	.030	.00174	.00801	.00147	.00030	.0611	.00024
%RSD	.64753	.29611	.44340	1.6369	.14776	.60772	.62029	.48017
#1	.39528	10.011	.39103	.48057	.99301	.04978	9.8212	.05054
#2	.39540	10.004	.39410	.49091	.99218	.05009	9.9146	.05017
#3	.39092	10.059	.39115	.49634	.99504	.04949	9.7997	.05008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20130**	**.50328**	**.50194**	**3.8976**	**50.161**	**.99794**	**9.9823**	**.49277**
Stddev	.00054	.00180	.00113	.0316	.096	.00307	.0048	.00233
%RSD	.27066	.35681	.22427	.80949	.19110	.30743	.04819	.47273
#1	.20072	.50134	.50064	3.8647	50.177	.99891	9.9878	.49045
#2	.20180	.50488	.50251	3.9005	50.058	.99450	9.9799	.49510
#3	.20139	.50362	.50266	3.9276	50.248	1.0004	9.9792	.49275
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0041**	**49.461**	**.49722**	**9.8366**	**.49583**	**1.1908**	**.39387**	**4.9618**
Stddev	.0018	.062	.00041	.0283	.00102	.0064	.00958	.0100
%RSD	.18282	.12491	.08194	.28740	.20516	.53822	2.4318	.20201
#1	1.0023	49.480	.49734	9.8053	.49524	1.1847	.40206	4.9509
#2	1.0059	49.391	.49755	9.8603	.49525	1.1975	.38334	4.9705
#3	1.0042	49.510	.49676	9.8443	.49700	1.1901	.39620	4.9641
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 20:50:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0071**	**.98955**	**.99924**	**.50029**	**1.0027**	**.99967**	**1.0262**
Stddev	.0029	.00102	.00558	.00094	.0071	.00173	.0015
%RSD	.28373	.10289	.55859	.18755	.70574	.17318	.15142
#1	1.0044	.99067	.99835	.50120	.99916	.99923	1.0257
#2	1.0069	.98868	.99416	.50035	1.0109	.99819	1.0280
#3	1.0101	.98929	1.0052	.49933	.99811	1.0016	1.0250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8509.8**	**50998.**	**2411.4**
Stddev	31.1	121.	5.1
%RSD	.36540	.23792	.21191
#1	8492.7	50959.	2406.2
#2	8545.7	51133.	2411.4
#3	8491.1	50900.	2416.4

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 20:54:31 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00097	.01028	-.00070	.00231	.00628	.00006	-.00151	.00026
Stddev	.00117	.00825	.00285	.00203	.00132	.00006	.05286	.00040
%RSD	121.50	80.294	406.96	87.692	20.977	99.683	3494.8	153.91
#1	.00016	.01966	.00239	.00134	.00484	.00005	.05735	-.00019
#2	-.00088	.00413	-.00127	.00096	.00743	.00012	-.01695	.00040
#3	-.00218	.00705	-.00323	.00465	.00656	.00001	-.04494	.00057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00019	.00124	.00012	.01193	.00194	.09408	-.00460
Stddev	.00035	.00047	.00168	.01222	.12968	.00350	.09956	.00259
%RSD	394.87	246.49	135.63	10327.	1086.9	179.97	105.82	56.340
#1	.00045	.00000	.00318	.00632	-.11270	.00119	.17982	-.00178
#2	.00006	-.00016	.00036	.00799	.14613	-.00112	.11753	-.00516
#3	-.00024	.00072	.00018	-.01395	.00236	.00576	-.01511	-.00687
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	-.08282	-.00179	.00255	-.00305	.00088	-.00266	.00929
Stddev	.00044	.02080	.00061	.00580	.00051	.00568	.00235	.00264
%RSD	390.13	25.120	34.102	227.36	16.768	645.68	88.410	28.446
#1	.00023	-.05883	-.00182	.00709	-.00359	.00496	-.00107	.01233
#2	-.00061	-.09382	-.00238	.00454	-.00296	.00329	-.00155	.00806
#3	.00004	-.09582	-.00116	-.00398	-.00258	-.00561	-.00536	.00749
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 20:54:31 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**-.00009**	**.00531**	**-.00285**	**-.00050**	**.00011**	**-.00047**
Stddev	.00107	.00038	.00364	.00117	.00035	.00019	.00041
%RSD	261.53	433.74	68.573	40.924	69.361	167.36	86.498
#1	-.00066	-.00053	.00158	-.00249	-.00082	.00015	-.00018
#2	.00041	.00010	.00885	-.00415	-.00057	.00029	-.00029
#3	.00148	.00017	.00551	-.00191	-.00013	-.00009	-.00094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8624.7**	**51659.**	**2390.8**
Stddev	26.4	102.	13.3
%RSD	.30619	.19728	.55665
#1	8650.5	51749.	2395.5
#2	8626.0	51679.	2375.8
#3	8597.7	51548.	2401.1

Approved: June 29, 2016

Sample Name: L1606106501 Acquired: 6/28/2016 20:58:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00122	.04246	.00096	.00933	.01907	.00012	48.210	.00018
Stddev	.00080	.00956	.00129	.00476	.00169	.00009	.667	.00040
%RSD	66.026	22.514	133.81	51.003	8.8376	74.850	1.3838	224.50
#1	-.00109	.03166	-.00051	.00441	.01870	.00022	47.543	-.00028
#2	-.00049	.04591	.00187	.01391	.02090	.00006	48.211	.00033
#3	-.00208	.04982	.00152	.00966	.01759	.00008	48.877	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00082	.12034	.00337	.84538	4.8885	.00613	19.130	.19236
Stddev	.00035	.00062	.00185	.01733	.0577	.00353	.062	.00124
%RSD	42.451	.51230	55.118	2.0499	1.1811	57.613	.32623	.64546
#1	.00076	.11987	.00429	.84110	4.8268	.00687	19.058	.19093
#2	.00050	.12104	.00123	.83059	4.9412	.00229	19.167	.19314
#3	.00119	.12012	.00458	.86445	4.8975	.00923	19.166	.19300
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00502	101.49	.03666	.05061	.00037	.00552	-.00691	4.2371
Stddev	.00063	.70	.00145	.00855	.00214	.00409	.00550	.0714
%RSD	12.644	.68806	3.9580	16.896	580.68	74.132	79.603	1.6841
#1	.00553	100.80	.03830	.04656	-.00196	.00856	-.01288	4.2787
#2	.00521	102.20	.03615	.06044	.00225	.00087	-.00206	4.2778
#3	.00431	101.47	.03554	.04484	.00082	.00713	-.00578	4.1547
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106501 Acquired: 6/28/2016 20:58:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00058	.27982	-.00044	-.00323	.00081	.00487	-.00039
Stddev	.00124	.00141	.01103	.00191	.00135	.00030	.00090
%RSD	214.61	.50382	2503.1	59.084	167.35	6.2180	234.47
#1	.00005	.27832	-.00113	-.00441	-.00040	.00461	-.00063
#2	-.00031	.28112	-.01111	-.00103	.00055	.00520	-.00114
#3	.00199	.28001	.01092	-.00425	.00227	.00480	.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8509.3	50804.	2422.1
Stddev	39.1	141.	10.1
%RSD	.45930	.27662	.41861
#1	8466.1	50939.	2433.8
#2	8542.3	50658.	2415.8
#3	8519.4	50814.	2416.7

Approved: June 29, 2016

Sample Name: L1606106502 Acquired: 6/28/2016 21:02:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00114	.04867	-.00289	.00851	.01762	.00016	35.936	.00020
Stddev	.00268	.00795	.00156	.00216	.00094	.00011	.343	.00034
%RSD	234.09	16.342	53.935	25.365	5.3376	68.879	.95434	175.42
#1	.00194	.04010	-.00140	.00603	.01790	.00019	36.093	.00008
#2	-.00255	.05010	-.00450	.00991	.01657	.00024	35.543	-.00007
#3	-.00282	.05581	-.00276	.00961	.01839	.00004	36.172	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00459	1.0529	.01632	5.0050	.94962	.00464	10.669	.16800
Stddev	.00041	.0021	.00038	.0194	.06132	.00481	.111	.00302
%RSD	9.0431	.19962	2.3454	.38836	6.4578	103.77	1.0376	1.7983
#1	.00412	1.0546	.01676	4.9982	.96223	.00667	10.667	.17029
#2	.00491	1.0537	.01605	4.9898	.88297	.00810	10.781	.16912
#3	.00473	1.0506	.01616	5.0269	1.0037	-.00086	10.559	.16457
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02964	111.70	.04251	.05620	-.00251	-.00857	-.00677	5.3032
Stddev	.00092	.30	.00079	.00640	.00333	.00438	.01076	.0854
%RSD	3.1108	.26623	1.8609	11.382	132.84	51.124	158.88	1.6112
#1	.03041	111.57	.04282	.05992	-.00625	-.00890	-.00689	5.3352
#2	.02990	112.04	.04309	.05987	.00011	-.01278	-.01747	5.3680
#3	.02862	111.49	.04161	.04882	-.00137	-.00403	.00405	5.2064
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106502 Acquired: 6/28/2016 21:02:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00084	.12031	.00009	-.00450	.00634	.00260	-.00112
Stddev	.00029	.00088	.00398	.00333	.00034	.00025	.00041
%RSD	34.357	.73136	4483.1	74.119	5.3714	9.8103	36.698
#1	.00117	.11973	.00242	-.00289	.00663	.00269	-.00123
#2	.00063	.11988	.00235	-.00833	.00641	.00231	-.00066
#3	.00072	.12132	-.00450	-.00227	.00596	.00279	-.00146
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8550.4	51133.	2443.3
Stddev	23.9	86.	5.6
%RSD	.27987	.16812	.22818
#1	8569.9	51216.	2438.0
#2	8523.7	51044.	2442.8
#3	8557.6	51139.	2449.1

Approved: June 29, 2016

Sample Name: L1606106503 Acquired: 6/28/2016 21:06:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.01851	-.00143	.00738	.04387	.00008	45.653	.00029
Stddev	.00152	.00228	.00115	.00348	.00218	.00006	.183	.00008
%RSD	414.82	12.329	80.342	47.166	4.9668	74.693	.40194	29.371
#1	-.00121	.01940	-.00262	.01046	.04591	.00013	45.864	.00034
#2	.00047	.01591	-.00034	.00806	.04157	.00001	45.552	.00019
#3	.00183	.02021	-.00132	.00361	.04412	.00011	45.542	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00159	.16212	.00545	3.1219	1.3740	.00540	11.847	.51275
Stddev	.00044	.00101	.00037	.0120	.1362	.00337	.092	.00428
%RSD	27.935	.62303	6.8000	.38450	9.9150	62.457	.77861	.83566
#1	.00146	.16139	.00566	3.1123	1.2183	.00220	11.756	.51512
#2	.00123	.16169	.00502	3.1180	1.4714	.00892	11.844	.51533
#3	.00209	.16327	.00567	3.1354	1.4322	.00507	11.940	.50781
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00114	174.62	.04481	.00362	-.00178	.00108	-.00296	4.4236
Stddev	.00017	1.14	.00119	.00421	.00226	.00281	.00929	.0795
%RSD	14.627	.65397	2.6463	116.24	127.13	258.91	313.99	1.7977
#1	.00095	175.93	.04559	.00590	.00071	.00419	.00728	4.4682
#2	.00127	174.11	.04540	.00619	-.00233	.00033	-.01085	4.4708
#3	.00118	173.82	.04345	-.00124	-.00371	-.00127	-.00530	4.3318
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106503 Acquired: 6/28/2016 21:06:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	.16890	-.00309	-.00225	-.00026	.00270	-.00035
Stddev	.00100	.00033	.00750	.00208	.00148	.00008	.00068
%RSD	483.66	.19786	242.96	92.738	566.95	2.9192	192.50
#1	.00079	.16911	.00487	-.00262	-.00195	.00276	-.00032
#2	.00078	.16908	-.00411	-.00000	.00082	.00261	.00031
#3	-.00095	.16852	-.01002	-.00412	.00034	.00274	-.00104
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8510.3	50639.	2430.2
Stddev	7.5	23.	18.8
%RSD	.08869	.04463	.77216
#1	8519.0	50665.	2409.5
#2	8505.2	50628.	2435.0
#3	8506.7	50623.	2446.1

Approved: June 29, 2016

Sample Name: L1606106504 Acquired: 6/28/2016 21:10:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00213	.09096	-.00153	.00691	.01641	.00011	37.014	.00041
Stddev	.00056	.01201	.00090	.00198	.00229	.00006	.834	.00023
%RSD	26.320	13.200	58.781	28.617	13.939	54.878	2.2539	56.817
#1	-.00260	.08217	-.00057	.00917	.01902	.00005	37.973	.00016
#2	-.00228	.08608	-.00235	.00547	.01545	.00018	36.605	.00061
#3	-.00151	.10464	-.00168	.00611	.01476	.00011	36.463	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01035	.41103	.00712	3.8800	9.5189	.02111	18.430	.25101
Stddev	.00050	.00097	.00195	.0540	.1479	.00400	.267	.00484
%RSD	4.8232	.23525	27.322	1.3928	1.5538	18.953	1.4467	1.9274
#1	.01046	.40992	.00878	3.9419	9.3883	.02555	18.710	.25657
#2	.01079	.41171	.00760	3.8560	9.4889	.01780	18.402	.24876
#3	.00981	.41145	.00498	3.8422	9.6795	.01998	18.179	.24771
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00352	122.20	.09998	.03453	.00070	.00399	-.00526	5.7215
Stddev	.00039	1.45	.00206	.00291	.00260	.00243	.00421	.1201
%RSD	11.002	1.1895	2.0639	8.4366	372.00	61.032	80.108	2.0990
#1	.00375	123.86	.09940	.03333	.00304	.00199	-.00504	5.7577
#2	.00373	121.61	.10227	.03785	.00117	.00670	-.00958	5.8193
#3	.00307	121.14	.09827	.03241	-.00211	.00327	-.00116	5.5875
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106504 Acquired: 6/28/2016 21:10:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	.21514	-.00193	-.00213	.00339	.00785	-.00076
Stddev	.00062	.00319	.01407	.00225	.00062	.00025	.00024
%RSD	114.95	1.4817	727.11	106.00	18.385	3.1697	31.487
#1	-.00008	.21868	-.01773	-.00095	.00282	.00786	-.00068
#2	.00115	.21423	.00924	-.00472	.00328	.00810	-.00058
#3	.00055	.21250	.00269	-.00070	.00405	.00760	-.00104
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8604.3	51216.	2448.5
Stddev	45.8	176.	25.8
%RSD	.53283	.34304	1.0528
#1	8580.4	51038.	2418.8
#2	8575.4	51389.	2463.9
#3	8657.2	51221.	2462.9

Approved: June 29, 2016

Sample Name: L1606106505 Acquired: 6/28/2016 21:13:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	.02921	-.00384	.00411	.01418	.00007	21.596	.00014
Stddev	.00260	.01455	.00201	.00175	.00156	.00012	.210	.00028
%RSD	285.47	49.798	52.350	42.699	10.969	180.72	.97426	194.07
#1	.00036	.04383	-.00604	.00599	.01579	.00008	21.785	.00041
#2	-.00137	.02906	-.00336	.00383	.01407	-.00006	21.633	.00016
#3	.00374	.01474	-.00211	.00251	.01268	.00019	21.369	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.01331	.00184	.28146	42.106	.02502	24.386	.10216
Stddev	.00023	.00099	.00045	.02441	.255	.00418	.202	.00328
%RSD	74.655	7.4575	24.686	8.6720	.60615	16.715	.82951	3.2063
#1	.00037	.01445	.00205	.27951	42.035	.02729	24.208	.10074
#2	.00049	.01291	.00132	.25808	42.390	.02759	24.606	.10590
#3	.00005	.01259	.00215	.30678	41.894	.02020	24.342	.09983
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00133	71.860	.01009	.01291	-.00001	.00666	-.00207	3.4334
Stddev	.00030	.672	.00042	.00086	.00201	.00229	.00662	.0871
%RSD	22.478	.93503	4.1380	6.6831	38038.	34.442	319.11	2.5378
#1	.00135	71.698	.01043	.01290	-.00221	.00546	.00549	3.4892
#2	.00102	72.598	.01021	.01205	.00049	.00930	-.00683	3.4780
#3	.00161	71.284	.00963	.01377	.00171	.00522	-.00488	3.3330
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106505 Acquired: 6/28/2016 21:13:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.11257**	**-.00701**	**-.00258**	**-.00079**	**.00417**	**-.00019**
Stddev	.00050	.00059	.00451	.00158	.00075	.00010	.00046
%RSD	710.42	.52043	64.379	61.242	94.617	2.3387	242.20
#1	.00015	.11286	-.00751	-.00313	-.00089	.00412	-.00046
#2	.00029	.11296	-.00227	-.00080	.00000	.00428	.00034
#3	-.00065	.11190	-.01126	-.00381	-.00148	.00411	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8614.1**	**51472.**	**2478.5**
Stddev	5.8	202.	14.1
%RSD	.06752	.39279	.56993
#1	8607.5	51241.	2482.7
#2	8616.5	51619.	2462.8
#3	8618.3	51555.	2490.1

Approved: June 29, 2016

Sample Name: L1606106506 Acquired: 6/28/2016 21:17:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00158	.03183	.00137	.00857	.02635	.00004	82.528	.00016
Stddev	.00017	.00971	.00409	.00205	.00061	.00005	.363	.00031
%RSD	10.921	30.510	298.35	23.919	2.2963	131.49	.43946	194.55
#1	-.00141	.03589	.00503	.01061	.02646	.00008	82.864	-.00015
#2	-.00175	.02075	-.00305	.00651	.02569	.00004	82.576	.00046
#3	-.00159	.03886	.00214	.00859	.02689	-.00001	82.144	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00909	.00538	7.0235	1.4155	.00695	12.915	.85197
Stddev	.00018	.00062	.00113	.0060	.1772	.00130	.106	.00198
%RSD	58.487	6.8567	20.985	.08524	12.519	18.696	.82117	.23221
#1	.00037	.00928	.00506	7.0254	1.2352	.00616	12.934	.85425
#2	.00011	.00839	.00445	7.0168	1.5895	.00845	12.800	.85094
#3	.00046	.00960	.00664	7.0283	1.4219	.00623	13.010	.85072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00083	144.61	.00414	.05218	-.00444	.00163	-.00756	3.8921
Stddev	.00008	.67	.00044	.00345	.00182	.00509	.00113	.0069
%RSD	10.115	.46055	10.513	6.6114	41.057	312.15	14.927	.17602
#1	.00074	145.24	.00447	.04820	-.00234	.00737	-.00725	3.8999
#2	.00089	144.68	.00430	.05438	-.00538	-.00013	-.00661	3.8886
#3	.00088	143.92	.00365	.05395	-.00561	-.00234	-.00881	3.8876
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106506 Acquired: 6/28/2016 21:17:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.28262	-.01096	-.00234	-.00027	.00256	-.00032
Stddev	.00025	.00036	.01126	.00040	.00113	.00013	.00040
%RSD	112.34	.12884	102.74	17.244	427.21	5.1943	124.24
#1	.00047	.28284	-.02222	-.00236	-.00117	.00256	-.00074
#2	-.00003	.28281	-.01096	-.00193	.00101	.00243	-.00026
#3	.00022	.28220	.00030	-.00273	-.00063	.00270	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8553.4	50864.	2455.9
Stddev	12.6	33.	15.0
%RSD	.14684	.06447	.61218
#1	8567.9	50893.	2443.3
#2	8545.3	50829.	2451.9
#3	8547.0	50870.	2472.6

Approved: June 29, 2016

Sample Name: L1606106601 Acquired: 6/28/2016 21:21:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.05733	.00013	.02509	.01675	.00006	41.897	-.00001
Stddev	.00135	.00660	.00335	.00142	.00111	.00014	.519	.00029
%RSD	143.38	11.514	2627.2	5.6694	6.6496	234.17	1.2380	2888.5
#1	.00055	.05738	-.00157	.02580	.01748	-.00008	42.496	-.00021
#2	.00244	.05071	-.00204	.02601	.01731	.00006	41.615	.00032
#3	-.00017	.06391	.00399	.02345	.01547	.00020	41.581	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.00150	.00375	.10753	1.7660	.00792	6.7640	.37747
Stddev	.00046	.00032	.00079	.04103	.1722	.00282	.0311	.00284
%RSD	89.372	21.198	21.178	38.159	9.7541	35.537	.45978	.75243
#1	.00018	.00135	.00466	.11217	1.9288	.00664	6.7589	.37569
#2	.00032	.00186	.00321	.14605	1.5857	.00598	6.7358	.38075
#3	.00103	.00128	.00336	.06438	1.7834	.01115	6.7974	.37598
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	6.4675	.00459	.04483	-.00411	-.00214	-.00687	1.9555
Stddev	.00003	.0420	.00107	.01033	.00284	.00195	.00638	.0168
%RSD	4.2619	.64927	23.394	23.036	69.131	91.184	92.837	.85655
#1	.00071	6.4802	.00522	.05673	-.00662	.00006	-.00932	1.9683
#2	.00077	6.5017	.00335	.03834	-.00102	-.00280	-.01166	1.9616
#3	.00075	6.4206	.00521	.03940	-.00470	-.00368	.00037	1.9365
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106601 Acquired: 6/28/2016 21:21:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.11283	.00392	-.00305	.00047	.33904	-.00049
Stddev	.00054	.00044	.00554	.00319	.00027	.00188	.00070
%RSD	78.018	.39156	141.22	104.31	56.552	.55336	141.29
#1	.00130	.11256	.00656	-.00672	.00074	.33986	-.00115
#2	.00051	.11260	-.00244	-.00097	.00046	.34036	.00023
#3	.00027	.11334	.00764	-.00147	.00021	.33689	-.00056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8739.1	52488.	2461.2
Stddev	19.7	68.	11.7
%RSD	.22495	.12970	.47713
#1	8753.6	52516.	2461.6
#2	8716.7	52537.	2449.3
#3	8747.0	52410.	2472.8

Approved: June 29, 2016

Sample Name: L1606106602 Acquired: 6/28/2016 21:25:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00046	.01721	-.00296	.03350	.01766	.00005	126.67	.00054
Stddev	.00050	.00800	.00245	.00208	.00078	.00011	.63	.00011
%RSD	109.04	46.468	82.731	6.1998	4.4271	218.76	.50118	20.238
#1	-.00060	.00978	-.00457	.03491	.01741	.00017	126.16	.00043
#2	-.00087	.01618	-.00418	.03448	.01853	-.00005	127.38	.00054
#3	.00010	.02568	-.00014	.03112	.01703	.00003	126.47	.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	.00096	.00718	.00525	3.3984	.03319	27.870	.32098
Stddev	.00008	.00104	.00040	.03706	.0389	.00390	.150	.00200
%RSD	36.271	108.18	5.6337	705.29	1.1462	11.750	.53992	.62385
#1	.00015	.00156	.00702	.03492	3.4430	.02922	27.743	.31869
#2	.00018	.00157	.00764	-.03628	3.3810	.03702	28.037	.32186
#3	.00029	-.00024	.00689	.01712	3.3711	.03334	27.832	.32239
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00100	7.9568	.00808	.01457	-.00103	.00082	-.00252	4.0823
Stddev	.00027	.0423	.00084	.00435	.00417	.00306	.00511	.0358
%RSD	27.211	.53158	10.346	29.825	404.71	372.65	202.25	.87730
#1	.00131	7.9223	.00760	.01070	.00365	.00377	.00155	4.1012
#2	.00089	8.0040	.00905	.01927	-.00238	-.00234	-.00088	4.1048
#3	.00080	7.9440	.00760	.01373	-.00436	.00104	-.00825	4.0410
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106602 Acquired: 6/28/2016 21:25:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.69108**	**-.02422**	**-.00202**	**-.00021**	**.92972**	**-.00088**
Stddev	.00073	.00328	.00761	.00348	.00114	.01192	.00037
%RSD	1124.6	.47509	31.395	172.68	544.07	1.2824	42.708
#1	.00025	.68768	-.03174	-.00293	-.00019	.93618	-.00131
#2	-.00090	.69423	-.02440	.00183	-.00135	.93701	-.00069
#3	.00046	.69134	-.01653	-.00495	.00092	.91596	-.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8615.2**	**51801.**	**2454.3**
Stddev	26.5	242.	3.2
%RSD	.30743	.46655	.13005
#1	8603.8	51557.	2457.9
#2	8596.2	52040.	2451.7
#3	8645.4	51806.	2453.4

Approved: June 29, 2016

Sample Name: L1606106603 Acquired: 6/28/2016 21:29:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00173	.36498	-.00171	.02440	.03685	.00017	69.851	.00055
Stddev	.00273	.00934	.00289	.00202	.00234	.00006	.658	.00005
%RSD	157.80	2.5588	168.91	8.2904	6.3439	36.518	.94238	8.8191
#1	.00060	.37414	.00151	.02477	.03915	.00011	70.340	.00053
#2	-.00025	.35547	-.00258	.02621	.03693	.00017	70.112	.00051
#3	.00484	.36534	-.00407	.02222	.03448	.00024	69.103	.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00147	.00148	.00571	.64206	2.7655	.02243	19.201	.14255
Stddev	.00003	.00107	.00122	.07652	.0955	.00337	.326	.00224
%RSD	2.0740	72.233	21.333	11.918	3.4524	15.030	1.6982	1.5740
#1	.00146	.00206	.00710	.58376	2.7001	.02239	18.883	.14401
#2	.00145	.00214	.00480	.72871	2.8751	.02581	19.185	.14366
#3	.00151	.00025	.00524	.61371	2.7214	.01907	19.535	.13996
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	3.0430	.00499	.01511	-.00185	.00358	-.00385	4.6375
Stddev	.00045	.0310	.00026	.00537	.00127	.00190	.00513	.0117
%RSD	87.312	1.0191	5.2903	35.507	68.817	52.995	133.19	.25255
#1	.00026	3.0201	.00477	.02129	-.00278	.00269	-.00042	4.6465
#2	.00025	3.0307	.00490	.01164	-.00235	.00230	-.00139	4.6243
#3	.00103	3.0783	.00528	.01241	-.00040	.00576	-.00975	4.6417
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106603 Acquired: 6/28/2016 21:29:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.48630**	**-.01289**	**-.00215**	**-.00076**	**.45919**	**-.00029**
Stddev	.00139	.00323	.00210	.00305	.00079	.00017	.00032
%RSD	712.04	.66440	16.307	141.91	103.26	.03766	109.68
#1	.00037	.48604	-.01099	-.00551	.00014	.45931	-.00027
#2	.00083	.48966	-.01254	.00045	-.00114	.45927	.00002
#3	-.00178	.48321	-.01515	-.00139	-.00129	.45899	-.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8732.4**	**52177.**	**2462.7**
Stddev	20.3	54.	13.0
%RSD	.23191	.10365	.52811
#1	8709.0	52117.	2455.4
#2	8744.0	52190.	2455.1
#3	8744.2	52223.	2477.8

Approved: June 29, 2016

Sample Name: L1606106604 Acquired: 6/28/2016 21:33:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.02304**	**-.00165**	**.00067**	**.00485**	**.00005**	**.13530**	**.00025**
Stddev	.00174	.00560	.00089	.00160	.00009	.00013	.04003	.00020
%RSD	1057.4	24.313	53.680	240.55	1.7582	234.28	29.589	79.333
#1	-.00143	.01809	-.00247	.00206	.00495	-.00009	.15528	.00024
#2	-.00088	.02190	-.00178	.00103	.00479	.00014	.16141	.00046
#3	.00182	.02912	-.00071	-.00109	.00480	.00012	.08921	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**-.00028**	**.00384**	**-.00237**	**-.08280**	**.00575**	**.00931**	**.00331**
Stddev	.00028	.00070	.00074	.02982	.04654	.00319	.05212	.00164
%RSD	101.17	250.89	19.269	1258.4	56.201	55.378	559.70	49.631
#1	-.00033	.00034	.00360	.02974	-.13452	.00564	-.05087	.00491
#2	-.00053	-.00104	.00467	-.02920	-.06959	.00900	.03957	.00338
#3	.00003	-.00014	.00325	-.00765	-.04430	.00263	.03924	.00163
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00012**	**.19024**	**-.00085**	**.00306**	**-.00070**	**.00752**	**-.00658**	**.00832**
Stddev	.00018	.04205	.00044	.00554	.00157	.00438	.00441	.00165
%RSD	146.41	22.106	51.727	180.83	225.72	58.246	67.118	19.873
#1	.00006	.19030	-.00035	-.00122	.00046	.00812	-.01079	.00852
#2	-.00012	.14815	-.00101	.00932	-.00006	.01158	-.00199	.00657
#3	-.00030	.23226	-.00118	.00109	-.00249	.00288	-.00695	.00986
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606106604 Acquired: 6/28/2016 21:33:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.00064	.00545	-.00336	-.00090	.00138	-.00024
Stddev	.00073	.00042	.00640	.00137	.00073	.00023	.00007
%RSD	328.97	65.140	117.35	40.879	80.825	16.816	28.554
#1	-.00060	.00107	-.00114	-.00247	-.00171	.00118	-.00029
#2	.00047	.00023	.00586	-.00494	-.00029	.00133	-.00016
#3	.00080	.00064	.01164	-.00267	-.00071	.00163	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8774.5	53148.	2468.5
Stddev	18.9	40.	21.3
%RSD	.21516	.07564	.86449
#1	8788.8	53138.	2443.9
#2	8753.1	53192.	2479.7
#3	8781.7	53113.	2481.9

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 21:37:18 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39973	10.108	.39636	.49128	1.0030	.05037	9.9826	.05037
Stddev	.00161	.031	.00538	.00660	.0054	.00040	.0796	.00027
%RSD	.40227	.30747	1.3561	1.3434	.53726	.79813	.79769	.52668
#1	.39827	10.073	.40184	.49693	1.0081	.05010	10.074	.05059
#2	.40145	10.121	.39615	.48403	1.0036	.05018	9.9267	.05044
#3	.39946	10.132	.39110	.49289	.99738	.05083	9.9473	.05007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20223	.50813	.50393	3.9109	50.905	1.0169	10.132	.49597
Stddev	.00031	.00309	.00152	.0391	.191	.0173	.111	.00237
%RSD	.15093	.60823	.30237	1.0004	.37447	1.6974	1.0972	.47821
#1	.20248	.50643	.50485	3.9094	51.119	1.0362	10.014	.49324
#2	.20231	.50627	.50217	3.9508	50.843	1.0112	10.235	.49743
#3	.20189	.51170	.50477	3.8726	50.754	1.0031	10.147	.49725
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0097	50.118	.50038	9.9139	.50050	1.1943	.39418	4.9666
Stddev	.0018	.494	.00134	.0075	.00314	.0064	.01371	.0067
%RSD	.17790	.98650	.26717	.07528	.62691	.53237	3.4790	.13412
#1	1.0110	50.489	.50146	9.9177	.49695	1.2005	.39664	4.9686
#2	1.0105	50.309	.49889	9.9187	.50165	1.1878	.40650	4.9721
#3	1.0077	49.557	.50079	9.9053	.50291	1.1945	.37940	4.9592
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 21:37:18 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0102**	**1.0008**	**1.0090**	**.50371**	**1.0109**	**1.0026**	**1.0337**
Stddev	.0011	.0082	.0140	.00342	.0098	.0015	.0091
%RSD	.11060	.81843	1.3826	.67900	.97198	.15021	.87957
#1	1.0110	1.0081	1.0239	.50460	1.0029	1.0041	1.0379
#2	1.0108	1.0024	1.0069	.49993	1.0080	1.0025	1.0399
#3	1.0089	.99194	.99622	.50660	1.0219	1.0011	1.0232
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8691.4**	**51771.**	**2447.6**
Stddev	17.1	102.	28.5
%RSD	.19660	.19712	1.1648
#1	8710.9	51793.	2432.1
#2	8679.2	51660.	2430.3
#3	8684.1	51860.	2480.5

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 21:40:55 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00230**	**.02348**	**.00079**	**.00047**	**.00786**	**.00018**	**.01177**
Stddev	.00096	.01651	.00379	.00372	.00037	.00013	.04160
%RSD	41.591	70.337	482.07	783.24	4.6602	72.515	353.45
#1	-.00126	.02991	-.00187	-.00345	.00750	.00031	.00397
#2	-.00315	.03582	.00513	.00092	.00824	.00004	.05672
#3	-.00250	.00472	-.00090	.00395	.00784	.00020	-.02538
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00034**	**-.00004**	**.00107**	**-.00001**	**.00019**	**.07602**	**.00268**
Stddev	.00009	.00025	.00159	.00135	.01328	.08213	.00385
%RSD	25.273	632.10	148.38	19006.	6889.7	108.05	143.60
#1	.00043	-.00027	.00031	-.00143	.01232	-.01693	.00613
#2	.00026	.00023	.00290	.00015	.00226	.13881	-.00146
#3	.00033	-.00008	.00001	.00125	-.01400	.10617	.00337
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02421**	**-.00287**	**.00013**	**-.07567**	**-.00105**	**-.00288**	F **-.00510**
Stddev	.14641	.00299	.00020	.04275	.00176	.00467	.00166
%RSD	604.74	104.22	149.54	56.498	167.99	162.30	32.476
#1	.17026	-.00597	.00032	-.12254	-.00215	-.00071	-.00500
#2	.02494	-.00265	.00015	-.03883	-.00199	-.00824	-.00350
#3	-.12256	.00000	-.00007	-.06562	.00099	.00032	-.00681
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							.00500
Low Limit							-.00500

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 21:40:55 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00053	-.00493	.01371	-.00034	.00027	-.00092	-.00343
Stddev	.00210	.00240	.00112	.00073	.00037	.00774	.00240
%RSD	400.61	48.796	8.1935	212.64	134.38	841.10	69.734
#1	-.00285	-.00741	.01246	.00047	.00065	-.00106	-.00415
#2	.00126	-.00477	.01464	-.00055	-.00009	.00689	-.00076
#3	.00001	-.00260	.01404	-.00095	.00027	-.00859	-.00539
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00092	-.00006	-.00074
Stddev	.00130	.00011	.00020
%RSD	140.65	194.82	26.527
#1	-.00015	.00005	-.00062
#2	-.00242	-.00018	-.00097
#3	-.00020	-.00005	-.00063
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8260.5	48995.	2264.7
Stddev	38.9	34.	4.4
%RSD	.47079	.06981	.19247
#1	8254.9	49022.	2262.3
#2	8224.7	48957.	2262.1
#3	8301.9	49006.	2269.7

Approved: June 29, 2016

Sample Name: L1606112801 Acquired: 6/28/2016 21:44:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00126	6.6020	.00045	.01160	.10137	.00065	89.722	.00048
Stddev	.00051	.0809	.00394	.00130	.00139	.00003	.444	.00026
%RSD	40.081	1.2256	881.01	11.180	1.3750	5.0705	.49497	55.083
#1	-.00112	6.5919	-.00406	.01267	.10022	.00066	90.003	.00018
#2	-.00084	6.6875	.00325	.01199	.10292	.00061	89.952	.00066
#3	-.00182	6.5266	.00216	.01016	.10097	.00067	89.210	.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00927	.01015	.01734	9.3384	2.8756	.00909	27.581	3.3145
Stddev	.00031	.00120	.00195	.1034	.1441	.00919	.176	.0157
%RSD	3.3697	11.836	11.222	1.1073	5.0108	101.13	.63765	.47468
#1	.00919	.00915	.01674	9.4457	3.0190	.01971	27.402	3.3263
#2	.00961	.01148	.01952	9.3301	2.7308	.00356	27.753	3.3205
#3	.00901	.00981	.01576	9.2394	2.8771	.00401	27.587	3.2966
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	179.82	.00990	1.1598	.00365	.00463	-.00760	14.603
Stddev	.00021	1.25	.00112	.0071	.00319	.00725	.01197	.046
%RSD	66.922	.69527	11.336	.61274	87.319	156.46	157.61	.31395
#1	.00024	180.61	.01115	1.1668	.00089	-.00339	.00615	14.625
#2	.00016	180.48	.00957	1.1601	.00293	.00659	-.01320	14.633
#3	.00056	178.38	.00898	1.1526	.00715	.01070	-.01573	14.550
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606112801 Acquired: 6/28/2016 21:44:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00050**	**.32812**	**.27643**	**-.00273**	**.01512**	**.04982**	**.00275**
Stddev	.00096	.00293	.00218	.00221	.00018	.00020	.00062
%RSD	189.76	.89290	.78923	80.867	1.2130	.39717	22.527
#1	-.00059	.32919	.27449	-.00043	.01522	.04962	.00329
#2	.00116	.33038	.27600	-.00484	.01491	.05001	.00207
#3	.00094	.32481	.27879	-.00294	.01525	.04985	.00290
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8325.9**	**49707.**	**2420.6**
Stddev	10.7	333.	17.2
%RSD	.12902	.66931	.71130
#1	8327.5	49554.	2417.7
#2	8314.4	49478.	2405.1
#3	8335.7	50088.	2439.1

Approved: June 29, 2016

Sample Name: L1606112802 Acquired: 6/28/2016 21:48:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00143**	**.09340**	**.02577**	**.01283**	**.03807**	**.00004**	**75.043**	**.00011**
Stddev	.00212	.00753	.00448	.00265	.00148	.00008	1.434	.00026
%RSD	147.93	8.0639	17.390	20.691	3.8920	211.55	1.9113	230.46
#1	-.00174	.08474	.03069	.01180	.03842	.00008	76.162	.00016
#2	.00082	.09699	.02192	.01584	.03935	.00009	75.542	.00034
#3	-.00338	.09846	.02470	.01084	.03645	-.00006	73.426	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00256**	**.00042**	**.00242**	**21.284**	**2.4576**	**.00843**	**12.599**	**.64431**
Stddev	.00040	.00092	.00111	.262	.1645	.00155	.042	.01215
%RSD	15.565	219.85	45.761	1.2315	6.6928	18.347	.33457	1.8852
#1	.00298	.00009	.00303	21.442	2.3550	.00665	12.584	.64760
#2	.00219	-.00029	.00309	21.428	2.6473	.00944	12.646	.65447
#3	.00251	.00146	.00114	20.981	2.3704	.00920	12.565	.63085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00061**	**109.87**	**.00156**	**.12368**	**.00708**	**.01401**	**-.00736**	**10.011**
Stddev	.00039	1.13	.00086	.00820	.00187	.00109	.00394	.102
%RSD	64.929	1.0247	55.389	6.6338	26.435	7.7786	53.526	1.0229
#1	.00016	109.93	.00215	.13208	.00744	.01525	-.00302	10.118
#2	.00091	110.97	.00196	.11568	.00875	.01358	-.00834	9.9991
#3	.00075	108.72	.00057	.12329	.00506	.01321	-.01070	9.9145
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606112802 Acquired: 6/28/2016 21:48:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.26989	-.00221	-.00203	.00052	.00463	-.00108
Stddev	.00059	.00192	.01536	.00088	.00043	.00003	.00047
%RSD	347.96	.71298	693.92	43.316	83.559	.73022	43.462
#1	.00080	.26979	-.00603	-.00248	.00037	.00465	-.00105
#2	.00006	.27186	-.01531	-.00259	.00018	.00459	-.00063
#3	-.00036	.26801	.01470	-.00102	.00101	.00465	-.00157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8612.0	50934.	2441.5
Stddev	51.1	190.	21.3
%RSD	.59296	.37328	.87422
#1	8555.4	50716.	2436.0
#2	8626.2	51018.	2423.5
#3	8654.5	51068.	2465.1

Approved: June 29, 2016

Sample Name: L1606112803 Acquired: 6/28/2016 21:52:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	10.535	.00189	.01142	.11626	.00079	98.814	.00034
Stddev	.00177	.148	.00298	.00095	.00142	.00002	1.200	.00026
%RSD	1594.6	1.4026	157.74	8.3374	1.2246	2.0752	1.2140	75.122
#1	.00006	10.645	.00445	.01111	.11595	.00080	97.453	.00005
#2	-.00196	10.593	-.00138	.01249	.11781	.00080	99.717	.00044
#3	.00157	10.367	.00259	.01066	.11501	.00077	99.273	.00054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01269	.01633	.02038	16.450	3.4713	.02302	33.982	3.5230
Stddev	.00024	.00161	.00072	.240	.0597	.00431	.399	.0643
%RSD	1.8735	9.8301	3.5542	1.4610	1.7189	18.733	1.1733	1.8258
#1	.01276	.01759	.02108	16.172	3.4581	.02703	33.528	3.4508
#2	.01289	.01452	.02043	16.578	3.5364	.02358	34.277	3.5743
#3	.01243	.01688	.01963	16.598	3.4193	.01846	34.140	3.5438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	177.78	.01566	2.3781	.01017	.00458	.00154	17.494
Stddev	.00046	2.20	.00031	.0458	.00324	.00567	.00741	.335
%RSD	138.39	1.2365	1.9982	1.9246	31.815	123.68	482.45	1.9164
#1	.00086	175.28	.01531	2.3321	.00645	.01104	-.00628	17.130
#2	.00008	179.42	.01577	2.4236	.01171	.00230	.00241	17.790
#3	.00005	178.65	.01590	2.3786	.01235	.00041	.00847	17.563
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606112803 Acquired: 6/28/2016 21:52:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00194	.33225	.42590	-.00152	.02349	.08177	.00412
Stddev	.00069	.00446	.00364	.00092	.00102	.00175	.00011
%RSD	35.430	1.3426	.85533	60.584	4.3449	2.1409	2.7154
#1	.00163	.32718	.42347	-.00248	.02252	.08031	.00399
#2	.00273	.33556	.42414	-.00146	.02455	.08371	.00417
#3	.00146	.33402	.43009	-.00063	.02340	.08128	.00419
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8675.3	50297.	2418.4
Stddev	148.1	449.	26.1
%RSD	1.7076	.89307	1.0785
#1	8846.2	49999.	2446.3
#2	8582.5	50079.	2394.7
#3	8597.3	50814.	2414.2

Approved: June 29, 2016

Sample Name: L1606112804 Acquired: 6/28/2016 21:56:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00094**	**.01965**	**-.00331**	**.00170**	**.00552**	**.00010**	**.05227**	**.00019**
Stddev	.00209	.00679	.00295	.00183	.00070	.00003	.01579	.00009
%RSD	221.69	34.539	88.933	107.86	12.661	29.053	30.205	45.792
#1	.00131	.01674	-.00652	.00375	.00632	.00013	.06667	.00010
#2	-.00132	.01480	-.00269	.00112	.00517	.00009	.03539	.00027
#3	-.00281	.02740	-.00073	.00022	.00506	.00008	.05477	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**.00071**	**.00267**	**.01034**	**.01751**	**-.00294**	**.07074**	**-.00085**
Stddev	.00057	.00072	.00087	.00956	.06462	.00447	.02273	.00293
%RSD	719.54	101.38	32.771	92.501	368.98	151.68	32.134	344.35
#1	-.00017	.00050	.00329	-.00070	-.05466	.00197	.07932	-.00361
#2	-.00060	.00012	.00167	.01592	.03721	-.00675	.08794	-.00115
#3	.00053	.00152	.00304	.01581	.06999	-.00405	.04497	.00221
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.21454**	**-.00017**	**-.00100**	**.00001**	**.00141**	**-.00683**	**.00229**
Stddev	.00011	.05619	.00160	.00204	.00183	.00153	.00705	.00107
%RSD	69.253	26.191	936.44	203.28	21825.	108.74	103.17	46.841
#1	-.00005	.18801	.00145	.00032	.00208	.00290	.00047	.00242
#2	-.00016	.27908	-.00021	-.00335	-.00071	-.00017	-.00737	.00116
#3	-.00026	.17652	-.00175	.00002	-.00135	.00151	-.01361	.00329
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606112804 Acquired: 6/28/2016 21:56:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.00011	-.00309	-.00145	-.00050	.00490	-.00036
Stddev	.00050	.00071	.00063	.00370	.00123	.00023	.00073
%RSD	84.759	627.39	20.331	254.92	247.66	4.6374	203.87
#1	.00014	.00011	-.00285	.00062	.00082	.00464	-.00007
#2	.00050	.00083	-.00380	-.00573	-.00071	.00507	.00019
#3	.00112	-.00060	-.00261	.00075	-.00160	.00499	-.00118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8819.2	53004.	2487.9
Stddev	17.1	187.	24.2
%RSD	.19396	.35229	.97464
#1	8810.0	52928.	2477.4
#2	8808.7	52868.	2515.7
#3	8839.0	53217.	2470.7

Approved: June 29, 2016

Sample Name: L1606112803PS Acquired: 6/28/2016 22:00:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574357-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20095**	**14.356**	**.21007**	**1.0121**	**.61454**	**.02613**	**91.444**	**.02600**
Stddev	.00481	.061	.00389	.0043	.00540	.00013	.473	.00017
%RSD	2.3919	.42364	1.8524	.42525	.87819	.48337	.51703	.64154
#1	.20638	14.390	.20954	1.0149	.61844	.02627	91.821	.02612
#2	.19724	14.393	.21420	1.0141	.60838	.02605	90.914	.02607
#3	.19924	14.286	.20647	1.0071	.61679	.02607	91.598	.02581
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.11359**	**.27131**	**.27123**	**16.370**	**29.233**	**.54468**	**34.678**	**3.3100**
Stddev	.00068	.00178	.00265	.137	.068	.00572	.153	.0190
%RSD	.59694	.65438	.97793	.83583	.23153	1.0504	.44001	.57504
#1	.11319	.27050	.27032	16.469	29.265	.54266	34.847	3.3073
#2	.11437	.27335	.27422	16.214	29.156	.54024	34.636	3.2925
#3	.11320	.27008	.26916	16.428	29.280	.55113	34.551	3.3302
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52427**	**181.81**	**.26694**	**7.3186**	**.26296**	**.61666**	**.18939**	**18.508**
Stddev	.00210	1.02	.00124	.0166	.00398	.01135	.00558	.072
%RSD	.39994	.56052	.46561	.22700	1.5152	1.8411	2.9443	.38719
#1	.52344	182.62	.26633	7.3067	.26751	.60699	.18666	18.466
#2	.52665	180.67	.26837	7.3376	.26010	.62916	.19580	18.591
#3	.52271	182.14	.26613	7.3116	.26127	.61382	.18570	18.468
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606112803PS Acquired: 6/28/2016 22:00:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574357-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51709**	**.80563**	**.87003**	**.24848**	**.53655**	**.57886**	**.00411**
Stddev	.00316	.01295	.00934	.00030	.00121	.00554	.00024
%RSD	.61122	1.6072	1.0733	.11999	.22571	.95632	5.7393
#1	.51459	.81184	.86393	.24821	.53722	.57986	.00392
#2	.52065	.79075	.86539	.24844	.53727	.58383	.00405
#3	.51604	.81430	.88078	.24880	.53515	.57289	.00438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8563.6**	**51061.**	**2463.3**
Stddev	11.6	133.	17.7
%RSD	.13595	.26074	.71667
#1	8550.2	51001.	2450.1
#2	8569.8	50969.	2483.3
#3	8571.0	51214.	2456.3

Approved: June 29, 2016

Sample Name: L1606112803SDL Acquired: 6/28/2016 22:03:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574357-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00068	2.3653	-.00080	.00071	.03250	.00019	21.647	.00016
Stddev	.00316	.0441	.00432	.00148	.00027	.00002	.131	.00015
%RSD	464.59	1.8640	543.10	206.66	.83918	8.5968	.60578	92.705
#1	.00138	2.4022	-.00231	.00088	.03251	.00017	21.568	.00033
#2	.00090	2.3165	-.00415	.00210	.03223	.00021	21.798	.00006
#3	-.00432	2.3773	.00408	-.00084	.03278	.00019	21.574	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00291	.00430	.00502	3.5754	.78870	.00110	7.4514	.76169
Stddev	.00023	.00147	.00070	.0615	.07166	.00058	.1103	.00877
%RSD	7.7357	34.230	14.001	1.7196	9.0857	52.847	1.4803	1.1513
#1	.00300	.00450	.00487	3.5046	.87006	.00064	7.5321	.75196
#2	.00308	.00274	.00441	3.6152	.73494	.00175	7.3257	.76897
#3	.00266	.00566	.00579	3.6064	.76111	.00090	7.4964	.76415
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	38.198	.00320	.53198	-.00107	.00060	-.00472	3.8999
Stddev	.00032	.372	.00123	.01450	.00685	.00503	.00573	.0839
%RSD	361.14	.97448	38.470	2.7254	640.05	841.28	121.39	2.1521
#1	.00046	37.770	.00281	.54432	-.00286	-.00142	.00062	3.9374
#2	-.00016	38.375	.00221	.53562	.00650	.00633	-.01076	3.9585
#3	-.00002	38.448	.00458	.51601	-.00685	-.00311	-.00401	3.8037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606112803SDL Acquired: 6/28/2016 22:03:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574357-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00095	.07216	.10212	-.00231	.00431	.01844	.00038
Stddev	.00133	.00117	.01163	.00109	.00028	.00061	.00039
%RSD	139.81	1.6216	11.386	47.354	6.3917	3.2919	103.05
#1	.00178	.07087	.10324	-.00353	.00402	.01856	.00004
#2	-.00058	.07246	.08998	-.00140	.00456	.01897	.00081
#3	.00165	.07315	.11315	-.00201	.00435	.01778	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8361.5	49819.	2293.8
Stddev	17.0	414.	11.1
%RSD	.20308	.83150	.48449
#1	8371.9	49341.	2306.4
#2	8370.6	50077.	2289.6
#3	8341.9	50038.	2285.5

Approved: June 29, 2016

Sample Name: L1606112803SDL Acquired: 6/28/2016 22:07:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574357-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00162	.47788	-.00227	-.00056	.01205	.00011	4.2713	-.00014
Stddev	.00075	.01163	.00206	.00203	.00116	.00004	.0877	.00019
%RSD	46.251	2.4344	90.808	362.12	9.6597	38.275	2.0541	140.63
#1	-.00216	.46621	-.00032	.00059	.01219	.00006	4.2856	-.00036
#2	-.00193	.47795	-.00443	-.00290	.01082	.00014	4.1772	-.00003
#3	-.00076	.48948	-.00206	.00063	.01313	.00013	4.3509	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.00135	.00081	.70827	-.00670	.00175	1.6675	.15266
Stddev	.00036	.00138	.00156	.01174	.12685	.00342	.0917	.00439
%RSD	70.312	102.42	193.61	1.6582	1893.3	194.78	5.4974	2.8763
#1	.00076	.00267	-.00050	.72142	.10653	-.00105	1.7637	.14860
#2	.00010	.00144	.00038	.69883	-.14379	.00076	1.5812	.15207
#3	.00068	-.00008	.00254	.70455	.01716	.00556	1.6574	.15732
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	7.7362	-.00043	.10795	-.00209	.00389	.00185	.76606
Stddev	.00023	.0714	.00020	.00783	.00156	.00375	.00575	.01334
%RSD	90.709	.92253	45.658	7.2541	74.799	96.576	310.52	1.7416
#1	.00014	7.7553	-.00031	.10438	-.00205	.00754	.00542	.76915
#2	.00053	7.6573	-.00033	.11693	-.00366	.00407	.00492	.77759
#3	.00010	7.7962	-.00066	.10255	-.00054	.00004	-.00478	.75145
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606112803SDL Acquired: 6/28/2016 22:07:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574357-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**.01382**	**.01746**	**-.00635**	**.00012**	**.00409**	**-.00003**
Stddev	.00069	.00028	.00359	.00161	.00049	.00018	.00092
%RSD	183.96	2.0556	20.543	25.328	418.39	4.2845	2643.0
#1	.00006	.01368	.01735	-.00457	-.00044	.00393	.00099
#2	-.00116	.01415	.01394	-.00676	.00031	.00406	-.00031
#3	-.00002	.01364	.02111	-.00771	.00048	.00427	-.00078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8482.1**	**50509.**	**2297.3**
Stddev	19.5	251.	4.0
%RSD	.23043	.49685	.17596
#1	8501.8	50309.	2293.8
#2	8462.7	50428.	2301.7
#3	8481.9	50791.	2296.4

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 22:11:40 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40572**	**10.228**	**.40778**	**.50344**	**1.0288**	**.05092**	**10.169**	**.05113**
Stddev	.00314	.025	.00392	.00430	.0033	.00034	.070	.00010
%RSD	.77427	.24251	.96061	.85317	.32250	.67424	.69173	.19962
#1	.40916	10.221	.40874	.50657	1.0322	.05126	10.249	.05122
#2	.40300	10.207	.41114	.49854	1.0288	.05058	10.116	.05116
#3	.40501	10.255	.40348	.50520	1.0255	.05093	10.143	.05102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20555**	**.51334**	**.51382**	**4.0383**	**51.647**	**1.0392**	**10.217**	**.50448**
Stddev	.00151	.00479	.00222	.0333	.180	.0070	.054	.00584
%RSD	.73486	.93225	.43112	.82342	.34947	.67702	.52572	1.1579
#1	.20603	.51676	.51420	4.0121	51.784	1.0466	10.278	.51121
#2	.20676	.50787	.51582	4.0757	51.443	1.0326	10.191	.50138
#3	.20385	.51538	.51144	4.0272	51.715	1.0383	10.180	.50084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0275**	**51.414**	**.51049**	**10.139**	**.51106**	**1.2210**	**.41631**	**5.0808**
Stddev	.0045	.240	.00280	.062	.00613	.0093	.00996	.0304
%RSD	.44229	.46623	.54817	.61116	1.2004	.75913	2.3927	.59862
#1	1.0302	51.644	.51221	10.175	.51426	1.2272	.41472	5.0962
#2	1.0300	51.433	.51200	10.175	.51493	1.2253	.42698	5.1005
#3	1.0222	51.166	.50726	10.067	.50399	1.2103	.40725	5.0458
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 22:11:40 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0285**	**1.0247**	**1.0020**	**.51174**	**1.0149**	**1.0240**	**1.0488**
Stddev	.0076	.0082	.0163	.00555	.0049	.0062	.0044
%RSD	.74427	.80293	1.6241	1.0847	.48551	.60338	.42003
#1	1.0309	1.0329	1.0205	.51033	1.0132	1.0279	1.0440
#2	1.0346	1.0248	.99569	.51786	1.0111	1.0272	1.0498
#3	1.0199	1.0165	.98987	.50703	1.0205	1.0168	1.0527
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8678.6**	**51516.**	**2445.1**
Stddev	45.7	29.	5.4
%RSD	.52668	.05576	.22001
#1	8663.9	51536.	2449.9
#2	8642.0	51483.	2439.3
#3	8729.8	51529.	2446.2

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 22:15:18 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00113**	**.01093**	**-.00104**	**.00133**	**.00382**	**.00009**	**-.00048**	**.00002**
Stddev	.00188	.00631	.00224	.00072	.00217	.00014	.03647	.00017
%RSD	165.57	57.741	215.36	54.491	56.767	157.27	7575.1	819.46
#1	-.00328	.01759	-.00360	.00205	.00490	-.00007	-.04232	.00021
#2	.00023	.00503	.00062	.00060	.00523	.00020	.02457	-.00011
#3	-.00035	.01017	-.00015	.00133	.00132	.00013	.01631	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00047**	**.00130**	**-.00003**	**.00471**	**-.17082**	**.00107**	**.07763**	**-.00159**
Stddev	.00008	.00102	.00244	.01922	.12011	.00243	.10018	.00118
%RSD	17.678	78.123	6991.8	407.68	70.313	226.77	129.04	74.398
#1	-.00055	.00013	.00120	.01111	-.16180	-.00099	-.03260	-.00250
#2	-.00047	.00194	-.00284	-.01689	-.29517	.00375	.16311	-.00025
#3	-.00039	.00184	.00154	.01992	-.05547	.00046	.10239	-.00202
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**-.04420**	**-.00104**	**.00127**	**-.00270**	**.00108**	**-.00369**	**.01070**
Stddev	.00019	.01963	.00078	.00469	.00329	.00282	.00430	.00127
%RSD	85.105	44.403	74.947	368.86	121.95	262.24	116.56	11.870
#1	-.00021	-.06646	-.00192	.00316	.00110	.00244	-.00063	.01216
#2	-.00041	-.02938	-.00045	-.00407	-.00449	.00296	-.00183	.00984
#3	-.00004	-.03676	-.00074	.00473	-.00469	-.00217	-.00860	.01010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 22:15:18 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.00007	-.00497	-.00309	-.00064	.00009	-.00028
Stddev	.00131	.00026	.00562	.00208	.00140	.00004	.00053
%RSD	191.19	360.61	113.14	67.324	219.62	39.362	185.03
#1	.00036	.00023	-.00552	-.00204	.00054	.00008	-.00040
#2	-.00043	-.00023	-.01029	-.00175	-.00218	.00006	.00029
#3	.00213	.00021	.00091	-.00549	-.00027	.00013	-.00075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8755.8	52637.	2452.1
Stddev	10.5	105.	18.3
%RSD	.11982	.19865	.74545
#1	8744.3	52518.	2444.9
#2	8764.9	52679.	2438.5
#3	8758.1	52714.	2472.9

Approved: June 29, 2016

Sample Name: PBW 1C Acquired: 6/28/2016 22:19:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00055**	**.02526**	**.00019**	**-.00126**	**.00474**	**.00005**	**-.06440**
Stddev	.00133	.00097	.00079	.00039	.00092	.00008	.02795
%RSD	244.34	3.8298	424.05	30.922	19.421	160.84	43.410
#1	-.00187	.02587	.00106	-.00084	.00457	-.00003	-.06853
#2	.00080	.02577	-.00004	-.00132	.00392	.00005	-.09005
#3	-.00056	.02414	-.00046	-.00161	.00574	.00012	-.03461
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.00006**	**.00004**	**.00069**	**-.01050**	**-.08446**	**.00399**
Stddev	.00019	.00018	.00021	.00178	.00472	.04011	.00130
%RSD	121.72	319.28	500.05	257.41	44.944	47.484	32.424
#1	-.00037	.00018	.00005	-.00122	-.00949	-.05954	.00250
#2	.00000	-.00015	.00026	.00099	-.00637	-.06312	.00463
#3	-.00011	.00014	-.00017	.00231	-.01564	-.13073	.00485
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.07442**	F **-.00430**	**-.00000**	**-.03320**	**.00047**	**.00033**	**-.00283**
Stddev	.16565	.00512	.00038	.01914	.00036	.00983	.00441
%RSD	222.60	119.13	36626.	57.648	77.208	2964.3	155.82
#1	-.00353	-.00406	-.00012	-.01395	.00031	.00271	.00178
#2	.26466	.00070	-.00031	-.05223	.00089	.00875	-.00700
#3	-.03788	-.00953	.00043	-.03344	.00022	-.01047	-.00327
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		36.000					
Low Limit		-.00300					

Approved: June 29, 2016

Sample Name: PBW 1C Acquired: 6/28/2016 22:19:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00187	-.00564	.01154	.00035	.00053	-.00260	-.00298
Stddev	.00354	.00266	.00212	.00068	.00032	.00827	.00455
%RSD	188.84	47.177	18.346	195.26	60.764	317.95	152.51
#1	.00215	-.00544	.01047	-.00041	.00085	.00498	-.00808
#2	.00526	-.00840	.01398	.00054	.00053	-.00136	.00064
#3	-.00180	-.00309	.01017	.00091	.00020	-.01142	-.00150
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00022	.00074	-.00068
Stddev	.00020	.00015	.00030
%RSD	90.741	19.670	43.452
#1	.00003	.00058	-.00080
#2	.00020	.00077	-.00090
#3	.00043	.00086	-.00034
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8910.1	53689.	2496.9
Stddev	19.0	146.	12.6
%RSD	.21295	.27185	.50389
#1	8888.4	53854.	2492.7
#2	8917.8	53579.	2487.0
#3	8923.9	53632.	2511.1

Approved: June 29, 2016

Sample Name: LCSW 1C Acquired: 6/28/2016 22:23:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20404**	**5.1631**	**.20421**	**1.0014**	**.52128**	**.02521**	**5.2991**	**.02561**
Stddev	.00280	.0119	.00623	.0076	.00253	.00014	.0470	.00003
%RSD	1.3713	.22990	3.0485	.76107	.48529	.54123	.88764	.12887
#1	.20159	5.1496	.20785	.99456	.52403	.02523	5.3257	.02562
#2	.20343	5.1720	.20777	1.0096	.52076	.02506	5.2447	.02564
#3	.20709	5.1676	.19702	.99998	.51906	.02533	5.3267	.02557
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10436**	**.26054**	**.26124**	**2.0905**	**25.769**	**.53496**	**5.1879**	**.25915**
Stddev	.00080	.00255	.00082	.0795	.010	.00339	.0920	.00313
%RSD	.76572	.97787	.31411	3.8046	.04033	.63443	1.7740	1.2087
#1	.10510	.25765	.26079	2.1392	25.768	.53886	5.0993	.25829
#2	.10447	.26150	.26218	2.1337	25.780	.53341	5.2830	.26262
#3	.10352	.26247	.26074	1.9988	25.760	.53262	5.1814	.25654
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52537**	**26.143**	**.26070**	**4.9992**	**.25777**	**.61678**	**.19947**	**2.4584**
Stddev	.00273	.080	.00155	.0135	.00340	.00487	.01034	.0045
%RSD	.51951	.30602	.59512	.27082	1.3194	.78946	5.1860	.18373
#1	.52631	26.235	.25959	5.0046	.26170	.61253	.18798	2.4607
#2	.52751	26.100	.26247	5.0092	.25571	.62209	.20805	2.4614
#3	.52230	26.093	.26005	4.9838	.25591	.61572	.20236	2.4532
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LCSW 1C Acquired: 6/28/2016 22:23:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51944	.52676	.50888	.25733	.51326	.52069	.00091
Stddev	.00368	.00097	.01396	.00225	.00359	.00299	.00071
%RSD	.70927	.18347	2.7425	.87396	.69915	.57451	78.366
#1	.52040	.52780	.52316	.25579	.50921	.52136	.00095
#2	.52255	.52659	.49527	.25991	.51455	.52330	.00161
#3	.51537	.52589	.50819	.25630	.51603	.51743	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8773.4	52628.	2505.9
Stddev	31.5	151.	8.4
%RSD	.35958	.28754	.33514
#1	8809.4	52672.	2499.6
#2	8750.4	52753.	2515.4
#3	8760.5	52460.	2502.6

Approved: June 29, 2016

Sample Name: L1606090701 Acquired: 6/28/2016 22:26:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.20247	.70648	.23731	.05346	.00049	.47637
Stddev	.00453	.01902	.01020	.00474	.00090	.00011	.00516
%RSD	1221.6	9.3956	1.4434	1.9964	1.6844	23.047	1.0839
#1	.00534	.18337	.70812	.23191	.05262	.00038	.48206
#2	-.00353	.20262	.71575	.23925	.05337	.00050	.47199
#3	-.00070	.22142	.69556	.24077	.05441	.00060	.47505
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.00415	.02862	.00093	.10270	.46857	.00685
Stddev	.00039	.00030	.00044	.00084	.02803	.04045	.00114
%RSD	116.54	7.1863	1.5407	90.443	27.291	8.6325	16.609
#1	-.00000	.00449	.02829	.00068	.12172	.48022	.00762
#2	.00075	.00403	.02912	.00024	.07051	.50192	.00738
#3	.00024	.00393	.02845	.00187	.11586	.42358	.00554
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.47395	-.00153	.00856	F 1299.3	.04735	3.3563	-.00183
Stddev	.11995	.00088	.00070	14.8	.00184	.0605	.00319
%RSD	25.309	57.507	8.1580	1.1376	3.8948	1.8029	173.76
#1	.60272	-.00108	.00804	1312.4	.04531	3.3872	-.00182
#2	.45373	-.00097	.00935	1302.3	.04891	3.3952	-.00503
#3	.36539	-.00255	.00827	1283.3	.04783	3.2866	.00135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090701 Acquired: 6/28/2016 22:26:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01444	-.00771	1.4228	.00372	.16630	.19886	.00097
Stddev	.00266	.00684	.0230	.00054	.00110	.01041	.00476
%RSD	18.436	88.776	1.6168	14.433	.66413	5.2364	489.80
#1	.01722	-.01490	1.4366	.00426	.16673	.19548	-.00309
#2	.01418	-.00696	1.4355	.00319	.16713	.19055	.00621
#3	.01192	-.00127	1.3962	.00371	.16505	.21054	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.09811	.00863	.04798
Stddev	.00119	.00010	.00066
%RSD	1.2143	1.1489	1.3715
#1	.09836	.00872	.04820
#2	.09915	.00866	.04850
#3	.09681	.00853	.04724
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8051.3	46745.	2322.8
Stddev	24.3	190.	26.3
%RSD	.30151	.40704	1.1338
#1	8077.3	46953.	2301.4
#2	8047.1	46580.	2314.8
#3	8029.3	46702.	2352.2

Approved: June 29, 2016

Sample Name: L1606090702 Acquired: 6/28/2016 22:30:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**.12789**	**.78212**	**.25911**	**.04510**	**.00044**	**.29251**
Stddev	.00416	.00204	.04015	.00375	.00118	.00013	.04673
%RSD	1709.5	1.5928	5.1337	1.4478	2.6147	30.156	15.977
#1	-.00276	.12878	.80294	.26034	.04582	.00029	.26761
#2	-.00253	.12932	.80758	.25489	.04573	.00055	.34642
#3	.00456	.12555	.73583	.26208	.04374	.00048	.26349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00038**	**.00446**	**.02542**	**.00097**	**.03210**	**.49071**	**.00689**
Stddev	.00021	.00018	.00107	.00162	.00935	.12505	.00134
%RSD	55.703	4.0075	4.2056	166.85	29.132	25.483	19.378
#1	.00017	.00467	.02432	.00112	.04087	.49772	.00816
#2	.00060	.00437	.02549	-.00072	.02226	.61210	.00550
#3	.00038	.00436	.02645	.00251	.03316	.36230	.00703
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.29743**	**-.00100**	**.00979**	F **1332.3**	**.05469**	**3.0958**	**-.00494**
Stddev	.04778	.00165	.00042	7.8	.00235	.1690	.00326
%RSD	16.064	165.30	4.2654	.58822	4.2891	5.4596	66.047
#1	.35189	.00017	.00961	1324.6	.05628	3.1896	-.00696
#2	.26255	-.00289	.01026	1340.3	.05580	3.1972	-.00668
#3	.27785	-.00028	.00948	1332.0	.05200	2.9007	-.00118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090702 Acquired: 6/28/2016 22:30:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01286**	**.00017**	**1.3895**	**.00591**	**.14936**	**.14448**	**.00213**
Stddev	.00363	.00339	.0730	.00055	.00219	.01191	.00247
%RSD	28.193	1943.7	5.2542	9.3870	1.4656	8.2462	115.94
#1	.00873	-.00252	1.4256	.00645	.14987	.13233	.00187
#2	.01432	.00398	1.4374	.00594	.15125	.15614	.00472
#3	.01553	-.00093	1.3055	.00534	.14696	.14496	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.11003**	**.00718**	**.05092**
Stddev	.00070	.00058	.00075
%RSD	.63332	8.0564	1.4819
#1	.10929	.00774	.05172
#2	.11013	.00723	.05022
#3	.11067	.00658	.05082
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8056.2**	**46928.**	**2348.2**
Stddev	8.2	310.	23.7
%RSD	.10227	.66009	1.0082
#1	8051.3	47216.	2344.9
#2	8065.8	46600.	2326.3
#3	8051.7	46969.	2373.3

Approved: June 29, 2016

Sample Name: L1606090703 Acquired: 6/28/2016 22:34:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00058	.21822	.91288	.25581	.05517	.00054	.50027
Stddev	.00200	.00882	.04933	.00386	.00034	.00010	.04190
%RSD	345.56	4.0400	5.4034	1.5075	.62106	17.932	8.3762
#1	.00247	.21173	.93681	.25152	.05494	.00064	.53835
#2	.00079	.21468	.94567	.25692	.05501	.00052	.50708
#3	-.00152	.22826	.85615	.25899	.05557	.00045	.45538
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.00493	.03469	.00014	.09214	.56022	.00836
Stddev	.00022	.00016	.00072	.00051	.02370	.09849	.00192
%RSD	45.113	3.2908	2.0715	363.89	25.718	17.581	22.978
#1	.00073	.00482	.03419	-.00033	.08643	.44861	.01057
#2	.00042	.00511	.03437	.00006	.11818	.63492	.00708
#3	.00031	.00484	.03551	.00069	.07183	.59714	.00744
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.61119	-.00056	.01189	F 1334.7	.05087	3.6444	-.00456
Stddev	.01713	.00296	.00070	15.6	.00309	.2175	.00548
%RSD	2.8035	531.91	5.8615	1.1715	6.0695	5.9671	120.21
#1	.60865	-.00389	.01246	1319.5	.05224	3.7621	-.00857
#2	.59546	.00047	.01210	1334.0	.05304	3.7775	.00168
#3	.62945	.00176	.01111	1350.7	.04734	3.3934	-.00679
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090703 Acquired: 6/28/2016 22:34:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01265**	**-.00629**	**1.5342**	**.00519**	**.17328**	**.25183**	**.00137**
Stddev	.00236	.00192	.0849	.00050	.00293	.00765	.00343
%RSD	18.686	30.543	5.5340	9.5782	1.6931	3.0382	249.67
#1	.01081	-.00496	1.5818	.00485	.17075	.25533	.00530
#2	.01532	-.00543	1.5846	.00576	.17259	.25711	-.00011
#3	.01184	-.00850	1.4362	.00496	.17650	.24305	-.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.10623**	**.00853**	**.05422**
Stddev	.00168	.00057	.00054
%RSD	1.5791	6.6217	.99216
#1	.10430	.00883	.05362
#2	.10728	.00889	.05438
#3	.10713	.00788	.05466
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8112.9**	**46934.**	**2373.1**
Stddev	19.1	67.	8.5
%RSD	.23568	.14286	.35956
#1	8109.4	46928.	2363.7
#2	8095.8	46871.	2380.5
#3	8133.5	47004.	2375.0

Approved: June 29, 2016

Sample Name: L1606090704 Acquired: 6/28/2016 22:38:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00032	.17494	.00497	.32040	.06352	-.00003	139.74	.00030
Stddev	.00119	.00286	.00470	.00160	.00110	.00008	2.95	.00025
%RSD	374.53	1.6346	94.501	.49976	1.7242	295.73	2.1089	83.199
#1	.00106	.17492	.00205	.31857	.06422	.00005	142.00	.00051
#2	-.00095	.17781	.01040	.32109	.06226	-.00011	140.82	.00003
#3	-.00106	.17209	.00247	.32154	.06408	-.00002	136.41	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	.00111	.00256	1.0822	3.9031	.04950	69.750	.15431
Stddev	.00071	.00119	.00142	.0787	.1085	.00334	1.215	.00158
%RSD	309.50	107.58	55.330	7.2741	2.7812	6.7370	1.7420	1.0263
#1	.00104	.00235	.00211	1.1580	4.0127	.04909	70.913	.15511
#2	-.00025	-.00002	.00143	1.0878	3.9011	.05302	69.848	.15534
#3	-.00010	.00099	.00415	1.0009	3.7956	.04639	68.489	.15249
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00079	147.94	.00034	.01280	.00111	.00125	-.00760	7.7303
Stddev	.00015	3.31	.00058	.00224	.00503	.00297	.00295	.1525
%RSD	18.814	2.2398	171.11	17.506	453.42	236.93	38.834	1.9722
#1	.00091	150.42	.00094	.01352	.00164	.00194	-.01096	7.8177
#2	.00084	149.24	-.00021	.01029	.00586	.00382	-.00641	7.8188
#3	.00062	144.18	.00028	.01459	-.00416	-.00200	-.00542	7.5542
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090704 Acquired: 6/28/2016 22:38:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00058	2.6834	-.02101	-.00193	-.00039	.00292	.00059
Stddev	.00145	.0622	.00529	.00167	.00032	.00031	.00010
%RSD	249.72	2.3172	25.156	86.729	81.495	10.722	17.819
#1	-.00052	2.7308	-.01626	-.00066	-.00034	.00285	.00056
#2	.00004	2.7065	-.02670	-.00382	-.00010	.00326	.00070
#3	.00223	2.6130	-.02007	-.00130	-.00073	.00265	.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8658.8	51888.	2487.2
Stddev	9.9	148.	69.0
%RSD	.11468	.28592	2.7755
#1	8654.6	51738.	2521.7
#2	8651.7	51893.	2532.1
#3	8670.2	52035.	2407.7

Approved: June 29, 2016

Sample Name: L1606090705 Acquired: 6/28/2016 22:42:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	.02159	.00561	.30320	.06274	.00002	137.80	.00024
Stddev	.00156	.00578	.00162	.00302	.00133	.00008	.48	.00030
%RSD	1169.5	26.784	28.929	.99639	2.1264	326.70	.34802	126.66
#1	.00118	.01941	.00433	.30596	.06334	.00006	138.36	.00017
#2	.00028	.01721	.00744	.29997	.06367	-.00006	137.52	.00057
#3	-.00186	.02814	.00507	.30366	.06121	.00008	137.53	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.00085	.00036	.84842	3.8794	.05303	68.272	.14675
Stddev	.00018	.00119	.00129	.00435	.1739	.00302	.204	.00403
%RSD	105.03	140.13	361.75	.51297	4.4822	5.6928	.29863	2.7492
#1	.00037	.00018	-.00104	.84393	4.0068	.05284	68.461	.14708
#2	.00011	.00015	.00062	.85262	3.6813	.05011	68.056	.14255
#3	.00003	.00223	.00149	.84870	3.9500	.05614	68.298	.15060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00104	148.72	.00060	.00270	-.00210	.00669	-.00077	7.1810
Stddev	.00029	.55	.00115	.00224	.00157	.00298	.00974	.1338
%RSD	28.046	.37003	191.52	82.940	75.086	44.551	1260.3	1.8630
#1	.00086	149.35	.00186	.00114	-.00376	.00586	-.01160	7.2794
#2	.00138	148.49	-.00039	.00526	-.00190	.00999	.00201	7.2349
#3	.00089	148.32	.00033	.00169	-.00063	.00421	.00728	7.0286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090705 Acquired: 6/28/2016 22:42:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**2.6618**	**-.01517**	**-.00418**	**-.00152**	**.00293**	**-.00010**
Stddev	.00046	.0095	.01009	.00214	.00102	.00029	.00027
%RSD	208.97	.35779	66.496	51.120	67.379	10.065	276.76
#1	-.00061	2.6723	-.02480	-.00226	-.00057	.00310	-.00034
#2	.00029	2.6591	-.00468	-.00649	-.00139	.00309	-.00014
#3	-.00035	2.6538	-.01602	-.00381	-.00260	.00259	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8674.4**	**51820.**	**2498.2**
Stddev	32.9	175.	23.9
%RSD	.37941	.33839	.95480
#1	8655.0	51617.	2471.9
#2	8712.4	51919.	2518.5
#3	8655.8	51922.	2504.0

Approved: June 29, 2016

Sample Name: L1606090706 Acquired: 6/28/2016 22:46:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00090**	**.15373**	**.00403**	**.30250**	**.06188**	**-.00006**	**136.59**	**.00008**
Stddev	.00131	.01001	.00352	.00314	.00039	.00009	.12	.00010
%RSD	146.19	6.5090	87.260	1.0395	.62550	147.12	.08614	120.77
#1	-.00023	.14243	.00610	.30562	.06154	-.00015	136.60	.00004
#2	-.00240	.16146	-.00003	.29933	.06180	-.00006	136.69	.00019
#3	-.00006	.15730	.00602	.30256	.06230	.00003	136.46	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00004**	**.00069**	**.00154**	**1.0178**	**3.8522**	**.04856**	**67.952**	**.14959**
Stddev	.00011	.00084	.00094	.0208	.1250	.00071	.165	.00297
%RSD	287.57	121.84	61.318	2.0466	3.2435	1.4598	.24300	1.9863
#1	-.00009	.00158	.00258	.99741	3.7640	.04774	67.876	.15012
#2	.00008	.00057	.00074	1.0390	3.7975	.04899	68.142	.15226
#3	.00012	-.00009	.00130	1.0169	3.9952	.04895	67.839	.14639
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00078**	**143.60**	**.00084**	**.00793**	**.00189**	**.00624**	**-.00491**	**7.3759**
Stddev	.00024	.10	.00096	.00216	.00148	.00303	.01046	.0144
%RSD	31.262	.06631	114.15	27.183	78.406	48.515	213.04	.19504
#1	.00105	143.69	.00177	.00696	.00306	.00927	-.00685	7.3596
#2	.00073	143.50	.00091	.01041	.00237	.00321	.00638	7.3867
#3	.00057	143.61	-.00015	.00644	.00023	.00625	-.01426	7.3815
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090706 Acquired: 6/28/2016 22:46:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	2.6312	-.02241	-.00027	-.00185	.00410	.00039
Stddev	.00066	.0032	.00434	.00181	.00059	.00019	.00047
%RSD	431.02	.12040	19.377	673.65	32.035	4.6825	118.72
#1	.00001	2.6346	-.01751	-.00130	-.00179	.00402	.00057
#2	.00087	2.6307	-.02577	.00182	-.00129	.00433	.00075
#3	-.00042	2.6283	-.02395	-.00133	-.00248	.00397	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8657.0	51883.	2499.7
Stddev	10.6	192.	2.4
%RSD	.12268	.36927	.09631
#1	8645.7	51825.	2499.6
#2	8666.7	51727.	2502.1
#3	8658.7	52097.	2497.3

Approved: June 29, 2016

Sample Name: L1606090707 Acquired: 6/28/2016 22:50:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00031**	**.07375**	**.70623**	**.33607**	**.07325**	**.00013**	**5.4165**
Stddev	.00058	.00357	.03344	.00389	.00301	.00005	.0795
%RSD	186.60	4.8345	4.7357	1.1586	4.1099	37.394	1.4682
#1	.00098	.06964	.72690	.33159	.07673	.00018	5.4977
#2	-.00006	.07564	.72414	.33855	.07162	.00013	5.4130
#3	.00001	.07598	.66764	.33808	.07141	.00008	5.3387
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00063**	**.00137**	**.00186**	**.00186**	**.13231**	**1.7812**	**.01194**
Stddev	.00063	.00056	.00061	.00033	.00855	.0656	.00137
%RSD	100.58	40.601	32.549	17.672	6.4637	3.6831	11.472
#1	.00037	.00105	.00175	.00201	.12751	1.7109	.01081
#2	.00134	.00202	.00252	.00148	.14218	1.8407	.01346
#3	.00017	.00106	.00132	.00208	.12723	1.7919	.01155
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**8.0009**	**.01807**	**.00288**	F **632.46**	**.00073**	**.07554**	**-.00359**
Stddev	.2970	.00121	.00074	7.98	.00139	.01500	.00381
%RSD	3.7122	6.7066	25.889	1.2624	189.72	19.859	106.12
#1	8.0051	.01910	.00358	628.03	.00117	.07361	.00081
#2	7.7019	.01674	.00210	641.68	.00185	.09142	-.00577
#3	8.2959	.01837	.00295	627.68	-.00082	.06160	-.00580
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090707 Acquired: 6/28/2016 22:50:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00671	-.00605	4.2226	.00040	.59804	-.00277	-.00454
Stddev	.00347	.00661	.2109	.00102	.00214	.01232	.00349
%RSD	51.629	109.28	4.9938	255.44	.35786	444.35	76.911
#1	.01029	-.01053	4.3569	.00029	.59679	-.00286	-.00813
#2	.00648	.00154	4.3313	.00147	.60051	-.01505	-.00116
#3	.00337	-.00917	3.9795	-.00056	.59683	.00959	-.00431
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00049	.00286	.00051
Stddev	.00080	.00026	.00019
%RSD	163.21	9.1726	36.456
#1	-.00139	.00288	.00066
#2	.00012	.00312	.00056
#3	-.00019	.00259	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8507.4	50781.	2448.7
Stddev	26.8	172.	22.3
%RSD	.31549	.33939	.91265
#1	8532.0	50586.	2429.1
#2	8511.6	50913.	2444.0
#3	8478.8	50844.	2473.0

Approved: June 29, 2016

Sample Name: L1606090708 Acquired: 6/28/2016 22:54:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00089	.02176	.71471	.33811	.07254	.00002	5.0730
Stddev	.00183	.00345	.04493	.00058	.00161	.00009	.0292
%RSD	206.52	15.872	6.2858	.17285	2.2229	399.17	.57529
#1	-.00228	.02426	.73953	.33878	.07437	.00010	5.0414
#2	-.00158	.02321	.74175	.33786	.07193	.00005	5.0990
#3	.00119	.01782	.66285	.33769	.07132	-.00008	5.0787
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	.00106	.00161	-.00160	.00022	1.6878	.01046
Stddev	.00022	.00018	.00152	.00051	.02286	.2081	.00428
%RSD	25.222	17.186	94.297	32.142	10180.	12.331	40.874
#1	.00101	.00121	.00011	-.00101	-.01033	1.5372	.01387
#2	.00062	.00110	.00315	-.00189	.02646	1.6009	.01186
#3	.00099	.00086	.00158	-.00190	-.01545	1.9252	.00566
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.5862	.01686	.00321	F 624.73	-.00051	.07940	.00105
Stddev	.1396	.00137	.00063	16.41	.00145	.00521	.00014
%RSD	1.8406	8.1255	19.463	2.6262	285.59	6.5654	13.351
#1	7.7394	.01591	.00323	635.00	.00084	.07365	.00093
#2	7.5528	.01843	.00383	605.81	-.00204	.08381	.00120
#3	7.4662	.01624	.00258	633.40	-.00032	.08075	.00101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090708 Acquired: 6/28/2016 22:54:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00382**	**-.00261**	**4.2531**	**-.00015**	**.57918**	**-.00135**	**-.00088**
Stddev	.00153	.00968	.2281	.00025	.00127	.00872	.00071
%RSD	40.120	370.97	5.3644	163.66	.21989	646.16	81.340
#1	.00451	.00347	4.3850	-.00018	.57780	-.01137	-.00170
#2	.00488	.00248	4.3845	-.00038	.57941	.00279	-.00040
#3	.00206	-.01378	3.9896	.00011	.58032	.00452	-.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00039**	**.00142**	**-.00001**
Stddev	.00093	.00008	.00004
%RSD	238.33	5.7809	430.75
#1	.00066	.00151	.00002
#2	-.00071	.00137	.00000
#3	-.00112	.00137	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8720.2**	**51336.**	**2488.0**
Stddev	11.3	289.	71.4
%RSD	.12924	.56321	2.8704
#1	8716.8	51002.	2405.8
#2	8732.7	51515.	2524.3
#3	8710.9	51489.	2534.0

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 22:58:32 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39344	9.8988	.39249	.49224	.99894	.04861	9.8375	.04953
Stddev	.00232	.0610	.00510	.00165	.00208	.00013	.0480	.00023
%RSD	.58958	.61629	1.2996	.33480	.20806	.26302	.48816	.47024
#1	.39269	9.9164	.39121	.49398	1.0005	.04864	9.7932	.04952
#2	.39604	9.9491	.38815	.49071	.99967	.04871	9.8308	.04977
#3	.39158	9.8310	.39811	.49203	.99659	.04847	9.8885	.04931
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19950	.49097	.49985	3.9366	49.669	1.0039	9.9168	.49251
Stddev	.00092	.00192	.00190	.0169	.237	.0038	.0981	.00169
%RSD	.46102	.39146	.38006	.43000	.47634	.37925	.98952	.34245
#1	.20054	.49018	.50105	3.9395	49.542	1.0056	9.8676	.49093
#2	.19920	.49316	.50084	3.9519	49.523	1.0066	9.8530	.49429
#3	.19877	.48957	.49766	3.9184	49.942	.99955	10.030	.49232
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0011	50.743	.49860	9.8926	.50483	1.1979	.39869	4.9753
Stddev	.0024	.181	.00037	.0093	.00530	.0033	.00678	.0067
%RSD	.24044	.35752	.07415	.09361	1.0505	.27239	1.7002	.13442
#1	1.0035	50.865	.49899	9.8952	.49872	1.1997	.40291	4.9679
#2	1.0012	50.535	.49826	9.8824	.50755	1.1999	.39088	4.9770
#3	.99870	50.831	.49856	9.9004	.50822	1.1942	.40230	4.9810
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 22:58:32 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99767**	**.99373**	**.96406**	**.49618**	**.97586**	**1.0021**	**1.0208**
Stddev	.00239	.00053	.01473	.00080	.00425	.0005	.0053
%RSD	.23990	.05369	1.5278	.16191	.43595	.04913	.51729
#1	.99930	.99431	.95995	.49662	.97870	1.0018	1.0265
#2	.99492	.99361	.98040	.49526	.97791	1.0017	1.0160
#3	.99879	.99327	.95182	.49667	.97097	1.0026	1.0199
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8992.4**	**54014.**	**2548.3**
Stddev	16.7	153.	12.1
%RSD	.18517	.28361	.47426
#1	9002.2	53936.	2534.7
#2	9001.8	53916.	2557.9
#3	8973.1	54191.	2552.3

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 23:02:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00100	.00842	-.00230	.00116	.00400	.00005	-.04233	.00014
Stddev	.00182	.01035	.00099	.00018	.00131	.00006	.03657	.00020
%RSD	181.88	122.94	43.133	15.210	32.627	109.75	86.407	142.05
#1	.00262	.00341	-.00343	.00121	.00497	.00012	-.01453	.00036
#2	.00137	.02033	-.00158	.00130	.00252	.00002	-.02869	-.00000
#3	-.00098	.00153	-.00189	.00096	.00452	.00002	-.08376	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00012	.00068	-.00021	.00012	.02280	.00716	.14734	-.00204
Stddev	.00036	.00099	.00052	.02768	.05559	.00282	.07268	.00369
%RSD	309.21	145.76	249.13	22189.	243.81	39.425	49.327	180.61
#1	-.00027	.00166	.00038	.00594	.06447	.00463	.06670	-.00567
#2	-.00037	.00072	-.00040	-.03000	.04426	.01020	.20779	-.00216
#3	.00030	-.00033	-.00061	.02443	-.04032	.00663	.16753	.00171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.12092	.00014	.00488	-.00013	-.00107	.00087	.00687
Stddev	.00019	.00980	.00054	.01211	.00369	.00175	.00409	.00121
%RSD	60.294	8.1009	381.60	248.32	2776.9	163.54	471.54	17.539
#1	.00012	.11566	.00070	.01850	.00389	-.00115	.00253	.00754
#2	.00049	.11487	-.00036	.00084	-.00094	-.00278	-.00379	.00548
#3	.00032	.13222	.00008	-.00470	-.00334	.00072	.00386	.00760
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 23:02:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**-.00010**	**-.00017**	**-.00250**	**.00002**	**-.00009**	**-.00070**
Stddev	.00071	.00061	.00969	.00374	.00116	.00001	.00017
%RSD	1926.0	592.76	5554.2	149.55	5142.7	8.4484	24.855
#1	-.00059	.00055	.00970	.00174	-.00131	-.00008	-.00087
#2	-.00028	-.00020	-.00967	-.00390	.00076	-.00009	-.00069
#3	.00076	-.00066	-.00055	-.00533	.00062	-.00010	-.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9051.2**	**54427.**	**2508.0**
Stddev	17.0	197.	4.4
%RSD	.18779	.36147	.17683
#1	9069.0	54303.	2506.7
#2	9035.2	54324.	2512.9
#3	9049.2	54654.	2504.3

Approved: June 29, 2016

Sample Name: L1606090709 Acquired: 6/28/2016 23:06:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00023**	**.08904**	**.70931**	**.33668**	**.07317**	**.00007**	**5.4108**
Stddev	.00023	.01573	.03728	.00368	.00092	.00002	.0048
%RSD	102.45	17.664	5.2553	1.0924	1.2568	32.392	.08917
#1	-.00004	.10613	.73018	.33255	.07211	.00008	5.4124
#2	.00036	.07518	.73148	.33961	.07369	.00004	5.4146
#3	.00036	.08580	.66628	.33788	.07371	.00008	5.4054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00048**	**.00121**	**.00143**	**-.00011**	**.08534**	**1.8682**	**.01053**
Stddev	.00027	.00057	.00102	.00206	.00736	.0683	.00158
%RSD	56.037	47.367	71.215	1896.7	8.6284	3.6542	15.010
#1	.00057	.00153	.00064	.00015	.08703	1.9454	.01051
#2	.00068	.00154	.00258	-.00229	.07728	1.8158	.01212
#3	.00018	.00055	.00107	.00181	.09172	1.8434	.00896
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.9578**	**.01679**	**.00329**	F **631.90**	**.00018**	**.07592**	**-.00095**
Stddev	.0271	.00359	.00013	.79	.00058	.01123	.00345
%RSD	.34071	21.404	3.9287	.12431	324.85	14.789	363.21
#1	7.9889	.01584	.00341	631.44	-.00006	.07663	-.00321
#2	7.9445	.01376	.00316	631.46	.00084	.08678	-.00265
#3	7.9398	.02076	.00331	632.81	-.00024	.06436	.00302
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090709 Acquired: 6/28/2016 23:06:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00637	-.00876	4.2975	.00019	.59786	.00813	-.00327
Stddev	.00220	.00654	.2103	.00077	.00208	.00724	.00217
%RSD	34.543	74.679	4.8941	408.44	.34807	88.983	66.163
#1	.00831	-.00342	4.4325	.00026	.59619	.01154	-.00545
#2	.00398	-.00680	4.4049	.00092	.59720	-.00018	-.00111
#3	.00683	-.01606	4.0552	-.00061	.60019	.01303	-.00326
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00013	.00214	.00012
Stddev	.00062	.00011	.00013
%RSD	463.70	5.1663	101.51
#1	.00051	.00222	.00005
#2	-.00072	.00219	.00027
#3	-.00019	.00201	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8576.6	50611.	2469.4
Stddev	28.5	223.	8.7
%RSD	.33249	.44051	.35190
#1	8552.3	50373.	2459.7
#2	8608.0	50645.	2476.6
#3	8569.3	50815.	2471.8

Approved: June 29, 2016

Sample Name: L1606090710 Acquired: 6/28/2016 23:10:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00116	.07123	.69978	.33683	.07153	.00003	5.2509
Stddev	.00269	.00183	.03909	.00290	.00172	.00010	.0210
%RSD	231.20	2.5745	5.5862	.86014	2.4047	323.75	.39931
#1	.00066	.07077	.72204	.33383	.07008	-.00001	5.2751
#2	-.00426	.07325	.72266	.33703	.07108	.00015	5.2375
#3	.00010	.06968	.65465	.33962	.07343	-.00004	5.2401
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	.00133	.00103	.00035	.08426	1.6622	.01610
Stddev	.00034	.00039	.00026	.00054	.01504	.0838	.00599
%RSD	134.41	29.601	25.679	154.79	17.852	5.0401	37.195
#1	.00030	.00160	.00133	.00074	.08774	1.7067	.01003
#2	-.00011	.00150	.00091	.00058	.06778	1.5655	.02201
#3	.00057	.00088	.00085	-.00027	.09725	1.7142	.01628
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.8156	.01761	.00333	F 618.28	.00063	.07265	-.00419
Stddev	.1337	.00064	.00050	3.47	.00003	.00721	.00267
%RSD	1.7102	3.6403	15.005	.56098	4.6752	9.9227	63.740
#1	7.6942	.01720	.00381	615.78	.00063	.07234	-.00378
#2	7.7937	.01835	.00338	622.24	.00060	.08001	-.00174
#3	7.9588	.01729	.00281	616.81	.00065	.06560	-.00704
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090710 Acquired: 6/28/2016 23:10:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00217	-.00567	4.1751	.00077	.58570	.01177	-.00436
Stddev	.00165	.00574	.2229	.00130	.00328	.00743	.00507
%RSD	75.844	101.25	5.3390	169.28	.56049	63.116	116.30
#1	.00029	-.01056	4.2974	.00224	.58523	.01020	-.00962
#2	.00289	.00066	4.3100	-.00023	.58919	.00525	.00049
#3	.00334	-.00712	3.9178	.00030	.58268	.01986	-.00394
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00034	.00214	.00029
Stddev	.00041	.00018	.00078
%RSD	121.71	8.4377	264.45
#1	-.00045	.00193	-.00059
#2	.00012	.00222	.00087
#3	-.00068	.00226	.00060
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8615.9	50993.	2485.4
Stddev	19.1	101.	8.7
%RSD	.22196	.19826	.34997
#1	8599.4	50877.	2486.2
#2	8636.9	51045.	2476.3
#3	8611.5	51058.	2493.6

Approved: June 29, 2016

Sample Name: L1606090711 Acquired: 6/28/2016 23:14:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00097	.03556	.73169	.34795	.07439	.00003	5.2478
Stddev	.00024	.00485	.04137	.00163	.00035	.00006	.0392
%RSD	25.030	13.645	5.6546	.46954	.46963	202.86	.74701
#1	-.00117	.03016	.75338	.34674	.07421	-.00003	5.2114
#2	-.00105	.03698	.75772	.34980	.07479	.00004	5.2427
#3	-.00070	.03955	.68398	.34730	.07416	.00008	5.2893
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00078	.00109	.00075	-.00124	.01430	1.9312	.01121
Stddev	.00032	.00057	.00098	.00116	.01452	.0662	.00375
%RSD	40.847	52.643	130.59	93.056	101.50	3.4299	33.475
#1	.00065	.00148	.00185	-.00182	.00722	1.9905	.00707
#2	.00054	.00136	-.00002	-.00201	.00468	1.8597	.01218
#3	.00114	.00043	.00041	.00009	.03100	1.9435	.01438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	7.6988	.01630	.00313	F 663.81	.00018	.08187	.00053
Stddev	.0966	.00360	.00048	5.28	.00079	.00852	.00463
%RSD	1.2553	22.095	15.303	.79571	446.31	10.404	870.46
#1	7.7774	.01955	.00368	663.60	.00064	.09166	-.00463
#2	7.7282	.01692	.00294	669.19	.00063	.07782	.00192
#3	7.5909	.01243	.00279	658.64	-.00073	.07613	.00430
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090711 Acquired: 6/28/2016 23:14:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00477	-.00947	4.3743	.00012	.59749	-.00341	-.00368
Stddev	.00205	.00703	.2235	.00071	.00261	.00718	.00482
%RSD	42.998	74.264	5.1088	610.33	.43726	210.78	131.07
#1	.00352	-.01297	4.5068	.00080	.59457	-.00637	-.00075
#2	.00366	-.01406	4.4999	-.00061	.59959	.00478	-.00105
#3	.00714	-.00137	4.1163	.00016	.59832	-.00864	-.00924
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00067	.00187	.00016
Stddev	.00018	.00039	.00039
%RSD	26.132	20.991	250.81
#1	-.00048	.00224	.00013
#2	-.00072	.00192	-.00022
#3	-.00082	.00146	.00055
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8558.7	50968.	2468.0
Stddev	32.6	266.	12.5
%RSD	.38137	.52256	.50634
#1	8582.1	50678.	2474.2
#2	8572.7	51022.	2453.7
#3	8521.4	51203.	2476.3

Approved: June 29, 2016

Sample Name: L1606090712 Acquired: 6/28/2016 23:18:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00081	.33933	.00030	.07127	.05688	.00016	2.0338
Stddev	.00237	.00787	.00132	.00246	.00045	.00012	.0603
%RSD	291.62	2.3179	435.76	3.4534	.79846	72.701	2.9649
#1	.00177	.33514	-.00021	.06852	.05740	.00027	2.1010
#2	-.00288	.33445	-.00068	.07204	.05653	.00003	1.9844
#3	-.00133	.34841	.00181	.07326	.05673	.00019	2.0160
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00348	.00115	.14552	.01724	.92438	1.6617	.01097
Stddev	.00018	.00061	.00045	.00110	.03976	.0106	.00703
%RSD	5.1777	53.182	.30931	6.3566	4.3016	.63818	64.052
#1	.00353	.00097	.14500	.01788	.88776	1.6670	.01828
#2	.00362	.00183	.14581	.01597	.91871	1.6687	.00426
#3	.00327	.00065	.14575	.01786	.96668	1.6495	.01039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.3249	.01152	.00383	F 391.44	.00707	.86059	.02181
Stddev	.1530	.00179	.00054	2.81	.00137	.01152	.00342
%RSD	11.552	15.543	14.106	.71775	19.411	1.3389	15.698
#1	1.5007	.01088	.00325	388.59	.00558	.86948	.01787
#2	1.2531	.01014	.00432	391.52	.00829	.84757	.02352
#3	1.2210	.01354	.00392	394.20	.00735	.86472	.02403
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090712 Acquired: 6/28/2016 23:18:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00348**	**.00035**	**1.9954**	**.01117**	**.32038**	**.22636**	**.00135**
Stddev	.00020	.00121	.0012	.00040	.00240	.00266	.00214
%RSD	5.8328	347.48	.06231	3.5705	.75050	1.1738	158.56
#1	.00370	.00157	1.9940	.01149	.31769	.22820	.00269
#2	.00345	.00033	1.9955	.01130	.32111	.22756	-.00112
#3	.00330	-.00085	1.9965	.01072	.32233	.22331	.00247
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.04514**	**.17974**	**.02206**
Stddev	.00090	.00019	.00066
%RSD	1.9881	.10310	2.9925
#1	.04612	.17978	.02281
#2	.04436	.17953	.02156
#3	.04495	.17989	.02182
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8716.9**	**51451.**	**2449.4**
Stddev	48.4	29.	7.6
%RSD	.55475	.05648	.30870
#1	8664.0	51484.	2448.2
#2	8758.7	51440.	2457.4
#3	8728.0	51429.	2442.4

Approved: June 29, 2016

Sample Name: L1606090713 Acquired: 6/28/2016 23:22:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00219**	**.08213**	**.00368**	**.07443**	**.04854**	**.00011**	**.42469**
Stddev	.00096	.00972	.00334	.00183	.00110	.00005	.01977
%RSD	43.698	11.832	90.686	2.4627	2.2723	40.957	4.6556
#1	-.00225	.09092	.00289	.07233	.04795	.00011	.40186
#2	-.00121	.08378	.00081	.07521	.04981	.00016	.43586
#3	-.00312	.07170	.00734	.07574	.04786	.00007	.43635
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00222**	**.00137**	**.13907**	**.00317**	**.34040**	**1.7220**	**.00905**
Stddev	.00025	.00028	.00123	.00071	.01243	.0003	.00271
%RSD	11.273	20.393	.88415	22.430	3.6529	.01888	29.930
#1	.00223	.00160	.13998	.00280	.34114	1.7219	.00629
#2	.00247	.00146	.13767	.00272	.32761	1.7224	.01170
#3	.00197	.00106	.13955	.00399	.35244	1.7218	.00916
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0987**	**.00113**	**.00754**	F **415.04**	**.00596**	**.74146**	**.00350**
Stddev	.0280	.00202	.00033	2.37	.00037	.00798	.00379
%RSD	2.5471	178.69	4.3197	.57087	6.2471	1.0768	108.44
#1	1.1249	.00313	.00717	412.47	.00613	.73242	-.00053
#2	1.0692	.00117	.00780	417.13	.00621	.74754	.00700
#3	1.1020	-.00091	.00765	415.51	.00553	.74442	.00403
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090713 Acquired: 6/28/2016 23:22:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00153**	**-.00521**	**1.6202**	**.00992**	**.32429**	**.20882**	**-.00046**
Stddev	.00624	.00387	.0074	.00050	.00323	.01892	.00304
%RSD	408.39	74.236	.45925	5.0727	.99564	9.0597	653.54
#1	.00863	-.00095	1.6128	.00948	.32128	.19072	-.00372
#2	-.00310	-.00851	1.6200	.01047	.32770	.22846	.00004
#3	-.00095	-.00616	1.6277	.00980	.32389	.20727	.00229
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.03937**	**.07492**	**.02350**
Stddev	.00096	.00040	.00055
%RSD	2.4413	.53362	2.3494
#1	.04043	.07465	.02411
#2	.03855	.07474	.02336
#3	.03914	.07538	.02304
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8640.6**	**51402.**	**2468.9**
Stddev	11.6	25.	10.8
%RSD	.13368	.04908	.43542
#1	8653.3	51400.	2462.0
#2	8630.8	51378.	2463.4
#3	8637.6	51428.	2481.3

Approved: June 29, 2016

Sample Name: L1606090714 Acquired: 6/28/2016 23:25:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	.05270	.00261	.14849	.04532	.00003	61.576
Stddev	.00185	.00318	.00454	.00253	.00179	.00010	.493
%RSD	687.89	6.0257	174.05	1.7055	3.9414	357.59	.80130
#1	-.00157	.04958	.00318	.15133	.04382	.00007	61.008
#2	-.00110	.05258	.00683	.14767	.04484	-.00009	61.890
#3	.00185	.05593	-.00219	.14646	.04729	.00010	61.831
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	.00075	.00337	-.00019	.78003	7.3488	.01657
Stddev	.00021	.00021	.00077	.00126	.00831	.1082	.00291
%RSD	72.792	28.536	22.927	672.72	1.0653	1.4723	17.561
#1	.00008	.00100	.00398	.00126	.77075	7.4712	.01488
#2	.00027	.00062	.00363	-.00091	.78677	7.3091	.01993
#3	.00050	.00063	.00250	-.00091	.78257	7.2660	.01490
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.360	.06191	.00071	F 463.30	-.00030	.21561	.00177
Stddev	.046	.00525	.00020	1.03	.00019	.00661	.00305
%RSD	.37543	8.4821	27.996	.22272	64.080	3.0658	172.41
#1	12.310	.05872	.00072	464.48	-.00041	.22283	.00423
#2	12.369	.06797	.00051	462.60	-.00008	.21412	-.00164
#3	12.401	.05903	.00091	462.81	-.00041	.20986	.00271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090714 Acquired: 6/28/2016 23:25:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00300	-.00604	7.8267	-.00025	.74218	.01975	-.00197
Stddev	.00421	.00260	.1047	.00019	.00050	.00124	.00109
%RSD	140.31	43.094	1.3380	77.158	.06708	6.2763	55.271
#1	.00785	-.00902	7.8821	-.00023	.74201	.02073	-.00317
#2	.00099	-.00423	7.8920	-.00045	.74274	.02016	-.00166
#3	.00018	-.00486	7.7059	-.00006	.74179	.01835	-.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00316	.00407	.00256
Stddev	.00077	.00024	.00075
%RSD	24.497	5.8483	29.163
#1	.00354	.00412	.00330
#2	.00227	.00381	.00258
#3	.00367	.00428	.00181
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8639.6	51094.	2465.7
Stddev	41.6	335.	13.0
%RSD	.48197	.65487	.52745
#1	8594.7	50709.	2451.1
#2	8647.1	51260.	2476.1
#3	8677.0	51313.	2469.8

Approved: June 29, 2016

Sample Name: L1606090715 Acquired: 6/28/2016 23:29:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00285	.04407	.00140	.14412	.04143	.00005	59.558
Stddev	.00231	.00586	.00072	.00507	.00040	.00007	.224
%RSD	81.027	13.303	51.277	3.5199	.95567	130.41	.37536
#1	-.00334	.04994	.00156	.14606	.04131	.00012	59.814
#2	-.00033	.03822	.00202	.13837	.04111	-.00001	59.406
#3	-.00486	.04404	.00061	.14794	.04188	.00004	59.452
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00118	.00184	.00063	.76100	7.1671	.01922
Stddev	.00015	.00052	.00098	.00103	.01018	.0349	.00312
%RSD	163.96	43.892	53.087	163.96	1.3375	.48685	16.215
#1	.00011	.00058	.00246	-.00047	.77275	7.1527	.02093
#2	-.00007	.00153	.00071	.00158	.75530	7.1417	.01563
#3	.00022	.00141	.00236	.00077	.75494	7.2069	.02112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.054	.05684	.00116	F 450.35	.00088	.20516	-.00211
Stddev	.082	.00269	.00042	2.00	.00126	.00415	.00576
%RSD	.68190	4.7277	35.663	.44397	142.77	2.0226	273.36
#1	11.975	.05375	.00106	452.52	-.00055	.20427	-.00571
#2	12.048	.05807	.00162	449.96	.00139	.20968	.00454
#3	12.139	.05868	.00081	448.58	.00181	.20152	-.00515
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090715 Acquired: 6/28/2016 23:29:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00081**	**-.00862**	**7.6795**	**-.00039**	**.71676**	**.00461**	**-.00278**
Stddev	.00283	.00291	.1196	.00106	.00041	.01298	.00101
%RSD	347.45	33.797	1.5570	275.08	.05661	281.78	36.497
#1	-.00157	-.00587	7.7419	-.00040	.71645	-.00429	-.00356
#2	.00007	-.01167	7.7550	.00069	.71722	.01951	-.00313
#3	.00394	-.00832	7.5417	-.00144	.71660	-.00140	-.00163
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00152**	**.00115**	**.00113**
Stddev	.00105	.00008	.00105
%RSD	68.884	6.8866	93.346
#1	.00202	.00117	.00002
#2	.00032	.00106	.00212
#3	.00223	.00121	.00124
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8792.1**	**51880.**	**2496.3**
Stddev	133.4	299.	10.1
%RSD	1.5178	.57649	.40317
#1	8941.8	51623.	2484.7
#2	8685.6	51808.	2502.1
#3	8748.8	52208.	2502.2

Approved: June 29, 2016

Sample Name: L1606090716 Acquired: 6/28/2016 23:33:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00333	.06674	.00128	.14298	.04222	-.00000	59.504
Stddev	.00201	.01138	.00278	.00064	.00070	.00007	.484
%RSD	60.249	17.058	217.94	.44859	1.6629	94045.	.81312
#1	-.00169	.07800	-.00194	.14246	.04294	.00002	59.231
#2	-.00557	.05523	.00286	.14278	.04219	.00006	60.063
#3	-.00273	.06698	.00291	.14369	.04154	-.00008	59.219
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00092	.00339	.00042	.74101	7.3675	.01893
Stddev	.00006	.00016	.00146	.00135	.02065	.0749	.00240
%RSD	50.431	17.014	43.091	324.21	2.7866	1.0165	12.657
#1	.00017	.00075	.00375	-.00081	.76451	7.3956	.01995
#2	.00005	.00106	.00463	.00020	.72578	7.2826	.02065
#3	.00013	.00095	.00178	.00187	.73273	7.4242	.01619
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.094	.05669	.00049	F 451.79	.00147	.21191	-.00151
Stddev	.163	.00550	.00036	.50	.00054	.00242	.00084
%RSD	1.3447	9.6932	73.725	.11164	37.077	1.1421	55.736
#1	12.012	.05647	.00070	451.99	.00147	.21046	-.00232
#2	11.990	.05131	.00007	452.16	.00201	.21470	-.00064
#3	12.282	.06230	.00070	451.22	.00092	.21056	-.00157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090716 Acquired: 6/28/2016 23:33:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00348**	**.00089**	**7.5669**	**.00117**	**.72443**	**.01709**	**-.00245**
Stddev	.00354	.00448	.1572	.00050	.00298	.00437	.00201
%RSD	101.58	501.51	2.0775	42.865	.41088	25.593	82.267
#1	.00281	-.00275	7.6956	.00118	.72247	.02126	-.00474
#2	.00033	-.00046	7.6136	.00167	.72297	.01748	-.00099
#3	.00731	.00590	7.3917	.00066	.72785	.01253	-.00161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00241**	**.00548**	**.00402**
Stddev	.00054	.00017	.00083
%RSD	22.212	3.0592	20.651
#1	.00257	.00567	.00416
#2	.00285	.00542	.00312
#3	.00181	.00535	.00476
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8690.3**	**52175.**	**2516.1**
Stddev	61.6	126.	8.6
%RSD	.70844	.24177	.34375
#1	8760.8	52034.	2508.6
#2	8663.2	52277.	2514.2
#3	8646.9	52214.	2525.5

Approved: June 29, 2016

Sample Name: L1606090717S Acquired: 6/28/2016 23:37:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19035**	**4.9212**	**.20242**	**1.1173**	**.53870**	**.02399**	**64.987**
Stddev	.00066	.0138	.00438	.0089	.00438	.00023	.548
%RSD	.34417	.28081	2.1640	.79744	.81379	.96737	.84372
#1	.19107	4.9363	.19945	1.1238	.54193	.02421	65.145
#2	.19018	4.9092	.20745	1.1071	.54046	.02375	65.440
#3	.18980	4.9181	.20036	1.1209	.53371	.02402	64.378
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02424**	**.09697**	**.24272**	**.24153**	**2.7000**	**32.302**	**.53435**
Stddev	.00017	.00063	.00128	.00115	.0542	.305	.00423
%RSD	.69750	.64652	.52774	.47706	2.0085	.94343	.79145
#1	.02434	.09701	.24384	.24064	2.6890	32.507	.53012
#2	.02404	.09757	.24299	.24283	2.7589	32.447	.53858
#3	.02433	.09632	.24133	.24112	2.6521	31.952	.53434
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**16.882**	**.30451**	**.49711**	F **482.71**	**.24091**	**5.1537**	**.23668**
Stddev	.177	.00348	.00560	3.01	.00269	.0308	.00218
%RSD	1.0459	1.1415	1.1272	.62426	1.1176	.59723	.92237
#1	16.684	.30381	.50102	485.98	.24166	5.1882	.23907
#2	16.940	.30143	.49961	480.04	.24314	5.1434	.23479
#3	17.023	.30828	.49069	482.12	.23792	5.1293	.23620
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090717S Acquired: 6/28/2016 23:37:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.58578**	**.18538**	**10.159**	**.48811**	**1.2154**	**.49634**	**.23046**
Stddev	.00448	.00618	.043	.00637	.0098	.00608	.00038
%RSD	.76433	3.3363	.42424	1.3058	.80446	1.2245	.16463
#1	.58622	.18565	10.182	.49235	1.2180	.50327	.23047
#2	.59002	.19142	10.185	.49120	1.2236	.49195	.23007
#3	.58110	.17906	10.109	.48078	1.2045	.49379	.23083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.48987**	**.55148**	**.00343**
Stddev	.00176	.00599	.00013
%RSD	.35980	1.0854	3.7809
#1	.49143	.55650	.00328
#2	.49024	.55309	.00353
#3	.48796	.54486	.00348
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8539.5**	**51024.**	**2450.9**
Stddev	15.7	223.	7.4
%RSD	.18405	.43733	.30335
#1	8544.9	50769.	2447.1
#2	8551.8	51123.	2446.2
#3	8521.8	51181.	2459.5

Approved: June 29, 2016

Sample Name: L1606090718S Acquired: 6/28/2016 23:41:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19819**	**5.0418**	**.21172**	**1.1474**	**.55608**	**.02463**	**66.735**
Stddev	.00185	.0069	.00260	.0063	.00500	.00008	.403
%RSD	.93500	.13782	1.2291	.55360	.89834	.32817	.60319
#1	.19951	5.0496	.20902	1.1497	.56117	.02462	67.001
#2	.19607	5.0393	.21422	1.1402	.55588	.02472	66.933
#3	.19898	5.0364	.21193	1.1522	.55119	.02456	66.272
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02500**	**.10059**	**.24966**	**.24894**	**2.7946**	**32.968**	**.54262**
Stddev	.00038	.00067	.00147	.00202	.0041	.141	.00182
%RSD	1.5041	.66457	.58723	.81332	.14772	.42769	.33489
#1	.02475	.10047	.25066	.24998	2.7907	33.127	.54285
#2	.02543	.10131	.25035	.25022	2.7989	32.857	.54431
#3	.02482	.09999	.24798	.24660	2.7943	32.920	.54070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**17.345**	**.31116**	**.51510**	F **490.28**	**.24919**	**5.3591**	**.24651**
Stddev	.105	.00167	.00292	3.51	.00358	.0052	.00234
%RSD	.60374	.53669	.56649	.71621	1.4381	.09607	.95097
#1	17.354	.31227	.51623	493.94	.25164	5.3628	.24477
#2	17.445	.31197	.51728	489.95	.25087	5.3613	.24917
#3	17.236	.30924	.51178	486.94	.24508	5.3532	.24558
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090718S Acquired: 6/28/2016 23:41:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-07

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.61053	.18691	10.528	.50556	1.2260	.48937	.23724
Stddev	.00166	.00666	.059	.00312	.0084	.00665	.00363
%RSD	.27229	3.5608	.55758	.61700	.68851	1.3593	1.5298
#1	.60861	.19403	10.543	.50630	1.2334	.49010	.24128
#2	.61141	.18085	10.578	.50824	1.2277	.48238	.23618
#3	.61157	.18584	10.464	.50214	1.2168	.49562	.23425
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.50091	.51523	.00172
Stddev	.00126	.00263	.00010
%RSD	.25176	.51067	5.6499
#1	.50233	.51612	.00161
#2	.50044	.51730	.00180
#3	.49994	.51227	.00174
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8681.6	51146.	2422.3
Stddev	38.8	474.	15.3
%RSD	.44711	.92760	.63064
#1	8639.4	50613.	2406.1
#2	8715.8	51303.	2424.3
#3	8689.6	51522.	2436.4

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 23:44:53 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39087	9.8878	.39267	.49465	1.0058	.04827	9.9182	.04932
Stddev	.00134	.0059	.00349	.00240	.0067	.00007	.1083	.00019
%RSD	.34212	.05973	.88952	.48553	.66475	.14231	1.0921	.38581
#1	.39238	9.8935	.39657	.49655	.99820	.04819	9.9431	.04942
#2	.39039	9.8883	.38984	.49195	1.0109	.04832	10.012	.04944
#3	.38985	9.8817	.39158	.49545	1.0082	.04830	9.7996	.04910
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19738	.48910	.49523	3.9669	49.882	1.0110	9.9379	.49619
Stddev	.00146	.00249	.00033	.0535	.426	.0100	.0856	.00254
%RSD	.73891	.50943	.06565	1.3490	.85413	.98572	.86106	.51125
#1	.19864	.48643	.49560	3.9112	49.398	1.0025	9.9597	.49529
#2	.19771	.49137	.49512	4.0179	50.203	1.0219	10.010	.49906
#3	.19578	.48951	.49498	3.9715	50.043	1.0085	9.8435	.49423
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99366	51.102	.49479	9.8180	.49245	1.1839	.38331	4.9252
Stddev	.00229	.296	.00112	.0436	.00417	.0076	.00756	.0162
%RSD	.23040	.57951	.22563	.44368	.84739	.64567	1.9734	.32807
#1	.99519	50.797	.49605	9.8652	.48874	1.1905	.38626	4.9385
#2	.99476	51.389	.49438	9.8094	.49696	1.1858	.38895	4.9300
#3	.99103	51.119	.49393	9.7793	.49165	1.1755	.37471	4.9072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/28/2016 23:44:53 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98988	.99765	.95643	.49291	.97109	.99816	1.0264
Stddev	.00005	.00662	.00491	.00612	.00246	.00225	.0069
%RSD	.00544	.66367	.51341	1.2415	.25373	.22587	.66714
#1	.98986	.99154	.96068	.49817	.96993	.99855	1.0228
#2	.98985	1.0047	.95106	.49436	.97392	1.0002	1.0343
#3	.98995	.99673	.95756	.48619	.96943	.99574	1.0221
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8852.4	53248.	2485.2
Stddev	68.1	165.	17.6
%RSD	.76947	.31035	.70769
#1	8891.9	53420.	2501.0
#2	8891.6	53232.	2466.3
#3	8773.7	53091.	2488.4

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 23:48:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	.00890	-.00396	.00204	.00494	-.00000	-.03955	.00028
Stddev	.00061	.00649	.00226	.00096	.00139	.00006	.02980	.00016
%RSD	121.10	72.941	57.036	47.171	28.084	1878.9	75.346	56.000
#1	.00012	.00140	-.00135	.00236	.00433	-.00007	-.00514	.00025
#2	.00019	.01256	-.00530	.00280	.00653	.00003	-.05651	.00014
#3	.00120	.01274	-.00524	.00096	.00396	.00003	-.05701	.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00030	.00009	-.00055	-.00135	.02566	.00472	.12990	-.00124
Stddev	.00026	.00133	.00103	.03748	.11658	.00694	.07003	.00153
%RSD	88.905	1496.9	185.85	2784.8	454.39	146.81	53.907	123.10
#1	-.00021	.00162	-.00060	-.04304	-.10891	.00709	.05840	.00042
#2	-.00009	-.00079	.00050	.02953	.08997	-.00309	.19836	-.00156
#3	-.00059	-.00057	-.00156	.00947	.09591	.01017	.13295	-.00259
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.11232	.00016	-.00070	-.00263	.00402	-.00130	.00878
Stddev	.00052	.01221	.00035	.00315	.00378	.00429	.00491	.00194
%RSD	233.23	10.874	219.15	451.13	143.82	106.54	378.44	22.144
#1	.00018	.09853	.00056	-.00433	-.00468	.00891	-.00563	.01097
#2	.00076	.12179	-.00003	.00108	-.00494	.00227	.00404	.00808
#3	-.00027	.11663	-.00005	.00116	.00173	.00089	-.00230	.00727
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/28/2016 23:48:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.00041	.00381	-.00016	-.00081	-.00009	-.00076
Stddev	.00089	.00029	.01190	.00136	.00028	.00006	.00080
%RSD	548.13	70.796	312.63	830.39	34.214	65.418	104.29
#1	.00094	.00011	.00779	-.00069	-.00088	-.00002	-.00004
#2	-.00080	.00043	-.00957	-.00118	-.00051	-.00014	-.00063
#3	.00035	.00070	.01320	.00138	-.00105	-.00011	-.00162
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8917.9	53751.	2458.4
Stddev	22.4	401.	6.6
%RSD	.25103	.74546	.27049
#1	8939.0	53385.	2451.2
#2	8920.3	53689.	2464.4
#3	8894.4	54179.	2459.5

Approved: June 29, 2016

Sample Name: L1606090719SD Acquired: 6/28/2016 23:52:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19494	4.9876	.20649	1.1206	.54899	.02446	63.684
Stddev	.00341	.0267	.00227	.0072	.00266	.00017	.197
%RSD	1.7503	.53500	1.0987	.64357	.48472	.70636	.30953
#1	.19841	5.0143	.20896	1.1267	.55198	.02458	63.895
#2	.19159	4.9875	.20600	1.1224	.54814	.02454	63.505
#3	.19483	4.9610	.20450	1.1126	.54686	.02426	63.652
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02431	.09859	.24820	.24356	2.7627	32.523	.53917
Stddev	.00024	.00035	.00106	.00236	.0104	.139	.00283
%RSD	.97941	.35770	.42716	.97084	.37521	.42742	.52434
#1	.02452	.09895	.24891	.24428	2.7631	32.683	.54200
#2	.02405	.09857	.24872	.24548	2.7521	32.438	.53915
#3	.02436	.09824	.24698	.24092	2.7728	32.447	.53635
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	16.744	.30262	.50161	F 474.44	.24121	5.1977	.24211
Stddev	.092	.00376	.00063	1.95	.00134	.0033	.00235
%RSD	.55099	1.2423	.12466	.41010	.55486	.06327	.97156
#1	16.843	.30299	.50231	476.69	.24248	5.1948	.24104
#2	16.730	.29869	.50142	473.46	.24134	5.2012	.24049
#3	16.660	.30618	.50110	473.18	.23981	5.1970	.24481
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090719SD Acquired: 6/28/2016 23:52:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-06

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.59430**	**.19071**	**9.9338**	**.49319**	**1.2061**	**.50455**	**.23257**
Stddev	.00255	.00879	.0338	.00371	.0041	.01325	.00642
%RSD	.42853	4.6099	.34057	.75174	.34161	2.6270	2.7619
#1	.59360	.18296	9.9720	.49283	1.2102	.50667	.23886
#2	.59713	.20026	9.9217	.49706	1.2019	.49036	.23282
#3	.59219	.18890	9.9077	.48967	1.2063	.51661	.22602
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.49849**	**.50582**	**.00353**
Stddev	.00523	.00152	.00043
%RSD	1.0487	.30029	12.202
#1	.50407	.50610	.00382
#2	.49770	.50717	.00372
#3	.49371	.50417	.00303
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8401.5**	**50047.**	**2408.6**
Stddev	47.5	258.	12.0
%RSD	.56522	.51528	.50025
#1	8347.1	50008.	2396.9
#2	8422.6	49810.	2408.1
#3	8434.7	50321.	2421.0

Approved: June 29, 2016

Sample Name: L1606090720SD Acquired: 6/28/2016 23:56:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19353**	**5.0216**	**.20252**	**1.1352**	**.55071**	**.02451**	**66.439**
Stddev	.00144	.0141	.00254	.0111	.00305	.00002	.233
%RSD	.74536	.28090	1.2537	.97553	.55460	.08092	.35135
#1	.19274	5.0377	.20544	1.1467	.55275	.02452	66.357
#2	.19265	5.0157	.20132	1.1247	.54720	.02453	66.259
#3	.19519	5.0114	.20080	1.1342	.55218	.02449	66.703
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02480**	**.09885**	**.24939**	**.24699**	**2.8311**	**33.202**	**.54334**
Stddev	.00042	.00109	.00128	.00315	.0563	.083	.00155
%RSD	1.6782	1.1039	.51473	1.2735	1.9886	.24955	.28467
#1	.02471	.09937	.24793	.24805	2.7662	33.298	.54161
#2	.02525	.09958	.24991	.24947	2.8664	33.150	.54461
#3	.02443	.09759	.25034	.24345	2.8608	33.159	.54379
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**17.468**	**.30738**	**.50680**	F **486.61**	**.24492**	**5.2693**	**.23893**
Stddev	.072	.00145	.00532	.70	.00225	.0369	.00191
%RSD	.41344	.47181	1.0490	.14406	.91921	.69961	.79970
#1	17.534	.30875	.50843	487.39	.24519	5.2707	.23692
#2	17.479	.30586	.51112	486.41	.24702	5.3054	.24072
#3	17.391	.30753	.50086	486.04	.24254	5.2317	.23916
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 29, 2016

Sample Name: L1606090720SD Acquired: 6/28/2016 23:56:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573685-08

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.60142**	**.18637**	**10.363**	**.49767**	**1.2283**	**.48765**	**.23702**
Stddev	.00105	.00245	.038	.00779	.0034	.01138	.00072
%RSD	.17417	1.3166	.36865	1.5652	.27874	2.3335	.30474
#1	.60114	.18602	10.365	.50037	1.2270	.48994	.23679
#2	.60258	.18411	10.400	.50376	1.2257	.49771	.23784
#3	.60054	.18898	10.323	.48889	1.2322	.47530	.23645
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.49895**	**.50500**	**.00250**
Stddev	.00095	.00538	.00016
%RSD	.19000	1.0655	6.4596
#1	.49928	.50545	.00254
#2	.49789	.51014	.00232
#3	.49969	.49940	.00263
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8545.4**	**50337.**	**2417.3**
Stddev	21.8	38.	36.4
%RSD	.25460	.07587	1.5070
#1	8520.7	50381.	2377.2
#2	8553.5	50312.	2448.3
#3	8561.9	50318.	2426.3

Approved: June 29, 2016

Sample Name: L1606090721 Acquired: 6/28/2016 23:59:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.02815	.15472	.21993	.04999	-.00009	89.088	.00036
Stddev	.00081	.00286	.00224	.00203	.00067	.00013	.252	.00044
%RSD	366.68	10.152	1.4476	.92302	1.3456	150.92	.28326	121.20
#1	-.00034	.03039	.15696	.22227	.04930	.00005	89.280	.00047
#2	-.00015	.02493	.15248	.21860	.05065	-.00021	89.181	.00073
#3	.00116	.02913	.15471	.21893	.05004	-.00011	88.802	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.00053	-.00019	3.2279	4.7476	.04543	58.195	.03506
Stddev	.00051	.00109	.00130	.0396	.0330	.00398	.306	.00452
%RSD	326.23	207.39	678.63	1.2283	.69494	8.7612	.52530	12.890
#1	.00000	.00087	.00120	3.2707	4.7445	.04159	58.337	.03505
#2	.00073	-.00070	-.00039	3.2207	4.7162	.04953	57.844	.03055
#3	-.00026	.00141	-.00138	3.1923	4.7820	.04517	58.404	.03959
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00255	148.09	.00067	.00784	-.00039	.00421	.00052	8.2957
Stddev	.00041	.74	.00056	.00761	.00326	.00112	.00642	.0916
%RSD	15.975	.49798	83.836	97.017	843.36	26.690	1239.6	1.1044
#1	.00242	148.81	.00126	.01662	.00333	.00379	.00730	8.3545
#2	.00222	148.12	.00060	.00379	-.00277	.00548	-.00546	8.3426
#3	.00300	147.34	.00015	.00312	-.00172	.00336	-.00029	8.1902
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090721 Acquired: 6/28/2016 23:59:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00030**	**2.8879**	**-.00940**	**-.00107**	**-.00134**	**.00848**	**-.00035**
Stddev	.00043	.0149	.00196	.00331	.00181	.00045	.00038
%RSD	143.26	.51746	20.833	308.32	134.84	5.2706	107.75
#1	.00019	2.8997	-.00999	-.00402	.00042	.00893	-.00019
#2	-.00051	2.8929	-.00722	-.00170	-.00320	.00845	-.00008
#3	-.00059	2.8711	-.01100	.00251	-.00126	.00804	-.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8758.0**	**52368.**	**2466.4**
Stddev	37.5	325.	5.9
%RSD	.42875	.61986	.23758
#1	8801.1	52031.	2461.0
#2	8740.8	52395.	2465.6
#3	8732.2	52679.	2472.6

Approved: June 29, 2016

Sample Name: L1606090721PS Acquired: 6/29/2016 0:03:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574358-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20019**	**5.1576**	**.34766**	**1.2114**	**.56381**	**.02498**	**84.663**	**.02573**
Stddev	.00211	.0098	.00116	.0050	.00202	.00020	.418	.00033
%RSD	1.0557	.19056	.33293	.41263	.35822	.78492	.49396	1.2934
#1	.20254	5.1664	.34633	1.2164	.56443	.02520	84.492	.02609
#2	.19843	5.1594	.34818	1.2115	.56156	.02488	84.358	.02565
#3	.19962	5.1470	.34846	1.2064	.56545	.02485	85.140	.02544
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10080**	**.25421**	**.24916**	**4.8701**	**30.624**	**.57779**	**56.693**	**.28817**
Stddev	.00058	.00200	.00195	.0302	.149	.00202	.131	.00453
%RSD	.57642	.78787	.78160	.62019	.48743	.34921	.23190	1.5720
#1	.10116	.25562	.25054	4.8792	30.503	.58012	56.633	.28367
#2	.10112	.25192	.25001	4.8364	30.577	.57659	56.844	.28809
#3	.10013	.25509	.24693	4.8947	30.791	.57665	56.603	.29273
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52502**	**158.09**	**.24876**	**5.1636**	**.25008**	**.61265**	**.20014**	**9.8671**
Stddev	.00212	.60	.00180	.0181	.00331	.00479	.00936	.0394
%RSD	.40403	.38248	.72227	.35030	1.3223	.78195	4.6766	.39881
#1	.52705	157.73	.25045	5.1793	.25359	.61277	.21037	9.9112
#2	.52519	157.76	.24895	5.1678	.24962	.60780	.19201	9.8547
#3	.52282	158.79	.24687	5.1438	.24702	.61738	.19805	9.8355
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090721PS Acquired: 6/29/2016 0:03:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574358-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51223**	**3.0821**	**.49582**	**.24982**	**.51140**	**.51568**	**.00008**
Stddev	.00186	.0080	.00627	.00152	.00318	.00201	.00023
%RSD	.36371	.25984	1.2655	.60916	.62230	.38914	288.95
#1	.51427	3.0793	.49082	.24918	.51445	.51741	-.00011
#2	.51181	3.0759	.50286	.24872	.51164	.51616	.00001
#3	.51062	3.0912	.49379	.25156	.50810	.51348	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8832.3**	**52453.**	**2508.5**
Stddev	83.5	84.	29.4
%RSD	.94590	.16065	1.1725
#1	8737.3	52363.	2520.1
#2	8865.3	52530.	2530.3
#3	8894.3	52465.	2475.0

Approved: June 29, 2016

Sample Name: L1606090721SDL Acquired: 6/29/2016 0:07:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574358-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00109	.01687	.03369	.04578	.01396	.00004	18.552	-.00004
Stddev	.00056	.00689	.00354	.00177	.00096	.00009	.306	.00023
%RSD	51.289	40.861	10.514	3.8702	6.8513	202.11	1.6474	556.22
#1	-.00057	.01633	.03244	.04378	.01352	-.00003	18.207	-.00012
#2	-.00168	.02401	.03094	.04715	.01506	.00002	18.661	-.00023
#3	-.00102	.01026	.03768	.04641	.01331	.00014	18.789	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	.00087	.00035	.65230	1.0355	.01184	12.221	.00894
Stddev	.00063	.00100	.00121	.00671	.0941	.00202	.100	.00309
%RSD	228.11	115.30	345.85	1.0286	9.0852	17.078	.82191	34.543
#1	-.00017	.00049	.00025	.64609	1.1157	.01374	12.150	.00874
#2	-.00095	.00201	.00160	.65942	.93195	.00972	12.336	.01212
#3	.00029	.00011	-.00080	.65140	1.0588	.01205	12.177	.00595
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	30.325	-.00027	.00422	-.00298	-.00092	.00109	1.7914
Stddev	.00016	.440	.00045	.00425	.00057	.00256	.00169	.0091
%RSD	27.689	1.4521	163.54	100.75	19.102	277.37	155.02	.50513
#1	.00039	29.824	.00017	.00885	-.00259	-.00352	.00170	1.7813
#2	.00063	30.649	-.00072	.00329	-.00363	.00160	.00240	1.7986
#3	.00068	30.503	-.00027	.00050	-.00270	-.00084	-.00082	1.7945
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090721SDL Acquired: 6/29/2016 0:07:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574358-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00031**	**.60742**	**-.00374**	**-.00166**	**-.00033**	**.00256**	**-.00085**
Stddev	.00088	.00734	.00118	.00273	.00106	.00022	.00027
%RSD	279.18	1.2083	31.693	164.00	318.25	8.4916	31.787
#1	.00070	.59907	-.00244	.00132	.00067	.00233	-.00090
#2	-.00077	.61036	-.00402	-.00403	-.00023	.00276	-.00109
#3	-.00087	.61284	-.00475	-.00228	-.00144	.00259	-.00056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9187.1**	**55503.**	**2599.5**
Stddev	26.1	119.	10.7
%RSD	.28437	.21476	.41022
#1	9217.2	55501.	2602.6
#2	9170.3	55385.	2587.6
#3	9173.8	55623.	2608.2

Approved: June 29, 2016

Sample Name: L1606090721SDL Acquired: 6/29/2016 0:11:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574358-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00118	.01500	.00516	.01043	.00379	.00000	3.7995	-.00012
Stddev	.00135	.01168	.00534	.00108	.00026	.00003	.1244	.00014
%RSD	115.03	77.862	103.64	10.384	6.8212	2470.3	3.2736	120.38
#1	.00206	.02216	.00814	.01042	.00375	-.00003	3.6648	-.00028
#2	.00185	.00152	-.00101	.01152	.00355	.00003	3.8235	-.00005
#3	-.00038	.02133	.00835	.00935	.00407	.00000	3.9101	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	.00065	-.00055	.11045	.13865	.00675	2.5225	.00092
Stddev	.00015	.00092	.00086	.02744	.23040	.00333	.0784	.00193
%RSD	109.63	141.35	157.85	24.848	166.17	49.354	3.1085	209.31
#1	.00002	-.00027	.00015	.09324	.28975	.00394	2.5026	.00021
#2	-.00015	.00158	-.00028	.14210	.25272	.01043	2.6090	-.00055
#3	-.00028	.00066	-.00151	.09600	-.12653	.00587	2.4560	.00311
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	6.3739	.00039	-.00167	-.00065	-.00192	-.00400	.35805
Stddev	.00019	.1221	.00077	.00568	.00220	.00225	.00392	.00092
%RSD	80.325	1.9149	193.81	340.49	339.56	117.21	97.951	.25782
#1	-.00041	6.2501	.00122	.00247	-.00170	-.00154	.00049	.35884
#2	-.00025	6.3776	.00024	.00067	-.00212	-.00435	-.00579	.35826
#3	-.00004	6.4941	-.00028	-.00815	.00188	.00011	-.00671	.35703
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090721SDL Acquired: 6/29/2016 0:11:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574358-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00035**	**.12378**	**-.00436**	**-.00134**	**-.00055**	**.00073**	**-.00039**
Stddev	.00019	.00308	.00683	.00086	.00034	.00007	.00029
%RSD	53.797	2.4878	156.69	64.146	61.988	8.9830	73.514
#1	-.00044	.12023	-.00553	-.00058	-.00062	.00068	-.00036
#2	-.00014	.12543	.00298	-.00228	-.00018	.00081	-.00070
#3	-.00049	.12569	-.01052	-.00118	-.00084	.00071	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9402.9**	**57082.**	**2645.4**
Stddev	82.4	75.	15.8
%RSD	.87665	.13174	.59891
#1	9406.7	56995.	2659.6
#2	9483.5	57126.	2628.3
#3	9318.7	57125.	2648.2

Approved: June 29, 2016

Sample Name: L1606090722 Acquired: 6/29/2016 0:15:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.01028	.16985	.22958	.04883	-.00008	90.394	.00025
Stddev	.00324	.00963	.00396	.00222	.00061	.00002	.121	.00028
%RSD	4949.1	93.723	2.3290	.96586	1.2550	23.760	.13404	111.24
#1	-.00285	.02132	.16813	.22730	.04935	-.00010	90.382	.00038
#2	.00356	.00356	.17438	.23172	.04815	-.00006	90.279	.00045
#3	-.00051	.00596	.16705	.22972	.04898	-.00008	90.521	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.00041	.00087	3.5026	4.9295	.04910	59.267	.03325
Stddev	.00022	.00111	.00098	.0284	.0894	.00151	.265	.00219
%RSD	60.847	271.25	113.61	.80943	1.8143	3.0855	.44788	6.5929
#1	.00021	.00134	-.00025	3.5352	5.0034	.05063	59.294	.03495
#2	.00061	-.00082	.00122	3.4887	4.9549	.04760	58.989	.03402
#3	.00025	.00070	.00163	3.4838	4.8301	.04907	59.518	.03077
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00244	153.19	.00041	.00458	-.00053	.00040	-.00283	8.7875
Stddev	.00007	.41	.00041	.00497	.00262	.00456	.00573	.1224
%RSD	2.9584	.27064	99.304	108.46	489.40	1152.0	202.89	1.3923
#1	.00237	153.49	.00084	-.00022	.00239	-.00465	-.00944	8.8015
#2	.00251	152.72	.00004	.00427	-.00266	.00424	.00068	8.9022
#3	.00243	153.37	.00034	.00970	-.00134	.00160	.00029	8.6587
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090722 Acquired: 6/29/2016 0:15:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	2.9518	-.00995	-.00362	-.00096	.00440	.00001
Stddev	.00028	.0074	.00793	.00237	.00054	.00006	.00056
%RSD	32.226	.25211	79.682	65.490	56.708	1.2532	6214.2
#1	.00100	2.9566	-.00351	-.00118	-.00042	.00436	.00025
#2	.00104	2.9432	-.00753	-.00591	-.00150	.00446	-.00063
#3	.00054	2.9556	-.01881	-.00378	-.00096	.00438	.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9054.6	54099.	2585.8
Stddev	57.4	436.	25.2
%RSD	.63423	.80554	.97528
#1	8988.4	53629.	2556.7
#2	9090.0	54180.	2602.1
#3	9085.5	54489.	2598.5

Approved: June 29, 2016

Sample Name: L1606090701 Acquired: 6/29/2016 0:18:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 500 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00057**	**.00128**	**.00101**	**.00061**	**.00104**	**-.00005**	**.00169**
Stddev	.00126	.00585	.00355	.00032	.00091	.00002	.04030
%RSD	221.80	456.51	353.52	53.224	87.506	37.484	2388.3
#1	-.00202	.00804	-.00224	.00024	.00004	-.00004	.00221
#2	.00024	-.00195	.00046	.00078	.00184	-.00004	.04172
#3	.00008	-.00224	.00480	.00082	.00125	-.00008	-.03887
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**.00013**	**.00013**	**-.00052**	F **-.02173**	**.03273**	**.00032**
Stddev	.00034	.00034	.00036	.00092	.03139	.06816	.00284
%RSD	181.69	267.06	267.98	175.61	144.44	208.24	885.16
#1	-.00016	-.00013	.00000	.00035	-.00211	-.02317	-.00284
#2	.00052	.00001	.00054	-.00148	-.05793	.01270	.00268
#3	.00020	.00050	-.00014	-.00044	-.00515	.10865	.00112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03898**	**-.00058**	**-.00045**	**13.251**	**.00077**	**.02846**	**.00119**
Stddev	.01377	.00586	.00050	.124	.00076	.00679	.00468
%RSD	35.318	1010.5	110.38	.93889	99.705	23.842	394.31
#1	.05488	.00610	.00012	13.121	-.00004	.03395	.00279
#2	.03088	-.00485	-.00078	13.369	.00087	.03056	.00485
#3	.03118	-.00299	-.00069	13.262	.00148	.02087	-.00408
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606090701 Acquired: 6/29/2016 0:18:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 500 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00122	-.00537	-.00914	-.00006	.00159	.00532	.00037
Stddev	.00582	.00242	.00090	.00019	.00051	.00299	.00136
%RSD	476.64	45.078	9.7969	317.95	32.073	56.250	371.00
#1	.00683	-.00708	-.00955	.00015	.00207	.00837	-.00054
#2	.00162	-.00260	-.00812	-.00022	.00105	.00517	.00193
#3	-.00479	-.00644	-.00976	-.00012	.00165	.00240	-.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00093	.00059	-.00016
Stddev	.00081	.00031	.00018
%RSD	87.282	53.168	114.46
#1	.00149	.00024	-.00018
#2	-.00000	.00070	.00003
#3	.00130	.00083	-.00034
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10015.	59457.	2772.0
Stddev	42.	185.	13.1
%RSD	.41543	.31142	.47139
#1	9974.4	59316.	2765.7
#2	10014.	59389.	2763.3
#3	10058.	59667.	2787.0

Approved: June 29, 2016

Sample Name: L1606090702 Acquired: 6/29/2016 0:22:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 500 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**.01099**	**.00749**	**.00123**	**.00036**	**-.00012**	**-.07492**	**-.00003**
Stddev	.00077	.00938	.00313	.00162	.00100	.00005	.00757	.00027
%RSD	273.98	85.420	41.773	131.72	279.74	40.850	10.106	1080.6
#1	-.00115	.00075	.00467	.00308	.00068	-.00017	-.07360	-.00000
#2	.00027	.01919	.00694	.00049	.00115	-.00008	-.08306	.00024
#3	.00004	.01302	.01085	.00011	-.00076	-.00011	-.06809	-.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**-.00052**	**.00026**	**.00386**	**.16270**	**.00415**	**.04673**	**.00035**
Stddev	.00014	.00036	.00083	.03541	.08205	.00393	.05332	.00318
%RSD	207.94	70.672	315.94	916.99	50.431	94.730	114.10	912.30
#1	-.00005	-.00049	.00109	.03399	.24654	.00843	.09724	.00046
#2	.00003	-.00089	.00028	-.03514	.15901	.00071	-.00901	-.00289
#3	.00022	-.00017	-.00058	.01273	.08256	.00330	.05196	.00347
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00011**	**13.268**	**.00028**	**.03344**	**-.00107**	**.00163**	**-.00334**	**-.00974**
Stddev	.00034	.166	.00066	.00168	.00231	.00202	.00700	.00231
%RSD	306.42	1.2519	239.13	5.0110	216.85	124.05	209.45	23.731
#1	-.00024	13.091	.00009	.03433	-.00011	.00058	-.00482	-.01123
#2	.00014	13.421	-.00027	.03151	-.00370	.00396	.00428	-.01090
#3	.00044	13.292	.00101	.03449	.00061	.00035	-.00947	-.00708
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090702 Acquired: 6/29/2016 0:22:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 500 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00006	.00164	-.00565	.00199	.00055	.00050	.00004
Stddev	.00079	.00045	.00790	.00125	.00014	.00028	.00055
%RSD	1277.4	27.361	139.76	62.800	24.818	56.699	1243.8
#1	-.00043	.00119	-.00017	.00104	.00045	.00053	.00062
#2	.00085	.00209	-.00208	.00153	.00070	.00020	-.00000
#3	-.00061	.00165	-.01471	.00341	.00048	.00076	-.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9738.1	60303.	2841.7
Stddev	547.0	130.	36.2
%RSD	5.6170	.21550	1.2725
#1	10017.	60254.	2883.1
#2	10090.	60205.	2816.3
#3	9107.9	60450.	2825.6

Approved: June 29, 2016

Sample Name: L1606090703 Acquired: 6/29/2016 0:26:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 500 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00034	.01419	.00833	.00267	.00573	.00007	-.01298	.00028
Stddev	.00111	.00653	.00123	.00250	.00075	.00004	.01762	.00008
%RSD	324.10	46.043	14.722	93.692	13.099	59.317	135.74	30.625
#1	.00043	.01132	.00941	.00414	.00600	.00009	-.02179	.00028
#2	-.00162	.02166	.00699	-.00022	.00488	.00010	-.02446	.00036
#3	.00015	.00958	.00859	.00408	.00631	.00002	.00731	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	.00028	-.00007	.00093	-.08334	.00442	.05416	-.00223
Stddev	.00033	.00039	.00100	.03445	.03697	.00209	.12696	.00364
%RSD	714.65	138.78	1370.0	3703.8	44.357	47.372	234.43	163.51
#1	-.00035	-.00004	.00065	.03766	-.04634	.00636	-.08396	-.00517
#2	-.00009	.00071	.00035	-.03067	-.08341	.00220	.08067	-.00335
#3	.00030	.00016	-.00122	-.00419	-.12027	.00471	.16576	.00184
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	12.860	.00056	.03060	.00372	.00167	-.00610	-.00860
Stddev	.00033	.114	.00047	.00278	.00309	.00242	.00720	.00231
%RSD	68.677	.88636	84.171	9.0836	83.096	145.58	118.12	26.807
#1	.00085	12.729	.00085	.03311	.00720	.00039	-.01435	-.00824
#2	.00020	12.918	.00082	.03107	.00133	.00015	-.00106	-.01107
#3	.00040	12.934	.00002	.02761	.00261	.00446	-.00289	-.00650
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090703 Acquired: 6/29/2016 0:26:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 500 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00163	.00150	-.00142	-.00028	.00054	-.00031
Stddev	.00154	.00020	.00473	.00186	.00089	.00012	.00014
%RSD	833.10	12.147	314.69	131.50	317.50	23.204	44.658
#1	-.00148	.00177	.00555	.00056	-.00022	.00040	-.00038
#2	.00049	.00140	.00264	-.00313	-.00119	.00057	-.00015
#3	.00155	.00171	-.00369	-.00168	.00058	.00064	-.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8961.9	53770.	2483.7
Stddev	24.6	200.	12.6
%RSD	.27397	.37198	.50552
#1	8948.0	53948.	2494.1
#2	8947.6	53810.	2487.2
#3	8990.3	53554.	2469.8

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 0:30:45 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.38698	9.7002	.38881	.48586	.97844	.04760	9.6997	.04862
Stddev	.00201	.0203	.00157	.00014	.00815	.00008	.1085	.00031
%RSD	.51885	.20953	.40456	.02940	.83333	.17484	1.1184	.62844
#1	.38537	9.7101	.38875	.48602	.97139	.04767	9.5885	.04859
#2	.38923	9.7137	.39041	.48575	.97656	.04751	9.7056	.04893
#3	.38635	9.6768	.38727	.48580	.98737	.04761	9.8052	.04833
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19474	.48277	.49043	3.8560	48.915	.99456	9.7949	.48405
Stddev	.00051	.00254	.00033	.0609	.335	.00767	.1720	.00787
%RSD	.26333	.52661	.06686	1.5789	.68546	.77131	1.7563	1.6253
#1	.19457	.48338	.49081	3.8528	48.576	.99076	9.7412	.47822
#2	.19531	.48496	.49029	3.7967	48.921	.98953	9.9874	.49300
#3	.19433	.47998	.49020	3.9184	49.247	1.0034	9.6561	.48095
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98170	49.583	.48813	9.7294	.48732	1.1783	.39418	4.8785
Stddev	.00158	.461	.00119	.0077	.00141	.0038	.00511	.0212
%RSD	.16102	.92944	.24398	.07901	.28900	.32524	1.2962	.43401
#1	.98309	49.171	.48947	9.7258	.48621	1.1793	.39983	4.8671
#2	.98204	49.497	.48720	9.7383	.48891	1.1815	.38987	4.9030
#3	.97998	50.081	.48770	9.7242	.48685	1.1740	.39285	4.8655
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 0:30:45 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.97834	.97494	.95108	.49247	.96191	.98339	1.0034
Stddev	.00099	.00909	.00833	.00178	.00224	.00090	.0089
%RSD	.10136	.93258	.87586	.36227	.23243	.09113	.88886
#1	.97841	.96663	.94449	.49042	.96271	.98417	1.0004
#2	.97929	.97353	.96044	.49368	.96363	.98360	.99636
#3	.97731	.98465	.94830	.49330	.95938	.98241	1.0134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9122.8	54587.	2572.6
Stddev	38.4	60.	22.7
%RSD	.42057	.10952	.88400
#1	9080.2	54522.	2582.2
#2	9154.5	54598.	2589.0
#3	9133.9	54640.	2546.6

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 0:34:23 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00122**	**.00466**	**-.00017**	**.00093**	**.00303**	**.00003**	**-.00913**	**.00007**
Stddev	.00162	.00478	.00123	.00265	.00146	.00003	.02230	.00003
%RSD	132.99	102.72	706.52	285.61	48.176	128.86	244.19	39.474
#1	-.00245	.00930	-.00082	.00154	.00139	-.00001	-.02871	.00006
#2	.00062	-.00026	-.00095	.00321	.00352	.00005	-.01382	.00010
#3	-.00182	.00494	.00125	-.00197	.00419	.00004	.01514	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**.00032**	**.00081**	**.00903**	**.11096**	**.00079**	**.11616**	**-.00064**
Stddev	.00021	.00106	.00150	.00328	.08553	.00255	.04775	.00185
%RSD	92.337	329.80	184.91	36.276	77.077	324.20	41.108	287.40
#1	-.00031	.00116	.00012	.01041	.15087	-.00162	.12367	.00002
#2	.00001	-.00087	.00253	.01139	.16925	.00345	.06510	.00078
#3	-.00037	.00068	-.00022	.00529	.01278	.00053	.15972	-.00273
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00000**	**.03737**	**.00066**	**.00144**	**-.00082**	**.00340**	**-.00182**	**.00536**
Stddev	.00029	.03843	.00053	.00265	.00132	.00154	.00313	.00166
%RSD	18406.	102.83	80.134	184.71	160.11	45.408	172.27	31.019
#1	-.00023	-.00602	.00051	.00428	-.00109	.00444	-.00083	.00643
#2	-.00008	.05101	.00125	-.00097	.00061	.00162	-.00533	.00344
#3	.00032	.06712	.00022	.00100	-.00199	.00412	.00070	.00619
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 0:34:23 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.00006	-.00104	-.00128	-.00041	-.00019	-.00004
Stddev	.00023	.00034	.00413	.00294	.00104	.00017	.00025
%RSD	118.21	534.50	395.70	230.77	254.74	88.279	579.67
#1	-.00003	.00003	-.00572	-.00154	-.00150	-.00037	.00025
#2	.00043	-.00026	.00210	-.00408	.00058	-.00004	-.00020
#3	.00019	.00042	.00049	.00179	-.00032	-.00016	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9272.3	55978.	2591.0
Stddev	17.3	111.	14.1
%RSD	.18630	.19762	.54251
#1	9287.0	55853.	2604.2
#2	9276.7	56064.	2576.2
#3	9253.3	56018.	2592.6

Approved: June 29, 2016

Sample Name: ICSA Acquired: 6/29/2016 0:38:19 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00047**	**262.47**	**-.00206**	**-.02130**	**.00281**	**-.00000**	**250.14**
Stddev	.00247	1.07	.00184	.00233	.00097	.00005	2.94
%RSD	520.49	.40938	89.302	10.960	34.651	8633.1	1.1761
#1	-.00151	263.71	-.00344	-.02376	.00260	-.00002	251.91
#2	-.00030	261.77	-.00276	-.02102	.00386	-.00004	251.76
#3	.00324	261.93	.00003	-.01911	.00195	.00005	246.74
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00029**	**-.00148**	**-.00209**	F **.00553**	**97.120**	**.04934**	**.01710**
Stddev	.00029	.00036	.00124	.00159	1.989	.10530	.00684
%RSD	102.43	24.677	59.423	28.729	2.0482	213.42	39.969
#1	-.00058	-.00111	-.00306	.00402	99.151	-.05089	.02085
#2	.00000	-.00184	-.00069	.00538	97.032	.03984	.00921
#3	-.00028	-.00147	-.00253	.00719	95.176	.15907	.02125
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				.00400			
Low Limit				-.00400			

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**246.62**	**-.00237**	**-.00057**	**.08363**	**.00230**	**.02090**	**.00151**
Stddev	4.84	.00083	.00044	.01520	.00099	.00801	.00124
%RSD	1.9620	34.848	77.462	18.179	42.768	38.309	82.153
#1	250.97	-.00179	-.00098	.08232	.00251	.02109	.00293
#2	247.47	-.00201	-.00011	.06913	.00317	.02881	.00068
#3	241.41	-.00332	-.00061	.09945	.00123	.01280	.00091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: ICSA Acquired: 6/29/2016 0:38:19 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	-.00153	.00160	.00135	.00065	.01387	-.00370
Stddev	.00668	.00418	.00084	.00065	.00032	.01328	.00337
%RSD	5905.2	273.58	52.462	48.380	49.235	95.708	91.188
#1	-.00013	-.00376	.00212	.00090	.00048	.02812	.00019
#2	-.00679	.00330	.00063	.00209	.00102	.01165	-.00584
#3	.00658	-.00412	.00205	.00104	.00045	.00184	-.00544
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00278	-.00222	-.00352
Stddev	.00102	.00014	.00042
%RSD	36.742	6.2944	12.022
#1	-.00380	-.00209	-.00303
#2	-.00176	-.00220	-.00370
#3	-.00277	-.00237	-.00382
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8680.3	52289.	2546.4
Stddev	44.3	276.	34.7
%RSD	.51002	.52714	1.3639
#1	8712.8	51991.	2529.8
#2	8698.3	52534.	2523.1
#3	8629.9	52343.	2586.3

Approved: June 29, 2016

Sample Name: ICSAB Acquired: 6/29/2016 0:42:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50445	258.44	.25287	-.02137	.25789	.23434	248.80	.48765
Stddev	.00262	.64	.00200	.00127	.00279	.00053	1.58	.00305
%RSD	.51933	.24817	.79007	5.9512	1.0819	.22550	.63387	.62636
#1	.50738	258.98	.25156	-.02092	.26103	.23410	250.34	.49004
#2	.50363	257.73	.25188	-.02281	.25570	.23397	248.87	.48870
#3	.50233	258.62	.25517	-.02038	.25694	.23494	247.19	.48420
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.23586	.24441	.24607	95.941	5.0748	.01284	244.06	.24468
Stddev	.00239	.00022	.00330	.799	.2552	.00183	1.38	.00514
%RSD	1.0145	.09063	1.3420	.83270	5.0291	14.276	.56411	2.1022
#1	.23719	.24416	.24760	96.679	5.2910	.01485	245.62	.25020
#2	.23730	.24453	.24833	96.052	5.1401	.01124	243.56	.24384
#3	.23310	.24455	.24228	95.093	4.7933	.01244	243.01	.24001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00082	5.5086	.47332	.08682	.49116	.50117	.24881	-.01883
Stddev	.00020	.0636	.00452	.00312	.00773	.00981	.00506	.00303
%RSD	24.735	1.1550	.95592	3.5983	1.5729	1.9568	2.0355	16.104
#1	-.00060	5.5795	.47560	.08552	.49675	.50459	.25092	-.01667
#2	-.00101	5.4897	.47625	.09038	.49439	.50881	.24304	-.01753
#3	-.00086	5.4566	.46811	.08455	.48235	.49011	.25248	-.02230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: ICSAB Acquired: 6/29/2016 0:42:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**.00046**	**.01528**	**.45471**	**.24352**	**.47724**	**-.00365**
Stddev	.00022	.00062	.01129	.00542	.00062	.00539	.00054
%RSD	53.078	134.10	73.872	1.1924	.25306	1.1297	14.769
#1	.00016	.00017	.02136	.45909	.24299	.47979	-.00426
#2	.00054	.00004	.00226	.44865	.24337	.48089	-.00344
#3	.00057	.00118	.02221	.45639	.24420	.47105	-.00324
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8595.4**	**51463.**	**2494.4**
Stddev	12.5	154.	16.1
%RSD	.14588	.29931	.64420
#1	8581.0	51365.	2476.0
#2	8601.3	51640.	2501.3
#3	8603.9	51383.	2505.9

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 0:45:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.37249	9.3850	.37153	.46617	.94206	.04580	9.3425	.04736
Stddev	.00135	.0062	.00236	.00421	.00815	.00009	.1257	.00021
%RSD	.36335	.06605	.63425	.90259	.86541	.20303	1.3456	.44636
#1	.37201	9.3922	.37250	.46400	.93313	.04575	9.2021	.04760
#2	.37402	9.3815	.37325	.46348	.94911	.04591	9.4445	.04730
#3	.37145	9.3814	.36885	.47102	.94393	.04575	9.3811	.04719
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.18881	.46476	.47375	3.7404	47.124	.95096	9.4232	.47238
Stddev	.00059	.00211	.00197	.0379	.346	.01412	.1940	.00206
%RSD	.31469	.45346	.41514	1.0141	.73325	1.4848	2.0589	.43640
#1	.18948	.46353	.47602	3.7313	46.726	.93751	9.5290	.47025
#2	.18859	.46356	.47266	3.7821	47.295	.96567	9.5413	.47436
#3	.18835	.46719	.47256	3.7079	47.350	.94969	9.1993	.47253
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.95052	47.859	.47282	9.4102	.47603	1.1343	.38138	4.6607
Stddev	.00385	.439	.00178	.0522	.00235	.0072	.00804	.0170
%RSD	.40470	.91770	.37626	.55421	.49431	.63621	2.1084	.36583
#1	.95410	47.399	.47476	9.4689	.47851	1.1426	.37301	4.6779
#2	.95101	48.274	.47244	9.3923	.47383	1.1311	.38207	4.6604
#3	.94645	47.904	.47126	9.3694	.47575	1.1293	.38905	4.6438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 0:45:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.95197**	**.93702**	**.92263**	**.47643**	**.92448**	**.95160**	**.97507**
Stddev	.00473	.00838	.01693	.00143	.00063	.00382	.00104
%RSD	.49684	.89484	1.8346	.30081	.06802	.40092	.10630
#1	.95683	.92974	.90667	.47650	.92520	.95592	.97461
#2	.95171	.94619	.94038	.47783	.92404	.95023	.97626
#3	.94738	.93514	.92083	.47497	.92419	.94867	.97435
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9087.0**	**54614.**	**2550.6**
Stddev	3.8	262.	13.9
%RSD	.04182	.47951	.54585
#1	9083.1	54480.	2543.1
#2	9087.3	54445.	2542.0
#3	9090.7	54915.	2566.6

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 0:49:29 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00068**	**.00400**	**.00139**	**.00122**	**.00267**	**.00003**	**.05025**	**.00011**
Stddev	.00251	.01163	.00213	.00125	.00165	.00007	.07513	.00012
%RSD	366.27	290.42	152.53	102.57	61.778	205.07	149.51	109.92
#1	-.00158	.01718	.00371	.00209	.00087	-.00002	.05175	.00020
#2	.00215	-.00482	-.00047	.00177	.00412	.00002	-.02562	.00016
#3	-.00262	-.00035	.00094	-.00021	.00303	.00011	.12463	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**.00016**	**-.00070**	**-.01893**	**.07755**	**.00375**	**.03834**	**-.00121**
Stddev	.00013	.00056	.00119	.00831	.13350	.00081	.08590	.00146
%RSD	171.58	345.66	170.55	43.884	172.14	21.694	224.04	120.18
#1	-.00006	.00072	-.00188	-.00946	.20051	.00374	-.05322	.00040
#2	-.00022	-.00040	.00049	-.02497	.09658	.00457	.05108	-.00244
#3	.00005	.00017	-.00070	-.02237	-.06444	.00295	.11717	-.00160
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	**.01371**	**-.00046**	**-.00067**	**-.00131**	**.00551**	**-.00590**	**.00629**
Stddev	.00042	.03708	.00226	.00533	.00161	.00520	.00597	.00022
%RSD	217.83	270.34	492.60	796.20	122.75	94.376	101.19	3.4434
#1	.00027	-.00597	.00177	-.00182	-.00130	.00352	-.00607	.00632
#2	-.00054	.05648	-.00040	.00514	.00029	.00160	-.01178	.00649
#3	-.00030	-.00937	-.00275	-.00532	-.00293	.01141	.00016	.00606
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 0:49:29 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.00044	-.00315	-.00473	-.00034	.00003	.00018
Stddev	.00061	.00016	.00698	.00077	.00104	.00016	.00023
%RSD	455.77	35.798	221.58	16.356	310.41	589.77	124.55
#1	.00084	.00062	.00235	-.00465	.00045	.00020	.00037
#2	-.00027	.00040	-.00079	-.00401	.00006	-.00010	.00024
#3	-.00017	.00031	-.01101	-.00555	-.00152	-.00003	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9180.5	55417.	2549.1
Stddev	25.8	125.	21.9
%RSD	.28083	.22601	.86043
#1	9183.5	55274.	2554.0
#2	9204.7	55507.	2568.1
#3	9153.4	55471.	2525.1

Approved: June 29, 2016

Sample Name: LLCCV Acquired: 6/29/2016 0:53:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00728	.16725	.00378	.07726	.01180	.00143	.35906	.00066
Stddev	.00137	.00666	.00178	.00289	.00157	.00004	.05069	.00023
%RSD	18.848	3.9821	47.186	3.7351	13.268	2.6821	14.119	34.256
#1	.00828	.16623	.00413	.07569	.01240	.00145	.41129	.00054
#2	.00785	.17436	.00184	.07549	.01298	.00145	.35585	.00053
#3	.00572	.16116	.00536	.08059	.01002	.00138	.31005	.00093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00379	.00358	.00417	.08592	.63449	.08105	.42078	.00714
Stddev	.00037	.00061	.00084	.02959	.14149	.00217	.08217	.00569
%RSD	9.7874	16.945	20.280	34.437	22.301	2.6718	19.528	79.640
#1	.00409	.00347	.00508	.11985	.68708	.08034	.51284	.01145
#2	.00391	.00304	.00341	.07236	.74215	.08348	.39465	.00070
#3	.00338	.00424	.00401	.06554	.47423	.07932	.35486	.00927
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00745	.45225	.01495	.74739	.00741	.08220	.01330	.78982
Stddev	.00026	.01750	.00093	.01357	.00202	.00457	.00369	.00349
%RSD	3.4239	3.8702	6.2130	1.8157	27.283	5.5591	27.773	.44225
#1	.00762	.47114	.01588	.76086	.00541	.07740	.01396	.79161
#2	.00716	.43658	.01402	.74758	.00945	.08272	.01662	.79206
#3	.00758	.44903	.01495	.73372	.00736	.08649	.00932	.78580
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LLCCV Acquired: 6/29/2016 0:53:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v984) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38988**	**.03952**	**.02710**	**.14360**	**.00710**	**.01660**	**.04091**
Stddev	.00438	.00037	.00041	.00006	.00032	.00023	.00032
%RSD	1.1233	.93136	1.5058	.04290	4.5228	1.3963	.77546
#1	.39331	.03950	.02704	.14359	.00677	.01680	.04127
#2	.39139	.03989	.02754	.14367	.00741	.01665	.04070
#3	.38495	.03916	.02673	.14354	.00712	.01634	.04075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9192.1**	**55588.**	**2554.1**
Stddev	31.9	43.	25.7
%RSD	.34691	.07750	1.0055
#1	9168.6	55539.	2529.3
#2	9179.3	55615.	2552.4
#3	9228.4	55612.	2580.5

Approved: June 29, 2016

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000196	0.047990	0.000000	1.000000
Al 308.215 {109}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	0.000901	0.007651	0.000000	1.000000
As 189.042 {478}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000059	0.022693	0.000000	1.000000
B 249.678 {135}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	0.000011	0.021306	0.000000	1.000000
Ba 455.403 { 74}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	0.025239	2.033102	0.000000	1.000000
Be 313.107 {108}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	0.000137	0.920722	0.000000	1.000000
Ca 422.673 { 80}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000203	0.043704	0.000000	1.000000
Cd 228.802 {447}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000064	0.534006	0.000000	1.000000
Co 228.616 {447}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000100	0.338487	0.000000	1.000000
Cr 267.716 {126}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	0.000351	0.055455	0.000000	1.000000
Cu 224.700 {450}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000309	0.117342	0.000000	1.000000
Fe 261.187 {129}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000420	0.020311	0.000000	1.000000
K 766.490 { 44}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.012203	0.064990	0.000000	1.000000
Li 670.784 { 50}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.010371	1.550017	0.000000	1.000000
Mg 279.079 {121}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000313	0.008074	0.000000	1.000000
Mn 257.610 {131}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	0.000062	0.258342	0.000000	1.000000
Mo 202.030 {467}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000039	0.171526	0.000000	1.000000
Na 589.592 { 57}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.057864	0.176430	0.000000	1.000000
Ni 231.604 {446}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000833	0.127737	0.000000	1.000000
P 214.914 {457}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000207	0.012452	0.000000	1.000000
Pb 220.353 {453}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000812	0.059494	0.000000	1.000000
Sb 206.833 {463}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	0.000048	0.028410	0.000000	1.000000
Se 196.090 {472}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000299	0.014866	0.000000	1.000000
Si 212.412 {459}	6/29/2016 10:10:58	6/29/2016 10:10:58	Linear	1/Conc	0.001678	0.037859	0.000000	1.000000
Sn 189.989 {477}	6/29/2016 10:10:58	6/29/2016 10:10:58	Linear	1/Conc	0.000047	0.065871	0.000000	1.000000
Sr 407.771 { 83}	6/29/2016 10:10:58	6/29/2016 10:10:58	Linear	1/Conc	0.003016	3.365181	0.000000	1.000000
Ti 337.280 {100}	6/29/2016 10:10:58	6/29/2016 10:10:58	Linear	1/Conc	-0.003144	0.113188	0.000000	1.000000
Tl 190.856 {477}	6/29/2016 10:10:58	6/29/2016 10:10:58	Linear	1/Conc	-0.000461	0.027273	0.000000	1.000000
V 292.402 {115}	6/29/2016 10:10:58	6/29/2016 10:10:58	Linear	1/Conc	-0.000106	0.064790	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	6/29/2016 10:10:58	6/29/2016 10:10:58	Linear	1/Conc	0.000213	0.399755	0.000000	1.000000
Zr 339.198 { 99}	6/29/2016 10:10:58	6/29/2016 10:10:58	Linear	1/Conc	-0.018311	3.321003	0.000000	1.000000

Approved: June 29, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999904	0.000002	0.002705	0.009018	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999990	0.000002	0.011613	0.038710	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999844	0.000002	0.003811	0.012703	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999248	0.000004	0.003627	0.012092	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999993	0.000049	0.001401	0.004669	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999899	0.000004	0.000119	0.000398	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.998775	0.000137	0.053968	0.179895	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999581	0.000005	0.000328	0.001095	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999972	0.000003	0.000498	0.001659	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999958	0.000002	0.001490	0.004968	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999726	0.000009	0.001692	0.005639	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999702	0.000013	0.036905	0.123018	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999964	0.000176	0.118817	0.396058	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999889	0.000227	0.004949	0.016497	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999747	0.000018	0.104463	0.348210	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999861	0.000014	0.003389	0.011296	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999994	0.000004	0.000521	0.001736	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999966	0.000465	0.040386	0.134618	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999894	0.000006	0.001398	0.004661	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999991	0.000003	0.008925	0.029749	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.998411	0.000011	0.004359	0.014529	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999872	0.000003	0.005409	0.018030	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999294	0.000002	0.008435	0.028117	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999891	0.000018	0.002773	0.009244	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999973	0.000003	0.001075	0.003584	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999996	0.000063	0.000581	0.001938	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999125	0.000030	0.009303	0.031011	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999951	0.000001	0.003749	0.012498	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999987	0.000002	0.001236	0.004120	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999996	0.000007	0.000241	0.000803	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.999991	0.000089	0.000706	0.002352	OK.	1.000000	0.000000	1	0

Approved: June 29, 2016

Sample Name: S0 Acquired: 6/29/2016 9:52:02 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00020**	**.00090**	**-.00006**	**.00001**	**.02524**	**.00014**	**-.00021**
Stddev	.00004	.00001	.00006	.00003	.00310	.00002	.00346
%RSD	22.411	.98399	104.57	240.96	12.265	12.424	1673.7
#1	-.00015	.00091	-.00011	.00003	.02283	.00015	.00154
#2	-.00020	.00091	-.00007	.00002	.02415	.00012	-.00419
#3	-.00024	.00089	.00001	-.00002	.02873	.00014	.00203

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00006**	**-.00010**	**.00035**	**-.00031**	**-.00042**	**-.01221**	**-.01037**
Stddev	.00014	.00018	.00006	.00025	.00031	.00332	.00949
%RSD	221.14	179.29	16.915	81.782	72.829	27.169	91.545
#1	.00008	-.00028	.00039	-.00014	-.00014	-.01249	-.00990
#2	-.00020	-.00009	.00038	-.00060	-.00038	-.01537	-.02008
#3	-.00007	.00007	.00028	-.00019	-.00074	-.00876	-.00112

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00031**	**.00006**	**-.00004**	**-.05787**	**-.00083**	**-.00021**	**-.00081**
Stddev	.00048	.00065	.00007	.00436	.00011	.00003	.00011
%RSD	153.72	1050.1	186.66	7.5353	12.837	16.794	13.738
#1	.00023	.00081	.00004	-.06291	-.00075	-.00022	-.00087
#2	-.00047	-.00032	-.00006	-.05532	-.00080	-.00023	-.00089
#3	-.00069	-.00031	-.00010	-.05539	-.00095	-.00017	-.00068

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00005**	**-.00030**	**.00168**	**.00005**	**.00302**	**-.00314**	**-.00046**
Stddev	.00012	.00011	.00005	.00005	.00223	.00113	.00011
%RSD	247.95	37.856	3.1434	111.20	73.864	36.032	23.262
#1	-.00008	-.00022	.00167	.00006	.00519	-.00401	-.00048
#2	.00016	-.00025	.00173	.00009	.00074	-.00186	-.00056
#3	.00007	-.00043	.00163	-.00001	.00311	-.00356	-.00034

Approved: June 29, 2016

Sample Name: S0 Acquired: 6/29/2016 9:52:02 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**-.00011**	**.00021**	**-.01831**
Stddev	.00008	.00009	.00440
%RSD	72.585	40.463	24.022
#1	-.00012	.00024	-.01431
#2	-.00002	.00012	-.01760
#3	-.00018	.00028	-.02302
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9115.5**	**54884.**	**2480.1**
Stddev	24.2	210.	22.3
%RSD	.26510	.38244	.90045
#1	9143.2	55110.	2454.9
#2	9099.0	54695.	2497.5
#3	9104.3	54847.	2488.0

Approved: June 29, 2016

Sample Name: S1 Acquired: 6/29/2016 9:55:58 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00003	.00149	.04238	.00061	.00581	.00027	.00038
Stddev	.00014	.00004	.00174	.00001	.00174	.00016	.00008
%RSD	493.35	2.7596	4.1174	2.1805	29.926	60.533	21.804
#1	-.00006	.00145	.04420	.00060	.00395	.00044	.00048
#2	.00012	.00150	.04221	.00062	.00611	.00027	.00032
#3	-.00015	.00154	.04073	.00062	.00739	.00011	.00035

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00054	.00038	-.00008	.01707	.00101	.00131	.01790
Stddev	.00006	.00006	.00059	.00268	.00063	.00008	.00342
%RSD	10.750	15.855	770.56	15.692	61.961	6.4456	19.090
#1	.00058	.00044	.00001	.01723	.00042	.00131	.02178
#2	.00048	.00033	-.00071	.01966	.00096	.00140	.01661
#3	.00057	.00035	.00047	.01431	.00167	.00123	.01532

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00043	.00074	-.00031	.00040	.00286	.00052	.02991
Stddev	.00015	.00014	.00022	.00001	.00006	.00003	.00266
%RSD	34.679	18.970	71.060	2.7952	2.0014	6.7309	8.8928
#1	-.00037	.00078	-.00038	.00039	.00280	.00056	.02685
#2	-.00033	.00086	-.00049	.00040	.00291	.00050	.03167
#3	-.00061	.00059	-.00006	.00041	.00287	.00050	.03120

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00153	.00043	.00328	.00747
Stddev	.00060	.00005	.00017	.00219
%RSD	39.113	10.913	5.1911	29.317
#1	-.00220	.00047	.00332	.00993
#2	-.00136	.00043	.00342	.00678
#3	-.00104	.00038	.00309	.00571

Approved: June 29, 2016

Sample Name: S1 Acquired: 6/29/2016 9:55:58 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9108.0**	**54989.**	**2477.7**
Stddev	25.7	207.	10.2
%RSD	.28175	.37676	.41037
#1	9129.4	55084.	2488.2
#2	9079.6	54752.	2467.9
#3	9115.0	55132.	2477.2

Approved: June 29, 2016

Sample Name: S2 Acquired: 6/29/2016 9:59:53 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00016	.00216	.00012	.00027	.05721	.00091	.00981
Stddev	.00014	.00005	.00001	.00002	.00061	.00004	.00076
%RSD	87.206	2.3473	6.3239	6.2998	1.0584	4.4038	7.7890
#1	.00026	.00210	.00012	.00029	.05687	.00087	.01007
#2	.00000	.00220	.00012	.00026	.05686	.00092	.01041
#3	.00021	.00218	.00011	.00026	.05791	.00095	.00895

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00042	.00093	.00077	.00069	.00085	.03865	.00938
Stddev	.00028	.00003	.00003	.00001	.00045	.00490	.00149
%RSD	66.365	3.0403	3.7171	1.8776	53.045	12.668	15.907
#1	.00059	.00096	.00074	.00069	.00137	.03348	.00933
#2	.00059	.00091	.00077	.00070	.00064	.04321	.01090
#3	.00010	.00092	.00080	.00067	.00054	.03926	.00792

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00058	.00168	.00261	.09115	.00006	.00175	-.00031
Stddev	.00098	.00052	.00014	.00432	.00032	.00013	.00028
%RSD	167.86	31.183	5.3329	4.7388	537.39	7.2792	90.400
#1	.00132	.00108	.00264	.08842	-.00027	.00190	.00000
#2	.00095	.00192	.00273	.09613	.00008	.00165	-.00039
#3	-.00052	.00204	.00246	.08890	.00036	.00170	-.00053

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00056	-.00025	.00443	.00103	.05569	-.00158	-.00025
Stddev	.00015	.00008	.00005	.00004	.00034	.00116	.00005
%RSD	27.350	31.837	1.1615	4.3714	.60840	73.502	21.152
#1	.00073	-.00018	.00438	.00107	.05552	-.00032	-.00020
#2	.00053	-.00034	.00448	.00102	.05547	-.00180	-.00030
#3	.00042	-.00024	.00443	.00099	.05608	-.00261	-.00024

Approved: June 29, 2016

Sample Name: S2 Acquired: 6/29/2016 9:59:53 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00098	.00643	.03194
Stddev	.00008	.00014	.00127
%RSD	8.1381	2.0985	3.9732
#1	.00089	.00650	.03225
#2	.00102	.00652	.03054
#3	.00104	.00628	.03302
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9104.6	54986.	2500.4
Stddev	11.8	96.	11.1
%RSD	.13007	.17414	.44486
#1	9116.7	54945.	2501.3
#2	9093.1	55096.	2488.9
#3	9103.9	54918.	2511.1

Approved: June 29, 2016

Sample Name: S3 Acquired: 6/29/2016 10:03:48 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.01869	.07766	.00885	.01052	2.0517	.04687	.42972	.02883
Stddev	.00010	.00016	.00008	.00004	.0032	.00034	.00080	.00010
%RSD	.55151	.20479	.90829	.38019	.15653	.72788	.18609	.33451
#1	.01881	.07784	.00891	.01051	2.0489	.04676	.43025	.02887
#2	.01863	.07754	.00876	.01048	2.0510	.04660	.42880	.02890
#3	.01863	.07761	.00888	.01056	2.0552	.04725	.43010	.02872

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.06718	.02796	.05899	.08098	3.2121	1.5387	.08004	.12886
Stddev	.00017	.00020	.00014	.00085	.0066	.0107	.00043	.00031
%RSD	.25123	.72026	.24482	1.0474	.20656	.69238	.54007	.24346
#1	.06716	.02788	.05915	.08049	3.2116	1.5363	.07955	.12919
#2	.06703	.02782	.05893	.08195	3.2056	1.5293	.08018	.12857
#3	.06736	.02819	.05888	.08048	3.2189	1.5503	.08038	.12881

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.17205	8.6822	.06315	.12174	.02914	.03341	.00565	.19356
Stddev	.00031	.0256	.00007	.00018	.00011	.00021	.00007	.00013
%RSD	.18051	.29494	.10895	.14761	.36256	.62587	1.1963	.06718
#1	.17198	8.6568	.06317	.12178	.02917	.03341	.00571	.19347
#2	.17178	8.6819	.06321	.12154	.02922	.03320	.00558	.19350
#3	.17239	8.7080	.06307	.12189	.02902	.03362	.00566	.19371

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.06591	3.3569	.10885	.01218	.06423	.39984	3.3046
Stddev	.00009	.0081	.00139	.00005	.00041	.00013	.0223
%RSD	.13520	.24258	1.2796	.40879	.63272	.03282	.67478
#1	.06594	3.3482	.10985	.01212	.06402	.39998	3.2853
#2	.06581	3.3581	.10726	.01221	.06397	.39981	3.2995
#3	.06598	3.3643	.10945	.01220	.06470	.39972	3.3290

Approved: June 29, 2016

Sample Name: S3 Acquired: 6/29/2016 10:03:48 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8936.5**	**53607.**	**2459.5**
Stddev	17.8	172.	16.5
%RSD	.19869	.32046	.67053
#1	8948.3	53558.	2468.9
#2	8916.1	53798.	2469.2
#3	8945.2	53465.	2440.5

Approved: June 29, 2016

Sample Name: S4 Acquired: 6/29/2016 10:07:26 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.03809	.15568	.01806	.02127	4.0977	.09410	.87546	.05845
Stddev	.00006	.00018	.00005	.00005	.0047	.00010	.00176	.00012
%RSD	.15008	.11845	.28737	.24709	.11559	.10855	.20067	.20874
#1	.03804	.15555	.01806	.02127	4.0931	.09422	.87715	.05832
#2	.03808	.15589	.01812	.02132	4.0975	.09404	.87365	.05856
#3	.03815	.15560	.01802	.02122	4.1026	.09405	.87559	.05848

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13549	.05605	.11769	.16222	6.5100	3.0957	.16128	.25943
Stddev	.00014	.00010	.00021	.00068	.0186	.0116	.00066	.00120
%RSD	.10476	.18095	.18082	.41633	.28563	.37530	.40965	.46423
#1	.13535	.05603	.11756	.16145	6.4930	3.0828	.16069	.25809
#2	.13564	.05616	.11759	.16267	6.5070	3.0989	.16199	.25977
#3	.13547	.05595	.11794	.16256	6.5298	3.1054	.16114	.26043

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.34251	17.654	.12703	.24567	.05867	.06706	.01164	.38042
Stddev	.00035	.052	.00035	.00016	.00046	.00002	.00006	.00039
%RSD	.10335	.29675	.27610	.06413	.78699	.02879	.52045	.10268
#1	.34211	17.621	.12664	.24575	.05814	.06708	.01160	.38040
#2	.34262	17.626	.12712	.24549	.05886	.06704	.01160	.38083
#3	.34279	17.714	.12732	.24578	.05900	.06708	.01171	.38004

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13155	6.7464	.22309	.02436	.12935	.79951	6.6243
Stddev	.00008	.0203	.00179	.00008	.00009	.00117	.0174
%RSD	.06203	.30098	.80453	.32304	.06859	.14600	.26196
#1	.13147	6.7274	.22250	.02431	.12945	.79836	6.6092
#2	.13163	6.7440	.22165	.02433	.12931	.79947	6.6432
#3	.13155	6.7678	.22510	.02445	.12929	.80069	6.6204

Approved: June 29, 2016

Sample Name: S4 Acquired: 6/29/2016 10:07:26 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8921.2**	**53238.**	**2473.0**
Stddev	18.3	108.	7.0
%RSD	.20479	.20318	.28323
#1	8919.4	53202.	2476.9
#2	8903.9	53152.	2464.9
#3	8940.3	53359.	2477.3

Approved: June 29, 2016

Sample Name: ICV Acquired: 6/29/2016 10:11:02 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40442	10.286	.41098	.50592	1.0366	.05070	10.092
Stddev	.00330	.017	.00346	.00271	.0026	.00003	.054
%RSD	.81540	.16712	.84291	.53476	.24579	.06427	.53421
#1	.40613	10.305	.41012	.50573	1.0391	.05071	10.144
#2	.40062	10.279	.41479	.50331	1.0340	.05067	10.037
#3	.40651	10.273	.40802	.50871	1.0367	.05073	10.095
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05076	.20318	.50598	.50845	4.0917	51.004	1.0197
Stddev	.00051	.00054	.00159	.00095	.0399	.219	.0093
%RSD	1.0116	.26720	.31500	.18732	.97540	.42916	.91103
#1	.05134	.20361	.50423	.50846	4.0711	51.243	1.0299
#2	.05035	.20336	.50734	.50940	4.0664	50.814	1.0175
#3	.05060	.20257	.50638	.50749	4.1377	50.954	1.0117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.296	.51552	.96471	50.940	.50720	9.6966	.51063
Stddev	.141	.00366	.00146	.130	.00148	.0073	.00218
%RSD	1.3690	.71030	.15108	.25486	.29239	.07577	.42637
#1	10.212	.51660	.96636	51.086	.50872	9.6973	.50842
#2	10.216	.51144	.96419	50.892	.50575	9.7036	.51071
#3	10.458	.51852	.96359	50.840	.50712	9.6890	.51277
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 29, 2016

Sample Name: ICV Acquired: 6/29/2016 10:11:02 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2312**	**.40824**	F **4.7353**	**1.0396**	**1.0085**	**1.0166**	**.51532**
Stddev	.0046	.00693	.0040	.0016	.0042	.0078	.00390
%RSD	.37161	1.6986	.08505	.15478	.41422	.76488	.75613
#1	1.2294	.40991	4.7343	1.0415	1.0119	1.0250	.51933
#2	1.2364	.41418	4.7320	1.0387	1.0098	1.0096	.51509
#3	1.2278	.40062	4.7398	1.0387	1.0038	1.0153	.51155
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value			5.0000				
Range			-5.0000%				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0066**	**1.0167**	**1.0346**
Stddev	.0019	.0012	.0034
%RSD	.19382	.12004	.33211
#1	1.0066	1.0180	1.0376
#2	1.0085	1.0156	1.0352
#3	1.0046	1.0166	1.0308
Check ?	Chk Pass	Chk Pass	Chk Pass
Value			
Range			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9016.8**	**54198.**	**2484.7**
Stddev	34.4	67.	10.4
%RSD	.38098	.12315	.41934
#1	8978.8	54206.	2472.8
#2	9045.6	54260.	2489.2
#3	9026.1	54128.	2492.2

Approved: June 29, 2016

Sample Name: ICB Acquired: 6/29/2016 10:14:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00201	.01836	-.00141	.00781	.00152	-.00001	.08366
Stddev	.00082	.00200	.00208	.00229	.00035	.00006	.01618
%RSD	40.698	10.891	147.26	29.310	23.077	485.21	19.340
#1	.00256	.01613	-.00355	.01041	.00168	.00003	.10066
#2	.00240	.02000	-.00131	.00608	.00177	.00002	.08186
#3	.00107	.01894	.00061	.00695	.00112	-.00008	.06845
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	-.00008	-.00032	.00181	-.01955	.27921	.00178
Stddev	.00029	.00013	.00086	.00127	.03923	.09246	.00456
%RSD	372.03	169.87	270.02	70.363	200.64	33.116	256.70
#1	.00039	.00006	-.00040	.00064	-.02314	.17263	-.00171
#2	-.00019	-.00020	-.00113	.00162	.02135	.33788	.00694
#3	.00003	-.00008	.00058	.00317	-.05688	.32713	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.06410	.00147	.00078	.10419	.00112	F .01118	.00327
Stddev	.06961	.00309	.00063	.03713	.00057	.00173	.00107
%RSD	108.59	209.72	81.088	35.632	50.549	15.489	32.666
#1	.00071	.00251	.00146	.09352	.00159	.01283	.00317
#2	-.05535	-.00200	.00068	.14549	.00128	.00938	.00226
#3	-.13768	.00391	.00020	.07357	.00049	.01133	.00439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						.01000	
Low Limit						-.01000	

Approved: June 29, 2016

Sample Name: ICB Acquired: 6/29/2016 10:14:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00086	-.00340	-.01473	.00060	.00124	.00125	.00059
Stddev	.00143	.00785	.00191	.00077	.00074	.00777	.00202
%RSD	166.00	230.78	13.002	128.34	59.622	619.73	344.29
#1	-.00250	-.01070	-.01252	.00136	.00133	.00946	.00101
#2	-.00011	.00490	-.01567	.00061	.00193	.00028	.00236
#3	.00003	-.00441	-.01599	-.00017	.00046	-.00599	-.00161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00253	.00100	.00081
Stddev	.00074	.00035	.00047
%RSD	29.384	34.824	58.912
#1	.00232	.00132	.00069
#2	.00335	.00106	.00040
#3	.00191	.00063	.00133
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9084.4	54980.	2488.4
Stddev	135.8	68.	2.1
%RSD	1.4949	.12377	.08443
#1	8930.5	55059.	2490.1
#2	9135.2	54945.	2489.0
#3	9187.4	54938.	2486.1

Approved: June 29, 2016

Sample Name: LLICV Acquired: 6/29/2016 10:18:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00872	.17063	.00885	.08373	.00860	.00157	.42073	.00073
Stddev	.00123	.00534	.00231	.00067	.00138	.00006	.03113	.00038
%RSD	14.065	3.1304	26.064	.79719	16.041	4.0340	7.3981	51.856
#1	.00819	.17652	.00868	.08307	.00712	.00164	.38707	.00037
#2	.01012	.16609	.00663	.08440	.00885	.00152	.42664	.00113
#3	.00785	.16929	.01123	.08372	.00984	.00155	.44848	.00069
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00391	.00455	.00624	.10276	1.0619	.07782	.31322	.00827
Stddev	.00043	.00092	.00112	.03246	.0112	.00430	.09347	.00037
%RSD	10.917	20.252	17.906	31.585	1.0560	5.5298	29.841	4.5346
#1	.00438	.00353	.00531	.07196	1.0586	.07424	.21886	.00787
#2	.00354	.00533	.00748	.09967	1.0743	.07662	.31502	.00831
#3	.00383	.00480	.00594	.13665	1.0526	.08260	.40577	.00862
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00805	.42286	.01644	.79611	.01299	.08354	.01434	.72436
Stddev	.00028	.00902	.00098	.00141	.00416	.00232	.01207	.00478
%RSD	3.4369	2.1335	5.9790	.17658	32.054	2.7721	84.200	.65952
#1	.00810	.43087	.01534	.79702	.01757	.08599	.00418	.72986
#2	.00776	.42462	.01724	.79449	.01196	.08325	.01115	.72188
#3	.00831	.41309	.01675	.79681	.00943	.08139	.02769	.72132
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LLICV Acquired: 6/29/2016 10:18:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40263**	**.04084**	**.02518**	**.15168**	**.00937**	**.01675**	**.04172**
Stddev	.00091	.00036	.00443	.00197	.00116	.00020	.00069
%RSD	.22645	.89206	17.576	1.3007	12.341	1.2016	1.6651
#1	.40366	.04125	.02007	.15388	.00804	.01687	.04096
#2	.40231	.04055	.02772	.15110	.01016	.01687	.04233
#3	.40192	.04073	.02775	.15006	.00991	.01652	.04187
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9183.9**	**55097.**	**2506.7**
Stddev	28.5	155.	11.4
%RSD	.31037	.28188	.45399
#1	9209.7	55255.	2496.9
#2	9153.3	55090.	2504.1
#3	9188.9	54945.	2519.2

Approved: June 29, 2016

Sample Name: ICSA Acquired: 6/29/2016 10:22:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00084**	**256.78**	**-.00093**	**.01473**	**-.00127**	**-.00007**	**241.44**	**-.00048**
Stddev	.00094	.72	.00227	.00118	.00156	.00011	1.66	.00020
%RSD	111.40	.27959	242.95	8.0158	122.68	145.05	.68673	41.517
#1	-.00043	256.01	-.00202	.01467	-.00302	.00001	241.06	-.00037
#2	-.00191	256.91	.00168	.01595	-.00076	-.00019	243.25	-.00071
#3	-.00018	257.43	-.00246	.01359	-.00003	-.00004	240.00	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00193**	**-.00215**	**-.00098**	**96.233**	**.18223**	**.00799**	**245.73**	**.00118**
Stddev	.00010	.00124	.00101	.819	.15413	.00679	1.81	.00175
%RSD	5.1935	57.417	102.42	.85122	84.579	84.964	.73485	148.16
#1	-.00182	-.00123	-.00147	96.033	.32674	.01197	246.38	.00301
#2	-.00197	-.00168	.00018	97.134	.19995	.01185	247.11	-.00048
#3	-.00201	-.00356	-.00165	95.533	.02001	.00015	243.68	.00101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00086**	**.01054**	**-.00048**	**.04095**	**-.00008**	**-.00728**	**.00425**	**-.01488**
Stddev	.00034	.02123	.00188	.01874	.00416	.00372	.00642	.00348
%RSD	39.777	201.47	393.65	45.749	5111.4	51.146	151.05	23.403
#1	-.00126	.02786	-.00189	.05055	.00446	-.00298	-.00308	-.01456
#2	-.00067	.01688	-.00120	.05295	-.00099	-.00943	.00887	-.01156
#3	-.00065	-.01314	.00166	.01936	-.00371	-.00943	.00697	-.01850
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: ICSA Acquired: 6/29/2016 10:22:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00054**	**.00073**	**.02193**	**-.00014**	**-.00166**	**-.00668**	**.00332**
Stddev	.00061	.00100	.00144	.00351	.00076	.00007	.00048
%RSD	112.55	136.67	6.5637	2422.7	45.900	1.0941	14.413
#1	-.00076	.00033	.02256	-.00301	-.00254	-.00665	.00376
#2	-.00100	-.00001	.02029	-.00120	-.00118	-.00663	.00339
#3	.00015	.00186	.02296	.00377	-.00126	-.00677	.00281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8736.9**	**52049.**	**2498.5**
Stddev	24.9	58.	18.1
%RSD	.28538	.11097	.72548
#1	8711.7	52105.	2503.9
#2	8737.5	52051.	2478.3
#3	8761.6	51990.	2513.3

Approved: June 29, 2016

Sample Name: ICSAB Acquired: 6/29/2016 10:26:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50532	257.64	.24041	.01593	.24782	.25031	243.08	.48094
Stddev	.00171	.66	.00247	.00567	.00099	.00074	.60	.00095
%RSD	.33818	.25546	1.0272	35.576	.40061	.29554	.24559	.19763
#1	.50548	258.11	.23817	.01042	.24888	.25076	243.61	.48009
#2	.50694	257.93	.23999	.01562	.24691	.25072	242.43	.48077
#3	.50354	256.89	.24306	.02174	.24768	.24946	243.19	.48196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.23496	.24688	.24059	94.984	5.3181	.00767	241.98	.24053
Stddev	.00079	.00037	.00198	.300	.0452	.00698	.24	.00042
%RSD	.33424	.14899	.82504	.31541	.84893	90.971	.09967	.17601
#1	.23490	.24729	.24016	95.186	5.3643	.00114	242.07	.24026
#2	.23577	.24675	.24276	94.640	5.2741	.00684	242.17	.24032
#3	.23421	.24659	.23886	95.126	5.3159	.01502	241.71	.24102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00045	5.2047	.46980	.03085	.48046	.48169	.25661	-.00890
Stddev	.00021	.0640	.00232	.00572	.00164	.00298	.00285	.00179
%RSD	46.426	1.2289	.49319	18.555	.34062	.61826	1.1093	20.104
#1	-.00036	5.2773	.46718	.02681	.48229	.48409	.25349	-.01095
#2	-.00069	5.1806	.47063	.03740	.47996	.48262	.25727	-.00770
#3	-.00031	5.1564	.47158	.02833	.47913	.47836	.25907	-.00803
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: ICSAB Acquired: 6/29/2016 10:26:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00044	.00077	.02203	.45802	.24979	.46986	.00245
Stddev	.00180	.00022	.00309	.00630	.00104	.00013	.00049
%RSD	408.40	28.979	14.011	1.3750	.41683	.02831	19.880
#1	.00248	.00101	.01849	.45999	.24918	.46991	.00235
#2	-.00021	.00058	.02346	.46310	.24919	.46995	.00202
#3	-.00094	.00070	.02414	.45097	.25099	.46970	.00298
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8714.2	52027.	2490.8
Stddev	13.4	71.	10.7
%RSD	.15385	.13668	.42866
#1	8720.3	52047.	2479.5
#2	8723.4	51948.	2492.0
#3	8698.8	52086.	2500.8

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 10:29:53 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.38545	9.7565	.37968	.47556	.96130	.04802	9.7563	.04801
Stddev	.00149	.0491	.00049	.00509	.00395	.00037	.1577	.00039
%RSD	.38566	.50355	.12878	1.0695	.41099	.76364	1.6159	.82135
#1	.38586	9.8125	.38024	.47673	.96416	.04784	9.8713	.04814
#2	.38380	9.7209	.37931	.47996	.96295	.04844	9.8211	.04833
#3	.38669	9.7360	.37950	.46999	.95679	.04777	9.5766	.04757
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19120	.47822	.47994	3.9564	48.202	.97060	9.9602	.48155
Stddev	.00043	.00297	.00073	.0398	.102	.01545	.2137	.00456
%RSD	.22626	.62097	.15125	1.0060	.21204	1.5918	2.1455	.94698
#1	.19093	.47906	.48045	4.0011	48.250	.98467	10.152	.47813
#2	.19170	.48067	.47911	3.9248	48.272	.97306	9.9994	.47980
#3	.19096	.47491	.48026	3.9433	48.085	.95407	9.7296	.48673
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.96357	47.886	.48088	9.5345	.47920	1.1504	.38429	4.8575
Stddev	.00295	.120	.00075	.0224	.00446	.0029	.00064	.0081
%RSD	.30570	.24971	.15493	.23468	.93138	.25485	.16589	.16756
#1	.96520	47.982	.48163	9.5372	.48008	1.1536	.38445	4.8590
#2	.96534	47.923	.48085	9.5554	.47437	1.1497	.38359	4.8649
#3	.96017	47.752	.48014	9.5109	.48317	1.1478	.38483	4.8488
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 10:29:53 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.95817	.96154	.97251	.48359	.95998	.95642	.95740
Stddev	.00212	.00517	.00473	.00288	.00538	.00175	.00901
%RSD	.22176	.53814	.48620	.59624	.56006	.18293	.94112
#1	.95810	.96589	.97320	.48316	.96144	.95616	.96570
#2	.96032	.96292	.97685	.48094	.96448	.95481	.95868
#3	.95607	.95582	.96747	.48666	.95403	.95828	.94782
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9329.2	56053.	2575.1
Stddev	2.5	209.	17.9
%RSD	.02702	.37346	.69466
#1	9328.4	55913.	2557.2
#2	9332.1	56294.	2575.2
#3	9327.3	55953.	2592.9

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 10:33:33 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00159	.04378	.00092	.00232	.00099	.00010	.10123	-.00004
Stddev	.00231	.01305	.00241	.00272	.00047	.00006	.02043	.00004
%RSD	145.46	29.810	262.06	117.36	47.745	62.131	20.182	114.14
#1	.00341	.05304	.00368	.00105	.00154	.00016	.12224	-.00004
#2	-.00101	.04945	-.00075	.00543	.00069	.00004	.08144	-.00008
#3	.00238	.02885	-.00018	.00046	.00075	.00011	.10001	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.00062	.00170	-.00155	.25334	.00056	-.00187	.00192
Stddev	.00020	.00064	.00189	.00533	.06368	.00243	.07462	.00456
%RSD	222.29	102.61	111.38	344.66	25.136	433.45	3980.0	237.69
#1	.00014	.00070	.00306	-.00090	.21902	-.00061	-.07603	-.00263
#2	-.00021	.00122	.00250	-.00717	.21418	.00336	-.00280	.00190
#3	-.00020	-.00005	-.00046	.00343	.32682	-.00107	.07321	.00650
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00065	.04437	.00005	.00934	.00350	.00059	.00215	-.01774
Stddev	.00011	.04353	.00107	.00336	.00137	.00309	.00560	.00305
%RSD	17.530	98.104	2366.4	36.014	39.191	524.62	259.85	17.208
#1	.00066	.06944	-.00035	.01067	.00499	.00416	.00846	-.01471
#2	.00053	.06957	.00126	.01184	.00322	-.00108	.00023	-.01769
#3	.00076	-.00589	-.00077	.00552	.00229	-.00131	-.00222	-.02081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 10:33:33 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00032**	**.00049**	**.00458**	**.00189**	**.00092**	**.00197**	**.00039**
Stddev	.00025	.00045	.00174	.00327	.00053	.00007	.00094
%RSD	77.695	91.451	38.085	173.43	57.187	3.4706	242.63
#1	-.00060	.00046	.00257	.00351	.00093	.00199	.00131
#2	-.00021	.00094	.00553	-.00188	.00039	.00202	.00043
#3	-.00014	.00005	.00564	.00403	.00144	.00189	-.00057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9485.3**	**57413.**	**2581.2**
Stddev	17.0	57.	12.7
%RSD	.17947	.09957	.49264
#1	9465.7	57380.	2584.4
#2	9493.7	57380.	2592.0
#3	9496.5	57479.	2567.2

Approved: June 29, 2016

Sample Name: PBW FB Acquired: 6/29/2016 10:37:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00054**	**.00760**	**.00035**	**.00218**	**-.00053**	**-.00002**	**.03562**	**-.00013**
Stddev	.00198	.00612	.00271	.00167	.00078	.00003	.04893	.00014
%RSD	364.60	80.490	783.97	76.555	147.09	135.34	137.36	102.88
#1	.00122	.01052	-.00215	.00135	-.00070	-.00003	.06148	-.00018
#2	-.00015	.01171	.00323	.00108	-.00121	-.00005	-.02081	.00002
#3	-.00269	.00057	-.00005	.00409	.00032	.00001	.06620	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00025**	**-.00052**	**.00169**	**.01996**	**.05997**	**-.00167**	**-.04418**	**.00199**
Stddev	.00020	.00118	.00100	.00706	.14566	.00254	.04322	.00383
%RSD	82.183	224.92	58.747	35.368	242.89	152.22	97.836	192.33
#1	-.00012	.00029	.00069	.02783	.21959	-.00044	-.07189	.00586
#2	-.00014	.00001	.00171	.01789	-.06574	-.00459	-.06627	.00191
#3	-.00048	-.00188	.00268	.01417	.02605	.00002	.00563	-.00180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00031**	**.05592**	**.00048**	**.00581**	**.00515**	**-.00331**	**.00202**	**-.00473**
Stddev	.00015	.04015	.00103	.00347	.00220	.00443	.00614	.00147
%RSD	47.719	71.802	215.60	59.752	42.733	133.91	303.26	31.020
#1	.00043	.03372	-.00059	.00869	.00763	.00172	.00313	-.00379
#2	.00015	.10227	.00055	.00195	.00437	-.00500	.00753	-.00642
#3	.00034	.03177	.00147	.00678	.00344	-.00663	-.00459	-.00399
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: PBW FB Acquired: 6/29/2016 10:37:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.00049	.00691	.00109	.00028	.00077	.00045
Stddev	.00124	.00017	.00278	.00259	.00091	.00020	.00020
%RSD	344.68	34.296	40.227	238.75	329.09	25.996	44.233
#1	-.00012	.00038	.00665	.00014	.00131	.00066	.00068
#2	-.00057	.00041	.00981	-.00090	-.00042	.00066	.00029
#3	.00176	.00069	.00427	.00402	-.00006	.00100	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9661.3	58506.	2641.9
Stddev	8.4	39.	4.1
%RSD	.08722	.06636	.15529
#1	9654.6	58462.	2643.1
#2	9670.8	58536.	2637.3
#3	9658.6	58521.	2645.2

Approved: June 29, 2016

Sample Name: LCSW FB Acquired: 6/29/2016 10:41:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20370**	**5.1376**	**.20101**	**.98179**	**.51698**	**.02494**	**5.2688**	**.02554**
Stddev	.00114	.0040	.00301	.00487	.00277	.00006	.0279	.00009
%RSD	.55949	.07726	1.4964	.49570	.53639	.22903	.52991	.34850
#1	.20502	5.1375	.20328	.97672	.51912	.02487	5.2372	.02563
#2	.20306	5.1337	.19760	.98220	.51797	.02495	5.2792	.02545
#3	.20303	5.1417	.20215	.98643	.51385	.02499	5.2900	.02553
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10323**	**.25700**	**.25880**	**2.0709**	**25.781**	**.52295**	**5.1906**	**.26094**
Stddev	.00023	.00047	.00162	.0098	.125	.00625	.1782	.00370
%RSD	.22183	.18355	.62622	.47068	.48649	1.1960	3.4341	1.4198
#1	.10340	.25753	.25784	2.0688	25.869	.52659	5.3964	.26359
#2	.10297	.25685	.26067	2.0815	25.837	.52654	5.0906	.26253
#3	.10331	.25662	.25789	2.0624	25.638	.51573	5.0847	.25671
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52023**	**25.915**	**.25965**	**4.9668**	**.26247**	**.61292**	**.19435**	**2.4853**
Stddev	.00079	.143	.00151	.0220	.00148	.00281	.00301	.0027
%RSD	.15259	.55270	.58218	.44282	.56222	.45892	1.5506	.10988
#1	.51932	26.010	.26100	4.9735	.26381	.61059	.19229	2.4822
#2	.52060	25.985	.25802	4.9422	.26271	.61604	.19295	2.4875
#3	.52078	25.751	.25992	4.9846	.26089	.61213	.19781	2.4862
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LCSW FB Acquired: 6/29/2016 10:41:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51760**	**.52472**	**.51670**	**.26018**	**.51344**	**.51480**	**.00106**
Stddev	.00084	.00343	.00531	.00450	.00220	.00032	.00068
%RSD	.16154	.65377	1.0277	1.7311	.42871	.06150	64.585
#1	.51772	.52728	.52254	.25881	.51503	.51503	.00153
#2	.51671	.52607	.51216	.25652	.51437	.51492	.00028
#3	.51837	.52083	.51541	.26521	.51093	.51444	.00137
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9014.6**	**54430.**	**2511.5**
Stddev	17.6	205.	22.8
%RSD	.19522	.37586	.90940
#1	9034.7	54306.	2501.7
#2	9006.8	54318.	2495.1
#3	9002.2	54666.	2537.6

Approved: June 29, 2016

Sample Name: L1606117701 Acquired: 6/29/2016 10:45:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.02570	.00379	.09957	.00036	.00012	.06954	.00009
Stddev	.00188	.01108	.00366	.00112	.00044	.00008	.05770	.00023
%RSD	502.08	43.121	96.396	1.1256	123.03	65.043	82.983	264.23
#1	-.00172	.03569	.00193	.10021	.00070	.00019	.08438	.00006
#2	.00093	.02763	.00801	.09827	.00052	.00004	.00586	-.00013
#3	.00192	.01378	.00145	.10022	-.00014	.00013	.11837	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	-.00003	.00182	.03157	.25886	-.00017	-.03062	.00402
Stddev	.00021	.00044	.00154	.02412	.07495	.00077	.10924	.00214
%RSD	234.47	1384.7	84.513	76.424	28.952	444.60	356.80	53.262
#1	-.00009	-.00022	.00346	.03078	.34415	-.00011	-.10112	.00381
#2	.00031	.00047	.00041	.00784	.20352	.00056	-.08595	.00199
#3	.00004	-.00035	.00159	.05607	.22892	-.00098	.09522	.00625
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00689	115.28	.00054	.01609	.00211	.00016	.00064	4.1138
Stddev	.00033	.89	.00124	.00512	.00208	.00316	.00335	.0042
%RSD	4.7528	.77547	231.01	31.846	98.898	1988.7	523.66	.10156
#1	.00714	114.59	.00118	.01368	.00303	-.00237	-.00302	4.1168
#2	.00652	116.29	-.00089	.01262	-.00028	.00370	.00140	4.1156
#3	.00702	114.95	.00133	.02198	.00356	-.00085	.00354	4.1090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606117701 Acquired: 6/29/2016 10:45:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00045	-.00027	.00449	.00390	.00174	.04403	.00026
Stddev	.00025	.00048	.01014	.00210	.00045	.00018	.00052
%RSD	55.323	177.85	226.06	53.721	25.860	.39798	196.34
#1	-.00048	-.00013	-.00582	.00168	.00123	.04416	.00086
#2	-.00019	-.00080	.01446	.00420	.00208	.04383	.00000
#3	-.00069	.00012	.00483	.00584	.00191	.04409	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9044.4	54361.	2502.1
Stddev	23.6	58.	19.2
%RSD	.26040	.10713	.76910
#1	9021.8	54294.	2520.4
#2	9068.8	54392.	2482.1
#3	9042.5	54397.	2503.7

Approved: June 29, 2016

Sample Name: L1606117702S Acquired: 6/29/2016 10:49:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19530**	**4.8939**	**.19914**	**1.0404**	**.49612**	**.02417**	**5.0444**	**.02435**
Stddev	.00251	.0122	.00165	.0028	.00442	.00010	.0185	.00056
%RSD	1.2864	.24990	.82634	.27278	.89114	.40757	.36689	2.3025
#1	.19406	4.8978	.20076	1.0389	.50121	.02422	5.0389	.02499
#2	.19365	4.8802	.19917	1.0387	.49326	.02406	5.0651	.02396
#3	.19819	4.9038	.19747	1.0437	.49389	.02423	5.0294	.02411
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09720**	**.24421**	**.24503**	**1.9907**	**24.978**	**.50490**	**4.9655**	**.24535**
Stddev	.00108	.00153	.00339	.0160	.316	.00383	.1207	.00378
%RSD	1.1061	.62627	1.3815	.80251	1.2655	.75893	2.4314	1.5417
#1	.09784	.24393	.24719	1.9872	25.343	.50799	5.0551	.24575
#2	.09779	.24284	.24678	1.9768	24.788	.50061	4.8282	.24891
#3	.09596	.24586	.24113	2.0081	24.803	.50609	5.0131	.24138
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49956**	**136.35**	**.24473**	**4.8026**	**.24494**	**.58098**	**.18789**	**6.4038**
Stddev	.00321	1.15	.00190	.0434	.00352	.00719	.00523	.0341
%RSD	.64184	.84473	.77812	.90272	1.4356	1.2369	2.7839	.53200
#1	.50201	137.68	.24501	4.8241	.24136	.58754	.18314	6.4187
#2	.50073	135.72	.24648	4.8309	.24839	.58208	.18703	6.4279
#3	.49593	135.65	.24270	4.7526	.24507	.57330	.19349	6.3648
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606117702S Acquired: 6/29/2016 10:49:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48929	.50112	.49418	.24358	.48863	.53562	.00050
Stddev	.00591	.00300	.00180	.00026	.00134	.00435	.00021
%RSD	1.2084	.59800	.36509	.10578	.27453	.81172	41.703
#1	.49224	.50455	.49562	.24333	.48964	.53849	.00070
#2	.49314	.49899	.49215	.24357	.48711	.53774	.00054
#3	.48248	.49983	.49475	.24385	.48914	.53061	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9081.9	54484.	2525.1
Stddev	10.5	190.	32.2
%RSD	.11569	.34939	1.2735
#1	9086.1	54548.	2488.8
#2	9070.0	54633.	2536.5
#3	9089.7	54269.	2550.0

Approved: June 29, 2016

Sample Name: L1606117703SD Acquired: 6/29/2016 10:52:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19451**	**4.8952**	**.20314**	**1.0415**	**.49496**	**.02429**	**5.0340**	**.02406**
Stddev	.00108	.0218	.00109	.0053	.00293	.00021	.0434	.00009
%RSD	.55729	.44561	.53676	.50951	.59283	.88227	.86146	.35903
#1	.19551	4.8713	.20438	1.0360	.49820	.02412	4.9842	.02411
#2	.19335	4.9141	.20231	1.0465	.49419	.02454	5.0552	.02412
#3	.19466	4.9001	.20274	1.0421	.49248	.02423	5.0628	.02396
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09901**	**.24380**	**.24679**	**1.9923**	**25.016**	**.50362**	**4.9359**	**.24624**
Stddev	.00059	.00289	.00206	.0277	.040	.00536	.0290	.00314
%RSD	.59286	1.1873	.83568	1.3898	.15802	1.0648	.58693	1.2753
#1	.09948	.24100	.24820	1.9793	24.975	.50095	4.9342	.24285
#2	.09835	.24364	.24442	2.0240	25.054	.50013	4.9657	.24905
#3	.09920	.24678	.24775	1.9734	25.019	.50980	4.9078	.24681
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50578**	**135.15**	**.24586**	**4.8228**	**.24334**	**.58373**	**.18718**	**6.3663**
Stddev	.00085	.49	.00076	.0032	.00233	.00442	.00776	.0382
%RSD	.16843	.36540	.31021	.06703	.95674	.75665	4.1467	.59942
#1	.50657	135.27	.24671	4.8249	.24602	.58882	.17991	6.3664
#2	.50589	135.58	.24561	4.8243	.24217	.58089	.19536	6.4044
#3	.50488	134.61	.24525	4.8190	.24183	.58147	.18626	6.3281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606117703SD Acquired: 6/29/2016 10:52:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49637**	**.50255**	**.50979**	**.24641**	**.49557**	**.53975**	**.00058**
Stddev	.00126	.00135	.01203	.00206	.00096	.00059	.00047
%RSD	.25315	.26867	2.3607	.83654	.19399	.10848	80.198
#1	.49603	.50372	.49709	.24704	.49511	.54043	.00110
#2	.49776	.50287	.51125	.24808	.49492	.53942	.00044
#3	.49531	.50107	.52102	.24410	.49667	.53941	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9098.0**	**54719.**	**2550.7**
Stddev	23.7	61.	3.5
%RSD	.26096	.11196	.13807
#1	9075.7	54671.	2553.6
#2	9095.4	54699.	2546.8
#3	9123.0	54788.	2551.7

Approved: June 29, 2016

Sample Name: L16060114201 Acquired: 6/29/2016 10:56:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00029	.05384	-.00032	.01684	.07761	-.00004	2.2488	.00021
Stddev	.00119	.00770	.00187	.00396	.00106	.00006	.0225	.00011
%RSD	415.52	14.296	577.94	23.515	1.3614	145.16	.99944	50.495
#1	.00096	.06269	-.00245	.01306	.07883	.00002	2.2683	.00009
#2	-.00140	.04866	.00040	.02096	.07698	-.00004	2.2538	.00025
#3	-.00041	.05019	.00108	.01650	.07701	-.00010	2.2242	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00590	.00097	.00195	4.6344	1.1664	.00930	1.6448	.22938
Stddev	.00022	.00098	.00114	.0386	.0250	.00305	.1018	.00282
%RSD	3.6669	101.51	58.513	.83227	2.1468	32.789	6.1907	1.2305
#1	.00612	.00192	.00228	4.6599	1.1924	.00816	1.7294	.23103
#2	.00587	.00101	.00068	4.5901	1.1645	.00698	1.6731	.23098
#3	.00569	-.00004	.00290	4.6534	1.1425	.01275	1.5318	.22612
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	19.811	.00759	.07218	.00239	.00125	-.00008	15.664
Stddev	.00040	.035	.00122	.00329	.00158	.00636	.00432	.082
%RSD	128.61	.17766	16.039	4.5625	66.322	506.95	5476.0	.52147
#1	-.00014	19.840	.00899	.06838	.00176	.00486	-.00406	15.721
#2	.00062	19.822	.00680	.07423	.00121	-.00609	.00451	15.701
#3	.00046	19.772	.00697	.07394	.00419	.00499	-.00069	15.571
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L16060114201 Acquired: 6/29/2016 10:56:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.04063	.00787	.00205	.00169	.01008	.00074
Stddev	.00031	.00072	.00259	.00031	.00086	.00030	.00060
%RSD	130.29	1.7665	32.862	14.961	51.026	2.9613	81.471
#1	.00031	.04071	.01082	.00236	.00268	.01018	.00029
#2	-.00010	.04131	.00603	.00205	.00112	.01033	.00142
#3	.00050	.03988	.00675	.00174	.00127	.00975	.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9265.1	56620.	2599.8
Stddev	32.3	57.	16.0
%RSD	.34816	.10067	.61596
#1	9300.8	56597.	2581.4
#2	9256.7	56685.	2607.4
#3	9237.9	56579.	2610.6

Approved: June 29, 2016

Sample Name: L16060114203 Acquired: 6/29/2016 11:00:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00198	.26266	-.00256	.01654	.04946	.00008	7.0396	.00052
Stddev	.00042	.01082	.00139	.00188	.00123	.00012	.0573	.00004
%RSD	21.424	4.1184	54.375	11.371	2.4882	142.01	.81409	7.7118
#1	.00178	.27101	-.00401	.01835	.05088	.00020	7.0973	.00051
#2	.00169	.25044	-.00243	.01669	.04881	.00009	7.0386	.00049
#3	.00247	.26653	-.00124	.01459	.04869	-.00004	6.9827	.00056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	-.00005	.00274	3.9448	1.6398	.00224	1.1106	.20239
Stddev	.00010	.00092	.00066	.0326	.1612	.00458	.0425	.00281
%RSD	13.101	1790.3	24.128	.82696	9.8324	204.48	3.8273	1.3861
#1	.00073	.00101	.00240	3.9720	1.8259	-.00214	1.0675	.19923
#2	.00088	-.00060	.00232	3.9087	1.5415	.00186	1.1525	.20459
#3	.00069	-.00056	.00350	3.9539	1.5520	.00700	1.1119	.20335
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	4.1156	.00378	.08391	.00282	-.00087	-.00174	5.1219
Stddev	.00015	.0406	.00051	.00804	.00259	.00234	.00831	.0495
%RSD	20.086	.98643	13.451	9.5772	91.737	267.84	478.76	.96697
#1	.00063	4.1179	.00323	.07573	.00011	.00046	.00046	5.1453
#2	.00071	4.1550	.00423	.08423	.00527	.00049	-.01093	5.1553
#3	.00092	4.0739	.00388	.09179	.00309	-.00357	.00526	5.0650
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L16060114203 Acquired: 6/29/2016 11:00:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00030	.05567	.01313	.00192	.00335	.00373	.00101
Stddev	.00129	.00058	.00273	.00330	.00039	.00020	.00009
%RSD	430.22	1.0337	20.797	172.02	11.633	5.2474	8.8281
#1	.00027	.05537	.01143	.00545	.00300	.00376	.00109
#2	.00060	.05633	.01628	.00140	.00377	.00352	.00103
#3	-.00177	.05531	.01168	-.00109	.00328	.00390	.00091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9288.4	56422.	2559.6
Stddev	3.9	105.	13.3
%RSD	.04169	.18677	.51831
#1	9290.7	56395.	2551.0
#2	9284.0	56538.	2552.9
#3	9290.6	56332.	2574.9

Approved: June 29, 2016

Sample Name: L16060114205 Acquired: 6/29/2016 11:04:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00267	.31454	-.00074	.01756	.05047	.00008	6.9218	.00008
Stddev	.00260	.00412	.00201	.00145	.00123	.00006	.0836	.00022
%RSD	97.281	1.3114	271.27	8.2833	2.4347	78.389	1.2080	281.44
#1	.00126	.31884	.00027	.01892	.05118	.00001	6.9917	.00020
#2	.00108	.31061	-.00306	.01772	.05117	.00011	6.9446	-.00018
#3	.00567	.31418	.00056	.01603	.04905	.00012	6.8292	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.00084	.00163	3.9780	1.4777	.00255	1.1076	.20275
Stddev	.00016	.00108	.00090	.0271	.0869	.00126	.1639	.00081
%RSD	31.175	128.55	55.227	.67991	5.8832	49.328	14.796	.39818
#1	.00060	.00178	.00084	3.9938	1.4991	.00201	.91841	.20198
#2	.00060	.00108	.00261	3.9935	1.3821	.00399	1.1975	.20269
#3	.00033	-.00034	.00145	3.9468	1.5520	.00166	1.2068	.20359
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	3.9762	.00428	.09393	.00314	.00006	-.00349	5.0942
Stddev	.00050	.0505	.00061	.00534	.00346	.00302	.00814	.1419
%RSD	105.07	1.2700	14.343	5.6804	110.23	5362.3	232.89	2.7854
#1	-.00008	4.0322	.00467	.09370	.00372	.00154	-.00756	5.1798
#2	.00089	3.9623	.00458	.08871	-.00058	-.00341	-.00880	5.1725
#3	.00063	3.9341	.00357	.09938	.00627	.00204	.00588	4.9304
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L16060114205 Acquired: 6/29/2016 11:04:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.05376	.01657	.00180	.00232	.00388	.00099
Stddev	.00062	.00025	.00776	.00362	.00126	.00017	.00040
%RSD	848.78	.47096	46.800	201.27	54.318	4.2990	39.956
#1	.00015	.05405	.00962	-.00229	.00335	.00404	.00138
#2	-.00077	.05360	.01516	.00309	.00270	.00388	.00059
#3	.00040	.05362	.02493	.00459	.00091	.00371	.00099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9261.4	56467.	2570.5
Stddev	29.2	271.	24.3
%RSD	.31523	.48004	.94686
#1	9257.6	56373.	2553.3
#2	9234.3	56773.	2559.8
#3	9292.3	56255.	2598.3

Approved: June 29, 2016

Sample Name: L16060114205PS Acquired: 6/29/2016 11:08:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574350-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19698**	**5.1836**	**.19690**	**.95704**	**.54220**	**.02421**	**11.138**	**.02453**
Stddev	.00135	.0090	.00208	.00306	.00204	.00007	.014	.00029
%RSD	.68306	.17341	1.0563	.32007	.37665	.29489	.12834	1.1976
#1	.19571	5.1940	.19609	.95996	.54402	.02421	11.124	.02467
#2	.19684	5.1782	.19927	.95385	.54259	.02428	11.138	.02473
#3	.19839	5.1786	.19536	.95732	.53999	.02414	11.153	.02419
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09992**	**.24885**	**.24937**	**5.5654**	**26.142**	**.50983**	**5.9583**	**.42668**
Stddev	.00040	.00150	.00134	.0652	.048	.00495	.0267	.00252
%RSD	.39603	.60158	.53809	1.1713	.18369	.97095	.44863	.59093
#1	.09959	.24796	.24783	5.6405	26.194	.51229	5.9767	.42684
#2	.10036	.24801	.25032	5.5232	26.100	.51307	5.9277	.42408
#3	.09980	.25058	.24994	5.5325	26.132	.50413	5.9706	.42912
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50145**	**28.500**	**.25395**	**4.8917**	**.24863**	**.58871**	**.19215**	**6.9581**
Stddev	.00313	.082	.00223	.0255	.00074	.00657	.00526	.0108
%RSD	.62474	.28814	.87906	.52166	.29696	1.1164	2.7355	.15503
#1	.49785	28.540	.25157	4.8626	.24945	.58282	.18674	6.9490
#2	.50361	28.555	.25600	4.9103	.24801	.58751	.19245	6.9700
#3	.50288	28.406	.25429	4.9023	.24844	.59580	.19724	6.9553
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L16060114205PS Acquired: 6/29/2016 11:08:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574350-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49659	.55312	.50515	.25176	.49354	.49936	.00053
Stddev	.00055	.00203	.00972	.00430	.00287	.00203	.00043
%RSD	.11132	.36752	1.9241	1.7078	.58090	.40709	81.497
#1	.49601	.55084	.50654	.24787	.49023	.49713	.00005
#2	.49663	.55474	.51410	.25103	.49532	.50111	.00063
#3	.49712	.55377	.49481	.25637	.49506	.49984	.00089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9168.3	55703.	2548.0
Stddev	10.0	145.	9.7
%RSD	.10905	.26037	.37880
#1	9175.4	55714.	2537.0
#2	9156.9	55553.	2551.5
#3	9172.8	55843.	2555.3

Approved: June 29, 2016

Sample Name: L16060114205SDL Acquired: 6/29/2016 11:11:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574350-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00237	.06917	.00008	.00708	.01120	.00005	1.4792	-.00005
Stddev	.00168	.00656	.00232	.00425	.00087	.00009	.0060	.00021
%RSD	70.898	9.4785	2824.2	60.070	7.7802	181.44	.40789	419.89
#1	.00108	.07431	.00214	.01059	.01168	-.00000	1.4731	-.00025
#2	.00177	.06178	-.00244	.00829	.01172	.00015	1.4795	-.00008
#3	.00428	.07140	.00054	.00235	.01019	-.00000	1.4851	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	-.00071	.00091	.83418	.42736	-.00138	.22801	.04289
Stddev	.00018	.00036	.00109	.02527	.03815	.00129	.10671	.00196
%RSD	512.99	51.088	118.89	3.0288	8.9277	93.122	46.801	4.5585
#1	.00017	-.00110	.00134	.83970	.40128	-.00154	.10601	.04084
#2	-.00012	-.00064	.00172	.80661	.47115	-.00259	.30399	.04310
#3	-.00015	-.00039	-.00032	.85623	.40964	-.00002	.27405	.04473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.85799	.00103	.02194	.00462	-.00136	-.00758	1.0687
Stddev	.00004	.00336	.00071	.00142	.00524	.00412	.00289	.0208
%RSD	26.931	.39213	68.406	6.4793	113.23	303.12	38.205	1.9437
#1	.00020	.86186	.00128	.02038	.00673	.00320	-.00885	1.0772
#2	.00014	.85578	.00024	.02229	.00848	-.00246	-.00961	1.0839
#3	.00013	.85633	.00158	.02316	-.00134	-.00482	-.00426	1.0450
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L16060114205SDL Acquired: 6/29/2016 11:11:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574350-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.01111**	**.00591**	**.00103**	**.00120**	**.00132**	**.00010**
Stddev	.00009	.00032	.00950	.00060	.00074	.00008	.00021
%RSD	23.226	2.8851	160.92	57.789	61.352	5.8407	213.09
#1	-.00042	.01076	.01610	.00110	.00193	.00124	-.00012
#2	-.00028	.01139	-.00271	.00040	.00122	.00139	.00012
#3	-.00044	.01117	.00433	.00159	.00046	.00132	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9326.3**	**56292.**	**2538.0**
Stddev	30.3	71.	19.8
%RSD	.32487	.12632	.77960
#1	9326.4	56243.	2531.8
#2	9295.9	56374.	2560.1
#3	9356.5	56260.	2522.0

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 11:15:39 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39775**	**9.8980**	**.39330**	**.49118**	**.99618**	**.04916**	**9.9003**	**.04913**
Stddev	.00028	.0560	.00344	.00440	.01235	.00018	.1516	.00043
%RSD	.07093	.56566	.87509	.89603	1.2396	.37112	1.5313	.87815
#1	.39800	9.8583	.39274	.48610	1.0087	.04918	10.059	.04947
#2	.39782	9.9620	.39698	.49355	.99581	.04933	9.8861	.04928
#3	.39744	9.8736	.39017	.49388	.98402	.04897	9.7563	.04864
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19705**	**.49096**	**.49572**	**3.9516**	**49.948**	**.99803**	**9.8895**	**.49836**
Stddev	.00190	.00200	.00583	.0450	.591	.01343	.1159	.00804
%RSD	.96321	.40673	1.1755	1.1386	1.1829	1.3461	1.1717	1.6141
#1	.19783	.49013	.50017	4.0012	50.569	1.0122	9.8805	.50704
#2	.19843	.49324	.49786	3.9403	49.885	.99645	10.010	.49690
#3	.19488	.48952	.48912	3.9133	49.392	.98546	9.7784	.49115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99282**	**49.820**	**.49528**	**9.8340**	**.49480**	**1.1873**	**.39399**	**5.0133**
Stddev	.00974	.654	.00462	.0602	.00114	.0096	.00750	.0260
%RSD	.98116	1.3132	.93375	.61242	.23105	.81129	1.9029	.51928
#1	.99790	50.506	.49591	9.8634	.49609	1.1933	.39907	5.0261
#2	.99897	49.752	.49955	9.8740	.49439	1.1925	.39752	5.0304
#3	.98159	49.202	.49037	9.7648	.49392	1.1762	.38538	4.9833
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 11:15:39 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98633	.99784	.99276	.49829	.98981	.98431	.99417
Stddev	.01201	.01332	.00694	.00399	.00642	.00973	.01444
%RSD	1.2180	1.3354	.69883	.80127	.64872	.98812	1.4527
#1	.99356	1.0107	.99799	.49978	.98669	.98877	1.0096
#2	.99298	.99878	.98489	.50132	.99720	.99101	.99184
#3	.97246	.98407	.99539	.49376	.98555	.97315	.98103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9186.3	54900.	2516.8
Stddev	45.8	223.	34.6
%RSD	.49897	.40661	1.3751
#1	9171.0	55098.	2480.3
#2	9150.1	54658.	2520.8
#3	9237.8	54946.	2549.2

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 11:19:16 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00053**	**.00004**	**.00204**	**.00557**	**-.00049**	**-.00001**	**.02351**
Stddev	.00401	.00403	.00167	.00294	.00175	.00006	.04614
%RSD	755.35	9033.9	81.596	52.893	355.36	1009.0	196.26
#1	-.00253	-.00049	.00303	.00681	-.00252	-.00002	.06775
#2	-.00095	-.00369	.00012	.00768	.00050	.00006	.02710
#3	.00507	.00431	.00298	.00220	.00054	-.00006	-.02432
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**-.00012**	**-.00057**	**.00179**	**.02465**	**.20659**	**.00034**
Stddev	.00019	.00060	.00072	.00137	.02370	.15089	.00074
%RSD	121.13	518.86	127.53	76.416	96.147	73.040	220.06
#1	-.00021	-.00076	-.00051	.00098	.05094	.21592	.00063
#2	.00005	-.00002	.00013	.00337	.00490	.35260	.00089
#3	-.00032	.00043	-.00132	.00102	.01812	.05125	-.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.05204**	**.00035**	**.00076**	**.01493**	**.00059**	**-.00104**	F **.00757**
Stddev	.09746	.00246	.00010	.03176	.00037	.00811	.00219
%RSD	187.29	699.20	13.005	212.77	62.419	781.27	28.939
#1	.04085	.00315	.00085	.05137	.00088	-.00126	.00749
#2	-.04345	-.00145	.00078	.00022	.00072	.00718	.00542
#3	-.15351	-.00064	.00066	-.00682	.00018	-.00903	.00980
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							.00500
Low Limit							-.00500

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 11:19:16 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00467	-.00035	-.01690	.00078	-.00014	.00673	.00379
Stddev	.00277	.00516	.00351	.00037	.00010	.00281	.00201
%RSD	59.320	1473.1	20.751	47.408	71.238	41.680	52.985
#1	.00374	-.00628	-.01299	.00070	-.00020	.00667	.00592
#2	.00248	.00305	-.01976	.00118	-.00003	.00957	.00354
#3	.00779	.00218	-.01795	.00045	-.00019	.00396	.00192
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00120	.00155	.00079
Stddev	.00106	.00004	.00058
%RSD	88.613	2.8281	73.063
#1	.00020	.00158	.00024
#2	.00231	.00155	.00140
#3	.00108	.00150	.00074
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9303.5	56275.	2550.5
Stddev	46.8	137.	4.0
%RSD	.50277	.24398	.15699
#1	9269.0	56271.	2549.9
#2	9356.7	56140.	2546.8
#3	9284.8	56415.	2554.8

Approved: June 29, 2016

Sample Name: L1606090707 Acquired: 6/29/2016 11:23:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00070	.00642	.01308	.00774	.00097	.00006	.04094	-.00017
Stddev	.00308	.00957	.00153	.00083	.00054	.00005	.05492	.00015
%RSD	443.75	149.09	11.694	10.686	55.811	85.531	134.17	91.439
#1	.00317	.01345	.01352	.00718	.00083	.00011	.04123	-.00006
#2	.00167	-.00448	.01138	.00869	.00052	.00000	.09572	-.00034
#3	-.00276	.01027	.01434	.00735	.00157	.00007	-.01413	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.00042	.00267	.01617	.10414	.00178	.06017	.00283
Stddev	.00030	.00142	.00121	.01849	.09074	.00164	.06430	.00090
%RSD	175.42	336.02	45.126	114.35	87.136	91.951	106.87	31.946
#1	-.00017	-.00115	.00284	-.00445	.03631	.00287	.00821	.00205
#2	.00039	.00160	.00379	.03127	.06888	.00258	.04022	.00262
#3	.00028	.00082	.00139	.02168	.20722	-.00010	.13208	.00382
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	6.7723	-.00046	.01207	.00641	-.00331	.00104	.04216
Stddev	.00018	.0474	.00104	.00626	.00490	.00324	.00440	.00349
%RSD	173.51	.70044	225.49	51.855	76.397	97.995	422.65	8.2776
#1	-.00011	6.7197	.00016	.01921	.01139	.00043	.00612	.03859
#2	.00023	6.7856	-.00167	.00752	.00626	-.00501	-.00121	.04556
#3	.00019	6.8117	.00012	.00948	.00159	-.00533	-.00178	.04233
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090707 Acquired: 6/29/2016 11:23:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00058**	**.00614**	**-.00204**	**-.00136**	**.00101**	**.00038**	**-.00005**
Stddev	.00033	.00021	.00654	.00236	.00067	.00012	.00051
%RSD	57.776	3.4898	320.10	173.56	66.707	30.990	1055.7
#1	-.00075	.00635	.00273	-.00400	.00027	.00051	.00054
#2	-.00078	.00616	-.00950	-.00058	.00158	.00032	-.00032
#3	-.00019	.00592	.00064	.00051	.00118	.00030	-.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9018.4**	**54413.**	**2480.7**
Stddev	10.7	126.	2.2
%RSD	.11833	.23069	.08723
#1	9030.1	54490.	2480.6
#2	9016.0	54268.	2483.0
#3	9009.2	54481.	2478.6

Approved: June 29, 2016

Sample Name: L1606090710 Acquired: 6/29/2016 11:27:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	-.00080	.01196	.00653	.00077	.00000	.09228	-.00016
Stddev	.00195	.00455	.00605	.00233	.00085	.00006	.02540	.00014
%RSD	321.96	565.38	50.605	35.715	110.15	21021.	27.529	86.232
#1	.00271	-.00596	.01675	.00727	.00121	-.00000	.12116	-.00001
#2	-.00115	.00088	.00516	.00392	-.00021	.00006	.07341	-.00028
#3	.00025	.00266	.01396	.00841	.00130	-.00006	.08226	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	-.00028	.00205	.02121	.05093	-.00416	.07609	.00177
Stddev	.00043	.00042	.00125	.05029	.14808	.00259	.06210	.00182
%RSD	196.49	148.59	61.188	237.14	290.73	62.230	81.617	102.51
#1	-.00060	.00015	.00113	-.01674	.22192	-.00655	.14733	.00387
#2	-.00030	-.00069	.00154	.00211	-.03371	-.00451	.04756	.00070
#3	.00024	-.00031	.00347	.07824	-.03541	-.00141	.03338	.00075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	6.7027	-.00060	.01357	.00560	-.00133	-.00797	.04302
Stddev	.00007	.0621	.00099	.00377	.00298	.00183	.00822	.00114
%RSD	26.393	.92649	164.56	27.775	53.184	137.72	103.16	2.6388
#1	.00019	6.6531	.00054	.01713	.00406	-.00257	-.00080	.04171
#2	.00027	6.6826	-.00123	.00962	.00372	-.00219	-.01695	.04375
#3	.00032	6.7724	-.00112	.01396	.00904	.00077	-.00616	.04360
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090710 Acquired: 6/29/2016 11:27:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.00591	.00284	.00190	.00143	.00046	-.00031
Stddev	.00037	.00010	.00142	.00261	.00107	.00012	.00039
%RSD	72.988	1.6223	50.200	137.59	74.960	26.873	123.18
#1	.00063	.00590	.00447	.00250	.00210	.00033	-.00048
#2	.00080	.00582	.00218	-.00096	.00019	.00058	.00013
#3	.00009	.00601	.00186	.00416	.00199	.00048	-.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8995.4	54163.	2477.2
Stddev	21.3	65.	3.8
%RSD	.23688	.11987	.15296
#1	9016.5	54234.	2477.5
#2	8973.9	54146.	2473.3
#3	8995.9	54108.	2480.9

Approved: June 29, 2016

Sample Name: L1606090712 Acquired: 6/29/2016 11:31:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 500 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00088**	**.01896**	**-.00058**	**.00565**	**.00121**	**.00006**	**.01835**
Stddev	.00187	.00807	.00645	.00089	.00110	.00007	.04026
%RSD	214.15	42.553	1103.8	15.709	90.202	133.41	219.45
#1	.00293	.02231	.00055	.00483	.00007	.00014	.04911
#2	-.00073	.00975	-.00753	.00553	.00226	.00000	.03316
#3	.00042	.02480	.00523	.00660	.00132	.00002	-.02722
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00018**	**-.00021**	**.00200**	**.00076**	F **-.02009**	**.10524**	**-.00315**
Stddev	.00013	.00056	.00100	.00046	.03765	.07386	.00106
%RSD	70.958	263.43	50.245	61.050	187.40	70.178	33.537
#1	.00019	-.00077	.00270	.00104	-.06176	.06677	-.00337
#2	.00029	.00035	.00085	.00101	-.00999	.19040	-.00407
#3	.00004	-.00022	.00244	.00022	.01148	.05857	-.00200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.02634**	**-.00050**	**.00009**	**4.1202**	**-.00044**	**.01785**	**.00118**
Stddev	.02096	.00133	.00029	.0340	.00078	.00425	.00251
%RSD	79.590	264.37	333.72	.82527	175.42	23.835	213.44
#1	-.04939	-.00200	-.00025	4.1500	.00046	.01986	.00360
#2	-.02124	-.00008	.00025	4.0832	-.00086	.01296	.00134
#3	-.00840	.00057	.00027	4.1274	-.00092	.02071	-.00141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606090712 Acquired: 6/29/2016 11:31:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 500 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00160	-.00679	.01586	-.00087	.00309	-.00100	.00219
Stddev	.00258	.00308	.00057	.00061	.00014	.00496	.00259
%RSD	160.60	45.324	3.5701	69.809	4.4010	495.43	118.52
#1	.00436	-.00954	.01645	-.00065	.00295	-.00520	.00081
#2	.00119	-.00346	.01532	-.00155	.00310	-.00227	.00058
#3	-.00074	-.00736	.01581	-.00040	.00322	.00447	.00518
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00163	.00262	-.00052
Stddev	.00061	.00030	.00108
%RSD	37.672	11.355	208.41
#1	.00220	.00249	-.00175
#2	.00171	.00240	-.00002
#3	.00098	.00295	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8859.6	53426.	2419.2
Stddev	22.6	111.	13.9
%RSD	.25560	.20706	.57304
#1	8855.4	53529.	2418.3
#2	8884.1	53439.	2433.4
#3	8839.4	53309.	2405.8

Approved: June 29, 2016

Sample Name: L1606090714 Acquired: 6/29/2016 11:35:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG573685-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00029**	**.00510**	**.00399**	**.00362**	**.00127**	**.00005**	**.58262**	**-.00010**
Stddev	.00173	.00299	.00186	.00149	.00148	.00015	.01830	.00029
%RSD	597.57	58.669	46.546	41.233	116.79	271.31	3.1402	278.65
#1	.00065	.00687	.00608	.00232	-.00037	-.00011	.60314	.00023
#2	.00076	.00165	.00341	.00330	.00166	.00015	.56800	-.00025
#3	-.00228	.00679	.00250	.00525	.00252	.00013	.57673	-.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00058**	**-.00007**	**.00094**	**.00525**	**.06024**	**.00065**	**.06442**	**-.00265**
Stddev	.00047	.00092	.00185	.05553	.17905	.00338	.05158	.00254
%RSD	80.962	1408.9	196.96	1057.4	297.23	520.94	80.076	95.684
#1	-.00004	-.00109	.00199	-.03472	.17108	.00412	.00583	-.00557
#2	-.00077	.00069	-.00119	.06865	-.14633	.00047	.08444	-.00146
#3	-.00091	.00020	.00202	-.01818	.15597	-.00264	.10299	-.00093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00004**	**4.8479**	**-.00053**	**.01156**	**.00233**	**.00108**	**-.00182**	**.08400**
Stddev	.00026	.0811	.00033	.00405	.00279	.00409	.00693	.00108
%RSD	702.98	1.6732	62.836	35.045	119.52	379.17	380.96	1.2822
#1	.00031	4.7775	-.00082	.01496	.00306	-.00207	-.00746	.08288
#2	-.00021	4.8297	-.00061	.01262	.00468	.00570	.00592	.08503
#3	.00000	4.9366	-.00017	.00708	-.00075	-.00039	-.00391	.08409
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090714 Acquired: 6/29/2016 11:35:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG573685-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.00775**	**.00275**	**.00198**	**.00091**	**.00057**	**-.00060**
Stddev	.00031	.00043	.00297	.00184	.00113	.00033	.00031
%RSD	206.37	5.5462	108.08	92.892	123.55	57.792	50.999
#1	-.00046	.00726	.00143	.00362	.00222	.00084	-.00039
#2	-.00013	.00797	.00067	.00234	.00036	.00020	-.00095
#3	.00015	.00803	.00615	-.00001	.00017	.00068	-.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8955.2**	**53721.**	**2433.6**
Stddev	24.8	47.	8.7
%RSD	.27678	.08839	.35709
#1	8929.5	53679.	2443.6
#2	8957.2	53773.	2429.5
#3	8978.9	53711.	2427.7

Approved: June 29, 2016

Sample Name: L1606090717S Acquired: 6/29/2016 11:38:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG573685-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00409	.07103	.00385	.01209	.00597	.00020	.73321	.00048
Stddev	.00201	.00400	.00261	.00266	.00149	.00003	.02661	.00015
%RSD	49.153	5.6316	67.876	21.985	25.026	13.360	3.6293	30.401
#1	.00600	.07445	.00488	.00937	.00524	.00018	.76390	.00052
#2	.00199	.07201	.00088	.01222	.00768	.00023	.71897	.00061
#3	.00429	.06663	.00579	.01468	.00498	.00020	.71674	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00113	.00285	.00361	.04803	.41005	.00365	.14563	.00566
Stddev	.00020	.00031	.00028	.03389	.12460	.00311	.08051	.00310
%RSD	17.840	10.940	7.6373	70.562	30.386	85.115	55.284	54.744
#1	.00090	.00266	.00332	.07245	.36366	.00669	.22910	.00831
#2	.00129	.00320	.00365	.06230	.31531	.00048	.06844	.00225
#3	.00121	.00267	.00386	.00934	.55119	.00378	.13935	.00643
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00546	5.1203	.00301	.06957	.00458	.00313	.00098	.10974
Stddev	.00004	.0766	.00041	.00538	.00059	.00477	.00430	.00403
%RSD	.71454	1.4950	13.793	7.7375	12.967	152.61	437.47	3.6722
#1	.00542	5.0411	.00260	.07294	.00510	.00222	.00045	.10670
#2	.00549	5.1258	.00299	.07241	.00393	-.00113	-.00302	.11431
#3	.00547	5.1939	.00343	.06336	.00470	.00829	.00552	.10821
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090717S Acquired: 6/29/2016 11:38:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG573685-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00597	.01280	.00744	.00501	.00595	.00686	.00015
Stddev	.00062	.00032	.00844	.00181	.00114	.00010	.00021
%RSD	10.308	2.4761	113.38	36.111	19.232	1.4153	137.53
#1	.00598	.01246	-.00160	.00688	.00570	.00675	.00030
#2	.00657	.01309	.01511	.00327	.00495	.00690	-.00009
#3	.00534	.01283	.00882	.00488	.00719	.00694	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9118.4	54908.	2482.3
Stddev	18.5	107.	24.0
%RSD	.20329	.19521	.96747
#1	9118.0	54839.	2504.8
#2	9100.0	54853.	2485.1
#3	9137.1	55032.	2457.0

Approved: June 29, 2016

Sample Name: L1606090719SD Acquired: 6/29/2016 11:42:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG573685-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00246	.06591	.00542	.01296	.00584	.00032	.69080	.00026
Stddev	.00143	.00624	.00267	.00164	.00050	.00005	.03527	.00009
%RSD	58.193	9.4623	49.158	12.639	8.5256	15.303	5.1052	34.475
#1	.00097	.07304	.00374	.01474	.00553	.00031	.67080	.00016
#2	.00257	.06322	.00850	.01152	.00641	.00027	.67008	.00034
#3	.00383	.06147	.00404	.01261	.00558	.00037	.73152	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00105	.00245	.00307	.03604	.35441	.00514	.14600	.00348
Stddev	.00021	.00145	.00151	.02124	.06524	.00248	.02243	.00129
%RSD	20.162	59.060	49.275	58.941	18.409	48.372	15.361	36.881
#1	.00117	.00189	.00284	.05986	.28084	.00633	.14299	.00353
#2	.00081	.00137	.00169	.02920	.37718	.00228	.12523	.00218
#3	.00118	.00410	.00469	.01906	.40523	.00680	.16978	.00475
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00610	5.0747	.00169	.06420	.00756	.00316	-.00333	.11191
Stddev	.00055	.0846	.00018	.00170	.00069	.00241	.00590	.00158
%RSD	9.0498	1.6668	10.601	2.6545	9.0655	76.054	177.28	1.4102
#1	.00572	4.9771	.00149	.06581	.00678	.00511	-.00488	.11026
#2	.00585	5.1201	.00182	.06242	.00808	.00390	.00319	.11207
#3	.00673	5.1269	.00176	.06437	.00782	.00047	-.00829	.11340
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090719SD Acquired: 6/29/2016 11:42:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG573685-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00511	.01246	.00522	.00524	.00731	.00639	.00004
Stddev	.00014	.00019	.00999	.00107	.00096	.00021	.00043
%RSD	2.7424	1.5379	191.31	20.455	13.197	3.3635	1034.5
#1	.00515	.01267	.01170	.00647	.00839	.00622	.00040
#2	.00496	.01229	.01026	.00450	.00653	.00631	-.00043
#3	.00523	.01242	-.00629	.00476	.00702	.00663	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9084.2	54806.	2516.4
Stddev	17.9	225.	16.0
%RSD	.19752	.40979	.63660
#1	9100.7	54871.	2534.9
#2	9086.8	54990.	2506.1
#3	9065.1	54556.	2508.3

Approved: June 29, 2016

Sample Name: L1606138001 Acquired: 6/29/2016 11:46:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00079	1.1667	.00020	.00408	.01597	.00013	4.9938	-.00017
Stddev	.00019	.0222	.00398	.00252	.00035	.00005	.1237	.00004
%RSD	24.691	1.9019	1956.1	61.841	2.2144	35.146	2.4774	25.063
#1	-.00094	1.1490	.00460	.00140	.01556	.00016	4.9039	-.00021
#2	-.00057	1.1594	-.00314	.00640	.01615	.00016	4.9426	-.00013
#3	-.00085	1.1916	-.00085	.00443	.01619	.00008	5.1349	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	.00133	.00290	1.4752	.28705	-.00033	1.6814	.08145
Stddev	.00016	.00069	.00109	.0428	.05712	.00383	.0556	.00614
%RSD	19.902	51.826	37.557	2.9000	19.900	1174.2	3.3072	7.5336
#1	.00067	.00078	.00275	1.4561	.23781	-.00418	1.7308	.07457
#2	.00098	.00110	.00406	1.4452	.27367	.00348	1.6212	.08341
#3	.00075	.00210	.00190	1.5241	.34968	-.00028	1.6922	.08637
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.38691	.00104	.05759	.00309	-.00157	-.00552	1.5832
Stddev	.00033	.05150	.00062	.00607	.00414	.00724	.00334	.0344
%RSD	204.05	13.310	60.083	10.538	133.91	460.69	60.490	2.1733
#1	-.00021	.33554	.00104	.05351	.00668	-.00972	-.00251	1.5443
#2	.00042	.38666	.00041	.05469	-.00144	.00087	-.00494	1.5955
#3	.00026	.43854	.00165	.06456	.00404	.00413	-.00911	1.6097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606138001 Acquired: 6/29/2016 11:46:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00062**	**.01816**	**.01395**	**.00473**	**.00341**	**.03308**	**.00038**
Stddev	.00041	.00010	.01270	.00264	.00070	.00082	.00043
%RSD	66.236	.55650	91.059	55.864	20.624	2.4793	111.37
#1	-.00019	.01825	.00675	.00199	.00284	.03213	.00003
#2	-.00102	.01816	.02862	.00727	.00420	.03351	.00086
#3	-.00066	.01805	.00648	.00493	.00319	.03359	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9144.8**	**55027.**	**2512.8**
Stddev	28.1	259.	16.1
%RSD	.30702	.47067	.63939
#1	9117.7	55113.	2531.3
#2	9143.0	55231.	2504.6
#3	9173.8	54736.	2502.4

Approved: June 29, 2016

Sample Name: L1606138002 Acquired: 6/29/2016 11:50:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00158**	**1.2783**	**.00236**	**.00735**	**.01468**	**.00009**	**4.8914**	**-.00002**
Stddev	.00195	.0110	.00294	.00192	.00057	.00008	.0458	.00032
%RSD	123.26	.86212	124.17	26.126	3.8829	83.161	.93618	1366.6
#1	-.00336	1.2812	.00574	.00897	.01518	.00001	4.8513	-.00023
#2	.00051	1.2875	.00098	.00786	.01480	.00010	4.9413	.00034
#3	-.00190	1.2661	.00037	.00523	.01406	.00016	4.8815	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**.00144**	**.00285**	**1.6811**	**.39676**	**-.00124**	**1.7322**	**.07966**
Stddev	.00025	.00026	.00072	.0633	.11078	.00243	.1159	.00213
%RSD	60.651	18.048	25.338	3.7640	27.922	196.25	6.6890	2.6737
#1	.00028	.00119	.00312	1.6276	.29955	-.00167	1.6330	.07756
#2	.00026	.00171	.00203	1.6648	.37336	.00138	1.7041	.08182
#3	.00070	.00141	.00339	1.7509	.51738	-.00343	1.8596	.07959
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00046**	**.34155**	**.00192**	**.05378**	**.00662**	**-.00042**	**-.00699**	**1.6268**
Stddev	.00020	.03838	.00088	.00515	.00130	.00140	.00800	.0234
%RSD	44.748	11.237	45.515	9.5799	19.632	329.79	114.44	1.4417
#1	.00032	.37444	.00183	.04800	.00798	-.00150	-.01542	1.6033
#2	.00036	.29938	.00110	.05790	.00539	-.00094	-.00603	1.6271
#3	.00069	.35085	.00285	.05543	.00648	.00116	.00048	1.6502
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606138002 Acquired: 6/29/2016 11:50:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00065**	**.01800**	**.01045**	**.00374**	**.00287**	**.01012**	**.00034**
Stddev	.00116	.00037	.00673	.00355	.00097	.00034	.00009
%RSD	178.85	2.0304	64.422	94.960	33.958	3.3659	25.301
#1	-.00137	.01838	.01821	.00077	.00358	.00978	.00025
#2	-.00126	.01799	.00686	.00278	.00327	.01013	.00042
#3	.00069	.01764	.00627	.00767	.00176	.01046	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9065.8**	**54756.**	**2463.3**
Stddev	8.9	95.	2.1
%RSD	.09787	.17393	.08672
#1	9058.1	54717.	2464.0
#2	9075.5	54687.	2465.0
#3	9063.7	54865.	2460.9

Approved: June 29, 2016

Sample Name: L1606122707 Acquired: 6/29/2016 11:54:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00031	.00440	-.00011	.00328	.04214	.00006	1.9802	-.00005
Stddev	.00164	.00893	.00346	.00245	.00073	.00001	.0281	.00027
%RSD	521.57	202.86	3196.9	74.893	1.7389	15.703	1.4203	591.52
#1	-.00205	.00381	.00012	.00501	.04272	.00007	1.9590	.00005
#2	.00122	.01361	-.00367	.00047	.04238	.00005	2.0121	.00016
#3	-.00011	-.00422	.00323	.00435	.04132	.00006	1.9694	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00038	-.00170	.00213	3.1213	.16126	.00327	1.3586	.06579
Stddev	.00011	.00044	.00065	.0243	.02784	.00383	.0505	.00051
%RSD	27.317	26.051	30.481	.77969	17.265	117.27	3.7158	.77306
#1	-.00027	-.00128	.00138	3.1145	.18303	-.00100	1.3676	.06616
#2	-.00040	-.00166	.00254	3.1011	.12989	.00440	1.4039	.06521
#3	-.00048	-.00216	.00247	3.1483	.17087	.00641	1.3042	.06600
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	5.8464	.00204	.00518	.00310	.00048	-.00259	.72429
Stddev	.00047	.0604	.00061	.00185	.00254	.00200	.00554	.00430
%RSD	93.786	1.0330	29.977	35.701	81.965	416.48	213.52	.59411
#1	.00042	5.7801	.00206	.00460	.00186	.00033	.00336	.71961
#2	.00008	5.8982	.00142	.00725	.00142	.00255	-.00354	.72807
#3	.00101	5.8608	.00264	.00368	.00603	-.00144	-.00760	.72520
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606122707 Acquired: 6/29/2016 11:54:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00069**	**.04887**	**.00096**	**-.00153**	**.00119**	**.00082**	**.00021**
Stddev	.00043	.00042	.00368	.00165	.00078	.00003	.00017
%RSD	61.997	.85230	384.33	108.21	65.432	3.1027	80.254
#1	-.00052	.04842	.00226	-.00147	.00052	.00084	.00030
#2	-.00037	.04924	.00380	-.00320	.00205	.00079	.00002
#3	-.00118	.04895	-.00319	.00010	.00101	.00083	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9100.9**	**54688.**	**2494.3**
Stddev	28.1	202.	5.1
%RSD	.30861	.36873	.20433
#1	9090.5	54493.	2494.5
#2	9079.6	54677.	2499.2
#3	9132.7	54896.	2489.0

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 11:58:33 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39688	9.8512	.39413	.49321	.99016	.04879	9.7997	.04959
Stddev	.00059	.0088	.00450	.00624	.00545	.00031	.0491	.00026
%RSD	.14819	.08921	1.1421	1.2646	.55075	.63457	.50130	.53290
#1	.39706	9.8586	.38893	.48858	.98907	.04866	9.7569	.04929
#2	.39735	9.8535	.39656	.50030	.99608	.04914	9.7889	.04977
#3	.39622	9.8415	.39689	.49075	.98534	.04857	9.8534	.04971
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19882	.49248	.49963	3.9490	49.398	.98997	9.9063	.49440
Stddev	.00152	.00367	.00355	.0476	.248	.00145	.0824	.00539
%RSD	.76310	.74448	.71137	1.2049	.50245	.14604	.83135	1.0893
#1	.19707	.48982	.49699	3.9059	49.346	.99147	9.8769	.48866
#2	.19983	.49666	.49824	4.0000	49.668	.98859	9.8427	.49934
#3	.19955	.49095	.50367	3.9411	49.180	.98985	9.9993	.49521
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0011	49.330	.49897	9.9418	.50080	1.1989	.40286	5.0396
Stddev	.0055	.294	.00338	.0547	.00281	.0006	.00365	.0347
%RSD	.55045	.59550	.67763	.54993	.56158	.04604	.90574	.68936
#1	.99477	49.221	.49536	9.8787	.50335	1.1983	.40072	5.0010
#2	1.0037	49.663	.49950	9.9712	.50126	1.1990	.40079	5.0498
#3	1.0048	49.106	.50206	9.9754	.49778	1.1993	.40708	5.0682
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 11:58:33 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99492	.98797	.99267	.50603	.99004	.99110	.97683
Stddev	.00681	.00569	.02039	.00492	.00660	.00435	.00879
%RSD	.68434	.57612	2.0539	.97323	.66682	.43920	.89996
#1	.98706	.98517	.97657	.50037	.98733	.98654	.96886
#2	.99882	.99452	1.0156	.50832	.99756	.99154	.97537
#3	.99889	.98422	.98586	.50939	.98522	.99521	.98626
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9140.1	54735.	2547.5
Stddev	23.3	354.	7.8
%RSD	.25497	.64585	.30650
#1	9137.6	54500.	2556.1
#2	9118.2	54563.	2540.9
#3	9164.6	55142.	2545.5

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 12:02:11 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**.00980**	**.00159**	**.00301**	**-.00231**	**-.00002**	**.05137**	**-.00003**
Stddev	.00080	.00182	.00313	.00160	.00141	.00005	.01990	.00032
%RSD	505.26	18.548	196.74	53.049	61.050	215.07	38.737	920.88
#1	.00042	.00836	.00201	.00131	-.00237	.00000	.07431	-.00028
#2	.00079	.00921	.00450	.00449	-.00088	.00001	.03866	-.00014
#3	-.00074	.01185	-.00173	.00325	-.00370	-.00008	.04115	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**-.00073**	**.00126**	**.00388**	**.19440**	**.00155**	**.00560**	**.00227**
Stddev	.00037	.00155	.00089	.02431	.04073	.00153	.02007	.00307
%RSD	183.17	213.46	70.395	626.79	20.950	98.550	358.11	135.41
#1	.00014	-.00231	.00074	.02353	.18263	.00179	-.00548	.00135
#2	-.00015	-.00066	.00076	.01142	.23971	.00296	.02877	.00569
#3	-.00060	.00079	.00229	-.02331	.16085	-.00008	-.00648	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.01512**	**.00140**	**.00444**	**.00378**	**.00415**	**.00061**	**-.01344**
Stddev	.00040	.03252	.00069	.00073	.00574	.00471	.00394	.00053
%RSD	319.62	215.15	49.153	16.405	151.98	113.38	647.74	3.9630
#1	.00019	.01151	.00071	.00432	.00792	-.00090	-.00163	-.01395
#2	.00049	-.01545	.00141	.00377	-.00278	.00842	-.00170	-.01289
#3	-.00030	.04929	.00209	.00521	.00620	.00494	.00516	-.01348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 12:02:11 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00084**	**-.00035**	**.00368**	**.00167**	**.00096**	**.00170**	**.00042**
Stddev	.00080	.00025	.00390	.00263	.00105	.00007	.00065
%RSD	95.968	71.594	105.89	157.91	108.47	3.9451	155.39
#1	-.00164	-.00013	-.00072	.00344	.00144	.00164	-.00028
#2	-.00084	-.00063	.00507	-.00136	.00169	.00169	.00099
#3	-.00003	-.00030	.00670	.00292	-.00024	.00178	.00054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9151.3**	**55942.**	**2592.6**
Stddev	7.3	441.	22.9
%RSD	.08030	.78823	.88137
#1	9159.1	56371.	2600.0
#2	9150.4	55964.	2567.0
#3	9144.5	55490.	2610.8

Approved: June 29, 2016

Sample Name: ICSA Acquired: 6/29/2016 12:06:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00060	255.94	-.00165	.01120	.00020	-.00007	243.01	-.00009
Stddev	.00151	.50	.00310	.00093	.00011	.00009	1.98	.00034
%RSD	253.76	.19515	188.20	8.3312	56.041	136.74	.81639	356.18
#1	-.00159	255.93	-.00519	.01174	.00034	-.00017	244.75	.00029
#2	.00114	255.44	-.00038	.01174	.00013	-.00004	243.43	-.00028
#3	-.00134	256.44	.00062	.01012	.00015	.00001	240.85	-.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00153	-.00160	-.00060	96.491	.02735	.00278	246.20	-.00125
Stddev	.00044	.00072	.00047	.805	.05129	.00162	2.62	.00339
%RSD	28.875	45.065	78.040	.83461	187.56	58.278	1.0622	271.35
#1	-.00170	-.00208	-.00101	97.354	.08389	.00139	248.59	-.00516
#2	-.00103	-.00194	-.00009	96.359	.01433	.00240	246.60	.00054
#3	-.00186	-.00077	-.00071	95.760	-.01618	.00456	243.41	.00087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00063	.01110	-.00126	.04392	-.00149	-.00898	.00783	-.01528
Stddev	.00059	.02615	.00118	.00571	.00362	.00187	.00432	.00266
%RSD	92.708	235.62	93.325	13.010	243.00	20.819	55.216	17.436
#1	-.00119	.03843	-.00263	.03972	.00235	-.00709	.00686	-.01366
#2	-.00069	.00854	-.00059	.04162	-.00198	-.01083	.01255	-.01836
#3	-.00002	-.01368	-.00058	.05043	-.00484	-.00904	.00407	-.01383
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: ICSA Acquired: 6/29/2016 12:06:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.00023**	**.02224**	**.00386**	**-.00165**	**-.00654**	**.00214**
Stddev	.00041	.00067	.00086	.00086	.00091	.00017	.00039
%RSD	252.56	288.37	3.8484	22.351	55.189	2.6355	18.132
#1	-.00064	.00034	.02237	.00449	-.00126	-.00672	.00207
#2	.00010	.00084	.02132	.00421	-.00269	-.00638	.00256
#3	.00005	-.00048	.02302	.00288	-.00100	-.00653	.00180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8766.0**	**52087.**	**2495.6**
Stddev	15.9	170.	14.3
%RSD	.18130	.32719	.57463
#1	8770.4	51898.	2479.2
#2	8748.4	52230.	2501.8
#3	8779.3	52132.	2505.8

Approved: June 29, 2016

Sample Name: ICSAB Acquired: 6/29/2016 12:09:59 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50734	257.51	.24131	.01272	.24807	.25068	241.07	.48446
Stddev	.00412	.51	.00069	.00050	.00312	.00028	.90	.00013
%RSD	.81232	.19627	.28760	3.9448	1.2596	.11114	.37397	.02689
#1	.50266	256.93	.24196	.01329	.25140	.25037	241.62	.48432
#2	.51041	257.72	.24140	.01255	.24760	.25078	241.56	.48457
#3	.50896	257.88	.24058	.01233	.24520	.25090	240.03	.48449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.23503	.24726	.24440	94.269	5.2006	.00821	240.90	.23840
Stddev	.00077	.00242	.00071	.402	.0996	.00307	1.07	.00309
%RSD	.32939	.97772	.29206	.42640	1.9143	37.378	.44384	1.2979
#1	.23436	.24536	.24387	94.628	5.3098	.00478	242.06	.23780
#2	.23487	.24645	.24412	94.344	5.1772	.01070	240.71	.24176
#3	.23588	.24998	.24521	93.834	5.1149	.00916	239.95	.23566
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00055	5.2614	.47336	.02875	.48433	.48657	.26422	-.00770
Stddev	.00022	.0150	.00189	.00931	.00753	.00736	.00883	.00451
%RSD	40.746	.28490	.39985	32.374	1.5551	1.5123	3.3416	58.647
#1	-.00080	5.2539	.47134	.03926	.47614	.48324	.27429	-.00256
#2	-.00038	5.2516	.47509	.02157	.48588	.49500	.26057	-.01103
#3	-.00046	5.2786	.47365	.02541	.49096	.48145	.25781	-.00951
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: ICSAB Acquired: 6/29/2016 12:09:59 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00048**	**.00030**	**.02351**	**.45762**	**.24854**	**.47227**	**.00297**
Stddev	.00061	.00056	.01175	.00173	.00079	.00099	.00060
%RSD	127.26	185.36	49.987	.37759	.31592	.20864	20.120
#1	-.00014	.00093	.01146	.45652	.24882	.47114	.00229
#2	-.00011	-.00012	.03494	.45674	.24765	.47274	.00320
#3	-.00118	.00008	.02412	.45961	.24914	.47294	.00341
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8731.8**	**52174.**	**2509.6**
Stddev	26.4	65.	18.6
%RSD	.30284	.12375	.74252
#1	8706.6	52246.	2488.6
#2	8759.3	52121.	2516.0
#3	8729.4	52155.	2524.2

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 12:13:42 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40609	10.157	.40230	.50343	1.0188	.05040	10.091	.05079
Stddev	.00218	.021	.00331	.00384	.0017	.00017	.104	.00019
%RSD	.53746	.20256	.82232	.76263	.16380	.33206	1.0316	.36956
#1	.40725	10.157	.40572	.50548	1.0182	.05059	10.041	.05066
#2	.40744	10.137	.39912	.49900	1.0175	.05033	10.211	.05069
#3	.40357	10.178	.40205	.50581	1.0207	.05028	10.021	.05100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20237	.50550	.50987	4.0350	51.084	1.0203	10.173	.50788
Stddev	.00061	.00069	.00213	.0944	.085	.0107	.095	.00114
%RSD	.30016	.13658	.41783	2.3400	.16629	1.0496	.93296	.22508
#1	.20306	.50497	.51045	4.0483	51.023	1.0301	10.074	.50898
#2	.20209	.50628	.50751	4.1221	51.181	1.0220	10.182	.50796
#3	.20195	.50526	.51165	3.9346	51.047	1.0089	10.263	.50670
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0221	50.841	.51050	10.150	.50802	1.2227	.40322	5.1413
Stddev	.0020	.110	.00140	.032	.00139	.0051	.00211	.0071
%RSD	.19823	.21590	.27448	.31495	.27358	.41346	.52414	.13833
#1	1.0244	50.756	.51103	10.186	.50962	1.2261	.40506	5.1426
#2	1.0208	50.802	.51156	10.139	.50738	1.2250	.40091	5.1336
#3	1.0210	50.965	.50891	10.124	.50707	1.2169	.40368	5.1476
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 12:13:42 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0183**	**1.0207**	**1.0265**	**.51107**	**1.0132**	**1.0148**	**1.0193**
Stddev	.0024	.0008	.0082	.00055	.0045	.0019	.0027
%RSD	.23717	.07303	.79675	.10719	.44532	.18624	.26154
#1	1.0210	1.0209	1.0170	.51071	1.0179	1.0169	1.0163
#2	1.0174	1.0199	1.0314	.51170	1.0089	1.0143	1.0202
#3	1.0164	1.0214	1.0309	.51080	1.0127	1.0132	1.0214
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9052.4**	**54332.**	**2495.9**
Stddev	5.6	56.	2.1
%RSD	.06235	.10276	.08611
#1	9053.4	54286.	2498.0
#2	9057.4	54394.	2495.9
#3	9046.3	54316.	2493.7

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 12:17:18 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.00938	.00073	.00484	.00056	-.00003	.02976	.00014
Stddev	.00272	.00587	.00360	.00166	.00093	.00003	.02753	.00025
%RSD	3952.1	62.651	491.07	34.255	167.01	104.78	92.512	178.01
#1	-.00116	.00889	.00444	.00607	-.00046	-.00007	.05769	-.00010
#2	-.00182	.00376	.00050	.00296	.00137	-.00000	.02894	.00012
#3	.00318	.01548	-.00274	.00550	.00077	-.00002	.00265	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00062	-.00026	.00147	-.00293	.12048	-.00272	-.04259	.00250
Stddev	.00021	.00113	.00101	.00343	.05999	.00447	.05629	.00398
%RSD	34.132	429.11	68.864	117.02	49.796	164.55	132.18	159.06
#1	-.00078	-.00017	.00147	-.00611	.14692	-.00687	.00904	.00356
#2	-.00038	.00081	.00249	.00070	.05181	-.00330	-.10260	.00584
#3	-.00069	-.00143	.00046	-.00339	.16272	.00202	-.03421	-.00190
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.05530	.00038	.00467	.00162	-.00085	-.00242	-.01369
Stddev	.00031	.01142	.00006	.00335	.00208	.00309	.01054	.00284
%RSD	52.972	20.647	15.524	71.745	128.71	365.68	436.19	20.744
#1	.00023	.05338	.00031	.00408	.00120	-.00340	-.00437	-.01086
#2	.00082	.04497	.00040	.00166	-.00022	.00259	.00896	-.01368
#3	.00072	.06756	.00042	.00828	.00388	-.00173	-.01183	-.01654
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 12:17:18 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00132**	**-.00047**	**.00392**	**.00026**	**.00123**	**.00140**	**.00038**
Stddev	.00028	.00080	.00476	.00140	.00083	.00017	.00066
%RSD	21.568	168.21	121.48	547.41	67.923	11.972	173.11
#1	-.00117	-.00135	.00198	.00188	.00035	.00122	.00025
#2	-.00165	-.00029	.00043	-.00058	.00201	.00145	.00110
#3	-.00114	.00021	.00934	-.00052	.00133	.00154	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9021.4**	**54197.**	**2477.1**
Stddev	17.7	72.	12.5
%RSD	.19625	.13312	.50281
#1	9012.0	54182.	2480.1
#2	9010.4	54135.	2463.5
#3	9041.8	54276.	2487.8

Approved: June 29, 2016

Sample Name: LLCCV Acquired: 6/29/2016 12:21:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00930	.18527	.00831	.08680	.00908	.00161	.46292	.00077
Stddev	.00154	.01126	.00208	.00248	.00073	.00005	.03175	.00030
%RSD	16.577	6.0796	25.075	2.8560	8.0173	3.0639	6.8582	38.937
#1	.00816	.18000	.01045	.08705	.00824	.00158	.43180	.00107
#2	.00868	.19820	.00628	.08421	.00939	.00159	.49526	.00074
#3	.01106	.17761	.00820	.08915	.00959	.00167	.46172	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00379	.00286	.00752	.07010	.88858	.08506	.33804	.00800
Stddev	.00040	.00061	.00070	.03490	.07168	.00359	.06707	.00189
%RSD	10.603	21.467	9.3740	49.790	8.0672	4.2234	19.840	23.594
#1	.00350	.00350	.00702	.04132	.97072	.08650	.27131	.01017
#2	.00425	.00280	.00721	.06005	.85638	.08771	.33737	.00668
#3	.00362	.00228	.00832	.10892	.83864	.08097	.40544	.00717
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00788	.43352	.01602	.82021	.01274	.08681	.01319	.74946
Stddev	.00004	.05212	.00057	.00536	.00288	.00276	.00456	.00433
%RSD	.56667	12.022	3.5785	.65372	22.621	3.1751	34.563	.57752
#1	.00787	.49352	.01554	.81561	.01320	.08794	.01438	.75216
#2	.00785	.39951	.01666	.82609	.01537	.08883	.00816	.75175
#3	.00794	.40753	.01587	.81892	.00966	.08367	.01704	.74446
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LLCCV Acquired: 6/29/2016 12:21:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41310	.04246	.03184	.15616	.00889	.01771	.04320
Stddev	.00463	.00051	.00473	.00028	.00097	.00035	.00058
%RSD	1.1201	1.2065	14.851	.17819	10.855	1.9758	1.3315
#1	.41617	.04188	.02840	.15646	.00862	.01807	.04384
#2	.41536	.04283	.02988	.15612	.00996	.01768	.04304
#3	.40778	.04268	.03723	.15590	.00809	.01737	.04272
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9101.1	54266.	2460.7
Stddev	26.1	395.	5.7
%RSD	.28689	.72780	.23021
#1	9083.8	53891.	2466.7
#2	9088.3	54227.	2460.1
#3	9131.1	54679.	2455.4

Approved: June 29, 2016

Sample Name: PBW 1A Acquired: 6/29/2016 12:25:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572926-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	.00969	.00038	.00219	.00001	-.00001	.03841	.00000
Stddev	.00208	.00740	.00389	.00299	.00060	.00005	.03188	.00011
%RSD	490.47	76.386	1019.5	136.75	9720.9	1068.5	83.004	4065.3
#1	-.00163	.00771	-.00079	.00162	-.00061	-.00004	.00538	-.00006
#2	.00253	.00348	-.00279	.00542	.00059	-.00003	.06900	.00013
#3	.00037	.01788	.00473	-.00048	.00004	.00006	.04083	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	-.00114	.00101	-.00743	.05403	-.00461	.00807	.00265
Stddev	.00016	.00115	.00139	.03073	.12944	.00184	.04739	.00241
%RSD	80.693	100.57	138.13	413.72	239.57	39.969	587.23	91.000
#1	-.00010	-.00093	-.00008	.02742	.18957	-.00661	-.02026	.00319
#2	-.00039	-.00012	.00257	-.03064	-.06829	-.00298	.06278	.00001
#3	-.00012	-.00239	.00052	-.01906	.04081	-.00425	-.01831	.00474
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.01638	-.00012	-.00282	.00313	.00156	-.00004	-.01726
Stddev	.00031	.01737	.00058	.00451	.00088	.00443	.00754	.00313
%RSD	341.98	106.08	491.56	159.75	28.092	284.40	18390.	18.103
#1	-.00041	.02925	.00054	.00166	.00247	-.00307	-.00321	-.02086
#2	.00021	-.00339	-.00033	-.00735	.00279	.00198	-.00548	-.01579
#3	-.00007	.02327	-.00056	-.00277	.00413	.00577	.00856	-.01515
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: PBW 1A Acquired: 6/29/2016 12:25:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572926-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	-.00037	.00835	.00044	.00061	.00070	.00098
Stddev	.00035	.00043	.00581	.00403	.00043	.00006	.00029
%RSD	115.51	115.48	69.571	911.33	69.936	8.7596	29.722
#1	.00036	.00009	.00689	.00493	.00095	.00064	.00130
#2	-.00007	-.00075	.01476	-.00074	.00013	.00070	.00090
#3	.00063	-.00045	.00341	-.00287	.00076	.00076	.00074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9077.8	55403.	2547.2
Stddev	29.0	136.	11.6
%RSD	.31944	.24610	.45692
#1	9090.8	55492.	2560.5
#2	9098.0	55246.	2541.9
#3	9044.6	55471.	2539.2

Approved: June 29, 2016

Sample Name: L1606000317 Acquired: 6/29/2016 12:51:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19942	4.9152	.19467	.94685	.49734	.02416	5.0301	.02449
Stddev	.00255	.0117	.00420	.00146	.00228	.00009	.0426	.00032
%RSD	1.2773	.23807	2.1585	.15423	.45856	.39192	.84644	1.2871
#1	.20196	4.9030	.19717	.94606	.49912	.02407	4.9810	.02484
#2	.19686	4.9263	.19702	.94595	.49814	.02414	5.0529	.02441
#3	.19945	4.9164	.18982	.94853	.49477	.02426	5.0564	.02422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09914	.24528	.24831	1.9921	24.590	.50338	4.9364	.24982
Stddev	.00028	.00273	.00169	.0121	.169	.00088	.1699	.00058
%RSD	.28422	1.1127	.68258	.60865	.68881	.17436	3.4428	.23154
#1	.09933	.24822	.24886	1.9942	24.551	.50339	5.0948	.25044
#2	.09928	.24282	.24641	1.9790	24.775	.50249	4.9575	.24929
#3	.09882	.24481	.24966	2.0030	24.443	.50425	4.7568	.24974
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49762	24.927	.24842	4.7827	.24600	.58372	.18760	2.3385
Stddev	.00152	.049	.00111	.0046	.00502	.00040	.00394	.0041
%RSD	.30447	.19534	.44745	.09557	2.0396	.06777	2.1019	.17592
#1	.49904	24.918	.24747	4.7873	.24576	.58326	.18318	2.3426
#2	.49603	24.979	.24815	4.7781	.25113	.58396	.19076	2.3344
#3	.49780	24.883	.24964	4.7828	.24110	.58393	.18887	2.3384
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606000317 Acquired: 6/29/2016 12:51:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49497	.50184	.49529	.24845	.49224	.49191	.50492
Stddev	.00275	.00140	.00808	.00021	.00139	.00069	.00249
%RSD	.55508	.27961	1.6310	.08451	.28222	.13974	.49288
#1	.49807	.50189	.50355	.24861	.49286	.49225	.50678
#2	.49397	.50322	.49491	.24821	.49321	.49112	.50588
#3	.49285	.50041	.48740	.24852	.49065	.49236	.50209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9106.9	54839.	2510.9
Stddev	31.7	98.	10.0
%RSD	.34778	.17793	.39937
#1	9070.5	54743.	2503.6
#2	9122.5	54837.	2506.9
#3	9127.7	54938.	2522.4

Approved: June 29, 2016

Sample Name: L1606000318 Acquired: 6/29/2016 12:54:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20311**	**5.0093**	**.20024**	**.96622**	**.50492**	**.02463**	**5.1020**	**.02493**
Stddev	.00134	.0069	.00123	.00653	.00175	.00006	.0248	.00009
%RSD	.65845	.13814	.61617	.67574	.34616	.23578	.48634	.37015
#1	.20259	5.0148	.19919	.97000	.50693	.02456	5.1289	.02499
#2	.20463	5.0115	.19994	.95868	.50405	.02465	5.0971	.02482
#3	.20211	5.0015	.20160	.96999	.50378	.02468	5.0800	.02497
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10159**	**.25237**	**.25344**	**2.0243**	**25.196**	**.50983**	**4.9947**	**.25208**
Stddev	.00022	.00097	.00010	.0071	.064	.00473	.0322	.00383
%RSD	.21200	.38555	.03998	.34981	.25307	.92753	.64516	1.5175
#1	.10168	.25147	.25337	2.0230	25.166	.51502	5.0116	.25643
#2	.10134	.25340	.25339	2.0319	25.269	.50576	4.9576	.24922
#3	.10175	.25222	.25355	2.0179	25.153	.50870	5.0150	.25061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51133**	**25.314**	**.25403**	**4.8909**	**.25346**	**.59729**	**.19152**	**2.3900**
Stddev	.00025	.101	.00164	.0074	.00202	.00300	.01053	.0036
%RSD	.04800	.39933	.64387	.15059	.79518	.50201	5.4987	.15132
#1	.51138	25.371	.25300	4.8825	.25574	.59947	.18873	2.3859
#2	.51107	25.375	.25316	4.8948	.25274	.59387	.20316	2.3915
#3	.51155	25.198	.25591	4.8955	.25191	.59853	.18266	2.3926
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606000318 Acquired: 6/29/2016 12:54:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50607	.51174	.50420	.25663	.50263	.50496	.50908
Stddev	.00055	.00020	.00568	.00381	.00128	.00087	.00229
%RSD	.10798	.03949	1.1259	1.4837	.25367	.17237	.45012
#1	.50554	.51151	.49897	.26069	.50259	.50421	.50995
#2	.50604	.51186	.51023	.25313	.50137	.50476	.51082
#3	.50663	.51185	.50339	.25606	.50392	.50592	.50648
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9125.2	55317.	2535.5
Stddev	23.7	132.	16.3
%RSD	.26019	.23790	.64140
#1	9101.1	55178.	2528.3
#2	9125.8	55335.	2524.1
#3	9148.6	55439.	2554.1

Approved: June 29, 2016

Sample Name: L1606000319 Acquired: 6/29/2016 12:58:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20259	4.9748	.19670	.96312	.50177	.02447	5.1150	.02478
Stddev	.00335	.0120	.00105	.00730	.00329	.00011	.0459	.00019
%RSD	1.6539	.24134	.53322	.75754	.65553	.43752	.89800	.77153
#1	.20645	4.9806	.19550	.96677	.49884	.02441	5.0929	.02465
#2	.20083	4.9827	.19718	.95472	.50533	.02459	5.1678	.02500
#3	.20048	4.9610	.19743	.96787	.50112	.02441	5.0844	.02470
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10071	.24983	.25372	1.9968	25.135	.51049	5.0317	.24909
Stddev	.00057	.00136	.00115	.0570	.092	.00078	.1042	.00287
%RSD	.57056	.54283	.45193	2.8535	.36573	.15242	2.0711	1.1532
#1	.10016	.24978	.25491	1.9675	25.037	.51039	5.1497	.24614
#2	.10067	.24850	.25364	2.0625	25.220	.51131	4.9934	.25187
#3	.10131	.25121	.25262	1.9605	25.147	.50977	4.9521	.24926
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50759	25.260	.25300	4.8539	.25419	.59776	.19000	2.3625
Stddev	.00112	.047	.00099	.0055	.00338	.00476	.00429	.0019
%RSD	.21968	.18448	.39174	.11346	1.3288	.79571	2.2577	.07826
#1	.50884	25.244	.25400	4.8572	.25062	.59919	.19488	2.3643
#2	.50670	25.313	.25298	4.8570	.25460	.60164	.18834	2.3626
#3	.50723	25.224	.25202	4.8476	.25734	.59245	.18679	2.3606
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606000319 Acquired: 6/29/2016 12:58:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50413	.51002	.49861	.25226	.49804	.50117	.50899
Stddev	.00077	.00178	.00782	.00363	.00110	.00076	.00148
%RSD	.15230	.34965	1.5686	1.4399	.22145	.15205	.29136
#1	.50501	.50928	.49725	.25039	.49679	.50174	.50957
#2	.50370	.51205	.49156	.25644	.49845	.50146	.50731
#3	.50367	.50873	.50702	.24994	.49888	.50030	.51010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9138.5	55370.	2535.2
Stddev	33.9	132.	12.4
%RSD	.37093	.23838	.49071
#1	9127.8	55226.	2523.7
#2	9176.5	55486.	2548.4
#3	9111.3	55399.	2533.4

Approved: June 29, 2016

Sample Name: L1606000320 Acquired: 6/29/2016 13:01:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20245**	**4.9702**	**.19985**	**.96406**	**.50180**	**.02434**	**5.0941**	**.02476**
Stddev	.00212	.0121	.00304	.00165	.00115	.00010	.0121	.00025
%RSD	1.0488	.24344	1.5231	.17079	.22884	.43136	.23714	1.0220
#1	.20099	4.9792	.20327	.96261	.50290	.02434	5.0979	.02471
#2	.20148	4.9750	.19888	.96372	.50061	.02423	5.1038	.02503
#3	.20489	4.9565	.19742	.96585	.50189	.02444	5.0806	.02453
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10089**	**.24943**	**.25316**	**2.0222**	**24.982**	**.50705**	**5.0147**	**.25129**
Stddev	.00012	.00066	.00186	.0200	.034	.00254	.1081	.00517
%RSD	.12332	.26387	.73297	.98746	.13790	.50173	2.1552	2.0577
#1	.10080	.25017	.25499	2.0000	25.004	.50412	4.9990	.24775
#2	.10103	.24921	.25320	2.0276	25.000	.50842	4.9153	.25722
#3	.10083	.24891	.25128	2.0388	24.942	.50862	5.1297	.24889
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50686**	**25.213**	**.25335**	**4.8622**	**.25304**	**.59399**	**.19598**	**2.3602**
Stddev	.00079	.047	.00040	.0043	.00210	.00132	.00508	.0044
%RSD	.15635	.18575	.15834	.08895	.83025	.22140	2.5942	.18605
#1	.50769	25.260	.25297	4.8659	.25387	.59512	.19014	2.3653
#2	.50679	25.167	.25330	4.8631	.25460	.59430	.19839	2.3584
#3	.50611	25.211	.25377	4.8575	.25065	.59255	.19942	2.3571
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606000320 Acquired: 6/29/2016 13:01:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50362	.51051	.50103	.25257	.50156	.50166	.46823
Stddev	.00072	.00045	.00604	.00391	.00108	.00067	.00088
%RSD	.14335	.08821	1.2065	1.5475	.21506	.13395	.18846
#1	.50381	.51034	.50396	.25632	.50267	.50161	.46861
#2	.50423	.51102	.49408	.25286	.50149	.50235	.46722
#3	.50282	.51017	.50505	.24852	.50052	.50101	.46886
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9124.0	55260.	2545.8
Stddev	21.0	111.	3.4
%RSD	.23034	.20049	.13548
#1	9099.7	55218.	2542.6
#2	9137.3	55177.	2549.4
#3	9134.8	55386.	2545.3

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 13:05:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41728**	**10.443**	**.40824**	**.52559**	**1.0322**	**.05136**	**10.162**	**.05182**
Stddev	.00237	.025	.00050	.00501	.0032	.00014	.032	.00015
%RSD	.56738	.23872	.12193	.95267	.30669	.26937	.31037	.28513
#1	.41466	10.419	.40772	.53075	1.0302	.05152	10.197	.05196
#2	.41928	10.441	.40828	.52075	1.0358	.05129	10.136	.05183
#3	.41789	10.469	.40871	.52528	1.0305	.05127	10.154	.05167
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20840**	**.52211**	**.52309**	**4.1083**	**51.248**	**1.0398**	**10.307**	**.51344**
Stddev	.00024	.00275	.00166	.0550	.066	.0053	.136	.00123
%RSD	.11505	.52680	.31759	1.3384	.12825	.50870	1.3228	.24045
#1	.20812	.52522	.52492	4.0977	51.292	1.0343	10.153	.51232
#2	.20852	.52000	.52270	4.1679	51.279	1.0449	10.411	.51476
#3	.20855	.52113	.52167	4.0595	51.173	1.0402	10.357	.51322
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0440**	**51.386**	**.52438**	**10.412**	**.52053**	**1.2552**	**.42317**	**5.2692**
Stddev	.0008	.067	.00122	.014	.00415	.0027	.01133	.0060
%RSD	.07805	.13026	.23220	.13293	.79813	.21836	2.6770	.11421
#1	1.0446	51.436	.52317	10.397	.52193	1.2543	.43284	5.2639
#2	1.0443	51.412	.52561	10.423	.52381	1.2530	.41071	5.2758
#3	1.0431	51.310	.52436	10.418	.51586	1.2583	.42597	5.2679
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 13:05:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0436**	**1.0279**	**1.0340**	**.52273**	**1.0431**	**1.0402**	**1.0378**
Stddev	.0017	.0015	.0024	.00377	.0024	.0010	.0044
%RSD	.16567	.15092	.23240	.72085	.22837	.09675	.42077
#1	1.0418	1.0270	1.0313	.51970	1.0446	1.0399	1.0426
#2	1.0453	1.0297	1.0348	.52153	1.0404	1.0413	1.0368
#3	1.0436	1.0270	1.0359	.52695	1.0444	1.0394	1.0340
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8816.9**	**52768.**	**2460.8**
Stddev	25.4	35.	11.8
%RSD	.28757	.06597	.47754
#1	8803.8	52804.	2449.9
#2	8800.7	52734.	2459.2
#3	8846.1	52767.	2473.3

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 13:09:00 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00144	.02092	.00499	.00875	.00130	.00004	.04368	-.00006
Stddev	.00139	.00906	.00291	.00167	.00046	.00007	.03569	.00034
%RSD	96.487	43.295	58.180	19.023	35.727	172.04	81.714	579.33
#1	-.00003	.03119	.00427	.00901	.00142	.00008	.07806	.00020
#2	.00161	.01746	.00819	.00698	.00168	.00009	.04617	-.00044
#3	.00273	.01409	.00252	.01028	.00078	-.00004	.00681	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	.00027	.00060	.01159	.31430	-.00299	-.07103	.00030
Stddev	.00017	.00035	.00102	.02144	.01113	.00849	.06707	.00165
%RSD	89.290	130.31	170.26	185.01	3.5420	284.33	94.418	543.54
#1	-.00016	.00064	-.00052	.03505	.32409	.00279	-.03511	.00134
#2	-.00038	-.00004	.00147	.00668	.30219	.00098	-.02957	-.00160
#3	-.00004	.00020	.00085	-.00697	.31662	-.01273	-.14840	.00118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	.03858	.00079	.00525	-.00017	-.00129	.00458	-.01015
Stddev	.00031	.05294	.00163	.00742	.00058	.00315	.00322	.00163
%RSD	57.139	137.21	205.93	141.12	341.19	244.71	70.209	16.103
#1	.00086	.07534	-.00107	.01276	-.00034	.00051	.00776	-.00828
#2	.00025	.06251	.00198	-.00207	-.00064	.00056	.00468	-.01133
#3	.00050	-.02210	.00147	.00507	.00047	-.00493	.00132	-.01083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 13:09:00 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00110	.00088	.00633	.00294	.00284	.00275	.00099
Stddev	.00009	.00010	.00393	.00140	.00074	.00017	.00049
%RSD	8.3685	11.846	62.098	47.766	25.940	6.0078	49.647
#1	.00119	.00080	.00973	.00137	.00199	.00268	.00093
#2	.00111	.00083	.00723	.00339	.00331	.00263	.00151
#3	.00100	.00099	.00203	.00407	.00320	.00294	.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9069.1	54567.	2459.8
Stddev	34.3	946.	2.7
%RSD	.37865	1.7328	.10952
#1	9101.3	53961.	2456.7
#2	9072.9	54082.	2460.8
#3	9033.0	55656.	2461.9

Approved: June 29, 2016

Sample Name: PBW 9A Acquired: 6/29/2016 13:12:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00156	.01277	-.00057	.00128	.00058	.00012	.02846	-.00015
Stddev	.00243	.01074	.00129	.00102	.00108	.00009	.03509	.00028
%RSD	156.09	84.047	228.10	79.795	185.93	79.077	123.28	187.74
#1	.00307	.02394	-.00144	.00015	.00172	.00006	-.01063	.00011
#2	.00284	.00253	.00091	.00155	-.00043	.00006	.05722	-.00045
#3	-.00125	.01185	-.00117	.00214	.00046	.00022	.03879	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00012	-.00060	.00271	-.00172	.10278	-.00435	-.05155	.00144
Stddev	.00026	.00014	.00059	.02008	.11040	.00141	.03391	.00194
%RSD	215.36	23.355	21.966	1166.1	107.41	32.304	65.786	134.90
#1	-.00034	-.00045	.00248	-.02335	.22979	-.00298	-.08390	.00338
#2	.00017	-.00062	.00226	.00183	.04875	-.00429	-.01626	-.00050
#3	-.00019	-.00073	.00338	.01635	.02981	-.00578	-.05450	.00144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	-.00949	-.00074	.00015	.00305	.00458	-.00220	-.00408
Stddev	.00019	.05710	.00110	.00555	.00336	.00036	.00500	.00163
%RSD	82.720	601.37	148.14	3741.8	110.48	7.8763	227.58	39.866
#1	-.00003	.00344	.00052	-.00258	.00028	.00434	.00356	-.00318
#2	-.00026	.04002	-.00124	-.00351	.00206	.00500	-.00470	-.00309
#3	-.00041	-.07195	-.00152	.00653	.00679	.00441	-.00544	-.00595
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: PBW 9A Acquired: 6/29/2016 13:12:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00000**	**-.00017**	**.00835**	**.00399**	**.00221**	**.00058**	**-.00007**
Stddev	.00032	.00034	.00260	.00541	.00092	.00007	.00034
%RSD	15258.	200.35	31.148	135.71	41.862	12.717	487.57
#1	.00036	-.00025	.00932	.00647	.00302	.00051	-.00045
#2	-.00009	.00021	.01032	-.00222	.00239	.00057	.00015
#3	-.00026	-.00047	.00540	.00771	.00120	.00065	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8979.3**	**53829.**	**2438.6**
Stddev	13.3	47.	17.0
%RSD	.14830	.08639	.69821
#1	8964.6	53864.	2422.5
#2	8982.6	53776.	2436.9
#3	8990.6	53846.	2456.4

Approved: June 29, 2016

Sample Name: LCSW 9A Acquired: 6/29/2016 13:16:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19153**	**4.8242**	**.19643**	**.93765**	**.48784**	**.02348**	**4.9390**	**.02367**
Stddev	.00023	.0092	.00257	.00737	.00434	.00005	.0641	.00018
%RSD	.11813	.19160	1.3078	.78564	.88908	.23086	1.2976	.76226
#1	.19126	4.8142	.19451	.94494	.48814	.02344	4.8736	.02347
#2	.19164	4.8259	.19935	.93779	.48336	.02354	4.9419	.02383
#3	.19167	4.8324	.19543	.93021	.49201	.02347	5.0016	.02369
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09709**	**.24274**	**.24500**	**1.9526**	**24.264**	**.49676**	**4.8975**	**.24566**
Stddev	.00023	.00123	.00204	.0603	.156	.00276	.1134	.00298
%RSD	.24128	.50688	.83346	3.0892	.64109	.55474	2.3145	1.2147
#1	.09706	.24399	.24387	2.0191	24.150	.49989	4.8090	.24872
#2	.09733	.24270	.24736	1.9375	24.201	.49568	4.8582	.24275
#3	.09686	.24153	.24377	1.9014	24.441	.49470	5.0252	.24551
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48960**	**24.489**	**.24515**	**4.7214**	**.24653**	**.57645**	**.19208**	**2.2961**
Stddev	.00187	.110	.00154	.0246	.00069	.00338	.00416	.0083
%RSD	.38239	.44956	.62743	.52045	.28063	.58690	2.1678	.36040
#1	.48896	24.569	.24362	4.7202	.24577	.57275	.19660	2.2976
#2	.49171	24.364	.24670	4.7465	.24713	.57938	.18839	2.3035
#3	.48813	24.535	.24515	4.6974	.24668	.57723	.19124	2.2871
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LCSW 9A Acquired: 6/29/2016 13:16:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48754	.49440	.49346	.24467	.48567	.48631	.00100
Stddev	.00247	.00085	.00185	.00469	.00086	.00164	.00051
%RSD	.50612	.17214	.37585	1.9151	.17727	.33744	51.175
#1	.48669	.49487	.49132	.24095	.48611	.48510	.00106
#2	.49032	.49342	.49462	.24312	.48621	.48818	.00147
#3	.48562	.49491	.49443	.24993	.48467	.48564	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9069.4	54722.	2517.9
Stddev	20.8	63.	2.3
%RSD	.22881	.11570	.09293
#1	9045.5	54658.	2515.6
#2	9079.4	54722.	2520.2
#3	9083.3	54784.	2518.0

Approved: June 29, 2016

Sample Name: F BLANK Acquired: 6/29/2016 13:20:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574515-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00047**	**.01538**	**-.00286**	**.01085**	**.00013**	**.00010**	**.02649**	**.00006**
Stddev	.00233	.01023	.00247	.00313	.00061	.00008	.06500	.00010
%RSD	494.84	66.496	86.406	28.893	457.32	73.499	245.39	174.09
#1	.00221	.02702	-.00051	.01142	-.00013	.00005	-.03588	.00014
#2	-.00166	.00785	-.00264	.01365	-.00029	.00007	.02150	-.00005
#3	-.00197	.01126	-.00544	.00746	.00083	.00019	.09384	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.00036**	**.00207**	**.00408**	**.13839**	**-.00066**	**.00872**	**.00046**
Stddev	.00031	.00065	.00059	.02388	.03067	.00271	.00917	.00060
%RSD	184.06	183.11	28.679	586.09	22.159	413.43	105.15	130.31
#1	-.00037	-.00035	.00254	.03155	.16581	.00225	.01333	-.00014
#2	-.00031	.00093	.00225	-.01178	.14409	-.00312	-.00184	.00106
#3	.00019	.00049	.00140	-.00754	.10528	-.00109	.01466	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00054**	**.07025**	**.00090**	**.00198**	**.00563**	**-.00130**	**.00142**	**-.01125**
Stddev	.00037	.02627	.00077	.00663	.00114	.00219	.00085	.00286
%RSD	68.038	37.398	84.813	335.31	20.209	168.94	59.973	25.454
#1	.00097	.07572	.00026	-.00335	.00545	-.00054	.00074	-.00976
#2	.00033	.09337	.00175	.00941	.00684	.00041	.00113	-.00943
#3	.00033	.04168	.00070	-.00013	.00458	-.00377	.00237	-.01455
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: F BLANK Acquired: 6/29/2016 13:20:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574515-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.00033	.00749	.00139	.00161	.00366	.00033
Stddev	.00034	.00035	.00360	.00082	.00107	.00016	.00020
%RSD	875.38	106.02	48.045	59.255	66.263	4.2389	61.205
#1	.00037	.00050	.01150	.00203	.00236	.00357	.00056
#2	.00005	-.00007	.00452	.00046	.00039	.00384	.00018
#3	-.00031	.00056	.00646	.00167	.00209	.00357	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9236.9	55682.	2578.1
Stddev	14.9	456.	8.4
%RSD	.16086	.81916	.32679
#1	9251.7	55556.	2569.8
#2	9222.0	55302.	2577.9
#3	9237.0	56188.	2586.6

Approved: June 29, 2016

Sample Name: L1606153901 Acquired: 6/29/2016 13:24:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	.04503	.00049	.02211	.17570	-.00002	50.971	.00006
Stddev	.00098	.00339	.00086	.00379	.00296	.00012	.598	.00011
%RSD	129.22	7.5349	175.62	17.128	1.6847	620.32	1.1738	202.33
#1	.00186	.04145	.00146	.02564	.17860	-.00014	51.468	.00019
#2	-.00001	.04542	.00020	.01811	.17268	.00009	50.307	-.00001
#3	.00042	.04821	-.00019	.02258	.17581	-.00001	51.138	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	-.00042	.00313	.01681	.98433	-.00212	4.8021	.00732
Stddev	.00016	.00050	.00067	.04138	.14623	.00172	.0876	.00134
%RSD	114.87	117.94	21.271	246.08	14.855	80.977	1.8235	18.291
#1	.00000	.00015	.00379	.05311	1.1527	-.00347	4.7574	.00857
#2	.00032	-.00074	.00246	-.02824	.88915	-.00271	4.7459	.00591
#3	.00010	-.00067	.00314	.02556	.91113	-.00019	4.9030	.00748
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	31.048	-.00039	-.00056	.00278	-.00117	.00307	4.4799
Stddev	.00023	.353	.00054	.00326	.00085	.00361	.00456	.0307
%RSD	97.571	1.1354	139.05	585.12	30.622	307.41	148.29	.68488
#1	.00008	31.353	-.00087	-.00289	.00268	.00154	.00769	4.4736
#2	.00013	30.662	.00019	.00316	.00368	-.00526	.00295	4.5132
#3	.00049	31.128	-.00049	-.00194	.00199	.00021	-.00142	4.4528
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606153901 Acquired: 6/29/2016 13:24:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00049**	**.24437**	**-.00150**	**.00320**	**.00048**	**.00260**	**.00024**
Stddev	.00033	.00337	.00539	.00295	.00098	.00005	.00067
%RSD	66.819	1.3809	358.87	92.105	205.70	2.0652	282.05
#1	-.00061	.24636	-.00695	.00055	.00052	.00263	-.00005
#2	-.00075	.24048	.00382	.00267	.00143	.00263	-.00024
#3	-.00012	.24628	-.00137	.00638	-.00052	.00253	.00100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9084.0**	**54917.**	**2530.0**
Stddev	37.9	437.	39.4
%RSD	.41716	.79561	1.5565
#1	9064.6	54983.	2496.9
#2	9059.8	55317.	2573.5
#3	9127.7	54450.	2519.5

Approved: June 29, 2016

Sample Name: L1606149601 Acquired: 6/29/2016 13:27:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.04490	.00155	.04404	.08099	-.00000	152.38	.00387
Stddev	.00184	.01056	.00185	.00277	.00097	.00005	1.60	.00031
%RSD	2651.7	23.512	119.01	6.2792	1.2002	3186.0	1.0468	8.0000
#1	-.00197	.05188	.00369	.04382	.08022	.00005	151.97	.00400
#2	.00161	.05006	.00038	.04138	.08208	-.00001	154.14	.00352
#3	.00057	.03276	.00059	.04690	.08067	-.00004	151.03	.00410
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	.00078	.08572	.03952	2.3284	.00873	2.1016	.14257
Stddev	.00016	.00011	.00159	.02088	.1056	.00542	.0733	.00470
%RSD	91.389	14.348	1.8525	52.820	4.5346	62.073	3.4891	3.2950
#1	-.00001	.00067	.08649	.06019	2.4297	.00391	2.0986	.14083
#2	-.00033	.00077	.08678	.01844	2.2190	.01460	2.1763	.13899
#3	-.00019	.00090	.08390	.03994	2.3365	.00769	2.0298	.14789
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	3.9437	.00213	.48417	.04082	-.00093	.00085	.68513
Stddev	.00021	.0307	.00050	.01401	.00231	.00060	.00505	.00752
%RSD	196.10	.77890	23.717	2.8944	5.6647	64.335	591.18	1.0973
#1	-.00006	3.9619	.00255	.49011	.03817	-.00116	.00014	.69065
#2	.00004	3.9610	.00226	.49423	.04240	-.00137	.00622	.68818
#3	.00034	3.9082	.00157	.46816	.04190	-.00025	-.00380	.67657
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606149601 Acquired: 6/29/2016 13:27:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.33940	-.01837	.00131	.00158	.15825	.00049
Stddev	.00026	.00192	.00599	.00263	.00030	.00187	.00017
%RSD	327.05	.56694	32.634	201.60	18.811	1.1847	35.786
#1	.00006	.34018	-.02023	.00434	.00192	.15890	.00029
#2	-.00017	.34080	-.01166	-.00037	.00138	.15971	.00056
#3	.00035	.33720	-.02321	-.00006	.00144	.15613	.00061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9083.0	55048.	2572.1
Stddev	12.4	106.	20.0
%RSD	.13696	.19313	.77824
#1	9096.9	54966.	2569.4
#2	9073.0	55010.	2553.6
#3	9079.0	55168.	2593.3

Approved: June 29, 2016

Sample Name: L1606149601S Acquired: 6/29/2016 13:31:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-09

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19901**	**5.0835**	**.20422**	**1.0200**	**.58673**	**.02474**	**152.60**	**.02902**
Stddev	.00268	.0032	.00478	.0050	.02151	.00017	5.66	.00010
%RSD	1.3471	.06200	2.3428	.48536	3.6654	.67464	3.7112	.33393
#1	.20137	5.0799	.20951	1.0256	.57631	.02491	149.80	.02906
#2	.19956	5.0853	.20018	1.0181	.57242	.02473	148.88	.02909
#3	.19609	5.0854	.20299	1.0163	.61146	.02458	159.12	.02891
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09935**	**.25120**	**.32839**	**2.0167**	**27.699**	**.52373**	**7.0826**	**.38660**
Stddev	.00019	.00042	.00321	.1390	1.135	.02634	.2402	.01337
%RSD	.19025	.16720	.97706	6.8918	4.0974	5.0297	3.3916	3.4593
#1	.09957	.25142	.32884	1.9876	27.155	.50789	7.1811	.37541
#2	.09926	.25071	.33135	1.8945	26.939	.50916	6.8087	.38299
#3	.09923	.25146	.32498	2.1679	29.004	.55414	7.2578	.40141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51367**	**29.242**	**.25007**	**5.5779**	**.28995**	**.61217**	**.19415**	**3.1202**
Stddev	.00224	1.120	.00162	.0326	.00216	.00586	.00396	.0141
%RSD	.43553	3.8309	.64653	.58366	.74661	.95659	2.0391	.45211
#1	.51394	28.687	.25099	5.5840	.28950	.61568	.18974	3.1244
#2	.51576	28.508	.25102	5.6070	.29230	.61543	.19530	3.1318
#3	.51131	30.531	.24820	5.5427	.28804	.60541	.19741	3.1045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606149601S Acquired: 6/29/2016 13:31:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-09

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50841**	**.83006**	**.48317**	**.25181**	**.50876**	**.64056**	**.00125**
Stddev	.00279	.02809	.02264	.00257	.00177	.00306	.00069
%RSD	.54937	3.3838	4.6851	1.0190	.34844	.47814	55.275
#1	.51067	.82564	.48407	.24885	.50672	.64257	.00045
#2	.50927	.80445	.46010	.25339	.50984	.64208	.00164
#3	.50529	.86010	.50535	.25319	.50973	.63703	.00164
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8925.7**	**53605.**	**2514.8**
Stddev	32.1	114.	66.8
%RSD	.35995	.21348	2.6578
#1	8904.1	53541.	2533.4
#2	8910.5	53737.	2570.4
#3	8962.6	53536.	2440.7

Approved: June 29, 2016

Sample Name: L1606149601SD Acquired: 6/29/2016 13:35:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-10

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20298**	**5.1471**	**.20841**	**1.0355**	**.59469**	**.02517**	**161.77**	**.02948**
Stddev	.00333	.0076	.00366	.0045	.00331	.00008	.91	.00026
%RSD	1.6408	.14687	1.7558	.43354	.55680	.30956	.56220	.87127
#1	.20648	5.1503	.20791	1.0374	.59848	.02514	162.81	.02959
#2	.19985	5.1525	.21230	1.0303	.59237	.02511	161.35	.02966
#3	.20260	5.1385	.20503	1.0387	.59321	.02526	161.13	.02918
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10040**	**.25341**	**.33794**	**2.0523**	**28.211**	**.52968**	**7.2091**	**.39606**
Stddev	.00033	.00261	.00159	.0236	.021	.00241	.0455	.00457
%RSD	.32394	1.0290	.46924	1.1505	.07537	.45466	.63062	1.1537
#1	.10022	.25630	.33827	2.0301	28.213	.53240	7.1616	.40061
#2	.10078	.25270	.33934	2.0771	28.231	.52782	7.2135	.39609
#3	.10021	.25123	.33622	2.0497	28.188	.52882	7.2522	.39147
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52134**	**29.781**	**.25290**	**5.6983**	**.29509**	**.61618**	**.20300**	**3.2091**
Stddev	.00203	.140	.00096	.0096	.00142	.00461	.00627	.0089
%RSD	.38917	.46857	.37998	.16896	.48273	.74876	3.0907	.27566
#1	.52173	29.911	.25390	5.6911	.29670	.61861	.20133	3.2129
#2	.52315	29.799	.25283	5.7092	.29460	.61907	.20994	3.2154
#3	.51915	29.633	.25198	5.6946	.29398	.61086	.19773	3.1990
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606149601SD Acquired: 6/29/2016 13:35:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-10

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51305**	**.85393**	**.50073**	**.25713**	**.51551**	**.65641**	**.00038**
Stddev	.00264	.01335	.00656	.00188	.00222	.00100	.00089
%RSD	.51363	1.5635	1.3091	.73265	.43057	.15215	234.39
#1	.51277	.86930	.50785	.25842	.51412	.65597	.00001
#2	.51581	.84733	.49495	.25497	.51434	.65755	.00139
#3	.51056	.84517	.49940	.25800	.51807	.65570	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8935.7**	**53938.**	**2524.0**
Stddev	22.6	87.	20.2
%RSD	.25300	.16207	.79942
#1	8946.9	54038.	2502.6
#2	8909.7	53879.	2527.0
#3	8950.6	53896.	2542.6

Approved: June 29, 2016

Sample Name: L1606149601PS Acquired: 6/29/2016 13:38:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574645-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20054**	**5.1036**	**.20832**	**1.0283**	**.58081**	**.02493**	**145.21**	**.02893**
Stddev	.00093	.0139	.00310	.0064	.00420	.00017	1.06	.00029
%RSD	.46402	.27197	1.4885	.62248	.72276	.66614	.73188	1.0052
#1	.19971	5.0879	.20511	1.0209	.58524	.02475	146.21	.02918
#2	.20155	5.1142	.21130	1.0317	.58029	.02497	145.32	.02899
#3	.20037	5.1087	.20854	1.0323	.57690	.02508	144.09	.02861
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10016**	**.25150**	**.32808**	**1.9934**	**27.533**	**.52384**	**6.9324**	**.37604**
Stddev	.00016	.00018	.00185	.0266	.147	.00167	.1202	.00194
%RSD	.16020	.07268	.56512	1.3335	.53434	.31836	1.7343	.51548
#1	.10014	.25167	.32966	2.0240	27.661	.52244	6.9856	.37778
#2	.10001	.25131	.32855	1.9805	27.565	.52569	7.0169	.37639
#3	.10033	.25151	.32604	1.9757	27.372	.52341	6.7948	.37395
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51962**	**29.049**	**.25255**	**5.6296**	**.29024**	**.61643**	**.20214**	**3.1122**
Stddev	.00075	.199	.00072	.0105	.00168	.00611	.01025	.0067
%RSD	.14413	.68651	.28652	.18630	.58005	.99164	5.0693	.21625
#1	.52008	29.270	.25178	5.6175	.29130	.61427	.19110	3.1145
#2	.52003	28.996	.25322	5.6359	.28830	.61169	.20398	3.1176
#3	.51876	28.882	.25264	5.6354	.29113	.62333	.21134	3.1047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606149601PS Acquired: 6/29/2016 13:38:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574645-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51169**	**.81148**	**.48297**	**.25279**	**.51036**	**.64217**	**.00009**
Stddev	.00096	.01402	.00273	.00253	.00157	.00146	.00054
%RSD	.18795	1.7283	.56579	.99895	.30669	.22793	566.34
#1	.51206	.82676	.48178	.25490	.51034	.64384	-.00036
#2	.51242	.80849	.48104	.24999	.50880	.64158	-.00005
#3	.51060	.79919	.48610	.25347	.51193	.64109	.00069
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8974.4**	**53921.**	**2529.2**
Stddev	18.9	362.	17.1
%RSD	.21065	.67063	.67636
#1	8952.7	53771.	2512.0
#2	8987.7	53659.	2529.4
#3	8982.6	54334.	2546.2

Approved: June 29, 2016

Sample Name: L1606149601SDL Acquired: 6/29/2016 13:42:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574645-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00267	.02265	.00439	.01861	.01991	.00001	34.038	.00076
Stddev	.00237	.00623	.00284	.00283	.00055	.00008	.351	.00013
%RSD	88.809	27.485	64.694	15.181	2.7467	583.76	1.0315	16.599
#1	.00540	.02732	.00767	.02173	.01932	.00010	33.853	.00073
#2	.00109	.02506	.00277	.01786	.02039	-.00004	33.818	.00066
#3	.00153	.01558	.00273	.01623	.02002	-.00002	34.443	.00090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	.00062	.02070	.01263	.64040	-.00117	.47919	.03072
Stddev	.00027	.00059	.00049	.02795	.07398	.00191	.11296	.00112
%RSD	120.29	95.891	2.3478	221.37	11.553	162.93	23.573	3.6479
#1	-.00024	.00108	.02099	-.01237	.70940	-.00228	.43966	.03057
#2	.00005	.00082	.02097	.04281	.56228	.00103	.60660	.03191
#3	-.00050	-.00005	.02014	.00744	.64953	-.00227	.39131	.02968
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	.87973	.00039	.11914	.01170	.00038	.00064	.15165
Stddev	.00069	.03146	.00108	.00344	.00381	.00470	.00283	.00126
%RSD	1754.8	3.5762	278.53	2.8862	32.581	1243.0	444.64	.83076
#1	.00075	.89723	-.00063	.11919	.00995	.00542	-.00262	.15021
#2	-.00033	.84341	.00027	.12255	.01607	-.00387	.00211	.15222
#3	-.00054	.89854	.00153	.11567	.00907	-.00041	.00242	.15252
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606149601SDL Acquired: 6/29/2016 13:42:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574645-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.07377	.00394	.00294	.00223	.03691	.00004
Stddev	.00105	.00059	.00619	.00218	.00071	.00013	.00071
%RSD	283.17	.80195	157.13	74.208	31.723	.34011	2011.1
#1	.00026	.07309	.00295	.00509	.00149	.03696	.00081
#2	-.00062	.07407	-.00170	.00073	.00229	.03677	-.00059
#3	.00147	.07415	.01056	.00299	.00290	.03700	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8856.7	53491.	2431.8
Stddev	12.0	145.	16.6
%RSD	.13541	.27109	.68401
#1	8870.2	53328.	2432.6
#2	8852.6	53606.	2448.0
#3	8847.3	53539.	2414.7

Approved: June 29, 2016

Sample Name: L1606149601SDL Acquired: 6/29/2016 13:46:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574645-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00062**	**.01470**	**.00246**	**.00724**	**.00491**	**.00005**	**6.6349**	**-.00015**
Stddev	.00282	.00852	.00115	.00218	.00150	.00009	.0736	.00025
%RSD	451.73	57.984	46.707	30.143	30.632	193.02	1.1088	164.73
#1	-.00099	.00499	.00287	.00765	.00563	-.00000	6.5913	.00009
#2	-.00324	.01818	.00116	.00918	.00318	.00015	6.5937	-.00014
#3	.00236	.02093	.00335	.00488	.00592	-.00001	6.7199	-.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**-.00122**	**.00474**	**.03942**	**.19051**	**-.00406**	**.04822**	**.00545**
Stddev	.00034	.00021	.00192	.01779	.11336	.00307	.07286	.00352
%RSD	1047.4	17.030	40.519	45.138	59.504	75.613	151.09	64.471
#1	-.00030	-.00121	.00678	.05654	.17314	-.00053	.05234	.00330
#2	.00038	-.00143	.00448	.02103	.31155	-.00557	.11894	.00951
#3	.00002	-.00101	.00297	.04068	.08684	-.00608	-.02661	.00354
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00077**	**.12457**	**.00002**	**.02721**	**.00302**	**-.00078**	**.00898**	**.02532**
Stddev	.00015	.01454	.00074	.00142	.00426	.00453	.00442	.00181
%RSD	19.478	11.672	3733.6	5.2076	141.20	578.54	49.243	7.1430
#1	.00088	.10778	.00072	.02560	.00160	.00186	.01203	.02733
#2	.00060	.13316	.00009	.02773	-.00035	-.00602	.01100	.02480
#3	.00082	.13275	-.00075	.02828	.00780	.00181	.00391	.02382
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606149601SDL Acquired: 6/29/2016 13:46:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574645-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.01430	.00089	.00259	.00141	.00761	.00062
Stddev	.00074	.00024	.00368	.00450	.00065	.00017	.00019
%RSD	391.61	1.6814	415.80	174.00	46.484	2.1887	30.376
#1	.00037	.01408	-.00013	.00638	.00166	.00743	.00076
#2	.00082	.01455	-.00218	-.00238	.00066	.00767	.00070
#3	-.00062	.01428	.00497	.00376	.00189	.00775	.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8865.8	53275.	2415.4
Stddev	4.0	113.	10.8
%RSD	.04531	.21270	.44617
#1	8867.2	53400.	2402.9
#2	8861.3	53179.	2421.7
#3	8869.0	53246.	2421.5

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 13:50:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.43655	10.978	.43937	.54785	1.0971	.05438	10.826
Stddev	.00135	.026	.00061	.00327	.0027	.00007	.060
%RSD	.30979	.23937	.13954	.59651	.24424	.12669	.55629
#1	.43586	10.995	.43886	.54528	1.1000	.05445	10.888
#2	.43811	10.991	.44005	.54675	1.0947	.05439	10.823
#3	.43568	10.947	.43920	.55153	1.0965	.05431	10.768
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05470	.21964	.54715	F .55305	4.3512	54.438	1.0930
Stddev	.00008	.00037	.00087	.00183	.0224	.086	.0063
%RSD	.13926	.16924	.15951	.33062	.51567	.15724	.58110
#1	.05476	.21935	.54786	.55269	4.3680	54.532	1.0877
#2	.05473	.21950	.54618	.55503	4.3258	54.363	1.0911
#3	.05462	.22006	.54740	.55143	4.3599	54.420	1.1000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value				.50000			
Range				10.000%			

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.965	.54340	F 1.1048	54.727	F .55602	F 11.063	.54591
Stddev	.158	.00449	.0014	.079	.00146	.021	.00195
%RSD	1.4388	.82627	.12456	.14502	.26234	.18692	.35775
#1	10.792	.54102	1.1054	54.637	.55599	11.077	.54587
#2	11.001	.54858	1.1032	54.756	.55458	11.040	.54398
#3	11.101	.54060	1.1057	54.787	.55750	11.073	.54788
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Fail	Chk Fail	Chk Pass
Value			1.0000		.50000	10.000	
Range			10.000%		10.000%	10.000%	

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 13:50:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 1.3300	.43998	F 5.5688	F 1.1051	1.0953	1.0953	.54932
Stddev	.0066	.00256	.0043	.0016	.0007	.0085	.00440
%RSD	.49866	.58162	.07732	.14659	.06456	.77643	.80171
#1	1.3301	.44292	5.5647	1.1068	1.0952	1.0927	.55160
#2	1.3233	.43876	5.5685	1.1050	1.0960	1.1048	.54425
#3	1.3366	.43826	5.5733	1.1036	1.0946	1.0884	.55212
Check ?	Chk Fail	Chk Pass	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value	1.2000		5.0000	1.0000			
Range	10.000%		10.000%	10.000%			

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0920	F 1.1025	F 1.1012
Stddev	.0020	.0007	.0052
%RSD	.18361	.06332	.47550
#1	1.0932	1.1031	1.1050
#2	1.0931	1.1018	1.0952
#3	1.0897	1.1027	1.1034
Check ?	Chk Pass	Chk Fail	Chk Fail
Value		1.0000	1.0000
Range		10.000%	10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8606.2	51334.	2377.1
Stddev	13.1	255.	10.7
%RSD	.15266	.49713	.44883
#1	8591.7	51291.	2365.7
#2	8609.4	51102.	2386.9
#3	8617.4	51607.	2378.8

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 13:53:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00124**	**.03388**	**.00187**	**.00598**	**.00209**	**.00006**	**.08905**
Stddev	.00312	.00279	.00177	.00274	.00071	.00009	.03047
%RSD	252.10	8.2384	94.700	45.781	34.047	152.64	34.214
#1	.00089	.03254	.00070	.00844	.00286	-.00002	.07588
#2	-.00170	.03709	.00391	.00647	.00146	.00004	.06738
#3	.00452	.03202	.00101	.00303	.00195	.00015	.12389
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00018**	**-.00042**	**.00159**	**.00116**	**.00800**	**.16229**	**-.00336**
Stddev	.00030	.00021	.00063	.00099	.05432	.13072	.00219
%RSD	163.94	50.275	39.779	85.074	679.20	80.545	65.297
#1	-.00048	-.00038	.00092	.00029	.00967	.31233	-.00486
#2	-.00018	-.00065	.00169	.00223	.06147	.07307	-.00438
#3	.00012	-.00023	.00218	.00096	-.04714	.10147	-.00084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01753**	**.00154**	**.00064**	**.09416**	**-.00033**	F **.01257**	**.00484**
Stddev	.06865	.00210	.00048	.02475	.00047	.00868	.00535
%RSD	391.63	136.30	73.800	26.283	142.42	69.055	110.46
#1	.07238	-.00008	.00070	.09247	.00021	.01642	.00150
#2	.03967	.00391	.00109	.11972	-.00055	.01865	.00202
#3	-.05946	.00078	.00014	.07031	-.00064	.00263	.01101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						.01000	
Low Limit						-.01000	

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 13:53:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00070	-.00632	-.00767	-.00022	.00107	.00097	-.00047
Stddev	.00830	.00559	.00085	.00084	.00074	.00244	.00305
%RSD	1178.3	88.429	11.038	380.90	69.167	251.33	652.95
#1	-.00453	-.01035	-.00808	-.00056	.00181	.00204	.00282
#2	.01028	-.00867	-.00670	.00073	.00108	-.00182	-.00100
#3	-.00363	.00006	-.00824	-.00083	.00033	.00270	-.00322
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00266	.00298	.00156
Stddev	.00122	.00013	.00075
%RSD	45.925	4.4612	48.080
#1	.00394	.00304	.00243
#2	.00150	.00308	.00105
#3	.00253	.00283	.00121
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8689.4	52522.	2390.6
Stddev	12.8	95.	7.5
%RSD	.14773	.18164	.31458
#1	8704.2	52437.	2381.9
#2	8683.0	52504.	2394.6
#3	8681.0	52625.	2395.2

Approved: June 29, 2016

2.3.2 Metals ICP-MS Data

2.3.2.1 Summary Data

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW20-062016	**Prep Method:**	3015	**Prep Date:**	06/22/2016 13:25
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/28/2016 13:15
Workgroup #:	WG574522	**Analyst:**	BKT	**Run Date:**	06/28/2016 16:41
Collect Date:	06/20/2016 07:55	**Dilution:**	1	**File ID:**	NI.062816.164105
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00100	U	0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.0918		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00274	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00808		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00200	U	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.00996		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW20-062016	**Prep Method:**	3015	**Prep Date:**	06/22/2016 13:25
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/28/2016 13:15
Workgroup #:	WG574522	**Analyst:**	BKT	**Run Date:**	06/28/2016 18:46
Collect Date:	06/20/2016 07:55	**Dilution:**	10	**File ID:**	NI.062816.184632
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Total	7439-96-5	0.279		0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW19F-062016	**Prep Method:**	3015	**Prep Date:**	06/22/2016 13:25
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/28/2016 13:15
Workgroup #:	WG574522	**Analyst:**	BKT	**Run Date:**	06/28/2016 16:44
Collect Date:	06/20/2016 08:55	**Dilution:**	1	**File ID:**	NI.062816.164417
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.000865	J	0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.0557		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00184	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00116	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00117	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.221		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00429	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00170	J	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW19FFD-062016	**Prep Method:**	3015	**Prep Date:**	06/22/2016 13:25
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/28/2016 13:15
Workgroup #:	WG574522	**Analyst:**	BKT	**Run Date:**	06/28/2016 16:47
Collect Date:	06/20/2016 08:55	**Dilution:**	1	**File ID:**	NI.062816.164728
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.000910	J	0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.0588		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00219	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00119	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00131	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.221		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00449	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00184	J	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer NexION 300X

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	100
Vi = Initial volume	40
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/L)	0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	200
Vi = Initial volume	0.5
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/kg)	40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	40
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	50

50 ug/kg = 0.050 mg/kg

Perkin Elmer NexION ICP/MS

STANDARDS KEY

QC Std 1 - ICV
QC Std 2 - ICB
QC Std 3 - LLICV
QC Std 4 - ICSA
QC Std 5 - ICSAB
QC Std 6 - CCV
QC Std 7 - CCB
QC Std 8 - LLCCV

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.00005	0.05	0.1
Sb	10	0	0.00005	0.05	0.1
As	10	0	0.00005	0.05	0.1
Ba	10	0	0.00005	0.05	0.1
Be	10	0	0.00005	0.05	0.1
Ca	1000	0	0.005	5	10
Cd	10	0	0.0005	0.05	0.1
Cr	10	0	0.0005	0.05	0.1
Co	10	0	0.0005	0.05	0.1
Cu	10	0	0.0005	0.05	0.1
Fe	1000	0	0.005	5	10
Pb	10	0	0.00005	0.05	0.1
Mg	1000	0	0.005	5	10
Mn	10	0	0.00005	0.05	0.1
Ni	10	0	0.00005	0.05	0.1
K	1000	0	0.005	5	10
Se	10	0	0.00005	0.05	0.1
Ag	10	0	0.00005	0.05	0.1
Na	1000	0	0.005	5	10
Tl	10	0	0.00005	0.05	0.1
V	10	0	0.00005	0.05	0.1
U	1000	0	0.00005	0.05	0.1
Zn	10	0	0.00005	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG573751
Analyst: VC
Spike Analyst: VC
Run Date: 06/22/2016 13:25
Method: 3015
Balance: BAL016
Instrument: MW-3
Instrument Start: 06/22/2016 13:30

SOP: ME407 Revison 19
Spike Solution: STD75998
Spike Witness: ERP
HNO3 Lot #: COA18905
MS Filters- fisher-Lot#R RGT35621
40 & 50 ML. DIGESTION TU COA18987

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG573751-04	BLANK	1	20 mL	50 mL	183.635 g	183.628 g		
2	WG573751-05	LCS	1	20 mL	50 mL	184.614 g	184.604 g	.25 mL	
3	L16060916-01	SAMP	2	20 mL	50 mL	184.217 g	184.209 g		06/23/16
4	WG573751-01	REF	2	20 mL	50 mL	184.101 g	184.084 g		
5	L16060916-02	SAMP	2	20 mL	50 mL	184.101 g	184.084 g		06/23/16
6	L16061142-01	SAMP	1	20 mL	50 mL	182.493 g	182.489 g		07/01/16
7	L16061142-03	SAMP	1	20 mL	50 mL	182.681 g	182.672 g		07/01/16
8	L16061142-05	SAMP	1	20 mL	50 mL	184.726 g	184.715 g		07/01/16
9	WG573751-02	REF	1	20 mL	50 mL	182.734 g	182.725 g		
10	L16061151-01	RS01	1	20 mL	50 mL	182.734 g	182.725 g		06/28/16
11	L16061151-02	SAMP	1	20 mL	50 mL	181.045 g	181.025 g		06/28/16
12	WG573751-07	MS	1	20 mL	50 mL	181.147 g	181.137 g	.25 mL	
13	L16061151-03	MS01	1	20 mL	50 mL	181.147 g	181.137 g	.25 mL	06/28/16
14	WG573751-08	MSD	1	20 mL	50 mL	185.508 g	185.49 g	.25 mL	
15	L16061151-04	SD01	1	20 mL	50 mL	185.508 g	185.49 g	.25 mL	06/28/16
16	L16061151-05	SAMP	1	20 mL	50 mL	182.124 g	182.111 g		06/28/16
17	WG573751-03	REF	1	20 mL	50 mL	183.372 g	183.337 g		
18	L16061154-01	RS01	1	20 mL	50 mL	183.372 g	183.337 g		06/28/16
19	WG573751-09	MS	1	20 mL	50 mL	180.94 g	180.932 g	.25 mL	
20	L16061154-02	MS01	1	20 mL	50 mL	180.94 g	180.932 g	.25 mL	06/28/16
21	WG573751-10	MSD	1	20 mL	50 mL	183.536 g	183.502 g	.25 mL	
22	L16061154-03	SD01	1	20 mL	50 mL	183.536 g	183.502 g	.25 mL	06/28/16
23	L16061154-04	SAMP	1	20 mL	50 mL	183.126 g	183.106 g		06/28/16
24	L16061155-01	SAMP	1	20 mL	50 mL	180.844 g	180.818 g		06/28/16
25	L16061155-02	SAMP	1	20 mL	50 mL	181.822 g	181.809 g		06/28/16
26	L16061155-03	SAMP	1	20 mL	50 mL	183.256 g	183.255 g		06/28/16
27	WG573751-06	DUP	1	20 mL	50 mL	181.638 g	181.625 g		

Analyst: Vicki Collins

Reviewer: Erin Potter

MW_DIG - Modified 09/30/2009
PDF ID: 4819258
Report generated: 06/22/2016 14:23

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062816A.REP

Analyst1: BKT Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705

ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607

CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345

Stannous : Hydroxylamine :

Workgroups: 572184,573475,574522,574570,574571,574573

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.062816.130257	Blank	Blank		1		06/28/16 13:02
2	NI.062816.130609	WG574537-01	Calibration Point		1		06/28/16 13:06
3	NI.062816.130921	WG574537-02	Calibration Point		1		06/28/16 13:09
4	NI.062816.131232	WG574537-03	Calibration Point		1		06/28/16 13:12
5	NI.062816.131544	WG574537-04	Calibration Point		1		06/28/16 13:15
6	NI.062816.131857	WG574537-05	Initial Calibration Verification		1		06/28/16 13:18
7	NI.062816.132210	WG574537-06	Initial Calib Blank		1		06/28/16 13:22
8	NI.062816.132523	WG574537-07	Low Level Initial Calibration V		1		06/28/16 13:25
9	NI.062816.132834	WG574537-08	Interference Check		1		06/28/16 13:28
10	NI.062816.133145	WG574537-09	Interference Check		1		06/28/16 13:31
11	NI.062816.133459	WG574537-10	CCV		1		06/28/16 13:34
12	NI.062816.133810	WG574537-11	CCB		1		06/28/16 13:38
13	NI.062816.134122	L16060362-03	6060227-03		10		06/28/16 13:41
14	NI.062816.134434	L16060362-04	6060227-04		1		06/28/16 13:44
15	NI.062816.134903	L16060362-03	6060227-03	20/50	10		06/28/16 13:49
16	NI.062816.135218	L16060362-04	6060227-04	20/50	1		06/28/16 13:52
17	NI.062816.135925	L16060362-05	6060227-05	20/50	1		06/28/16 13:59
18	NI.062816.140236	L16060362-06	6060227-06	20/50	1		06/28/16 14:02
19	NI.062816.140602	L16060362-07	6060227-07	20/50	1		06/28/16 14:06
20	NI.062816.140914	L16060362-08	6060227-08	20/50	1		06/28/16 14:09
21	NI.062816.141225	L16060362-09	6060227-09	20/50	1		06/28/16 14:12
22	NI.062816.141537	L16060362-10	6060227-10	20/50	1		06/28/16 14:15
23	NI.062816.141850	WG574537-12	CCV		1		06/28/16 14:18
24	NI.062816.142201	WG574537-13	CCB		1		06/28/16 14:22
25	NI.062816.142514	L16060362-11	6060227-11	20/50	1		06/28/16 14:25
26	NI.062816.142825	L16060362-12	6060227-12	20/50	1		06/28/16 14:28
27	NI.062816.143138	WG574537-14	CCV		1		06/28/16 14:31
28	NI.062816.143450	WG574537-15	CCB		1		06/28/16 14:34
29	NI.062816.143803	WG573333-03	Method/Prep Blank	.25/100	1		06/28/16 14:38
30	NI.062816.144114	WG573333-04	Laboratory Control S	.25/100	1		06/28/16 14:41
31	NI.062816.144426	WG573333-02	Reference Sample		1	L16061053-01	06/28/16 14:44
32	NI.062816.144737	WG573333-07	Matrix Spike	.253/100	1	L16061053-01	06/28/16 14:47
33	NI.062816.145049	WG573333-08	Matrix Spike Duplica	.252/100	1	L16061053-01	06/28/16 14:50
34	NI.062816.145400	L16061048-01	TR0062	.252/100	5		06/28/16 14:54

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Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062816A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 572184,573475,574522,574570,574571,574573

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.062816.145711	WG573475-03	Post Digestion Spike		5	L16061048-01	06/28/16 14:57
36	NI.062816.150023	WG573475-04	Serial Dilution		25	L16061048-01	06/28/16 15:00
37	NI.062816.150336	WG574537-16	Interference Check		1		06/28/16 15:03
38	NI.062816.150647	WG574537-17	Interference Check		1		06/28/16 15:06
39	NI.062816.151001	WG574537-18	CCV		1		06/28/16 15:10
40	NI.062816.151312	WG574537-19	CCB		1		06/28/16 15:13
41	NI.062816.151629	WG574537-20	Low Level Continuing Calibra		1		06/28/16 15:16
42	NI.062816.152424	WG573333-01	Reference Sample		10	L16060787-03	06/28/16 15:24
43	NI.062816.152735	WG573333-05	Matrix Spike	.256/100	10	L16060787-03	06/28/16 15:27
44	NI.062816.153046	WG573333-06	Matrix Spike Duplica	.253/100	10	L16060787-03	06/28/16 15:30
45	NI.062816.153358	L16060787-06	U517SS00512A	.256/100	10		06/28/16 15:33
46	NI.062816.153709	L16060787-08	U517SS00612A	.254/100	10		06/28/16 15:37
47	NI.062816.154021	L16060787-13	U517SS00708A	.252/100	10		06/28/16 15:40
48	NI.062816.154332	L16060787-15	U517SS00808A	.257/100	10		06/28/16 15:43
49	NI.062816.154644	L16060787-16	U517SS00808C	.255/100	10		06/28/16 15:46
50	NI.062816.154955	L16060787-17	U517SS00810A	.259/100	10		06/28/16 15:49
51	NI.062816.155308	WG574537-21	CCV		1		06/28/16 15:53
52	NI.062816.155620	WG574537-22	CCB		1		06/28/16 15:56
53	NI.062816.155933	WG573751-04	Method/Prep Blank	20/50	1		06/28/16 15:59
54	NI.062816.160244	WG573751-05	Laboratory Control S	20/50	1		06/28/16 16:02
55	NI.062816.160556	WG573751-02	Reference Sample		1	L16061151-01	06/28/16 16:05
56	NI.062816.160907	WG573751-07	Matrix Spike	20/50	1	L16061151-01	06/28/16 16:09
57	NI.062816.161219	WG573751-08	Matrix Spike Duplica	20/50	1	L16061151-01	06/28/16 16:12
58	NI.062816.161530	WG573751-01	Reference Sample		1	L16060916-02	06/28/16 16:15
59	NI.062816.161841	WG573751-06	Duplicate	20/50	1	L16060916-02	06/28/16 16:18
60	NI.062816.162153	L16060916-01	PHL 1 FRESHWATER IMPO	20/50	1		06/28/16 16:21
61	NI.062816.162504	WG574522-01	Post Digestion Spike		1	L16060916-01	06/28/16 16:25
62	NI.062816.162816	WG574522-02	Serial Dilution		5	L16060916-01	06/28/16 16:28
63	NI.062816.163129	WG574537-23	CCV		1		06/28/16 16:31
64	NI.062816.163441	WG574537-24	CCB		1		06/28/16 16:34
65	NI.062816.163754	WG574522-02	Serial Dilution		25	L16060916-01	06/28/16 16:37
66	NI.062816.164105	L16061142-01	18WW20-062016	20/50	1		06/28/16 16:41
67	NI.062816.164417	L16061142-03	18WW19F-062016	20/50	1		06/28/16 16:44
68	NI.062816.164728	L16061142-05	18WW19FFD-062016	20/50	1		06/28/16 16:47

Page: 2 Approved: June 29, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062816A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 572184,573475,574522,574570,574571,574573

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.062816.165039	L16061151-02	LF003SW0311-007 DUP	20/50	1		06/28/16 16:50
70	NI.062816.165351	L16061151-05	LF003SW0312-007	20/50	1		06/28/16 16:53
71	NI.062816.165702	WG573751-03	Reference Sample		1	L16061154-01	06/28/16 16:57
72	NI.062816.170014	WG573751-09	Matrix Spike	20/50	1	L16061154-01	06/28/16 17:00
73	NI.062816.170325	WG573751-10	Matrix Spike Duplica	20/50	1	L16061154-01	06/28/16 17:03
74	NI.062816.170637	L16061154-04	FQC-RB06201601-CB	20/50	1		06/28/16 17:06
75	NI.062816.170950	WG574537-25	CCV		1		06/28/16 17:09
76	NI.062816.171301	WG574537-26	CCB		1		06/28/16 17:13
77	NI.062816.171614	L16061155-01	ST008MW0812-007	20/50	1		06/28/16 17:16
78	NI.062816.171926	L16061155-02	ST008MW0809-007	20/50	1		06/28/16 17:19
79	NI.062816.172237	L16061155-03	ST008MW0816-007	20/50	1		06/28/16 17:22
80	NI.062816.172550	WG574537-27	CCV		1		06/28/16 17:25
81	NI.062816.172902	WG574537-28	CCB		1		06/28/16 17:29
82	NI.062816.184632	L16061142-01	18WW20-062016	20/50	10		06/28/16 18:46
83	NI.062816.184946	WG574537-29	CCV		1		06/28/16 18:49
84	NI.062816.185257	WG574537-30	CCB		1		06/28/16 18:52
85	NI.062816.185610	WG574537-31	Low Level Continuing Calibra		1		06/28/16 18:56
86	NI.062816.195129	WG574242-02	Method/Prep Blank	20/50	1		06/28/16 19:51
87	NI.062816.195440	WG574242-03	Laboratory Control S	20/50	1		06/28/16 19:54
88	NI.062816.195752	WG574242-01	Reference Sample		1	L16060839-01	06/28/16 19:57
89	NI.062816.200103	WG574242-04	Duplicate	20/50	1	L16060839-01	06/28/16 20:01
90	NI.062816.200414	WG574242-05	Matrix Spike	20/50	1	L16060839-01	06/28/16 20:04
91	NI.062816.200726	WG574242-06	Matrix Spike Duplica	20/50	1	L16060839-01	06/28/16 20:07
92	NI.062816.201037	L16060843-01	6060966-01	20/50	1		06/28/16 20:10
93	NI.062816.201349	WG574570-01	Post Digestion Spike		1	L16060843-01	06/28/16 20:13
94	NI.062816.201700	WG574570-02	Serial Dilution		5	L16060843-01	06/28/16 20:17
95	NI.062816.202012	WG574570-02	Serial Dilution		25	L16060843-01	06/28/16 20:20
96	NI.062816.202325	WG574537-32	CCV		1		06/28/16 20:23
97	NI.062816.202637	WG574537-33	CCB		1		06/28/16 20:26
98	NI.062816.202950	L16060794-01	A08-MW06-Y1S2	20/50	1		06/28/16 20:29
99	NI.062816.203301	L16060794-02	A08-MW09-Y1S2	20/50	1		06/28/16 20:33
100	NI.062816.203613	L16060794-03	A09-MW02-Y1S2	20/50	1		06/28/16 20:36
101	NI.062816.203924	L16060794-04	A09-MW07-Y1S2	20/50	1		06/28/16 20:39
102	NI.062816.204236	L16060822-02	18WW03F-061416	20/50	1		06/28/16 20:42

Page: 3 Approved: June 29, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062816A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 572184,573475,574522,574570,574571,574573

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.062816.204547	L16060822-03	18CPTMW04SW-061416	20/50	1		06/28/16 20:45
104	NI.062816.204859	L16060823-02	126F-061416	20/50	1		06/28/16 20:48
105	NI.062816.205210	L16060823-03	C08-061416	20/50	1		06/28/16 20:52
106	NI.062816.205522	L16060823-04	C03-061416	20/50	1		06/28/16 20:55
107	NI.062816.205833	L16060843-02	6060966-02	20/50	1		06/28/16 20:58
108	NI.062816.210146	WG574537-34	CCV		1		06/28/16 21:01
109	NI.062816.210457	WG574537-35	CCB		1		06/28/16 21:04
110	NI.062816.210810	L16061410-01	SS007MW0704-007	20/50	1		06/28/16 21:08
111	NI.062816.211122	L16061412-01	SS007MW0B05-007	20/50	1		06/28/16 21:11
112	NI.062816.211433	L16061412-02	SS007MW0B02-007	20/50	1		06/28/16 21:14
113	NI.062816.211745	L16061413-01	DP005MW0504-007	20/50	1		06/28/16 21:17
114	NI.062816.212056	L16061416-01	DP005MW0509-007	20/50	1		06/28/16 21:20
115	NI.062816.212408	L16061416-02	DP005MW0518-007	20/50	1		06/28/16 21:24
116	NI.062816.212719	L16061421-01	LF003MW03	20/50	1		06/28/16 21:27
117	NI.062816.213032	WG574537-36	CCV		1		06/28/16 21:30
118	NI.062816.213343	WG574537-37	CCB		1		06/28/16 21:33
119	NI.062816.213655	WG574205-02	Method/Prep Blank	20/50	1		06/28/16 21:36
120	NI.062816.214007	WG574205-03	Laboratory Control S	20/50	1		06/28/16 21:40
121	NI.062816.214318	WG574205-01	Reference Sample		1	L16061343-01	06/28/16 21:43
122	NI.062816.214630	WG574205-04	Duplicate	20/50	1	L16061343-01	06/28/16 21:46
123	NI.062816.214941	WG574205-05	Matrix Spike	20/50	1	L16061343-01	06/28/16 21:49
124	NI.062816.215253	WG574205-06	Matrix Spike Duplica	20/50	1	L16061343-01	06/28/16 21:52
125	NI.062816.215604	L16060732-01	LH18/24-SP650-6371-GRAB	20/50	1		06/28/16 21:56
126	NI.062816.215915	WG574571-01	Post Digestion Spike		1	L16060732-01	06/28/16 21:59
127	NI.062816.220227	WG574571-02	Serial Dilution		5	L16060732-01	06/28/16 22:02
128	NI.062816.220538	WG574571-02	Serial Dilution		25	L16060732-01	06/28/16 22:05
129	NI.062816.220851	WG574537-38	CCV		1		06/28/16 22:08
130	NI.062816.221202	WG574537-39	CCB		1		06/28/16 22:12
131	NI.062816.221514	L16060732-02	LH18/24-SP650-6371-COMP	20/50	1		06/28/16 22:15
132	NI.062816.221825	L16060762-01	MW-24-001	20/50	1		06/28/16 22:18
133	NI.062816.222137	L16061380-01	XU936TW003A	20/50	1		06/28/16 22:21
134	NI.062816.222448	L16061380-02	XU936TW003C	20/50	1		06/28/16 22:24
135	NI.062816.222800	L16061381-06	EB02	20/50	1		06/28/16 22:28
136	NI.062816.223111	L16061393-01	S6F0627-01	20/50	1		06/28/16 22:31

Page: 4 Approved: June 29, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062816A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 572184,573475,574522,574570,574571,574573

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	NI.062816.223423	L16061393-02	S6F0627-02	20/50	1		06/28/16 22:34
138	NI.062816.223734	L16061393-03	S6F0627-03	20/50	1		06/28/16 22:37
139	NI.062816.224046	L16061393-04	S6F0627-04	20/50	1		06/28/16 22:40
140	NI.062816.224357	L16061393-05	S6F0627-05	20/50	1		06/28/16 22:43
141	NI.062816.224710	WG574537-40	CCV		1		06/28/16 22:47
142	NI.062816.225022	WG574537-41	CCB		1		06/28/16 22:50
143	NI.062816.225335	L16061393-06	S6F0627-06	20/50	1		06/28/16 22:53
144	NI.062816.225646	L16061393-07	S6F0627-07	20/50	1		06/28/16 22:56
145	NI.062816.225958	L16061401-01	DP005MW0501-007	20/50	1		06/28/16 22:59
146	NI.062816.230309	L16061402-01	SS007MW0715-007	20/50	1		06/28/16 23:03
147	NI.062816.230621	L16061404-01	DP005MW0503-007	20/50	1		06/28/16 23:06
148	NI.062816.230932	L16061408-01	DP005MW0508-007	20/50	1		06/28/16 23:09
149	NI.062816.231244	L16061409-01	ST008MW0818-007	20/50	1		06/28/16 23:12
150	NI.062816.231556	WG574537-42	CCV		1		06/28/16 23:15
151	NI.062816.231908	WG574537-43	CCB		1		06/28/16 23:19
152	NI.062816.232221	WG574537-44	Low Level Continuing Calibra		1		06/28/16 23:22
153	NI.062816.232534	WG574306-02	Method/Prep Blank	.25/100	1		06/28/16 23:25
154	NI.062816.232845	WG574306-03	Laboratory Control S	.25/100	1		06/28/16 23:28
155	NI.062816.233157	L16061297-07	XU936DS01700A		1	WG574306-01	06/28/16 23:31
156	NI.062816.233508	L16061297-08	XU936DS01700MS	.253/100	1	WG574306-04	06/28/16 23:35
157	NI.062816.233819	L16061297-09	XU936DS01700MSD	.255/100	1	WG574306-05	06/28/16 23:38
158	NI.062816.234131	L16061443-01	GS042QACF035SB062416-E	.256/100	1		06/28/16 23:41
159	NI.062816.234442	L16061443-02	GS042QACF035SB062416-E	.256/100	1		06/28/16 23:44
160	NI.062816.234754	WG574573-01	Post Digestion Spike		1	L16061443-02	06/28/16 23:47
161	NI.062816.235105	WG574573-02	Serial Dilution		5	L16061443-02	06/28/16 23:51
162	NI.062816.235417	WG574573-02	Serial Dilution		25	L16061443-02	06/28/16 23:54
163	NI.062816.235730	WG574537-45	CCV		1		06/28/16 23:57
164	NI.062916.000041	WG574537-46	CCB		1		06/29/16 00:00

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Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 28-JUN-2016
Analyst: BKT
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 574537
Runlog ID: 75986
Analytical Workgroups: 572184,573475,574522,574570,574571,574573

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	762,1380,1381
Level 4	732,787,822,823,1048,1142,1151,1154
Level 4	1155,1401,1402,1404,1408,1409,1410
Level 4	1412,1413,1416,1421,1443
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BKT
Secondary Reviewer	KHR
Comments	

Primary Reviewer:
29-JUN-2016

Secondary Reviewer:
29-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-29-2016 15:32:08

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG574522

Login Number: L16061142

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW20-062016	01	06/20/16					06/22/2016	2.2	180		06/28/16	8.5	180	
18WW20-062016	01	06/20/16					06/22/2016	2.2	180		06/28/16	8.4	180	
18WW19F-062016	03	06/20/16					06/22/2016	2.2	180		06/28/16	8.3	180	
18WW19FFD-062016	05	06/20/16					06/22/2016	2.2	180		06/28/16	8.3	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4829575
Report generated 06/29/2016 08:10

METHOD BLANK SUMMARY

Login Number: L16061142
Blank File ID: NI.062816.155933
Prep Date: 06/22/16 13:25
Analyzed Date: 06/28/16 15:59
Analyst: BKT

Work Group: WG574522
Blank Sample ID: WG573751-04
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573751-05	NI.062816.160244	06/28/16 16:02	01
DUP	WG573751-06	NI.062816.161841	06/28/16 16:18	01
18WW20-062016	L16061142-01	NI.062816.164105	06/28/16 16:41	01
18WW19F-062016	L16061142-03	NI.062816.164417	06/28/16 16:44	01
18WW19FFD-062016	L16061142-05	NI.062816.164728	06/28/16 16:47	01
18WW20-062016	L16061142-01	NI.062816.184632	06/28/16 18:46	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4829576
Report generated 06/29/2016 08:10

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061142 Prep Date: 06/22/16 13:25 Sample ID: WG573751-04
Instrument ID: ICP-MS2 Run Date: 06/28/16 15:59 Prep Method: 3015
File ID: NI.062816.155933 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG574522 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-28-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Antimony, Total	0.000500	0.00200	0.000500	1	U
Arsenic, Total	0.000500	0.00200	0.000500	1	U
Barium, Total	0.00150	0.00600	0.00150	1	U
Cadmium, Total	0.000300	0.00120	0.000300	1	U
Chromium, Total	0.00100	0.00400	0.00100	1	U
Cobalt, Total	0.000500	0.00200	0.000500	1	U
Copper, Total	0.00100	0.00400	0.00100	1	U
Lead, Total	0.000500	0.00200	0.000500	1	U
Manganese, Total	0.00100	0.00400	0.00171	1	J
Nickel, Total	0.00200	0.00800	0.00200	1	U
Silver, Total	0.000500	0.00200	0.000500	1	U
Thallium, Total	0.000100	0.000400	0.000100	1	U
Vanadium, Total	0.000500	0.00200	0.000500	1	U
Zinc, Total	0.0125	0.0500	0.0125	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4829577
29-JUN-2016 08:10

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061142 Run Date: 06/28/2016 Sample ID: WG573751-05
Instrument ID: ICP-MS2 Run Time: 16:02 Prep Method: 3015
File ID: NI.062816.160244 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG574522 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD75998 Cal ID: ICP-MS-28-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Antimony, Total	0.125	0.122	97.9	80 - 120	
Arsenic, Total	0.125	0.125	99.9	80 - 120	
Barium, Total	0.125	0.120	96.1	80 - 120	
Cadmium, Total	0.125	0.121	97.1	80 - 120	
Chromium, Total	0.125	0.125	100	80 - 120	
Cobalt, Total	0.125	0.127	102	80 - 120	
Copper, Total	0.125	0.126	101	80 - 120	
Lead, Total	0.125	0.129	104	80 - 120	
Manganese, Total	0.125	0.126	101	80 - 120	
Nickel, Total	0.125	0.125	100	80 - 120	
Silver, Total	0.125	0.121	97.0	80 - 120	
Thallium, Total	0.125	0.124	99.5	80 - 120	
Vanadium, Total	0.125	0.123	98.4	80 - 120	
Zinc, Total	0.125	0.127	102	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4829578
Report generated: 06/29/2016 08:10

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061142 Cal ID: ICP-MS2- Worknum: WG574522
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG573751-02 File ID: NI.062816.160556 Dil: 1 Matrix: WATER
Sample ID: WG573751-07 MS File ID: NI.062816.160907 Dil: 1 Units: mg/L
Sample ID: WG573751-08 MSD File ID: NI.062816.161219 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Antimony	ND	0.125	0.126	101	0.125	0.125	99.7	0.861	80 - 120	20	
Arsenic	0.00221	0.125	0.126	99.0	0.125	0.130	102	3.03	80 - 120	20	
Barium	0.0853	0.125	0.207	97.3	0.125	0.211	101	1.99	80 - 120	20	
Cadmium	ND	0.125	0.118	94.5	0.125	0.120	95.8	1.43	80 - 120	20	
Chromium	0.00134	0.125	0.121	96.0	0.125	0.128	101	5.32	80 - 120	20	
Cobalt	ND	0.125	0.116	93.1	0.125	0.126	101	7.91	80 - 120	20	
Copper	0.00228	0.125	0.121	95.0	0.125	0.126	99.0	4.00	80 - 120	20	
Lead	0.000651	0.125	0.124	98.4	0.125	0.127	101	2.96	80 - 120	20	
Manganese	0.0708	0.125	0.185	91.1	0.125	0.209	110	12.3	80 - 120	20	
Nickel	ND	0.125	0.120	95.7	0.125	0.125	100	4.71	80 - 120	20	
Silver	ND	0.125	0.119	95.3	0.125	0.118	94.8	0.549	80 - 120	20	
Thallium	0.000115	0.125	0.122	97.3	0.125	0.124	99.5	2.23	80 - 120	20	
Vanadium	0.00541	0.125	0.126	96.4	0.125	0.132	101	4.49	80 - 120	20	
Zinc	0.0131	0.125	0.137	99.4	0.125	0.149	109	8.01	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4829579
Report generated 06/29/2016 08:10

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061142 Cal ID: ICP-MS2 - Worknum: WG574522
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG573751-03 File ID: NI.062816.165702 Dil: 1 Matrix: WATER
Sample ID: WG573751-09 MS File ID: NI.062816.170014 Dil: 1 Units: mg/L
Sample ID: WG573751-10 MSD File ID: NI.062816.170325 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Antimony	ND	0.125	0.131	105	0.125	0.129	103	1.68	80 - 120	20	
Arsenic	0.00500	0.125	0.139	107	0.125	0.144	111	3.49	80 - 120	20	
Barium	0.0233	0.125	0.147	98.8	0.125	0.144	96.7	1.77	80 - 120	20	
Cadmium	ND	0.125	0.121	96.5	0.125	0.121	96.7	0.209	80 - 120	20	
Chromium	0.00236	0.125	0.129	101	0.125	0.133	105	3.19	80 - 120	20	
Cobalt	0.00132	0.125	0.129	102	0.125	0.137	109	6.06	80 - 120	20	
Copper	0.00717	0.125	0.123	92.8	0.125	0.127	95.5	2.74	80 - 120	20	
Lead	ND	0.125	0.129	103	0.125	0.131	105	2.01	80 - 120	20	
Manganese	0.322	0.125	0.401	63.5	0.125	0.432	88.1	7.39	80 - 120	20	*
Nickel	0.0149	0.125	0.135	95.9	0.125	0.139	99.3	3.13	80 - 120	20	
Silver	ND	0.125	0.118	94.7	0.125	0.118	94.0	0.702	80 - 120	20	
Thallium	ND	0.125	0.129	103	0.125	0.130	104	0.817	80 - 120	20	
Vanadium	0.0222	0.125	0.154	105	0.125	0.159	110	3.58	80 - 120	20	
Zinc	0.0129	0.125	0.131	94.6	0.125	0.136	98.2	3.42	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4829579
Report generated 06/29/2016 08:10

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16061142 **Worknum:** WG574522
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG574522-02 **File ID:** NI.062816.162816 **Dil:** 5 **Units:** ug/L
Sample: L16060916-01 **File ID:** NI.062816.162153 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	ND	U	2.08	F	6690.00	
Arsenic	ND	U	ND	U		
Barium	83.2		82.8		0.40	
Cadmium	ND	U	ND	U		
Chromium	0.420	F	ND	U		
Cobalt	ND	U	ND	U		
Copper	ND	U	ND	U		
Lead	ND	U	ND	U		
Manganese	9.79	X	10.6	X	8.40	
Nickel	ND	U	ND	U		
Silver	ND	U	ND	U		
Thallium	ND	U	ND	U		
Vanadium	ND	U	ND	U		
Zinc	7.82	F	33.1	F	324.00	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4829573
06/29/2016 08:10

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061142 **Worknum:** WG574522
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG574522-01 **File ID:** NI.062816.162504 **Dil:** 1 **Units:** ug/L
Sample ID: L16060916-01 **File ID:** NI.062816.162153 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	50.1		0	U	50	100.2	75 - 125	
ARSENIC	50.6		0	U	50	101.3	75 - 125	
BARIUM	129		83.2		50	92.1	75 - 125	
CADMIUM	49.0		0	U	50	97.9	75 - 125	
CHROMIUM	51.4		0.420	F	50	101.9	75 - 125	
COBALT	50.4		0	U	50	100.8	75 - 125	
COPPER	52.0		0	U	50	104.0	75 - 125	
LEAD	50.9		0	U	50	101.8	75 - 125	
MANGANESE	59.4		9.79		50	99.3	75 - 125	
NICKEL	51.0		0	U	50	102.1	75 - 125	
SILVER	49.7		0	U	50	99.3	75 - 125	
THALLIUM	50.0		0	U	50	100.0	75 - 125	
VANADIUM	50.9		0	U	50	101.9	75 - 125	
ZINC	57.1		7.82	F	50	98.6	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4829574
Report generated: 06/29/2016 08:10

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061142	Workgroup (AAB#):	WG574522
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG574537	Initial Calibration Date:	28-JUN-2016 13:15

	WG574537-01		WG574537-02		WG574537-03		WG574537-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	47.7	.4	303	50	245000	100	482000	.999953	
ARSENIC	0	-33.8	.4	11.1	50	59300	100	117000	.999972	
BARIUM	0	33.7	.4	159	50	107000	100	212000	.999991	
CADMIUM	0	3.30	.4	116	50	110000	100	219000	.999985	
CHROMIUM	0	7410	.4	8070	50	376000	100	727000	.999989	
COBALT	0	227	.4	599	50	370000	100	731000	.999947	
COPPER	0	135	.4	280	50	102000	100	195000	.999984	
LEAD	0	933	.4	2130	50	978000	100	1950000	.999942	
MANGANESE	0	835	.4	1350	50	340000	100	679000	.99986	
NICKEL	0	183	.4	306	50	100000	100	194000	1	
SILVER	0	79.0	.4	455	50	352000	100	679000	.999803	
THALLIUM	0	5.30	.4	473	50	438000	100	866000	.999971	
VANADIUM	0	1490	.4	1870	50	370000	100	719000	.999996	
ZINC	0	520	.4	1010	50	59300	100	114000	.999999	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4829582
Report generated: 29-JUN-2016 08:10

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061142
Instrument ID: ICP-MS2
File ID: NI.062816.132210
Workgroup (AAB#): WG574522
Matrix: WATER

Run Date: 06/28/2016
Run Time: 13:22
Analyst: BKT
Cal ID: ICP-MS2 - 28-JUN-16

Sample ID: WG574537-06
Method: 6020A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
COPPER	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.405	*
THALLIUM	.04	.16	.04	U
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574537-11
Instrument ID: ICP-MS2
Run Time: 13:38
Method: 6020A
File ID: NI.062816.133810
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574522
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.259	F
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4829587
Report generated 06/29/2016 08:11

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574537-15
Instrument ID: ICP-MS2
Run Time: 14:34
Method: 6020A
File ID: NI.062816.143450
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574522
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574537-19
Instrument ID: ICP-MS2
Run Time: 15:13
Method: 6020A
File ID: NI.062816.151312
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574522
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.263	F
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574537-22
Instrument ID: ICP-MS2
Run Time: 15:56
Method: 6020A
File ID: NI.062816.155620
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574522
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574537-24
Instrument ID: ICP-MS2
Run Time: 16:34
Method: 6020A
File ID: NI.062816.163441
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574522
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574537-26
Instrument ID: ICP-MS2
Run Time: 17:13
Method: 6020A
File ID: NI.062816.171301
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574522
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574537-28
Instrument ID: ICP-MS2
Run Time: 17:29
Method: 6020A
File ID: NI.062816.172902
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574522
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574537-30
Instrument ID: ICP-MS2
Run Time: 18:52
Method: 6020A
File ID: NI.062816.185257
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574522
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061142 Run Date: 06/28/2016 Sample ID: WG574537-05
Instrument ID: ICP-MS2 Run Time: 13:18 Method: 6020A
File ID: NI.062816.131857 Analyst: BKT Units: ug/L
Workgroup (AAB#): WG574522 Cal ID: ICP-MS - 28-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	48.3	96.6	90 - 110	
Arsenic		50	50.3	101	90 - 110	
Barium		50	48.2	96.4	90 - 110	
Cadmium		50	49.0	98.0	90 - 110	
Chromium		50	50.0	100	90 - 110	
Cobalt		50	50.2	100	90 - 110	
Copper		50	50.1	100	90 - 110	
Lead		50	48.9	97.7	90 - 110	
Manganese		50	50.2	100	90 - 110	
Nickel		50	49.7	99.4	90 - 110	
Silver		50	49.3	98.6	90 - 110	
Thallium		50	49.1	98.2	90 - 110	
Vanadium		50	49.7	99.5	90 - 110	
Zinc		50	50.7	101	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
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Report generated 06/29/2016 08:11

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574537-10
Instrument ID: ICP-MS2
Run Time: 13:34
Method: 6020A
File ID: NI.062816.133459
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574522
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0492	mg/L	98.4	90 - 110		
Arsenic		0.0500	0.0495	mg/L	99.0	90 - 110		
Barium		0.0500	0.0487	mg/L	97.5	90 - 110		
Cadmium		0.0500	0.0487	mg/L	97.4	90 - 110		
Chromium		0.0500	0.0494	mg/L	98.8	90 - 110		
Cobalt		0.0500	0.0512	mg/L	102	90 - 110		
Copper		0.0500	0.0496	mg/L	99.2	90 - 110		
Lead		0.0500	0.0496	mg/L	99.3	90 - 110		
Manganese		0.0500	0.0497	mg/L	99.5	90 - 110		
Nickel		0.0500	0.0495	mg/L	98.9	90 - 110		
Silver		0.0500	0.0487	mg/L	97.3	90 - 110		
Thallium		0.0500	0.0489	mg/L	97.7	90 - 110		
Vanadium		0.0500	0.0499	mg/L	99.8	90 - 110		
Zinc		0.0500	0.0495	mg/L	99.0	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4829586
Report generated 06/29/2016 08:11

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574537-14
Instrument ID: ICP-MS2
Run Time: 14:31
Method: 6020A
File ID: NI.062816.143138
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574522
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0480	mg/L	96.1	90 - 110		
Arsenic		0.0500	0.0501	mg/L	100	90 - 110		
Barium		0.0500	0.0474	mg/L	94.9	90 - 110		
Cadmium		0.0500	0.0480	mg/L	96.1	90 - 110		
Chromium		0.0500	0.0496	mg/L	99.1	90 - 110		
Cobalt		0.0500	0.0531	mg/L	106	90 - 110		
Copper		0.0500	0.0499	mg/L	99.7	90 - 110		
Lead		0.0500	0.0506	mg/L	101	90 - 110		
Manganese		0.0500	0.0492	mg/L	98.5	90 - 110		
Nickel		0.0500	0.0495	mg/L	99.0	90 - 110		
Silver		0.0500	0.0484	mg/L	96.8	90 - 110		
Thallium		0.0500	0.0490	mg/L	98.1	90 - 110		
Vanadium		0.0500	0.0508	mg/L	102	90 - 110		
Zinc		0.0500	0.0501	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574537-18
Instrument ID: ICP-MS2
Run Time: 15:10
Method: 6020A
File ID: NI.062816.151001
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574522
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0504	mg/L	101	90 - 110		
Arsenic		0.0500	0.0499	mg/L	99.7	90 - 110		
Barium		0.0500	0.0485	mg/L	96.9	90 - 110		
Cadmium		0.0500	0.0487	mg/L	97.5	90 - 110		
Chromium		0.0500	0.0489	mg/L	97.9	90 - 110		
Cobalt		0.0500	0.0517	mg/L	103	90 - 110		
Copper		0.0500	0.0490	mg/L	97.9	90 - 110		
Lead		0.0500	0.0514	mg/L	103	90 - 110		
Manganese		0.0500	0.0487	mg/L	97.5	90 - 110		
Nickel		0.0500	0.0484	mg/L	96.8	90 - 110		
Silver		0.0500	0.0495	mg/L	98.9	90 - 110		
Thallium		0.0500	0.0506	mg/L	101	90 - 110		
Vanadium		0.0500	0.0498	mg/L	99.6	90 - 110		
Zinc		0.0500	0.0494	mg/L	98.9	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574537-21
Instrument ID: ICP-MS2
Run Time: 15:53
Method: 6020A
File ID: NI.062816.155308
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574522
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0499	mg/L	99.8	90 - 110		
Arsenic		0.0500	0.0507	mg/L	101	90 - 110		
Barium		0.0500	0.0489	mg/L	97.8	90 - 110		
Cadmium		0.0500	0.0493	mg/L	98.6	90 - 110		
Chromium		0.0500	0.0508	mg/L	102	90 - 110		
Cobalt		0.0500	0.0508	mg/L	102	90 - 110		
Copper		0.0500	0.0512	mg/L	102	90 - 110		
Lead		0.0500	0.0510	mg/L	102	90 - 110		
Manganese		0.0500	0.0496	mg/L	99.2	90 - 110		
Nickel		0.0500	0.0514	mg/L	103	90 - 110		
Silver		0.0500	0.0498	mg/L	99.6	90 - 110		
Thallium		0.0500	0.0499	mg/L	99.9	90 - 110		
Vanadium		0.0500	0.0503	mg/L	101	90 - 110		
Zinc		0.0500	0.0511	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4829586
Report generated 06/29/2016 08:11

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142 Run Date: 06/28/2016 Sample ID: WG574537-23
Instrument ID: ICP-MS2 Run Time: 16:31 Method: 6020A
File ID: NI.062816.163129 Analyst: BKT QC Key: DOD4
Workgroup (AAB#): WG574522 Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0508	mg/L	102	90 - 110		
Arsenic		0.0500	0.0507	mg/L	101	90 - 110		
Barium		0.0500	0.0494	mg/L	98.9	90 - 110		
Cadmium		0.0500	0.0499	mg/L	99.9	90 - 110		
Chromium		0.0500	0.0509	mg/L	102	90 - 110		
Cobalt		0.0500	0.0511	mg/L	102	90 - 110		
Copper		0.0500	0.0513	mg/L	103	90 - 110		
Lead		0.0500	0.0513	mg/L	103	90 - 110		
Manganese		0.0500	0.0495	mg/L	98.9	90 - 110		
Nickel		0.0500	0.0510	mg/L	102	90 - 110		
Silver		0.0500	0.0503	mg/L	101	90 - 110		
Thallium		0.0500	0.0508	mg/L	102	90 - 110		
Vanadium		0.0500	0.0508	mg/L	102	90 - 110		
Zinc		0.0500	0.0513	mg/L	103	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4829586
Report generated 06/29/2016 08:11

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142 Run Date: 06/28/2016 Sample ID: WG574537-25
Instrument ID: ICP-MS2 Run Time: 17:09 Method: 6020A
File ID: NI.062816.170950 Analyst: BKT QC Key: DOD4
Workgroup (AAB#): WG574522 Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0496	mg/L	99.1	90 - 110		
Arsenic		0.0500	0.0510	mg/L	102	90 - 110		
Barium		0.0500	0.0482	mg/L	96.5	90 - 110		
Cadmium		0.0500	0.0489	mg/L	97.8	90 - 110		
Chromium		0.0500	0.0511	mg/L	102	90 - 110		
Cobalt		0.0500	0.0534	mg/L	107	90 - 110		
Copper		0.0500	0.0507	mg/L	101	90 - 110		
Lead		0.0500	0.0519	mg/L	104	90 - 110		
Manganese		0.0500	0.0497	mg/L	99.5	90 - 110		
Nickel		0.0500	0.0507	mg/L	101	90 - 110		
Silver		0.0500	0.0496	mg/L	99.1	90 - 110		
Thallium		0.0500	0.0505	mg/L	101	90 - 110		
Vanadium		0.0500	0.0511	mg/L	102	90 - 110		
Zinc		0.0500	0.0512	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574537-27
Instrument ID: ICP-MS2
Run Time: 17:25
Method: 6020A
File ID: NI.062816.172550
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574522
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0507	mg/L	101	90 - 110		
Arsenic		0.0500	0.0509	mg/L	102	90 - 110		
Barium		0.0500	0.0493	mg/L	98.6	90 - 110		
Cadmium		0.0500	0.0503	mg/L	101	90 - 110		
Chromium		0.0500	0.0502	mg/L	100	90 - 110		
Cobalt		0.0500	0.0530	mg/L	106	90 - 110		
Copper		0.0500	0.0506	mg/L	101	90 - 110		
Lead		0.0500	0.0532	mg/L	106	90 - 110		
Manganese		0.0500	0.0499	mg/L	99.7	90 - 110		
Nickel		0.0500	0.0503	mg/L	101	90 - 110		
Silver		0.0500	0.0508	mg/L	102	90 - 110		
Thallium		0.0500	0.0509	mg/L	102	90 - 110		
Vanadium		0.0500	0.0509	mg/L	102	90 - 110		
Zinc		0.0500	0.0506	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4829586
Report generated 06/29/2016 08:11

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142 Run Date: 06/28/2016 Sample ID: WG574537-29
Instrument ID: ICP-MS2 Run Time: 18:49 Method: 6020A
File ID: NI.062816.184946 Analyst: BKT QC Key: DOD4
Workgroup (AAB#): WG574522 Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0481	mg/L	96.2	90 - 110		
Arsenic		0.0500	0.0471	mg/L	94.1	90 - 110		
Barium		0.0500	0.0464	mg/L	92.9	90 - 110		
Cadmium		0.0500	0.0463	mg/L	92.7	90 - 110		
Chromium		0.0500	0.0469	mg/L	93.8	90 - 110		
Cobalt		0.0500	0.0469	mg/L	93.8	90 - 110		
Copper		0.0500	0.0475	mg/L	94.9	90 - 110		
Lead		0.0500	0.0484	mg/L	96.7	90 - 110		
Manganese		0.0500	0.0473	mg/L	94.6	90 - 110		
Nickel		0.0500	0.0476	mg/L	95.1	90 - 110		
Silver		0.0500	0.0474	mg/L	94.8	90 - 110		
Thallium		0.0500	0.0474	mg/L	94.8	90 - 110		
Vanadium		0.0500	0.0472	mg/L	94.5	90 - 110		
Zinc		0.0500	0.0472	mg/L	94.5	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4829586
Report generated 06/29/2016 08:11

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574537-07
Instrument ID: ICP-MS2
Run Time: 13:25
Method: 6020A
File ID: NI.062816.132523
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574522
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.414	ug/L	104	70 - 130		
Arsenic		0.400	0.419	ug/L	105	70 - 130		
Barium		0.750	0.681	ug/L	90.8	70 - 130		
Cadmium		0.240	0.234	ug/L	97.7	70 - 130		
Chromium		0.800	0.628	ug/L	78.5	70 - 130		
Cobalt		0.400	0.384	ug/L	96.1	70 - 130		
Copper		0.800	0.759	ug/L	94.9	70 - 130		
Lead		0.200	0.183	ug/L	91.6	70 - 130		
Manganese		0.500	0.437	ug/L	87.4	70 - 130		
Nickel		1.60	1.53	ug/L	95.5	70 - 130		
Silver		0.400	0.372	ug/L	92.9	70 - 130		
Thallium		0.0800	0.0768	ug/L	96.0	70 - 130		
Vanadium		0.400	0.332	ug/L	83.0	70 - 130		
Zinc		6.25	6.14	ug/L	98.3	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4829588
Report generated 06/29/2016 08:11

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574537-20
Instrument ID: ICP-MS2
Run Time: 15:16
Method: 6020A
File ID: NI.062816.151629
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574522
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.429	ug/L	107	70 - 130		
Arsenic		0.400	0.377	ug/L	94.2	70 - 130		
Barium		0.750	0.677	ug/L	90.2	70 - 130		
Cadmium		0.240	0.235	ug/L	98.1	70 - 130		
Chromium		0.800	0.595	ug/L	74.4	70 - 130		
Cobalt		0.400	0.388	ug/L	97.1	70 - 130		
Copper		0.800	0.739	ug/L	92.4	70 - 130		
Lead		0.200	0.192	ug/L	96.0	70 - 130		
Manganese		0.500	0.408	ug/L	81.6	70 - 130		
Nickel		1.60	1.48	ug/L	92.6	70 - 130		
Silver		0.400	0.384	ug/L	96.0	70 - 130		
Thallium		0.0800	0.0804	ug/L	101	70 - 130		
Vanadium		0.400	0.327	ug/L	81.9	70 - 130		
Zinc		6.25	6.24	ug/L	99.9	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4829588
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Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061142
Run Date: 06/28/2016
Sample ID: WG574537-31
Instrument ID: ICP-MS2
Run Time: 18:56
Method: 6020A
File ID: NI.062816.185610
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574522
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.386	ug/L	96.6	70 - 130		
Arsenic		0.400	0.381	ug/L	95.2	70 - 130		
Barium		0.750	0.671	ug/L	89.5	70 - 130		
Cadmium		0.240	0.217	ug/L	90.2	70 - 130		
Chromium		0.800	0.581	ug/L	72.7	70 - 130		
Cobalt		0.400	0.365	ug/L	91.2	70 - 130		
Copper		0.800	0.726	ug/L	90.7	70 - 130		
Lead		0.200	0.188	ug/L	93.9	70 - 130		
Manganese		0.500	0.396	ug/L	79.2	70 - 130		
Nickel		1.60	1.44	ug/L	89.7	70 - 130		
Silver		0.400	0.365	ug/L	91.2	70 - 130		
Thallium		0.0800	0.0752	ug/L	94.0	70 - 130		
Vanadium		0.400	0.309	ug/L	77.3	70 - 130		
Zinc		6.25	5.67	ug/L	90.8	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4829588
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Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061142
Instrument ID: ICP-MS2
Sol. A : WG574537-08 **File ID:** NI.062816.132834
Sol. AB : WG574537-09 **File ID:** NI.062816.133145

Workgroup (AAB#): WG574522
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.0836	NS	100	94.7	94.7	
Arsenic	NS	-0.0118	NS	100	98.9	98.9	
Barium	NS	0.266	NS	100	94.5	94.5	
Cadmium	NS	-0.106	NS	100	95.6	95.6	
Chromium	NS	-0.0468	NS	100	96.5	96.5	
Cobalt	NS	0.0276	NS	100	97.7	97.7	
Copper	NS	0.231	NS	100	96.5	96.5	
Lead	NS	0.0352	NS	100	98.2	98.2	
Manganese	NS	0.0680	NS	100	97.7	97.7	
Nickel	NS	0.332	NS	100	96.0	96.0	
Silver	NS	0.0254	NS	100	89.5	89.5	
Thallium	NS	0.0257	NS	100	96.4	96.4	
Vanadium	NS	-0.0466	NS	100	96.5	96.5	
Zinc	NS	0.903	NS	100	101	101	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4829585
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Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061142
Instrument ID: ICP-MS2
Sol. A : WG574537-16 **File ID:** NI.062816.150336
Sol. AB : WG574537-17 **File ID:** NI.062816.150647

Workgroup (AAB#): WG574522
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.126	NS	100	101	101	
Arsenic	NS	-0.0170	NS	100	102	102	
Barium	NS	0.271	NS	100	98.3	98.3	
Cadmium	NS	-0.0956	NS	100	99.8	99.8	
Chromium	NS	-0.00590	NS	100	97.3	97.3	
Cobalt	NS	0.0242	NS	100	102	102	
Copper	NS	0.234	NS	100	97.4	97.4	
Lead	NS	0.0422	NS	100	102	102	
Manganese	NS	0.0683	NS	100	97.7	97.7	
Nickel	NS	0.343	NS	100	95.9	95.9	
Silver	NS	0.0228	NS	100	91.0	91.0	
Thallium	NS	0.0182	NS	100	99.2	99.2	
Vanadium	NS	-0.0922	NS	100	100	100	
Zinc	NS	0.968	NS	100	103	103	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
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Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16061142 **Analytical Method:** 6020
Analytical Workgroup: WG574522 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 28-JUN-2016 13:06

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16061142-01	SAMP	28-JUN-2016 16:41	99.255	96.551	101.401
L16061142-01	SAMP	28-JUN-2016 18:46	100.965	100.286	100.017
L16061142-03	SAMP	28-JUN-2016 16:44	101.048	100.945	100.342
L16061142-05	SAMP	28-JUN-2016 16:47	102.922	103.837	100.277
WG573751-04	BLANK	28-JUN-2016 15:59	103.478	101.272	101.942
WG573751-05	LCS	28-JUN-2016 16:02	101.311	100.028	102.068
WG574522-01	PSPK	28-JUN-2016 16:25	102.605	99.458	100.372
WG574522-02	SERIAL	28-JUN-2016 16:28	100.917	97.675	101.604
WG574537-05	ICV	28-JUN-2016 13:18	106.21	104.263	104.758
WG574537-06	ICB	28-JUN-2016 13:22	103.902	104.951	103.59
WG574537-07	LLICV	28-JUN-2016 13:25	104.131	100.167	102.925
WG574537-08	ICS	28-JUN-2016 13:28	105.453	105.812	102.55
WG574537-09	ICS	28-JUN-2016 13:31	104.707	103.975	104.833
WG574537-10	CCV	28-JUN-2016 13:34	105.977	103.288	105.534
WG574537-11	CCB	28-JUN-2016 13:38	102.403	102.67	102.767
WG574537-14	CCV	28-JUN-2016 14:31	103.407	95.988	101.793
WG574537-15	CCB	28-JUN-2016 14:34	104.225	98.805	100.724
WG574537-16	ICS	28-JUN-2016 15:03	99.952	99.435	100.043
WG574537-17	ICS	28-JUN-2016 15:06	101.575	99.874	97.332
WG574537-18	CCV	28-JUN-2016 15:10	100.244	98.973	99.201
WG574537-19	CCB	28-JUN-2016 15:13	103.776	99.505	101.81
WG574537-20	LLCCV	28-JUN-2016 15:16	99.051	96.111	96.093
WG574537-21	CCV	28-JUN-2016 15:53	102.325	99.988	101.736
WG574537-22	CCB	28-JUN-2016 15:56	100.66	98.559	102.089
WG574537-23	CCV	28-JUN-2016 16:31	100.569	98.236	98.84
WG574537-24	CCB	28-JUN-2016 16:34	98.016	97.516	98.396
WG574537-25	CCV	28-JUN-2016 17:09	103.008	97.514	102.105
WG574537-26	CCB	28-JUN-2016 17:13	100.776	97.768	98.614
WG574537-27	CCV	28-JUN-2016 17:25	103.598	102.656	103.011
WG574537-28	CCB	28-JUN-2016 17:29	102.284	100.798	98.989
WG574537-29	CCV	28-JUN-2016 18:49	100.019	101.137	98.931
WG574537-30	CCB	28-JUN-2016 18:52	100.148	99.202	100.624
WG574537-31	LLCCV	28-JUN-2016 18:56	95.839	97.87	93.931

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4829581
Report generated: 06/29/2016 08:10

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16061142 **Analytical Method:** 6020
Analytical Workgroup: WG574522 **Matrix:** 2
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 28-JUN-2016 13:06

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060916-01	SAMP	28-JUN-2016 16:21	99.466	100.136	98.238

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4829581
Report generated: 06/29/2016 08:10

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16061142 **Date:** 04/19/2016
Insturment ID: ICP-MS2 **Method:** 6020A

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Uranium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4829580
Report generated: 06/29/2016 08:10

2.3.2.3 Raw Data

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Tuesday, June 28, 2016 12:45:36

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1331	2024	0.706	
Mg	23.985	24.025	4508	2020	0.701	
Co	58.933	58.925	11686	2022	0.701	
In	114.904	114.875	22861	2028	0.696	
U	238.050	238.025	47455	2043	0.688	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	5.573
5.575	2.596
5.625	3.076
5.675	2.368
5.725	2.568
5.775	3.011
5.825	2.517
5.875	2.694
5.925	1.595
5.975	3.373
6.025	3.068
6.075	2.439
6.125	2.845
6.175	3.293
6.225	6.959
6.275	54.149
6.325	79.756
6.375	69.722
6.425	99.103
6.475	35.972
6.525	19.569
6.575	4.348
6.625	4.647
6.675	4.116
6.725	2.239
6.775	2.849
6.825	1.600

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6.875	3.248
6.925	2.794
6.975	1.665
7.025	2.844
7.075	2.994
7.125	3.503
7.175	2.980
7.225	3.713
7.275	5.087
7.325	35.264
7.375	93.541
7.425	136.931
7.475	82.402
7.525	71.261
7.575	39.123
7.625	180.662
7.675	64.358
7.725	47.507
7.775	71.261
7.825	70.711
7.875	52.705
7.925	46.481
7.975	63.888
8.025	74.689
8.075	64.359
8.125	63.888
8.175	34.401
8.225	46.481
8.275	49.793
8.325	81.441
8.375	60.858
8.425	67.420
8.475	108.653
22.525	223.607
22.575	90.014
22.625	44.605
22.675	65.617
22.725	58.975
22.775	40.945
22.825	35.460
22.875	18.054
22.925	42.061
22.975	53.715
23.025	19.357
23.075	24.491
23.125	8.438
23.175	12.837

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23.225	30.858
23.275	24.845
23.325	45.141
23.375	26.438
23.425	14.816
23.475	14.263
23.525	12.137
23.575	3.832
23.625	2.363
23.675	1.595
23.725	2.170
23.775	2.317
23.825	1.497
23.875	1.501
23.925	1.731
23.975	0.863
24.025	2.634
24.075	2.734
24.125	2.053
24.175	2.398
24.225	2.993
24.275	2.883
24.325	7.686
24.375	28.384
24.425	36.617
24.475	12.141
24.525	3.189
24.575	0.926
24.625	1.585
24.675	1.547
24.725	2.051
24.775	1.408
24.825	2.678
24.875	1.711
24.925	1.949
24.975	2.595
25.025	3.005
25.075	2.962
25.125	2.366
25.175	2.463
25.225	2.722
25.275	9.971
25.325	31.599
25.375	47.140
25.425	64.885
25.475	6.734
57.525	8.866

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57.575	5.291
57.625	3.440
57.675	3.697
57.725	3.076
57.775	2.567
57.825	2.416
57.875	1.794
57.925	2.766
57.975	2.199
58.025	1.926
58.075	2.254
58.125	1.436
58.175	1.390
58.225	3.504
58.275	5.534
58.325	34.267
58.375	33.055
58.425	20.772
58.475	14.356
58.525	5.854
58.575	3.115
58.625	4.057
58.675	2.315
58.725	2.604
58.775	2.171
58.825	1.290
58.875	1.298
58.925	2.935
58.975	1.929
59.025	1.078
59.075	1.921
59.125	2.163
59.175	2.388
59.225	3.289
59.275	8.929
59.325	38.030
59.375	58.736
59.425	28.284
59.475	17.563
59.525	12.128
59.575	6.526
59.625	2.279
59.675	2.377
59.725	6.247
59.775	4.326
59.825	2.635
59.875	3.246

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59.925	1.954
59.975	3.753
60.025	5.882
60.075	3.380
60.125	2.788
60.175	3.075
60.225	4.430
60.275	18.947
60.325	43.241
60.375	22.017
60.425	79.756
60.475	50.461
113.525	7.111
113.575	1.614
113.625	3.295
113.675	3.378
113.725	2.143
113.775	2.366
113.825	3.191
113.875	4.581
113.925	1.498
113.975	2.463
114.025	3.675
114.075	2.767
114.125	4.064
114.175	2.276
114.225	6.994
114.275	28.008
114.325	41.691
114.375	17.526
114.425	9.127
114.475	6.547
114.525	3.985
114.575	2.757
114.625	3.785
114.675	2.945
114.725	3.014
114.775	2.252
114.825	1.319
114.875	1.984
114.925	1.415
114.975	0.577
115.025	0.422
115.075	1.851
115.125	0.695
115.175	3.426
115.225	3.732

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115.275	9.818
115.325	57.810
115.375	52.705
115.425	23.458
115.475	18.657
115.525	4.767
115.575	6.521
115.625	4.984
115.675	3.649
115.725	7.463
115.775	7.302
115.825	2.294
115.875	3.587
115.925	2.925
115.975	3.587
116.025	4.548
116.075	6.187
116.125	2.246
116.175	11.560
116.225	3.389
116.275	17.538
116.325	51.618
116.375	52.705
116.425	42.127
116.475	34.312
236.525	
236.575	28.853
236.625	56.165
236.675	51.701
236.725	11.620
236.775	50.775
236.825	27.217
236.875	33.431
236.925	29.881
236.975	45.955
237.025	46.771
237.075	7.402
237.125	30.162
237.175	24.686
237.225	34.297
237.275	16.110
237.325	20.328
237.375	28.770
237.425	26.702
237.475	18.887
237.525	24.816
237.575	6.725

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237.625	8.740
237.675	3.668
237.725	2.023
237.775	1.587
237.825	3.110
237.875	1.530
237.925	2.794
237.975	3.068
238.025	2.967
238.075	2.352
238.125	2.652
238.175	2.474
238.225	2.129
238.275	1.500
238.325	2.197
238.375	3.421
238.425	3.111
238.475	6.669
238.525	16.077
238.575	17.557
238.625	21.969
238.675	32.775
238.725	22.232
238.775	26.146
238.825	21.694
238.875	19.088
238.925	8.384
238.975	17.180
239.025	59.843
239.075	31.485
239.125	33.497
239.175	31.181
239.225	27.834
239.275	28.743
239.325	26.503
239.375	17.174
239.425	9.195
239.475	35.446

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SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 6/28/2016 12:50:43 PM
End Time: 6/28/2016 12:52:55 PM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 5221.30
        Obtained Intensity (Mg 23.985): 136183.87
        Obtained Intensity (In 114.904): 66441.11
        Obtained Intensity (U 238.05): 147068.09
        Obtained Intensity (Bkgd 220): 0.20
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.018 (=3731.53 / 205818.69)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.004 (=890.23 / 205818.69)
```

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SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 6/28/2016 12:50:43 PM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 5221.30
                Obtained Intensity (Mg 23.985): 136183.87
                Obtained Intensity (In 114.904): 66441.11
                Obtained Intensity (U 238.05): 147068.09
                Obtained Intensity (Bkgd 220): 0.20
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.018 (=3731.53 / 205818.69)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.004 (=890.23 / 205818.69)
[Passed]  Optimum value(s): N/A

End Time: 6/28/2016 12:52:55 PM
```


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Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Tuesday, June 28, 2016 13:02:57
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81760.1	2.0				ug/L		Standard
	Be	9	16.7	75.5				ug/L		Standard
	Al	27	1410.1	2.3				ug/L		Standard
	Sc	45	39543.2	2.7				ug/L		Standard
	Ti	47	39.0	9.2				ug/L		Standard
	V	51	1415.2	6.8				ug/L		Standard
	Cr	52	6946.3	1.7				ug/L		Standard
	Cr	53	328.3	14.1				ug/L		Standard
	Mn	55	823.0	8.8				ug/L		Standard
	Co	59	251.7	9.6				ug/L		Standard
	Ni	60	192.0	8.0				ug/L		Standard
	Cu	65	140.7	5.3				ug/L		Standard
	Zn	66	490.7	3.4				ug/L		Standard
>	Ge	72	515086.9	1.2				ug/L		Standard
	As	75	19.8	169.9				ug/L		Standard
	Se	82	15.3	19.8				ug/L		Standard
	Se-1	77	48.0	15.7				ug/L		Standard
>	Ga	71	90.0	5.6				mg/L		Standard
	Rb	85	23.3	68.9				ug/L		Standard
	Y	89	448509.9	0.5				ug/L		Standard
>	Rh	103	15.0	66.7				ug/L		Standard
	Mo	98	10.9	19.2				ug/L		Standard
	Ag	107	134.0	44.7				ug/L		Standard
	Cd	111	6.6	57.0				mg/L		Standard
	Cd	114	16.1	68.4				ug/L		Standard
>	In	115	611116.5	1.9				ug/L		Standard
	Sn	118	518.3	7.2				ug/L		Standard
	Sb	123	126.7	13.8				ug/L		Standard
	Ba	135	45.3	39.8				ug/L		Standard
	Ce	140	298.3	72.3				ug/L		Standard
>	Tb	159	977942.3	1.0				ug/L		Standard
	Ho	165	11.7	24.7				ug/L		Standard
	Tl	203	30.7	114.0				ug/L		Standard
	Tl	205	20.0	152.1				ug/L		Standard
	Pb	206	285.7	7.2				ug/L		Standard
	Pb	207	257.0	5.7				ug/L		Standard
	Pb	208	955.7	3.9				ug/L		Standard
	U	238	17.0	67.8				ug/L		Standard
>	Bi	209	557080.4	0.4				ug/L		Standard

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	Na	23	0.0		mg/L	Standard
	Mg	24	31.7	36.5	mg/L	Standard
	K	39	30.0	57.7	mg/L	Standard
	Ca	43	48.3	43.1	mg/L	Standard
	Fe	54	159.3	19.3	mg/L	Standard
	Fe	57	195.0	11.2	mg/L	Standard
>	**Sc-1**	45	39543.2	2.7	mg/L	Standard
	Cl	35	27641.9	2.8	ug/L	Standard
	Kr	83	2.0	50.0	ug/L	Standard
	Br	81	1646.8	11.1	ug/L	Standard
	P	31	15231.0	1.6	ug/L	Standard
	S	34	1845.1	7.5	ug/L	Standard
	Sr	88	70.0	12.4	ug/L	Standard
	C	12	113.3	28.4	mg/L	Standard
	N	14	0.0		mg/L	Standard
	Hg	202	0.0		mg/L	Standard
	Dy	164	12.4	122.2	mg/L	Standard
	Ho-1	165	11.7	24.7	mg/L	Standard
	Er	166	20.0	50.0	mg/L	Standard
	I	127	1161.7	12.0	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Blank
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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Tuesday, June 28, 2016 13:06:09
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83638.6	0.9				ug/L	81760	Standard
	Be	9	11.7	49.5				ug/L	17	Standard
	Al	27	1445.1	4.5				ug/L	1410	Standard
	Sc	45	40184.9	2.0				ug/L	39543	Standard
	Ti	47	38.3	12.0				ug/L	39	Standard
	V	51	1492.6	2.6				ug/L	1415	Standard
	Cr	52	7409.5	2.1				ug/L	6946	Standard
	Cr	53	321.7	15.3				ug/L	328	Standard
	Mn	55	835.0	1.8				ug/L	823	Standard
	Co	59	226.7	11.0				ug/L	252	Standard
	Ni	60	182.7	5.1				ug/L	192	Standard
	Cu	65	134.7	15.9				ug/L	141	Standard
	Zn	66	519.7	4.6				ug/L	491	Standard
>	**Ge**	72	517782.5	2.4				ug/L	515087	Standard
	As	75	-33.8	72.0				ug/L	20	Standard
	Se	82	16.9	27.2				ug/L	15	Standard
	Se-1	77	48.7	14.9				ug/L	48	Standard
>	**Ga**	71	95.0	19.0				mg/L	90	Standard
	Rb	85	33.3	82.6				ug/L	23	Standard
	Y	89	456301.2	1.1				ug/L	448510	Standard
>	**Rh**	103	21.7	58.1				ug/L	15	Standard
	Mo	98	8.3	58.9				ug/L	11	Standard
	Ag	107	79.0	9.1				ug/L	134	Standard
	Cd	111	3.3	17.5				mg/L	7	Standard
	Cd	114	6.2	12.1				ug/L	16	Standard
>	**In**	115	624714.7	2.4				ug/L	611117	Standard
	Sn	118	515.0	5.4				ug/L	518	Standard
	Sb	123	47.7	15.0				ug/L	127	Standard
	Ba	135	33.7	27.6				ug/L	45	Standard
	Ce	140	86.7	24.0				ug/L	298	Standard
>	**Tb**	159	1001347.1	1.8				ug/L	977942	Standard
	Ho	165	6.7	43.3				ug/L	12	Standard
	Tl	203	5.3	60.3				ug/L	31	Standard
	Tl	205	3.3	86.6				ug/L	20	Standard
	Pb	206	276.7	3.7				ug/L	286	Standard
	Pb	207	213.3	7.3				ug/L	257	Standard
	Pb	208	933.0	3.4				ug/L	956	Standard
	U	238	4.7	12.4				ug/L	17	Standard
>	**Bi**	209	562888.8	0.9				ug/L	557080	Standard

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	Na	23	0.0		mg/L	0	Standard
	Mg	24	36.7	7.9	mg/L	32	Standard
	K	39	28.3	44.4	mg/L	30	Standard
	Ca	43	36.7	28.4	mg/L	48	Standard
	Fe	54	172.5	32.0	mg/L	159	Standard
	Fe	57	211.7	34.4	mg/L	195	Standard
>	**Sc-1**	45	40184.9	2.0	mg/L	39543	Standard
	Cl	35	29114.6	1.1	ug/L	27642	Standard
	Kr	83	3.3	96.4	ug/L	2	Standard
	Br	81	1676.8	6.8	ug/L	1647	Standard
	P	31	15918.4	1.2	ug/L	15231	Standard
	S	34	1885.1	11.3	ug/L	1845	Standard
	Sr	88	58.3	21.6	ug/L	70	Standard
	C	12	116.7	24.7	mg/L	113	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	0.0		mg/L	0	Standard
	Dy	164	16.2	93.4	mg/L	12	Standard
	Ho-1	165	6.7	43.3	mg/L	12	Standard
	Er	166	10.0	100.0	mg/L	20	Standard
	I	127	1170.0	16.3	mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 1
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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Tuesday, June 28, 2016 13:09:21
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82626.5	2.9				ug/L	81760	Standard
	Be	9	60.0	14.4				ug/L	17	Standard
	Al	27	10023.3	4.0				ug/L	1410	Standard
	Sc	45	41007.1	1.4				ug/L	39543	Standard
	Ti	47	69.0	5.8				ug/L	39	Standard
	V	51	1868.4	2.4				ug/L	1415	Standard
	Cr	52	8071.5	1.1				ug/L	6946	Standard
	Cr	53	360.0	4.2				ug/L	328	Standard
	Mn	55	1347.7	1.9				ug/L	823	Standard
	Co	59	599.0	5.9				ug/L	252	Standard
	Ni	60	305.7	5.8				ug/L	192	Standard
	Cu	65	280.3	2.3				ug/L	141	Standard
	Zn	66	1008.0	4.7				ug/L	491	Standard
>	**Ge**	72	539572.1	1.8				ug/L	515087	Standard
	As	75	11.1	230.1				ug/L	20	Standard
	Se	82	20.4	17.1				ug/L	15	Standard
	Se-1	77	60.7	1.9				ug/L	48	Standard
>	**Ga**	71	83.3	19.3				mg/L	90	Standard
	Rb	85	31.7	48.2				ug/L	23	Standard
	Y	89	463986.2	1.2				ug/L	448510	Standard
>	**Rh**	103	13.3	57.3				ug/L	15	Standard
	Mo	98	329.5	2.8				ug/L	11	Standard
	Ag	107	455.0	1.5				ug/L	134	Standard
	Cd	111	115.7	6.5				mg/L	7	Standard
	Cd	114	292.0	6.0				ug/L	16	Standard
>	**In**	115	625608.8	0.7				ug/L	611117	Standard
	Sn	118	920.0	9.2				ug/L	518	Standard
	Sb	123	303.4	7.6				ug/L	127	Standard
	Ba	135	158.7	8.0				ug/L	45	Standard
	Ce	140	88.3	42.5				ug/L	298	Standard
>	**Tb**	159	1002874.0	1.4				ug/L	977942	Standard
	Ho	165	11.7	24.7				ug/L	12	Standard
	Tl	203	472.7	2.0				ug/L	31	Standard
	Tl	205	391.7	11.0				ug/L	20	Standard
	Pb	206	628.7	5.7				ug/L	286	Standard
	Pb	207	539.3	6.7				ug/L	257	Standard
	Pb	208	2133.7	2.7				ug/L	956	Standard
	U	238	388.7	5.1				ug/L	17	Standard
>	**Bi**	209	570508.1	0.4				ug/L	557080	Standard

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	Na	23	0.0		mg/L	0	Standard
	Mg	24	48.3	26.0	mg/L	32	Standard
	K	39	45.0	19.2	mg/L	30	Standard
	Ca	43	36.7	43.8	mg/L	48	Standard
	Fe	54	162.5	17.6	mg/L	159	Standard
	Fe	57	193.3	3.0	mg/L	195	Standard
>	**Sc-1**	45	41007.1	1.4	mg/L	39543	Standard
	Cl	35	29715.1	0.6	ug/L	27642	Standard
	Kr	83	3.0	33.3	ug/L	2	Standard
	Br	81	1836.8	4.6	ug/L	1647	Standard
	P	31	16030.1	3.1	ug/L	15231	Standard
	S	34	1895.1	1.4	ug/L	1845	Standard
	Sr	88	61.7	9.4	ug/L	70	Standard
	C	12	143.3	21.3	mg/L	113	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	0.0		mg/L	0	Standard
	Dy	164	19.5	50.0	mg/L	12	Standard
	Ho-1	165	11.7	24.7	mg/L	12	Standard
	Er	166	10.0	100.0	mg/L	20	Standard
	I	127	1208.4	23.1	mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 2
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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Tuesday, June 28, 2016 13:12:32
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83151.0	2.6				ug/L	81760	Standard
	Be	9	50594.4	3.3	**50.0000**	0.655	1.3	ug/L	17	Standard
	Al	27	7832644.8	2.3	**50.0000**	1.818	3.6	ug/L	1410	Standard
	Sc	45	42972.5	0.7				ug/L	39543	Standard
	Ti	47	26044.7	0.2	**100.0000**	1.044	1.0	ug/L	39	Standard
	V	51	369925.9	1.5	**50.0000**	0.431	0.9	ug/L	1415	Standard
	Cr	52	376035.2	0.6	**50.0000**	0.381	0.8	ug/L	6946	Standard
	Cr	53	47201.8	2.5	**50.0000**	1.648	3.3	ug/L	328	Standard
	Mn	55	339840.1	0.9	**50.0000**	0.028	0.1	ug/L	823	Standard
	Co	59	369835.8	1.4	**50.0000**	0.329	0.7	ug/L	252	Standard
	Ni	60	100390.8	0.3	**50.0000**	0.410	0.8	ug/L	192	Standard
	Cu	65	101743.1	0.9	**50.0000**	0.203	0.4	ug/L	141	Standard
	Zn	66	59304.5	0.9	**50.0000**	0.371	0.7	ug/L	491	Standard
>	**Ge**	72	547553.1	0.8				ug/L	515087	Standard
	As	75	59263.2	0.8	**50.0000**	0.205	0.4	ug/L	20	Standard
	Se	82	6019.0	1.0	**50.0000**	0.596	1.2	ug/L	15	Standard
	Se-1	77	4068.9	1.3	**50.0000**	0.434	0.9	ug/L	48	Standard
>	**Ga**	71	120.0	22.0				mg/L	90	Standard
	Rb	85	803.4	2.6				ug/L	23	Standard
	Y	89	462085.4	0.0				ug/L	448510	Standard
>	**Rh**	103	33.3	52.7				ug/L	15	Standard
	Mo	98	278482.4	0.5	**100.0000**	0.941	0.9	ug/L	11	Standard
	Ag	107	351728.0	0.3	**50.0000**	0.642	1.3	ug/L	134	Standard
	Cd	111	110396.3	1.4	**50.0000**	0.556	1.1	mg/L	7	Standard
	Cd	114	267604.2	1.4	**50.0000**	0.663	1.3	ug/L	16	Standard
>	**In**	115	627830.2	1.2				ug/L	611117	Standard
	Sn	118	304675.0	1.7	**50.0000**	0.618	1.2	ug/L	518	Standard
	Sb	123	244739.5	0.4	**50.0000**	0.675	1.4	ug/L	127	Standard
	Ba	135	106555.1	1.0	**50.0000**	0.097	0.2	ug/L	45	Standard
	Ce	140	116.7	9.9				ug/L	298	Standard
>	**Tb**	159	1018565.7	2.1				ug/L	977942	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	438004.0	1.2	**50.0000**	0.427	0.9	ug/L	31	Standard
	Tl	205	379940.6	1.7	**50.0000**	0.597	1.2	ug/L	20	Standard
	Pb	206	284208.1	0.3	**50.0000**	0.335	0.7	ug/L	286	Standard
	Pb	207	256392.2	0.5	**50.0000**	0.374	0.7	ug/L	257	Standard
	Pb	208	978425.0	1.4	**50.0000**	0.588	1.2	ug/L	956	Standard
	U	238	371095.6	0.5	**50.0000**	0.490	1.0	ug/L	17	Standard
>	**Bi**	209	583572.7	0.6				ug/L	557080	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	4002.2	2.2	**5.0000**	0.144	2.9	mg/L	32	Standard
K	39	1640.1	4.4	**5.0000**	0.220	4.4	mg/L	30	Standard
Ca	43	73.3	27.6	**5.0000**	2.832	56.6	mg/L	48	Standard
Fe	54	6006.1	1.4	**5.0000**	0.034	0.7	mg/L	159	Standard
Fe	57	1818.4	10.7	**5.0000**	0.606	12.1	mg/L	195	Standard
> **Sc-1**	45	42972.5	0.7				mg/L	39543	Standard
Cl	35	31584.9	0.4				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1736.8	12.0				ug/L	1647	Standard
P	31	18696.5	1.2				ug/L	15231	Standard
S	34	2423.5	4.1				ug/L	1845	Standard
Sr	88	71.7	21.3				ug/L	70	Standard
C	12	110.0	39.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	18.6	110.3				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	30.0	33.3				mg/L	20	Standard
I	127	1405.1	8.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Tuesday, June 28, 2016 13:15:44
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81919.2	1.8				ug/L	81760	Standard
	Be	9	99366.8	4.2	**99.8402**	3.215	3.2	ug/L	17	Standard
	Al	27	15456145.8	2.8	**100.0514**	1.254	1.3	ug/L	1410	Standard
	Sc	45	41889.5	2.4				ug/L	39543	Standard
	Ti	47	52065.7	3.9	**203.2707**	7.861	3.9	ug/L	39	Standard
	V	51	718696.0	1.3	**100.2818**	2.594	2.6	ug/L	1415	Standard
	Cr	52	727396.2	2.7	**100.4747**	2.418	2.4	ug/L	6946	Standard
	Cr	53	90202.9	3.4	**99.4979**	3.023	3.0	ug/L	328	Standard
	Mn	55	679268.3	1.6	**101.6708**	2.363	2.3	ug/L	823	Standard
	Co	59	730686.9	1.6	**101.0312**	2.535	2.5	ug/L	252	Standard
	Ni	60	193870.4	2.0	**99.9159**	1.756	1.8	ug/L	192	Standard
	Cu	65	194619.8	1.4	**99.4389**	1.906	1.9	ug/L	141	Standard
	Zn	66	113576.2	1.7	**99.8564**	1.521	1.5	ug/L	491	Standard
>	**Ge**	72	530148.8	1.5				ug/L	515087	Standard
	As	75	116520.9	0.8	**100.7477**	1.604	1.6	ug/L	20	Standard
	Se	82	12083.5	1.4	**101.8724**	2.244	2.2	ug/L	15	Standard
	Se-1	77	7795.3	2.5	**99.8242**	2.540	2.5	ug/L	48	Standard
>	**Ga**	71	125.0	22.3				mg/L	90	Standard
	Rb	85	1618.4	10.1				ug/L	23	Standard
	Y	89	461192.2	0.4				ug/L	448510	Standard
>	**Rh**	103	56.7	20.4				ug/L	15	Standard
	Mo	98	556218.8	1.0	**199.4538**	3.118	1.6	ug/L	11	Standard
	Ag	107	678834.5	1.8	**98.0160**	2.327	2.4	ug/L	134	Standard
	Cd	111	219330.5	1.3	**99.4613**	1.808	1.8	mg/L	7	Standard
	Cd	114	534582.7	2.1	**99.7362**	2.615	2.6	ug/L	16	Standard
>	**In**	115	630478.6	0.6				ug/L	611117	Standard
	Sn	118	609964.7	1.0	**99.8933**	1.520	1.5	ug/L	518	Standard
	Sb	123	482106.0	1.2	**99.0353**	1.710	1.7	ug/L	127	Standard
	Ba	135	212119.9	0.9	**99.5711**	1.444	1.4	ug/L	45	Standard
	Ce	140	165.0	42.7				ug/L	298	Standard
>	**Tb**	159	1009801.9	0.4				ug/L	977942	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	865813.4	1.1	**100.7605**	1.348	1.3	ug/L	31	Standard
	Tl	205	752692.6	1.1	**100.8681**	0.657	0.7	ug/L	20	Standard
	Pb	206	549987.8	0.2	**99.7256**	0.843	0.8	ug/L	286	Standard
	Pb	207	495989.2	0.5	**99.7047**	0.496	0.5	ug/L	257	Standard
	Pb	208	1945321.0	0.5	**101.0779**	0.484	0.5	ug/L	956	Standard
	U	238	738847.3	0.4	**101.1182**	1.306	1.3	ug/L	17	Standard
>	**Bi**	209	568134.9	1.0				ug/L	557080	Standard

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Na	23	3.3	86.6	**19.9850**	17.308	86.6	mg/L	0	Standard
Mg	24	8245.6	0.3	**10.3081**	0.247	2.4	mg/L	32	Standard
K	39	3202.0	9.6	**10.0847**	1.159	11.5	mg/L	30	Standard
Ca	43	108.3	26.2	**10.2160**	4.199	41.1	mg/L	48	Standard
Fe	54	12180.7	3.3	**10.2708**	0.331	3.2	mg/L	159	Standard
Fe	57	3313.7	6.4	**9.9500**	0.928	9.3	mg/L	195	Standard
Sc-1	45	41889.5	2.4				mg/L	39543	Standard
Cl	35	30969.0	3.8				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1773.4	7.0				ug/L	1647	Standard
P	31	19072.0	2.1				ug/L	15231	Standard
S	34	2495.2	5.2				ug/L	1845	Standard
Sr	88	56.7	5.1				ug/L	70	Standard
C	12	143.3	29.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	13.0	113.4				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	6.7	173.2				mg/L	20	Standard
I	127	1551.7	12.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Tuesday, June 28, 2016 13:18:57
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81910.8	1.2				ug/L	81760	Standard
	Be	9	50188.0	2.5	**50.4285**	0.671	1.3	ug/L	17	Standard
	Al	27	7919939.7	1.3	**51.2716**	0.184	0.4	ug/L	1410	Standard
	Sc	45	42151.9	1.0				ug/L	39543	Standard
	Ti	47	26799.3	0.9	**103.2216**	1.931	1.9	ug/L	39	Standard
	V	51	362002.1	2.3	**49.7477**	0.555	1.1	ug/L	1415	Standard
	Cr	52	370323.8	0.7	**49.9789**	0.741	1.5	ug/L	6946	Standard
	Cr	53	45478.3	5.4	**49.3268**	1.623	3.3	ug/L	328	Standard
	Mn	55	340081.6	0.1	**50.1792**	1.001	2.0	ug/L	823	Standard
	Co	59	367567.5	0.6	**50.1558**	0.780	1.6	ug/L	252	Standard
	Ni	60	97767.5	1.8	**49.6873**	0.150	0.3	ug/L	192	Standard
	Cu	65	99441.7	2.0	**50.1064**	0.391	0.8	ug/L	141	Standard
	Zn	66	58882.6	2.1	**50.6983**	0.019	0.0	ug/L	491	Standard
>	**Ge**	72	537043.0	2.1				ug/L	515087	Standard
	As	75	58926.0	1.4	**50.3136**	0.381	0.8	ug/L	20	Standard
	Se	82	6003.9	1.4	**49.9034**	0.396	0.8	ug/L	15	Standard
	Se-1	77	4037.5	1.3	**50.7056**	1.619	3.2	ug/L	48	Standard
>	**Ga**	71	113.3	22.2				mg/L	90	Standard
	Rb	85	626.7	7.4				ug/L	23	Standard
	Y	89	465817.4	0.7				ug/L	448510	Standard
>	**Rh**	103	43.3	24.0				ug/L	15	Standard
	Mo	98	284447.8	1.6	**100.4857**	3.626	3.6	ug/L	11	Standard
	Ag	107	346501.9	1.0	**49.2778**	1.406	2.9	ug/L	134	Standard
	Cd	111	109630.9	1.1	**48.9766**	1.535	3.1	mg/L	7	Standard
	Cd	114	266600.1	1.2	**48.9905**	1.146	2.3	ug/L	16	Standard
>	**In**	115	640190.8	2.0				ug/L	611117	Standard
	Sn	118	332613.3	1.3	**53.6148**	1.570	2.9	ug/L	518	Standard
	Sb	123	238639.0	2.2	**48.2943**	2.007	4.2	ug/L	127	Standard
	Ba	135	104330.0	1.0	**48.2232**	0.702	1.5	ug/L	45	Standard
	Ce	140	120.0	15.0				ug/L	298	Standard
>	**Tb**	159	1038346.1	1.3				ug/L	977942	Standard
	Ho	165	16.7	34.6				ug/L	12	Standard
	Tl	203	439433.3	1.3	**49.1017**	0.655	1.3	ug/L	31	Standard
	Tl	205	379171.3	1.2	**48.7970**	1.107	2.3	ug/L	20	Standard
	Pb	206	282861.9	1.4	**49.2211**	1.133	2.3	ug/L	286	Standard
	Pb	207	247275.0	1.2	**47.7052**	1.056	2.2	ug/L	257	Standard
	Pb	208	979823.4	0.2	**48.8569**	0.617	1.3	ug/L	956	Standard
	U	238	361651.7	0.7	**47.5263**	0.839	1.8	ug/L	17	Standard
>	**Bi**	209	591677.6	1.0				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.0435**	17.387	173.1	mg/L	0	Standard
Mg	24	4277.3	3.5	**5.2835**	0.147	2.8	mg/L	32	Standard
K	39	1651.8	3.6	**5.0931**	0.136	2.7	mg/L	30	Standard
Ca	43	81.7	30.2	**6.2885**	3.508	55.8	mg/L	48	Standard
Fe	54	5996.6	1.6	**4.9548**	0.129	2.6	mg/L	159	Standard
Fe	57	1723.4	6.4	**4.8356**	0.391	8.1	mg/L	195	Standard
Sc-1	45	42151.9	1.0				mg/L	39543	Standard
Cl	35	29861.4	1.9				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1713.4	14.2				ug/L	1647	Standard
P	31	18880.1	1.3				ug/L	15231	Standard
S	34	2316.8	4.8				ug/L	1845	Standard
Sr	88	70.0	35.7				ug/L	70	Standard
C	12	156.7	32.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	46.2	33.1				mg/L	12	Standard
Ho-1	165	16.7	34.6				mg/L	12	Standard
Er	166	10.0					mg/L	20	Standard
I	127	1246.7	11.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	100.857		
Al	27	102.543		
Sc	45			
Ti	47	103.222		
V	51	99.495		
Cr	52	99.958		
Cr	53			
Mn	55	100.358		
Co	59	100.312		
Ni	60	99.375		
Cu	65	100.213		
Zn	66	101.397		
Ge	72		104.263	
As	75	100.627		
Se	82	99.807		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	100.486		
Ag	107	98.556		
Cd	111	97.953		
Cd	114			
In	115		104.758	
Sn	118	107.230		
Sb	123	96.589		
Ba	135	96.446		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.203		
Tl	205			
Pb	206	98.442		
Pb	207	95.410		
Pb	208	97.714		
U	238	95.053		
Bi	209		106.210	
Na	23	200.869		
Mg	24	105.670		
K	39	101.861		
Ca	43	125.771		
Fe	54	99.097		
Fe	57	96.711		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	

Sample ID: QC Std 1
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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Tuesday, June 28, 2016 13:22:10
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81098.1	0.9				ug/L	81760	Standard
	Be	9	35.0	14.3	**0.0258**	0.005	18.6	ug/L	17	Standard
	Al	27	2568.6	16.6	**0.0024**	0.003	117.4	ug/L	1410	Standard
	Sc	45	40706.3	0.9				ug/L	39543	Standard
	Ti	47	40.7	7.5	**-0.0093**	0.010	110.5	ug/L	39	Standard
	V	51	1184.2	4.7	**-0.0443**	0.005	11.8	ug/L	1415	Standard
	Cr	52	6261.3	1.2	**-0.1999**	0.018	9.1	ug/L	6946	Standard
	Cr	53	338.3	3.7	**0.0258**	0.014	55.9	ug/L	328	Standard
	Mn	55	842.4	4.2	**-0.0247**	0.005	18.3	ug/L	823	Standard
	Co	59	286.0	9.3	**0.0074**	0.003	40.3	ug/L	252	Standard
	Ni	60	199.7	6.5	**-0.0040**	0.005	124.9	ug/L	192	Standard
	Cu	65	142.3	4.7	**-0.0195**	0.003	13.5	ug/L	141	Standard
	Zn	66	529.7	2.7	**-0.3672**	0.009	2.6	ug/L	491	Standard
>	**Ge**	72	540586.6	1.6				ug/L	515087	Standard
	As	75	16.4	99.5	**0.0543**	0.014	25.8	ug/L	20	Standard
	Se	82	18.7	7.6	**0.0353**	0.014	40.6	ug/L	15	Standard
	Se-1	77	50.3	10.9	**-0.0819**	0.075	91.1	ug/L	48	Standard
>	**Ga**	71	86.7	18.5				mg/L	90	Standard
	Rb	85	13.3	78.1				ug/L	23	Standard
	Y	89	464568.8	2.3				ug/L	448510	Standard
>	**Rh**	103	18.3	15.7				ug/L	15	Standard
	Mo	98	439.4	21.7	**0.1377**	0.033	23.9	ug/L	11	Standard
	Ag	107	149.7	25.4	**0.0053**	0.005	102.3	ug/L	134	Standard
	Cd	111	15.2	39.6	**0.0040**	0.003	67.9	mg/L	7	Standard
	Cd	114	45.8	32.1	**0.0036**	0.003	74.9	ug/L	16	Standard
>	**In**	115	633054.7	0.7				ug/L	611117	Standard
	Sn	118	1025.0	34.7	**0.0655**	0.058	89.1	ug/L	518	Standard
	Sb	123	2042.3	25.6	**0.4053**	0.108	26.7	ug/L	127	Standard
	Ba	135	49.7	4.2	**-0.0019**	0.001	60.7	ug/L	45	Standard
	Ce	140	36.7	20.8				ug/L	298	Standard
>	**Tb**	159	1001668.5	0.7				ug/L	977942	Standard
	Ho	165	10.0					ug/L	12	Standard
	Tl	203	78.0	41.6	**0.0041**	0.004	88.8	ug/L	31	Standard
	Tl	205	58.3	47.2	**0.0054**	0.004	66.7	ug/L	20	Standard
	Pb	206	315.3	11.1	**-0.0075**	0.006	81.9	ug/L	286	Standard
	Pb	207	291.3	4.8	**-0.0005**	0.003	477.4	ug/L	257	Standard
	Pb	208	1079.0	5.9	**-0.0054**	0.003	55.4	ug/L	956	Standard
	U	238	63.3	42.9	**0.0055**	0.004	65.2	ug/L	17	Standard
>	**Bi**	209	578819.3	0.5				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	25.0	40.0	**-0.0249**	0.013	50.9	mg/L	32	Standard
K	39	31.7	9.1	**-0.0375**	0.009	24.5	mg/L	30	Standard
Ca	43	41.7	36.7	**0.7901**	2.216	280.5	mg/L	48	Standard
Fe	54	146.0	8.6	**-0.0087**	0.010	113.7	mg/L	159	Standard
Fe	57	195.0	25.3	**0.0139**	0.156	1122.4	mg/L	195	Standard
Sc-1	45	40706.3	0.9				mg/L	39543	Standard
Cl	35	29554.8	2.8				ug/L	27642	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	1693.4	6.8				ug/L	1647	Standard
P	31	17536.8	2.2				ug/L	15231	Standard
S	34	2233.5	3.0				ug/L	1845	Standard
Sr	88	66.7	15.6				ug/L	70	Standard
C	12	96.7	33.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.7	49.8				mg/L	12	Standard
Ho-1	165	10.0					mg/L	12	Standard
Er	166	13.3	86.6				mg/L	20	Standard
I	127	1260.1	15.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		104.951	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.590
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.902
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Tuesday, June 28, 2016 13:25:23
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79486.3	1.5				ug/L	81760	Standard
	Be	9	236.7	23.6	**0.2350**	0.054	23.1	ug/L	17	Standard
	Al	27	1635.1	14.9	**-0.0035**	0.001	42.0	ug/L	1410	Standard
	Sc	45	39860.7	2.7				ug/L	39543	Standard
	Ti	47	39.7	2.9	**-0.0059**	0.005	91.5	ug/L	39	Standard
	V	51	3750.6	3.6	**0.3321**	0.019	5.7	ug/L	1415	Standard
	Cr	52	11750.6	2.2	**0.6283**	0.044	7.0	ug/L	6946	Standard
	Cr	53	1020.0	3.7	**0.8185**	0.038	4.7	ug/L	328	Standard
	Mn	55	3800.5	0.2	**0.4368**	0.004	0.8	ug/L	823	Standard
	Co	59	2925.3	4.6	**0.3843**	0.020	5.3	ug/L	252	Standard
	Ni	60	3080.3	1.6	**1.5280**	0.033	2.2	ug/L	192	Standard
	Cu	65	1617.4	2.7	**0.7591**	0.027	3.5	ug/L	141	Standard
	Zn	66	7652.9	2.4	**6.1434**	0.191	3.1	ug/L	491	Standard
>	**Ge**	72	515947.7	0.4				ug/L	515087	Standard
	As	75	426.1	10.9	**0.4186**	0.040	9.6	ug/L	20	Standard
	Se	82	65.5	20.2	**0.4487**	0.114	25.5	ug/L	15	Standard
	Se-1	77	77.0	13.5	**0.3017**	0.140	46.4	ug/L	48	Standard
>	**Ga**	71	75.0	29.1				mg/L	90	Standard
	Rb	85	11.7	49.5				ug/L	23	Standard
	Y	89	454544.4	2.9				ug/L	448510	Standard
>	**Rh**	103	11.7	65.5				ug/L	15	Standard
	Mo	98	144.3	6.8	**0.0328**	0.004	11.5	ug/L	11	Standard
	Ag	107	2677.9	4.8	**0.3715**	0.022	5.8	ug/L	134	Standard
	Cd	111	522.1	8.6	**0.2344**	0.020	8.5	mg/L	7	Standard
	Cd	114	1313.6	1.7	**0.2408**	0.006	2.4	ug/L	16	Standard
>	**In**	115	628989.1	0.7				ug/L	611117	Standard
	Sn	118	611.7	1.9	**-0.0014**	0.001	96.1	ug/L	518	Standard
	Sb	123	2074.6	8.0	**0.4143**	0.033	7.9	ug/L	127	Standard
	Ba	135	1500.7	4.3	**0.6813**	0.036	5.2	ug/L	45	Standard
	Ce	140	23.3	24.7				ug/L	298	Standard
>	**Tb**	159	1002704.6	1.0				ug/L	977942	Standard
	Ho	165	21.7	35.3				ug/L	12	Standard
	Tl	203	715.4	2.1	**0.0768**	0.002	2.1	ug/L	31	Standard
	Tl	205	653.3	9.4	**0.0835**	0.008	10.1	ug/L	20	Standard
	Pb	206	1358.4	2.4	**0.1778**	0.007	3.8	ug/L	286	Standard
	Pb	207	1172.0	3.3	**0.1729**	0.010	5.8	ug/L	257	Standard
	Pb	208	4784.3	0.9	**0.1832**	0.004	2.4	ug/L	956	Standard
	U	238	2840.3	2.6	**0.3778**	0.014	3.6	ug/L	17	Standard
>	**Bi**	209	580093.5	1.0				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	33.3	22.9	**-0.0129**	0.011	85.9	mg/L	32	Standard
K	39	38.3	45.8	**-0.0130**	0.059	454.3	mg/L	30	Standard
Ca	43	38.3	41.9	**0.4748**	2.540	535.0	mg/L	48	Standard
Fe	54	103.9	16.3	**-0.0436**	0.016	37.7	mg/L	159	Standard
Fe	57	210.0	19.5	**0.0806**	0.150	185.6	mg/L	195	Standard
> **Sc-1**	45	39860.7	2.7				mg/L	39543	Standard
Cl	35	28271.0	1.2				ug/L	27642	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	1630.1	3.7				ug/L	1647	Standard
P	31	12470.1	4.9				ug/L	15231	Standard
S	34	2090.1	6.4				ug/L	1845	Standard
Sr	88	61.7	72.7				ug/L	70	Standard
C	12	146.7	7.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	26.0	116.4				mg/L	12	Standard
Ho-1	165	21.7	35.3				mg/L	12	Standard
Er	166	13.3	43.3				mg/L	20	Standard
I	127	1031.7	25.9				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	117.475		
	Al	27	-0.351		
	Sc	45			
	Ti	47			
	V	51	83.021		
	Cr	52	78.533		
	Cr	53			
	Mn	55	87.355		
	Co	59	96.082		
	Ni	60	95.499		
	Cu	65	94.881		
	Zn	66	98.294		
>	Ge	72		100.167	
	As	75	104.644		
	Se	82	112.180		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	92.871		
Cd	111	97.662		
Cd	114			
> In	115			102.925
Sn	118			
Sb	123	103.570		
Ba	135	90.845		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	95.941		
Tl	205			
Pb	206			
Pb	207			
Pb	208	91.584		
U	238	94.451		
> Bi	209			104.131
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Tuesday, June 28, 2016 13:28:34
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	85379.9	0.7				ug/L	81760	Standard
	Be	9	28.3	44.4	**0.0176**	0.012	68.3	ug/L	17	Standard
	Al	27	7582301.1	0.5	**47.0918**	0.449	1.0	ug/L	1410	Standard
	Sc	45	42481.1	0.8				ug/L	39543	Standard
	Ti	47	26924.2	1.2	**102.1971**	2.644	2.6	ug/L	39	Standard
	V	51	1177.2	11.7	**-0.0466**	0.017	37.5	ug/L	1415	Standard
	Cr	52	7440.5	1.6	**-0.0468**	0.011	24.4	ug/L	6946	Standard
	Cr	53	2938.6	8.1	**2.8263**	0.310	11.0	ug/L	328	Standard
	Mn	55	1484.1	0.5	**0.0680**	0.007	9.9	ug/L	823	Standard
	Co	59	438.3	7.6	**0.0276**	0.004	13.4	ug/L	252	Standard
	Ni	60	870.4	2.5	**0.3318**	0.004	1.2	ug/L	192	Standard
	Cu	65	647.0	5.3	**0.2309**	0.010	4.5	ug/L	141	Standard
	Zn	66	2006.5	1.8	**0.9027**	0.019	2.1	ug/L	491	Standard
>	Ge	72	545025.5	2.5				ug/L	515087	Standard
	As	75	-62.2	34.4	**-0.0118**	0.017	144.3	ug/L	20	Standard
	Se	82	23.6	6.2	**0.0746**	0.009	12.7	ug/L	15	Standard
	Se-1	77	231.7	5.9	**2.1902**	0.222	10.1	ug/L	48	Standard
>	Ga	71	171.7	17.1				mg/L	90	Standard
	Rb	85	1090.0	4.4				ug/L	23	Standard
	Y	89	452797.1	1.4				ug/L	448510	Standard
>	Rh	103	10.0	100.0				ug/L	15	Standard
	Mo	98	263118.9	1.1	**94.9055**	0.578	0.6	ug/L	11	Standard
	Ag	107	286.7	3.7	**0.0254**	0.002	6.6	ug/L	134	Standard
	Cd	111	-226.3	7.3	**-0.1062**	0.009	8.1	mg/L	7	Standard
	Cd	114	466.4	13.0	**0.0826**	0.011	12.8	ug/L	16	Standard
>	In	115	626700.1	1.0				ug/L	611117	Standard
	Sn	118	941.7	5.7	**0.0533**	0.007	13.8	ug/L	518	Standard
	Sb	123	466.3	29.2	**0.0836**	0.028	33.8	ug/L	127	Standard
	Ba	135	616.7	6.0	**0.2662**	0.017	6.2	ug/L	45	Standard
	Ce	140	233.3	17.2				ug/L	298	Standard
>	Tb	159	1019781.5	0.4				ug/L	977942	Standard
	Ho	165	28.3	27.0				ug/L	12	Standard
	Tl	203	270.7	14.6	**0.0257**	0.004	17.2	ug/L	31	Standard
	Tl	205	205.0	17.1	**0.0243**	0.005	18.8	ug/L	20	Standard
	Pb	206	568.7	4.5	**0.0362**	0.004	12.0	ug/L	286	Standard
	Pb	207	508.0	2.4	**0.0408**	0.002	5.7	ug/L	257	Standard
	Pb	208	1902.0	8.6	**0.0352**	0.008	23.2	ug/L	956	Standard
	U	238	71.7	54.2	**0.0065**	0.005	78.6	ug/L	17	Standard
>	Bi	209	587460.1	0.4				ug/L	557080	Standard

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Na	23	5.0	100.0	**29.8288**	29.665	99.5	mg/L	0	Standard
Mg	24	10050.0	1.2	**12.3961**	0.163	1.3	mg/L	32	Standard
K	39	1535.1	9.7	**4.6887**	0.503	10.7	mg/L	30	Standard
Ca	43	211.7	14.4	**24.5987**	4.529	18.4	mg/L	48	Standard
Fe	54	14184.2	1.5	**11.8132**	0.271	2.3	mg/L	159	Standard
Fe	57	3883.8	1.7	**11.5795**	0.109	0.9	mg/L	195	Standard
Sc-1	45	42481.1	0.8				mg/L	39543	Standard
Cl	35	27442.8	1.7				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1816.8	6.7				ug/L	1647	Standard
P	31	16744.2	0.2				ug/L	15231	Standard
S	34	1956.8	7.4				ug/L	1845	Standard
Sr	88	48.3	53.1				ug/L	70	Standard
C	12	220.0	25.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	27.0				mg/L	0	Standard
Dy	164	24.9	47.6				mg/L	12	Standard
Ho-1	165	28.3	27.0				mg/L	12	Standard
Er	166	36.7	56.8				mg/L	20	Standard
I	127	1896.8	6.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27	0.942		
Sc	45			
Ti	47	102.197		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		105.812	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	94.905		
Ag	107			
Cd	111			
Cd	114			
In	115			102.550
Sn	118			
Sb	123			
Ba	135			
Ce	140			
Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
Bi	209			105.453
Na	23	238.631		
Mg	24	247.921		
K	39	93.774		
Ca	43	163.991		
Fe	54	94.506		
Fe	57	92.636		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	

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QC Std 4	Ca	43

Sample ID: QC Std 4
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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Tuesday, June 28, 2016 13:31:45
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	87031.0	2.2				ug/L	81760	Standard
	Be	9	104600.0	3.1	**98.9445**	2.636	2.7	ug/L	17	Standard
	Al	27	8235764.9	2.8	**50.1881**	1.494	3.0	ug/L	1410	Standard
	Sc	45	40814.9	1.3				ug/L	39543	Standard
	Ti	47	28557.9	2.6	**110.3128**	3.806	3.5	ug/L	39	Standard
	V	51	698774.9	0.6	**96.5097**	2.203	2.3	ug/L	1415	Standard
	Cr	52	706026.0	2.3	**96.5109**	2.799	2.9	ug/L	6946	Standard
	Cr	53	91691.9	3.7	**100.1429**	4.249	4.2	ug/L	328	Standard
	Mn	55	659133.1	0.8	**97.6603**	2.181	2.2	ug/L	823	Standard
	Co	59	714164.5	1.5	**97.7493**	2.387	2.4	ug/L	252	Standard
	Ni	60	188241.9	2.2	**96.0473**	2.835	3.0	ug/L	192	Standard
	Cu	65	190773.3	1.3	**96.4911**	2.052	2.1	ug/L	141	Standard
	Zn	66	115799.2	0.5	**100.8065**	2.067	2.1	ug/L	491	Standard
>	**Ge**	72	535562.3	1.7				ug/L	515087	Standard
	As	75	115513.0	0.8	**98.8727**	1.879	1.9	ug/L	20	Standard
	Se	82	11807.8	0.8	**98.5471**	2.365	2.4	ug/L	15	Standard
	Se-1	77	7973.8	0.6	**101.0979**	1.926	1.9	ug/L	48	Standard
>	**Ga**	71	195.0	2.6				mg/L	90	Standard
	Rb	85	900.0	5.1				ug/L	23	Standard
	Y	89	467512.1	1.1				ug/L	448510	Standard
>	**Rh**	103	41.7	61.6				ug/L	15	Standard
	Mo	98	278616.6	1.0	**98.3192**	1.671	1.7	ug/L	11	Standard
	Ag	107	629653.8	2.5	**89.4581**	1.609	1.8	ug/L	134	Standard
	Cd	111	214179.9	0.7	**95.5849**	1.082	1.1	mg/L	7	Standard
	Cd	114	513207.5	0.9	**94.2229**	0.578	0.6	ug/L	16	Standard
>	**In**	115	640649.3	1.3				ug/L	611117	Standard
	Sn	118	1085.0	2.4	**0.0732**	0.006	8.8	ug/L	518	Standard
	Sb	123	468645.5	2.2	**94.7292**	1.132	1.2	ug/L	127	Standard
	Ba	135	204538.3	1.7	**94.4814**	1.088	1.2	ug/L	45	Standard
	Ce	140	98.3	7.8				ug/L	298	Standard
>	**Tb**	159	1030592.0	2.2				ug/L	977942	Standard
	Ho	165	16.7	45.8				ug/L	12	Standard
	Tl	203	850272.7	1.9	**96.3847**	2.377	2.5	ug/L	31	Standard
	Tl	205	753805.3	1.5	**98.4067**	2.429	2.5	ug/L	20	Standard
	Pb	206	560444.8	0.3	**98.9799**	0.961	1.0	ug/L	286	Standard
	Pb	207	485626.8	0.4	**95.0861**	1.259	1.3	ug/L	257	Standard
	Pb	208	1940003.2	1.2	**98.1909**	2.155	2.2	ug/L	956	Standard
	U	238	731621.6	1.7	**97.5330**	2.488	2.6	ug/L	17	Standard
>	**Bi**	209	583301.0	1.0				ug/L	557080	Standard

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Na	23	5.0	100.0	**30.9951**	30.718	99.1	mg/L	0	Standard
Mg	24	10642.1	4.7	**13.6704**	0.697	5.1	mg/L	32	Standard
K	39	1555.1	3.7	**4.9498**	0.207	4.2	mg/L	30	Standard
Ca	43	191.7	19.9	**22.8900**	5.801	25.3	mg/L	48	Standard
Fe	54	15478.2	1.2	**13.4350**	0.150	1.1	mg/L	159	Standard
Fe	57	4137.2	0.8	**12.9082**	0.151	1.2	mg/L	195	Standard
Sc-1	45	40814.9	1.3				mg/L	39543	Standard
Cl	35	27689.3	2.5				ug/L	27642	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	1876.8	10.9				ug/L	1647	Standard
P	31	15799.9	3.3				ug/L	15231	Standard
S	34	1943.5	5.2				ug/L	1845	Standard
Sr	88	65.0	27.7				ug/L	70	Standard
C	12	256.7	13.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	15.9	127.8				mg/L	12	Standard
Ho-1	165	16.7	45.8				mg/L	12	Standard
Er	166	16.7	69.3				mg/L	20	Standard
I	127	1231.7	9.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	98.944		
Al	27	1.004		
Sc	45			
Ti	47	110.313		
V	51	96.510		
Cr	52	96.511		
Cr	53			
Mn	55	97.660		
Co	59	97.749		
Ni	60	96.047		
Cu	65	96.491		
Zn	66	100.807		
Ge	72		103.975	
As	75	98.873		
Se	82	98.547		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	98.319		
Ag	107	89.458		
Cd	111	95.585		
Cd	114			
In	115		104.833	
Sn	118			
Sb	123	94.729		
Ba	135	94.481		
Ce	140			
Tb	159			
Ho	165			
Tl	203	96.385		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.191		
U	238	97.533		
Bi	209		104.707	
Na	23	247.961		
Mg	24	273.408		
K	39	98.997		
Ca	43	152.600		
Fe	54	107.480		
Fe	57	103.265		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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QC Std 5	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 13:34:59
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85572.8	3.1				ug/L	81760	Standard
	Be	9	51348.6	3.0	**49.4131**	1.801	3.6	ug/L	17	Standard
	Al	27	7869928.8	0.7	**48.7904**	1.162	2.4	ug/L	1410	Standard
	Sc	45	41500.1	1.3				ug/L	39543	Standard
	Ti	47	25257.0	1.4	**98.1904**	2.232	2.3	ug/L	39	Standard
	V	51	359717.6	0.9	**49.9155**	1.252	2.5	ug/L	1415	Standard
	Cr	52	362752.3	1.0	**49.4079**	0.954	1.9	ug/L	6946	Standard
	Cr	53	45483.2	1.3	**49.8439**	1.589	3.2	ug/L	328	Standard
	Mn	55	333977.4	0.1	**49.7416**	1.012	2.0	ug/L	823	Standard
	Co	59	371364.3	0.2	**51.1559**	1.087	2.1	ug/L	252	Standard
	Ni	60	96391.0	0.8	**49.4567**	0.760	1.5	ug/L	192	Standard
	Cu	65	97494.7	0.8	**49.5943**	0.620	1.2	ug/L	141	Standard
	Zn	66	56948.5	0.8	**49.4853**	0.762	1.5	ug/L	491	Standard
>	**Ge**	72	532023.1	2.0				ug/L	515087	Standard
	As	75	57437.4	0.6	**49.5161**	1.180	2.4	ug/L	20	Standard
	Se	82	5946.0	0.9	**49.9013**	1.415	2.8	ug/L	15	Standard
	Se-1	77	4004.5	1.6	**50.7471**	0.199	0.4	ug/L	48	Standard
>	**Ga**	71	93.3	16.4				mg/L	90	Standard
	Rb	85	881.7	8.3				ug/L	23	Standard
	Y	89	456900.1	0.4				ug/L	448510	Standard
>	**Rh**	103	26.7	60.3				ug/L	15	Standard
	Mo	98	274645.7	0.6	**96.2670**	1.141	1.2	ug/L	11	Standard
	Ag	107	344865.6	0.2	**48.6675**	0.302	0.6	ug/L	134	Standard
	Cd	111	109918.0	0.6	**48.7237**	0.167	0.3	mg/L	7	Standard
	Cd	114	266820.9	0.9	**48.6598**	0.652	1.3	ug/L	16	Standard
>	**In**	115	644937.8	0.8				ug/L	611117	Standard
	Sn	118	304766.5	1.2	**48.7367**	0.172	0.4	ug/L	518	Standard
	Sb	123	245072.6	0.1	**49.2072**	0.383	0.8	ug/L	127	Standard
	Ba	135	106223.8	1.1	**48.7299**	0.483	1.0	ug/L	45	Standard
	Ce	140	76.7	21.0				ug/L	298	Standard
>	**Tb**	159	1040424.8	0.9				ug/L	977942	Standard
	Ho	165	11.7	89.2				ug/L	12	Standard
	Tl	203	436254.3	0.9	**48.8621**	1.048	2.1	ug/L	31	Standard
	Tl	205	382952.9	1.1	**49.3898**	0.698	1.4	ug/L	20	Standard
	Pb	206	278752.3	0.9	**48.6168**	1.163	2.4	ug/L	286	Standard
	Pb	207	252906.4	1.0	**48.9055**	1.215	2.5	ug/L	257	Standard
	Pb	208	993060.2	1.0	**49.6339**	1.159	2.3	ug/L	956	Standard
	U	238	369537.8	0.4	**48.6731**	0.911	1.9	ug/L	17	Standard
>	**Bi**	209	590375.8	1.5				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4017.2	5.2	**5.0405**	0.318	6.3	mg/L	32	Standard
K	39	1600.1	5.0	**5.0128**	0.329	6.6	mg/L	30	Standard
Ca	43	98.3	19.3	**8.9105**	2.944	33.0	mg/L	48	Standard
Fe	54	5965.0	1.0	**5.0068**	0.016	0.3	mg/L	159	Standard
Fe	57	1785.1	5.1	**5.1208**	0.370	7.2	mg/L	195	Standard
> **Sc-1**	45	41500.1	1.3				mg/L	39543	Standard
Cl	35	29160.0	1.9				ug/L	27642	Standard
Kr	83	3.3	45.8				ug/L	2	Standard
Br	81	1670.1	8.2				ug/L	1647	Standard
P	31	17116.3	2.7				ug/L	15231	Standard
S	34	2186.8	7.3				ug/L	1845	Standard
Sr	88	41.7	34.6				ug/L	70	Standard
C	12	130.0	42.8				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	23.3	24.7				mg/L	12	Standard
Ho-1	165	11.7	89.2				mg/L	12	Standard
Er	166	0.0					mg/L	20	Standard
I	127	1351.7	14.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	98.826		
Al	27	97.581		
Sc	45			
Ti	47	98.190		
V	51	99.831		
Cr	52	98.816		
Cr	53			
Mn	55	99.483		
Co	59	102.312		
Ni	60	98.913		
Cu	65	99.189		
Zn	66	98.971		
> Ge	72		103.288	
As	75	99.032		
Se	82	99.803		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	96.267		
Ag	107	97.335		
Cd	111	97.447		
Cd	114			
> In	115			105.534
Sn	118	97.473		
Sb	123	98.414		
Ba	135	97.460		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	97.724		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.268		
U	238	97.346		
> Bi	209			105.977
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 13:38:10
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82763.8	0.7				ug/L	81760	Standard
	Be	9	40.0	57.3	**0.0300**	0.023	75.9	ug/L	17	Standard
	Al	27	4257.4	63.2	**0.0129**	0.017	134.4	ug/L	1410	Standard
	Sc	45	40355.3	1.7				ug/L	39543	Standard
	Ti	47	44.3	23.5	**0.0085**	0.041	476.8	ug/L	39	Standard
	V	51	1283.7	14.1	**-0.0268**	0.025	92.2	ug/L	1415	Standard
	Cr	52	6366.3	1.6	**-0.1663**	0.013	7.9	ug/L	6946	Standard
	Cr	53	461.7	3.5	**0.1707**	0.014	8.3	ug/L	328	Standard
	Mn	55	939.4	15.6	**-0.0074**	0.022	294.6	ug/L	823	Standard
	Co	59	428.3	39.2	**0.0280**	0.023	82.9	ug/L	252	Standard
	Ni	60	218.7	25.5	**0.0081**	0.029	354.3	ug/L	192	Standard
	Cu	65	184.3	18.2	**0.0036**	0.017	469.2	ug/L	141	Standard
	Zn	66	515.3	2.3	**-0.3696**	0.014	3.7	ug/L	491	Standard
>	**Ge**	72	528838.2	0.8				ug/L	515087	Standard
	As	75	8.3	324.4	**0.0475**	0.023	49.1	ug/L	20	Standard
	Se	82	19.9	12.2	**0.0491**	0.021	43.7	ug/L	15	Standard
	Se-1	77	55.0	4.8	**-0.0079**	0.029	369.8	ug/L	48	Standard
>	**Ga**	71	56.7	39.8				mg/L	90	Standard
	Rb	85	10.0					ug/L	23	Standard
	Y	89	469796.8	1.6				ug/L	448510	Standard
>	**Rh**	103	20.0	25.0				ug/L	15	Standard
	Mo	98	452.3	25.3	**0.1439**	0.042	29.5	ug/L	11	Standard
	Ag	107	307.7	67.7	**0.0286**	0.031	108.2	ug/L	134	Standard
	Cd	111	45.2	95.8	**0.0178**	0.020	112.8	mg/L	7	Standard
	Cd	114	114.8	113.1	**0.0168**	0.025	147.3	ug/L	16	Standard
>	**In**	115	628024.0	1.4				ug/L	611117	Standard
	Sn	118	940.0	23.7	**0.0531**	0.039	73.1	ug/L	518	Standard
	Sb	123	1312.1	39.0	**0.2588**	0.110	42.3	ug/L	127	Standard
	Ba	135	79.3	75.1	**0.0125**	0.029	229.7	ug/L	45	Standard
	Ce	140	28.3	36.7				ug/L	298	Standard
>	**Tb**	159	1003248.8	1.6				ug/L	977942	Standard
	Ho	165	15.0	88.2				ug/L	12	Standard
	Tl	203	265.0	107.1	**0.0261**	0.033	127.7	ug/L	31	Standard
	Tl	205	163.3	84.5	**0.0196**	0.019	95.5	ug/L	20	Standard
	Pb	206	421.0	42.3	**0.0127**	0.033	261.4	ug/L	286	Standard
	Pb	207	362.0	44.3	**0.0147**	0.033	224.6	ug/L	257	Standard
	Pb	208	1358.7	30.8	**0.0100**	0.022	223.6	ug/L	956	Standard
	U	238	139.0	84.9	**0.0161**	0.016	101.8	ug/L	17	Standard
>	**Bi**	209	570467.7	1.7				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.3221**	17.870	173.1	mg/L	0	Standard
Mg	24	30.0	28.9	**-0.0179**	0.012	67.0	mg/L	32	Standard
K	39	31.7	24.1	**-0.0367**	0.024	65.4	mg/L	30	Standard
Ca	43	38.3	15.1	**0.3686**	0.952	258.2	mg/L	48	Standard
Fe	54	115.7	16.2	**-0.0344**	0.017	49.5	mg/L	159	Standard
Fe	57	198.3	8.1	**0.0320**	0.061	191.3	mg/L	195	Standard
> **Sc-1**	45	40355.3	1.7				mg/L	39543	Standard
Cl	35	29509.4	2.2				ug/L	27642	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	1783.4	4.3				ug/L	1647	Standard
P	31	17421.7	1.2				ug/L	15231	Standard
S	34	2170.2	3.8				ug/L	1845	Standard
Sr	88	55.0	15.7				ug/L	70	Standard
C	12	93.3	40.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	8.9	120.7				mg/L	12	Standard
Ho-1	165	15.0	88.2				mg/L	12	Standard
Er	166	23.3	65.5				mg/L	20	Standard
I	127	1233.4	14.2				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		102.670	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	102.767
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.403
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

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Method 6020 - Summary Report

Sample ID: L1606036203
Sample Date/Time: Tuesday, June 28, 2016 13:41:22
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83400.5	10.2				ug/L	81760	Standard
	Be	9	11.7	65.5	**0.0015**	0.006	425.0	ug/L	17	Standard
	Al	27	3017.0	39.5	**0.0053**	0.009	165.2	ug/L	1410	Standard
	Sc	45	40218.8	12.0				ug/L	39543	Standard
	Ti	47	37.0	23.6	**-0.0163**	0.022	135.1	ug/L	39	Standard
	V	51	613.8	4.6	**-0.1167**	0.012	10.1	ug/L	1415	Standard
	Cr	52	3481.1	12.6	**-0.5531**	0.019	3.4	ug/L	6946	Standard
	Cr	53	250.0	27.5	**-0.0570**	0.057	99.8	ug/L	328	Standard
	Mn	55	1041.4	26.2	**0.0117**	0.027	231.5	ug/L	823	Standard
	Co	59	254.7	5.9	**0.0055**	0.004	71.3	ug/L	252	Standard
	Ni	60	206.3	13.3	**0.0056**	0.009	153.1	ug/L	192	Standard
	Cu	65	131.7	19.5	**-0.0206**	0.013	65.4	ug/L	141	Standard
	Zn	66	531.7	22.4	**-0.3419**	0.069	20.1	ug/L	491	Standard
>	**Ge**	72	510441.4	10.5				ug/L	515087	Standard
	As	75	44.6	25.0	**0.0799**	0.006	7.8	ug/L	20	Standard
	Se	82	38.3	36.8	**0.2107**	0.093	44.1	ug/L	15	Standard
	Se-1	77	32.0	11.3	**-0.2872**	0.062	21.6	ug/L	48	Standard
>	**Ga**	71	61.7	4.7				mg/L	90	Standard
	Rb	85	33.3	37.7				ug/L	23	Standard
	Y	89	399549.3	20.8				ug/L	448510	Standard
>	**Rh**	103	11.7	65.5				ug/L	15	Standard
	Mo	98	155.9	22.2	**0.0482**	0.023	47.8	ug/L	11	Standard
	Ag	107	121.0	24.4	**0.0044**	0.005	118.2	ug/L	134	Standard
	Cd	111	13.4	45.5	**0.0046**	0.004	96.5	mg/L	7	Standard
	Cd	114	43.9	10.7	**0.0047**	0.001	14.6	ug/L	16	Standard
>	**In**	115	541793.5	15.9				ug/L	611117	Standard
	Sn	118	351.7	31.7	**-0.0361**	0.012	32.5	ug/L	518	Standard
	Sb	123	283.1	30.2	**0.0538**	0.012	21.7	ug/L	127	Standard
	Ba	135	37.0	32.8	**-0.0052**	0.004	82.4	ug/L	45	Standard
	Ce	140	30.0	28.9				ug/L	298	Standard
>	**Tb**	159	879683.0	16.9				ug/L	977942	Standard
	Ho	165	8.3	34.6				ug/L	12	Standard
	Tl	203	99.7	75.1	**0.0097**	0.013	137.9	ug/L	31	Standard
	Tl	205	85.0	86.7	**0.0121**	0.015	120.6	ug/L	20	Standard
	Pb	206	313.0	1.9	**0.0011**	0.012	1036.8	ug/L	286	Standard
	Pb	207	266.0	5.5	**0.0034**	0.015	442.4	ug/L	257	Standard
	Pb	208	1233.7	12.3	**0.0133**	0.020	150.4	ug/L	956	Standard
	U	238	39.3	36.7	**0.0031**	0.002	60.3	ug/L	17	Standard
>	**Bi**	209	508733.8	16.9				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	21.7	13.3	**-0.0282**	0.008	27.2	mg/L	32	Standard
K	39	25.0	34.6	**-0.0591**	0.022	36.5	mg/L	30	Standard
Ca	43	40.0	12.5	**0.7483**	1.524	203.6	mg/L	48	Standard
Fe	54	113.2	25.1	**-0.0334**	0.039	117.8	mg/L	159	Standard
Fe	57	238.3	14.7	**0.1717**	0.127	73.7	mg/L	195	Standard
Sc-1	45	40218.8	12.0				mg/L	39543	Standard
Cl	35	13831.7	10.0				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	810.0	8.9				ug/L	1647	Standard
P	31	10527.1	24.9				ug/L	15231	Standard
S	34	970.0	6.2				ug/L	1845	Standard
Sr	88	66.7	11.5				ug/L	70	Standard
C	12	110.0	9.1				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.4	124.8				mg/L	12	Standard
Ho-1	165	8.3	34.6				mg/L	12	Standard
Er	166	20.0	50.0				mg/L	20	Standard
I	127	523.3	19.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		102.006	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.098	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	88.656
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	91.321
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 52 Lower	Cr	52	

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Method 6020 - Summary Report

Sample ID: L1606036204
Sample Date/Time: Tuesday, June 28, 2016 13:44:34
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83225.5	7.5				ug/L	81760	Standard
	Be	9	31228.6	61.6	**31.9371**	21.971	68.8	ug/L	17	Standard
	Al	27	8471.1	48.6	**0.0411**	0.031	75.9	ug/L	1410	Standard
	Sc	45	40830.0	2.2				ug/L	39543	Standard
	Ti	47	34.3	11.8	**-0.0297**	0.018	59.1	ug/L	39	Standard
	V	51	224078.9	58.8	**31.3360**	18.302	58.4	ug/L	1415	Standard
	Cr	52	238015.8	57.7	**32.3999**	19.040	58.8	ug/L	6946	Standard
	Cr	53	29690.7	58.7	**32.7502**	19.168	58.5	ug/L	328	Standard
	Mn	55	213724.7	56.8	**32.1044**	18.055	56.2	ug/L	823	Standard
	Co	59	222487.2	58.7	**30.9454**	17.938	58.0	ug/L	252	Standard
	Ni	60	62090.3	57.3	**32.1492**	18.240	56.7	ug/L	192	Standard
	Cu	65	63757.0	57.0	**32.7355**	18.436	56.3	ug/L	141	Standard
	Zn	66	38227.9	57.9	**33.2873**	19.476	58.5	ug/L	491	Standard
>	**Ge**	72	525473.2	1.2				ug/L	515087	Standard
	As	75	36453.5	56.6	**31.7527**	17.695	55.7	ug/L	20	Standard
	Se	82	3780.3	55.0	**31.9968**	17.401	54.4	ug/L	15	Standard
	Se-1	77	2538.3	56.6	**32.2335**	18.366	57.0	ug/L	48	Standard
>	**Ga**	71	76.7	26.4				mg/L	90	Standard
	Rb	85	43.3	17.6				ug/L	23	Standard
	Y	89	474726.4	7.6				ug/L	448510	Standard
>	**Rh**	103	26.7	21.7				ug/L	15	Standard
	Mo	98	564.0	40.4	**0.1823**	0.089	49.0	ug/L	11	Standard
	Ag	107	212096.4	59.4	**30.6350**	19.274	62.9	ug/L	134	Standard
	Cd	111	68030.3	54.2	**30.8198**	17.865	58.0	mg/L	7	Standard
	Cd	114	165078.2	56.3	**30.7839**	18.487	60.1	ug/L	16	Standard
>	**In**	115	641067.2	4.2				ug/L	611117	Standard
	Sn	118	550.0	28.6	**-0.0125**	0.029	234.3	ug/L	518	Standard
	Sb	123	143570.7	60.9	**29.5172**	18.974	64.3	ug/L	127	Standard
	Ba	135	66133.4	54.2	**31.0035**	17.964	57.9	ug/L	45	Standard
	Ce	140	83.3	81.7				ug/L	298	Standard
>	**Tb**	159	1026938.7	4.8				ug/L	977942	Standard
	Ho	165	11.7	65.5				ug/L	12	Standard
	Tl	203	274073.1	56.4	**30.7538**	17.663	57.4	ug/L	31	Standard
	Tl	205	243234.0	54.4	**31.4411**	17.425	55.4	ug/L	20	Standard
	Pb	206	180330.9	55.5	**31.4753**	17.798	56.5	ug/L	286	Standard
	Pb	207	158009.7	55.1	**30.5868**	17.206	56.3	ug/L	257	Standard
	Pb	208	646417.5	54.5	**32.3514**	17.977	55.6	ug/L	956	Standard
	U	238	234720.5	55.2	**30.9733**	17.414	56.2	ug/L	17	Standard
>	**Bi**	209	588853.8	4.4				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.1717**	17.609	173.1	mg/L	0	Standard
Mg	24	26.7	10.8	**-0.0228**	0.004	16.0	mg/L	32	Standard
K	39	36.7	43.8	**-0.0214**	0.052	244.2	mg/L	30	Standard
Ca	43	30.0	66.7	**-0.9172**	2.942	320.7	mg/L	48	Standard
Fe	54	107.6	36.8	**-0.0427**	0.035	81.3	mg/L	159	Standard
Fe	57	220.0	9.9	**0.0952**	0.078	81.4	mg/L	195	Standard
Sc-1	45	40830.0	2.2				mg/L	39543	Standard
Cl	35	20640.2	29.5				ug/L	27642	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	1230.1	37.8				ug/L	1647	Standard
P	31	11926.4	10.7				ug/L	15231	Standard
S	34	1536.7	28.4				ug/L	1845	Standard
Sr	88	66.7	11.5				ug/L	70	Standard
C	12	146.7	27.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	5.9	100.8				mg/L	12	Standard
Ho-1	165	11.7	65.5				mg/L	12	Standard
Er	166	16.7	34.6				mg/L	20	Standard
I	127	785.0	24.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.792	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.016	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.901
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.704
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606036203
Sample Date/Time: Tuesday, June 28, 2016 13:49:03
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90942.6	5.2				ug/L	81760	Standard
	Be	9	53.3	85.1	**0.0399**	0.045	111.9	ug/L	17	Standard
	Al	27	693137.8	2.1	**4.0335**	0.159	3.9	ug/L	1410	Standard
	Sc	45	39909.2	1.1				ug/L	39543	Standard
	Ti	47	362.3	4.5	**1.2955**	0.068	5.3	ug/L	39	Standard
	V	51	2278.9	9.8	**0.1220**	0.031	25.8	ug/L	1415	Standard
	Cr	52	6909.6	1.4	**-0.0622**	0.012	19.7	ug/L	6946	Standard
	Cr	53	1090.0	12.5	**0.9032**	0.155	17.1	ug/L	328	Standard
	Mn	55	5526773.3	1.7	**854.3657**	14.322	1.7	ug/L	823	Standard
	Co	59	9370.2	5.6	**1.3053**	0.073	5.6	ug/L	252	Standard
	Ni	60	2122.5	1.2	**1.0247**	0.015	1.4	ug/L	192	Standard
	Cu	65	2498.9	0.1	**1.2274**	0.002	0.2	ug/L	141	Standard
	Zn	66	6516.4	0.8	**5.1316**	0.039	0.8	ug/L	491	Standard
>	**Ge**	72	513880.5	0.2				ug/L	515087	Standard
	As	75	3228.7	3.4	**2.9189**	0.105	3.6	ug/L	20	Standard
	Se	82	922.2	2.2	**7.9103**	0.196	2.5	ug/L	15	Standard
	Se-1	77	155.0	10.7	**1.3431**	0.217	16.2	ug/L	48	Standard
>	**Ga**	71	388.3	17.5				mg/L	90	Standard
	Rb	85	68372.4	3.2				ug/L	23	Standard
	Y	89	447009.0	1.5				ug/L	448510	Standard
>	**Rh**	103	111.7	20.2				ug/L	15	Standard
	Mo	98	1200247.1	0.8	**451.3790**	8.919	2.0	ug/L	11	Standard
	Ag	107	153.3	18.9	**0.0070**	0.004	61.8	ug/L	134	Standard
	Cd	111	-1054.6	0.6	**-0.5044**	0.004	0.7	mg/L	7	Standard
	Cd	114	1800.6	2.5	**0.3474**	0.013	3.8	ug/L	16	Standard
>	**In**	115	601262.2	1.3				ug/L	611117	Standard
	Sn	118	788.4	4.6	**0.0336**	0.006	17.8	ug/L	518	Standard
	Sb	123	1882.7	34.8	**0.3916**	0.136	34.8	ug/L	127	Standard
	Ba	135	4520.7	1.0	**2.2009**	0.051	2.3	ug/L	45	Standard
	Ce	140	6458.0	2.1				ug/L	298	Standard
>	**Tb**	159	1000527.6	0.4				ug/L	977942	Standard
	Ho	165	130.0	21.4				ug/L	12	Standard
	Tl	203	285.7	2.5	**0.0299**	0.000	1.6	ug/L	31	Standard
	Tl	205	403.3	76.1	**0.0543**	0.043	79.9	ug/L	20	Standard
	Pb	206	899.7	2.3	**0.1068**	0.005	4.7	ug/L	286	Standard
	Pb	207	732.0	4.6	**0.0957**	0.009	9.0	ug/L	257	Standard
	Pb	208	3524.8	26.8	**0.1310**	0.052	40.0	ug/L	956	Standard
	U	238	352.3	76.1	**0.0475**	0.039	81.4	ug/L	17	Standard
>	**Bi**	209	544253.0	1.1				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.4757**	18.136	173.1	mg/L	0	Standard
Mg	24	122834.3	0.9	**161.9583**	0.885	0.5	mg/L	32	Standard
K	39	4865.8	5.3	**16.1536**	1.001	6.2	mg/L	30	Standard
Ca	43	186.7	17.4	**22.7843**	5.205	22.8	mg/L	48	Standard
Fe	54	927.7	8.4	**0.6952**	0.076	10.9	mg/L	159	Standard
Fe	57	461.7	8.7	**0.9208**	0.151	16.4	mg/L	195	Standard
> **Sc-1**	45	39909.2	1.1				mg/L	39543	Standard
Cl	35	47371.9	1.0				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	196320.5	1.2				ug/L	1647	Standard
P	31	16525.7	2.7				ug/L	15231	Standard
S	34	2001.8	3.8				ug/L	1845	Standard
Sr	88	358.3	4.3				ug/L	70	Standard
C	12	246.7	19.2				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	211.1	26.7				mg/L	12	Standard
Ho-1	165	130.0	21.4				mg/L	12	Standard
Er	166	116.7	51.7				mg/L	20	Standard
I	127	1244078.5	12.9				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		111.231	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.766	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.387
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.697
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

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Method 6020 - Summary Report

Sample ID: L1606036204
Sample Date/Time: Tuesday, June 28, 2016 13:52:18
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	103725.5	0.9				ug/L	81760	Standard
	Be	9	18.3	41.7	**0.0048**	0.006	125.1	ug/L	17	Standard
	Al	27	23803073.4	2.1	**121.7007**	1.863	1.5	ug/L	1410	Standard
	Sc	45	41989.8	2.5				ug/L	39543	Standard
	Ti	47	198.3	8.2	**0.6152**	0.056	9.1	ug/L	39	Standard
	V	51	2022.8	10.2	**0.0784**	0.030	38.8	ug/L	1415	Standard
	Cr	52	8025.5	3.2	**0.0718**	0.049	68.1	ug/L	6946	Standard
	Cr	53	1725.1	14.9	**1.5845**	0.307	19.4	ug/L	328	Standard
	Mn	55	8347.3	4.1	**1.1117**	0.038	3.4	ug/L	823	Standard
	Co	59	1991.1	1.1	**0.2461**	0.003	1.1	ug/L	252	Standard
	Ni	60	2784.9	2.6	**1.3428**	0.049	3.7	ug/L	192	Standard
	Cu	65	1676.4	9.2	**0.7724**	0.072	9.4	ug/L	141	Standard
	Zn	66	3951.5	5.5	**2.7003**	0.153	5.7	ug/L	491	Standard
>	**Ge**	72	526193.8	1.1				ug/L	515087	Standard
	As	75	658.8	2.1	**0.6140**	0.018	3.0	ug/L	20	Standard
	Se	82	229.7	4.0	**1.8340**	0.092	5.0	ug/L	15	Standard
	Se-1	77	153.0	9.2	**1.2707**	0.204	16.0	ug/L	48	Standard
>	**Ga**	71	148.3	16.6				mg/L	90	Standard
	Rb	85	683.3	4.9				ug/L	23	Standard
	Y	89	453248.0	2.1				ug/L	448510	Standard
>	**Rh**	103	91.7	27.5				ug/L	15	Standard
	Mo	98	5026.0	6.3	**1.8280**	0.098	5.4	ug/L	11	Standard
	Ag	107	95.3	7.7	**-0.0021**	0.001	57.5	ug/L	134	Standard
	Cd	111	8.0	39.8	**0.0008**	0.001	178.0	mg/L	7	Standard
	Cd	114	50.5	30.0	**0.0047**	0.003	60.8	ug/L	16	Standard
>	**In**	115	615030.5	1.6				ug/L	611117	Standard
	Sn	118	1100.0	6.8	**0.0830**	0.014	16.4	ug/L	518	Standard
	Sb	123	686.5	31.6	**0.1319**	0.046	34.9	ug/L	127	Standard
	Ba	135	22769.8	0.9	**10.9347**	0.080	0.7	ug/L	45	Standard
	Ce	140	320.0	14.9				ug/L	298	Standard
>	**Tb**	159	1016190.3	1.0				ug/L	977942	Standard
	Ho	165	48.3	15.8				ug/L	12	Standard
	Tl	203	156.0	5.7	**0.0132**	0.001	7.6	ug/L	31	Standard
	Tl	205	153.3	14.7	**0.0181**	0.003	17.2	ug/L	20	Standard
	Pb	206	466.3	6.0	**0.0202**	0.005	24.4	ug/L	286	Standard
	Pb	207	405.3	5.2	**0.0227**	0.004	15.6	ug/L	257	Standard
	Pb	208	1478.0	2.2	**0.0157**	0.002	13.7	ug/L	956	Standard
	U	238	1957.8	2.0	**0.2625**	0.004	1.4	ug/L	17	Standard
>	**Bi**	209	573383.4	0.9				ug/L	557080	Standard

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Na	23	8.3	34.6	**50.1179**	16.456	32.8	mg/L	0	Standard
Mg	24	58420.8	1.2	**73.2244**	2.756	3.8	mg/L	32	Standard
K	39	723.4	8.7	**2.1601**	0.187	8.7	mg/L	30	Standard
Ca	43	463.3	11.9	**60.9213**	7.520	12.3	mg/L	48	Standard
Fe	54	191.2	7.7	**0.0260**	0.014	55.5	mg/L	159	Standard
Fe	57	531.7	2.7	**1.0656**	0.010	0.9	mg/L	195	Standard
> **Sc-1**	45	41989.8	2.5				mg/L	39543	Standard
Cl	35	37603.3	1.8				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	30841.4	4.4				ug/L	1647	Standard
P	31	21757.3	1.3				ug/L	15231	Standard
S	34	1778.4	1.5				ug/L	1845	Standard
Sr	88	246.7	9.1				ug/L	70	Standard
C	12	216.7	7.1				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	60.8	24.7				mg/L	12	Standard
Ho-1	165	48.3	15.8				mg/L	12	Standard
Er	166	53.3	10.8				mg/L	20	Standard
I	127	78536.8	23.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		126.866	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.156	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.640
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.927
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606036205
Sample Date/Time: Tuesday, June 28, 2016 13:59:25
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	103215.4	0.9				ug/L	81760	Standard
	Be	9	20.0	50.0	**0.0063**	0.008	129.0	ug/L	17	Standard
	Al	27	14439258.9	3.3	**74.2049**	3.024	4.1	ug/L	1410	Standard
	Sc	45	39693.6	2.3				ug/L	39543	Standard
	Ti	47	140.0	4.0	**0.4180**	0.020	4.8	ug/L	39	Standard
	V	51	3604.7	5.2	**0.3305**	0.025	7.7	ug/L	1415	Standard
	Cr	52	7555.2	2.8	**0.0671**	0.025	36.8	ug/L	6946	Standard
	Cr	53	1441.7	2.8	**1.3602**	0.060	4.4	ug/L	328	Standard
	Mn	55	692335.2	1.4	**110.4896**	2.247	2.0	ug/L	823	Standard
	Co	59	1760.4	3.6	**0.2283**	0.011	4.9	ug/L	252	Standard
	Ni	60	2996.0	4.5	**1.5433**	0.085	5.5	ug/L	192	Standard
	Cu	65	1684.1	4.6	**0.8273**	0.040	4.8	ug/L	141	Standard
	Zn	66	2371.2	1.2	**1.4134**	0.020	1.4	ug/L	491	Standard
>	**Ge**	72	497232.9	0.8				ug/L	515087	Standard
	As	75	475.6	6.3	**0.4785**	0.029	6.0	ug/L	20	Standard
	Se	82	111.0	8.1	**0.8794**	0.084	9.6	ug/L	15	Standard
	Se-1	77	118.0	5.1	**0.9042**	0.095	10.5	ug/L	48	Standard
>	**Ga**	71	108.3	35.3				mg/L	90	Standard
	Rb	85	57350.0	0.9				ug/L	23	Standard
	Y	89	457066.8	2.1				ug/L	448510	Standard
>	**Rh**	103	28.3	44.4				ug/L	15	Standard
	Mo	98	255967.1	1.2	**93.6404**	2.667	2.8	ug/L	11	Standard
	Ag	107	89.3	9.3	**-0.0031**	0.001	44.5	ug/L	134	Standard
	Cd	111	-197.3	3.0	**-0.0942**	0.001	1.4	mg/L	7	Standard
	Cd	114	425.0	6.1	**0.0760**	0.006	8.0	ug/L	16	Standard
>	**In**	115	618093.1	1.7				ug/L	611117	Standard
	Sn	118	871.7	7.6	**0.0437**	0.009	20.3	ug/L	518	Standard
	Sb	123	474.5	27.0	**0.0866**	0.026	30.6	ug/L	127	Standard
	Ba	135	13314.9	2.5	**6.3544**	0.263	4.1	ug/L	45	Standard
	Ce	140	228.3	6.3				ug/L	298	Standard
>	**Tb**	159	1010942.5	1.3				ug/L	977942	Standard
	Ho	165	25.0	72.1				ug/L	12	Standard
	Tl	203	239.7	6.5	**0.0241**	0.002	9.5	ug/L	31	Standard
	Tl	205	181.7	22.1	**0.0230**	0.006	26.1	ug/L	20	Standard
	Pb	206	319.7	6.3	**-0.0035**	0.004	108.4	ug/L	286	Standard
	Pb	207	282.7	2.0	**0.0009**	0.002	252.3	ug/L	257	Standard
	Pb	208	1120.3	3.0	**-0.0001**	0.003	3300.1	ug/L	956	Standard
	U	238	733.7	3.0	**0.1011**	0.005	4.9	ug/L	17	Standard
>	**Bi**	209	548318.3	1.8				ug/L	557080	Standard

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Na	23	3.3	173.2	**21.6860**	37.553	173.2	mg/L	0	Standard
Mg	24	97569.9	1.9	**129.3694**	3.560	2.8	mg/L	32	Standard
K	39	4389.0	6.2	**14.6373**	1.001	6.8	mg/L	30	Standard
Ca	43	378.3	2.8	**51.9377**	2.720	5.2	mg/L	48	Standard
Fe	54	155.8	7.4	**0.0035**	0.012	336.9	mg/L	159	Standard
Fe	57	446.7	11.3	**0.8756**	0.135	15.4	mg/L	195	Standard
> **Sc-1**	45	39693.6	2.3				mg/L	39543	Standard
Cl	35	45044.9	1.9				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	18554.7	4.8				ug/L	1647	Standard
P	31	20283.6	3.2				ug/L	15231	Standard
S	34	1950.1	2.9				ug/L	1845	Standard
Sr	88	140.0	14.3				ug/L	70	Standard
C	12	253.3	26.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	47.4	35.9				mg/L	12	Standard
Ho-1	165	25.0	72.1				mg/L	12	Standard
Er	166	53.3	21.7				mg/L	20	Standard
I	127	81681.7	5.6				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		126.242	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.534	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.142	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.427	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606036206
Sample Date/Time: Tuesday, June 28, 2016 14:02:36
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	108188.3	1.9				ug/L	81760	Standard
	Be	9	25.0	69.3	**0.0094**	0.014	144.0	ug/L	17	Standard
	Al	27	23235387.8	1.2	**113.9176**	1.672	1.5	ug/L	1410	Standard
	Sc	45	42060.0	3.5				ug/L	39543	Standard
	Ti	47	152.7	7.7	**0.4364**	0.055	12.6	ug/L	39	Standard
	V	51	2674.6	4.0	**0.1700**	0.012	6.8	ug/L	1415	Standard
	Cr	52	8527.1	1.1	**0.1424**	0.031	21.5	ug/L	6946	Standard
	Cr	53	1513.4	3.0	**1.3470**	0.073	5.5	ug/L	328	Standard
	Mn	55	17845.5	5.4	**2.5461**	0.135	5.3	ug/L	823	Standard
	Co	59	1119.4	15.5	**0.1245**	0.023	18.8	ug/L	252	Standard
	Ni	60	2702.9	1.5	**1.3004**	0.041	3.1	ug/L	192	Standard
	Cu	65	753.4	4.7	**0.2972**	0.013	4.4	ug/L	141	Standard
	Zn	66	1481.1	2.0	**0.4954**	0.035	7.0	ug/L	491	Standard
>	**Ge**	72	526170.8	1.4				ug/L	515087	Standard
	As	75	291.6	5.2	**0.2943**	0.014	4.7	ug/L	20	Standard
	Se	82	87.6	19.6	**0.6269**	0.155	24.7	ug/L	15	Standard
	Se-1	77	124.0	13.8	**0.8941**	0.239	26.7	ug/L	48	Standard
>	**Ga**	71	93.3	13.5				mg/L	90	Standard
	Rb	85	1890.1	1.5				ug/L	23	Standard
	Y	89	457488.4	1.5				ug/L	448510	Standard
>	**Rh**	103	41.7	45.4				ug/L	15	Standard
	Mo	98	1289.7	27.8	**0.4294**	0.125	29.1	ug/L	11	Standard
	Ag	107	132.0	62.6	**0.0022**	0.011	517.7	ug/L	134	Standard
	Cd	111	14.8	9.0	**0.0036**	0.001	18.2	mg/L	7	Standard
	Cd	114	35.3	64.8	**0.0015**	0.004	279.2	ug/L	16	Standard
>	**In**	115	650440.2	1.2				ug/L	611117	Standard
	Sn	118	795.0	5.8	**0.0244**	0.006	26.1	ug/L	518	Standard
	Sb	123	299.9	40.5	**0.0467**	0.023	50.3	ug/L	127	Standard
	Ba	135	16583.1	1.2	**7.5223**	0.109	1.5	ug/L	45	Standard
	Ce	140	573.3	12.7				ug/L	298	Standard
>	**Tb**	159	1070413.0	0.5				ug/L	977942	Standard
	Ho	165	35.0	14.3				ug/L	12	Standard
	Tl	203	143.0	68.4	**0.0109**	0.011	100.1	ug/L	31	Standard
	Tl	205	173.3	55.8	**0.0194**	0.012	61.7	ug/L	20	Standard
	Pb	206	407.0	5.8	**0.0055**	0.005	85.2	ug/L	286	Standard
	Pb	207	361.0	20.9	**0.0099**	0.014	143.4	ug/L	257	Standard
	Pb	208	1551.4	24.3	**0.0150**	0.018	119.8	ug/L	956	Standard
	U	238	2137.8	4.4	**0.2708**	0.011	4.2	ug/L	17	Standard
>	**Bi**	209	607194.4	1.0				ug/L	557080	Standard

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Na	23	15.0	57.7	**91.7381**	54.279	59.2	mg/L	0	Standard
Mg	24	7570.2	0.6	**9.4255**	0.372	3.9	mg/L	32	Standard
K	39	228.3	12.1	**0.5833**	0.074	12.7	mg/L	30	Standard
Ca	43	403.3	9.3	**52.3767**	6.757	12.9	mg/L	48	Standard
Fe	54	189.4	6.8	**0.0240**	0.007	29.2	mg/L	159	Standard
Fe	57	486.7	15.4	**0.9208**	0.241	26.2	mg/L	195	Standard
> **Sc-1**	45	42060.0	3.5				mg/L	39543	Standard
Cl	35	35390.6	1.2				ug/L	27642	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	8392.3	5.9				ug/L	1647	Standard
P	31	21440.2	3.3				ug/L	15231	Standard
S	34	2026.8	8.3				ug/L	1845	Standard
Sr	88	143.3	29.0				ug/L	70	Standard
C	12	223.3	9.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	47.9	21.4				mg/L	12	Standard
Ho-1	165	35.0	14.3				mg/L	12	Standard
Er	166	43.3	35.3				mg/L	20	Standard
I	127	10155.1	10.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.324	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.152	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	106.435
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	108.996
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606036206
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Method 6020 - Summary Report

Sample ID: L1606036207
Sample Date/Time: Tuesday, June 28, 2016 14:06:02
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	107639.4	1.9				ug/L	81760	Standard
	Be	9	20.0	0.0	**0.0056**	0.000	5.4	ug/L	17	Standard
	Al	27	3476504.2	1.7	**17.1173**	0.043	0.3	ug/L	1410	Standard
	Sc	45	39367.8	2.7				ug/L	39543	Standard
	Ti	47	100.3	3.5	**0.2518**	0.007	3.0	ug/L	39	Standard
	V	51	5441.1	3.8	**0.6024**	0.020	3.4	ug/L	1415	Standard
	Cr	52	7747.6	3.6	**0.0931**	0.026	27.8	ug/L	6946	Standard
	Cr	53	1961.8	9.7	**1.9650**	0.153	7.8	ug/L	328	Standard
	Mn	55	12138.9	1.5	**1.7871**	0.034	1.9	ug/L	823	Standard
	Co	59	2054.5	1.6	**0.2711**	0.013	4.9	ug/L	252	Standard
	Ni	60	1564.4	4.1	**0.7535**	0.028	3.7	ug/L	192	Standard
	Cu	65	3547.1	3.0	**1.8404**	0.110	6.0	ug/L	141	Standard
	Zn	66	3174.7	2.0	**2.1684**	0.146	6.7	ug/L	491	Standard
>	**Ge**	72	498440.9	3.0				ug/L	515087	Standard
	As	75	2063.4	4.9	**1.9397**	0.147	7.6	ug/L	20	Standard
	Se	82	279.9	8.8	**2.3986**	0.288	12.0	ug/L	15	Standard
	Se-1	77	196.7	12.4	**1.9867**	0.408	20.5	ug/L	48	Standard
>	**Ga**	71	203.3	22.3				mg/L	90	Standard
	Rb	85	4590.7	1.6				ug/L	23	Standard
	Y	89	429873.2	1.1				ug/L	448510	Standard
>	**Rh**	103	36.7	15.7				ug/L	15	Standard
	Mo	98	411573.4	1.6	**157.7590**	2.905	1.8	ug/L	11	Standard
	Ag	107	97.0	12.7	**-0.0013**	0.002	144.7	ug/L	134	Standard
	Cd	111	-313.3	8.5	**-0.1547**	0.012	7.7	mg/L	7	Standard
	Cd	114	654.0	5.6	**0.1255**	0.007	5.6	ug/L	16	Standard
>	**In**	115	589803.8	0.9				ug/L	611117	Standard
	Sn	118	783.4	15.3	**0.0353**	0.020	57.5	ug/L	518	Standard
	Sb	123	727.4	9.3	**0.1468**	0.014	9.3	ug/L	127	Standard
	Ba	135	15565.3	1.0	**7.7872**	0.095	1.2	ug/L	45	Standard
	Ce	140	646.7	2.7				ug/L	298	Standard
>	**Tb**	159	991896.0	2.4				ug/L	977942	Standard
	Ho	165	86.7	18.5				ug/L	12	Standard
	Tl	203	276.7	3.3	**0.0282**	0.002	5.4	ug/L	31	Standard
	Tl	205	283.3	3.7	**0.0365**	0.002	4.5	ug/L	20	Standard
	Pb	206	399.0	5.4	**0.0104**	0.005	44.3	ug/L	286	Standard
	Pb	207	325.3	5.9	**0.0089**	0.004	45.8	ug/L	257	Standard
	Pb	208	1296.0	0.3	**0.0084**	0.001	12.8	ug/L	956	Standard
	U	238	1382.7	4.5	**0.1905**	0.008	4.1	ug/L	17	Standard
>	**Bi**	209	555677.7	1.4				ug/L	557080	Standard

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Na	23	3.3	86.6	**21.6985**	18.802	86.6	mg/L	0	Standard
Mg	24	201508.1	2.0	**269.4503**	5.984	2.2	mg/L	32	Standard
K	39	1843.4	2.4	**6.1200**	0.302	4.9	mg/L	30	Standard
Ca	43	86.7	16.7	**7.9004**	2.376	30.1	mg/L	48	Standard
Fe	54	134.1	6.8	**-0.0152**	0.007	45.6	mg/L	159	Standard
Fe	57	218.3	31.3	**0.1119**	0.215	192.0	mg/L	195	Standard
> **Sc-1**	45	39367.8	2.7				mg/L	39543	Standard
Cl	35	57177.0	0.5				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	35885.9	6.7				ug/L	1647	Standard
P	31	17845.5	1.4				ug/L	15231	Standard
S	34	1995.1	3.9				ug/L	1845	Standard
Sr	88	96.7	26.5				ug/L	70	Standard
C	12	250.0	28.0				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	68.0	19.9				mg/L	12	Standard
Ho-1	165	86.7	18.5				mg/L	12	Standard
Er	166	180.0	33.3				mg/L	20	Standard
I	127	352295.0	10.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		131.653	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.768	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.512
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.748
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

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Method 6020 - Summary Report

Sample ID: L1606036208
Sample Date/Time: Tuesday, June 28, 2016 14:09:14
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	113878.0	0.7				ug/L	81760	Standard
	Be	9	15.0	33.3	**0.0011**	0.004	325.9	ug/L	17	Standard
	Al	27	36051659.4	1.3	**167.9026**	1.365	0.8	ug/L	1410	Standard
	Sc	45	40123.1	2.7				ug/L	39543	Standard
	Ti	47	157.7	1.6	**0.4795**	0.006	1.3	ug/L	39	Standard
	V	51	2374.4	7.5	**0.1409**	0.028	20.1	ug/L	1415	Standard
	Cr	52	8200.6	0.9	**0.1408**	0.017	11.9	ug/L	6946	Standard
	Cr	53	1531.7	7.2	**1.4329**	0.130	9.1	ug/L	328	Standard
	Mn	55	2760.9	2.4	**0.2845**	0.009	3.3	ug/L	823	Standard
	Co	59	1114.0	4.4	**0.1299**	0.007	5.8	ug/L	252	Standard
	Ni	60	3861.2	1.0	**1.9798**	0.033	1.7	ug/L	192	Standard
	Cu	65	1286.1	5.6	**0.5974**	0.039	6.5	ug/L	141	Standard
	Zn	66	2133.2	3.4	**1.1513**	0.069	6.0	ug/L	491	Standard
>	**Ge**	72	506573.0	0.6				ug/L	515087	Standard
	As	75	124.6	44.5	**0.1528**	0.050	32.6	ug/L	20	Standard
	Se	82	87.7	7.6	**0.6552**	0.055	8.5	ug/L	15	Standard
	Se-1	77	126.7	6.6	**0.9909**	0.116	11.7	ug/L	48	Standard
>	**Ga**	71	56.7	45.3				mg/L	90	Standard
	Rb	85	275.0	18.5				ug/L	23	Standard
	Y	89	450902.0	1.5				ug/L	448510	Standard
>	**Rh**	103	46.7	32.7				ug/L	15	Standard
	Mo	98	3181.2	4.8	**1.1379**	0.054	4.7	ug/L	11	Standard
	Ag	107	86.0	6.5	**-0.0036**	0.001	24.6	ug/L	134	Standard
	Cd	111	11.8	23.2	**0.0025**	0.001	50.9	mg/L	7	Standard
	Cd	114	54.8	27.0	**0.0054**	0.003	50.7	ug/L	16	Standard
>	**In**	115	621612.8	0.6				ug/L	611117	Standard
	Sn	118	878.4	13.7	**0.0442**	0.021	46.4	ug/L	518	Standard
	Sb	123	218.7	21.6	**0.0327**	0.010	30.0	ug/L	127	Standard
	Ba	135	24511.5	2.2	**11.6480**	0.297	2.5	ug/L	45	Standard
	Ce	140	126.7	17.8				ug/L	298	Standard
>	**Tb**	159	1020349.4	1.6				ug/L	977942	Standard
	Ho	165	38.3	41.9				ug/L	12	Standard
	Tl	203	70.7	5.4	**0.0034**	0.000	14.1	ug/L	31	Standard
	Tl	205	50.0	36.1	**0.0044**	0.002	54.4	ug/L	20	Standard
	Pb	206	339.3	6.0	**-0.0025**	0.003	133.5	ug/L	286	Standard
	Pb	207	287.3	3.0	**-0.0007**	0.002	279.9	ug/L	257	Standard
	Pb	208	1133.4	0.9	**-0.0020**	0.001	40.2	ug/L	956	Standard
	U	238	2248.5	2.1	**0.3023**	0.005	1.6	ug/L	17	Standard
>	**Bi**	209	572724.5	0.5				ug/L	557080	Standard

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Na	23	11.7	65.5	**74.1428**	49.752	67.1	mg/L	0	Standard
Mg	24	18449.6	1.2	**24.1624**	0.882	3.7	mg/L	32	Standard
K	39	318.3	12.8	**0.9203**	0.151	16.4	mg/L	30	Standard
Ca	43	671.7	8.0	**95.1609**	6.901	7.3	mg/L	48	Standard
Fe	54	172.3	21.8	**0.0165**	0.033	197.4	mg/L	159	Standard
Fe	57	548.3	9.0	**1.2014**	0.184	15.3	mg/L	195	Standard
> **Sc-1**	45	40123.1	2.7				mg/L	39543	Standard
Cl	35	45031.5	1.7				ug/L	27642	Standard
Kr	83	2.3	89.2				ug/L	2	Standard
Br	81	9216.1	3.8				ug/L	1647	Standard
P	31	22331.4	1.4				ug/L	15231	Standard
S	34	2088.5	6.2				ug/L	1845	Standard
Sr	88	246.7	15.5				ug/L	70	Standard
C	12	346.7	6.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	37.4	4.1				mg/L	12	Standard
Ho-1	165	38.3	41.9				mg/L	12	Standard
Er	166	53.3	60.3				mg/L	20	Standard
I	127	16496.5	38.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		139.283	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.347	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.718
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.808
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606036209
Sample Date/Time: Tuesday, June 28, 2016 14:12:25
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	107575.7	2.1				ug/L	81760	Standard
	Be	9	15.0	33.3	**0.0018**	0.004	223.3	ug/L	17	Standard
	Al	27	24368759.8	1.3	**120.1696**	2.653	2.2	ug/L	1410	Standard
	Sc	45	40144.8	3.7				ug/L	39543	Standard
	Ti	47	175.7	9.7	**0.5394**	0.064	11.9	ug/L	39	Standard
	V	51	1717.1	6.1	**0.0398**	0.013	33.2	ug/L	1415	Standard
	Cr	52	8804.6	0.4	**0.2048**	0.007	3.4	ug/L	6946	Standard
	Cr	53	1576.7	7.9	**1.4512**	0.154	10.6	ug/L	328	Standard
	Mn	55	1083613.1	0.9	**166.6059**	0.333	0.2	ug/L	823	Standard
	Co	59	2591.6	2.6	**0.3366**	0.007	2.1	ug/L	252	Standard
	Ni	60	4161.2	1.9	**2.0993**	0.030	1.4	ug/L	192	Standard
	Cu	65	1088.7	1.4	**0.4808**	0.011	2.3	ug/L	141	Standard
	Zn	66	3226.7	2.3	**2.1094**	0.068	3.2	ug/L	491	Standard
>	**Ge**	72	516304.1	0.8				ug/L	515087	Standard
	As	75	854.1	2.3	**0.7983**	0.019	2.4	ug/L	20	Standard
	Se	82	52.5	11.5	**0.3355**	0.056	16.6	ug/L	15	Standard
	Se-1	77	105.7	6.3	**0.6809**	0.097	14.3	ug/L	48	Standard
>	**Ga**	71	153.3	30.3				mg/L	90	Standard
	Rb	85	15286.0	2.4				ug/L	23	Standard
	Y	89	449805.6	1.9				ug/L	448510	Standard
>	**Rh**	103	36.7	43.8				ug/L	15	Standard
	Mo	98	1903.1	2.7	**0.6696**	0.018	2.6	ug/L	11	Standard
	Ag	107	88.0	6.3	**-0.0034**	0.001	30.6	ug/L	134	Standard
	Cd	111	24.4	20.6	**0.0083**	0.002	29.8	mg/L	7	Standard
	Cd	114	75.3	47.3	**0.0092**	0.007	71.3	ug/L	16	Standard
>	**In**	115	624865.1	1.8				ug/L	611117	Standard
	Sn	118	858.4	10.9	**0.0403**	0.018	44.8	ug/L	518	Standard
	Sb	123	598.6	8.7	**0.1114**	0.013	11.4	ug/L	127	Standard
	Ba	135	79235.0	1.1	**37.5150**	0.511	1.4	ug/L	45	Standard
	Ce	140	1043.4	5.0				ug/L	298	Standard
>	**Tb**	159	1006271.6	1.0				ug/L	977942	Standard
	Ho	165	31.7	55.5				ug/L	12	Standard
	Tl	203	94.7	10.4	**0.0060**	0.001	17.2	ug/L	31	Standard
	Tl	205	103.3	26.6	**0.0113**	0.003	31.1	ug/L	20	Standard
	Pb	206	1317.1	2.4	**0.1704**	0.008	4.5	ug/L	286	Standard
	Pb	207	1098.7	2.3	**0.1583**	0.006	3.8	ug/L	257	Standard
	Pb	208	4505.3	1.8	**0.1689**	0.006	3.3	ug/L	956	Standard
	U	238	1688.4	2.2	**0.2232**	0.003	1.5	ug/L	17	Standard
>	**Bi**	209	580367.6	0.9				ug/L	557080	Standard

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Na	23	5.0	100.0	**32.4402**	32.912	101.5	mg/L	0	Standard
Mg	24	8242.2	2.3	**10.7549**	0.236	2.2	mg/L	32	Standard
K	39	375.0	23.7	**1.1102**	0.318	28.6	mg/L	30	Standard
Ca	43	428.3	18.6	**58.5393**	9.751	16.7	mg/L	48	Standard
Fe	54	1288.6	9.8	**1.0145**	0.141	13.9	mg/L	159	Standard
Fe	57	713.4	8.9	**1.7461**	0.160	9.2	mg/L	195	Standard
Sc-1	45	40144.8	3.7				mg/L	39543	Standard
Cl	35	37853.9	1.3				ug/L	27642	Standard
Kr	83	2.3	173.2				ug/L	2	Standard
Br	81	8949.3	3.3				ug/L	1647	Standard
P	31	22830.5	2.4				ug/L	15231	Standard
S	34	2348.5	6.0				ug/L	1845	Standard
Sr	88	131.7	18.7				ug/L	70	Standard
C	12	320.0	23.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	57.1	19.2				mg/L	12	Standard
Ho-1	165	31.7	55.5				mg/L	12	Standard
Er	166	60.0	44.1				mg/L	20	Standard
I	127	12798.7	0.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		131.575	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.236	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	102.250
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	104.180
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606036209
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Method 6020 - Summary Report

Sample ID: L1606036210
Sample Date/Time: Tuesday, June 28, 2016 14:15:37
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	112279.5	1.4				ug/L	81760	Standard
	Be	9	23.3	32.7	**0.0074**	0.006	75.4	ug/L	17	Standard
	Al	27	11519588.8	0.5	**54.4098**	0.542	1.0	ug/L	1410	Standard
	Sc	45	38345.1	1.2				ug/L	39543	Standard
	Ti	47	94.7	7.9	**0.2480**	0.026	10.6	ug/L	39	Standard
	V	51	2217.7	3.9	**0.1400**	0.014	10.3	ug/L	1415	Standard
	Cr	52	7580.6	0.1	**0.1258**	0.020	16.0	ug/L	6946	Standard
	Cr	53	2436.9	5.1	**2.6754**	0.201	7.5	ug/L	328	Standard
	Mn	55	75388.8	2.2	**12.4826**	0.333	2.7	ug/L	823	Standard
	Co	59	4144.2	3.9	**0.6094**	0.028	4.6	ug/L	252	Standard
	Ni	60	4832.4	1.6	**2.6820**	0.049	1.8	ug/L	192	Standard
	Cu	65	4625.4	2.6	**2.5532**	0.075	2.9	ug/L	141	Standard
	Zn	66	4203.9	2.1	**3.3383**	0.098	2.9	ug/L	491	Standard
>	**Ge**	72	474293.4	1.6				ug/L	515087	Standard
	As	75	1073.0	2.0	**1.0772**	0.038	3.5	ug/L	20	Standard
	Se	82	351.4	3.1	**3.1960**	0.130	4.1	ug/L	15	Standard
	Se-1	77	210.7	7.1	**2.3175**	0.198	8.5	ug/L	48	Standard
>	**Ga**	71	73.3	33.6				mg/L	90	Standard
	Rb	85	56526.9	1.1				ug/L	23	Standard
	Y	89	421082.0	1.6				ug/L	448510	Standard
>	**Rh**	103	96.7	14.9				ug/L	15	Standard
	Mo	98	257904.5	1.0	**100.5156**	1.205	1.2	ug/L	11	Standard
	Ag	107	79.7	12.8	**-0.0037**	0.002	45.1	ug/L	134	Standard
	Cd	111	-189.4	16.3	**-0.0962**	0.015	15.7	mg/L	7	Standard
	Cd	114	358.5	16.9	**0.0677**	0.012	17.5	ug/L	16	Standard
>	**In**	115	580013.8	0.6				ug/L	611117	Standard
	Sn	118	865.0	5.3	**0.0522**	0.009	16.9	ug/L	518	Standard
	Sb	123	234.3	5.5	**0.0395**	0.003	7.3	ug/L	127	Standard
	Ba	135	12298.0	0.4	**6.2513**	0.035	0.6	ug/L	45	Standard
	Ce	140	386.7	8.8				ug/L	298	Standard
>	**Tb**	159	979000.4	0.2				ug/L	977942	Standard
	Ho	165	86.7	26.6				ug/L	12	Standard
	Tl	203	556.3	8.3	**0.0635**	0.006	10.1	ug/L	31	Standard
	Tl	205	491.7	8.6	**0.0672**	0.007	10.1	ug/L	20	Standard
	Pb	206	339.7	4.4	**0.0013**	0.002	176.0	ug/L	286	Standard
	Pb	207	303.3	2.7	**0.0062**	0.001	17.9	ug/L	257	Standard
	Pb	208	1090.3	1.9	**-0.0007**	0.002	299.6	ug/L	956	Standard
	U	238	117.3	12.8	**0.0140**	0.002	17.0	ug/L	17	Standard
>	**Bi**	209	539461.3	1.8				ug/L	557080	Standard

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Na	23	8.3	34.6	**55.0323**	18.599	33.8	mg/L	0	Standard
Mg	24	255159.1	1.2	**350.2417**	6.027	1.7	mg/L	32	Standard
K	39	5237.6	3.5	**18.1047**	0.448	2.5	mg/L	30	Standard
Ca	43	815.0	11.2	**122.4307**	15.864	13.0	mg/L	48	Standard
Fe	54	150.7	21.1	**0.0038**	0.031	813.1	mg/L	159	Standard
Fe	57	818.4	11.3	**2.2227**	0.299	13.5	mg/L	195	Standard
> **Sc-1**	45	38345.1	1.2				mg/L	39543	Standard
Cl	35	84049.9	1.6				ug/L	27642	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	57144.3	3.2				ug/L	1647	Standard
P	31	18494.6	4.2				ug/L	15231	Standard
S	34	1918.5	8.3				ug/L	1845	Standard
Sr	88	445.0	8.9				ug/L	70	Standard
C	12	253.3	16.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	64.7	80.3				mg/L	12	Standard
Ho-1	165	86.7	26.6				mg/L	12	Standard
Er	166	110.0	9.1				mg/L	20	Standard
I	127	999438.0	9.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		137.328	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.080	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.911
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.837
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 14:18:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	108145.2	5.1				ug/L	81760	Standard
	Be	9	64242.8	4.5	**48.9113**	0.992	2.0	ug/L	17	Standard
	Al	27	8304059.2	3.3	**40.7429**	1.039	2.5	ug/L	1410	Standard
	Sc	45	37765.4	4.0				ug/L	39543	Standard
	Ti	47	23471.8	2.0	**97.1021**	1.269	1.3	ug/L	39	Standard
	V	51	349107.5	0.6	**51.5604**	0.772	1.5	ug/L	1415	Standard
	Cr	52	335198.9	1.2	**48.5745**	0.974	2.0	ug/L	6946	Standard
	Cr	53	41869.4	1.3	**48.8267**	1.454	3.0	ug/L	328	Standard
	Mn	55	314993.6	1.3	**49.9295**	0.954	1.9	ug/L	823	Standard
	Co	59	375345.6	0.1	**55.0339**	1.228	2.2	ug/L	252	Standard
	Ni	60	88766.6	0.5	**48.4746**	0.838	1.7	ug/L	192	Standard
	Cu	65	90675.9	1.2	**49.0916**	0.682	1.4	ug/L	141	Standard
	Zn	66	53067.8	0.6	**49.0759**	0.955	1.9	ug/L	491	Standard
>	**Ge**	72	499870.2	2.1				ug/L	515087	Standard
	As	75	55072.1	0.8	**50.5344**	1.449	2.9	ug/L	20	Standard
	Se	82	6022.1	1.2	**53.7900**	0.803	1.5	ug/L	15	Standard
	Se-1	77	3835.5	2.7	**51.7480**	1.296	2.5	ug/L	48	Standard
>	**Ga**	71	68.3	34.6				mg/L	90	Standard
	Rb	85	878.4	4.0				ug/L	23	Standard
	Y	89	444195.9	1.0				ug/L	448510	Standard
>	**Rh**	103	36.7	7.9				ug/L	15	Standard
	Mo	98	271765.3	0.4	**101.0586**	1.139	1.1	ug/L	11	Standard
	Ag	107	335937.1	0.8	**50.2935**	0.228	0.5	ug/L	134	Standard
	Cd	111	104881.4	1.9	**49.3201**	0.733	1.5	mg/L	7	Standard
	Cd	114	258223.7	2.1	**49.9610**	1.276	2.6	ug/L	16	Standard
>	**In**	115	607920.9	0.8				ug/L	611117	Standard
	Sn	118	297159.7	1.8	**50.4160**	0.583	1.2	ug/L	518	Standard
	Sb	123	233566.6	0.5	**49.7525**	0.427	0.9	ug/L	127	Standard
	Ba	135	100029.2	1.5	**48.6806**	0.509	1.0	ug/L	45	Standard
	Ce	140	56.7	27.0				ug/L	298	Standard
>	**Tb**	159	990459.3	1.9				ug/L	977942	Standard
	Ho	165	13.3	21.7				ug/L	12	Standard
	Tl	203	438180.8	0.9	**49.9571**	0.368	0.7	ug/L	31	Standard
	Tl	205	400912.4	1.6	**52.6337**	0.214	0.4	ug/L	20	Standard
	Pb	206	285968.6	0.8	**50.7733**	0.808	1.6	ug/L	286	Standard
	Pb	207	258378.5	0.4	**50.8616**	0.645	1.3	ug/L	257	Standard
	Pb	208	1010283.1	0.5	**51.4021**	0.498	1.0	ug/L	956	Standard
	U	238	389330.8	1.6	**52.1963**	0.349	0.7	ug/L	17	Standard
>	**Bi**	209	579902.5	1.4				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4220.6	3.3	**5.8326**	0.328	5.6	mg/L	32	Standard
K	39	1343.4	3.1	**4.6154**	0.216	4.7	mg/L	30	Standard
Ca	43	66.7	37.7	**5.1699**	3.623	70.1	mg/L	48	Standard
Fe	54	5699.2	5.0	**5.2644**	0.205	3.9	mg/L	159	Standard
Fe	57	1620.1	3.2	**5.1052**	0.186	3.6	mg/L	195	Standard
> **Sc-1**	45	37765.4	4.0				mg/L	39543	Standard
Cl	35	31900.9	3.3				ug/L	27642	Standard
Kr	83	2.3	89.2				ug/L	2	Standard
Br	81	2500.2	16.5				ug/L	1647	Standard
P	31	18272.7	3.1				ug/L	15231	Standard
S	34	2018.5	1.5				ug/L	1845	Standard
Sr	88	43.3	24.0				ug/L	70	Standard
C	12	196.7	21.2				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.4	50.3				mg/L	12	Standard
Ho-1	165	13.3	21.7				mg/L	12	Standard
Er	166	20.0	86.6				mg/L	20	Standard
I	127	32500.9	63.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	97.823		
Al	27	81.486		
Sc	45			
Ti	47	97.102		
V	51	103.121		
Cr	52	97.149		
Cr	53			
Mn	55	99.859		
Co	59	110.068		
Ni	60	96.949		
Cu	65	98.183		
Zn	66	98.152		
> Ge	72		97.046	
As	75	101.069		
Se	82	107.580		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.059		
Ag	107	100.587		
Cd	111	98.640		
Cd	114			
In	115		99.477	
Sn	118	100.832		
Sb	123	99.505		
Ba	135	97.361		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.914		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.804		
U	238	104.393		
Bi	209		104.097	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	
QC Std 6	Co	59	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 14:22:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	101364.8	2.9				ug/L	81760	Standard
	Be	9	38.3	49.4	**0.0216**	0.016	74.7	ug/L	17	Standard
	Al	27	15489.3	94.8	**0.0675**	0.079	117.4	ug/L	1410	Standard
	Sc	45	38064.4	0.9				ug/L	39543	Standard
	Ti	47	37.3	29.4	**-0.0111**	0.045	403.8	ug/L	39	Standard
	V	51	1161.3	1.6	**-0.0351**	0.002	6.4	ug/L	1415	Standard
	Cr	52	5982.8	2.5	**-0.1747**	0.020	11.4	ug/L	6946	Standard
	Cr	53	318.3	7.1	**0.0308**	0.025	81.8	ug/L	328	Standard
	Mn	55	894.7	9.5	**-0.0068**	0.013	197.2	ug/L	823	Standard
	Co	59	241.0	14.9	**0.0039**	0.005	138.8	ug/L	252	Standard
	Ni	60	266.0	10.4	**0.0400**	0.015	37.4	ug/L	192	Standard
	Cu	65	200.0	8.9	**0.0172**	0.009	54.5	ug/L	141	Standard
	Zn	66	430.0	7.9	**-0.4249**	0.030	7.1	ug/L	491	Standard
>	**Ge**	72	501700.0	0.4				ug/L	515087	Standard
	As	75	1.5	1379.3	**0.0417**	0.019	44.5	ug/L	20	Standard
	Se	82	27.3	19.7	**0.1242**	0.049	39.3	ug/L	15	Standard
	Se-1	77	54.3	18.4	**0.0219**	0.139	635.7	ug/L	48	Standard
>	**Ga**	71	63.3	9.1				mg/L	90	Standard
	Rb	85	26.7	28.6				ug/L	23	Standard
	Y	89	434979.7	1.5				ug/L	448510	Standard
>	**Rh**	103	11.7	89.2				ug/L	15	Standard
	Mo	98	412.1	20.1	**0.1325**	0.026	19.5	ug/L	11	Standard
	Ag	107	133.7	24.7	**0.0036**	0.005	131.9	ug/L	134	Standard
	Cd	111	17.6	36.9	**0.0053**	0.003	55.6	mg/L	7	Standard
	Cd	114	37.0	22.5	**0.0022**	0.002	81.0	ug/L	16	Standard
>	**In**	115	612643.0	3.0				ug/L	611117	Standard
	Sn	118	796.7	19.5	**0.0328**	0.028	85.4	ug/L	518	Standard
	Sb	123	465.9	23.7	**0.0860**	0.025	29.2	ug/L	127	Standard
	Ba	135	55.7	25.4	**0.0018**	0.007	380.6	ug/L	45	Standard
	Ce	140	23.3	53.9				ug/L	298	Standard
>	**Tb**	159	991657.2	2.1				ug/L	977942	Standard
	Ho	165	6.7	114.6				ug/L	12	Standard
	Tl	203	81.3	30.4	**0.0043**	0.003	63.5	ug/L	31	Standard
	Tl	205	65.0	13.3	**0.0061**	0.001	17.5	ug/L	20	Standard
	Pb	206	313.0	2.4	**-0.0091**	0.002	17.1	ug/L	286	Standard
	Pb	207	268.3	2.3	**-0.0063**	0.001	16.7	ug/L	257	Standard
	Pb	208	1057.3	6.3	**-0.0078**	0.003	38.5	ug/L	956	Standard
	U	238	61.3	40.7	**0.0051**	0.003	63.9	ug/L	17	Standard
>	**Bi**	209	592397.8	0.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	95.0	63.8	**0.0743**	0.084	112.6	mg/L	32	Standard
K	39	16.7	17.3	**-0.0829**	0.011	12.9	mg/L	30	Standard
Ca	43	31.7	36.5	**-0.3389**	1.874	552.9	mg/L	48	Standard
Fe	54	110.8	32.6	**-0.0331**	0.033	100.8	mg/L	159	Standard
Fe	57	168.3	28.5	**-0.0341**	0.169	494.5	mg/L	195	Standard
> **Sc-1**	45	38064.4	0.9				mg/L	39543	Standard
Cl	35	31593.6	0.5				ug/L	27642	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	1856.8	9.2				ug/L	1647	Standard
P	31	17672.0	1.1				ug/L	15231	Standard
S	34	2055.1	6.3				ug/L	1845	Standard
Sr	88	56.7	18.4				ug/L	70	Standard
C	12	170.0	20.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.3	173.2				mg/L	12	Standard
Ho-1	165	6.7	114.6				mg/L	12	Standard
Er	166	6.7	173.2				mg/L	20	Standard
I	127	7793.7	20.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.401	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.250
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.340
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606036211
Sample Date/Time: Tuesday, June 28, 2016 14:25:14
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	100807.6	1.2				ug/L	81760	Standard
	Be	9	76.7	13.6	**0.0528**	0.008	15.0	ug/L	17	Standard
	Al	27	23829161.3	1.5	**125.3655**	0.841	0.7	ug/L	1410	Standard
	Sc	45	39760.5	3.7				ug/L	39543	Standard
	Ti	47	180.7	0.8	**0.5860**	0.014	2.4	ug/L	39	Standard
	V	51	2583.8	5.2	**0.1775**	0.016	9.1	ug/L	1415	Standard
	Cr	52	8684.5	0.7	**0.2325**	0.005	2.3	ug/L	6946	Standard
	Cr	53	1498.4	3.7	**1.4227**	0.048	3.4	ug/L	328	Standard
	Mn	55	44479.2	1.1	**6.9441**	0.116	1.7	ug/L	823	Standard
	Co	59	1598.1	1.9	**0.2038**	0.006	2.9	ug/L	252	Standard
	Ni	60	3161.3	2.5	**1.6303**	0.047	2.9	ug/L	192	Standard
	Cu	65	697.7	3.7	**0.2888**	0.018	6.1	ug/L	141	Standard
	Zn	66	2205.8	4.6	**1.2527**	0.096	7.7	ug/L	491	Standard
>	**Ge**	72	498311.0	1.0				ug/L	515087	Standard
	As	75	175.3	10.2	**0.2014**	0.015	7.3	ug/L	20	Standard
	Se	82	90.2	6.0	**0.6901**	0.041	6.0	ug/L	15	Standard
	Se-1	77	104.3	15.6	**0.7141**	0.236	33.0	ug/L	48	Standard
>	**Ga**	71	91.7	19.2				mg/L	90	Standard
	Rb	85	3617.1	1.0				ug/L	23	Standard
	Y	89	438807.3	1.1				ug/L	448510	Standard
>	**Rh**	103	23.3	24.7				ug/L	15	Standard
	Mo	98	5340.3	1.5	**1.9620**	0.035	1.8	ug/L	11	Standard
	Ag	107	313.7	8.5	**0.0307**	0.004	14.3	ug/L	134	Standard
	Cd	111	102.5	10.0	**0.0451**	0.004	9.9	mg/L	7	Standard
	Cd	114	269.5	9.6	**0.0471**	0.005	11.0	ug/L	16	Standard
>	**In**	115	609490.3	1.0				ug/L	611117	Standard
	Sn	118	888.4	6.3	**0.0488**	0.011	22.0	ug/L	518	Standard
	Sb	123	739.4	5.4	**0.1443**	0.009	6.4	ug/L	127	Standard
	Ba	135	23651.8	1.3	**11.4620**	0.117	1.0	ug/L	45	Standard
	Ce	140	2515.2	8.7				ug/L	298	Standard
>	**Tb**	159	994391.3	1.1				ug/L	977942	Standard
	Ho	165	61.7	16.9				ug/L	12	Standard
	Tl	203	495.7	2.3	**0.0524**	0.001	2.2	ug/L	31	Standard
	Tl	205	451.7	6.1	**0.0577**	0.003	5.9	ug/L	20	Standard
	Pb	206	782.0	4.2	**0.0770**	0.005	7.0	ug/L	286	Standard
	Pb	207	638.7	5.2	**0.0693**	0.006	8.1	ug/L	257	Standard
	Pb	208	2612.4	2.6	**0.0742**	0.003	3.5	ug/L	956	Standard
	U	238	3078.0	1.8	**0.4146**	0.006	1.5	ug/L	17	Standard
>	**Bi**	209	573149.3	0.8				ug/L	557080	Standard

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Na	23	10.0	50.0	**63.1287**	29.742	47.1	mg/L	0	Standard
Mg	24	8182.2	4.0	**10.7839**	0.556	5.2	mg/L	32	Standard
K	39	235.0	11.8	**0.6477**	0.082	12.7	mg/L	30	Standard
Ca	43	488.3	8.8	**68.4110**	5.631	8.2	mg/L	48	Standard
Fe	54	190.4	22.3	**0.0341**	0.036	104.7	mg/L	159	Standard
Fe	57	451.7	3.2	**0.8921**	0.019	2.1	mg/L	195	Standard
Sc-1	45	39760.5	3.7				mg/L	39543	Standard
Cl	35	36572.1	2.1				ug/L	27642	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	15501.3	5.9				ug/L	1647	Standard
P	31	22299.7	2.1				ug/L	15231	Standard
S	34	2183.5	4.1				ug/L	1845	Standard
Sr	88	141.7	11.3				ug/L	70	Standard
C	12	286.7	23.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	128.1	22.2				mg/L	12	Standard
Ho-1	165	61.7	16.9				mg/L	12	Standard
Er	166	110.0	63.6				mg/L	20	Standard
I	127	9539.7	2.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.297	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.743	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.734	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	102.884	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606036212
Sample Date/Time: Tuesday, June 28, 2016 14:28:25
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	101556.0	2.3				ug/L	81760	Standard
	Be	9	16.7	34.6	**0.0037**	0.005	121.7	ug/L	17	Standard
	Al	27	17765744.4	2.3	**92.8094**	3.109	3.3	ug/L	1410	Standard
	Sc	45	39087.0	2.2				ug/L	39543	Standard
	Ti	47	247.0	6.3	**0.8686**	0.057	6.6	ug/L	39	Standard
	V	51	2382.1	6.3	**0.1501**	0.021	13.9	ug/L	1415	Standard
	Cr	52	8300.6	1.1	**0.1842**	0.008	4.2	ug/L	6946	Standard
	Cr	53	1501.7	3.0	**1.4394**	0.046	3.2	ug/L	328	Standard
	Mn	55	1258376.0	0.7	**201.9190**	0.817	0.4	ug/L	823	Standard
	Co	59	3356.7	1.5	**0.4660**	0.012	2.5	ug/L	252	Standard
	Ni	60	3550.4	0.9	**1.8576**	0.023	1.3	ug/L	192	Standard
	Cu	65	1089.7	4.5	**0.5061**	0.022	4.4	ug/L	141	Standard
	Zn	66	2532.2	4.9	**1.5769**	0.099	6.3	ug/L	491	Standard
>	**Ge**	72	494799.1	0.8				ug/L	515087	Standard
	As	75	371.2	4.5	**0.3840**	0.014	3.7	ug/L	20	Standard
	Se	82	96.6	14.9	**0.7542**	0.127	16.9	ug/L	15	Standard
	Se-1	77	117.3	12.8	**0.9020**	0.200	22.2	ug/L	48	Standard
>	**Ga**	71	161.7	20.6				mg/L	90	Standard
	Rb	85	5996.2	5.2				ug/L	23	Standard
	Y	89	446186.9	1.4				ug/L	448510	Standard
>	**Rh**	103	35.0	37.8				ug/L	15	Standard
	Mo	98	1982.4	1.7	**0.7175**	0.021	3.0	ug/L	11	Standard
	Ag	107	87.7	6.7	**-0.0031**	0.001	30.7	ug/L	134	Standard
	Cd	111	81.3	17.6	**0.0353**	0.007	20.5	mg/L	7	Standard
	Cd	114	230.7	12.0	**0.0397**	0.006	14.9	ug/L	16	Standard
>	**In**	115	608659.5	1.3				ug/L	611117	Standard
	Sn	118	906.7	3.5	**0.0521**	0.007	12.9	ug/L	518	Standard
	Sb	123	394.5	7.6	**0.0711**	0.006	8.6	ug/L	127	Standard
	Ba	135	51224.8	1.3	**24.8890**	0.366	1.5	ug/L	45	Standard
	Ce	140	3013.6	4.4				ug/L	298	Standard
>	**Tb**	159	974496.5	1.8				ug/L	977942	Standard
	Ho	165	80.0	16.5				ug/L	12	Standard
	Tl	203	128.3	8.3	**0.0104**	0.001	10.4	ug/L	31	Standard
	Tl	205	91.7	22.0	**0.0102**	0.003	28.0	ug/L	20	Standard
	Pb	206	755.4	5.1	**0.0757**	0.008	10.8	ug/L	286	Standard
	Pb	207	644.0	3.0	**0.0736**	0.005	7.3	ug/L	257	Standard
	Pb	208	2468.4	2.8	**0.0700**	0.005	7.5	ug/L	956	Standard
	U	238	1502.1	3.5	**0.2059**	0.006	2.8	ug/L	17	Standard
>	**Bi**	209	559159.1	1.2				ug/L	557080	Standard

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Na	23	5.0	0.0	**32.4897**	0.713	2.2	mg/L	0	Standard
Mg	24	34367.3	2.9	**46.2225**	0.714	1.5	mg/L	32	Standard
K	39	518.3	10.6	**1.6321**	0.206	12.7	mg/L	30	Standard
Ca	43	333.3	3.5	**45.8704**	1.237	2.7	mg/L	48	Standard
Fe	54	313.8	12.6	**0.1508**	0.042	28.0	mg/L	159	Standard
Fe	57	493.3	3.3	**1.0616**	0.089	8.4	mg/L	195	Standard
> **Sc-1**	45	39087.0	2.2				mg/L	39543	Standard
Cl	35	40128.4	3.1				ug/L	27642	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	13105.7	7.2				ug/L	1647	Standard
P	31	21068.0	1.2				ug/L	15231	Standard
S	34	2031.8	3.8				ug/L	1845	Standard
Sr	88	195.0	14.3				ug/L	70	Standard
C	12	220.0	19.8				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	113.5	27.0				mg/L	12	Standard
Ho-1	165	80.0	16.5				mg/L	12	Standard
Er	166	66.7	48.2				mg/L	20	Standard
I	127	14735.5	4.5				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		124.212	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.061	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.598	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.373	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 14:31:38
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	96993.2	4.5				ug/L	81760	Standard
	Be	9	59018.4	6.5	**50.0965**	2.769	5.5	ug/L	17	Standard
	Al	27	7977258.4	4.2	**43.6214**	1.029	2.4	ug/L	1410	Standard
	Sc	45	38238.2	1.6				ug/L	39543	Standard
	Ti	47	23612.4	4.0	**98.7594**	3.955	4.0	ug/L	39	Standard
	V	51	340072.0	1.7	**50.7725**	1.247	2.5	ug/L	1415	Standard
	Cr	52	338200.8	3.5	**49.5590**	1.660	3.3	ug/L	6946	Standard
	Cr	53	42016.5	3.2	**49.5286**	1.703	3.4	ug/L	328	Standard
	Mn	55	307360.3	1.5	**49.2454**	0.735	1.5	ug/L	823	Standard
	Co	59	358545.3	2.7	**53.1356**	1.497	2.8	ug/L	252	Standard
	Ni	60	89705.8	2.1	**49.5206**	1.132	2.3	ug/L	192	Standard
	Cu	65	91128.3	2.1	**49.8745**	1.003	2.0	ug/L	141	Standard
	Zn	66	53559.8	1.4	**50.0843**	0.931	1.9	ug/L	491	Standard
>	Ge	72	494423.7	1.0				ug/L	515087	Standard
	As	75	53994.0	0.9	**50.0733**	0.496	1.0	ug/L	20	Standard
	Se	82	5715.9	0.2	**51.6065**	0.476	0.9	ug/L	15	Standard
	Se-1	77	3736.8	1.4	**50.9602**	0.952	1.9	ug/L	48	Standard
>	Ga	71	70.0	28.6				mg/L	90	Standard
	Rb	85	770.0	3.6				ug/L	23	Standard
	Y	89	445528.9	0.6				ug/L	448510	Standard
>	Rh	103	23.3	44.6				ug/L	15	Standard
	Mo	98	264652.3	1.1	**96.1672**	0.791	0.8	ug/L	11	Standard
	Ag	107	331013.3	2.8	**48.4244**	1.155	2.4	ug/L	134	Standard
	Cd	111	104542.0	2.3	**48.0434**	1.120	2.3	mg/L	7	Standard
	Cd	114	255433.5	4.1	**48.2912**	1.921	4.0	ug/L	16	Standard
>	In	115	622075.2	0.5				ug/L	611117	Standard
	Sn	118	295472.2	1.9	**48.9864**	0.743	1.5	ug/L	518	Standard
	Sb	123	230757.9	1.7	**48.0319**	0.618	1.3	ug/L	127	Standard
	Ba	135	99769.8	2.2	**47.4498**	0.988	2.1	ug/L	45	Standard
	Ce	140	73.3	7.9				ug/L	298	Standard
>	Tb	159	1000112.3	1.5				ug/L	977942	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	427237.6	2.4	**49.0359**	1.247	2.5	ug/L	31	Standard
	Tl	205	388094.9	2.7	**51.3011**	1.717	3.3	ug/L	20	Standard
	Pb	206	274003.7	2.0	**48.9721**	1.261	2.6	ug/L	286	Standard
	Pb	207	249924.4	1.5	**49.5263**	1.133	2.3	ug/L	257	Standard
	Pb	208	988217.1	0.7	**50.6156**	0.799	1.6	ug/L	956	Standard
	U	238	380024.3	2.2	**51.3005**	1.621	3.2	ug/L	17	Standard
>	Bi	209	576058.0	1.3				ug/L	557080	Standard

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Na	23	5.0	100.0	**33.2699**	32.995	99.2	mg/L	0	Standard
Mg	24	4203.9	5.4	**5.7315**	0.340	5.9	mg/L	32	Standard
K	39	1220.0	6.7	**4.1203**	0.250	6.1	mg/L	30	Standard
Ca	43	103.3	14.8	**10.9126**	2.675	24.5	mg/L	48	Standard
Fe	54	5915.4	3.1	**5.3996**	0.173	3.2	mg/L	159	Standard
Fe	57	1661.8	2.4	**5.1766**	0.085	1.6	mg/L	195	Standard
> **Sc-1**	45	38238.2	1.6				mg/L	39543	Standard
Cl	35	33728.9	2.6				ug/L	27642	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	1893.5	8.5				ug/L	1647	Standard
P	31	18936.8	1.0				ug/L	15231	Standard
S	34	2451.9	4.7				ug/L	1845	Standard
Sr	88	73.3	14.2				ug/L	70	Standard
C	12	160.0	43.3				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.2	6.0				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	16.7	69.3				mg/L	20	Standard
I	127	3007.0	16.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	100.193		
Al	27	87.243		
Sc	45			
Ti	47	98.759		
V	51	101.545		
Cr	52	99.118		
Cr	53			
Mn	55	98.491		
Co	59	106.271		
Ni	60	99.041		
Cu	65	99.749		
Zn	66	100.169		
> Ge	72		95.988	
As	75	100.147		
Se	82	103.213		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	96.167		
Ag	107	96.849		
Cd	111	96.087		
Cd	114			
In	115		101.793	
Sn	118	97.973		
Sb	123	96.064		
Ba	135	94.900		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.072		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.231		
U	238	102.601		
Bi	209		103.407	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 14:34:50
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92870.5	2.0				ug/L	81760	Standard
	Be	9	15.0	66.7	**0.0036**	0.009	245.7	ug/L	17	Standard
	Al	27	2743.6	21.7	**0.0013**	0.004	284.3	ug/L	1410	Standard
	Sc	45	38460.4	1.3				ug/L	39543	Standard
	Ti	47	30.7	8.2	**-0.0403**	0.010	23.8	ug/L	39	Standard
	V	51	1134.9	2.6	**-0.0414**	0.005	11.0	ug/L	1415	Standard
	Cr	52	5878.1	2.2	**-0.2023**	0.026	12.8	ug/L	6946	Standard
	Cr	53	310.0	1.6	**0.0160**	0.005	29.1	ug/L	328	Standard
	Mn	55	709.4	9.1	**-0.0377**	0.010	26.9	ug/L	823	Standard
	Co	59	233.7	1.1	**0.0023**	0.001	24.5	ug/L	252	Standard
	Ni	60	211.0	9.6	**0.0084**	0.011	126.5	ug/L	192	Standard
	Cu	65	155.3	8.6	**-0.0081**	0.008	96.4	ug/L	141	Standard
	Zn	66	394.0	4.1	**-0.4638**	0.014	3.1	ug/L	491	Standard
>	**Ge**	72	508932.6	0.9				ug/L	515087	Standard
	As	75	-34.1	13.4	**0.0096**	0.004	45.1	ug/L	20	Standard
	Se	82	19.4	20.9	**0.0515**	0.036	69.8	ug/L	15	Standard
	Se-1	77	46.7	12.2	**-0.0918**	0.077	84.0	ug/L	48	Standard
>	**Ga**	71	66.7	8.7				mg/L	90	Standard
	Rb	85	15.0	33.3				ug/L	23	Standard
	Y	89	445570.9	1.5				ug/L	448510	Standard
>	**Rh**	103	15.0	88.2				ug/L	15	Standard
	Mo	98	287.3	16.9	**0.0864**	0.017	20.0	ug/L	11	Standard
	Ag	107	124.0	22.6	**0.0021**	0.004	200.7	ug/L	134	Standard
	Cd	111	14.8	9.5	**0.0040**	0.001	16.6	mg/L	7	Standard
	Cd	114	48.0	37.7	**0.0043**	0.004	82.8	ug/L	16	Standard
>	**In**	115	615541.5	0.9				ug/L	611117	Standard
	Sn	118	883.4	22.9	**0.0465**	0.035	74.9	ug/L	518	Standard
	Sb	123	479.5	25.7	**0.0882**	0.027	30.1	ug/L	127	Standard
	Ba	135	35.7	10.6	**-0.0080**	0.002	22.2	ug/L	45	Standard
	Ce	140	21.7	48.0				ug/L	298	Standard
>	**Tb**	159	980265.4	0.4				ug/L	977942	Standard
	Ho	165	16.7	45.8				ug/L	12	Standard
	Tl	203	63.0	23.1	**0.0024**	0.002	67.2	ug/L	31	Standard
	Tl	205	63.3	31.9	**0.0060**	0.003	42.7	ug/L	20	Standard
	Pb	206	313.3	5.4	**-0.0080**	0.003	36.6	ug/L	286	Standard
	Pb	207	273.0	6.7	**-0.0043**	0.004	87.0	ug/L	257	Standard
	Pb	208	1087.7	7.3	**-0.0051**	0.004	85.3	ug/L	956	Standard
	U	238	49.0	30.5	**0.0036**	0.002	56.1	ug/L	17	Standard
>	**Bi**	209	580619.2	1.2				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	35.0	28.6	**-0.0091**	0.014	156.5	mg/L	32	Standard
K	39	36.7	28.4	**-0.0142**	0.035	248.1	mg/L	30	Standard
Ca	43	26.7	57.3	**-1.1996**	2.339	195.0	mg/L	48	Standard
Fe	54	140.8	15.9	**-0.0061**	0.021	341.9	mg/L	159	Standard
Fe	57	151.7	6.9	**-0.0978**	0.042	43.3	mg/L	195	Standard
> **Sc-1**	45	38460.4	1.3				mg/L	39543	Standard
Cl	35	32500.2	3.2				ug/L	27642	Standard
Kr	83	3.0	0.0				ug/L	2	Standard
Br	81	1736.8	3.3				ug/L	1647	Standard
P	31	17698.7	3.2				ug/L	15231	Standard
S	34	2320.2	10.5				ug/L	1845	Standard
Sr	88	73.3	21.9				ug/L	70	Standard
C	12	133.3	15.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.0	113.3				mg/L	12	Standard
Ho-1	165	16.7	45.8				mg/L	12	Standard
Er	166	20.0	50.0				mg/L	20	Standard
I	127	2206.8	20.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.805	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.724
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.225
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBS M7 WG573333-03
Sample Date/Time: Tuesday, June 28, 2016 14:38:03
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	95050.7	3.1				ug/L	81760	Standard
	Be	9	18.3	87.7	**0.0062**	0.014	223.6	ug/L	17	Standard
	Al	27	17488.4	2.4	**0.0832**	0.003	3.2	ug/L	1410	Standard
	Sc	45	39132.2	2.7				ug/L	39543	Standard
	Ti	47	49.7	51.3	**0.0353**	0.101	286.1	ug/L	39	Standard
	V	51	1251.1	3.7	**-0.0255**	0.008	31.0	ug/L	1415	Standard
	Cr	52	8706.2	0.9	**0.2013**	0.013	6.2	ug/L	6946	Standard
	Cr	53	700.0	11.0	**0.4613**	0.093	20.2	ug/L	328	Standard
	Mn	55	1542.7	1.5	**0.0910**	0.006	6.6	ug/L	823	Standard
	Co	59	278.7	9.1	**0.0085**	0.003	38.3	ug/L	252	Standard
	Ni	60	602.0	5.9	**0.2166**	0.018	8.1	ug/L	192	Standard
	Cu	65	210.7	10.6	**0.0207**	0.012	58.0	ug/L	141	Standard
	Zn	66	1817.8	2.7	**0.8408**	0.028	3.4	ug/L	491	Standard
>	**Ge**	72	511962.6	1.0				ug/L	515087	Standard
	As	75	-35.9	60.1	**0.0082**	0.019	234.7	ug/L	20	Standard
	Se	82	20.1	18.9	**0.0563**	0.034	59.9	ug/L	15	Standard
	Se-1	77	44.7	10.1	**-0.1225**	0.058	47.0	ug/L	48	Standard
>	**Ga**	71	48.3	15.8				mg/L	90	Standard
	Rb	85	66.7	31.2				ug/L	23	Standard
	Y	89	442200.8	1.3				ug/L	448510	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	193.0	16.8	**0.0509**	0.011	21.8	ug/L	11	Standard
	Ag	107	97.0	17.0	**-0.0021**	0.002	110.1	ug/L	134	Standard
	Cd	111	7.4	64.2	**0.0005**	0.002	466.2	mg/L	7	Standard
	Cd	114	31.4	28.6	**0.0010**	0.002	163.8	ug/L	16	Standard
>	**In**	115	622890.2	1.7				ug/L	611117	Standard
	Sn	118	691.7	5.6	**0.0128**	0.005	38.1	ug/L	518	Standard
	Sb	123	212.1	15.5	**0.0312**	0.006	20.3	ug/L	127	Standard
	Ba	135	298.3	2.4	**0.1167**	0.001	1.2	ug/L	45	Standard
	Ce	140	113.3	24.3				ug/L	298	Standard
>	**Tb**	159	998579.7	1.5				ug/L	977942	Standard
	Ho	165	16.7	17.3				ug/L	12	Standard
	Tl	203	39.0	48.9	**-0.0004**	0.002	526.4	ug/L	31	Standard
	Tl	205	20.0	50.0	**0.0003**	0.001	421.9	ug/L	20	Standard
	Pb	206	313.7	9.3	**-0.0086**	0.005	56.5	ug/L	286	Standard
	Pb	207	273.0	2.4	**-0.0050**	0.001	28.4	ug/L	257	Standard
	Pb	208	1093.3	1.9	**-0.0055**	0.001	16.3	ug/L	956	Standard
	U	238	24.3	55.2	**0.0002**	0.002	711.6	ug/L	17	Standard
>	**Bi**	209	587793.8	0.5				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	36.7	7.9	**-0.0078**	0.003	35.7	mg/L	32	Standard
K	39	35.0	51.5	**-0.0208**	0.064	309.0	mg/L	30	Standard
Ca	43	25.0	34.6	**-1.5082**	1.327	88.0	mg/L	48	Standard
Fe	54	165.5	15.5	**0.0140**	0.019	138.8	mg/L	159	Standard
Fe	57	203.3	9.9	**0.0704**	0.084	119.9	mg/L	195	Standard
> **Sc-1**	45	39132.2	2.7				mg/L	39543	Standard
Cl	35	33734.8	0.7				ug/L	27642	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	1786.8	3.4				ug/L	1647	Standard
P	31	17722.0	1.9				ug/L	15231	Standard
S	34	2341.8	1.1				ug/L	1845	Standard
Sr	88	65.0	27.7				ug/L	70	Standard
C	12	180.0	47.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	18.7	93.3				mg/L	12	Standard
Ho-1	165	16.7	17.3				mg/L	12	Standard
Er	166	26.7	21.7				mg/L	20	Standard
I	127	1696.8	8.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.256	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.393	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.927
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.513
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSS M7 WG573333-04
Sample Date/Time: Tuesday, June 28, 2016 14:41:14
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92927.6	3.1				ug/L	81760	Standard
	Be	9	30111.6	3.7	**26.7031**	1.769	6.6	ug/L	17	Standard
	Al	27	18035.9	13.5	**0.0888**	0.016	18.2	ug/L	1410	Standard
	Sc	45	39361.1	1.9				ug/L	39543	Standard
	Ti	47	37.0	28.2	**-0.0130**	0.042	322.2	ug/L	39	Standard
	V	51	182372.3	3.8	**26.6531**	1.518	5.7	ug/L	1415	Standard
	Cr	52	189442.3	3.6	**26.8012**	1.501	5.6	ug/L	6946	Standard
	Cr	53	22922.3	1.8	**26.3866**	1.122	4.3	ug/L	328	Standard
	Mn	55	169435.1	3.2	**26.6017**	1.285	4.8	ug/L	823	Standard
	Co	59	193981.0	3.8	**28.2331**	1.651	5.8	ug/L	252	Standard
	Ni	60	48862.7	3.3	**26.4525**	1.352	5.1	ug/L	192	Standard
	Cu	65	49743.6	2.7	**26.7036**	1.173	4.4	ug/L	141	Standard
	Zn	66	30362.1	3.5	**27.5261**	1.455	5.3	ug/L	491	Standard
>	**Ge**	72	503563.1	2.3				ug/L	515087	Standard
	As	75	29155.1	3.3	**26.5827**	1.325	5.0	ug/L	20	Standard
	Se	82	3055.7	1.7	**27.0468**	1.107	4.1	ug/L	15	Standard
	Se-1	77	2068.5	3.5	**27.3757**	1.137	4.2	ug/L	48	Standard
>	**Ga**	71	53.3	14.3				mg/L	90	Standard
	Rb	85	78.3	16.1				ug/L	23	Standard
	Y	89	444634.7	2.0				ug/L	448510	Standard
>	**Rh**	103	18.3	41.7				ug/L	15	Standard
	Mo	98	104.5	23.9	**0.0190**	0.010	51.3	ug/L	11	Standard
	Ag	107	179344.1	3.7	**26.2092**	1.706	6.5	ug/L	134	Standard
	Cd	111	55845.5	2.3	**25.6355**	1.334	5.2	mg/L	7	Standard
	Cd	114	136877.4	2.6	**25.8483**	1.371	5.3	ug/L	16	Standard
>	**In**	115	623373.0	3.0				ug/L	611117	Standard
	Sn	118	755.0	11.3	**0.0235**	0.016	68.2	ug/L	518	Standard
	Sb	123	124890.1	3.5	**25.9676**	1.618	6.2	ug/L	127	Standard
	Ba	135	53944.6	3.3	**25.6212**	1.575	6.1	ug/L	45	Standard
	Ce	140	106.7	9.8				ug/L	298	Standard
>	**Tb**	159	976375.9	3.3				ug/L	977942	Standard
	Ho	165	15.0	57.7				ug/L	12	Standard
	Tl	203	229696.9	2.8	**26.5184**	1.549	5.8	ug/L	31	Standard
	Tl	205	205993.8	3.8	**27.3937**	1.852	6.8	ug/L	20	Standard
	Pb	206	150555.8	3.2	**27.0395**	1.637	6.1	ug/L	286	Standard
	Pb	207	130667.9	3.7	**26.0217**	1.699	6.5	ug/L	257	Standard
	Pb	208	532429.0	3.5	**27.4071**	1.756	6.4	ug/L	956	Standard
	U	238	197217.2	3.4	**26.7798**	1.720	6.4	ug/L	17	Standard
>	**Bi**	209	573273.6	3.1				ug/L	557080	Standard

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Na	23	3.3	86.6	**21.2655**	18.412	86.6	mg/L	0	Standard
Mg	24	50.0	43.6	**0.0096**	0.028	296.2	mg/L	32	Standard
K	39	30.0	100.0	**-0.0395**	0.101	254.9	mg/L	30	Standard
Ca	43	25.0	40.0	**-1.5307**	1.509	98.6	mg/L	48	Standard
Fe	54	141.7	2.7	**-0.0082**	0.003	33.7	mg/L	159	Standard
Fe	57	226.7	9.9	**0.1435**	0.065	45.0	mg/L	195	Standard
Sc-1	45	39361.1	1.9				mg/L	39543	Standard
Cl	35	35061.2	2.7				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1886.8	4.9				ug/L	1647	Standard
P	31	18956.9	6.3				ug/L	15231	Standard
S	34	2375.2	1.6				ug/L	1845	Standard
Sr	88	65.0	30.8				ug/L	70	Standard
C	12	170.0	38.6				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	12.7	49.8				mg/L	12	Standard
Ho-1	165	15.0	57.7				mg/L	12	Standard
Er	166	13.3	86.6				mg/L	20	Standard
I	127	1553.4	15.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		113.659	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.763	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.006
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.907
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606105301 WG573333-02
Sample Date/Time: Tuesday, June 28, 2016 14:44:26
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92504.9	1.8				ug/L	81760	Standard
	Be	9	211.7	3.6	**0.1787**	0.009	5.2	ug/L	17	Standard
	Al	27	476632.7	0.6	**2.7192**	0.058	2.1	ug/L	1410	Standard
	Sc	45	39899.1	1.7				ug/L	39543	Standard
	Ti	47	7508.9	2.4	**29.9625**	0.867	2.9	ug/L	39	Standard
	V	51	54226.8	0.3	**7.5775**	0.105	1.4	ug/L	1415	Standard
	Cr	52	35510.9	0.6	**4.0327**	0.059	1.5	ug/L	6946	Standard
	Cr	53	3988.9	7.5	**4.1910**	0.323	7.7	ug/L	328	Standard
	Mn	55	226862.1	2.5	**34.7724**	1.274	3.7	ug/L	823	Standard
	Co	59	8803.9	0.2	**1.2188**	0.017	1.4	ug/L	252	Standard
	Ni	60	5989.2	1.6	**3.0677**	0.039	1.3	ug/L	192	Standard
	Cu	65	4442.7	0.7	**2.2418**	0.014	0.6	ug/L	141	Standard
	Zn	66	19698.8	1.0	**17.1048**	0.367	2.1	ug/L	491	Standard
>	**Ge**	72	516312.9	1.2				ug/L	515087	Standard
	As	75	2960.6	0.8	**2.6677**	0.048	1.8	ug/L	20	Standard
	Se	82	53.9	7.9	**0.3477**	0.042	12.1	ug/L	15	Standard
	Se-1	77	82.0	6.8	**0.3676**	0.085	23.1	ug/L	48	Standard
>	**Ga**	71	5075.9	3.2				mg/L	90	Standard
	Rb	85	19981.5	3.8				ug/L	23	Standard
	Y	89	472017.4	2.4				ug/L	448510	Standard
>	**Rh**	103	21.7	26.6				ug/L	15	Standard
	Mo	98	6655.2	1.4	**2.4116**	0.043	1.8	ug/L	11	Standard
	Ag	107	178.7	11.3	**0.0101**	0.003	29.0	ug/L	134	Standard
	Cd	111	244.9	9.1	**0.1102**	0.010	9.1	mg/L	7	Standard
	Cd	114	621.2	5.8	**0.1131**	0.007	6.2	ug/L	16	Standard
>	**In**	115	619055.2	0.3				ug/L	611117	Standard
	Sn	118	640.0	5.5	**0.0049**	0.006	124.7	ug/L	518	Standard
	Sb	123	463.5	5.3	**0.0841**	0.005	6.4	ug/L	127	Standard
	Ba	135	41539.5	1.0	**19.8378**	0.203	1.0	ug/L	45	Standard
	Ce	140	324520.8	1.6				ug/L	298	Standard
>	**Tb**	159	988287.6	1.4				ug/L	977942	Standard
	Ho	165	2263.5	6.3				ug/L	12	Standard
	Tl	203	550.3	1.1	**0.0581**	0.001	1.2	ug/L	31	Standard
	Tl	205	506.7	1.1	**0.0644**	0.001	1.1	ug/L	20	Standard
	Pb	206	143402.5	0.9	**25.4978**	0.319	1.3	ug/L	286	Standard
	Pb	207	120708.6	0.6	**23.7943**	0.166	0.7	ug/L	257	Standard
	Pb	208	491539.2	1.4	**25.0461**	0.389	1.6	ug/L	956	Standard
	U	238	1919.1	2.3	**0.2551**	0.006	2.5	ug/L	17	Standard
>	**Bi**	209	578289.7	0.5				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.6918**	18.510	173.1	mg/L	0	Standard
Mg	24	41.7	30.2	**-0.0023**	0.016	678.2	mg/L	32	Standard
K	39	48.3	15.8	**0.0204**	0.026	126.1	mg/L	30	Standard
Ca	43	38.3	27.2	**0.4078**	1.458	357.4	mg/L	48	Standard
Fe	54	3682.2	3.4	**3.1665**	0.134	4.2	mg/L	159	Standard
Fe	57	1100.0	9.6	**3.0601**	0.408	13.3	mg/L	195	Standard
> **Sc-1**	45	39899.1	1.7				mg/L	39543	Standard
Cl	35	32895.7	2.7				ug/L	27642	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	2153.5	9.2				ug/L	1647	Standard
P	31	17883.9	3.0				ug/L	15231	Standard
S	34	2195.2	9.1				ug/L	1845	Standard
Sr	88	71.7	4.0				ug/L	70	Standard
C	12	220.0	19.8				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	40.0	25.0				mg/L	0	Standard
Dy	164	4107.1	8.5				mg/L	12	Standard
Ho-1	165	2263.5	6.3				mg/L	12	Standard
Er	166	2160.2	2.1				mg/L	20	Standard
I	127	7528.5	2.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.142	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.238	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.299
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.807
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606105302S WG573333-07
Sample Date/Time: Tuesday, June 28, 2016 14:47:37
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	91483.8	2.5				ug/L	81760	Standard
	Be	9	28575.3	3.7	**25.7021**	0.502	2.0	ug/L	17	Standard
	Al	27	472647.5	0.9	**2.7267**	0.044	1.6	ug/L	1410	Standard
	Sc	45	40355.4	2.6				ug/L	39543	Standard
	Ti	47	8788.9	2.8	**34.8074**	0.551	1.6	ug/L	39	Standard
	V	51	216754.8	1.8	**30.6603**	0.748	2.4	ug/L	1415	Standard
	Cr	52	202224.9	0.6	**27.6955**	0.221	0.8	ug/L	6946	Standard
	Cr	53	25461.4	2.5	**28.3619**	0.467	1.6	ug/L	328	Standard
	Mn	55	374661.4	3.0	**57.0462**	1.611	2.8	ug/L	823	Standard
	Co	59	185021.8	2.1	**26.0317**	0.592	2.3	ug/L	252	Standard
	Ni	60	51684.0	1.6	**27.0535**	0.107	0.4	ug/L	192	Standard
	Cu	65	52133.2	1.4	**27.0623**	0.171	0.6	ug/L	141	Standard
	Zn	66	46187.6	0.8	**40.8778**	0.267	0.7	ug/L	491	Standard
>	**Ge**	72	520472.6	1.2				ug/L	515087	Standard
	As	75	27327.3	2.3	**24.0946**	0.465	1.9	ug/L	20	Standard
	Se	82	2628.8	2.4	**22.4788**	0.502	2.2	ug/L	15	Standard
	Se-1	77	1784.1	1.0	**22.7201**	0.347	1.5	ug/L	48	Standard
>	**Ga**	71	5215.9	5.7				mg/L	90	Standard
	Rb	85	16937.8	2.3				ug/L	23	Standard
	Y	89	458647.4	1.3				ug/L	448510	Standard
>	**Rh**	103	30.0	44.1				ug/L	15	Standard
	Mo	98	18905.8	1.4	**6.8731**	0.106	1.5	ug/L	11	Standard
	Ag	107	155307.6	0.6	**22.7819**	0.123	0.5	ug/L	134	Standard
	Cd	111	52492.7	0.7	**24.1959**	0.317	1.3	mg/L	7	Standard
	Cd	114	128079.2	0.4	**24.2856**	0.076	0.3	ug/L	16	Standard
>	**In**	115	620204.7	0.6				ug/L	611117	Standard
	Sn	118	685.0	20.9	**0.0121**	0.023	191.0	ug/L	518	Standard
	Sb	123	65087.0	0.8	**13.5800**	0.099	0.7	ug/L	127	Standard
	Ba	135	93846.7	0.6	**44.7672**	0.375	0.8	ug/L	45	Standard
	Ce	140	331961.2	1.7				ug/L	298	Standard
>	**Tb**	159	981697.8	0.7				ug/L	977942	Standard
	Ho	165	1903.5	2.0				ug/L	12	Standard
	Tl	203	213525.6	1.3	**24.5875**	0.365	1.5	ug/L	31	Standard
	Tl	205	191177.1	1.7	**25.3529**	0.481	1.9	ug/L	20	Standard
	Pb	206	446032.3	1.2	**80.0233**	1.190	1.5	ug/L	286	Standard
	Pb	207	376762.1	1.5	**74.9381**	1.277	1.7	ug/L	257	Standard
	Pb	208	1506170.9	0.7	**77.4336**	0.690	0.9	ug/L	956	Standard
	U	238	183525.9	0.8	**24.8532**	0.261	1.1	ug/L	17	Standard
>	**Bi**	209	574082.0	0.2				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	51.7	22.3	**0.0106**	0.017	161.8	mg/L	32	Standard
K	39	33.3	8.7	**-0.0312**	0.007	21.8	mg/L	30	Standard
Ca	43	38.3	15.1	**0.3768**	1.024	271.7	mg/L	48	Standard
Fe	54	2984.3	5.7	**2.5132**	0.224	8.9	mg/L	159	Standard
Fe	57	1001.7	4.5	**2.6914**	0.198	7.3	mg/L	195	Standard
> **Sc-1**	45	40355.4	2.6				mg/L	39543	Standard
Cl	35	31360.4	1.4				ug/L	27642	Standard
Kr	83	1.0	173.2				ug/L	2	Standard
Br	81	2753.6	4.6				ug/L	1647	Standard
P	31	16745.9	1.5				ug/L	15231	Standard
S	34	2118.5	5.5				ug/L	1845	Standard
Sr	88	78.3	9.8				ug/L	70	Standard
C	12	286.7	29.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	100.3				mg/L	0	Standard
Dy	164	3434.6	3.8				mg/L	12	Standard
Ho-1	165	1903.5	2.0				mg/L	12	Standard
Er	166	1860.1	3.3				mg/L	20	Standard
I	127	5512.7	1.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.893	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.046	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.487
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.052
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606105303SD WG573333-08
Sample Date/Time: Tuesday, June 28, 2016 14:50:49
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90707.5	2.1				ug/L	81760	Standard
	Be	9	28490.1	1.5	**25.8507**	0.239	0.9	ug/L	17	Standard
	Al	27	517242.7	0.8	**3.0108**	0.045	1.5	ug/L	1410	Standard
	Sc	45	41104.0	1.1				ug/L	39543	Standard
	Ti	47	9706.8	1.9	**39.3684**	1.018	2.6	ug/L	39	Standard
	V	51	220560.4	0.1	**31.9323**	0.545	1.7	ug/L	1415	Standard
	Cr	52	204805.0	1.1	**28.7389**	0.342	1.2	ug/L	6946	Standard
	Cr	53	25147.5	3.9	**28.6674**	1.000	3.5	ug/L	328	Standard
	Mn	55	371807.0	1.2	**57.9433**	1.578	2.7	ug/L	823	Standard
	Co	59	187737.3	0.6	**27.0316**	0.558	2.1	ug/L	252	Standard
	Ni	60	52302.5	0.6	**28.0202**	0.336	1.2	ug/L	192	Standard
	Cu	65	51530.8	0.8	**27.3738**	0.234	0.9	ug/L	141	Standard
	Zn	66	58955.2	1.6	**53.6399**	0.321	0.6	ug/L	491	Standard
>	**Ge**	72	508670.0	1.6				ug/L	515087	Standard
	As	75	26613.2	0.3	**24.0128**	0.310	1.3	ug/L	20	Standard
	Se	82	2643.5	1.0	**23.1344**	0.377	1.6	ug/L	15	Standard
	Se-1	77	1782.1	1.4	**23.2396**	0.549	2.4	ug/L	48	Standard
>	**Ga**	71	5607.7	2.4				mg/L	90	Standard
	Rb	85	19120.4	0.8				ug/L	23	Standard
	Y	89	464944.5	0.8				ug/L	448510	Standard
>	**Rh**	103	20.0	66.1				ug/L	15	Standard
	Mo	98	6589.1	2.9	**2.3569**	0.065	2.7	ug/L	11	Standard
	Ag	107	161248.5	0.9	**23.3982**	0.239	1.0	ug/L	134	Standard
	Cd	111	52808.4	0.9	**24.0772**	0.233	1.0	mg/L	7	Standard
	Cd	114	128062.2	0.6	**24.0198**	0.192	0.8	ug/L	16	Standard
>	**In**	115	626980.9	0.2				ug/L	611117	Standard
	Sn	118	691.7	6.1	**0.0121**	0.007	57.7	ug/L	518	Standard
	Sb	123	64415.1	1.9	**13.2945**	0.276	2.1	ug/L	127	Standard
	Ba	135	100181.1	0.9	**47.2728**	0.453	1.0	ug/L	45	Standard
	Ce	140	306983.9	0.9				ug/L	298	Standard
>	**Tb**	159	992773.6	1.4				ug/L	977942	Standard
	Ho	165	1925.1	2.4				ug/L	12	Standard
	Tl	203	213931.4	0.2	**24.2345**	0.027	0.1	ug/L	31	Standard
	Tl	205	188875.1	1.2	**24.6411**	0.299	1.2	ug/L	20	Standard
	Pb	206	399455.5	0.3	**70.4964**	0.248	0.4	ug/L	286	Standard
	Pb	207	335397.3	0.3	**65.6206**	0.221	0.3	ug/L	257	Standard
	Pb	208	1377394.4	0.8	**69.6587**	0.536	0.8	ug/L	956	Standard
	U	238	183479.9	0.5	**24.4438**	0.133	0.5	ug/L	17	Standard
>	**Bi**	209	583538.4	0.1				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	45.0	11.1	**0.0005**	0.006	1275.5	mg/L	32	Standard
K	39	46.7	12.4	**0.0102**	0.018	179.3	mg/L	30	Standard
Ca	43	46.7	40.6	**1.4697**	2.764	188.0	mg/L	48	Standard
Fe	54	3552.4	2.1	**2.9565**	0.098	3.3	mg/L	159	Standard
Fe	57	1123.4	10.8	**3.0231**	0.384	12.7	mg/L	195	Standard
> **Sc-1**	45	41104.0	1.1				mg/L	39543	Standard
Cl	35	31493.4	1.6				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	2126.8	11.6				ug/L	1647	Standard
P	31	16392.2	2.4				ug/L	15231	Standard
S	34	1988.5	3.7				ug/L	1845	Standard
Sr	88	56.7	20.4				ug/L	70	Standard
C	12	256.7	29.2				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	34.3				mg/L	0	Standard
Dy	164	3598.5	4.6				mg/L	12	Standard
Ho-1	165	1925.1	2.4				mg/L	12	Standard
Er	166	1710.1	5.6				mg/L	20	Standard
I	127	5772.8	6.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.943	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.754	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606105303SD WG573333-08
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.596
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.749
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606104801
Sample Date/Time: Tuesday, June 28, 2016 14:54:00
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	87619.5	3.9				ug/L	81760	Standard
	Be	9	323.3	11.2	**0.2951**	0.044	15.0	ug/L	17	Standard
	Al	27	1546436.6	2.8	**9.3502**	0.142	1.5	ug/L	1410	Standard
	Sc	45	40666.2	2.1				ug/L	39543	Standard
	Ti	47	348.0	4.5	**1.2425**	0.055	4.4	ug/L	39	Standard
	V	51	27678.8	0.4	**3.7995**	0.033	0.9	ug/L	1415	Standard
	Cr	52	26992.7	1.5	**2.8437**	0.051	1.8	ug/L	6946	Standard
	Cr	53	2932.0	5.7	**3.0177**	0.170	5.6	ug/L	328	Standard
	Mn	55	139361.0	0.9	**21.4761**	0.101	0.5	ug/L	823	Standard
	Co	59	8883.9	1.8	**1.2405**	0.015	1.2	ug/L	252	Standard
	Ni	60	10083.0	1.9	**5.2809**	0.102	1.9	ug/L	192	Standard
	Cu	65	17655.3	1.5	**9.2565**	0.148	1.6	ug/L	141	Standard
	Zn	66	24172.6	2.4	**21.3574**	0.493	2.3	ug/L	491	Standard
>	**Ge**	72	512038.2	0.7				ug/L	515087	Standard
	As	75	255.5	6.8	**0.2688**	0.014	5.3	ug/L	20	Standard
	Se	82	53.2	11.2	**0.3458**	0.053	15.2	ug/L	15	Standard
	Se-1	77	80.3	12.8	**0.3545**	0.144	40.6	ug/L	48	Standard
>	**Ga**	71	3018.6	3.1				mg/L	90	Standard
	Rb	85	16969.5	1.9				ug/L	23	Standard
	Y	89	529226.2	0.9				ug/L	448510	Standard
>	**Rh**	103	10.0					ug/L	15	Standard
	Mo	98	313.0	4.7	**0.0960**	0.005	5.5	ug/L	11	Standard
	Ag	107	442.0	1.6	**0.0492**	0.001	1.7	ug/L	134	Standard
	Cd	111	534.5	3.9	**0.2456**	0.011	4.4	mg/L	7	Standard
	Cd	114	1438.1	5.6	**0.2703**	0.019	7.1	ug/L	16	Standard
>	**In**	115	614980.8	1.4				ug/L	611117	Standard
	Sn	118	1005.0	9.0	**0.0670**	0.016	23.2	ug/L	518	Standard
	Sb	123	831.9	19.2	**0.1627**	0.036	21.9	ug/L	127	Standard
	Ba	135	51902.4	2.2	**24.9562**	0.305	1.2	ug/L	45	Standard
	Ce	140	320029.2	2.5				ug/L	298	Standard
>	**Tb**	159	977861.1	0.7				ug/L	977942	Standard
	Ho	165	6373.0	4.5				ug/L	12	Standard
	Tl	203	276.7	7.5	**0.0277**	0.002	8.0	ug/L	31	Standard
	Tl	205	265.0	17.0	**0.0335**	0.006	17.4	ug/L	20	Standard
	Pb	206	33506.0	0.9	**6.0646**	0.072	1.2	ug/L	286	Standard
	Pb	207	27548.0	1.0	**5.5276**	0.068	1.2	ug/L	257	Standard
	Pb	208	115638.2	1.3	**6.0000**	0.078	1.3	ug/L	956	Standard
	U	238	6967.9	1.8	**0.9584**	0.022	2.3	ug/L	17	Standard
>	**Bi**	209	563593.3	0.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	48.3	36.3	**0.0057**	0.024	420.3	mg/L	32	Standard
K	39	71.7	21.3	**0.0944**	0.052	54.8	mg/L	30	Standard
Ca	43	58.3	17.8	**3.2603**	1.450	44.5	mg/L	48	Standard
Fe	54	2389.6	6.6	**1.9680**	0.178	9.0	mg/L	159	Standard
Fe	57	746.7	5.6	**1.8289**	0.182	10.0	mg/L	195	Standard
Sc-1	45	40666.2	2.1				mg/L	39543	Standard
Cl	35	32405.3	1.2				ug/L	27642	Standard
Kr	83	4.0	43.3				ug/L	2	Standard
Br	81	2003.5	7.8				ug/L	1647	Standard
P	31	17084.6	3.9				ug/L	15231	Standard
S	34	2108.5	4.8				ug/L	1845	Standard
Sr	88	73.3	30.7				ug/L	70	Standard
C	12	240.0	38.2				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	20.0				mg/L	0	Standard
Dy	164	9760.8	1.5				mg/L	12	Standard
Ho-1	165	6373.0	4.5				mg/L	12	Standard
Er	166	5897.8	8.3				mg/L	20	Standard
I	127	2141.8	10.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		107.167	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.408	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.632
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.169
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606104801PS WG573475-03
Sample Date/Time: Tuesday, June 28, 2016 14:57:11
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90811.3	0.7				ug/L	81760	Standard
	Be	9	56498.5	1.8	**51.2132**	1.080	2.1	ug/L	17	Standard
	Al	27	1545775.3	0.6	**9.0143**	0.017	0.2	ug/L	1410	Standard
	Sc	45	41961.4	1.6				ug/L	39543	Standard
	Ti	47	342.0	11.2	**1.1864**	0.157	13.2	ug/L	39	Standard
	V	51	392129.2	0.5	**55.2170**	0.488	0.9	ug/L	1415	Standard
	Cr	52	384433.3	0.4	**53.1980**	0.445	0.8	ug/L	6946	Standard
	Cr	53	48853.7	2.8	**54.3367**	1.767	3.3	ug/L	328	Standard
	Mn	55	478138.1	0.8	**72.3045**	0.492	0.7	ug/L	823	Standard
	Co	59	389747.9	0.3	**54.4630**	0.290	0.5	ug/L	252	Standard
	Ni	60	106262.0	0.3	**55.3242**	0.400	0.7	ug/L	192	Standard
	Cu	65	114943.7	0.4	**59.3369**	0.368	0.6	ug/L	141	Standard
	Zn	66	80976.1	0.1	**71.7501**	0.396	0.6	ug/L	491	Standard
>	**Ge**	72	524333.4	0.5				ug/L	515087	Standard
	As	75	59243.0	1.9	**51.8077**	1.242	2.4	ug/L	20	Standard
	Se	82	6211.1	2.1	**52.8798**	1.213	2.3	ug/L	15	Standard
	Se-1	77	4085.6	1.2	**52.5558**	0.559	1.1	ug/L	48	Standard
>	**Ga**	71	3287.0	1.8				mg/L	90	Standard
	Rb	85	16744.3	3.7				ug/L	23	Standard
	Y	89	522998.5	1.8				ug/L	448510	Standard
>	**Rh**	103	28.3	36.7				ug/L	15	Standard
	Mo	98	332.0	9.1	**0.1017**	0.011	11.1	ug/L	11	Standard
	Ag	107	350941.4	1.0	**51.3750**	0.335	0.7	ug/L	134	Standard
	Cd	111	110107.7	1.0	**50.6313**	0.348	0.7	mg/L	7	Standard
	Cd	114	268982.1	1.5	**50.8849**	0.677	1.3	ug/L	16	Standard
>	**In**	115	621693.0	0.4				ug/L	611117	Standard
	Sn	118	1258.4	5.6	**0.1073**	0.012	10.9	ug/L	518	Standard
	Sb	123	241746.4	1.3	**50.3512**	0.498	1.0	ug/L	127	Standard
	Ba	135	155747.4	0.9	**74.1325**	0.655	0.9	ug/L	45	Standard
	Ce	140	312396.1	0.8				ug/L	298	Standard
>	**Tb**	159	997317.5	1.6				ug/L	977942	Standard
	Ho	165	6548.1	1.9				ug/L	12	Standard
	Tl	203	447292.7	0.3	**50.4657**	0.615	1.2	ug/L	31	Standard
	Tl	205	398193.6	1.5	**51.7351**	0.805	1.6	ug/L	20	Standard
	Pb	206	325033.3	0.1	**57.1116**	0.488	0.9	ug/L	286	Standard
	Pb	207	282464.7	0.8	**55.0228**	0.100	0.2	ug/L	257	Standard
	Pb	208	1144735.7	1.0	**57.6431**	0.938	1.6	ug/L	956	Standard
	U	238	386201.4	1.1	**51.2415**	0.797	1.6	ug/L	17	Standard
>	**Bi**	209	586004.9	0.9				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	48.3	41.8	**0.0038**	0.026	698.9	mg/L	32	Standard
K	39	65.0	20.4	**0.0660**	0.045	68.1	mg/L	30	Standard
Ca	43	46.7	27.0	**1.3158**	1.694	128.8	mg/L	48	Standard
Fe	54	2337.7	11.4	**1.8584**	0.246	13.3	mg/L	159	Standard
Fe	57	760.0	13.2	**1.7916**	0.300	16.7	mg/L	195	Standard
> **Sc-1**	45	41961.4	1.6				mg/L	39543	Standard
Cl	35	32737.3	1.7				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	2180.2	6.6				ug/L	1647	Standard
P	31	17061.3	3.2				ug/L	15231	Standard
S	34	2245.2	3.3				ug/L	1845	Standard
Sr	88	81.7	12.7				ug/L	70	Standard
C	12	226.7	6.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	32.7				mg/L	0	Standard
Dy	164	10105.0	3.1				mg/L	12	Standard
Ho-1	165	6548.1	1.9				mg/L	12	Standard
Er	166	5884.5	3.8				mg/L	20	Standard
I	127	2158.5	15.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.071	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.795	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.731
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.192
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606104801SDL WG573475-04
Sample Date/Time: Tuesday, June 28, 2016 15:00:23
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89188.5	2.4				ug/L	81760	Standard
	Be	9	71.7	4.0	**0.0564**	0.001	2.3	ug/L	17	Standard
	Al	27	302683.6	0.7	**1.7866**	0.056	3.1	ug/L	1410	Standard
	Sc	45	41125.8	3.4				ug/L	39543	Standard
	Ti	47	82.7	6.2	**0.1644**	0.030	18.2	ug/L	39	Standard
	V	51	6527.8	1.5	**0.7233**	0.030	4.1	ug/L	1415	Standard
	Cr	52	10512.6	0.6	**0.4384**	0.054	12.4	ug/L	6946	Standard
	Cr	53	805.0	22.0	**0.5666**	0.199	35.2	ug/L	328	Standard
	Mn	55	27749.4	1.2	**4.0892**	0.112	2.7	ug/L	823	Standard
	Co	59	1936.1	6.5	**0.2412**	0.012	4.8	ug/L	252	Standard
	Ni	60	2147.2	1.2	**1.0241**	0.047	4.6	ug/L	192	Standard
	Cu	65	3398.4	1.3	**1.6803**	0.070	4.1	ug/L	141	Standard
	Zn	66	7011.6	1.2	**5.5054**	0.150	2.7	ug/L	491	Standard
>	**Ge**	72	520536.2	3.0				ug/L	515087	Standard
	As	75	60.9	66.9	**0.0932**	0.035	37.4	ug/L	20	Standard
	Se	82	24.2	49.2	**0.0869**	0.099	113.8	ug/L	15	Standard
	Se-1	77	55.3	11.8	**0.0096**	0.103	1081.5	ug/L	48	Standard
>	**Ga**	71	663.3	7.6				mg/L	90	Standard
	Rb	85	3270.4	5.2				ug/L	23	Standard
	Y	89	464717.5	1.9				ug/L	448510	Standard
>	**Rh**	103	16.7	121.2				ug/L	15	Standard
	Mo	98	80.8	3.1	**0.0096**	0.001	7.0	ug/L	11	Standard
	Ag	107	180.0	20.5	**0.0094**	0.005	54.7	ug/L	134	Standard
	Cd	111	113.9	5.5	**0.0481**	0.003	5.7	mg/L	7	Standard
	Cd	114	303.5	12.8	**0.0510**	0.007	13.8	ug/L	16	Standard
>	**In**	115	638226.3	1.3				ug/L	611117	Standard
	Sn	118	801.7	13.2	**0.0279**	0.017	59.8	ug/L	518	Standard
	Sb	123	2112.7	26.2	**0.4158**	0.111	26.6	ug/L	127	Standard
	Ba	135	10186.4	1.4	**4.7001**	0.102	2.2	ug/L	45	Standard
	Ce	140	62112.1	0.6				ug/L	298	Standard
>	**Tb**	159	1019737.0	1.0				ug/L	977942	Standard
	Ho	165	1263.4	4.0				ug/L	12	Standard
	Tl	203	113.0	16.9	**0.0078**	0.002	24.0	ug/L	31	Standard
	Tl	205	118.3	30.6	**0.0128**	0.004	33.6	ug/L	20	Standard
	Pb	206	6901.2	1.0	**1.1348**	0.029	2.6	ug/L	286	Standard
	Pb	207	5663.1	0.8	**1.0321**	0.019	1.9	ug/L	257	Standard
	Pb	208	22745.7	0.6	**1.0713**	0.025	2.3	ug/L	956	Standard
	U	238	1347.1	2.4	**0.1734**	0.003	1.5	ug/L	17	Standard
>	**Bi**	209	593755.8	1.9				ug/L	557080	Standard

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	Na	23	0.0		**0.0050**			mg/L	0	Standard
	Mg	24	45.0	40.1	**0.0009**	0.025	2626.8	mg/L	32	Standard
	K	39	30.0	28.9	**-0.0443**	0.026	58.3	mg/L	30	Standard
	Ca	43	28.3	20.4	**-1.2169**	0.752	61.8	mg/L	48	Standard
	Fe	54	584.0	13.3	**0.3714**	0.068	18.2	mg/L	159	Standard
	Fe	57	295.0	14.5	**0.3314**	0.118	35.5	mg/L	195	Standard
>	**Sc-1**	45	41125.8	3.4				mg/L	39543	Standard
	Cl	35	31826.1	1.1				ug/L	27642	Standard
	Kr	83	2.7	21.7				ug/L	2	Standard
	Br	81	1903.5	3.4				ug/L	1647	Standard
	P	31	16692.5	3.1				ug/L	15231	Standard
	S	34	2128.5	4.6				ug/L	1845	Standard
	Sr	88	68.3	36.1				ug/L	70	Standard
	C	12	176.7	42.9				mg/L	113	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	10.0	100.0				mg/L	0	Standard
	Dy	164	1953.3	7.3				mg/L	12	Standard
	Ho-1	165	1263.4	4.0				mg/L	12	Standard
	Er	166	1116.7	6.8				mg/L	20	Standard
	I	127	1450.1	11.9				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		109.086	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.058	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606104801SDL WG573475-04
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.436
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.584
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Tuesday, June 28, 2016 15:03:36
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	89282.3	1.4				ug/L	81760	Standard
	Be	9	15.0	33.3	**0.0041**	0.005	114.8	ug/L	17	Standard
	Al	27	7897505.8	1.4	**46.9037**	0.018	0.0	ug/L	1410	Standard
	Sc	45	39757.1	3.6				ug/L	39543	Standard
	Ti	47	27232.5	2.5	**109.9775**	3.234	2.9	ug/L	39	Standard
	V	51	789.3	35.9	**-0.0922**	0.042	45.6	ug/L	1415	Standard
	Cr	52	7275.7	2.2	**-0.0059**	0.028	478.1	ug/L	6946	Standard
	Cr	53	6823.2	10.4	**7.4758**	0.819	11.0	ug/L	328	Standard
	Mn	55	1397.7	2.4	**0.0683**	0.004	5.9	ug/L	823	Standard
	Co	59	388.0	3.6	**0.0242**	0.002	7.5	ug/L	252	Standard
	Ni	60	839.0	6.3	**0.3431**	0.028	8.3	ug/L	192	Standard
	Cu	65	614.0	0.9	**0.2341**	0.001	0.3	ug/L	141	Standard
	Zn	66	1957.1	1.8	**0.9682**	0.037	3.8	ug/L	491	Standard
>	Ge	72	512179.1	1.0				ug/L	515087	Standard
	As	75	-64.0	70.1	**-0.0170**	0.040	237.0	ug/L	20	Standard
	Se	82	21.9	13.2	**0.0720**	0.027	37.3	ug/L	15	Standard
	Se-1	77	397.7	7.2	**4.5923**	0.428	9.3	ug/L	48	Standard
>	Ga	71	168.3	7.5				mg/L	90	Standard
	Rb	85	1135.0	8.9				ug/L	23	Standard
	Y	89	442720.4	1.1				ug/L	448510	Standard
>	Rh	103	10.0	50.0				ug/L	15	Standard
	Mo	98	272741.3	0.7	**100.8481**	1.185	1.2	ug/L	11	Standard
	Ag	107	262.0	2.0	**0.0228**	0.001	4.1	ug/L	134	Standard
	Cd	111	-198.2	9.3	**-0.0956**	0.008	8.7	mg/L	7	Standard
	Cd	114	465.1	17.4	**0.0845**	0.015	17.7	ug/L	16	Standard
>	In	115	611378.2	0.9				ug/L	611117	Standard
	Sn	118	743.4	13.4	**0.0238**	0.017	73.3	ug/L	518	Standard
	Sb	123	656.7	25.2	**0.1264**	0.036	28.5	ug/L	127	Standard
	Ba	135	610.7	6.5	**0.2705**	0.017	6.2	ug/L	45	Standard
	Ce	140	266.7	9.2				ug/L	298	Standard
>	Tb	159	977869.4	2.5				ug/L	977942	Standard
	Ho	165	16.7	17.3				ug/L	12	Standard
	Tl	203	193.3	8.8	**0.0182**	0.002	10.2	ug/L	31	Standard
	Tl	205	168.3	10.4	**0.0207**	0.002	10.8	ug/L	20	Standard
	Pb	206	552.7	5.7	**0.0387**	0.005	12.2	ug/L	286	Standard
	Pb	207	474.0	2.6	**0.0392**	0.001	3.3	ug/L	257	Standard
	Pb	208	1934.7	0.9	**0.0422**	0.002	5.1	ug/L	956	Standard
	U	238	35.3	29.7	**0.0020**	0.001	71.8	ug/L	17	Standard
>	Bi	209	556811.8	1.3				ug/L	557080	Standard

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Na	23	3.3	173.2	**20.5038**	35.505	173.2	mg/L	0	Standard
Mg	24	10406.9	1.4	**13.7318**	0.472	3.4	mg/L	32	Standard
K	39	1353.4	4.9	**4.4093**	0.243	5.5	mg/L	30	Standard
Ca	43	183.3	3.1	**22.3899**	1.779	7.9	mg/L	48	Standard
Fe	54	14710.0	1.7	**13.1205**	0.693	5.3	mg/L	159	Standard
Fe	57	4182.2	3.4	**13.4196**	0.181	1.3	mg/L	195	Standard
Sc-1	45	39757.1	3.6				mg/L	39543	Standard
Cl	35	33087.4	2.4				ug/L	27642	Standard
Kr	83	1.3	173.2				ug/L	2	Standard
Br	81	1766.8	6.4				ug/L	1647	Standard
P	31	17728.7	3.7				ug/L	15231	Standard
S	34	2340.2	3.3				ug/L	1845	Standard
Sr	88	45.0	0.0				ug/L	70	Standard
C	12	306.7	6.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	93.3	12.4				mg/L	0	Standard
Dy	164	15.1	45.8				mg/L	12	Standard
Ho-1	165	16.7	17.3				mg/L	12	Standard
Er	166	33.3	75.5				mg/L	20	Standard
I	127	1891.8	6.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27	0.938		
Sc	45			
Ti	47	109.978		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.435	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	100.848		
Ag	107			
Cd	111			
Cd	114			
In	115			100.043
Sn	118			
Sb	123			
Ba	135			
Ce	140			
Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
Bi	209			99.952
Na	23	164.030		
Mg	24	274.635		
K	39	88.187		
Ca	43	149.266		
Fe	54	104.964		
Fe	57	107.357		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	

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QC Std 4	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Tuesday, June 28, 2016 15:06:47
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	87968.0	1.5				ug/L	81760	Standard
	Be	9	111223.4	1.1	**104.1090**	2.678	2.6	ug/L	17	Standard
	Al	27	8303576.6	1.0	**50.0632**	1.083	2.2	ug/L	1410	Standard
	Sc	45	38970.1	2.5				ug/L	39543	Standard
	Ti	47	28030.6	1.5	**112.6949**	1.093	1.0	ug/L	39	Standard
	V	51	696349.8	1.4	**100.1131**	1.784	1.8	ug/L	1415	Standard
	Cr	52	683707.3	0.8	**97.2904**	0.687	0.7	ug/L	6946	Standard
	Cr	53	91713.5	1.8	**104.2725**	1.761	1.7	ug/L	328	Standard
	Mn	55	633248.9	0.6	**97.6578**	0.701	0.7	ug/L	823	Standard
	Co	59	716430.9	0.3	**102.0719**	1.125	1.1	ug/L	252	Standard
	Ni	60	180604.4	0.8	**95.9232**	1.625	1.7	ug/L	192	Standard
	Cu	65	185052.2	0.7	**97.4326**	1.562	1.6	ug/L	141	Standard
	Zn	66	113502.2	0.3	**102.8618**	0.650	0.6	ug/L	491	Standard
>	Ge	72	514438.0	0.9				ug/L	515087	Standard
	As	75	114188.1	0.3	**101.7361**	0.865	0.8	ug/L	20	Standard
	Se	82	11752.5	0.4	**102.0988**	1.402	1.4	ug/L	15	Standard
	Se-1	77	8079.2	0.7	**106.6610**	0.727	0.7	ug/L	48	Standard
>	Ga	71	190.0	7.0				mg/L	90	Standard
	Rb	85	893.4	6.0				ug/L	23	Standard
	Y	89	434662.6	1.6				ug/L	448510	Standard
>	Rh	103	38.3	52.7				ug/L	15	Standard
	Mo	98	282406.5	1.5	**107.3339**	1.537	1.4	ug/L	11	Standard
	Ag	107	594345.7	0.8	**90.9666**	1.393	1.5	ug/L	134	Standard
	Cd	111	207638.0	0.2	**99.8149**	1.587	1.6	mg/L	7	Standard
	Cd	114	499764.2	0.7	**98.8323**	1.071	1.1	ug/L	16	Standard
>	In	115	594810.8	1.6				ug/L	611117	Standard
	Sn	118	1138.4	7.8	**0.0959**	0.015	15.6	ug/L	518	Standard
	Sb	123	463528.1	1.1	**100.9493**	2.612	2.6	ug/L	127	Standard
	Ba	135	197524.5	0.1	**98.2892**	1.431	1.5	ug/L	45	Standard
	Ce	140	85.0	21.2				ug/L	298	Standard
>	Tb	159	967938.8	1.8				ug/L	977942	Standard
	Ho	165	8.3	69.3				ug/L	12	Standard
	Tl	203	848553.4	0.8	**99.1555**	1.255	1.3	ug/L	31	Standard
	Tl	205	762572.5	0.3	**102.6175**	1.400	1.4	ug/L	20	Standard
	Pb	206	559247.5	0.6	**101.8213**	1.258	1.2	ug/L	286	Standard
	Pb	207	488004.9	0.6	**98.5027**	1.226	1.2	ug/L	257	Standard
	Pb	208	1955600.4	0.4	**102.0354**	1.641	1.6	ug/L	956	Standard
	U	238	737824.6	0.7	**101.3974**	2.083	2.1	ug/L	17	Standard
>	Bi	209	565855.3	1.5				ug/L	557080	Standard

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Na	23	3.3	86.6	**21.8863**	18.964	86.6	mg/L	0	Standard
Mg	24	10742.1	1.4	**14.4601**	0.490	3.4	mg/L	32	Standard
K	39	1261.7	7.3	**4.1815**	0.232	5.5	mg/L	30	Standard
Ca	43	183.3	29.9	**22.9918**	8.781	38.2	mg/L	48	Standard
Fe	54	15164.6	1.1	**13.7950**	0.409	3.0	mg/L	159	Standard
Fe	57	4003.9	4.1	**13.0952**	0.606	4.6	mg/L	195	Standard
Sc-1	45	38970.1	2.5				mg/L	39543	Standard
Cl	35	31476.7	2.0				ug/L	27642	Standard
Kr	83	3.3	75.5				ug/L	2	Standard
Br	81	1726.8	7.1				ug/L	1647	Standard
P	31	16804.3	1.0				ug/L	15231	Standard
S	34	2221.8	2.4				ug/L	1845	Standard
Sr	88	46.7	22.3				ug/L	70	Standard
C	12	280.0	21.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	25.2	45.9				mg/L	12	Standard
Ho-1	165	8.3	69.3				mg/L	12	Standard
Er	166	30.0	66.7				mg/L	20	Standard
I	127	1238.4	19.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	104.109		
Al	27	1.001		
Sc	45			
Ti	47	112.695		
V	51	100.113		
Cr	52	97.290		
Cr	53			
Mn	55	97.658		
Co	59	102.072		
Ni	60	95.923		
Cu	65	97.433		
Zn	66	102.862		
Ge	72		99.874	
As	75	101.736		
Se	82	102.099		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	107.334		
Ag	107	90.967		
Cd	111	99.815		
Cd	114			
In	115		97.332	
Sn	118			
Sb	123	100.949		
Ba	135	98.289		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.155		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.035		
U	238	101.397		
Bi	209		101.575	
Na	23	175.090		
Mg	24	289.203		
K	39	83.630		
Ca	43	153.278		
Fe	54	110.360		
Fe	57	104.761		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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QC Std 5	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 15:10:01
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85172.2	3.3				ug/L	81760	Standard
	Be	9	53236.8	4.1	**51.4767**	2.435	4.7	ug/L	17	Standard
	Al	27	7628795.8	0.6	**47.5256**	1.416	3.0	ug/L	1410	Standard
	Sc	45	37696.8	2.0				ug/L	39543	Standard
	Ti	47	24164.9	0.9	**98.0401**	2.312	2.4	ug/L	39	Standard
	V	51	343835.2	0.1	**49.7831**	0.751	1.5	ug/L	1415	Standard
	Cr	52	344282.1	1.0	**48.9253**	1.054	2.2	ug/L	6946	Standard
	Cr	53	43472.3	1.9	**49.7131**	1.693	3.4	ug/L	328	Standard
	Mn	55	313567.9	1.4	**48.7360**	1.405	2.9	ug/L	823	Standard
	Co	59	359786.6	1.1	**51.7171**	1.082	2.1	ug/L	252	Standard
	Ni	60	90351.3	0.3	**48.3759**	0.827	1.7	ug/L	192	Standard
	Cu	65	92251.0	0.7	**48.9699**	0.708	1.4	ug/L	141	Standard
	Zn	66	54515.2	1.1	**49.4372**	1.191	2.4	ug/L	491	Standard
>	**Ge**	72	509796.1	1.5				ug/L	515087	Standard
	As	75	55417.4	0.8	**49.8530**	1.118	2.2	ug/L	20	Standard
	Se	82	5885.8	2.0	**51.5527**	1.791	3.5	ug/L	15	Standard
	Se-1	77	3913.8	2.3	**51.7920**	1.979	3.8	ug/L	48	Standard
>	**Ga**	71	60.0	14.4				mg/L	90	Standard
	Rb	85	760.0	3.9				ug/L	23	Standard
	Y	89	437496.8	1.0				ug/L	448510	Standard
>	**Rh**	103	35.0	28.6				ug/L	15	Standard
	Mo	98	271668.8	0.6	**101.2993**	0.747	0.7	ug/L	11	Standard
	Ag	107	329448.9	0.2	**49.4598**	0.339	0.7	ug/L	134	Standard
	Cd	111	103364.2	1.7	**48.7409**	0.531	1.1	mg/L	7	Standard
	Cd	114	251263.5	1.7	**48.7432**	0.553	1.1	ug/L	16	Standard
>	**In**	115	606236.0	0.6				ug/L	611117	Standard
	Sn	118	288784.4	0.3	**49.1320**	0.341	0.7	ug/L	518	Standard
	Sb	123	235993.4	0.4	**50.4089**	0.456	0.9	ug/L	127	Standard
	Ba	135	99324.5	0.4	**48.4735**	0.237	0.5	ug/L	45	Standard
	Ce	140	126.7	35.6				ug/L	298	Standard
>	**Tb**	159	959991.8	0.1				ug/L	977942	Standard
	Ho	165	8.3	34.6				ug/L	12	Standard
	Tl	203	427212.2	0.6	**50.5774**	0.492	1.0	ug/L	31	Standard
	Tl	205	380951.0	2.1	**51.9422**	1.422	2.7	ug/L	20	Standard
	Pb	206	273119.7	0.4	**50.3511**	0.572	1.1	ug/L	286	Standard
	Pb	207	248886.2	0.4	**50.8720**	0.472	0.9	ug/L	257	Standard
	Pb	208	972505.1	1.3	**51.3811**	0.993	1.9	ug/L	956	Standard
	U	238	367751.0	1.4	**51.2030**	1.055	2.1	ug/L	17	Standard
>	**Bi**	209	558440.3	0.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4133.9	5.5	**5.7164**	0.326	5.7	mg/L	32	Standard
K	39	1253.4	8.2	**4.3011**	0.352	8.2	mg/L	30	Standard
Ca	43	70.0	37.8	**5.7557**	4.052	70.4	mg/L	48	Standard
Fe	54	5742.0	2.6	**5.3173**	0.253	4.8	mg/L	159	Standard
Fe	57	1578.4	3.1	**4.9652**	0.143	2.9	mg/L	195	Standard
> **Sc-1**	45	37696.8	2.0				mg/L	39543	Standard
Cl	35	31580.2	0.9				ug/L	27642	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	1660.1	9.6				ug/L	1647	Standard
P	31	16826.0	2.3				ug/L	15231	Standard
S	34	2313.5	5.0				ug/L	1845	Standard
Sr	88	61.7	26.1				ug/L	70	Standard
C	12	133.3	18.9				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	13.3	114.6				mg/L	12	Standard
Ho-1	165	8.3	34.6				mg/L	12	Standard
Er	166	0.0					mg/L	20	Standard
I	127	1290.1	24.6				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	102.953		
	Al	27	95.051		
	Sc	45			
	Ti	47	98.040		
	V	51	99.566		
	Cr	52	97.851		
	Cr	53			
	Mn	55	97.472		
	Co	59	103.434		
	Ni	60	96.752		
	Cu	65	97.940		
	Zn	66	98.874		
>	Ge	72		98.973	
	As	75	99.706		
	Se	82	103.105		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.299		
Ag	107	98.920		
Cd	111	97.482		
Cd	114			
In	115			99.201
Sn	118	98.264		
Sb	123	100.818		
Ba	135	96.947		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.155		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.762		
U	238	102.406		
Bi	209			100.244
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 15:13:12
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	88670.5	2.8				ug/L	81760	Standard
	Be	9	51.7	24.4	**0.0381**	0.010	27.4	ug/L	17	Standard
	Al	27	5021.0	57.4	**0.0153**	0.016	105.4	ug/L	1410	Standard
	Sc	45	39924.2	3.2				ug/L	39543	Standard
	Ti	47	36.7	33.9	**-0.0173**	0.048	276.4	ug/L	39	Standard
	V	51	1293.4	14.6	**-0.0198**	0.025	126.5	ug/L	1415	Standard
	Cr	52	6153.2	0.9	**-0.1686**	0.020	12.1	ug/L	6946	Standard
	Cr	53	480.0	7.9	**0.2078**	0.038	18.2	ug/L	328	Standard
	Mn	55	818.0	20.7	**-0.0219**	0.025	112.7	ug/L	823	Standard
	Co	59	362.0	35.7	**0.0203**	0.018	87.2	ug/L	252	Standard
	Ni	60	216.7	22.5	**0.0105**	0.024	233.6	ug/L	192	Standard
	Cu	65	206.0	48.8	**0.0177**	0.051	290.8	ug/L	141	Standard
	Zn	66	512.3	23.8	**-0.3586**	0.106	29.6	ug/L	491	Standard
>	Ge	72	512537.5	1.6				ug/L	515087	Standard
	As	75	16.6	529.1	**0.0544**	0.078	142.5	ug/L	20	Standard
	Se	82	20.8	66.0	**0.0610**	0.117	191.3	ug/L	15	Standard
	Se-1	77	56.0	20.1	**0.0270**	0.140	518.0	ug/L	48	Standard
>	Ga	71	48.3	15.8				mg/L	90	Standard
	Rb	85	23.3	32.7				ug/L	23	Standard
	Y	89	442158.0	1.4				ug/L	448510	Standard
>	Rh	103	8.3	69.3				ug/L	15	Standard
	Mo	98	390.5	34.5	**0.1230**	0.050	40.8	ug/L	11	Standard
	Ag	107	293.7	71.4	**0.0269**	0.031	115.5	ug/L	134	Standard
	Cd	111	93.5	118.9	**0.0403**	0.052	128.0	mg/L	7	Standard
	Cd	114	191.9	127.3	**0.0316**	0.047	147.6	ug/L	16	Standard
>	In	115	622178.9	0.7				ug/L	611117	Standard
	Sn	118	798.4	19.1	**0.0306**	0.025	81.3	ug/L	518	Standard
	Sb	123	1327.2	22.5	**0.2633**	0.061	23.3	ug/L	127	Standard
	Ba	135	121.3	95.4	**0.0329**	0.056	169.3	ug/L	45	Standard
	Ce	140	156.7	109.9				ug/L	298	Standard
>	Tb	159	979098.8	1.1				ug/L	977942	Standard
	Ho	165	8.3	124.9				ug/L	12	Standard
	Tl	203	319.0	100.9	**0.0316**	0.036	115.5	ug/L	31	Standard
	Tl	205	186.7	86.1	**0.0222**	0.021	94.2	ug/L	20	Standard
	Pb	206	461.3	35.4	**0.0186**	0.029	153.9	ug/L	286	Standard
	Pb	207	392.3	40.1	**0.0194**	0.031	157.4	ug/L	257	Standard
	Pb	208	1505.0	29.2	**0.0164**	0.022	134.2	ug/L	956	Standard
	U	238	157.3	69.9	**0.0181**	0.015	80.5	ug/L	17	Standard
>	Bi	209	578116.8	1.4				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	31.7	18.2	**-0.0152**	0.009	57.6	mg/L	32	Standard
K	39	23.3	49.5	**-0.0625**	0.040	64.6	mg/L	30	Standard
Ca	43	25.0	40.0	**-1.6032**	1.411	88.0	mg/L	48	Standard
Fe	54	127.6	20.0	**-0.0223**	0.025	111.2	mg/L	159	Standard
Fe	57	173.3	7.3	**-0.0450**	0.038	85.1	mg/L	195	Standard
Sc-1	45	39924.2	3.2				mg/L	39543	Standard
Cl	35	32496.1	0.6				ug/L	27642	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	1573.4	6.5				ug/L	1647	Standard
P	31	17568.5	2.8				ug/L	15231	Standard
S	34	2373.5	3.0				ug/L	1845	Standard
Sr	88	50.0	26.5				ug/L	70	Standard
C	12	106.7	19.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.5	38.4				mg/L	12	Standard
Ho-1	165	8.3	124.9				mg/L	12	Standard
Er	166	16.7	124.9				mg/L	20	Standard
I	127	1251.7	20.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.505	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.810
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.776
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Tuesday, June 28, 2016 15:16:29
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81011.1	2.2				ug/L	81760	Standard
	Be	9	195.0	20.5	**0.1880**	0.037	19.7	ug/L	17	Standard
	Al	27	1493.4	21.7	**-0.0047**	0.002	41.0	ug/L	1410	Standard
	Sc	45	36542.4	1.6				ug/L	39543	Standard
	Ti	47	30.7	9.4	**-0.0369**	0.011	30.3	ug/L	39	Standard
	V	51	3567.1	2.8	**0.3274**	0.017	5.3	ug/L	1415	Standard
	Cr	52	11052.7	0.9	**0.5951**	0.027	4.6	ug/L	6946	Standard
	Cr	53	1095.0	4.8	**0.9563**	0.056	5.9	ug/L	328	Standard
	Mn	55	3466.7	0.6	**0.4079**	0.007	1.6	ug/L	823	Standard
	Co	59	2834.6	2.1	**0.3884**	0.006	1.6	ug/L	252	Standard
	Ni	60	2871.9	0.5	**1.4818**	0.019	1.3	ug/L	192	Standard
	Cu	65	1515.4	2.2	**0.7391**	0.023	3.1	ug/L	141	Standard
	Zn	66	7448.8	1.9	**6.2435**	0.137	2.2	ug/L	491	Standard
>	**Ge**	72	495055.6	0.7				ug/L	515087	Standard
	As	75	363.8	8.2	**0.3769**	0.025	6.6	ug/L	20	Standard
	Se	82	58.7	3.6	**0.4109**	0.015	3.7	ug/L	15	Standard
	Se-1	77	71.3	17.1	**0.2665**	0.171	64.2	ug/L	48	Standard
>	**Ga**	71	38.3	19.9				mg/L	90	Standard
	Rb	85	26.7	28.6				ug/L	23	Standard
	Y	89	415588.9	2.9				ug/L	448510	Standard
>	**Rh**	103	6.7	43.3				ug/L	15	Standard
	Mo	98	101.2	14.2	**0.0199**	0.005	26.4	ug/L	11	Standard
	Ag	107	2581.2	2.0	**0.3840**	0.010	2.6	ug/L	134	Standard
	Cd	111	489.5	5.9	**0.2354**	0.013	5.3	mg/L	7	Standard
	Cd	114	1118.1	7.7	**0.2189**	0.015	6.9	ug/L	16	Standard
>	**In**	115	587241.6	1.2				ug/L	611117	Standard
	Sn	118	508.3	8.2	**-0.0124**	0.008	65.2	ug/L	518	Standard
	Sb	123	2001.1	5.7	**0.4288**	0.031	7.2	ug/L	127	Standard
	Ba	135	1392.4	6.1	**0.6767**	0.039	5.8	ug/L	45	Standard
	Ce	140	30.0	44.1				ug/L	298	Standard
>	**Tb**	159	929212.6	0.4				ug/L	977942	Standard
	Ho	165	13.3	57.3				ug/L	12	Standard
	Tl	203	711.0	4.8	**0.0804**	0.004	5.1	ug/L	31	Standard
	Tl	205	656.7	5.8	**0.0883**	0.005	5.1	ug/L	20	Standard
	Pb	206	1347.1	1.6	**0.1880**	0.004	2.0	ug/L	286	Standard
	Pb	207	1117.4	2.9	**0.1733**	0.005	3.1	ug/L	257	Standard
	Pb	208	4713.3	2.2	**0.1919**	0.007	3.7	ug/L	956	Standard
	U	238	2843.3	0.8	**0.3977**	0.005	1.3	ug/L	17	Standard
>	**Bi**	209	551791.7	0.8				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	26.7	39.0	**-0.0189**	0.015	77.3	mg/L	32	Standard
K	39	20.0	25.0	**-0.0684**	0.018	25.7	mg/L	30	Standard
Ca	43	25.0	40.0	**-1.2235**	1.703	139.2	mg/L	48	Standard
Fe	54	112.3	6.9	**-0.0270**	0.008	31.0	mg/L	159	Standard
Fe	57	200.0	28.8	**0.1050**	0.205	195.5	mg/L	195	Standard
Sc-1	45	36542.4	1.6				mg/L	39543	Standard
Cl	35	31755.9	1.1				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1523.4	8.9				ug/L	1647	Standard
P	31	12263.3	0.6				ug/L	15231	Standard
S	34	2283.5	2.6				ug/L	1845	Standard
Sr	88	63.3	25.4				ug/L	70	Standard
C	12	146.7	38.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	15.9	37.5				mg/L	12	Standard
Ho-1	165	13.3	57.3				mg/L	12	Standard
Er	166	16.7	91.7				mg/L	20	Standard
I	127	1103.4	23.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	94.012		
Al	27			
Sc	45			
Ti	47			
V	51	81.855		
Cr	52	74.385		
Cr	53			
Mn	55	81.586		
Co	59	97.096		
Ni	60	92.611		
Cu	65	92.383		
Zn	66	99.896		
Ge	72		96.111	
As	75	94.213		
Se	82	102.730		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	96.001		
Cd	111	98.068		
Cd	114			
> In	115			96.093
Sn	118			
Sb	123	107.193		
Ba	135	90.223		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.519		
Tl	205			
Pb	206			
Pb	207			
Pb	208	95.932		
U	238	99.422		
> Bi	209			99.051
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078703 WG573333-01
Sample Date/Time: Tuesday, June 28, 2016 15:24:24
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77973.6	3.5				ug/L	81760	Standard
	Be	9	93.3	32.7	**0.0882**	0.029	33.1	ug/L	17	Standard
	Al	27	522182.4	1.6	**3.5410**	0.149	4.2	ug/L	1410	Standard
	Sc	45	36268.4	3.8				ug/L	39543	Standard
	Ti	47	171.7	14.8	**0.5849**	0.118	20.2	ug/L	39	Standard
	V	51	8345.2	3.6	**1.0965**	0.041	3.8	ug/L	1415	Standard
	Cr	52	9135.4	1.3	**0.3675**	0.032	8.6	ug/L	6946	Standard
	Cr	53	715.0	6.0	**0.5424**	0.045	8.2	ug/L	328	Standard
	Mn	55	230272.3	2.4	**38.4029**	0.677	1.8	ug/L	823	Standard
	Co	59	4116.2	4.4	**0.6044**	0.024	3.9	ug/L	252	Standard
	Ni	60	2251.2	4.1	**1.1925**	0.054	4.6	ug/L	192	Standard
	Cu	65	1784.1	4.6	**0.9285**	0.051	5.5	ug/L	141	Standard
	Zn	66	3508.4	21.7	**2.6509**	0.786	29.6	ug/L	491	Standard
>	**Ge**	72	474556.6	0.9				ug/L	515087	Standard
	As	75	172.3	13.5	**0.2068**	0.024	11.5	ug/L	20	Standard
	Se	82	19.4	8.6	**0.0638**	0.017	27.3	ug/L	15	Standard
	Se-1	77	47.7	3.2	**-0.0320**	0.028	88.4	ug/L	48	Standard
>	**Ga**	71	883.4	11.6				mg/L	90	Standard
	Rb	85	7710.3	5.5				ug/L	23	Standard
	Y	89	442484.5	1.8				ug/L	448510	Standard
>	**Rh**	103	20.0	25.0				ug/L	15	Standard
	Mo	98	50.0	20.9	**0.0005**	0.004	864.7	ug/L	11	Standard
	Ag	107	103.7	35.8	**0.0001**	0.006	5294.7	ug/L	134	Standard
	Cd	111	33.9	43.4	**0.0139**	0.007	52.6	mg/L	7	Standard
	Cd	114	75.2	57.1	**0.0104**	0.009	84.2	ug/L	16	Standard
>	**In**	115	577946.8	0.2				ug/L	611117	Standard
	Sn	118	366.7	11.4	**-0.0364**	0.008	20.8	ug/L	518	Standard
	Sb	123	219.5	27.2	**0.0364**	0.013	37.0	ug/L	127	Standard
	Ba	135	15089.5	2.8	**7.7036**	0.230	3.0	ug/L	45	Standard
	Ce	140	101663.3	0.5				ug/L	298	Standard
>	**Tb**	159	912358.4	0.5				ug/L	977942	Standard
	Ho	165	1823.4	12.2				ug/L	12	Standard
	Tl	203	96.3	39.3	**0.0070**	0.005	65.1	ug/L	31	Standard
	Tl	205	60.0	22.0	**0.0062**	0.002	29.8	ug/L	20	Standard
	Pb	206	5271.9	0.9	**0.9471**	0.013	1.4	ug/L	286	Standard
	Pb	207	4329.0	2.2	**0.8620**	0.023	2.7	ug/L	257	Standard
	Pb	208	18126.6	1.5	**0.9354**	0.019	2.1	ug/L	956	Standard
	U	238	313.3	4.9	**0.0423**	0.002	4.7	ug/L	17	Standard
>	**Bi**	209	537668.4	0.5				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	30.0	60.1	**-0.0138**	0.025	183.5	mg/L	32	Standard
K	39	53.3	37.9	**0.0534**	0.067	124.6	mg/L	30	Standard
Ca	43	48.3	6.0	**2.6636**	0.532	20.0	mg/L	48	Standard
Fe	54	632.5	2.4	**0.4873**	0.016	3.2	mg/L	159	Standard
Fe	57	343.3	3.0	**0.6393**	0.010	1.6	mg/L	195	Standard
> **Sc-1**	45	36268.4	3.8				mg/L	39543	Standard
Cl	35	30788.6	1.3				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1480.1	1.8				ug/L	1647	Standard
P	31	7060.0	1.2				ug/L	15231	Standard
S	34	2285.2	6.0				ug/L	1845	Standard
Sr	88	48.3	21.5				ug/L	70	Standard
C	12	146.7	76.6				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	3101.1	5.7				mg/L	12	Standard
Ho-1	165	1823.4	12.2				mg/L	12	Standard
Er	166	1723.4	3.7				mg/L	20	Standard
I	127	1973.5	19.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.369	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.131	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.572
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.515
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606078704S WG573333-05
Sample Date/Time: Tuesday, June 28, 2016 15:27:35
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77117.5	2.8				ug/L	81760	Standard
	Be	9	2866.9	4.2	**3.0501**	0.044	1.4	ug/L	17	Standard
	Al	27	530634.0	2.5	**3.6356**	0.032	0.9	ug/L	1410	Standard
	Sc	45	36769.6	1.1				ug/L	39543	Standard
	Ti	47	373.0	7.6	**1.4053**	0.111	7.9	ug/L	39	Standard
	V	51	27357.6	1.0	**3.9153**	0.028	0.7	ug/L	1415	Standard
	Cr	52	27754.1	2.5	**3.1178**	0.072	2.3	ug/L	6946	Standard
	Cr	53	3205.3	2.9	**3.4822**	0.093	2.7	ug/L	328	Standard
	Mn	55	199454.4	1.6	**32.0700**	0.433	1.4	ug/L	823	Standard
	Co	59	21527.3	1.4	**3.1772**	0.038	1.2	ug/L	252	Standard
	Ni	60	6879.6	1.3	**3.7203**	0.017	0.5	ug/L	192	Standard
	Cu	65	6482.7	2.3	**3.4817**	0.050	1.4	ug/L	141	Standard
	Zn	66	6297.6	0.7	**5.1896**	0.074	1.4	ug/L	491	Standard
>	**Ge**	72	491870.4	0.9				ug/L	515087	Standard
	As	75	2731.5	2.2	**2.5846**	0.063	2.4	ug/L	20	Standard
	Se	82	265.3	2.1	**2.2945**	0.068	3.0	ug/L	15	Standard
	Se-1	77	206.7	1.5	**2.1542**	0.060	2.8	ug/L	48	Standard
>	**Ga**	71	993.4	9.7				mg/L	90	Standard
	Rb	85	7418.5	3.4				ug/L	23	Standard
	Y	89	432036.7	0.9				ug/L	448510	Standard
>	**Rh**	103	6.7	86.6				ug/L	15	Standard
	Mo	98	97.6	12.4	**0.0190**	0.004	23.4	ug/L	11	Standard
	Ag	107	16692.5	1.2	**2.6046**	0.053	2.0	ug/L	134	Standard
	Cd	111	5558.2	2.0	**2.7376**	0.075	2.7	mg/L	7	Standard
	Cd	114	13660.0	0.7	**2.7659**	0.042	1.5	ug/L	16	Standard
>	**In**	115	579914.2	0.8				ug/L	611117	Standard
	Sn	118	355.0	9.2	**-0.0387**	0.005	13.8	ug/L	518	Standard
	Sb	123	2408.5	2.5	**0.5252**	0.017	3.2	ug/L	127	Standard
	Ba	135	18788.0	0.3	**9.5654**	0.079	0.8	ug/L	45	Standard
	Ce	140	97333.3	0.8				ug/L	298	Standard
>	**Tb**	159	916801.1	0.1				ug/L	977942	Standard
	Ho	165	2003.5	4.3				ug/L	12	Standard
	Tl	203	21211.2	1.5	**2.5655**	0.023	0.9	ug/L	31	Standard
	Tl	205	18352.8	1.2	**2.5587**	0.022	0.9	ug/L	20	Standard
	Pb	206	18796.3	1.3	**3.4874**	0.034	1.0	ug/L	286	Standard
	Pb	207	16054.8	0.9	**3.3044**	0.015	0.5	ug/L	257	Standard
	Pb	208	66020.8	0.7	**3.5136**	0.008	0.2	ug/L	956	Standard
	U	238	18577.7	1.3	**2.6444**	0.019	0.7	ug/L	17	Standard
>	**Bi**	209	545605.1	0.6				ug/L	557080	Standard

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Na	23	3.3	86.6	**23.0608**	19.970	86.6	mg/L	0	Standard
Mg	24	33.3	17.3	**-0.0095**	0.008	83.3	mg/L	32	Standard
K	39	50.0	30.0	**0.0407**	0.057	139.0	mg/L	30	Standard
Ca	43	23.3	86.6	**-1.5565**	3.262	209.6	mg/L	48	Standard
Fe	54	789.3	5.9	**0.6315**	0.054	8.6	mg/L	159	Standard
Fe	57	388.3	19.5	**0.7873**	0.291	37.0	mg/L	195	Standard
Sc-1	45	36769.6	1.1				mg/L	39543	Standard
Cl	35	31616.3	0.3				ug/L	27642	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	1516.7	10.3				ug/L	1647	Standard
P	31	7133.3	2.5				ug/L	15231	Standard
S	34	2288.5	0.7				ug/L	1845	Standard
Sr	88	63.3	12.1				ug/L	70	Standard
C	12	90.0	50.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	3099.8	4.3				mg/L	12	Standard
Ho-1	165	2003.5	4.3				mg/L	12	Standard
Er	166	1750.1	2.1				mg/L	20	Standard
I	127	2031.8	18.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		94.322	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.493	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.894
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.940
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606078705SD WG573333-06
Sample Date/Time: Tuesday, June 28, 2016 15:30:46
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74501.2	2.9				ug/L	81760	Standard
	Be	9	2816.9	5.3	**3.1033**	0.143	4.6	ug/L	17	Standard
	Al	27	652490.2	1.4	**4.6325**	0.073	1.6	ug/L	1410	Standard
	Sc	45	35373.0	4.0				ug/L	39543	Standard
	Ti	47	288.0	4.5	**1.0503**	0.068	6.5	ug/L	39	Standard
	V	51	27556.1	4.5	**3.9507**	0.115	2.9	ug/L	1415	Standard
	Cr	52	29741.5	2.7	**3.4242**	0.036	1.1	ug/L	6946	Standard
	Cr	53	3408.7	4.0	**3.7308**	0.095	2.5	ug/L	328	Standard
	Mn	55	239390.4	1.7	**38.5872**	0.363	0.9	ug/L	823	Standard
	Co	59	21175.8	2.9	**3.1300**	0.064	2.1	ug/L	252	Standard
	Ni	60	7152.0	2.5	**3.8782**	0.013	0.3	ug/L	192	Standard
	Cu	65	6817.5	3.4	**3.6719**	0.046	1.3	ug/L	141	Standard
	Zn	66	6491.4	2.6	**5.3843**	0.067	1.2	ug/L	491	Standard
>	**Ge**	72	491074.4	2.2				ug/L	515087	Standard
	As	75	2669.0	1.7	**2.5305**	0.018	0.7	ug/L	20	Standard
	Se	82	259.6	0.9	**2.2467**	0.073	3.2	ug/L	15	Standard
	Se-1	77	214.7	9.1	**2.2690**	0.247	10.9	ug/L	48	Standard
>	**Ga**	71	1028.4	8.9				mg/L	90	Standard
	Rb	85	7220.1	2.0				ug/L	23	Standard
	Y	89	434100.4	1.8				ug/L	448510	Standard
>	**Rh**	103	11.7	24.7				ug/L	15	Standard
	Mo	98	220.7	3.6	**0.0685**	0.004	5.3	ug/L	11	Standard
	Ag	107	16241.0	2.2	**2.5784**	0.042	1.6	ug/L	134	Standard
	Cd	111	5563.7	4.0	**2.7880**	0.091	3.3	mg/L	7	Standard
	Cd	114	13468.2	1.0	**2.7750**	0.021	0.8	ug/L	16	Standard
>	**In**	115	569849.5	0.7				ug/L	611117	Standard
	Sn	118	353.3	16.1	**-0.0379**	0.010	26.3	ug/L	518	Standard
	Sb	123	2719.7	5.6	**0.6052**	0.030	5.0	ug/L	127	Standard
	Ba	135	20622.4	3.5	**10.6862**	0.314	2.9	ug/L	45	Standard
	Ce	140	98046.3	2.6				ug/L	298	Standard
>	**Tb**	159	907491.8	2.5				ug/L	977942	Standard
	Ho	165	2030.1	2.1				ug/L	12	Standard
	Tl	203	20792.6	2.1	**2.5412**	0.024	1.0	ug/L	31	Standard
	Tl	205	18564.7	0.9	**2.6157**	0.018	0.7	ug/L	20	Standard
	Pb	206	19134.8	4.2	**3.5891**	0.137	3.8	ug/L	286	Standard
	Pb	207	16318.5	3.9	**3.3949**	0.097	2.9	ug/L	257	Standard
	Pb	208	68373.0	0.9	**3.6800**	0.027	0.7	ug/L	956	Standard
	U	238	18425.5	1.4	**2.6505**	0.039	1.5	ug/L	17	Standard
>	**Bi**	209	539937.0	1.4				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	30.0	44.1	**-0.0120**	0.022	182.1	mg/L	32	Standard
K	39	43.3	29.0	**0.0214**	0.044	203.2	mg/L	30	Standard
Ca	43	31.7	50.8	**-0.0240**	2.524	10500.7	mg/L	48	Standard
Fe	54	837.2	3.3	**0.7115**	0.061	8.6	mg/L	159	Standard
Fe	57	390.0	5.9	**0.8507**	0.142	16.6	mg/L	195	Standard
> **Sc-1**	45	35373.0	4.0				mg/L	39543	Standard
Cl	35	30539.4	1.3				ug/L	27642	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	1456.7	10.3				ug/L	1647	Standard
P	31	7050.0	3.7				ug/L	15231	Standard
S	34	2141.8	2.3				ug/L	1845	Standard
Sr	88	61.7	12.4				ug/L	70	Standard
C	12	110.0	32.8				mg/L	113	Standard
N	14	6.7	86.6				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	3163.0	6.4				mg/L	12	Standard
Ho-1	165	2030.1	2.1				mg/L	12	Standard
Er	166	1753.4	8.6				mg/L	20	Standard
I	127	1965.1	14.8				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		91.122	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.338	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606078705SD WG573333-06
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.247
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.923
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606078706
Sample Date/Time: Tuesday, June 28, 2016 15:33:58
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76028.8	3.5				ug/L	81760	Standard
	Be	9	38.3	19.9	**0.0318**	0.009	27.2	ug/L	17	Standard
	Al	27	238262.4	1.5	**1.6489**	0.050	3.0	ug/L	1410	Standard
	Sc	45	37198.9	1.1				ug/L	39543	Standard
	Ti	47	135.7	11.8	**0.3914**	0.065	16.6	ug/L	39	Standard
	V	51	5276.5	1.4	**0.5679**	0.012	2.1	ug/L	1415	Standard
	Cr	52	6498.4	1.5	**-0.1047**	0.015	14.1	ug/L	6946	Standard
	Cr	53	391.7	9.7	**0.1138**	0.045	39.3	ug/L	328	Standard
	Mn	55	119285.7	3.0	**18.6233**	0.543	2.9	ug/L	823	Standard
	Co	59	1493.7	2.3	**0.1855**	0.005	2.9	ug/L	252	Standard
	Ni	60	894.4	1.7	**0.3795**	0.008	2.0	ug/L	192	Standard
	Cu	65	697.3	2.0	**0.2836**	0.007	2.5	ug/L	141	Standard
	Zn	66	2625.6	1.0	**1.6163**	0.028	1.8	ug/L	491	Standard
>	**Ge**	72	504872.7	0.1				ug/L	515087	Standard
	As	75	131.9	5.5	**0.1599**	0.007	4.3	ug/L	20	Standard
	Se	82	16.6	26.9	**0.0277**	0.040	143.8	ug/L	15	Standard
	Se-1	77	42.3	11.2	**-0.1455**	0.065	44.4	ug/L	48	Standard
>	**Ga**	71	331.7	11.3				mg/L	90	Standard
	Rb	85	2800.3	5.6				ug/L	23	Standard
	Y	89	425969.9	0.3				ug/L	448510	Standard
>	**Rh**	103	21.7	96.1				ug/L	15	Standard
	Mo	98	33.2	18.6	**-0.0062**	0.003	40.5	ug/L	11	Standard
	Ag	107	87.7	13.4	**-0.0025**	0.002	77.6	ug/L	134	Standard
	Cd	111	11.3	20.5	**0.0026**	0.001	43.1	mg/L	7	Standard
	Cd	114	30.9	19.2	**0.0013**	0.001	87.3	ug/L	16	Standard
>	**In**	115	583702.0	1.1				ug/L	611117	Standard
	Sn	118	278.3	22.7	**-0.0527**	0.011	20.3	ug/L	518	Standard
	Sb	123	103.7	16.2	**0.0102**	0.004	35.3	ug/L	127	Standard
	Ba	135	9187.1	1.4	**4.6338**	0.016	0.3	ug/L	45	Standard
	Ce	140	45456.4	1.3				ug/L	298	Standard
>	**Tb**	159	930779.6	1.7				ug/L	977942	Standard
	Ho	165	850.0	2.4				ug/L	12	Standard
	Tl	203	23.3	23.6	**-0.0020**	0.001	31.7	ug/L	31	Standard
	Tl	205	35.0	37.8	**0.0025**	0.002	71.7	ug/L	20	Standard
	Pb	206	2536.5	1.2	**0.4062**	0.009	2.2	ug/L	286	Standard
	Pb	207	2050.5	1.7	**0.3630**	0.010	2.7	ug/L	257	Standard
	Pb	208	8421.9	1.7	**0.3865**	0.010	2.6	ug/L	956	Standard
	U	238	103.3	13.1	**0.0115**	0.002	17.1	ug/L	17	Standard
>	**Bi**	209	556617.5	0.8				ug/L	557080	Standard

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Na	23	1.7	173.2	**11.3116**	19.584	173.1	mg/L	0	Standard
Mg	24	31.7	9.1	**-0.0123**	0.005	37.6	mg/L	32	Standard
K	39	50.0	10.0	**0.0383**	0.020	51.6	mg/L	30	Standard
Ca	43	18.3	103.3	**-2.3989**	3.033	126.4	mg/L	48	Standard
Fe	54	317.8	14.7	**0.1684**	0.043	25.3	mg/L	159	Standard
Fe	57	280.0	19.3	**0.3807**	0.196	51.6	mg/L	195	Standard
> **Sc-1**	45	37198.9	1.1				mg/L	39543	Standard
Cl	35	30150.0	0.9				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1330.1	6.0				ug/L	1647	Standard
P	31	7115.0	3.6				ug/L	15231	Standard
S	34	2203.5	6.4				ug/L	1845	Standard
Sr	88	73.3	23.9				ug/L	70	Standard
C	12	136.7	33.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	1461.3	2.6				mg/L	12	Standard
Ho-1	165	850.0	2.4				mg/L	12	Standard
Er	166	740.0	2.3				mg/L	20	Standard
I	127	1331.7	15.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.990	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.017	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.514
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.917
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606078708
Sample Date/Time: Tuesday, June 28, 2016 15:37:09
Number of Replicates: 3
Autosampler Position: 227
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75812.6	2.8				ug/L	81760	Standard
	Be	9	48.3	21.5	**0.0428**	0.011	26.6	ug/L	17	Standard
	Al	27	1071474.1	1.0	**7.4874**	0.284	3.8	ug/L	1410	Standard
	Sc	45	37513.1	2.1				ug/L	39543	Standard
	Ti	47	158.0	12.8	**0.5014**	0.093	18.5	ug/L	39	Standard
	V	51	6689.1	0.4	**0.8020**	0.010	1.2	ug/L	1415	Standard
	Cr	52	7515.2	0.4	**0.0743**	0.008	10.8	ug/L	6946	Standard
	Cr	53	588.3	8.1	**0.3608**	0.056	15.4	ug/L	328	Standard
	Mn	55	205213.7	2.8	**33.0324**	1.280	3.9	ug/L	823	Standard
	Co	59	2212.5	3.2	**0.2987**	0.013	4.3	ug/L	252	Standard
	Ni	60	1404.4	3.4	**0.6767**	0.035	5.1	ug/L	192	Standard
	Cu	65	1102.0	3.5	**0.5169**	0.018	3.4	ug/L	141	Standard
	Zn	66	2607.9	0.9	**1.6660**	0.041	2.5	ug/L	491	Standard
>	**Ge**	72	491532.3	1.1				ug/L	515087	Standard
	As	75	127.5	11.1	**0.1592**	0.014	8.7	ug/L	20	Standard
	Se	82	17.3	29.3	**0.0385**	0.047	123.2	ug/L	15	Standard
	Se-1	77	43.3	11.6	**-0.1157**	0.075	64.9	ug/L	48	Standard
>	**Ga**	71	450.0	13.5				mg/L	90	Standard
	Rb	85	3788.8	1.3				ug/L	23	Standard
	Y	89	433725.3	2.1				ug/L	448510	Standard
>	**Rh**	103	18.3	31.5				ug/L	15	Standard
	Mo	98	38.5	4.2	**-0.0045**	0.000	10.9	ug/L	11	Standard
	Ag	107	93.3	12.0	**-0.0020**	0.002	78.2	ug/L	134	Standard
	Cd	111	23.9	23.2	**0.0085**	0.003	31.3	mg/L	7	Standard
	Cd	114	45.7	16.0	**0.0041**	0.001	34.3	ug/L	16	Standard
>	**In**	115	598611.3	0.9				ug/L	611117	Standard
	Sn	118	346.7	46.9	**-0.0421**	0.028	66.0	ug/L	518	Standard
	Sb	123	86.1	26.8	**0.0058**	0.005	89.2	ug/L	127	Standard
	Ba	135	10124.4	4.3	**4.9826**	0.248	5.0	ug/L	45	Standard
	Ce	140	56269.4	3.6				ug/L	298	Standard
>	**Tb**	159	935742.2	1.5				ug/L	977942	Standard
	Ho	165	1033.4	8.1				ug/L	12	Standard
	Tl	203	29.7	5.1	**-0.0013**	0.000	18.3	ug/L	31	Standard
	Tl	205	31.7	18.2	**0.0020**	0.001	35.8	ug/L	20	Standard
	Pb	206	3055.6	2.0	**0.5003**	0.022	4.4	ug/L	286	Standard
	Pb	207	2503.2	3.8	**0.4542**	0.030	6.6	ug/L	257	Standard
	Pb	208	10181.4	1.0	**0.4779**	0.016	3.3	ug/L	956	Standard
	U	238	166.3	6.9	**0.0202**	0.002	9.9	ug/L	17	Standard
>	**Bi**	209	558847.5	2.0				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	26.7	28.6	**-0.0198**	0.010	52.5	mg/L	32	Standard
K	39	46.7	22.3	**0.0253**	0.040	158.3	mg/L	30	Standard
Ca	43	46.7	43.3	**2.1703**	3.421	157.6	mg/L	48	Standard
Fe	54	430.9	12.9	**0.2746**	0.059	21.6	mg/L	159	Standard
Fe	57	336.7	7.3	**0.5728**	0.068	12.0	mg/L	195	Standard
> **Sc-1**	45	37513.1	2.1				mg/L	39543	Standard
Cl	35	31262.2	0.8				ug/L	27642	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	1390.1	8.3				ug/L	1647	Standard
P	31	7195.0	0.6				ug/L	15231	Standard
S	34	2350.2	4.3				ug/L	1845	Standard
Sr	88	86.7	13.3				ug/L	70	Standard
C	12	130.0	15.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	1824.8	9.6				mg/L	12	Standard
Ho-1	165	1033.4	8.1				mg/L	12	Standard
Er	166	946.7	6.2				mg/L	20	Standard
I	127	1363.4	17.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.726	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.427	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	97.954	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.317	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078713
Sample Date/Time: Tuesday, June 28, 2016 15:40:21
Number of Replicates: 3
Autosampler Position: 228
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75663.5	2.7				ug/L	81760	Standard
	Be	9	81.7	30.2	**0.0793**	0.028	34.9	ug/L	17	Standard
	Al	27	416574.6	1.3	**2.9066**	0.048	1.7	ug/L	1410	Standard
	Sc	45	36378.7	3.4				ug/L	39543	Standard
	Ti	47	126.3	10.5	**0.3773**	0.057	15.2	ug/L	39	Standard
	V	51	8315.3	0.5	**1.0708**	0.007	0.7	ug/L	1415	Standard
	Cr	52	8765.5	1.6	**0.2875**	0.022	7.8	ug/L	6946	Standard
	Cr	53	728.4	7.9	**0.5445**	0.070	12.8	ug/L	328	Standard
	Mn	55	93455.4	1.8	**15.2441**	0.287	1.9	ug/L	823	Standard
	Co	59	3649.1	3.3	**0.5232**	0.019	3.5	ug/L	252	Standard
	Ni	60	1651.1	5.4	**0.8312**	0.052	6.2	ug/L	192	Standard
	Cu	65	1200.0	2.8	**0.5835**	0.019	3.3	ug/L	141	Standard
	Zn	66	2593.9	1.4	**1.6993**	0.037	2.2	ug/L	491	Standard
>	**Ge**	72	482399.4	0.1				ug/L	515087	Standard
	As	75	167.0	21.6	**0.1989**	0.034	17.3	ug/L	20	Standard
	Se	82	15.9	30.3	**0.0282**	0.045	158.8	ug/L	15	Standard
	Se-1	77	52.3	6.7	**0.0228**	0.050	216.8	ug/L	48	Standard
>	**Ga**	71	573.3	13.4				mg/L	90	Standard
	Rb	85	5119.2	1.4				ug/L	23	Standard
	Y	89	439888.1	1.2				ug/L	448510	Standard
>	**Rh**	103	13.3	78.1				ug/L	15	Standard
	Mo	98	43.4	10.8	**-0.0024**	0.002	79.1	ug/L	11	Standard
	Ag	107	106.7	10.0	**0.0002**	0.002	826.8	ug/L	134	Standard
	Cd	111	22.9	46.1	**0.0082**	0.005	63.6	mg/L	7	Standard
	Cd	114	51.2	44.0	**0.0052**	0.004	84.1	ug/L	16	Standard
>	**In**	115	591171.7	0.9				ug/L	611117	Standard
	Sn	118	328.3	8.7	**-0.0445**	0.005	12.1	ug/L	518	Standard
	Sb	123	88.5	32.5	**0.0066**	0.006	98.7	ug/L	127	Standard
	Ba	135	15979.8	0.8	**7.9763**	0.029	0.4	ug/L	45	Standard
	Ce	140	70630.9	0.7				ug/L	298	Standard
>	**Tb**	159	919155.3	2.1				ug/L	977942	Standard
	Ho	165	1308.4	8.9				ug/L	12	Standard
	Tl	203	43.3	33.8	**0.0005**	0.002	355.9	ug/L	31	Standard
	Tl	205	45.0	58.8	**0.0041**	0.004	93.0	ug/L	20	Standard
	Pb	206	4127.6	1.0	**0.7213**	0.011	1.5	ug/L	286	Standard
	Pb	207	3419.4	2.4	**0.6628**	0.016	2.5	ug/L	257	Standard
	Pb	208	14423.4	1.0	**0.7255**	0.013	1.8	ug/L	956	Standard
	U	238	157.3	5.4	**0.0196**	0.001	6.2	ug/L	17	Standard
>	**Bi**	209	542054.4	0.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	38.3	7.5	**-0.0016**	0.005	296.7	mg/L	32	Standard
K	39	31.7	55.5	**-0.0245**	0.065	264.7	mg/L	30	Standard
Ca	43	18.3	56.8	**-2.3425**	1.620	69.1	mg/L	48	Standard
Fe	54	638.8	9.9	**0.4927**	0.076	15.4	mg/L	159	Standard
Fe	57	368.3	10.9	**0.7248**	0.101	14.0	mg/L	195	Standard
> **Sc-1**	45	36378.7	3.4				mg/L	39543	Standard
Cl	35	31640.3	1.2				ug/L	27642	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	1476.7	9.6				ug/L	1647	Standard
P	31	7046.6	3.0				ug/L	15231	Standard
S	34	2278.5	11.1				ug/L	1845	Standard
Sr	88	80.0	28.6				ug/L	70	Standard
C	12	116.7	26.2				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2168.9	5.7				mg/L	12	Standard
Ho-1	165	1308.4	8.9				mg/L	12	Standard
Er	166	1140.0	7.8				mg/L	20	Standard
I	127	1385.1	16.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.543	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.654	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.736
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.303
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078715
Sample Date/Time: Tuesday, June 28, 2016 15:43:32
Number of Replicates: 3
Autosampler Position: 229
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72672.4	3.8				ug/L	81760	Standard
	Be	9	136.7	16.5	**0.1453**	0.027	18.6	ug/L	17	Standard
	Al	27	1143496.8	3.3	**8.3341**	0.197	2.4	ug/L	1410	Standard
	Sc	45	36597.5	3.0				ug/L	39543	Standard
	Ti	47	230.0	1.3	**0.8041**	0.017	2.1	ug/L	39	Standard
	V	51	11413.9	1.0	**1.5144**	0.038	2.5	ug/L	1415	Standard
	Cr	52	15036.8	0.3	**1.2067**	0.029	2.4	ug/L	6946	Standard
	Cr	53	1373.4	5.7	**1.2975**	0.078	6.0	ug/L	328	Standard
	Mn	55	293360.4	0.3	**47.2738**	0.683	1.4	ug/L	823	Standard
	Co	59	6852.2	0.9	**0.9907**	0.018	1.8	ug/L	252	Standard
	Ni	60	4182.9	0.4	**2.2225**	0.021	0.9	ug/L	192	Standard
	Cu	65	2749.2	1.6	**1.4253**	0.010	0.7	ug/L	141	Standard
	Zn	66	5934.8	0.5	**4.8465**	0.046	1.0	ug/L	491	Standard
>	**Ge**	72	491565.9	1.3				ug/L	515087	Standard
	As	75	281.2	9.9	**0.3023**	0.024	7.9	ug/L	20	Standard
	Se	82	16.6	41.5	**0.0313**	0.062	197.6	ug/L	15	Standard
	Se-1	77	52.7	11.4	**0.0136**	0.082	602.5	ug/L	48	Standard
>	**Ga**	71	1726.8	3.8				mg/L	90	Standard
	Rb	85	17453.4	2.4				ug/L	23	Standard
	Y	89	433246.4	2.7				ug/L	448510	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	40.4	18.8	**-0.0027**	0.003	116.5	ug/L	11	Standard
	Ag	107	118.3	7.6	**0.0030**	0.002	54.7	ug/L	134	Standard
	Cd	111	36.9	12.4	**0.0159**	0.002	13.6	mg/L	7	Standard
	Cd	114	100.1	28.9	**0.0161**	0.006	36.4	ug/L	16	Standard
>	**In**	115	559969.6	1.0				ug/L	611117	Standard
	Sn	118	245.0	14.3	**-0.0567**	0.006	11.1	ug/L	518	Standard
	Sb	123	73.5	14.6	**0.0042**	0.003	63.0	ug/L	127	Standard
	Ba	135	26697.5	0.7	**14.0890**	0.209	1.5	ug/L	45	Standard
	Ce	140	126090.9	1.2				ug/L	298	Standard
>	**Tb**	159	888471.0	0.2				ug/L	977942	Standard
	Ho	165	2013.5	3.3				ug/L	12	Standard
	Tl	203	105.3	16.7	**0.0083**	0.002	26.4	ug/L	31	Standard
	Tl	205	98.3	26.1	**0.0118**	0.004	31.7	ug/L	20	Standard
	Pb	206	7239.7	1.0	**1.3394**	0.022	1.6	ug/L	286	Standard
	Pb	207	5907.2	0.7	**1.2110**	0.009	0.7	ug/L	257	Standard
	Pb	208	24779.9	1.0	**1.3155**	0.008	0.6	ug/L	956	Standard
	U	238	285.0	3.3	**0.0387**	0.001	3.3	ug/L	17	Standard
>	**Bi**	209	531928.0	0.6				ug/L	557080	Standard

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Na	23	1.7	173.2	**11.1992**	19.389	173.1	mg/L	0	Standard
Mg	24	35.0	0.0	**-0.0068**	0.002	22.3	mg/L	32	Standard
K	39	70.0	24.7	**0.1145**	0.065	56.7	mg/L	30	Standard
Ca	43	41.7	48.5	**1.5107**	3.417	226.2	mg/L	48	Standard
Fe	54	1498.6	2.3	**1.3298**	0.075	5.6	mg/L	159	Standard
Fe	57	515.0	3.5	**1.2558**	0.109	8.7	mg/L	195	Standard
> **Sc-1**	45	36597.5	3.0				mg/L	39543	Standard
Cl	35	30785.2	1.5				ug/L	27642	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	1506.7	9.5				ug/L	1647	Standard
P	31	6974.9	2.8				ug/L	15231	Standard
S	34	2301.8	4.8				ug/L	1845	Standard
Sr	88	70.0	28.6				ug/L	70	Standard
C	12	113.3	31.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	3365.6	4.6				mg/L	12	Standard
Ho-1	165	2013.5	3.3				mg/L	12	Standard
Er	166	1770.1	9.2				mg/L	20	Standard
I	127	1690.1	9.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.885	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.434	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.631
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.485
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078716
Sample Date/Time: Tuesday, June 28, 2016 15:46:44
Number of Replicates: 3
Autosampler Position: 230
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72657.2	3.0				ug/L	81760	Standard
	Be	9	110.0	13.6	**0.1151**	0.019	16.6	ug/L	17	Standard
	Al	27	964168.3	0.2	**7.0283**	0.202	2.9	ug/L	1410	Standard
	Sc	45	36550.7	1.7				ug/L	39543	Standard
	Ti	47	122.3	2.9	**0.3511**	0.018	5.2	ug/L	39	Standard
	V	51	5582.1	3.3	**0.6361**	0.029	4.5	ug/L	1415	Standard
	Cr	52	12113.5	1.9	**0.7686**	0.019	2.4	ug/L	6946	Standard
	Cr	53	1075.0	5.2	**0.9442**	0.085	9.0	ug/L	328	Standard
	Mn	55	296391.3	0.6	**47.8289**	1.096	2.3	ug/L	823	Standard
	Co	59	5108.9	2.5	**0.7319**	0.032	4.3	ug/L	252	Standard
	Ni	60	3102.7	1.4	**1.6241**	0.056	3.4	ug/L	192	Standard
	Cu	65	3067.6	0.7	**1.6034**	0.043	2.7	ug/L	141	Standard
	Zn	66	5597.7	1.7	**4.5323**	0.178	3.9	ug/L	491	Standard
>	**Ge**	72	490975.8	1.9				ug/L	515087	Standard
	As	75	34.9	42.7	**0.0731**	0.015	20.1	ug/L	20	Standard
	Se	82	17.1	13.6	**0.0368**	0.020	54.2	ug/L	15	Standard
	Se-1	77	53.7	6.0	**0.0281**	0.032	114.8	ug/L	48	Standard
>	**Ga**	71	1235.1	6.5				mg/L	90	Standard
	Rb	85	7633.6	0.9				ug/L	23	Standard
	Y	89	431776.8	2.6				ug/L	448510	Standard
>	**Rh**	103	15.0	66.7				ug/L	15	Standard
	Mo	98	19.3	30.7	**-0.0115**	0.002	20.4	ug/L	11	Standard
	Ag	107	114.7	7.5	**0.0018**	0.001	48.3	ug/L	134	Standard
	Cd	111	65.3	10.2	**0.0294**	0.003	8.8	mg/L	7	Standard
	Cd	114	154.6	13.1	**0.0266**	0.003	12.9	ug/L	16	Standard
>	**In**	115	577281.8	2.6				ug/L	611117	Standard
	Sn	118	261.7	10.5	**-0.0551**	0.004	6.8	ug/L	518	Standard
	Sb	123	70.5	12.0	**0.0029**	0.001	50.3	ug/L	127	Standard
	Ba	135	31515.4	1.1	**16.1422**	0.456	2.8	ug/L	45	Standard
	Ce	140	108483.7	1.5				ug/L	298	Standard
>	**Tb**	159	919053.3	0.1				ug/L	977942	Standard
	Ho	165	2146.8	3.5				ug/L	12	Standard
	Tl	203	55.7	15.3	**0.0020**	0.001	51.1	ug/L	31	Standard
	Tl	205	56.7	10.2	**0.0057**	0.001	13.8	ug/L	20	Standard
	Pb	206	8383.7	0.8	**1.5358**	0.026	1.7	ug/L	286	Standard
	Pb	207	6950.9	2.1	**1.4122**	0.046	3.3	ug/L	257	Standard
	Pb	208	28623.6	0.6	**1.5044**	0.028	1.9	ug/L	956	Standard
	U	238	278.7	6.7	**0.0371**	0.002	6.0	ug/L	17	Standard
>	**Bi**	209	540360.9	1.3				ug/L	557080	Standard

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Na	23	3.3	86.6	**23.0232**	19.940	86.6	mg/L	0	Standard
Mg	24	31.7	36.5	**-0.0117**	0.016	134.2	mg/L	32	Standard
K	39	40.0	57.3	**0.0042**	0.082	1950.6	mg/L	30	Standard
Ca	43	45.0	19.2	**2.0338**	1.285	63.2	mg/L	48	Standard
Fe	54	558.7	3.5	**0.4103**	0.028	6.8	mg/L	159	Standard
Fe	57	366.7	19.3	**0.7123**	0.240	33.7	mg/L	195	Standard
> **Sc-1**	45	36550.7	1.7				mg/L	39543	Standard
Cl	35	30424.5	0.4				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	1540.1	8.3				ug/L	1647	Standard
P	31	6878.2	1.3				ug/L	15231	Standard
S	34	2278.5	4.6				ug/L	1845	Standard
Sr	88	71.7	29.0				ug/L	70	Standard
C	12	150.0	33.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	0	Standard
Dy	164	3587.7	5.2				mg/L	12	Standard
Ho-1	165	2146.8	3.5				mg/L	12	Standard
Er	166	1936.8	10.5				mg/L	20	Standard
I	127	1943.5	8.8				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.866	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.319	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.463
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.999
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606078717
Sample Date/Time: Tuesday, June 28, 2016 15:49:55
Number of Replicates: 3
Autosampler Position: 231
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72923.4	1.2				ug/L	81760	Standard
	Be	9	50.0	43.6	**0.0466**	0.024	52.0	ug/L	17	Standard
	Al	27	245816.4	0.3	**1.7738**	0.027	1.5	ug/L	1410	Standard
	Sc	45	37411.1	1.3				ug/L	39543	Standard
	Ti	47	150.7	7.6	**0.4619**	0.045	9.8	ug/L	39	Standard
	V	51	5992.6	2.2	**0.6857**	0.015	2.1	ug/L	1415	Standard
	Cr	52	7687.3	1.9	**0.0860**	0.027	31.9	ug/L	6946	Standard
	Cr	53	518.3	10.1	**0.2697**	0.061	22.7	ug/L	328	Standard
	Mn	55	119301.5	0.3	**18.8992**	0.085	0.4	ug/L	823	Standard
	Co	59	2188.2	2.9	**0.2910**	0.008	2.8	ug/L	252	Standard
	Ni	60	1191.7	0.5	**0.5500**	0.007	1.2	ug/L	192	Standard
	Cu	65	843.0	2.1	**0.3684**	0.010	2.8	ug/L	141	Standard
	Zn	66	2526.9	1.6	**1.5588**	0.051	3.2	ug/L	491	Standard
>	**Ge**	72	497647.3	0.6				ug/L	515087	Standard
	As	75	96.2	13.8	**0.1289**	0.013	9.7	ug/L	20	Standard
	Se	82	10.6	36.2	**-0.0241**	0.035	144.8	ug/L	15	Standard
	Se-1	77	46.0	14.3	**-0.0871**	0.088	100.8	ug/L	48	Standard
>	**Ga**	71	388.3	9.7				mg/L	90	Standard
	Rb	85	3552.1	4.5				ug/L	23	Standard
	Y	89	408184.3	3.4				ug/L	448510	Standard
>	**Rh**	103	16.7	17.3				ug/L	15	Standard
	Mo	98	62.0	6.5	**0.0053**	0.001	22.5	ug/L	11	Standard
	Ag	107	95.7	11.7	**-0.0010**	0.002	195.1	ug/L	134	Standard
	Cd	111	10.9	9.2	**0.0025**	0.001	23.6	mg/L	7	Standard
	Cd	114	23.2	24.4	**-0.0002**	0.001	811.4	ug/L	16	Standard
>	**In**	115	574185.6	1.8				ug/L	611117	Standard
	Sn	118	255.0	18.7	**-0.0561**	0.008	14.6	ug/L	518	Standard
	Sb	123	68.2	5.6	**0.0025**	0.001	35.8	ug/L	127	Standard
	Ba	135	10138.1	0.2	**5.2024**	0.085	1.6	ug/L	45	Standard
	Ce	140	49457.3	0.9				ug/L	298	Standard
>	**Tb**	159	906877.5	2.2				ug/L	977942	Standard
	Ho	165	853.4	7.8				ug/L	12	Standard
	Tl	203	26.0	16.8	**-0.0016**	0.001	32.4	ug/L	31	Standard
	Tl	205	21.7	26.6	**0.0008**	0.001	106.7	ug/L	20	Standard
	Pb	206	2799.3	1.6	**0.4682**	0.011	2.3	ug/L	286	Standard
	Pb	207	2286.8	2.0	**0.4236**	0.011	2.7	ug/L	257	Standard
	Pb	208	9380.8	1.4	**0.4502**	0.009	2.0	ug/L	956	Standard
	U	238	106.7	2.9	**0.0123**	0.000	3.6	ug/L	17	Standard
>	**Bi**	209	542636.2	0.5				ug/L	557080	Standard

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Na	23	3.3	86.6	**22.4620**	19.449	86.6	mg/L	0	Standard
Mg	24	26.7	21.7	**-0.0196**	0.008	42.2	mg/L	32	Standard
K	39	36.7	7.9	**-0.0105**	0.010	94.8	mg/L	30	Standard
Ca	43	36.7	56.8	**0.5265**	3.309	628.5	mg/L	48	Standard
Fe	54	389.3	2.1	**0.2354**	0.013	5.4	mg/L	159	Standard
Fe	57	280.0	3.1	**0.3744**	0.024	6.3	mg/L	195	Standard
Sc-1	45	37411.1	1.3				mg/L	39543	Standard
Cl	35	30529.4	0.4				ug/L	27642	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1530.1	5.4				ug/L	1647	Standard
P	31	7263.4	2.6				ug/L	15231	Standard
S	34	2140.2	5.9				ug/L	1845	Standard
Sr	88	53.3	23.6				ug/L	70	Standard
C	12	100.0	75.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	1448.1	5.9				mg/L	12	Standard
Ho-1	165	853.4	7.8				mg/L	12	Standard
Er	166	736.7	15.9				mg/L	20	Standard
I	127	6059.5	4.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		89.192	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.614	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.957
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.407
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 15:53:08
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80037.6	2.2				ug/L	81760	Standard
	Be	9	50415.4	0.4	**51.8632**	1.062	2.0	ug/L	17	Standard
	Al	27	7611642.9	1.2	**50.4371**	0.677	1.3	ug/L	1410	Standard
	Sc	45	41097.3	0.2				ug/L	39543	Standard
	Ti	47	25369.9	1.7	**101.8781**	2.068	2.0	ug/L	39	Standard
	V	51	351293.9	2.1	**50.3394**	0.543	1.1	ug/L	1415	Standard
	Cr	52	361193.1	2.4	**50.8341**	0.636	1.3	ug/L	6946	Standard
	Cr	53	45189.0	2.1	**51.1421**	0.625	1.2	ug/L	328	Standard
	Mn	55	322540.4	1.4	**49.6098**	0.122	0.2	ug/L	823	Standard
	Co	59	356756.8	0.9	**50.7536**	0.285	0.6	ug/L	252	Standard
	Ni	60	97064.3	2.1	**51.4369**	0.357	0.7	ug/L	192	Standard
	Cu	65	97360.2	2.2	**51.1525**	0.591	1.2	ug/L	141	Standard
	Zn	66	56918.1	2.1	**51.1056**	0.446	0.9	ug/L	491	Standard
>	Ge	72	515026.5	1.4				ug/L	515087	Standard
	As	75	56903.6	1.1	**50.6598**	0.179	0.4	ug/L	20	Standard
	Se	82	5856.2	1.8	**50.7515**	0.222	0.4	ug/L	15	Standard
	Se-1	77	3927.8	0.7	**51.4293**	0.511	1.0	ug/L	48	Standard
>	Ga	71	66.7	30.3				mg/L	90	Standard
	Rb	85	760.0	4.6				ug/L	23	Standard
	Y	89	447852.9	1.0				ug/L	448510	Standard
>	Rh	103	25.0	34.6				ug/L	15	Standard
	Mo	98	271272.3	0.9	**98.6404**	1.710	1.7	ug/L	11	Standard
	Ag	107	339950.6	2.5	**49.7752**	1.742	3.5	ug/L	134	Standard
	Cd	111	107240.7	1.0	**49.3177**	0.985	2.0	mg/L	7	Standard
	Cd	114	262943.6	0.6	**49.7461**	0.816	1.6	ug/L	16	Standard
>	In	115	621725.8	1.1				ug/L	611117	Standard
	Sn	118	299388.1	2.0	**49.6643**	0.590	1.2	ug/L	518	Standard
	Sb	123	239448.5	1.8	**49.8807**	1.390	2.8	ug/L	127	Standard
	Ba	135	102748.9	0.7	**48.8974**	0.441	0.9	ug/L	45	Standard
	Ce	140	90.0	5.6				ug/L	298	Standard
>	Tb	159	985013.6	1.3				ug/L	977942	Standard
	Ho	165	16.7	45.8				ug/L	12	Standard
	Tl	203	430595.1	1.2	**49.9408**	0.227	0.5	ug/L	31	Standard
	Tl	205	380549.9	0.8	**50.8302**	0.446	0.9	ug/L	20	Standard
	Pb	206	272066.9	1.5	**49.1343**	0.429	0.9	ug/L	286	Standard
	Pb	207	246215.9	1.8	**49.3013**	0.781	1.6	ug/L	257	Standard
	Pb	208	985827.4	0.9	**51.0241**	0.323	0.6	ug/L	956	Standard
	U	238	363383.0	0.6	**49.5660**	0.508	1.0	ug/L	17	Standard
>	Bi	209	570034.9	1.5				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.2894**	17.813	173.1	mg/L	0	Standard
Mg	24	3815.5	2.6	**4.8299**	0.134	2.8	mg/L	32	Standard
K	39	1281.7	1.9	**4.0254**	0.078	1.9	mg/L	30	Standard
Ca	43	63.3	19.9	**3.9099**	1.840	47.1	mg/L	48	Standard
Fe	54	5945.2	1.8	**5.0400**	0.102	2.0	mg/L	159	Standard
Fe	57	1733.4	4.2	**5.0061**	0.238	4.8	mg/L	195	Standard
> **Sc-1**	45	41097.3	0.2				mg/L	39543	Standard
Cl	35	35020.4	1.1				ug/L	27642	Standard
Kr	83	3.0	57.7				ug/L	2	Standard
Br	81	1666.8	6.4				ug/L	1647	Standard
P	31	18748.3	2.5				ug/L	15231	Standard
S	34	2583.6	5.3				ug/L	1845	Standard
Sr	88	53.3	28.6				ug/L	70	Standard
C	12	110.0	24.1				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.4	101.7				mg/L	12	Standard
Ho-1	165	16.7	45.8				mg/L	12	Standard
Er	166	13.3	86.6				mg/L	20	Standard
I	127	1388.4	22.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	103.726		
Al	27	100.874		
Sc	45			
Ti	47	101.878		
V	51	100.679		
Cr	52	101.668		
Cr	53			
Mn	55	99.220		
Co	59	101.507		
Ni	60	102.874		
Cu	65	102.305		
Zn	66	102.211		
> Ge	72		99.988	
As	75	101.320		
Se	82	101.503		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	98.640		
Ag	107	99.550		
Cd	111	98.635		
Cd	114			
In	115			101.736
Sn	118	99.329		
Sb	123	99.761		
Ba	135	97.795		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.882		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.048		
U	238	99.132		
Bi	209			102.325
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 15:56:20
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79843.2	1.6				ug/L	81760	Standard
	Be	9	23.3	75.3	**0.0144**	0.018	125.7	ug/L	17	Standard
	Al	27	2505.2	18.4	**0.0022**	0.003	136.7	ug/L	1410	Standard
	Sc	45	39966.0	1.7				ug/L	39543	Standard
	Ti	47	35.3	11.4	**-0.0209**	0.017	83.6	ug/L	39	Standard
	V	51	1133.0	9.8	**-0.0412**	0.016	39.7	ug/L	1415	Standard
	Cr	52	6206.9	2.0	**-0.1524**	0.017	11.1	ug/L	6946	Standard
	Cr	53	315.0	2.7	**0.0227**	0.013	56.9	ug/L	328	Standard
	Mn	55	686.0	7.5	**-0.0412**	0.007	17.6	ug/L	823	Standard
	Co	59	254.3	2.2	**0.0054**	0.001	12.6	ug/L	252	Standard
	Ni	60	171.3	1.2	**-0.0127**	0.001	8.3	ug/L	192	Standard
	Cu	65	123.3	12.6	**-0.0250**	0.008	31.0	ug/L	141	Standard
	Zn	66	449.3	3.1	**-0.4117**	0.013	3.2	ug/L	491	Standard
>	**Ge**	72	507665.8	0.8				ug/L	515087	Standard
	As	75	-25.2	101.2	**0.0174**	0.023	132.3	ug/L	20	Standard
	Se	82	17.2	13.7	**0.0322**	0.020	60.6	ug/L	15	Standard
	Se-1	77	51.3	10.7	**-0.0277**	0.072	260.3	ug/L	48	Standard
>	**Ga**	71	48.3	15.8				mg/L	90	Standard
	Rb	85	30.0	44.1				ug/L	23	Standard
	Y	89	444982.9	1.9				ug/L	448510	Standard
>	**Rh**	103	16.7	34.6				ug/L	15	Standard
	Mo	98	252.7	24.3	**0.0725**	0.022	30.7	ug/L	11	Standard
	Ag	107	129.7	3.6	**0.0027**	0.001	26.2	ug/L	134	Standard
	Cd	111	17.2	9.0	**0.0050**	0.001	14.0	mg/L	7	Standard
	Cd	114	47.7	10.5	**0.0041**	0.001	23.1	ug/L	16	Standard
>	**In**	115	623883.8	0.1				ug/L	611117	Standard
	Sn	118	770.0	14.1	**0.0256**	0.018	70.0	ug/L	518	Standard
	Sb	123	507.4	30.1	**0.0925**	0.032	34.2	ug/L	127	Standard
	Ba	135	38.7	5.4	**-0.0068**	0.001	14.6	ug/L	45	Standard
	Ce	140	40.0	21.7				ug/L	298	Standard
>	**Tb**	159	974680.3	0.5				ug/L	977942	Standard
	Ho	165	13.3	78.1				ug/L	12	Standard
	Tl	203	68.0	6.7	**0.0032**	0.001	15.5	ug/L	31	Standard
	Tl	205	66.7	11.5	**0.0068**	0.001	14.7	ug/L	20	Standard
	Pb	206	289.3	1.4	**-0.0104**	0.001	6.9	ug/L	286	Standard
	Pb	207	250.7	7.8	**-0.0070**	0.004	55.4	ug/L	257	Standard
	Pb	208	1099.7	2.8	**-0.0025**	0.002	60.9	ug/L	956	Standard
	U	238	62.3	42.5	**0.0057**	0.004	64.1	ug/L	17	Standard
>	**Bi**	209	560756.1	0.5				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	33.3	45.8	**-0.0130**	0.021	161.7	mg/L	32	Standard
K	39	33.3	17.3	**-0.0301**	0.018	60.0	mg/L	30	Standard
Ca	43	38.3	27.2	**0.4086**	1.513	370.3	mg/L	48	Standard
Fe	54	141.0	17.0	**-0.0107**	0.022	208.8	mg/L	159	Standard
Fe	57	213.3	13.7	**0.0887**	0.105	118.5	mg/L	195	Standard
> **Sc-1**	45	39966.0	1.7				mg/L	39543	Standard
Cl	35	34581.4	2.4				ug/L	27642	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	1706.8	4.2				ug/L	1647	Standard
P	31	18139.2	2.9				ug/L	15231	Standard
S	34	2418.5	8.0				ug/L	1845	Standard
Sr	88	68.3	11.2				ug/L	70	Standard
C	12	130.0	53.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.8	101.7				mg/L	12	Standard
Ho-1	165	13.3	78.1				mg/L	12	Standard
Er	166	3.3	173.2				mg/L	20	Standard
I	127	1121.7	18.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.559	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.089
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.660
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW 45 WG573751-04
Sample Date/Time: Tuesday, June 28, 2016 15:59:33
Number of Replicates: 3
Autosampler Position: 232
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80427.9	0.7				ug/L	81760	Standard
	Be	9	20.0	43.3	**0.0107**	0.009	82.0	ug/L	17	Standard
	Al	27	16896.1	3.6	**0.0970**	0.004	4.0	ug/L	1410	Standard
	Sc	45	39630.1	2.3				ug/L	39543	Standard
	Ti	47	34.3	28.0	**-0.0290**	0.037	127.4	ug/L	39	Standard
	V	51	1241.7	7.6	**-0.0303**	0.012	39.4	ug/L	1415	Standard
	Cr	52	8808.2	2.5	**0.1923**	0.015	7.8	ug/L	6946	Standard
	Cr	53	705.0	11.9	**0.4526**	0.107	23.5	ug/L	328	Standard
	Mn	55	5471.7	0.3	**0.6851**	0.014	2.1	ug/L	823	Standard
	Co	59	272.7	7.3	**0.0070**	0.003	48.0	ug/L	252	Standard
	Ni	60	321.0	11.4	**0.0633**	0.019	30.2	ug/L	192	Standard
	Cu	65	232.7	11.6	**0.0301**	0.014	46.8	ug/L	141	Standard
	Zn	66	2018.1	1.4	**0.9905**	0.004	0.4	ug/L	491	Standard
>	**Ge**	72	521638.1	1.4				ug/L	515087	Standard
	As	75	-54.9	36.7	**-0.0079**	0.017	218.9	ug/L	20	Standard
	Se	82	10.0	20.3	**-0.0338**	0.018	54.1	ug/L	15	Standard
	Se-1	77	48.0	14.4	**-0.0888**	0.100	112.7	ug/L	48	Standard
>	**Ga**	71	53.3	28.6				mg/L	90	Standard
	Rb	85	156.7	21.7				ug/L	23	Standard
	Y	89	436462.5	0.8				ug/L	448510	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	82.2	21.1	**0.0108**	0.006	59.5	ug/L	11	Standard
	Ag	107	93.7	16.2	**-0.0025**	0.002	87.2	ug/L	134	Standard
	Cd	111	11.9	25.2	**0.0025**	0.001	54.5	mg/L	7	Standard
	Cd	114	46.6	47.9	**0.0039**	0.004	108.7	ug/L	16	Standard
>	**In**	115	622987.2	0.5				ug/L	611117	Standard
	Sn	118	873.4	7.7	**0.0429**	0.010	24.2	ug/L	518	Standard
	Sb	123	225.0	36.0	**0.0339**	0.017	49.6	ug/L	127	Standard
	Ba	135	668.7	0.9	**0.2926**	0.004	1.5	ug/L	45	Standard
	Ce	140	103.3	7.4				ug/L	298	Standard
>	**Tb**	159	980754.1	0.6				ug/L	977942	Standard
	Ho	165	13.3	78.1				ug/L	12	Standard
	Tl	203	31.7	30.7	**-0.0012**	0.001	94.5	ug/L	31	Standard
	Tl	205	30.0	86.6	**0.0017**	0.003	203.8	ug/L	20	Standard
	Pb	206	380.3	5.4	**0.0044**	0.003	72.4	ug/L	286	Standard
	Pb	207	331.3	8.5	**0.0076**	0.005	67.3	ug/L	257	Standard
	Pb	208	1302.7	2.5	**0.0063**	0.001	19.3	ug/L	956	Standard
	U	238	25.3	53.6	**0.0004**	0.002	408.2	ug/L	17	Standard
>	**Bi**	209	576453.2	0.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	33.3	8.7	**-0.0129**	0.003	22.5	mg/L	32	Standard
K	39	48.3	15.8	**0.0218**	0.028	129.2	mg/L	30	Standard
Ca	43	18.3	78.7	**-2.5918**	2.118	81.7	mg/L	48	Standard
Fe	54	122.7	28.9	**-0.0266**	0.030	114.3	mg/L	159	Standard
Fe	57	223.3	24.1	**0.1269**	0.176	138.7	mg/L	195	Standard
Sc-1	45	39630.1	2.3				mg/L	39543	Standard
Cl	35	33807.0	1.7				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1633.4	2.0				ug/L	1647	Standard
P	31	17535.1	2.2				ug/L	15231	Standard
S	34	2338.5	7.5				ug/L	1845	Standard
Sr	88	75.0	30.6				ug/L	70	Standard
C	12	106.7	19.5				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.4	3.0				mg/L	12	Standard
Ho-1	165	13.3	78.1				mg/L	12	Standard
Er	166	13.3	43.3				mg/L	20	Standard
I	127	955.0	19.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		98.371	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.272	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.942
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.478
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 45 WG573451-05
Sample Date/Time: Tuesday, June 28, 2016 16:02:44
Number of Replicates: 3
Autosampler Position: 233
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81285.8	1.4				ug/L	81760	Standard
	Be	9	49444.0	4.0	**50.0648**	1.744	3.5	ug/L	17	Standard
	Al	27	14440.2	1.6	**0.0798**	0.002	2.1	ug/L	1410	Standard
	Sc	45	40522.5	4.2				ug/L	39543	Standard
	Ti	47	35.7	14.1	**-0.0217**	0.021	96.5	ug/L	39	Standard
	V	51	343445.8	1.5	**49.2175**	1.714	3.5	ug/L	1415	Standard
	Cr	52	355835.3	1.6	**50.0593**	1.026	2.0	ug/L	6946	Standard
	Cr	53	43403.8	4.1	**49.0831**	1.336	2.7	ug/L	328	Standard
	Mn	55	327263.1	1.9	**50.3439**	1.847	3.7	ug/L	823	Standard
	Co	59	357909.9	1.9	**50.9146**	1.589	3.1	ug/L	252	Standard
	Ni	60	94484.4	2.0	**50.0595**	0.992	2.0	ug/L	192	Standard
	Cu	65	95887.5	1.7	**50.3702**	0.997	2.0	ug/L	141	Standard
	Zn	66	56697.9	0.9	**50.8990**	0.801	1.6	ug/L	491	Standard
>	**Ge**	72	515232.3	2.4				ug/L	515087	Standard
	As	75	56137.8	1.3	**49.9742**	1.270	2.5	ug/L	20	Standard
	Se	82	5754.2	0.4	**49.8676**	1.316	2.6	ug/L	15	Standard
	Se-1	77	3847.2	2.4	**50.3547**	1.829	3.6	ug/L	48	Standard
>	**Ga**	71	80.0	38.0				mg/L	90	Standard
	Rb	85	45.0	58.8				ug/L	23	Standard
	Y	89	449389.0	2.2				ug/L	448510	Standard
>	**Rh**	103	28.3	66.8				ug/L	15	Standard
	Mo	98	72.0	12.6	**0.0070**	0.003	48.7	ug/L	11	Standard
	Ag	107	332360.6	2.0	**48.5009**	1.256	2.6	ug/L	134	Standard
	Cd	111	105950.1	2.1	**48.5677**	1.420	2.9	mg/L	7	Standard
	Cd	114	259244.9	2.6	**48.8950**	1.818	3.7	ug/L	16	Standard
>	**In**	115	623755.7	1.2				ug/L	611117	Standard
	Sn	118	950.0	6.3	**0.0554**	0.008	14.9	ug/L	518	Standard
	Sb	123	235787.4	1.4	**48.9583**	1.261	2.6	ug/L	127	Standard
	Ba	135	101234.2	2.5	**48.0272**	1.604	3.3	ug/L	45	Standard
	Ce	140	53.3	5.4				ug/L	298	Standard
>	**Tb**	159	962831.7	2.3				ug/L	977942	Standard
	Ho	165	6.7	114.6				ug/L	12	Standard
	Tl	203	424492.3	2.2	**49.7361**	1.545	3.1	ug/L	31	Standard
	Tl	205	378457.4	1.6	**51.0672**	1.520	3.0	ug/L	20	Standard
	Pb	206	276584.3	1.3	**50.4636**	1.380	2.7	ug/L	286	Standard
	Pb	207	241372.6	1.3	**48.8258**	1.366	2.8	ug/L	257	Standard
	Pb	208	990155.6	1.9	**51.7752**	1.712	3.3	ug/L	956	Standard
	U	238	358184.2	2.6	**49.3578**	1.903	3.9	ug/L	17	Standard
>	**Bi**	209	564381.2	1.4				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.8762**	18.829	173.1	mg/L	0	Standard
Mg	24	28.3	71.3	**-0.0199**	0.028	139.9	mg/L	32	Standard
K	39	45.0	40.1	**0.0061**	0.057	941.7	mg/L	30	Standard
Ca	43	25.0	60.0	**-1.6629**	2.211	133.0	mg/L	48	Standard
Fe	54	141.6	12.0	**-0.0123**	0.010	79.8	mg/L	159	Standard
Fe	57	180.0	5.6	**-0.0319**	0.009	26.7	mg/L	195	Standard
Sc-1	45	40522.5	4.2				mg/L	39543	Standard
Cl	35	33285.9	3.1				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	5364.3	7.6				ug/L	1647	Standard
P	31	17471.7	4.0				ug/L	15231	Standard
S	34	2361.9	6.4				ug/L	1845	Standard
Sr	88	63.3	24.1				ug/L	70	Standard
C	12	126.7	43.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	15.9	34.8				mg/L	12	Standard
Ho-1	165	6.7	114.6				mg/L	12	Standard
Er	166	16.7	69.3				mg/L	20	Standard
I	127	856.7	31.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.420	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.028	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.068
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.311
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 45 WG573451-05
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Method 6020 - Summary Report

Sample ID: L1606115101 WG573751-02
Sample Date/Time: Tuesday, June 28, 2016 16:05:56
Number of Replicates: 3
Autosampler Position: 234
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77671.9	1.4				ug/L	81760	Standard
	Be	9	26.7	39.0	**0.0185**	0.011	58.4	ug/L	17	Standard
	Al	27	13955917.4	1.2	**95.3134**	2.493	2.6	ug/L	1410	Standard
	Sc	45	39321.0	0.9				ug/L	39543	Standard
	Ti	47	301.7	10.7	**1.0707**	0.148	13.8	ug/L	39	Standard
	V	51	16198.5	2.2	**2.1650**	0.025	1.2	ug/L	1415	Standard
	Cr	52	10911.9	4.6	**0.5376**	0.044	8.1	ug/L	6946	Standard
	Cr	53	3267.0	16.4	**3.4384**	0.551	16.0	ug/L	328	Standard
	Mn	55	181411.8	1.7	**28.3397**	0.987	3.5	ug/L	823	Standard
	Co	59	976.7	3.3	**0.1102**	0.006	5.4	ug/L	252	Standard
	Ni	60	1471.7	0.7	**0.6905**	0.022	3.2	ug/L	192	Standard
	Cu	65	1872.1	2.6	**0.9119**	0.023	2.5	ug/L	141	Standard
	Zn	66	6550.4	2.0	**5.2541**	0.063	1.2	ug/L	491	Standard
>	**Ge**	72	506178.8	2.0				ug/L	515087	Standard
	As	75	931.2	4.4	**0.8837**	0.051	5.8	ug/L	20	Standard
	Se	82	231.2	4.1	**1.9256**	0.108	5.6	ug/L	15	Standard
	Se-1	77	230.7	3.7	**2.3974**	0.119	5.0	ug/L	48	Standard
>	**Ga**	71	195.0	5.1				mg/L	90	Standard
	Rb	85	19537.6	1.2				ug/L	23	Standard
	Y	89	432314.6	1.1				ug/L	448510	Standard
>	**Rh**	103	61.7	12.4				ug/L	15	Standard
	Mo	98	3291.8	1.3	**1.2330**	0.013	1.0	ug/L	11	Standard
	Ag	107	150.7	8.2	**0.0069**	0.002	29.9	ug/L	134	Standard
	Cd	111	62.2	4.0	**0.0270**	0.001	5.4	mg/L	7	Standard
	Cd	114	153.0	45.9	**0.0254**	0.014	55.2	ug/L	16	Standard
>	**In**	115	594394.0	1.1				ug/L	611117	Standard
	Sn	118	883.4	9.5	**0.0516**	0.013	25.0	ug/L	518	Standard
	Sb	123	639.6	8.2	**0.1265**	0.011	8.6	ug/L	127	Standard
	Ba	135	68518.2	0.3	**34.1005**	0.460	1.3	ug/L	45	Standard
	Ce	140	2645.2	17.9				ug/L	298	Standard
>	**Tb**	159	950271.0	0.7				ug/L	977942	Standard
	Ho	165	53.3	10.8				ug/L	12	Standard
	Tl	203	411.7	14.6	**0.0459**	0.008	17.1	ug/L	31	Standard
	Tl	205	376.7	19.3	**0.0511**	0.011	20.8	ug/L	20	Standard
	Pb	206	1679.8	1.4	**0.2582**	0.003	1.3	ug/L	286	Standard
	Pb	207	1366.4	3.8	**0.2322**	0.009	3.7	ug/L	257	Standard
	Pb	208	5841.1	1.9	**0.2602**	0.004	1.4	ug/L	956	Standard
	U	238	9731.1	2.1	**1.4034**	0.022	1.5	ug/L	17	Standard
>	**Bi**	209	537950.1	0.8				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	34736.4	1.4	**46.4420**	0.278	0.6	mg/L	32	Standard
K	39	261.7	6.7	**0.7474**	0.052	7.0	mg/L	30	Standard
Ca	43	178.3	24.5	**21.8549**	6.453	29.5	mg/L	48	Standard
Fe	54	262.3	8.0	**0.1018**	0.020	19.8	mg/L	159	Standard
Fe	57	341.7	2.2	**0.5353**	0.023	4.3	mg/L	195	Standard
> **Sc-1**	45	39321.0	0.9				mg/L	39543	Standard
Cl	35	35275.1	3.8				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	35124.1	4.7				ug/L	1647	Standard
P	31	18164.2	1.2				ug/L	15231	Standard
S	34	2260.2	2.8				ug/L	1845	Standard
Sr	88	231.7	13.9				ug/L	70	Standard
C	12	256.7	41.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	63.6	33.9				mg/L	12	Standard
Ho-1	165	53.3	10.8				mg/L	12	Standard
Er	166	63.3	36.5				mg/L	20	Standard
I	127	311901.7	7.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.000	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.271	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.264
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.566
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606115103S WG573751-07
Sample Date/Time: Tuesday, June 28, 2016 16:09:07
Number of Replicates: 3
Autosampler Position: 235
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82738.6	0.2				ug/L	81760	Standard
	Be	9	50932.1	1.3	**50.6700**	0.765	1.5	ug/L	17	Standard
	Al	27	14256616.7	2.2	**91.3792**	1.822	2.0	ug/L	1410	Standard
	Sc	45	41140.8	1.3				ug/L	39543	Standard
	Ti	47	371.0	4.6	**1.3119**	0.075	5.7	ug/L	39	Standard
	V	51	355266.5	2.0	**50.3881**	1.016	2.0	ug/L	1415	Standard
	Cr	52	348734.5	0.9	**48.5348**	0.604	1.2	ug/L	6946	Standard
	Cr	53	45906.1	1.2	**51.4332**	1.330	2.6	ug/L	328	Standard
	Mn	55	484874.0	0.4	**73.8916**	1.228	1.7	ug/L	823	Standard
	Co	59	330526.6	1.2	**46.5427**	1.213	2.6	ug/L	252	Standard
	Ni	60	91208.4	1.4	**47.8307**	0.262	0.5	ug/L	192	Standard
	Cu	65	93139.1	0.3	**48.4331**	0.711	1.5	ug/L	141	Standard
	Zn	66	61775.3	0.7	**54.9696**	1.209	2.2	ug/L	491	Standard
>	**Ge**	72	520412.6	1.6				ug/L	515087	Standard
	As	75	57188.6	0.5	**50.3925**	0.724	1.4	ug/L	20	Standard
	Se	82	5643.2	0.1	**48.4036**	0.791	1.6	ug/L	15	Standard
	Se-1	77	3992.2	4.4	**51.7398**	2.452	4.7	ug/L	48	Standard
>	**Ga**	71	230.0	28.3				mg/L	90	Standard
	Rb	85	19777.9	1.1				ug/L	23	Standard
	Y	89	433897.5	1.4				ug/L	448510	Standard
>	**Rh**	103	81.7	39.4				ug/L	15	Standard
	Mo	98	3301.1	2.4	**1.2202**	0.040	3.3	ug/L	11	Standard
	Ag	107	315385.8	0.9	**47.6558**	0.862	1.8	ug/L	134	Standard
	Cd	111	99498.3	0.6	**47.2265**	0.833	1.8	mg/L	7	Standard
	Cd	114	242671.7	0.4	**47.3834**	0.530	1.1	ug/L	16	Standard
>	**In**	115	602380.0	1.2				ug/L	611117	Standard
	Sn	118	866.7	11.7	**0.0467**	0.016	33.5	ug/L	518	Standard
	Sb	123	233832.7	0.4	**50.2714**	0.769	1.5	ug/L	127	Standard
	Ba	135	168472.5	0.5	**82.7716**	1.205	1.5	ug/L	45	Standard
	Ce	140	3190.3	1.8				ug/L	298	Standard
>	**Tb**	159	975538.4	0.7				ug/L	977942	Standard
	Ho	165	55.0	50.6				ug/L	12	Standard
	Tl	203	405391.8	0.6	**48.6809**	0.381	0.8	ug/L	31	Standard
	Tl	205	349844.8	1.2	**48.3796**	0.623	1.3	ug/L	20	Standard
	Pb	206	268733.3	0.7	**50.2550**	0.909	1.8	ug/L	286	Standard
	Pb	207	232854.8	1.2	**48.2799**	1.141	2.4	ug/L	257	Standard
	Pb	208	923192.2	0.6	**49.4693**	0.366	0.7	ug/L	956	Standard
	U	238	355626.8	0.4	**50.2227**	0.621	1.2	ug/L	17	Standard
>	**Bi**	209	550570.6	1.2				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	35867.4	1.9	**45.8327**	0.548	1.2	mg/L	32	Standard
K	39	318.3	2.4	**0.8927**	0.038	4.2	mg/L	30	Standard
Ca	43	141.7	5.4	**15.3452**	1.333	8.7	mg/L	48	Standard
Fe	54	233.9	13.6	**0.0666**	0.029	43.8	mg/L	159	Standard
Fe	57	373.3	5.1	**0.5873**	0.073	12.3	mg/L	195	Standard
> **Sc-1**	45	41140.8	1.3				mg/L	39543	Standard
Cl	35	36665.0	1.2				ug/L	27642	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	38074.5	2.7				ug/L	1647	Standard
P	31	19512.6	0.4				ug/L	15231	Standard
S	34	2426.9	4.9				ug/L	1845	Standard
Sr	88	241.7	11.4				ug/L	70	Standard
C	12	183.3	31.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	66.3	40.2				mg/L	12	Standard
Ho-1	165	55.0	50.6				mg/L	12	Standard
Er	166	76.7	15.1				mg/L	20	Standard
I	127	311628.4	3.8				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.197	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.034	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.570
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.831
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606115304SD WG573751-08
Sample Date/Time: Tuesday, June 28, 2016 16:12:19
Number of Replicates: 3
Autosampler Position: 236
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82914.6	1.7				ug/L	81760	Standard
	Be	9	51258.3	2.2	**50.8925**	1.250	2.5	ug/L	17	Standard
	Al	27	15399778.5	0.9	**98.5192**	1.923	2.0	ug/L	1410	Standard
	Sc	45	40084.7	2.9				ug/L	39543	Standard
	Ti	47	640.0	9.7	**2.4715**	0.230	9.3	ug/L	39	Standard
	V	51	358753.7	1.2	**52.7008**	0.680	1.3	ug/L	1415	Standard
	Cr	52	354784.4	1.1	**51.1849**	0.073	0.1	ug/L	6946	Standard
	Cr	53	47661.6	3.5	**55.3029**	1.433	2.6	ug/L	328	Standard
	Mn	55	529314.6	1.5	**83.5469**	1.579	1.9	ug/L	823	Standard
	Co	59	345503.9	1.1	**50.3773**	0.891	1.8	ug/L	252	Standard
	Ni	60	92308.7	1.0	**50.1355**	0.426	0.9	ug/L	192	Standard
	Cu	65	93613.0	1.4	**50.4100**	0.723	1.4	ug/L	141	Standard
	Zn	66	64567.0	0.6	**59.5553**	0.411	0.7	ug/L	491	Standard
>	**Ge**	72	502524.4	1.0				ug/L	515087	Standard
	As	75	56933.1	0.7	**51.9453**	0.162	0.3	ug/L	20	Standard
	Se	82	5947.1	1.7	**52.8275**	0.666	1.3	ug/L	15	Standard
	Se-1	77	3965.5	2.7	**53.2435**	1.801	3.4	ug/L	48	Standard
>	**Ga**	71	291.7	11.2				mg/L	90	Standard
	Rb	85	22576.8	1.0				ug/L	23	Standard
	Y	89	439067.8	2.2				ug/L	448510	Standard
>	**Rh**	103	73.3	7.9				ug/L	15	Standard
	Mo	98	3536.7	2.2	**1.2876**	0.021	1.6	ug/L	11	Standard
	Ag	107	318639.0	0.2	**47.3947**	0.683	1.4	ug/L	134	Standard
	Cd	111	102545.7	0.7	**47.9082**	0.269	0.6	mg/L	7	Standard
	Cd	114	249882.8	0.5	**48.0284**	0.370	0.8	ug/L	16	Standard
>	**In**	115	611940.4	1.2				ug/L	611117	Standard
	Sn	118	1045.0	4.1	**0.0745**	0.005	6.8	ug/L	518	Standard
	Sb	123	235512.7	0.7	**49.8406**	0.693	1.4	ug/L	127	Standard
	Ba	135	174610.3	1.9	**84.4342**	0.545	0.6	ug/L	45	Standard
	Ce	140	5954.5	2.4				ug/L	298	Standard
>	**Tb**	159	973344.6	0.2				ug/L	977942	Standard
	Ho	165	121.7	6.3				ug/L	12	Standard
	Tl	203	413217.7	0.6	**49.7797**	0.456	0.9	ug/L	31	Standard
	Tl	205	363310.0	1.7	**50.4036**	0.986	2.0	ug/L	20	Standard
	Pb	206	270026.6	0.5	**50.6539**	0.212	0.4	ug/L	286	Standard
	Pb	207	235774.0	0.4	**49.0358**	0.293	0.6	ug/L	257	Standard
	Pb	208	947837.4	0.9	**50.9548**	0.634	1.2	ug/L	956	Standard
	U	238	363550.4	1.8	**51.5051**	1.028	2.0	ug/L	17	Standard
>	**Bi**	209	548791.6	0.3				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.4900**	18.160	173.1	mg/L	0	Standard
Mg	24	38714.4	0.7	**50.8180**	1.880	3.7	mg/L	32	Standard
K	39	343.3	15.2	**1.0066**	0.203	20.2	mg/L	30	Standard
Ca	43	156.7	1.8	**18.1495**	1.124	6.2	mg/L	48	Standard
Fe	54	374.0	6.7	**0.1967**	0.015	7.7	mg/L	159	Standard
Fe	57	400.0	0.0	**0.7083**	0.040	5.6	mg/L	195	Standard
> **Sc-1**	45	40084.7	2.9				mg/L	39543	Standard
Cl	35	38416.6	0.8				ug/L	27642	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	40474.1	6.0				ug/L	1647	Standard
P	31	20383.7	1.9				ug/L	15231	Standard
S	34	2388.5	6.8				ug/L	1845	Standard
Sr	88	235.0	8.5				ug/L	70	Standard
C	12	253.3	25.1				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	175.2	19.1				mg/L	12	Standard
Ho-1	165	121.7	6.3				mg/L	12	Standard
Er	166	100.0	26.5				mg/L	20	Standard
I	127	354555.7	8.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.412	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.561	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.135
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.512
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606091602 WG573751-01
Sample Date/Time: Tuesday, June 28, 2016 16:15:30
Number of Replicates: 3
Autosampler Position: 237
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83752.6	2.6				ug/L	81760	Standard
	Be	9	50.0	26.5	**0.0395**	0.014	34.7	ug/L	17	Standard
	Al	27	2701508.7	2.5	**17.0954**	0.130	0.8	ug/L	1410	Standard
	Sc	45	39755.5	3.1				ug/L	39543	Standard
	Ti	47	56.0	11.2	**0.0633**	0.027	42.8	ug/L	39	Standard
	V	51	1924.8	3.9	**0.0741**	0.009	12.6	ug/L	1415	Standard
	Cr	52	10285.8	1.8	**0.4408**	0.012	2.7	ug/L	6946	Standard
	Cr	53	1156.7	1.7	**0.9947**	0.041	4.2	ug/L	328	Standard
	Mn	55	253930.8	1.4	**39.5649**	0.851	2.1	ug/L	823	Standard
	Co	59	1951.8	2.9	**0.2502**	0.004	1.8	ug/L	252	Standard
	Ni	60	1859.1	3.7	**0.8956**	0.027	3.0	ug/L	192	Standard
	Cu	65	1000.0	2.6	**0.4428**	0.017	3.9	ug/L	141	Standard
	Zn	66	2280.8	1.9	**1.2819**	0.026	2.1	ug/L	491	Standard
>	**Ge**	72	508105.2	1.4				ug/L	515087	Standard
	As	75	151.5	17.1	**0.1768**	0.022	12.7	ug/L	20	Standard
	Se	82	39.2	12.0	**0.2256**	0.041	18.4	ug/L	15	Standard
	Se-1	77	70.3	2.2	**0.2277**	0.025	11.1	ug/L	48	Standard
>	**Ga**	71	73.3	3.9				mg/L	90	Standard
	Rb	85	9319.5	3.0				ug/L	23	Standard
	Y	89	446629.7	1.4				ug/L	448510	Standard
>	**Rh**	103	35.0	37.8				ug/L	15	Standard
	Mo	98	255.3	4.6	**0.0742**	0.003	4.3	ug/L	11	Standard
	Ag	107	140.0	17.3	**0.0044**	0.004	86.0	ug/L	134	Standard
	Cd	111	34.5	15.3	**0.0130**	0.002	17.2	mg/L	7	Standard
	Cd	114	78.1	40.8	**0.0099**	0.006	59.3	ug/L	16	Standard
>	**In**	115	618896.7	1.2				ug/L	611117	Standard
	Sn	118	878.4	9.4	**0.0447**	0.013	28.2	ug/L	518	Standard
	Sb	123	309.3	20.5	**0.0520**	0.014	26.9	ug/L	127	Standard
	Ba	135	35857.7	1.5	**17.1253**	0.158	0.9	ug/L	45	Standard
	Ce	140	1368.4	3.3				ug/L	298	Standard
>	**Tb**	159	968292.7	1.7				ug/L	977942	Standard
	Ho	165	100.0	15.0				ug/L	12	Standard
	Tl	203	175.7	13.5	**0.0159**	0.003	15.9	ug/L	31	Standard
	Tl	205	158.3	30.0	**0.0192**	0.006	31.5	ug/L	20	Standard
	Pb	206	469.3	2.7	**0.0227**	0.001	2.5	ug/L	286	Standard
	Pb	207	387.3	8.4	**0.0210**	0.006	30.5	ug/L	257	Standard
	Pb	208	1635.4	0.6	**0.0258**	0.001	5.1	ug/L	956	Standard
	U	238	220.3	6.6	**0.0276**	0.001	5.0	ug/L	17	Standard
>	**Bi**	209	560335.5	2.1				ug/L	557080	Standard

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Na	23	3.3	173.2	**20.5537**	35.591	173.2	mg/L	0	Standard
Mg	24	3380.4	0.3	**4.4213**	0.131	3.0	mg/L	32	Standard
K	39	168.3	9.1	**0.4237**	0.034	8.1	mg/L	30	Standard
Ca	43	108.3	14.8	**11.0098**	2.304	20.9	mg/L	48	Standard
Fe	54	282.4	10.4	**0.1178**	0.034	28.5	mg/L	159	Standard
Fe	57	291.7	21.2	**0.3561**	0.217	61.0	mg/L	195	Standard
> **Sc-1**	45	39755.5	3.1				mg/L	39543	Standard
Cl	35	40081.0	2.5				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	4644.1	13.8				ug/L	1647	Standard
P	31	18102.5	2.7				ug/L	15231	Standard
S	34	2331.8	2.8				ug/L	1845	Standard
Sr	88	118.3	8.8				ug/L	70	Standard
C	12	123.3	9.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	117.9	56.1				mg/L	12	Standard
Ho-1	165	100.0	15.0				mg/L	12	Standard
Er	166	43.3	48.0				mg/L	20	Standard
I	127	21574.4	25.8				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.437	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.645	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.273
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.584
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606091602DP WG573751-06
Sample Date/Time: Tuesday, June 28, 2016 16:18:41
Number of Replicates: 3
Autosampler Position: 238
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81912.6	2.5				ug/L	81760	Standard
	Be	9	38.3	32.8	**0.0286**	0.012	41.1	ug/L	17	Standard
	Al	27	2661315.3	2.5	**17.2245**	0.558	3.2	ug/L	1410	Standard
	Sc	45	39553.2	2.2				ug/L	39543	Standard
	Ti	47	60.3	10.8	**0.0810**	0.030	36.5	ug/L	39	Standard
	V	51	1771.3	1.7	**0.0516**	0.003	5.3	ug/L	1415	Standard
	Cr	52	10216.4	1.4	**0.4303**	0.018	4.2	ug/L	6946	Standard
	Cr	53	1328.4	4.4	**1.1923**	0.072	6.1	ug/L	328	Standard
	Mn	55	248102.9	0.7	**38.6399**	0.746	1.9	ug/L	823	Standard
	Co	59	1844.8	1.4	**0.2347**	0.001	0.3	ug/L	252	Standard
	Ni	60	1828.1	4.4	**0.8792**	0.056	6.4	ug/L	192	Standard
	Cu	65	995.0	2.4	**0.4399**	0.012	2.7	ug/L	141	Standard
	Zn	66	2165.5	0.6	**1.1746**	0.022	1.8	ug/L	491	Standard
>	**Ge**	72	508291.1	1.3				ug/L	515087	Standard
	As	75	90.4	12.4	**0.1217**	0.009	7.5	ug/L	20	Standard
	Se	82	34.1	11.8	**0.1803**	0.032	17.6	ug/L	15	Standard
	Se-1	77	74.3	14.5	**0.2819**	0.154	54.5	ug/L	48	Standard
>	**Ga**	71	68.3	30.5				mg/L	90	Standard
	Rb	85	9142.8	6.3				ug/L	23	Standard
	Y	89	450226.3	2.8				ug/L	448510	Standard
>	**Rh**	103	21.7	58.1				ug/L	15	Standard
	Mo	98	245.2	4.8	**0.0704**	0.005	7.4	ug/L	11	Standard
	Ag	107	87.7	6.3	**-0.0033**	0.001	21.6	ug/L	134	Standard
	Cd	111	23.2	17.5	**0.0078**	0.002	23.8	mg/L	7	Standard
	Cd	114	58.3	13.8	**0.0061**	0.001	23.6	ug/L	16	Standard
>	**In**	115	619551.5	1.3				ug/L	611117	Standard
	Sn	118	933.4	2.4	**0.0538**	0.006	10.7	ug/L	518	Standard
	Sb	123	201.2	19.7	**0.0293**	0.009	30.0	ug/L	127	Standard
	Ba	135	34661.9	0.9	**16.5369**	0.177	1.1	ug/L	45	Standard
	Ce	140	1260.1	4.6				ug/L	298	Standard
>	**Tb**	159	963340.8	1.2				ug/L	977942	Standard
	Ho	165	88.3	18.2				ug/L	12	Standard
	Tl	203	85.3	6.5	**0.0054**	0.001	13.0	ug/L	31	Standard
	Tl	205	83.3	17.3	**0.0091**	0.002	21.1	ug/L	20	Standard
	Pb	206	415.0	2.1	**0.0134**	0.001	8.9	ug/L	286	Standard
	Pb	207	359.0	2.4	**0.0158**	0.001	8.8	ug/L	257	Standard
	Pb	208	1485.0	2.9	**0.0185**	0.003	14.1	ug/L	956	Standard
	U	238	164.0	3.4	**0.0200**	0.001	3.7	ug/L	17	Standard
>	**Bi**	209	555403.6	0.6				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	3443.7	5.9	**4.5314**	0.377	8.3	mg/L	32	Standard
K	39	158.3	7.9	**0.3934**	0.041	10.4	mg/L	30	Standard
Ca	43	93.3	12.4	**8.8061**	1.479	16.8	mg/L	48	Standard
Fe	54	304.0	6.5	**0.1380**	0.017	12.0	mg/L	159	Standard
Fe	57	313.3	6.4	**0.4340**	0.087	20.1	mg/L	195	Standard
> **Sc-1**	45	39553.2	2.2				mg/L	39543	Standard
Cl	35	40893.8	1.8				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	3857.2	4.5				ug/L	1647	Standard
P	31	18868.4	1.0				ug/L	15231	Standard
S	34	2383.5	7.0				ug/L	1845	Standard
Sr	88	95.0	13.9				ug/L	70	Standard
C	12	200.0	17.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	96.2	30.5				mg/L	12	Standard
Ho-1	165	88.3	18.2				mg/L	12	Standard
Er	166	80.0	37.5				mg/L	20	Standard
I	127	15653.1	0.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.187	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.681	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.380
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.699
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606091601
Sample Date/Time: Tuesday, June 28, 2016 16:21:53
Number of Replicates: 3
Autosampler Position: 239
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81664.5	1.8				ug/L	81760	Standard
	Be	9	26.7	28.6	**0.0172**	0.008	47.1	ug/L	17	Standard
	Al	27	4275643.4	2.5	**27.7561**	0.463	1.7	ug/L	1410	Standard
	Sc	45	38087.8	3.0				ug/L	39543	Standard
	Ti	47	54.7	26.0	**0.0548**	0.059	108.3	ug/L	39	Standard
	V	51	1697.6	8.1	**0.0374**	0.021	56.8	ug/L	1415	Standard
	Cr	52	10296.2	0.8	**0.4201**	0.020	4.7	ug/L	6946	Standard
	Cr	53	1460.1	7.5	**1.3201**	0.135	10.2	ug/L	328	Standard
	Mn	55	64493.4	3.0	**9.7887**	0.389	4.0	ug/L	823	Standard
	Co	59	427.0	5.1	**0.0294**	0.004	12.3	ug/L	252	Standard
	Ni	60	847.0	2.5	**0.3443**	0.016	4.7	ug/L	192	Standard
	Cu	65	826.7	6.2	**0.3435**	0.022	6.5	ug/L	141	Standard
	Zn	66	9487.6	0.7	**7.8171**	0.052	0.7	ug/L	491	Standard
>	**Ge**	72	515789.8	1.2				ug/L	515087	Standard
	As	75	95.2	47.1	**0.1249**	0.040	32.1	ug/L	20	Standard
	Se	82	32.5	28.2	**0.1620**	0.079	48.7	ug/L	15	Standard
	Se-1	77	78.3	8.3	**0.3202**	0.098	30.6	ug/L	48	Standard
>	**Ga**	71	58.3	50.2				mg/L	90	Standard
	Rb	85	8367.3	1.9				ug/L	23	Standard
	Y	89	424791.4	2.4				ug/L	448510	Standard
>	**Rh**	103	81.7	19.7				ug/L	15	Standard
	Mo	98	367.2	2.9	**0.1192**	0.004	3.5	ug/L	11	Standard
	Ag	107	119.3	48.0	**0.0019**	0.009	460.3	ug/L	134	Standard
	Cd	111	50.7	68.6	**0.0212**	0.017	78.0	mg/L	7	Standard
	Cd	114	102.4	71.8	**0.0151**	0.014	95.2	ug/L	16	Standard
>	**In**	115	600349.6	1.0				ug/L	611117	Standard
	Sn	118	1276.7	2.5	**0.1178**	0.004	3.0	ug/L	518	Standard
	Sb	123	200.9	15.6	**0.0306**	0.007	23.5	ug/L	127	Standard
	Ba	135	168683.5	0.8	**83.1505**	0.843	1.0	ug/L	45	Standard
	Ce	140	160.0	17.4				ug/L	298	Standard
>	**Tb**	159	943339.1	0.8				ug/L	977942	Standard
	Ho	165	5.0	100.0				ug/L	12	Standard
	Tl	203	103.7	83.0	**0.0076**	0.010	135.3	ug/L	31	Standard
	Tl	205	65.0	38.5	**0.0066**	0.003	51.6	ug/L	20	Standard
	Pb	206	449.7	4.5	**0.0200**	0.004	18.4	ug/L	286	Standard
	Pb	207	373.7	5.2	**0.0190**	0.004	20.9	ug/L	257	Standard
	Pb	208	1469.0	1.7	**0.0178**	0.001	8.0	ug/L	956	Standard
	U	238	195.0	9.9	**0.0244**	0.003	11.1	ug/L	17	Standard
>	**Bi**	209	554105.5	0.2				ug/L	557080	Standard

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Na	23	1.7	173.2	**11.2769**	19.523	173.1	mg/L	0	Standard
Mg	24	4872.5	3.1	**6.6831**	0.365	5.5	mg/L	32	Standard
K	39	180.0	11.1	**0.4891**	0.054	11.0	mg/L	30	Standard
Ca	43	71.7	49.5	**5.8566**	5.217	89.1	mg/L	48	Standard
Fe	54	187.0	32.7	**0.0391**	0.060	153.5	mg/L	159	Standard
Fe	57	275.0	13.7	**0.3422**	0.158	46.1	mg/L	195	Standard
> **Sc-1**	45	38087.8	3.0				mg/L	39543	Standard
Cl	35	39985.4	2.3				ug/L	27642	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	5007.5	9.4				ug/L	1647	Standard
P	31	18170.9	2.8				ug/L	15231	Standard
S	34	2413.5	5.6				ug/L	1845	Standard
Sr	88	318.3	14.3				ug/L	70	Standard
C	12	223.3	5.2				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	59.7	16.8				mg/L	12	Standard
Ho-1	165	5.0	100.0				mg/L	12	Standard
Er	166	6.7	86.6				mg/L	20	Standard
I	127	27700.4	6.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.883	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.136	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.238
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.466
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606091601PS WG574522-01
Sample Date/Time: Tuesday, June 28, 2016 16:25:04
Number of Replicates: 3
Autosampler Position: 240
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84128.0	1.7				ug/L	81760	Standard
	Be	9	52619.6	0.9	**51.4982**	1.298	2.5	ug/L	17	Standard
	Al	27	4326633.2	0.4	**27.2707**	0.550	2.0	ug/L	1410	Standard
	Sc	45	39650.1	0.7				ug/L	39543	Standard
	Ti	47	62.3	14.0	**0.0872**	0.038	43.9	ug/L	39	Standard
	V	51	353435.0	1.4	**50.9243**	0.391	0.8	ug/L	1415	Standard
	Cr	52	362779.9	0.9	**51.3507**	0.534	1.0	ug/L	6946	Standard
	Cr	53	45635.3	3.2	**51.9244**	0.938	1.8	ug/L	328	Standard
	Mn	55	384138.6	0.3	**59.4407**	0.957	1.6	ug/L	823	Standard
	Co	59	352427.3	0.4	**50.4121**	0.778	1.5	ug/L	252	Standard
	Ni	60	95802.0	1.3	**51.0471**	0.630	1.2	ug/L	192	Standard
	Cu	65	98413.6	0.9	**51.9931**	0.640	1.2	ug/L	141	Standard
	Zn	66	63162.1	1.4	**57.1168**	0.348	0.6	ug/L	491	Standard
>	**Ge**	72	512293.3	1.9				ug/L	515087	Standard
	As	75	56566.0	1.5	**50.6330**	0.812	1.6	ug/L	20	Standard
	Se	82	5805.6	1.0	**50.5901**	0.677	1.3	ug/L	15	Standard
	Se-1	77	3921.2	1.4	**51.6223**	0.909	1.8	ug/L	48	Standard
>	**Ga**	71	60.0	50.7				mg/L	90	Standard
	Rb	85	8215.6	0.6				ug/L	23	Standard
	Y	89	438501.2	1.8				ug/L	448510	Standard
>	**Rh**	103	71.7	28.2				ug/L	15	Standard
	Mo	98	368.8	5.9	**0.1169**	0.008	6.7	ug/L	11	Standard
	Ag	107	334626.2	0.5	**49.6506**	0.360	0.7	ug/L	134	Standard
	Cd	111	105047.6	0.7	**48.9601**	0.529	1.1	mg/L	7	Standard
	Cd	114	254060.7	2.8	**48.7162**	1.522	3.1	ug/L	16	Standard
>	**In**	115	613389.4	0.3				ug/L	611117	Standard
	Sn	118	1936.8	37.5	**0.2241**	0.121	54.0	ug/L	518	Standard
	Sb	123	237358.9	1.9	**50.1080**	0.980	2.0	ug/L	127	Standard
	Ba	135	267735.0	1.3	**129.1838**	2.081	1.6	ug/L	45	Standard
	Ce	140	231.7	21.3				ug/L	298	Standard
>	**Tb**	159	964479.2	1.1				ug/L	977942	Standard
	Ho	165	18.3	56.8				ug/L	12	Standard
	Tl	203	432424.0	0.5	**50.0145**	0.262	0.5	ug/L	31	Standard
	Tl	205	382714.9	0.3	**50.9759**	0.183	0.4	ug/L	20	Standard
	Pb	206	282966.8	1.1	**50.9646**	0.635	1.2	ug/L	286	Standard
	Pb	207	246387.7	1.3	**49.1992**	0.690	1.4	ug/L	257	Standard
	Pb	208	985942.4	0.8	**50.8876**	0.399	0.8	ug/L	956	Standard
	U	238	365334.3	1.0	**49.6910**	0.475	1.0	ug/L	17	Standard
>	**Bi**	209	571593.5	0.1				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4890.8	3.1	**6.4355**	0.187	2.9	mg/L	32	Standard
K	39	161.7	23.2	**0.4031**	0.125	30.9	mg/L	30	Standard
Ca	43	113.3	24.3	**11.8087**	4.086	34.6	mg/L	48	Standard
Fe	54	177.2	7.7	**0.0228**	0.011	49.5	mg/L	159	Standard
Fe	57	255.0	15.6	**0.2338**	0.132	56.3	mg/L	195	Standard
> **Sc-1**	45	39650.1	0.7				mg/L	39543	Standard
Cl	35	40732.7	2.1				ug/L	27642	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	4914.1	11.2				ug/L	1647	Standard
P	31	18529.7	1.8				ug/L	15231	Standard
S	34	2476.9	6.8				ug/L	1845	Standard
Sr	88	310.0	4.8				ug/L	70	Standard
C	12	160.0	18.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	12.7	117.1				mg/L	12	Standard
Ho-1	165	18.3	56.8				mg/L	12	Standard
Er	166	13.3	86.6				mg/L	20	Standard
I	127	27421.5	4.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.896	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.458	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606091601PS WG574522-01
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.372
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.605
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606091601SDL WG574522-02
Sample Date/Time: Tuesday, June 28, 2016 16:28:16
Number of Replicates: 3
Autosampler Position: 241
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82723.6	2.3				ug/L	81760	Standard
	Be	9	23.3	12.4	**0.0135**	0.003	18.7	ug/L	17	Standard
	Al	27	900313.9	2.1	**5.7596**	0.136	2.4	ug/L	1410	Standard
	Sc	45	39763.8	0.8				ug/L	39543	Standard
	Ti	47	29.7	9.7	**-0.0430**	0.012	28.1	ug/L	39	Standard
	V	51	1735.9	7.6	**0.0491**	0.020	40.6	ug/L	1415	Standard
	Cr	52	8352.3	2.2	**0.1715**	0.035	20.7	ug/L	6946	Standard
	Cr	53	645.0	2.8	**0.4109**	0.024	5.9	ug/L	328	Standard
	Mn	55	14377.5	0.8	**2.1221**	0.018	0.8	ug/L	823	Standard
	Co	59	301.0	11.3	**0.0125**	0.005	41.5	ug/L	252	Standard
	Ni	60	410.7	1.2	**0.1183**	0.004	3.1	ug/L	192	Standard
	Cu	65	611.3	5.6	**0.2385**	0.017	7.2	ug/L	141	Standard
	Zn	66	7975.8	0.8	**6.6226**	0.085	1.3	ug/L	491	Standard
>	**Ge**	72	503109.1	0.7				ug/L	515087	Standard
	As	75	19.7	109.3	**0.0582**	0.020	33.7	ug/L	20	Standard
	Se	82	17.8	58.3	**0.0388**	0.092	237.9	ug/L	15	Standard
	Se-1	77	57.7	14.7	**0.0653**	0.120	183.5	ug/L	48	Standard
>	**Ga**	71	58.3	44.0				mg/L	90	Standard
	Rb	85	1753.4	3.2				ug/L	23	Standard
	Y	89	444634.9	0.6				ug/L	448510	Standard
>	**Rh**	103	21.7	48.0				ug/L	15	Standard
	Mo	98	88.5	3.1	**0.0131**	0.001	5.4	ug/L	11	Standard
	Ag	107	142.0	4.2	**0.0046**	0.001	16.3	ug/L	134	Standard
	Cd	111	23.2	23.8	**0.0077**	0.002	31.6	mg/L	7	Standard
	Cd	114	28.0	34.6	**0.0004**	0.002	477.3	ug/L	16	Standard
>	**In**	115	620921.1	1.0				ug/L	611117	Standard
	Sn	118	821.7	5.2	**0.0348**	0.006	16.8	ug/L	518	Standard
	Sb	123	2051.2	21.4	**0.4156**	0.096	23.0	ug/L	127	Standard
	Ba	135	34796.2	0.2	**16.5640**	0.119	0.7	ug/L	45	Standard
	Ce	140	63.3	12.1				ug/L	298	Standard
>	**Tb**	159	973024.2	1.8				ug/L	977942	Standard
	Ho	165	8.3	124.9				ug/L	12	Standard
	Tl	203	97.0	5.7	**0.0066**	0.000	6.5	ug/L	31	Standard
	Tl	205	68.3	44.1	**0.0070**	0.004	57.1	ug/L	20	Standard
	Pb	206	360.7	11.0	**0.0024**	0.006	236.3	ug/L	286	Standard
	Pb	207	322.3	9.7	**0.0075**	0.006	86.2	ug/L	257	Standard
	Pb	208	1339.4	1.1	**0.0099**	0.001	10.7	ug/L	956	Standard
	U	238	86.3	6.6	**0.0090**	0.001	5.9	ug/L	17	Standard
>	**Bi**	209	562189.7	2.5				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	991.7	7.3	**1.2554**	0.092	7.3	mg/L	32	Standard
K	39	51.7	11.2	**0.0323**	0.021	64.1	mg/L	30	Standard
Ca	43	40.0	45.1	**0.6884**	2.694	391.4	mg/L	48	Standard
Fe	54	140.9	19.7	**-0.0104**	0.024	229.0	mg/L	159	Standard
Fe	57	241.7	4.8	**0.1865**	0.032	17.2	mg/L	195	Standard
> **Sc-1**	45	39763.8	0.8				mg/L	39543	Standard
Cl	35	40635.1	0.7				ug/L	27642	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	2310.2	7.5				ug/L	1647	Standard
P	31	19332.3	4.6				ug/L	15231	Standard
S	34	2451.9	6.9				ug/L	1845	Standard
Sr	88	125.0	21.2				ug/L	70	Standard
C	12	163.3	25.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.5	88.8				mg/L	12	Standard
Ho-1	165	8.3	124.9				mg/L	12	Standard
Er	166	10.0	100.0				mg/L	20	Standard
I	127	7598.6	6.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.179	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.675	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.604
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.917
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 16:31:29
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79881.8	2.3				ug/L	81760	Standard
	Be	9	50840.2	1.3	**52.4015**	1.145	2.2	ug/L	17	Standard
	Al	27	7585830.9	1.9	**50.3677**	1.194	2.4	ug/L	1410	Standard
	Sc	45	39128.8	0.6				ug/L	39543	Standard
	Ti	47	24998.6	0.9	**102.1788**	1.762	1.7	ug/L	39	Standard
	V	51	348429.9	1.4	**50.8229**	0.271	0.5	ug/L	1415	Standard
	Cr	52	355416.3	0.4	**50.9232**	0.579	1.1	ug/L	6946	Standard
	Cr	53	44443.4	1.1	**51.2031**	0.906	1.8	ug/L	328	Standard
	Mn	55	315927.2	0.8	**49.4624**	0.575	1.2	ug/L	823	Standard
	Co	59	353189.3	0.9	**51.1457**	0.854	1.7	ug/L	252	Standard
	Ni	60	94600.8	0.9	**51.0293**	0.136	0.3	ug/L	192	Standard
	Cu	65	95833.5	0.4	**51.2541**	0.406	0.8	ug/L	141	Standard
	Zn	66	56109.7	0.5	**51.2906**	0.852	1.7	ug/L	491	Standard
>	Ge	72	505999.1	1.2				ug/L	515087	Standard
	As	75	55945.5	0.4	**50.6968**	0.402	0.8	ug/L	20	Standard
	Se	82	5756.3	0.8	**50.7852**	1.001	2.0	ug/L	15	Standard
	Se-1	77	3889.8	1.1	**51.8484**	1.021	2.0	ug/L	48	Standard
>	Ga	71	51.7	20.1				mg/L	90	Standard
	Rb	85	811.7	9.0				ug/L	23	Standard
	Y	89	426423.1	2.5				ug/L	448510	Standard
>	Rh	103	31.7	24.1				ug/L	15	Standard
	Mo	98	265386.1	0.2	**99.3199**	0.619	0.6	ug/L	11	Standard
	Ag	107	333927.0	1.2	**50.3137**	0.313	0.6	ug/L	134	Standard
	Cd	111	105484.6	1.1	**49.9277**	0.764	1.5	mg/L	7	Standard
	Cd	114	258596.4	2.6	**50.3494**	1.108	2.2	ug/L	16	Standard
>	In	115	604027.1	0.8				ug/L	611117	Standard
	Sn	118	295796.4	1.2	**50.5150**	0.923	1.8	ug/L	518	Standard
	Sb	123	237014.9	1.1	**50.8107**	0.333	0.7	ug/L	127	Standard
	Ba	135	100914.0	1.4	**49.4318**	0.852	1.7	ug/L	45	Standard
	Ce	140	80.0	0.0				ug/L	298	Standard
>	Tb	159	968181.4	1.1				ug/L	977942	Standard
	Ho	165	8.3	69.3				ug/L	12	Standard
	Tl	203	430250.2	1.2	**50.7804**	1.115	2.2	ug/L	31	Standard
	Tl	205	381434.8	2.3	**51.8414**	1.366	2.6	ug/L	20	Standard
	Pb	206	273103.8	0.8	**50.1867**	0.395	0.8	ug/L	286	Standard
	Pb	207	246704.6	0.5	**50.2667**	0.621	1.2	ug/L	257	Standard
	Pb	208	974193.4	0.6	**51.3084**	0.901	1.8	ug/L	956	Standard
	U	238	366221.1	0.4	**50.8280**	0.746	1.5	ug/L	17	Standard
>	Bi	209	560252.8	1.6				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	3943.8	5.4	**5.2490**	0.301	5.7	mg/L	32	Standard
K	39	1356.7	5.3	**4.4904**	0.223	5.0	mg/L	30	Standard
Ca	43	83.3	18.3	**7.4389**	2.295	30.8	mg/L	48	Standard
Fe	54	5957.3	2.0	**5.3112**	0.093	1.8	mg/L	159	Standard
Fe	57	1600.1	10.0	**4.8365**	0.580	12.0	mg/L	195	Standard
Sc-1	45	39128.8	0.6				mg/L	39543	Standard
Cl	35	37049.3	3.3				ug/L	27642	Standard
Kr	83	2.0	132.3				ug/L	2	Standard
Br	81	1520.1	14.1				ug/L	1647	Standard
P	31	19898.1	2.1				ug/L	15231	Standard
S	34	2718.6	2.9				ug/L	1845	Standard
Sr	88	73.3	20.8				ug/L	70	Standard
C	12	120.0	43.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.0	113.3				mg/L	12	Standard
Ho-1	165	8.3	69.3				mg/L	12	Standard
Er	166	20.0	50.0				mg/L	20	Standard
I	127	2098.5	16.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	104.803		
Al	27	100.735		
Sc	45			
Ti	47	102.179		
V	51	101.646		
Cr	52	101.846		
Cr	53			
Mn	55	98.925		
Co	59	102.291		
Ni	60	102.059		
Cu	65	102.508		
Zn	66	102.581		
Ge	72		98.236	
As	75	101.394		
Se	82	101.570		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	99.320		
Ag	107	100.627		
Cd	111	99.855		
Cd	114			
In	115			98.840
Sn	118	101.030		
Sb	123	101.621		
Ba	135	98.864		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.561		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.617		
U	238	101.656		
Bi	209			100.569
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 16:34:41
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77653.6	3.2				ug/L	81760	Standard
	Be	9	28.3	27.0	**0.0205**	0.009	43.8	ug/L	17	Standard
	Al	27	2033.5	6.8	**-0.0005**	0.001	113.9	ug/L	1410	Standard
	Sc	45	38149.6	0.7				ug/L	39543	Standard
	Ti	47	33.0	16.0	**-0.0290**	0.023	78.1	ug/L	39	Standard
	V	51	1124.7	5.5	**-0.0407**	0.010	23.8	ug/L	1415	Standard
	Cr	52	6085.9	0.6	**-0.1604**	0.016	10.1	ug/L	6946	Standard
	Cr	53	345.0	11.5	**0.0612**	0.041	67.1	ug/L	328	Standard
	Mn	55	652.0	2.2	**-0.0453**	0.002	5.1	ug/L	823	Standard
	Co	59	236.0	7.4	**0.0031**	0.003	92.5	ug/L	252	Standard
	Ni	60	163.3	9.5	**-0.0160**	0.008	51.9	ug/L	192	Standard
	Cu	65	132.3	11.7	**-0.0193**	0.009	47.2	ug/L	141	Standard
	Zn	66	446.3	5.3	**-0.4102**	0.017	4.3	ug/L	491	Standard
>	**Ge**	72	502289.8	1.3				ug/L	515087	Standard
	As	75	-42.3	118.5	**0.0014**	0.046	3304.8	ug/L	20	Standard
	Se	82	15.3	48.7	**0.0168**	0.064	382.8	ug/L	15	Standard
	Se-1	77	51.0	21.6	**-0.0257**	0.142	551.0	ug/L	48	Standard
>	**Ga**	71	38.3	27.2				mg/L	90	Standard
	Rb	85	10.0	86.6				ug/L	23	Standard
	Y	89	438316.4	0.6				ug/L	448510	Standard
>	**Rh**	103	15.0	0.0				ug/L	15	Standard
	Mo	98	228.3	18.4	**0.0667**	0.015	22.0	ug/L	11	Standard
	Ag	107	123.7	9.2	**0.0025**	0.002	72.5	ug/L	134	Standard
	Cd	111	11.3	56.7	**0.0024**	0.003	123.9	mg/L	7	Standard
	Cd	114	32.3	39.0	**0.0014**	0.003	178.7	ug/L	16	Standard
>	**In**	115	601315.6	1.3				ug/L	611117	Standard
	Sn	118	783.4	33.2	**0.0331**	0.047	140.5	ug/L	518	Standard
	Sb	123	646.2	31.1	**0.1267**	0.045	35.7	ug/L	127	Standard
	Ba	135	40.3	7.6	**-0.0052**	0.002	33.4	ug/L	45	Standard
	Ce	140	38.3	19.9				ug/L	298	Standard
>	**Tb**	159	937082.2	1.4				ug/L	977942	Standard
	Ho	165	5.0	100.0				ug/L	12	Standard
	Tl	203	49.7	12.9	**0.0012**	0.001	66.7	ug/L	31	Standard
	Tl	205	40.0	57.3	**0.0033**	0.003	97.6	ug/L	20	Standard
	Pb	206	275.3	5.0	**-0.0116**	0.003	25.8	ug/L	286	Standard
	Pb	207	258.0	7.0	**-0.0041**	0.003	84.6	ug/L	257	Standard
	Pb	208	1051.3	3.4	**-0.0036**	0.002	41.9	ug/L	956	Standard
	U	238	50.3	16.2	**0.0042**	0.001	28.1	ug/L	17	Standard
>	**Bi**	209	546028.7	0.7				ug/L	557080	Standard

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Na	23	3.3	86.6	**22.1550**	19.184	86.6	mg/L	0	Standard
Mg	24	31.7	50.8	**-0.0134**	0.022	167.6	mg/L	32	Standard
K	39	30.0	28.9	**-0.0362**	0.031	85.5	mg/L	30	Standard
Ca	43	30.0	66.7	**-0.6084**	3.177	522.1	mg/L	48	Standard
Fe	54	168.0	24.0	**0.0206**	0.039	187.8	mg/L	159	Standard
Fe	57	143.3	24.5	**-0.1229**	0.124	101.2	mg/L	195	Standard
Sc-1	45	38149.6	0.7				mg/L	39543	Standard
Cl	35	36673.0	2.0				ug/L	27642	Standard
Kr	83	1.0	173.2				ug/L	2	Standard
Br	81	1570.1	7.0				ug/L	1647	Standard
P	31	19050.3	3.5				ug/L	15231	Standard
S	34	2736.9	0.8				ug/L	1845	Standard
Sr	88	48.3	15.8				ug/L	70	Standard
C	12	133.3	4.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	5.7	217.0				mg/L	12	Standard
Ho-1	165	5.0	100.0				mg/L	12	Standard
Er	166	20.0	100.0				mg/L	20	Standard
I	127	1683.4	18.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.516	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.396
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.016
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606091601SDL WG574522-02
Sample Date/Time: Tuesday, June 28, 2016 16:37:54
Number of Replicates: 3
Autosampler Position: 242
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80481.5	1.5				ug/L	81760	Standard
	Be	9	31.7	9.1	**0.0226**	0.003	11.9	ug/L	17	Standard
	Al	27	181010.0	1.7	**1.1789**	0.039	3.3	ug/L	1410	Standard
	Sc	45	40285.2	2.7				ug/L	39543	Standard
	Ti	47	30.3	10.1	**-0.0420**	0.014	34.3	ug/L	39	Standard
	V	51	1262.3	9.3	**-0.0236**	0.014	61.0	ug/L	1415	Standard
	Cr	52	6637.8	2.8	**-0.0958**	0.014	14.1	ug/L	6946	Standard
	Cr	53	403.3	17.4	**0.1211**	0.074	61.5	ug/L	328	Standard
	Mn	55	3292.4	3.2	**0.3636**	0.014	3.8	ug/L	823	Standard
	Co	59	275.7	13.5	**0.0082**	0.005	64.5	ug/L	252	Standard
	Ni	60	218.7	22.1	**0.0120**	0.025	207.8	ug/L	192	Standard
	Cu	65	189.7	2.7	**0.0098**	0.003	33.4	ug/L	141	Standard
	Zn	66	2022.1	5.3	**1.0328**	0.100	9.7	ug/L	491	Standard
>	**Ge**	72	510876.9	1.9				ug/L	515087	Standard
	As	75	-16.1	411.9	**0.0255**	0.059	233.0	ug/L	20	Standard
	Se	82	17.9	79.1	**0.0373**	0.123	328.7	ug/L	15	Standard
	Se-1	77	53.0	5.0	**-0.0093**	0.040	429.4	ug/L	48	Standard
>	**Ga**	71	26.7	10.8				mg/L	90	Standard
	Rb	85	385.0	11.5				ug/L	23	Standard
	Y	89	434970.9	1.3				ug/L	448510	Standard
>	**Rh**	103	13.3	57.3				ug/L	15	Standard
	Mo	98	105.1	23.0	**0.0193**	0.009	45.6	ug/L	11	Standard
	Ag	107	160.3	33.6	**0.0074**	0.008	107.2	ug/L	134	Standard
	Cd	111	27.8	77.7	**0.0099**	0.010	100.3	mg/L	7	Standard
	Cd	114	89.4	76.6	**0.0121**	0.013	107.6	ug/L	16	Standard
>	**In**	115	618555.8	0.1				ug/L	611117	Standard
	Sn	118	705.0	14.2	**0.0159**	0.017	105.2	ug/L	518	Standard
	Sb	123	323.1	28.2	**0.0548**	0.019	34.7	ug/L	127	Standard
	Ba	135	6967.6	1.3	**3.3092**	0.040	1.2	ug/L	45	Standard
	Ce	140	23.3	65.5				ug/L	298	Standard
>	**Tb**	159	976647.8	1.4				ug/L	977942	Standard
	Ho	165	15.0	57.7				ug/L	12	Standard
	Tl	203	112.7	67.1	**0.0081**	0.009	105.4	ug/L	31	Standard
	Tl	205	90.0	29.4	**0.0096**	0.003	35.2	ug/L	20	Standard
	Pb	206	345.7	14.3	**-0.0019**	0.008	437.8	ug/L	286	Standard
	Pb	207	297.3	11.3	**0.0008**	0.006	736.1	ug/L	257	Standard
	Pb	208	1206.4	8.6	**0.0013**	0.005	370.6	ug/L	956	Standard
	U	238	79.3	55.4	**0.0077**	0.006	75.6	ug/L	17	Standard
>	**Bi**	209	576852.7	1.1				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	251.7	21.2	**0.2729**	0.077	28.4	mg/L	32	Standard
K	39	35.0	75.6	**-0.0238**	0.089	375.8	mg/L	30	Standard
Ca	43	41.7	66.1	**0.8623**	4.157	482.1	mg/L	48	Standard
Fe	54	139.7	6.2	**-0.0128**	0.010	79.6	mg/L	159	Standard
Fe	57	215.0	8.1	**0.0878**	0.054	61.5	mg/L	195	Standard
Sc-1	45	40285.2	2.7				mg/L	39543	Standard
Cl	35	36209.9	2.0				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1783.4	3.4				ug/L	1647	Standard
P	31	18659.8	1.9				ug/L	15231	Standard
S	34	2565.2	1.9				ug/L	1845	Standard
Sr	88	76.7	26.4				ug/L	70	Standard
C	12	126.7	24.1				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	19.2	52.1				mg/L	12	Standard
Ho-1	165	15.0	57.7				mg/L	12	Standard
Er	166	16.7	34.6				mg/L	20	Standard
I	127	2670.2	2.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		98.436	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.183	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.217
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.549
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606114201
Sample Date/Time: Tuesday, June 28, 2016 16:41:05
Number of Replicates: 3
Autosampler Position: 243
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80520.1	1.9				ug/L	81760	Standard
	Be	9	30.0	16.7	**0.0209**	0.005	21.7	ug/L	17	Standard
	Al	27	1224587.7	1.8	**8.0560**	0.286	3.6	ug/L	1410	Standard
	Sc	45	42140.2	1.9				ug/L	39543	Standard
	Ti	47	397.3	21.3	**1.4906**	0.359	24.1	ug/L	39	Standard
	V	51	2122.9	0.3	**0.1097**	0.002	1.5	ug/L	1415	Standard
	Cr	52	14472.9	1.3	**1.0963**	0.024	2.2	ug/L	6946	Standard
	Cr	53	2878.6	1.5	**3.0550**	0.050	1.6	ug/L	328	Standard
	Mn	55	698464.2	0.4	**111.4396**	0.282	0.3	ug/L	823	Standard
	Co	59	22132.5	0.4	**3.2312**	0.012	0.4	ug/L	252	Standard
	Ni	60	7435.8	1.3	**3.9843**	0.043	1.1	ug/L	192	Standard
	Cu	65	724.4	2.6	**0.3040**	0.008	2.7	ug/L	141	Standard
	Zn	66	6121.2	1.0	**4.9565**	0.034	0.7	ug/L	491	Standard
>	**Ge**	72	497323.9	0.5				ug/L	515087	Standard
	As	75	171.3	19.9	**0.1980**	0.031	15.4	ug/L	20	Standard
	Se	82	64.0	10.3	**0.4560**	0.056	12.4	ug/L	15	Standard
	Se-1	77	106.7	7.0	**0.7479**	0.110	14.7	ug/L	48	Standard
>	**Ga**	71	88.3	6.5				mg/L	90	Standard
	Rb	85	4614.0	1.5				ug/L	23	Standard
	Y	89	442742.2	2.0				ug/L	448510	Standard
>	**Rh**	103	21.7	35.3				ug/L	15	Standard
	Mo	98	335.3	5.4	**0.1033**	0.008	7.8	ug/L	11	Standard
	Ag	107	92.0	14.2	**-0.0027**	0.002	71.5	ug/L	134	Standard
	Cd	111	86.4	7.6	**0.0370**	0.004	9.6	mg/L	7	Standard
	Cd	114	204.2	9.6	**0.0339**	0.004	12.0	ug/L	16	Standard
>	**In**	115	619678.1	1.4				ug/L	611117	Standard
	Sn	118	898.4	6.0	**0.0480**	0.011	22.7	ug/L	518	Standard
	Sb	123	324.0	26.0	**0.0551**	0.019	33.6	ug/L	127	Standard
	Ba	135	76873.5	0.9	**36.7017**	0.677	1.8	ug/L	45	Standard
	Ce	140	3832.2	0.5				ug/L	298	Standard
>	**Tb**	159	963958.5	1.3				ug/L	977942	Standard
	Ho	165	96.7	23.3				ug/L	12	Standard
	Tl	203	122.3	9.5	**0.0098**	0.001	14.0	ug/L	31	Standard
	Tl	205	126.7	13.9	**0.0151**	0.002	14.9	ug/L	20	Standard
	Pb	206	564.7	2.8	**0.0417**	0.003	6.6	ug/L	286	Standard
	Pb	207	477.0	3.5	**0.0406**	0.003	8.6	ug/L	257	Standard
	Pb	208	2018.4	2.1	**0.0474**	0.002	3.2	ug/L	956	Standard
	U	238	92.7	4.5	**0.0101**	0.001	6.9	ug/L	17	Standard
>	**Bi**	209	552929.6	1.0				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.1351**	17.546	173.1	mg/L	0	Standard
Mg	24	7430.2	1.6	**9.2261**	0.222	2.4	mg/L	32	Standard
K	39	131.7	22.3	**0.2750**	0.084	30.6	mg/L	30	Standard
Ca	43	50.0	10.0	**1.7747**	0.605	34.1	mg/L	48	Standard
Fe	54	2749.1	1.6	**2.1977**	0.008	0.4	mg/L	159	Standard
Fe	57	918.4	0.8	**2.2851**	0.038	1.7	mg/L	195	Standard
> **Sc-1**	45	42140.2	1.9				mg/L	39543	Standard
Cl	35	36101.6	0.8				ug/L	27642	Standard
Kr	83	3.3	75.5				ug/L	2	Standard
Br	81	12138.2	7.4				ug/L	1647	Standard
P	31	25736.8	1.2				ug/L	15231	Standard
S	34	2443.5	6.8				ug/L	1845	Standard
Sr	88	88.3	31.2				ug/L	70	Standard
C	12	360.0	10.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	87.0	21.3				mg/L	12	Standard
Ho-1	165	96.7	23.3				mg/L	12	Standard
Er	166	63.3	48.2				mg/L	20	Standard
I	127	223077.6	8.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.483	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.551	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.401
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.255
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606114203
Sample Date/Time: Tuesday, June 28, 2016 16:44:17
Number of Replicates: 3
Autosampler Position: 244
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81992.9	1.1				ug/L	81760	Standard
	Be	9	28.3	27.0	**0.0187**	0.008	41.6	ug/L	17	Standard
	Al	27	794059.8	1.7	**5.1234**	0.139	2.7	ug/L	1410	Standard
	Sc	45	39785.5	1.2				ug/L	39543	Standard
	Ti	47	377.0	7.0	**1.3367**	0.105	7.9	ug/L	39	Standard
	V	51	6234.1	1.0	**0.6819**	0.005	0.8	ug/L	1415	Standard
	Cr	52	12611.2	0.3	**0.7377**	0.006	0.8	ug/L	6946	Standard
	Cr	53	1423.4	7.9	**1.2652**	0.132	10.4	ug/L	328	Standard
	Mn	55	579693.3	1.0	**88.4369**	1.228	1.4	ug/L	823	Standard
	Co	59	3503.7	1.5	**0.4627**	0.007	1.6	ug/L	252	Standard
	Ni	60	3465.4	2.9	**1.7179**	0.054	3.1	ug/L	192	Standard
	Cu	65	1070.0	1.6	**0.4670**	0.008	1.6	ug/L	141	Standard
	Zn	66	3004.0	2.3	**1.8876**	0.071	3.8	ug/L	491	Standard
>	**Ge**	72	519952.2	0.4				ug/L	515087	Standard
	As	75	346.7	9.3	**0.3458**	0.028	8.2	ug/L	20	Standard
	Se	82	27.6	23.7	**0.1179**	0.056	47.6	ug/L	15	Standard
	Se-1	77	61.3	6.2	**0.0875**	0.047	53.2	ug/L	48	Standard
>	**Ga**	71	168.3	22.5				mg/L	90	Standard
	Rb	85	8202.2	4.2				ug/L	23	Standard
	Y	89	450084.2	2.9				ug/L	448510	Standard
>	**Rh**	103	20.0	50.0				ug/L	15	Standard
	Mo	98	804.4	3.7	**0.2777**	0.016	5.8	ug/L	11	Standard
	Ag	107	104.7	4.0	**-0.0007**	0.001	91.7	ug/L	134	Standard
	Cd	111	177.3	6.3	**0.0797**	0.005	6.4	mg/L	7	Standard
	Cd	114	412.5	12.7	**0.0743**	0.011	14.2	ug/L	16	Standard
>	**In**	115	613204.5	2.4				ug/L	611117	Standard
	Sn	118	838.4	3.1	**0.0394**	0.004	11.4	ug/L	518	Standard
	Sb	123	255.2	2.7	**0.0411**	0.003	6.6	ug/L	127	Standard
	Ba	135	46232.8	2.2	**22.2974**	0.510	2.3	ug/L	45	Standard
	Ce	140	10413.6	4.0				ug/L	298	Standard
>	**Tb**	159	959024.8	2.1				ug/L	977942	Standard
	Ho	165	235.0	14.0				ug/L	12	Standard
	Tl	203	65.0	35.5	**0.0028**	0.003	94.5	ug/L	31	Standard
	Tl	205	33.3	45.8	**0.0022**	0.002	93.6	ug/L	20	Standard
	Pb	206	995.4	6.0	**0.1186**	0.010	8.6	ug/L	286	Standard
	Pb	207	825.7	1.1	**0.1096**	0.003	2.3	ug/L	257	Standard
	Pb	208	3331.5	0.8	**0.1144**	0.002	1.9	ug/L	956	Standard
	U	238	237.0	6.0	**0.0298**	0.002	6.6	ug/L	17	Standard
>	**Bi**	209	562917.3	0.4				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	1456.7	5.2	**1.8709**	0.119	6.4	mg/L	32	Standard
K	39	195.0	2.6	**0.5136**	0.022	4.3	mg/L	30	Standard
Ca	43	66.7	37.7	**4.7333**	3.876	81.9	mg/L	48	Standard
Fe	54	1995.7	3.8	**1.6587**	0.089	5.4	mg/L	159	Standard
Fe	57	716.7	4.0	**1.7796**	0.068	3.8	mg/L	195	Standard
> **Sc-1**	45	39785.5	1.2				mg/L	39543	Standard
Cl	35	34494.6	2.9				ug/L	27642	Standard
Kr	83	1.3	173.2				ug/L	2	Standard
Br	81	3500.4	9.9				ug/L	1647	Standard
P	31	20160.1	3.5				ug/L	15231	Standard
S	34	2286.8	4.4				ug/L	1845	Standard
Sr	88	110.0	28.4				ug/L	70	Standard
C	12	216.7	25.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	341.7	16.9				mg/L	12	Standard
Ho-1	165	235.0	14.0				mg/L	12	Standard
Er	166	243.3	11.9				mg/L	20	Standard
I	127	25506.6	11.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.285	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.945	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.342
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.048
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606114205
Sample Date/Time: Tuesday, June 28, 2016 16:47:28
Number of Replicates: 3
Autosampler Position: 245
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82787.3	1.4				ug/L	81760	Standard
	Be	9	48.3	23.9	**0.0383**	0.011	29.1	ug/L	17	Standard
	Al	27	819185.4	1.5	**5.2350**	0.125	2.4	ug/L	1410	Standard
	Sc	45	40940.2	1.5				ug/L	39543	Standard
	Ti	47	480.0	5.9	**1.6939**	0.112	6.6	ug/L	39	Standard
	V	51	6800.6	1.0	**0.7356**	0.007	0.9	ug/L	1415	Standard
	Cr	52	13980.4	1.6	**0.8771**	0.035	4.0	ug/L	6946	Standard
	Cr	53	1753.4	3.0	**1.5823**	0.062	3.9	ug/L	328	Standard
	Mn	55	596277.6	1.3	**88.4306**	1.209	1.4	ug/L	823	Standard
	Co	59	3687.4	0.3	**0.4741**	0.004	0.7	ug/L	252	Standard
	Ni	60	3717.1	1.3	**1.7958**	0.025	1.4	ug/L	192	Standard
	Cu	65	1213.0	2.2	**0.5240**	0.015	2.9	ug/L	141	Standard
	Zn	66	2977.6	2.2	**1.7886**	0.052	2.9	ug/L	491	Standard
>	**Ge**	72	534849.8	0.4				ug/L	515087	Standard
	As	75	377.9	7.0	**0.3640**	0.023	6.2	ug/L	20	Standard
	Se	82	30.4	15.6	**0.1347**	0.040	29.6	ug/L	15	Standard
	Se-1	77	66.7	7.4	**0.1333**	0.063	47.3	ug/L	48	Standard
>	**Ga**	71	223.3	16.2				mg/L	90	Standard
	Rb	85	9057.7	1.9				ug/L	23	Standard
	Y	89	448330.1	1.0				ug/L	448510	Standard
>	**Rh**	103	13.3	21.7				ug/L	15	Standard
	Mo	98	830.0	4.5	**0.2872**	0.016	5.5	ug/L	11	Standard
	Ag	107	122.7	18.8	**0.0020**	0.004	175.3	ug/L	134	Standard
	Cd	111	156.2	7.4	**0.0700**	0.006	8.4	mg/L	7	Standard
	Cd	114	373.1	12.2	**0.0667**	0.009	13.8	ug/L	16	Standard
>	**In**	115	612810.6	0.7				ug/L	611117	Standard
	Sn	118	755.0	9.6	**0.0254**	0.012	48.6	ug/L	518	Standard
	Sb	123	285.8	9.7	**0.0476**	0.006	12.8	ug/L	127	Standard
	Ba	135	48731.6	0.5	**23.5144**	0.057	0.2	ug/L	45	Standard
	Ce	140	12518.5	3.0				ug/L	298	Standard
>	**Tb**	159	979236.7	1.3				ug/L	977942	Standard
	Ho	165	273.3	12.2				ug/L	12	Standard
	Tl	203	95.3	25.1	**0.0062**	0.003	47.7	ug/L	31	Standard
	Tl	205	61.7	4.7	**0.0059**	0.000	5.9	ug/L	20	Standard
	Pb	206	1176.7	3.8	**0.1481**	0.011	7.4	ug/L	286	Standard
	Pb	207	985.7	2.0	**0.1385**	0.005	4.0	ug/L	257	Standard
	Pb	208	4033.5	3.6	**0.1475**	0.011	7.5	ug/L	956	Standard
	U	238	279.0	8.7	**0.0349**	0.004	10.9	ug/L	17	Standard
>	**Bi**	209	573358.0	1.7				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.1692**	17.605	173.1	mg/L	0	Standard
Mg	24	1471.7	7.4	**1.8343**	0.119	6.5	mg/L	32	Standard
K	39	181.7	21.4	**0.4516**	0.129	28.5	mg/L	30	Standard
Ca	43	60.0	36.3	**3.4344**	3.118	90.8	mg/L	48	Standard
Fe	54	2300.2	8.7	**1.8724**	0.148	7.9	mg/L	159	Standard
Fe	57	716.7	8.3	**1.7108**	0.158	9.3	mg/L	195	Standard
> **Sc-1**	45	40940.2	1.5				mg/L	39543	Standard
Cl	35	34657.6	1.8				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	3160.3	4.1				ug/L	1647	Standard
P	31	20585.6	2.1				ug/L	15231	Standard
S	34	2273.5	1.5				ug/L	1845	Standard
Sr	88	120.0	11.0				ug/L	70	Standard
C	12	246.7	23.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	334.1	26.2				mg/L	12	Standard
Ho-1	165	273.3	12.2				mg/L	12	Standard
Er	166	263.3	24.4				mg/L	20	Standard
I	127	21154.8	6.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.256	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.837	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.277
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.922
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606115102
Sample Date/Time: Tuesday, June 28, 2016 16:50:39
Number of Replicates: 3
Autosampler Position: 246
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83962.1	2.2				ug/L	81760	Standard
	Be	9	23.3	32.7	**0.0132**	0.008	57.7	ug/L	17	Standard
	Al	27	14475219.3	2.2	**91.4576**	2.716	3.0	ug/L	1410	Standard
	Sc	45	40821.6	0.4				ug/L	39543	Standard
	Ti	47	413.3	6.2	**1.5180**	0.138	9.1	ug/L	39	Standard
	V	51	16629.8	2.6	**2.2151**	0.113	5.1	ug/L	1415	Standard
	Cr	52	10947.0	2.1	**0.5345**	0.067	12.6	ug/L	6946	Standard
	Cr	53	3965.5	4.7	**4.2265**	0.126	3.0	ug/L	328	Standard
	Mn	55	185468.7	3.9	**28.8128**	1.697	5.9	ug/L	823	Standard
	Co	59	997.7	2.0	**0.1124**	0.006	4.9	ug/L	252	Standard
	Ni	60	1478.4	4.6	**0.6898**	0.053	7.7	ug/L	192	Standard
	Cu	65	1958.8	1.9	**0.9525**	0.040	4.2	ug/L	141	Standard
	Zn	66	8106.5	2.8	**6.6572**	0.319	4.8	ug/L	491	Standard
>	**Ge**	72	509236.4	2.2				ug/L	515087	Standard
	As	75	962.9	2.3	**0.9070**	0.035	3.9	ug/L	20	Standard
	Se	82	228.1	4.7	**1.8861**	0.120	6.4	ug/L	15	Standard
	Se-1	77	223.7	5.0	**2.2872**	0.212	9.3	ug/L	48	Standard
>	**Ga**	71	265.0	37.9				mg/L	90	Standard
	Rb	85	21039.6	2.1				ug/L	23	Standard
	Y	89	444144.2	0.6				ug/L	448510	Standard
>	**Rh**	103	50.0	20.0				ug/L	15	Standard
	Mo	98	3394.4	4.1	**1.2339**	0.051	4.2	ug/L	11	Standard
	Ag	107	107.3	13.1	**-0.0003**	0.002	751.8	ug/L	134	Standard
	Cd	111	62.6	4.9	**0.0263**	0.001	5.7	mg/L	7	Standard
	Cd	114	195.9	21.1	**0.0327**	0.008	24.5	ug/L	16	Standard
>	**In**	115	612517.0	0.3				ug/L	611117	Standard
	Sn	118	836.7	5.7	**0.0392**	0.008	20.1	ug/L	518	Standard
	Sb	123	547.1	4.7	**0.1028**	0.005	5.0	ug/L	127	Standard
	Ba	135	71666.8	2.3	**34.6081**	0.699	2.0	ug/L	45	Standard
	Ce	140	3362.0	2.6				ug/L	298	Standard
>	**Tb**	159	988372.6	0.5				ug/L	977942	Standard
	Ho	165	63.3	75.9				ug/L	12	Standard
	Tl	203	105.7	10.4	**0.0078**	0.001	16.0	ug/L	31	Standard
	Tl	205	108.3	39.8	**0.0125**	0.006	45.9	ug/L	20	Standard
	Pb	206	1800.1	2.5	**0.2697**	0.008	3.1	ug/L	286	Standard
	Pb	207	1518.4	2.6	**0.2536**	0.007	2.9	ug/L	257	Standard
	Pb	208	6212.5	1.8	**0.2692**	0.011	4.0	ug/L	956	Standard
	U	238	10075.0	2.3	**1.4043**	0.047	3.4	ug/L	17	Standard
>	**Bi**	209	556782.3	1.6				ug/L	557080	Standard

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Na	23	3.3	86.6	**20.7586**	17.973	86.6	mg/L	0	Standard
Mg	24	36599.2	3.6	**47.1388**	1.781	3.8	mg/L	32	Standard
K	39	311.7	20.3	**0.8782**	0.204	23.2	mg/L	30	Standard
Ca	43	200.0	10.0	**24.0730**	2.845	11.8	mg/L	48	Standard
Fe	54	272.4	27.9	**0.1018**	0.067	65.8	mg/L	159	Standard
Fe	57	400.0	17.2	**0.6830**	0.221	32.3	mg/L	195	Standard
Sc-1	45	40821.6	0.4				mg/L	39543	Standard
Cl	35	37764.4	4.8				ug/L	27642	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	41179.3	5.9				ug/L	1647	Standard
P	31	20392.0	1.6				ug/L	15231	Standard
S	34	2350.2	4.9				ug/L	1845	Standard
Sr	88	246.7	3.1				ug/L	70	Standard
C	12	240.0	16.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	93.2	27.3				mg/L	12	Standard
Ho-1	165	63.3	75.9				mg/L	12	Standard
Er	166	73.3	7.9				mg/L	20	Standard
I	127	267945.4	8.8				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.693	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.864	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.229
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.946
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606115105
Sample Date/Time: Tuesday, June 28, 2016 16:53:51
Number of Replicates: 3
Autosampler Position: 247
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81681.4	3.1				ug/L	81760	Standard
	Be	9	16.7	45.8	**0.0069**	0.007	104.2	ug/L	17	Standard
	Al	27	18070414.8	1.1	**117.3803**	2.444	2.1	ug/L	1410	Standard
	Sc	45	40721.3	2.6				ug/L	39543	Standard
	Ti	47	244.7	8.0	**0.8457**	0.069	8.1	ug/L	39	Standard
	V	51	17618.4	3.0	**2.3985**	0.046	1.9	ug/L	1415	Standard
	Cr	52	10888.2	1.3	**0.5506**	0.002	0.4	ug/L	6946	Standard
	Cr	53	4290.6	7.0	**4.6855**	0.402	8.6	ug/L	328	Standard
	Mn	55	234137.7	1.0	**36.9743**	0.056	0.2	ug/L	823	Standard
	Co	59	907.0	1.1	**0.1013**	0.001	0.9	ug/L	252	Standard
	Ni	60	1595.4	2.1	**0.7658**	0.017	2.3	ug/L	192	Standard
	Cu	65	1678.8	2.6	**0.8172**	0.017	2.1	ug/L	141	Standard
	Zn	66	5525.3	1.2	**4.3540**	0.048	1.1	ug/L	491	Standard
>	**Ge**	72	501124.8	1.2				ug/L	515087	Standard
	As	75	1072.7	4.1	**1.0212**	0.046	4.5	ug/L	20	Standard
	Se	82	264.0	5.9	**2.2378**	0.139	6.2	ug/L	15	Standard
	Se-1	77	284.0	16.7	**3.1586**	0.667	21.1	ug/L	48	Standard
>	**Ga**	71	116.7	13.8				mg/L	90	Standard
	Rb	85	15923.4	4.0				ug/L	23	Standard
	Y	89	444308.5	1.8				ug/L	448510	Standard
>	**Rh**	103	68.3	40.3				ug/L	15	Standard
	Mo	98	3823.6	1.7	**1.4182**	0.006	0.4	ug/L	11	Standard
	Ag	107	76.3	4.0	**-0.0047**	0.001	10.8	ug/L	134	Standard
	Cd	111	40.8	13.4	**0.0165**	0.003	15.5	mg/L	7	Standard
	Cd	114	111.3	16.3	**0.0169**	0.004	22.4	ug/L	16	Standard
>	**In**	115	601437.2	1.6				ug/L	611117	Standard
	Sn	118	1256.7	47.3	**0.1130**	0.098	86.7	ug/L	518	Standard
	Sb	123	502.0	6.8	**0.0953**	0.009	9.3	ug/L	127	Standard
	Ba	135	85456.0	1.5	**42.0358**	0.440	1.0	ug/L	45	Standard
	Ce	140	1221.7	20.4				ug/L	298	Standard
>	**Tb**	159	951914.7	0.8				ug/L	977942	Standard
	Ho	165	38.3	39.8				ug/L	12	Standard
	Tl	203	109.0	4.0	**0.0087**	0.001	7.8	ug/L	31	Standard
	Tl	205	100.0	13.2	**0.0120**	0.002	15.9	ug/L	20	Standard
	Pb	206	942.7	3.4	**0.1187**	0.004	3.7	ug/L	286	Standard
	Pb	207	751.4	3.5	**0.1031**	0.007	7.3	ug/L	257	Standard
	Pb	208	3320.1	1.9	**0.1235**	0.005	4.4	ug/L	956	Standard
	U	238	12716.0	1.7	**1.8521**	0.048	2.6	ug/L	17	Standard
>	**Bi**	209	533061.4	1.1				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.4978**	18.174	173.1	mg/L	0	Standard
Mg	24	45127.2	3.7	**58.2718**	1.297	2.2	mg/L	32	Standard
K	39	268.3	17.6	**0.7391**	0.156	21.1	mg/L	30	Standard
Ca	43	230.0	5.8	**28.6229**	2.753	9.6	mg/L	48	Standard
Fe	54	227.2	16.5	**0.0631**	0.037	58.2	mg/L	159	Standard
Fe	57	321.7	8.6	**0.4294**	0.079	18.3	mg/L	195	Standard
> **Sc-1**	45	40721.3	2.6				mg/L	39543	Standard
Cl	35	40535.5	2.1				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	42472.8	3.2				ug/L	1647	Standard
P	31	21144.7	2.2				ug/L	15231	Standard
S	34	2520.2	4.3				ug/L	1845	Standard
Sr	88	268.3	23.3				ug/L	70	Standard
C	12	270.0	30.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	48.6	21.1				mg/L	12	Standard
Ho-1	165	38.3	39.8				mg/L	12	Standard
Er	166	30.0	33.3				mg/L	20	Standard
I	127	357293.3	4.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.904	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.289	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.416
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.688
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606115401 WG573751-03
Sample Date/Time: Tuesday, June 28, 2016 16:57:02
Number of Replicates: 3
Autosampler Position: 248
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	100430.3	2.8				ug/L	81760	Standard
	Be	9	28.3	56.7	**0.0134**	0.013	96.3	ug/L	17	Standard
	Al	27	81335563.7	1.7	**429.6767**	8.046	1.9	ug/L	1410	Standard
	Sc	45	36054.5	1.3				ug/L	39543	Standard
	Ti	47	276.7	4.4	**1.0861**	0.041	3.8	ug/L	39	Standard
	V	51	56034.7	2.7	**8.8625**	0.243	2.7	ug/L	1415	Standard
	Cr	52	12377.7	0.7	**0.9433**	0.019	2.0	ug/L	6946	Standard
	Cr	53	23940.6	3.3	**30.3443**	1.215	4.0	ug/L	328	Standard
	Mn	55	741944.6	0.9	**128.6152**	2.806	2.2	ug/L	823	Standard
	Co	59	3502.1	2.3	**0.5295**	0.021	4.0	ug/L	252	Standard
	Ni	60	10135.4	1.6	**5.9492**	0.102	1.7	ug/L	192	Standard
	Cu	65	4993.5	1.7	**2.8661**	0.085	3.0	ug/L	141	Standard
	Zn	66	5821.5	1.7	**5.1486**	0.184	3.6	ug/L	491	Standard
>	**Ge**	72	457910.9	1.5				ug/L	515087	Standard
	As	75	1957.2	6.1	**1.9997**	0.145	7.2	ug/L	20	Standard
	Se	82	3071.1	3.5	**29.9014**	1.486	5.0	ug/L	15	Standard
	Se-1	77	4244.3	1.8	**62.6742**	2.070	3.3	ug/L	48	Standard
>	**Ga**	71	138.3	10.4				mg/L	90	Standard
	Rb	85	9993.3	0.6				ug/L	23	Standard
	Y	89	397349.5	0.4				ug/L	448510	Standard
>	**Rh**	103	1400.1	6.9				ug/L	15	Standard
	Mo	98	28731.5	0.6	**12.2349**	0.110	0.9	ug/L	11	Standard
	Ag	107	395.7	2.6	**0.0517**	0.002	4.3	ug/L	134	Standard
	Cd	111	92.0	15.6	**0.0467**	0.008	17.2	mg/L	7	Standard
	Cd	114	319.4	5.6	**0.0659**	0.004	5.6	ug/L	16	Standard
>	**In**	115	530125.1	0.7				ug/L	611117	Standard
	Sn	118	1140.0	5.3	**0.1203**	0.011	8.8	ug/L	518	Standard
	Sb	123	532.5	6.0	**0.1172**	0.007	5.9	ug/L	127	Standard
	Ba	135	16736.6	1.8	**9.3206**	0.182	2.0	ug/L	45	Standard
	Ce	140	1620.1	9.0				ug/L	298	Standard
>	**Tb**	159	890828.2	2.0				ug/L	977942	Standard
	Ho	165	38.3	27.2				ug/L	12	Standard
	Tl	203	267.7	7.7	**0.0327**	0.003	10.1	ug/L	31	Standard
	Tl	205	231.7	6.6	**0.0350**	0.002	6.9	ug/L	20	Standard
	Pb	206	883.7	4.8	**0.1290**	0.007	5.4	ug/L	286	Standard
	Pb	207	738.7	4.5	**0.1206**	0.010	8.0	ug/L	257	Standard
	Pb	208	2811.4	0.6	**0.1152**	0.004	3.5	ug/L	956	Standard
	U	238	63722.1	1.7	**10.4767**	0.095	0.9	ug/L	17	Standard
>	**Bi**	209	472777.8	1.7				ug/L	557080	Standard

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Na	23	15.0	33.3	**105.9031**	36.283	34.3	mg/L	0	Standard
Mg	24	356514.1	0.8	**520.5310**	10.800	2.1	mg/L	32	Standard
K	39	430.0	2.3	**1.4525**	0.056	3.9	mg/L	30	Standard
Ca	43	1840.1	5.6	**301.0738**	13.488	4.5	mg/L	48	Standard
Fe	54	188.6	12.1	**0.0500**	0.021	41.8	mg/L	159	Standard
Fe	57	1585.1	2.5	**5.2457**	0.200	3.8	mg/L	195	Standard
Sc-1	45	36054.5	1.3				mg/L	39543	Standard
Cl	35	90598.1	1.3				ug/L	27642	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	42312.4	3.9				ug/L	1647	Standard
P	31	19347.4	2.8				ug/L	15231	Standard
S	34	2421.9	2.4				ug/L	1845	Standard
Sr	88	6231.3	0.9				ug/L	70	Standard
C	12	243.3	12.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	37.9	25.6				mg/L	12	Standard
Ho-1	165	38.3	27.2				mg/L	12	Standard
Er	166	43.3	96.1				mg/L	20	Standard
I	127	118064.4	6.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		122.835	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		88.900	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	86.747
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	84.867
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606115402S WG573751-09
Sample Date/Time: Tuesday, June 28, 2016 17:00:14
Number of Replicates: 3
Autosampler Position: 249
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	111794.4	2.2				ug/L	81760	Standard
	Be	9	61074.6	3.8	**44.9573**	0.853	1.9	ug/L	17	Standard
	Al	27	84589452.8	4.6	**401.1886**	9.792	2.4	ug/L	1410	Standard
	Sc	45	39148.9	4.1				ug/L	39543	Standard
	Ti	47	272.0	24.8	**0.9934**	0.318	32.0	ug/L	39	Standard
	V	51	406216.4	3.4	**61.4172**	0.609	1.0	ug/L	1415	Standard
	Cr	52	347340.1	3.9	**51.5532**	0.830	1.6	ug/L	6946	Standard
	Cr	53	63548.0	2.3	**76.0057**	0.198	0.3	ug/L	328	Standard
	Mn	55	986761.6	2.9	**160.3601**	1.162	0.7	ug/L	823	Standard
	Co	59	344414.5	2.6	**51.6648**	0.567	1.1	ug/L	252	Standard
	Ni	60	96461.7	3.6	**53.9005**	0.670	1.2	ug/L	192	Standard
	Cu	65	88941.7	2.7	**49.2712**	0.171	0.3	ug/L	141	Standard
	Zn	66	55366.0	3.1	**52.4384**	0.443	0.8	ug/L	491	Standard
>	**Ge**	72	488431.6	2.5				ug/L	515087	Standard
	As	75	59145.7	4.0	**55.5035**	0.877	1.6	ug/L	20	Standard
	Se	82	9257.9	4.7	**84.6512**	1.891	2.2	ug/L	15	Standard
	Se-1	77	8241.9	2.0	**114.6628**	0.599	0.5	ug/L	48	Standard
>	**Ga**	71	135.0	3.7				mg/L	90	Standard
	Rb	85	11232.5	8.2				ug/L	23	Standard
	Y	89	424780.5	4.2				ug/L	448510	Standard
>	**Rh**	103	1410.1	5.3				ug/L	15	Standard
	Mo	98	28554.4	4.0	**11.2353**	0.049	0.4	ug/L	11	Standard
	Ag	107	298500.0	4.4	**47.3531**	0.325	0.7	ug/L	134	Standard
	Cd	111	96838.7	4.3	**48.2572**	0.264	0.5	mg/L	7	Standard
	Cd	114	236461.6	3.9	**48.4818**	0.307	0.6	ug/L	16	Standard
>	**In**	115	573601.2	3.7				ug/L	611117	Standard
	Sn	118	926.7	16.3	**0.0649**	0.025	39.2	ug/L	518	Standard
	Sb	123	232072.7	4.2	**52.3852**	0.509	1.0	ug/L	127	Standard
	Ba	135	113861.5	4.7	**58.7202**	0.562	1.0	ug/L	45	Standard
	Ce	140	1120.0	4.0				ug/L	298	Standard
>	**Tb**	159	960238.4	4.5				ug/L	977942	Standard
	Ho	165	33.3	75.5				ug/L	12	Standard
	Tl	203	395828.3	3.1	**51.4711**	0.762	1.5	ug/L	31	Standard
	Tl	205	346560.1	3.5	**51.8878**	0.159	0.3	ug/L	20	Standard
	Pb	206	263890.3	2.7	**53.4438**	0.979	1.8	ug/L	286	Standard
	Pb	207	230261.5	2.5	**51.7030**	0.928	1.8	ug/L	257	Standard
	Pb	208	887552.6	2.9	**51.5030**	0.554	1.1	ug/L	956	Standard
	U	238	419873.0	2.9	**64.2072**	0.642	1.0	ug/L	17	Standard
>	**Bi**	209	508536.8	3.8				ug/L	557080	Standard

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Na	23	21.7	35.3	**139.6053**	45.304	32.5	mg/L	0	Standard
Mg	24	357824.7	2.8	**481.2852**	10.577	2.2	mg/L	32	Standard
K	39	491.7	6.5	**1.5399**	0.155	10.1	mg/L	30	Standard
Ca	43	1775.1	1.7	**267.3999**	15.688	5.9	mg/L	48	Standard
Fe	54	171.9	15.3	**0.0199**	0.020	102.8	mg/L	159	Standard
Fe	57	1550.1	0.6	**4.6666**	0.208	4.5	mg/L	195	Standard
Sc-1	45	39148.9	4.1				mg/L	39543	Standard
Cl	35	91435.3	3.5				ug/L	27642	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	45418.1	6.1				ug/L	1647	Standard
P	31	20330.3	5.5				ug/L	15231	Standard
S	34	2288.5	3.3				ug/L	1845	Standard
Sr	88	6416.4	6.4				ug/L	70	Standard
C	12	206.7	37.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	21.9	50.9				mg/L	12	Standard
Ho-1	165	33.3	75.5				mg/L	12	Standard
Er	166	30.0	57.7				mg/L	20	Standard
I	127	49499.1	2.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		136.735	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.825	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	93.861
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	91.286
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Se-1 77 Upper, S, EEE	Se-1	77	

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Method 6020 - Summary Report

Sample ID: L1606115403SD WG573751-10
Sample Date/Time: Tuesday, June 28, 2016 17:03:25
Number of Replicates: 3
Autosampler Position: 250
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	118994.0	2.6				ug/L	81760	Standard
	Be	9	64654.3	0.9	**44.7357**	0.820	1.8	ug/L	17	Standard
	Al	27	87741403.7	3.4	**391.0655**	6.582	1.7	ug/L	1410	Standard
	Sc	45	41172.5	1.6				ug/L	39543	Standard
	Ti	47	259.3	3.7	**0.9238**	0.057	6.2	ug/L	39	Standard
	V	51	425385.5	3.2	**63.6566**	1.295	2.0	ug/L	1415	Standard
	Cr	52	362069.3	1.9	**53.2267**	0.604	1.1	ug/L	6946	Standard
	Cr	53	64441.8	2.0	**76.2717**	0.872	1.1	ug/L	328	Standard
	Mn	55	1073606.3	3.1	**172.6721**	4.096	2.4	ug/L	823	Standard
	Co	59	369825.3	3.2	**54.8942**	1.128	2.1	ug/L	252	Standard
	Ni	60	100548.2	1.5	**55.6131**	0.149	0.3	ug/L	192	Standard
	Cu	65	92359.0	1.3	**50.6385**	0.319	0.6	ug/L	141	Standard
	Zn	66	57865.3	2.6	**54.2651**	0.864	1.6	ug/L	491	Standard
>	**Ge**	72	493572.0	1.8				ug/L	515087	Standard
	As	75	61885.0	3.3	**57.4777**	1.381	2.4	ug/L	20	Standard
	Se	82	9664.4	3.7	**87.4717**	2.250	2.6	ug/L	15	Standard
	Se-1	77	8366.3	3.5	**115.1653**	2.897	2.5	ug/L	48	Standard
>	**Ga**	71	118.3	21.7				mg/L	90	Standard
	Rb	85	11170.8	6.4				ug/L	23	Standard
	Y	89	447220.0	3.1				ug/L	448510	Standard
>	**Rh**	103	1640.1	8.8				ug/L	15	Standard
	Mo	98	29726.0	4.1	**11.0857**	0.160	1.4	ug/L	11	Standard
	Ag	107	312572.9	2.2	**47.0220**	0.762	1.6	ug/L	134	Standard
	Cd	111	102356.1	3.3	**48.3584**	0.794	1.6	mg/L	7	Standard
	Cd	114	246212.9	4.6	**47.8408**	0.884	1.8	ug/L	16	Standard
>	**In**	115	605206.5	3.7				ug/L	611117	Standard
	Sn	118	1233.4	10.6	**0.1085**	0.018	16.3	ug/L	518	Standard
	Sb	123	240651.4	1.9	**51.5127**	0.935	1.8	ug/L	127	Standard
	Ba	135	117995.0	3.4	**57.6913**	0.169	0.3	ug/L	45	Standard
	Ce	140	1415.1	2.3				ug/L	298	Standard
>	**Tb**	159	994298.0	3.0				ug/L	977942	Standard
	Ho	165	46.7	12.4				ug/L	12	Standard
	Tl	203	412661.0	1.3	**51.8933**	0.197	0.4	ug/L	31	Standard
	Tl	205	366877.2	3.6	**53.1179**	1.107	2.1	ug/L	20	Standard
	Pb	206	275320.1	2.3	**53.9118**	0.413	0.8	ug/L	286	Standard
	Pb	207	238830.1	2.6	**51.8469**	0.552	1.1	ug/L	257	Standard
	Pb	208	936516.1	2.9	**52.5472**	0.756	1.4	ug/L	956	Standard
	U	238	442147.9	3.9	**65.3698**	1.598	2.4	ug/L	17	Standard
>	**Bi**	209	525736.2	1.5				ug/L	557080	Standard

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Na	23	31.7	48.2	**194.7966**	93.559	48.0	mg/L	0	Standard
Mg	24	381865.2	2.0	**488.2175**	12.226	2.5	mg/L	32	Standard
K	39	475.0	11.9	**1.3985**	0.159	11.4	mg/L	30	Standard
Ca	43	1828.4	7.5	**261.2707**	17.620	6.7	mg/L	48	Standard
Fe	54	210.4	5.2	**0.0459**	0.012	26.9	mg/L	159	Standard
Fe	57	1693.4	5.0	**4.8640**	0.189	3.9	mg/L	195	Standard
> **Sc-1**	45	41172.5	1.6				mg/L	39543	Standard
Cl	35	96785.1	3.5				ug/L	27642	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	48665.0	7.0				ug/L	1647	Standard
P	31	21074.7	3.4				ug/L	15231	Standard
S	34	2411.9	0.6				ug/L	1845	Standard
Sr	88	7001.6	9.4				ug/L	70	Standard
C	12	253.3	28.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	54.1	45.2				mg/L	12	Standard
Ho-1	165	46.7	12.4				mg/L	12	Standard
Er	166	53.3	28.6				mg/L	20	Standard
I	127	96813.1	12.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		145.540	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.823	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.033
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.373
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606115403SD WG573751-10
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Se-1 77 Upper, S, EEE Se-1 77

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Method 6020 - Summary Report

Sample ID: L1606115404
Sample Date/Time: Tuesday, June 28, 2016 17:06:37
Number of Replicates: 3
Autosampler Position: 251
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	100804.3	1.4				ug/L	81760	Standard
	Be	9	43.3	6.7	**0.0257**	0.002	9.1	ug/L	17	Standard
	Al	27	95134.9	5.2	**0.4862**	0.026	5.4	ug/L	1410	Standard
	Sc	45	38767.9	2.5				ug/L	39543	Standard
	Ti	47	56.0	17.6	**0.0568**	0.042	74.0	ug/L	39	Standard
	V	51	2653.2	7.2	**0.1688**	0.023	13.6	ug/L	1415	Standard
	Cr	52	16846.0	0.3	**1.3242**	0.040	3.0	ug/L	6946	Standard
	Cr	53	2448.5	10.3	**2.4055**	0.318	13.2	ug/L	328	Standard
	Mn	55	6416.4	0.3	**0.8254**	0.012	1.5	ug/L	823	Standard
	Co	59	385.0	5.1	**0.0226**	0.003	13.2	ug/L	252	Standard
	Ni	60	1595.4	9.2	**0.7282**	0.071	9.8	ug/L	192	Standard
	Cu	65	1383.7	5.1	**0.6260**	0.046	7.3	ug/L	141	Standard
	Zn	66	3329.0	1.8	**2.1614**	0.092	4.3	ug/L	491	Standard
>	**Ge**	72	523540.2	1.3				ug/L	515087	Standard
	As	75	21.6	288.4	**0.0594**	0.054	91.4	ug/L	20	Standard
	Se	82	48.4	30.2	**0.2956**	0.131	44.3	ug/L	15	Standard
	Se-1	77	118.7	6.2	**0.8319**	0.117	14.0	ug/L	48	Standard
>	**Ga**	71	35.0	51.5				mg/L	90	Standard
	Rb	85	285.0	10.7				ug/L	23	Standard
	Y	89	449294.4	0.5				ug/L	448510	Standard
>	**Rh**	103	35.0	14.3				ug/L	15	Standard
	Mo	98	461.6	2.9	**0.1485**	0.005	3.0	ug/L	11	Standard
	Ag	107	143.3	7.2	**0.0047**	0.002	32.8	ug/L	134	Standard
	Cd	111	43.9	7.3	**0.0172**	0.002	8.8	mg/L	7	Standard
	Cd	114	151.5	5.9	**0.0237**	0.002	7.4	ug/L	16	Standard
>	**In**	115	622732.4	0.3				ug/L	611117	Standard
	Sn	118	3920.5	2.1	**0.5488**	0.015	2.8	ug/L	518	Standard
	Sb	123	270.3	27.2	**0.0434**	0.015	35.5	ug/L	127	Standard
	Ba	135	1327.1	1.7	**0.6057**	0.011	1.9	ug/L	45	Standard
	Ce	140	168.3	16.4				ug/L	298	Standard
>	**Tb**	159	980536.6	0.9				ug/L	977942	Standard
	Ho	165	21.7	13.3				ug/L	12	Standard
	Tl	203	266.3	8.1	**0.0259**	0.003	10.5	ug/L	31	Standard
	Tl	205	201.7	5.7	**0.0244**	0.001	5.0	ug/L	20	Standard
	Pb	206	459.0	5.5	**0.0188**	0.005	29.2	ug/L	286	Standard
	Pb	207	389.7	6.3	**0.0195**	0.006	29.5	ug/L	257	Standard
	Pb	208	1625.7	6.2	**0.0231**	0.006	26.8	ug/L	956	Standard
	U	238	121.7	7.4	**0.0135**	0.001	9.9	ug/L	17	Standard
>	**Bi**	209	574701.5	1.2				ug/L	557080	Standard

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Na	23	5.0	100.0	**32.7163**	32.227	98.5	mg/L	0	Standard
Mg	24	330.0	22.9	**0.3898**	0.094	24.2	mg/L	32	Standard
K	39	33.3	43.3	**-0.0268**	0.048	179.7	mg/L	30	Standard
Ca	43	33.3	43.3	**-0.2011**	2.146	1067.4	mg/L	48	Standard
Fe	54	141.8	17.1	**-0.0059**	0.025	416.6	mg/L	159	Standard
Fe	57	216.7	23.3	**0.1207**	0.166	137.9	mg/L	195	Standard
Sc-1	45	38767.9	2.5				mg/L	39543	Standard
Cl	35	43132.0	0.5				ug/L	27642	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	3107.0	8.7				ug/L	1647	Standard
P	31	17094.6	3.8				ug/L	15231	Standard
S	34	2171.8	4.7				ug/L	1845	Standard
Sr	88	71.7	31.5				ug/L	70	Standard
C	12	180.0	44.1				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.3	86.6				mg/L	12	Standard
Ho-1	165	21.7	13.3				mg/L	12	Standard
Er	166	6.7	86.6				mg/L	20	Standard
I	127	6683.3	38.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		123.293	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.641	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.901
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.163
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 17:09:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	98106.9	3.9				ug/L	81760	Standard
	Be	9	60781.9	5.8	**50.9762**	1.224	2.4	ug/L	17	Standard
	Al	27	8271215.1	2.8	**44.7180**	0.568	1.3	ug/L	1410	Standard
	Sc	45	39052.0	5.6				ug/L	39543	Standard
	Ti	47	24646.4	4.4	**101.4481**	2.619	2.6	ug/L	39	Standard
	V	51	347970.7	1.4	**51.1411**	0.534	1.0	ug/L	1415	Standard
	Cr	52	354198.6	3.4	**51.1178**	0.779	1.5	ug/L	6946	Standard
	Cr	53	44595.6	4.3	**51.7475**	1.396	2.7	ug/L	328	Standard
	Mn	55	315347.9	1.9	**49.7410**	0.694	1.4	ug/L	823	Standard
	Co	59	365725.5	2.3	**53.3530**	0.828	1.6	ug/L	252	Standard
	Ni	60	93315.9	2.3	**50.7083**	0.301	0.6	ug/L	192	Standard
	Cu	65	94072.6	2.8	**50.6778**	0.428	0.8	ug/L	141	Standard
	Zn	66	55586.5	1.6	**51.1865**	0.432	0.8	ug/L	491	Standard
>	Ge	72	502280.1	2.3				ug/L	515087	Standard
	As	75	55868.4	1.2	**51.0087**	0.746	1.5	ug/L	20	Standard
	Se	82	5921.1	2.6	**52.6309**	1.371	2.6	ug/L	15	Standard
	Se-1	77	3936.2	0.2	**52.8821**	1.332	2.5	ug/L	48	Standard
>	Ga	71	43.3	6.7				mg/L	90	Standard
	Rb	85	853.4	12.0				ug/L	23	Standard
	Y	89	445806.9	0.5				ug/L	448510	Standard
>	Rh	103	45.0	61.9				ug/L	15	Standard
	Mo	98	273081.8	2.1	**98.9265**	1.774	1.8	ug/L	11	Standard
	Ag	107	339843.9	2.2	**49.5651**	0.762	1.5	ug/L	134	Standard
	Cd	111	106758.1	1.3	**48.9107**	0.367	0.7	mg/L	7	Standard
	Cd	114	258025.9	1.5	**48.6321**	0.403	0.8	ug/L	16	Standard
>	In	115	623979.7	0.7				ug/L	611117	Standard
	Sn	118	298451.0	1.1	**49.3312**	0.224	0.5	ug/L	518	Standard
	Sb	123	238781.4	2.0	**49.5506**	0.796	1.6	ug/L	127	Standard
	Ba	135	101752.9	1.4	**48.2444**	0.388	0.8	ug/L	45	Standard
	Ce	140	83.3	6.9				ug/L	298	Standard
>	Tb	159	999812.3	3.7				ug/L	977942	Standard
	Ho	165	18.3	56.8				ug/L	12	Standard
	Tl	203	438487.8	2.0	**50.5214**	0.372	0.7	ug/L	31	Standard
	Tl	205	396911.7	0.7	**52.6785**	1.200	2.3	ug/L	20	Standard
	Pb	206	278860.8	1.5	**50.0350**	0.542	1.1	ug/L	286	Standard
	Pb	207	252734.9	2.4	**50.2714**	0.461	0.9	ug/L	257	Standard
	Pb	208	1008405.1	1.0	**51.8566**	0.775	1.5	ug/L	956	Standard
	U	238	385967.4	0.9	**52.3060**	0.849	1.6	ug/L	17	Standard
>	Bi	209	573840.1	2.4				ug/L	557080	Standard

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Na	23	6.7	43.3	**42.7715**	15.957	37.3	mg/L	0	Standard
Mg	24	4330.6	4.7	**5.7850**	0.241	4.2	mg/L	32	Standard
K	39	1310.1	5.5	**4.3410**	0.087	2.0	mg/L	30	Standard
Ca	43	75.0	17.6	**6.2533**	2.500	40.0	mg/L	48	Standard
Fe	54	6082.2	3.3	**5.4477**	0.350	6.4	mg/L	159	Standard
Fe	57	1690.1	5.8	**5.1531**	0.140	2.7	mg/L	195	Standard
Sc-1	45	39052.0	5.6				mg/L	39543	Standard
Cl	35	36312.2	3.9				ug/L	27642	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	2130.1	3.3				ug/L	1647	Standard
P	31	18776.6	1.2				ug/L	15231	Standard
S	34	2388.5	6.0				ug/L	1845	Standard
Sr	88	65.0	13.3				ug/L	70	Standard
C	12	133.3	33.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.7	43.5				mg/L	12	Standard
Ho-1	165	18.3	56.8				mg/L	12	Standard
Er	166	13.3	86.6				mg/L	20	Standard
I	127	2708.6	18.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	101.952		
Al	27	89.436		
Sc	45			
Ti	47	101.448		
V	51	102.282		
Cr	52	102.236		
Cr	53			
Mn	55	99.482		
Co	59	106.706		
Ni	60	101.417		
Cu	65	101.356		
Zn	66	102.373		
Ge	72		97.514	
As	75	102.017		
Se	82	105.262		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	98.926		
Ag	107	99.130		
Cd	111	97.821		
Cd	114			
In	115		102.105	
Sn	118	98.662		
Sb	123	99.101		
Ba	135	96.489		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.043		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.713		
U	238	104.612		
Bi	209		103.008	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 17:13:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92565.4	2.9				ug/L	81760	Standard
	Be	9	53.3	124.8	**0.0389**	0.062	158.6	ug/L	17	Standard
	Al	27	40870.6	146.9	**0.2266**	0.357	157.4	ug/L	1410	Standard
	Sc	45	37247.5	4.3				ug/L	39543	Standard
	Ti	47	28.7	28.0	**-0.0471**	0.033	70.8	ug/L	39	Standard
	V	51	1306.5	27.0	**-0.0143**	0.053	368.2	ug/L	1415	Standard
	Cr	52	6317.0	3.9	**-0.1289**	0.039	29.9	ug/L	6946	Standard
	Cr	53	723.4	11.4	**0.5015**	0.098	19.5	ug/L	328	Standard
	Mn	55	1084.7	54.0	**0.0228**	0.093	407.7	ug/L	823	Standard
	Co	59	338.3	37.8	**0.0179**	0.019	104.7	ug/L	252	Standard
	Ni	60	322.7	24.3	**0.0703**	0.043	61.2	ug/L	192	Standard
	Cu	65	237.7	21.2	**0.0371**	0.027	74.0	ug/L	141	Standard
	Zn	66	487.7	9.0	**-0.3725**	0.041	11.1	ug/L	491	Standard
>	**Ge**	72	503592.6	0.3				ug/L	515087	Standard
	As	75	-19.3	188.6	**0.0227**	0.033	146.0	ug/L	20	Standard
	Se	82	22.8	34.7	**0.0835**	0.070	83.8	ug/L	15	Standard
	Se-1	77	71.3	3.2	**0.2496**	0.032	12.8	ug/L	48	Standard
>	**Ga**	71	43.3	46.6				mg/L	90	Standard
	Rb	85	33.3	37.7				ug/L	23	Standard
	Y	89	434857.2	0.6				ug/L	448510	Standard
>	**Rh**	103	13.3	43.3				ug/L	15	Standard
	Mo	98	288.2	19.1	**0.0890**	0.021	23.1	ug/L	11	Standard
	Ag	107	295.0	92.5	**0.0287**	0.042	146.5	ug/L	134	Standard
	Cd	111	58.8	115.8	**0.0253**	0.033	130.1	mg/L	7	Standard
	Cd	114	179.7	150.5	**0.0306**	0.054	175.0	ug/L	16	Standard
>	**In**	115	602649.0	1.7				ug/L	611117	Standard
	Sn	118	880.0	23.1	**0.0494**	0.037	75.1	ug/L	518	Standard
	Sb	123	564.4	53.6	**0.1091**	0.067	61.4	ug/L	127	Standard
	Ba	135	113.7	104.6	**0.0312**	0.059	190.7	ug/L	45	Standard
	Ce	140	26.7	21.7				ug/L	298	Standard
>	**Tb**	159	956287.2	0.6				ug/L	977942	Standard
	Ho	165	6.7	173.2				ug/L	12	Standard
	Tl	203	302.3	107.0	**0.0307**	0.038	123.1	ug/L	31	Standard
	Tl	205	353.3	119.4	**0.0454**	0.057	124.8	ug/L	20	Standard
	Pb	206	425.3	47.1	**0.0143**	0.036	251.9	ug/L	286	Standard
	Pb	207	353.0	32.9	**0.0137**	0.023	168.1	ug/L	257	Standard
	Pb	208	1674.0	55.6	**0.0274**	0.048	175.9	ug/L	956	Standard
	U	238	298.0	132.6	**0.0381**	0.054	142.5	ug/L	17	Standard
>	**Bi**	209	561401.5	0.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	206.7	141.8	**0.2403**	0.424	176.4	mg/L	32	Standard
K	39	28.3	71.3	**-0.0379**	0.076	200.2	mg/L	30	Standard
Ca	43	35.0	24.7	**0.2817**	1.299	461.1	mg/L	48	Standard
Fe	54	147.7	17.2	**0.0057**	0.030	525.6	mg/L	159	Standard
Fe	57	195.0	14.3	**0.0744**	0.099	133.6	mg/L	195	Standard
Sc-1	45	37247.5	4.3				mg/L	39543	Standard
Cl	35	35032.5	2.2				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1893.5	11.2				ug/L	1647	Standard
P	31	18479.6	2.3				ug/L	15231	Standard
S	34	2273.5	3.9				ug/L	1845	Standard
Sr	88	81.7	3.5				ug/L	70	Standard
C	12	186.7	15.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.5	186.3				mg/L	12	Standard
Ho-1	165	6.7	173.2				mg/L	12	Standard
Er	166	10.0	100.0				mg/L	20	Standard
I	127	2043.5	19.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.768	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.614	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.776	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606115501
Sample Date/Time: Tuesday, June 28, 2016 17:16:14
Number of Replicates: 3
Autosampler Position: 252
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92590.4	1.6				ug/L	81760	Standard
	Be	9	26.7	47.2	**0.0141**	0.012	82.4	ug/L	17	Standard
	Al	27	22123057.0	1.6	**126.7281**	1.652	1.3	ug/L	1410	Standard
	Sc	45	39028.5	1.1				ug/L	39543	Standard
	Ti	47	160.7	8.5	**0.5119**	0.051	9.9	ug/L	39	Standard
	V	51	4388.8	2.7	**0.4554**	0.016	3.5	ug/L	1415	Standard
	Cr	52	10159.7	1.1	**0.4737**	0.053	11.2	ug/L	6946	Standard
	Cr	53	1711.8	8.9	**1.7064**	0.233	13.7	ug/L	328	Standard
	Mn	55	4816073.5	0.9	**779.0277**	27.654	3.5	ug/L	823	Standard
	Co	59	2714.6	0.9	**0.3738**	0.009	2.5	ug/L	252	Standard
	Ni	60	3772.1	1.1	**1.9951**	0.039	2.0	ug/L	192	Standard
	Cu	65	754.7	3.1	**0.3255**	0.008	2.4	ug/L	141	Standard
	Zn	66	4017.9	2.4	**3.0152**	0.057	1.9	ug/L	491	Standard
>	**Ge**	72	491414.0	2.7				ug/L	515087	Standard
	As	75	1051.2	2.3	**1.0210**	0.045	4.4	ug/L	20	Standard
	Se	82	143.6	4.5	**1.1879**	0.030	2.5	ug/L	15	Standard
	Se-1	77	105.7	15.2	**0.7547**	0.249	32.9	ug/L	48	Standard
>	**Ga**	71	188.3	17.7				mg/L	90	Standard
	Rb	85	950.0	0.9				ug/L	23	Standard
	Y	89	424439.8	0.9				ug/L	448510	Standard
>	**Rh**	103	96.7	7.9				ug/L	15	Standard
	Mo	98	5849.5	0.5	**2.2126**	0.029	1.3	ug/L	11	Standard
	Ag	107	89.7	21.1	**-0.0024**	0.003	128.8	ug/L	134	Standard
	Cd	111	11.8	58.9	**0.0028**	0.003	121.4	mg/L	7	Standard
	Cd	114	46.1	44.3	**0.0042**	0.004	96.2	ug/L	16	Standard
>	**In**	115	592706.9	1.7				ug/L	611117	Standard
	Sn	118	891.7	9.5	**0.0535**	0.013	23.6	ug/L	518	Standard
	Sb	123	236.5	14.9	**0.0388**	0.007	18.8	ug/L	127	Standard
	Ba	135	171509.6	0.5	**85.6510**	1.837	2.1	ug/L	45	Standard
	Ce	140	703.3	3.9				ug/L	298	Standard
>	**Tb**	159	954495.6	1.0				ug/L	977942	Standard
	Ho	165	26.7	60.3				ug/L	12	Standard
	Tl	203	128.7	6.5	**0.0108**	0.001	9.4	ug/L	31	Standard
	Tl	205	116.7	2.5	**0.0140**	0.000	2.9	ug/L	20	Standard
	Pb	206	518.0	5.9	**0.0341**	0.006	17.0	ug/L	286	Standard
	Pb	207	434.7	5.8	**0.0328**	0.005	16.1	ug/L	257	Standard
	Pb	208	1843.7	3.4	**0.0392**	0.003	8.9	ug/L	956	Standard
	U	238	11694.2	0.7	**1.6602**	0.012	0.7	ug/L	17	Standard
>	**Bi**	209	546693.4	0.1				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.9680**	18.988	173.1	mg/L	0	Standard
Mg	24	30276.9	1.0	**40.7793**	0.477	1.2	mg/L	32	Standard
K	39	240.0	12.5	**0.6798**	0.099	14.5	mg/L	30	Standard
Ca	43	255.0	15.3	**33.9356**	6.415	18.9	mg/L	48	Standard
Fe	54	184.3	20.5	**0.0318**	0.034	107.2	mg/L	159	Standard
Fe	57	341.7	3.0	**0.5441**	0.035	6.5	mg/L	195	Standard
> **Sc-1**	45	39028.5	1.1				mg/L	39543	Standard
Cl	35	37440.9	1.2				ug/L	27642	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	32190.8	1.7				ug/L	1647	Standard
P	31	22541.8	0.7				ug/L	15231	Standard
S	34	2386.9	3.2				ug/L	1845	Standard
Sr	88	303.3	20.6				ug/L	70	Standard
C	12	480.0	6.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	27.6	75.9				mg/L	12	Standard
Ho-1	165	26.7	60.3				mg/L	12	Standard
Er	166	50.0	40.0				mg/L	20	Standard
I	127	1264643.9	6.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.247	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.404	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.988
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.135
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606115502
Sample Date/Time: Tuesday, June 28, 2016 17:19:26
Number of Replicates: 3
Autosampler Position: 253
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	94157.1	4.7				ug/L	81760	Standard
	Be	9	20.0	50.0	**0.0078**	0.009	115.3	ug/L	17	Standard
	Al	27	28931934.4	4.0	**163.0048**	1.392	0.9	ug/L	1410	Standard
	Sc	45	40320.3	3.5				ug/L	39543	Standard
	Ti	47	168.3	17.1	**0.5232**	0.117	22.4	ug/L	39	Standard
	V	51	1551.4	10.5	**0.0205**	0.027	130.5	ug/L	1415	Standard
	Cr	52	10328.9	2.0	**0.4515**	0.024	5.3	ug/L	6946	Standard
	Cr	53	2665.2	7.9	**2.7435**	0.199	7.2	ug/L	328	Standard
	Mn	55	1534029.1	1.0	**240.4438**	3.129	1.3	ug/L	823	Standard
	Co	59	1102.0	2.8	**0.1281**	0.004	3.4	ug/L	252	Standard
	Ni	60	1786.8	2.8	**0.8597**	0.029	3.3	ug/L	192	Standard
	Cu	65	955.7	1.4	**0.4206**	0.012	3.0	ug/L	141	Standard
	Zn	66	3611.4	2.8	**2.5229**	0.115	4.5	ug/L	491	Standard
>	**Ge**	72	506659.2	1.8				ug/L	515087	Standard
	As	75	1883.3	1.6	**1.7433**	0.024	1.4	ug/L	20	Standard
	Se	82	155.4	0.8	**1.2536**	0.030	2.4	ug/L	15	Standard
	Se-1	77	168.7	6.6	**1.5590**	0.181	11.6	ug/L	48	Standard
>	**Ga**	71	140.0	15.6				mg/L	90	Standard
	Rb	85	1435.1	8.2				ug/L	23	Standard
	Y	89	449200.8	1.5				ug/L	448510	Standard
>	**Rh**	103	93.3	16.4				ug/L	15	Standard
	Mo	98	2699.1	0.6	**0.9667**	0.027	2.8	ug/L	11	Standard
	Ag	107	94.7	12.7	**-0.0023**	0.002	96.2	ug/L	134	Standard
	Cd	111	15.7	16.0	**0.0044**	0.001	31.4	mg/L	7	Standard
	Cd	114	28.9	55.3	**0.0006**	0.003	513.8	ug/L	16	Standard
>	**In**	115	619397.8	3.1				ug/L	611117	Standard
	Sn	118	1035.0	8.9	**0.0707**	0.012	17.4	ug/L	518	Standard
	Sb	123	177.5	18.8	**0.0244**	0.008	32.9	ug/L	127	Standard
	Ba	135	342505.9	1.5	**163.7121**	2.675	1.6	ug/L	45	Standard
	Ce	140	470.0	1.8				ug/L	298	Standard
>	**Tb**	159	978535.3	2.3				ug/L	977942	Standard
	Ho	165	33.3	17.3				ug/L	12	Standard
	Tl	203	95.7	2.4	**0.0067**	0.000	2.7	ug/L	31	Standard
	Tl	205	98.3	7.8	**0.0112**	0.001	8.1	ug/L	20	Standard
	Pb	206	616.7	3.3	**0.0513**	0.003	5.5	ug/L	286	Standard
	Pb	207	520.0	3.8	**0.0494**	0.003	5.9	ug/L	257	Standard
	Pb	208	2224.4	1.1	**0.0583**	0.001	1.4	ug/L	956	Standard
	U	238	39.7	29.5	**0.0026**	0.002	61.0	ug/L	17	Standard
>	**Bi**	209	553220.4	1.1				ug/L	557080	Standard

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Na	23	5.0	0.0	**31.5109**	1.087	3.4	mg/L	0	Standard
Mg	24	25140.9	3.4	**32.7721**	0.865	2.6	mg/L	32	Standard
K	39	73.3	23.9	**0.1023**	0.063	61.8	mg/L	30	Standard
Ca	43	243.3	6.6	**30.9203**	2.535	8.2	mg/L	48	Standard
Fe	54	2629.1	2.7	**2.1972**	0.059	2.7	mg/L	159	Standard
Fe	57	1076.7	7.2	**2.9489**	0.380	12.9	mg/L	195	Standard
> **Sc-1**	45	40320.3	3.5				mg/L	39543	Standard
Cl	35	39998.8	2.6				ug/L	27642	Standard
Kr	83	2.7	43.3				ug/L	2	Standard
Br	81	32989.2	3.3				ug/L	1647	Standard
P	31	24089.1	1.8				ug/L	15231	Standard
S	34	2583.6	5.0				ug/L	1845	Standard
Sr	88	433.3	4.7				ug/L	70	Standard
C	12	350.0	5.7				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	25.7	20.9				mg/L	12	Standard
Ho-1	165	33.3	17.3				mg/L	12	Standard
Er	166	20.0	50.0				mg/L	20	Standard
I	127	377170.1	0.3				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		115.163	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.364	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	101.355
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.307
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606115503
Sample Date/Time: Tuesday, June 28, 2016 17:22:37
Number of Replicates: 3
Autosampler Position: 254
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	93460.7	0.5				ug/L	81760	Standard
	Be	9	35.0	14.3	**0.0211**	0.004	21.2	ug/L	17	Standard
	Al	27	14187081.3	1.7	**80.5012**	1.275	1.6	ug/L	1410	Standard
	Sc	45	39556.6	4.7				ug/L	39543	Standard
	Ti	47	229.0	18.7	**0.7435**	0.168	22.5	ug/L	39	Standard
	V	51	2172.0	8.1	**0.1016**	0.022	21.3	ug/L	1415	Standard
	Cr	52	10167.4	1.5	**0.3846**	0.034	8.8	ug/L	6946	Standard
	Cr	53	1090.0	15.2	**0.8840**	0.185	20.9	ug/L	328	Standard
	Mn	55	1432250.3	1.3	**217.9180**	5.450	2.5	ug/L	823	Standard
	Co	59	795.7	6.2	**0.0804**	0.008	9.7	ug/L	252	Standard
	Ni	60	1574.1	4.4	**0.7198**	0.033	4.6	ug/L	192	Standard
	Cu	65	1999.1	3.4	**0.9475**	0.036	3.8	ug/L	141	Standard
	Zn	66	5797.8	1.6	**4.3927**	0.080	1.8	ug/L	491	Standard
>	**Ge**	72	521945.3	1.2				ug/L	515087	Standard
	As	75	168.7	6.2	**0.1883**	0.009	4.6	ug/L	20	Standard
	Se	82	81.0	7.2	**0.5749**	0.055	9.6	ug/L	15	Standard
	Se-1	77	72.3	14.9	**0.2276**	0.131	57.6	ug/L	48	Standard
>	**Ga**	71	155.0	23.3				mg/L	90	Standard
	Rb	85	10031.7	2.6				ug/L	23	Standard
	Y	89	435099.7	2.5				ug/L	448510	Standard
>	**Rh**	103	70.0	28.6				ug/L	15	Standard
	Mo	98	145.2	5.2	**0.0354**	0.003	8.7	ug/L	11	Standard
	Ag	107	85.3	8.5	**-0.0033**	0.001	30.7	ug/L	134	Standard
	Cd	111	76.7	2.3	**0.0335**	0.001	2.5	mg/L	7	Standard
	Cd	114	203.1	19.3	**0.0347**	0.008	22.4	ug/L	16	Standard
>	**In**	115	602973.5	0.6				ug/L	611117	Standard
	Sn	118	941.7	4.9	**0.0595**	0.009	14.6	ug/L	518	Standard
	Sb	123	323.8	6.4	**0.0567**	0.004	7.5	ug/L	127	Standard
	Ba	135	119338.2	0.9	**58.5639**	0.899	1.5	ug/L	45	Standard
	Ce	140	855.0	10.9				ug/L	298	Standard
>	**Tb**	159	952983.8	1.5				ug/L	977942	Standard
	Ho	165	36.7	41.7				ug/L	12	Standard
	Tl	203	88.7	6.9	**0.0057**	0.001	14.0	ug/L	31	Standard
	Tl	205	55.0	27.3	**0.0052**	0.002	38.2	ug/L	20	Standard
	Pb	206	861.0	5.9	**0.0956**	0.010	10.1	ug/L	286	Standard
	Pb	207	708.7	5.0	**0.0873**	0.008	9.7	ug/L	257	Standard
	Pb	208	2964.1	2.3	**0.0967**	0.005	5.3	ug/L	956	Standard
	U	238	696.7	2.0	**0.0942**	0.003	2.9	ug/L	17	Standard
>	**Bi**	209	557355.1	1.0				ug/L	557080	Standard

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Na	23	6.7	43.3	**42.2849**	16.098	38.1	mg/L	0	Standard
Mg	24	19544.3	4.8	**25.9961**	1.909	7.3	mg/L	32	Standard
K	39	113.3	15.5	**0.2405**	0.047	19.5	mg/L	30	Standard
Ca	43	286.7	25.9	**38.5627**	12.897	33.4	mg/L	48	Standard
Fe	54	997.4	5.8	**0.7664**	0.064	8.4	mg/L	159	Standard
Fe	57	530.0	13.9	**1.1674**	0.275	23.5	mg/L	195	Standard
> **Sc-1**	45	39556.6	4.7				mg/L	39543	Standard
Cl	35	38409.3	3.3				ug/L	27642	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	17249.8	6.1				ug/L	1647	Standard
P	31	22414.9	3.0				ug/L	15231	Standard
S	34	2625.2	3.4				ug/L	1845	Standard
Sr	88	228.3	6.7				ug/L	70	Standard
C	12	260.0	15.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	21.4	67.1				mg/L	12	Standard
Ho-1	165	36.7	41.7				mg/L	12	Standard
Er	166	40.0	75.0				mg/L	20	Standard
I	127	663837.8	8.8				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.311	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.332	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.668
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.049
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 17:25:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	91554.4	4.0				ug/L	81760	Standard
	Be	9	59302.5	0.5	**53.3655**	1.843	3.5	ug/L	17	Standard
	Al	27	8323459.6	1.6	**48.2773**	2.634	5.5	ug/L	1410	Standard
	Sc	45	40460.6	1.5				ug/L	39543	Standard
	Ti	47	25609.3	2.1	**100.1533**	1.793	1.8	ug/L	39	Standard
	V	51	364470.3	1.4	**50.8781**	0.853	1.7	ug/L	1415	Standard
	Cr	52	366105.1	1.7	**50.1771**	0.675	1.3	ug/L	6946	Standard
	Cr	53	45260.8	0.4	**49.8893**	0.509	1.0	ug/L	328	Standard
	Mn	55	332731.4	2.3	**49.8507**	1.205	2.4	ug/L	823	Standard
	Co	59	382266.4	2.9	**52.9683**	1.437	2.7	ug/L	252	Standard
	Ni	60	97387.3	1.2	**50.2694**	0.545	1.1	ug/L	192	Standard
	Cu	65	98831.3	1.3	**50.5786**	0.557	1.1	ug/L	141	Standard
	Zn	66	57834.9	1.6	**50.5762**	0.877	1.7	ug/L	491	Standard
>	**Ge**	72	528768.9	1.2				ug/L	515087	Standard
	As	75	58724.5	1.2	**50.9203**	0.224	0.4	ug/L	20	Standard
	Se	82	6151.0	1.0	**51.9261**	0.245	0.5	ug/L	15	Standard
	Se-1	77	4089.2	2.2	**52.1522**	0.563	1.1	ug/L	48	Standard
>	**Ga**	71	85.0	21.2				mg/L	90	Standard
	Rb	85	851.7	6.5				ug/L	23	Standard
	Y	89	456324.8	0.4				ug/L	448510	Standard
>	**Rh**	103	36.7	39.4				ug/L	15	Standard
	Mo	98	284202.4	1.9	**102.0947**	3.648	3.6	ug/L	11	Standard
	Ag	107	351396.4	1.1	**50.8197**	1.435	2.8	ug/L	134	Standard
	Cd	111	110732.8	1.5	**50.3025**	1.470	2.9	mg/L	7	Standard
	Cd	114	271688.9	2.3	**50.7793**	1.915	3.8	ug/L	16	Standard
>	**In**	115	629514.4	1.7				ug/L	611117	Standard
	Sn	118	310739.2	0.7	**50.9245**	0.924	1.8	ug/L	518	Standard
	Sb	123	246166.6	1.6	**50.6553**	1.659	3.3	ug/L	127	Standard
	Ba	135	104825.0	0.9	**49.2805**	1.265	2.6	ug/L	45	Standard
	Ce	140	70.0	55.8				ug/L	298	Standard
>	**Tb**	159	987475.2	1.7				ug/L	977942	Standard
	Ho	165	5.0	100.0				ug/L	12	Standard
	Tl	203	444397.7	1.4	**50.9180**	1.232	2.4	ug/L	31	Standard
	Tl	205	396866.3	1.6	**52.3722**	1.695	3.2	ug/L	20	Standard
	Pb	206	284750.7	1.1	**50.8069**	1.281	2.5	ug/L	286	Standard
	Pb	207	259280.5	1.3	**51.2940**	1.414	2.8	ug/L	257	Standard
	Pb	208	1040337.0	1.7	**53.1998**	1.656	3.1	ug/L	956	Standard
	U	238	390662.1	1.3	**52.6405**	1.349	2.6	ug/L	17	Standard
>	**Bi**	209	577126.2	1.6				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4445.7	6.0	**5.7289**	0.397	6.9	mg/L	32	Standard
K	39	1320.1	5.5	**4.2194**	0.276	6.5	mg/L	30	Standard
Ca	43	81.7	24.7	**6.7579**	2.904	43.0	mg/L	48	Standard
Fe	54	5927.1	5.8	**5.1036**	0.243	4.8	mg/L	159	Standard
Fe	57	1661.8	3.7	**4.8569**	0.121	2.5	mg/L	195	Standard
> **Sc-1**	45	40460.6	1.5				mg/L	39543	Standard
Cl	35	38764.2	1.7				ug/L	27642	Standard
Kr	83	2.3	107.9				ug/L	2	Standard
Br	81	2123.5	9.4				ug/L	1647	Standard
P	31	21915.8	3.2				ug/L	15231	Standard
S	34	2866.9	6.9				ug/L	1845	Standard
Sr	88	56.7	10.2				ug/L	70	Standard
C	12	170.0	44.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	173.2				mg/L	0	Standard
Dy	164	9.7	103.3				mg/L	12	Standard
Ho-1	165	5.0	100.0				mg/L	12	Standard
Er	166	6.7	86.6				mg/L	20	Standard
I	127	21360.9	50.2				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	106.731		
	Al	27	96.555		
	Sc	45			
	Ti	47	100.153		
	V	51	101.756		
	Cr	52	100.354		
	Cr	53			
	Mn	55	99.701		
	Co	59	105.937		
	Ni	60	100.539		
	Cu	65	101.157		
	Zn	66	101.152		
>	Ge	72		102.656	
	As	75	101.841		
	Se	82	103.852		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	102.095		
Ag	107	101.639		
Cd	111	100.605		
Cd	114			
In	115			103.011
Sn	118	101.849		
Sb	123	101.311		
Ba	135	98.561		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.836		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.400		
U	238	105.281		
Bi	209			103.598
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 17:29:02
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89289.0	1.1				ug/L	81760	Standard
	Be	9	35.0	51.5	**0.0225**	0.017	74.1	ug/L	17	Standard
	Al	27	14272.5	142.7	**0.0706**	0.122	172.0	ug/L	1410	Standard
	Sc	45	39427.9	1.8				ug/L	39543	Standard
	Ti	47	28.0	28.3	**-0.0534**	0.032	59.3	ug/L	39	Standard
	V	51	1205.0	11.4	**-0.0346**	0.020	56.4	ug/L	1415	Standard
	Cr	52	6173.6	1.1	**-0.1773**	0.009	5.0	ug/L	6946	Standard
	Cr	53	500.0	6.0	**0.2236**	0.034	15.3	ug/L	328	Standard
	Mn	55	1435.1	83.0	**0.0711**	0.182	256.2	ug/L	823	Standard
	Co	59	252.7	26.0	**0.0043**	0.009	214.7	ug/L	252	Standard
	Ni	60	265.7	8.4	**0.0350**	0.012	33.5	ug/L	192	Standard
	Cu	65	144.0	13.3	**-0.0157**	0.010	63.6	ug/L	141	Standard
	Zn	66	428.7	4.3	**-0.4396**	0.017	3.8	ug/L	491	Standard
>	**Ge**	72	519199.6	0.1				ug/L	515087	Standard
	As	75	-13.2	109.3	**0.0287**	0.013	44.2	ug/L	20	Standard
	Se	82	24.7	35.1	**0.0933**	0.075	79.8	ug/L	15	Standard
	Se-1	77	53.0	16.4	**-0.0209**	0.115	551.4	ug/L	48	Standard
>	**Ga**	71	56.7	41.7				mg/L	90	Standard
	Rb	85	13.3	78.1				ug/L	23	Standard
	Y	89	435848.4	0.6				ug/L	448510	Standard
>	**Rh**	103	16.7	45.8				ug/L	15	Standard
	Mo	98	252.5	21.9	**0.0755**	0.022	29.1	ug/L	11	Standard
	Ag	107	123.0	3.3	**0.0023**	0.000	14.7	ug/L	134	Standard
	Cd	111	11.8	114.0	**0.0027**	0.006	236.7	mg/L	7	Standard
	Cd	114	47.6	83.9	**0.0044**	0.008	178.8	ug/L	16	Standard
>	**In**	115	604937.7	1.9				ug/L	611117	Standard
	Sn	118	835.0	26.8	**0.0403**	0.035	87.6	ug/L	518	Standard
	Sb	123	438.3	28.1	**0.0807**	0.025	30.6	ug/L	127	Standard
	Ba	135	40.7	30.0	**-0.0052**	0.006	117.6	ug/L	45	Standard
	Ce	140	35.0	37.8				ug/L	298	Standard
>	**Tb**	159	968167.7	1.8				ug/L	977942	Standard
	Ho	165	8.3	124.9				ug/L	12	Standard
	Tl	203	65.7	40.9	**0.0028**	0.003	111.1	ug/L	31	Standard
	Tl	205	198.3	119.2	**0.0243**	0.032	131.1	ug/L	20	Standard
	Pb	206	312.0	4.9	**-0.0071**	0.003	48.0	ug/L	286	Standard
	Pb	207	265.7	2.9	**-0.0047**	0.002	47.8	ug/L	257	Standard
	Pb	208	1274.7	38.3	**0.0057**	0.026	450.9	ug/L	956	Standard
	U	238	172.3	130.6	**0.0207**	0.031	149.9	ug/L	17	Standard
>	**Bi**	209	569803.2	1.6				ug/L	557080	Standard

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Na	23	3.3	86.6	**21.6890**	18.779	86.6	mg/L	0	Standard
Mg	24	61.7	47.5	**0.0256**	0.040	158.0	mg/L	32	Standard
K	39	26.7	10.8	**-0.0510**	0.010	20.5	mg/L	30	Standard
Ca	43	21.7	48.0	**-2.0553**	1.552	75.5	mg/L	48	Standard
Fe	54	129.4	21.4	**-0.0198**	0.024	119.8	mg/L	159	Standard
Fe	57	196.7	34.5	**0.0395**	0.221	559.0	mg/L	195	Standard
Sc-1	45	39427.9	1.8				mg/L	39543	Standard
Cl	35	37196.3	1.0				ug/L	27642	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	1853.4	7.9				ug/L	1647	Standard
P	31	20680.8	2.7				ug/L	15231	Standard
S	34	2700.2	3.5				ug/L	1845	Standard
Sr	88	68.3	23.5				ug/L	70	Standard
C	12	133.3	38.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.5	107.6				mg/L	12	Standard
Ho-1	165	8.3	124.9				mg/L	12	Standard
Er	166	10.0	100.0				mg/L	20	Standard
I	127	7115.0	15.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.798	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.989	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	102.284	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606114201
Sample Date/Time: Tuesday, June 28, 2016 18:46:32
Number of Replicates: 3
Autosampler Position: 255
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78164.5	2.4				ug/L	81760	Standard
	Be	9	18.3	41.7	**0.0097**	0.008	86.8	ug/L	17	Standard
	Al	27	121659.9	1.7	**0.8116**	0.028	3.5	ug/L	1410	Standard
	Sc	45	40555.9	2.8				ug/L	39543	Standard
	Ti	47	55.7	15.0	**0.0583**	0.036	61.2	ug/L	39	Standard
	V	51	1460.1	6.7	**0.0028**	0.012	438.4	ug/L	1415	Standard
	Cr	52	7975.8	0.8	**0.0855**	0.018	21.3	ug/L	6946	Standard
	Cr	53	690.0	12.1	**0.4421**	0.091	20.5	ug/L	328	Standard
	Mn	55	73452.6	0.4	**11.1499**	0.088	0.8	ug/L	823	Standard
	Co	59	2365.9	3.2	**0.3044**	0.010	3.2	ug/L	252	Standard
	Ni	60	956.0	2.8	**0.4012**	0.010	2.4	ug/L	192	Standard
	Cu	65	203.7	5.3	**0.0160**	0.005	33.1	ug/L	141	Standard
	Zn	66	1994.1	0.1	**0.9866**	0.018	1.8	ug/L	491	Standard
>	**Ge**	72	516559.4	1.0				ug/L	515087	Standard
	As	75	-28.9	32.9	**0.0147**	0.008	56.4	ug/L	20	Standard
	Se	82	19.3	15.0	**0.0479**	0.026	53.5	ug/L	15	Standard
	Se-1	77	59.0	13.2	**0.0614**	0.097	157.2	ug/L	48	Standard
>	**Ga**	71	36.7	51.6				mg/L	90	Standard
	Rb	85	463.3	2.5				ug/L	23	Standard
	Y	89	448462.9	2.6				ug/L	448510	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	65.9	7.4	**0.0053**	0.002	42.6	ug/L	11	Standard
	Ag	107	82.7	4.2	**-0.0039**	0.001	16.6	ug/L	134	Standard
	Cd	111	8.9	29.8	**0.0012**	0.001	94.7	mg/L	7	Standard
	Cd	114	20.4	73.3	**-0.0010**	0.003	278.6	ug/L	16	Standard
>	**In**	115	611220.6	1.9				ug/L	611117	Standard
	Sn	118	670.0	14.0	**0.0115**	0.017	148.1	ug/L	518	Standard
	Sb	123	214.2	30.6	**0.0326**	0.014	43.4	ug/L	127	Standard
	Ba	135	7677.9	3.5	**3.6947**	0.165	4.5	ug/L	45	Standard
	Ce	140	396.7	10.7				ug/L	298	Standard
>	**Tb**	159	963569.5	0.7				ug/L	977942	Standard
	Ho	165	16.7	45.8				ug/L	12	Standard
	Tl	203	21.7	17.5	**-0.0022**	0.000	19.5	ug/L	31	Standard
	Tl	205	13.3	21.7	**-0.0005**	0.000	79.8	ug/L	20	Standard
	Pb	206	368.7	4.6	**0.0040**	0.003	86.3	ug/L	286	Standard
	Pb	207	283.0	4.1	**-0.0005**	0.002	459.4	ug/L	257	Standard
	Pb	208	1139.7	3.0	**-0.0006**	0.002	246.5	ug/L	956	Standard
	U	238	10.3	39.1	**-0.0015**	0.001	36.3	ug/L	17	Standard
>	**Bi**	209	562456.7	0.5				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	763.4	13.7	**0.9351**	0.146	15.6	mg/L	32	Standard
K	39	31.7	39.7	**-0.0363**	0.045	123.6	mg/L	30	Standard
Ca	43	18.3	31.5	**-2.6404**	0.796	30.1	mg/L	48	Standard
Fe	54	359.1	17.1	**0.1792**	0.047	26.3	mg/L	159	Standard
Fe	57	273.3	13.7	**0.2778**	0.149	53.6	mg/L	195	Standard
> **Sc-1**	45	40555.9	2.8				mg/L	39543	Standard
Cl	35	37427.5	0.7				ug/L	27642	Standard
Kr	83	0.0					ug/L	2	Standard
Br	81	2536.9	6.5				ug/L	1647	Standard
P	31	19003.6	0.9				ug/L	15231	Standard
S	34	2375.2	4.8				ug/L	1845	Standard
Sr	88	91.7	13.7				ug/L	70	Standard
C	12	86.7	29.0				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	29.2	34.3				mg/L	12	Standard
Ho-1	165	16.7	45.8				mg/L	12	Standard
Er	166	16.7	34.6				mg/L	20	Standard
I	127	22815.7	12.2				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		95.602	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.286	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.017
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.965
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 18:49:46
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77476.0	3.1				ug/L	81760	Standard
	Be	9	45015.2	3.8	**47.8878**	3.193	6.7	ug/L	17	Standard
	Al	27	6953697.9	2.2	**47.6359**	2.288	4.8	ug/L	1410	Standard
	Sc	45	38896.5	2.1				ug/L	39543	Standard
	Ti	47	23530.3	2.9	**93.4171**	3.639	3.9	ug/L	39	Standard
	V	51	333406.5	0.5	**47.2267**	0.631	1.3	ug/L	1415	Standard
	Cr	52	337441.2	2.6	**46.8861**	1.719	3.7	ug/L	6946	Standard
	Cr	53	42128.5	3.1	**47.1231**	1.874	4.0	ug/L	328	Standard
	Mn	55	311025.1	1.6	**47.2965**	1.233	2.6	ug/L	823	Standard
	Co	59	333541.6	0.3	**46.9106**	0.523	1.1	ug/L	252	Standard
	Ni	60	90766.5	2.7	**47.5598**	1.737	3.7	ug/L	192	Standard
	Cu	65	91363.1	2.5	**47.4629**	1.646	3.5	ug/L	141	Standard
	Zn	66	53283.5	1.9	**47.2487**	1.367	2.9	ug/L	491	Standard
>	**Ge**	72	520941.4	1.0				ug/L	515087	Standard
	As	75	53453.8	0.5	**47.0530**	0.571	1.2	ug/L	20	Standard
	Se	82	5409.0	0.9	**46.3406**	0.883	1.9	ug/L	15	Standard
	Se-1	77	3695.1	1.5	**47.7773**	0.360	0.8	ug/L	48	Standard
>	**Ga**	71	58.3	27.6				mg/L	90	Standard
	Rb	85	731.7	6.2				ug/L	23	Standard
	Y	89	433135.5	0.5				ug/L	448510	Standard
>	**Rh**	103	21.7	13.3				ug/L	15	Standard
	Mo	98	251705.5	0.6	**94.1208**	1.331	1.4	ug/L	11	Standard
	Ag	107	314845.2	1.8	**47.3955**	0.605	1.3	ug/L	134	Standard
	Cd	111	98007.4	2.2	**46.3425**	0.750	1.6	mg/L	7	Standard
	Cd	114	239351.7	3.2	**46.5659**	1.544	3.3	ug/L	16	Standard
>	**In**	115	604583.1	1.4				ug/L	611117	Standard
	Sn	118	276455.2	2.3	**47.1543**	0.498	1.1	ug/L	518	Standard
	Sb	123	224560.9	2.5	**48.0923**	0.641	1.3	ug/L	127	Standard
	Ba	135	94923.9	3.0	**46.4488**	1.094	2.4	ug/L	45	Standard
	Ce	140	80.0	22.5				ug/L	298	Standard
>	**Tb**	159	958457.8	2.2				ug/L	977942	Standard
	Ho	165	13.3	21.7				ug/L	12	Standard
	Tl	203	399564.4	2.5	**47.4112**	1.332	2.8	ug/L	31	Standard
	Tl	205	347775.3	2.0	**47.5216**	1.083	2.3	ug/L	20	Standard
	Pb	206	259967.8	1.3	**48.0301**	0.722	1.5	ug/L	286	Standard
	Pb	207	236539.5	0.9	**48.4530**	0.488	1.0	ug/L	257	Standard
	Pb	208	913309.7	2.1	**48.3569**	1.176	2.4	ug/L	956	Standard
	U	238	337839.3	1.6	**47.1413**	0.910	1.9	ug/L	17	Standard
>	**Bi**	209	557186.5	0.3				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	3633.8	7.1	**4.8666**	0.455	9.3	mg/L	32	Standard
K	39	1313.4	12.2	**4.3752**	0.599	13.7	mg/L	30	Standard
Ca	43	51.7	20.1	**2.6371**	1.625	61.6	mg/L	48	Standard
Fe	54	5289.1	7.8	**4.7357**	0.483	10.2	mg/L	159	Standard
Fe	57	1531.7	10.1	**4.6389**	0.613	13.2	mg/L	195	Standard
> **Sc-1**	45	38896.5	2.1				mg/L	39543	Standard
Cl	35	35022.4	1.4				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	1490.1	8.7				ug/L	1647	Standard
P	31	19075.3	3.9				ug/L	15231	Standard
S	34	2581.9	1.6				ug/L	1845	Standard
Sr	88	70.0	18.9				ug/L	70	Standard
C	12	143.3	33.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	6.0	193.9				mg/L	12	Standard
Ho-1	165	13.3	21.7				mg/L	12	Standard
Er	166	13.3	43.3				mg/L	20	Standard
I	127	2193.5	28.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	95.776		
Al	27	95.272		
Sc	45			
Ti	47	93.417		
V	51	94.453		
Cr	52	93.772		
Cr	53			
Mn	55	94.593		
Co	59	93.821		
Ni	60	95.120		
Cu	65	94.926		
Zn	66	94.497		
> Ge	72		101.137	
As	75	94.106		
Se	82	92.681		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	94.121		
Ag	107	94.791		
Cd	111	92.685		
Cd	114			
> In	115		98.931	
Sn	118	94.309		
Sb	123	96.185		
Ba	135	92.898		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	94.822		
Tl	205			
Pb	206			
Pb	207			
Pb	208	96.714		
U	238	94.283		
> Bi	209		100.019	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 18:52:57
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75264.9	3.1				ug/L	81760	Standard
	Be	9	28.3	44.4	**0.0211**	0.013	62.2	ug/L	17	Standard
	Al	27	1848.4	7.3	**-0.0014**	0.001	57.2	ug/L	1410	Standard
	Sc	45	39733.8	3.9				ug/L	39543	Standard
	Ti	47	30.7	21.2	**-0.0408**	0.026	64.0	ug/L	39	Standard
	V	51	1157.9	3.5	**-0.0386**	0.007	18.1	ug/L	1415	Standard
	Cr	52	6209.6	2.0	**-0.1578**	0.015	9.7	ug/L	6946	Standard
	Cr	53	373.3	6.7	**0.0873**	0.028	32.1	ug/L	328	Standard
	Mn	55	647.3	1.5	**-0.0478**	0.002	4.7	ug/L	823	Standard
	Co	59	232.0	9.1	**0.0019**	0.003	163.0	ug/L	252	Standard
	Ni	60	166.3	9.0	**-0.0160**	0.007	44.1	ug/L	192	Standard
	Cu	65	124.7	14.0	**-0.0248**	0.008	34.1	ug/L	141	Standard
	Zn	66	405.0	8.1	**-0.4552**	0.029	6.3	ug/L	491	Standard
>	**Ge**	72	510975.0	1.4				ug/L	515087	Standard
	As	75	-43.1	41.4	**0.0017**	0.016	900.9	ug/L	20	Standard
	Se	82	19.6	25.0	**0.0525**	0.045	86.4	ug/L	15	Standard
	Se-1	77	59.7	5.9	**0.0797**	0.050	62.7	ug/L	48	Standard
>	**Ga**	71	36.7	39.4				mg/L	90	Standard
	Rb	85	23.3	32.7				ug/L	23	Standard
	Y	89	435979.5	2.5				ug/L	448510	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	250.3	25.6	**0.0730**	0.024	32.3	ug/L	11	Standard
	Ag	107	100.0	11.8	**-0.0014**	0.002	125.8	ug/L	134	Standard
	Cd	111	11.9	34.0	**0.0026**	0.002	71.6	mg/L	7	Standard
	Cd	114	45.3	6.7	**0.0038**	0.000	13.0	ug/L	16	Standard
>	**In**	115	614932.8	1.3				ug/L	611117	Standard
	Sn	118	795.0	23.6	**0.0316**	0.031	97.7	ug/L	518	Standard
	Sb	123	431.0	25.7	**0.0779**	0.023	29.6	ug/L	127	Standard
	Ba	135	30.3	24.3	**-0.0105**	0.003	32.1	ug/L	45	Standard
	Ce	140	20.0	66.1				ug/L	298	Standard
>	**Tb**	159	946813.4	1.4				ug/L	977942	Standard
	Ho	165	11.7	89.2				ug/L	12	Standard
	Tl	203	48.3	29.0	**0.0009**	0.002	172.8	ug/L	31	Standard
	Tl	205	35.0	86.9	**0.0025**	0.004	165.9	ug/L	20	Standard
	Pb	206	284.0	5.8	**-0.0111**	0.003	26.2	ug/L	286	Standard
	Pb	207	257.7	11.7	**-0.0053**	0.006	110.9	ug/L	257	Standard
	Pb	208	990.3	3.8	**-0.0080**	0.002	20.6	ug/L	956	Standard
	U	238	43.0	24.2	**0.0030**	0.001	48.0	ug/L	17	Standard
>	**Bi**	209	557905.1	0.6				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	31.7	18.2	**-0.0149**	0.009	60.8	mg/L	32	Standard
K	39	20.0	50.0	**-0.0742**	0.034	46.2	mg/L	30	Standard
Ca	43	35.0	62.3	**-0.0114**	3.447	30330.8	mg/L	48	Standard
Fe	54	144.1	21.6	**-0.0065**	0.032	498.8	mg/L	159	Standard
Fe	57	238.3	3.2	**0.1775**	0.054	30.7	mg/L	195	Standard
Sc-1	45	39733.8	3.9				mg/L	39543	Standard
Cl	35	35783.5	1.7				ug/L	27642	Standard
Kr	83	3.3	45.8				ug/L	2	Standard
Br	81	1466.7	6.9				ug/L	1647	Standard
P	31	19612.7	1.4				ug/L	15231	Standard
S	34	2756.9	2.6				ug/L	1845	Standard
Sr	88	66.7	37.0				ug/L	70	Standard
C	12	86.7	6.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	32.7	47.4				mg/L	12	Standard
Ho-1	165	11.7	89.2				mg/L	12	Standard
Er	166	13.3	43.3				mg/L	20	Standard
I	127	1593.4	21.8				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.202	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.624
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.148
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Tuesday, June 28, 2016 18:56:10
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71096.5	2.9				ug/L	81760	Standard
	Be	9	180.0	15.5	**0.1982**	0.026	13.3	ug/L	17	Standard
	Al	27	1130.0	11.5	**-0.0060**	0.001	12.9	ug/L	1410	Standard
	Sc	45	37422.8	0.9				ug/L	39543	Standard
	Ti	47	25.0	10.6	**-0.0625**	0.010	16.0	ug/L	39	Standard
	V	51	3508.6	1.4	**0.3092**	0.005	1.6	ug/L	1415	Standard
	Cr	52	11162.1	1.4	**0.5814**	0.031	5.3	ug/L	6946	Standard
	Cr	53	975.0	4.9	**0.7938**	0.066	8.3	ug/L	328	Standard
	Mn	55	3454.1	1.9	**0.3960**	0.015	3.8	ug/L	823	Standard
	Co	59	2721.9	4.1	**0.3646**	0.019	5.1	ug/L	252	Standard
	Ni	60	2839.3	1.0	**1.4356**	0.026	1.8	ug/L	192	Standard
	Cu	65	1518.4	2.5	**0.7258**	0.025	3.5	ug/L	141	Standard
	Zn	66	6972.6	1.8	**5.6720**	0.065	1.1	ug/L	491	Standard
>	**Ge**	72	504116.3	0.9				ug/L	515087	Standard
	As	75	374.9	9.7	**0.3808**	0.031	8.0	ug/L	20	Standard
	Se	82	63.0	8.6	**0.4404**	0.052	11.9	ug/L	15	Standard
	Se-1	77	80.7	10.3	**0.3758**	0.122	32.5	ug/L	48	Standard
>	**Ga**	71	33.3	52.7				mg/L	90	Standard
	Rb	85	16.7	96.4				ug/L	23	Standard
	Y	89	427965.8	1.5				ug/L	448510	Standard
>	**Rh**	103	20.0	25.0				ug/L	15	Standard
	Mo	98	72.3	5.2	**0.0094**	0.001	12.5	ug/L	11	Standard
	Ag	107	2402.2	4.6	**0.3647**	0.015	4.1	ug/L	134	Standard
	Cd	111	440.5	3.4	**0.2165**	0.007	3.2	mg/L	7	Standard
	Cd	114	1158.4	0.8	**0.2324**	0.001	0.2	ug/L	16	Standard
>	**In**	115	574029.4	1.1				ug/L	611117	Standard
	Sn	118	496.7	16.4	**-0.0124**	0.016	125.3	ug/L	518	Standard
	Sb	123	1769.4	0.8	**0.3864**	0.003	0.7	ug/L	127	Standard
	Ba	135	1350.1	0.7	**0.6712**	0.012	1.8	ug/L	45	Standard
	Ce	140	15.0	0.0				ug/L	298	Standard
>	**Tb**	159	914394.0	1.1				ug/L	977942	Standard
	Ho	165	6.7	43.3				ug/L	12	Standard
	Tl	203	645.7	4.5	**0.0752**	0.004	4.8	ug/L	31	Standard
	Tl	205	546.7	2.9	**0.0757**	0.002	3.3	ug/L	20	Standard
	Pb	206	1234.7	1.4	**0.1748**	0.002	1.1	ug/L	286	Standard
	Pb	207	1077.0	1.2	**0.1725**	0.004	2.3	ug/L	257	Standard
	Pb	208	4484.6	3.2	**0.1877**	0.008	4.4	ug/L	956	Standard
	U	238	2602.6	1.7	**0.3761**	0.010	2.6	ug/L	17	Standard
>	**Bi**	209	533901.6	0.9				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	26.7	10.8	**-0.0196**	0.004	19.0	mg/L	32	Standard
K	39	28.3	10.2	**-0.0403**	0.010	24.0	mg/L	30	Standard
Ca	43	38.3	7.5	**0.8090**	0.513	63.4	mg/L	48	Standard
Fe	54	99.0	17.7	**-0.0423**	0.018	41.4	mg/L	159	Standard
Fe	57	198.3	16.4	**0.0831**	0.119	142.8	mg/L	195	Standard
Sc-1	45	37422.8	0.9				mg/L	39543	Standard
Cl	35	34311.5	2.9				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1263.4	4.0				ug/L	1647	Standard
P	31	12998.9	1.6				ug/L	15231	Standard
S	34	2533.5	5.7				ug/L	1845	Standard
Sr	88	71.7	29.0				ug/L	70	Standard
C	12	70.0	24.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	5.9	100.8				mg/L	12	Standard
Ho-1	165	6.7	43.3				mg/L	12	Standard
Er	166	16.7	34.6				mg/L	20	Standard
I	127	1311.7	25.8				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	99.121		
Al	27			
Sc	45			
Ti	47			
V	51	77.290		
Cr	52	72.680		
Cr	53			
Mn	55	79.198		
Co	59	91.138		
Ni	60	89.723		
Cu	65	90.724		
Zn	66	90.752		
Ge	72		97.870	
As	75	95.209		
Se	82	110.096		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	91.178		
Cd	111	90.212		
Cd	114			
> In	115			93.931
Sn	118			
Sb	123	96.601		
Ba	135	89.490		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	93.978		
Tl	205			
Pb	206			
Pb	207			
Pb	208	93.825		
U	238	94.023		
> Bi	209			95.839
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
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Method 6020 - Summary Report

Sample ID: PBW A9 WG572242-02
Sample Date/Time: Tuesday, June 28, 2016 19:51:29
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73456.0	1.1				ug/L	81760	Standard
	Be	9	13.3	21.7	**0.0052**	0.003	59.5	ug/L	17	Standard
	Al	27	9322.9	1.9	**0.0529**	0.001	1.2	ug/L	1410	Standard
	Sc	45	38756.2	2.9				ug/L	39543	Standard
	Ti	47	33.7	15.2	**-0.0290**	0.022	74.1	ug/L	39	Standard
	V	51	1394.3	5.5	**-0.0051**	0.010	198.0	ug/L	1415	Standard
	Cr	52	7883.4	0.8	**0.0807**	0.013	16.5	ug/L	6946	Standard
	Cr	53	506.7	16.0	**0.2387**	0.095	39.9	ug/L	328	Standard
	Mn	55	1210.0	2.0	**0.0390**	0.005	11.7	ug/L	823	Standard
	Co	59	188.0	6.5	**-0.0045**	0.002	42.5	ug/L	252	Standard
	Ni	60	230.3	1.3	**0.0179**	0.002	10.0	ug/L	192	Standard
	Cu	65	157.0	8.9	**-0.0078**	0.008	102.0	ug/L	141	Standard
	Zn	66	1546.4	2.1	**0.5897**	0.023	3.8	ug/L	491	Standard
>	**Ge**	72	512703.5	0.7				ug/L	515087	Standard
	As	75	-32.6	48.2	**0.0111**	0.014	127.3	ug/L	20	Standard
	Se	82	19.2	20.1	**0.0486**	0.034	70.8	ug/L	15	Standard
	Se-1	77	50.0	10.6	**-0.0518**	0.075	145.3	ug/L	48	Standard
>	**Ga**	71	33.3	34.6				mg/L	90	Standard
	Rb	85	33.3	31.2				ug/L	23	Standard
	Y	89	438886.4	1.2				ug/L	448510	Standard
>	**Rh**	103	13.3	43.3				ug/L	15	Standard
	Mo	98	27.2	14.3	**-0.0088**	0.001	17.0	ug/L	11	Standard
	Ag	107	75.7	8.8	**-0.0047**	0.001	18.4	ug/L	134	Standard
	Cd	111	4.3	48.7	**-0.0009**	0.001	113.9	mg/L	7	Standard
	Cd	114	21.5	41.2	**-0.0007**	0.002	246.6	ug/L	16	Standard
>	**In**	115	598021.6	1.3				ug/L	611117	Standard
	Sn	118	688.3	6.3	**0.0170**	0.007	40.8	ug/L	518	Standard
	Sb	123	162.8	37.0	**0.0223**	0.013	56.3	ug/L	127	Standard
	Ba	135	50.0	12.0	**-0.0003**	0.003	1000.2	ug/L	45	Standard
	Ce	140	36.7	78.7				ug/L	298	Standard
>	**Tb**	159	940667.7	2.2				ug/L	977942	Standard
	Ho	165	18.3	56.8				ug/L	12	Standard
	Tl	203	9.0	22.2	**-0.0037**	0.000	6.2	ug/L	31	Standard
	Tl	205	5.0	0.0	**-0.0016**	0.000	0.7	ug/L	20	Standard
	Pb	206	302.0	8.3	**-0.0074**	0.006	75.2	ug/L	286	Standard
	Pb	207	237.7	5.4	**-0.0090**	0.003	32.3	ug/L	257	Standard
	Pb	208	966.3	1.0	**-0.0090**	0.001	6.5	ug/L	956	Standard
	U	238	4.3	48.0	**-0.0024**	0.000	12.3	ug/L	17	Standard
>	**Bi**	209	554162.6	1.6				ug/L	557080	Standard

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	Na	23	0.0		**0.0050**			mg/L	0	Standard
	Mg	24	41.7	18.3	**-0.0005**	0.010	2017.0	mg/L	32	Standard
	K	39	30.0	33.3	**-0.0385**	0.033	84.7	mg/L	30	Standard
	Ca	43	16.7	91.7	**-2.7218**	2.434	89.4	mg/L	48	Standard
	Fe	54	121.1	16.6	**-0.0249**	0.021	84.8	mg/L	159	Standard
	Fe	57	230.0	15.2	**0.1658**	0.100	60.0	mg/L	195	Standard
>	**Sc-1**	45	38756.2	2.9				mg/L	39543	Standard
	Cl	35	36900.9	1.9				ug/L	27642	Standard
	Kr	83	1.3	43.3				ug/L	2	Standard
	Br	81	1656.8	8.0				ug/L	1647	Standard
	P	31	17782.1	2.2				ug/L	15231	Standard
	S	34	2408.5	10.1				ug/L	1845	Standard
	Sr	88	75.0	29.1				ug/L	70	Standard
	C	12	50.0	52.9				mg/L	113	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	0	Standard
	Dy	164	9.5	105.0				mg/L	12	Standard
	Ho-1	165	18.3	56.8				mg/L	12	Standard
	Er	166	10.0					mg/L	20	Standard
	I	127	1248.4	23.8				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		89.843	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.537	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.857
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.476
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW A9 WG572242-03
Sample Date/Time: Tuesday, June 28, 2016 19:54:40
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74125.9	0.7				ug/L	81760	Standard
	Be	9	45613.6	2.5	**50.6567**	1.536	3.0	ug/L	17	Standard
	Al	27	52265.0	2.7	**0.3596**	0.008	2.3	ug/L	1410	Standard
	Sc	45	39738.7	2.1				ug/L	39543	Standard
	Ti	47	34.0	10.6	**-0.0277**	0.015	52.7	ug/L	39	Standard
	V	51	340531.5	1.6	**49.0319**	0.683	1.4	ug/L	1415	Standard
	Cr	52	354579.7	0.6	**50.1386**	0.494	1.0	ug/L	6946	Standard
	Cr	53	44436.8	3.3	**50.5389**	1.845	3.7	ug/L	328	Standard
	Mn	55	331885.6	0.6	**51.3034**	0.483	0.9	ug/L	823	Standard
	Co	59	341252.7	1.0	**48.7823**	0.497	1.0	ug/L	252	Standard
	Ni	60	94292.8	0.4	**50.2138**	0.089	0.2	ug/L	192	Standard
	Cu	65	96497.7	0.5	**50.9494**	0.130	0.3	ug/L	141	Standard
	Zn	66	57251.0	0.4	**51.6689**	0.417	0.8	ug/L	491	Standard
>	**Ge**	72	512516.5	0.4				ug/L	515087	Standard
	As	75	55356.1	0.6	**49.5225**	0.094	0.2	ug/L	20	Standard
	Se	82	5489.9	0.8	**47.8062**	0.574	1.2	ug/L	15	Standard
	Se-1	77	3699.5	2.3	**48.6318**	0.978	2.0	ug/L	48	Standard
>	**Ga**	71	51.7	29.6				mg/L	90	Standard
	Rb	85	58.3	27.6				ug/L	23	Standard
	Y	89	427399.3	0.3				ug/L	448510	Standard
>	**Rh**	103	20.0	66.1				ug/L	15	Standard
	Mo	98	50.9	5.4	**0.0000**	0.001	4406.4	ug/L	11	Standard
	Ag	107	325451.5	0.2	**49.1242**	0.412	0.8	ug/L	134	Standard
	Cd	111	100950.5	1.5	**47.8617**	0.611	1.3	mg/L	7	Standard
	Cd	114	243935.8	0.5	**47.5806**	0.389	0.8	ug/L	16	Standard
>	**In**	115	602979.8	0.8				ug/L	611117	Standard
	Sn	118	653.3	9.2	**0.0100**	0.010	97.1	ug/L	518	Standard
	Sb	123	224336.4	0.4	**48.1778**	0.461	1.0	ug/L	127	Standard
	Ba	135	98286.4	0.2	**48.2270**	0.385	0.8	ug/L	45	Standard
	Ce	140	205.0	19.4				ug/L	298	Standard
>	**Tb**	159	962904.7	0.9				ug/L	977942	Standard
	Ho	165	11.7	49.5				ug/L	12	Standard
	Tl	203	409811.5	0.9	**48.6592**	0.503	1.0	ug/L	31	Standard
	Tl	205	358097.5	0.9	**48.9662**	0.679	1.4	ug/L	20	Standard
	Pb	206	272798.6	0.1	**50.4414**	0.712	1.4	ug/L	286	Standard
	Pb	207	236678.2	0.4	**48.5210**	0.945	1.9	ug/L	257	Standard
	Pb	208	941837.1	1.1	**49.9011**	0.393	0.8	ug/L	956	Standard
	U	238	343975.4	0.3	**48.0328**	0.703	1.5	ug/L	17	Standard
>	**Bi**	209	556837.1	1.5				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.3983**	18.002	173.1	mg/L	0	Standard
Mg	24	58.3	27.6	**0.0205**	0.023	110.8	mg/L	32	Standard
K	39	16.7	45.8	**-0.0851**	0.027	31.2	mg/L	30	Standard
Ca	43	23.3	32.7	**-1.8206**	1.160	63.7	mg/L	48	Standard
Fe	54	118.7	10.7	**-0.0303**	0.010	31.4	mg/L	159	Standard
Fe	57	200.0	10.0	**0.0482**	0.079	163.5	mg/L	195	Standard
Sc-1	45	39738.7	2.1				mg/L	39543	Standard
Cl	35	36016.8	1.9				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	3627.1	7.0				ug/L	1647	Standard
P	31	18584.7	0.6				ug/L	15231	Standard
S	34	2266.8	5.1				ug/L	1845	Standard
Sr	88	53.3	23.6				ug/L	70	Standard
C	12	126.7	32.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	9.0	105.3				mg/L	12	Standard
Ho-1	165	11.7	49.5				mg/L	12	Standard
Er	166	20.0	50.0				mg/L	20	Standard
I	127	1253.4	17.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.663	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.501	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.669
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.956
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606083901 WG574242-01
Sample Date/Time: Tuesday, June 28, 2016 19:57:52
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73849.6	1.9				ug/L	81760	Standard
	Be	9	25.0	0.0	**0.0181**	0.001	2.9	ug/L	17	Standard
	Al	27	15521751.4	1.0	**111.4854**	1.467	1.3	ug/L	1410	Standard
	Sc	45	39103.8	3.8				ug/L	39543	Standard
	Ti	47	591.7	5.1	**2.3246**	0.153	6.6	ug/L	39	Standard
	V	51	4219.1	3.4	**0.4282**	0.015	3.5	ug/L	1415	Standard
	Cr	52	8895.6	2.0	**0.2798**	0.040	14.2	ug/L	6946	Standard
	Cr	53	3360.4	10.4	**3.6642**	0.437	11.9	ug/L	328	Standard
	Mn	55	16077.2	1.4	**2.4454**	0.007	0.3	ug/L	823	Standard
	Co	59	1032.0	3.9	**0.1223**	0.006	4.9	ug/L	252	Standard
	Ni	60	3143.3	2.0	**1.6407**	0.018	1.1	ug/L	192	Standard
	Cu	65	3355.0	2.0	**1.7559**	0.016	0.9	ug/L	141	Standard
	Zn	66	14991.7	0.7	**13.4797**	0.137	1.0	ug/L	491	Standard
>	**Ge**	72	492452.2	1.1				ug/L	515087	Standard
	As	75	562.8	15.9	**0.5640**	0.084	14.9	ug/L	20	Standard
	Se	82	67.0	15.0	**0.4895**	0.090	18.3	ug/L	15	Standard
	Se-1	77	207.3	11.8	**2.1604**	0.344	15.9	ug/L	48	Standard
>	**Ga**	71	103.3	23.9				mg/L	90	Standard
	Rb	85	20340.3	1.9				ug/L	23	Standard
	Y	89	439150.3	1.0				ug/L	448510	Standard
>	**Rh**	103	18.3	15.7				ug/L	15	Standard
	Mo	98	1185.2	3.1	**0.4267**	0.016	3.7	ug/L	11	Standard
	Ag	107	124.0	3.2	**0.0026**	0.001	26.5	ug/L	134	Standard
	Cd	111	35.9	29.2	**0.0141**	0.005	34.6	mg/L	7	Standard
	Cd	114	96.0	6.6	**0.0139**	0.001	9.0	ug/L	16	Standard
>	**In**	115	601194.2	0.6				ug/L	611117	Standard
	Sn	118	770.0	3.2	**0.0304**	0.004	13.3	ug/L	518	Standard
	Sb	123	1910.7	20.7	**0.3992**	0.088	22.0	ug/L	127	Standard
	Ba	135	33674.7	0.4	**16.5556**	0.054	0.3	ug/L	45	Standard
	Ce	140	1643.4	3.5				ug/L	298	Standard
>	**Tb**	159	946228.9	1.7				ug/L	977942	Standard
	Ho	165	41.7	36.7				ug/L	12	Standard
	Tl	203	211.3	8.6	**0.0215**	0.002	11.4	ug/L	31	Standard
	Tl	205	188.3	11.1	**0.0247**	0.003	12.3	ug/L	20	Standard
	Pb	206	2721.9	1.8	**0.4638**	0.014	3.1	ug/L	286	Standard
	Pb	207	2208.8	1.5	**0.4164**	0.010	2.4	ug/L	257	Standard
	Pb	208	9386.5	1.8	**0.4607**	0.014	3.1	ug/L	956	Standard
	U	238	2364.2	1.6	**0.3425**	0.008	2.2	ug/L	17	Standard
>	**Bi**	209	532104.5	1.0				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.9240**	18.912	173.1	mg/L	0	Standard
Mg	24	14932.4	1.8	**20.0717**	1.109	5.5	mg/L	32	Standard
K	39	851.7	12.5	**2.7753**	0.419	15.1	mg/L	30	Standard
Ca	43	323.3	7.9	**44.3168**	3.500	7.9	mg/L	48	Standard
Fe	54	180.7	15.7	**0.0282**	0.024	84.5	mg/L	159	Standard
Fe	57	355.0	6.1	**0.5869**	0.046	7.9	mg/L	195	Standard
> **Sc-1**	45	39103.8	3.8				mg/L	39543	Standard
Cl	35	38446.7	1.8				ug/L	27642	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	10497.0	5.2				ug/L	1647	Standard
P	31	21567.0	1.7				ug/L	15231	Standard
S	34	2493.5	2.8				ug/L	1845	Standard
Sr	88	151.7	7.6				ug/L	70	Standard
C	12	210.0	39.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	67.9	17.5				mg/L	12	Standard
Ho-1	165	41.7	36.7				mg/L	12	Standard
Er	166	43.3	93.3				mg/L	20	Standard
I	127	29340.1	3.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.325	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.606	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.376
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.517
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606083901DP WG574242-04
Sample Date/Time: Tuesday, June 28, 2016 20:01:03
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74496.0	1.1				ug/L	81760	Standard
	Be	9	20.0	25.0	**0.0124**	0.006	45.8	ug/L	17	Standard
	Al	27	15458448.5	1.4	**110.0484**	0.587	0.5	ug/L	1410	Standard
	Sc	45	38253.3	3.4				ug/L	39543	Standard
	Ti	47	558.7	5.4	**2.1548**	0.155	7.2	ug/L	39	Standard
	V	51	4067.8	2.6	**0.3973**	0.009	2.2	ug/L	1415	Standard
	Cr	52	9024.7	1.6	**0.2811**	0.031	11.1	ug/L	6946	Standard
	Cr	53	3592.1	3.4	**3.8809**	0.090	2.3	ug/L	328	Standard
	Mn	55	13517.4	2.1	**2.0039**	0.068	3.4	ug/L	823	Standard
	Co	59	1022.7	3.5	**0.1189**	0.006	5.0	ug/L	252	Standard
	Ni	60	3054.6	1.9	**1.5691**	0.041	2.6	ug/L	192	Standard
	Cu	65	3452.1	3.2	**1.7838**	0.034	1.9	ug/L	141	Standard
	Zn	66	14844.3	0.5	**13.1506**	0.169	1.3	ug/L	491	Standard
>	**Ge**	72	499109.4	1.4				ug/L	515087	Standard
	As	75	584.5	8.0	**0.5768**	0.041	7.2	ug/L	20	Standard
	Se	82	58.0	10.0	**0.3998**	0.046	11.4	ug/L	15	Standard
	Se-1	77	200.7	10.2	**2.0328**	0.318	15.6	ug/L	48	Standard
>	**Ga**	71	100.0	13.2				mg/L	90	Standard
	Rb	85	19739.5	1.7				ug/L	23	Standard
	Y	89	436250.9	1.8				ug/L	448510	Standard
>	**Rh**	103	38.3	7.5				ug/L	15	Standard
	Mo	98	1219.4	1.0	**0.4525**	0.003	0.7	ug/L	11	Standard
	Ag	107	99.7	5.7	**-0.0007**	0.001	125.7	ug/L	134	Standard
	Cd	111	32.6	12.4	**0.0130**	0.002	14.9	mg/L	7	Standard
	Cd	114	81.5	18.5	**0.0115**	0.003	24.6	ug/L	16	Standard
>	**In**	115	584572.0	1.4				ug/L	611117	Standard
	Sn	118	751.7	6.1	**0.0310**	0.009	27.5	ug/L	518	Standard
	Sb	123	786.1	12.1	**0.1616**	0.023	14.4	ug/L	127	Standard
	Ba	135	32184.1	0.9	**16.2729**	0.095	0.6	ug/L	45	Standard
	Ce	140	490.0	7.4				ug/L	298	Standard
>	**Tb**	159	929479.8	0.3				ug/L	977942	Standard
	Ho	165	31.7	24.1				ug/L	12	Standard
	Tl	203	152.7	10.6	**0.0145**	0.002	14.7	ug/L	31	Standard
	Tl	205	146.7	17.2	**0.0191**	0.004	18.8	ug/L	20	Standard
	Pb	206	2610.2	1.4	**0.4511**	0.005	1.2	ug/L	286	Standard
	Pb	207	2110.5	2.5	**0.4033**	0.013	3.2	ug/L	257	Standard
	Pb	208	8866.0	0.9	**0.4405**	0.006	1.4	ug/L	956	Standard
	U	238	2335.8	3.1	**0.3444**	0.010	2.9	ug/L	17	Standard
>	**Bi**	209	522741.7	0.4				ug/L	557080	Standard

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Na	23	1.7	173.2	**11.1196**	19.251	173.1	mg/L	0	Standard
Mg	24	14720.5	1.4	**20.2196**	0.936	4.6	mg/L	32	Standard
K	39	903.4	10.8	**3.0129**	0.317	10.5	mg/L	30	Standard
Ca	43	308.3	1.9	**43.1033**	1.939	4.5	mg/L	48	Standard
Fe	54	132.3	23.0	**-0.0139**	0.024	174.3	mg/L	159	Standard
Fe	57	371.7	11.8	**0.6755**	0.185	27.4	mg/L	195	Standard
> **Sc-1**	45	38253.3	3.4				mg/L	39543	Standard
Cl	35	39853.0	2.0				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	7995.4	3.8				ug/L	1647	Standard
P	31	20689.1	2.4				ug/L	15231	Standard
S	34	2350.2	5.7				ug/L	1845	Standard
Sr	88	115.0	7.5				ug/L	70	Standard
C	12	266.7	11.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	41.7	57.7				mg/L	12	Standard
Ho-1	165	31.7	24.1				mg/L	12	Standard
Er	166	33.3	75.5				mg/L	20	Standard
I	127	28308.1	3.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.115	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.898	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.656
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.836
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606083901S WG574242-05
Sample Date/Time: Tuesday, June 28, 2016 20:04:14
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77052.1	1.2				ug/L	81760	Standard
	Be	9	48365.4	1.4	**51.6767**	1.282	2.5	ug/L	17	Standard
	Al	27	15205678.0	0.8	**104.6750**	1.999	1.9	ug/L	1410	Standard
	Sc	45	39767.1	2.3				ug/L	39543	Standard
	Ti	47	566.0	2.6	**2.1182**	0.041	1.9	ug/L	39	Standard
	V	51	345428.5	0.5	**49.6572**	0.625	1.3	ug/L	1415	Standard
	Cr	52	342558.9	0.4	**48.3219**	0.886	1.8	ug/L	6946	Standard
	Cr	53	45610.2	2.6	**51.7999**	1.901	3.7	ug/L	328	Standard
	Mn	55	334844.2	1.7	**51.6671**	0.130	0.3	ug/L	823	Standard
	Co	59	340587.2	2.1	**48.5963**	0.256	0.5	ug/L	252	Standard
	Ni	60	92425.4	0.6	**49.1352**	0.675	1.4	ug/L	192	Standard
	Cu	65	94140.2	0.6	**49.6217**	0.865	1.7	ug/L	141	Standard
	Zn	66	68169.3	0.4	**61.5791**	1.173	1.9	ug/L	491	Standard
>	**Ge**	72	513441.7	1.6				ug/L	515087	Standard
	As	75	56899.2	0.6	**50.8164**	0.583	1.1	ug/L	20	Standard
	Se	82	5653.4	1.3	**49.1454**	0.462	0.9	ug/L	15	Standard
	Se-1	77	3932.8	1.5	**51.6632**	1.250	2.4	ug/L	48	Standard
>	**Ga**	71	93.3	35.7				mg/L	90	Standard
	Rb	85	19300.6	2.7				ug/L	23	Standard
	Y	89	425453.4	2.7				ug/L	448510	Standard
>	**Rh**	103	45.0	19.2				ug/L	15	Standard
	Mo	98	1218.6	0.9	**0.4503**	0.008	1.7	ug/L	11	Standard
	Ag	107	314898.7	0.6	**48.8175**	0.102	0.2	ug/L	134	Standard
	Cd	111	99777.7	0.5	**48.5906**	0.622	1.3	mg/L	7	Standard
	Cd	114	243059.8	0.9	**48.6969**	0.795	1.6	ug/L	16	Standard
>	**In**	115	587073.7	0.8				ug/L	611117	Standard
	Sn	118	733.4	7.3	**0.0272**	0.010	36.7	ug/L	518	Standard
	Sb	123	223776.0	1.4	**49.3561**	0.290	0.6	ug/L	127	Standard
	Ba	135	127336.9	0.7	**64.1810**	0.344	0.5	ug/L	45	Standard
	Ce	140	335.0	9.1				ug/L	298	Standard
>	**Tb**	159	937062.8	1.0				ug/L	977942	Standard
	Ho	165	41.7	79.9				ug/L	12	Standard
	Tl	203	401801.7	0.6	**49.2378**	0.579	1.2	ug/L	31	Standard
	Tl	205	351031.6	0.7	**49.5383**	0.691	1.4	ug/L	20	Standard
	Pb	206	267916.7	0.7	**51.1246**	0.591	1.2	ug/L	286	Standard
	Pb	207	234005.3	0.9	**49.5047**	0.372	0.8	ug/L	257	Standard
	Pb	208	924903.3	0.8	**50.5781**	0.765	1.5	ug/L	956	Standard
	U	238	349197.5	0.5	**50.3229**	0.614	1.2	ug/L	17	Standard
>	**Bi**	209	539520.7	0.7				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.8832**	18.842	173.1	mg/L	0	Standard
Mg	24	14542.0	3.3	**19.1893**	0.286	1.5	mg/L	32	Standard
K	39	753.4	10.6	**2.3925**	0.305	12.7	mg/L	30	Standard
Ca	43	295.0	12.2	**39.3051**	6.421	16.3	mg/L	48	Standard
Fe	54	140.6	16.7	**-0.0107**	0.020	183.5	mg/L	159	Standard
Fe	57	348.3	9.1	**0.5437**	0.082	15.1	mg/L	195	Standard
> **Sc-1**	45	39767.1	2.3				mg/L	39543	Standard
Cl	35	39860.4	1.2				ug/L	27642	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	7565.2	10.7				ug/L	1647	Standard
P	31	21044.6	3.8				ug/L	15231	Standard
S	34	2540.2	5.7				ug/L	1845	Standard
Sr	88	145.0	22.6				ug/L	70	Standard
C	12	196.7	11.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	48.4	54.7				mg/L	12	Standard
Ho-1	165	41.7	79.9				mg/L	12	Standard
Er	166	33.3	45.8				mg/L	20	Standard
I	127	26943.9	1.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.242	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.681	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.066
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.848
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606083901SD WG574242-06
Sample Date/Time: Tuesday, June 28, 2016 20:07:26
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77184.4	1.1				ug/L	81760	Standard
	Be	9	48315.3	1.2	**51.5258**	0.436	0.8	ug/L	17	Standard
	Al	27	15387465.4	1.3	**105.7299**	0.773	0.7	ug/L	1410	Standard
	Sc	45	40039.5	2.3				ug/L	39543	Standard
	Ti	47	554.0	4.1	**2.1409**	0.093	4.3	ug/L	39	Standard
	V	51	332776.2	1.5	**49.3498**	0.268	0.5	ug/L	1415	Standard
	Cr	52	340776.8	0.8	**49.6175**	0.095	0.2	ug/L	6946	Standard
	Cr	53	45466.5	0.7	**53.2763**	0.775	1.5	ug/L	328	Standard
	Mn	55	324192.4	1.4	**51.6123**	0.258	0.5	ug/L	823	Standard
	Co	59	327045.3	2.1	**48.1461**	0.569	1.2	ug/L	252	Standard
	Ni	60	91364.7	1.1	**50.1099**	0.072	0.1	ug/L	192	Standard
	Cu	65	91854.3	0.9	**49.9479**	0.081	0.2	ug/L	141	Standard
	Zn	66	66866.6	0.8	**62.3204**	0.118	0.2	ug/L	491	Standard
>	**Ge**	72	497622.9	1.0				ug/L	515087	Standard
	As	75	54845.8	1.7	**50.5323**	0.480	1.0	ug/L	20	Standard
	Se	82	5429.5	1.2	**48.6954**	0.265	0.5	ug/L	15	Standard
	Se-1	77	3850.8	1.9	**52.1872**	0.544	1.0	ug/L	48	Standard
>	**Ga**	71	85.0	11.8				mg/L	90	Standard
	Rb	85	19015.3	1.2				ug/L	23	Standard
	Y	89	421533.6	0.8				ug/L	448510	Standard
>	**Rh**	103	55.0	15.7				ug/L	15	Standard
	Mo	98	1205.1	2.4	**0.4408**	0.012	2.7	ug/L	11	Standard
	Ag	107	307002.5	0.8	**47.1551**	0.386	0.8	ug/L	134	Standard
	Cd	111	97425.8	0.9	**47.0062**	0.430	0.9	mg/L	7	Standard
	Cd	114	239795.9	0.5	**47.5975**	0.300	0.6	ug/L	16	Standard
>	**In**	115	592518.8	0.1				ug/L	611117	Standard
	Sn	118	761.7	9.1	**0.0309**	0.012	38.7	ug/L	518	Standard
	Sb	123	220298.1	1.2	**48.1440**	0.631	1.3	ug/L	127	Standard
	Ba	135	125301.0	0.6	**62.5732**	0.412	0.7	ug/L	45	Standard
	Ce	140	340.0	1.5				ug/L	298	Standard
>	**Tb**	159	948091.3	1.9				ug/L	977942	Standard
	Ho	165	23.3	65.5				ug/L	12	Standard
	Tl	203	394026.8	0.4	**48.4831**	0.151	0.3	ug/L	31	Standard
	Tl	205	348699.1	1.4	**49.4146**	1.048	2.1	ug/L	20	Standard
	Pb	206	261711.9	1.4	**50.1430**	0.483	1.0	ug/L	286	Standard
	Pb	207	228078.7	1.5	**48.4479**	0.479	1.0	ug/L	257	Standard
	Pb	208	906176.6	0.5	**49.7571**	0.517	1.0	ug/L	956	Standard
	U	238	340376.9	0.5	**49.2541**	0.514	1.0	ug/L	17	Standard
>	**Bi**	209	537295.6	0.7				ug/L	557080	Standard

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Na	23	3.3	86.6	**20.8666**	18.067	86.6	mg/L	0	Standard
Mg	24	14582.0	2.3	**19.1163**	0.419	2.2	mg/L	32	Standard
K	39	795.0	3.8	**2.5139**	0.164	6.5	mg/L	30	Standard
Ca	43	345.0	2.9	**46.4459**	2.697	5.8	mg/L	48	Standard
Fe	54	142.5	14.7	**-0.0097**	0.018	187.3	mg/L	159	Standard
Fe	57	408.3	2.5	**0.7378**	0.065	8.9	mg/L	195	Standard
> **Sc-1**	45	40039.5	2.3				mg/L	39543	Standard
Cl	35	39300.2	1.1				ug/L	27642	Standard
Kr	83	1.7	173.2				ug/L	2	Standard
Br	81	7651.9	3.5				ug/L	1647	Standard
P	31	20634.0	3.2				ug/L	15231	Standard
S	34	2398.5	2.0				ug/L	1845	Standard
Sr	88	180.0	15.5				ug/L	70	Standard
C	12	226.7	27.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	27.4	58.7				mg/L	12	Standard
Ho-1	165	23.3	65.5				mg/L	12	Standard
Er	166	53.3	108.3				mg/L	20	Standard
I	127	27065.8	3.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.404	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.610	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.957
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.448
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606084301
Sample Date/Time: Tuesday, June 28, 2016 20:10:37
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80372.6	1.6				ug/L	81760	Standard
	Be	9	41.7	45.4	**0.0330**	0.020	59.2	ug/L	17	Standard
	Al	27	7042054.5	1.4	**46.4726**	1.334	2.9	ug/L	1410	Standard
	Sc	45	38211.6	5.6				ug/L	39543	Standard
	Ti	47	149.3	19.8	**0.4676**	0.133	28.4	ug/L	39	Standard
	V	51	1769.8	3.9	**0.0612**	0.007	10.9	ug/L	1415	Standard
	Cr	52	8360.6	4.6	**0.2060**	0.044	21.1	ug/L	6946	Standard
	Cr	53	938.4	5.4	**0.7826**	0.048	6.1	ug/L	328	Standard
	Mn	55	4412856.2	0.9	**715.8990**	5.361	0.7	ug/L	823	Standard
	Co	59	49628.8	1.9	**7.3983**	0.034	0.5	ug/L	252	Standard
	Ni	60	31518.1	1.1	**17.4994**	0.073	0.4	ug/L	192	Standard
	Cu	65	1083.7	2.3	**0.5092**	0.018	3.5	ug/L	141	Standard
	Zn	66	58737.0	1.3	**55.5464**	0.787	1.4	ug/L	491	Standard
>	**Ge**	72	489683.3	1.5				ug/L	515087	Standard
	As	75	118.1	28.8	**0.1508**	0.032	21.2	ug/L	20	Standard
	Se	82	133.7	3.3	**1.1023**	0.049	4.4	ug/L	15	Standard
	Se-1	77	146.3	10.3	**1.3266**	0.239	18.0	ug/L	48	Standard
>	**Ga**	71	230.0	39.9				mg/L	90	Standard
	Rb	85	13262.5	1.5				ug/L	23	Standard
	Y	89	437622.3	1.3				ug/L	448510	Standard
>	**Rh**	103	40.0	43.3				ug/L	15	Standard
	Mo	98	84.3	2.5	**0.0124**	0.001	5.4	ug/L	11	Standard
	Ag	107	135.7	14.4	**0.0042**	0.003	69.6	ug/L	134	Standard
	Cd	111	325.5	6.3	**0.1508**	0.009	6.1	mg/L	7	Standard
	Cd	114	800.8	5.2	**0.1507**	0.008	5.1	ug/L	16	Standard
>	**In**	115	605376.8	0.3				ug/L	611117	Standard
	Sn	118	716.7	15.8	**0.0204**	0.019	93.4	ug/L	518	Standard
	Sb	123	1846.5	24.8	**0.3824**	0.099	25.9	ug/L	127	Standard
	Ba	135	61196.0	0.7	**29.8977**	0.107	0.4	ug/L	45	Standard
	Ce	140	4327.3	3.4				ug/L	298	Standard
>	**Tb**	159	946751.9	1.1				ug/L	977942	Standard
	Ho	165	113.3	17.8				ug/L	12	Standard
	Tl	203	274.7	6.5	**0.0286**	0.002	7.3	ug/L	31	Standard
	Tl	205	308.3	53.1	**0.0408**	0.023	55.8	ug/L	20	Standard
	Pb	206	584.3	5.1	**0.0470**	0.006	11.8	ug/L	286	Standard
	Pb	207	484.3	1.7	**0.0436**	0.002	3.9	ug/L	257	Standard
	Pb	208	2242.1	13.2	**0.0611**	0.016	25.8	ug/L	956	Standard
	U	238	167.0	68.8	**0.0208**	0.016	78.4	ug/L	17	Standard
>	**Bi**	209	544741.6	0.3				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	6142.9	1.9	**8.4190**	0.399	4.7	mg/L	32	Standard
K	39	320.0	19.2	**0.9720**	0.149	15.3	mg/L	30	Standard
Ca	43	193.3	18.7	**25.2140**	6.755	26.8	mg/L	48	Standard
Fe	54	272.9	8.2	**0.1197**	0.034	28.2	mg/L	159	Standard
Fe	57	298.3	20.0	**0.4171**	0.202	48.3	mg/L	195	Standard
Sc-1	45	38211.6	5.6				mg/L	39543	Standard
Cl	35	43040.4	2.1				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	3493.7	8.6				ug/L	1647	Standard
P	31	19535.9	3.1				ug/L	15231	Standard
S	34	2298.5	3.2				ug/L	1845	Standard
Sr	88	191.7	4.0				ug/L	70	Standard
C	12	103.3	24.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	171.7	2.4				mg/L	12	Standard
Ho-1	165	113.3	17.8				mg/L	12	Standard
Er	166	103.3	43.6				mg/L	20	Standard
I	127	15184.3	1.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		98.303	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.068	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.061
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.785
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606084301PS WG574570-01
Sample Date/Time: Tuesday, June 28, 2016 20:13:49
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84132.9	0.3				ug/L	81760	Standard
	Be	9	53800.4	2.5	**52.6389**	1.459	2.8	ug/L	17	Standard
	Al	27	7286262.3	0.5	**45.9217**	0.095	0.2	ug/L	1410	Standard
	Sc	45	39187.3	1.8				ug/L	39543	Standard
	Ti	47	167.0	8.4	**0.5053**	0.064	12.8	ug/L	39	Standard
	V	51	355576.0	1.4	**50.8299**	0.802	1.6	ug/L	1415	Standard
	Cr	52	356673.6	1.0	**50.0684**	1.233	2.5	ug/L	6946	Standard
	Cr	53	44503.6	1.2	**50.2498**	1.575	3.1	ug/L	328	Standard
	Mn	55	4859292.5	1.8	**747.6759**	17.580	2.4	ug/L	823	Standard
	Co	59	417615.7	1.3	**59.2660**	0.892	1.5	ug/L	252	Standard
	Ni	60	125871.4	1.4	**66.5870**	2.033	3.1	ug/L	192	Standard
	Cu	65	97106.5	1.0	**50.8947**	0.717	1.4	ug/L	141	Standard
	Zn	66	127581.2	0.7	**115.3025**	1.913	1.7	ug/L	491	Standard
>	**Ge**	72	516403.0	2.2				ug/L	515087	Standard
	As	75	57691.6	2.0	**51.2302**	0.986	1.9	ug/L	20	Standard
	Se	82	6053.8	2.8	**52.3316**	1.116	2.1	ug/L	15	Standard
	Se-1	77	3949.2	3.8	**51.5591**	1.119	2.2	ug/L	48	Standard
>	**Ga**	71	251.7	10.0				mg/L	90	Standard
	Rb	85	13841.3	3.1				ug/L	23	Standard
	Y	89	444794.9	3.0				ug/L	448510	Standard
>	**Rh**	103	78.3	24.2				ug/L	15	Standard
	Mo	98	86.4	4.3	**0.0128**	0.001	7.7	ug/L	11	Standard
	Ag	107	327259.4	2.3	**48.6313**	0.643	1.3	ug/L	134	Standard
	Cd	111	105349.6	1.3	**49.1793**	0.322	0.7	mg/L	7	Standard
	Cd	114	257271.1	1.0	**49.4173**	1.101	2.2	ug/L	16	Standard
>	**In**	115	612449.2	2.0				ug/L	611117	Standard
	Sn	118	941.7	3.9	**0.0570**	0.004	7.5	ug/L	518	Standard
	Sb	123	235069.6	1.3	**49.7050**	0.359	0.7	ug/L	127	Standard
	Ba	135	161643.1	1.4	**78.1070**	0.551	0.7	ug/L	45	Standard
	Ce	140	4429.0	1.8				ug/L	298	Standard
>	**Tb**	159	958659.2	2.3				ug/L	977942	Standard
	Ho	165	101.7	15.0				ug/L	12	Standard
	Tl	203	432017.4	2.0	**50.9163**	0.725	1.4	ug/L	31	Standard
	Tl	205	384793.0	2.1	**52.2411**	1.764	3.4	ug/L	20	Standard
	Pb	206	286141.9	1.8	**52.5195**	0.925	1.8	ug/L	286	Standard
	Pb	207	249240.4	1.8	**50.7143**	0.544	1.1	ug/L	257	Standard
	Pb	208	995726.4	2.1	**52.3723**	1.044	2.0	ug/L	956	Standard
	U	238	370701.4	1.5	**51.3906**	1.394	2.7	ug/L	17	Standard
>	**Bi**	209	561025.3	2.5				ug/L	557080	Standard

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Na	23	5.0	0.0	**32.4034**	0.594	1.8	mg/L	0	Standard
Mg	24	6414.7	1.1	**8.5623**	0.246	2.9	mg/L	32	Standard
K	39	321.7	9.1	**0.9561**	0.110	11.5	mg/L	30	Standard
Ca	43	185.0	8.1	**22.9936**	1.940	8.4	mg/L	48	Standard
Fe	54	250.2	14.1	**0.0912**	0.029	32.3	mg/L	159	Standard
Fe	57	306.7	15.8	**0.4183**	0.145	34.7	mg/L	195	Standard
> **Sc-1**	45	39187.3	1.8				mg/L	39543	Standard
Cl	35	43079.8	1.6				ug/L	27642	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	3410.4	11.2				ug/L	1647	Standard
P	31	19879.7	4.3				ug/L	15231	Standard
S	34	2313.5	2.6				ug/L	1845	Standard
Sr	88	201.7	5.2				ug/L	70	Standard
C	12	140.0	32.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	196.2	20.7				mg/L	12	Standard
Ho-1	165	101.7	15.0				mg/L	12	Standard
Er	166	80.0	76.0				mg/L	20	Standard
I	127	16267.1	4.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.902	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.256	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.218
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.708
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1606084301SDL WG574570-02
Sample Date/Time: Tuesday, June 28, 2016 20:17:00
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84610.6	1.2				ug/L	81760	Standard
	Be	9	31.7	24.1	**0.0210**	0.007	33.6	ug/L	17	Standard
	Al	27	1535529.0	0.5	**9.6123**	0.084	0.9	ug/L	1410	Standard
	Sc	45	40586.0	2.0				ug/L	39543	Standard
	Ti	47	54.0	14.5	**0.0442**	0.029	66.4	ug/L	39	Standard
	V	51	1510.6	4.6	**0.0030**	0.011	356.0	ug/L	1415	Standard
	Cr	52	7700.6	1.7	**0.0097**	0.022	221.3	ug/L	6946	Standard
	Cr	53	548.3	6.2	**0.2609**	0.037	14.0	ug/L	328	Standard
	Mn	55	927997.3	1.4	**137.8897**	1.374	1.0	ug/L	823	Standard
	Co	59	10741.5	3.1	**1.4429**	0.042	2.9	ug/L	252	Standard
	Ni	60	6856.2	1.9	**3.4057**	0.060	1.7	ug/L	192	Standard
	Cu	65	384.3	5.5	**0.1042**	0.011	10.3	ug/L	141	Standard
	Zn	66	13504.0	1.8	**11.0531**	0.162	1.5	ug/L	491	Standard
>	**Ge**	72	534132.0	0.6				ug/L	515087	Standard
	As	75	-8.2	426.8	**0.0333**	0.030	90.7	ug/L	20	Standard
	Se	82	34.3	14.2	**0.1678**	0.041	24.5	ug/L	15	Standard
	Se-1	77	77.7	7.3	**0.2756**	0.079	28.6	ug/L	48	Standard
>	**Ga**	71	133.3	12.1				mg/L	90	Standard
	Rb	85	2885.3	6.5				ug/L	23	Standard
	Y	89	438369.8	1.0				ug/L	448510	Standard
>	**Rh**	103	21.7	13.3				ug/L	15	Standard
	Mo	98	33.0	37.7	**-0.0070**	0.005	64.6	ug/L	11	Standard
	Ag	107	108.0	7.3	**-0.0003**	0.002	523.1	ug/L	134	Standard
	Cd	111	82.3	4.3	**0.0351**	0.001	2.2	mg/L	7	Standard
	Cd	114	247.3	23.3	**0.0421**	0.011	25.9	ug/L	16	Standard
>	**In**	115	618448.1	2.5				ug/L	611117	Standard
	Sn	118	536.7	11.9	**-0.0124**	0.008	66.9	ug/L	518	Standard
	Sb	123	2208.8	28.0	**0.4480**	0.119	26.5	ug/L	127	Standard
	Ba	135	12894.8	1.5	**6.1480**	0.082	1.3	ug/L	45	Standard
	Ce	140	871.7	9.1				ug/L	298	Standard
>	**Tb**	159	974992.3	2.7				ug/L	977942	Standard
	Ho	165	33.3	48.2				ug/L	12	Standard
	Tl	203	98.0	7.7	**0.0064**	0.001	11.0	ug/L	31	Standard
	Tl	205	90.0	24.2	**0.0096**	0.003	27.9	ug/L	20	Standard
	Pb	206	392.7	2.7	**0.0066**	0.003	42.8	ug/L	286	Standard
	Pb	207	318.0	2.7	**0.0050**	0.001	23.7	ug/L	257	Standard
	Pb	208	1352.7	4.0	**0.0088**	0.002	18.5	ug/L	956	Standard
	U	238	56.0	29.8	**0.0046**	0.002	47.0	ug/L	17	Standard
>	**Bi**	209	576774.8	1.6				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.6259**	18.396	173.1	mg/L	0	Standard
Mg	24	1335.1	0.6	**1.6748**	0.038	2.2	mg/L	32	Standard
K	39	83.3	27.1	**0.1320**	0.069	52.2	mg/L	30	Standard
Ca	43	66.7	4.3	**4.5227**	0.490	10.8	mg/L	48	Standard
Fe	54	158.9	15.8	**0.0030**	0.021	715.4	mg/L	159	Standard
Fe	57	226.7	20.8	**0.1225**	0.167	136.7	mg/L	195	Standard
> **Sc-1**	45	40586.0	2.0				mg/L	39543	Standard
Cl	35	41629.1	0.8				ug/L	27642	Standard
Kr	83	4.7	24.7				ug/L	2	Standard
Br	81	2016.8	5.8				ug/L	1647	Standard
P	31	19454.2	1.7				ug/L	15231	Standard
S	34	2286.8	4.6				ug/L	1845	Standard
Sr	88	108.3	9.6				ug/L	70	Standard
C	12	106.7	39.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	58.6	31.0				mg/L	12	Standard
Ho-1	165	33.3	48.2				mg/L	12	Standard
Er	166	30.0	57.7				mg/L	20	Standard
I	127	4460.7	6.1				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		103.486	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		103.697	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606084301SDL WG574570-02
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.200
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.535
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606084301SDL WG574570-02
Sample Date/Time: Tuesday, June 28, 2016 20:20:12
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84917.5	3.2				ug/L	81760	Standard
	Be	9	15.0	66.7	**0.0050**	0.010	200.3	ug/L	17	Standard
	Al	27	312447.8	1.9	**1.9378**	0.034	1.7	ug/L	1410	Standard
	Sc	45	41284.5	3.3				ug/L	39543	Standard
	Ti	47	45.7	48.8	**0.0117**	0.082	700.7	ug/L	39	Standard
	V	51	1463.2	5.6	**-0.0026**	0.007	263.9	ug/L	1415	Standard
	Cr	52	7659.3	1.8	**0.0098**	0.004	44.8	ug/L	6946	Standard
	Cr	53	423.3	16.3	**0.1274**	0.086	67.2	ug/L	328	Standard
	Mn	55	187375.9	0.8	**27.8813**	0.482	1.7	ug/L	823	Standard
	Co	59	2308.5	0.8	**0.2873**	0.008	2.8	ug/L	252	Standard
	Ni	60	1540.7	3.0	**0.6883**	0.022	3.2	ug/L	192	Standard
	Cu	65	216.7	7.3	**0.0197**	0.006	31.0	ug/L	141	Standard
	Zn	66	4319.6	1.9	**2.9936**	0.025	0.8	ug/L	491	Standard
>	**Ge**	72	531260.9	2.2				ug/L	515087	Standard
	As	75	-47.8	76.7	**-0.0014**	0.032	2343.8	ug/L	20	Standard
	Se	82	17.0	17.8	**0.0237**	0.023	96.9	ug/L	15	Standard
	Se-1	77	59.0	6.1	**0.0400**	0.030	74.0	ug/L	48	Standard
>	**Ga**	71	86.7	31.8				mg/L	90	Standard
	Rb	85	596.7	10.5				ug/L	23	Standard
	Y	89	453907.4	1.0				ug/L	448510	Standard
>	**Rh**	103	8.3	34.6				ug/L	15	Standard
	Mo	98	28.3	9.0	**-0.0090**	0.001	10.4	ug/L	11	Standard
	Ag	107	92.0	2.2	**-0.0030**	0.000	8.2	ug/L	134	Standard
	Cd	111	15.3	15.1	**0.0040**	0.001	27.2	mg/L	7	Standard
	Cd	114	38.2	13.4	**0.0022**	0.001	41.3	ug/L	16	Standard
>	**In**	115	632674.4	0.8				ug/L	611117	Standard
	Sn	118	625.0	9.7	**0.0002**	0.010	5977.1	ug/L	518	Standard
	Sb	123	614.9	31.7	**0.1128**	0.039	34.5	ug/L	127	Standard
	Ba	135	2594.2	0.9	**1.1887**	0.008	0.6	ug/L	45	Standard
	Ce	140	198.3	20.2				ug/L	298	Standard
>	**Tb**	159	988615.6	0.9				ug/L	977942	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	26.7	16.9	**-0.0018**	0.000	28.3	ug/L	31	Standard
	Tl	205	16.7	75.5	**-0.0001**	0.002	1448.6	ug/L	20	Standard
	Pb	206	345.0	3.1	**-0.0028**	0.002	58.3	ug/L	286	Standard
	Pb	207	303.3	7.6	**0.0012**	0.004	352.8	ug/L	257	Standard
	Pb	208	1152.7	2.7	**-0.0023**	0.002	71.0	ug/L	956	Standard
	U	238	16.0	21.7	**-0.0008**	0.000	54.8	ug/L	17	Standard
>	**Bi**	209	585233.9	0.6				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	291.7	12.4	**0.3140**	0.035	11.1	mg/L	32	Standard
K	39	48.3	6.0	**0.0153**	0.013	86.9	mg/L	30	Standard
Ca	43	35.0	28.6	**-0.2811**	1.306	464.6	mg/L	48	Standard
Fe	54	153.8	34.6	**-0.0038**	0.045	1180.2	mg/L	159	Standard
Fe	57	170.0	8.8	**-0.0754**	0.036	48.4	mg/L	195	Standard
Sc-1	45	41284.5	3.3				mg/L	39543	Standard
Cl	35	41099.7	0.8				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1820.1	5.7				ug/L	1647	Standard
P	31	19375.7	1.6				ug/L	15231	Standard
S	34	2545.2	4.1				ug/L	1845	Standard
Sr	88	58.3	27.6				ug/L	70	Standard
C	12	110.0	39.6				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	28.2	93.4				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	36.7	15.7				mg/L	20	Standard
I	127	1790.1	13.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.862	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.140	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.528
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.054
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 20:23:25
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82271.2	2.6				ug/L	81760	Standard
	Be	9	51878.7	2.6	**51.9060**	0.474	0.9	ug/L	17	Standard
	Al	27	7912369.8	3.4	**50.9914**	0.481	0.9	ug/L	1410	Standard
	Sc	45	40149.8	1.3				ug/L	39543	Standard
	Ti	47	25445.3	0.9	**101.2486**	0.646	0.6	ug/L	39	Standard
	V	51	355257.7	1.2	**50.4501**	0.253	0.5	ug/L	1415	Standard
	Cr	52	364176.4	2.0	**50.7897**	0.304	0.6	ug/L	6946	Standard
	Cr	53	45239.1	0.4	**50.7395**	0.592	1.2	ug/L	328	Standard
	Mn	55	333791.7	0.4	**50.8845**	0.584	1.1	ug/L	823	Standard
	Co	59	367088.8	1.7	**51.7480**	0.425	0.8	ug/L	252	Standard
	Ni	60	95399.1	1.8	**50.0959**	0.391	0.8	ug/L	192	Standard
	Cu	65	97309.2	2.1	**50.6606**	0.365	0.7	ug/L	141	Standard
	Zn	66	56912.4	2.6	**50.6269**	0.602	1.2	ug/L	491	Standard
>	**Ge**	72	519736.7	1.5				ug/L	515087	Standard
	As	75	56554.6	1.5	**49.8917**	0.034	0.1	ug/L	20	Standard
	Se	82	5843.7	2.8	**50.1784**	0.757	1.5	ug/L	15	Standard
	Se-1	77	3965.5	1.4	**51.4490**	0.315	0.6	ug/L	48	Standard
>	**Ga**	71	118.3	13.6				mg/L	90	Standard
	Rb	85	848.4	6.2				ug/L	23	Standard
	Y	89	451425.6	1.6				ug/L	448510	Standard
>	**Rh**	103	31.7	71.2				ug/L	15	Standard
	Mo	98	272060.7	0.6	**99.5752**	0.551	0.6	ug/L	11	Standard
	Ag	107	339081.9	1.7	**49.9711**	1.119	2.2	ug/L	134	Standard
	Cd	111	106686.1	0.8	**49.3843**	0.588	1.2	mg/L	7	Standard
	Cd	114	259655.5	1.7	**49.4494**	1.121	2.3	ug/L	16	Standard
>	**In**	115	617617.8	0.6				ug/L	611117	Standard
	Sn	118	302897.0	2.2	**50.5905**	1.415	2.8	ug/L	518	Standard
	Sb	123	239436.4	1.3	**50.2037**	0.916	1.8	ug/L	127	Standard
	Ba	135	101930.1	0.6	**48.8299**	0.530	1.1	ug/L	45	Standard
	Ce	140	63.3	9.1				ug/L	298	Standard
>	**Tb**	159	978625.5	0.9				ug/L	977942	Standard
	Ho	165	8.3	69.3				ug/L	12	Standard
	Tl	203	434700.2	0.8	**50.4033**	0.455	0.9	ug/L	31	Standard
	Tl	205	381183.1	1.9	**50.8972**	0.874	1.7	ug/L	20	Standard
	Pb	206	277544.1	1.7	**50.1113**	0.892	1.8	ug/L	286	Standard
	Pb	207	250965.9	2.0	**50.2393**	1.021	2.0	ug/L	257	Standard
	Pb	208	994830.3	0.3	**51.4752**	0.269	0.5	ug/L	956	Standard
	U	238	372750.7	1.1	**50.8268**	0.592	1.2	ug/L	17	Standard
>	**Bi**	209	570174.9	0.2				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4207.3	2.1	**5.4598**	0.160	2.9	mg/L	32	Standard
K	39	1353.4	1.9	**4.3620**	0.034	0.8	mg/L	30	Standard
Ca	43	68.3	23.5	**4.8558**	2.284	47.0	mg/L	48	Standard
Fe	54	6096.4	4.5	**5.2968**	0.235	4.4	mg/L	159	Standard
Fe	57	1726.8	6.1	**5.1204**	0.425	8.3	mg/L	195	Standard
Sc-1	45	40149.8	1.3				mg/L	39543	Standard
Cl	35	38223.5	2.9				ug/L	27642	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	1710.1	6.5				ug/L	1647	Standard
P	31	20984.5	3.6				ug/L	15231	Standard
S	34	2836.9	3.0				ug/L	1845	Standard
Sr	88	73.3	32.2				ug/L	70	Standard
C	12	176.7	8.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	26.3	80.0				mg/L	12	Standard
Ho-1	165	8.3	69.3				mg/L	12	Standard
Er	166	6.7	86.6				mg/L	20	Standard
I	127	1388.4	24.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	103.812		
Al	27	101.983		
Sc	45			
Ti	47	101.249		
V	51	100.900		
Cr	52	101.579		
Cr	53			
Mn	55	101.769		
Co	59	103.496		
Ni	60	100.192		
Cu	65	101.321		
Zn	66	101.254		
Ge	72		100.903	
As	75	99.783		
Se	82	100.357		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	99.575		
Ag	107	99.942		
Cd	111	98.769		
Cd	114			
In	115			101.064
Sn	118	101.181		
Sb	123	100.407		
Ba	135	97.660		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.807		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.950		
U	238	101.654		
Bi	209			102.351
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 20:26:37
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77291.7	2.7				ug/L	81760	Standard
	Be	9	25.0	40.0	**0.0170**	0.011	63.1	ug/L	17	Standard
	Al	27	2576.9	24.9	**0.0032**	0.004	126.1	ug/L	1410	Standard
	Sc	45	39050.3	1.7				ug/L	39543	Standard
	Ti	47	33.7	13.4	**-0.0246**	0.019	78.0	ug/L	39	Standard
	V	51	1167.6	8.0	**-0.0323**	0.013	41.5	ug/L	1415	Standard
	Cr	52	6011.5	1.2	**-0.1610**	0.012	7.3	ug/L	6946	Standard
	Cr	53	398.3	5.1	**0.1293**	0.022	17.0	ug/L	328	Standard
	Mn	55	883.7	9.4	**-0.0071**	0.013	183.2	ug/L	823	Standard
	Co	59	243.0	13.8	**0.0045**	0.005	107.7	ug/L	252	Standard
	Ni	60	165.0	10.4	**-0.0141**	0.009	65.1	ug/L	192	Standard
	Cu	65	129.3	4.3	**-0.0202**	0.003	14.1	ug/L	141	Standard
	Zn	66	451.0	1.9	**-0.4007**	0.009	2.3	ug/L	491	Standard
>	**Ge**	72	496420.0	0.5				ug/L	515087	Standard
	As	75	-52.8	22.7	**-0.0085**	0.011	133.2	ug/L	20	Standard
	Se	82	7.8	31.0	**-0.0491**	0.022	44.9	ug/L	15	Standard
	Se-1	77	52.0	3.8	**-0.0027**	0.026	948.5	ug/L	48	Standard
>	**Ga**	71	61.7	18.7				mg/L	90	Standard
	Rb	85	18.3	103.3				ug/L	23	Standard
	Y	89	442161.2	1.2				ug/L	448510	Standard
>	**Rh**	103	6.7	43.3				ug/L	15	Standard
	Mo	98	281.8	35.5	**0.0839**	0.034	41.1	ug/L	11	Standard
	Ag	107	122.3	22.2	**0.0018**	0.004	200.6	ug/L	134	Standard
	Cd	111	14.5	44.1	**0.0038**	0.003	74.5	mg/L	7	Standard
	Cd	114	43.1	30.3	**0.0033**	0.002	70.6	ug/L	16	Standard
>	**In**	115	615841.7	2.0				ug/L	611117	Standard
	Sn	118	753.4	17.4	**0.0248**	0.024	98.6	ug/L	518	Standard
	Sb	123	596.8	25.3	**0.1131**	0.034	30.2	ug/L	127	Standard
	Ba	135	38.0	16.0	**-0.0069**	0.003	39.0	ug/L	45	Standard
	Ce	140	8.3	91.7				ug/L	298	Standard
>	**Tb**	159	956084.4	3.2				ug/L	977942	Standard
	Ho	165	5.0	100.0				ug/L	12	Standard
	Tl	203	73.0	30.8	**0.0039**	0.003	64.7	ug/L	31	Standard
	Tl	205	60.0	44.1	**0.0059**	0.003	58.6	ug/L	20	Standard
	Pb	206	307.3	5.4	**-0.0063**	0.002	32.6	ug/L	286	Standard
	Pb	207	254.3	1.8	**-0.0055**	0.000	8.7	ug/L	257	Standard
	Pb	208	1093.3	8.1	**-0.0021**	0.004	180.6	ug/L	956	Standard
	U	238	62.0	42.0	**0.0057**	0.004	62.4	ug/L	17	Standard
>	**Bi**	209	552726.9	1.8				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.8094**	18.714	173.1	mg/L	0	Standard
Mg	24	20.0	100.0	**-0.0300**	0.027	91.7	mg/L	32	Standard
K	39	31.7	50.8	**-0.0336**	0.053	157.9	mg/L	30	Standard
Ca	43	16.7	17.3	**-2.7773**	0.490	17.6	mg/L	48	Standard
Fe	54	136.0	26.0	**-0.0122**	0.034	282.8	mg/L	159	Standard
Fe	57	233.3	19.3	**0.1724**	0.147	85.5	mg/L	195	Standard
Sc-1	45	39050.3	1.7				mg/L	39543	Standard
Cl	35	37106.7	0.9				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	1596.8	5.3				ug/L	1647	Standard
P	31	19597.7	1.6				ug/L	15231	Standard
S	34	2643.6	3.6				ug/L	1845	Standard
Sr	88	53.3	61.0				ug/L	70	Standard
C	12	110.0	32.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	9.4	104.3				mg/L	12	Standard
Ho-1	165	5.0	100.0				mg/L	12	Standard
Er	166	13.3	43.3				mg/L	20	Standard
I	127	1173.4	25.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.376	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.773
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.219
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 28, 2016 20:28:53
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Method 6020 - Summary Report

Sample ID: L1606079401
Sample Date/Time: Tuesday, June 28, 2016 20:29:50
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76244.9	4.1				ug/L	81760	Standard
	Be	9	31.7	63.8	**0.0239**	0.020	83.5	ug/L	17	Standard
	Al	27	4859544.3	1.6	**33.8379**	1.720	5.1	ug/L	1410	Standard
	Sc	45	41316.3	3.1				ug/L	39543	Standard
	Ti	47	1613.1	8.6	**6.3222**	0.521	8.2	ug/L	39	Standard
	V	51	5296.6	3.8	**0.5556**	0.022	4.0	ug/L	1415	Standard
	Cr	52	9948.6	1.0	**0.3727**	0.012	3.3	ug/L	6946	Standard
	Cr	53	1300.1	3.5	**1.1398**	0.032	2.8	ug/L	328	Standard
	Mn	55	10830112.5	0.4	**1671.2513**	23.447	1.4	ug/L	823	Standard
	Co	59	98900.4	0.9	**14.0508**	0.072	0.5	ug/L	252	Standard
	Ni	60	5918.2	0.8	**3.0389**	0.039	1.3	ug/L	192	Standard
	Cu	65	1492.7	4.1	**0.6949**	0.022	3.2	ug/L	141	Standard
	Zn	66	3606.1	2.5	**2.4634**	0.043	1.7	ug/L	491	Standard
>	**Ge**	72	514893.7	1.4				ug/L	515087	Standard
	As	75	2838.5	0.7	**2.5661**	0.029	1.1	ug/L	20	Standard
	Se	82	67.5	5.6	**0.4677**	0.041	8.7	ug/L	15	Standard
	Se-1	77	72.7	2.9	**0.2462**	0.031	12.7	ug/L	48	Standard
>	**Ga**	71	795.0	2.5				mg/L	90	Standard
	Rb	85	32504.8	2.3				ug/L	23	Standard
	Y	89	435925.3	2.8				ug/L	448510	Standard
>	**Rh**	103	93.3	3.1				ug/L	15	Standard
	Mo	98	343.6	1.5	**0.1114**	0.005	4.3	ug/L	11	Standard
	Ag	107	117.7	11.3	**0.0018**	0.002	118.8	ug/L	134	Standard
	Cd	111	40.7	19.8	**0.0166**	0.004	21.3	mg/L	7	Standard
	Cd	114	97.5	38.9	**0.0145**	0.008	54.8	ug/L	16	Standard
>	**In**	115	595657.1	2.2				ug/L	611117	Standard
	Sn	118	961.7	5.9	**0.0649**	0.008	12.2	ug/L	518	Standard
	Sb	123	345.9	22.0	**0.0622**	0.015	24.5	ug/L	127	Standard
	Ba	135	208994.2	0.7	**103.8626**	2.069	2.0	ug/L	45	Standard
	Ce	140	33943.0	0.8				ug/L	298	Standard
>	**Tb**	159	940708.8	1.0				ug/L	977942	Standard
	Ho	165	610.0	7.0				ug/L	12	Standard
	Tl	203	714.0	4.8	**0.0811**	0.003	4.2	ug/L	31	Standard
	Tl	205	651.7	8.6	**0.0881**	0.009	9.8	ug/L	20	Standard
	Pb	206	1354.7	2.2	**0.1905**	0.003	1.6	ug/L	286	Standard
	Pb	207	1119.4	1.4	**0.1747**	0.005	2.8	ug/L	257	Standard
	Pb	208	4748.3	2.1	**0.1947**	0.004	1.9	ug/L	956	Standard
	U	238	416.3	2.3	**0.0559**	0.002	3.0	ug/L	17	Standard
>	**Bi**	209	549596.9	1.2				ug/L	557080	Standard

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Na	23	6.7	114.6	**41.1239**	47.883	116.4	mg/L	0	Standard
Mg	24	3483.7	2.6	**4.3856**	0.231	5.3	mg/L	32	Standard
K	39	496.7	14.5	**1.4639**	0.222	15.1	mg/L	30	Standard
Ca	43	190.0	16.0	**22.2436**	4.083	18.4	mg/L	48	Standard
Fe	54	7377.0	1.5	**6.2559**	0.190	3.0	mg/L	159	Standard
Fe	57	2103.5	3.2	**6.1801**	0.414	6.7	mg/L	195	Standard
Sc-1	45	41316.3	3.1				mg/L	39543	Standard
Cl	35	35106.6	2.5				ug/L	27642	Standard
Kr	83	2.3	107.9				ug/L	2	Standard
Br	81	13476.0	5.7				ug/L	1647	Standard
P	31	22598.5	5.8				ug/L	15231	Standard
S	34	2571.9	2.2				ug/L	1845	Standard
Sr	88	433.3	9.8				ug/L	70	Standard
C	12	150.0	35.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	882.4	15.5				mg/L	12	Standard
Ho-1	165	610.0	7.0				mg/L	12	Standard
Er	166	576.7	6.6				mg/L	20	Standard
I	127	50022.6	4.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.254	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.963	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.470
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.657
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606079402
Sample Date/Time: Tuesday, June 28, 2016 20:33:01
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75678.5	1.2				ug/L	81760	Standard
	Be	9	111.7	13.7	**0.1118**	0.017	15.0	ug/L	17	Standard
	Al	27	1429595.1	1.1	**10.0072**	0.228	2.3	ug/L	1410	Standard
	Sc	45	39138.8	1.6				ug/L	39543	Standard
	Ti	47	278.3	21.3	**0.9895**	0.212	21.4	ug/L	39	Standard
	V	51	1557.1	6.8	**0.0252**	0.009	34.9	ug/L	1415	Standard
	Cr	52	8352.6	6.5	**0.1848**	0.041	22.0	ug/L	6946	Standard
	Cr	53	1770.1	12.2	**1.7430**	0.191	11.0	ug/L	328	Standard
	Mn	55	34175.5	2.4	**5.3156**	0.224	4.2	ug/L	823	Standard
	Co	59	3266.0	5.1	**0.4499**	0.010	2.1	ug/L	252	Standard
	Ni	60	1953.8	3.9	**0.9695**	0.017	1.8	ug/L	192	Standard
	Cu	65	1358.7	2.9	**0.6499**	0.011	1.6	ug/L	141	Standard
	Zn	66	4870.4	2.4	**3.7758**	0.058	1.5	ug/L	491	Standard
>	**Ge**	72	497312.9	3.3				ug/L	515087	Standard
	As	75	54.7	94.2	**0.0915**	0.049	53.2	ug/L	20	Standard
	Se	82	40.7	27.3	**0.2488**	0.112	45.1	ug/L	15	Standard
	Se-1	77	77.0	9.4	**0.3389**	0.077	22.7	ug/L	48	Standard
>	**Ga**	71	155.0	28.1				mg/L	90	Standard
	Rb	85	30158.3	1.3				ug/L	23	Standard
	Y	89	432228.9	1.1				ug/L	448510	Standard
>	**Rh**	103	11.7	49.5				ug/L	15	Standard
	Mo	98	72.4	21.3	**0.0082**	0.006	70.5	ug/L	11	Standard
	Ag	107	118.3	24.0	**0.0017**	0.004	249.1	ug/L	134	Standard
	Cd	111	44.6	10.6	**0.0183**	0.002	12.1	mg/L	7	Standard
	Cd	114	123.7	31.0	**0.0193**	0.007	38.8	ug/L	16	Standard
>	**In**	115	600554.1	0.2				ug/L	611117	Standard
	Sn	118	733.4	8.7	**0.0243**	0.011	44.6	ug/L	518	Standard
	Sb	123	231.2	28.1	**0.0370**	0.014	37.8	ug/L	127	Standard
	Ba	135	65483.6	1.3	**32.2516**	0.425	1.3	ug/L	45	Standard
	Ce	140	2745.2	3.0				ug/L	298	Standard
>	**Tb**	159	936903.6	1.4				ug/L	977942	Standard
	Ho	165	75.0	17.6				ug/L	12	Standard
	Tl	203	221.3	13.5	**0.0222**	0.003	15.7	ug/L	31	Standard
	Tl	205	186.7	13.2	**0.0239**	0.003	14.3	ug/L	20	Standard
	Pb	206	523.0	7.4	**0.0358**	0.006	17.6	ug/L	286	Standard
	Pb	207	464.7	6.5	**0.0400**	0.008	19.0	ug/L	257	Standard
	Pb	208	1837.7	5.9	**0.0397**	0.005	13.6	ug/L	956	Standard
	U	238	125.7	23.1	**0.0151**	0.004	27.1	ug/L	17	Standard
>	**Bi**	209	541937.8	1.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	2726.9	0.4	**3.6111**	0.076	2.1	mg/L	32	Standard
K	39	506.7	5.1	**1.5885**	0.091	5.7	mg/L	30	Standard
Ca	43	36.7	15.7	**0.2847**	0.917	322.3	mg/L	48	Standard
Fe	54	182.6	18.3	**0.0302**	0.033	110.1	mg/L	159	Standard
Fe	57	203.3	25.6	**0.0706**	0.187	264.3	mg/L	195	Standard
> **Sc-1**	45	39138.8	1.6				mg/L	39543	Standard
Cl	35	34567.4	3.2				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	6558.1	13.2				ug/L	1647	Standard
P	31	21156.4	3.6				ug/L	15231	Standard
S	34	2326.8	9.7				ug/L	1845	Standard
Sr	88	76.7	13.6				ug/L	70	Standard
C	12	236.7	44.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	150.6	9.6				mg/L	12	Standard
Ho-1	165	75.0	17.6				mg/L	12	Standard
Er	166	56.7	40.8				mg/L	20	Standard
I	127	9424.6	4.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.562	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.549	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.272
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.282
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606079403
Sample Date/Time: Tuesday, June 28, 2016 20:36:13
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76753.9	0.3				ug/L	81760	Standard
	Be	9	53.3	32.9	**0.0475**	0.019	39.7	ug/L	17	Standard
	Al	27	2019995.9	2.1	**13.9455**	0.321	2.3	ug/L	1410	Standard
	Sc	45	39648.5	2.7				ug/L	39543	Standard
	Ti	47	884.4	21.1	**3.3748**	0.755	22.4	ug/L	39	Standard
	V	51	4216.0	3.5	**0.3970**	0.022	5.5	ug/L	1415	Standard
	Cr	52	11350.6	1.0	**0.5656**	0.020	3.6	ug/L	6946	Standard
	Cr	53	3082.0	1.2	**3.1525**	0.043	1.4	ug/L	328	Standard
	Mn	55	1462715.3	1.2	**224.3814**	2.702	1.2	ug/L	823	Standard
	Co	59	3343.0	3.0	**0.4421**	0.013	2.9	ug/L	252	Standard
	Ni	60	3343.7	2.8	**1.6618**	0.047	2.8	ug/L	192	Standard
	Cu	65	1050.7	3.0	**0.4594**	0.015	3.2	ug/L	141	Standard
	Zn	66	4988.5	1.4	**3.7017**	0.077	2.1	ug/L	491	Standard
>	**Ge**	72	517603.4	0.3				ug/L	515087	Standard
	As	75	193.9	14.0	**0.2119**	0.024	11.1	ug/L	20	Standard
	Se	82	57.1	5.5	**0.3743**	0.026	6.9	ug/L	15	Standard
	Se-1	77	124.7	7.3	**0.9281**	0.125	13.4	ug/L	48	Standard
>	**Ga**	71	286.7	21.7				mg/L	90	Standard
	Rb	85	31280.6	0.6				ug/L	23	Standard
	Y	89	445698.9	0.7				ug/L	448510	Standard
>	**Rh**	103	16.7	45.8				ug/L	15	Standard
	Mo	98	229.5	3.6	**0.0662**	0.004	6.0	ug/L	11	Standard
	Ag	107	129.3	14.3	**0.0031**	0.003	91.8	ug/L	134	Standard
	Cd	111	79.6	15.3	**0.0346**	0.006	17.8	mg/L	7	Standard
	Cd	114	219.2	32.9	**0.0375**	0.014	38.3	ug/L	16	Standard
>	**In**	115	608521.7	1.3				ug/L	611117	Standard
	Sn	118	713.4	5.3	**0.0192**	0.007	34.1	ug/L	518	Standard
	Sb	123	215.5	21.1	**0.0330**	0.009	27.4	ug/L	127	Standard
	Ba	135	73971.5	1.1	**35.9586**	0.191	0.5	ug/L	45	Standard
	Ce	140	14728.8	3.9				ug/L	298	Standard
>	**Tb**	159	956871.9	1.4				ug/L	977942	Standard
	Ho	165	336.7	6.7				ug/L	12	Standard
	Tl	203	279.3	8.0	**0.0283**	0.003	10.3	ug/L	31	Standard
	Tl	205	295.0	11.9	**0.0379**	0.004	11.8	ug/L	20	Standard
	Pb	206	724.7	2.0	**0.0702**	0.002	2.4	ug/L	286	Standard
	Pb	207	605.7	5.7	**0.0660**	0.008	12.2	ug/L	257	Standard
	Pb	208	2584.1	3.2	**0.0763**	0.006	7.3	ug/L	956	Standard
	U	238	605.0	8.8	**0.0814**	0.008	10.1	ug/L	17	Standard
>	**Bi**	209	558048.4	1.1				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4734.1	2.7	**6.2297**	0.190	3.1	mg/L	32	Standard
K	39	378.3	13.8	**1.1326**	0.165	14.5	mg/L	30	Standard
Ca	43	55.0	18.2	**3.0097**	1.672	55.5	mg/L	48	Standard
Fe	54	512.5	3.2	**0.3260**	0.027	8.3	mg/L	159	Standard
Fe	57	288.3	19.9	**0.3473**	0.203	58.5	mg/L	195	Standard
> **Sc-1**	45	39648.5	2.7				mg/L	39543	Standard
Cl	35	35720.7	1.2				ug/L	27642	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	10650.4	4.7				ug/L	1647	Standard
P	31	21555.3	1.7				ug/L	15231	Standard
S	34	2313.5	4.4				ug/L	1845	Standard
Sr	88	90.0	14.7				ug/L	70	Standard
C	12	206.7	17.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	611.8	5.5				mg/L	12	Standard
Ho-1	165	336.7	6.7				mg/L	12	Standard
Er	166	310.0	11.6				mg/L	20	Standard
I	127	51010.9	6.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.877	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.489	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.575	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.174	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606079404
Sample Date/Time: Tuesday, June 28, 2016 20:39:24
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77373.8	1.6				ug/L	81760	Standard
	Be	9	33.3	45.8	**0.0257**	0.016	61.7	ug/L	17	Standard
	Al	27	6530294.9	1.7	**44.7685**	1.484	3.3	ug/L	1410	Standard
	Sc	45	40462.3	2.9				ug/L	39543	Standard
	Ti	47	1753.8	22.2	**6.9932**	1.564	22.4	ug/L	39	Standard
	V	51	4913.4	4.4	**0.5113**	0.026	5.2	ug/L	1415	Standard
	Cr	52	10044.0	5.5	**0.4080**	0.064	15.7	ug/L	6946	Standard
	Cr	53	2381.9	7.8	**2.4159**	0.236	9.8	ug/L	328	Standard
	Mn	55	8647420.3	0.2	**1354.8198**	14.536	1.1	ug/L	823	Standard
	Co	59	169235.6	0.5	**24.4356**	0.161	0.7	ug/L	252	Standard
	Ni	60	12361.0	0.9	**6.5619**	0.023	0.4	ug/L	192	Standard
	Cu	65	806.0	0.9	**0.3401**	0.009	2.5	ug/L	141	Standard
	Zn	66	7577.2	1.7	**6.1942**	0.082	1.3	ug/L	491	Standard
>	**Ge**	72	507111.0	1.2				ug/L	515087	Standard
	As	75	265.8	16.5	**0.2802**	0.037	13.2	ug/L	20	Standard
	Se	82	64.6	10.0	**0.4504**	0.053	11.9	ug/L	15	Standard
	Se-1	77	107.0	10.8	**0.7228**	0.140	19.4	ug/L	48	Standard
>	**Ga**	71	598.3	9.8				mg/L	90	Standard
	Rb	85	32554.9	1.8				ug/L	23	Standard
	Y	89	447221.5	3.0				ug/L	448510	Standard
>	**Rh**	103	20.0	50.0				ug/L	15	Standard
	Mo	98	99.0	16.4	**0.0174**	0.006	35.0	ug/L	11	Standard
	Ag	107	155.7	70.8	**0.0069**	0.016	237.9	ug/L	134	Standard
	Cd	111	107.8	50.7	**0.0474**	0.026	54.2	mg/L	7	Standard
	Cd	114	265.0	52.4	**0.0460**	0.027	58.4	ug/L	16	Standard
>	**In**	115	613219.8	0.3				ug/L	611117	Standard
	Sn	118	870.0	6.6	**0.0447**	0.010	22.4	ug/L	518	Standard
	Sb	123	214.6	24.5	**0.0325**	0.011	34.6	ug/L	127	Standard
	Ba	135	118463.0	0.8	**57.1584**	0.254	0.4	ug/L	45	Standard
	Ce	140	43559.2	3.6				ug/L	298	Standard
>	**Tb**	159	953430.3	1.1				ug/L	977942	Standard
	Ho	165	631.7	5.3				ug/L	12	Standard
	Tl	203	508.0	24.8	**0.0560**	0.015	27.1	ug/L	31	Standard
	Tl	205	431.7	17.4	**0.0571**	0.010	17.4	ug/L	20	Standard
	Pb	206	1022.0	12.5	**0.1271**	0.024	19.0	ug/L	286	Standard
	Pb	207	848.0	9.6	**0.1173**	0.017	14.2	ug/L	257	Standard
	Pb	208	3317.1	5.1	**0.1168**	0.009	7.7	ug/L	956	Standard
	U	238	210.3	17.6	**0.0266**	0.005	19.3	ug/L	17	Standard
>	**Bi**	209	552632.4	0.7				ug/L	557080	Standard

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Na	23	3.3	86.6	**20.7118**	17.947	86.6	mg/L	0	Standard
Mg	24	5764.4	1.5	**7.4467**	0.270	3.6	mg/L	32	Standard
K	39	563.3	10.2	**1.7170**	0.152	8.8	mg/L	30	Standard
Ca	43	75.0	17.6	**5.8105**	2.161	37.2	mg/L	48	Standard
Fe	54	999.2	5.7	**0.7481**	0.074	9.9	mg/L	159	Standard
Fe	57	490.0	3.5	**0.9936**	0.094	9.5	mg/L	195	Standard
Sc-1	45	40462.3	2.9				mg/L	39543	Standard
Cl	35	35374.6	1.6				ug/L	27642	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	12395.1	8.6				ug/L	1647	Standard
P	31	20597.3	1.4				ug/L	15231	Standard
S	34	2416.9	2.7				ug/L	1845	Standard
Sr	88	128.3	19.6				ug/L	70	Standard
C	12	236.7	2.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	1138.1	44.8				mg/L	12	Standard
Ho-1	165	631.7	5.3				mg/L	12	Standard
Er	166	596.7	6.3				mg/L	20	Standard
I	127	203787.2	10.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.635	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.452	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606079404
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.344	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.202	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606079404
Report Date/Time: Tuesday, June 28, 2016 20:41:41
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Method 6020 - Summary Report

Sample ID: L1606082202
Sample Date/Time: Tuesday, June 28, 2016 20:42:36
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79831.5	1.5				ug/L	81760	Standard
	Be	9	18.3	63.0	**0.0091**	0.012	129.5	ug/L	17	Standard
	Al	27	3326140.8	2.2	**22.0876**	0.529	2.4	ug/L	1410	Standard
	Sc	45	40903.5	2.4				ug/L	39543	Standard
	Ti	47	258.3	7.7	**0.8950**	0.111	12.4	ug/L	39	Standard
	V	51	1427.8	26.8	**0.0038**	0.061	1620.7	ug/L	1415	Standard
	Cr	52	8606.8	1.2	**0.2025**	0.023	11.3	ug/L	6946	Standard
	Cr	53	7031.6	3.4	**7.8173**	0.215	2.7	ug/L	328	Standard
	Mn	55	245282.9	2.4	**38.3872**	0.371	1.0	ug/L	823	Standard
	Co	59	360.0	5.7	**0.0208**	0.001	6.7	ug/L	252	Standard
	Ni	60	675.7	7.1	**0.2607**	0.030	11.7	ug/L	192	Standard
	Cu	65	319.3	4.0	**0.0805**	0.011	13.1	ug/L	141	Standard
	Zn	66	1777.8	5.5	**0.8236**	0.060	7.3	ug/L	491	Standard
>	**Ge**	72	505790.0	3.0				ug/L	515087	Standard
	As	75	361.2	27.3	**0.3676**	0.091	24.7	ug/L	20	Standard
	Se	82	151.2	10.8	**1.2184**	0.141	11.6	ug/L	15	Standard
	Se-1	77	286.7	5.2	**3.1548**	0.107	3.4	ug/L	48	Standard
>	**Ga**	71	148.3	15.6				mg/L	90	Standard
	Rb	85	12600.2	4.8				ug/L	23	Standard
	Y	89	440998.1	2.4				ug/L	448510	Standard
>	**Rh**	103	48.3	6.0				ug/L	15	Standard
	Mo	98	329.5	7.2	**0.1031**	0.007	6.5	ug/L	11	Standard
	Ag	107	82.7	3.0	**-0.0039**	0.000	4.5	ug/L	134	Standard
	Cd	111	39.1	14.9	**0.0154**	0.002	16.0	mg/L	7	Standard
	Cd	114	93.5	42.9	**0.0131**	0.008	57.9	ug/L	16	Standard
>	**In**	115	609428.7	1.7				ug/L	611117	Standard
	Sn	118	616.7	6.1	**0.0027**	0.008	296.4	ug/L	518	Standard
	Sb	123	172.8	22.7	**0.0238**	0.008	32.2	ug/L	127	Standard
	Ba	135	142178.1	1.8	**69.0335**	0.137	0.2	ug/L	45	Standard
	Ce	140	378.3	16.5				ug/L	298	Standard
>	**Tb**	159	949587.4	3.3				ug/L	977942	Standard
	Ho	165	25.0	20.0				ug/L	12	Standard
	Tl	203	147.7	1.7	**0.0134**	0.001	4.1	ug/L	31	Standard
	Tl	205	166.7	29.1	**0.0214**	0.007	33.5	ug/L	20	Standard
	Pb	206	309.7	2.3	**-0.0043**	0.001	31.8	ug/L	286	Standard
	Pb	207	262.7	4.1	**-0.0022**	0.002	83.4	ug/L	257	Standard
	Pb	208	1080.7	3.0	**-0.0011**	0.001	98.3	ug/L	956	Standard
	U	238	30.0	28.9	**0.0014**	0.001	94.3	ug/L	17	Standard
>	**Bi**	209	537934.0	1.4				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.6139**	18.375	173.1	mg/L	0	Standard
Mg	24	32371.2	3.9	**41.6322**	2.388	5.7	mg/L	32	Standard
K	39	260.0	20.1	**0.7087**	0.176	24.8	mg/L	30	Standard
Ca	43	58.3	19.8	**3.1978**	1.533	48.0	mg/L	48	Standard
Fe	54	1294.3	5.1	**0.9965**	0.083	8.3	mg/L	159	Standard
Fe	57	445.0	8.5	**0.8270**	0.105	12.6	mg/L	195	Standard
> **Sc-1**	45	40903.5	2.4				mg/L	39543	Standard
Cl	35	36431.1	1.6				ug/L	27642	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	35805.7	4.9				ug/L	1647	Standard
P	31	25079.1	3.1				ug/L	15231	Standard
S	34	2408.5	3.8				ug/L	1845	Standard
Sr	88	206.7	19.6				ug/L	70	Standard
C	12	176.7	45.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	28.1	3.0				mg/L	12	Standard
Ho-1	165	25.0	20.0				mg/L	12	Standard
Er	166	40.0	43.3				mg/L	20	Standard
I	127	201681.5	7.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.641	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.195	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.724
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.563
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606082203
Sample Date/Time: Tuesday, June 28, 2016 20:45:47
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90191.0	1.0				ug/L	81760	Standard
	Be	9	23.3	68.9	**0.0116**	0.015	127.2	ug/L	17	Standard
	Al	27	11365406.0	0.9	**66.8332**	1.185	1.8	ug/L	1410	Standard
	Sc	45	43861.8	3.4				ug/L	39543	Standard
	Ti	47	293.7	8.7	**0.9575**	0.101	10.6	ug/L	39	Standard
	V	51	2061.8	11.0	**0.0753**	0.031	41.0	ug/L	1415	Standard
	Cr	52	35560.4	1.1	**3.7982**	0.065	1.7	ug/L	6946	Standard
	Cr	53	13979.8	6.4	**14.7966**	1.011	6.8	ug/L	328	Standard
	Mn	55	581441.7	2.8	**85.0974**	2.668	3.1	ug/L	823	Standard
	Co	59	11104.7	2.7	**1.4708**	0.043	3.0	ug/L	252	Standard
	Ni	60	4756.1	1.3	**2.2951**	0.027	1.2	ug/L	192	Standard
	Cu	65	585.0	3.7	**0.2018**	0.012	5.9	ug/L	141	Standard
	Zn	66	4219.9	2.2	**2.8317**	0.093	3.3	ug/L	491	Standard
>	**Ge**	72	541965.4	0.4				ug/L	515087	Standard
	As	75	1879.3	4.8	**1.6291**	0.081	5.0	ug/L	20	Standard
	Se	82	403.3	6.2	**3.2102**	0.210	6.5	ug/L	15	Standard
	Se-1	77	499.0	5.4	**5.5758**	0.322	5.8	ug/L	48	Standard
>	**Ga**	71	170.0	12.8				mg/L	90	Standard
	Rb	85	898318.0	1.7				ug/L	23	Standard
	Y	89	454033.5	1.6				ug/L	448510	Standard
>	**Rh**	103	158.3	15.6				ug/L	15	Standard
	Mo	98	390.2	3.3	**0.1238**	0.006	4.6	ug/L	11	Standard
	Ag	107	91.7	18.8	**-0.0027**	0.003	94.7	ug/L	134	Standard
	Cd	111	57.3	18.5	**0.0236**	0.005	19.9	mg/L	7	Standard
	Cd	114	162.3	23.5	**0.0261**	0.008	29.2	ug/L	16	Standard
>	**In**	115	617377.1	1.4				ug/L	611117	Standard
	Sn	118	971.7	10.6	**0.0609**	0.019	30.8	ug/L	518	Standard
	Sb	123	275.2	12.0	**0.0450**	0.008	16.8	ug/L	127	Standard
	Ba	135	754414.8	1.4	**361.7131**	4.988	1.4	ug/L	45	Standard
	Ce	140	4038.9	3.4				ug/L	298	Standard
>	**Tb**	159	972701.2	1.2				ug/L	977942	Standard
	Ho	165	60.0					ug/L	12	Standard
	Tl	203	156.0	13.2	**0.0138**	0.002	16.1	ug/L	31	Standard
	Tl	205	116.7	13.1	**0.0137**	0.002	15.9	ug/L	20	Standard
	Pb	206	526.0	2.4	**0.0341**	0.004	10.3	ug/L	286	Standard
	Pb	207	425.7	3.6	**0.0296**	0.004	13.9	ug/L	257	Standard
	Pb	208	1793.4	1.5	**0.0349**	0.002	5.6	ug/L	956	Standard
	U	238	113.7	2.7	**0.0130**	0.001	4.0	ug/L	17	Standard
>	**Bi**	209	555248.6	1.3				ug/L	557080	Standard

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Na	23	1.7	173.2	**9.3851**	16.247	173.1	mg/L	0	Standard
Mg	24	35620.2	1.5	**42.7261**	1.684	3.9	mg/L	32	Standard
K	39	6901.6	2.1	**20.9070**	1.156	5.5	mg/L	30	Standard
Ca	43	215.0	12.3	**24.1234**	3.813	15.8	mg/L	48	Standard
Fe	54	3077.7	3.9	**2.3743**	0.067	2.8	mg/L	159	Standard
Fe	57	1036.7	11.9	**2.5246**	0.275	10.9	mg/L	195	Standard
Sc-1	45	43861.8	3.4				mg/L	39543	Standard
Cl	35	37418.9	4.6				ug/L	27642	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	90214.6	3.4				ug/L	1647	Standard
P	31	25815.3	2.7				ug/L	15231	Standard
S	34	2615.2	3.8				ug/L	1845	Standard
Sr	88	703.3	5.7				ug/L	70	Standard
C	12	206.7	5.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	96.0	27.7				mg/L	12	Standard
Ho-1	165	60.0					mg/L	12	Standard
Er	166	83.3	6.9				mg/L	20	Standard
I	127	135411.8	5.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.312	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.218	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.024	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.671	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606082302
Sample Date/Time: Tuesday, June 28, 2016 20:48:59
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	108277.4	2.9				ug/L	81760	Standard
	Be	9	45.0	44.4	**0.0244**	0.015	61.4	ug/L	17	Standard
	Al	27	155300534.6	2.6	**761.2127**	30.613	4.0	ug/L	1410	Standard
	Sc	45	45277.6	3.5				ug/L	39543	Standard
	Ti	47	403.3	5.8	**1.4273**	0.064	4.5	ug/L	39	Standard
	V	51	3112.6	16.0	**0.2334**	0.070	30.2	ug/L	1415	Standard
	Cr	52	14043.2	7.2	**0.9232**	0.105	11.4	ug/L	6946	Standard
	Cr	53	48930.1	15.5	**54.3111**	7.500	13.8	ug/L	328	Standard
	Mn	55	2748271.5	3.9	**416.1426**	7.847	1.9	ug/L	823	Standard
	Co	59	187853.6	1.8	**26.2312**	0.060	0.2	ug/L	252	Standard
	Ni	60	24191.7	7.1	**12.5042**	0.665	5.3	ug/L	192	Standard
	Cu	65	2608.9	7.7	**1.2568**	0.078	6.2	ug/L	141	Standard
	Zn	66	8434.7	3.5	**6.7297**	0.123	1.8	ug/L	491	Standard
>	**Ge**	72	524401.5	2.0				ug/L	515087	Standard
	As	75	6667.1	7.6	**5.8608**	0.340	5.8	ug/L	20	Standard
	Se	82	2463.0	3.4	**20.8902**	0.307	1.5	ug/L	15	Standard
	Se-1	77	5803.1	9.1	**74.8730**	5.475	7.3	ug/L	48	Standard
>	**Ga**	71	283.3	11.5				mg/L	90	Standard
	Rb	85	14086.5	1.8				ug/L	23	Standard
	Y	89	450377.0	4.3				ug/L	448510	Standard
>	**Rh**	103	1153.4	2.0				ug/L	15	Standard
	Mo	98	228.3	2.1	**0.0678**	0.002	2.3	ug/L	11	Standard
	Ag	107	100.7	7.3	**-0.0008**	0.001	114.3	ug/L	134	Standard
	Cd	111	85.9	11.5	**0.0385**	0.005	14.0	mg/L	7	Standard
	Cd	114	207.5	20.1	**0.0360**	0.007	20.1	ug/L	16	Standard
>	**In**	115	594734.3	2.8				ug/L	611117	Standard
	Sn	118	838.4	7.1	**0.0436**	0.007	15.0	ug/L	518	Standard
	Sb	123	341.7	13.9	**0.0614**	0.008	13.7	ug/L	127	Standard
	Ba	135	7531184.6	2.9	**3748.3398**	4.365	0.1	ug/L	45	Standard
	Ce	140	2656.9	7.0				ug/L	298	Standard
>	**Tb**	159	994456.1	1.2				ug/L	977942	Standard
	Ho	165	153.3	5.0				ug/L	12	Standard
	Tl	203	149.0	11.0	**0.0143**	0.002	16.0	ug/L	31	Standard
	Tl	205	131.7	44.0	**0.0171**	0.008	49.5	ug/L	20	Standard
	Pb	206	558.3	2.7	**0.0476**	0.002	3.6	ug/L	286	Standard
	Pb	207	480.7	4.4	**0.0481**	0.004	8.4	ug/L	257	Standard
	Pb	208	1800.4	1.7	**0.0423**	0.001	2.5	ug/L	956	Standard
	U	238	2848.6	3.5	**0.4250**	0.011	2.7	ug/L	17	Standard
>	**Bi**	209	517504.0	1.7				ug/L	557080	Standard

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Na	23	15.0	33.3	**83.8040**	26.058	31.1	mg/L	0	Standard
Mg	24	304856.8	3.2	**354.4066**	5.599	1.6	mg/L	32	Standard
K	39	523.3	14.8	**1.3989**	0.174	12.4	mg/L	30	Standard
Ca	43	1175.0	5.2	**150.6324**	9.407	6.2	mg/L	48	Standard
Fe	54	2706.9	4.6	**2.0025**	0.071	3.5	mg/L	159	Standard
Fe	57	1593.4	6.7	**4.0698**	0.154	3.8	mg/L	195	Standard
> **Sc-1**	45	45277.6	3.5				mg/L	39543	Standard
Cl	35	40644.4	1.3				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	610984.3	3.4				ug/L	1647	Standard
P	31	30180.0	2.7				ug/L	15231	Standard
S	34	2781.9	5.2				ug/L	1845	Standard
Sr	88	4374.0	2.8				ug/L	70	Standard
C	12	443.3	22.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	166.1	26.6				mg/L	12	Standard
Ho-1	165	153.3	5.0				mg/L	12	Standard
Er	166	220.0	28.4				mg/L	20	Standard
I	127	589063.3	13.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.433	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.808	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.319
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.896
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606082303
Sample Date/Time: Tuesday, June 28, 2016 20:52:10
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	93244.4	1.1				ug/L	81760	Standard
	Be	9	28.3	10.2	**0.0153**	0.003	16.9	ug/L	17	Standard
	Al	27	94744933.1	0.6	**538.9798**	6.462	1.2	ug/L	1410	Standard
	Sc	45	47113.2	4.5				ug/L	39543	Standard
	Ti	47	553.7	11.7	**2.0175**	0.206	10.2	ug/L	39	Standard
	V	51	4328.2	13.5	**0.4057**	0.092	22.6	ug/L	1415	Standard
	Cr	52	14490.9	2.4	**0.9864**	0.018	1.8	ug/L	6946	Standard
	Cr	53	43709.7	3.6	**48.5418**	1.565	3.2	ug/L	328	Standard
	Mn	55	8319616.3	2.0	**1259.6840**	13.722	1.1	ug/L	823	Standard
	Co	59	19767.9	2.2	**2.7309**	0.056	2.1	ug/L	252	Standard
	Ni	60	10810.2	4.4	**5.5279**	0.127	2.3	ug/L	192	Standard
	Cu	65	2456.2	2.4	**1.1782**	0.021	1.8	ug/L	141	Standard
	Zn	66	5426.0	2.4	**4.0320**	0.062	1.5	ug/L	491	Standard
>	**Ge**	72	524719.7	2.2				ug/L	515087	Standard
	As	75	3752.6	7.8	**3.3171**	0.255	7.7	ug/L	20	Standard
	Se	82	1738.6	3.2	**14.7077**	0.502	3.4	ug/L	15	Standard
	Se-1	77	4761.1	4.1	**61.3297**	2.628	4.3	ug/L	48	Standard
>	**Ga**	71	408.3	8.7				mg/L	90	Standard
	Rb	85	9714.8	3.7				ug/L	23	Standard
	Y	89	460620.0	3.3				ug/L	448510	Standard
>	**Rh**	103	891.7	10.4				ug/L	15	Standard
	Mo	98	389.5	4.4	**0.1260**	0.003	2.4	ug/L	11	Standard
	Ag	107	110.7	7.4	**0.0004**	0.001	272.1	ug/L	134	Standard
	Cd	111	332.6	3.0	**0.1538**	0.007	4.3	mg/L	7	Standard
	Cd	114	853.2	3.8	**0.1605**	0.008	5.1	ug/L	16	Standard
>	**In**	115	607039.3	2.6				ug/L	611117	Standard
	Sn	118	751.7	13.7	**0.0260**	0.016	61.8	ug/L	518	Standard
	Sb	123	376.4	10.5	**0.0674**	0.007	10.4	ug/L	127	Standard
	Ba	135	4357695.0	1.8	**2125.2206**	17.296	0.8	ug/L	45	Standard
	Ce	140	11329.2	2.7				ug/L	298	Standard
>	**Tb**	159	992575.1	2.0				ug/L	977942	Standard
	Ho	165	278.3	9.0				ug/L	12	Standard
	Tl	203	135.0	5.8	**0.0123**	0.001	6.8	ug/L	31	Standard
	Tl	205	110.0	27.6	**0.0138**	0.004	31.4	ug/L	20	Standard
	Pb	206	907.4	3.0	**0.1159**	0.005	4.7	ug/L	286	Standard
	Pb	207	750.0	6.5	**0.1064**	0.009	8.4	ug/L	257	Standard
	Pb	208	3103.1	4.1	**0.1154**	0.005	4.4	ug/L	956	Standard
	U	238	44356.2	2.2	**6.6145**	0.107	1.6	ug/L	17	Standard
>	**Bi**	209	521151.7	1.4				ug/L	557080	Standard

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Na	23	10.0	86.6	**54.6526**	47.439	86.8	mg/L	0	Standard
Mg	24	287663.3	3.0	**321.5385**	8.440	2.6	mg/L	32	Standard
K	39	226.7	14.2	**0.5032**	0.104	20.6	mg/L	30	Standard
Ca	43	1070.0	2.9	**131.3674**	10.299	7.8	mg/L	48	Standard
Fe	54	476.6	5.9	**0.2261**	0.038	16.9	mg/L	159	Standard
Fe	57	1008.4	3.2	**2.2367**	0.165	7.4	mg/L	195	Standard
Sc-1	45	47113.2	4.5				mg/L	39543	Standard
Cl	35	40790.8	0.7				ug/L	27642	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	436089.5	3.9				ug/L	1647	Standard
P	31	27271.2	4.0				ug/L	15231	Standard
S	34	2836.9	4.2				ug/L	1845	Standard
Sr	88	2816.9	2.8				ug/L	70	Standard
C	12	376.7	12.5				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	0	Standard
Dy	164	345.0	17.3				mg/L	12	Standard
Ho-1	165	278.3	9.0				mg/L	12	Standard
Er	166	243.3	18.5				mg/L	20	Standard
I	127	900084.0	10.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.046	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.870	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.333
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.551
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606082304
Sample Date/Time: Tuesday, June 28, 2016 20:55:22
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74476.1	3.3				ug/L	81760	Standard
	Be	9	15.0	115.5	**0.0072**	0.020	276.2	ug/L	17	Standard
	Al	27	20080706.8	2.9	**143.0136**	1.080	0.8	ug/L	1410	Standard
	Sc	45	42894.0	3.7				ug/L	39543	Standard
	Ti	47	325.7	10.6	**1.1562**	0.137	11.8	ug/L	39	Standard
	V	51	1429.9	29.9	**0.0011**	0.063	5474.1	ug/L	1415	Standard
	Cr	52	7720.6	1.3	**0.0621**	0.011	18.4	ug/L	6946	Standard
	Cr	53	9723.1	6.1	**10.8363**	0.676	6.2	ug/L	328	Standard
	Mn	55	4663144.1	0.8	**725.7255**	4.778	0.7	ug/L	823	Standard
	Co	59	1828.4	1.1	**0.2313**	0.003	1.3	ug/L	252	Standard
	Ni	60	1442.4	3.3	**0.6679**	0.026	3.9	ug/L	192	Standard
	Cu	65	719.0	5.1	**0.2910**	0.019	6.5	ug/L	141	Standard
	Zn	66	7525.5	1.3	**6.1013**	0.101	1.7	ug/L	491	Standard
>	**Ge**	72	510419.4	0.4				ug/L	515087	Standard
	As	75	3004.5	4.7	**2.7368**	0.118	4.3	ug/L	20	Standard
	Se	82	527.6	3.3	**4.5049**	0.149	3.3	ug/L	15	Standard
	Se-1	77	877.0	5.5	**11.0280**	0.616	5.6	ug/L	48	Standard
>	**Ga**	71	135.0	44.9				mg/L	90	Standard
	Rb	85	21460.2	1.4				ug/L	23	Standard
	Y	89	449502.6	1.2				ug/L	448510	Standard
>	**Rh**	103	240.0	18.2				ug/L	15	Standard
	Mo	98	71.6	8.8	**0.0080**	0.002	28.5	ug/L	11	Standard
	Ag	107	77.3	9.2	**-0.0044**	0.001	24.3	ug/L	134	Standard
	Cd	111	102.2	7.3	**0.0460**	0.004	8.2	mg/L	7	Standard
	Cd	114	276.1	15.2	**0.0494**	0.008	16.6	ug/L	16	Standard
>	**In**	115	597587.3	0.9				ug/L	611117	Standard
	Sn	118	641.7	5.5	**0.0090**	0.005	57.4	ug/L	518	Standard
	Sb	123	117.8	11.7	**0.0127**	0.003	24.6	ug/L	127	Standard
	Ba	135	1219381.1	1.8	**603.9591**	5.851	1.0	ug/L	45	Standard
	Ce	140	360.0	14.7				ug/L	298	Standard
>	**Tb**	159	948906.4	1.3				ug/L	977942	Standard
	Ho	165	16.7	17.3				ug/L	12	Standard
	Tl	203	82.3	3.1	**0.0057**	0.000	3.2	ug/L	31	Standard
	Tl	205	61.7	24.8	**0.0067**	0.002	33.3	ug/L	20	Standard
	Pb	206	418.0	3.1	**0.0190**	0.003	17.6	ug/L	286	Standard
	Pb	207	378.0	5.3	**0.0247**	0.003	13.2	ug/L	257	Standard
	Pb	208	1532.7	1.1	**0.0263**	0.002	6.1	ug/L	956	Standard
	U	238	34.3	24.8	**0.0022**	0.001	61.6	ug/L	17	Standard
>	**Bi**	209	521633.3	1.5				ug/L	557080	Standard

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Na	23	3.3	173.2	**19.9869**	34.610	173.2	mg/L	0	Standard
Mg	24	52154.6	2.1	**63.9697**	1.039	1.6	mg/L	32	Standard
K	39	548.3	16.2	**1.5625**	0.223	14.3	mg/L	30	Standard
Ca	43	246.7	5.1	**29.2175**	2.054	7.0	mg/L	48	Standard
Fe	54	45285.0	1.2	**37.6782**	1.468	3.9	mg/L	159	Standard
Fe	57	11722.9	3.7	**35.8594**	0.146	0.4	mg/L	195	Standard
Sc-1	45	42894.0	3.7				mg/L	39543	Standard
Cl	35	35015.1	2.5				ug/L	27642	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	123689.6	1.5				ug/L	1647	Standard
P	31	28713.9	1.8				ug/L	15231	Standard
S	34	2633.6	10.4				ug/L	1845	Standard
Sr	88	703.3	3.4				ug/L	70	Standard
C	12	210.0	12.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	32.1	16.4				mg/L	12	Standard
Ho-1	165	16.7	17.3				mg/L	12	Standard
Er	166	26.7	57.3				mg/L	20	Standard
I	127	194264.8	2.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.091	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.094	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.786
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.637
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606084302
Sample Date/Time: Tuesday, June 28, 2016 20:58:33
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77271.6	2.1				ug/L	81760	Standard
	Be	9	30.0	44.1	**0.0221**	0.014	61.6	ug/L	17	Standard
	Al	27	13023291.9	1.0	**89.3957**	1.109	1.2	ug/L	1410	Standard
	Sc	45	41354.7	3.2				ug/L	39543	Standard
	Ti	47	172.3	20.3	**0.4975**	0.149	29.9	ug/L	39	Standard
	V	51	1869.8	10.2	**0.0496**	0.023	45.4	ug/L	1415	Standard
	Cr	52	9029.4	5.3	**0.1789**	0.049	27.5	ug/L	6946	Standard
	Cr	53	1933.5	16.3	**1.7631**	0.385	21.8	ug/L	328	Standard
	Mn	55	2010517.0	2.2	**295.6150**	12.044	4.1	ug/L	823	Standard
	Co	59	28381.9	0.9	**3.8204**	0.101	2.6	ug/L	252	Standard
	Ni	60	51973.3	1.5	**26.2049**	0.504	1.9	ug/L	192	Standard
	Cu	65	2375.5	2.3	**1.1012**	0.038	3.5	ug/L	141	Standard
	Zn	66	19572.0	0.3	**16.1981**	0.371	2.3	ug/L	491	Standard
>	**Ge**	72	540385.6	2.0				ug/L	515087	Standard
	As	75	349.5	8.0	**0.3364**	0.018	5.2	ug/L	20	Standard
	Se	82	126.5	4.8	**0.9278**	0.047	5.1	ug/L	15	Standard
	Se-1	77	166.7	13.3	**1.3933**	0.317	22.7	ug/L	48	Standard
>	**Ga**	71	106.7	22.2				mg/L	90	Standard
	Rb	85	40220.0	0.6				ug/L	23	Standard
	Y	89	449597.2	1.4				ug/L	448510	Standard
>	**Rh**	103	146.7	12.0				ug/L	15	Standard
	Mo	98	594.8	3.0	**0.2021**	0.008	3.8	ug/L	11	Standard
	Ag	107	92.7	31.3	**-0.0024**	0.004	183.9	ug/L	134	Standard
	Cd	111	161.3	7.4	**0.0729**	0.005	7.5	mg/L	7	Standard
	Cd	114	441.9	5.3	**0.0806**	0.004	5.2	ug/L	16	Standard
>	**In**	115	608035.7	0.5				ug/L	611117	Standard
	Sn	118	676.7	9.6	**0.0131**	0.012	88.5	ug/L	518	Standard
	Sb	123	188.3	22.2	**0.0273**	0.009	32.4	ug/L	127	Standard
	Ba	135	24154.9	0.6	**11.7345**	0.088	0.8	ug/L	45	Standard
	Ce	140	2120.1	7.8				ug/L	298	Standard
>	**Tb**	159	946861.5	2.0				ug/L	977942	Standard
	Ho	165	63.3	29.9				ug/L	12	Standard
	Tl	203	1826.8	0.7	**0.2203**	0.002	1.1	ug/L	31	Standard
	Tl	205	1685.1	3.3	**0.2367**	0.005	2.2	ug/L	20	Standard
	Pb	206	439.0	7.7	**0.0207**	0.006	26.8	ug/L	286	Standard
	Pb	207	381.0	5.7	**0.0231**	0.004	17.6	ug/L	257	Standard
	Pb	208	1509.0	1.3	**0.0226**	0.000	0.8	ug/L	956	Standard
	U	238	1189.4	4.4	**0.1693**	0.007	4.4	ug/L	17	Standard
>	**Bi**	209	536700.0	1.2				ug/L	557080	Standard

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Na	23	5.0	100.0	**30.9676**	31.632	102.1	mg/L	0	Standard
Mg	24	21311.6	1.7	**27.0900**	1.076	4.0	mg/L	32	Standard
K	39	978.4	4.6	**3.0186**	0.057	1.9	mg/L	30	Standard
Ca	43	386.7	7.5	**50.8608**	4.765	9.4	mg/L	48	Standard
Fe	54	204.3	23.4	**0.0400**	0.042	106.1	mg/L	159	Standard
Fe	57	446.7	11.3	**0.8216**	0.208	25.3	mg/L	195	Standard
Sc-1	45	41354.7	3.2				mg/L	39543	Standard
Cl	35	48993.8	3.0				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	7075.0	5.6				ug/L	1647	Standard
P	31	18566.4	1.9				ug/L	15231	Standard
S	34	2263.5	0.1				ug/L	1845	Standard
Sr	88	423.3	3.6				ug/L	70	Standard
C	12	123.3	40.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	104.0	29.5				mg/L	12	Standard
Ho-1	165	63.3	29.9				mg/L	12	Standard
Er	166	56.7	27.0				mg/L	20	Standard
I	127	48509.5	7.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.510	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.912	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.496
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.342
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 21:01:46
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77410.6	1.1				ug/L	81760	Standard
	Be	9	48694.9	4.0	**51.7876**	2.330	4.5	ug/L	17	Standard
	Al	27	7498260.2	2.7	**51.3685**	1.536	3.0	ug/L	1410	Standard
	Sc	45	39994.4	1.6				ug/L	39543	Standard
	Ti	47	24919.8	1.5	**100.1235**	0.955	1.0	ug/L	39	Standard
	V	51	352037.7	1.5	**50.4818**	0.410	0.8	ug/L	1415	Standard
	Cr	52	359056.3	3.2	**50.5608**	1.258	2.5	ug/L	6946	Standard
	Cr	53	45264.2	3.2	**51.2590**	1.232	2.4	ug/L	328	Standard
	Mn	55	341978.2	1.6	**52.6439**	0.559	1.1	ug/L	823	Standard
	Co	59	358967.4	0.9	**51.1022**	0.460	0.9	ug/L	252	Standard
	Ni	60	95904.1	3.3	**50.8527**	1.284	2.5	ug/L	192	Standard
	Cu	65	96846.7	3.1	**50.9133**	1.132	2.2	ug/L	141	Standard
	Zn	66	56366.4	2.4	**50.6359**	0.804	1.6	ug/L	491	Standard
>	Ge	72	514670.0	0.9				ug/L	515087	Standard
	As	75	56653.0	2.7	**50.4646**	0.946	1.9	ug/L	20	Standard
	Se	82	5738.6	2.7	**49.7611**	0.957	1.9	ug/L	15	Standard
	Se-1	77	3922.2	4.5	**51.3791**	2.097	4.1	ug/L	48	Standard
>	Ga	71	78.3	3.7				mg/L	90	Standard
	Rb	85	913.4	7.9				ug/L	23	Standard
	Y	89	449629.1	4.0				ug/L	448510	Standard
>	Rh	103	26.7	60.3				ug/L	15	Standard
	Mo	98	269192.0	0.5	**99.9193**	1.745	1.7	ug/L	11	Standard
	Ag	107	324356.7	1.6	**48.4664**	0.560	1.2	ug/L	134	Standard
	Cd	111	104800.0	2.8	**49.1868**	1.080	2.2	mg/L	7	Standard
	Cd	114	253765.7	3.7	**48.9997**	1.658	3.4	ug/L	16	Standard
>	In	115	609141.6	2.1				ug/L	611117	Standard
	Sn	118	292076.9	3.3	**49.4485**	0.824	1.7	ug/L	518	Standard
	Sb	123	232366.9	1.6	**49.3998**	0.394	0.8	ug/L	127	Standard
	Ba	135	100964.1	2.8	**49.0412**	1.097	2.2	ug/L	45	Standard
	Ce	140	81.7	25.5				ug/L	298	Standard
>	Tb	159	939122.1	2.3				ug/L	977942	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	411985.1	1.5	**50.6376**	0.301	0.6	ug/L	31	Standard
	Tl	205	371737.4	2.9	**52.6085**	0.609	1.2	ug/L	20	Standard
	Pb	206	267607.7	0.9	**51.2233**	0.555	1.1	ug/L	286	Standard
	Pb	207	243032.3	0.6	**51.5800**	0.780	1.5	ug/L	257	Standard
	Pb	208	974203.2	1.1	**53.4395**	0.502	0.9	ug/L	956	Standard
	U	238	359093.2	2.3	**51.8989**	0.179	0.3	ug/L	17	Standard
>	Bi	209	537912.3	2.0				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	3960.5	5.8	**5.1535**	0.239	4.6	mg/L	32	Standard
K	39	1450.1	5.1	**4.7011**	0.180	3.8	mg/L	30	Standard
Ca	43	56.7	22.2	**3.1676**	1.896	59.9	mg/L	48	Standard
Fe	54	5602.2	1.3	**4.8773**	0.145	3.0	mg/L	159	Standard
Fe	57	1671.8	3.1	**4.9554**	0.149	3.0	mg/L	195	Standard
Sc-1	45	39994.4	1.6				mg/L	39543	Standard
Cl	35	34924.3	5.3				ug/L	27642	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	3010.3	3.5				ug/L	1647	Standard
P	31	18342.8	3.8				ug/L	15231	Standard
S	34	2438.5	4.7				ug/L	1845	Standard
Sr	88	55.0	47.2				ug/L	70	Standard
C	12	96.7	23.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	23.2	100.3				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	3.3	173.2				mg/L	20	Standard
I	127	10668.8	10.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	103.575		
Al	27	102.737		
Sc	45			
Ti	47	100.123		
V	51	100.964		
Cr	52	101.122		
Cr	53			
Mn	55	105.288		
Co	59	102.204		
Ni	60	101.705		
Cu	65	101.827		
Zn	66	101.272		
Ge	72		99.919	
As	75	100.929		
Se	82	99.522		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	99.919		
Ag	107	96.933		
Cd	111	98.374		
Cd	114			
> In	115			99.677
Sn	118	98.897		
Sb	123	98.800		
Ba	135	98.082		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.275		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.879		
U	238	103.798		
> Bi	209			96.559
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 21:04:57
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76325.1	1.4				ug/L	81760	Standard
	Be	9	36.7	47.9	**0.0297**	0.018	61.9	ug/L	17	Standard
	Al	27	7433.8	52.1	**0.0370**	0.026	70.5	ug/L	1410	Standard
	Sc	45	39083.7	0.3				ug/L	39543	Standard
	Ti	47	29.0	21.5	**-0.0509**	0.024	47.8	ug/L	39	Standard
	V	51	1130.0	4.7	**-0.0473**	0.008	16.3	ug/L	1415	Standard
	Cr	52	6124.9	1.6	**-0.1950**	0.012	6.3	ug/L	6946	Standard
	Cr	53	786.7	2.0	**0.5367**	0.019	3.5	ug/L	328	Standard
	Mn	55	1151.0	22.6	**0.0255**	0.040	155.2	ug/L	823	Standard
	Co	59	234.7	8.8	**0.0014**	0.003	211.9	ug/L	252	Standard
	Ni	60	158.3	5.7	**-0.0226**	0.005	21.5	ug/L	192	Standard
	Cu	65	164.3	12.7	**-0.0061**	0.011	179.5	ug/L	141	Standard
	Zn	66	470.3	2.4	**-0.4072**	0.010	2.5	ug/L	491	Standard
>	**Ge**	72	525676.3	0.2				ug/L	515087	Standard
	As	75	-22.3	21.6	**0.0209**	0.004	19.9	ug/L	20	Standard
	Se	82	22.8	31.8	**0.0747**	0.062	82.4	ug/L	15	Standard
	Se-1	77	66.0	18.9	**0.1398**	0.164	117.4	ug/L	48	Standard
>	**Ga**	71	56.7	10.2				mg/L	90	Standard
	Rb	85	51.7	11.2				ug/L	23	Standard
	Y	89	445574.4	3.2				ug/L	448510	Standard
>	**Rh**	103	28.3	36.7				ug/L	15	Standard
	Mo	98	286.8	35.9	**0.0884**	0.038	42.5	ug/L	11	Standard
	Ag	107	119.3	19.2	**0.0018**	0.003	188.2	ug/L	134	Standard
	Cd	111	12.1	17.7	**0.0028**	0.001	35.0	mg/L	7	Standard
	Cd	114	42.6	30.2	**0.0034**	0.003	75.4	ug/L	16	Standard
>	**In**	115	602370.1	0.9				ug/L	611117	Standard
	Sn	118	773.4	17.1	**0.0309**	0.024	76.6	ug/L	518	Standard
	Sb	123	433.3	25.4	**0.0805**	0.024	30.2	ug/L	127	Standard
	Ba	135	290.7	43.2	**0.1174**	0.060	51.4	ug/L	45	Standard
	Ce	140	18.3	56.8				ug/L	298	Standard
>	**Tb**	159	950012.1	0.7				ug/L	977942	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	71.7	40.5	**0.0037**	0.004	95.1	ug/L	31	Standard
	Tl	205	85.0	56.1	**0.0094**	0.007	71.5	ug/L	20	Standard
	Pb	206	271.0	4.2	**-0.0136**	0.003	20.1	ug/L	286	Standard
	Pb	207	260.3	8.3	**-0.0047**	0.005	107.3	ug/L	257	Standard
	Pb	208	1029.7	7.7	**-0.0060**	0.005	82.3	ug/L	956	Standard
	U	238	47.7	42.8	**0.0037**	0.003	79.6	ug/L	17	Standard
>	**Bi**	209	558519.2	1.3				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	48.3	11.9	**0.0079**	0.008	95.2	mg/L	32	Standard
K	39	18.3	56.8	**-0.0788**	0.036	45.2	mg/L	30	Standard
Ca	43	31.7	24.1	**-0.4803**	1.172	244.0	mg/L	48	Standard
Fe	54	125.9	16.2	**-0.0218**	0.019	87.4	mg/L	159	Standard
Fe	57	238.3	12.6	**0.1894**	0.102	54.0	mg/L	195	Standard
> **Sc-1**	45	39083.7	0.3				mg/L	39543	Standard
Cl	35	33723.5	2.9				ug/L	27642	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	2386.9	5.5				ug/L	1647	Standard
P	31	18112.5	4.7				ug/L	15231	Standard
S	34	2391.9	4.0				ug/L	1845	Standard
Sr	88	68.3	29.6				ug/L	70	Standard
C	12	100.0	36.1				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	18.9	54.4				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	23.3	65.5				mg/L	20	Standard
I	127	7351.8	8.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.056	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.569	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.258	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606141001
Sample Date/Time: Tuesday, June 28, 2016 21:08:10
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79030.6	2.3				ug/L	81760	Standard
	Be	9	11.7	89.2	**0.0026**	0.011	425.8	ug/L	17	Standard
	Al	27	44776805.2	0.7	**300.5948**	6.187	2.1	ug/L	1410	Standard
	Sc	45	43343.6	2.1				ug/L	39543	Standard
	Ti	47	192.3	8.0	**0.6107**	0.056	9.2	ug/L	39	Standard
	V	51	4772.2	4.6	**0.4823**	0.029	6.1	ug/L	1415	Standard
	Cr	52	9840.2	0.5	**0.3614**	0.015	4.2	ug/L	6946	Standard
	Cr	53	1230.1	5.5	**1.0645**	0.072	6.7	ug/L	328	Standard
	Mn	55	4769620.0	0.5	**738.1503**	9.110	1.2	ug/L	823	Standard
	Co	59	9207.1	1.6	**1.2837**	0.028	2.2	ug/L	252	Standard
	Ni	60	5238.9	2.1	**2.6865**	0.062	2.3	ug/L	192	Standard
	Cu	65	718.7	4.1	**0.2886**	0.013	4.4	ug/L	141	Standard
	Zn	66	2924.3	0.9	**1.8496**	0.029	1.6	ug/L	491	Standard
>	**Ge**	72	513321.3	0.8				ug/L	515087	Standard
	As	75	4203.4	1.1	**3.7919**	0.050	1.3	ug/L	20	Standard
	Se	82	127.5	8.3	**0.9927**	0.098	9.9	ug/L	15	Standard
	Se-1	77	88.3	31.6	**0.4581**	0.375	81.9	ug/L	48	Standard
>	**Ga**	71	145.0	24.1				mg/L	90	Standard
	Rb	85	2930.3	3.3				ug/L	23	Standard
	Y	89	443412.2	1.4				ug/L	448510	Standard
>	**Rh**	103	140.0	15.6				ug/L	15	Standard
	Mo	98	1185.9	4.8	**0.4170**	0.022	5.4	ug/L	11	Standard
	Ag	107	98.0	15.7	**-0.0017**	0.002	128.2	ug/L	134	Standard
	Cd	111	19.9	13.4	**0.0063**	0.001	18.0	mg/L	7	Standard
	Cd	114	87.1	38.1	**0.0117**	0.006	53.6	ug/L	16	Standard
>	**In**	115	614969.4	1.2				ug/L	611117	Standard
	Sn	118	790.0	17.2	**0.0309**	0.023	75.8	ug/L	518	Standard
	Sb	123	280.0	20.4	**0.0462**	0.012	26.5	ug/L	127	Standard
	Ba	135	192282.6	1.4	**92.5375**	1.689	1.8	ug/L	45	Standard
	Ce	140	2006.8	4.1				ug/L	298	Standard
>	**Tb**	159	961897.3	2.5				ug/L	977942	Standard
	Ho	165	81.7	52.8				ug/L	12	Standard
	Tl	203	119.7	8.5	**0.0099**	0.002	15.4	ug/L	31	Standard
	Tl	205	98.3	15.5	**0.0116**	0.002	19.8	ug/L	20	Standard
	Pb	206	482.7	4.9	**0.0287**	0.002	8.4	ug/L	286	Standard
	Pb	207	424.0	4.8	**0.0319**	0.005	14.5	ug/L	257	Standard
	Pb	208	1694.0	1.8	**0.0325**	0.004	11.5	ug/L	956	Standard
	U	238	15563.7	1.1	**2.2446**	0.071	3.2	ug/L	17	Standard
>	**Bi**	209	538649.3	2.3				ug/L	557080	Standard

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Na	23	16.7	75.5	**98.5166**	75.230	76.4	mg/L	0	Standard
Mg	24	9014.3	3.2	**10.8981**	0.573	5.3	mg/L	32	Standard
K	39	116.7	19.3	**0.2184**	0.072	32.8	mg/L	30	Standard
Ca	43	525.0	6.7	**67.4527**	5.707	8.5	mg/L	48	Standard
Fe	54	1820.8	2.9	**1.3668**	0.058	4.2	mg/L	159	Standard
Fe	57	973.4	7.5	**2.3749**	0.248	10.4	mg/L	195	Standard
Sc-1	45	43343.6	2.1				mg/L	39543	Standard
Cl	35	38331.8	2.6				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	27825.5	3.4				ug/L	1647	Standard
P	31	23363.0	0.7				ug/L	15231	Standard
S	34	2495.2	2.5				ug/L	1845	Standard
Sr	88	533.3	5.7				ug/L	70	Standard
C	12	353.3	5.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	83.6	23.1				mg/L	12	Standard
Ho-1	165	81.7	52.8				mg/L	12	Standard
Er	166	63.3	50.8				mg/L	20	Standard
I	127	532195.8	11.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		96.662	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.657	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.630
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.691
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606141201
Sample Date/Time: Tuesday, June 28, 2016 21:11:22
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79318.7	0.7				ug/L	81760	Standard
	Be	9	16.7	45.8	**0.0076**	0.008	106.2	ug/L	17	Standard
	Al	27	14913651.7	1.4	**99.7256**	2.143	2.1	ug/L	1410	Standard
	Sc	45	40395.5	2.6				ug/L	39543	Standard
	Ti	47	500.3	4.7	**1.8979**	0.055	2.9	ug/L	39	Standard
	V	51	36055.9	2.6	**5.1139**	0.040	0.8	ug/L	1415	Standard
	Cr	52	13456.3	2.4	**0.9269**	0.086	9.3	ug/L	6946	Standard
	Cr	53	9844.9	11.5	**11.1480**	1.101	9.9	ug/L	328	Standard
	Mn	55	27340.3	1.0	**4.1779**	0.048	1.1	ug/L	823	Standard
	Co	59	924.7	1.8	**0.1037**	0.005	4.9	ug/L	252	Standard
	Ni	60	2165.5	2.9	**1.0744**	0.025	2.4	ug/L	192	Standard
	Cu	65	1308.7	4.1	**0.6156**	0.023	3.7	ug/L	141	Standard
	Zn	66	7243.7	2.3	**5.9517**	0.120	2.0	ug/L	491	Standard
>	**Ge**	72	502171.0	2.0				ug/L	515087	Standard
	As	75	1256.7	3.1	**1.1867**	0.017	1.5	ug/L	20	Standard
	Se	82	736.7	2.2	**6.4443**	0.037	0.6	ug/L	15	Standard
	Se-1	77	926.0	3.3	**11.8887**	0.285	2.4	ug/L	48	Standard
>	**Ga**	71	176.7	6.5				mg/L	90	Standard
	Rb	85	2561.9	8.5				ug/L	23	Standard
	Y	89	439495.0	0.9				ug/L	448510	Standard
>	**Rh**	103	90.0	38.9				ug/L	15	Standard
	Mo	98	758.7	2.1	**0.2744**	0.005	1.7	ug/L	11	Standard
	Ag	107	112.7	8.8	**0.0013**	0.001	110.1	ug/L	134	Standard
	Cd	111	18.4	13.8	**0.0061**	0.001	20.0	mg/L	7	Standard
	Cd	114	55.1	29.0	**0.0062**	0.003	52.0	ug/L	16	Standard
>	**In**	115	584464.7	0.6				ug/L	611117	Standard
	Sn	118	741.7	7.5	**0.0292**	0.010	34.2	ug/L	518	Standard
	Sb	123	322.5	19.3	**0.0586**	0.014	23.6	ug/L	127	Standard
	Ba	135	23648.1	1.5	**11.9524**	0.216	1.8	ug/L	45	Standard
	Ce	140	4514.0	4.6				ug/L	298	Standard
>	**Tb**	159	922323.8	0.6				ug/L	977942	Standard
	Ho	165	91.7	12.6				ug/L	12	Standard
	Tl	203	130.7	10.2	**0.0124**	0.002	15.2	ug/L	31	Standard
	Tl	205	113.3	46.8	**0.0149**	0.008	53.9	ug/L	20	Standard
	Pb	206	585.3	3.6	**0.0562**	0.004	7.1	ug/L	286	Standard
	Pb	207	533.0	4.2	**0.0629**	0.005	7.8	ug/L	257	Standard
	Pb	208	2107.4	5.4	**0.0632**	0.008	12.1	ug/L	956	Standard
	U	238	32845.9	1.3	**5.0682**	0.050	1.0	ug/L	17	Standard
>	**Bi**	209	503585.9	0.8				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	118021.2	0.8	**153.7808**	2.811	1.8	mg/L	32	Standard
K	39	101.7	17.3	**0.1948**	0.058	29.7	mg/L	30	Standard
Ca	43	335.0	15.7	**44.3505**	6.519	14.7	mg/L	48	Standard
Fe	54	237.2	9.3	**0.0729**	0.016	22.5	mg/L	159	Standard
Fe	57	498.3	12.0	**1.0226**	0.198	19.4	mg/L	195	Standard
> **Sc-1**	45	40395.5	2.6				mg/L	39543	Standard
Cl	35	43781.2	1.0				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	58978.2	6.0				ug/L	1647	Standard
P	31	22017.7	1.7				ug/L	15231	Standard
S	34	2351.8	1.8				ug/L	1845	Standard
Sr	88	240.0	11.0				ug/L	70	Standard
C	12	356.7	26.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	169.3	7.0				mg/L	12	Standard
Ho-1	165	91.7	12.6				mg/L	12	Standard
Er	166	83.3	13.9				mg/L	20	Standard
I	127	31387.7	30.0				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		97.014	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.492	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.639
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.397
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606141202
Sample Date/Time: Tuesday, June 28, 2016 21:14:33
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83650.3	1.0				ug/L	81760	Standard
	Be	9	21.7	53.3	**0.0115**	0.011	97.0	ug/L	17	Standard
	Al	27	38632215.5	2.3	**244.9578**	5.868	2.4	ug/L	1410	Standard
	Sc	45	43420.5	1.6				ug/L	39543	Standard
	Ti	47	186.0	10.8	**0.5354**	0.077	14.4	ug/L	39	Standard
	V	51	26880.1	4.2	**3.4128**	0.061	1.8	ug/L	1415	Standard
	Cr	52	10918.6	2.1	**0.4115**	0.017	4.1	ug/L	6946	Standard
	Cr	53	7481.8	4.1	**7.6462**	0.526	6.9	ug/L	328	Standard
	Mn	55	33664.4	1.6	**4.7149**	0.144	3.1	ug/L	823	Standard
	Co	59	762.7	5.1	**0.0704**	0.007	10.1	ug/L	252	Standard
	Ni	60	2375.2	1.6	**1.0759**	0.011	1.0	ug/L	192	Standard
	Cu	65	711.7	7.3	**0.2600**	0.027	10.4	ug/L	141	Standard
	Zn	66	3134.0	1.7	**1.8510**	0.112	6.1	ug/L	491	Standard
>	**Ge**	72	550214.2	2.6				ug/L	515087	Standard
	As	75	794.1	8.2	**0.7027**	0.072	10.2	ug/L	20	Standard
	Se	82	234.2	3.9	**1.7863**	0.091	5.1	ug/L	15	Standard
	Se-1	77	482.0	4.4	**5.2700**	0.176	3.3	ug/L	48	Standard
>	**Ga**	71	80.0	16.5				mg/L	90	Standard
	Rb	85	1268.4	2.0				ug/L	23	Standard
	Y	89	467702.3	2.0				ug/L	448510	Standard
>	**Rh**	103	125.0	4.0				ug/L	15	Standard
	Mo	98	395.0	8.4	**0.1254**	0.010	8.1	ug/L	11	Standard
	Ag	107	91.7	6.0	**-0.0027**	0.001	31.4	ug/L	134	Standard
	Cd	111	17.7	18.1	**0.0053**	0.002	30.5	mg/L	7	Standard
	Cd	114	70.4	32.3	**0.0084**	0.004	47.5	ug/L	16	Standard
>	**In**	115	618005.7	2.3				ug/L	611117	Standard
	Sn	118	668.3	14.3	**0.0101**	0.018	180.4	ug/L	518	Standard
	Sb	123	172.5	13.4	**0.0233**	0.005	22.3	ug/L	127	Standard
	Ba	135	80657.5	2.0	**38.6136**	0.662	1.7	ug/L	45	Standard
	Ce	140	231.7	23.7				ug/L	298	Standard
>	**Tb**	159	976289.5	2.7				ug/L	977942	Standard
	Ho	165	20.0	50.0				ug/L	12	Standard
	Tl	203	130.7	0.4	**0.0112**	0.000	4.3	ug/L	31	Standard
	Tl	205	103.3	15.6	**0.0123**	0.003	20.6	ug/L	20	Standard
	Pb	206	343.3	3.7	**0.0019**	0.004	206.6	ug/L	286	Standard
	Pb	207	309.0	3.8	**0.0073**	0.004	55.0	ug/L	257	Standard
	Pb	208	1267.4	6.3	**0.0088**	0.006	66.3	ug/L	956	Standard
	U	238	23437.4	1.1	**3.3661**	0.068	2.0	ug/L	17	Standard
>	**Bi**	209	541066.6	2.7				ug/L	557080	Standard

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Na	23	10.0	100.0	**57.8886**	57.492	99.3	mg/L	0	Standard
Mg	24	42571.4	0.8	**51.5637**	1.207	2.3	mg/L	32	Standard
K	39	90.0	30.9	**0.1357**	0.087	64.2	mg/L	30	Standard
Ca	43	438.3	26.2	**55.1842**	15.190	27.5	mg/L	48	Standard
Fe	54	177.1	8.1	**0.0090**	0.012	139.0	mg/L	159	Standard
Fe	57	461.7	5.0	**0.7949**	0.071	8.9	mg/L	195	Standard
> **Sc-1**	45	43420.5	1.6				mg/L	39543	Standard
Cl	35	42170.0	2.1				ug/L	27642	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	34382.4	5.6				ug/L	1647	Standard
P	31	23767.0	4.2				ug/L	15231	Standard
S	34	2608.6	3.1				ug/L	1845	Standard
Sr	88	431.7	5.4				ug/L	70	Standard
C	12	273.3	10.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	32.2	46.2				mg/L	12	Standard
Ho-1	165	20.0	50.0				mg/L	12	Standard
Er	166	23.3	89.2				mg/L	20	Standard
I	127	35633.6	4.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.312	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.820	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.127	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.125	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606141301
Sample Date/Time: Tuesday, June 28, 2016 21:17:45
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79916.9	1.5				ug/L	81760	Standard
	Be	9	28.3	27.0	**0.0194**	0.007	38.6	ug/L	17	Standard
	Al	27	38023288.5	2.1	**252.3385**	1.857	0.7	ug/L	1410	Standard
	Sc	45	42571.5	4.4				ug/L	39543	Standard
	Ti	47	396.7	7.8	**1.4239**	0.097	6.8	ug/L	39	Standard
	V	51	6119.0	6.6	**0.6719**	0.073	10.9	ug/L	1415	Standard
	Cr	52	11441.3	0.3	**0.5818**	0.031	5.4	ug/L	6946	Standard
	Cr	53	9654.8	11.4	**10.6403**	1.449	13.6	ug/L	328	Standard
	Mn	55	1634887.0	2.2	**251.2478**	2.194	0.9	ug/L	823	Standard
	Co	59	3215.3	1.8	**0.4249**	0.007	1.5	ug/L	252	Standard
	Ni	60	4170.9	0.8	**2.1033**	0.039	1.9	ug/L	192	Standard
	Cu	65	1200.4	3.8	**0.5391**	0.026	4.9	ug/L	141	Standard
	Zn	66	3234.7	1.4	**2.1147**	0.035	1.7	ug/L	491	Standard
>	**Ge**	72	516685.2	1.8				ug/L	515087	Standard
	As	75	16545.6	0.8	**14.7132**	0.205	1.4	ug/L	20	Standard
	Se	82	192.8	5.0	**1.5497**	0.062	4.0	ug/L	15	Standard
	Se-1	77	648.0	6.7	**7.8638**	0.716	9.1	ug/L	48	Standard
>	**Ga**	71	125.0	18.3				mg/L	90	Standard
	Rb	85	1723.4	7.4				ug/L	23	Standard
	Y	89	425819.3	3.1				ug/L	448510	Standard
>	**Rh**	103	118.3	17.1				ug/L	15	Standard
	Mo	98	4050.2	1.8	**1.5330**	0.030	2.0	ug/L	11	Standard
	Ag	107	94.7	12.2	**-0.0016**	0.002	127.1	ug/L	134	Standard
	Cd	111	117.7	9.5	**0.0542**	0.007	12.3	mg/L	7	Standard
	Cd	114	297.9	4.3	**0.0546**	0.005	8.5	ug/L	16	Standard
>	**In**	115	590223.7	3.4				ug/L	611117	Standard
	Sn	118	1010.0	10.9	**0.0746**	0.013	17.7	ug/L	518	Standard
	Sb	123	1963.6	1.5	**0.4183**	0.013	3.0	ug/L	127	Standard
	Ba	135	194231.1	1.1	**97.4394**	2.308	2.4	ug/L	45	Standard
	Ce	140	3857.2	6.5				ug/L	298	Standard
>	**Tb**	159	963155.2	4.7				ug/L	977942	Standard
	Ho	165	81.7	25.5				ug/L	12	Standard
	Tl	203	50.3	12.9	**0.0015**	0.001	66.6	ug/L	31	Standard
	Tl	205	46.7	32.7	**0.0044**	0.002	52.1	ug/L	20	Standard
	Pb	206	2455.5	1.0	**0.4110**	0.018	4.4	ug/L	286	Standard
	Pb	207	2061.1	1.1	**0.3836**	0.016	4.1	ug/L	257	Standard
	Pb	208	8494.6	1.5	**0.4098**	0.011	2.7	ug/L	956	Standard
	U	238	9671.1	1.3	**1.4065**	0.038	2.7	ug/L	17	Standard
>	**Bi**	209	533828.4	3.8				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	104970.9	3.0	**129.8006**	2.883	2.2	mg/L	32	Standard
K	39	241.7	3.2	**0.6187**	0.058	9.4	mg/L	30	Standard
Ca	43	386.7	15.6	**49.0389**	6.282	12.8	mg/L	48	Standard
Fe	54	7303.8	3.7	**6.0094**	0.321	5.3	mg/L	159	Standard
Fe	57	2221.8	6.0	**6.3400**	0.172	2.7	mg/L	195	Standard
> **Sc-1**	45	42571.5	4.4				mg/L	39543	Standard
Cl	35	37833.2	3.5				ug/L	27642	Standard
Kr	83	4.7	44.6				ug/L	2	Standard
Br	81	42533.0	4.1				ug/L	1647	Standard
P	31	23852.1	1.0				ug/L	15231	Standard
S	34	2610.2	4.2				ug/L	1845	Standard
Sr	88	403.3	5.0				ug/L	70	Standard
C	12	1170.0	10.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	0	Standard
Dy	164	115.7	9.7				mg/L	12	Standard
Ho-1	165	81.7	25.5				mg/L	12	Standard
Er	166	90.0	29.4				mg/L	20	Standard
I	127	137002.4	10.0				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		97.746	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.310	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.581
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.826
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606141601
Sample Date/Time: Tuesday, June 28, 2016 21:20:56
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92372.4	1.4				ug/L	81760	Standard
	Be	9	16.7	45.8	**0.0051**	0.007	132.4	ug/L	17	Standard
	Al	27	74980741.0	2.1	**430.5985**	11.194	2.6	ug/L	1410	Standard
	Sc	45	42273.9	1.4				ug/L	39543	Standard
	Ti	47	206.0	5.5	**0.6860**	0.049	7.2	ug/L	39	Standard
	V	51	76665.0	2.1	**11.1242**	0.138	1.2	ug/L	1415	Standard
	Cr	52	20589.0	2.5	**1.9813**	0.052	2.6	ug/L	6946	Standard
	Cr	53	16427.3	7.3	**18.8858**	1.445	7.7	ug/L	328	Standard
	Mn	55	4403.6	9.9	**0.5498**	0.075	13.7	ug/L	823	Standard
	Co	59	1375.4	0.7	**0.1698**	0.002	1.0	ug/L	252	Standard
	Ni	60	4849.1	3.4	**2.5400**	0.080	3.2	ug/L	192	Standard
	Cu	65	2467.2	2.0	**1.2432**	0.032	2.6	ug/L	141	Standard
	Zn	66	3268.7	3.6	**2.2359**	0.099	4.4	ug/L	491	Standard
>	**Ge**	72	501391.0	1.2				ug/L	515087	Standard
	As	75	1723.8	1.9	**1.6153**	0.015	1.0	ug/L	20	Standard
	Se	82	1818.6	2.0	**16.1069**	0.131	0.8	ug/L	15	Standard
	Se-1	77	2238.8	2.0	**29.8099**	0.421	1.4	ug/L	48	Standard
>	**Ga**	71	70.0	35.7				mg/L	90	Standard
	Rb	85	6024.5	1.3				ug/L	23	Standard
	Y	89	451516.3	2.4				ug/L	448510	Standard
>	**Rh**	103	580.0	3.0				ug/L	15	Standard
	Mo	98	4894.1	3.5	**1.7784**	0.027	1.5	ug/L	11	Standard
	Ag	107	107.3	12.0	**-0.0004**	0.002	428.3	ug/L	134	Standard
	Cd	111	61.6	14.8	**0.0258**	0.005	19.6	mg/L	7	Standard
	Cd	114	169.0	6.0	**0.0274**	0.002	5.8	ug/L	16	Standard
>	**In**	115	615602.8	3.1				ug/L	611117	Standard
	Sn	118	783.4	1.3	**0.0296**	0.003	11.3	ug/L	518	Standard
	Sb	123	203.3	3.5	**0.0299**	0.001	4.8	ug/L	127	Standard
	Ba	135	8199.6	0.5	**3.9202**	0.126	3.2	ug/L	45	Standard
	Ce	140	360.0	9.7				ug/L	298	Standard
>	**Tb**	159	979932.9	1.3				ug/L	977942	Standard
	Ho	165	28.3	20.4				ug/L	12	Standard
	Tl	203	89.3	17.1	**0.0065**	0.002	28.6	ug/L	31	Standard
	Tl	205	80.0	25.0	**0.0093**	0.003	29.8	ug/L	20	Standard
	Pb	206	345.7	2.0	**0.0043**	0.002	47.1	ug/L	286	Standard
	Pb	207	309.7	5.2	**0.0094**	0.004	39.7	ug/L	257	Standard
	Pb	208	1290.0	0.3	**0.0121**	0.001	10.3	ug/L	956	Standard
	U	238	27903.3	2.3	**4.1288**	0.057	1.4	ug/L	17	Standard
>	**Bi**	209	525055.5	1.5				ug/L	557080	Standard

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Na	23	21.7	48.0	**130.4724**	63.085	48.4	mg/L	0	Standard
Mg	24	101248.9	2.2	**126.0185**	2.508	2.0	mg/L	32	Standard
K	39	313.3	18.1	**0.8505**	0.192	22.6	mg/L	30	Standard
Ca	43	933.4	7.3	**127.1886**	7.858	6.2	mg/L	48	Standard
Fe	54	133.4	13.8	**-0.0242**	0.015	63.9	mg/L	159	Standard
Fe	57	858.4	5.3	**2.0873**	0.173	8.3	mg/L	195	Standard
> **Sc-1**	45	42273.9	1.4				mg/L	39543	Standard
Cl	35	65275.0	2.4				ug/L	27642	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	32608.5	7.2				ug/L	1647	Standard
P	31	23807.1	4.7				ug/L	15231	Standard
S	34	2403.5	5.0				ug/L	1845	Standard
Sr	88	2410.2	4.8				ug/L	70	Standard
C	12	193.3	34.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	21.1	69.3				mg/L	12	Standard
Ho-1	165	28.3	20.4				mg/L	12	Standard
Er	166	46.7	53.9				mg/L	20	Standard
I	127	42467.9	5.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.980	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.341	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.734	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	94.251	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606141602
Sample Date/Time: Tuesday, June 28, 2016 21:24:08
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88434.1	2.2				ug/L	81760	Standard
	Be	9	13.3	57.3	**0.0028**	0.007	262.6	ug/L	17	Standard
	Al	27	52144460.9	0.4	**312.8622**	8.112	2.6	ug/L	1410	Standard
	Sc	45	37740.3	1.5				ug/L	39543	Standard
	Ti	47	227.7	10.0	**0.8076**	0.101	12.5	ug/L	39	Standard
	V	51	38489.9	1.8	**5.6761**	0.140	2.5	ug/L	1415	Standard
	Cr	52	19640.1	1.0	**1.9398**	0.010	0.5	ug/L	6946	Standard
	Cr	53	17715.4	1.9	**21.0942**	0.301	1.4	ug/L	328	Standard
	Mn	55	4373.0	6.9	**0.5679**	0.048	8.4	ug/L	823	Standard
	Co	59	870.4	1.6	**0.1002**	0.001	1.2	ug/L	252	Standard
	Ni	60	2666.6	2.1	**1.3989**	0.023	1.6	ug/L	192	Standard
	Cu	65	1074.7	4.8	**0.5100**	0.030	5.9	ug/L	141	Standard
	Zn	66	2890.6	2.0	**1.9736**	0.048	2.4	ug/L	491	Standard
>	**Ge**	72	484924.7	0.7				ug/L	515087	Standard
	As	75	2458.8	5.8	**2.3632**	0.133	5.6	ug/L	20	Standard
	Se	82	892.7	6.7	**8.1181**	0.571	7.0	ug/L	15	Standard
	Se-1	77	1757.1	0.5	**24.0557**	0.109	0.5	ug/L	48	Standard
>	**Ga**	71	76.7	13.6				mg/L	90	Standard
	Rb	85	4900.8	2.1				ug/L	23	Standard
	Y	89	417881.5	5.4				ug/L	448510	Standard
>	**Rh**	103	255.0	18.7				ug/L	15	Standard
	Mo	98	772.2	2.1	**0.2950**	0.006	2.2	ug/L	11	Standard
	Ag	107	68.7	21.6	**-0.0049**	0.003	53.5	ug/L	134	Standard
	Cd	111	15.0	33.1	**0.0048**	0.003	56.9	mg/L	7	Standard
	Cd	114	24.6	131.5	**0.0004**	0.007	1725.2	ug/L	16	Standard
>	**In**	115	555990.7	3.0				ug/L	611117	Standard
	Sn	118	696.7	10.1	**0.0278**	0.015	54.6	ug/L	518	Standard
	Sb	123	106.5	16.8	**0.0120**	0.005	38.5	ug/L	127	Standard
	Ba	135	12524.8	3.0	**6.6489**	0.344	5.2	ug/L	45	Standard
	Ce	140	808.4	5.3				ug/L	298	Standard
>	**Tb**	159	897664.5	1.7				ug/L	977942	Standard
	Ho	165	23.3	68.9				ug/L	12	Standard
	Tl	203	89.0	17.6	**0.0071**	0.002	31.3	ug/L	31	Standard
	Tl	205	90.0	0.0	**0.0115**	0.000	1.5	ug/L	20	Standard
	Pb	206	365.7	4.1	**0.0124**	0.004	32.4	ug/L	286	Standard
	Pb	207	325.3	1.4	**0.0169**	0.000	0.6	ug/L	257	Standard
	Pb	208	1289.4	1.1	**0.0163**	0.000	2.7	ug/L	956	Standard
	U	238	25222.0	1.6	**3.9519**	0.013	0.3	ug/L	17	Standard
>	**Bi**	209	495840.1	1.2				ug/L	557080	Standard

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Na	23	3.3	86.6	**22.3577**	19.364	86.6	mg/L	0	Standard
Mg	24	65916.4	2.1	**91.8901**	2.205	2.4	mg/L	32	Standard
K	39	221.7	4.7	**0.6432**	0.031	4.9	mg/L	30	Standard
Ca	43	530.0	9.4	**79.0853**	9.116	11.5	mg/L	48	Standard
Fe	54	138.0	10.0	**-0.0062**	0.012	195.9	mg/L	159	Standard
Fe	57	510.0	5.1	**1.1793**	0.086	7.3	mg/L	195	Standard
> **Sc-1**	45	37740.3	1.5				mg/L	39543	Standard
Cl	35	44130.9	1.6				ug/L	27642	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	28483.4	4.0				ug/L	1647	Standard
P	31	20263.6	4.9				ug/L	15231	Standard
S	34	2148.5	1.6				ug/L	1845	Standard
Sr	88	1128.4	6.6				ug/L	70	Standard
C	12	163.3	25.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	36.0	33.6				mg/L	12	Standard
Ho-1	165	23.3	68.9				mg/L	12	Standard
Er	166	13.3	114.6				mg/L	20	Standard
I	127	19656.1	3.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.163	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.144	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.979
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		89.007
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606142101
Sample Date/Time: Tuesday, June 28, 2016 21:27:19
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86072.2	1.7				ug/L	81760	Standard
	Be	9	31.7	65.7	**0.0204**	0.019	95.2	ug/L	17	Standard
	Al	27	37149346.8	0.4	**228.9677**	4.521	2.0	ug/L	1410	Standard
	Sc	45	40693.0	3.6				ug/L	39543	Standard
	Ti	47	211.7	4.5	**0.7055**	0.031	4.4	ug/L	39	Standard
	V	51	19470.4	0.9	**2.6593**	0.027	1.0	ug/L	1415	Standard
	Cr	52	9577.4	0.5	**0.3506**	0.020	5.8	ug/L	6946	Standard
	Cr	53	13504.4	2.9	**15.3965**	0.370	2.4	ug/L	328	Standard
	Mn	55	2482687.2	1.9	**391.6677**	8.445	2.2	ug/L	823	Standard
	Co	59	1010.4	4.1	**0.1158**	0.006	5.6	ug/L	252	Standard
	Ni	60	2375.2	1.3	**1.1855**	0.029	2.4	ug/L	192	Standard
	Cu	65	1289.7	5.2	**0.6034**	0.030	5.0	ug/L	141	Standard
	Zn	66	3124.3	3.5	**2.0882**	0.083	4.0	ug/L	491	Standard
>	**Ge**	72	503476.5	0.9				ug/L	515087	Standard
	As	75	9860.1	0.9	**9.0129**	0.111	1.2	ug/L	20	Standard
	Se	82	502.3	2.2	**4.3447**	0.140	3.2	ug/L	15	Standard
	Se-1	77	853.4	2.0	**10.8689**	0.134	1.2	ug/L	48	Standard
>	**Ga**	71	115.0	32.8				mg/L	90	Standard
	Rb	85	655.0	2.3				ug/L	23	Standard
	Y	89	413248.4	1.0				ug/L	448510	Standard
>	**Rh**	103	123.3	18.3				ug/L	15	Standard
	Mo	98	77.7	17.1	**0.0125**	0.006	46.7	ug/L	11	Standard
	Ag	107	81.3	4.3	**-0.0029**	0.001	26.3	ug/L	134	Standard
	Cd	111	15.2	10.0	**0.0049**	0.001	14.6	mg/L	7	Standard
	Cd	114	38.3	10.8	**0.0032**	0.001	30.4	ug/L	16	Standard
>	**In**	115	557968.8	1.5				ug/L	611117	Standard
	Sn	118	745.0	12.3	**0.0359**	0.015	41.7	ug/L	518	Standard
	Sb	123	991.0	1.5	**0.2172**	0.002	1.1	ug/L	127	Standard
	Ba	135	220850.7	1.1	**117.1448**	0.521	0.4	ug/L	45	Standard
	Ce	140	1566.7	2.4				ug/L	298	Standard
>	**Tb**	159	920767.6	2.2				ug/L	977942	Standard
	Ho	165	58.3	38.7				ug/L	12	Standard
	Tl	203	55.7	23.2	**0.0023**	0.002	74.7	ug/L	31	Standard
	Tl	205	45.0	38.5	**0.0043**	0.003	60.7	ug/L	20	Standard
	Pb	206	169197.9	0.8	**33.4745**	0.521	1.6	ug/L	286	Standard
	Pb	207	142071.0	0.5	**31.1598**	0.218	0.7	ug/L	257	Standard
	Pb	208	579992.3	2.5	**32.8772**	0.549	1.7	ug/L	956	Standard
	U	238	648.7	2.7	**0.0940**	0.004	4.0	ug/L	17	Standard
>	**Bi**	209	520066.6	1.1				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.0185**	17.344	173.1	mg/L	0	Standard
Mg	24	83474.3	1.3	**108.0258**	4.532	4.2	mg/L	32	Standard
K	39	53.3	28.6	**0.0335**	0.050	147.9	mg/L	30	Standard
Ca	43	435.0	11.3	**58.7409**	4.908	8.4	mg/L	48	Standard
Fe	54	1115.5	8.0	**0.8464**	0.111	13.2	mg/L	159	Standard
Fe	57	721.7	4.0	**1.7451**	0.132	7.5	mg/L	195	Standard
> **Sc-1**	45	40693.0	3.6				mg/L	39543	Standard
Cl	35	37196.3	1.1				ug/L	27642	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	117004.1	4.8				ug/L	1647	Standard
P	31	21849.1	2.8				ug/L	15231	Standard
S	34	2463.5	4.3				ug/L	1845	Standard
Sr	88	470.0	11.8				ug/L	70	Standard
C	12	400.0	4.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	47.0	20.8				mg/L	12	Standard
Ho-1	165	58.3	38.7				mg/L	12	Standard
Er	166	63.3	9.1				mg/L	20	Standard
I	127	290371.1	9.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.274	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.746	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	91.303
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.356
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 21:30:32
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80064.5	3.2				ug/L	81760	Standard
	Be	9	49945.6	4.7	**51.3339**	1.054	2.1	ug/L	17	Standard
	Al	27	7446953.3	1.3	**49.3416**	1.021	2.1	ug/L	1410	Standard
	Sc	45	39994.4	3.1				ug/L	39543	Standard
	Ti	47	24563.6	1.8	**103.4611**	0.538	0.5	ug/L	39	Standard
	V	51	332459.7	1.4	**49.9760**	0.258	0.5	ug/L	1415	Standard
	Cr	52	346732.4	1.5	**51.2013**	0.219	0.4	ug/L	6946	Standard
	Cr	53	44092.4	3.1	**52.3486**	0.902	1.7	ug/L	328	Standard
	Mn	55	316773.7	1.0	**51.1225**	0.963	1.9	ug/L	823	Standard
	Co	59	338255.6	0.9	**50.4803**	0.452	0.9	ug/L	252	Standard
	Ni	60	91110.2	2.0	**50.6466**	0.186	0.4	ug/L	192	Standard
	Cu	65	91902.3	2.1	**50.6488**	0.160	0.3	ug/L	141	Standard
	Zn	66	53757.9	1.1	**50.6325**	0.663	1.3	ug/L	491	Standard
>	**Ge**	72	490984.9	1.8				ug/L	515087	Standard
	As	75	53512.8	1.1	**49.9767**	0.363	0.7	ug/L	20	Standard
	Se	82	5576.6	0.4	**50.7061**	0.891	1.8	ug/L	15	Standard
	Se-1	77	3693.5	2.8	**50.7124**	1.021	2.0	ug/L	48	Standard
>	**Ga**	71	63.3	29.9				mg/L	90	Standard
	Rb	85	831.7	5.0				ug/L	23	Standard
	Y	89	421530.5	1.2				ug/L	448510	Standard
>	**Rh**	103	28.3	44.4				ug/L	15	Standard
	Mo	98	254944.7	0.2	**97.5527**	0.365	0.4	ug/L	11	Standard
	Ag	107	312741.7	1.2	**48.1812**	0.687	1.4	ug/L	134	Standard
	Cd	111	100992.4	1.1	**48.8720**	0.473	1.0	mg/L	7	Standard
	Cd	114	246539.5	0.8	**49.0819**	0.317	0.6	ug/L	16	Standard
>	**In**	115	590755.4	0.3				ug/L	611117	Standard
	Sn	118	285297.8	0.9	**49.8102**	0.309	0.6	ug/L	518	Standard
	Sb	123	223087.7	1.5	**48.8998**	0.798	1.6	ug/L	127	Standard
	Ba	135	97286.0	1.5	**48.7240**	0.868	1.8	ug/L	45	Standard
	Ce	140	78.3	36.9				ug/L	298	Standard
>	**Tb**	159	940662.6	1.7				ug/L	977942	Standard
	Ho	165	20.0	25.0				ug/L	12	Standard
	Tl	203	402817.7	0.9	**49.5894**	0.553	1.1	ug/L	31	Standard
	Tl	205	361515.5	0.7	**51.2534**	0.688	1.3	ug/L	20	Standard
	Pb	206	256836.7	1.0	**49.2334**	0.527	1.1	ug/L	286	Standard
	Pb	207	233772.2	1.4	**49.6819**	0.304	0.6	ug/L	257	Standard
	Pb	208	939106.3	0.8	**51.5898**	0.228	0.4	ug/L	956	Standard
	U	238	351652.3	0.3	**50.9098**	0.427	0.8	ug/L	17	Standard
>	**Bi**	209	537054.5	1.2				ug/L	557080	Standard

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Na	23	5.0	173.2	**32.8471**	56.884	173.2	mg/L	0	Standard
Mg	24	4075.5	3.9	**5.3128**	0.340	6.4	mg/L	32	Standard
K	39	1373.4	2.2	**4.4475**	0.053	1.2	mg/L	30	Standard
Ca	43	71.7	22.4	**5.4062**	2.324	43.0	mg/L	48	Standard
Fe	54	5589.4	3.1	**4.8672**	0.205	4.2	mg/L	159	Standard
Fe	57	1635.1	4.9	**4.8331**	0.203	4.2	mg/L	195	Standard
> **Sc-1**	45	39994.4	3.1				mg/L	39543	Standard
Cl	35	35754.8	4.0				ug/L	27642	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	3610.5	34.2				ug/L	1647	Standard
P	31	19324.0	4.2				ug/L	15231	Standard
S	34	2706.9	5.1				ug/L	1845	Standard
Sr	88	63.3	27.7				ug/L	70	Standard
C	12	143.3	42.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	5.9	100.8				mg/L	12	Standard
Ho-1	165	20.0	25.0				mg/L	12	Standard
Er	166	16.7	34.6				mg/L	20	Standard
I	127	9711.8	44.1				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	102.668		
	Al	27	98.683		
	Sc	45			
	Ti	47	103.461		
	V	51	99.952		
	Cr	52	102.403		
	Cr	53			
	Mn	55	102.245		
	Co	59	100.961		
	Ni	60	101.293		
	Cu	65	101.298		
	Zn	66	101.265		
>	Ge	72		95.321	
	As	75	99.953		
	Se	82	101.412		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	97.553		
Ag	107	96.362		
Cd	111	97.744		
Cd	114			
In	115			96.668
Sn	118	99.620		
Sb	123	97.800		
Ba	135	97.448		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.179		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.180		
U	238	101.820		
Bi	209			96.405
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 21:33:43
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77306.8	2.0				ug/L	81760	Standard
	Be	9	21.7	26.6	**0.0134**	0.006	48.3	ug/L	17	Standard
	Al	27	7303.5	27.4	**0.0355**	0.013	36.3	ug/L	1410	Standard
	Sc	45	38198.1	0.8				ug/L	39543	Standard
	Ti	47	25.7	25.3	**-0.0566**	0.027	47.6	ug/L	39	Standard
	V	51	1109.0	7.8	**-0.0386**	0.015	38.5	ug/L	1415	Standard
	Cr	52	6097.9	0.7	**-0.1350**	0.015	10.8	ug/L	6946	Standard
	Cr	53	763.4	6.1	**0.5733**	0.039	6.9	ug/L	328	Standard
	Mn	55	836.4	10.1	**-0.0128**	0.011	87.4	ug/L	823	Standard
	Co	59	230.3	21.5	**0.0031**	0.007	222.1	ug/L	252	Standard
	Ni	60	176.3	3.3	**-0.0064**	0.005	75.2	ug/L	192	Standard
	Cu	65	147.3	9.8	**-0.0093**	0.007	71.2	ug/L	141	Standard
	Zn	66	414.7	6.5	**-0.4297**	0.019	4.3	ug/L	491	Standard
>	**Ge**	72	489415.0	1.8				ug/L	515087	Standard
	As	75	-13.4	315.6	**0.0274**	0.040	146.9	ug/L	20	Standard
	Se	82	21.4	39.0	**0.0756**	0.076	100.0	ug/L	15	Standard
	Se-1	77	62.3	3.3	**0.1522**	0.035	23.1	ug/L	48	Standard
>	**Ga**	71	55.0	41.7				mg/L	90	Standard
	Rb	85	21.7	26.6				ug/L	23	Standard
	Y	89	425437.4	1.2				ug/L	448510	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	273.7	29.6	**0.0854**	0.031	36.3	ug/L	11	Standard
	Ag	107	107.7	30.0	**0.0003**	0.005	1550.1	ug/L	134	Standard
	Cd	111	12.2	52.2	**0.0030**	0.003	103.1	mg/L	7	Standard
	Cd	114	23.6	69.2	**-0.0002**	0.003	1385.1	ug/L	16	Standard
>	**In**	115	592746.5	0.3				ug/L	611117	Standard
	Sn	118	735.0	15.8	**0.0262**	0.020	76.7	ug/L	518	Standard
	Sb	123	418.9	32.2	**0.0787**	0.029	37.2	ug/L	127	Standard
	Ba	135	58.7	27.6	**0.0042**	0.008	193.4	ug/L	45	Standard
	Ce	140	16.7	34.6				ug/L	298	Standard
>	**Tb**	159	928666.7	1.6				ug/L	977942	Standard
	Ho	165	11.7	89.2				ug/L	12	Standard
	Tl	203	77.0	34.1	**0.0046**	0.003	68.4	ug/L	31	Standard
	Tl	205	76.7	35.9	**0.0085**	0.004	45.8	ug/L	20	Standard
	Pb	206	287.0	11.8	**-0.0088**	0.007	78.2	ug/L	286	Standard
	Pb	207	252.0	6.9	**-0.0047**	0.004	83.8	ug/L	257	Standard
	Pb	208	1038.7	6.8	**-0.0037**	0.004	102.1	ug/L	956	Standard
	U	238	52.3	19.6	**0.0046**	0.001	32.5	ug/L	17	Standard
>	**Bi**	209	540535.6	1.1				ug/L	557080	Standard

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Na	23	1.7	173.2	**11.1254**	19.261	173.1	mg/L	0	Standard
Mg	24	41.7	25.0	**0.0002**	0.014	5858.2	mg/L	32	Standard
K	39	25.0	20.0	**-0.0539**	0.018	33.4	mg/L	30	Standard
Ca	43	40.0	25.0	**0.9508**	1.613	169.6	mg/L	48	Standard
Fe	54	117.8	25.5	**-0.0268**	0.028	102.8	mg/L	159	Standard
Fe	57	235.0	7.7	**0.1964**	0.057	28.8	mg/L	195	Standard
Sc-1	45	38198.1	0.8				mg/L	39543	Standard
Cl	35	35245.6	1.5				ug/L	27642	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	2320.2	7.7				ug/L	1647	Standard
P	31	18950.2	2.2				ug/L	15231	Standard
S	34	2475.2	4.2				ug/L	1845	Standard
Sr	88	68.3	27.7				ug/L	70	Standard
C	12	103.3	5.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	0	Standard
Dy	164	8.9	118.0				mg/L	12	Standard
Ho-1	165	11.7	89.2				mg/L	12	Standard
Er	166	23.3	49.5				mg/L	20	Standard
I	127	4469.0	13.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.016	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.994
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.030
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW 82 WG574205-02
Sample Date/Time: Tuesday, June 28, 2016 21:36:55
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77750.7	1.6				ug/L	81760	Standard
	Be	9	23.3	24.7	**0.0149**	0.006	38.5	ug/L	17	Standard
	Al	27	11095.9	27.0	**0.0614**	0.021	33.8	ug/L	1410	Standard
	Sc	45	39309.3	3.2				ug/L	39543	Standard
	Ti	47	35.7	19.9	**-0.0160**	0.027	171.9	ug/L	39	Standard
	V	51	1269.4	3.8	**-0.0162**	0.012	71.1	ug/L	1415	Standard
	Cr	52	7452.2	2.1	**0.0582**	0.015	26.3	ug/L	6946	Standard
	Cr	53	805.0	4.3	**0.6140**	0.043	7.0	ug/L	328	Standard
	Mn	55	3268.0	4.0	**0.3772**	0.034	9.1	ug/L	823	Standard
	Co	59	296.7	4.7	**0.0126**	0.001	9.3	ug/L	252	Standard
	Ni	60	300.3	5.8	**0.0613**	0.013	21.5	ug/L	192	Standard
	Cu	65	252.7	4.2	**0.0478**	0.009	19.3	ug/L	141	Standard
	Zn	66	1868.1	1.9	**0.9480**	0.028	3.0	ug/L	491	Standard
>	**Ge**	72	494530.1	2.9				ug/L	515087	Standard
	As	75	-37.6	66.7	**0.0055**	0.023	429.2	ug/L	20	Standard
	Se	82	15.9	27.5	**0.0238**	0.038	158.5	ug/L	15	Standard
	Se-1	77	56.7	8.0	**0.0642**	0.051	79.2	ug/L	48	Standard
>	**Ga**	71	51.7	31.1				mg/L	90	Standard
	Rb	85	45.0	48.4				ug/L	23	Standard
	Y	89	413936.1	2.9				ug/L	448510	Standard
>	**Rh**	103	23.3	32.7				ug/L	15	Standard
	Mo	98	83.2	8.2	**0.0127**	0.003	23.0	ug/L	11	Standard
	Ag	107	95.3	10.0	**-0.0016**	0.002	102.9	ug/L	134	Standard
	Cd	111	39.5	14.4	**0.0162**	0.003	18.5	mg/L	7	Standard
	Cd	114	83.7	13.3	**0.0117**	0.002	21.2	ug/L	16	Standard
>	**In**	115	592344.0	1.8				ug/L	611117	Standard
	Sn	118	795.0	11.2	**0.0369**	0.017	47.0	ug/L	518	Standard
	Sb	123	176.9	20.5	**0.0258**	0.007	28.3	ug/L	127	Standard
	Ba	135	88.3	8.2	**0.0191**	0.004	22.5	ug/L	45	Standard
	Ce	140	48.3	15.8				ug/L	298	Standard
>	**Tb**	159	936174.2	1.5				ug/L	977942	Standard
	Ho	165	6.7	114.6				ug/L	12	Standard
	Tl	203	128.0	4.9	**0.0106**	0.001	7.1	ug/L	31	Standard
	Tl	205	116.7	44.6	**0.0139**	0.007	52.1	ug/L	20	Standard
	Pb	206	358.0	3.9	**0.0036**	0.003	73.1	ug/L	286	Standard
	Pb	207	341.0	6.5	**0.0129**	0.005	36.4	ug/L	257	Standard
	Pb	208	1292.4	1.6	**0.0090**	0.001	13.2	ug/L	956	Standard
	U	238	93.7	24.0	**0.0103**	0.003	31.1	ug/L	17	Standard
>	**Bi**	209	549438.7	0.1				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.5912**	18.336	173.1	mg/L	0	Standard
Mg	24	55.0	47.2	**0.0170**	0.036	211.2	mg/L	32	Standard
K	39	38.3	52.7	**-0.0104**	0.070	678.8	mg/L	30	Standard
Ca	43	46.7	16.4	**1.7858**	1.139	63.8	mg/L	48	Standard
Fe	54	125.7	11.9	**-0.0224**	0.015	66.3	mg/L	159	Standard
Fe	57	226.7	12.1	**0.1455**	0.093	63.6	mg/L	195	Standard
Sc-1	45	39309.3	3.2				mg/L	39543	Standard
Cl	35	34398.3	0.8				ug/L	27642	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	1940.1	5.9				ug/L	1647	Standard
P	31	18074.1	0.8				ug/L	15231	Standard
S	34	2498.5	3.0				ug/L	1845	Standard
Sr	88	61.7	46.1				ug/L	70	Standard
C	12	113.3	13.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	9.2	3.0				mg/L	12	Standard
Ho-1	165	6.7	114.6				mg/L	12	Standard
Er	166	16.7	34.6				mg/L	20	Standard
I	127	3242.0	12.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.096	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.009	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.928
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.628
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 82 WG574205-03
Sample Date/Time: Tuesday, June 28, 2016 21:40:07
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77370.5	2.5				ug/L	81760	Standard
	Be	9	47069.7	3.6	**50.0685**	0.762	1.5	ug/L	17	Standard
	Al	27	8339.0	0.8	**0.0428**	0.001	2.3	ug/L	1410	Standard
	Sc	45	38442.1	2.3				ug/L	39543	Standard
	Ti	47	32.3	15.3	**-0.0274**	0.023	83.9	ug/L	39	Standard
	V	51	328373.9	1.3	**49.7728**	1.098	2.2	ug/L	1415	Standard
	Cr	52	340284.0	1.1	**50.6522**	0.528	1.0	ug/L	6946	Standard
	Cr	53	43268.4	1.2	**51.8066**	1.337	2.6	ug/L	328	Standard
	Mn	55	314954.5	0.2	**51.2439**	0.720	1.4	ug/L	823	Standard
	Co	59	331722.8	0.6	**49.9116**	0.628	1.3	ug/L	252	Standard
	Ni	60	91188.9	0.7	**51.1120**	0.365	0.7	ug/L	192	Standard
	Cu	65	91760.4	1.1	**50.9900**	0.227	0.4	ug/L	141	Standard
	Zn	66	54150.6	1.3	**51.4287**	0.106	0.2	ug/L	491	Standard
>	**Ge**	72	486985.3	1.4				ug/L	515087	Standard
	As	75	52577.5	0.5	**49.5070**	0.430	0.9	ug/L	20	Standard
	Se	82	5439.8	1.4	**49.8572**	0.058	0.1	ug/L	15	Standard
	Se-1	77	3674.8	1.0	**50.8806**	0.838	1.6	ug/L	48	Standard
>	**Ga**	71	70.0	21.4				mg/L	90	Standard
	Rb	85	35.0	37.8				ug/L	23	Standard
	Y	89	431830.9	0.7				ug/L	448510	Standard
>	**Rh**	103	38.3	15.1				ug/L	15	Standard
	Mo	98	69.3	10.5	**0.0074**	0.003	42.1	ug/L	11	Standard
	Ag	107	312423.9	0.2	**48.0443**	1.285	2.7	ug/L	134	Standard
	Cd	111	99250.2	0.2	**47.9394**	1.102	2.3	mg/L	7	Standard
	Cd	114	241436.3	0.5	**47.9735**	0.947	2.0	ug/L	16	Standard
>	**In**	115	592091.2	2.5				ug/L	611117	Standard
	Sn	118	838.4	9.3	**0.0444**	0.014	30.4	ug/L	518	Standard
	Sb	123	213126.5	0.4	**46.6279**	1.103	2.4	ug/L	127	Standard
	Ba	135	94941.2	1.6	**47.4531**	1.010	2.1	ug/L	45	Standard
	Ce	140	68.3	22.4				ug/L	298	Standard
>	**Tb**	159	920874.0	1.0				ug/L	977942	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	395784.4	0.5	**49.2144**	0.506	1.0	ug/L	31	Standard
	Tl	205	352148.8	0.9	**50.4246**	0.261	0.5	ug/L	20	Standard
	Pb	206	261292.0	1.2	**50.5931**	0.633	1.3	ug/L	286	Standard
	Pb	207	229140.8	1.1	**49.1895**	0.516	1.0	ug/L	257	Standard
	Pb	208	939702.2	0.3	**52.1447**	0.484	0.9	ug/L	956	Standard
	U	238	338970.6	0.7	**49.5659**	0.166	0.3	ug/L	17	Standard
>	**Bi**	209	531689.3	0.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	35.0	0.0	**-0.0092**	0.001	12.0	mg/L	32	Standard
K	39	35.0	42.9	**-0.0195**	0.052	268.3	mg/L	30	Standard
Ca	43	38.3	32.8	**0.6220**	1.885	303.1	mg/L	48	Standard
Fe	54	132.7	8.8	**-0.0133**	0.014	103.8	mg/L	159	Standard
Fe	57	226.7	10.4	**0.1628**	0.084	51.6	mg/L	195	Standard
> **Sc-1**	45	38442.1	2.3				mg/L	39543	Standard
Cl	35	35188.8	3.0				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1823.4	6.0				ug/L	1647	Standard
P	31	17611.9	0.6				ug/L	15231	Standard
S	34	2310.2	2.3				ug/L	1845	Standard
Sr	88	75.0	17.6				ug/L	70	Standard
C	12	96.7	46.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	5.9	194.5				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	16.7	34.6				mg/L	20	Standard
I	127	2716.9	12.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.631	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.544	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.887
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.442
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606134301 WG574205-01
Sample Date/Time: Tuesday, June 28, 2016 21:43:18
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74323.5	0.8				ug/L	81760	Standard
	Be	9	31.7	36.5	**0.0253**	0.013	49.8	ug/L	17	Standard
	Al	27	2998278.2	0.6	**21.3833**	0.050	0.2	ug/L	1410	Standard
	Sc	45	38510.6	3.3				ug/L	39543	Standard
	Ti	47	232.7	4.1	**0.8126**	0.032	3.9	ug/L	39	Standard
	V	51	1652.5	23.4	**0.0414**	0.055	131.6	ug/L	1415	Standard
	Cr	52	135321.3	0.7	**19.2638**	0.330	1.7	ug/L	6946	Standard
	Cr	53	19187.1	1.5	**22.5044**	0.281	1.2	ug/L	328	Standard
	Mn	55	3959.9	4.4	**0.4904**	0.040	8.1	ug/L	823	Standard
	Co	59	833.7	4.3	**0.0927**	0.008	8.3	ug/L	252	Standard
	Ni	60	44655.7	0.7	**24.6837**	0.632	2.6	ug/L	192	Standard
	Cu	65	31746.9	0.7	**17.3740**	0.276	1.6	ug/L	141	Standard
	Zn	66	57137.2	0.4	**53.6669**	1.121	2.1	ug/L	491	Standard
>	**Ge**	72	492860.3	1.9				ug/L	515087	Standard
	As	75	122.8	20.0	**0.1545**	0.023	14.7	ug/L	20	Standard
	Se	82	36.2	8.8	**0.2097**	0.035	16.8	ug/L	15	Standard
	Se-1	77	205.3	7.5	**2.1323**	0.253	11.9	ug/L	48	Standard
>	**Ga**	71	501.7	15.2				mg/L	90	Standard
	Rb	85	10964.0	0.9				ug/L	23	Standard
	Y	89	418533.1	1.8				ug/L	448510	Standard
>	**Rh**	103	56.7	31.0				ug/L	15	Standard
	Mo	98	2829.4	1.2	**1.1053**	0.009	0.8	ug/L	11	Standard
	Ag	107	25274.7	1.2	**4.0283**	0.033	0.8	ug/L	134	Standard
	Cd	111	119.1	9.1	**0.0569**	0.005	9.6	mg/L	7	Standard
	Cd	114	490.9	6.4	**0.0966**	0.006	6.7	ug/L	16	Standard
>	**In**	115	568910.2	0.4				ug/L	611117	Standard
	Sn	118	49674.7	2.3	**8.9227**	0.228	2.6	ug/L	518	Standard
	Sb	123	2415.2	17.6	**0.5368**	0.095	17.6	ug/L	127	Standard
	Ba	135	20410.1	0.9	**10.5946**	0.091	0.9	ug/L	45	Standard
	Ce	140	566.7	11.5				ug/L	298	Standard
>	**Tb**	159	895351.1	0.7				ug/L	977942	Standard
	Ho	165	20.0	25.0				ug/L	12	Standard
	Tl	203	216.3	14.7	**0.0231**	0.004	18.6	ug/L	31	Standard
	Tl	205	211.7	17.7	**0.0291**	0.005	18.1	ug/L	20	Standard
	Pb	206	14582.7	1.0	**2.8682**	0.053	1.8	ug/L	286	Standard
	Pb	207	11703.2	0.8	**2.5502**	0.014	0.5	ug/L	257	Standard
	Pb	208	49274.0	0.6	**2.7782**	0.042	1.5	ug/L	956	Standard
	U	238	116.0	23.9	**0.0146**	0.004	29.7	ug/L	17	Standard
>	**Bi**	209	512746.8	0.9				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	23663.5	1.4	**32.3162**	1.385	4.3	mg/L	32	Standard
K	39	683.3	9.3	**2.2286**	0.197	8.8	mg/L	30	Standard
Ca	43	95.0	32.9	**9.3774**	4.330	46.2	mg/L	48	Standard
Fe	54	183.2	7.6	**0.0331**	0.009	27.1	mg/L	159	Standard
Fe	57	263.3	14.4	**0.2873**	0.119	41.4	mg/L	195	Standard
> **Sc-1**	45	38510.6	3.3				mg/L	39543	Standard
Cl	35	35170.8	1.9				ug/L	27642	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	3347.0	4.4				ug/L	1647	Standard
P	31	18034.1	2.9				ug/L	15231	Standard
S	34	2231.8	5.1				ug/L	1845	Standard
Sr	88	143.3	22.7				ug/L	70	Standard
C	12	123.3	47.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	12.4	90.1				mg/L	12	Standard
Ho-1	165	20.0	25.0				mg/L	12	Standard
Er	166	20.0	86.6				mg/L	20	Standard
I	127	33806.0	2.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.904	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.685	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.094
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.042
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606134301DP WG574205-04
Sample Date/Time: Tuesday, June 28, 2016 21:46:30
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75650.1	1.3				ug/L	81760	Standard
	Be	9	38.3	7.5	**0.0320**	0.004	11.5	ug/L	17	Standard
	Al	27	3034197.2	1.7	**21.2640**	0.568	2.7	ug/L	1410	Standard
	Sc	45	38358.5	1.6				ug/L	39543	Standard
	Ti	47	242.3	3.4	**0.8481**	0.030	3.6	ug/L	39	Standard
	V	51	2921.5	21.4	**0.2301**	0.091	39.7	ug/L	1415	Standard
	Cr	52	132102.7	0.7	**18.6755**	0.034	0.2	ug/L	6946	Standard
	Cr	53	19672.8	2.2	**22.9627**	0.596	2.6	ug/L	328	Standard
	Mn	55	13082.6	2.2	**1.9497**	0.036	1.8	ug/L	823	Standard
	Co	59	922.0	4.8	**0.1051**	0.006	5.6	ug/L	252	Standard
	Ni	60	44071.0	1.0	**24.2264**	0.187	0.8	ug/L	192	Standard
	Cu	65	31222.8	1.1	**16.9947**	0.096	0.6	ug/L	141	Standard
	Zn	66	55768.5	0.9	**52.0764**	0.197	0.4	ug/L	491	Standard
>	**Ge**	72	495382.5	0.5				ug/L	515087	Standard
	As	75	105.3	17.2	**0.1377**	0.017	12.5	ug/L	20	Standard
	Se	82	31.4	9.3	**0.1642**	0.025	15.2	ug/L	15	Standard
	Se-1	77	224.7	3.6	**2.3824**	0.126	5.3	ug/L	48	Standard
>	**Ga**	71	485.0	9.9				mg/L	90	Standard
	Rb	85	10640.4	0.2				ug/L	23	Standard
	Y	89	407749.6	1.6				ug/L	448510	Standard
>	**Rh**	103	56.7	27.0				ug/L	15	Standard
	Mo	98	2759.9	2.4	**1.0902**	0.013	1.1	ug/L	11	Standard
	Ag	107	24718.5	0.6	**3.9851**	0.067	1.7	ug/L	134	Standard
	Cd	111	119.1	7.2	**0.0577**	0.005	8.8	mg/L	7	Standard
	Cd	114	389.6	30.3	**0.0764**	0.024	30.9	ug/L	16	Standard
>	**In**	115	562489.2	1.2				ug/L	611117	Standard
	Sn	118	48104.7	5.2	**8.7400**	0.532	6.1	ug/L	518	Standard
	Sb	123	1085.9	11.8	**0.2370**	0.026	11.2	ug/L	127	Standard
	Ba	135	21279.9	0.9	**11.1745**	0.156	1.4	ug/L	45	Standard
	Ce	140	1446.7	1.7				ug/L	298	Standard
>	**Tb**	159	899809.7	0.9				ug/L	977942	Standard
	Ho	165	38.3	37.7				ug/L	12	Standard
	Tl	203	211.3	8.9	**0.0223**	0.003	11.4	ug/L	31	Standard
	Tl	205	171.7	14.4	**0.0230**	0.004	16.6	ug/L	20	Standard
	Pb	206	14329.4	1.7	**2.7934**	0.069	2.5	ug/L	286	Standard
	Pb	207	11471.7	1.5	**2.4775**	0.050	2.0	ug/L	257	Standard
	Pb	208	48196.5	1.3	**2.6929**	0.035	1.3	ug/L	956	Standard
	U	238	162.0	9.3	**0.0214**	0.002	11.2	ug/L	17	Standard
>	**Bi**	209	517046.0	0.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	23364.7	1.2	**32.0144**	0.886	2.8	mg/L	32	Standard
K	39	620.0	6.9	**2.0197**	0.176	8.7	mg/L	30	Standard
Ca	43	98.3	39.5	**10.0220**	6.022	60.1	mg/L	48	Standard
Fe	54	175.4	14.5	**0.0269**	0.026	96.7	mg/L	159	Standard
Fe	57	298.3	7.6	**0.4146**	0.094	22.7	mg/L	195	Standard
> **Sc-1**	45	38358.5	1.6				mg/L	39543	Standard
Cl	35	35843.0	1.2				ug/L	27642	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	4177.2	4.7				ug/L	1647	Standard
P	31	18070.8	1.2				ug/L	15231	Standard
S	34	2273.5	5.8				ug/L	1845	Standard
Sr	88	125.0	20.0				ug/L	70	Standard
C	12	143.3	21.3				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	0	Standard
Dy	164	45.4	50.3				mg/L	12	Standard
Ho-1	165	38.3	37.7				mg/L	12	Standard
Er	166	26.7	21.7				mg/L	20	Standard
I	127	32309.4	0.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.527	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.175	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606134301DP WG574205-04
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		92.043
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.814
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606134301S WG574205-05
Sample Date/Time: Tuesday, June 28, 2016 21:49:41
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	76159.4	2.8				ug/L	81760	Standard
	Be	9	48450.7	1.7	**52.3785**	0.949	1.8	ug/L	17	Standard
	Al	27	2895043.9	1.0	**20.1618**	0.737	3.7	ug/L	1410	Standard
	Sc	45	38742.8	1.9				ug/L	39543	Standard
	Ti	47	240.0	7.2	**0.8720**	0.082	9.4	ug/L	39	Standard
	V	51	323841.2	0.8	**49.8512**	0.902	1.8	ug/L	1415	Standard
	Cr	52	453207.8	1.4	**68.8842**	0.591	0.9	ug/L	6946	Standard
	Cr	53	60472.1	1.8	**73.6607**	0.780	1.1	ug/L	328	Standard
	Mn	55	309167.0	1.2	**51.0846**	0.705	1.4	ug/L	823	Standard
	Co	59	322466.2	0.8	**49.2767**	0.754	1.5	ug/L	252	Standard
	Ni	60	129806.7	1.0	**73.9391**	0.553	0.7	ug/L	192	Standard
	Cu	65	118360.2	1.2	**66.8253**	0.317	0.5	ug/L	141	Standard
	Zn	66	105137.5	0.6	**102.2235**	1.030	1.0	ug/L	491	Standard
>	Ge	72	479488.8	1.1				ug/L	515087	Standard
	As	75	53941.4	1.7	**51.5891**	1.400	2.7	ug/L	20	Standard
	Se	82	5350.1	0.9	**49.8082**	0.982	2.0	ug/L	15	Standard
	Se-1	77	3727.1	2.1	**52.4361**	1.513	2.9	ug/L	48	Standard
>	Ga	71	476.7	2.2				mg/L	90	Standard
	Rb	85	10533.7	3.9				ug/L	23	Standard
	Y	89	417307.7	1.3				ug/L	448510	Standard
>	Rh	103	73.3	25.8				ug/L	15	Standard
	Mo	98	2762.6	0.6	**1.0591**	0.012	1.2	ug/L	11	Standard
	Ag	107	321242.3	0.9	**50.4672**	0.741	1.5	ug/L	134	Standard
	Cd	111	96845.5	0.4	**47.7898**	0.498	1.0	mg/L	7	Standard
	Cd	114	233334.7	1.1	**47.3688**	0.646	1.4	ug/L	16	Standard
>	In	115	579360.0	0.8				ug/L	611117	Standard
	Sn	118	55146.4	13.8	**9.7304**	1.292	13.3	ug/L	518	Standard
	Sb	123	221114.9	0.1	**49.4220**	0.385	0.8	ug/L	127	Standard
	Ba	135	112895.7	0.5	**57.6594**	0.626	1.1	ug/L	45	Standard
	Ce	140	313.3	11.5				ug/L	298	Standard
>	Tb	159	912553.5	0.8				ug/L	977942	Standard
	Ho	165	15.0	66.7				ug/L	12	Standard
	Tl	203	384933.8	0.5	**49.0255**	0.608	1.2	ug/L	31	Standard
	Tl	205	344367.9	0.4	**50.5097**	0.783	1.5	ug/L	20	Standard
	Pb	206	266968.5	0.3	**52.9500**	0.690	1.3	ug/L	286	Standard
	Pb	207	232893.3	0.6	**51.2096**	0.463	0.9	ug/L	257	Standard
	Pb	208	948808.9	1.4	**53.9303**	1.097	2.0	ug/L	956	Standard
	U	238	335133.4	0.9	**50.1950**	0.747	1.5	ug/L	17	Standard
>	Bi	209	519140.8	1.4				ug/L	557080	Standard

Sample ID: L1606134301S WG574205-05
Report Date/Time: Tuesday, June 28, 2016 21:51:58
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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	23122.6	1.5	**31.3670**	0.821	2.6	mg/L	32	Standard
K	39	550.0	13.4	**1.7528**	0.224	12.8	mg/L	30	Standard
Ca	43	93.3	3.1	**9.1209**	0.222	2.4	mg/L	48	Standard
Fe	54	147.8	38.5	**0.0002**	0.055	34709.4	mg/L	159	Standard
Fe	57	261.7	11.7	**0.2782**	0.120	43.1	mg/L	195	Standard
> **Sc-1**	45	38742.8	1.9				mg/L	39543	Standard
Cl	35	35887.1	0.6				ug/L	27642	Standard
Kr	83	2.3	89.2				ug/L	2	Standard
Br	81	3013.6	4.3				ug/L	1647	Standard
P	31	18511.3	3.1				ug/L	15231	Standard
S	34	2173.5	7.9				ug/L	1845	Standard
Sr	88	115.0	4.3				ug/L	70	Standard
C	12	143.3	35.1				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	12.7	50.0				mg/L	12	Standard
Ho-1	165	15.0	66.7				mg/L	12	Standard
Er	166	13.3	114.6				mg/L	20	Standard
I	127	29318.3	1.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.150	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.089	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.804
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.190
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Zn 66 Upper, S, EEE	Zn	66	

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606134301SD WG574205-06
Sample Date/Time: Tuesday, June 28, 2016 21:52:53
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74233.3	4.4				ug/L	81760	Standard
	Be	9	46944.3	0.7	**52.1161**	2.208	4.2	ug/L	17	Standard
	Al	27	2867977.1	1.8	**20.5130**	1.211	5.9	ug/L	1410	Standard
	Sc	45	37107.1	4.7				ug/L	39543	Standard
	Ti	47	208.3	2.4	**0.7439**	0.023	3.1	ug/L	39	Standard
	V	51	314357.5	0.7	**48.8632**	0.269	0.5	ug/L	1415	Standard
	Cr	52	443013.9	1.2	**67.9920**	0.699	1.0	ug/L	6946	Standard
	Cr	53	57726.4	1.5	**71.0049**	0.771	1.1	ug/L	328	Standard
	Mn	55	299003.6	1.5	**49.8899**	0.541	1.1	ug/L	823	Standard
	Co	59	310607.5	1.9	**47.9296**	0.658	1.4	ug/L	252	Standard
	Ni	60	125816.0	1.4	**72.3742**	0.740	1.0	ug/L	192	Standard
	Cu	65	116930.9	2.0	**66.6728**	1.005	1.5	ug/L	141	Standard
	Zn	66	105389.9	0.9	**103.4925**	0.359	0.3	ug/L	491	Standard
>	**Ge**	72	474757.8	0.5				ug/L	515087	Standard
	As	75	52320.0	1.0	**50.5276**	0.214	0.4	ug/L	20	Standard
	Se	82	5199.8	1.3	**48.8839**	0.776	1.6	ug/L	15	Standard
	Se-1	77	3645.4	2.7	**51.7794**	1.336	2.6	ug/L	48	Standard
>	**Ga**	71	471.7	1.2				mg/L	90	Standard
	Rb	85	10923.9	0.7				ug/L	23	Standard
	Y	89	414912.1	1.8				ug/L	448510	Standard
>	**Rh**	103	51.7	22.3				ug/L	15	Standard
	Mo	98	2810.6	3.1	**1.1098**	0.050	4.5	ug/L	11	Standard
	Ag	107	309794.3	1.1	**50.0964**	1.925	3.8	ug/L	134	Standard
	Cd	111	92939.1	0.1	**47.2004**	1.405	3.0	mg/L	7	Standard
	Cd	114	227712.2	0.8	**47.5835**	1.757	3.7	ug/L	16	Standard
>	**In**	115	563239.5	3.0				ug/L	611117	Standard
	Sn	118	48800.3	6.0	**8.8657**	0.749	8.5	ug/L	518	Standard
	Sb	123	213681.9	0.5	**49.1574**	1.598	3.3	ug/L	127	Standard
	Ba	135	108173.8	0.8	**56.8630**	1.899	3.3	ug/L	45	Standard
	Ce	140	258.3	11.8				ug/L	298	Standard
>	**Tb**	159	874543.1	3.3				ug/L	977942	Standard
	Ho	165	16.7	62.4				ug/L	12	Standard
	Tl	203	370949.6	0.9	**49.2226**	1.185	2.4	ug/L	31	Standard
	Tl	205	332170.0	0.6	**50.7579**	1.084	2.1	ug/L	20	Standard
	Pb	206	260124.0	0.8	**53.7518**	1.191	2.2	ug/L	286	Standard
	Pb	207	226333.8	1.1	**51.8538**	1.336	2.6	ug/L	257	Standard
	Pb	208	924176.8	1.2	**54.7310**	1.509	2.8	ug/L	956	Standard
	U	238	327055.2	1.2	**51.0349**	1.235	2.4	ug/L	17	Standard
>	**Bi**	209	498348.0	1.6				ug/L	557080	Standard

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Na	23	5.0	173.2	**33.3751**	57.799	173.2	mg/L	0	Standard
Mg	24	22616.9	1.7	**32.0867**	1.983	6.2	mg/L	32	Standard
K	39	585.0	8.2	**1.9630**	0.088	4.5	mg/L	30	Standard
Ca	43	106.7	21.1	**11.9418**	3.627	30.4	mg/L	48	Standard
Fe	54	143.6	9.6	**0.0016**	0.013	810.1	mg/L	159	Standard
Fe	57	260.0	25.0	**0.3188**	0.279	87.4	mg/L	195	Standard
> **Sc-1**	45	37107.1	4.7				mg/L	39543	Standard
Cl	35	35012.4	2.2				ug/L	27642	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	3463.7	1.0				ug/L	1647	Standard
P	31	17954.0	1.9				ug/L	15231	Standard
S	34	2235.2	3.1				ug/L	1845	Standard
Sr	88	115.0	27.2				ug/L	70	Standard
C	12	173.3	16.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	0	Standard
Dy	164	16.2	97.3				mg/L	12	Standard
Ho-1	165	16.7	62.4				mg/L	12	Standard
Er	166	10.0	100.0				mg/L	20	Standard
I	127	29468.6	2.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.794	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.170	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	92.166
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	89.457
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1606073201
Sample Date/Time: Tuesday, June 28, 2016 21:56:04
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79995.7	1.9				ug/L	81760	Standard
	Be	9	111.7	43.0	**0.1055**	0.050	47.4	ug/L	17	Standard
	Al	27	26418031.8	2.7	**175.1861**	5.381	3.1	ug/L	1410	Standard
	Sc	45	39758.8	3.3				ug/L	39543	Standard
	Ti	47	586.7	3.3	**2.3079**	0.104	4.5	ug/L	39	Standard
	V	51	2345.3	13.2	**0.1468**	0.044	29.9	ug/L	1415	Standard
	Cr	52	26092.8	3.1	**2.8709**	0.089	3.1	ug/L	6946	Standard
	Cr	53	22536.8	6.4	**26.5559**	1.479	5.6	ug/L	328	Standard
	Mn	55	128770.6	1.1	**20.6681**	0.068	0.3	ug/L	823	Standard
	Co	59	4370.6	1.2	**0.6206**	0.009	1.4	ug/L	252	Standard
	Ni	60	4217.9	1.8	**2.2421**	0.029	1.3	ug/L	192	Standard
	Cu	65	1551.7	2.2	**0.7650**	0.010	1.3	ug/L	141	Standard
	Zn	66	53557.8	1.5	**50.3807**	0.333	0.7	ug/L	491	Standard
>	**Ge**	72	491490.5	1.0				ug/L	515087	Standard
	As	75	918.5	14.0	**0.8957**	0.112	12.5	ug/L	20	Standard
	Se	82	316.6	5.4	**2.7619**	0.129	4.7	ug/L	15	Standard
	Se-1	77	1234.4	4.8	**16.4500**	0.704	4.3	ug/L	48	Standard
>	**Ga**	71	80.0	6.3				mg/L	90	Standard
	Rb	85	7720.3	1.4				ug/L	23	Standard
	Y	89	403861.7	0.4				ug/L	448510	Standard
>	**Rh**	103	80.0	50.0				ug/L	15	Standard
	Mo	98	355.0	5.6	**0.1283**	0.008	5.9	ug/L	11	Standard
	Ag	107	141.3	9.2	**0.0074**	0.002	31.2	ug/L	134	Standard
	Cd	111	202.7	10.3	**0.1036**	0.012	11.2	mg/L	7	Standard
	Cd	114	507.6	13.6	**0.1047**	0.015	13.9	ug/L	16	Standard
>	**In**	115	544497.8	0.6				ug/L	611117	Standard
	Sn	118	1023.4	24.9	**0.0925**	0.050	53.7	ug/L	518	Standard
	Sb	123	669.1	12.6	**0.1463**	0.019	13.2	ug/L	127	Standard
	Ba	135	206763.5	2.5	**112.3722**	2.187	1.9	ug/L	45	Standard
	Ce	140	411.7	6.1				ug/L	298	Standard
>	**Tb**	159	889575.8	1.3				ug/L	977942	Standard
	Ho	165	35.0	37.8				ug/L	12	Standard
	Tl	203	749.0	2.3	**0.0953**	0.003	3.6	ug/L	31	Standard
	Tl	205	685.0	13.9	**0.1029**	0.013	12.2	ug/L	20	Standard
	Pb	206	776.0	1.1	**0.0981**	0.006	5.8	ug/L	286	Standard
	Pb	207	670.3	1.0	**0.0968**	0.005	4.8	ug/L	257	Standard
	Pb	208	2692.4	0.9	**0.1003**	0.005	4.6	ug/L	956	Standard
	U	238	1446.7	3.3	**0.2244**	0.006	2.7	ug/L	17	Standard
>	**Bi**	209	494871.3	2.5				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.6945**	18.515	173.1	mg/L	0	Standard
Mg	24	122893.2	2.3	**162.6797**	1.668	1.0	mg/L	32	Standard
K	39	163.3	4.7	**0.4080**	0.035	8.6	mg/L	30	Standard
Ca	43	160.0	24.8	**18.8525**	6.186	32.8	mg/L	48	Standard
Fe	54	210.9	15.7	**0.0529**	0.031	58.0	mg/L	159	Standard
Fe	57	311.7	8.2	**0.4207**	0.052	12.3	mg/L	195	Standard
> **Sc-1**	45	39758.8	3.3				mg/L	39543	Standard
Cl	35	36983.1	0.7				ug/L	27642	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	75233.3	4.9				ug/L	1647	Standard
P	31	24466.4	2.9				ug/L	15231	Standard
S	34	2258.5	3.0				ug/L	1845	Standard
Sr	88	378.3	24.5				ug/L	70	Standard
C	12	350.0	10.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	120.9	45.9				mg/L	12	Standard
Ho-1	165	35.0	37.8				mg/L	12	Standard
Er	166	50.0	20.0				mg/L	20	Standard
I	127	539973.2	10.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.842	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.419	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.099
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		88.833
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606073201PS WG574571-01
Sample Date/Time: Tuesday, June 28, 2016 21:59:15
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83254.8	1.5				ug/L	81760	Standard
	Be	9	50562.6	1.1	**49.9976**	0.969	1.9	ug/L	17	Standard
	Al	27	27107676.6	2.1	**172.7073**	3.970	2.3	ug/L	1410	Standard
	Sc	45	41809.3	4.0				ug/L	39543	Standard
	Ti	47	632.7	1.1	**2.4753**	0.055	2.2	ug/L	39	Standard
	V	51	341856.0	1.3	**50.8320**	0.708	1.4	ug/L	1415	Standard
	Cr	52	363663.1	1.5	**53.1642**	1.402	2.6	ug/L	6946	Standard
	Cr	53	65238.5	1.6	**76.7756**	0.750	1.0	ug/L	328	Standard
	Mn	55	438903.0	0.5	**70.1258**	2.130	3.0	ug/L	823	Standard
	Co	59	331676.0	1.2	**48.9632**	1.267	2.6	ug/L	252	Standard
	Ni	60	91787.9	1.2	**50.4717**	0.832	1.6	ug/L	192	Standard
	Cu	65	90254.4	2.3	**49.1926**	0.475	1.0	ug/L	141	Standard
	Zn	66	107316.4	1.1	**100.7774**	1.488	1.5	ug/L	491	Standard
>	**Ge**	72	496483.6	2.5				ug/L	515087	Standard
	As	75	55410.9	1.5	**51.1805**	0.552	1.1	ug/L	20	Standard
	Se	82	5728.8	0.9	**51.5315**	1.616	3.1	ug/L	15	Standard
	Se-1	77	4873.5	1.7	**66.4041**	0.559	0.8	ug/L	48	Standard
>	**Ga**	71	86.7	34.8				mg/L	90	Standard
	Rb	85	8242.2	2.9				ug/L	23	Standard
	Y	89	419418.3	1.5				ug/L	448510	Standard
>	**Rh**	103	96.7	18.2				ug/L	15	Standard
	Mo	98	373.5	3.6	**0.1304**	0.006	4.5	ug/L	11	Standard
	Ag	107	276030.5	2.3	**44.4706**	1.418	3.2	ug/L	134	Standard
	Cd	111	97190.1	1.0	**49.1769**	0.174	0.4	mg/L	7	Standard
	Cd	114	234963.3	0.8	**48.9150**	0.797	1.6	ug/L	16	Standard
>	**In**	115	564991.8	0.9				ug/L	611117	Standard
	Sn	118	1183.4	5.3	**0.1145**	0.011	9.2	ug/L	518	Standard
	Sb	123	221298.1	1.9	**50.7268**	1.390	2.7	ug/L	127	Standard
	Ba	135	302634.3	0.9	**158.5372**	1.746	1.1	ug/L	45	Standard
	Ce	140	460.0	11.5				ug/L	298	Standard
>	**Tb**	159	913205.8	1.2				ug/L	977942	Standard
	Ho	165	30.0	16.7				ug/L	12	Standard
	Tl	203	392737.2	0.1	**50.5926**	0.297	0.6	ug/L	31	Standard
	Tl	205	346685.2	1.3	**51.4296**	0.576	1.1	ug/L	20	Standard
	Pb	206	257242.2	1.9	**51.6050**	1.169	2.3	ug/L	286	Standard
	Pb	207	223447.5	1.6	**49.6960**	0.910	1.8	ug/L	257	Standard
	Pb	208	904356.3	0.4	**51.9882**	0.250	0.5	ug/L	956	Standard
	U	238	346838.0	0.8	**52.5438**	0.601	1.1	ug/L	17	Standard
>	**Bi**	209	513215.0	0.6				ug/L	557080	Standard

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Na	23	1.7	173.2	**9.7143**	16.817	173.1	mg/L	0	Standard
Mg	24	126816.9	1.1	**159.8003**	7.491	4.7	mg/L	32	Standard
K	39	205.0	11.2	**0.5135**	0.066	12.9	mg/L	30	Standard
Ca	43	170.0	5.9	**19.0779**	1.160	6.1	mg/L	48	Standard
Fe	54	195.8	12.4	**0.0303**	0.016	52.3	mg/L	159	Standard
Fe	57	350.0	26.8	**0.4863**	0.252	51.8	mg/L	195	Standard
> **Sc-1**	45	41809.3	4.0				mg/L	39543	Standard
Cl	35	38499.5	1.5				ug/L	27642	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	75812.6	2.8				ug/L	1647	Standard
P	31	25067.4	2.7				ug/L	15231	Standard
S	34	2465.2	4.5				ug/L	1845	Standard
Sr	88	373.3	2.8				ug/L	70	Standard
C	12	380.0	17.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	29.2	88.7				mg/L	12	Standard
Ho-1	165	30.0	16.7				mg/L	12	Standard
Er	166	16.7	69.3				mg/L	20	Standard
I	127	574284.0	7.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.828	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.388	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	92.452
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	92.126
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606073202SDL WG574571-02
Sample Date/Time: Tuesday, June 28, 2016 22:02:27
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80721.2	1.7				ug/L	81760	Standard
	Be	9	38.3	19.9	**0.0293**	0.007	25.3	ug/L	17	Standard
	Al	27	5438081.5	1.8	**35.7222**	0.611	1.7	ug/L	1410	Standard
	Sc	45	40838.3	2.8				ug/L	39543	Standard
	Ti	47	147.3	1.4	**0.4611**	0.014	3.1	ug/L	39	Standard
	V	51	1818.8	6.0	**0.0702**	0.022	30.8	ug/L	1415	Standard
	Cr	52	11457.0	0.2	**0.6827**	0.037	5.5	ug/L	6946	Standard
	Cr	53	6112.9	0.7	**7.0202**	0.190	2.7	ug/L	328	Standard
	Mn	55	27400.4	0.7	**4.3193**	0.101	2.3	ug/L	823	Standard
	Co	59	1102.0	5.1	**0.1343**	0.005	3.9	ug/L	252	Standard
	Ni	60	1029.7	4.0	**0.4727**	0.014	2.9	ug/L	192	Standard
	Cu	65	552.3	3.6	**0.2164**	0.013	6.0	ug/L	141	Standard
	Zn	66	17277.2	1.2	**15.8333**	0.273	1.7	ug/L	491	Standard
>	**Ge**	72	487411.0	2.0				ug/L	515087	Standard
	As	75	241.2	19.0	**0.2666**	0.040	15.0	ug/L	20	Standard
	Se	82	96.0	8.9	**0.7616**	0.066	8.7	ug/L	15	Standard
	Se-1	77	318.7	3.3	**3.7527**	0.181	4.8	ug/L	48	Standard
>	**Ga**	71	61.7	24.8				mg/L	90	Standard
	Rb	85	1698.4	2.7				ug/L	23	Standard
	Y	89	428587.6	1.1				ug/L	448510	Standard
>	**Rh**	103	33.3	37.7				ug/L	15	Standard
	Mo	98	99.2	5.5	**0.0185**	0.002	11.0	ug/L	11	Standard
	Ag	107	280.0	31.3	**0.0265**	0.013	49.6	ug/L	134	Standard
	Cd	111	57.2	23.8	**0.0245**	0.006	26.0	mg/L	7	Standard
	Cd	114	159.7	10.5	**0.0266**	0.003	11.9	ug/L	16	Standard
>	**In**	115	596430.5	0.6				ug/L	611117	Standard
	Sn	118	631.7	19.2	**0.0076**	0.022	282.9	ug/L	518	Standard
	Sb	123	2037.7	21.9	**0.4301**	0.100	23.2	ug/L	127	Standard
	Ba	135	42595.5	1.1	**21.1150**	0.168	0.8	ug/L	45	Standard
	Ce	140	145.0	24.9				ug/L	298	Standard
>	**Tb**	159	930009.8	1.5				ug/L	977942	Standard
	Ho	165	10.0					ug/L	12	Standard
	Tl	203	287.0	3.9	**0.0311**	0.001	3.3	ug/L	31	Standard
	Tl	205	238.3	17.8	**0.0321**	0.006	20.0	ug/L	20	Standard
	Pb	206	467.7	4.1	**0.0276**	0.003	10.6	ug/L	286	Standard
	Pb	207	403.3	2.0	**0.0292**	0.001	2.3	ug/L	257	Standard
	Pb	208	1685.7	2.5	**0.0338**	0.002	5.7	ug/L	956	Standard
	U	238	344.0	11.7	**0.0476**	0.005	11.0	ug/L	17	Standard
>	**Bi**	209	528241.9	1.3				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	25095.8	1.4	**32.3042**	0.912	2.8	mg/L	32	Standard
K	39	53.3	28.6	**0.0336**	0.053	158.1	mg/L	30	Standard
Ca	43	51.7	14.8	**2.2359**	0.907	40.5	mg/L	48	Standard
Fe	54	140.6	10.4	**-0.0136**	0.016	114.2	mg/L	159	Standard
Fe	57	253.3	13.1	**0.2033**	0.104	51.3	mg/L	195	Standard
> **Sc-1**	45	40838.3	2.8				mg/L	39543	Standard
Cl	35	38490.2	0.9				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	17116.3	3.1				ug/L	1647	Standard
P	31	18993.6	2.2				ug/L	15231	Standard
S	34	2316.8	7.4				ug/L	1845	Standard
Sr	88	121.7	17.1				ug/L	70	Standard
C	12	150.0	13.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	5.2	126.3				mg/L	12	Standard
Ho-1	165	10.0					mg/L	12	Standard
Er	166	30.0	57.7				mg/L	20	Standard
I	127	133767.9	0.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.729	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.627	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	97.597	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	94.823	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606073202SDL WG574571-02
Sample Date/Time: Tuesday, June 28, 2016 22:05:38
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76053.8	2.7				ug/L	81760	Standard
	Be	9	25.0	34.6	**0.0174**	0.009	54.5	ug/L	17	Standard
	Al	27	1128796.7	0.4	**7.8615**	0.198	2.5	ug/L	1410	Standard
	Sc	45	38686.0	0.8				ug/L	39543	Standard
	Ti	47	55.3	34.5	**0.0617**	0.078	127.2	ug/L	39	Standard
	V	51	1638.9	5.5	**0.0337**	0.013	38.4	ug/L	1415	Standard
	Cr	52	8717.5	0.5	**0.2193**	0.011	4.9	ug/L	6946	Standard
	Cr	53	2070.1	6.6	**2.0621**	0.160	7.7	ug/L	328	Standard
	Mn	55	6629.8	1.0	**0.8938**	0.008	0.9	ug/L	823	Standard
	Co	59	385.0	3.7	**0.0245**	0.002	8.1	ug/L	252	Standard
	Ni	60	384.7	1.7	**0.1032**	0.003	2.7	ug/L	192	Standard
	Cu	65	339.7	2.9	**0.0913**	0.005	5.2	ug/L	141	Standard
	Zn	66	9883.2	1.3	**8.3627**	0.143	1.7	ug/L	491	Standard
>	**Ge**	72	505388.6	0.3				ug/L	515087	Standard
	As	75	-13.0	254.9	**0.0286**	0.030	104.7	ug/L	20	Standard
	Se	82	27.4	29.7	**0.1233**	0.072	58.7	ug/L	15	Standard
	Se-1	77	108.0	8.5	**0.7425**	0.129	17.3	ug/L	48	Standard
>	**Ga**	71	48.3	46.6				mg/L	90	Standard
	Rb	85	370.0	8.2				ug/L	23	Standard
	Y	89	428119.2	2.9				ug/L	448510	Standard
>	**Rh**	103	23.3	44.6				ug/L	15	Standard
	Mo	98	45.2	4.1	**-0.0015**	0.001	60.8	ug/L	11	Standard
	Ag	107	113.3	16.4	**0.0016**	0.003	172.3	ug/L	134	Standard
	Cd	111	14.3	24.6	**0.0041**	0.002	39.1	mg/L	7	Standard
	Cd	114	49.9	58.5	**0.0052**	0.006	113.8	ug/L	16	Standard
>	**In**	115	579695.7	1.7				ug/L	611117	Standard
	Sn	118	626.7	2.3	**0.0098**	0.004	44.1	ug/L	518	Standard
	Sb	123	500.2	33.4	**0.0994**	0.039	39.6	ug/L	127	Standard
	Ba	135	8786.5	0.8	**4.4621**	0.051	1.1	ug/L	45	Standard
	Ce	140	53.3	19.5				ug/L	298	Standard
>	**Tb**	159	899038.1	0.5				ug/L	977942	Standard
	Ho	165	3.3	86.6				ug/L	12	Standard
	Tl	203	124.3	3.7	**0.0110**	0.001	5.1	ug/L	31	Standard
	Tl	205	108.3	13.3	**0.0136**	0.002	15.1	ug/L	20	Standard
	Pb	206	338.3	5.2	**0.0034**	0.004	109.0	ug/L	286	Standard
	Pb	207	309.3	7.0	**0.0098**	0.005	45.9	ug/L	257	Standard
	Pb	208	1266.0	2.0	**0.0114**	0.001	11.9	ug/L	956	Standard
	U	238	68.0	9.6	**0.0072**	0.001	13.2	ug/L	17	Standard
>	**Bi**	209	520681.9	0.4				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	5104.2	1.7	**6.8887**	0.170	2.5	mg/L	32	Standard
K	39	40.0	37.5	**-0.0032**	0.052	1630.6	mg/L	30	Standard
Ca	43	30.0	57.7	**-0.6841**	2.704	395.3	mg/L	48	Standard
Fe	54	149.1	25.4	**0.0007**	0.034	4947.2	mg/L	159	Standard
Fe	57	220.0	14.9	**0.1340**	0.108	80.4	mg/L	195	Standard
Sc-1	45	38686.0	0.8				mg/L	39543	Standard
Cl	35	39148.5	1.2				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	4957.5	4.0				ug/L	1647	Standard
P	31	18357.8	2.1				ug/L	15231	Standard
S	34	2318.5	4.4				ug/L	1845	Standard
Sr	88	78.3	18.4				ug/L	70	Standard
C	12	130.0	27.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.2	116.5				mg/L	12	Standard
Ho-1	165	3.3	86.6				mg/L	12	Standard
Er	166	16.7	91.7				mg/L	20	Standard
I	127	32523.3	5.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		93.021	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.117	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.858
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.466
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 22:08:51
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74027.2	2.8				ug/L	81760	Standard
	Be	9	46885.8	2.2	**52.1458**	1.090	2.1	ug/L	17	Standard
	Al	27	7258519.9	1.3	**52.0333**	2.108	4.1	ug/L	1410	Standard
	Sc	45	37711.9	1.9				ug/L	39543	Standard
	Ti	47	24276.8	0.9	**101.7561**	0.915	0.9	ug/L	39	Standard
	V	51	338117.2	0.9	**50.5811**	0.467	0.9	ug/L	1415	Standard
	Cr	52	344759.2	1.1	**50.6515**	0.612	1.2	ug/L	6946	Standard
	Cr	53	43998.8	1.8	**51.9886**	0.950	1.8	ug/L	328	Standard
	Mn	55	319756.8	1.7	**51.3453**	0.844	1.6	ug/L	823	Standard
	Co	59	342187.7	2.1	**50.8146**	1.023	2.0	ug/L	252	Standard
	Ni	60	91463.9	0.8	**50.5986**	0.401	0.8	ug/L	192	Standard
	Cu	65	92539.7	0.2	**50.7558**	0.132	0.3	ug/L	141	Standard
	Zn	66	54475.1	1.3	**51.0616**	0.732	1.4	ug/L	491	Standard
>	Ge	72	493368.3	0.1				ug/L	515087	Standard
	As	75	54361.0	0.4	**50.5191**	0.195	0.4	ug/L	20	Standard
	Se	82	5570.4	0.7	**50.3948**	0.327	0.6	ug/L	15	Standard
	Se-1	77	3889.2	2.7	**53.1789**	1.513	2.8	ug/L	48	Standard
>	Ga	71	56.7	13.5				mg/L	90	Standard
	Rb	85	710.0	9.2				ug/L	23	Standard
	Y	89	427120.1	2.2				ug/L	448510	Standard
>	Rh	103	20.0	50.0				ug/L	15	Standard
	Mo	98	255476.4	1.0	**100.3761**	0.479	0.5	ug/L	11	Standard
	Ag	107	311158.3	0.6	**49.2259**	0.757	1.5	ug/L	134	Standard
	Cd	111	98620.7	1.2	**49.0052**	0.618	1.3	mg/L	7	Standard
	Cd	114	238558.2	0.5	**48.7672**	0.251	0.5	ug/L	16	Standard
>	In	115	575337.5	0.9				ug/L	611117	Standard
	Sn	118	277257.2	0.9	**49.7064**	0.586	1.2	ug/L	518	Standard
	Sb	123	223054.4	0.8	**50.2070**	0.812	1.6	ug/L	127	Standard
	Ba	135	94954.3	0.7	**48.8337**	0.782	1.6	ug/L	45	Standard
	Ce	140	61.7	16.9				ug/L	298	Standard
>	Tb	159	913449.5	0.5				ug/L	977942	Standard
	Ho	165	10.0	86.6				ug/L	12	Standard
	Tl	203	397249.4	0.6	**50.3639**	0.352	0.7	ug/L	31	Standard
	Tl	205	354959.8	0.3	**51.8245**	0.065	0.1	ug/L	20	Standard
	Pb	206	256290.8	0.6	**50.5971**	0.273	0.5	ug/L	286	Standard
	Pb	207	233188.9	1.2	**51.0418**	0.565	1.1	ug/L	257	Standard
	Pb	208	935979.9	1.1	**52.9561**	0.623	1.2	ug/L	956	Standard
	U	238	344850.7	0.5	**51.4151**	0.322	0.6	ug/L	17	Standard
>	Bi	209	521458.9	0.2				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	3802.1	3.0	**5.2525**	0.237	4.5	mg/L	32	Standard
K	39	1311.7	9.2	**4.5102**	0.493	10.9	mg/L	30	Standard
Ca	43	78.3	7.4	**7.1225**	0.723	10.1	mg/L	48	Standard
Fe	54	5407.8	4.5	**4.9980**	0.312	6.2	mg/L	159	Standard
Fe	57	1643.4	4.4	**5.1911**	0.156	3.0	mg/L	195	Standard
> **Sc-1**	45	37711.9	1.9				mg/L	39543	Standard
Cl	35	36184.5	2.9				ug/L	27642	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	1690.1	2.4				ug/L	1647	Standard
P	31	19537.6	2.2				ug/L	15231	Standard
S	34	2665.2	5.3				ug/L	1845	Standard
Sr	88	80.0	12.5				ug/L	70	Standard
C	12	116.7	9.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	9.4	109.4				mg/L	12	Standard
Ho-1	165	10.0	86.6				mg/L	12	Standard
Er	166	13.3	43.3				mg/L	20	Standard
I	127	5821.1	15.1				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	104.292		
	Al	27	104.067		
	Sc	45			
	Ti	47	101.756		
	V	51	101.162		
	Cr	52	101.303		
	Cr	53			
	Mn	55	102.691		
	Co	59	101.629		
	Ni	60	101.197		
	Cu	65	101.512		
	Zn	66	102.123		
>	Ge	72		95.784	
	As	75	101.038		
	Se	82	100.790		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	100.376		
Ag	107	98.452		
Cd	111	98.010		
Cd	114			
In	115			94.145
Sn	118	99.413		
Sb	123	100.414		
Ba	135	97.667		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.728		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.912		
U	238	102.830		
Bi	209			93.606
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 22:12:02
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72720.8	1.4				ug/L	81760	Standard
	Be	9	31.7	9.1	**0.0261**	0.003	13.4	ug/L	17	Standard
	Al	27	3567.1	29.0	**0.0117**	0.008	67.2	ug/L	1410	Standard
	Sc	45	39132.1	1.1				ug/L	39543	Standard
	Ti	47	37.0	21.5	**-0.0116**	0.034	290.1	ug/L	39	Standard
	V	51	1125.9	7.5	**-0.0395**	0.013	33.1	ug/L	1415	Standard
	Cr	52	6280.0	4.7	**-0.1269**	0.043	33.9	ug/L	6946	Standard
	Cr	53	665.0	3.8	**0.4397**	0.027	6.1	ug/L	328	Standard
	Mn	55	716.0	7.9	**-0.0346**	0.009	26.9	ug/L	823	Standard
	Co	59	261.7	5.4	**0.0070**	0.002	26.9	ug/L	252	Standard
	Ni	60	220.7	25.5	**0.0158**	0.031	194.2	ug/L	192	Standard
	Cu	65	175.7	31.3	**0.0045**	0.030	664.0	ug/L	141	Standard
	Zn	66	494.7	12.2	**-0.3623**	0.056	15.6	ug/L	491	Standard
>	**Ge**	72	499522.9	0.5				ug/L	515087	Standard
	As	75	-22.4	199.4	**0.0197**	0.041	208.7	ug/L	20	Standard
	Se	82	18.1	44.1	**0.0430**	0.071	165.8	ug/L	15	Standard
	Se-1	77	56.7	13.4	**0.0566**	0.102	180.9	ug/L	48	Standard
>	**Ga**	71	45.0	38.5				mg/L	90	Standard
	Rb	85	31.7	45.6				ug/L	23	Standard
	Y	89	417360.5	0.9				ug/L	448510	Standard
>	**Rh**	103	6.7	114.6				ug/L	15	Standard
	Mo	98	287.6	23.9	**0.0927**	0.026	27.9	ug/L	11	Standard
	Ag	107	190.3	4.8	**0.0136**	0.002	11.9	ug/L	134	Standard
	Cd	111	25.8	62.0	**0.0098**	0.008	81.4	mg/L	7	Standard
	Cd	114	75.5	64.7	**0.0104**	0.010	96.5	ug/L	16	Standard
>	**In**	115	581386.0	1.0				ug/L	611117	Standard
	Sn	118	788.4	29.5	**0.0382**	0.041	108.2	ug/L	518	Standard
	Sb	123	553.2	30.8	**0.1105**	0.038	34.6	ug/L	127	Standard
	Ba	135	104.3	62.1	**0.0282**	0.034	119.2	ug/L	45	Standard
	Ce	140	15.0	88.2				ug/L	298	Standard
>	**Tb**	159	916886.1	2.0				ug/L	977942	Standard
	Ho	165	6.7	43.3				ug/L	12	Standard
	Tl	203	96.0	40.0	**0.0072**	0.005	66.3	ug/L	31	Standard
	Tl	205	80.0	25.0	**0.0092**	0.003	29.7	ug/L	20	Standard
	Pb	206	283.3	0.7	**-0.0085**	0.001	14.2	ug/L	286	Standard
	Pb	207	242.3	7.5	**-0.0058**	0.004	64.9	ug/L	257	Standard
	Pb	208	1066.3	4.7	**-0.0011**	0.002	176.0	ug/L	956	Standard
	U	238	68.3	24.9	**0.0070**	0.002	33.1	ug/L	17	Standard
>	**Bi**	209	530213.7	1.5				ug/L	557080	Standard

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Na	23	5.0	100.0	**32.2313**	32.195	99.9	mg/L	0	Standard
Mg	24	43.3	46.6	**0.0012**	0.027	2331.0	mg/L	32	Standard
K	39	38.3	41.9	**-0.0103**	0.056	538.4	mg/L	30	Standard
Ca	43	25.0	20.0	**-1.5137**	0.732	48.3	mg/L	48	Standard
Fe	54	136.0	18.8	**-0.0125**	0.025	197.8	mg/L	159	Standard
Fe	57	235.0	17.0	**0.1764**	0.130	73.9	mg/L	195	Standard
Sc-1	45	39132.1	1.1				mg/L	39543	Standard
Cl	35	35003.7	1.3				ug/L	27642	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1530.1	14.2				ug/L	1647	Standard
P	31	18486.3	1.6				ug/L	15231	Standard
S	34	2496.9	3.2				ug/L	1845	Standard
Sr	88	51.7	31.1				ug/L	70	Standard
C	12	86.7	52.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.5	5.0				mg/L	12	Standard
Ho-1	165	6.7	43.3				mg/L	12	Standard
Er	166	10.0	100.0				mg/L	20	Standard
I	127	4170.6	14.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.978	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.135
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.177
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606073202
Sample Date/Time: Tuesday, June 28, 2016 22:15:14
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76318.4	2.0				ug/L	81760	Standard
	Be	9	40.0	69.6	**0.0330**	0.029	88.9	ug/L	17	Standard
	Al	27	23571551.0	1.4	**163.8296**	2.147	1.3	ug/L	1410	Standard
	Sc	45	39020.2	3.0				ug/L	39543	Standard
	Ti	47	595.0	5.6	**2.3771**	0.145	6.1	ug/L	39	Standard
	V	51	1578.4	25.4	**0.0346**	0.061	176.4	ug/L	1415	Standard
	Cr	52	21713.5	1.1	**2.2571**	0.032	1.4	ug/L	6946	Standard
	Cr	53	25227.7	4.6	**30.1930**	1.400	4.6	ug/L	328	Standard
	Mn	55	113835.4	1.3	**18.5078**	0.247	1.3	ug/L	823	Standard
	Co	59	3991.2	2.2	**0.5722**	0.015	2.6	ug/L	252	Standard
	Ni	60	3905.8	1.2	**2.0985**	0.020	1.0	ug/L	192	Standard
	Cu	65	1542.7	2.9	**0.7718**	0.023	3.0	ug/L	141	Standard
	Zn	66	25635.3	1.1	**24.0224**	0.322	1.3	ug/L	491	Standard
>	**Ge**	72	484802.3	0.3				ug/L	515087	Standard
	As	75	911.4	10.9	**0.9016**	0.094	10.4	ug/L	20	Standard
	Se	82	285.6	1.4	**2.5161**	0.032	1.3	ug/L	15	Standard
	Se-1	77	1182.4	4.2	**15.9563**	0.701	4.4	ug/L	48	Standard
>	**Ga**	71	88.3	32.7				mg/L	90	Standard
	Rb	85	8777.5	4.2				ug/L	23	Standard
	Y	89	401864.9	0.9				ug/L	448510	Standard
>	**Rh**	103	95.0	19.0				ug/L	15	Standard
	Mo	98	789.3	4.8	**0.3176**	0.018	5.8	ug/L	11	Standard
	Ag	107	101.3	14.3	**0.0012**	0.002	197.6	ug/L	134	Standard
	Cd	111	81.6	8.8	**0.0411**	0.003	8.4	mg/L	7	Standard
	Cd	114	236.0	13.0	**0.0475**	0.007	15.0	ug/L	16	Standard
>	**In**	115	530144.7	1.0				ug/L	611117	Standard
	Sn	118	770.0	10.1	**0.0481**	0.014	28.6	ug/L	518	Standard
	Sb	123	728.9	13.4	**0.1651**	0.022	13.6	ug/L	127	Standard
	Ba	135	185424.0	0.3	**103.5140**	0.966	0.9	ug/L	45	Standard
	Ce	140	496.7	18.3				ug/L	298	Standard
>	**Tb**	159	867434.9	1.9				ug/L	977942	Standard
	Ho	165	20.0	0.0				ug/L	12	Standard
	Tl	203	239.3	4.0	**0.0278**	0.001	4.3	ug/L	31	Standard
	Tl	205	225.0	20.4	**0.0330**	0.007	22.5	ug/L	20	Standard
	Pb	206	582.0	1.5	**0.0598**	0.001	1.4	ug/L	286	Standard
	Pb	207	480.3	3.9	**0.0549**	0.005	9.4	ug/L	257	Standard
	Pb	208	1935.7	1.6	**0.0572**	0.003	4.8	ug/L	956	Standard
	U	238	1057.0	6.3	**0.1661**	0.010	5.7	ug/L	17	Standard
>	**Bi**	209	486031.1	0.8				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	123145.1	1.2	**166.1283**	3.309	2.0	mg/L	32	Standard
K	39	193.3	27.9	**0.5225**	0.193	37.0	mg/L	30	Standard
Ca	43	155.0	19.6	**18.5842**	5.220	28.1	mg/L	48	Standard
Fe	54	201.4	15.9	**0.0482**	0.034	70.8	mg/L	159	Standard
Fe	57	301.7	7.8	**0.4095**	0.108	26.4	mg/L	195	Standard
Sc-1	45	39020.2	3.0				mg/L	39543	Standard
Cl	35	36882.8	1.2				ug/L	27642	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	66321.6	2.9				ug/L	1647	Standard
P	31	23950.6	0.8				ug/L	15231	Standard
S	34	2285.2	3.2				ug/L	1845	Standard
Sr	88	326.7	6.4				ug/L	70	Standard
C	12	383.3	11.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	24.1	87.6				mg/L	12	Standard
Ho-1	165	20.0	0.0				mg/L	12	Standard
Er	166	53.3	28.6				mg/L	20	Standard
I	127	490270.4	8.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		93.344	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		94.121	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	86.750
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	87.246
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606076201
Sample Date/Time: Tuesday, June 28, 2016 22:18:25
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74725.5	1.6				ug/L	81760	Standard
	Be	9	33.3	56.8	**0.0272**	0.022	79.2	ug/L	17	Standard
	Al	27	1272215.4	1.6	**9.0180**	0.230	2.5	ug/L	1410	Standard
	Sc	45	40079.6	0.9				ug/L	39543	Standard
	Ti	47	73.0	21.4	**0.1312**	0.065	49.6	ug/L	39	Standard
	V	51	1912.1	11.7	**0.0708**	0.033	46.3	ug/L	1415	Standard
	Cr	52	9243.8	1.7	**0.2820**	0.015	5.4	ug/L	6946	Standard
	Cr	53	1550.1	16.6	**1.4381**	0.284	19.7	ug/L	328	Standard
	Mn	55	4050.6	51.7	**0.4818**	0.327	67.8	ug/L	823	Standard
	Co	59	576.0	42.1	**0.0513**	0.035	68.0	ug/L	252	Standard
	Ni	60	659.3	6.6	**0.2481**	0.023	9.5	ug/L	192	Standard
	Cu	65	493.7	5.0	**0.1712**	0.013	7.5	ug/L	141	Standard
	Zn	66	2294.8	5.3	**1.2839**	0.114	8.9	ug/L	491	Standard
>	**Ge**	72	510757.4	0.7				ug/L	515087	Standard
	As	75	-15.4	127.0	**0.0265**	0.018	66.6	ug/L	20	Standard
	Se	82	23.9	38.0	**0.0895**	0.079	87.8	ug/L	15	Standard
	Se-1	77	93.7	16.1	**0.5342**	0.193	36.2	ug/L	48	Standard
>	**Ga**	71	58.3	17.8				mg/L	90	Standard
	Rb	85	1476.7	6.6				ug/L	23	Standard
	Y	89	432514.2	1.7				ug/L	448510	Standard
>	**Rh**	103	26.7	39.0				ug/L	15	Standard
	Mo	98	146.0	48.2	**0.0371**	0.027	72.5	ug/L	11	Standard
	Ag	107	112.7	13.4	**0.0013**	0.002	181.1	ug/L	134	Standard
	Cd	111	43.2	14.9	**0.0182**	0.003	18.1	mg/L	7	Standard
	Cd	114	109.3	34.7	**0.0170**	0.007	43.8	ug/L	16	Standard
>	**In**	115	586396.8	0.9				ug/L	611117	Standard
	Sn	118	771.7	15.6	**0.0341**	0.022	63.3	ug/L	518	Standard
	Sb	123	236.4	15.7	**0.0394**	0.008	21.0	ug/L	127	Standard
	Ba	135	3173.0	2.9	**1.5769**	0.056	3.5	ug/L	45	Standard
	Ce	140	2270.2	3.3				ug/L	298	Standard
>	**Tb**	159	916697.6	0.7				ug/L	977942	Standard
	Ho	165	490.0	12.4				ug/L	12	Standard
	Tl	203	130.7	10.3	**0.0114**	0.002	13.6	ug/L	31	Standard
	Tl	205	215.0	77.4	**0.0282**	0.023	82.9	ug/L	20	Standard
	Pb	206	395.3	3.6	**0.0126**	0.003	22.5	ug/L	286	Standard
	Pb	207	368.7	19.2	**0.0207**	0.015	70.3	ug/L	257	Standard
	Pb	208	1630.7	27.1	**0.0295**	0.024	80.4	ug/L	956	Standard
	U	238	158.7	69.5	**0.0200**	0.016	79.0	ug/L	17	Standard
>	**Bi**	209	534609.1	0.7				ug/L	557080	Standard

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Na	23	5.0	100.0	**31.5470**	31.355	99.4	mg/L	0	Standard
Mg	24	598.3	11.5	**0.7287**	0.091	12.5	mg/L	32	Standard
K	39	176.7	18.2	**0.4475**	0.107	24.0	mg/L	30	Standard
Ca	43	93.3	48.6	**8.6233**	6.782	78.6	mg/L	48	Standard
Fe	54	114.2	15.8	**-0.0351**	0.016	46.3	mg/L	159	Standard
Fe	57	271.7	7.4	**0.2806**	0.074	26.3	mg/L	195	Standard
> **Sc-1**	45	40079.6	0.9				mg/L	39543	Standard
Cl	35	37059.3	1.9				ug/L	27642	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	3193.7	9.3				ug/L	1647	Standard
P	31	19133.7	1.0				ug/L	15231	Standard
S	34	2435.2	3.0				ug/L	1845	Standard
Sr	88	116.7	19.8				ug/L	70	Standard
C	12	110.0	24.1				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	699.7	7.7				mg/L	12	Standard
Ho-1	165	490.0	12.4				mg/L	12	Standard
Er	166	563.3	4.5				mg/L	20	Standard
I	127	24296.3	37.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.396	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.159	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.955
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.966
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606138001
Sample Date/Time: Tuesday, June 28, 2016 22:21:37
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79317.1	2.1				ug/L	81760	Standard
	Be	9	923.4	3.6	**0.9491**	0.046	4.8	ug/L	17	Standard
	Al	27	22322355.7	1.2	**149.2842**	1.816	1.2	ug/L	1410	Standard
	Sc	45	50147.9	2.6				ug/L	39543	Standard
	Ti	47	26223.7	0.7	**107.9697**	0.846	0.8	ug/L	39	Standard
	V	51	127306.3	1.5	**18.5751**	0.291	1.6	ug/L	1415	Standard
	Cr	52	100654.9	1.1	**13.7705**	0.145	1.1	ug/L	6946	Standard
	Cr	53	12865.5	4.5	**14.6884**	0.707	4.8	ug/L	328	Standard
	Mn	55	4304305.9	0.4	**680.6871**	4.381	0.6	ug/L	823	Standard
	Co	59	49359.3	0.1	**7.1725**	0.024	0.3	ug/L	252	Standard
	Ni	60	30538.1	1.5	**16.5228**	0.280	1.7	ug/L	192	Standard
	Cu	65	24616.6	0.6	**13.1942**	0.101	0.8	ug/L	141	Standard
	Zn	66	126791.0	1.1	**117.7932**	1.321	1.1	ug/L	491	Standard
>	**Ge**	72	502314.8	0.3				ug/L	515087	Standard
	As	75	6358.7	2.6	**5.8397**	0.152	2.6	ug/L	20	Standard
	Se	82	52.0	15.4	**0.3436**	0.072	20.9	ug/L	15	Standard
	Se-1	77	111.0	6.5	**0.7919**	0.097	12.2	ug/L	48	Standard
>	**Ga**	71	15155.9	0.2				mg/L	90	Standard
	Rb	85	244761.5	1.6				ug/L	23	Standard
	Y	89	581808.2	2.1				ug/L	448510	Standard
>	**Rh**	103	81.7	28.3				ug/L	15	Standard
	Mo	98	7400.1	1.4	**2.8571**	0.099	3.5	ug/L	11	Standard
	Ag	107	359.7	8.1	**0.0401**	0.005	12.7	ug/L	134	Standard
	Cd	111	226.0	4.7	**0.1082**	0.006	6.0	mg/L	7	Standard
	Cd	114	572.5	10.7	**0.1110**	0.014	12.9	ug/L	16	Standard
>	**In**	115	581977.2	2.1				ug/L	611117	Standard
	Sn	118	1150.0	8.4	**0.1021**	0.013	12.6	ug/L	518	Standard
	Sb	123	1041.4	3.0	**0.2191**	0.011	5.1	ug/L	127	Standard
	Ba	135	264934.9	0.4	**134.7601**	2.267	1.7	ug/L	45	Standard
	Ce	140	872470.7	0.6				ug/L	298	Standard
>	**Tb**	159	944063.2	1.7				ug/L	977942	Standard
	Ho	165	13182.4	3.3				ug/L	12	Standard
	Tl	203	1500.7	3.5	**0.1808**	0.008	4.2	ug/L	31	Standard
	Tl	205	1268.4	3.4	**0.1783**	0.007	4.2	ug/L	20	Standard
	Pb	206	85066.5	1.3	**16.3322**	0.328	2.0	ug/L	286	Standard
	Pb	207	70090.8	1.2	**14.9184**	0.287	1.9	ug/L	257	Standard
	Pb	208	293052.1	0.7	**16.1237**	0.113	0.7	ug/L	956	Standard
	U	238	6791.5	1.5	**0.9844**	0.021	2.1	ug/L	17	Standard
>	**Bi**	209	534845.3	0.8				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	2491.9	2.3	**2.5590**	0.057	2.2	mg/L	32	Standard
K	39	860.0	5.6	**2.1528**	0.183	8.5	mg/L	30	Standard
Ca	43	481.7	3.2	**52.3892**	3.048	5.8	mg/L	48	Standard
Fe	54	14060.9	4.3	**9.8944**	0.202	2.0	mg/L	159	Standard
Fe	57	4057.2	4.0	**10.1835**	0.599	5.9	mg/L	195	Standard
> **Sc-1**	45	50147.9	2.6				mg/L	39543	Standard
Cl	35	34061.6	1.3				ug/L	27642	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	3443.7	4.1				ug/L	1647	Standard
P	31	33871.2	1.5				ug/L	15231	Standard
S	34	2461.9	2.1				ug/L	1845	Standard
Sr	88	305.0	8.2				ug/L	70	Standard
C	12	206.7	29.6				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	40.0	50.0				mg/L	0	Standard
Dy	164	22121.1	1.8				mg/L	12	Standard
Ho-1	165	13182.4	3.3				mg/L	12	Standard
Er	166	12021.4	0.9				mg/L	20	Standard
I	127	158658.4	11.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.012	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.520	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.232
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.009
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	

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Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606138002
Sample Date/Time: Tuesday, June 28, 2016 22:24:48
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80508.4	1.6				ug/L	81760	Standard
	Be	9	865.0	8.5	**0.8749**	0.075	8.6	ug/L	17	Standard
	Al	27	22868958.8	1.7	**150.6704**	2.885	1.9	ug/L	1410	Standard
	Sc	45	49400.4	2.8				ug/L	39543	Standard
	Ti	47	23164.7	1.4	**96.5938**	1.528	1.6	ug/L	39	Standard
	V	51	124883.8	1.8	**18.4559**	0.304	1.6	ug/L	1415	Standard
	Cr	52	103466.8	1.3	**14.3825**	0.239	1.7	ug/L	6946	Standard
	Cr	53	12758.7	1.5	**14.7559**	0.244	1.7	ug/L	328	Standard
	Mn	55	4407919.2	0.3	**706.0993**	3.755	0.5	ug/L	823	Standard
	Co	59	51228.1	1.3	**7.5421**	0.111	1.5	ug/L	252	Standard
	Ni	60	30969.0	1.2	**16.9756**	0.235	1.4	ug/L	192	Standard
	Cu	65	25034.7	0.7	**13.5947**	0.118	0.9	ug/L	141	Standard
	Zn	66	152662.0	1.2	**143.8470**	1.906	1.3	ug/L	491	Standard
>	**Ge**	72	495895.8	0.2				ug/L	515087	Standard
	As	75	6401.6	1.0	**5.9544**	0.051	0.9	ug/L	20	Standard
	Se	82	65.6	3.6	**0.4728**	0.020	4.3	ug/L	15	Standard
	Se-1	77	120.3	12.9	**0.9403**	0.215	22.9	ug/L	48	Standard
>	**Ga**	71	15282.7	1.5				mg/L	90	Standard
	Rb	85	248664.6	2.3				ug/L	23	Standard
	Y	89	598252.6	1.6				ug/L	448510	Standard
>	**Rh**	103	61.7	4.7				ug/L	15	Standard
	Mo	98	8173.4	1.7	**3.0442**	0.032	1.1	ug/L	11	Standard
	Ag	107	334.0	5.8	**0.0342**	0.003	8.9	ug/L	134	Standard
	Cd	111	175.2	4.5	**0.0802**	0.004	5.0	mg/L	7	Standard
	Cd	114	424.7	8.5	**0.0779**	0.007	8.4	ug/L	16	Standard
>	**In**	115	603234.5	0.7				ug/L	611117	Standard
	Sn	118	1006.7	2.2	**0.0706**	0.004	6.0	ug/L	518	Standard
	Sb	123	981.2	4.8	**0.1979**	0.011	5.8	ug/L	127	Standard
	Ba	135	265403.3	0.1	**130.2141**	0.915	0.7	ug/L	45	Standard
	Ce	140	904460.6	1.2				ug/L	298	Standard
>	**Tb**	159	953156.2	1.3				ug/L	977942	Standard
	Ho	165	13287.5	2.7				ug/L	12	Standard
	Tl	203	1338.1	1.2	**0.1623**	0.004	2.2	ug/L	31	Standard
	Tl	205	1380.1	21.0	**0.1966**	0.045	23.0	ug/L	20	Standard
	Pb	206	85143.9	1.2	**16.5139**	0.424	2.6	ug/L	286	Standard
	Pb	207	70337.2	0.8	**15.1235**	0.335	2.2	ug/L	257	Standard
	Pb	208	299122.5	0.5	**16.6275**	0.345	2.1	ug/L	956	Standard
	U	238	7037.6	3.1	**1.0308**	0.048	4.7	ug/L	17	Standard
>	**Bi**	209	529543.6	1.6				ug/L	557080	Standard

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Na	23	5.0	0.0	**25.7128**	0.720	2.8	mg/L	0	Standard
Mg	24	2751.9	1.6	**2.8760**	0.054	1.9	mg/L	32	Standard
K	39	820.0	12.4	**2.0772**	0.274	13.2	mg/L	30	Standard
Ca	43	460.0	15.1	**50.7618**	10.089	19.9	mg/L	48	Standard
Fe	54	14800.2	1.5	**10.5924**	0.445	4.2	mg/L	159	Standard
Fe	57	4213.9	2.7	**10.7740**	0.623	5.8	mg/L	195	Standard
Sc-1	45	49400.4	2.8				mg/L	39543	Standard
Cl	35	34900.8	0.4				ug/L	27642	Standard
Kr	83	3.0	0.0				ug/L	2	Standard
Br	81	3303.7	3.6				ug/L	1647	Standard
P	31	33101.1	2.4				ug/L	15231	Standard
S	34	2478.5	3.3				ug/L	1845	Standard
Sr	88	288.3	13.9				ug/L	70	Standard
C	12	206.7	17.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	53.3	65.8				mg/L	0	Standard
Dy	164	23538.0	3.9				mg/L	12	Standard
Ho-1	165	13287.5	2.7				mg/L	12	Standard
Er	166	12271.6	4.5				mg/L	20	Standard
I	127	174817.7	8.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		98.469	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.274	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.710
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.057
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606138106
Sample Date/Time: Tuesday, June 28, 2016 22:28:00
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75884.6	2.0				ug/L	81760	Standard
	Be	9	26.7	10.8	**0.0192**	0.003	17.5	ug/L	17	Standard
	Al	27	26057.5	7.4	**0.1676**	0.010	6.0	ug/L	1410	Standard
	Sc	45	39473.0	0.8				ug/L	39543	Standard
	Ti	47	39.3	21.6	**-0.0051**	0.035	681.9	ug/L	39	Standard
	V	51	1622.1	7.1	**0.0295**	0.017	56.8	ug/L	1415	Standard
	Cr	52	8616.4	0.2	**0.1952**	0.003	1.5	ug/L	6946	Standard
	Cr	53	775.0	5.7	**0.5518**	0.051	9.2	ug/L	328	Standard
	Mn	55	5073.2	5.2	**0.6432**	0.042	6.5	ug/L	823	Standard
	Co	59	305.3	2.9	**0.0126**	0.001	10.1	ug/L	252	Standard
	Ni	60	336.7	8.9	**0.0759**	0.016	21.2	ug/L	192	Standard
	Cu	65	1953.8	0.6	**0.9495**	0.006	0.6	ug/L	141	Standard
	Zn	66	2327.2	0.6	**1.3204**	0.013	1.0	ug/L	491	Standard
>	**Ge**	72	509122.8	0.0				ug/L	515087	Standard
	As	75	-29.7	15.9	**0.0136**	0.004	31.1	ug/L	20	Standard
	Se	82	19.1	15.2	**0.0489**	0.026	52.3	ug/L	15	Standard
	Se-1	77	54.3	12.9	**0.0108**	0.094	874.4	ug/L	48	Standard
>	**Ga**	71	61.7	23.4				mg/L	90	Standard
	Rb	85	193.3	9.8				ug/L	23	Standard
	Y	89	438080.9	2.7				ug/L	448510	Standard
>	**Rh**	103	13.3	94.4				ug/L	15	Standard
	Mo	98	1348.1	2.9	**0.4917**	0.018	3.6	ug/L	11	Standard
	Ag	107	96.0	6.3	**-0.0016**	0.001	59.2	ug/L	134	Standard
	Cd	111	29.0	10.6	**0.0110**	0.001	13.2	mg/L	7	Standard
	Cd	114	62.4	58.3	**0.0074**	0.007	97.2	ug/L	16	Standard
>	**In**	115	596825.6	0.5				ug/L	611117	Standard
	Sn	118	1153.4	11.3	**0.0978**	0.023	23.4	ug/L	518	Standard
	Sb	123	161.5	18.7	**0.0222**	0.007	29.7	ug/L	127	Standard
	Ba	135	505.0	6.7	**0.2253**	0.016	7.0	ug/L	45	Standard
	Ce	140	233.3	21.5				ug/L	298	Standard
>	**Tb**	159	918727.2	0.8				ug/L	977942	Standard
	Ho	165	6.7	43.3				ug/L	12	Standard
	Tl	203	77.0	15.3	**0.0048**	0.001	30.3	ug/L	31	Standard
	Tl	205	70.0	7.1	**0.0078**	0.001	10.7	ug/L	20	Standard
	Pb	206	353.0	8.2	**0.0052**	0.006	124.2	ug/L	286	Standard
	Pb	207	316.0	5.0	**0.0102**	0.004	41.5	ug/L	257	Standard
	Pb	208	1279.0	2.9	**0.0109**	0.002	20.1	ug/L	956	Standard
	U	238	66.0	9.1	**0.0067**	0.001	13.4	ug/L	17	Standard
>	**Bi**	209	529518.6	1.3				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.6931**	18.512	173.1	mg/L	0	Standard
Mg	24	105.0	31.2	**0.0830**	0.044	52.9	mg/L	32	Standard
K	39	31.7	9.1	**-0.0342**	0.011	31.1	mg/L	30	Standard
Ca	43	30.0	66.7	**-0.7662**	3.081	402.2	mg/L	48	Standard
Fe	54	132.0	13.9	**-0.0174**	0.016	93.3	mg/L	159	Standard
Fe	57	243.3	16.5	**0.1990**	0.142	71.4	mg/L	195	Standard
Sc-1	45	39473.0	0.8				mg/L	39543	Standard
Cl	35	35269.0	1.4				ug/L	27642	Standard
Kr	83	2.3	107.9				ug/L	2	Standard
Br	81	2306.8	8.4				ug/L	1647	Standard
P	31	16594.1	0.5				ug/L	15231	Standard
S	34	2131.8	6.4				ug/L	1845	Standard
Sr	88	88.3	36.8				ug/L	70	Standard
C	12	163.3	23.2				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	9.0	110.6				mg/L	12	Standard
Ho-1	165	6.7	43.3				mg/L	12	Standard
Er	166	20.0	0.0				mg/L	20	Standard
I	127	8462.7	47.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		92.814	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.842	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	97.661	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	95.052	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606139301
Sample Date/Time: Tuesday, June 28, 2016 22:31:11
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75653.4	0.9				ug/L	81760	Standard
	Be	9	36.7	15.7	**0.0301**	0.006	19.8	ug/L	17	Standard
	Al	27	730309.3	1.1	**5.1065**	0.100	1.9	ug/L	1410	Standard
	Sc	45	40455.6	1.8				ug/L	39543	Standard
	Ti	47	3049.6	0.8	**12.0214**	0.208	1.7	ug/L	39	Standard
	V	51	20044.5	0.4	**2.6590**	0.030	1.1	ug/L	1415	Standard
	Cr	52	14783.9	1.2	**1.0533**	0.031	2.9	ug/L	6946	Standard
	Cr	53	1555.1	3.4	**1.4185**	0.043	3.0	ug/L	328	Standard
	Mn	55	57374.1	1.8	**8.6446**	0.070	0.8	ug/L	823	Standard
	Co	59	1706.1	0.5	**0.2099**	0.002	1.1	ug/L	252	Standard
	Ni	60	1958.1	2.2	**0.9282**	0.028	3.1	ug/L	192	Standard
	Cu	65	11994.7	1.9	**6.1812**	0.063	1.0	ug/L	141	Standard
	Zn	66	20161.1	0.6	**17.4500**	0.168	1.0	ug/L	491	Standard
>	**Ge**	72	518413.1	1.4				ug/L	515087	Standard
	As	75	157.8	25.1	**0.1801**	0.037	20.6	ug/L	20	Standard
	Se	82	23.1	48.8	**0.0801**	0.098	121.9	ug/L	15	Standard
	Se-1	77	63.3	7.3	**0.1169**	0.069	59.2	ug/L	48	Standard
>	**Ga**	71	505.0	4.5				mg/L	90	Standard
	Rb	85	7842.0	2.0				ug/L	23	Standard
	Y	89	431479.5	0.9				ug/L	448510	Standard
>	**Rh**	103	15.0	100.0				ug/L	15	Standard
	Mo	98	468.3	2.4	**0.1592**	0.005	3.4	ug/L	11	Standard
	Ag	107	177.3	7.3	**0.0110**	0.002	18.6	ug/L	134	Standard
	Cd	111	203.8	5.3	**0.0952**	0.005	5.7	mg/L	7	Standard
	Cd	114	524.4	13.4	**0.0989**	0.013	13.5	ug/L	16	Standard
>	**In**	115	593880.8	0.6				ug/L	611117	Standard
	Sn	118	2320.2	4.6	**0.3018**	0.016	5.3	ug/L	518	Standard
	Sb	123	1520.6	3.7	**0.3188**	0.011	3.4	ug/L	127	Standard
	Ba	135	21231.5	1.4	**10.5571**	0.086	0.8	ug/L	45	Standard
	Ce	140	21453.5	1.1				ug/L	298	Standard
>	**Tb**	159	941666.6	1.6				ug/L	977942	Standard
	Ho	165	511.7	11.3				ug/L	12	Standard
	Tl	203	106.0	9.9	**0.0082**	0.001	16.0	ug/L	31	Standard
	Tl	205	85.0	31.1	**0.0097**	0.004	38.6	ug/L	20	Standard
	Pb	206	17358.9	1.4	**3.2466**	0.044	1.3	ug/L	286	Standard
	Pb	207	14395.2	1.0	**2.9852**	0.035	1.2	ug/L	257	Standard
	Pb	208	59327.6	0.5	**3.1814**	0.019	0.6	ug/L	956	Standard
	U	238	205.3	8.1	**0.0266**	0.002	9.0	ug/L	17	Standard
>	**Bi**	209	540531.5	0.2				ug/L	557080	Standard

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Na	23	3.3	173.2	**21.0062**	36.375	173.2	mg/L	0	Standard
Mg	24	250.0	13.1	**0.2677**	0.037	13.9	mg/L	32	Standard
K	39	110.0	28.4	**0.2220**	0.104	47.1	mg/L	30	Standard
Ca	43	51.7	20.1	**2.3448**	1.674	71.4	mg/L	48	Standard
Fe	54	595.3	12.6	**0.3888**	0.057	14.6	mg/L	159	Standard
Fe	57	388.3	11.5	**0.6585**	0.168	25.5	mg/L	195	Standard
> **Sc-1**	45	40455.6	1.8				mg/L	39543	Standard
Cl	35	34669.0	0.4				ug/L	27642	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	3693.8	7.2				ug/L	1647	Standard
P	31	17358.3	1.4				ug/L	15231	Standard
S	34	2180.2	7.0				ug/L	1845	Standard
Sr	88	80.0	38.0				ug/L	70	Standard
C	12	186.7	21.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	0	Standard
Dy	164	723.1	8.6				mg/L	12	Standard
Ho-1	165	511.7	11.3				mg/L	12	Standard
Er	166	493.3	12.2				mg/L	20	Standard
I	127	46309.3	8.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.531	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.646	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.180
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.029
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606139302
Sample Date/Time: Tuesday, June 28, 2016 22:34:23
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76487.6	0.6				ug/L	81760	Standard
	Be	9	26.7	57.3	**0.0190**	0.016	86.6	ug/L	17	Standard
	Al	27	422387.9	1.8	**2.9148**	0.060	2.0	ug/L	1410	Standard
	Sc	45	40846.7	1.8				ug/L	39543	Standard
	Ti	47	1809.8	2.0	**7.1474**	0.208	2.9	ug/L	39	Standard
	V	51	13250.7	0.8	**1.7088**	0.032	1.8	ug/L	1415	Standard
	Cr	52	14384.8	1.8	**1.0188**	0.008	0.8	ug/L	6946	Standard
	Cr	53	1510.1	5.3	**1.3859**	0.061	4.4	ug/L	328	Standard
	Mn	55	44577.2	1.1	**6.7600**	0.108	1.6	ug/L	823	Standard
	Co	59	1155.0	3.6	**0.1339**	0.008	5.8	ug/L	252	Standard
	Ni	60	2034.1	3.4	**0.9799**	0.027	2.8	ug/L	192	Standard
	Cu	65	13331.2	1.6	**6.9601**	0.242	3.5	ug/L	141	Standard
	Zn	66	18863.7	1.1	**16.4635**	0.229	1.4	ug/L	491	Standard
>	**Ge**	72	512762.7	2.0				ug/L	515087	Standard
	As	75	120.3	20.8	**0.1481**	0.025	16.6	ug/L	20	Standard
	Se	82	22.7	50.1	**0.0800**	0.103	128.5	ug/L	15	Standard
	Se-1	77	66.7	3.8	**0.1706**	0.046	27.2	ug/L	48	Standard
>	**Ga**	71	313.3	7.5				mg/L	90	Standard
	Rb	85	9062.7	6.6				ug/L	23	Standard
	Y	89	438095.5	1.1				ug/L	448510	Standard
>	**Rh**	103	11.7	65.5				ug/L	15	Standard
	Mo	98	749.7	5.2	**0.2622**	0.015	5.9	ug/L	11	Standard
	Ag	107	250.0	4.9	**0.0215**	0.002	9.3	ug/L	134	Standard
	Cd	111	268.7	5.4	**0.1246**	0.007	5.7	mg/L	7	Standard
	Cd	114	686.3	8.9	**0.1290**	0.012	9.4	ug/L	16	Standard
>	**In**	115	602735.5	0.4				ug/L	611117	Standard
	Sn	118	2001.8	9.6	**0.2412**	0.032	13.1	ug/L	518	Standard
	Sb	123	1551.7	1.3	**0.3206**	0.005	1.5	ug/L	127	Standard
	Ba	135	10171.4	0.7	**4.9702**	0.026	0.5	ug/L	45	Standard
	Ce	140	10203.4	3.4				ug/L	298	Standard
>	**Tb**	159	943711.5	1.3				ug/L	977942	Standard
	Ho	165	201.7	2.9				ug/L	12	Standard
	Tl	203	136.7	14.9	**0.0117**	0.003	21.7	ug/L	31	Standard
	Tl	205	126.7	4.6	**0.0153**	0.001	5.0	ug/L	20	Standard
	Pb	206	13666.8	0.5	**2.5119**	0.014	0.6	ug/L	286	Standard
	Pb	207	11351.3	1.7	**2.3133**	0.023	1.0	ug/L	257	Standard
	Pb	208	47777.6	0.4	**2.5197**	0.028	1.1	ug/L	956	Standard
	U	238	179.7	5.5	**0.0226**	0.001	5.2	ug/L	17	Standard
>	**Bi**	209	546981.3	0.8				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	296.7	10.2	**0.3250**	0.036	11.0	mg/L	32	Standard
K	39	131.7	25.3	**0.2905**	0.116	40.0	mg/L	30	Standard
Ca	43	28.3	44.4	**-1.1569**	1.919	165.9	mg/L	48	Standard
Fe	54	412.0	10.8	**0.2238**	0.038	16.8	mg/L	159	Standard
Fe	57	300.0	5.8	**0.3560**	0.058	16.2	mg/L	195	Standard
> **Sc-1**	45	40846.7	1.8				mg/L	39543	Standard
Cl	35	35351.2	2.0				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	2080.1	6.1				ug/L	1647	Standard
P	31	17501.8	0.9				ug/L	15231	Standard
S	34	2256.8	4.2				ug/L	1845	Standard
Sr	88	83.3	24.2				ug/L	70	Standard
C	12	216.7	41.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	66.7				mg/L	0	Standard
Dy	164	374.4	8.4				mg/L	12	Standard
Ho-1	165	201.7	2.9				mg/L	12	Standard
Er	166	186.7	17.2				mg/L	20	Standard
I	127	9588.0	8.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.551	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.549	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.629
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.187
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606139303
Sample Date/Time: Tuesday, June 28, 2016 22:37:34
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75224.7	2.8				ug/L	81760	Standard
	Be	9	26.7	47.2	**0.0195**	0.014	72.7	ug/L	17	Standard
	Al	27	335427.7	1.4	**2.3514**	0.039	1.7	ug/L	1410	Standard
	Sc	45	40873.4	3.2				ug/L	39543	Standard
	Ti	47	1306.7	3.3	**5.2014**	0.227	4.4	ug/L	39	Standard
	V	51	16739.3	1.3	**2.2527**	0.061	2.7	ug/L	1415	Standard
	Cr	52	12212.3	0.6	**0.7342**	0.019	2.6	ug/L	6946	Standard
	Cr	53	1208.4	9.2	**1.0637**	0.123	11.6	ug/L	328	Standard
	Mn	55	30356.4	1.8	**4.6331**	0.125	2.7	ug/L	823	Standard
	Co	59	971.0	0.7	**0.1098**	0.003	2.3	ug/L	252	Standard
	Ni	60	1423.4	2.9	**0.6666**	0.013	2.0	ug/L	192	Standard
	Cu	65	8494.4	2.1	**4.4744**	0.140	3.1	ug/L	141	Standard
	Zn	66	12099.5	0.6	**10.4446**	0.200	1.9	ug/L	491	Standard
>	**Ge**	72	504506.4	1.3				ug/L	515087	Standard
	As	75	95.4	18.1	**0.1269**	0.016	12.6	ug/L	20	Standard
	Se	82	22.1	16.3	**0.0773**	0.034	44.4	ug/L	15	Standard
	Se-1	77	59.3	9.3	**0.0847**	0.065	76.5	ug/L	48	Standard
>	**Ga**	71	286.7	13.3				mg/L	90	Standard
	Rb	85	4860.8	3.1				ug/L	23	Standard
	Y	89	447487.9	1.5				ug/L	448510	Standard
>	**Rh**	103	10.0	50.0				ug/L	15	Standard
	Mo	98	335.7	2.2	**0.1056**	0.003	3.1	ug/L	11	Standard
	Ag	107	149.3	7.8	**0.0061**	0.002	27.6	ug/L	134	Standard
	Cd	111	92.8	5.9	**0.0407**	0.003	6.7	mg/L	7	Standard
	Cd	114	275.4	18.0	**0.0483**	0.009	19.4	ug/L	16	Standard
>	**In**	115	608945.1	0.4				ug/L	611117	Standard
	Sn	118	2160.2	6.9	**0.2646**	0.024	9.0	ug/L	518	Standard
	Sb	123	1475.9	3.1	**0.3011**	0.011	3.5	ug/L	127	Standard
	Ba	135	7298.8	1.0	**3.5230**	0.049	1.4	ug/L	45	Standard
	Ce	140	7186.7	3.0				ug/L	298	Standard
>	**Tb**	159	941207.0	0.6				ug/L	977942	Standard
	Ho	165	175.0	29.8				ug/L	12	Standard
	Tl	203	127.3	10.7	**0.0108**	0.002	16.0	ug/L	31	Standard
	Tl	205	91.7	22.0	**0.0106**	0.003	26.7	ug/L	20	Standard
	Pb	206	10382.9	0.6	**1.9175**	0.012	0.6	ug/L	286	Standard
	Pb	207	8724.8	0.9	**1.7876**	0.028	1.6	ug/L	257	Standard
	Pb	208	36599.7	1.1	**1.9407**	0.035	1.8	ug/L	956	Standard
	U	238	138.7	9.6	**0.0170**	0.002	11.7	ug/L	17	Standard
>	**Bi**	209	540229.2	0.6				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	201.7	23.0	**0.2027**	0.061	30.0	mg/L	32	Standard
K	39	85.0	15.6	**0.1365**	0.043	31.8	mg/L	30	Standard
Ca	43	46.7	34.4	**1.4659**	2.107	143.8	mg/L	48	Standard
Fe	54	348.6	7.5	**0.1680**	0.018	11.0	mg/L	159	Standard
Fe	57	325.0	9.4	**0.4364**	0.086	19.7	mg/L	195	Standard
> **Sc-1**	45	40873.4	3.2				mg/L	39543	Standard
Cl	35	35045.8	0.8				ug/L	27642	Standard
Kr	83	2.3	107.9				ug/L	2	Standard
Br	81	1873.4	9.4				ug/L	1647	Standard
P	31	17319.9	1.5				ug/L	15231	Standard
S	34	2126.8	6.5				ug/L	1845	Standard
Sr	88	78.3	28.8				ug/L	70	Standard
C	12	160.0	25.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	78.1				mg/L	0	Standard
Dy	164	223.9	25.3				mg/L	12	Standard
Ho-1	165	175.0	29.8				mg/L	12	Standard
Er	166	126.7	25.4				mg/L	20	Standard
I	127	7363.5	5.1				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		92.007	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.946	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606139303
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.645
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.975
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606139304
Sample Date/Time: Tuesday, June 28, 2016 22:40:46
Number of Replicates: 3
Autosampler Position: 346
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74628.4	2.8				ug/L	81760	Standard
	Be	9	20.0	25.0	**0.0122**	0.005	40.5	ug/L	17	Standard
	Al	27	327323.4	5.6	**2.3109**	0.073	3.1	ug/L	1410	Standard
	Sc	45	39232.4	1.5				ug/L	39543	Standard
	Ti	47	1081.7	2.8	**4.2827**	0.197	4.6	ug/L	39	Standard
	V	51	17364.8	3.6	**2.3462**	0.053	2.3	ug/L	1415	Standard
	Cr	52	11969.4	3.2	**0.6998**	0.018	2.6	ug/L	6946	Standard
	Cr	53	1151.7	1.8	**0.9999**	0.045	4.5	ug/L	328	Standard
	Mn	55	27710.7	5.0	**4.2196**	0.194	4.6	ug/L	823	Standard
	Co	59	805.7	4.4	**0.0858**	0.004	4.6	ug/L	252	Standard
	Ni	60	1156.4	2.7	**0.5226**	0.014	2.7	ug/L	192	Standard
	Cu	65	7318.8	3.6	**3.8448**	0.072	1.9	ug/L	141	Standard
	Zn	66	9717.1	4.5	**8.2301**	0.259	3.2	ug/L	491	Standard
>	**Ge**	72	504100.5	3.0				ug/L	515087	Standard
	As	75	86.2	19.2	**0.1185**	0.013	11.2	ug/L	20	Standard
	Se	82	21.0	26.2	**0.0675**	0.052	77.2	ug/L	15	Standard
	Se-1	77	57.7	9.6	**0.0648**	0.094	144.5	ug/L	48	Standard
>	**Ga**	71	233.3	13.9				mg/L	90	Standard
	Rb	85	3882.2	6.3				ug/L	23	Standard
	Y	89	430223.1	5.6				ug/L	448510	Standard
>	**Rh**	103	8.3	124.9				ug/L	15	Standard
	Mo	98	801.5	6.3	**0.2860**	0.012	4.3	ug/L	11	Standard
	Ag	107	120.7	5.8	**0.0023**	0.000	18.3	ug/L	134	Standard
	Cd	111	92.6	9.2	**0.0417**	0.004	9.3	mg/L	7	Standard
	Cd	114	241.3	24.7	**0.0431**	0.013	29.2	ug/L	16	Standard
>	**In**	115	593856.9	3.7				ug/L	611117	Standard
	Sn	118	1755.1	4.0	**0.2036**	0.011	5.3	ug/L	518	Standard
	Sb	123	1169.8	3.7	**0.2423**	0.004	1.7	ug/L	127	Standard
	Ba	135	5956.2	4.1	**2.9440**	0.065	2.2	ug/L	45	Standard
	Ce	140	5319.3	7.3				ug/L	298	Standard
>	**Tb**	159	910819.3	2.0				ug/L	977942	Standard
	Ho	165	128.3	12.5				ug/L	12	Standard
	Tl	203	88.0	5.7	**0.0062**	0.001	12.2	ug/L	31	Standard
	Tl	205	70.0	25.8	**0.0077**	0.003	33.5	ug/L	20	Standard
	Pb	206	8718.5	3.6	**1.6271**	0.072	4.4	ug/L	286	Standard
	Pb	207	7163.0	4.3	**1.4818**	0.072	4.9	ug/L	257	Standard
	Pb	208	29853.9	4.1	**1.5981**	0.065	4.1	ug/L	956	Standard
	U	238	115.3	2.6	**0.0139**	0.000	1.6	ug/L	17	Standard
>	**Bi**	209	531672.0	1.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	220.0	2.3	**0.2381**	0.006	2.4	mg/L	32	Standard
K	39	73.3	3.9	**0.1083**	0.007	6.4	mg/L	30	Standard
Ca	43	31.7	24.1	**-0.5049**	1.115	220.9	mg/L	48	Standard
Fe	54	263.9	12.4	**0.1035**	0.028	27.1	mg/L	159	Standard
Fe	57	248.3	16.1	**0.2213**	0.145	65.6	mg/L	195	Standard
> **Sc-1**	45	39232.4	1.5				mg/L	39543	Standard
Cl	35	34033.6	5.9				ug/L	27642	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	1946.8	12.8				ug/L	1647	Standard
P	31	16857.7	2.7				ug/L	15231	Standard
S	34	2100.1	4.5				ug/L	1845	Standard
Sr	88	66.7	28.4				ug/L	70	Standard
C	12	176.7	23.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	134.9	39.4				mg/L	12	Standard
Ho-1	165	128.3	12.5				mg/L	12	Standard
Er	166	106.7	10.8				mg/L	20	Standard
I	127	6791.5	2.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.277	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.867	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.176
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.439
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606139305
Sample Date/Time: Tuesday, June 28, 2016 22:43:57
Number of Replicates: 3
Autosampler Position: 347
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74899.7	0.9				ug/L	81760	Standard
	Be	9	18.3	15.7	**0.0104**	0.003	29.0	ug/L	17	Standard
	Al	27	328437.1	1.5	**2.3115**	0.035	1.5	ug/L	1410	Standard
	Sc	45	40647.8	2.1				ug/L	39543	Standard
	Ti	47	1117.7	1.6	**4.2600**	0.050	1.2	ug/L	39	Standard
	V	51	13332.6	0.8	**1.6821**	0.023	1.4	ug/L	1415	Standard
	Cr	52	11640.1	0.5	**0.5893**	0.015	2.6	ug/L	6946	Standard
	Cr	53	1158.4	10.6	**0.9575**	0.132	13.8	ug/L	328	Standard
	Mn	55	25508.1	0.7	**3.7255**	0.023	0.6	ug/L	823	Standard
	Co	59	795.0	2.3	**0.0800**	0.002	2.0	ug/L	252	Standard
	Ni	60	1111.4	4.5	**0.4759**	0.022	4.7	ug/L	192	Standard
	Cu	65	7781.0	2.0	**3.9419**	0.127	3.2	ug/L	141	Standard
	Zn	66	11686.8	2.5	**9.6690**	0.148	1.5	ug/L	491	Standard
>	**Ge**	72	523177.1	1.2				ug/L	515087	Standard
	As	75	150.7	20.5	**0.1724**	0.029	16.5	ug/L	20	Standard
	Se	82	42.9	7.7	**0.2478**	0.029	11.9	ug/L	15	Standard
	Se-1	77	60.7	2.5	**0.0739**	0.016	21.3	ug/L	48	Standard
>	**Ga**	71	226.7	1.3				mg/L	90	Standard
	Rb	85	5315.9	7.9				ug/L	23	Standard
	Y	89	431953.8	1.9				ug/L	448510	Standard
>	**Rh**	103	15.0	66.7				ug/L	15	Standard
	Mo	98	276.3	6.3	**0.0857**	0.006	6.9	ug/L	11	Standard
	Ag	107	169.0	7.2	**0.0096**	0.002	19.7	ug/L	134	Standard
	Cd	111	162.4	6.5	**0.0750**	0.005	6.0	mg/L	7	Standard
	Cd	114	335.5	8.9	**0.0613**	0.005	8.9	ug/L	16	Standard
>	**In**	115	595959.3	0.7				ug/L	611117	Standard
	Sn	118	1471.7	5.0	**0.1534**	0.014	9.4	ug/L	518	Standard
	Sb	123	1173.4	5.5	**0.2422**	0.014	5.7	ug/L	127	Standard
	Ba	135	5837.1	3.3	**2.8740**	0.084	2.9	ug/L	45	Standard
	Ce	140	5496.0	2.0				ug/L	298	Standard
>	**Tb**	159	937149.5	1.0				ug/L	977942	Standard
	Ho	165	138.3	7.5				ug/L	12	Standard
	Tl	203	94.3	16.1	**0.0066**	0.002	26.5	ug/L	31	Standard
	Tl	205	66.7	26.3	**0.0070**	0.002	32.8	ug/L	20	Standard
	Pb	206	8082.5	0.7	**1.4592**	0.036	2.4	ug/L	286	Standard
	Pb	207	6688.5	1.5	**1.3390**	0.041	3.1	ug/L	257	Standard
	Pb	208	27392.7	1.4	**1.4181**	0.004	0.2	ug/L	956	Standard
	U	238	108.7	8.4	**0.0125**	0.002	12.3	ug/L	17	Standard
>	**Bi**	209	547233.0	1.6				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.3347**	17.892	173.1	mg/L	0	Standard
Mg	24	221.7	15.4	**0.2295**	0.039	17.1	mg/L	32	Standard
K	39	100.0	17.3	**0.1871**	0.055	29.3	mg/L	30	Standard
Ca	43	26.7	60.3	**-1.4304**	2.300	160.8	mg/L	48	Standard
Fe	54	289.4	9.6	**0.1178**	0.025	21.2	mg/L	159	Standard
Fe	57	271.7	9.3	**0.2686**	0.097	36.1	mg/L	195	Standard
> **Sc-1**	45	40647.8	2.1				mg/L	39543	Standard
Cl	35	33690.1	1.5				ug/L	27642	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	7261.7	1.9				ug/L	1647	Standard
P	31	16325.5	0.4				ug/L	15231	Standard
S	34	1950.1	10.4				ug/L	1845	Standard
Sr	88	81.7	9.4				ug/L	70	Standard
C	12	186.7	18.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	222.3	16.3				mg/L	12	Standard
Ho-1	165	138.3	7.5				mg/L	12	Standard
Er	166	160.0	6.3				mg/L	20	Standard
I	127	6493.1	4.1				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		91.609	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.571	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.520
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.232
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 22:47:10
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	71793.2	3.7				ug/L	81760	Standard
	Be	9	44618.9	1.2	**51.1958**	1.696	3.3	ug/L	17	Standard
	Al	27	6865175.8	2.0	**50.7482**	1.963	3.9	ug/L	1410	Standard
	Sc	45	39468.0	3.1				ug/L	39543	Standard
	Ti	47	23906.5	1.3	**96.7870**	2.402	2.5	ug/L	39	Standard
	V	51	334011.6	0.6	**48.2557**	0.941	2.0	ug/L	1415	Standard
	Cr	52	340377.2	0.5	**48.2561**	1.001	2.1	ug/L	6946	Standard
	Cr	53	42902.3	1.0	**48.9484**	1.164	2.4	ug/L	328	Standard
	Mn	55	309303.1	1.2	**47.9606**	0.591	1.2	ug/L	823	Standard
	Co	59	332037.9	0.8	**47.6215**	0.384	0.8	ug/L	252	Standard
	Ni	60	90431.4	0.3	**48.3175**	0.794	1.6	ug/L	192	Standard
	Cu	65	91394.5	0.3	**48.4155**	0.851	1.8	ug/L	141	Standard
	Zn	66	53482.9	1.3	**48.3851**	1.341	2.8	ug/L	491	Standard
>	Ge	72	510859.4	1.5				ug/L	515087	Standard
	As	75	54007.5	0.9	**48.4846**	1.105	2.3	ug/L	20	Standard
	Se	82	5360.1	0.8	**46.8280**	0.601	1.3	ug/L	15	Standard
	Se-1	77	3686.4	1.7	**48.6230**	0.812	1.7	ug/L	48	Standard
>	Ga	71	56.7	18.4				mg/L	90	Standard
	Rb	85	810.0	4.5				ug/L	23	Standard
	Y	89	431931.2	2.6				ug/L	448510	Standard
>	Rh	103	26.7	43.3				ug/L	15	Standard
	Mo	98	251225.1	0.7	**96.8468**	1.378	1.4	ug/L	11	Standard
	Ag	107	304440.8	0.4	**47.2505**	0.474	1.0	ug/L	134	Standard
	Cd	111	96060.5	0.9	**46.8341**	0.834	1.8	mg/L	7	Standard
	Cd	114	238889.8	1.2	**47.9103**	0.301	0.6	ug/L	16	Standard
>	In	115	586435.3	1.3				ug/L	611117	Standard
	Sn	118	269259.0	2.4	**47.3660**	1.700	3.6	ug/L	518	Standard
	Sb	123	219432.6	0.9	**48.4541**	0.360	0.7	ug/L	127	Standard
	Ba	135	92563.9	0.7	**46.7027**	0.660	1.4	ug/L	45	Standard
	Ce	140	88.3	61.1				ug/L	298	Standard
>	Tb	159	918919.9	0.8				ug/L	977942	Standard
	Ho	165	13.3	21.7				ug/L	12	Standard
	Tl	203	386832.4	0.9	**48.5637**	0.777	1.6	ug/L	31	Standard
	Tl	205	343277.1	1.0	**49.6247**	0.132	0.3	ug/L	20	Standard
	Pb	206	249448.7	0.4	**48.7606**	0.291	0.6	ug/L	286	Standard
	Pb	207	228146.2	0.6	**49.4471**	0.531	1.1	ug/L	257	Standard
	Pb	208	902842.6	0.2	**50.5774**	0.397	0.8	ug/L	956	Standard
	U	238	333363.3	0.9	**49.2162**	0.753	1.5	ug/L	17	Standard
>	Bi	209	526646.5	0.9				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.4874**	18.156	173.1	mg/L	0	Standard
Mg	24	3567.1	3.5	**4.7067**	0.317	6.7	mg/L	32	Standard
K	39	1421.7	5.7	**4.6773**	0.373	8.0	mg/L	30	Standard
Ca	43	60.0	8.3	**3.7779**	0.573	15.2	mg/L	48	Standard
Fe	54	5303.1	4.9	**4.6695**	0.087	1.9	mg/L	159	Standard
Fe	57	1570.1	3.9	**4.6916**	0.328	7.0	mg/L	195	Standard
> **Sc-1**	45	39468.0	3.1				mg/L	39543	Standard
Cl	35	34178.5	1.9				ug/L	27642	Standard
Kr	83	1.7	124.9				ug/L	2	Standard
Br	81	1696.8	1.5				ug/L	1647	Standard
P	31	17313.2	2.3				ug/L	15231	Standard
S	34	2535.2	5.3				ug/L	1845	Standard
Sr	88	81.7	40.8				ug/L	70	Standard
C	12	120.0	14.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	8.9	11.2				mg/L	12	Standard
Ho-1	165	13.3	21.7				mg/L	12	Standard
Er	166	23.3	89.2				mg/L	20	Standard
I	127	2468.5	18.6				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	102.392		
	Al	27	101.496		
	Sc	45			
	Ti	47	96.787		
	V	51	96.511		
	Cr	52	96.512		
	Cr	53			
	Mn	55	95.921		
	Co	59	95.243		
	Ni	60	96.635		
	Cu	65	96.831		
	Zn	66	96.770		
>	Ge	72		99.179	
	As	75	96.969		
	Se	82	93.656		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	96.847		
Ag	107	94.501		
Cd	111	93.668		
Cd	114			
In	115			95.961
Sn	118	94.732		
Sb	123	96.908		
Ba	135	93.405		
Ce	140			
Tb	159			
Ho	165			
Tl	203	97.127		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.155		
U	238	98.432		
Bi	209			94.537
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 22:50:22
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72519.8	1.9				ug/L	81760	Standard
	Be	9	21.7	113.8	**0.0146**	0.027	188.1	ug/L	17	Standard
	Al	27	2256.8	25.0	**0.0021**	0.004	187.1	ug/L	1410	Standard
	Sc	45	39016.8	1.3				ug/L	39543	Standard
	Ti	47	28.7	19.2	**-0.0470**	0.020	43.5	ug/L	39	Standard
	V	51	1194.9	2.1	**-0.0301**	0.006	21.3	ug/L	1415	Standard
	Cr	52	6354.0	0.6	**-0.1199**	0.015	12.7	ug/L	6946	Standard
	Cr	53	495.0	4.6	**0.2373**	0.020	8.3	ug/L	328	Standard
	Mn	55	724.7	7.6	**-0.0338**	0.007	19.6	ug/L	823	Standard
	Co	59	253.7	9.1	**0.0057**	0.003	47.4	ug/L	252	Standard
	Ni	60	174.7	5.0	**-0.0098**	0.003	33.3	ug/L	192	Standard
	Cu	65	124.0	10.1	**-0.0239**	0.006	23.4	ug/L	141	Standard
	Zn	66	416.7	1.4	**-0.4373**	0.011	2.5	ug/L	491	Standard
>	**Ge**	72	501758.9	1.8				ug/L	515087	Standard
	As	75	-30.1	127.3	**0.0123**	0.035	285.9	ug/L	20	Standard
	Se	82	17.1	40.3	**0.0328**	0.058	178.2	ug/L	15	Standard
	Se-1	77	51.3	18.1	**-0.0207**	0.113	545.7	ug/L	48	Standard
>	**Ga**	71	38.3	27.2				mg/L	90	Standard
	Rb	85	28.3	36.7				ug/L	23	Standard
	Y	89	432168.4	0.3				ug/L	448510	Standard
>	**Rh**	103	15.0	66.7				ug/L	15	Standard
	Mo	98	274.3	30.4	**0.0862**	0.033	37.9	ug/L	11	Standard
	Ag	107	126.3	11.5	**0.0033**	0.002	71.2	ug/L	134	Standard
	Cd	111	15.5	45.6	**0.0046**	0.003	75.0	mg/L	7	Standard
	Cd	114	32.8	69.1	**0.0016**	0.005	280.8	ug/L	16	Standard
>	**In**	115	589750.3	1.0				ug/L	611117	Standard
	Sn	118	705.0	18.1	**0.0215**	0.021	98.3	ug/L	518	Standard
	Sb	123	430.7	24.1	**0.0816**	0.022	27.0	ug/L	127	Standard
	Ba	135	35.7	21.2	**-0.0072**	0.004	55.2	ug/L	45	Standard
	Ce	140	38.3	41.9				ug/L	298	Standard
>	**Tb**	159	920829.0	0.8				ug/L	977942	Standard
	Ho	165	5.0	100.0				ug/L	12	Standard
	Tl	203	59.7	35.8	**0.0027**	0.003	98.6	ug/L	31	Standard
	Tl	205	48.3	29.9	**0.0047**	0.002	43.8	ug/L	20	Standard
	Pb	206	270.0	6.9	**-0.0110**	0.004	33.8	ug/L	286	Standard
	Pb	207	257.3	3.4	**-0.0024**	0.002	65.9	ug/L	257	Standard
	Pb	208	1000.7	8.0	**-0.0046**	0.004	92.2	ug/L	956	Standard
	U	238	61.0	23.2	**0.0060**	0.002	34.0	ug/L	17	Standard
>	**Bi**	209	528739.4	0.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	23.3	86.6	**-0.0259**	0.027	103.6	mg/L	32	Standard
K	39	31.7	48.2	**-0.0333**	0.052	155.8	mg/L	30	Standard
Ca	43	30.0	72.6	**-0.7014**	3.391	483.5	mg/L	48	Standard
Fe	54	129.4	20.1	**-0.0182**	0.025	139.3	mg/L	159	Standard
Fe	57	250.0	16.4	**0.2316**	0.148	64.1	mg/L	195	Standard
Sc-1	45	39016.8	1.3				mg/L	39543	Standard
Cl	35	33625.3	1.5				ug/L	27642	Standard
Kr	83	3.3	124.9				ug/L	2	Standard
Br	81	1580.1	13.5				ug/L	1647	Standard
P	31	17735.4	1.8				ug/L	15231	Standard
S	34	2481.9	5.6				ug/L	1845	Standard
Sr	88	73.3	14.2				ug/L	70	Standard
C	12	113.3	41.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	9.4	5.9				mg/L	12	Standard
Ho-1	165	5.0	100.0				mg/L	12	Standard
Er	166	13.3	86.6				mg/L	20	Standard
I	127	1860.1	15.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.412	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.504
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.913
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606139306
Sample Date/Time: Tuesday, June 28, 2016 22:53:35
Number of Replicates: 3
Autosampler Position: 348
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70220.8	3.4				ug/L	81760	Standard
	Be	9	21.7	48.0	**0.0156**	0.012	75.7	ug/L	17	Standard
	Al	27	339019.6	1.3	**2.5478**	0.066	2.6	ug/L	1410	Standard
	Sc	45	39077.0	1.3				ug/L	39543	Standard
	Ti	47	1359.1	3.4	**5.3458**	0.211	3.9	ug/L	39	Standard
	V	51	13893.8	2.6	**1.8093**	0.072	4.0	ug/L	1415	Standard
	Cr	52	10697.1	2.4	**0.4928**	0.058	11.9	ug/L	6946	Standard
	Cr	53	1106.7	6.2	**0.9306**	0.098	10.5	ug/L	328	Standard
	Mn	55	27827.9	2.7	**4.1809**	0.179	4.3	ug/L	823	Standard
	Co	59	887.0	0.6	**0.0960**	0.003	2.8	ug/L	252	Standard
	Ni	60	1041.0	6.1	**0.4528**	0.043	9.5	ug/L	192	Standard
	Cu	65	6718.2	2.4	**3.4752**	0.137	3.9	ug/L	141	Standard
	Zn	66	10492.3	2.9	**8.8264**	0.376	4.3	ug/L	491	Standard
>	**Ge**	72	510902.9	1.6				ug/L	515087	Standard
	As	75	95.4	28.2	**0.1256**	0.023	18.4	ug/L	20	Standard
	Se	82	17.2	18.1	**0.0307**	0.025	82.4	ug/L	15	Standard
	Se-1	77	52.3	18.1	**-0.0171**	0.139	811.5	ug/L	48	Standard
>	**Ga**	71	256.7	6.0				mg/L	90	Standard
	Rb	85	4037.2	4.0				ug/L	23	Standard
	Y	89	441838.7	1.2				ug/L	448510	Standard
>	**Rh**	103	13.3	43.3				ug/L	15	Standard
	Mo	98	321.3	2.1	**0.1057**	0.004	4.2	ug/L	11	Standard
	Ag	107	134.7	13.7	**0.0048**	0.003	55.1	ug/L	134	Standard
	Cd	111	94.4	13.5	**0.0434**	0.006	14.4	mg/L	7	Standard
	Cd	114	184.5	30.3	**0.0322**	0.011	33.4	ug/L	16	Standard
>	**In**	115	582517.6	1.6				ug/L	611117	Standard
	Sn	118	1633.4	8.5	**0.1881**	0.027	14.5	ug/L	518	Standard
	Sb	123	1202.8	2.0	**0.2547**	0.009	3.5	ug/L	127	Standard
	Ba	135	5625.0	0.7	**2.8338**	0.047	1.7	ug/L	45	Standard
	Ce	140	7943.7	1.7				ug/L	298	Standard
>	**Tb**	159	895525.5	0.4				ug/L	977942	Standard
	Ho	165	181.7	15.7				ug/L	12	Standard
	Tl	203	104.3	12.5	**0.0084**	0.002	20.6	ug/L	31	Standard
	Tl	205	91.7	22.0	**0.0111**	0.003	27.4	ug/L	20	Standard
	Pb	206	6727.8	0.5	**1.2603**	0.018	1.4	ug/L	286	Standard
	Pb	207	5614.0	0.6	**1.1666**	0.017	1.4	ug/L	257	Standard
	Pb	208	23664.6	2.1	**1.2740**	0.038	3.0	ug/L	956	Standard
	U	238	141.7	17.4	**0.0181**	0.004	20.7	ug/L	17	Standard
>	**Bi**	209	523874.2	0.9				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	196.7	25.5	**0.2078**	0.067	32.2	mg/L	32	Standard
K	39	58.3	32.5	**0.0586**	0.068	115.6	mg/L	30	Standard
Ca	43	33.3	48.2	**-0.2427**	2.425	998.9	mg/L	48	Standard
Fe	54	342.2	5.9	**0.1765**	0.023	12.8	mg/L	159	Standard
Fe	57	293.3	7.1	**0.3778**	0.076	20.2	mg/L	195	Standard
Sc-1	45	39077.0	1.3				mg/L	39543	Standard
Cl	35	33443.5	2.1				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1690.1	11.7				ug/L	1647	Standard
P	31	17176.4	4.2				ug/L	15231	Standard
S	34	2306.8	4.6				ug/L	1845	Standard
Sr	88	88.3	31.2				ug/L	70	Standard
C	12	143.3	10.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	0	Standard
Dy	164	280.6	4.7				mg/L	12	Standard
Ho-1	165	181.7	15.7				mg/L	12	Standard
Er	166	196.7	36.8				mg/L	20	Standard
I	127	4592.4	1.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		85.886	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.188	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.320
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.039
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606139307
Sample Date/Time: Tuesday, June 28, 2016 22:56:46
Number of Replicates: 3
Autosampler Position: 349
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72494.7	0.8				ug/L	81760	Standard
	Be	9	18.3	15.7	**0.0111**	0.003	30.5	ug/L	17	Standard
	Al	27	342418.0	1.1	**2.4911**	0.036	1.4	ug/L	1410	Standard
	Sc	45	40101.3	1.0				ug/L	39543	Standard
	Ti	47	932.7	2.7	**3.5634**	0.149	4.2	ug/L	39	Standard
	V	51	14612.8	2.1	**1.8826**	0.024	1.3	ug/L	1415	Standard
	Cr	52	11386.6	1.0	**0.5692**	0.057	10.1	ug/L	6946	Standard
	Cr	53	1260.1	6.9	**1.0869**	0.132	12.1	ug/L	328	Standard
	Mn	55	23640.1	1.0	**3.4768**	0.122	3.5	ug/L	823	Standard
	Co	59	741.4	0.2	**0.0735**	0.003	3.5	ug/L	252	Standard
	Ni	60	1110.0	3.0	**0.4811**	0.030	6.3	ug/L	192	Standard
	Cu	65	7534.9	0.8	**3.8515**	0.130	3.4	ug/L	141	Standard
	Zn	66	11297.5	1.4	**9.4161**	0.135	1.4	ug/L	491	Standard
>	**Ge**	72	518404.2	2.6				ug/L	515087	Standard
	As	75	185.7	13.2	**0.2041**	0.018	8.6	ug/L	20	Standard
	Se	82	58.4	11.2	**0.3845**	0.051	13.1	ug/L	15	Standard
	Se-1	77	57.0	12.3	**0.0333**	0.095	284.1	ug/L	48	Standard
>	**Ga**	71	201.7	7.6				mg/L	90	Standard
	Rb	85	5255.9	2.3				ug/L	23	Standard
	Y	89	429044.9	0.4				ug/L	448510	Standard
>	**Rh**	103	18.3	68.6				ug/L	15	Standard
	Mo	98	299.7	1.8	**0.0961**	0.002	1.9	ug/L	11	Standard
	Ag	107	153.3	22.0	**0.0075**	0.005	67.1	ug/L	134	Standard
	Cd	111	143.0	17.2	**0.0665**	0.011	16.8	mg/L	7	Standard
	Cd	114	356.8	31.1	**0.0663**	0.022	32.5	ug/L	16	Standard
>	**In**	115	588246.1	1.2				ug/L	611117	Standard
	Sn	118	1550.1	10.3	**0.1702**	0.025	14.7	ug/L	518	Standard
	Sb	123	1125.9	6.3	**0.2350**	0.013	5.6	ug/L	127	Standard
	Ba	135	5627.4	4.0	**2.8066**	0.107	3.8	ug/L	45	Standard
	Ce	140	5279.3	1.4				ug/L	298	Standard
>	**Tb**	159	929768.7	1.5				ug/L	977942	Standard
	Ho	165	90.0	24.2				ug/L	12	Standard
	Tl	203	125.7	60.8	**0.0104**	0.009	86.4	ug/L	31	Standard
	Tl	205	76.7	65.3	**0.0084**	0.007	82.2	ug/L	20	Standard
	Pb	206	9321.2	0.6	**1.7003**	0.038	2.2	ug/L	286	Standard
	Pb	207	7700.6	1.2	**1.5576**	0.043	2.8	ug/L	257	Standard
	Pb	208	32126.4	0.5	**1.6815**	0.027	1.6	ug/L	956	Standard
	U	238	95.0	19.2	**0.0106**	0.002	23.3	ug/L	17	Standard
>	**Bi**	209	544815.4	1.6				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	241.7	8.4	**0.2600**	0.024	9.1	mg/L	32	Standard
K	39	93.3	13.5	**0.1697**	0.044	25.8	mg/L	30	Standard
Ca	43	48.3	11.9	**1.8938**	0.874	46.1	mg/L	48	Standard
Fe	54	296.6	3.5	**0.1277**	0.009	7.4	mg/L	159	Standard
Fe	57	275.0	13.7	**0.2917**	0.134	46.0	mg/L	195	Standard
> **Sc-1**	45	40101.3	1.0				mg/L	39543	Standard
Cl	35	33371.4	1.5				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	12191.6	6.9				ug/L	1647	Standard
P	31	16642.5	2.2				ug/L	15231	Standard
S	34	2221.8	1.3				ug/L	1845	Standard
Sr	88	81.7	3.5				ug/L	70	Standard
C	12	180.0	14.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	78.1				mg/L	0	Standard
Dy	164	179.2	25.7				mg/L	12	Standard
Ho-1	165	90.0	24.2				mg/L	12	Standard
Er	166	86.7	26.6				mg/L	20	Standard
I	127	5902.8	5.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.668	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.644	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.258
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.798
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606140101
Sample Date/Time: Tuesday, June 28, 2016 22:59:58
Number of Replicates: 3
Autosampler Position: 350
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81815.4	2.6				ug/L	81760	Standard
	Be	9	21.7	13.3	**0.0121**	0.003	22.9	ug/L	17	Standard
	Al	27	45785308.7	4.2	**296.7336**	5.244	1.8	ug/L	1410	Standard
	Sc	45	41065.6	3.8				ug/L	39543	Standard
	Ti	47	178.0	12.2	**0.5887**	0.089	15.1	ug/L	39	Standard
	V	51	35448.4	4.1	**5.1643**	0.153	3.0	ug/L	1415	Standard
	Cr	52	9787.8	5.7	**0.4235**	0.068	16.1	ug/L	6946	Standard
	Cr	53	17411.8	14.2	**20.5297**	2.734	13.3	ug/L	328	Standard
	Mn	55	165972.1	5.7	**26.8086**	1.220	4.6	ug/L	823	Standard
	Co	59	1056.4	5.8	**0.1270**	0.007	5.7	ug/L	252	Standard
	Ni	60	3143.3	7.3	**1.6522**	0.109	6.6	ug/L	192	Standard
	Cu	65	2057.8	4.7	**1.0496**	0.040	3.9	ug/L	141	Standard
	Zn	66	6024.5	5.7	**4.9599**	0.261	5.3	ug/L	491	Standard
>	**Ge**	72	489001.5	1.3				ug/L	515087	Standard
	As	75	1112.2	8.9	**1.0817**	0.080	7.4	ug/L	20	Standard
	Se	82	302.7	9.2	**2.6482**	0.222	8.4	ug/L	15	Standard
	Se-1	77	1245.1	18.8	**16.6637**	3.078	18.5	ug/L	48	Standard
>	**Ga**	71	58.3	55.1				mg/L	90	Standard
	Rb	85	2691.9	5.7				ug/L	23	Standard
	Y	89	432812.2	6.0				ug/L	448510	Standard
>	**Rh**	103	128.3	14.8				ug/L	15	Standard
	Mo	98	642.1	7.2	**0.2310**	0.011	4.8	ug/L	11	Standard
	Ag	107	89.7	20.6	**-0.0021**	0.003	162.7	ug/L	134	Standard
	Cd	111	183.2	13.1	**0.0876**	0.014	15.6	mg/L	7	Standard
	Cd	114	423.4	6.2	**0.0810**	0.006	6.9	ug/L	16	Standard
>	**In**	115	580206.4	3.0				ug/L	611117	Standard
	Sn	118	1115.0	4.7	**0.0968**	0.010	9.8	ug/L	518	Standard
	Sb	123	200.7	10.2	**0.0319**	0.003	10.9	ug/L	127	Standard
	Ba	135	44440.1	3.3	**22.6462**	0.082	0.4	ug/L	45	Standard
	Ce	140	446.7	12.1				ug/L	298	Standard
>	**Tb**	159	929235.2	2.2				ug/L	977942	Standard
	Ho	165	38.3	7.5				ug/L	12	Standard
	Tl	203	126.0	16.1	**0.0119**	0.003	21.7	ug/L	31	Standard
	Tl	205	103.3	17.0	**0.0135**	0.003	21.8	ug/L	20	Standard
	Pb	206	396.7	5.3	**0.0183**	0.002	11.9	ug/L	286	Standard
	Pb	207	341.7	4.5	**0.0202**	0.002	8.5	ug/L	257	Standard
	Pb	208	1505.0	2.0	**0.0286**	0.002	5.8	ug/L	956	Standard
	U	238	10687.1	4.8	**1.6615**	0.054	3.3	ug/L	17	Standard
>	**Bi**	209	499114.9	2.7				ug/L	557080	Standard

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Na	23	8.3	91.7	**52.4138**	47.655	90.9	mg/L	0	Standard
Mg	24	165387.3	4.5	**211.9511**	6.406	3.0	mg/L	32	Standard
K	39	600.0	13.6	**1.8174**	0.318	17.5	mg/L	30	Standard
Ca	43	581.7	9.4	**79.6243**	5.149	6.5	mg/L	48	Standard
Fe	54	126.1	20.1	**-0.0269**	0.024	89.8	mg/L	159	Standard
Fe	57	591.7	6.9	**1.2999**	0.139	10.7	mg/L	195	Standard
> **Sc-1**	45	41065.6	3.8				mg/L	39543	Standard
Cl	35	47499.7	3.6				ug/L	27642	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	60832.3	7.6				ug/L	1647	Standard
P	31	21663.8	6.1				ug/L	15231	Standard
S	34	2320.2	3.1				ug/L	1845	Standard
Sr	88	470.0	1.1				ug/L	70	Standard
C	12	286.7	5.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	31.1	36.4				mg/L	12	Standard
Ho-1	165	38.3	7.5				mg/L	12	Standard
Er	166	46.7	44.6				mg/L	20	Standard
I	127	79897.5	13.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.068	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.936	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.942
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		89.595
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606140201
Sample Date/Time: Tuesday, June 28, 2016 23:03:09
Number of Replicates: 3
Autosampler Position: 351
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76605.0	3.1				ug/L	81760	Standard
	Be	9	21.7	13.3	**0.0135**	0.003	20.6	ug/L	17	Standard
	Al	27	26105502.1	1.1	**180.8194**	3.801	2.1	ug/L	1410	Standard
	Sc	45	39097.0	0.2				ug/L	39543	Standard
	Ti	47	562.0	2.4	**2.2655**	0.057	2.5	ug/L	39	Standard
	V	51	4742.4	3.6	**0.5271**	0.022	4.2	ug/L	1415	Standard
	Cr	52	10082.4	1.2	**0.5007**	0.019	3.8	ug/L	6946	Standard
	Cr	53	12313.3	5.4	**14.7485**	0.907	6.2	ug/L	328	Standard
	Mn	55	1295871.4	1.2	**214.8489**	3.945	1.8	ug/L	823	Standard
	Co	59	1407.4	1.1	**0.1841**	0.002	1.1	ug/L	252	Standard
	Ni	60	4305.3	1.8	**2.3535**	0.034	1.4	ug/L	192	Standard
	Cu	65	1020.0	5.2	**0.4867**	0.034	6.9	ug/L	141	Standard
	Zn	66	18219.9	0.4	**17.0511**	0.173	1.0	ug/L	491	Standard
>	**Ge**	72	478933.9	0.7				ug/L	515087	Standard
	As	75	17040.6	2.0	**16.3399**	0.219	1.3	ug/L	20	Standard
	Se	82	892.6	3.4	**8.2180**	0.229	2.8	ug/L	15	Standard
	Se-1	77	753.4	7.3	**10.0390**	0.842	8.4	ug/L	48	Standard
>	**Ga**	71	218.3	6.6				mg/L	90	Standard
	Rb	85	3558.8	1.6				ug/L	23	Standard
	Y	89	416573.3	1.7				ug/L	448510	Standard
>	**Rh**	103	118.3	21.3				ug/L	15	Standard
	Mo	98	260.0	1.1	**0.0877**	0.004	4.4	ug/L	11	Standard
	Ag	107	80.3	26.9	**-0.0029**	0.004	134.9	ug/L	134	Standard
	Cd	111	40.9	26.1	**0.0184**	0.006	33.2	mg/L	7	Standard
	Cd	114	102.6	27.3	**0.0171**	0.006	37.8	ug/L	16	Standard
>	**In**	115	551143.5	2.5				ug/L	611117	Standard
	Sn	118	835.0	12.0	**0.0548**	0.020	37.1	ug/L	518	Standard
	Sb	123	829.1	3.5	**0.1820**	0.004	2.4	ug/L	127	Standard
	Ba	135	332622.5	0.7	**178.6804**	3.714	2.1	ug/L	45	Standard
	Ce	140	6094.6	2.7				ug/L	298	Standard
>	**Tb**	159	884304.9	2.4				ug/L	977942	Standard
	Ho	165	73.3	20.8				ug/L	12	Standard
	Tl	203	115.3	18.9	**0.0110**	0.003	28.4	ug/L	31	Standard
	Tl	205	95.0	13.9	**0.0127**	0.002	15.2	ug/L	20	Standard
	Pb	206	48021.0	1.3	**10.1649**	0.107	1.1	ug/L	286	Standard
	Pb	207	40222.3	0.8	**9.4401**	0.093	1.0	ug/L	257	Standard
	Pb	208	168471.0	1.1	**10.2223**	0.060	0.6	ug/L	956	Standard
	U	238	714.0	7.4	**0.1118**	0.009	8.4	ug/L	17	Standard
>	**Bi**	209	483931.7	1.1				ug/L	557080	Standard

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Na	23	8.3	34.6	**54.1394**	18.829	34.8	mg/L	0	Standard
Mg	24	106065.1	2.2	**142.7401**	3.063	2.1	mg/L	32	Standard
K	39	148.3	8.5	**0.3655**	0.044	12.0	mg/L	30	Standard
Ca	43	363.3	11.2	**50.4710**	6.294	12.5	mg/L	48	Standard
Fe	54	1618.9	1.4	**1.3448**	0.023	1.7	mg/L	159	Standard
Fe	57	835.0	5.7	**2.2263**	0.157	7.1	mg/L	195	Standard
Sc-1	45	39097.0	0.2				mg/L	39543	Standard
Cl	35	36261.3	1.4				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	214333.6	4.1				ug/L	1647	Standard
P	31	21892.5	1.8				ug/L	15231	Standard
S	34	2305.2	3.8				ug/L	1845	Standard
Sr	88	363.3	12.3				ug/L	70	Standard
C	12	390.0	0.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	133.0	23.5				mg/L	12	Standard
Ho-1	165	73.3	20.8				mg/L	12	Standard
Er	166	76.7	66.9				mg/L	20	Standard
I	127	398539.7	6.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		93.695	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		92.981	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	90.186
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	86.869
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606140401
Sample Date/Time: Tuesday, June 28, 2016 23:06:21
Number of Replicates: 3
Autosampler Position: 352
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74993.5	0.5				ug/L	81760	Standard
	Be	9	21.7	13.3	**0.0141**	0.003	22.5	ug/L	17	Standard
	Al	27	30278310.9	1.4	**214.1402**	2.917	1.4	ug/L	1410	Standard
	Sc	45	39486.4	2.9				ug/L	39543	Standard
	Ti	47	193.3	4.5	**0.6334**	0.048	7.5	ug/L	39	Standard
	V	51	22966.6	2.4	**3.1851**	0.035	1.1	ug/L	1415	Standard
	Cr	52	11319.6	0.7	**0.6125**	0.031	5.1	ug/L	6946	Standard
	Cr	53	1811.8	4.8	**1.7776**	0.107	6.0	ug/L	328	Standard
	Mn	55	8657.1	1.2	**1.2226**	0.034	2.8	ug/L	823	Standard
	Co	59	565.7	7.8	**0.0513**	0.007	13.0	ug/L	252	Standard
	Ni	60	1945.8	2.7	**0.9557**	0.026	2.7	ug/L	192	Standard
	Cu	65	60353.0	0.9	**32.5191**	0.515	1.6	ug/L	141	Standard
	Zn	66	48175.8	1.3	**44.3004**	1.008	2.3	ug/L	491	Standard
>	**Ge**	72	501772.7	1.4				ug/L	515087	Standard
	As	75	367.9	8.8	**0.3760**	0.025	6.7	ug/L	20	Standard
	Se	82	110.4	13.6	**0.8639**	0.120	13.9	ug/L	15	Standard
	Se-1	77	129.0	8.1	**1.0381**	0.123	11.8	ug/L	48	Standard
>	**Ga**	71	68.3	27.7				mg/L	90	Standard
	Rb	85	1198.4	2.3				ug/L	23	Standard
	Y	89	417957.0	1.4				ug/L	448510	Standard
>	**Rh**	103	78.3	35.2				ug/L	15	Standard
	Mo	98	388.3	6.2	**0.1355**	0.009	6.9	ug/L	11	Standard
	Ag	107	94.3	4.8	**-0.0011**	0.001	61.6	ug/L	134	Standard
	Cd	111	42.7	19.5	**0.0186**	0.004	22.3	mg/L	7	Standard
	Cd	114	106.8	24.4	**0.0172**	0.005	31.6	ug/L	16	Standard
>	**In**	115	568064.8	0.3				ug/L	611117	Standard
	Sn	118	741.7	8.4	**0.0330**	0.012	35.5	ug/L	518	Standard
	Sb	123	163.0	3.3	**0.0243**	0.001	4.6	ug/L	127	Standard
	Ba	135	87619.3	0.7	**45.6318**	0.199	0.4	ug/L	45	Standard
	Ce	140	530.0	5.7				ug/L	298	Standard
>	**Tb**	159	902463.1	0.6				ug/L	977942	Standard
	Ho	165	31.7	24.1				ug/L	12	Standard
	Tl	203	89.3	3.6	**0.0068**	0.000	7.0	ug/L	31	Standard
	Tl	205	80.0	18.8	**0.0096**	0.002	23.2	ug/L	20	Standard
	Pb	206	4637.4	0.5	**0.8697**	0.009	1.0	ug/L	286	Standard
	Pb	207	3892.8	1.5	**0.8106**	0.017	2.1	ug/L	257	Standard
	Pb	208	15697.9	1.6	**0.8448**	0.009	1.1	ug/L	956	Standard
	U	238	6211.6	0.5	**0.9400**	0.010	1.1	ug/L	17	Standard
>	**Bi**	209	512163.0	0.7				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.8762**	18.829	173.1	mg/L	0	Standard
Mg	24	25888.8	0.8	**34.4779**	1.238	3.6	mg/L	32	Standard
K	39	206.7	17.0	**0.5565**	0.104	18.6	mg/L	30	Standard
Ca	43	238.3	20.2	**30.9565**	7.726	25.0	mg/L	48	Standard
Fe	54	118.7	26.0	**-0.0297**	0.026	88.1	mg/L	159	Standard
Fe	57	376.7	12.0	**0.6523**	0.186	28.5	mg/L	195	Standard
Sc-1	45	39486.4	2.9				mg/L	39543	Standard
Cl	35	38202.8	1.2				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	11808.0	7.7				ug/L	1647	Standard
P	31	21151.4	0.3				ug/L	15231	Standard
S	34	2466.9	2.1				ug/L	1845	Standard
Sr	88	291.7	10.5				ug/L	70	Standard
C	12	196.7	43.2				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	28.2	2.0				mg/L	12	Standard
Ho-1	165	31.7	24.1				mg/L	12	Standard
Er	166	36.7	31.5				mg/L	20	Standard
I	127	34317.5	11.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.724	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.415	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		92.955
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.937
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606140801
Sample Date/Time: Tuesday, June 28, 2016 23:09:32
Number of Replicates: 3
Autosampler Position: 353
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78174.6	2.2				ug/L	81760	Standard
	Be	9	35.0	24.7	**0.0270**	0.008	30.6	ug/L	17	Standard
	Al	27	18286645.8	1.2	**124.0948**	2.663	2.1	ug/L	1410	Standard
	Sc	45	40988.7	1.5				ug/L	39543	Standard
	Ti	47	225.3	13.4	**0.7985**	0.121	15.1	ug/L	39	Standard
	V	51	51258.6	3.2	**7.6390**	0.153	2.0	ug/L	1415	Standard
	Cr	52	11486.4	2.6	**0.6992**	0.069	9.9	ug/L	6946	Standard
	Cr	53	8145.5	5.8	**9.5287**	0.474	5.0	ug/L	328	Standard
	Mn	55	98520.0	1.7	**16.0208**	0.120	0.7	ug/L	823	Standard
	Co	59	769.4	2.9	**0.0851**	0.002	2.7	ug/L	252	Standard
	Ni	60	1615.4	2.4	**0.8080**	0.032	4.0	ug/L	192	Standard
	Cu	65	1131.0	3.0	**0.5425**	0.014	2.7	ug/L	141	Standard
	Zn	66	4403.0	3.4	**3.4460**	0.103	3.0	ug/L	491	Standard
>	**Ge**	72	484103.1	1.4				ug/L	515087	Standard
	As	75	1970.8	6.0	**1.9047**	0.087	4.5	ug/L	20	Standard
	Se	82	191.5	8.8	**1.6489**	0.132	8.0	ug/L	15	Standard
	Se-1	77	529.7	10.7	**6.7555**	0.697	10.3	ug/L	48	Standard
>	**Ga**	71	85.0	31.1				mg/L	90	Standard
	Rb	85	2531.9	3.1				ug/L	23	Standard
	Y	89	421592.5	4.0				ug/L	448510	Standard
>	**Rh**	103	66.7	30.3				ug/L	15	Standard
	Mo	98	353.3	5.0	**0.1209**	0.007	5.4	ug/L	11	Standard
	Ag	107	105.0	57.1	**0.0006**	0.010	1741.0	ug/L	134	Standard
	Cd	111	58.7	7.1	**0.0265**	0.001	5.4	mg/L	7	Standard
	Cd	114	139.6	12.3	**0.0238**	0.003	13.4	ug/L	16	Standard
>	**In**	115	570844.6	2.8				ug/L	611117	Standard
	Sn	118	760.0	5.7	**0.0358**	0.009	25.3	ug/L	518	Standard
	Sb	123	136.8	41.6	**0.0182**	0.013	71.7	ug/L	127	Standard
	Ba	135	27343.0	2.9	**14.1534**	0.097	0.7	ug/L	45	Standard
	Ce	140	1776.8	2.1				ug/L	298	Standard
>	**Tb**	159	907261.5	0.9				ug/L	977942	Standard
	Ho	165	38.3	32.8				ug/L	12	Standard
	Tl	203	160.7	51.8	**0.0162**	0.011	66.8	ug/L	31	Standard
	Tl	205	123.3	9.4	**0.0162**	0.002	11.0	ug/L	20	Standard
	Pb	206	469.0	16.1	**0.0318**	0.015	47.2	ug/L	286	Standard
	Pb	207	405.3	12.5	**0.0333**	0.011	33.4	ug/L	257	Standard
	Pb	208	1576.7	3.7	**0.0314**	0.003	10.7	ug/L	956	Standard
	U	238	14465.9	3.7	**2.2164**	0.080	3.6	ug/L	17	Standard
>	**Bi**	209	506765.8	0.4				ug/L	557080	Standard

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Na	23	3.3	86.6	**20.4816**	17.733	86.6	mg/L	0	Standard
Mg	24	76429.0	2.1	**98.0879**	0.872	0.9	mg/L	32	Standard
K	39	103.3	20.1	**0.1958**	0.071	36.2	mg/L	30	Standard
Ca	43	268.3	18.7	**34.0467**	7.923	23.3	mg/L	48	Standard
Fe	54	210.5	5.9	**0.0466**	0.009	18.4	mg/L	159	Standard
Fe	57	346.7	13.1	**0.5032**	0.132	26.3	mg/L	195	Standard
Sc-1	45	40988.7	1.5				mg/L	39543	Standard
Cl	35	41040.2	0.8				ug/L	27642	Standard
Kr	83	2.0	173.2				ug/L	2	Standard
Br	81	20580.7	5.3				ug/L	1647	Standard
P	31	21832.4	1.0				ug/L	15231	Standard
S	34	2461.9	6.1				ug/L	1845	Standard
Sr	88	228.3	13.2				ug/L	70	Standard
C	12	196.7	34.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	38.1	77.6				mg/L	12	Standard
Ho-1	165	38.3	32.8				mg/L	12	Standard
Er	166	40.0	90.1				mg/L	20	Standard
I	127	105209.9	5.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		95.615	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		93.985	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.410
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.968
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606140901
Sample Date/Time: Tuesday, June 28, 2016 23:12:44
Number of Replicates: 3
Autosampler Position: 354
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78595.1	3.1				ug/L	81760	Standard
	Be	9	26.7	57.3	**0.0179**	0.015	85.3	ug/L	17	Standard
	Al	27	20167615.6	1.1	**136.1889**	4.854	3.6	ug/L	1410	Standard
	Sc	45	39818.9	1.9				ug/L	39543	Standard
	Ti	47	311.7	10.4	**1.1846**	0.135	11.4	ug/L	39	Standard
	V	51	55787.4	0.6	**8.4391**	0.018	0.2	ug/L	1415	Standard
	Cr	52	16179.6	1.9	**1.4466**	0.047	3.2	ug/L	6946	Standard
	Cr	53	12833.8	2.8	**15.4070**	0.434	2.8	ug/L	328	Standard
	Mn	55	13187.4	1.1	**2.0427**	0.028	1.4	ug/L	823	Standard
	Co	59	670.0	4.7	**0.0714**	0.005	7.2	ug/L	252	Standard
	Ni	60	2540.2	2.3	**1.3479**	0.032	2.4	ug/L	192	Standard
	Cu	65	810.4	1.3	**0.3686**	0.005	1.5	ug/L	141	Standard
	Zn	66	2808.3	3.3	**1.9320**	0.083	4.3	ug/L	491	Standard
>	**Ge**	72	478186.0	0.4				ug/L	515087	Standard
	As	75	1572.1	0.9	**1.5465**	0.010	0.6	ug/L	20	Standard
	Se	82	338.5	3.3	**3.0475**	0.114	3.7	ug/L	15	Standard
	Se-1	77	792.0	6.7	**10.6055**	0.757	7.1	ug/L	48	Standard
>	**Ga**	71	71.7	10.7				mg/L	90	Standard
	Rb	85	3450.4	2.1				ug/L	23	Standard
	Y	89	421286.0	4.0				ug/L	448510	Standard
>	**Rh**	103	76.7	10.0				ug/L	15	Standard
	Mo	98	1179.3	2.2	**0.4594**	0.016	3.6	ug/L	11	Standard
	Ag	107	70.0	6.5	**-0.0048**	0.001	13.6	ug/L	134	Standard
	Cd	111	26.3	13.5	**0.0106**	0.002	18.0	mg/L	7	Standard
	Cd	114	71.5	14.0	**0.0102**	0.002	20.9	ug/L	16	Standard
>	**In**	115	557486.7	1.6				ug/L	611117	Standard
	Sn	118	753.4	2.1	**0.0377**	0.003	7.4	ug/L	518	Standard
	Sb	123	140.1	13.9	**0.0197**	0.005	23.1	ug/L	127	Standard
	Ba	135	30044.1	2.0	**15.9271**	0.116	0.7	ug/L	45	Standard
	Ce	140	1501.7	8.9				ug/L	298	Standard
>	**Tb**	159	887600.8	1.1				ug/L	977942	Standard
	Ho	165	38.3	27.2				ug/L	12	Standard
	Tl	203	136.3	15.5	**0.0135**	0.003	21.6	ug/L	31	Standard
	Tl	205	116.7	8.9	**0.0158**	0.002	10.2	ug/L	20	Standard
	Pb	206	477.7	6.1	**0.0364**	0.006	16.6	ug/L	286	Standard
	Pb	207	398.0	3.8	**0.0344**	0.003	8.7	ug/L	257	Standard
	Pb	208	1707.0	2.5	**0.0420**	0.002	4.6	ug/L	956	Standard
	U	238	23354.0	0.6	**3.6864**	0.026	0.7	ug/L	17	Standard
>	**Bi**	209	492176.6	0.6				ug/L	557080	Standard

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Na	23	8.3	124.9	**53.9308**	68.028	126.1	mg/L	0	Standard
Mg	24	78221.4	0.2	**103.3688**	1.796	1.7	mg/L	32	Standard
K	39	181.7	9.7	**0.4684**	0.061	12.9	mg/L	30	Standard
Ca	43	295.0	5.9	**39.1939**	3.495	8.9	mg/L	48	Standard
Fe	54	173.9	5.6	**0.0192**	0.007	35.0	mg/L	159	Standard
Fe	57	403.3	17.1	**0.7302**	0.251	34.4	mg/L	195	Standard
> **Sc-1**	45	39818.9	1.9				mg/L	39543	Standard
Cl	35	38063.1	1.8				ug/L	27642	Standard
Kr	83	1.3	173.2				ug/L	2	Standard
Br	81	39401.2	2.9				ug/L	1647	Standard
P	31	23753.6	2.5				ug/L	15231	Standard
S	34	2233.5	3.9				ug/L	1845	Standard
Sr	88	295.0	6.1				ug/L	70	Standard
C	12	220.0	31.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	222.1	127.8				mg/L	12	Standard
Ho-1	165	38.3	27.2				mg/L	12	Standard
Er	166	26.7	78.1				mg/L	20	Standard
I	127	56189.0	1.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		96.129	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.836	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.224
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		88.349
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 23:15:56
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73471.1	1.2				ug/L	81760	Standard
	Be	9	47618.1	3.0	**53.3659**	2.229	4.2	ug/L	17	Standard
	Al	27	7287296.4	1.0	**52.5966**	0.249	0.5	ug/L	1410	Standard
	Sc	45	40183.2	3.0				ug/L	39543	Standard
	Ti	47	24656.7	0.7	**99.9368**	1.445	1.4	ug/L	39	Standard
	V	51	342959.6	1.5	**49.6067**	0.741	1.5	ug/L	1415	Standard
	Cr	52	350575.7	1.6	**49.7880**	0.923	1.9	ug/L	6946	Standard
	Cr	53	44859.7	1.2	**51.2482**	0.358	0.7	ug/L	328	Standard
	Mn	55	313688.7	1.9	**48.6980**	0.765	1.6	ug/L	823	Standard
	Co	59	336351.1	1.2	**48.2963**	0.507	1.1	ug/L	252	Standard
	Ni	60	92893.3	2.1	**49.6893**	0.993	2.0	ug/L	192	Standard
	Cu	65	92858.0	0.8	**49.2454**	0.445	0.9	ug/L	141	Standard
	Zn	66	54854.1	1.5	**49.6985**	0.961	1.9	ug/L	491	Standard
>	**Ge**	72	510232.1	0.7				ug/L	515087	Standard
	As	75	53972.2	1.6	**48.5043**	0.935	1.9	ug/L	20	Standard
	Se	82	5467.9	0.8	**47.8296**	0.724	1.5	ug/L	15	Standard
	Se-1	77	3829.5	1.2	**50.5966**	0.465	0.9	ug/L	48	Standard
>	**Ga**	71	55.0	32.8				mg/L	90	Standard
	Rb	85	740.0	22.2				ug/L	23	Standard
	Y	89	417471.8	0.9				ug/L	448510	Standard
>	**Rh**	103	28.3	40.8				ug/L	15	Standard
	Mo	98	255774.9	1.1	**100.4324**	1.068	1.1	ug/L	11	Standard
	Ag	107	314263.4	0.6	**49.6826**	0.310	0.6	ug/L	134	Standard
	Cd	111	99244.0	2.0	**49.2800**	0.642	1.3	mg/L	7	Standard
	Cd	114	244609.6	0.7	**49.9721**	0.117	0.2	ug/L	16	Standard
>	**In**	115	575695.1	0.7				ug/L	611117	Standard
	Sn	118	277518.7	1.2	**49.7196**	0.393	0.8	ug/L	518	Standard
	Sb	123	223405.3	1.0	**50.2498**	0.315	0.6	ug/L	127	Standard
	Ba	135	95362.2	0.9	**49.0082**	0.194	0.4	ug/L	45	Standard
	Ce	140	66.7	18.9				ug/L	298	Standard
>	**Tb**	159	900469.8	1.2				ug/L	977942	Standard
	Ho	165	0.0					ug/L	12	Standard
	Tl	203	399704.8	0.8	**50.1537**	0.324	0.6	ug/L	31	Standard
	Tl	205	354566.9	2.1	**51.2307**	0.689	1.3	ug/L	20	Standard
	Pb	206	258134.8	1.1	**50.4360**	0.346	0.7	ug/L	286	Standard
	Pb	207	234508.0	1.0	**50.8014**	0.140	0.3	ug/L	257	Standard
	Pb	208	934488.0	0.8	**52.3272**	0.390	0.7	ug/L	956	Standard
	U	238	348175.4	0.3	**51.3787**	0.514	1.0	ug/L	17	Standard
>	**Bi**	209	526902.0	1.3				ug/L	557080	Standard

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Na	23	5.0	100.0	**32.0442**	31.868	99.5	mg/L	0	Standard
Mg	24	3947.2	3.3	**5.1157**	0.206	4.0	mg/L	32	Standard
K	39	1291.7	6.0	**4.1569**	0.313	7.5	mg/L	30	Standard
Ca	43	78.3	13.3	**6.3383**	1.191	18.8	mg/L	48	Standard
Fe	54	5567.6	3.6	**4.8270**	0.308	6.4	mg/L	159	Standard
Fe	57	1653.4	2.1	**4.8734**	0.265	5.4	mg/L	195	Standard
Sc-1	45	40183.2	3.0				mg/L	39543	Standard
Cl	35	36099.6	2.2				ug/L	27642	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	2486.9	19.4				ug/L	1647	Standard
P	31	18199.3	2.9				ug/L	15231	Standard
S	34	2558.5	2.4				ug/L	1845	Standard
Sr	88	88.3	13.1				ug/L	70	Standard
C	12	123.3	18.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.5	205.9				mg/L	12	Standard
Ho-1	165	0.0					mg/L	12	Standard
Er	166	16.7	69.3				mg/L	20	Standard
I	127	3410.4	24.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	106.732		
Al	27	105.193		
Sc	45			
Ti	47	99.937		
V	51	99.213		
Cr	52	99.576		
Cr	53			
Mn	55	97.396		
Co	59	96.593		
Ni	60	99.379		
Cu	65	98.491		
Zn	66	99.397		
Ge	72		99.057	
As	75	97.009		
Se	82	95.659		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	100.432		
Ag	107	99.365		
Cd	111	98.560		
Cd	114			
In	115			94.204
Sn	118	99.439		
Sb	123	100.500		
Ba	135	98.016		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.307		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.654		
U	238	102.757		
Bi	209			94.583
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 23:19:08
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74688.6	0.5				ug/L	81760	Standard
	Be	9	23.3	68.9	**0.0159**	0.018	110.7	ug/L	17	Standard
	Al	27	6963.5	51.4	**0.0350**	0.025	72.0	ug/L	1410	Standard
	Sc	45	39526.5	2.8				ug/L	39543	Standard
	Ti	47	29.3	2.0	**-0.0430**	0.003	6.9	ug/L	39	Standard
	V	51	1022.6	3.0	**-0.0543**	0.006	11.1	ug/L	1415	Standard
	Cr	52	6275.6	1.6	**-0.1243**	0.005	4.1	ug/L	6946	Standard
	Cr	53	655.0	2.0	**0.4308**	0.021	5.0	ug/L	328	Standard
	Mn	55	708.0	10.7	**-0.0355**	0.011	31.8	ug/L	823	Standard
	Co	59	254.0	9.4	**0.0060**	0.003	53.0	ug/L	252	Standard
	Ni	60	190.7	1.6	**-0.0002**	0.001	475.8	ug/L	192	Standard
	Cu	65	144.3	16.1	**-0.0123**	0.012	100.6	ug/L	141	Standard
	Zn	66	441.0	4.3	**-0.4114**	0.015	3.7	ug/L	491	Standard
>	**Ge**	72	497792.7	1.0				ug/L	515087	Standard
	As	75	-15.2	258.6	**0.0262**	0.036	138.8	ug/L	20	Standard
	Se	82	23.5	16.0	**0.0916**	0.033	35.7	ug/L	15	Standard
	Se-1	77	63.7	3.3	**0.1558**	0.037	23.6	ug/L	48	Standard
>	**Ga**	71	50.0	34.6				mg/L	90	Standard
	Rb	85	33.3	56.8				ug/L	23	Standard
	Y	89	425942.8	1.0				ug/L	448510	Standard
>	**Rh**	103	6.7	43.3				ug/L	15	Standard
	Mo	98	281.0	37.4	**0.0876**	0.040	45.9	ug/L	11	Standard
	Ag	107	137.7	21.7	**0.0048**	0.005	95.8	ug/L	134	Standard
	Cd	111	15.2	29.8	**0.0044**	0.002	50.1	mg/L	7	Standard
	Cd	114	43.1	89.6	**0.0036**	0.008	212.7	ug/L	16	Standard
>	**In**	115	595727.8	0.7				ug/L	611117	Standard
	Sn	118	753.4	17.4	**0.0287**	0.023	78.8	ug/L	518	Standard
	Sb	123	441.8	17.1	**0.0832**	0.016	19.8	ug/L	127	Standard
	Ba	135	56.0	54.4	**0.0027**	0.015	556.5	ug/L	45	Standard
	Ce	140	23.3	12.4				ug/L	298	Standard
>	**Tb**	159	931120.0	0.7				ug/L	977942	Standard
	Ho	165	10.0	86.6				ug/L	12	Standard
	Tl	203	88.3	51.6	**0.0060**	0.006	92.0	ug/L	31	Standard
	Tl	205	63.3	63.8	**0.0066**	0.006	85.2	ug/L	20	Standard
	Pb	206	308.0	15.6	**-0.0049**	0.009	177.6	ug/L	286	Standard
	Pb	207	259.7	11.6	**-0.0032**	0.006	187.4	ug/L	257	Standard
	Pb	208	1046.3	7.8	**-0.0033**	0.004	126.3	ug/L	956	Standard
	U	238	64.3	43.1	**0.0063**	0.004	62.8	ug/L	17	Standard
>	**Bi**	209	540861.2	0.7				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.5148**	18.203	173.1	mg/L	0	Standard
Mg	24	55.0	41.7	**0.0162**	0.030	187.5	mg/L	32	Standard
K	39	25.0	20.0	**-0.0566**	0.019	34.0	mg/L	30	Standard
Ca	43	33.3	34.6	**-0.2594**	1.827	704.2	mg/L	48	Standard
Fe	54	134.2	10.1	**-0.0157**	0.009	57.1	mg/L	159	Standard
Fe	57	241.7	9.3	**0.1932**	0.098	50.6	mg/L	195	Standard
Sc-1	45	39526.5	2.8				mg/L	39543	Standard
Cl	35	35813.0	1.8				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1830.1	10.1				ug/L	1647	Standard
P	31	18830.0	1.9				ug/L	15231	Standard
S	34	2625.2	3.0				ug/L	1845	Standard
Sr	88	65.0	33.5				ug/L	70	Standard
C	12	80.0	21.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	19.2	93.8				mg/L	12	Standard
Ho-1	165	10.0	86.6				mg/L	12	Standard
Er	166	16.7	91.7				mg/L	20	Standard
I	127	2391.9	12.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.642	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.482
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.089
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Tuesday, June 28, 2016 23:22:21
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70209.0	1.7				ug/L	81760	Standard
	Be	9	180.0	16.9	**0.2017**	0.039	19.3	ug/L	17	Standard
	Al	27	5133.2	109.4	**0.0240**	0.041	173.1	ug/L	1410	Standard
	Sc	45	36931.6	2.6				ug/L	39543	Standard
	Ti	47	20.7	36.3	**-0.0758**	0.033	44.0	ug/L	39	Standard
	V	51	3515.4	3.3	**0.3352**	0.014	4.2	ug/L	1415	Standard
	Cr	52	11116.7	0.6	**0.6541**	0.028	4.2	ug/L	6946	Standard
	Cr	53	1220.0	4.0	**1.1474**	0.049	4.3	ug/L	328	Standard
	Mn	55	3585.8	2.9	**0.4442**	0.023	5.1	ug/L	823	Standard
	Co	59	2687.2	1.7	**0.3785**	0.013	3.3	ug/L	252	Standard
	Ni	60	2873.6	1.1	**1.5299**	0.031	2.0	ug/L	192	Standard
	Cu	65	1483.4	2.9	**0.7455**	0.015	2.0	ug/L	141	Standard
	Zn	66	6969.9	1.2	**5.9869**	0.185	3.1	ug/L	491	Standard
>	**Ge**	72	480794.8	1.6				ug/L	515087	Standard
	As	75	396.5	4.3	**0.4183**	0.021	5.0	ug/L	20	Standard
	Se	82	61.9	5.1	**0.4561**	0.020	4.4	ug/L	15	Standard
	Se-1	77	78.3	14.0	**0.3969**	0.172	43.4	ug/L	48	Standard
>	**Ga**	71	46.7	32.7				mg/L	90	Standard
	Rb	85	21.7	13.3				ug/L	23	Standard
	Y	89	400775.4	1.5				ug/L	448510	Standard
>	**Rh**	103	13.3	21.7				ug/L	15	Standard
	Mo	98	70.5	1.1	**0.0095**	0.000	1.9	ug/L	11	Standard
	Ag	107	2377.2	2.1	**0.3719**	0.012	3.3	ug/L	134	Standard
	Cd	111	440.9	3.8	**0.2230**	0.005	2.1	mg/L	7	Standard
	Cd	114	1065.8	11.0	**0.2200**	0.026	11.9	ug/L	16	Standard
>	**In**	115	557761.4	1.6				ug/L	611117	Standard
	Sn	118	468.3	18.8	**-0.0150**	0.017	116.5	ug/L	518	Standard
	Sb	123	1709.9	1.5	**0.3843**	0.009	2.4	ug/L	127	Standard
	Ba	135	1358.4	3.9	**0.6957**	0.022	3.2	ug/L	45	Standard
	Ce	140	15.0	33.3				ug/L	298	Standard
>	**Tb**	159	873882.2	1.3				ug/L	977942	Standard
	Ho	165	8.3	124.9				ug/L	12	Standard
	Tl	203	633.3	2.0	**0.0774**	0.002	2.5	ug/L	31	Standard
	Tl	205	590.0	17.7	**0.0858**	0.015	17.2	ug/L	20	Standard
	Pb	206	1230.0	0.6	**0.1853**	0.002	0.8	ug/L	286	Standard
	Pb	207	1060.4	4.9	**0.1798**	0.012	6.4	ug/L	257	Standard
	Pb	208	4496.6	3.9	**0.2002**	0.009	4.3	ug/L	956	Standard
	U	238	2637.6	2.9	**0.3996**	0.008	2.0	ug/L	17	Standard
>	**Bi**	209	509391.4	0.9				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	38.3	30.1	**-0.0027**	0.016	586.9	mg/L	32	Standard
K	39	28.3	44.4	**-0.0396**	0.043	109.0	mg/L	30	Standard
Ca	43	26.7	43.3	**-1.0379**	1.747	168.3	mg/L	48	Standard
Fe	54	112.3	22.9	**-0.0284**	0.024	85.0	mg/L	159	Standard
Fe	57	253.3	17.2	**0.2902**	0.150	51.8	mg/L	195	Standard
> **Sc-1**	45	36931.6	2.6				mg/L	39543	Standard
Cl	35	34628.2	2.2				ug/L	27642	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1663.4	2.8				ug/L	1647	Standard
P	31	13167.4	6.3				ug/L	15231	Standard
S	34	2550.2	3.7				ug/L	1845	Standard
Sr	88	81.7	12.7				ug/L	70	Standard
C	12	96.7	15.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	22.7	104.3				mg/L	12	Standard
Ho-1	165	8.3	124.9				mg/L	12	Standard
Er	166	13.3	173.2				mg/L	20	Standard
I	127	1815.1	19.4				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	100.854		
	Al	27			
	Sc	45			
	Ti	47			
	V	51	83.798		
	Cr	52	81.760		
	Cr	53			
	Mn	55	88.848		
	Co	59	94.629		
	Ni	60	95.622		
	Cu	65	93.183		
	Zn	66	95.791		
>	Ge	72		93.342	
	As	75	104.574		
	Se	82	114.027		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	92.977		
Cd	111	92.929		
Cd	114			
> In	115			91.269
Sn	118			
Sb	123	96.075		
Ba	135	92.766		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	96.789		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.122		
U	238	99.892		
> Bi	209			91.439
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBS M4 WG574306-02
Sample Date/Time: Tuesday, June 28, 2016 23:25:34
Number of Replicates: 3
Autosampler Position: 401
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73219.9	2.0				ug/L	81760	Standard
	Be	9	21.7	13.3	**0.0146**	0.003	19.0	ug/L	17	Standard
	Al	27	8870.9	1.6	**0.0499**	0.001	2.1	ug/L	1410	Standard
	Sc	45	39242.4	3.0				ug/L	39543	Standard
	Ti	47	26.0	21.4	**-0.0565**	0.021	37.8	ug/L	39	Standard
	V	51	1183.1	4.4	**-0.0293**	0.008	27.7	ug/L	1415	Standard
	Cr	52	7819.4	0.5	**0.1132**	0.035	31.1	ug/L	6946	Standard
	Cr	53	706.7	5.7	**0.4968**	0.043	8.6	ug/L	328	Standard
	Mn	55	910.4	1.2	**-0.0022**	0.005	247.3	ug/L	823	Standard
	Co	59	210.7	7.4	**-0.0001**	0.003	2281.1	ug/L	252	Standard
	Ni	60	270.7	10.1	**0.0449**	0.018	40.4	ug/L	192	Standard
	Cu	65	197.3	7.2	**0.0174**	0.009	50.7	ug/L	141	Standard
	Zn	66	1637.4	3.9	**0.7282**	0.056	7.7	ug/L	491	Standard
>	**Ge**	72	494675.2	2.7				ug/L	515087	Standard
	As	75	-22.9	72.5	**0.0188**	0.016	85.6	ug/L	20	Standard
	Se	82	19.6	24.9	**0.0572**	0.041	70.8	ug/L	15	Standard
	Se-1	77	57.0	14.0	**0.0674**	0.090	134.0	ug/L	48	Standard
>	**Ga**	71	43.3	17.6				mg/L	90	Standard
	Rb	85	43.3	35.3				ug/L	23	Standard
	Y	89	424600.8	0.9				ug/L	448510	Standard
>	**Rh**	103	15.0	66.7				ug/L	15	Standard
	Mo	98	68.5	24.2	**0.0070**	0.006	90.8	ug/L	11	Standard
	Ag	107	79.3	10.7	**-0.0041**	0.001	32.3	ug/L	134	Standard
	Cd	111	8.5	44.3	**0.0012**	0.002	151.3	mg/L	7	Standard
	Cd	114	29.3	97.6	**0.0009**	0.006	647.6	ug/L	16	Standard
>	**In**	115	594639.0	0.2				ug/L	611117	Standard
	Sn	118	648.3	4.2	**0.0107**	0.005	42.7	ug/L	518	Standard
	Sb	123	146.0	12.4	**0.0190**	0.004	20.5	ug/L	127	Standard
	Ba	135	94.3	2.4	**0.0219**	0.001	5.5	ug/L	45	Standard
	Ce	140	41.7	27.7				ug/L	298	Standard
>	**Tb**	159	926166.4	1.8				ug/L	977942	Standard
	Ho	165	11.7	24.7				ug/L	12	Standard
	Tl	203	20.7	43.9	**-0.0022**	0.001	49.4	ug/L	31	Standard
	Tl	205	15.0	33.3	**-0.0001**	0.001	484.0	ug/L	20	Standard
	Pb	206	313.0	7.9	**-0.0032**	0.004	138.6	ug/L	286	Standard
	Pb	207	286.3	1.1	**0.0033**	0.001	36.5	ug/L	257	Standard
	Pb	208	1144.7	1.9	**0.0029**	0.001	51.3	ug/L	956	Standard
	U	238	10.7	32.9	**-0.0014**	0.001	35.7	ug/L	17	Standard
>	**Bi**	209	533593.4	0.9				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	31.7	39.7	**-0.0149**	0.016	104.8	mg/L	32	Standard
K	39	41.7	69.3	**0.0013**	0.101	7981.1	mg/L	30	Standard
Ca	43	18.3	15.7	**-2.5418**	0.422	16.6	mg/L	48	Standard
Fe	54	144.2	9.3	**-0.0052**	0.016	301.7	mg/L	159	Standard
Fe	57	226.7	13.5	**0.1451**	0.083	57.3	mg/L	195	Standard
Sc-1	45	39242.4	3.0				mg/L	39543	Standard
Cl	35	36295.4	2.3				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	2233.5	3.2				ug/L	1647	Standard
P	31	18441.2	3.0				ug/L	15231	Standard
S	34	2560.2	3.7				ug/L	1845	Standard
Sr	88	61.7	26.1				ug/L	70	Standard
C	12	130.0	20.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	22.9	112.2				mg/L	12	Standard
Ho-1	165	11.7	24.7				mg/L	12	Standard
Er	166	10.0	100.0				mg/L	20	Standard
I	127	1601.8	24.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.555	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.037	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.304
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.784
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSS M4 WG574306-03
Sample Date/Time: Tuesday, June 28, 2016 23:28:45
Number of Replicates: 3
Autosampler Position: 402
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72376.0	3.8				ug/L	81760	Standard
	Be	9	23423.1	1.4	**26.6532**	0.807	3.0	ug/L	17	Standard
	Al	27	9074.4	3.8	**0.0521**	0.003	4.9	ug/L	1410	Standard
	Sc	45	39197.3	2.4				ug/L	39543	Standard
	Ti	47	29.3	7.1	**-0.0442**	0.007	16.8	ug/L	39	Standard
	V	51	169885.7	0.8	**24.8594**	0.272	1.1	ug/L	1415	Standard
	Cr	52	181506.5	1.2	**25.6821**	0.081	0.3	ug/L	6946	Standard
	Cr	53	22394.9	2.0	**25.8190**	0.261	1.0	ug/L	328	Standard
	Mn	55	162938.5	1.1	**25.6253**	0.137	0.5	ug/L	823	Standard
	Co	59	171171.6	1.4	**24.9527**	0.363	1.5	ug/L	252	Standard
	Ni	60	47214.1	1.2	**25.6031**	0.067	0.3	ug/L	192	Standard
	Cu	65	47011.2	0.9	**25.2811**	0.042	0.2	ug/L	141	Standard
	Zn	66	28788.3	1.3	**26.1066**	0.165	0.6	ug/L	491	Standard
>	**Ge**	72	502290.9	1.0				ug/L	515087	Standard
	As	75	27387.3	0.6	**25.0208**	0.130	0.5	ug/L	20	Standard
	Se	82	2754.4	0.7	**24.4154**	0.147	0.6	ug/L	15	Standard
	Se-1	77	1916.1	0.9	**25.3637**	0.129	0.5	ug/L	48	Standard
>	**Ga**	71	55.0	18.2				mg/L	90	Standard
	Rb	85	31.7	18.2				ug/L	23	Standard
	Y	89	439399.0	0.9				ug/L	448510	Standard
>	**Rh**	103	31.7	24.1				ug/L	15	Standard
	Mo	98	98.7	7.7	**0.0186**	0.002	12.0	ug/L	11	Standard
	Ag	107	158446.9	0.8	**24.3265**	0.298	1.2	ug/L	134	Standard
	Cd	111	51639.0	0.8	**24.9106**	0.321	1.3	mg/L	7	Standard
	Cd	114	123238.5	0.9	**24.4562**	0.275	1.1	ug/L	16	Standard
>	**In**	115	592677.3	1.9				ug/L	611117	Standard
	Sn	118	653.3	6.2	**0.0119**	0.005	41.0	ug/L	518	Standard
	Sb	123	110361.6	0.7	**24.1094**	0.310	1.3	ug/L	127	Standard
	Ba	135	48745.3	0.9	**24.3246**	0.340	1.4	ug/L	45	Standard
	Ce	140	51.7	39.1				ug/L	298	Standard
>	**Tb**	159	905963.3	1.2				ug/L	977942	Standard
	Ho	165	11.7	65.5				ug/L	12	Standard
	Tl	203	202415.8	0.8	**25.4126**	0.129	0.5	ug/L	31	Standard
	Tl	205	180512.3	0.1	**26.1008**	0.236	0.9	ug/L	20	Standard
	Pb	206	132596.7	0.6	**25.8949**	0.268	1.0	ug/L	286	Standard
	Pb	207	115831.1	1.1	**25.0809**	0.349	1.4	ug/L	257	Standard
	Pb	208	485807.7	1.5	**27.1937**	0.548	2.0	ug/L	956	Standard
	U	238	174705.5	0.6	**25.7950**	0.133	0.5	ug/L	17	Standard
>	**Bi**	209	526543.8	0.9				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	28.3	53.9	**-0.0192**	0.020	104.0	mg/L	32	Standard
K	39	18.3	78.7	**-0.0794**	0.048	60.3	mg/L	30	Standard
Ca	43	26.7	21.7	**-1.2726**	0.799	62.8	mg/L	48	Standard
Fe	54	143.6	13.2	**-0.0059**	0.017	289.5	mg/L	159	Standard
Fe	57	241.7	12.5	**0.2002**	0.121	60.5	mg/L	195	Standard
> **Sc-1**	45	39197.3	2.4				mg/L	39543	Standard
Cl	35	35988.7	2.8				ug/L	27642	Standard
Kr	83	3.3	17.3				ug/L	2	Standard
Br	81	1690.1	11.1				ug/L	1647	Standard
P	31	17910.6	1.0				ug/L	15231	Standard
S	34	2548.5	6.5				ug/L	1845	Standard
Sr	88	75.0	24.0				ug/L	70	Standard
C	12	120.0	16.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	16.5	68.3				mg/L	12	Standard
Ho-1	165	11.7	65.5				mg/L	12	Standard
Er	166	3.3	173.2				mg/L	20	Standard
I	127	1618.4	15.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.522	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.516	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.983
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.518
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129707 WG574306-01
Sample Date/Time: Tuesday, June 28, 2016 23:31:57
Number of Replicates: 3
Autosampler Position: 403
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73039.0	1.3				ug/L	81760	Standard
	Be	9	626.7	10.9	**0.6973**	0.086	12.3	ug/L	17	Standard
	Al	27	6016122.3	2.0	**43.6794**	0.992	2.3	ug/L	1410	Standard
	Sc	45	43592.6	1.8				ug/L	39543	Standard
	Ti	47	1645.1	1.5	**6.4955**	0.085	1.3	ug/L	39	Standard
	V	51	103833.7	2.4	**14.8338**	0.288	1.9	ug/L	1415	Standard
	Cr	52	59851.7	1.4	**7.6005**	0.153	2.0	ug/L	6946	Standard
	Cr	53	7268.4	3.1	**7.9966**	0.305	3.8	ug/L	328	Standard
	Mn	55	3268160.2	1.2	**507.4707**	9.760	1.9	ug/L	823	Standard
	Co	59	39533.2	0.9	**5.6343**	0.098	1.7	ug/L	252	Standard
	Ni	60	18874.4	2.7	**9.9863**	0.299	3.0	ug/L	192	Standard
	Cu	65	69246.2	1.1	**36.6021**	0.305	0.8	ug/L	141	Standard
	Zn	66	86637.7	0.8	**78.7605**	0.745	0.9	ug/L	491	Standard
>	**Ge**	72	511586.4	0.8				ug/L	515087	Standard
	As	75	4823.9	1.5	**4.3600**	0.029	0.7	ug/L	20	Standard
	Se	82	100.3	6.0	**0.7578**	0.047	6.2	ug/L	15	Standard
	Se-1	77	133.3	1.1	**1.0631**	0.006	0.6	ug/L	48	Standard
>	**Ga**	71	7216.7	0.8				mg/L	90	Standard
	Rb	85	77067.2	0.1				ug/L	23	Standard
	Y	89	607493.8	2.8				ug/L	448510	Standard
>	**Rh**	103	25.0	34.6				ug/L	15	Standard
	Mo	98	512.0	2.8	**0.1759**	0.005	2.9	ug/L	11	Standard
	Ag	107	750.4	6.7	**0.0988**	0.008	7.8	ug/L	134	Standard
	Cd	111	815.5	1.0	**0.3898**	0.005	1.3	mg/L	7	Standard
	Cd	114	2038.2	2.1	**0.3989**	0.010	2.4	ug/L	16	Standard
>	**In**	115	593721.9	0.4				ug/L	611117	Standard
	Sn	118	941.7	10.4	**0.0620**	0.016	26.6	ug/L	518	Standard
	Sb	123	1005.8	16.4	**0.2066**	0.037	17.7	ug/L	127	Standard
	Ba	135	393236.3	1.1	**196.0335**	2.433	1.2	ug/L	45	Standard
	Ce	140	857283.3	2.5				ug/L	298	Standard
>	**Tb**	159	944884.3	0.7				ug/L	977942	Standard
	Ho	165	15139.2	2.1				ug/L	12	Standard
	Tl	203	479.0	10.1	**0.0546**	0.006	10.6	ug/L	31	Standard
	Tl	205	396.7	12.4	**0.0544**	0.008	14.1	ug/L	20	Standard
	Pb	206	209606.6	0.8	**40.4302**	0.428	1.1	ug/L	286	Standard
	Pb	207	173972.5	0.8	**37.2011**	0.310	0.8	ug/L	257	Standard
	Pb	208	734775.6	0.6	**40.6204**	0.824	2.0	ug/L	956	Standard
	U	238	3055.0	2.6	**0.4423**	0.014	3.2	ug/L	17	Standard
>	**Bi**	209	533598.4	1.5				ug/L	557080	Standard

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Na	23	3.3	173.2	**19.2926**	33.407	173.2	mg/L	0	Standard
Mg	24	75.0	26.7	**0.0334**	0.024	70.8	mg/L	32	Standard
K	39	210.0	4.8	**0.5021**	0.023	4.7	mg/L	30	Standard
Ca	43	75.0	29.1	**4.9537**	2.848	57.5	mg/L	48	Standard
Fe	54	6552.0	2.8	**5.2441**	0.230	4.4	mg/L	159	Standard
Fe	57	1841.8	2.3	**5.0156**	0.091	1.8	mg/L	195	Standard
> **Sc-1**	45	43592.6	1.8				mg/L	39543	Standard
Cl	35	34528.0	1.5				ug/L	27642	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	3080.3	6.6				ug/L	1647	Standard
P	31	18262.7	4.8				ug/L	15231	Standard
S	34	2550.2	4.9				ug/L	1845	Standard
Sr	88	106.7	7.2				ug/L	70	Standard
C	12	370.0	20.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	40.0				mg/L	0	Standard
Dy	164	25551.2	3.2				mg/L	12	Standard
Ho-1	165	15139.2	2.1				mg/L	12	Standard
Er	166	14156.6	1.1				mg/L	20	Standard
I	127	14104.9	1.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.333	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.320	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.154
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.785
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129708S WG574306-04
Sample Date/Time: Tuesday, June 28, 2016 23:35:08
Number of Replicates: 3
Autosampler Position: 404
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77425.7	0.5				ug/L	81760	Standard
	Be	9	24978.9	2.1	**26.5514**	0.597	2.2	ug/L	17	Standard
	Al	27	20723622.4	0.1	**141.9584**	0.685	0.5	ug/L	1410	Standard
	Sc	45	47225.2	3.2				ug/L	39543	Standard
	Ti	47	4499.3	2.9	**18.2724**	0.558	3.1	ug/L	39	Standard
	V	51	344846.0	0.3	**50.3538**	0.699	1.4	ug/L	1415	Standard
	Cr	52	312957.5	0.8	**44.7646**	1.096	2.4	ug/L	6946	Standard
	Cr	53	39581.6	1.4	**45.6150**	1.229	2.7	ug/L	328	Standard
	Mn	55	5573425.5	1.4	**875.8629**	6.350	0.7	ug/L	823	Standard
	Co	59	254404.2	1.0	**36.8653**	0.333	0.9	ug/L	252	Standard
	Ni	60	98601.5	0.1	**53.2500**	0.840	1.6	ug/L	192	Standard
	Cu	65	83052.3	0.8	**44.4536**	0.827	1.9	ug/L	141	Standard
	Zn	66	91760.7	0.8	**84.4843**	0.972	1.2	ug/L	491	Standard
>	**Ge**	72	505521.9	1.6				ug/L	515087	Standard
	As	75	29384.3	0.4	**26.6737**	0.341	1.3	ug/L	20	Standard
	Se	82	1902.3	1.0	**16.7176**	0.177	1.1	ug/L	15	Standard
	Se-1	77	1368.1	4.0	**17.7813**	0.553	3.1	ug/L	48	Standard
>	**Ga**	71	22081.1	1.8				mg/L	90	Standard
	Rb	85	217862.7	3.0				ug/L	23	Standard
	Y	89	681158.2	0.5				ug/L	448510	Standard
>	**Rh**	103	41.7	13.9				ug/L	15	Standard
	Mo	98	502.0	0.9	**0.1763**	0.003	1.6	ug/L	11	Standard
	Ag	107	151390.6	0.2	**23.7106**	0.326	1.4	ug/L	134	Standard
	Cd	111	50168.4	0.1	**24.6878**	0.285	1.2	mg/L	7	Standard
	Cd	114	122073.8	0.4	**24.7133**	0.372	1.5	ug/L	16	Standard
>	**In**	115	580961.0	1.3				ug/L	611117	Standard
	Sn	118	790.0	7.7	**0.0385**	0.009	23.5	ug/L	518	Standard
	Sb	123	3165.4	5.9	**0.6928**	0.037	5.4	ug/L	127	Standard
	Ba	135	532338.7	0.4	**271.2464**	4.110	1.5	ug/L	45	Standard
	Ce	140	1309534.5	1.1				ug/L	298	Standard
>	**Tb**	159	945803.3	0.3				ug/L	977942	Standard
	Ho	165	21665.5	2.8				ug/L	12	Standard
	Tl	203	195988.5	0.7	**24.3661**	0.181	0.7	ug/L	31	Standard
	Tl	205	172319.6	2.0	**24.6721**	0.452	1.8	ug/L	20	Standard
	Pb	206	254741.0	0.7	**49.3204**	0.423	0.9	ug/L	286	Standard
	Pb	207	216152.1	1.4	**46.3962**	0.722	1.6	ug/L	257	Standard
	Pb	208	888930.7	0.3	**49.3200**	0.099	0.2	ug/L	956	Standard
	U	238	171966.4	0.9	**25.1430**	0.188	0.7	ug/L	17	Standard
>	**Bi**	209	531711.1	0.2				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	125.0	34.9	**0.0812**	0.045	55.3	mg/L	32	Standard
K	39	518.3	8.6	**1.3288**	0.177	13.3	mg/L	30	Standard
Ca	43	238.3	9.5	**24.9959**	3.131	12.5	mg/L	48	Standard
Fe	54	18930.5	0.8	**14.2167**	0.407	2.9	mg/L	159	Standard
Fe	57	5154.2	3.0	**13.9467**	0.213	1.5	mg/L	195	Standard
> **Sc-1**	45	47225.2	3.2				mg/L	39543	Standard
Cl	35	33388.1	1.2				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2326.8	4.2				ug/L	1647	Standard
P	31	19087.0	1.5				ug/L	15231	Standard
S	34	2648.6	1.1				ug/L	1845	Standard
Sr	88	121.7	17.1				ug/L	70	Standard
C	12	206.7	36.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	56.8				mg/L	0	Standard
Dy	164	35480.3	0.5				mg/L	12	Standard
Ho-1	165	21665.5	2.8				mg/L	12	Standard
Er	166	19556.0	2.5				mg/L	20	Standard
I	127	13694.5	2.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.699	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.143	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.065
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.446
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129708S WG574306-04
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Method 6020 - Summary Report

Sample ID: L1606129709SD WG574306-05
Sample Date/Time: Tuesday, June 28, 2016 23:38:19
Number of Replicates: 3
Autosampler Position: 405
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74161.1	1.1				ug/L	81760	Standard
	Be	9	23705.2	3.8	**26.3039**	0.872	3.3	ug/L	17	Standard
	Al	27	6111125.0	1.3	**43.6951**	0.516	1.2	ug/L	1410	Standard
	Sc	45	44620.6	1.2				ug/L	39543	Standard
	Ti	47	2932.6	3.4	**11.8635**	0.492	4.1	ug/L	39	Standard
	V	51	246865.2	0.2	**36.0158**	0.450	1.2	ug/L	1415	Standard
	Cr	52	213059.8	1.6	**30.1549**	0.173	0.6	ug/L	6946	Standard
	Cr	53	26094.1	1.0	**29.9771**	0.650	2.2	ug/L	328	Standard
	Mn	55	1521366.7	1.6	**239.1613**	2.815	1.2	ug/L	823	Standard
	Co	59	194513.2	1.8	**28.2005**	0.410	1.5	ug/L	252	Standard
	Ni	60	61728.2	1.1	**33.3195**	0.163	0.5	ug/L	192	Standard
	Cu	65	74436.8	1.3	**39.8619**	0.705	1.8	ug/L	141	Standard
	Zn	66	58904.3	0.8	**53.9789**	0.545	1.0	ug/L	491	Standard
>	**Ge**	72	505111.3	1.2				ug/L	515087	Standard
	As	75	31837.0	1.5	**28.9187**	0.503	1.7	ug/L	20	Standard
	Se	82	2328.1	1.1	**20.5054**	0.470	2.3	ug/L	15	Standard
	Se-1	77	1619.4	1.4	**21.2042**	0.440	2.1	ug/L	48	Standard
>	**Ga**	71	6334.7	3.0				mg/L	90	Standard
	Rb	85	74980.1	1.6				ug/L	23	Standard
	Y	89	605551.0	0.9				ug/L	448510	Standard
>	**Rh**	103	31.7	39.7				ug/L	15	Standard
	Mo	98	404.4	5.7	**0.1335**	0.008	5.8	ug/L	11	Standard
	Ag	107	149725.6	1.6	**22.7377**	0.610	2.7	ug/L	134	Standard
	Cd	111	49979.3	1.2	**23.8462**	0.386	1.6	mg/L	7	Standard
	Cd	114	121386.1	1.5	**23.8269**	0.554	2.3	ug/L	16	Standard
>	**In**	115	599198.2	1.3				ug/L	611117	Standard
	Sn	118	811.7	7.5	**0.0382**	0.012	32.5	ug/L	518	Standard
	Sb	123	19138.7	1.5	**4.1252**	0.117	2.8	ug/L	127	Standard
	Ba	135	258930.8	0.8	**127.9040**	1.896	1.5	ug/L	45	Standard
	Ce	140	760518.7	0.8				ug/L	298	Standard
>	**Tb**	159	951283.8	0.9				ug/L	977942	Standard
	Ho	165	14106.6	0.1				ug/L	12	Standard
	Tl	203	188730.2	0.5	**23.1187**	0.087	0.4	ug/L	31	Standard
	Tl	205	170134.9	1.0	**24.0027**	0.337	1.4	ug/L	20	Standard
	Pb	206	208981.3	1.7	**39.8515**	0.361	0.9	ug/L	286	Standard
	Pb	207	178505.4	0.4	**37.7421**	0.330	0.9	ug/L	257	Standard
	Pb	208	755416.1	1.2	**41.2868**	0.479	1.2	ug/L	956	Standard
	U	238	170025.1	1.0	**24.4935**	0.095	0.4	ug/L	17	Standard
>	**Bi**	209	539649.3	0.9				ug/L	557080	Standard

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Na	23	3.3	86.6	**19.0051**	16.458	86.6	mg/L	0	Standard
Mg	24	83.3	27.7	**0.0410**	0.026	64.1	mg/L	32	Standard
K	39	181.7	7.9	**0.4027**	0.045	11.2	mg/L	30	Standard
Ca	43	75.0	26.7	**4.7351**	2.622	55.4	mg/L	48	Standard
Fe	54	5650.5	3.5	**4.3963**	0.211	4.8	mg/L	159	Standard
Fe	57	1623.4	7.9	**4.2316**	0.365	8.6	mg/L	195	Standard
> **Sc-1**	45	44620.6	1.2				mg/L	39543	Standard
Cl	35	32136.0	1.3				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1900.1	7.1				ug/L	1647	Standard
P	31	17840.5	2.2				ug/L	15231	Standard
S	34	2363.5	5.1				ug/L	1845	Standard
Sr	88	98.3	20.5				ug/L	70	Standard
C	12	150.0	37.1				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	20.0				mg/L	0	Standard
Dy	164	23948.7	0.5				mg/L	12	Standard
Ho-1	165	14106.6	0.1				mg/L	12	Standard
Er	166	12898.8	4.1				mg/L	20	Standard
I	127	5567.7	3.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.706	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.063	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.050
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.871
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144301
Sample Date/Time: Tuesday, June 28, 2016 23:41:31
Number of Replicates: 3
Autosampler Position: 406
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72988.8	2.0				ug/L	81760	Standard
	Be	9	916.7	4.9	**1.0251**	0.070	6.9	ug/L	17	Standard
	Al	27	29327581.2	1.7	**213.1994**	7.066	3.3	ug/L	1410	Standard
	Sc	45	42180.3	1.1				ug/L	39543	Standard
	Ti	47	15217.0	2.1	**62.4530**	1.008	1.6	ug/L	39	Standard
	V	51	58550.8	0.3	**8.4144**	0.093	1.1	ug/L	1415	Standard
	Cr	52	50375.3	2.1	**6.3484**	0.119	1.9	ug/L	6946	Standard
	Cr	53	5892.8	2.4	**6.5282**	0.148	2.3	ug/L	328	Standard
	Mn	55	1501608.8	1.0	**236.8837**	1.387	0.6	ug/L	823	Standard
	Co	59	11082.4	1.1	**1.5829**	0.023	1.4	ug/L	252	Standard
	Ni	60	9938.9	1.0	**5.2962**	0.105	2.0	ug/L	192	Standard
	Cu	65	12880.8	1.6	**6.8461**	0.032	0.5	ug/L	141	Standard
	Zn	66	52551.7	1.1	**48.2375**	0.337	0.7	ug/L	491	Standard
>	**Ge**	72	503346.2	1.1				ug/L	515087	Standard
	As	75	9638.5	1.8	**8.8128**	0.107	1.2	ug/L	20	Standard
	Se	82	89.1	11.5	**0.6728**	0.088	13.1	ug/L	15	Standard
	Se-1	77	112.0	20.6	**0.8047**	0.328	40.8	ug/L	48	Standard
>	**Ga**	71	5402.6	1.6				mg/L	90	Standard
	Rb	85	27092.5	2.9				ug/L	23	Standard
	Y	89	512619.4	0.7				ug/L	448510	Standard
>	**Rh**	103	40.0	45.1				ug/L	15	Standard
	Mo	98	2129.4	2.5	**0.7922**	0.032	4.0	ug/L	11	Standard
	Ag	107	397.3	28.5	**0.0446**	0.016	36.8	ug/L	134	Standard
	Cd	111	847.6	0.8	**0.4054**	0.009	2.1	mg/L	7	Standard
	Cd	114	2047.7	3.4	**0.4008**	0.011	2.7	ug/L	16	Standard
>	**In**	115	593663.8	1.5				ug/L	611117	Standard
	Sn	118	1955.1	5.4	**0.2386**	0.021	8.9	ug/L	518	Standard
	Sb	123	857.9	5.2	**0.1744**	0.012	7.0	ug/L	127	Standard
	Ba	135	91007.2	1.4	**45.3648**	1.263	2.8	ug/L	45	Standard
	Ce	140	427372.5	1.2				ug/L	298	Standard
>	**Tb**	159	914890.2	3.3				ug/L	977942	Standard
	Ho	165	5369.3	2.3				ug/L	12	Standard
	Tl	203	3260.4	2.3	**0.4133**	0.015	3.6	ug/L	31	Standard
	Tl	205	2856.9	4.2	**0.4193**	0.011	2.7	ug/L	20	Standard
	Pb	206	241551.6	0.7	**48.2276**	1.641	3.4	ug/L	286	Standard
	Pb	207	199984.5	0.7	**44.2621**	1.381	3.1	ug/L	257	Standard
	Pb	208	845904.8	0.5	**48.3946**	1.395	2.9	ug/L	956	Standard
	U	238	4244.6	0.7	**0.6370**	0.016	2.5	ug/L	17	Standard
>	**Bi**	209	515907.9	2.8				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.1607**	17.590	173.1	mg/L	0	Standard
Mg	24	176.7	13.4	**0.1635**	0.031	19.2	mg/L	32	Standard
K	39	111.7	29.8	**0.2126**	0.107	50.1	mg/L	30	Standard
Ca	43	486.7	20.1	**63.9109**	13.520	21.2	mg/L	48	Standard
Fe	54	4570.1	3.9	**3.7396**	0.111	3.0	mg/L	159	Standard
Fe	57	1611.8	3.6	**4.4774**	0.217	4.9	mg/L	195	Standard
> **Sc-1**	45	42180.3	1.1				mg/L	39543	Standard
Cl	35	34952.3	0.5				ug/L	27642	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	2820.3	6.2				ug/L	1647	Standard
P	31	18733.3	7.5				ug/L	15231	Standard
S	34	2421.9	7.6				ug/L	1845	Standard
Sr	88	105.0	16.5				ug/L	70	Standard
C	12	266.7	9.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	83.3	60.4				mg/L	0	Standard
Dy	164	8334.8	4.4				mg/L	12	Standard
Ho-1	165	5369.3	2.3				mg/L	12	Standard
Er	166	5100.9	4.8				mg/L	20	Standard
I	127	10480.3	8.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.272	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.721	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.144
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	92.609
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606144302
Sample Date/Time: Tuesday, June 28, 2016 23:44:42
Number of Replicates: 3
Autosampler Position: 407
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71243.8	1.4				ug/L	81760	Standard
	Be	9	1080.0	8.5	**1.2377**	0.094	7.6	ug/L	17	Standard
	Al	27	5504266.2	2.7	**40.9647**	0.928	2.3	ug/L	1410	Standard
	Sc	45	42188.7	3.4				ug/L	39543	Standard
	Ti	47	15737.8	0.6	**62.0152**	0.652	1.1	ug/L	39	Standard
	V	51	45512.4	1.5	**6.2276**	0.158	2.5	ug/L	1415	Standard
	Cr	52	44821.9	1.8	**5.2702**	0.176	3.3	ug/L	6946	Standard
	Cr	53	5345.9	2.2	**5.6430**	0.187	3.3	ug/L	328	Standard
	Mn	55	1510551.7	1.4	**228.8078**	5.482	2.4	ug/L	823	Standard
	Co	59	8314.6	0.3	**1.1314**	0.011	1.0	ug/L	252	Standard
	Ni	60	7372.1	1.0	**3.7410**	0.046	1.2	ug/L	192	Standard
	Cu	65	13129.7	1.4	**6.6988**	0.146	2.2	ug/L	141	Standard
	Zn	66	50712.1	0.8	**44.6331**	0.723	1.6	ug/L	491	Standard
>	**Ge**	72	524277.6	1.0				ug/L	515087	Standard
	As	75	7848.1	0.4	**6.8989**	0.093	1.3	ug/L	20	Standard
	Se	82	94.2	13.2	**0.6849**	0.109	15.9	ug/L	15	Standard
	Se-1	77	110.0	9.5	**0.7149**	0.123	17.2	ug/L	48	Standard
>	**Ga**	71	4740.7	7.0				mg/L	90	Standard
	Rb	85	22735.4	3.5				ug/L	23	Standard
	Y	89	510942.2	1.8				ug/L	448510	Standard
>	**Rh**	103	18.3	110.2				ug/L	15	Standard
	Mo	98	3616.2	2.9	**1.3869**	0.053	3.8	ug/L	11	Standard
	Ag	107	415.3	27.2	**0.0487**	0.017	35.1	ug/L	134	Standard
	Cd	111	879.6	1.3	**0.4294**	0.003	0.8	mg/L	7	Standard
	Cd	114	2156.4	4.6	**0.4311**	0.017	3.9	ug/L	16	Standard
>	**In**	115	581659.3	1.0				ug/L	611117	Standard
	Sn	118	1941.8	8.1	**0.2429**	0.025	10.2	ug/L	518	Standard
	Sb	123	795.2	3.5	**0.1642**	0.005	3.1	ug/L	127	Standard
	Ba	135	105670.2	0.5	**53.7566**	0.798	1.5	ug/L	45	Standard
	Ce	140	489350.3	0.7				ug/L	298	Standard
>	**Tb**	159	914906.3	0.9				ug/L	977942	Standard
	Ho	165	5852.8	3.2				ug/L	12	Standard
	Tl	203	2193.8	7.0	**0.2695**	0.018	6.5	ug/L	31	Standard
	Tl	205	1858.4	8.2	**0.2655**	0.024	8.9	ug/L	20	Standard
	Pb	206	250441.6	1.0	**48.7728**	1.107	2.3	ug/L	286	Standard
	Pb	207	208820.1	0.2	**45.0828**	0.807	1.8	ug/L	257	Standard
	Pb	208	871187.9	1.2	**48.6248**	1.437	3.0	ug/L	956	Standard
	U	238	4748.1	0.9	**0.6954**	0.016	2.3	ug/L	17	Standard
>	**Bi**	209	528719.9	1.7				ug/L	557080	Standard

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Na	23	6.7	43.3	**39.8641**	16.152	40.5	mg/L	0	Standard
Mg	24	568.3	2.7	**0.6523**	0.023	3.6	mg/L	32	Standard
K	39	88.3	11.8	**0.1385**	0.034	24.4	mg/L	30	Standard
Ca	43	236.7	18.2	**28.4335**	6.608	23.2	mg/L	48	Standard
Fe	54	3607.3	1.4	**2.9257**	0.132	4.5	mg/L	159	Standard
Fe	57	1208.4	3.1	**3.2044**	0.245	7.6	mg/L	195	Standard
> **Sc-1**	45	42188.7	3.4				mg/L	39543	Standard
Cl	35	33795.0	1.6				ug/L	27642	Standard
Kr	83	3.3	75.5				ug/L	2	Standard
Br	81	2200.2	4.1				ug/L	1647	Standard
P	31	17892.2	3.9				ug/L	15231	Standard
S	34	2398.5	0.8				ug/L	1845	Standard
Sr	88	86.7	23.3				ug/L	70	Standard
C	12	246.7	15.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	76.7	30.1				mg/L	0	Standard
Dy	164	8934.1	5.5				mg/L	12	Standard
Ho-1	165	5852.8	3.2				mg/L	12	Standard
Er	166	5817.8	2.9				mg/L	20	Standard
I	127	10927.3	3.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		87.138	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.784	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.180
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.909
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606144302PS WG574573-01
Sample Date/Time: Tuesday, June 28, 2016 23:47:54
Number of Replicates: 3
Autosampler Position: 408
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74517.8	1.0				ug/L	81760	Standard
	Be	9	49025.9	0.9	**54.1590**	0.839	1.5	ug/L	17	Standard
	Al	27	5488864.5	1.0	**39.0606**	0.777	2.0	ug/L	1410	Standard
	Sc	45	43992.1	1.6				ug/L	39543	Standard
	Ti	47	15590.7	1.3	**62.0794**	2.775	4.5	ug/L	39	Standard
	V	51	384779.8	0.6	**54.7401**	1.764	3.2	ug/L	1415	Standard
	Cr	52	400124.0	1.3	**56.0091**	2.445	4.4	ug/L	6946	Standard
	Cr	53	50664.6	1.6	**56.9262**	0.956	1.7	ug/L	328	Standard
	Mn	55	1785071.4	0.4	**273.1709**	9.729	3.6	ug/L	823	Standard
	Co	59	343226.4	0.5	**48.4551**	1.560	3.2	ug/L	252	Standard
	Ni	60	101539.8	1.7	**53.4214**	2.390	4.5	ug/L	192	Standard
	Cu	65	107630.3	0.5	**56.1285**	1.666	3.0	ug/L	141	Standard
	Zn	66	105446.7	0.4	**94.6554**	2.823	3.0	ug/L	491	Standard
>	**Ge**	72	519316.9	3.3				ug/L	515087	Standard
	As	75	63635.8	1.4	**56.2203**	2.024	3.6	ug/L	20	Standard
	Se	82	5672.0	2.3	**48.8026**	2.645	5.4	ug/L	15	Standard
	Se-1	77	3855.8	0.1	**50.0819**	1.642	3.3	ug/L	48	Standard
>	**Ga**	71	4749.1	6.7				mg/L	90	Standard
	Rb	85	22398.2	1.3				ug/L	23	Standard
	Y	89	511504.7	2.1				ug/L	448510	Standard
>	**Rh**	103	58.3	34.6				ug/L	15	Standard
	Mo	98	3550.9	0.5	**1.3279**	0.015	1.1	ug/L	11	Standard
	Ag	107	317741.2	0.8	**48.5166**	0.462	1.0	ug/L	134	Standard
	Cd	111	103027.6	1.2	**49.4156**	0.686	1.4	mg/L	7	Standard
	Cd	114	250223.1	1.7	**49.3820**	1.399	2.8	ug/L	16	Standard
>	**In**	115	596094.6	1.6				ug/L	611117	Standard
	Sn	118	2016.8	5.9	**0.2476**	0.017	6.7	ug/L	518	Standard
	Sb	123	226110.3	0.9	**49.1269**	0.970	2.0	ug/L	127	Standard
	Ba	135	199376.6	0.4	**98.9961**	1.356	1.4	ug/L	45	Standard
	Ce	140	473631.7	1.6				ug/L	298	Standard
>	**Tb**	159	946510.9	0.6				ug/L	977942	Standard
	Ho	165	5706.1	1.8				ug/L	12	Standard
	Tl	203	404565.2	1.6	**49.2192**	0.432	0.9	ug/L	31	Standard
	Tl	205	358549.4	2.4	**50.2279**	0.323	0.6	ug/L	20	Standard
	Pb	206	506766.3	0.6	**96.0764**	1.688	1.8	ug/L	286	Standard
	Pb	207	430425.5	0.4	**90.4686**	1.648	1.8	ug/L	257	Standard
	Pb	208	1789019.3	1.0	**97.1851**	0.775	0.8	ug/L	956	Standard
	U	238	348425.0	0.3	**49.8561**	0.765	1.5	ug/L	17	Standard
>	**Bi**	209	543434.9	1.8				ug/L	557080	Standard

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Na	23	3.3	86.6	**19.2423**	16.666	86.6	mg/L	0	Standard
Mg	24	530.0	3.8	**0.5773**	0.030	5.2	mg/L	32	Standard
K	39	95.0	5.3	**0.1471**	0.014	9.3	mg/L	30	Standard
Ca	43	235.0	26.6	**26.8058**	8.969	33.5	mg/L	48	Standard
Fe	54	3632.6	2.6	**2.8189**	0.112	4.0	mg/L	159	Standard
Fe	57	1290.1	7.8	**3.2920**	0.337	10.2	mg/L	195	Standard
> **Sc-1**	45	43992.1	1.6				mg/L	39543	Standard
Cl	35	33127.5	1.3				ug/L	27642	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	2050.1	2.6				ug/L	1647	Standard
P	31	18372.8	5.1				ug/L	15231	Standard
S	34	2410.2	0.9				ug/L	1845	Standard
Sr	88	108.3	17.5				ug/L	70	Standard
C	12	236.7	47.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	86.7	70.5				mg/L	0	Standard
Dy	164	8282.4	2.8				mg/L	12	Standard
Ho-1	165	5706.1	1.8				mg/L	12	Standard
Er	166	5427.6	1.3				mg/L	20	Standard
I	127	10600.4	5.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.142	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.821	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.542
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.551
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606144302SDL WG574573-02
Sample Date/Time: Tuesday, June 28, 2016 23:51:05
Number of Replicates: 3
Autosampler Position: 409
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73539.7	0.5				ug/L	81760	Standard
	Be	9	228.3	17.7	**0.2458**	0.045	18.1	ug/L	17	Standard
	Al	27	1128305.0	2.6	**8.1231**	0.173	2.1	ug/L	1410	Standard
	Sc	45	40995.4	3.1				ug/L	39543	Standard
	Ti	47	3133.3	3.6	**12.6953**	0.331	2.6	ug/L	39	Standard
	V	51	9700.8	3.1	**1.2183**	0.050	4.1	ug/L	1415	Standard
	Cr	52	13743.6	3.1	**0.9582**	0.044	4.6	ug/L	6946	Standard
	Cr	53	1285.1	5.5	**1.1537**	0.099	8.6	ug/L	328	Standard
	Mn	55	302649.7	2.2	**47.5055**	0.538	1.1	ug/L	823	Standard
	Co	59	1856.8	5.3	**0.2384**	0.012	4.9	ug/L	252	Standard
	Ni	60	1619.8	3.4	**0.7729**	0.024	3.1	ug/L	192	Standard
	Cu	65	2766.6	1.1	**1.3956**	0.008	0.6	ug/L	141	Standard
	Zn	66	11859.0	1.8	**10.2169**	0.056	0.5	ug/L	491	Standard
>	**Ge**	72	504593.5	1.7				ug/L	515087	Standard
	As	75	1530.8	2.0	**1.4307**	0.048	3.3	ug/L	20	Standard
	Se	82	33.4	31.2	**0.1774**	0.094	53.0	ug/L	15	Standard
	Se-1	77	64.7	12.6	**0.1577**	0.113	71.7	ug/L	48	Standard
>	**Ga**	71	975.0	10.5				mg/L	90	Standard
	Rb	85	4577.4	4.1				ug/L	23	Standard
	Y	89	452862.0	1.2				ug/L	448510	Standard
>	**Rh**	103	23.3	32.7				ug/L	15	Standard
	Mo	98	722.3	4.5	**0.2491**	0.011	4.3	ug/L	11	Standard
	Ag	107	159.0	11.1	**0.0076**	0.003	35.4	ug/L	134	Standard
	Cd	111	175.3	14.8	**0.0794**	0.012	14.8	mg/L	7	Standard
	Cd	114	462.3	4.9	**0.0844**	0.004	4.5	ug/L	16	Standard
>	**In**	115	608749.5	0.7				ug/L	611117	Standard
	Sn	118	845.0	9.9	**0.0416**	0.014	34.5	ug/L	518	Standard
	Sb	123	2112.7	19.6	**0.4370**	0.091	20.8	ug/L	127	Standard
	Ba	135	21046.6	3.7	**10.2079**	0.317	3.1	ug/L	45	Standard
	Ce	140	96335.3	1.6				ug/L	298	Standard
>	**Tb**	159	932545.8	1.3				ug/L	977942	Standard
	Ho	165	1166.7	10.3				ug/L	12	Standard
	Tl	203	511.3	6.9	**0.0588**	0.004	6.8	ug/L	31	Standard
	Tl	205	456.7	14.9	**0.0631**	0.009	14.8	ug/L	20	Standard
	Pb	206	50001.0	0.8	**9.6268**	0.026	0.3	ug/L	286	Standard
	Pb	207	41687.9	1.1	**8.8985**	0.042	0.5	ug/L	257	Standard
	Pb	208	175842.9	0.5	**9.7051**	0.030	0.3	ug/L	956	Standard
	U	238	977.7	3.5	**0.1400**	0.006	4.1	ug/L	17	Standard
>	**Bi**	209	531859.1	0.7				ug/L	557080	Standard

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Na	23	3.3	86.6	**20.9199**	18.126	86.6	mg/L	0	Standard
Mg	24	148.3	20.6	**0.1326**	0.034	25.5	mg/L	32	Standard
K	39	35.0	24.7	**-0.0267**	0.032	120.4	mg/L	30	Standard
Ca	43	75.0	20.0	**5.6602**	2.270	40.1	mg/L	48	Standard
Fe	54	775.4	6.3	**0.5410**	0.062	11.5	mg/L	159	Standard
Fe	57	435.0	3.0	**0.7919**	0.003	0.4	mg/L	195	Standard
> **Sc-1**	45	40995.4	3.1				mg/L	39543	Standard
Cl	35	32746.0	2.5				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1743.4	12.5				ug/L	1647	Standard
P	31	17056.3	1.5				ug/L	15231	Standard
S	34	2336.8	6.2				ug/L	1845	Standard
Sr	88	78.3	20.5				ug/L	70	Standard
C	12	126.7	27.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	89.2				mg/L	0	Standard
Dy	164	1870.0	3.5				mg/L	12	Standard
Ho-1	165	1166.7	10.3				mg/L	12	Standard
Er	166	1116.7	18.2				mg/L	20	Standard
I	127	3388.7	11.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.946	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.963	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.613
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.473
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606144302SDL WG574573-02
Sample Date/Time: Tuesday, June 28, 2016 23:54:17
Number of Replicates: 3
Autosampler Position: 410
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70935.7	2.2				ug/L	81760	Standard
	Be	9	55.0	15.7	**0.0540**	0.009	16.0	ug/L	17	Standard
	Al	27	218570.5	1.6	**1.6201**	0.011	0.7	ug/L	1410	Standard
	Sc	45	39984.4	1.2				ug/L	39543	Standard
	Ti	47	627.7	4.3	**2.4198**	0.114	4.7	ug/L	39	Standard
	V	51	2847.0	3.0	**0.2129**	0.013	6.1	ug/L	1415	Standard
	Cr	52	7618.6	1.2	**0.0637**	0.011	17.1	ug/L	6946	Standard
	Cr	53	580.0	9.6	**0.3354**	0.068	20.2	ug/L	328	Standard
	Mn	55	61547.4	1.3	**9.5745**	0.188	2.0	ug/L	823	Standard
	Co	59	523.0	3.3	**0.0449**	0.003	6.0	ug/L	252	Standard
	Ni	60	493.7	5.6	**0.1635**	0.016	10.1	ug/L	192	Standard
	Cu	65	675.0	3.2	**0.2729**	0.010	3.6	ug/L	141	Standard
	Zn	66	4565.4	1.3	**3.4380**	0.075	2.2	ug/L	491	Standard
>	**Ge**	72	502988.1	0.7				ug/L	515087	Standard
	As	75	269.2	10.7	**0.2856**	0.028	9.7	ug/L	20	Standard
	Se	82	20.7	22.3	**0.0646**	0.042	64.7	ug/L	15	Standard
	Se-1	77	45.7	15.4	**-0.0984**	0.093	94.5	ug/L	48	Standard
>	**Ga**	71	186.7	12.1				mg/L	90	Standard
	Rb	85	835.0	12.4				ug/L	23	Standard
	Y	89	441201.2	2.7				ug/L	448510	Standard
>	**Rh**	103	13.3	94.4				ug/L	15	Standard
	Mo	98	189.0	7.0	**0.0532**	0.006	12.0	ug/L	11	Standard
	Ag	107	91.3	11.0	**-0.0021**	0.002	87.0	ug/L	134	Standard
	Cd	111	37.0	12.7	**0.0150**	0.002	15.9	mg/L	7	Standard
	Cd	114	85.9	30.8	**0.0122**	0.005	43.3	ug/L	16	Standard
>	**In**	115	591854.8	2.3				ug/L	611117	Standard
	Sn	118	648.3	6.3	**0.0113**	0.007	65.4	ug/L	518	Standard
	Sb	123	522.8	33.2	**0.1022**	0.041	39.7	ug/L	127	Standard
	Ba	135	4107.2	1.3	**2.0294**	0.025	1.2	ug/L	45	Standard
	Ce	140	18988.6	1.0				ug/L	298	Standard
>	**Tb**	159	914076.3	1.3				ug/L	977942	Standard
	Ho	165	253.3	13.1				ug/L	12	Standard
	Tl	203	112.3	10.6	**0.0094**	0.002	17.3	ug/L	31	Standard
	Tl	205	90.0	29.4	**0.0108**	0.004	36.1	ug/L	20	Standard
	Pb	206	10230.5	2.1	**1.9438**	0.049	2.5	ug/L	286	Standard
	Pb	207	8531.4	1.5	**1.7976**	0.010	0.6	ug/L	257	Standard
	Pb	208	36086.5	0.6	**1.9686**	0.029	1.5	ug/L	956	Standard
	U	238	209.0	10.0	**0.0280**	0.003	11.9	ug/L	17	Standard
>	**Bi**	209	525348.3	0.9				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	68.3	18.4	**0.0329**	0.017	52.2	mg/L	32	Standard
K	39	41.7	42.1	**-0.0025**	0.057	2323.2	mg/L	30	Standard
Ca	43	35.0	49.5	**-0.0873**	2.606	2984.1	mg/L	48	Standard
Fe	54	276.1	10.3	**0.1102**	0.028	25.1	mg/L	159	Standard
Fe	57	273.3	14.9	**0.2889**	0.146	50.5	mg/L	195	Standard
Sc-1	45	39984.4	1.2				mg/L	39543	Standard
Cl	35	32328.5	1.4				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1603.4	8.8				ug/L	1647	Standard
P	31	16148.6	1.7				ug/L	15231	Standard
S	34	2251.8	6.8				ug/L	1845	Standard
Sr	88	76.7	35.9				ug/L	70	Standard
C	12	146.7	10.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	330.4	18.3				mg/L	12	Standard
Ho-1	165	253.3	13.1				mg/L	12	Standard
Er	166	270.0	22.5				mg/L	20	Standard
I	127	1720.1	18.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		86.761	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.651	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.848
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.304
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 23:57:30
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72062.8	4.4				ug/L	81760	Standard
	Be	9	45152.2	3.9	**51.5939**	1.461	2.8	ug/L	17	Standard
	Al	27	7383002.3	3.7	**54.3407**	0.756	1.4	ug/L	1410	Standard
	Sc	45	39518.2	3.2				ug/L	39543	Standard
	Ti	47	24690.4	0.9	**102.0722**	0.550	0.5	ug/L	39	Standard
	V	51	333814.0	1.2	**49.2501**	0.769	1.6	ug/L	1415	Standard
	Cr	52	345665.5	1.2	**50.0774**	0.577	1.2	ug/L	6946	Standard
	Cr	53	43291.8	1.9	**50.4406**	0.792	1.6	ug/L	328	Standard
	Mn	55	319563.2	0.6	**50.6110**	0.452	0.9	ug/L	823	Standard
	Co	59	337944.7	0.8	**49.4985**	0.535	1.1	ug/L	252	Standard
	Ni	60	91064.9	0.9	**49.6861**	0.418	0.8	ug/L	192	Standard
	Cu	65	92447.5	0.3	**50.0106**	0.369	0.7	ug/L	141	Standard
	Zn	66	53973.0	1.5	**49.8813**	0.957	1.9	ug/L	491	Standard
>	Ge	72	500217.2	0.4				ug/L	515087	Standard
	As	75	53742.2	1.5	**49.2630**	0.862	1.7	ug/L	20	Standard
	Se	82	5467.6	1.7	**48.7858**	1.017	2.1	ug/L	15	Standard
	Se-1	77	3788.8	1.0	**51.0702**	0.720	1.4	ug/L	48	Standard
>	Ga	71	51.7	5.6				mg/L	90	Standard
	Rb	85	820.0	10.6				ug/L	23	Standard
	Y	89	441206.7	0.2				ug/L	448510	Standard
>	Rh	103	33.3	8.7				ug/L	15	Standard
	Mo	98	251795.6	1.0	**94.4274**	1.474	1.6	ug/L	11	Standard
	Ag	107	307525.6	0.6	**46.4306**	0.349	0.8	ug/L	134	Standard
	Cd	111	100206.1	1.3	**47.5308**	1.177	2.5	mg/L	7	Standard
	Cd	114	244073.0	1.7	**47.6209**	0.821	1.7	ug/L	16	Standard
>	In	115	602825.2	1.4				ug/L	611117	Standard
	Sn	118	281047.8	1.1	**48.0844**	0.236	0.5	ug/L	518	Standard
	Sb	123	222239.4	0.2	**47.7427**	0.588	1.2	ug/L	127	Standard
	Ba	135	96470.5	0.6	**47.3499**	0.512	1.1	ug/L	45	Standard
	Ce	140	125.0	48.0				ug/L	298	Standard
>	Tb	159	921870.8	1.1				ug/L	977942	Standard
	Ho	165	11.7	65.5				ug/L	12	Standard
	Tl	203	392459.6	0.5	**49.4989**	0.479	1.0	ug/L	31	Standard
	Tl	205	352339.7	0.4	**51.1783**	0.770	1.5	ug/L	20	Standard
	Pb	206	250499.8	0.3	**49.1963**	0.428	0.9	ug/L	286	Standard
	Pb	207	226961.6	0.5	**49.4195**	0.337	0.7	ug/L	257	Standard
	Pb	208	926488.8	0.6	**52.1497**	0.850	1.6	ug/L	956	Standard
	U	238	343296.3	1.3	**50.9156**	0.444	0.9	ug/L	17	Standard
>	Bi	209	524204.3	1.1				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.4692**	18.124	173.1	mg/L	0	Standard
Mg	24	3737.1	0.3	**4.9245**	0.180	3.7	mg/L	32	Standard
K	39	1403.4	10.2	**4.6088**	0.536	11.6	mg/L	30	Standard
Ca	43	78.3	16.1	**6.5318**	1.619	24.8	mg/L	48	Standard
Fe	54	5604.3	1.6	**4.9425**	0.217	4.4	mg/L	159	Standard
Fe	57	1713.4	2.9	**5.1658**	0.187	3.6	mg/L	195	Standard
Sc-1	45	39518.2	3.2				mg/L	39543	Standard
Cl	35	33439.5	0.8				ug/L	27642	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	1523.4	5.0				ug/L	1647	Standard
P	31	18217.6	1.7				ug/L	15231	Standard
S	34	2641.9	8.4				ug/L	1845	Standard
Sr	88	48.3	11.9				ug/L	70	Standard
C	12	93.3	12.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	9.4	104.5				mg/L	12	Standard
Ho-1	165	11.7	65.5				mg/L	12	Standard
Er	166	13.3	114.6				mg/L	20	Standard
I	127	1510.1	17.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	103.188		
Al	27	108.681		
Sc	45			
Ti	47	102.072		
V	51	98.500		
Cr	52	100.155		
Cr	53			
Mn	55	101.222		
Co	59	98.997		
Ni	60	99.372		
Cu	65	100.021		
Zn	66	99.763		
Ge	72		97.113	
As	75	98.526		
Se	82	97.572		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	94.427		
Ag	107	92.861		
Cd	111	95.062		
Cd	114			
In	115			98.643
Sn	118	96.169		
Sb	123	95.485		
Ba	135	94.700		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.998		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.299		
U	238	101.831		
Bi	209			94.098
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 00:00:41
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70070.0	1.8				ug/L	81760	Standard
	Be	9	30.0	16.7	**0.0256**	0.006	25.2	ug/L	17	Standard
	Al	27	3812.2	30.7	**0.0144**	0.008	57.9	ug/L	1410	Standard
	Sc	45	40014.5	4.3				ug/L	39543	Standard
	Ti	47	26.7	12.1	**-0.0568**	0.013	23.6	ug/L	39	Standard
	V	51	1145.1	6.3	**-0.0403**	0.010	25.4	ug/L	1415	Standard
	Cr	52	6171.9	1.7	**-0.1619**	0.014	8.6	ug/L	6946	Standard
	Cr	53	411.7	3.9	**0.1320**	0.019	14.5	ug/L	328	Standard
	Mn	55	924.7	19.7	**-0.0044**	0.029	653.9	ug/L	823	Standard
	Co	59	261.3	12.2	**0.0062**	0.005	75.0	ug/L	252	Standard
	Ni	60	171.3	8.8	**-0.0131**	0.008	64.0	ug/L	192	Standard
	Cu	65	132.0	5.3	**-0.0207**	0.004	18.6	ug/L	141	Standard
	Zn	66	427.3	9.5	**-0.4339**	0.039	8.9	ug/L	491	Standard
>	**Ge**	72	510161.6	0.4				ug/L	515087	Standard
	As	75	-21.8	127.1	**0.0207**	0.025	120.4	ug/L	20	Standard
	Se	82	17.0	25.9	**0.0293**	0.038	129.6	ug/L	15	Standard
	Se-1	77	53.7	12.0	**0.0005**	0.088	17869.4	ug/L	48	Standard
>	**Ga**	71	35.0	28.6				mg/L	90	Standard
	Rb	85	33.3	60.6				ug/L	23	Standard
	Y	89	437929.1	1.0				ug/L	448510	Standard
>	**Rh**	103	6.7	43.3				ug/L	15	Standard
	Mo	98	269.2	32.9	**0.0838**	0.033	39.3	ug/L	11	Standard
	Ag	107	120.7	16.7	**0.0024**	0.003	124.0	ug/L	134	Standard
	Cd	111	21.8	34.3	**0.0077**	0.004	48.1	mg/L	7	Standard
	Cd	114	36.7	62.4	**0.0024**	0.005	190.6	ug/L	16	Standard
>	**In**	115	590666.4	0.9				ug/L	611117	Standard
	Sn	118	743.4	12.2	**0.0282**	0.017	60.4	ug/L	518	Standard
	Sb	123	532.5	22.4	**0.1040**	0.027	25.7	ug/L	127	Standard
	Ba	135	71.0	29.1	**0.0104**	0.010	96.8	ug/L	45	Standard
	Ce	140	91.7	65.8				ug/L	298	Standard
>	**Tb**	159	911246.7	0.8				ug/L	977942	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	81.7	41.2	**0.0055**	0.004	77.1	ug/L	31	Standard
	Tl	205	68.3	66.0	**0.0076**	0.007	85.7	ug/L	20	Standard
	Pb	206	297.7	10.9	**-0.0054**	0.007	123.4	ug/L	286	Standard
	Pb	207	283.7	16.0	**0.0035**	0.010	283.6	ug/L	257	Standard
	Pb	208	1155.4	11.3	**0.0043**	0.008	176.0	ug/L	956	Standard
	U	238	70.3	39.4	**0.0074**	0.004	55.5	ug/L	17	Standard
>	**Bi**	209	527005.8	1.2				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	25.0	20.0	**-0.0244**	0.005	21.9	mg/L	32	Standard
K	39	18.3	31.5	**-0.0799**	0.021	26.0	mg/L	30	Standard
Ca	43	16.7	17.3	**-2.8535**	0.318	11.1	mg/L	48	Standard
Fe	54	122.6	39.6	**-0.0261**	0.047	179.6	mg/L	159	Standard
Fe	57	230.0	17.0	**0.1451**	0.148	101.7	mg/L	195	Standard
Sc-1	45	40014.5	4.3				mg/L	39543	Standard
Cl	35	33255.8	1.4				ug/L	27642	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	1523.4	4.7				ug/L	1647	Standard
P	31	17488.4	2.6				ug/L	15231	Standard
S	34	2358.5	3.1				ug/L	1845	Standard
Sr	88	70.0	25.8				ug/L	70	Standard
C	12	73.3	39.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.5	100.0				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	10.0	100.0				mg/L	20	Standard
I	127	1368.4	18.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.044	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.654
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.601
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Wednesday, June 29, 2016 00:02:58
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2.3.3 Metals CVAA Data (Mercury)

2.3.3.1 Summary Data

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-01	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18WW20-062016	**Prep Method:**	7470A	**Prep Date:**	06/22/2016 07:32
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/29/2016 12:57
Workgroup #:	WG573906	**Analyst:**	AMA	**Run Date:**	06/29/2016 13:26
Collect Date:	06/20/2016 07:55	**Dilution:**	1	**File ID:**	M7.062916.132604
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-03	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18WW19F-062016	**Prep Method:**	7470A	**Prep Date:**	06/22/2016 07:32
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/29/2016 12:57
Workgroup #:	WG573906	**Analyst:**	AMA	**Run Date:**	06/29/2016 13:28
Collect Date:	06/20/2016 08:55	**Dilution:**	1	**File ID:**	M7.062916.132836
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061142-05	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18WW19FFD-062016	**Prep Method:**	7470A	**Prep Date:**	06/22/2016 07:32
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/29/2016 12:57
Workgroup #:	WG573906	**Analyst:**	AMA	**Run Date:**	06/29/2016 13:31
Collect Date:	06/20/2016 08:55	**Dilution:**	1	**File ID:**	M7.062916.133109
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061142
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.3.2 QC Summary

Example Cold Vapor Mercury Calculations
Hydra AA Mercury Analyzer / CETAC M-7600 Quick Trace Mercury Analyzer

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and five standards.

2.0 Calculating the concentration (C) of an element in water using data from run log and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to Volume (mL)	40
Vi = Aliquot Volume (mL)	40
D = Manual dilution factor, if required (10X = 10)	1
Cx = Concentration of element in ppb (ug/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Ws} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to volume (mL)	40
Ws = Aliquot weight (g)	0.6
D = Manual dilution factor	1
Cx = Concentration of element in ug/kg	6.67

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

1 Cx = Concentration calculated as received (wet basis)	6.67
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	8.33

8.33 ug/kg = 0.00833 mg/kg

Microbac Laboratories Inc.
Metals Digest Log

Workgroup: WG573654
Analyst: REK
Spike Analyst: REK
Method: 7470A
Run Date: 06/22/2016 07:32
Hotblock Start Temp: 95.1 @ 07:15
Hotblock End Temp: 95 @ 09:15
Instrument: HB2

SOP: ME404 Revison 17
Spike Solution: STD76757
Spike Witness: VC
H2SO4 Lot #: COA18359
HNO3 Lot #: COA18905
40 & 50 ML. DIGESTION TU COA18987
K2S2O8 1:1 Lot #: RGT37046
KMnO4 1:1 Lot #: RGT37128
Mercury Water ICV Lot #: STD76759
HG H2O STDS 10PPM Lot #: STD76765

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Spike Amount	Due Date
1	WG573654-04	BLANK	1	40 mL	40 mL		
2	WG573654-05	LCS	1	40 mL	40 mL	4 mL	
3	L16061142-01	SAMP	1	40 mL	40 mL		07/01/16
4	L16061142-03	SAMP	1	40 mL	40 mL		07/01/16
5	L16061142-05	SAMP	1	40 mL	40 mL		07/01/16
6	L16061148-01	SAMP	1	40 mL	40 mL		06/28/16
7	L16061148-02	SAMP	1	40 mL	40 mL		06/28/16
8	L16061150-01	SAMP	1	40 mL	40 mL		06/28/16
9	L16061150-02	SAMP	1	40 mL	40 mL		06/28/16
10	WG573654-01	REF	1	40 mL	40 mL		
11	L16061151-01	RS01	1	40 mL	40 mL		06/28/16
12	L16061151-02	SAMP	1	40 mL	40 mL		06/28/16
13	WG573654-06	MS	1	36 mL	40 mL	4 mL	
14	L16061151-03	MS01	1	36 mL	40 mL	4 mL	06/28/16
15	WG573654-07	MSD	1	36 mL	40 mL	4 mL	
16	L16061151-04	SD01	1	36 mL	40 mL	4 mL	06/28/16
17	L16061151-05	SAMP	1	40 mL	40 mL		06/28/16
18	WG573654-02	REF	1	40 mL	40 mL		
19	L16061154-01	RS01	1	40 mL	40 mL		06/28/16
20	WG573654-08	MS	1	36 mL	40 mL	4 mL	
21	L16061154-02	MS01	1	36 mL	40 mL	4 mL	06/28/16
22	WG573654-09	MSD	1	36 mL	40 mL	4 mL	
23	L16061154-03	SD01	1	36 mL	40 mL	4 mL	06/28/16
24	L16061154-04	SAMP	1	40 mL	40 mL		06/28/16
25	L16061155-01	SAMP	1	40 mL	40 mL		06/28/16
26	L16061155-02	SAMP	1	40 mL	40 mL		06/28/16
27	L16061155-03	SAMP	1	40 mL	40 mL		06/28/16
28	L16061158-01	SAMP	2	40 mL	40 mL		06/28/16
29	WG573654-03	REF	2	40 mL	40 mL		
30	L16061158-02	SAMP	2	40 mL	40 mL		06/28/16
31	WG573654-10	DUP	1	40 mL	40 mL		

Analyst: _____

Reviewer: _____

HB_DIG - Modified 07/26/2012
PDF ID: 4819080
Report generated: 06/22/2016 13:22

Microbac Laboratories Inc.
Metals Digest Log

Workgroup:	WG573654	SOP:	ME404 Revison 17
Analyst:	REK	Spike Solution:	STD76757
Spike Analyst:	REK	Spike Witness:	VC
Method:	7470A	H2SO4 Lot #:	COA18359
Run Date:	06/22/2016 07:32	HNO3 Lot #:	COA18905
Hotblock Start Temp:	95.1 @ 07:15	40 & 50 ML. DIGESTION TU	COA18987
Hotblock End Temp:	95 @ 09:15	K2S2O8 1:1 Lot #:	RGT37046
Instrument:	HB2	KMnO4 1:1 Lot #:	RGT37128
		Mercury Water ICV Lot #:	STD76759
		HG H2O STDS 10PPM Lot #:	STD76765

* All calibration and check standards are prepared and digested with sample batch following the procedures in section 7.0 of SOP ME404/ME405.

HB_DIG - Modified 07/26/2012
PDF ID: 4819080
Report generated: 06/22/2016 13:22

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 062916D.CSV

Analyst1: AMA Analyst2: N/A

Method: 7470A/245.1 SOP: ME404 Rev: 17

Maintenance Log ID:

Calibration Std: STD76765 ICV Std: STD76759 Post Spike: STD76765

ICSA: N/A ICSAB: N/A Int. Std:

CCV: LLCCV: Tuning Sol :

Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 573906

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	M7.062916.124425	WG574759-01	Calibration Point		1		06/29/16 12:44
2	M7.062916.124656	WG574759-02	Calibration Point		1		06/29/16 12:46
3	M7.062916.124928	WG574759-03	Calibration Point		1		06/29/16 12:49
4	M7.062916.125200	WG574759-04	Calibration Point		1		06/29/16 12:52
5	M7.062916.125433	WG574759-05	Calibration Point		1		06/29/16 12:54
6	M7.062916.125707	WG574759-06	Calibration Point		1		06/29/16 12:57
7	M7.062916.125941	WG574759-07	ICV		1		06/29/16 12:59
8	M7.062916.130320	WG574759-08	Initial Calibration Verification		1		06/29/16 13:03
9	M7.062916.130551	WG574759-09	Initial Calib Blank		1		06/29/16 13:05
10	M7.062916.130823	WG574759-10	CCV		1		06/29/16 13:08
11	M7.062916.131054	WG574759-11	CCB		1		06/29/16 13:10
12	M7.062916.131325	WG573654-04	Method/Prep Blank	40/40	1		06/29/16 13:13
13	M7.062916.131556	WG573654-05	Laboratory Control S	40/40	1		06/29/16 13:15
14	M7.062916.131828	WG573654-03	Reference Sample	40/40	1	L16061158-02	06/29/16 13:18
15	M7.062916.132059	WG573906-01	Post Digestion Spike		1	L16061158-02	06/29/16 13:20
16	M7.062916.132331	WG573654-10	Duplicate	40/40	1	L16061158-02	06/29/16 13:23
17	M7.062916.132604	L16061142-01	18WW20-062016	40/40	1		06/29/16 13:26
18	M7.062916.132836	L16061142-03	18WW19F-062016	40/40	1		06/29/16 13:28
19	M7.062916.133109	L16061142-05	18WW19FFD-062016	40/40	1		06/29/16 13:31
20	M7.062916.133342	L16061148-01	DP005SW0513-007	40/40	1		06/29/16 13:33
21	M7.062916.133615	L16061148-02	DP005SW0514-007	40/40	1		06/29/16 13:36
22	M7.062916.133848	WG574759-12	CCV		1		06/29/16 13:38
23	M7.062916.134119	WG574759-13	CCB		1		06/29/16 13:41
24	M7.062916.134352	L16061150-01	SS007SW0709-007	40/40	1		06/29/16 13:43
25	M7.062916.134626	L16061150-02	SS007SW0710-007	40/40	1		06/29/16 13:46
26	M7.062916.134856	WG573654-01	Reference Sample	40/40	1	L16061151-01	06/29/16 13:48
27	M7.062916.135127	L16061151-02	LF003SW0311-007 DUP	40/40	1		06/29/16 13:51
28	M7.062916.135358	L16061151-03	LF003SW0311-007 MS	36/40	1	WG573654-06	06/29/16 13:53
29	M7.062916.135629	L16061151-04	LF003SW0311-007 MSD	36/40	1	WG573654-07	06/29/16 13:56
30	M7.062916.135900	L16061151-05	LF003SW0312-007	40/40	1		06/29/16 13:59
31	M7.062916.140132	WG573654-02	Reference Sample	40/40	1	L16061154-01	06/29/16 14:01
32	M7.062916.140404	L16061154-02	SS007MW0707-007 MS	36/40	1	WG573654-08	06/29/16 14:04
33	M7.062916.140637	L16061154-03	SS007MW0707-007 MSD	36/40	1	WG573654-09	06/29/16 14:06
34	M7.062916.140909	WG574759-14	CCV		1		06/29/16 14:09

Page: 1 Approved: June 30, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 062916D.CSV

Analyst1: AMA Analyst2: N/A

Method: 7470A/245.1 SOP: ME404 Rev: 17

Maintenance Log ID:

Calibration Std: STD76765 ICV Std: STD76759 Post Spike: STD76765

ICSA: N/A ICSAB: N/A Int. Std:

CCV: LLCCV: Tuning Sol :

Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 573906

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	M7.062916.141140	WG574759-15	CCB		1		06/29/16 14:11
36	M7.062916.141412	L16061154-04	FQC-RB06201601-CB	40/40	1		06/29/16 14:14
37	M7.062916.141645	L16061155-01	ST008MW0812-007	40/40	1		06/29/16 14:16
38	M7.062916.141919	L16061155-02	ST008MW0809-007	40/40	1		06/29/16 14:19
39	M7.062916.142152	L16061155-03	ST008MW0816-007	40/40	1		06/29/16 14:21
40	M7.062916.142423	L16061158-01	16F1217-01	40/40	1		06/29/16 14:24
41	M7.062916.142655	WG574759-16	CCV		1		06/29/16 14:26
42	M7.062916.142926	WG574759-17	CCB		1		06/29/16 14:29

Page: 2 Approved: June 30, 2016

Microbac Laboratories Inc.

Data Checklist

Date: 29-JUN-2016
Analyst: AMA
Analyst: NA
Method: 7470A/245.1
Instrument: CVAA1
Curve Workgroup: 574759
Runlog ID: 76026
Analytical Workgroups: 573906

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	1142, 1148, 1150, 1151
Case Narrative	1154, 1155, 1158
Client Forms	X
Level X	
Level 3	
Level 4	1142,1148,1150,1151,1154,1155
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	AMA
Secondary Reviewer	BKT
Comments	

Primary Reviewer:
30-JUN-2016
Alexandra M. Alfred

Secondary Reviewer:
30-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-30-2016 13:17:13

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 7470A

AAB#: WG573906

Login Number: L16061142

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW20-062016	01	06/20/16					06/22/2016	2	28		06/29/16	9.2	28	
18WW19F-062016	03	06/20/16					06/22/2016	1.9	28		06/29/16	9.2	28	
18WW19FFD-062016	05	06/20/16					06/22/2016	1.9	28		06/29/16	9.2	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4832204
Report generated 06/30/2016 09:30

METHOD BLANK SUMMARY

Login Number: L16061142
Blank File ID: M7.062916.131325
Prep Date: 06/22/16 07:32
Analyzed Date: 06/29/16 13:13
Analyst: AMA

Work Group: WG573906
Blank Sample ID: WG573654-04
Instrument ID: CVAA1
Method: 7470A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573654-05	M7.062916.131556	06/29/16 13:15	01
DUP	WG573654-10	M7.062916.132331	06/29/16 13:23	01
18WW20-062016	L16061142-01	M7.062916.132604	06/29/16 13:26	01
18WW19F-062016	L16061142-03	M7.062916.132836	06/29/16 13:28	01
18WW19FFD-062016	L16061142-05	M7.062916.133109	06/29/16 13:31	01

Report Name: BLANK_SUMMARY
PDF File ID: 4832205
Report generated 06/30/2016 09:30

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061142 Prep Date: 06/22/16 07:32 Sample ID: WG573654-04
Instrument ID: CVAA1 Run Date: 06/29/16 13:13 Prep Method: 7470A
File ID: M7.062916.131325 Analyst: AMA Method: 7470A
Workgroup (AAB#): WG573906 Matrix: Water Units: mg/L
Contract #: Cal ID: CVAA1-29-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Mercury	0.000100	0.000400	-0.000174	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4832206
30-JUN-2016 09:30

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061142 Run Date: 06/29/2016 Sample ID: WG573654-05
Instrument ID: CVAA1 Run Time: 13:15 Prep Method: 7470A
File ID: M7.062916.131556 Analyst: AMA Method: 7470A
Workgroup (AAB#): WG573906 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76757 Cal ID: CVAA1-29-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Mercury	0.00400	0.00441	110	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4832207
Report generated: 06/30/2016 09:30

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061142 Cal ID: CVAA1 - Worknum: WG573906
Instrument ID: CVAA1 Contract #: Method: 7470A
Parent ID: WG573654-01 File ID: M7.062916.134856 Dil: 1 Matrix: WATER
Sample ID: WG573654-06 MS File ID: M7.062916.135358 Dil: 1 Units: mg/L
Sample ID: WG573654-07 MSD File ID: M7.062916.135629 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Mercury	ND	0.00444	0.00476	107	0.00444	0.00442	99.5	7.45	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4832208
Report generated 06/30/2016 09:30

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061142 Cal ID: CVAA1 - Worknum: WG573906
Instrument ID: CVAA1 Contract #: Method: 7470A
Parent ID: WG573654-02 File ID: M7.062916.140132 Dil: 1 Matrix: WATER
Sample ID: WG573654-08 MS File ID: M7.062916.140404 Dil: 1 Units: mg/L
Sample ID: WG573654-09 MSD File ID: M7.062916.140637 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Mercury	ND	0.00444	0.00457	103	0.00444	0.00485	109	5.83	80 - 120	20	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4832208
Report generated 06/30/2016 09:30

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061142 **Worknum:** WG573906
Instrument ID: CVAA1 **Method:** 7470A
Post Spike ID: WG573906-01 **File ID:** M7.062916.132059 **Dil:** 1 **Units:** ug/L
Sample ID: L16061158-02 **File ID:** M7.062916.131828 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MERCURY	0.947		0	U	1	94.7	85 - 115	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4832203
Report generated: 06/30/2016 09:30

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061142
Analytical Method: 7470A
ICAL Worknum: WG574759

Workgroup (AAB#): WG573906
Instrument ID: CVAA1
Initial Calibration Date: 06/29/2016 12:57

Analyte	WG574759-01		WG574759-02		WG574759-03		WG574759-04		WG574759-05		WG574759-06	
	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT
Mercury	0	16.97	0.200	2365	1.00	13040	2.00	26380	5.00	62980	10.0	111700

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4832209
Report generated 06/30/2016 09:30

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061142
Analytical Method: 7470A
ICAL Worknum: WG574759

Workgroup (AAB#): WG573906
Instrument ID: CVAA1
Initial Calibration Date: 06/29/2016 12:57

Analyte	R	Q
Mercury	0.9980	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4832209
Report generated 06/30/2016 09:30

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061142
Instrument ID: CVAA1
File ID: M7.062916.130551
Workgroup (AAB#): WG573906
Matrix: WATER

Run Date: 06/29/2016
Run Time: 13:05
Analyst: AMA
Cal ID: CVAA1 - 29-JUN-16

Sample ID: WG574759-09
Method: 7470A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
MERCURY	.1	.4	-.176	F

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4832211
Report generated 06/30/2016 09:30

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/29/2016
Sample ID: WG574759-11
Instrument ID: CVAA1
Run Time: 13:10
Method: 7470A
File ID: M7.062916.131054
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG573906
Cal ID: CVAA1 - 29-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	-0.176	F

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4832213
Report generated 06/30/2016 09:30

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061142
Run Date: 06/29/2016
Sample ID: WG574759-13
Instrument ID: CVAA1
Run Time: 13:41
Method: 7470A
File ID: M7.062916.134119
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG573906
Cal ID: CVAA1 - 29-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	-0.178	F

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4832213
Report generated 06/30/2016 09:30

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061142
Run Date: 06/29/2016
Sample ID: WG574759-08
Instrument ID: CVAA1
Run Time: 13:03
Method: 7470A
File ID: M7.062916.130320
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG573906
Cal ID: CVAA1 - 29-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Mercury		2	1.98	99.0	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4832210
Report generated 06/30/2016 09:30

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142
Run Date: 06/29/2016
Sample ID: WG574759-10
Instrument ID: CVAA1
Run Time: 13:08
Method: 7470A
File ID: M7.062916.130823
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG573906
Cal ID: CVAA1 - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00213	mg/L	107	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4832212
Report generated 06/30/2016 09:30

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061142
Run Date: 06/29/2016
Sample ID: WG574759-12
Instrument ID: CVAA1
Run Time: 13:38
Method: 7470A
File ID: M7.062916.133848
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG573906
Cal ID: CVAA1 - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00214	mg/L	107	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4832212
Report generated 06/30/2016 09:30

2.3.3.3 Raw Data

PDM CVAA1 245.1/7470/7471

Report Generated By CETAC QuickTrace
Analyst: VOA
Worksheet file: C:\Program Files (x86)\QuickTrace\Worksheets\062916D.wsz
Date Started: 6/29/2016 12:09:19 PM
Comment:

Results

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
Standard #0					STD	06/29/16 12:44:25 pm	0.0000	17	158.16		1.00
Replicates	10.5	-5.2	6.6	56.0							
Standard #1 (0.2 ug/L)					STD	06/29/16 12:46:56 pm	0.2000	2365	0.59		1.00
Replicates	2357.4	2355.9	2385.5	2361.4							
Standard #2 (1.0 ug/L)					STD	06/29/16 12:49:28 pm	1.0000	13045	0.18		1.00
Replicates	13050.4	13045.1	13070.6	13012.4							
Standard #3 (2.0 ug/L)					STD	06/29/16 12:52:00 pm	2.0000	26379	0.62		1.00
Replicates	26145.1	26388.6	26467.6	26514.0							
Standard #4 (5.0 ug/L)					STD	06/29/16 12:54:33 pm	5.0000	62979	0.31		1.00
Replicates	62704.2	62984.8	63115.0	63113.5							
Standard #5 (10.0 ug/L)					STD	06/29/16 12:57:07 pm	10.0000	111692	0.20		1.00
Replicates	111353.3	111757.4	111839.1	111819.9							

Calibration

Equation: A = 1971.824 + 11244.300C
R2: 0.99565
SEE: 3212.9470
Flags:

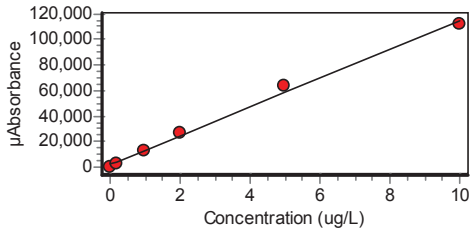

ICV					ICV	06/29/16 12:59:41 pm	2.1280	25900	0.31	Q	1.00
Replicates	25937.8	25974.8	25896.8	25789.5							
% Recovery	106.40										

Approved: June 30, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
ICV					ICV	06/29/16 01:03:20 pm	1.9790	24219	0.32		1.00
	Replicates	24259.0	24289.2	24213.2	24114.3						
	% Recovery	98.93									
ICB					ICB	06/29/16 01:05:51 pm	-0.1760	-7	304.32		1.00
	Replicates	14.2	6.6	-18.4	-29.4						
CCV					CCV	06/29/16 01:08:23 pm	2.1300	25924	0.14		1.00
	Replicates	25874.1	25936.0	25961.0	25924.9						
	% Recovery	106.51									
CCB					CCB	06/29/16 01:10:54 pm	-0.1764	-12	71.36		1.00
	Replicates	-17.1	0.1	-17.7	-11.6						
WG573654-04					MB	06/29/16 01:13:25 pm	-0.1744	11	105.38		1.00
	Replicates	-4.6	9.2	21.2	18.3						
WG573654-05					LCS	06/29/16 01:15:56 pm	4.4070	51525	0.28		1.00
	Replicates	51320.3	51523.4	51611.9	51646.1						
	% Recovery	110.17									
L1606115802					UNK	06/29/16 01:18:28 pm	-0.1739	17	60.09		1.00
	Replicates	5.9	13.1	29.9	18.2						
WG573906-01					SPK	06/29/16 01:20:59 pm	0.9473	12623	0.30		1.00
	Replicates	12645.2	12665.8	12596.5	12586.0						
	% Recovery	112.12									
WG573654-10					UNK	06/29/16 01:23:31 pm	-0.1693	68	18.66		1.00
	Replicates	69.8	69.6	50.6	81.1						
L1606114201					UNK	06/29/16 01:26:04 pm	-0.1744	11	170.80		1.00
	Replicates	15.7	33.7	-5.2	-2.2						
L1606114203					UNK	06/29/16 01:28:36 pm	-0.1710	49	21.67		1.00
	Replicates	44.4	37.4	51.1	62.3						
L1606114205					UNK	06/29/16 01:31:09 pm	-0.1724	33	45.57		1.00
	Replicates	11.6	34.3	40.6	46.0						

Approved: June 30, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1606114801					UNK	06/29/16 01:33:42 pm	-0.1741	14	108.66		1.00
Replicates	32.5	10.8	-3.7	15.4							
L1606114802					UNK	06/29/16 01:36:15 pm	-0.1729	28	50.47		1.00
Replicates	30.0	21.8	13.7	46.8							
CCV					CCV	06/29/16 01:38:48 pm	2.1390	26023	0.14		1.00
Replicates	25987.4	26051.6	26057.9	25995.2							
% Recovery	106.95										
CCB					CCB	06/29/16 01:41:19 pm	-0.1784	-34	18.80		1.00
Replicates	-38.1	-31.2	-40.5	-26.5							
L1606115001					UNK	06/29/16 01:43:52 pm	-0.1730	26	92.91		1.00
Replicates	22.3	53.3	-5.0	35.0							
L1606115002					UNK	06/29/16 01:46:26 pm	-0.1718	41	32.34		1.00
Replicates	35.5	44.2	25.7	56.6							
L1606115101					UNK	06/29/16 01:48:56 pm	-0.1733	23	49.76		1.00
Replicates	36.9	8.5	24.7	23.3							
L1606115102					UNK	06/29/16 01:51:27 pm	-0.1729	27	26.49		1.00
Replicates	20.7	33.1	34.1	21.4							
WG573654-06					UNK	06/29/16 01:53:58 pm	4.2880	50192	0.10		1.00
Replicates	50201.3	50245.2	50197.9	50123.1							
WG573654-07					UNK	06/29/16 01:56:29 pm	3.9800	46728	0.11		1.00
Replicates	46733.2	46785.8	46728.3	46663.3							
L1606115105					UNK	06/29/16 01:59:00 pm	-0.1804	-56	11.95		1.00
Replicates	-53.1	-64.7	-49.0	-57.7							
L1606115401					UNK	06/29/16 02:01:32 pm	-0.1787	-37	35.00		1.00
Replicates	-28.8	-34.4	-56.5	-29.5							

Approved: June 30, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
WG573654-08					UNK	06/29/16 02:04:04 pm	4.1140	48233	0.28		1.00
Replicates	48325.7	48349.7	48204.6	48051.9							
WG573654-09					UNK	06/29/16 02:06:37 pm	4.3610	51013	0.25		1.00
Replicates	50824.4	51080.3	51091.3	51056.5							
CCV					CCV	06/29/16 02:09:09 pm	2.1850	26535	0.12		1.00
Replicates	26495.6	26554.4	26564.7	26525.7							
% Recovery	109.23										
CCB					CCB	06/29/16 02:11:40 pm	-0.1770	-19	110.09		1.00
Replicates	-20.7	-16.8	-43.8	6.5							
L1606115404					UNK	06/29/16 02:14:12 pm	-0.1782	-32	69.22		1.00
Replicates	-41.3	-57.0	-4.8	-25.7							
L1606115501					UNK	06/29/16 02:16:45 pm	-0.1761	-8	221.52		1.00
Replicates	-20.8	-21.2	-9.5	18.1							
L1606115502					UNK	06/29/16 02:19:19 pm	-0.1735	21	39.50		1.00
Replicates	17.4	12.8	32.0	20.6							
L1606115503					UNK	06/29/16 02:21:52 pm	-0.1753	1	499.21		1.00
Replicates	-0.1	-5.5	25.5	-17.0							
L1606115801					UNK	06/29/16 02:24:23 pm	-0.1677	86	19.93		1.00
Replicates	76.5	67.2	101.1	100.9							
CCV					CCV	06/29/16 02:26:55 pm	2.2180	26910	0.12	Q	1.00
Replicates	26893.0	26907.1	26957.5	26884.3							
% Recovery	110.89										
CCB					CCB	06/29/16 02:29:26 pm	-0.1777	-26	73.38		1.00
Replicates	-16.8	-29.3	-52.3	-7.5							

Approved: June 30, 2016
Alexandra M. Alfred

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
July 14, 2016

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001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BNB - Brandi N. Bentley
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJQ - Cameron J. Quick
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
CV - Carl Volkman
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
EMW - ERIC M. WILKEN
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
HDC - Hanah D. Coe
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LJH - Lacey J. Hendershot
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
NPH - Natalie P. Hart
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RNP - RICK N. PETTY
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
July 14, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
July 14, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Debra Richmann
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD		
Project Name/Location:	Longhorn		
Project Number:	60274185.0013BH 1824 MR10		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Total Metals	1,4 - DIOXANE	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 18/24	18WW20-062016			6/20/16	0755		✓	W	7	✓	✓	✓	✓					
	18WW19-062016			6/20/16	0855		✓	W	4	✓	✓							
	18WW19F-062016			6/20/16	0855		✓	W	1			✓						
	18WW19FD-062016			6/20/16	0855		✓	W	4	✓	✓							
	18WW19FFD-062016			6/20/16	0855		✓	W	1			✓						
	18WW08-062016			6/20/16	1010		✓	W	6	✓	✓		✓					
	18WW09-062016			6/20/16	1110		✓	W	6	✓	✓		✓					
	TRIP BLANK			6/20/16			✓	W	2	✓								

Comments: **STANDARD TAT**

	Date	Time	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature) Scott Beesinger	6/20/16	1545					
Relinquished by: (Signature)	Date	Time	Received for Lab (Signature)				Remarks:

Microbac OVD
Received: 06/21/2016 10:32
By: BRENDA GREGORY
221000087493

Brenda Gregory

•Homogenize all composite samples prior to analysis

...k QA/QC Manager

00682485

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061142
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061142-01	763864	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:49	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:13	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:49	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:13	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:49	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:13	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

Samplenum	Container ID	Products
L16061142-01	763865	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-JUN-2016 13:49	CLS		
2	PREP	W1	EXT	23-JUN-2016 13:30	CPD	CLS	
3	ANALYZ*	EXT	SEMI	27-JUN-2016 10:41	NPH	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-JUN-2016 13:49	CLS		
2	STORE	W1	A1	24-JUN-2016 10:20	BRG	BRG	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061142-01	763866	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-JUN-2016 13:49	CLS		
2	ANALYZ	W1	SEM	24-JUN-2016 12:12	JWR	BRG	
3	STORE	SEM	A1	29-JUN-2016 13:20	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061142
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061142-01	763867	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-JUN-2016 13:49	CLS		
2	PREP	W1	DIG	21-JUN-2016 15:40	ERP	CLS	
3	ANALYZ*	DIG	METALS	23-JUN-2016 12:10	AMA	ERP	
4	STORE	DIG	A1	23-JUN-2016 12:54	CLS	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061142-02	763868	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:49	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:49	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:49	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

Samplenum	Container ID	Products
L16061142-02	763869	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-JUN-2016 13:49	CLS		
2	ANALYZ	W1	SEM	24-JUN-2016 12:12	JWR	BRG	
3	STORE	SEM	A1	29-JUN-2016 13:20	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061142
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061142-03	763870	K MG MN-MS NA NI-MS PB-MS SB-MS SE-AX TL-MS V-

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-JUN-2016 13:49	CLS		
2	PREP	W1	DIG	21-JUN-2016 15:40	ERP	CLS	
3	ANALYZ*	DIG	METALS	23-JUN-2016 12:10	AMA	ERP	
4	STORE	DIG	A1	23-JUN-2016 12:54	CLS	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061142-04	763871	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:49	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:49	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:49	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

Samplenum	Container ID	Products
L16061142-04	763872	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-JUN-2016 13:49	CLS		
2	ANALYZ	W1	SEM	24-JUN-2016 12:12	JWR	BRG	
3	STORE	SEM	A1	29-JUN-2016 13:20	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061142
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061142-05	763873	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-JUN-2016 13:49	CLS		
2	PREP	W1	DIG	21-JUN-2016 15:40	ERP	CLS	
3	ANALYZ*	DIG	METALS	23-JUN-2016 12:10	AMA	ERP	
4	STORE	DIG	A1	23-JUN-2016 12:54	CLS	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061142-06	763874	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:49	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:49	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:49	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061142
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061142-06	763875	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-JUN-2016 13:49	CLS		
2	PREP	W1	EXT	23-JUN-2016 13:30	CPD	CLS	
3	ANALYZ*	EXT	SEMI	27-JUN-2016 10:41	NPH	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-JUN-2016 13:49	CLS		
2	STORE	W1	A1	24-JUN-2016 10:00	BRG	BRG	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061142-06	763876	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-JUN-2016 13:49	CLS		
2	ANALYZ	W1	SEM	24-JUN-2016 12:12	JWR	BRG	
3	STORE	SEM	A1	29-JUN-2016 13:20	CLS	JWR	

Samplenum	Container ID	Products
L16061142-07	763877	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:49	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:49	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:49	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061142
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061142-07	763878	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-JUN-2016 13:49	CLS		
2	PREP	W1	EXT	23-JUN-2016 13:30	CPD	CLS	
3	ANALYZ*	EXT	SEMI	27-JUN-2016 10:41	NPH	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-JUN-2016 13:49	CLS		
2	STORE	W1	A1	24-JUN-2016 10:20	BRG	BRG	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061142-07	763879	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-JUN-2016 13:49	CLS		
2	ANALYZ	W1	SEM	24-JUN-2016 12:12	JWR	BRG	
3	STORE	SEM	A1	29-JUN-2016 13:20	CLS	JWR	

Samplenum	Container ID	Products
L16061142-08	763880	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:49	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:49	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16061144

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Michelle Taylor – Client Services Specialist
(740) 373-4071
Michelle.Taylor@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on July 12 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
0019158	H	2.0		J2317164948	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18WW06-062016	L16061144-01	06/20/2016 13:45	06/21/2016 10:35
18WW06FD-062016	L16061144-02	06/20/2016 13:45	06/21/2016 10:35
MW17-062016	L16061144-03	06/20/2016 15:00	06/21/2016 10:35
TRIP BLANK	L16061144-04	06/20/2016 00:01	06/21/2016 10:35

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16061144
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.0 Summary Data

1.1 Narratives

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061144
Project Name:		**Method:**	8260
Prep Batch Number(s):	574410,	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-07-11 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2016-07-11 20:49:30

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061144
Project Name:		**Method:**	8260
Prep Batch Number(s):	574410,	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-07-11 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?		X			1
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061144
Project Name:		**Method:**	8260
Prep Batch Number(s):	574410,	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-07-11 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061144
Project Name:		**Method:**	8260
Prep Batch Number(s):	574410,	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-07-11 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			2
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061144
Project Name:		**Method:**	8260
Prep Batch Number(s):	574410,	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-07-11 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061144
Project Name:		**Method:**	8260
Prep Batch Number(s):	574410,	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-07-11 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1)1,2-Dichloroethane-d4 exceeded the UCL in the surrogate standards.
2)Acetone, Carbon Tetrachloride, 1,2-Dichloroethane, 1,2-Dichloroethane, 1,1,1-Trichloroethane, and Trichlorofluoromethane exceeded the UCL in the CCV analyzed 06/27/16 om HPMS8.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061144
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573812	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Wade DeLong	Wade DeLong	Chemist I	2016-06-28 18:21:40

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061144
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573812	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?	X				
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061144
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573812	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?		X			ER1
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061144
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573812	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061144
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573812	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061144
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573812	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER1 The LCS/LCSD exceeded RPD criteria.

1.2 Certificate of Analysis

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061144-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18WW06-062016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574410	**Analyst:**	FJB	**Run Date:**	06/28/2016 04:23
Collect Date:	06/20/2016 13:45	**Dilution:**	1	**File ID:**	8M413297
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	118	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	102	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061144-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18WW06-062016	**Prep Method:**	3520C	**Prep Date:**	06/22/2016 13:51
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574301	**Analyst:**	MES	**Run Date:**	06/27/2016 18:31
Collect Date:	06/20/2016 13:45	**Dilution:**	1	**File ID:**	15M18608
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	36.3	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061144-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW06-062016	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 05:18
Collect Date:	06/20/2016 13:45	**Dilution:**	1	**File ID:**	1LM.LM35492
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061144-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18WW06FD-062016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574410	**Analyst:**	FJB	**Run Date:**	06/28/2016 04:52
Collect Date:	06/20/2016 13:45	**Dilution:**	1	**File ID:**	8M413298
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	Q	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	Q	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	Q	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	Q	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	Q	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	Q	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	Q	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	Q	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	Q	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	Q	2.00	1.00	0.500
Chloroform	67-66-3	0.250	Q	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	Q	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	Q	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	Q	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	Q	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	Q	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	Q	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	Q	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	Q	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	Q	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	Q	1.00	0.500	0.250

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	Q	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	Q	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	Q	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	Q	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	Q	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	Q	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	Q	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	Q	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	Q	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	Q	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	Q	1.00	0.250	0.125
Styrene	100-42-5	0.250	Q	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	Q	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	Q	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	Q	1.00	0.500	0.250
Toluene	108-88-3	0.500	Q	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	Q	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	Q	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	Q	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	Q	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	Q	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	Q	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	Q	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	Q	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	Q	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	Q	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	114	85	115	
1,2-Dichloroethane-d4	123	70	120	*
Toluene-d8	102	85	120	
4-Bromofluorobenzene	103	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061144-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18WW06FD-062016	**Prep Method:**	3520C	**Prep Date:**	06/22/2016 13:51
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574301	**Analyst:**	MES	**Run Date:**	06/27/2016 18:54
Collect Date:	06/20/2016 13:45	**Dilution:**	1	**File ID:**	15M18609
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	48.5	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061144-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW06FD-062016	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 05:37
Collect Date:	06/20/2016 13:45	**Dilution:**	1	**File ID:**	1LM.LM35493
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061144-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW17-062016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574410	**Analyst:**	FJB	**Run Date:**	06/28/2016 05:21
Collect Date:	06/20/2016 15:00	**Dilution:**	1	**File ID:**	8M413299
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.410	J	1.00	0.500	0.250

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	118	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	99.7	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061144-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	MW17-062016	**Prep Method:**	3520C	**Prep Date:**	06/22/2016 13:51
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574301	**Analyst:**	MES	**Run Date:**	06/27/2016 19:17
Collect Date:	06/20/2016 15:00	**Dilution:**	1	**File ID:**	15M18610
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	46.8	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061144-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW17-062016	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 20:56
Collect Date:	06/20/2016 15:00	**Dilution:**	1	**File ID:**	1LM.LM35507
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061144-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574410	**Analyst:**	FJB	**Run Date:**	06/27/2016 21:08
Collect Date:	06/20/2016 00:01	**Dilution:**	1	**File ID:**	8M413282
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

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Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	118	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	98.4	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

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Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

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Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061144-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18WW06-062016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574410	**Analyst:**	FJB	**Run Date:**	06/28/2016 04:23
Collect Date:	06/20/2016 13:45	**Dilution:**	1	**File ID:**	8M413297
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	118	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	102	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061144-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18WW06FD-062016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574410	**Analyst:**	FJB	**Run Date:**	06/28/2016 04:52
Collect Date:	06/20/2016 13:45	**Dilution:**	1	**File ID:**	8M413298
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	Q	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	Q	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	Q	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	Q	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	Q	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	Q	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	Q	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	Q	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	Q	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	Q	2.00	1.00	0.500
Chloroform	67-66-3	0.250	Q	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	Q	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	Q	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	Q	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	Q	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	Q	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	Q	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	Q	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	Q	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	Q	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	Q	1.00	0.500	0.250

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Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	Q	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	Q	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	Q	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	Q	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	Q	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	Q	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	Q	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	Q	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	Q	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	Q	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	Q	1.00	0.250	0.125
Styrene	100-42-5	0.250	Q	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	Q	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	Q	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	Q	1.00	0.500	0.250
Toluene	108-88-3	0.500	Q	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	Q	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	Q	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	Q	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	Q	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	Q	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	Q	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	Q	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	Q	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	Q	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	Q	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	114	85	115	
1,2-Dichloroethane-d4	123	70	120	*
Toluene-d8	102	85	120	
4-Bromofluorobenzene	103	75	120	

Q	One or more quality control criteria failed. See narrative.

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Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061144-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW17-062016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574410	**Analyst:**	FJB	**Run Date:**	06/28/2016 05:21
Collect Date:	06/20/2016 15:00	**Dilution:**	1	**File ID:**	8M413299
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.410	J	1.00	0.500	0.250

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Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	118	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	99.7	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

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Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061144-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG574410	**Analyst:**	FJB	**Run Date:**	06/27/2016 21:08
Collect Date:	06/20/2016 00:01	**Dilution:**	1	**File ID:**	8M413282
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

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Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	118	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	98.4	75	120	

Q	One or more quality control criteria failed. See narrative.

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Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Analyst(s): CPD
Date: 6/22/16
Filter Lot #: 9697607

Agitator Speed 30 ± 2 rpm ☑

Analyst / Date		Analyst / Date	
CPD	6/22/16	CPD	6/23/16
Time On	Temp On °C	Time Off	Temp Off °C
1457	23.1	0812	21.7

ZHE	Sample #	Pressure √	PSI ON	PSI OFF	Method	Fluid #	Matrix*	%Solid	Size Reduction Yes	Size Reduction No	Int. Wt. (g)	Fluid Vol. (mL)
A												
B												
C												
D												
E												
F												
G	06-1164-11	✓	10	10	1311	FI-182	S	100		✓	25.00	500
H												
I												
J												
K												
L												
M												
N												
O												
P												
Q												
R												
S												
NA	FBIK1	NA	NA	NA	1311	FI-182	NA	NA	NA	NA	40	40

CPD 6/22/16

*Matrix Code = (S-solid) (SS-sand, soil or sludge) (P-paint) (O-organic) (W-water or waste)

Comments: N/A

Peer Review By: Allie Alfred 06/23/2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051316
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53752

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG568561

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412209	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 08:38
8M412210	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 08:57
8M412211	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 09:29
8M412212	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 09:56
8M412213	WG568561-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/13/16 10:19
8M412214	WG568561-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/13/16 10:51
8M412215	WG568565-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76072	05/13/16 11:36
8M412216	BFB CHECK	NA	1	1	STD76034	05/13/16 12:04
8M412217	BFB CHECK	NA	1	1	STD76034	05/13/16 12:18
8M412218	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 12:36
8M412219	RINSE	NA	1	1		05/13/16 13:00
8M412220	WG568561-02 0.3ug/L STD 8260	NA	1	1	STD76127	05/13/16 13:29
8M412221	WG568561-03 0.4ug/L STD 8260	NA	1	1	STD76127	05/13/16 13:58
8M412222	WG568561-04 1ug/L STD 8260	NA	1	1	STD76127	05/13/16 14:27
8M412223	WG568561-05 2ug/L STD 8260	NA	1	1	STD76127	05/13/16 14:56
8M412224	WG568561-06 5ug/L STD 8260	NA	1	1	STD76127	05/13/16 15:25
8M412225	WG568561-07 20ug/L STD 8260	NA	1	1	STD76127	05/13/16 15:54
8M412226	WG568561-08 50ug/L STD 8260	NA	1	1	STD76127	05/13/16 16:23
8M412227	WG568561-09 100ug/L STD 8260	NA	1	1	STD76127	05/13/16 16:52
8M412228	WG568561-10 200ug/L STD 8260	NA	1	1	STD76127	05/13/16 17:21
8M412229	WG568561-11 300ug/L STD 8260	NA	1	1	STD76127	05/13/16 17:50
8M412230	RINSE	NA	1	1		05/13/16 18:19
8M412231	RINSE	NA	1	1		05/13/16 18:49
8M412232	WG568561-12 50ug/L ALT SRC STD 8260	NA	1	1	STD76109	05/13/16 19:17
8M412233	RINSE	NA	1	1		05/13/16 19:46

Comments

Seq.	Rerun	Dil.	Reason	Analytes
5	X			
File ID: 8M412213				
	Several compounds were low, DNR.			
6				
File ID: 8M412214				

Approved: May 20, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS8	Dataset:	051316		
Analyst1:	TMB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	23
Method:	624	SOP:	MSV10	Rev:	14
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:	53752				

Internal Standard: STD75899 Surrogate Standard: STD75899

CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG568561

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			Two C compounds failed. DNR. Run a curve.	
7 File ID: 8M412215				
			DNR.	

Approved: May 20, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051716
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76072; STD76127 LCS: STD76109; STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG569079; WG569083

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412319	WG569084-01 50ng BFB STD 8260	NA	1	1	STD76034	05/17/16 08:53
8M412320	WG569084-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/17/16 09:18
8M412321	WG569079-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76072	05/17/16 09:47
8M412322	WG569079-03 50ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 10:16
8M412323	WG569079-04 20ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 10:44
8M412324	WG569079-05 5ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 11:13
8M412325	WG569079-06 200ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 11:42
8M412326	WG569079-07 300ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 12:40
8M412327	WG569079-08 400ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 13:10
8M412328	WG569079-09 500ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 13:39
8M412329	RINSE	NA	1	1		05/17/16 14:08
8M412330	RINSE	NA	1	1		05/17/16 14:37
8M412331	WG569079-10 100ug/L ALT SRC STD 826	NA	1	1	STD75801	05/17/16 15:06
8M412332	WG569259-01 BFB 50ng 8260	NA	1	1	STD76034	05/17/16 18:27
8M412333	WG569259-02 50ug/L CCV 8260	NA	1	1	STD76034	05/17/16 18:53
8M412334	WG569260-01 100ug/L CCV A9	NA	1	1	STD76072	05/17/16 19:22
8M412335	WG569083-01 VBLK0517 BLANK 8260	NA	1	1		05/17/16 19:51
8M412336	WG569083-02 20ug/L LCS 8260	NA	1	1	STD76109	05/17/16 20:20
8M412337	WG569083-03 20ug/L LCS2 8260	NA	1	1	STD76109	05/17/16 20:49
8M412338	WG569083-04 100ug/L LCS A9	NA	1	1	STD75801	05/17/16 21:18
8M412339	WG569083-05 100ug/L LCS2 A9	NA	1	1	STD75801	05/17/16 21:46
8M412340	L16050844-01 TB A 826-A9-SPE	5	1	1		05/17/16 22:16
8M412341	L16050844-07 EB A 826-A9-SPE	5	1	1		05/17/16 22:45
8M412342	L16050844-11 AB A 826-A9-SPE	5	1	1		05/17/16 23:14
8M412343	L16050844-02 A 826-A9-SPE	6	1	1		05/17/16 23:43
8M412344	L16050844-05 A 826-A9-SPE	6	1	1		05/18/16 00:12
8M412345	L16050844-06 A 826-A9-SPE	6	1	1		05/18/16 00:41
8M412346	L16050844-12 A 826-A9-SPE	6	1	1		05/18/16 01:10
8M412347	L16050840-01 A 826-A9-SPE	7	1	1		05/18/16 01:38
8M412348	L16050844-08 A 826-A9-SPE	7	1	1		05/18/16 02:07
8M412349	L16050844-13 A 826-A9-SPE	7	1	1		05/18/16 02:36
8M412350	L16050844-15 A 826-A9-SPE	7	1	1		05/18/16 03:05
8M412351	L16050839-01 A 826-A9-SPE	7	1	1		05/18/16 03:33
8M412352	L16050844-03 2.5X A 826-A9-SPE	7	1	2.5		05/18/16 04:02

Approved: May 20, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051716
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76072; STD76127 LCS: STD76109; STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG569079; WG569083

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412353	L16050844-04 5X A 826-A9-SPE	7	1	5		05/18/16 04:31
8M412354	L16050844-09 5X A 826-A9-SPE	7	1	5		05/18/16 05:01
8M412355	L16050844-10 5X A 826-A9-SPE	7	1	5		05/18/16 05:30
8M412356	L16050844-14 50X A 826-A9-SPE	7	1	50		05/18/16 05:59
8M412357	RINSE	NA	1	1		05/18/16 06:28

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
File ID: 8M412320				
	DNR. Running an a9/foo curve.			
32	X	10	Over Calibration Range	CIS12-DCE
File ID: 8M412350				
40	X	2.5	Analyzed too dilute	
File ID: 8M412353				
	DNR.			
37	X	25	Over Calibration Range	TCE
File ID: 8M412355				
38	X	20	Analyzed too dilute	
File ID: 8M412356				
	DNR.			

Approved: May 20, 2016

Sarah Vandenberg

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 062716
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD76370 Surrogate Standard: STD76370
CCV: STD76715 LCS: STD76744 MS/MSD: STD76744

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG574410

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M413275	WG574409-01 BFB 50ng 8260	NA	1	1	STD76496	06/27/16 17:45
8M413276	WG574409-02 50ug/L CCV 8260	NA	1	1	STD76715	06/27/16 18:10
8M413277	WG574409-02 50ug/L CCV 8260	NA	1	1	STD76578	06/27/16 18:40
8M413278	WG574XXX-01 100ug/L CCV A9	NA	1	1	STDXXXXX	06/27/16 19:13
8M413279	WG574410-01 BLANK 8260	NA	1	1		06/27/16 19:42
8M413280	WG574410-02 20ug/L LCS 8260	NA	1	1	STD76744	06/27/16 20:11
8M413281	L16061055-07 1000X C 826-SPE D2	NA	1	1000		06/27/16 20:39
8M413282	L16061144-04 TB A 826-LOW	<2	1	1		06/27/16 21:08
8M413283	L16061151-06 TB A 826-SPE	<2	1	1		06/27/16 21:37
8M413284	L16061068-18 TB B 826-SPE	<2	1	1		06/27/16 22:06
8M413285	L16061148-03 TB B 826-SPE	<2	1	1		06/27/16 22:35
8M413286	L16061151-03 MS A 826-SPE	<2	1	1	STD76744	06/27/16 23:04
8M413287	L16061151-04 MSD A 826-SPE	<2	1	1	STD76744	06/27/16 23:34
8M413288	L16061164-11 10X 826-TC	NA	17	10		06/28/16 00:02
8M413289	L16061151-02 A 826-SPE	<2	1	1		06/28/16 00:31
8M413290	L16061151-01 REF A 826-SPE	<2	1	1		06/28/16 01:00
8M413291	L16061151-05 A 826-SPE	<2	1	1		06/28/16 01:29
8M413292	L16061150-01 A 826-SPE	<2	1	1		06/28/16 01:58
8M413293	L16061150-02 A 826-SPE	<2	1	1		06/28/16 02:27
8M413294	L16061155-01 A 826-SPE	<2	1	1		06/28/16 02:56
8M413295	L16061155-02 A 826-SPE	<2	1	1		06/28/16 03:25
8M413296	L16061155-03 A 826-SPE	<2	1	1		06/28/16 03:54
8M413297	L16061144-01 A 826-LOW	<2	1	1		06/28/16 04:23
8M413298	L16061144-02 A 826-LOW	<2	1	1		06/28/16 04:52
8M413299	L16061144-03 A 826-LOW	<2	1	1		06/28/16 05:21
8M413300	CCV	NA	1	1		06/28/16 05:50
8M413301	RINSE	NA	1	1		06/28/16 06:19
8M413302	RINSE	NA	1	1		06/28/16 06:48
8M413303	WG573693-01 10X FBLK	NA	17	10		06/28/16 07:17

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			

Approved: July 08, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 062716
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD76370 Surrogate Standard: STD76370
CCV: STD76715 LCS: STD76744 MS/MSD: STD76744

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG574410

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
File ID: 8M413276				
	VC was high, DNR.			
4				
File ID: 8M413278				
	Not needed, DNR.			
7				
File ID: 8M413281				
	Could not read the pH because the sample was too dark.			
21	X	1	Surrogate standard failure	
File ID: 8M413295				

Approved: July 08, 2016

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 13-MAY-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75126
Analytical Workgroups: WG568561

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	TMB
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
17-MAY-2016
Tiffany Bailey

Secondary Reviewer:
20-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2016 11:18:36

Microbac Laboratories Inc.

Data Checklist

Date: 17-MAY-2016
Analyst: TMB
Analyst: FJB
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75174
Analytical Workgroups: WG569079; WG569083

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
19-MAY-2016
Tiffany Bailey

Secondary Reviewer:
20-MAY-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2016 11:05:37

Microbac Laboratories Inc.

Data Checklist

Date: 27-JUN-2016
Analyst: FJB
Analyst: NA
Method: 8260B
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 76035
Analytical Workgroups: WG574410

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	WTD
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	ADC
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
30-JUN-2016
Tiffany Bailey

Secondary Reviewer:
08-JUL-2016
Cathy Cater

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-08-2016 12:26:26

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG574410

Login Number: L16061144

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW06-062016	01	06/20/16					06/28/2016	7.6	14		06/28/16	7.6	14	
18WW06FD-062016	02	06/20/16					06/28/2016	7.6	14		06/28/16	7.6	14	
MW17-062016	03	06/20/16					06/28/2016	7.6	14		06/28/16	7.6	14	
TRIP BLANK	04	06/20/16					06/27/2016	7.9	14		06/27/16	7.9	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4833232
Report generated 07/11/2016 16:25

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061144
Instrument Id: HPMS8
Workgroup (AAB#): WG574410

Method: 8260
CAL ID: HPMS8-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16061144-01	1.00	01	118	113	102	101
L16061144-02	1.00	01	123	114	103	102
L16061144-03	1.00	01	118	113	99.7	101
L16061144-04	1.00	01	118	113	98.4	102
WG574410-01	1.00	01	114	113	100	103
WG574410-02	1.00	01	114	110	99.3	103

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4833238
Report generated: 07/11/2016 16:25

METHOD BLANK SUMMARY

Login Number: L16061144
Blank File ID: 8M413279
Prep Date: 06/27/16 19:42
Analyzed Date: 06/27/16 19:42
Analyst: FJB

Work Group: WG574410
Blank Sample ID: WG574410-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG574410-02	8M413280	06/27/16 20:11	01
TRIP BLANK	L16061144-04	8M413282	06/27/16 21:08	01
18WW06-062016	L16061144-01	8M413297	06/28/16 04:23	01
18WW06FD-062016	L16061144-02	8M413298	06/28/16 04:52	01
MW17-062016	L16061144-03	8M413299	06/28/16 05:21	01

Report Name: BLANK_SUMMARY
PDF File ID: 4845082
Report generated 07/11/2016 16:25

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16061144 Prep Date: 06/27/16 19:42 Sample ID: WG574410-01
Instrument ID: HPMS8 Run Date: 06/27/16 19:42 Prep Method: 5030B/5030C/503
File ID: 8M413279 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG574410 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4833233
11-JUL-2016 16:25

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061144 Prep Date: 06/27/16 19:42 Sample ID: WG574410-01
Instrument ID: HPMS8 Run Date: 06/27/16 19:42 Prep Method: 5030B/5030C/503
File ID: 8M413279 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG574410 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	113	85 - 115	PASS
1,2-Dichloroethane-d4	114	70 - 120	PASS
Toluene-d8	103	85 - 120	PASS
4-Bromofluorobenzene	100	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4833233
11-JUL-2016 16:25

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061144 | Run Date: 06/27/2016 | Sample ID: WG574410-02
Instrument ID: HPMS8 | Run Time: 20:11 | Prep Method: 5030B/5030C/503
File ID: 8M413280 | Analyst: FJB | Method: 8260B
Workgroup (AAB#): WG574410 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD76744 | Cal ID: HPMS8-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	25.4	127	40 - 140	
Benzene	20.0	21.6	108	80 - 120	
Bromobenzene	20.0	19.0	94.8	75 - 125	
Bromochloromethane	20.0	21.5	108	65 - 130	
Bromodichloromethane	20.0	23.5	118	75 - 120	
Bromoform	20.0	19.9	99.5	70 - 130	
Bromomethane	20.0	16.9	84.7	30 - 145	
2-Butanone	20.0	20.5	103	30 - 150	
n-Butylbenzene	20.0	18.7	93.6	70 - 135	
sec-Butylbenzene	20.0	19.6	98.1	70 - 125	
tert-Butylbenzene	20.0	19.5	97.5	70 - 130	
Carbon disulfide	20.0	20.6	103	35 - 160	
Carbon tetrachloride	20.0	24.3	121	65 - 140	
Chlorobenzene	20.0	20.3	101	80 - 120	
Chlorodibromomethane	20.0	20.4	102	60 - 135	
Chloroethane	20.0	23.1	115	60 - 135	
Chloroform	20.0	23.0	115	65 - 135	
Chloromethane	20.0	22.5	113	40 - 125	
2-Chlorotoluene	20.0	18.2	90.8	75 - 125	
4-Chlorotoluene	20.0	21.4	107	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	17.9	89.4	50 - 130	
1,2-Dibromoethane	20.0	19.6	97.8	80 - 120	
Dibromomethane	20.0	20.3	102	75 - 125	
1,2-Dichlorobenzene	20.0	19.0	95.1	70 - 120	
1,3-Dichlorobenzene	20.0	19.7	98.4	75 - 125	
1,4-Dichlorobenzene	20.0	19.3	96.7	75 - 125	
Dichlorodifluoromethane	20.0	25.4	127	30 - 155	
1,1-Dichloroethane	20.0	21.2	106	70 - 135	
1,2-Dichloroethane	20.0	24.7	124	70 - 130	
1,1-Dichloroethene	20.0	21.6	108	70 - 130	
cis-1,2-Dichloroethene	20.0	21.9	109	70 - 125	
trans-1,2-Dichloroethene	20.0	22.3	112	60 - 140	
1,2-Dichloropropane	20.0	20.8	104	75 - 125	
1,3-Dichloropropane	20.0	20.7	103	75 - 125	
2,2-Dichloropropane	20.0	24.5	123	70 - 135	
cis-1,3-Dichloropropene	20.0	24.2	121	70 - 130	
trans-1,3-Dichloropropene	20.0	20.8	104	55 - 140	
1,1-Dichloropropene	20.0	22.1	110	75 - 130	
Ethylbenzene	20.0	19.8	98.8	75 - 125	
2-Hexanone	20.0	17.1	85.3	55 - 130	
Hexachlorobutadiene	20.0	19.8	98.9	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4833234
Report generated: 07/11/2016 16:25

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061144 Run Date: 06/27/2016 Sample ID: WG574410-02
Instrument ID: HPMS8 Run Time: 20:11 Prep Method: 5030B/5030C/503
File ID: 8M413280 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG574410 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD76744 Cal ID: HPMS8-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	21.5	107	75 - 125	
p-Isopropyltoluene	20.0	19.6	98.0	75 - 130	
4-Methyl-2-pentanone	20.0	18.3	91.7	60 - 135	
Methylene chloride	20.0	20.9	105	55 - 140	
Naphthalene	20.0	15.6	77.9	55 - 140	
n-Propylbenzene	20.0	20.1	101	70 - 130	
Styrene	20.0	20.7	104	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	20.6	103	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	16.6	83.2	65 - 130	
Tetrachloroethene	20.0	20.5	103	45 - 150	
Toluene	20.0	19.8	99.2	75 - 120	
1,2,3-Trichlorobenzene	20.0	17.1	85.4	55 - 140	
1,2,4-Trichlorobenzene	20.0	18.2	90.9	65 - 135	
1,1,1-Trichloroethane	20.0	24.0	120	65 - 130	
1,1,2-Trichloroethane	20.0	19.3	96.7	75 - 125	
Trichloroethene	20.0	23.3	117	70 - 125	
Trichlorofluoromethane	20.0	24.4	122	60 - 145	
1,2,3-Trichloropropane	20.0	18.4	92.2	75 - 125	
1,2,4-Trimethylbenzene	20.0	19.7	98.6	75 - 130	
1,3,5-Trimethylbenzene	20.0	20.2	101	75 - 130	
Vinyl chloride	20.0	26.2	131	50 - 145	
o-Xylene	20.0	20.5	102	80 - 120	
m-,p-Xylene	40.0	41.3	103	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	110	85 - 115	PASS
1,2-Dichloroethane-d4	114	70 - 120	PASS
Toluene-d8	103	85 - 120	PASS
4-Bromofluorobenzene	99.3	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4833234
Report generated: 07/11/2016 16:25

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061144
Instrument: HPMS8
Analyst: TMB
Workgroup: WG568561

Tune ID: WG568561-01
Run Date: 05/13/2016
Run Time: 12:36
File ID: 8M412218
Cal ID: HPMS8 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	16.7	6575	PASS
75.0	95.0	30.0	60.0	51.3	20171	PASS
95.0	95.0	100	100	100	39312	PASS
96.0	95.0	5.00	9.00	6.74	2649	PASS
173	174	0	2.00	0.363	122	PASS
174	95.0	50.0	100	85.5	33616	PASS
175	174	5.00	9.00	8.17	2746	PASS
176	174	95.0	101	99.2	33360	PASS
177	176	5.00	9.00	6.80	2267	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG568561-02	STD	01	05/13/2016 13:29	
WG568561-03	STD	01	05/13/2016 13:58	
WG568561-04	STD	01	05/13/2016 14:27	
WG568561-05	STD	01	05/13/2016 14:56	
WG568561-06	STD	01	05/13/2016 15:25	
WG568561-07	STD	01	05/13/2016 15:54	
WG568561-08	STD-CCV	01	05/13/2016 16:23	
WG568561-09	STD	01	05/13/2016 16:52	
WG568561-10	STD	01	05/13/2016 17:21	
WG568561-11	STD	01	05/13/2016 17:50	
WG568561-12	SSCV	01	05/13/2016 19:17	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4833236
Report generated 07/11/2016 16:25

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061144
Instrument: HPMS8
Analyst: TMB
Workgroup: WG569084

Tune ID: WG569084-01
Run Date: 05/17/2016
Run Time: 08:53
File ID: 8M412319
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.1	6316	PASS
75.0	95.0	30.0	60.0	54.7	18130	PASS
95.0	95.0	100	100	100	33138	PASS
96.0	95.0	5.00	9.00	6.76	2241	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	72.2	23934	PASS
175	174	5.00	9.00	7.88	1886	PASS
176	174	95.0	101	96.8	23159	PASS
177	176	5.00	9.00	7.15	1655	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG569079-01	STD-CCV	01	05/17/2016 09:47	
WG569079-03	STD	01	05/17/2016 10:16	
WG569079-04	STD	01	05/17/2016 10:44	
WG569079-05	STD	01	05/17/2016 11:13	
WG569079-06	STD	01	05/17/2016 11:42	
WG569079-07	STD	01	05/17/2016 12:40	
WG569079-08	STD	01	05/17/2016 13:10	
WG569079-09	STD	01	05/17/2016 13:39	
WG569079-10	SSCV	01	05/17/2016 15:06	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4833236
Report generated 07/11/2016 16:25

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061144
Instrument: HPMS8
Analyst: FJB
Workgroup: WG574409

Tune ID: WG574409-01
Run Date: 06/27/2016
Run Time: 17:45
File ID: 8M413275
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	18.5	9667	PASS
75.0	95.0	30.0	60.0	57.7	30122	PASS
95.0	95.0	100	100	100	52181	PASS
96.0	95.0	5.00	9.00	6.82	3559	PASS
173	174	0	2.00	0.363	160	PASS
174	95.0	50.0	100	84.5	44069	PASS
175	174	5.00	9.00	7.30	3216	PASS
176	174	95.0	101	98.9	43568	PASS
177	176	5.00	9.00	6.07	2646	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG574409-02	CCV	01	06/27/2016 18:40	
WG574410-01	BLANK	01	06/27/2016 19:42	
WG574410-02	LCS	01	06/27/2016 20:11	
L16061144-04	TRIP BLANK	01	06/27/2016 21:08	
L16061144-01	18WW06-062016	01	06/28/2016 04:23	
L16061144-02	18WW06FD-062016	01	06/28/2016 04:52	
L16061144-03	MW17-062016	01	06/28/2016 05:21	
WG573693-01	FBLK1	DL01	06/28/2016 07:17	*

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4833236
Report generated 07/11/2016 16:25

Calibration Table Report
Method: 8260WT.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Calibration: Sat May 14 18:08:06 2016
Curve: WG568561
Calibration Files

	Compound	0.3 8M412220.D	0.4 8M412221.D	1 8M412222.D	2 8M412223.D	5 8M412224.D	20 8M412225.D	50 8M412226.D	100 8M412227.D	200 8M412228.D	300 8M412229.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane		0.427	0.390	0.397	0.364	0.468	0.439	0.452	0.427	0.408	0.419	7.751		
P	Chloromethane			0.264	0.257	0.223	0.253	0.240	0.240	0.239	0.241	0.245	5.336		
C	Vinyl Chloride		0.274	0.296	0.297	0.277	0.299	0.292	0.299	0.292	0.288	0.290	3.191		
T	1,3-Butadiene				0.218	0.208	0.242	0.251	0.277	0.254	0.254	0.243	9.644		
T	Bromomethane			0.129	0.133	0.127	0.162	0.167	0.187	0.205	0.212	0.165	20.449		1.000
T	Chloroethane		0.173	0.157	0.153	0.143	0.164	0.157	0.163	0.164	0.164	0.160	5.354		
T	Trichlorofluoromethane		0.544	0.538	0.559	0.506	0.570	0.538	0.551	0.531	0.525	0.540	3.520		
T	Diethyl ether			0.130	0.138	0.123	0.132	0.125	0.128		0.127	0.129	3.866		
T	Isoprene		0.335	0.351	0.334	0.293	0.334	0.320	0.334	0.322	0.329	0.328	4.867		
T	Acrolein				0.012	0.010	0.010	0.011	0.012		0.014	0.012	12.987		
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.256	0.269	0.240	0.260	0.249	0.257	0.251	0.250	0.254	3.397		
T	Acetone					0.023	0.030	0.029	0.030	0.028	0.028	0.028	9.132		
C	1,1-Dichloroethene		0.424	0.407	0.406	0.387	0.416	0.398	0.409	0.400	0.393	0.404	2.830		
T	Tert-Butyl Alcohol				0.010	0.009	0.009	0.009	0.009		0.009	0.009	2.872		
T	Dimethyl Sulfide		0.133	0.142	0.152	0.137	0.145	0.142	0.151	0.147	0.151	0.145	4.534		
T	Iodomethane				0.019	0.024	0.066	0.101	0.129	0.135	0.131	0.087	58.244		0.998
T	Methyl acetate					0.075	0.076	0.074	0.078	0.076	0.078	0.076	2.221		
T	Methylene Chloride			0.274	0.265	0.244	0.263	0.250	0.255	0.254	0.252	0.257	3.686		
T	Carbon Disulfide			0.888	0.922	0.801	0.873	0.816	0.854	0.813	0.802	0.846	5.346		
T	Acrylonitrile			0.027	0.035	0.033	0.038	0.038	0.039		0.044	0.036	14.671		
T	Methyl Tert Butyl Ether			0.534	0.543	0.521	0.586	0.579	0.585	0.560	0.546	0.557	4.455		
T	trans-1,2-Dichloroethene		0.389	0.395	0.364	0.352	0.381	0.367	0.372	0.364	0.358	0.371	3.858		
T	n-Hexane					0.265	0.280	0.270	0.286	0.275	0.279	0.276	2.732		
T	Diisopropyl ether			0.600	0.607	0.548	0.588	0.572	0.571		0.567	0.579	3.559		
T	Vinyl Acetate				0.256	0.243	0.270	0.275	0.266	0.271	0.275	0.265	4.509		
P	1,1-Dichloroethane		0.441	0.463	0.486	0.434	0.488	0.464	0.470	0.459	0.447	0.461	4.012		
T	Ethyl-Tert-Butyl ether			0.616	0.645	0.590	0.641	0.628	0.619		0.603	0.620	3.188		
T	2-Butanone					0.035	0.042	0.043	0.045	0.041	0.043	0.041	8.268		
T	Propionitrile			0.010	0.012	0.012	0.013	0.012	0.013		0.013	0.012	8.354		
T	2,2-Dichloropropane		0.471	0.462	0.520	0.476	0.503	0.494	0.497	0.483	0.470	0.486	3.839		
T	cis-1,2-Dichloroethene		0.299	0.298	0.291	0.267	0.295	0.282	0.289	0.283	0.277	0.287	3.685		
C	Chloroform	0.563	0.567	0.581	0.536	0.509	0.566	0.543	0.546	0.529	0.506	0.545	4.619		
T	1-Bromopropane			0.034	0.040	0.040	0.043	0.041	0.043	0.043	0.044	0.041	7.649		
T	Bromochloromethane		0.131	0.164	0.147	0.137	0.154	0.148	0.151	0.148	0.145	0.147	6.598		
T	Tetrahydrofuran			0.034	0.028	0.025	0.026	0.026	0.026		0.026	0.027	11.724		
S	Dibromofluoromethane			0.249	0.261	0.257	0.280	0.271	0.284	0.271	0.275	0.269	4.465		
T	1,1,1-Trichloroethane		0.492	0.537	0.515	0.496	0.545	0.525	0.533	0.515	0.499	0.517	3.660		
T	Cyclohexane			0.373	0.369	0.335	0.359	0.344	0.366	0.356	0.364	0.358	3.619		
T	1,1-Dichloropropene			0.414	0.399	0.369	0.403	0.395	0.399	0.392	0.382	0.394	3.488		
T	Tert-Amyl-Methyl ether			0.567	0.587	0.534	0.576	0.568	0.561		0.549	0.563	3.077		
T	Carbon Tetrachloride		0.444	0.456	0.462	0.441	0.481	0.465	0.474	0.462	0.448	0.4594	2.92173		
S	1,2-Dichloroethane-d4			0.241	0.309	0.276	0.312	0.295	0.301	0.284	0.286	0.288	7.93644		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.347	0.335	0.354	0.336	0.371	0.36	0.364	0.349	0.338	0.3505	3.65503		
T	Benzene		1.128	1.084	1.071	0.977	1.085	1.033	1.019	0.963	0.883	1.0269	7.39343		
T	Trichloroethene		0.285	0.275	0.276	0.251	0.283	0.273	0.279	0.273	0.27	0.2739	3.66126		
T	Methylcyclohexane					0.396	0.426	0.408	0.429	0.416	0.422	0.4161	2.94153		
C	1,2-Dichloropropane		0.239	0.222	0.233	0.207	0.238	0.226	0.233	0.231	0.229	0.2286	4.30096		
T	Bromodichloromethane		0.369	0.382	0.412	0.385	0.426	0.421	0.417	0.41	0.395	0.4018	4.93305		
T	1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.0011	14.5817		
T	Dibromomethane		0.141	0.13	0.137	0.128	0.141	0.134	0.137	0.136	0.133	0.1353	3.26799		
T	2-Chloroethyl Vinyl Ether				0.1	0.084	0.103	0.104	0.103	0.095	0.098	0.0983	7.09792		
T	4-Methyl-2-Pentanone					0.033	0.042	0.042	0.043	0.04	0.041	0.0401	8.66859		
T	cis-1,3-Dichloropropene		0.391	0.393	0.386	0.398	0.431	0.428	0.428	0.42	0.405	0.409	4.41527		

T	Dimethyl Disulfide					0.182	0.218	0.221	0.23	0.229	0.23	0.2183	8.49419	
I	Chlorobenzene-d5	ISTD												
S	Toluene-d8			1.282	1.295	1.228	1.385	1.333	1.378	1.289	1.278	1.3084	4.07746	
C	Toluene		1.653	1.696	1.678	1.507	1.647	1.554	1.545	1.418	1.27	1.552	8.98325	
T	Ethyl Methacrylate			0.251	0.293	0.268	0.314	0.314	0.327	0.309	0.31	0.2981	8.76897	
T	Paraldehyde											0	0	
T	trans-1,3-Dichloropropene			0.472	0.51	0.466	0.561	0.552	0.553	0.533	0.515	0.5201	7.01006	
T	1,1,2-Trichloroethane		0.261	0.241	0.242	0.222	0.254	0.249	0.252	0.243	0.241	0.2449	4.54209	
T	2-Hexanone					0.042	0.053	0.053	0.056	0.051	0.053	0.0515	9.50479	
T	1,3-Dichloropropane		0.355	0.442	0.465	0.42	0.468	0.454	0.457	0.437	0.428	0.436	7.93348	
T	Tetrachloroethene		0.355	0.337	0.336	0.306	0.333	0.325	0.337	0.334	0.33	0.3325	3.83886	
T	Dibromochloromethane		0.349	0.336	0.338	0.328	0.373	0.372	0.383	0.373	0.367	0.3576	5.60043	
T	1,2-Dibromoethane		0.233	0.234	0.234	0.227	0.259	0.254	0.258	0.251	0.247	0.2441	5.04151	
T	1-Chlorohexane		0.532	0.584	0.505	0.502	0.54	0.52	0.547	0.521	0.516	0.5298	4.7826	
P	Chlorobenzene		1.029	1.173	1.09	1.007	1.099	1.037	1.043	1.002	0.939	1.0466	6.41465	
T	1,1,1,2-Tetrachloroethane		0.392	0.399	0.403	0.357	0.431	0.414	0.424	0.417	0.413	0.4055	5.39495	
C	Ethylbenzene		0.6	0.594	0.59	0.532	0.586	0.559	0.57	0.564	0.558	0.5726	3.7769	
T	m-,p-Xylene		0.744	0.696	0.691	0.643	0.713	0.67	0.673	0.634	0.581	0.6716	7.12586	
T	o-Xylene			0.691	0.651	0.614	0.692	0.658	0.667	0.65	0.63	0.6567	4.11758	
T	Styrene		1.05	1.06	1.096	1.043	1.159	1.124	1.12	1.061	0.98	1.077	4.96781	
P	Bromoform			0.177	0.21	0.181	0.226	0.221	0.232	0.227	0.223	0.2121	10.0546	
T	Isopropylbenzene		1.853	1.891	1.871	1.708	1.897	1.781	1.75	1.573	1.377	1.7444	9.92447	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.426	0.492	0.503	0.486	0.543	0.51	0.527	0.513	0.514	0.5018	6.60291	
S	p-Bromofluorobenzene				1.054	0.976	1.071	1.016	1.053	1.031	1.046	1.0352	3.05136	
T	1,2,3-Trichloropropane			0.119	0.158	0.161	0.162	0.155	0.162	0.16	0.158	0.1545	9.40789	
T	trans-1,4-Dichloro-2-Butene			0.085	0.118	0.12	0.149	0.151	0.16	0.159	0.161	0.1376	19.9543	1.000
T	n-Propylbenzene		4.139	4.239	4.243	4.051	4.241	3.953	3.882	3.419	2.935	3.9003	11.4439	
T	Bromobenzene	0.796	0.708	0.843	0.837	0.778	0.84	0.798	0.817	0.803	0.803	0.8022	4.93253	
T	1,3,5-Trimethylbenzene		2.941	2.93	2.941	2.839	3.053	2.882	2.871	2.689	2.423	2.8411	6.50391	
T	2-Chlorotoluene		2.917	2.935	2.929	2.712	2.861	2.795	2.682	2.533	2.145	2.7231	9.37022	
T	4-Chlorotoluene		2.681	2.596	2.581	2.474	2.625	2.326	2.447	2.286	2.121	2.4597	7.49558	
T	a-Methylstyrene					1.257	1.406	1.34	1.384	1.35	1.351	1.3479	3.77654	
T	tert-Butylbenzene			0.587	0.555	0.53	0.571	0.533	0.552	0.561	0.558	0.5558	3.34508	
T	1,2,4-Trimethylbenzene		2.955	3.168	3.127	2.936	3.12	2.914	2.937	2.709	2.427	2.9214	7.97314	
T	sec-Butylbenzene			3.701	3.536	3.487	3.607	3.34	3.332	3.045	2.69	3.3424	9.93324	
T	p-Isopropyltoluene			3.112	3.062	2.903	2.988	2.813	2.809	2.634	2.382	2.8379	8.45265	
T	1,3-Dichlorobenzene		1.484	1.617	1.627	1.53	1.605	1.531	1.549	1.51	1.45	1.5448	3.95774	
T	1,4-Dichlorobenzene	1.713	1.524	1.672	1.594	1.503	1.6	1.511	1.535	1.49	1.431	1.5574	5.56562	
T	n-Butylbenzene			3.143	2.96	2.895	3.002	2.791	2.792	2.571	2.292	2.8056	9.55812	
T	1,2-Dichlorobenzene	1.59	1.307	1.415	1.41	1.322	1.404	1.333	1.356	1.315	1.286	1.3739	6.4618	
T	1,2-Dibromo-3-Chloropropane				0.085	0.103	0.102	0.103	0.106	0.104	0.103	0.1007	6.86771	
T	1,2,4-Trichlorobenzene		1.074	1.01	1.028	0.982	1.069	1.013	1.036	1.029	1.002	1.0269	2.90829	
T	Hexachlorobutadiene		0.516	0.476	0.483	0.447	0.487	0.459	0.48	0.485	0.485	0.4798	4.00465	
T	Naphthalene		1.594	1.457	1.574	1.455	1.63	1.552	1.564	1.485	1.422	1.5258	4.75891	
T	1,2,3-Trichlorobenzene	0.913	0.934	0.905	0.862	0.805	0.877	0.824	0.862	0.846	0.835	0.8664	4.7474	

Tue May 17 11:49:41 2016

Calibration Table Report
Method: A9FOOWT.M
Title: A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Calibration: Thu May 19 08:54:31 2016
Curve: WG569079
Calibration Files

	Compound	5 8M412324.D	20 8M412323.D	50 8M412322.D	100 8M412321.D	200 8M412325.D	300 8M412326.D	400 8M412327.D	500 8M412328.D	Avg	%RSD
I	Fluorobenzene	ISTD									
T	Acetonitrile		0.009	0.010	0.010	0.010	0.010	0.010	0.010	0.010	2.076
T	3-Chloro-1-propene	0.306	0.330	0.335	0.331	0.324	0.307	0.304	0.304	0.318	4.307
T	2-Chloro-1,3-butadiene	0.368	0.420	0.420	0.419	0.419	0.392	0.389	0.387	0.402	5.022
T	Ethyl Acetate	0.080	0.096	0.097	0.100	0.099	0.098	0.100	0.095	0.096	6.751
T	Methacrylonitrile	0.041	0.054	0.055	0.055	0.055	0.054	0.055	0.052	0.053	9.227
T	Isobutyl Alcohol			0.003	0.003	0.003	0.003	0.003	0.003	0.003	3.599
T	1-Butanol									0.000	0.000
T	Methyl methacrylate	0.089	0.106	0.106	0.105	0.106	0.105	0.107	0.102	0.103	5.868
T	2-Nitropropane		0.041	0.042	0.043	0.046	0.047	0.048	0.046	0.045	5.992
I	Chlorobenzene-d5	ISTD									
I	1,4-Dichlorobenzene-d4	ISTD									
T	Cyclohexanone		0.011	0.010	0.010	0.009	0.010	0.011	0.010	0.010	4.971

Thu May 19 09:04:52 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061144 Run Date: 05/13/2016 Sample ID: WG568561-12
Instrument ID: HPMS8 Run Time: 19:17 Method: 8260B
File ID: 8M412232 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG568561 Cal ID: HPMS8 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.1	ug/L	0.513	5.70	20	
1,1-Dichloroethene	CCC	50.0	46.0	ug/L	0.372	8.10	20	
1,2-Dichloropropane	CCC	50.0	51.0	ug/L	0.233	1.90	20	
Ethylbenzene	CCC	50.0	48.2	ug/L	0.552	3.60	20	
Toluene	CCC	50.0	49.1	ug/L	1.52	1.80	20	
Vinyl Chloride	CCC	50.0	52.4	ug/L	0.304	4.80	20	
Bromoform	SPCC	50.0	48.2	ug/L	0.205	3.60	20	
Chlorobenzene	SPCC	50.0	50.2	ug/L	1.05	0.400	20	
Chloromethane	SPCC	50.0	50.7	ug/L	0.248	1.40	20	
1,1-Dichloroethane	SPCC	50.0	46.7	ug/L	0.431	6.60	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.6	ug/L	0.498	0.800	20	
Acetone		50.0	57.5	ug/L	0.0324	15.1	20	
Benzene		50.0	48.5	ug/L	0.997	3.00	20	
Bromobenzene		50.0	49.5	ug/L	0.794	1.10	20	
Bromochloromethane		50.0	47.5	ug/L	0.140	4.90	20	
Bromodichloromethane		50.0	48.3	ug/L	0.388	3.40	20	
Bromomethane		50.0	46.4	ug/L	0.162	7.20	20	
2-Butanone		50.0	53.0	ug/L	0.0438	6.00	20	
n-Butylbenzene		50.0	49.7	ug/L	2.79	0.700	20	
sec-Butylbenzene		50.0	51.3	ug/L	3.43	2.70	20	
tert-Butylbenzene		50.0	50.9	ug/L	0.566	1.90	20	
Carbon Disulfide		50.0	42.3	ug/L	0.716	15.4	20	
Carbon Tetrachloride		50.0	46.2	ug/L	0.425	7.50	20	
Dibromochloromethane		50.0	49.7	ug/L	0.355	0.700	20	
Chloroethane		50.0	53.3	ug/L	0.170	6.70	20	
2-Chlorotoluene		50.0	51.6	ug/L	2.81	3.10	20	
4-Chlorotoluene		50.0	48.3	ug/L	2.37	3.50	20	
1,2-Dibromo-3-Chloropropane		50.0	48.5	ug/L	0.0977	3.00	20	
1,2-Dibromoethane		50.0	51.1	ug/L	0.250	2.20	20	
Dibromomethane		50.0	45.8	ug/L	0.124	8.40	20	
1,2-Dichlorobenzene		50.0	50.5	ug/L	1.39	1.00	20	
1,3-Dichlorobenzene		50.0	50.9	ug/L	1.57	1.80	20	
1,4-Dichlorobenzene		50.0	50.5	ug/L	1.57	0.900	20	
Dichlorodifluoromethane		50.0	54.2	ug/L	0.455	8.40	20	
1,2-Dichloroethane		50.0	49.0	ug/L	0.344	2.00	20	
cis-1,2-Dichloroethene		50.0	48.9	ug/L	0.281	2.20	20	
trans-1,2-Dichloroethene		50.0	48.1	ug/L	0.357	3.90	20	
1,3-Dichloropropane		50.0	53.7	ug/L	0.468	7.30	20	
2,2-Dichloropropane		50.0	47.9	ug/L	0.466	4.20	20	
cis-1,3-Dichloropropene		50.0	53.9	ug/L	0.441	7.80	20	
trans-1,3-Dichloropropene		50.0	50.7	ug/L	0.527	1.30	20	
1,1-Dichloropropene		50.0	47.5	ug/L	0.374	5.10	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4833235
Report generated 07/11/2016 16:25

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061144 Run Date: 05/13/2016 Sample ID: WG568561-12
Instrument ID: HPMS8 Run Time: 19:17 Method: 8260B
File ID: 8M412232 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG568561 Cal ID: HPMS8 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	53.6	ug/L	0.0552	7.20	20	
Hexachlorobutadiene		50.0	52.1	ug/L	0.500	4.20	20	
Isopropylbenzene		50.0	51.1	ug/L	1.78	2.20	20	
p-Isopropyltoluene		50.0	50.1	ug/L	2.85	0.300	20	
4-Methyl-2-Pentanone		50.0	51.9	ug/L	0.0416	3.70	20	
Methylene Chloride		50.0	48.4	ug/L	0.249	3.10	20	
Naphthalene		50.0	45.8	ug/L	1.40	8.40	20	
n-Propylbenzene		50.0	51.9	ug/L	4.05	3.80	20	
Styrene		50.0	51.5	ug/L	1.11	3.00	20	
1,1,1,2-Tetrachloroethane		50.0	49.4	ug/L	0.400	1.20	20	
Tetrachloroethene		50.0	47.8	ug/L	0.318	4.40	20	
1,2,3-Trichlorobenzene		50.0	47.7	ug/L	0.827	4.50	20	
1,2,4-Trichlorobenzene		50.0	50.1	ug/L	1.03	0.200	20	
1,1,1-Trichloroethane		50.0	47.6	ug/L	0.492	4.80	20	
1,1,2-Trichloroethane		50.0	49.0	ug/L	0.240	1.90	20	
Trichloroethene		50.0	51.1	ug/L	0.280	2.10	20	
Trichlorofluoromethane		50.0	46.9	ug/L	0.507	6.10	20	
1,2,3-Trichloropropane		50.0	50.1	ug/L	0.155	0.200	20	
1,2,4-Trimethylbenzene		50.0	49.7	ug/L	2.90	0.700	20	
1,3,5-Trimethylbenzene		50.0	51.6	ug/L	2.93	3.30	20	
o-Xylene		50.0	50.6	ug/L	0.664	1.10	20	
m-,p-Xylene		100	101	ug/L	0.679	1.10	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4833235
Report generated 07/11/2016 16:25

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061144 Run Date: 06/27/2016 Sample ID: WG574409-02
Instrument ID: HPMS8 Run Time: 18:40 Method: 8260B
File ID: 8M413277 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG574410 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	56.5	ug/L	0.615	13.0	20	
1,1-Dichloroethene	CCC	50.0	55.7	ug/L	0.450	11.3	20	
1,2-Dichloropropane	CCC	50.0	51.2	ug/L	0.234	2.31	20	
Ethylbenzene	CCC	50.0	48.1	ug/L	0.550	3.89	20	
Toluene	CCC	50.0	48.6	ug/L	1.51	2.82	20	
Vinyl Chloride	CCC	50.0	55.4	ug/L	0.321	10.7	20	
Bromoform	SPCC	50.0	53.4	ug/L	0.227	6.82	20	
Chlorobenzene	SPCC	50.0	48.6	ug/L	1.02	2.71	20	
Chloromethane	SPCC	50.0	47.4	ug/L	0.232	5.15	20	
1,1-Dichloroethane	SPCC	50.0	54.2	ug/L	0.500	8.46	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	44.4	ug/L	0.446	11.2	20	
Xylenes		150	147	ug/L	0.647	2.29	20	
Acetone		50.0	61.8	ug/L	0.0348	23.5	20	*
Benzene		50.0	52.9	ug/L	1.09	5.84	20	
Bromobenzene		50.0	47.6	ug/L	0.765	4.71	20	
Bromochloromethane		50.0	54.7	ug/L	0.161	9.36	20	
Bromodichloromethane		50.0	58.1	ug/L	0.467	16.2	20	
Bromomethane		50.0	44.9	ug/L	0.157	10.1	20	
2-Butanone		50.0	52.3	ug/L	0.0432	4.63	20	
n-Butylbenzene		50.0	47.3	ug/L	2.65	5.48	20	
sec-Butylbenzene		50.0	47.6	ug/L	3.18	4.82	20	
tert-Butylbenzene		50.0	46.6	ug/L	0.518	6.82	20	
Carbon Disulfide		50.0	59.1	ug/L	1.00	18.2	20	
Carbon Tetrachloride		50.0	61.6	ug/L	0.566	23.2	20	*
Dibromochloromethane		50.0	50.8	ug/L	0.363	1.57	20	
Chloroethane		50.0	50.8	ug/L	0.162	1.69	20	
2-Chlorotoluene		50.0	48.6	ug/L	2.65	2.74	20	
4-Chlorotoluene		50.0	44.8	ug/L	2.21	10.3	20	
1,2-Dibromo-3-Chloropropane		50.0	46.0	ug/L	0.0927	7.99	20	
1,2-Dibromoethane		50.0	48.7	ug/L	0.238	2.57	20	
Dibromomethane		50.0	54.0	ug/L	0.146	7.97	20	
1,2-Dichlorobenzene		50.0	46.4	ug/L	1.28	7.10	20	
1,3-Dichlorobenzene		50.0	48.0	ug/L	1.48	4.07	20	
1,4-Dichlorobenzene		50.0	46.6	ug/L	1.45	6.70	20	
Dichlorodifluoromethane		50.0	45.5	ug/L	0.382	8.98	20	
1,2-Dichloroethane		50.0	60.2	ug/L	0.422	20.3	20	*
cis-1,2-Dichloroethene		50.0	52.9	ug/L	0.304	5.75	20	
trans-1,2-Dichloroethene		50.0	54.0	ug/L	0.401	8.05	20	
1,3-Dichloropropane		50.0	48.0	ug/L	0.418	4.07	20	
2,2-Dichloropropane		50.0	64.1	ug/L	0.623	28.2	20	*
cis-1,3-Dichloropropene		50.0	56.3	ug/L	0.461	12.7	20	
trans-1,3-Dichloropropene		50.0	52.1	ug/L	0.542	4.14	20	

CCV - Modified 03/05/2008
PDF File ID: 4833237
Report generated 07/11/2016 16:25

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061144 Run Date: 06/27/2016 Sample ID: WG574409-02
Instrument ID: HPMS8 Run Time: 18:40 Method: 8260B
File ID: 8M413277 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG574410 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	56.7	ug/L	0.447	13.3	20	
2-Hexanone		50.0	47.2	ug/L	0.0486	5.63	20	
Hexachlorobutadiene		50.0	49.1	ug/L	0.472	1.72	20	
Isopropylbenzene		50.0	50.9	ug/L	1.78	1.84	20	
p-Isopropyltoluene		50.0	47.7	ug/L	2.71	4.55	20	
4-Methyl-2-Pentanone		50.0	50.6	ug/L	0.0406	1.24	20	
Methylene Chloride		50.0	52.3	ug/L	0.269	4.59	20	
Naphthalene		50.0	44.8	ug/L	1.37	10.4	20	
n-Propylbenzene		50.0	47.7	ug/L	3.72	4.64	20	
Styrene		50.0	50.0	ug/L	1.08	0.0298	20	
1,1,1,2-Tetrachloroethane		50.0	51.0	ug/L	0.414	1.98	20	
Tetrachloroethene		50.0	52.5	ug/L	0.349	4.93	20	
1,2,3-Trichlorobenzene		50.0	44.5	ug/L	0.771	11.1	20	
1,2,4-Trichlorobenzene		50.0	47.6	ug/L	0.977	4.90	20	
1,1,1-Trichloroethane		50.0	60.8	ug/L	0.629	21.5	20	*
1,1,2-Trichloroethane		50.0	46.9	ug/L	0.230	6.12	20	
Trichloroethene		50.0	55.0	ug/L	0.301	9.96	20	
Trichlorofluoromethane		50.0	60.2	ug/L	0.650	20.4	20	*
1,2,3-Trichloropropane		50.0	47.0	ug/L	0.145	5.96	20	
1,2,4-Trimethylbenzene		50.0	48.2	ug/L	2.82	3.51	20	
1,3,5-Trimethylbenzene		50.0	48.3	ug/L	2.75	3.32	20	
o-Xylene		50.0	48.3	ug/L	0.635	3.34	20	
m-,p-Xylene		100	98.2	ug/L	0.660	1.76	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4833237
Report generated 07/11/2016 16:25

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061144
Instrument ID: HPMS8
Workgroup (AAB#): WG574410

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	288225	539116	778260
Upper Limit	NA	NA	576450	1078232	1556520
Lower Limit	NA	NA	144113	269558	389130
L16061144-01	1.00	01	290600	516879	645801
L16061144-02	1.00	01	284900	514911	636097
L16061144-03	1.00	01	282669	509550	634418
L16061144-04	1.00	01	298716	519452	649248
WG574410-01	1.00	01	302642	539767	679552
WG574410-02	1.00	01	303369	528164	681082

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4845087
Report generated 07/11/2016 16:25

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061144
Instrument ID: HPMS8
Workgroup (AAB#): WG574410

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	17.6	14.58	10.71
Upper Limit	NA	NA	18.1	15.08	11.21
Lower Limit	NA	NA	17.1	14.08	10.21
L16061144-01	1.00	01	17.6	14.57	10.71
L16061144-02	1.00	01	17.6	14.57	10.71
L16061144-03	1.00	01	17.6	14.58	10.71
L16061144-04	1.00	01	17.6	14.58	10.71
WG574410-01	1.00	01	17.6	14.57	10.71
WG574410-02	1.00	01	17.6	14.58	10.71

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4845088
Report generated: 07/11/2016 16:25

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413297.D Vial: 23
Acq On : 28 Jun 2016 4:23 Operator: FJB
Sample : L16061144-01 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 08:58:40 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	645801	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	516879	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	290600	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	196879	28.3745 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 113.48%		
43) 1,2-Dichloroethane-d4	10.30	65	219907	29.5578 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 118.24%		
58) Toluene-d8	12.68	98	684866	25.3175 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.28%		
80) p-Bromofluorobenzene	16.08	95	305490	25.3879 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.56%		

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
8M413297.D 8260WT.M Wed Jun 29 08:58:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413297.D Vial: 23
Acq On : 28 Jun 2016 4:23 Operator: FJB
Sample : L16061144-01 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 8:58 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

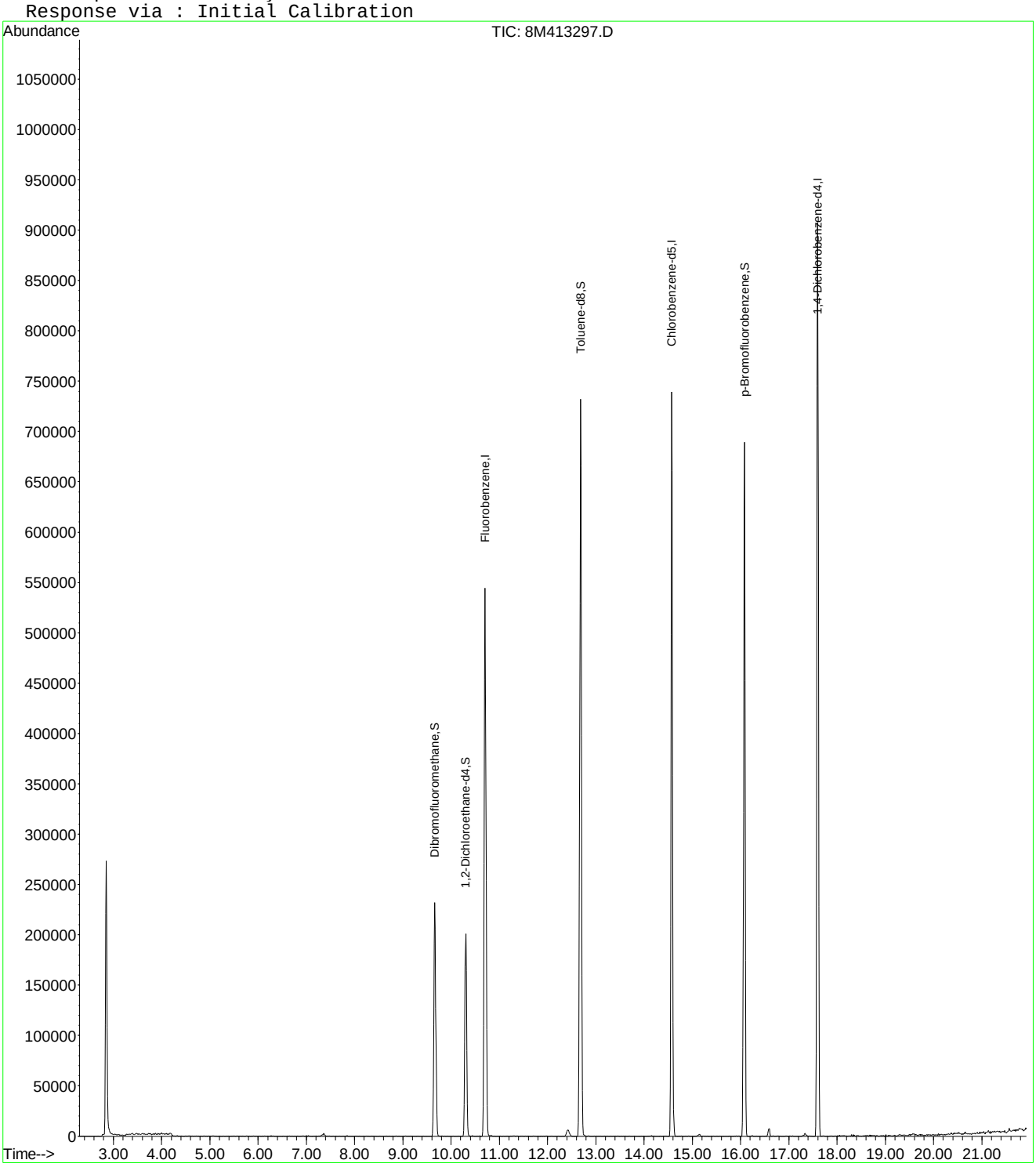

8M413297.D 8260WT.M Wed Jun 29 08:58:44 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413298.D Vial: 24
Acq On : 28 Jun 2016 4:52 Operator: FJB
Sample : L16061144-02 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 08:58:45 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	636097	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	514911	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	284900	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	194980	28.5295 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 114.12%		
43) 1,2-Dichloroethane-d4	10.30	65	224691	30.6616 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 122.64%#		
58) Toluene-d8	12.68	98	689402	25.5826 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.32%		
80) p-Bromofluorobenzene	16.07	95	303022	25.6866 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.76%		

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
8M413298.D 8260WT.M Wed Jun 29 08:58:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413298.D Vial: 24
Acq On : 28 Jun 2016 4:52 Operator: FJB
Sample : L16061144-02 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 8:58 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

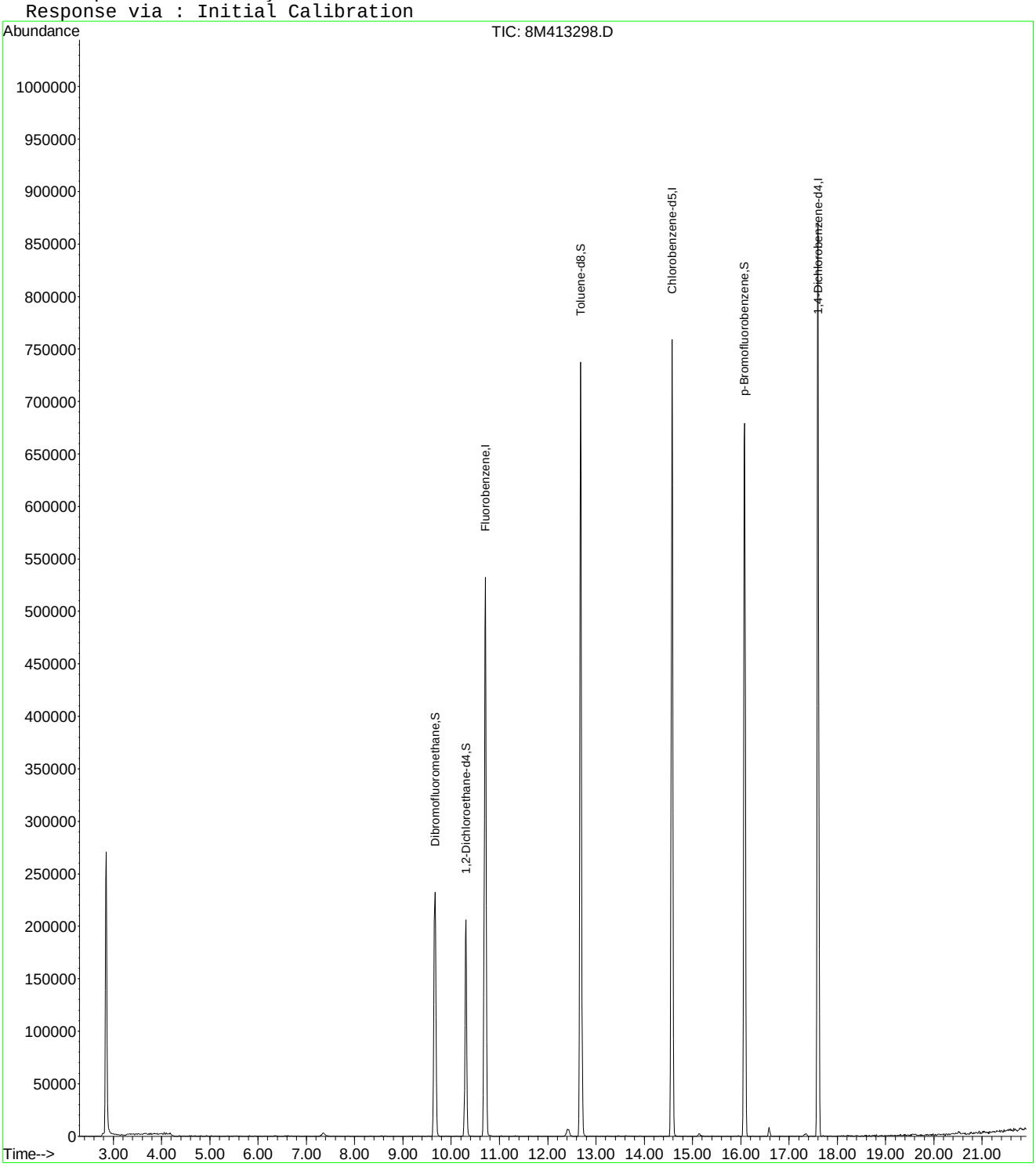

8M413298.D 8260WT.M Wed Jun 29 08:58:49 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413299.D Vial: 25
Acq On : 28 Jun 2016 5:21 Operator: FJB
Sample : L16061144-03 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 08:58:50 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	634418	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	509550	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	282669	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	193052	28.3222 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 113.28%		
43) 1,2-Dichloroethane-d4	10.31	65	216322	29.5977 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 118.40%		
58) Toluene-d8	12.68	98	674918	25.3086 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.24%		
80) p-Bromofluorobenzene	16.07	95	291787	24.9294 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.72%		

Target Compounds					Qvalue
32) cis-1,2-Dichloroethene	9.17	96	2989	0.4104 ug/L	67

(#) = qualifier out of range (m) = manual integration
8M413299.D 8260WT.M Wed Jun 29 08:58:53 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413299.D Vial: 25
Acq On : 28 Jun 2016 5:21 Operator: FJB
Sample : L16061144-03 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 8:58 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

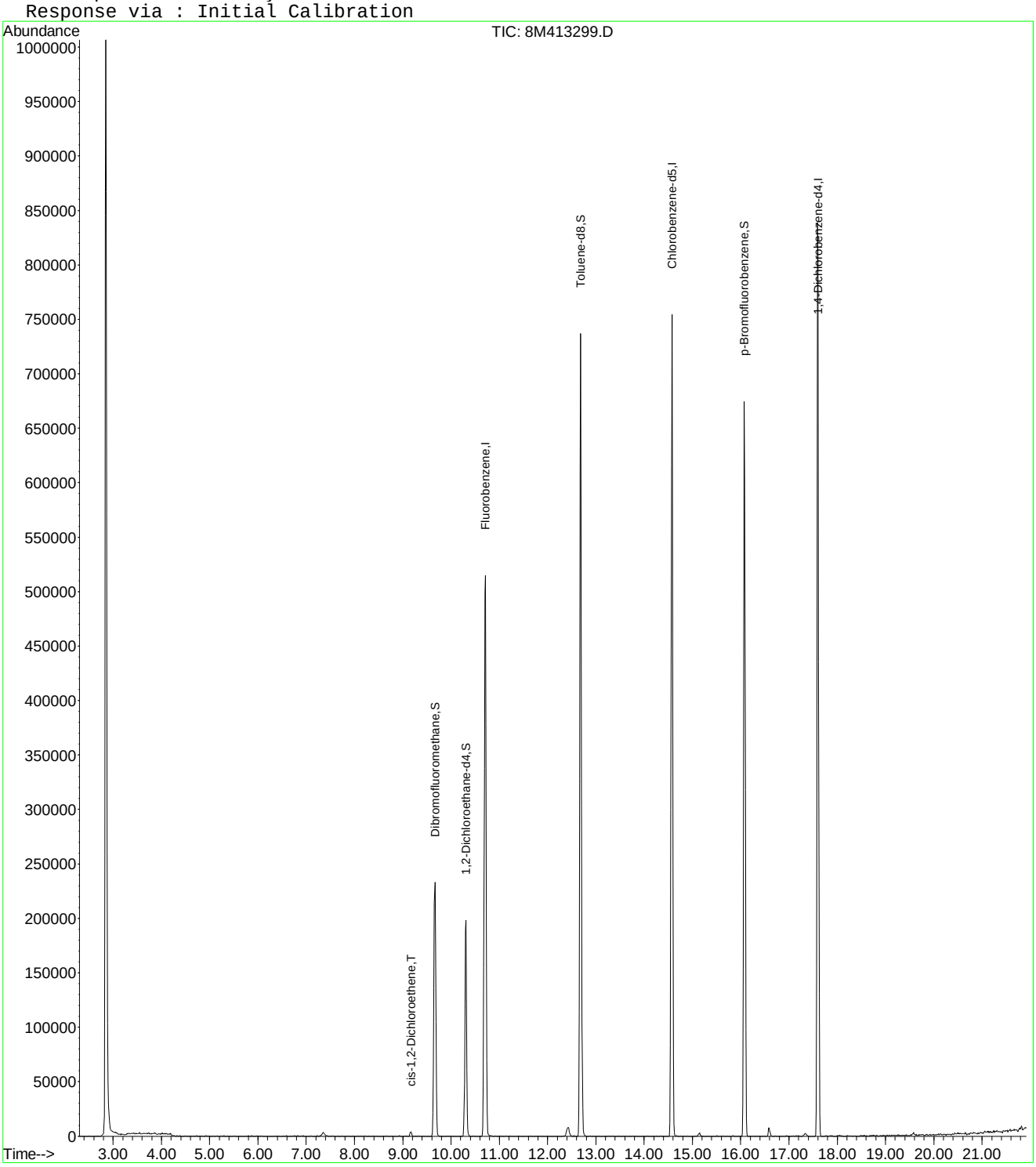

8M413299.D 8260WT.M Wed Jun 29 08:58:54 2016 Page 2

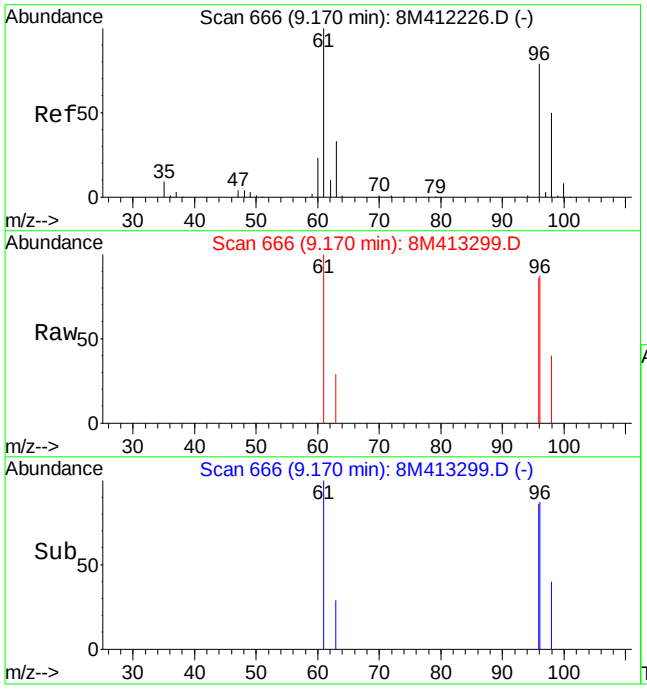

#32
cis-1,2-Dichloroethene
Concen: 0.41 ug/L
RT: 9.17 min Scan# 666
Delta R.T. 0.00 min
Lab File: 8M413299.D
Acq: 28 Jun 2016 5:21

Tgt Ion: 96 Resp: 2989

Ion	Ratio	Lower	Upper
96	100		
61	109.9	91.5	213.5

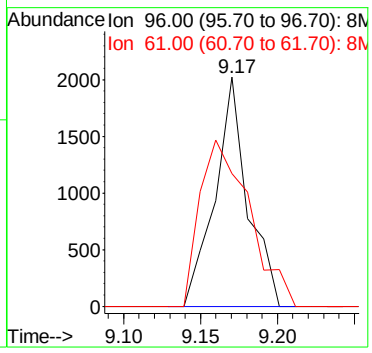

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413282.D Vial: 8
Acq On : 27 Jun 2016 21:08 Operator: FJB
Sample : L16061144-04 TB A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 08:57:18 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	649248	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	519452	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	298716	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	197213	28.2718 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 113.08%		
43) 1,2-Dichloroethane-d4	10.30	65	220197	29.4397 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 117.76%		
58) Toluene-d8	12.68	98	694890	25.5609 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.24%		
80) p-Bromofluorobenzene	16.07	95	304195	24.5934 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.36%		

Target Compounds					Qvalue
36) Tetrahydrofuran	9.62	42	1023	1.4472 ug/L #	38
70) Chlorobenzene	14.62	112	3484	0.1602 ug/L #	1

(#) = qualifier out of range (m) = manual integration
8M413282.D 8260WT.M Wed Jun 29 08:57:20 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413282.D Vial: 8
Acq On : 27 Jun 2016 21:08 Operator: FJB
Sample : L16061144-04 TB A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 8:57 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

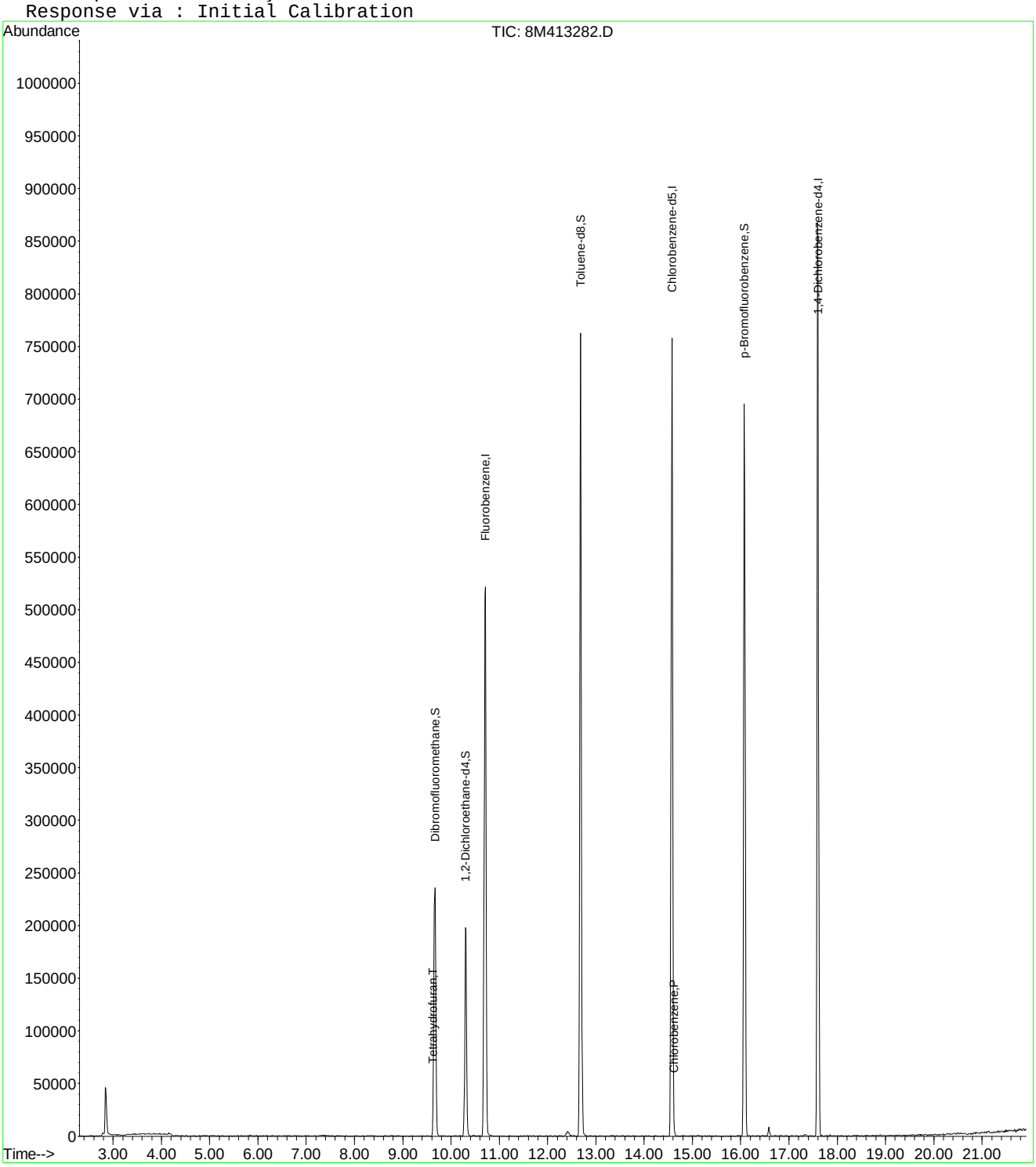

8M413282.D 8260WT.M Wed Jun 29 08:57:21 2016 Page 2

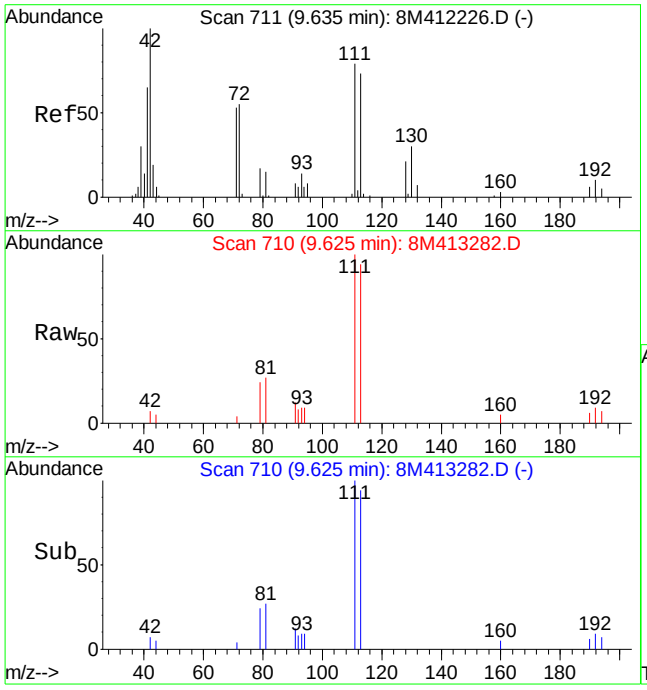

#36
Tetrahydrofuran
Concen: 1.45 ug/L
RT: 9.62 min Scan# 710
Delta R.T. -0.01 min
Lab File: 8M413282.D
Acq: 27 Jun 2016 21:08

Tgt Ion: 42 Resp: 1023

Ion	Ratio	Lower	Upper
42	100		
72	0.0	33.8	78.8#
71	19.7	32.0	74.8#

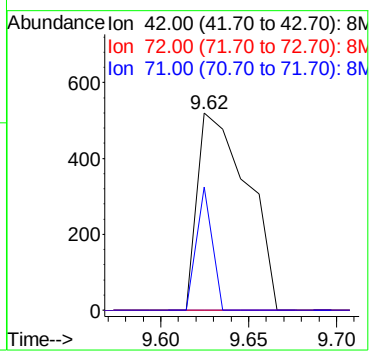

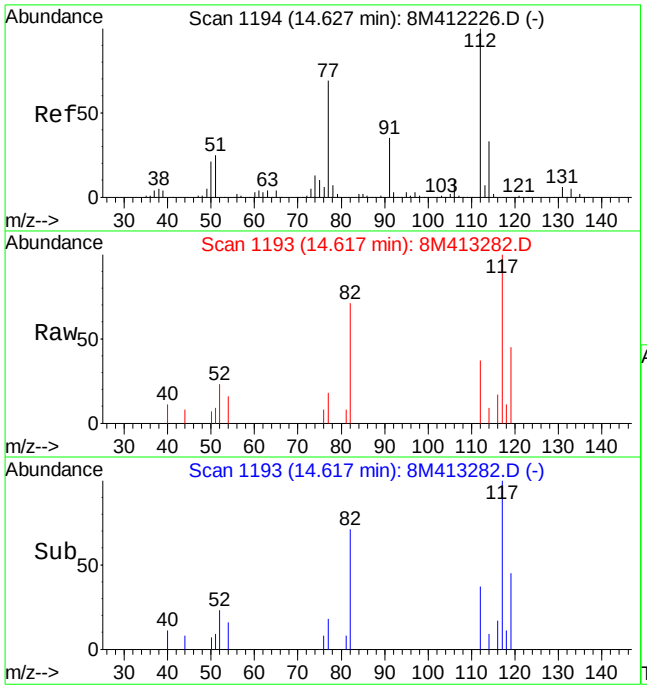

#70
Chlorobenzene
Concen: 0.16 ug/L
RT: 14.62 min Scan# 1193
Delta R.T. -0.01 min
Lab File: 8M413282.D
Acq: 27 Jun 2016 21:08

Tgt Ion:112 Resp: 3484

Ion	Ratio	Lower	Upper
112	100		
77	209.2	49.7	115.9#

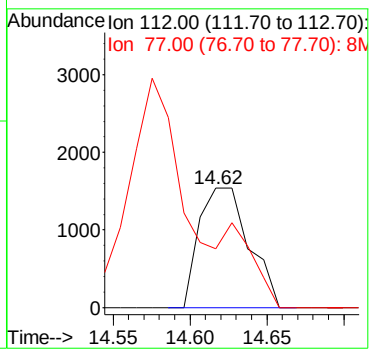

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:40:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	823748	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	571926	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	299321	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	12.68	98	567	0.0189 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.08%#	
80) p-Bromofluorobenzene	16.08	95	313	0.0253 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	3836	0.2778 ug/L	91
3) Chloromethane	3.62	50	3658	0.4537 ug/L	95
4) Vinyl Chloride	3.85	62	2516	0.2630 ug/L #	58
5) 1,3-Butadiene	3.91	54	2079	0.2592 ug/L	71
6) Bromomethane	4.73	94	1152	0.6530 ug/L #	55
7) Chloroethane	4.90	64	1112	0.2113 ug/L #	72
8) Trichlorofluoromethane	5.35	101	2706	0.1520 ug/L #	53
10) Isoprene	5.93	67	2147	0.1987 ug/L	85
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1746	0.2087 ug/L	97
14) 1,1-Dichloroethene	6.48	61	3332	0.2501 ug/L	75
16) Dimethyl Sulfide	6.73	62	1099	0.2308 ug/L	95
19) Methylene Chloride	7.26	84	3414	0.4028 ug/L	88
20) Carbon Disulfide	7.30	76	10739	0.3853 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	4927	0.2686 ug/L #	60
23) trans-1,2-Dichloroethene	7.70	61	3879	0.3170 ug/L	98
24) n-Hexane	7.78	57	2794	0.3075 ug/L	85
26) Vinyl Acetate	8.30	43	1973	0.2259 ug/L #	70
27) 1,1-Dichloroethane	8.33	63	4881	0.3212 ug/L #	88
31) 2,2-Dichloropropane	9.11	77	4966	0.3101 ug/L	89
32) cis-1,2-Dichloroethene	9.17	96	2958	0.3128 ug/L	87
33) Chloroform	9.37	83	5564	0.3101 ug/L	95
34) 1-Bromopropane	9.52	122	210	0.1551 ug/L #	1
35) Bromochloromethane	9.60	130	1386	0.2858 ug/L	76
36) Tetrahydrofuran	9.62	42	1849	2.0617 ug/L #	60
38) 1,1,1-Trichloroethane	9.91	97	4978	0.2921 ug/L	95
39) Cyclohexane	9.93	56	3120	0.2644 ug/L #	85
40) 1,1-Dichloropropene	10.11	75	3779	0.2909 ug/L	97
42) Carbon Tetrachloride	10.24	117	4835	0.3194 ug/L #	74
45) 1,2-Dichloroethane	10.43	62	3295	0.2853 ug/L #	81
46) Benzene	10.46	78	11279	0.3333 ug/L	93
47) Trichloroethene	11.20	130	2410	0.2670 ug/L	97
48) Methylcyclohexane	11.31	83	3936	0.2871 ug/L	84
49) 1,2-Dichloropropane	11.42	63	2136	0.2836 ug/L	88
50) Bromodichloromethane	11.73	83	3767	0.2845 ug/L #	91
52) Dibromomethane	11.82	93	700	0.1570 ug/L #	59
53) 2-Chloroethyl Vinyl Ether	12.02	63	847	0.2616 ug/L #	47
55) cis-1,3-Dichloropropene	12.36	75	4763	0.3535 ug/L	84
56) Dimethyl Disulfide	12.63	79	1647	0.2290 ug/L	82
59) Toluene	12.78	91	11513	0.3243 ug/L	92
60) Ethyl Methacrylate	12.89	69	1631	0.2392 ug/L #	64

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:40:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
62)	trans-1,3-Dichloropropene	12.96	75	3626	0.3047 ug/L		82
63)	1,1,2-Trichloroethane	13.18	97	1409	0.2515 ug/L		98
65)	1,3-Dichloropropane	13.49	76	2584	0.2590 ug/L		93
66)	Tetrachloroethene	13.61	164	2678	0.3520 ug/L	#	75
67)	Dibromochloromethane	13.87	129	2126	0.2599 ug/L		79
68)	1,2-Dibromoethane	14.12	107	1895	0.3394 ug/L		91
69)	1-Chlorohexane	14.21	91	3835	0.3164 ug/L		99
70)	Chlorobenzene	14.62	112	7968	0.3328 ug/L		88
71)	1,1,1,2-Tetrachloroethane	14.67	131	2872	0.3096 ug/L		87
72)	Ethylbenzene	14.64	106	3844	0.2934 ug/L		81
73)	m-,p-Xylene	14.75	106	10447	0.6799 ug/L		96
74)	o-Xylene	15.31	106	4577	0.3047 ug/L		97
75)	Styrene	15.35	104	7545	0.3062 ug/L		95
76)	Bromoform	15.84	173	1301	0.2681 ug/L	#	51
77)	Isopropylbenzene	15.74	105	13119	0.3287 ug/L		90
79)	1,1,2,2-Tetrachloroethane	15.96	83	1714	0.2853 ug/L	#	85
83)	n-Propylbenzene	16.24	91	15676	0.3357 ug/L		92
84)	Bromobenzene	16.38	156	2859	0.2977 ug/L		90
85)	1,3,5-Trimethylbenzene	16.43	105	10873	0.3196 ug/L		99
86)	2-Chlorotoluene	16.52	91	11133	0.3415 ug/L		96
87)	4-Chlorotoluene	16.56	91	10305	0.3499 ug/L		97
88)	a-Methylstyrene	16.83	118	4090	0.2534 ug/L		86
89)	tert-Butylbenzene	16.90	134	1734	0.2606 ug/L		72
90)	1,2,4-Trimethylbenzene	16.95	105	10734	0.3069 ug/L		89
91)	sec-Butylbenzene	17.16	105	13749	0.3436 ug/L		97
92)	p-Isopropyltoluene	17.32	119	10847	0.3192 ug/L		95
93)	1,3-Dichlorobenzene	17.52	146	6023	0.3257 ug/L		99
94)	1,4-Dichlorobenzene	17.65	146	6152	0.3299 ug/L	#	60
95)	n-Butylbenzene	17.85	91	11161	0.3323 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	5711	0.3472 ug/L		92
98)	1,2,4-Trichlorobenzene	20.29	180	4203	0.3418 ug/L		91
99)	Hexachlorobutadiene	20.43	225	1894	0.3297 ug/L		84
100)	Naphthalene	20.65	128	6039	0.3306 ug/L		91
101)	1,2,3-Trichlorobenzene	20.96	180	3279	0.3161 ug/L		86

(#) = qualifier out of range (m) = manual integration
8M412220.D 8260WT.M Tue May 17 11:40:55 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2778	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.4537	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.2630	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	0.2592	0.0	100	0.03
6	T	Bromomethane	-1.0000	0.9911	0.0	100	0.00
7	T	Chloroethane	-1.0000	0.2113	0.0	100	0.00
8	T	Trichlorofluoromethane	-1.0000	0.1520	0.0	100	-0.02
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.90#
10	T	Isoprene	-1.0000	0.1987	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.13#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2087	0.0	100	0.00
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	-1.0000	0.2501	0.0	100	0.02
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.58#
16	T	Dimethyl Sulfide	-1.0000	0.2308	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.0000	0.0	0	-7.00#
19	T	Methylene Chloride	-1.0000	0.4028	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.3853	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.43#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2686	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	-1.0000	0.3170	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.3075	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.2259	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.3212	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.98#
31	T	2,2-Dichloropropane	-1.0000	0.3101	0.0	100	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.3128	0.0	100	0.00
33	C	Chloroform	0.3000	0.3101	-3.4	100	0.00
34		1-Bromopropane	-1.0000	0.1551	0.0	100	0.00
35	T	Bromochloromethane	-1.0000	0.2858	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	2.0617	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	-1.0000	0.2921	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.2644	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.2909	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	-1.0000	0.3194	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	-1.0000	0.2853	0.0	100	0.00
46	T	Benzene	-1.0000	0.3333	0.0	100	0.00
47	T	Trichloroethene	-1.0000	0.2670	0.0	100	-0.01
48	T	Methylcyclohexane	-1.0000	0.2871	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2836	0.0	100	0.00
50	T	Bromodichloromethane	-1.0000	0.2845	0.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	-1.0000	0.1570	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2616	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.05#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.3535	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2290	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0189	0.0	100	0.00
59	C	Toluene	-1.0000	0.3243	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2392	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3047	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.2515	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	-1.0000	0.2590	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.3520	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.2599	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.3394	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.3164	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.3328	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.3096	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.2934	0.0	100	-0.01
73	T	m-,p-Xylene	-1.0000	0.6799	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.3047	0.0	100	0.00
75	T	Styrene	-1.0000	0.3062	0.0	100	0.00
76	P	Bromoform	-1.0000	0.2681	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.3287	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2853	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0253	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.1103	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	-1.0000	0.3357	0.0	100	0.00
84	T	Bromobenzene	0.3000	0.2977	0.8	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.3196	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.3415	0.0	100	0.00
87	T	4-Chlorotoluene	-1.0000	0.3499	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2534	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.2606	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.3069	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3436	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.3192	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.3257	0.0	100	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.3299	-10.0	100	0.00
95	T	n-Butylbenzene	-1.0000	0.3323	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.3472	-15.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.3418	0.0	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.3297	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.3306	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.3161	-5.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412220.D 8260WT.M Sat May 14 18:03:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	801173	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	557498	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	293108	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
80) p-Bromofluorobenzene	16.08	95	343	0.0286 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	5478	0.3262 ug/L	79
3) Chloromethane	3.63	50	3930	0.2484 ug/L	85
4) Vinyl Chloride	3.84	62	3512	0.3288 ug/L	97
5) 1,3-Butadiene	3.90	54	2479	0.2375 ug/L #	75
6) Bromomethane	4.73	94	1343	0.9497 ug/L	85
7) Chloroethane	4.90	64	2219	0.3174 ug/L #	43
8) Trichlorofluoromethane	5.36	101	6974	0.3289 ug/L #	93
10) Isoprene	5.94	67	4288	0.3952 ug/L #	62
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	3168	0.3263 ug/L #	40
14) 1,1-Dichloroethene	6.47	61	5431	0.2882 ug/L	92
16) Dimethyl Sulfide	6.74	62	1708	0.2453 ug/L	64
19) Methylene Chloride	7.24	84	3785	0.4239 ug/L #	43
20) Carbon Disulfide	7.29	76	12437	0.4565 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	6580	0.3336 ug/L #	76
23) trans-1,2-Dichloroethene	7.71	61	4990	0.2928 ug/L	96
24) n-Hexane	7.79	57	3110	0.2011 ug/L	99
26) Vinyl Acetate	8.31	43	2753	0.1566 ug/L	100
27) 1,1-Dichloroethane	8.32	63	5655	0.2774 ug/L #	92
31) 2,2-Dichloropropane	9.10	77	6035	0.3360 ug/L	82
32) cis-1,2-Dichloroethene	9.16	96	3837	0.3762 ug/L	74
33) Chloroform	9.37	83	7267	0.3842 ug/L	100
34) 1-Bromopropane	9.50	122	234	0.1456 ug/L #	1
35) Bromochloromethane	9.60	130	1674	0.3137 ug/L	62
36) Tetrahydrofuran	9.62	42	447	0.2146 ug/L #	41
38) 1,1,1-Trichloroethane	9.91	97	6304	0.3305 ug/L	90
39) Cyclohexane	9.94	56	4658	0.2238 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	5172	0.3768 ug/L	80
42) Carbon Tetrachloride	10.25	117	5692	0.3172 ug/L	95
45) 1,2-Dichloroethane	10.43	62	4443	0.2796 ug/L #	63
46) Benzene	10.46	78	14456	0.4134 ug/L #	77
47) Trichloroethene	11.21	130	3659	0.3626 ug/L	98
48) Methylcyclohexane	11.29	83	5025	0.3562 ug/L	84
49) 1,2-Dichloropropane	11.42	63	3060	0.3007 ug/L	98
50) Bromodichloromethane	11.73	83	4734	0.3343 ug/L #	93
52) Dibromomethane	11.82	93	1805	0.3767 ug/L	84
55) cis-1,3-Dichloropropene	12.36	75	5008	0.3514 ug/L	90
56) Dimethyl Disulfide	12.63	79	1921	0.2573 ug/L	85
59) Toluene	12.78	91	14742	0.4416 ug/L	98
60) Ethyl Methacrylate	12.90	69	2062	0.3292 ug/L	66
62) trans-1,3-Dichloropropene	12.96	75	3693	0.3171 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M412221.D 8260WT.M Fri May 13 14:20:38 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
63)	1,1,2-Trichloroethane	13.18	97	2326	0.4391 ug/L	70
65)	1,3-Dichloropropane	13.49	76	3163	0.3219 ug/L	88
66)	Tetrachloroethene	13.61	164	3164	0.4185 ug/L	93
67)	Dibromochloromethane	13.87	129	3113	0.3727 ug/L	86
68)	1,2-Dibromoethane	14.12	107	2076	0.3760 ug/L	90
69)	1-Chlorohexane	14.21	91	4746	0.4174 ug/L	80
70)	Chlorobenzene	14.62	112	9180	0.3960 ug/L	98
71)	1,1,1,2-Tetrachloroethane	14.66	131	3501	0.3876 ug/L	95
72)	Ethylbenzene	14.65	106	5348	0.4066 ug/L	84
73)	m-,p-Xylene	14.75	106	13269	0.8757 ug/L	89
74)	o-Xylene	15.31	106	6019	0.3943 ug/L	97
75)	Styrene	15.35	104	9370	0.3849 ug/L	95
76)	Bromoform	15.83	173	1198	0.2500 ug/L #	76
77)	Isopropylbenzene	15.73	105	16528	0.4270 ug/L	92
79)	1,1,2,2-Tetrachloroethane	15.96	83	1999	0.3419 ug/L #	83
83)	n-Propylbenzene	16.25	91	19410	0.4297 ug/L	95
84)	Bromobenzene	16.37	156	3319	0.3524 ug/L	75
85)	1,3,5-Trimethylbenzene	16.42	105	13794	0.4127 ug/L	95
86)	2-Chlorotoluene	16.51	91	13678	0.4729 ug/L	90
87)	4-Chlorotoluene	16.56	91	12572	0.4219 ug/L	98
88)	a-Methylstyrene	16.84	118	5739	0.3485 ug/L	96
89)	tert-Butylbenzene	16.90	134	2254	0.3403 ug/L	55
90)	1,2,4-Trimethylbenzene	16.95	105	13859	0.4051 ug/L	90
91)	sec-Butylbenzene	17.17	105	17612	0.4382 ug/L	90
92)	p-Isopropyltoluene	17.32	119	13616	0.3968 ug/L	90
93)	1,3-Dichlorobenzene	17.52	146	6961	0.3724 ug/L	86
94)	1,4-Dichlorobenzene	17.64	146	7149	0.3832 ug/L #	1
95)	n-Butylbenzene	17.85	91	15223	0.4664 ug/L	91
96)	1,2-Dichlorobenzene	18.14	146	6129	0.3742 ug/L	92
98)	1,2,4-Trichlorobenzene	20.28	180	5035	0.3969 ug/L	97
99)	Hexachlorobutadiene	20.44	225	2420	0.4122 ug/L	83
100)	Naphthalene	20.65	128	7474	0.3874 ug/L #	84
101)	1,2,3-Trichlorobenzene	20.96	180	4378	0.4056 ug/L #	78

(#) = qualifier out of range (m) = manual integration
8M412221.D 8260WT.M Fri May 13 14:20:39 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

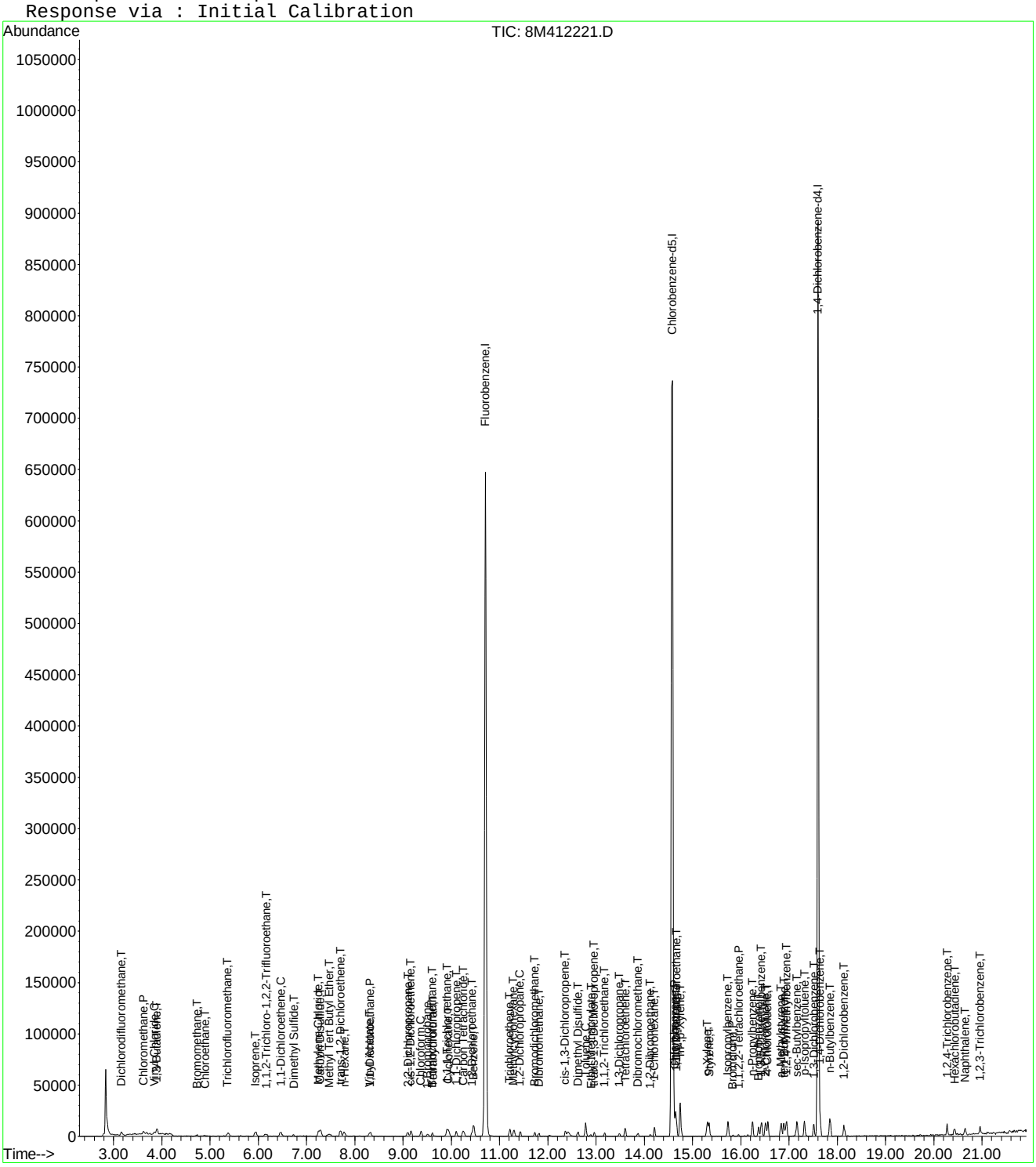

8M412221.D 8260WT.M Fri May 13 14:20:40 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	0.4000	0.4078	-2.0	100	0.00
3	P	Chloromethane	-1.0000	0.5012	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.3775	5.6	100	0.00
5	T	1,3-Butadiene	-1.0000	0.3178	0.0	100	0.02
6	T	Bromomethane	-1.0000	1.0253	0.0	100	0.00
7	T	Chloroethane	0.4000	0.4335	-8.4	100	0.00
8	T	Trichlorofluoromethane	0.4000	0.4029	-0.7	100	-0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.90#
10	T	Isoprene	0.4000	0.4079	-2.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.13#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3894	0.0	100	0.02
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	0.4000	0.4192	-4.8	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.58#
16	T	Dimethyl Sulfide	0.4000	0.3687	7.8	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.2179	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4591	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4587	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.43#
22	T	Methyl Tert Butyl Ether	-1.0000	0.3688	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.4193	-4.8	100	0.00
24	T	n-Hexane	-1.0000	0.3519	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.3241	0.0	100	0.02
27	P	1,1-Dichloroethane	0.4000	0.3826	4.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.98#
31	T	2,2-Dichloropropane	0.4000	0.3874	3.1	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.4172	-4.3	100	-0.01
33	C	Chloroform	0.4000	0.4164	-4.1	100	0.00
34		1-Bromopropane	-1.0000	0.1776	0.0	100	-0.01
35	T	Bromochloromethane	0.4000	0.3550	11.3	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.5125	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	0.4000	0.3803	4.9	100	0.00
39	T	Cyclohexane	-1.0000	0.4058	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4093	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	0.4000	0.3867	3.3	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	0.4000	0.3955	1.1	100	0.00
46	T	Benzene	0.4000	0.4393	-9.8	100	0.00
47	T	Trichloroethene	0.4000	0.4169	-4.2	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3768	0.0	100	-0.01
49	C	1,2-Dichloropropane	0.4000	0.4177	-4.4	100	0.00
50	T	Bromodichloromethane	0.4000	0.3676	8.1	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	0.4000	0.4162	-4.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1401	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.05#

(#) = Out of Range

8M412221.D 8260WT.M Sat May 14 18:03:54 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3821	4.5	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2746	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0000	0.0	0	-12.68#
59	C	Toluene	0.4000	0.4259	-6.5	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3102	0.0	100	0.02
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3184	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.4259	-6.5	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	0.4000	0.3253	18.7	100	0.00
66	T	Tetrachloroethene	0.4000	0.4267	-6.7	100	0.00
67	T	Dibromochloromethane	0.4000	0.3904	2.4	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.3814	4.6	100	0.00
69	T	1-Chlorohexane	0.4000	0.4017	-0.4	100	0.00
70	P	Chlorobenzene	0.4000	0.3933	1.7	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3872	3.2	100	0.00
72	C	Ethylbenzene	0.4000	0.4188	-4.7	100	0.00
73	T	m-,p-Xylene	0.8000	0.8859	-10.7	100	0.00
74	T	o-Xylene	-1.0000	0.4110	0.0	100	0.00
75	T	Styrene	0.4000	0.3901	2.5	100	0.00
76	P	Bromoform	-1.0000	0.2533	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.4249	-6.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.3398	15.1	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0283	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.14#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	0.4000	0.4245	-6.1	100	0.00
84	T	Bromobenzene	0.4000	0.3529	11.8	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.4141	-3.5	100	0.00
86	T	2-Chlorotoluene	0.4000	0.4284	-7.1	100	0.00
87	T	4-Chlorotoluene	0.4000	0.4359	-9.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.3631	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3459	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	0.4000	0.4046	-1.2	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.4494	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4092	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.3844	3.9	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.3915	2.1	100	0.00
95	T	n-Butylbenzene	-1.0000	0.4628	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.3805	4.9	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	0.4000	0.4182	-4.5	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.4302	-7.5	100	0.00
100	T	Naphthalene	0.4000	0.4178	-4.5	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.4310	-7.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412221.D 8260WT.M Sat May 14 18:03:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	795577	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	547129	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	284579	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.65	111	3962	0.3966 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery	= 1.60%#	
43) 1,2-Dichloroethane-d4	10.31	65	3835	0.3356 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery	= 1.36%#	
58) Toluene-d8	12.68	98	14023	0.4957 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 2.00%#	
80) p-Bromofluorobenzene	16.08	95	6483	0.5565 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery	= 2.24%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	12402	0.7438 ug/L	97
3) Chloromethane	3.62	50	8415	0.5357 ug/L #	75
4) Vinyl Chloride	3.84	62	9412	0.8873 ug/L	89
5) 1,3-Butadiene	3.90	54	6974	0.6729 ug/L	81
6) Bromomethane	4.73	94	4114	1.3123 ug/L	92
7) Chloroethane	4.90	64	4983	0.7178 ug/L #	80
8) Trichlorofluoromethane	5.38	101	17133	0.8136 ug/L #	96
9) Diethyl ether	5.90	59	20707	3.2140 ug/L	84
10) Isoprene	5.94	67	11176	1.0373 ug/L	76
11) Acrolein	6.14	56	246	0.4300 ug/L #	15
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	8135	0.8438 ug/L	96
13) Acetone	6.24	43	413	0.2115 ug/L #	48
14) 1,1-Dichloroethene	6.46	61	12947	0.6919 ug/L	91
15) Tert-Butyl Alcohol	6.59	59	3316	7.3747 ug/L #	55
16) Dimethyl Sulfide	6.72	62	4505	0.6515 ug/L	79
18) Methyl acetate	7.00	43	2119	0.3630 ug/L #	66
19) Methylene Chloride	7.24	84	8723	0.9837 ug/L #	43
20) Carbon Disulfide	7.29	76	28246	1.0441 ug/L	100
21) Acrylonitrile	7.43	53	2164	0.8620 ug/L	76
22) Methyl Tert Butyl Ether	7.47	73	16998	0.8678 ug/L	84
23) trans-1,2-Dichloroethene	7.70	61	12571	0.7427 ug/L	100
24) n-Hexane	7.78	57	9382	0.6109 ug/L	82
25) Diisopropyl ether	8.12	45	95400	2.1939 ug/L #	91
26) Vinyl Acetate	8.30	43	6750	0.3867 ug/L #	89
27) 1,1-Dichloroethane	8.32	63	14721	0.7271 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	97972	3.2102 ug/L	88
29) 2-Butanone	8.88	43	380	0.1215 ug/L #	57
30) Propionitrile	8.99	54	1593	2.0138 ug/L #	56
31) 2,2-Dichloropropane	9.09	77	14691	0.8236 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	9482	0.9362 ug/L	72
33) Chloroform	9.37	83	18494	0.9845 ug/L	94
34) 1-Bromopropane	9.50	122	1092	0.6844 ug/L	80
35) Bromochloromethane	9.61	130	5234	0.9877 ug/L #	55
36) Tetrahydrofuran	9.63	42	5415	2.6185 ug/L #	68
38) 1,1,1-Trichloroethane	9.91	97	17074	0.9016 ug/L	92
39) Cyclohexane	9.94	56	11865	0.5740 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	13172	0.9663 ug/L	87
41) Tert-Amyl-Methyl ether	10.21	73	90255	4.6173 ug/L #	88
42) Carbon Tetrachloride	10.25	117	14515	0.8146 ug/L	95
45) 1,2-Dichloroethane	10.42	62	10675	0.6766 ug/L	85

(#) = qualifier out of range (m) = manual integration
8M412222.D 8260WT.M Fri May 13 14:49:47 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	10.47	78	34504	0.9938 ug/L		84
47)	Trichloroethene	11.21	130	8752	0.8735 ug/L		93
48)	Methylcyclohexane	11.30	83	13513	0.9646 ug/L		79
49)	1,2-Dichloropropane	11.43	63	7057	0.6982 ug/L	#	67
50)	Bromodichloromethane	11.73	83	12147	0.8638 ug/L		96
52)	Dibromomethane	11.81	93	4130	0.8681 ug/L		95
53)	2-Chloroethyl Vinyl Ether	12.03	63	2694	0.6366 ug/L		86
54)	4-Methyl-2-Pentanone	12.06	58	848	0.3671 ug/L	#	41
55)	cis-1,3-Dichloropropene	12.36	75	12521	0.8847 ug/L		97
56)	Dimethyl Disulfide	12.63	79	5799	0.7821 ug/L		96
59)	Toluene	12.79	91	37114	1.1328 ug/L		95
60)	Ethyl Methacrylate	12.88	69	5490	0.8930 ug/L		69
62)	trans-1,3-Dichloropropene	12.96	75	10328	0.9035 ug/L		92
63)	1,1,2-Trichloroethane	13.18	97	5274	1.0144 ug/L		93
64)	2-Hexanone	13.10	58	397	0.2127 ug/L	#	1
65)	1,3-Dichloropropane	13.49	76	9673	1.0032 ug/L		73
66)	Tetrachloroethene	13.61	164	7373	0.9937 ug/L		95
67)	Dibromochloromethane	13.87	129	7358	0.8977 ug/L		95
68)	1,2-Dibromoethane	14.13	107	5123	0.9454 ug/L		95
69)	1-Chlorohexane	14.21	91	12790	1.1461 ug/L		79
70)	Chlorobenzene	14.62	112	25662	1.1281 ug/L		89
71)	1,1,1,2-Tetrachloroethane	14.66	131	8722	0.9838 ug/L		94
72)	Ethylbenzene	14.65	106	13009	1.0078 ug/L		87
73)	m-,p-Xylene	14.75	106	30465	2.0486 ug/L		84
74)	o-Xylene	15.31	106	15133	1.0101 ug/L		84
75)	Styrene	15.35	104	23191	0.9707 ug/L		91
76)	Bromoform	15.84	173	3875	0.8240 ug/L		96
77)	Isopropylbenzene	15.74	105	41382	1.0895 ug/L		95
79)	1,1,2,2-Tetrachloroethane	15.95	83	5604	0.9873 ug/L	#	93
81)	1,2,3-Trichloropropane	16.15	110	1355	0.7428 ug/L	#	1
82)	trans-1,4-Dichloro-2-Buten	16.19	53	962	0.3479 ug/L	#	1
83)	n-Propylbenzene	16.25	91	48249	1.1002 ug/L		99
84)	Bromobenzene	16.37	156	9598	1.0497 ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	33355	1.0278 ug/L		96
86)	2-Chlorotoluene	16.51	91	33408	1.1895 ug/L		94
87)	4-Chlorotoluene	16.56	91	29548	1.0213 ug/L		95
88)	a-Methylstyrene	16.84	118	14414	0.9014 ug/L		91
89)	tert-Butylbenzene	16.89	134	6686	1.0398 ug/L		86
90)	1,2,4-Trimethylbenzene	16.95	105	36066	1.0857 ug/L		96
91)	sec-Butylbenzene	17.16	105	42128	1.0796 ug/L		96
92)	p-Isopropyltoluene	17.32	119	35424	1.0633 ug/L		94
93)	1,3-Dichlorobenzene	17.52	146	18409	1.0144 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	19031	1.0506 ug/L	#	62
95)	n-Butylbenzene	17.85	91	35772	1.1288 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	16104	1.0126 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.14	75	1262	1.0152 ug/L	#	53
98)	1,2,4-Trichlorobenzene	20.28	180	11494	0.9331 ug/L		98
99)	Hexachlorobutadiene	20.43	225	5421	0.9510 ug/L		98
100)	Naphthalene	20.65	128	16581	0.8853 ug/L		100
101)	1,2,3-Trichlorobenzene	20.96	180	10306	0.9835 ug/L		94

(#) = qualifier out of range (m) = manual integration
8M412222.D 8260WT.M Fri May 13 14:49:48 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

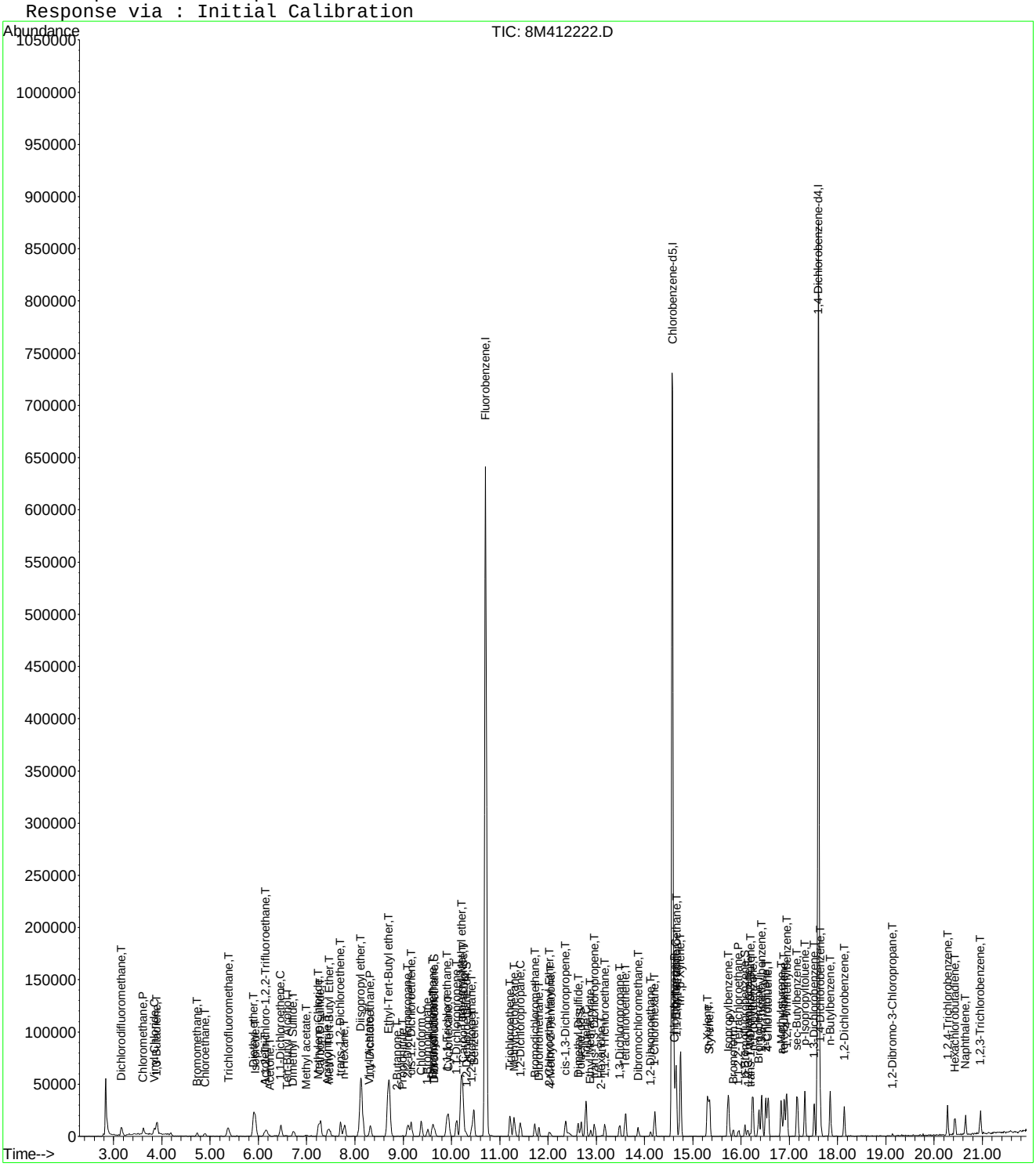

8M412222.D 8260WT.M Fri May 13 14:49:48 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:05:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9298	7.0	100	0.00
3	P	Chloromethane	1.0000	1.0808	-8.1	100	0.00
4	C	Vinyl Chloride	1.0000	1.0189	-1.9	100	0.00
5	T	1,3-Butadiene	-1.0000	0.9002	0.0	100	0.02
6	T	Bromomethane	1.0000	1.2082	-20.8	100	0.00
7	T	Chloroethane	1.0000	0.9803	2.0	100	0.00
8	T	Trichlorofluoromethane	1.0000	0.9968	0.3	100	0.00
9	T	Diethyl ether	5.0000	5.0462	-0.9	100	0.00
10	T	Isoprene	1.0000	1.0707	-7.1	100	0.00
11	T	Acrolein	-1.0000	0.6696	0.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0069	-0.7	100	0.00
13	T	Acetone	-1.0000	0.4614	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	1.0064	-0.6	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	11.5604	0.0	0	0.02
16	T	Dimethyl Sulfide	1.0000	0.9794	2.1	100	-0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.8758	0.0	100	0.00
19	T	Methylene Chloride	1.0000	1.0655	-6.5	100	0.00
20	T	Carbon Disulfide	1.0000	1.0492	-4.9	100	0.00
21	T	Acrylonitrile	2.5000	1.8633	25.5#	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9593	4.1	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	1.0636	-6.4	100	0.00
24	T	n-Hexane	-1.0000	1.0690	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	5.1784	-3.6	100	0.00
26	T	Vinyl Acetate	-1.0000	0.8002	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0029	-0.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.9635	0.7	100	0.00
29	T	2-Butanone	-1.0000	0.2889	0.0	100	0.00
30	T	Propionitrile	5.0000	4.1566	16.9	100	0.00
31	T	2,2-Dichloropropane	1.0000	0.9498	5.0	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	1.0383	-3.8	100	0.00
33	C	Chloroform	1.0000	1.0671	-6.7	100	0.00
34		1-Bromopropane	1.0000	0.8348	16.5	100	-0.01
35	T	Bromochloromethane	1.0000	1.1177	-11.8	100	0.00
36	T	Tetrahydrofuran	5.0000	6.2516	-25.0#	100	0.00
37	S	Dibromofluoromethane	0.5000	0.4635	7.3	100	-0.01
38	T	1,1,1-Trichloroethane	1.0000	1.0372	-3.7	100	0.00
39	T	Cyclohexane	1.0000	1.0411	-4.1	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0498	-5.0	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	5.0344	-0.7	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.9930	0.7	100	0.00
43	S	1,2-Dichloroethane-d4	0.5000	0.4184	16.3	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	1.0000	0.9570	4.3	100	0.00
46	T	Benzene	1.0000	1.0558	-5.6	100	0.00
47	T	Trichloroethene	1.0000	1.0041	-0.4	100	0.00
48	T	Methylcyclohexane	-1.0000	1.0205	0.0	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.9700	3.0	100	0.00
50	T	Bromodichloromethane	1.0000	0.9500	5.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	1.0000	0.9590	4.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.8616	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.6639	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:05:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9621	3.8	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.8348	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	0.5000	0.4897	2.1	100	0.00
59	C	Toluene	1.0000	1.0927	-9.3	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.8416	15.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	1.0000	0.9073	9.3	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.9840	1.6	100	0.00
64	T	2-Hexanone	-1.0000	0.3525	0.0	100	-0.01
65	T	1,3-Dichloropropane	1.0000	1.0137	-1.4	100	0.00
66	T	Tetrachloroethene	1.0000	1.0132	-1.3	100	0.00
67	T	Dibromochloromethane	1.0000	0.9402	6.0	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.9590	4.1	100	0.00
69	T	1-Chlorohexane	1.0000	1.1031	-10.3	100	0.00
70	P	Chlorobenzene	1.0000	1.1204	-12.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.9829	1.7	100	0.00
72	C	Ethylbenzene	1.0000	1.0381	-3.8	100	0.00
73	T	m-,p-Xylene	2.0000	2.0726	-3.6	100	0.00
74	T	o-Xylene	1.0000	1.0530	-5.3	100	0.00
75	T	Styrene	1.0000	0.9839	1.6	100	0.00
76	P	Bromoform	1.0000	0.8348	16.5	100	0.00
77	T	Isopropylbenzene	1.0000	1.0840	-8.4	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	0.9810	1.9	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5502	0.0	100	0.00
81	T	1,2,3-Trichloropropane	1.0000	0.7703	23.0	100	0.02
82	T	trans-1,4-Dichloro-2-Butene	1.0000	1.1443	-14.4	100	0.00
83	T	n-Propylbenzene	1.0000	1.0868	-8.7	100	0.00
84	T	Bromobenzene	1.0000	1.0510	-5.1	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	1.0314	-3.1	100	0.00
86	T	2-Chlorotoluene	1.0000	1.0778	-7.8	100	0.00
87	T	4-Chlorotoluene	1.0000	1.0553	-5.5	100	0.00
88	T	a-Methylstyrene	-1.0000	0.9394	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	1.0567	-5.7	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	1.0845	-8.5	100	0.00
91	T	sec-Butylbenzene	1.0000	1.1073	-10.7	100	0.00
92	T	p-Isopropyltoluene	1.0000	1.0966	-9.7	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0469	-4.7	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	1.0735	-7.3	100	0.00
95	T	n-Butylbenzene	1.0000	1.1201	-12.0	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0297	-3.0	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.1006	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	1.0000	0.9832	1.7	100	0.00
99	T	Hexachlorobutadiene	1.0000	0.9925	0.7	100	0.00
100	T	Naphthalene	1.0000	0.9547	4.5	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	1.0450	-4.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	782460	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.57	117	543252	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	286450	25.00	ug/L	0.01

System Monitoring Compounds						
37) Dibromofluoromethane	9.66	111	8161	0.8307	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery	=	3.32%#	
43) 1,2-Dichloroethane-d4	10.30	65	9681	0.8613	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery	=	3.44%#	
58) Toluene-d8	12.68	98	28135	1.0016	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	=	4.00%#	
80) p-Bromofluorobenzene	16.08	95	12079	1.0302	ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery	=	4.12%#	

Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.16	85	24870	1.5166	ug/L	98
3) Chloromethane	3.62	50	16106	1.0425	ug/L	93
4) Vinyl Chloride	3.85	62	18562	1.7792	ug/L	94
5) 1,3-Butadiene	3.90	54	13617	1.3360	ug/L	92
6) Bromomethane	4.73	94	8329	1.8804	ug/L	94
7) Chloroethane	4.90	64	9562	1.4006	ug/L	86
8) Trichlorofluoromethane	5.39	101	34970	1.6885	ug/L	97
9) Diethyl ether	5.90	59	107986	17.0420	ug/L	79
10) Isoprene	5.93	67	20936	1.9757	ug/L	73
11) Acrolein	6.14	56	4864	8.6444	ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	16832	1.7751	ug/L	99
13) Acetone	6.23	43	1519	0.7908	ug/L #	48
14) 1,1-Dichloroethene	6.47	61	25394	1.3798	ug/L	89
15) Tert-Butyl Alcohol	6.58	59	14891	33.6725	ug/L	85
16) Dimethyl Sulfide	6.73	62	9489	1.3953	ug/L	79
17) Iodomethane	6.98	142	1211	1.3472	ug/L #	60
18) Methyl acetate	7.01	43	5064	0.8821	ug/L #	79
19) Methylene Chloride	7.25	84	16579	1.9010	ug/L	52
20) Carbon Disulfide	7.29	76	57693	2.1683	ug/L	98
21) Acrylonitrile	7.43	53	13848	5.6089	ug/L	93
22) Methyl Tert Butyl Ether	7.47	73	33991	1.7644	ug/L	84
23) trans-1,2-Dichloroethene	7.70	61	22786	1.3688	ug/L	88
24) n-Hexane	7.79	57	18282	1.2105	ug/L	84
25) Diisopropyl ether	8.12	45	475271	11.1128	ug/L #	92
26) Vinyl Acetate	8.29	43	15998	0.9318	ug/L	93
27) 1,1-Dichloroethane	8.32	63	30419	1.5277	ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	505010	16.8250	ug/L	89
29) 2-Butanone	8.90	43	2250	0.7313	ug/L #	57
30) Propionitrile	8.99	54	9373	12.0479	ug/L	86
31) 2,2-Dichloropropane	9.10	77	32521	1.8538	ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	18238	1.8309	ug/L	91
33) Chloroform	9.37	83	33543	1.8156	ug/L	99
34) 1-Bromopropane	9.52	122	2513	1.6014	ug/L	88
35) Bromochloromethane	9.60	130	9189	1.7632	ug/L	67
36) Tetrahydrofuran	9.63	42	22074	10.8529	ug/L #	66
38) 1,1,1-Trichloroethane	9.90	97	32268	1.7324	ug/L	96
39) Cyclohexane	9.93	56	23097	1.1362	ug/L #	65
40) 1,1-Dichloropropene	10.10	75	24988	1.8639	ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	459535	23.9029	ug/L	87
42) Carbon Tetrachloride	10.24	117	28935	1.6512	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412223.D 8260WT.M Fri May 13 15:18:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.42	62	22142	1.4270 ug/L #	83
46)	Benzene	10.46	78	67028	1.9629 ug/L	83
47)	Trichloroethene	11.21	130	17287	1.7543 ug/L	96
48)	Methylcyclohexane	11.30	83	26050	1.8907 ug/L	84
49)	1,2-Dichloropropane	11.42	63	14582	1.4670 ug/L	77
50)	Bromodichloromethane	11.73	83	25794	1.8651 ug/L	93
51)	1,4-Dioxane	11.73	88	1282	32.3515 ug/L	74
52)	Dibromomethane	11.81	93	8575	1.8325 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.02	63	6234	1.4979 ug/L	100
54)	4-Methyl-2-Pentanone	12.06	58	2139	0.9416 ug/L	84
55)	cis-1,3-Dichloropropene	12.37	75	24153	1.7353 ug/L	98
56)	Dimethyl Disulfide	12.62	79	12288	1.6851 ug/L	99
59)	Toluene	12.79	91	72944	2.2423 ug/L	95
60)	Ethyl Methacrylate	12.88	69	12716	2.0832 ug/L	71
62)	trans-1,3-Dichloropropene	12.96	75	22163	1.9527 ug/L	100
63)	1,1,2-Trichloroethane	13.18	97	10537	2.0412 ug/L	99
64)	2-Hexanone	13.13	58	2200	1.1873 ug/L #	65
65)	1,3-Dichloropropane	13.49	76	20212	2.1112 ug/L	72
66)	Tetrachloroethene	13.60	164	14595	1.9811 ug/L	90
67)	Dibromochloromethane	13.87	129	14698	1.8061 ug/L	98
68)	1,2-Dibromoethane	14.12	107	10152	1.8869 ug/L	95
69)	1-Chlorohexane	14.21	91	21960	1.9818 ug/L	89
70)	Chlorobenzene	14.62	112	47376	2.0974 ug/L	81
71)	1,1,1,2-Tetrachloroethane	14.66	131	17526	1.9910 ug/L	97
72)	Ethylbenzene	14.66	106	25628	1.9996 ug/L	92
73)	m-,p-Xylene	14.74	106	60087	4.0693 ug/L	84
74)	o-Xylene	15.31	106	28289	1.9017 ug/L	79
75)	Styrene	15.35	104	47644	2.0086 ug/L	92
76)	Bromoform	15.84	173	9145	1.9585 ug/L	95
77)	Isopropylbenzene	15.73	105	81301	2.1557 ug/L	97
79)	1,1,2,2-Tetrachloroethane	15.95	83	11538	2.0194 ug/L	95
81)	1,2,3-Trichloropropane	16.13	110	3630	1.9770 ug/L	94
82)	trans-1,4-Dichloro-2-Buten	16.19	53	2699	0.9698 ug/L #	36
83)	n-Propylbenzene	16.24	91	97233	2.2026 ug/L	96
84)	Bromobenzene	16.37	156	19174	2.0834 ug/L	92
85)	1,3,5-Trimethylbenzene	16.42	105	67395	2.0631 ug/L	97
86)	2-Chlorotoluene	16.51	91	67110	2.3739 ug/L	94
87)	4-Chlorotoluene	16.56	91	59154	2.0313 ug/L	92
88)	a-Methylstyrene	16.84	118	29415	1.8275 ug/L	86
89)	tert-Butylbenzene	16.89	134	12716	1.9647 ug/L	67
90)	1,2,4-Trimethylbenzene	16.95	105	71669	2.1435 ug/L	94
91)	sec-Butylbenzene	17.17	105	81038	2.0632 ug/L	98
92)	p-Isopropyltoluene	17.32	119	70170	2.0924 ug/L	92
93)	1,3-Dichlorobenzene	17.52	146	37289	2.0413 ug/L	93
94)	1,4-Dichlorobenzene	17.64	146	36528	2.0034 ug/L #	73
95)	n-Butylbenzene	17.85	91	67823	2.1262 ug/L	96
96)	1,2-Dichlorobenzene	18.14	146	32322	2.0190 ug/L	92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	1955	1.5624 ug/L	94
98)	1,2,4-Trichlorobenzene	20.28	180	23558	1.9000 ug/L	98
99)	Hexachlorobutadiene	20.43	225	11066	1.9286 ug/L	99
100)	Naphthalene	20.65	128	36066	1.9130 ug/L	99
101)	1,2,3-Trichlorobenzene	20.96	180	19765	1.8738 ug/L	95

(#) = qualifier out of range (m) = manual integration
8M412223.D 8260WT.M Fri May 13 15:18:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

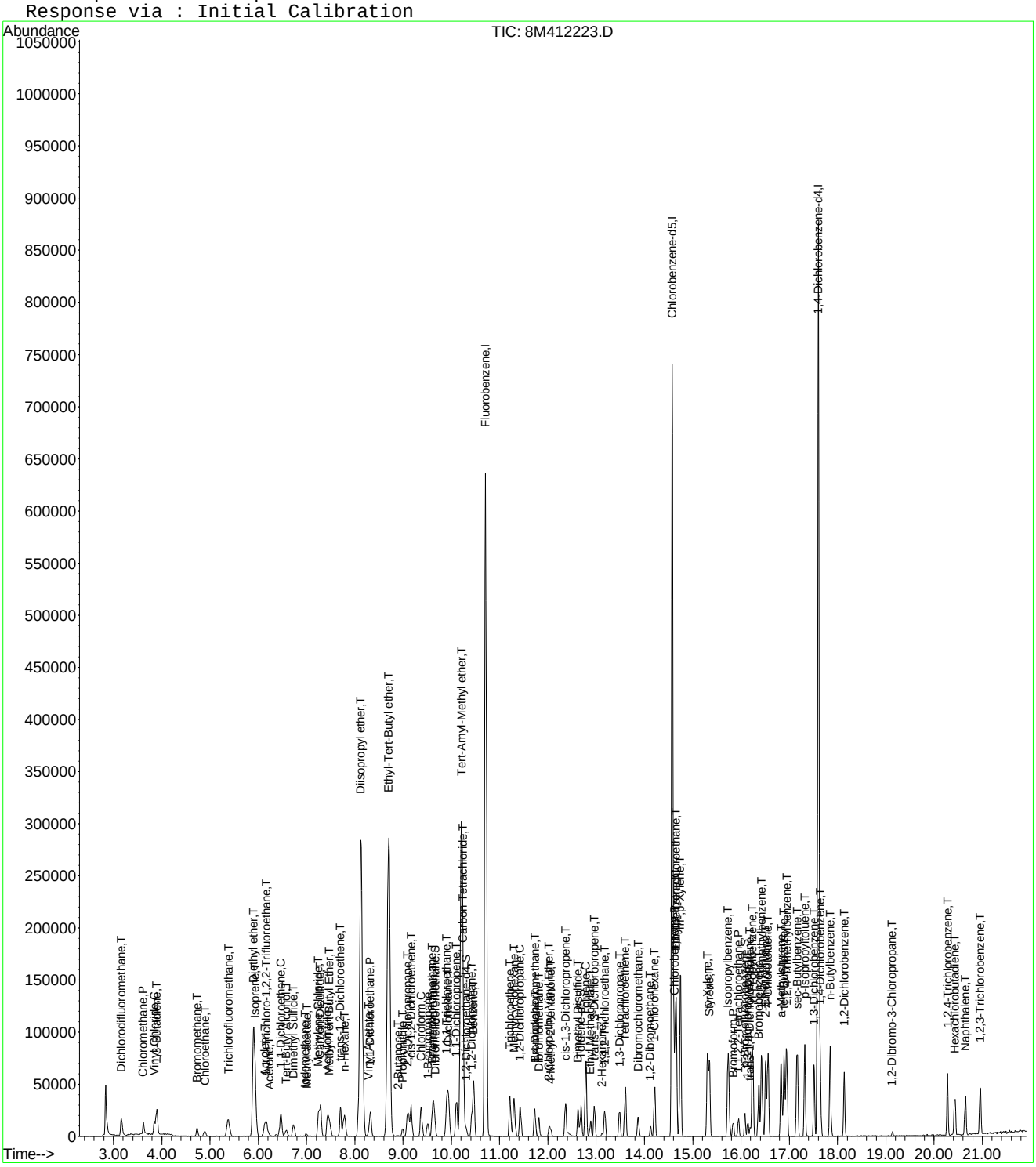

8M412223.D 8260WT.M Fri May 13 15:18:37 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.8958	5.2	100	0.00
3	P	Chloromethane	2.0000	2.1033	-5.2	100	0.00
4	C	Vinyl Chloride	2.0000	2.0431	-2.2	100	0.00
5	T	1,3-Butadiene	2.0000	1.7872	10.6	100	0.02
6	T	Bromomethane	2.0000	2.0126	-0.6	100	0.00
7	T	Chloroethane	2.0000	1.9127	4.4	100	0.00
8	T	Trichlorofluoromethane	2.0000	2.0686	-3.4	100	0.00
9	T	Diethyl ether	25.0000	26.7567	-7.0	100	0.00
10	T	Isoprene	2.0000	2.0394	-2.0	100	0.00
11	T	Acrolein	12.5000	13.4606	-7.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	2.1182	-5.9	100	0.02
13	T	Acetone	-1.0000	1.7255	0.0	100	-0.01
14	C	1,1-Dichloroethene	2.0000	2.0070	-0.4	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	52.7840	-5.6	100	0.00
16	T	Dimethyl Sulfide	2.0000	2.0975	-4.9	100	0.00
17	T	Iodomethane	2.0000	3.0680	-53.4#	100	0.00
18	T	Methyl acetate	-1.0000	2.1281	0.0	100	0.00
19	T	Methylene Chloride	2.0000	2.0590	-3.0	100	0.00
20	T	Carbon Disulfide	2.0000	2.1789	-8.9	100	0.00
21	T	Acrylonitrile	12.5000	12.1237	3.0	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.9505	2.5	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.9603	2.0	100	0.00
24	T	n-Hexane	-1.0000	2.1181	0.0	100	0.00
25	T	Diisopropyl ether	25.0000	26.2305	-4.9	100	0.00
26	T	Vinyl Acetate	2.0000	1.9284	3.6	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.1072	-5.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	26.0139	-4.1	100	0.00
29	T	2-Butanone	-1.0000	1.7396	0.0	100	0.02
30	T	Propionitrile	25.0000	24.8668	0.5	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1378	-6.9	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0306	-1.5	100	0.00
33	C	Chloroform	2.0000	1.9679	1.6	100	0.00
34		1-Bromopropane	2.0000	1.9533	2.3	100	0.00
35	T	Bromochloromethane	2.0000	1.9951	0.2	100	0.00
36	T	Tetrahydrofuran	25.0000	25.9117	-3.6	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9708	2.9	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.9930	0.3	100	0.00
39	T	Cyclohexane	2.0000	2.0605	-3.0	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0248	-1.2	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	26.0627	-4.3	100	0.00
42	T	Carbon Tetrachloride	2.0000	2.0126	-0.6	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0740	-7.4	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	2.0000	2.0183	-0.9	100	0.00
46	T	Benzene	2.0000	2.0854	-4.3	100	0.00
47	T	Trichloroethene	2.0000	2.0166	-0.8	100	0.00
48	T	Methylcyclohexane	-1.0000	2.0003	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0380	-1.9	100	0.00
50	T	Bromodichloromethane	2.0000	2.0511	-2.6	100	0.00
51	T	1,4-Dioxane	-1.0000	35.6688	0.0	100	0.02
52	T	Dibromomethane	2.0000	2.0246	-1.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	2.0271	-1.4	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.7027	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.8869	5.7	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.7986	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	0.9896	1.0	100	0.00
59	C	Toluene	2.0000	2.1628	-8.1	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.9633	1.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	2.0000	1.9609	2.0	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.9800	1.0	100	0.00
64	T	2-Hexanone	-1.0000	1.9672	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.1332	-6.7	100	0.00
66	T	Tetrachloroethene	2.0000	2.0198	-1.0	100	0.00
67	T	Dibromochloromethane	2.0000	1.8915	5.4	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.9141	4.3	100	0.00
69	T	1-Chlorohexane	2.0000	1.9075	4.6	100	0.00
70	P	Chlorobenzene	2.0000	2.0831	-4.2	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.9892	0.5	100	0.00
72	C	Ethylbenzene	2.0000	2.0596	-3.0	100	0.00
73	T	m-,p-Xylene	4.0000	4.1170	-2.9	100	0.00
74	T	o-Xylene	2.0000	1.9825	0.9	100	0.00
75	T	Styrene	2.0000	2.0358	-1.8	100	0.00
76	P	Bromoform	2.0000	1.9841	0.8	100	0.00
77	T	Isopropylbenzene	2.0000	2.1448	-7.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	2.0066	-0.3	100	0.00
80	S	p-Bromofluorobenzene	1.0000	1.0184	-1.8	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	2.0501	-2.5	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	2.0915	-4.6	100	0.00
83	T	n-Propylbenzene	2.0000	2.1757	-8.8	100	0.00
84	T	Bromobenzene	2.0000	2.0859	-4.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.0703	-3.5	100	0.00
86	T	2-Chlorotoluene	2.0000	2.1509	-7.5	100	0.00
87	T	4-Chlorotoluene	2.0000	2.0989	-4.9	100	0.00
88	T	a-Methylstyrene	-1.0000	1.9045	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	1.9967	0.2	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.1411	-7.1	100	0.00
91	T	sec-Butylbenzene	2.0000	2.1161	-5.8	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.1579	-7.9	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.1067	-5.3	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.0470	-2.4	100	0.00
95	T	n-Butylbenzene	2.0000	2.1098	-5.5	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0532	-2.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.6938	15.3	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	2.0021	-0.1	100	0.00
99	T	Hexachlorobutadiene	2.0000	2.0128	-0.6	100	0.00
100	T	Naphthalene	2.0000	2.0630	-3.2	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9910	0.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412223.D 8260WT.M Sat May 14 18:08:14 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	768397	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	534372	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	274234	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	19775	2.0496 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	8.20%#	
43) 1,2-Dichloroethane-d4	10.30	65	21200	1.9207 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	7.68%#	
58) Toluene-d8	12.68	98	65647	2.3758 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	9.52%#	
80) p-Bromofluorobenzene	16.08	95	26759	2.3838 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	9.52%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	55961	3.4750 ug/L	99
3) Chloromethane	3.62	50	34194	2.2538 ug/L	100
4) Vinyl Chloride	3.84	62	42506	4.1488 ug/L	99
5) 1,3-Butadiene	3.89	54	32006	3.1976 ug/L	93
6) Bromomethane	4.72	94	19582	3.4204 ug/L	94
7) Chloroethane	4.90	64	22000	3.2814 ug/L	84
8) Trichlorofluoromethane	5.37	101	77715	3.8212 ug/L	96
9) Diethyl ether	5.90	59	188516	30.2955 ug/L	79
10) Isoprene	5.94	67	44975	4.3218 ug/L	78
11) Acrolein	6.15	56	7712	13.9568 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	36867	3.9591 ug/L	99
13) Acetone	6.24	43	3578	1.8967 ug/L	85
14) 1,1-Dichloroethene	6.47	61	59405	3.2870 ug/L	95
15) Tert-Butyl Alcohol	6.58	59	27833	64.0897 ug/L #	82
16) Dimethyl Sulfide	6.73	62	21102	3.1597 ug/L	77
17) Iodomethane	6.99	142	3667	1.8964 ug/L	95
18) Methyl acetate	7.00	43	11500	2.0398 ug/L #	86
19) Methylene Chloride	7.24	84	37533	4.3823 ug/L	52
20) Carbon Disulfide	7.29	76	123060	4.7097 ug/L	100
21) Acrylonitrile	7.43	53	25653	10.5804 ug/L	99
22) Methyl Tert Butyl Ether	7.47	73	80005	4.2289 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	54124	3.3108 ug/L	94
24) n-Hexane	7.78	57	40758	2.7480 ug/L	82
25) Diisopropyl ether	8.12	45	841400	20.0337 ug/L #	91
26) Vinyl Acetate	8.30	43	37284	2.2113 ug/L #	90
27) 1,1-Dichloroethane	8.32	63	66711	3.4116 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	907423	30.7852 ug/L	89
29) 2-Butanone	8.89	43	5359	1.7738 ug/L #	82
30) Propionitrile	8.99	54	17933	23.4726 ug/L	100
31) 2,2-Dichloropropane	9.10	77	73150	4.2462 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	41036	4.1950 ug/L	89
33) Chloroform	9.37	83	78227	4.3116 ug/L	99
34) 1-Bromopropane	9.52	122	6162	3.9986 ug/L	99
35) Bromochloromethane	9.60	130	20988	4.1009 ug/L #	62
36) Tetrahydrofuran	9.62	42	38098	19.0742 ug/L #	62
38) 1,1,1-Trichloroethane	9.91	97	76152	4.1633 ug/L	97
39) Cyclohexane	9.94	56	51439	2.5767 ug/L #	66
40) 1,1-Dichloropropene	10.11	75	56645	4.3027 ug/L	93
41) Tert-Amyl-Methyl ether	10.21	73	821180	43.4958 ug/L	87
42) Carbon Tetrachloride	10.25	117	67831	3.9416 ug/L	96

(#) = qualifier out of range (m) = manual integration
8M412224.D 8260WT.M Fri May 13 15:47:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	51708	3.3934 ug/L		85
46)	Benzene	10.46	78	150204	4.4792 ug/L		86
47)	Trichloroethene	11.21	130	38500	3.9784 ug/L		94
48)	Methylcyclohexane	11.30	83	60897	4.5008 ug/L		81
49)	1,2-Dichloropropane	11.43	63	31773	3.2549 ug/L		77
50)	Bromodichloromethane	11.73	83	59127	4.3535 ug/L		94
51)	1,4-Dioxane	11.71	88	2719	69.8702 ug/L	#	62
52)	Dibromomethane	11.81	93	19711	4.2894 ug/L		96
53)	2-Chloroethyl Vinyl Ether	12.03	63	12946	3.1676 ug/L		98
54)	4-Methyl-2-Pentanone	12.05	58	5129	2.2991 ug/L	#	78
55)	cis-1,3-Dichloropropene	12.36	75	61169	4.4752 ug/L		94
56)	Dimethyl Disulfide	12.62	79	27966	3.9053 ug/L		98
59)	Toluene	12.78	91	161007	5.0316 ug/L		97
60)	Ethyl Methacrylate	12.88	69	28595	4.7624 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	49791	4.4599 ug/L		97
63)	1,1,2-Trichloroethane	13.18	97	23678	4.6631 ug/L		99
64)	2-Hexanone	13.11	58	4499	2.4685 ug/L	#	97
65)	1,3-Dichloropropane	13.49	76	44838	4.7614 ug/L		73
66)	Tetrachloroethene	13.60	164	32715	4.5144 ug/L		97
67)	Dibromochloromethane	13.87	129	35009	4.3734 ug/L		98
68)	1,2-Dibromoethane	14.13	107	24247	4.5815 ug/L		99
69)	1-Chlorohexane	14.21	91	53599	4.9176 ug/L		84
70)	Chlorobenzene	14.62	112	107618	4.8437 ug/L		95
71)	1,1,1,2-Tetrachloroethane	14.65	131	38120	4.4025 ug/L		96
72)	Ethylbenzene	14.65	106	56905	4.5138 ug/L		91
73)	m-,p-Xylene	14.75	106	137390	9.4592 ug/L		86
74)	o-Xylene	15.31	106	65650	4.4866 ug/L		85
75)	Styrene	15.35	104	111433	4.7758 ug/L		91
76)	Bromoform	15.84	173	19346	4.2121 ug/L		97
77)	Isopropylbenzene	15.73	105	182523	4.9200 ug/L		96
79)	1,1,2,2-Tetrachloroethane	15.95	83	26655	4.8730 ug/L		99
81)	1,2,3-Trichloropropane	16.13	110	8840	5.0289 ug/L		81
82)	trans-1,4-Dichloro-2-Buten	16.19	53	6584	2.4712 ug/L	#	51
83)	n-Propylbenzene	16.24	91	222196	5.2576 ug/L		96
84)	Bromobenzene	16.37	156	42665	4.8423 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	155714	4.9790 ug/L		93
86)	2-Chlorotoluene	16.52	91	148764	5.4968 ug/L		94
87)	4-Chlorotoluene	16.56	91	135679	4.8666 ug/L		94
88)	a-Methylstyrene	16.84	118	68945	4.4743 ug/L		91
89)	tert-Butylbenzene	16.89	134	29069	4.6914 ug/L		77
90)	1,2,4-Trimethylbenzene	16.95	105	161016	5.0301 ug/L		94
91)	sec-Butylbenzene	17.17	105	191273	5.0866 ug/L		94
92)	p-Isopropyltoluene	17.32	119	159232	4.9597 ug/L		93
93)	1,3-Dichlorobenzene	17.52	146	83896	4.7972 ug/L		95
94)	1,4-Dichlorobenzene	17.64	146	82462	4.7242 ug/L		86
95)	n-Butylbenzene	17.85	91	158787	5.1996 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	72524	4.7321 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	5629	4.6990 ug/L		76
98)	1,2,4-Trichlorobenzene	20.28	180	53855	4.5369 ug/L		98
99)	Hexachlorobutadiene	20.43	225	24504	4.4608 ug/L		93
100)	Naphthalene	20.65	128	79806	4.4217 ug/L		98
101)	1,2,3-Trichlorobenzene	20.96	180	44150	4.3720 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412224.D 8260WT.M Fri May 13 15:47:44 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

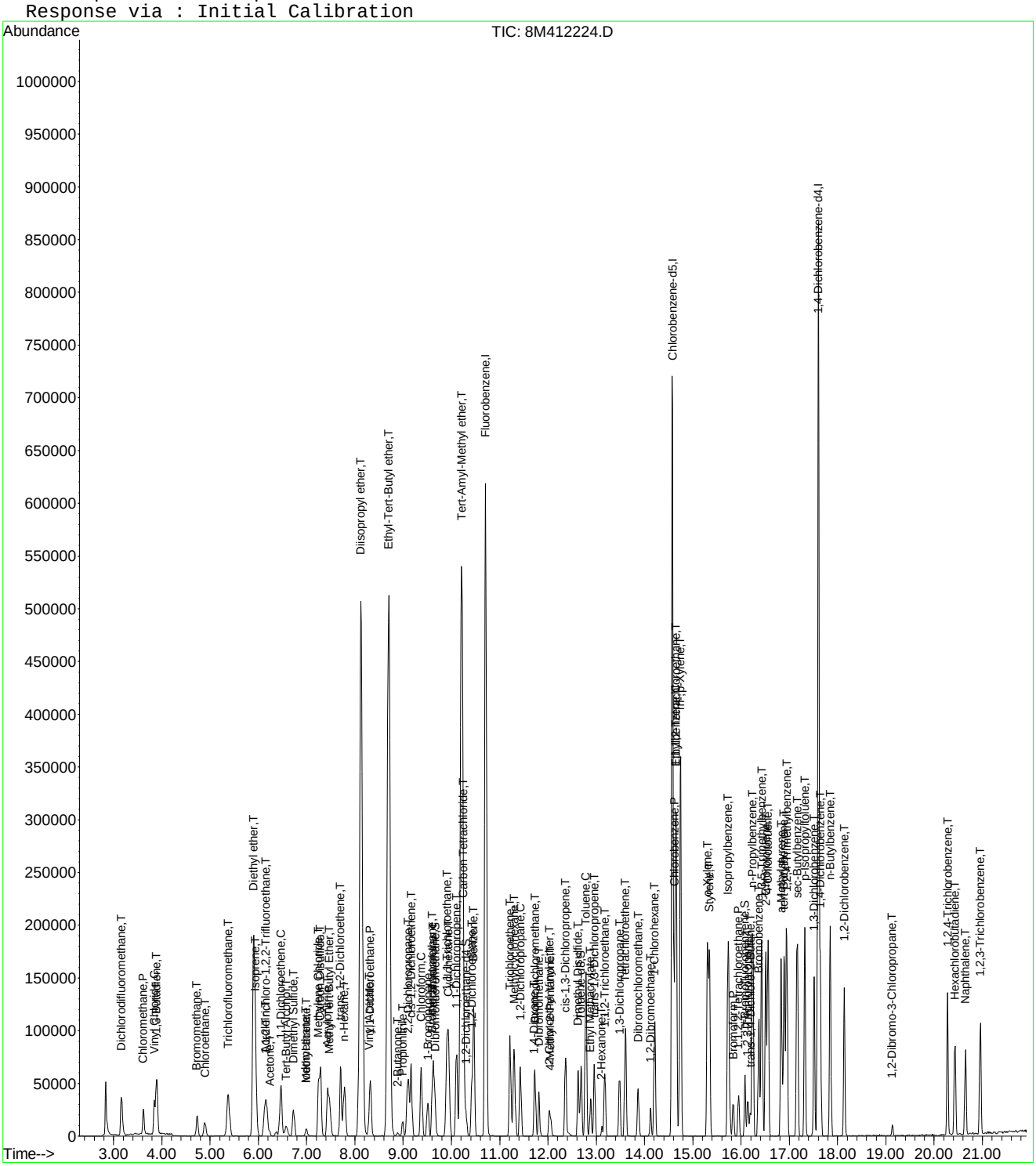

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.3438	13.1	100	0.00
3	P	Chloromethane	5.0000	4.5471	9.1	100	0.00
4	C	Vinyl Chloride	5.0000	4.7641	4.7	100	0.00
5	T	1,3-Butadiene	5.0000	4.2777	14.4	100	0.00
6	T	Bromomethane	5.0000	4.1880	16.2	100	-0.01
7	T	Chloroethane	5.0000	4.4813	10.4	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.6812	6.4	100	0.00
9	T	Diethyl ether	50.0000	47.5652	4.9	100	0.00
10	T	Isoprene	5.0000	4.4611	10.8	100	0.00
11	T	Acrolein	25.0000	21.7328	13.1	100	0.02
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.7244	5.5	100	0.00
13	T	Acetone	5.0000	4.1387	17.2	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.7810	4.4	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	100.4650	-0.5	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.7499	5.0	100	0.00
17	T	Iodomethane	5.0000	3.7634	24.7	100	0.00
18	T	Methyl acetate	5.0000	4.9211	1.6	100	0.00
19	T	Methylene Chloride	5.0000	4.7467	5.1	100	0.00
20	T	Carbon Disulfide	5.0000	4.7328	5.3	100	0.00
21	T	Acrylonitrile	25.0000	22.8698	8.5	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.6750	6.5	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.7415	5.2	100	0.00
24	T	n-Hexane	5.0000	4.8084	3.8	100	0.00
25	T	Diisopropyl ether	50.0000	47.2872	5.4	100	0.00
26	T	Vinyl Acetate	5.0000	4.5766	8.5	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.7058	5.9	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	47.5984	4.8	100	0.00
29	T	2-Butanone	5.0000	4.2191	15.6	100	0.00
30	T	Propionitrile	50.0000	48.4475	3.1	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.8965	2.1	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.6525	7.0	100	0.00
33	C	Chloroform	5.0000	4.6735	6.5	100	0.00
34		1-Bromopropane	5.0000	4.8774	2.5	100	0.00
35	T	Bromochloromethane	5.0000	4.6403	7.2	100	0.00
36	T	Tetrahydrofuran	50.0000	45.5400	8.9	100	-0.01
37	S	Dibromofluoromethane	2.5000	2.3953	4.2	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.7896	4.2	100	0.00
39	T	Cyclohexane	5.0000	4.6730	6.5	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.6741	6.5	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	47.6211	4.8	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.8044	3.9	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.3949	4.2	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	5.0000	4.7996	4.0	100	0.00
46	T	Benzene	5.0000	4.7588	4.8	100	0.00
47	T	Trichloroethene	5.0000	4.5733	8.5	100	0.00
48	T	Methylcyclohexane	5.0000	4.7616	4.8	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.5219	9.6	100	0.00
50	T	Bromodichloromethane	5.0000	4.7878	4.2	100	0.00
51	T	1,4-Dioxane	100.0000	77.0346	23.0	100	0.00
52	T	Dibromomethane	5.0000	4.7390	5.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.2867	14.3	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.1576	16.8	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.8662	2.7	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.1683	16.6	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.3473	6.1	100	0.00
59	C	Toluene	5.0000	4.8533	2.9	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.4883	10.2	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	5.0000	4.4786	10.4	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.5231	9.5	100	0.00
64	T	2-Hexanone	5.0000	4.0898	18.2	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.8109	3.8	100	0.00
66	T	Tetrachloroethene	5.0000	4.6028	7.9	100	0.00
67	T	Dibromochloromethane	5.0000	4.5802	8.4	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.6475	7.1	100	0.00
69	T	1-Chlorohexane	5.0000	4.7331	5.3	100	0.00
70	P	Chlorobenzene	5.0000	4.8107	3.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.3984	12.0	100	0.00
72	C	Ethylbenzene	5.0000	4.6492	7.0	100	0.00
73	T	m-,p-Xylene	10.0000	9.5700	4.3	100	0.00
74	T	o-Xylene	5.0000	4.6773	6.5	100	0.00
75	T	Styrene	5.0000	4.8405	3.2	100	0.00
76	P	Bromoform	5.0000	4.2672	14.7	100	0.00
77	T	Isopropylbenzene	5.0000	4.8951	2.1	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	4.8422	3.2	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.3565	5.7	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.2150	-4.3	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.3781	12.4	100	0.00
83	T	n-Propylbenzene	5.0000	5.1935	-3.9	100	0.00
84	T	Bromobenzene	5.0000	4.8483	3.0	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	4.9964	0.1	100	0.00
86	T	2-Chlorotoluene	5.0000	4.9803	0.4	100	0.00
87	T	4-Chlorotoluene	5.0000	5.0286	-0.6	100	0.00
88	T	a-Methylstyrene	5.0000	4.6629	6.7	100	0.00
89	T	tert-Butylbenzene	5.0000	4.7677	4.6	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.0245	-0.5	100	0.00
91	T	sec-Butylbenzene	5.0000	5.2170	-4.3	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.1150	-2.3	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	4.9511	1.0	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	4.8270	3.5	100	0.00
95	T	n-Butylbenzene	5.0000	5.1595	-3.2	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	4.8122	3.8	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	5.0942	-1.9	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.7808	4.4	100	0.00
99	T	Hexachlorobutadiene	5.0000	4.6555	6.9	100	0.00
100	T	Naphthalene	5.0000	4.7684	4.6	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.6455	7.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412224.D 8260WT.M Sat May 14 18:08:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	770027	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	531490	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	283594	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	86295	10.9569 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 43.84%#		
43) 1,2-Dichloroethane-d4	10.30	65	96239	11.3450 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 45.36%#		
58) Toluene-d8	12.68	98	294491	10.9223 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 43.68%#		
80) p-Bromofluorobenzene	16.08	95	121459	10.5490 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 42.20%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	288235	23.7135 ug/L	99
3) Chloromethane	3.62	50	155712	20.3784 ug/L	98
4) Vinyl Chloride	3.84	62	184250	20.9368 ug/L	95
5) 1,3-Butadiene	3.89	54	149348	22.7750 ug/L	96
6) Bromomethane	4.73	94	100098	25.0143 ug/L	99
7) Chloroethane	4.89	64	100876	20.9404 ug/L	91
8) Trichlorofluoromethane	5.37	101	351299	21.2512 ug/L	98
9) Diethyl ether	5.90	59	324317	80.8265 ug/L	78
10) Isoprene	5.94	67	205842	20.3622 ug/L	77
11) Acrolein	6.14	56	12049	34.8201 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	159996	20.3859 ug/L	97
13) Acetone	6.25	43	18459	25.7405 ug/L	98
14) 1,1-Dichloroethene	6.47	61	256241	20.5065 ug/L	92
15) Tert-Butyl Alcohol	6.57	59	43922	153.5712 ug/L	93
16) Dimethyl Sulfide	6.73	62	89456	20.6087 ug/L	83
17) Iodomethane	6.99	142	40622	61.0474 ug/L	93
18) Methyl acetate	7.00	43	46598	20.2171 ug/L #	85
19) Methylene Chloride	7.25	84	161897	20.1338 ug/L	52
20) Carbon Disulfide	7.30	76	538090	20.0802 ug/L	98
21) Acrylonitrile	7.43	53	46305	46.9889 ug/L	100
22) Methyl Tert Butyl Ether	7.47	73	361116	22.0137 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	234754	20.3175 ug/L	90
24) n-Hexane	7.78	57	172498	21.1165 ug/L	84
25) Diisopropyl ether	8.12	45	1447822	80.3755 ug/L #	91
26) Vinyl Acetate	8.30	43	166501	21.7017 ug/L #	88
27) 1,1-Dichloroethane	8.33	63	300321	21.3849 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	1579265	83.0733 ug/L	89
29) 2-Butanone	8.88	43	25681	23.9099 ug/L	87
30) Propionitrile	8.98	54	30953	89.5673 ug/L	94
31) 2,2-Dichloropropane	9.10	77	309575	20.8527 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	181973	20.4488 ug/L	89
33) Chloroform	9.37	83	348925	20.5535 ug/L	96
34) 1-Bromopropane	9.52	122	26723	22.7206 ug/L	96
35) Bromochloromethane	9.61	130	94952	21.3181 ug/L	65
36) Tetrahydrofuran	9.63	42	63066	70.5772 ug/L #	57
38) 1,1,1-Trichloroethane	9.91	97	335486	21.3640 ug/L	99
39) Cyclohexane	9.94	56	221040	19.9984 ug/L #	64
40) 1,1-Dichloropropene	10.11	75	248373	20.4717 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1418183	81.7883 ug/L	88
42) Carbon Tetrachloride	10.25	117	296471	21.3449 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412225.D 8260WT.M Fri May 13 16:16:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	228665	21.6403	ug/L		85
46)	Benzene	10.46	78	668449	20.3769	ug/L		86
47)	Trichloroethene	11.21	130	174107	20.7980	ug/L		96
48)	Methylcyclohexane	11.29	83	262275	21.4887	ug/L		82
49)	1,2-Dichloropropane	11.43	63	146868	21.1883	ug/L	#	72
50)	Bromodichloromethane	11.73	83	262192	21.9986	ug/L		98
51)	1,4-Dioxane	11.71	88	5351	196.3837	ug/L		76
52)	Dibromomethane	11.81	93	86951	21.0734	ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	63586	22.4600	ug/L		91
54)	4-Methyl-2-Pentanone	12.05	58	25754	25.0531	ug/L	#	73
55)	cis-1,3-Dichloropropene	12.36	75	265439	21.9841	ug/L		99
56)	Dimethyl Disulfide	12.63	79	134192	23.9412	ug/L		100
59)	Toluene	12.78	91	700473	20.1722	ug/L		99
60)	Ethyl Methacrylate	12.88	69	133361	23.2046	ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	238585	23.2548	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	107901	21.0216	ug/L		99
64)	2-Hexanone	13.11	58	22561	25.2093	ug/L	#	85
65)	1,3-Dichloropropane	13.49	76	198804	22.2491	ug/L		74
66)	Tetrachloroethene	13.60	164	141791	20.0055	ug/L		94
67)	Dibromochloromethane	13.87	129	158465	22.0695	ug/L		99
68)	1,2-Dibromoethane	14.13	107	110085	22.3366	ug/L		100
69)	1-Chlorohexane	14.21	91	229753	20.3591	ug/L		83
70)	Chlorobenzene	14.62	112	467492	20.4613	ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.65	131	183079	22.2095	ug/L		96
72)	Ethylbenzene	14.65	106	249016	20.2289	ug/L		90
73)	m-,p-Xylene	14.75	106	606381	41.1308	ug/L		88
74)	o-Xylene	15.30	106	294106	21.2106	ug/L		90
75)	Styrene	15.35	104	492781	21.8207	ug/L		89
76)	Bromoform	15.83	173	95911	23.8070	ug/L		99
77)	Isopropylbenzene	15.73	105	806678	20.7280	ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	123253	22.7779	ug/L		95
81)	1,2,3-Trichloropropane	16.14	110	36712	22.1354	ug/L		94
82)	trans-1,4-Dichloro-2-Buten	16.18	53	33702	27.6513	ug/L	#	56
83)	n-Propylbenzene	16.24	91	962196	20.3511	ug/L		97
84)	Bromobenzene	16.37	156	190566	21.2033	ug/L		94
85)	1,3,5-Trimethylbenzene	16.43	105	692633	20.9615	ug/L		94
86)	2-Chlorotoluene	16.51	91	649077	19.9155	ug/L		96
87)	4-Chlorotoluene	16.56	91	595446	20.3225	ug/L		95
88)	a-Methylstyrene	16.83	118	318960	22.3680	ug/L		92
89)	tert-Butylbenzene	16.90	134	129440	20.4705	ug/L		83
90)	1,2,4-Trimethylbenzene	16.95	105	707749	20.4783	ug/L		94
91)	sec-Butylbenzene	17.17	105	818359	20.1802	ug/L		97
92)	p-Isopropyltoluene	17.32	119	677859	19.7492	ug/L		96
93)	1,3-Dichlorobenzene	17.52	146	364065	20.5126	ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	363066	19.9874	ug/L		92
95)	n-Butylbenzene	17.85	91	681055	20.0187	ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	318612	19.9358	ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	23070	21.6419	ug/L		93
98)	1,2,4-Trichlorobenzene	20.28	180	242455	20.8863	ug/L		98
99)	Hexachlorobutadiene	20.43	225	110384	20.2523	ug/L		96
100)	Naphthalene	20.65	128	369849	21.4526	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	198876	19.8356	ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration

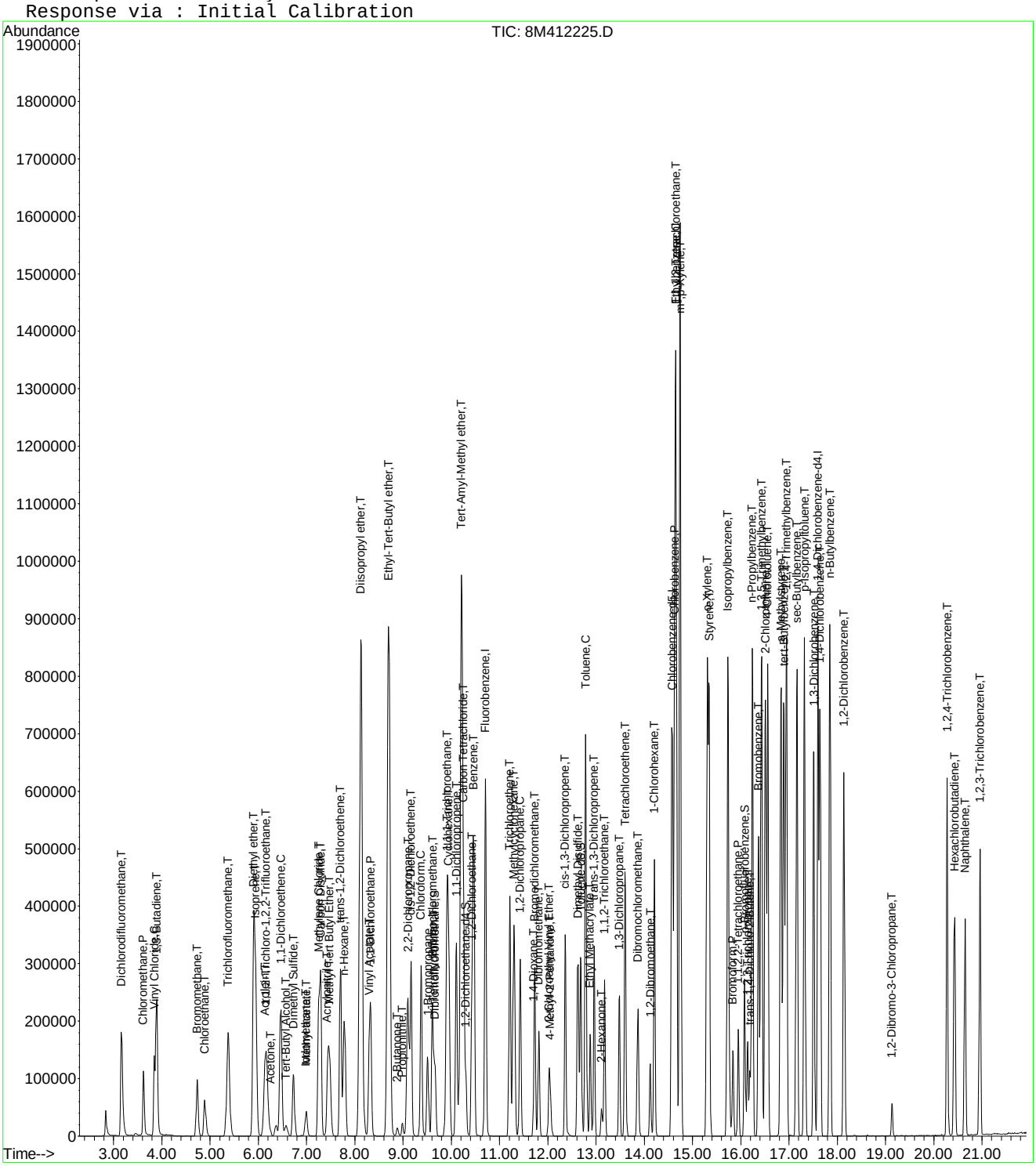

8M412225.D 8260WT.M Fri May 13 16:16:36 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45:30 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	778260	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	539116	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	288225	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	211053	26.5139 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.04%		
43) 1,2-Dichloroethane-d4	10.31	65	229348	26.7504 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.00%		
58) Toluene-d8	12.68	98	718491	26.2709 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.08%		
80) p-Bromofluorobenzene	16.07	95	292755	25.0180 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.08%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	682745	55.5761 ug/L	100
3) Chloromethane	3.62	50	372858	48.2806 ug/L	98
4) Vinyl Chloride	3.85	62	453905	51.0328 ug/L	96
5) 1,3-Butadiene	3.88	54	390501	58.9199 ug/L	99
6) Bromomethane	4.74	94	260493	64.4080 ug/L	97
7) Chloroethane	4.89	64	244336	50.1840 ug/L	91
8) Trichlorofluoromethane	5.38	101	837676	50.1376 ug/L	99
9) Diethyl ether	5.90	59	389327	96.0019 ug/L	79
10) Isoprene	5.94	67	498060	48.7477 ug/L	76
11) Acrolein	6.13	56	17644	50.4496 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	387643	48.8691 ug/L	97
13) Acetone	6.25	43	45901	63.3305 ug/L	97
14) 1,1-Dichloroethene	6.46	61	619744	49.0724 ug/L	94
15) Tert-Butyl Alcohol	6.58	59	53656	185.6211 ug/L	91
16) Dimethyl Sulfide	6.73	62	221107	50.3993 ug/L	82
17) Iodomethane	6.98	142	157872	234.7428 ug/L	94
18) Methyl acetate	7.00	43	114759	49.2629 ug/L #	81
19) Methylene Chloride	7.25	84	389653	47.9453 ug/L	52
20) Carbon Disulfide	7.29	76	1269941	46.8897 ug/L	99
21) Acrylonitrile	7.43	53	59882	60.1236 ug/L	97
22) Methyl Tert Butyl Ether	7.46	73	901668	54.3843 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	571507	48.9396 ug/L	93
24) n-Hexane	7.79	57	419656	50.8290 ug/L	83
25) Diisopropyl ether	8.13	45	1781012	97.8265 ug/L #	90
26) Vinyl Acetate	8.29	43	428708	55.2866 ug/L #	89
27) 1,1-Dichloroethane	8.32	63	722574	50.9078 ug/L	96
28) Ethyl-Tert-Butyl ether	8.71	59	1955100	101.7552 ug/L	89
29) 2-Butanone	8.88	43	66579	61.3316 ug/L #	82
30) Propionitrile	8.98	54	38235	109.4684 ug/L	95
31) 2,2-Dichloropropane	9.10	77	768496	51.2175 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	439590	48.8754 ug/L	91
33) Chloroform	9.38	83	844564	49.2230 ug/L	97
34) 1-Bromopropane	9.51	122	63442	53.3693 ug/L	99
35) Bromochloromethane	9.60	130	230119	51.1185 ug/L	66
36) Tetrahydrofuran	9.64	42	79437	87.9575 ug/L #	62
38) 1,1,1-Trichloroethane	9.90	97	817606	51.5150 ug/L	99
39) Cyclohexane	9.93	56	535882	47.9707 ug/L #	65
40) 1,1-Dichloropropene	10.10	75	615439	50.1899 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1769381	100.9628 ug/L	88
42) Carbon Tetrachloride	10.24	117	724058	51.5782 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412226.D 8260WT.M Fri May 13 16:45:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45:30 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	561107	52.5401 ug/L		85
46)	Benzene	10.46	78	1607407	48.4816 ug/L		86
47)	Trichloroethene	11.22	130	424998	50.2312 ug/L		96
48)	Methylcyclohexane	11.30	83	635339	51.5040 ug/L		83
49)	1,2-Dichloropropane	11.42	63	351908	50.2320 ug/L	#	71
50)	Bromodichloromethane	11.72	83	654943	54.3701 ug/L		97
51)	1,4-Dioxane	11.71	88	7573	274.9918 ug/L		73
52)	Dibromomethane	11.82	93	209167	50.1574 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	162319	56.7281 ug/L		93
54)	4-Methyl-2-Pentanone	12.05	58	64928	62.4928 ug/L		80
55)	cis-1,3-Dichloropropene	12.36	75	666861	54.6463 ug/L		98
56)	Dimethyl Disulfide	12.62	79	343446	60.6260 ug/L		96
59)	Toluene	12.79	91	1676069	47.5846 ug/L		100
60)	Ethyl Methacrylate	12.88	69	338996	58.1503 ug/L		69
62)	trans-1,3-Dichloropropene	12.96	75	594749	57.1499 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	268432	51.5570 ug/L		98
64)	2-Hexanone	13.12	58	56859	62.6347 ug/L	#	83
65)	1,3-Dichloropropane	13.48	76	489226	53.9770 ug/L		75
66)	Tetrachloroethene	13.60	164	350332	48.7296 ug/L		95
67)	Dibromochloromethane	13.86	129	401149	55.0780 ug/L		100
68)	1,2-Dibromoethane	14.12	107	273580	54.7252 ug/L		99
69)	1-Chlorohexane	14.21	91	560883	48.9984 ug/L		82
70)	Chlorobenzene	14.63	112	1117812	48.2326 ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	446892	53.4462 ug/L		99
72)	Ethylbenzene	14.66	106	603074	48.2980 ug/L		91
73)	m-,p-Xylene	14.74	106	1443780	96.5463 ug/L		90
74)	o-Xylene	15.31	106	709244	50.4265 ug/L		90
75)	Styrene	15.34	104	1212099	52.9133 ug/L		91
76)	Bromoform	15.84	173	238354	58.3272 ug/L		100
77)	Isopropylbenzene	15.73	105	1919993	48.6372 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	294266	53.5083 ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	89279	52.9656 ug/L		93
82)	trans-1,4-Dichloro-2-Buten	16.19	53	86829	70.0956 ug/L	#	53
83)	n-Propylbenzene	16.24	91	2278994	47.4277 ug/L		98
84)	Bromobenzene	16.37	156	459959	50.3549 ug/L		93
85)	1,3,5-Trimethylbenzene	16.43	105	1661486	49.4745 ug/L		95
86)	2-Chlorotoluene	16.51	91	1611031	48.6367 ug/L		97
87)	4-Chlorotoluene	16.56	91	1341051	45.0344 ug/L		95
88)	a-Methylstyrene	16.83	118	772611	53.3111 ug/L		90
89)	tert-Butylbenzene	16.89	134	307503	47.8493 ug/L		81
90)	1,2,4-Trimethylbenzene	16.94	105	1679809	47.8234 ug/L		95
91)	sec-Butylbenzene	17.16	105	1925411	46.7166 ug/L		97
92)	p-Isopropyltoluene	17.32	119	1621383	46.4795 ug/L		95
93)	1,3-Dichlorobenzene	17.51	146	882656	48.9327 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	871210	47.1909 ug/L		92
95)	n-Butylbenzene	17.85	91	1608832	46.5296 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	768548	47.3159 ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	59586	54.9992 ug/L		86
98)	1,2,4-Trichlorobenzene	20.28	180	583880	49.4902 ug/L		100
99)	Hexachlorobutadiene	20.44	225	264699	47.7844 ug/L		98
100)	Naphthalene	20.65	128	894629	51.0579 ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	475246	46.6387 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412226.D 8260WT.M Fri May 13 16:45:33 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration

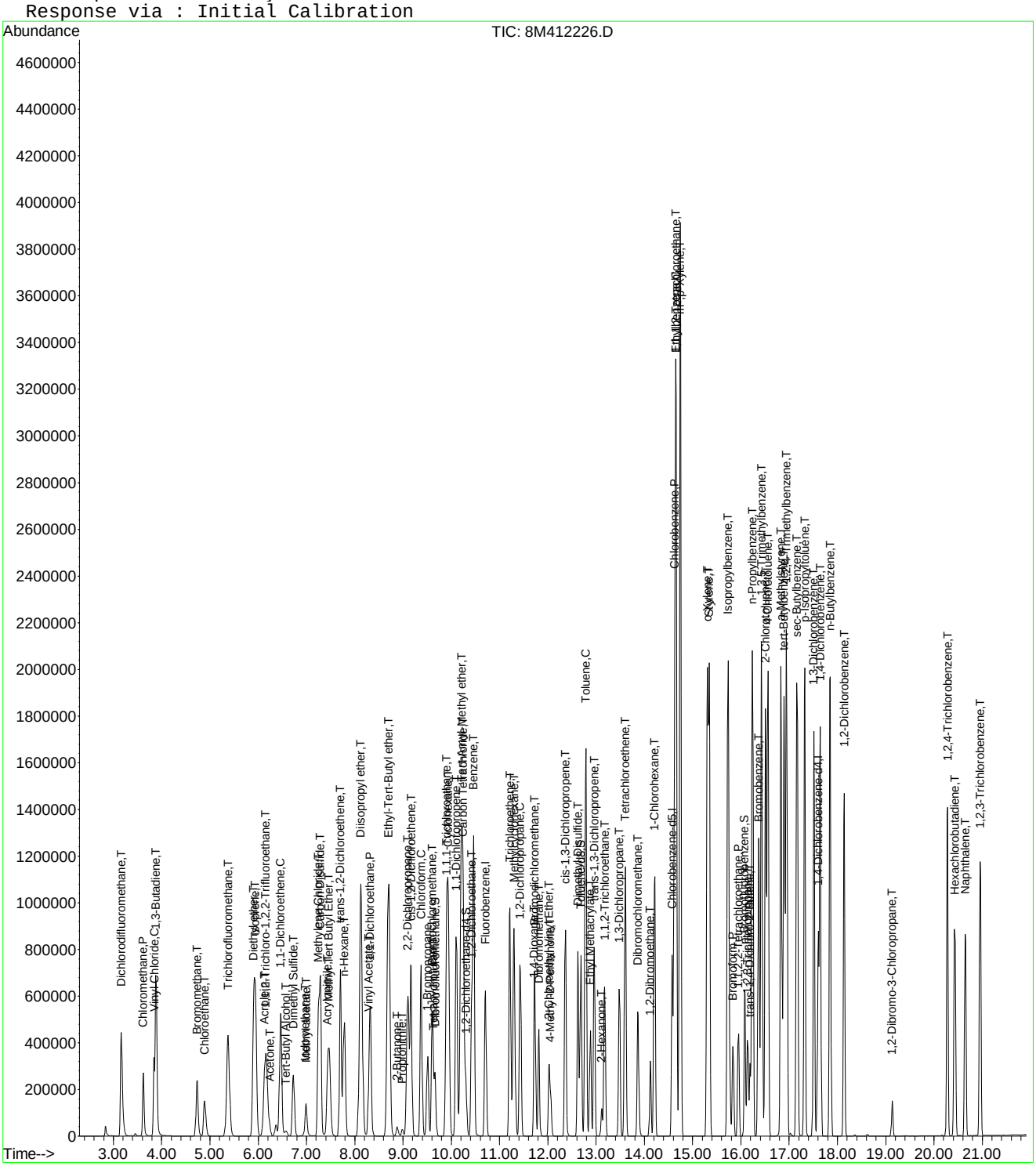

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	809533	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	559075	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	296193	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	460283	53.9056 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 215.64%#		
43) 1,2-Dichloroethane-d4	10.30	65	488116	52.5821 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 210.32%#		
58) Toluene-d8	12.68	98	1540572	52.8075 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 211.24%#		
80) p-Bromofluorobenzene	16.08	95	623735	51.1573 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 204.64%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	1463283	109.1068 ug/L	100
3) Chloromethane	3.62	50	778702	97.2380 ug/L	98
4) Vinyl Chloride	3.84	62	968312	103.4979 ug/L	95
5) 1,3-Butadiene	3.88	54	896569	120.4972 ug/L	95
6) Bromomethane	4.73	94	605228	129.8677 ug/L	99
7) Chloroethane	4.89	64	528153	103.4126 ug/L	90
8) Trichlorofluoromethane	5.37	101	1782726	101.4754 ug/L	99
9) Diethyl ether	5.90	59	828091	197.4770 ug/L	79
10) Isoprene	5.94	67	1080684	101.8037 ug/L	78
11) Acrolein	6.14	56	38655	109.5572 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	833546	101.0906 ug/L	97
13) Acetone	6.24	43	97515	109.1944 ug/L	100
14) 1,1-Dichloroethene	6.46	61	1323999	100.6729 ug/L	93
15) Tert-Butyl Alcohol	6.57	59	114220	387.5328 ug/L	91
16) Dimethyl Sulfide	6.73	62	489571	106.5996 ug/L	82
17) Iodomethane	6.99	142	416890	244.5557 ug/L	97
18) Methyl acetate	7.00	43	252444	104.3161 ug/L #	81
19) Methylene Chloride	7.24	84	827241	98.5346 ug/L	53
20) Carbon Disulfide	7.29	76	2766110	99.3432 ug/L	100
21) Acrylonitrile	7.43	53	126153	113.2272 ug/L	98
22) Methyl Tert Butyl Ether	7.46	73	1894494	105.8643 ug/L	87
23) trans-1,2-Dichloroethene	7.70	61	1203701	99.1822 ug/L	93
24) n-Hexane	7.78	57	926226	105.3097 ug/L	84
25) Diisopropyl ether	8.12	45	3699807	196.0386 ug/L #	90
26) Vinyl Acetate	8.29	43	860820	101.8643 ug/L #	88
27) 1,1-Dichloroethane	8.32	63	1521237	101.5567 ug/L	96
28) Ethyl-Tert-Butyl ether	8.70	59	4005676	198.2271 ug/L	89
29) 2-Butanone	8.88	43	145126	112.6698 ug/L #	81
30) Propionitrile	8.98	54	83038	219.1648 ug/L	97
31) 2,2-Dichloropropane	9.11	77	1610615	102.0557 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	935490	99.9944 ug/L	89
33) Chloroform	9.37	83	1766988	98.8341 ug/L	98
34) 1-Bromopropane	9.51	122	139657	108.5299 ug/L	100
35) Bromochloromethane	9.61	130	488678	102.8480 ug/L	66
36) Tetrahydrofuran	9.63	42	167812	187.5699 ug/L #	61
38) 1,1,1-Trichloroethane	9.91	97	1724504	102.7713 ug/L	100
39) Cyclohexane	9.94	56	1185537	102.8628 ug/L #	66
40) 1,1-Dichloropropene	10.11	75	1293224	100.8377 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	3634806	198.1264 ug/L	88
42) Carbon Tetrachloride	10.25	117	1534696	103.3979 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412227.D 8260WT.M Fri May 13 17:14:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	1177876	103.7352	ug/L		85
46)	Benzene	10.46	78	3298928	95.8405	ug/L		87
47)	Trichloroethene	11.21	130	903490	101.9036	ug/L		97
48)	Methylcyclohexane	11.30	83	1389528	104.6454	ug/L		83
49)	1,2-Dichloropropane	11.43	63	755128	102.5297	ug/L		73
50)	Bromodichloromethane	11.73	83	1351612	104.6036	ug/L		99
51)	1,4-Dioxane	11.72	88	16303	473.9624	ug/L		68
52)	Dibromomethane	11.81	93	445130	101.6543	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.02	63	333977	105.4228	ug/L		92
54)	4-Methyl-2-Pentanone	12.05	58	138980	110.1494	ug/L	#	77
55)	cis-1,3-Dichloropropene	12.36	75	1387475	105.9136	ug/L		100
56)	Dimethyl Disulfide	12.62	79	745504	111.3169	ug/L		97
59)	Toluene	12.78	91	3455614	95.2346	ug/L		99
60)	Ethyl Methacrylate	12.88	69	731009	113.5760	ug/L		70
62)	trans-1,3-Dichloropropene	12.96	75	1236182	107.9445	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	564076	103.0604	ug/L		99
64)	2-Hexanone	13.12	58	126268	114.5366	ug/L	#	79
65)	1,3-Dichloropropane	13.48	76	1021082	105.2672	ug/L		74
66)	Tetrachloroethene	13.60	164	752835	101.4023	ug/L		95
67)	Dibromochloromethane	13.87	129	856499	109.6525	ug/L		100
68)	1,2-Dibromoethane	14.12	107	577701	107.6426	ug/L		98
69)	1-Chlorohexane	14.21	91	1222720	103.0385	ug/L		82
70)	Chlorobenzene	14.62	112	2332247	97.2408	ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	947925	106.1463	ug/L		99
72)	Ethylbenzene	14.66	106	1275519	98.8771	ug/L		97
73)	m-,p-Xylene	14.75	106	3009424	194.2602	ug/L		98
74)	o-Xylene	15.31	106	1490638	100.8068	ug/L		93
75)	Styrene	15.35	104	2503721	102.8373	ug/L		88
76)	Bromoform	15.83	173	517827	114.0520	ug/L		100
77)	Isopropylbenzene	15.73	105	3913141	95.4433	ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	624965	106.8610	ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	192087	107.3268	ug/L		97
82)	trans-1,4-Dichloro-2-Buten	16.18	53	189214	128.4818	ug/L	#	59
83)	n-Propylbenzene	16.24	91	4599057	93.6644	ug/L		100
84)	Bromobenzene	16.37	156	968011	102.1426	ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	3401719	97.9556	ug/L		97
86)	2-Chlorotoluene	16.52	91	3177047	93.8267	ug/L		98
87)	4-Chlorotoluene	16.56	91	2899171	96.0712	ug/L		96
88)	a-Methylstyrene	16.84	118	1639166	103.6811	ug/L		90
89)	tert-Butylbenzene	16.90	134	654025	99.4199	ug/L		85
90)	1,2,4-Trimethylbenzene	16.95	105	3479295	96.7054	ug/L		97
91)	sec-Butylbenzene	17.17	105	3947832	94.2785	ug/L		98
92)	p-Isopropyltoluene	17.32	119	3328450	94.4148	ug/L		97
93)	1,3-Dichlorobenzene	17.52	146	1834740	98.9074	ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	1818309	96.6271	ug/L		92
95)	n-Butylbenzene	17.85	91	3308330	94.4002	ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	1606254	97.0179	ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	125368	107.7020	ug/L		87
98)	1,2,4-Trichlorobenzene	20.28	180	1227926	100.7076	ug/L		99
99)	Hexachlorobutadiene	20.43	225	569213	100.5231	ug/L		97
100)	Naphthalene	20.65	128	1852486	101.2968	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	1021163	98.5794	ug/L		100

(#) = qualifier out of range (m) = manual integration
8M412227.D 8260WT.M Fri May 13 17:14:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration

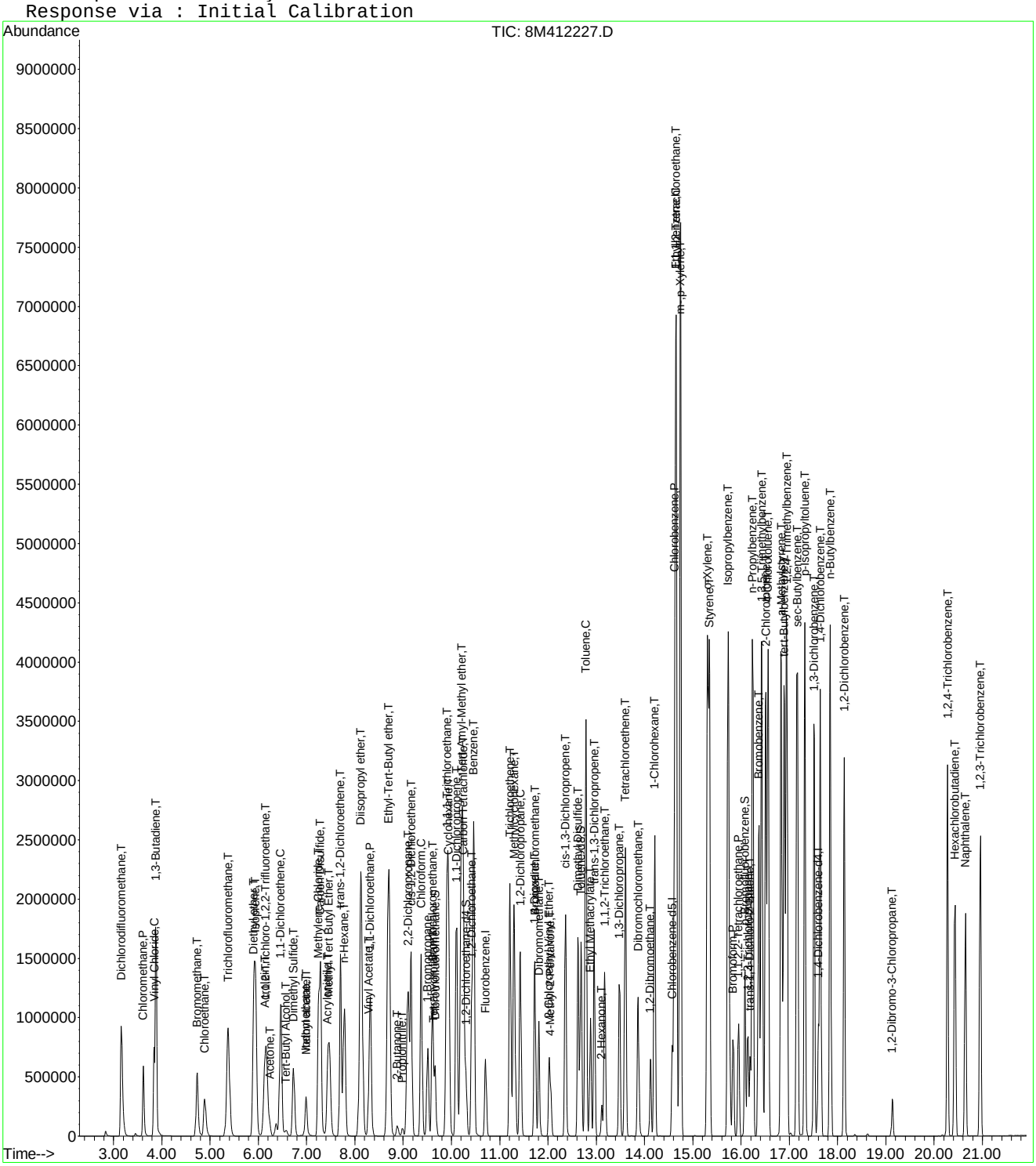

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	828540	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	578848	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	301401	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	898145	101.4517 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 405.80%#		
43) 1,2-Dichloroethane-d4	10.30	65	939848	98.0779 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 392.32%#		
58) Toluene-d8	12.68	98	2984162	97.8805 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 391.52%#		
80) p-Bromofluorobenzene	16.08	95	1242720	99.7023 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 398.80%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	2830517	203.5621 ug/L	98
3) Chloromethane	3.62	50	1586058	194.4056 ug/L	97
4) Vinyl Chloride	3.83	62	1935009	201.0738 ug/L	94
5) 1,3-Butadiene	3.88	54	1684964	212.5477 ug/L	94
6) Bromomethane	4.72	94	1358068	271.2231 ug/L	99
7) Chloroethane	4.89	64	1084803	206.5255 ug/L	90
8) Trichlorofluoromethane	5.37	101	3516760	195.1756 ug/L	99
10) Isoprene	5.94	67	2136665	196.1573 ug/L	78
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1662142	196.5993 ug/L	95
13) Acetone	6.24	43	187748	200.7963 ug/L	97
14) 1,1-Dichloroethene	6.46	61	2649821	196.6732 ug/L	92
15) Tert-Butyl Alcohol	6.58	59	6024	20.0950 ug/L #	87
16) Dimethyl Sulfide	6.73	62	976862	205.8822 ug/L	82
17) Iodomethane	6.99	142	896947	398.7987 ug/L	100
18) Methyl acetate	7.00	43	504293	201.4324 ug/L #	81
19) Methylene Chloride	7.25	84	1684780	196.5546 ug/L	52
20) Carbon Disulfide	7.29	76	5386210	189.2120 ug/L	99
21) Acrylonitrile	7.45	53	30354	26.0447 ug/L #	32
22) Methyl Tert Butyl Ether	7.46	73	3711011	200.6529 ug/L	87
23) trans-1,2-Dichloroethene	7.70	61	2410498	194.2902 ug/L	92
24) n-Hexane	7.78	57	1821777	199.7288 ug/L	84
26) Vinyl Acetate	8.29	43	1796217	206.9060 ug/L #	88
27) 1,1-Dichloroethane	8.32	63	3042055	197.9863 ug/L	95
29) 2-Butanone	8.88	43	271767	199.8193 ug/L #	77
30) Propionitrile	8.90	54	208	0.5280 ug/L #	1
31) 2,2-Dichloropropane	9.11	77	3202633	197.6970 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	1875631	195.8883 ug/L	89
33) Chloroform	9.37	83	3506648	191.9199 ug/L	99
34) 1-Bromopropane	9.51	122	286158	214.2313 ug/L	99
35) Bromochloromethane	9.60	130	980373	200.7807 ug/L	66
36) Tetrahydrofuran	9.62	42	2381	2.6275 ug/L	87
38) 1,1,1-Trichloroethane	9.91	97	3410306	197.7909 ug/L	99
39) Cyclohexane	9.94	56	2357393	198.8974 ug/L #	66
40) 1,1-Dichloropropene	10.10	75	2601175	197.8946 ug/L	96
42) Carbon Tetrachloride	10.25	117	3062767	200.6417 ug/L	99
45) 1,2-Dichloroethane	10.42	62	2313662	198.0324 ug/L	85
46) Benzene	10.46	78	6379817	182.1771 ug/L	89
47) Trichloroethene	11.21	130	1810459	198.9741 ug/L	97
48) Methylcyclohexane	11.30	83	2755373	200.4193 ug/L	83
49) 1,2-Dichloropropane	11.43	63	1528407	202.0331 ug/L	74

(#) = qualifier out of range (m) = manual integration
8M412228.D 8260WT.M Fri May 13 17:43:34 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
50)	Bromodichloromethane	11.73	83	2716764	204.0895 ug/L		99
51)	1,4-Dioxane	11.73	88	3865	104.9352 ug/L	#	18
52)	Dibromomethane	11.81	93	898971	200.1154 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.02	63	631656	192.7236 ug/L		90
54)	4-Methyl-2-Pentanone	12.05	58	262702	198.3957 ug/L	#	75
55)	cis-1,3-Dichloropropene	12.36	75	2784162	205.9153 ug/L		99
56)	Dimethyl Disulfide	12.62	79	1518705	215.4711 ug/L		95
59)	Toluene	12.78	91	6564353	175.9274 ug/L		96
60)	Ethyl Methacrylate	12.88	69	1429837	209.8161 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	2468609	205.4771 ug/L		98
63)	1,1,2-Trichloroethane	13.18	97	1124672	197.6019 ug/L		100
64)	2-Hexanone	13.12	58	237678	200.9290 ug/L	#	81
65)	1,3-Dichloropropane	13.48	76	2023247	199.9545 ug/L		76
66)	Tetrachloroethene	13.60	164	1546618	200.8018 ug/L		97
67)	Dibromochloromethane	13.87	129	1726523	210.5823 ug/L		100
68)	1,2-Dibromoethane	14.12	107	1163160	207.0667 ug/L		99
69)	1-Chlorohexane	14.21	91	2414147	195.6413 ug/L		83
70)	Chlorobenzene	14.62	112	4641169	187.6386 ug/L		94
71)	1,1,1,2-Tetrachloroethane	14.66	131	1929251	206.8372 ug/L		99
72)	Ethylbenzene	14.66	106	2611321	195.8267 ug/L		88
73)	m-,p-Xylene	14.75	106	5876234	367.8657 ug/L		83
74)	o-Xylene	15.31	106	3012318	196.4899 ug/L		98
75)	Styrene	15.35	104	4913204	194.1235 ug/L		86
76)	Bromoform	15.83	173	1052629	218.7989 ug/L		100
77)	Isopropylbenzene	15.73	105	7284624	172.7305 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	1237171	205.8673 ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	386738	209.7906 ug/L	#	54
82)	trans-1,4-Dichloro-2-Buten	16.19	53	382467	243.6526 ug/L		76
83)	n-Propylbenzene	16.24	91	8244387	166.5110 ug/L		93
84)	Bromobenzene	16.37	156	1935166	200.1305 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	6482975	183.9948 ug/L		98
86)	2-Chlorotoluene	16.52	91	6108308	178.8549 ug/L		99
87)	4-Chlorotoluene	16.56	91	5513221	180.5508 ug/L		99
88)	a-Methylstyrene	16.84	118	3255254	200.4995 ug/L		89
89)	tert-Butylbenzene	16.90	134	1351569	202.1005 ug/L		92
90)	1,2,4-Trimethylbenzene	16.95	105	6531416	179.2445 ug/L		97
91)	sec-Butylbenzene	17.17	105	7342730	173.9814 ug/L		97
92)	p-Isopropyltoluene	17.32	119	6352010	178.7315 ug/L		99
93)	1,3-Dichlorobenzene	17.52	146	3640547	193.1654 ug/L		90
94)	1,4-Dichlorobenzene	17.64	146	3593548	188.4603 ug/L		91
95)	n-Butylbenzene	17.85	91	6198060	175.4375 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	3171699	188.9651 ug/L		89
97)	1,2-Dibromo-3-Chloropropan	19.13	75	249646	207.5645 ug/L		88
98)	1,2,4-Trichlorobenzene	20.28	180	2480626	199.7296 ug/L		99
99)	Hexachlorobutadiene	20.43	225	1169411	202.7981 ug/L		98
100)	Naphthalene	20.65	128	3580198	192.0323 ug/L		97
101)	1,2,3-Trichlorobenzene	20.96	180	2040570	193.9298 ug/L		100

(#) = qualifier out of range (m) = manual integration
8M412228.D 8260WT.M Fri May 13 17:43:35 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration

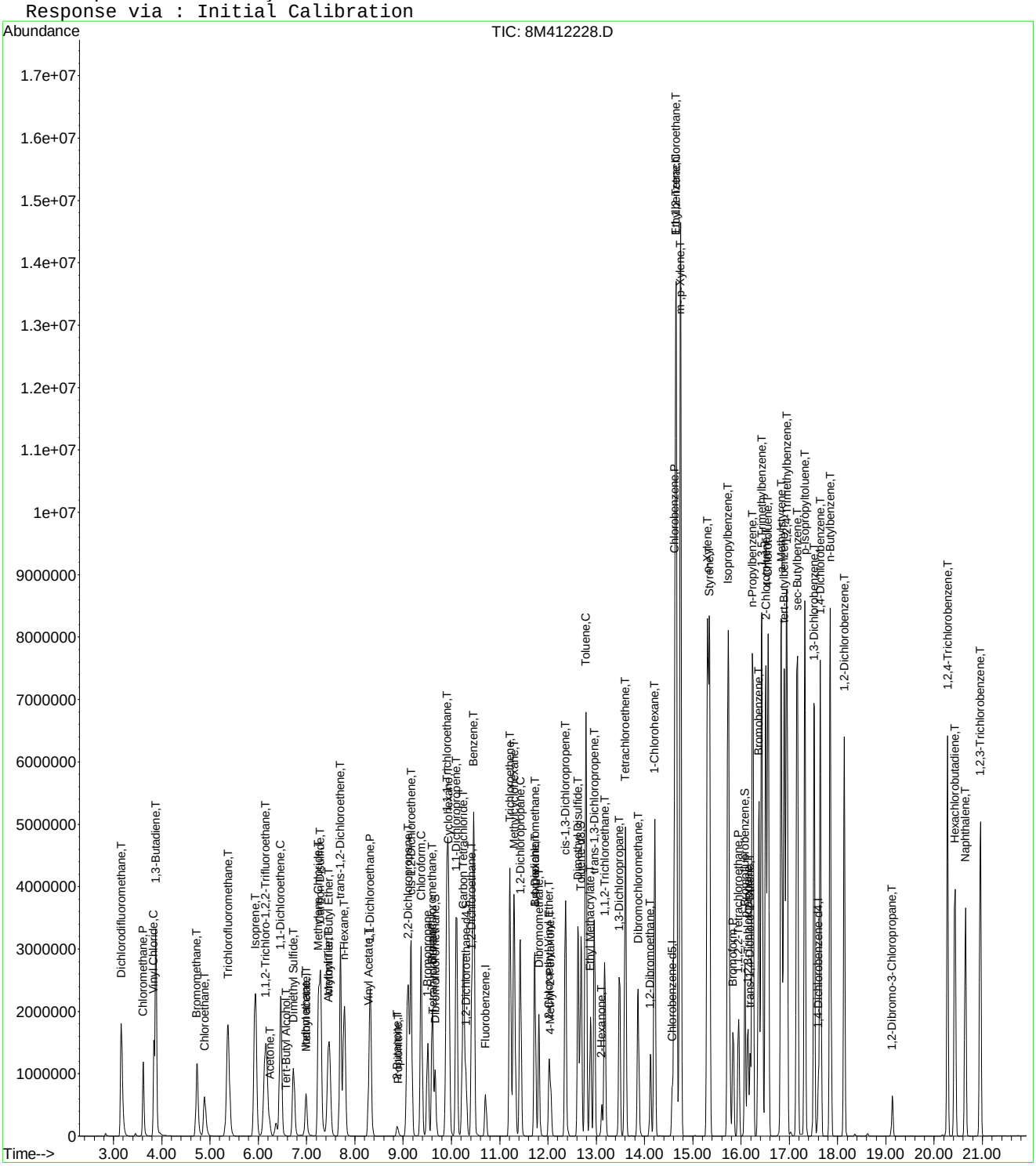

8M412228.D 8260WT.M Fri May 13 17:43:35 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	855409	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	599314	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	305726	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	1411837	154.4674 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 617.88%#		
43) 1,2-Dichloroethane-d4	10.30	65	1466019	148.1811 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 592.72%#		
58) Toluene-d8	12.69	98	4594713	145.5601 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 582.24%#		
80) p-Bromofluorobenzene	16.08	95	1918996	151.7813 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 607.12%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	4191932	292.0014 ug/L	97
3) Chloromethane	3.62	50	2474035	293.7212 ug/L	97
4) Vinyl Chloride	3.83	62	2956347	297.5552 ug/L	94
5) 1,3-Butadiene	3.87	54	2605506	318.3447 ug/L	94
6) Bromomethane	4.72	94	2177550	421.2239 ug/L	98
7) Chloroethane	4.89	64	1688005	311.2693 ug/L	90
8) Trichlorofluoromethane	5.37	101	5387662	289.6161 ug/L	99
9) Diethyl ether	5.90	59	1306432	295.4610 ug/L	80
10) Isoprene	5.93	67	3377164	300.3032 ug/L	78
11) Acrolein	6.14	56	70572	185.7401 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	2563878	293.7317 ug/L	94
13) Acetone	6.24	43	283185	293.3529 ug/L	90
14) 1,1-Dichloroethene	6.46	61	4031745	289.8421 ug/L	91
15) Tert-Butyl Alcohol	6.58	59	181796	587.3907 ug/L	90
16) Dimethyl Sulfide	6.73	62	1553493	317.1280 ug/L	81
17) Iodomethane	6.99	142	1347307	580.2206 ug/L	98
18) Methyl acetate	7.00	43	800046	309.5287 ug/L #	80
19) Methylene Chloride	7.24	84	2587731	292.4144 ug/L	52
20) Carbon Disulfide	7.29	76	8228181	279.9683 ug/L	98
21) Acrylonitrile	7.43	53	228227	189.6753 ug/L	94
22) Methyl Tert Butyl Ether	7.46	73	5605924	293.5892 ug/L	88
23) trans-1,2-Dichloroethene	7.70	61	3678699	287.1957 ug/L	92
24) n-Hexane	7.78	57	2863434	304.0691 ug/L	86
25) Diisopropyl ether	8.12	45	5819647	292.7898 ug/L #	89
26) Vinyl Acetate	8.30	43	2819503	314.5767 ug/L #	87
27) 1,1-Dichloroethane	8.32	63	4586531	289.1293 ug/L	94
28) Ethyl-Tert-Butyl ether	8.70	59	6190206	290.3321 ug/L	89
29) 2-Butanone	8.88	43	439359	312.8959 ug/L #	76
30) Propionitrile	8.99	54	133197	327.4673 ug/L	95
31) 2,2-Dichloropropane	9.10	77	4821388	288.2735 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	2847005	287.9976 ug/L	89
33) Chloroform	9.37	83	5197860	275.5447 ug/L	100
34) 1-Bromopropane	9.51	122	450012	326.3179 ug/L	100
35) Bromochloromethane	9.61	130	1490221	295.6112 ug/L	66
36) Tetrahydrofuran	9.63	42	271736	290.4491 ug/L #	62
38) 1,1,1-Trichloroethane	9.91	97	5126354	287.9792 ug/L	98
39) Cyclohexane	9.94	56	3733392	305.0987 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	3923871	289.1471 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	5639573	291.3713 ug/L	88
42) Carbon Tetrachloride	10.25	117	4598150	291.7629 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412229.D 8260WT.M Fri May 13 18:12:35 2016 Page 1

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	3468738	287.5726 ug/L		86
46)	Benzene	10.46	78	9065861	250.7462 ug/L		93
47)	Trichloroethene	11.21	130	2772282	295.1106 ug/L		97
48)	Methylcyclohexane	11.30	83	4327357	304.8748 ug/L		84
49)	1,2-Dichloropropane	11.43	63	2350729	300.9718 ug/L		74
50)	Bromodichloromethane	11.73	83	4051493	294.7973 ug/L		99
51)	1,4-Dioxane	11.72	88	26614	699.8767 ug/L		67
52)	Dibromomethane	11.81	93	1369945	295.3776 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.03	63	1006317	297.3917 ug/L		90
54)	4-Methyl-2-Pentanone	12.06	58	424684	310.6522 ug/L	#	76
55)	cis-1,3-Dichloropropene	12.36	75	4156310	297.7431 ug/L		97
56)	Dimethyl Disulfide	12.63	79	2359825	324.2911 ug/L		94
59)	Toluene	12.78	91	9135213	236.4669 ug/L		90
60)	Ethyl Methacrylate	12.88	69	2228037	315.7801 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	3700845	297.5240 ug/L		96
63)	1,1,2-Trichloroethane	13.18	97	1730199	293.6104 ug/L		100
64)	2-Hexanone	13.11	58	381967	311.8816 ug/L	#	78
65)	1,3-Dichloropropane	13.49	76	3080177	294.0141 ug/L		76
66)	Tetrachloroethene	13.60	164	2374435	297.7522 ug/L		96
67)	Dibromochloromethane	13.87	129	2638145	310.7838 ug/L		100
68)	1,2-Dibromoethane	14.13	107	1778561	305.8085 ug/L		99
69)	1-Chlorohexane	14.21	91	3712592	290.5924 ug/L		84
70)	Chlorobenzene	14.63	112	6754240	263.7433 ug/L		90
71)	1,1,1,2-Tetrachloroethane	14.65	131	2967650	307.3001 ug/L		100
72)	Ethylbenzene	14.65	106	4014412	290.7661 ug/L		70
73)	m-,p-Xylene	14.75	106	8357822	505.3514 ug/L		70
74)	o-Xylene	15.31	106	4530840	285.4488 ug/L		88
75)	Styrene	15.35	104	7050702	269.0641 ug/L		82
76)	Bromoform	15.84	173	1602587	321.7373 ug/L		99
77)	Isopropylbenzene	15.73	105	9900817	226.7477 ug/L		90
79)	1,1,2,2-Tetrachloroethane	15.95	83	1885953	309.3861 ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	581198	310.8176 ug/L		61
82)	trans-1,4-Dichloro-2-Buten	16.18	53	589705	370.3601 ug/L		82
83)	n-Propylbenzene	16.25	91	10768378	214.4110 ug/L		86
84)	Bromobenzene	16.37	156	2947671	300.5290 ug/L		99
85)	1,3,5-Trimethylbenzene	16.43	105	8890651	248.7580 ug/L		92
86)	2-Chlorotoluene	16.51	91	7868844	227.1449 ug/L		92
87)	4-Chlorotoluene	16.57	91	7782731	251.2687 ug/L		93
88)	a-Methylstyrene	16.84	118	4955768	300.9205 ug/L		86
89)	tert-Butylbenzene	16.90	134	2046401	301.6701 ug/L		95
90)	1,2,4-Trimethylbenzene	16.95	105	8903769	240.8932 ug/L		89
91)	sec-Butylbenzene	17.17	105	9867862	230.5051 ug/L		91
92)	p-Isopropyltoluene	17.32	119	8738927	242.4155 ug/L		94
93)	1,3-Dichlorobenzene	17.52	146	5319954	278.2806 ug/L		87
94)	1,4-Dichlorobenzene	17.64	146	5248511	271.3593 ug/L		88
95)	n-Butylbenzene	17.85	91	8408157	234.6279 ug/L		92
96)	1,2-Dichlorobenzene	18.14	146	4717385	277.0787 ug/L		87
97)	1,2-Dibromo-3-Chloropropan	19.13	75	377070	309.0741 ug/L		91
98)	1,2,4-Trichlorobenzene	20.28	180	3677657	291.9206 ug/L		98
99)	Hexachlorobutadiene	20.43	225	1780695	304.4378 ug/L		96
100)	Naphthalene	20.65	128	5216751	275.8542 ug/L		95
101)	1,2,3-Trichlorobenzene	20.96	180	3064908	287.1593 ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration

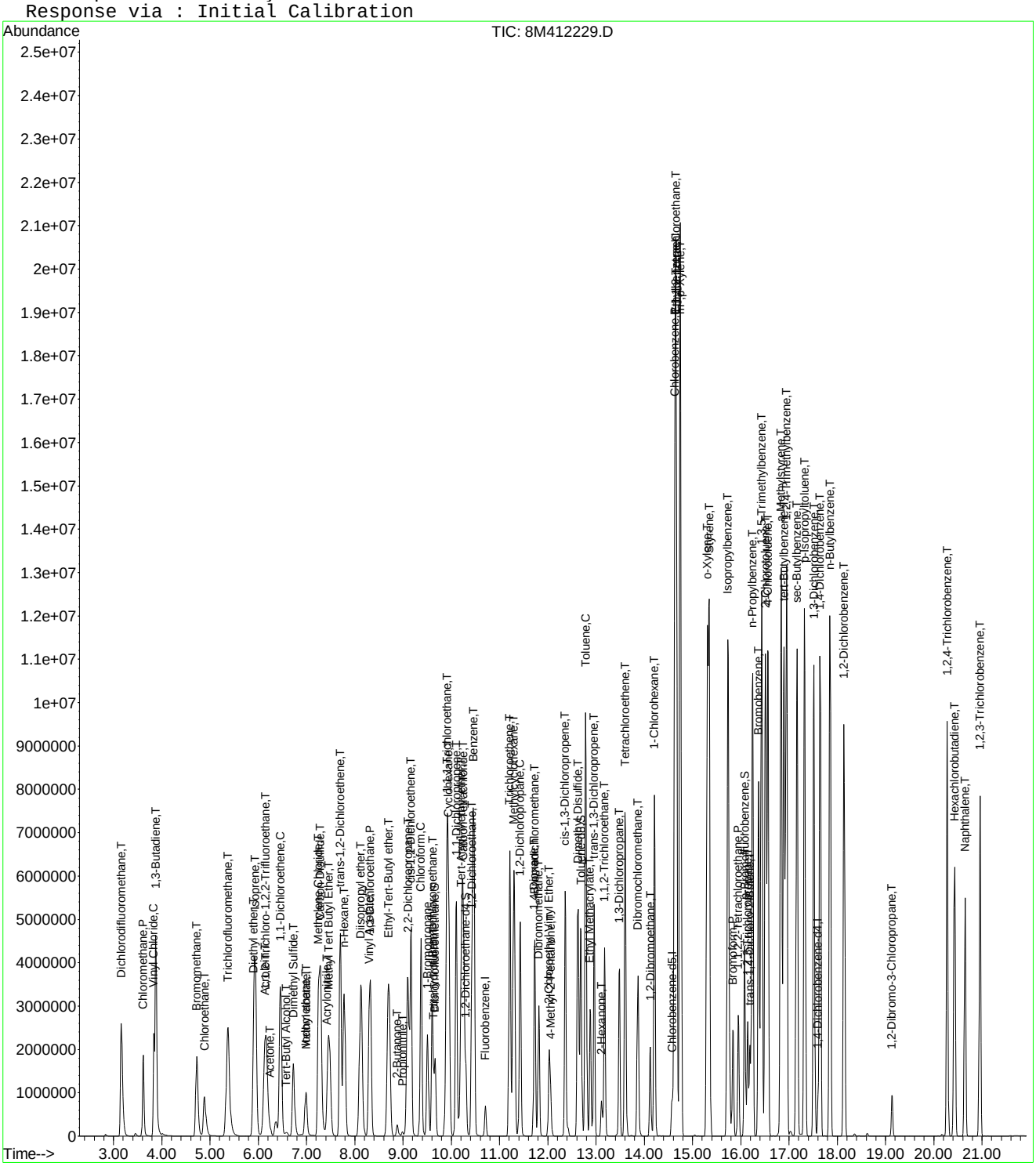

8M412229.D 8260WT.M Fri May 13 18:12:36 2016 Page 3

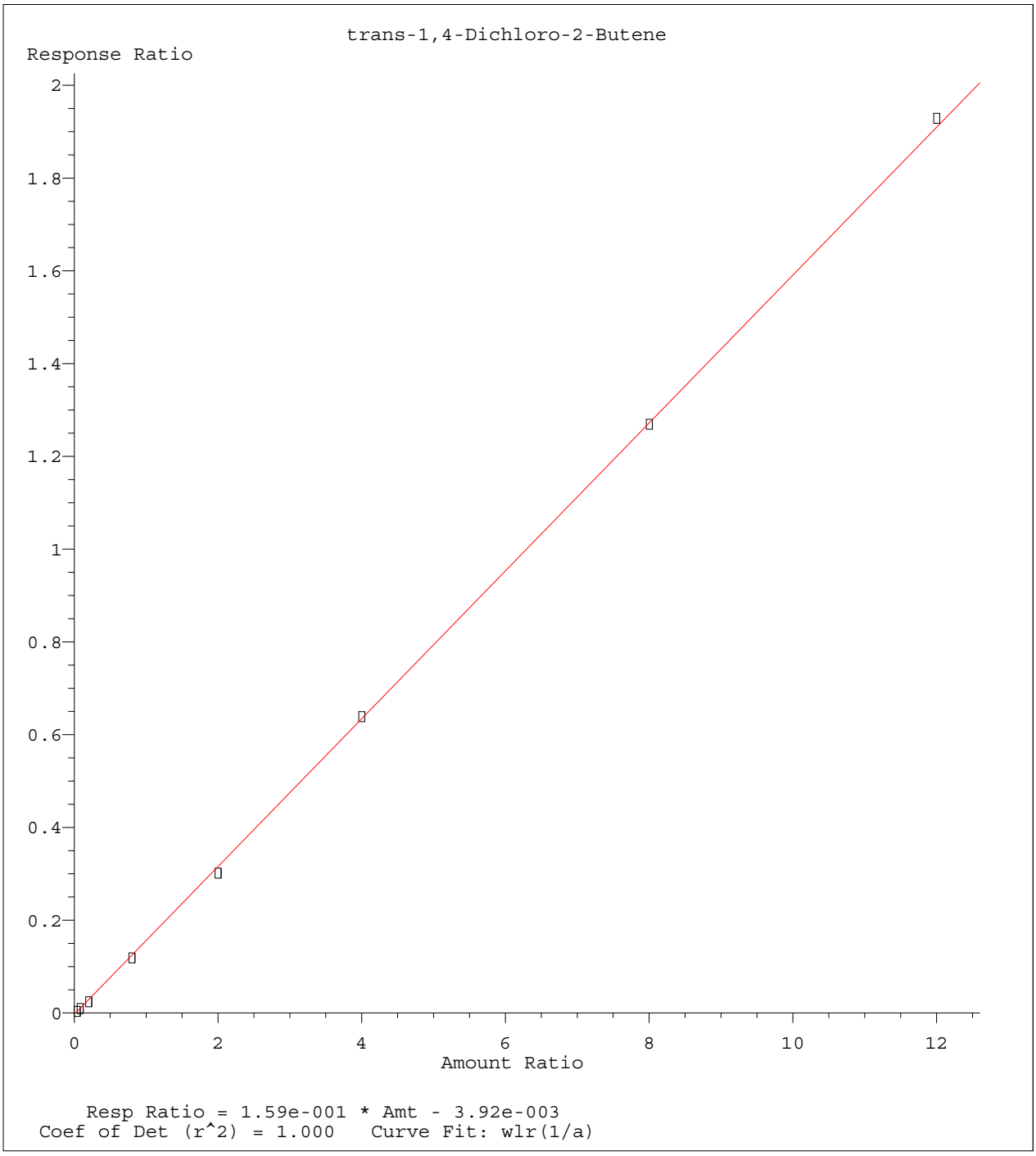

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

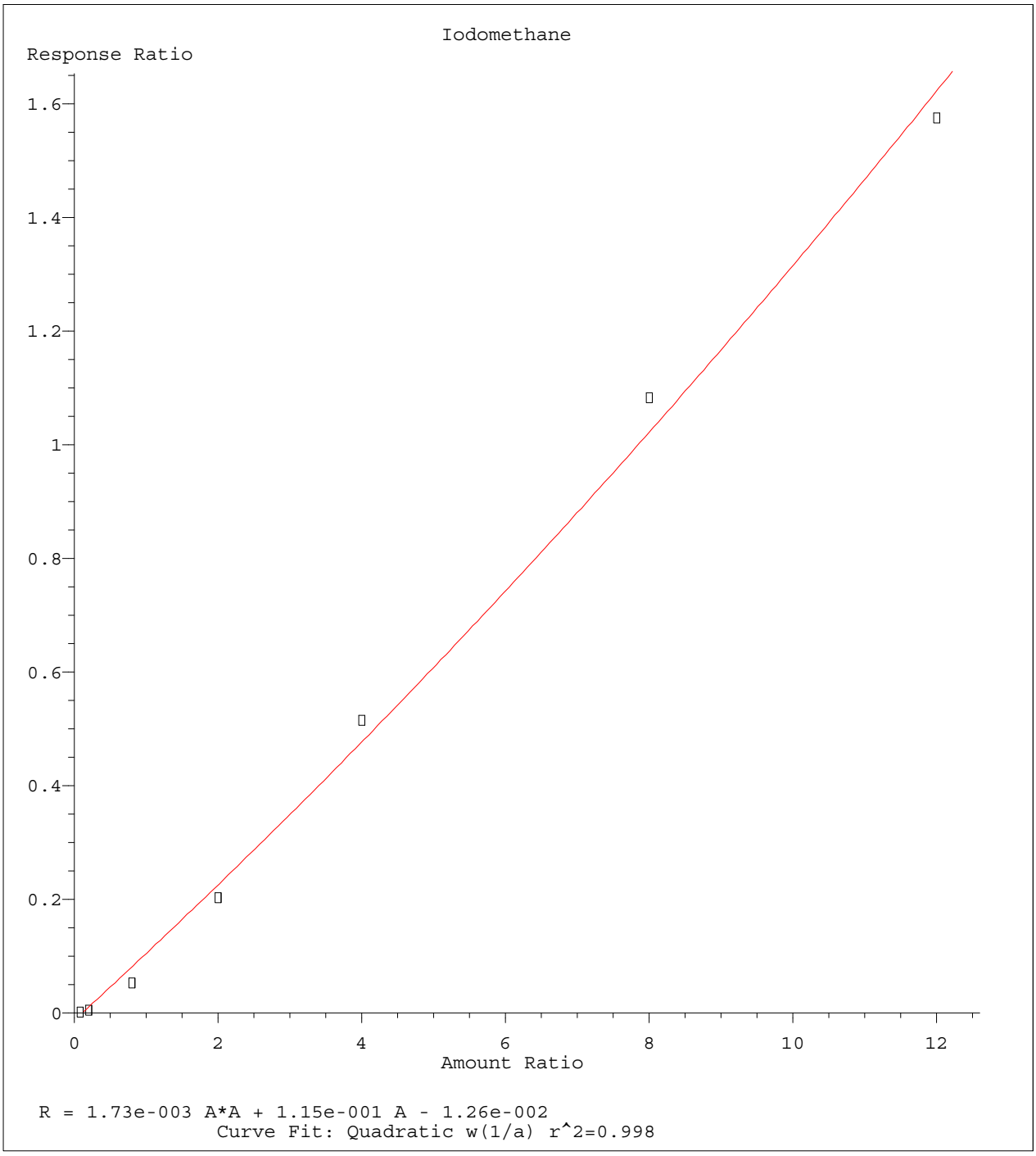

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

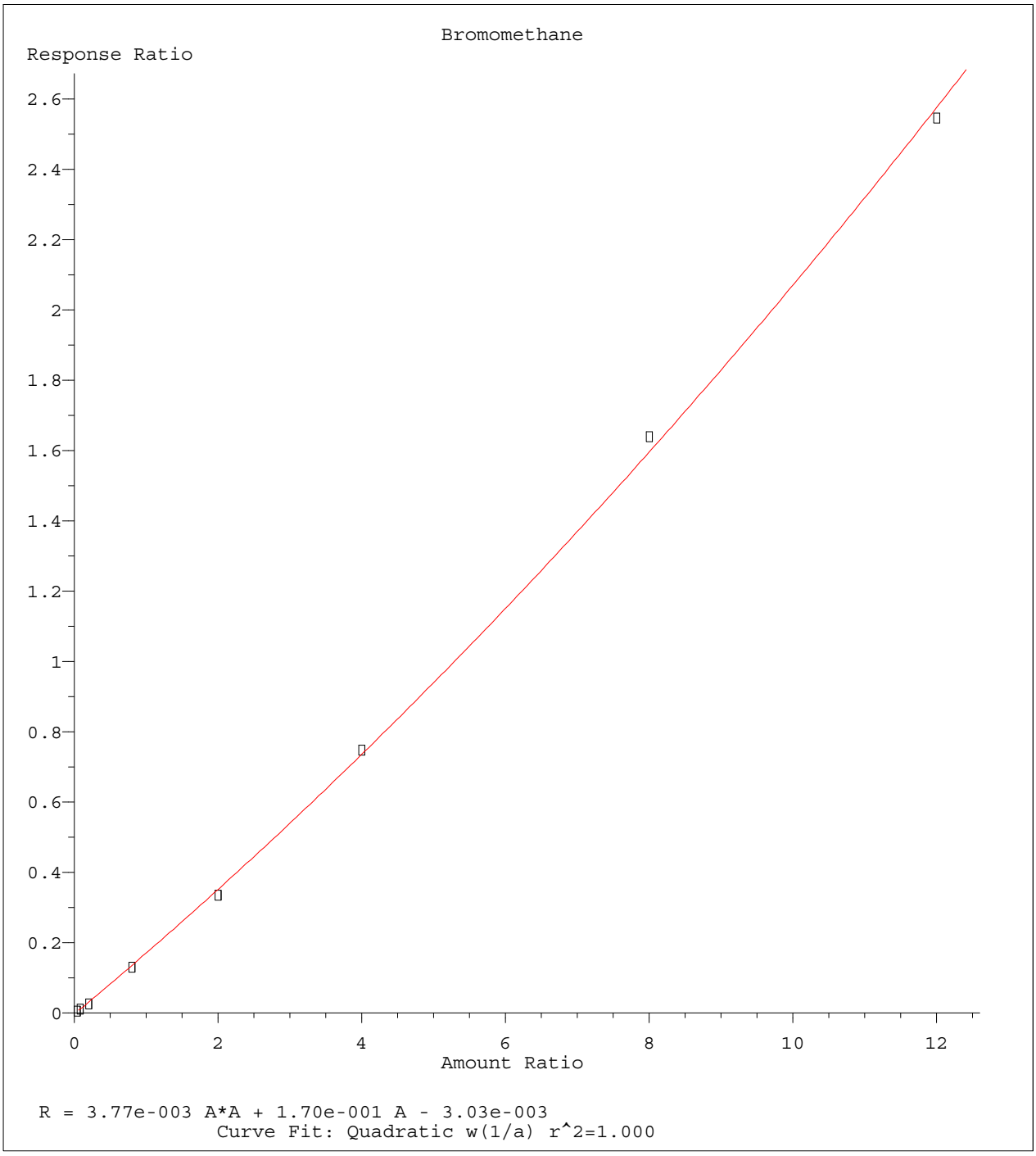

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:44:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Tue May 17 11:43:20 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	837879	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	574720	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	304324	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	229742	25.5204 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.08%		
43) 1,2-Dichloroethane-d4	10.31	65	238672	24.7259 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.92%		
58) Toluene-d8	12.68	98	776362	25.8115 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.24%		
80) p-Bromofluorobenzene	16.07	95	315683	25.0519 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.20%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	761591	54.2141 ug/L	99
3) Chloromethane	3.62	50	415589	50.6814 ug/L	100
4) Vinyl Chloride	3.84	62	509607	52.3810 ug/L	100
5) 1,3-Butadiene	3.88	54	347562	42.6002 ug/L	97
6) Bromomethane	4.73	94	272060	46.3924 ug/L	99
7) Chloroethane	4.88	64	285509	53.3336 ug/L	98
8) Trichlorofluoromethane	5.37	101	849580	46.9313 ug/L	100
9) Diethyl ether	5.90	59	451307	104.4282 ug/L	99
10) Isoprene	5.93	67	582863	53.0208 ug/L	99
11) Acrolein	6.13	56	38877	100.4722 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	419584	49.3091 ug/L	97
13) Acetone	6.23	43	54234	57.5310 ug/L	94
14) 1,1-Dichloroethene	6.46	61	622831	45.9700 ug/L	99
15) Tert-Butyl Alcohol	6.59	59	59797	197.9422 ug/L	97
16) Dimethyl Sulfide	6.73	62	351814	72.6234 ug/L	98
17) Iodomethane	6.99	142	92716	26.2832 ug/L	99
18) Methyl acetate	7.00	43	127540	50.0514 ug/L	98
19) Methylene Chloride	7.25	84	417642	48.4385 ug/L	99
20) Carbon Disulfide	7.29	76	1199899	42.3200 ug/L	100
21) Acrylonitrile	7.43	53	65324	53.4074 ug/L	93
22) Methyl Tert Butyl Ether	7.46	73	949572	50.8859 ug/L	97
23) trans-1,2-Dichloroethene	7.70	61	598296	48.0666 ug/L	99
24) n-Hexane	7.77	57	425106	45.9930 ug/L	99
25) Diisopropyl ether	8.13	45	2040382	105.1615 ug/L	98
26) Vinyl Acetate	8.29	43	415568	46.7802 ug/L	99
27) 1,1-Dichloroethane	8.32	63	721661	46.6846 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	2040020	98.1343 ug/L	99
29) 2-Butanone	8.88	43	73394	52.9905 ug/L	99
30) Propionitrile	8.98	54	42290	104.7756 ug/L	100
31) 2,2-Dichloropropane	9.10	77	780073	47.8861 ug/L	99
32) cis-1,2-Dichloroethene	9.16	96	470465	48.9162 ug/L	98
33) Chloroform	9.38	83	860252	47.1317 ug/L	100
34) 1-Bromopropane	9.51	122	98585	71.5615 ug/L	98
35) Bromochloromethane	9.60	130	234493	47.5456 ug/L	99
36) Tetrahydrofuran	9.62	42	86049	94.3281 ug/L	99
38) 1,1,1-Trichloroethane	9.90	97	825167	47.5949 ug/L	100
39) Cyclohexane	9.93	56	586721	48.8808 ug/L	97
40) 1,1-Dichloropropene	10.10	75	627217	47.4632 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1962875	103.9618 ug/L	99
42) Carbon Tetrachloride	10.24	117	711823	46.2363 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M412232.D 8260WT.M Tue May 17 11:44:38 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	108	0.00
2	T	Dichlorodifluoromethane	50.0000	54.2141	-8.4	112	0.00
3	P	Chloromethane	50.0000	50.6814	-1.4	111	0.00
4	C	Vinyl Chloride	50.0000	52.3811	-4.8	112	-0.01
5	T	1,3-Butadiene	50.0000	42.6002	14.8	89	0.00
6	T	Bromomethane	50.0000	46.3924	7.2	104	-0.01
7	T	Chloroethane	50.0000	53.3336	-6.7	117	-0.01
8	T	Trichlorofluoromethane	50.0000	46.9313	6.1	101	-0.01
9	T	Diethyl ether	100.0000	104.4282	-4.4	116	0.00
10	T	Isoprene	50.0000	53.0208	-6.0	117	0.00
11	T	Acrolein	50.0000	100.4722	-100.9#	220	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	49.3091	1.4	108	0.00
13	T	Acetone	50.0000	57.5310	-15.1	118	-0.01
14	C	1,1-Dichloroethene	50.0000	45.9700	8.1	100	0.00
15	T	Tert-Butyl Alcohol	200.0000	197.9423	1.0	108	0.01
16	T	Dimethyl Sulfide	50.0000	72.6234	-45.2#	159	0.00
17	T	Iodomethane	50.0000	26.2832	47.4#	59	0.01
18	T	Methyl acetate	50.0000	50.0514	-0.1	111	0.00
19	T	Methylene Chloride	50.0000	48.4385	3.1	107	0.00
20	T	Carbon Disulfide	50.0000	42.3200	15.4	94	0.00
21	T	Acrylonitrile	50.0000	53.4074	-6.8	109	0.00
22	T	Methyl Tert Butyl Ether	50.0000	50.8859	-1.8	105	0.00
23	T	trans-1,2-Dichloroethene	50.0000	48.0666	3.9	105	0.00
24	T	n-Hexane	50.0000	45.9930	8.0	101	-0.01
25	T	Diisopropyl ether	100.0000	105.1615	-5.2	115	0.00
26	T	Vinyl Acetate	50.0000	46.7802	6.4	97	0.00
27	P	1,1-Dichloroethane	50.0000	46.6846	6.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.1343	1.9	104	0.00
29	T	2-Butanone	50.0000	52.9905	-6.0	110	0.00
30	T	Propionitrile	100.0000	104.7756	-4.8	111	0.00
31	T	2,2-Dichloropropane	50.0000	47.8861	4.2	102	0.00
32	T	cis-1,2-Dichloroethene	50.0000	48.9162	2.2	107	-0.01
33	C	Chloroform	50.0000	47.1317	5.7	102	0.00
34		1-Bromopropane	50.0000	71.5615	-43.1#	155	0.00
35	T	Bromochloromethane	50.0000	47.5456	4.9	102	0.00
36	T	Tetrahydrofuran	100.0000	94.3281	5.7	108	-0.01
37	S	Dibromofluoromethane	25.0000	25.5204	-2.1	109	0.00
38	T	1,1,1-Trichloroethane	50.0000	47.5949	4.8	101	0.00
39	T	Cyclohexane	50.0000	48.8808	2.2	109	0.00
40	T	1,1-Dichloropropene	50.0000	47.4632	5.1	102	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	103.9618	-4.0	111	0.00
42	T	Carbon Tetrachloride	50.0000	46.2363	7.5	98	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.7259	1.1	104	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	49.0148	2.0	103	0.00
46	T	Benzene	50.0000	48.5232	3.0	104	0.00
47	T	Trichloroethene	50.0000	51.0658	-2.1	110	0.00
48	T	Methylcyclohexane	50.0000	49.8573	0.3	109	0.00
49	C	1,2-Dichloropropane	50.0000	50.9747	-1.9	111	0.00
50	T	Bromodichloromethane	50.0000	48.3053	3.4	99	0.00
51	T	1,4-Dioxane	200.0000	216.9538	-8.5	110	0.01
52	T	Dibromomethane	50.0000	45.8126	8.4	99	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	51.2623	-2.5	104	0.00
54	T	4-Methyl-2-Pentanone	50.0000	51.8715	-3.7	107	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.8979	-7.8	111	0.00
56	T	Dimethyl Disulfide	50.0000	52.2714	-4.5	111	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	107	0.00
58	S	Toluene-d8	25.0000	25.8115	-3.2	108	0.00
59	C	Toluene	50.0000	49.0912	1.8	105	0.00
60	T	Ethyl Methacrylate	50.0000	55.9509	-11.9	113	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	50.6740	-1.3	102	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.0377	1.9	103	0.00
64	T	2-Hexanone	50.0000	53.6057	-7.2	112	0.00
65	T	1,3-Dichloropropane	50.0000	53.6720	-7.3	110	0.00
66	T	Tetrachloroethene	50.0000	47.8053	4.4	104	0.00
67	T	Dibromochloromethane	50.0000	49.6585	0.7	102	0.00
68	T	1,2-Dibromoethane	50.0000	51.1121	-2.2	105	0.00
69	T	1-Chlorohexane	50.0000	51.0611	-2.1	111	0.00
70	P	Chlorobenzene	50.0000	50.1844	-0.4	108	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	49.3793	1.2	103	0.00
72	C	Ethylbenzene	50.0000	48.2013	3.6	105	0.00
73	T	m-,p-Xylene	100.0000	101.1341	-1.1	108	0.00
74	T	o-Xylene	50.0000	50.5675	-1.1	108	0.00
75	T	Styrene	50.0000	51.5086	-3.0	105	0.00
76	P	Bromoform	50.0000	48.2227	3.6	99	0.00
77	T	Isopropylbenzene	50.0000	51.1140	-2.2	107	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	106	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	49.6172	0.8	103	0.00
80	S	p-Bromofluorobenzene	25.0000	25.0519	-0.2	108	0.00
81	T	1,2,3-Trichloropropane	50.0000	50.0849	-0.2	106	0.01
82	T	trans-1,4-Dichloro-2-Butene	50.0000	39.2043	21.6	86	0.00
83	T	n-Propylbenzene	50.0000	51.9237	-3.8	108	0.00
84	T	Bromobenzene	50.0000	49.4648	1.1	105	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	51.6344	-3.3	107	0.00
86	T	2-Chlorotoluene	50.0000	51.5639	-3.1	106	0.00
87	T	4-Chlorotoluene	50.0000	48.2650	3.5	108	0.00
88	T	a-Methylstyrene	50.0000	56.4132	-12.8	120	0.00
89	T	tert-Butylbenzene	50.0000	50.9494	-1.9	112	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	49.6617	0.7	105	0.00
91	T	sec-Butylbenzene	50.0000	51.3386	-2.7	108	0.00
92	T	p-Isopropyltoluene	50.0000	50.1261	-0.3	107	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.8943	-1.8	108	0.00
94	T	1,4-Dichlorobenzene	50.0000	50.4742	-0.9	110	0.00
95	T	n-Butylbenzene	50.0000	49.6520	0.7	105	0.00
96	T	1,2-Dichlorobenzene	50.0000	50.4907	-1.0	110	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	48.4851	3.0	100	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	50.1129	-0.2	107	0.00
99	T	Hexachlorobutadiene	50.0000	52.0919	-4.2	115	0.00
100	T	Naphthalene	50.0000	45.8047	8.4	95	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	47.7353	4.5	106	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412232.D 8260WT.M Sat May 14 18:09:03 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:21 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	709364	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	505399	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	272922	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	27428	100.2132 ug/L	99
3) 3-Chloro-1-propene	7.07	41	940418	104.3259 ug/L	82
4) 2-Chloro-1,3-butadiene	8.45	53	1188994	104.3183 ug/L	86
5) Ethyl Acetate	9.10	43	283167	104.3264 ug/L	95
6) Methacrylonitrile	9.25	67	155775	104.5365 ug/L #	63
7) Isobutyl Alcohol	9.25	43	17893	197.3629 ug/L #	96
9) Methyl methacrylate	11.42	41	298802	102.0346 ug/L	70
10) 2-Nitropropane	11.75	43	121321	95.8263 ug/L	97
13) Cyclohexanone	15.84	55	11401	102.1363 ug/L #	70

(#) = qualifier out of range (m) = manual integration
8M412321.D A9FOOWT.M Thu May 19 09:01:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

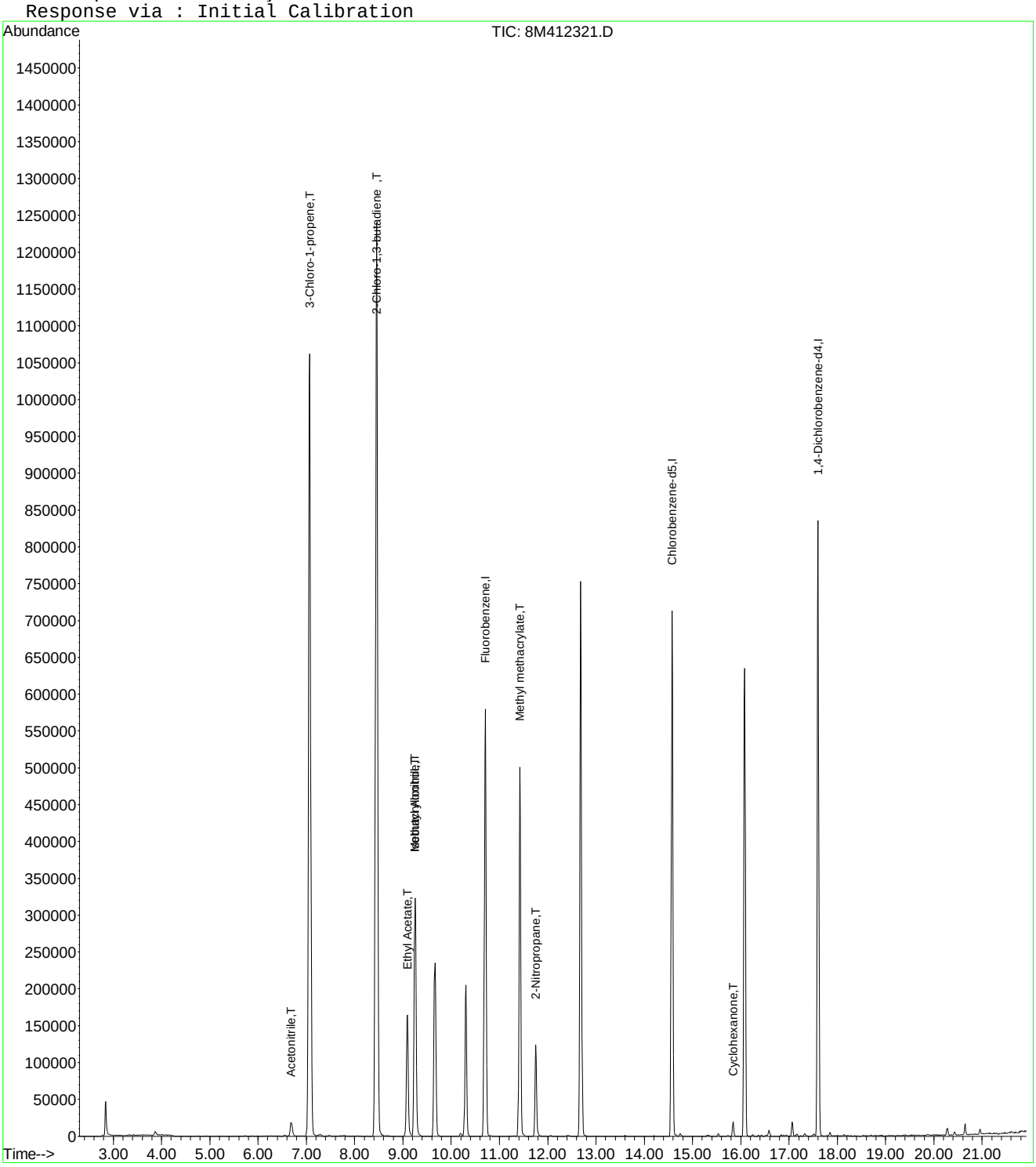

8M412321.D A9FOOWT.M Thu May 19 09:01:22 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	100.2132	-0.2	100	0.00
3	T	3-Chloro-1-propene	100.0000	104.3259	-4.3	100	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	104.3183	-4.3	100	0.00
5	T	Ethyl Acetate	100.0000	104.3264	-4.3	100	0.00
6	T	Methacrylonitrile	100.0000	104.5365	-4.5	100	0.00
7	T	Isobutyl Alcohol	200.0000	197.3629	1.3	100	-0.01
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.02
9	T	Methyl methacrylate	100.0000	102.0346	-2.0	100	0.00
10	T	2-Nitropropane	100.0000	95.8263	4.2	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	100.0000	102.1363	-2.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412321.D A9FOOWT.M Thu May 19 09:02:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:20:35 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	677339	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	488377	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	260939	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	13323	50.9795 ug/L	98
3) 3-Chloro-1-propene	7.07	41	453655	52.7060 ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	568765	52.2609 ug/L	87
5) Ethyl Acetate	9.09	43	131636	50.7913 ug/L	97
6) Methacrylonitrile	9.25	67	74064	52.0523 ug/L #	62
7) Isobutyl Alcohol	9.26	43	8483	97.9930 ug/L	95
9) Methyl methacrylate	11.42	41	143892	51.4593 ug/L	70
10) 2-Nitropropane	11.75	43	56559	46.7858 ug/L	95
13) Cyclohexanone	15.84	55	5225	48.9579 ug/L	83

(#) = qualifier out of range (m) = manual integration
8M412322.D A9FOOWT.M Thu May 19 09:20:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:19 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

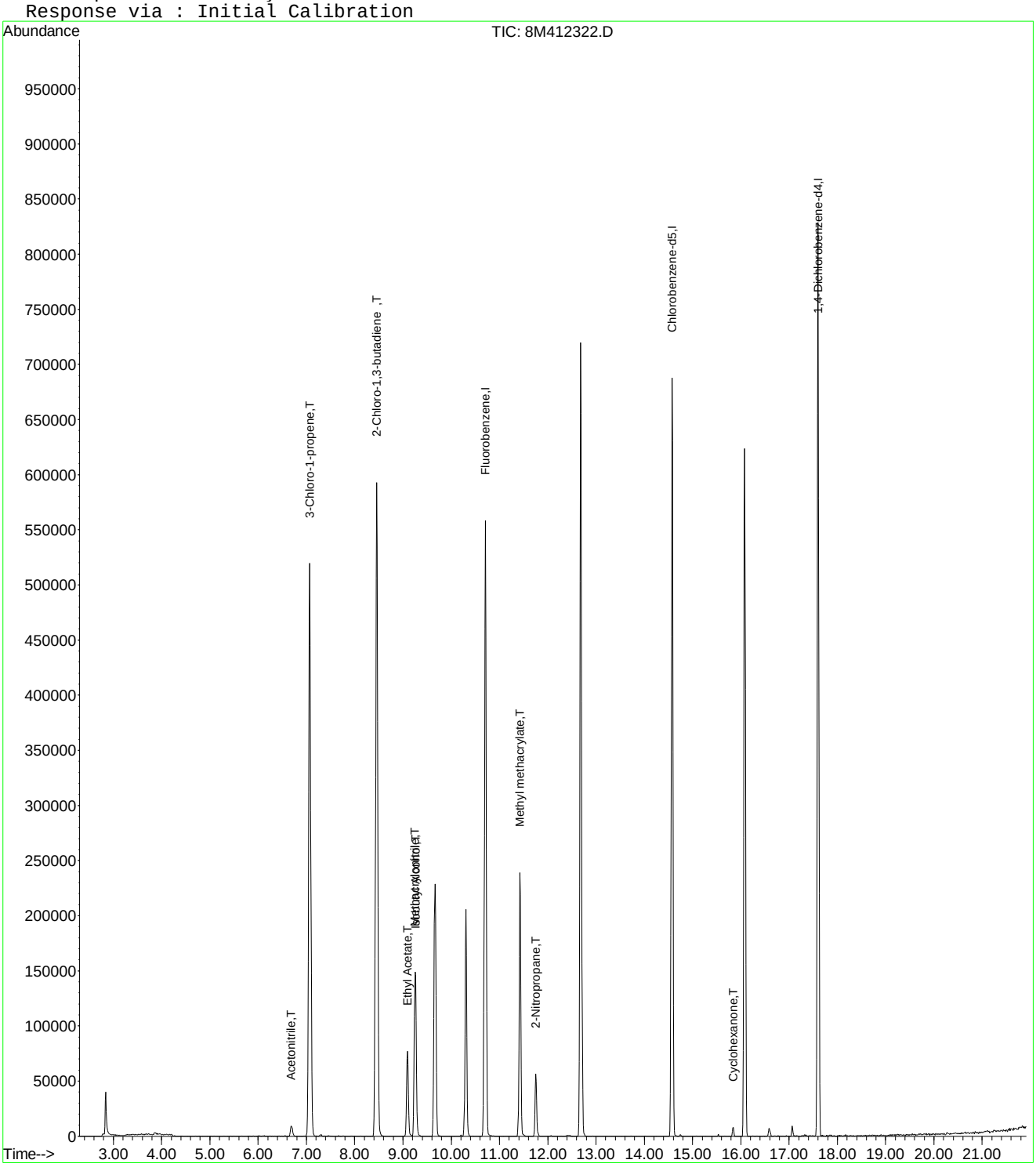

8M412322.D A9FOOWT.M Thu May 19 09:20:36 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	50.9795	-2.0	100	0.00
3	T	3-Chloro-1-propene	50.0000	52.7060	-5.4	100	0.00
4	T	2-Chloro-1,3-butadiene	50.0000	52.2609	-4.5	100	0.00
5	T	Ethyl Acetate	50.0000	50.7913	-1.6	100	0.00
6	T	Methacrylonitrile	50.0000	52.0523	-4.1	100	0.00
7	T	Isobutyl Alcohol	100.0000	97.9929	2.0	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.02
9	T	Methyl methacrylate	50.0000	51.4592	-2.9	100	0.00
10	T	2-Nitropropane	50.0000	46.7858	6.4	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	50.0000	48.9579	2.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412322.D A9FOOWT.M Thu May 19 09:02:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:22:33 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	652985	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	476539	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	256082	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	4873	19.3416 ug/L	80
3) 3-Chloro-1-propene	7.07	41	172467	20.7847 ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	219296	20.9015 ug/L	87
5) Ethyl Acetate	9.09	43	50385	20.1659 ug/L	100
6) Methacrylonitrile	9.26	67	28119	20.4992 ug/L #	63
7) Isobutyl Alcohol	9.27	43	2774	33.2395 ug/L #	8
9) Methyl methacrylate	11.42	41	55309	20.5176 ug/L	73
10) 2-Nitropropane	11.75	43	21584	18.5202 ug/L	99
13) Cyclohexanone	15.84	55	2230	21.2913 ug/L	87

(#) = qualifier out of range (m) = manual integration
8M412323.D A9FOOWT.M Thu May 19 09:22:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:21 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

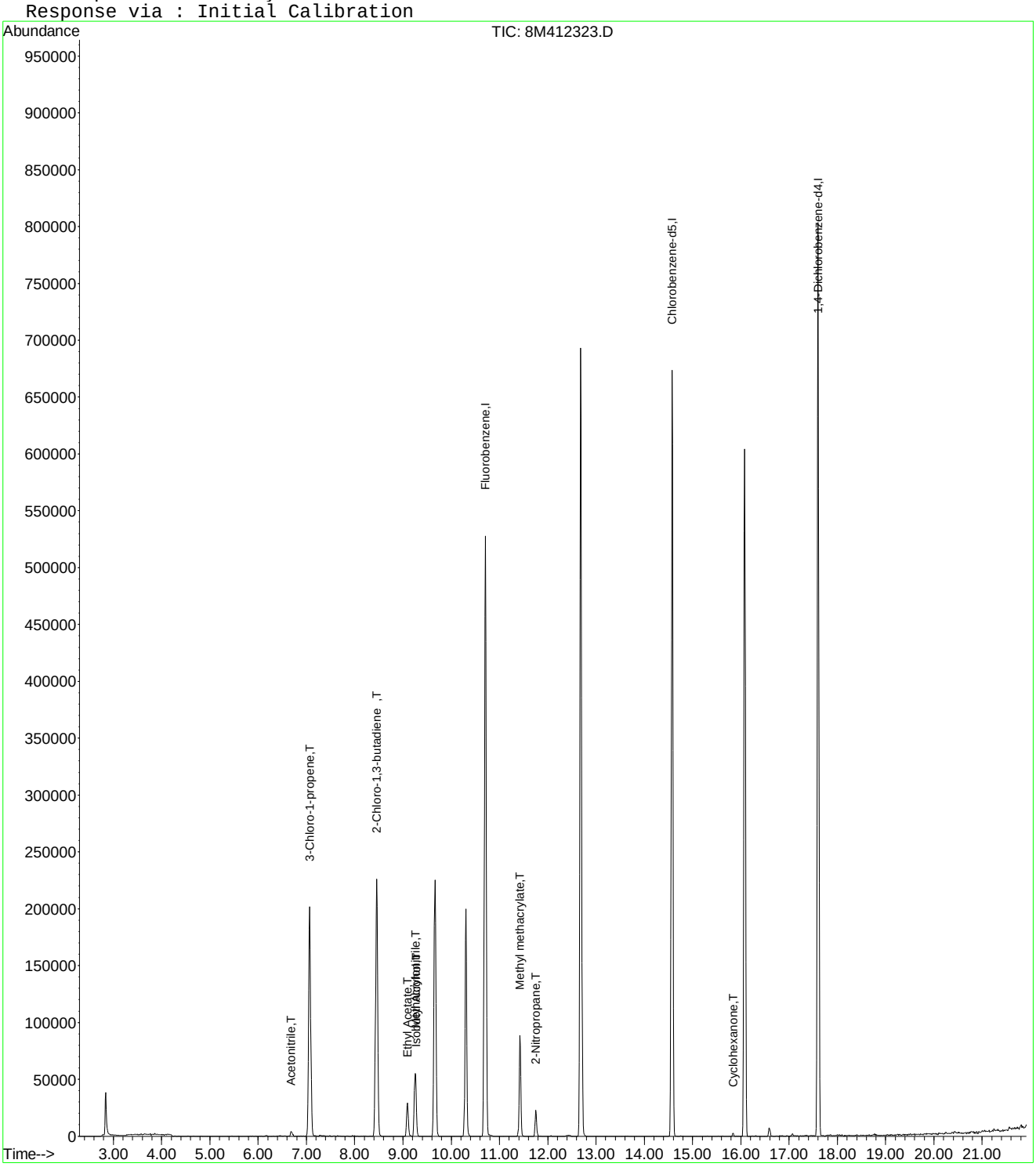

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	19.3416	3.3	100	0.00
3	T	3-Chloro-1-propene	20.0000	20.7847	-3.9	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	20.9015	-4.5	100	0.00
5	T	Ethyl Acetate	20.0000	20.1659	-0.8	100	0.00
6	T	Methacrylonitrile	20.0000	20.4992	-2.5	100	0.00
7	T	Isobutyl Alcohol	-1.0000	33.2395	0.0	0	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.18#
9	T	Methyl methacrylate	20.0000	20.5176	-2.6	100	0.00
10	T	2-Nitropropane	20.0000	18.5203	7.4	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	20.0000	21.2913	-6.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412323.D A9FOOWT.M Thu May 19 09:02:17 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:22:43 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	665645	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	483812	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	257678	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	405	1.5769 ug/L #	23
3) 3-Chloro-1-propene	7.07	41	40699	4.8115 ug/L	84
4) 2-Chloro-1,3-butadiene	8.45	53	48973	4.5789 ug/L	81
5) Ethyl Acetate	9.09	43	10675	4.1913 ug/L	95
6) Methacrylonitrile	9.26	67	5417	3.8740 ug/L #	72
7) Isobutyl Alcohol	9.27	43	441	5.1838 ug/L #	8
9) Methyl methacrylate	11.43	41	11811	4.2981 ug/L	65
10) 2-Nitropropane	11.76	43	4170	3.5100 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412324.D A9FOOWT.M Thu May 19 09:22:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:21 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

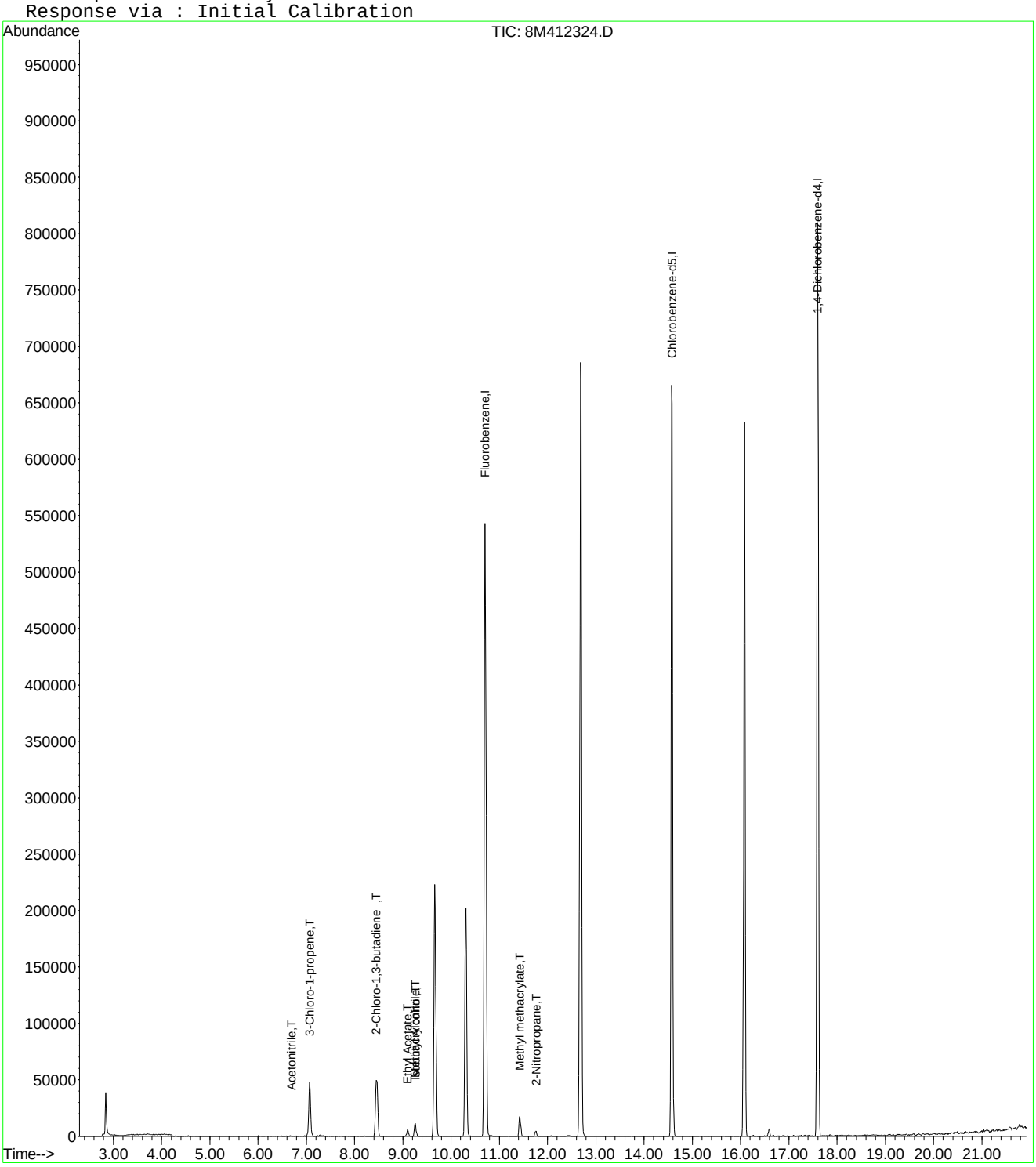

8M412324.D A9FOOWT.M Thu May 19 09:22:43 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	-1.0000	1.5769	0.0	0	0.00
3	T	3-Chloro-1-propene	5.0000	4.8115	3.8	100	0.00
4	T	2-Chloro-1,3-butadiene	5.0000	4.5789	8.4	100	0.00
5	T	Ethyl Acetate	5.0000	4.1913	16.2	100	0.00
6	T	Methacrylonitrile	5.0000	3.8740	22.5	100	0.00
7	T	Isobutyl Alcohol	-1.0000	5.1838	0.0	0	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.18#
9	T	Methyl methacrylate	5.0000	4.2981	14.0	100	0.00
10	T	2-Nitropropane	-1.0000	3.5100	0.0	0	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	0.0000	0.0	0	-15.84#

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412324.D A9FOOWT.M Thu May 19 09:02:03 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412325.D Vial: 7
Acq On : 17 May 2016 11:42 Operator: TMB
Sample : WG569079-06 200ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:27 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	682012	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	491515	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	261877	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.68	41	52022	197.6946 ug/L	97
3) 3-Chloro-1-propene	7.06	41	1768403	204.0468 ug/L	83
4) 2-Chloro-1,3-butadiene	8.46	53	2283706	208.4003 ug/L	87
5) Ethyl Acetate	9.09	43	537585	206.0040 ug/L	94
6) Methacrylonitrile	9.25	67	297408	207.5869 ug/L #	63
7) Isobutyl Alcohol	9.26	43	34441	395.1256 ug/L	95
9) Methyl methacrylate	11.42	41	577612	205.1526 ug/L	72
10) 2-Nitropropane	11.75	43	248395	204.0652 ug/L	95
13) Cyclohexanone	15.85	55	19752	184.4122 ug/L #	59

(#) = qualifier out of range (m) = manual integration
8M412325.D A9FOOWT.M Thu May 19 09:01:28 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412325.D Vial: 7
Acq On : 17 May 2016 11:42 Operator: TMB
Sample : WG569079-06 200ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

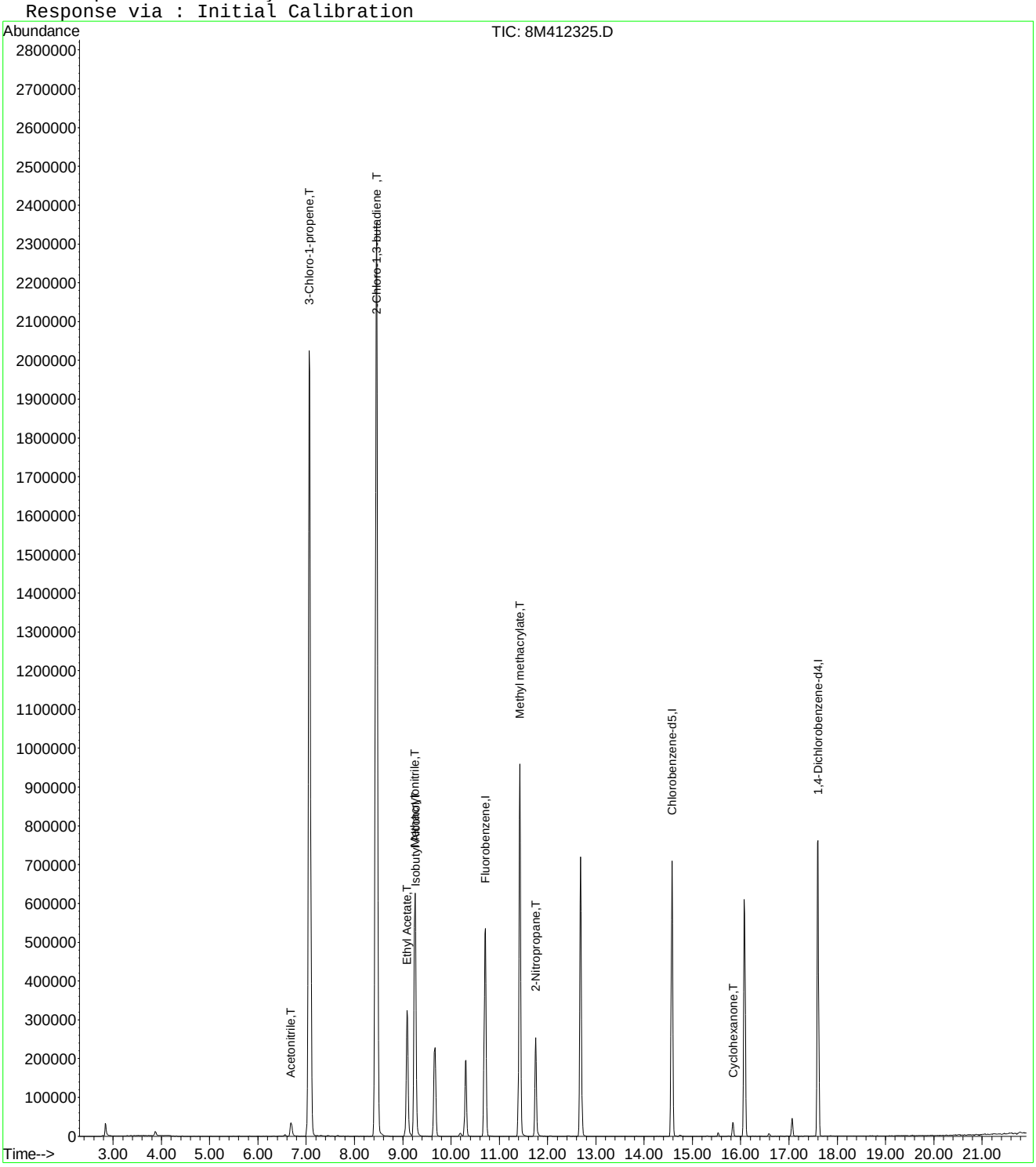

8M412325.D A9FOOWT.M Thu May 19 09:01:28 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412326.D Vial: 8
Acq On : 17 May 2016 12:40 Operator: TMB
Sample : WG569079-07 300ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:29 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	694903	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	496643	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	267309	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.69	41	81471	303.8636	ug/L	98
3) 3-Chloro-1-propene	7.06	41	2563559	290.3084	ug/L	83
4) 2-Chloro-1,3-butadiene	8.46	53	3270971	292.9562	ug/L	86
5) Ethyl Acetate	9.09	43	821184	308.8424	ug/L	95
6) Methacrylonitrile	9.25	67	451708	309.4374	ug/L #	62
7) Isobutyl Alcohol	9.26	43	55071	620.0836	ug/L	94
9) Methyl methacrylate	11.42	41	874430	304.8132	ug/L	70
10) 2-Nitropropane	11.75	43	392965	316.8456	ug/L	94
13) Cyclohexanone	15.84	55	33523	306.6233	ug/L #	61

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412326.D Vial: 8
Acq On : 17 May 2016 12:40 Operator: TMB
Sample : WG569079-07 300ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

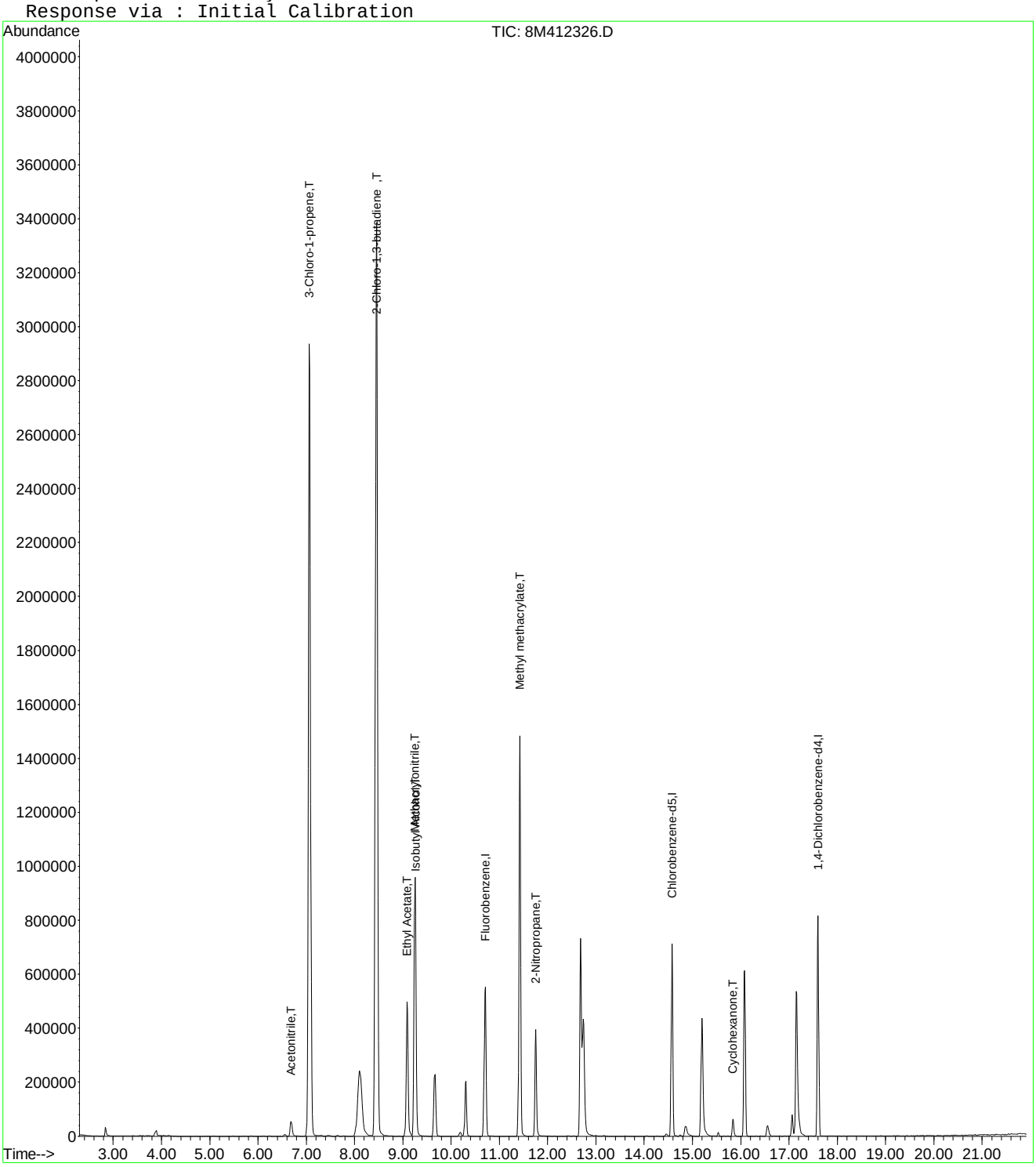

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412327.D Vial: 9
Acq On : 17 May 2016 13:10 Operator: TMB
Sample : WG569079-08 400ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:30 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	700514	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	502552	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	270883	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	110761	409.7980 ug/L	97
3) 3-Chloro-1-propene	7.07	41	3406131	382.6353 ug/L	82
4) 2-Chloro-1,3-butadiene	8.45	53	4356691	387.0705 ug/L	85
5) Ethyl Acetate	9.09	43	1116818	416.6642 ug/L	94
6) Methacrylonitrile	9.25	67	615482	418.2517 ug/L #	62
7) Isobutyl Alcohol	9.26	43	75472	842.9862 ug/L	97
9) Methyl methacrylate	11.42	41	1199317	414.7153 ug/L	71
10) 2-Nitropropane	11.75	43	538580	430.7760 ug/L	94
13) Cyclohexanone	15.84	55	45874	414.0575 ug/L #	55

(#) = qualifier out of range (m) = manual integration
8M412327.D A9FOOWT.M Thu May 19 09:01:31 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412327.D Vial: 9
Acq On : 17 May 2016 13:10 Operator: TMB
Sample : WG569079-08 400ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

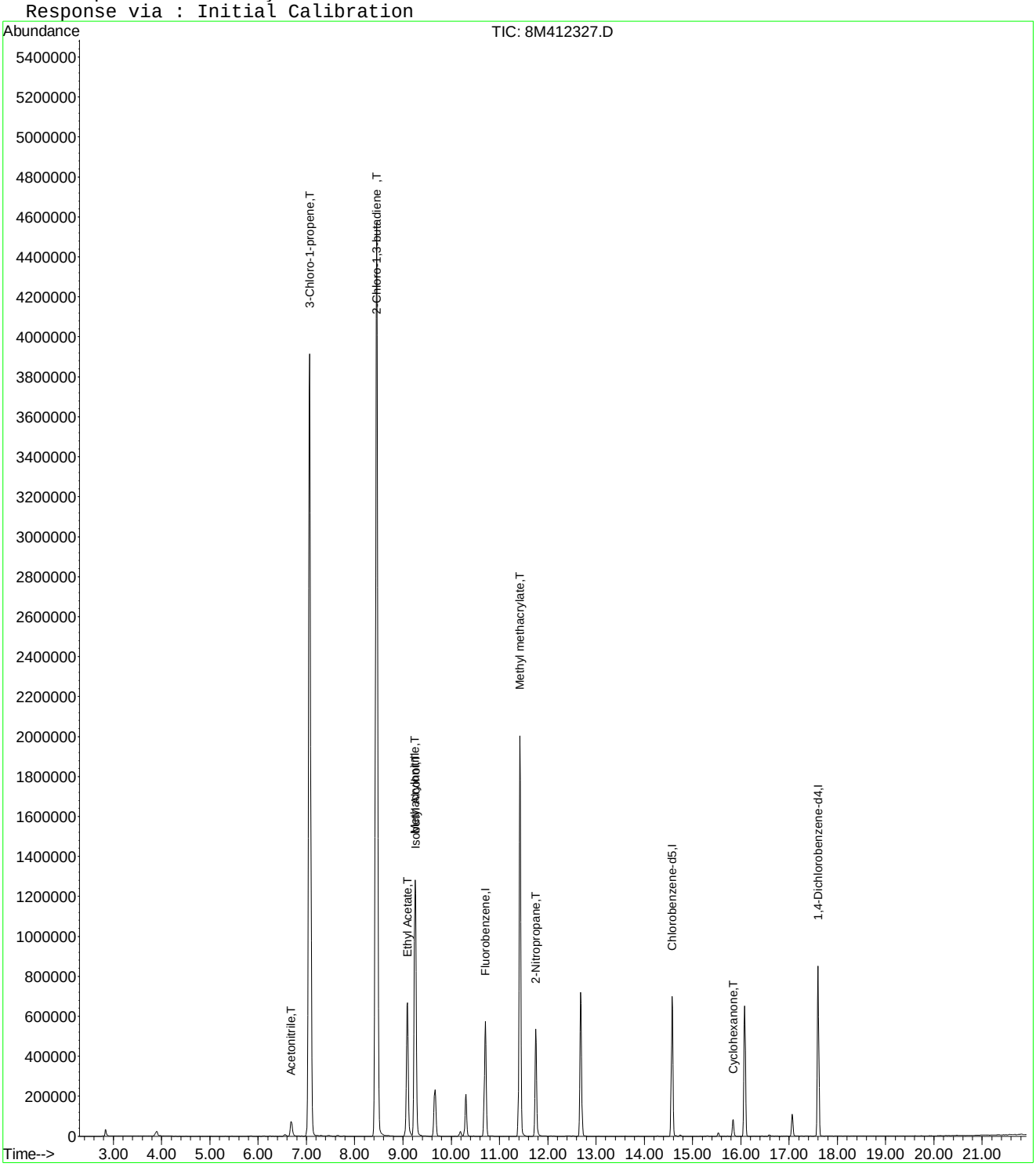

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412328.D Vial: 10
Acq On : 17 May 2016 13:39 Operator: TMB
Sample : WG569079-09 500ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:31 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	695694	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	495257	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	266442	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.69	41	132245	492.6753	ug/L	99
3) 3-Chloro-1-propene	7.06	41	4228273	478.2834	ug/L	82
4) 2-Chloro-1,3-butadiene	8.46	53	5390856	482.2693	ug/L	85
5) Ethyl Acetate	9.09	43	1321922	496.6017	ug/L	95
6) Methacrylonitrile	9.25	67	729852	499.4083	ug/L #	61
7) Isobutyl Alcohol	9.26	43	85200	958.2367	ug/L	96
9) Methyl methacrylate	11.42	41	1416438	493.1877	ug/L	72
10) 2-Nitropropane	11.75	43	637335	513.2956	ug/L	93
13) Cyclohexanone	15.84	55	52070	477.8160	ug/L #	61

(#) = qualifier out of range (m) = manual integration
8M412328.D A9FOOWT.M Thu May 19 09:01:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412328.D Vial: 10
Acq On : 17 May 2016 13:39 Operator: TMB
Sample : WG569079-09 500ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

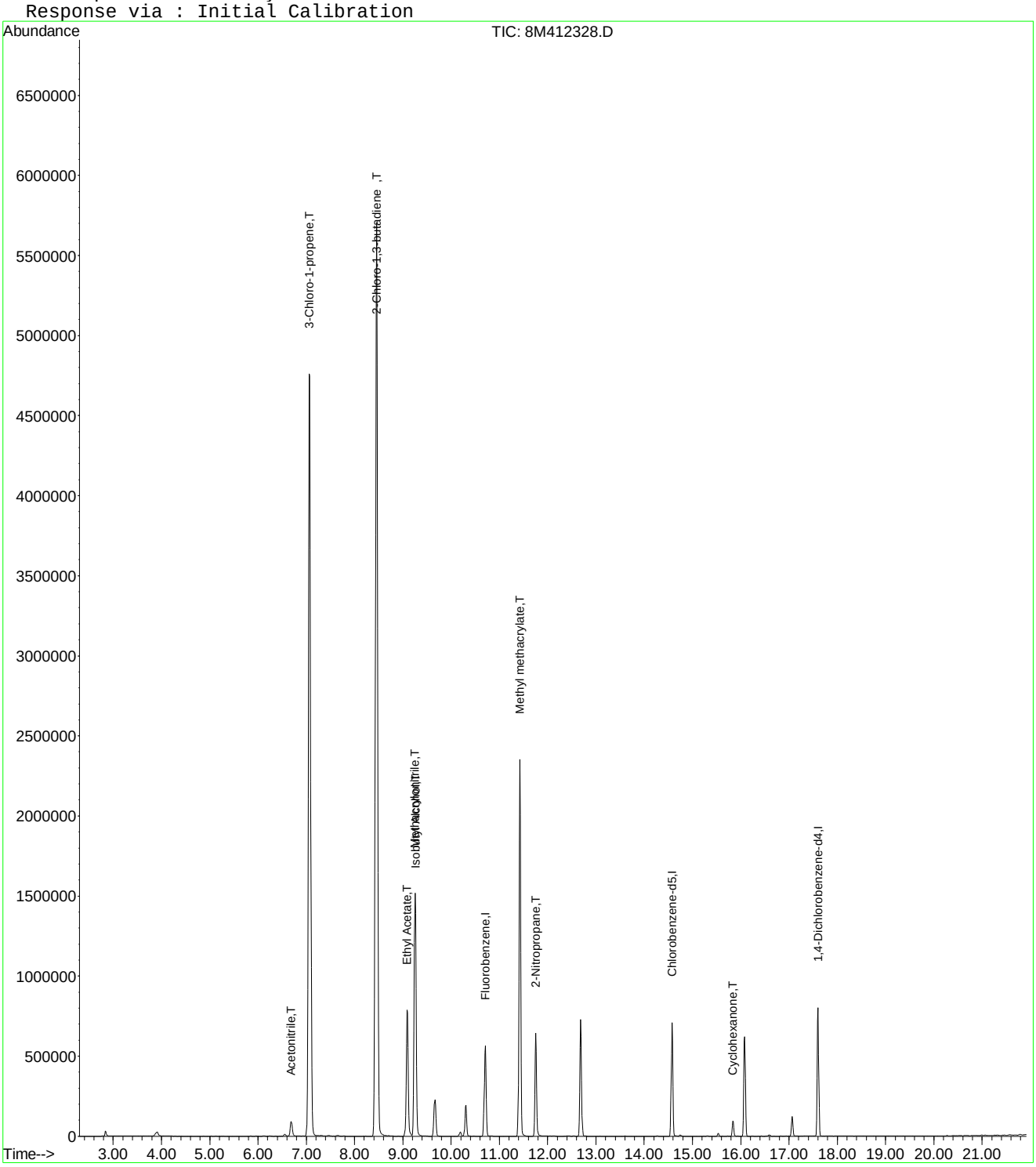

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:32 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	676765	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	486447	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	263036	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.69	41	29876	114.4154	ug/L	97
3) 3-Chloro-1-propene	7.07	41	858035	99.7718	ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	1224194	112.5803	ug/L	87
5) Ethyl Acetate	9.09	43	295545	114.1317	ug/L	96
6) Methacrylonitrile	9.25	67	161574	113.6509	ug/L #	63
7) Isobutyl Alcohol	9.26	43	19948	230.6285	ug/L	94
9) Methyl methacrylate	11.42	41	326465	116.8508	ug/L	72
10) 2-Nitropropane	11.75	43	131261	108.6716	ug/L	94
13) Cyclohexanone	15.83	55	10459	97.2189	ug/L #	74

(#) = qualifier out of range (m) = manual integration
8M412331.D A9FOOWT.M Thu May 19 09:01:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

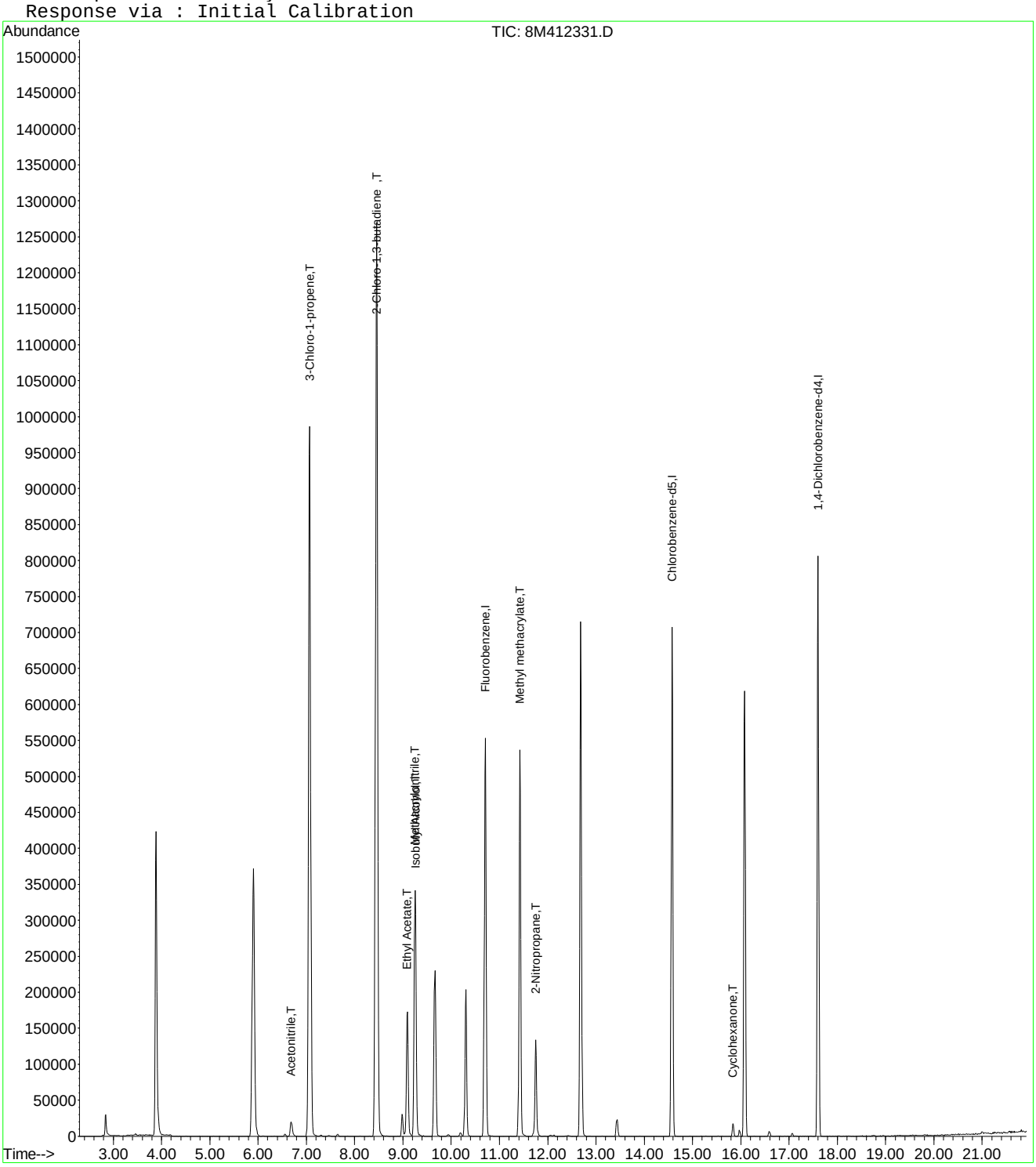

8M412331.D A9FOOWT.M Thu May 19 09:01:33 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	95	0.00
2	T	Acetonitrile	100.0000	114.4154	-14.4	109	0.00
3	T	3-Chloro-1-propene	100.0000	99.7718	0.2	91	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	112.5803	-12.6	103	0.00
5	T	Ethyl Acetate	100.0000	114.1317	-14.1	104	0.00
6	T	Methacrylonitrile	100.0000	113.6509	-13.7	104	0.00
7	T	Isobutyl Alcohol	200.0000	230.6285	-15.3	111	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.01
9	T	Methyl methacrylate	100.0000	116.8508	-16.9	109	0.00
10	T	2-Nitropropane	100.0000	108.6716	-8.7	108	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	96	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	96	0.00
13	T	Cyclohexanone	100.0000	97.2189	2.8	92	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412331.D A9FOOWT.M Thu May 19 09:03:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413277.D Vial: 3
Acq On : 27 Jun 2016 18:40 Operator: FJB
Sample : WG574409-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 08:23:32 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	708255	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	558123	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	315137	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	212502	27.9255 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.72%		
43) 1,2-Dichloroethane-d4	10.30	65	237357	29.0901 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 116.36%		
58) Toluene-d8	12.68	98	736182	25.2035 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.80%		
80) p-Bromofluorobenzene	16.07	95	333093	25.5265 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.12%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	540391	45.5083 ug/L	100
3) Chloromethane	3.62	50	328739	47.4272 ug/L	99
4) Vinyl Chloride	3.84	62	455331	55.3679 ug/L	99
5) 1,3-Butadiene	3.89	54	493105	71.5007 ug/L	97
6) Bromomethane	4.73	94	222431	44.9412 ug/L	98
7) Chloroethane	4.89	64	230089	50.8474 ug/L	97
8) Trichlorofluoromethane	5.37	101	921029	60.1899 ug/L	99
9) Diethyl ether	5.90	59	329176	90.1084 ug/L	97
10) Isoprene	5.94	67	543864	58.5277 ug/L	97
11) Acrolein	6.13	56	10450	31.9493 ug/L	89
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	397606	55.2781 ug/L	96
13) Acetone	6.23	43	49224	61.7730 ug/L	95
14) 1,1-Dichloroethene	6.46	61	637496	55.6639 ug/L	98
15) Tert-Butyl Alcohol	6.57	59	56211	220.1264 ug/L	96
16) Dimethyl Sulfide	6.73	62	208344	50.8787 ug/L	99
17) Iodomethane	6.98	142	170642	53.2063 ug/L	99
18) Methyl acetate	7.00	43	133012	61.7522 ug/L	99
19) Methylene Chloride	7.25	84	381140	52.2953 ug/L	99
20) Carbon Disulfide	7.29	76	1416153	59.0884 ug/L	100
21) Acrylonitrile	7.43	53	55176	53.3667 ug/L	98
22) Methyl Tert Butyl Ether	7.46	73	890658	56.4640 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	568436	54.0257 ug/L	100
24) n-Hexane	7.78	57	473111	60.5549 ug/L	100
25) Diisopropyl ether	8.12	45	1653566	100.8228 ug/L	96
26) Vinyl Acetate	8.29	43	289159	38.5078 ug/L	99
27) 1,1-Dichloroethane	8.32	63	708581	54.2278 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1927676	109.7014 ug/L	99
29) 2-Butanone	8.88	43	61250	52.3161 ug/L	94
30) Propionitrile	8.99	54	36343	106.5209 ug/L	100
31) 2,2-Dichloropropane	9.10	77	882692	64.1025 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	429873	52.8759 ug/L	96
33) Chloroform	9.37	83	871320	56.4751 ug/L	99
34) 1-Bromopropane	9.51	122	75427	64.7720 ug/L	98
35) Bromochloromethane	9.60	130	227968	54.6822 ug/L	94
36) Tetrahydrofuran	9.63	42	70838	91.8656 ug/L	95
38) 1,1,1-Trichloroethane	9.91	97	890583	60.7694 ug/L	100
39) Cyclohexane	9.94	56	583136	57.4735 ug/L	97
40) 1,1-Dichloropropene	10.10	75	632920	56.6604 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	1794513	112.4396 ug/L	99
42) Carbon Tetrachloride	10.25	117	801759	61.6093 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413277.D Vial: 3
Acq On : 27 Jun 2016 18:40 Operator: FJB
Sample : WG574409-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 08:23:32 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.42	62	597374	60.1571 ug/L	98
46)	Benzene	10.46	78	1539572	52.9185 ug/L	99
47)	Trichloroethene	11.21	130	426598	54.9776 ug/L	98
48)	Methylcyclohexane	11.30	83	704621	59.7740 ug/L	99
49)	1,2-Dichloropropane	11.43	63	331303	51.1548 ug/L	90
50)	Bromodichloromethane	11.72	83	661441	58.1077 ug/L	99
51)	1,4-Dioxane	11.72	88	7409	227.7362 ug/L	88
52)	Dibromomethane	11.81	93	206969	53.9859 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.02	63	130048	46.7184 ug/L	94
54)	4-Methyl-2-Pentanone	12.05	58	57560	50.6207 ug/L	92
55)	cis-1,3-Dichloropropene	12.36	75	652717	56.3352 ug/L	100
56)	Dimethyl Disulfide	12.62	79	371318	60.0446 ug/L	97
59)	Toluene	12.78	91	1683635	48.5909 ug/L	100
60)	Ethyl Methacrylate	12.88	69	348427	52.3617 ug/L	98
62)	trans-1,3-Dichloropropene	12.96	75	604607	52.0693 ug/L	100
63)	1,1,2-Trichloroethane	13.18	97	256636	46.9382 ug/L	99
64)	2-Hexanone	13.12	58	54211	47.1829 ug/L #	96
65)	1,3-Dichloropropane	13.48	76	466904	47.9644 ug/L	98
66)	Tetrachloroethene	13.60	164	389465	52.4633 ug/L	97
67)	Dibromochloromethane	13.87	129	405413	50.7826 ug/L	100
68)	1,2-Dibromoethane	14.12	107	265443	48.7130 ug/L	99
69)	1-Chlorohexane	14.21	91	620553	52.4666 ug/L	95
70)	Chlorobenzene	14.62	112	1136584	48.6448 ug/L	100
71)	1,1,1,2-Tetrachloroethane	14.66	131	461555	50.9898 ug/L	100
72)	Ethylbenzene	14.66	106	614295	48.0532 ug/L	100
73)	m-,p-Xylene	14.74	106	1473086	98.2418 ug/L	98
74)	o-Xylene	15.31	106	708507	48.3302 ug/L	97
75)	Styrene	15.34	104	1201852	49.9851 ug/L	96
76)	Bromoform	15.83	173	252897	53.4078 ug/L	99
77)	Isopropylbenzene	15.73	105	1983006	50.9193 ug/L	100
79)	1,1,2,2-Tetrachloroethane	15.95	83	280807	44.3910 ug/L	99
81)	1,2,3-Trichloropropane	16.14	110	91595	47.0214 ug/L	84
82)	trans-1,4-Dichloro-2-Buten	16.18	53	97851	49.2908 ug/L	76
83)	n-Propylbenzene	16.24	91	2344121	47.6788 ug/L	99
84)	Bromobenzene	16.37	156	481835	47.6468 ug/L	95
85)	1,3,5-Trimethylbenzene	16.42	105	1731219	48.3397 ug/L	99
86)	2-Chlorotoluene	16.51	91	1669268	48.6302 ug/L	99
87)	4-Chlorotoluene	16.56	91	1390077	44.8326 ug/L	98
88)	a-Methylstyrene	16.83	118	838059	49.3226 ug/L	99
89)	tert-Butylbenzene	16.89	134	326432	46.5903 ug/L	98
90)	1,2,4-Trimethylbenzene	16.94	105	1776678	48.2454 ug/L	99
91)	sec-Butylbenzene	17.16	105	2005098	47.5907 ug/L	99
92)	p-Isopropyltoluene	17.32	119	1707286	47.7248 ug/L	98
93)	1,3-Dichlorobenzene	17.51	146	933961	47.9634 ug/L	98
94)	1,4-Dichlorobenzene	17.64	146	915806	46.6497 ug/L	100
95)	n-Butylbenzene	17.85	91	1671344	47.2585 ug/L	99
96)	1,2-Dichlorobenzene	18.14	146	804434	46.4491 ug/L	99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	58417	46.0055 ug/L	97
98)	1,2,4-Trichlorobenzene	20.28	180	615552	47.5508 ug/L	100
99)	Hexachlorobutadiene	20.43	225	297223	49.1403 ug/L	97
100)	Naphthalene	20.65	128	861244	44.7800 ug/L	98
101)	1,2,3-Trichlorobenzene	20.96	180	485630	44.4665 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413277.D Vial: 3
Acq On : 27 Jun 2016 18:40 Operator: FJB
Sample : WG574409-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 8:23 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

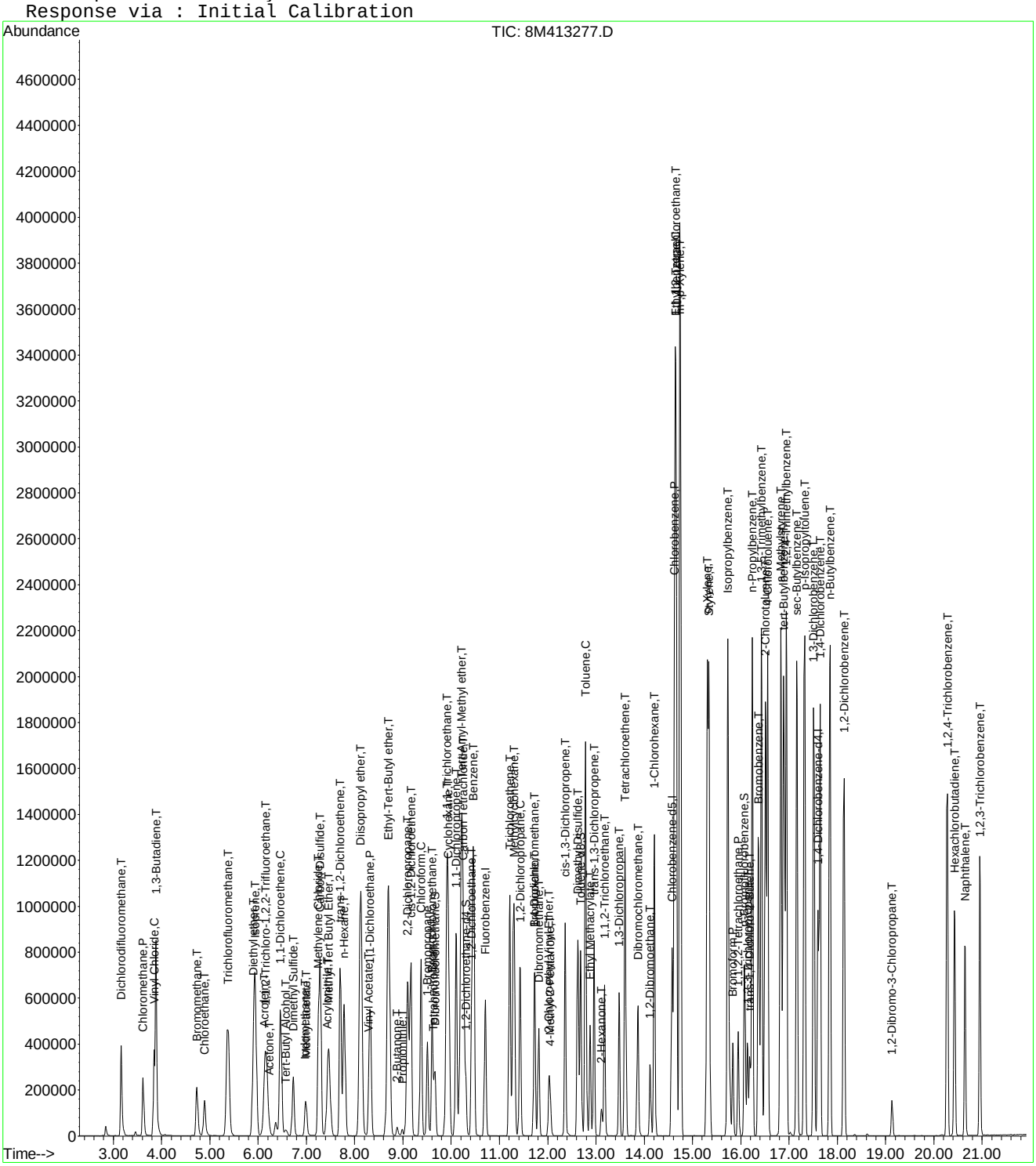

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413277.D Vial: 3
Acq On : 27 Jun 2016 18:40 Operator: FJB
Sample : WG574409-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	91	0.00
2	T	Dichlorodifluoromethane	0.4192	0.3815	9.0	79	0.00
3	P	Chloromethane	0.2447	0.2321	5.1	88	0.00
4	C	Vinyl Chloride	0.2903	0.3215	-10.7	100	0.00
5	T	1,3-Butadiene	0.2434	0.3481	-43.0#	126	0.00
6	T	Bromomethane	0.1654	0.1570	5.1	85	0.00
7	T	Chloroethane	0.1597	0.1624	-1.7	94	0.00
8	T	Trichlorofluoromethane	0.5401	0.6502	-20.4	110	0.00
9	T	Diethyl ether	0.1290	0.1162	9.9	85	0.00
10	T	Isoprene	0.3280	0.3840	-17.1	109	0.00
11	T	Acrolein	0.0116	0.0074	36.1#	59	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2539	0.2807	-10.6	103	0.00
13	T	Acetone	0.0281	0.0348	-23.5	107	-0.01
14	C	1,1-Dichloroethene	0.4043	0.4501	-11.3	103	0.00
15	T	Tert-Butyl Alcohol	0.0090	0.0099	-10.1	101	0.00
16	T	Dimethyl Sulfide	0.1445	0.1471	-1.8	94	0.00
17	T	Iodomethane	0.0866	0.1205	-39.2#	108	0.00
18	T	Methyl acetate	0.0760	0.0939	-23.5	116	0.00
19	T	Methylene Chloride	0.2573	0.2691	-4.6	98	0.00
20	T	Carbon Disulfide	0.8460	0.9998	-18.2	112	0.00
21	T	Acrylonitrile	0.0365	0.0389	-6.7	92	0.00
22	T	Methyl Tert Butyl Ether	0.5568	0.6288	-12.9	99	0.00
23	T	trans-1,2-Dichloroethene	0.3714	0.4013	-8.1	99	0.00
24	T	n-Hexane	0.2758	0.3340	-21.1	113	0.00
25	T	Diisopropyl ether	0.5789	0.5837	-0.8	93	0.00
26	T	Vinyl Acetate	0.2651	0.2041	23.0	67	0.00
27	P	1,1-Dichloroethane	0.4612	0.5002	-8.5	98	0.00
28	T	Ethyl-Tert-Butyl ether	0.6203	0.6804	-9.7	99	0.00
29	T	2-Butanone	0.0413	0.0432	-4.6	92	0.00
30	T	Propionitrile	0.0120	0.0128	-6.6	95	0.00
31	T	2,2-Dichloropropane	0.4860	0.6231	-28.2#	115	0.00
32	T	cis-1,2-Dichloroethene	0.2870	0.3035	-5.7	98	0.00
33	C	Chloroform	0.5446	0.6151	-13.0	103	0.00
34		1-Bromopropane	0.0411	0.0532	-29.6#	119	0.00
35	T	Bromochloromethane	0.1472	0.1609	-9.4	99	0.00
36	T	Tetrahydrofuran	0.0272	0.0250	8.2	89	0.00
37	S	Dibromofluoromethane	0.2686	0.3000	-11.7	101	0.00
38	T	1,1,1-Trichloroethane	0.5173	0.6287	-21.5	109	0.00
39	T	Cyclohexane	0.3581	0.4117	-14.9	109	0.00
40	T	1,1-Dichloropropene	0.3943	0.4468	-13.3	103	0.00
41	T	Tert-Amyl-Methyl ether	0.5634	0.6334	-12.4	101	0.00
42	T	Carbon Tetrachloride	0.4593	0.5660	-23.2	111	0.00
43	S	1,2-Dichloroethane-d4	0.2880	0.3351	-16.4	103	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.3505	0.4217	-20.3	106	0.00
46	T	Benzene	1.0269	1.0869	-5.8	96	0.00
47	T	Trichloroethene	0.2739	0.3012	-10.0	100	0.00
48	T	Methylcyclohexane	0.4161	0.4974	-19.5	111	0.00
49	C	1,2-Dichloropropane	0.2286	0.2339	-2.3	94	0.00
50	T	Bromodichloromethane	0.4018	0.4669	-16.2	101	0.00
51	T	1,4-Dioxane	0.0012	0.0013	-13.9	98	0.00
52	T	Dibromomethane	0.1353	0.1461	-8.0	99	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0983	0.0918	6.6	80	0.00
54	T	4-Methyl-2-Pentanone	0.0401	0.0406	-1.2	89	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413277.D Vial: 3
Acq On : 27 Jun 2016 18:40 Operator: FJB
Sample : WG574409-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4090	0.4608	-12.7	98	0.00
56	T	Dimethyl Disulfide	0.2183	0.2621	-20.1	108	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	104	0.00
58	S	Toluene-d8	1.3084	1.3190	-0.8	102	0.00
59	C	Toluene	1.5520	1.5083	2.8	100	0.00
60	T	Ethyl Methacrylate	0.2981	0.3121	-4.7	103	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.5201	0.5416	-4.1	102	0.00
63	T	1,1,2-Trichloroethane	0.2449	0.2299	6.1	96	0.00
64	T	2-Hexanone	0.0515	0.0486	5.6	95	0.00
65	T	1,3-Dichloropropane	0.4360	0.4183	4.1	95	0.00
66	T	Tetrachloroethene	0.3325	0.3489	-4.9	111	0.00
67	T	Dibromochloromethane	0.3576	0.3632	-1.6	101	0.00
68	T	1,2-Dibromoethane	0.2441	0.2378	2.6	97	0.00
69	T	1-Chlorohexane	0.5298	0.5559	-4.9	111	0.00
70	P	Chlorobenzene	1.0466	1.0182	2.7	102	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4055	0.4135	-2.0	103	0.00
72	C	Ethylbenzene	0.5726	0.5503	3.9	102	0.00
73	T	m-,p-Xylene	0.6716	0.6598	1.8	102	0.00
74	T	o-Xylene	0.6566	0.6347	3.3	100	0.00
75	T	Styrene	1.0770	1.0767	0.0	99	0.00
76	P	Bromoform	0.2121	0.2266	-6.8	106	0.00
77	T	Isopropylbenzene	1.7444	1.7765	-1.8	103	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	109	0.00
79	P	1,1,2,2-Tetrachloroethane	0.5018	0.4455	11.2	95	0.00
80	S	p-Bromofluorobenzene	1.0352	1.0570	-2.1	114	0.00
81	T	1,2,3-Trichloropropane	0.1545	0.1453	6.0	103	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1376	0.1553	-12.9	113	0.00
83	T	n-Propylbenzene	3.9003	3.7192	4.6	103	0.00
84	T	Bromobenzene	0.8022	0.7645	4.7	105	0.00
85	T	1,3,5-Trimethylbenzene	2.8411	2.7468	3.3	104	0.00
86	T	2-Chlorotoluene	2.7231	2.6485	2.7	104	0.00
87	T	4-Chlorotoluene	2.4597	2.2055	10.3	104	0.00
88	T	a-Methylstyrene	1.3479	1.3297	1.4	108	0.00
89	T	tert-Butylbenzene	0.5558	0.5179	6.8	106	0.00
90	T	1,2,4-Trimethylbenzene	2.9214	2.8189	3.5	106	0.00
91	T	sec-Butylbenzene	3.3424	3.1813	4.8	104	0.00
92	T	p-Isopropyltoluene	2.8379	2.7088	4.6	105	0.00
93	T	1,3-Dichlorobenzene	1.5448	1.4818	4.1	106	0.00
94	T	1,4-Dichlorobenzene	1.5574	1.4530	6.7	105	0.00
95	T	n-Butylbenzene	2.8056	2.6518	5.5	104	0.00
96	T	1,2-Dichlorobenzene	1.3739	1.2763	7.1	105	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1007	0.0927	8.0	98	0.00
98	T	1,2,4-Trichlorobenzene	1.0269	0.9766	4.9	105	0.00
99	T	Hexachlorobutadiene	0.4798	0.4716	1.7	112	0.00
100	T	Naphthalene	1.5257	1.3665	10.4	96	0.00
101	T	1,2,3-Trichlorobenzene	0.8664	0.7705	11.1	102	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413277.D 8260WT.M Wed Jun 29 08:37:36 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413277.D Vial: 3
Acq On : 27 Jun 2016 18:40 Operator: FJB
Sample : WG574409-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	91	0.00
2	T	Dichlorodifluoromethane	50.0000	45.5083	9.0	79	0.00
3	P	Chloromethane	50.0000	47.4272	5.1	88	0.00
4	C	Vinyl Chloride	50.0000	55.3678	-10.7	100	0.00
5	T	1,3-Butadiene	50.0000	71.5007	-43.0#	126	0.00
6	T	Bromomethane	50.0000	44.9412	10.1	85	0.00
7	T	Chloroethane	50.0000	50.8474	-1.7	94	0.00
8	T	Trichlorofluoromethane	50.0000	60.1899	-20.4	110	0.00
9	T	Diethyl ether	100.0000	90.1084	9.9	85	0.00
10	T	Isoprene	50.0000	58.5277	-17.1	109	0.00
11	T	Acrolein	50.0000	31.9493	36.1#	59	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	55.2781	-10.6	103	0.00
13	T	Acetone	50.0000	61.7730	-23.5	107	-0.01
14	C	1,1-Dichloroethene	50.0000	55.6639	-11.3	103	0.00
15	T	Tert-Butyl Alcohol	200.0000	220.1264	-10.1	101	0.00
16	T	Dimethyl Sulfide	50.0000	50.8787	-1.8	94	0.00
17	T	Iodomethane	50.0000	53.2063	-6.4	108	0.00
18	T	Methyl acetate	50.0000	61.7522	-23.5	116	0.00
19	T	Methylene Chloride	50.0000	52.2953	-4.6	98	0.00
20	T	Carbon Disulfide	50.0000	59.0884	-18.2	112	0.00
21	T	Acrylonitrile	50.0000	53.3667	-6.7	92	0.00
22	T	Methyl Tert Butyl Ether	50.0000	56.4641	-12.9	99	0.00
23	T	trans-1,2-Dichloroethene	50.0000	54.0257	-8.1	99	0.00
24	T	n-Hexane	50.0000	60.5549	-21.1	113	0.00
25	T	Diisopropyl ether	100.0000	100.8228	-0.8	93	0.00
26	T	Vinyl Acetate	50.0000	38.5078	23.0	67	0.00
27	P	1,1-Dichloroethane	50.0000	54.2278	-8.5	98	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	109.7014	-9.7	99	0.00
29	T	2-Butanone	50.0000	52.3161	-4.6	92	0.00
30	T	Propionitrile	100.0000	106.5209	-6.5	95	0.00
31	T	2,2-Dichloropropane	50.0000	64.1025	-28.2#	115	0.00
32	T	cis-1,2-Dichloroethene	50.0000	52.8759	-5.8	98	0.00
33	C	Chloroform	50.0000	56.4751	-13.0	103	0.00
34		1-Bromopropane	50.0000	64.7720	-29.5#	119	0.00
35	T	Bromochloromethane	50.0000	54.6822	-9.4	99	0.00
36	T	Tetrahydrofuran	100.0000	91.8656	8.1	89	0.00
37	S	Dibromofluoromethane	25.0000	27.9255	-11.7	101	0.00
38	T	1,1,1-Trichloroethane	50.0000	60.7694	-21.5	109	0.00
39	T	Cyclohexane	50.0000	57.4735	-14.9	109	0.00
40	T	1,1-Dichloropropene	50.0000	56.6604	-13.3	103	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	112.4396	-12.4	101	0.00
42	T	Carbon Tetrachloride	50.0000	61.6093	-23.2	111	0.00
43	S	1,2-Dichloroethane-d4	25.0000	29.0901	-16.4	103	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	60.1572	-20.3	106	0.00
46	T	Benzene	50.0000	52.9185	-5.8	96	0.00
47	T	Trichloroethene	50.0000	54.9776	-10.0	100	0.00
48	T	Methylcyclohexane	50.0000	59.7741	-19.5	111	0.00
49	C	1,2-Dichloropropane	50.0000	51.1548	-2.3	94	0.00
50	T	Bromodichloromethane	50.0000	58.1077	-16.2	101	0.00
51	T	1,4-Dioxane	200.0000	227.7362	-13.9	98	0.00
52	T	Dibromomethane	50.0000	53.9859	-8.0	99	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	46.7184	6.6	80	0.00
54	T	4-Methyl-2-Pentanone	50.0000	50.6208	-1.2	89	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413277.D Vial: 3
Acq On : 27 Jun 2016 18:40 Operator: FJB
Sample : WG574409-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	56.3352	-12.7	98	0.00
56	T	Dimethyl Disulfide	50.0000	60.0446	-20.1	108	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	104	0.00
58	S	Toluene-d8	25.0000	25.2035	-0.8	102	0.00
59	C	Toluene	50.0000	48.5909	2.8	100	0.00
60	T	Ethyl Methacrylate	50.0000	52.3617	-4.7	103	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	52.0693	-4.1	102	0.00
63	T	1,1,2-Trichloroethane	50.0000	46.9382	6.1	96	0.00
64	T	2-Hexanone	50.0000	47.1829	5.6	95	0.00
65	T	1,3-Dichloropropane	50.0000	47.9644	4.1	95	0.00
66	T	Tetrachloroethene	50.0000	52.4633	-4.9	111	0.00
67	T	Dibromochloromethane	50.0000	50.7826	-1.6	101	0.00
68	T	1,2-Dibromoethane	50.0000	48.7131	2.6	97	0.00
69	T	1-Chlorohexane	50.0000	52.4666	-4.9	111	0.00
70	P	Chlorobenzene	50.0000	48.6448	2.7	102	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	50.9898	-2.0	103	0.00
72	C	Ethylbenzene	50.0000	48.0532	3.9	102	0.00
73	T	m-,p-Xylene	100.0000	98.2418	1.8	102	0.00
74	T	o-Xylene	50.0000	48.3302	3.3	100	0.00
75	T	Styrene	50.0000	49.9851	0.0	99	0.00
76	P	Bromoform	50.0000	53.4078	-6.8	106	0.00
77	T	Isopropylbenzene	50.0000	50.9192	-1.8	103	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	109	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	44.3910	11.2	95	0.00
80	S	p-Bromofluorobenzene	25.0000	25.5265	-2.1	114	0.00
81	T	1,2,3-Trichloropropane	50.0000	47.0214	6.0	103	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	49.2908	1.4	113	0.00
83	T	n-Propylbenzene	50.0000	47.6788	4.6	103	0.00
84	T	Bromobenzene	50.0000	47.6468	4.7	105	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	48.3397	3.3	104	0.00
86	T	2-Chlorotoluene	50.0000	48.6302	2.7	104	0.00
87	T	4-Chlorotoluene	50.0000	44.8326	10.3	104	0.00
88	T	a-Methylstyrene	50.0000	49.3226	1.4	108	0.00
89	T	tert-Butylbenzene	50.0000	46.5903	6.8	106	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	48.2454	3.5	106	0.00
91	T	sec-Butylbenzene	50.0000	47.5907	4.8	104	0.00
92	T	p-Isopropyltoluene	50.0000	47.7248	4.6	105	0.00
93	T	1,3-Dichlorobenzene	50.0000	47.9634	4.1	106	0.00
94	T	1,4-Dichlorobenzene	50.0000	46.6497	6.7	105	0.00
95	T	n-Butylbenzene	50.0000	47.2585	5.5	104	0.00
96	T	1,2-Dichlorobenzene	50.0000	46.4491	7.1	105	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	46.0055	8.0	98	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	47.5508	4.9	105	0.00
99	T	Hexachlorobutadiene	50.0000	49.1403	1.7	112	0.00
100	T	Naphthalene	50.0000	44.7800	10.4	96	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	44.4665	11.1	102	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413277.D 8260WT.M Wed Jun 29 08:37:40 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\2\DATA\051316\8M412218.D          Vial: 3
Acq On    : 13 May 2016  12:36                       Operator: TMB
Sample    : WG568561-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD76034                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

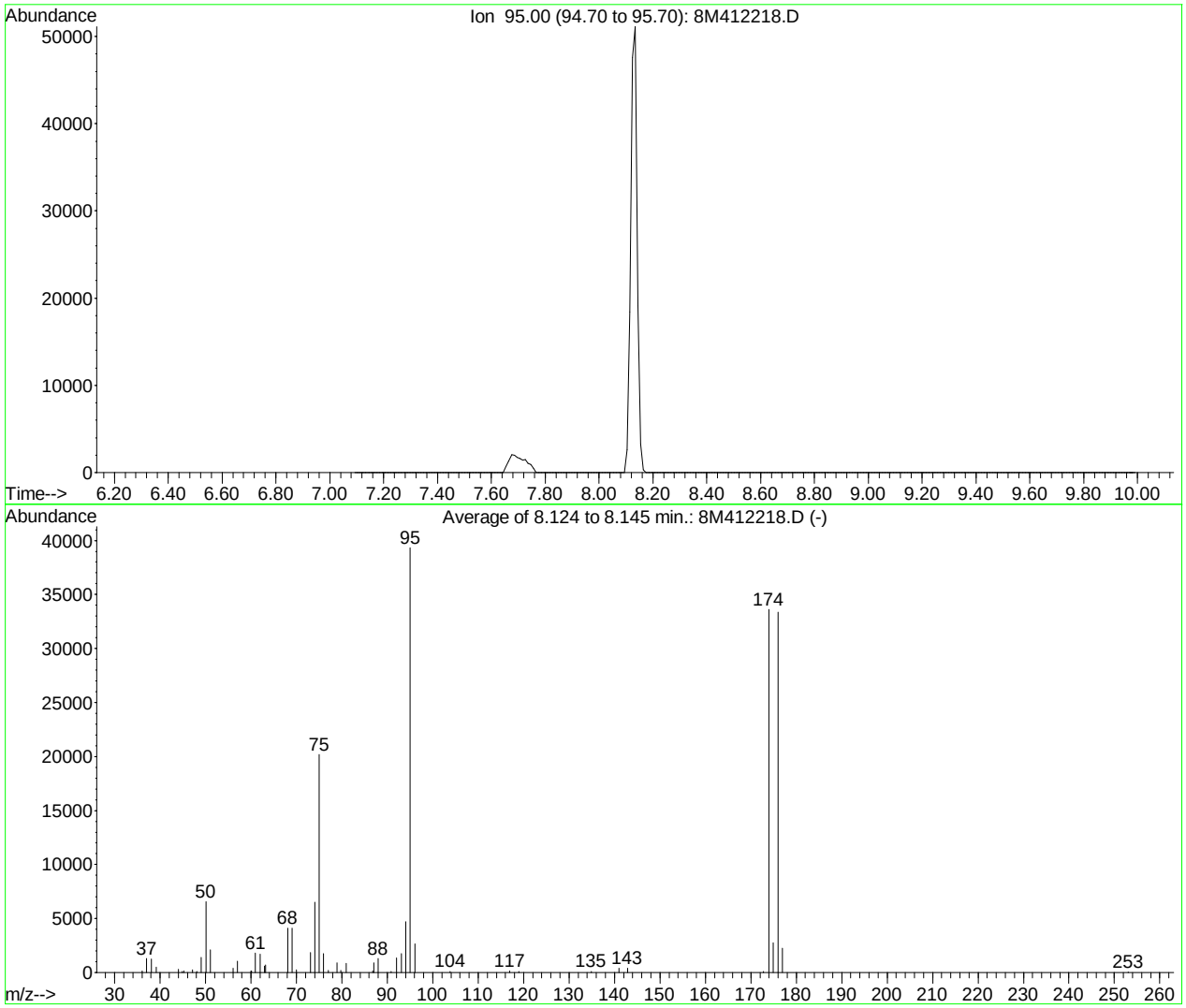

AutoFind: Scans 102, 103, 104; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.7	6575	PASS
75	95	30	60	51.3	20171	PASS
95	95	100	100	100.0	39312	PASS
96	95	5	9	6.7	2649	PASS
173	174	0.00	2	0.4	122	PASS
174	95	50	100	85.5	33616	PASS
175	174	5	9	8.2	2746	PASS
176	174	95	101	99.2	33360	PASS
177	176	5	9	6.8	2267	PASS

8M412218.D BFB.M Fri May 13 12:47:24 2016

BFB

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413275.D Vial: 1
Acq On : 27 Jun 2016 17:45 Operator: FJB
Sample : WG574409-01 BFB 50ng 8260 Inst : HPMS8
Misc : 1,1 STD76496 Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8

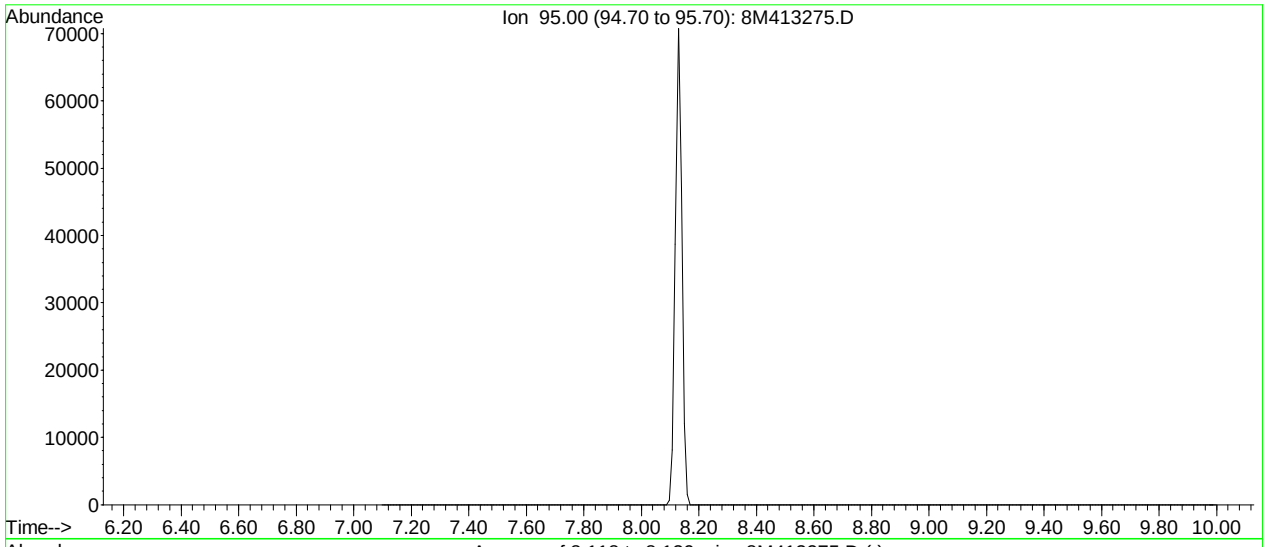

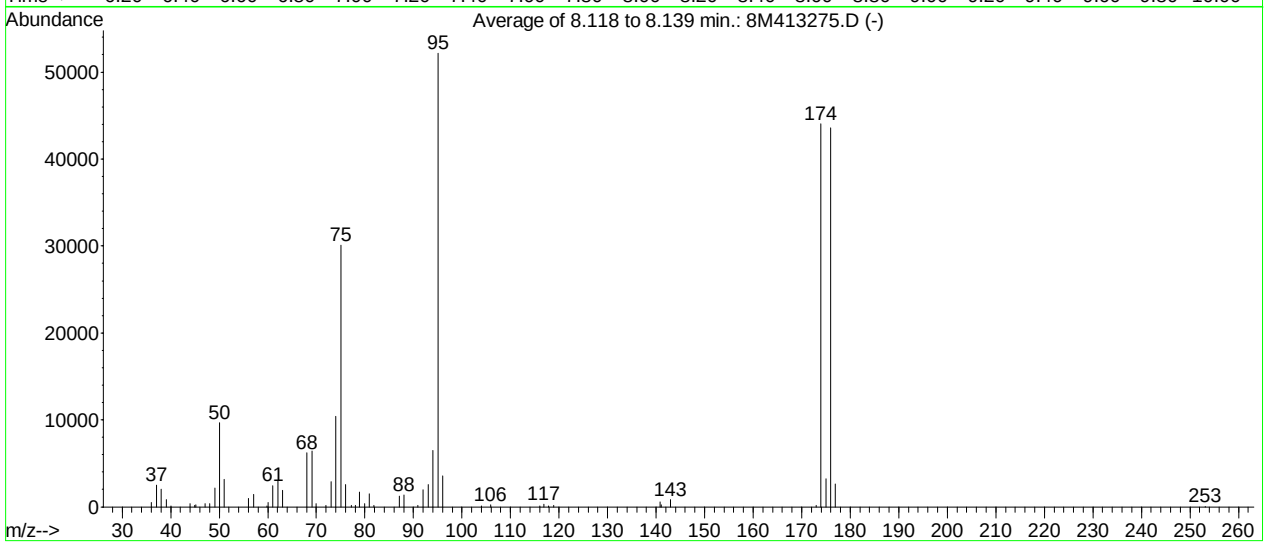

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 96

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.5	9667	PASS
75	95	30	60	57.7	30122	PASS
95	95	100	100	100.0	52181	PASS
96	95	5	9	6.8	3559	PASS
173	174	0.00	2	0.4	160	PASS
174	95	50	100	84.5	44069	PASS
175	174	5	9	7.3	3216	PASS
176	174	95	101	98.9	43568	PASS
177	176	5	9	6.1	2646	PASS

8M413275.D 8260WT.M Wed Jun 29 08:37:20 2016

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413279.D Vial: 5
Acq On : 27 Jun 2016 19:42 Operator: FJB
Sample : WG574410-01 BLANK 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 08:57:05 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	679552	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	539767	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	302642	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	205706	28.1742 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 112.68%		
43) 1,2-Dichloroethane-d4	10.30	65	222351	28.4020 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 113.60%		
58) Toluene-d8	12.68	98	726188	25.7068 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.84%		
80) p-Bromofluorobenzene	16.08	95	314092	25.0641 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.24%		

Target Compounds					Qvalue
36) Tetrahydrofuran	9.64	42	699	0.9448 ug/L #	56

(#) = qualifier out of range (m) = manual integration
8M413279.D 8260WT.M Wed Jun 29 08:57:08 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413279.D Vial: 5
Acq On : 27 Jun 2016 19:42 Operator: FJB
Sample : WG574410-01 BLANK 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 8:57 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

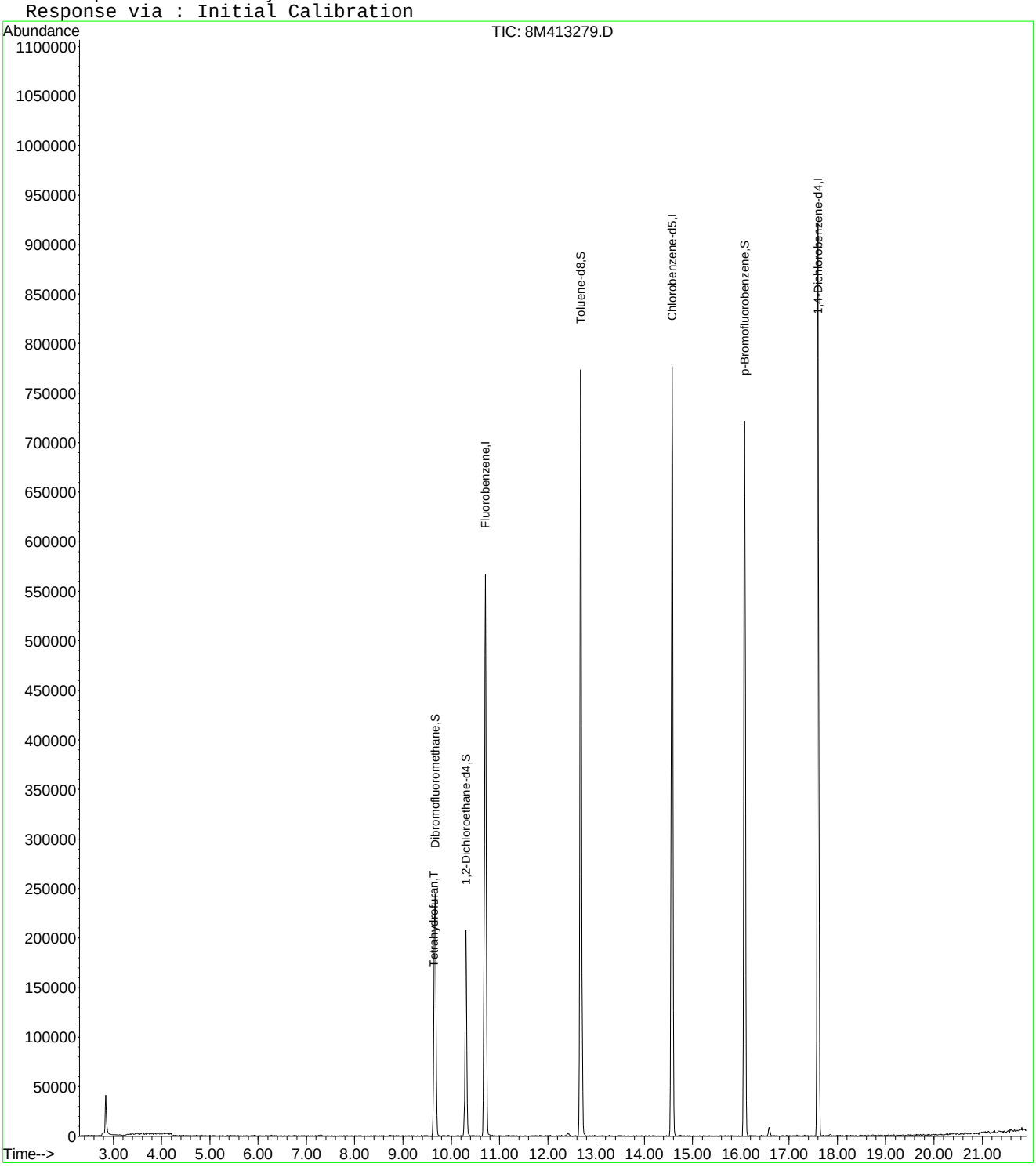

8M413279.D 8260WT.M Wed Jun 29 08:57:08 2016 Page 2

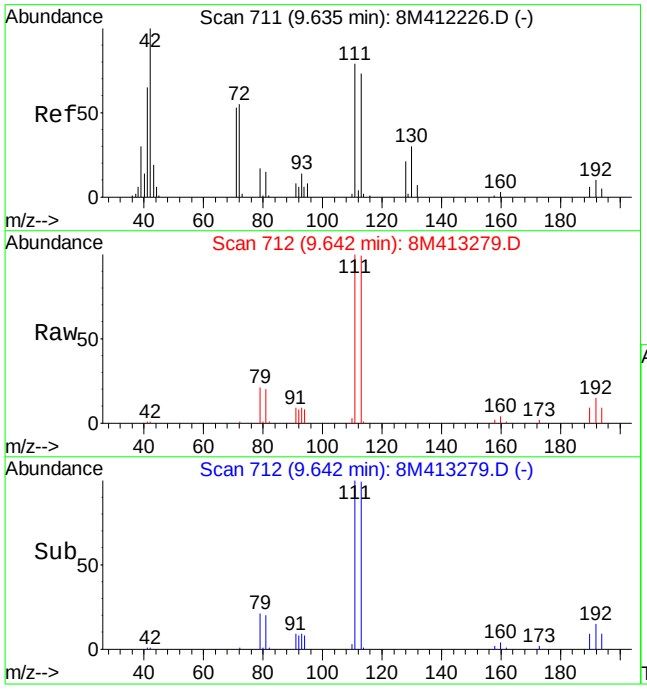

#36
Tetrahydrofuran
Concen: 0.94 ug/L
RT: 9.64 min Scan# 712
Delta R.T. 0.01 min
Lab File: 8M413279.D
Acq: 27 Jun 2016 19:42

Tgt Ion: 42 Resp: 699

Ion	Ratio	Lower	Upper
42	100		
72	67.0	33.8	78.8
71	0.0	32.0	74.8#

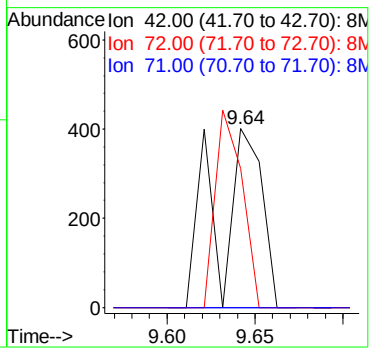

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413280.D Vial: 6
Acq On : 27 Jun 2016 20:11 Operator: FJB
Sample : WG574410-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 08:23:54 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	681082	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	528164	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	303369	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	201383	27.5202 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.08%		
43) 1,2-Dichloroethane-d4	10.31	65	224098	28.5608 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 114.24%		
58) Toluene-d8	12.68	98	715116	25.8710 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.48%		
80) p-Bromofluorobenzene	16.07	95	311755	24.8180 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.28%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	290548	25.4443 ug/L	99
3) Chloromethane	3.62	50	150178	22.5306 ug/L	97
4) Vinyl Chloride	3.84	62	207577	26.2482 ug/L	98
5) 1,3-Butadiene	3.88	54	103786	15.6495 ug/L	98
6) Bromomethane	4.73	94	77353	16.9327 ug/L	98
7) Chloroethane	4.88	64	100493	23.0940 ug/L	97
8) Trichlorofluoromethane	5.37	101	358613	24.3706 ug/L	99
9) Diethyl ether	5.90	59	350742	99.8424 ug/L	98
10) Isoprene	5.94	67	214217	23.9726 ug/L	99
11) Acrolein	6.13	56	22309	70.9276 ug/L	88
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	158184	22.8693 ug/L	95
13) Acetone	6.25	43	19484	25.4267 ug/L	94
14) 1,1-Dichloroethene	6.46	61	238182	21.6269 ug/L	98
15) Tert-Butyl Alcohol	6.58	59	49065	199.8080 ug/L	98
16) Dimethyl Sulfide	6.73	62	144988	36.8195 ug/L	99
17) Iodomethane	6.98	142	69030	24.3285 ug/L	100
18) Methyl acetate	7.00	43	41707	20.1354 ug/L	95
19) Methylene Chloride	7.25	84	146530	20.9071 ug/L	99
20) Carbon Disulfide	7.29	76	474119	20.5717 ug/L	99
21) Acrylonitrile	7.43	53	20023	20.1391 ug/L	99
22) Methyl Tert Butyl Ether	7.46	73	349130	23.0165 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	225867	22.3235 ug/L	98
24) n-Hexane	7.79	57	160733	21.3935 ug/L	99
25) Diisopropyl ether	8.13	45	1611083	102.1516 ug/L	96
26) Vinyl Acetate	8.29	43	116387	16.1178 ug/L	100
27) 1,1-Dichloroethane	8.32	63	266239	21.1882 ug/L	99
28) Ethyl-Tert-Butyl ether	8.69	59	1732266	102.5140 ug/L	98
29) 2-Butanone	8.88	43	23100	20.5178 ug/L	100
30) Propionitrile	8.98	54	31306	95.4184 ug/L	98
31) 2,2-Dichloropropane	9.10	77	324518	24.5072 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	171028	21.8763 ug/L	99
33) Chloroform	9.38	83	341403	23.0111 ug/L	98
34) 1-Bromopropane	9.51	122	36558	32.6462 ug/L	98
35) Bromochloromethane	9.60	130	86317	21.5307 ug/L	96
36) Tetrahydrofuran	9.62	42	61031	82.3052 ug/L	94
38) 1,1,1-Trichloroethane	9.90	97	338469	24.0170 ug/L	100
39) Cyclohexane	9.93	56	201814	20.6842 ug/L	96
40) 1,1-Dichloropropene	10.10	75	236903	22.0542 ug/L	97
41) Tert-Amyl-Methyl ether	10.20	73	1661227	108.2411 ug/L	100
42) Carbon Tetrachloride	10.24	117	303524	24.2541 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413280.D 8260WT.M Wed Jun 29 08:23:58 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413280.D Vial: 6
Acq On : 27 Jun 2016 20:11 Operator: FJB
Sample : WG574410-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 08:23:54 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	236082	24.7226 ug/L		98
46)	Benzene	10.46	78	605519	21.6434 ug/L		99
47)	Trichloroethene	11.22	130	174082	23.3298 ug/L		99
48)	Methylcyclohexane	11.30	83	251982	22.2288 ug/L		100
49)	1,2-Dichloropropane	11.42	63	129626	20.8134 ug/L		88
50)	Bromodichloromethane	11.72	83	257769	23.5485 ug/L		99
51)	1,4-Dioxane	11.71	88	4652	148.6971 ug/L		93
52)	Dibromomethane	11.81	93	74844	20.3012 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.02	63	52144	19.4795 ug/L		93
54)	4-Methyl-2-Pentanone	12.06	58	20053	18.3391 ug/L		88
55)	cis-1,3-Dichloropropene	12.36	75	269581	24.1955 ug/L		98
56)	Dimethyl Disulfide	12.62	79	135405	22.7695 ug/L		93
59)	Toluene	12.79	91	650563	19.8407 ug/L		100
60)	Ethyl Methacrylate	12.88	69	126680	20.1174 ug/L		99
62)	trans-1,3-Dichloropropene	12.96	75	228531	20.7977 ug/L		100
63)	1,1,2-Trichloroethane	13.17	97	100026	19.3323 ug/L		98
64)	2-Hexanone	13.12	58	18558	17.0683 ug/L	#	97
65)	1,3-Dichloropropane	13.48	76	190456	20.6751 ug/L		99
66)	Tetrachloroethene	13.60	164	144130	20.5165 ug/L		97
67)	Dibromochloromethane	13.86	129	153794	20.3572 ug/L		99
68)	1,2-Dibromoethane	14.12	107	100863	19.5599 ug/L		98
69)	1-Chlorohexane	14.21	91	225215	20.1216 ug/L		100
70)	Chlorobenzene	14.63	112	448084	20.2654 ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.66	131	176797	20.6393 ug/L		100
72)	Ethylbenzene	14.65	106	239033	19.7590 ug/L		97
73)	m-,p-Xylene	14.74	106	586089	41.3041 ug/L		96
74)	o-Xylene	15.31	106	284203	20.4864 ug/L		94
75)	Styrene	15.34	104	471198	20.7088 ug/L		96
76)	Bromoform	15.84	173	89190	19.9039 ug/L		98
77)	Isopropylbenzene	15.73	105	790764	21.4569 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	101272	16.6305 ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	34568	18.4343 ug/L		81
82)	trans-1,4-Dichloro-2-Buten	16.19	53	30633	16.4440 ug/L		89
83)	n-Propylbenzene	16.24	91	952312	20.1212 ug/L		99
84)	Bromobenzene	16.36	156	184517	18.9540 ug/L		92
85)	1,3,5-Trimethylbenzene	16.43	105	697206	20.2228 ug/L		98
86)	2-Chlorotoluene	16.51	91	599994	18.1575 ug/L		93
87)	4-Chlorotoluene	16.56	91	640125	21.4461 ug/L		92
88)	a-Methylstyrene	16.83	118	338335	20.6846 ug/L		99
89)	tert-Butylbenzene	16.89	134	131548	19.5036 ug/L		98
90)	1,2,4-Trimethylbenzene	16.94	105	699066	19.7194 ug/L		98
91)	sec-Butylbenzene	17.16	105	795429	19.6117 ug/L		100
92)	p-Isopropyltoluene	17.32	119	675309	19.6096 ug/L		100
93)	1,3-Dichlorobenzene	17.51	146	368775	19.6730 ug/L		97
94)	1,4-Dichlorobenzene	17.64	146	365385	19.3341 ug/L		99
95)	n-Butylbenzene	17.84	91	637234	18.7172 ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	316991	19.0135 ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.13	75	21850	17.8752 ug/L		98
98)	1,2,4-Trichlorobenzene	20.27	180	226638	18.1867 ug/L		97
99)	Hexachlorobutadiene	20.43	225	115147	19.7759 ug/L		98
100)	Naphthalene	20.64	128	288316	15.5724 ug/L		98
101)	1,2,3-Trichlorobenzene	20.95	180	179526	17.0759 ug/L		97

(#) = qualifier out of range (m) = manual integration
8M413280.D 8260WT.M Wed Jun 29 08:23:58 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062716\8M413280.D Vial: 6
Acq On : 27 Jun 2016 20:11 Operator: FJB
Sample : WG574410-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 29 8:23 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

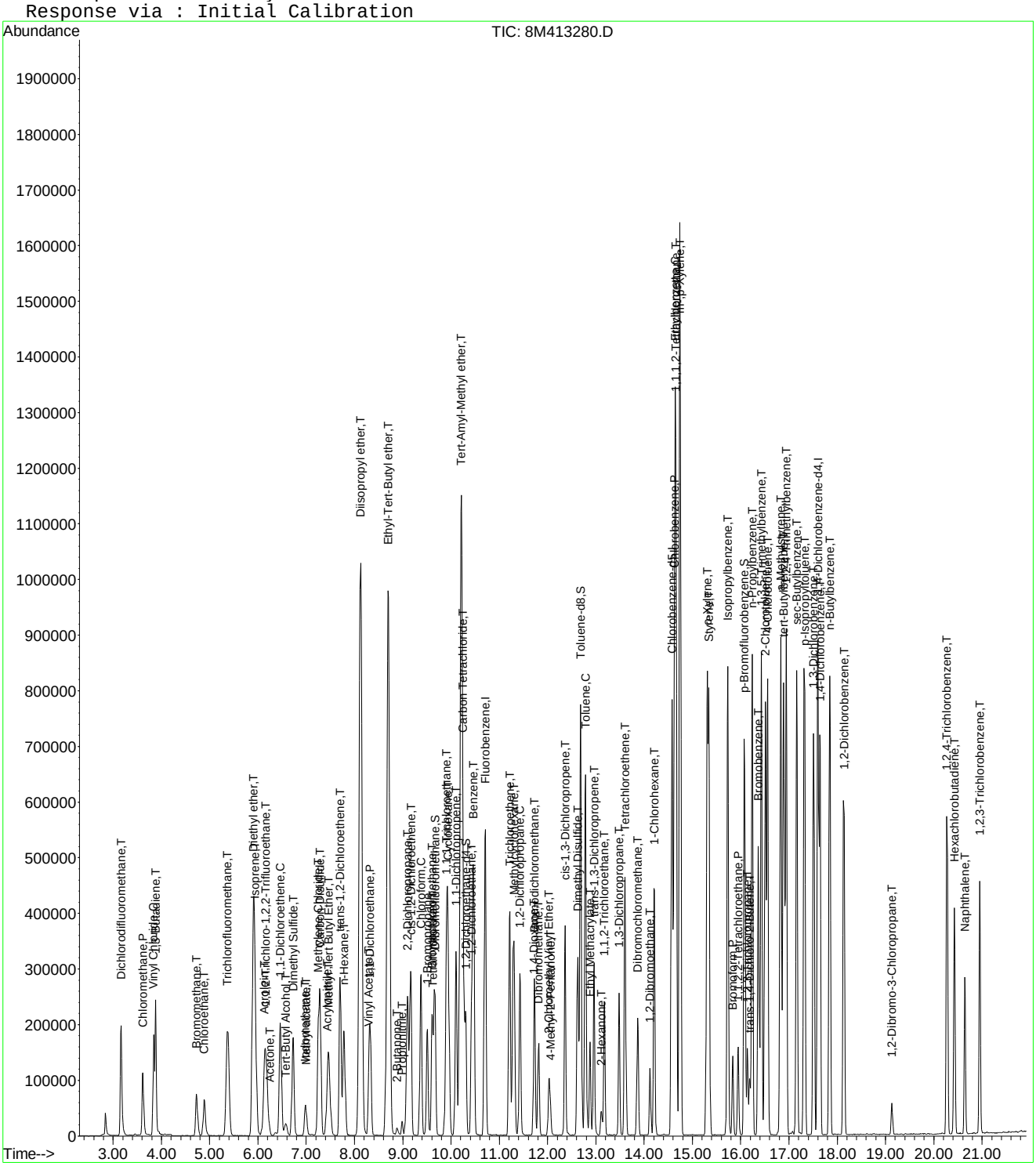

2.2 Semivolatiles Data

2.2.1 Semivolatiles GC/MS Data (Dioxane)

2.2.1.1 Summary Data

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061144-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18WW06-062016	**Prep Method:**	3520C	**Prep Date:**	06/22/2016 13:51
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574301	**Analyst:**	MES	**Run Date:**	06/27/2016 18:31
Collect Date:	06/20/2016 13:45	**Dilution:**	1	**File ID:**	15M18608
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	36.3	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061144-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18WW06FD-062016	**Prep Method:**	3520C	**Prep Date:**	06/22/2016 13:51
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574301	**Analyst:**	MES	**Run Date:**	06/27/2016 18:54
Collect Date:	06/20/2016 13:45	**Dilution:**	1	**File ID:**	15M18609
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	48.5	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061144-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	MW17-062016	**Prep Method:**	3520C	**Prep Date:**	06/22/2016 13:51
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574301	**Analyst:**	MES	**Run Date:**	06/27/2016 19:17
Collect Date:	06/20/2016 15:00	**Dilution:**	1	**File ID:**	15M18610
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	46.8	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.2.1.2 QC Summary Data

Example 8270 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	1261197
Cis = Concentration of the specific internal standard (ug/mL)	40
Ais = Area of the characteristic ion of the specific internal standard	608044
Cx = Concentration of the compound in the standard being measured (ug/mL)	50
RF = Calculated Response Factor	**1.65935**

2.0 Calculating the concentration (C) of a compound in water using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Vi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Vi = Initial volume of sample extracted from prep log (mL)	1021
Cx = Concentration of the compound in the sample being measured (ug/mL)	0.016947
Cx = Concentration of the compound in the sample being measured (ug/L)	**16.947**

3.0 Calculating the concentration (C) of a compound in soil using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Wi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Wi = Initial weight of sample extracted (g) from prep log	30
Cx = Concentration of the compound in the sample being measured (ug/g)	0.576763
Cx = Concentration of the compound in the sample being measured (ug/kg)	**576.7627**

Dry weight correction:

Percent solids (PCT_S)	50
Cd = (Cx) (100)/PCT_S	**1153.525** ug/kg

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve plot

b = intercept from curve plot

Step 2: Calculate y from Quantitation Report

y = 16790/784838 = 0.02139

Step 3: Solve for x

x = (y - b)/m = [(0.02139 -(- 0.0435)]/ 0.0783 = 0.829

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.829) = 20.72 ug/L

Example Spreadsheet Calculation:

Slope from curve, m:	0.0783	
Intercept from curve, b:	-0.0435	
Area of analyte, Ax:	16790	
Area of Internal Standard , Ais:	784484	
Concentration of IS, Cis	25.00	ug/L
Response Ratio (y) :	0.021403	
Amount Ratio:	0.828897	
Concentration (Cx):	20.72241	ug/L

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**0.0259**	
Value of B from plot:	**0.0596**	
Value of C from plot:	**-0.0165**	
Area of analyte from quantitation report:	**203233**	
Area of IS from quantiation report:	**1425653**	
Response ratio, y:	**0.142554**	
C - y:	**-0.15905**	
Root 1 - Computed amount ratio , X1:	**-3.88278**	
Root 2 - Computed amount ratio , X2:	**1.581623**	use this solution
Concentration of IS, Cis:	**40.00**	
Concentration of analyte, Cx:	**63.26**	ug/L

Microbac Laboratories Inc.
Continuous Sample Extract Log

Workgroup: WG573812
Analyst: CPD
Spike Analyst: 001
Method: 3520C
Run Date: 06/22/2016 13:51
SOP: EXB01 Revison 20
Spike Witness: JDH
Surr Solution: STD76628

TIME ON: 14:35 OFF: 09:00 ON: 14:30 OFF: 08:30

CH2CL2 Lot #: COA18982
1:1 H2SO4 Lot #: RGT36755
sodium sulfate Lot #: COA18814

	SAMPLE #	Type	Reference	Prod	pH	Init Amnt	Surr Amnt	Spike Amnt	Spike Sol	Final Vol	Color
1	L16061124-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
2	L16061142-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
3	L16061142-06	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
4	L16061142-07	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
5	L16061144-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
6	L16061144-02	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
7	L16061144-03	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
8	L16061227-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
9	L16061227-06	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
10	L16061227-07	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
11	L16061233-02	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
12	WG573812-01	BLANK		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
13	WG573812-02	LCS		827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD75256	1 mL	Transparent
14	WG573812-03	LCS2		827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD75256	1 mL	Transparent

Analyst: Chelsie Davis

Reviewer: Justin Hesson

EXTRACT - Modified 01/23/2009
PDF ID: 4825364
Report generated: 06/27/2016 08:29

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062116
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573365

Internal STD: STD76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: STD74214 MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18455	BAKEOUT	1	1		06/21/16 08:46
2	15M18456	WG573501-01 5PPM DFTPP STD	1	1	STD75016	06/21/16 09:05
3	15M18457	WG573501-01 5PPM DFTPP STD	1	1	STD75016	06/21/16 09:34
4	15M18458	WG573501-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 09:52
5	15M18459	WG573501-03 10 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 10:27
6	15M18460	WG573501-04 7.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 10:49
7	15M18461	WG573501-05 2.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:12
8	15M18462	WG573501-06 1 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:34
9	15M18463	WG573501-07 0.4 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:57
10	15M18464	WG573501-08 5PPM 1,4-DIOXANE ALT SRC	1	1	STD74214	06/21/16 12:20
11	15M18465	WG572806-01 BLANK 6/15	1	1		06/21/16 12:54
12	15M18466	WG572806-02 LCS 6/15	1	1		06/21/16 13:17
13	15M18467	WG572806-03 LCSDUP 6/15	1	1		06/21/16 13:40
14	15M18468	WG573008-01 BLANK 6/17	7	1	SOIL	06/21/16 14:03
15	15M18469	WG573008-02 LCS 6/17	7	1	SOIL	06/21/16 14:26
16	15M18470	WG573008-03 LCSDUP 6/17	7	1	SOIL	06/21/16 14:48
17	15M18471	L16060730-01	1	1		06/21/16 15:11
18	15M18472	L16060730-02	1	1		06/21/16 15:34
19	15M18473	L16060854-01	1	1		06/21/16 15:57
20	15M18474	L16060730-03	1	1		06/21/16 16:19
21	15M18475	L16060756-04 827-DIOX	1	1		06/21/16 16:46
22	15M18476	L16060822-01	1	1		06/21/16 17:08
23	15M18477	L16060822-03	1	1		06/21/16 17:31
24	15M18478	L16060822-04	1	1		06/21/16 17:54
25	15M18479	L16060822-05	1	1		06/21/16 18:17
26	15M18480	L16060823-01	1	1		06/21/16 18:40
27	15M18481	L16060823-03	1	1		06/21/16 19:02
28	15M18482	L16060823-04	1	1		06/21/16 19:25
29	15M18483	L16060809-03 827-DIOX	1	1		06/21/16 19:48
30	15M18484	L16060854-01 2X	1	2		06/21/16 20:10
31	15M18485	BAKEOUT	1	1		06/21/16 20:33
32	15M18486	BAKEOUT	1	1		06/21/16 20:55
33	15M18487	BAKEOUT	1	1		06/21/16 21:18

Page: 1 Approved: 22-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062116

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573365

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD: STD74214

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
	WG573501-01 5PPM DFTPP STD rerun DFTPP, pentachlorophenol tailing >2.			
14				
	WG573008-01 BLANK 6/17 DNR-not needed.			
15				
	WG573008-02 LCS DNR-not needed.			
16				
	WG573008-03 LCSDUP DNR-not needed.			
19	X	2	Over Calibration Range	
	L16060854-01			

Page: 2 Approved: 22-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062716

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574301,WG574187,WG574186,WG573853

Internal STD: STD76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: MS/MSD STD:

Comments: All samples associated with extraction workgroup WG573815 are being re-extracted due to low LCSDUP recovery: L16060637-02,756-01 to-03,809-01 and -02,930-01 and -02, 1213-01 to -06.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18584	BAKEOUT	1	1		06/27/16 08:21
13	15M18585	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 08:41
14	15M18586	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 08:58
2	15M18587	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 09:22
3	15M18588	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 09:38
4	15M18589	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 10:23
5	15M18590	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 11:15
6	15M18591	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 11:32
7	15M18592	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 12:20
8	15M18593	WG574241-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/27/16 12:37
9	15M18594	WG573975-03 LCSDUP 6/24 RR	7	1	SOIL	06/27/16 13:15
10	15M18595	WG573815-02 LCS 6/23 RR	7	1	SOIL	06/27/16 13:37
11	15M18596	WG573815-03 LCSDUP 6/23 RR	7	1	SOIL	06/27/16 13:59
12	15M18597	WG573812-01 BLANK 6/22	1	1		06/27/16 14:22
15	15M18598	WG573812-02 LCS 6/22	1	1		06/27/16 14:45
16	15M18599	WG573812-03 LCSDUP 6/22	1	1		06/27/16 15:07
17	15M18600	L16061026-05 40X	1	40		06/27/16 15:30
18	15M18601	L16061213-05 827-DIOX	7	1	SOIL	06/27/16 15:52
19	15M18602	L16061213-06 827-DIOX	7	1		06/27/16 16:15
20	15M18603	L16061233-02 827-DIOX	1	1		06/27/16 16:38
21	15M18604	L16061124-01	1	1		06/27/16 17:01
22	15M18605	L16061142-01	1	1		06/27/16 17:23
23	15M18606	L16061142-06	1	1		06/27/16 17:46
24	15M18607	L16061142-07	1	1		06/27/16 18:09
25	15M18608	L16061144-01	1	1		06/27/16 18:31
26	15M18609	L16061144-02	1	1		06/27/16 18:54
27	15M18610	L16061144-03	1	1		06/27/16 19:17
28	15M18611	L16061227-01	1	1		06/27/16 19:39
29	15M18612	L16061227-06	1	1		06/27/16 20:02
30	15M18613	L16061227-07	1	1		06/27/16 20:25
31	15M18614	L16061124-01 2X	1	2		06/27/16 20:47
32	15M18615	BAKEOUT	1	1		06/27/16 21:10
33	15M18616	BAKEOUT	1	1		06/27/16 21:32

Page: 1 Approved: 28-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062716

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574301,WG574187,WG574186,WG573853

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	15M18617	BAKEOUT	1	1		06/27/16 21:55

Comments

Seq.	Rerun	Dil.	Reason	Analytes
13				
	Rerun DFTPP, wrong standard was analyzed.			
14				
	Rerun DFTPP, wrong standard was analyzed.			
2				
	Rerun DFTPP, ion failures. Liner needs changed.			
3				
	Rerun DFTPP, degradation >20%.			
4				
	Rerun DFTPP, degradation >20%. Changed the gold seal.			
5				
	Rerun DFTPP, benzidine tailing >2.			
6				
	Rerun DFTPP, benzidine tailing >2. Clipped 5cm from the column.			
9				
	WG573975-03 LCSDUP 6/24 RR recovery is acceptable. Not reporting the run from 6/25/16.			
11				
	WG573815-03 LCSDUP 6/23 RR low recovery; confirms the original run.			
21	X	2	Over Calibration Range	
	L16061124-01			
28				
	L16061227-01 Needs re-extracted; surrogate recovery is low.			

Page: 2 Approved: 28-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 21-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75850
Analytical Workgroups: L16060730, 060756, 060809, 060822, 060823, 060854

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 22-JUN-2016

Secondary Reviewer: 22-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-22-2016 16:00:51

Microbac Laboratories Inc.

Data Checklist

Date: 27-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75949
Analytical Workgroups: L16061026,061213,WG573956-LCSDUP RR,061124,1142,1144,1227,123

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
28-JUN-2016

Secondary Reviewer:
28-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-28-2016 14:33:27

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8270D

AAB#: WG574301

Login Number: L16061144

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW06-062016	01	06/20/16					06/22/2016	2	7		06/27/16	5.2	40	
18WW06FD-062016	02	06/20/16					06/22/2016	2	7		06/27/16	5.2	40	
MW17-062016	03	06/20/16					06/22/2016	2	7		06/27/16	5.2	40	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4828110
Report generated 06/29/2016 08:19

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061144
Instrument Id: HPMS15
Workgroup (AAB#): WG574301

Method: 827-DIOXANE
CAL ID: HPMS15-21-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1
L16061144-01	1.00	01	36.3
L16061144-02	1.00	01	48.5
L16061144-03	1.00	01	46.8
WG573812-01	1.00	01	29.1
WG573812-02	1.00	01	33.3
WG573812-03	1.00	01	61.4

Surrogates	Surrogate Limits		
1 - 1,4-Dioxane-d8	20	-	129

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4828116
Report generated: 06/29/2016 08:19

METHOD BLANK SUMMARY

Login Number: L16061144
Blank File ID: 15M18597
Prep Date: 06/22/16 13:51
Analyzed Date: 06/27/16 14:22
Analyst: MES

Work Group: WG574301
Blank Sample ID: WG573812-01
Instrument ID: HPMS15
Method: 8270D

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573812-02	15M18598	06/27/16 14:45	01
LCS2	WG573812-03	15M18599	06/27/16 15:07	01
18WW06-062016	L16061144-01	15M18608	06/27/16 18:31	01
18WW06FD-062016	L16061144-02	15M18609	06/27/16 18:54	01
MW17-062016	L16061144-03	15M18610	06/27/16 19:17	01

Report Name: BLANK_SUMMARY
PDF File ID: 4828893
Report generated 06/29/2016 08:19

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061144 Prep Date: 06/22/16 13:51 Sample ID: WG573812-01
Instrument ID: HPMS15 Run Date: 06/27/16 14:22 Prep Method: 3520C
File ID: 15M18597 Analyst: MES Method: 8270D
Workgroup (AAB#): WG574301 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS15-21-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
1,4-Dioxane	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	29.1	20 - 129	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4828111
29-JUN-2016 08:19

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061144 Analyst: MES Prep Method: 3520C
Instrument ID: HPMS15 Matrix: Water Method: 8270D
Workgroup (AAB#): WG574301 Units: ug/L
QC Key: DOD4 Lot #: STD75256

Sample ID: WG573812-02 LCS File ID: 15M18598 Run Date: 06/27/2016 14:45
Sample ID: WG573812-03 LCS2 File ID: 15M18599 Run Date: 06/27/2016 15:07

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,4-Dioxane	5.00	1.59	31.8	5.00	3.00	60.0	61.5	30 - 104	30	#

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,4-Dioxane-d8	33.3	61.4	20 - 129	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4828112
Report generated: 06/29/2016 08:19

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16061144
Instrument: HPMS15
Analyst: MES
Workgroup: WG573501

Tune ID: WG573501-01
Run Date: 06/21/2016
Run Time: 09:34
File ID: 15M18457
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	38.8	34488	PASS
68.0	69.0	0	2.00	1.36	500	PASS
69.0	198	0	100	41.4	36833	PASS
70.0	69.0	0	2.00	0.467	172	PASS
127	198	40.0	60.0	51.9	46131	PASS
197	198	0	1.00	0	0	PASS
198	198	100	100	100	88880	PASS
199	198	5.00	9.00	6.66	5918	PASS
275	198	10.0	30.0	24.9	22090	PASS
365	198	1.00	100	2.65	2358	PASS
441	443	0.0100	100	75.7	9586	PASS
442	198	40.0	100	73.4	65261	PASS
443	442	17.0	23.0	19.4	12659	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573501-02	STD-CCV	01	06/21/2016 09:52	
WG573501-03	STD	01	06/21/2016 10:27	
WG573501-04	STD	01	06/21/2016 10:49	
WG573501-05	STD	01	06/21/2016 11:12	
WG573501-06	STD	01	06/21/2016 11:34	
WG573501-07	STD	01	06/21/2016 11:57	
WG573501-08	SSCV	01	06/21/2016 12:20	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4828113
Report generated 06/29/2016 08:19

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16061144
Instrument: HPMS15
Analyst: MES
Workgroup: WG574241

Tune ID: WG574241-01
Run Date: 06/27/2016
Run Time: 12:20
File ID: 15M18592
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	33.2	31989	PASS
68.0	69.0	0	2.00	1.61	580	PASS
69.0	198	0	100	37.4	35954	PASS
70.0	69.0	0	2.00	0.617	222	PASS
127	198	40.0	60.0	50.4	48459	PASS
197	198	0	1.00	0.425	409	PASS
198	198	100	100	100	96232	PASS
199	198	5.00	9.00	6.65	6399	PASS
275	198	10.0	30.0	25.2	24236	PASS
365	198	1.00	100	2.50	2410	PASS
441	443	0.0100	100	75.7	10371	PASS
442	198	40.0	100	73.9	71133	PASS
443	442	17.0	23.0	19.3	13708	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG574241-02	CCV	01	06/27/2016 12:37	
WG573812-01	BLANK	01	06/27/2016 14:22	
WG573812-02	LCS	01	06/27/2016 14:45	
WG573812-03	LCS2	01	06/27/2016 15:07	
L16061144-01	18WW06-062016	01	06/27/2016 18:31	
L16061144-02	18WW06FD-062016	01	06/27/2016 18:54	
L16061144-03	MW17-062016	01	06/27/2016 19:17	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4828113
Report generated 06/29/2016 08:19

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061144
Analytical Method: 8270D
ICAL Workgroup: WG573501

Instrument ID: HPMS15
Initial Calibration Date: 21-JUN-16 11:57
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
1,4-Dioxane		0.3060	2.56		

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4828894
Report generated 06/29/2016 08:19

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061144

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 21-JUN-16 11:57

Column ID: F

Analyte	WG573501-02			WG573501-03			WG573501-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	5.00	60883.0000	0.3073	10.0	138820.000	0.3164	7.50	103182.000	0.3106

INT_CAL - Modified 03/06/2008
PDF File ID: 4828894
Report generated 06/29/2016 08:19

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061144
Analytical Method: 8270D

Instrument ID: HPMS15
Initial Calibration Date: 21-JUN-16 11:57
Column ID: F

Analyte	WG573501-05			WG573501-06			WG573501-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	2.50	26333.0000	0.2969	1.00	13250.0000	0.2966	0.400	5650.00000	0.3081

INT_CAL - Modified 03/06/2008
PDF File ID: 4828894
Report generated 06/29/2016 08:19

Calibration Table Report
Method: DIOXANE_D8.M
Title: OVD MSS01 SIM 1,4-dioxane ICAL 062116
Last Calibration: Tue Jun 21 12:51:17 2016
Curve:WG573501
Calibration Files

Compound	10 15M18459.D	7.5 15M18460.D	5 15M18458.D	2.5 15M18461.D	1 15M18462.D	0.4 15M18463.D	Avg	%RSD
1,4-Dichlorobenzene-d4	ISTD							
1,4-Dioxane	0.316	0.311	0.307	0.297	0.297	0.308	0.306	2.558
1,4-Dioxane-d8	0.426	0.418	0.417	0.402	0.395		0.411	3.044
Nitrobenzene-d5	1.202	1.173	1.128	1.002	0.927	0.906	1.056	12.163
2-Fluorobiphenyl	2.735	2.736	2.691	2.621	2.563	2.651	2.666	2.548
p-Terphenyl-d14	2.793	2.774	2.622	2.460	2.367	2.405	2.570	7.266

Wed Jun 22 12:17:33 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061144 Run Date: 06/21/2016 Sample ID: WG573501-08
Instrument ID: HPMS15 Run Time: 12:20 Method: 8270D
File ID: 15M18464 Analyst: MES QC Key: DOD4
ICal Workgroup: WG573501 Cal ID: HPMS15 - 21-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
1,4-Dioxane		5000	5050	ug/L	0.309	0.900	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4828895
Report generated 06/29/2016 08:19

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061144
Run Date: 06/27/2016
Sample ID: WG574241-02
Instrument ID: HPMS15
Run Time: 12:37
Method: 8270D
File ID: 15M18593
Analyst: MES
QC Key: DOD4
Workgroup (AAB#): WG574301
Cal ID: HPMS15 - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,4-Dioxane		5000	4360	ug/L	0.267	12.8	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4828114
Report generated 06/29/2016 08:19

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061144
Instrument ID: HPMS15
Workgroup (AAB#): WG574301

ICAL CCV Number: WG573501-02
CAL ID: HPMS15 - 21-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG573501-02	NA	NA	39637
Upper Limit	NA	NA	79274
Lower Limit	NA	NA	19819
L16061144-01	1.00	01	47380
L16061144-02	1.00	01	44627
L16061144-03	1.00	01	49277
WG573812-01	1.00	01	38478
WG573812-02	1.00	01	47423
WG573812-03	1.00	01	50712

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4828115
Report generated 06/29/2016 08:19

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061144
Instrument ID: HPMS15
Workgroup (AAB#): WG574301

ICAL CCV Number: WG573501-02
CAL ID: HPMS15-21-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG573501-02	NA	NA	6.93
Upper Limit	NA	NA	7.43
Lower Limit	NA	NA	6.43
L16061144-01	1.00	01	6.896
L16061144-02	1.00	01	6.896
L16061144-03	1.00	01	6.896
WG573812-01	1.00	01	6.896
WG573812-02	1.00	01	6.896
WG573812-03	1.00	01	6.896

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4828896
Report generated: 06/29/2016 08:19

2.2.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18608.D
Acq On : 27 Jun 2016 18:31
Operator : MES
Sample : L16061144-01
Misc : 1,1
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Jun 28 08:07:02 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.896	152	47380	1.0000	ug/mL	#-0.04
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.770	96	35418	1.8167	ug/L	-0.06
Spiked Amount 5.000			Recovery	=	36.40%	
4) Nitrobenzene-d5	7.404	82	1006	0.0201	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.40%	
5) 2-Fluorobiphenyl	8.889	172	102	0.0008	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.151	244	270	0.0022	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.00%	

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18608.D
Acq On : 27 Jun 2016 18:31
Operator : MES
Sample : L16061144-01
Misc : 1,1
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Jun 28 08:07:02 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

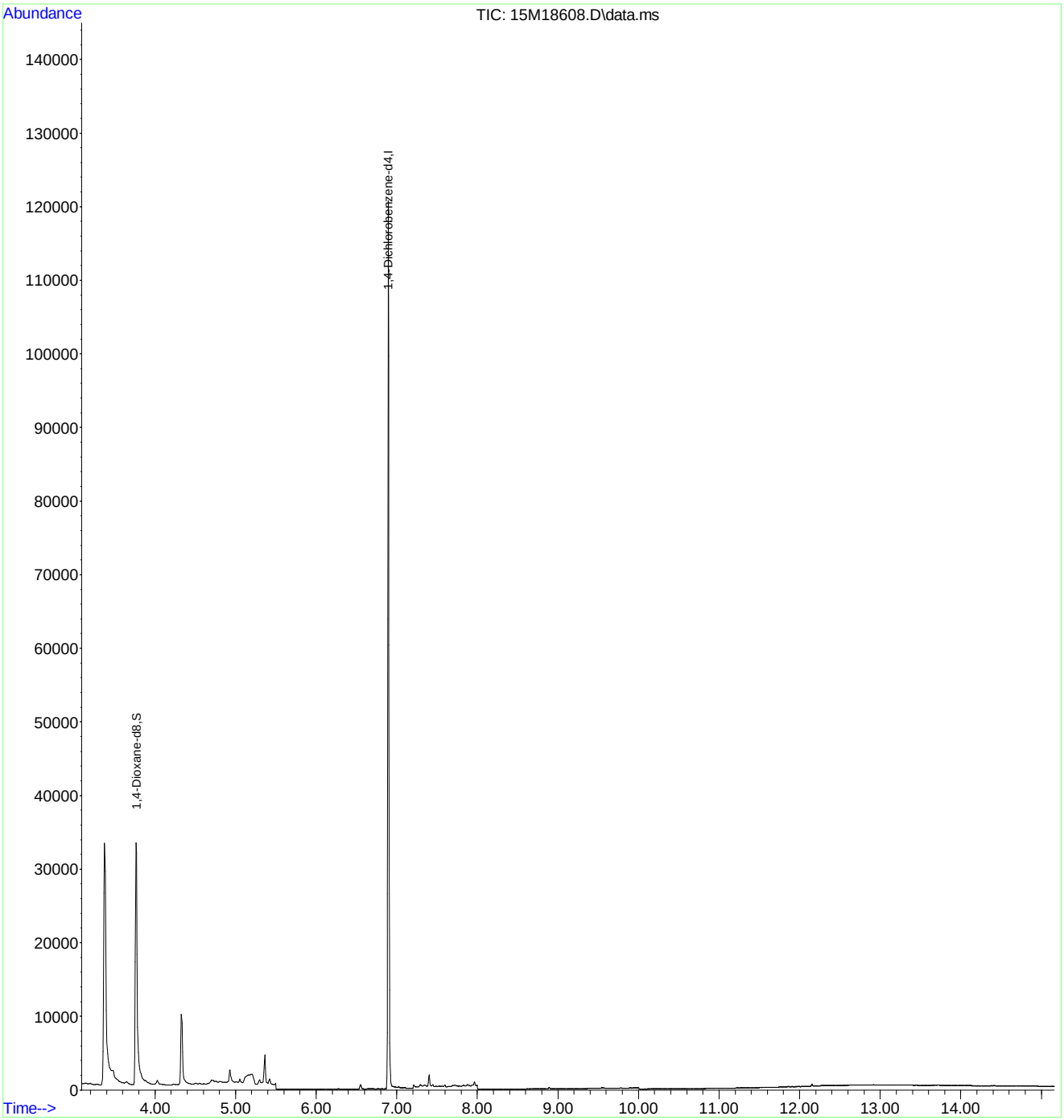

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18609.D
Acq On : 27 Jun 2016 18:54
Operator : MES
Sample : L16061144-02
Misc : 1,1
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Jun 28 08:07:05 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.896	152	44627	1.0000	ug/mL	#-0.04
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.763	96	44560	2.4266	ug/L	-0.06
Spiked Amount 5.000			Recovery	=	48.60%	
4) Nitrobenzene-d5	7.404	82	1166	0.0247	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.40%	
5) 2-Fluorobiphenyl	8.889	172	190	0.0016	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.140	244	573	0.0050	ug/L	-0.04
Spiked Amount 5.000			Recovery	=	0.00%	

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18609.D
Acq On : 27 Jun 2016 18:54
Operator : MES
Sample : L16061144-02
Misc : 1,1
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Jun 28 08:07:05 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

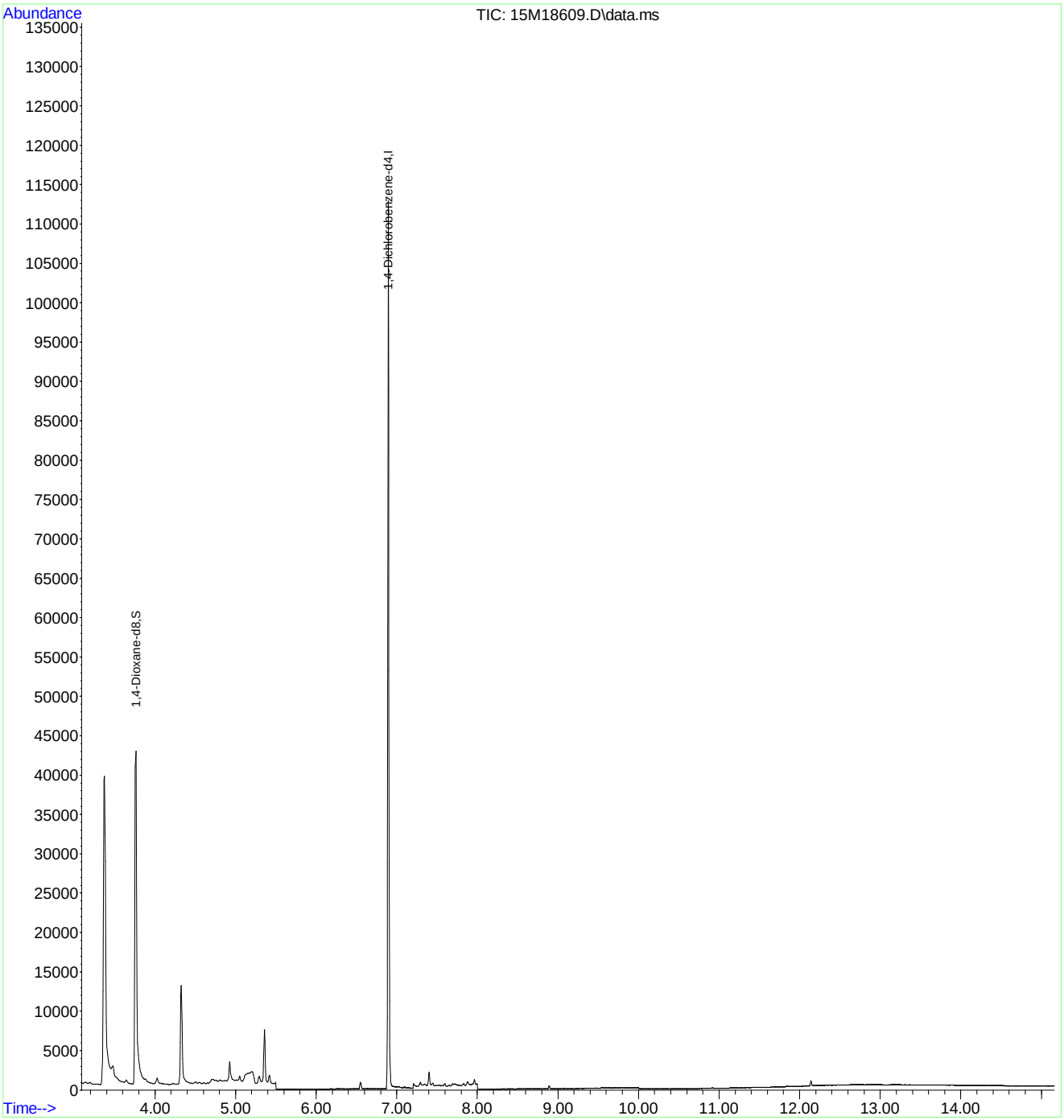

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18610.D
Acq On : 27 Jun 2016 19:17
Operator : MES
Sample : L16061144-03
Misc : 1,1
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Jun 28 08:07:08 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.896	152	49277	1.0000	ug/mL	#-0.04
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.764	96	47477	2.3415	ug/L	-0.06
Spiked Amount 5.000			Recovery	=	46.80%	
4) Nitrobenzene-d5	7.404	82	1503	0.0289	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.60%	
5) 2-Fluorobiphenyl	8.889	172	211	0.0016	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.148	244	797	0.0063	ug/L	-0.04
Spiked Amount 5.000			Recovery	=	0.20%	

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18610.D
Acq On : 27 Jun 2016 19:17
Operator : MES
Sample : L16061144-03
Misc : 1,1
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Jun 28 08:07:08 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

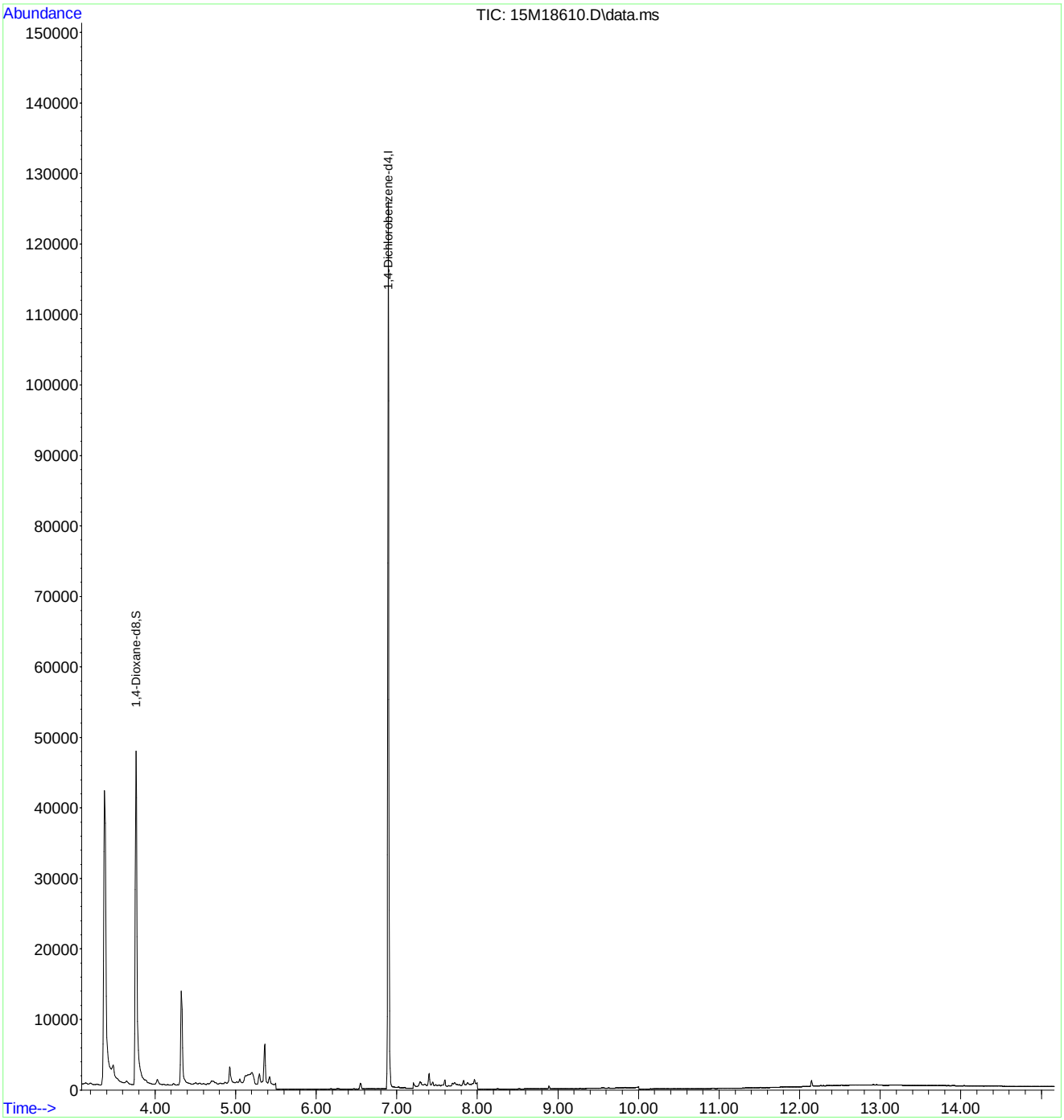

2.2.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 22 08:04:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	39637	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.827	96	82573	5.0627 ug/L	0.00
Spiked Amount 5.000			Recovery	= 101.20%	
4) Nitrobenzene-d5	7.431	82	223381	5.3353 ug/L	0.00
Spiked Amount 5.000			Recovery	= 106.80%	
5) 2-Fluorobiphenyl	8.922	172	533101	5.0444 ug/L	0.00
Spiked Amount 5.000			Recovery	= 100.80%	
6) p-Terphenyl-d14	12.184	244	519544	5.1003 ug/L	0.00
Spiked Amount 5.000			Recovery	= 102.00%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.862	58	60883	5.0202 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 22 08:04:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

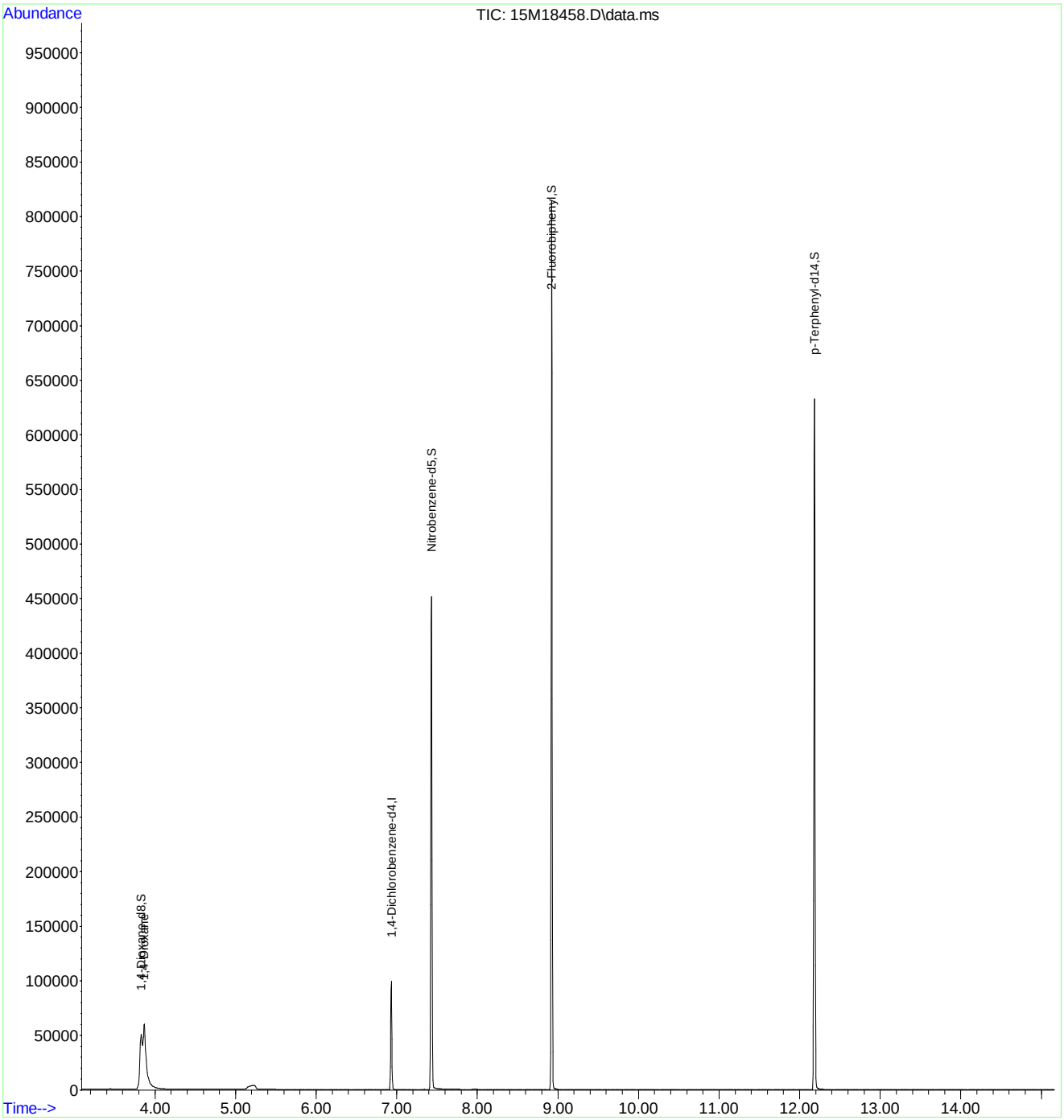

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18459.D
Acq On : 21 Jun 2016 10:27
Operator : MES
Sample : WG573501-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 22 08:04:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	43874	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	186767	10.3452	ug/L	0.00
Spiked Amount 5.000			Recovery = 207.00%			
4) Nitrobenzene-d5	7.431	82	527549	11.3834	ug/L	0.00
Spiked Amount 5.000			Recovery = 227.60%			
5) 2-Fluorobiphenyl	8.926	172	1199799	10.2565	ug/L	0.00
Spiked Amount 5.000			Recovery = 205.20%			
6) p-Terphenyl-d14	12.240	244	1225328	10.8672	ug/L	0.06
Spiked Amount 5.000			Recovery = 217.40%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	138820	10.3412	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18459.D
Acq On : 21 Jun 2016 10:27
Operator : MES
Sample : WG573501-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 22 08:04:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

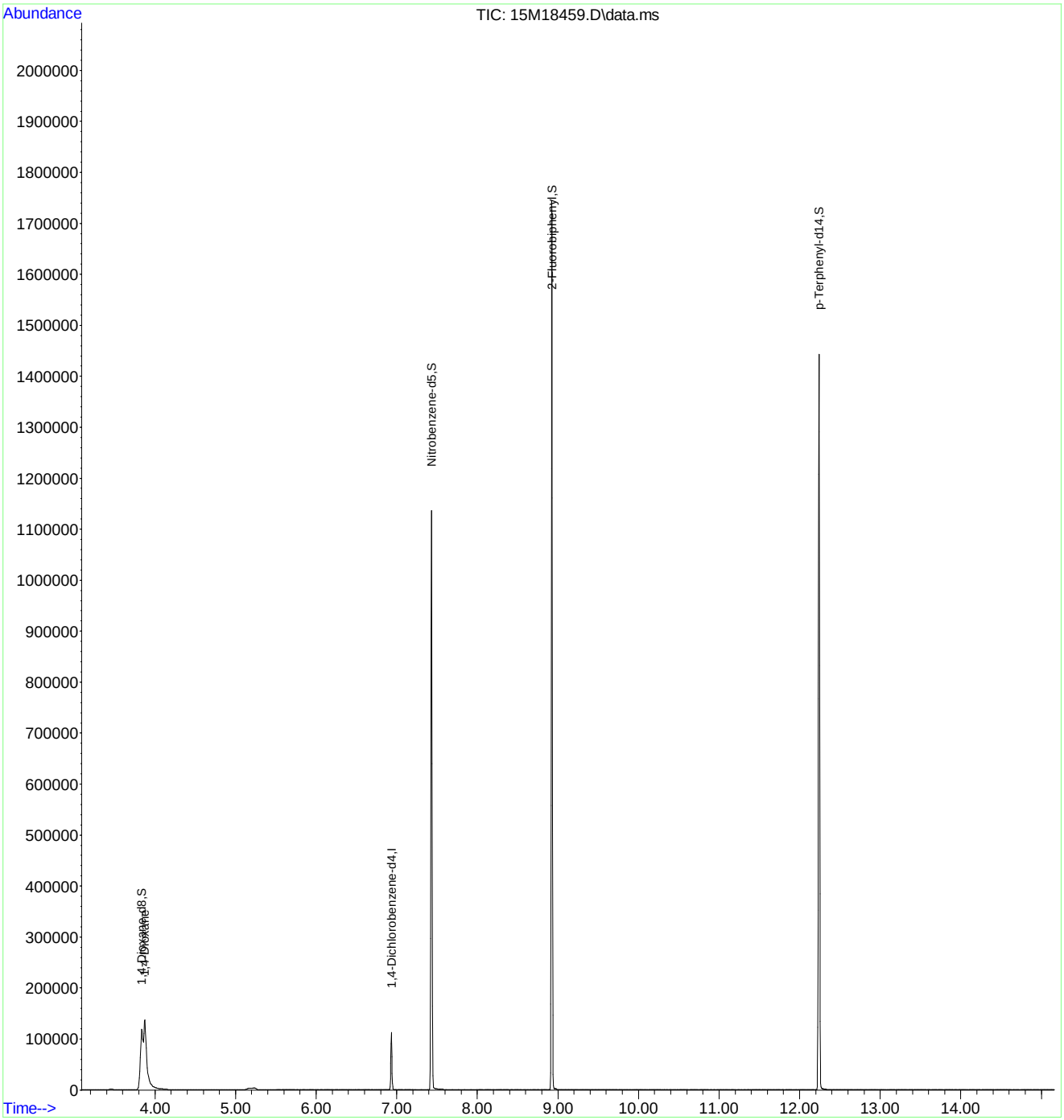

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18460.D
Acq On : 21 Jun 2016 10:49
Operator : MES
Sample : WG573501-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 22 08:04:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	44299	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.834	96	138833	7.6163 ug/L	0.00
Spiked Amount 5.000			Recovery	= 152.40%	
4) Nitrobenzene-d5	7.431	82	389810	8.3306 ug/L	0.00
Spiked Amount 5.000			Recovery	= 166.60%	
5) 2-Fluorobiphenyl	8.923	172	909050	7.6965 ug/L	0.00
Spiked Amount 5.000			Recovery	= 154.00%	
6) p-Terphenyl-d14	12.203	244	921380	8.0931 ug/L	0.02
Spiked Amount 5.000			Recovery	= 161.80%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.876	58	103182	7.6127 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18460.D
Acq On : 21 Jun 2016 10:49
Operator : MES
Sample : WG573501-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 22 08:04:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

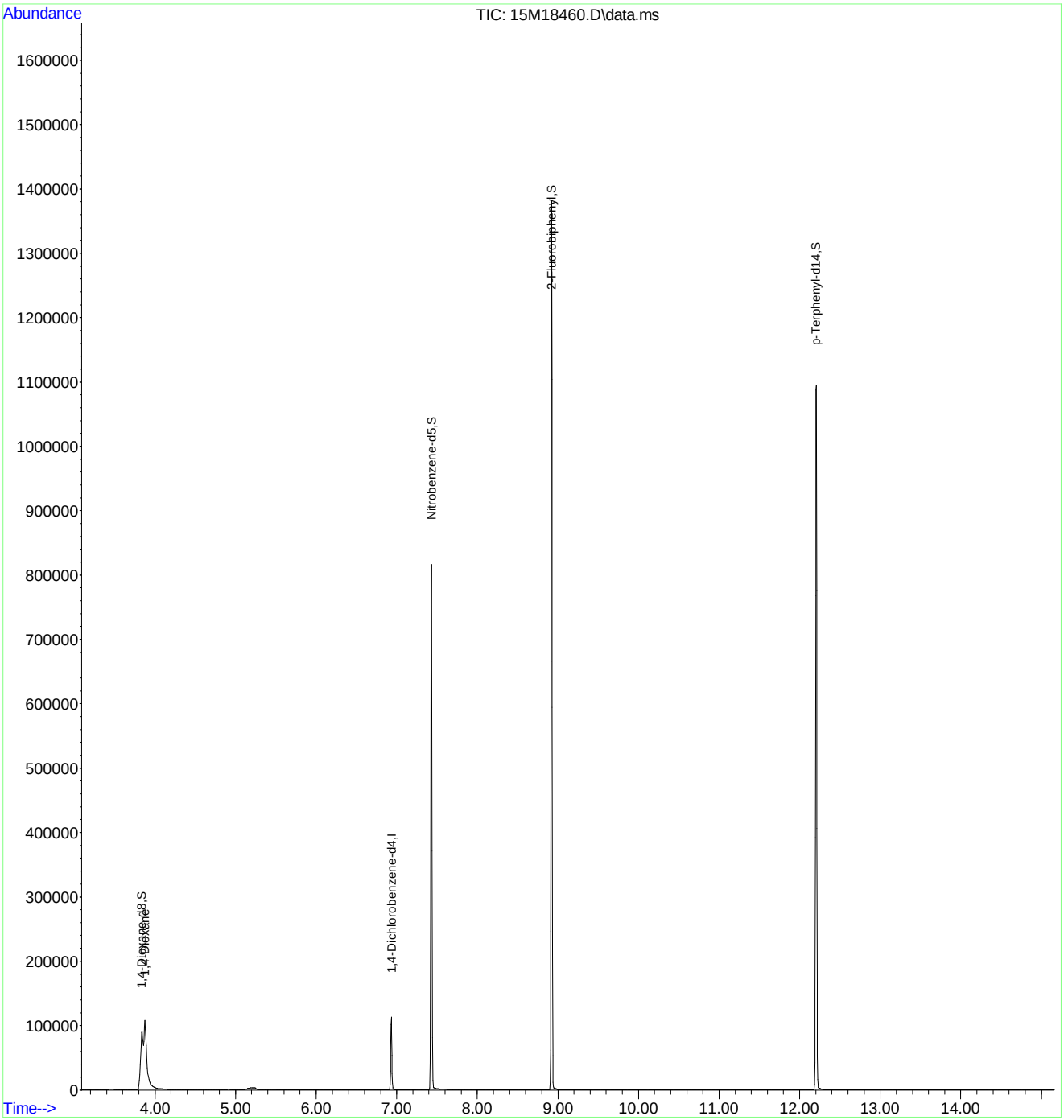

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18461.D
Acq On : 21 Jun 2016 11:12
Operator : MES
Sample : WG573501-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 22 08:04:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	35478	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.827	96	35630	2.4406 ug/L	0.00
Spiked Amount 5.000			Recovery	= 48.80%	
4) Nitrobenzene-d5	7.431	82	88869	2.3714 ug/L	0.00
Spiked Amount 5.000			Recovery	= 47.40%	
5) 2-Fluorobiphenyl	8.923	172	232500	2.4579 ug/L	0.00
Spiked Amount 5.000			Recovery	= 49.20%	
6) p-Terphenyl-d14	12.199	244	218191	2.3930 ug/L	0.02
Spiked Amount 5.000			Recovery	= 47.80%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.862	58	26333	2.4259 ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18461.D
Acq On : 21 Jun 2016 11:12
Operator : MES
Sample : WG573501-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 22 08:04:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

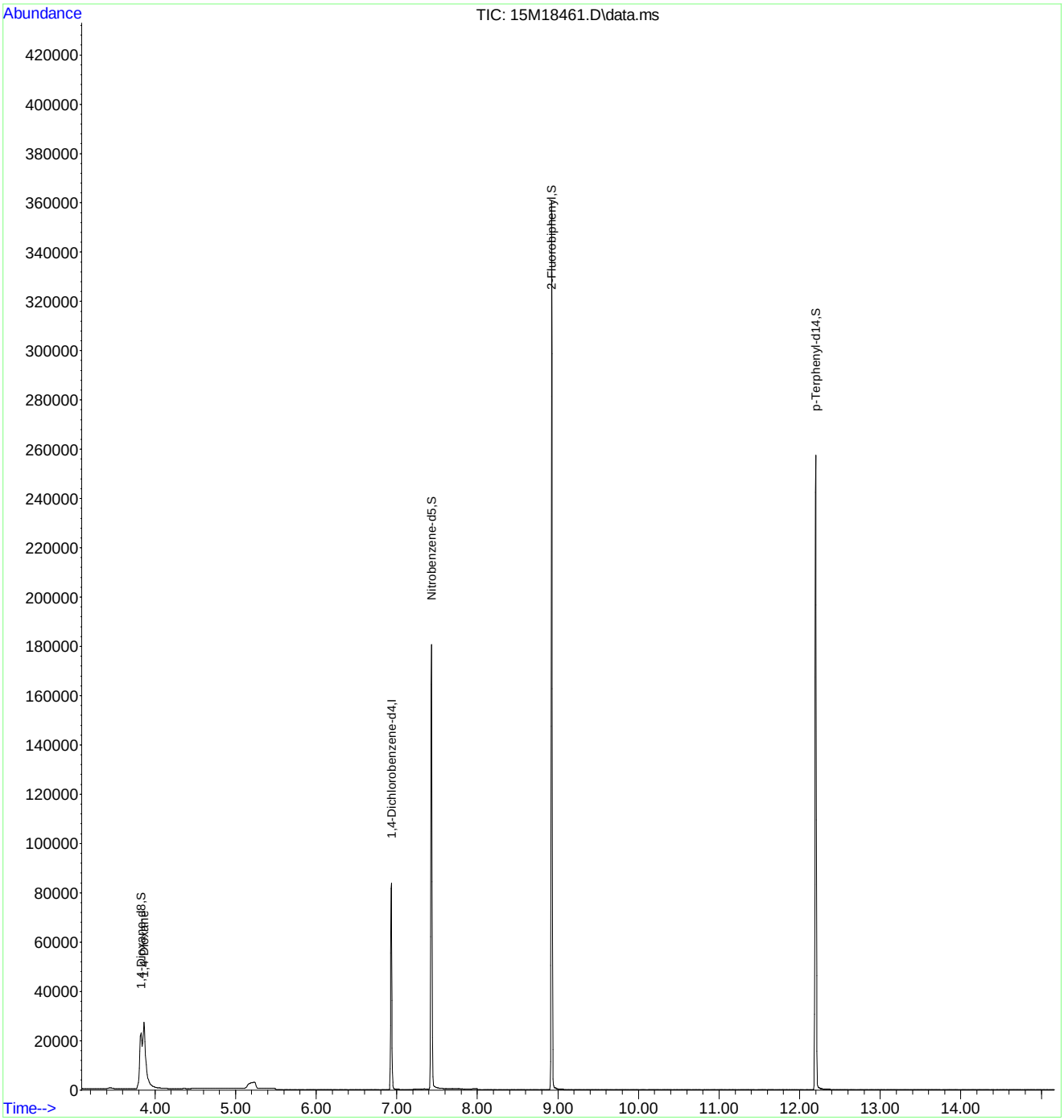

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18462.D
Acq On : 21 Jun 2016 11:34
Operator : MES
Sample : WG573501-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 22 08:04:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	44672	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.841	96	17660	0.9607 ug/L	0.01
Spiked Amount 5.000			Recovery	= 19.20%	
4) Nitrobenzene-d5	7.431	82	41409	0.8776 ug/L	0.00
Spiked Amount 5.000			Recovery	= 17.60%	
5) 2-Fluorobiphenyl	8.922	172	114491	0.9612 ug/L	0.00
Spiked Amount 5.000			Recovery	= 19.20%	
6) p-Terphenyl-d14	12.203	244	105713	0.9208 ug/L	0.02
Spiked Amount 5.000			Recovery	= 18.40%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.876	58	13250	0.9694 ug/L	82

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18462.D
Acq On : 21 Jun 2016 11:34
Operator : MES
Sample : WG573501-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 22 08:04:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

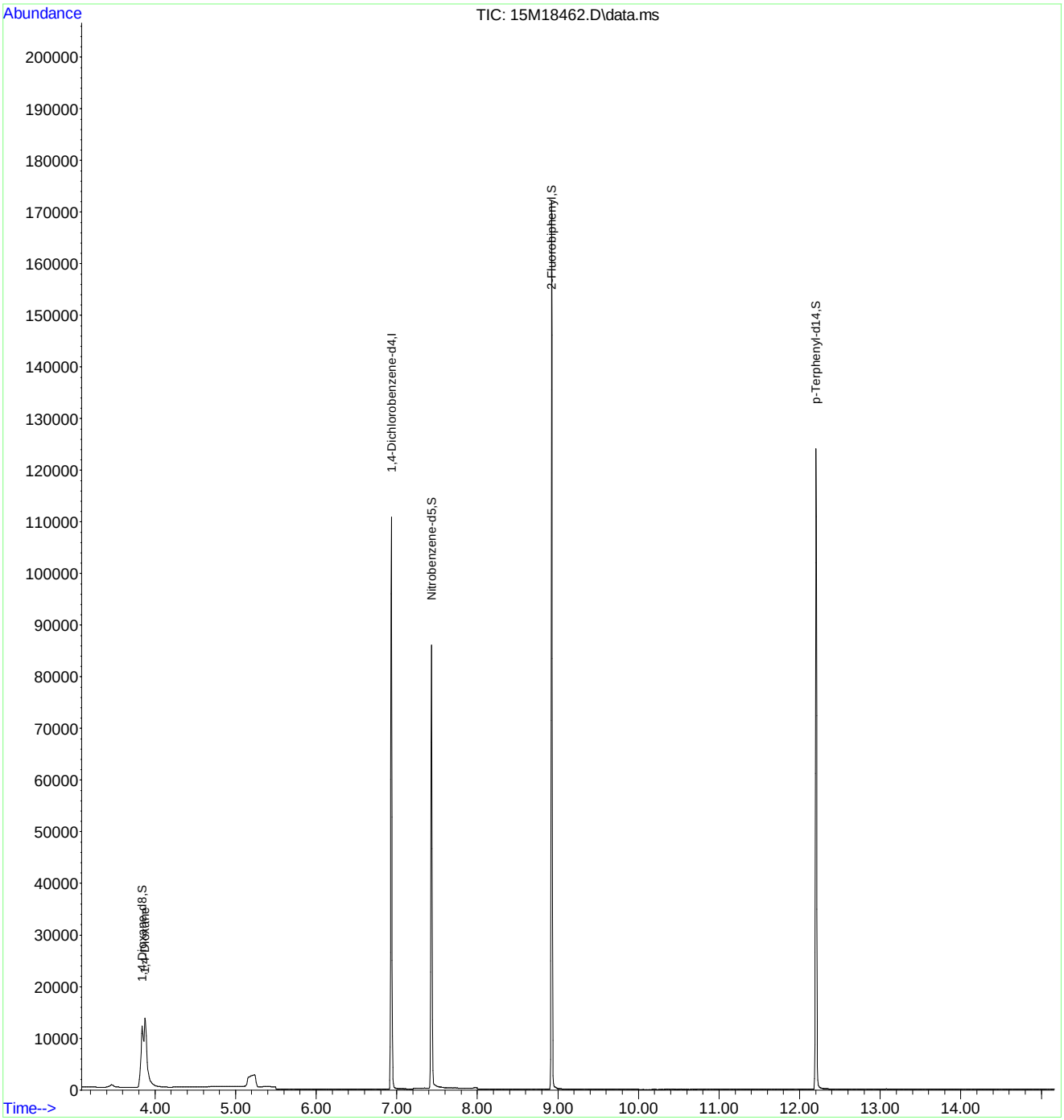

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18463.D
Acq On : 21 Jun 2016 11:57
Operator : MES
Sample : WG573501-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 22 08:04:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	45840	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.841	96	7629	0.4045	ug/L	0.01
Spiked Amount 5.000			Recovery	=	8.00%	
4) Nitrobenzene-d5	7.431	82	16604	0.3429	ug/L	0.00
Spiked Amount 5.000			Recovery	=	6.80%	
5) 2-Fluorobiphenyl	8.923	172	48617	0.3978	ug/L	0.00
Spiked Amount 5.000			Recovery	=	8.00%	
6) p-Terphenyl-d14	12.210	244	44097	0.3743	ug/L	0.03
Spiked Amount 5.000			Recovery	=	7.40%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.876	58	5650	0.4028	ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18463.D
Acq On : 21 Jun 2016 11:57
Operator : MES
Sample : WG573501-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 22 08:04:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

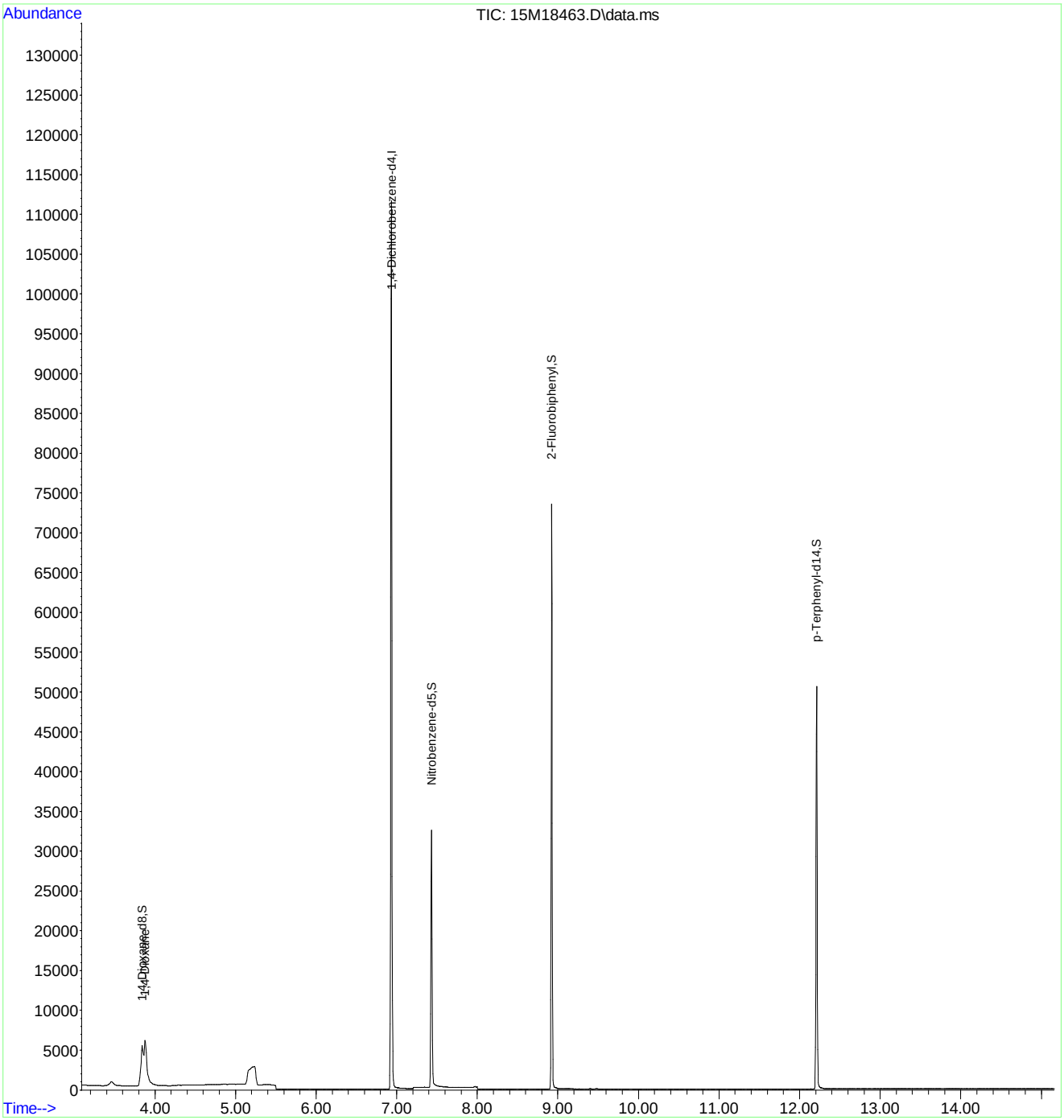

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	41944	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.792	96	22	0.0013	ug/L	-0.04
Spiked Amount 5.000			Recovery	=	0.00%	
4) Nitrobenzene-d5	7.436	82	56	0.0013	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
5) 2-Fluorobiphenyl	8.926	172	23	0.0002	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.214	244	128	0.0012	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	64750	5.0454	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

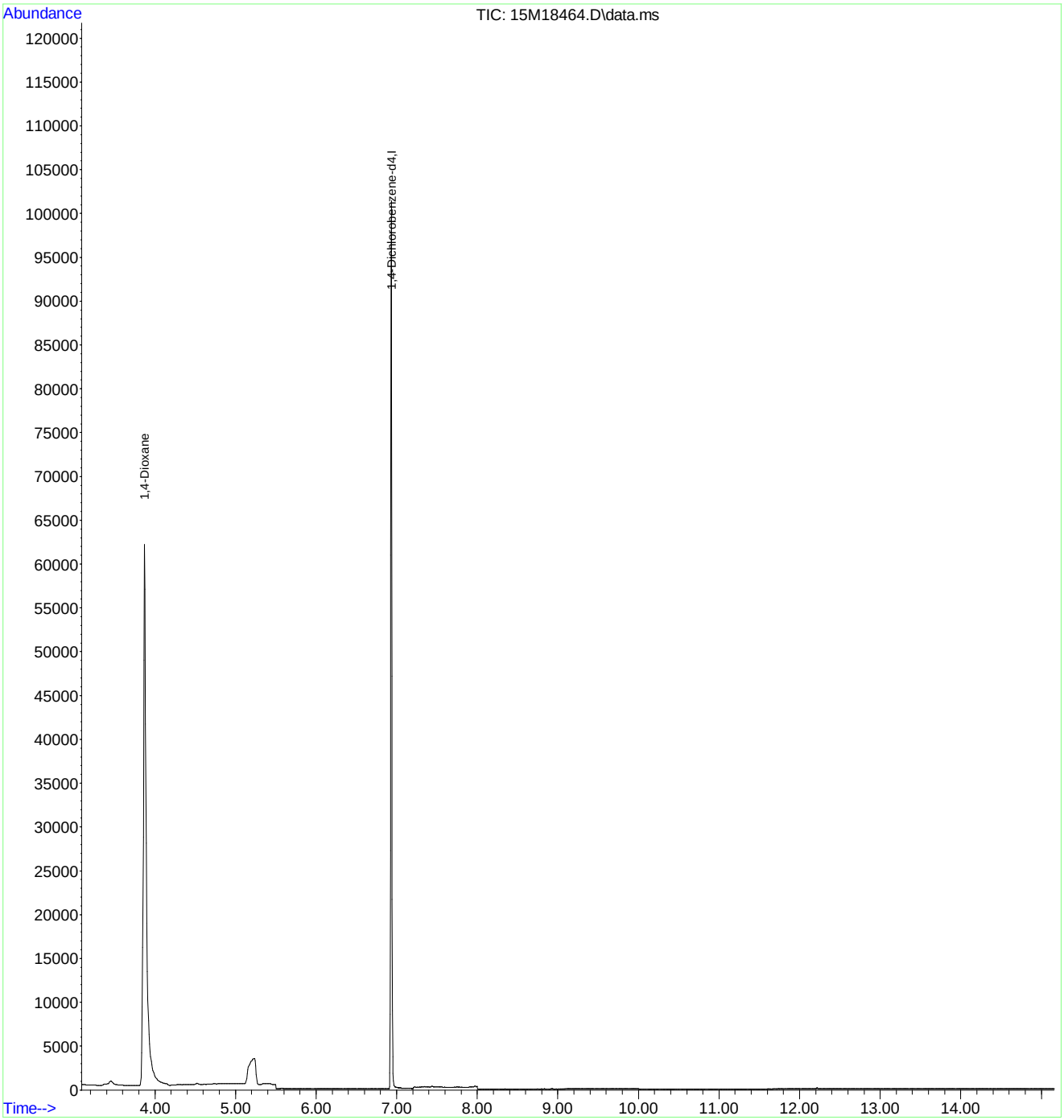

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	106	0.00
2		1,4-Dioxane	5.000	5.045	-0.9	106	0.00
3	S	1,4-Dioxane-d8	5.000	0.001	100.0#	0	-0.04
4	S	Nitrobenzene-d5	5.000	0.001	100.0#	0	0.00
5	S	2-Fluorobiphenyl	5.000	0.000	100.0#	0	0.00
6	S	p-Terphenyl-d14	5.000	0.001	100.0#	0	0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18593.D
Acq On : 27 Jun 2016 12:37
Operator : MES
Sample : WG574241-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 27 13:07:36 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.892	152	42974	1.0000 ug/mL	#-0.04
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.749	96	78711	4.4512 ug/L	-0.08
Spiked Amount 5.000			Recovery	= 89.00%	
4) Nitrobenzene-d5	7.393	82	235288	5.1833 ug/L	-0.04
Spiked Amount 5.000			Recovery	= 103.60%	
5) 2-Fluorobiphenyl	8.886	172	551093	4.8097 ug/L	-0.04
Spiked Amount 5.000			Recovery	= 96.20%	
6) p-Terphenyl-d14	12.170	244	561144	5.0809 ug/L	-0.01
Spiked Amount 5.000			Recovery	= 101.60%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.785	58	57358	4.3623 ug/L	88

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18593.D
Acq On : 27 Jun 2016 12:37
Operator : MES
Sample : WG574241-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 27 13:07:36 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

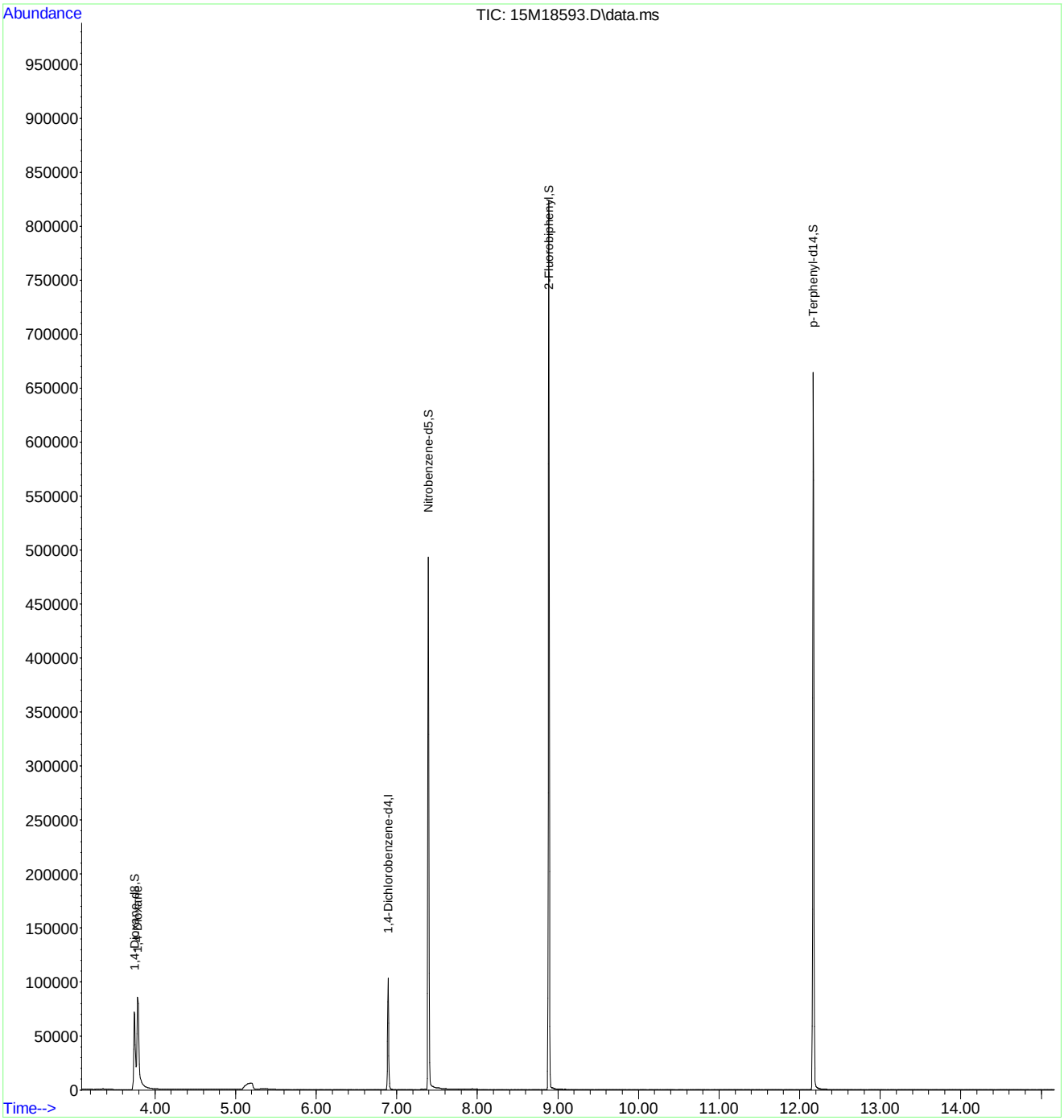

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18593.D
Acq On : 27 Jun 2016 12:37
Operator : MES
Sample : WG574241-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 27 13:07:36 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	108	-0.04
2	1,4-Dioxane	0.306	0.267	12.7	94	-0.08
3 S	1,4-Dioxane-d8	0.411	0.366	10.9	95	-0.08
4 S	Nitrobenzene-d5	1.056	1.095	-3.7	105	-0.04
5 S	2-Fluorobiphenyl	2.666	2.565	3.8	103	-0.04
6 S	p-Terphenyl-d14	2.570	2.612	-1.6	108	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18593.D
Acq On : 27 Jun 2016 12:37
Operator : MES
Sample : WG574241-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 27 13:07:36 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	108	-0.04
2	1,4-Dioxane	5.000	4.362	12.8	94	-0.08
3 S	1,4-Dioxane-d8	5.000	4.451	11.0	95	-0.08
4 S	Nitrobenzene-d5	5.000	5.183	-3.7	105	-0.04
5 S	2-Fluorobiphenyl	5.000	4.810	3.8	103	-0.04
6 S	p-Terphenyl-d14	5.000	5.081	-1.6	108	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

2.2.1.5 Raw QC Data

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

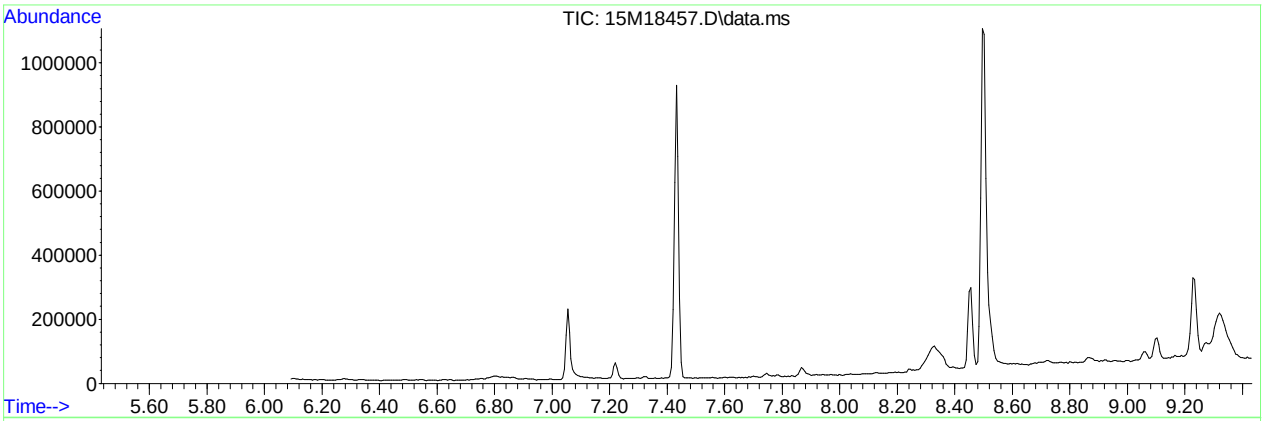

AutoFind: Scans 234, 235, 236; Background Corrected with Scan 228

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	38.8	34488	PASS
68	69	0.00	2	1.4	500	PASS
69	198	0.00	100	41.4	36833	PASS
70	69	0.00	2	0.5	172	PASS
127	198	40	60	51.9	46131	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	88880	PASS
199	198	5	9	6.7	5918	PASS
275	198	10	30	24.9	22090	PASS
365	198	1	100	2.7	2358	PASS
441	443	0.01	100	75.7	9586	PASS
442	198	40	100	73.4	65261	PASS
443	442	17	23	19.4	12659	PASS

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

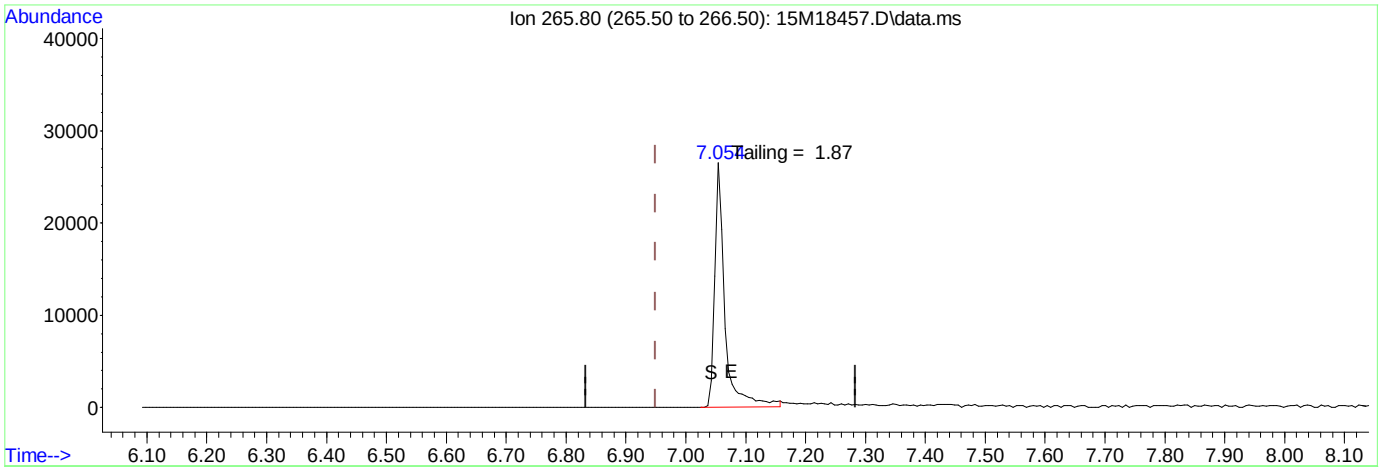

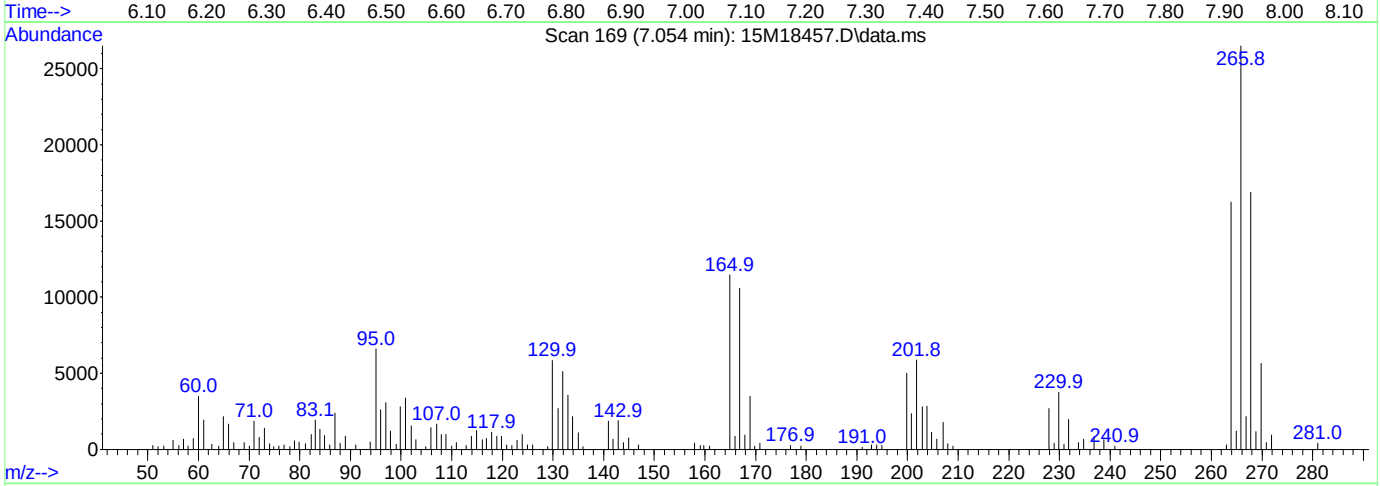

TIC: 15M18457.D\data.ms

(1) Pentachlorophenol

7.054min (+ 0.105) 0.00 ug/ml

response 30738

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

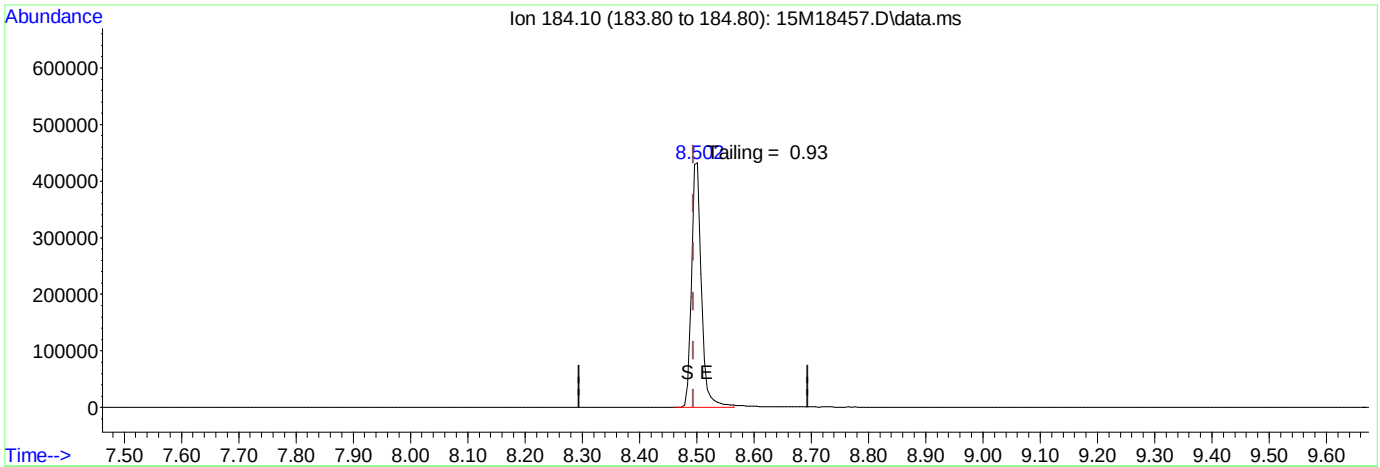

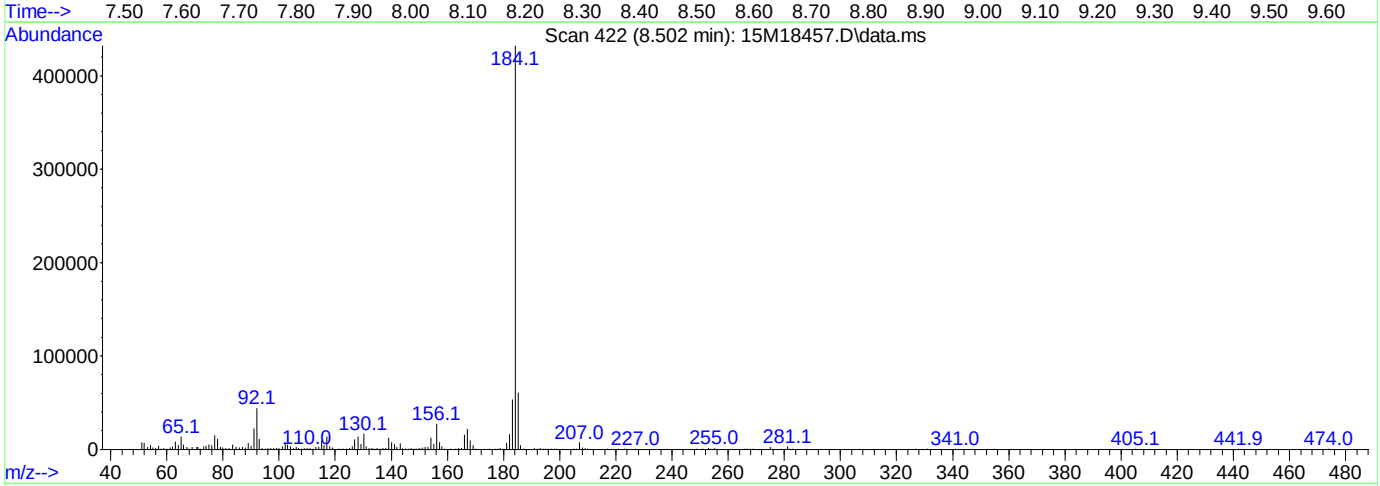

TIC: 15M18457.D\data.ms

(2) Benzidine

8.502min (+ 0.008) 0.00 ug/ml

response 532770

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

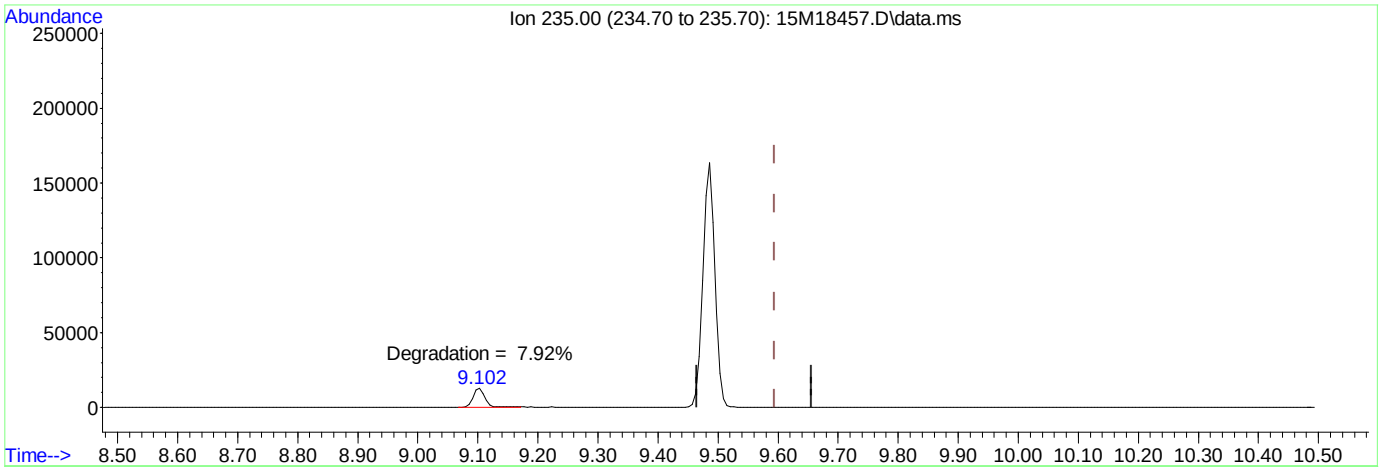

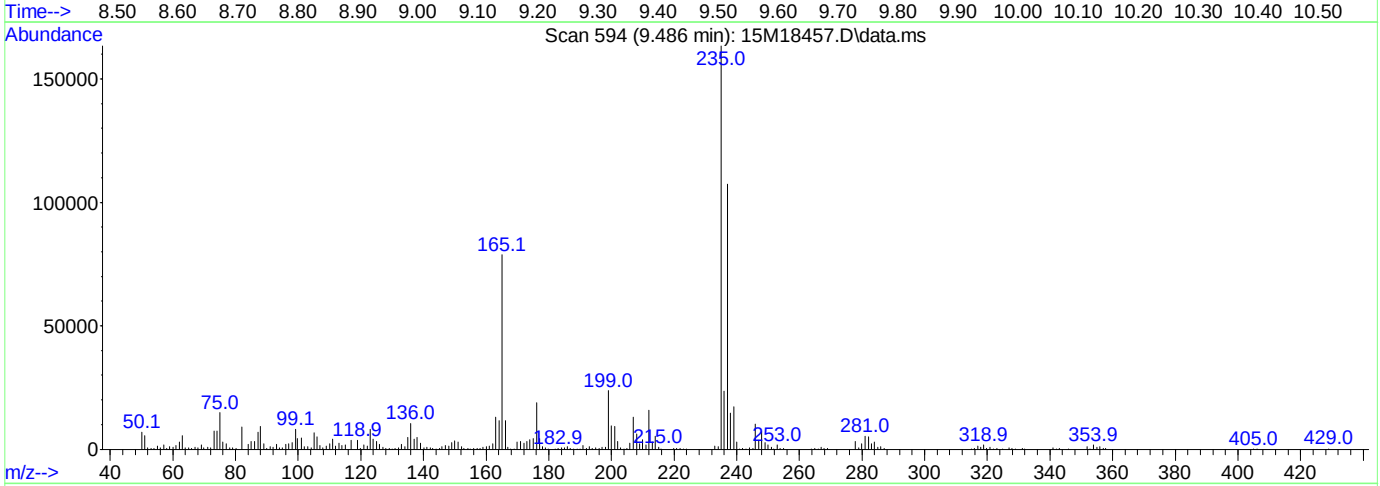

TIC: 15M18457.D\data.ms

(3) DDT

9.486min (-0.108) 0.00 ug/ml

response 180187

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18592.D
Acq On : 27 Jun 2016 12:20
Operator : MES
Sample : WG574241-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

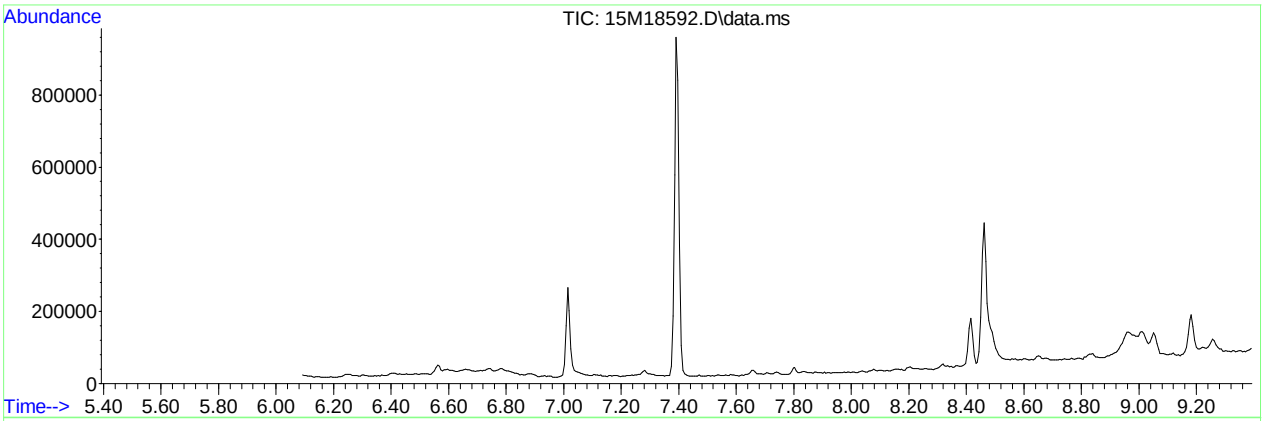

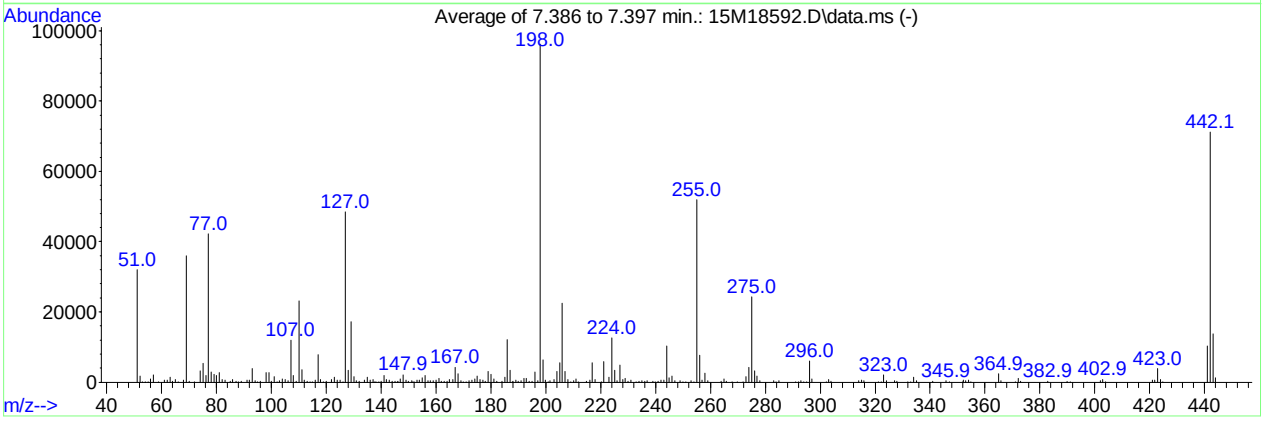

AutoFind: Scans 227, 228, 229; Background Corrected with Scan 221

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	33.2	31989	PASS
68	69	0.00	2	1.6	580	PASS
69	198	0.00	100	37.4	35954	PASS
70	69	0.00	2	0.6	222	PASS
127	198	40	60	50.4	48459	PASS
197	198	0.00	1	0.4	409	PASS
198	198	100	100	100.0	96232	PASS
199	198	5	9	6.6	6399	PASS
275	198	10	30	25.2	24236	PASS
365	198	1	100	2.5	2410	PASS
441	443	0.01	100	75.7	10371	PASS
442	198	40	100	73.9	71133	PASS
443	442	17	23	19.3	13708	PASS

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18592.D
Acq On : 27 Jun 2016 12:20
Operator : MES
Sample : WG574241-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 27 12:31:57 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

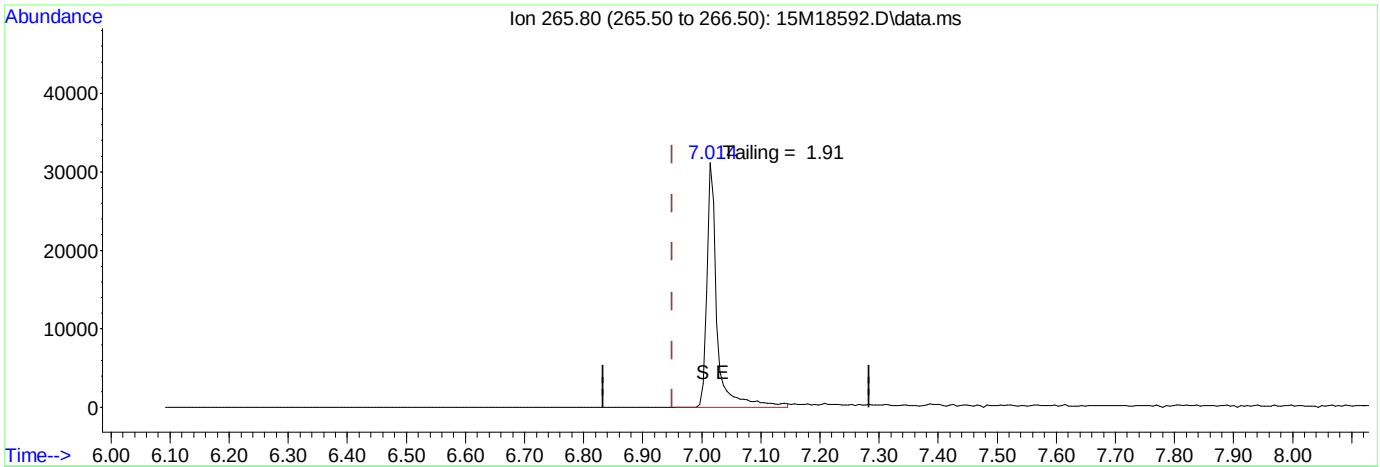

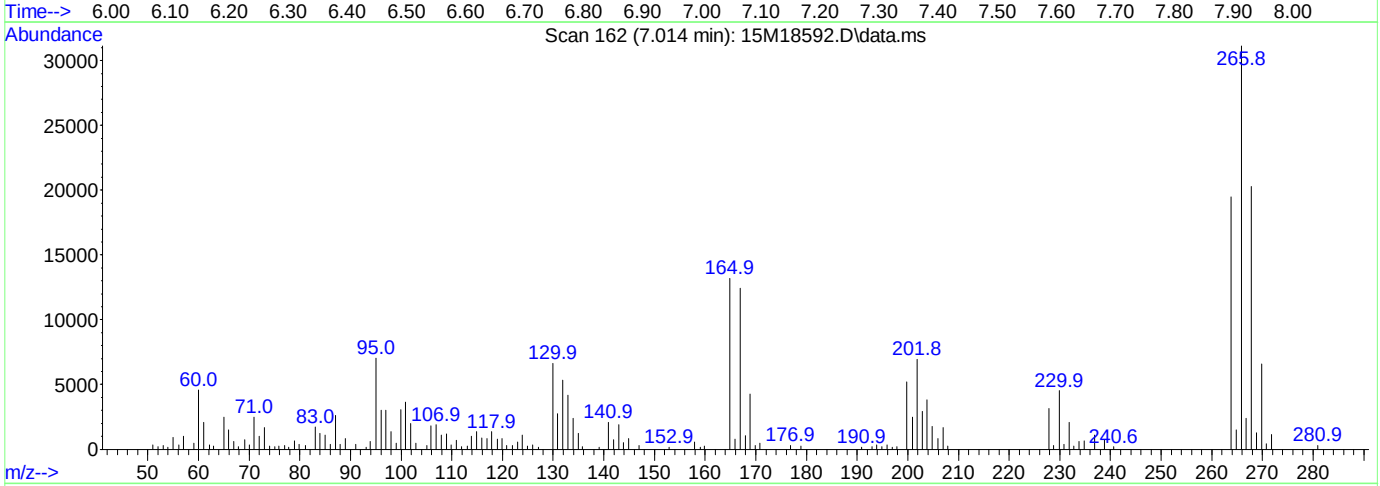

(1) Pentachlorophenol

7.014min (+ 0.065) 0.00 ug/ml

response 37276

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18592.D
Acq On : 27 Jun 2016 12:20
Operator : MES
Sample : WG574241-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 27 12:31:57 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

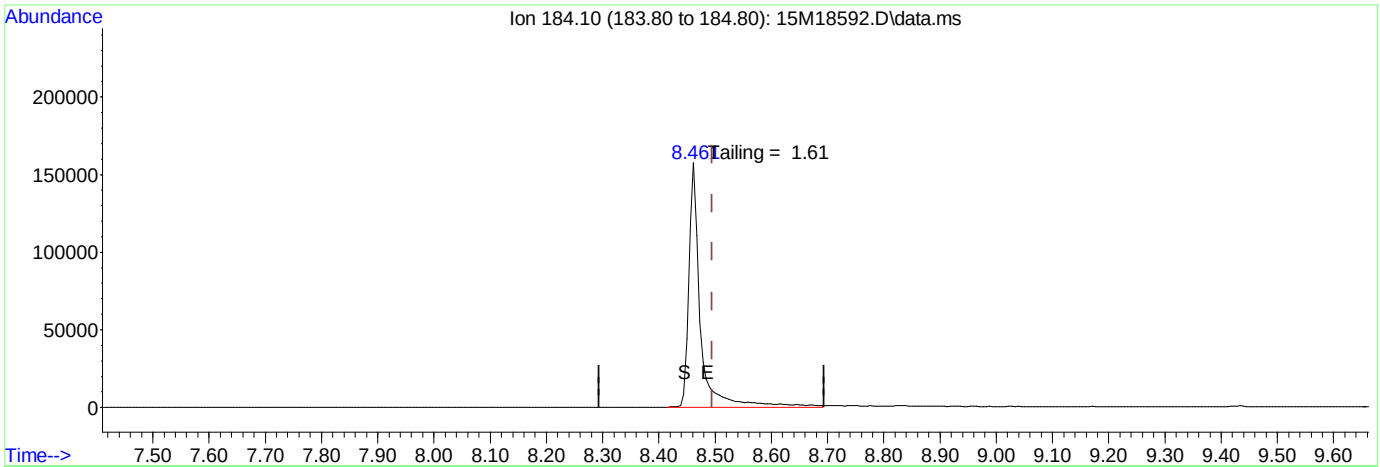

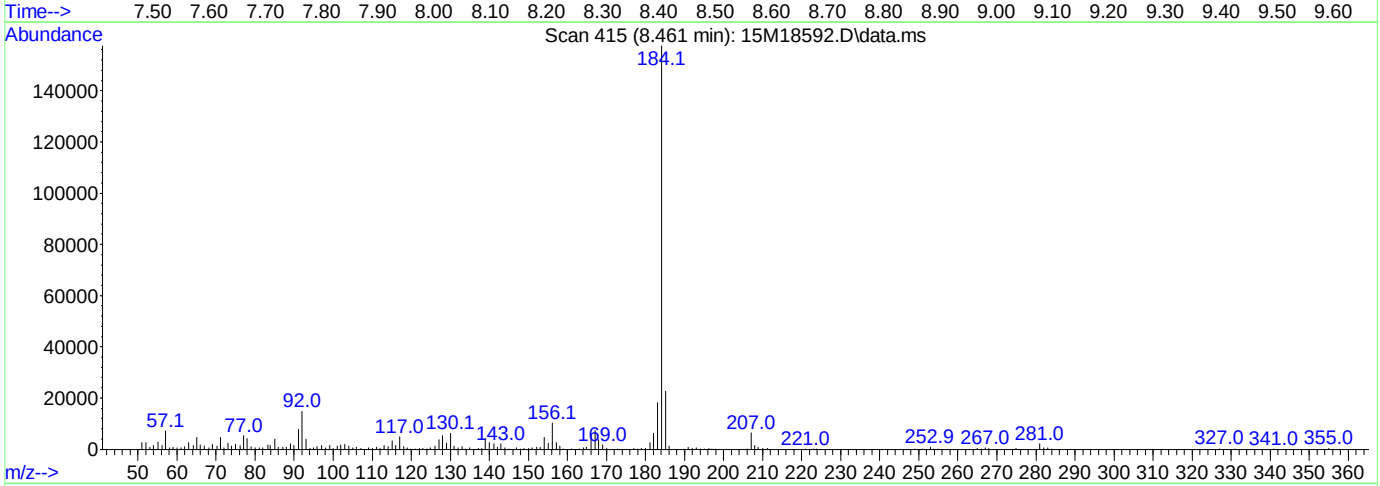

TIC: 15M18592.D\data.ms

(2) Benzidine

8.461min (-0.033) 0.00 ug/ml

response 225697

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18592.D
Acq On : 27 Jun 2016 12:20
Operator : MES
Sample : WG574241-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 27 12:31:57 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

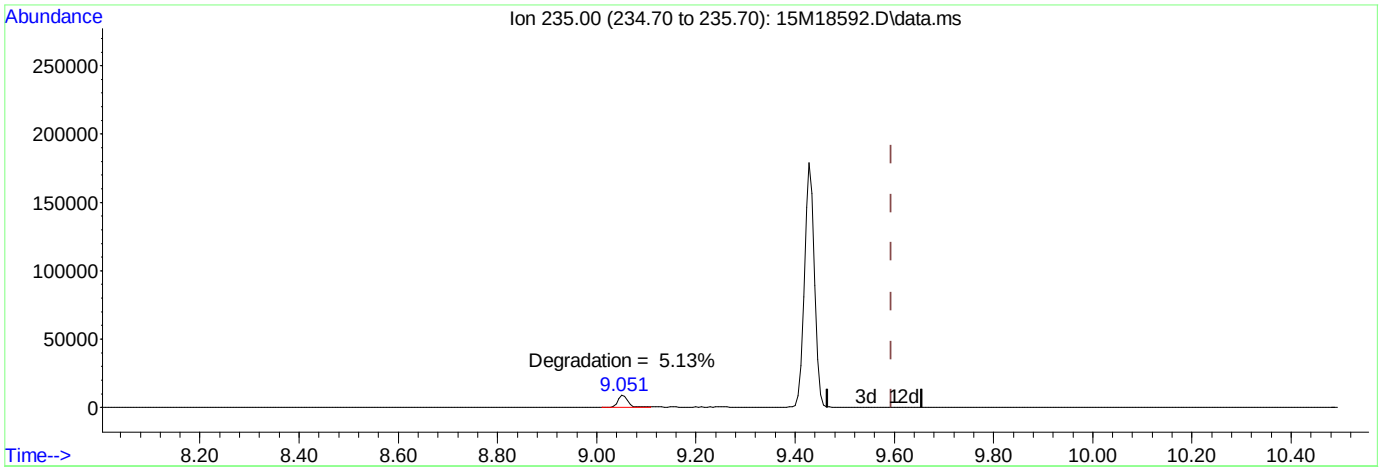

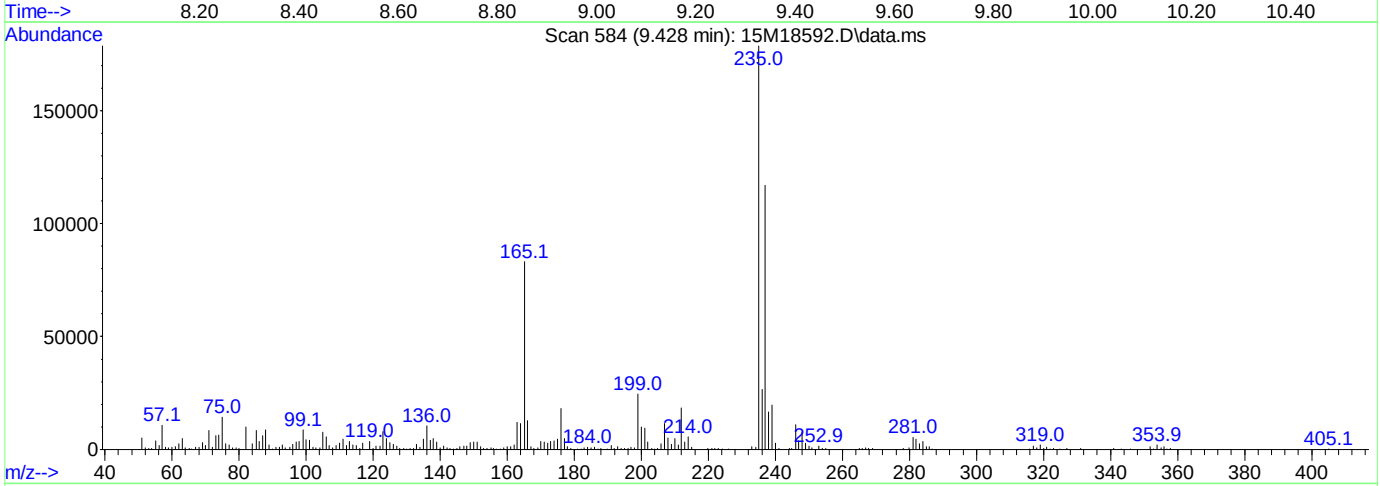

(3) DDT

9.428min (-0.166) 0.00 ug/ml mint

response 273417

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18597.D
Acq On : 27 Jun 2016 14:22
Operator : MES
Sample : WG573812-01 BLANK 6/22
Misc : 1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 27 17:44:10 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.896	152	38478	1.0000	ug/mL	#-0.04
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.749	96	23026	1.4543	ug/L	-0.08
Spiked Amount 5.000			Recovery = 29.00%			
4) Nitrobenzene-d5	7.393	82	809059	19.9059	ug/L	-0.04
Spiked Amount 5.000			Recovery = 398.20%			
5) 2-Fluorobiphenyl	8.889	172	1650481	16.0878	ug/L	-0.03
Spiked Amount 5.000			Recovery = 321.80%			
6) p-Terphenyl-d14	12.184	244	3974204	40.1893	ug/L	0.00
Spiked Amount 5.000			Recovery = 803.80%			

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18597.D
Acq On : 27 Jun 2016 14:22
Operator : MES
Sample : WG573812-01 BLANK 6/22
Misc : 1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 27 17:44:10 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

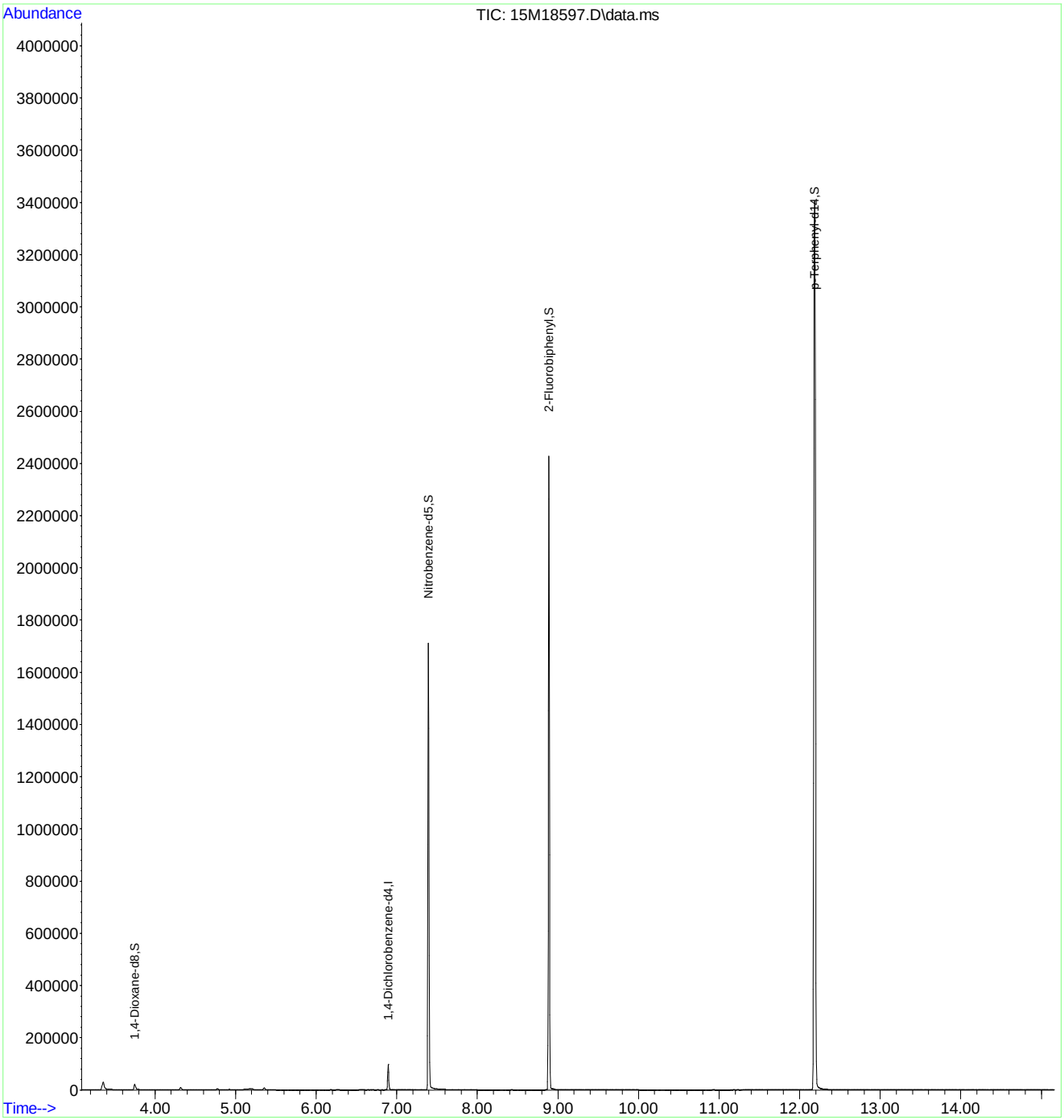

DIOXANE_D8.M Mon Jun 27 17:44:11 2016 Page: 2

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18598.D
Acq On : 27 Jun 2016 14:45
Operator : MES
Sample : WG573812-02 LCS 6/22
Misc : 1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 27 17:47:18 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.896	152	47423	1.0000	ug/mL	#-0.04
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.764	96	32479	1.6644	ug/L	-0.06
Spiked Amount 5.000			Recovery	=	33.20%	
4) Nitrobenzene-d5	7.404	82	1302	0.0260	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.60%	
5) 2-Fluorobiphenyl	8.890	172	587	0.0046	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.199	244	733	0.0060	ug/L	0.02
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.806	58	23052	1.5887	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18598.D
Acq On : 27 Jun 2016 14:45
Operator : MES
Sample : WG573812-02 LCS 6/22
Misc : 1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 27 17:47:18 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

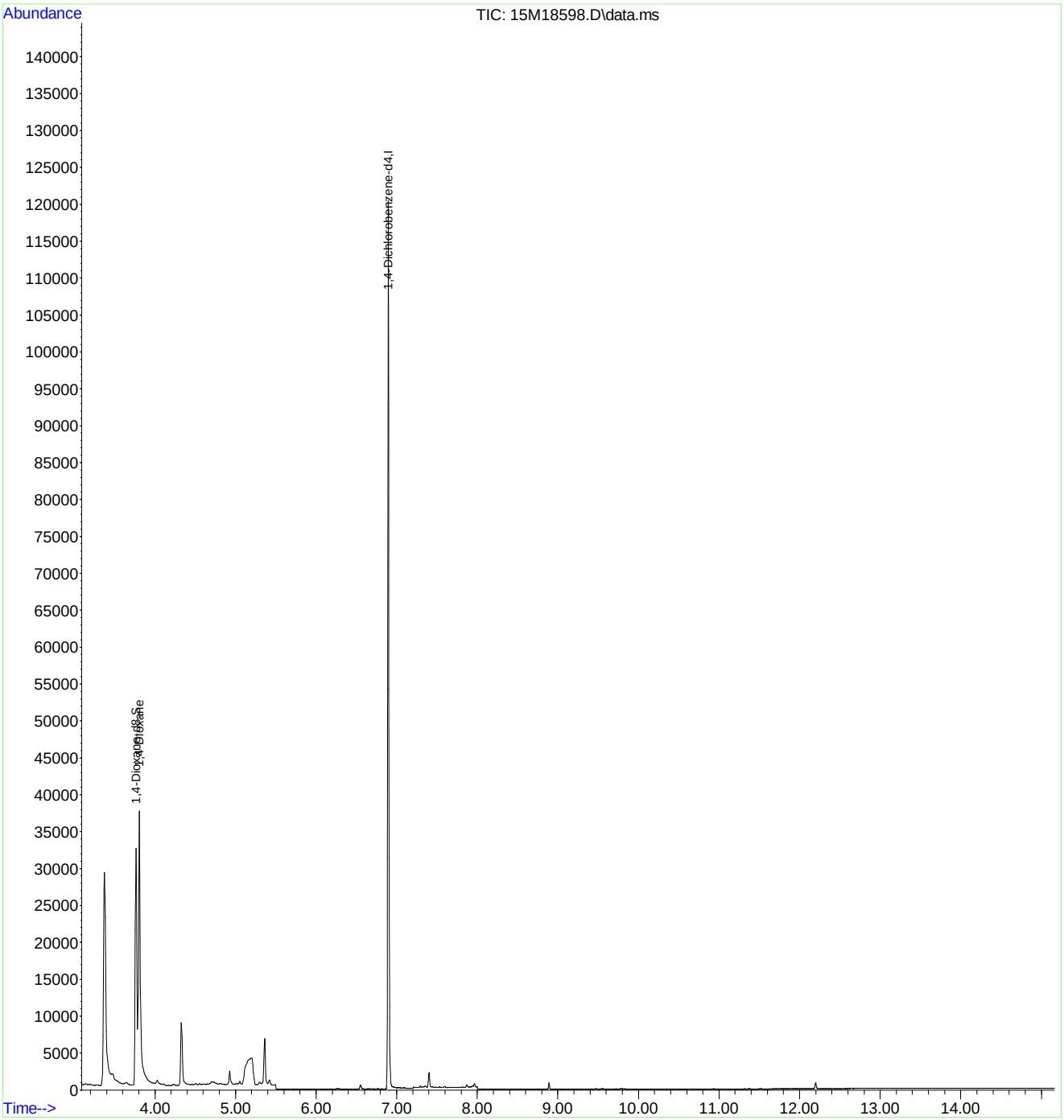

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18599.D
Acq On : 27 Jun 2016 15:07
Operator : MES
Sample : WG573812-03 LCSDUP 6/22
Misc : 1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 27 17:47:21 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.896	152	50712	1.0000	ug/mL	#-0.04
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.763	96	64077	3.0707	ug/L	-0.06
Spiked Amount 5.000			Recovery	=	61.40%	
4) Nitrobenzene-d5	7.404	82	2658	0.0496	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	1.00%	
5) 2-Fluorobiphenyl	8.889	172	2319	0.0172	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.40%	
6) p-Terphenyl-d14	12.195	244	557	0.0043	ug/L	0.01
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.806	58	46522	2.9983	ug/L	86

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18599.D
Acq On : 27 Jun 2016 15:07
Operator : MES
Sample : WG573812-03 LCSDUP 6/22
Misc : 1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 27 17:47:21 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

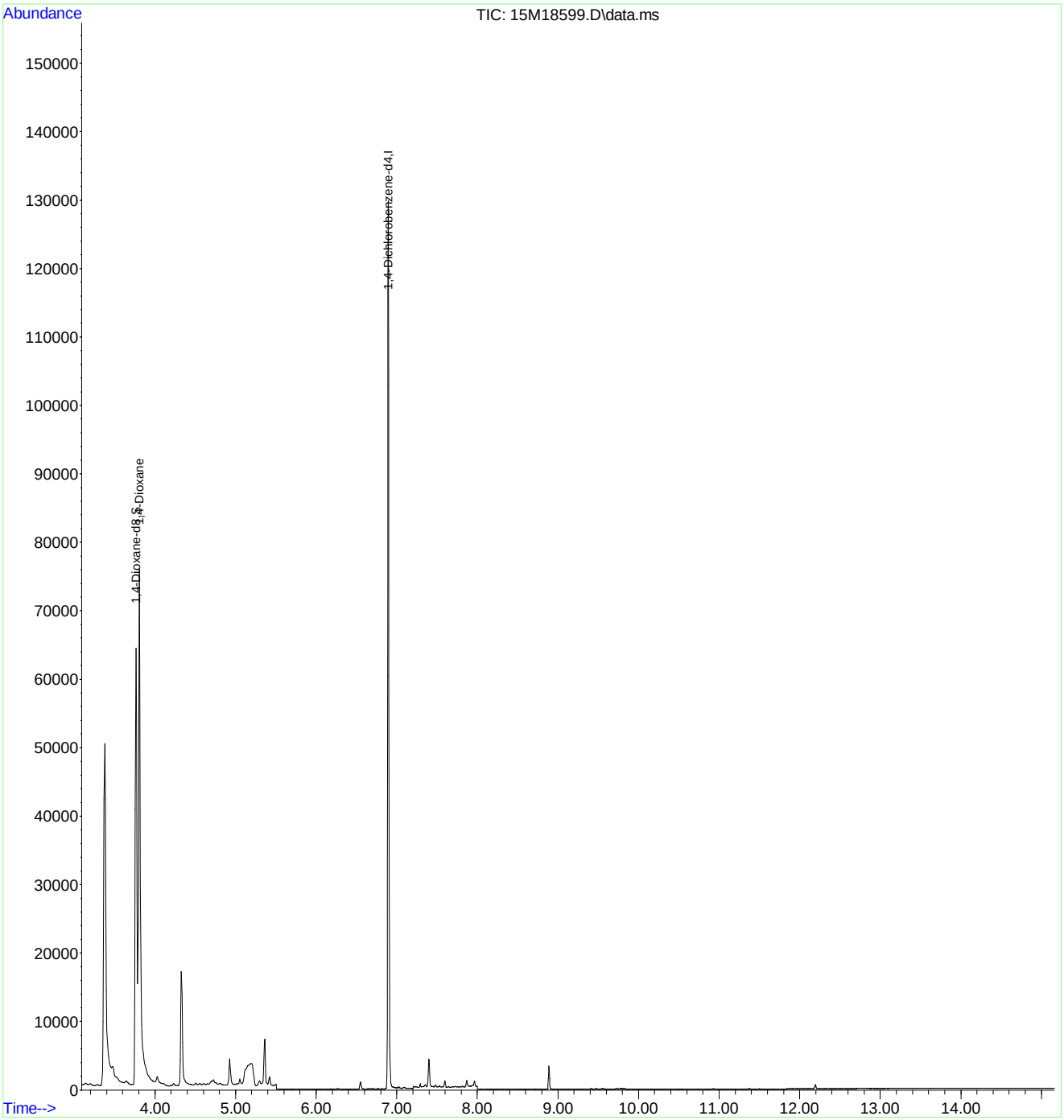

2.2 General Chromatography Data

2.2.2 6850 LC/MS Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061144-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW06-062016	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 05:18
Collect Date:	06/20/2016 13:45	**Dilution:**	1	**File ID:**	1LM.LM35492
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061144-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW06FD-062016	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 05:37
Collect Date:	06/20/2016 13:45	**Dilution:**	1	**File ID:**	1LM.LM35493
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061144-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW17-062016	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 20:56
Collect Date:	06/20/2016 15:00	**Dilution:**	1	**File ID:**	1LM.LM35507
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061144
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.2.2.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1380 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG574101-01 MCT	9,990.	
-02 Blank	0.33	
-03 LCS	0.48	
-04 LCS2	0.51	
L16060823-01	9,120.	
-03	7,440.	
-04	1,943.	
L16060927-01	750.	
-02	652.	
-03	446.	
-04	162.7	
L16061026-01	6,910.	
-03	238.	
-04	965.	
-05	1,526.	
-07	220.	
L16061142-01	165.3	
-02	81.1	
-04	83.1	
-06	728.	
-07	74.2	
L16061144-01	118.6	
-02	118.7	
-03	110.1	

Analyst: John Richards

Date/Time: 06/27/16 / 20:00

DCN#119317

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

Page: 1 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

Page: 2 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 062416_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG574101 (waters)

Internal STD: STD18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments: Samples initially analyzed at dilutions were done so based on their historical results. Samples tagged with (NR) did not conform to their historical results. These samples were reanalyzed on the end of the sequence as neat or at dilutions based on the results of their initial analysis.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35462	WG574102-01 CCB	1	1		06/24/16 19:50
2	1LM.LM35463	WG574102-02 CCV (1.0ug/L)	1	1	STD75510	06/24/16 20:09
3	1LM.LM35464	WG574101-05 MRL (0.2ug/L)	1	1	STD75510	06/24/16 20:28
4	1LM.LM35465	WG574101-01 MCT (0.2ug/L)	1	1	STD75512	06/24/16 20:47
5	1LM.LM35466	WG574101-02 BLANK	1	1		06/24/16 21:06
6	1LM.LM35467	WG574101-03 LCS (0.2ug/L)	1	1	STD75512	06/24/16 21:25
7	1LM.LM35468	L16060823-01	1	1		06/24/16 21:44
8	1LM.LM35469	L16060823-03	1	1		06/24/16 22:03
9	1LM.LM35470	L16060823-04 (10x)	1	10		06/24/16 22:22
10	1LM.LM35471	L16060927-01 (100x) (NR)	1	100		06/24/16 22:41
11	1LM.LM35472	L16060927-02 (100x) (NR)	1	100		06/24/16 23:00
12	1LM.LM35473	L16060927-03	1	1		06/24/16 23:18
13	1LM.LM35474	L16060927-04	1	1		06/24/16 23:37
14	1LM.LM35475	WG574102-03 CCV (1.0ug/L)	1	1	STD75510	06/24/16 23:56
15	1LM.LM35476	WG574101-06 MRL (0.2ug/L)	1	1	STD75510	06/25/16 00:15
16	1LM.LM35477	WG574102-04 CCB	1	1		06/25/16 00:34
17	1LM.LM35478	L16061026-01 (100x) (NR)	1	100		06/25/16 00:53
18	1LM.LM35479	L16061026-03 (100x)	1	100		06/25/16 01:12
19	1LM.LM35480	L16061026-04 (10,000x)	1	10000		06/25/16 01:31
20	1LM.LM35481	L16061026-05 (100,000x) (NR)	1	100000		06/25/16 01:50
21	1LM.LM35482	L16061026-07 (10x) (NR)	1	10		06/25/16 02:09
22	1LM.LM35483	L16061142-01	1	1		06/25/16 02:28
23	1LM.LM35484	L16061142-02	1	1		06/25/16 02:47
24	1LM.LM35485	L16061142-04	1	1		06/25/16 03:06
25	1LM.LM35486	L16061142-06 (10x) (NR)	1	10		06/25/16 03:25
26	1LM.LM35487	L16061142-07	1	1		06/25/16 03:44
27	1LM.LM35488	WG574102-05 CCV (1.0ug/L)	1	1	STD75510	06/25/16 04:03
28	1LM.LM35489	WG574101-07 MRL (0.2ug/L)	1	1	STD75510	06/25/16 04:22
29	1LM.LM35490	WG574102-06 CCB	1	1		06/25/16 04:40
30	1LM.LM35491	WG574101-04 LCS2 (0.2ug/L)	1	1	STD75512	06/25/16 04:59
31	1LM.LM35492	L16061144-01	1	1		06/25/16 05:18
32	1LM.LM35493	L16061144-02	1	1		06/25/16 05:37
33	1LM.LM35494	L16061144-03 (10x) (NR)	1	10		06/25/16 05:56

Page: 1 Approved: 28-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 062416_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG574101 (waters)

Internal STD: STD18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 NA

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM35495	WG574102-07 CCV (1.0ug/L)	1	1	STD75510	06/25/16 06:15
35	1LM.LM35496	WG574101-08 MRL (0.2ug/L)	1	1	STD75510	06/25/16 06:34
36	1LM.LM35497	WG574102-08 CCB	1	1		06/25/16 06:53
37	1LM.LM35498	WG574102-09 CCV (1.0ug/L)	1	1	STD75510	06/25/16 18:06
38	1LM.LM35499	WG574101-09 MRL (0.2ug/L)	1	1	STD75510	06/25/16 18:25
39	1LM.LM35500	WG574102-10 CCB	1	1		06/25/16 18:44
40	1LM.LM35501	L16060927-01 (RR Neat)	1	1		06/25/16 19:02
41	1LM.LM35502	L16060927-02 (RR 1000x)	1	1000		06/25/16 19:21
42	1LM.LM35503	L16061026-01 (RR Neat)	1	1		06/25/16 19:40
43	1LM.LM35504	L16061026-05 (RR 10,000x)	1	10000		06/25/16 19:59
44	1LM.LM35505	L16061026-07 (RR 50x)	1	50		06/25/16 20:18
45	1LM.LM35506	L16061142-06 (RR Neat)	1	1		06/25/16 20:37
46	1LM.LM35507	L16061144-03 (RR Neat)	1	1		06/25/16 20:56
47	1LM.LM35508	WG574102-11 CCV (1.0ug/L)	1	1	STD75510	06/25/16 21:15
48	1LM.LM35509	WG574101-10 MRL (0.2ug/L)	1	1	STD75510	06/25/16 21:34
49	1LM.LM35510	WG574102-12 CCB	1	1		06/25/16 21:53

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 2 Approved: 28-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
04-MAY-2016
John Richards

Secondary Reviewer:
05-MAY-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 24-JUN-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 75960
Analytical Workgroups: L16060823, 0927, 1026, 1142, 1144

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
27-JUN-2016
John Richards

Secondary Reviewer:
28-JUN-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-28-2016 14:00:55

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG574101

Login Number: L16061144

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW06-062016	01	06/20/16					06/24/2016	4.2	28		06/25/16	.4	28	
18WW06FD-062016	02	06/20/16					06/24/2016	4.2	28		06/25/16	.4	28	
MW17-062016	03	06/20/16					06/24/2016	4.2	28		06/25/16	1.1	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4827794
Report generated 06/28/2016 14:17

METHOD BLANK SUMMARY

Login Number: L16061144
Blank File ID: 1LM.LM35466
Prep Date: 06/24/16 19:00
Analyzed Date: 06/24/16 21:06
Analyst: JWR

Work Group: WG574101
Blank Sample ID: WG574101-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG574101-05	1LM.LM35464	06/24/16 20:28	01
MCT	WG574101-01	1LM.LM35465	06/24/16 20:47	01
LCS	WG574101-03	1LM.LM35467	06/24/16 21:25	01
QCMRL	WG574101-06	1LM.LM35476	06/25/16 00:15	01
QCMRL	WG574101-07	1LM.LM35489	06/25/16 04:22	01
LCS2	WG574101-04	1LM.LM35491	06/25/16 04:59	01
18WW06-062016	L16061144-01	1LM.LM35492	06/25/16 05:18	01
18WW06FD-062016	L16061144-02	1LM.LM35493	06/25/16 05:37	01
QCMRL	WG574101-08	1LM.LM35496	06/25/16 06:34	01
QCMRL	WG574101-09	1LM.LM35499	06/25/16 18:25	01
MW17-062016	L16061144-03	1LM.LM35507	06/25/16 20:56	01
QCMRL	WG574101-10	1LM.LM35509	06/25/16 21:34	01

Report Name: BLANK_SUMMARY
PDF File ID: 4827795
Report generated 06/28/2016 14:18

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061144 Prep Date: 06/24/16 19:00 Sample ID: WG574101-02
Instrument ID: LCMS1 Run Date: 06/24/16 21:06 Prep Method: 6850
File ID: 1LM.LM35466 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4827796
28-JUN-2016 14:18

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061144 Analyst: JWR Prep Method: 6850
Instrument ID: LCMS1 Matrix: Water Method: 6850
Workgroup (AAB#): WG574101 Units: ug/L
QC Key: DOD4 Lot #: STD75512

Sample ID: WG574101-03 LCS File ID: 1LM.LM35467 Run Date: 06/24/2016 21:25
Sample ID: WG574101-04 LCS2 File ID: 1LM.LM35491 Run Date: 06/25/2016 04:59

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Perchlorate	0.200	0.208	104	0.200	0.213	107	2.38	80 - 120	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4827797
Report generated: 06/28/2016 14:18

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061144
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4828787
Report generated 06/28/2016 14:18

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061144

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4828787
Report generated 06/28/2016 14:18

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061144

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4828787
Report generated 06/28/2016 14:18

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061144

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008
PDF File ID: 4828787
Report generated 06/28/2016 14:18

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061144 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4828788
Report generated 06/28/2016 14:18

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061144
Run Date: 06/24/2016
Sample ID: WG574102-01
Instrument ID: LCMS1
Run Time: 19:50
Method: 6850
File ID: 1LM.LM35462
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827800
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Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061144
Run Date: 06/25/2016
Sample ID: WG574102-04
Instrument ID: LCMS1
Run Time: 00:34
Method: 6850
File ID: 1LM.LM35477
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827800
Report generated 06/28/2016 14:18

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061144
Run Date: 06/25/2016
Sample ID: WG574102-06
Instrument ID: LCMS1
Run Time: 04:40
Method: 6850
File ID: 1LM.LM35490
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827800
Report generated 06/28/2016 14:18

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061144
Run Date: 06/25/2016
Sample ID: WG574102-08
Instrument ID: LCMS1
Run Time: 06:53
Method: 6850
File ID: 1LM.LM35497
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827800
Report generated 06/28/2016 14:18

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061144
Run Date: 06/25/2016
Sample ID: WG574102-10
Instrument ID: LCMS1
Run Time: 18:44
Method: 6850
File ID: 1LM.LM35500
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827800
Report generated 06/28/2016 14:18

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061144
Run Date: 06/25/2016
Sample ID: WG574102-12
Instrument ID: LCMS1
Run Time: 21:53
Method: 6850
File ID: 1LM.LM35510
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827800
Report generated 06/28/2016 14:18

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061144
Run Date: 06/24/2016
Sample ID: WG574102-02
Instrument ID: LCMS1
Run Time: 20:09
Method: 6850
File ID: 1LM.LM35463
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.70	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827799
Report generated 06/28/2016 14:18

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061144
Run Date: 06/24/2016
Sample ID: WG574102-03
Instrument ID: LCMS1
Run Time: 23:56
Method: 6850
File ID: 1LM.LM35475
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.70	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827799
Report generated 06/28/2016 14:18

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061144
Run Date: 06/25/2016
Sample ID: WG574102-05
Instrument ID: LCMS1
Run Time: 04:03
Method: 6850
File ID: 1LM.LM35488
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.75	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827799
Report generated 06/28/2016 14:18

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061144
Run Date: 06/25/2016
Sample ID: WG574102-07
Instrument ID: LCMS1
Run Time: 06:15
Method: 6850
File ID: 1LM.LM35495
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.72	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827799
Report generated 06/28/2016 14:18

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061144
Run Date: 06/25/2016
Sample ID: WG574102-09
Instrument ID: LCMS1
Run Time: 18:06
Method: 6850
File ID: 1LM.LM35498
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.76	4.00	15	

* Exceeds %D Criteria

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Report generated 06/28/2016 14:18

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061144
Run Date: 06/25/2016
Sample ID: WG574102-11
Instrument ID: LCMS1
Run Time: 21:15
Method: 6850
File ID: 1LM.LM35508
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.73	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827799
Report generated 06/28/2016 14:18

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061144 Run Date: 06/24/2016 Sample ID: WG574101-05
Instrument ID: LCMS1 Run Time: 20:28 Prep Method: 6850
File ID: 1LM.LM35464 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827798
Report generated 06/28/2016 14:18

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061144 Run Date: 06/25/2016 Sample ID: WG574101-06
Instrument ID: LCMS1 Run Time: 00:15 Prep Method: 6850
File ID: 1LM.LM35476 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.198	99.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827798
Report generated 06/28/2016 14:18

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061144 Run Date: 06/25/2016 Sample ID: WG574101-07
Instrument ID: LCMS1 Run Time: 04:22 Prep Method: 6850
File ID: 1LM.LM35489 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.211	106	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827798
Report generated 06/28/2016 14:18

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061144 Run Date: 06/25/2016 Sample ID: WG574101-08
Instrument ID: LCMS1 Run Time: 06:34 Prep Method: 6850
File ID: 1LM.LM35496 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.201	101	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827798
Report generated 06/28/2016 14:18

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061144 Run Date: 06/25/2016 Sample ID: WG574101-09
Instrument ID: LCMS1 Run Time: 18:25 Prep Method: 6850
File ID: 1LM.LM35499 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.207	104	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827798
Report generated 06/28/2016 14:18

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061144 Run Date: 06/25/2016 Sample ID: WG574101-10
Instrument ID: LCMS1 Run Time: 21:34 Prep Method: 6850
File ID: 1LM.LM35509 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827798
Report generated 06/28/2016 14:18

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16061144
Instrument ID: LCMS1
Workgroup (AAB#): WG574101

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16061144-01	1.00	01	512000
L16061144-02	1.00	01	502000
L16061144-03	1.00	01	424000
WG574101-02	1.00	01	443000
WG574101-03	1.00	01	444000
WG574101-04	1.00	01	526000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4827801
Report generated 06/28/2016 14:18

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**	6850	**Samplenum:**	L16061144-01
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35492
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 05:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1040	780	1.33	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**	6850	**Samplenum:**	L16061144-02
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35493
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 05:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	2360	1310	1.80	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**	6850	**Samplenum:**	L16061144-03
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35507
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 20:56	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	2280	866	2.63	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**	6850	**Samplenum:**	WG574101-01
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35465
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 20:47	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	28100	10000	2.81	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**	6850	**Samplenum:**	WG574101-02
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35466
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 21:06	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**	6850	**Samplenum:**	WG574101-03
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35467
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 21:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	31600	11800	2.68	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**	6850	**Samplenum:**	WG574101-04
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35491
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 04:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38300	14000	2.74	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**	6850	**Samplenum:**	WG574101-05
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35464
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 20:28	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	31600	12100	2.61	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**	6850	**Samplenum:**	WG574101-06
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35476
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 00:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35000	13100	2.67	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**	6850	**Samplenum:**	WG574101-07
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35489
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 04:22	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38900	13400	2.90	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**	6850	**Samplenum:**	WG574101-08
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35496
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 06:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38000	14100	2.70	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**	6850	**Samplenum:**	WG574101-09
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35499
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 18:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32900	11500	2.86	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**	6850	**Samplenum:**	WG574101-10
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35509
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 21:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37900	14000	2.71	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**		**Samplenum:**	WG574102-01
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:50	**File ID:**	1LM.LM35462
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 19:50	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**		**Samplenum:**	WG574102-02
Instrument:	LCMS1	**Prep Date:**	06/24/2016 20:09	**File ID:**	1LM.LM35463
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 20:09	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	152000	55500	2.74	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**		**Samplenum:**	WG574102-03
Instrument:	LCMS1	**Prep Date:**	06/24/2016 23:56	**File ID:**	1LM.LM35475
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 23:56	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	170000	57500	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**		**Samplenum:**	WG574102-04
Instrument:	LCMS1	**Prep Date:**	06/25/2016 00:34	**File ID:**	1LM.LM35477
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 00:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	824	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**		**Samplenum:**	WG574102-05
Instrument:	LCMS1	**Prep Date:**	06/25/2016 04:03	**File ID:**	1LM.LM35488
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 04:03	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	179000	60200	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**		**Samplenum:**	WG574102-06
Instrument:	LCMS1	**Prep Date:**	06/25/2016 04:40	**File ID:**	1LM.LM35490
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 04:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**		**Samplenum:**	WG574102-07
Instrument:	LCMS1	**Prep Date:**	06/25/2016 06:15	**File ID:**	1LM.LM35495
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 06:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	189000	63400	2.98	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**		**Samplenum:**	WG574102-08
Instrument:	LCMS1	**Prep Date:**	06/25/2016 06:53	**File ID:**	1LM.LM35497
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 06:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	518	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**		**Samplenum:**	WG574102-09
Instrument:	LCMS1	**Prep Date:**	06/25/2016 18:06	**File ID:**	1LM.LM35498
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 18:06	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	161000	56700	2.84	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**		**Samplenum:**	WG574102-10
Instrument:	LCMS1	**Prep Date:**	06/25/2016 18:44	**File ID:**	1LM.LM35500
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 18:44	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**		**Samplenum:**	WG574102-11
Instrument:	LCMS1	**Prep Date:**	06/25/2016 21:15	**File ID:**	1LM.LM35508
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 21:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	176000	59300	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061144	**Prep Method:**		**Samplenum:**	WG574102-12
Instrument:	LCMS1	**Prep Date:**	06/25/2016 21:53	**File ID:**	1LM.LM35510
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 21:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

2.2.2.3 Sample Data

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Data File	LM35492.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 5:18:50 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061144-01	**Injection Vial**	25.00
Data File	LM35492.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 5:18:50 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	L16061144-01	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.120e+05	9.56	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.040e+03	9.55	N/A	0.0022
Perchlorate conf	7.800e+02	9.57	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.56(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

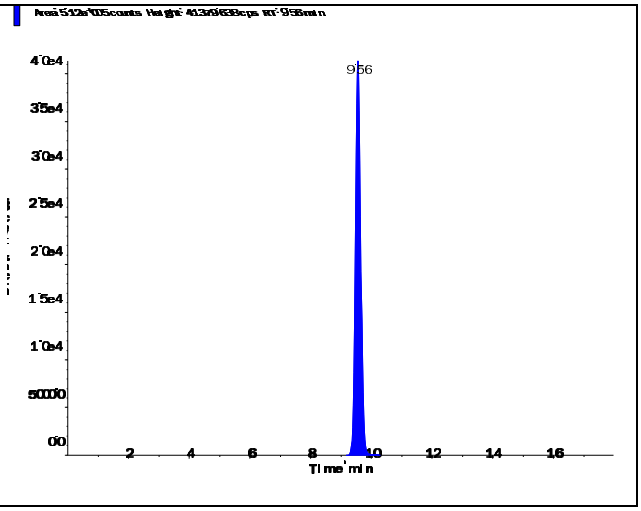

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.55 (9.84) min
Calculated conc:	0.0022 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

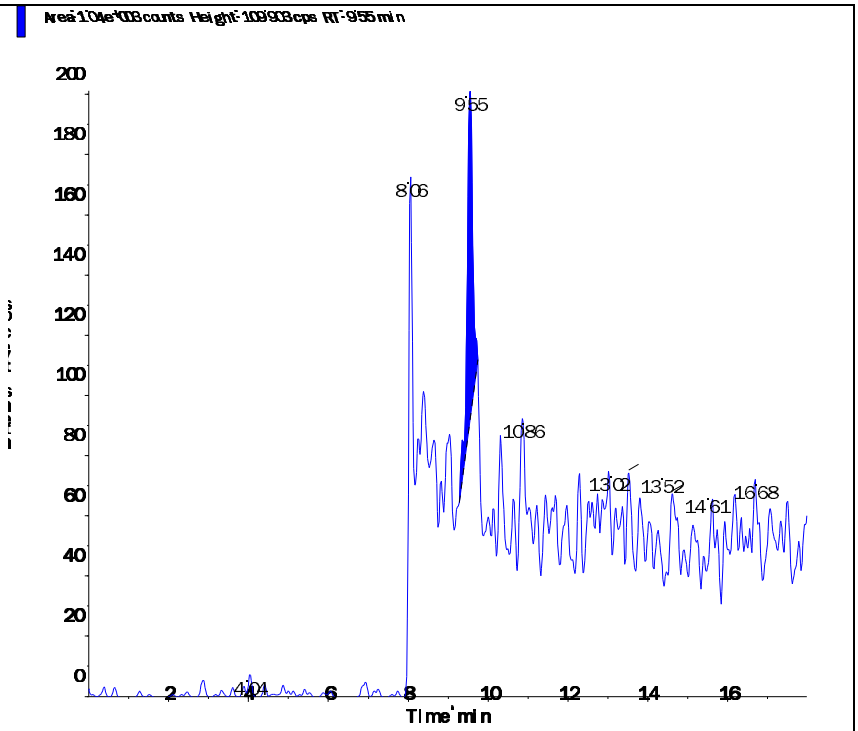

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.57 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

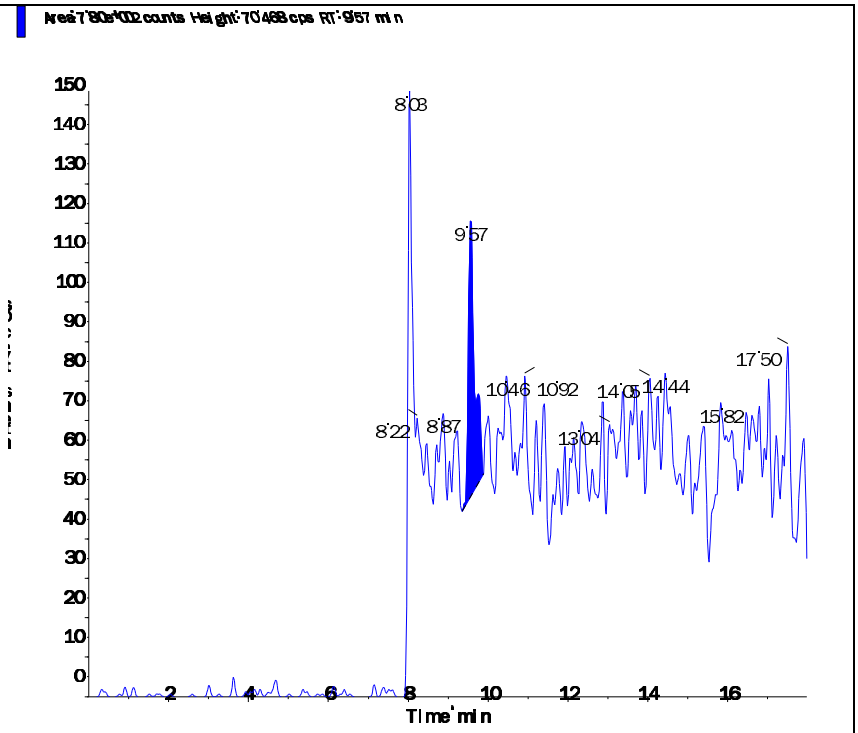

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Data File	LM35493.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 5:37:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061144-02	**Injection Vial**	26.00
Data File	LM35493.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 5:37:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	L16061144-02	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.55	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.360e+03	9.57	N/A	0.0102
Perchlorate conf	1.310e+03	9.56	N/A	0.003

O18LP (Internal Standard)

RT (Exp. RT): 9.55(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

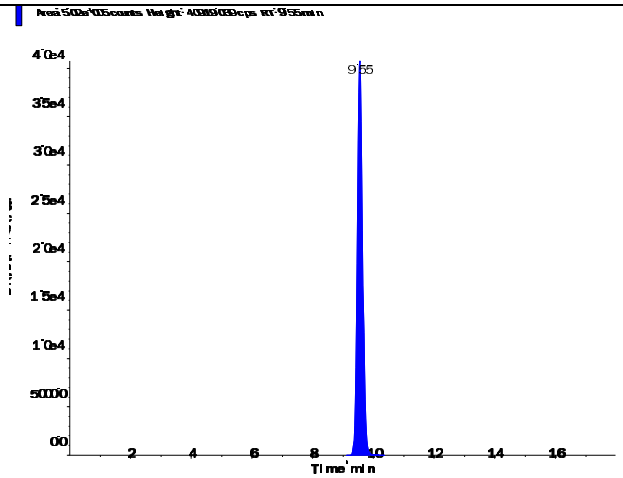

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.57 (9.84) min
Calculated conc:	0.0102 ng/ml
Area Ratio:	0.005
Sample Type:	(Unknown)

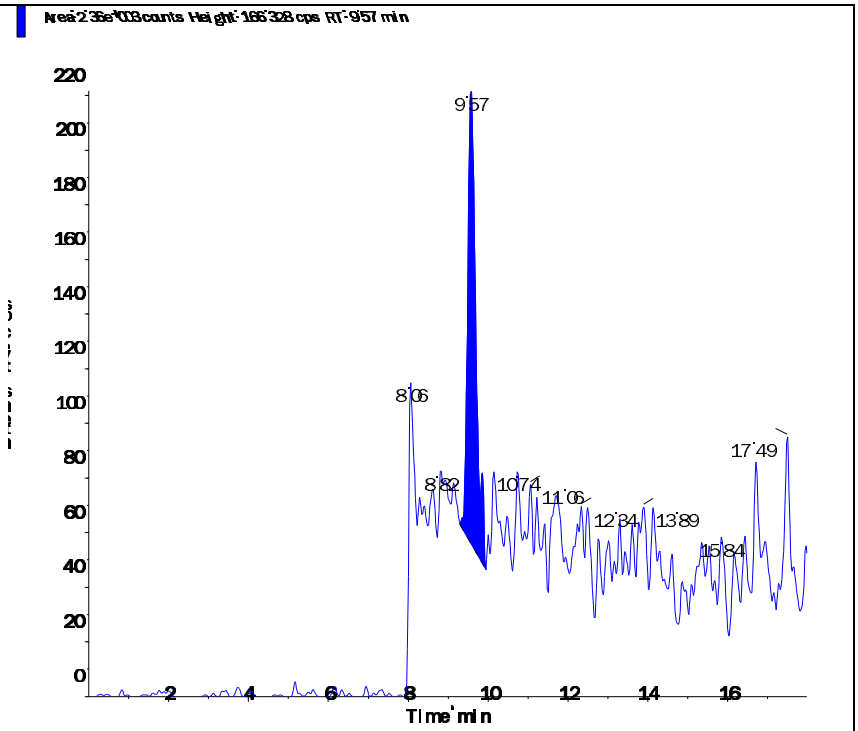

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.56 (9.84) min
Calculated conc:	0.003 ng/ml
Area Ratio:	0.003
Sample Type:	(Unknown)

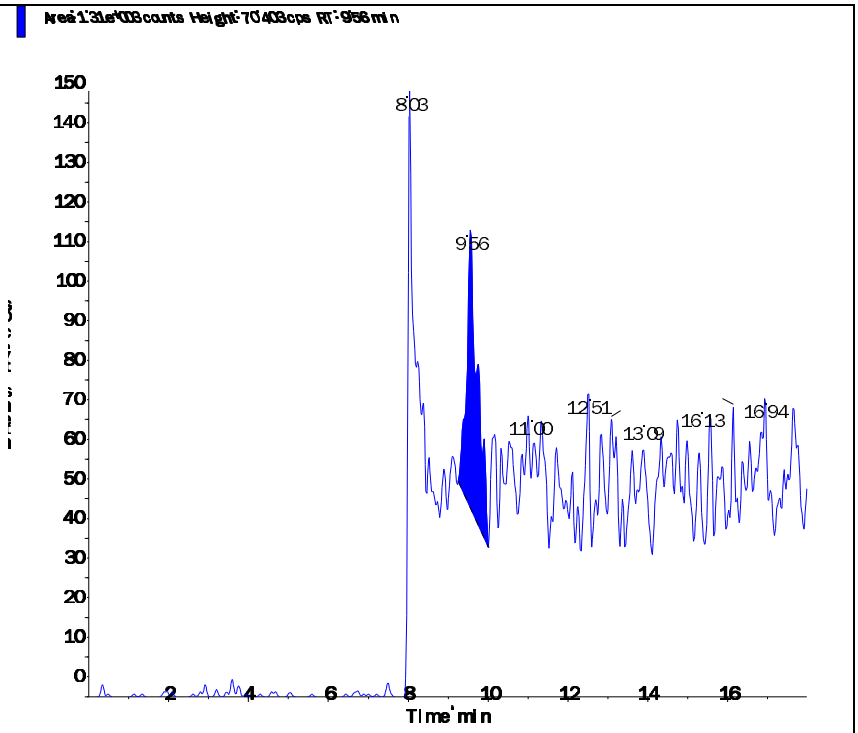

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Data File	LM35507.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 8:56:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061144-03 (RR Neat)	**Injection Vial**	34.00
Data File	LM35507.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 8:56:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	L16061144-03	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.240e+05	9.53	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.280e+03	9.54	N/A	0.0122
Perchlorate conf	8.660e+02	9.54	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.53(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

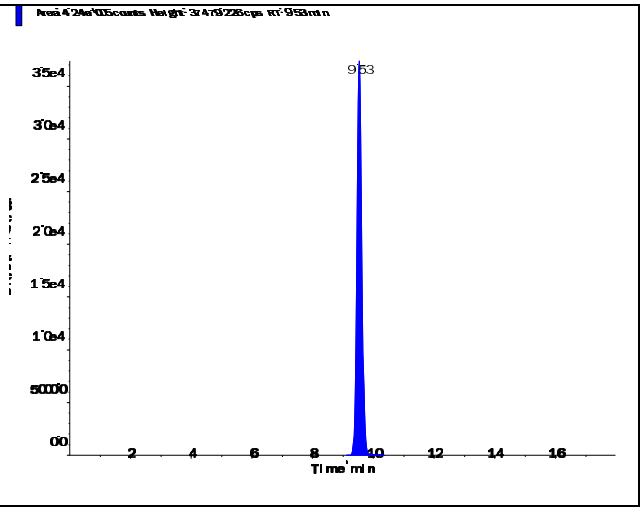

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.54 (9.84) min
Calculated conc:	0.0122 ng/ml
Area Ratio:	0.005
Sample Type:	(Unknown)

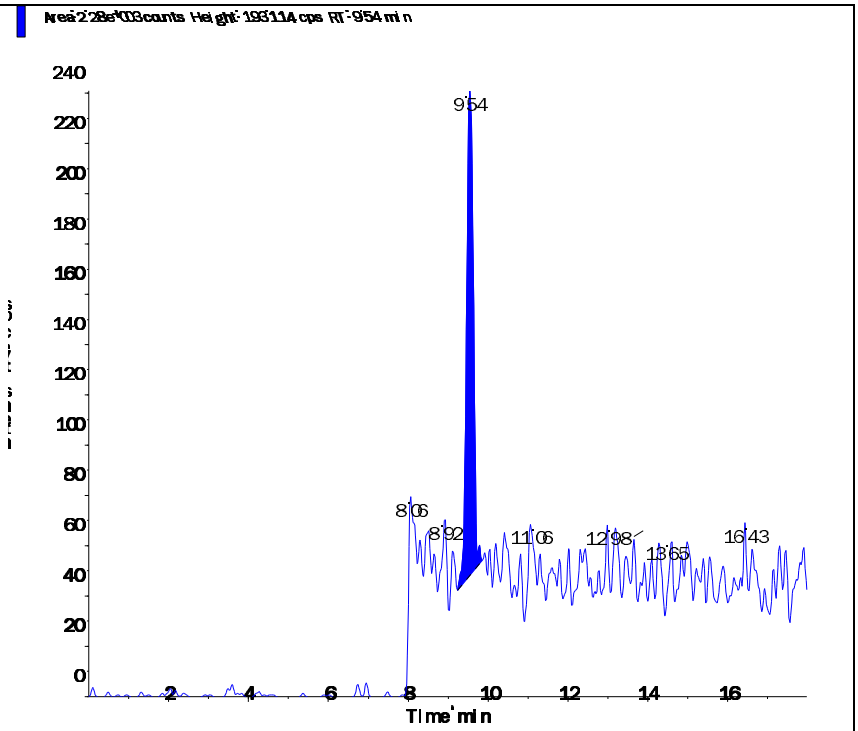

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.54 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

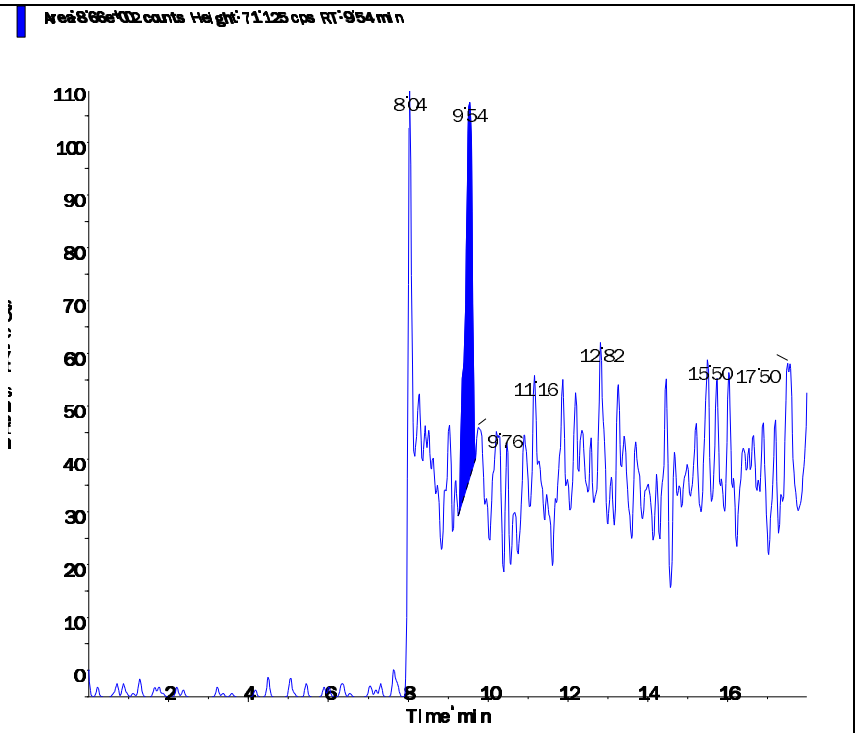

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2.2.2.4 Standards Data

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Data File	LM34686.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

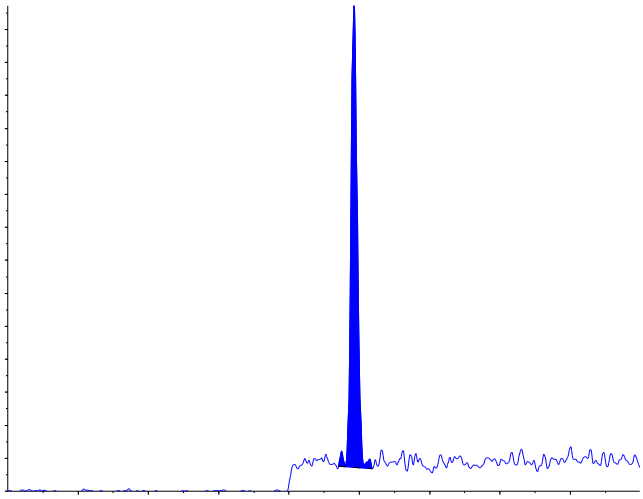

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

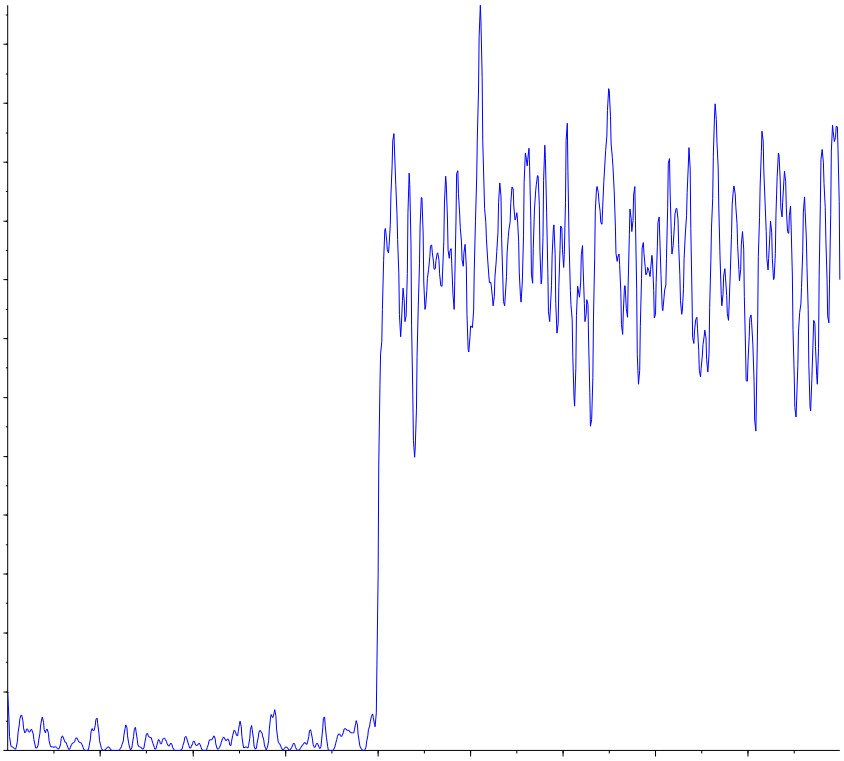

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

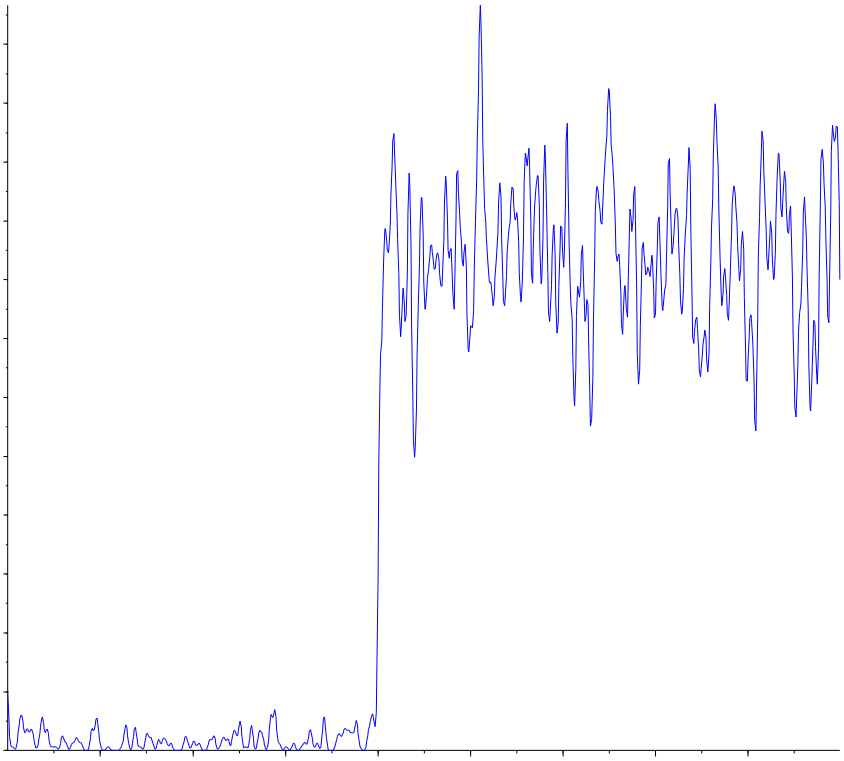

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Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

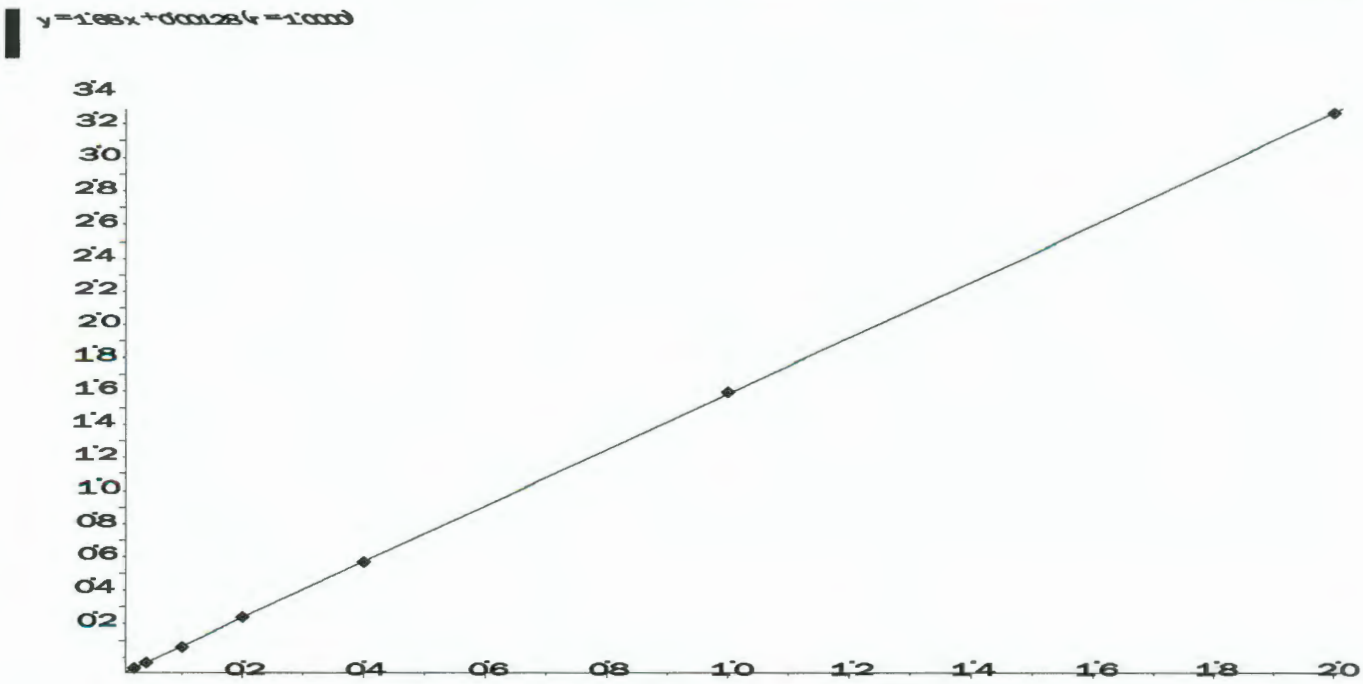

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Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

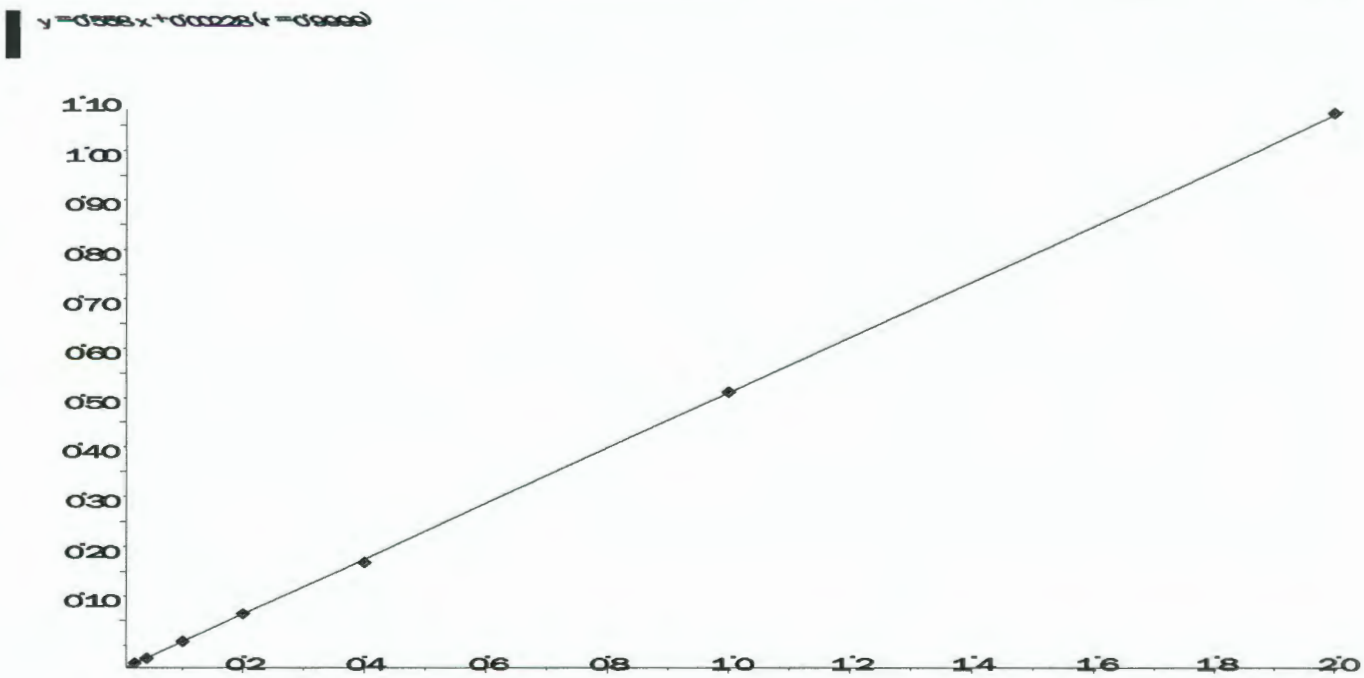

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Data File	LM34687.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

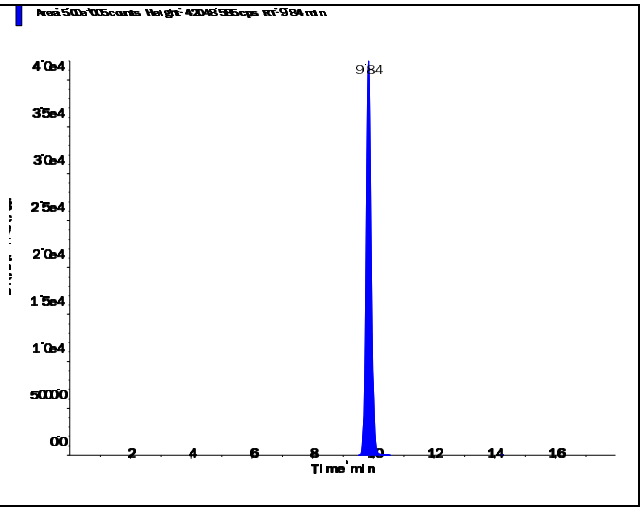

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.103 ng/ml
Area Ratio:	0.036
Sample Type:	(Standard)

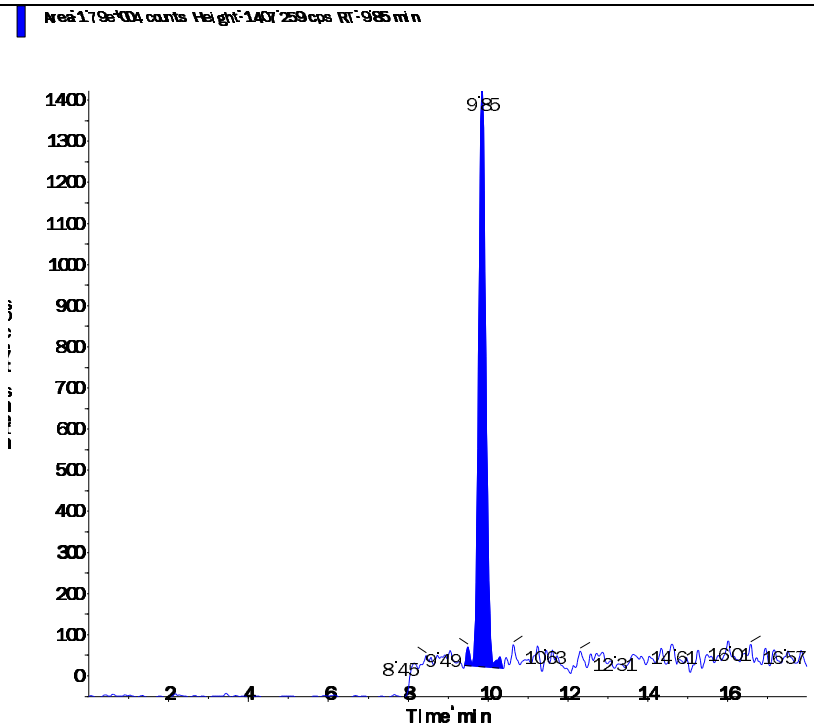

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.104 ng/ml
Area Ratio:	0.014
Sample Type:	(Standard)

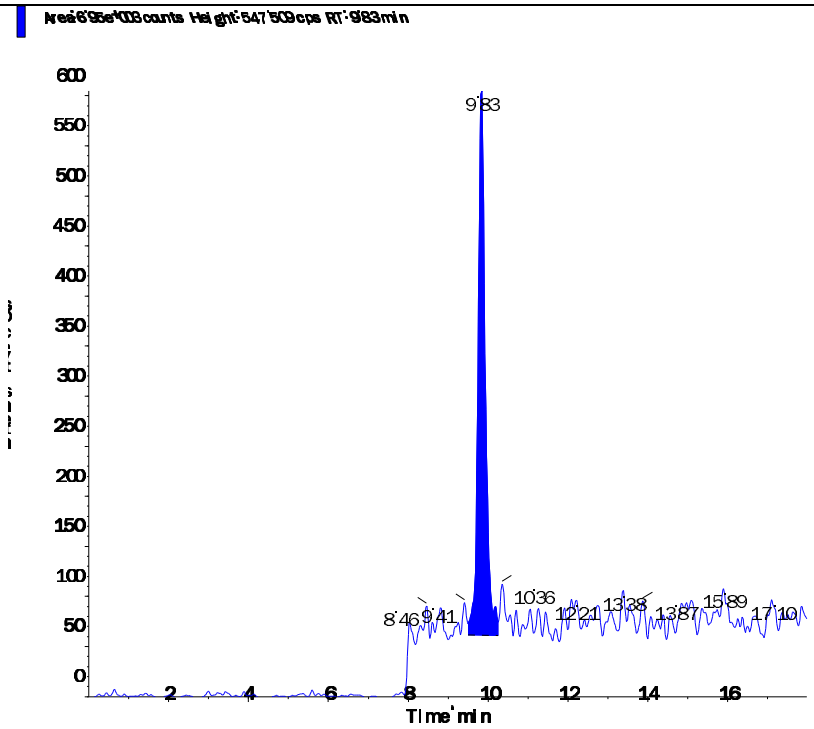

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Data File	LM34688.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

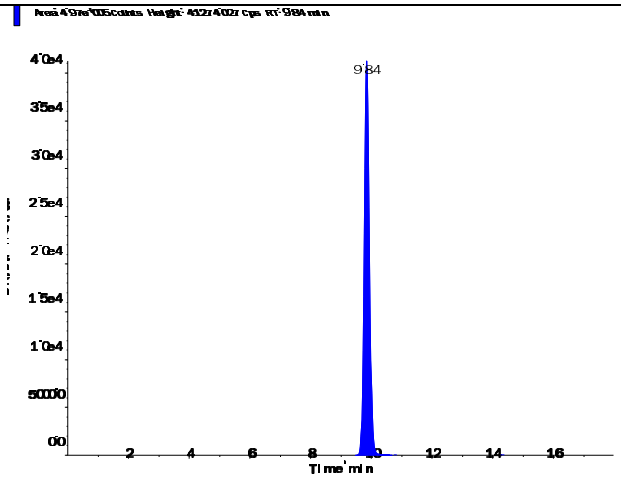

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

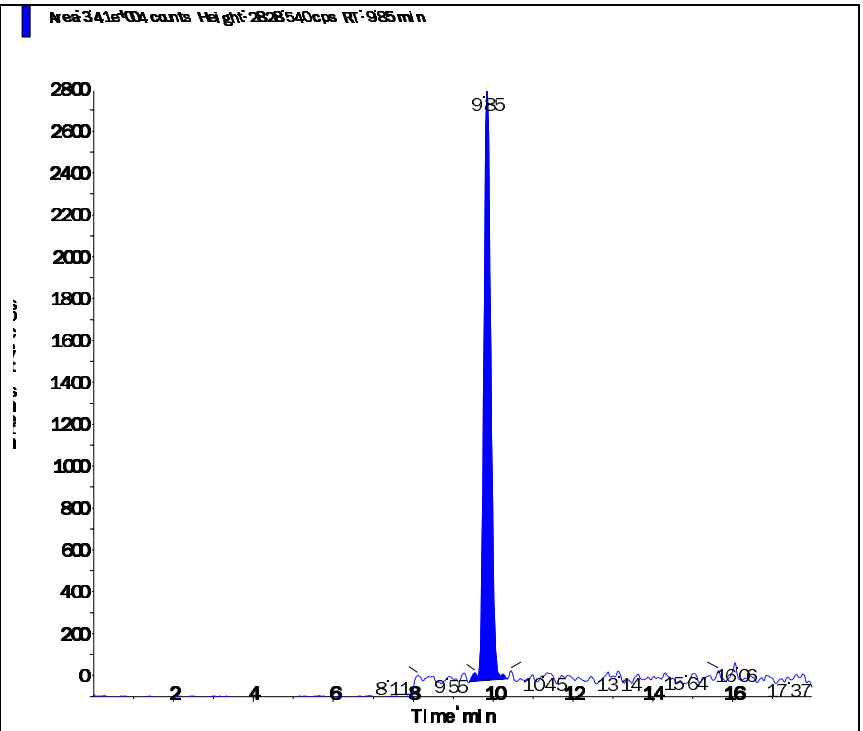

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

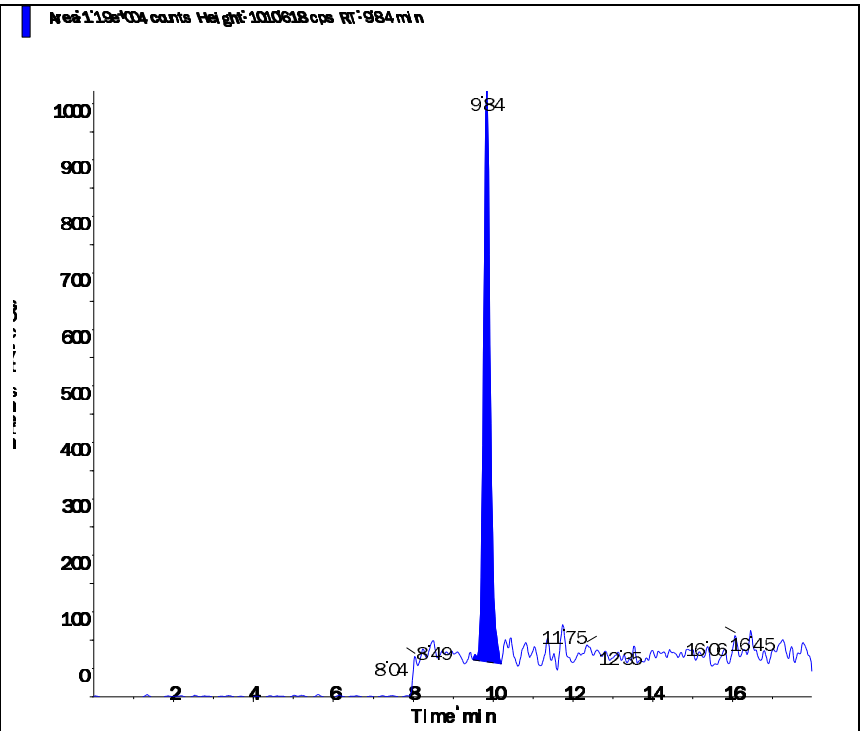

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Data File	LM34689.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

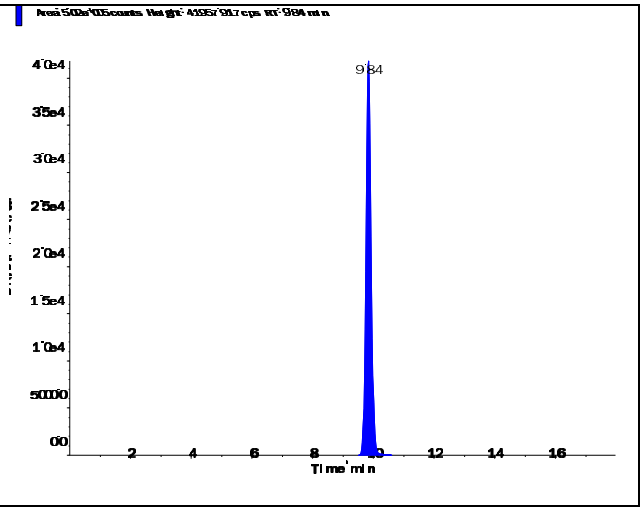

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.483 ng/ml
Area Ratio:	0.164
Sample Type:	(Standard)

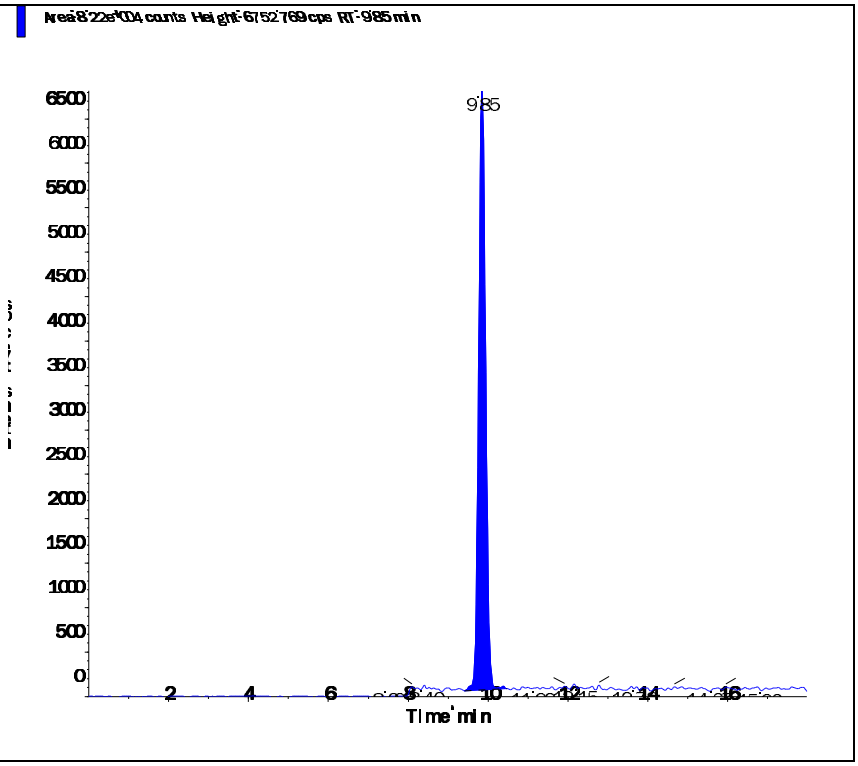

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.503 ng/ml
Area Ratio:	0.058
Sample Type:	(Standard)

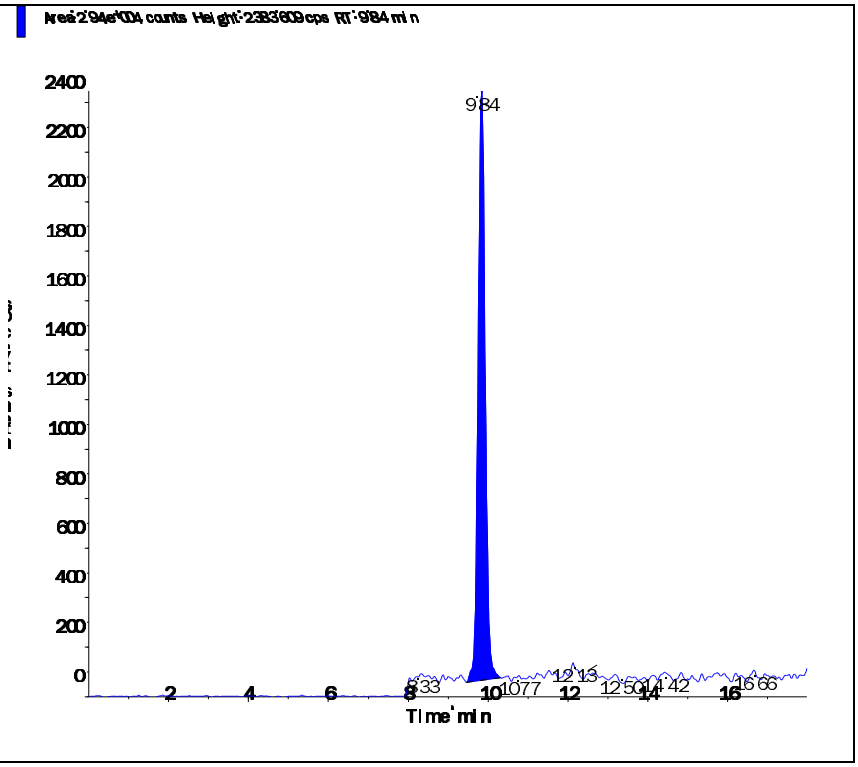

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Data File	LM34690.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

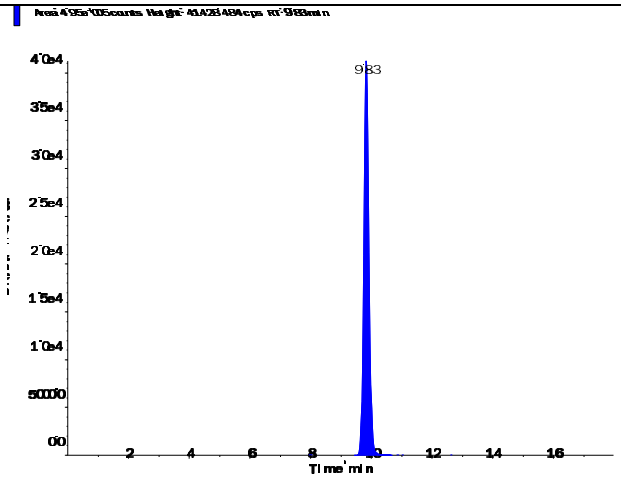

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

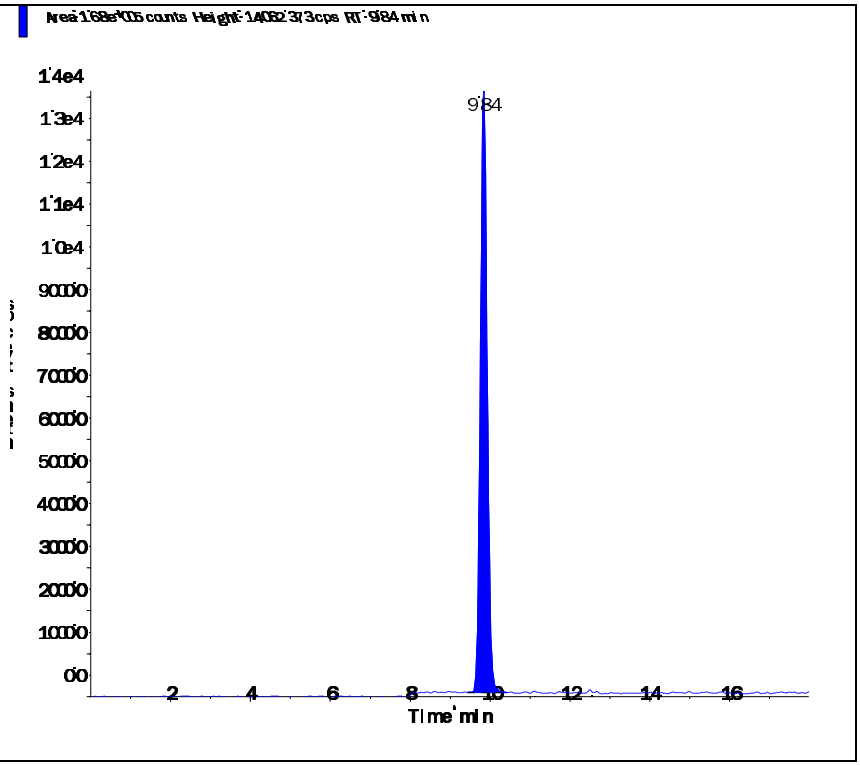

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

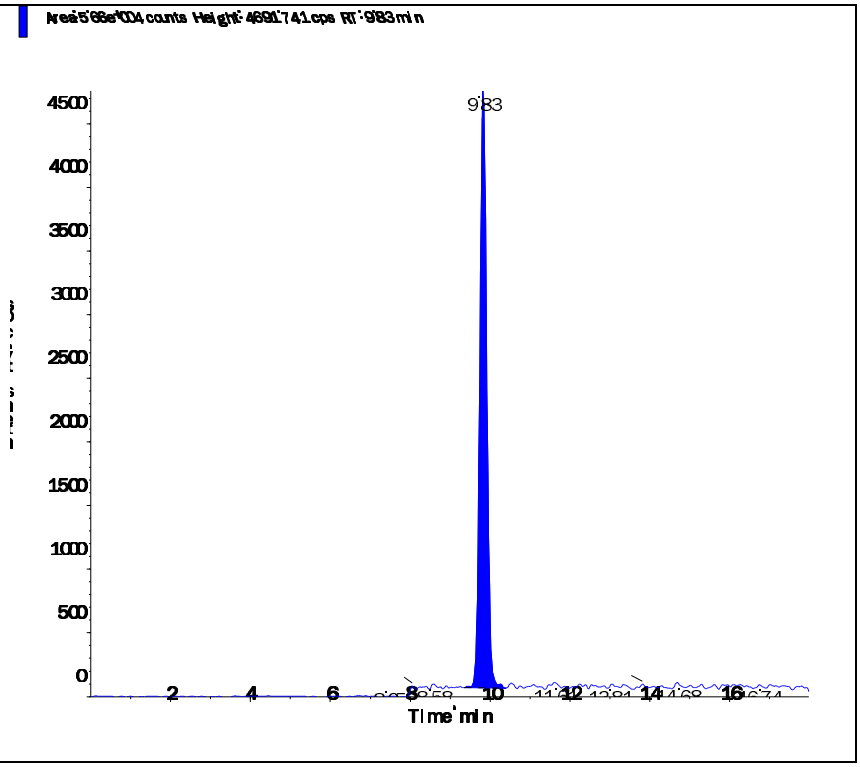

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Data File	LM34691.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

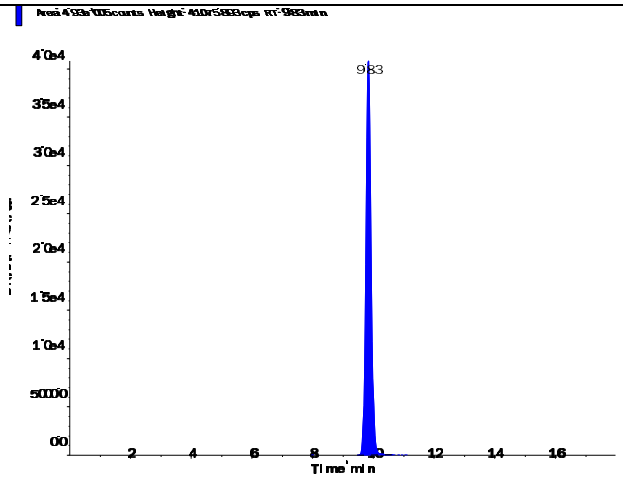

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.99 ng/ml
Area Ratio:	0.669
Sample Type:	(Standard)

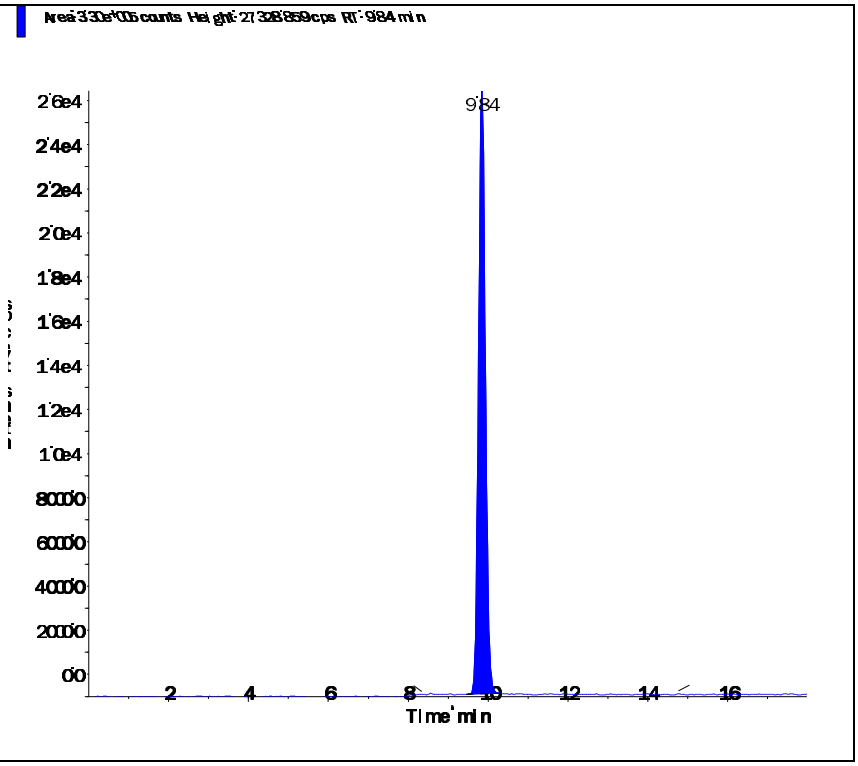

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.94 ng/ml
Area Ratio:	0.219
Sample Type:	(Standard)

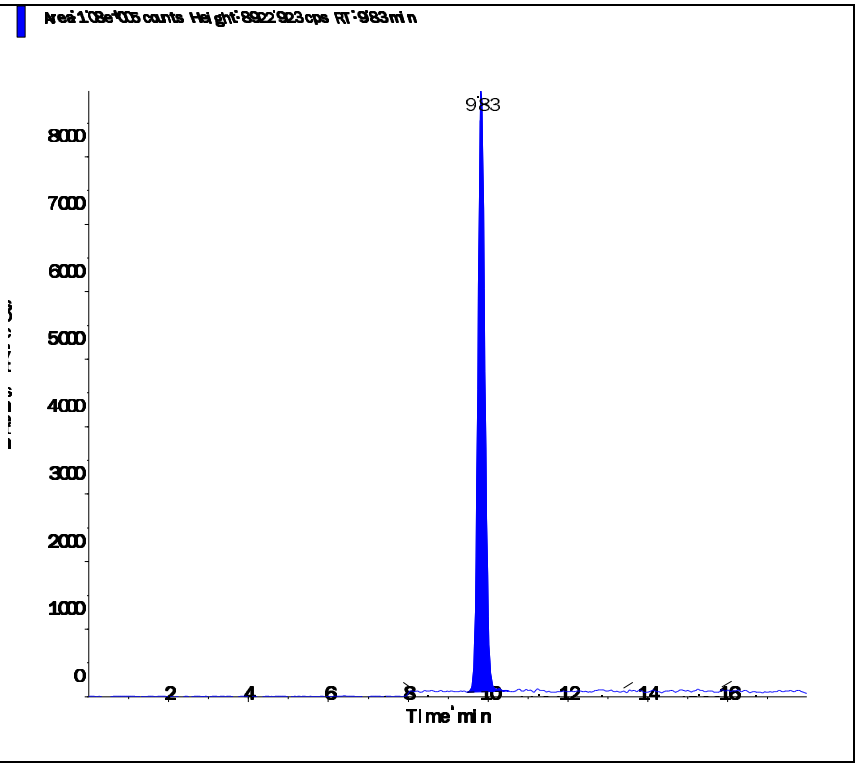

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Data File	LM34692.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

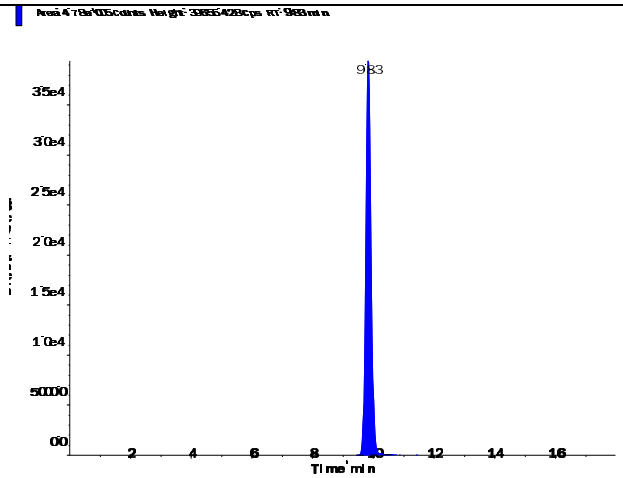

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

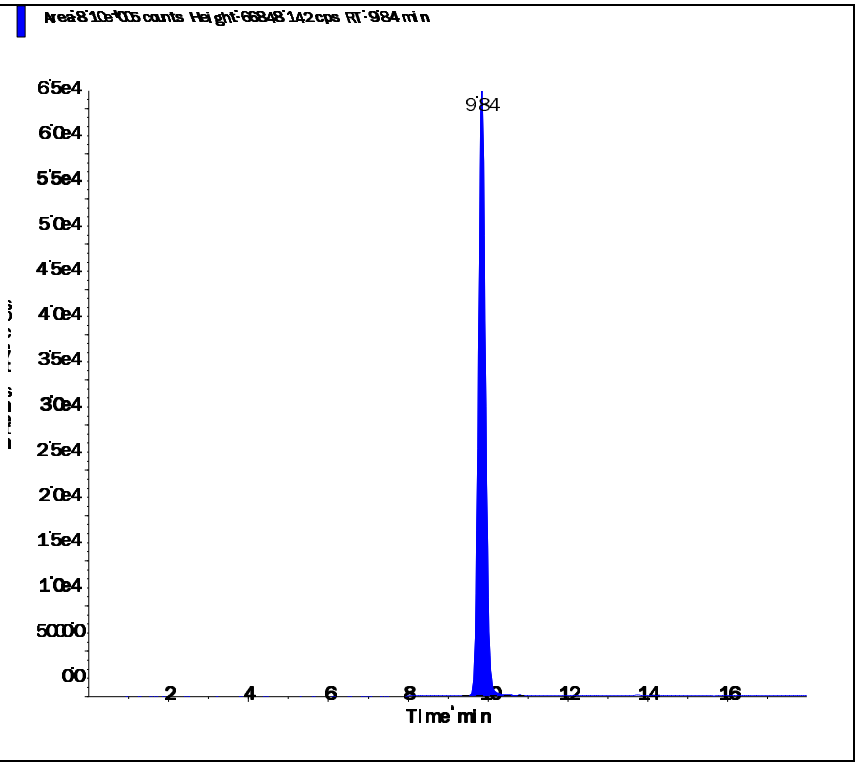

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

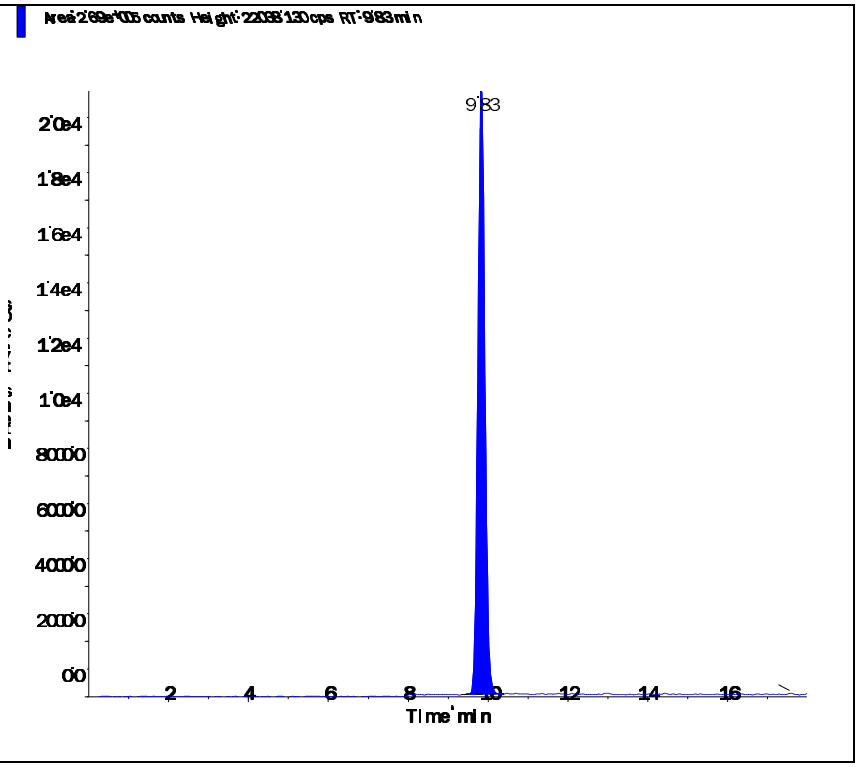

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Data File	LM34693.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

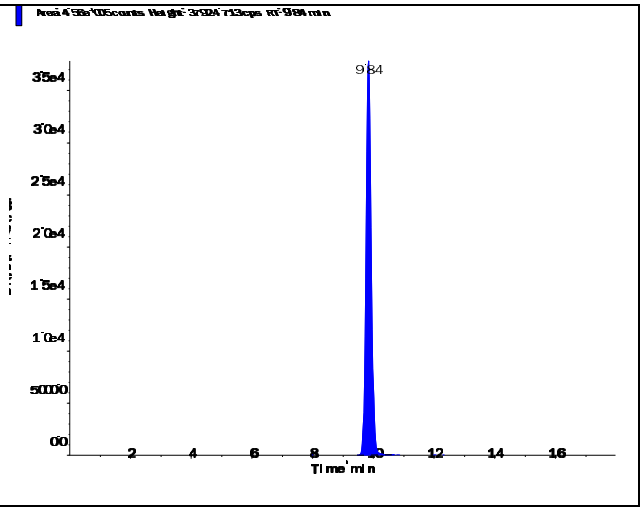

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 9.99 ng/ml Area Ratio: 3.36 Sample Type: (Standard)	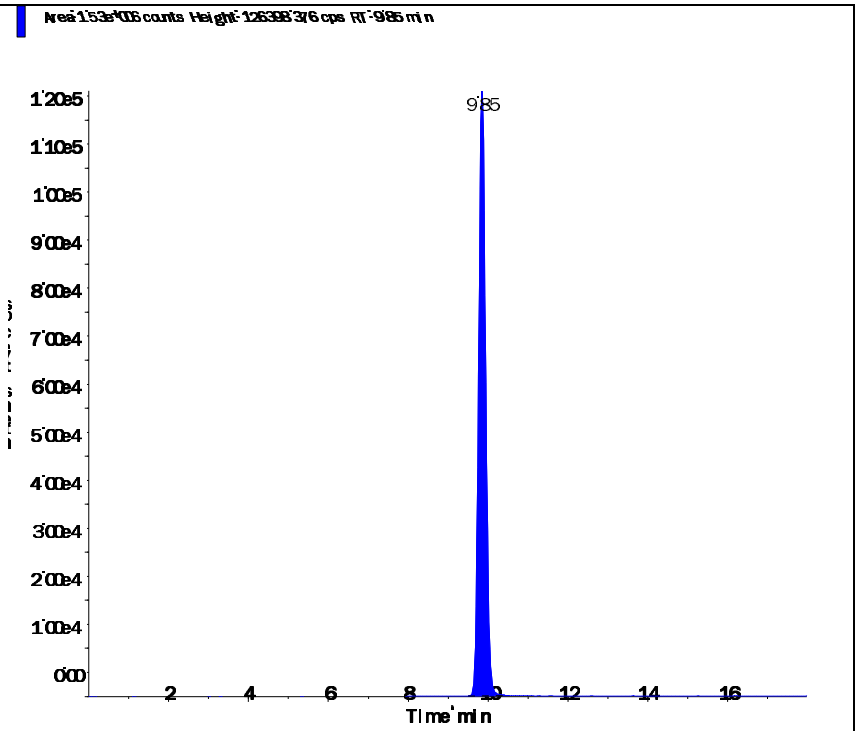
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 10.00 ng/ml Area Ratio: 1.122 Sample Type: (Standard)	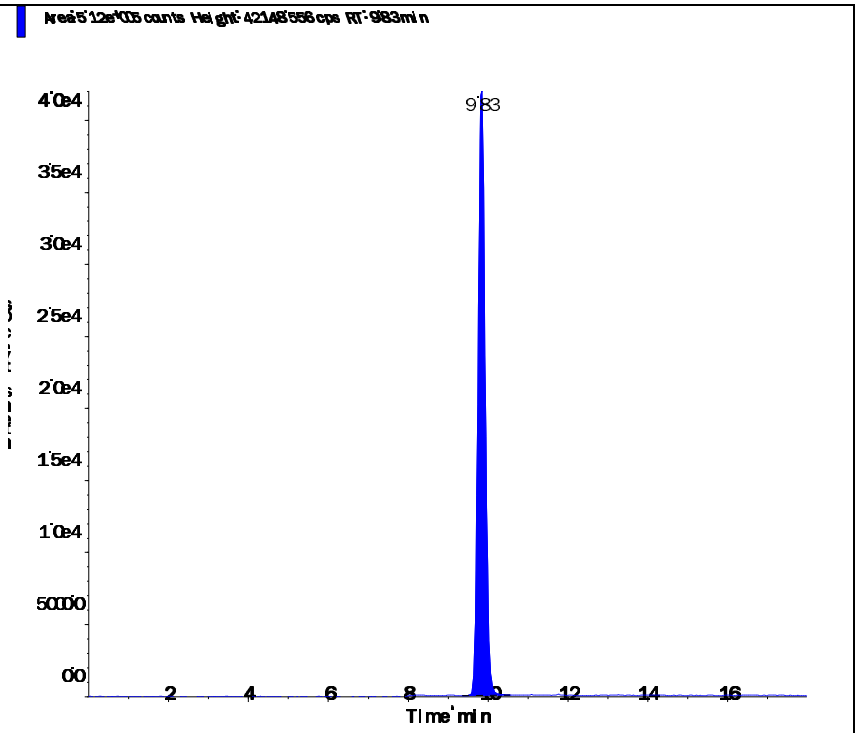

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Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

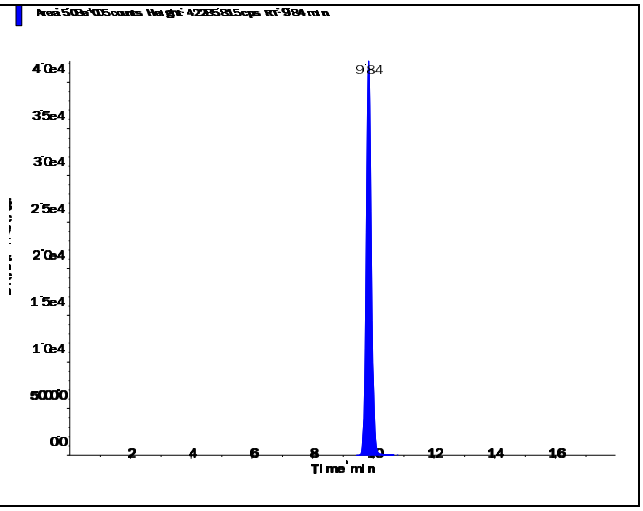

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.332
Sample Type:	(Quality Control)

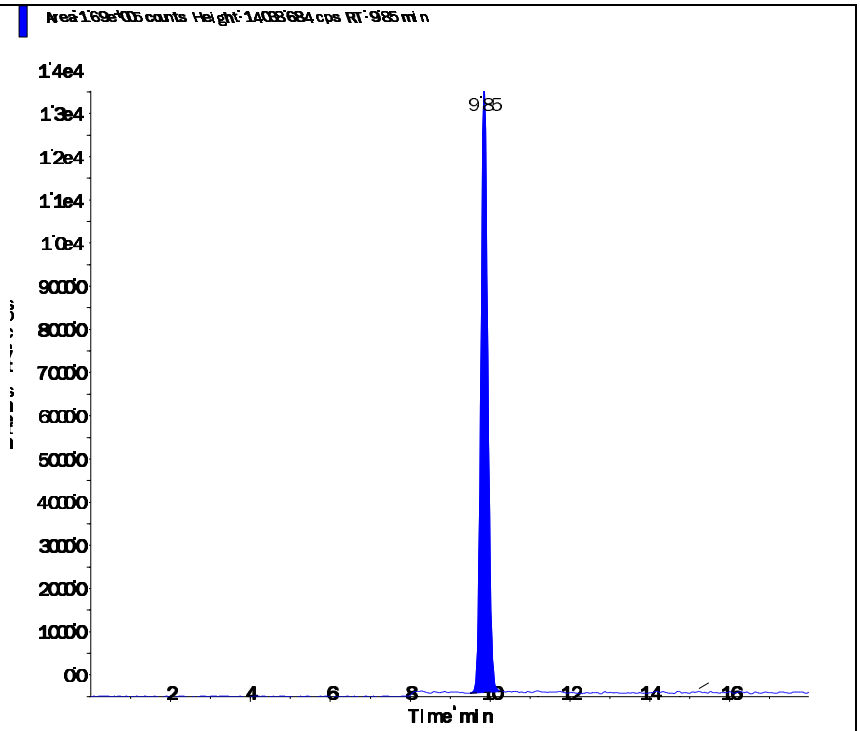

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

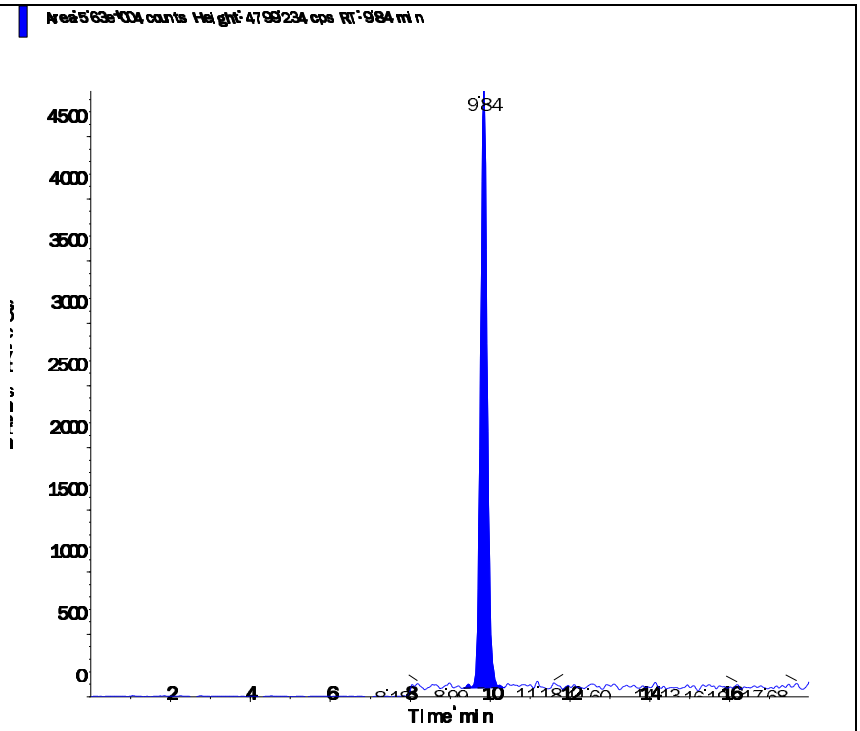

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Data File	LM35463.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 8:09:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35463.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 8:09:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.450e+05	9.34	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.520e+05	9.35	1.00	1.01
Perchlorate conf	5.550e+04	9.33	1.00	1.10

O18LP (Internal Standard)

RT (Exp. RT): 9.34(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

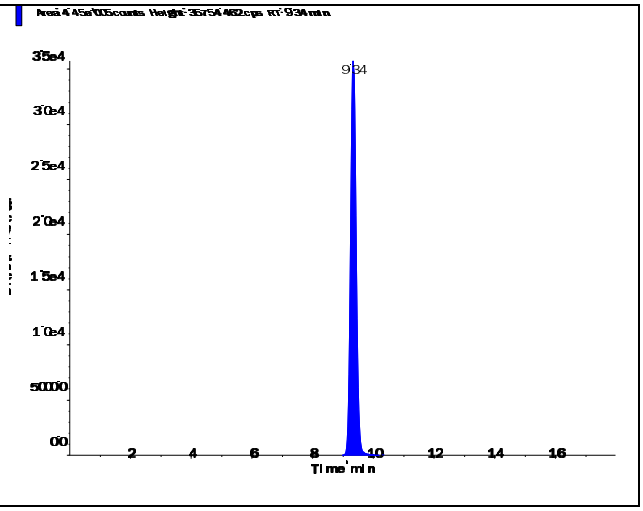

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Printed: 6/27/2016 7:39 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.341
Sample Type:	(Quality Control)

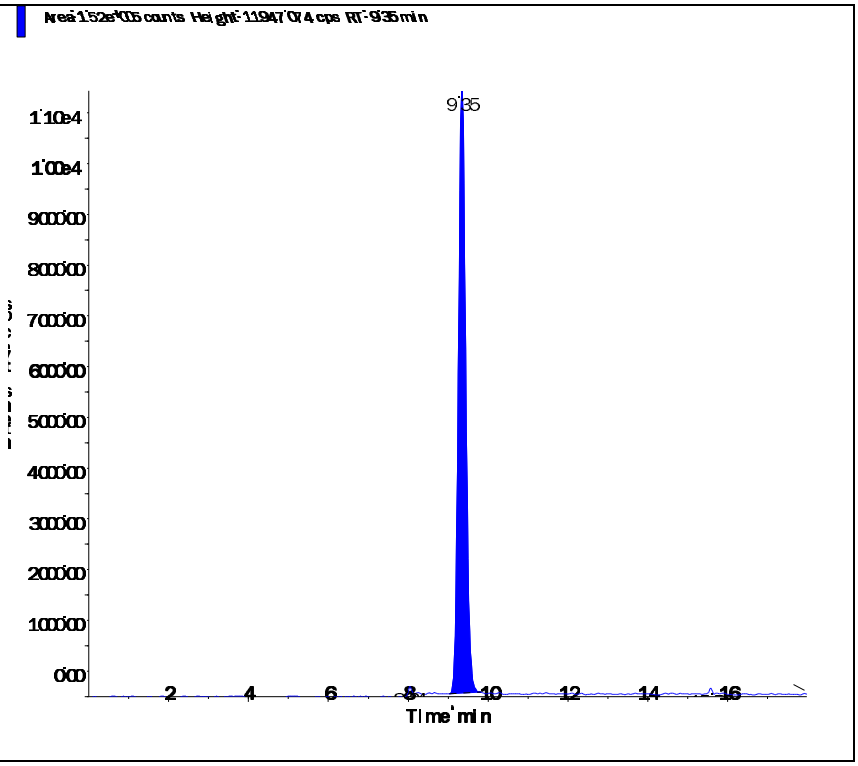

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.33 (9.84) min
Calculated conc:	1.10 ng/ml
Area Ratio:	0.125
Sample Type:	(Quality Control)

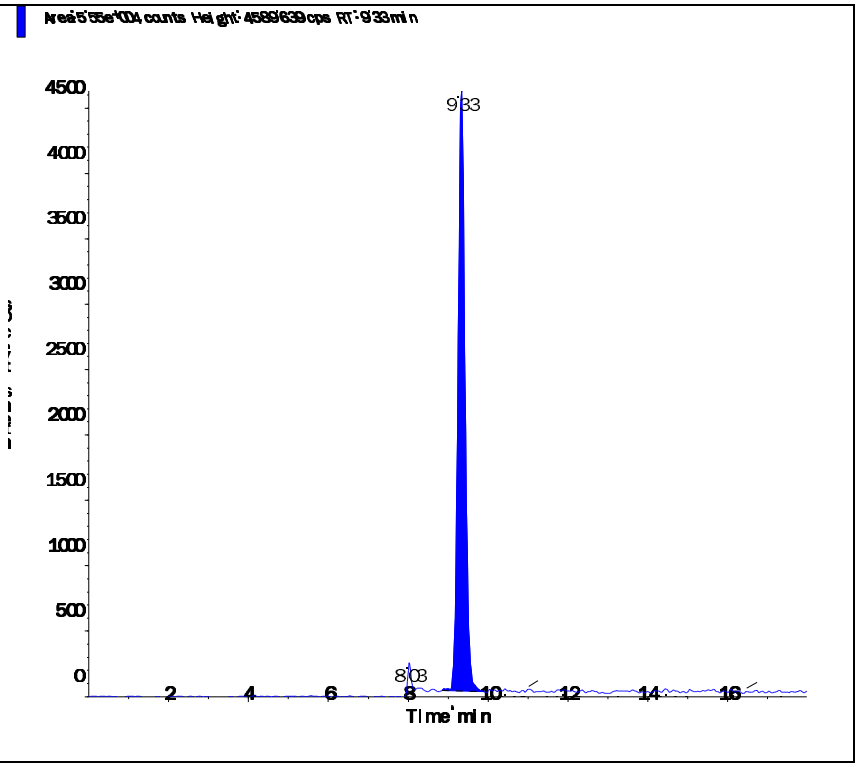

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Data File	LM35475.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 11:56:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35475.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 11:56:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.980e+05	9.32	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.700e+05	9.33	1.00	1.01
Perchlorate conf	5.750e+04	9.32	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.32(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

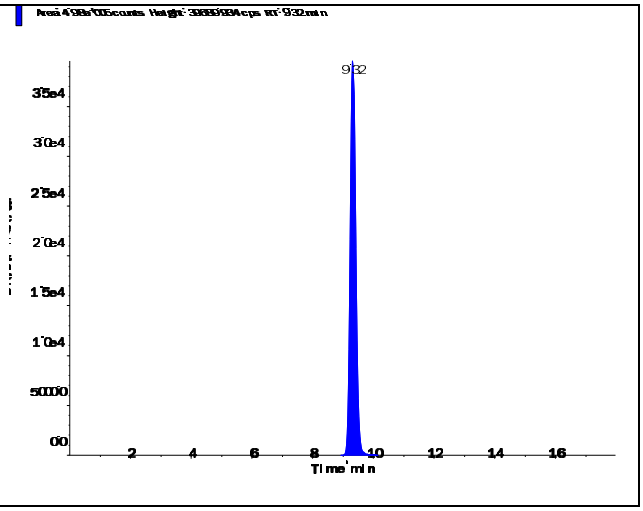

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.33 (9.84) min Calculated conc: 1.01 ng/ml Area Ratio: 0.34 Sample Type: (Quality Control)	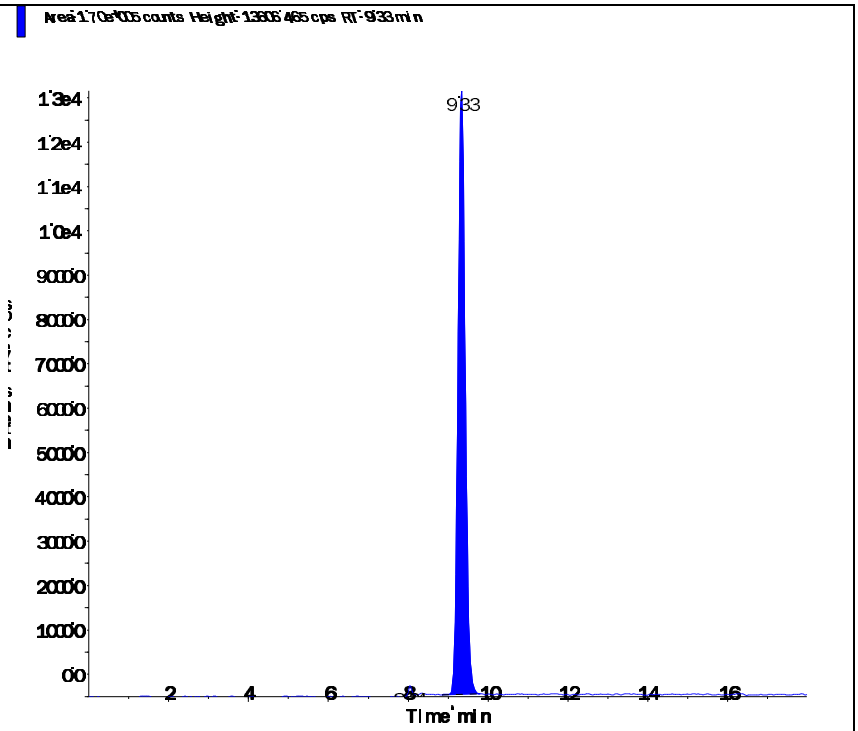
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.32 (9.84) min Calculated conc: 1.01 ng/ml Area Ratio: 0.115 Sample Type: (Quality Control)	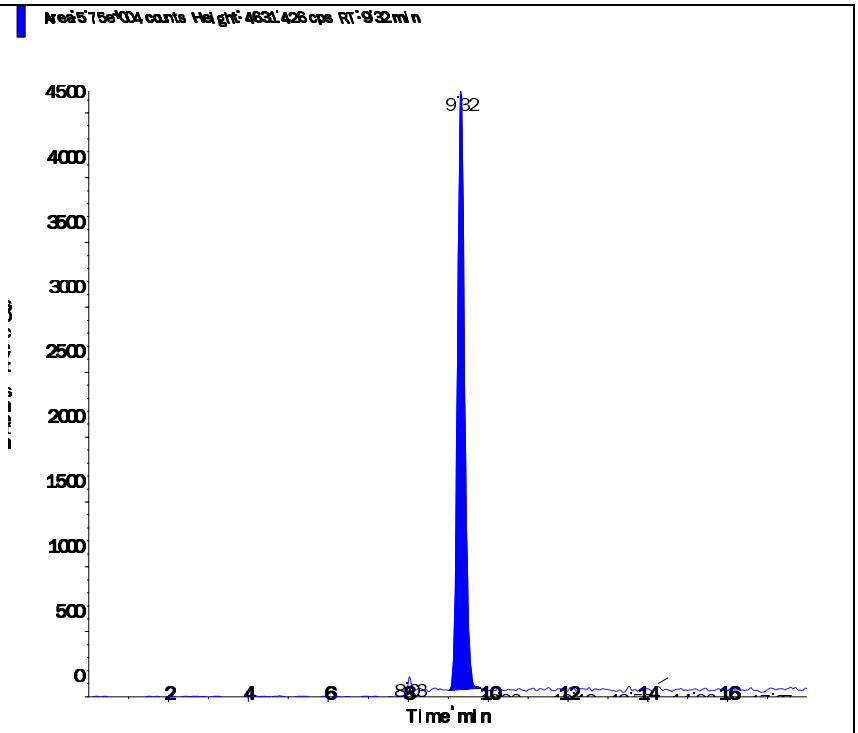

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Data File	LM35488.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 4:03:05 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35488.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 4:03:05 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.33	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+05	9.34	1.00	1.04
Perchlorate conf	6.020e+04	9.32	1.00	1.03

O18LP (Internal Standard)

RT (Exp. RT): 9.33(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

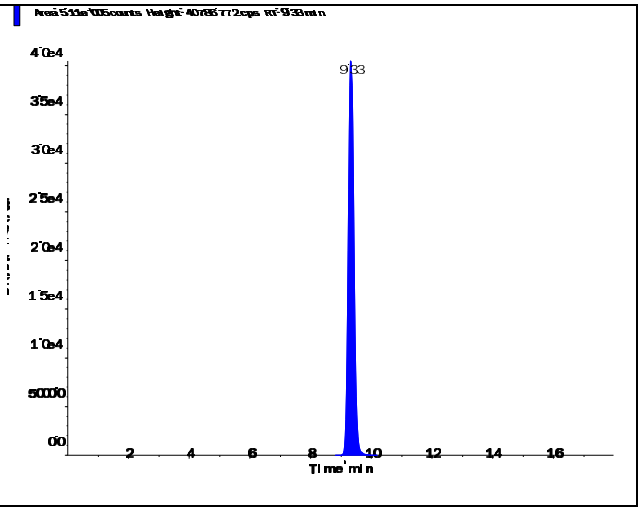

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.34 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.35
Sample Type:	(Quality Control)

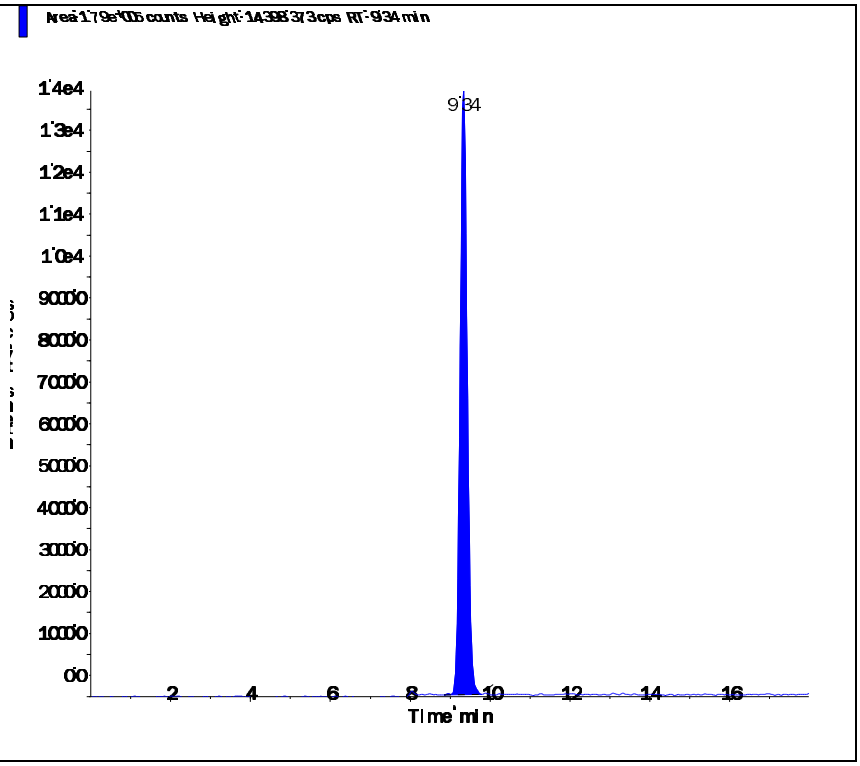

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.32 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.118
Sample Type:	(Quality Control)

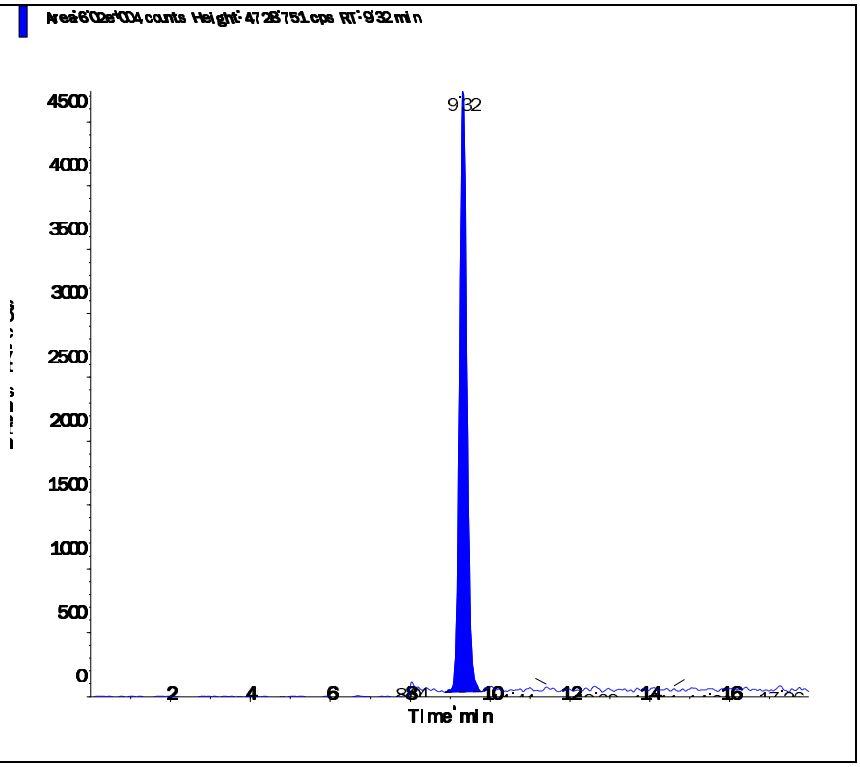

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Data File	LM35495.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:15:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35495.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:15:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.500e+05	9.33	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.890e+05	9.35	1.00	1.02
Perchlorate conf	6.340e+04	9.33	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.33(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

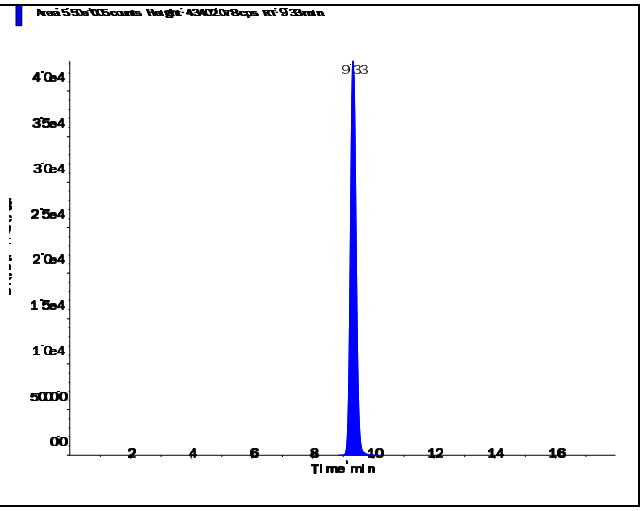

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.345
Sample Type:	(Quality Control)

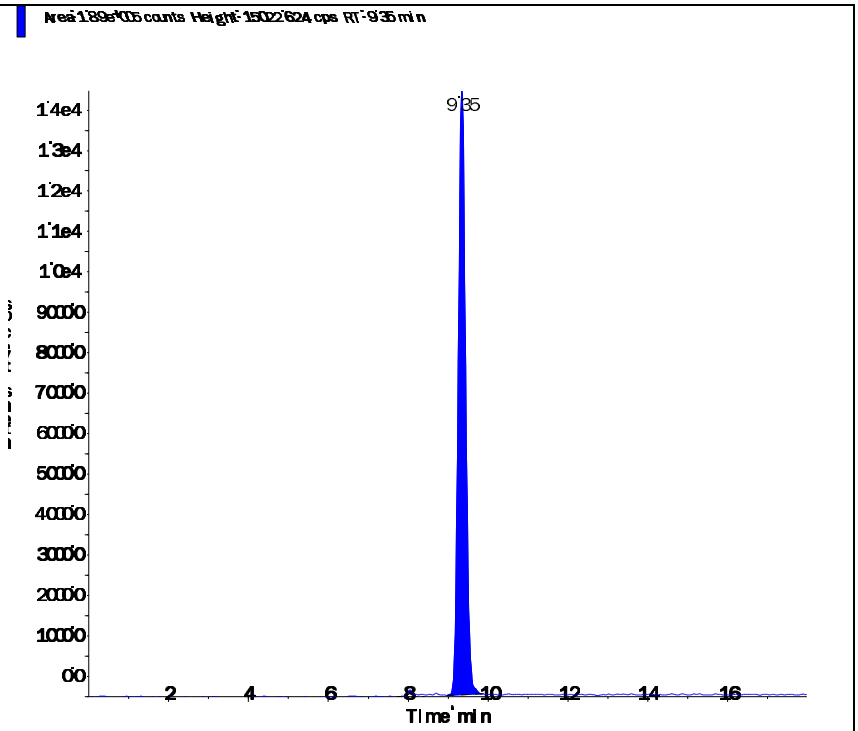

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.33 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.115
Sample Type:	(Quality Control)

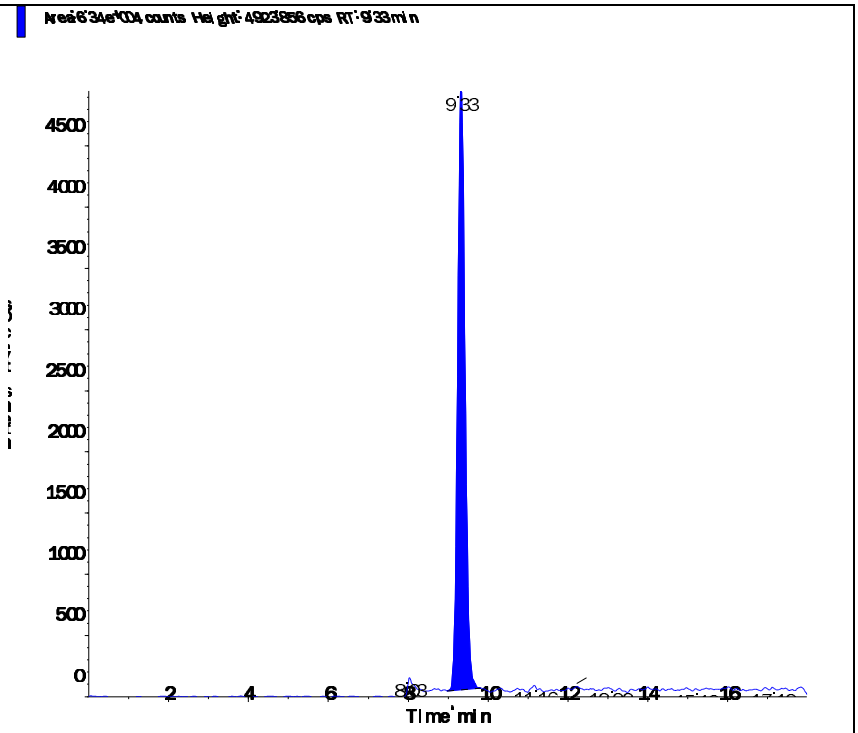

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Data File	LM35498.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:06:10 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35498.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:06:10 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.580e+05	9.34	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.610e+05	9.35	1.00	1.04
Perchlorate conf	5.670e+04	9.34	1.00	1.09

O18LP (Internal Standard)

RT (Exp. RT): 9.34(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

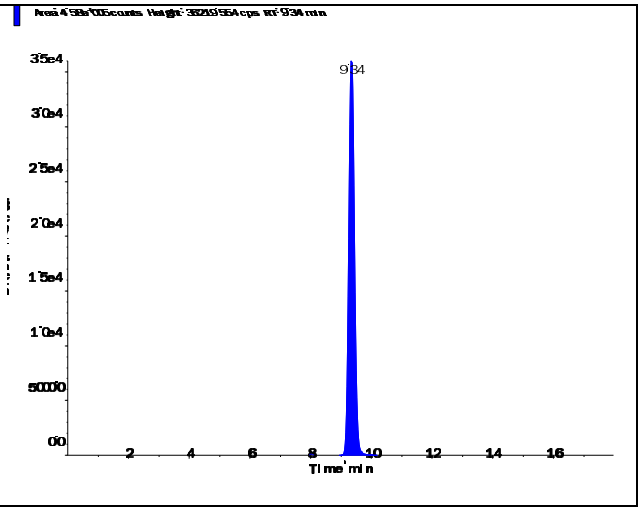

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.353
Sample Type:	(Quality Control)

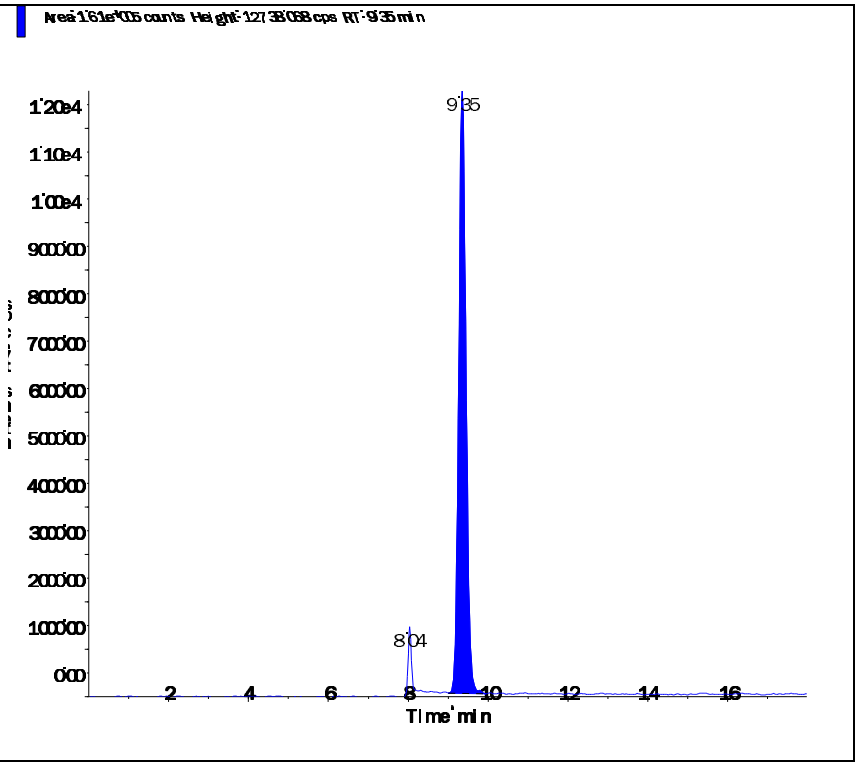

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.34 (9.84) min
Calculated conc:	1.09 ng/ml
Area Ratio:	0.124
Sample Type:	(Quality Control)

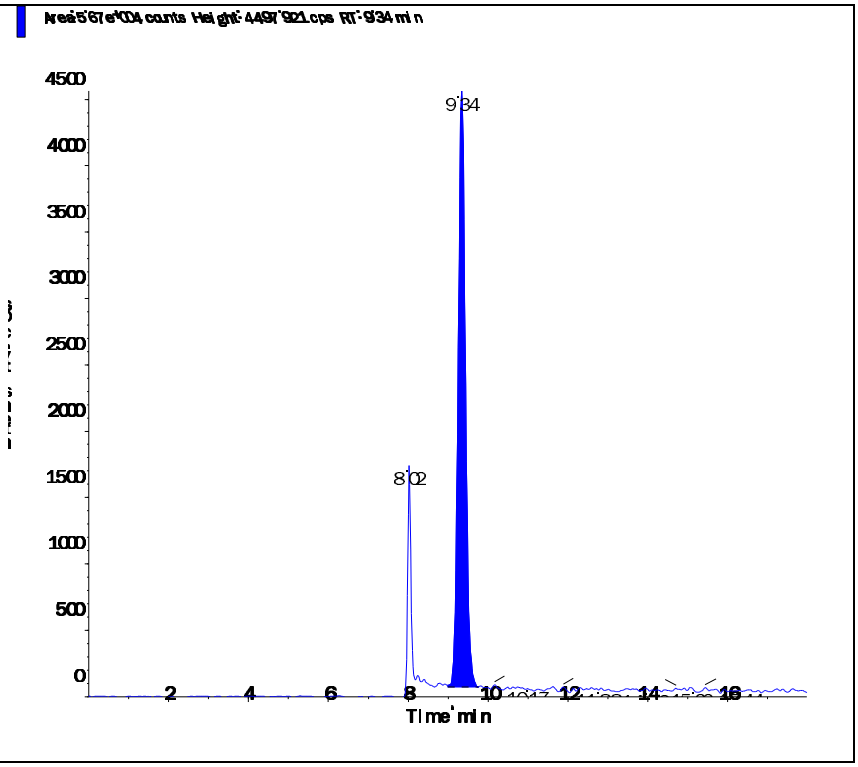

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Data File	LM35508.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 9:15:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-11 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35508.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 9:15:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.090e+05	9.35	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.760e+05	9.36	1.00	1.02
Perchlorate conf	5.930e+04	9.35	1.00	1.02

O18LP (Internal Standard)

RT (Exp. RT): 9.35(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

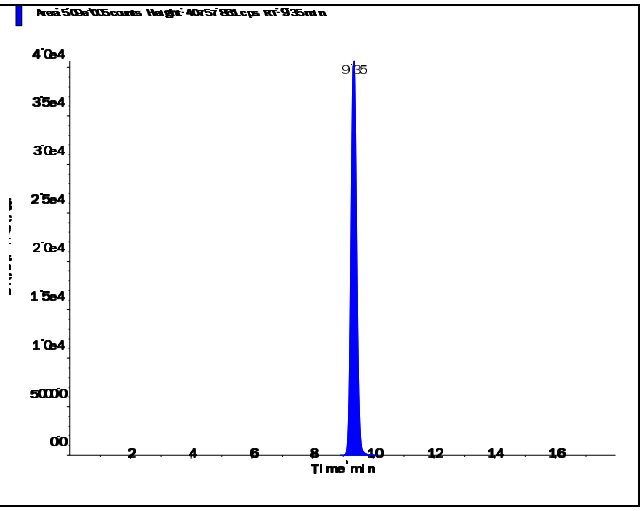

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.36 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.345
Sample Type:	(Quality Control)

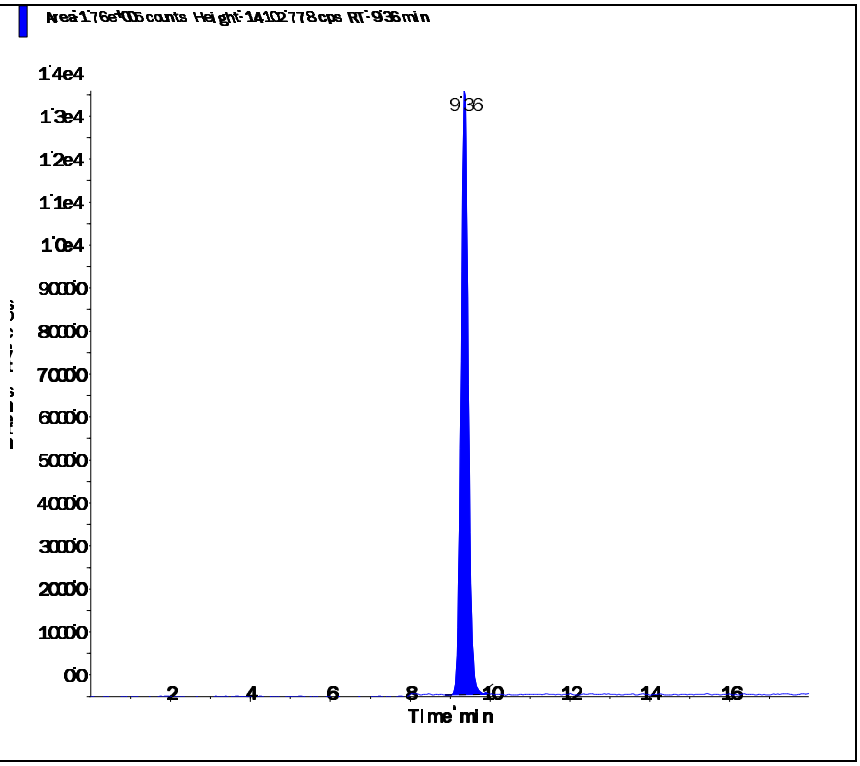

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.117
Sample Type:	(Quality Control)

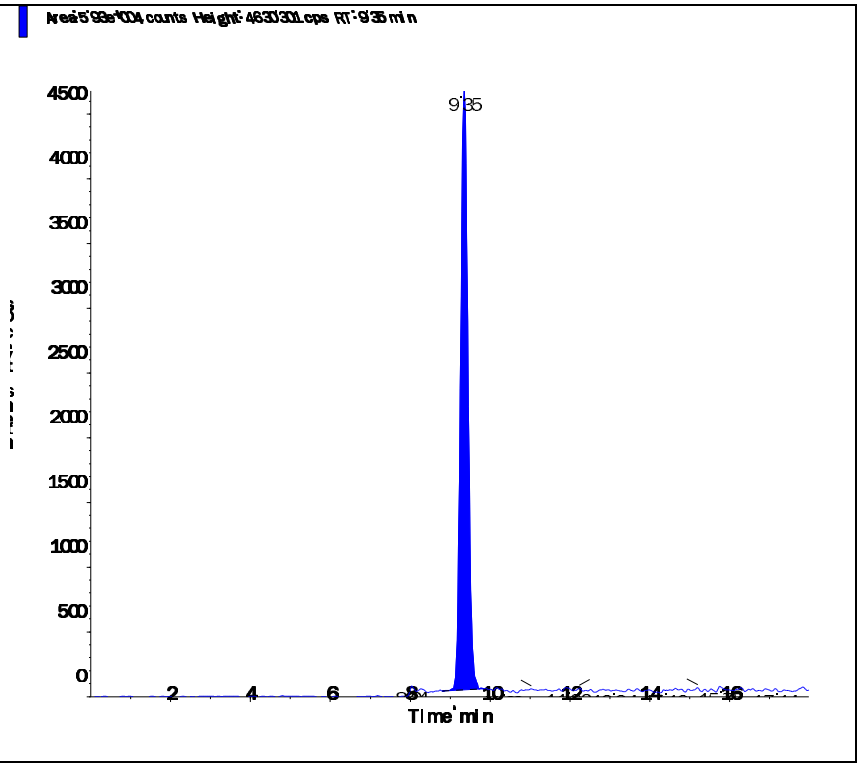

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Data File	LM35464.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 8:28:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-05 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35464.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 8:28:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.490e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.160e+04	9.40	N/A	0.206
Perchlorate conf	1.210e+04	9.37	N/A	0.222

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

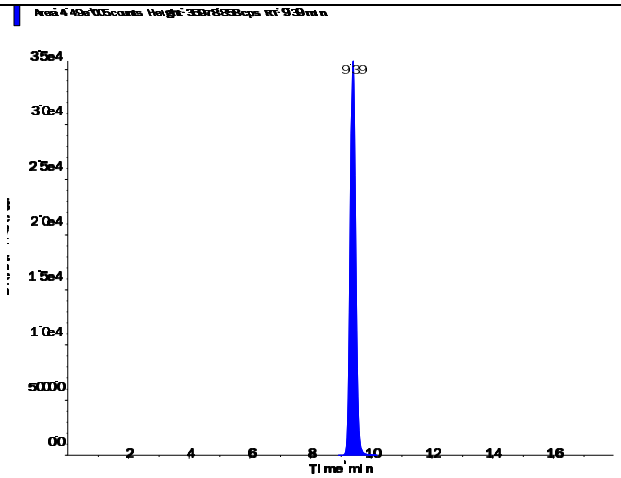

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

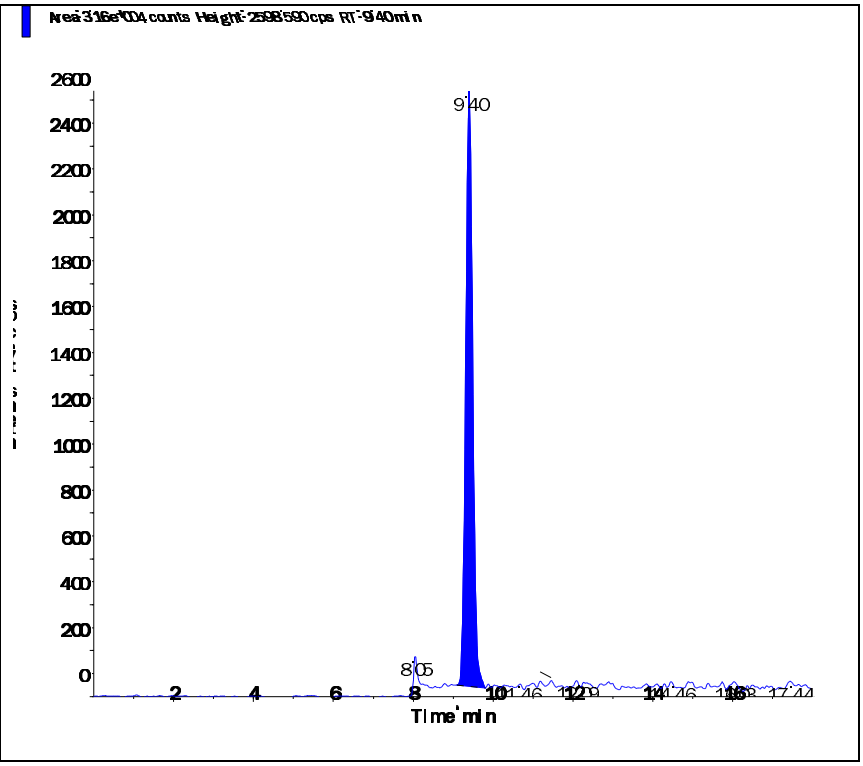

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.37 (9.84) min
Calculated conc:	0.222 ng/ml
Area Ratio:	0.027
Sample Type:	(Unknown)

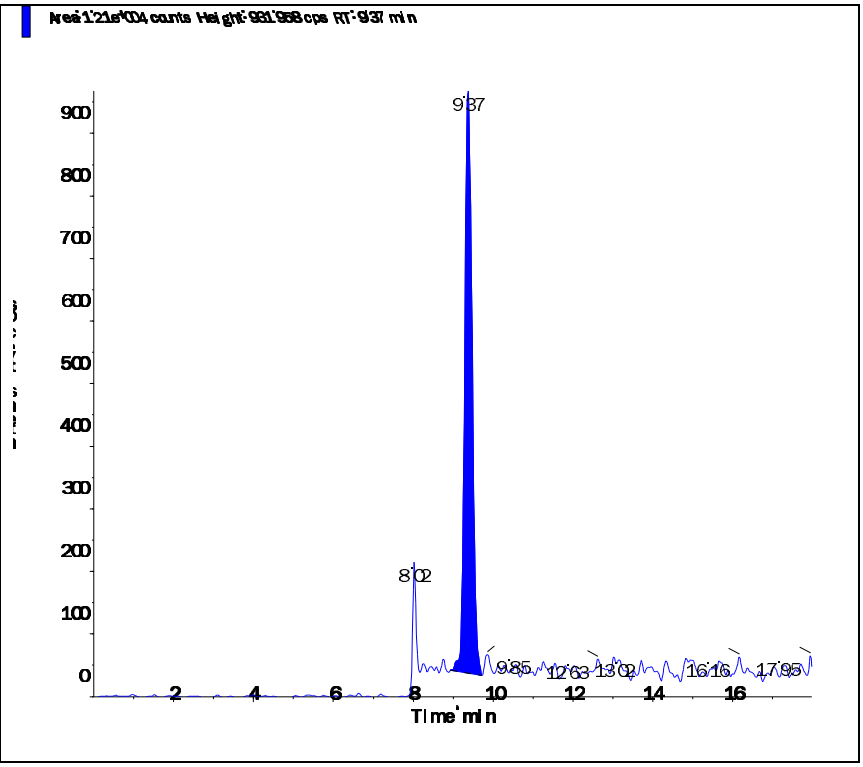

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Data File	LM35476.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 12:15:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-06 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35476.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 12:15:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.160e+05	9.36	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.500e+04	9.37	N/A	0.198
Perchlorate conf	1.310e+04	9.35	N/A	0.207

O18LP (Internal Standard)

RT (Exp. RT): 9.36(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

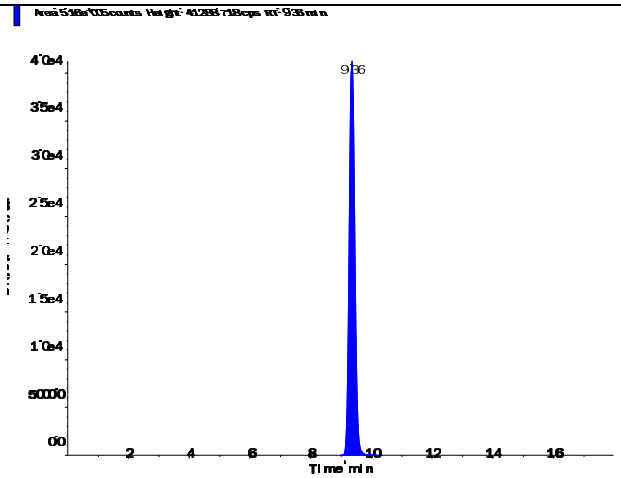

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.37 (9.84) min
Calculated conc:	0.198 ng/ml
Area Ratio:	0.068
Sample Type:	(Unknown)

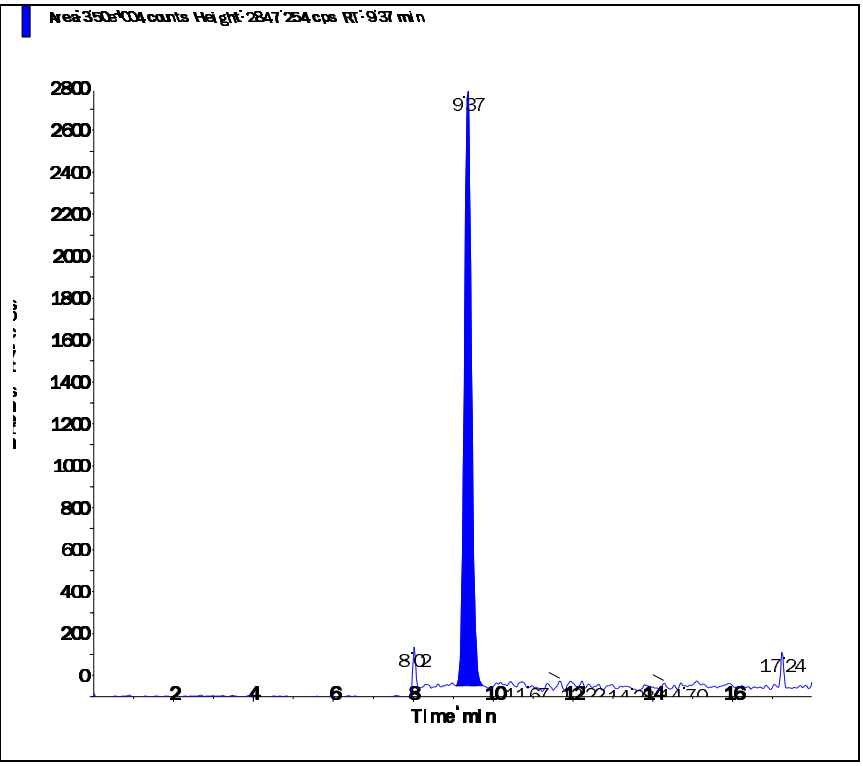

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

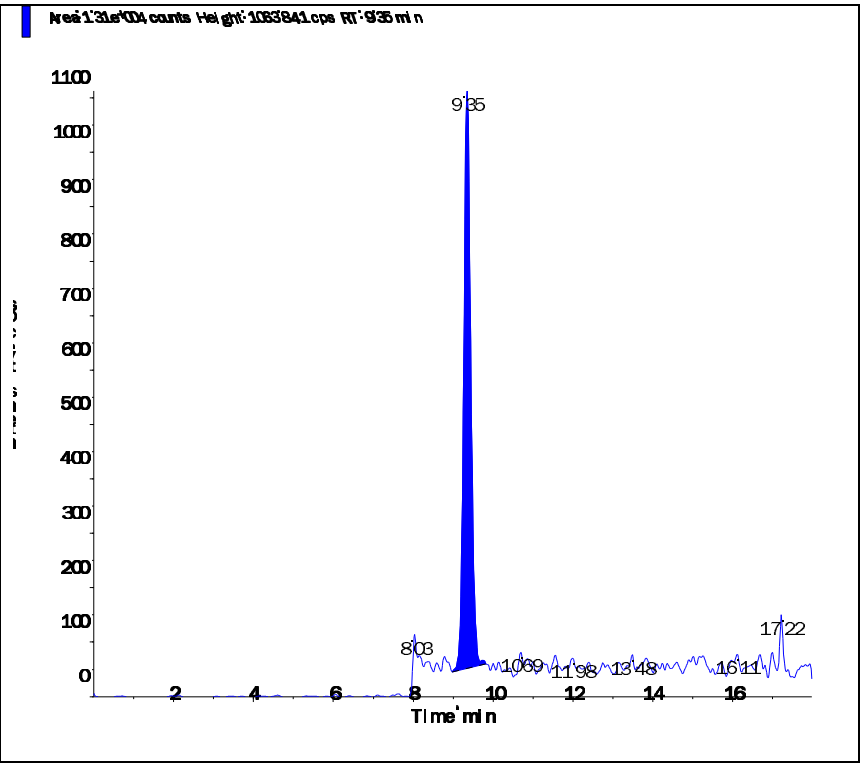

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Data File	LM35489.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 4:22:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35489.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 4:22:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.380e+05	9.37	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.890e+04	9.39	N/A	0.211
Perchlorate conf	1.340e+04	9.38	N/A	0.202

O18LP (Internal Standard)

RT (Exp. RT): 9.37(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

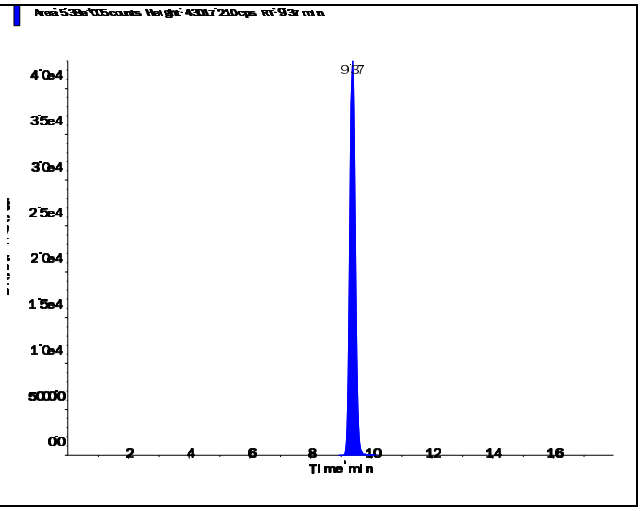

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	0.211 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

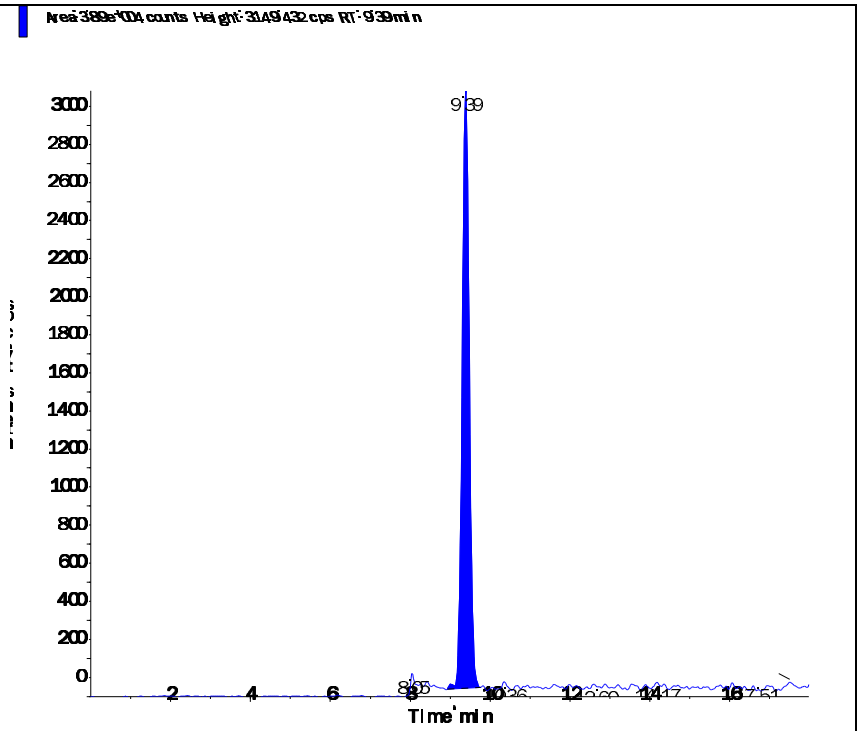

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	0.202 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

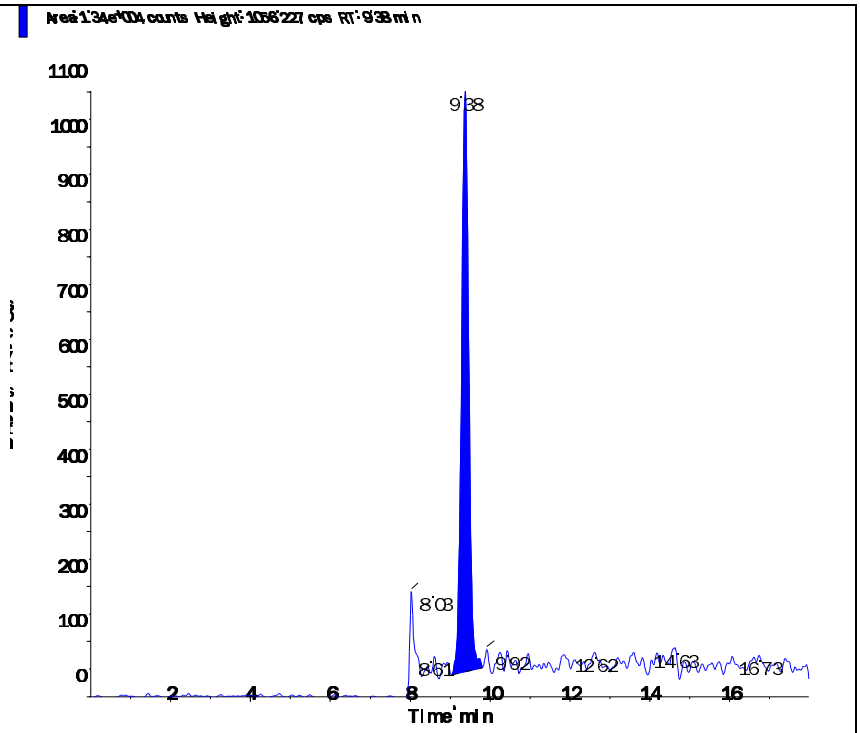

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Data File	LM35496.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:34:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-08 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35496.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:34:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.520e+05	9.38	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.800e+04	9.39	N/A	0.201
Perchlorate conf	1.410e+04	9.38	N/A	0.208

O18LP (Internal Standard)

RT (Exp. RT): 9.38(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

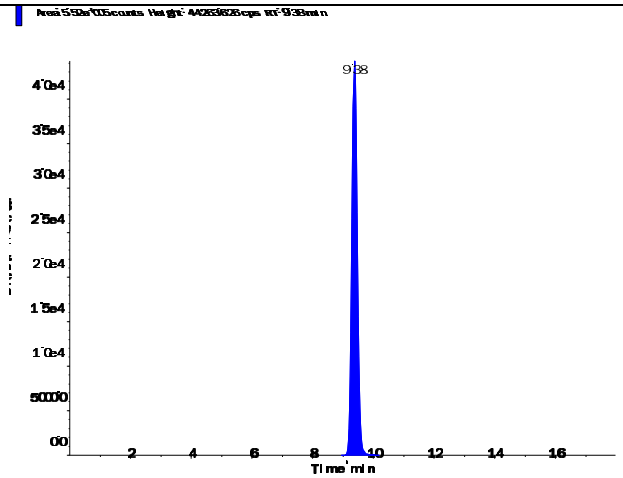

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

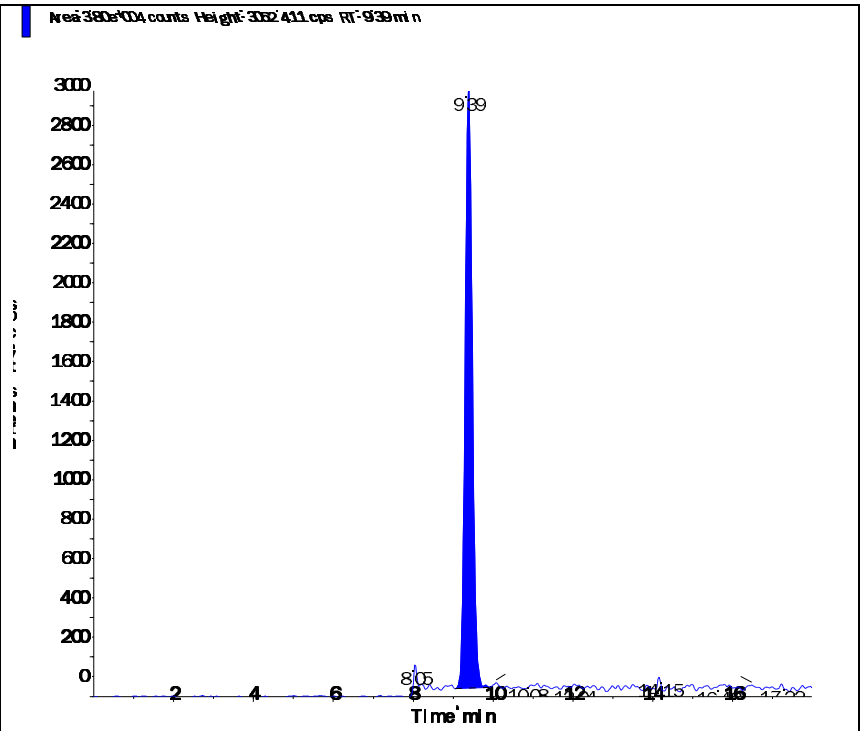

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	0.208 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

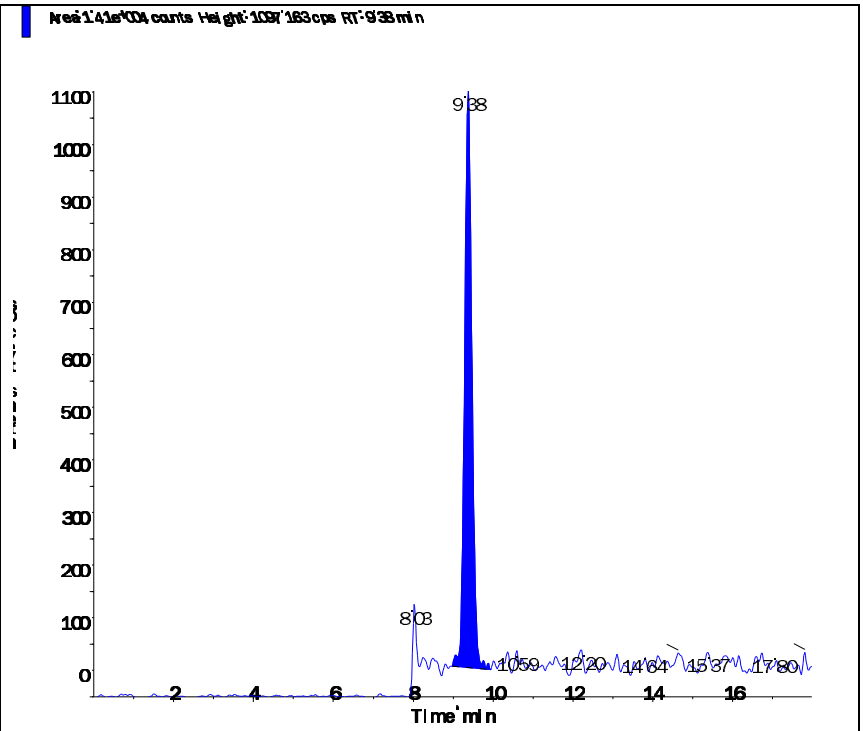

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Data File	LM35499.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:25:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-09 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35499.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:25:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.640e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.290e+04	9.40	N/A	0.207
Perchlorate conf	1.150e+04	9.38	N/A	0.201

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

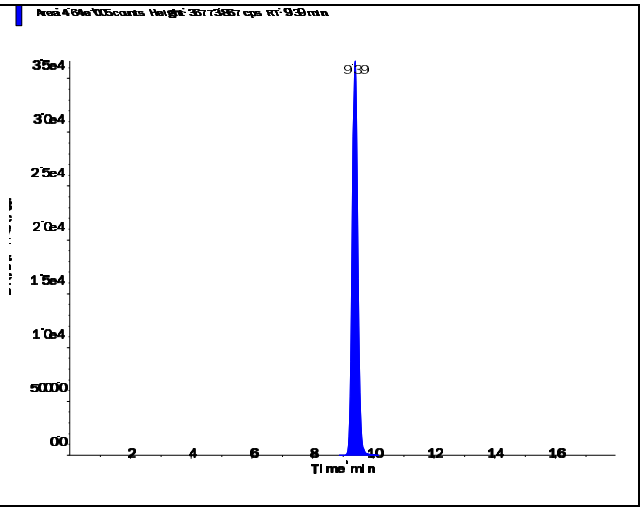

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

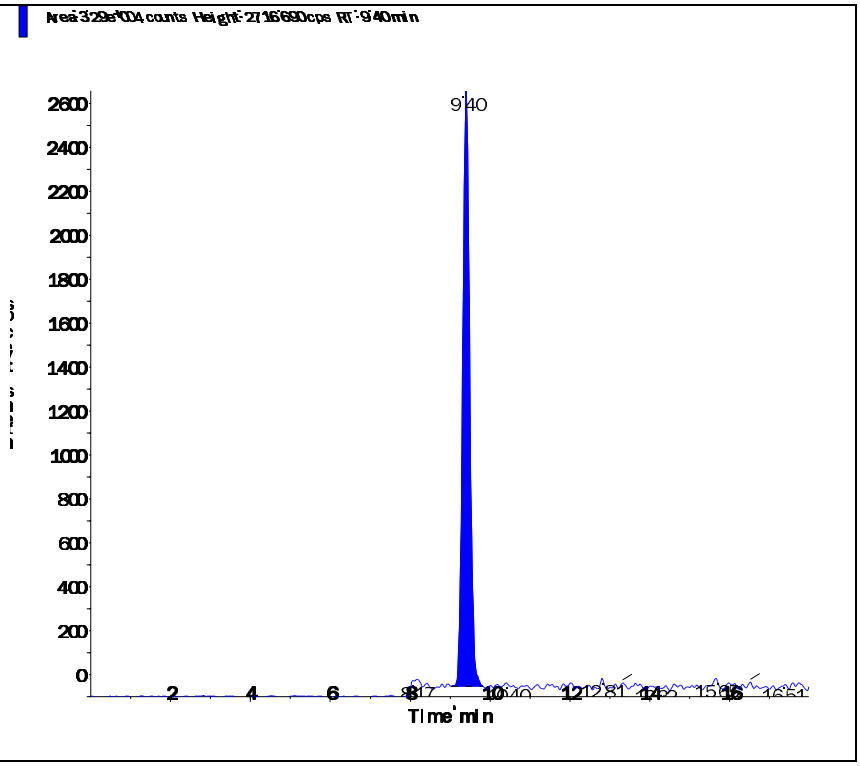

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

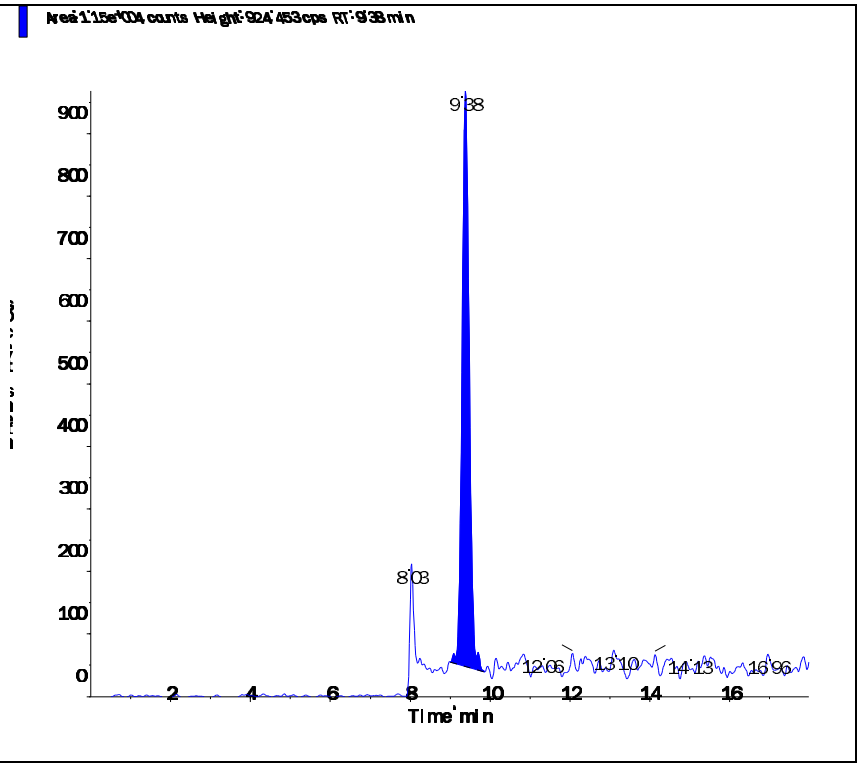

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Data File	LM35509.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 9:34:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-10 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35509.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 9:34:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-10	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.370e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.790e+04	9.40	N/A	0.206
Perchlorate conf	1.400e+04	9.39	N/A	0.214

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

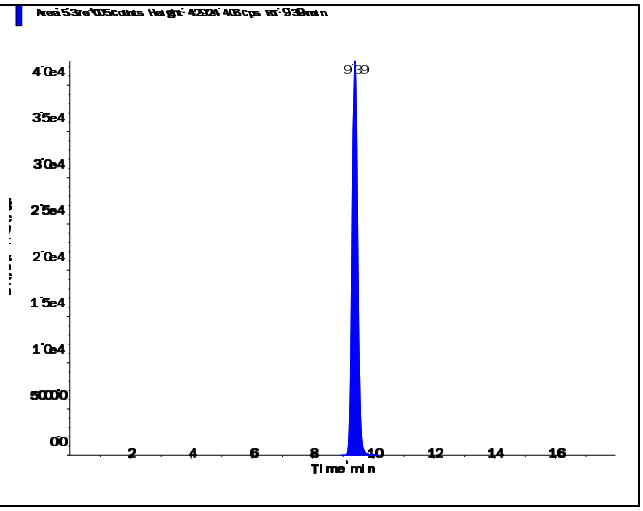

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.40 (9.84) min Calculated conc: 0.206 ng/ml Area Ratio: 0.071 Sample Type: (Unknown)	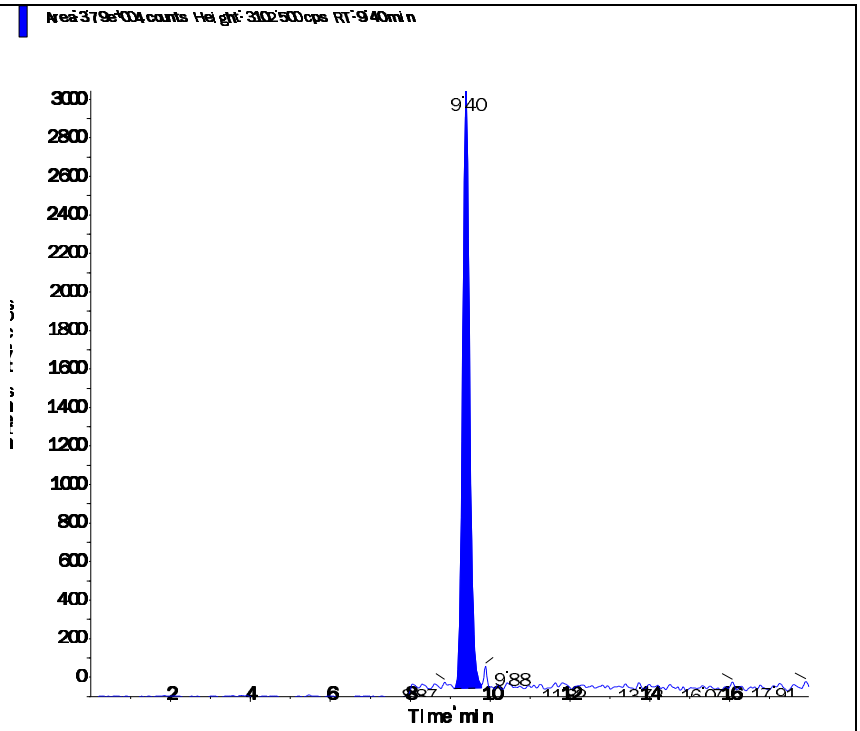
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.39 (9.84) min Calculated conc: 0.214 ng/ml Area Ratio: 0.026 Sample Type: (Unknown)	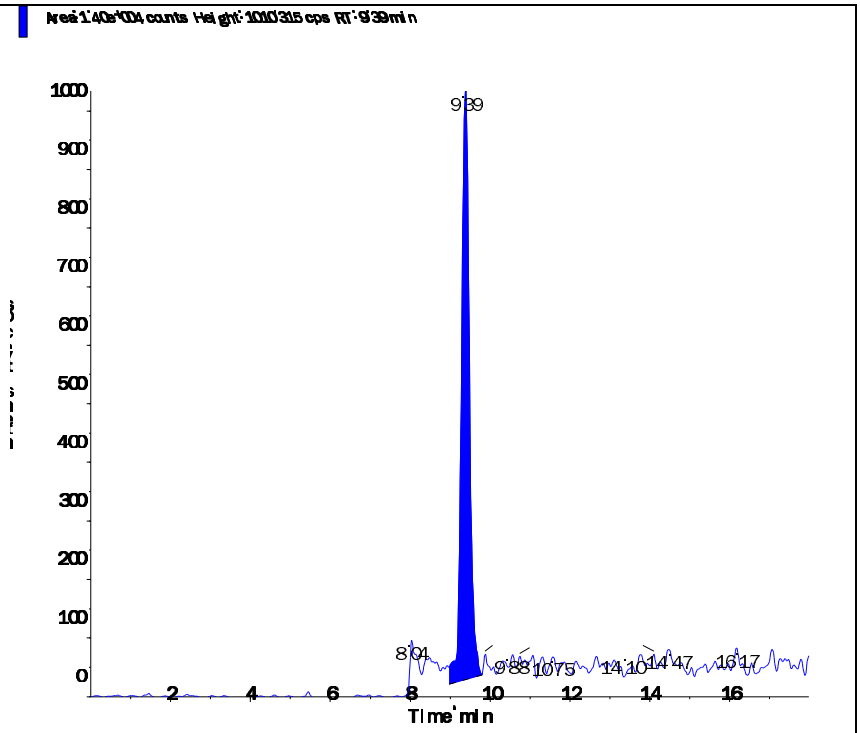

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Data File	LM35462.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 7:50:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-01 CCB	**Injection Vial**	1.00
Data File	LM35462.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 7:50:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.420e+05	9.58	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.58(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

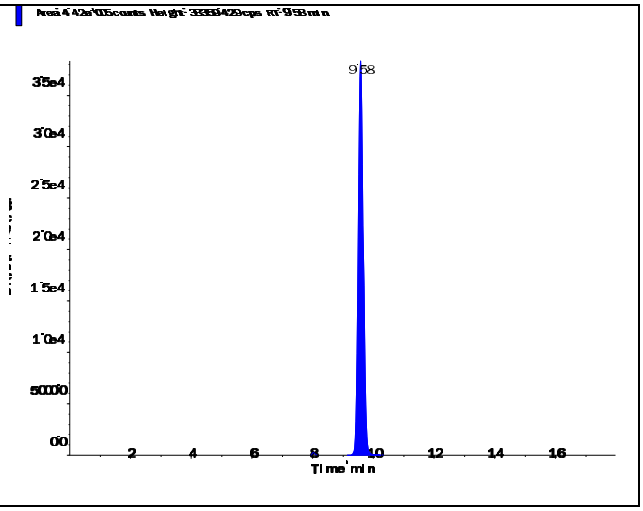

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	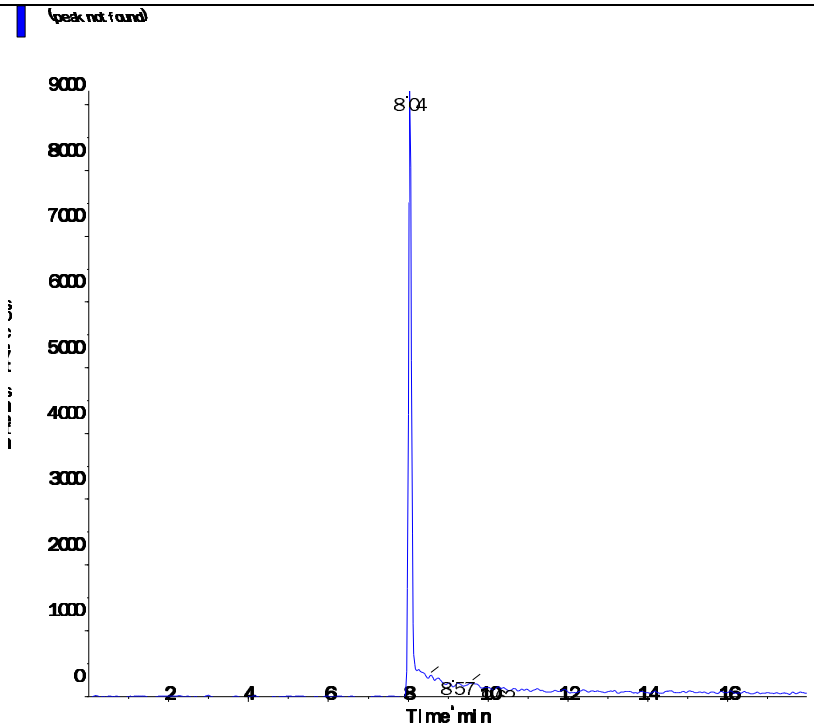
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	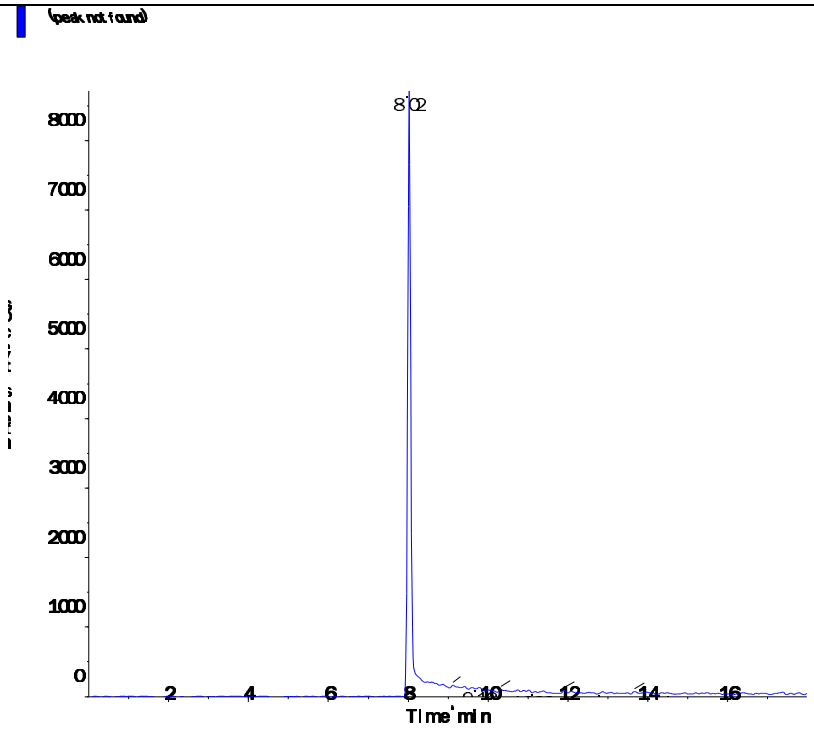

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Data File	LM35477.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 12:34:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-04 CCB	**Injection Vial**	1.00
Data File	LM35477.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 12:34:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.240e+05	9.57	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	8.240e+02	9.53	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.57(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

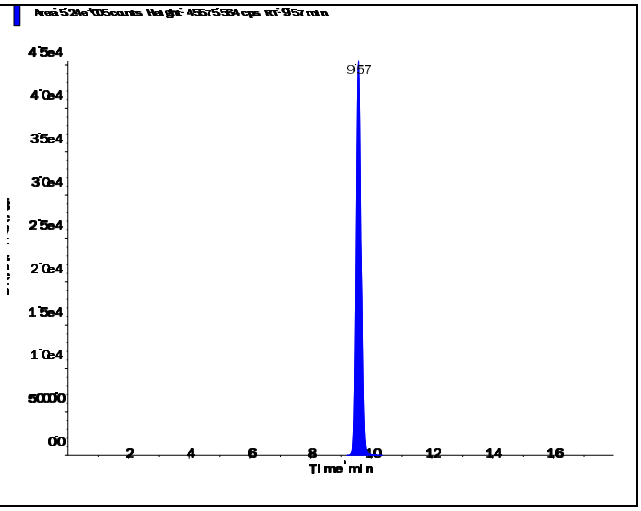

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	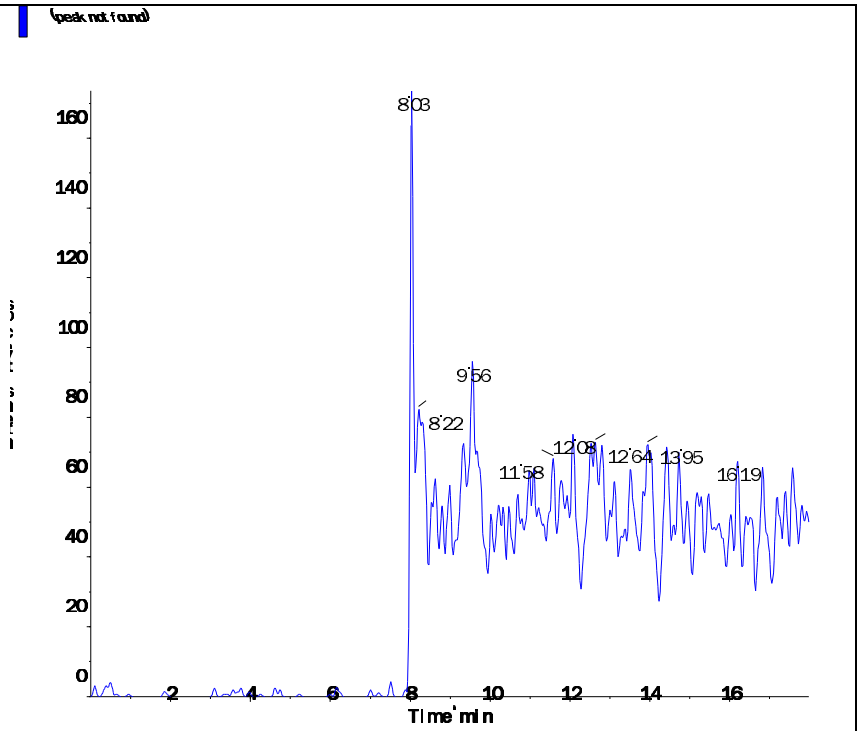
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.53 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	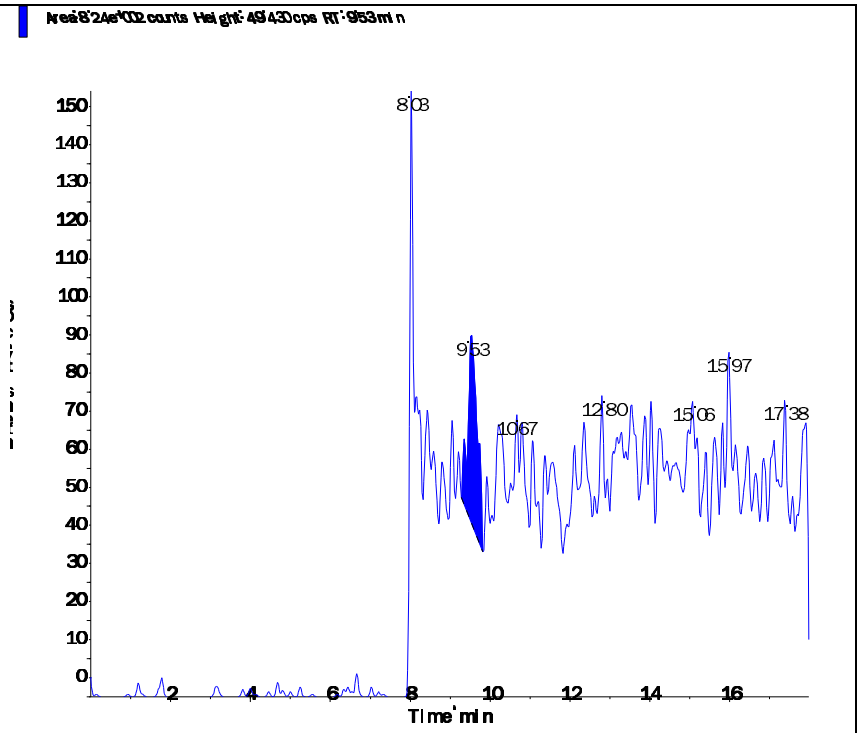

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Data File	LM35490.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 4:40:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-06 CCB	**Injection Vial**	1.00
Data File	LM35490.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 4:40:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.420e+05	9.59	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.59(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

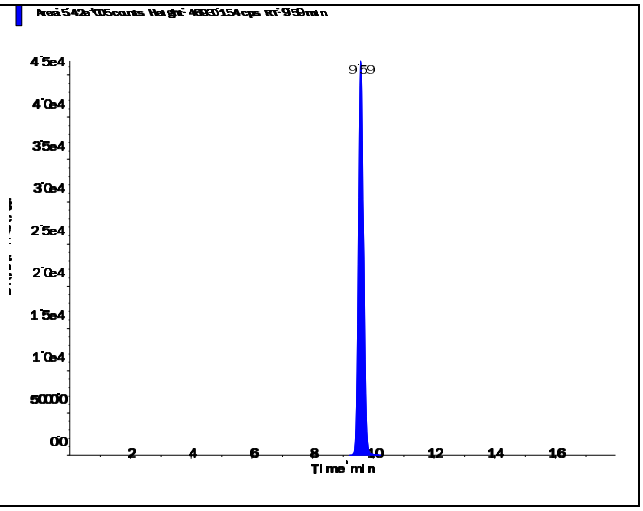

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

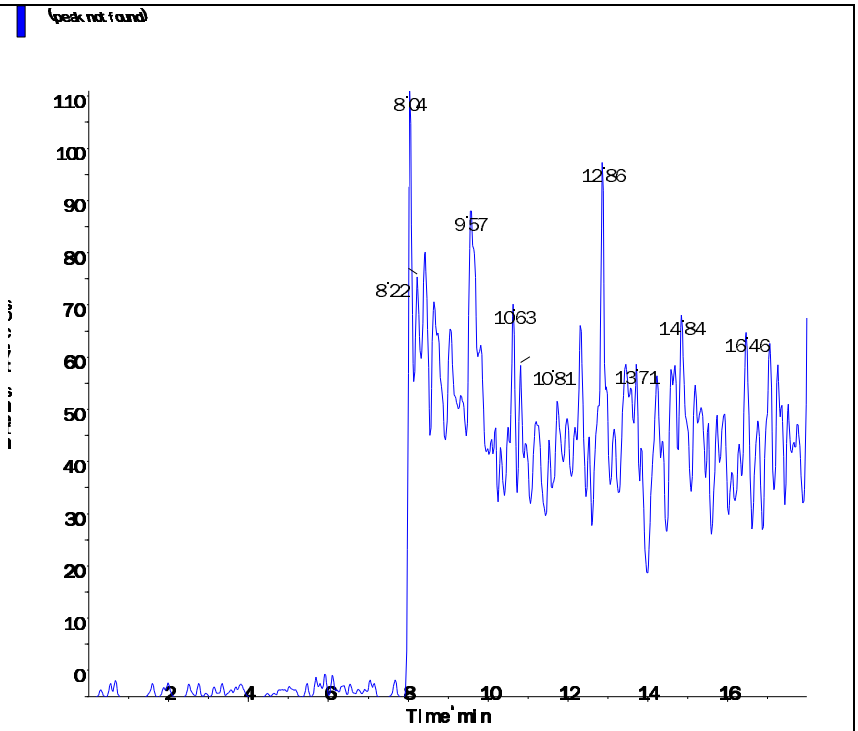

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

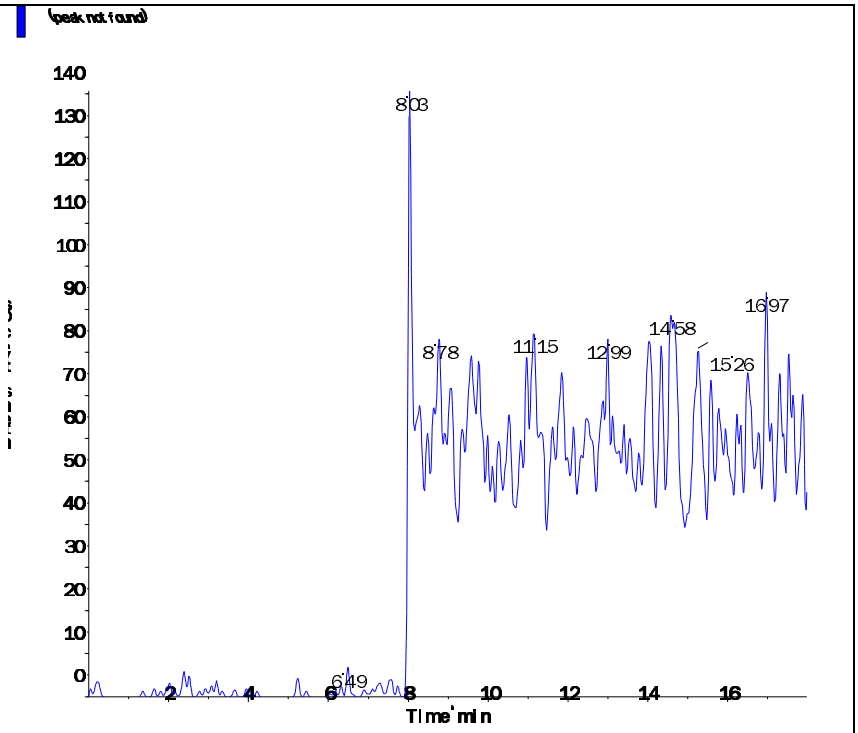

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Data File	LM35497.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:53:28 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-08 CCB	**Injection Vial**	1.00
Data File	LM35497.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:53:28 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.550e+05	9.59	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	5.180e+02	9.63	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.59(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

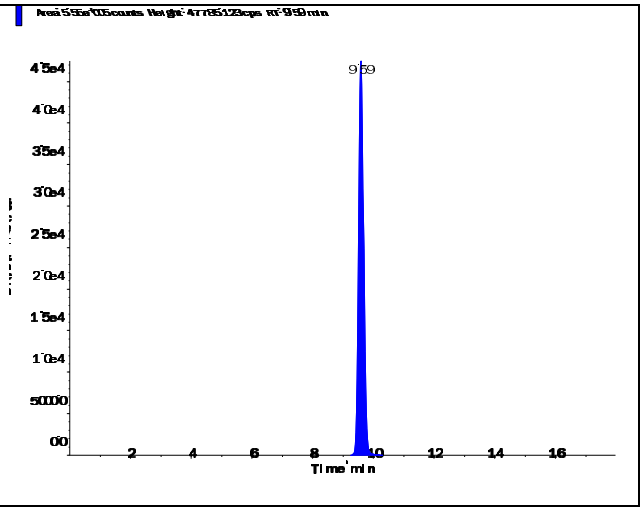

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

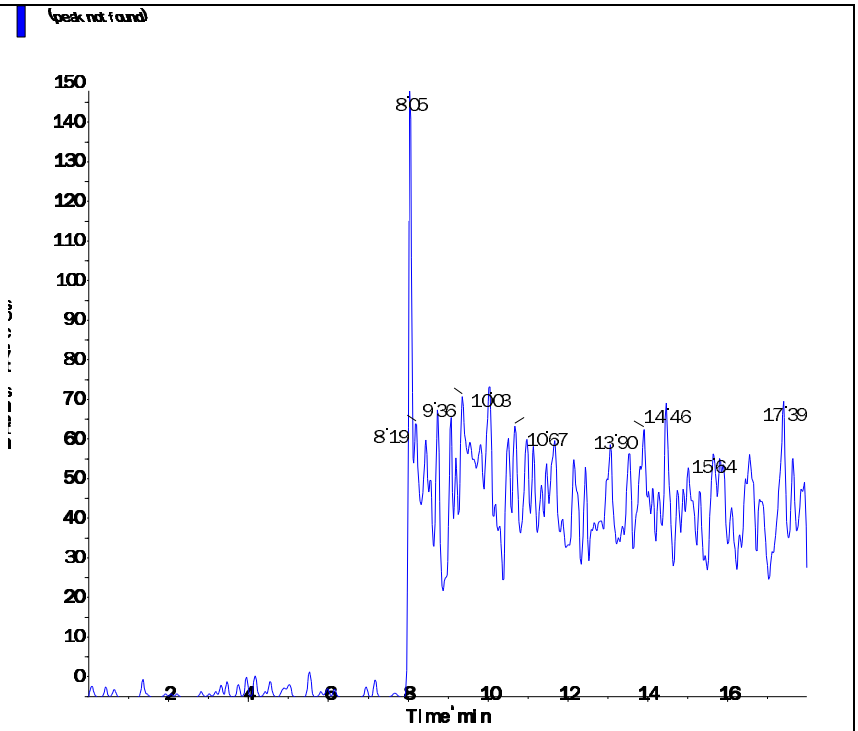

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

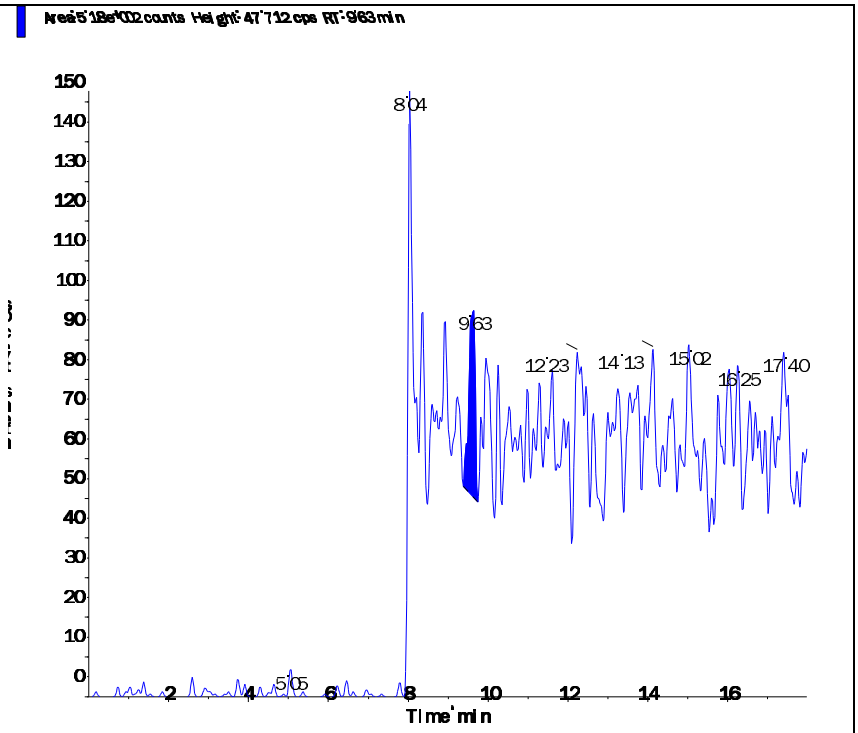

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Data File	LM35500.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:44:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-10 CCB	**Injection Vial**	1.00
Data File	LM35500.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:44:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.840e+05	9.61	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.61(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

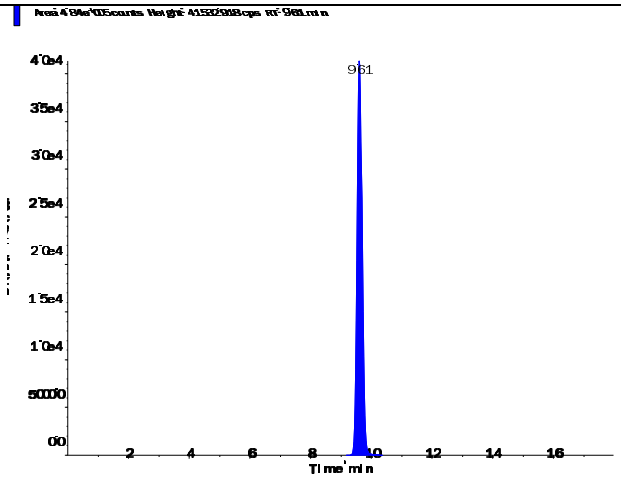

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

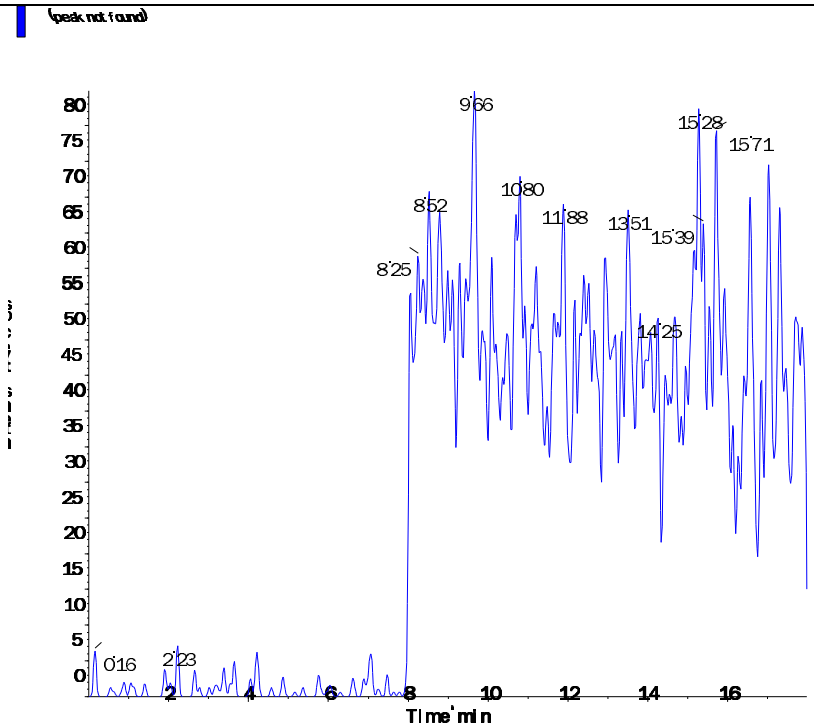

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

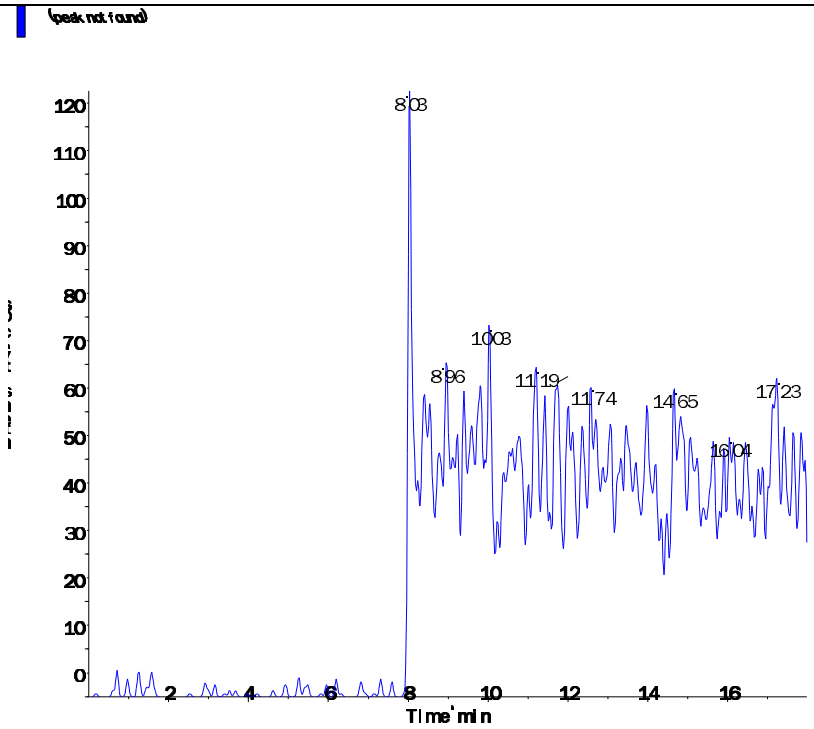

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Data File	LM35510.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 9:53:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-12 CCB	**Injection Vial**	1.00
Data File	LM35510.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 9:53:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-12	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.380e+05	9.61	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.61(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

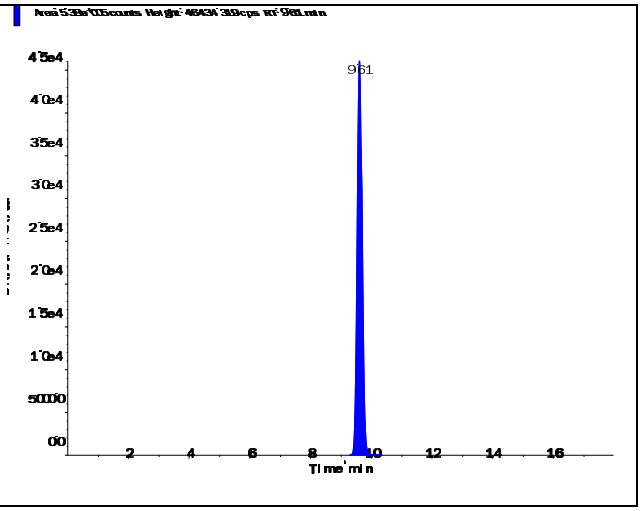

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

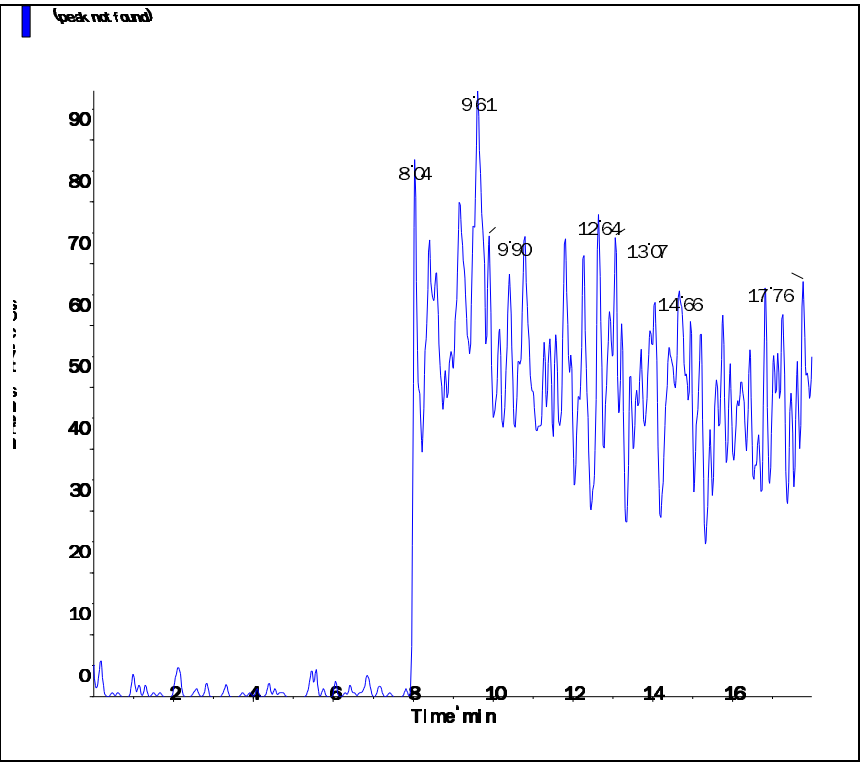

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

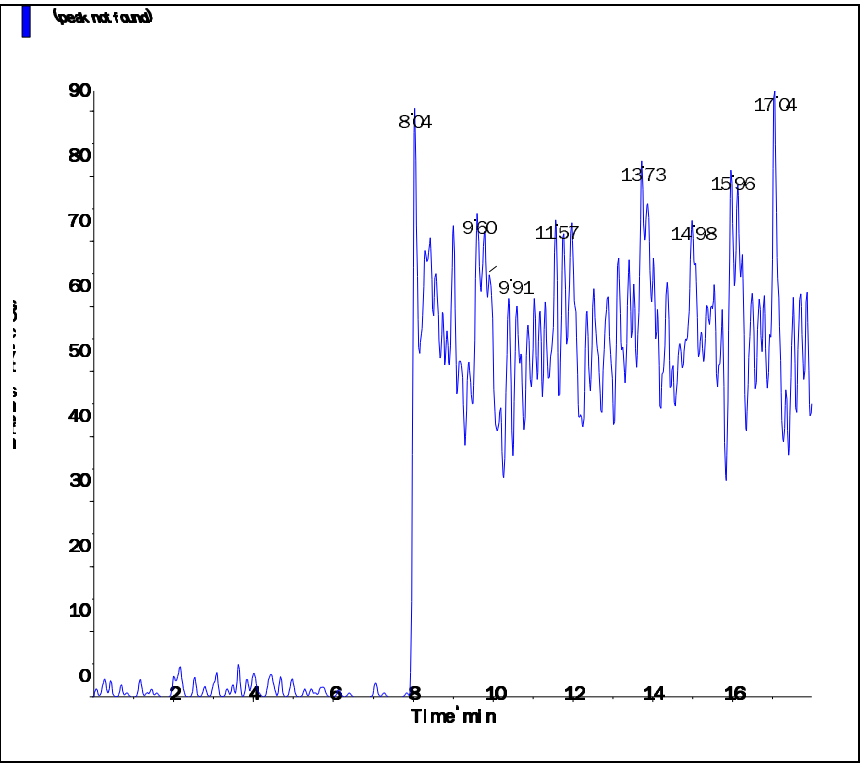

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Data File	LM35465.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 8:47:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM35465.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 8:47:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.320e+05	8.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.810e+04	8.97	N/A	0.19
Perchlorate conf	1.000e+04	8.95	N/A	0.188

O18LP (Internal Standard)

RT (Exp. RT): 8.95(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

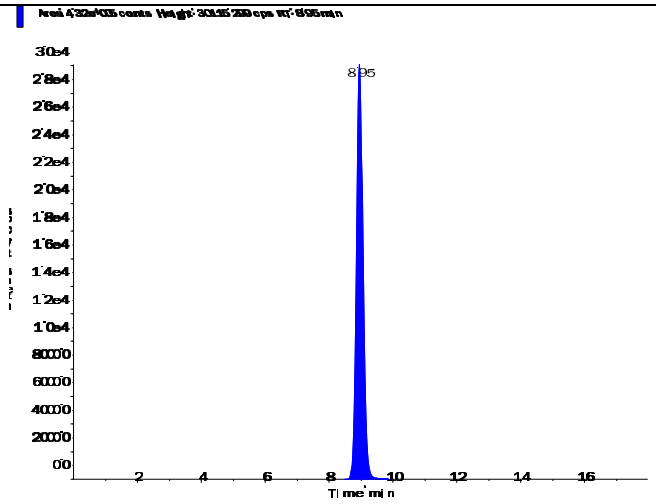

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	8.97 (9.84) min
Calculated conc:	0.19 ng/ml
Area Ratio:	0.065
Sample Type:	(Unknown)

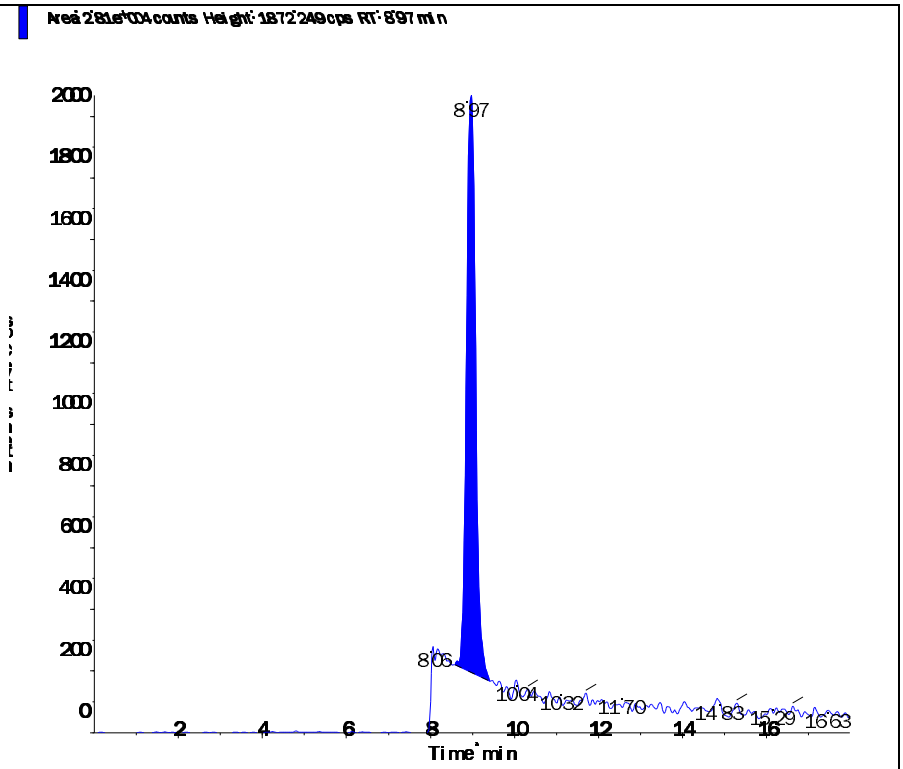

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	8.95 (9.84) min
Calculated conc:	0.188 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

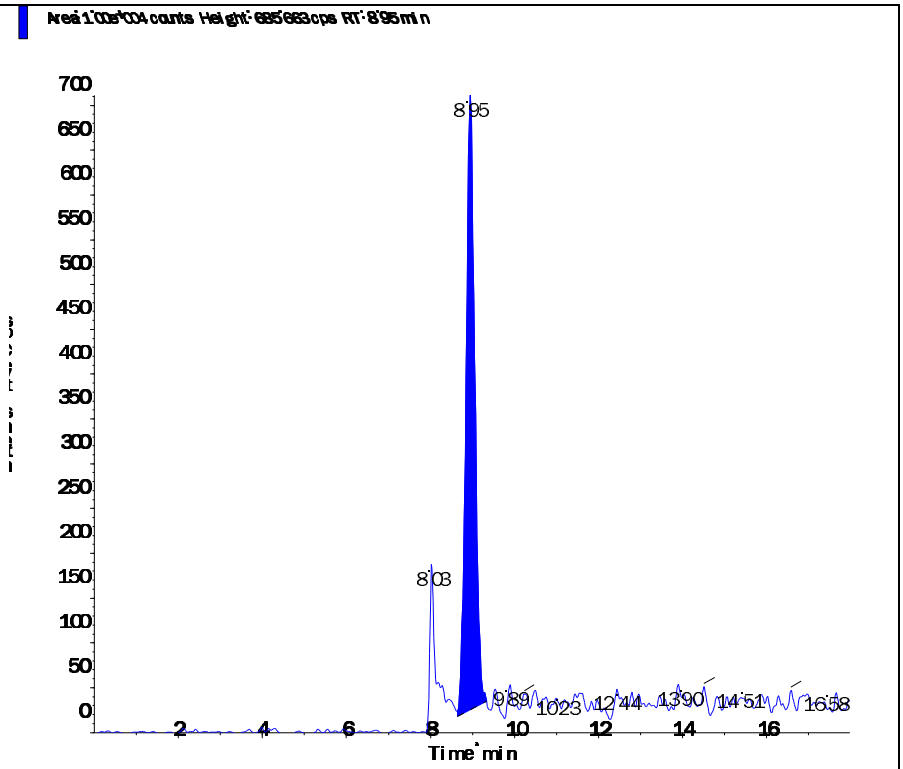

Printing Time: 4:34:28 PM
Printing Date: Saturday, June 25, 2016

Sample Name: "WG574101-01 MCT (0.2ug/L)" Sample ID: "WG574101-01" File: "LM35465.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.219 ug/L
Acq. Date:	6/24/2016
Acq. Time:	8:47:28 PM
Modified:	No
Proc. Algorithm:	Analyst Classic
Bunching Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Exp. Width:	0.20
Sep. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Valley
Retention Time:	8.97 min
Area:	3.23e+004 counts
Height:	1951.523 cps
Start Time:	8.526 min
End Time:	9.417 min

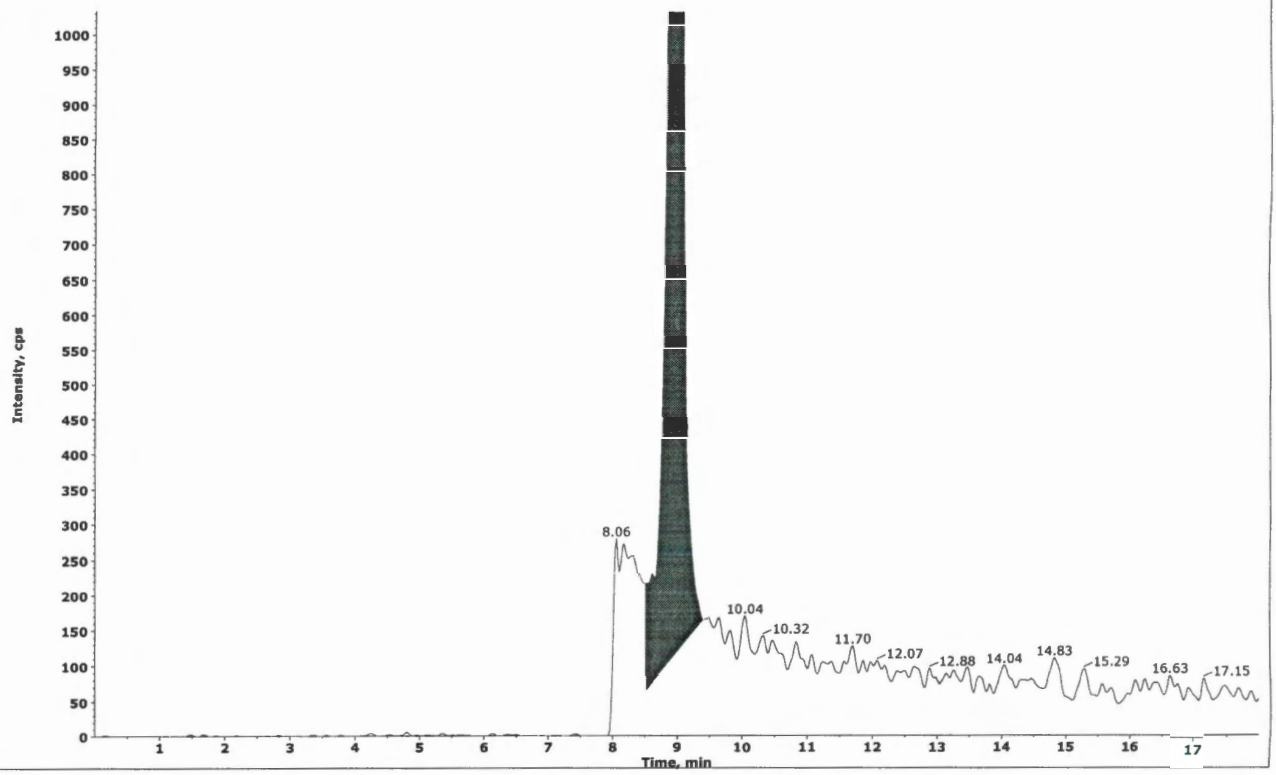

Collected by: N/A
Electronic Signature: no
Operator: lcmsl

Printing Time: 4:36:56 PM
Printing Date: Saturday, June 25, 2016

Sample Name: "WG574101-01 MCT (0.2ug/L)" Sample ID: "WG574101-01" File: "LM35465.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.190 ug/L
Acq. Date:	6/24/2016
Acq. Time:	8:47:28 PM
Modified:	Yes
Proc. Algorithm:	Analyst Classic
Smoothing Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Sep. Width:	0.20
Sep. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Manual
Retention Time:	8.97 min
Area:	2.81e+004 counts
Height:	1872.249 cps
Start Time:	8.587 min
End Time:	9.417 min

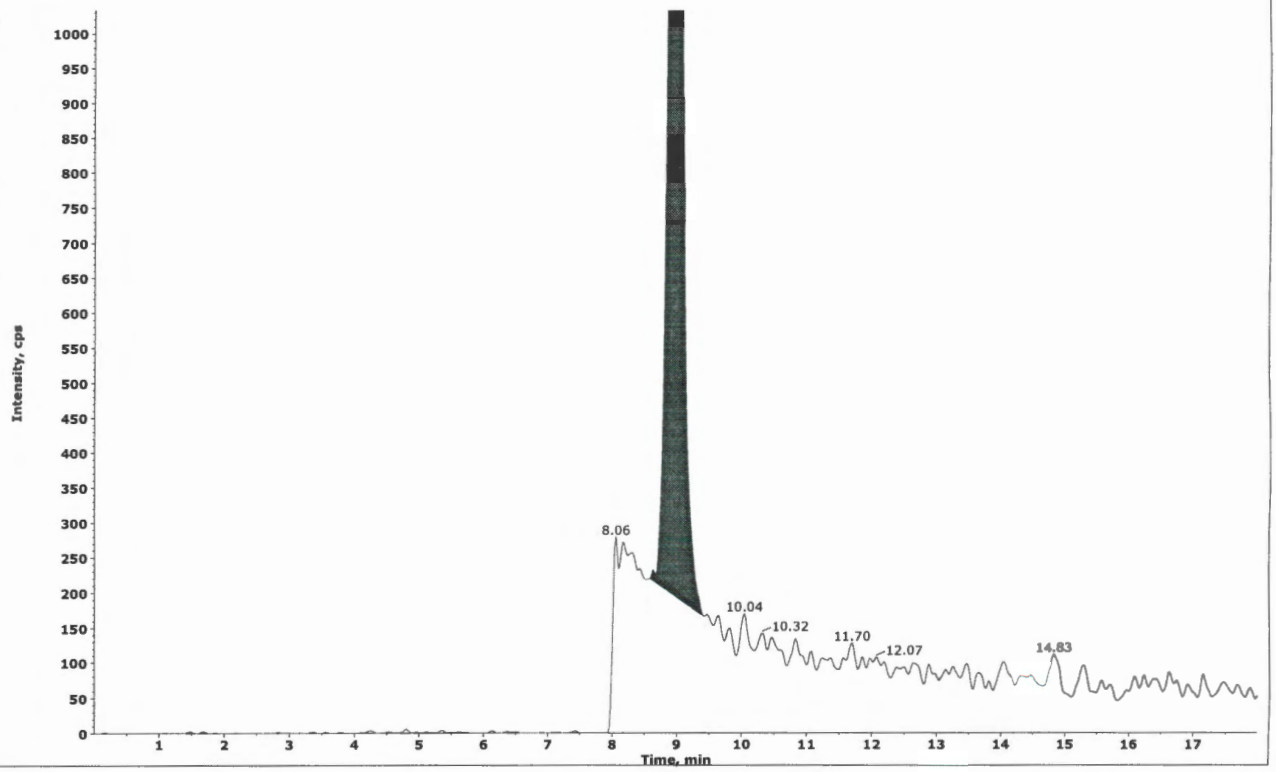

#4
JWR 06/25/16

✓ WTD
06-28-16

Collected by: N/A
Electronic Signature: no
Operator: lcms1

2.2.2.5 Raw QC Data

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Data File	LM35466.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 9:06:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-02 BLANK	**Injection Vial**	5.00
Data File	LM35466.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 9:06:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.430e+05	9.50	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.50(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

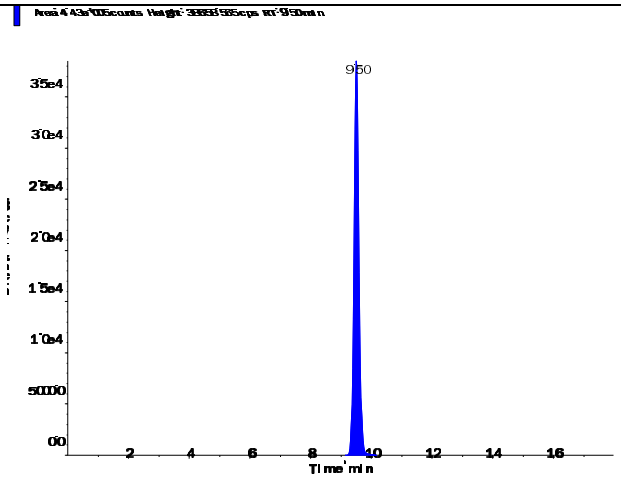

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

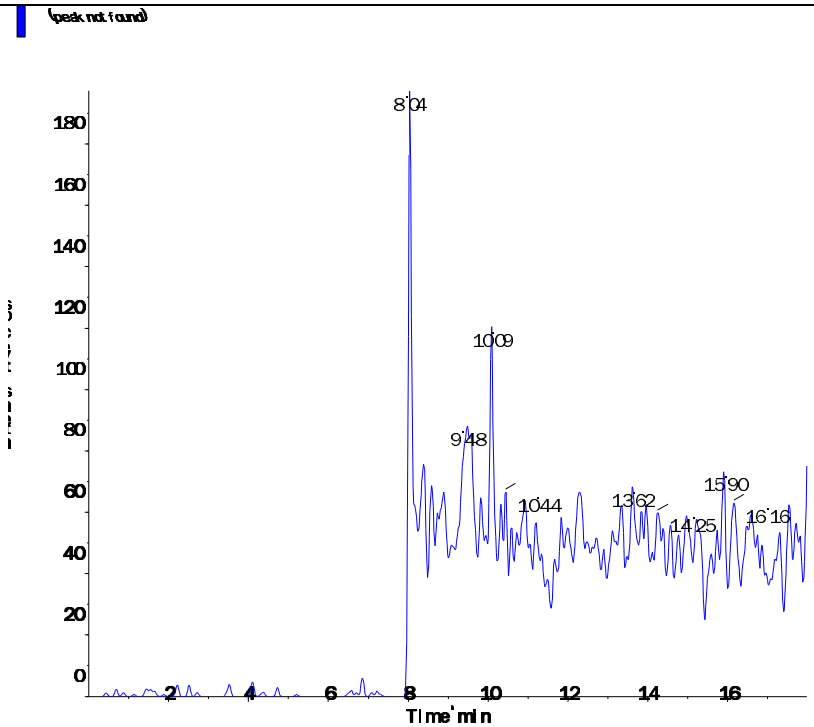

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

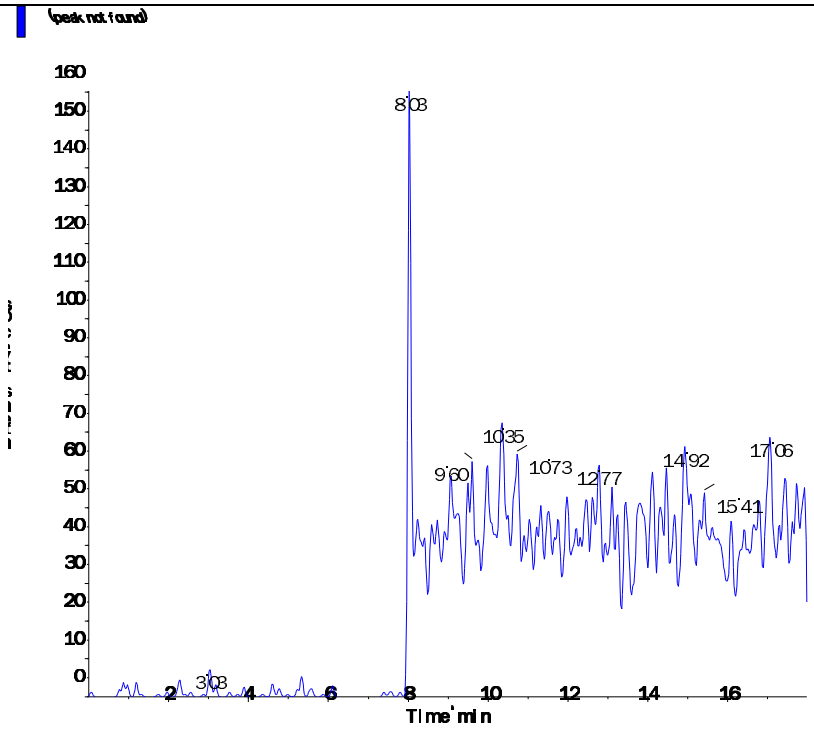

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Data File	LM35467.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 9:25:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM35467.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 9:25:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.440e+05	9.53	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.160e+04	9.54	N/A	0.208
Perchlorate conf	1.180e+04	9.53	N/A	0.217

O18LP (Internal Standard)

RT (Exp. RT): 9.53(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

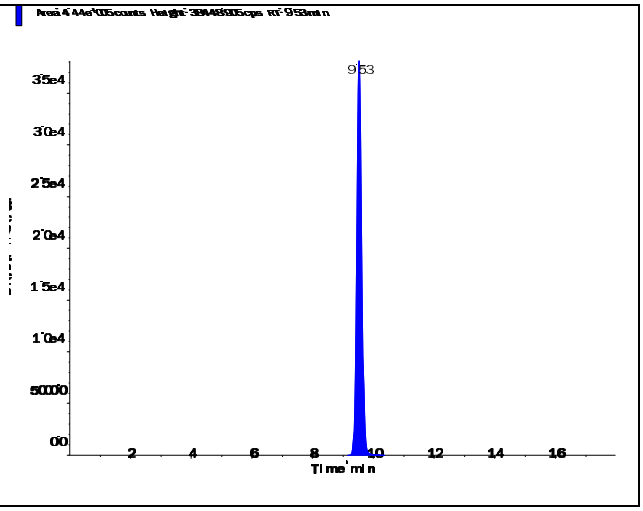

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.54 (9.84) min
Calculated conc:	0.208 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

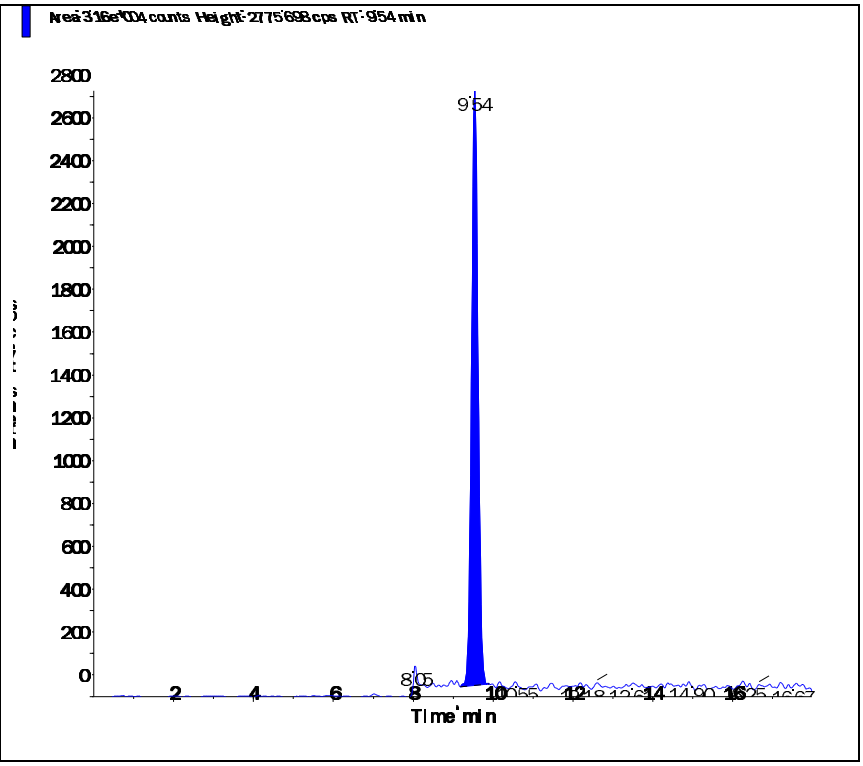

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.53 (9.84) min
Calculated conc:	0.217 ng/ml
Area Ratio:	0.027
Sample Type:	(Unknown)

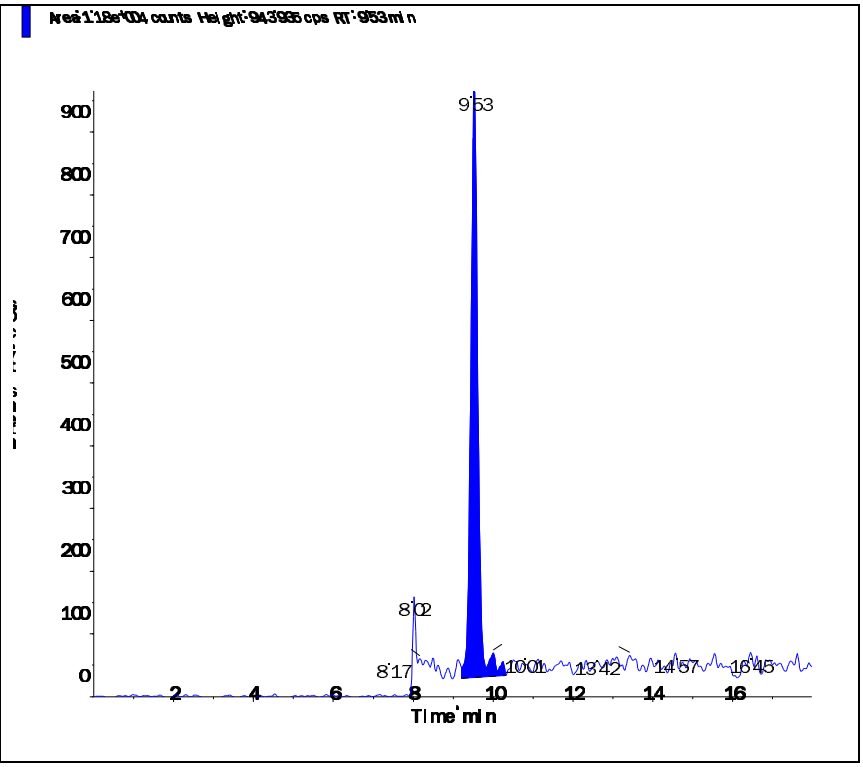

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Data File	LM35491.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 4:59:54 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-04 LCS2 (0.2ug/L)	**Injection Vial**	7.00
Data File	LM35491.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 4:59:54 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.260e+05	9.57	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.830e+04	9.59	N/A	0.213
Perchlorate conf	1.400e+04	9.57	N/A	0.218

O18LP (Internal Standard)

RT (Exp. RT): 9.57(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

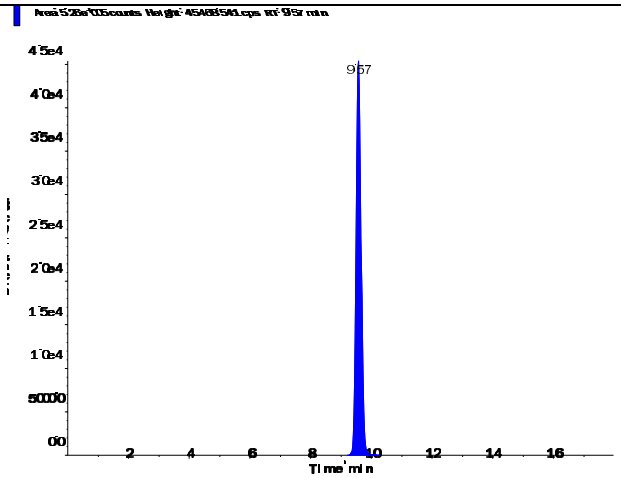

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.59 (9.84) min
Calculated conc:	0.213 ng/ml
Area Ratio:	0.073
Sample Type:	(Unknown)

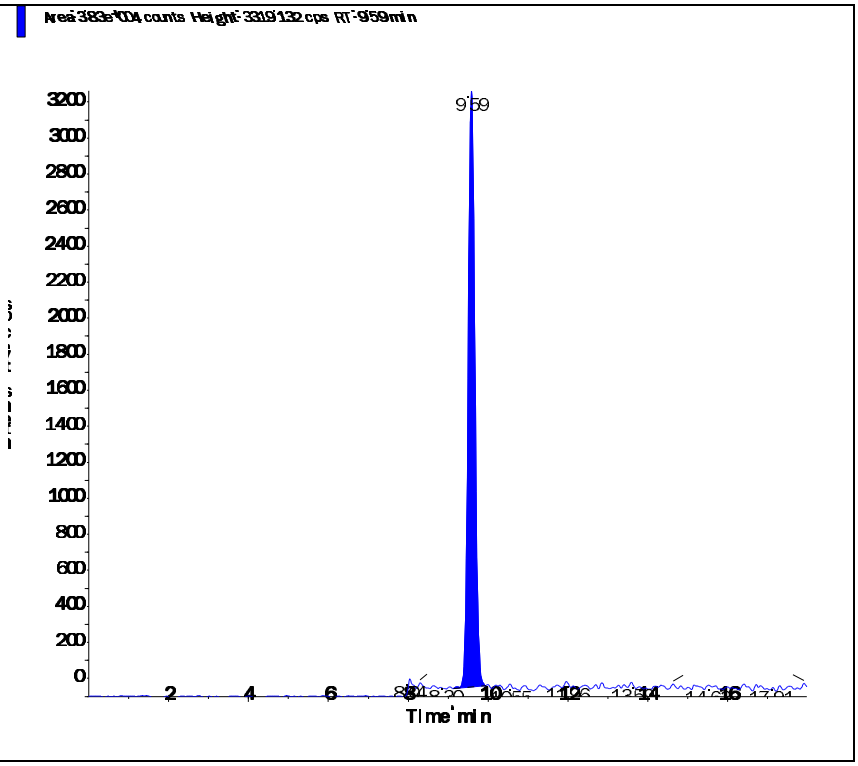

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.57 (9.84) min
Calculated conc:	0.218 ng/ml
Area Ratio:	0.027
Sample Type:	(Unknown)

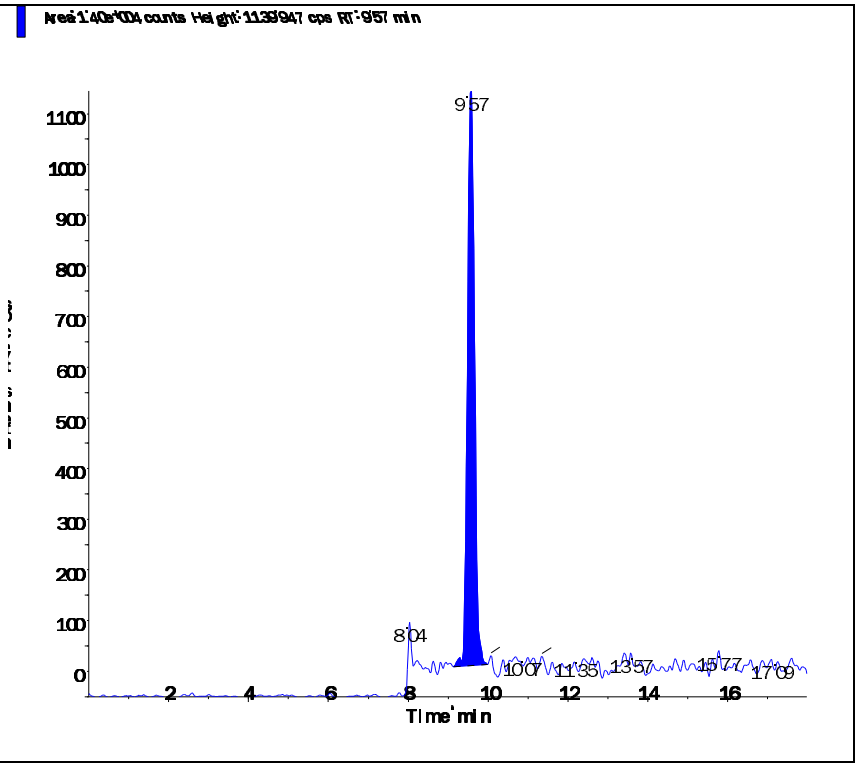

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
July 12, 2016

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BNB - Brandi N. Bentley
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJQ - Cameron J. Quick
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
CV - Carl Volkman
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
EMW - ERIC M. WILKEN
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
HDC - Hanah D. Coe
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LJH - Lacey J. Hendershot
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
NPH - Natalie P. Hart
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
July 12, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
July 12, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Debra Richmann
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD	pH:	
Project Name/Location:	Longhorn		
Project Number:	60274185.0013BH 1824 MR10		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Total Metals	1, 4 - DIOXANE	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 18/24	18WW06-062016			6/20/16	1345		✓	W	6	✓	✓		✓					
	18WW06FD-062016			6/20/16	1345		✓	W	6	✓	✓		✓					
	MW17-062016			6/20/16	1500		✓	W	6	✓	✓		✓					
	TRip Blank			6/20/16			✓	W	2	✓								

Comments: **STANDARD TAT**

Relinquished by: (Signature) Scott Beesinger	Date 6/20/16	Time 1545	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Rece (Sign			Time	Remarks:

Microbac OVD
Received: 06/21/2016 10:35
By: BRENDA GREGORY 221000087494

Brenda Gregory

*Homogenize all composite samples prior to analysis

...ager, Pink QA/QC Manager

00682907

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061144
Account: 2551
Project: 2551.096
Samples: 4
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061144-01	763890	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:54	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:54	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:54	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

Samplenum	Container ID	Products
L16061144-01	763891	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-JUN-2016 13:54	CLS		
2	PREP	W1	EXT	23-JUN-2016 13:30	CPD	CLS	
3	ANALYZ*	EXT	SEMI	27-JUN-2016 10:41	NPH	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-JUN-2016 13:54	CLS		
2	STORE	W1	A1	24-JUN-2016 10:20	BRG	BRG	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061144-01	763892	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-JUN-2016 13:54	CLS		
2	ANALYZ	W1	SEM	24-JUN-2016 12:12	JWR	BRG	
3	STORE	SEM	A1	29-JUN-2016 13:20	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061144
Account: 2551
Project: 2551.096
Samples: 4
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061144-02	763893	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:54	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:54	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:54	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

Samplenum	Container ID	Products
L16061144-02	763894	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-JUN-2016 13:54	CLS		
2	PREP	W1	EXT	23-JUN-2016 13:30	CPD	CLS	
3	ANALYZ*	EXT	SEMI	27-JUN-2016 10:41	NPH	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-JUN-2016 13:54	CLS		
2	STORE	W1	A1	24-JUN-2016 10:20	BRG	BRG	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061144-02	763895	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-JUN-2016 13:54	CLS		
2	ANALYZ	W1	SEM	24-JUN-2016 12:12	JWR	BRG	
3	STORE	SEM	A1	29-JUN-2016 13:20	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061144
Account: 2551
Project: 2551.096
Samples: 4
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061144-03	763896	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:54	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:54	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:54	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	

Samplenum	Container ID	Products
L16061144-03	763897	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-JUN-2016 13:54	CLS		
2	PREP	W1	EXT	23-JUN-2016 13:30	CPD	CLS	
3	ANALYZ*	EXT	SEMI	27-JUN-2016 10:41	NPH	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-JUN-2016 13:54	CLS		
2	STORE	W1	A1	24-JUN-2016 10:00	BRG	BRG	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061144-03	763898	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	21-JUN-2016 13:54	CLS		
2	ANALYZ	W1	SEM	24-JUN-2016 12:12	JWR	BRG	
3	STORE	SEM	A1	29-JUN-2016 13:20	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061144
Account: 2551
Project: 2551.096
Samples: 4
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061144-04	763899	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:54	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	21-JUN-2016 13:54	CLS		
2	ANALYZ	V1	ORG4	21-JUN-2016 18:14	FJB	AZH	
3	STORE	ORG4	A1	06-JUL-2016 07:36	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16061227

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Michelle Taylor – Client Services Specialist
(740) 373-4071
Michelle.Taylor@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on July 12 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

The following discrepancies were noted:

Discrepancy	Resolution
Sample ID: CO4-062116 (6/21 @ 08:55). COC marked for 1,4-Dioxane. NO Semi's received. BRG Sample ID: CO4FD-062116 (6/21 @ 08:55). COC marked for 1,4-Dioxane. NO semi's received. BRG	Please proceed. MRT
Sample ID: 18WW17-062116 (6/21 @ 11:40). 1 of 3 voa vials received w/headspace. BRG	Please proceed.MRT

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00112155	I	4.0		J2317164920	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	No
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	No

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18WW22-062116	L16061227-01	06/21/2016 07:55	06/22/2016 10:14
C04-062116	L16061227-02	06/21/2016 08:55	06/22/2016 10:14
C04F-062116	L16061227-03	06/21/2016 08:55	06/22/2016 10:14
C04FD-062116	L16061227-04	06/21/2016 08:55	06/22/2016 10:14
C04FFD-062116	L16061227-05	06/21/2016 08:55	06/22/2016 10:14
18CPTMW18-062116	L16061227-06	06/21/2016 10:05	06/22/2016 10:14
18WW18-062116	L16061227-07	06/21/2016 11:15	06/22/2016 10:14
18WW17-062116	L16061227-08	06/21/2016 11:40	06/22/2016 10:14
TRIP BLANK	L16061227-09	06/21/2016 00:01	06/22/2016 10:14

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16061227
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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2.3.3.1 Summary Data 2055
2.3.3.2 QC Summary 2062
2.3.3.3 Raw Data 2090
3.0 Attachments 2098

1.0 Summary Data

1.1 Narratives

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	8260
Prep Batch Number(s):		**Reviewer Name:**	Franci Bolden
LRC Date:	2016-07-07 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden	Franci Bolden	Analyst I	2016-07-07 17:55:43

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	8260
Prep Batch Number(s):		**Reviewer Name:**	Franci Bolden
LRC Date:	2016-07-07 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	8260
Prep Batch Number(s):		**Reviewer Name:**	Franci Bolden
LRC Date:	2016-07-07 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	8260
Prep Batch Number(s):		**Reviewer Name:**	Franci Bolden
LRC Date:	2016-07-07 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			2
Was the ICAL curve verified for each analyte?		X			1
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	8260
Prep Batch Number(s):		**Reviewer Name:**	Franci Bolden
LRC Date:	2016-07-07 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	8260
Prep Batch Number(s):		**Reviewer Name:**	Franci Bolden
LRC Date:	2016-07-07 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) Chloromethane is marginally below the LCL in ICV WG574723-12 analyzed 06/30/2016 on HPMS6.

2) Trichlorofluoromethane is marginally above the UCL in CCV WG574938-02 analyzed 07/01/2016 on HPMS6.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573812, WG574706	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-12 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-07-12 12:21:21

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573812, WG574706	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-12 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?		X			1
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?		X			2
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573812, WG574706	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-12 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?		X			3
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573812, WG574706	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-12 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573812, WG574706	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-12 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573812, WG574706	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-12 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. Sample 01 was re-extracted out of hold time.
2. Sample 01 yielded a recovery for the surrogate that was below the acceptance criteria.
3. The RPD was greater than the upper limit for WG573812, however all recoveries were within acceptance criteria.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574701	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-01 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Wade DeLong	Wade DeLong	Chemist I	2016-07-01 13:10:09

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574701	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-01 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574701	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-01 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			ER1
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574701	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-01 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574701	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-01 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574701	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-01 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER1 MS/MSD analyses were not associated with this sample delivery group. Three sets of MS/MSDs were analyzed in Batch WG574701. Recoveries in the first set MS and MSD are out of range due to high level of target analyte in the reference sample and required dilutions to obtain results within the calibration range for Sample 01. Acceptable recoveries were observed in the MS/MSD set 02 and 03.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573994	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Maren Beery	Maren Beery	Metals Supervisor	2016-07-11 17:10:28

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573994	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				ER#1
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573994	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573994	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573994	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573994	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - Client samples 06 and 07 required dilution analyses in order to obtain results for magnesium and sodium within the calibration range. Client sample 07 required dilution analysis in order to obtain a result for iron within the calibration range. Client samples 01, 06 and 07 required dilution analyses in order to obtain results for calcium within the calibration range.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG573859	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Maren Beery	Maren Beery	Metals Supervisor	2016-07-11 17:08:12

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG573859	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG573859	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG573859	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG573859	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061227
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG573859	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18WW22-062116	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG574939	**Analyst:**	TMB	**Run Date:**	07/01/2016 16:24
Collect Date:	06/21/2016 07:55	**Dilution:**	1	**File ID:**	6M140338
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.2	85	115	
1,2-Dichloroethane-d4	99.3	70	120	
Toluene-d8	99.3	85	120	
4-Bromofluorobenzene	102	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18WW22-062116	**Prep Method:**	3520C	**Prep Date:**	06/22/2016 13:51
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574301	**Analyst:**	MES	**Run Date:**	06/27/2016 19:39
Collect Date:	06/21/2016 07:55	**Dilution:**	1	**File ID:**	15M18611
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	Q	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	18.3	20	129	*

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18WW22-062116	**Prep Method:**	3520C	**Prep Date:**	06/30/2016 16:00
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG575045	**Analyst:**	MES	**Run Date:**	07/05/2016 18:15
Collect Date:	06/21/2016 07:55	**Dilution:**	1	**File ID:**	15M18726
Sample Tag:	RE	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U,H1	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	35.2	20	129	

U,H1	Not detected; Sample analysis performed past holding time.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW22-062116	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/30/2016 00:14
Collect Date:	06/21/2016 07:55	**Dilution:**	1	**File ID:**	1LM.LM35540
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1.53		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16061227-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW22-062116	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/24/2016 10:17
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/24/2016 14:13
Collect Date:	06/21/2016 07:55	**Dilution:**	1	**File ID:**	T3.062416.141350
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	2.57		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	0.0825		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	1.09		1.00	0.500	0.250
Potassium, Total	7440-09-7	8.42		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.00528	J	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	60.6		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW22-062116	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/25/2016 12:36
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/25/2016 15:17
Collect Date:	06/21/2016 07:55	**Dilution:**	20	**File ID:**	T3.062516.151743
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	193		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW22-062116	**Prep Method:**	3015	**Prep Date:**	06/23/2016 10:15
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574742	**Analyst:**	JYH	**Run Date:**	06/30/2016 12:55
Collect Date:	06/21/2016 07:55	**Dilution:**	1	**File ID:**	NI.063016.125503
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00523		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.114		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00110	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00449		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.00227	J	0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00569	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.0767		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW22-062116	**Prep Method:**	3015	**Prep Date:**	06/23/2016 10:15
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574742	**Analyst:**	JYH	**Run Date:**	06/30/2016 14:42
Collect Date:	06/21/2016 07:55	**Dilution:**	20	**File ID:**	NI.063016.144253
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.353		0.120	0.0600	0.0300

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-01	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18WW22-062116	**Prep Method:**	7470A	**Prep Date:**	06/23/2016 09:29
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/28/2016 14:32
Workgroup #:	WG574517	**Analyst:**	AMA	**Run Date:**	06/28/2016 16:38
Collect Date:	06/21/2016 07:55	**Dilution:**	1	**File ID:**	M7.062816.163856
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	C04-062116	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG574939	**Analyst:**	TMB	**Run Date:**	07/01/2016 16:56
Collect Date:	06/21/2016 08:55	**Dilution:**	1	**File ID:**	6M140339
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	3.24	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.6	85	115	
1,2-Dichloroethane-d4	97.4	70	120	
Toluene-d8	99.9	85	120	
4-Bromofluorobenzene	102	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	C04-062116	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/30/2016 00:33
Collect Date:	06/21/2016 08:55	**Dilution:**	1	**File ID:**	1LM.LM35541
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	C04F-062116	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/24/2016 10:17
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/24/2016 14:17
Collect Date:	06/21/2016 08:55	**Dilution:**	1	**File ID:**	T3.062416.141746
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.100	U	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	13.9		0.500	0.250	0.125
Iron, Total	7439-89-6	7.76		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	7.73		1.00	0.500	0.250
Potassium, Total	7440-09-7	1.89	J	2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	27.9		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	C04F-062116	**Prep Method:**	3015	**Prep Date:**	06/23/2016 10:15
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574742	**Analyst:**	JYH	**Run Date:**	06/30/2016 12:58
Collect Date:	06/21/2016 08:55	**Dilution:**	1	**File ID:**	NI.063016.125815
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.000967	J	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00355	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00100	U	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00200	U	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.00400	U	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	C04F-062116	**Prep Method:**	3015	**Prep Date:**	06/23/2016 10:15
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574742	**Analyst:**	JYH	**Run Date:**	06/30/2016 14:46
Collect Date:	06/21/2016 08:55	**Dilution:**	20	**File ID:**	NI.063016.144605
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.311		0.120	0.0600	0.0300
Manganese, Total	7439-96-5	0.287		0.0800	0.0400	0.0200

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-03	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	C04F-062116	**Prep Method:**	7470A	**Prep Date:**	06/23/2016 09:29
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/28/2016 14:32
Workgroup #:	WG574517	**Analyst:**	AMA	**Run Date:**	06/28/2016 16:46
Collect Date:	06/21/2016 08:55	**Dilution:**	1	**File ID:**	M7.062816.164630
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	C04FD-062116	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG574939	**Analyst:**	TMB	**Run Date:**	07/01/2016 17:28
Collect Date:	06/21/2016 08:55	**Dilution:**	1	**File ID:**	6M140340
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.0	85	115	
1,2-Dichloroethane-d4	97.5	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	103	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	C04FD-062116	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/30/2016 00:52
Collect Date:	06/21/2016 08:55	**Dilution:**	1	**File ID:**	1LM.LM35542
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	C04FFD-062116	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/24/2016 10:17
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/24/2016 14:21
Collect Date:	06/21/2016 08:55	**Dilution:**	1	**File ID:**	T3.062416.142142
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.100	U	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	14.0		0.500	0.250	0.125
Iron, Total	7439-89-6	7.21		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	7.47		1.00	0.500	0.250
Potassium, Total	7440-09-7	1.89	J	2.00	1.00	0.500
Selenium, Total	7782-49-2	0.00539	J	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	27.5		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	C04FFD-062116	**Prep Method:**	3015	**Prep Date:**	06/23/2016 10:15
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574742	**Analyst:**	JYH	**Run Date:**	06/30/2016 13:01
Collect Date:	06/21/2016 08:55	**Dilution:**	1	**File ID:**	NI.063016.130126
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.000991	J	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00186	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00100	U	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00200	U	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.247		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00400	U	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	C04FFD-062116	**Prep Method:**	3015	**Prep Date:**	06/23/2016 10:15
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574742	**Analyst:**	JYH	**Run Date:**	06/30/2016 14:49
Collect Date:	06/21/2016 08:55	**Dilution:**	20	**File ID:**	NI.063016.144917
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.288		0.120	0.0600	0.0300

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-05	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	C04FFD-062116	**Prep Method:**	7470A	**Prep Date:**	06/23/2016 09:29
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/28/2016 14:32
Workgroup #:	WG574517	**Analyst:**	AMA	**Run Date:**	06/28/2016 16:49
Collect Date:	06/21/2016 08:55	**Dilution:**	1	**File ID:**	M7.062816.164902
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW18-062116	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG574939	**Analyst:**	TMB	**Run Date:**	07/01/2016 18:00
Collect Date:	06/21/2016 10:05	**Dilution:**	1	**File ID:**	6M140341
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	3.39	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	85	115	
1,2-Dichloroethane-d4	99.0	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	101	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW18-062116	**Prep Method:**	3520C	**Prep Date:**	06/22/2016 13:51
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574301	**Analyst:**	MES	**Run Date:**	06/27/2016 20:02
Collect Date:	06/21/2016 10:05	**Dilution:**	1	**File ID:**	15M18612
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	55.5	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW18-062116	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/30/2016 02:07
Collect Date:	06/21/2016 10:05	**Dilution:**	1	**File ID:**	1LM.LM35546
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW18-062116	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/24/2016 10:17
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/24/2016 14:25
Collect Date:	06/21/2016 10:05	**Dilution:**	1	**File ID:**	T3.062416.142526
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.271		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	2.44		0.200	0.100	0.0500
Potassium, Total	7440-09-7	7.88		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.00770	J	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW18-062116	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/25/2016 12:36
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/25/2016 15:21
Collect Date:	06/21/2016 10:05	**Dilution:**	20	**File ID:**	T3.062516.152125
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	337		10.0	5.00	2.50
Magnesium, Total	7439-95-4	203		20.0	10.0	5.00
Sodium, Total	7440-23-5	849		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW18-062116	**Prep Method:**	3015	**Prep Date:**	06/23/2016 10:15
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574742	**Analyst:**	JYH	**Run Date:**	06/30/2016 13:04
Collect Date:	06/21/2016 10:05	**Dilution:**	1	**File ID:**	NI.063016.130438
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.0161		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.0130		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.0229		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00266	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0270		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000115	J	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00313		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0175	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW18-062116	**Prep Method:**	3015	**Prep Date:**	06/23/2016 10:15
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574742	**Analyst:**	JYH	**Run Date:**	06/30/2016 14:52
Collect Date:	06/21/2016 10:05	**Dilution:**	100	**File ID:**	NI.063016.145228
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.713		0.600	0.300	0.150
Manganese, Total	7439-96-5	2.81		0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-06	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18CPTMW18-062116	**Prep Method:**	7470A	**Prep Date:**	06/23/2016 09:29
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/28/2016 14:32
Workgroup #:	WG574517	**Analyst:**	AMA	**Run Date:**	06/28/2016 16:51
Collect Date:	06/21/2016 10:05	**Dilution:**	1	**File ID:**	M7.062816.165134
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18WW18-062116	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG574939	**Analyst:**	TMB	**Run Date:**	07/01/2016 18:33
Collect Date:	06/21/2016 11:15	**Dilution:**	1	**File ID:**	6M140342
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	4.41	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.2	85	115	
1,2-Dichloroethane-d4	98.5	70	120	
Toluene-d8	99.5	85	120	
4-Bromofluorobenzene	102	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18WW18-062116	**Prep Method:**	3520C	**Prep Date:**	06/22/2016 13:51
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574301	**Analyst:**	MES	**Run Date:**	06/27/2016 20:25
Collect Date:	06/21/2016 11:15	**Dilution:**	1	**File ID:**	15M18613
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	35.0	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW18-062116	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/30/2016 02:26
Collect Date:	06/21/2016 11:15	**Dilution:**	1	**File ID:**	1LM.LM35547
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW18-062116	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/24/2016 10:17
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/24/2016 14:48
Collect Date:	06/21/2016 11:15	**Dilution:**	1	**File ID:**	T3.062416.144853
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.100	U	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Potassium, Total	7440-09-7	3.75		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW18-062116	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/29/2016 10:07
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/29/2016 11:54
Collect Date:	06/21/2016 11:15	**Dilution:**	20	**File ID:**	T3.062916.115438
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	49.5		10.0	5.00	2.50
Iron, Total	7439-89-6	78.0		4.00	2.00	1.00
Magnesium, Total	7439-95-4	34.0		20.0	10.0	5.00
Sodium, Total	7440-23-5	146		20.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW18-062116	**Prep Method:**	3015	**Prep Date:**	06/23/2016 10:15
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574742	**Analyst:**	JYH	**Run Date:**	06/30/2016 13:07
Collect Date:	06/21/2016 11:15	**Dilution:**	1	**File ID:**	NI.063016.130749
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00541		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00126	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00100	U	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00107	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0497		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW18-062116	**Prep Method:**	3015	**Prep Date:**	06/23/2016 10:15
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574742	**Analyst:**	JYH	**Run Date:**	06/30/2016 14:55
Collect Date:	06/21/2016 11:15	**Dilution:**	100	**File ID:**	NI.063016.145540
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	1.01		0.600	0.300	0.150
Manganese, Total	7439-96-5	1.55		0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-07	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18WW18-062116	**Prep Method:**	7470A	**Prep Date:**	06/23/2016 09:29
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/28/2016 14:32
Workgroup #:	WG574517	**Analyst:**	AMA	**Run Date:**	06/28/2016 16:54
Collect Date:	06/21/2016 11:15	**Dilution:**	1	**File ID:**	M7.062816.165406
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18WW17-062116	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG574939	**Analyst:**	TMB	**Run Date:**	07/01/2016 19:05
Collect Date:	06/21/2016 11:40	**Dilution:**	1	**File ID:**	6M140343
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.275	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.703	J	1.00	0.500	0.250

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	46.3		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.9	85	115	
1,2-Dichloroethane-d4	98.5	70	120	
Toluene-d8	99.4	85	120	
4-Bromofluorobenzene	101	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW17-062116	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/30/2016 02:45
Collect Date:	06/21/2016 11:40	**Dilution:**	10000	**File ID:**	1LM.LM35548
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	82900		4000	2000	1000

Certificate of Analysis

Sample #:	L16061227-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG574939	**Analyst:**	TMB	**Run Date:**	07/01/2016 15:19
Collect Date:	06/21/2016 00:01	**Dilution:**	1	**File ID:**	6M140336
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

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Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.6	85	115	
1,2-Dichloroethane-d4	96.2	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	102	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18WW22-062116	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG574939	**Analyst:**	TMB	**Run Date:**	07/01/2016 16:24
Collect Date:	06/21/2016 07:55	**Dilution:**	1	**File ID:**	6M140338
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.2	85	115	
1,2-Dichloroethane-d4	99.3	70	120	
Toluene-d8	99.3	85	120	
4-Bromofluorobenzene	102	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	C04-062116	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG574939	**Analyst:**	TMB	**Run Date:**	07/01/2016 16:56
Collect Date:	06/21/2016 08:55	**Dilution:**	1	**File ID:**	6M140339
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	3.24	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

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Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.6	85	115	
1,2-Dichloroethane-d4	97.4	70	120	
Toluene-d8	99.9	85	120	
4-Bromofluorobenzene	102	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

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Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	C04FD-062116	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG574939	**Analyst:**	TMB	**Run Date:**	07/01/2016 17:28
Collect Date:	06/21/2016 08:55	**Dilution:**	1	**File ID:**	6M140340
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

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Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.0	85	115	
1,2-Dichloroethane-d4	97.5	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	103	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW18-062116	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG574939	**Analyst:**	TMB	**Run Date:**	07/01/2016 18:00
Collect Date:	06/21/2016 10:05	**Dilution:**	1	**File ID:**	6M140341
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	3.39	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	85	115	
1,2-Dichloroethane-d4	99.0	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	101	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18WW18-062116	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG574939	**Analyst:**	TMB	**Run Date:**	07/01/2016 18:33
Collect Date:	06/21/2016 11:15	**Dilution:**	1	**File ID:**	6M140342
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	4.41	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.2	85	115	
1,2-Dichloroethane-d4	98.5	70	120	
Toluene-d8	99.5	85	120	
4-Bromofluorobenzene	102	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18WW17-062116	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG574939	**Analyst:**	TMB	**Run Date:**	07/01/2016 19:05
Collect Date:	06/21/2016 11:40	**Dilution:**	1	**File ID:**	6M140343
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.275	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.703	J	1.00	0.500	0.250

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	46.3		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.9	85	115	
1,2-Dichloroethane-d4	98.5	70	120	
Toluene-d8	99.4	85	120	
4-Bromofluorobenzene	101	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG574939	**Analyst:**	TMB	**Run Date:**	07/01/2016 15:19
Collect Date:	06/21/2016 00:01	**Dilution:**	1	**File ID:**	6M140336
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.6	85	115	
1,2-Dichloroethane-d4	96.2	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	102	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 042416
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75498 Surrogate Standard: STD75498
CCV: STD75791 LCS: STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG566155

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M138749	RINSE	NA	1	1		04/24/16 16:05
6M138750	WG566155-01 50ng BFB 826-A9	NA	1	1	STD75485	04/24/16 16:33
6M138751	WG566155-02 5ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 16:59
6M138752	WG566155-03 20ug/L STD 826-A	NA	1	1	STD75791	04/24/16 17:31
6M138753	WG566155-04 50ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 18:03
6M138754	WG566155-05 100ug/L STD 826-A	NA	1	1	STD75791	04/24/16 18:36
6M138755	WG566155-06 200ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 19:08
6M138756	WG566155-07 300ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 19:40
6M138757	WG566155-08 400ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 20:12
6M138758	WG566155-09 500ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 20:44
6M138759	RINSE	NA	1	1		04/24/16 21:16
6M138760	RINSE	NA	1	1		04/24/16 21:49
6M138761	WG566155-10 100ug/L ALT SRC	NA	1	1	STD75801	04/24/16 22:21
6M138762	RINSE	NA	1	1		04/24/16 22:53
6M138763	RINSE	NA	1	1		04/24/16 23:25

Approved: April 29, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 063016
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53798

Internal Standard: STD76854 Surrogate Standard: STD76854
CCV: STD76892 LCS: STD76744 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG574723

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M140313	WG574723-01 50ng BFB STD 8260	NA	1	1	STD76496	06/30/16 11:36
6M140314	WG574723-02 0.3ug/L STD 8260	NA	1	1	STD76892	06/30/16 12:03
6M140315	WG574723-03 0.4ug/L STD 8260	NA	1	1	STD76892	06/30/16 12:35
6M140316	WG574723-04 1ug/L STD 8260	NA	1	1	STD76892	06/30/16 13:08
6M140317	WG574723-05 2ug/L STD 8260	NA	1	1	STD76892	06/30/16 13:40
6M140318	WG574723-06 5ug/L STD 8260	NA	1	1	STD76892	06/30/16 14:12
6M140319	WG574723-07 20ug/L STD 8260	NA	1	1	STD76892	06/30/16 14:44
6M140320	WG574723-08 50ug/L STD 8260	NA	1	1	STD76892	06/30/16 15:16
6M140321	WG574723-09 100ug/L STD 8260	NA	1	1	STD76892	06/30/16 15:48
6M140322	WG574723-10 200ug/L STD 8260	NA	1	1	STD76892	06/30/16 16:21
6M140323	WG574723-11 300ug/L STD 8260	NA	1	1	STD76892	06/30/16 16:53
6M140324	RINSE	NA	1	1		06/30/16 17:27
6M140325	RINSE	NA	1	1		06/30/16 17:59
6M140326	WG574723-12 50ug/L ALT SRC STD 8260	NA	1	1	STD76744	06/30/16 18:31
6M140327	RINSE	NA	1	1		06/30/16 19:04

Approved: July 07, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 070116
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD76854 Surrogate Standard: STD76854
CCV: STD76892 LCS: STD76744 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG574939

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M140328	WG574938-01 50ng BFB STD 8260	NA	1	1	STD76496	07/01/16 11:08
6M140329	WG574938-02 50ug/L CCV STD 8260	NA	1	1	STD76892	07/01/16 11:34
6M140330	WG574938-02 50ug/L CCV STD 8260	NA	1	1	STD76892	07/01/16 12:06
6M140331	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76432	07/01/16 12:38
6M140332	WG574939-01 VBLK0701 BLANK STD 826	NA	1	1		07/01/16 13:10
6M140333	WG574939-02 20ug/L LCS STD 8260	NA	1	1	STD76744	07/01/16 13:43
6M140334	WG574939-03 20ug/L LCS2 STD 8260	NA	1	1	STD76744	07/01/16 14:15
6M140335	L16061260-02 A 10X 826-TC	NA	17	10		07/01/16 14:47
6M140336	L16061227-09 A TB 826-SPE	<2	1	1		07/01/16 15:19
6M140337	L16061404-02 A TB 826-SPE	<2	1	1		07/01/16 15:51
6M140338	L16061227-01 A 826-LOW	<2	1	1		07/01/16 16:24
6M140339	L16061227-02 A 826-LOW	<2	1	1		07/01/16 16:56
6M140340	L16061227-04 A 826-LOW	<2	1	1		07/01/16 17:28
6M140341	L16061227-06 A 826-LOW	<2	1	1		07/01/16 18:00
6M140342	L16061227-07 A 826-LOW	<2	1	1		07/01/16 18:33
6M140343	L16061227-08 A 826-LOW	<2	1	1		07/01/16 19:05
6M140344	L16061404-01 A 826-SPE	<2	1	1		07/01/16 19:37
6M140345	L16061211-13 A 826-SPE	<2	1	1		07/01/16 20:09
6M140346	L16061211-19 A 826-SPE	<2	1	1		07/01/16 20:41
6M140347	L16061211-16 A 826-SPE	<2	1	1		07/01/16 21:13
6M140348	L16061211-20 A 826-SPE	<2	1	1		07/01/16 21:46
6M140349	L16061211-17 A 826-SPE	<2	1	1		07/01/16 22:18
6M140350	L16061211-18 A 826-SPE	<2	1	1		07/01/16 22:50
6M140351	RINSE	NA	1	1		07/01/16 23:22
6M140352	WG574939-04 VBLK0701 BLANK STD 624	NA	2	1		07/01/16 23:54
6M140353	L16061650-02 A 624-SPE	6	2	1		07/02/16 00:26
6M140354	L16070047-01 A 624-SPE	6	2	1		07/02/16 00:58
6M140355	L16070047-02 A 624-SPE	6	2	1		07/02/16 01:30
6M140356	L16070038-07 A 10X 624-SPE	7	2	10		07/02/16 02:02
6M140357	CCV	NA	1	1		07/02/16 02:34
6M140358	RINSE	NA	1	1		07/02/16 03:06
6M140359	RINSE	NA	1	1		07/02/16 03:38
6M140360	ANTIFOAM BLANK	NA	1	1		07/02/16 04:10
6M140361	WG573894-01 A FBLK 10X 826-TC	NA	17	10		07/02/16 04:42

Approved: July 05, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS6	Dataset:	070116		
Analyst1:	TMB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	23
Method:	624	SOP:	MSV10	Rev:	14
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:					

Internal Standard: STD76854 Surrogate Standard: STD76854

CCV: STD76892 LCS: STD76744 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG574939

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 6M140329				
	Ketones were low, DNR.			
4				
File ID: 6M140331				
	Not needed, DNR.			

Approved: July 05, 2016

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 24-APR-2016
Analyst: JDS
Analyst: NA
Method: 8260B/624
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 74754
Analytical Workgroups: WG566155

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
27-APR-2016
Tiffany Bailey

Secondary Reviewer:
29-APR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: APR-29-2016 12:29:57

Microbac Laboratories Inc.

Data Checklist

Date: 30-JUN-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 76082
Analytical Workgroups: WG574723

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
01-JUL-2016
Tiffany Bailey

Secondary Reviewer:
07-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-07-2016 13:59:59

Microbac Laboratories Inc.

Data Checklist

Date: 01-JUL-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 76105
Analytical Workgroups: WG574939

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
05-JUL-2016
Tiffany Bailey

Secondary Reviewer:
05-JUL-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-05-2016 16:02:07

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG574939

Login Number: L16061227

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW22-062116	01	06/21/16					07/01/2016	10.4	14		07/01/16	10.4	14	
C04-062116	02	06/21/16					07/01/2016	10.3	14		07/01/16	10.3	14	
C04FD-062116	04	06/21/16					07/01/2016	10.4	14		07/01/16	10.4	14	
18CPTMW18-062116	06	06/21/16					07/01/2016	10.3	14		07/01/16	10.3	14	
18WW18-062116	07	06/21/16					07/01/2016	10.3	14		07/01/16	10.3	14	
18WW17-062116	08	06/21/16					07/01/2016	10.3	14		07/01/16	10.3	14	
TRIP BLANK	09	06/21/16					07/01/2016	10.6	14		07/01/16	10.6	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4838758
Report generated 07/07/2016 11:53

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061227
Instrument Id: HPMS6
Workgroup (AAB#): WG574939

Method: 8260
CAL ID: HPMS6-30-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16061227-01	1.00	01	99.3	99.2	102	99.3
L16061227-02	1.00	01	97.4	98.6	102	99.9
L16061227-04	1.00	01	97.5	98.0	103	100
L16061227-06	1.00	01	99.0	100	101	101
L16061227-07	1.00	01	98.5	99.2	102	99.5
L16061227-08	1.00	01	98.5	99.9	101	99.4
L16061227-09	1.00	01	96.2	97.6	102	100
WG574939-01	1.00	01	96.7	95.9	102	99.8
WG574939-02	1.00	01	96.9	98.6	99.2	99.1
WG574939-03	1.00	01	96.9	98.1	99.1	99.6
WG574939-04	1.00	01	101	101	102	99.5

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4838764
Report generated: 07/07/2016 11:53

METHOD BLANK SUMMARY

Login Number: L16061227
Blank File ID: 6M140332
Prep Date: 07/01/16 13:10
Analyzed Date: 07/01/16 13:10
Analyst: TMB

Work Group: WG574939
Blank Sample ID: WG574939-01
Instrument ID: HPMS6
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG574939-02	6M140333	07/01/16 13:43	01
LCS2	WG574939-03	6M140334	07/01/16 14:15	01
TRIP BLANK	L16061227-09	6M140336	07/01/16 15:19	01
18WW22-062116	L16061227-01	6M140338	07/01/16 16:24	01
C04-062116	L16061227-02	6M140339	07/01/16 16:56	01
C04FD-062116	L16061227-04	6M140340	07/01/16 17:28	01
18CPTMW18-062116	L16061227-06	6M140341	07/01/16 18:00	01
18WW18-062116	L16061227-07	6M140342	07/01/16 18:33	01
18WW17-062116	L16061227-08	6M140343	07/01/16 19:05	01

Report Name: BLANK_SUMMARY
PDF File ID: 4842604
Report generated 07/07/2016 11:53

METHOD BLANK SUMMARY

Login Number: L16061227
Blank File ID: 6M140352
Prep Date: 07/01/16 23:54
Analyzed Date: 07/01/16 23:54
Analyst: TMB

Work Group: WG574939
Blank Sample ID: WG574939-04
Instrument ID: HPMS6
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG574939-02	6M140333	07/01/16 13:43	01
LCS2	WG574939-03	6M140334	07/01/16 14:15	01
TRIP BLANK	L16061227-09	6M140336	07/01/16 15:19	01
18WW22-062116	L16061227-01	6M140338	07/01/16 16:24	01
C04-062116	L16061227-02	6M140339	07/01/16 16:56	01
C04FD-062116	L16061227-04	6M140340	07/01/16 17:28	01
18CPTMW18-062116	L16061227-06	6M140341	07/01/16 18:00	01
18WW18-062116	L16061227-07	6M140342	07/01/16 18:33	01
18WW17-062116	L16061227-08	6M140343	07/01/16 19:05	01

Report Name: BLANK_SUMMARY
PDF File ID: 4842604
Report generated 07/07/2016 11:53

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16061227 Prep Date: 07/01/16 13:10 Sample ID: WG574939-01
Instrument ID: HPMS6 Run Date: 07/01/16 13:10 Prep Method: 5030B/5030C/503
File ID: 6M140332 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG574939 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS6-30-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4838759
07-JUL-2016 11:53

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061227 Prep Date: 07/01/16 13:10 Sample ID: WG574939-01
Instrument ID: HPMS6 Run Date: 07/01/16 13:10 Prep Method: 5030B/5030C/503
File ID: 6M140332 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG574939 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS6-30-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	95.9	85 - 115	PASS
1,2-Dichloroethane-d4	96.7	70 - 120	PASS
Toluene-d8	99.8	85 - 120	PASS
4-Bromofluorobenzene	102	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4838759
07-JUL-2016 11:53

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061227 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS6 Matrix: Water Method: 8260B
Workgroup (AAB#): WG574939 Units: ug/L
QC Key: DOD4 Lot #: STD76744

Sample ID: WG574939-02 LCS File ID: 6M140333 Run Date: 07/01/2016 13:43
Sample ID: WG574939-03 LCS2 File ID: 6M140334 Run Date: 07/01/2016 14:15

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	21.8	109	20.0	21.6	108	0.889	80 - 130	30	
1,1,1-Trichloroethane	20.0	20.0	100	20.0	19.8	99.1	0.872	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	22.3	111	20.0	22.7	114	2.18	65 - 130	30	
1,1,2-Trichloroethane	20.0	21.9	110	20.0	21.3	107	2.73	75 - 125	30	
1,1-Dichloroethane	20.0	18.9	94.4	20.0	18.7	93.5	0.925	70 - 135	30	
1,1-Dichloroethene	20.0	17.5	87.6	20.0	17.4	87.1	0.656	70 - 130	30	
1,1-Dichloropropene	20.0	19.2	95.9	20.0	19.2	96.0	0.0917	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	22.2	111	20.0	22.3	112	0.665	55 - 140	30	
1,2,3-Trichloropropane	20.0	23.4	117	20.0	22.8	114	2.75	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	22.2	111	20.0	22.3	112	0.510	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	21.9	109	20.0	21.7	109	0.610	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	22.8	114	20.0	24.3	121	6.06	50 - 130	30	
1,2-Dibromoethane	20.0	21.8	109	20.0	21.4	107	1.90	80 - 120	30	
1,2-Dichlorobenzene	20.0	22.4	112	20.0	22.2	111	0.967	70 - 120	30	
1,2-Dichloroethane	20.0	20.7	104	20.0	20.3	102	2.01	70 - 130	30	
1,2-Dichloropropane	20.0	21.3	106	20.0	21.0	105	1.41	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	22.1	110	20.0	22.0	110	0.435	75 - 130	30	
1,3-Dichlorobenzene	20.0	21.7	108	20.0	21.6	108	0.389	75 - 125	30	
1,3-Dichloropropane	20.0	22.3	112	20.0	21.9	109	1.96	75 - 125	30	
1,4-Dichlorobenzene	20.0	21.6	108	20.0	21.7	108	0.135	75 - 125	30	
2,2-Dichloropropane	20.0	19.8	98.9	20.0	21.1	106	6.50	70 - 135	30	
2-Butanone	20.0	21.2	106	20.0	20.9	105	1.22	30 - 150	30	
2-Chlorotoluene	20.0	21.9	110	20.0	20.5	103	6.58	75 - 125	30	
2-Hexanone	20.0	20.8	104	20.0	21.0	105	1.11	55 - 130	30	
4-Chlorotoluene	20.0	21.3	107	20.0	22.8	114	6.63	75 - 130	30	
4-Methyl-2-pentanone	20.0	21.4	107	20.0	21.1	105	1.47	60 - 135	30	
Acetone	20.0	21.0	105	20.0	20.4	102	2.57	40 - 140	30	
Benzene	20.0	20.1	101	20.0	19.9	99.4	1.14	80 - 120	30	
Bromobenzene	20.0	21.0	105	20.0	21.0	105	0.338	75 - 125	30	
Bromochloromethane	20.0	20.0	100	20.0	19.9	99.7	0.330	65 - 130	30	
Bromodichloromethane	20.0	21.0	105	20.0	20.7	104	1.25	75 - 120	30	
Bromoform	20.0	20.5	102	20.0	19.7	98.7	3.64	70 - 130	30	
Bromomethane	20.0	19.3	96.4	20.0	19.0	94.9	1.58	30 - 145	30	
Carbon disulfide	20.0	17.5	87.4	20.0	17.7	88.4	1.06	35 - 160	30	
Carbon tetrachloride	20.0	20.2	101	20.0	20.1	101	0.0578	65 - 140	30	
Chlorobenzene	20.0	21.4	107	20.0	21.1	106	1.17	80 - 120	30	
Chloroethane	20.0	20.4	102	20.0	19.8	98.9	3.01	60 - 135	30	
Chloroform	20.0	19.7	98.5	20.0	19.4	97.0	1.50	65 - 135	30	
Chloromethane	20.0	15.9	79.3	20.0	16.1	80.3	1.26	40 - 125	30	
cis-1,2-Dichloroethene	20.0	20.5	102	20.0	20.2	101	1.53	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4838760
Report generated: 07/07/2016 11:53

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061227 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS6 Matrix: Water Method: 8260B
Workgroup (AAB#): WG574939 Units: ug/L
QC Key: DOD4 Lot #: STD76744

Sample ID: WG574939-02 LCS File ID: 6M140333 Run Date: 07/01/2016 13:43
Sample ID: WG574939-03 LCS2 File ID: 6M140334 Run Date: 07/01/2016 14:15

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	23.0	115	20.0	23.0	115	0.194	70 - 130	30	
Chlorodibromomethane	20.0	21.7	109	20.0	21.6	108	0.513	60 - 135	30	
Dibromomethane	20.0	20.5	103	20.0	20.0	100	2.68	75 - 125	30	
Dichlorodifluoromethane	20.0	15.7	78.7	20.0	15.6	77.8	1.10	30 - 155	30	
Ethylbenzene	20.0	21.5	108	20.0	21.4	107	0.919	75 - 125	30	
Hexachlorobutadiene	20.0	23.0	115	20.0	23.3	117	1.30	50 - 140	30	
Isopropylbenzene	20.0	22.0	110	20.0	21.9	109	0.705	75 - 125	30	
m-,p-Xylene	40.0	43.6	109	40.0	43.0	107	1.48	75 - 130	30	
Methylene chloride	20.0	19.3	96.4	20.0	19.1	95.3	1.13	55 - 140	30	
n-Butylbenzene	20.0	21.9	110	20.0	22.0	110	0.229	70 - 135	30	
n-Propylbenzene	20.0	22.4	112	20.0	22.5	112	0.561	70 - 130	30	
Naphthalene	20.0	21.1	106	20.0	21.2	106	0.180	55 - 140	30	
o-Xylene	20.0	22.3	112	20.0	22.3	111	0.205	80 - 120	30	
p-Isopropyltoluene	20.0	22.1	111	20.0	22.1	111	0.0535	75 - 130	30	
sec-Butylbenzene	20.0	22.3	111	20.0	22.4	112	0.611	70 - 125	30	
Styrene	20.0	22.2	111	20.0	22.1	111	0.452	65 - 135	30	
tert-Butylbenzene	20.0	22.4	112	20.0	22.1	110	1.42	70 - 130	30	
Tetrachloroethene	20.0	20.1	101	20.0	20.0	99.9	0.638	45 - 150	30	
Toluene	20.0	20.6	103	20.0	20.3	102	1.20	75 - 120	30	
trans-1,2-Dichloroethene	20.0	19.2	96.0	20.0	18.9	94.7	1.41	60 - 140	30	
trans-1,3-Dichloropropene	20.0	21.8	109	20.0	21.7	109	0.357	55 - 140	30	
Trichloroethene	20.0	20.4	102	20.0	19.9	99.5	2.69	70 - 125	30	
Trichlorofluoromethane	20.0	23.2	116	20.0	23.5	117	1.11	60 - 145	30	
Vinyl chloride	20.0	19.0	95.0	20.0	18.7	93.7	1.37	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	96.9	96.9	70 - 120	PASS
Dibromofluoromethane	98.6	98.1	85 - 115	PASS
4-Bromofluorobenzene	99.2	99.1	75 - 120	PASS
Toluene-d8	99.1	99.6	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4838760
Report generated: 07/07/2016 11:53

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061227
Instrument: HPMS6
Analyst: JDS
Workgroup: WG566155

Tune ID: WG566155-01
Run Date: 04/24/2016
Run Time: 16:33
File ID: 6M138750
Cal ID: HPMS6 - 24-APR-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.5	10010	PASS
75.0	95.0	30.0	60.0	52.0	23152	PASS
95.0	95.0	100	100	100	44552	PASS
96.0	95.0	5.00	9.00	6.92	3085	PASS
173	174	0	2.00	0.346	113	PASS
174	95.0	50.0	100	73.2	32632	PASS
175	174	5.00	9.00	7.16	2336	PASS
176	174	95.0	101	99.2	32384	PASS
177	176	5.00	9.00	6.95	2251	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG566155-02	STD	01	04/24/2016 16:59	
WG566155-03	STD	01	04/24/2016 17:31	
WG566155-04	STD	01	04/24/2016 18:03	
WG566155-05	STD-CCV	01	04/24/2016 18:36	
WG566155-06	STD	01	04/24/2016 19:08	
WG566155-07	STD	01	04/24/2016 19:40	
WG566155-08	STD	01	04/24/2016 20:12	
WG566155-09	STD	01	04/24/2016 20:44	
WG566155-10	SSCV	01	04/24/2016 22:21	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4838762
Report generated 07/07/2016 11:53

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061227
Instrument: HPMS6
Analyst: TMB
Workgroup: WG574723

Tune ID: WG574723-01
Run Date: 06/30/2016
Run Time: 11:36
File ID: 6M140313
Cal ID: HPMS6 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.0	8707	PASS
75.0	95.0	30.0	60.0	49.7	19699	PASS
95.0	95.0	100	100	100	39664	PASS
96.0	95.0	5.00	9.00	6.69	2652	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	73.8	29282	PASS
175	174	5.00	9.00	7.28	2131	PASS
176	174	95.0	101	99.6	29157	PASS
177	176	5.00	9.00	6.75	1969	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG574723-02	STD	01	06/30/2016 12:03	
WG574723-03	STD	01	06/30/2016 12:35	
WG574723-04	STD	01	06/30/2016 13:08	
WG574723-05	STD	01	06/30/2016 13:40	
WG574723-06	STD	01	06/30/2016 14:12	
WG574723-07	STD	01	06/30/2016 14:44	
WG574723-08	STD-CCV	01	06/30/2016 15:16	
WG574723-09	STD	01	06/30/2016 15:48	
WG574723-10	STD	01	06/30/2016 16:21	
WG574723-11	STD	01	06/30/2016 16:53	
WG574723-12	SSCV	01	06/30/2016 18:31	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4838762
Report generated 07/07/2016 11:53

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061227
Instrument: HPMS6
Analyst: TMB
Workgroup: WG574938

Tune ID: WG574938-01
Run Date: 07/01/2016
Run Time: 11:08
File ID: 6M140328
Cal ID: HPMS6 - 30-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.7	10717	PASS
75.0	95.0	30.0	60.0	51.3	24277	PASS
95.0	95.0	100	100	100	47296	PASS
96.0	95.0	5.00	9.00	7.03	3326	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	74.7	35325	PASS
175	174	5.00	9.00	6.90	2437	PASS
176	174	95.0	101	97.6	34493	PASS
177	176	5.00	9.00	7.10	2450	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG574938-02	CCV	01	07/01/2016 12:06	
WG574939-01	BLANK	01	07/01/2016 13:10	
WG574939-02	LCS	01	07/01/2016 13:43	
WG574939-03	LCS2	01	07/01/2016 14:15	
L16061227-09	TRIP BLANK	01	07/01/2016 15:19	
L16061227-01	18WW22-062116	01	07/01/2016 16:24	
L16061227-02	C04-062116	01	07/01/2016 16:56	
L16061227-04	C04FD-062116	01	07/01/2016 17:28	
L16061227-06	18CPTMW18-062116	01	07/01/2016 18:00	
L16061227-07	18WW18-062116	01	07/01/2016 18:33	
L16061227-08	18WW17-062116	01	07/01/2016 19:05	
WG574939-04	BLANK2	01	07/01/2016 23:54	*
WG573894-01	FBLK1	DL01	07/02/2016 04:42	*

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4838762
Report generated 07/07/2016 11:53

Calibration Table Report
Method: A9FOOWT.M
Title: A9-FOO Water - IC: 042416 - HPMS6
Last Calibration: Wed Apr 27 16:03:33 2016
Curve: WG566155
Calibration Files

	Compound	5	20	50	100	200	300	400	500	Avg	%RSD
		6M138751.D	6M138752.D	6M138753.D	6M138754.D	6M138755.D	6M138756.D	6M138757.D	6M138758.D		
I	Fluorobenzene	ISTD									
T	Acetonitrile	0.036	0.037	0.039	0.038	0.038	0.038	0.038	0.036	0.037	2.606
T	3-Chloro-1-propene	0.567	0.621	0.656	0.672	0.635	0.622	0.617	0.603	0.624	5.157
T	2-Chloro-1,3-butadiene	0.415	0.507	0.558	0.590	0.558	0.553	0.556	0.548	0.535	10.001
T	Ethyl Acetate	0.229	0.259	0.279	0.281	0.277	0.272	0.279	0.268	0.268	6.419
T	Methacrylonitrile	0.071	0.089	0.099	0.099	0.097	0.095	0.096	0.093	0.092	9.852
T	Isobutyl Alcohol		0.008	0.008	0.007	0.007	0.008	0.010	0.010	0.009	13.654
T	1-Butanol									0.000	0.000
T	Methyl methacrylate	0.159	0.200	0.231	0.244	0.244	0.241	0.246	0.236	0.225	13.591
T	2-Nitropropane			0.079	0.082	0.085	0.085	0.088	0.084	0.084	3.643
I	Chlorobenzene-d5	ISTD									
I	1,4-Dichlorobenzene-d4	ISTD									
T	Cyclohexanone			0.026	0.027	0.032	0.034	0.035	0.033	0.031	12.127

Wed Apr 27 16:05:59 2016

Calibration Table Report
Method: 8260WTR.M
Title: 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Calibration: Fri Jul 01 09:28:30 2016
Curve: WG574723
Calibration Files

	Compound	0.3 6M140314.D	0.4 6M140315.D	1 6M140316.D	2 6M140317.D	5 6M140318.D	20 6M140319.D	50 6M140320.D	100 6M140321.D	200 6M140322.D	300 6M140323.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.401	0.398	0.362	0.449	0.438	0.462	0.444	0.391	0.418	8.327		
P	Chloromethane			0.564	0.519	0.446	0.512	0.463	0.436	0.411	0.381	0.467	13.089		
C	Vinyl Chloride		0.237	0.280	0.277	0.251	0.252	0.260	0.267	0.257	0.225	0.256	6.911		
T	1,3-Butadiene					0.175	0.204	0.154	0.154	0.147	0.132	0.161	15.792	0.991	
T	Bromomethane			0.179	0.184	0.166	0.178	0.161	0.164	0.170	0.160	0.170	5.344		
T	Chloroethane			0.158	0.158	0.155	0.170	0.162	0.163	0.168	0.162	0.162	3.146		
T	Trichlorofluoromethane		0.448	0.383	0.389	0.372	0.394	0.373	0.402	0.383	0.374	0.391	6.074		
T	Diethyl ether			0.240	0.244	0.238	0.231	0.237	0.234		0.190	0.231	7.911		
T	Isoprene					0.332	0.374	0.357	0.358	0.361	0.310	0.349	6.639		
T	Acrolein				0.039	0.038	0.038	0.038	0.039		0.039	0.038	1.589		
T	1,1,2-Trichloro-1,2,2-Trifluoroet			0.245	0.246	0.231	0.246	0.239	0.249	0.248	0.242	0.243	2.486		
T	Acetone					0.086	0.083	0.080	0.078	0.078	0.075	0.080	4.861		
C	1,1-Dichloroethene		0.475	0.488	0.483	0.447	0.475	0.469	0.477	0.473	0.459	0.472	2.614		
T	Tert-Butyl Alcohol			0.023	0.024	0.024	0.024	0.024	0.026		0.028	0.024	7.165		
T	Dimethyl Sulfide					0.197	0.217	0.208	0.206	0.206	0.201	0.206	3.230		
T	Iodomethane			0.076	0.076	0.099	0.149	0.180	0.188	0.180	0.164	0.139	34.268	0.996	
T	Methyl acetate					0.218	0.224	0.214	0.217	0.211	0.216	0.217	2.077		
T	Methylene Chloride			0.310	0.299	0.265	0.271	0.261	0.263	0.254	0.240	0.271	8.561		
T	Carbon Disulfide			0.926	0.900	0.839	0.925	0.868	0.856	0.834	0.768	0.864	6.148		
T	Acrylonitrile			0.090	0.096	0.098	0.098	0.102	0.104		0.108	0.099	5.795		
T	Methyl Tert Butyl Ether			0.716	0.725	0.704	0.737	0.716	0.729	0.714	0.694	0.717	1.916		
T	trans-1,2-Dichloroethene		0.263	0.254	0.262	0.245	0.253	0.250	0.255	0.251	0.241	0.253	2.748		
T	n-Hexane					0.432	0.456	0.424	0.426	0.424	0.412	0.429	3.449		
T	Diisopropyl ether			1.208	1.209	1.172	1.157	1.153	1.123		1.058	1.154	4.538		
T	Vinyl Acetate					0.458	0.448	0.486	0.493	0.523	0.482	0.482	5.502		
P	1,1-Dichloroethane		0.561	0.556	0.569	0.531	0.553	0.540	0.544	0.533	0.509	0.544	3.330		
T	Ethyl-Tert-Butyl ether			0.953	0.955	0.939	0.931	0.928	0.916		0.878	0.929	2.832		
T	2-Butanone					0.118	0.124	0.125	0.127	0.123	0.118	0.123	3.167		
T	Propionitrile			0.032	0.033	0.033	0.033	0.034	0.035		0.032	0.033	3.279		
T	2,2-Dichloropropane		0.396	0.421	0.439	0.414	0.411	0.401	0.411	0.407	0.393	0.410	3.381		
T	cis-1,2-Dichloroethene		0.295	0.285	0.269	0.267	0.280	0.277	0.280	0.274	0.262	0.277	3.558		
C	Chloroform	0.615	0.457	0.478	0.484	0.466	0.487	0.476	0.482	0.474	0.454	0.487	9.510		
T	1-Bromopropane			0.024	0.033	0.038	0.044	0.045	0.044	0.045	0.043	0.039	19.340	1.000	
T	Bromochloromethane		0.141	0.141	0.148	0.149	0.155	0.153	0.155	0.152	0.145	0.149	3.658		
T	Tetrahydrofuran			0.104	0.087	0.084	0.081	0.081	0.083		0.078	0.086	9.999		
S	Dibromofluoromethane				0.254	0.258	0.262	0.257	0.250	0.249	0.245	0.254	2.416		
T	1,1,1-Trichloroethane		0.395	0.436	0.430	0.412	0.430	0.430	0.438	0.432	0.414	0.424	3.334		
T	Cyclohexane			0.589	0.567	0.521	0.577	0.543	0.550	0.543	0.524	0.552	4.390		
T	1,1-Dichloropropene			0.377	0.376	0.356	0.370	0.367	0.375	0.373	0.362	0.370	2.060		
T	Tert-Amyl-Methyl ether			0.710	0.726	0.713	0.703	0.708	0.705		0.671	0.705	2.388		
T	Carbon Tetrachloride		0.271	0.305	0.33	0.33	0.37	0.377	0.39	0.391	0.371	0.3484	11.955		
S	1,2-Dichloroethane-d4				0.33	0.331	0.333	0.318	0.316	0.31	0.304	0.3202	3.5321		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.391	0.394	0.406	0.375	0.399	0.393	0.397	0.39	0.373	0.3907	2.7505		
T	Benzene		1.155	1.094	1.109	1.038	1.052	1.035	1.03	0.983	0.89	1.043	7.3599		
T	Trichloroethene		0.277	0.267	0.265	0.253	0.263	0.256	0.255	0.246	0.234	0.2574	4.9066		
T	Methylcyclohexane					0.396	0.428	0.4	0.409	0.404	0.387	0.404	3.4238		
C	1,2-Dichloropropane		0.311	0.293	0.305	0.293	0.306	0.302	0.305	0.3	0.288	0.3004	2.5217		
T	1,4-Dioxane					0.002	0.002	0.002	0.002		0.002	0.002	6.9968		
T	Bromodichloromethane		0.323	0.353	0.365	0.351	0.371	0.375	0.386	0.378	0.359	0.3624	5.1801		
T	Dibromomethane		0.125	0.137	0.148	0.143	0.153	0.151	0.156	0.151	0.145	0.1453	6.6336		
T	2-Chloroethyl Vinyl Ether				0.138	0.135	0.158	0.161	0.16	0.155	0.146	0.1506	7.0765		
T	4-Methyl-2-Pentanone					0.085	0.094	0.095	0.098	0.096	0.089	0.0927	5.3799		
T	cis-1,3-Dichloropropene		0.415	0.394	0.426	0.409	0.431	0.433	0.443	0.433	0.404	0.4208	3.888		
T	Dimethyl Disulfide					0.199	0.239	0.242	0.246	0.245	0.233	0.2342	7.589		
I	Chlorobenzene-d5	ISTD													
S	Toluene-d8				1.304	1.297	1.272	1.226	1.166	1.162	1.19	1.2311	4.9151		
C	Toluene		1.699	1.583	1.601	1.454	1.503	1.467	1.44	1.369	1.294	1.49	8.2924		
T	Ethyl Methacrylate			0.37	0.406	0.396	0.455	0.443	0.443	0.439	0.44	0.4239	6.9571		
T	Paraldehyde											0	0		
T	trans-1,3-Dichloropropene			0.49	0.514	0.506	0.547	0.548	0.551	0.543	0.539	0.5298	4.3368		
T	1,1,2-Trichloroethane		0.262	0.278	0.282	0.27	0.285	0.28	0.281	0.274	0.269	0.2757	2.687		
T	2-Hexanone					0.237	0.266	0.269	0.271	0.267	0.261	0.2618	4.9035		
T	1,3-Dichloropropane		0.55	0.526	0.539	0.51	0.52	0.519	0.517	0.503	0.493	0.5197	3.397		
T	Tetrachloroethene		0.362	0.364	0.373	0.351	0.354	0.353	0.352	0.344	0.343	0.3551	2.7537		
T	Dibromochloromethane		0.278	0.3	0.318	0.322	0.353	0.36	0.37	0.36	0.352	0.3348	9.4942		
T	1,2-Dibromoethane		0.238	0.259	0.265	0.259	0.277	0.274	0.281	0.274	0.268	0.2662	4.8464		
T	1-Chlorohexane		0.507	0.497	0.506	0.475	0.52	0.501	0.495	0.488	0.474	0.4959	3.0436		
P	Chlorobenzene		1.087	1.01	1.026	0.933	0.963	0.947	0.932	0.878	0.824	0.9556	8.2302		
T	1,1,1,2-Tetrachloroethane		0.327	0.335	0.343	0.328	0.352	0.354	0.356	0.342	0.323	0.34	3.6316		
C	Ethylbenzene		0.509	0.503	0.522	0.5	0.517	0.508	0.509	0.481	0.452	0.5002	4.2933		
T	m-,p-Xylene		0.651	0.636	0.652	0.606	0.626	0.612	0.603	0.553	0.501	0.6045	8.1404		
T	o-Xylene			0.61	0.633	0.59	0.625	0.619	0.618	0.585	0.544	0.6029	4.778		
T	Styrene		0.992	0.978	1.025	0.988	1.072	1.065	1.072	1.013	0.924	1.0143	4.9363		
P	Bromoform			0.172	0.184	0.183	0.215	0.22	0.234	0.231	0.222	0.2076	11.743		
T	Isopropylbenzene		1.684	1.642	1.648	1.582	1.619	1.599	1.602	1.477	1.304	1.5731	7.3897		
I	1,4-Dichlorobenzene-d4	ISTD													
P	1,1,2,2-Tetrachloroethane		0.542	0.561	0.589	0.589	0.619	0.616	0.651	0.654	0.639	0.6067	6.4625		
S	p-Bromofluorobenzene				1.007	1.02	1.012	0.972	0.933	0.96	0.949	0.9791	3.484		

T	1,2,3-Trichloropropane		0.131	0.176	0.189	0.19	0.187	0.19	0.191	0.185	0.1799	11.385
T	trans-1,4-Dichloro-2-Butene		0.158	0.209	0.218	0.244	0.244	0.253	0.256	0.254	0.2294	14.64
T	n-Propylbenzene	4.147	3.945	3.827	3.612	3.693	3.558	3.522	3.223	2.802	3.5921	11.066
T	Bromobenzene	0.822	0.753	0.776	0.753	0.761	0.736	0.737	0.723	0.695	0.7506	4.7215
T	1,3,5-Trimethylbenzene	2.687	2.633	2.638	2.51	2.587	2.52	2.523	2.394	2.166	2.5177	6.2882
T	2-Chlorotoluene	2.919	2.675	2.482	2.32	2.324	2.405	2.382	2.249	2.107	2.4293	9.9295
T	4-Chlorotoluene	2.561	2.355	2.535	2.399	2.452	2.211	2.223	2.179	1.93	2.316	8.6649
T	a-Methylstyrene				1.171	1.369	1.303	1.3	1.265	1.19	1.2663	5.9075
T	tert-Butylbenzene		0.522	0.53	0.496	0.527	0.502	0.507	0.492	0.47	0.5058	3.9858
T	1,2,4-Trimethylbenzene		2.731	2.759	2.607	2.688	2.607	2.616	2.454	2.207	2.5836	6.9171
T	sec-Butylbenzene		3.3	3.29	3.02	3.128	3.02	3.014	2.818	2.521	3.0139	8.4375
T	p-Isopropyltoluene		2.762	2.734	2.57	2.677	2.59	2.601	2.425	2.188	2.5685	7.2625
T	1,3-Dichlorobenzene	1.666	1.555	1.538	1.459	1.494	1.448	1.455	1.387	1.293	1.4773	7.1422
T	1,4-Dichlorobenzene	1.73	1.6	1.574	1.462	1.495	1.451	1.46	1.383	1.287	1.4936	8.6114
T	n-Butylbenzene		2.725	2.645	2.516	2.61	2.545	2.566	2.387	2.156	2.5188	7.0194
T	1,2-Dichlorobenzene	1.544	1.461	1.436	1.375	1.404	1.371	1.382	1.297	1.212	1.387	6.8449
T	1,2-Dibromo-3-Chloropropane			0.093	0.097	0.122	0.122	0.134	0.134	0.13	0.1188	14.398
T	1,2,4-Trichlorobenzene	1.156	0.963	0.98	0.936	0.999	0.975	0.988	0.944	0.882	0.9804	7.5963
T	Hexachlorobutadiene	0.47	0.405	0.413	0.39	0.407	0.402	0.408	0.395	0.377	0.4076	6.3393
T	Naphthalene	1.978	1.873	1.94	1.955	2.174	2.126	2.159	2.015	1.813	2.0036	6.3217
T	1,2,3-Trichlorobenzene	0.987	0.959	0.905	0.88	0.936	0.904	0.915	0.87	0.813	0.9078	5.6179

Fri Jul 01 14:48:52 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061227 Run Date: 06/30/2016 Sample ID: WG574723-12
Instrument ID: HPMS6 Run Time: 18:31 Method: 8260B
File ID: 6M140326 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG574723 Cal ID: HPMS6 - 30-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.9	ug/L	0.467	4.30	20	
1,1-Dichloroethene	CCC	50.0	44.2	ug/L	0.417	11.7	20	
1,2-Dichloropropane	CCC	50.0	52.0	ug/L	0.313	4.10	20	
Ethylbenzene	CCC	50.0	51.7	ug/L	0.517	3.40	20	
Toluene	CCC	50.0	50.2	ug/L	1.50	0.400	20	
Vinyl Chloride	CCC	50.0	46.1	ug/L	0.237	7.70	20	
Bromoform	SPCC	50.0	49.4	ug/L	0.205	1.20	20	
Chlorobenzene	SPCC	50.0	51.0	ug/L	0.974	1.90	20	
Chloromethane	SPCC	50.0	39.1	ug/L	0.365	21.7	20	*
1,1-Dichloroethane	SPCC	50.0	46.5	ug/L	0.506	7.10	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	55.5	ug/L	0.673	11.0	20	
Acetone		50.0	46.9	ug/L	0.0752	6.10	20	
Benzene		50.0	48.8	ug/L	1.02	2.40	20	
Bromobenzene		50.0	50.7	ug/L	0.761	1.40	20	
Bromochloromethane		50.0	48.9	ug/L	0.145	2.20	20	
Bromodichloromethane		50.0	51.3	ug/L	0.372	2.60	20	
Bromomethane		50.0	48.4	ug/L	0.165	3.20	20	
2-Butanone		50.0	50.7	ug/L	0.124	1.50	20	
n-Butylbenzene		50.0	51.3	ug/L	2.59	2.70	20	
sec-Butylbenzene		50.0	52.6	ug/L	3.17	5.10	20	
tert-Butylbenzene		50.0	53.2	ug/L	0.538	6.40	20	
Carbon Disulfide		50.0	43.6	ug/L	0.755	12.7	20	
Carbon Tetrachloride		50.0	51.4	ug/L	0.358	2.90	20	
Dibromochloromethane		50.0	53.8	ug/L	0.360	7.60	20	
Chloroethane		50.0	51.7	ug/L	0.168	3.50	20	
2-Chlorotoluene		50.0	52.8	ug/L	2.57	5.70	20	
4-Chlorotoluene		50.0	50.9	ug/L	2.36	1.80	20	
1,2-Dibromo-3-Chloropropane		50.0	55.7	ug/L	0.132	11.3	20	
1,2-Dibromoethane		50.0	52.4	ug/L	0.279	4.90	20	
Dibromomethane		50.0	49.0	ug/L	0.142	2.00	20	
1,2-Dichlorobenzene		50.0	52.5	ug/L	1.46	4.90	20	
1,3-Dichlorobenzene		50.0	51.3	ug/L	1.52	2.60	20	
1,4-Dichlorobenzene		50.0	51.8	ug/L	1.55	3.60	20	
Dichlorodifluoromethane		50.0	40.7	ug/L	0.340	18.6	20	
1,2-Dichloroethane		50.0	49.4	ug/L	0.386	1.20	20	
cis-1,2-Dichloroethene		50.0	49.8	ug/L	0.275	0.500	20	
trans-1,2-Dichloroethene		50.0	47.1	ug/L	0.238	5.90	20	
1,3-Dichloropropane		50.0	53.2	ug/L	0.553	6.30	20	
2,2-Dichloropropane		50.0	50.7	ug/L	0.416	1.40	20	
cis-1,3-Dichloropropene		50.0	56.3	ug/L	0.474	12.6	20	
trans-1,3-Dichloropropene		50.0	53.4	ug/L	0.565	6.70	20	
1,1-Dichloropropene		50.0	48.1	ug/L	0.356	3.80	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4838761
Report generated 07/07/2016 11:53

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061227 Run Date: 06/30/2016 Sample ID: WG574723-12
Instrument ID: HPMS6 Run Time: 18:31 Method: 8260B
File ID: 6M140326 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG574723 Cal ID: HPMS6 - 30-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	49.7	ug/L	0.260	0.600	20	
Hexachlorobutadiene		50.0	52.6	ug/L	0.429	5.20	20	
Isopropylbenzene		50.0	51.7	ug/L	1.63	3.30	20	
p-Isopropyltoluene		50.0	51.7	ug/L	2.65	3.40	20	
4-Methyl-2-Pentanone		50.0	50.7	ug/L	0.0939	1.40	20	
Methylene Chloride		50.0	46.6	ug/L	0.252	6.80	20	
Naphthalene		50.0	49.3	ug/L	1.98	1.40	20	
n-Propylbenzene		50.0	53.7	ug/L	3.86	7.40	20	
Styrene		50.0	52.9	ug/L	1.07	5.90	20	
1,1,1,2-Tetrachloroethane		50.0	52.6	ug/L	0.358	5.20	20	
Tetrachloroethene		50.0	48.7	ug/L	0.346	2.50	20	
1,2,3-Trichlorobenzene		50.0	51.1	ug/L	0.928	2.20	20	
1,2,4-Trichlorobenzene		50.0	51.4	ug/L	1.01	2.90	20	
1,1,1-Trichloroethane		50.0	49.4	ug/L	0.419	1.20	20	
1,1,2-Trichloroethane		50.0	52.1	ug/L	0.287	4.10	20	
Trichloroethene		50.0	49.0	ug/L	0.252	2.10	20	
Trichlorofluoromethane		50.0	47.1	ug/L	0.368	5.70	20	
1,2,3-Trichloropropane		50.0	54.9	ug/L	0.197	9.80	20	
1,2,4-Trimethylbenzene		50.0	51.6	ug/L	2.66	3.10	20	
1,3,5-Trimethylbenzene		50.0	52.6	ug/L	2.65	5.10	20	
o-Xylene		50.0	53.4	ug/L	0.644	6.80	20	
m-,p-Xylene		100	104	ug/L	0.627	3.70	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4838761
Report generated 07/07/2016 11:53

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227 Run Date: 07/01/2016 Sample ID: WG574938-02
Instrument ID: HPMS6 Run Time: 12:06 Method: 8260B
File ID: 6M140330 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG574939 Cal ID: HPMS6 - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	49.5	ug/L	0.482	1.05	20	
1,1-Dichloroethene	CCC	50.0	51.0	ug/L	0.481	2.02	20	
1,2-Dichloropropane	CCC	50.0	51.0	ug/L	0.306	1.91	20	
Ethylbenzene	CCC	50.0	51.6	ug/L	0.517	3.28	20	
Toluene	CCC	50.0	50.2	ug/L	1.50	0.495	20	
Vinyl Chloride	CCC	50.0	50.1	ug/L	0.257	0.290	20	
Bromoform	SPCC	50.0	53.5	ug/L	0.222	6.91	20	
Chlorobenzene	SPCC	50.0	49.9	ug/L	0.953	0.254	20	
Chloromethane	SPCC	50.0	47.3	ug/L	0.442	5.30	20	
1,1-Dichloroethane	SPCC	50.0	50.2	ug/L	0.546	0.398	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	55.5	ug/L	0.674	11.1	20	
Xylenes		150	155	ug/L	0.625	3.44	20	
Acetone		50.0	46.7	ug/L	0.0747	6.68	20	
Benzene		50.0	50.3	ug/L	1.05	0.579	20	
Bromobenzene		50.0	50.6	ug/L	0.760	1.24	20	
Bromochloromethane		50.0	52.5	ug/L	0.156	4.98	20	
Bromodichloromethane		50.0	52.3	ug/L	0.379	4.57	20	
Bromomethane		50.0	47.7	ug/L	0.162	4.68	20	
2-Butanone		50.0	50.0	ug/L	0.123	0.0326	20	
n-Butylbenzene		50.0	53.1	ug/L	2.68	6.21	20	
sec-Butylbenzene		50.0	52.6	ug/L	3.17	5.15	20	
tert-Butylbenzene		50.0	52.3	ug/L	0.529	4.64	20	
Carbon Disulfide		50.0	50.9	ug/L	0.879	1.70	20	
Carbon Tetrachloride		50.0	55.0	ug/L	0.384	10.1	20	
Dibromochloromethane		50.0	54.1	ug/L	0.362	8.19	20	
Chloroethane		50.0	48.6	ug/L	0.157	2.79	20	
2-Chlorotoluene		50.0	51.7	ug/L	2.51	3.30	20	
4-Chlorotoluene		50.0	49.3	ug/L	2.28	1.46	20	
1,2-Dibromo-3-Chloropropane		50.0	55.4	ug/L	0.132	10.8	20	
1,2-Dibromoethane		50.0	52.4	ug/L	0.279	4.76	20	
Dibromomethane		50.0	52.7	ug/L	0.153	5.45	20	
1,2-Dichlorobenzene		50.0	50.6	ug/L	1.40	1.26	20	
1,3-Dichlorobenzene		50.0	51.0	ug/L	1.51	1.96	20	
1,4-Dichlorobenzene		50.0	50.5	ug/L	1.51	0.999	20	
Dichlorodifluoromethane		50.0	54.5	ug/L	0.455	8.94	20	
1,2-Dichloroethane		50.0	50.2	ug/L	0.392	0.401	20	
cis-1,2-Dichloroethene		50.0	51.0	ug/L	0.282	2.06	20	
trans-1,2-Dichloroethene		50.0	51.2	ug/L	0.259	2.36	20	
1,3-Dichloropropane		50.0	50.2	ug/L	0.521	0.316	20	
2,2-Dichloropropane		50.0	55.1	ug/L	0.453	10.3	20	
cis-1,3-Dichloropropene		50.0	52.9	ug/L	0.445	5.80	20	
trans-1,3-Dichloropropene		50.0	53.1	ug/L	0.563	6.22	20	

CCV - Modified 03/05/2008
PDF File ID: 4838763
Report generated 07/07/2016 11:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227 Run Date: 07/01/2016 Sample ID: WG574938-02
Instrument ID: HPMS6 Run Time: 12:06 Method: 8260B
File ID: 6M140330 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG574939 Cal ID: HPMS6 - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	51.3	ug/L	0.379	2.64	20	
2-Hexanone		50.0	50.6	ug/L	0.265	1.20	20	
Hexachlorobutadiene		50.0	52.0	ug/L	0.424	4.04	20	
Isopropylbenzene		50.0	51.6	ug/L	1.62	3.19	20	
p-Isopropyltoluene		50.0	53.0	ug/L	2.72	6.06	20	
4-Methyl-2-Pentanone		50.0	51.0	ug/L	0.0946	2.02	20	
Methylene Chloride		50.0	49.4	ug/L	0.267	1.24	20	
Naphthalene		50.0	54.4	ug/L	2.18	8.88	20	
n-Propylbenzene		50.0	52.2	ug/L	3.75	4.39	20	
Styrene		50.0	52.8	ug/L	1.07	5.61	20	
1,1,1,2-Tetrachloroethane		50.0	52.5	ug/L	0.357	5.00	20	
Tetrachloroethene		50.0	51.3	ug/L	0.364	2.52	20	
1,2,3-Trichlorobenzene		50.0	51.1	ug/L	0.927	2.16	20	
1,2,4-Trichlorobenzene		50.0	51.4	ug/L	1.01	2.72	20	
1,1,1-Trichloroethane		50.0	51.3	ug/L	0.435	2.61	20	
1,1,2-Trichloroethane		50.0	51.7	ug/L	0.285	3.49	20	
Trichloroethene		50.0	49.0	ug/L	0.252	1.99	20	
Trichlorofluoromethane		50.0	60.3	ug/L	0.472	20.6	20	*
1,2,3-Trichloropropane		50.0	53.6	ug/L	0.193	7.16	20	
1,2,4-Trimethylbenzene		50.0	52.5	ug/L	2.71	4.98	20	
1,3,5-Trimethylbenzene		50.0	52.2	ug/L	2.63	4.47	20	
o-Xylene		50.0	52.0	ug/L	0.627	3.91	20	
m-,p-Xylene		100	103	ug/L	0.624	3.21	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4838763
Report generated 07/07/2016 11:53

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061227
Instrument ID: HPMS6
Workgroup (AAB#): WG574939

ICAL CCV Number: WG574723-08
CAL ID: HPMS6-30-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG574723-08	NA	NA	264882	476977	665194
Upper Limit	NA	NA	529764	953954	1330388
Lower Limit	NA	NA	132441	238489	332597
L16061227-01	1.00	01	224470	439057	622904
L16061227-02	1.00	01	222600	432310	615962
L16061227-04	1.00	01	219154	426974	612094
L16061227-06	1.00	01	221247	423456	606310
L16061227-07	1.00	01	214283	421104	597077
L16061227-08	1.00	01	215057	421541	593443
L16061227-09	1.00	01	227983	446539	638332
WG574939-01	1.00	01	233968	460683	653506
WG574939-02	1.00	01	244926	452149	632534
WG574939-03	1.00	01	240618	446803	627951

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4842605
Report generated 07/07/2016 11:53

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061227
Instrument ID: HPMS6
Workgroup (AAB#): WG574939

ICAL CCV Number: WG574723-08
CAL ID: HPMS6-30-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG574723-08	NA	NA	18.81	15.25	10.77
Upper Limit	NA	NA	19.31	15.75	11.27
Lower Limit	NA	NA	18.31	14.75	10.27
L16061227-01	1.00	01	18.81	15.25	10.77
L16061227-02	1.00	01	18.8	15.25	10.77
L16061227-04	1.00	01	18.8	15.25	10.77
L16061227-06	1.00	01	18.81	15.24	10.77
L16061227-07	1.00	01	18.81	15.24	10.77
L16061227-08	1.00	01	18.81	15.25	10.77
L16061227-09	1.00	01	18.81	15.25	10.77
WG574939-01	1.00	01	18.81	15.25	10.76
WG574939-02	1.00	01	18.81	15.25	10.76
WG574939-03	1.00	01	18.8	15.25	10.77

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4842606
Report generated: 07/07/2016 11:54

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140338.D Vial: 11
Acq On : 1 Jul 2016 16:24 Operator: TMB
Sample : L16061227-01 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 02 10:33:54 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	622904	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	439057	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	224470	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	156693	24.7944 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.16%		
43) 1,2-Dichloroethane-d4	10.31	65	198006	24.8194 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.28%		
58) Toluene-d8	13.04	98	536501	24.8145 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.24%		
80) p-Bromofluorobenzene	17.02	95	224722	25.5625 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.24%		

Target Compounds					Qvalue
3) Chloromethane	3.37	50	2072	0.1782 ug/L	93
13) Acetone	5.90	43	4037	2.0229 ug/L #	57
29) 2-Butanone	8.55	43	812	0.2658 ug/L #	57

(#) = qualifier out of range (m) = manual integration
6M140338.D 8260WTR.M Sat Jul 02 10:33:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140338.D Vial: 11
Acq On : 1 Jul 2016 16:24 Operator: TMB
Sample : L16061227-01 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 2 10:33 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

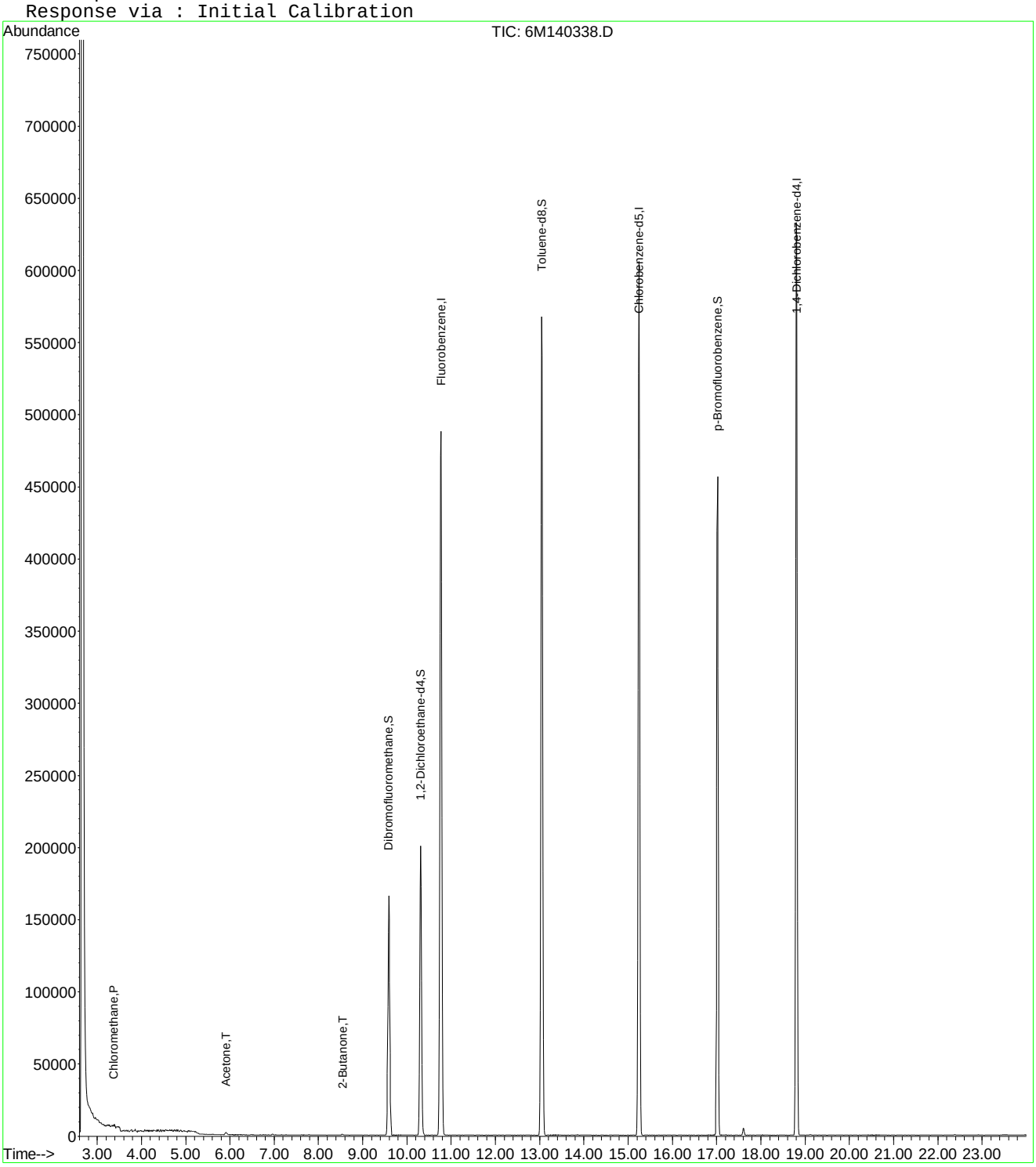

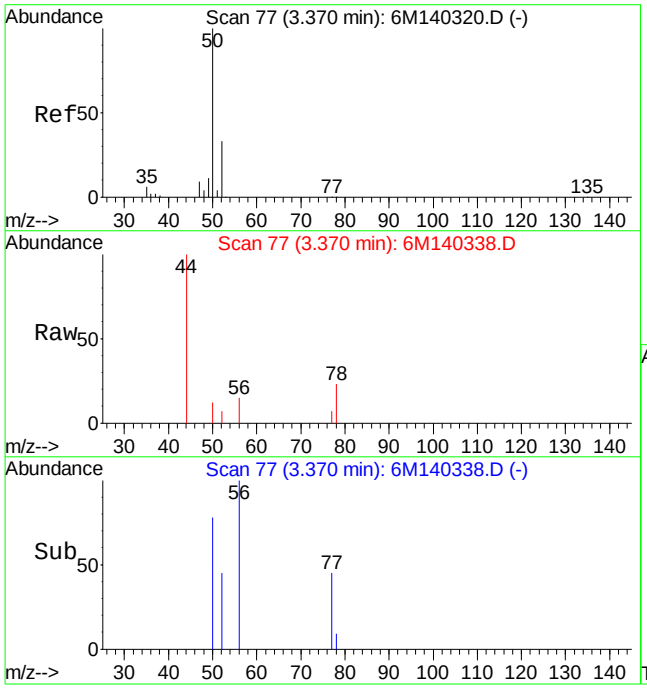

#3
Chloromethane
Concen: 0.18 ug/L
RT: 3.37 min Scan# 77
Delta R.T. 0.01 min
Lab File: 6M140338.D
Acq: 1 Jul 2016 16:24

Tgt Ion: 50 Resp: 2072

Ion	Ratio	Lower	Upper
50	100		
52	28.8	19.8	46.2

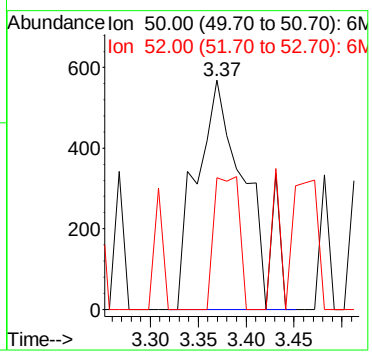

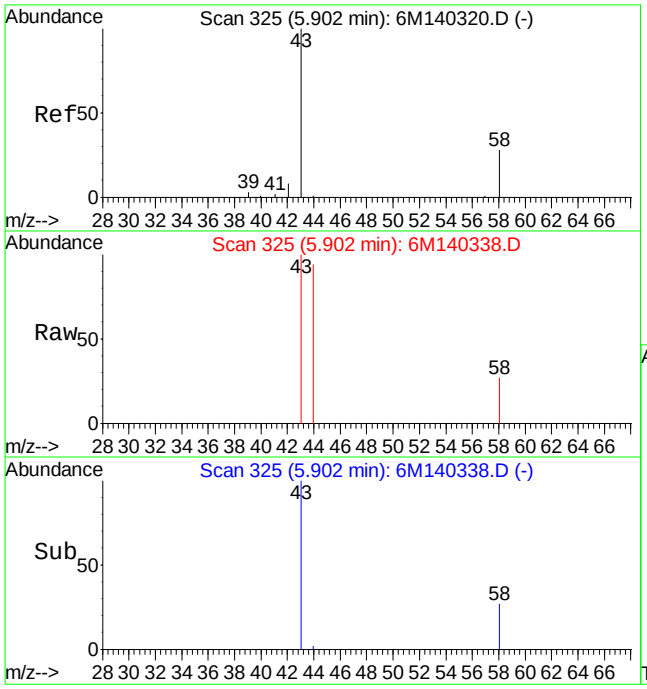

#13
Acetone
Concen: 2.02 ug/L
RT: 5.90 min Scan# 325
Delta R.T. -0.00 min
Lab File: 6M140338.D
Acq: 1 Jul 2016 16:24

Tgt Ion: 43 Resp: 4037

Ion	Ratio	Lower	Upper
43	100		
58	5.0	16.4	38.2#

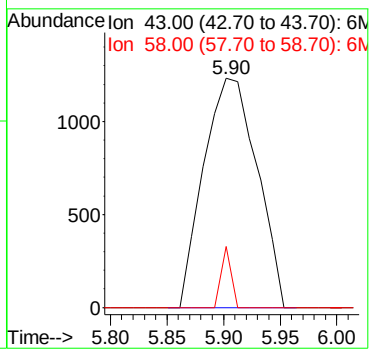

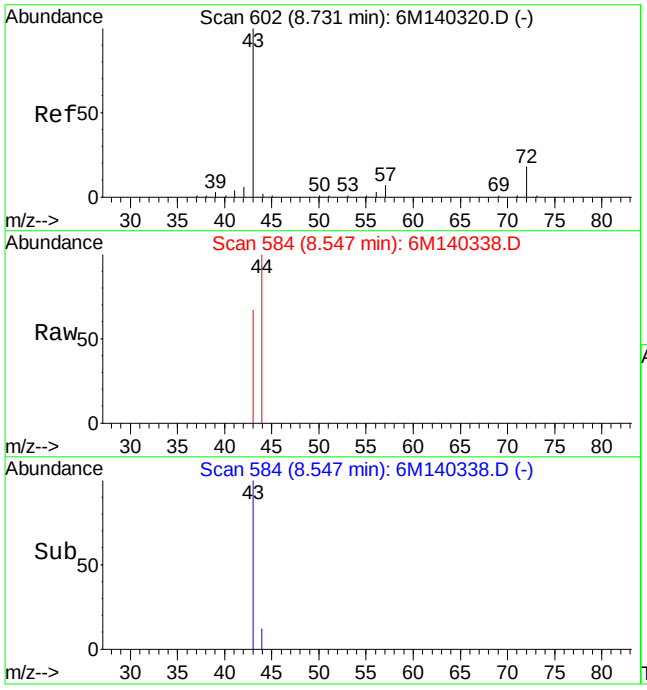

#29
2-Butanone
Concen: 0.27 ug/L
RT: 8.55 min Scan# 584
Delta R.T. -0.19 min
Lab File: 6M140338.D
Acq: 1 Jul 2016 16:24

Tgt Ion: 43 Resp: 812

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.9	27.9#

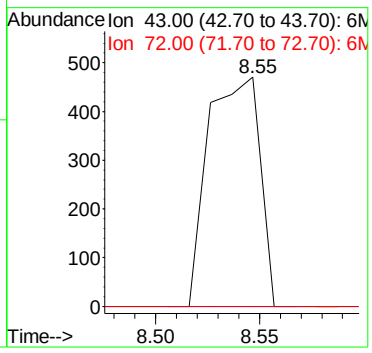

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140339.D Vial: 12
Acq On : 1 Jul 2016 16:56 Operator: TMB
Sample : L16061227-02 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 02 10:34:00 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	615962	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	432310	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	222600	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	154116	24.6615 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.64%		
43) 1,2-Dichloroethane-d4	10.32	65	192166	24.3588 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.44%		
58) Toluene-d8	13.04	98	531564	24.9699 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.88%		
80) p-Bromofluorobenzene	17.02	95	222902	25.5685 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.28%		

Target Compounds					Qvalue
3) Chloromethane	3.37	50	1426	0.1240 ug/L	77
13) Acetone	5.91	43	6398	3.2421 ug/L	97
29) 2-Butanone	8.52	43	442	0.1463 ug/L #	57

(#) = qualifier out of range (m) = manual integration
6M140339.D 8260WTR.M Sat Jul 02 10:34:03 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140339.D Vial: 12
Acq On : 1 Jul 2016 16:56 Operator: TMB
Sample : L16061227-02 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 2 10:33 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

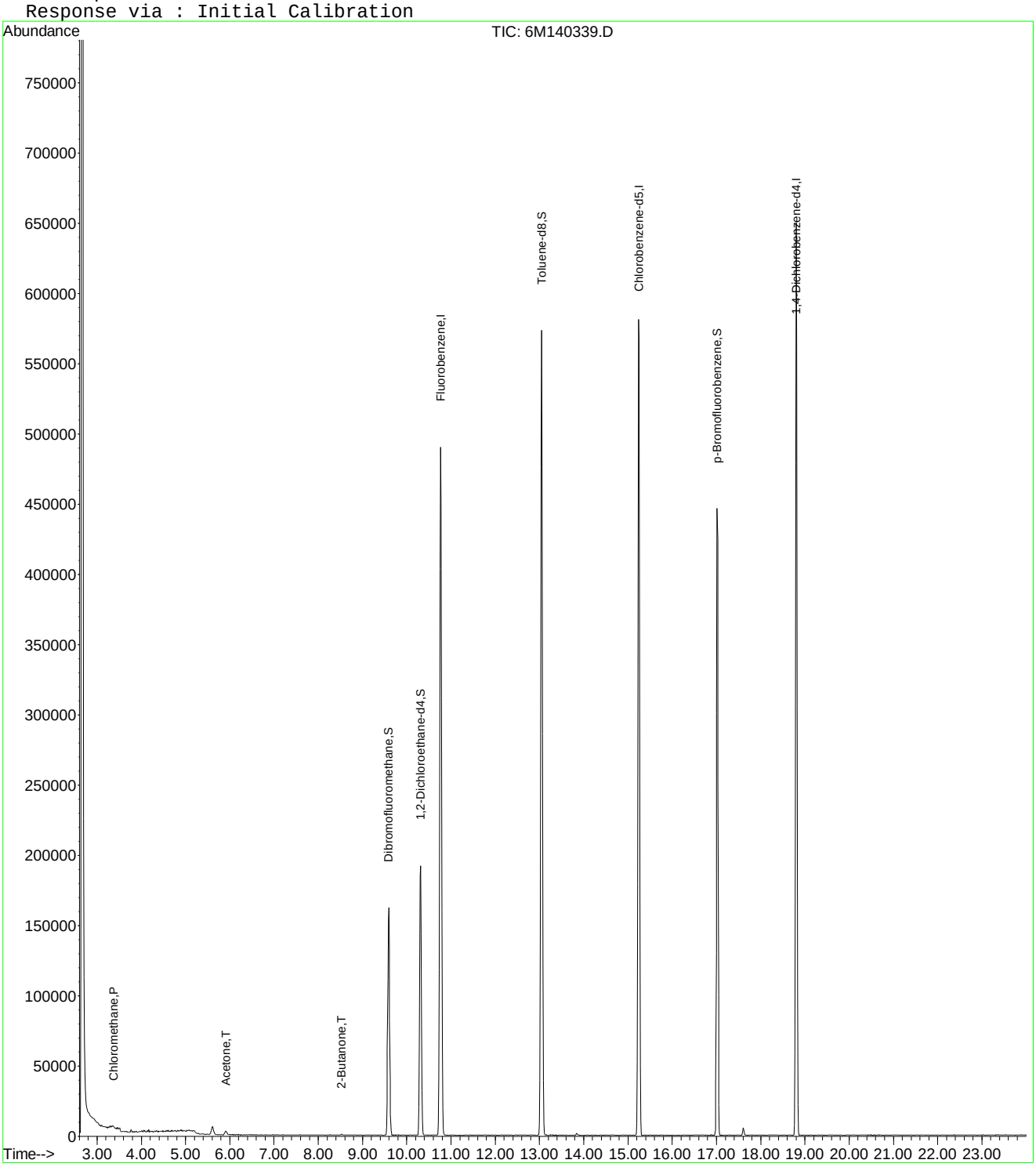

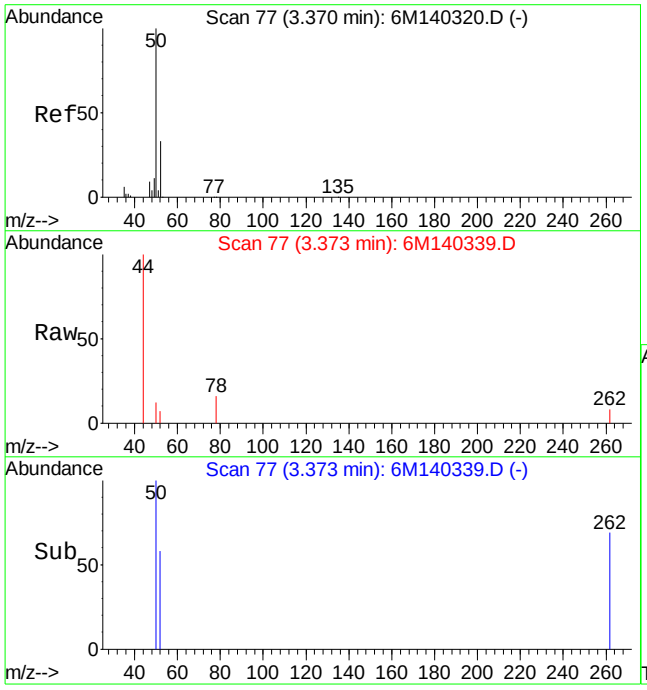

#3
Chloromethane
Concen: 0.12 ug/L
RT: 3.37 min Scan# 77
Delta R.T. 0.01 min
Lab File: 6M140339.D
Acq: 1 Jul 2016 16:56

Tgt Ion: 50 Resp: 1426

Ion	Ratio	Lower	Upper
50	100		
52	46.1	19.8	46.2

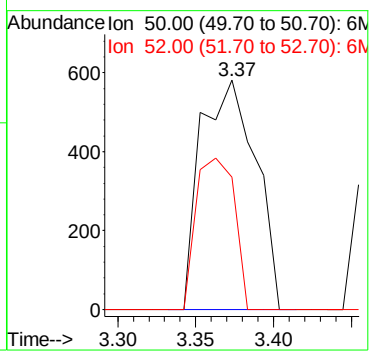

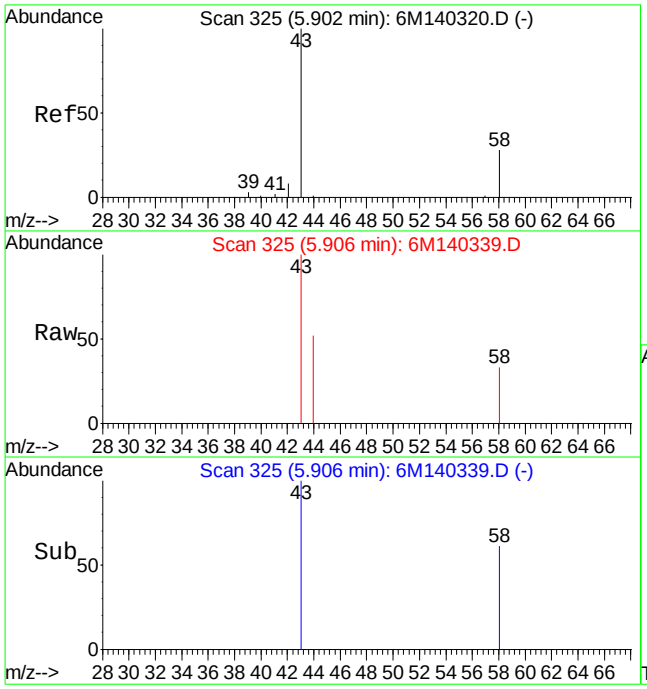

#13
Acetone
Concen: 3.24 ug/L
RT: 5.91 min Scan# 325
Delta R.T. 0.00 min
Lab File: 6M140339.D
Acq: 1 Jul 2016 16:56

Tgt Ion: 43 Resp: 6398

Ion	Ratio	Lower	Upper
43	100		
58	25.8	16.4	38.2

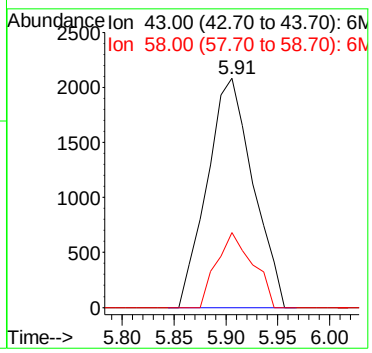

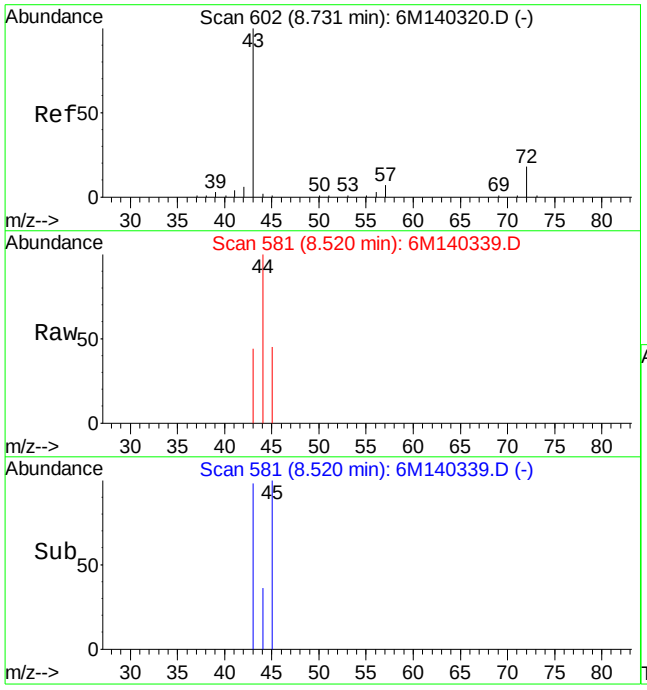

#29
2-Butanone
Concen: 0.15 ug/L
RT: 8.52 min Scan# 581
Delta R.T. -0.21 min
Lab File: 6M140339.D
Acq: 1 Jul 2016 16:56

Tgt Ion: 43 Resp: 442

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.9	27.9#

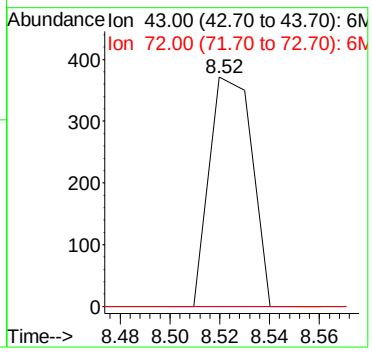

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140340.D Vial: 13
Acq On : 1 Jul 2016 17:28 Operator: TMB
Sample : L16061227-04 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 02 10:34:07 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	612094	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	426974	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	219154	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	152114	24.4950 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.96%		
43) 1,2-Dichloroethane-d4	10.32	65	191117	24.3789 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.52%		
58) Toluene-d8	13.04	98	528141	25.1191 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.48%		
80) p-Bromofluorobenzene	17.02	95	220005	25.6330 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.52%		

Target Compounds					Qvalue
3) Chloromethane	3.38	50	1782	0.1560 ug/L	78
13) Acetone	5.91	43	1260	0.6425 ug/L #	48

(#) = qualifier out of range (m) = manual integration
6M140340.D 8260WTR.M Sat Jul 02 10:34:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140340.D Vial: 13
Acq On : 1 Jul 2016 17:28 Operator: TMB
Sample : L16061227-04 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 2 10:34 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

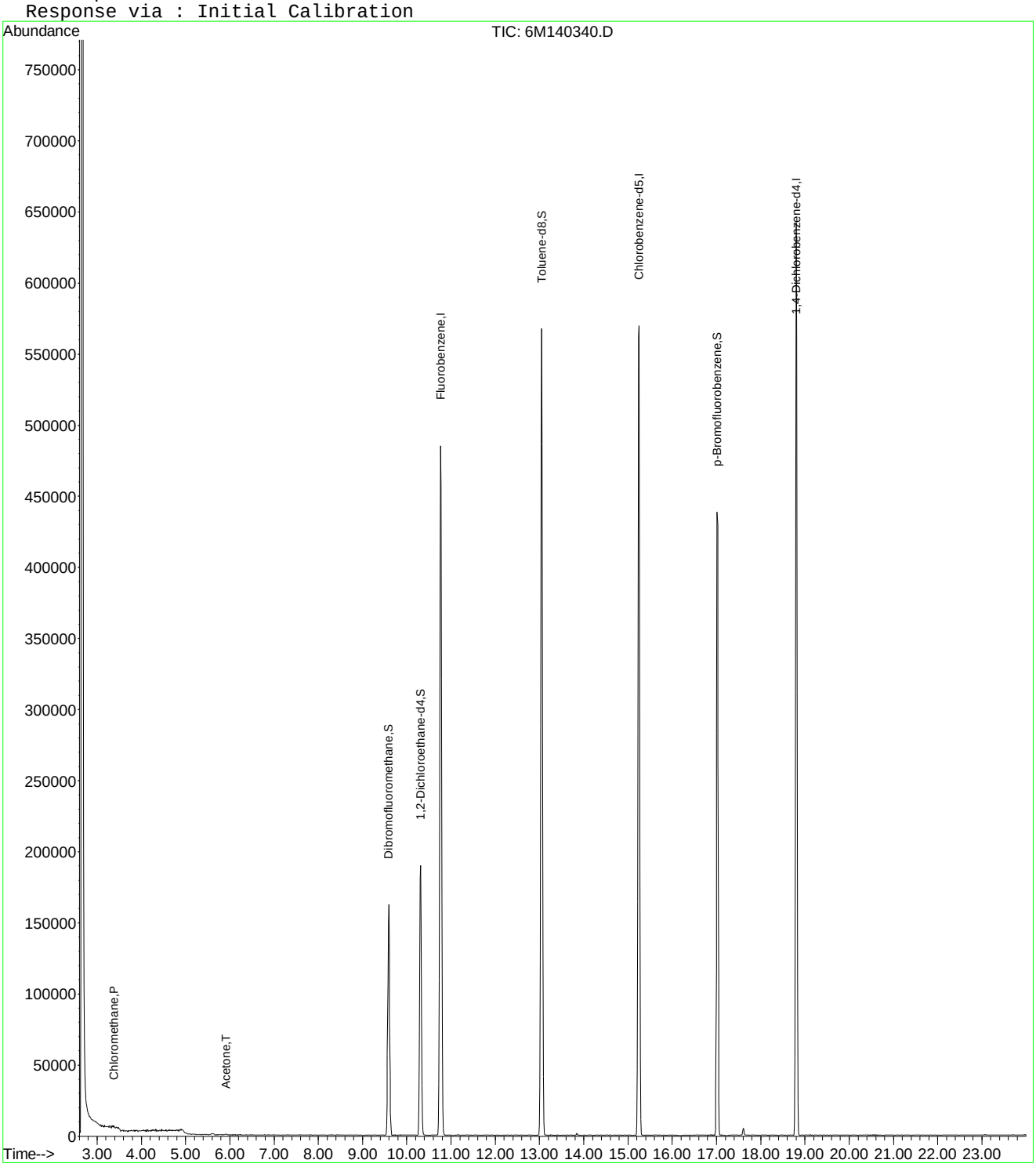

6M140340.D 8260WTR.M Sat Jul 02 10:34:10 2016 Page 2

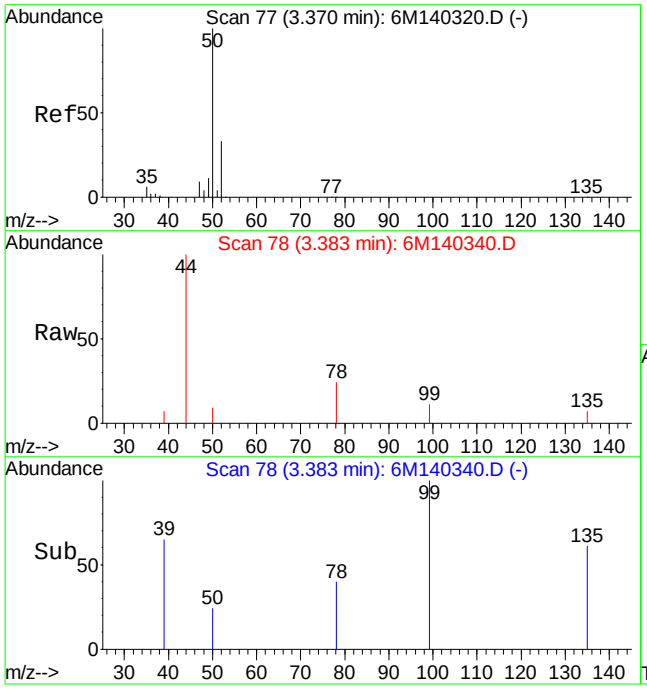

#3
Chloromethane
Concen: 0.16 ug/L
RT: 3.38 min Scan# 78
Delta R.T. 0.02 min
Lab File: 6M140340.D
Acq: 1 Jul 2016 17:28

Tgt Ion: 50 Resp: 1782

Ion	Ratio	Lower	Upper
50	100		
52	20.7	19.8	46.2

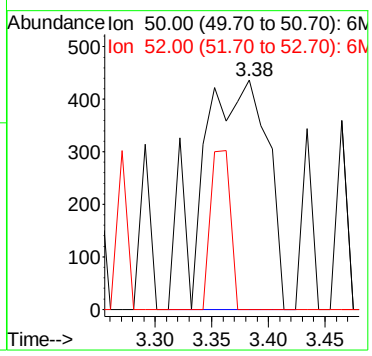

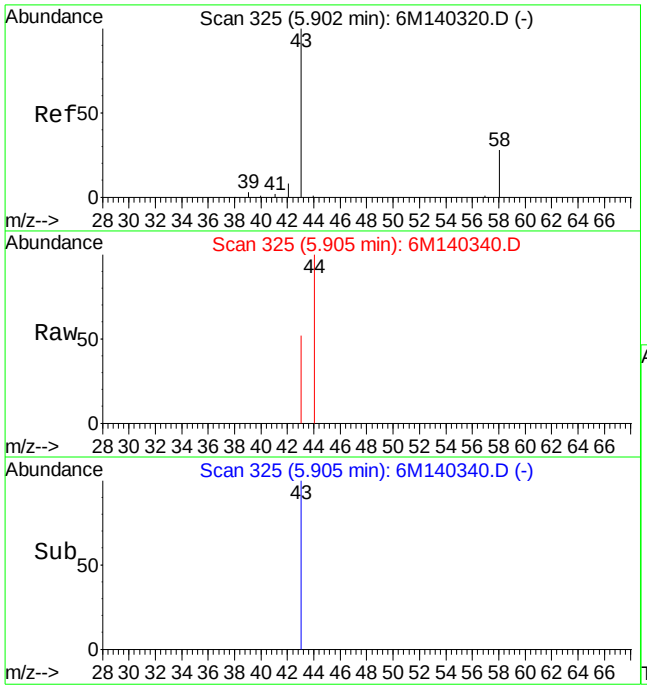

#13
Acetone
Concen: 0.64 ug/L
RT: 5.91 min Scan# 325
Delta R.T. -0.00 min
Lab File: 6M140340.D
Acq: 1 Jul 2016 17:28

Tgt Ion: 43 Resp: 1260

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

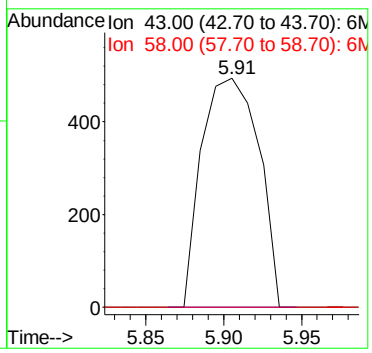

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140341.D Vial: 14
Acq On : 1 Jul 2016 18:00 Operator: TMB
Sample : L16061227-06 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 02 10:34:13 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	606310	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.24	117	423456	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	221247	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	154055	25.0442 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.16%		
43) 1,2-Dichloroethane-d4	10.31	65	192233	24.7552 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.04%		
58) Toluene-d8	13.04	98	527312	25.2880 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.16%		
80) p-Bromofluorobenzene	17.02	95	219746	25.3606 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.44%		

Target Compounds					Qvalue
3) Chloromethane	3.37	50	2432	0.2149 ug/L	98
13) Acetone	5.90	43	6587	3.3910 ug/L	89

(#) = qualifier out of range (m) = manual integration
6M140341.D 8260WTR.M Sat Jul 02 10:34:16 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140341.D Vial: 14
Acq On : 1 Jul 2016 18:00 Operator: TMB
Sample : L16061227-06 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 2 10:34 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

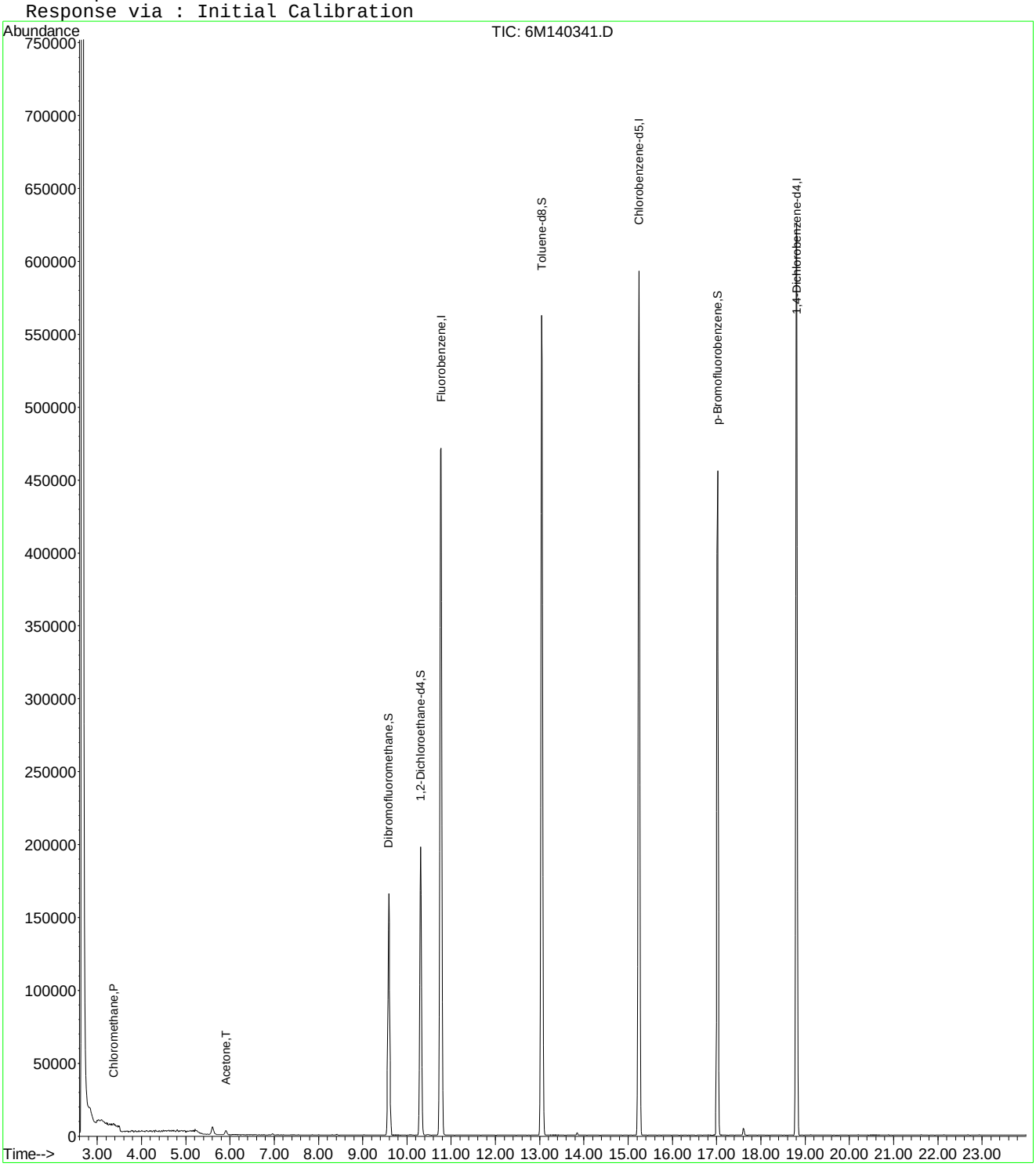

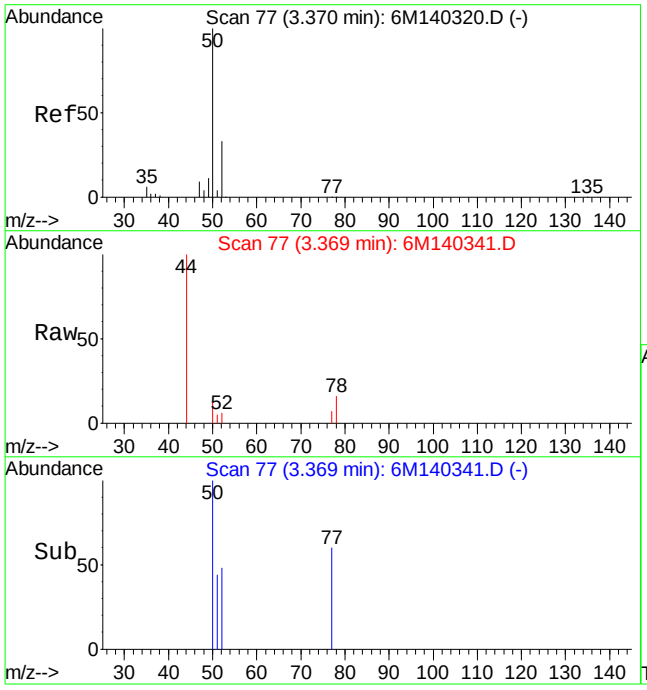

#3
Chloromethane
Concen: 0.21 ug/L
RT: 3.37 min Scan# 77
Delta R.T. 0.01 min
Lab File: 6M140341.D
Acq: 1 Jul 2016 18:00

Tgt Ion: 50 Resp: 2432

Ion	Ratio	Lower	Upper
50	100		
52	34.4	19.8	46.2

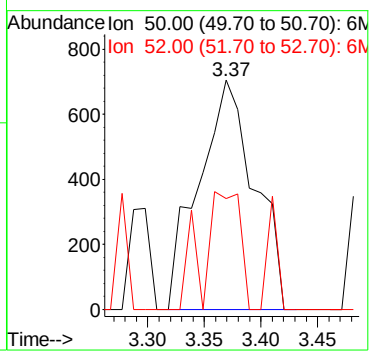

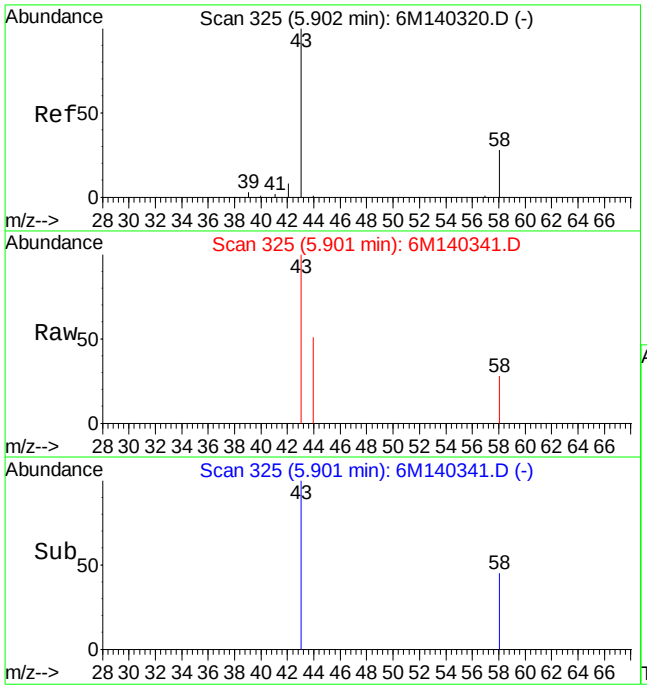

#13
Acetone
Concen: 3.39 ug/L
RT: 5.90 min Scan# 325
Delta R.T. -0.00 min
Lab File: 6M140341.D
Acq: 1 Jul 2016 18:00

Tgt Ion: 43 Resp: 6587

Ion	Ratio	Lower	Upper
43	100		
58	21.6	16.4	38.2

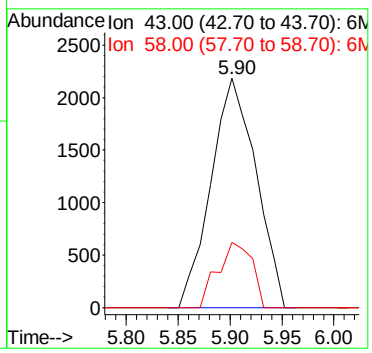

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140342.D Vial: 15
Acq On : 1 Jul 2016 18:33 Operator: TMB
Sample : L16061227-07 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 02 10:34:19 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	597077	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.24	117	421104	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	214283	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	150229	24.7999 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.20%		
43) 1,2-Dichloroethane-d4	10.31	65	188228	24.6143 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.44%		
58) Toluene-d8	13.04	98	515593	24.8641 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.44%		
80) p-Bromofluorobenzene	17.02	95	214385	25.5460 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.20%		
Target Compounds					Qvalue
3) Chloromethane	3.36	50	1871	0.1679 ug/L #	29
13) Acetone	5.91	43	8429	4.4064 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M140342.D 8260WTR.M Sat Jul 02 10:34:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140342.D Vial: 15
Acq On : 1 Jul 2016 18:33 Operator: TMB
Sample : L16061227-07 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 2 10:34 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

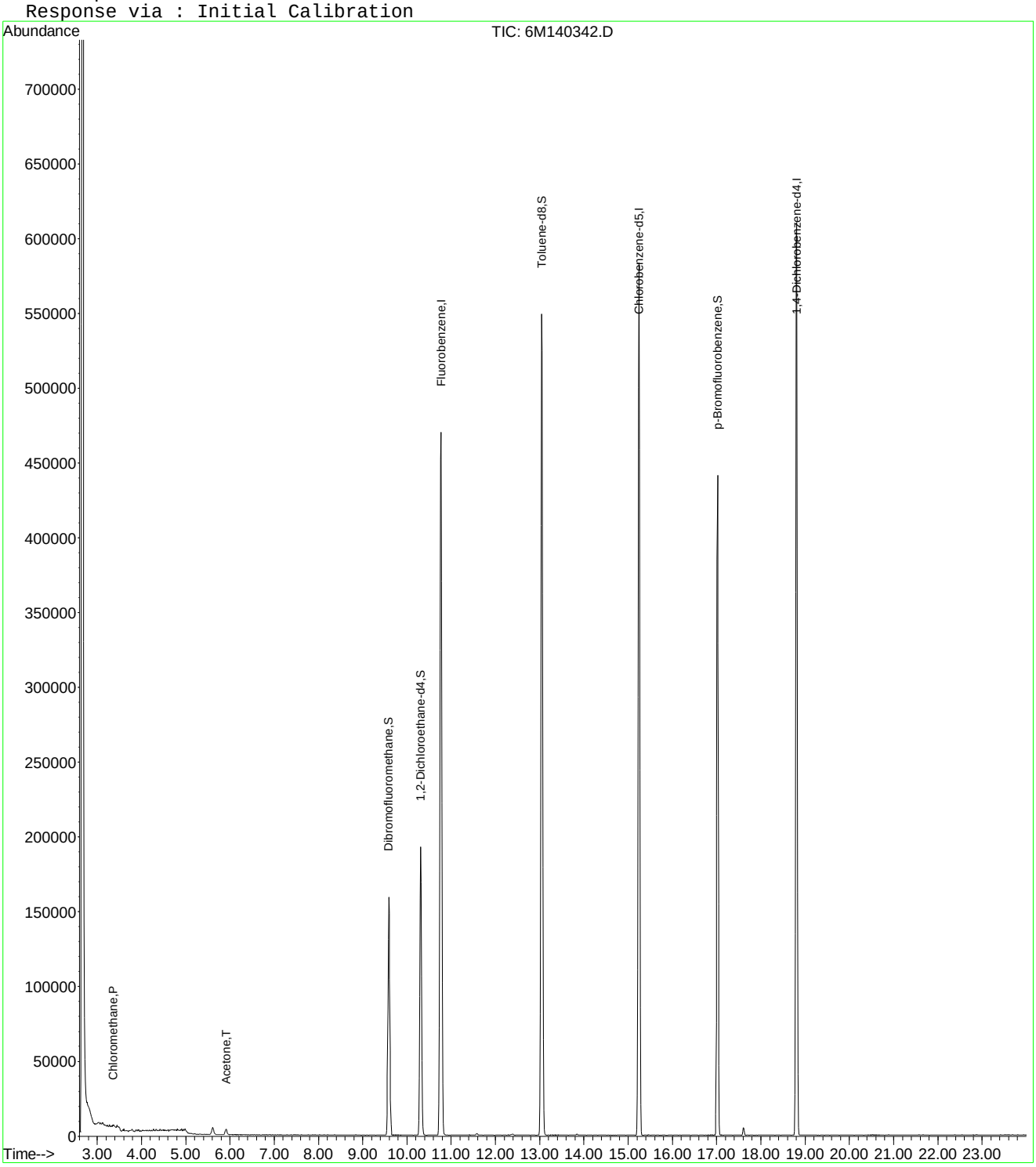

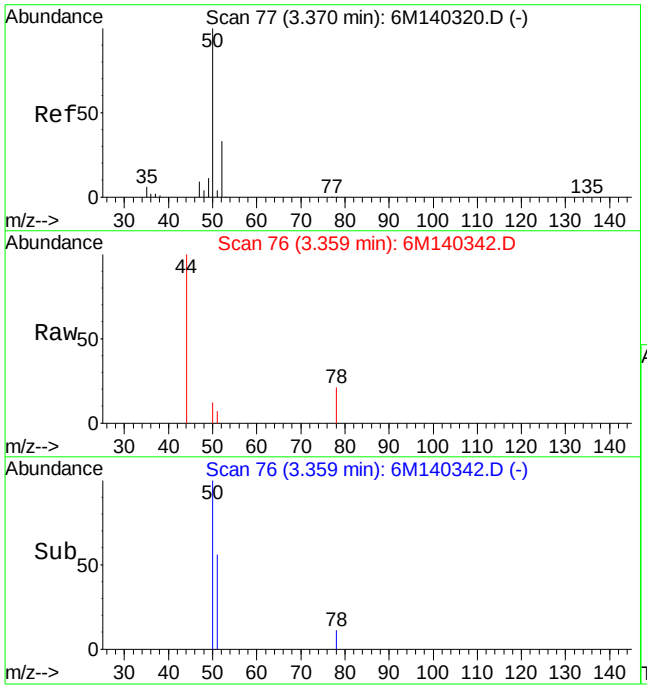

#3
Chloromethane
Concen: 0.17 ug/L
RT: 3.36 min Scan# 76
Delta R.T. -0.00 min
Lab File: 6M140342.D
Acq: 1 Jul 2016 18:33

Tgt Ion: 50 Resp: 1871

Ion	Ratio	Lower	Upper
50	100		
52	73.1	19.8	46.2#

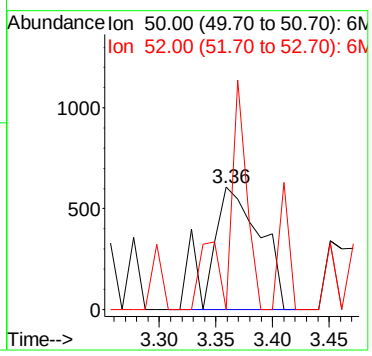

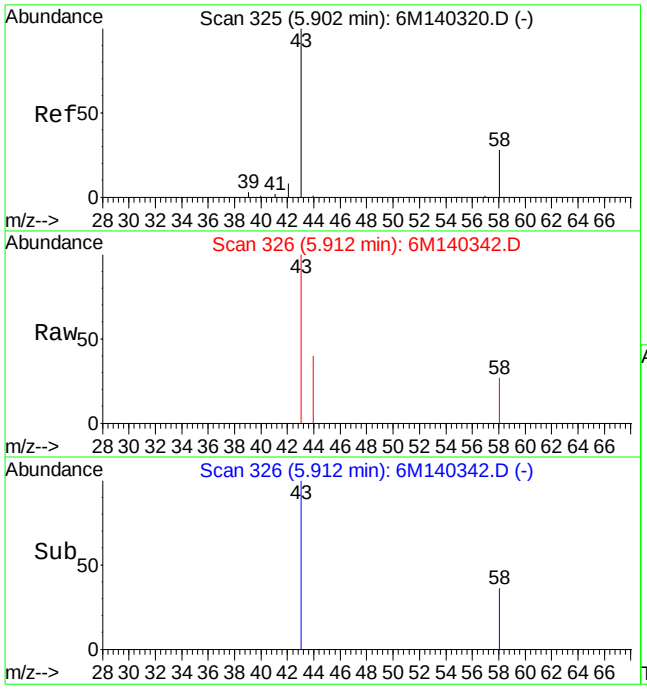

#13
Acetone
Concen: 4.41 ug/L
RT: 5.91 min Scan# 326
Delta R.T. 0.01 min
Lab File: 6M140342.D
Acq: 1 Jul 2016 18:33

Tgt Ion: 43 Resp: 8429

Ion	Ratio	Lower	Upper
43	100		
58	26.2	16.4	38.2

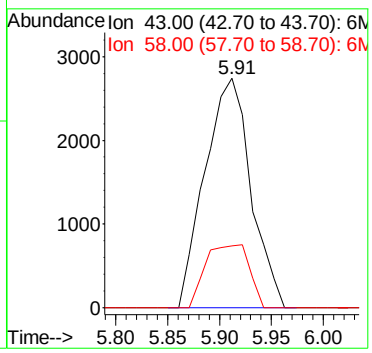

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140343.D Vial: 16
Acq On : 1 Jul 2016 19:05 Operator: TMB
Sample : L16061227-08 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 02 10:34:25 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	593443	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	421541	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	215057	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	150323	24.9673 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.88%		
43) 1,2-Dichloroethane-d4	10.31	65	187249	24.6362 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.56%		
58) Toluene-d8	13.04	98	515872	24.8518 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.40%		
80) p-Bromofluorobenzene	17.02	95	213271	25.3218 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.28%		

Target Compounds

					Qvalue
3) Chloromethane	3.37	50	2927	0.2643 ug/L	79
9) Diethyl ether	5.80	59	11870	2.1687 ug/L #	11
10) Isoprene	5.80	67	7418	0.8960 ug/L #	10
12) 1,1,2-Trichloro-1,2,2-Trif	5.80	101	1251237	216.7900 ug/L	97
13) Acetone	5.91	43	4072	2.1417 ug/L	80
14) 1,1-Dichloroethene	6.11	61	1371	0.1224 ug/L #	25
32) cis-1,2-Dichloroethene	9.04	96	4612	0.7025 ug/L	83
33) Chloroform	9.26	83	3186	0.2754 ug/L #	90
47) Trichloroethene	11.34	130	282598	46.2572 ug/L	90
48) Methylcyclohexane	11.34	83	3860	0.4025 ug/L #	1
49) 1,2-Dichloropropane	11.33	63	884	0.1240 ug/L #	35

(#) = qualifier out of range (m) = manual integration
6M140343.D 8260WTR.M Sat Jul 02 10:34:28 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140343.D Vial: 16
Acq On : 1 Jul 2016 19:05 Operator: TMB
Sample : L16061227-08 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 2 10:34 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

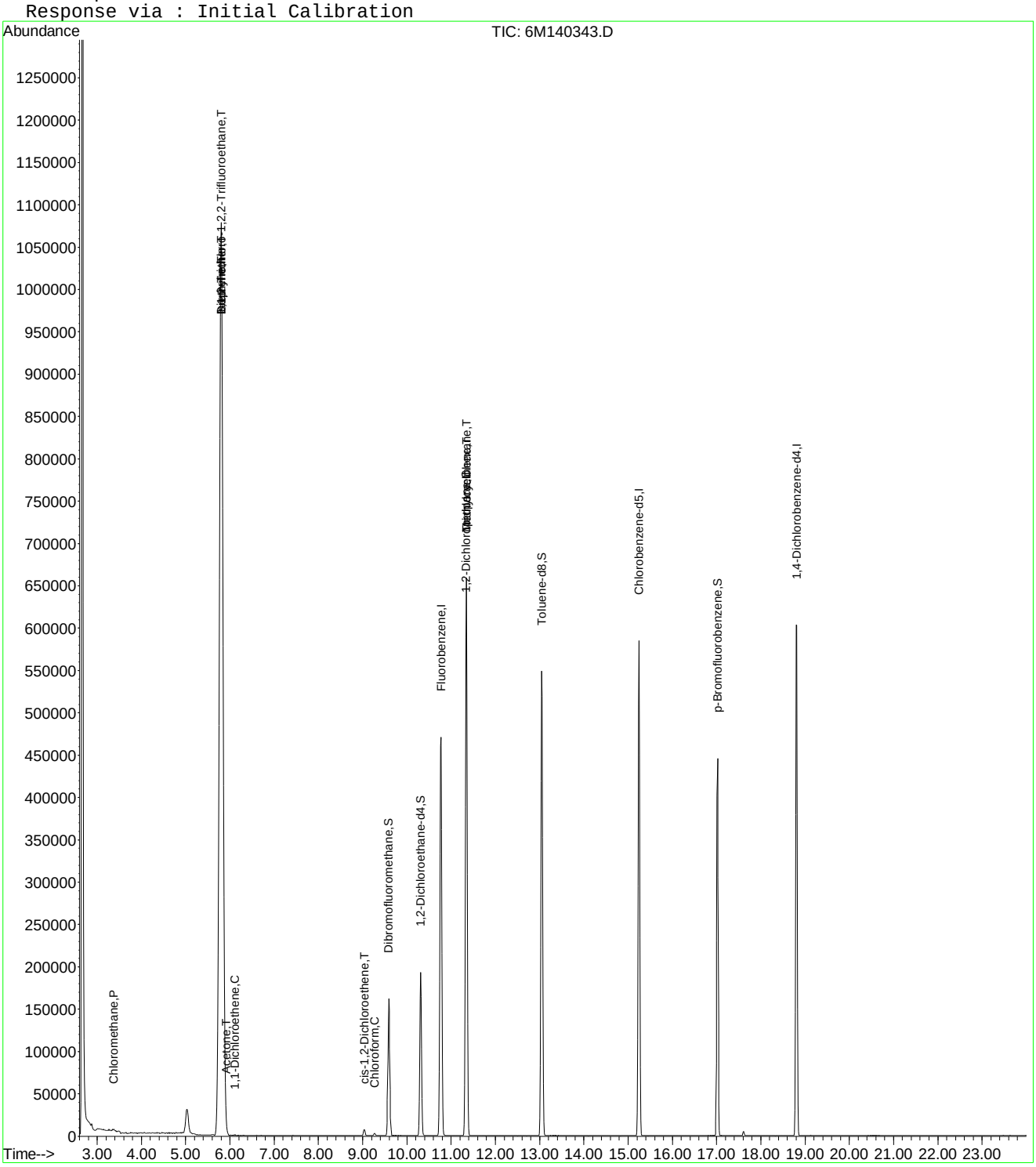

6M140343.D 8260WTR.M Sat Jul 02 10:34:29 2016 Page 2

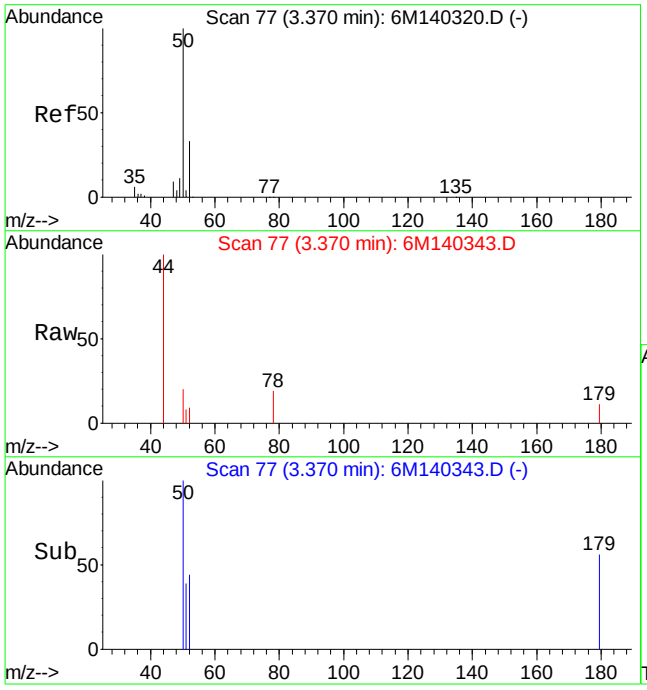

#3
Chloromethane
Concen: 0.26 ug/L
RT: 3.37 min Scan# 77
Delta R.T. 0.01 min
Lab File: 6M140343.D
Acq: 1 Jul 2016 19:05

Tgt Ion: 50 Resp: 2927

Ion	Ratio	Lower	Upper
50	100		
52	45.0	19.8	46.2

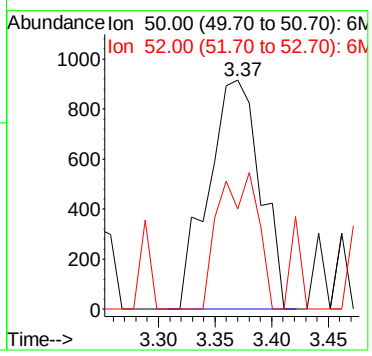

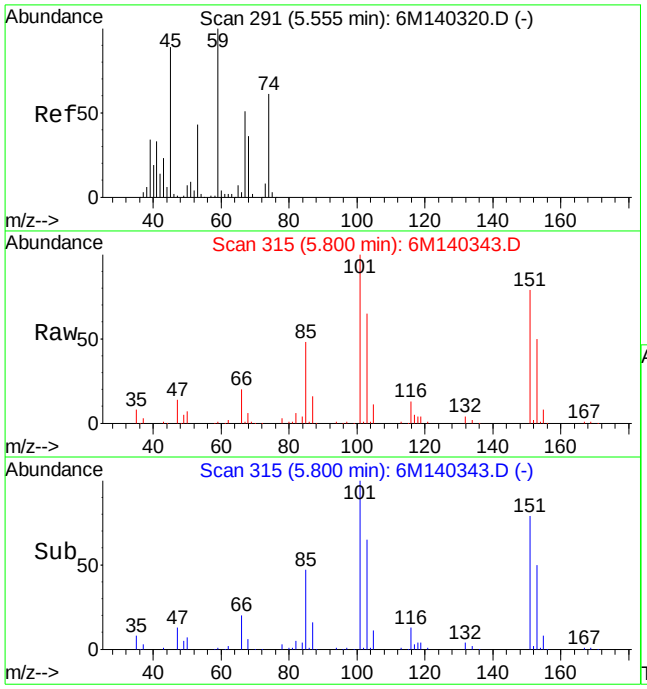

#9
Diethyl ether
Concen: 2.17 ug/L
RT: 5.80 min Scan# 315
Delta R.T. 0.25 min
Lab File: 6M140343.D
Acq: 1 Jul 2016 19:05

Tgt Ion: 59 Resp: 11870

Ion	Ratio	Lower	Upper
59	100		
45	0.0	51.5	120.3#
74	0.0	38.5	89.7#

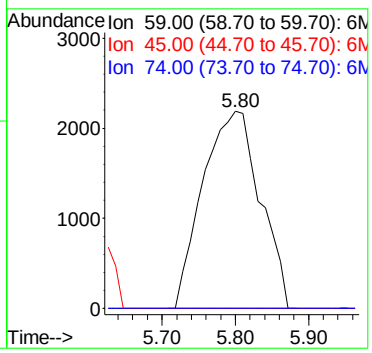

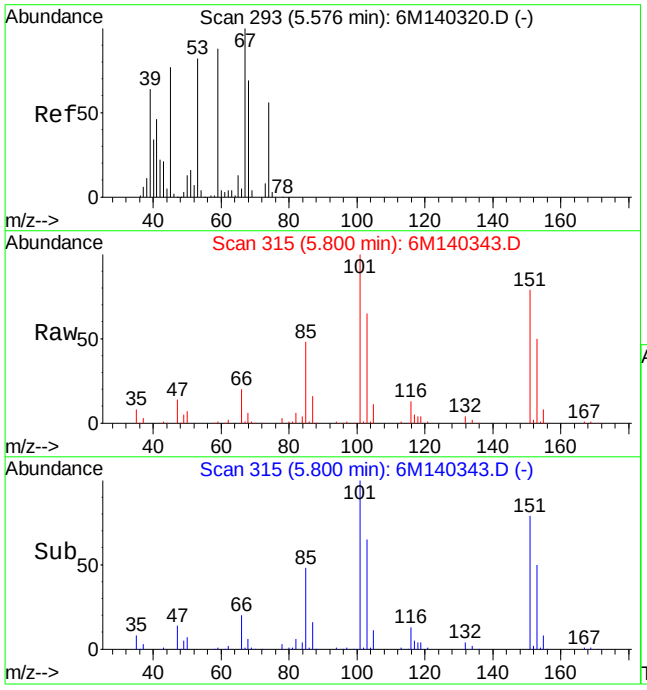

#10
Isoprene
Concen: 0.90 ug/L
RT: 5.80 min Scan# 315
Delta R.T. 0.23 min
Lab File: 6M140343.D
Acq: 1 Jul 2016 19:05

Tgt Ion: 67 Resp: 7418

Ion	Ratio	Lower	Upper
67	100		
53	0.0	47.4	110.6#

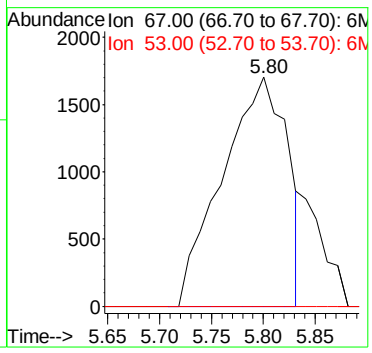

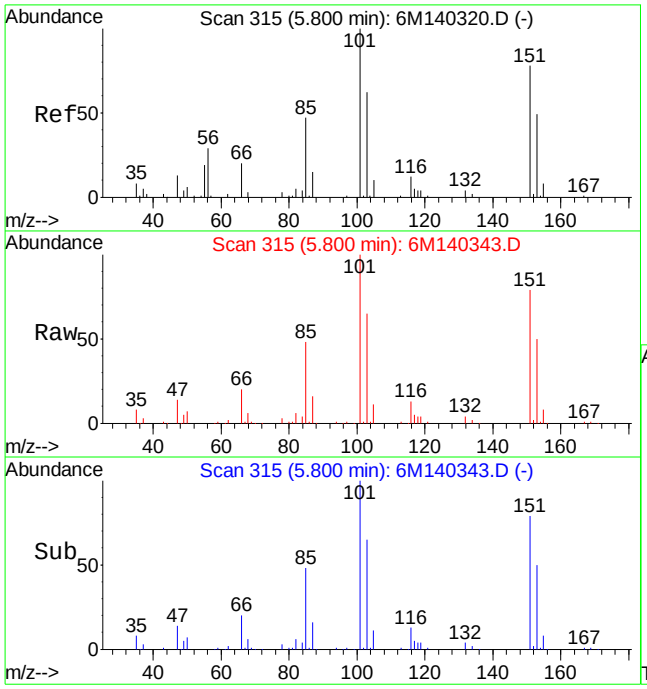

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 216.79 ug/L
RT: 5.80 min Scan# 315
Delta R.T. 0.02 min
Lab File: 6M140343.D
Acq: 1 Jul 2016 19:05

Tgt Ion:101 Resp: 1251237

Ion	Ratio	Lower	Upper
101	100		
151	77.0	49.4	115.2
103	64.8	38.8	90.4

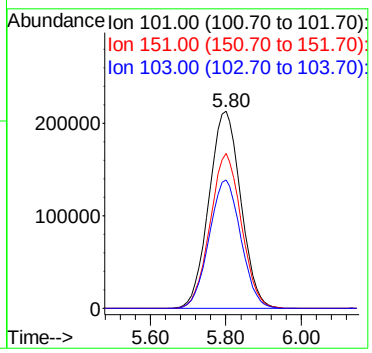

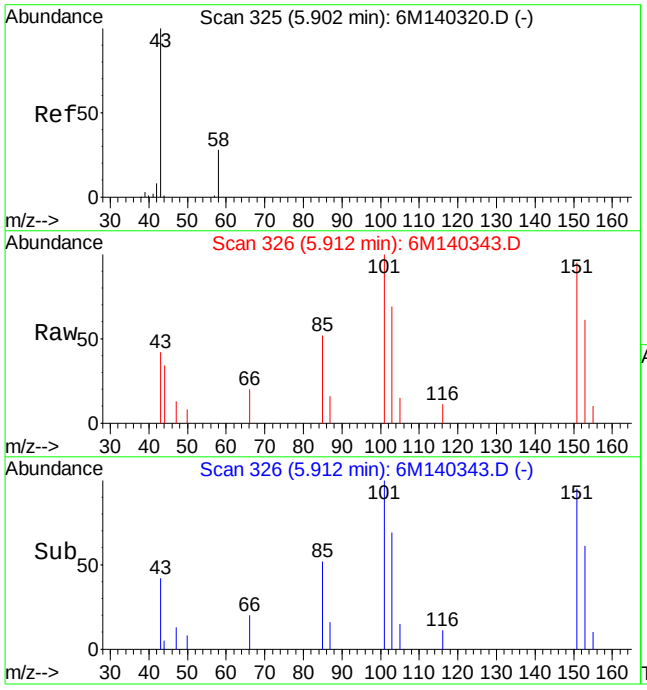

#13
Acetone
Concen: 2.14 ug/L
RT: 5.91 min Scan# 326
Delta R.T. 0.01 min
Lab File: 6M140343.D
Acq: 1 Jul 2016 19:05

Tgt Ion: 43 Resp: 4072

Ion	Ratio	Lower	Upper
43	100		
58	16.7	16.4	38.2

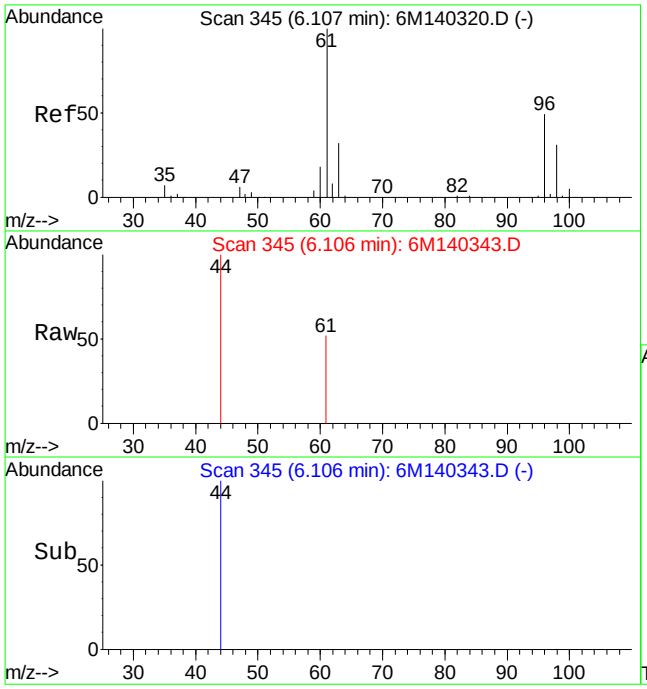

#14
1,1-Dichloroethene
Concen: 0.12 ug/L
RT: 6.11 min Scan# 345
Delta R.T. 0.01 min
Lab File: 6M140343.D
Acq: 1 Jul 2016 19:05

Tgt Ion: 61 Resp: 1371

Ion	Ratio	Lower	Upper
61	100		
96	0.0	32.0	74.6#

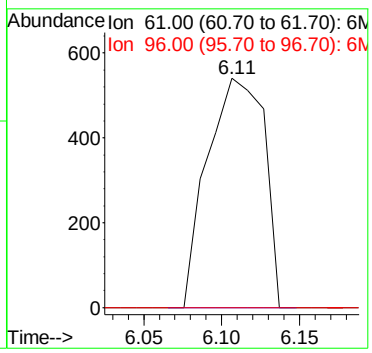

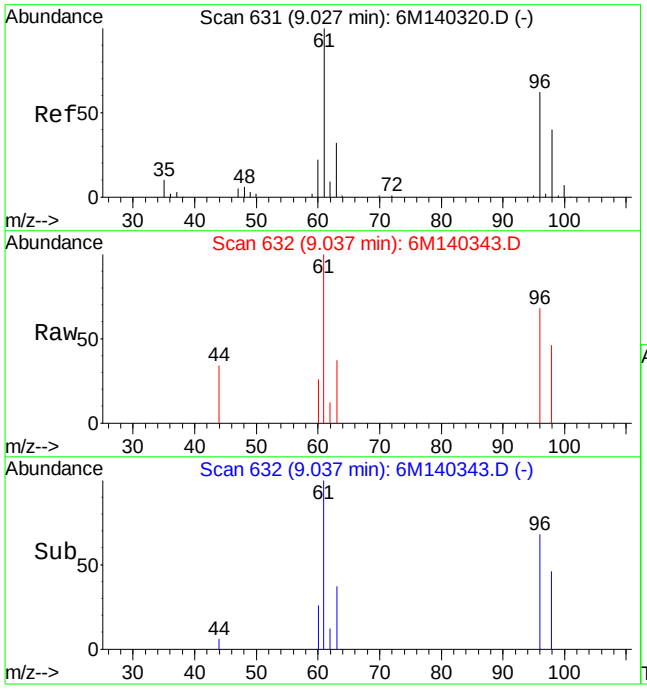

#32
cis-1,2-Dichloroethene
Concen: 0.70 ug/L
RT: 9.04 min Scan# 632
Delta R.T. 0.01 min
Lab File: 6M140343.D
Acq: 1 Jul 2016 19:05

Tgt Ion: 96 Resp: 4612

Ion	Ratio	Lower	Upper
96	100		
61	169.7	89.2	208.2

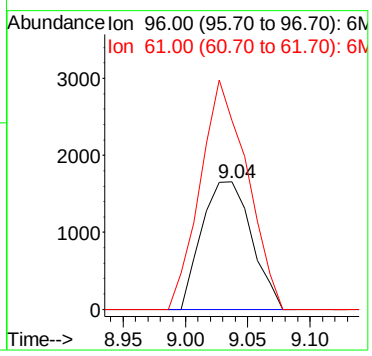

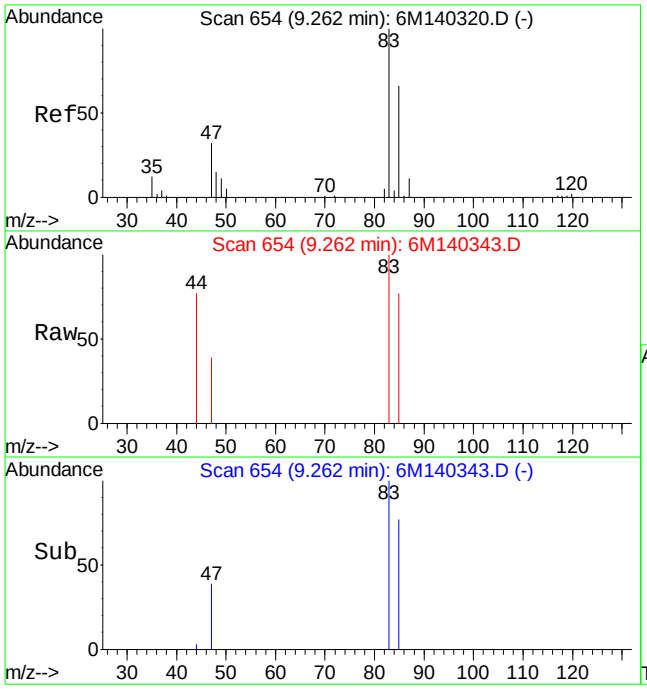

#33
Chloroform
Concen: 0.28 ug/L
RT: 9.26 min Scan# 654
Delta R.T. -0.00 min
Lab File: 6M140343.D
Acq: 1 Jul 2016 19:05

Tgt Ion: 83 Resp: 3186

Ion	Ratio	Lower	Upper
83	100		
85	64.1	39.0	91.0
47	14.6	18.5	43.1#

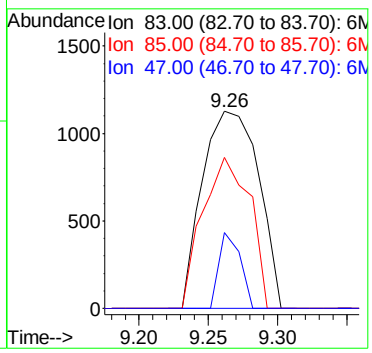

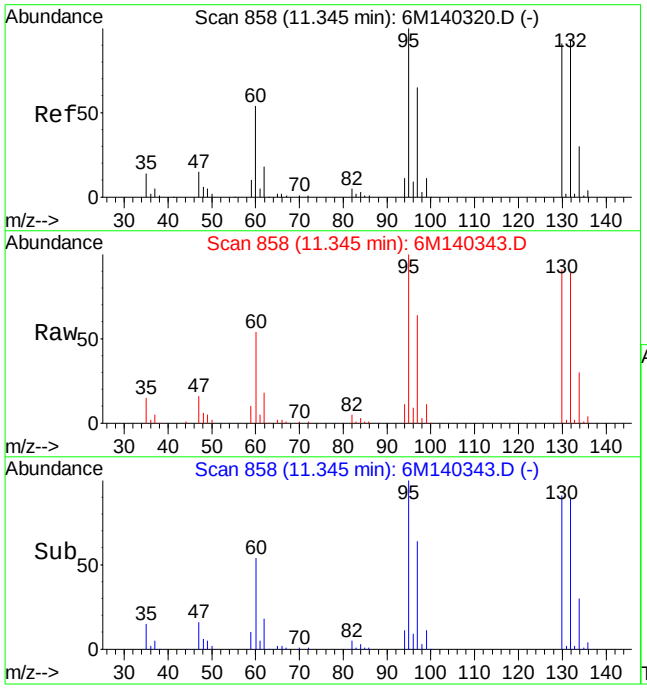

#47
Trichloroethene
Concen: 46.26 ug/L
RT: 11.34 min Scan# 858
Delta R.T. 0.01 min
Lab File: 6M140343.D
Acq: 1 Jul 2016 19:05

Tgt Ion:130 Resp: 282598

Ion	Ratio	Lower	Upper
130	100		
60	60.7	32.0	74.6

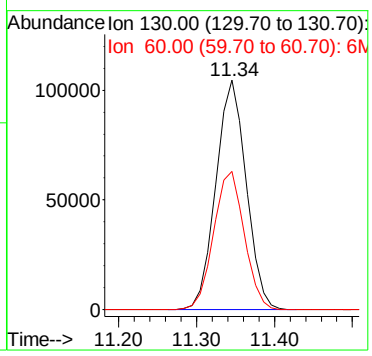

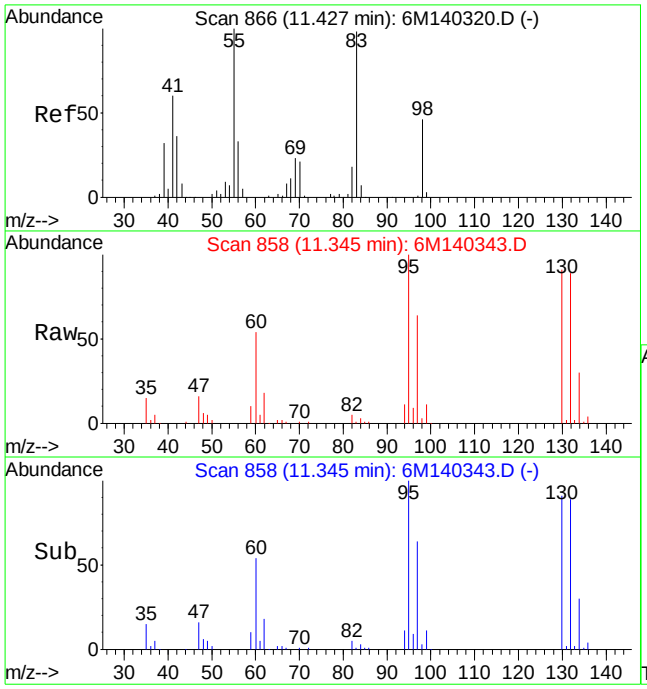

#48
Methylcyclohexane
Concen: 0.40 ug/L
RT: 11.34 min Scan# 858
Delta R.T. -0.08 min
Lab File: 6M140343.D
Acq: 1 Jul 2016 19:05

Tgt Ion: 83 Resp: 3860

Ion	Ratio	Lower	Upper
83	100		
55	0.0	56.3	131.3#
98	205.5	28.4	66.4#

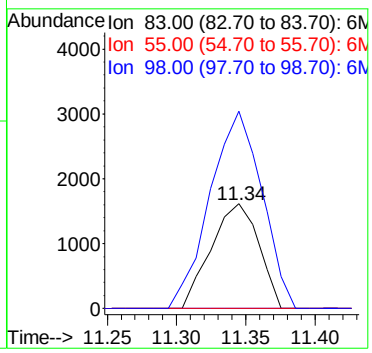

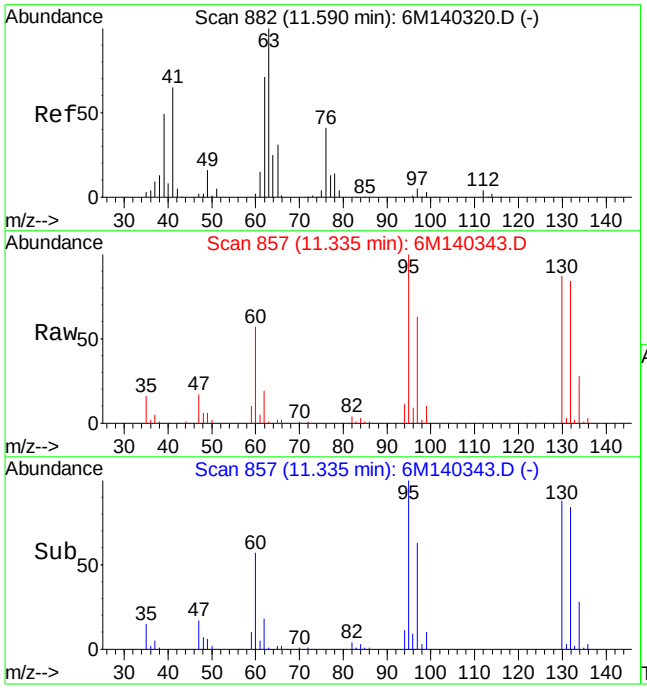

#49
1,2-Dichloropropane
Concen: 0.12 ug/L
RT: 11.33 min Scan# 857
Delta R.T. -0.26 min
Lab File: 6M140343.D
Acq: 1 Jul 2016 19:05

Tgt Ion: 63 Resp: 884

Ion	Ratio	Lower	Upper
63	100		
76	0.0	24.2	56.4#

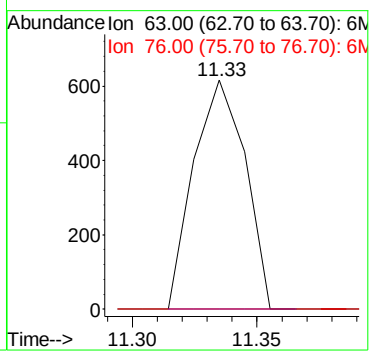

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140336.D Vial: 9
Acq On : 1 Jul 2016 15:19 Operator: TMB
Sample : L16061227-09 A TB 826-SPE Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 02 10:33:41 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	638332	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	446539	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	227983	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	157948	24.3890 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.56%		
43) 1,2-Dichloroethane-d4	10.31	65	196609	24.0486 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.20%		
58) Toluene-d8	13.04	98	550198	25.0216 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.08%		
80) p-Bromofluorobenzene	17.02	95	228425	25.5834 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.32%		

Target Compounds

					Qvalue
13) Acetone	5.90	43	1427	0.6978 ug/L #	48
29) 2-Butanone	8.55	43	3662	1.1697 ug/L #	57
36) Tetrahydrofuran	9.56	42	3183	1.4577 ug/L #	66
100) Naphthalene	22.38	128	2285	0.1251 ug/L #	67

(#) = qualifier out of range (m) = manual integration
6M140336.D 8260WTR.M Sat Jul 02 10:33:44 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140336.D Vial: 9
Acq On : 1 Jul 2016 15:19 Operator: TMB
Sample : L16061227-09 A TB 826-SPE Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 2 10:33 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

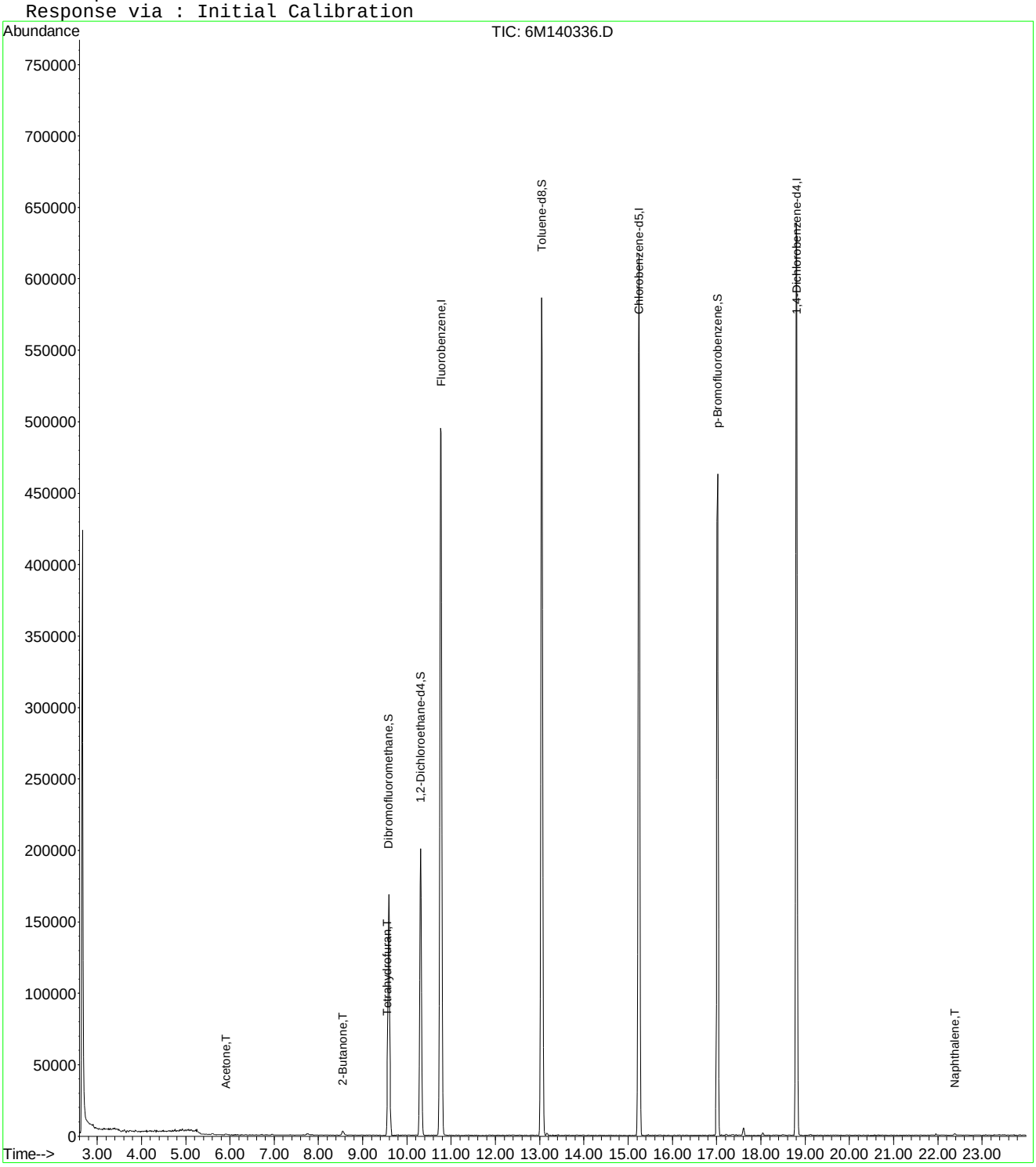

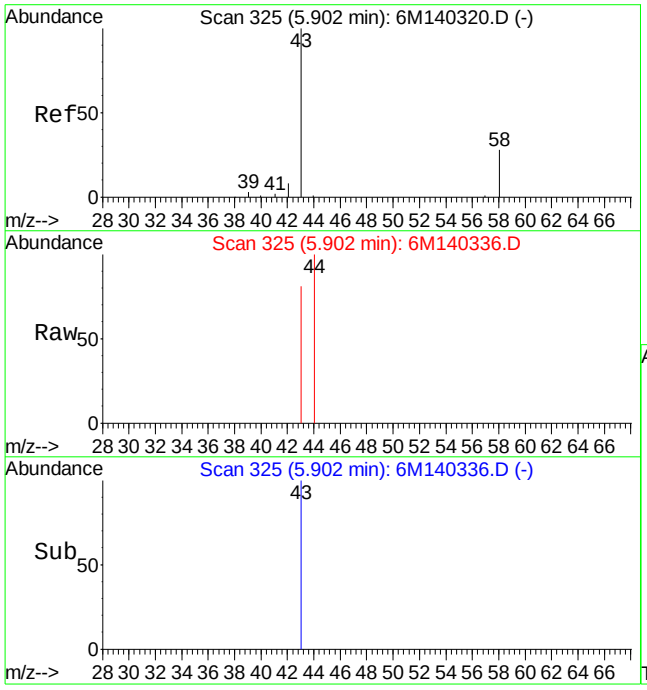

#13
Acetone
Concen: 0.70 ug/L
RT: 5.90 min Scan# 325
Delta R.T. -0.00 min
Lab File: 6M140336.D
Acq: 1 Jul 2016 15:19

Tgt Ion: 43 Resp: 1427

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

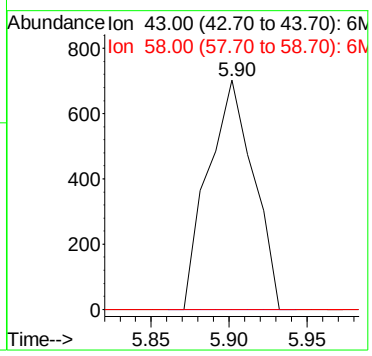

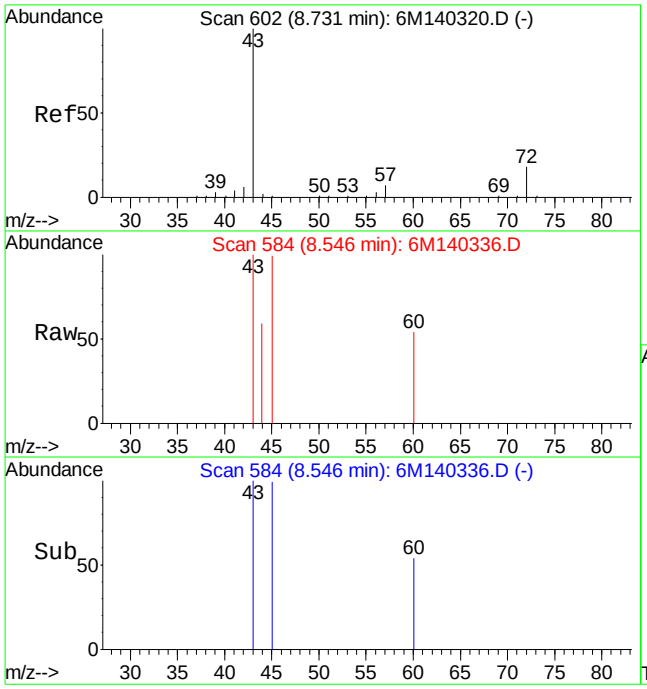

#29
2-Butanone
Concen: 1.17 ug/L
RT: 8.55 min Scan# 584
Delta R.T. -0.19 min
Lab File: 6M140336.D
Acq: 1 Jul 2016 15:19

Tgt Ion: 43 Resp: 3662

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.9	27.9#

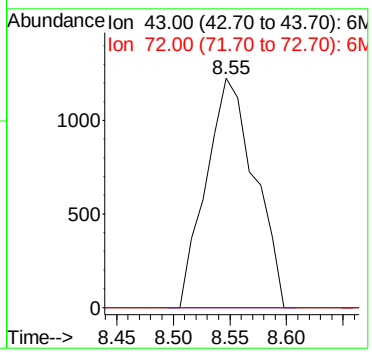

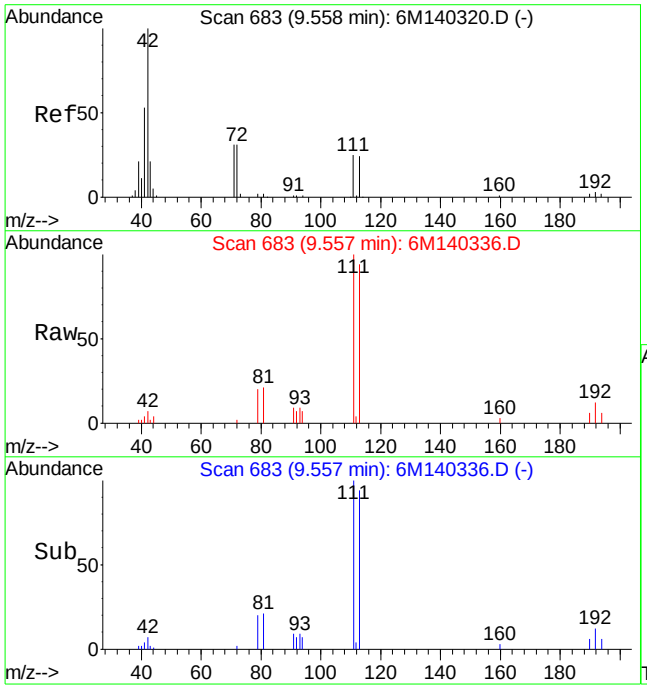

#36
Tetrahydrofuran
Concen: 1.46 ug/L
RT: 9.56 min Scan# 683
Delta R.T. -0.00 min
Lab File: 6M140336.D
Acq: 1 Jul 2016 15:19

Tgt Ion: 42 Resp: 3183

Ion	Ratio	Lower	Upper
42	100		
72	22.2	20.8	48.4
71	6.9	19.9	46.5#

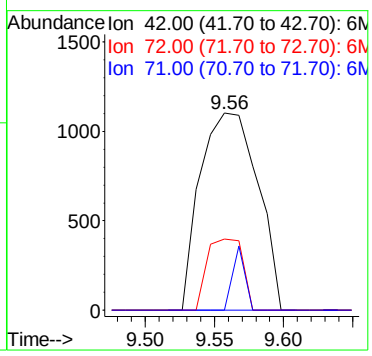

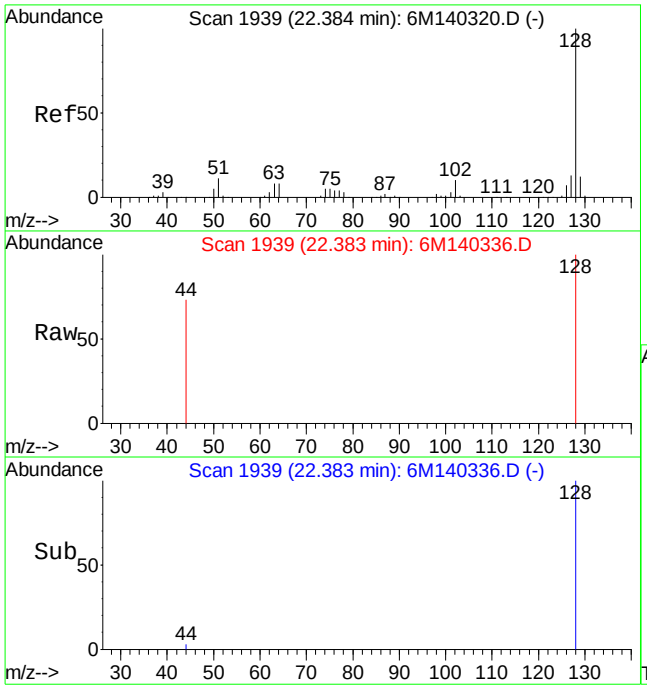

#100
Naphthalene
Concen: 0.13 ug/L
RT: 22.38 min Scan# 1939
Delta R.T. -0.00 min
Lab File: 6M140336.D
Acq: 1 Jul 2016 15:19

Tgt Ion:128 Resp: 2285

Ion	Ratio	Lower	Upper
128	100		
127	0.0	7.8	18.2#

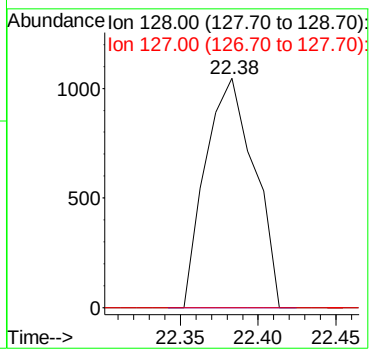

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:46 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	611118	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	473080	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	253718	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.40	111	173671	27.7488 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.00%		
43) 1,2-Dichloroethane-d4	11.12	65	203570	26.8000 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.20%		
58) Toluene-d8	13.86	98	554047	26.0139 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.04%		
80) p-Bromofluorobenzene	17.85	95	229998	27.1525 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 108.60%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	1325	0.6992 ug/L #	46
20) Carbon Disulfide	7.54	76	18747	0.9622 ug/L #	39
29) 2-Butanone	9.31	43	1188	0.4247 ug/L #	1
36) Tetrahydrofuran	10.36	42	2769	1.5196 ug/L #	58
60) Ethyl Methacrylate	13.87	69	899	0.1270 ug/L #	1

(#) = qualifier out of range (m) = manual integration
6M138751.D 8260WTR.M Mon Apr 25 09:22:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

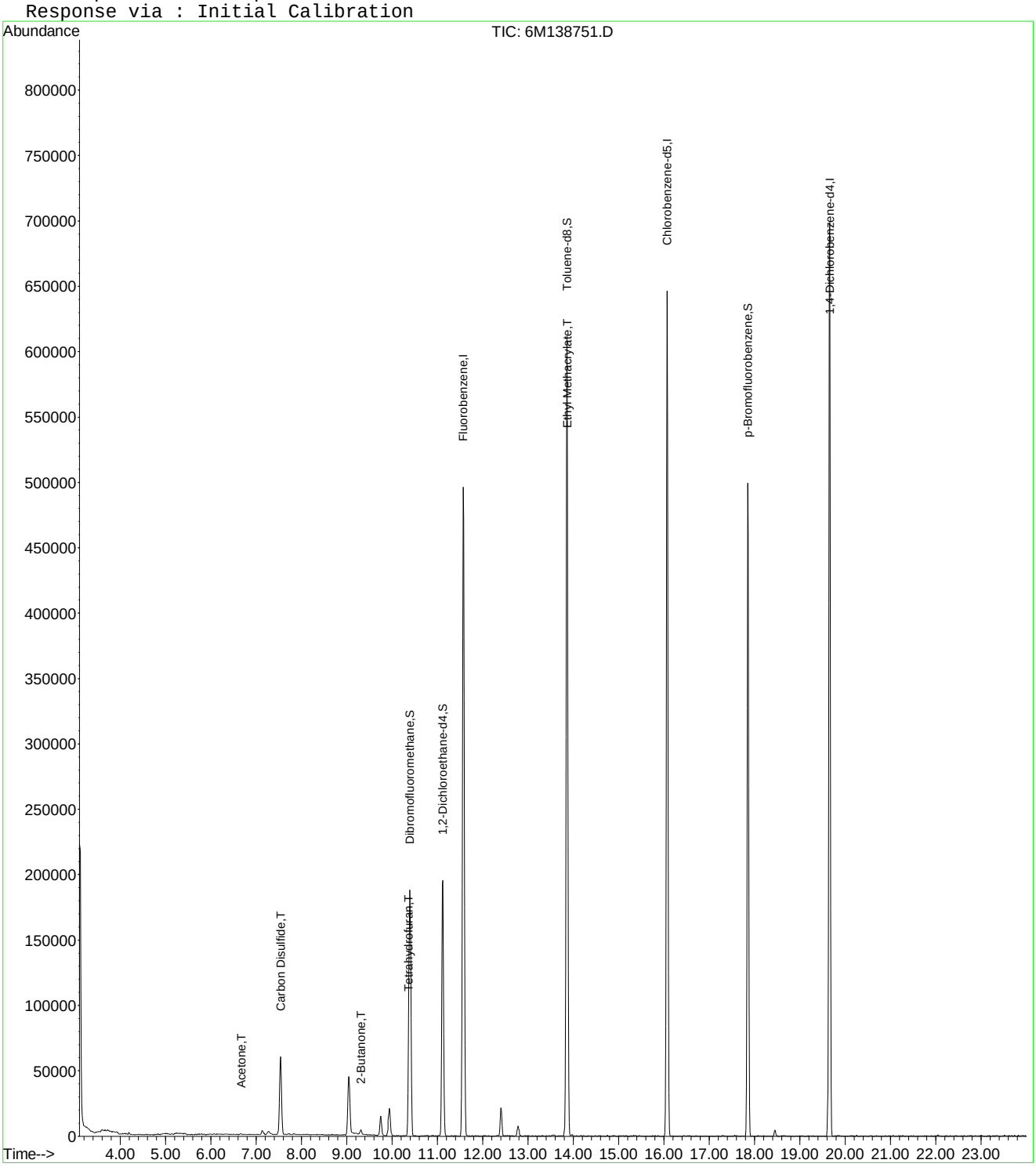

6M138751.D 8260WTR.M Mon Apr 25 09:22:46 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:52 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	611118	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	473080	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	253718	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.13	41	4366	3.7209 ug/L	76
3) 3-Chloro-1-propene	7.54	41	69268	4.2301 ug/L	92
4) 2-Chloro-1,3-butadiene	9.04	53	50753	3.6002 ug/L	85
5) Ethyl Acetate	9.75	43	28042	4.3499 ug/L #	90
6) Methacrylonitrile	9.94	67	8721	3.5173 ug/L #	55
7) Isobutyl Alcohol	9.94	43	1233	3.4767 ug/L #	85
9) Methyl methacrylate	12.40	41	19474	3.0338 ug/L	79
10) 2-Nitropropane	12.78	43	7076	3.7392 ug/L	93
13) Cyclohexanone	17.57	55	447	0.5159 ug/L #	25

(#) = qualifier out of range (m) = manual integration
6M138751.D A9FOOWT.M Mon Apr 25 15:45:52 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

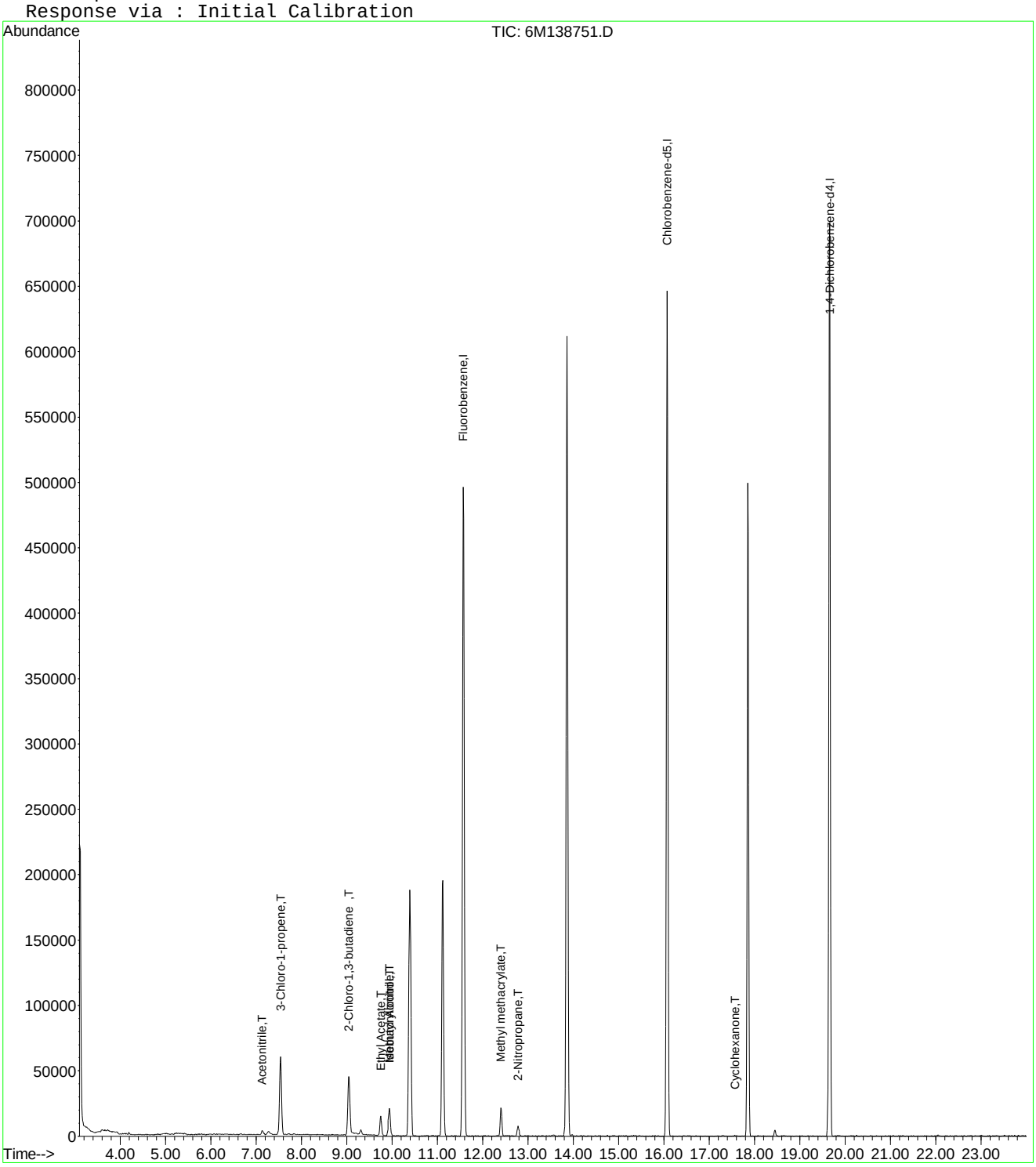

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:56 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	611118	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	473080	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	253718	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.13	41	4366	4.7698 ug/L	76
3) 3-Chloro-1-propene	7.54	41	69268	4.5408 ug/L	92
4) 2-Chloro-1,3-butadiene	9.04	53	50753	3.8775 ug/L	85
5) Ethyl Acetate	9.75	43	28042	4.2792 ug/L #	90
6) Methacrylonitrile	9.94	67	8721	3.8601 ug/L #	55
7) Isobutyl Alcohol	9.94	43	1233	5.9076 ug/L #	85
9) Methyl methacrylate	12.40	41	19474	3.5356 ug/L	79
10) 2-Nitropropane	12.78	43	7076	3.4543 ug/L	93
13) Cyclohexanone	17.57	55	447	1.4133 ug/L #	25

(#) = qualifier out of range (m) = manual integration
6M138751.D A9FOOWT.M Wed Apr 27 16:04:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

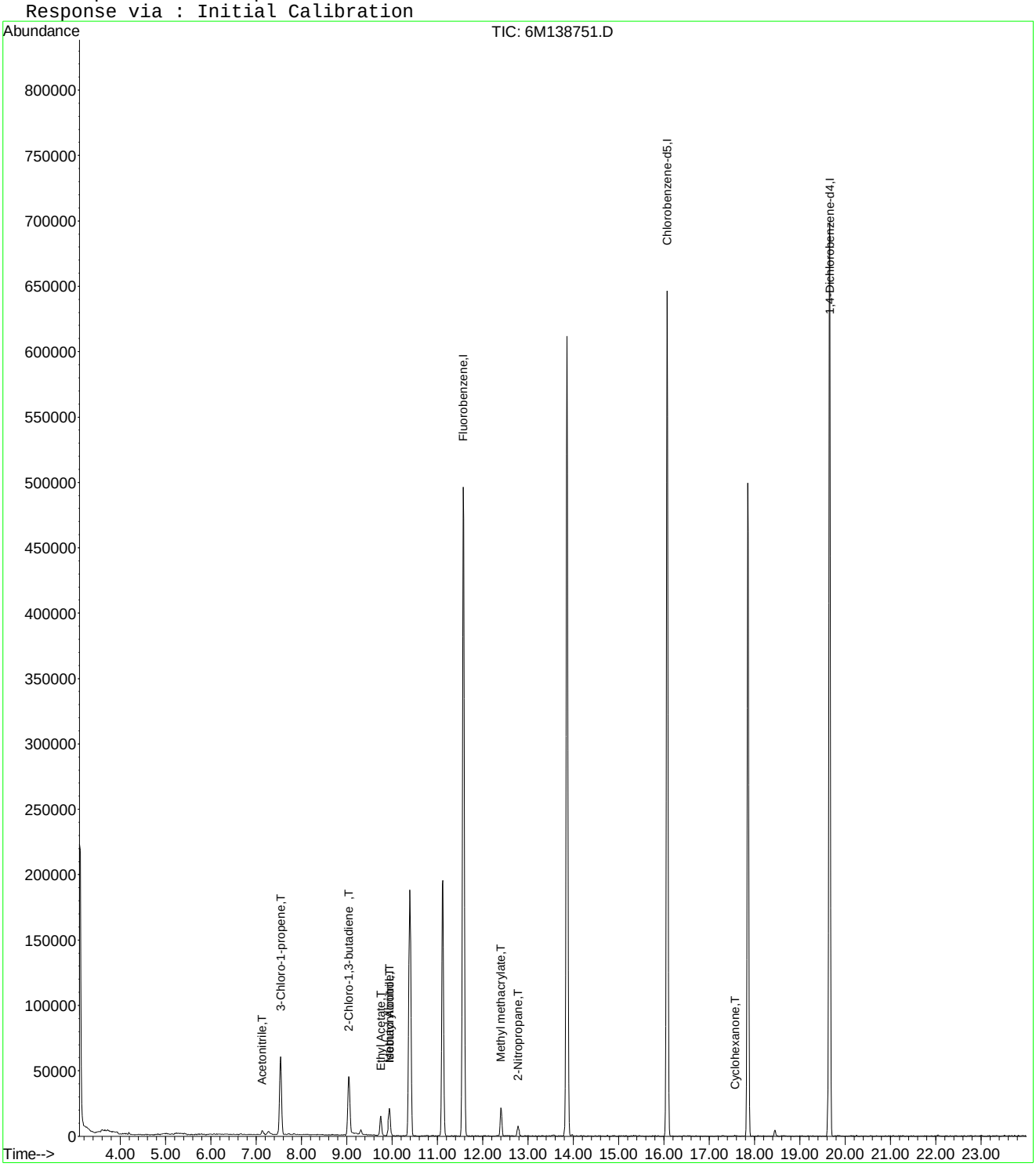

6M138751.D A9FOOWT.M Wed Apr 27 16:04:56 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	5.0000	4.7698	4.6	100	0.00
3	T	3-Chloro-1-propene	5.0000	4.5408	9.2	100	0.00
4	T	2-Chloro-1,3-butadiene	5.0000	3.8775	22.5	100	0.00
5	T	Ethyl Acetate	5.0000	4.2792	14.4	100	0.00
6	T	Methacrylonitrile	5.0000	3.8601	22.8	100	0.00
7	T	Isobutyl Alcohol	-1.0000	5.9076	0.0	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.99#
9	T	Methyl methacrylate	5.0000	3.5356	29.3	100	0.00
10	T	2-Nitropropane	-1.0000	3.4543	0.0	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	1.4133	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138751.D A9FOOWT.M Wed Apr 27 16:04:12 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:48 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	599043	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	463005	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	248475	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	171577	27.9669 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.88%		
43) 1,2-Dichloroethane-d4	11.12	65	207390	27.8532 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.40%		
58) Toluene-d8	13.86	98	547786	26.2796 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.12%		
80) p-Bromofluorobenzene	17.85	95	228171	27.5052 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 110.04%		

Target Compounds					Qvalue
13) Acetone	6.67	43	2739	1.4745 ug/L #	59
20) Carbon Disulfide	7.54	76	81493	4.2668 ug/L #	36
27) 1,1-Dichloroethane	9.05	63	3411	0.2688 ug/L #	42
29) 2-Butanone	9.31	43	3879	1.4148 ug/L #	1
36) Tetrahydrofuran	10.37	42	3350	1.8754 ug/L #	62
60) Ethyl Methacrylate	13.86	69	1183	0.1708 ug/L #	27

(#) = qualifier out of range (m) = manual integration
6M138752.D 8260WTR.M Mon Apr 25 09:22:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

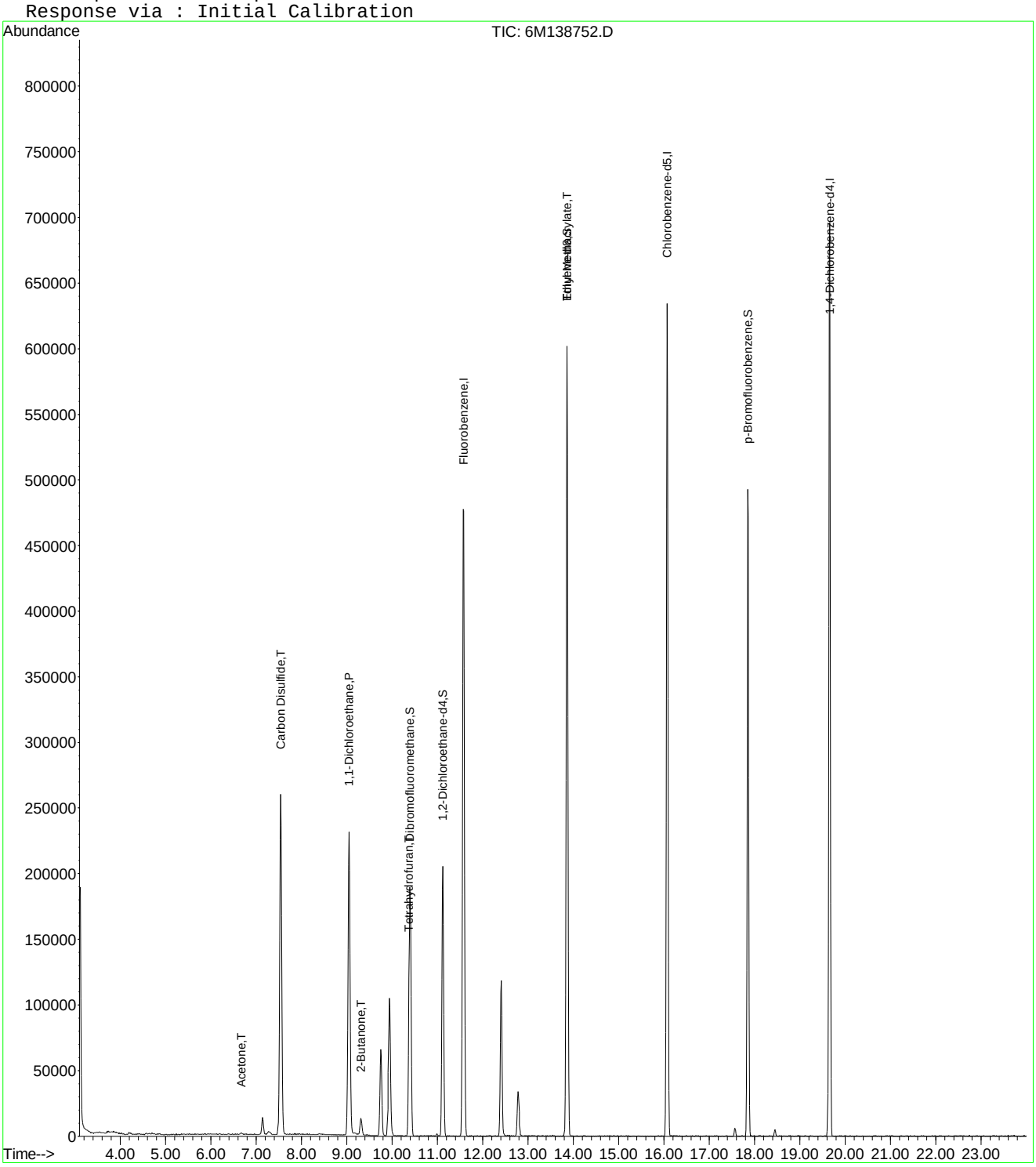

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:54 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	599043	25.00 ug/L	-0.02
11) Chlorobenzene-d5	16.07	117	463005	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	248475	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	17741	15.4242 ug/L	95
3) 3-Chloro-1-propene	7.54	41	297686	18.5457 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	242962	17.5823 ug/L	84
5) Ethyl Acetate	9.75	43	124111	19.6403 ug/L	93
6) Methacrylonitrile	9.93	67	42708	17.5719 ug/L #	59
7) Isobutyl Alcohol	9.95	43	7968	22.9203 ug/L #	85
8) 1-Butanol	10.98	41	982	6.5662 ug/L #	52
9) Methyl methacrylate	12.41	41	95824	15.2291 ug/L	81
10) 2-Nitropropane	12.78	43	34207	18.4403 ug/L	92
13) Cyclohexanone	17.57	55	4053	4.7763 ug/L	81

(#) = qualifier out of range (m) = manual integration
6M138752.D A9FOOWT.M Mon Apr 25 15:45:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

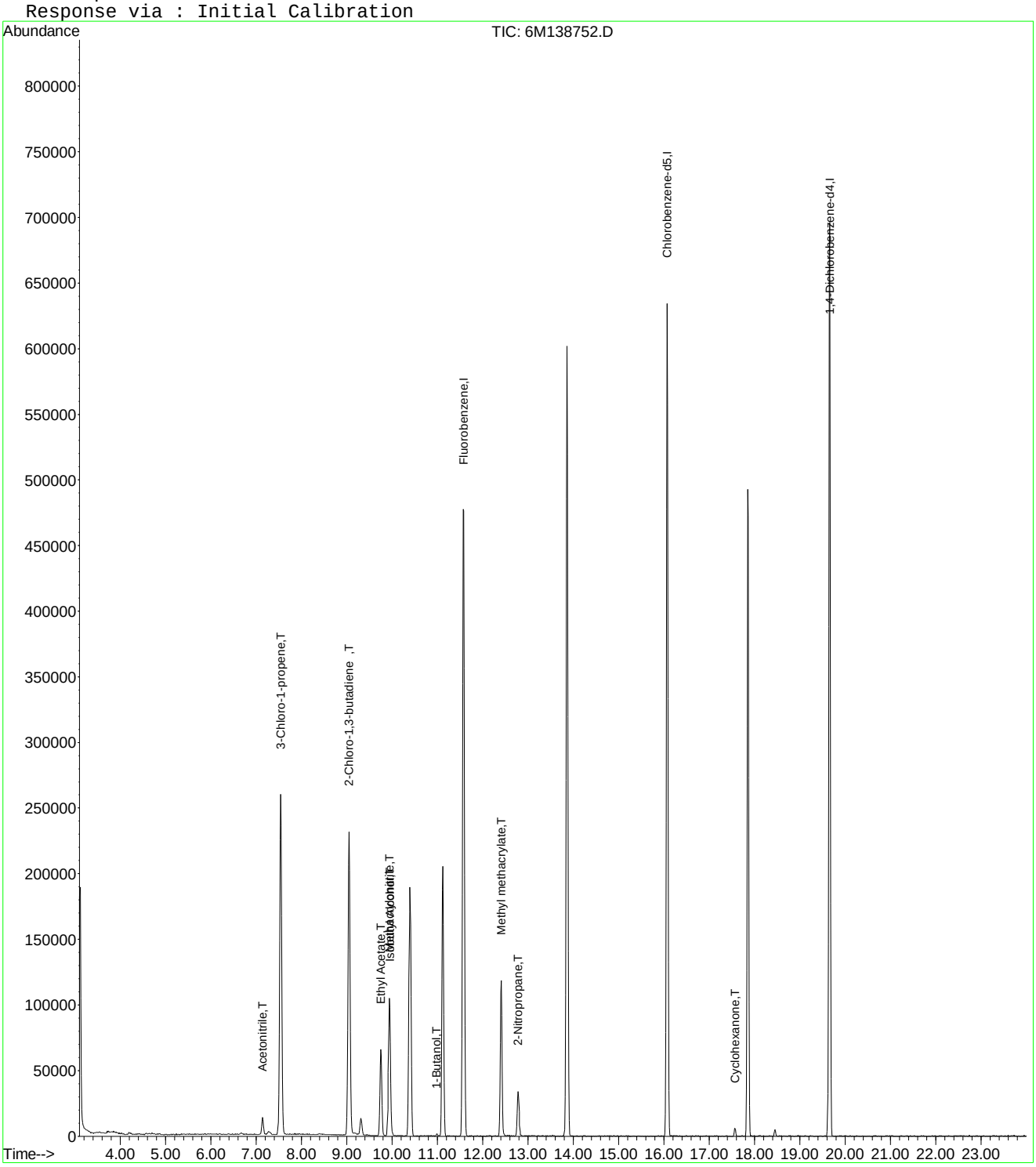

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:58 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	599043	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	463005	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	248475	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	17741	19.7725 ug/L	95
3) 3-Chloro-1-propene	7.54	41	297686	19.9080 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	242962	18.9362 ug/L	84
5) Ethyl Acetate	9.75	43	124111	19.3209 ug/L	93
6) Methacrylonitrile	9.93	67	42708	19.2846 ug/L #	59
7) Isobutyl Alcohol	9.95	43	7968	38.9462 ug/L #	85
9) Methyl methacrylate	12.41	41	95824	17.7480 ug/L	81
10) 2-Nitropropane	12.78	43	34207	17.0355 ug/L	92
13) Cyclohexanone	17.57	55	4053	13.0852 ug/L	81

(#) = qualifier out of range (m) = manual integration
6M138752.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

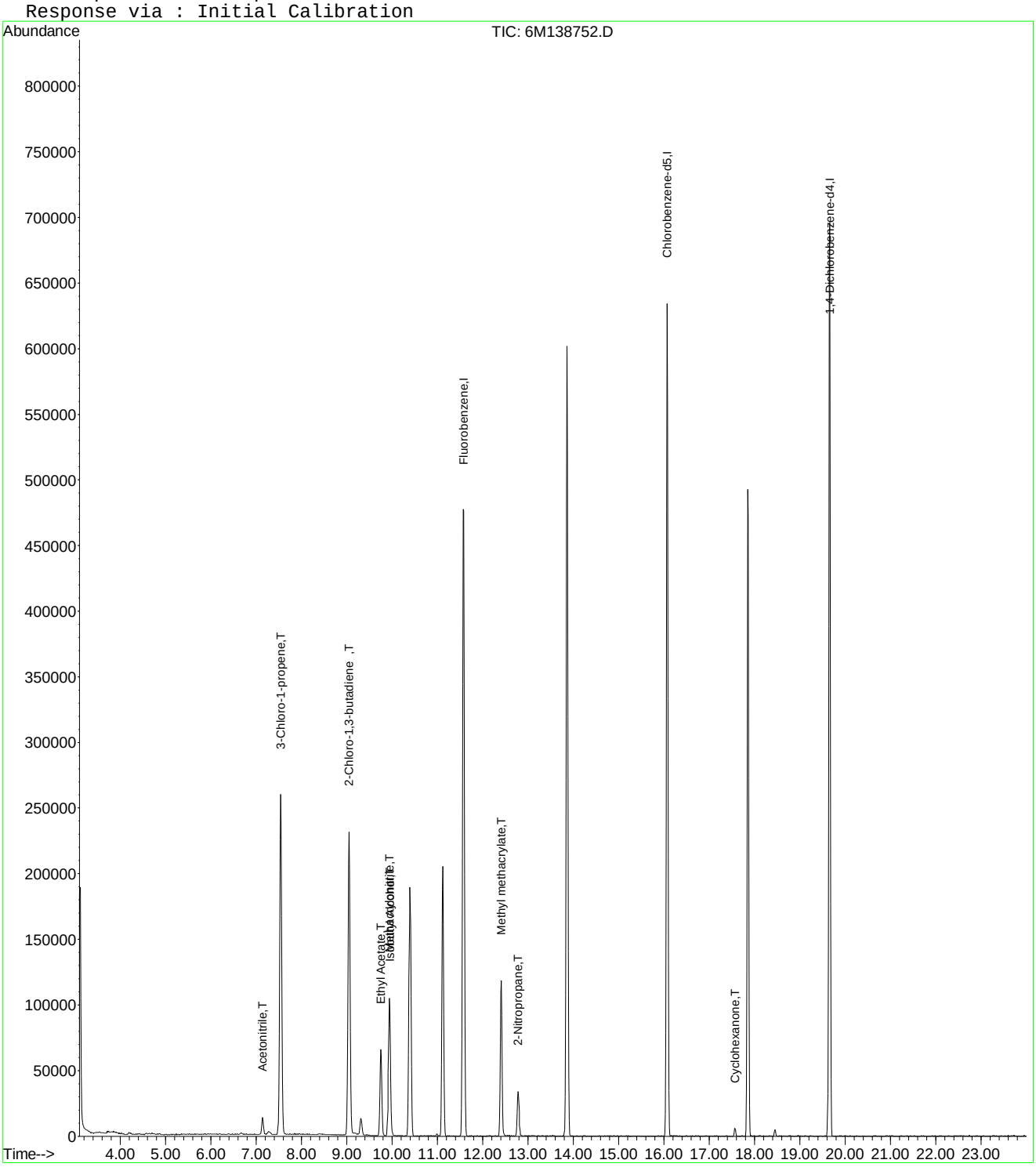

6M138752.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	19.7724	1.1	100	0.00
3	T	3-Chloro-1-propene	20.0000	19.9080	0.5	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	18.9362	5.3	100	0.00
5	T	Ethyl Acetate	20.0000	19.3209	3.4	100	0.00
6	T	Methacrylonitrile	20.0000	19.2846	3.6	100	0.00
7	T	Isobutyl Alcohol	40.0000	38.9462	2.6	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	20.0000	17.7480	11.3	100	0.00
10	T	2-Nitropropane	-1.0000	17.0355	0.0	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	13.0852	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138752.D A9FOOWT.M Wed Apr 27 16:04:26 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:48 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	604736	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	468574	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	254472	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.40	111	172256	27.8132 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.24%		
43) 1,2-Dichloroethane-d4	11.12	65	208744	27.7711 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.08%		
58) Toluene-d8	13.86	98	553191	26.2235 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.88%		
80) p-Bromofluorobenzene	17.85	95	239542	28.1954 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 112.80%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	3732	1.9901 ug/L #	57
20) Carbon Disulfide	7.54	76	220780	11.4508 ug/L #	36
26) Vinyl Acetate	9.04	43	2704	0.2791 ug/L #	8
27) 1,1-Dichloroethane	9.05	63	9803	0.7652 ug/L #	42
28) Ethyl-Tert-Butyl ether	9.31	59	152978	7.3579 ug/L #	39
29) 2-Butanone	9.53	43	660	0.2385 ug/L #	52
36) Tetrahydrofuran	10.37	42	3746	2.0774 ug/L #	62
60) Ethyl Methacrylate	13.86	69	1423	0.2030 ug/L #	9

(#) = qualifier out of range (m) = manual integration
6M138753.D 8260WTR.M Mon Apr 25 09:22:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

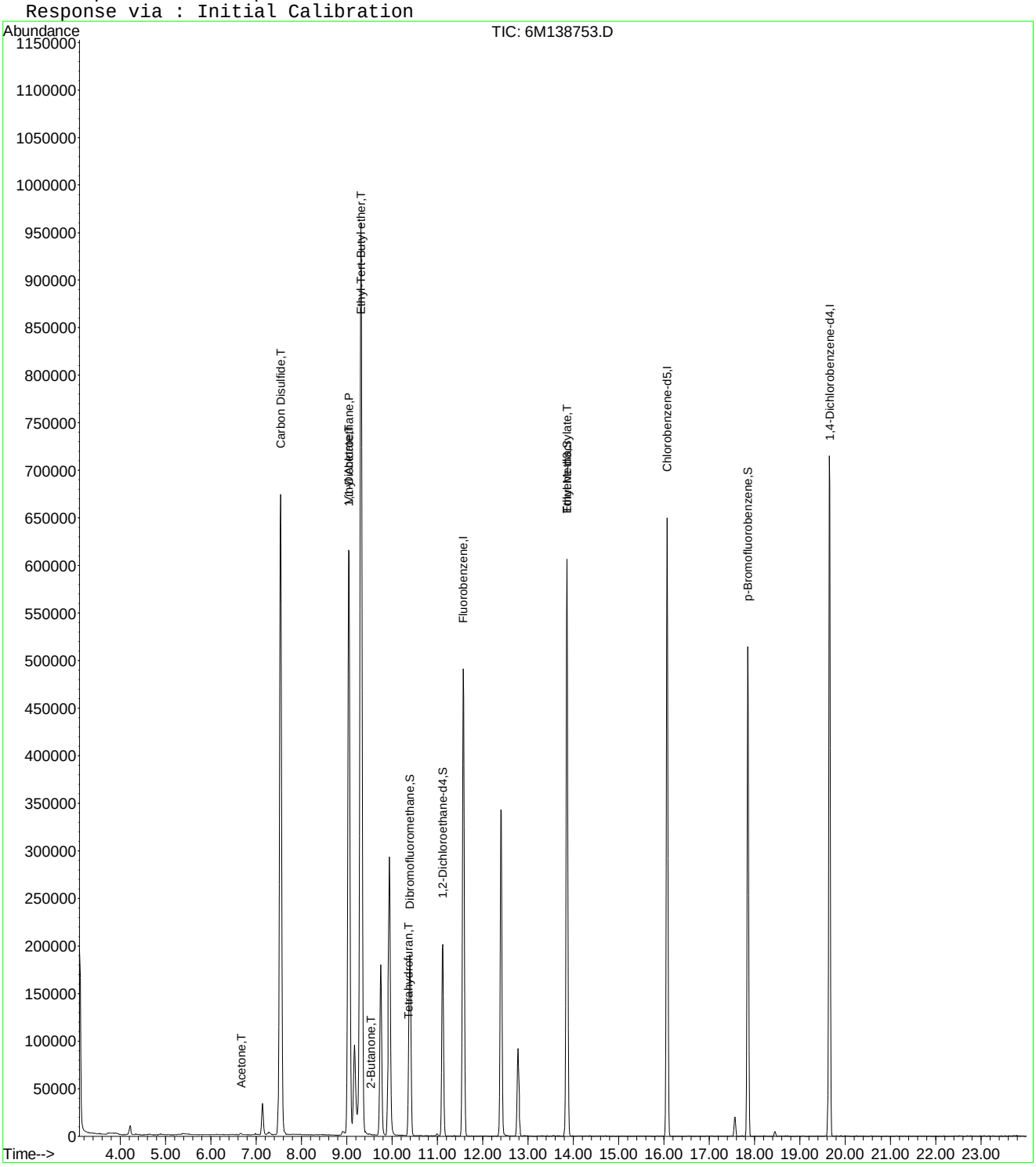

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:55 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	604736	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	468574	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	254472	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	46802	40.3072 ug/L	94
3) 3-Chloro-1-propene	7.54	41	793114	48.9454 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	674471	48.3496 ug/L	83
5) Ethyl Acetate	9.75	43	336975	52.8234 ug/L	93
6) Methacrylonitrile	9.94	67	119267	48.6097 ug/L #	62
7) Isobutyl Alcohol	9.95	43	20135	57.3741 ug/L #	99
8) 1-Butanol	10.98	41	1474	9.7632 ug/L	77
9) Methyl methacrylate	12.40	41	279157	43.9482 ug/L	81
10) 2-Nitropropane	12.79	43	95327	50.9052 ug/L	94
13) Cyclohexanone	17.56	55	13241	15.2363 ug/L	91

(#) = qualifier out of range (m) = manual integration
6M138753.D A9FOOWT.M Mon Apr 25 15:45:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

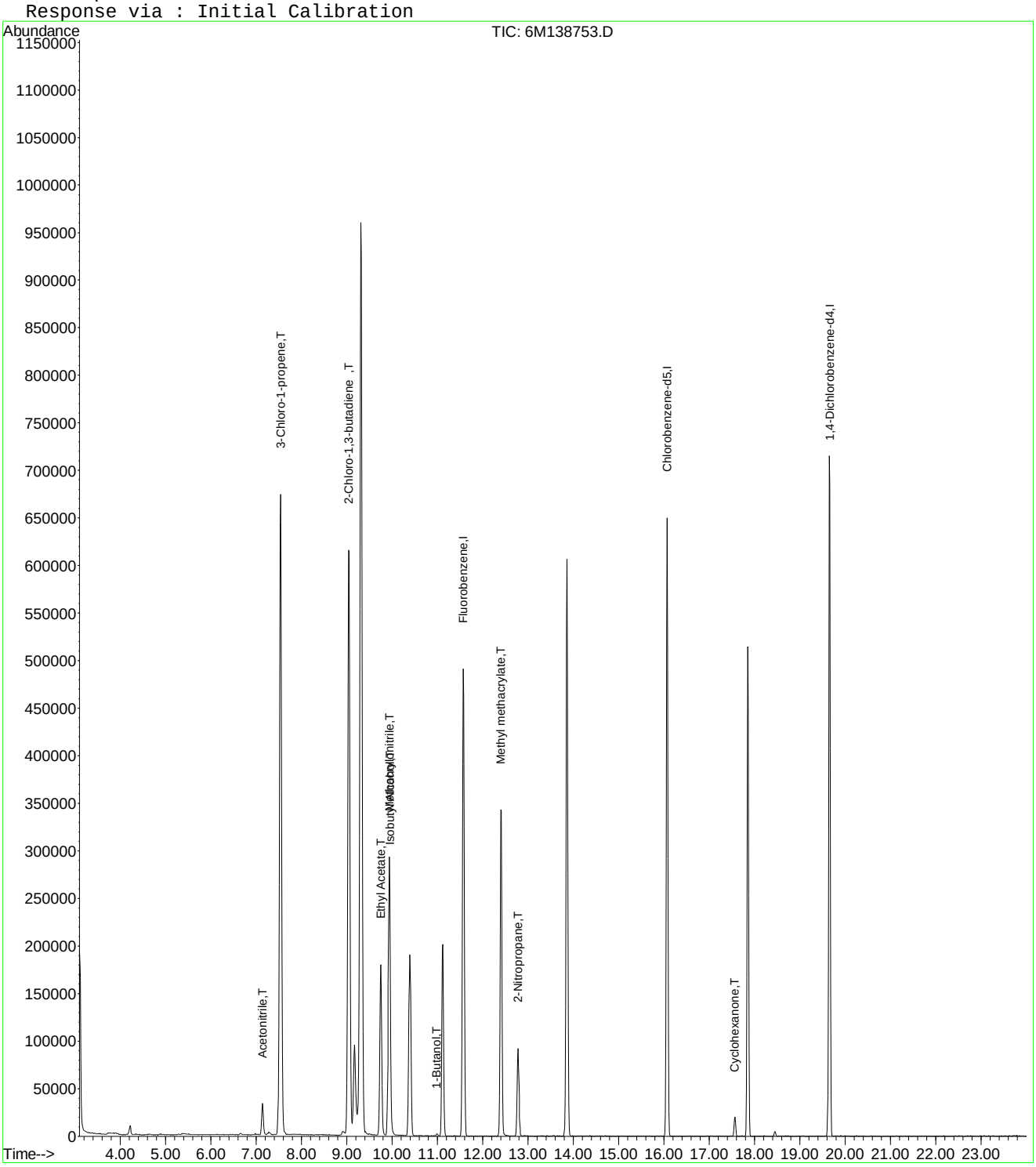

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:59 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	604736	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	468574	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	254472	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	46802	51.6701 ug/L	94
3) 3-Chloro-1-propene	7.54	41	793114	52.5409 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	674471	52.0726 ug/L	83
5) Ethyl Acetate	9.75	43	336975	51.9646 ug/L	93
6) Methacrylonitrile	9.94	67	119267	53.3476 ug/L #	62
7) Isobutyl Alcohol	9.95	43	20135	97.4900 ug/L #	99
9) Methyl methacrylate	12.40	41	279157	51.2171 ug/L	81
10) 2-Nitropropane	12.79	43	95327	47.0270 ug/L	94
13) Cyclohexanone	17.56	55	13241	41.7415 ug/L	91

(#) = qualifier out of range (m) = manual integration
6M138753.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

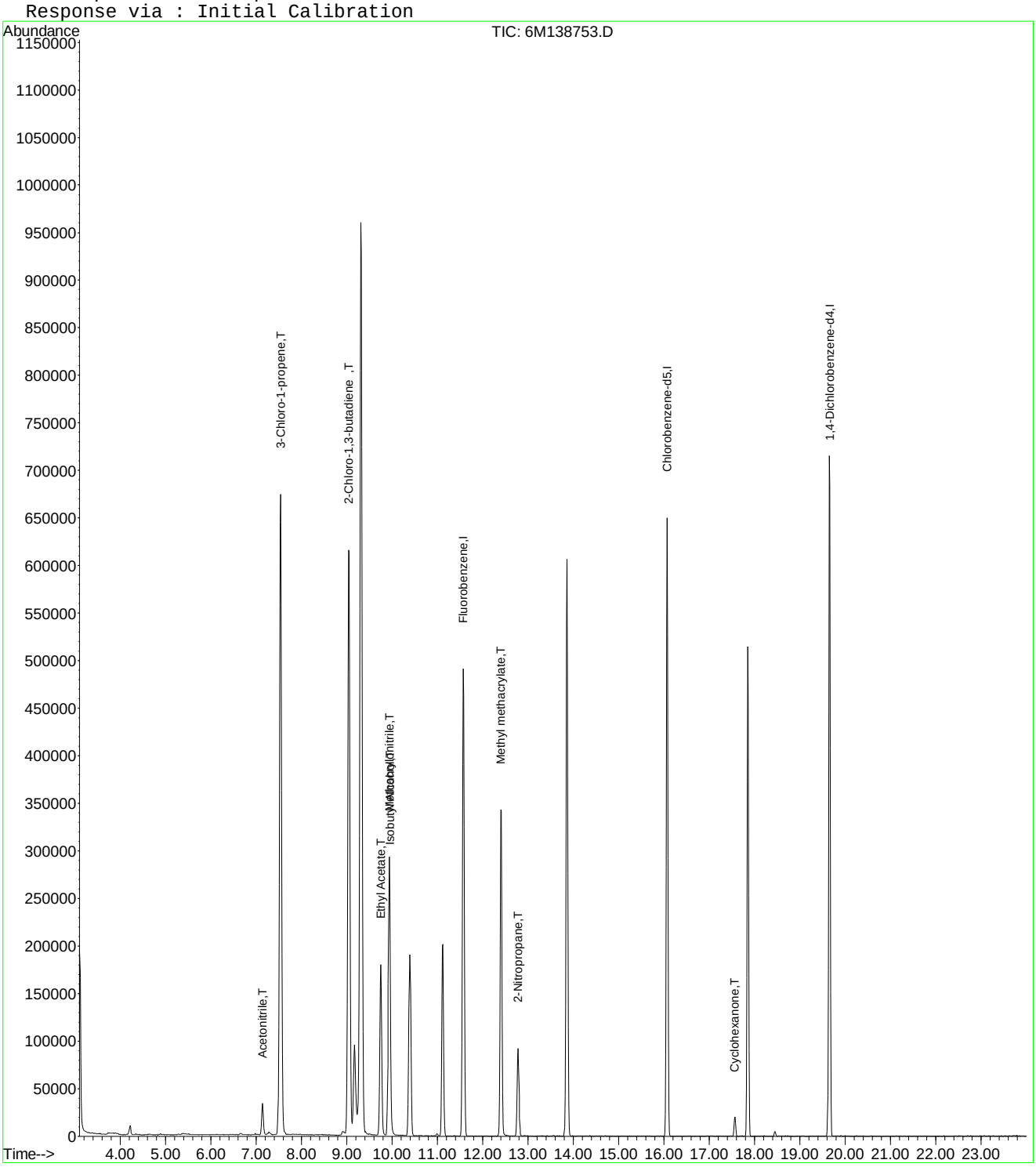

6M138753.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	51.6701	-3.3	100	0.00
3	T	3-Chloro-1-propene	50.0000	52.5409	-5.1	100	0.00
4	T	2-Chloro-1,3-butadiene	50.0000	52.0726	-4.1	100	0.00
5	T	Ethyl Acetate	50.0000	51.9646	-3.9	100	0.00
6	T	Methacrylonitrile	50.0000	53.3476	-6.7	100	0.00
7	T	Isobutyl Alcohol	100.0000	97.4900	2.5	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	50.0000	51.2171	-2.4	100	0.00
10	T	2-Nitropropane	50.0000	47.0270	5.9	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	50.0000	41.7415	16.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138753.D A9FOOWT.M Wed Apr 27 16:04:38 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:49 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	599121	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	467316	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	255798	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	169577	27.6373 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.56%		
43) 1,2-Dichloroethane-d4	11.12	65	210119	28.2161 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.88%		
58) Toluene-d8	13.86	98	550953	26.1877 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.76%		
80) p-Bromofluorobenzene	17.85	95	239480	28.0420 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 112.16%		

Target Compounds

					Qvalue
13) Acetone	6.66	43	6960	3.7463 ug/L	82
16) Dimethyl Sulfide	7.15	62	732	0.1448 ug/L #	1
18) Methyl acetate	7.53	43	1419	0.2750 ug/L #	1
22) Methyl Tert Butyl Ether	7.96	73	2141	0.1320 ug/L #	72
27) 1,1-Dichloroethane	9.05	63	20725	1.6328 ug/L #	42
28) Ethyl-Tert-Butyl ether	9.31	59	76666	3.7220 ug/L #	39
29) 2-Butanone	9.53	43	1176	0.4289 ug/L #	52
34) 1-Bromopropane	10.00	122	702	0.6817 ug/L #	1
36) Tetrahydrofuran	10.35	42	4425	2.4769 ug/L #	60
48) Methylcyclohexane	12.41	83	1461	0.1681 ug/L #	1
60) Ethyl Methacrylate	13.87	69	1083	0.1549 ug/L #	1
79) 1,1,2,2-Tetrachloroethane	17.57	83	1910	0.3066 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138754.D 8260WTR.M Mon Apr 25 09:22:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

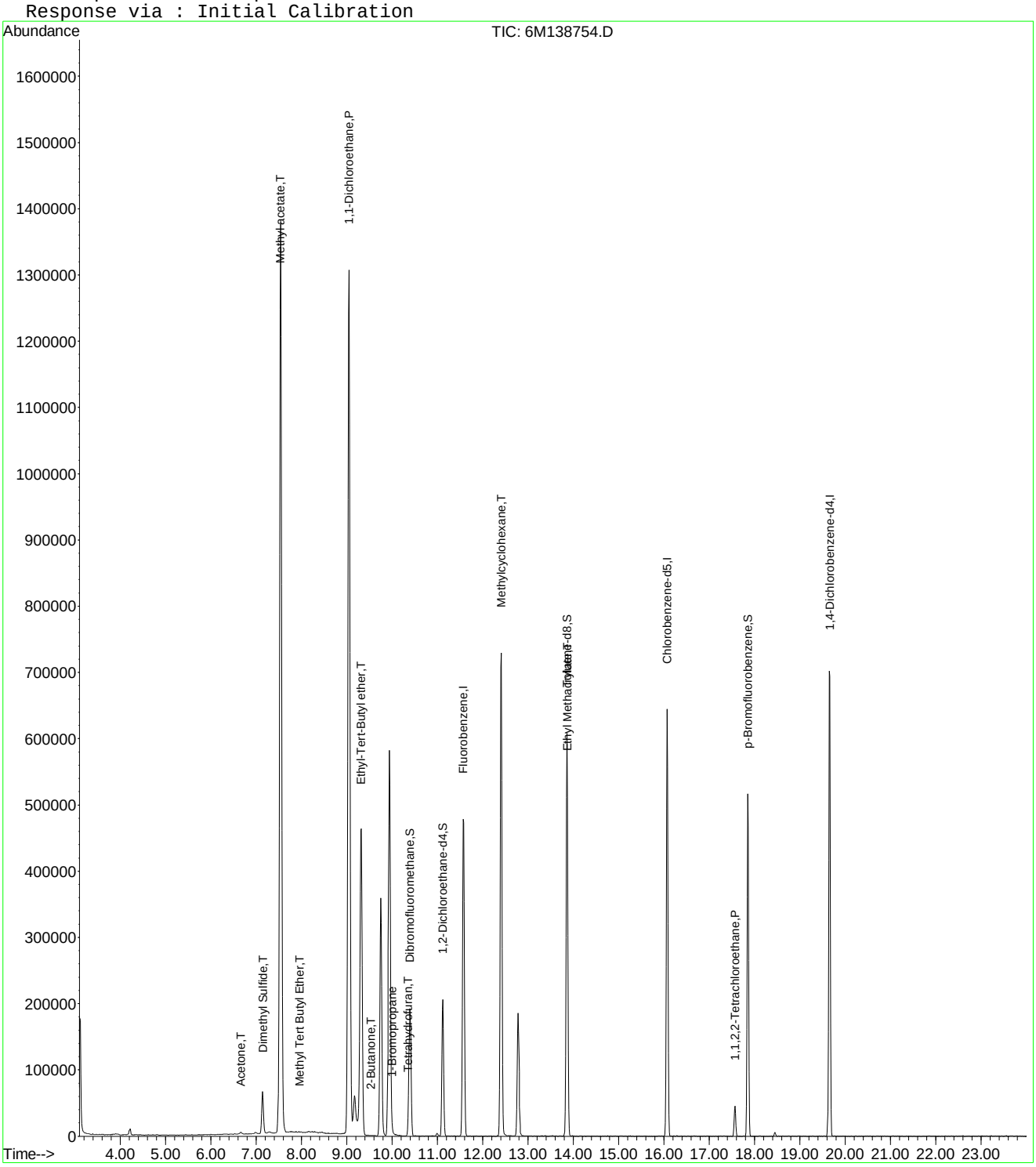

6M138754.D 8260WTR.M Mon Apr 25 09:22:50 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:57 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	599121	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	467316	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	255798	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	90880	79.0019 ug/L	95
3) 3-Chloro-1-propene	7.54	41	1610716	100.3335 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	1413663	102.2884 ug/L	83
5) Ethyl Acetate	9.75	43	673221	106.5217 ug/L	93
6) Methacrylonitrile	9.94	67	237219	97.5895 ug/L #	62
7) Isobutyl Alcohol	9.95	43	33897	97.4937 ug/L #	85
8) 1-Butanol	11.00	41	2978	19.9099 ug/L #	64
9) Methyl methacrylate	12.41	41	585839	93.0942 ug/L	80
10) 2-Nitropropane	12.78	43	197598	106.5074 ug/L	97
13) Cyclohexanone	17.57	55	27547	31.5338 ug/L	88

(#) = qualifier out of range (m) = manual integration
6M138754.D A9FOOWT.M Mon Apr 25 15:45:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

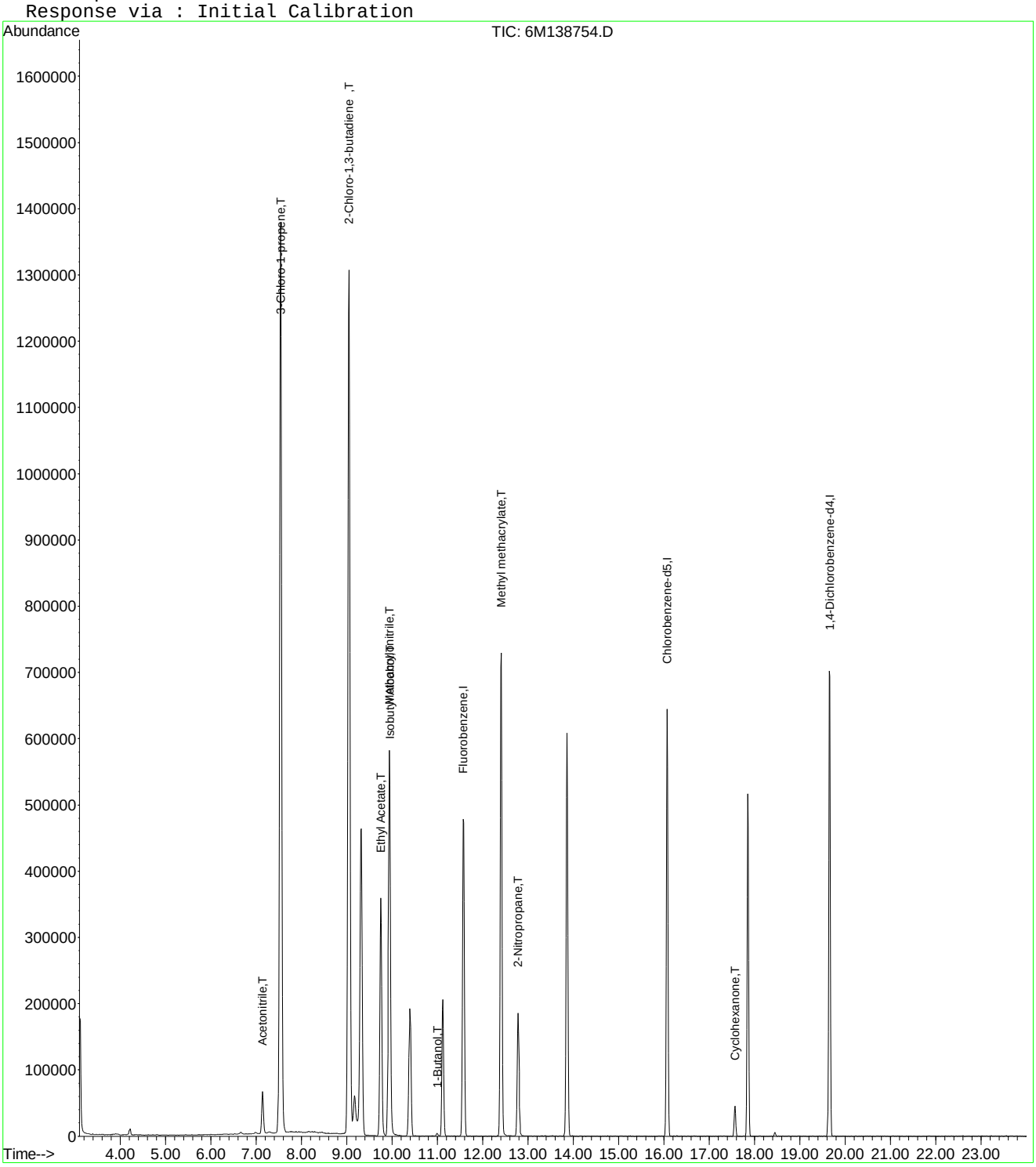

6M138754.D A9FOOWT.M Mon Apr 25 15:45:58 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:59 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	599121	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	467316	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	255798	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	90880	101.2731 ug/L	95
3) 3-Chloro-1-propene	7.54	41	1610716	107.7041 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	1413663	110.1648 ug/L	83
5) Ethyl Acetate	9.75	43	673221	104.7898 ug/L	93
6) Methacrylonitrile	9.94	67	237219	107.1014 ug/L #	62
7) Isobutyl Alcohol	9.95	43	33897	165.6613 ug/L #	85
9) Methyl methacrylate	12.41	41	585839	108.4917 ug/L	80
10) 2-Nitropropane	12.78	43	197598	98.3932 ug/L	97
13) Cyclohexanone	17.57	55	27547	86.3902 ug/L	88

(#) = qualifier out of range (m) = manual integration
6M138754.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

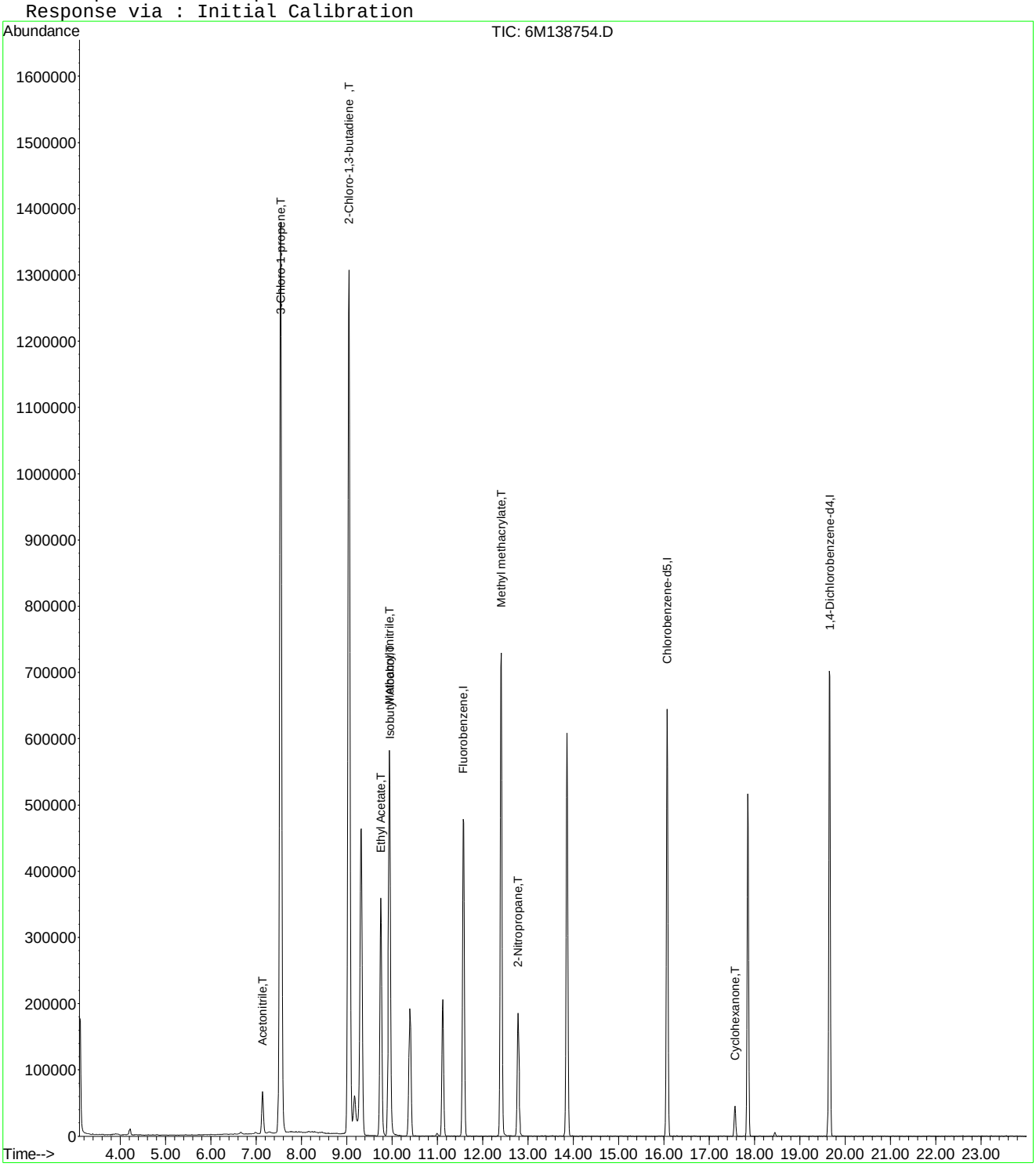

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:50 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	607157	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	473187	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	259046	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.40	111	172341	27.7160 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.88%		
43) 1,2-Dichloroethane-d4	11.12	65	211249	27.9923 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.96%		
58) Toluene-d8	13.86	98	552831	25.9510 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.80%		
80) p-Bromofluorobenzene	17.85	95	247709	28.6419 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 114.56%		

Target Compounds

					Qvalue
9) Diethyl ether	6.31	59	653	0.1225 ug/L #	12
13) Acetone	6.66	43	9406	4.9959 ug/L #	64
15) Tert-Butyl Alcohol	6.98	59	449	0.8301 ug/L #	1
16) Dimethyl Sulfide	7.16	62	680	0.1328 ug/L #	1
22) Methyl Tert Butyl Ether	7.96	73	3926	0.2388 ug/L	83
24) n-Hexane	8.30	57	1777	0.2040 ug/L	87
27) 1,1-Dichloroethane	9.05	63	41640	3.2372 ug/L #	47
28) Ethyl-Tert-Butyl ether	9.31	59	272648	13.0615 ug/L #	38
29) 2-Butanone	9.51	43	2992	1.0767 ug/L #	67
30) Propionitrile	9.93	54	258	0.3232 ug/L #	57
34) 1-Bromopropane	9.99	122	1417	1.3579 ug/L #	1
36) Tetrahydrofuran	10.37	42	4839	2.6728 ug/L #	62
48) Methylcyclohexane	12.40	83	2976	0.3378 ug/L #	1
60) Ethyl Methacrylate	13.87	69	1202	0.1698 ug/L #	1
79) 1,1,2,2-Tetrachloroethane	17.57	83	5192	0.8231 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138755.D 8260WTR.M Mon Apr 25 09:22:50 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

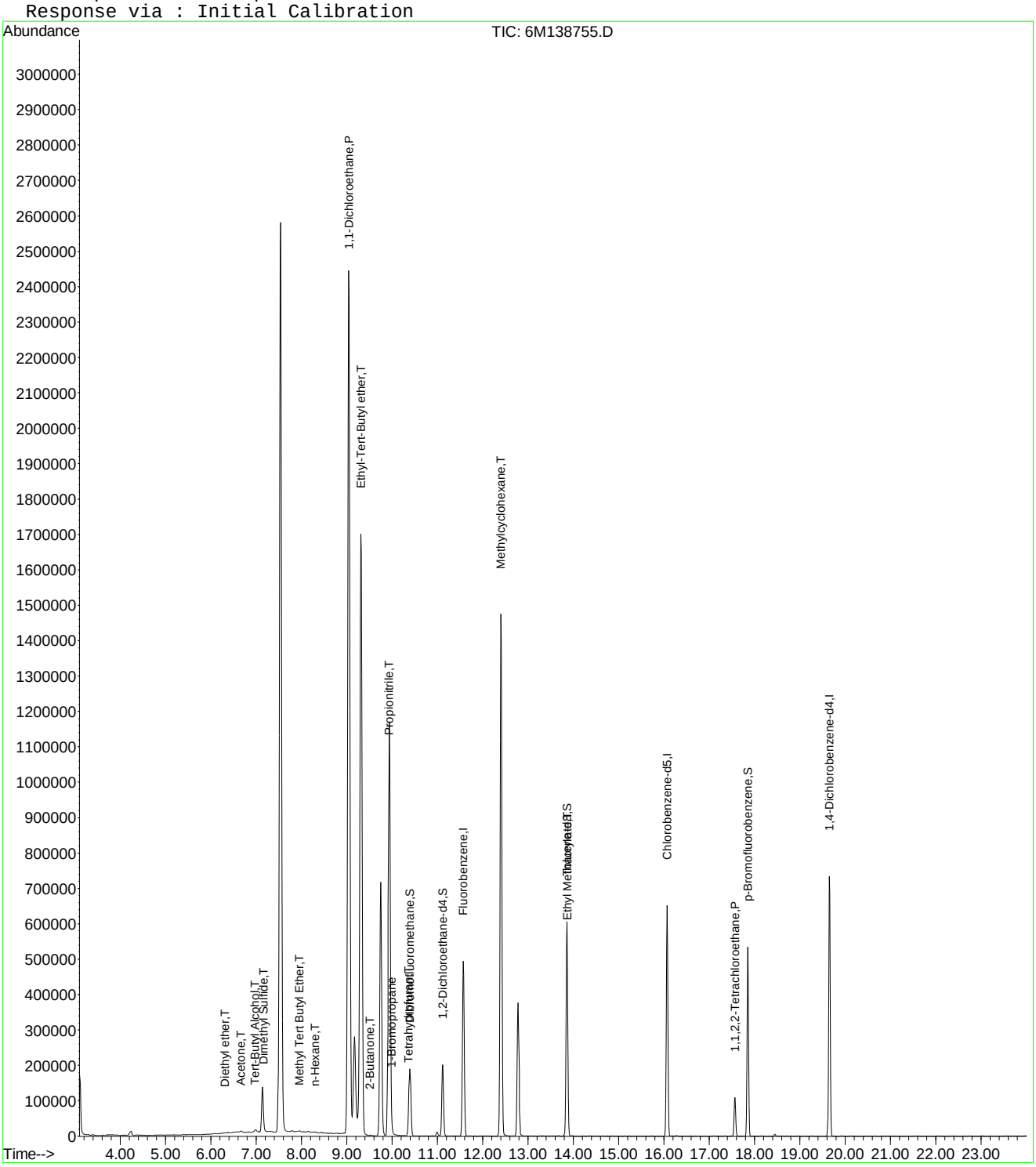

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:58 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	607157	25.00	ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	473187	25.00	ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.65	152	259046	25.00	ug/L	-0.03

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	183628	157.5150	ug/L	93
3) 3-Chloro-1-propene	7.54	41	3085939	189.6828	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	2709180	193.4336	ug/L	83
5) Ethyl Acetate	9.75	43	1346541	210.2391	ug/L	94
6) Methacrylonitrile	9.94	67	471538	191.4186	ug/L #	64
7) Isobutyl Alcohol	9.95	43	72755	206.4864	ug/L #	92
8) 1-Butanol	10.99	41	8815	58.1542	ug/L #	64
9) Methyl methacrylate	12.40	41	1186381	186.0295	ug/L	80
10) 2-Nitropropane	12.79	43	410702	218.4428	ug/L	99
13) Cyclohexanone	17.57	55	67080	75.8254	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138755.D A9FOOWT.M Mon Apr 25 15:45:58 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

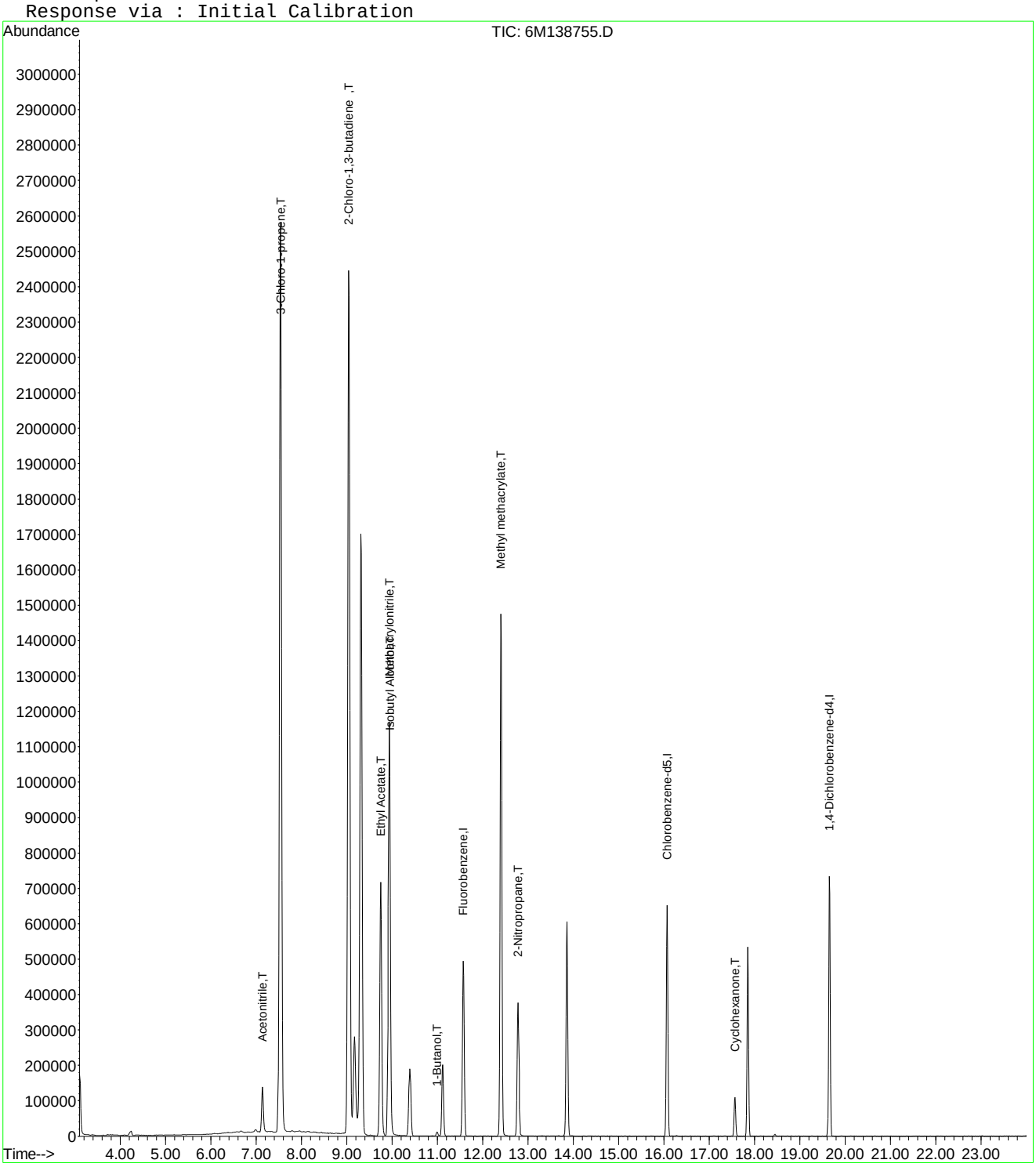

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	607157	25.00	ug/L	0.00
11) Chlorobenzene-d5	16.07	117	473187	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.65	152	259046	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	183628	201.9195	ug/L	93
3) 3-Chloro-1-propene	7.54	41	3085939	203.6170	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	2709180	208.3284	ug/L	83
5) Ethyl Acetate	9.75	43	1346541	206.8209	ug/L	94
6) Methacrylonitrile	9.94	67	471538	210.0757	ug/L #	64
7) Isobutyl Alcohol	9.95	43	72755	350.8618	ug/L #	92
9) Methyl methacrylate	12.40	41	1186381	216.7982	ug/L	80
10) 2-Nitropropane	12.79	43	410702	201.8008	ug/L	99
13) Cyclohexanone	17.57	55	67080	207.7320	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138755.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

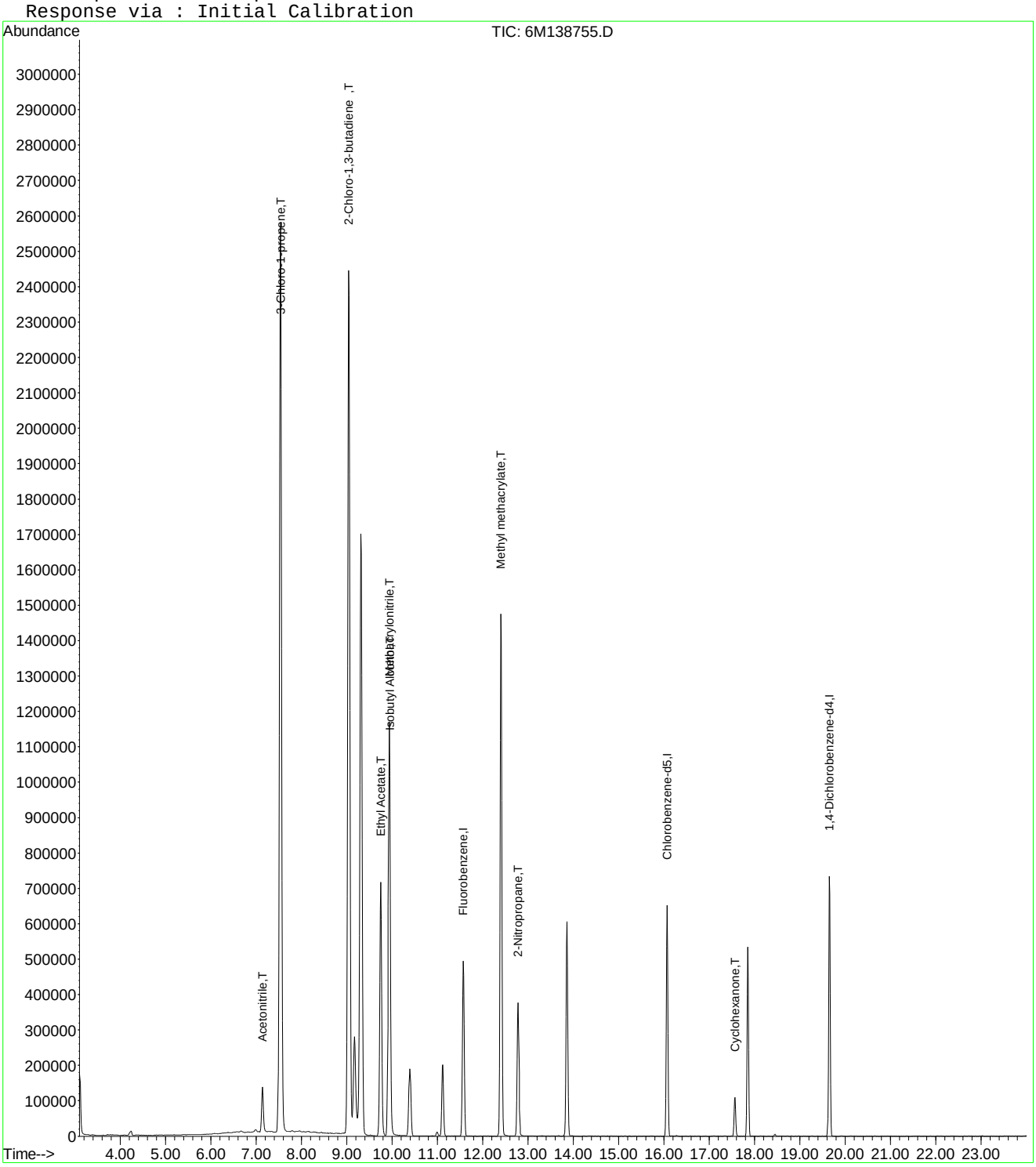

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:50 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	602356	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	472685	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	264650	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	169983	27.5546 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.20%		
43) 1,2-Dichloroethane-d4	11.12	65	207199	27.6745 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 110.68%		
58) Toluene-d8	13.86	98	553023	25.9875 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.96%		
80) p-Bromofluorobenzene	17.85	95	247939	28.0615 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 112.24%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	13666	7.3164 ug/L #	77
15) Tert-Butyl Alcohol	7.06	59	467	0.8703 ug/L #	59
16) Dimethyl Sulfide	7.14	62	668	0.1315 ug/L #	1
18) Methyl acetate	7.54	43	3262	0.6289 ug/L #	1
22) Methyl Tert Butyl Ether	7.97	73	10591	0.6492 ug/L #	53
24) n-Hexane	8.28	57	3576	0.4138 ug/L #	56
27) 1,1-Dichloroethane	9.04	63	60743	4.7600 ug/L #	48
28) Ethyl-Tert-Butyl ether	9.31	59	155796	7.5231 ug/L #	39
29) 2-Butanone	9.52	43	4002	1.4516 ug/L	97
30) Propionitrile	9.95	54	1113	1.4052 ug/L #	1
34) 1-Bromopropane	9.99	122	1450	1.4006 ug/L #	1
36) Tetrahydrofuran	10.36	42	4902	2.7292 ug/L #	61
48) Methylcyclohexane	12.41	83	4626	0.5293 ug/L #	1
60) Ethyl Methacrylate	13.88	69	1599	0.2261 ug/L #	1
72) Ethylbenzene	16.28	106	1349	0.1427 ug/L	56
73) m-,p-Xylene	16.28	106	1349	0.1203 ug/L	81
79) 1,1,2,2-Tetrachloroethane	17.57	83	8744	1.3569 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138756.D 8260WTR.M Mon Apr 25 09:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

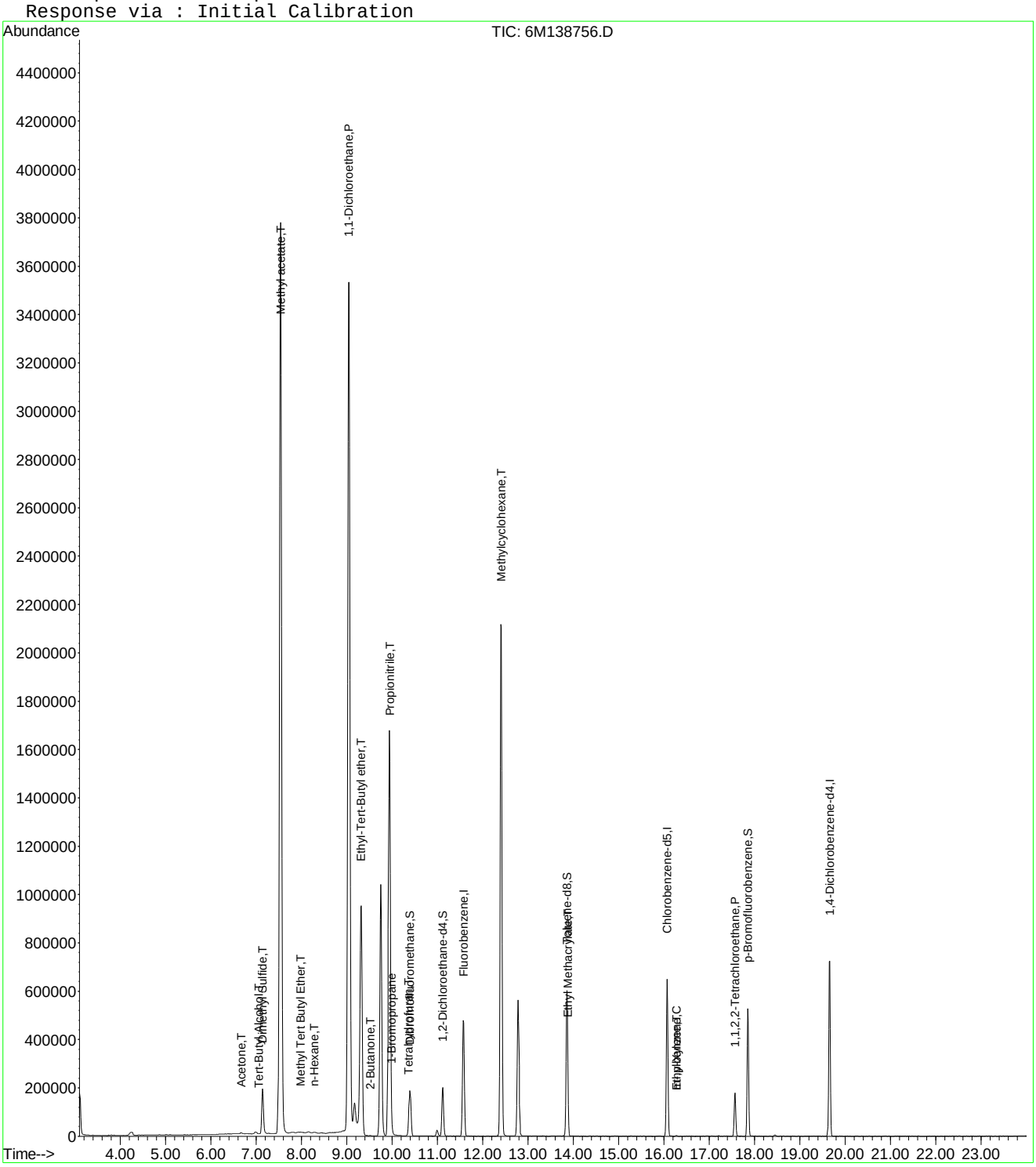

6M138756.D 8260WTR.M Mon Apr 25 09:22:51 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:59 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.58	96	602356	25.00	ug/L	-0.02
11) Chlorobenzene-d5	16.07	117	472685	25.00	ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	264650	25.00	ug/L	-0.02

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	273003	236.0468	ug/L	93
3) 3-Chloro-1-propene	7.54	41	4493022	278.3729	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	3994938	287.5093	ug/L	83
5) Ethyl Acetate	9.75	43	1967613	309.6573	ug/L	94
6) Methacrylonitrile	9.94	67	686612	280.9484	ug/L #	63
7) Isobutyl Alcohol	9.95	43	121480	347.5212	ug/L #	90
8) 1-Butanol	10.99	41	18116	120.4672	ug/L	69
9) Methyl methacrylate	12.40	41	1742413	275.3954	ug/L	81
10) 2-Nitropropane	12.78	43	613081	328.6824	ug/L	99
13) Cyclohexanone	17.57	55	106618	117.9661	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138756.D A9FOOWT.M Mon Apr 25 15:45:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

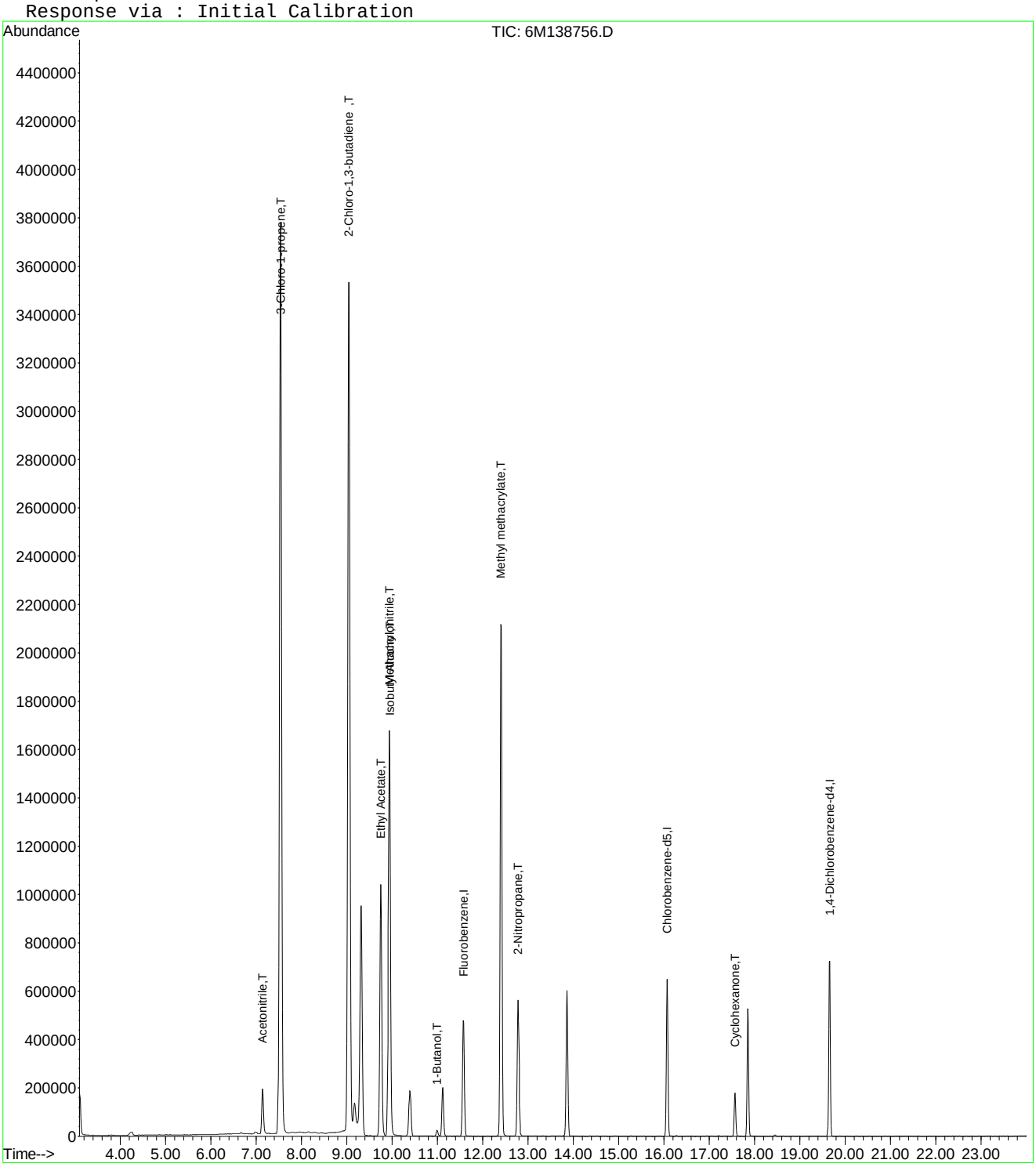

6M138756.D A9FOOWT.M Mon Apr 25 15:45:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.58	96	602356	25.00	ug/L	0.01
11) Chlorobenzene-d5	16.07	117	472685	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	264650	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	273003	302.5900	ug/L	93
3) 3-Chloro-1-propene	7.54	41	4493022	298.8224	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	3994938	309.6481	ug/L	83
5) Ethyl Acetate	9.75	43	1967613	304.6228	ug/L	94
6) Methacrylonitrile	9.94	67	686612	308.3318	ug/L #	63
7) Isobutyl Alcohol	9.95	43	121480	590.5081	ug/L #	90
9) Methyl methacrylate	12.40	41	1742413	320.9449	ug/L	81
10) 2-Nitropropane	12.78	43	613081	303.6419	ug/L	99
13) Cyclohexanone	17.57	55	106618	323.1811	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138756.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

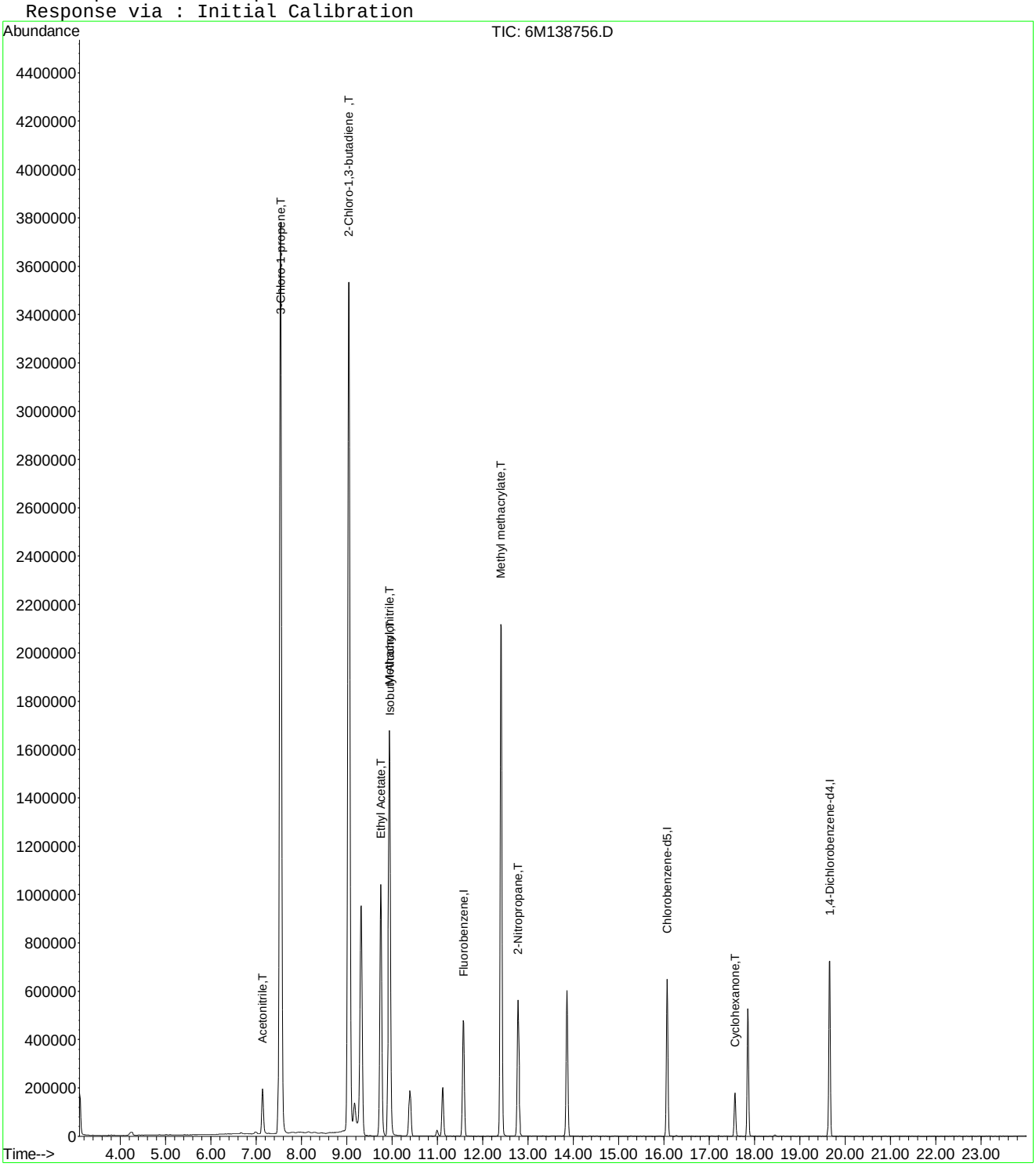

6M138756.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:51 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602625	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.08	117	475117	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	264739	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	170708	27.6598 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.64%		
43) 1,2-Dichloroethane-d4	11.11	65	208757	27.8702 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.48%		
58) Toluene-d8	13.86	98	554316	25.9150 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.64%		
80) p-Bromofluorobenzene	17.85	95	246698	27.9116 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 111.64%		

Target Compounds					Qvalue
13) Acetone	6.66	43	14063	7.5256 ug/L	99
15) Tert-Butyl Alcohol	7.05	59	807	1.5033 ug/L #	59
16) Dimethyl Sulfide	7.16	62	1034	0.2034 ug/L #	1
18) Methyl acetate	7.48	43	1103	0.2125 ug/L #	60
19) Methylene Chloride	7.73	84	1123	0.1699 ug/L #	40
22) Methyl Tert Butyl Ether	7.97	73	18318	1.1224 ug/L #	53
24) n-Hexane	8.28	57	5609	0.6488 ug/L	75
27) 1,1-Dichloroethane	9.04	63	82912	6.4943 ug/L #	48
28) Ethyl-Tert-Butyl ether	9.32	59	139043	6.7111 ug/L #	38
29) 2-Butanone	9.53	43	4129	1.4970 ug/L	86
30) Propionitrile	9.72	54	202	0.2549 ug/L #	1
34) 1-Bromopropane	9.99	122	1978	1.9098 ug/L #	1
36) Tetrahydrofuran	10.37	42	5444	3.0296 ug/L #	63
48) Methylcyclohexane	12.40	83	6593	0.7540 ug/L #	1
60) Ethyl Methacrylate	13.85	69	1165	0.1639 ug/L #	1
73) m-,p-Xylene	16.28	106	1795	0.1593 ug/L	72
79) 1,1,2,2-Tetrachloroethane	17.57	83	12875	1.9973 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138757.D 8260WTR.M Mon Apr 25 09:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

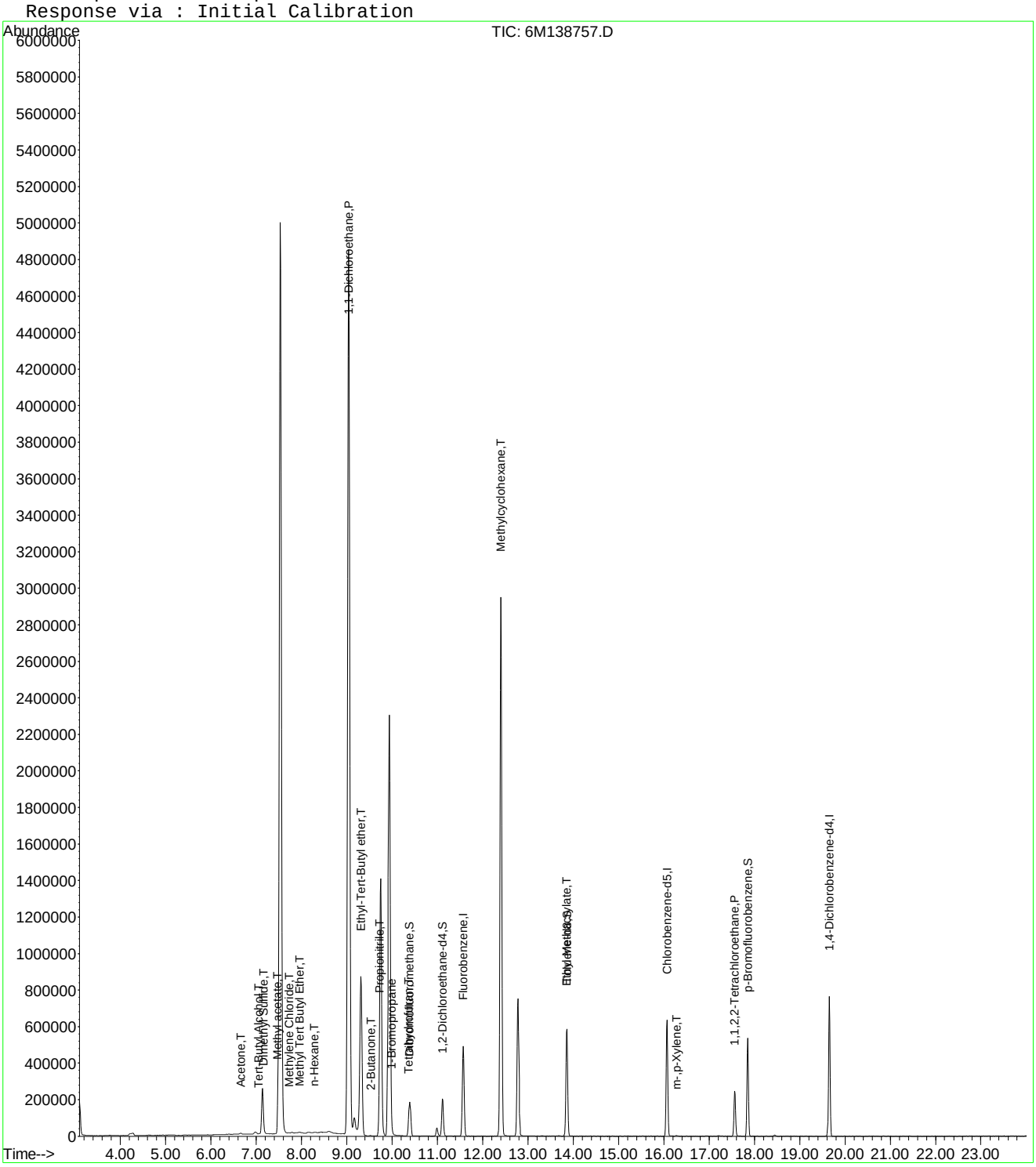

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602625	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.08	117	475117	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.65	152	264739	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	368012	318.0524 ug/L	93
3) 3-Chloro-1-propene	7.53	41	5948883	368.4088 ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	5359203	385.5211 ug/L	83
5) Ethyl Acetate	9.76	43	2690267	423.1975 ug/L	94
6) Methacrylonitrile	9.94	67	929265	380.0675 ug/L #	62
7) Isobutyl Alcohol	9.95	43	192560	550.6158 ug/L #	89
8) 1-Butanol	10.99	41	29815	198.1744 ug/L	75
9) Methyl methacrylate	12.40	41	2375132	375.2316 ug/L	81
10) 2-Nitropropane	12.79	43	849210	455.0717 ug/L	98
13) Cyclohexanone	17.57	55	149420	165.2683 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138757.D A9FOOWT.M Mon Apr 25 15:46:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

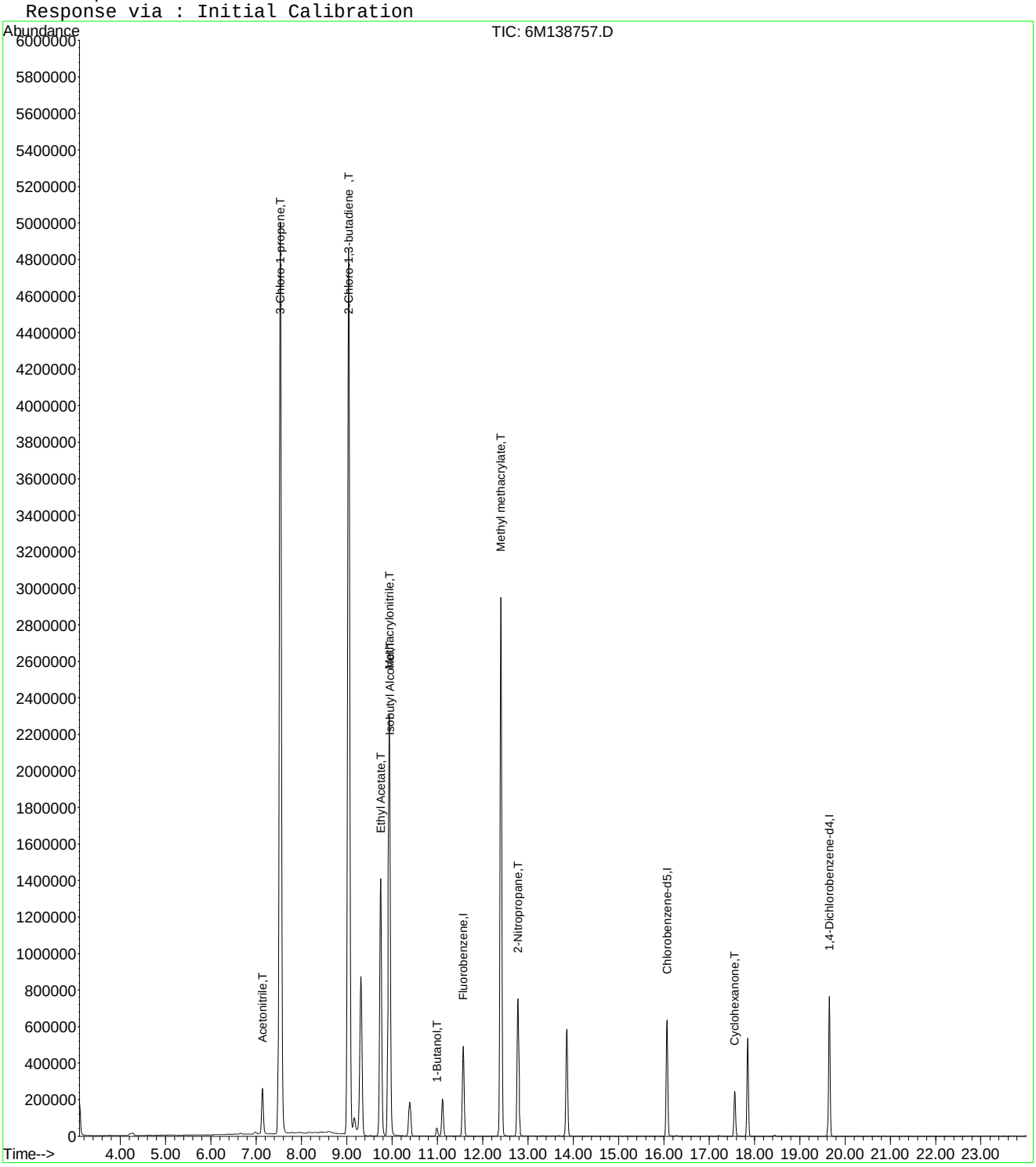

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:01 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602625	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.08	117	475117	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.65	152	264739	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	368012	407.7137 ug/L	93
3) 3-Chloro-1-propene	7.53	41	5948883	395.4723 ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	5359203	415.2070 ug/L	83
5) Ethyl Acetate	9.76	43	2690267	416.3170 ug/L	94
6) Methacrylonitrile	9.94	67	929265	417.1119 ug/L #	62
7) Isobutyl Alcohol	9.95	43	192560	935.6065 ug/L #	89
9) Methyl methacrylate	12.40	41	2375132	437.2937 ug/L	81
10) 2-Nitropropane	12.79	43	849210	420.4022 ug/L	98
13) Cyclohexanone	17.57	55	149420	452.7705 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138757.D A9FOOWT.M Wed Apr 27 16:05:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

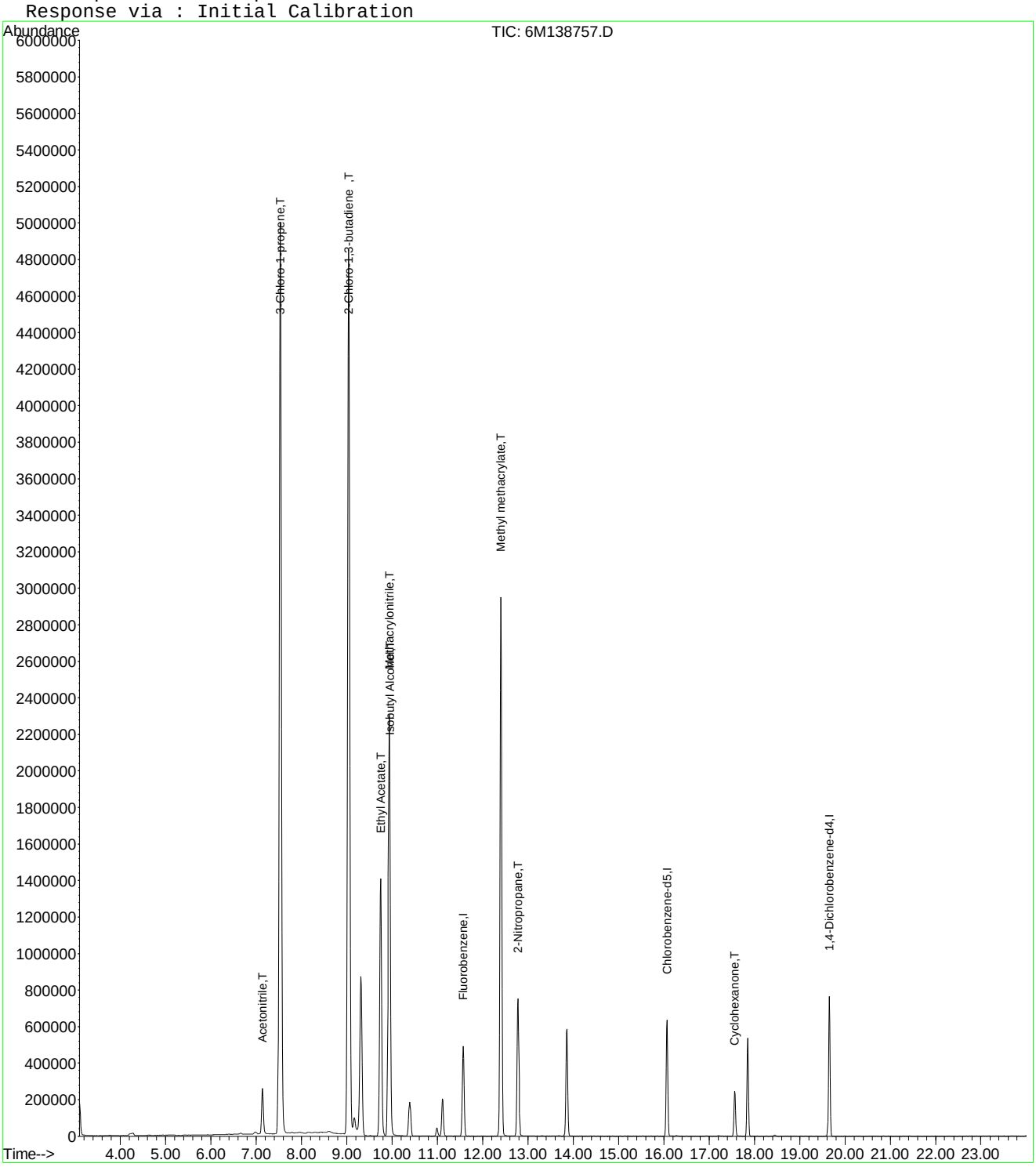

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:52 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	616486	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	485048	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	268890	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	175239	27.7556 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.04%		
43) 1,2-Dichloroethane-d4	11.12	65	210644	27.4898 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 109.96%		
58) Toluene-d8	13.86	98	563297	25.7957 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.20%		
80) p-Bromofluorobenzene	17.85	95	249406	27.7824 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 111.12%		

Target Compounds					Qvalue
13) Acetone	6.67	43	15233	7.9684 ug/L	89
15) Tert-Butyl Alcohol	7.06	59	370	0.6737 ug/L #	59
18) Methyl acetate	7.46	43	1079	0.2032 ug/L #	34
19) Methylene Chloride	7.73	84	1471	0.2176 ug/L	66
20) Carbon Disulfide	7.78	76	2765	0.1407 ug/L #	74
22) Methyl Tert Butyl Ether	7.96	73	25284	1.5144 ug/L #	53
24) n-Hexane	8.28	57	5266	0.5954 ug/L	97
27) 1,1-Dichloroethane	9.05	63	105121	8.0488 ug/L #	48
28) Ethyl-Tert-Butyl ether	9.31	59	124099	5.8551 ug/L #	39
29) 2-Butanone	9.52	43	4475	1.5860 ug/L #	72
30) Propionitrile	9.71	54	473	0.5835 ug/L #	1
34) 1-Bromopropane	10.00	122	2117	1.9980 ug/L #	1
36) Tetrahydrofuran	10.36	42	5652	3.0747 ug/L #	54
48) Methylcyclohexane	12.40	83	8011	0.8956 ug/L #	1
59) Toluene	13.98	91	3373	0.1249 ug/L	84
60) Ethyl Methacrylate	13.87	69	1585	0.2184 ug/L #	1
73) m-,p-Xylene	16.28	106	2521	0.2191 ug/L	79
79) 1,1,2,2-Tetrachloroethane	17.57	83	14350	2.1917 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138758.D 8260WTR.M Mon Apr 25 09:22:52 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

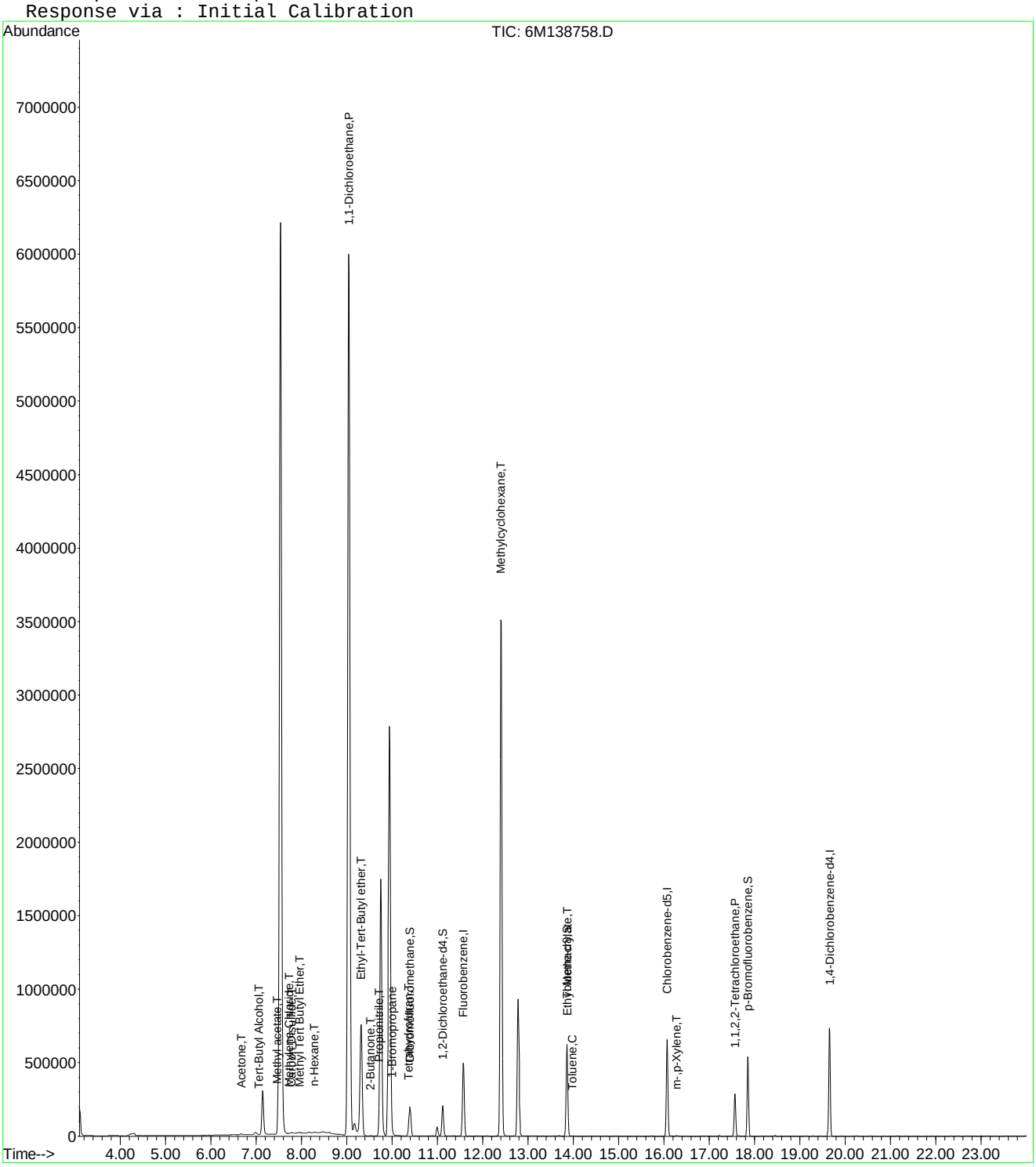

6M138758.D 8260WTR.M Mon Apr 25 09:22:52 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	616486	25.00	ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	485048	25.00	ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	268890	25.00	ug/L	-0.02

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	449583	379.8136	ug/L	92
3) 3-Chloro-1-propene	7.54	41	7430577	449.8223	ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	6752476	474.8265	ug/L	84
5) Ethyl Acetate	9.75	43	3307403	508.5794	ug/L	94
6) Methacrylonitrile	9.94	67	1145073	457.8027	ug/L #	63
7) Isobutyl Alcohol	9.95	43	251034	701.6799	ug/L #	90
8) 1-Butanol	10.99	41	42236	274.4224	ug/L	75
9) Methyl methacrylate	12.40	41	2914815	450.1389	ug/L	81
10) 2-Nitropropane	12.78	43	1036720	543.0629	ug/L	99
13) Cyclohexanone	17.57	55	176545	192.2558	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138758.D A9FOOWT.M Mon Apr 25 15:46:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

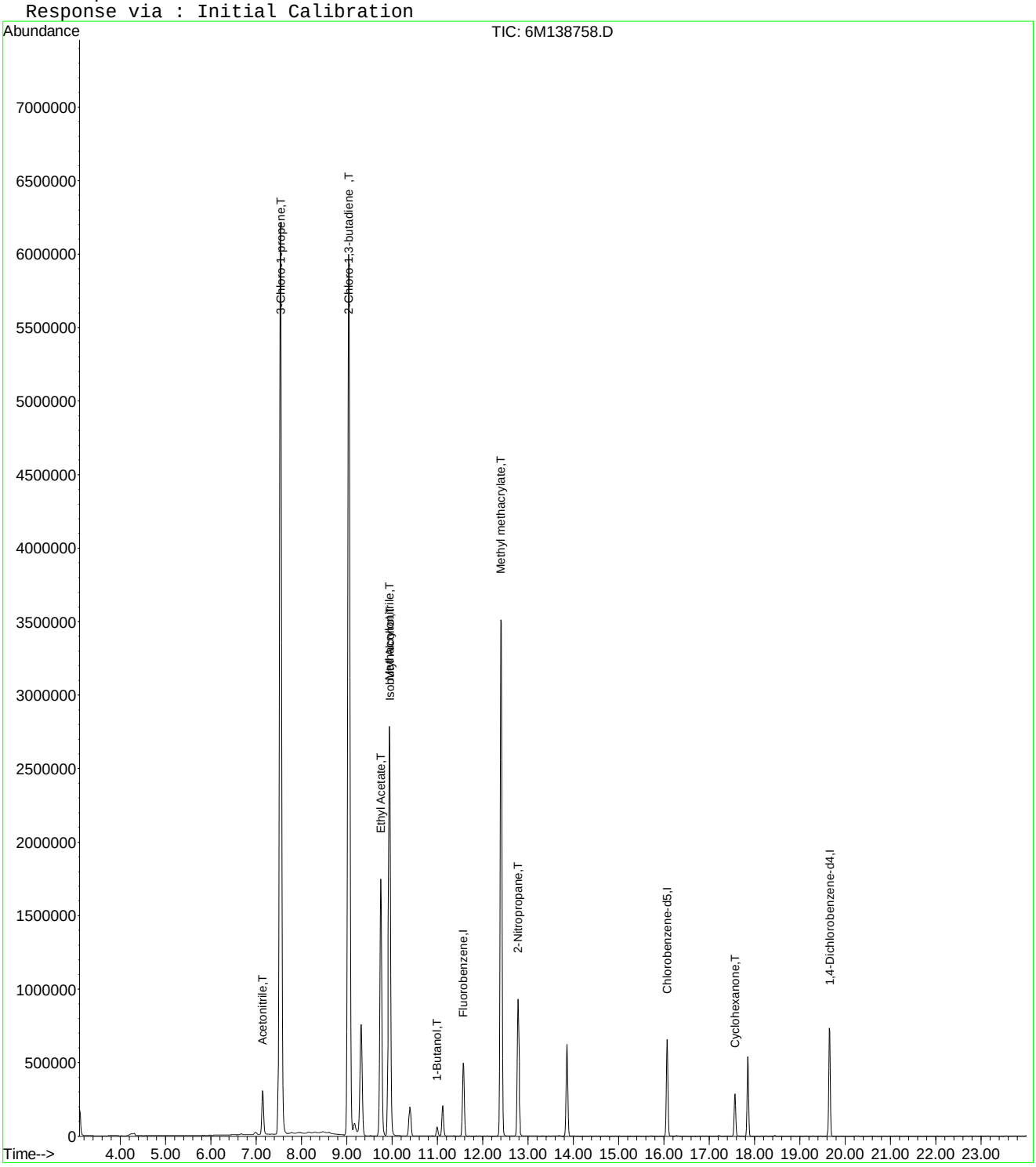

6M138758.D A9FOOWT.M Mon Apr 25 15:46:01 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:01 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	616486	25.00	ug/L	0.00
11) Chlorobenzene-d5	16.07	117	485048	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	268890	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	449583	486.8858	ug/L	92
3) 3-Chloro-1-propene	7.54	41	7430577	482.8665	ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	6752476	511.3891	ug/L	84
5) Ethyl Acetate	9.75	43	3307403	500.3107	ug/L	94
6) Methacrylonitrile	9.94	67	1145073	502.4237	ug/L #	63
7) Isobutyl Alcohol	9.95	43	251034	1192.2947	ug/L #	90
9) Methyl methacrylate	12.40	41	2914815	524.5904	ug/L	81
10) 2-Nitropropane	12.78	43	1036720	501.6898	ug/L	99
13) Cyclohexanone	17.57	55	176545	526.7057	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138758.D A9FOOWT.M Wed Apr 27 16:05:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

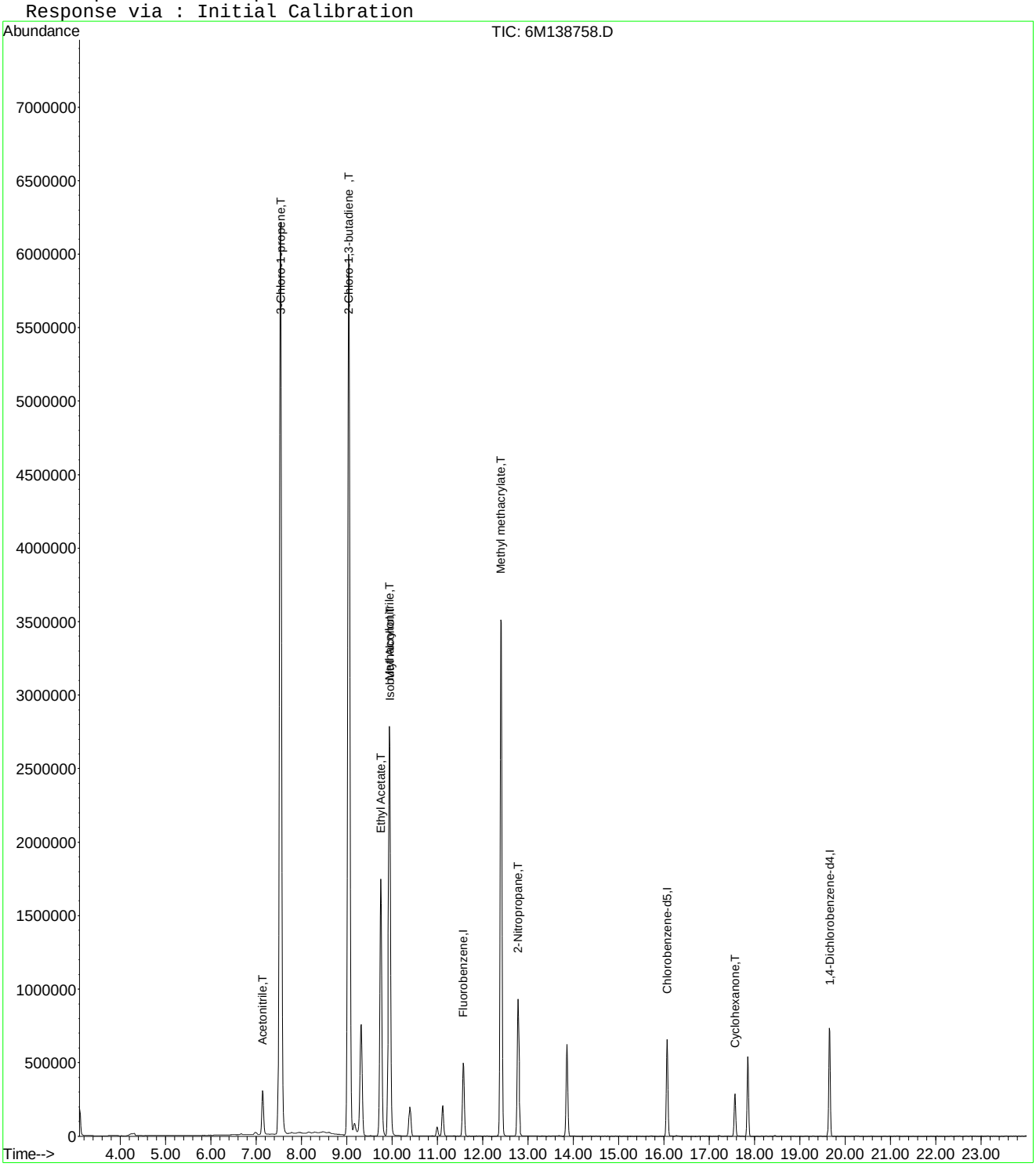

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:54 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602884	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	471639	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	256885	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.40	111	171708	27.8099 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.24%		
43) 1,2-Dichloroethane-d4	11.12	65	210067	28.0330 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.12%		
58) Toluene-d8	13.86	98	553825	26.0829 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.32%		
80) p-Bromofluorobenzene	17.85	95	243088	28.3441 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 113.36%		

Target Compounds					Qvalue
5) 1,3-Butadiene	4.21	54	367749	92.2302 ug/L	88
9) Diethyl ether	6.30	59	700386	132.3612 ug/L	92
13) Acetone	6.67	43	6570	3.5143 ug/L	81
16) Dimethyl Sulfide	7.14	62	2726	0.5361 ug/L #	1
20) Carbon Disulfide	7.54	76	432674	22.5096 ug/L #	36
22) Methyl Tert Butyl Ether	7.97	73	2916	0.1786 ug/L #	53
26) Vinyl Acetate	9.05	43	5230	0.5414 ug/L #	1
27) 1,1-Dichloroethane	9.04	63	22472	1.7594 ug/L #	42
28) Ethyl-Tert-Butyl ether	9.32	59	4063	0.1960 ug/L #	35
29) 2-Butanone	9.52	43	6076	2.2019 ug/L #	66
30) Propionitrile	9.64	54	91341	115.2239 ug/L	96
36) Tetrahydrofuran	10.36	42	4030	2.2418 ug/L #	52
39) Cyclohexane	10.69	56	2387	0.2138 ug/L	79
48) Methylcyclohexane	12.40	83	1353	0.1547 ug/L #	1
50) 1,4-Dioxane	12.73	88	9231	177.0935 ug/L	71
60) Ethyl Methacrylate	13.86	69	1222	0.1732 ug/L #	1
79) 1,1,2,2-Tetrachloroethane	17.57	83	1146	0.1832 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138761.D 8260WTR.M Mon Apr 25 09:22:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

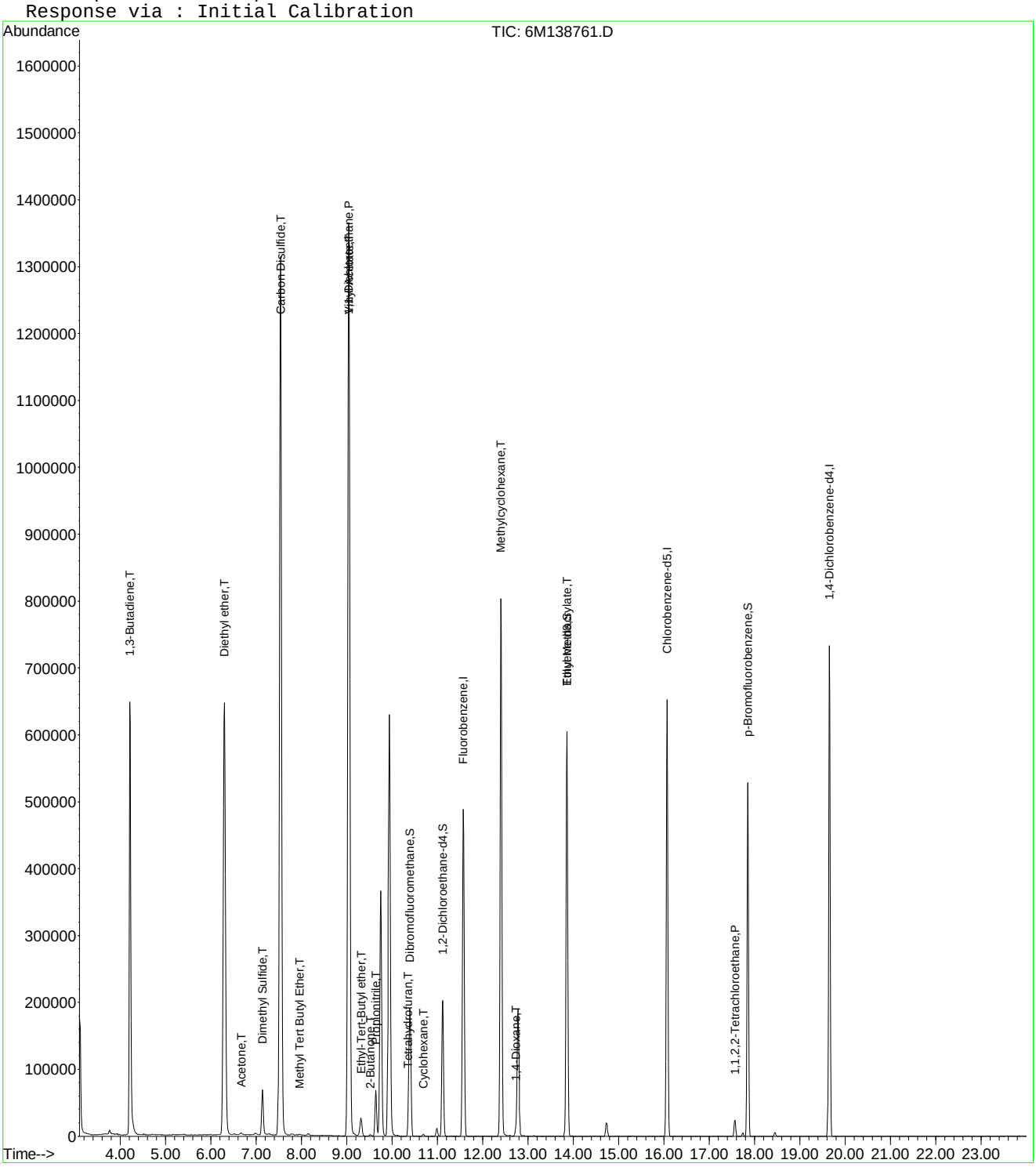

6M138761.D 8260WTR.M Mon Apr 25 09:22:54 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46:01 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	602884	25.00	ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	471639	25.00	ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.65	152	256885	25.00	ug/L	-0.03

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	96564	83.4191	ug/L	96
3) 3-Chloro-1-propene	7.54	41	1552115	96.0797	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	1512761	108.7756	ug/L	83
5) Ethyl Acetate	9.75	43	691566	108.7414	ug/L	93
6) Methacrylonitrile	9.94	67	252030	103.0355	ug/L #	63
7) Isobutyl Alcohol	9.95	43	51165	146.2409	ug/L #	93
8) 1-Butanol	10.99	41	7584	50.3877	ug/L	72
9) Methyl methacrylate	12.40	41	635574	100.3670	ug/L	81
10) 2-Nitropropane	12.79	43	211020	113.0321	ug/L	98
13) Cyclohexanone	17.57	55	15491	17.6579	ug/L	85

(#) = qualifier out of range (m) = manual integration
6M138761.D A9FOOWT.M Mon Apr 25 15:46:02 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

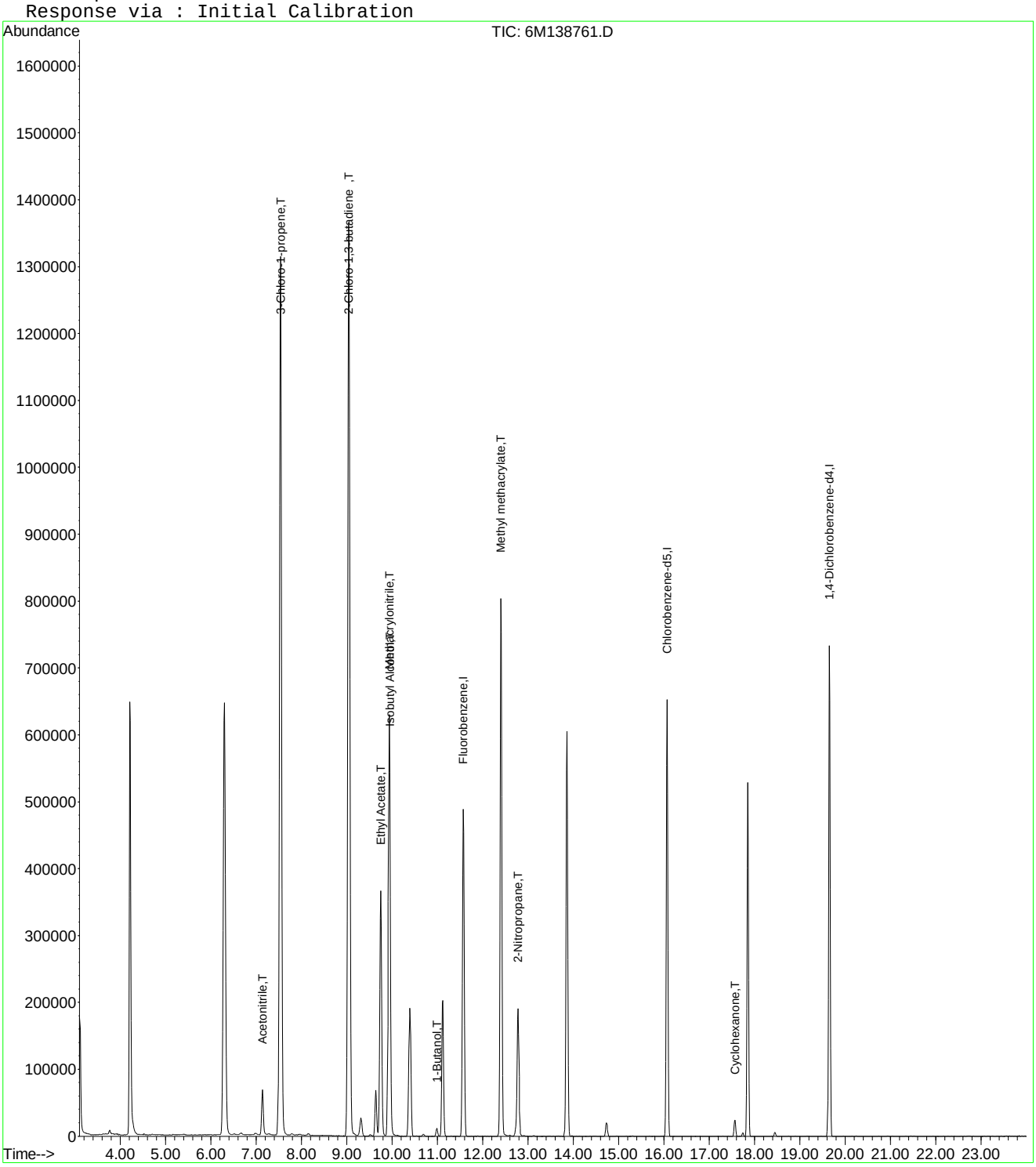

6M138761.D A9FOOWT.M Mon Apr 25 15:46:02 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:02 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	602884	25.00	ug/L	0.00
11) Chlorobenzene-d5	16.07	117	471639	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.65	152	256885	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	96564	106.9355	ug/L	96
3) 3-Chloro-1-propene	7.54	41	1552115	103.1378	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	1512761	117.1516	ug/L	83
5) Ethyl Acetate	9.75	43	691566	106.9734	ug/L	93
6) Methacrylonitrile	9.94	67	252030	113.0781	ug/L #	63
7) Isobutyl Alcohol	9.95	43	51165	248.4926	ug/L #	93
9) Methyl methacrylate	12.40	41	635574	116.9674	ug/L	81
10) 2-Nitropropane	12.79	43	211020	104.4208	ug/L	98
13) Cyclohexanone	17.57	55	15491	48.3758	ug/L	85

(#) = qualifier out of range (m) = manual integration
6M138761.D A9FOOWT.M Wed Apr 27 16:05:02 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

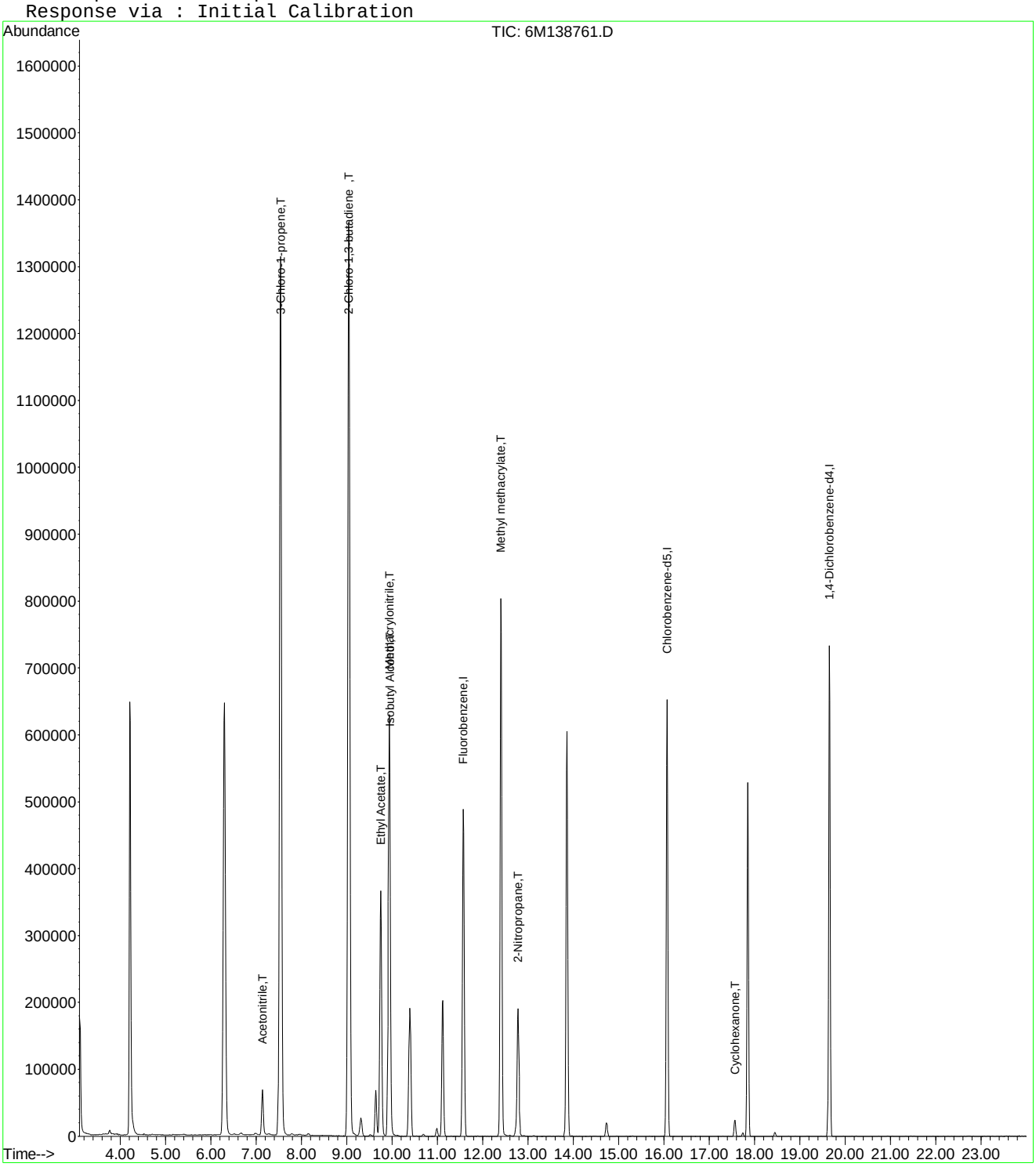

6M138761.D A9FOOWT.M Wed Apr 27 16:05:02 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	101	0.00
2	T	Acetonitrile	100.0000	106.9355	-6.9	106	0.00
3	T	3-Chloro-1-propene	100.0000	103.1378	-3.1	96	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	117.1516	-17.2	107	0.00
5	T	Ethyl Acetate	100.0000	106.9734	-7.0	103	0.00
6	T	Methacrylonitrile	100.0000	113.0781	-13.1	106	0.00
7	T	Isobutyl Alcohol	200.0000	248.4926	-24.2	151	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	100.0000	116.9674	-17.0	108	0.00
10	T	2-Nitropropane	100.0000	104.4208	-4.4	107	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	101	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	100.0000	48.3758	51.6	56	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138761.D A9FOOWT.M Wed Apr 27 16:05:40 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140314.D Vial: 2
Acq On : 30 Jun 2016 12:03 Operator: TMB
Sample : WG574723-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:20:28 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	782166	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	545154	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	278489	25.00 ug/L	-0.01
System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	4426	0.5577 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	2.24%#	
43) 1,2-Dichloroethane-d4	10.31	65	6633	0.6621 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	2.64%#	
58) Toluene-d8	13.04	98	14915	0.5556 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.24%#	
80) p-Bromofluorobenzene	17.02	95	6529	0.5986 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.40%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	7859	0.6011 ug/L #	80
3) Chloromethane	3.36	50	10543	0.7222 ug/L	88
4) Vinyl Chloride	3.57	62	6524	0.8138 ug/L	85
5) 1,3-Butadiene	3.62	54	5236	Below Cal #	53
6) Bromomethane	4.39	94	2681	0.5033 ug/L	75
7) Chloroethane	4.55	64	2218	0.4379 ug/L #	74
8) Trichlorofluoromethane	5.01	101	7455	0.6097 ug/L #	89
10) Isoprene	5.58	67	5099	0.4673 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.81	101	3458	0.4546 ug/L	87
13) Acetone	5.90	43	5483	2.1880 ug/L	88
14) 1,1-Dichloroethene	6.11	61	8367	0.5669 ug/L	89
16) Dimethyl Sulfide	6.39	62	2618	0.4067 ug/L	92
17) Iodomethane	6.65	142	580	1.0028 ug/L #	32
18) Methyl acetate	6.68	43	2212	0.3262 ug/L #	66
19) Methylene Chloride	6.95	84	4491	0.5306 ug/L	87
20) Carbon Disulfide	6.97	76	28617	1.0581 ug/L	97
22) Methyl Tert Butyl Ether	7.17	73	6219	0.2772 ug/L #	56
23) trans-1,2-Dichloroethene	7.42	96	5255	0.6648 ug/L	83
24) n-Hexane	7.50	57	14948	1.1142 ug/L	95
26) Vinyl Acetate	8.09	43	2544	0.1688 ug/L #	78
27) 1,1-Dichloroethane	8.10	63	6467	0.3800 ug/L	91
29) 2-Butanone	8.74	43	738	0.1924 ug/L #	57
31) 2,2-Dichloropropane	8.96	77	4273	0.3328 ug/L	92
32) cis-1,2-Dichloroethene	9.04	96	4541	0.5248 ug/L	70
33) Chloroform	9.26	83	5775	0.3788 ug/L	94
35) Bromochloromethane	9.52	130	2012	0.4327 ug/L	92
36) Tetrahydrofuran	9.55	42	2953	1.1037 ug/L #	55
38) 1,1,1-Trichloroethane	9.86	97	4483	0.3377 ug/L	92
39) Cyclohexane	9.87	56	8253	0.4779 ug/L	90
40) 1,1-Dichloropropene	10.08	75	6696	0.5791 ug/L	91
42) Carbon Tetrachloride	10.23	117	3257	0.2988 ug/L #	92
45) 1,2-Dichloroethane	10.45	62	5310	0.4344 ug/L #	89
46) Benzene	10.48	78	15173	0.4650 ug/L	96
47) Trichloroethene	11.35	130	5387	0.6690 ug/L	99
48) Methylcyclohexane	11.43	83	7364	0.5825 ug/L	88
49) 1,2-Dichloropropane	11.58	63	3158	0.3361 ug/L	79
51) Bromodichloromethane	11.94	83	4017	0.3543 ug/L	95
52) Dibromomethane	12.03	93	2564	0.5639 ug/L	85
53) 2-Chloroethyl Vinyl Ether	12.31	63	1255	0.2664 ug/L #	41
55) cis-1,3-Dichloropropene	12.69	75	6354	0.4827 ug/L	93

(#) = qualifier out of range (m) = manual integration
6M140314.D 8260WTR.M Fri Jul 01 14:20:31 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140314.D Vial: 2
Acq On : 30 Jun 2016 12:03 Operator: TMB
Sample : WG574723-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:20:28 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
56)	Dimethyl Disulfide	12.96	79	2244	0.3062 ug/L #	47
59)	Toluene	13.16	91	16171	0.4977 ug/L	100
60)	Ethyl Methacrylate	13.33	69	2168	0.2345 ug/L	77
62)	trans-1,3-Dichloropropene	13.39	75	6685	0.5786 ug/L	82
63)	1,1,2-Trichloroethane	13.62	97	2098	0.3489 ug/L	91
64)	2-Hexanone	13.58	43	1202	0.2105 ug/L #	54
65)	1,3-Dichloropropane	13.99	76	4378	0.3863 ug/L	85
66)	Tetrachloroethene	14.10	166	4661	0.6020 ug/L	99
67)	Dibromochloromethane	14.41	129	2599	0.3560 ug/L	98
68)	1,2-Dibromoethane	14.71	107	3093	0.5329 ug/L	98
69)	1-Chlorohexane	14.85	91	5951	0.5504 ug/L	88
70)	Chlorobenzene	15.30	112	13354	0.6409 ug/L	99
71)	1,1,1,2-Tetrachloroethane	15.35	131	2310	0.3116 ug/L	94
72)	Ethylbenzene	15.35	106	5305	0.4864 ug/L	85
73)	m-,p-Xylene	15.45	106	13647	1.0353 ug/L	91
74)	o-Xylene	16.11	106	5438	0.4136 ug/L	85
75)	Styrene	16.16	104	10471	0.4734 ug/L	91
76)	Bromoform	16.71	173	1433	0.3165 ug/L #	50
77)	Isopropylbenzene	16.63	105	15560	0.4536 ug/L	92
79)	1,1,2,2-Tetrachloroethane	16.88	83	1987	0.2940 ug/L	77
81)	1,2,3-Trichloropropane	17.10	110	241	0.1203 ug/L #	1
82)	trans-1,4-Dichloro-2-Buten	17.19	53	903	0.3534 ug/L	88
83)	n-Propylbenzene	17.22	91	21456	0.5362 ug/L #	94
84)	Bromobenzene	17.34	156	5484	0.6559 ug/L	92
85)	1,3,5-Trimethylbenzene	17.44	105	12453	0.4440 ug/L	96
86)	2-Chlorotoluene	17.52	91	13840	0.5114 ug/L	95
87)	4-Chlorotoluene	17.59	91	17422	0.6753 ug/L	95
88)	a-Methylstyrene	17.92	118	6165	0.4370 ug/L	93
89)	tert-Butylbenzene	17.98	134	2101	0.3729 ug/L #	24
90)	1,2,4-Trimethylbenzene	18.05	105	13753	0.4779 ug/L	100
91)	sec-Butylbenzene	18.30	105	18042	0.5374 ug/L	92
92)	p-Isopropyltoluene	18.51	119	14633	0.5114 ug/L	94
93)	1,3-Dichlorobenzene	18.70	146	11689	0.7103 ug/L	99
94)	1,4-Dichlorobenzene	18.85	146	12500	0.7513 ug/L	97
95)	n-Butylbenzene	19.12	91	17799	0.6344 ug/L	93
96)	1,2-Dichlorobenzene	19.43	146	9545	0.6178 ug/L	96
97)	1,2-Dibromo-3-Chloropropan	20.62	75	229	0.1730 ug/L #	1
98)	1,2,4-Trichlorobenzene	21.96	180	8749	0.8011 ug/L	91
99)	Hexachlorobutadiene	22.15	225	2944	0.6484 ug/L	95
100)	Naphthalene	22.39	128	14249	0.6384 ug/L	95
101)	1,2,3-Trichlorobenzene	22.76	180	7092	0.7013 ug/L	96

(#) = qualifier out of range (m) = manual integration
6M140314.D 8260WTR.M Fri Jul 01 14:20:32 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140314.D Vial: 2
Acq On : 30 Jun 2016 12:03 Operator: TMB
Sample : WG574723-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:20 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

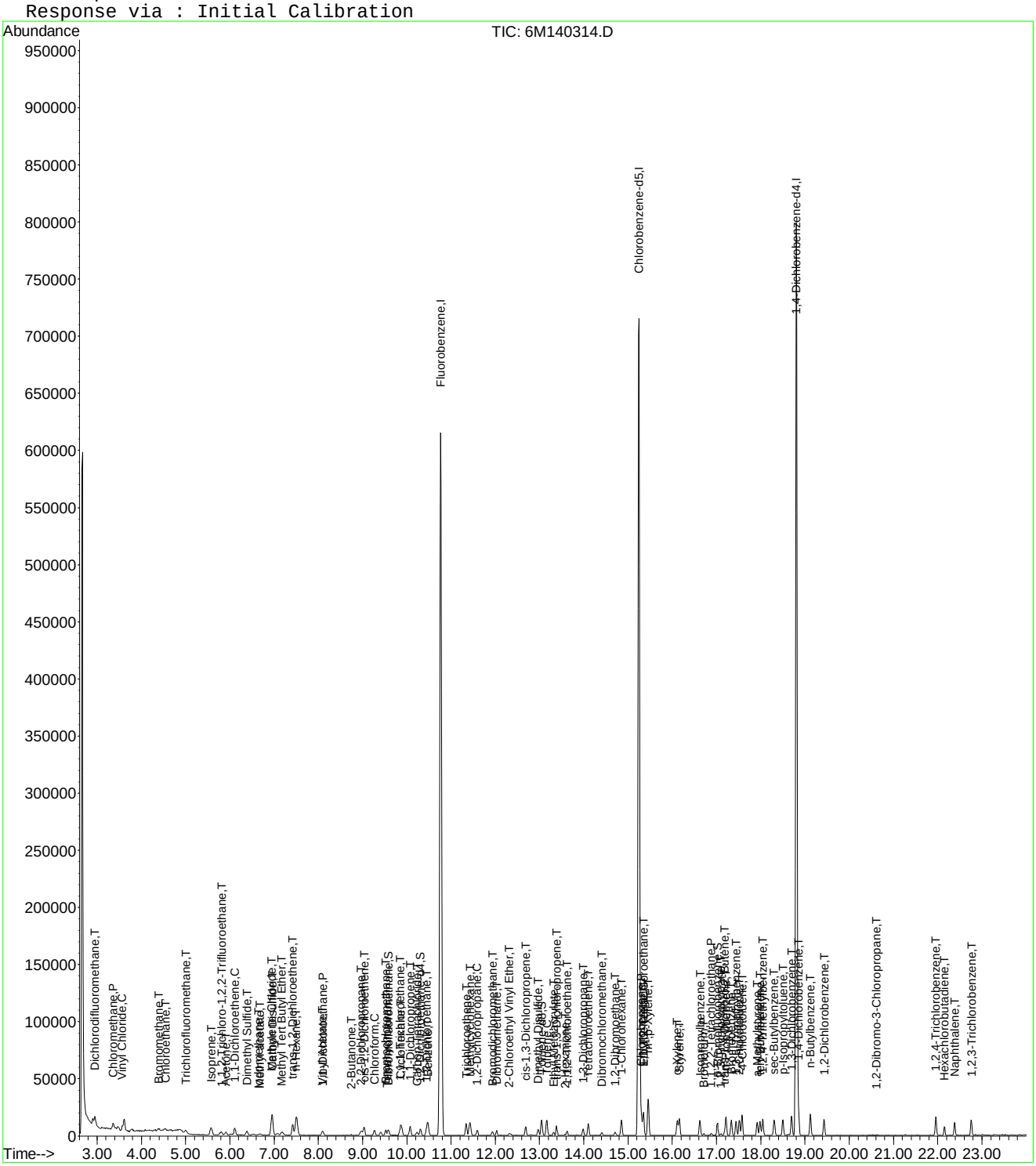

6M140314.D 8260WTR.M Fri Jul 01 14:20:34 2016 Page 3

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140314.D Vial: 2
Acq On : 30 Jun 2016 12:03 Operator: TMB
Sample : WG574723-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.6011	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.7222	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.8138	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	-1.9896	0.0	0	0.03
6	T	Bromomethane	-1.0000	0.5033	0.0	100	0.02
7	T	Chloroethane	-1.0000	0.4379	0.0	100	0.02
8	T	Trichlorofluoromethane	-1.0000	0.6097	0.0	100	0.00
9	T	Diethyl ether	-1.0000	0.0280	0.0	100	0.00
10	T	Isoprene	-1.0000	0.4673	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-5.79#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.4546	0.0	100	0.03
13	T	Acetone	-1.0000	2.1880	0.0	100	0.00
14	C	1,1-Dichloroethene	-1.0000	0.5669	0.0	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.29#
16	T	Dimethyl Sulfide	-1.0000	0.4067	0.0	100	0.00
17	T	Iodomethane	-1.0000	1.0028	0.0	0	0.01
18	T	Methyl acetate	-1.0000	0.3262	0.0	100	-0.01
19	T	Methylene Chloride	-1.0000	0.5306	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	1.0581	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.15#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2772	0.0	100	-0.01
23	T	trans-1,2-Dichloroethene	-1.0000	0.6648	0.0	100	0.00
24	T	n-Hexane	-1.0000	1.1142	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-7.90#
26	T	Vinyl Acetate	-1.0000	0.1688	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.3800	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.53#
29	T	2-Butanone	-1.0000	0.1924	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.86#
31	T	2,2-Dichloropropane	-1.0000	0.3328	0.0	100	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.5248	0.0	100	0.00
33	C	Chloroform	0.3000	0.3788	-26.3#	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.41#
35	T	Bromochloromethane	-1.0000	0.4327	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	1.1037	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.5577	0.0	100	0.00
38	T	1,1,1-Trichloroethane	-1.0000	0.3377	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.4779	0.0	100	-0.01
40	T	1,1-Dichloropropene	-1.0000	0.5791	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0293	0.0	100	-0.13
42	T	Carbon Tetrachloride	-1.0000	0.2988	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.6621	0.0	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-10.21#
45	T	1,2-Dichloroethane	-1.0000	0.4344	0.0	100	0.00
46	T	Benzene	-1.0000	0.4650	0.0	100	0.00
47	T	Trichloroethene	-1.0000	0.6690	0.0	100	0.00
48	T	Methylcyclohexane	-1.0000	0.5825	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.3361	0.0	100	-0.01
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.94#
51	T	Bromodichloromethane	-1.0000	0.3543	0.0	100	0.00
52	T	Dibromomethane	-1.0000	0.5639	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2664	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0645	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140314.D Vial: 2
Acq On : 30 Jun 2016 12:03 Operator: TMB
Sample : WG574723-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.4827	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.3062	0.0	100	-0.01
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.5556	0.0	100	0.00
59	C	Toluene	-1.0000	0.4977	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2345	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	-1.0000	0.5786	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.3489	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.2105	0.0	100	0.00
65	T	1,3-Dichloropropane	-1.0000	0.3863	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.6020	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.3560	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.5329	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.5504	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.6409	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.3116	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.4864	0.0	100	0.00
73	T	m-,p-Xylene	-1.0000	1.0353	0.0	100	-0.01
74	T	o-Xylene	-1.0000	0.4136	0.0	100	-0.01
75	T	Styrene	-1.0000	0.4734	0.0	100	0.00
76	P	Bromoform	-1.0000	0.3165	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.4536	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	-0.01
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2940	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5986	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.1203	0.0	100	-0.01
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.3534	0.0	100	0.00
83	T	n-Propylbenzene	-1.0000	0.5362	0.0	100	0.00
84	T	Bromobenzene	-1.0000	0.6559	0.0	0	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.4440	0.0	100	-0.01
86	T	2-Chlorotoluene	-1.0000	0.5114	0.0	79	-0.01
87	T	4-Chlorotoluene	-1.0000	0.6753	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.4370	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3729	0.0	100	-0.01
90	T	1,2,4-Trimethylbenzene	-1.0000	0.4779	0.0	100	-0.01
91	T	sec-Butylbenzene	-1.0000	0.5374	0.0	100	-0.01
92	T	p-Isopropyltoluene	-1.0000	0.5114	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.7103	0.0	100	0.00
94	T	1,4-Dichlorobenzene	-1.0000	0.7513	0.0	0	0.00
95	T	n-Butylbenzene	-1.0000	0.6344	0.0	100	0.00
96	T	1,2-Dichlorobenzene	-1.0000	0.6178	0.0	0	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.1730	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	-1.0000	0.8011	0.0	100	-0.01
99	T	Hexachlorobutadiene	-1.0000	0.6484	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.6384	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	-1.0000	0.7013	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1
6M140314.D 8260WTR.M Fri Jul 01 14:34:29 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140315.D Vial: 3
Acq On : 30 Jun 2016 12:35 Operator: TMB
Sample : WG574723-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:20:36 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	711040	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	496934	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	254758	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	13.04	98	1118	0.0457 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.20%#	
80) p-Bromofluorobenzene	17.01	95	723	0.0725 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	4029	0.3390 ug/L #	64
3) Chloromethane	3.37	50	7908	0.5959 ug/L	82
4) Vinyl Chloride	3.56	62	2700	0.3705 ug/L	78
5) 1,3-Butadiene	3.62	54	3035	Below Cal #	51
6) Bromomethane	4.39	94	1885	0.3892 ug/L	95
7) Chloroethane	4.55	64	1384	0.3006 ug/L #	43
8) Trichlorofluoromethane	5.00	101	5096	0.4585 ug/L #	91
10) Isoprene	5.57	67	4197	0.4231 ug/L	86
12) 1,1,2-Trichloro-1,2,2-Trif	5.82	101	2196	0.3176 ug/L	83
13) Acetone	5.90	43	1650	0.7243 ug/L #	48
14) 1,1-Dichloroethene	6.11	61	5407	0.4030 ug/L	90
16) Dimethyl Sulfide	6.38	62	2288	0.3910 ug/L	87
18) Methyl acetate	6.69	43	1819	0.2951 ug/L #	66
19) Methylene Chloride	6.93	84	3320	0.4315 ug/L	82
20) Carbon Disulfide	6.97	76	11427	0.4648 ug/L	99
22) Methyl Tert Butyl Ether	7.18	73	8255	0.4048 ug/L #	75
23) trans-1,2-Dichloroethene	7.42	96	2988	0.4158 ug/L	82
24) n-Hexane	7.51	57	5670	0.4649 ug/L	92
26) Vinyl Acetate	8.09	43	2906	0.2121 ug/L #	78
27) 1,1-Dichloroethane	8.10	63	6380	0.4124 ug/L	89
29) 2-Butanone	8.74	43	1046	0.3000 ug/L #	57
31) 2,2-Dichloropropane	8.95	77	4509	0.3863 ug/L	96
32) cis-1,2-Dichloroethene	9.03	96	3353	0.4263 ug/L	94
33) Chloroform	9.27	83	5194	0.3747 ug/L	99
35) Bromochloromethane	9.53	130	1601	0.3788 ug/L	83
36) Tetrahydrofuran	9.56	42	3379	1.3892 ug/L #	67
38) 1,1,1-Trichloroethane	9.87	97	4496	0.3726 ug/L	93
39) Cyclohexane	9.89	56	6498	0.4139 ug/L	94
40) 1,1-Dichloropropene	10.08	75	4389	0.4176 ug/L	94
42) Carbon Tetrachloride	10.24	117	3081	0.3110 ug/L #	88
45) 1,2-Dichloroethane	10.45	62	4443	0.3998 ug/L #	81
46) Benzene	10.48	78	13145	0.4431 ug/L	97
47) Trichloroethene	11.34	130	3154	0.4309 ug/L	93
48) Methylcyclohexane	11.42	83	4969	0.4324 ug/L	87
49) 1,2-Dichloropropane	11.59	63	3543	0.4147 ug/L	87
51) Bromodichloromethane	11.93	83	3676	0.3566 ug/L	92
52) Dibromomethane	12.03	93	1420	0.3436 ug/L	100
53) 2-Chloroethyl Vinyl Ether	12.31	63	1186	0.2769 ug/L #	41
54) 4-Methyl-2-Pentanone	12.35	58	422	0.1601 ug/L #	38
55) cis-1,3-Dichloropropene	12.67	75	4716	0.3941 ug/L	96

(#) = qualifier out of range (m) = manual integration
6M140315.D 8260WTR.M Fri Jul 01 14:20:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140315.D Vial: 3
Acq On : 30 Jun 2016 12:35 Operator: TMB
Sample : WG574723-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:20:36 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
56)	Dimethyl Disulfide	12.97	79	1919	0.2881 ug/L #	68
59)	Toluene	13.16	91	13506	0.4560 ug/L	97
60)	Ethyl Methacrylate	13.32	69	2728	0.3238 ug/L	91
62)	trans-1,3-Dichloropropene	13.39	75	3780	0.3589 ug/L	86
63)	1,1,2-Trichloroethane	13.63	97	2086	0.3806 ug/L	93
64)	2-Hexanone	13.58	43	1538	0.2955 ug/L	72
65)	1,3-Dichloropropane	13.98	76	4376	0.4236 ug/L	95
66)	Tetrachloroethene	14.10	166	2876	0.4075 ug/L	95
67)	Dibromochloromethane	14.41	129	2210	0.3321 ug/L	93
68)	1,2-Dibromoethane	14.72	107	1896	0.3584 ug/L	87
69)	1-Chlorohexane	14.86	91	4030	0.4089 ug/L	91
70)	Chlorobenzene	15.30	112	8640	0.4549 ug/L	96
71)	1,1,1,2-Tetrachloroethane	15.35	131	2601	0.3848 ug/L	92
72)	Ethylbenzene	15.35	106	4049	0.4073 ug/L	76
73)	m-,p-Xylene	15.45	106	10358	0.8620 ug/L	87
74)	o-Xylene	16.10	106	5184	0.4326 ug/L	96
75)	Styrene	16.16	104	7888	0.3912 ug/L	83
76)	Bromoform	16.72	173	1146	0.2777 ug/L #	68
77)	Isopropylbenzene	16.62	105	13388	0.4282 ug/L	97
79)	1,1,2,2-Tetrachloroethane	16.88	83	2211	0.3576 ug/L	95
81)	1,2,3-Trichloropropane	17.11	110	427	0.2329 ug/L #	1
83)	n-Propylbenzene	17.22	91	16903	0.4618 ug/L #	94
84)	Bromobenzene	17.34	156	3349	0.4379 ug/L	93
85)	1,3,5-Trimethylbenzene	17.44	105	10954	0.4269 ug/L	99
86)	2-Chlorotoluene	17.51	91	11900	0.4807 ug/L	93
87)	4-Chlorotoluene	17.57	91	10437	0.4422 ug/L	94
88)	a-Methylstyrene	17.92	118	4645	0.3600 ug/L	98
89)	tert-Butylbenzene	17.98	134	2361	0.4580 ug/L	87
90)	1,2,4-Trimethylbenzene	18.04	105	11026	0.4188 ug/L	95
91)	sec-Butylbenzene	18.31	105	13954	0.4543 ug/L	95
92)	p-Isopropyltoluene	18.50	119	11850	0.4527 ug/L	94
93)	1,3-Dichlorobenzene	18.70	146	6789	0.4510 ug/L	100
94)	1,4-Dichlorobenzene	18.85	146	7052	0.4633 ug/L	99
95)	n-Butylbenzene	19.12	91	11908	0.4639 ug/L	90
96)	1,2-Dichlorobenzene	19.42	146	6295	0.4454 ug/L	99
97)	1,2-Dibromo-3-Chloropropan	20.62	75	204	0.1685 ug/L #	1
98)	1,2,4-Trichlorobenzene	21.96	180	4710	0.4715 ug/L	93
99)	Hexachlorobutadiene	22.15	225	1916	0.4613 ug/L	98
100)	Naphthalene	22.38	128	8061	0.3948 ug/L	90
101)	1,2,3-Trichlorobenzene	22.75	180	4023	0.4349 ug/L	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140315.D Vial: 3
Acq On : 30 Jun 2016 12:35 Operator: TMB
Sample : WG574723-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:20 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

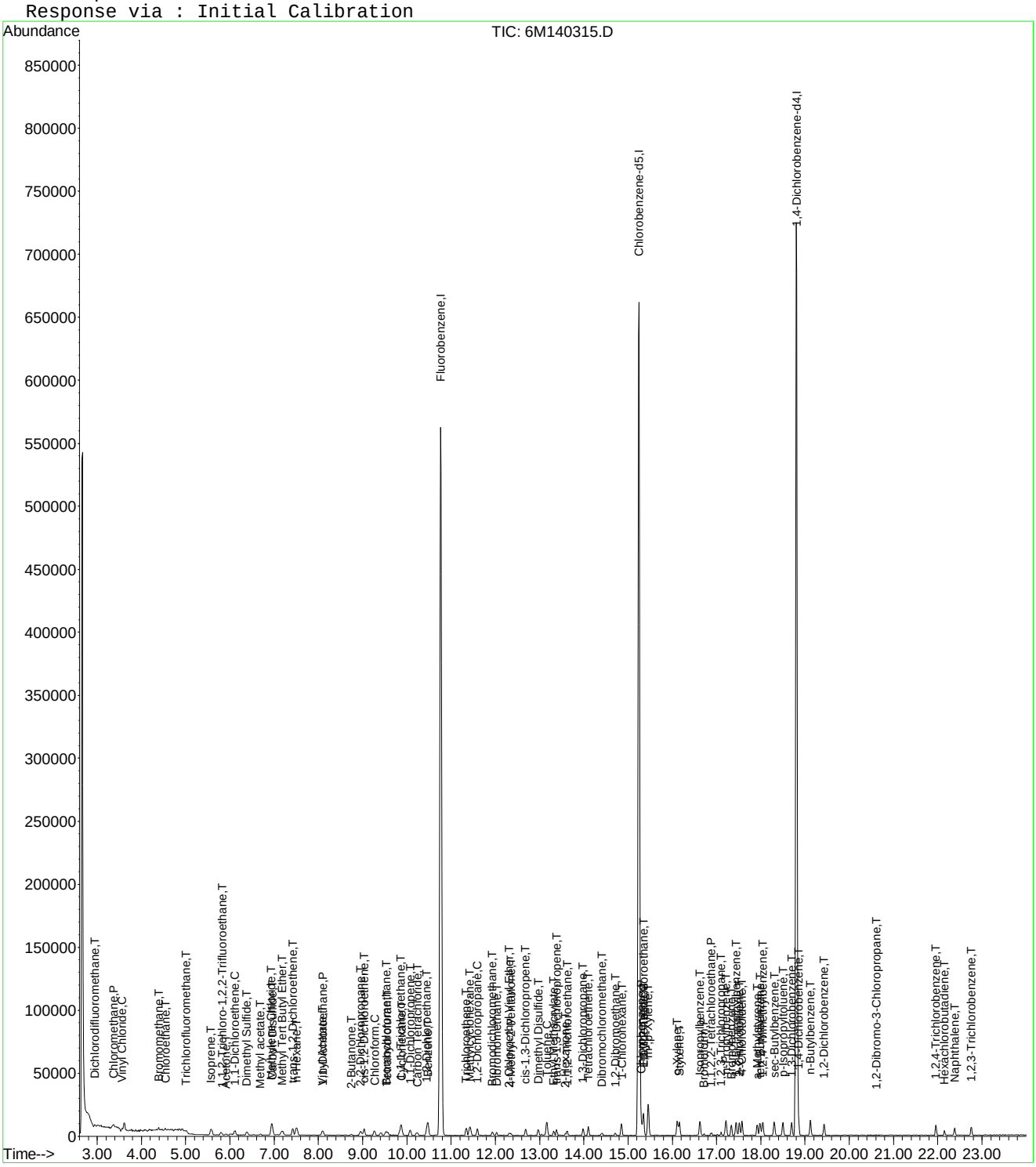

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140315.D Vial: 3
Acq On : 30 Jun 2016 12:35 Operator: TMB
Sample : WG574723-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.3390	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.5959	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.3705	7.4	100	0.00
5	T	1,3-Butadiene	-1.0000	-2.4246	0.0	0	0.03
6	T	Bromomethane	-1.0000	0.3892	0.0	100	0.02
7	T	Chloroethane	-1.0000	0.3006	0.0	100	0.02
8	T	Trichlorofluoromethane	0.4000	0.4585	-14.6	100	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.55#
10	T	Isoprene	-1.0000	0.4231	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-5.79#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3176	0.0	100	0.04
13	T	Acetone	-1.0000	0.7243	0.0	100	0.00
14	C	1,1-Dichloroethene	0.4000	0.4030	-0.7	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.29#
16	T	Dimethyl Sulfide	-1.0000	0.3910	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.64#
18	T	Methyl acetate	-1.0000	0.2951	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4315	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4648	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.15#
22	T	Methyl Tert Butyl Ether	-1.0000	0.4048	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.4158	-4.0	100	0.00
24	T	n-Hexane	-1.0000	0.4649	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-7.90#
26	T	Vinyl Acetate	-1.0000	0.2121	0.0	100	0.00
27	P	1,1-Dichloroethane	0.4000	0.4124	-3.1	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.53#
29	T	2-Butanone	-1.0000	0.3000	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.86#
31	T	2,2-Dichloropropane	0.4000	0.3863	3.4	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.4263	-6.6	100	0.00
33	C	Chloroform	0.4000	0.3747	6.3	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.41#
35	T	Bromochloromethane	0.4000	0.3787	5.3	100	0.00
36	T	Tetrahydrofuran	-1.0000	1.3892	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.59#
38	T	1,1,1-Trichloroethane	0.4000	0.3726	6.9	100	0.02
39	T	Cyclohexane	-1.0000	0.4139	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4176	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	0.4000	0.3110	22.3#	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-10.21#
45	T	1,2-Dichloroethane	0.4000	0.3998	0.1	100	0.00
46	T	Benzene	0.4000	0.4431	-10.8	100	0.00
47	T	Trichloroethene	0.4000	0.4309	-7.7	100	0.00
48	T	Methylcyclohexane	-1.0000	0.4324	0.0	100	-0.01
49	C	1,2-Dichloropropane	0.4000	0.4147	-3.7	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.94#
51	T	Bromodichloromethane	0.4000	0.3566	10.8	100	0.00
52	T	Dibromomethane	0.4000	0.3436	14.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2769	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.1601	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140315.D Vial: 3
Acq On : 30 Jun 2016 12:35 Operator: TMB
Sample : WG574723-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3941	1.5	100	-0.01
56	T	Dimethyl Disulfide	-1.0000	0.2881	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0457	0.0	100	0.00
59	C	Toluene	0.4000	0.4560	-14.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3238	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.16#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3589	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.3806	4.9	100	0.00
64	T	2-Hexanone	-1.0000	0.2955	0.0	100	0.00
65	T	1,3-Dichloropropane	0.4000	0.4236	-5.9	100	-0.01
66	T	Tetrachloroethene	0.4000	0.4075	-1.9	100	0.00
67	T	Dibromochloromethane	0.4000	0.3321	17.0	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.3584	10.4	100	0.00
69	T	1-Chlorohexane	0.4000	0.4089	-2.2	100	0.00
70	P	Chlorobenzene	0.4000	0.4549	-13.7	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3848	3.8	100	0.00
72	C	Ethylbenzene	0.4000	0.4073	-1.8	100	0.00
73	T	m-,p-Xylene	0.8000	0.8620	-7.8	100	-0.01
74	T	o-Xylene	-1.0000	0.4326	0.0	100	-0.01
75	T	Styrene	0.4000	0.3912	2.2	100	0.00
76	P	Bromoform	-1.0000	0.2777	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.4282	-7.0	100	-0.01
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.3576	10.6	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0725	0.0	100	-0.01
81	T	1,2,3-Trichloropropane	-1.0000	0.2329	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.1005	0.0	100	0.00
83	T	n-Propylbenzene	0.4000	0.4618	-15.4	100	0.00
84	T	Bromobenzene	0.4000	0.4379	-9.5	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.4270	-6.7	100	-0.01
86	T	2-Chlorotoluene	0.4000	0.4807	-20.2#	100	-0.01
87	T	4-Chlorotoluene	0.4000	0.4422	-10.6	100	-0.01
88	T	a-Methylstyrene	-1.0000	0.3600	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.4580	0.0	100	-0.01
90	T	1,2,4-Trimethylbenzene	-1.0000	0.4188	0.0	100	-0.01
91	T	sec-Butylbenzene	-1.0000	0.4543	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4527	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.4510	-12.7	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.4633	-15.8	100	0.00
95	T	n-Butylbenzene	-1.0000	0.4639	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.4454	-11.4	100	-0.01
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.1685	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	0.4000	0.4714	-17.9	100	-0.01
99	T	Hexachlorobutadiene	0.4000	0.4613	-15.3	100	0.00
100	T	Naphthalene	0.4000	0.3948	1.3	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.4349	-8.7	100	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140315.D 8260WTR.M Fri Jul 01 14:35:02 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140316.D Vial: 4
Acq On : 30 Jun 2016 13:08 Operator: TMB
Sample : WG574723-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:20:58 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	687429	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	485381	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	251587	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	3444	0.4938 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.96%#	
43) 1,2-Dichloroethane-d4	10.31	65	4418	0.5018 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	2.00%#	
58) Toluene-d8	13.04	98	12734	0.5328 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.12%#	
80) p-Bromofluorobenzene	17.01	95	5390	0.5470 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.20%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	11016	0.9586 ug/L #	84
3) Chloromethane	3.37	50	15509	1.2088 ug/L	95
4) Vinyl Chloride	3.56	62	7694	1.0920 ug/L	94
5) 1,3-Butadiene	3.62	54	7756	Below Cal #	68
6) Bromomethane	4.39	94	4929	1.0528 ug/L	86
7) Chloroethane	4.53	64	4342	0.9753 ug/L	93
8) Trichlorofluoromethane	5.01	101	10531	0.9800 ug/L	96
9) Diethyl ether	5.55	59	32999	5.2047 ug/L	95
10) Isoprene	5.57	67	9716	1.0131 ug/L	99
11) Acrolein	5.79	56	2538	2.4066 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	6731	1.0068 ug/L	91
13) Acetone	5.90	43	3178	1.4430 ug/L #	76
14) 1,1-Dichloroethene	6.12	61	13411	1.0339 ug/L	87
15) Tert-Butyl Alcohol	6.25	59	6206	9.2151 ug/L #	84
16) Dimethyl Sulfide	6.38	62	5231	0.9246 ug/L	96
17) Iodomethane	6.65	142	2100	1.3352 ug/L	82
18) Methyl acetate	6.69	43	5561	0.9331 ug/L #	66
19) Methylene Chloride	6.94	84	8529	1.1466 ug/L	84
20) Carbon Disulfide	6.97	76	25467	1.0714 ug/L	99
21) Acrylonitrile	7.16	53	6206	2.2695 ug/L	94
22) Methyl Tert Butyl Ether	7.18	73	19700	0.9991 ug/L	95
23) trans-1,2-Dichloroethene	7.42	96	6984	1.0053 ug/L	82
24) n-Hexane	7.51	57	13051	1.1069 ug/L	96
25) Diisopropyl ether	7.90	45	166032	5.2317 ug/L	96
26) Vinyl Acetate	8.09	43	9104	0.6872 ug/L #	78
27) 1,1-Dichloroethane	8.10	63	15277	1.0213 ug/L	96
28) Ethyl-Tert-Butyl ether	8.53	59	131034	5.1323 ug/L	97
29) 2-Butanone	8.73	43	3268	0.9693 ug/L #	57
30) Propionitrile	8.85	54	4333	4.7359 ug/L	96
31) 2,2-Dichloropropane	8.95	77	11579	1.0261 ug/L	100
32) cis-1,2-Dichloroethene	9.03	96	7838	1.0307 ug/L	88
33) Chloroform	9.26	83	13154	0.9816 ug/L	99
34) 1-Bromopropane	9.41	122	659	1.0190 ug/L	80
35) Bromochloromethane	9.52	130	3868	0.9465 ug/L	100
36) Tetrahydrofuran	9.55	42	14306	6.0837 ug/L	89
38) 1,1,1-Trichloroethane	9.84	97	11995	1.0282 ug/L	99
39) Cyclohexane	9.89	56	16203	1.0675 ug/L	92
40) 1,1-Dichloropropene	10.08	75	10372	1.0207 ug/L	98
41) Tert-Amyl-Methyl ether	10.22	73	97548	5.0317 ug/L	97
42) Carbon Tetrachloride	10.22	117	8394	0.8763 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M140316.D 8260WTR.M Fri Jul 01 14:21:13 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140316.D Vial: 4
Acq On : 30 Jun 2016 13:08 Operator: TMB
Sample : WG574723-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:20:58 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	10834	1.0084 ug/L #	94
46)	Benzene	10.48	78	30089	1.0492 ug/L	98
47)	Trichloroethene	11.35	130	7344	1.0378 ug/L	95
48)	Methylcyclohexane	11.43	83	11566	1.0410 ug/L	92
49)	1,2-Dichloropropane	11.59	63	8057	0.9755 ug/L	94
51)	Bromodichloromethane	11.93	83	9704	0.9738 ug/L	95
52)	Dibromomethane	12.02	93	3754	0.9395 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.31	63	3750	0.9056 ug/L	89
54)	4-Methyl-2-Pentanone	12.35	58	1943	0.7624 ug/L #	38
55)	cis-1,3-Dichloropropene	12.68	75	10823	0.9354 ug/L	99
56)	Dimethyl Disulfide	12.97	79	5005	0.7771 ug/L	92
59)	Toluene	13.16	91	30726	1.0622 ug/L	99
60)	Ethyl Methacrylate	13.32	69	7189	0.8735 ug/L	94
62)	trans-1,3-Dichloropropene	13.39	75	9521	0.9256 ug/L	92
63)	1,1,2-Trichloroethane	13.63	97	5389	1.0066 ug/L	99
64)	2-Hexanone	13.58	43	4641	0.9130 ug/L	84
65)	1,3-Dichloropropane	13.99	76	10212	1.0121 ug/L	95
66)	Tetrachloroethene	14.10	166	7069	1.0254 ug/L	90
67)	Dibromochloromethane	14.41	129	5818	0.8951 ug/L	98
68)	1,2-Dibromoethane	14.71	107	5034	0.9742 ug/L	100
69)	1-Chlorohexane	14.85	91	9657	1.0031 ug/L	86
70)	Chlorobenzene	15.30	112	19612	1.0571 ug/L	95
71)	1,1,1,2-Tetrachloroethane	15.35	131	6511	0.9863 ug/L	95
72)	Ethylbenzene	15.35	106	9761	1.0051 ug/L	83
73)	m-,p-Xylene	15.45	106	24695	2.1041 ug/L	92
74)	o-Xylene	16.11	106	11834	1.0110 ug/L	92
75)	Styrene	16.16	104	18993	0.9644 ug/L	88
76)	Bromoform	16.72	173	3330	0.8262 ug/L #	88
77)	Isopropylbenzene	16.61	105	31878	1.0438 ug/L	96
79)	1,1,2,2-Tetrachloroethane	16.88	83	5647	0.9248 ug/L	93
81)	1,2,3-Trichloropropane	17.11	110	1314	0.7259 ug/L #	16
82)	trans-1,4-Dichloro-2-Buten	17.18	53	1593	0.6900 ug/L	82
83)	n-Propylbenzene	17.22	91	39699	1.0982 ug/L	95
84)	Bromobenzene	17.34	156	7581	1.0037 ug/L	87
85)	1,3,5-Trimethylbenzene	17.44	105	26502	1.0460 ug/L	94
86)	2-Chlorotoluene	17.51	91	26919	1.1011 ug/L	97
87)	4-Chlorotoluene	17.58	91	23704	1.0170 ug/L	96
88)	a-Methylstyrene	17.92	118	11597	0.9100 ug/L	97
89)	tert-Butylbenzene	17.98	134	5253	1.0319 ug/L	63
90)	1,2,4-Trimethylbenzene	18.04	105	27482	1.0570 ug/L	95
91)	sec-Butylbenzene	18.30	105	33207	1.0949 ug/L	94
92)	p-Isopropyltoluene	18.50	119	27800	1.0755 ug/L	94
93)	1,3-Dichlorobenzene	18.70	146	15649	1.0526 ug/L	95
94)	1,4-Dichlorobenzene	18.85	146	16097	1.0710 ug/L #	64
95)	n-Butylbenzene	19.12	91	27428	1.0821 ug/L	93
96)	1,2-Dichlorobenzene	19.43	146	14706	1.0536 ug/L	98
97)	1,2-Dibromo-3-Chloropropan	20.62	75	1058	0.8847 ug/L	65
98)	1,2,4-Trichlorobenzene	21.97	180	9695	0.9827 ug/L	98
99)	Hexachlorobutadiene	22.15	225	4079	0.9944 ug/L	93
100)	Naphthalene	22.38	128	18851	0.9349 ug/L	92
101)	1,2,3-Trichlorobenzene	22.75	180	9647	1.0560 ug/L	93

(#) = qualifier out of range (m) = manual integration
6M140316.D 8260WTR.M Fri Jul 01 14:21:14 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140316.D Vial: 4
Acq On : 30 Jun 2016 13:08 Operator: TMB
Sample : WG574723-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:21 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

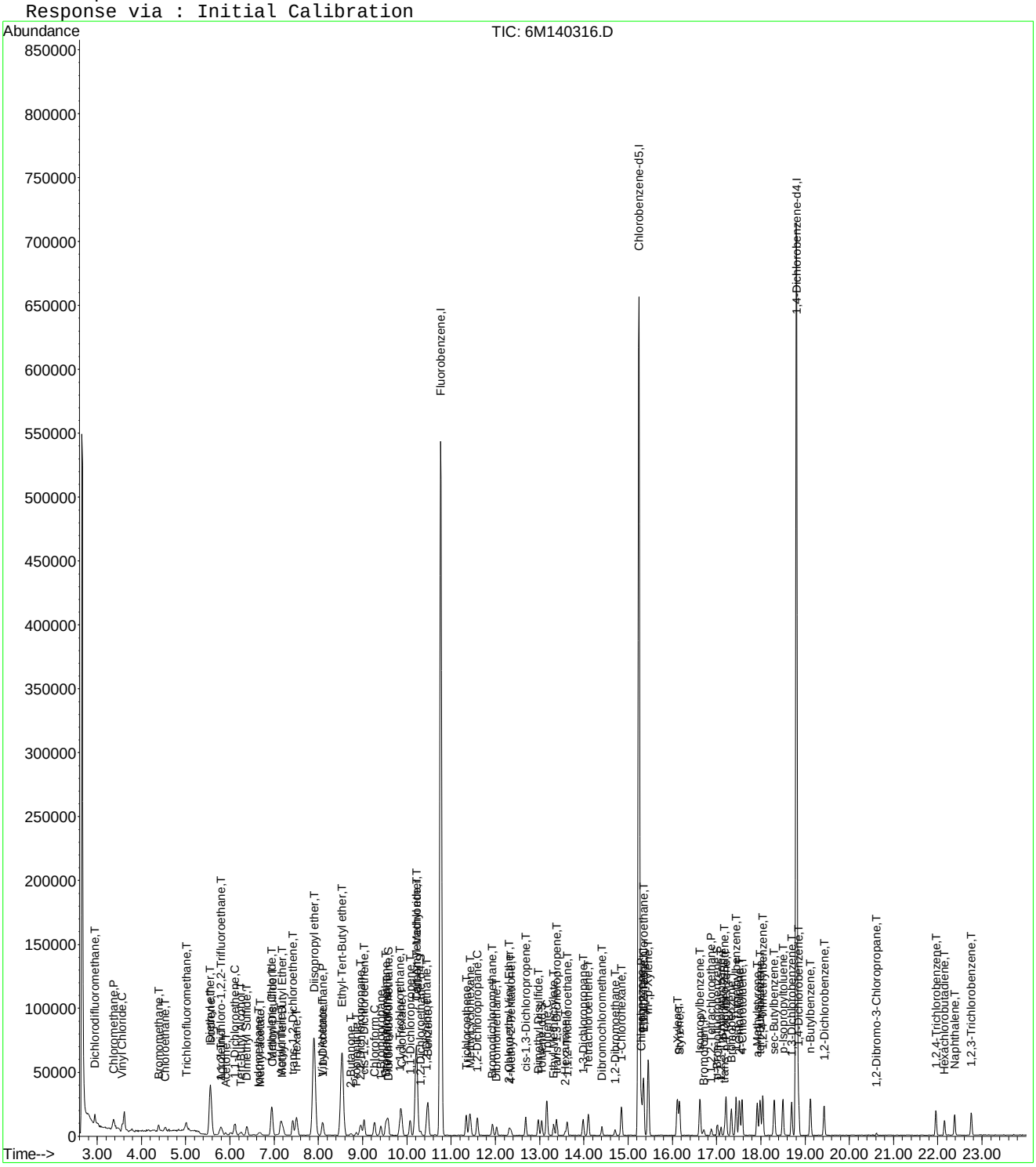

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140316.D Vial: 4
Acq On : 30 Jun 2016 13:08 Operator: TMB
Sample : WG574723-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9586	4.1	100	0.00
3	P	Chloromethane	1.0000	1.2088	-20.9#	100	0.00
4	C	Vinyl Chloride	1.0000	1.0920	-9.2	100	0.00
5	T	1,3-Butadiene	-1.0000	-1.1669	0.0	0	0.03
6	T	Bromomethane	1.0000	1.0528	-5.3	100	0.02
7	T	Chloroethane	1.0000	0.9753	2.5	100	0.00
8	T	Trichlorofluoromethane	1.0000	0.9800	2.0	100	0.02
9	T	Diethyl ether	5.0000	5.2047	-4.1	100	0.00
10	T	Isoprene	-1.0000	1.0131	0.0	100	0.00
11	T	Acrolein	-1.0000	2.4066	0.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0068	-0.7	100	0.00
13	T	Acetone	-1.0000	1.4430	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	1.0338	-3.4	100	0.02
15	T	Tert-Butyl Alcohol	10.0000	9.2151	7.8	100	-0.04
16	T	Dimethyl Sulfide	-1.0000	0.9246	0.0	100	0.00
17	T	Iodomethane	1.0000	1.3352	-33.5#	100	0.00
18	T	Methyl acetate	-1.0000	0.9331	0.0	100	0.00
19	T	Methylene Chloride	1.0000	1.1466	-14.7	100	0.00
20	T	Carbon Disulfide	1.0000	1.0714	-7.1	100	0.00
21	T	Acrylonitrile	2.5000	2.2695	9.2	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9991	0.1	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	1.0053	-0.5	100	0.00
24	T	n-Hexane	-1.0000	1.1069	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	5.2317	-4.6	100	0.00
26	T	Vinyl Acetate	-1.0000	0.6872	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0213	-2.1	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	5.1323	-2.6	100	0.00
29	T	2-Butanone	-1.0000	0.9693	0.0	100	0.00
30	T	Propionitrile	5.0000	4.7359	5.3	100	0.00
31	T	2,2-Dichloropropane	1.0000	1.0261	-2.6	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	1.0307	-3.1	100	0.00
33	C	Chloroform	1.0000	0.9816	1.8	100	0.00
34		1-Bromopropane	1.0000	1.0190	-1.9	100	0.00
35	T	Bromochloromethane	1.0000	0.9465	5.3	100	0.00
36	T	Tetrahydrofuran	5.0000	6.0837	-21.7#	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.4938	0.0	100	0.00
38	T	1,1,1-Trichloroethane	1.0000	1.0282	-2.8	100	0.00
39	T	Cyclohexane	1.0000	1.0675	-6.8	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0207	-2.1	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	5.0317	-0.6	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.8763	12.4	100	-0.01
43	S	1,2-Dichloroethane-d4	-1.0000	0.5018	0.0	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	-0.01
45	T	1,2-Dichloroethane	1.0000	1.0084	-0.8	100	0.00
46	T	Benzene	1.0000	1.0492	-4.9	100	0.00
47	T	Trichloroethene	1.0000	1.0378	-3.8	100	0.00
48	T	Methylcyclohexane	-1.0000	1.0410	0.0	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.9756	2.4	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.94#
51	T	Bromodichloromethane	1.0000	0.9738	2.6	100	0.00
52	T	Dibromomethane	1.0000	0.9395	6.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.9056	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.7624	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140316.D Vial: 4
Acq On : 30 Jun 2016 13:08 Operator: TMB
Sample : WG574723-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9355	6.5	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.7771	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.5328	0.0	100	0.00
59	C	Toluene	1.0000	1.0621	-6.2	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.8735	12.7	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	1.0000	0.9256	7.4	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	1.0066	-0.7	100	0.00
64	T	2-Hexanone	-1.0000	0.9130	0.0	100	0.00
65	T	1,3-Dichloropropane	1.0000	1.0121	-1.2	100	0.00
66	T	Tetrachloroethene	1.0000	1.0254	-2.5	100	0.00
67	T	Dibromochloromethane	1.0000	0.8951	10.5	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.9742	2.6	100	0.00
69	T	1-Chlorohexane	1.0000	1.0031	-0.3	100	0.00
70	P	Chlorobenzene	1.0000	1.0571	-5.7	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.9863	1.4	100	0.00
72	C	Ethylbenzene	1.0000	1.0051	-0.5	100	0.00
73	T	m-,p-Xylene	2.0000	2.1041	-5.2	100	-0.01
74	T	o-Xylene	1.0000	1.0110	-1.1	100	0.00
75	T	Styrene	1.0000	0.9645	3.6	100	0.00
76	P	Bromoform	1.0000	0.8262	17.4	100	0.00
77	T	Isopropylbenzene	1.0000	1.0438	-4.4	100	-0.01
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	0.9248	7.5	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5470	0.0	100	-0.01
81	T	1,2,3-Trichloropropane	1.0000	0.7259	27.4#	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	1.0000	0.6900	31.0#	100	0.00
83	T	n-Propylbenzene	1.0000	1.0982	-9.8	100	0.00
84	T	Bromobenzene	1.0000	1.0037	-0.4	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	1.0460	-4.6	100	-0.01
86	T	2-Chlorotoluene	1.0000	1.1011	-10.1	100	-0.01
87	T	4-Chlorotoluene	1.0000	1.0171	-1.7	100	0.00
88	T	a-Methylstyrene	-1.0000	0.9100	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	1.0319	-3.2	100	-0.01
90	T	1,2,4-Trimethylbenzene	1.0000	1.0570	-5.7	100	-0.01
91	T	sec-Butylbenzene	1.0000	1.0949	-9.5	100	-0.01
92	T	p-Isopropyltoluene	1.0000	1.0755	-7.6	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0526	-5.3	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	1.0710	-7.1	100	0.00
95	T	n-Butylbenzene	1.0000	1.0821	-8.2	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0536	-5.4	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.8847	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	1.0000	0.9827	1.7	100	0.00
99	T	Hexachlorobutadiene	1.0000	0.9944	0.6	100	0.00
100	T	Naphthalene	1.0000	0.9349	6.5	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	1.0560	-5.6	100	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140316.D 8260WTR.M Fri Jul 01 14:35:27 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140317.D Vial: 5
Acq On : 30 Jun 2016 13:40 Operator: TMB
Sample : WG574723-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:18 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	681288	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	479716	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	253621	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	6933	1.0030 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	4.00%#	
43) 1,2-Dichloroethane-d4	10.32	65	9000	1.0314 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	4.12%#	
58) Toluene-d8	13.04	98	25015	1.0589 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.24%#	
80) p-Bromofluorobenzene	17.02	95	10214	1.0283 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	21693	1.9048 ug/L	92
3) Chloromethane	3.37	50	28294	2.2252 ug/L	99
4) Vinyl Chloride	3.57	62	15095	2.1618 ug/L	90
5) 1,3-Butadiene	3.61	54	14228	0.5548 ug/L	81
6) Bromomethane	4.39	94	10021	2.1597 ug/L	92
7) Chloroethane	4.54	64	8637	1.9576 ug/L	99
8) Trichlorofluoromethane	5.01	101	21198	1.9905 ug/L	99
9) Diethyl ether	5.55	59	166163	26.4440 ug/L	96
10) Isoprene	5.58	67	20113	2.1161 ug/L	98
11) Acrolein	5.79	56	13232	12.6601 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.80	101	13403	2.0228 ug/L	98
13) Acetone	5.90	43	5431	2.4882 ug/L	86
14) 1,1-Dichloroethene	6.11	61	26310	2.0465 ug/L	95
15) Tert-Butyl Alcohol	6.25	59	32448	48.6151 ug/L	96
16) Dimethyl Sulfide	6.39	62	10884	1.9412 ug/L	92
17) Iodomethane	6.64	142	4160	1.7736 ug/L	99
18) Methyl acetate	6.68	43	11835	2.0038 ug/L #	83
19) Methylene Chloride	6.94	84	16307	2.2119 ug/L	88
20) Carbon Disulfide	6.96	76	49030	2.0813 ug/L	98
21) Acrylonitrile	7.14	53	32708	12.0688 ug/L	93
22) Methyl Tert Butyl Ether	7.17	73	39510	2.0219 ug/L	98
23) trans-1,2-Dichloroethene	7.43	96	14262	2.0714 ug/L	91
24) n-Hexane	7.51	57	25227	2.1588 ug/L	95
25) Diisopropyl ether	7.90	45	823711	26.1894 ug/L	97
26) Vinyl Acetate	8.09	43	22167	1.6883 ug/L	93
27) 1,1-Dichloroethane	8.10	63	31011	2.0919 ug/L	96
28) Ethyl-Tert-Butyl ether	8.53	59	650758	25.7185 ug/L	98
29) 2-Butanone	8.72	43	6560	1.9633 ug/L #	79
30) Propionitrile	8.86	54	22752	25.0916 ug/L	98
31) 2,2-Dichloropropane	8.95	77	23903	2.1372 ug/L	100
32) cis-1,2-Dichloroethene	9.03	96	14680	1.9478 ug/L	78
33) Chloroform	9.27	83	26391	1.9872 ug/L	98
34) 1-Bromopropane	9.42	122	1777	1.9534 ug/L	97
35) Bromochloromethane	9.52	130	8058	1.9896 ug/L	93
36) Tetrahydrofuran	9.55	42	58983	25.3089 ug/L	92
38) 1,1,1-Trichloroethane	9.86	97	23448	2.0280 ug/L	99
39) Cyclohexane	9.88	56	30890	2.0535 ug/L	95
40) 1,1-Dichloropropene	10.08	75	20511	2.0367 ug/L	98
41) Tert-Amyl-Methyl ether	10.22	73	494429	25.7332 ug/L	97
42) Carbon Tetrachloride	10.23	117	18006	1.8966 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140317.D 8260WTR.M Fri Jul 01 14:21:21 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140317.D Vial: 5
Acq On : 30 Jun 2016 13:40 Operator: TMB
Sample : WG574723-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:18 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	22120	2.0774 ug/L	98
46)	Benzene	10.48	78	60457	2.1271 ug/L	100
47)	Trichloroethene	11.35	130	14433	2.0579 ug/L	92
48)	Methylcyclohexane	11.43	83	23167	2.1040 ug/L	93
49)	1,2-Dichloropropane	11.59	63	16607	2.0289 ug/L	96
50)	1,4-Dioxane	11.94	88	2503	45.1726 ug/L	97
51)	Bromodichloromethane	11.93	83	19917	2.0166 ug/L	98
52)	Dibromomethane	12.02	93	8051	2.0330 ug/L	95
53)	2-Chloroethyl Vinyl Ether	12.31	63	7544	1.8383 ug/L	94
54)	4-Methyl-2-Pentanone	12.35	58	4674	1.8506 ug/L	83
55)	cis-1,3-Dichloropropene	12.69	75	23212	2.0243 ug/L	98
56)	Dimethyl Disulfide	12.97	79	10618	1.6635 ug/L	98
59)	Toluene	13.16	91	61452	2.1494 ug/L	98
60)	Ethyl Methacrylate	13.32	69	15594	1.9171 ug/L	93
62)	trans-1,3-Dichloropropene	13.38	75	19722	1.9399 ug/L	94
63)	1,1,2-Trichloroethane	13.63	97	10814	2.0438 ug/L	96
64)	2-Hexanone	13.59	43	9516	1.8942 ug/L	94
65)	1,3-Dichloropropane	13.98	76	20700	2.0758 ug/L	97
66)	Tetrachloroethene	14.11	166	14321	2.1019 ug/L	97
67)	Dibromochloromethane	14.41	129	12204	1.8998 ug/L	99
68)	1,2-Dibromoethane	14.71	107	10178	1.9929 ug/L	98
69)	1-Chlorohexane	14.85	91	19403	2.0392 ug/L	87
70)	Chlorobenzene	15.30	112	39367	2.1469 ug/L	81
71)	1,1,1,2-Tetrachloroethane	15.35	131	13145	2.0147 ug/L	96
72)	Ethylbenzene	15.35	106	20014	2.0853 ug/L	88
73)	m-,p-Xylene	15.45	106	50059	4.3155 ug/L	94
74)	o-Xylene	16.11	106	24284	2.0991 ug/L	92
75)	Styrene	16.16	104	39349	2.0217 ug/L	93
76)	Bromoform	16.71	173	7051	1.7700 ug/L	91
77)	Isopropylbenzene	16.62	105	63245	2.0952 ug/L	97
79)	1,1,2,2-Tetrachloroethane	16.87	83	11943	1.9403 ug/L	99
81)	1,2,3-Trichloropropane	17.11	110	3577	1.9601 ug/L	70
82)	trans-1,4-Dichloro-2-Buten	17.18	53	4235	1.8198 ug/L	92
83)	n-Propylbenzene	17.22	91	77640	2.1306 ug/L	97
84)	Bromobenzene	17.34	156	15737	2.0668 ug/L	90
85)	1,3,5-Trimethylbenzene	17.45	105	53524	2.0955 ug/L	96
86)	2-Chlorotoluene	17.52	91	50361	2.0435 ug/L	96
87)	4-Chlorotoluene	17.58	91	51425	2.1888 ug/L	96
88)	a-Methylstyrene	17.91	118	23705	1.8452 ug/L	90
89)	tert-Butylbenzene	17.99	134	10746	2.0941 ug/L	69
90)	1,2,4-Trimethylbenzene	18.05	105	55973	2.1356 ug/L	97
91)	sec-Butylbenzene	18.30	105	66761	2.1835 ug/L	94
92)	p-Isopropyltoluene	18.50	119	55466	2.1287 ug/L	97
93)	1,3-Dichlorobenzene	18.70	146	31212	2.0827 ug/L	98
94)	1,4-Dichlorobenzene	18.85	146	31934	2.1076 ug/L	79
95)	n-Butylbenzene	19.12	91	53671	2.1004 ug/L	95
96)	1,2-Dichlorobenzene	19.44	146	29144	2.0713 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	20.61	75	1880	1.5595 ug/L	96
98)	1,2,4-Trichlorobenzene	21.96	180	19883	1.9991 ug/L	99
99)	Hexachlorobutadiene	22.15	225	8377	2.0258 ug/L	98
100)	Naphthalene	22.38	128	39370	1.9369 ug/L	98
101)	1,2,3-Trichlorobenzene	22.75	180	18357	1.9933 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140317.D 8260WTR.M Fri Jul 01 14:21:22 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140317.D Vial: 5
Acq On : 30 Jun 2016 13:40 Operator: TMB
Sample : WG574723-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:21 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

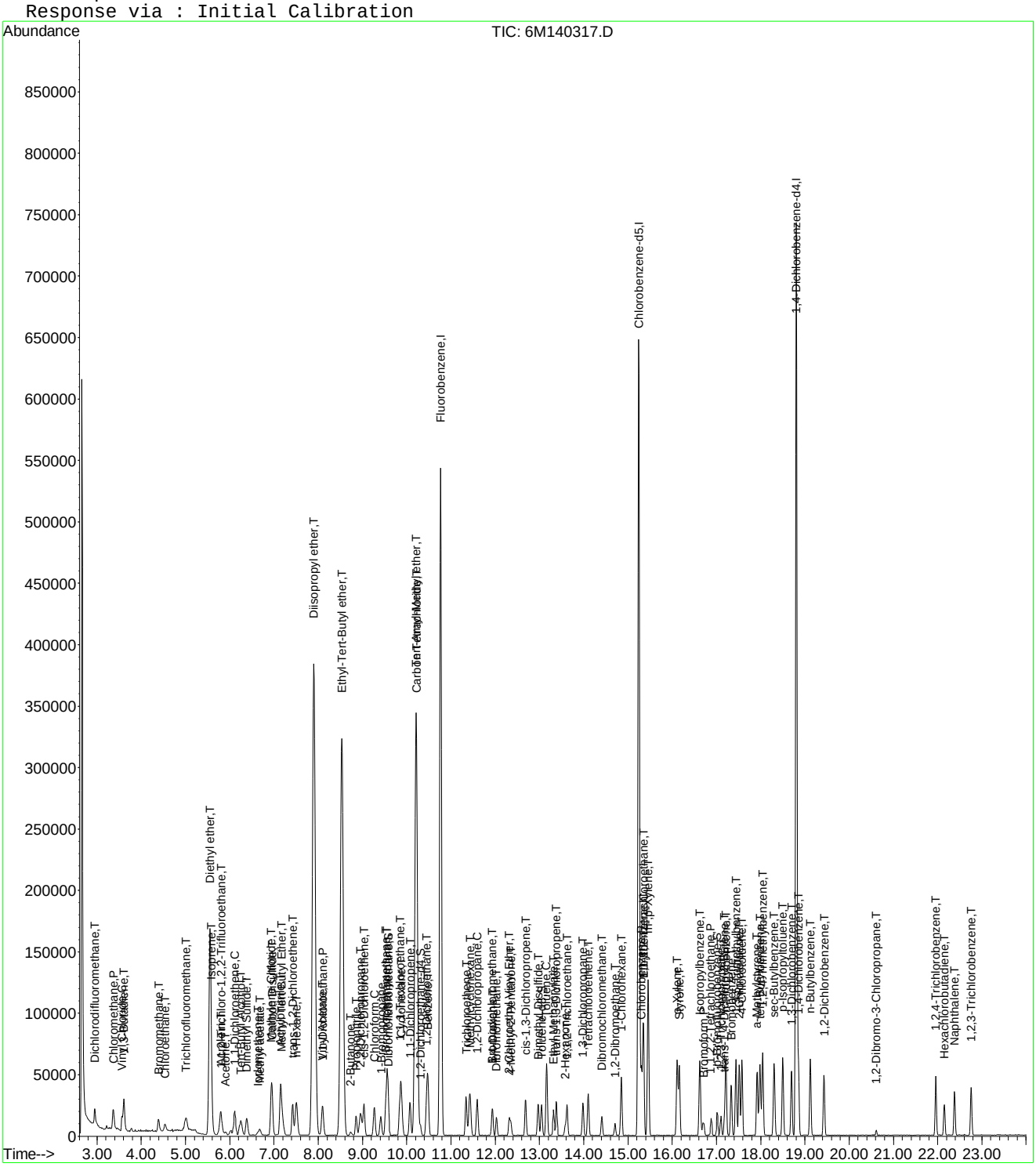

6M140317.D 8260WTR.M Fri Jul 01 14:21:24 2016 Page 3

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140317.D Vial: 5
Acq On : 30 Jun 2016 13:40 Operator: TMB
Sample : WG574723-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.9048	4.8	100	0.01
3	P	Chloromethane	2.0000	2.2252	-11.3	100	0.01
4	C	Vinyl Chloride	2.0000	2.1618	-8.1	100	0.01
5	T	1,3-Butadiene	-1.0000	0.5548	0.0	0	0.02
6	T	Bromomethane	2.0000	2.1597	-8.0	100	0.02
7	T	Chloroethane	2.0000	1.9576	2.1	100	0.01
8	T	Trichlorofluoromethane	2.0000	1.9905	0.5	100	0.01
9	T	Diethyl ether	25.0000	26.4441	-5.8	100	0.00
10	T	Isoprene	-1.0000	2.1161	0.0	100	0.01
11	T	Acrolein	12.5000	12.6601	-1.3	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	2.0228	-1.1	100	0.02
13	T	Acetone	-1.0000	2.4882	0.0	100	0.00
14	C	1,1-Dichloroethene	2.0000	2.0465	-2.3	100	0.01
15	T	Tert-Butyl Alcohol	50.0000	48.6152	2.8	100	-0.04
16	T	Dimethyl Sulfide	-1.0000	1.9412	0.0	100	0.00
17	T	Iodomethane	2.0000	1.7736	11.3	100	0.00
18	T	Methyl acetate	-1.0000	2.0038	0.0	100	0.00
19	T	Methylene Chloride	2.0000	2.2119	-10.6	100	0.00
20	T	Carbon Disulfide	2.0000	2.0813	-4.1	100	0.00
21	T	Acrylonitrile	12.5000	12.0688	3.4	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	2.0219	-1.1	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	2.0714	-3.6	100	0.01
24	T	n-Hexane	-1.0000	2.1588	0.0	100	0.01
25	T	Diisopropyl ether	25.0000	26.1894	-4.8	100	0.00
26	T	Vinyl Acetate	-1.0000	1.6883	0.0	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.0919	-4.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	25.7185	-2.9	100	0.00
29	T	2-Butanone	-1.0000	1.9633	0.0	100	0.00
30	T	Propionitrile	25.0000	25.0916	-0.4	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1372	-6.9	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	1.9478	2.6	100	0.00
33	C	Chloroform	2.0000	1.9872	0.6	100	0.00
34		1-Bromopropane	2.0000	1.9534	2.3	100	0.01
35	T	Bromochloromethane	2.0000	1.9896	0.5	100	0.00
36	T	Tetrahydrofuran	25.0000	25.3089	-1.2	100	0.00
37	S	Dibromofluoromethane	1.0000	1.0030	-0.3	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	2.0280	-1.4	100	0.01
39	T	Cyclohexane	2.0000	2.0535	-2.7	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0367	-1.8	100	0.01
41	T	Tert-Amyl-Methyl ether	25.0000	25.7333	-2.9	100	0.00
42	T	Carbon Tetrachloride	2.0000	1.8966	5.2	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0314	-3.1	100	0.01
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	T	1,2-Dichloroethane	2.0000	2.0774	-3.9	100	0.00
46	T	Benzene	2.0000	2.1271	-6.4	100	0.00
47	T	Trichloroethene	2.0000	2.0579	-2.9	100	0.01
48	T	Methylcyclohexane	-1.0000	2.1040	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0289	-1.4	100	0.00
50	T	1,4-Dioxane	-1.0000	45.1726	0.0	100	0.00
51	T	Bromodichloromethane	2.0000	2.0166	-0.8	100	0.00
52	T	Dibromomethane	2.0000	2.0330	-1.6	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	1.8383	8.1	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.8506	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140317.D Vial: 5
Acq On : 30 Jun 2016 13:40 Operator: TMB
Sample : WG574723-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	2.0243	-1.2	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.6635	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	1.0589	-5.9	100	0.00
59	C	Toluene	2.0000	2.1494	-7.5	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.9171	4.1	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	2.0000	1.9399	3.0	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	2.0438	-2.2	100	0.00
64	T	2-Hexanone	-1.0000	1.8942	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.0758	-3.8	100	0.00
66	T	Tetrachloroethene	2.0000	2.1019	-5.1	100	0.00
67	T	Dibromochloromethane	2.0000	1.8998	5.0	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.9929	0.4	100	0.00
69	T	1-Chlorohexane	2.0000	2.0392	-2.0	100	0.00
70	P	Chlorobenzene	2.0000	2.1469	-7.3	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	2.0147	-0.7	100	0.00
72	C	Ethylbenzene	2.0000	2.0853	-4.3	100	0.00
73	T	m-,p-Xylene	4.0000	4.3156	-7.9	100	0.00
74	T	o-Xylene	2.0000	2.0991	-5.0	100	0.00
75	T	Styrene	2.0000	2.0217	-1.1	100	0.00
76	P	Bromoform	2.0000	1.7700	11.5	100	0.00
77	T	Isopropylbenzene	2.0000	2.0952	-4.8	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	1.9403	3.0	100	0.00
80	S	p-Bromofluorobenzene	1.0000	1.0283	-2.8	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	1.9601	2.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	1.8198	9.0	100	0.00
83	T	n-Propylbenzene	2.0000	2.1306	-6.5	100	0.00
84	T	Bromobenzene	2.0000	2.0668	-3.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.0955	-4.8	100	0.00
86	T	2-Chlorotoluene	2.0000	2.0435	-2.2	100	0.00
87	T	4-Chlorotoluene	2.0000	2.1888	-9.4	100	0.00
88	T	a-Methylstyrene	-1.0000	1.8452	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	2.0941	-4.7	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.1356	-6.8	100	0.00
91	T	sec-Butylbenzene	2.0000	2.1835	-9.2	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.1287	-6.4	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.0827	-4.1	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.1076	-5.4	100	0.00
95	T	n-Butylbenzene	2.0000	2.1004	-5.0	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0713	-3.6	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.5595	22.0#	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	1.9991	0.0	100	0.00
99	T	Hexachlorobutadiene	2.0000	2.0258	-1.3	100	0.00
100	T	Naphthalene	2.0000	1.9369	3.2	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9933	0.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140317.D 8260WTR.M Fri Jul 01 14:35:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140318.D Vial: 6
Acq On : 30 Jun 2016 14:12 Operator: TMB
Sample : WG574723-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:25 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	665911	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	475530	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	251113	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	17208	2.5471 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 10.20%#		
43) 1,2-Dichloroethane-d4	10.32	65	22015	2.5813 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 10.32%#		
58) Toluene-d8	13.04	98	61675	2.6338 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 10.52%#		
80) p-Bromofluorobenzene	17.01	95	25621	2.6052 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 10.44%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	48247	4.3342 ug/L	98
3) Chloromethane	3.37	50	59455	4.7839 ug/L	98
4) Vinyl Chloride	3.57	62	33485	4.9063 ug/L	98
5) 1,3-Butadiene	3.60	54	23338	3.0943 ug/L	87
6) Bromomethane	4.39	94	22163	4.8867 ug/L	97
7) Chloroethane	4.54	64	20579	4.7720 ug/L	97
8) Trichlorofluoromethane	5.02	101	49493	4.7547 ug/L	100
9) Diethyl ether	5.55	59	316870	51.5928 ug/L	96
10) Isoprene	5.58	67	44245	4.7626 ug/L	95
11) Acrolein	5.79	56	25354	24.8183 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	5.80	101	30711	4.7419 ug/L	96
13) Acetone	5.90	43	11460	5.3716 ug/L	98
14) 1,1-Dichloroethene	6.11	61	59549	4.7390 ug/L	93
15) Tert-Butyl Alcohol	6.26	59	62697	96.1048 ug/L	99
16) Dimethyl Sulfide	6.39	62	26287	4.7966 ug/L	98
17) Iodomethane	6.65	142	13226	3.7502 ug/L	97
18) Methyl acetate	6.69	43	29044	5.0309 ug/L	94
19) Methylene Chloride	6.95	84	35243	4.8909 ug/L	87
20) Carbon Disulfide	6.97	76	111679	4.8502 ug/L	99
21) Acrylonitrile	7.15	53	65252	24.6331 ug/L	96
22) Methyl Tert Butyl Ether	7.18	73	93809	4.9114 ug/L	100
23) trans-1,2-Dichloroethene	7.43	96	32653	4.8519 ug/L	90
24) n-Hexane	7.51	57	57537	5.0375 ug/L	99
25) Diisopropyl ether	7.91	45	1560840	50.7720 ug/L	98
26) Vinyl Acetate	8.09	43	61001	4.7533 ug/L	96
27) 1,1-Dichloroethane	8.10	63	70715	4.8804 ug/L	99
28) Ethyl-Tert-Butyl ether	8.53	59	1249973	50.5407 ug/L	98
29) 2-Butanone	8.73	43	15743	4.8205 ug/L	90
30) Propionitrile	8.86	54	44610	50.3332 ug/L	100
31) 2,2-Dichloropropane	8.96	77	55177	5.0475 ug/L	100
32) cis-1,2-Dichloroethene	9.03	96	35623	4.8356 ug/L	87
33) Chloroform	9.26	83	62050	4.7802 ug/L	99
34) 1-Bromopropane	9.42	122	5012	4.7391 ug/L	100
35) Bromochloromethane	9.52	130	19897	5.0261 ug/L	99
36) Tetrahydrofuran	9.56	42	111306	48.8630 ug/L	94
38) 1,1,1-Trichloroethane	9.86	97	54902	4.8581 ug/L	98
39) Cyclohexane	9.88	56	69439	4.7228 ug/L	96
40) 1,1-Dichloropropene	10.08	75	47385	4.8139 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	949512	50.5598 ug/L	97
42) Carbon Tetrachloride	10.23	117	43932	4.7343 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140318.D 8260WTR.M Fri Jul 01 14:21:29 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140318.D Vial: 6
Acq On : 30 Jun 2016 14:12 Operator: TMB
Sample : WG574723-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:25 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	49969	4.8012 ug/L	99
46)	Benzene	10.48	78	138207	4.9748 ug/L	98
47)	Trichloroethene	11.35	130	33708	4.9171 ug/L	90
48)	Methylcyclohexane	11.43	83	52733	4.8997 ug/L	94
49)	1,2-Dichloropropane	11.59	63	39044	4.8802 ug/L	100
50)	1,4-Dioxane	11.94	88	4972	91.8036 ug/L	77
51)	Bromodichloromethane	11.93	83	46783	4.8462 ug/L	100
52)	Dibromomethane	12.02	93	19034	4.9173 ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.31	63	18004	4.4884 ug/L	97
54)	4-Methyl-2-Pentanone	12.35	58	11300	4.5774 ug/L	94
55)	cis-1,3-Dichloropropene	12.69	75	54408	4.8545 ug/L	99
56)	Dimethyl Disulfide	12.97	79	26532	4.2526 ug/L	100
59)	Toluene	13.15	91	138309	4.8802 ug/L	99
60)	Ethyl Methacrylate	13.32	69	37662	4.6708 ug/L	95
62)	trans-1,3-Dichloropropene	13.39	75	48146	4.7775 ug/L	95
63)	1,1,2-Trichloroethane	13.62	97	25707	4.9014 ug/L	99
64)	2-Hexanone	13.58	43	22497	4.5176 ug/L	99
65)	1,3-Dichloropropane	13.99	76	48531	4.9096 ug/L	95
66)	Tetrachloroethene	14.10	166	33388	4.9436 ug/L	96
67)	Dibromochloromethane	14.41	129	30609	4.8067 ug/L	100
68)	1,2-Dibromoethane	14.71	107	24604	4.8600 ug/L	99
69)	1-Chlorohexane	14.85	91	45159	4.7879 ug/L	91
70)	Chlorobenzene	15.30	112	88763	4.8834 ug/L	87
71)	1,1,1,2-Tetrachloroethane	15.35	131	31237	4.8298 ug/L	97
72)	Ethylbenzene	15.35	106	47581	5.0011 ug/L	93
73)	m-,p-Xylene	15.45	106	115328	10.0299 ug/L	93
74)	o-Xylene	16.11	106	56158	4.8969 ug/L	90
75)	Styrene	16.16	104	93922	4.8681 ug/L	93
76)	Bromoform	16.71	173	17414	4.4099 ug/L	98
77)	Isopropylbenzene	16.62	105	150490	5.0295 ug/L	96
79)	1,1,2,2-Tetrachloroethane	16.88	83	29598	4.8565 ug/L	100
81)	1,2,3-Trichloropropane	17.11	110	9483	5.2483 ug/L	91
82)	trans-1,4-Dichloro-2-Buten	17.18	53	10928	4.7426 ug/L	99
83)	n-Propylbenzene	17.22	91	181410	5.0279 ug/L	97
84)	Bromobenzene	17.34	156	37810	5.0153 ug/L	91
85)	1,3,5-Trimethylbenzene	17.44	105	126034	4.9837 ug/L	97
86)	2-Chlorotoluene	17.52	91	116508	4.7747 ug/L	100
87)	4-Chlorotoluene	17.58	91	120486	5.1793 ug/L	93
88)	a-Methylstyrene	17.92	118	58815	4.6239 ug/L	99
89)	tert-Butylbenzene	17.98	134	24935	4.9076 ug/L	64
90)	1,2,4-Trimethylbenzene	18.05	105	130919	5.0449 ug/L	98
91)	sec-Butylbenzene	18.30	105	151691	5.0108 ug/L	98
92)	p-Isopropyltoluene	18.50	119	129076	5.0032 ug/L	96
93)	1,3-Dichlorobenzene	18.70	146	73279	4.9385 ug/L	97
94)	1,4-Dichlorobenzene	18.85	146	73402	4.8928 ug/L	89
95)	n-Butylbenzene	19.12	91	126335	4.9935 ug/L	96
96)	1,2-Dichlorobenzene	19.43	146	69034	4.9553 ug/L	95
97)	1,2-Dibromo-3-Chloropropan	20.61	75	4890	4.0969 ug/L	84
98)	1,2,4-Trichlorobenzene	21.96	180	46999	4.7727 ug/L	99
99)	Hexachlorobutadiene	22.15	225	19578	4.7818 ug/L	97
100)	Naphthalene	22.39	128	98169	4.8780 ug/L	99
101)	1,2,3-Trichlorobenzene	22.75	180	44211	4.8487 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140318.D Vial: 6
Acq On : 30 Jun 2016 14:12 Operator: TMB
Sample : WG574723-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:21 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

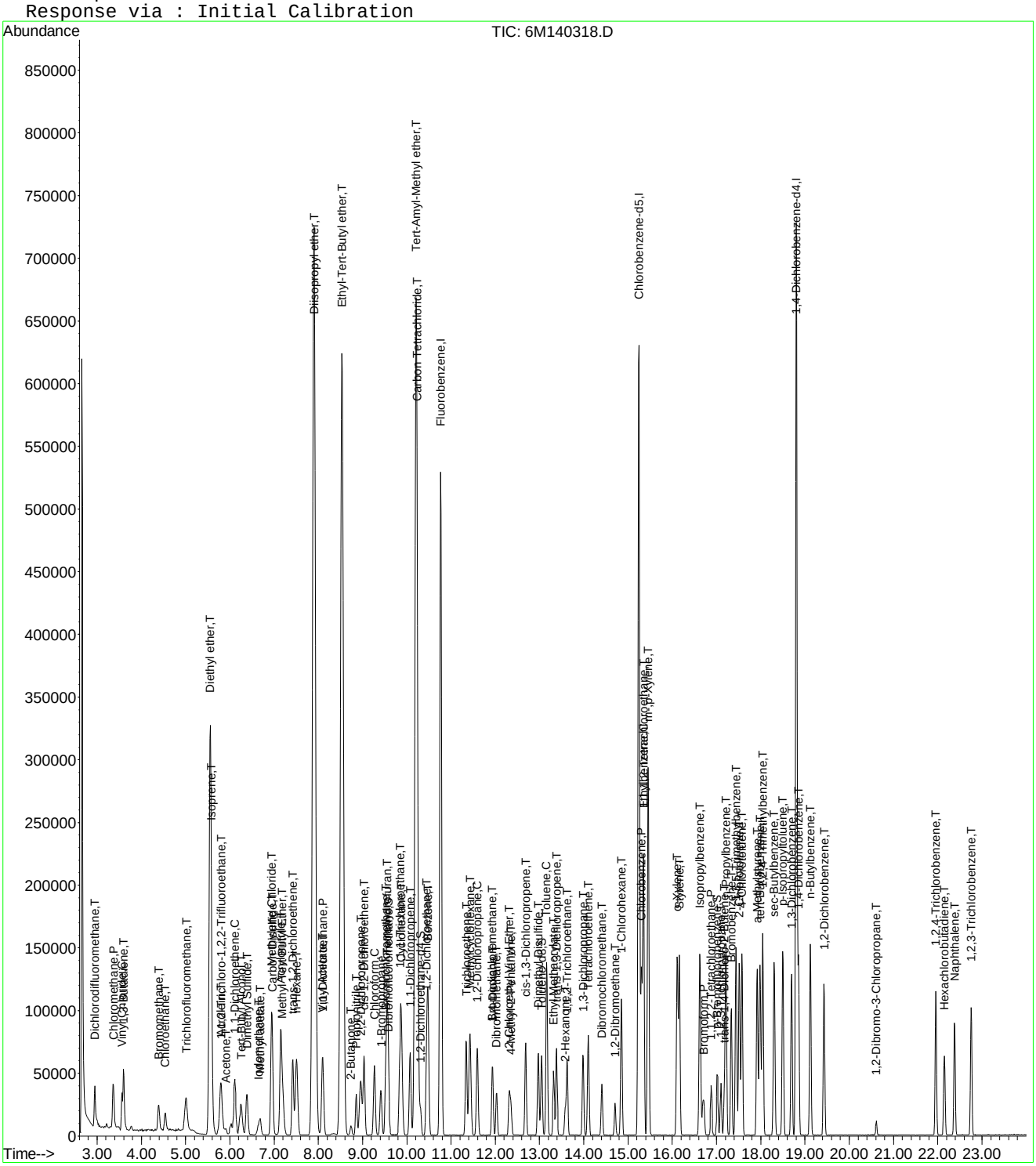

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140318.D Vial: 6
Acq On : 30 Jun 2016 14:12 Operator: TMB
Sample : WG574723-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.3342	13.3	100	0.00
3	P	Chloromethane	5.0000	4.7839	4.3	100	0.00
4	C	Vinyl Chloride	5.0000	4.9063	1.9	100	0.00
5	T	1,3-Butadiene	5.0000	3.0943	38.1#	100	0.00
6	T	Bromomethane	5.0000	4.8868	2.3	100	0.02
7	T	Chloroethane	5.0000	4.7720	4.6	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.7547	4.9	100	0.02
9	T	Diethyl ether	50.0000	51.5928	-3.2	100	0.00
10	T	Isoprene	5.0000	4.7626	4.7	100	0.00
11	T	Acrolein	25.0000	24.8183	0.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.7420	5.2	100	0.02
13	T	Acetone	5.0000	5.3716	-7.4	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.7390	5.2	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	96.1048	3.9	100	-0.03
16	T	Dimethyl Sulfide	5.0000	4.7966	4.1	100	0.00
17	T	Iodomethane	5.0000	3.7502	25.0#	100	0.01
18	T	Methyl acetate	5.0000	5.0309	-0.6	100	0.00
19	T	Methylene Chloride	5.0000	4.8909	2.2	100	0.00
20	T	Carbon Disulfide	5.0000	4.8502	3.0	100	0.00
21	T	Acrylonitrile	25.0000	24.6331	1.5	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.9113	1.8	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.8519	3.0	100	0.00
24	T	n-Hexane	5.0000	5.0375	-0.7	100	0.00
25	T	Diisopropyl ether	50.0000	50.7719	-1.5	100	0.00
26	T	Vinyl Acetate	5.0000	4.7533	4.9	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.8804	2.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	50.5407	-1.1	100	0.00
29	T	2-Butanone	5.0000	4.8205	3.6	100	0.00
30	T	Propionitrile	50.0000	50.3332	-0.7	100	0.00
31	T	2,2-Dichloropropane	5.0000	5.0475	-0.9	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.8356	3.3	100	0.00
33	C	Chloroform	5.0000	4.7802	4.4	100	0.00
34		1-Bromopropane	5.0000	4.7391	5.2	100	0.01
35	T	Bromochloromethane	5.0000	5.0261	-0.5	100	0.00
36	T	Tetrahydrofuran	50.0000	48.8630	2.3	100	0.00
37	S	Dibromofluoromethane	2.5000	2.5471	-1.9	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.8581	2.8	100	0.00
39	T	Cyclohexane	5.0000	4.7228	5.5	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.8139	3.7	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	50.5598	-1.1	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.7344	5.3	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.5813	-3.3	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	T	1,2-Dichloroethane	5.0000	4.8012	4.0	100	0.00
46	T	Benzene	5.0000	4.9748	0.5	100	0.00
47	T	Trichloroethene	5.0000	4.9171	1.7	100	0.00
48	T	Methylcyclohexane	5.0000	4.8997	2.0	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.8802	2.4	100	0.00
50	T	1,4-Dioxane	100.0000	91.8036	8.2	100	0.00
51	T	Bromodichloromethane	5.0000	4.8463	3.1	100	0.00
52	T	Dibromomethane	5.0000	4.9173	1.7	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.4884	10.2	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.5774	8.5	100	0.00

(#) = Out of Range

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140318.D Vial: 6
Acq On : 30 Jun 2016 14:12 Operator: TMB
Sample : WG574723-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.8545	2.9	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.2526	14.9	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.6338	-5.4	100	0.00
59	C	Toluene	5.0000	4.8802	2.4	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.6708	6.6	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	5.0000	4.7775	4.4	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.9014	2.0	100	0.00
64	T	2-Hexanone	5.0000	4.5176	9.6	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.9096	1.8	100	0.00
66	T	Tetrachloroethene	5.0000	4.9436	1.1	100	0.00
67	T	Dibromochloromethane	5.0000	4.8067	3.9	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.8600	2.8	100	0.00
69	T	1-Chlorohexane	5.0000	4.7880	4.2	100	0.00
70	P	Chlorobenzene	5.0000	4.8834	2.3	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.8298	3.4	100	0.00
72	C	Ethylbenzene	5.0000	5.0011	-0.0	100	0.00
73	T	m-,p-Xylene	10.0000	10.0299	-0.3	100	-0.01
74	T	o-Xylene	5.0000	4.8970	2.1	100	-0.01
75	T	Styrene	5.0000	4.8681	2.6	100	0.00
76	P	Bromoform	5.0000	4.4099	11.8	100	0.00
77	T	Isopropylbenzene	5.0000	5.0295	-0.6	100	-0.01
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	-0.01
79	P	1,1,2,2-Tetrachloroethane	5.0000	4.8565	2.9	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.6052	-4.2	100	-0.01
81	T	1,2,3-Trichloropropane	5.0000	5.2483	-5.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.7426	5.1	100	0.00
83	T	n-Propylbenzene	5.0000	5.0279	-0.6	100	0.00
84	T	Bromobenzene	5.0000	5.0153	-0.3	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	4.9837	0.3	100	-0.01
86	T	2-Chlorotoluene	5.0000	4.7747	4.5	100	-0.01
87	T	4-Chlorotoluene	5.0000	5.1794	-3.6	100	-0.01
88	T	a-Methylstyrene	5.0000	4.6239	7.5	100	0.00
89	T	tert-Butylbenzene	5.0000	4.9076	1.8	100	-0.01
90	T	1,2,4-Trimethylbenzene	5.0000	5.0449	-0.9	100	-0.01
91	T	sec-Butylbenzene	5.0000	5.0108	-0.2	100	-0.01
92	T	p-Isopropyltoluene	5.0000	5.0032	-0.1	100	-0.01
93	T	1,3-Dichlorobenzene	5.0000	4.9385	1.2	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	4.8928	2.1	100	0.00
95	T	n-Butylbenzene	5.0000	4.9935	0.1	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	4.9553	0.9	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	4.0969	18.1	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.7727	4.5	100	-0.01
99	T	Hexachlorobutadiene	5.0000	4.7818	4.4	100	0.00
100	T	Naphthalene	5.0000	4.8780	2.4	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.8487	3.0	100	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140318.D 8260WTR.M Fri Jul 01 14:36:23 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140319.D Vial: 7
Acq On : 30 Jun 2016 14:44 Operator: TMB
Sample : WG574723-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:33 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	668919	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	478690	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	258443	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	70098	10.3290 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 41.32%#		
43) 1,2-Dichloroethane-d4	10.31	65	89020	10.3908 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 41.56%#		
58) Toluene-d8	13.04	98	243575	10.3332 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 41.32%#		
80) p-Bromofluorobenzene	17.01	95	104612	10.3355 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 41.36%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	240030	21.4659 ug/L	100
3) Chloromethane	3.37	50	274164	21.9607 ug/L	99
4) Vinyl Chloride	3.56	62	134656	19.6412 ug/L	99
5) 1,3-Butadiene	3.60	54	109113	26.0590 ug/L	94
6) Bromomethane	4.39	94	95323	20.9234 ug/L	99
7) Chloroethane	4.54	64	90881	20.9793 ug/L	97
8) Trichlorofluoromethane	5.00	101	210753	20.1557 ug/L	99
9) Diethyl ether	5.55	59	494080	80.0844 ug/L	96
10) Isoprene	5.58	67	199958	21.4269 ug/L	96
11) Acrolein	5.79	56	40308	39.2789 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	131653	20.2365 ug/L	96
13) Acetone	5.89	43	44542	20.7841 ug/L	99
14) 1,1-Dichloroethene	6.11	61	254255	20.1429 ug/L	95
15) Tert-Butyl Alcohol	6.25	59	101804	155.3480 ug/L	98
16) Dimethyl Sulfide	6.39	62	115970	21.0658 ug/L	96
17) Iodomethane	6.65	142	79774	18.0326 ug/L	94
18) Methyl acetate	6.69	43	119945	20.6831 ug/L	98
19) Methylene Chloride	6.93	84	145226	20.0632 ug/L	90
20) Carbon Disulfide	6.97	76	495098	21.4053 ug/L	100
21) Acrylonitrile	7.15	53	104807	39.3874 ug/L	95
22) Methyl Tert Butyl Ether	7.18	73	394607	20.5667 ug/L	100
23) trans-1,2-Dichloroethene	7.42	96	135387	20.0268 ug/L	87
24) n-Hexane	7.51	57	243963	21.2635 ug/L	99
25) Diisopropyl ether	7.89	45	2475744	80.1704 ug/L	98
26) Vinyl Acetate	8.09	43	239974	18.6153 ug/L	97
27) 1,1-Dichloroethane	8.10	63	295851	20.3263 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	1992124	80.1862 ug/L	98
29) 2-Butanone	8.73	43	66102	20.1493 ug/L	96
30) Propionitrile	8.85	54	71515	80.3272 ug/L	99
31) 2,2-Dichloropropane	8.96	77	220142	20.0476 ug/L	98
32) cis-1,2-Dichloroethene	9.03	96	149673	20.2260 ug/L	73
33) Chloroform	9.26	83	260745	19.9968 ug/L	99
34) 1-Bromopropane	9.42	122	23773	20.6056 ug/L	99
35) Bromochloromethane	9.52	130	82689	20.7938 ug/L	100
36) Tetrahydrofuran	9.56	42	173501	75.8239 ug/L	94
38) 1,1,1-Trichloroethane	9.86	97	230314	20.2881 ug/L	98
39) Cyclohexane	9.88	56	309021	20.9230 ug/L	96
40) 1,1-Dichloropropene	10.08	75	198240	20.0489 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	1504867	79.7712 ug/L	98
42) Carbon Tetrachloride	10.23	117	197807	21.2209 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140319.D 8260WTR.M Fri Jul 01 14:21:37 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140319.D Vial: 7
Acq On : 30 Jun 2016 14:44 Operator: TMB
Sample : WG574723-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:33 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	213475	20.4192	ug/L	98
46)	Benzene	10.48	78	563224	20.1824	ug/L	97
47)	Trichloroethene	11.35	130	140565	20.4123	ug/L	91
48)	Methylcyclohexane	11.43	83	229029	21.1847	ug/L	95
49)	1,2-Dichloropropane	11.59	63	163803	20.3822	ug/L	99
50)	1,4-Dioxane	11.94	88	8245	151.5521	ug/L	87
51)	Bromodichloromethane	11.94	83	198529	20.4731	ug/L	99
52)	Dibromomethane	12.02	93	81976	21.0826	ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.31	63	84440	20.9563	ug/L	100
54)	4-Methyl-2-Pentanone	12.35	58	50113	20.2084	ug/L	98
55)	cis-1,3-Dichloropropene	12.68	75	230873	20.5069	ug/L	99
56)	Dimethyl Disulfide	12.97	79	127875	20.4039	ug/L	99
59)	Toluene	13.15	91	575595	20.1756	ug/L	100
60)	Ethyl Methacrylate	13.32	69	174096	21.4487	ug/L	95
62)	trans-1,3-Dichloropropene	13.39	75	209635	20.6648	ug/L	96
63)	1,1,2-Trichloroethane	13.62	97	109279	20.6980	ug/L	99
64)	2-Hexanone	13.58	43	101714	20.2903	ug/L	96
65)	1,3-Dichloropropane	13.99	76	199227	20.0217	ug/L	94
66)	Tetrachloroethene	14.10	166	135754	19.9678	ug/L	93
67)	Dibromochloromethane	14.41	129	135289	21.1051	ug/L	100
68)	1,2-Dibromoethane	14.71	107	105892	20.7786	ug/L	100
69)	1-Chlorohexane	14.85	91	199253	20.9862	ug/L	90
70)	Chlorobenzene	15.30	112	368915	20.1622	ug/L	92
71)	1,1,1,2-Tetrachloroethane	15.35	131	134691	20.6882	ug/L	97
72)	Ethylbenzene	15.35	106	198149	20.6895	ug/L	94
73)	m-,p-Xylene	15.45	106	479614	41.4358	ug/L	94
74)	o-Xylene	16.10	106	239170	20.7178	ug/L	94
75)	Styrene	16.16	104	410666	21.1448	ug/L	94
76)	Bromoform	16.71	173	82284	20.7000	ug/L	97
77)	Isopropylbenzene	16.62	105	620142	20.5887	ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.88	83	128022	20.4105	ug/L	99
81)	1,2,3-Trichloropropane	17.11	110	39329	21.1491	ug/L	80
82)	trans-1,4-Dichloro-2-Buten	17.18	53	50449	21.2733	ug/L	99
83)	n-Propylbenzene	17.22	91	763535	20.5616	ug/L	97
84)	Bromobenzene	17.34	156	157241	20.2655	ug/L	90
85)	1,3,5-Trimethylbenzene	17.44	105	534922	20.5522	ug/L	97
86)	2-Chlorotoluene	17.52	91	480540	19.1348	ug/L	100
87)	4-Chlorotoluene	17.58	91	506904	21.1723	ug/L	93
88)	a-Methylstyrene	17.92	118	283013	21.6190	ug/L	99
89)	tert-Butylbenzene	17.98	134	108977	20.8400	ug/L	73
90)	1,2,4-Trimethylbenzene	18.04	105	555658	20.8047	ug/L	98
91)	sec-Butylbenzene	18.30	105	646673	20.7557	ug/L	97
92)	p-Isopropyltoluene	18.50	119	553560	20.8482	ug/L	98
93)	1,3-Dichlorobenzene	18.70	146	308829	20.2225	ug/L	96
94)	1,4-Dichlorobenzene	18.85	146	309174	20.0243	ug/L	95
95)	n-Butylbenzene	19.12	91	539602	20.7232	ug/L	96
96)	1,2-Dichlorobenzene	19.43	146	290193	20.2396	ug/L	95
97)	1,2-Dibromo-3-Chloropropan	20.61	75	25172	20.4911	ug/L	84
98)	1,2,4-Trichlorobenzene	21.96	180	206634	20.3883	ug/L	99
99)	Hexachlorobutadiene	22.15	225	84200	19.9820	ug/L	100
100)	Naphthalene	22.38	128	449397	21.6970	ug/L	99
101)	1,2,3-Trichlorobenzene	22.75	180	193555	20.6254	ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140319.D 8260WTR.M Fri Jul 01 14:21:38 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140319.D Vial: 7
Acq On : 30 Jun 2016 14:44 Operator: TMB
Sample : WG574723-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:21 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

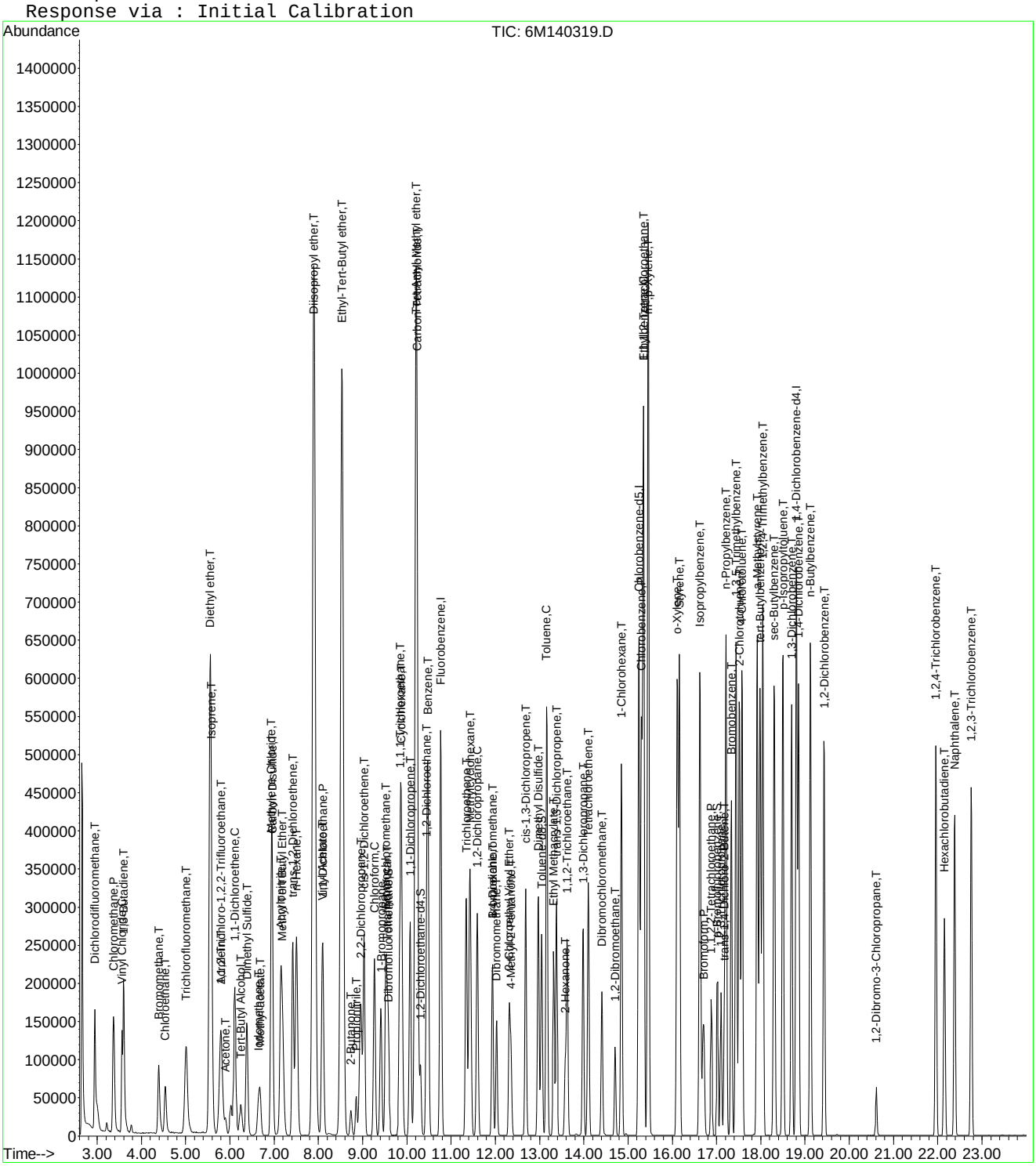

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140320.D Vial: 8
Acq On : 30 Jun 2016 15:16 Operator: TMB
Sample : WG574723-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:42 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	665194	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	476977	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	264882	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	171183	25.3652 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.48%		
43) 1,2-Dichloroethane-d4	10.31	65	211795	24.8600 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.44%		
58) Toluene-d8	13.04	98	584965	24.9051 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.64%		
80) p-Bromofluorobenzene	17.02	95	257496	24.8219 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.28%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	582153	52.3535 ug/L	99
3) Chloromethane	3.37	50	615809	49.6030 ug/L	100
4) Vinyl Chloride	3.56	62	346419	50.8123 ug/L	99
5) 1,3-Butadiene	3.59	54	204917	52.0480 ug/L	96
6) Bromomethane	4.39	94	214126	47.2638 ug/L	99
7) Chloroethane	4.53	64	215766	50.0871 ug/L	96
8) Trichlorofluoromethane	5.00	101	495602	47.6630 ug/L	100
9) Diethyl ether	5.56	59	630517	102.7715 ug/L	96
10) Isoprene	5.58	67	475494	51.2378 ug/L	96
11) Acrolein	5.79	56	50160	49.1531 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.80	101	318041	49.1602 ug/L	97
13) Acetone	5.90	43	105863	49.6741 ug/L	100
14) 1,1-Dichloroethene	6.11	61	623813	49.6972 ug/L	94
15) Tert-Butyl Alcohol	6.26	59	129177	198.2217 ug/L	99
16) Dimethyl Sulfide	6.39	62	276319	50.4741 ug/L	95
17) Iodomethane	6.65	142	239373	52.6044 ug/L	93
18) Methyl acetate	6.69	43	285035	49.4262 ug/L	98
19) Methylene Chloride	6.94	84	347634	48.2950 ug/L	88
20) Carbon Disulfide	6.96	76	1155252	50.2265 ug/L	100
21) Acrylonitrile	7.15	53	135608	51.2481 ug/L	98
22) Methyl Tert Butyl Ether	7.18	73	953213	49.9591 ug/L	100
23) trans-1,2-Dichloroethene	7.42	96	333111	49.5507 ug/L	89
24) n-Hexane	7.51	57	564061	49.4381 ug/L	98
25) Diisopropyl ether	7.90	45	3068443	99.9198 ug/L	98
26) Vinyl Acetate	8.09	43	646413	50.4243 ug/L	98
27) 1,1-Dichloroethane	8.10	63	718876	49.6666 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	2470202	99.9864 ug/L	98
29) 2-Butanone	8.73	43	166904	51.1609 ug/L	95
30) Propionitrile	8.85	54	90037	101.6978 ug/L	100
31) 2,2-Dichloropropane	8.96	77	533000	48.8104 ug/L	100
32) cis-1,2-Dichloroethene	9.03	96	368400	50.0623 ug/L	73
33) Chloroform	9.26	83	633467	48.8534 ug/L	99
34) 1-Bromopropane	9.42	122	59330	50.9944 ug/L	99
35) Bromochloromethane	9.52	130	203288	51.4071 ug/L	99
36) Tetrahydrofuran	9.56	42	216772	95.2648 ug/L	94
38) 1,1,1-Trichloroethane	9.85	97	572724	50.7331 ug/L	99
39) Cyclohexane	9.87	56	723056	49.2305 ug/L	96
40) 1,1-Dichloropropene	10.08	75	488493	49.6802 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	1883625	100.4078 ug/L	98
42) Carbon Tetrachloride	10.23	117	502186	54.1766 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140320.D 8260WTR.M Fri Jul 01 14:21:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140320.D Vial: 8
Acq On : 30 Jun 2016 15:16 Operator: TMB
Sample : WG574723-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:42 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	522936	50.2998 ug/L	99
46)	Benzene	10.48	78	1376892	49.6154 ug/L	97
47)	Trichloroethene	11.35	130	341168	49.8206 ug/L	91
48)	Methylcyclohexane	11.43	83	532584	49.5388 ug/L	95
49)	1,2-Dichloropropane	11.59	63	402187	50.3249 ug/L	99
50)	1,4-Dioxane	11.94	88	11316	209.1652 ug/L	91
51)	Bromodichloromethane	11.94	83	499306	51.7788 ug/L	99
52)	Dibromomethane	12.03	93	200679	51.8998 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.32	63	214371	53.5004 ug/L	99
54)	4-Methyl-2-Pentanone	12.35	58	126993	51.4974 ug/L	97
55)	cis-1,3-Dichloropropene	12.68	75	576590	51.5014 ug/L	99
56)	Dimethyl Disulfide	12.97	79	322099	51.6823 ug/L	98
59)	Toluene	13.15	91	1399906	49.2452 ug/L	99
60)	Ethyl Methacrylate	13.32	69	422208	52.2030 ug/L	95
62)	trans-1,3-Dichloropropene	13.39	75	522454	51.6858 ug/L	96
63)	1,1,2-Trichloroethane	13.63	97	267159	50.7830 ug/L	98
64)	2-Hexanone	13.58	43	256820	51.4155 ug/L	96
65)	1,3-Dichloropropane	13.99	76	494920	49.9167 ug/L	94
66)	Tetrachloroethene	14.10	166	336402	49.6585 ug/L	94
67)	Dibromochloromethane	14.41	129	343402	53.7632 ug/L	100
68)	1,2-Dibromoethane	14.70	107	261585	51.5137 ug/L	100
69)	1-Chlorohexane	14.85	91	477655	50.4894 ug/L	92
70)	Chlorobenzene	15.30	112	903124	49.5353 ug/L	93
71)	1,1,1,2-Tetrachloroethane	15.35	131	337691	52.0547 ug/L	98
72)	Ethylbenzene	15.35	106	484831	50.8048 ug/L	94
73)	m-,p-Xylene	15.46	106	1167250	101.2056 ug/L	95
74)	o-Xylene	16.11	106	590057	51.2966 ug/L	94
75)	Styrene	16.15	104	1015963	52.4987 ug/L	92
76)	Bromoform	16.72	173	210299	53.0943 ug/L	98
77)	Isopropylbenzene	16.62	105	1525364	50.8239 ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.88	83	326482	50.7855 ug/L	100
81)	1,2,3-Trichloropropane	17.10	110	98816	51.8463 ug/L	83
82)	trans-1,4-Dichloro-2-Buten	17.18	53	129320	53.2061 ug/L	97
83)	n-Propylbenzene	17.22	91	1885010	49.5285 ug/L	98
84)	Bromobenzene	17.34	156	390005	49.0426 ug/L	89
85)	1,3,5-Trimethylbenzene	17.44	105	1335066	50.0475 ug/L	97
86)	2-Chlorotoluene	17.52	91	1274044	49.4983 ug/L	96
87)	4-Chlorotoluene	17.58	91	1171374	47.7365 ug/L	96
88)	a-Methylstyrene	17.92	118	690404	51.4571 ug/L	95
89)	tert-Butylbenzene	17.98	134	265842	49.6018 ug/L	70
90)	1,2,4-Trimethylbenzene	18.04	105	1381292	50.4604 ug/L	98
91)	sec-Butylbenzene	18.31	105	1599719	50.0966 ug/L	98
92)	p-Isopropyltoluene	18.50	119	1372031	50.4173 ug/L	98
93)	1,3-Dichlorobenzene	18.70	146	767298	49.0222 ug/L	95
94)	1,4-Dichlorobenzene	18.85	146	768779	48.5813 ug/L	95
95)	n-Butylbenzene	19.12	91	1348420	50.5266 ug/L	97
96)	1,2-Dichlorobenzene	19.43	146	726470	49.4362 ug/L	95
97)	1,2-Dibromo-3-Chloropropan	20.62	75	64455	51.1937 ug/L	86
98)	1,2,4-Trichlorobenzene	21.97	180	516677	49.7405 ug/L	99
99)	Hexachlorobutadiene	22.16	225	213166	49.3581 ug/L	100
100)	Naphthalene	22.38	128	1126213	53.0520 ug/L	100
101)	1,2,3-Trichlorobenzene	22.76	180	479054	49.8076 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140320.D 8260WTR.M Fri Jul 01 14:21:46 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140320.D Vial: 8
Acq On : 30 Jun 2016 15:16 Operator: TMB
Sample : WG574723-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:21 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

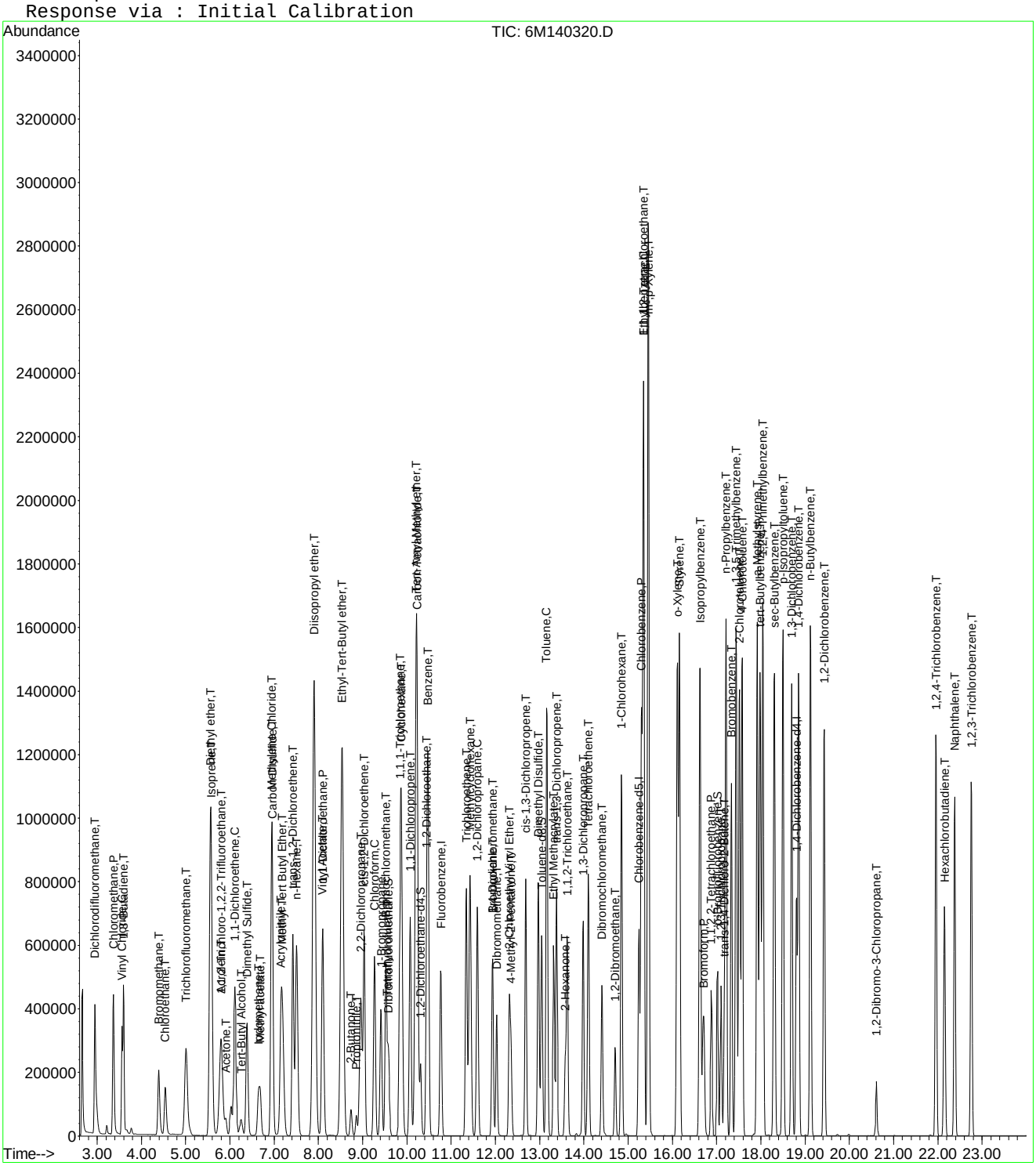

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140321.D Vial: 9
Acq On : 30 Jun 2016 15:48 Operator: TMB
Sample : WG574723-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:51 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	646485	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	471613	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	268377	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	322733	49.2052 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 196.84%#		
43) 1,2-Dichloroethane-d4	10.31	65	408267	49.3082 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 197.24%#		
58) Toluene-d8	13.04	98	1099687	47.3521 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 189.40%#		
80) p-Bromofluorobenzene	17.02	95	500608	47.6287 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 190.52%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	1195098	110.5865 ug/L	100
3) Chloromethane	3.37	50	1126306	93.3487 ug/L	100
4) Vinyl Chloride	3.56	62	690730	104.2475 ug/L	100
5) 1,3-Butadiene	3.59	54	397047	106.9364 ug/L	97
6) Bromomethane	4.38	94	423232	96.1231 ug/L	100
7) Chloroethane	4.53	64	421078	100.5763 ug/L	96
8) Trichlorofluoromethane	5.00	101	1039911	102.9045 ug/L	99
9) Diethyl ether	5.56	59	1210825	203.0707 ug/L	96
10) Isoprene	5.57	67	926995	102.7810 ug/L	96
11) Acrolein	5.79	56	100610	101.4435 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	644973	102.5798 ug/L	97
13) Acetone	5.90	43	202374	97.7080 ug/L	98
14) 1,1-Dichloroethene	6.11	61	1233915	101.1469 ug/L	94
15) Tert-Butyl Alcohol	6.26	59	264298	417.3014 ug/L	98
16) Dimethyl Sulfide	6.39	62	533770	100.3234 ug/L	95
17) Iodomethane	6.65	142	485581	108.8245 ug/L	92
18) Methyl acetate	6.69	43	562111	100.2930 ug/L	98
19) Methylene Chloride	6.94	84	680086	97.2151 ug/L	90
20) Carbon Disulfide	6.96	76	2214357	99.0589 ug/L	100
21) Acrylonitrile	7.15	53	269273	104.7069 ug/L	97
22) Methyl Tert Butyl Ether	7.18	73	1885141	101.6619 ug/L	99
23) trans-1,2-Dichloroethene	7.42	96	659412	100.9269 ug/L	89
24) n-Hexane	7.51	57	1100352	99.2333 ug/L	97
25) Diisopropyl ether	7.90	45	5806079	194.5388 ug/L	99
26) Vinyl Acetate	8.09	43	1275603	102.3848 ug/L	98
27) 1,1-Dichloroethane	8.10	63	1407131	100.0311 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	4736533	197.2691 ug/L	99
29) 2-Butanone	8.73	43	329619	103.9617 ug/L	96
30) Propionitrile	8.85	54	180672	209.9768 ug/L	99
31) 2,2-Dichloropropane	8.96	77	1063724	100.2315 ug/L	99
32) cis-1,2-Dichloroethene	9.03	96	723748	101.1973 ug/L	73
33) Chloroform	9.26	83	1245839	98.8604 ug/L	99
34) 1-Bromopropane	9.42	122	114449	100.7473 ug/L	100
35) Bromochloromethane	9.52	130	399705	104.0018 ug/L	100
36) Tetrahydrofuran	9.56	42	431461	195.1016 ug/L	95
38) 1,1,1-Trichloroethane	9.85	97	1132312	103.2053 ug/L	98
39) Cyclohexane	9.87	56	1422141	99.6310 ug/L	96
40) 1,1-Dichloropropene	10.08	75	970489	101.5559 ug/L	98
41) Tert-Amyl-Methyl ether	10.22	73	3648605	200.1197 ug/L	98
42) Carbon Tetrachloride	10.23	117	1008047	111.8968 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140321.D 8260WTR.M Fri Jul 01 14:21:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140321.D Vial: 9
Acq On : 30 Jun 2016 15:48 Operator: TMB
Sample : WG574723-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:51 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	1026377	101.5814 ug/L	99
46)	Benzene	10.48	78	2663898	98.7698 ug/L	96
47)	Trichloroethene	11.35	130	659415	99.0807 ug/L	89
48)	Methylcyclohexane	11.43	83	1057163	101.1788 ug/L	95
49)	1,2-Dichloropropane	11.59	63	787420	101.3798 ug/L	97
50)	1,4-Dioxane	11.94	88	22910	435.7239 ug/L	83
51)	Bromodichloromethane	11.94	83	998026	106.4921 ug/L	100
52)	Dibromomethane	12.03	93	402229	107.0352 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.32	63	414426	106.4211 ug/L	99
54)	4-Methyl-2-Pentanone	12.35	58	253505	105.7748 ug/L	99
55)	cis-1,3-Dichloropropene	12.68	75	1145435	105.2719 ug/L	99
56)	Dimethyl Disulfide	12.97	79	637376	105.2297 ug/L	98
59)	Toluene	13.16	91	2716275	96.6387 ug/L	99
60)	Ethyl Methacrylate	13.32	69	835175	104.4378 ug/L	95
62)	trans-1,3-Dichloropropene	13.39	75	1039244	103.9807 ug/L	96
63)	1,1,2-Trichloroethane	13.63	97	530894	102.0629 ug/L	98
64)	2-Hexanone	13.58	43	511940	103.6564 ug/L	98
65)	1,3-Dichloropropane	13.99	76	975019	99.4570 ug/L	94
66)	Tetrachloroethene	14.10	166	663843	99.1087 ug/L	93
67)	Dibromochloromethane	14.41	129	698275	110.5657 ug/L	100
68)	1,2-Dibromoethane	14.70	107	530245	105.6082 ug/L	100
69)	1-Chlorohexane	14.86	91	934249	99.8757 ug/L	91
70)	Chlorobenzene	15.30	112	1757753	97.5073 ug/L	90
71)	1,1,1,2-Tetrachloroethane	15.35	131	672232	104.8024 ug/L	97
72)	Ethylbenzene	15.35	106	960737	101.8195 ug/L	96
73)	m-,p-Xylene	15.46	106	2273350	199.3511 ug/L	96
74)	o-Xylene	16.11	106	1166695	102.5802 ug/L	94
75)	Styrene	16.15	104	2021937	105.6696 ug/L	91
76)	Bromoform	16.72	173	442224	112.9184 ug/L	98
77)	Isopropylbenzene	16.62	105	3022582	101.8554 ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.88	83	699051	107.3240 ug/L	100
81)	1,2,3-Trichloropropane	17.10	110	204344	105.8180 ug/L	81
82)	trans-1,4-Dichloro-2-Buten	17.18	53	271253	110.1481 ug/L	96
83)	n-Propylbenzene	17.22	91	3780776	98.0459 ug/L	98
84)	Bromobenzene	17.34	156	791175	98.1936 ug/L	89
85)	1,3,5-Trimethylbenzene	17.44	105	2708977	100.2286 ug/L	97
86)	2-Chlorotoluene	17.52	91	2557008	98.0494 ug/L	97
87)	4-Chlorotoluene	17.58	91	2386130	95.9746 ug/L	97
88)	a-Methylstyrene	17.92	118	1396050	102.6951 ug/L	95
89)	tert-Butylbenzene	17.99	134	544776	100.3227 ug/L	72
90)	1,2,4-Trimethylbenzene	18.04	105	2808112	101.2481 ug/L	99
91)	sec-Butylbenzene	18.31	105	3235910	100.0157 ug/L	98
92)	p-Isopropyltoluene	18.50	119	2792332	101.2720 ug/L	98
93)	1,3-Dichlorobenzene	18.70	146	1561532	98.4661 ug/L	94
94)	1,4-Dichlorobenzene	18.86	146	1567098	97.7396 ug/L	94
95)	n-Butylbenzene	19.12	91	2754111	101.8553 ug/L	97
96)	1,2-Dichlorobenzene	19.43	146	1483394	99.6302 ug/L	93
97)	1,2-Dibromo-3-Chloropropan	20.62	75	143837	112.7555 ug/L	86
98)	1,2,4-Trichlorobenzene	21.97	180	1060844	100.7975 ug/L	98
99)	Hexachlorobutadiene	22.15	225	438054	100.1094 ug/L	100
100)	Naphthalene	22.38	128	2317282	107.7376 ug/L	99
101)	1,2,3-Trichlorobenzene	22.76	180	982434	100.8141 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140321.D Vial: 9
Acq On : 30 Jun 2016 15:48 Operator: TMB
Sample : WG574723-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:21 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

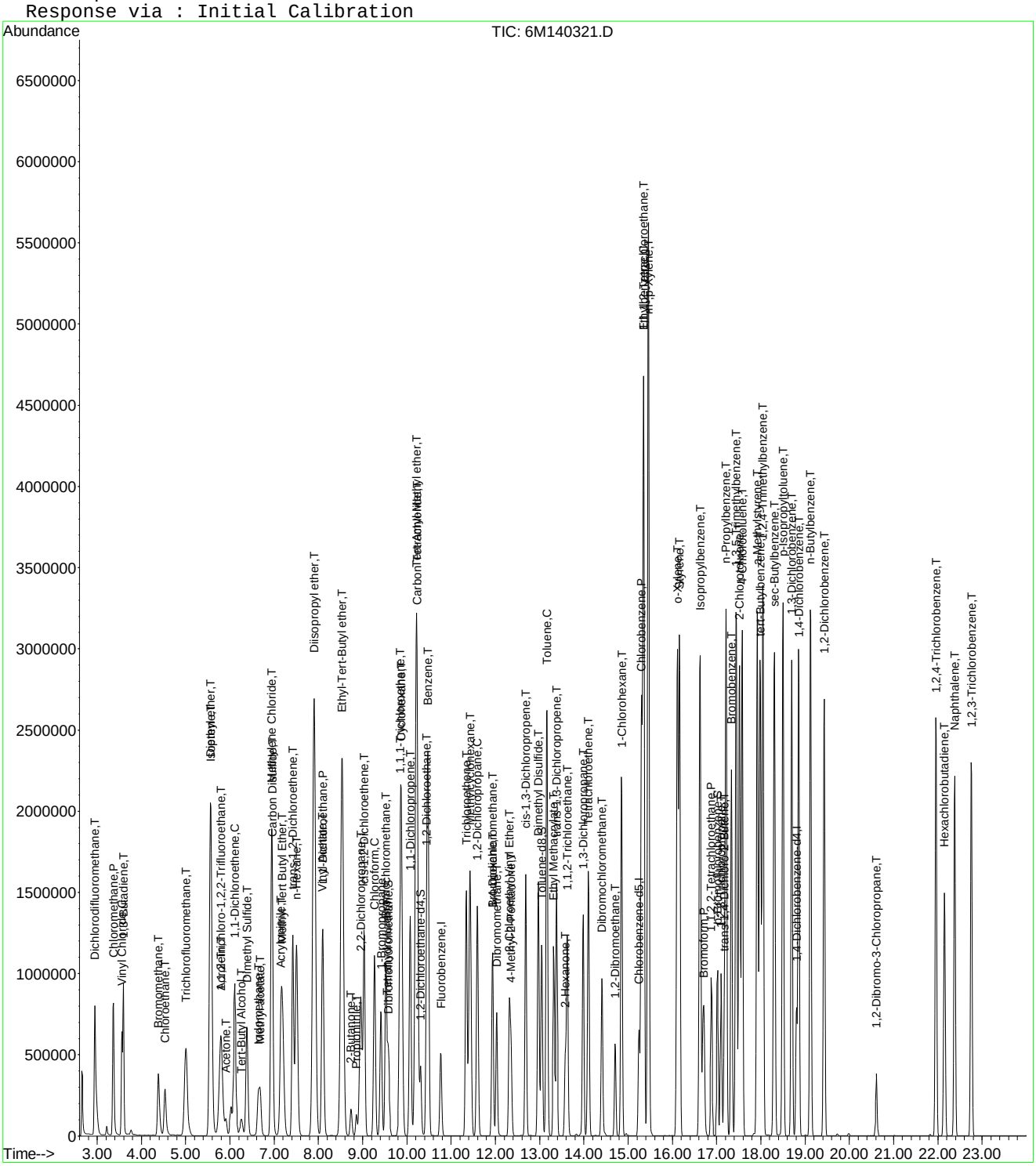
Abundance
TIC: 6M140321.D
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6000000
5500000
5000000
4500000
4000000
3500000
3000000
2500000
2000000
1500000
1000000
500000
0
Time-->
3.00 4.00 5.00 6.00 7.00 8.00 9.00 10.00 11.00 12.00 13.00 14.00 15.00 16.00 17.00 18.00 19.00 20.00 21.00 22.00 23.00
Dichlorodifluoromethane,T
Chloromethane,P
Vinyl Chloride,T
Bromomethane,T
Chloroethane,T
Trichlorofluoromethane,T
Acetone,T
Tert-Butyl Alcohol,T
Carbon Disulfide,T
Methylene Chloride,T
Diisopropyl ether,T
Ethyl-Tert-Butyl ether,T
Benzene,T
Fluorobenzene,I
Toluene,C
1,2-Dibromo-3-Chloropropane,T
Hexachlorobutadiene,T
Naphthalene,T
1,2,3-Trichlorobenzene,T
1,2,4-Trichlorobenzene,T
Chlorobenzene,P
Chlorobenzene-d5,I
1-Chlorohexane,T
Isopropylbenzene,T
n-Propylbenzene,T
sec-Butylbenzene,T
n-Butylbenzene,T
1,2-Dichlorobenzene,T
1,4-Dichlorobenzene,T
1,3-Dichlorobenzene,T
p-Isopropyltoluene,T
Bromobenzene,T
Bromoform,P
Dibromochloromethane,T
1,2-Dibromoethane,T
Toluene-d8,S
Toluene-d8,I
Ethyl Methacrylate,T
1,1,2-Trichloroethane,T
1,3-Dichloropropane,T
Tetrachloroethene,T
2-Hexanone,T
4-Methyl-2-Pentanone,T
Vinyl Ether,T
cis-1,3-Dichloropropene,T
Dimethyl Disulfide,T
trans-1,3-Dichloropropene,T
Trichloroethene,T
1,2-Dichloropropane,C
1,1-Dichloroethane,T
1,2-Dichloroethane,T
Chloroform,C
Carbon Tetrachloride,T
Bromochloromethane,T
2,2-Dichloropropane,T
1,1-Dichloropropene,T
2-Butanone,T
Propionitrile,T
Methyl Methacrylate,T
Acrylonitrile,T
Methyl Tert Butyl Ether,T
n-Hexane,T
1,1-Dichloroethene,T
Vinyl Acetate,T
Methyl Acrylate,T
Methyl Iodide,T
Methyl Sulfide,T
Acrolein,T
Iodomethane,T
Isobutyl Alcohol,T
Propionitrile,T
Methacrylonitrile,T
Tert-Butyl Alcohol,T
Acetone,T
1,1-Dichloroethane,T
1,2,2-Trifluoroethane,T
1,1-Dichloroethene,C
Methyl Sulfide,T
Methyl Iodide,T
Acrolein,T
Acrylonitrile,T
Methyl Acrylate,T
Methacrylonitrile,T
Propionitrile,T
Methac

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140322.D Vial: 10
Acq On : 30 Jun 2016 16:21 Operator: TMB
Sample : WG574723-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:59 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	674210	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	486785	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	271900	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	671839	98.2191 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 392.88%#		
43) 1,2-Dichloroethane-d4	10.31	65	835948	96.8094 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 387.24%#		
58) Toluene-d8	13.04	98	2262915	94.4033 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 377.60%#		
80) p-Bromofluorobenzene	17.02	95	1044558	98.0934 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 392.36%#		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	2.95	85	2392226	212.2580 ug/L	100
3) Chloromethane	3.37	50	2218722	176.3266 ug/L	100
4) Vinyl Chloride	3.56	62	1383750	200.2527 ug/L	99
5) 1,3-Butadiene	3.59	54	790286	206.9928 ug/L	97
6) Bromomethane	4.38	94	916596	199.6138 ug/L	100
7) Chloroethane	4.53	64	905382	207.3615 ug/L	96
8) Trichlorofluoromethane	5.00	101	2065931	196.0277 ug/L	99
10) Isoprene	5.57	67	1944884	206.7723 ug/L	96
11) Acrolein	5.78	56	1541	1.4899 ug/L	69
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	1336247	203.7841 ug/L	97
13) Acetone	5.90	43	421648	195.2041 ug/L	99
14) 1,1-Dichloroethene	6.11	61	2551648	200.5632 ug/L	94
15) Tert-Butyl Alcohol	6.28	59	3198	4.8417 ug/L #	57
16) Dimethyl Sulfide	6.38	62	1109294	199.9208 ug/L	95
17) Iodomethane	6.65	142	972879	208.2422 ug/L	92
18) Methyl acetate	6.69	43	1135963	194.3462 ug/L	99
19) Methylene Chloride	6.94	84	1372201	188.0837 ug/L	89
20) Carbon Disulfide	6.96	76	4495945	192.8546 ug/L	99
21) Acrylonitrile	7.18	53	44700	16.6668 ug/L #	33
22) Methyl Tert Butyl Ether	7.18	73	3851369	199.1557 ug/L	99
23) trans-1,2-Dichloroethene	7.42	96	1353415	198.6299 ug/L	88
24) n-Hexane	7.51	57	2284673	197.5664 ug/L	97
26) Vinyl Acetate	8.09	43	2820141	217.0472 ug/L	98
27) 1,1-Dichloroethane	8.10	63	2873257	195.8566 ug/L	99
28) Ethyl-Tert-Butyl ether	8.56	59	6764	0.2701 ug/L #	47
29) 2-Butanone	8.73	43	664492	200.9620 ug/L	97
30) Propionitrile	8.74	54	1576	1.7563 ug/L #	81
31) 2,2-Dichloropropane	8.96	77	2196313	198.4415 ug/L	98
32) cis-1,2-Dichloroethene	9.03	96	1477699	198.1211 ug/L	88
33) Chloroform	9.26	83	2557143	194.5712 ug/L	99
34) 1-Bromopropane	9.41	122	241562	203.4107 ug/L	99
35) Bromochloromethane	9.52	130	819022	204.3432 ug/L	99
36) Tetrahydrofuran	9.56	42	4224	1.8315 ug/L #	75
38) 1,1,1-Trichloroethane	9.85	97	2330454	203.6760 ug/L	98
39) Cyclohexane	9.87	56	2930205	196.8399 ug/L	96
40) 1,1-Dichloropropene	10.08	75	2009314	201.6162 ug/L	98
42) Carbon Tetrachloride	10.23	117	2106944	224.2607 ug/L	99
45) 1,2-Dichloroethane	10.45	62	2101049	199.3915 ug/L	99
46) Benzene	10.48	78	5301493	188.4813 ug/L	94
47) Trichloroethene	11.34	130	1327069	191.1997 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M140322.D 8260WTR.M Fri Jul 01 14:22:03 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140322.D Vial: 10
Acq On : 30 Jun 2016 16:21 Operator: TMB
Sample : WG574723-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:59 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
48)	Methylcyclohexane	11.43	83	2178870	199.9595 ug/L	95
49)	1,2-Dichloropropane	11.59	63	1619228	199.9016 ug/L	98
50)	1,4-Dioxane	11.93	88	2818	51.3914 ug/L #	14
51)	Bromodichloromethane	11.94	83	2039115	208.6317 ug/L	99
52)	Dibromomethane	12.03	93	816650	208.3783 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.31	63	836577	205.9918 ug/L	100
54)	4-Methyl-2-Pentanone	12.35	58	515506	206.2494 ug/L	98
55)	cis-1,3-Dichloropropene	12.68	75	2333363	205.6305 ug/L	99
56)	Dimethyl Disulfide	12.97	79	1322167	209.3111 ug/L	97
59)	Toluene	13.16	91	5329560	183.7033 ug/L	98
60)	Ethyl Methacrylate	13.32	69	1710374	207.2144 ug/L	96
62)	trans-1,3-Dichloropropene	13.39	75	2115027	205.0216 ug/L	96
63)	1,1,2-Trichloroethane	13.63	97	1065320	198.4215 ug/L	98
64)	2-Hexanone	13.58	43	1038924	203.8025 ug/L	98
65)	1,3-Dichloropropane	13.99	76	1956962	193.3985 ug/L	94
66)	Tetrachloroethene	14.11	166	1338320	193.5775 ug/L	92
67)	Dibromochloromethane	14.41	129	1402954	215.2216 ug/L	99
68)	1,2-Dibromoethane	14.70	107	1067268	205.9412 ug/L	100
69)	1-Chlorohexane	14.86	91	1899241	196.7097 ug/L	91
70)	Chlorobenzene	15.31	112	3420251	183.8172 ug/L	87
71)	1,1,1,2-Tetrachloroethane	15.35	131	1330581	200.9750 ug/L	97
72)	Ethylbenzene	15.35	106	1873240	192.3394 ug/L	99
73)	m-,p-Xylene	15.46	106	4310843	366.2377 ug/L	95
74)	o-Xylene	16.11	106	2276447	193.9154 ug/L	96
75)	Styrene	16.16	104	3942983	199.6439 ug/L	88
76)	Bromoform	16.72	173	900340	222.7294 ug/L	97
77)	Isopropylbenzene	16.62	105	5752842	187.8178 ug/L	100
79)	1,1,2,2-Tetrachloroethane	16.88	83	1421698	215.4425 ug/L	100
81)	1,2,3-Trichloropropane	17.10	110	415115	212.1790 ug/L	84
82)	trans-1,4-Dichloro-2-Buten	17.19	53	555836	222.7847 ug/L	92
83)	n-Propylbenzene	17.22	91	7011461	179.4705 ug/L	99
84)	Bromobenzene	17.34	156	1573131	192.7133 ug/L	88
85)	1,3,5-Trimethylbenzene	17.45	105	5208297	190.2034 ug/L	98
86)	2-Chlorotoluene	17.52	91	4893039	185.1943 ug/L	96
87)	4-Chlorotoluene	17.58	91	4739568	188.1643 ug/L	97
88)	a-Methylstyrene	17.92	118	2750894	199.7372 ug/L	94
89)	tert-Butylbenzene	17.99	134	1070344	194.5543 ug/L	74
90)	1,2,4-Trimethylbenzene	18.05	105	5338361	189.9838 ug/L	98
91)	sec-Butylbenzene	18.31	105	6128752	186.9735 ug/L	99
92)	p-Isopropyltoluene	18.50	119	5274399	188.8129 ug/L	100
93)	1,3-Dichlorobenzene	18.70	146	3017581	187.8153 ug/L	92
94)	1,4-Dichlorobenzene	18.86	146	3009321	185.2589 ug/L	92
95)	n-Butylbenzene	19.13	91	5193206	189.5718 ug/L	98
96)	1,2-Dichlorobenzene	19.43	146	2821487	187.0461 ug/L	91
97)	1,2-Dibromo-3-Chloropropan	20.62	75	291664	225.6764 ug/L	84
98)	1,2,4-Trichlorobenzene	21.96	180	2052522	192.4961 ug/L	98
99)	Hexachlorobutadiene	22.16	225	860118	194.0178 ug/L	100
100)	Naphthalene	22.38	128	4383238	201.1498 ug/L	99
101)	1,2,3-Trichlorobenzene	22.76	180	1893203	191.7570 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M140322.D 8260WTR.M Fri Jul 01 14:22:03 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140322.D Vial: 10
Acq On : 30 Jun 2016 16:21 Operator: TMB
Sample : WG574723-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:22 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

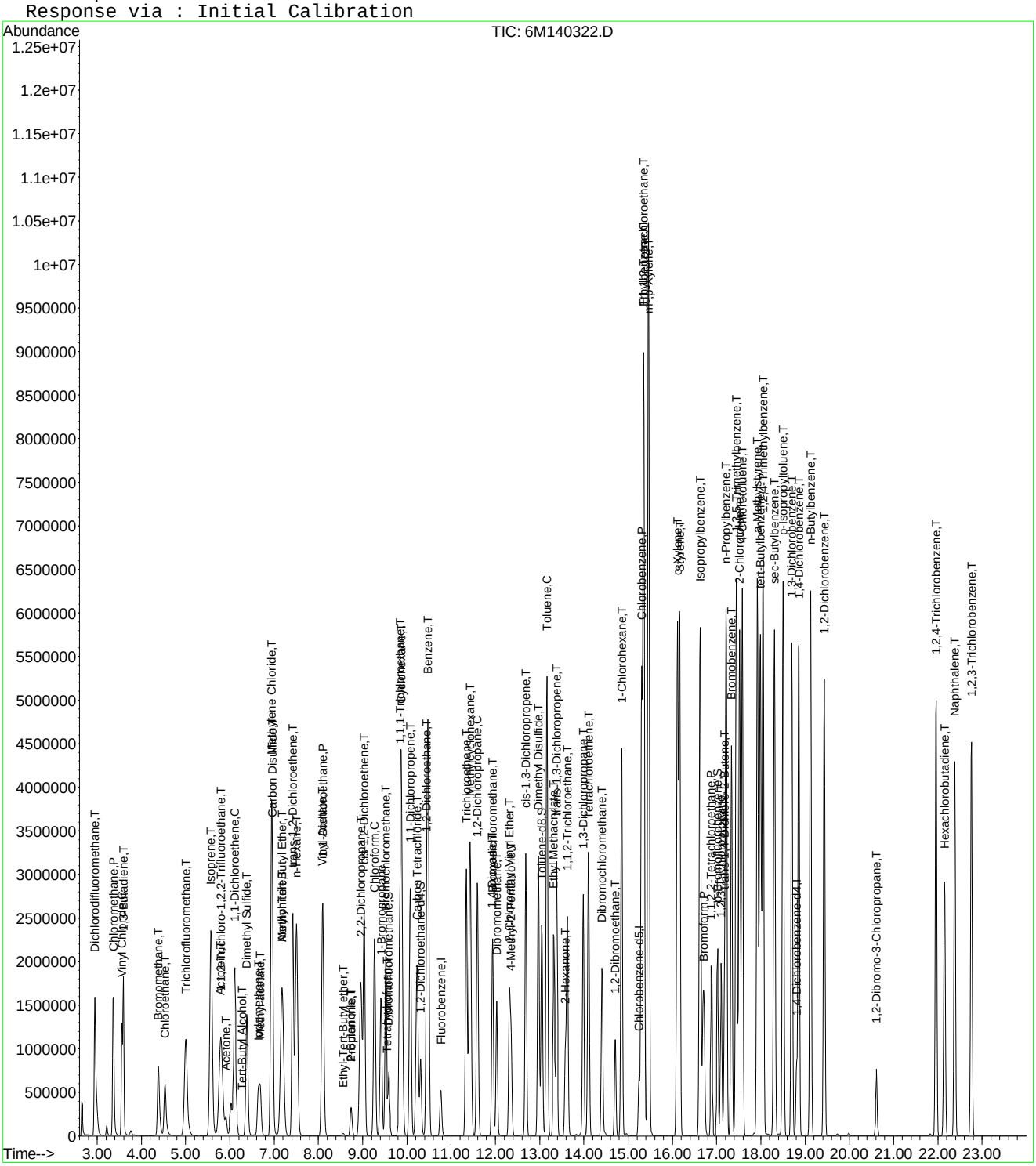

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140323.D Vial: 11
Acq On : 30 Jun 2016 16:53 Operator: TMB
Sample : WG574723-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:22:07 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	768752	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	513418	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	277427	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	1128188	144.6508 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 578.60%#		
43) 1,2-Dichloroethane-d4	10.31	65	1400537	142.2465 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 569.00%#		
58) Toluene-d8	13.04	98	3666921	145.0395 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 580.16%#		
80) p-Bromofluorobenzene	17.03	95	1580313	145.4490 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 581.80%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.94	85	3603130	280.3824 ug/L	99
3) Chloromethane	3.36	50	3514669	244.9674 ug/L	99
4) Vinyl Chloride	3.56	62	2074164	263.2526 ug/L	98
5) 1,3-Butadiene	3.59	54	1213545	279.8694 ug/L	97
6) Bromomethane	4.37	94	1474577	281.6365 ug/L	100
7) Chloroethane	4.53	64	1490836	299.4574 ug/L	96
8) Trichlorofluoromethane	5.00	101	3451196	287.1972 ug/L	99
9) Diethyl ether	5.55	59	1755505	247.5940 ug/L	97
10) Isoprene	5.57	67	2862617	266.9137 ug/L	94
11) Acrolein	5.79	56	179556	152.2492 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	5.78	101	2228863	298.1095 ug/L	97
13) Acetone	5.91	43	694471	281.9693 ug/L	98
14) 1,1-Dichloroethene	6.10	61	4231203	291.6778 ug/L	94
15) Tert-Butyl Alcohol	6.29	59	515078	683.9134 ug/L	92
16) Dimethyl Sulfide	6.39	62	1850710	292.5220 ug/L	96
17) Iodomethane	6.64	142	1511597	283.4374 ug/L	92
18) Methyl acetate	6.69	43	1992359	298.9430 ug/L	99
19) Methylene Chloride	6.94	84	2215285	266.3004 ug/L	89
20) Carbon Disulfide	6.96	76	7083320	266.4739 ug/L	98
21) Acrylonitrile	7.15	53	497546	162.7001 ug/L	96
22) Methyl Tert Butyl Ether	7.18	73	6401984	290.3361 ug/L	98
23) trans-1,2-Dichloroethene	7.42	96	2224367	286.3050 ug/L	87
24) n-Hexane	7.50	57	3799046	288.1194 ug/L	96
25) Diisopropyl ether	7.90	45	9759184	274.9849 ug/L	99
26) Vinyl Acetate	8.09	43	4448993	300.2991 ug/L	99
27) 1,1-Dichloroethane	8.10	63	4699381	280.9398 ug/L	99
28) Ethyl-Tert-Butyl ether	8.53	59	8098177	283.6338 ug/L	99
29) 2-Butanone	8.73	43	1086721	288.2380 ug/L	98
30) Propionitrile	8.86	54	298217	291.4641 ug/L	98
31) 2,2-Dichloropropane	8.95	77	3622985	287.0872 ug/L	98
32) cis-1,2-Dichloroethene	9.03	96	2417494	284.2622 ug/L	71
33) Chloroform	9.26	83	4185224	279.2874 ug/L	99
34) 1-Bromopropane	9.41	122	399109	294.5307 ug/L	100
35) Bromochloromethane	9.52	130	1339573	293.1163 ug/L	99
36) Tetrahydrofuran	9.56	42	723977	275.3063 ug/L	96
38) 1,1,1-Trichloroethane	9.85	97	3817009	292.5710 ug/L	97
39) Cyclohexane	9.88	56	4836948	284.9676 ug/L	96
40) 1,1-Dichloropropene	10.07	75	3335607	293.5361 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	6187488	285.3971 ug/L	98
42) Carbon Tetrachloride	10.23	117	3426898	319.8971 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140323.D 8260WTR.M Fri Jul 01 14:22:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140323.D Vial: 11
Acq On : 30 Jun 2016 16:53 Operator: TMB
Sample : WG574723-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:22:07 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	3436626	286.0301 ug/L	99
46)	Benzene	10.48	78	8206846	255.8911 ug/L	92
47)	Trichloroethene	11.34	130	2157856	272.6623 ug/L	85
48)	Methylcyclohexane	11.43	83	3572510	287.5366 ug/L	94
49)	1,2-Dichloropropane	11.59	63	2654885	287.4504 ug/L	98
50)	1,4-Dioxane	11.94	88	37500	599.7769 ug/L	90
51)	Bromodichloromethane	11.93	83	3309122	296.9343 ug/L	99
52)	Dibromomethane	12.02	93	1336996	299.1959 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.31	63	1349189	291.3572 ug/L	100
54)	4-Methyl-2-Pentanone	12.35	58	816641	286.5491 ug/L	98
55)	cis-1,3-Dichloropropene	12.69	75	3726475	288.0131 ug/L	98
56)	Dimethyl Disulfide	12.97	79	2153813	299.0355 ug/L	97
59)	Toluene	13.16	91	7972275	260.5398 ug/L	94
60)	Ethyl Methacrylate	13.32	69	2708040	311.0642 ug/L	96
62)	trans-1,3-Dichloropropene	13.39	75	3319850	305.1184 ug/L	96
63)	1,1,2-Trichloroethane	13.62	97	1658699	292.9155 ug/L	98
64)	2-Hexanone	13.58	43	1609874	299.4219 ug/L	99
65)	1,3-Dichloropropane	13.99	76	3035134	284.3902 ug/L	93
66)	Tetrachloroethene	14.10	166	2112313	289.6805 ug/L	90
67)	Dibromochloromethane	14.41	129	2168054	315.3397 ug/L	99
68)	1,2-Dibromoethane	14.71	107	1650327	301.9297 ug/L	99
69)	1-Chlorohexane	14.85	91	2920904	286.8330 ug/L	90
70)	Chlorobenzene	15.30	112	5078928	258.8012 ug/L	85
71)	1,1,1,2-Tetrachloroethane	15.35	131	1989897	284.9688 ug/L	97
72)	Ethylbenzene	15.35	106	2784005	271.0260 ug/L	89
73)	m-,p-Xylene	15.46	106	6169523	496.9567 ug/L	82
74)	o-Xylene	16.12	106	3353804	270.8685 ug/L	99
75)	Styrene	16.16	104	5692194	273.2606 ug/L	85
76)	Bromoform	16.71	173	1364903	320.1393 ug/L	96
77)	Isopropylbenzene	16.63	105	8032217	248.6314 ug/L	97
79)	1,1,2,2-Tetrachloroethane	16.88	83	2127089	315.9149 ug/L	100
81)	1,2,3-Trichloropropane	17.11	110	617415	309.2940 ug/L	88
82)	trans-1,4-Dichloro-2-Buten	17.18	53	846450	332.5067 ug/L	93
83)	n-Propylbenzene	17.22	91	9328034	234.0103 ug/L	95
84)	Bromobenzene	17.34	156	2312758	277.6754 ug/L	88
85)	1,3,5-Trimethylbenzene	17.45	105	7210752	258.0855 ug/L	99
86)	2-Chlorotoluene	17.53	91	7014220	260.1890 ug/L	97
87)	4-Chlorotoluene	17.59	91	6424073	249.9594 ug/L	98
88)	a-Methylstyrene	17.92	118	3960625	281.8443 ug/L	93
89)	tert-Butylbenzene	18.00	134	1565290	278.8513 ug/L	79
90)	1,2,4-Trimethylbenzene	18.06	105	7348747	256.3200 ug/L	97
91)	sec-Butylbenzene	18.31	105	8392860	250.9449 ug/L	98
92)	p-Isopropyltoluene	18.51	119	7284847	255.5874 ug/L	97
93)	1,3-Dichlorobenzene	18.70	146	4306096	262.6735 ug/L	90
94)	1,4-Dichlorobenzene	18.85	146	4284929	258.5323 ug/L	90
95)	n-Butylbenzene	19.12	91	7177388	256.7823 ug/L	99
96)	1,2-Dichlorobenzene	19.44	146	4035185	262.1770 ug/L	90
97)	1,2-Dibromo-3-Chloropropan	20.61	75	433780	328.9526 ug/L	84
98)	1,2,4-Trichlorobenzene	21.97	180	2937231	269.9807 ug/L	97
99)	Hexachlorobutadiene	22.15	225	1256182	277.7132 ug/L	99
100)	Naphthalene	22.39	128	6036194	271.4865 ug/L	97
101)	1,2,3-Trichlorobenzene	22.76	180	2707781	268.7993 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M140323.D 8260WTR.M Fri Jul 01 14:22:11 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140323.D Vial: 11
Acq On : 30 Jun 2016 16:53 Operator: TMB
Sample : WG574723-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:22 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

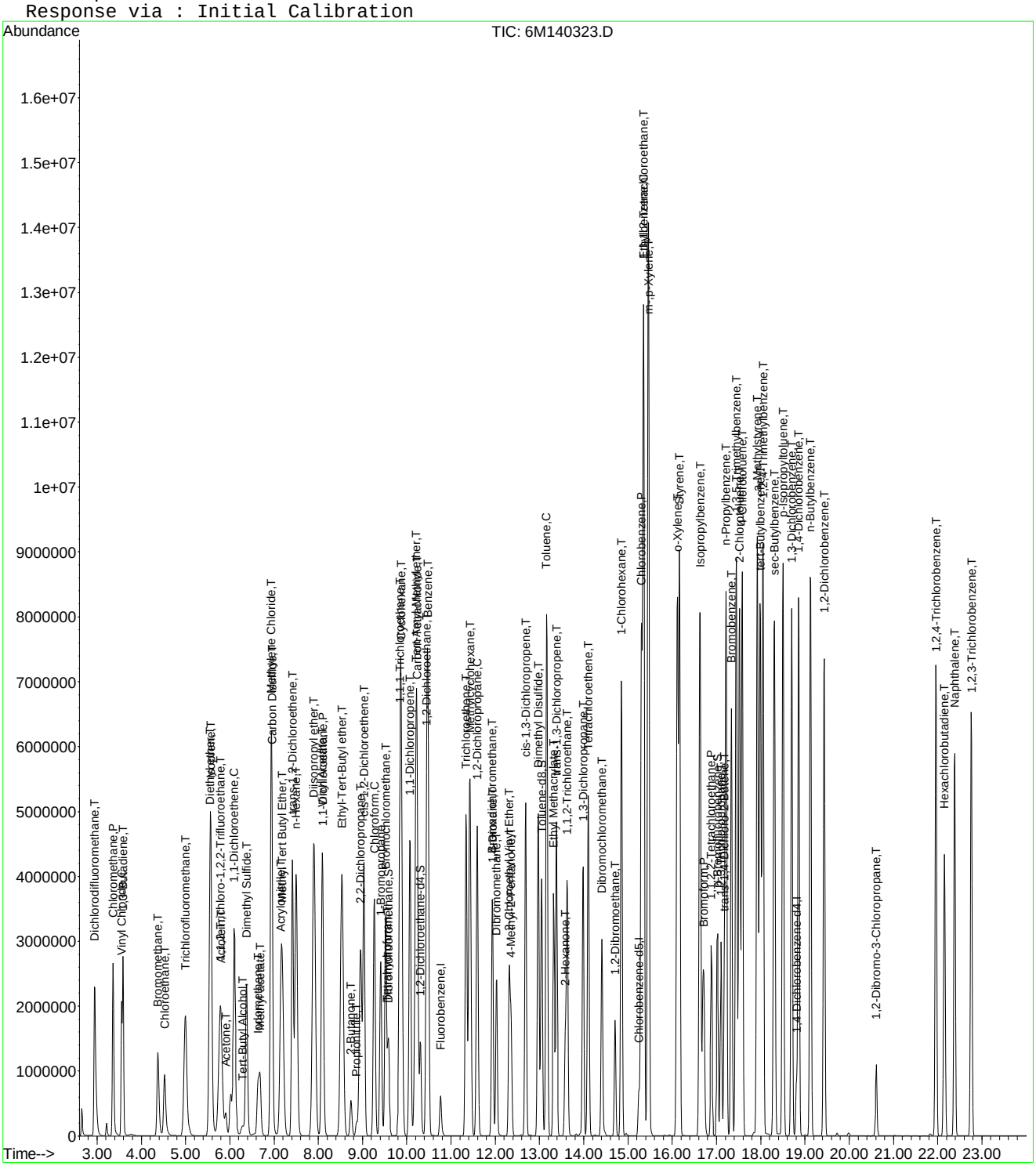

6M140323.D 8260WTR.M Fri Jul 01 14:22:13 2016 Page 3

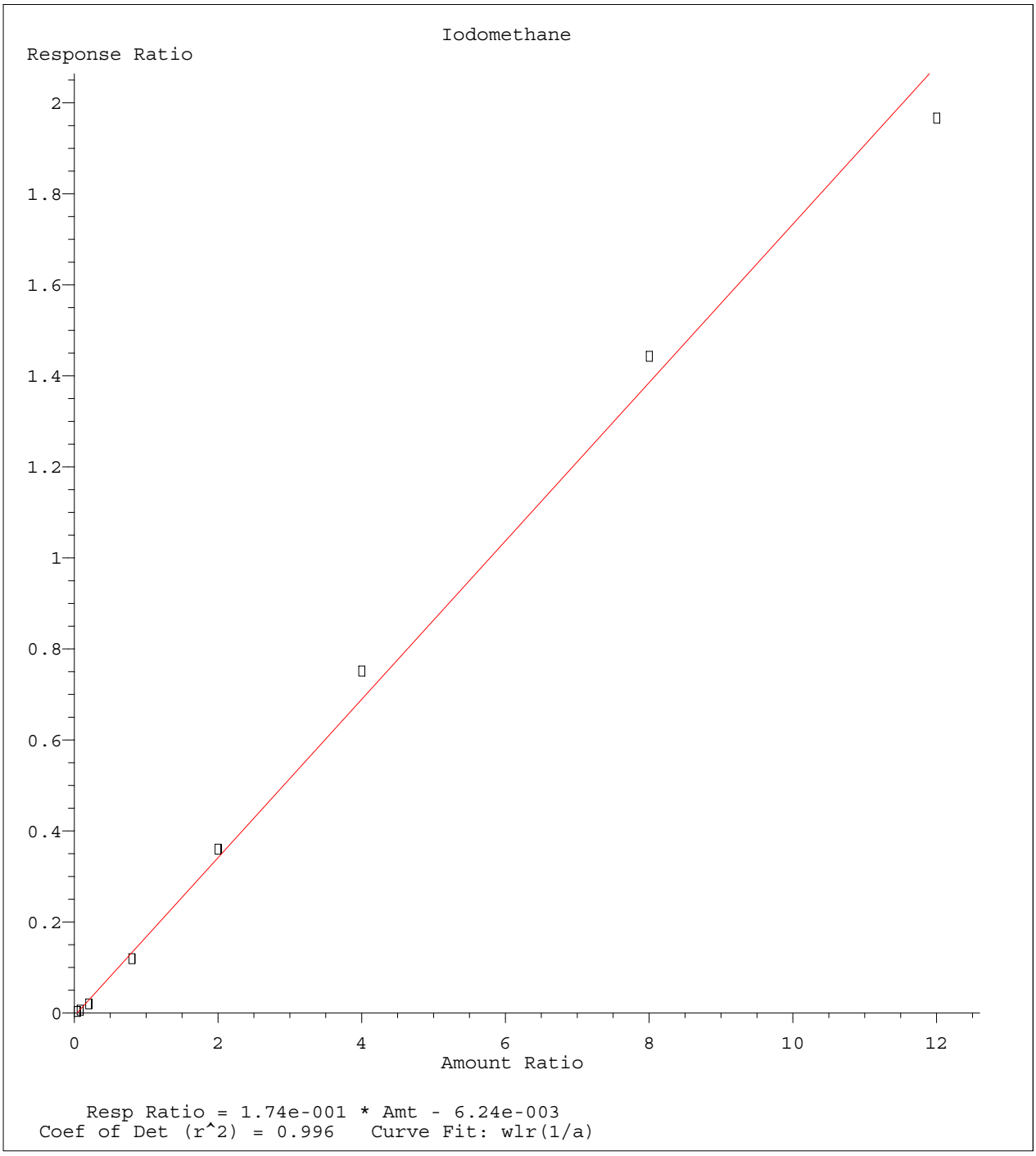

Method Name: K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M
Calibration Table Last Updated: Fri Jul 01 09:28:30 2016

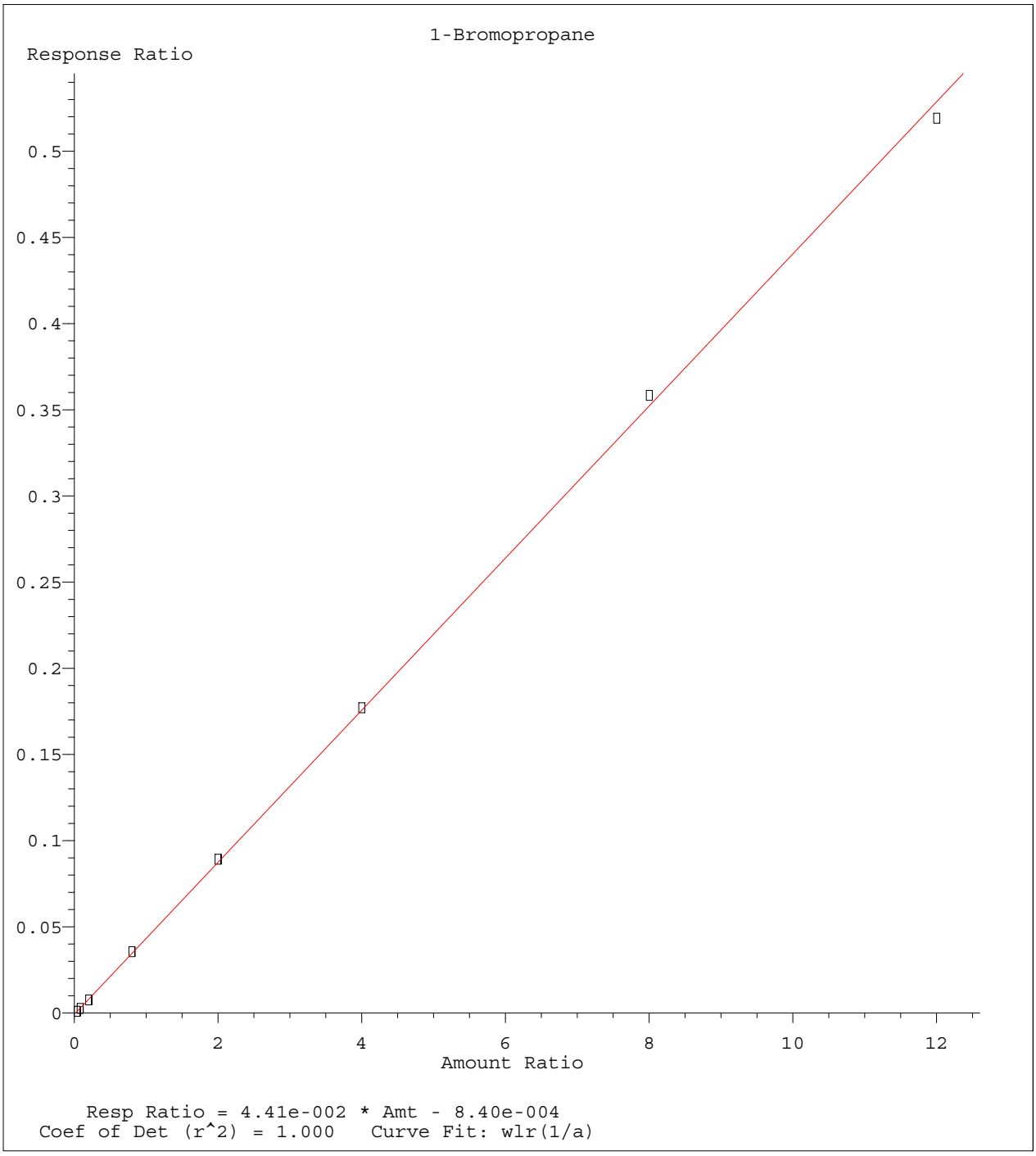

Method Name: K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M
Calibration Table Last Updated: Fri Jul 01 09:28:30 2016

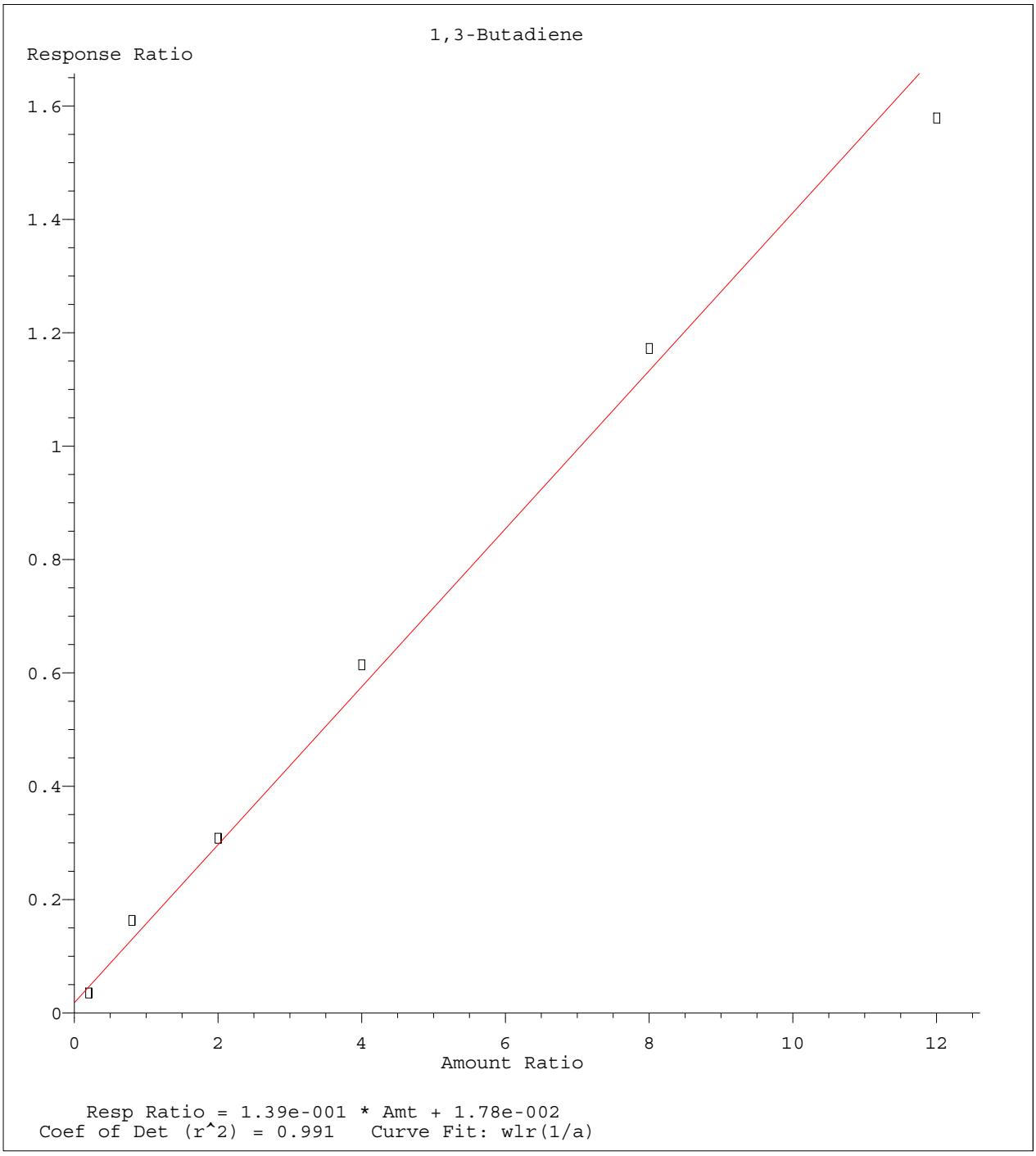

Method Name: K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M
Calibration Table Last Updated: Fri Jul 01 09:28:30 2016

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140326.D Vial: 14
Acq On : 30 Jun 2016 18:31 Operator: TMB
Sample : WG574723-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:22:31 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	713701	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	500221	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	261664	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	181470	25.0619 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.24%		
43) 1,2-Dichloroethane-d4	10.31	65	220889	24.1652 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.68%		
58) Toluene-d8	13.04	98	608395	24.6990 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.80%		
80) p-Bromofluorobenzene	17.02	95	256905	25.0695 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.28%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	485701	40.7108 ug/L	100
3) Chloromethane	3.37	50	521316	39.1377 ug/L	100
4) Vinyl Chloride	3.55	62	337528	46.1434 ug/L	100
5) 1,3-Butadiene	3.60	54	155736	35.9374 ug/L	97
6) Bromomethane	4.37	94	235295	48.4066 ug/L	100
7) Chloroethane	4.52	64	239156	51.7436 ug/L	97
8) Trichlorofluoromethane	4.99	101	525851	47.1350 ug/L	100
9) Diethyl ether	5.56	59	680169	103.3296 ug/L	97
10) Isoprene	5.57	67	555397	55.7803 ug/L	96
11) Acrolein	5.79	56	131596	120.1899 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	5.78	101	356202	51.3167 ug/L	97
13) Acetone	5.91	43	107340	46.9439 ug/L	98
14) 1,1-Dichloroethene	6.11	61	594692	44.1572 ug/L	95
15) Tert-Butyl Alcohol	6.28	59	140341	200.7163 ug/L	98
16) Dimethyl Sulfide	6.38	62	515949	87.8409 ug/L	96
17) Iodomethane	6.64	142	294876	60.2646 ug/L	92
18) Methyl acetate	6.69	43	338698	54.7398 ug/L	99
19) Methylene Chloride	6.93	84	359823	46.5909 ug/L	90
20) Carbon Disulfide	6.95	76	1077126	43.6470 ug/L	100
21) Acrylonitrile	7.15	53	146978	51.7699 ug/L	100
22) Methyl Tert Butyl Ether	7.18	73	1049922	51.2877 ug/L	100
23) trans-1,2-Dichloroethene	7.41	96	339388	47.0532 ug/L	88
24) n-Hexane	7.51	57	547762	44.7466 ug/L	97
25) Diisopropyl ether	7.90	45	3459050	104.9838 ug/L	98
26) Vinyl Acetate	8.09	43	697771	50.7312 ug/L	98
27) 1,1-Dichloroethane	8.10	63	721539	46.4625 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	2578321	97.2697 ug/L	98
29) 2-Butanone	8.73	43	177594	50.7378 ug/L	96
30) Propionitrile	8.85	54	95623	100.6665 ug/L	96
31) 2,2-Dichloropropane	8.96	77	593953	50.6955 ug/L	99
32) cis-1,2-Dichloroethene	9.03	96	392808	49.7512 ug/L	72
33) Chloroform	9.26	83	665890	47.8636 ug/L	100
34) 1-Bromopropane	9.41	122	83509	66.7495 ug/L	100
35) Bromochloromethane	9.52	130	207412	48.8852 ug/L	100
36) Tetrahydrofuran	9.56	42	224799	92.0780 ug/L	95
38) 1,1,1-Trichloroethane	9.85	97	598191	49.3876 ug/L	99
39) Cyclohexane	9.88	56	748359	47.4902 ug/L	96
40) 1,1-Dichloropropene	10.08	75	507584	48.1132 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	2097011	104.1851 ug/L	98
42) Carbon Tetrachloride	10.23	117	511641	51.4451 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140326.D 8260WTR.M Fri Jul 01 14:22:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140326.D Vial: 14
Acq On : 30 Jun 2016 18:31 Operator: TMB
Sample : WG574723-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:22:31 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	551012	49.3981 ug/L	98
46)	Benzene	10.48	78	1452601	48.7860 ug/L	97
47)	Trichloroethene	11.35	130	359806	48.9712 ug/L	90
48)	Methylcyclohexane	11.43	83	563704	48.8698 ug/L	95
49)	1,2-Dichloropropane	11.59	63	446228	52.0408 ug/L	99
50)	1,4-Dioxane	11.94	88	11529	198.6187 ug/L	84
51)	Bromodichloromethane	11.94	83	530754	51.2992 ug/L	100
52)	Dibromomethane	12.03	93	203238	48.9892 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.32	63	227435	52.9030 ug/L	100
54)	4-Methyl-2-Pentanone	12.35	58	134103	50.6846 ug/L	98
55)	cis-1,3-Dichloropropene	12.68	75	676117	56.2867 ug/L	100
56)	Dimethyl Disulfide	12.97	79	359470	53.7585 ug/L	98
59)	Toluene	13.15	91	1496307	50.1905 ug/L	99
60)	Ethyl Methacrylate	13.32	69	454272	53.5575 ug/L	96
62)	trans-1,3-Dichloropropene	13.39	75	565632	53.3572 ug/L	96
63)	1,1,2-Trichloroethane	13.63	97	287265	52.0675 ug/L	98
64)	2-Hexanone	13.58	43	260461	49.7214 ug/L	97
65)	1,3-Dichloropropane	13.99	76	552828	53.1662 ug/L	94
66)	Tetrachloroethene	14.10	166	346278	48.7411 ug/L	93
67)	Dibromochloromethane	14.41	129	360309	53.7889 ug/L	99
68)	1,2-Dibromoethane	14.71	107	279233	52.4339 ug/L	100
69)	1-Chlorohexane	14.85	91	508330	51.2350 ug/L	92
70)	Chlorobenzene	15.30	112	974362	50.9593 ug/L	92
71)	1,1,1,2-Tetrachloroethane	15.35	131	357715	52.5791 ug/L	98
72)	Ethylbenzene	15.35	106	517345	51.6928 ug/L	93
73)	m-,p-Xylene	15.46	106	1254856	103.7457 ug/L	95
74)	o-Xylene	16.11	106	643998	53.3844 ug/L	94
75)	Styrene	16.16	104	1074202	52.9288 ug/L	92
76)	Bromoform	16.72	173	205149	49.3874 ug/L	98
77)	Isopropylbenzene	16.62	105	1626117	51.6632 ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.88	83	352344	55.4825 ug/L	100
81)	1,2,3-Trichloropropane	17.10	110	103329	54.8809 ug/L	79
82)	trans-1,4-Dichloro-2-Buten	17.18	53	121642	50.6626 ug/L	96
83)	n-Propylbenzene	17.22	91	2019179	53.7062 ug/L	98
84)	Bromobenzene	17.34	156	398353	50.7084 ug/L	89
85)	1,3,5-Trimethylbenzene	17.44	105	1384872	52.5530 ug/L	97
86)	2-Chlorotoluene	17.52	91	1343673	52.8455 ug/L	96
87)	4-Chlorotoluene	17.58	91	1234147	50.9132 ug/L	97
88)	a-Methylstyrene	17.92	118	769488	58.0567 ug/L	95
89)	tert-Butylbenzene	17.98	134	281622	53.1924 ug/L	73
90)	1,2,4-Trimethylbenzene	18.04	105	1394233	51.5596 ug/L	98
91)	sec-Butylbenzene	18.30	105	1658086	52.5630 ug/L	97
92)	p-Isopropyltoluene	18.50	119	1389218	51.6766 ug/L	98
93)	1,3-Dichlorobenzene	18.70	146	793356	51.3104 ug/L	95
94)	1,4-Dichlorobenzene	18.85	146	809665	51.7942 ug/L	94
95)	n-Butylbenzene	19.12	91	1353617	51.3451 ug/L	96
96)	1,2-Dichlorobenzene	19.43	146	761556	52.4611 ug/L	94
97)	1,2-Dibromo-3-Chloropropan	20.62	75	69221	55.6553 ug/L	83
98)	1,2,4-Trichlorobenzene	21.97	180	527905	51.4464 ug/L	99
99)	Hexachlorobutadiene	22.15	225	224309	52.5770 ug/L	99
100)	Naphthalene	22.38	128	1033625	49.2893 ug/L	100
101)	1,2,3-Trichlorobenzene	22.76	180	485666	51.1160 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M140326.D 8260WTR.M Fri Jul 01 14:22:36 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140326.D Vial: 14
Acq On : 30 Jun 2016 18:31 Operator: TMB
Sample : WG574723-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:22 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

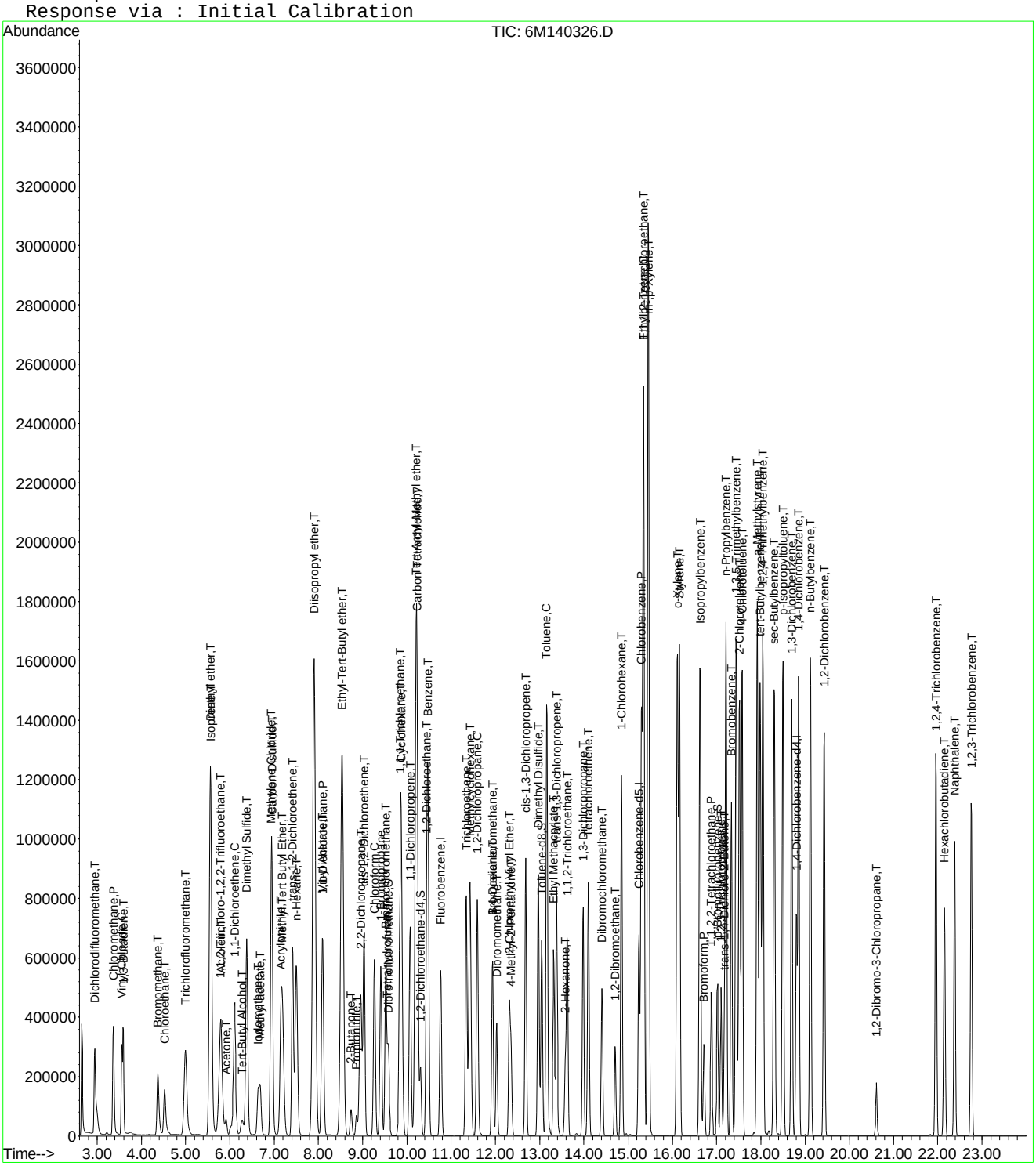

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140326.D Vial: 14
Acq On : 30 Jun 2016 18:31 Operator: TMB
Sample : WG574723-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	107	0.00
2	T	Dichlorodifluoromethane	50.0000	40.7108	18.6	83	0.00
3	P	Chloromethane	50.0000	39.1377	21.7#	85	0.00
4	C	Vinyl Chloride	50.0000	46.1434	7.7	97	0.00
5	T	1,3-Butadiene	50.0000	35.9374	28.1#	76	0.00
6	T	Bromomethane	50.0000	48.4066	3.2	110	0.00
7	T	Chloroethane	50.0000	51.7436	-3.5	111	0.00
8	T	Trichlorofluoromethane	50.0000	47.1350	5.7	106	0.00
9	T	Diethyl ether	100.0000	103.3296	-3.3	108	0.00
10	T	Isoprene	50.0000	55.7803	-11.6	117	0.00
11	T	Acrolein	50.0000	120.1899	-140.4#	262	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	51.3167	-2.6	112	0.00
13	T	Acetone	50.0000	46.9439	6.1	101	0.00
14	C	1,1-Dichloroethene	50.0000	44.1572	11.7	95	0.00
15	T	Tert-Butyl Alcohol	200.0000	200.7163	-0.4	109	-0.01
16	T	Dimethyl Sulfide	50.0000	87.8409	-75.7#	187	0.00
17	T	Iodomethane	50.0000	60.2646	-20.5#	123	0.00
18	T	Methyl acetate	50.0000	54.7398	-9.5	119	0.00
19	T	Methylene Chloride	50.0000	46.5909	6.8	104	0.00
20	T	Carbon Disulfide	50.0000	43.6470	12.7	93	0.00
21	T	Acrylonitrile	50.0000	51.7698	-3.5	108	0.00
22	T	Methyl Tert Butyl Ether	50.0000	51.2877	-2.6	110	0.00
23	T	trans-1,2-Dichloroethene	50.0000	47.0532	5.9	102	0.00
24	T	n-Hexane	50.0000	44.7466	10.5	97	0.00
25	T	Diisopropyl ether	100.0000	104.9838	-5.0	113	0.00
26	T	Vinyl Acetate	50.0000	50.7312	-1.5	108	0.00
27	P	1,1-Dichloroethane	50.0000	46.4625	7.1	100	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	97.2697	2.7	104	0.00
29	T	2-Butanone	50.0000	50.7378	-1.5	106	0.00
30	T	Propionitrile	100.0000	100.6665	-0.7	106	0.00
31	T	2,2-Dichloropropane	50.0000	50.6955	-1.4	111	0.00
32	T	cis-1,2-Dichloroethene	50.0000	49.7512	0.5	107	0.00
33	C	Chloroform	50.0000	47.8636	4.3	105	0.00
34		1-Bromopropane	50.0000	66.7495	-33.5#	141	0.00
35	T	Bromochloromethane	50.0000	48.8852	2.2	102	0.00
36	T	Tetrahydrofuran	100.0000	92.0780	7.9	104	0.00
37	S	Dibromofluoromethane	25.0000	25.0619	-0.2	106	0.00
38	T	1,1,1-Trichloroethane	50.0000	49.3876	1.2	104	0.00
39	T	Cyclohexane	50.0000	47.4902	5.0	103	0.00
40	T	1,1-Dichloropropene	50.0000	48.1132	3.8	104	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	104.1851	-4.2	111	0.00
42	T	Carbon Tetrachloride	50.0000	51.4451	-2.9	102	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.1652	3.3	104	0.00
44		Heptane	-1.0000	0.0000	0.0	111	0.00
45	T	1,2-Dichloroethane	50.0000	49.3981	1.2	105	0.00
46	T	Benzene	50.0000	48.7860	2.4	105	0.00
47	T	Trichloroethene	50.0000	48.9712	2.1	105	0.00
48	T	Methylcyclohexane	50.0000	48.8698	2.3	106	0.00
49	C	1,2-Dichloropropane	50.0000	52.0408	-4.1	111	0.00
50	T	1,4-Dioxane	200.0000	198.6187	0.7	102	0.00
51	T	Bromodichloromethane	50.0000	51.2992	-2.6	106	0.00
52	T	Dibromomethane	50.0000	48.9892	2.0	101	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	52.9030	-5.8	106	0.00
54	T	4-Methyl-2-Pentanone	50.0000	50.6846	-1.4	106	0.00

(#) = Out of Range

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140326.D Vial: 14
Acq On : 30 Jun 2016 18:31 Operator: TMB
Sample : WG574723-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	56.2867	-12.6	117	0.00
56	T	Dimethyl Disulfide	50.0000	53.7585	-7.5	112	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	105	0.00
58	S	Toluene-d8	25.0000	24.6990	1.2	104	0.00
59	C	Toluene	50.0000	50.1905	-0.4	107	0.00
60	T	Ethyl Methacrylate	50.0000	53.5575	-7.1	108	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	107	0.00
62	T	trans-1,3-Dichloropropene	50.0000	53.3572	-6.7	108	0.00
63	T	1,1,2-Trichloroethane	50.0000	52.0675	-4.1	108	0.00
64	T	2-Hexanone	50.0000	49.7214	0.6	101	0.00
65	T	1,3-Dichloropropane	50.0000	53.1662	-6.3	112	0.00
66	T	Tetrachloroethene	50.0000	48.7411	2.5	103	0.00
67	T	Dibromochloromethane	50.0000	53.7889	-7.6	105	0.00
68	T	1,2-Dibromoethane	50.0000	52.4339	-4.9	107	0.00
69	T	1-Chlorohexane	50.0000	51.2350	-2.5	106	0.00
70	P	Chlorobenzene	50.0000	50.9593	-1.9	108	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	52.5791	-5.2	106	0.00
72	C	Ethylbenzene	50.0000	51.6928	-3.4	107	0.00
73	T	m-,p-Xylene	100.0000	103.7457	-3.7	108	0.00
74	T	o-Xylene	50.0000	53.3844	-6.8	109	0.00
75	T	Styrene	50.0000	52.9288	-5.9	106	0.00
76	P	Bromoform	50.0000	49.3873	1.2	98	0.00
77	T	Isopropylbenzene	50.0000	51.6632	-3.3	107	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	99	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	55.4825	-11.0	108	0.00
80	S	p-Bromofluorobenzene	25.0000	25.0695	-0.3	100	0.00
81	T	1,2,3-Trichloropropane	50.0000	54.8809	-9.8	105	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	50.6626	-1.3	94	0.00
83	T	n-Propylbenzene	50.0000	53.7062	-7.4	107	0.00
84	T	Bromobenzene	50.0000	50.7084	-1.4	102	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	52.5530	-5.1	104	-0.01
86	T	2-Chlorotoluene	50.0000	52.8455	-5.7	105	0.00
87	T	4-Chlorotoluene	50.0000	50.9132	-1.8	105	0.00
88	T	a-Methylstyrene	50.0000	58.0567	-16.1	111	0.00
89	T	tert-Butylbenzene	50.0000	53.1924	-6.4	106	-0.01
90	T	1,2,4-Trimethylbenzene	50.0000	51.5596	-3.1	101	-0.01
91	T	sec-Butylbenzene	50.0000	52.5630	-5.1	104	-0.01
92	T	p-Isopropyltoluene	50.0000	51.6766	-3.4	101	0.00
93	T	1,3-Dichlorobenzene	50.0000	51.3104	-2.6	103	0.00
94	T	1,4-Dichlorobenzene	50.0000	51.7942	-3.6	105	0.00
95	T	n-Butylbenzene	50.0000	51.3451	-2.7	100	0.00
96	T	1,2-Dichlorobenzene	50.0000	52.4611	-4.9	105	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	55.6553	-11.3	107	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	51.4464	-2.9	102	0.00
99	T	Hexachlorobutadiene	50.0000	52.5770	-5.2	105	0.00
100	T	Naphthalene	50.0000	49.2893	1.4	92	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	51.1160	-2.2	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140330.D Vial: 3
Acq On : 1 Jul 2016 12:06 Operator: TMB
Sample : WG574938-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:43:49 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	678188	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	485516	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	260540	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	167819	24.3903 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.56%		
43) 1,2-Dichloroethane-d4	10.31	65	207479	23.8868 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 95.56%		
58) Toluene-d8	13.04	98	591717	24.7495 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.00%		
80) p-Bromofluorobenzene	17.02	95	254483	24.9403 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.76%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	617537	54.4716 ug/L	99
3) Chloromethane	3.36	50	599316	47.3496 ug/L	99
4) Vinyl Chloride	3.56	62	348549	50.1452 ug/L	99
5) 1,3-Butadiene	3.60	54	204683	50.9278 ug/L	96
6) Bromomethane	4.38	94	220148	47.6620 ug/L	99
7) Chloroethane	4.53	64	213472	48.6051 ug/L	96
8) Trichlorofluoromethane	5.00	101	639495	60.3231 ug/L	100
9) Diethyl ether	5.55	59	633340	101.2538 ug/L	97
10) Isoprene	5.57	67	496316	52.4568 ug/L	97
11) Acrolein	5.79	56	54373	52.2606 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	345309	52.3524 ug/L	97
13) Acetone	5.90	43	101386	46.6618 ug/L	99
14) 1,1-Dichloroethene	6.11	61	652800	51.0101 ug/L	95
15) Tert-Butyl Alcohol	6.25	59	126710	190.7108 ug/L	99
16) Dimethyl Sulfide	6.38	62	266921	47.8232 ug/L	96
17) Iodomethane	6.65	142	217547	46.9892 ug/L	94
18) Methyl acetate	6.69	43	289063	49.1643 ug/L	98
19) Methylene Chloride	6.93	84	362375	49.3784 ug/L	91
20) Carbon Disulfide	6.96	76	1192490	50.8521 ug/L	100
21) Acrylonitrile	7.15	53	135856	50.3581 ug/L	97
22) Methyl Tert Butyl Ether	7.18	73	992013	50.9965 ug/L	100
23) trans-1,2-Dichloroethene	7.42	96	350776	51.1786 ug/L	90
24) n-Hexane	7.51	57	624862	53.7178 ug/L	98
25) Diisopropyl ether	7.89	45	3078657	98.3315 ug/L	97
26) Vinyl Acetate	8.09	43	798262	61.0765 ug/L	98
27) 1,1-Dichloroethane	8.10	63	740774	50.1989 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	2487759	98.7677 ug/L	98
29) 2-Butanone	8.73	43	166249	49.9837 ug/L	96
30) Propionitrile	8.85	54	90882	100.6854 ug/L	99
31) 2,2-Dichloropropane	8.96	77	613820	55.1346 ug/L	98
32) cis-1,2-Dichloroethene	9.03	96	382874	51.0324 ug/L	72
33) Chloroform	9.26	83	654061	49.4751 ug/L	100
34) 1-Bromopropane	9.42	122	60213	50.7639 ug/L	99
35) Bromochloromethane	9.52	130	211631	52.4915 ug/L	100
36) Tetrahydrofuran	9.56	42	219242	94.5042 ug/L	94
38) 1,1,1-Trichloroethane	9.85	97	590469	51.3028 ug/L	99
39) Cyclohexane	9.88	56	761787	50.8738 ug/L	96
40) 1,1-Dichloropropene	10.08	75	514472	51.3198 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1909015	99.8115 ug/L	98
42) Carbon Tetrachloride	10.23	117	520188	55.0434 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140330.D 8260WTR.M Fri Jul 01 14:43:53 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140330.D Vial: 3
Acq On : 1 Jul 2016 12:06 Operator: TMB
Sample : WG574938-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:43:49 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	532100	50.2006 ug/L	98
46)	Benzene	10.48	78	1422862	50.2896 ug/L	97
47)	Trichloroethene	11.35	130	342142	49.0055 ug/L	91
48)	Methylcyclohexane	11.43	83	571431	52.1338 ug/L	95
49)	1,2-Dichloropropane	11.59	63	415157	50.9525 ug/L	99
50)	1,4-Dioxane	11.94	88	10696	193.9171 ug/L	83
51)	Bromodichloromethane	11.94	83	514022	52.2836 ug/L	99
52)	Dibromomethane	12.03	93	207850	52.7244 ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.32	63	214688	52.5529 ug/L	99
54)	4-Methyl-2-Pentanone	12.35	58	128247	51.0095 ug/L	99
55)	cis-1,3-Dichloropropene	12.68	75	603789	52.8975 ug/L	99
56)	Dimethyl Disulfide	12.97	79	326551	51.3928 ug/L	98
59)	Toluene	13.15	91	1453970	50.2475 ug/L	100
60)	Ethyl Methacrylate	13.32	69	435341	52.8801 ug/L	97
62)	trans-1,3-Dichloropropene	13.39	75	546478	53.1117 ug/L	96
63)	1,1,2-Trichloroethane	13.63	97	277093	51.7449 ug/L	98
64)	2-Hexanone	13.58	43	257265	50.5988 ug/L	96
65)	1,3-Dichloropropane	13.99	76	506215	50.1579 ug/L	95
66)	Tetrachloroethene	14.10	166	353460	51.2588 ug/L	94
67)	Dibromochloromethane	14.41	129	351718	54.0967 ug/L	100
68)	1,2-Dibromoethane	14.71	107	270743	52.3794 ug/L	99
69)	1-Chlorohexane	14.85	91	498236	51.7386 ug/L	92
70)	Chlorobenzene	15.30	112	925560	49.8731 ug/L	91
71)	1,1,1,2-Tetrachloroethane	15.35	131	346661	52.4976 ug/L	98
72)	Ethylbenzene	15.35	106	501641	51.6418 ug/L	94
73)	m-,p-Xylene	15.46	106	1211716	103.2132 ug/L	95
74)	o-Xylene	16.11	106	608315	51.9537 ug/L	95
75)	Styrene	16.16	104	1040199	52.8058 ug/L	93
76)	Bromoform	16.72	173	215518	53.4550 ug/L	98
77)	Isopropylbenzene	16.62	105	1576267	51.5962 ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.88	83	351215	55.5433 ug/L	98
81)	1,2,3-Trichloropropane	17.10	110	100447	53.5804 ug/L	82
82)	trans-1,4-Dichloro-2-Buten	17.18	53	133751	55.9462 ug/L	96
83)	n-Propylbenzene	17.22	91	1953988	52.1965 ug/L	98
84)	Bromobenzene	17.34	156	395949	50.6198 ug/L	88
85)	1,3,5-Trimethylbenzene	17.44	105	1370623	52.2366 ug/L	97
86)	2-Chlorotoluene	17.52	91	1307685	51.6520 ug/L	97
87)	4-Chlorotoluene	17.58	91	1189230	49.2719 ug/L	97
88)	a-Methylstyrene	17.92	118	694342	52.6130 ug/L	99
89)	tert-Butylbenzene	17.98	134	275815	52.3203 ug/L	72
90)	1,2,4-Trimethylbenzene	18.04	105	1413235	52.4877 ug/L	98
91)	sec-Butylbenzene	18.31	105	1651321	52.5744 ug/L	98
92)	p-Isopropyltoluene	18.50	119	1419478	53.0301 ug/L	98
93)	1,3-Dichlorobenzene	18.70	146	784875	50.9809 ug/L	95
94)	1,4-Dichlorobenzene	18.85	146	786033	50.4994 ug/L	95
95)	n-Butylbenzene	19.12	91	1393975	53.1041 ug/L	97
96)	1,2-Dichlorobenzene	19.43	146	731842	50.6317 ug/L	94
97)	1,2-Dibromo-3-Chloropropan	20.62	75	68614	55.4052 ug/L	85
98)	1,2,4-Trichlorobenzene	21.97	180	524743	51.3589 ug/L	99
99)	Hexachlorobutadiene	22.15	225	220984	52.0211 ug/L	99
100)	Naphthalene	22.38	128	1136742	54.4404 ug/L	100
101)	1,2,3-Trichlorobenzene	22.76	180	483245	51.0806 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140330.D 8260WTR.M Fri Jul 01 14:43:54 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140330.D Vial: 3
Acq On : 1 Jul 2016 12:06 Operator: TMB
Sample : WG574938-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:43 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

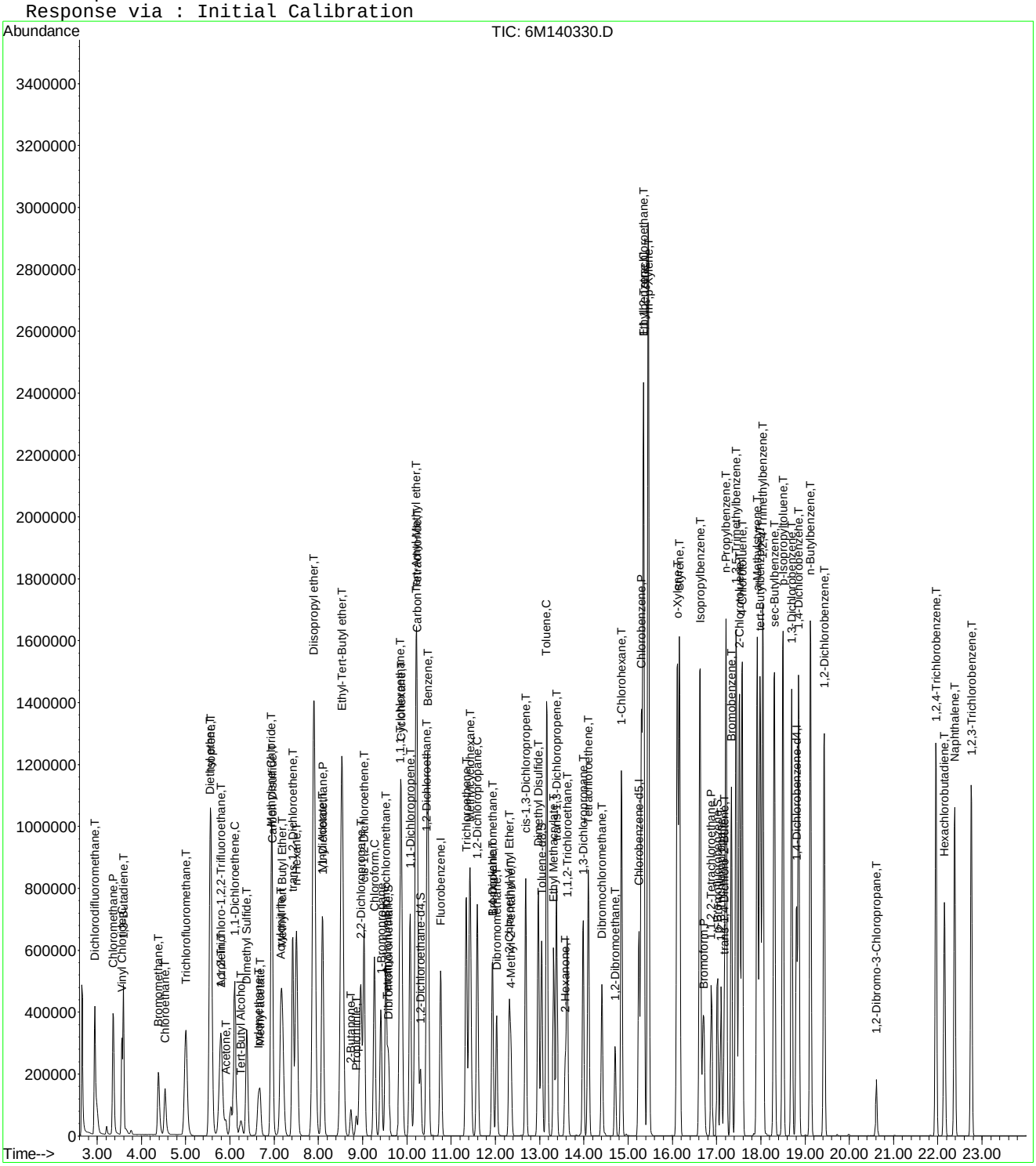

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140330.D Vial: 3
Acq On : 1 Jul 2016 12:06 Operator: TMB
Sample : WG574938-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	102	0.00
2	T	Dichlorodifluoromethane	0.4179	0.4553	-8.9	106	0.00
3	P	Chloromethane	0.4666	0.4419	5.3	97	0.00
4	C	Vinyl Chloride	0.2562	0.2570	-0.3	101	0.00
5	T	1,3-Butadiene	0.1608	0.1509	6.2	100	0.00
6	T	Bromomethane	0.1703	0.1623	4.7	103	0.00
7	T	Chloroethane	0.1619	0.1574	2.8	99	0.00
8	T	Trichlorofluoromethane	0.3908	0.4715	-20.6#	129	0.00
9	T	Diethyl ether	0.2306	0.2335	-1.3	100	0.00
10	T	Isoprene	0.3488	0.3659	-4.9	104	0.00
11	T	Acrolein	0.0384	0.0401	-4.5	108	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2431	0.2546	-4.7	109	0.00
13	T	Acetone	0.0801	0.0747	6.7	96	0.00
14	C	1,1-Dichloroethene	0.4718	0.4813	-2.0	105	0.00
15	T	Tert-Butyl Alcohol	0.0245	0.0233	4.7	98	-0.04
16	T	Dimethyl Sulfide	0.2057	0.1968	4.4	97	0.00
17	T	Iodomethane	0.1391	0.1604	-15.3	91	0.00
18	T	Methyl acetate	0.2167	0.2131	1.7	101	0.00
19	T	Methylene Chloride	0.2705	0.2672	1.2	104	0.00
20	T	Carbon Disulfide	0.8644	0.8792	-1.7	103	0.00
21	T	Acrylonitrile	0.0994	0.1002	-0.7	100	0.00
22	T	Methyl Tert Butyl Ether	0.7171	0.7314	-2.0	104	0.00
23	T	trans-1,2-Dichloroethene	0.2527	0.2586	-2.4	105	0.00
24	T	n-Hexane	0.4288	0.4607	-7.4	111	0.00
25	T	Diisopropyl ether	1.1541	1.1349	1.7	100	0.00
26	T	Vinyl Acetate	0.4818	0.5885	-22.2#	123	0.00
27	P	1,1-Dichloroethane	0.5440	0.5461	-0.4	103	0.00
28	T	Ethyl-Tert-Butyl ether	0.9285	0.9171	1.2	101	0.00
29	T	2-Butanone	0.1226	0.1226	0.0	100	0.00
30	T	Propionitrile	0.0333	0.0335	-0.7	101	0.00
31	T	2,2-Dichloropropane	0.4104	0.4525	-10.3	115	0.00
32	T	cis-1,2-Dichloroethene	0.2766	0.2823	-2.1	104	0.00
33	C	Chloroform	0.4873	0.4822	1.1	103	0.00
34		1-Bromopropane	0.0394	0.0444	-12.6	101	0.00
35	T	Bromochloromethane	0.1486	0.1560	-5.0	104	0.00
36	T	Tetrahydrofuran	0.0855	0.0808	5.5	101	0.00
37	S	Dibromofluoromethane	0.2536	0.2475	2.4	98	0.00
38	T	1,1,1-Trichloroethane	0.4243	0.4353	-2.6	103	0.00
39	T	Cyclohexane	0.5520	0.5616	-1.7	105	0.00
40	T	1,1-Dichloropropene	0.3695	0.3793	-2.6	105	0.00
41	T	Tert-Amyl-Methyl ether	0.7050	0.7037	0.2	101	0.00
42	T	Carbon Tetrachloride	0.3484	0.3835	-10.1	104	0.00
43	S	1,2-Dichloroethane-d4	0.3202	0.3059	4.5	98	0.00
44		Heptane	0.0000	0.0000	0.0	98	0.00
45	T	1,2-Dichloroethane	0.3907	0.3923	-0.4	102	0.00
46	T	Benzene	1.0430	1.0490	-0.6	103	0.00
47	T	Trichloroethene	0.2574	0.2522	2.0	100	0.00
48	T	Methylcyclohexane	0.4041	0.4213	-4.3	107	0.00
49	C	1,2-Dichloropropane	0.3004	0.3061	-1.9	103	0.00
50	T	1,4-Dioxane	0.0020	0.0020	3.0	95	0.00
51	T	Bromodichloromethane	0.3624	0.3790	-4.6	103	0.00
52	T	Dibromomethane	0.1453	0.1532	-5.5	104	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1506	0.1583	-5.1	100	0.00
54	T	4-Methyl-2-Pentanone	0.0927	0.0945	-2.0	101	0.00

(#) = Out of Range

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140330.D Vial: 3
Acq On : 1 Jul 2016 12:06 Operator: TMB
Sample : WG574938-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4208	0.4451	-5.8	105	0.00
56	T	Dimethyl Disulfide	0.2342	0.2407	-2.8	101	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	102	0.00
58	S	Toluene-d8	1.2311	1.2187	1.0	101	0.00
59	C	Toluene	1.4900	1.4974	-0.5	104	0.00
60	T	Ethyl Methacrylate	0.4239	0.4483	-5.8	103	0.00
61		Paraldehyde	0.0000	0.0000	0.0	105	0.00
62	T	trans-1,3-Dichloropropene	0.5298	0.5628	-6.2	105	0.00
63	T	1,1,2-Trichloroethane	0.2757	0.2854	-3.5	104	0.00
64	T	2-Hexanone	0.2618	0.2649	-1.2	100	0.00
65	T	1,3-Dichloropropane	0.5197	0.5213	-0.3	102	0.00
66	T	Tetrachloroethene	0.3551	0.3640	-2.5	105	0.00
67	T	Dibromochloromethane	0.3348	0.3622	-8.2	102	0.00
68	T	1,2-Dibromoethane	0.2662	0.2788	-4.8	104	0.00
69	T	1-Chlorohexane	0.4959	0.5131	-3.5	104	0.00
70	P	Chlorobenzene	0.9556	0.9532	0.3	102	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3400	0.3570	-5.0	103	0.00
72	C	Ethylbenzene	0.5002	0.5166	-3.3	103	0.00
73	T	m-,p-Xylene	0.6045	0.6239	-3.2	104	0.00
74	T	o-Xylene	0.6029	0.6265	-3.9	103	0.00
75	T	Styrene	1.0143	1.0712	-5.6	102	0.00
76	P	Bromoform	0.2076	0.2220	-6.9	102	0.00
77	T	Isopropylbenzene	1.5731	1.6233	-3.2	103	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	98	0.00
79	P	1,1,2,2-Tetrachloroethane	0.6068	0.6740	-11.1	108	0.00
80	S	p-Bromofluorobenzene	0.9791	0.9768	0.2	99	0.00
81	T	1,2,3-Trichloropropane	0.1799	0.1928	-7.2	102	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.2294	0.2567	-11.9	103	0.00
83	T	n-Propylbenzene	3.5921	3.7499	-4.4	104	0.00
84	T	Bromobenzene	0.7506	0.7599	-1.2	102	0.00
85	T	1,3,5-Trimethylbenzene	2.5177	2.6304	-4.5	103	-0.01
86	T	2-Chlorotoluene	2.4293	2.5096	-3.3	103	0.00
87	T	4-Chlorotoluene	2.3160	2.2822	1.5	102	0.00
88	T	a-Methylstyrene	1.2663	1.3325	-5.2	101	0.00
89	T	tert-Butylbenzene	0.5058	0.5293	-4.6	104	-0.01
90	T	1,2,4-Trimethylbenzene	2.5836	2.7121	-5.0	102	-0.01
91	T	sec-Butylbenzene	3.0139	3.1690	-5.1	103	0.00
92	T	p-Isopropyltoluene	2.5685	2.7241	-6.1	103	0.00
93	T	1,3-Dichlorobenzene	1.4773	1.5063	-2.0	102	0.00
94	T	1,4-Dichlorobenzene	1.4935	1.5085	-1.0	102	0.00
95	T	n-Butylbenzene	2.5188	2.6752	-6.2	103	0.00
96	T	1,2-Dichlorobenzene	1.3869	1.4045	-1.3	101	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1188	0.1317	-10.8	106	0.00
98	T	1,2,4-Trichlorobenzene	0.9804	1.0070	-2.7	102	0.00
99	T	Hexachlorobutadiene	0.4076	0.4241	-4.0	104	0.00
100	T	Naphthalene	2.0036	2.1815	-8.9	101	0.00
101	T	1,2,3-Trichlorobenzene	0.9078	0.9274	-2.2	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140330.D 8260WTR.M Fri Jul 01 14:44:36 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140330.D Vial: 3
Acq On : 1 Jul 2016 12:06 Operator: TMB
Sample : WG574938-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	102	0.00
2	T	Dichlorodifluoromethane	50.0000	54.4716	-8.9	106	0.00
3	P	Chloromethane	50.0000	47.3496	5.3	97	0.00
4	C	Vinyl Chloride	50.0000	50.1452	-0.3	101	0.00
5	T	1,3-Butadiene	50.0000	50.9278	-1.9	100	0.00
6	T	Bromomethane	50.0000	47.6620	4.7	103	0.00
7	T	Chloroethane	50.0000	48.6051	2.8	99	0.00
8	T	Trichlorofluoromethane	50.0000	60.3231	-20.6#	129	0.00
9	T	Diethyl ether	100.0000	101.2538	-1.3	100	0.00
10	T	Isoprene	50.0000	52.4568	-4.9	104	0.00
11	T	Acrolein	50.0000	52.2606	-4.5	108	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	52.3524	-4.7	109	0.00
13	T	Acetone	50.0000	46.6619	6.7	96	0.00
14	C	1,1-Dichloroethene	50.0000	51.0101	-2.0	105	0.00
15	T	Tert-Butyl Alcohol	200.0000	190.7108	4.6	98	-0.04
16	T	Dimethyl Sulfide	50.0000	47.8233	4.4	97	0.00
17	T	Iodomethane	50.0000	46.9892	6.0	91	0.00
18	T	Methyl acetate	50.0000	49.1643	1.7	101	0.00
19	T	Methylene Chloride	50.0000	49.3784	1.2	104	0.00
20	T	Carbon Disulfide	50.0000	50.8521	-1.7	103	0.00
21	T	Acrylonitrile	50.0000	50.3581	-0.7	100	0.00
22	T	Methyl Tert Butyl Ether	50.0000	50.9965	-2.0	104	0.00
23	T	trans-1,2-Dichloroethene	50.0000	51.1786	-2.4	105	0.00
24	T	n-Hexane	50.0000	53.7178	-7.4	111	0.00
25	T	Diisopropyl ether	100.0000	98.3315	1.7	100	0.00
26	T	Vinyl Acetate	50.0000	61.0765	-22.2#	123	0.00
27	P	1,1-Dichloroethane	50.0000	50.1989	-0.4	103	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.7677	1.2	101	0.00
29	T	2-Butanone	50.0000	49.9837	0.0	100	0.00
30	T	Propionitrile	100.0000	100.6854	-0.7	101	0.00
31	T	2,2-Dichloropropane	50.0000	55.1346	-10.3	115	0.00
32	T	cis-1,2-Dichloroethene	50.0000	51.0324	-2.1	104	0.00
33	C	Chloroform	50.0000	49.4751	1.0	103	0.00
34		1-Bromopropane	50.0000	50.7639	-1.5	101	0.00
35	T	Bromochloromethane	50.0000	52.4915	-5.0	104	0.00
36	T	Tetrahydrofuran	100.0000	94.5042	5.5	101	0.00
37	S	Dibromofluoromethane	25.0000	24.3903	2.4	98	0.00
38	T	1,1,1-Trichloroethane	50.0000	51.3028	-2.6	103	0.00
39	T	Cyclohexane	50.0000	50.8738	-1.7	105	0.00
40	T	1,1-Dichloropropene	50.0000	51.3197	-2.6	105	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	99.8115	0.2	101	0.00
42	T	Carbon Tetrachloride	50.0000	55.0434	-10.1	104	0.00
43	S	1,2-Dichloroethane-d4	25.0000	23.8868	4.5	98	0.00
44		Heptane	-1.0000	0.0000	0.0	98	0.00
45	T	1,2-Dichloroethane	50.0000	50.2006	-0.4	102	0.00
46	T	Benzene	50.0000	50.2896	-0.6	103	0.00
47	T	Trichloroethene	50.0000	49.0055	2.0	100	0.00
48	T	Methylcyclohexane	50.0000	52.1338	-4.3	107	0.00
49	C	1,2-Dichloropropane	50.0000	50.9525	-1.9	103	0.00
50	T	1,4-Dioxane	200.0000	193.9171	3.0	95	0.00
51	T	Bromodichloromethane	50.0000	52.2836	-4.6	103	0.00
52	T	Dibromomethane	50.0000	52.7244	-5.4	104	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	52.5529	-5.1	100	0.00
54	T	4-Methyl-2-Pentanone	50.0000	51.0095	-2.0	101	0.00

(#) = Out of Range

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140330.D Vial: 3
Acq On : 1 Jul 2016 12:06 Operator: TMB
Sample : WG574938-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	52.8975	-5.8	105	0.00
56	T	Dimethyl Disulfide	50.0000	51.3928	-2.8	101	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	102	0.00
58	S	Toluene-d8	25.0000	24.7495	1.0	101	0.00
59	C	Toluene	50.0000	50.2475	-0.5	104	0.00
60	T	Ethyl Methacrylate	50.0000	52.8801	-5.8	103	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	105	0.00
62	T	trans-1,3-Dichloropropene	50.0000	53.1117	-6.2	105	0.00
63	T	1,1,2-Trichloroethane	50.0000	51.7449	-3.5	104	0.00
64	T	2-Hexanone	50.0000	50.5988	-1.2	100	0.00
65	T	1,3-Dichloropropane	50.0000	50.1579	-0.3	102	0.00
66	T	Tetrachloroethene	50.0000	51.2588	-2.5	105	0.00
67	T	Dibromochloromethane	50.0000	54.0967	-8.2	102	0.00
68	T	1,2-Dibromoethane	50.0000	52.3794	-4.8	104	0.00
69	T	1-Chlorohexane	50.0000	51.7386	-3.5	104	0.00
70	P	Chlorobenzene	50.0000	49.8731	0.3	102	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	52.4976	-5.0	103	0.00
72	C	Ethylbenzene	50.0000	51.6418	-3.3	103	0.00
73	T	m-,p-Xylene	100.0000	103.2132	-3.2	104	0.00
74	T	o-Xylene	50.0000	51.9537	-3.9	103	0.00
75	T	Styrene	50.0000	52.8058	-5.6	102	0.00
76	P	Bromoform	50.0000	53.4550	-6.9	102	0.00
77	T	Isopropylbenzene	50.0000	51.5962	-3.2	103	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	98	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	55.5433	-11.1	108	0.00
80	S	p-Bromofluorobenzene	25.0000	24.9402	0.2	99	0.00
81	T	1,2,3-Trichloropropane	50.0000	53.5804	-7.2	102	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	55.9462	-11.9	103	0.00
83	T	n-Propylbenzene	50.0000	52.1965	-4.4	104	0.00
84	T	Bromobenzene	50.0000	50.6198	-1.2	102	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	52.2366	-4.5	103	-0.01
86	T	2-Chlorotoluene	50.0000	51.6520	-3.3	103	0.00
87	T	4-Chlorotoluene	50.0000	49.2719	1.5	102	0.00
88	T	a-Methylstyrene	50.0000	52.6130	-5.2	101	0.00
89	T	tert-Butylbenzene	50.0000	52.3203	-4.6	104	-0.01
90	T	1,2,4-Trimethylbenzene	50.0000	52.4877	-5.0	102	-0.01
91	T	sec-Butylbenzene	50.0000	52.5744	-5.1	103	0.00
92	T	p-Isopropyltoluene	50.0000	53.0301	-6.1	103	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.9809	-2.0	102	0.00
94	T	1,4-Dichlorobenzene	50.0000	50.4994	-1.0	102	0.00
95	T	n-Butylbenzene	50.0000	53.1041	-6.2	103	0.00
96	T	1,2-Dichlorobenzene	50.0000	50.6317	-1.3	101	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	55.4053	-10.8	106	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	51.3589	-2.7	102	0.00
99	T	Hexachlorobutadiene	50.0000	52.0211	-4.0	104	0.00
100	T	Naphthalene	50.0000	54.4404	-8.9	101	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	51.0806	-2.2	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140330.D 8260WTR.M Fri Jul 01 14:44:57 2016 Page 2

2.1.1.5 Raw QC Data

BFB

Data File : C:\MSDCHEM\1\DATA\042416\6M138750.D Vial: 1
Acq On : 24 Apr 2016 16:33 Operator: JDS
Sample : WG566155-01 50ng BFB 826-A9 Inst : HPMS6
Misc : 1,1 STD75485 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title : SOP: OVL MSV01

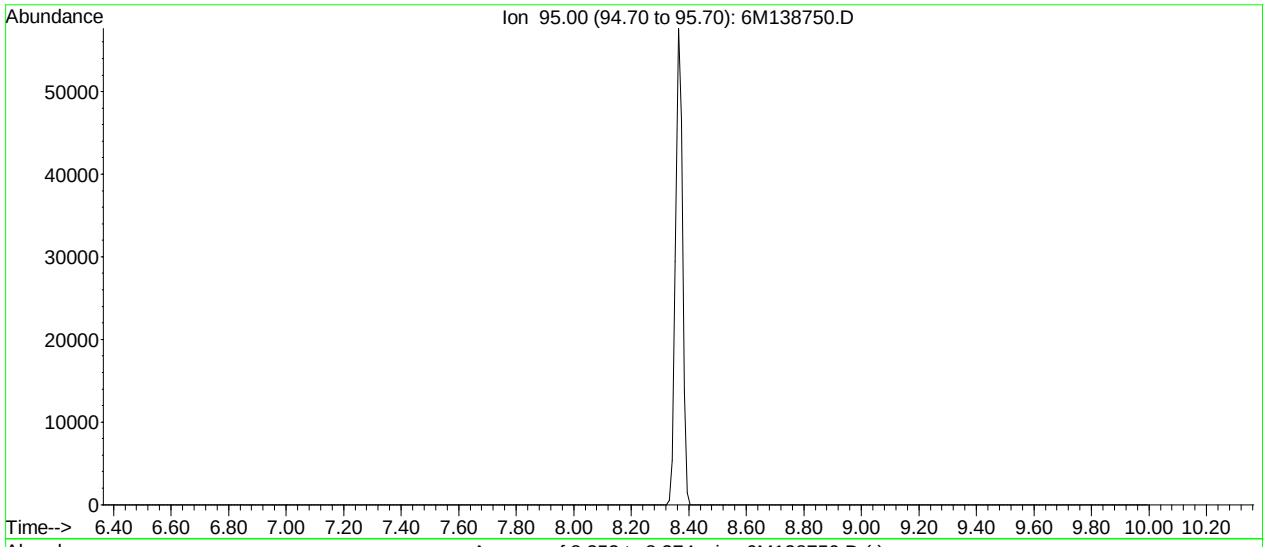

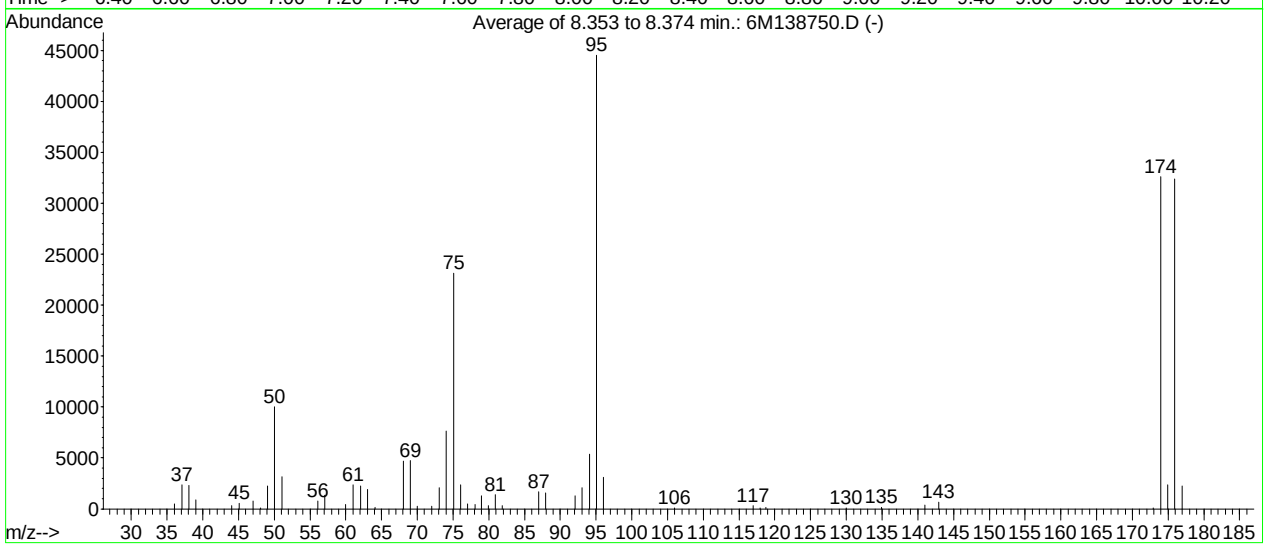

AutoFind: Scans 320, 321, 322; Background Corrected with Scan 315

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.5	10010	PASS
75	95	30	60	52.0	23152	PASS
95	95	100	100	100.0	44552	PASS
96	95	5	9	6.9	3085	PASS
173	174	0.00	2	0.3	113	PASS
174	95	50	100	73.2	32632	PASS
175	174	5	9	7.2	2336	PASS
176	174	95	101	99.2	32384	PASS
177	176	5	9	7.0	2251	PASS

6M138750.D BFB.M Mon Apr 25 09:21:54 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140313.D Vial: 1
Acq On    : 30 Jun 2016  11:36                        Operator: TMB
Sample    : WG574723-01 50ng BFB STD 8260             Inst    : HPMS6
Misc      : 1,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title     : 8260B/624_WATER SOP:MSV01  06-30-16 - HPMS6
```

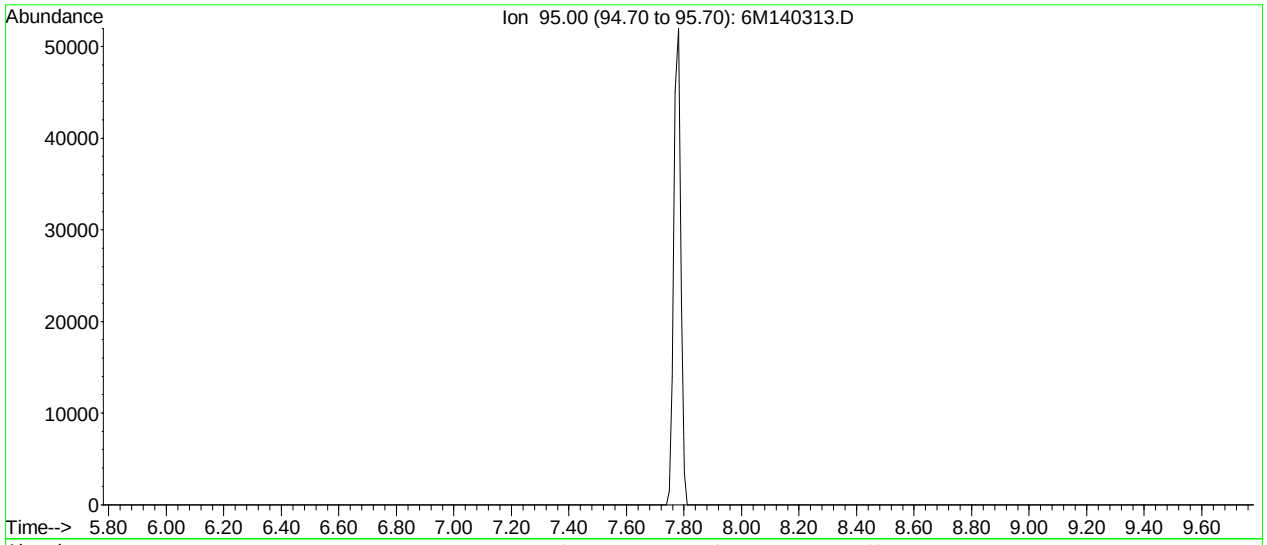

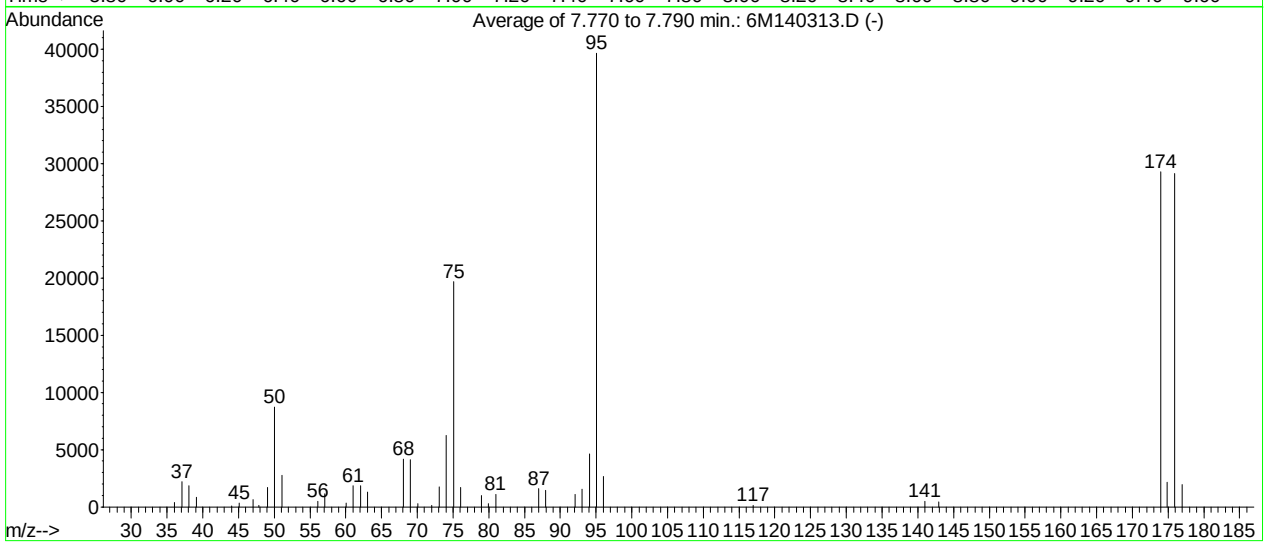

AutoFind: Scans 263, 264, 265; Background Corrected with Scan 258

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.0	8707	PASS
75	95	30	60	49.7	19699	PASS
95	95	100	100	100.0	39664	PASS
96	95	5	9	6.7	2652	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	73.8	29282	PASS
175	174	5	9	7.3	2131	PASS
176	174	95	101	99.6	29157	PASS
177	176	5	9	6.8	1969	PASS

6M140313.D 8260WTR.M Fri Jul 01 14:33:49 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140328.D Vial: 1
Acq On    :  1 Jul 2016  11:08                        Operator: TMB
Sample    : WG574938-01 50ng BFB STD 8260             Inst    : HPMS6
Misc      : 1,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title     : 8260B/624_WATER SOP:MSV01  06-30-16 - HPMS6
```

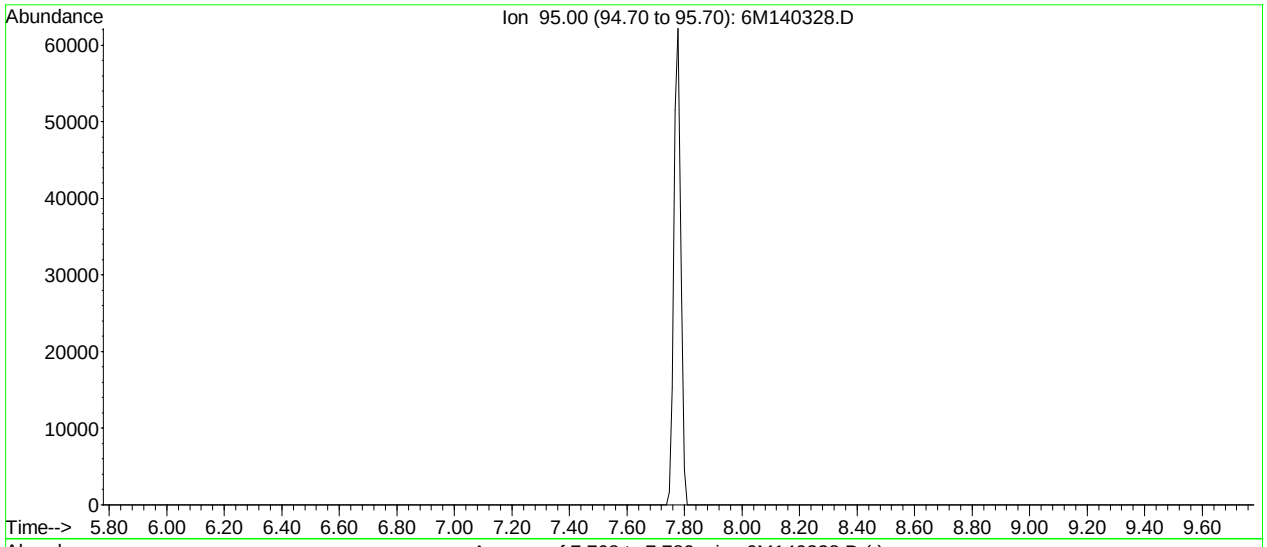

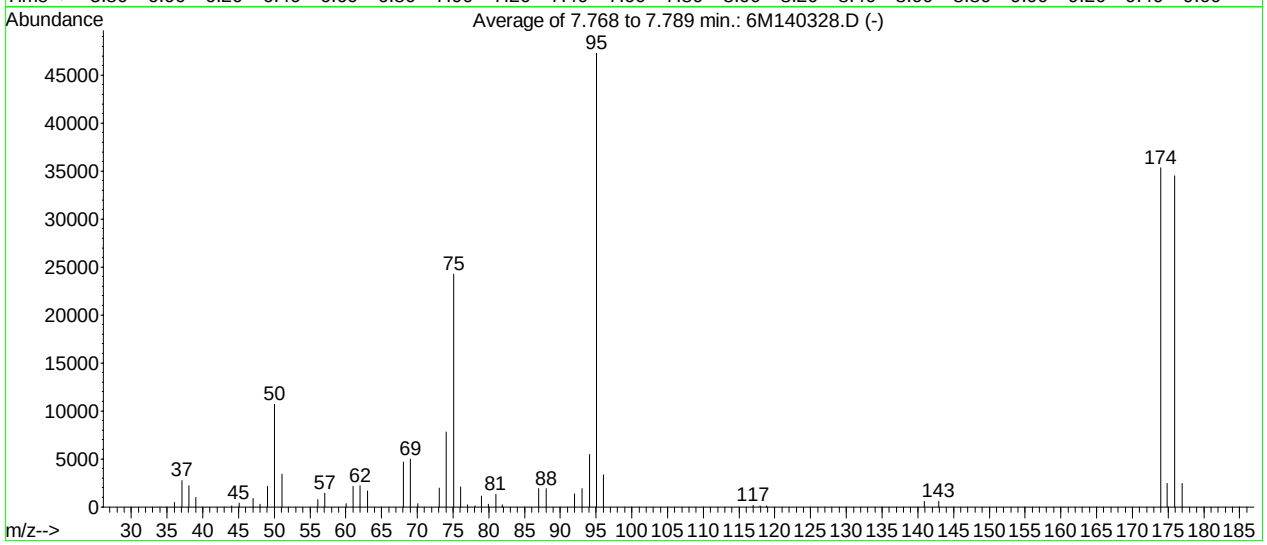

AutoFind: Scans 263, 264, 265; Background Corrected with Scan 258

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.7	10717	PASS
75	95	30	60	51.3	24277	PASS
95	95	100	100	100.0	47296	PASS
96	95	5	9	7.0	3326	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	74.7	35325	PASS
175	174	5	9	6.9	2437	PASS
176	174	95	101	97.6	34493	PASS
177	176	5	9	7.1	2450	PASS

6M140328.D 8260WTR.M Fri Jul 01 14:44:22 2016

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140332.D Vial: 5
Acq On : 1 Jul 2016 13:10 Operator: TMB
Sample : WG574939-01 VBLK0701 BLANK STD 8260 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 02 10:33:20 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	653506	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	460683	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	233968	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	159019	23.9842 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.92%		
43) 1,2-Dichloroethane-d4	10.31	65	202415	24.1839 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.72%		
58) Toluene-d8	13.04	98	565928	24.9468 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.80%		
80) p-Bromofluorobenzene	17.02	95	234181	25.5571 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.24%		

Target Compounds					Qvalue
3) Chloromethane	3.36	50	1553	0.1273 ug/L #	67
36) Tetrahydrofuran	9.57	42	2744	1.2275 ug/L #	47

(#) = qualifier out of range (m) = manual integration
6M140332.D 8260WTR.M Sat Jul 02 10:33:23 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140332.D Vial: 5
Acq On : 1 Jul 2016 13:10 Operator: TMB
Sample : WG574939-01 VBLK0701 BLANK STD 8260 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 2 10:33 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

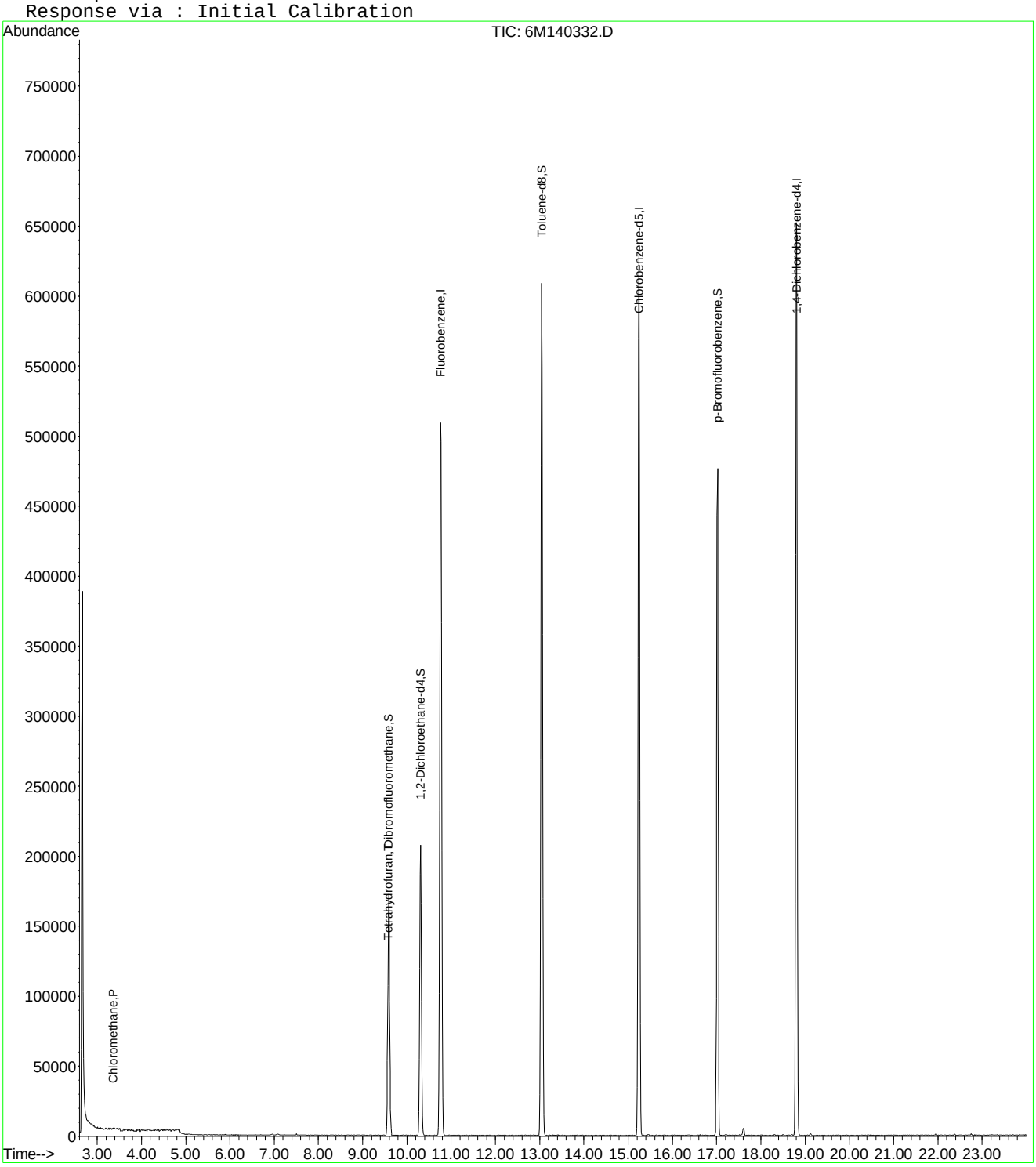

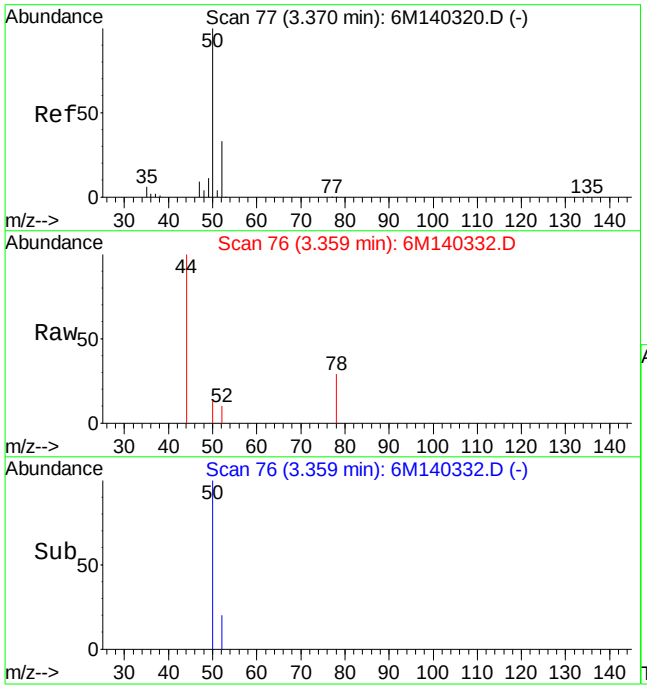

#3
Chloromethane
Concen: 0.13 ug/L
RT: 3.36 min Scan# 76
Delta R.T. -0.00 min
Lab File: 6M140332.D
Acq: 1 Jul 2016 13:10

Tgt Ion: 50 Resp: 1553

Ion	Ratio	Lower	Upper
50	100		
52	14.2	19.8	46.2#

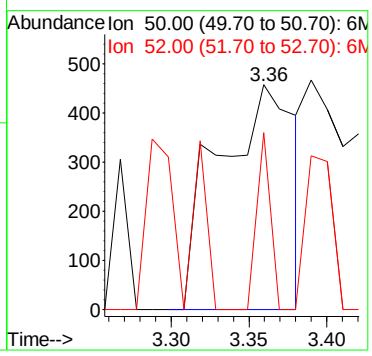

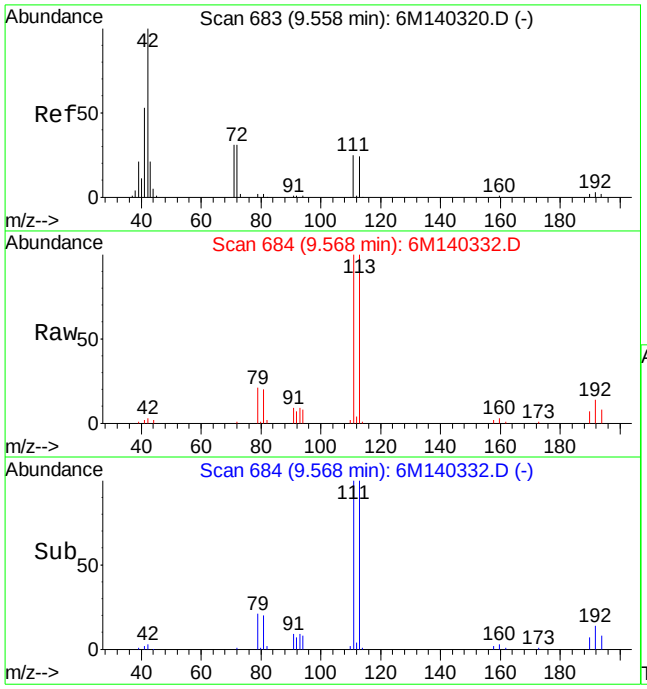

#36
Tetrahydrofuran
Concen: 1.23 ug/L
RT: 9.57 min Scan# 684
Delta R.T. 0.01 min
Lab File: 6M140332.D
Acq: 1 Jul 2016 13:10

Tgt Ion: 42 Resp: 2744

Ion	Ratio	Lower	Upper
42	100		
72	7.5	20.8	48.4#
71	0.0	19.9	46.5#

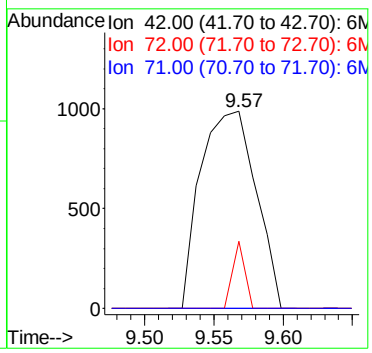

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140352.D Vial: 25
Acq On : 1 Jul 2016 23:54 Operator: TMB
Sample : WG574939-04 VBLK0701 BLANK STD 624 Inst : HPMS6
Misc : 2,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 02 10:35:33 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	542074	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	384959	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	196906	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	138984	25.2716 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.08%		
43) 1,2-Dichloroethane-d4	10.31	65	174879	25.1891 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.76%		
58) Toluene-d8	13.04	98	471401	24.8675 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.48%		
80) p-Bromofluorobenzene	17.02	95	196346	25.4612 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.84%		

Target Compounds					Qvalue
3) Chloromethane	3.36	50	1241	0.1227 ug/L	95
36) Tetrahydrofuran	9.57	42	2691	1.4512 ug/L #	41

(#) = qualifier out of range (m) = manual integration
6M140352.D 8260WTR.M Sat Jul 02 10:35:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140352.D Vial: 25
Acq On : 1 Jul 2016 23:54 Operator: TMB
Sample : WG574939-04 VBLK0701 BLANK STD 624 Inst : HPMS6
Misc : 2,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 2 10:35 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

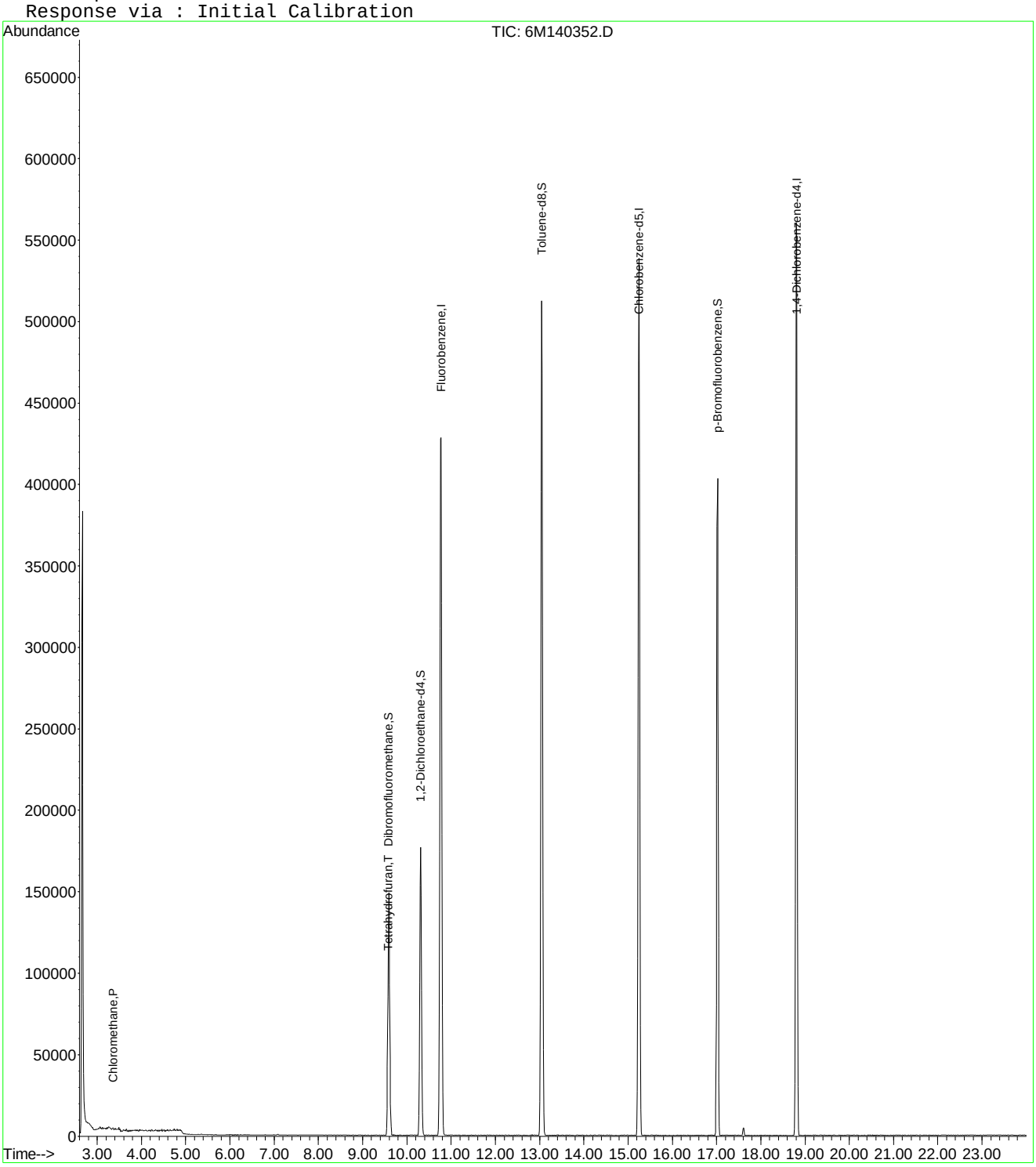

6M140352.D 8260WTR.M Sat Jul 02 10:35:37 2016 Page 2

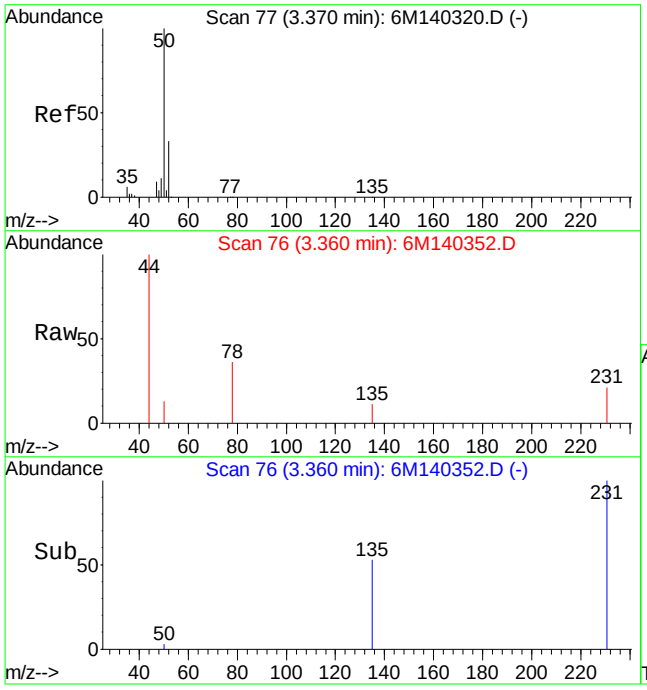

#3
Chloromethane
Concen: 0.12 ug/L
RT: 3.36 min Scan# 76
Delta R.T. -0.00 min
Lab File: 6M140352.D
Acq: 1 Jul 2016 23:54

Tgt Ion: 50 Resp: 1241

Ion	Ratio	Lower	Upper
50	100		
52	30.2	19.8	46.2

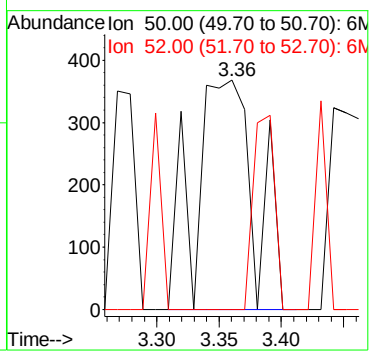

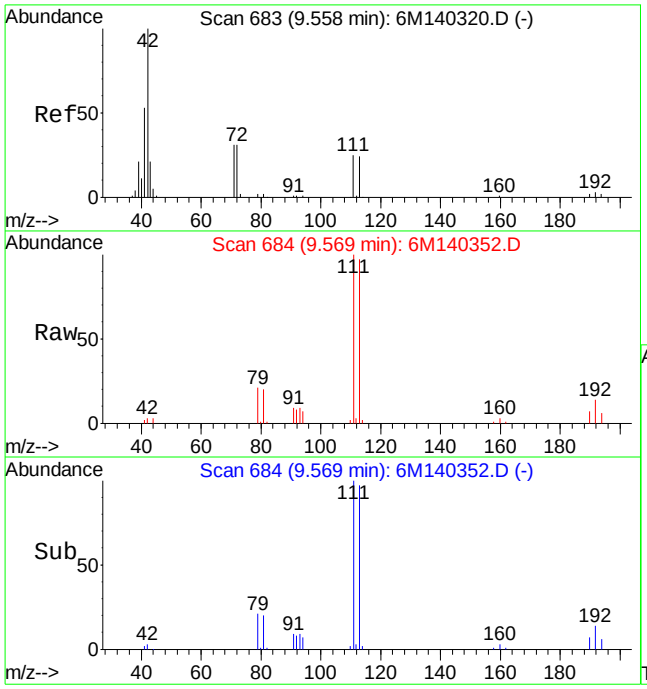

#36
Tetrahydrofuran
Concen: 1.45 ug/L
RT: 9.57 min Scan# 684
Delta R.T. 0.01 min
Lab File: 6M140352.D
Acq: 1 Jul 2016 23:54

Tgt Ion: 42 Resp: 2691

Ion	Ratio	Lower	Upper
42	100		
72	0.0	20.8	48.4#
71	0.0	19.9	46.5#

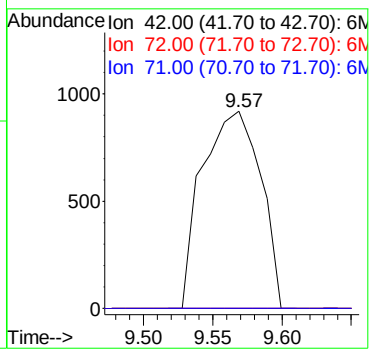

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140333.D Vial: 6
Acq On : 1 Jul 2016 13:43 Operator: TMB
Sample : WG574939-02 20ug/L LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 02 10:25:10 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	632534	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	452149	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	244926	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	158225	24.6557 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.64%		
43) 1,2-Dichloroethane-d4	10.31	65	196240	24.2235 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.88%		
58) Toluene-d8	13.04	98	551857	24.7857 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.16%		
80) p-Bromofluorobenzene	17.02	95	237905	24.8019 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.20%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	166419	15.7390 ug/L	100
3) Chloromethane	3.37	50	187201	15.8575 ug/L	100
4) Vinyl Chloride	3.55	62	123171	18.9994 ug/L	100
5) 1,3-Butadiene	3.59	54	57311	13.0566 ug/L	94
6) Bromomethane	4.38	94	83028	19.2730 ug/L	99
7) Chloroethane	4.53	64	83521	20.3893 ug/L	95
8) Trichlorofluoromethane	5.00	101	229498	23.2109 ug/L	100
9) Diethyl ether	5.55	59	562880	96.4842 ug/L	96
10) Isoprene	5.57	67	193585	21.9372 ug/L	97
11) Acrolein	5.79	56	111477	114.8796 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	124158	20.1823 ug/L	98
13) Acetone	5.91	43	42509	20.9764 ug/L	98
14) 1,1-Dichloroethene	6.11	61	209220	17.5285 ug/L	94
15) Tert-Butyl Alcohol	6.26	59	127889	206.3782 ug/L	99
16) Dimethyl Sulfide	6.38	62	185307	35.5971 ug/L	96
17) Iodomethane	6.65	142	105892	24.9516 ug/L	94
18) Methyl acetate	6.69	43	124626	22.7265 ug/L	97
19) Methylene Chloride	6.93	84	132004	19.2855 ug/L	90
20) Carbon Disulfide	6.95	76	382467	17.4870 ug/L	99
21) Acrylonitrile	7.15	53	53832	21.3943 ug/L	97
22) Methyl Tert Butyl Ether	7.18	73	383709	21.1490 ug/L	100
23) trans-1,2-Dichloroethene	7.42	96	122778	19.2064 ug/L	90
24) n-Hexane	7.51	57	199602	18.3978 ug/L	98
25) Diisopropyl ether	7.90	45	2967736	101.6303 ug/L	98
26) Vinyl Acetate	8.09	43	234321	19.2223 ug/L	98
27) 1,1-Dichloroethane	8.10	63	259760	18.8733 ug/L	100
28) Ethyl-Tert-Butyl ether	8.54	59	2225048	94.7136 ug/L	98
29) 2-Butanone	8.73	43	65661	21.1662 ug/L	96
30) Propionitrile	8.85	54	88427	105.0364 ug/L	97
31) 2,2-Dichloropropane	8.96	77	205408	19.7819 ug/L	99
32) cis-1,2-Dichloroethene	9.03	96	143226	20.4681 ug/L	73
33) Chloroform	9.26	83	242849	19.6957 ug/L	100
34) 1-Bromopropane	9.41	122	29500	26.8917 ug/L	98
35) Bromochloromethane	9.52	130	75197	19.9975 ug/L	99
36) Tetrahydrofuran	9.56	42	205464	94.9576 ug/L	94
38) 1,1,1-Trichloroethane	9.85	97	214596	19.9909 ug/L	99
39) Cyclohexane	9.87	56	271723	19.4560 ug/L	96
40) 1,1-Dichloropropene	10.08	75	179342	19.1810 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	1836265	102.9373 ug/L	98
42) Carbon Tetrachloride	10.23	117	177640	20.1536 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140333.D 8260WTR.M Sat Jul 02 10:25:13 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140333.D Vial: 6
Acq On : 1 Jul 2016 13:43 Operator: TMB
Sample : WG574939-02 20ug/L LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 02 10:25:10 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	204826	20.7189 ug/L	98
46)	Benzene	10.48	78	530433	20.1007 ug/L	98
47)	Trichloroethene	11.34	130	133112	20.4419 ug/L	90
48)	Methylcyclohexane	11.43	83	205071	20.0598 ug/L	95
49)	1,2-Dichloropropane	11.59	63	161738	21.2829 ug/L	100
50)	1,4-Dioxane	11.94	88	10586	205.7751 ug/L	85
51)	Bromodichloromethane	11.94	83	192412	20.9837 ug/L	100
52)	Dibromomethane	12.03	93	75523	20.5403 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.31	63	85055	22.3231 ug/L	98
54)	4-Methyl-2-Pentanone	12.36	58	50210	21.4122 ug/L	99
55)	cis-1,3-Dichloropropene	12.68	75	244447	22.9615 ug/L	99
56)	Dimethyl Disulfide	12.97	79	125446	21.1677 ug/L	99
59)	Toluene	13.16	91	553971	20.5574 ug/L	100
60)	Ethyl Methacrylate	13.32	69	166455	21.7111 ug/L	95
62)	trans-1,3-Dichloropropene	13.39	75	209138	21.8259 ug/L	96
63)	1,1,2-Trichloroethane	13.63	97	109231	21.9033 ug/L	98
64)	2-Hexanone	13.58	43	98478	20.7979 ug/L	98
65)	1,3-Dichloropropane	13.99	76	209705	22.3118 ug/L	93
66)	Tetrachloroethene	14.10	166	129103	20.1042 ug/L	94
67)	Dibromochloromethane	14.41	129	131405	21.7025 ug/L	98
68)	1,2-Dibromoethane	14.70	107	104860	21.7839 ug/L	99
69)	1-Chlorohexane	14.85	91	184839	20.6108 ug/L	91
70)	Chlorobenzene	15.30	112	369255	21.3654 ug/L	92
71)	1,1,1,2-Tetrachloroethane	15.35	131	133984	21.7876 ug/L	98
72)	Ethylbenzene	15.35	106	194921	21.5471 ug/L	94
73)	m-,p-Xylene	15.46	106	477085	43.6367 ug/L	94
74)	o-Xylene	16.11	106	243609	22.3411 ug/L	94
75)	Styrene	16.15	104	407583	22.2179 ug/L	93
76)	Bromoform	16.72	173	76905	20.4824 ug/L	98
77)	Isopropylbenzene	16.62	105	626168	22.0090 ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.88	83	132286	22.2542 ug/L	99
81)	1,2,3-Trichloropropane	17.10	110	41327	23.4500 ug/L	83
82)	trans-1,4-Dichloro-2-Buten	17.18	53	44264	19.6953 ug/L	99
83)	n-Propylbenzene	17.22	91	786894	22.3602 ug/L	97
84)	Bromobenzene	17.34	156	154150	20.9635 ug/L	89
85)	1,3,5-Trimethylbenzene	17.44	105	544511	22.0751 ug/L	98
86)	2-Chlorotoluene	17.52	91	521425	21.9086 ug/L	96
87)	4-Chlorotoluene	17.58	91	483812	21.3231 ug/L	97
88)	a-Methylstyrene	17.92	118	295193	23.7939 ug/L	96
89)	tert-Butylbenzene	17.98	134	111007	22.3997 ug/L	72
90)	1,2,4-Trimethylbenzene	18.04	105	553242	21.8574 ug/L	98
91)	sec-Butylbenzene	18.31	105	658149	22.2898 ug/L	97
92)	p-Isopropyltoluene	18.50	119	556855	22.1297 ug/L	97
93)	1,3-Dichlorobenzene	18.70	146	313875	21.6872 ug/L	95
94)	1,4-Dichlorobenzene	18.85	146	316550	21.6335 ug/L	93
95)	n-Butylbenzene	19.12	91	541149	21.9295 ug/L	96
96)	1,2-Dichlorobenzene	19.43	146	304743	22.4274 ug/L	95
97)	1,2-Dibromo-3-Chloropropan	20.62	75	26594	22.8434 ug/L	82
98)	1,2,4-Trichlorobenzene	21.96	180	213101	22.1868 ug/L	99
99)	Hexachlorobutadiene	22.16	225	91950	23.0255 ug/L	99
100)	Naphthalene	22.38	128	414697	21.1266 ug/L	99
101)	1,2,3-Trichlorobenzene	22.76	180	197343	22.1896 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M140333.D 8260WTR.M Sat Jul 02 10:25:14 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140333.D Vial: 6
Acq On : 1 Jul 2016 13:43 Operator: TMB
Sample : WG574939-02 20ug/L LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 2 10:25 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

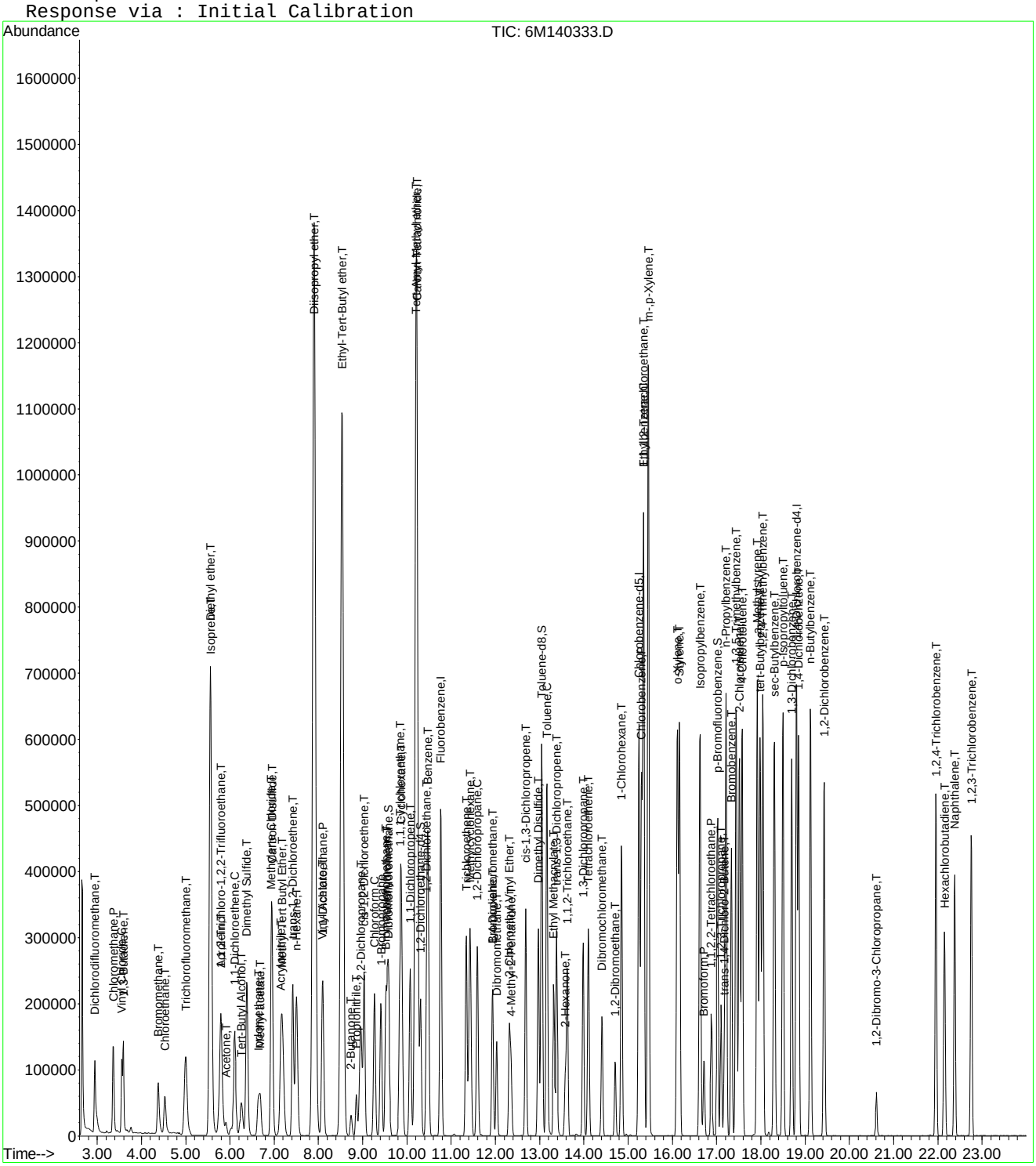

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140334.D Vial: 7
Acq On : 1 Jul 2016 14:15 Operator: TMB
Sample : WG574939-03 20ug/L LCS2 STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 02 10:25:18 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	627951	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	446803	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	240618	25.00 ug/L	-0.01
System Monitoring Compounds					
37) Dibromofluoromethane	9.58	111	156241	24.5242 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.08%		
43) 1,2-Dichloroethane-d4	10.32	65	194773	24.2179 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.88%		
58) Toluene-d8	13.04	98	547886	24.9018 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.60%		
80) p-Bromofluorobenzene	17.01	95	233420	24.7700 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.08%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.94	85	163410	15.5672 ug/L	99
3) Chloromethane	3.36	50	188202	16.0586 ug/L	100
4) Vinyl Chloride	3.56	62	120619	18.7416 ug/L	99
5) 1,3-Butadiene	3.59	54	57827	13.3225 ug/L	94
6) Bromomethane	4.37	94	81138	18.9717 ug/L	99
7) Chloroethane	4.53	64	80454	19.7840 ug/L	98
8) Trichlorofluoromethane	5.00	101	230387	23.4709 ug/L	100
9) Diethyl ether	5.55	59	591090	102.0592 ug/L	96
10) Isoprene	5.57	67	193007	22.0314 ug/L	95
11) Acrolein	5.79	56	117300	121.7625 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.78	101	129689	21.2352 ug/L	96
13) Acetone	5.90	43	41129	20.4436 ug/L	99
14) 1,1-Dichloroethene	6.11	61	206346	17.4139 ug/L	94
15) Tert-Butyl Alcohol	6.26	59	121431	197.3869 ug/L	99
16) Dimethyl Sulfide	6.38	62	184425	35.6862 ug/L	95
17) Iodomethane	6.64	142	116823	27.6284 ug/L	92
18) Methyl acetate	6.69	43	119583	21.9660 ug/L	98
19) Methylene Chloride	6.94	84	129570	19.0681 ug/L	89
20) Carbon Disulfide	6.96	76	383734	17.6729 ug/L	99
21) Acrylonitrile	7.15	53	52930	21.1893 ug/L	99
22) Methyl Tert Butyl Ether	7.18	73	385052	21.3780 ug/L	100
23) trans-1,2-Dichloroethene	7.42	96	120176	18.9365 ug/L	89
24) n-Hexane	7.51	57	209262	19.4289 ug/L	98
25) Diisopropyl ether	7.90	45	3022707	104.2682 ug/L	98
26) Vinyl Acetate	8.09	43	281969	23.2999 ug/L	97
27) 1,1-Dichloroethane	8.10	63	255504	18.6995 ug/L	99
28) Ethyl-Tert-Butyl ether	8.53	59	2258706	96.8480 ug/L	98
29) 2-Butanone	8.73	43	64398	20.9106 ug/L	96
30) Propionitrile	8.86	54	86501	103.4985 ug/L	100
31) 2,2-Dichloropropane	8.96	77	217625	21.1114 ug/L	99
32) cis-1,2-Dichloroethene	9.03	96	140025	20.1567 ug/L	71
33) Chloroform	9.26	83	237507	19.4030 ug/L	100
34) 1-Bromopropane	9.41	122	28658	26.3250 ug/L	100
35) Bromochloromethane	9.52	130	74406	19.9316 ug/L	100
36) Tetrahydrofuran	9.56	42	200396	93.2913 ug/L	94
38) 1,1,1-Trichloroethane	9.86	97	211192	19.8174 ug/L	99
39) Cyclohexane	9.88	56	276268	19.9258 ug/L	96
40) 1,1-Dichloropropene	10.08	75	178206	19.1986 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	1848821	104.3976 ug/L	98
42) Carbon Tetrachloride	10.23	117	176251	20.1419 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140334.D 8260WTR.M Sat Jul 02 10:25:21 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140334.D Vial: 7
Acq On : 1 Jul 2016 14:15 Operator: TMB
Sample : WG574939-03 20ug/L LCS2 STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 02 10:25:18 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	199297	20.3068 ug/L	98
46)	Benzene	10.48	78	520645	19.8738 ug/L	97
47)	Trichloroethene	11.35	130	128637	19.8989 ug/L	91
48)	Methylcyclohexane	11.43	83	210345	20.7259 ug/L	95
49)	1,2-Dichloropropane	11.59	63	158316	20.9847 ug/L	99
50)	1,4-Dioxane	11.94	88	11559	226.3285 ug/L	87
51)	Bromodichloromethane	11.93	83	188643	20.7228 ug/L	99
52)	Dibromomethane	12.02	93	72991	19.9966 ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.31	63	85812	22.6862 ug/L	100
54)	4-Methyl-2-Pentanone	12.35	58	49117	21.0989 ug/L	98
55)	cis-1,3-Dichloropropene	12.69	75	243147	23.0061 ug/L	99
56)	Dimethyl Disulfide	12.97	79	125368	21.3089 ug/L	98
59)	Toluene	13.15	91	540880	20.3118 ug/L	99
60)	Ethyl Methacrylate	13.32	69	166728	22.0069 ug/L	95
62)	trans-1,3-Dichloropropene	13.39	75	205928	21.7480 ug/L	95
63)	1,1,2-Trichloroethane	13.62	97	105033	21.3135 ug/L	98
64)	2-Hexanone	13.58	43	98399	21.0299 ug/L	96
65)	1,3-Dichloropropane	13.99	76	203195	21.8779 ug/L	94
66)	Tetrachloroethene	14.10	166	126765	19.9763 ug/L	95
67)	Dibromochloromethane	14.41	129	129187	21.5915 ug/L	100
68)	1,2-Dibromoethane	14.71	107	101674	21.3747 ug/L	99
69)	1-Chlorohexane	14.85	91	188938	21.3199 ug/L	91
70)	Chlorobenzene	15.30	112	360660	21.1177 ug/L	91
71)	1,1,1,2-Tetrachloroethane	15.35	131	131228	21.5948 ug/L	98
72)	Ethylbenzene	15.35	106	190855	21.3501 ug/L	94
73)	m-,p-Xylene	15.45	106	464517	42.9956 ug/L	94
74)	o-Xylene	16.11	106	240235	22.2952 ug/L	94
75)	Styrene	16.16	104	400947	22.1177 ug/L	93
76)	Bromoform	16.71	173	73277	19.7497 ug/L	98
77)	Isopropylbenzene	16.62	105	614416	21.8544 ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.88	83	132824	22.7448 ug/L	98
81)	1,2,3-Trichloropropane	17.11	110	39497	22.8128 ug/L	85
82)	trans-1,4-Dichloro-2-Buten	17.18	53	46047	20.8555 ug/L	100
83)	n-Propylbenzene	17.22	91	777403	22.4860 ug/L	97
84)	Bromobenzene	17.34	156	151951	21.0345 ug/L	90
85)	1,3,5-Trimethylbenzene	17.44	105	532611	21.9793 ug/L	97
86)	2-Chlorotoluene	17.52	91	479598	20.5120 ug/L	97
87)	4-Chlorotoluene	17.58	91	507919	22.7863 ug/L	96
88)	a-Methylstyrene	17.92	118	294908	24.1965 ug/L	96
89)	tert-Butylbenzene	17.98	134	107518	22.0841 ug/L	68
90)	1,2,4-Trimethylbenzene	18.05	105	540207	21.7245 ug/L	97
91)	sec-Butylbenzene	18.30	105	650535	22.4264 ug/L	97
92)	p-Isopropyltoluene	18.50	119	547353	22.1415 ug/L	97
93)	1,3-Dichlorobenzene	18.70	146	307156	21.6029 ug/L	95
94)	1,4-Dichlorobenzene	18.85	146	311402	21.6627 ug/L	94
95)	n-Butylbenzene	19.12	91	532850	21.9798 ug/L	96
96)	1,2-Dichlorobenzene	19.42	146	296501	22.2115 ug/L	95
97)	1,2-Dibromo-3-Chloropropan	20.61	75	27758	24.2702 ug/L	83
98)	1,2,4-Trichlorobenzene	21.96	180	210424	22.3003 ug/L	99
99)	Hexachlorobutadiene	22.15	225	91519	23.3279 ug/L	100
100)	Naphthalene	22.38	128	408138	21.1647 ug/L	99
101)	1,2,3-Trichlorobenzene	22.75	180	195165	22.3376 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140334.D 8260WTR.M Sat Jul 02 10:25:22 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070116\6M140334.D Vial: 7
Acq On : 1 Jul 2016 14:15 Operator: TMB
Sample : WG574939-03 20ug/L LCS2 STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 2 10:25 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

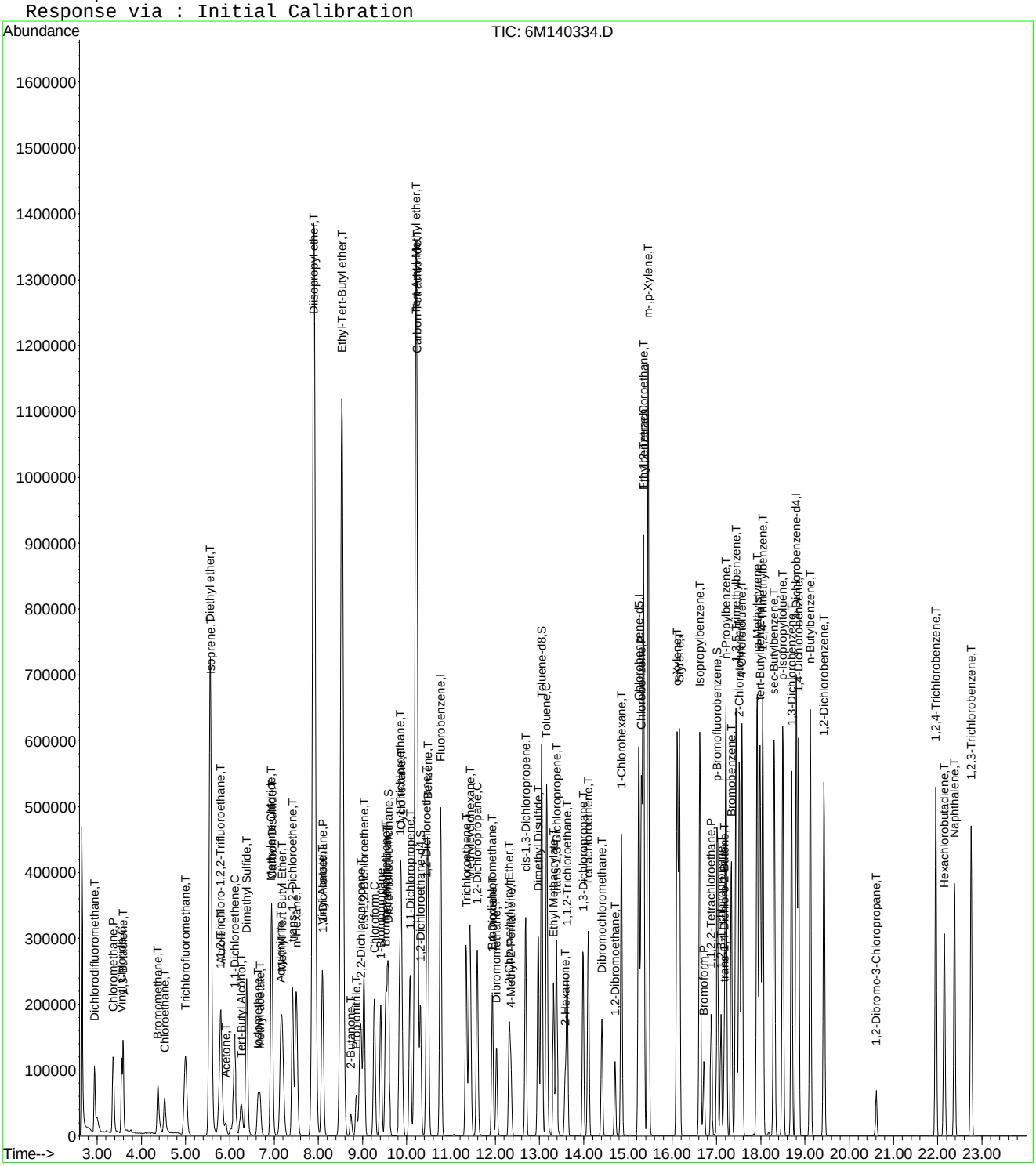

2.2 Semivolatiles Data

2.2.1 Semivolatiles GC/MS Data (Dioxane)

2.2.1.1 Summary Data

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18WW22-062116	**Prep Method:**	3520C	**Prep Date:**	06/22/2016 13:51
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574301	**Analyst:**	MES	**Run Date:**	06/27/2016 19:39
Collect Date:	06/21/2016 07:55	**Dilution:**	1	**File ID:**	15M18611
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	Q	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	18.3	20	129	*

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18WW22-062116	**Prep Method:**	3520C	**Prep Date:**	06/30/2016 16:00
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG575045	**Analyst:**	MES	**Run Date:**	07/05/2016 18:15
Collect Date:	06/21/2016 07:55	**Dilution:**	1	**File ID:**	15M18726
Sample Tag:	RE	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U,H1	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	35.2	20	129	

U,H1	Not detected; Sample analysis performed past holding time.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW18-062116	**Prep Method:**	3520C	**Prep Date:**	06/22/2016 13:51
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574301	**Analyst:**	MES	**Run Date:**	06/27/2016 20:02
Collect Date:	06/21/2016 10:05	**Dilution:**	1	**File ID:**	15M18612
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	55.5	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18WW18-062116	**Prep Method:**	3520C	**Prep Date:**	06/22/2016 13:51
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574301	**Analyst:**	MES	**Run Date:**	06/27/2016 20:25
Collect Date:	06/21/2016 11:15	**Dilution:**	1	**File ID:**	15M18613
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	35.0	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.2.1.2 QC Summary Data

Example 8270 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:

	Example
Ax = Area of the characteristic ion for the compound being measured:	1261197
Cis = Concentration of the specific internal standard (ug/mL)	40
Ais = Area of the characteristic ion of the specific internal standard	608044
Cx = Concentration of the compound in the standard being measured (ug/mL)	50
RF = Calculated Response Factor	**1.65935**

2.0 Calculating the concentration (C) of a compound in water using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Vi)]

where:

	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Vi = Initial volume of sample extracted from prep log (mL)	1021
Cx = Concentration of the compound in the sample being measured (ug/mL)	0.016947
Cx = Concentration of the compound in the sample being measured (ug/L)	**16.947**

3.0 Calculating the concentration (C) of a compound in soil using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Wi)]

where:

	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Wi = Initial weight of sample extracted (g) from prep log	30
Cx = Concentration of the compound in the sample being measured (ug/g)	0.576763
Cx = Concentration of the compound in the sample being measured (ug/kg)	**576.7627**

Dry weight correction:

Percent solids (PCT_S)	50
Cd = (Cx) (100)/PCT_S	**1153.525** ug/kg

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve plot

b = intercept from curve plot

Step 2: Calculate y from Quantitation Report

y = 16790/784838 = 0.02139

Step 3: Solve for x

x = (y - b)/m = [(0.02139 -(- 0.0435)]/ 0.0783 = 0.829

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.829) = 20.72 ug/L

Example Spreadsheet Calculation:

Slope from curve, m:	0.0783	
Intercept from curve, b:	-0.0435	
Area of analyte, Ax:	16790	
Area of Internal Standard , Ais:	784484	
Concentration of IS, Cis	25.00	ug/L
Response Ratio (y) :	0.021403	
Amount Ratio:	0.828897	
Concentration (Cx):	20.72241	ug/L

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**0.0259**	
Value of B from plot:	**0.0596**	
Value of C from plot:	**-0.0165**	
Area of analyte from quantitation report:	**203233**	
Area of IS from quantiation report:	**1425653**	
Response ratio, y:	**0.142554**	
C - y:	**-0.15905**	
Root 1 - Computed amount ratio , X1:	**-3.88278**	
Root 2 - Computed amount ratio , X2:	**1.581623**	use this solution
Concentration of IS, Cis:	**40.00**	
Concentration of analyte, Cx:	**63.26**	ug/L

Microbac Laboratories Inc.
Continuous Sample Extract Log

Workgroup: WG573812
Analyst: CPD
Spike Analyst: 001
Method: 3520C
Run Date: 06/22/2016 13:51
SOP: EXB01 Revison 20
Spike Witness: JDH
Surr Solution: STD76628

TIME ON: 14:35 OFF: 09:00 ON: 14:30 OFF: 08:30

CH2CL2 Lot #: COA18982
1:1 H2SO4 Lot #: RGT36755
sodium sulfate Lot #: COA18814

	SAMPLE #	Type	Reference	Prod	pH	Init Amnt	Surr Amnt	Spike Amnt	Spike Sol	Final Vol	Color
1	L16061124-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
2	L16061142-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
3	L16061142-06	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
4	L16061142-07	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
5	L16061144-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
6	L16061144-02	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
7	L16061144-03	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
8	L16061227-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
9	L16061227-06	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
10	L16061227-07	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
11	L16061233-02	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
12	WG573812-01	BLANK		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
13	WG573812-02	LCS		827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD75256	1 mL	Transparent
14	WG573812-03	LCS2		827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD75256	1 mL	Transparent

Analyst: Chelsie Davis

Reviewer: Justin Hesson

EXTRACT - Modified 01/23/2009
PDF ID: 4825362
Report generated: 06/27/2016 08:29

Microbac Laboratories Inc.
Continuous Sample Extract Log

Workgroup: WG574706
Analyst: CPD
Spike Analyst: CPD
Method: 3520C
Run Date: 06/30/2016 16:00
SOP: EXB01 Revison 20
Spike Witness: JDH
Surr Solution: STD76628

TIME ON: 16:45 OFF: 10:25 ON: _____ OFF: _____

CH2CL2 Lot #: COA18982
Sodium Sulfate Lot #: COA18814
10N NaOH Lot #: RGT37076
1:1 H2SO4 Lot #: RGT36755

	SAMPLE #	Type	Reference	Prod	pH	Init Amnt	Surr Amnt	Spike Amnt	Spike Sol	Final Vol	Color
1	L16061227-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
2	L16061560-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
3	L16061648-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
4	WG574706-01	BLANK		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
5	WG574706-02	LCS		827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD75256	1 mL	Transparent
6	WG574706-03	LCS2		827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD75256	1 mL	Transparent

Due to insufficient sample volume, this preparation batch failed to include the method prescribed MS and MSD.

L16061227-01	RE-EXT OUT OF HOLD
WG574706-02	TURBO VAP 1 CELL CELL 5
WG574706-03	TURBO VAP 1 CELL CELL 6

Analyst: Chelsie Davis

Reviewer: Justin Hesson

EXTRACT - Modified 01/23/2009
PDF ID: 4837080
Report generated: 07/01/2016 15:12

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062116
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573365

Internal STD: STD76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: STD74214 MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18455	BAKEOUT	1	1		06/21/16 08:46
2	15M18456	WG573501-01 5PPM DFTPP STD	1	1	STD75016	06/21/16 09:05
3	15M18457	WG573501-01 5PPM DFTPP STD	1	1	STD75016	06/21/16 09:34
4	15M18458	WG573501-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 09:52
5	15M18459	WG573501-03 10 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 10:27
6	15M18460	WG573501-04 7.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 10:49
7	15M18461	WG573501-05 2.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:12
8	15M18462	WG573501-06 1 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:34
9	15M18463	WG573501-07 0.4 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:57
10	15M18464	WG573501-08 5PPM 1,4-DIOXANE ALT SRC	1	1	STD74214	06/21/16 12:20
11	15M18465	WG572806-01 BLANK 6/15	1	1		06/21/16 12:54
12	15M18466	WG572806-02 LCS 6/15	1	1		06/21/16 13:17
13	15M18467	WG572806-03 LCSDUP 6/15	1	1		06/21/16 13:40
14	15M18468	WG573008-01 BLANK 6/17	7	1	SOIL	06/21/16 14:03
15	15M18469	WG573008-02 LCS 6/17	7	1	SOIL	06/21/16 14:26
16	15M18470	WG573008-03 LCSDUP 6/17	7	1	SOIL	06/21/16 14:48
17	15M18471	L16060730-01	1	1		06/21/16 15:11
18	15M18472	L16060730-02	1	1		06/21/16 15:34
19	15M18473	L16060854-01	1	1		06/21/16 15:57
20	15M18474	L16060730-03	1	1		06/21/16 16:19
21	15M18475	L16060756-04 827-DIOX	1	1		06/21/16 16:46
22	15M18476	L16060822-01	1	1		06/21/16 17:08
23	15M18477	L16060822-03	1	1		06/21/16 17:31
24	15M18478	L16060822-04	1	1		06/21/16 17:54
25	15M18479	L16060822-05	1	1		06/21/16 18:17
26	15M18480	L16060823-01	1	1		06/21/16 18:40
27	15M18481	L16060823-03	1	1		06/21/16 19:02
28	15M18482	L16060823-04	1	1		06/21/16 19:25
29	15M18483	L16060809-03 827-DIOX	1	1		06/21/16 19:48
30	15M18484	L16060854-01 2X	1	2		06/21/16 20:10
31	15M18485	BAKEOUT	1	1		06/21/16 20:33
32	15M18486	BAKEOUT	1	1		06/21/16 20:55
33	15M18487	BAKEOUT	1	1		06/21/16 21:18

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062116

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573365

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD: STD74214

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
	WG573501-01 5PPM DFTPP STD rerun DFTPP, pentachlorophenol tailing >2.			
14				
	WG573008-01 BLANK 6/17 DNR-not needed.			
15				
	WG573008-02 LCS DNR-not needed.			
16				
	WG573008-03 LCSDUP DNR-not needed.			
19	X	2	Over Calibration Range	
	L16060854-01			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062716
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574301,WG574187,WG574186,WG573853

Internal STD: STD76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: MS/MSD STD:

Comments: All samples associated with extraction workgroup WG573815 are being re-extracted due to low LCSDUP recovery: L16060637-02,756-01 to-03,809-01 and -02,930-01 and -02, 1213-01 to -06.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18584	BAKEOUT	1	1		06/27/16 08:21
13	15M18585	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 08:41
14	15M18586	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 08:58
2	15M18587	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 09:22
3	15M18588	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 09:38
4	15M18589	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 10:23
5	15M18590	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 11:15
6	15M18591	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 11:32
7	15M18592	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 12:20
8	15M18593	WG574241-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/27/16 12:37
9	15M18594	WG573975-03 LCSDUP 6/24 RR	7	1	SOIL	06/27/16 13:15
10	15M18595	WG573815-02 LCS 6/23 RR	7	1	SOIL	06/27/16 13:37
11	15M18596	WG573815-03 LCSDUP 6/23 RR	7	1	SOIL	06/27/16 13:59
12	15M18597	WG573812-01 BLANK 6/22	1	1		06/27/16 14:22
15	15M18598	WG573812-02 LCS 6/22	1	1		06/27/16 14:45
16	15M18599	WG573812-03 LCSDUP 6/22	1	1		06/27/16 15:07
17	15M18600	L16061026-05 40X	1	40		06/27/16 15:30
18	15M18601	L16061213-05 827-DIOX	7	1	SOIL	06/27/16 15:52
19	15M18602	L16061213-06 827-DIOX	7	1		06/27/16 16:15
20	15M18603	L16061233-02 827-DIOX	1	1		06/27/16 16:38
21	15M18604	L16061124-01	1	1		06/27/16 17:01
22	15M18605	L16061142-01	1	1		06/27/16 17:23
23	15M18606	L16061142-06	1	1		06/27/16 17:46
24	15M18607	L16061142-07	1	1		06/27/16 18:09
25	15M18608	L16061144-01	1	1		06/27/16 18:31
26	15M18609	L16061144-02	1	1		06/27/16 18:54
27	15M18610	L16061144-03	1	1		06/27/16 19:17
28	15M18611	L16061227-01	1	1		06/27/16 19:39
29	15M18612	L16061227-06	1	1		06/27/16 20:02
30	15M18613	L16061227-07	1	1		06/27/16 20:25
31	15M18614	L16061124-01 2X	1	2		06/27/16 20:47
32	15M18615	BAKEOUT	1	1		06/27/16 21:10
33	15M18616	BAKEOUT	1	1		06/27/16 21:32

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062716
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574301,WG574187,WG574186,WG573853

Internal STD: STD76627 Surrogate STD: NA
CCV STD: STD74784 LCS STD:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	15M18617	BAKEOUT	1	1		06/27/16 21:55

Comments

Seq.	Rerun	Dil.	Reason	Analytes
13				
	Rerun DFTPP, wrong standard was analyzed.			
14				
	Rerun DFTPP, wrong standard was analyzed.			
2				
	Rerun DFTPP, ion failures. Liner needs changed.			
3				
	Rerun DFTPP, degradation >20%.			
4				
	Rerun DFTPP, degradation >20%. Changed the gold seal.			
5				
	Rerun DFTPP, benzidine tailing >2.			
6				
	Rerun DFTPP, benzidine tailing >2. Clipped 5cm from the column.			
9				
	WG573975-03 LCSDUP 6/24 RR recovery is acceptable. Not reporting the run from 6/25/16.			
11				
	WG573815-03 LCSDUP 6/23 RR low recovery; confirms the original run.			
21	X	2	Over Calibration Range	
	L16061124-01			
28				
	L16061227-01 Needs re-extracted; surrogate recovery is low.			

Page: 2 Approved: 28-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 070516

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574772,WG575045,WG575070

Internal STD: STD76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: MS/MSD STD:

Comments: File 15M18715 does not exist.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18708	BAKEOUT	1	1		07/05/16 10:31
2	15M18709	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 10:51
3	15M18710	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 11:11
4	15M18711	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 11:33
5	15M18712	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 12:30
6	15M18713	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 12:47
7	15M18714	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 14:14
8	15M18716	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 14:33
9	15M18717	WG575159-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	07/05/16 14:51
10	15M18718	WG574706-01 BLANK 6/30	1	1		07/05/16 15:14
11	15M18719	WG574706-02 LCS 6/30	1	1		07/05/16 15:38
12	15M18720	WG574706-03 LCSDUP 6/30	1	1		07/05/16 16:01
13	15M18721	WG574873-01 BLANK 7/1	7	1	SOIL	07/05/16 16:23
14	15M18722	WG574873-02 LCS 7/1	7	1	SOIL	07/05/16 16:45
15	15M18723	WG574873-03 LCSDUP 7/1	7	1	SOIL	07/05/16 17:07
16	15M18724	L16061290-02 5X 827-DIOX	1	5		07/05/16 17:29
17	15M18725	L16061289-01 10X 827-DIOX	1	10		07/05/16 17:52
18	15M18726	L16061227-01 RE 827-DIOX	1	10		07/05/16 18:15
19	15M18727	L16061290-06 827-DIOX	1	1		07/05/16 18:37
20	15M18728	L16061345-08 827-DIOX	1	1		07/05/16 19:00
21	15M18729	L16061345-04 REF 827-DIOX	1	1		07/05/16 19:23
22	15M18730	L16061345-05 MS 827-DIOX	1	1		07/05/16 19:45
23	15M18731	L16061345-06 MSD 827-DIOX	1	1		07/05/16 20:08
24	15M18732	L16061345-03 RE 827-DIOX	7	1	SOIL	07/05/16 20:31
25	15M18733	L16061345-01 RE 827-DIOX	7	1	SOIL	07/05/16 20:54
26	15M18734	L16061560-01 827-DIOX	1	1		07/05/16 21:16
27	15M18735	L16061648-01 827-DIOX	1	1		07/05/16 21:39
28	15M18736	L16061452-01 827-DIOX	1	1		07/05/16 22:02
29	15M18737	L16061452-02 827-DIOX	1	1		07/05/16 22:24
30	15M18738	L16061452-03 827-DIOX	1	1		07/05/16 22:46
31	15M18739	L16061453-01 827-DIOX	1	1		07/05/16 23:09
32	15M18740	L16061453-02 827-DIOX	1	1		07/05/16 23:32
33	15M18741	L16061453-03 827-DIOX	1	1		07/05/16 23:54

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 070516
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574772,WG575045,WG575070

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	15M18742	L16061450-04 827-DIOX	1	1		07/06/16 00:17
35	15M18743	L16061450-05 827-DIOX	1	1		07/06/16 00:39
36	15M18744	BAKEOUT	1	1		07/06/16 01:02
37	15M18745	BAKEOUT	1	1		07/06/16 01:25
38	15M18746	BAKEOUT	1	1		07/06/16 01:47
39	15M18747	BAKEOUT	1	1		07/06/16 02:10
40	15M18748	BAKEOUT	1	1		07/06/16 02:32
41	15M18749	BAKEOUT	1	1		07/06/16 02:55
42	15M18750	BAKEOUT	1	1		07/06/16 03:17
43	15M18751	BAKEOUT	1	1		07/06/16 03:40
44	15M18752	BAKEOUT	1	1		07/06/16 04:03

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
	Rerun DFTPP, ion ratio fails.			
3				
	Rerun DFTPP, ion ratio fails. Performed a quicktune.			
4				
	Rerun DFTPP, ion ratio fails. Changed the liner.			
5				
	Rerun DFTPP, ion ratio fails. Retuned.			
6				
	Rerun DFTPP, PCP tailing >2.			
7				
	Rerun DFTPP, PCP tailing >2. Clipping the column.			
13				
	WG574873-01 BLANK 7/1 surrogate is low.			
17				
	L16061289-01 10X 827-DIOX confirms high surrogate recovery; DNR. Surrogate is high due to SMI. Sample is not being re-extracted.			
18				
	L16061227-01 RE 827-DIOX surrogate recovery is good; does not confirm original extraction.			
21	X	20	Over Calibration Range	
	L16061345-04 REF			
22				
	L16061345-05 MS 827-DIOX DNR-sample is spiked for 827-SPE-DIOX			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 070516

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574772,WG575045,WG575070

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
23				
	L16061345-06 MSD 827-DIOX DNR-sample is spiked for 827-SPE-DIOX			
24				
	L16061345-03 RE 827-DIOX confirms low surrogate recovery.			
25				
	L16061345-01 RE 827-DIOX confirms low surrogate recovery.			
26	X	5	Over Calibration Range	
	L16061560-01 827-DIOX			
30	X	2	Over Calibration Range	
	L16061452-03 827-DIOX			
31	X	10	Surrogate standard failure	
	L16061453-01 surrogate high due to SMI. Not re-extracting.			

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Microbac Laboratories Inc.

Data Checklist

Date: 21-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75850
Analytical Workgroups: L16060730, 060756, 060809, 060822, 060823, 060854

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 22-JUN-2016

Secondary Reviewer: 22-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-22-2016 16:00:51

Microbac Laboratories Inc.

Data Checklist

Date: 27-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75949
Analytical Workgroups: L16061026,061213,WG573956-LCSDUP RR,061124,1142,1144,1227,123

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
28-JUN-2016

Secondary Reviewer:
28-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-28-2016 14:33:27

Microbac Laboratories Inc.

Data Checklist

Date: 05-JUL-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 76120
Analytical Workgroups: L16061345, 061227, 1560, 1648, 1290, 1450, 1452, 1453

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 06-JUL-2016

Secondary Reviewer: 11-JUL-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUL-11-2016 11:01:30

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8270D

AAB#: WG574301

Login Number: L16061227

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW22-062116	01	06/21/16					06/22/2016	1.2	7		06/27/16	5.2	40	
18CPTMW18-062116	06	06/21/16					06/22/2016	1.2	7		06/27/16	5.3	40	
18WW18-062116	07	06/21/16					06/22/2016	1.1	7		06/27/16	5.3	40	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4828117
Report generated 07/06/2016 11:09

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8270D

AAB#: WG575045

Login Number: L16061227

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW22-062116	01	06/21/16					06/30/2016	9.3	7	*	07/05/16	5.1	40	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4828117
Report generated 07/06/2016 11:09

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061227
Instrument Id: HPMS15
Workgroup (AAB#): WG574301

Method: 827-DIOXANE
CAL ID: HPMS15-21-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1
L16061227-01	1.00	01	18.3
L16061227-06	1.00	01	55.5
L16061227-07	1.00	01	35.0
WG573812-01	1.00	01	29.1
WG573812-02	1.00	01	33.3
WG573812-03	1.00	01	61.4

Surrogates	Surrogate Limits		
1 - 1,4-Dioxane-d8	20	-	129

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4828123
Report generated: 07/06/2016 11:10

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061227
Instrument Id: HPMS15
Workgroup (AAB#): WG575045

Method: 827-DIOXANE
CAL ID: HPMS15-21-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1
L16061227-01	1.00	RE	35.2
WG574706-01	1.00	01	28.3
WG574706-02	1.00	01	29.8
WG574706-03	1.00	01	35.9

Surrogates	Surrogate Limits		
1 - 1,4-Dioxane-d8	20	-	129

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4828123
Report generated: 07/06/2016 11:10

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061227 Prep Date: 06/22/16 13:51 Sample ID: WG573812-01
Instrument ID: HPMS15 Run Date: 06/27/16 14:22 Prep Method: 3520C
File ID: 15M18597 Analyst: MES Method: 8270D
Workgroup (AAB#): WG574301 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS15-21-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
1,4-Dioxane	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	29.1	20 - 129	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4828118
06-JUL-2016 11:09

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061227 Prep Date: 06/30/16 16:00 Sample ID: WG574706-01
Instrument ID: HPMS15 Run Date: 07/05/16 15:14 Prep Method: 3520C
File ID: 15M18718 Analyst: MES Method: 8270D
Workgroup (AAB#): WG575045 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS15-21-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
1,4-Dioxane	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	28.3	20 - 129	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4828118
06-JUL-2016 11:09

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061227 Analyst: MES Prep Method: 3520C
Instrument ID: HPMS15 Matrix: Water Method: 8270D
Workgroup (AAB#): WG575045 Units: ug/L
QC Key: DOD4 Lot #: STD75256

Sample ID: WG574706-02 LCS File ID: 15M18719 Run Date: 07/05/2016 15:38
Sample ID: WG574706-03 LCS2 File ID: 15M18720 Run Date: 07/05/2016 16:01

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,4-Dioxane	5.00	1.55	31.0	5.00	2.07	41.3	28.5	30 - 104	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,4-Dioxane-d8	29.8	35.9	20 - 129	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4828119
Report generated: 07/06/2016 11:09

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061227 Analyst: MES Prep Method: 3520C
Instrument ID: HPMS15 Matrix: Water Method: 8270D
Workgroup (AAB#): WG574301 Units: ug/L
QC Key: DOD4 Lot #: STD75256

Sample ID: WG573812-02 LCS File ID: 15M18598 Run Date: 06/27/2016 14:45
Sample ID: WG573812-03 LCS2 File ID: 15M18599 Run Date: 06/27/2016 15:07

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,4-Dioxane	5.00	1.59	31.8	5.00	3.00	60.0	61.5	30 - 104	30	#

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,4-Dioxane-d8	33.3	61.4	20 - 129	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4828119
Report generated: 07/06/2016 11:09

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16061227
Instrument: HPMS15
Analyst: MES
Workgroup: WG573501

Tune ID: WG573501-01
Run Date: 06/21/2016
Run Time: 09:34
File ID: 15M18457
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	38.8	34488	PASS
68.0	69.0	0	2.00	1.36	500	PASS
69.0	198	0	100	41.4	36833	PASS
70.0	69.0	0	2.00	0.467	172	PASS
127	198	40.0	60.0	51.9	46131	PASS
197	198	0	1.00	0	0	PASS
198	198	100	100	100	88880	PASS
199	198	5.00	9.00	6.66	5918	PASS
275	198	10.0	30.0	24.9	22090	PASS
365	198	1.00	100	2.65	2358	PASS
441	443	0.0100	100	75.7	9586	PASS
442	198	40.0	100	73.4	65261	PASS
443	442	17.0	23.0	19.4	12659	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573501-02	STD-CCV	01	06/21/2016 09:52	
WG573501-03	STD	01	06/21/2016 10:27	
WG573501-04	STD	01	06/21/2016 10:49	
WG573501-05	STD	01	06/21/2016 11:12	
WG573501-06	STD	01	06/21/2016 11:34	
WG573501-07	STD	01	06/21/2016 11:57	
WG573501-08	SSCV	01	06/21/2016 12:20	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4828120
Report generated 07/06/2016 11:09

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16061227
Instrument: HPMS15
Analyst: MES
Workgroup: WG574241

Tune ID: WG574241-01
Run Date: 06/27/2016
Run Time: 12:20
File ID: 15M18592
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	33.2	31989	PASS
68.0	69.0	0	2.00	1.61	580	PASS
69.0	198	0	100	37.4	35954	PASS
70.0	69.0	0	2.00	0.617	222	PASS
127	198	40.0	60.0	50.4	48459	PASS
197	198	0	1.00	0.425	409	PASS
198	198	100	100	100	96232	PASS
199	198	5.00	9.00	6.65	6399	PASS
275	198	10.0	30.0	25.2	24236	PASS
365	198	1.00	100	2.50	2410	PASS
441	443	0.0100	100	75.7	10371	PASS
442	198	40.0	100	73.9	71133	PASS
443	442	17.0	23.0	19.3	13708	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG574241-02	CCV	01	06/27/2016 12:37	
WG573812-01	BLANK	01	06/27/2016 14:22	
WG573812-02	LCS	01	06/27/2016 14:45	
WG573812-03	LCS2	01	06/27/2016 15:07	
L16061227-01	18WW22-062116	01	06/27/2016 19:39	
L16061227-06	18CPTMW18-062116	01	06/27/2016 20:02	
L16061227-07	18WW18-062116	01	06/27/2016 20:25	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4828120
Report generated 07/06/2016 11:09

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16061227
Instrument: HPMS15
Analyst: MES
Workgroup: WG575159

Tune ID: WG575159-01
Run Date: 07/05/2016
Run Time: 14:33
File ID: 15M18716
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	46.2	37745	PASS
68.0	69.0	0	2.00	1.95	734	PASS
69.0	198	0	100	46.2	37667	PASS
70.0	69.0	0	2.00	0.337	127	PASS
127	198	40.0	60.0	57.5	46941	PASS
197	198	0	1.00	0.380	310	PASS
198	198	100	100	100	81613	PASS
199	198	5.00	9.00	7.55	6162	PASS
275	198	10.0	30.0	24.6	20072	PASS
365	198	1.00	100	2.93	2392	PASS
441	443	0.0100	100	70.8	8479	PASS
442	198	40.0	100	73.3	59805	PASS
443	442	17.0	23.0	20.0	11980	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG575159-02	CCV	01	07/05/2016 14:51	
WG574706-01	BLANK	01	07/05/2016 15:14	
WG574706-02	LCS	01	07/05/2016 15:38	
WG574706-03	LCS2	01	07/05/2016 16:01	
L16061227-01	18WW22-062116	RE	07/05/2016 18:15	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4828120
Report generated 07/06/2016 11:09

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061227
Analytical Method: 8270D
ICAL Workgroup: WG573501

Instrument ID: HPMS15
Initial Calibration Date: 21-JUN-16 11:57
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
1,4-Dioxane		0.3060	2.56		

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4840529
Report generated 07/06/2016 11:09

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061227

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 21-JUN-16 11:57

Column ID: F

Analyte	WG573501-02			WG573501-03			WG573501-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	5.00	60883.0000	0.3073	10.0	138820.000	0.3164	7.50	103182.000	0.3106

INT_CAL - Modified 03/06/2008
PDF File ID: 4840529
Report generated 07/06/2016 11:09

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061227

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 21-JUN-16 11:57

Column ID: F

Analyte	WG573501-05			WG573501-06			WG573501-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	2.50	26333.0000	0.2969	1.00	13250.0000	0.2966	0.400	5650.00000	0.3081

INT_CAL - Modified 03/06/2008
PDF File ID: 4840529
Report generated 07/06/2016 11:09

Calibration Table Report
Method: DIOXANE_D8.M
Title: OVD MSS01 SIM 1,4-dioxane ICAL 062116
Last Calibration: Tue Jun 21 12:51:17 2016
Curve:WG573501
Calibration Files

Compound	10 15M18459.D	7.5 15M18460.D	5 15M18458.D	2.5 15M18461.D	1 15M18462.D	0.4 15M18463.D	Avg	%RSD
1,4-Dichlorobenzene-d4	ISTD							
1,4-Dioxane	0.316	0.311	0.307	0.297	0.297	0.308	0.306	2.558
1,4-Dioxane-d8	0.426	0.418	0.417	0.402	0.395		0.411	3.044
Nitrobenzene-d5	1.202	1.173	1.128	1.002	0.927	0.906	1.056	12.163
2-Fluorobiphenyl	2.735	2.736	2.691	2.621	2.563	2.651	2.666	2.548
p-Terphenyl-d14	2.793	2.774	2.622	2.460	2.367	2.405	2.570	7.266

Wed Jun 22 12:17:33 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061227 Run Date: 06/21/2016 Sample ID: WG573501-08
Instrument ID: HPMS15 Run Time: 12:20 Method: 8270D
File ID: 15M18464 Analyst: MES QC Key: DOD4
ICal Workgroup: WG573501 Cal ID: HPMS15 - 21-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
1,4-Dioxane		5000	5050	ug/L	0.309	0.900	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4840530
Report generated 07/06/2016 11:09

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/27/2016
Sample ID: WG574241-02
Instrument ID: HPMS15
Run Time: 12:37
Method: 8270D
File ID: 15M18593
Analyst: MES
QC Key: DOD4
Workgroup (AAB#): WG574301
Cal ID: HPMS15 - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,4-Dioxane		5000	4360	ug/L	0.267	12.8	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4828121
Report generated 07/06/2016 11:10

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 07/05/2016
Sample ID: WG575159-02
Instrument ID: HPMS15
Run Time: 14:51
Method: 8270D
File ID: 15M18717
Analyst: MES
QC Key: DOD4
Workgroup (AAB#): WG575045
Cal ID: HPMS15 - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,4-Dioxane		5000	5230	ug/L	0.320	4.63	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4828121
Report generated 07/06/2016 11:10

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061227
Instrument ID: HPMS15
Workgroup (AAB#): WG574301

ICAL CCV Number: WG573501-02
CAL ID: HPMS15 - 21-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG573501-02	NA	NA	39637
Upper Limit	NA	NA	79274
Lower Limit	NA	NA	19819
L16061227-01	1.00	01	48694
L16061227-06	1.00	01	37679
L16061227-07	1.00	01	44225
WG573812-01	1.00	01	38478
WG573812-02	1.00	01	47423
WG573812-03	1.00	01	50712

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4828122
Report generated 07/06/2016 11:10

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061227
Instrument ID: HPMS15
Workgroup (AAB#): WG575045

ICAL CCV Number: WG573501-02
CAL ID: HPMS15 - 21-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG573501-02	NA	NA	39637
Upper Limit	NA	NA	79274
Lower Limit	NA	NA	19819
L16061227-01	1.00	RE	30375
WG574706-01	1.00	01	36576
WG574706-02	1.00	01	36960
WG574706-03	1.00	01	37076

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4828122
Report generated 07/06/2016 11:10

2.2.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18611.D
Acq On : 27 Jun 2016 19:39
Operator : MES
Sample : L16061227-01
Misc : 1,1
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Jun 28 08:07:11 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.896	152	48694	1.0000	ug/mL	#-0.04
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.764	96	18335	0.9151	ug/L	-0.06
Spiked Amount 5.000			Recovery	=	18.40%	
4) Nitrobenzene-d5	7.404	82	1371	0.0267	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.60%	
5) 2-Fluorobiphenyl	8.889	172	121	0.0009	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.133	244	1023	0.0082	ug/L	-0.05
Spiked Amount 5.000			Recovery	=	0.20%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18611.D
Acq On : 27 Jun 2016 19:39
Operator : MES
Sample : L16061227-01
Misc : 1,1
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Jun 28 08:07:11 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

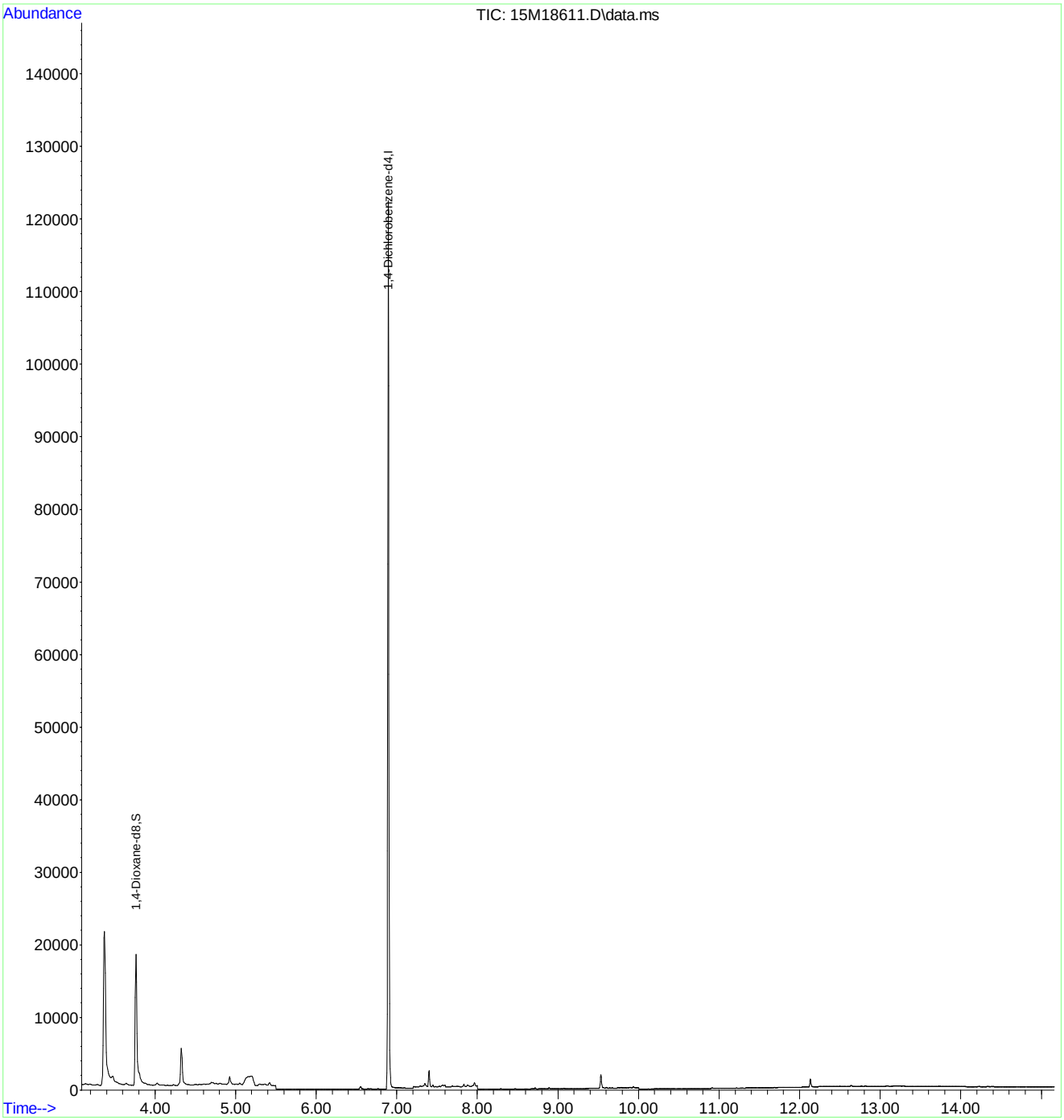

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18726.D
Acq On : 5 Jul 2016 18:15
Operator : MES
Sample : L16061227-01 RE 827-DIOX
Misc : 1,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jul 06 10:56:46 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.867	152	30375	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.763	96	22015	1.7614	ug/L	-0.02
Spiked Amount 5.000			Recovery	=	35.20%	
4) Nitrobenzene-d5	7.372	82	2383	0.0743	ug/L	0.00
Spiked Amount 5.000			Recovery	=	1.40%	
5) 2-Fluorobiphenyl	8.853	172	119	0.0015	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.096	244	1684	0.0216	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.40%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18726.D
Acq On : 5 Jul 2016 18:15
Operator : MES
Sample : L16061227-01 RE 827-DIOX
Misc : 1,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jul 06 10:56:46 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

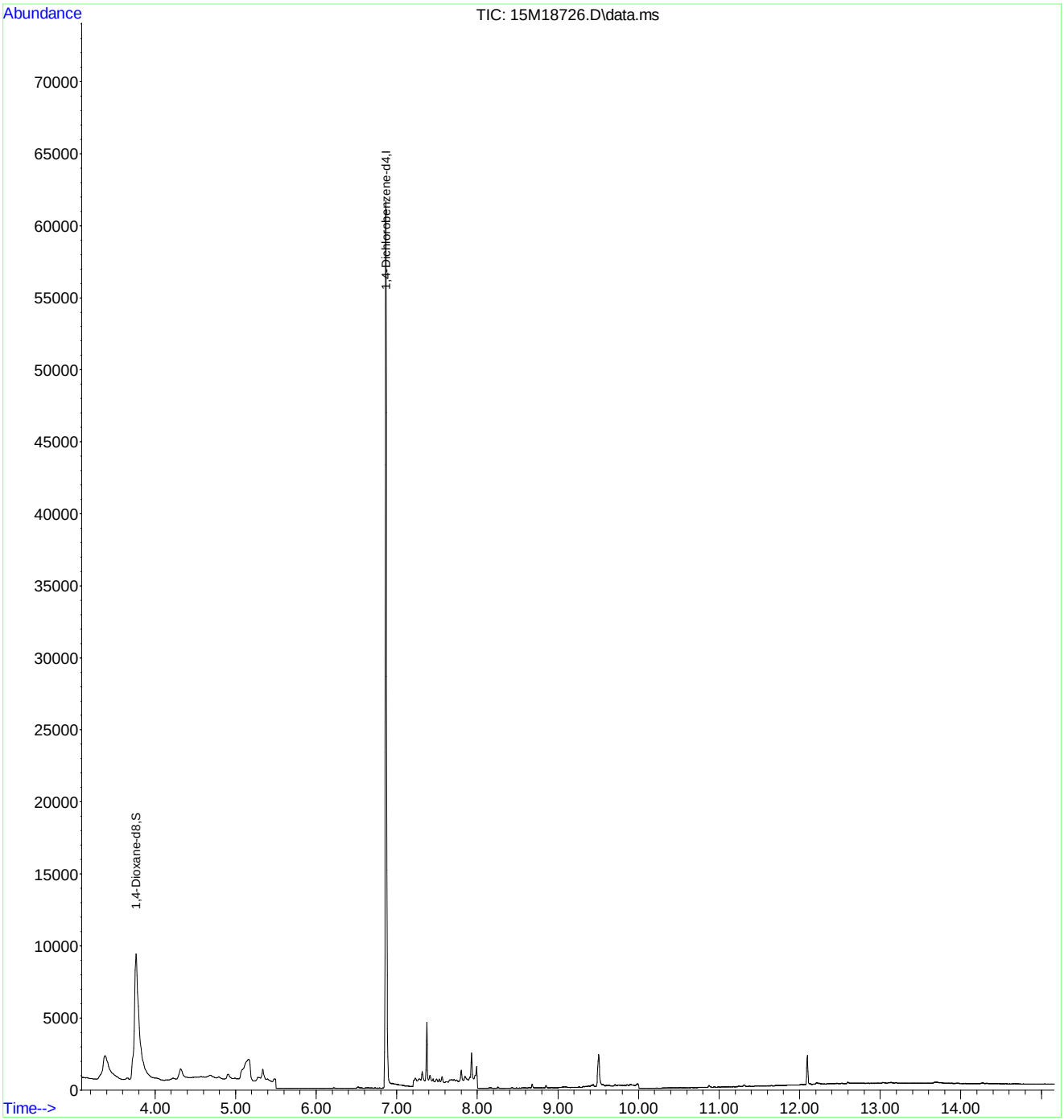

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18612.D
Acq On : 27 Jun 2016 20:02
Operator : MES
Sample : L16061227-06
Misc : 1,1
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Jun 28 08:07:14 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.896	152	37679	1.0000	ug/mL	#-0.04
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.749	96	43035	2.7757	ug/L	-0.08
Spiked Amount 5.000			Recovery	=	55.60%	
4) Nitrobenzene-d5	7.404	82	1694	0.0426	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.80%	
5) 2-Fluorobiphenyl	8.889	172	274	0.0027	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.147	244	36456	0.3765	ug/L	-0.04
Spiked Amount 5.000			Recovery	=	7.60%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18612.D
Acq On : 27 Jun 2016 20:02
Operator : MES
Sample : L16061227-06
Misc : 1,1
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Jun 28 08:07:14 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

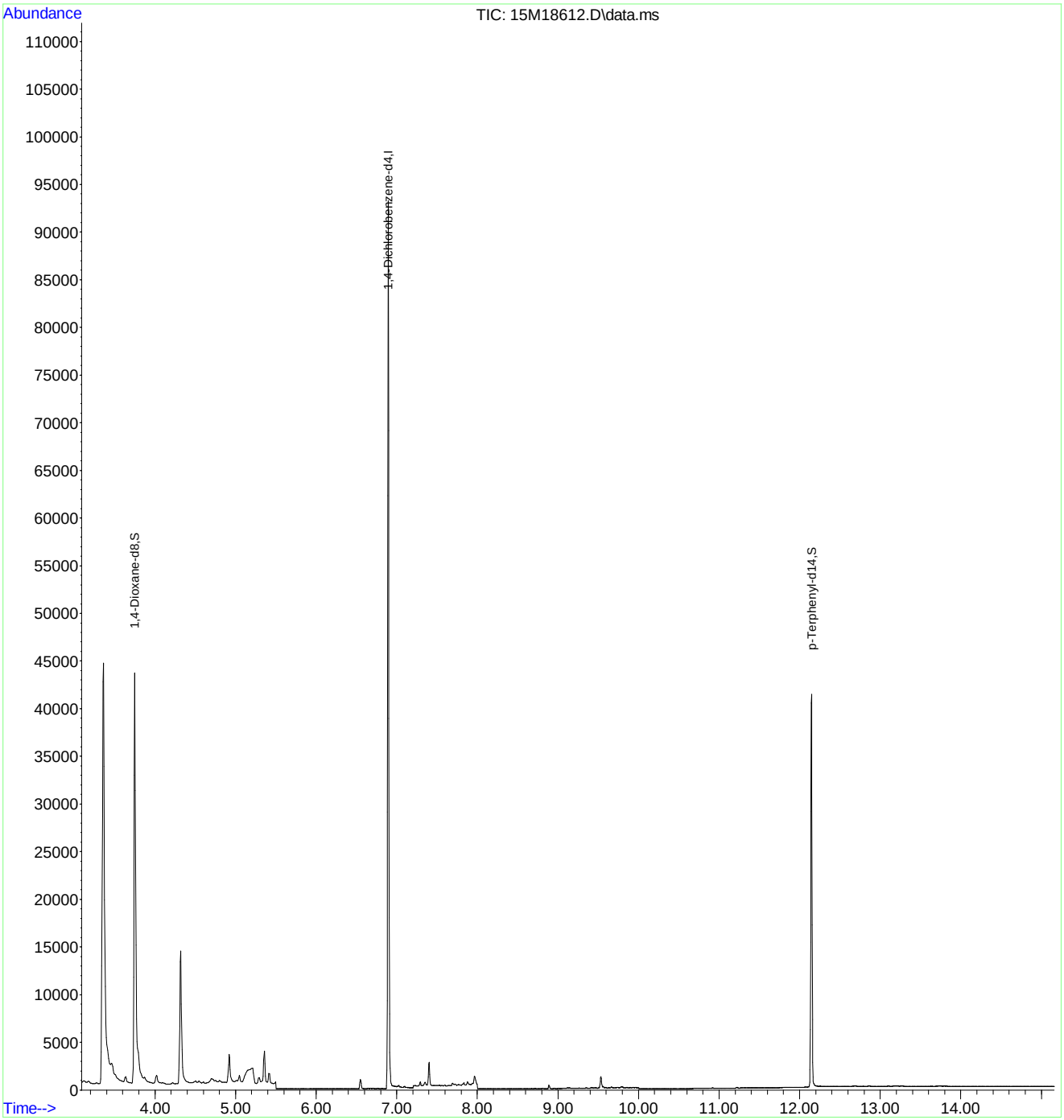

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18613.D
Acq On : 27 Jun 2016 20:25
Operator : MES
Sample : L16061227-07
Misc : 1,1
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Jun 28 08:07:17 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.896	152	44225	1.0000	ug/mL	#-0.04
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.763	96	31814	1.7482	ug/L	-0.06
Spiked Amount 5.000			Recovery	=	35.00%	
4) Nitrobenzene-d5	7.404	82	1100	0.0235	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.40%	
5) 2-Fluorobiphenyl	8.889	172	260	0.0022	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.136	244	105270	0.9262	ug/L	-0.05
Spiked Amount 5.000			Recovery	=	18.60%	

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18613.D
Acq On : 27 Jun 2016 20:25
Operator : MES
Sample : L16061227-07
Misc : 1,1
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Jun 28 08:07:17 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

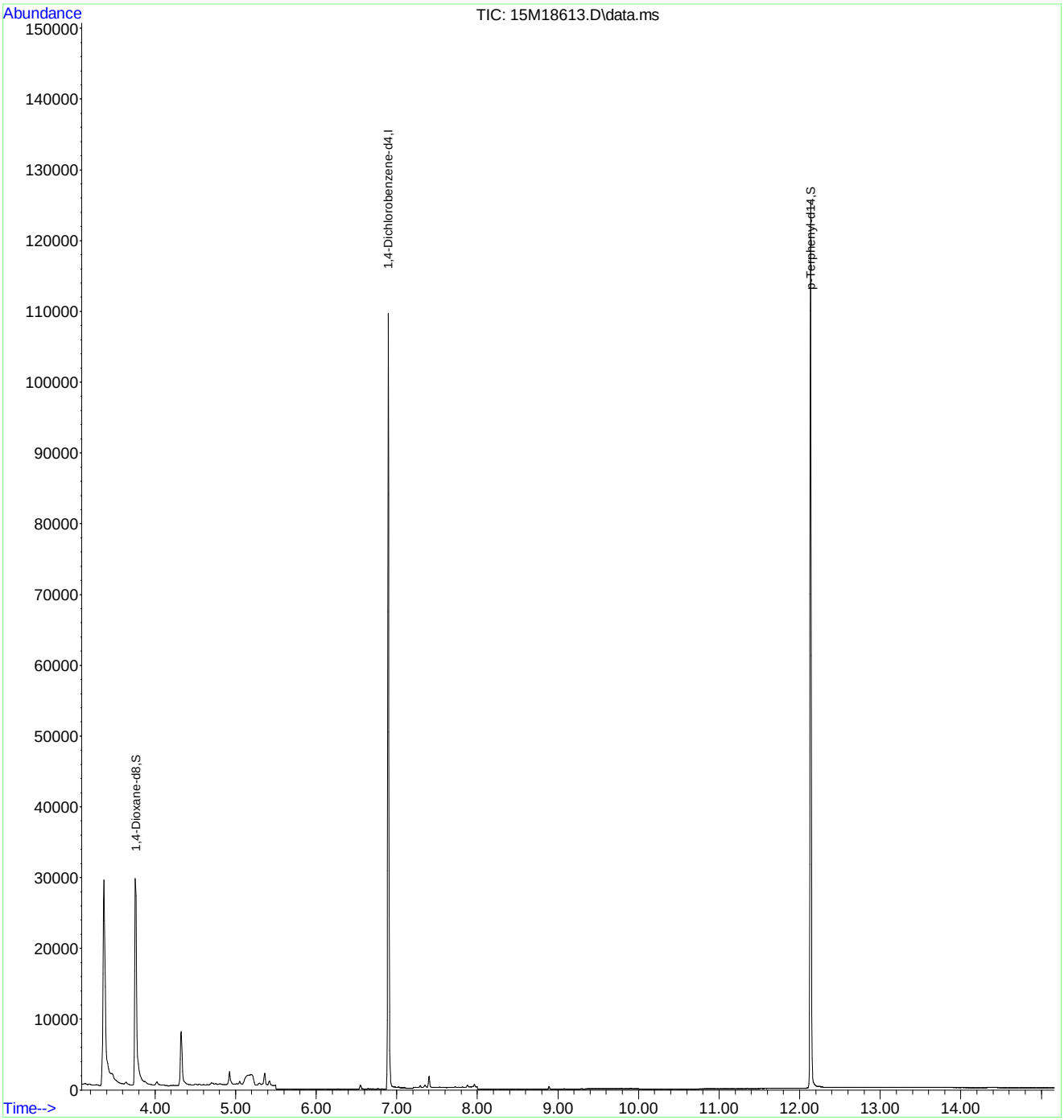

2.2.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 22 08:04:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	39637	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.827	96	82573	5.0627 ug/L	0.00
Spiked Amount 5.000			Recovery	= 101.20%	
4) Nitrobenzene-d5	7.431	82	223381	5.3353 ug/L	0.00
Spiked Amount 5.000			Recovery	= 106.80%	
5) 2-Fluorobiphenyl	8.922	172	533101	5.0444 ug/L	0.00
Spiked Amount 5.000			Recovery	= 100.80%	
6) p-Terphenyl-d14	12.184	244	519544	5.1003 ug/L	0.00
Spiked Amount 5.000			Recovery	= 102.00%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.862	58	60883	5.0202 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 21 10:23:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	60	0.00
2	1,4-Dioxane	0.325	0.307	5.5	57	-0.03
3 S	1,4-Dioxane-d8	0.419	0.417	0.5	60	-0.04
4 S	Nitrobenzene-d5	0.904	1.128	-24.8	69	0.00
5 S	2-Fluorobiphenyl	2.613	2.691	-3.0	63	0.00
6 S	p-Terphenyl-d14	2.562	2.622	-2.3	61	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 21 10:23:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	60	0.00
2	1,4-Dioxane	5.000	4.721	5.6	57	-0.03
3 S	1,4-Dioxane-d8	5.000	4.979	0.4	60	-0.04
4 S	Nitrobenzene-d5	5.000	5.474	-9.5	69	0.00
5 S	2-Fluorobiphenyl	5.000	5.150	-3.0	63	0.00
6 S	p-Terphenyl-d14	5.000	5.115	-2.3	61	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 22 08:04:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

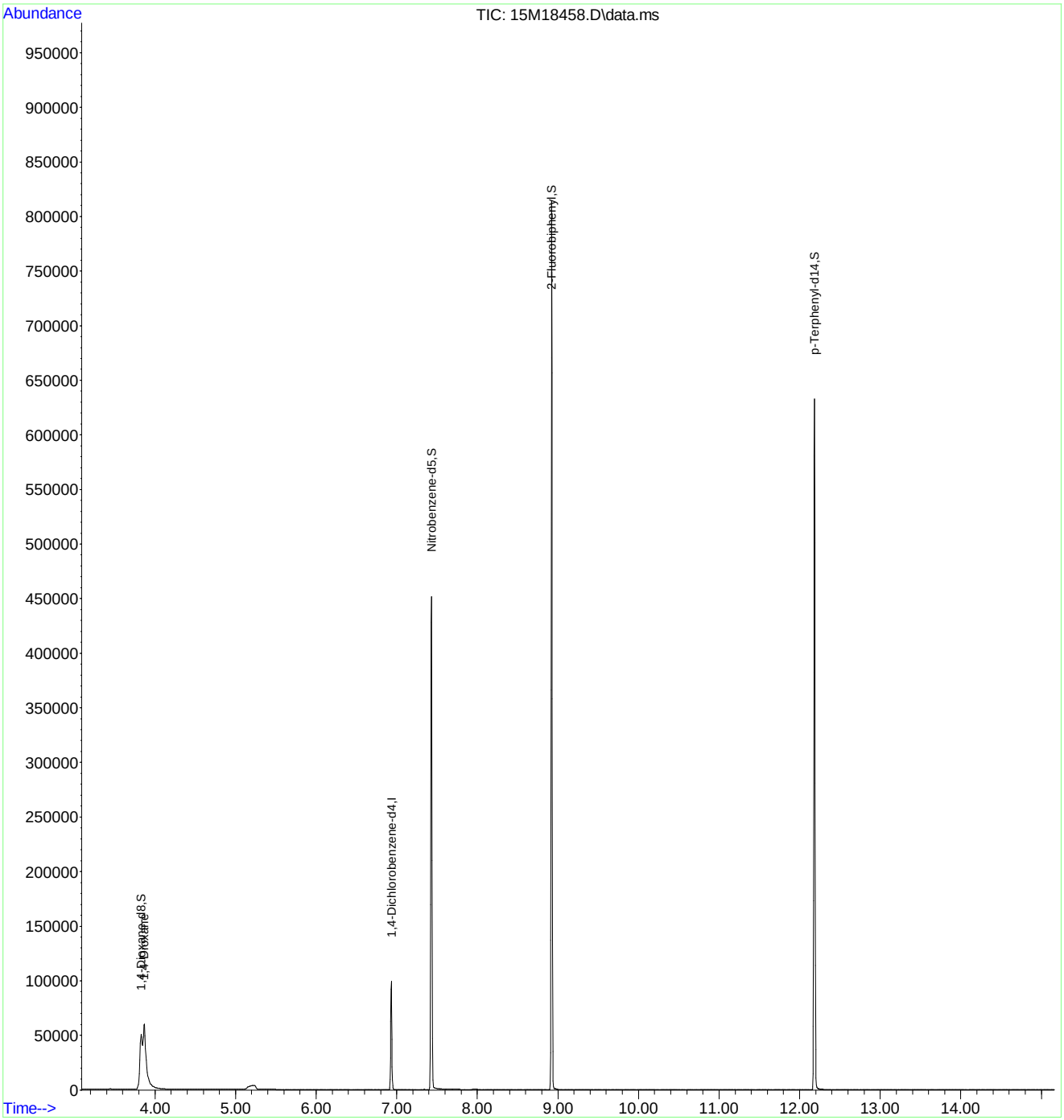

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18459.D
Acq On : 21 Jun 2016 10:27
Operator : MES
Sample : WG573501-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 22 08:04:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	43874	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	186767	10.3452	ug/L	0.00
Spiked Amount 5.000			Recovery = 207.00%			
4) Nitrobenzene-d5	7.431	82	527549	11.3834	ug/L	0.00
Spiked Amount 5.000			Recovery = 227.60%			
5) 2-Fluorobiphenyl	8.926	172	1199799	10.2565	ug/L	0.00
Spiked Amount 5.000			Recovery = 205.20%			
6) p-Terphenyl-d14	12.240	244	1225328	10.8672	ug/L	0.06
Spiked Amount 5.000			Recovery = 217.40%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	138820	10.3412	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18459.D
Acq On : 21 Jun 2016 10:27
Operator : MES
Sample : WG573501-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 22 08:04:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

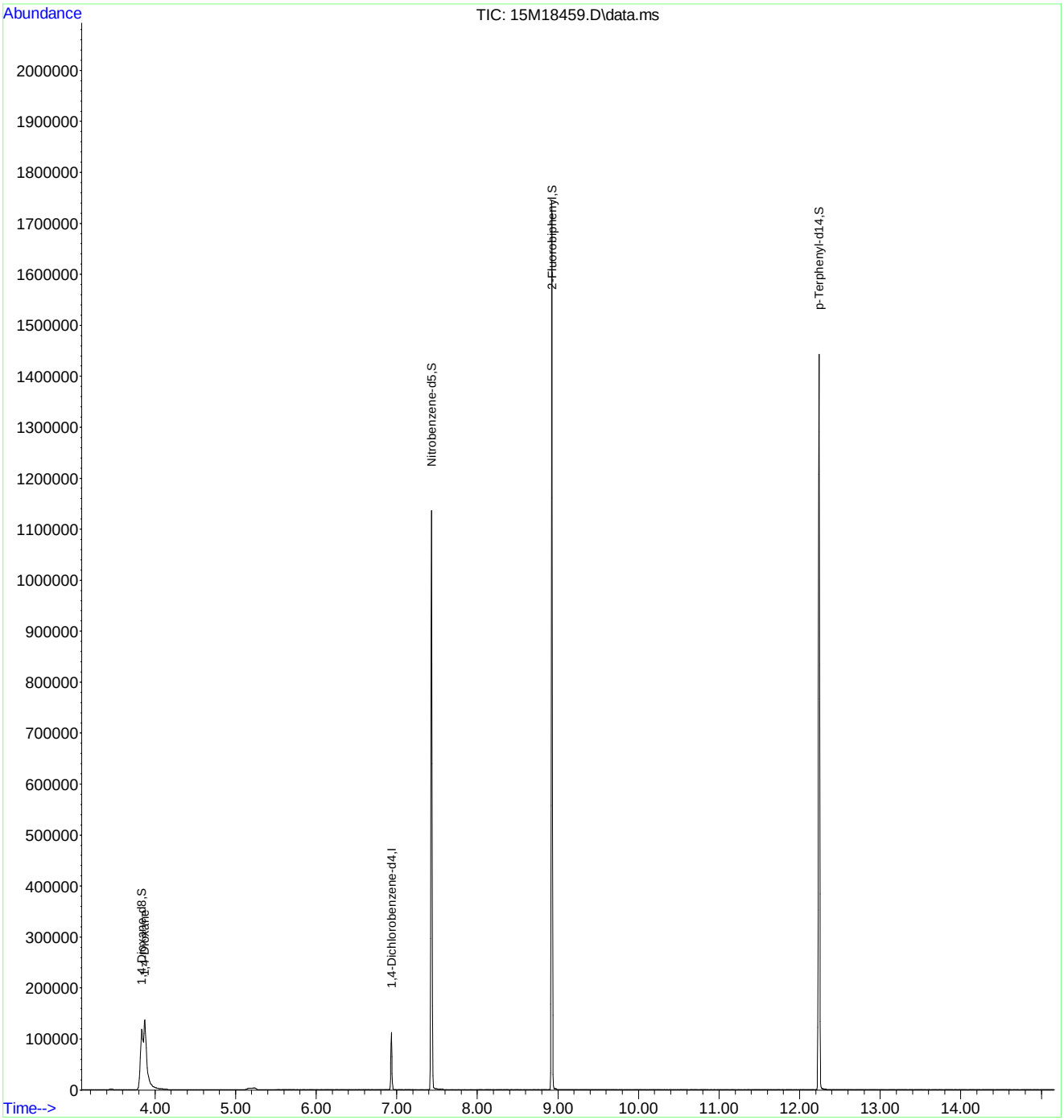

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18460.D
Acq On : 21 Jun 2016 10:49
Operator : MES
Sample : WG573501-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 22 08:04:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	44299	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.834	96	138833	7.6163 ug/L	0.00
Spiked Amount 5.000			Recovery	= 152.40%	
4) Nitrobenzene-d5	7.431	82	389810	8.3306 ug/L	0.00
Spiked Amount 5.000			Recovery	= 166.60%	
5) 2-Fluorobiphenyl	8.923	172	909050	7.6965 ug/L	0.00
Spiked Amount 5.000			Recovery	= 154.00%	
6) p-Terphenyl-d14	12.203	244	921380	8.0931 ug/L	0.02
Spiked Amount 5.000			Recovery	= 161.80%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.876	58	103182	7.6127 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18460.D
Acq On : 21 Jun 2016 10:49
Operator : MES
Sample : WG573501-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 22 08:04:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

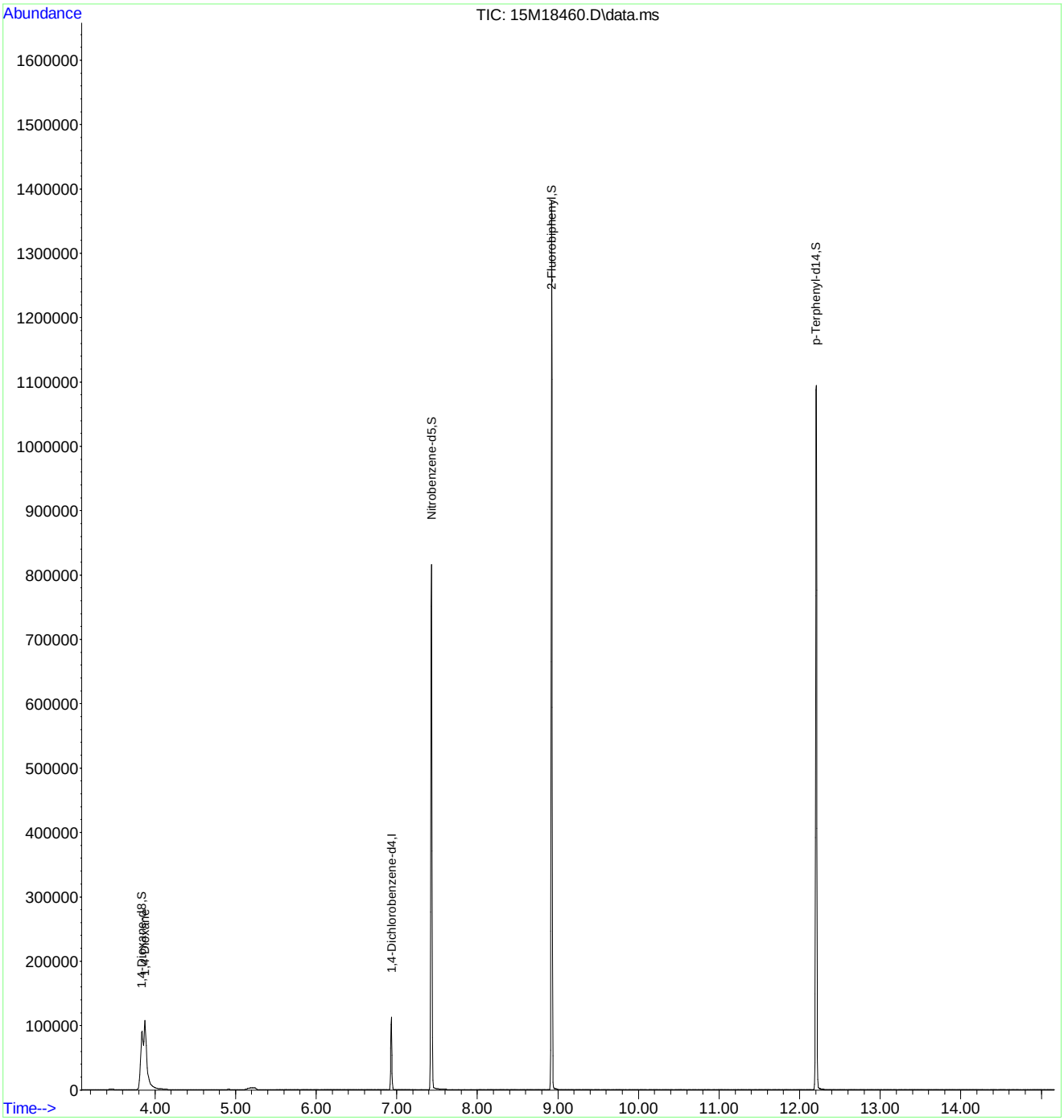

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18461.D
Acq On : 21 Jun 2016 11:12
Operator : MES
Sample : WG573501-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 22 08:04:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	35478	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.827	96	35630	2.4406 ug/L	0.00
Spiked Amount 5.000			Recovery	= 48.80%	
4) Nitrobenzene-d5	7.431	82	88869	2.3714 ug/L	0.00
Spiked Amount 5.000			Recovery	= 47.40%	
5) 2-Fluorobiphenyl	8.923	172	232500	2.4579 ug/L	0.00
Spiked Amount 5.000			Recovery	= 49.20%	
6) p-Terphenyl-d14	12.199	244	218191	2.3930 ug/L	0.02
Spiked Amount 5.000			Recovery	= 47.80%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.862	58	26333	2.4259 ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18461.D
Acq On : 21 Jun 2016 11:12
Operator : MES
Sample : WG573501-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 22 08:04:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

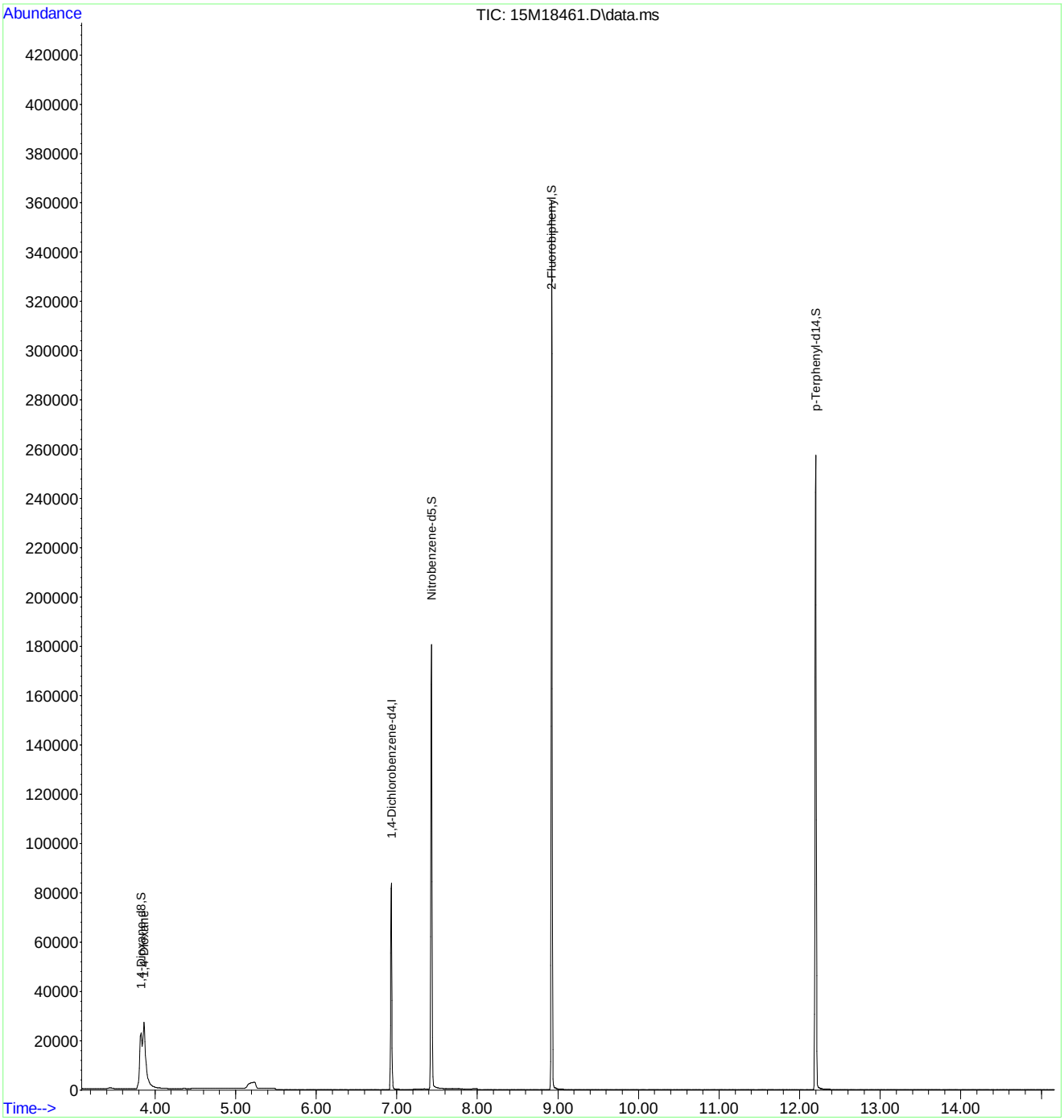

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18462.D
Acq On : 21 Jun 2016 11:34
Operator : MES
Sample : WG573501-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 22 08:04:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	44672	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.841	96	17660	0.9607 ug/L	0.01
Spiked Amount 5.000			Recovery	= 19.20%	
4) Nitrobenzene-d5	7.431	82	41409	0.8776 ug/L	0.00
Spiked Amount 5.000			Recovery	= 17.60%	
5) 2-Fluorobiphenyl	8.922	172	114491	0.9612 ug/L	0.00
Spiked Amount 5.000			Recovery	= 19.20%	
6) p-Terphenyl-d14	12.203	244	105713	0.9208 ug/L	0.02
Spiked Amount 5.000			Recovery	= 18.40%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.876	58	13250	0.9694 ug/L	82

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18462.D
Acq On : 21 Jun 2016 11:34
Operator : MES
Sample : WG573501-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 22 08:04:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

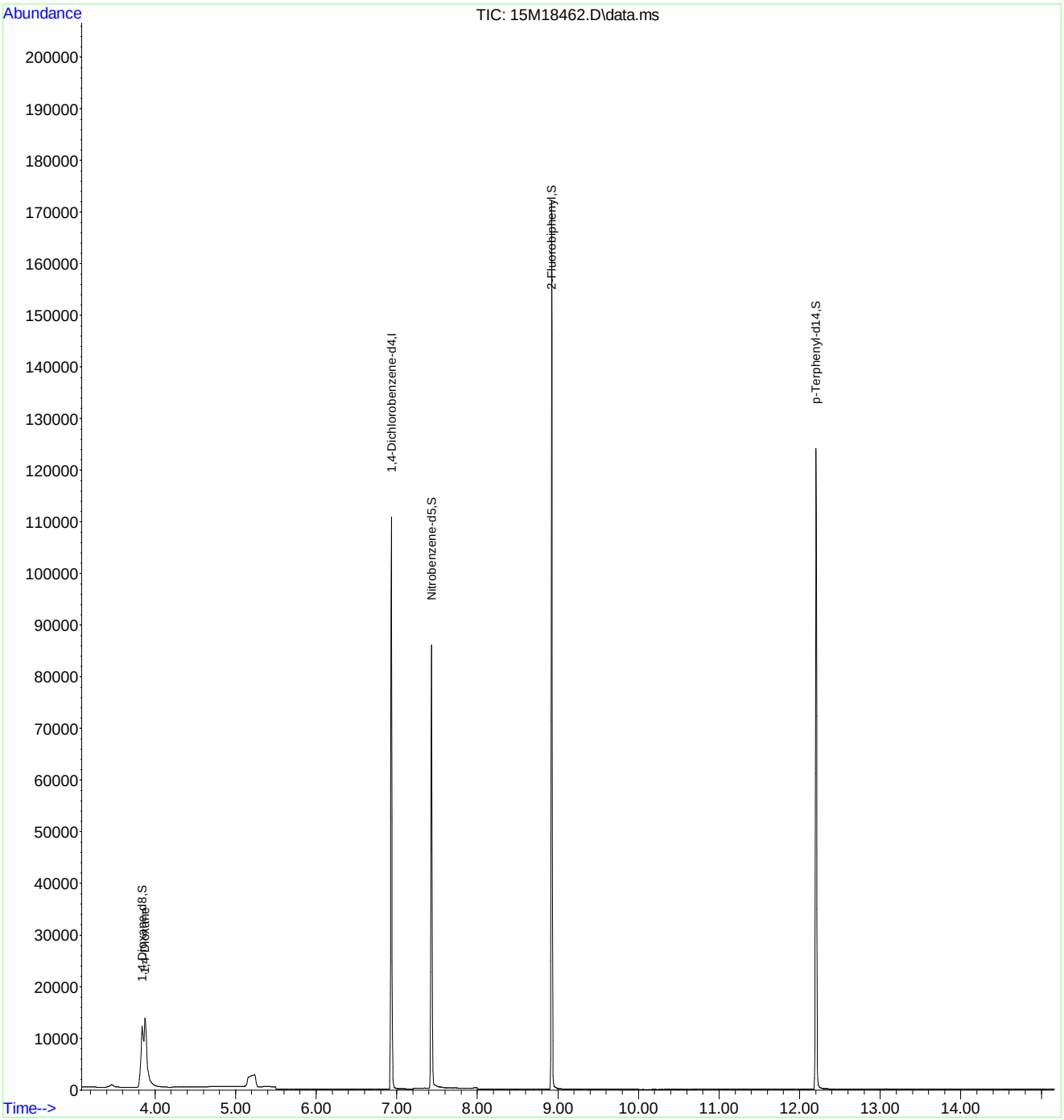

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18463.D
Acq On : 21 Jun 2016 11:57
Operator : MES
Sample : WG573501-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 22 08:04:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	45840	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.841	96	7629	0.4045	ug/L	0.01
Spiked Amount 5.000			Recovery	=	8.00%	
4) Nitrobenzene-d5	7.431	82	16604	0.3429	ug/L	0.00
Spiked Amount 5.000			Recovery	=	6.80%	
5) 2-Fluorobiphenyl	8.923	172	48617	0.3978	ug/L	0.00
Spiked Amount 5.000			Recovery	=	8.00%	
6) p-Terphenyl-d14	12.210	244	44097	0.3743	ug/L	0.03
Spiked Amount 5.000			Recovery	=	7.40%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.876	58	5650	0.4028	ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18463.D
Acq On : 21 Jun 2016 11:57
Operator : MES
Sample : WG573501-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 22 08:04:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

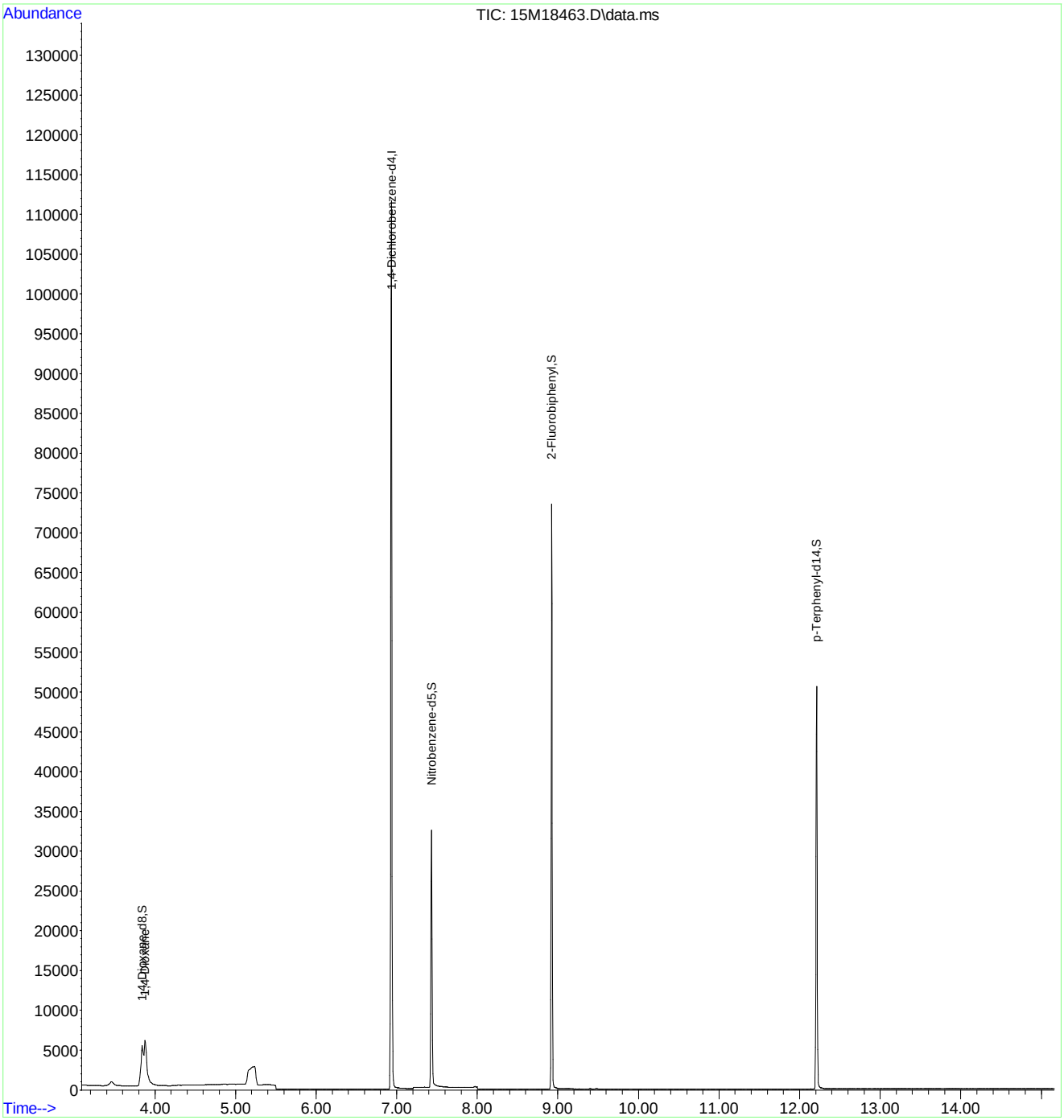

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	41944	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.792	96	22	0.0013	ug/L	-0.04
Spiked Amount 5.000			Recovery	=	0.00%	
4) Nitrobenzene-d5	7.436	82	56	0.0013	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
5) 2-Fluorobiphenyl	8.926	172	23	0.0002	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.214	244	128	0.0012	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	64750	5.0454	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	106	0.00
2	1,4-Dioxane	5.000	5.045	-0.9	106	0.00
3 S	1,4-Dioxane-d8	5.000	0.001	100.0#	0	-0.04
4 S	Nitrobenzene-d5	5.000	0.001	100.0#	0	0.00
5 S	2-Fluorobiphenyl	5.000	0.000	100.0#	0	0.00
6 S	p-Terphenyl-d14	5.000	0.001	100.0#	0	0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

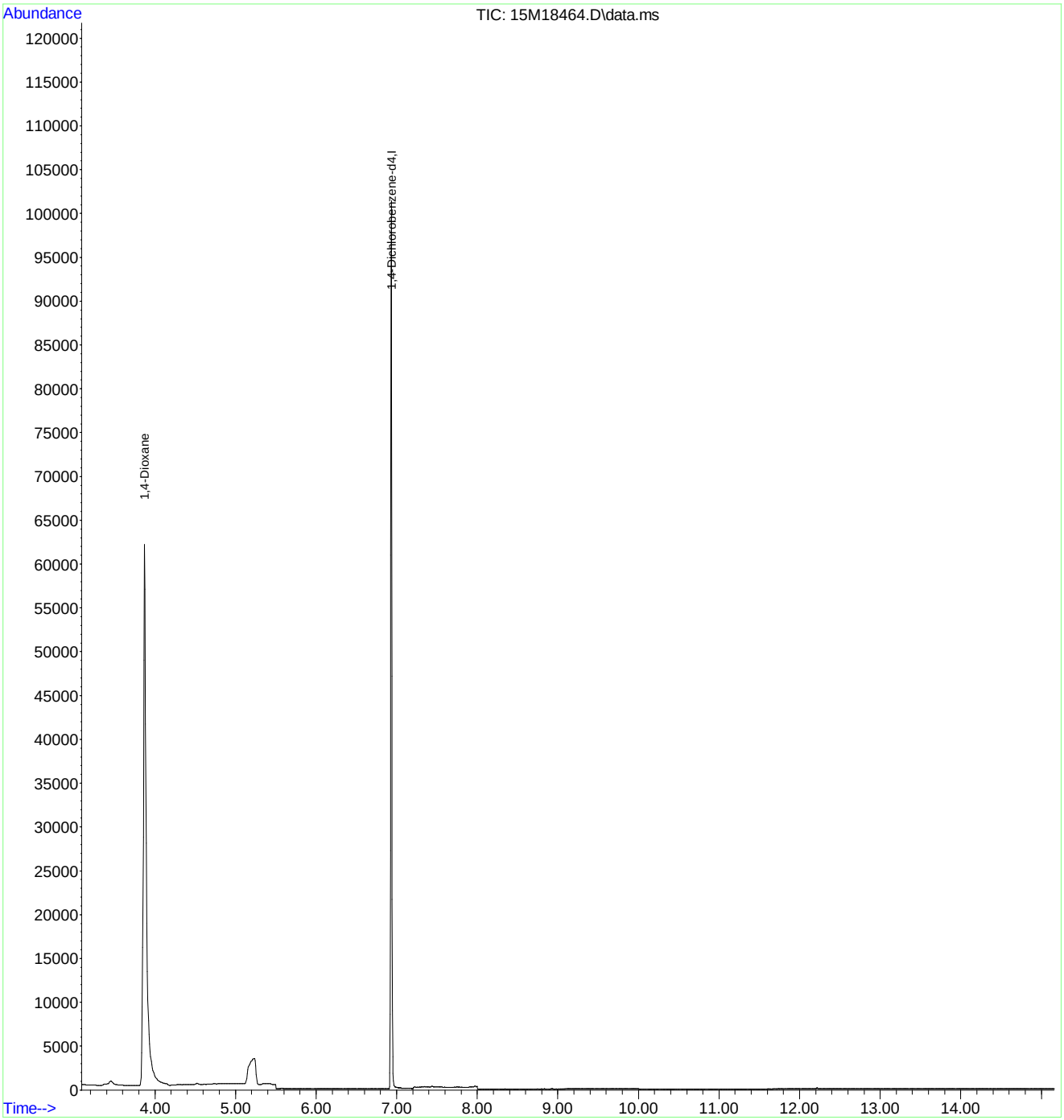

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18593.D
Acq On : 27 Jun 2016 12:37
Operator : MES
Sample : WG574241-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 27 13:07:36 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.892	152	42974	1.0000 ug/mL	#-0.04
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.749	96	78711	4.4512 ug/L	-0.08
Spiked Amount 5.000			Recovery	= 89.00%	
4) Nitrobenzene-d5	7.393	82	235288	5.1833 ug/L	-0.04
Spiked Amount 5.000			Recovery	= 103.60%	
5) 2-Fluorobiphenyl	8.886	172	551093	4.8097 ug/L	-0.04
Spiked Amount 5.000			Recovery	= 96.20%	
6) p-Terphenyl-d14	12.170	244	561144	5.0809 ug/L	-0.01
Spiked Amount 5.000			Recovery	= 101.60%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.785	58	57358	4.3623 ug/L	88

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Continuing Calibration Area and RT check

Instrument: HPMS15
Initial cal date: 06/21/16
CCV date: 06/27/16
CCV Filename: 15M18593

1,4-Dichlorobenzene-d4

	Amount	RT
InitCal	39637	6.93
CCV	42974	6.89

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18593.D
Acq On : 27 Jun 2016 12:37
Operator : MES
Sample : WG574241-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 27 13:07:36 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	108	-0.04
2	1,4-Dioxane	0.306	0.267	12.7	94	-0.08
3 S	1,4-Dioxane-d8	0.411	0.366	10.9	95	-0.08
4 S	Nitrobenzene-d5	1.056	1.095	-3.7	105	-0.04
5 S	2-Fluorobiphenyl	2.666	2.565	3.8	103	-0.04
6 S	p-Terphenyl-d14	2.570	2.612	-1.6	108	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18593.D
Acq On : 27 Jun 2016 12:37
Operator : MES
Sample : WG574241-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 27 13:07:36 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	108	-0.04
2	1,4-Dioxane	5.000	4.362	12.8	94	-0.08
3 S	1,4-Dioxane-d8	5.000	4.451	11.0	95	-0.08
4 S	Nitrobenzene-d5	5.000	5.183	-3.7	105	-0.04
5 S	2-Fluorobiphenyl	5.000	4.810	3.8	103	-0.04
6 S	p-Terphenyl-d14	5.000	5.081	-1.6	108	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18593.D
Acq On : 27 Jun 2016 12:37
Operator : MES
Sample : WG574241-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 27 13:07:36 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

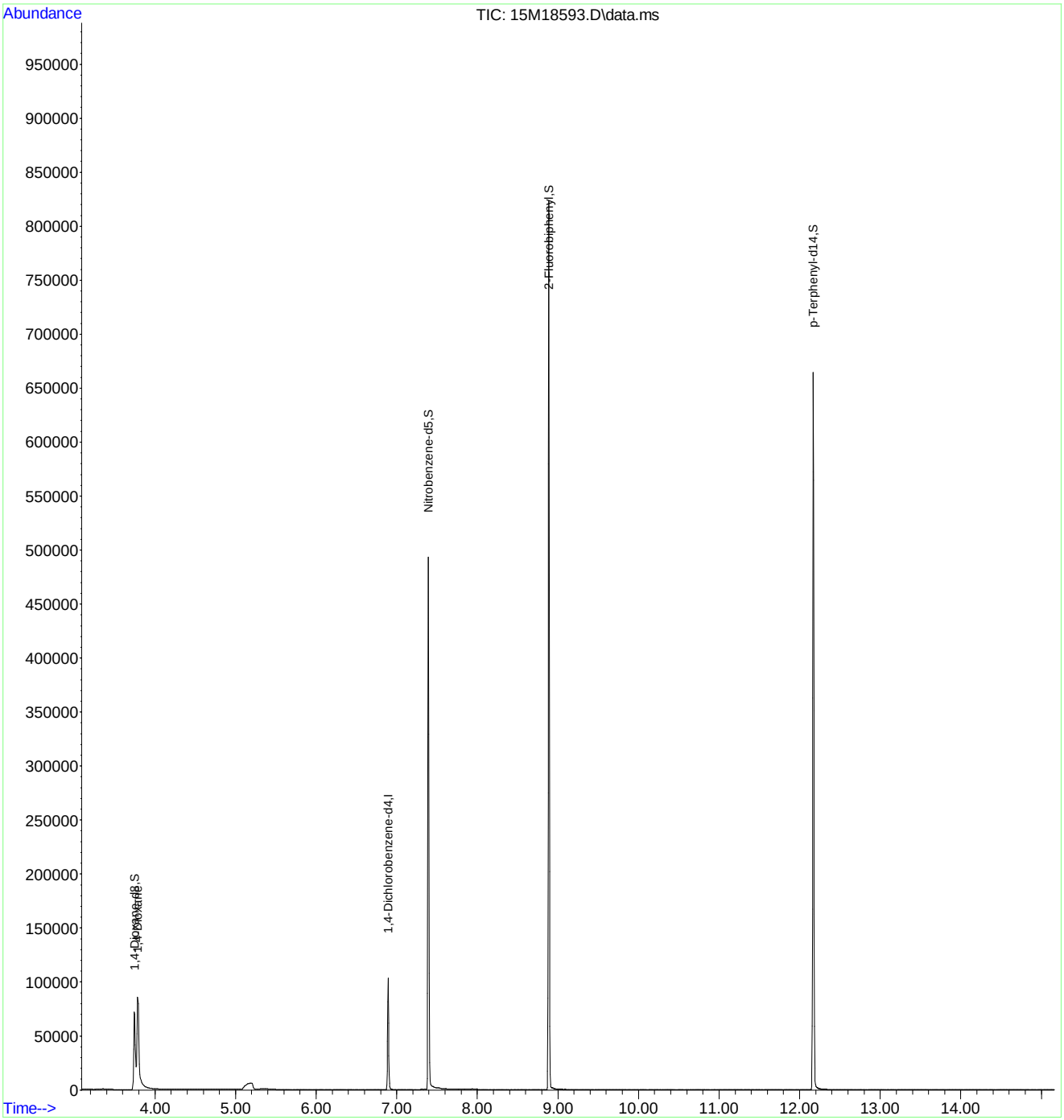

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18717.D
Acq On : 5 Jul 2016 14:51
Operator : MES
Sample : WG575159-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 05 15:07:06 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.867	152	50685	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.778	96	100564	4.8218	ug/L	0.00
Spiked Amount 5.000			Recovery	=	96.40%	
4) Nitrobenzene-d5	7.367	82	310249	5.7949	ug/L	0.00
Spiked Amount 5.000			Recovery	=	115.80%	
5) 2-Fluorobiphenyl	8.853	172	677739	5.0151	ug/L	0.00
Spiked Amount 5.000			Recovery	=	100.40%	
6) p-Terphenyl-d14	12.122	244	688752	5.2876	ug/L	0.03
Spiked Amount 5.000			Recovery	=	105.80%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.813	58	81128	5.2314	ug/L	78

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Continuing Calibration Area and RT check

Instrument: HPMS15
Initial cal date: 06/21/16
CCV date: 07/05/16
CCV Filename: 15M18717

1,4-Dichlorobenzene-d4

	Amount	RT
InitCal	39637	6.93
CCV	50685	6.87

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18717.D
Acq On : 5 Jul 2016 14:51
Operator : MES
Sample : WG575159-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 05 15:07:06 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	128	0.00
2	1,4-Dioxane	5.000	5.231	-4.6	133	0.00
3 S	1,4-Dioxane-d8	5.000	4.822	3.6	122	0.00
4 S	Nitrobenzene-d5	5.000	5.795	-15.9	139	0.00
5 S	2-Fluorobiphenyl	5.000	5.015	-0.3	127	0.00
6 S	p-Terphenyl-d14	5.000	5.288	-5.8	133	0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18717.D
Acq On : 5 Jul 2016 14:51
Operator : MES
Sample : WG575159-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 05 15:07:06 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

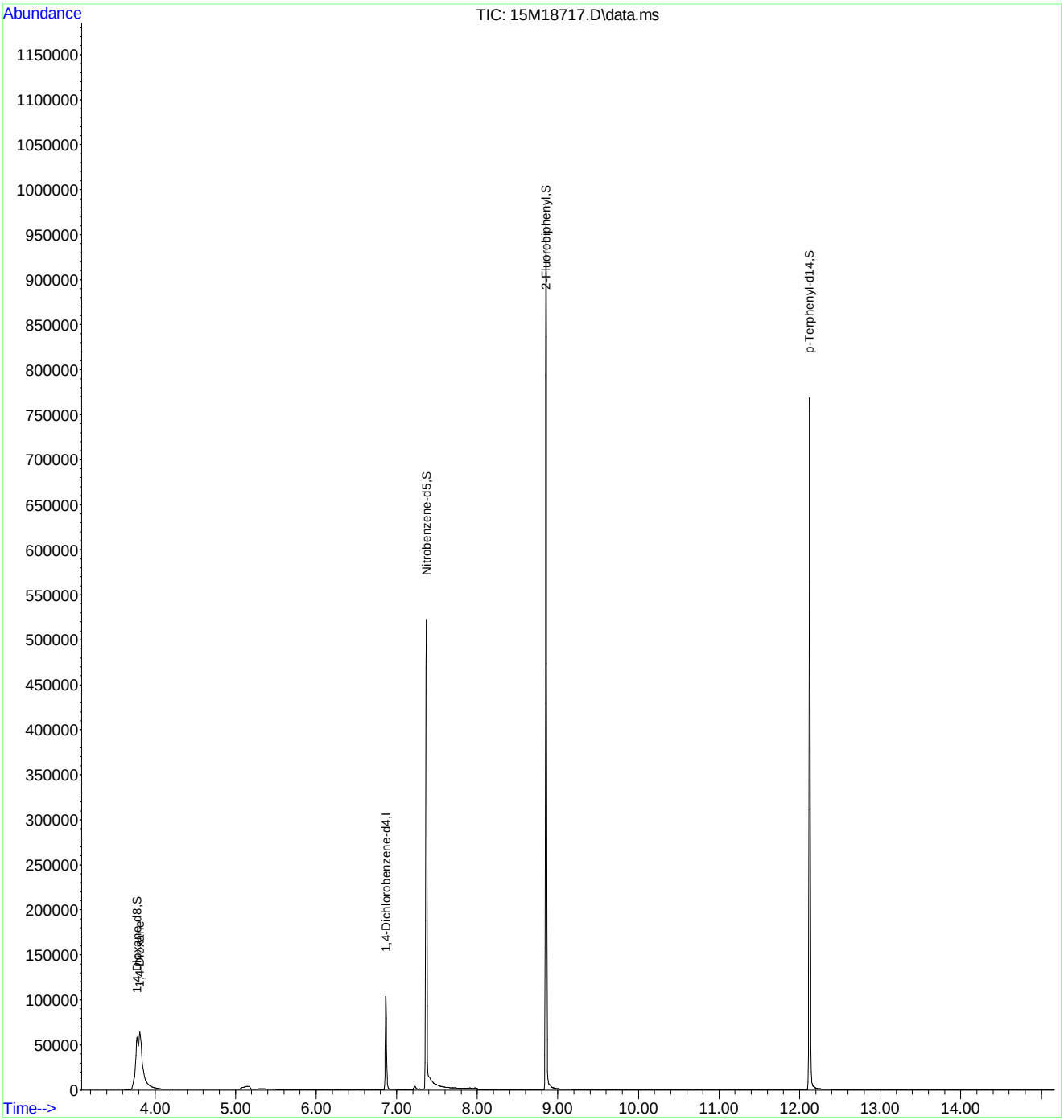

2.2.1.5 Raw QC Data

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

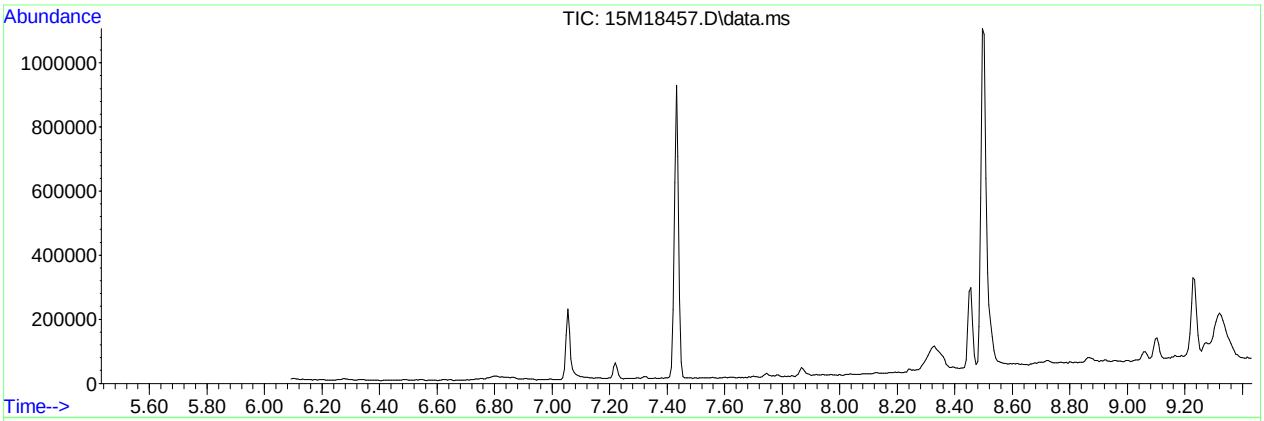

AutoFind: Scans 234, 235, 236; Background Corrected with Scan 228

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	38.8	34488	PASS
68	69	0.00	2	1.4	500	PASS
69	198	0.00	100	41.4	36833	PASS
70	69	0.00	2	0.5	172	PASS
127	198	40	60	51.9	46131	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	88880	PASS
199	198	5	9	6.7	5918	PASS
275	198	10	30	24.9	22090	PASS
365	198	1	100	2.7	2358	PASS
441	443	0.01	100	75.7	9586	PASS
442	198	40	100	73.4	65261	PASS
443	442	17	23	19.4	12659	PASS

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

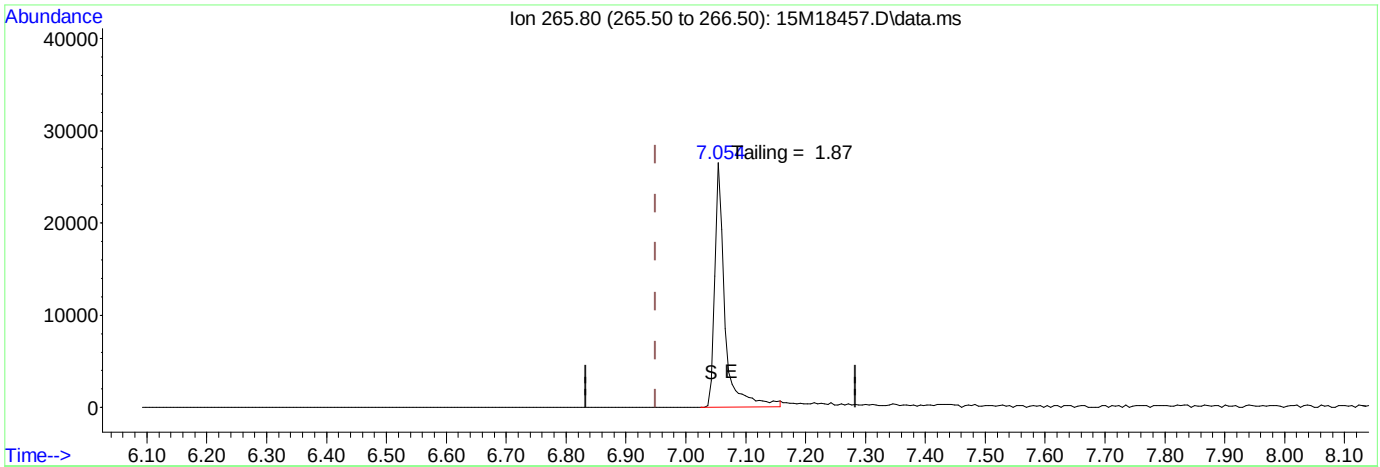

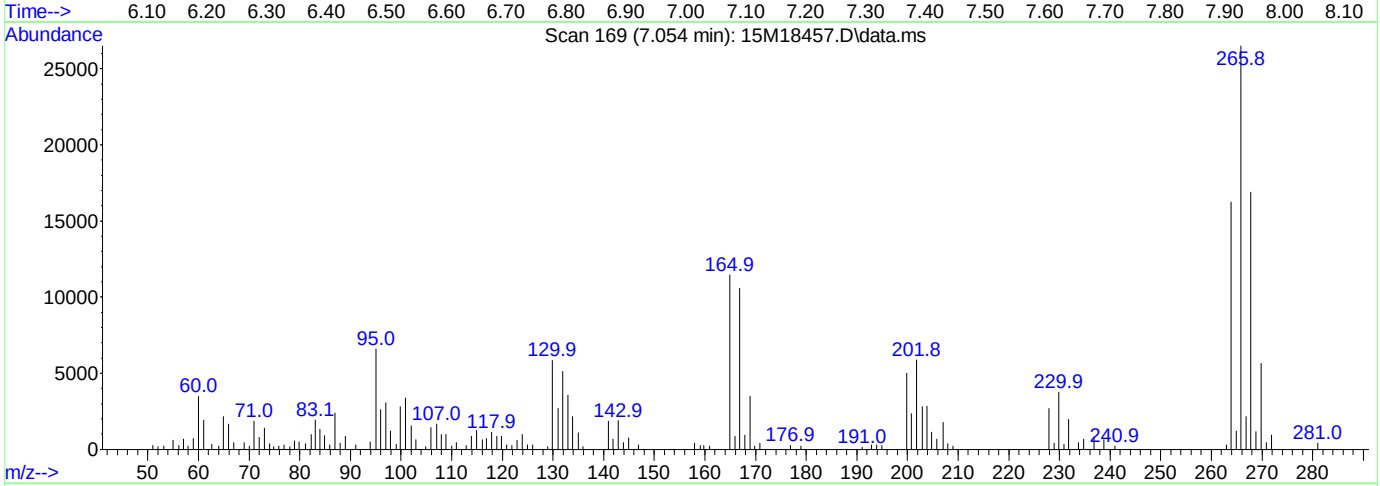

TIC: 15M18457.D\data.ms

(1) Pentachlorophenol

7.054min (+ 0.105) 0.00 ug/ml

response 30738

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

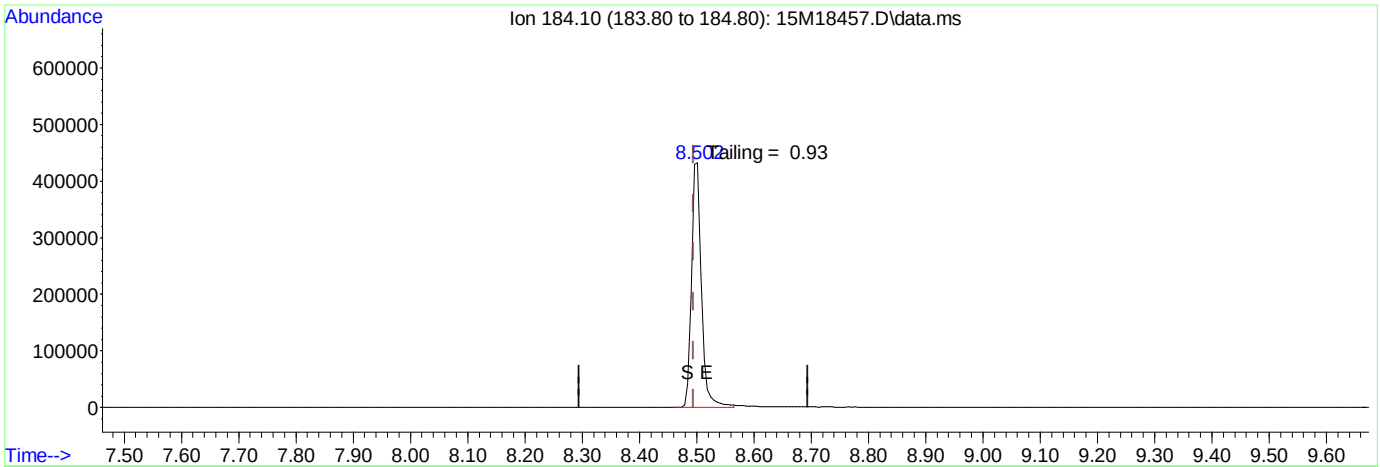

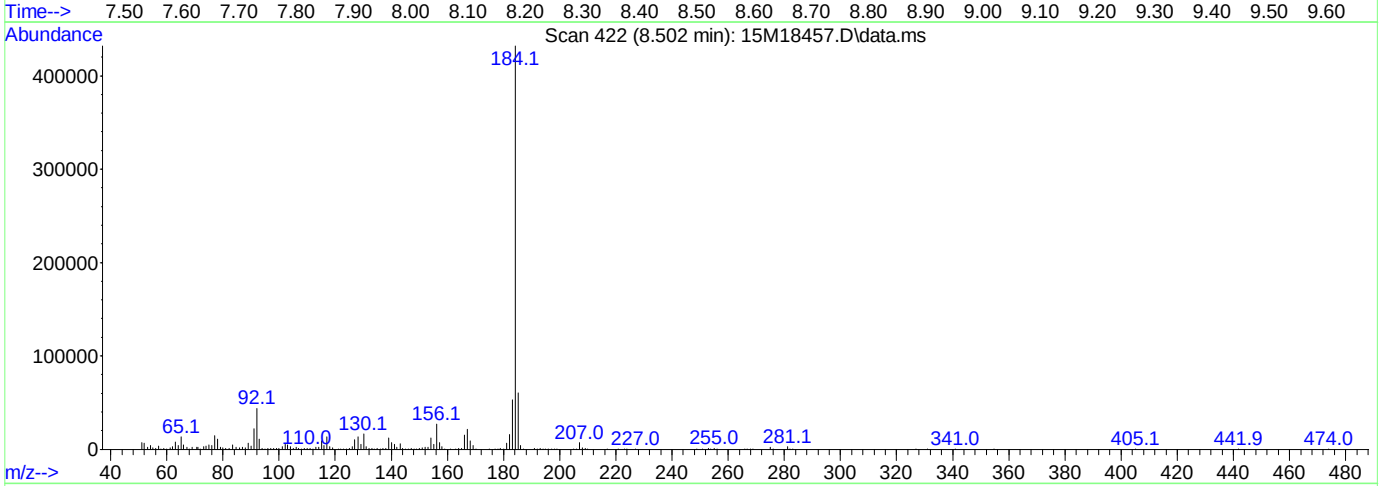

TIC: 15M18457.D\data.ms

(2) Benzidine

8.502min (+ 0.008) 0.00 ug/ml

response 532770

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

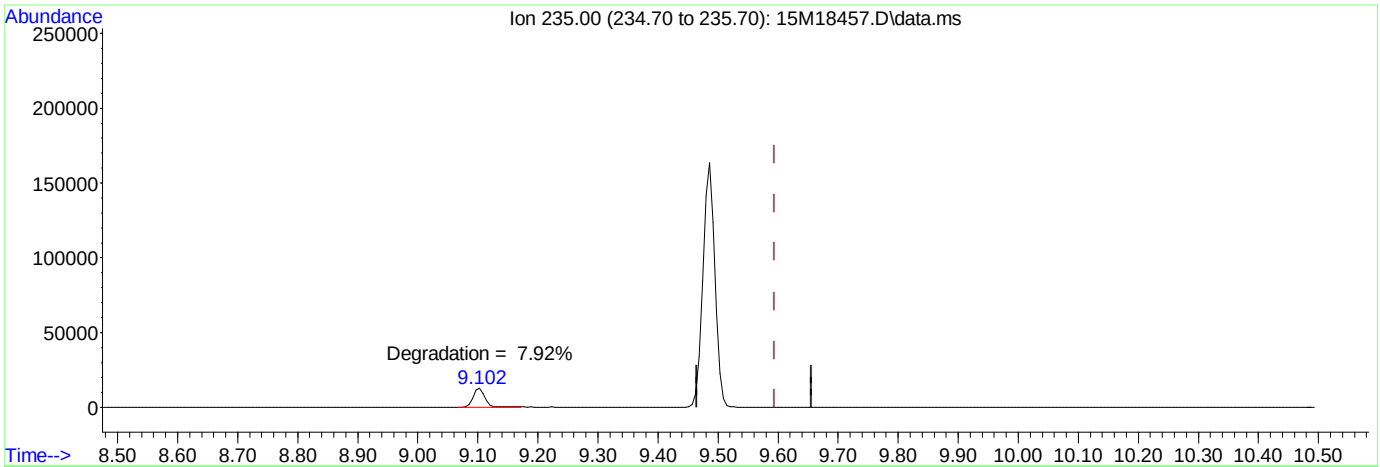

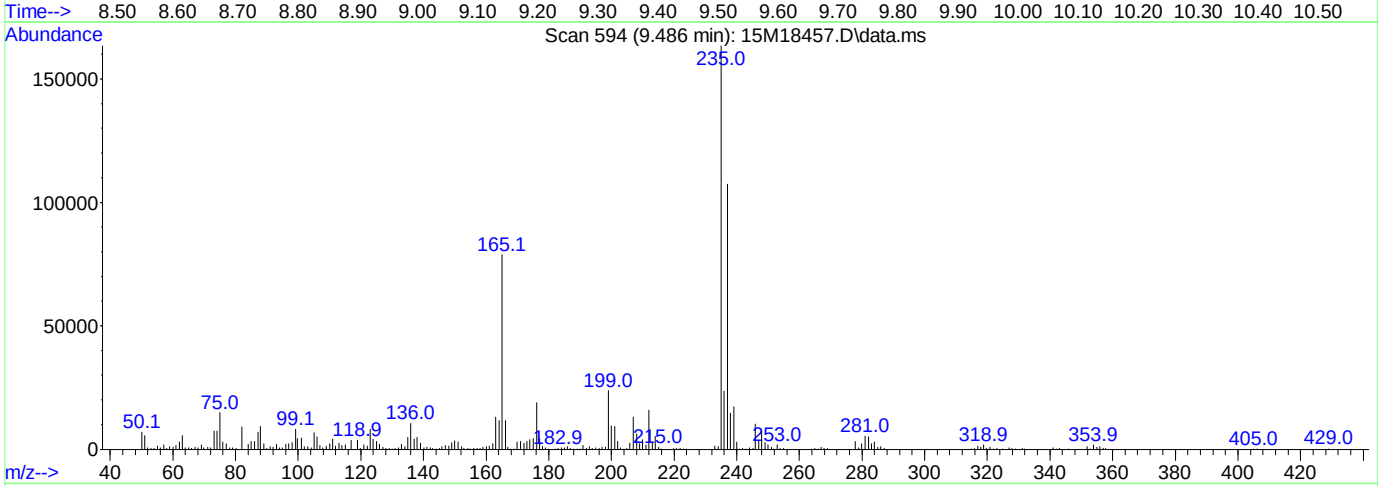

TIC: 15M18457.D\data.ms

(3) DDT

9.486min (-0.108) 0.00 ug/ml

response 180187

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18592.D
Acq On : 27 Jun 2016 12:20
Operator : MES
Sample : WG574241-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

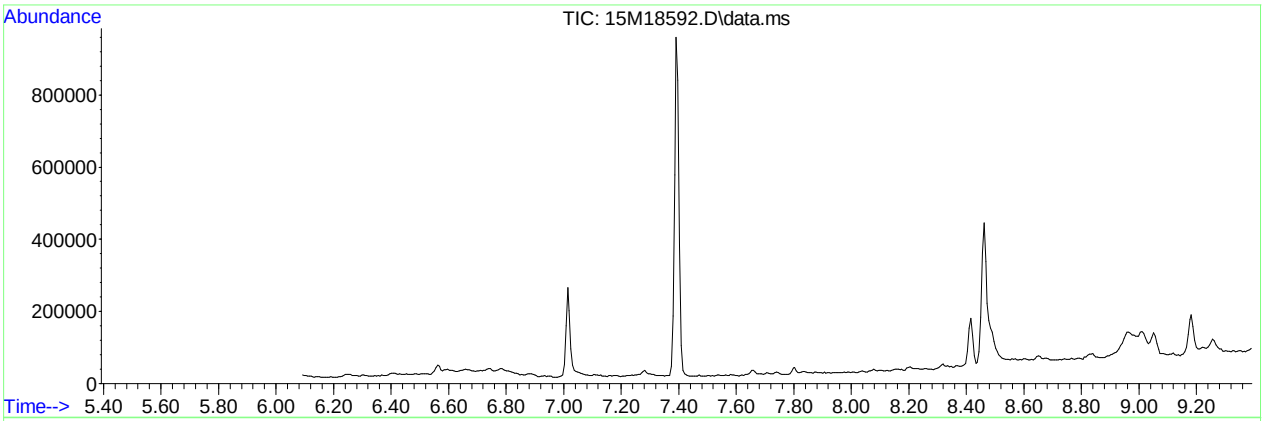

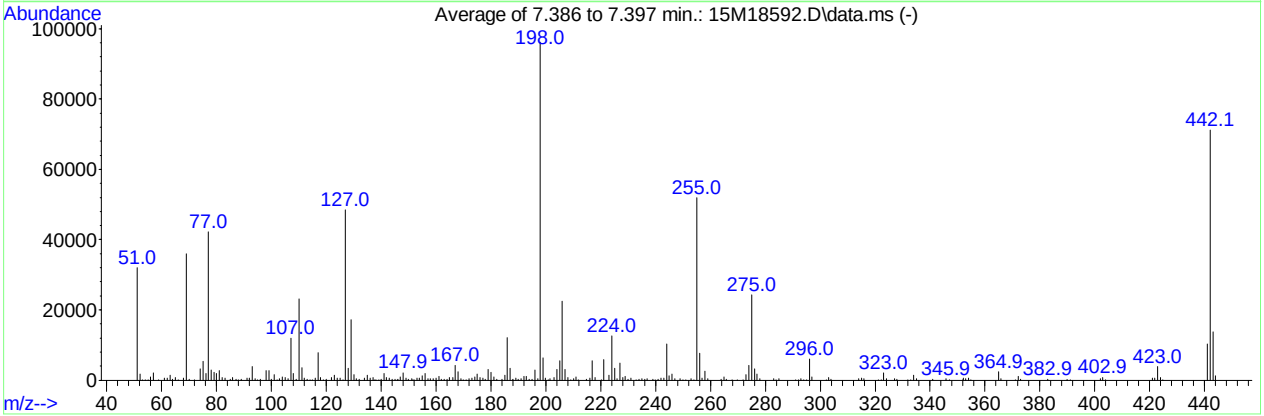

AutoFind: Scans 227, 228, 229; Background Corrected with Scan 221

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	33.2	31989	PASS
68	69	0.00	2	1.6	580	PASS
69	198	0.00	100	37.4	35954	PASS
70	69	0.00	2	0.6	222	PASS
127	198	40	60	50.4	48459	PASS
197	198	0.00	1	0.4	409	PASS
198	198	100	100	100.0	96232	PASS
199	198	5	9	6.6	6399	PASS
275	198	10	30	25.2	24236	PASS
365	198	1	100	2.5	2410	PASS
441	443	0.01	100	75.7	10371	PASS
442	198	40	100	73.9	71133	PASS
443	442	17	23	19.3	13708	PASS

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18592.D
Acq On : 27 Jun 2016 12:20
Operator : MES
Sample : WG574241-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 27 12:31:57 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

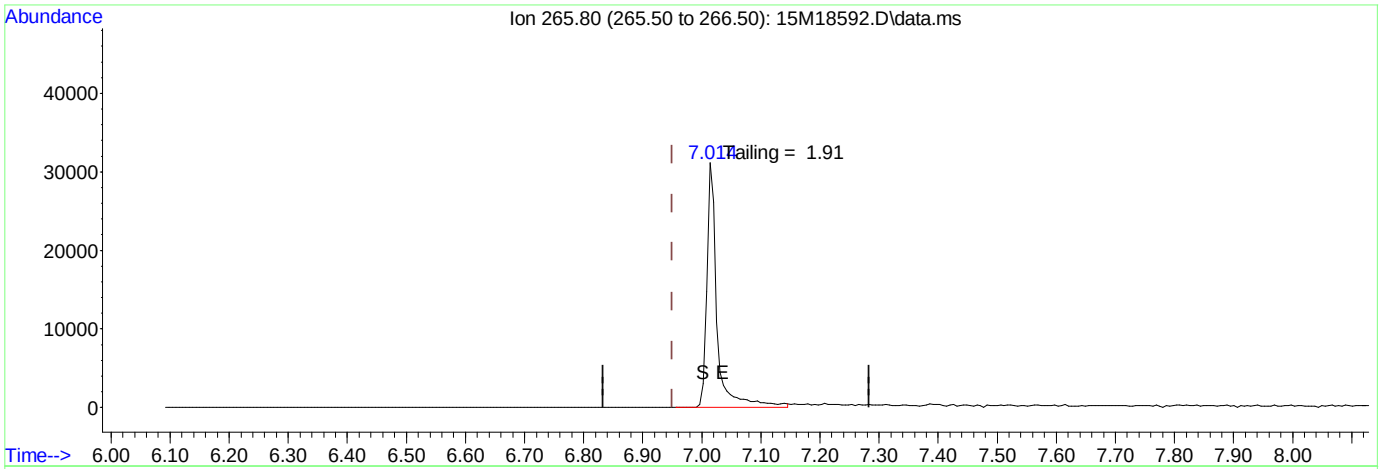

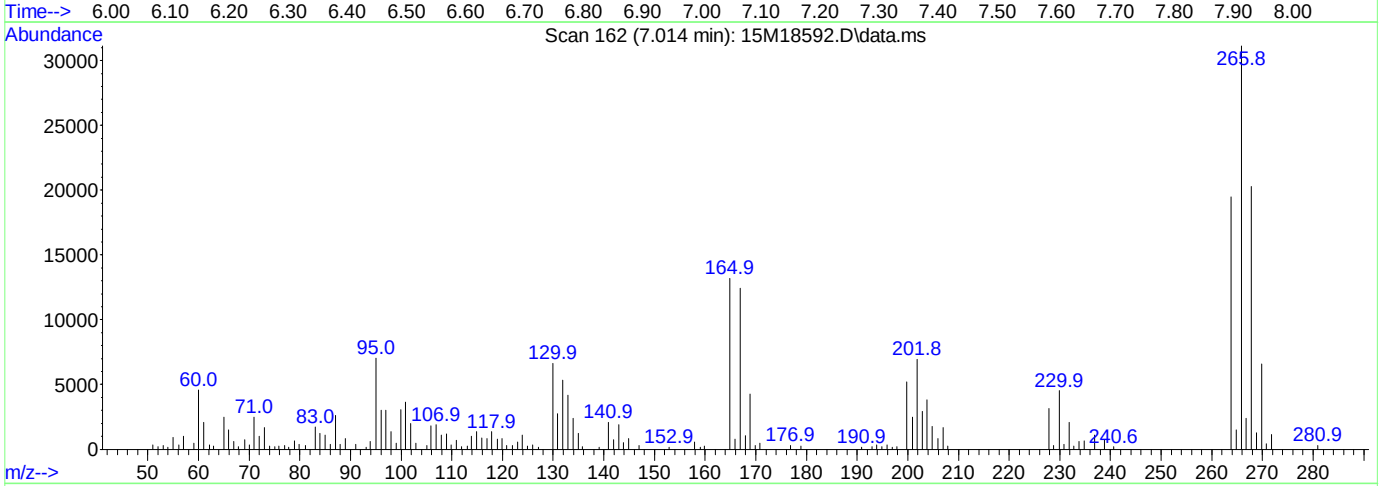

(1) Pentachlorophenol

7.014min (+ 0.065) 0.00 ug/ml

response 37276

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18592.D
Acq On : 27 Jun 2016 12:20
Operator : MES
Sample : WG574241-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 27 12:31:57 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

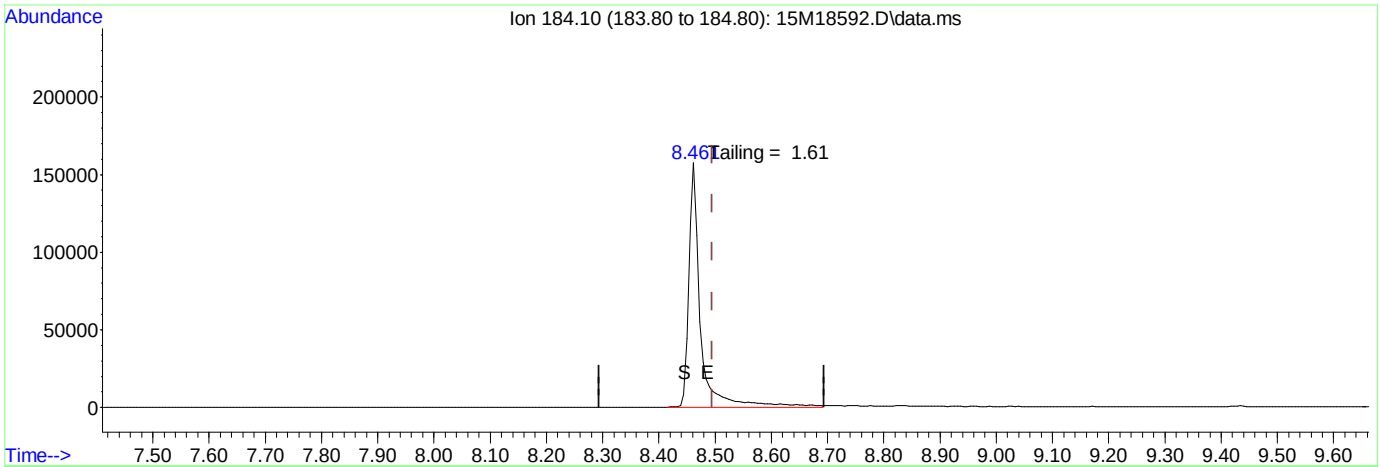

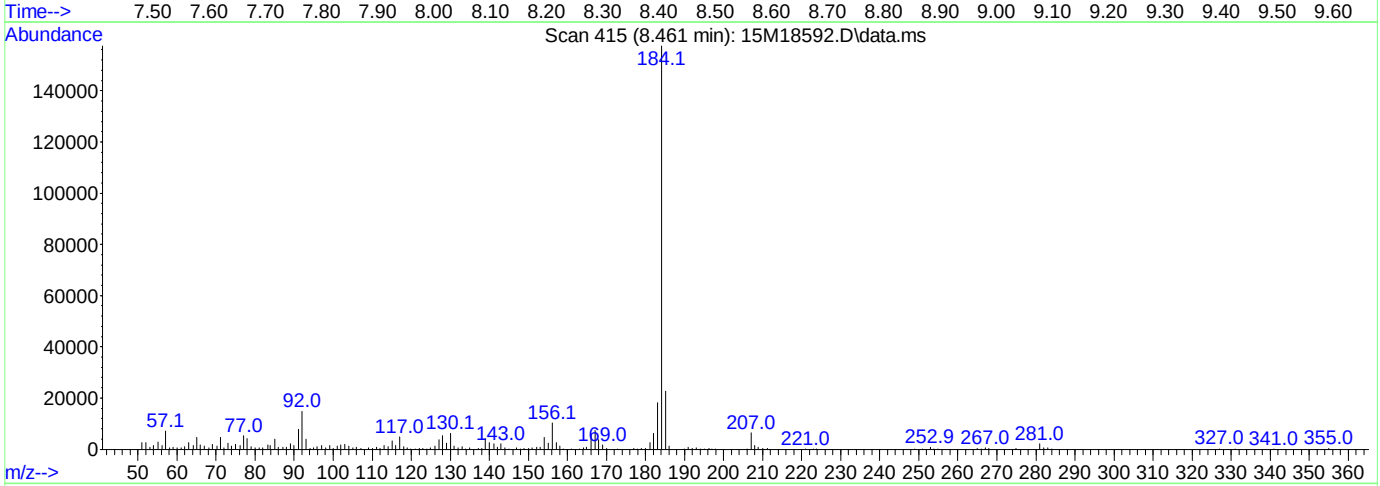

TIC: 15M18592.D\data.ms

(2) Benzidine

8.461min (-0.033) 0.00 ug/ml

response 225697

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18592.D
Acq On : 27 Jun 2016 12:20
Operator : MES
Sample : WG574241-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 27 12:31:57 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

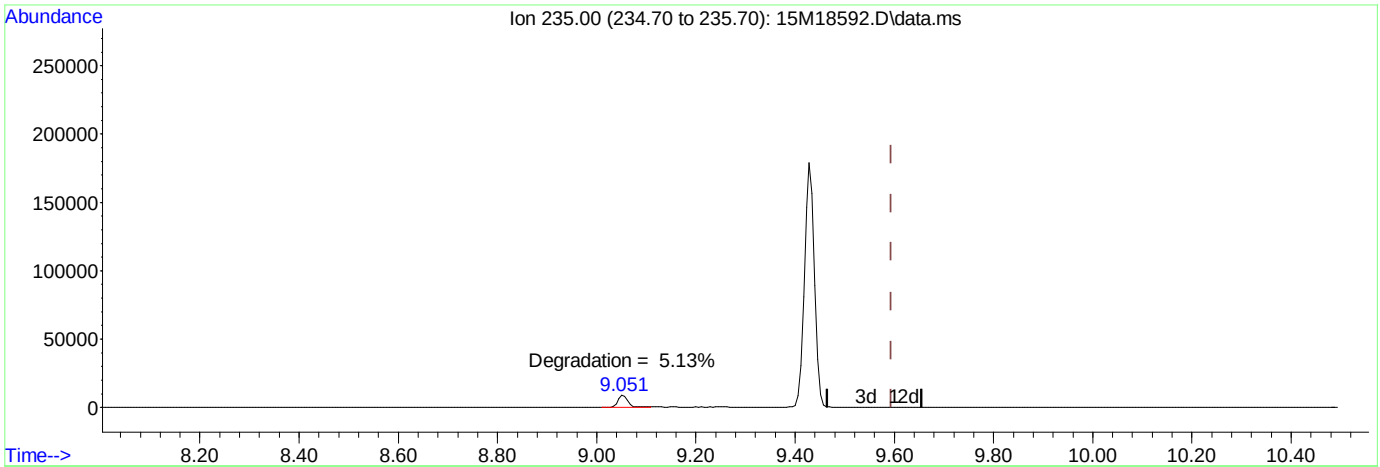

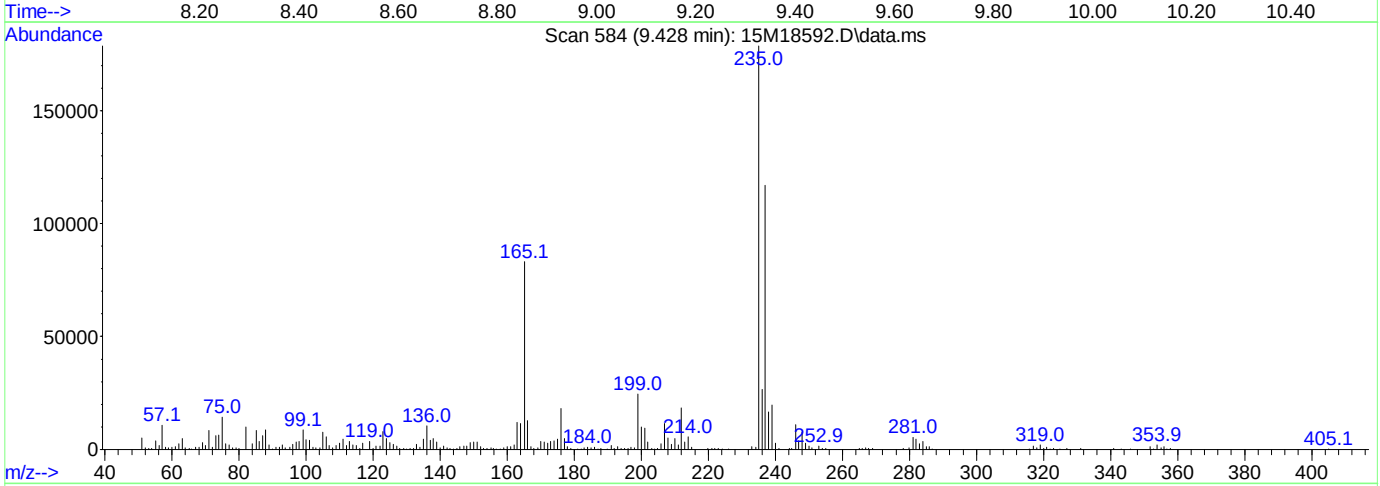

TIC: 15M18592.D\data.ms

(3) DDT

9.428min (-0.166) 0.00 ug/ml mint

response 273417

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18716.D
Acq On : 5 Jul 2016 14:33
Operator : MES
Sample : WG575159-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

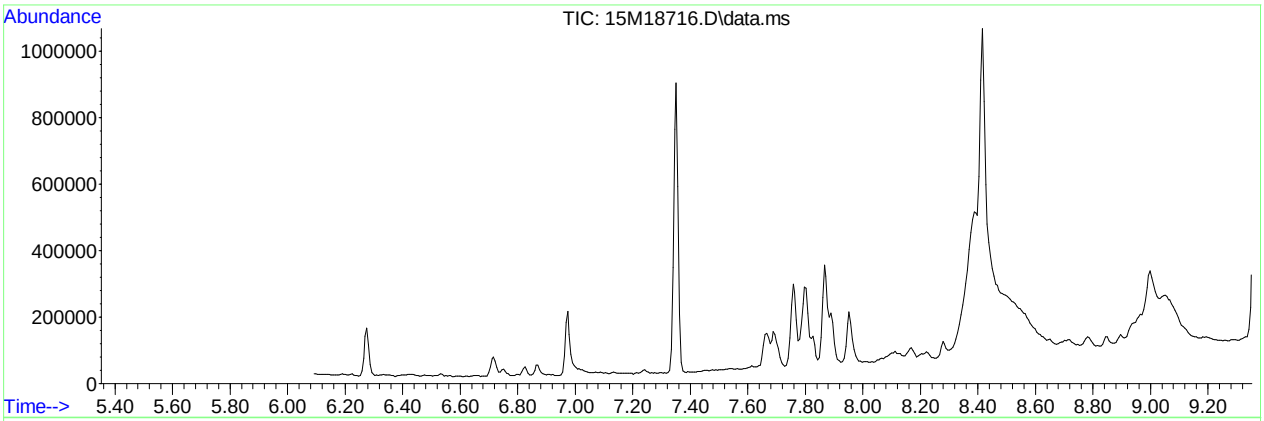

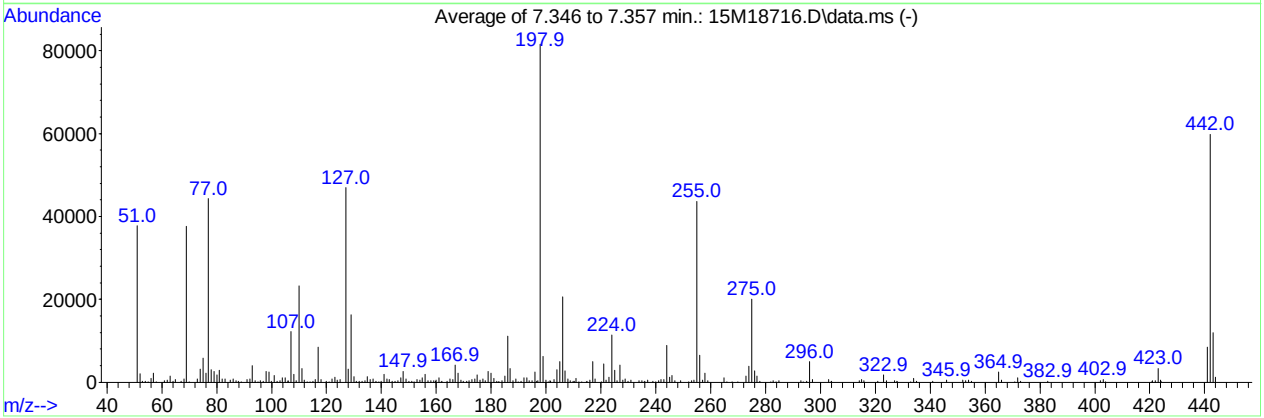

AutoFind: Scans 220, 221, 222; Background Corrected with Scan 214

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	46.2	37745	PASS
68	69	0.00	2	1.9	734	PASS
69	198	0.00	100	46.2	37667	PASS
70	69	0.00	2	0.3	127	PASS
127	198	40	60	57.5	46941	PASS
197	198	0.00	1	0.4	310	PASS
198	198	100	100	100.0	81613	PASS
199	198	5	9	7.6	6162	PASS
275	198	10	30	24.6	20072	PASS
365	198	1	100	2.9	2392	PASS
441	443	0.01	100	70.8	8479	PASS
442	198	40	100	73.3	59805	PASS
443	442	17	23	20.0	11980	PASS

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18716.D
Acq On : 5 Jul 2016 14:33
Operator : MES
Sample : WG575159-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 05 14:45:10 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

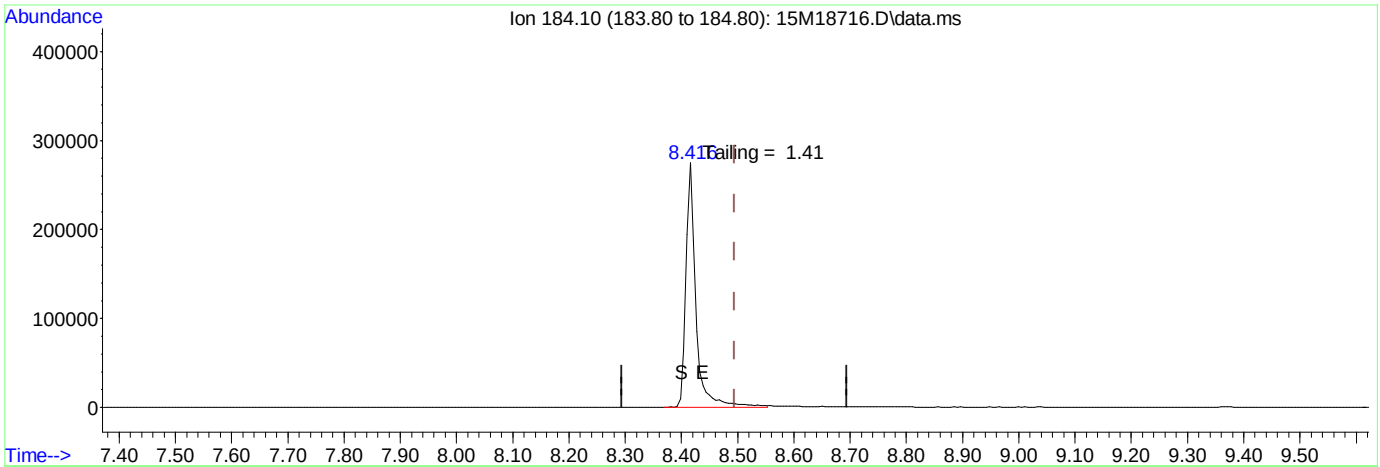

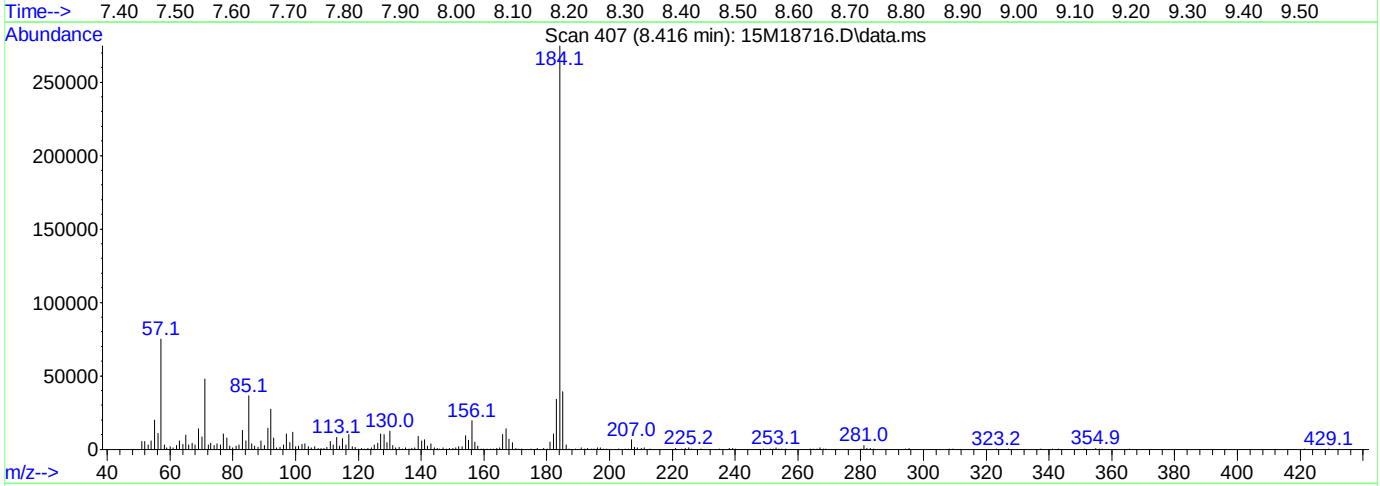

TIC: 15M18716.D\data.ms

(2) Benzidine

8.416min (-0.078) 0.00 ug/ml

response 340801

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18716.D
Acq On : 5 Jul 2016 14:33
Operator : MES
Sample : WG575159-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 05 14:45:10 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

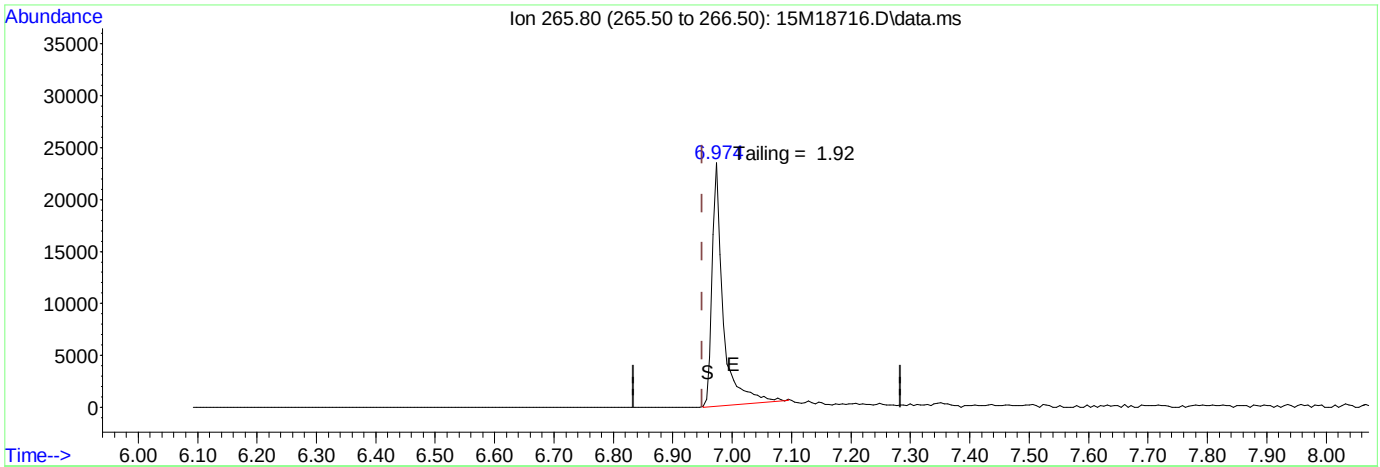

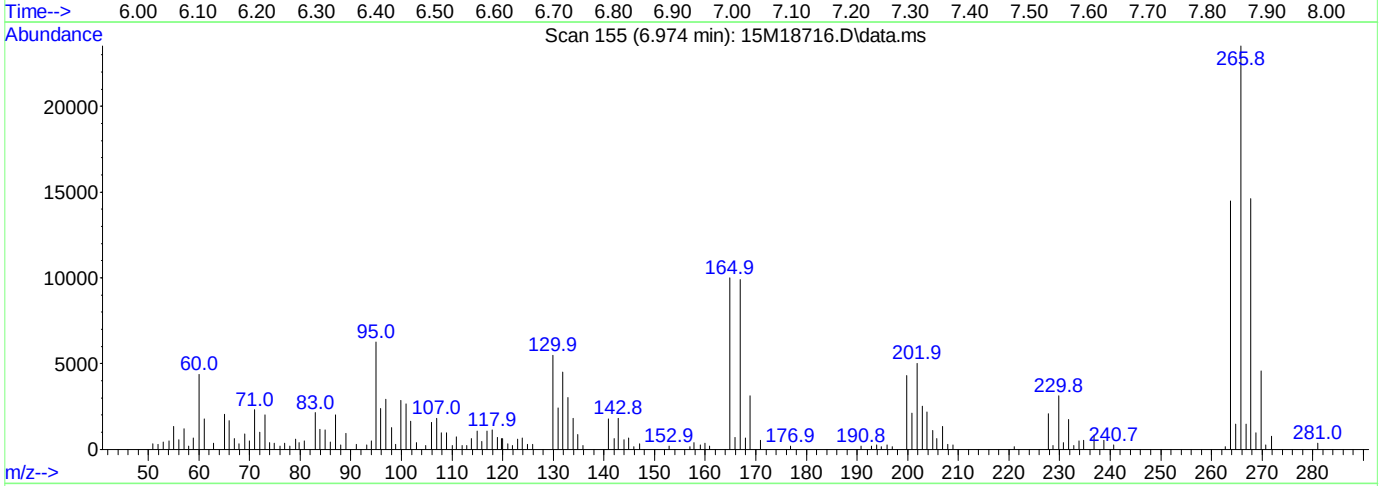

(1) Pentachlorophenol

6.974min (+ 0.025) 0.00 ug/ml

response 32364

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18716.D
Acq On : 5 Jul 2016 14:33
Operator : MES
Sample : WG575159-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 05 14:45:10 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

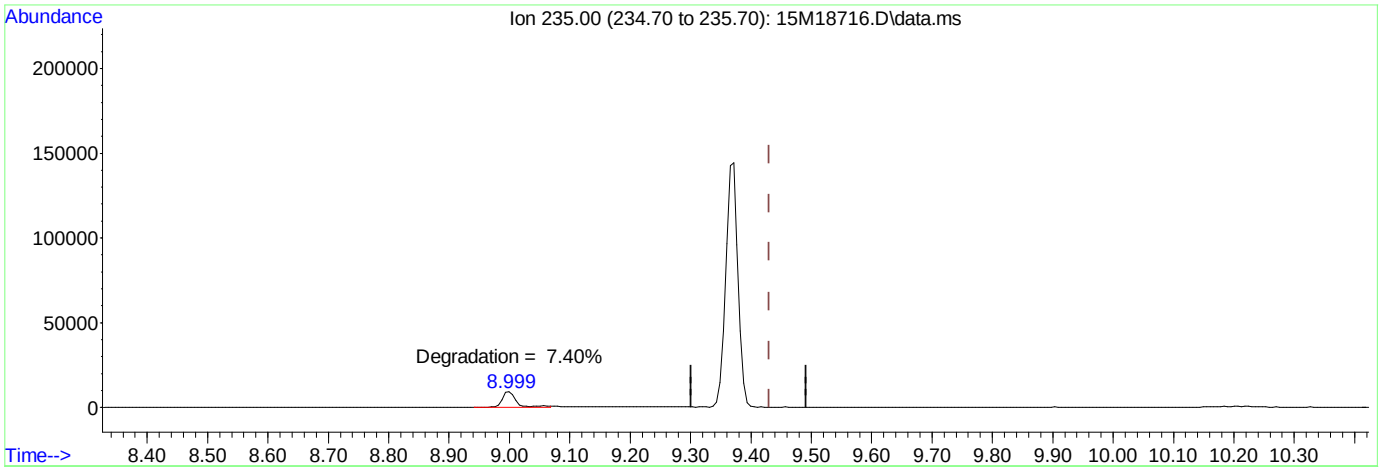

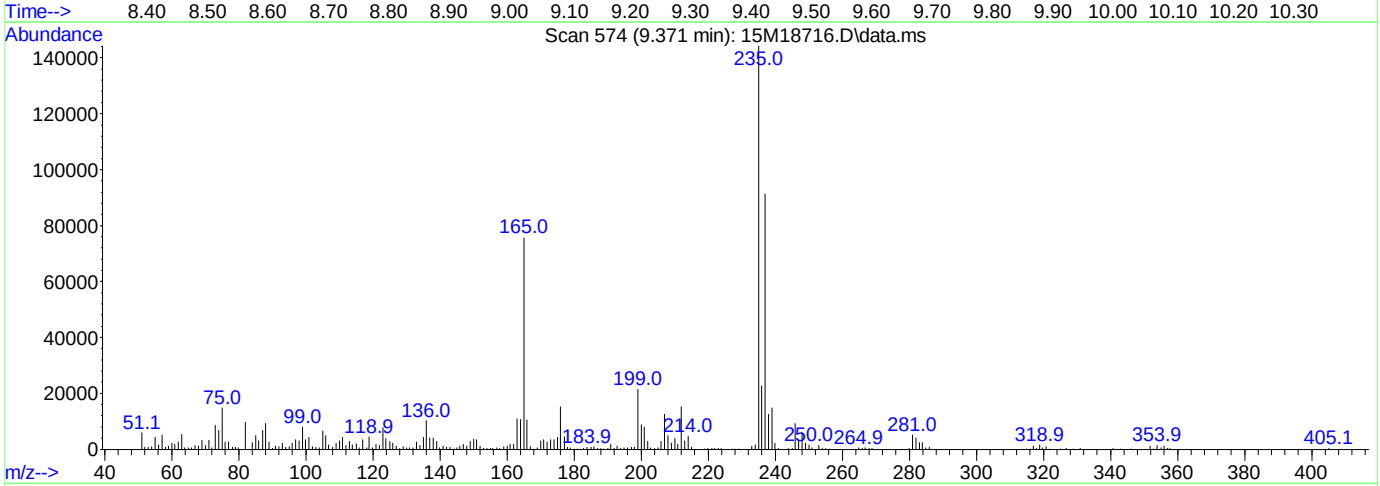

(3) DDT

9.371min (-0.059) 0.00 ug/ml

response 208755

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18597.D
Acq On : 27 Jun 2016 14:22
Operator : MES
Sample : WG573812-01 BLANK 6/22
Misc : 1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 27 17:44:10 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.896	152	38478	1.0000	ug/mL	#-0.04
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.749	96	23026	1.4543	ug/L	-0.08
Spiked Amount 5.000			Recovery = 29.00%			
4) Nitrobenzene-d5	7.393	82	809059	19.9059	ug/L	-0.04
Spiked Amount 5.000			Recovery = 398.20%			
5) 2-Fluorobiphenyl	8.889	172	1650481	16.0878	ug/L	-0.03
Spiked Amount 5.000			Recovery = 321.80%			
6) p-Terphenyl-d14	12.184	244	3974204	40.1893	ug/L	0.00
Spiked Amount 5.000			Recovery = 803.80%			

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18597.D
Acq On : 27 Jun 2016 14:22
Operator : MES
Sample : WG573812-01 BLANK 6/22
Misc : 1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 27 17:44:10 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

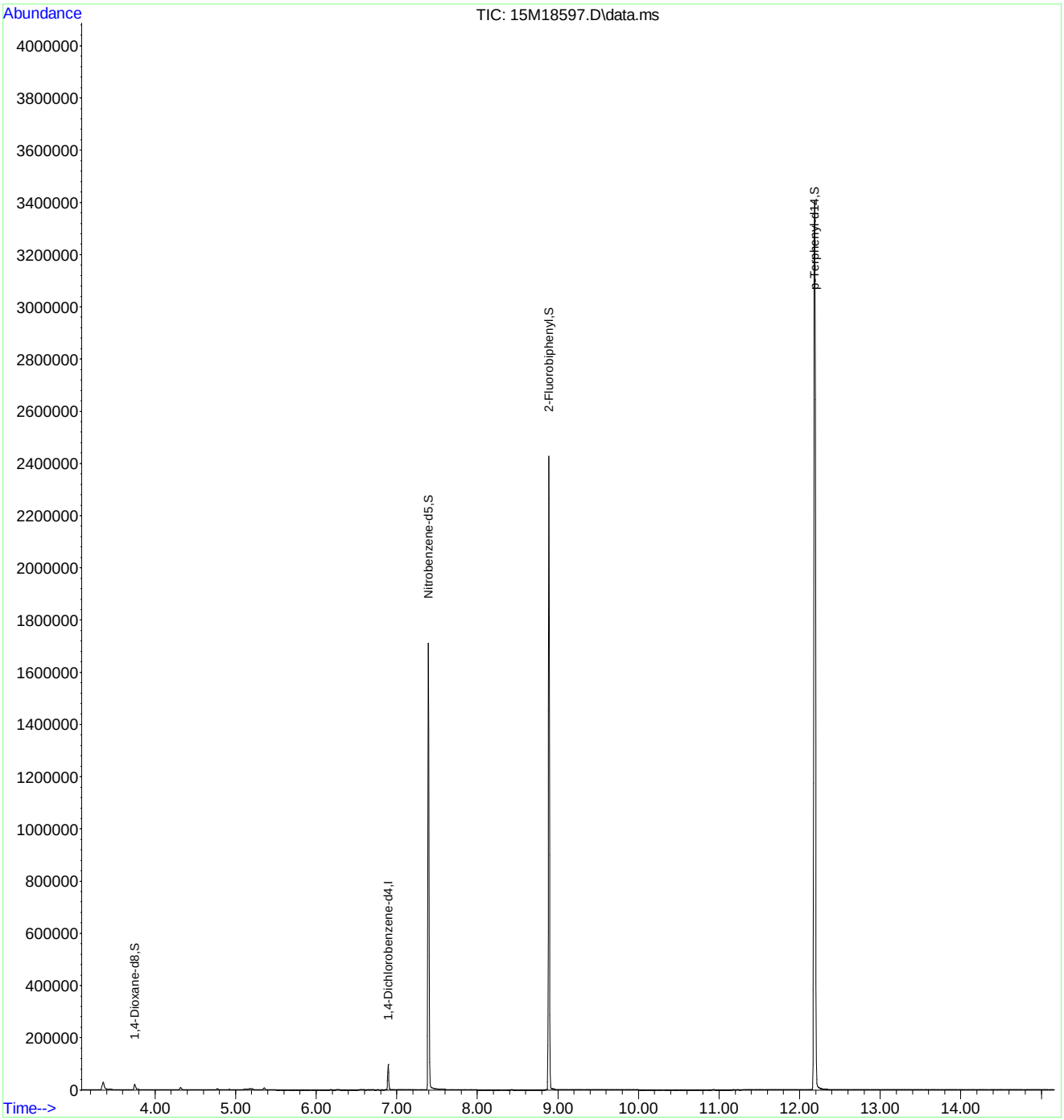

DIOXANE_D8.M Mon Jun 27 17:44:11 2016 Page: 2

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18718.D
Acq On : 5 Jul 2016 15:14
Operator : MES
Sample : WG574706-01 BLANK 6/30
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jul 05 16:37:18 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.867	152	36576	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.785	96	21271	1.4133	ug/L	0.00
Spiked Amount 5.000			Recovery	=	28.20%	
4) Nitrobenzene-d5	7.372	82	1968	0.0509	ug/L	0.00
Spiked Amount 5.000			Recovery	=	1.00%	
5) 2-Fluorobiphenyl	8.853	172	65	0.0007	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.114	244	1088	0.0116	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.20%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18718.D
Acq On : 5 Jul 2016 15:14
Operator : MES
Sample : WG574706-01 BLANK 6/30
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jul 05 16:37:18 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

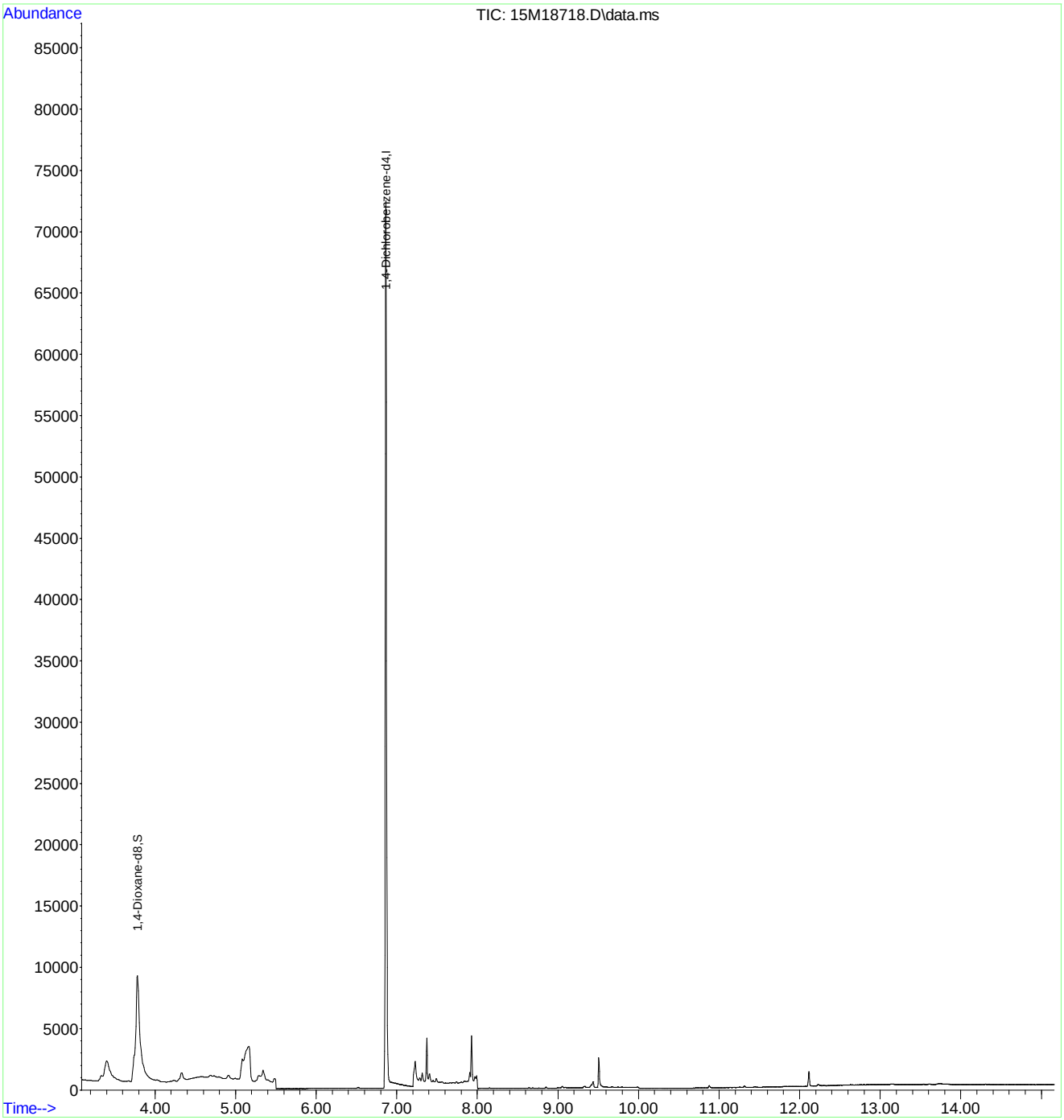

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18598.D
Acq On : 27 Jun 2016 14:45
Operator : MES
Sample : WG573812-02 LCS 6/22
Misc : 1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 27 17:47:18 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.896	152	47423	1.0000	ug/mL	#-0.04
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.764	96	32479	1.6644	ug/L	-0.06
Spiked Amount 5.000			Recovery	=	33.20%	
4) Nitrobenzene-d5	7.404	82	1302	0.0260	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.60%	
5) 2-Fluorobiphenyl	8.890	172	587	0.0046	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.199	244	733	0.0060	ug/L	0.02
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.806	58	23052	1.5887	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18598.D
Acq On : 27 Jun 2016 14:45
Operator : MES
Sample : WG573812-02 LCS 6/22
Misc : 1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 27 17:47:18 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

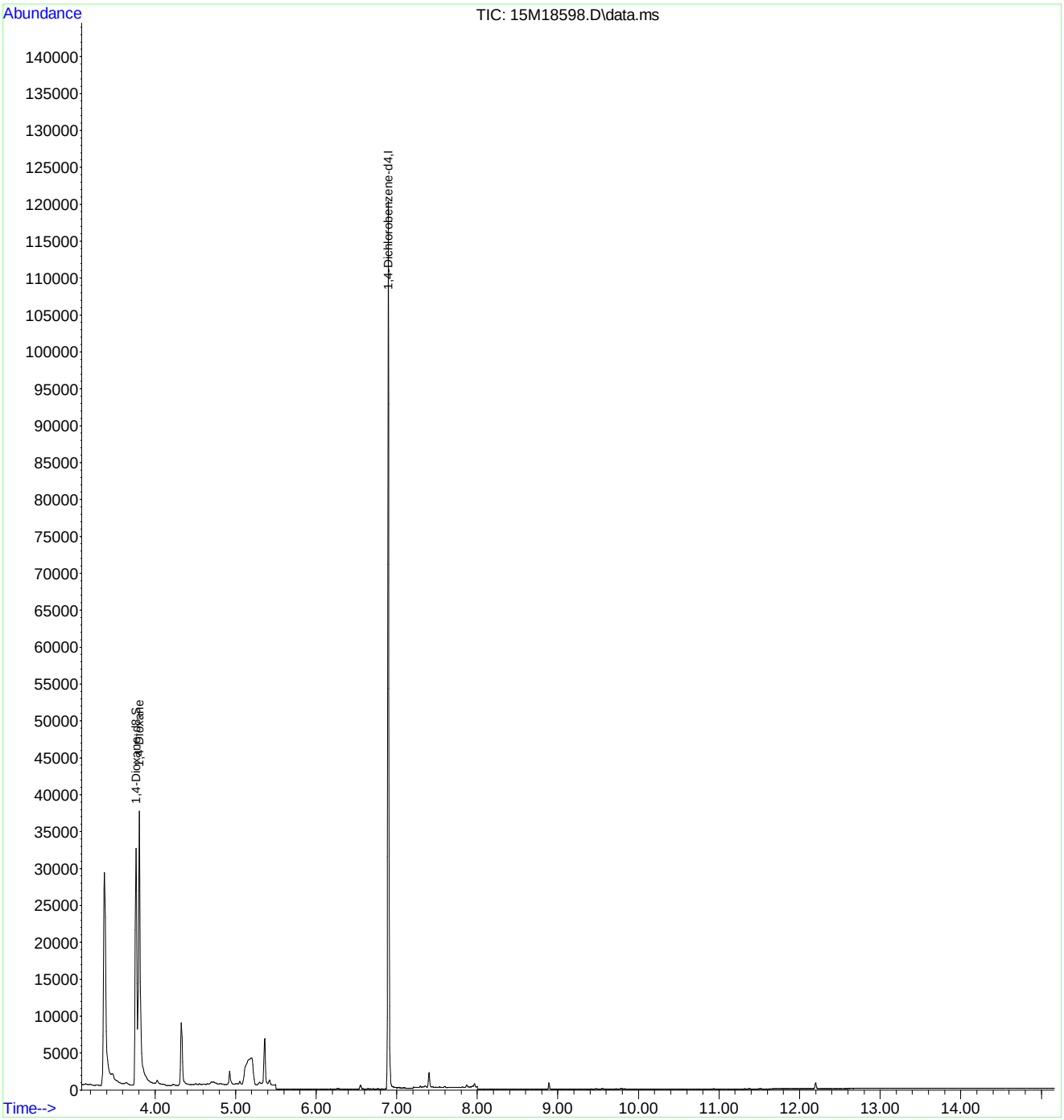

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18719.D
Acq On : 5 Jul 2016 15:38
Operator : MES
Sample : WG574706-02 LCS 6/30
Misc : 1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jul 05 16:37:21 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.867	152	36960	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.778	96	22635	1.4883	ug/L	0.00
Spiked Amount 5.000			Recovery	=	29.80%	
4) Nitrobenzene-d5	7.372	82	1139	0.0292	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.60%	
5) 2-Fluorobiphenyl	8.853	172	78	0.0008	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.122	244	1819	0.0192	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.40%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.813	58	17552	1.5521	ug/L	77

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18719.D
Acq On : 5 Jul 2016 15:38
Operator : MES
Sample : WG574706-02 LCS 6/30
Misc : 1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jul 05 16:37:21 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

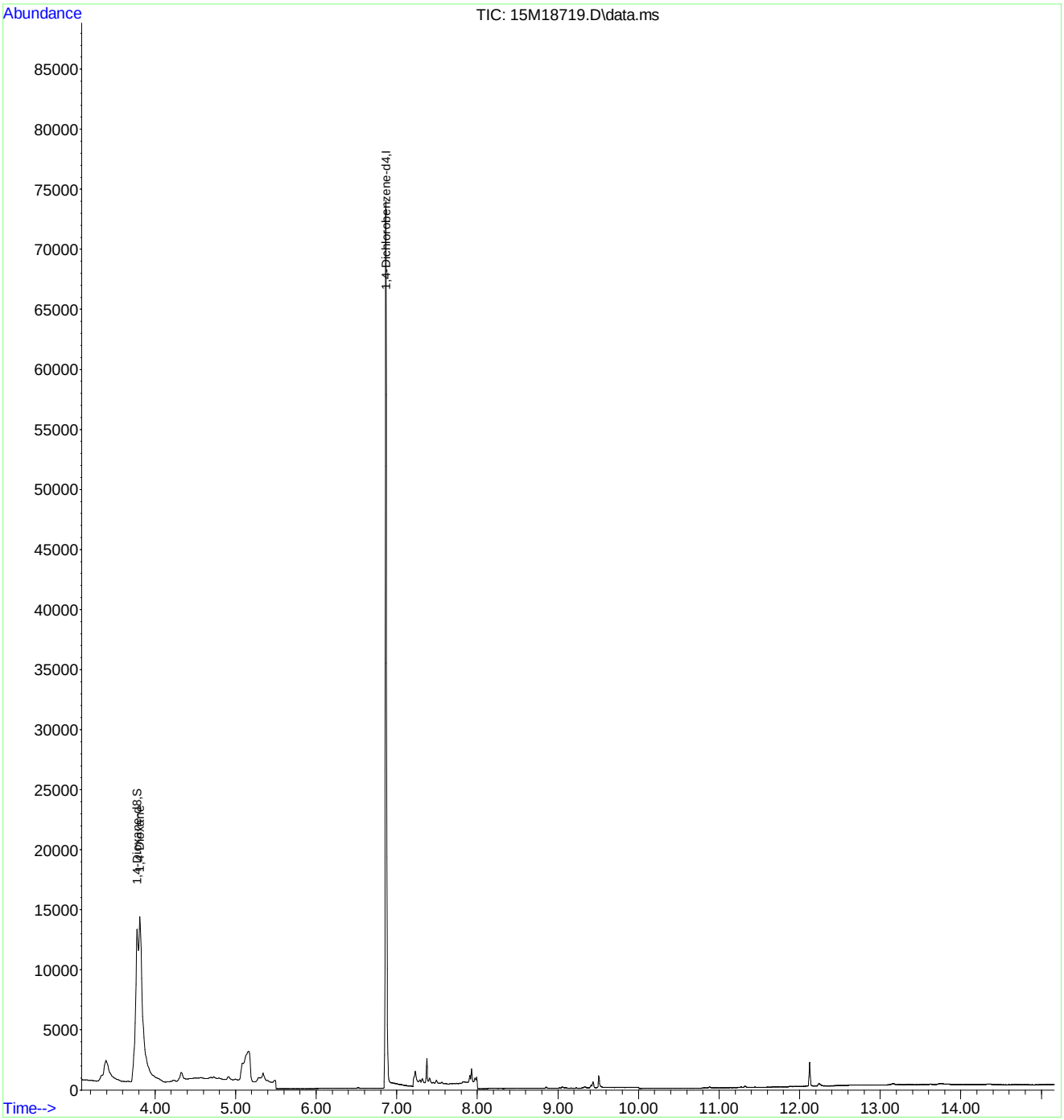

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18599.D
Acq On : 27 Jun 2016 15:07
Operator : MES
Sample : WG573812-03 LCSDUP 6/22
Misc : 1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 27 17:47:21 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.896	152	50712	1.0000	ug/mL	#-0.04
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.763	96	64077	3.0707	ug/L	-0.06
Spiked Amount 5.000			Recovery	=	61.40%	
4) Nitrobenzene-d5	7.404	82	2658	0.0496	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	1.00%	
5) 2-Fluorobiphenyl	8.889	172	2319	0.0172	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.40%	
6) p-Terphenyl-d14	12.195	244	557	0.0043	ug/L	0.01
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.806	58	46522	2.9983	ug/L	86

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18599.D
Acq On : 27 Jun 2016 15:07
Operator : MES
Sample : WG573812-03 LCSDUP 6/22
Misc : 1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 27 17:47:21 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

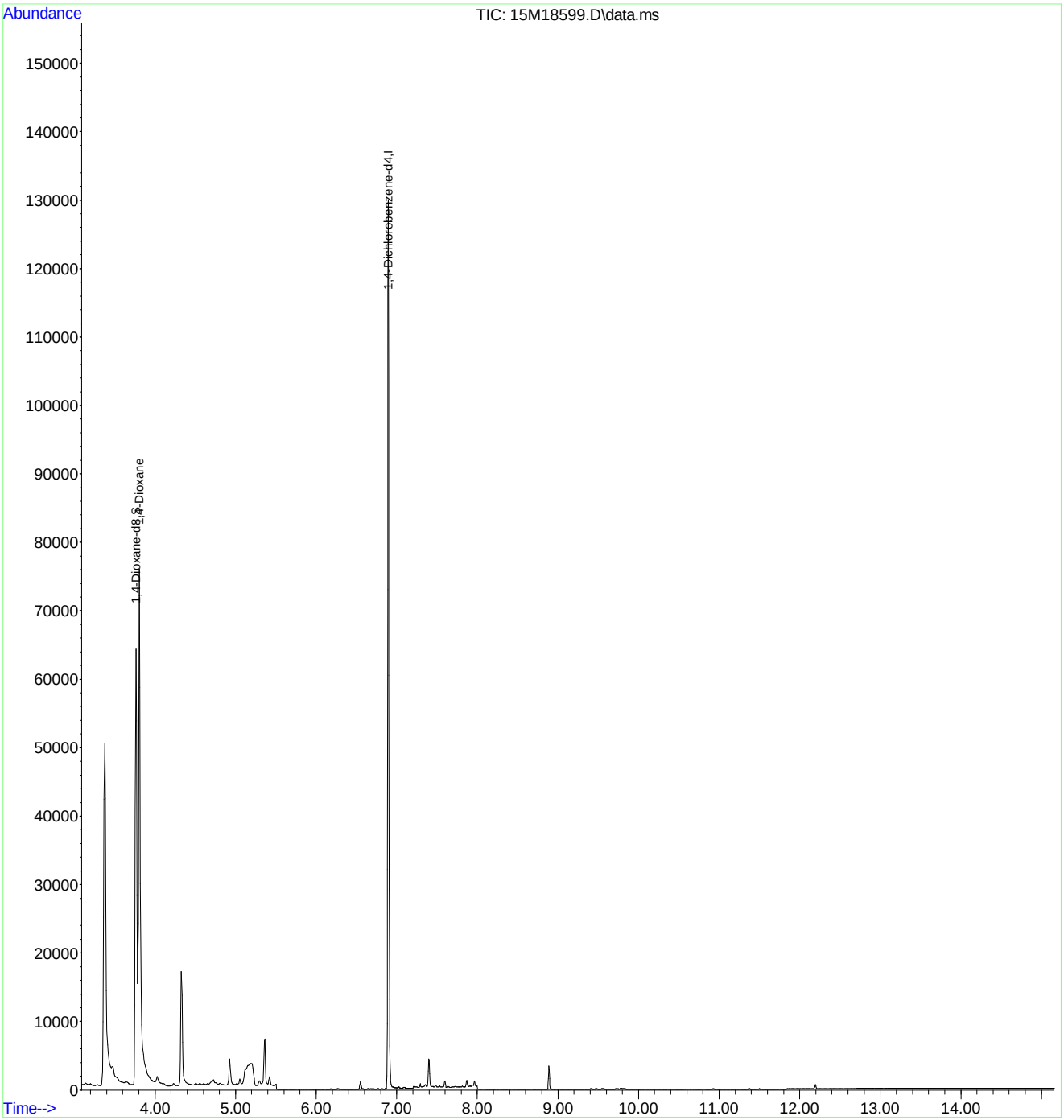

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18720.D
Acq On : 5 Jul 2016 16:01
Operator : MES
Sample : WG574706-03 LCSDUP 6/30
Misc : 1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jul 05 16:37:24 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.866	152	37076	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.777	96	27386	1.7951	ug/L	0.00
Spiked Amount 5.000			Recovery	=	36.00%	
4) Nitrobenzene-d5	7.371	82	1899	0.0485	ug/L	0.00
Spiked Amount 5.000			Recovery	=	1.00%	
5) 2-Fluorobiphenyl	8.852	172	144	0.0015	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.129	244	334	0.0035	ug/L	0.04
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.813	58	23450	2.0672	ug/L	78

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18720.D
Acq On : 5 Jul 2016 16:01
Operator : MES
Sample : WG574706-03 LCSDUP 6/30
Misc : 1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jul 05 16:37:24 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

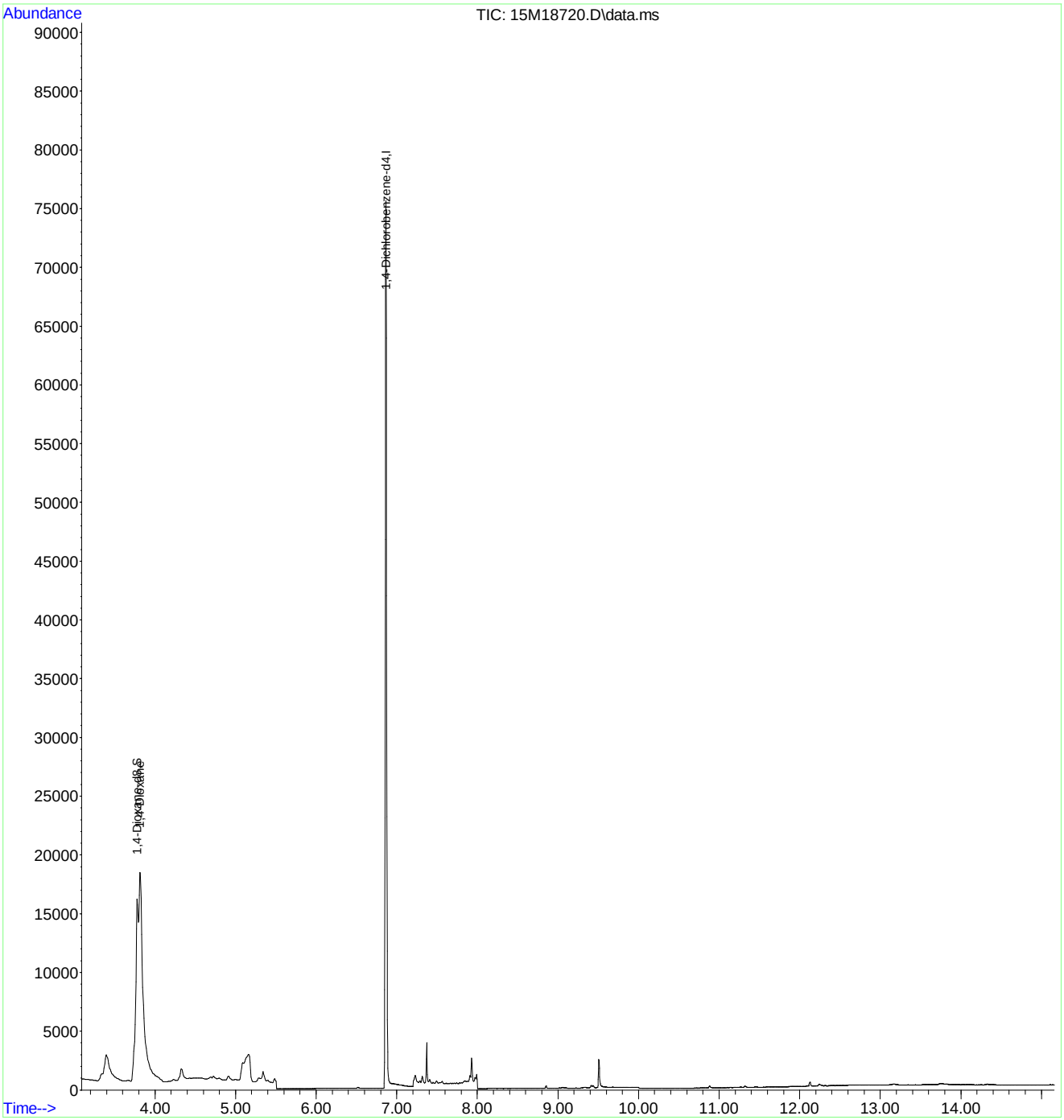

2.2 General Chromatography Data

2.2.2 6850 LC/MS Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW22-062116	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/30/2016 00:14
Collect Date:	06/21/2016 07:55	**Dilution:**	1	**File ID:**	1LM.LM35540
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1.53		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16061227-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	C04-062116	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/30/2016 00:33
Collect Date:	06/21/2016 08:55	**Dilution:**	1	**File ID:**	1LM.LM35541
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	C04FD-062116	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/30/2016 00:52
Collect Date:	06/21/2016 08:55	**Dilution:**	1	**File ID:**	1LM.LM35542
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW18-062116	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/30/2016 02:07
Collect Date:	06/21/2016 10:05	**Dilution:**	1	**File ID:**	1LM.LM35546
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW18-062116	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/30/2016 02:26
Collect Date:	06/21/2016 11:15	**Dilution:**	1	**File ID:**	1LM.LM35547
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW17-062116	**Prep Method:**	6850	**Prep Date:**	06/29/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574701	**Analyst:**	JWR	**Run Date:**	06/30/2016 02:45
Collect Date:	06/21/2016 11:40	**Dilution:**	10000	**File ID:**	1LM.LM35548
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	82900		4000	2000	1000

2.2.2.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1405 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG574701-01 MCT	10,030.	
-02 Blank	0.43	
-03 LCS	0.65	
L16061068-01 RS	1,959.	
-02 MS	1,957.	
-03 MSD	1,961.	
-04	3,020.	
-05	3,020.	
-06	170.3	
-07 RS	615.	
-08 MS	615.	
-09 MSD	607.	
-10	146.5	
-12 RS	1409.	
-14 MS	1412.	
-16 MSD	1398.	
L16061227-01	1242.	
-02	317.	
-04	317.	
-06	9,000.	
-07	1,645.	
-08	10,310.	
L16061549-01	3,090.	

Analyst: John Richards

Date/Time: 06/30/16 1430

DCN#119395

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 062916_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG574701 (waters)

Internal STD: STD18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: Samples L16061068(-01RS,-02MS,-03MSD) and L16061227-08 were analyzed at 10,000x dilutions based on their historical results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35517	WG574710-01 CCB	1	1		06/29/16 16:58
2	1LM.LM35518	WG574710-02 CCV (1.0ug/L)	1	1	STD75510	06/29/16 17:17
3	1LM.LM35519	WG574701-13 MRL (0.2ug/L)	1	1	STD75510	06/29/16 17:36
4	1LM.LM35520	WG574701-01 MCT (0.2ug/L)	1	1	STD75512	06/29/16 17:55
5	1LM.LM35521	WG574701-02 BLANK	1	1		06/29/16 18:14
6	1LM.LM35522	WG574701-03 LCS (0.2ug/L)	1	1	STD75512	06/29/16 18:33
7	1LM.LM35523	L16061549-01	1	1		06/29/16 18:52
8	1LM.LM35524	L16061068-01 RS (10.000x)	1	10000		06/29/16 19:11
9	1LM.LM35525	L16061068-02 MS (10.000x)	1	10000	STD75512	06/29/16 19:30
10	1LM.LM35526	L16061068-03 MSD (10.000x)	1	10000	STD75512	06/29/16 19:49
11	1LM.LM35527	L16061068-04	1	1		06/29/16 20:08
12	1LM.LM35528	L16061068-05	1	1		06/29/16 20:26
13	1LM.LM35529	L16061068-06	1	1		06/29/16 20:45
14	1LM.LM35530	WG574710-03 CCV (1.0ug/L)	1	1	STD75510	06/29/16 21:04
15	1LM.LM35531	WG574701-14 MRL (0.2ug/L)	1	1	STD75510	06/29/16 21:23
16	1LM.LM35532	WG574710-04 CCB	1	1		06/29/16 21:42
17	1LM.LM35533	L16061068-07 RS	1	1		06/29/16 22:01
18	1LM.LM35534	L16061068-08 MS	1	1	STD75512	06/29/16 22:20
19	1LM.LM35535	L16061068-09 MSD	1	1	STD75512	06/29/16 22:39
20	1LM.LM35536	L16061068-10 (NR)	1	1		06/29/16 22:58
21	1LM.LM35537	L16061068-12 RS	1	1		06/29/16 23:17
22	1LM.LM35538	L16061068-14 MS	1	1	STD75512	06/29/16 23:36
23	1LM.LM35539	L16061068-16 MSD	1	1	STD75512	06/29/16 23:55
24	1LM.LM35540	L16061227-01	1	1		06/30/16 00:14
25	1LM.LM35541	L16061227-02	1	1		06/30/16 00:33
26	1LM.LM35542	L16061227-04	1	1		06/30/16 00:52
27	1LM.LM35543	WG574710-05 CCV (1.0ug/L)	1	1	STD75510	06/30/16 01:11
28	1LM.LM35544	WG574701-15 MRL (0.2ug/L)	1	1	STD75510	06/30/16 01:29
29	1LM.LM35545	WG574710-06 CCB	1	1		06/30/16 01:48
30	1LM.LM35546	L16061227-06	1	1		06/30/16 02:07
31	1LM.LM35547	L16061227-07	1	1		06/30/16 02:26
32	1LM.LM35548	L16061227-08 (10,000x)	1	10000		06/30/16 02:45
33	1LM.LM35549	WG574710-07 CCV (1.0ug/L)	1	1	STD75510	06/30/16 03:04

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 062916_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG574701 (waters)

Internal STD: STD18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM35550	WG574701-16 MRL (0.2ug/L)	1	1	STD75510	06/30/16 03:23
35	1LM.LM35551	WG574710-08 CCB	1	1		06/30/16 03:42
36	1LM.LM35552	WG574710-09 CCV (1.0ug/L)	1	1	STD75510	06/30/16 12:56
37	1LM.LM35553	WG574701-17 MRL (0.2ug/L)	1	1	STD75510	06/30/16 13:15
38	1LM.LM35554	WG574710-10 CCB	1	1		06/30/16 13:34
39	1LM.LM35555	L16061068-10 (RR 5x)	1	5		06/30/16 13:53
40	1LM.LM35556	WG574710-11 CCV (1.0ug/L)	1	1	STD75510	06/30/16 14:12
41	1LM.LM35557	WG574701-18 MRL (0.2ug/L)	1	1	STD75510	06/30/16 14:31
42	1LM.LM35558	WG574710-12 CCB	1	1		06/30/16 14:50

Comments

Seq.	Rerun	Dil.	Reason	Analytes
9				
	L16061068-02 MS (10.000x) : The MS %Rec is above the advisory limit. At this level of dilution, the spiked amount added to the MS has been diluted below the method detection limit.			
10				
	L16061068-03 MSD (10.000x) : The MSD %Rec is above the advisory limit. At this level of dilution, the spiked amount added to the MSD has been diluted below the method detection limit.			
20	X	5	Over Calibration Range	
	L16061068-10 (NR) : This sample was reanalyzed at a 5x dilution on the end of this sequence.			

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Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
04-MAY-2016
John Richards

Secondary Reviewer:
05-MAY-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 29-JUN-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 76038
Analytical Workgroups: L16061068, 1227, 1549

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 30-JUN-2016 John Richards

Secondary Reviewer: 01-JUL-2016 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-01-2016 09:20:44

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG574701

Login Number: L16061227

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW22-062116	01	06/21/16					06/29/2016	8.3	28		06/30/16	.4	28	
C04-062116	02	06/21/16					06/29/2016	8.3	28		06/30/16	.4	28	
C04FD-062116	04	06/21/16					06/29/2016	8.3	28		06/30/16	.4	28	
18CPTMW18-062116	06	06/21/16					06/29/2016	8.2	28		06/30/16	.5	28	
18WW18-062116	07	06/21/16					06/29/2016	8.2	28		06/30/16	.5	28	
18WW17-062116	08	06/21/16					06/29/2016	8.1	28		06/30/16	.5	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4834049
Report generated 07/01/2016 09:08

METHOD BLANK SUMMARY

Login Number: L16061227
Blank File ID: 1LM.LM35521
Prep Date: 06/29/16 15:00
Analyzed Date: 06/29/16 18:14
Analyst: JWR

Work Group: WG574701
Blank Sample ID: WG574701-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG574701-13	1LM.LM35519	06/29/16 17:36	01
MCT	WG574701-01	1LM.LM35520	06/29/16 17:55	01
LCS	WG574701-03	1LM.LM35522	06/29/16 18:33	01
QCMRL	WG574701-14	1LM.LM35531	06/29/16 21:23	01
18WW22-062116	L16061227-01	1LM.LM35540	06/30/16 00:14	01
C04-062116	L16061227-02	1LM.LM35541	06/30/16 00:33	01
C04FD-062116	L16061227-04	1LM.LM35542	06/30/16 00:52	01
QCMRL	WG574701-15	1LM.LM35544	06/30/16 01:29	01
18CPTMW18-062116	L16061227-06	1LM.LM35546	06/30/16 02:07	01
18WW18-062116	L16061227-07	1LM.LM35547	06/30/16 02:26	01
18WW17-062116	L16061227-08	1LM.LM35548	06/30/16 02:45	DL01
QCMRL	WG574701-16	1LM.LM35550	06/30/16 03:23	01
QCMRL	WG574701-17	1LM.LM35553	06/30/16 13:15	01
QCMRL	WG574701-18	1LM.LM35557	06/30/16 14:31	01

Report Name: BLANK_SUMMARY
PDF File ID: 4834050
Report generated 07/01/2016 09:08

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061227 Prep Date: 06/29/16 15:00 Sample ID: WG574701-02
Instrument ID: LCMS1 Run Date: 06/29/16 18:14 Prep Method: 6850
File ID: 1LM.LM35521 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574701 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4834051
01-JUL-2016 09:08

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061227 Run Date: 06/29/2016 Sample ID: WG574701-03
Instrument ID: LCMS1 Run Time: 18:33 Prep Method: 6850
File ID: 1LM.LM35522 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574701 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD75512 Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	0.200	0.201	101	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4834052
Report generated: 07/01/2016 09:08

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061227
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4834759
Report generated 07/01/2016 09:08

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061227

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4834759
Report generated 07/01/2016 09:08

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061227

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4834759
Report generated 07/01/2016 09:08

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061227

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008

PDF File ID: 4834759

Report generated 07/01/2016 09:08

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061227 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4834760
Report generated 07/01/2016 09:08

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/29/2016
Sample ID: WG574710-01
Instrument ID: LCMS1
Run Time: 16:58
Method: 6850
File ID: 1LM.LM35517
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574701
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4834055
Report generated 07/01/2016 09:08

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/29/2016
Sample ID: WG574710-04
Instrument ID: LCMS1
Run Time: 21:42
Method: 6850
File ID: 1LM.LM35532
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574701
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4834055
Report generated 07/01/2016 09:08

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/30/2016
Sample ID: WG574710-06
Instrument ID: LCMS1
Run Time: 01:48
Method: 6850
File ID: 1LM.LM35545
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574701
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4834055
Report generated 07/01/2016 09:08

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/30/2016
Sample ID: WG574710-08
Instrument ID: LCMS1
Run Time: 03:42
Method: 6850
File ID: 1LM.LM35551
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574701
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4834055
Report generated 07/01/2016 09:08

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/30/2016
Sample ID: WG574710-10
Instrument ID: LCMS1
Run Time: 13:34
Method: 6850
File ID: 1LM.LM35554
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574701
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4834055
Report generated 07/01/2016 09:08

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/30/2016
Sample ID: WG574710-12
Instrument ID: LCMS1
Run Time: 14:50
Method: 6850
File ID: 1LM.LM35558
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574701
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4834055
Report generated 07/01/2016 09:08

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227 Run Date: 06/29/2016 Sample ID: WG574710-02
Instrument ID: LCMS1 Run Time: 17:17 Method: 6850
File ID: 1LM.LM35518 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG574701 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.73	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4834054
Report generated 07/01/2016 09:08

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/29/2016
Sample ID: WG574710-03
Instrument ID: LCMS1
Run Time: 21:04
Method: 6850
File ID: 1LM.LM35530
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574701
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.996	ug/L	1.68	0.400	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4834054
Report generated 07/01/2016 09:08

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/30/2016
Sample ID: WG574710-05
Instrument ID: LCMS1
Run Time: 01:11
Method: 6850
File ID: 1LM.LM35543
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574701
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.74	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4834054
Report generated 07/01/2016 09:08

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227 Run Date: 06/30/2016 Sample ID: WG574710-07
Instrument ID: LCMS1 Run Time: 03:04 Method: 6850
File ID: 1LM.LM35549 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG574701 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.73	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4834054
Report generated 07/01/2016 09:08

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227 Run Date: 06/30/2016 Sample ID: WG574710-09
Instrument ID: LCMS1 Run Time: 12:56 Method: 6850
File ID: 1LM.LM35552 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG574701 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.72	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4834054
Report generated 07/01/2016 09:08

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/30/2016
Sample ID: WG574710-11
Instrument ID: LCMS1
Run Time: 14:12
Method: 6850
File ID: 1LM.LM35556
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574701
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.74	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4834054
Report generated 07/01/2016 09:08

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061227 Run Date: 06/29/2016 Sample ID: WG574701-13
Instrument ID: LCMS1 Run Time: 17:36 Prep Method: 6850
File ID: 1LM.LM35519 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574701 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.203	102	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4834053
Report generated 07/01/2016 09:08

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061227 Run Date: 06/29/2016 Sample ID: WG574701-14
Instrument ID: LCMS1 Run Time: 21:23 Prep Method: 6850
File ID: 1LM.LM35531 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574701 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.209	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4834053
Report generated 07/01/2016 09:08

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061227 Run Date: 06/30/2016 Sample ID: WG574701-15
Instrument ID: LCMS1 Run Time: 01:29 Prep Method: 6850
File ID: 1LM.LM35544 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574701 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.201	101	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4834053
Report generated 07/01/2016 09:08

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061227 Run Date: 06/30/2016 Sample ID: WG574701-16
Instrument ID: LCMS1 Run Time: 03:23 Prep Method: 6850
File ID: 1LM.LM35550 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574701 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.208	104	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4834053
Report generated 07/01/2016 09:08

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061227 Run Date: 06/30/2016 Sample ID: WG574701-17
Instrument ID: LCMS1 Run Time: 13:15 Prep Method: 6850
File ID: 1LM.LM35553 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574701 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.204	102	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4834053
Report generated 07/01/2016 09:08

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061227 Run Date: 06/30/2016 Sample ID: WG574701-18
Instrument ID: LCMS1 Run Time: 14:31 Prep Method: 6850
File ID: 1LM.LM35557 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574701 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4834053
Report generated 07/01/2016 09:08

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16061227
Instrument ID: LCMS1
Workgroup (AAB#): WG574701

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16061227-01	1.00	01	380000
L16061227-02	1.00	01	421000
L16061227-04	1.00	01	418000
L16061227-06	1.00	01	378000
L16061227-07	1.00	01	393000
L16061227-08	10000	DL01	465000
WG574701-02	1.00	01	465000
WG574701-03	1.00	01	462000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4834056
Report generated 07/01/2016 09:08

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**	6850	**Samplenum:**	L16061227-01
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35540
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 00:14	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	196000	66200	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**	6850	**Samplenum:**	L16061227-02
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35541
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 00:33	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	7180	2670	2.69	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**	6850	**Samplenum:**	L16061227-04
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35542
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 00:52	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	7800	3170	2.46	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**	6850	**Samplenum:**	L16061227-06
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35546
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 02:07	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	13000	3510	3.70	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**	6850	**Samplenum:**	L16061227-07
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35547
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 02:26	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	7840	3160	2.48	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**	6850	**Samplenum:**	L16061227-08
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35548
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 02:45	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1300000	434000	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**	6850	**Samplenum:**	WG574701-01
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35520
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 17:55	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	30100	11300	2.66	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**	6850	**Samplenum:**	WG574701-02
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35521
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 18:14	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**	6850	**Samplenum:**	WG574701-03
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35522
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 18:33	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	31800	11300	2.81	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**	6850	**Samplenum:**	WG574701-13
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35519
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 17:36	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32700	12200	2.68	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**	6850	**Samplenum:**	WG574701-14
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35531
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 21:23	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37300	12900	2.89	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**	6850	**Samplenum:**	WG574701-15
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35544
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 01:29	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38200	13200	2.89	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**	6850	**Samplenum:**	WG574701-16
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35550
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 03:23	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38900	13900	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**	6850	**Samplenum:**	WG574701-17
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35553
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 13:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32600	11300	2.88	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**	6850	**Samplenum:**	WG574701-18
Instrument:	LCMS1	**Prep Date:**	06/29/2016 15:00	**File ID:**	1LM.LM35557
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 14:31	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34700	12600	2.75	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**		**Samplenum:**	WG574710-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35517
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 16:58	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**		**Samplenum:**	WG574710-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35518
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 17:17	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	162000	57400	2.82	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**		**Samplenum:**	WG574710-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35530
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 21:04	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	176000	59400	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**		**Samplenum:**	WG574710-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35532
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/29/2016 21:42	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**		**Samplenum:**	WG574710-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35543
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 01:11	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	187000	65800	2.84	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**		**Samplenum:**	WG574710-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35545
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 01:48	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	264	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**		**Samplenum:**	WG574710-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35549
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 03:04	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	188000	65500	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**		**Samplenum:**	WG574710-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35551
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 03:42	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**		**Samplenum:**	WG574710-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35552
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 12:56	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	162000	55700	2.91	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**		**Samplenum:**	WG574710-10
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35554
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 13:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	445	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**		**Samplenum:**	WG574710-11
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35556
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 14:12	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	174000	60800	2.86	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061227	**Prep Method:**		**Samplenum:**	WG574710-12
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35558
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574701	**Analysis Date:**	06/30/2016 14:50	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

2.2.2.3 Sample Data

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Printed: 6/30/2016 3:36 PM

Data File	LM35540.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 12:14:17 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061227-01	**Injection Vial**	21.00
Data File	LM35540.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 12:14:17 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	L16061227-01	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.800e+05	9.15	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.960e+05	9.16	N/A	1.53
Perchlorate conf	6.620e+04	9.14	N/A	1.54

O18LP (Internal Standard)

RT (Exp. RT): 9.15(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

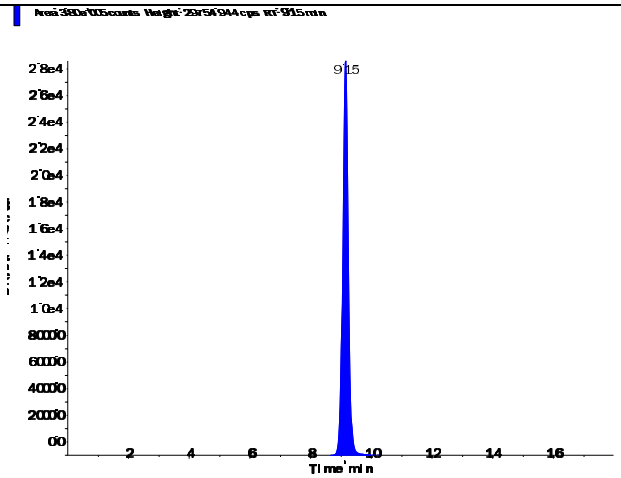

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.16 (9.84) min
Calculated conc:	1.53 ng/ml
Area Ratio:	0.515
Sample Type:	(Unknown)

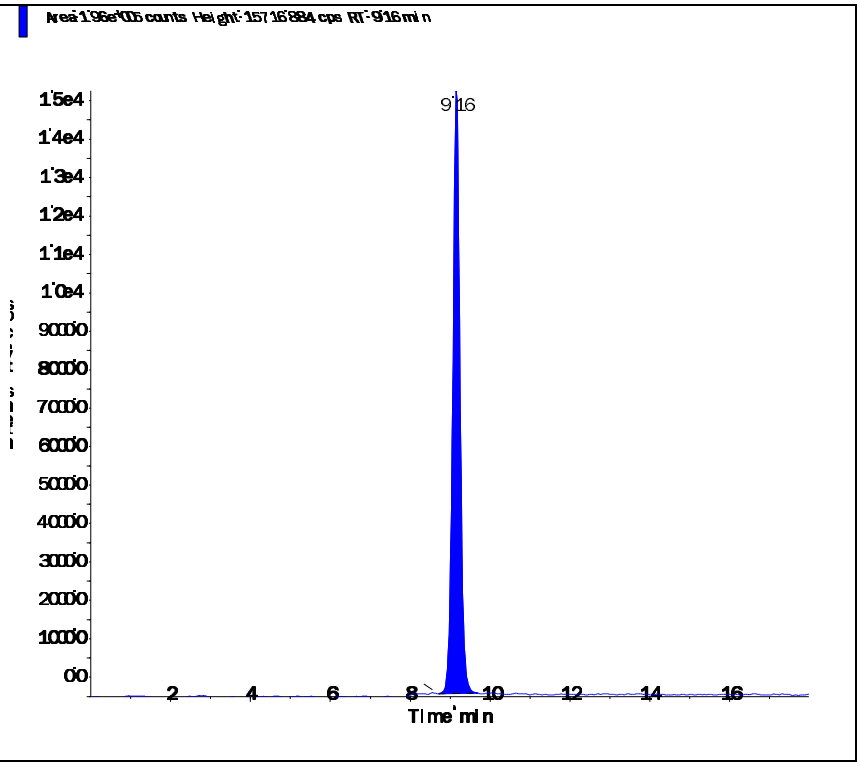

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.14 (9.84) min
Calculated conc:	1.54 ng/ml
Area Ratio:	0.174
Sample Type:	(Unknown)

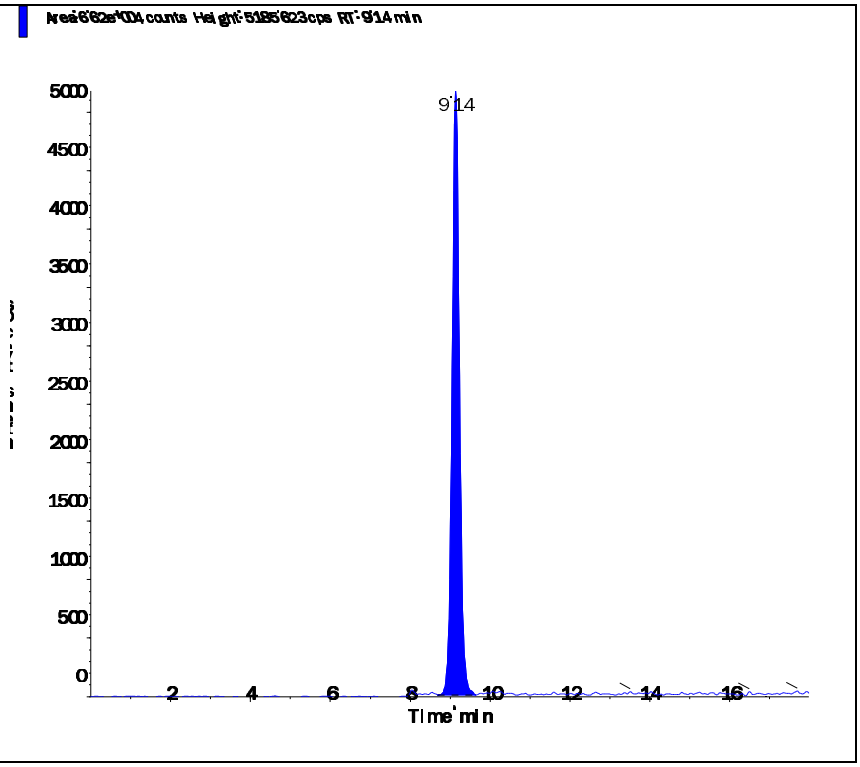

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Printed: 6/30/2016 3:37 PM

Data File	LM35541.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 12:33:12 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061227-02	**Injection Vial**	22.00
Data File	LM35541.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 12:33:12 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	L16061227-02	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.210e+05	9.47	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.180e+03	9.48	N/A	0.0469
Perchlorate conf	2.670e+03	9.49	N/A	0.0363

O18LP (Internal Standard)

RT (Exp. RT): 9.47(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

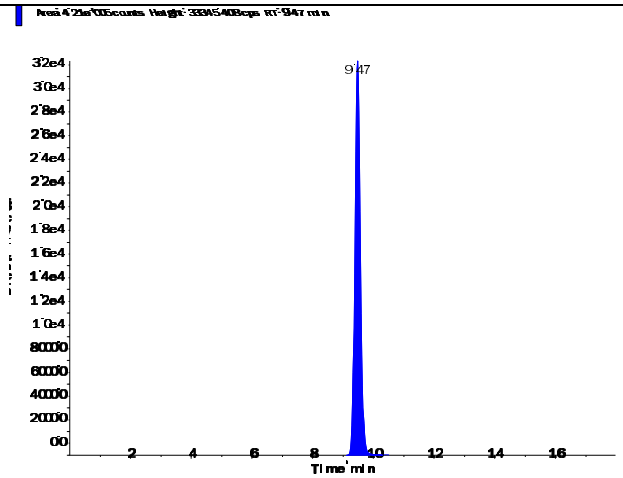

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.48 (9.84) min Calculated conc: 0.0469 ng/ml Area Ratio: 0.017 Sample Type: (Unknown)	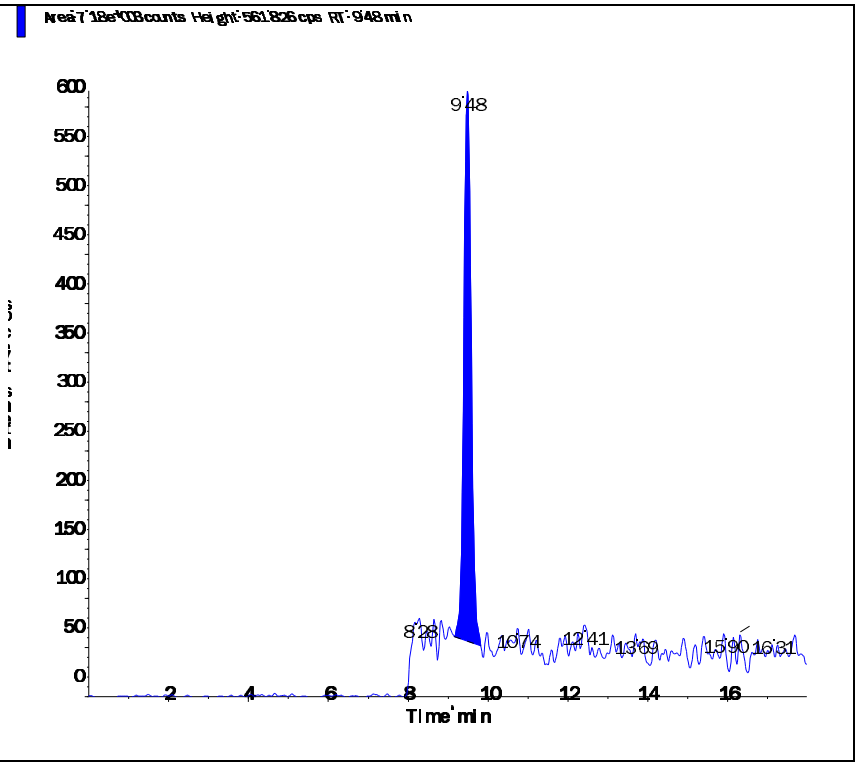
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.49 (9.84) min Calculated conc: 0.0363 ng/ml Area Ratio: 0.006 Sample Type: (Unknown)	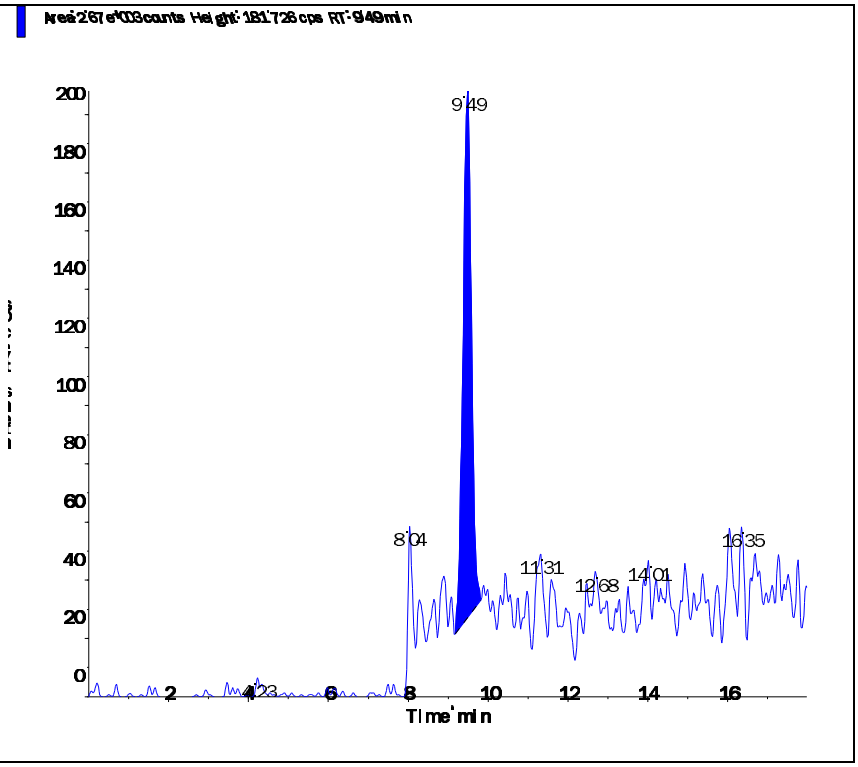

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Data File	LM35542.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 12:52:08 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061227-04	**Injection Vial**	23.00
Data File	LM35542.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 12:52:08 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	L16061227-04	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.180e+05	9.48	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.800e+03	9.49	N/A	0.0517
Perchlorate conf	3.170e+03	9.49	N/A	0.0476

O18LP (Internal Standard)

RT (Exp. RT): 9.48(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

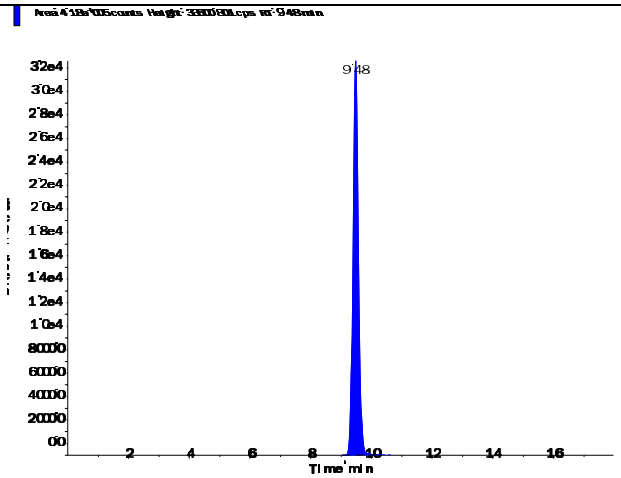

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.49 (9.84) min
Calculated conc:	0.0517 ng/ml
Area Ratio:	0.019
Sample Type:	(Unknown)

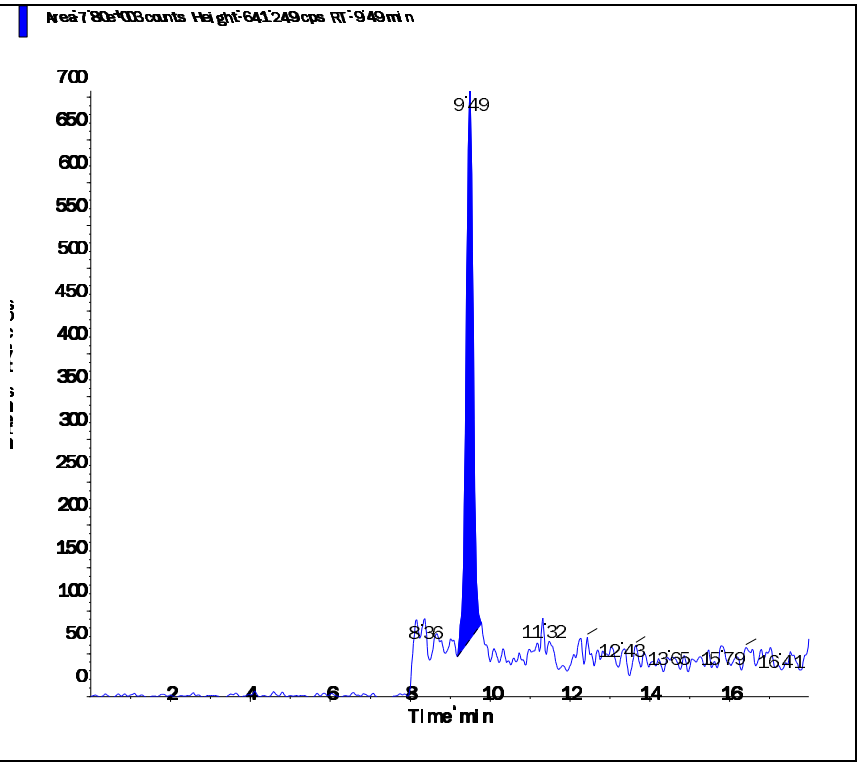

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.49 (9.84) min
Calculated conc:	0.0476 ng/ml
Area Ratio:	0.008
Sample Type:	(Unknown)

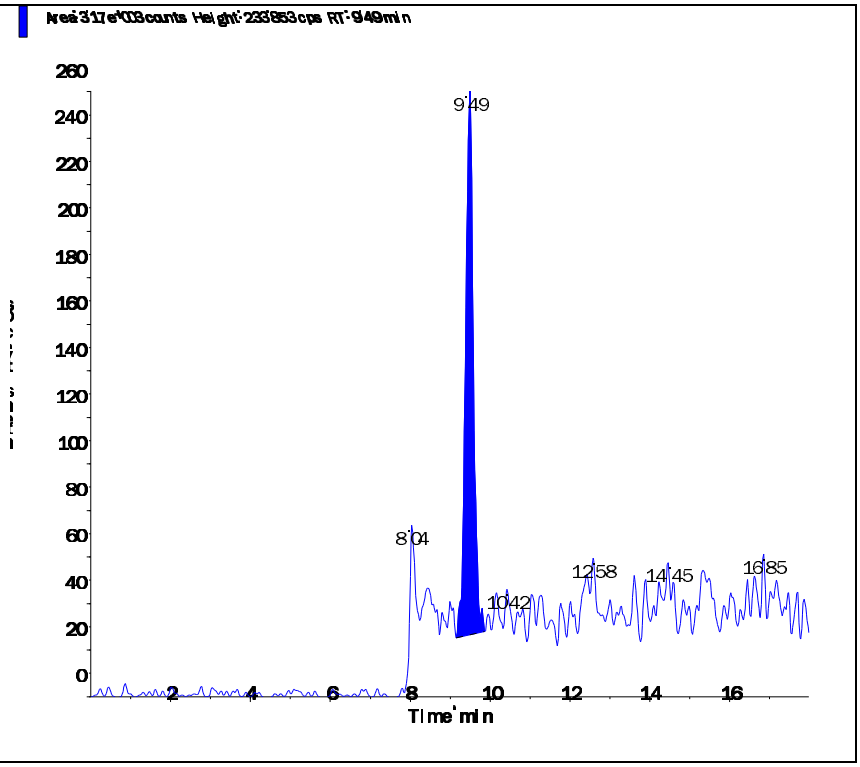

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Data File	LM35546.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 2:07:50 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061227-06	**Injection Vial**	24.00
Data File	LM35546.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 2:07:50 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	L16061227-06	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.780e+05	9.12	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.300e+04	9.13	N/A	0.0986
Perchlorate conf	3.510e+03	9.13	N/A	0.0627

O18LP (Internal Standard)

RT (Exp. RT): 9.12(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

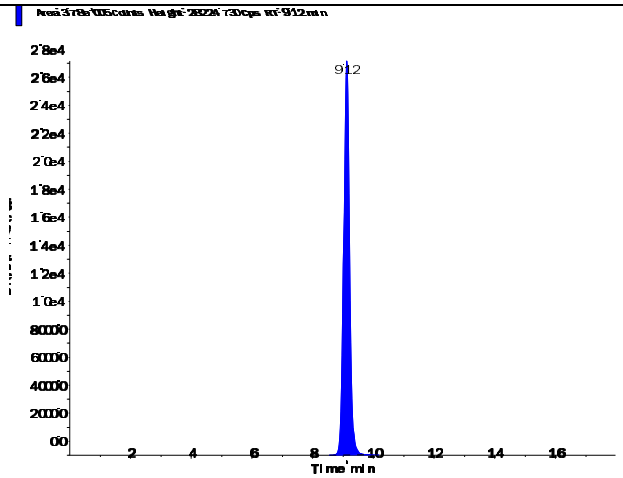

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.13 (9.84) min
Calculated conc:	0.0986 ng/ml
Area Ratio:	0.034
Sample Type:	(Unknown)

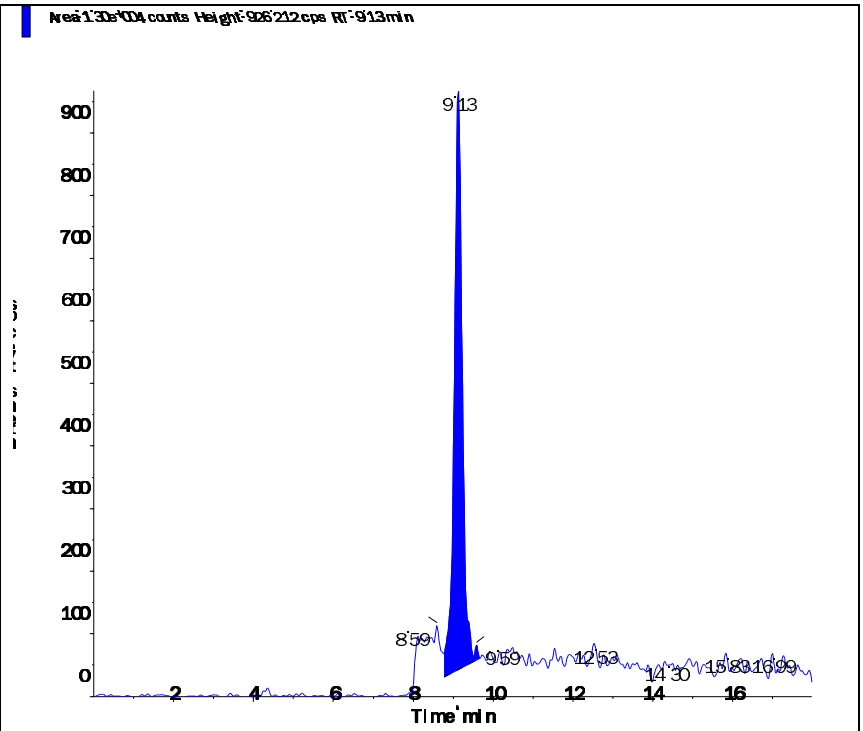

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.13 (9.84) min
Calculated conc:	0.0627 ng/ml
Area Ratio:	0.009
Sample Type:	(Unknown)

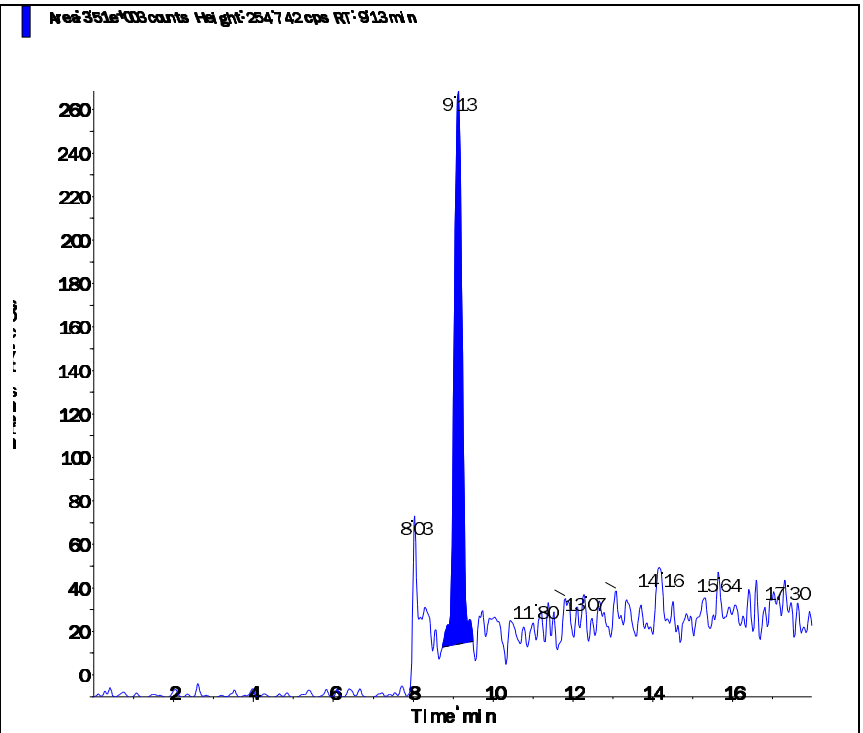

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Data File	LM35547.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 2:26:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061227-07	**Injection Vial**	25.00
Data File	LM35547.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 2:26:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	L16061227-07	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.930e+05	9.35	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.840e+03	9.37	N/A	0.0556
Perchlorate conf	3.160e+03	9.34	N/A	0.0518

O18LP (Internal Standard)

RT (Exp. RT): 9.35(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

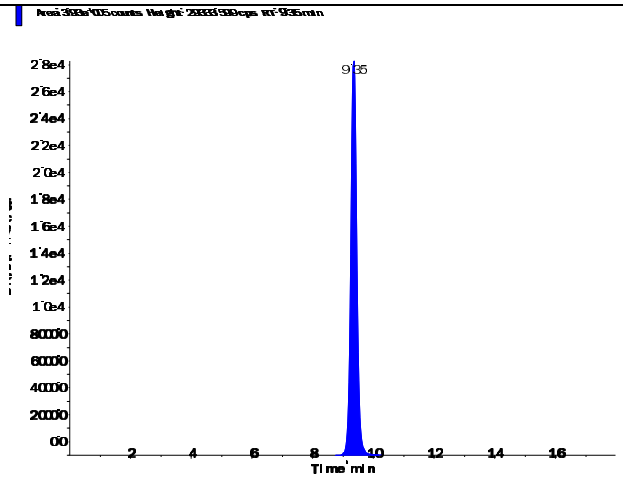

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.37 (9.84) min
Calculated conc:	0.0556 ng/ml
Area Ratio:	0.02
Sample Type:	(Unknown)

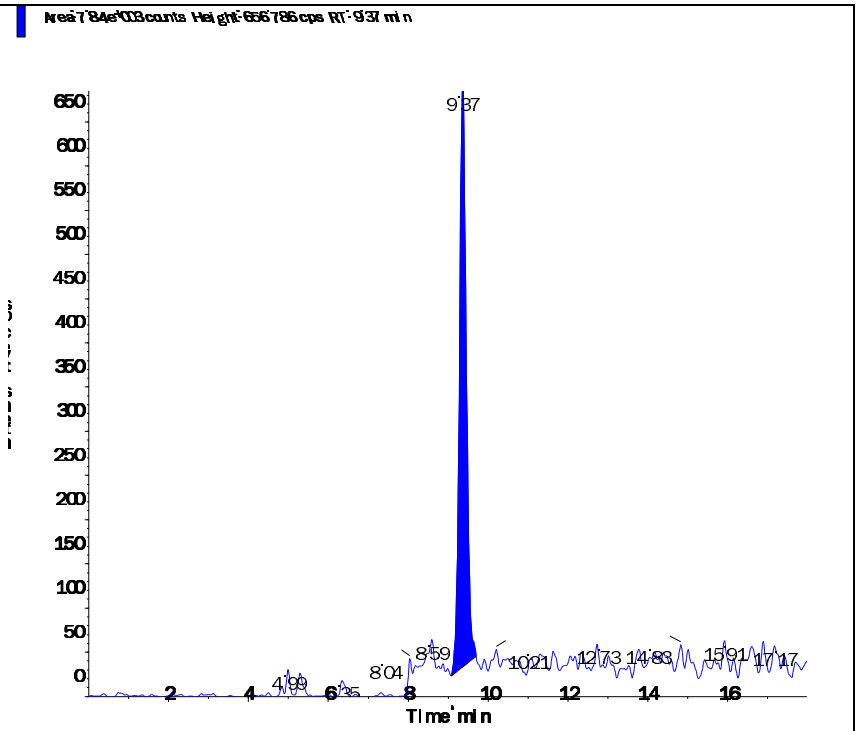

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.34 (9.84) min
Calculated conc:	0.0518 ng/ml
Area Ratio:	0.008
Sample Type:	(Unknown)

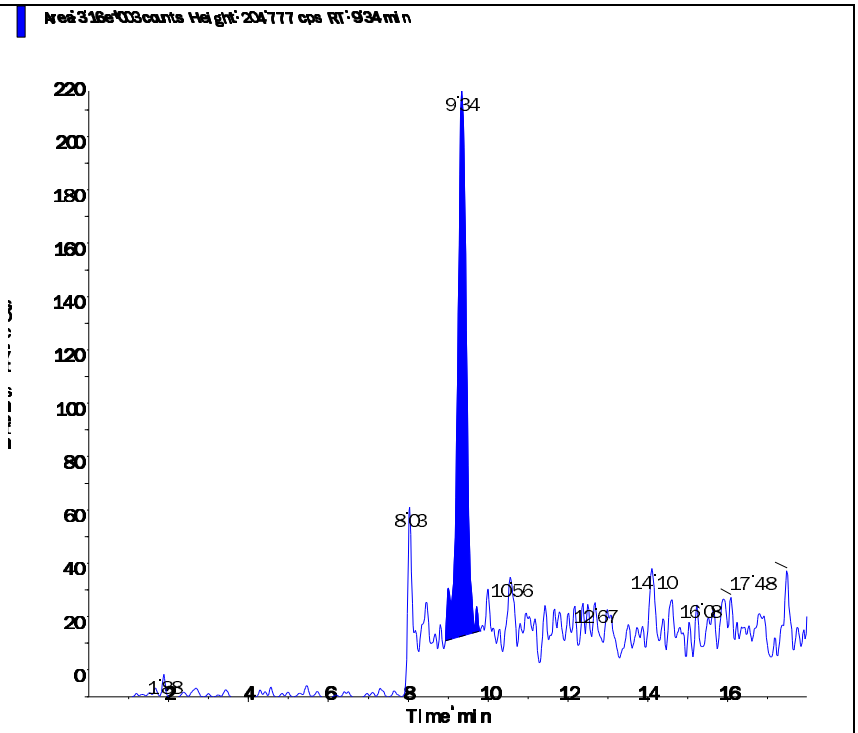

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Data File	LM35548.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 2:45:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061227-08 (10,000x)	**Injection Vial**	26.00
Data File	LM35548.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 2:45:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	L16061227-08	**Dilution Factor**	1.00
Sample Comment	1,10000 (screened)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.650e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.300e+06	9.67	N/A	8.29
Perchlorate conf	4.340e+05	9.66	N/A	8.33

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

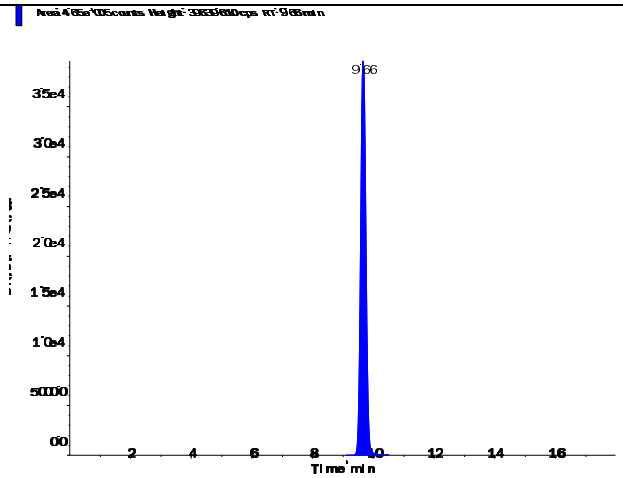

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.67 (9.84) min Calculated conc: 8.29 ng/ml Area Ratio: 2.791 Sample Type: (Unknown)	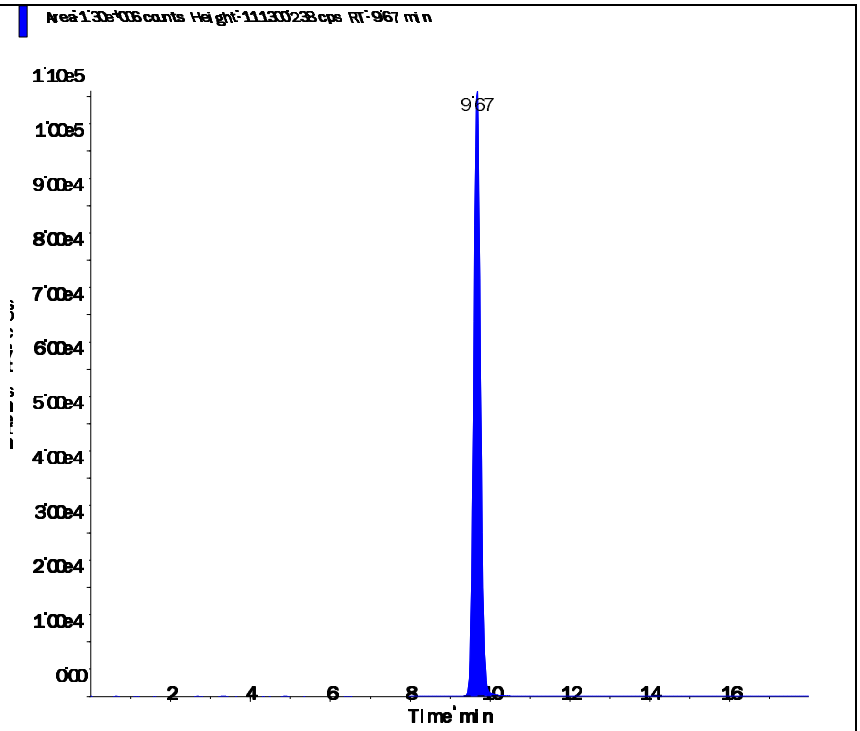
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.66 (9.84) min Calculated conc: 8.33 ng/ml Area Ratio: 0.932 Sample Type: (Unknown)	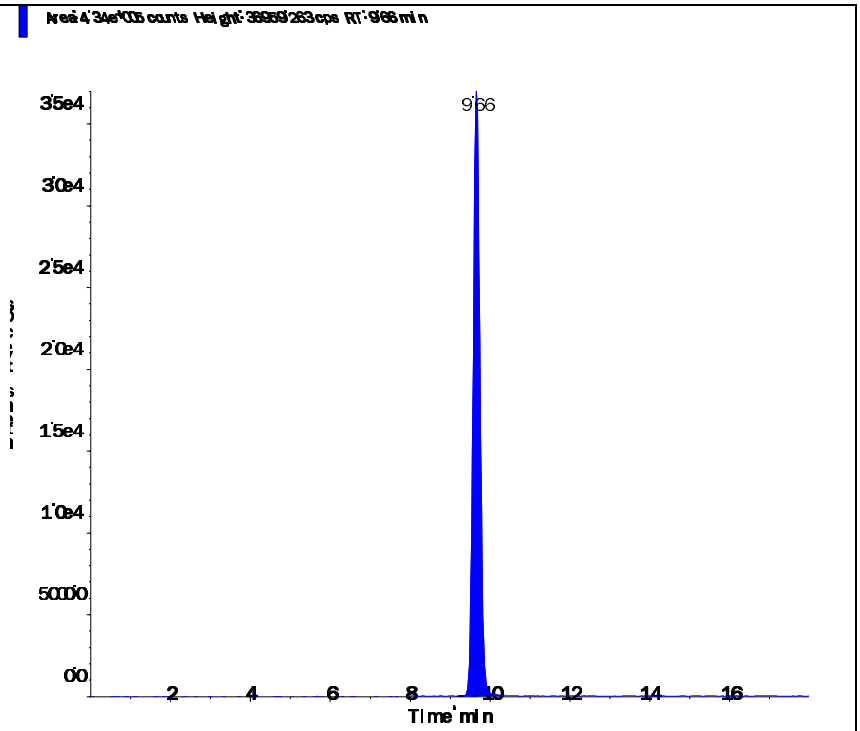

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2.2.2.4 Standards Data

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Data File	LM34686.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

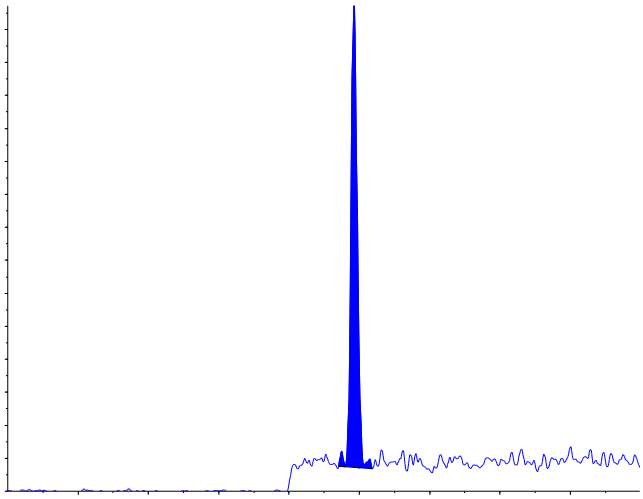

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	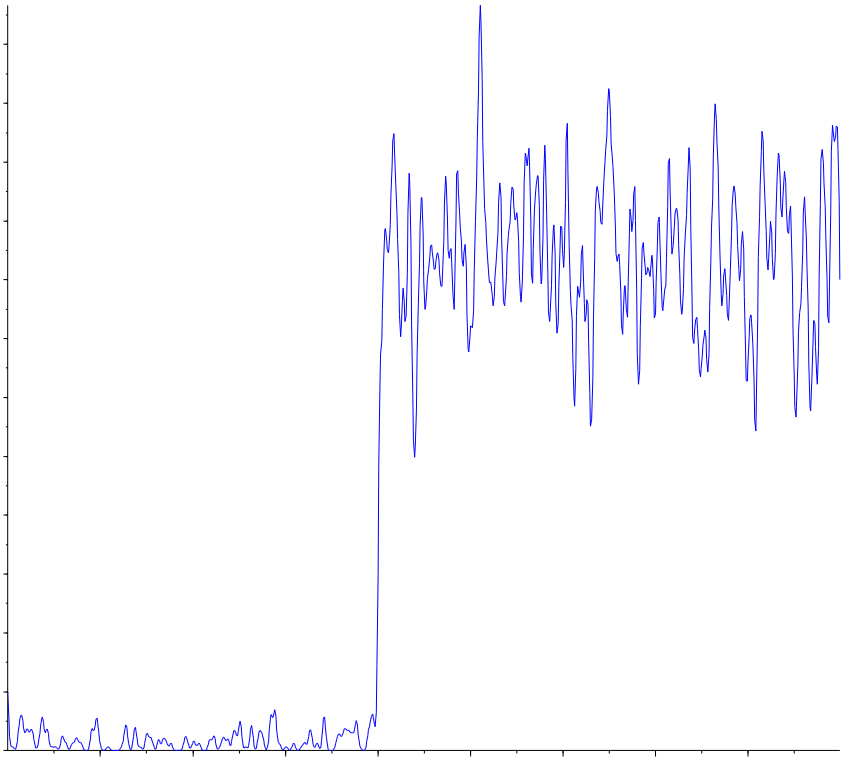
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	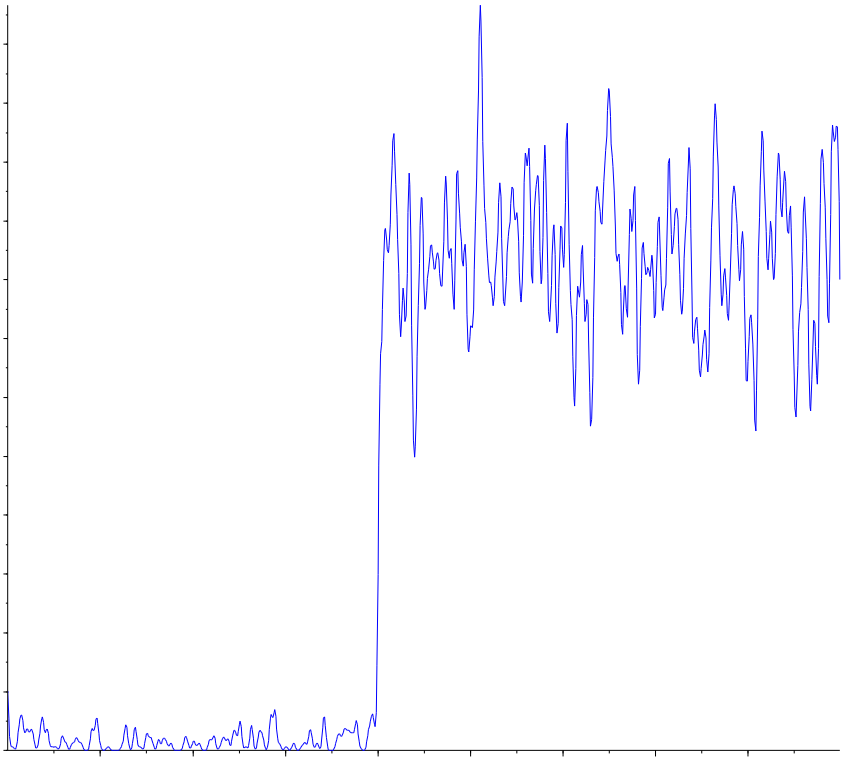

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Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

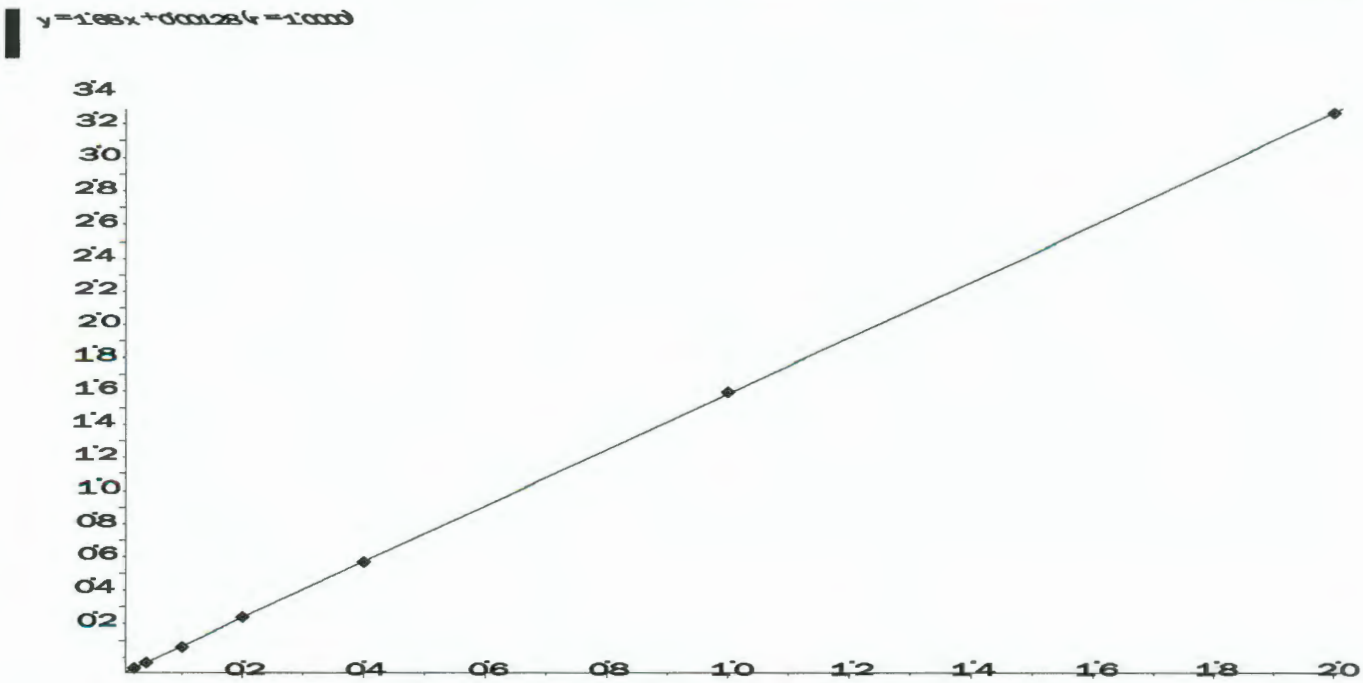

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Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

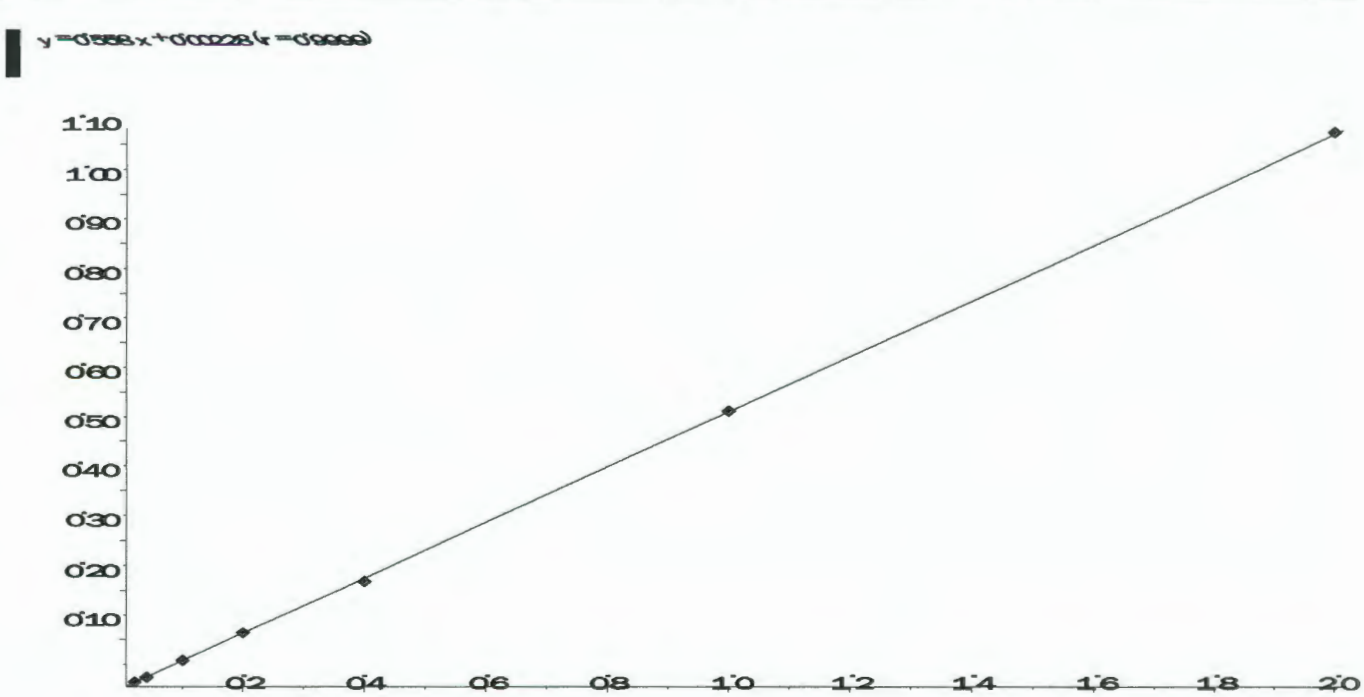

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Data File	LM34687.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

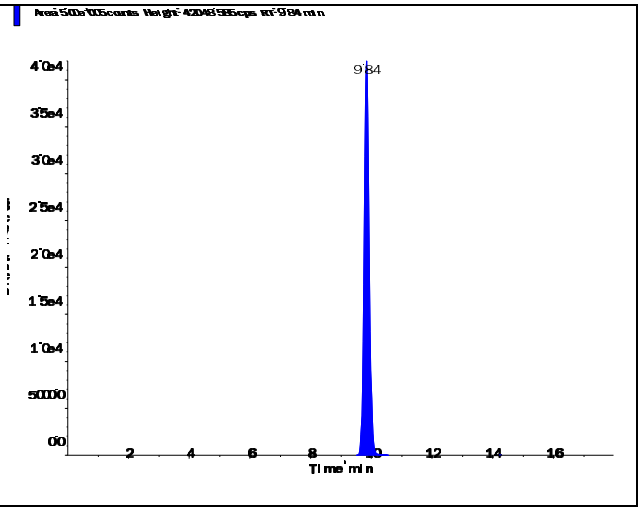

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 0.103 ng/ml Area Ratio: 0.036 Sample Type: (Standard)	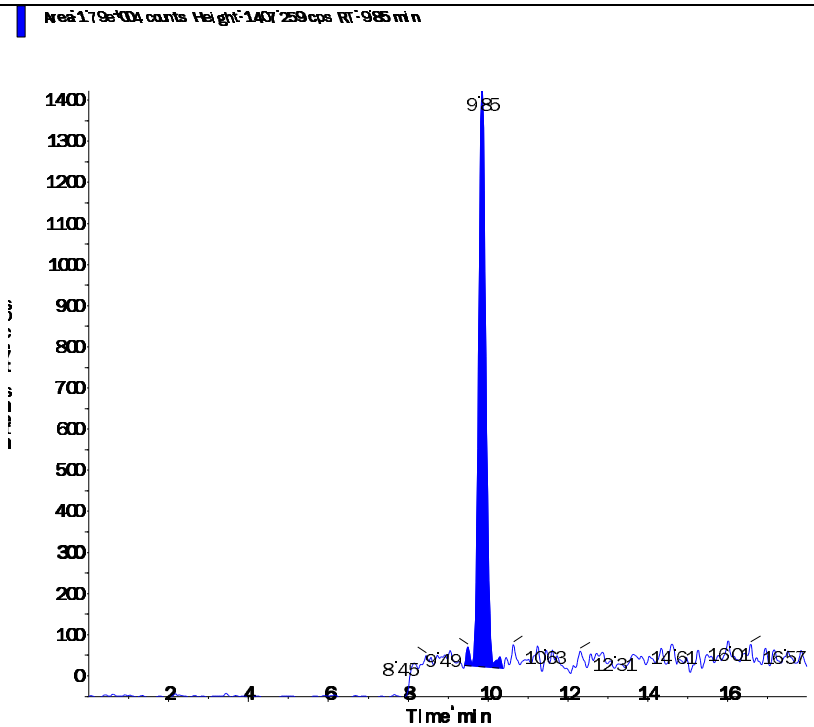
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 0.104 ng/ml Area Ratio: 0.014 Sample Type: (Standard)	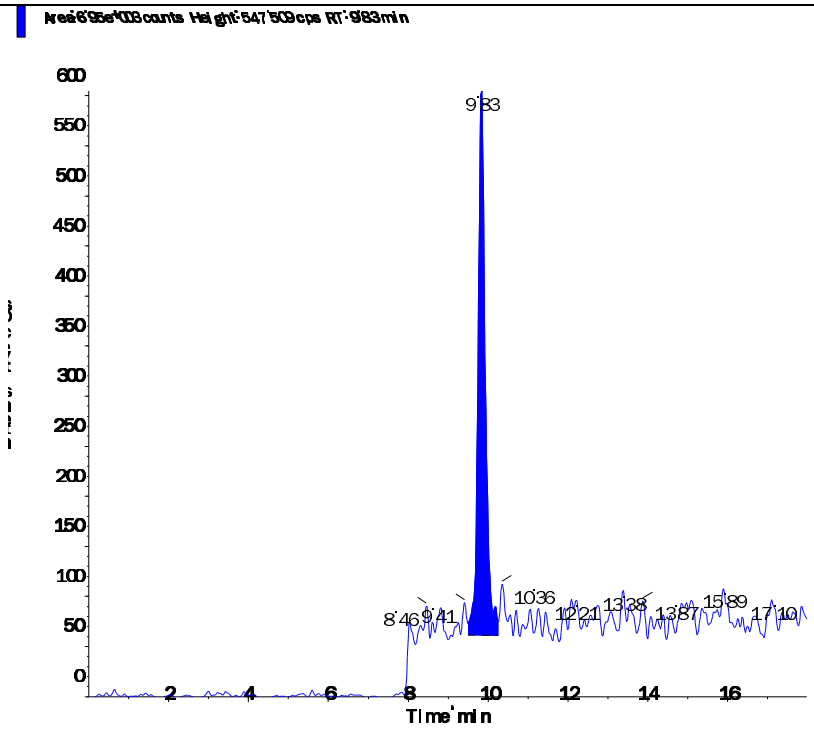

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Data File	LM34688.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

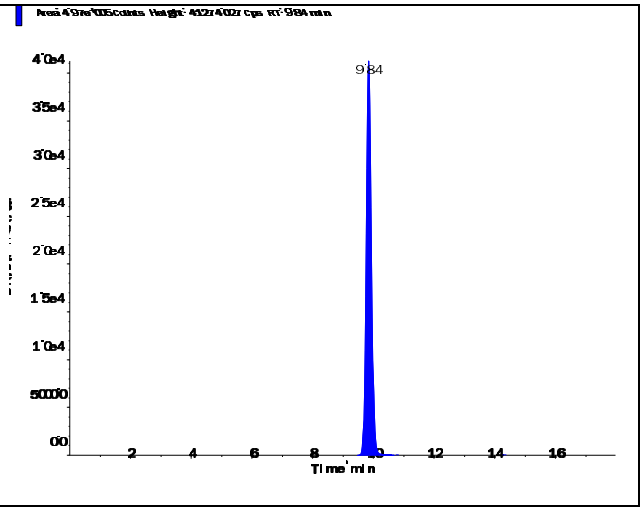

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

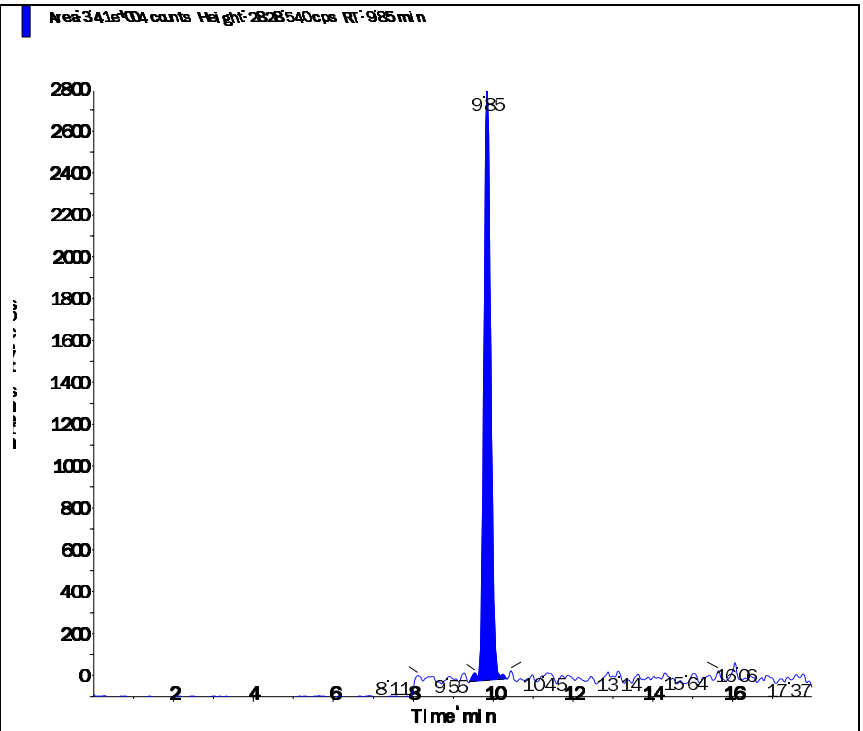

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

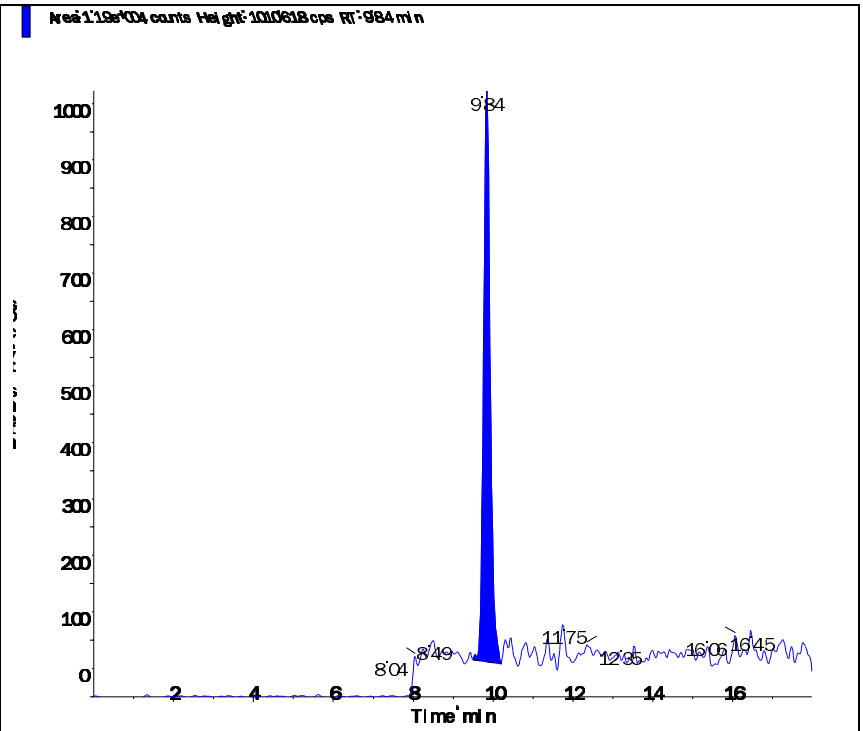

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Printed: 6/30/2016 3:28 PM

Data File	LM34689.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

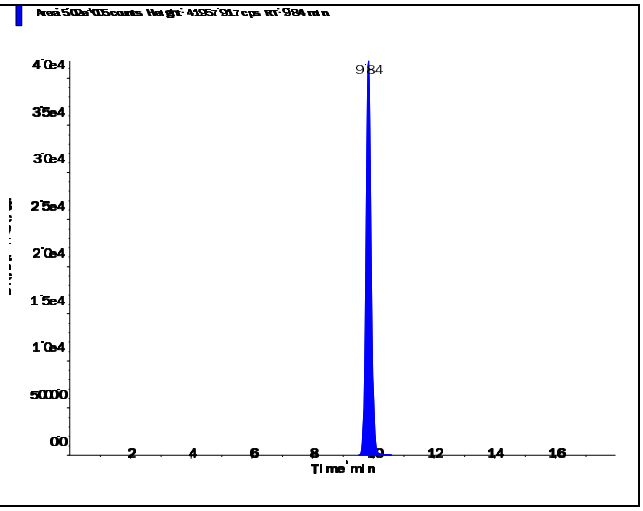

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.483 ng/ml
Area Ratio:	0.164
Sample Type:	(Standard)

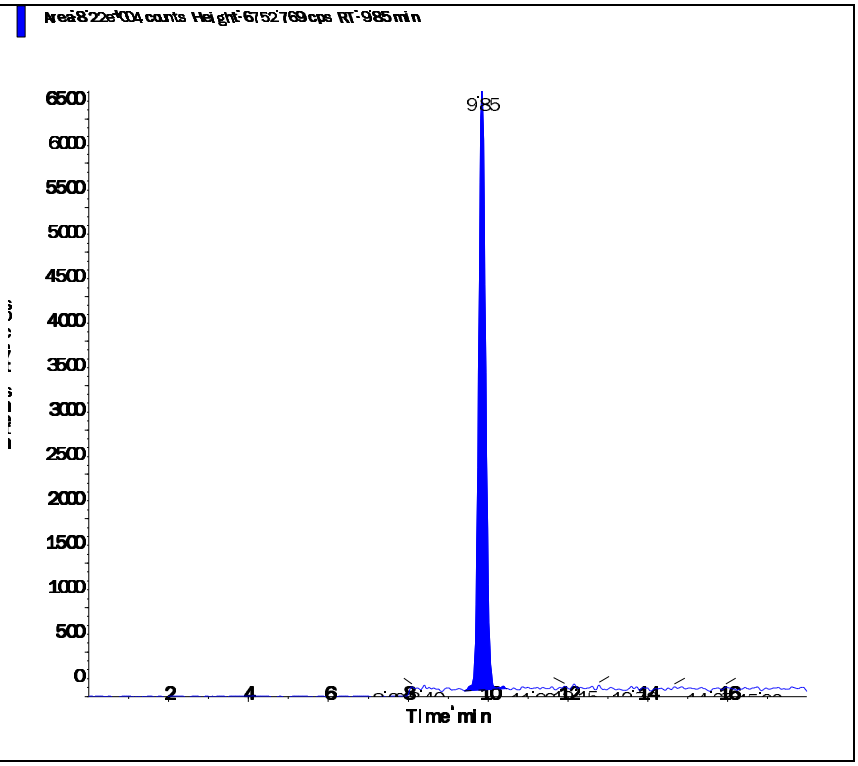

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.503 ng/ml
Area Ratio:	0.058
Sample Type:	(Standard)

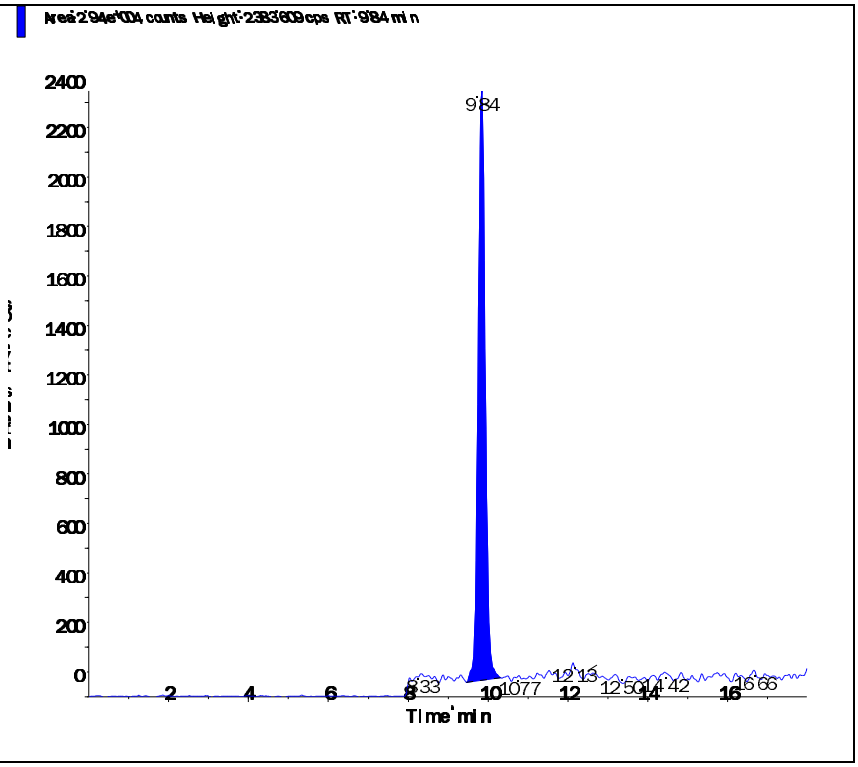

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Data File	LM34690.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

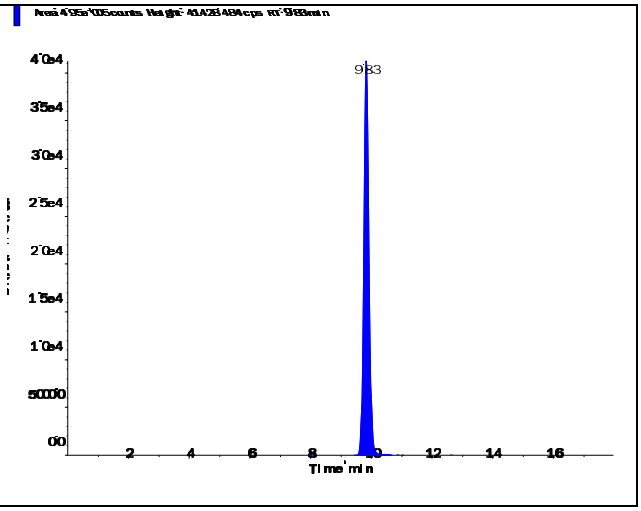

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

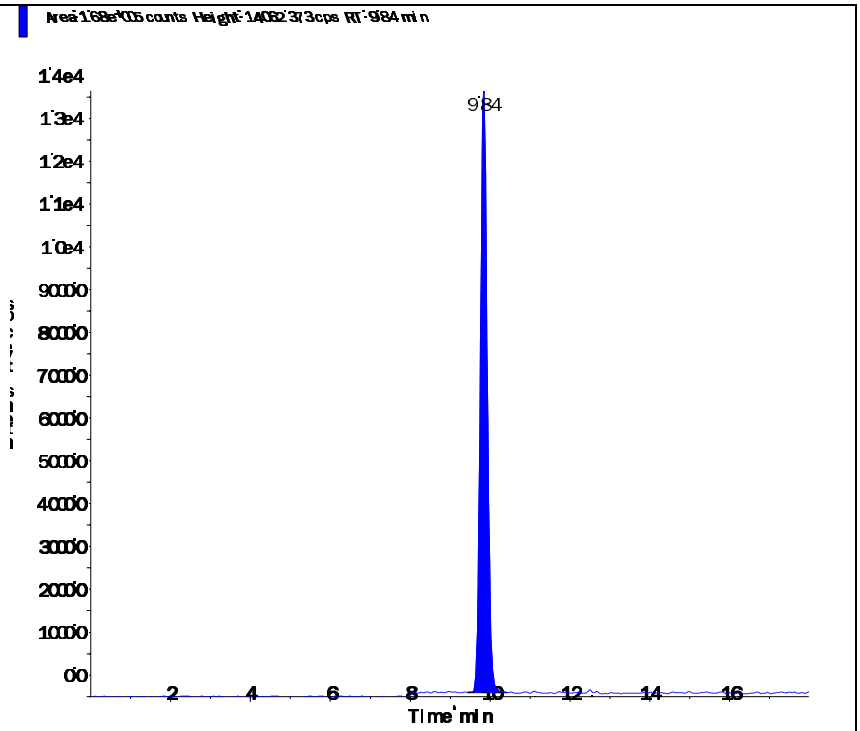

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

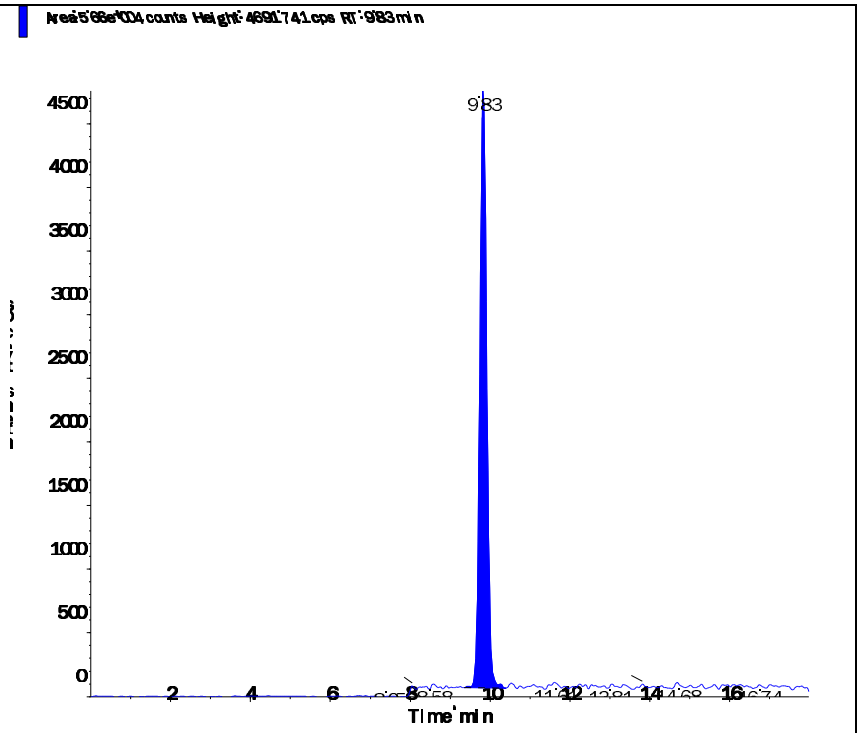

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Data File	LM34691.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

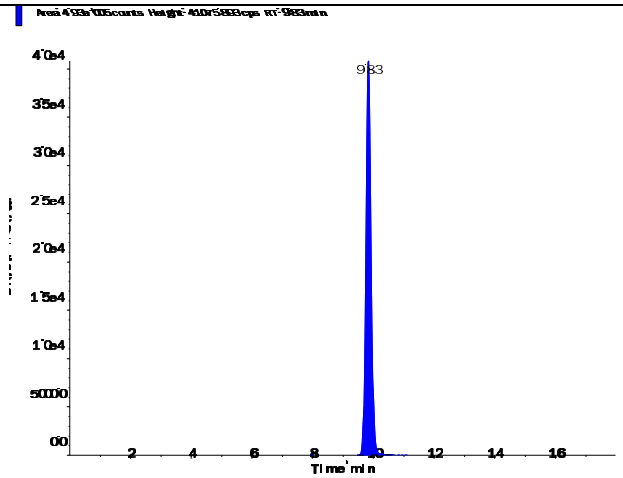

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 1.99 ng/ml Area Ratio: 0.669 Sample Type: (Standard)	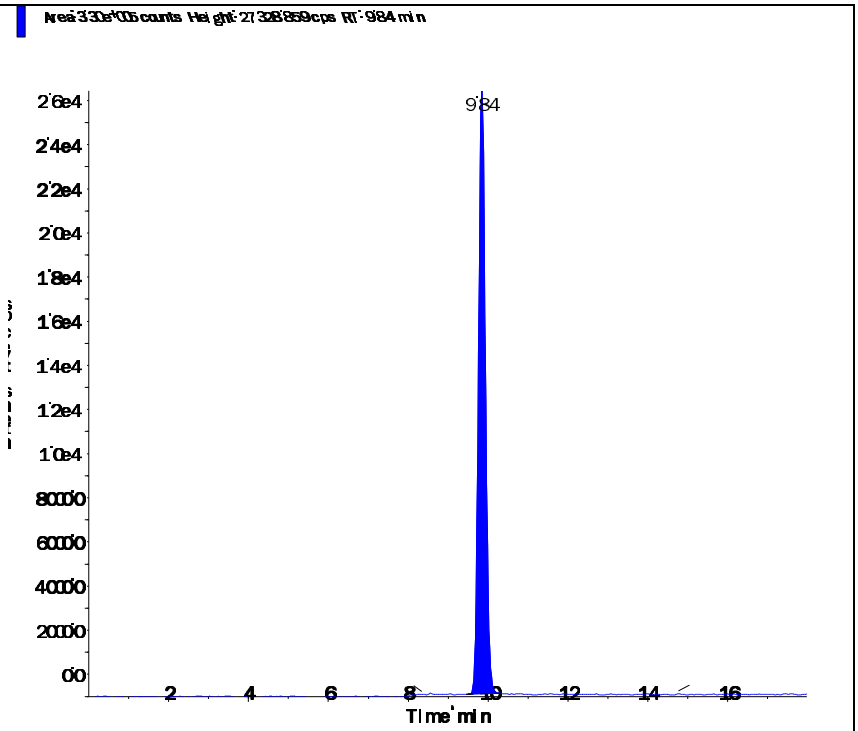
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 1.94 ng/ml Area Ratio: 0.219 Sample Type: (Standard)	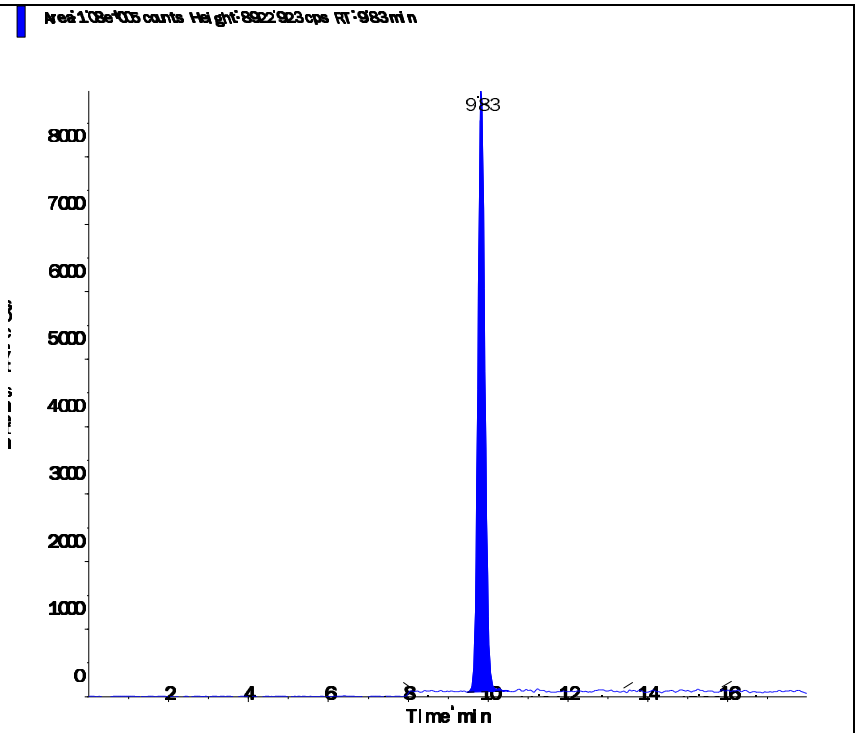

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Data File	LM34692.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

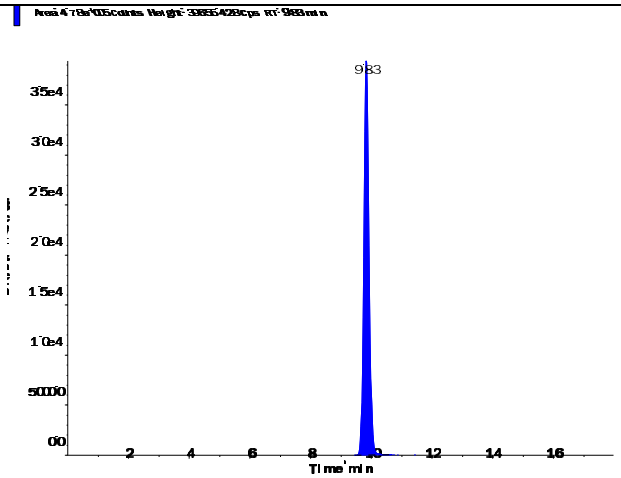

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

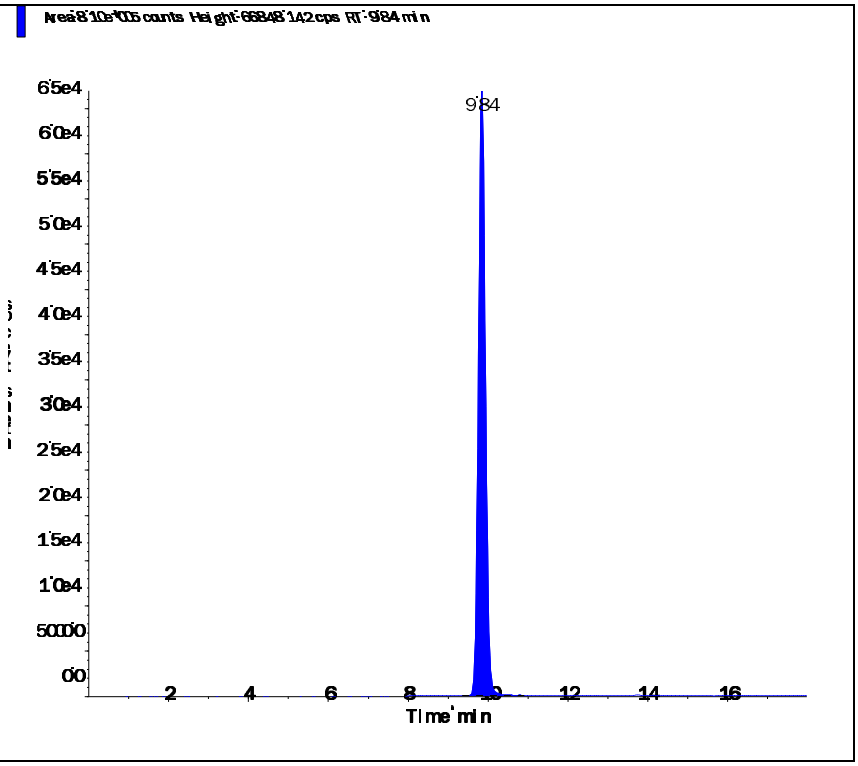

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

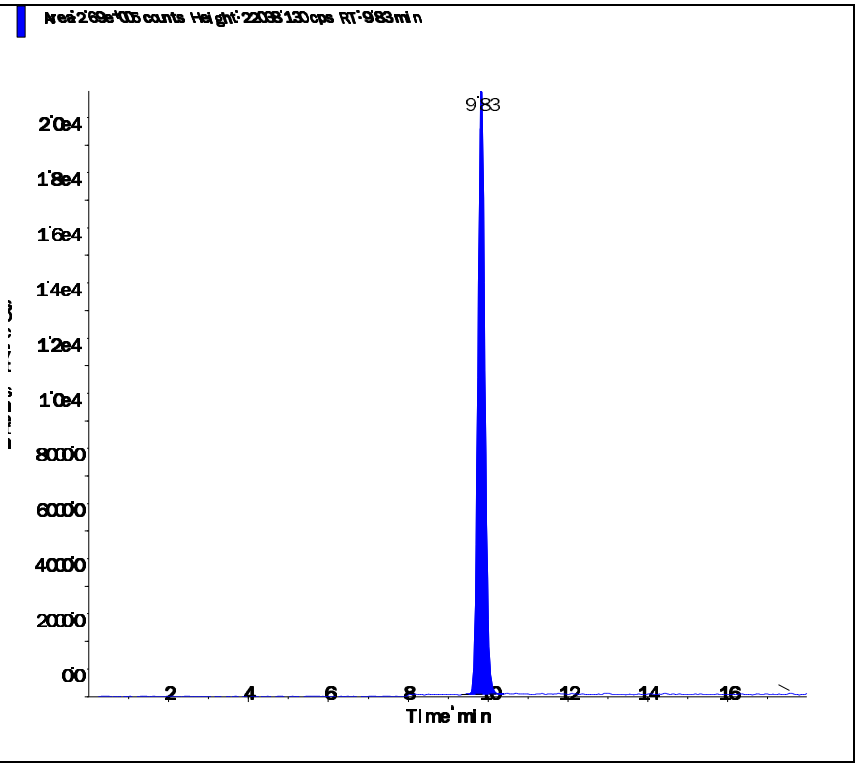

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Data File	LM34693.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

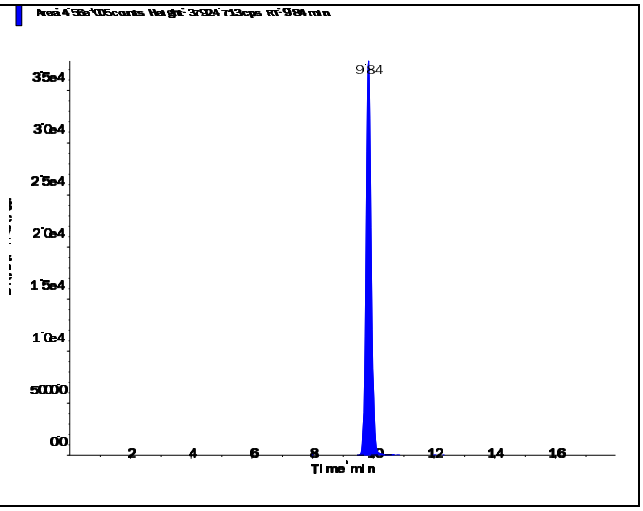

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	9.99 ng/ml
Area Ratio:	3.36
Sample Type:	(Standard)

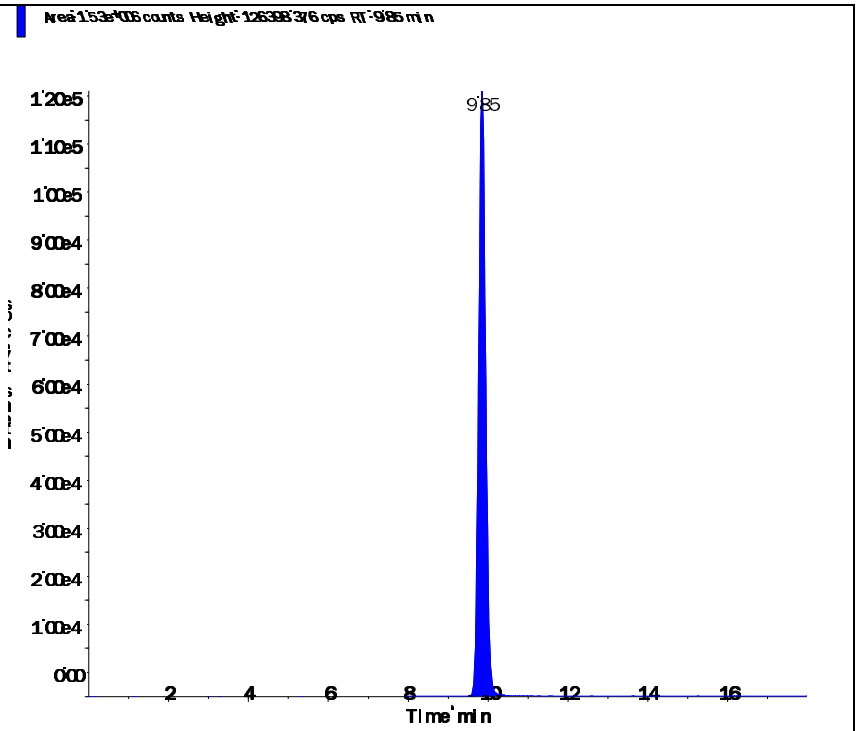

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	10.00 ng/ml
Area Ratio:	1.122
Sample Type:	(Standard)

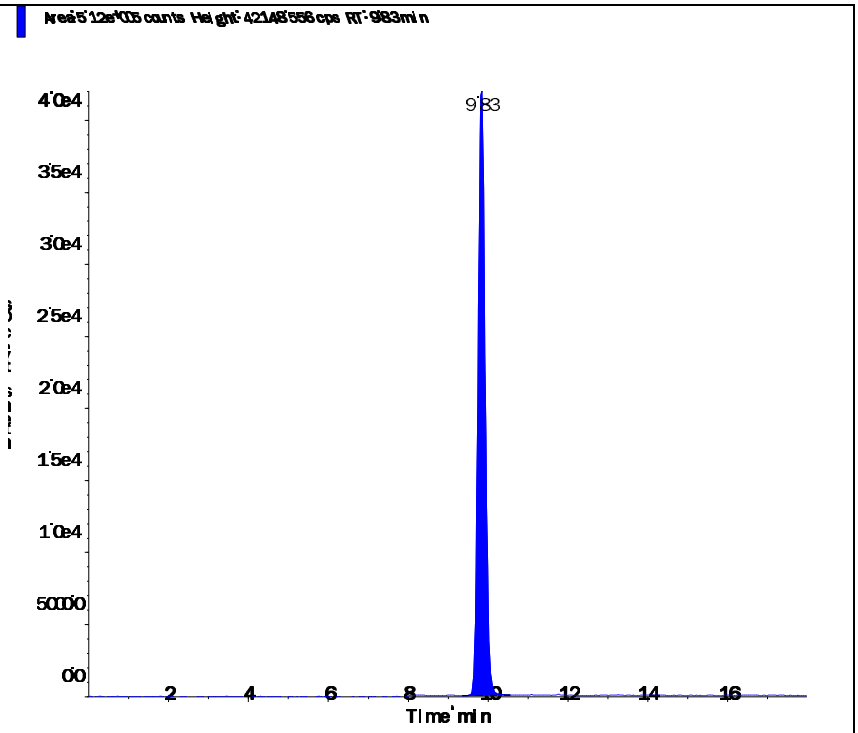

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Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

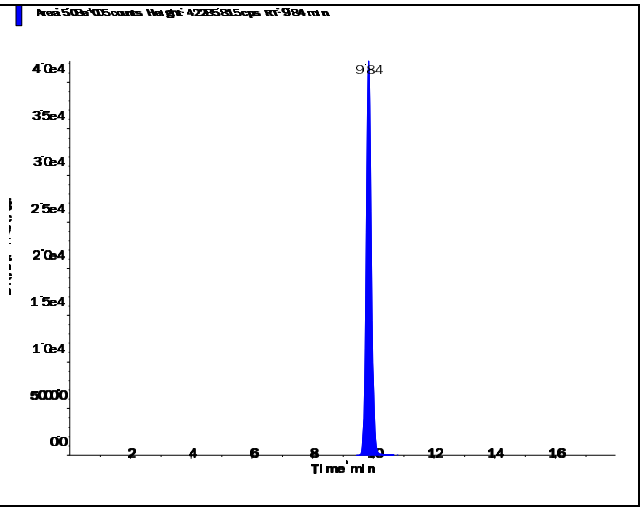

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.332
Sample Type:	(Quality Control)

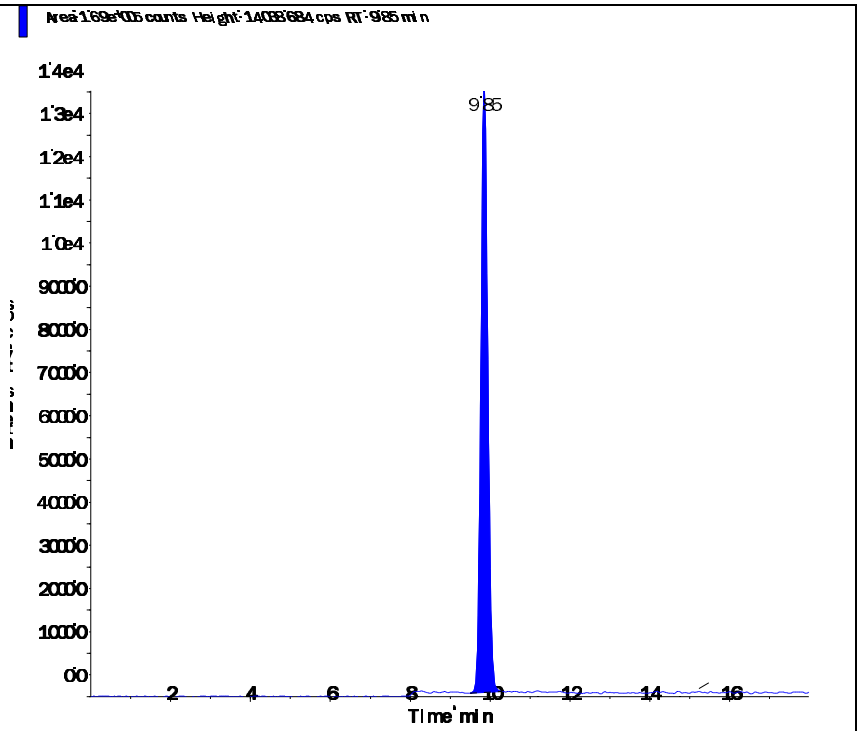

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

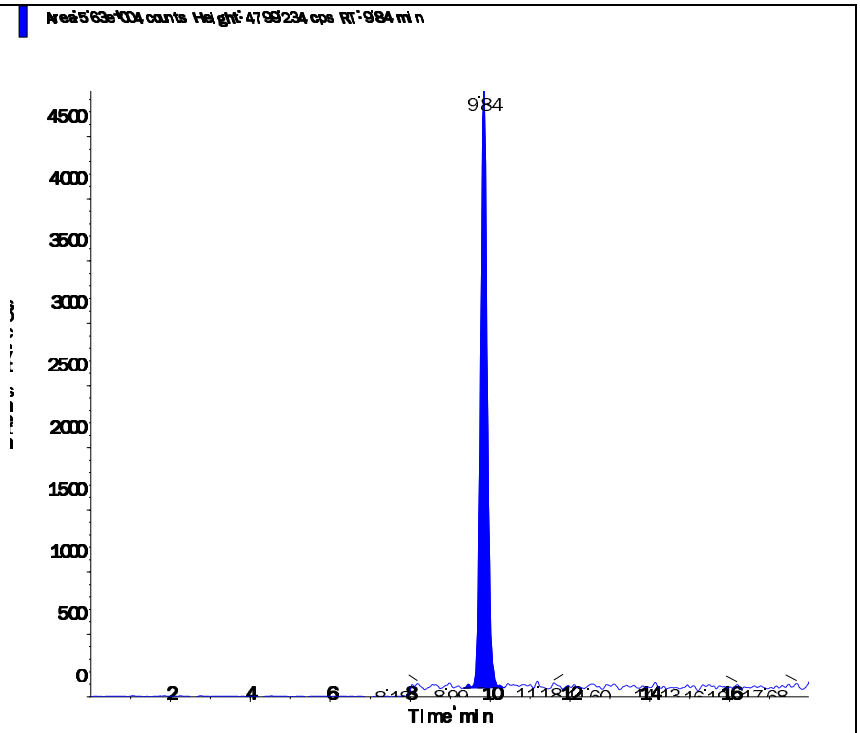

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Data File	LM35518.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 5:17:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574710-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35518.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 5:17:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574710-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.700e+05	9.38	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.620e+05	9.40	1.00	1.02
Perchlorate conf	5.740e+04	9.39	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 9.38(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

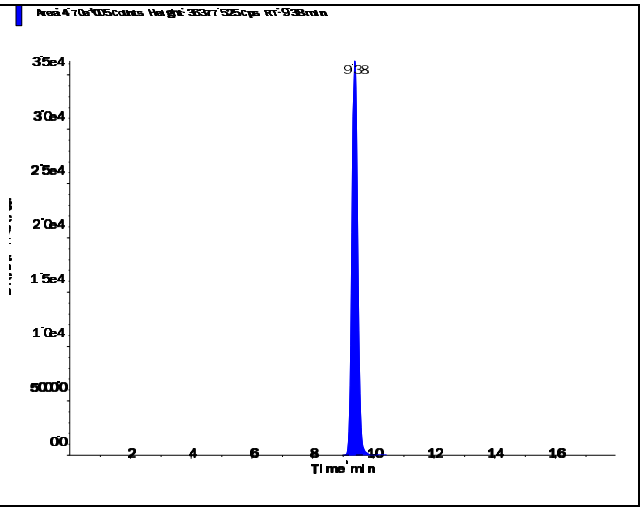

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.345
Sample Type:	(Quality Control)

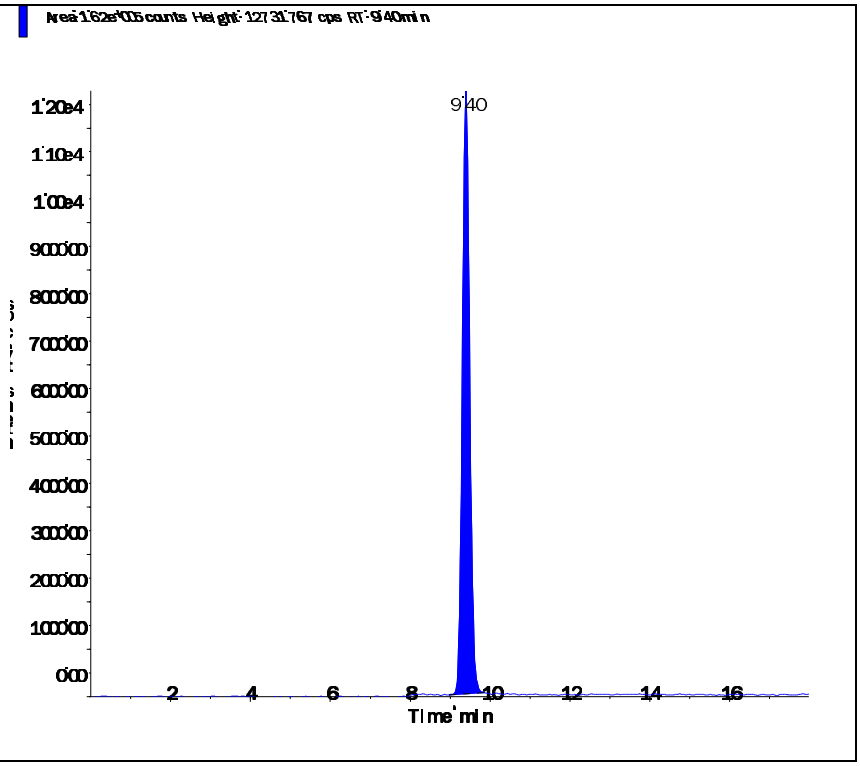

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	1.07 ng/ml
Area Ratio:	0.122
Sample Type:	(Quality Control)

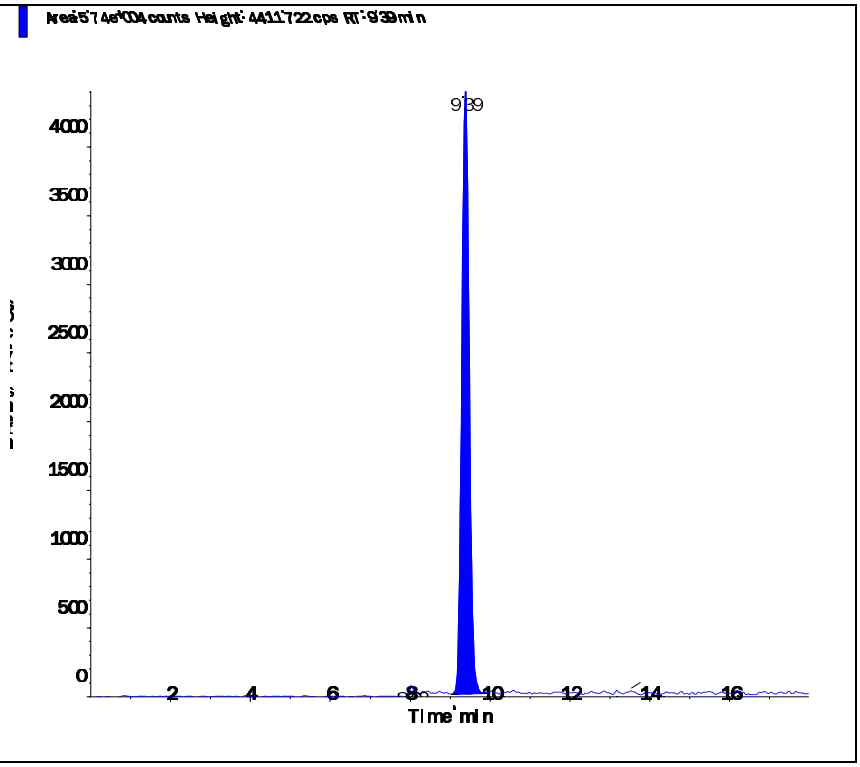

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Data File	LM35530.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 9:04:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574710-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35530.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 9:04:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574710-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.240e+05	9.38	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.760e+05	9.39	1.00	0.996
Perchlorate conf	5.940e+04	9.38	1.00	0.994

O18LP (Internal Standard)

RT (Exp. RT): 9.38(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

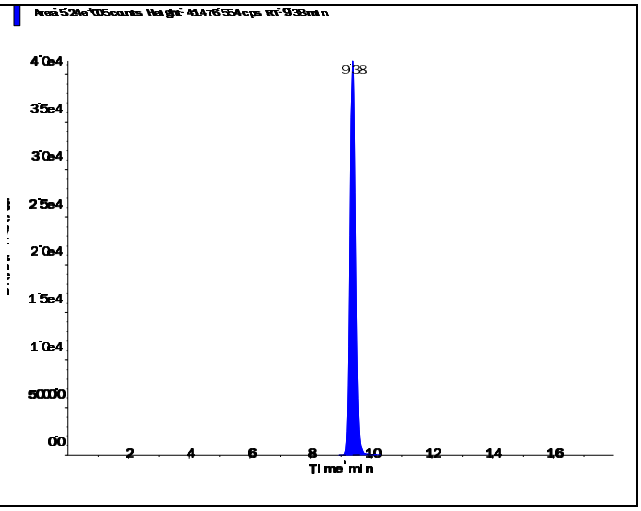

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.39 (9.84) min Calculated conc: 0.996 ng/ml Area Ratio: 0.336 Sample Type: (Quality Control)	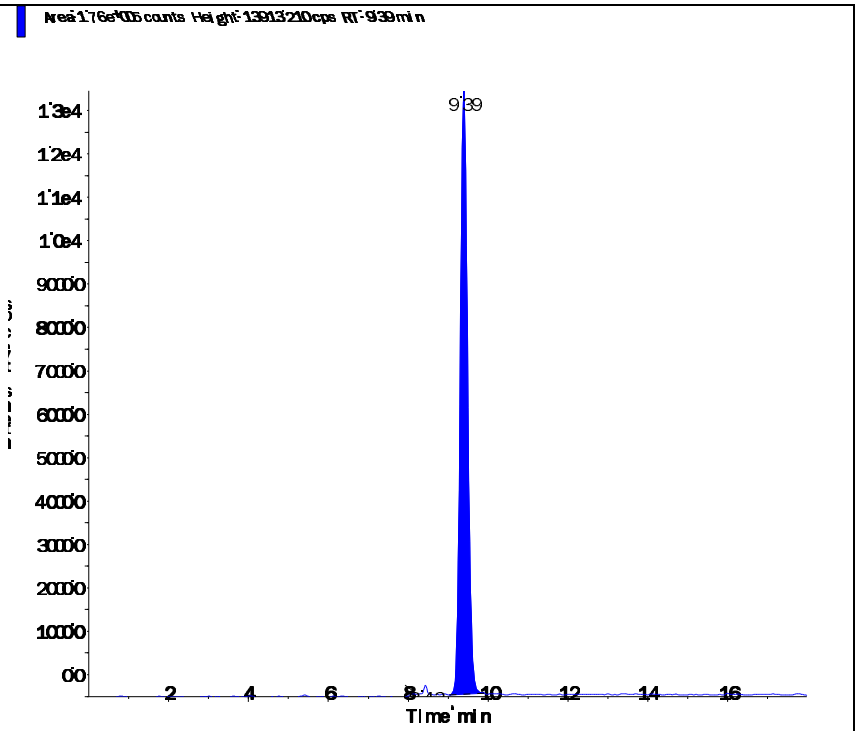
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.38 (9.84) min Calculated conc: 0.994 ng/ml Area Ratio: 0.113 Sample Type: (Quality Control)	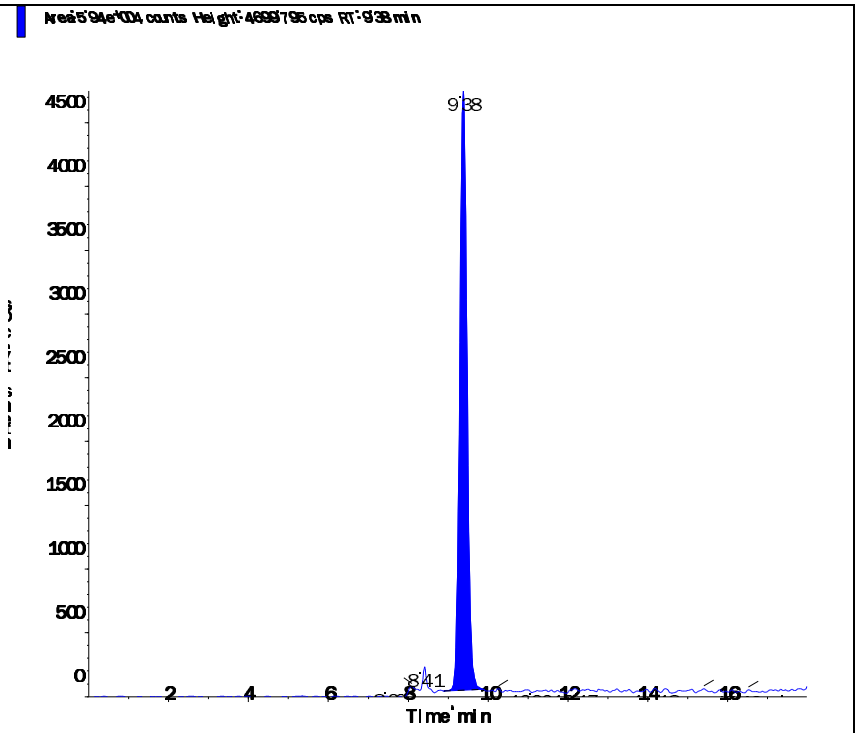

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Data File	LM35543.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 1:11:03 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574710-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35543.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 1:11:03 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574710-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.400e+05	9.37	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.870e+05	9.38	1.00	1.03
Perchlorate conf	6.580e+04	9.37	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 9.37(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

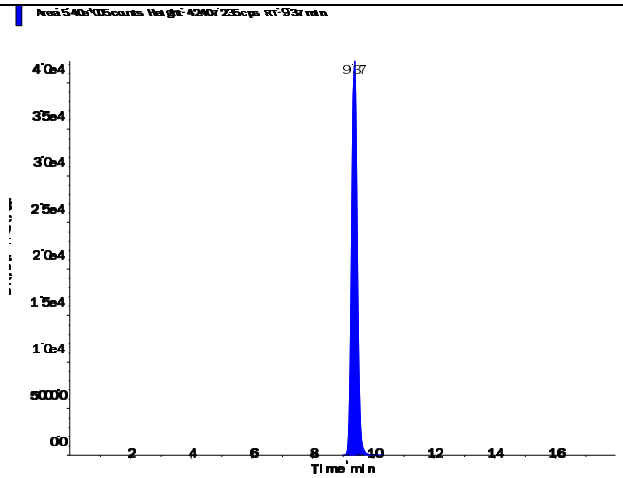

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.347
Sample Type:	(Quality Control)

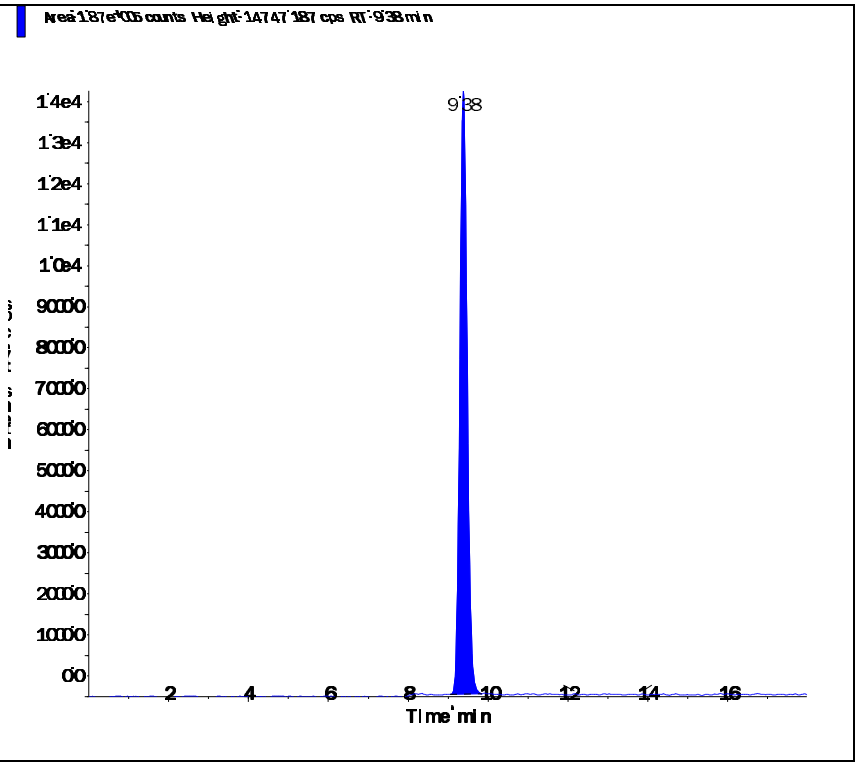

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.37 (9.84) min
Calculated conc:	1.07 ng/ml
Area Ratio:	0.122
Sample Type:	(Quality Control)

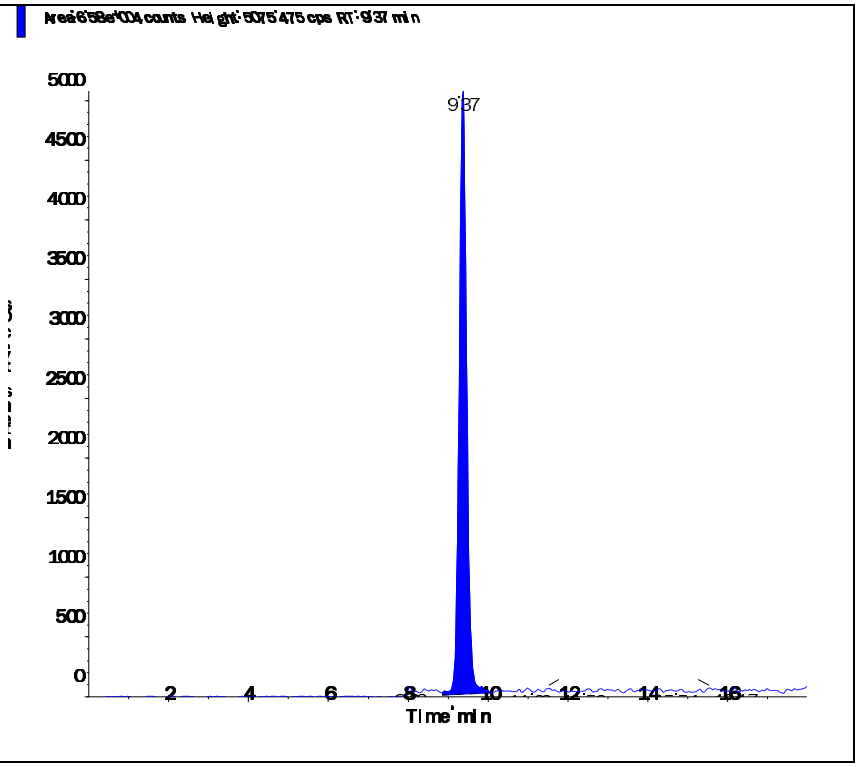

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Data File	LM35549.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 3:04:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574710-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35549.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 3:04:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574710-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.430e+05	9.38	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.880e+05	9.38	1.00	1.03
Perchlorate conf	6.550e+04	9.37	1.00	1.06

O18LP (Internal Standard)

RT (Exp. RT): 9.38(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

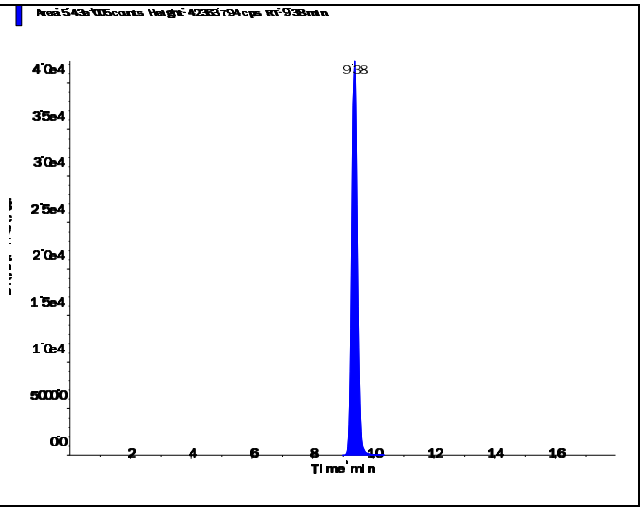

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.346
Sample Type:	(Quality Control)

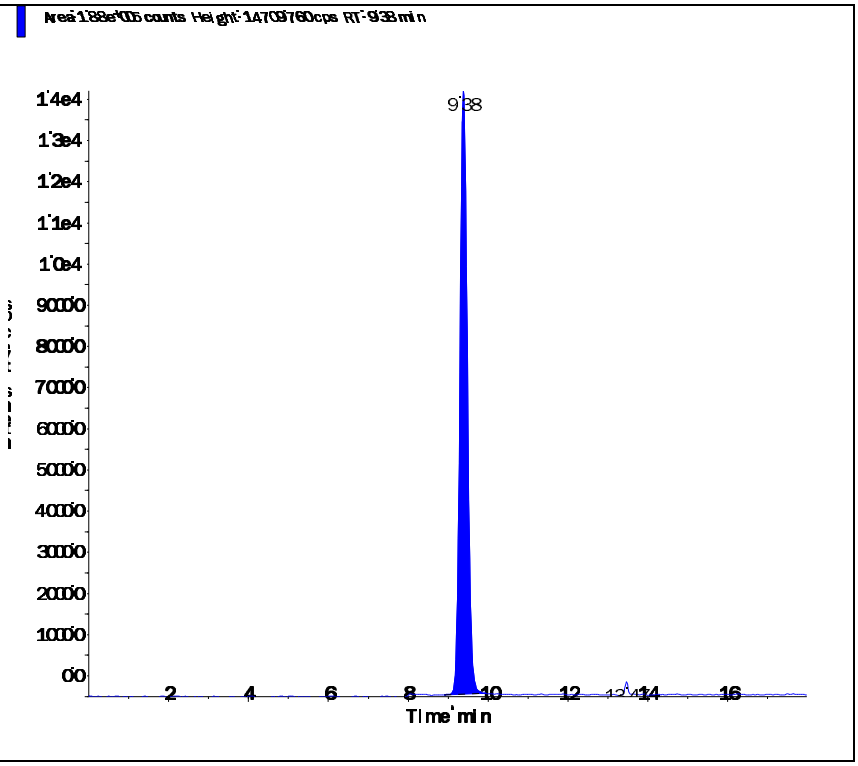

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.37 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

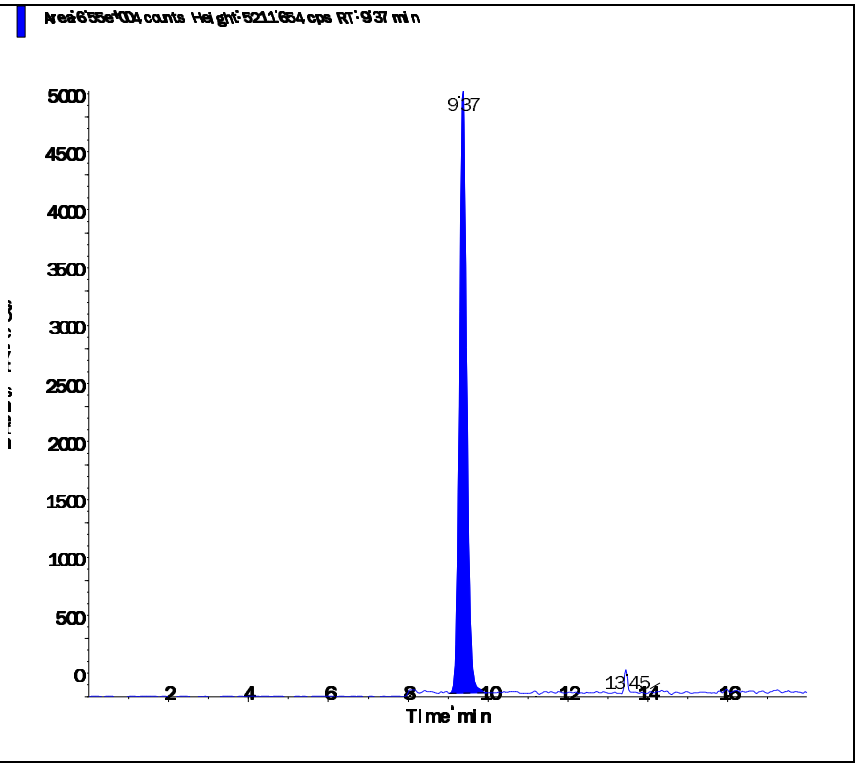

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Data File	LM35552.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 12:56:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574710-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35552.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 12:56:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574710-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.710e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.620e+05	9.40	1.00	1.02
Perchlorate conf	5.570e+04	9.38	1.00	1.04

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

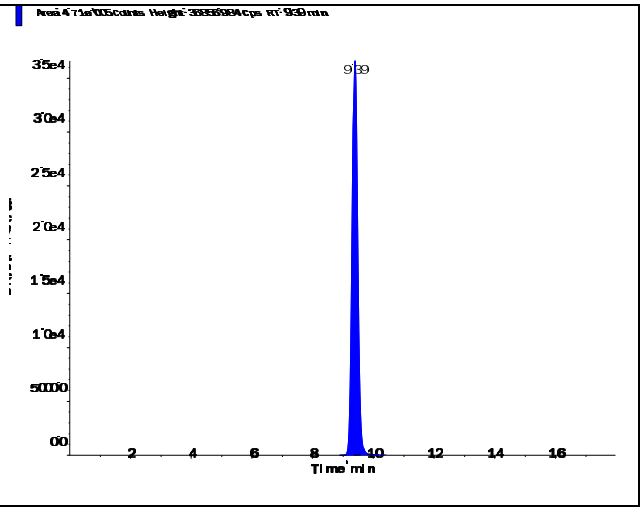

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.344
Sample Type:	(Quality Control)

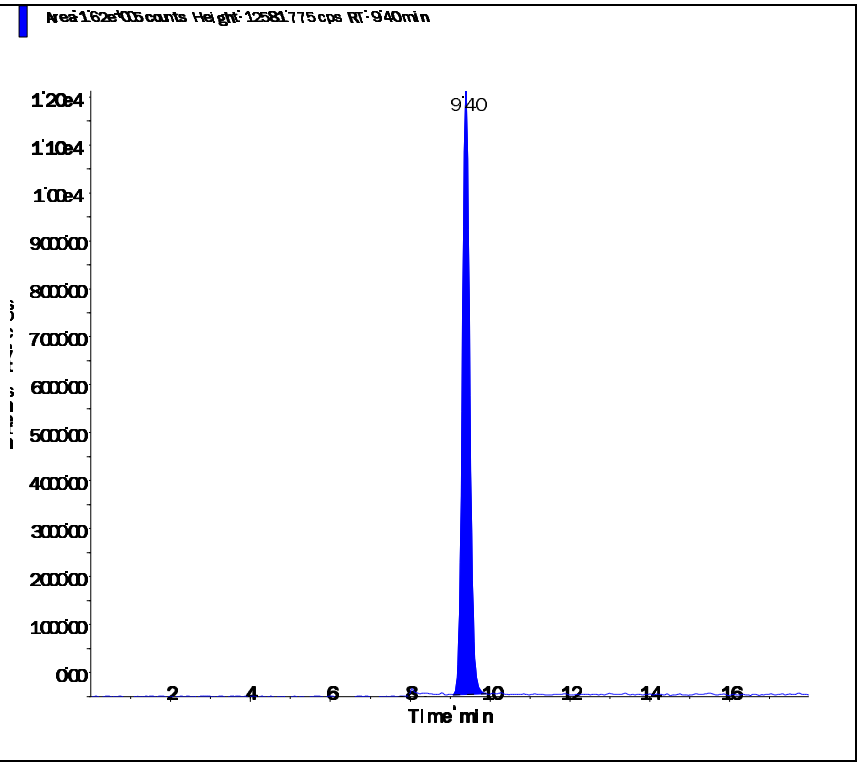

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.118
Sample Type:	(Quality Control)

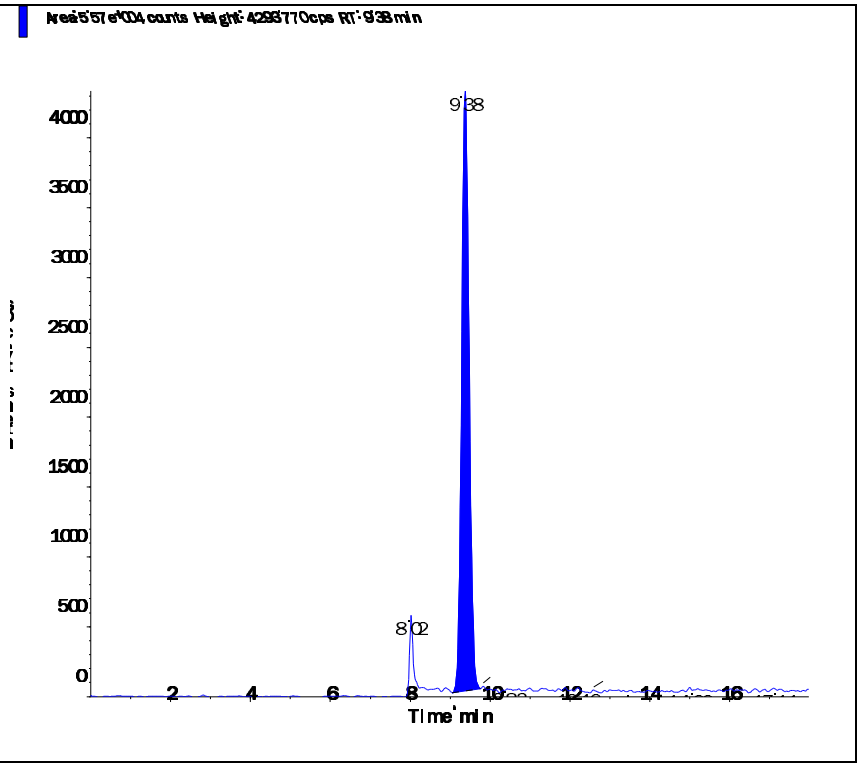

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Data File	LM35556.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 2:12:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574710-11 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35556.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 2:12:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574710-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.740e+05	9.40	1.00	1.03
Perchlorate conf	6.080e+04	9.39	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

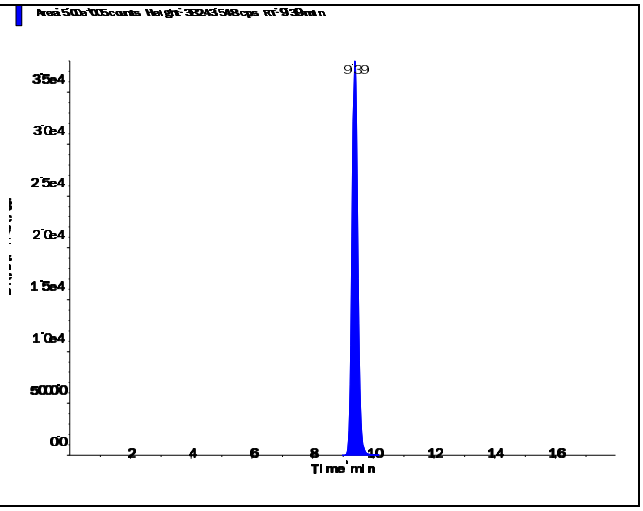

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.348
Sample Type:	(Quality Control)

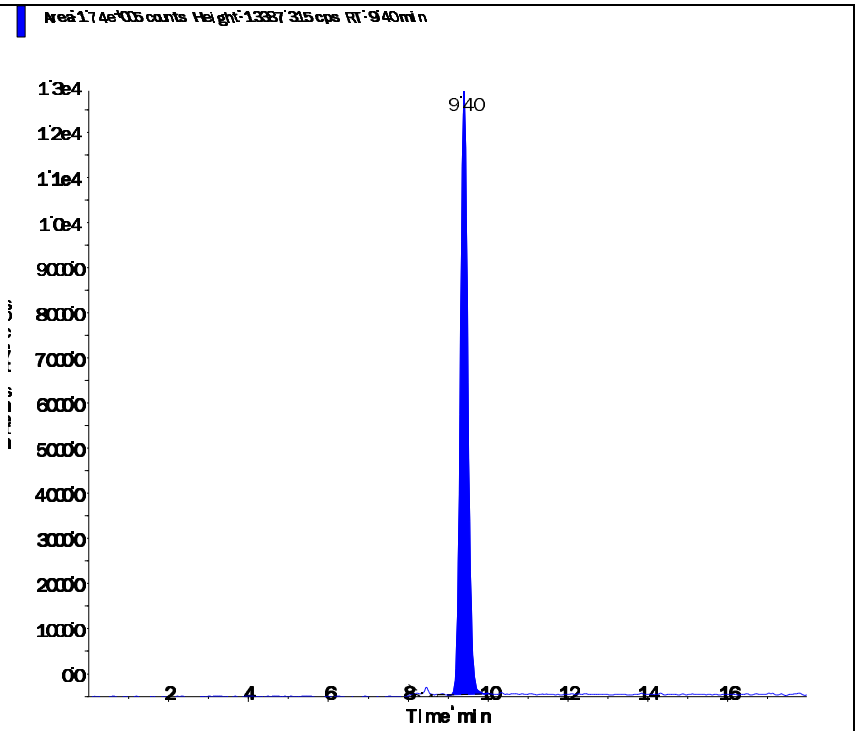

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	1.07 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

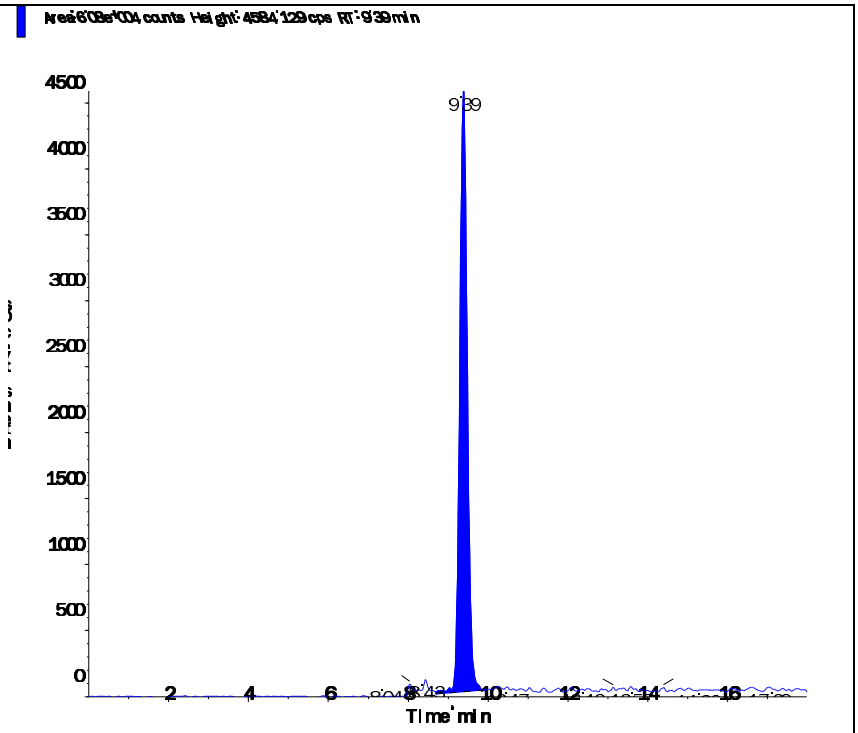

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Data File	LM35519.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 5:36:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574701-13 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35519.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 5:36:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-13	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.700e+05	9.43	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.270e+04	9.44	N/A	0.203
Perchlorate conf	1.220e+04	9.43	N/A	0.212

O18LP (Internal Standard)

RT (Exp. RT): 9.43(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

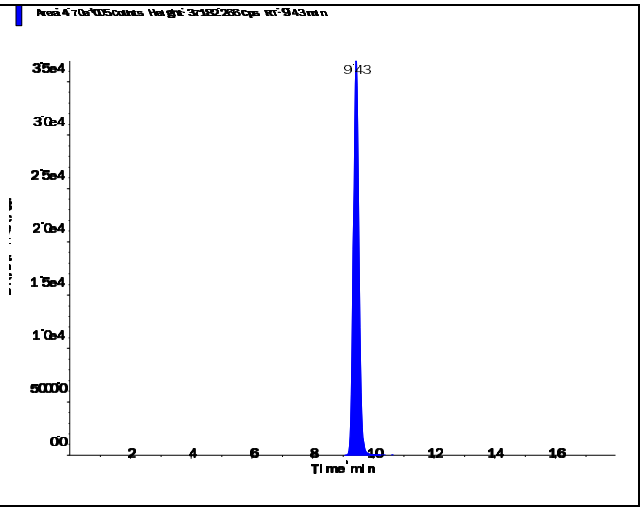

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	0.203 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

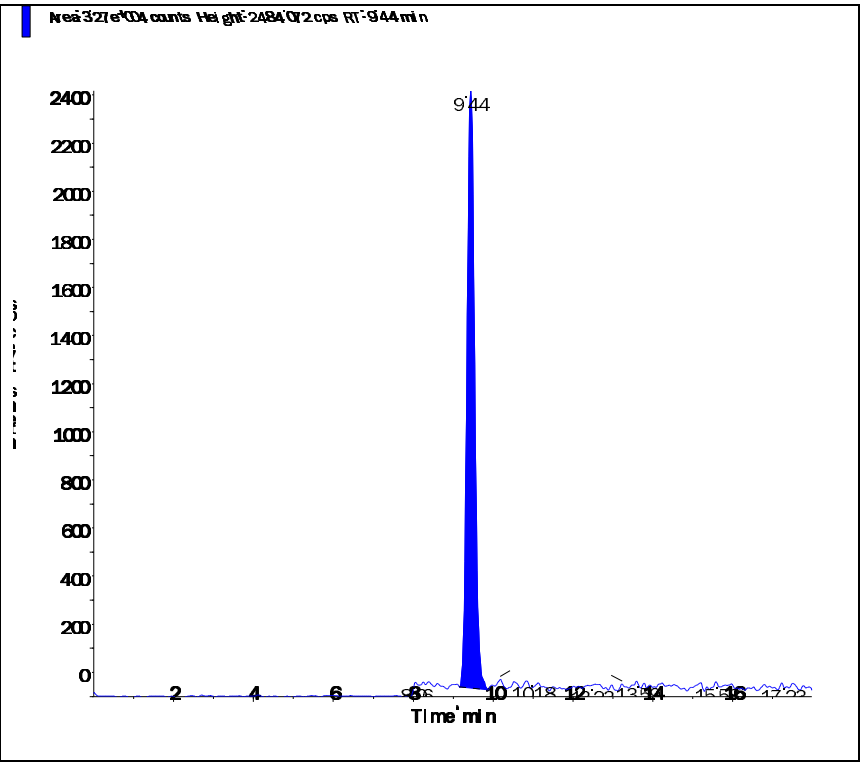

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.43 (9.84) min
Calculated conc:	0.212 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

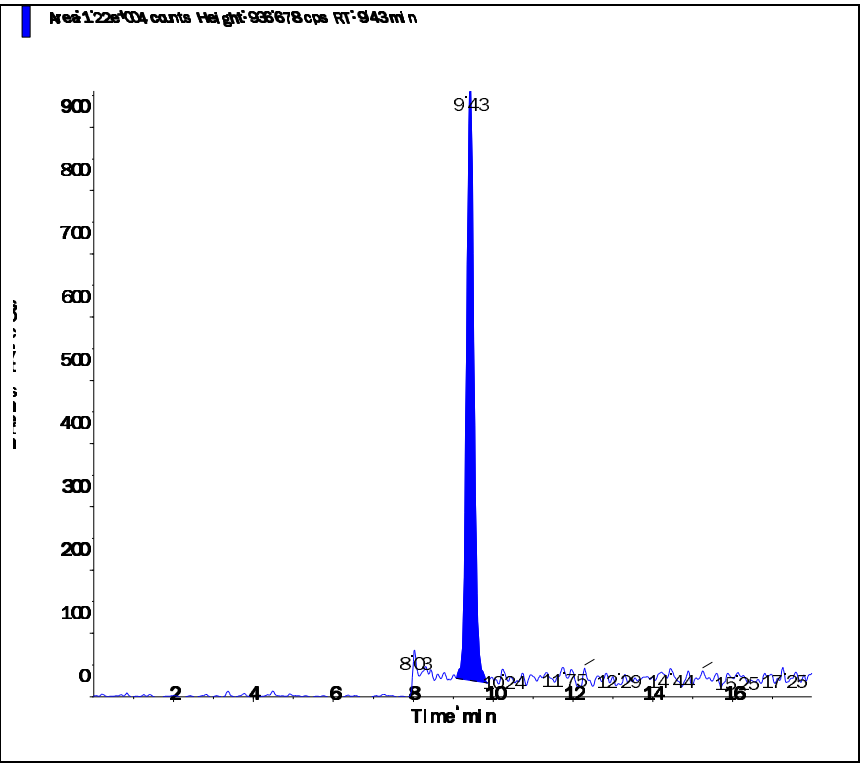

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Data File	LM35531.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 9:23:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574701-14 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35531.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 9:23:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-14	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.220e+05	9.42	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.730e+04	9.43	N/A	0.209
Perchlorate conf	1.290e+04	9.43	N/A	0.201

O18LP (Internal Standard)

RT (Exp. RT): 9.42(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

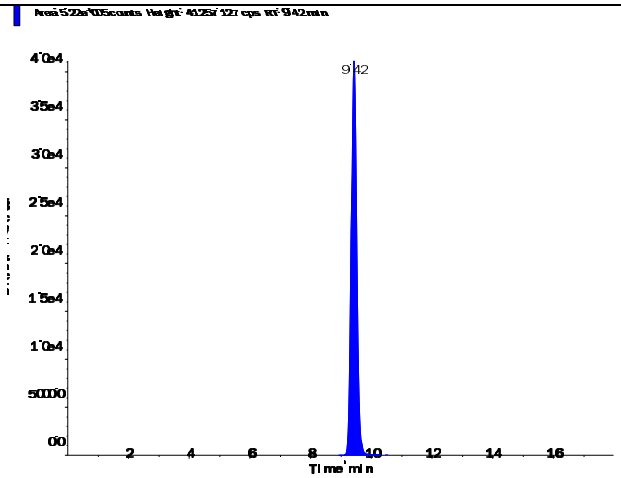

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.43 (9.84) min
Calculated conc:	0.209 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

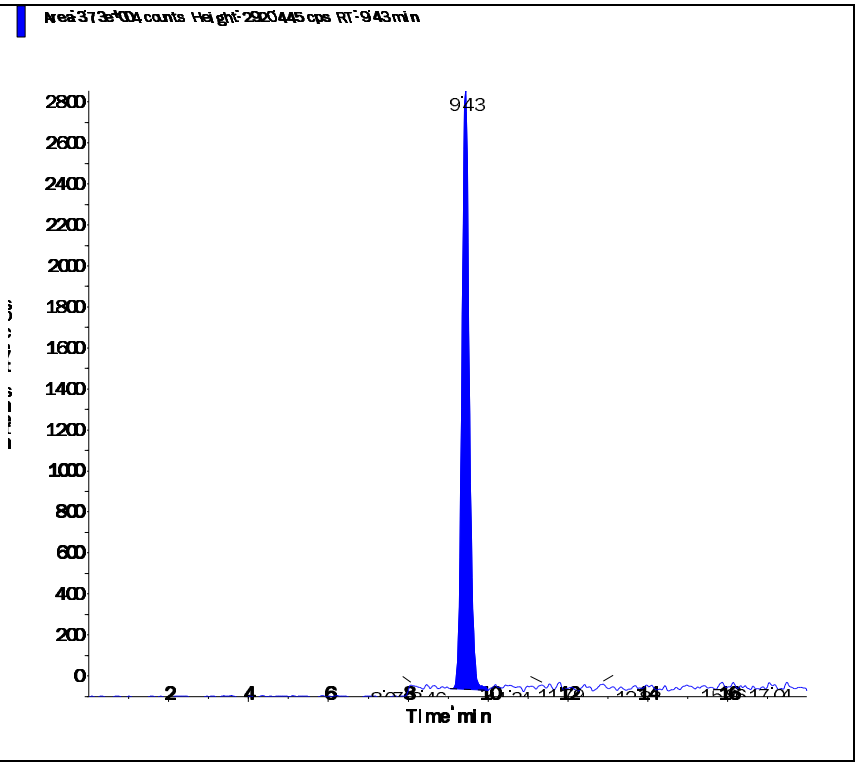

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.43 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

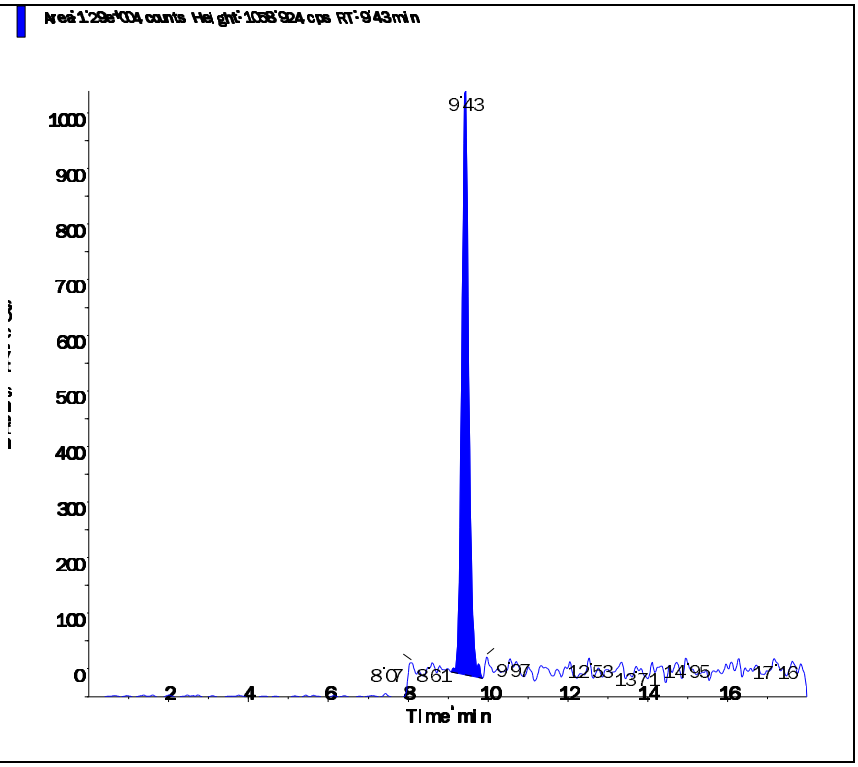

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Data File	LM35544.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 1:29:59 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574701-15 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35544.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 1:29:59 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-15	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.540e+05	9.42	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.820e+04	9.43	N/A	0.201
Perchlorate conf	1.320e+04	9.42	N/A	0.193

O18LP (Internal Standard)

RT (Exp. RT): 9.42(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

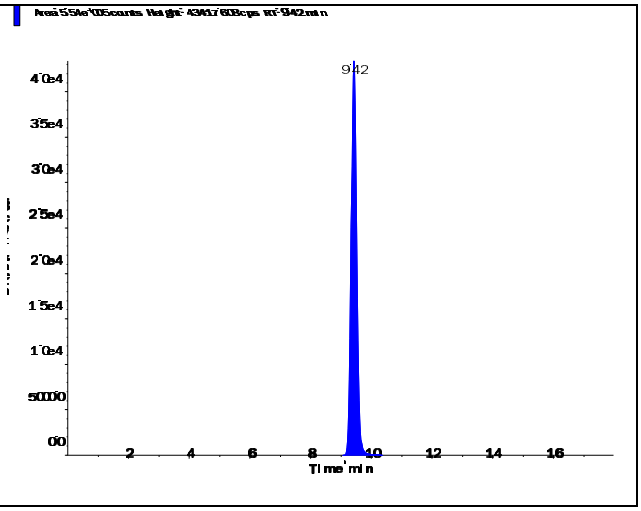

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.43 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

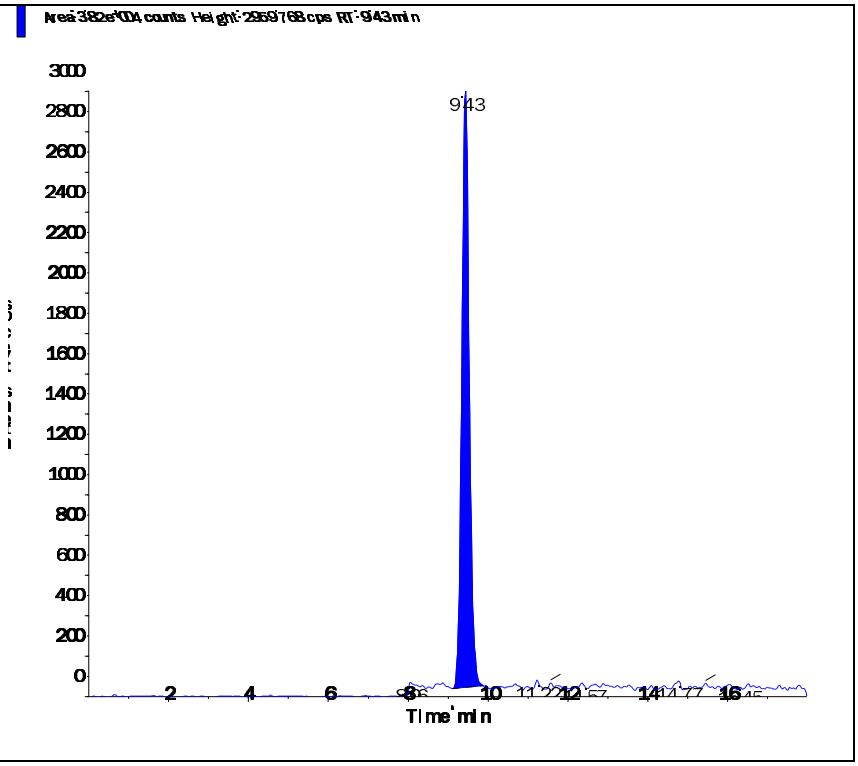

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.42 (9.84) min
Calculated conc:	0.193 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

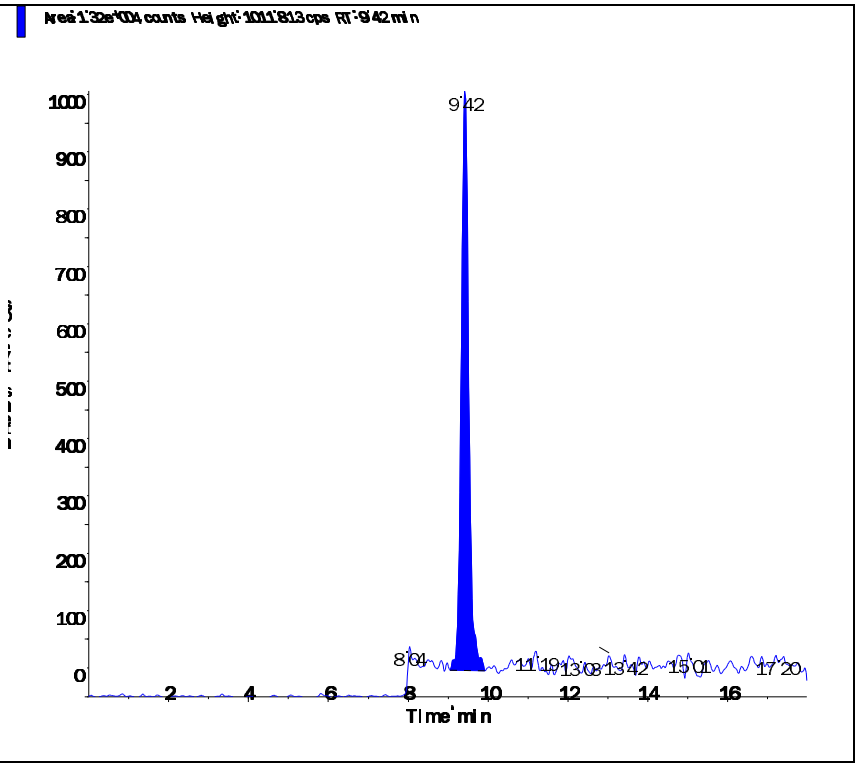

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Data File	LM35550.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 3:23:36 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574701-16 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35550.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 3:23:36 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-16	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.460e+05	9.41	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.890e+04	9.41	N/A	0.208
Perchlorate conf	1.390e+04	9.41	N/A	0.207

O18LP (Internal Standard)

RT (Exp. RT): 9.41(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

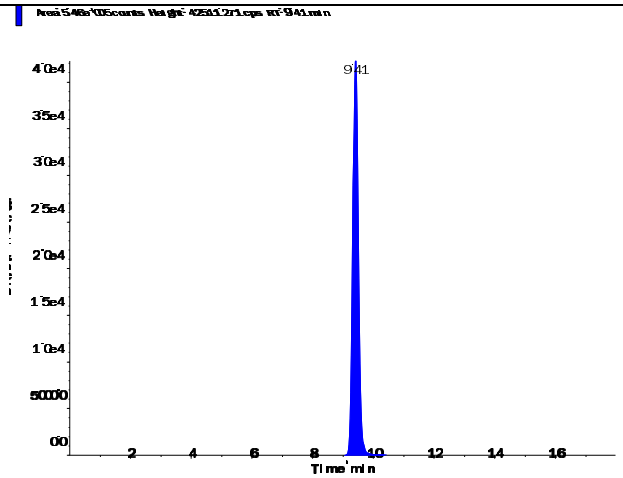

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.41 (9.84) min
Calculated conc:	0.208 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

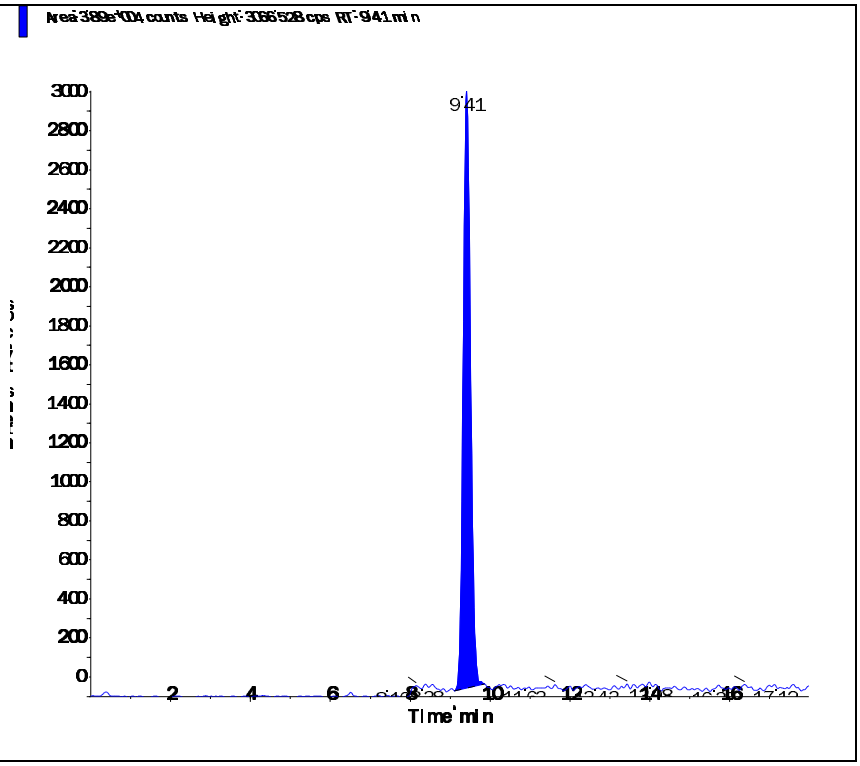

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.41 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

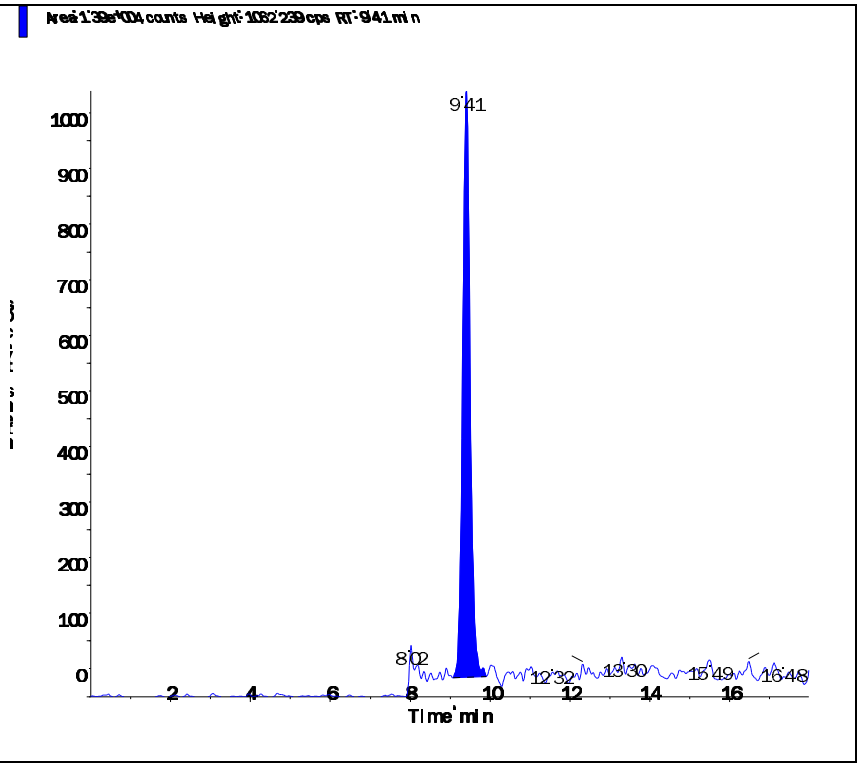

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Data File	LM35553.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 1:15:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574701-17 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35553.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 1:15:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-17	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.670e+05	9.43	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.260e+04	9.45	N/A	0.204
Perchlorate conf	1.130e+04	9.44	N/A	0.197

O18LP (Internal Standard)

RT (Exp. RT): 9.43(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

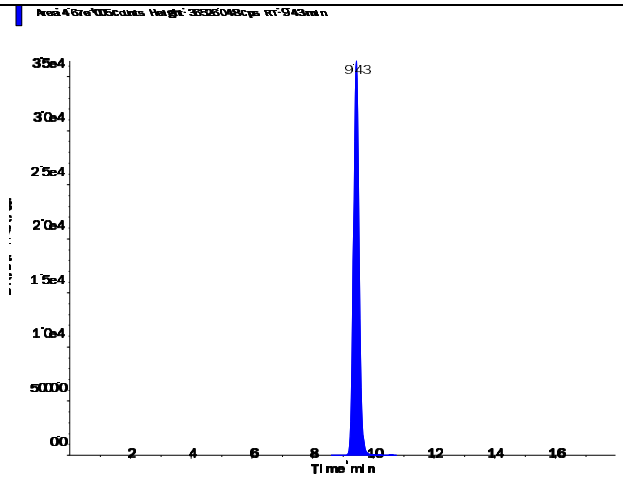

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.45 (9.84) min Calculated conc: 0.204 ng/ml Area Ratio: 0.07 Sample Type: (Unknown)	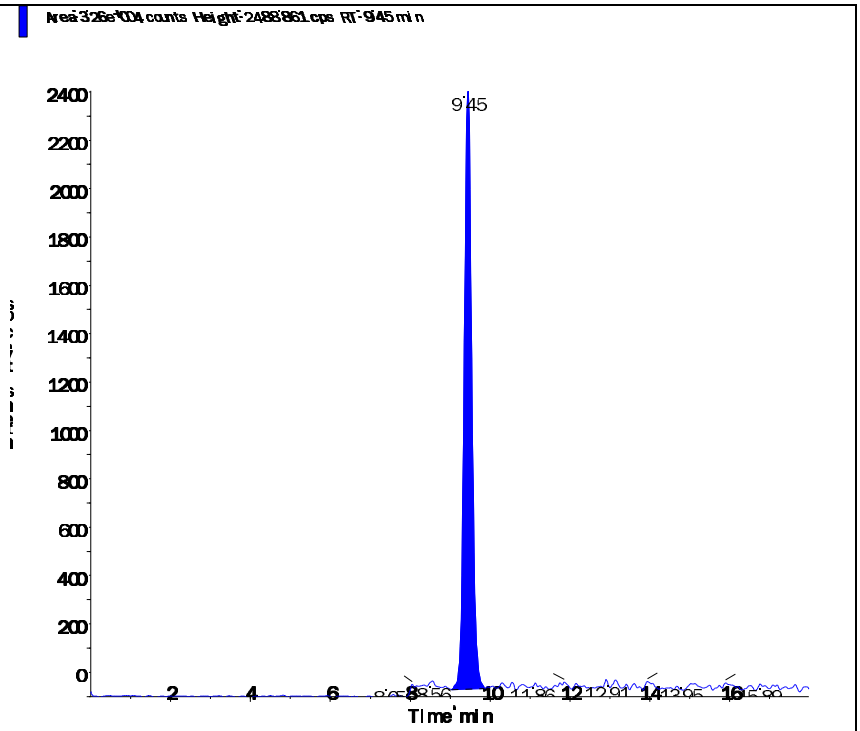
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.44 (9.84) min Calculated conc: 0.197 ng/ml Area Ratio: 0.024 Sample Type: (Unknown)	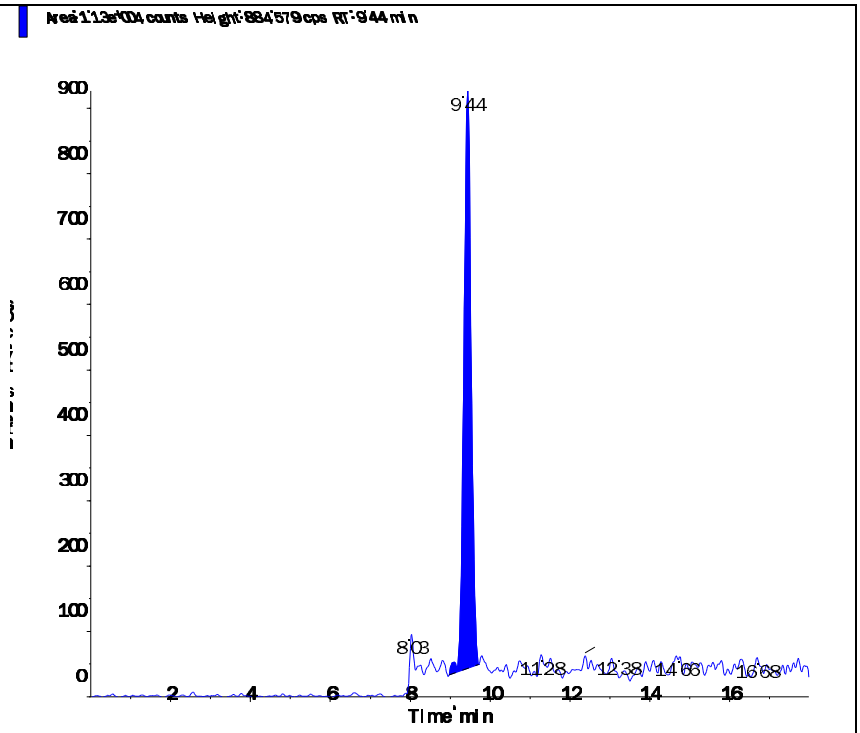

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Data File	LM35557.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 2:31:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574701-18 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35557.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 2:31:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-18	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.920e+05	9.44	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.470e+04	9.44	N/A	0.206
Perchlorate conf	1.260e+04	9.43	N/A	0.21

O18LP (Internal Standard)

RT (Exp. RT): 9.44(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

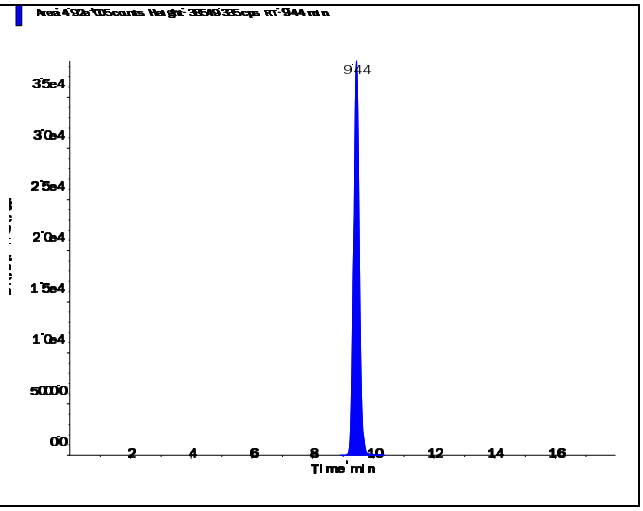

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

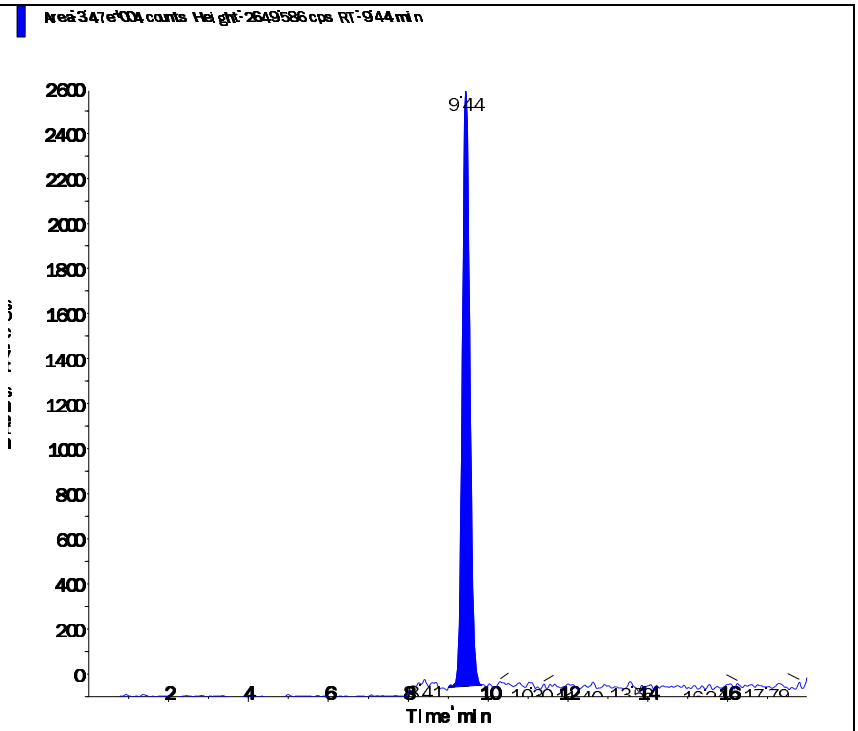

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.43 (9.84) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

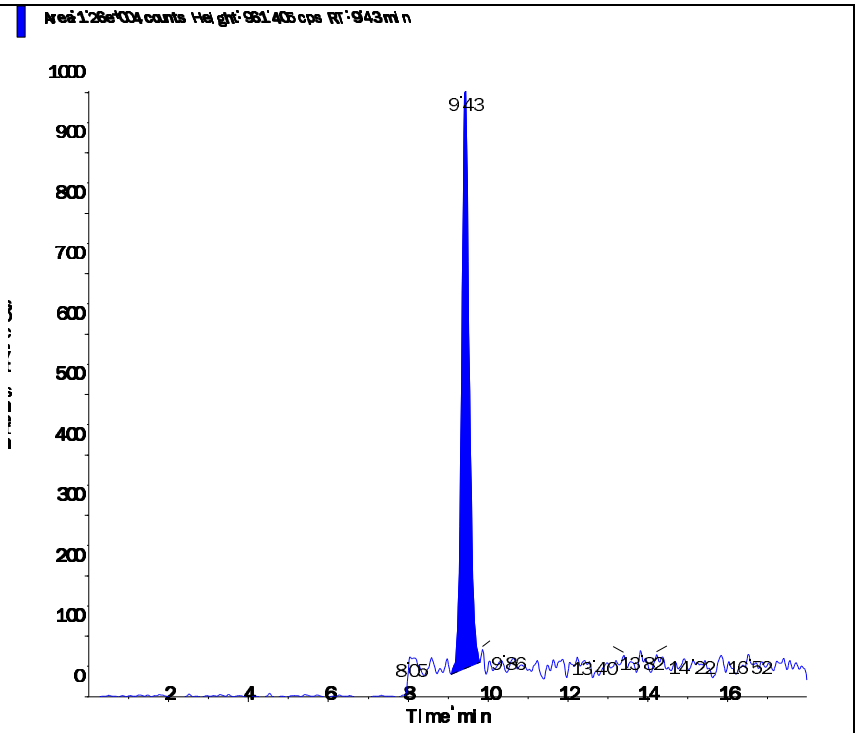

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Data File	LM35517.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 4:58:47 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574710-01 CCB	**Injection Vial**	1.00
Data File	LM35517.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 4:58:47 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574710-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.490e+05	9.65	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.65(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

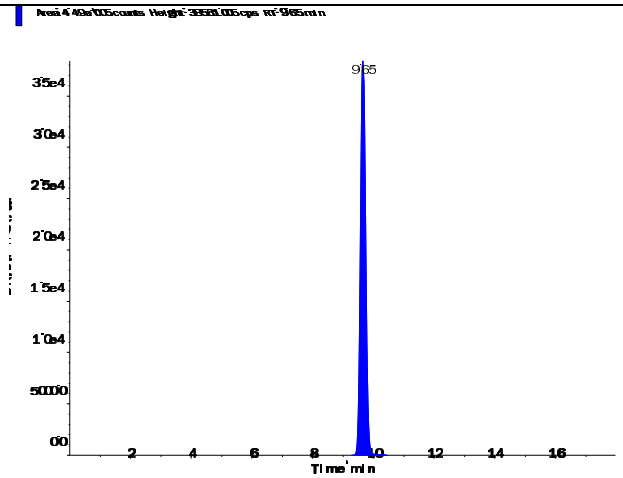

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

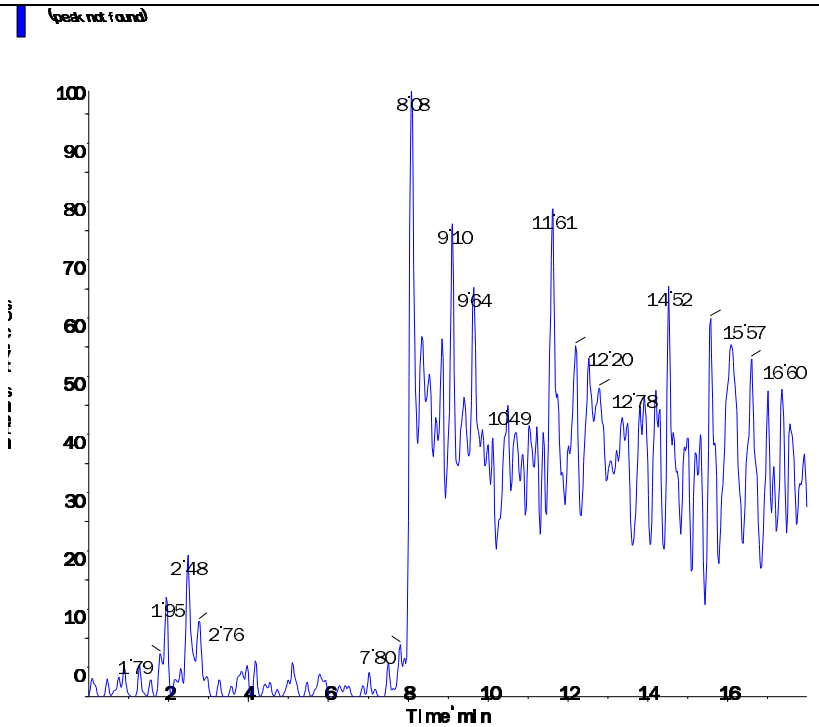

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

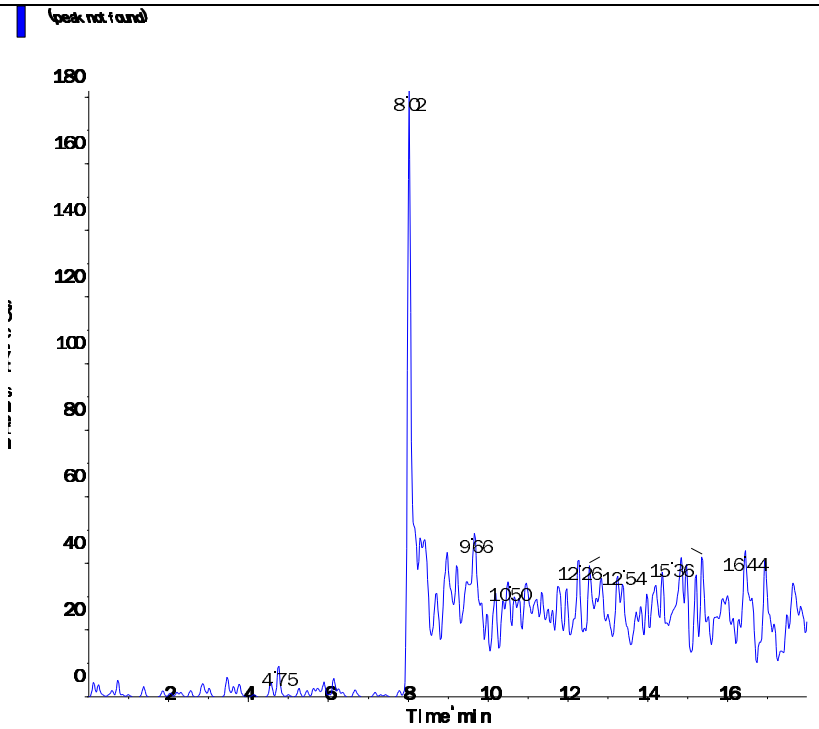

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Data File	LM35532.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 9:42:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574710-04 CCB	**Injection Vial**	1.00
Data File	LM35532.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 9:42:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574710-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.230e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

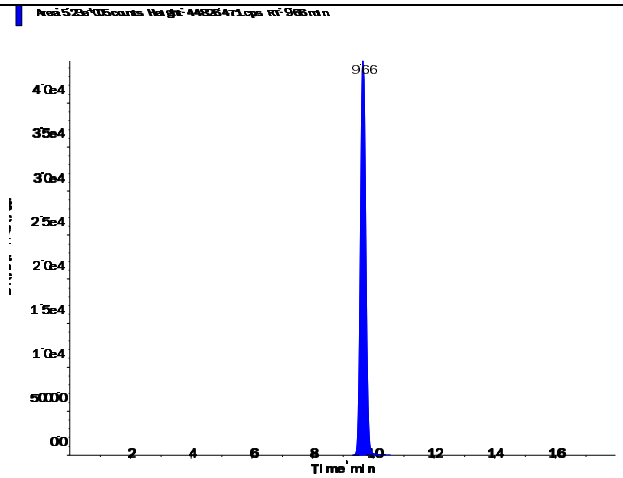

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

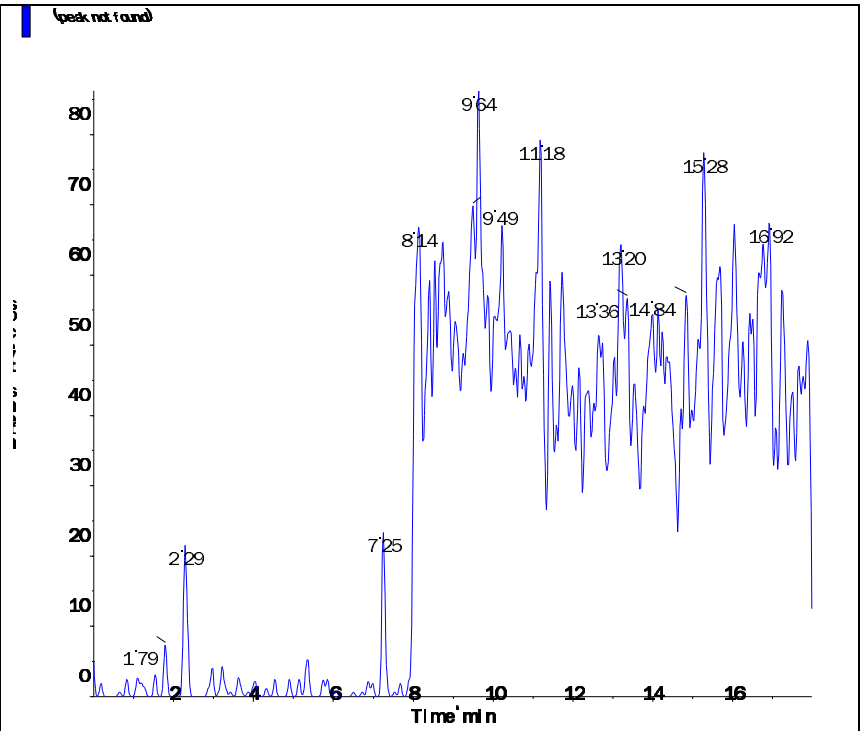

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

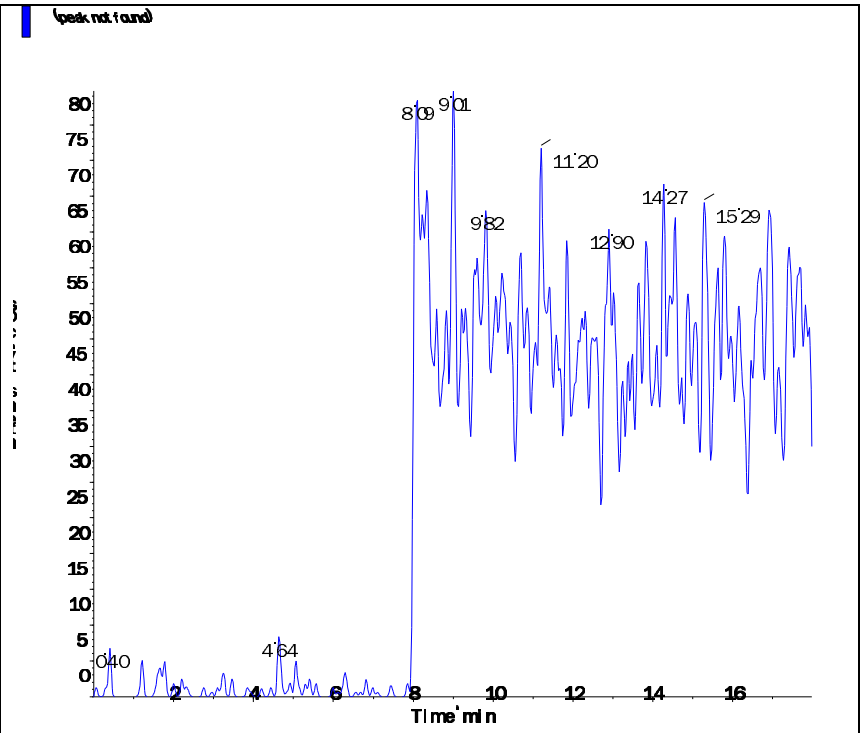

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Data File	LM35545.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 1:48:54 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574710-06 CCB	**Injection Vial**	1.00
Data File	LM35545.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 1:48:54 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574710-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.550e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	2.640e+02	9.60	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

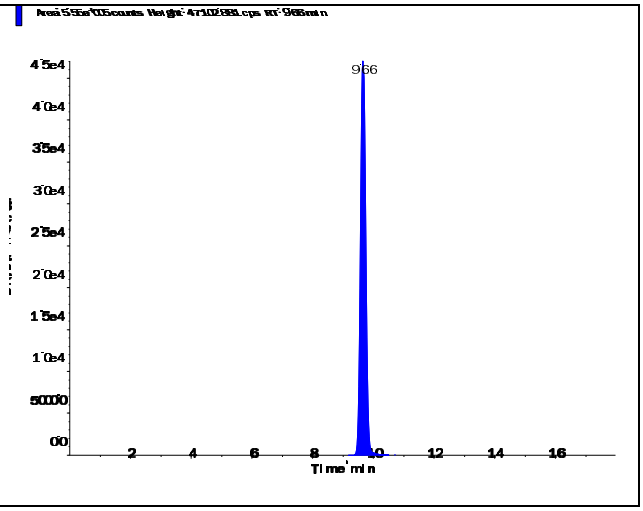

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

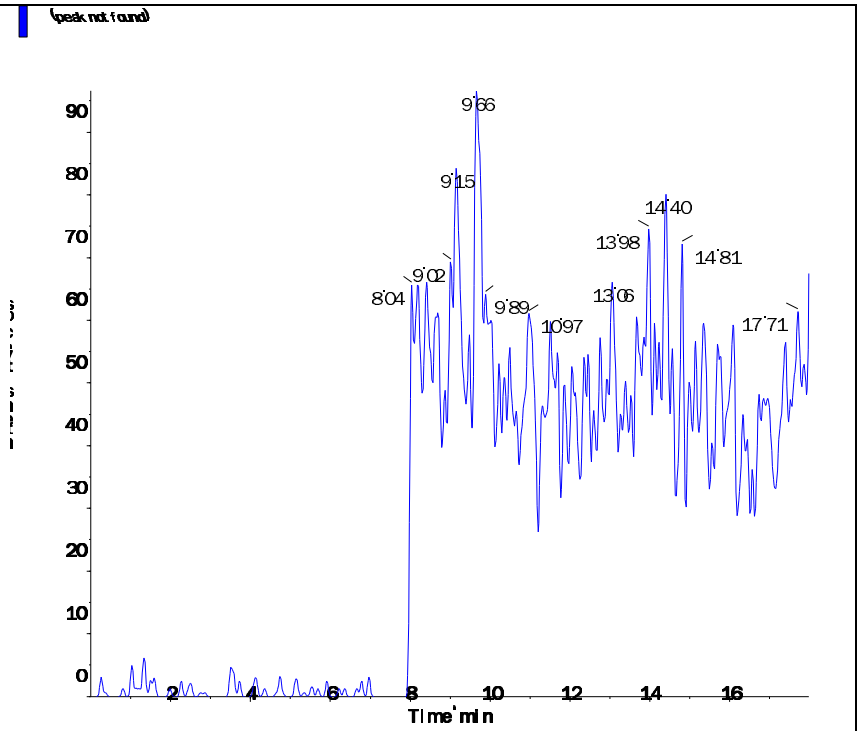

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.60 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

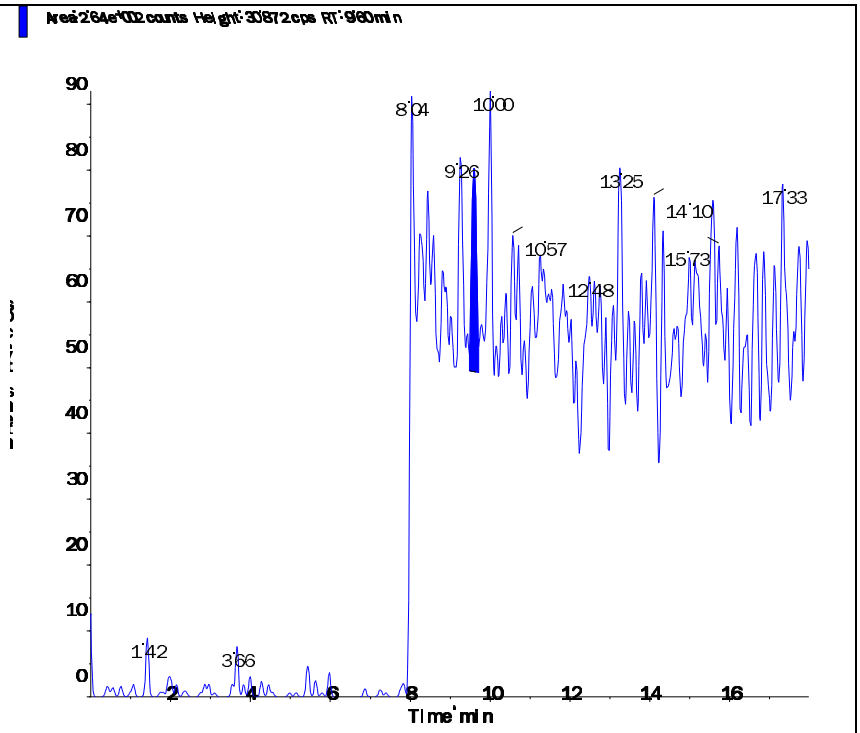

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Data File	LM35551.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 3:42:32 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574710-08 CCB	**Injection Vial**	1.00
Data File	LM35551.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 3:42:32 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574710-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.530e+05	9.65	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.65(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

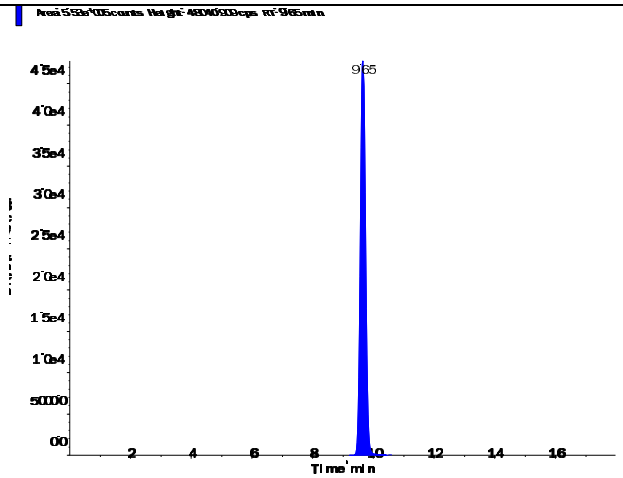

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

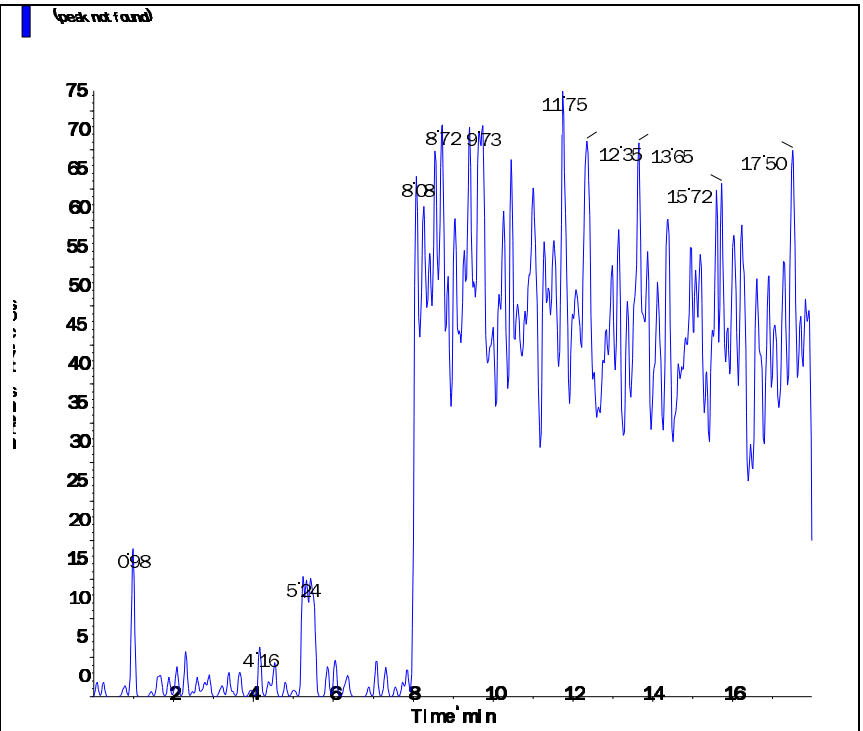

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

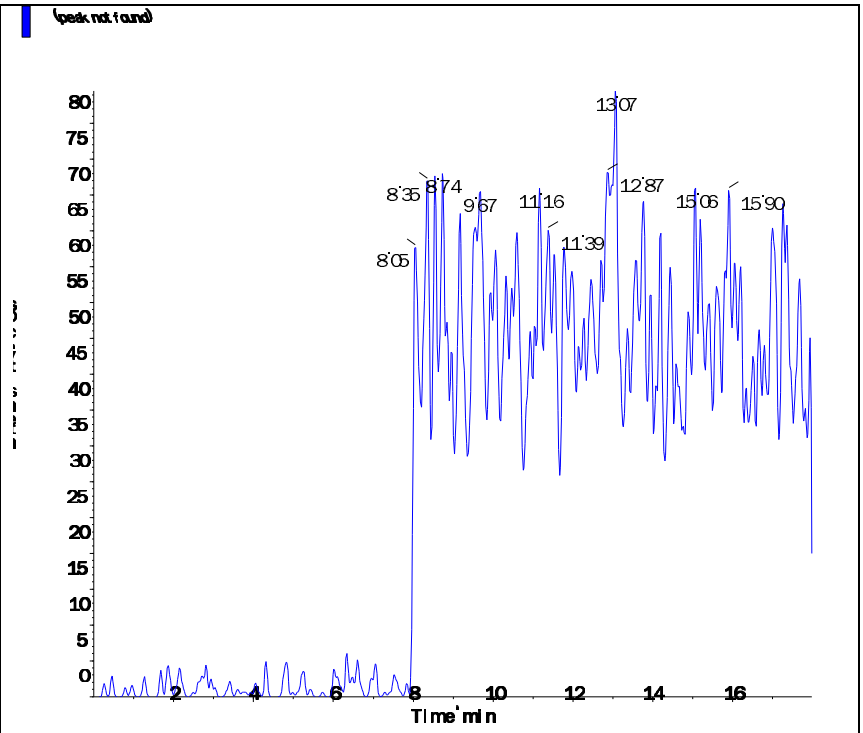

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Data File	LM35554.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 1:34:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574710-10 CCB	**Injection Vial**	1.00
Data File	LM35554.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 1:34:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574710-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.840e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	4.450e+02	9.65	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

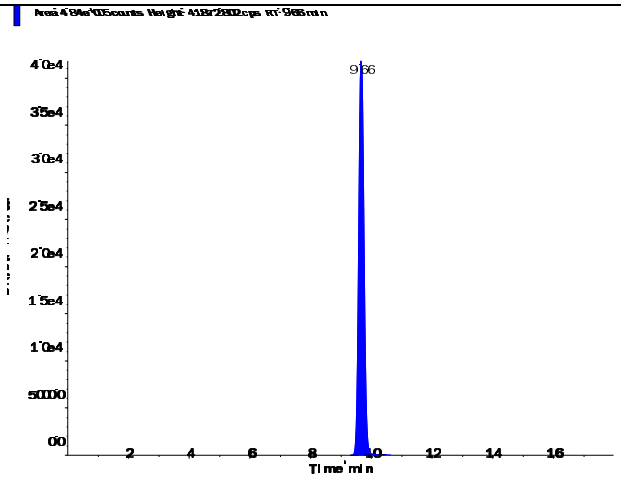

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

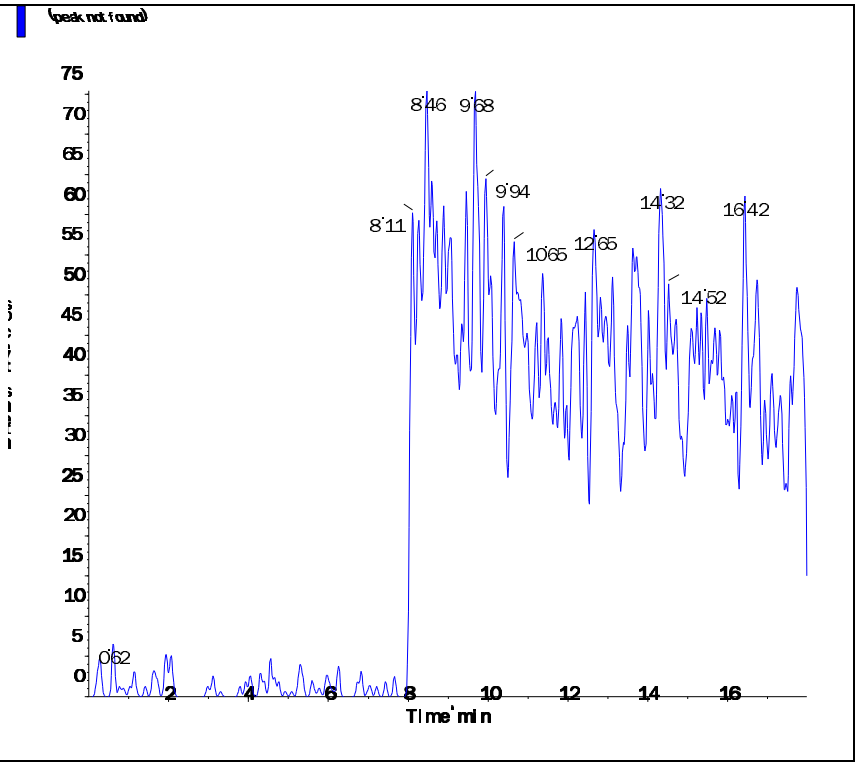

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.65 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

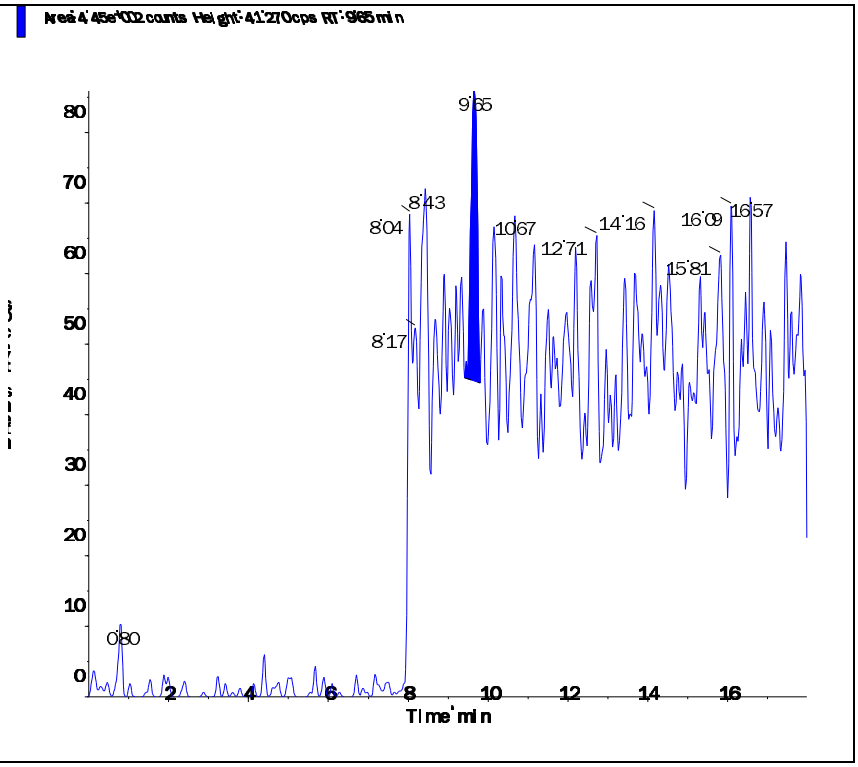

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Printed: 6/30/2016 3:42 PM

Data File	LM35558.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/30/2016 2:50:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574710-12 CCB	**Injection Vial**	1.00
Data File	LM35558.wiff	**Injection Volume**	10.00
Acquisition Date	6/30/2016 2:50:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574710-12	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.870e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

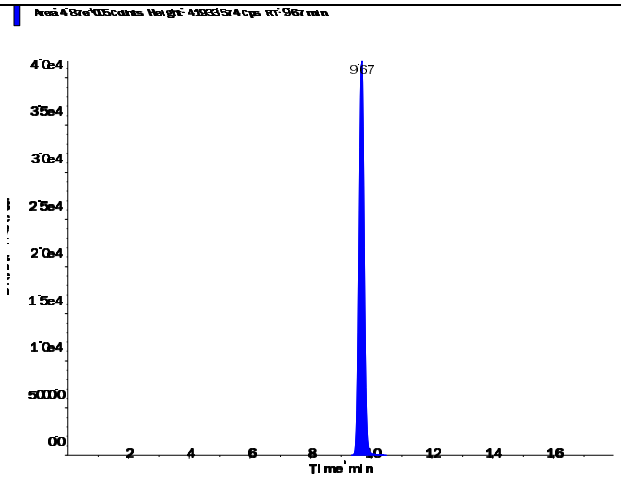

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

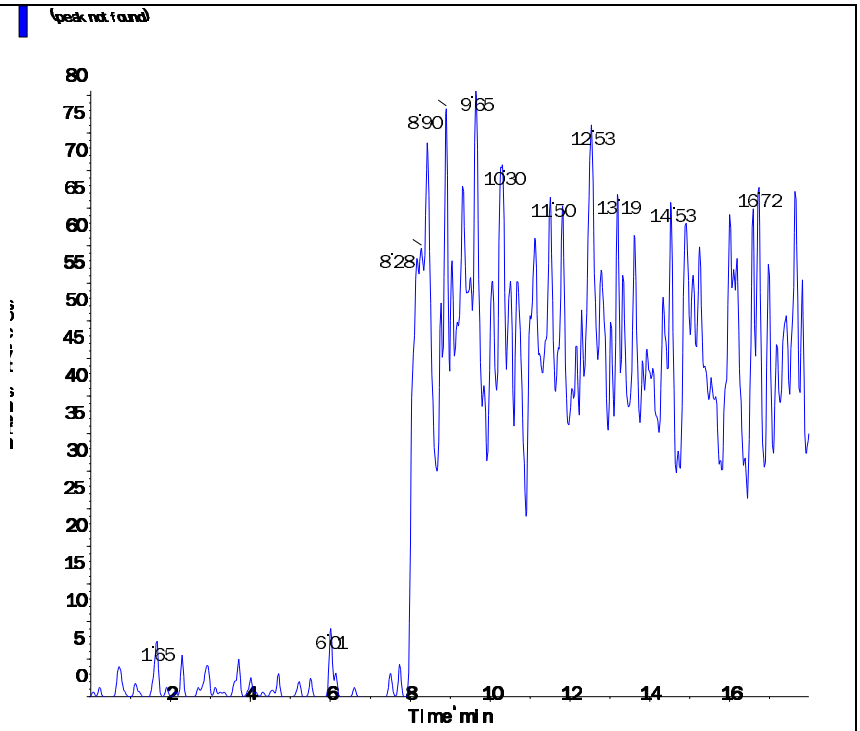

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

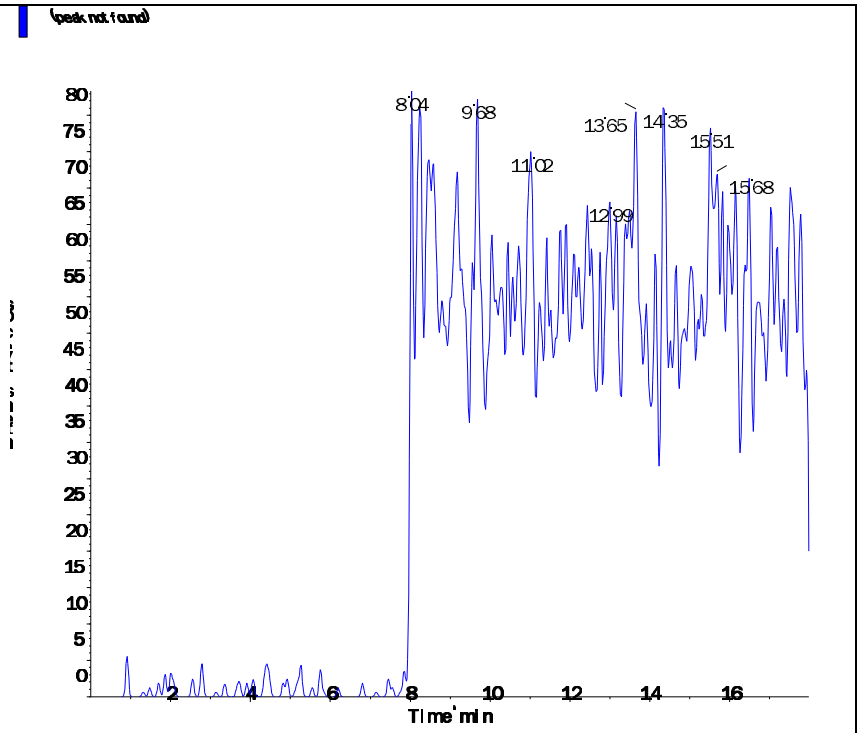

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Created with Analyst Reporter
Printed: 6/30/2016 3:30 PM

Data File	LM35520.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 5:55:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574701-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM35520.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 5:55:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.450e+05	9.03	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.010e+04	9.04	N/A	0.197
Perchlorate conf	1.130e+04	9.03	N/A	0.206

O18LP (Internal Standard)

RT (Exp. RT): 9.03(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

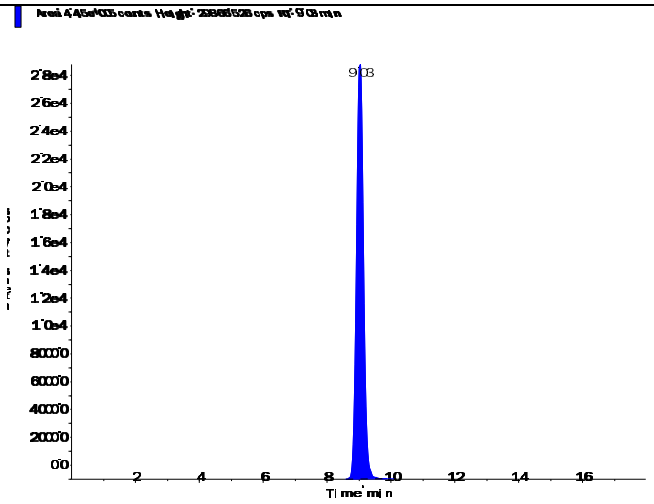

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Printed: 6/30/2016 3:30 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.04 (9.84) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.068
Sample Type:	(Unknown)

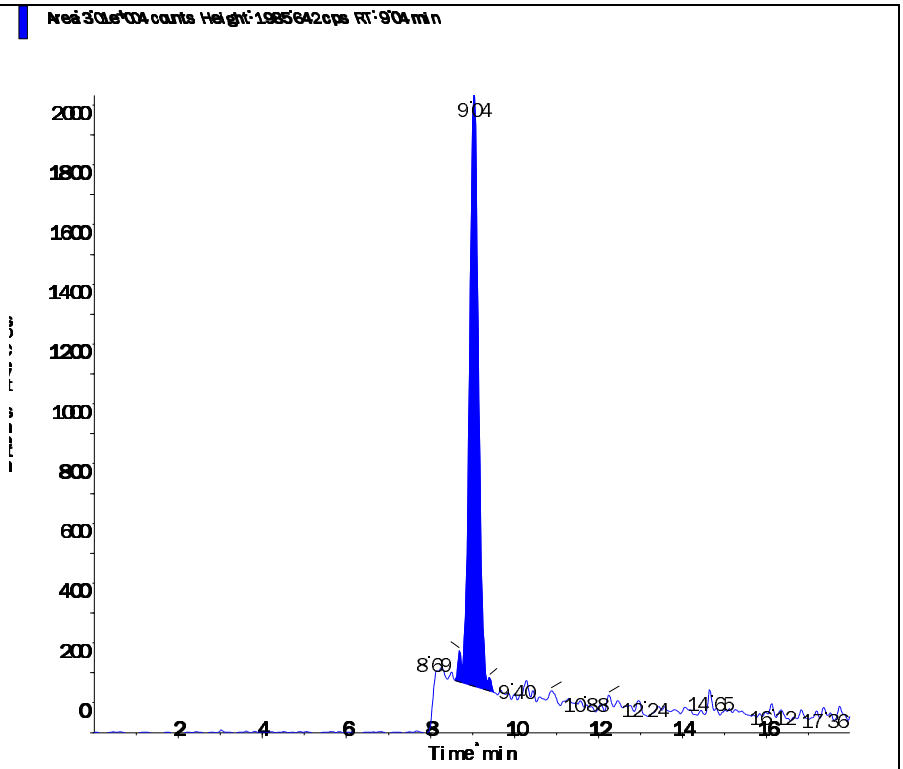

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.03 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

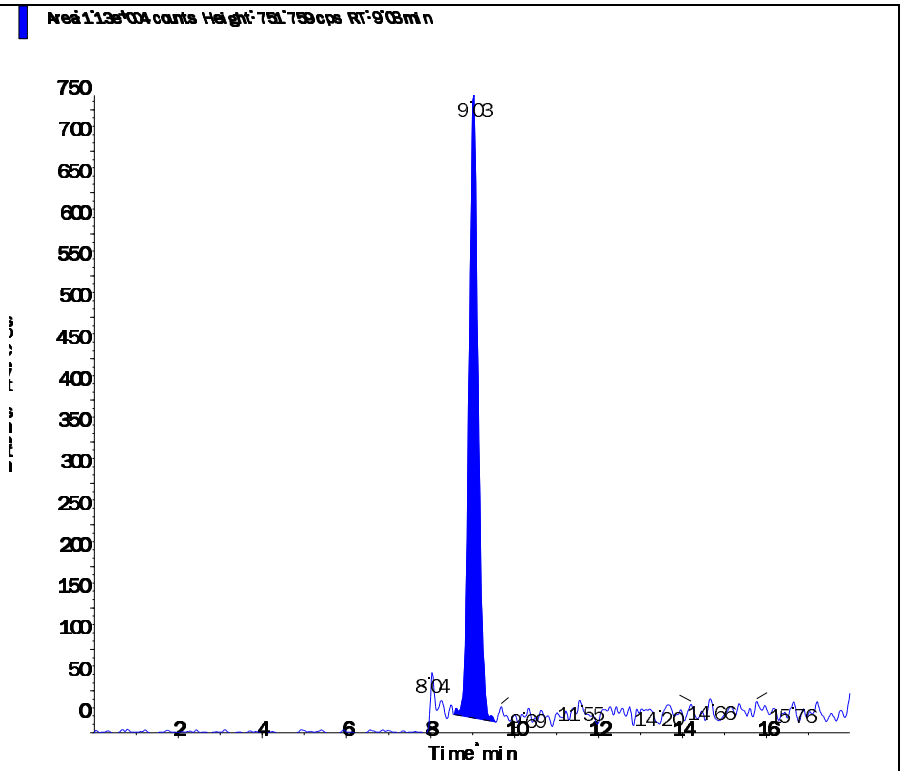

Printing Time: 2:10:45 PM
Printing Date: Thursday, June 30, 2016

Sample Name: "WG574701-01 MCT (0.2ug/L)" Sample ID: "WG574701-01" File: "LM35520.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.223 ug/L
Acq. Date:	6/29/2016
Acq. Time:	5:55:30 PM
Modified:	No
Proc. Algorithm:	Analyst Classic
Bunching Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Sep. Width:	0.20
Sep. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Valley
Retention Time:	9.04 min
Area:	3.39e+004 counts
Height:	2055.212 cps
Start Time:	8.587 min
End Time:	9.579 min

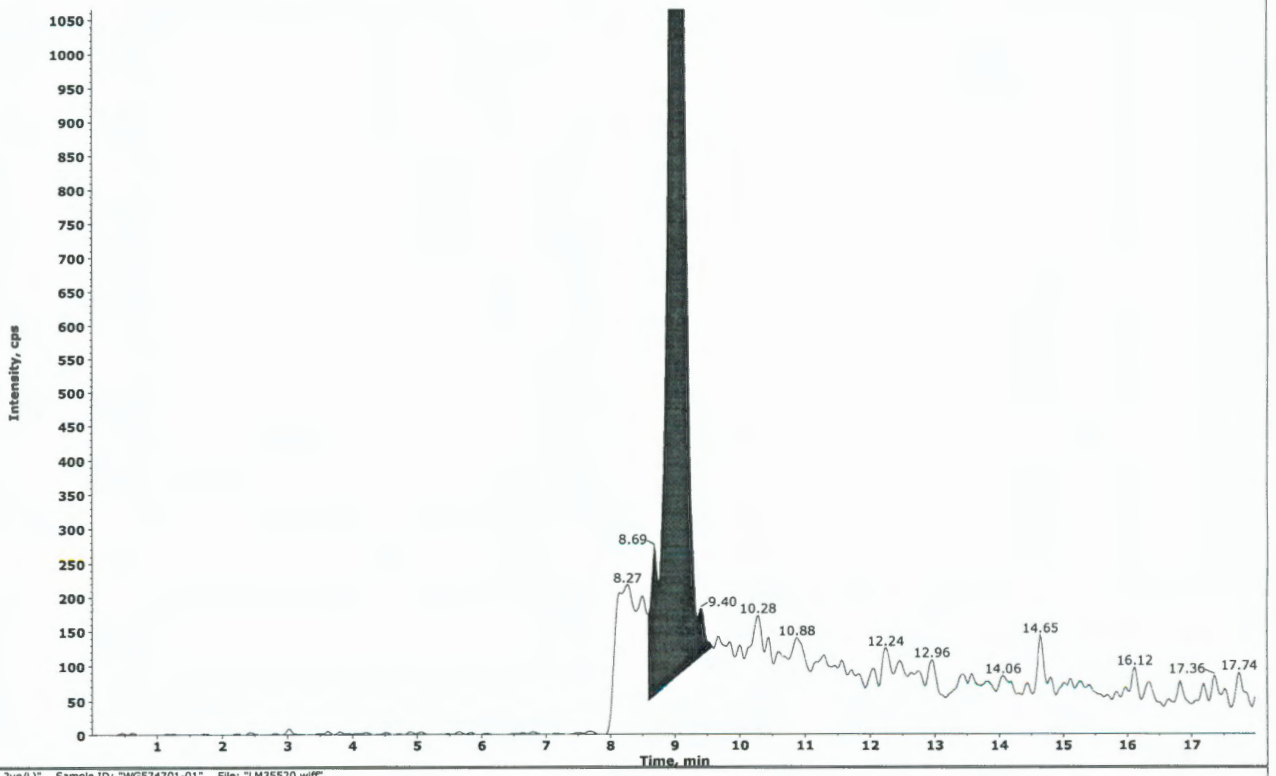

Sample Name: "WG574701-01 MCT (0.2ug/L)" Sample ID: "WG574701-01" File: "LM35520.wiff"
Peak Name: "Perchlorate conf" Mass(es): "100.8/85.2 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.220 ug/L
Acq. Date:	6/29/2016
Acq. Time:	5:55:30 PM
Modified:	No
Proc. Algorithm:	Analyst Classic
Bunching Factor:	2
Noise Threshold:	7.14 cps
Area Threshold:	35.71 cps
Num. Smooths:	5
Sep. Width:	0.20
Sep. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Valley
Retention Time:	9.03 min
Area:	1.20e+004 counts
Height:	760.490 cps
Start Time:	8.384 min
End Time:	9.538 min

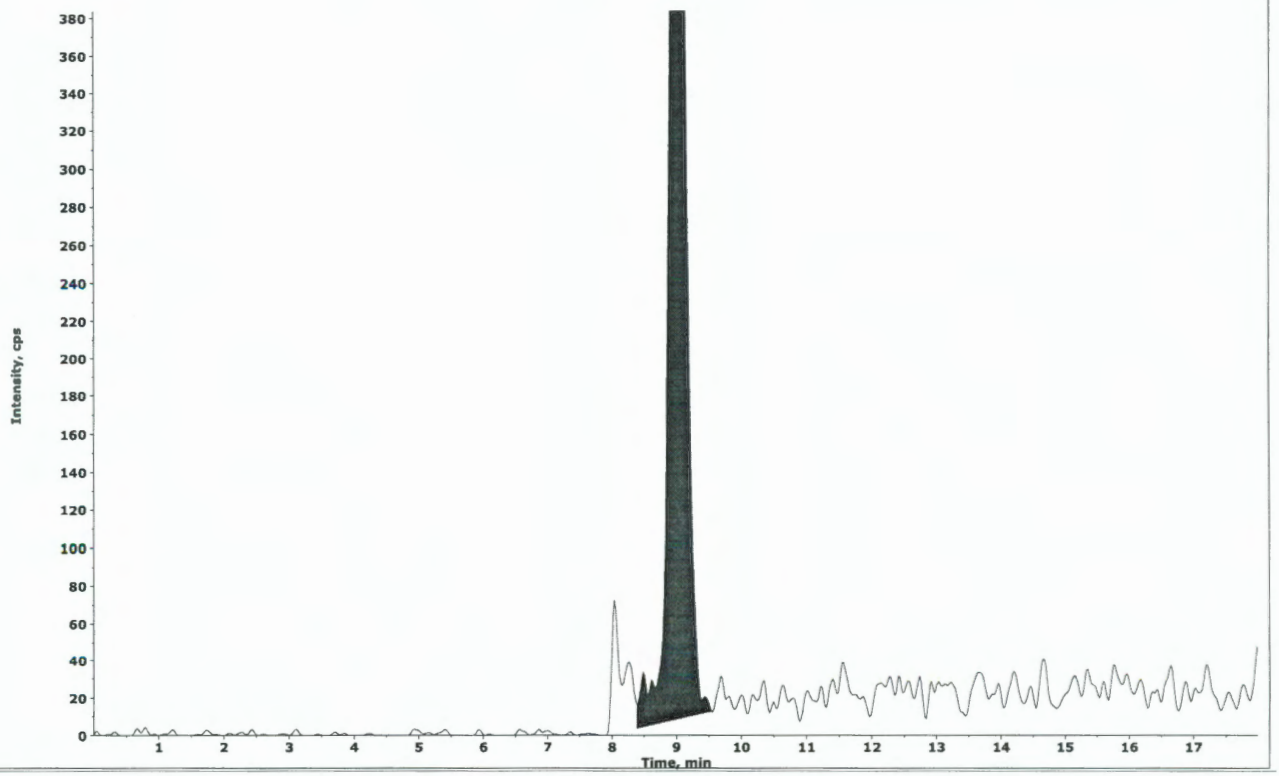

Collected by: N/A
Electronic Signature: no
Operator: lcms1

Printing Time: 2:12:53 PM
Printing Date: Thursday, June 30, 2016

Sample Name: "WG574701-01 MCT (0.2ug/L)" Sample ID: "WG574701-01" File: "LM35520.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1	
Sample Type:	Unknown	
Concentration:	N/A	
Calculated Conc:	0.197	ug/L
Acq. Date:	6/29/2016	
Acq. Time:	5:55:30 PM	
Modified:	Yes	
Proc. Algorithm:	Analyst Classic	
Smoothing Factor:	2	
Noise Threshold:	18.48	cps
Area Threshold:	92.40	cps
Num. Smooths:	5	
Exp. Width:	0.20	
Exp. Height:	0.01	
Exp. Peak Ratio:	5.00	
Exp. Adj. Ratio:	4.00	
Exp. Val. Ratio:	3.00	
RT Window:	30.000	sec
Expected RT:	9.84	min
Use Relative RT:	Yes	
Int. Type:	Manual	
Retention Time:	9.04	min
Area:	3.01e+004	counts
Height:	1985.642	cps
Start Time:	8.587	min
End Time:	9.498	min

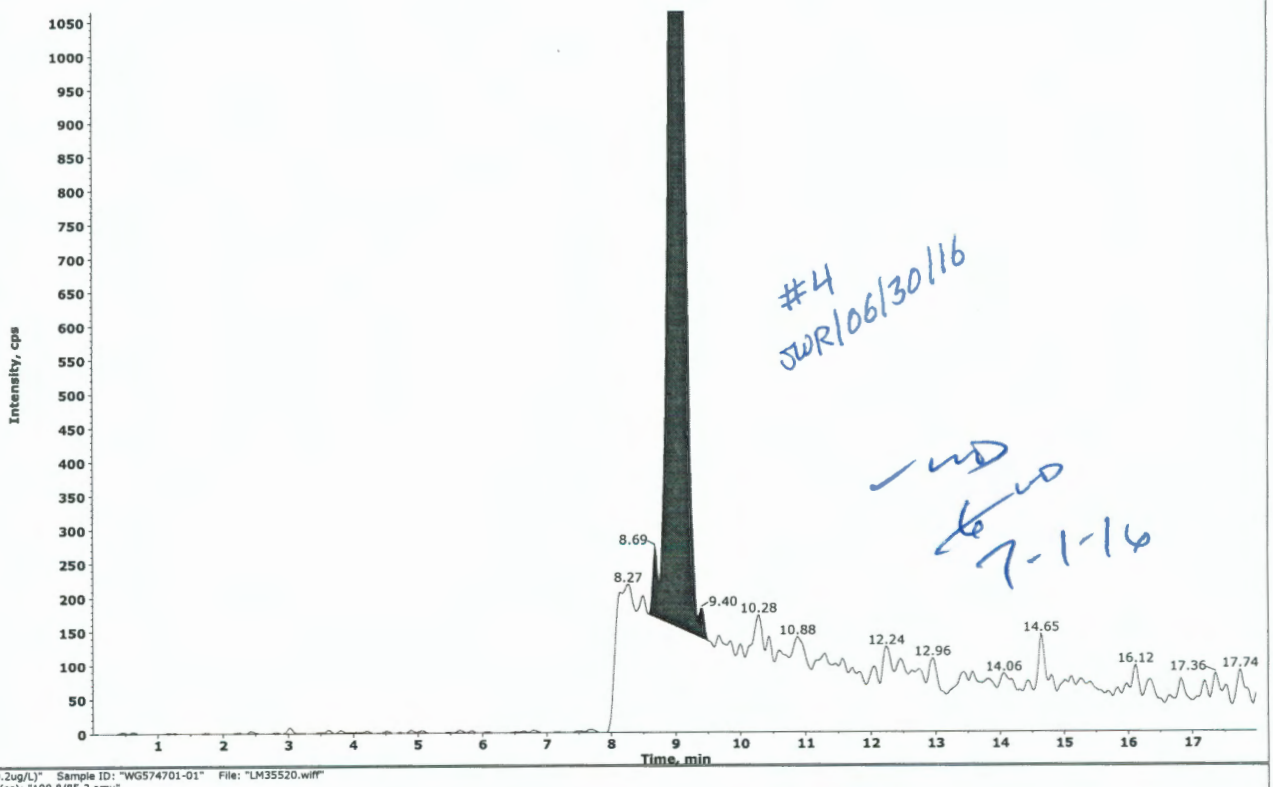

Sample Name: "WG574701-01 MCT (0.2ug/L)" Sample ID: "WG574701-01" File: "LM35520.wiff"
Peak Name: "Perchlorate conf" Mass(es): "100.8/85.2 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1	
Sample Type:	Unknown	
Concentration:	N/A	
Calculated Conc:	0.206	ug/L
Acq. Date:	6/29/2016	
Acq. Time:	5:55:30 PM	
Modified:	Yes	
Proc. Algorithm:	Analyst Classic	
Smoothing Factor:	2	
Noise Threshold:	7.14	cps
Area Threshold:	35.71	cps
Num. Smooths:	5	
Exp. Width:	0.20	
Exp. Height:	0.01	
Exp. Peak Ratio:	5.00	
Exp. Adj. Ratio:	4.00	
Exp. Val. Ratio:	3.00	
RT Window:	30.000	sec
Expected RT:	9.84	min
Use Relative RT:	Yes	
Int. Type:	Manual	
Retention Time:	9.03	min
Area:	1.13e+004	counts
Height:	751.759	cps
Start Time:	8.566	min
End Time:	9.538	min

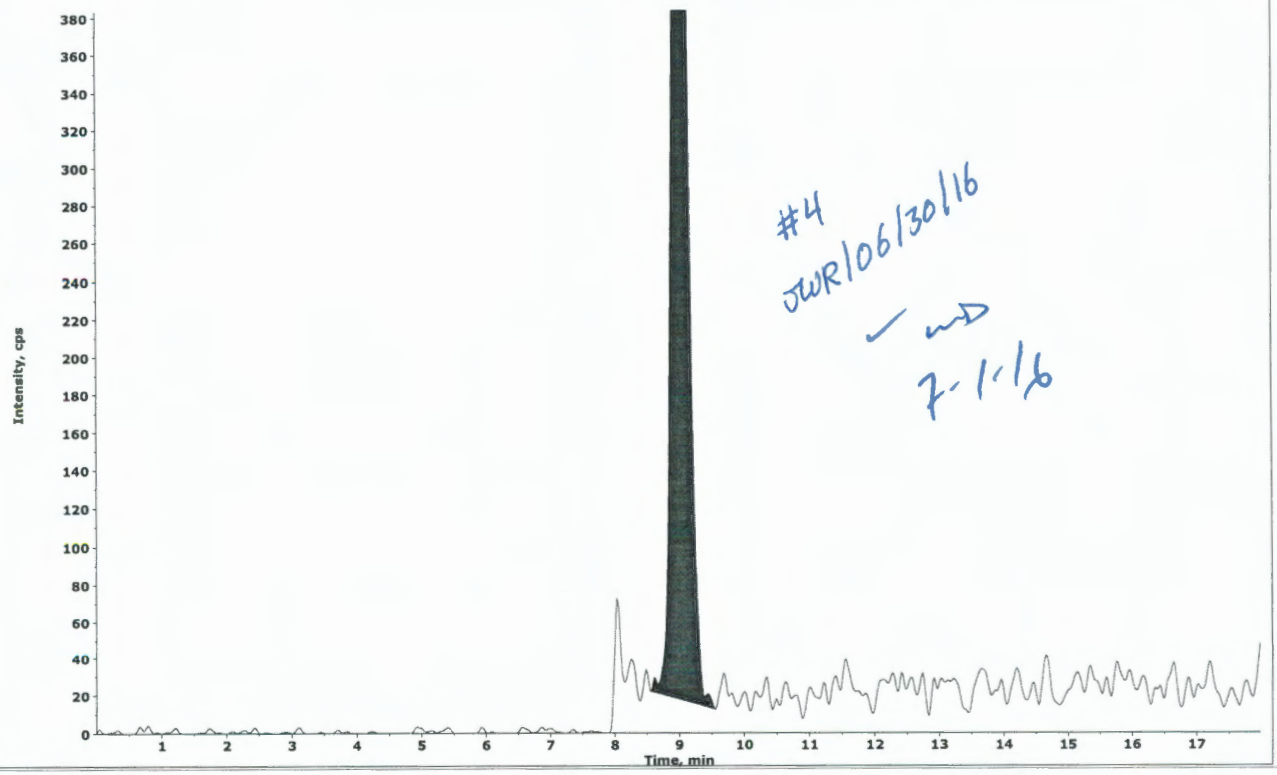

Collected by: N/A
Electronic Signature: no
Operator: lcms1

2.2.2.5 Raw QC Data

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Created with Analyst Reporter
Printed: 6/30/2016 3:31 PM

Data File	LM35521.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 6:14:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574701-02 BLANK	**Injection Vial**	5.00
Data File	LM35521.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 6:14:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.650e+05	9.56	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.56(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

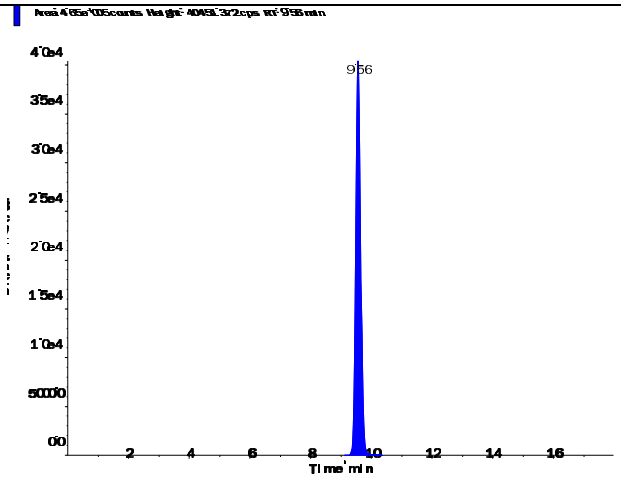

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

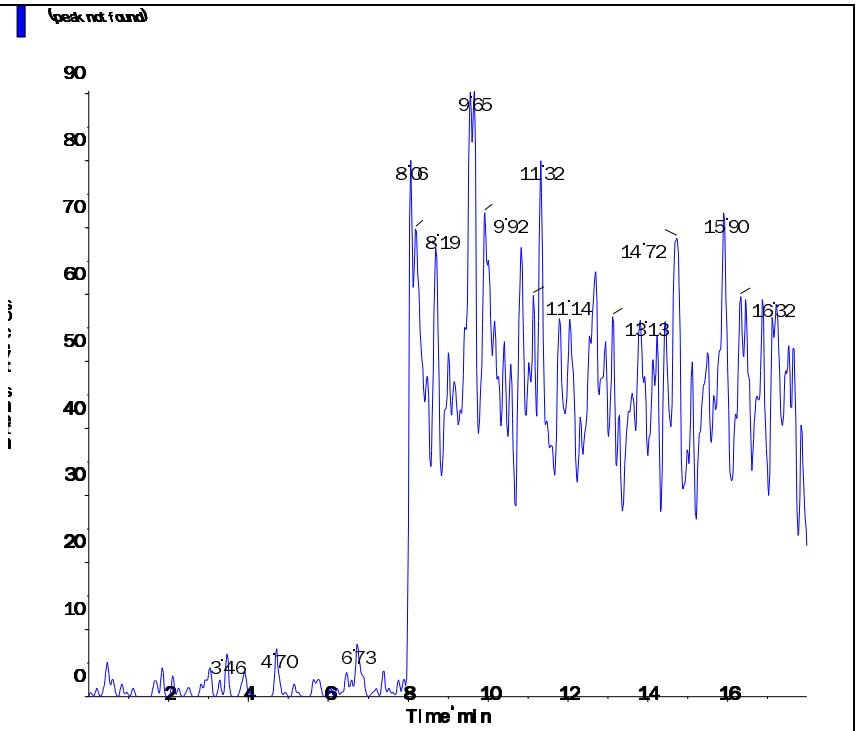

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

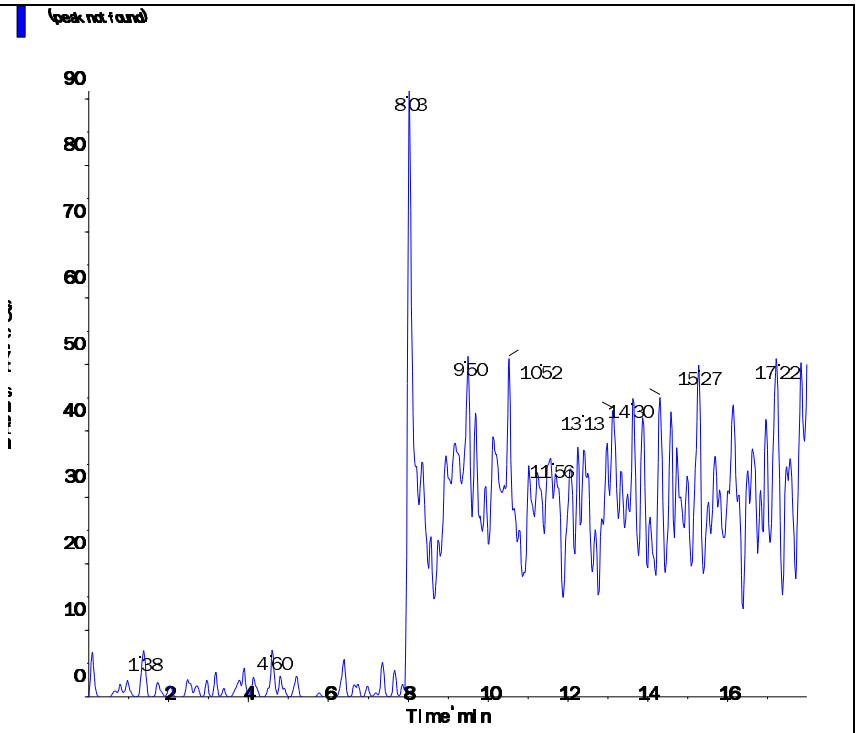

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Data File	LM35522.wiff	**Result Table**	062916_JWR.rdb
Acquisition Date	6/29/2016 6:33:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574701-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM35522.wiff	**Injection Volume**	10.00
Acquisition Date	6/29/2016 6:33:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062916_JWR.rdb
Sample ID	WG574701-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.620e+05	9.58	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.180e+04	9.60	N/A	0.201
Perchlorate conf	1.130e+04	9.58	N/A	0.199

O18LP (Internal Standard)

RT (Exp. RT): 9.58(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

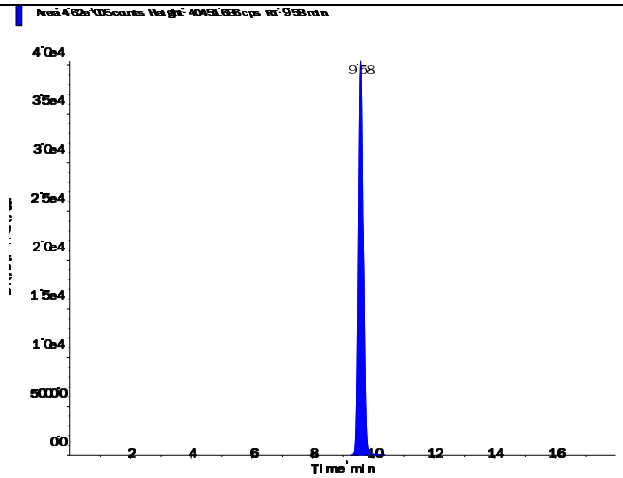

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.60 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

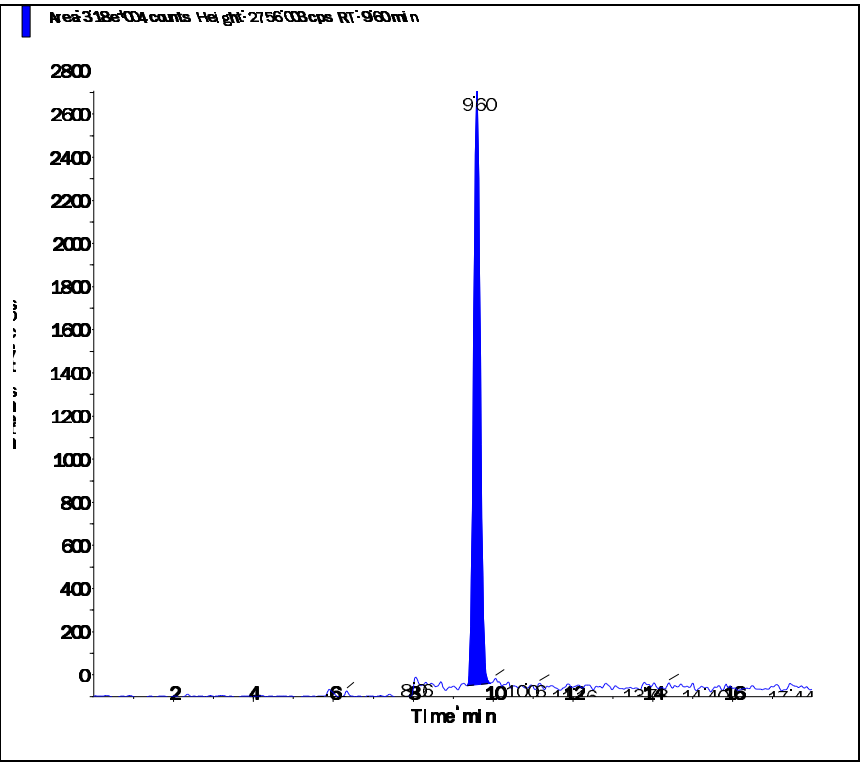

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.58 (9.84) min
Calculated conc:	0.199 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

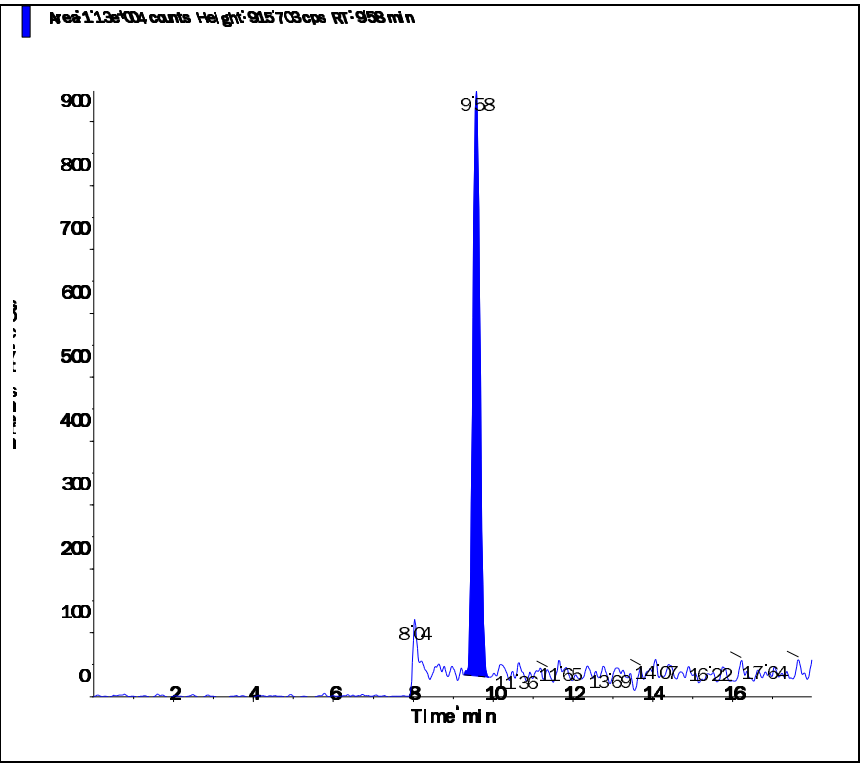

2.3 Metals Data

2.3.1 Metals I C P Data

2.3.1.1 Summary Data

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW22-062116	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/24/2016 10:17
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/24/2016 14:13
Collect Date:	06/21/2016 07:55	**Dilution:**	1	**File ID:**	T3.062416.141350
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	2.57		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	0.0825		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	1.09		1.00	0.500	0.250
Potassium, Total	7440-09-7	8.42		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.00528	J	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	60.6		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW22-062116	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/25/2016 12:36
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/25/2016 15:17
Collect Date:	06/21/2016 07:55	**Dilution:**	20	**File ID:**	T3.062516.151743
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	193		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	C04F-062116	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/24/2016 10:17
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/24/2016 14:17
Collect Date:	06/21/2016 08:55	**Dilution:**	1	**File ID:**	T3.062416.141746
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.100	U	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	13.9		0.500	0.250	0.125
Iron, Total	7439-89-6	7.76		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	7.73		1.00	0.500	0.250
Potassium, Total	7440-09-7	1.89	J	2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	27.9		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	C04FFD-062116	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/24/2016 10:17
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/24/2016 14:21
Collect Date:	06/21/2016 08:55	**Dilution:**	1	**File ID:**	T3.062416.142142
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.100	U	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	14.0		0.500	0.250	0.125
Iron, Total	7439-89-6	7.21		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	7.47		1.00	0.500	0.250
Potassium, Total	7440-09-7	1.89	J	2.00	1.00	0.500
Selenium, Total	7782-49-2	0.00539	J	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	27.5		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW18-062116	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/24/2016 10:17
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/24/2016 14:25
Collect Date:	06/21/2016 10:05	**Dilution:**	1	**File ID:**	T3.062416.142526
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.271		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	2.44		0.200	0.100	0.0500
Potassium, Total	7440-09-7	7.88		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.00770	J	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW18-062116	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/25/2016 12:36
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/25/2016 15:21
Collect Date:	06/21/2016 10:05	**Dilution:**	20	**File ID:**	T3.062516.152125
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	337		10.0	5.00	2.50
Magnesium, Total	7439-95-4	203		20.0	10.0	5.00
Sodium, Total	7440-23-5	849		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW18-062116	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/24/2016 10:17
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/24/2016 14:48
Collect Date:	06/21/2016 11:15	**Dilution:**	1	**File ID:**	T3.062416.144853
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.100	U	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Potassium, Total	7440-09-7	3.75		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW18-062116	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/29/2016 10:07
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/29/2016 11:54
Collect Date:	06/21/2016 11:15	**Dilution:**	20	**File ID:**	T3.062916.115438
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	49.5		10.0	5.00	2.50
Iron, Total	7439-89-6	78.0		4.00	2.00	1.00
Magnesium, Total	7439-95-4	34.0		20.0	10.0	5.00
Sodium, Total	7440-23-5	146		20.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.1.2 QC Summary Data

Example 6010 Calculations
Thermo Scientific iCAP

1.0 Initial Calibration (ICAL) Parameters
For a multi-point calibration, the system performs linear regression from data consisting of a blank and four standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG573994
Analyst: ERP
Spike Analyst: ERP
Run Date: 06/24/2016 07:18
Method: 3015
Balance: BAL019
Instrument: MW-1
Instrument Start: 06/24/2016 07:38

SOP: ME407 Revison 19
Spike Solution: STD76576
Spike Witness: VC
HNO3 Lot #: COA18905
HCL Lot #: COA18769
40 & 50 ML. DIGESTION TU COA18987
ICP Filters- fisher-Lot# RGT35619

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG573994-02	BLANK	1	40 mL	50 mL	205.799 g	205.793 g		
2	WG573994-03	LCS	1	40 mL	50 mL	211.523 g	211.513 g	5 mL	
3	L16060961-03	SAMP	1	40 mL	50 mL	205.052 g	205.037 g		06/24/16
4	L16061129-01	SAMP	1	40 mL	50 mL	206.124 g	206.112 g		07/05/16
5	L16061129-02	SAMP	1	40 mL	50 mL	206.489 g	206.476 g		07/05/16
6	L16061129-03	SAMP	1	40 mL	50 mL	205.825 g	205.808 g		07/05/16
7	L16061129-04	SAMP	1	40 mL	50 mL	205.354 g	205.348 g		07/05/16
8	L16061129-05	SAMP	1	40 mL	50 mL	205.317 g	205.299 g		07/05/16
9	L16061227-01	SAMP	1	40 mL	50 mL	204.465 g	204.443 g		07/01/16
10	L16061227-03	SAMP	1	40 mL	50 mL	204.813 g	204.793 g		07/01/16
11	L16061227-05	SAMP	1	40 mL	50 mL	206.069 g	206.05 g		07/01/16
12	L16061227-06	SAMP	1	40 mL	50 mL	202.826 g	202.812 g		07/01/16
13	L16061227-07	SAMP	1	40 mL	50 mL	205.408 g	205.392 g		07/01/16
14	L16061272-01	SAMP	1	40 mL	50 mL	206.813 g	206.794 g		06/30/16
15	L16061272-02	SAMP	1	40 mL	50 mL	208.22 g	208.202 g		06/30/16
16	L16061279-01	SAMP	1	40 mL	50 mL	206.107 g	206.09 g		06/28/16
17	WG573994-01	REF	1	40 mL	50 mL	204.432 g	204.415 g		
18	L16061279-02	RS01	1	40 mL	50 mL	204.432 g	204.415 g		06/28/16
19	WG573994-04	MS	1	40 mL	50 mL	213.413 g	213.398 g	5 mL	
20	L16061279-03	MS01	1	40 mL	50 mL	213.413 g	213.398 g	5 mL	06/28/16
21	WG573994-05	MSD	1	40 mL	50 mL	211.644 g	211.636 g	5 mL	
22	L16061279-04	SD01	1	40 mL	50 mL	211.644 g	211.636 g	5 mL	06/28/16
23	L16061279-05	SAMP	1	40 mL	50 mL	206.357 g	206.345 g		06/28/16
24	L16061289-01	SAMP	1	40 mL	50 mL	208.182 g	208.164 g		07/04/16
25	L16061289-04	SAMP	1	40 mL	50 mL	204.262 g	204.255 g		07/04/16
26	L16061290-03	SAMP	1	40 mL	50 mL	208.194 g	208.183 g		07/04/16
27	L16061290-05	SAMP	1	40 mL	50 mL	205.844 g	205.821 g		07/04/16

L16061279-03	filtered digestate
L16061279-04	filtered digestate
L16061279-01	filtered digestate
L16061279-02	filtered digestate
WG573994-01	filtered digestate
WG573994-04	filtered digestate
WG573994-05	filtered digestate
L16061279-05	filtered digestate

MW_DIG - Modified 09/30/2009
PDF ID: 4821837
Report generated: 06/24/2016 08:17

Microbac Laboratories Inc.
Microwave Digestion Log

Analyst: Erin Potter

SOP:
Spike Solution:
Reviewer: Jackie Collins
Spike Witness:

Method:
Balance:
Instrument:
Instrument Start:

MW_DIG - Modified 09/30/2009
PDF ID: 4821837
Report generated: 06/24/2016 08:17

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062416T3.1R.TXT

Analyst1: JYH Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 574050,574055,574076,573560,573149,573561

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.062416.100206	WG574123-01	Calibration Point		1		06/24/16 10:02
2	T3.062416.100606	WG574123-02	Calibration Point		1		06/24/16 10:06
3	T3.062416.101006	WG574123-03	Calibration Point		1		06/24/16 10:10
4	T3.062416.101405	WG574123-04	Calibration Point		1		06/24/16 10:14
5	T3.062416.101742	WG574123-05	Calibration Point		1		06/24/16 10:17
6	T3.062416.102118	WG574123-06	Initial Calibration Verification		1		06/24/16 10:21
7	T3.062416.102444	WG574123-07	Initial Calib Blank		1		06/24/16 10:24
8	T3.062416.102843	WG574123-08	Low Level Initial Calibration V		1		06/24/16 10:28
9	T3.062416.103239	WG574123-09	Low Level Initial Calibration V		1		06/24/16 10:32
10	T3.062416.103634	WG574123-10	Interference Check		1		06/24/16 10:36
11	T3.062416.104027	WG574123-11	Interference Check		1		06/24/16 10:40
12	T3.062416.104409	WG574123-12	CCV		1		06/24/16 10:44
13	T3.062416.104746	WG574123-13	CCB		1		06/24/16 10:47
14	T3.062416.105146	WG573823-01	Method/Prep Blank	1/50	1		06/24/16 10:51
15	T3.062416.105915	WG573823-02	Laboratory Control S	1/50	1		06/24/16 10:59
16	T3.062416.110255	WG573823-03	Laboratory Control S	1/50	1		06/24/16 11:02
17	T3.062416.110635	L16061143-01	500662-WP-002	1/50	1		06/24/16 11:06
18	T3.062416.111030	L16061143-02	500662-WP-003	1/50	1		06/24/16 11:10
19	T3.062416.111424	L16061143-03	500662-WP-004	1/50	1		06/24/16 11:14
20	T3.062416.111816	WG574050-01	Post Digestion Spike		1	L16061143-03	06/24/16 11:18
21	T3.062416.112154	WG574050-02	Serial Dilution		5	L16061143-03	06/24/16 11:21
22	T3.062416.112553	L16060724-01	ABW_06142016	40/50	1000		06/24/16 11:25
23	T3.062416.112949	L16060787-10	U517TW006C	40/50	10		06/24/16 11:29
24	T3.062416.113347	WG574123-14	CCV		1		06/24/16 11:33
25	T3.062416.113725	WG574123-15	CCB		1		06/24/16 11:37
26	T3.062416.114112	L16060787-18	U517TW008A	40/50	10		06/24/16 11:41
27	T3.062416.114510	WG573707-03	Method/Prep Blank	40/50	1		06/24/16 11:45
28	T3.062416.114908	WG573707-04	Laboratory Control S	40/50	1		06/24/16 11:49
29	T3.062416.115249	WG573594-01	Fluid Blank 1		1		06/24/16 11:52
30	T3.062416.115648	WG573594-02	Fluid Blank 2		1		06/24/16 11:56
31	T3.062416.120048	WG573707-01	Reference Sample		1	L16061151-01	06/24/16 12:00
32	T3.062416.120443	WG573707-05	Matrix Spike	40/50	1	L16061151-01	06/24/16 12:04
33	T3.062416.120811	WG573707-06	Matrix Spike Duplica	40/50	1	L16061151-01	06/24/16 12:08
34	T3.062416.121149	L16061140-01	60500-SSP0042-SSP0042	5/50	1		06/24/16 12:11

Page: 1 Approved: June 24, 2016

Kim H. Rhoden

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062416T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574050,574055,574076,573560,573149,573561

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.062416.121541	WG574055-02	Serial Dilution		5	L16061140-01	06/24/16 12:15
36	T3.062416.121926	WG574123-16	CCV		1		06/24/16 12:19
37	T3.062416.122304	WG574123-17	CCB		1		06/24/16 12:23
38	T3.062416.122703	WG574055-01	Post Digestion Spike		1	L16061140-01	06/24/16 12:27
39	T3.062416.123043	L16061140-03	60500-SSP0037-SPLP023	5/50	1		06/24/16 12:30
40	T3.062416.123437	WG572980-02	Method/Prep Blank	40/50	1		06/24/16 12:34
41	T3.062416.123836	WG572980-03	Laboratory Control S	40/50	1		06/24/16 12:38
42	T3.062416.124216	L16060732-01	LH18/24-SP650-6371-GRAB	40/50	1		06/24/16 12:42
43	T3.062416.124614	WG572980-01	Reference Sample		1	L16060796-01	06/24/16 12:46
44	T3.062416.125002	WG572980-04	Matrix Spike	5/50	1	L16060796-01	06/24/16 12:50
45	T3.062416.125340	WG572980-05	Matrix Spike Duplica	5/50	1	L16060796-01	06/24/16 12:53
46	T3.062416.125716	L16060732-02	LH18/24-SP650-6371-COMP	40/50	1		06/24/16 12:57
47	T3.062416.130110	L16060794-01	A08-MW06-Y1S2	40/50	10		06/24/16 13:01
48	T3.062416.130507	WG574123-18	CCV		1		06/24/16 13:05
49	T3.062416.130845	WG574123-19	CCB		1		06/24/16 13:08
50	T3.062416.131244	L16060794-04	A09-MW07-Y1S2	40/50	10		06/24/16 13:12
51	T3.062416.131643	L16060796-04	500662-DS-002	5/50	1		06/24/16 13:16
52	T3.062416.132032	WG573149-01	Post Digestion Spike		1	L16060796-04	06/24/16 13:20
53	T3.062416.132408	WG573149-02	Serial Dilution		5	L16060796-04	06/24/16 13:24
54	T3.062416.132801	WG573149-02	Serial Dilution		25	L16060796-04	06/24/16 13:28
55	T3.062416.133159	WG573994-02	Method/Prep Blank	40/50	1		06/24/16 13:31
56	T3.062416.133557	WG573994-03	Laboratory Control S	40/50	1		06/24/16 13:35
57	T3.062416.133937	WG573994-01	Reference Sample		1	L16061279-02	06/24/16 13:39
58	T3.062416.134328	WG573994-04	Matrix Spike	40/50	1	L16061279-02	06/24/16 13:43
59	T3.062416.134705	WG573994-05	Matrix Spike Duplica	40/50	1	L16061279-02	06/24/16 13:47
60	T3.062416.135042	WG574123-20	CCV		1		06/24/16 13:50
61	T3.062416.135419	WG574123-21	CCB		1		06/24/16 13:54
62	T3.062416.135818	L16060961-03	GH58HS_MELZER_03-03-0	40/50	1		06/24/16 13:58
63	T3.062416.140215	WG574076-01	Post Digestion Spike		1	L16060961-03	06/24/16 14:02
64	T3.062416.140555	WG574076-02	Serial Dilution		5	L16060961-03	06/24/16 14:05
65	T3.062416.140952	WG574076-02	Serial Dilution		25	L16060961-03	06/24/16 14:09
66	T3.062416.141350	L16061227-01	18WW22-062116	40/50	1		06/24/16 14:13
67	T3.062416.141746	L16061227-03	C04F-062116	40/50	1		06/24/16 14:17
68	T3.062416.142142	L16061227-05	C04FFD-062116	40/50	1		06/24/16 14:21

Page: 2 Approved: June 24, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062416T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574050,574055,574076,573560,573149,573561

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.062416.142526	L16061227-06	18CPTMW18-062116	40/50	1		06/24/16 14:25
70	T3.062416.142928	L16061227-01	18WW22-062116		10		06/24/16 14:29
71	T3.062416.143326	WG574123-22	CCV		1		06/24/16 14:33
72	T3.062416.143703	WG574123-23	CCB		1		06/24/16 14:37
73	T3.062416.144104	WG574123-24	Low Level Continuing Calibra		1		06/24/16 14:41
74	T3.062416.144501	WG574123-25	Low Level Continuing Calibra		1		06/24/16 14:45
75	T3.062416.144853	L16061227-07	18WW18-062116	40/50	1		06/24/16 14:48
76	T3.062416.145235	L16061289-01	MW21-062216	40/50	1		06/24/16 14:52
77	T3.062416.145634	L16061289-04	18WW02F-062216	40/50	1		06/24/16 14:56
78	T3.062416.150030	L16061290-03	MW16F-062116	40/50	1		06/24/16 15:00
79	T3.062416.150424	L16061290-05	109-062216	40/50	1		06/24/16 15:04
80	T3.062416.150820	L16061129-01	MW-22-002	40/50	1		06/24/16 15:08
81	T3.062416.151215	L16061129-02	MW-22-010	40/50	1		06/24/16 15:12
82	T3.062416.151609	L16061129-03	MW-22-007	40/50	1		06/24/16 15:16
83	T3.062416.152008	WG574123-26	CCV		1		06/24/16 15:20
84	T3.062416.152346	WG574123-27	CCB		1		06/24/16 15:23
85	T3.062416.152745	L16061129-04	FD061716	40/50	1		06/24/16 15:27
86	T3.062416.153140	L16061129-05	EB-WATER A	40/50	1		06/24/16 15:31
87	T3.062416.153539	L16061272-01	SS007MW0B18-007	40/50	1		06/24/16 15:35
88	T3.062416.153937	L16061272-02	SS007MWN752-007	40/50	1		06/24/16 15:39
89	T3.062416.154332	L16061279-01	XU936TW007A	40/50	1		06/24/16 15:43
90	T3.062416.154725	L16061279-05	XU936TW019A	40/50	1		06/24/16 15:47
91	T3.062416.155118	L16060729-01	A09-MW10-Y1S2	40/50	1		06/24/16 15:51
92	T3.062416.155514	L16060729-02	A09-MW11-Y1S2	40/50	1		06/24/16 15:55
93	T3.062416.155910	L16060729-03	A09-MW12-Y1S2	40/50	1		06/24/16 15:59
94	T3.062416.160303	WG574123-28	CCV		1		06/24/16 16:03
95	T3.062416.160640	WG574123-29	CCB		1		06/24/16 16:06
96	T3.062416.161038	L16061148-01	DP005SW0513-007		1		06/24/16 16:10
97	T3.062416.161432	L16061148-02	DP005SW0514-007		1		06/24/16 16:14
98	T3.062416.161828	L16061150-01	SS007SW0709-007		1		06/24/16 16:18
99	T3.062416.162223	L16061150-02	SS007SW0710-007		1		06/24/16 16:22
100	T3.062416.162617	L16061151-02	LF003SW0311-007 DUP		1		06/24/16 16:26
101	T3.062416.163012	L16061151-05	LF003SW0312-007		1		06/24/16 16:30
102	T3.062416.163406	WG573707-02	Reference Sample		1	L16061154-01	06/24/16 16:34

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Kim H. Rhoden

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062416T3.1R.TXT

Analyst1: JYH Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 574050,574055,574076,573560,573149,573561

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T3.062416.163809	WG573707-07	Matrix Spike		1	L16061154-01	06/24/16 16:38
104	T3.062416.164156	WG573707-08	Matrix Spike Duplica		1	L16061154-01	06/24/16 16:41
105	T3.062416.164542	L16061154-04	FQC-RB06201601-CB		1		06/24/16 16:45
106	T3.062416.164941	WG574123-30	CCV		1		06/24/16 16:49
107	T3.062416.165319	WG574123-31	CCB		1		06/24/16 16:53
108	T3.062416.165718	L16061155-01	ST008MW0812-007		1		06/24/16 16:57
109	T3.062416.170338	WG574123-32	CCV		1		06/24/16 17:03
110	T3.062416.170715	WG574123-33	CCB		1		06/24/16 17:07
111	T3.062416.171114	WG574123-34	Low Level Continuing Calibra		1		06/24/16 17:11
112	T3.062416.171510	WG574123-35	Low Level Continuing Calibra		1		06/24/16 17:15

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Kim H. Rhoden

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Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062516T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,574055,574076,574216,574215,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.062516.122104	WG574249-01	Calibration Point		1		06/25/16 12:21
2	T3.062516.122502	WG574249-02	Calibration Point		1		06/25/16 12:25
3	T3.062516.122900	WG574249-03	Calibration Point		1		06/25/16 12:29
4	T3.062516.123256	WG574249-04	Calibration Point		1		06/25/16 12:32
5	T3.062516.123634	WG574249-05	Calibration Point		1		06/25/16 12:36
6	T3.062516.124009	WG574249-06	Initial Calibration Verification		1		06/25/16 12:40
7	T3.062516.124348	WG574249-07	Initial Calib Blank		1		06/25/16 12:43
8	T3.062516.124745	WG574249-08	Low Level Initial Calibration V		1		06/25/16 12:47
9	T3.062516.125139	WG574249-09	Low Level Initial Calibration V		1		06/25/16 12:51
10	T3.062516.125529	WG574249-10	Interference Check		1		06/25/16 12:55
11	T3.062516.125921	WG574249-11	Interference Check		1		06/25/16 12:59
12	T3.062516.130304	WG574249-12	CCV		1		06/25/16 13:03
13	T3.062516.130641	WG574249-13	CCB		1		06/25/16 13:06
14	T3.062516.131816	WG573190-03	Method/Prep Blank	40/50	1		06/25/16 13:18
15	T3.062516.132214	WG573190-04	Laboratory Control S	40/50	1		06/25/16 13:22
16	T3.062516.132554	WG573190-02	Reference Sample		1	L16060808-01	06/25/16 13:25
17	T3.062516.132950	WG573190-07	Matrix Spike	40/50	1	L16060808-01	06/25/16 13:29
18	T3.062516.133327	WG573190-08	Matrix Spike Duplica	40/50	1	L16060808-01	06/25/16 13:33
19	T3.062516.133704	L16060822-03	18CPTMW04SW-061416	40/50	1		06/25/16 13:37
20	T3.062516.134058	L16060822-02	18WW03F-061416	40/50	1		06/25/16 13:40
21	T3.062516.134452	WG573973-03	Post Digestion Spike		1	L16060822-02	06/25/16 13:44
22	T3.062516.134830	WG573973-04	Serial Dilution		5	L16060822-02	06/25/16 13:48
23	T3.062516.135227	WG573973-04	Serial Dilution		25	L16060822-02	06/25/16 13:52
24	T3.062516.135622	WG574249-14	CCV		1		06/25/16 13:56
25	T3.062516.140001	WG574249-15	CCB		1		06/25/16 14:00
26	T3.062516.140359	L16060823-02	126F-061416	40/50	1		06/25/16 14:03
27	T3.062516.140759	L16060823-03	C08-061416	40/50	1		06/25/16 14:07
28	T3.062516.141200	L16060823-04	C03-061416	40/50	1		06/25/16 14:12
29	T3.062516.141551	L16061148-01	DP005SW0513-007	40/50	1		06/25/16 14:15
30	T3.062516.141945	L16061148-02	DP005SW0514-007	40/50	1		06/25/16 14:19
31	T3.062516.142340	L16061150-01	SS007SW0709-007	40/50	1		06/25/16 14:23
32	T3.062516.142732	L16061150-02	SS007SW0710-007	40/50	1		06/25/16 14:27
33	T3.062516.143125	L16061151-02	LF003SW0311-007 DUP	40/50	1		06/25/16 14:31
34	T3.062516.143519	L16061151-05	LF003SW0312-007	40/50	1		06/25/16 14:35

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Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062516T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,574055,574076,574216,574215,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.062516.143913	WG573707-02	Reference Sample		1	L16061154-01	06/25/16 14:39
36	T3.062516.144313	WG574249-16	CCV		1		06/25/16 14:43
37	T3.062516.144639	WG574249-17	CCB		1		06/25/16 14:46
38	T3.062516.145037	WG573707-07	Matrix Spike	40/50	1	L16061154-01	06/25/16 14:50
39	T3.062516.145424	WG573707-08	Matrix Spike Duplica	40/50	1	L16061154-01	06/25/16 14:54
40	T3.062516.145809	L16061154-04	FQC-RB06201601-CB	40/50	1		06/25/16 14:58
41	T3.062516.150207	L16061155-01	ST008MW0812-007	40/50	1		06/25/16 15:02
42	T3.062516.150559	L16061155-02	ST008MW0809-007	40/50	1		06/25/16 15:05
43	T3.062516.150954	L16061155-03	ST008MW0816-007	40/50	1		06/25/16 15:09
44	T3.062516.151348	L16061178-01	2016PRE-7217NEWENGLAN	40/50	1		06/25/16 15:13
45	T3.062516.151743	L16061227-01	18WW22-062116	40/50	20		06/25/16 15:17
46	T3.062516.152125	L16061227-06	18CPTMW18-062116	40/50	20		06/25/16 15:21
47	T3.062516.152518	WG573994-01	Reference Sample		20	L16061279-02	06/25/16 15:25
48	T3.062516.152911	WG574249-18	CCV		1		06/25/16 15:29
49	T3.062516.153248	WG574249-19	CCB		1		06/25/16 15:32
50	T3.062516.153646	WG573994-04	Matrix Spike	40/50	20	L16061279-02	06/25/16 15:36
51	T3.062516.154039	WG573994-05	Matrix Spike Duplica	40/50	20	L16061279-02	06/25/16 15:40
52	T3.062516.154432	L16061289-01	MW21-062216	40/50	20		06/25/16 15:44
53	T3.062516.154826	L16061129-01	MW-22-002		20		06/25/16 15:48
54	T3.062516.155222	L16061129-02	MW-22-010		20		06/25/16 15:52
55	T3.062516.155620	L16061129-03	MW-22-007		20		06/25/16 15:56
56	T3.062516.160018	L16061129-04	FD061716		20		06/25/16 16:00
57	T3.062516.160415	L16061272-01	SS007MW0B18-007		20		06/25/16 16:04
58	T3.062516.160812	L16061272-02	SS007MWN752-007		20		06/25/16 16:08
59	T3.062516.161208	L16061279-01	XU936TW007A	40/50	20		06/25/16 16:12
60	T3.062516.161603	WG574249-20	CCV		1		06/25/16 16:16
61	T3.062516.161940	WG574249-21	CCB		1		06/25/16 16:19
62	T3.062516.162338	L16061279-05	XU936TW019A	40/50	20		06/25/16 16:23
63	T3.062516.162733	L16061148-01	DP005SW0513-007		20		06/25/16 16:27
64	T3.062516.163130	L16061148-02	DP005SW0514-007		20		06/25/16 16:31
65	T3.062516.163527	L16061150-01	SS007SW0709-007		20		06/25/16 16:35
66	T3.062516.163912	L16061151-02	LF003SW0311-007 DUP		20		06/25/16 16:39
67	T3.062516.164310	L16061151-05	LF003SW0312-007		20		06/25/16 16:43
68	T3.062516.164706	WG573707-02	Reference Sample		20	L16061154-01	06/25/16 16:47

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Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062516T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,574055,574076,574216,574215,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.062516.165101	WG573707-07	Matrix Spike	40/50	20	L16061154-01	06/25/16 16:51
70	T3.062516.165454	L16061279-08	XU936TW011MSD	40/50	20	WG573707-08	06/25/16 16:54
71	T3.062516.165848	WG574249-22	CCV		1		06/25/16 16:58
72	T3.062516.170225	WG574249-23	CCB		1		06/25/16 17:02
73	T3.062516.170624	L16061155-01	ST008MW0812-007		20		06/25/16 17:06
74	T3.062516.171010	L16061155-02	ST008MW0809-007		20		06/25/16 17:10
75	T3.062516.171407	L16061155-03	ST008MW0816-007		20		06/25/16 17:14
76	T3.062516.171804	WG574249-24	CCV		1		06/25/16 17:18
77	T3.062516.172142	WG574249-25	CCB		1		06/25/16 17:21
78	T3.062516.172540	WG574249-26	Low Level Continuing Calibra		1		06/25/16 17:25
79	T3.062516.172933	WG573530-03	Method/Prep Blank	40/50	1		06/25/16 17:29
80	T3.062516.173331	WG573530-04	Laboratory Control S	40/50	1		06/25/16 17:33
81	T3.062516.173711	WG573530-05	Filter Blank		1		06/25/16 17:37
82	T3.062516.174110	L16060986-02	MW-07-04	40/50	1		06/25/16 17:41
83	T3.062516.174505	L16060986-04	MW-01-10	40/50	1		06/25/16 17:45
84	T3.062516.174856	L16060986-06	MW-03-12	40/50	1		06/25/16 17:48
85	T3.062516.175251	L16060986-08	MW-01-07	40/50	1		06/25/16 17:52
86	T3.062516.175646	WG574216-01	Post Digestion Spike		1	L16060986-08	06/25/16 17:56
87	T3.062516.180025	WG574216-02	Serial Dilution		5	L16060986-08	06/25/16 18:00
88	T3.062516.180418	WG574216-02	Serial Dilution		25	L16060986-08	06/25/16 18:04
89	T3.062516.180815	WG574249-27	CCV		1		06/25/16 18:08
90	T3.062516.181152	WG574249-28	CCB		1		06/25/16 18:11
91	T3.062516.181548	L16060986-10	MW-03-11		1		06/25/16 18:15
92	T3.062516.181942	L16060986-12	MW-01-01		1		06/25/16 18:19
93	T3.062516.182332	L16060986-14	MW-03-09		1		06/25/16 18:23
94	T3.062516.182724	L16060986-16	MW-01-08		1		06/25/16 18:27
95	T3.062516.183114	L16060986-18	MW-03-06		1		06/25/16 18:31
96	T3.062516.183511	L16060986-20	MW-03-05		1		06/25/16 18:35
97	T3.062516.183905	WG573530-01	Reference Sample		1	L16060986-22	06/25/16 18:39
98	T3.062516.184258	WG573530-02	Reference Sample		1	L16060986-24	06/25/16 18:42
99	T3.062516.184649	L16060986-26	MW-01-02		1		06/25/16 18:46
100	T3.062516.185044	L16060986-28	DUP 1		1		06/25/16 18:50
101	T3.062516.185437	WG574249-29	CCV		1		06/25/16 18:54
102	T3.062516.185815	WG574249-30	CCB		1		06/25/16 18:58

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062516T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,574055,574076,574216,574215,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T3.062516.190211	L16060986-30	DUP 2		1		06/25/16 19:02
104	T3.062516.190604	WG573530-06	Matrix Spike		1	L16060986-22	06/25/16 19:06
105	T3.062516.190942	WG573530-07	Matrix Spike Duplica		1	L16060986-22	06/25/16 19:09
106	T3.062516.191321	WG573530-08	Matrix Spike		1	L16060986-24	06/25/16 19:13
107	T3.062516.191658	WG573530-09	Matrix Spike Duplica		1	L16060986-24	06/25/16 19:16
108	T3.062516.192035	L16060986-40	EQUIP BLANK 1		1		06/25/16 19:20
109	T3.062516.192431	L16060986-42	EQUIP BLANK 2		1		06/25/16 19:24
110	T3.062516.192827	WG574249-31	CCV		1		06/25/16 19:28
111	T3.062516.193205	WG574249-32	CCB		1		06/25/16 19:32
112	T3.062516.193603	WG573544-03	Method/Prep Blank	40/50	1		06/25/16 19:36
113	T3.062516.193959	WG573544-04	Laboratory Control S	40/50	1		06/25/16 19:39
114	T3.062516.194338	L16060907-23	MW36-061516	40/50	1		06/25/16 19:43
115	T3.062516.194731	L16060986-01	MW-07-04	40/50	1		06/25/16 19:47
116	T3.062516.195124	L16060986-03	MW-01-10	40/50	1		06/25/16 19:51
117	T3.062516.195515	L16060986-05	MW-03-12	40/50	1		06/25/16 19:55
118	T3.062516.195905	L16060986-07	MW-01-07	40/50	1		06/25/16 19:59
119	T3.062516.200300	WG574215-01	Post Digestion Spike		1	L16060986-07	06/25/16 20:03
120	T3.062516.200637	WG574215-02	Serial Dilution		5	L16060986-07	06/25/16 20:06
121	T3.062516.201030	WG574215-02	Serial Dilution		25	L16060986-07	06/25/16 20:10
122	T3.062516.201426	WG574249-33	CCV		1		06/25/16 20:14
123	T3.062516.201803	WG574249-34	CCB		1		06/25/16 20:18
124	T3.062516.202200	L16060986-09	MW-03-11	40/50	1		06/25/16 20:22
125	T3.062516.202553	L16060986-11	MW-01-01	40/50	1		06/25/16 20:25
126	T3.062516.202942	L16060986-13	MW-03-09	40/50	1		06/25/16 20:29
127	T3.062516.203332	L16060986-15	MW-01-08	40/50	1		06/25/16 20:33
128	T3.062516.203723	L16060986-17	MW-03-06	40/50	1		06/25/16 20:37
129	T3.062516.204116	L16060986-19	MW-03-05	40/50	1		06/25/16 20:41
130	T3.062516.204510	WG573544-01	Reference Sample		1	L16060986-21	06/25/16 20:45
131	T3.062516.204903	WG573544-02	Reference Sample		1	L16060986-23	06/25/16 20:49
132	T3.062516.205255	L16060986-25	MW-01-02	40/50	1		06/25/16 20:52
133	T3.062516.205646	L16060986-27	DUP 1	40/50	1		06/25/16 20:56
134	T3.062516.210036	WG574249-35	CCV		1		06/25/16 21:00
135	T3.062516.210414	WG574249-36	CCB		1		06/25/16 21:04
136	T3.062516.210812	L16060986-29	DUP 2	40/50	1		06/25/16 21:08

Page: 4 Approved: June 27, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062516T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,574055,574076,574216,574215,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	T3.062516.211202	WG573544-05	Matrix Spike	40/50	1	L16060986-21	06/25/16 21:12
138	T3.062516.211541	WG573544-06	Matrix Spike Duplica	40/50	1	L16060986-21	06/25/16 21:15
139	T3.062516.211919	WG573544-07	Matrix Spike	40/50	1	L16060986-23	06/25/16 21:19
140	T3.062516.212256	WG573544-08	Matrix Spike Duplica	40/50	1	L16060986-23	06/25/16 21:22
141	T3.062516.212633	L16060986-39	EQUIP BLANK 1	40/50	1		06/25/16 21:26
142	T3.062516.213031	L16060986-41	EQUIP BLANK 2	40/50	1		06/25/16 21:30
143	T3.062516.213430	WG574249-37	CCV		1		06/25/16 21:34
144	T3.062516.213807	WG574249-38	CCB		1		06/25/16 21:38
145	T3.062516.214203	WG573102-02	Method/Prep Blank	40/50	1		06/25/16 21:42
146	T3.062516.214559	WG573102-03	Laboratory Control S	40/50	1		06/25/16 21:45
147	T3.062516.214937	WG573102-04	Filter Blank		1		06/25/16 21:49
148	T3.062516.215335	WG573102-01	Reference Sample		1	L16060787-09	06/25/16 21:53
149	T3.062516.215728	WG573102-05	Matrix Spike	40/50	1	L16060787-09	06/25/16 21:57
150	T3.062516.220106	WG573102-06	Matrix Spike Duplica	40/50	1	L16060787-09	06/25/16 22:01
151	T3.062516.220444	L16060787-01	EB04	40/50	1		06/25/16 22:04
152	T3.062516.220842	WG573561-03	Post Digestion Spike		1	L16060787-01	06/25/16 22:08
153	T3.062516.221220	WG573561-04	Serial Dilution		5	L16060787-01	06/25/16 22:12
154	T3.062516.221616	WG573561-04	Serial Dilution		25	L16060787-01	06/25/16 22:16
155	T3.062516.222012	WG574249-39	CCV		1		06/25/16 22:20
156	T3.062516.222349	WG574249-40	CCB		1		06/25/16 22:23
157	T3.062516.222746	L16060787-10	U517TW006C	40/50	1		06/25/16 22:27
158	T3.062516.223140	L16060787-18	U517TW008A	40/50	1		06/25/16 22:31
159	T3.062516.223534	L16060787-19	EB05	40/50	1		06/25/16 22:35
160	T3.062516.223931	WG573102-01	Reference Sample		20	L16060787-09	06/25/16 22:39
161	T3.062516.224326	WG573102-05	Matrix Spike	40/50	20	L16060787-09	06/25/16 22:43
162	T3.062516.224719	WG573102-06	Matrix Spike Duplica	40/50	20	L16060787-09	06/25/16 22:47
163	T3.062516.225113	WG574249-41	CCV		1		06/25/16 22:51
164	T3.062516.225451	WG574249-42	CCB		1		06/25/16 22:54
165	T3.062516.225848	WG573484-02	Method/Prep Blank	40/50	1		06/25/16 22:58
166	T3.062516.230246	WG573484-03	Laboratory Control S	40/50	1		06/25/16 23:02
167	T3.062516.230624	WG573484-01	Reference Sample		1	L16060764-04	06/25/16 23:06
168	T3.062516.231017	WG573484-04	Matrix Spike	40/50	1	L16060764-04	06/25/16 23:10
169	T3.062516.231356	WG573484-05	Matrix Spike Duplica	40/50	1	L16060764-04	06/25/16 23:13
170	T3.062516.231733	L16060991-02	MW31-061616	40/50	10		06/25/16 23:17

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062516T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,574055,574076,574216,574215,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
171	T3.062516.232126	WG573952-03	Post Digestion Spike		10	L16060991-02	06/25/16 23:21
172	T3.062516.232503	WG573952-04	Serial Dilution		50	L16060991-02	06/25/16 23:25
173	T3.062516.232900	L16060995-01	UNTREATED	40/50	1000		06/25/16 23:29
174	T3.062516.233253	L16060995-02	AFTER	40/50	1000		06/25/16 23:32
175	T3.062516.233647	WG574249-43	CCV		1		06/25/16 23:36
176	T3.062516.234025	WG574249-44	CCB		1		06/25/16 23:40
177	T3.062516.234420	WG574249-45	Interference Check		1		06/25/16 23:44
178	T3.062516.234809	WG574249-46	Interference Check		1		06/25/16 23:48
179	T3.062516.235152	WG574249-47	CCV		1		06/25/16 23:51
180	T3.062516.235530	WG574249-48	CCB		1		06/25/16 23:55
181	T3.062516.235927	WG574249-49	Low Level Continuing Calibra		1		06/25/16 23:59

Comments

Seq.	Rerun	Dil.	Reason	Analytes
69				
Seq. 69-70: wrong WG numbers JYH				

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Kim H. Rhoden

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062916T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76882 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574350574358,574351,574076,574637

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.062916.095202	WG574675-01	Calibration Point		1		06/29/16 09:52
2	T3.062916.095558	WG574675-02	Calibration Point		1		06/29/16 09:55
3	T3.062916.095953	WG574675-03	Calibration Point		1		06/29/16 09:59
4	T3.062916.100348	WG574675-04	Calibration Point		1		06/29/16 10:03
5	T3.062916.100726	WG574675-05	Calibration Point		1		06/29/16 10:07
6	T3.062916.101102	WG574675-06	Initial Calibration Verification		1		06/29/16 10:11
7	T3.062916.101440	WG574675-07	Initial Calib Blank		1		06/29/16 10:14
8	T3.062916.101836	WG574675-08	Low Level Initial Calibration V		1		06/29/16 10:18
9	T3.062916.102229	WG574675-09	Interference Check		1		06/29/16 10:22
10	T3.062916.102611	WG574675-10	Interference Check		1		06/29/16 10:26
11	T3.062916.102953	WG574675-11	CCV		1		06/29/16 10:29
12	T3.062916.103333	WG574675-12	CCB		1		06/29/16 10:33
13	T3.062916.103731	WG573828-02	Method/Prep Blank	40/50	1		06/29/16 10:37
14	T3.062916.104127	WG573828-03	Laboratory Control S	40/50	1		06/29/16 10:41
15	T3.062916.104507	WG573828-01	Reference Sample		1	L16061177-01	06/29/16 10:45
16	T3.062916.104902	WG573828-04	Matrix Spike	40/50	1	L16061177-01	06/29/16 10:49
17	T3.062916.105243	WG573828-05	Matrix Spike Duplica	40/50	1	L16061177-01	06/29/16 10:52
18	T3.062916.105622	L160601142-01	L16060114201	40/50	1		06/29/16 10:56
19	T3.062916.110017	L160601142-03	L16060114203	40/50	1		06/29/16 11:00
20	T3.062916.110411	L160601142-05	L16060114205	40/50	1		06/29/16 11:04
21	T3.062916.110805	WG574350-03	Post Digestion Spike		1	L16061142-05	06/29/16 11:08
22	T3.062916.111145	WG574350-04	Serial Dilution		5	L16061142-05	06/29/16 11:11
23	T3.062916.111539	WG574675-13	CCV		1		06/29/16 11:15
24	T3.062916.111916	WG574675-14	CCB		1		06/29/16 11:19
25	T3.062916.112313	L16060907-07	MW11S-061516	40/50	100		06/29/16 11:23
26	T3.062916.112709	L16060907-10	DUP-GW-061516	40/50	100		06/29/16 11:27
27	T3.062916.113106	L16060907-12	MW31-061516	40/50	500		06/29/16 11:31
28	T3.062916.113502	WG573685-01	Reference Sample		100	L16060907-14	06/29/16 11:35
29	T3.062916.113857	WG573685-05	Matrix Spike	40/50	100	L16060907-14	06/29/16 11:38
30	T3.062916.114254	WG573685-06	Matrix Spike Duplica	40/50	100	L16060907-14	06/29/16 11:42
31	T3.062916.114650	L16061380-01	XU936TW003A	40/50	20		06/29/16 11:46
32	T3.062916.115043	L16061380-02	XU936TW003C	40/50	20		06/29/16 11:50
33	T3.062916.115438	L16061227-07	18WW18-062116	40/50	20		06/29/16 11:54
34	T3.062916.115833	WG574675-15	CCV		1		06/29/16 11:58

Page: 1 Approved: June 30, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062916T3.1R.TXT

Analyst1: JYH Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76882 ICSAB: STD76834 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 574350574358,574351,574076,574637

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.062916.120211	WG574675-16	CCB		1		06/29/16 12:02
36	T3.062916.120607	WG574675-17	Interference Check		1		06/29/16 12:06
37	T3.062916.120959	WG574675-18	Interference Check		1		06/29/16 12:09
38	T3.062916.121342	WG574675-19	CCV		1		06/29/16 12:13
39	T3.062916.121718	WG574675-20	CCB		1		06/29/16 12:17
40	T3.062916.122116	WG574675-21	Low Level Continuing Calibra		1		06/29/16 12:21
41	T3.062916.122508	WG572926-01	Method/Prep Blank	40/50	1		06/29/16 12:25
42	T3.062916.125108	L16060003-17	DOC-17	40/50	1		06/29/16 12:51
43	T3.062916.125443	L16060003-18	DOC-18	40/50	1		06/29/16 12:54
44	T3.062916.125818	L16060003-19	DOC-19	40/50	1		06/29/16 12:58
45	T3.062916.130153	L16060003-20	DOC-20	40/50	1		06/29/16 13:01
46	T3.062916.130527	WG574675-22	CCV		1		06/29/16 13:05
47	T3.062916.130900	WG574675-23	CCB		1		06/29/16 13:09
48	T3.062916.131252	WG574597-07	Method/Prep Blank		1		06/29/16 13:12
49	T3.062916.131644	WG574597-08	Laboratory Control S		1		06/29/16 13:16
50	T3.062916.132019	WG574515-01	Fluid Blank 1		1		06/29/16 13:20
51	T3.062916.132411	L16061539-01	27-12-9 RPW3		1		06/29/16 13:24
52	T3.062916.132758	WG574597-06	Reference Sample		1	L16061496-01	06/29/16 13:27
53	T3.062916.133144	WG574597-09	Matrix Spike		1	L16061496-01	06/29/16 13:31
54	T3.062916.133518	WG574597-10	Matrix Spike Duplica		1	L16061496-01	06/29/16 13:35
55	T3.062916.133852	WG574645-01	Post Digestion Spike		1	L16061539-01	06/29/16 13:38
56	T3.062916.134226	WG574645-02	Serial Dilution		5	L16061539-01	06/29/16 13:42
57	T3.062916.134616	WG574645-02	Serial Dilution		25	L16061539-01	06/29/16 13:46
58	T3.062916.135007	WG574675-24	CCV		1		06/29/16 13:50
59	T3.062916.135340	WG574675-25	CCB		1		06/29/16 13:53

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Microbac Laboratories Inc.

Data Checklist

Date: 24-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 574123
Runlog ID: 75912
Analytical Workgroups: 574050,574055,574076,573560,573149,573561

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1129
Level 4	1140,1143,1151,1227,1272,1279
	1289,1290,729,732,794,787,724
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer: Secondary Reviewer:
26-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-26-2016 10:34:20

Microbac Laboratories Inc.

Data Checklist

Date: 25-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 574249
Runlog ID: 75923
Analytical Workgroups: 573973,574055,574076,574216,574215,573952

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1178
Level 4	822,823,1148,1150,1151,1154,1155
	1227,1279,1289,986,787,991,995
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer:

Secondary Reviewer:
27-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-27-2016 14:55:21

Microbac Laboratories Inc.

Data Checklist

Date: 29-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 574675
Runlog ID: 76005
Analytical Workgroups: 574350574358,574351,574076,574637

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1380
Level 4	1142,907,1227,0003
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	BKT
Comments	

Primary Reviewer:
30-JUN-2016

Secondary Reviewer:
30-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-30-2016 10:49:34

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010C

AAB#: WG574076

Login Number: L16061227

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW22-062116	01	06/21/16					06/24/2016	3	180		06/25/16	4.3	180	
18WW22-062116	01	06/21/16					06/24/2016	3	180		06/24/16	3.3	180	
C04F-062116	03	06/21/16					06/24/2016	2.9	180		06/24/16	3.2	180	
C04FFD-062116	05	06/21/16					06/24/2016	2.9	180		06/24/16	3.2	180	
18CPTMW18-062116	06	06/21/16					06/24/2016	2.9	180		06/25/16	4.2	180	
18CPTMW18-062116	06	06/21/16					06/24/2016	2.9	180		06/24/16	3.2	180	
18WW18-062116	07	06/21/16					06/24/2016	2.8	180		06/29/16	8	180	
18WW18-062116	07	06/21/16					06/24/2016	2.8	180		06/24/16	3.1	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4824666
Report generated 06/29/2016 13:51

METHOD BLANK SUMMARY

Login Number: L16061227
Blank File ID: T3.062416.133159
Prep Date: 06/24/16 07:18
Analyzed Date: 06/24/16 13:31
Analyst: JYH

Work Group: WG574076
Blank Sample ID: WG573994-02
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573994-03	T3.062416.133557	06/24/16 13:35	01
18WW22-062116	L16061227-01	T3.062416.141350	06/24/16 14:13	01
C04F-062116	L16061227-03	T3.062416.141746	06/24/16 14:17	01
C04FFD-062116	L16061227-05	T3.062416.142142	06/24/16 14:21	01
18CPTMW18-062116	L16061227-06	T3.062416.142526	06/24/16 14:25	01
18WW18-062116	L16061227-07	T3.062416.144853	06/24/16 14:48	01
18WW22-062116	L16061227-01	T3.062516.151743	06/25/16 15:17	DL01
18CPTMW18-062116	L16061227-06	T3.062516.152125	06/25/16 15:21	DL01
18WW18-062116	L16061227-07	T3.062916.115438	06/29/16 11:54	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4824667
Report generated 06/29/2016 13:59

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061227 Prep Date: 06/24/16 07:18 Sample ID: WG573994-02
Instrument ID: ICP-THERMO3 Run Date: 06/24/16 13:31 Prep Method: 3015
File ID: T3.062416.133159 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG574076 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-24-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Aluminum, Total	0.0500	0.200	0.0719	1	J
Beryllium, Total	0.00500	0.0200	0.00500	1	U
Calcium, Total	0.125	0.500	0.182	1	J
Iron, Total	0.0500	0.200	0.0950	1	J
Magnesium, Total	0.250	1.00	0.250	1	U
Potassium, Total	0.500	2.00	0.500	1	U
Selenium, Total	0.00500	0.0200	0.00500	1	U
Sodium, Total	0.250	1.00	0.250	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4824668
29-JUN-2016 13:59

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061227 Run Date: 06/24/2016 Sample ID: WG573994-03
Instrument ID: ICP-THERMO3 Run Time: 13:35 Prep Method: 3015
File ID: T3.062416.133557 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG574076 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76576 Cal ID: ICP-TH-24-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Aluminum, Total	6.25	6.37	102	80 - 120	
Beryllium, Total	0.0313	0.0306	97.8	80 - 120	
Calcium, Total	6.25	6.65	106	80 - 120	
Iron, Total	2.50	2.53	101	80 - 120	
Magnesium, Total	6.25	6.45	103	80 - 120	
Potassium, Total	31.3	32.7	105	80 - 120	
Selenium, Total	0.250	0.251	101	80 - 120	
Sodium, Total	31.3	32.8	105	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4824669
Report generated: 06/29/2016 13:59

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061227 Cal ID: ICP-THERMO3 - Worknum: WG574076
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG573994-01 File ID: T3.062416.133937 Dil: 1 Matrix: WATER
Sample ID: WG573994-04 MS File ID: T3.062416.134328 Dil: 1 Units: mg/L
Sample ID: WG573994-05 MSD File ID: T3.062416.134705 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Aluminum	19.7	6.25	25.8	97.8	6.25	27.1	119	4.89	80 - 120	20	
Beryllium	ND	0.0313	0.0301	96.4	0.0313	0.0309	98.8	2.42	80 - 120	20	
Potassium	7.81	31.3	38.1	96.9	31.3	39.6	102	3.81	80 - 120	20	
Selenium	ND	0.250	0.243	97.1	0.250	0.246	98.5	1.53	80 - 120	20	
Sodium	23.5	31.3	54.5	98.9	31.3	55.6	103	2.15	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4824670
Report generated 06/29/2016 13:59

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061227 Cal ID: ICP-THERMO3 - Worknum: WG574076
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG573994-01 File ID: T3.062516.152518 Dil: 20 Matrix: WATER
Sample ID: WG573994-04 MS File ID: T3.062516.153646 Dil: 20 Units: mg/L
Sample ID: WG573994-05 MSD File ID: T3.062516.154039 Dil: 20

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Calcium	234	6.25	249	243	6.25	247	200	1.10	80 - 120	20	*
Iron	27.6	2.50	26.9	-27.9	2.50	26.4	-47.0	1.79	80 - 120	20	*
Magnesium	95.8	6.25	106	157	6.25	105	154	0.173	80 - 120	20	*

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4824670
Report generated 06/29/2016 13:59

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16061227 **Worknum:** WG574076
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG574076-02 **File ID:** T3.062416.140555 **Dil:** 5 **Units:** ug/L
Sample: L16060961-03 **File ID:** T3.062416.135818 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	91.4		87.2		4.65	
Beryllium	ND	U	0.300		3100.00	
Calcium	50100		49300		1.56	
Iron	36.6		77.9		113.00	E
Magnesium	15200		15200		0.54	
Potassium	1350		1740		28.90	E
Selenium	4.57		26.5		480.00	E
Sodium	9650		9940		3.08	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4824664
06/29/2016 13:51

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061227 **Worknum:** WG574076
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG574076-01 **File ID:** T3.062416.140215 **Dil:** 1 **Units:** ug/L
Sample ID: L16060961-03 **File ID:** T3.062416.135818 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	5160		91.4	F	5000	101.5	75 - 125	
BERYLLIUM	24.6		0	U	25	98.3	75 - 125	
CALCIUM	50300		50100		5000	104.5	75 - 125	
IRON	2080		0	U	2000	103.9	75 - 125	
MAGNESIUM	18800		15200		5000	102.3	75 - 125	
POTASSIUM	27400		1350	F	25000	104.7	75 - 125	
SELENIUM	208		4.57	F	200	102.1	75 - 125	
SODIUM	34900		9650		25000	105.0	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4824665
Report generated: 06/29/2016 13:59

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061227	Workgroup (AAB#):	WG574076
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG574123	Initial Calibration Date:	24-JUN-2016 10:17

	WG574123-01		WG574123-02		WG574123-03		WG574123-04		WG574123-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000920	.1	0.00153	.2	0.00215	10	0.0811	20	0.159	.999969	
BERYLLIUM	0	0.000510	.0005	0.000790	.001	0.00116	.05	0.0467	.1	0.0919	.999879	
CALCIUM	0	0.000820	.1	0.00503	.2	0.00837	10	0.457	20	0.881	.999811	
IRON	0	-0.000100	.04	0.000570	.08	0.00116	4	0.0886	8	0.172	.999867	
MAGNESIUM	0	-0.000440	NA	NA	.2	0.000830	10	0.0815	20	0.157	.999846	
POTASSIUM	0	-0.0108	.5	0.0152	1	0.0397	50	3.07	100	5.95	.999864	
SELENIUM	0	-0.000160	NA	NA	.008	-0.000100	.4	0.00655	.8	0.0133	.999466	
SODIUM	0	-0.0319	.5	0.0316	1	0.0972	50	8.45	100	16.4	.999892	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4824673
Report generated: 29-JUN-2016 13:52

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	**L16061227**	Workgroup (AAB#):	**WG574076**
Analytical Method:	**6010C**	Instrument ID:	**ICP-THERMO3**
ICAL Worknum:	**WG574249**	Initial Calibration Date:	**25-JUN-2016 12:36**

	WG574249-01		WG574249-02		WG574249-03		WG574249-04		WG574249-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000800	.1	0.00148	.2	0.00220	10	0.0828	20	0.162	.99995	
BERYLLIUM	0	0.000480	.0005	0.000970	.001	0.00139	.05	0.0482	.1	0.0948	.999766	
CALCIUM	0	0.00288	.1	0.00582	.2	0.00931	10	0.466	20	0.917	.99989	
IRON	0	-0.000710	.04	0.000330	.08	0.00148	4	0.0965	8	0.191	.99933	
MAGNESIUM	0	-0.000260	NA	NA	.2	0.00109	10	0.0796	20	0.159	.99999	
POTASSIUM	0	-0.00661	.5	0.0195	1	0.0419	50	3.07	100	6.10	.999988	
SELENIUM	0	-0.000510	NA	NA	.008	-0.000340	.4	0.00649	.8	0.0134	.999238	
SODIUM	0	-0.0478	.5	0.0267	1	0.108	50	9.20	100	18.4	.99999	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4824673
Report generated: 29-JUN-2016 13:52

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061227	Workgroup (AAB#):	WG574076
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG574675	Initial Calibration Date:	29-JUN-2016 10:07

	WG574675-01		WG574675-02		WG574675-03		WG574675-04		WG574675-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000900	.1	0.00149	.2	0.00216	10	0.0777	20	0.156	.99999	
BERYLLIUM	0	0.000140	.0005	0.000610	.001	0.000910	.05	0.0469	.1	0.0941	.999899	
CALCIUM	0	-0.000210	.1	0.00581	.2	0.00981	10	0.430	20	0.875	.998775	
IRON	0	-0.000420	.04	-0.0000800	.08	0.000850	4	0.0810	8	0.162	.999702	
MAGNESIUM	0	-0.000310	NA	NA	.2	0.000580	10	0.0800	20	0.161	.999747	
POTASSIUM	0	-0.0122	.5	0.0171	1	0.0387	50	3.21	100	6.51	.999964	
SELENIUM	0	-0.000300	NA	NA	.008	-0.000250	.4	0.00565	.8	0.0116	.999294	
SODIUM	0	-0.0579	.5	0.0179	1	0.0912	50	8.68	100	17.7	.999966	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4824673
Report generated: 29-JUN-2016 13:52

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061227
Run Date: 06/24/2016
Sample ID: WG574123-07
Instrument ID: ICP-THERMO3
Run Time: 10:24
Method: 6010C
File ID: T3.062416.102444
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-THERI - 24-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	.0052	F
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4824675
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061227
Run Date: 06/25/2016
Sample ID: WG574249-07
Instrument ID: ICP-THERMO3
Run Time: 12:43
Method: 6010C
File ID: T3.062516.124348
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-THERI - 25-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	.0087	*
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4824675
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061227
Run Date: 06/29/2016
Sample ID: WG574675-07
Instrument ID: ICP-THERMO3
Run Time: 10:14
Method: 6010C
File ID: T3.062916.101440
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-THERI - 29-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	.004	U
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4824675
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/24/2016
Sample ID: WG574123-13
Instrument ID: ICP-THERMO3
Run Time: 10:47
Method: 6010C
File ID: T3.062416.104746
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4824678
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/24/2016
Sample ID: WG574123-19
Instrument ID: ICP-THERMO3
Run Time: 13:08
Method: 6010C
File ID: T3.062416.130845
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4824678
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/24/2016
Sample ID: WG574123-21
Instrument ID: ICP-THERMO3
Run Time: 13:54
Method: 6010C
File ID: T3.062416.135419
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4824678
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/24/2016
Sample ID: WG574123-23
Instrument ID: ICP-THERMO3
Run Time: 14:37
Method: 6010C
File ID: T3.062416.143703
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4824678
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/24/2016
Sample ID: WG574123-27
Instrument ID: ICP-THERMO3
Run Time: 15:23
Method: 6010C
File ID: T3.062416.152346
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4824678
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/25/2016
Sample ID: WG574249-13
Instrument ID: ICP-THERMO3
Run Time: 13:06
Method: 6010C
File ID: T3.062516.130641
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00482	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4824678
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/25/2016
Sample ID: WG574249-17
Instrument ID: ICP-THERMO3
Run Time: 14:46
Method: 6010C
File ID: T3.062516.144639
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00512	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4824678
Report generated 06/29/2016 13:52

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/25/2016
Sample ID: WG574249-19
Instrument ID: ICP-THERMO3
Run Time: 15:32
Method: 6010C
File ID: T3.062516.153248
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00412	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Login Number: L16061227
Run Date: 06/25/2016
Sample ID: WG574249-44
Instrument ID: ICP-THERMO3
Run Time: 23:40
Method: 6010C
File ID: T3.062516.234025
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Login Number: L16061227
Run Date: 06/25/2016
Sample ID: WG574249-48
Instrument ID: ICP-THERMO3
Run Time: 23:55
Method: 6010C
File ID: T3.062516.235530
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Login Number: L16061227
Run Date: 06/29/2016
Sample ID: WG574675-12
Instrument ID: ICP-THERMO3
Run Time: 10:33
Method: 6010C
File ID: T3.062916.103333
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 29-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0438	F
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.101	F
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Login Number: L16061227
Run Date: 06/29/2016
Sample ID: WG574675-14
Instrument ID: ICP-THERMO3
Run Time: 11:19
Method: 6010C
File ID: T3.062916.111916
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 29-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Login Number: L16061227
Run Date: 06/29/2016
Sample ID: WG574675-16
Instrument ID: ICP-THERMO3
Run Time: 12:02
Method: 6010C
File ID: T3.062916.120211
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 29-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Login Number: L16061227
Run Date: 06/29/2016
Sample ID: WG574675-20
Instrument ID: ICP-THERMO3
Run Time: 12:17
Method: 6010C
File ID: T3.062916.121718
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 29-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061227 Run Date: 06/29/2016 Sample ID: WG574675-06
Instrument ID: ICP-THERMO3 Run Time: 10:11 Method: 6010C
File ID: T3.062916.101102 Analyst: JYH Units: mg/L
Workgroup (AAB#): WG574076 Cal ID: ICP-TH - 29-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	10.3	103	90 - 110	
Beryllium		.05	0.0507	101	90 - 110	
Calcium		10	10.1	101	90 - 110	
Iron		4	4.09	102	90 - 110	
Magnesium		10	10.3	103	90 - 110	
Potassium		50	51.0	102	90 - 110	
Selenium		.4	0.408	102	90 - 110	
Sodium		50	50.9	102	90 - 110	

* Exceeds LIMITS Limit

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Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061227 Run Date: 06/24/2016 Sample ID: WG574123-06
Instrument ID: ICP-THERMO3 Run Time: 10:21 Method: 6010C
File ID: T3.062416.102118 Analyst: JYH Units: mg/L
Workgroup (AAB#): WG574076 Cal ID: ICP-TH - 24-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	10.1	101	90 - 110	
Beryllium		.05	0.0499	99.9	90 - 110	
Calcium		10	9.97	99.7	90 - 110	
Iron		4	4.01	100	90 - 110	
Magnesium		10	10.1	101	90 - 110	
Potassium		50	50.4	101	90 - 110	
Selenium		.4	0.410	102	90 - 110	
Sodium		50	50.2	100	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
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Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061227
Run Date: 06/25/2016
Sample ID: WG574249-06
Instrument ID: ICP-THERMO3
Run Time: 12:40
Method: 6010C
File ID: T3.062516.124009
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	10.1	101	90 - 110	
Beryllium		.05	0.0504	101	90 - 110	
Calcium		10	10.1	101	90 - 110	
Iron		4	4.05	101	90 - 110	
Magnesium		10	10.1	101	90 - 110	
Potassium		50	50.3	101	90 - 110	
Selenium		.4	0.400	100	90 - 110	
Sodium		50	50.1	100	90 - 110	

* Exceeds LIMITS Limit

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/24/2016
Sample ID: WG574123-12
Instrument ID: ICP-THERMO3
Run Time: 10:44
Method: 6010C
File ID: T3.062416.104409
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.2	mg/L	102	90 - 110		
Beryllium		0.0500	0.0500	mg/L	100	90 - 110		
Calcium		10.0	10.2	mg/L	102	90 - 110		
Iron		4.00	4.08	mg/L	102	90 - 110		
Magnesium		10.0	10.1	mg/L	101	90 - 110		
Potassium		50.0	51.1	mg/L	102	90 - 110		
Selenium		0.400	0.409	mg/L	102	90 - 110		
Sodium		50.0	50.8	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/24/2016
Sample ID: WG574123-18
Instrument ID: ICP-THERMO3
Run Time: 13:05
Method: 6010C
File ID: T3.062416.130507
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.4	mg/L	104	90 - 110		
Beryllium		0.0500	0.0505	mg/L	101	90 - 110		
Calcium		10.0	10.6	mg/L	106	90 - 110		
Iron		4.00	4.16	mg/L	104	90 - 110		
Magnesium		10.0	10.3	mg/L	103	90 - 110		
Potassium		50.0	53.3	mg/L	107	90 - 110		
Selenium		0.400	0.423	mg/L	106	90 - 110		
Sodium		50.0	52.9	mg/L	106	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/24/2016
Sample ID: WG574123-20
Instrument ID: ICP-THERMO3
Run Time: 13:50
Method: 6010C
File ID: T3.062416.135042
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.60	mg/L	96.0	90 - 110		
Beryllium		0.0500	0.0470	mg/L	93.9	90 - 110		
Calcium		10.0	9.67	mg/L	96.7	90 - 110		
Iron		4.00	3.83	mg/L	95.8	90 - 110		
Magnesium		10.0	9.49	mg/L	94.9	90 - 110		
Potassium		50.0	49.1	mg/L	98.2	90 - 110		
Selenium		0.400	0.391	mg/L	97.8	90 - 110		
Sodium		50.0	48.8	mg/L	97.6	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/24/2016
Sample ID: WG574123-22
Instrument ID: ICP-THERMO3
Run Time: 14:33
Method: 6010C
File ID: T3.062416.143326
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.4	mg/L	104	90 - 110		
Beryllium		0.0500	0.0505	mg/L	101	90 - 110		
Calcium		10.0	10.5	mg/L	105	90 - 110		
Iron		4.00	4.19	mg/L	105	90 - 110		
Magnesium		10.0	10.5	mg/L	105	90 - 110		
Potassium		50.0	53.3	mg/L	107	90 - 110		
Selenium		0.400	0.417	mg/L	104	90 - 110		
Sodium		50.0	53.0	mg/L	106	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/24/2016
Sample ID: WG574123-26
Instrument ID: ICP-THERMO3
Run Time: 15:20
Method: 6010C
File ID: T3.062416.152008
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.4	mg/L	104	90 - 110		
Beryllium		0.0500	0.0508	mg/L	102	90 - 110		
Calcium		10.0	10.4	mg/L	104	90 - 110		
Iron		4.00	4.13	mg/L	103	90 - 110		
Magnesium		10.0	10.3	mg/L	103	90 - 110		
Potassium		50.0	52.6	mg/L	105	90 - 110		
Selenium		0.400	0.416	mg/L	104	90 - 110		
Sodium		50.0	52.2	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/25/2016
Sample ID: WG574249-12
Instrument ID: ICP-THERMO3
Run Time: 13:03
Method: 6010C
File ID: T3.062516.130304
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.0	mg/L	100	90 - 110		
Beryllium		0.0500	0.0498	mg/L	99.6	90 - 110		
Calcium		10.0	9.94	mg/L	99.4	90 - 110		
Iron		4.00	4.00	mg/L	99.9	90 - 110		
Magnesium		10.0	9.92	mg/L	99.2	90 - 110		
Potassium		50.0	49.2	mg/L	98.4	90 - 110		
Selenium		0.400	0.405	mg/L	101	90 - 110		
Sodium		50.0	49.3	mg/L	98.6	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/25/2016
Sample ID: WG574249-16
Instrument ID: ICP-THERMO3
Run Time: 14:43
Method: 6010C
File ID: T3.062516.144313
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.5	mg/L	105	90 - 110		
Beryllium		0.0500	0.0519	mg/L	104	90 - 110		
Calcium		10.0	10.5	mg/L	105	90 - 110		
Iron		4.00	4.13	mg/L	103	90 - 110		
Magnesium		10.0	10.2	mg/L	102	90 - 110		
Potassium		50.0	50.7	mg/L	101	90 - 110		
Selenium		0.400	0.413	mg/L	103	90 - 110		
Sodium		50.0	51.4	mg/L	103	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/25/2016
Sample ID: WG574249-18
Instrument ID: ICP-THERMO3
Run Time: 15:29
Method: 6010C
File ID: T3.062516.152911
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.5	mg/L	105	90 - 110		
Beryllium		0.0500	0.0522	mg/L	104	90 - 110		
Calcium		10.0	10.4	mg/L	104	90 - 110		
Iron		4.00	4.15	mg/L	104	90 - 110		
Magnesium		10.0	9.96	mg/L	99.6	90 - 110		
Potassium		50.0	50.6	mg/L	101	90 - 110		
Selenium		0.400	0.412	mg/L	103	90 - 110		
Sodium		50.0	51.2	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/25/2016
Sample ID: WG574249-43
Instrument ID: ICP-THERMO3
Run Time: 23:36
Method: 6010C
File ID: T3.062516.233647
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.2	mg/L	102	90 - 110		
Beryllium		0.0500	0.0497	mg/L	99.5	90 - 110		
Calcium		10.0	10.4	mg/L	104	90 - 110		
Iron		4.00	4.06	mg/L	102	90 - 110		
Magnesium		10.0	9.72	mg/L	97.2	90 - 110		
Potassium		50.0	51.1	mg/L	102	90 - 110		
Selenium		0.400	0.405	mg/L	101	90 - 110		
Sodium		50.0	52.1	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/25/2016
Sample ID: WG574249-47
Instrument ID: ICP-THERMO3
Run Time: 23:51
Method: 6010C
File ID: T3.062516.235152
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.3	mg/L	103	90 - 110		
Beryllium		0.0500	0.0502	mg/L	100	90 - 110		
Calcium		10.0	10.5	mg/L	105	90 - 110		
Iron		4.00	4.08	mg/L	102	90 - 110		
Magnesium		10.0	9.81	mg/L	98.1	90 - 110		
Potassium		50.0	51.1	mg/L	102	90 - 110		
Selenium		0.400	0.412	mg/L	103	90 - 110		
Sodium		50.0	51.8	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/29/2016
Sample ID: WG574675-11
Instrument ID: ICP-THERMO3
Run Time: 10:29
Method: 6010C
File ID: T3.062916.102953
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.76	mg/L	97.6	90 - 110		
Beryllium		0.0500	0.0480	mg/L	96.0	90 - 110		
Calcium		10.0	9.76	mg/L	97.6	90 - 110		
Iron		4.00	3.96	mg/L	98.9	90 - 110		
Magnesium		10.0	9.96	mg/L	99.6	90 - 110		
Potassium		50.0	48.2	mg/L	96.4	90 - 110		
Selenium		0.400	0.384	mg/L	96.1	90 - 110		
Sodium		50.0	47.9	mg/L	95.8	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/29/2016
Sample ID: WG574675-13
Instrument ID: ICP-THERMO3
Run Time: 11:15
Method: 6010C
File ID: T3.062916.111539
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.90	mg/L	99.0	90 - 110		
Beryllium		0.0500	0.0492	mg/L	98.3	90 - 110		
Calcium		10.0	9.90	mg/L	99.0	90 - 110		
Iron		4.00	3.95	mg/L	98.8	90 - 110		
Magnesium		10.0	9.89	mg/L	98.9	90 - 110		
Potassium		50.0	49.9	mg/L	99.9	90 - 110		
Selenium		0.400	0.394	mg/L	98.5	90 - 110		
Sodium		50.0	49.8	mg/L	99.6	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/29/2016
Sample ID: WG574675-15
Instrument ID: ICP-THERMO3
Run Time: 11:58
Method: 6010C
File ID: T3.062916.115833
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.85	mg/L	98.5	90 - 110		
Beryllium		0.0500	0.0488	mg/L	97.6	90 - 110		
Calcium		10.0	9.80	mg/L	98.0	90 - 110		
Iron		4.00	3.95	mg/L	98.7	90 - 110		
Magnesium		10.0	9.91	mg/L	99.1	90 - 110		
Potassium		50.0	49.4	mg/L	98.8	90 - 110		
Selenium		0.400	0.403	mg/L	101	90 - 110		
Sodium		50.0	49.3	mg/L	98.7	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4824677
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/29/2016
Sample ID: WG574675-19
Instrument ID: ICP-THERMO3
Run Time: 12:13
Method: 6010C
File ID: T3.062916.121342
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.2	mg/L	102	90 - 110		
Beryllium		0.0500	0.0504	mg/L	101	90 - 110		
Calcium		10.0	10.1	mg/L	101	90 - 110		
Iron		4.00	4.04	mg/L	101	90 - 110		
Magnesium		10.0	10.2	mg/L	102	90 - 110		
Potassium		50.0	51.1	mg/L	102	90 - 110		
Selenium		0.400	0.403	mg/L	101	90 - 110		
Sodium		50.0	50.8	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4824677
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Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061227
Run Date: 06/24/2016
Sample ID: WG574123-08
Instrument ID: ICP-THERMO3
Run Time: 10:28
Method: 6010C
File ID: T3.062416.102843
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.175	mg/L	109	70 - 130		
Beryllium		0.00160	0.00162	mg/L	101	70 - 130		
Calcium		0.400	0.420	mg/L	105	70 - 130		
Iron		0.0800	0.0855	mg/L	107	70 - 130		
Magnesium		0.400	0.437	mg/L	109	70 - 130		
Potassium		0.800	0.954	mg/L	119	70 - 130		
Selenium		0.0160	0.0180	mg/L	112	70 - 130		
Sodium		0.400	0.448	mg/L	112	70 - 130		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061227
Run Date: 06/24/2016
Sample ID: WG574123-24
Instrument ID: ICP-THERMO3
Run Time: 14:41
Method: 6010C
File ID: T3.062416.144104
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.168	mg/L	105	70 - 130		
Beryllium		0.00160	0.00164	mg/L	103	70 - 130		
Calcium		0.400	0.416	mg/L	104	70 - 130		
Iron		0.0800	0.0993	mg/L	124	70 - 130		
Magnesium		0.400	0.414	mg/L	103	70 - 130		
Potassium		0.800	0.972	mg/L	121	70 - 130		
Selenium		0.0160	0.0132	mg/L	82.7	70 - 130		
Sodium		0.400	0.473	mg/L	118	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4824679
Report generated 06/29/2016 13:59

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061227
Run Date: 06/24/2016
Sample ID: WG574123-34
Instrument ID: ICP-THERMO3
Run Time: 17:11
Method: 6010C
File ID: T3.062416.171114
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.171	mg/L	107	70 - 130		
Beryllium		0.00160	0.00166	mg/L	104	70 - 130		
Calcium		0.400	0.434	mg/L	109	70 - 130		
Iron		0.0800	0.0873	mg/L	109	70 - 130		
Magnesium		0.400	0.381	mg/L	95.2	70 - 130		
Potassium		0.800	0.824	mg/L	103	70 - 130		
Selenium		0.0160	0.0183	mg/L	115	70 - 130		
Sodium		0.400	0.490	mg/L	123	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4824679
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Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061227
Run Date: 06/25/2016
Sample ID: WG574249-08
Instrument ID: ICP-THERMO3
Run Time: 12:47
Method: 6010C
File ID: T3.062516.124745
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.165	mg/L	103	70 - 130		
Beryllium		0.00160	0.00166	mg/L	104	70 - 130		
Calcium		0.400	0.414	mg/L	103	70 - 130		
Iron		0.0800	0.0939	mg/L	117	70 - 130		
Magnesium		0.400	0.441	mg/L	110	70 - 130		
Potassium		0.800	0.887	mg/L	111	70 - 130		
Selenium		0.0160	0.0204	mg/L	127	70 - 130		
Sodium		0.400	0.442	mg/L	110	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
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Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061227
Run Date: 06/25/2016
Sample ID: WG574249-26
Instrument ID: ICP-THERMO3
Run Time: 17:25
Method: 6010C
File ID: T3.062516.172540
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.163	mg/L	102	70 - 130		
Beryllium		0.00160	0.00172	mg/L	108	70 - 130		
Calcium		0.400	0.375	mg/L	93.8	70 - 130		
Iron		0.0800	0.0950	mg/L	119	70 - 130		
Magnesium		0.400	0.339	mg/L	84.7	70 - 130		
Potassium		0.800	0.714	mg/L	89.2	70 - 130		
Selenium		0.0160	0.0209	mg/L	131	70 - 130		*
Sodium		0.400	0.408	mg/L	102	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4824679
Report generated 06/29/2016 13:59

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061227
Run Date: 06/29/2016
Sample ID: WG574675-08
Instrument ID: ICP-THERMO3
Run Time: 10:18
Method: 6010C
File ID: T3.062916.101836
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.171	mg/L	107	70 - 130		
Beryllium		0.00160	0.00157	mg/L	98.1	70 - 130		
Calcium		0.400	0.421	mg/L	105	70 - 130		
Iron		0.0800	0.103	mg/L	128	70 - 130		
Magnesium		0.400	0.313	mg/L	78.3	70 - 130		
Selenium		0.0160	0.0143	mg/L	89.6	70 - 130		
Sodium		0.400	0.423	mg/L	106	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
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Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061227
Run Date: 06/29/2016
Sample ID: WG574675-21
Instrument ID: ICP-THERMO3
Run Time: 12:21
Method: 6010C
File ID: T3.062916.122116
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.185	mg/L	116	70 - 130		
Beryllium		0.00160	0.00161	mg/L	101	70 - 130		
Calcium		0.400	0.463	mg/L	116	70 - 130		
Iron		0.0800	0.0701	mg/L	87.6	70 - 130		
Magnesium		0.400	0.338	mg/L	84.5	70 - 130		
Selenium		0.0160	0.0132	mg/L	82.4	70 - 130		
Sodium		0.400	0.434	mg/L	108	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4824679
Report generated 06/29/2016 13:59

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061227
Instrument ID: ICP-THERMO3
Sol. A : WG574123-10 **File ID:** T3.062416.103634
Sol. AB : WG574123-11 **File ID:** T3.062416.104027

Workgroup (AAB#): WG574076
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	272	109	250	274	110	
Beryllium	NS	-0.0000400	NS	0.250	0.246	98.4	
Calcium	250	256	102	250	255	102	
Iron	100	102	102	100	99.9	99.9	
Magnesium	250	260	104	250	256	102	
Potassium	NS	0.0930	NS	5.00	5.48	110	
Selenium	NS	0.00445	NS	0.250	0.267	107	
Sodium	NS	0.0388	NS	5.00	5.59	112	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

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Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061227
Instrument ID: ICP-THERMO3
Sol. A : WG574249-10 **File ID:** T3.062516.125529
Sol. AB : WG574249-11 **File ID:** T3.062516.125921

Workgroup (AAB#): WG574076
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	266	106	250	268	107	
Beryllium	NS	0.000110	NS	0.250	0.245	98.0	
Calcium	250	244	97.6	250	247	98.8	
Iron	100	96.8	96.8	100	96.5	96.5	
Magnesium	250	249	99.6	250	249	99.6	
Potassium	NS	0.0533	NS	5.00	5.19	104	
Selenium	NS	-0.00224	NS	0.250	0.249	99.6	
Sodium	NS	0.0404	NS	5.00	5.32	106	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4824676
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Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061227
Instrument ID: ICP-THERMO3
Sol. A : WG574249-45 **File ID:** T3.062516.234420
Sol. AB : WG574249-46 **File ID:** T3.062516.234809

Workgroup (AAB#): WG574076
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	263	105	250	271	108	
Beryllium	NS	0.000140	NS	0.250	0.244	97.6	
Calcium	250	248	99.2	250	254	102	
Iron	100	95.6	95.6	100	96.1	96.1	
Magnesium	250	236	94.4	250	239	95.6	
Potassium	NS	-0.0460	NS	5.00	5.21	104	
Selenium	NS	-0.00782	NS	0.250	0.238	95.2	
Sodium	NS	0.0818	NS	5.00	5.50	110	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

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Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061227
Instrument ID: ICP-THERMO3
Sol. A : WG574675-09 **File ID:** T3.062916.102229
Sol. AB : WG574675-10 **File ID:** T3.062916.102611

Workgroup (AAB#): WG574076
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	257	103	250	258	103	
Beryllium	NS	-0.0000700	NS	0.250	0.250	100	
Calcium	250	241	96.4	250	243	97.2	
Iron	100	96.2	96.2	100	95.0	95.0	
Magnesium	250	246	98.4	250	242	96.8	
Potassium	NS	0.182	NS	5.00	5.32	106	
Selenium	NS	0.00425	NS	0.250	0.257	103	
Sodium	NS	0.0105	NS	5.00	5.20	104	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

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Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061227
Instrument ID: ICP-THERMO3
Sol. A : WG574675-17 **File ID:** T3.062916.120607
Sol. AB : WG574675-18 **File ID:** T3.062916.120959

Workgroup (AAB#): WG574076
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	256	102	250	258	103	
Beryllium	NS	-0.0000700	NS	0.250	0.251	100	
Calcium	250	243	97.2	250	241	96.4	
Iron	100	96.5	96.5	100	94.3	94.3	
Magnesium	250	246	98.4	250	241	96.4	
Potassium	NS	0.0274	NS	5.00	5.20	104	
Selenium	NS	0.00783	NS	0.250	0.264	106	
Sodium	NS	0.0111	NS	5.00	5.26	105	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061227 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	AG	AL	AS	B	BA
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000410	0	0	0
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0.0115	0	-0.0000800
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0.000260	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	-0.000289	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	-0.0000490	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.0000120	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0.0000300	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4824672
Report generated: 06/29/2016 13:52

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061227 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	BE	CA	CD	CO	CR
ALUMINUM	308.20	0	0	0	-0.000820	0
ANTIMONY	206.80	0	0	0	0	0.0200
ARSENIC	189.00	0	0	0	0	-0.00190
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0.00343	0
CADMIUM	228.80	0	0	0	-0.00390	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	-0.000200
COPPER	224.70	0	0	0	0.0000770	-0.00100
IRON	261.10	0	0	0	0	-0.00100
LEAD	220.30	0	0	0	-0.0000130	-0.000132
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.0000500
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	-0.000860	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0.00000500	0	0	0
THALLIUM	190.80	0	0	0	0.00240	0.000276
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	-0.00480
ZINC	206.20	0	0	0	0	-0.00180
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4824672
Report generated: 06/29/2016 13:52

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061227 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	CU	FE	K	LI	MG
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000560	0	0	0
ARSENIC	189.00	0	-0.0000500	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0.000300	0	0	0
CADMIUM	228.80	0	-0.0000190	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000500	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0.00160	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0.000609	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.00000300
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0.0000420	0	0	0
PHOSPHORUS	214.90	-0.323	0.000900	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000270	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000400	0	0	0
VANADIUM	292.40	0	0.00000700	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	-0.0000300	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4824672
Report generated: 06/29/2016 13:52

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061227 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	MN	MO	NA	NI	P
ALUMINUM	308.20	0	0.0163	0	0	0
ANTIMONY	206.80	0	-0.00310	0	-0.00350	0
ARSENIC	189.00	0	0.00120	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	-0.00190	0	0	0
CADMIUM	228.80	0	0.0000320	0	-0.000770	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0.000360	0	0	0	0
COBALT	228.60	0	-0.00200	0	0.000100	0
COPPER	224.70	0	0.00160	0	-0.0123	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	-0.00210	0	0.000110	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	-0.00290	-0.0230	0	0	0
MANGANESE	257.60	0	0.0000300	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0.00710	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0.000600	0.000580	0	0	0
SILICON	212.40	0	0.0187	0	0	0
SILVER	328.00	0	-0.0000430	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0.00100	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000153	0	0	0
VANADIUM	292.40	-0.000200	-0.00830	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4824672
Report generated: 06/29/2016 13:52

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061227 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	PB	SB	SE	SI	SN
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0	0	0	-0.0220
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0.00440	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4824672
Report generated: 06/29/2016 13:52

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061227 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	SR	TI	TL	V	ZN
ALUMINUM	308.20	0	0	0	0.0950	0
ANTIMONY	206.80	0	0.00110	0	-0.00360	0
ARSENIC	189.00	0	0	0	0.000107	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	-0.00000700	0	0.000990	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0.000102	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000550	0	0	0
COBALT	228.60	0	0.00210	0	0.0000200	0
COPPER	224.70	0	0.000269	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	-0.000126	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	-0.00290	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	-0.000110	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	-0.00100	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000720	0	-0.000260	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.000800	0	-0.00490	0
TIN	189.90	0	-0.00190	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0.000820	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4824672
Report generated: 06/29/2016 13:52

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061227 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	ZR
ALUMINUM	308.20	0
ANTIMONY	206.80	0
ARSENIC	189.00	0
BARIUM	455.40	0
BERYLLIUM	313.10	0
BORON	249.60	0
CADMIUM	228.80	0
CALCIUM	422.60	0
CHROMIUM	267.70	0
COBALT	228.60	0
COPPER	224.70	0
IRON	261.10	0
LEAD	220.30	0
LITHIUM	670.70	0
MAGNESIUM	279.00	0
MANGANESE	257.60	0
MOLYBDENUM	202.00	0
NICKEL	231.60	0
PHOSPHORUS	214.90	0
POTASSIUM	766.40	0
SELENIUM	196.00	0
SILICON	212.40	0
SILVER	328.00	0
SODIUM	589.50	0
STRONTIUM	407.70	0
THALLIUM	190.80	0
TIN	189.90	0
TITANIUM	337.20	0
VANADIUM	292.40	0
ZINC	206.20	0
ZIRCONIUM	339.10	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4824672
Report generated: 06/29/2016 13:52

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16061227 **Date:** 04/29/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	900.0
Antimony	20.00	45.0
Arsenic	10.00	45.0
Barium	10.00	45.0
Beryllium	10.00	1.8
Boron	20.00	45.0
Cadmium	20.00	4.5
Calcium	5.00	270.0
Chromium	20.00	36.0
Cobalt	20.00	45.0
Copper	20.00	180.0
Iron	5.00	720.0
Lead	20.00	225.0
Lithium	5.00	36.0
Magnesium	5.00	900.0
Manganese	10.00	36.0
Molybdenum	20.00	27.0
Nickel	20.00	90.0
Phosphorus	20.00	180.0
Potassium	5.00	450.0
Selenium	20.00	90.0
Silicon	20.00	36.0
Silver	10.00	9.0
Sodium	5.00	270.0
Strontium	5.00	9.0
Thallium	20.00	18.0
Tin	20.00	45.0
Titanium	5.00	36.0
Vanadium	20.00	27.0
Zinc	20.00	45.0
Zirconium	10.00	45.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4824671
Report generated: 06/29/2016 13:51

2.3.1.3 Raw Data

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000141	0.050748	0.000000	1.000000
Al 308.215 {109}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000916	0.007866	0.000000	1.000000
As 189.042 {478}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000058	0.023675	0.000000	1.000000
B 249.678 {135}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000060	0.022039	0.000000	1.000000
Ba 455.403 { 74}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.014298	2.093262	0.000000	1.000000
Be 313.107 {108}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000510	0.898055	0.000000	1.000000
Ca 422.673 { 80}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000824	0.044581	0.000000	1.000000
Cd 228.802 {447}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000030	0.563251	0.000000	1.000000
Co 228.616 {447}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000034	0.344510	0.000000	1.000000
Cr 267.716 {126}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000180	0.055863	0.000000	1.000000
Cu 224.700 {450}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000060	0.121643	0.000000	1.000000
Fe 261.187 {129}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000103	0.021701	0.000000	1.000000
K 766.490 { 44}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.010819	0.060325	0.000000	1.000000
Li 670.784 { 50}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.007531	1.496173	0.000000	1.000000
Mg 279.079 {121}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000442	0.008016	0.000000	1.000000
Mn 257.610 {131}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000827	0.279912	0.000000	1.000000
Mo 202.030 {467}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000039	0.179523	0.000000	1.000000
Na 589.592 { 57}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.031897	0.166281	0.000000	1.000000
Ni 231.604 {446}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000651	0.129323	0.000000	1.000000
P 214.914 {457}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000172	0.012827	0.000000	1.000000
Pb 220.353 {453}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000520	0.058788	0.000000	1.000000
Sb 206.833 {463}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000001	0.030127	0.000000	1.000000
Se 196.090 {472}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000164	0.016794	0.000000	1.000000
Si 212.412 {459}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000911	0.038950	0.000000	1.000000
Sn 189.989 {477}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000052	0.066907	0.000000	1.000000
Sr 407.771 { 83}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.002037	3.549642	0.000000	1.000000
Ti 337.280 {100}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.001943	0.119996	0.000000	1.000000
Tl 190.856 {477}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000361	0.028102	0.000000	1.000000
V 292.402 {115}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000023	0.065920	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000153	0.391840	0.000000	1.000000
Zr 339.198 { 99}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.012098	2.809224	0.000000	1.000000

Approved: June 25, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999737	0.000003	0.002049	0.006830	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999969	0.000004	0.009025	0.030084	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999986	0.000000	0.003104	0.010346	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999939	0.000001	0.002779	0.009264	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999858	0.000224	0.000982	0.003272	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999879	0.000005	0.000094	0.000312	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999811	0.000055	0.038318	0.127728	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999763	0.000004	0.000260	0.000866	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999919	0.000006	0.000408	0.001359	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999801	0.000004	0.001181	0.003936	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999857	0.000007	0.001355	0.004518	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999867	0.000009	0.021737	0.072458	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999864	0.000316	0.090153	0.300511	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999907	0.000200	0.003625	0.012085	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999846	0.000014	0.078797	0.262658	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999412	0.000030	0.002338	0.007792	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999986	0.000006	0.000418	0.001395	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999892	0.000776	0.030119	0.100396	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999935	0.000005	0.001154	0.003846	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999988	0.000004	0.007248	0.024159	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999843	0.000003	0.003678	0.012262	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999953	0.000002	0.004278	0.014260	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999466	0.000002	0.006279	0.020930	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999584	0.000036	0.002252	0.007507	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999937	0.000005	0.000895	0.002983	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999850	0.000390	0.000401	0.001336	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999443	0.000025	0.006504	0.021681	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999820	0.000002	0.003079	0.010263	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999965	0.000003	0.000964	0.003213	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999941	0.000027	0.000206	0.000686	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.999713	0.000427	0.000581	0.001936	OK.	1.000000	0.000000	1	0

Approved: June 25, 2016

Sample Name: S0 Acquired: 6/24/2016 10:02:06 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00014**	**.00092**	**-.00006**	**.00006**	**.01430**	**.00051**	**.00082**
Stddev	.00007	.00003	.00003	.00005	.00089	.00003	.00150
%RSD	48.462	3.7804	46.676	91.000	6.2407	5.9747	181.89
#1	-.00007	.00091	-.00009	.00011	.01533	.00048	-.00036
#2	-.00014	.00089	-.00003	.00007	.01383	.00054	.00251
#3	-.00021	.00095	-.00005	.00000	.01373	.00052	.00032

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00003**	**.00003**	**.00018**	**-.00006**	**-.00010**	**-.01082**	**-.00753**
Stddev	.00009	.00005	.00004	.00017	.00045	.00335	.00353
%RSD	281.39	147.40	23.426	287.67	438.41	30.962	46.865
#1	.00005	.00004	.00020	-.00025	.00041	-.00724	-.00439
#2	-.00003	-.00002	.00013	-.00002	-.00044	-.01389	-.00686
#3	-.00012	.00008	.00021	.00009	-.00028	-.01133	-.01135

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00044**	**.00083**	**-.00004**	**-.03189**	**-.00065**	**-.00017**	**-.00052**
Stddev	.00045	.00015	.00006	.00093	.00012	.00009	.00017
%RSD	102.79	17.791	163.60	2.9103	19.006	49.513	32.607
#1	-.00010	.00071	.00001	-.03192	-.00069	-.00027	-.00032
#2	-.00096	.00099	-.00002	-.03095	-.00051	-.00010	-.00062
#3	-.00026	.00079	-.00011	-.03280	-.00075	-.00015	-.00062

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00000**	**-.00016**	**.00091**	**.00005**	**.00204**	**-.00194**	**-.00036**
Stddev	.00012	.00004	.00007	.00002	.00021	.00013	.00002
%RSD	19810.	21.583	7.1930	34.140	10.449	6.4605	4.5673
#1	-.00014	-.00013	.00087	.00005	.00206	-.00182	-.00038
#2	.00005	-.00020	.00088	.00007	.00181	-.00194	-.00035
#3	.00009	-.00016	.00099	.00004	.00224	-.00207	-.00035

Approved: June 25, 2016

Sample Name: S0 Acquired: 6/24/2016 10:02:06 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00002	.00015	-.01209
Stddev	.00007	.00001	.00188
%RSD	312.68	7.9561	15.539
#1	.00011	.00015	-.01411
#2	-.00002	.00014	-.01039
#3	-.00002	.00017	-.01176
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10103.	63387.	3436.7
Stddev	24.	229.	8.8
%RSD	.23353	.36169	.25626
#1	10111.	63214.	3446.2
#2	10121.	63647.	3428.8
#3	10076.	63299.	3435.0

Approved: June 25, 2016

Sample Name: S1 Acquired: 6/24/2016 10:06:06 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00005**	**.00153**	**.03093**	**.00079**	**.00503**	**.00010**	**.00049**
Stddev	.00003	.00005	.00195	.00002	.00170	.00011	.00005
%RSD	59.232	2.9452	6.3135	3.1378	33.768	117.90	11.244
#1	-.00004	.00157	.02902	.00082	.00307	-.00000	.00053
#2	-.00008	.00153	.03085	.00078	.00607	.00007	.00051
#3	-.00003	.00148	.03292	.00077	.00594	.00022	.00042

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00047**	**.00031**	**.00057**	**.01522**	**.00155**	**.00132**	**.03160**
Stddev	.00005	.00001	.00017	.00200	.00074	.00003	.00575
%RSD	11.209	2.0951	30.554	13.113	47.893	2.1780	18.185
#1	.00046	.00031	.00053	.01296	.00101	.00135	.02748
#2	.00052	.00030	.00076	.01674	.00123	.00133	.02916
#3	.00042	.00031	.00042	.01597	.00239	.00129	.03817

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00014**	**.00081**	**-.00022**	**.00030**	**.00226**	**.00054**	**.03050**
Stddev	.00010	.00005	.00018	.00003	.00007	.00002	.00065
%RSD	73.955	5.5812	79.260	8.9775	2.9020	4.3963	2.1231
#1	-.00011	.00077	-.00030	.00033	.00229	.00052	.03078
#2	-.00005	.00086	-.00002	.00028	.00230	.00056	.02976
#3	-.00025	.00081	-.00035	.00030	.00218	.00052	.03096

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00144**	**.00052**	**.00324**	**.00445**
Stddev	.00042	.00004	.00013	.00179
%RSD	29.218	7.4619	4.0938	40.182
#1	-.00191	.00057	.00337	.00539
#2	-.00110	.00049	.00325	.00556
#3	-.00131	.00051	.00311	.00239

Approved: June 25, 2016

Sample Name: S1 Acquired: 6/24/2016 10:06:06 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10065.**	**62767.**	**3441.4**
Stddev	30.	97.	22.9
%RSD	.29930	.15510	.66663
#1	10069.	62771.	3417.8
#2	10093.	62861.	3463.7
#3	10033.	62667.	3442.7

Approved: June 25, 2016

Sample Name: S2 Acquired: 6/24/2016 10:10:06 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00021	.00215	.00010	.00026	.04762	.00116	.00837
Stddev	.00002	.00007	.00007	.00004	.00057	.00005	.00106
%RSD	8.9724	3.4344	65.774	15.619	1.1893	4.2144	12.640
#1	.00023	.00213	.00004	.00025	.04721	.00122	.00897
#2	.00020	.00223	.00018	.00022	.04739	.00114	.00715
#3	.00021	.00209	.00009	.00031	.04827	.00113	.00899

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00040	.00105	.00069	.00083	.00116	.03965	.01598
Stddev	.00005	.00003	.00003	.00008	.00031	.00217	.00181
%RSD	12.890	2.9404	4.0733	9.8734	26.550	5.4632	11.347
#1	.00035	.00103	.00067	.00092	.00083	.03746	.01389
#2	.00040	.00103	.00072	.00079	.00144	.03971	.01716
#3	.00045	.00108	.00068	.00077	.00121	.04179	.01688

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00083	.00238	.00276	.09724	.00041	.00174	-.00009
Stddev	.00012	.00062	.00011	.00164	.00010	.00006	.00030
%RSD	14.311	26.076	3.9026	1.6822	25.278	3.1866	350.41
#1	.00094	.00257	.00281	.09776	.00035	.00177	-.00007
#2	.00070	.00169	.00283	.09541	.00036	.00177	.00021
#3	.00086	.00289	.00264	.09856	.00053	.00168	-.00039

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00052	-.00010	.00385	.00103	.05810	-.00053	-.00015
Stddev	.00006	.00007	.00008	.00003	.00070	.00022	.00003
%RSD	12.430	68.938	2.1687	3.1112	1.2101	41.302	21.567
#1	.00055	-.00017	.00394	.00106	.05859	-.00045	-.00014
#2	.00056	-.00003	.00384	.00103	.05729	-.00036	-.00018
#3	.00045	-.00011	.00378	.00100	.05842	-.00077	-.00012

Approved: June 25, 2016

Sample Name: S2 Acquired: 6/24/2016 10:10:06 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00100	.00632	.02594
Stddev	.00007	.00019	.00102
%RSD	6.6145	2.9709	3.9200
#1	.00097	.00638	.02711
#2	.00108	.00648	.02521
#3	.00096	.00611	.02551

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10036.	62714.	3425.0
Stddev	5.	277.	24.9
%RSD	.04560	.44190	.72564
#1	10035.	62498.	3405.6
#2	10031.	62619.	3453.0
#3	10040.	63027.	3416.3

Approved: June 25, 2016

Sample Name: S3 Acquired: 6/24/2016 10:14:05 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.02012**	**.08112**	**.00937**	**.01100**	**2.1577**	**.04667**	**.45680**	**.03089**
Stddev	.00014	.00067	.00024	.00003	.0127	.00048	.00088	.00088
%RSD	.68506	.82535	2.5122	.26795	.58663	1.0260	.19280	2.8481
#1	.02016	.08148	.00911	.01102	2.1723	.04686	.45715	.02988
#2	.02024	.08154	.00955	.01102	2.1508	.04702	.45579	.03151
#3	.01997	.08035	.00946	.01097	2.1500	.04612	.45745	.03127

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.06952**	**.02847**	**.06168**	**.08857**	**3.0711**	**1.5176**	**.08149**	**.14484**
Stddev	.00185	.00019	.00161	.00089	.0148	.0183	.00050	.00149
%RSD	2.6617	.68366	2.6084	1.0060	.48208	1.2061	.60781	1.0306
#1	.06739	.02860	.05982	.08958	3.0854	1.5375	.08112	.14654
#2	.07070	.02858	.06252	.08789	3.0720	1.5016	.08130	.14374
#3	.07047	.02825	.06269	.08824	3.0558	1.5136	.08205	.14425

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.18057**	**8.4539**	**.06503**	**.12666**	**.02949**	**.03516**	**.00655**	**.20419**
Stddev	.00413	.0477	.00183	.00333	.00086	.00099	.00019	.00532
%RSD	2.2896	.56431	2.8080	2.6258	2.9031	2.8239	2.8275	2.6074
#1	.17586	8.5022	.06294	.12282	.02853	.03401	.00634	.19804
#2	.18358	8.4528	.06629	.12868	.02978	.03578	.00666	.20727
#3	.18229	8.4068	.06587	.12849	.03017	.03568	.00667	.20725

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.06764**	**3.6392**	**.12025**	**.01285**	**.06639**	**.39780**	**2.8658**
Stddev	.00187	.0221	.00095	.00032	.00069	.00999	.0226
%RSD	2.7649	.60748	.79359	2.4638	1.0447	2.5111	.78950
#1	.06551	3.6628	.12131	.01249	.06673	.38631	2.8817
#2	.06902	3.6359	.11996	.01298	.06685	.40437	2.8758
#3	.06839	3.6189	.11946	.01308	.06559	.40274	2.8399

Approved: June 25, 2016

Sample Name: S3 Acquired: 6/24/2016 10:14:05 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9803.5	60605.	3302.4
Stddev	185.3	628.	25.0
%RSD	1.8907	1.0370	.75704
#1	10017.	60237.	3292.4
#2	9686.1	60248.	3283.9
#3	9707.3	61331.	3330.8

Approved: June 25, 2016

Sample Name: S4 Acquired: 6/24/2016 10:17:42 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.04037	.15882	.01874	.02204	4.1509	.09188	.88125	.06147
Stddev	.00017	.00011	.00011	.00010	.0087	.00023	.00269	.00039
%RSD	.41570	.06765	.58871	.45251	.20975	.25568	.30549	.62850
#1	.04024	.15875	.01878	.02202	4.1571	.09190	.88218	.06177
#2	.04056	.15877	.01882	.02215	4.1547	.09211	.88335	.06161
#3	.04031	.15895	.01861	.02196	4.1410	.09164	.87821	.06104

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13710	.05562	.12100	.17176	5.9519	2.9563	.15745	.27789
Stddev	.00070	.00009	.00059	.00098	.0096	.0021	.00153	.00068
%RSD	.50874	.16610	.48875	.57160	.16058	.07181	.96992	.24355
#1	.13749	.05558	.12123	.17129	5.9624	2.9588	.15599	.27711
#2	.13751	.05557	.12144	.17289	5.9495	2.9553	.15904	.27832
#3	.13629	.05573	.12033	.17109	5.9438	2.9549	.15733	.27824

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.35800	16.431	.12763	.25198	.05815	.07137	.01334	.38448
Stddev	.00153	.049	.00061	.00022	.00023	.00008	.00003	.00032
%RSD	.42830	.29740	.47754	.08776	.39302	.10858	.22101	.08296
#1	.35959	16.449	.12796	.25213	.05792	.07142	.01337	.38462
#2	.35789	16.469	.12801	.25208	.05838	.07141	.01335	.38412
#3	.35653	16.376	.12693	.25172	.05815	.07128	.01331	.38471

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13295	7.0149	.23633	.02503	.13104	.77753	5.5495
Stddev	.00033	.0145	.00010	.00014	.00013	.00089	.0276
%RSD	.24509	.20672	.04320	.55584	.09686	.11476	.49668
#1	.13312	7.0177	.23635	.02504	.13089	.77820	5.5811
#2	.13314	7.0278	.23621	.02517	.13109	.77787	5.5303
#3	.13257	6.9992	.23641	.02489	.13113	.77652	5.5370

Approved: June 25, 2016

Sample Name: S4 Acquired: 6/24/2016 10:17:42 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9688.2**	**60219.**	**3370.4**
Stddev	7.1	189.	23.3
%RSD	.07324	.31409	.69082
#1	9691.6	60213.	3345.2
#2	9693.0	60033.	3375.0
#3	9680.0	60411.	3391.1

Approved: June 25, 2016

Sample Name: ICV Acquired: 6/24/2016 10:21:18 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39846**	**10.055**	**.40187**	**.50195**	**1.0043**	**.04994**	**9.9690**	**.05093**
Stddev	.00107	.004	.00071	.00352	.0049	.00015	.0985	.00023
%RSD	.26882	.04093	.17558	.70141	.48280	.30027	.98769	.44509
#1	.39801	10.053	.40263	.49813	1.0045	.04992	9.9634	.05069
#2	.39768	10.052	.40124	.50265	1.0091	.04980	10.070	.05113
#3	.39968	10.059	.40172	.50506	.99939	.05010	9.8735	.05098
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20275**	**.50186**	**.50806**	**4.0077**	**50.412**	**.99409**	**10.076**	**.50349**
Stddev	.00040	.00174	.00074	.0287	.156	.00370	.047	.00310
%RSD	.19601	.34705	.14641	.71708	.31025	.37246	.46653	.61637
#1	.20246	.50009	.50763	4.0406	50.449	.99815	10.023	.50004
#2	.20321	.50191	.50892	3.9950	50.546	.99323	10.093	.50606
#3	.20259	.50357	.50763	3.9874	50.240	.99090	10.113	.50436
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0161**	**50.208**	**.50900**	**10.102**	**.50737**	**1.1976**	**.40954**	**5.2491**
Stddev	.0035	.189	.00106	.014	.00059	.0046	.00351	.0132
%RSD	.34222	.37709	.20816	.13865	.11567	.38093	.85796	.25182
#1	1.0181	50.185	.50781	10.089	.50756	1.1956	.40737	5.2341
#2	1.0182	50.408	.50932	10.117	.50784	1.2028	.40767	5.2590
#3	1.0121	50.031	.50986	10.099	.50671	1.1944	.41360	5.2542
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 25, 2016

Sample Name: ICV Acquired: 6/24/2016 10:21:18 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0142**	**1.0055**	**1.0016**	**.51308**	**1.0042**	**1.0176**	**1.0099**
Stddev	.0008	.0052	.0045	.00359	.0054	.0023	.0053
%RSD	.07353	.51381	.45332	.69940	.53899	.22236	.52327
#1	1.0146	1.0049	1.0056	.51163	1.0037	1.0169	1.0108
#2	1.0147	1.0110	.99666	.51043	.99912	1.0202	1.0042
#3	1.0134	1.0007	1.0027	.51716	1.0099	1.0158	1.0147
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9784.6**	**61155.**	**3360.6**
Stddev	16.4	126.	16.3
%RSD	.16756	.20531	.48534
#1	9800.9	61010.	3348.1
#2	9785.0	61229.	3379.0
#3	9768.1	61226.	3354.6

Approved: June 25, 2016

Sample Name: ICB Acquired: 6/24/2016 10:24:44 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	-.00039	.00064	.00491	.00035	-.00004	.01970	-.00008
Stddev	.00118	.00395	.00185	.00079	.00095	.00004	.02171	.00007
%RSD	1355.8	1016.1	287.94	16.133	270.92	92.692	110.19	83.262
#1	.00054	-.00464	.00266	.00474	.00126	-.00001	.02755	-.00005
#2	-.00125	.00030	-.00097	.00577	-.00064	-.00002	.03640	-.00016
#3	.00097	.00318	.00023	.00421	.00044	-.00008	-.00484	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00032	.00131	-.00137	.02320	.06358	-.00066	.03856	-.00312
Stddev	.00017	.00055	.00043	.00941	.08768	.00266	.00747	.00261
%RSD	51.480	41.866	31.575	40.581	137.91	406.13	19.360	83.590
#1	-.00049	.00166	-.00107	.01306	.06334	-.00147	.03003	-.00355
#2	-.00033	.00160	-.00186	.03167	.15137	-.00281	.04179	-.00549
#3	-.00015	.00068	-.00116	.02486	-.02399	.00232	.04387	-.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00441	.05025	.00065	-.00381	-.00087	.00778	.00520	.00608
Stddev	.00033	.01048	.00078	.00461	.00397	.00208	.00680	.00201
%RSD	7.4861	20.853	119.99	121.10	458.20	26.759	130.76	33.156
#1	.00405	.05291	.00003	-.00874	-.00277	.00736	.00296	.00721
#2	.00448	.03870	.00040	.00039	.00370	.01003	-.00020	.00727
#3	.00470	.05914	.00153	-.00306	-.00353	.00593	.01285	.00375
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: ICB Acquired: 6/24/2016 10:24:44 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**.00012**	**.00094**	**.00181**	**-.00101**	**.00060**	**.00145**
Stddev	.00042	.00009	.00041	.00207	.00005	.00020	.00038
%RSD	513.90	78.925	43.774	114.17	4.9873	33.766	26.340
#1	.00040	.00003	.00072	-.00054	-.00105	.00057	.00107
#2	-.00028	.00022	.00068	.00334	-.00102	.00042	.00183
#3	-.00036	.00011	.00141	.00262	-.00096	.00082	.00145
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9828.6**	**62200.**	**3394.8**
Stddev	28.2	217.	16.2
%RSD	.28655	.34911	.47848
#1	9855.6	62450.	3410.7
#2	9830.8	62058.	3378.2
#3	9799.4	62092.	3395.6

Approved: June 25, 2016

Sample Name: LLICV Acquired: 6/24/2016 10:28:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00861	.17456	.00875	.08415	.00845	.00162	.42018	.00080
Stddev	.00241	.00320	.00584	.00044	.00062	.00010	.04537	.00016
%RSD	28.028	1.8340	66.707	.52598	7.3619	6.0745	10.799	19.768
#1	.00915	.17680	.01356	.08464	.00808	.00156	.43983	.00091
#2	.00598	.17599	.00226	.08403	.00809	.00173	.36829	.00086
#3	.01071	.17089	.01043	.08378	.00916	.00156	.45241	.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00400	.00560	.00345	.08548	.95350	.08105	.43655	.00707
Stddev	.00008	.00034	.00088	.01230	.04581	.00390	.09350	.00382
%RSD	2.0075	6.1076	25.604	14.389	4.8041	4.8127	21.418	54.018
#1	.00403	.00571	.00253	.09530	.99396	.07722	.34739	.00473
#2	.00391	.00522	.00353	.07168	.96278	.08091	.42840	.01148
#3	.00406	.00588	.00429	.08946	.90376	.08502	.53386	.00500
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00937	.44836	.01641	.81013	.00755	.08949	.01796	.80576
Stddev	.00033	.00782	.00043	.01533	.00353	.00603	.00226	.00882
%RSD	3.5349	1.7431	2.6293	1.8922	46.785	6.7340	12.603	1.0947
#1	.00911	.45731	.01596	.82200	.00588	.09248	.01611	.81287
#2	.00974	.44487	.01647	.81558	.01161	.09343	.02049	.80853
#3	.00925	.44289	.01682	.79283	.00517	.08255	.01729	.79589
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LLICV Acquired: 6/24/2016 10:28:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41092**	**.04172**	**.02043**	**.15548**	**.00810**	**.01698**	**.04605**
Stddev	.00936	.00016	.00448	.00254	.00066	.00050	.00187
%RSD	2.2770	.37475	21.916	1.6360	8.1067	2.9288	4.0649
#1	.41622	.04190	.02523	.15718	.00756	.01728	.04465
#2	.41644	.04163	.01969	.15671	.00791	.01725	.04533
#3	.40012	.04164	.01637	.15256	.00883	.01640	.04818
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9545.8**	**59931.**	**3275.5**
Stddev	15.6	83.	34.7
%RSD	.16333	.13820	1.0584
#1	9534.4	59838.	3252.2
#2	9539.4	59961.	3315.3
#3	9563.5	59995.	3258.9

Approved: June 25, 2016

Sample Name: LLICV Acquired: 6/24/2016 10:32:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02155	.40824	.02077	.20167	.02174	.00400	1.0366	.00202
Stddev	.00054	.00443	.00281	.00124	.00028	.00001	.0243	.00009
%RSD	2.5225	1.0863	13.516	.61328	1.2824	.22063	2.3424	4.3173
#1	.02133	.41154	.02394	.20052	.02183	.00399	1.0194	.00205
#2	.02115	.40999	.01859	.20150	.02142	.00401	1.0644	.00192
#3	.02216	.40320	.01978	.20298	.02196	.00400	1.0260	.00209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00994	.01113	.01102	.16765	2.1953	.20551	1.0506	.01921
Stddev	.00018	.00047	.00052	.00874	.0565	.00363	.0388	.00199
%RSD	1.8457	4.1791	4.7625	5.2113	2.5738	1.7653	3.6929	10.372
#1	.01014	.01147	.01043	.15847	2.1428	.20211	1.0170	.02151
#2	.00990	.01060	.01123	.17586	2.2551	.20509	1.0931	.01818
#3	.00978	.01132	.01141	.16862	2.1879	.20933	1.0419	.01794
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02056	1.0699	.04161	2.0283	.02093	.22105	.04598	1.9872
Stddev	.00073	.0134	.00029	.0213	.00141	.00521	.00230	.0146
%RSD	3.5426	1.2493	.69643	1.0505	6.7264	2.3551	5.0056	.73437
#1	.02134	1.0745	.04129	2.0517	.02096	.22638	.04821	1.9992
#2	.02046	1.0548	.04165	2.0232	.01951	.21598	.04361	1.9913
#3	.01989	1.0803	.04187	2.0101	.02232	.22080	.04611	1.9709
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LLICV Acquired: 6/24/2016 10:32:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0190**	**.10349**	**.06088**	**.38102**	**.01945**	**.04193**	**.10461**
Stddev	.0194	.00012	.00319	.00475	.00050	.00058	.00065
%RSD	1.9018	.11797	5.2343	1.2466	2.5499	1.3820	.62471
#1	1.0324	.10361	.06403	.38543	.01945	.04208	.10441
#2	1.0279	.10348	.06095	.38164	.01995	.04242	.10534
#3	.99680	.10337	.05766	.37599	.01896	.04129	.10408
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9527.9**	**60013.**	**3283.4**
Stddev	15.1	148.	21.9
%RSD	.15821	.24736	.66596
#1	9513.0	59863.	3269.8
#2	9527.6	60160.	3271.8
#3	9543.1	60017.	3308.6

Approved: June 25, 2016

Sample Name: ICSA Acquired: 6/24/2016 10:36:34 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	272.29	-.00639	.01187	.00097	-.00004	255.70	-.00011
Stddev	.00186	.14	.00204	.00102	.00103	.00005	.88	.00012
%RSD	388.65	.05142	31.923	8.6029	106.35	111.27	.34460	113.29
#1	-.00160	272.44	-.00702	.01157	.00211	-.00001	256.63	-.00021
#2	.00199	272.24	-.00411	.01301	.00068	-.00002	255.62	.00003
#3	.00104	272.17	-.00804	.01104	.00011	-.00009	254.87	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00172	.00015	-.00116	101.53	.09300	.00567	259.96	-.00382
Stddev	.00042	.00130	.00167	.28	.03409	.00366	.64	.00294
%RSD	24.472	881.01	143.42	.27829	36.657	64.638	.24529	76.986
#1	-.00152	-.00007	-.00240	101.84	.05558	.00951	260.50	-.00473
#2	-.00143	-.00103	.00073	101.29	.10113	.00529	260.13	-.00620
#3	-.00220	.00155	-.00182	101.47	.12229	.00221	259.26	-.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	.03878	-.00045	.04376	.00245	-.00458	.00445	.01844
Stddev	.00046	.04600	.00064	.01101	.00539	.00310	.00348	.00549
%RSD	287.16	118.61	140.72	25.160	220.05	67.775	78.148	29.762
#1	.00025	.00054	.00028	.04277	.00150	-.00104	.00050	.01603
#2	-.00065	.08983	-.00075	.03327	.00825	-.00682	.00580	.01457
#3	-.00008	.02597	-.00089	.05522	-.00240	-.00589	.00705	.02472
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: ICSA Acquired: 6/24/2016 10:36:34 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.00019	-.01134	-.00093	-.00397	-.00488	.00384
Stddev	.00032	.00049	.00588	.00258	.00006	.00039	.00038
%RSD	95.122	259.22	51.833	278.90	1.5390	7.9827	9.8011
#1	.00019	.00071	-.01724	.00196	-.00401	-.00532	.00366
#2	.00071	-.00024	-.00549	-.00301	-.00400	-.00461	.00427
#3	.00012	.00009	-.01128	-.00172	-.00390	-.00469	.00359
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8869.1	55471.	3153.2
Stddev	26.5	151.	18.0
%RSD	.29867	.27155	.57209
#1	8897.8	55567.	3139.7
#2	8845.6	55550.	3146.3
#3	8864.0	55298.	3173.7

Approved: June 25, 2016

Sample Name: ICSAB Acquired: 6/24/2016 10:40:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52801	273.86	.25914	.01325	.26102	.24578	255.40	.50739
Stddev	.00250	.16	.00666	.00063	.00070	.00039	.53	.00146
%RSD	.47355	.05748	2.5695	4.7909	.26706	.16053	.20826	.28726
#1	.52830	274.03	.26069	.01398	.26152	.24535	255.50	.50785
#2	.52537	273.71	.26489	.01290	.26131	.24586	254.82	.50857
#3	.53035	273.85	.25184	.01286	.26022	.24613	255.87	.50576
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.24727	.25565	.25562	99.861	5.4779	.00519	256.26	.25260
Stddev	.00097	.00095	.00265	.277	.0348	.00184	.86	.00168
%RSD	.39106	.37321	1.0376	.27690	.63446	35.421	.33443	.66352
#1	.24802	.25466	.25814	99.853	5.4700	.00385	255.90	.25222
#2	.24762	.25656	.25586	99.588	5.5160	.00443	255.64	.25443
#3	.24618	.25572	.25285	100.14	5.4478	.00728	257.24	.25115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	5.5858	.49274	.02117	.50583	.50989	.26678	.01309
Stddev	.00050	.0197	.00095	.01408	.00041	.00290	.00610	.00127
%RSD	250.13	.35306	.19217	66.536	.08120	.56902	2.2850	9.6691
#1	.00037	5.6063	.49240	.00688	.50630	.51290	.26722	.01358
#2	-.00039	5.5669	.49381	.02158	.50553	.50963	.27265	.01404
#3	-.00058	5.5841	.49200	.03503	.50566	.50712	.26048	.01165
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: ICSAB Acquired: 6/24/2016 10:40:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00171	.00067	-.01040	.47266	.25528	.50449	.00315
Stddev	.00100	.00032	.00325	.00524	.00094	.00232	.00022
%RSD	58.680	47.423	31.248	1.1093	.36860	.45903	6.9061
#1	.00125	.00096	-.01186	.47276	.25634	.50607	.00293
#2	.00102	.00072	-.01267	.47786	.25494	.50556	.00318
#3	.00286	.00033	-.00668	.46737	.25455	.50183	.00336
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8976.9	56220.	3187.5
Stddev	14.0	172.	27.3
%RSD	.15560	.30511	.85579
#1	8966.6	56386.	3171.0
#2	8992.8	56232.	3219.0
#3	8971.4	56043.	3172.5

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 10:44:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40510	10.227	.40997	.50470	1.0199	.05000	10.224	.05209
Stddev	.00259	.020	.00313	.00376	.0032	.00018	.050	.00003
%RSD	.63884	.19087	.76260	.74531	.31908	.36523	.48810	.05352
#1	.40303	10.211	.40694	.50216	1.0162	.04979	10.170	.05206
#2	.40800	10.220	.40978	.50293	1.0222	.05008	10.235	.05212
#3	.40426	10.248	.41318	.50902	1.0213	.05013	10.268	.05208
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20659	.50266	.51958	4.0815	51.148	1.0118	10.141	.51100
Stddev	.00025	.00146	.00022	.0426	.163	.0071	.045	.00204
%RSD	.12249	.29059	.04172	1.0445	.31821	.70440	.43990	.39976
#1	.20659	.50117	.51956	4.0379	50.961	1.0054	10.140	.50966
#2	.20684	.50409	.51937	4.1230	51.259	1.0106	10.186	.51335
#3	.20634	.50270	.51980	4.0835	51.225	1.0195	10.097	.50999
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0360	50.833	.51458	10.241	.51207	1.2224	.40899	5.3321
Stddev	.0063	.180	.00026	.014	.00288	.0026	.00371	.0135
%RSD	.60708	.35445	.05040	.13553	.56209	.21445	.90595	.25328
#1	1.0403	50.639	.51460	10.242	.51048	1.2194	.41231	5.3186
#2	1.0389	50.864	.51483	10.254	.51034	1.2245	.40499	5.3456
#3	1.0288	50.996	.51431	10.227	.51539	1.2232	.40965	5.3320
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 10:44:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0297**	**1.0232**	**1.0245**	**.52009**	**1.0074**	**1.0340**	**1.0135**
Stddev	.0029	.0039	.0041	.00364	.0035	.0016	.0058
%RSD	.27812	.38337	.40197	.69967	.34932	.15074	.57645
#1	1.0298	1.0187	1.0198	.51637	1.0034	1.0332	1.0152
#2	1.0325	1.0257	1.0262	.52364	1.0085	1.0358	1.0070
#3	1.0267	1.0252	1.0274	.52025	1.0102	1.0330	1.0183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9522.9**	**60073.**	**3307.5**
Stddev	11.7	184.	13.2
%RSD	.12286	.30629	.39835
#1	9509.8	60132.	3293.3
#2	9526.4	59867.	3319.3
#3	9532.4	60221.	3310.0

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 10:47:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	-.00231	.00174	.00317	.00089	.00008	.01478	-.00009
Stddev	.00098	.00197	.00138	.00099	.00051	.00008	.01897	.00016
%RSD	1615.6	85.585	79.150	31.308	57.430	97.913	128.33	176.75
#1	.00074	-.00458	.00332	.00208	.00145	.00015	-.00627	-.00026
#2	.00050	-.00127	.00081	.00403	.00044	.00008	.02007	-.00007
#3	-.00106	-.00107	.00109	.00339	.00079	.00000	.03055	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00069	.00201	-.00144	.01198	.09764	.00160	-.01376	-.00139
Stddev	.00007	.00062	.00140	.00633	.05541	.00323	.09391	.00206
%RSD	9.5195	30.966	97.276	52.810	56.748	201.98	682.68	147.81
#1	-.00064	.00243	-.00111	.01172	.03926	.00278	.06859	-.00281
#2	-.00066	.00129	-.00023	.00579	.14949	-.00205	-.11603	-.00233
#3	-.00076	.00231	-.00297	.01844	.10416	.00406	.00617	.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00327	.05554	.00020	-.00275	-.00017	.00433	.00267	.00326
Stddev	.00008	.01502	.00042	.00646	.00019	.00156	.00847	.00120
%RSD	2.3629	27.048	205.82	234.70	111.96	35.900	317.53	36.710
#1	.00322	.04802	.00003	.00456	-.00027	.00254	.00057	.00458
#2	.00336	.07283	-.00010	-.00514	.00005	.00529	.01198	.00225
#3	.00323	.04576	.00069	-.00769	-.00029	.00517	-.00456	.00295
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 10:47:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.00050**	**-.00470**	**-.00050**	**-.00052**	**.00020**	**.00116**
Stddev	.00046	.00047	.00508	.00198	.00127	.00011	.00086
%RSD	806.59	93.281	108.17	398.14	242.75	53.066	73.939
#1	.00001	.00104	-.00897	.00149	-.00184	.00011	.00135
#2	.00036	.00017	-.00606	-.00052	-.00043	.00032	.00022
#3	-.00055	.00030	.00092	-.00246	.00070	.00017	.00191
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9455.5**	**60247.**	**3262.6**
Stddev	21.9	389.	18.3
%RSD	.23119	.64505	.56229
#1	9449.8	59825.	3242.4
#2	9479.6	60328.	3267.4
#3	9437.0	60589.	3278.1

Approved: June 25, 2016

Sample Name: PBS DH Acquired: 6/24/2016 10:51:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573823-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.06424	.00963	.02920	.00211	-.00012	.91755	.00095
Stddev	.00146	.00403	.00255	.00180	.00069	.00002	.02625	.00023
%RSD	154.86	6.2780	26.453	6.1638	32.462	16.135	2.8607	24.438
#1	.00027	.06611	.00687	.03111	.00143	-.00014	.93724	.00119
#2	.00262	.05961	.01011	.02753	.00212	-.00010	.92766	.00096
#3	-.00006	.06700	.01190	.02897	.00280	-.00012	.88775	.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00034	.00196	.02606	.05611	.86754	-.00266	2.2157	.00096
Stddev	.00046	.00074	.00067	.01940	.03735	.00126	.0698	.00076
%RSD	132.65	37.622	2.5777	34.579	4.3057	47.393	3.1523	79.295
#1	-.00064	.00148	.02576	.06271	.88691	-.00288	2.1420	.00166
#2	.00018	.00281	.02683	.07136	.89123	-.00379	2.2810	.00015
#3	-.00057	.00159	.02558	.03427	.82448	-.00130	2.2241	.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00347	1.2358	.00309	.40462	.00290	.01813	.08932	.52615
Stddev	.00027	.0193	.00147	.02012	.00064	.00254	.00325	.01166
%RSD	7.8234	1.5654	47.492	4.9731	22.045	14.035	3.6331	2.2168
#1	.00357	1.2508	.00188	.42577	.00296	.01803	.09153	.53855
#2	.00367	1.2140	.00472	.40239	.00223	.02071	.09083	.52450
#3	.00316	1.2428	.00266	.38571	.00351	.01563	.08560	.51539
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: PBS DH Acquired: 6/24/2016 10:51:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573823-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01154	.00411	.00342	-.03779	-.00138	1.3066	.00905
Stddev	.00028	.00050	.00647	.00170	.00059	.0332	.00154
%RSD	2.4661	12.170	189.43	4.4933	42.724	2.5423	17.055
#1	.01162	.00444	.00927	-.03729	-.00161	1.3427	.00767
#2	.01122	.00436	-.00353	-.03639	-.00071	1.2998	.00877
#3	.01177	.00354	.00451	-.03968	-.00182	1.2773	.01072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9550.6	62753.	3709.8
Stddev	143.7	354.	18.2
%RSD	1.5048	.56355	.49089
#1	9384.7	62418.	3722.3
#2	9637.3	62720.	3688.9
#3	9629.7	63122.	3718.1

Approved: June 25, 2016

Sample Name: LCSS DH Acquired: 6/24/2016 10:59:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573823-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18247**	**4.5986**	**.19429**	**.89801**	**.50201**	**.02364**	**6.0280**	**.02381**
Stddev	.00498	.0862	.00294	.01488	.00719	.00048	.0822	.00026
%RSD	2.7299	1.8745	1.5140	1.6566	1.4323	2.0299	1.3633	1.0767
#1	.18767	4.6908	.19687	.91506	.49496	.02417	5.9363	.02410
#2	.18199	4.5849	.19109	.89128	.50174	.02351	6.0524	.02372
#3	.17774	4.5200	.19490	.88769	.50933	.02323	6.0952	.02362
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09575**	**.24396**	**.26604**	**2.0685**	**25.217**	**.49155**	**7.2727**	**.24507**
Stddev	.00128	.00454	.00424	.0072	.406	.00739	.2108	.00531
%RSD	1.3405	1.8602	1.5932	.34707	1.6111	1.5036	2.8983	2.1657
#1	.09698	.24884	.27087	2.0602	24.814	.48835	7.0584	.24165
#2	.09442	.24317	.26294	2.0726	25.211	.48631	7.2799	.24237
#3	.09586	.23987	.26432	2.0727	25.626	.50001	7.4798	.25118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49901**	**25.673**	**.23896**	**5.1500**	**.23582**	**.55555**	**.23212**	**3.3580**
Stddev	.00666	.317	.00299	.0593	.00138	.00716	.00897	.0420
%RSD	1.3352	1.2341	1.2511	1.1512	.58344	1.2890	3.8646	1.2518
#1	.50607	25.359	.24230	5.2165	.23738	.56336	.24189	3.4044
#2	.49283	25.668	.23655	5.1025	.23531	.54930	.22426	3.3223
#3	.49814	25.992	.23802	5.1310	.23477	.55398	.23021	3.3474
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LCSS DH Acquired: 6/24/2016 10:59:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573823-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47087**	**.50955**	**.50009**	**.22590**	**.48434**	**2.0632**	**.00627**
Stddev	.00683	.00732	.00690	.00326	.01049	.0277	.00044
%RSD	1.4508	1.4356	1.3790	1.4427	2.1662	1.3435	7.0255
#1	.47818	.50245	.49214	.22809	.49569	2.0928	.00585
#2	.46464	.50912	.50437	.22215	.48231	2.0378	.00625
#3	.46981	.51706	.50378	.22746	.47500	2.0590	.00673
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9997.3**	**62835.**	**3576.8**
Stddev	90.8	1056.	48.3
%RSD	.90842	1.6801	1.3504
#1	9896.1	61710.	3631.4
#2	10072.	62993.	3559.4
#3	10024.	63803.	3539.7

Approved: June 25, 2016

Sample Name: LCSS DP Acquired: 6/24/2016 11:02:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573823-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.17820**	**4.3366**	**.22875**	**.90184**	**.50529**	**.02446**	**5.8810**	**.02577**
Stddev	.00193	.0746	.01418	.01394	.01186	.00029	.1832	.00151
%RSD	1.0838	1.7190	6.1991	1.5457	2.3469	1.1886	3.1144	5.8704
#1	.17769	4.3180	.24506	.90296	.49226	.02426	5.6858	.02746
#2	.17657	4.2731	.22184	.88737	.51544	.02431	6.0491	.02530
#3	.18033	4.4187	.21935	.91519	.50818	.02479	5.9081	.02455
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10444**	**.24563**	**.28336**	**1.9956**	**24.666**	**.49175**	**7.0829**	**.24263**
Stddev	.00645	.00190	.01874	.0724	.577	.01385	.2327	.00720
%RSD	6.1730	.77249	6.6147	3.6300	2.3398	2.8160	3.2852	2.9669
#1	.11189	.24455	.30494	1.9215	24.049	.47780	6.8155	.23468
#2	.10090	.24453	.27395	2.0663	25.192	.50549	7.1939	.24871
#3	.10054	.24782	.27118	1.9991	24.758	.49196	7.2394	.24449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.55730**	**25.233**	**.26065**	**5.6927**	**.24891**	**.61155**	**.33091**	**3.1863**
Stddev	.03375	.569	.01436	.3577	.01270	.03374	.01816	.1852
%RSD	6.0554	2.2563	5.5090	6.2841	5.1039	5.5171	5.4865	5.8116
#1	.59622	24.626	.27718	6.1055	.26343	.65012	.35188	3.3998
#2	.53962	25.755	.25355	5.4986	.23984	.59708	.32033	3.0888
#3	.53608	25.317	.25122	5.4739	.24345	.58746	.32053	3.0702
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LCSS DP Acquired: 6/24/2016 11:02:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573823-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51198**	**.51153**	**.50880**	**.21284**	**.49128**	**2.1277**	**.00181**
Stddev	.03023	.01298	.01459	.01301	.00684	.1239	.00013
%RSD	5.9037	2.5381	2.8677	6.1112	1.3917	5.8220	7.2522
#1	.54684	.49772	.49512	.22747	.49101	2.2706	.00196
#2	.49599	.52349	.52416	.20844	.48458	2.0612	.00173
#3	.49310	.51336	.50711	.20260	.49825	2.0512	.00173
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9072.1**	**62124.**	**3651.9**
Stddev	334.9	431.	66.7
%RSD	3.6913	.69305	1.8269
#1	8685.5	62374.	3723.4
#2	9261.7	62371.	3591.3
#3	9269.2	61627.	3640.9

Approved: June 25, 2016

Sample Name: L1606114301 Acquired: 6/24/2016 11:06:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00340	.63384	.00605	.03311	.02504	-.00013	1.8306	.00360
Stddev	.00146	.01591	.00255	.00247	.00039	.00009	.0364	.00013
%RSD	42.981	2.5096	42.114	7.4636	1.5650	72.615	1.9881	3.6185
#1	.00487	.64708	.00405	.03597	.02496	-.00022	1.8648	.00356
#2	.00194	.61620	.00892	.03168	.02547	-.00004	1.8345	.00375
#3	.00340	.63825	.00519	.03170	.02471	-.00013	1.7924	.00350
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00160	.05627	.80386	5.1093	1.0547	.00294	1.5234	.06438
Stddev	.00009	.00071	.01373	.0178	.0718	.00145	.0795	.00165
%RSD	5.5825	1.2566	1.7075	.34819	6.8037	49.424	5.2181	2.5676
#1	.00161	.05677	.81424	5.0951	1.0867	.00418	1.5850	.06354
#2	.00168	.05546	.80905	5.1293	1.1049	.00329	1.5515	.06628
#3	.00150	.05659	.78830	5.1035	.97252	.00134	1.4337	.06332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00632	1.2820	.04272	.30849	.10441	.02066	.07677	.84241
Stddev	.00030	.0102	.00117	.00874	.00199	.00387	.00489	.01140
%RSD	4.8199	.79829	2.7325	2.8327	1.9073	18.733	6.3709	1.3529
#1	.00599	1.2908	.04257	.31674	.10484	.02431	.07533	.85254
#2	.00639	1.2708	.04396	.30939	.10616	.02107	.08222	.84461
#3	.00659	1.2845	.04164	.29933	.10225	.01660	.07276	.83007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114301 Acquired: 6/24/2016 11:06:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01737	.00705	.05358	-.03179	.00265	5.9842	.00421
Stddev	.00159	.00017	.00866	.00194	.00017	.0953	.00010
%RSD	9.1419	2.4404	16.162	6.1073	6.4079	1.5932	2.3093
#1	.01793	.00724	.04586	-.03088	.00248	6.0574	.00413
#2	.01859	.00700	.06294	-.03048	.00266	6.0188	.00432
#3	.01557	.00691	.05193	-.03402	.00282	5.8764	.00418
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9433.8	62273.	3673.3
Stddev	13.8	108.	33.0
%RSD	.14593	.17345	.89868
#1	9423.3	62153.	3665.0
#2	9449.4	62303.	3645.2
#3	9428.7	62363.	3709.6

Approved: June 25, 2016

Sample Name: L1606114302 Acquired: 6/24/2016 11:10:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.70974	.00483	.03211	.03431	-.00008	3.7526	.00880
Stddev	.00086	.00429	.00488	.00269	.00095	.00003	.0801	.00018
%RSD	286.06	.60458	101.04	8.3916	2.7576	37.081	2.1342	2.0709
#1	.00079	.71454	.00872	.03444	.03386	-.00010	3.7049	.00896
#2	.00080	.70628	.00640	.03273	.03367	-.00010	3.7078	.00884
#3	-.00069	.70840	-.00064	.02916	.03539	-.00005	3.8450	.00860
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03006	.01986	.07908	1.9614	1.7476	.00189	1.7739	.07217
Stddev	.00057	.00040	.00176	.0337	.0301	.00072	.0437	.00266
%RSD	1.8855	2.0050	2.2306	1.7184	1.7202	38.094	2.4665	3.6877
#1	.02997	.01958	.08079	1.9631	1.7210	.00189	1.7325	.07238
#2	.03067	.01968	.07918	1.9269	1.7417	.00118	1.8197	.06941
#3	.02955	.02032	.07727	1.9943	1.7802	.00262	1.7695	.07472
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00152	3.1867	.29445	.97828	.08164	.18406	.05191	.60601
Stddev	.00039	.0400	.00282	.02017	.00359	.00750	.00201	.00524
%RSD	25.606	1.2539	.95732	2.0615	4.3941	4.0727	3.8629	.86420
#1	.00122	3.1678	.29637	.99318	.08425	.18826	.05038	.60880
#2	.00138	3.1598	.29576	.98632	.08312	.18852	.05418	.60926
#3	.00195	3.2326	.29122	.95533	.07755	.17541	.05116	.59997
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114302 Acquired: 6/24/2016 11:10:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03851	.01220	.05871	-.02123	.00148	.92404	.00252
Stddev	.00125	.00043	.00052	.00163	.00043	.01192	.00035
%RSD	3.2486	3.5183	.88626	7.6964	29.162	1.2895	13.799
#1	.03869	.01230	.05838	-.02100	.00130	.93196	.00257
#2	.03966	.01173	.05843	-.02297	.00197	.92983	.00284
#3	.03718	.01257	.05931	-.01972	.00117	.91034	.00215
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9579.3	62698.	3582.6
Stddev	23.6	409.	31.5
%RSD	.24595	.65242	.88053
#1	9558.8	62230.	3582.4
#2	9574.2	62875.	3614.3
#3	9605.1	62989.	3551.2

Approved: June 25, 2016

Sample Name: L1606114303 Acquired: 6/24/2016 11:14:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00200	4.8207	.00231	.09925	.06384	-.00014	20.352	.03065
Stddev	.00115	.0169	.00244	.00272	.00062	.00004	.361	.00032
%RSD	57.119	.35023	105.60	2.7419	.97505	30.491	1.7725	1.0317
#1	.00068	4.8310	-.00033	.10036	.06456	-.00017	20.604	.03098
#2	.00273	4.8012	.00278	.09615	.06348	-.00009	19.939	.03063
#3	.00261	4.8299	.00448	.10125	.06347	-.00016	20.514	.03035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00385	.02269	.31038	.72640	3.9876	.00384	1.7996	.03505
Stddev	.00028	.00031	.00455	.03117	.1244	.00103	.0301	.00196
%RSD	7.3418	1.3582	1.4671	4.2904	3.1197	26.784	1.6740	5.6019
#1	.00418	.02300	.31423	.75545	4.1176	.00266	1.8228	.03702
#2	.00370	.02267	.31155	.69348	3.8697	.00453	1.7655	.03503
#3	.00368	.02239	.30535	.73028	3.9755	.00433	1.8103	.03309
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00143	69.304	.01792	.75789	.92900	.21972	.06124	1.0845
Stddev	.00052	1.191	.00091	.01147	.01251	.00309	.00193	.0066
%RSD	36.480	1.7182	5.0997	1.5130	1.3471	1.4069	3.1453	.61193
#1	.00085	70.245	.01893	.76639	.93239	.22277	.05909	1.0852
#2	.00156	67.965	.01715	.76244	.93946	.21982	.06281	1.0908
#3	.00187	69.701	.01768	.74485	.91513	.21659	.06183	1.0776
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114303 Acquired: 6/24/2016 11:14:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.06697	.02914	.17767	-.02618	.00084	1.1510	.00805
Stddev	.00103	.00029	.00367	.00124	.00100	.0176	.00078
%RSD	1.5441	1.0005	2.0643	4.7450	119.01	1.5335	9.6465
#1	.06805	.02923	.17998	-.02601	.00069	1.1598	.00715
#2	.06687	.02881	.17959	-.02504	.00191	1.1626	.00843
#3	.06599	.02937	.17344	-.02750	-.00008	1.1307	.00856
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9381.8	61970.	3689.1
Stddev	33.6	321.	57.3
%RSD	.35761	.51747	1.5540
#1	9391.7	61677.	3628.9
#2	9344.4	62313.	3743.0
#3	9409.2	61920.	3695.5

Approved: June 25, 2016

Sample Name: L1606114303PS Acquired: 6/24/2016 11:18:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574050-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19282**	**9.1030**	**.21930**	**1.0209**	**.57480**	**.02552**	**23.549**	**.05319**
Stddev	.00378	.1224	.00387	.0139	.00847	.00050	.384	.00014
%RSD	1.9610	1.3448	1.7659	1.3603	1.4741	1.9641	1.6292	.25923
#1	.19718	9.2398	.22265	1.0369	.57451	.02610	23.500	.05313
#2	.19085	9.0654	.22018	1.0119	.58342	.02525	23.955	.05335
#3	.19044	9.0038	.21506	1.0138	.56648	.02522	23.192	.05310
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10838**	**.27489**	**.53510**	**2.6325**	**28.426**	**.51916**	**6.4335**	**.28113**
Stddev	.00048	.00487	.00271	.0470	.438	.00652	.0658	.00732
%RSD	.44135	1.7702	.50609	1.7864	1.5402	1.2563	1.0234	2.6026
#1	.10883	.28050	.53765	2.6400	28.393	.51849	6.4132	.27737
#2	.10842	.27183	.53540	2.6753	28.879	.52600	6.5071	.28956
#3	.10788	.27234	.53226	2.5822	28.005	.51300	6.3802	.27645
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.55563**	**88.072**	**.27127**	**5.7330**	**1.0887**	**.80555**	**.28267**	**3.5801**
Stddev	.00233	1.489	.00140	.0340	.0052	.00245	.00476	.0110
%RSD	.41977	1.6902	.51481	.59236	.48130	.30394	1.6852	.30687
#1	.55781	87.868	.27253	5.7647	1.0876	.80600	.27727	3.5781
#2	.55592	89.652	.27153	5.7371	1.0944	.80774	.28448	3.5920
#3	.55317	86.695	.26977	5.6971	1.0841	.80291	.28627	3.5703
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114303PS Acquired: 6/24/2016 11:18:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574050-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.55832**	**.55250**	**.68468**	**.22830**	**.51898**	**1.4956**	**.00754**
Stddev	.00108	.00586	.00982	.00156	.00603	.0050	.00034
%RSD	.19343	1.0607	1.4349	.68445	1.1613	.33628	4.5321
#1	.55934	.55124	.67374	.23005	.52593	1.4982	.00780
#2	.55844	.55889	.69276	.22777	.51583	1.4988	.00765
#3	.55719	.54737	.68753	.22706	.51518	1.4898	.00715
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9369.0**	**61127.**	**3634.8**
Stddev	22.7	764.	54.2
%RSD	.24213	1.2496	1.4904
#1	9362.2	60252.	3618.8
#2	9350.5	61471.	3590.4
#3	9394.3	61659.	3695.1

Approved: June 25, 2016

Sample Name: L1606114303SDL Acquired: 6/24/2016 11:21:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574050-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	1.0261	.00297	.02318	.01266	-.00007	4.1845	.00623
Stddev	.00123	.0061	.00330	.00327	.00031	.00005	.0503	.00014
%RSD	365.72	.59880	111.06	14.127	2.4185	73.446	1.2012	2.2131
#1	-.00107	1.0196	.00542	.02404	.01302	-.00002	4.1771	.00614
#2	.00083	1.0267	-.00078	.01956	.01249	-.00012	4.1383	.00639
#3	.00124	1.0319	.00428	.02594	.01249	-.00008	4.2380	.00617
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.00540	.06226	.15898	.95529	-.00007	.39328	.00447
Stddev	.00025	.00082	.00151	.01807	.04331	.00277	.02612	.00106
%RSD	50.129	15.194	2.4288	11.369	4.5341	3914.2	6.6415	23.792
#1	.00077	.00446	.06382	.13919	.97561	-.00233	.38332	.00500
#2	.00037	.00596	.06216	.17463	.98470	.00302	.42292	.00517
#3	.00033	.00577	.06080	.16312	.90555	-.00090	.37361	.00325
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	14.368	.00341	.14113	.19112	.04241	.01311	.21447
Stddev	.00015	.033	.00044	.00572	.00278	.00110	.00399	.00347
%RSD	22.588	.22958	12.788	4.0544	1.4560	2.5835	30.424	1.6176
#1	.00054	14.331	.00376	.14763	.19272	.04265	.01583	.21733
#2	.00066	14.378	.00292	.13686	.19273	.04121	.00853	.21548
#3	.00085	14.394	.00355	.13890	.18791	.04336	.01496	.21061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114303SDL Acquired: 6/24/2016 11:21:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574050-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01266**	**.00566**	**.03785**	**-.00383**	**-.00075**	**.23612**	**.00185**
Stddev	.00065	.00028	.00383	.00311	.00045	.00453	.00029
%RSD	5.1470	5.0211	10.115	81.132	60.764	1.9188	15.554
#1	.01193	.00542	.03347	-.00556	-.00022	.23954	.00216
#2	.01290	.00558	.03952	-.00024	-.00102	.23784	.00159
#3	.01316	.00597	.04057	-.00569	-.00099	.23098	.00180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10057.**	**64667.**	**3566.1**
Stddev	24.	239.	18.3
%RSD	.24189	.36921	.51318
#1	10061.	64539.	3548.5
#2	10080.	64942.	3585.1
#3	10031.	64519.	3564.7

Approved: June 25, 2016

Sample Name: L1606072401 Acquired: 6/24/2016 11:25:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	-.00315	.00035	.10432	.27002	-.00002	19.485	-.00008
Stddev	.00044	.00317	.00249	.00108	.00200	.00009	.116	.00017
%RSD	1758.5	100.57	717.90	1.0354	.74150	535.21	.59419	213.12
#1	.00051	-.00633	.00240	.10390	.26802	.00008	19.352	-.00022
#2	-.00037	.00001	.00106	.10555	.27202	-.00009	19.546	-.00012
#3	-.00006	-.00313	-.00242	.10352	.27001	-.00003	19.558	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00054	.00046	-.00104	.04832	1.6362	.06448	1.9423	.00728
Stddev	.00032	.00099	.00074	.01250	.0309	.00265	.0169	.00214
%RSD	60.154	216.03	70.782	25.871	1.8896	4.1051	.87020	29.355
#1	-.00026	.00125	-.00020	.06077	1.6689	.06381	1.9502	.00486
#2	-.00046	.00077	-.00159	.04843	1.6074	.06740	1.9228	.00808
#3	-.00090	-.00065	-.00133	.03577	1.6323	.06224	1.9537	.00891
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	45.826	-.00085	.00269	-.00068	-.00086	.00607	.02783
Stddev	.00032	.230	.00099	.00141	.00111	.00064	.00697	.00182
%RSD	148.51	.50191	116.77	52.456	163.34	74.836	114.77	6.5364
#1	.00042	45.682	-.00200	.00191	-.00152	-.00014	.00291	.02894
#2	-.00016	46.091	-.00033	.00185	-.00108	-.00138	.01406	.02882
#3	.00039	45.704	-.00023	.00433	.00057	-.00105	.00124	.02573
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606072401 Acquired: 6/24/2016 11:25:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00043	3.7849	-.00208	.00102	-.00025	.00077	.00029
Stddev	.00032	.0200	.00520	.00060	.00104	.00010	.00043
%RSD	74.660	.52945	249.46	58.995	412.82	12.438	148.48
#1	-.00041	3.7649	.00110	.00076	-.00044	.00066	.00051
#2	-.00012	3.8049	.00073	.00059	.00087	.00082	-.00021
#3	-.00077	3.7849	-.00808	.00171	-.00118	.00083	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9875.5	62339.	3387.9
Stddev	19.3	92.	22.4
%RSD	.19558	.14698	.65977
#1	9880.5	62376.	3412.5
#2	9891.8	62234.	3382.5
#3	9854.1	62405.	3368.8

Approved: June 25, 2016

Sample Name: L1606078710 Acquired: 6/24/2016 11:29:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	.01245	.00093	.00672	.00888	-.00004	5.1268	-.00003
Stddev	.00207	.00513	.00062	.00160	.00032	.00006	.0280	.00009
%RSD	1015.8	41.172	67.473	23.880	3.6189	161.49	.54640	338.65
#1	-.00259	.01156	.00060	.00537	.00890	.00003	5.1020	.00003
#2	.00103	.01797	.00053	.00629	.00918	-.00004	5.1212	-.00013
#3	.00095	.00783	.00164	.00850	.00854	-.00010	5.1572	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	.00129	-.00031	.02121	.09124	.00142	1.6609	.00016
Stddev	.00030	.00103	.00028	.02108	.02779	.00443	.0362	.00043
%RSD	83.898	80.266	88.228	99.367	30.455	310.98	2.1784	267.47
#1	-.00002	.00013	-.00000	.02577	.07595	.00096	1.6192	.00066
#2	-.00047	.00163	-.00042	.03964	.12332	.00607	1.6798	-.00009
#3	-.00058	.00211	-.00052	-.00177	.07447	-.00275	1.6837	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.40629	-.00019	.02344	.00142	.00036	.00428	.86102
Stddev	.00008	.01566	.00070	.00293	.00389	.00131	.00308	.00301
%RSD	282.85	3.8547	375.84	12.494	274.41	367.61	71.795	.35006
#1	-.00005	.39122	-.00061	.02282	-.00202	-.00116	.00142	.85766
#2	.00002	.40516	.00062	.02087	.00564	.00112	.00390	.86349
#3	.00011	.42248	-.00056	.02663	.00064	.00110	.00753	.86190
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606078710 Acquired: 6/24/2016 11:29:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00084	.01418	.00262	.00104	-.00029	.00070	.00018
Stddev	.00037	.00086	.00142	.00185	.00024	.00007	.00067
%RSD	43.228	6.0990	54.198	178.45	83.020	9.6277	377.85
#1	-.00122	.01515	.00146	.00231	-.00032	.00062	-.00035
#2	-.00082	.01393	.00221	.00189	-.00003	.00073	.00093
#3	-.00049	.01347	.00421	-.00108	-.00051	.00074	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9908.1	62790.	3396.7
Stddev	24.3	134.	24.8
%RSD	.24489	.21371	.72925
#1	9883.2	62654.	3377.5
#2	9909.3	62793.	3388.0
#3	9931.7	62922.	3424.7

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 11:33:47 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38810**	**9.7098**	**.39689**	**.47714**	**.99058**	**.04739**	**9.8701**	**.05060**
Stddev	.00283	.0174	.01197	.00133	.00631	.00022	.0513	.00128
%RSD	.72928	.17891	3.0148	.27927	.63726	.46575	.51962	2.5352
#1	.39081	9.7194	.38991	.47646	.98553	.04761	9.8110	.04949
#2	.38516	9.6898	.39005	.47629	.99766	.04716	9.9033	.05031
#3	.38833	9.7203	.41070	.47868	.98855	.04739	9.8959	.05200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20045**	**.47745**	**.50304**	**3.8652**	**49.851**	**.98139**	**9.6090**	**.49428**
Stddev	.00476	.00182	.01308	.0187	.275	.00271	.1197	.00115
%RSD	2.3737	.38128	2.6009	.48458	.55213	.27645	1.2457	.23357
#1	.19707	.47916	.49332	3.8535	49.648	.97918	9.5187	.49428
#2	.19839	.47554	.49789	3.8554	50.165	.98442	9.7448	.49544
#3	.20589	.47766	.51792	3.8868	49.742	.98056	9.5635	.49313
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0051**	**49.395**	**.49829**	**9.9011**	**.49766**	**1.1837**	**.40223**	**5.1765**
Stddev	.0221	.266	.01338	.2380	.01263	.0295	.01301	.1331
%RSD	2.2022	.53859	2.6859	2.4036	2.5373	2.4958	3.2354	2.5717
#1	.99057	49.185	.48864	9.7382	.49052	1.1641	.39764	5.0820
#2	.99416	49.694	.49266	9.7909	.49023	1.1694	.39213	5.1189
#3	1.0306	49.307	.51357	10.174	.51224	1.2177	.41691	5.3288
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 11:33:47 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99780	.99494	.99460	.50316	.95384	.99778	.96366
Stddev	.02505	.00582	.00941	.01064	.00112	.02481	.00332
%RSD	2.5106	.58510	.94620	2.1156	.11735	2.4862	.34462
#1	.98222	.99006	.98399	.49648	.95510	.98037	.96166
#2	.98449	1.0014	.99788	.49756	.95296	.98679	.96750
#3	1.0267	.99339	1.0019	.51543	.95347	1.0262	.96183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9609.5	61484.	3367.3
Stddev	179.1	149.	17.5
%RSD	1.8637	.24184	.51943
#1	9727.0	61424.	3387.4
#2	9698.3	61653.	3355.3
#3	9403.4	61374.	3359.2

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 11:37:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00172**	**-.00134**	**.00309**	**.00209**	**.00125**	**-.00002**	**-.01440**	**-.00007**
Stddev	.00091	.00614	.00420	.00059	.00035	.00008	.00898	.00028
%RSD	52.779	459.15	136.12	28.437	28.440	502.17	62.405	405.50
#1	-.00077	-.00780	.00268	.00192	.00104	-.00008	-.01028	-.00013
#2	-.00183	-.00062	-.00090	.00275	.00104	-.00004	-.00821	-.00031
#3	-.00257	.00441	.00748	.00160	.00165	.00007	-.02470	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00058**	**.00219**	**-.00096**	**.01429**	**.07201**	**-.00051**	**-.01423**	**-.00338**
Stddev	.00025	.00091	.00116	.02391	.02885	.00127	.05533	.00160
%RSD	42.952	41.583	120.36	167.30	40.061	249.18	388.71	47.289
#1	-.00086	.00313	-.00216	.03857	.05729	-.00120	.01249	-.00407
#2	-.00049	.00132	.00015	-.00924	.05349	.00096	-.07785	-.00452
#3	-.00039	.00212	-.00087	.01355	.10524	-.00129	.02266	-.00155
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00397**	**.05772**	**.00049**	**.00166**	**.00060**	**.00709**	**.00415**	**.00501**
Stddev	.00025	.00897	.00091	.00777	.00062	.00346	.00064	.00058
%RSD	6.2010	15.535	183.67	469.35	103.11	48.715	15.417	11.538
#1	.00371	.06438	.00022	.00269	-.00009	.00377	.00431	.00485
#2	.00402	.04752	-.00024	.00886	.00078	.01067	.00470	.00452
#3	.00419	.06126	.00151	-.00658	.00112	.00684	.00345	.00565
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 11:37:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**-.00004**	**-.00290**	**-.00180**	**-.00095**	**.00026**	**.00127**
Stddev	.00126	.00040	.00531	.00104	.00030	.00018	.00033
%RSD	720.33	1037.6	182.93	57.739	31.840	69.543	26.201
#1	-.00138	.00030	.00232	-.00292	-.00094	.00041	.00115
#2	-.00028	-.00048	-.00273	-.00162	-.00066	.00030	.00101
#3	.00113	.00007	-.00830	-.00087	-.00126	.00006	.00164
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9475.4**	**60828.**	**3302.4**
Stddev	15.9	240.	28.2
%RSD	.16749	.39397	.85256
#1	9486.2	60837.	3325.2
#2	9482.7	61063.	3270.9
#3	9457.1	60584.	3311.0

Approved: June 25, 2016

Sample Name: L1606078718 Acquired: 6/24/2016 11:41:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00044	.12278	-.00107	.00913	.01523	.00001	5.3107	-.00005
Stddev	.00135	.00087	.00075	.00238	.00045	.00002	.0439	.00007
%RSD	307.59	.71051	70.678	26.118	2.9624	290.46	.82581	147.98
#1	-.00119	.12179	-.00040	.01179	.01472	.00003	5.2601	-.00013
#2	-.00124	.12310	-.00188	.00842	.01537	.00000	5.3382	.00001
#3	.00112	.12344	-.00091	.00718	.01559	-.00001	5.3338	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	.00156	.00001	.12761	.28289	-.00057	2.0930	.00966
Stddev	.00025	.00095	.00078	.01136	.02940	.00292	.1311	.00143
%RSD	123.91	60.819	13550.	8.9048	10.391	511.67	6.2613	14.807
#1	.00004	.00136	.00041	.11857	.31451	-.00375	2.2066	.00912
#2	-.00046	.00072	.00051	.14037	.25639	.00005	1.9496	.00858
#3	-.00018	.00259	-.00090	.12389	.27778	.00199	2.1228	.01128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	.96070	.00021	.01639	.00142	.00012	.00174	.95670
Stddev	.00022	.02144	.00152	.00378	.00110	.00353	.00315	.00064
%RSD	24.211	2.2317	705.53	23.047	77.668	2852.2	180.36	.06663
#1	.00066	.96380	-.00103	.01922	.00239	-.00367	.00218	.95743
#2	.00108	.98042	.00190	.01784	.00022	.00073	-.00160	.95644
#3	.00099	.93788	-.00022	.01210	.00165	.00331	.00465	.95624
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606078718 Acquired: 6/24/2016 11:41:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.02113**	**-.00261**	**.00155**	**.00015**	**.00102**	**.00007**
Stddev	.00039	.00013	.00231	.00262	.00009	.00008	.00015
%RSD	3458.6	.60621	88.436	169.06	60.666	7.5915	217.66
#1	-.00027	.02099	-.00355	.00304	.00004	.00110	-.00006
#2	.00044	.02124	.00002	-.00148	.00020	.00094	.00004
#3	-.00021	.02116	-.00429	.00309	.00019	.00102	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9833.8**	**62560.**	**3368.7**
Stddev	10.6	179.	20.6
%RSD	.10814	.28665	.61199
#1	9837.0	62447.	3366.4
#2	9821.9	62767.	3349.3
#3	9842.4	62467.	3390.3

Approved: June 25, 2016

Sample Name: PBW 76 Acquired: 6/24/2016 11:45:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.00756**	**-.00027**	**.00227**	**.00060**	**.00001**	**.00703**	**.00010**
Stddev	.00134	.00214	.00202	.00255	.00065	.00005	.01557	.00013
%RSD	7726.0	28.331	745.35	112.37	108.24	426.81	221.55	123.75
#1	.00015	.00960	.00041	.00019	.00119	.00007	-.00446	.00001
#2	.00123	.00774	.00132	.00150	-.00010	-.00002	.02475	.00024
#3	-.00144	.00533	-.00255	.00512	.00071	-.00001	.00079	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00074**	**.00189**	**-.00169**	**.00228**	**.02645**	**-.00293**	**.08622**	**-.00171**
Stddev	.00036	.00154	.00145	.01650	.09764	.00154	.04513	.00322
%RSD	48.622	81.673	85.412	724.65	369.14	52.587	52.347	188.75
#1	-.00110	.00346	-.00193	.01977	.12997	-.00130	.13664	-.00066
#2	-.00076	.00182	-.00301	.00009	-.06399	-.00437	.04959	-.00532
#3	-.00037	.00038	-.00014	-.01302	.01337	-.00312	.07244	.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00066**	**.03990**	**-.00047**	**-.00713**	**-.00416**	**-.00155**	**-.00282**	**.01609**
Stddev	.00011	.02208	.00015	.00734	.00167	.00446	.00425	.00127
%RSD	17.385	55.332	31.359	102.96	40.213	287.62	150.70	7.8845
#1	.00065	.03197	-.00031	-.00456	-.00533	.00097	.00195	.01464
#2	.00055	.02288	-.00051	-.01540	-.00224	.00108	-.00421	.01696
#3	.00078	.06484	-.00059	-.00142	-.00490	-.00670	-.00621	.01668
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: PBW 76 Acquired: 6/24/2016 11:45:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00042**	**-.00012**	**-.00291**	**.00062**	**-.00065**	**.00076**	**.00063**
Stddev	.00117	.00017	.00323	.00163	.00060	.00007	.00005
%RSD	281.50	146.61	111.08	263.50	92.819	8.5570	7.9907
#1	.00066	.00000	-.00316	-.00124	-.00007	.00071	.00069
#2	-.00166	-.00004	-.00601	.00179	-.00127	.00074	.00060
#3	-.00025	-.00031	.00044	.00131	-.00060	.00084	.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9158.3**	**58514.**	**3173.6**
Stddev	21.5	54.	54.1
%RSD	.23481	.09167	1.7045
#1	9170.2	58456.	3116.8
#2	9171.2	58527.	3224.6
#3	9133.5	58561.	3179.5

Approved: June 25, 2016

Sample Name: LCSW 76 Acquired: 6/24/2016 11:49:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19957**	**5.0577**	**.20359**	**.97778**	**.51970**	**.02459**	**5.2560**	**.02583**
Stddev	.00111	.0209	.00144	.00585	.00573	.00009	.0253	.00026
%RSD	.55649	.41409	.70902	.59861	1.1018	.38272	.48154	.99696
#1	.19952	5.0735	.20526	.97949	.51449	.02469	5.2312	.02570
#2	.19848	5.0657	.20267	.98260	.51879	.02457	5.2550	.02613
#3	.20070	5.0340	.20285	.97127	.52583	.02451	5.2818	.02566
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10438**	**.25143**	**.25975**	**2.0526**	**25.715**	**.51843**	**5.1244**	**.25887**
Stddev	.00049	.00212	.00051	.0472	.222	.00558	.0767	.00446
%RSD	.46631	.84222	.19672	2.2997	.86399	1.0771	1.4961	1.7214
#1	.10490	.25326	.25929	2.0703	25.495	.51419	5.0400	.25801
#2	.10428	.25193	.25965	1.9991	25.711	.51635	5.1897	.25491
#3	.10394	.24911	.26030	2.0884	25.939	.52476	5.1436	.26370
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53107**	**25.841**	**.25948**	**4.9583**	**.25768**	**.61986**	**.20199**	**2.6208**
Stddev	.00128	.248	.00088	.0110	.00363	.00187	.00566	.0027
%RSD	.24060	.95967	.33951	.22193	1.4073	.30098	2.7997	.10443
#1	.53215	25.579	.25869	4.9612	.25468	.61882	.19650	2.6225
#2	.53139	25.870	.26043	4.9675	.25665	.62201	.20780	2.6222
#3	.52966	26.073	.25932	4.9461	.26171	.61875	.20168	2.6176
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LCSW 76 Acquired: 6/24/2016 11:49:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51623**	**.53123**	**.52244**	**.25565**	**.49959**	**.51393**	**.00579**
Stddev	.00132	.00381	.00132	.00319	.00144	.00042	.00111
%RSD	.25652	.71784	.25180	1.2488	.28878	.08123	19.246
#1	.51555	.52808	.52357	.25635	.50112	.51432	.00458
#2	.51775	.53013	.52276	.25844	.49939	.51397	.00604
#3	.51538	.53547	.52100	.25217	.49826	.51349	.00677
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9055.9**	**57815.**	**3183.8**
Stddev	4.9	347.	20.8
%RSD	.05361	.60036	.65296
#1	9054.8	57514.	3207.6
#2	9061.2	57737.	3174.7
#3	9051.7	58195.	3169.1

Approved: June 25, 2016

Sample Name: F BLANK Acquired: 6/24/2016 11:52:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573594-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.01913	.00045	.00564	.00075	.00006	.03446	.00003
Stddev	.00067	.00249	.00285	.00093	.00023	.00008	.05634	.00010
%RSD	248.40	13.009	640.39	16.412	30.810	153.80	163.51	360.07
#1	-.00005	.01749	.00372	.00458	.00101	.00001	.06139	-.00008
#2	-.00018	.01791	-.00146	.00604	.00070	.00015	-.03030	.00007
#3	.00104	.02200	-.00093	.00630	.00056	.00000	.07228	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	.00253	-.00156	-.00596	.16777	.00070	.01889	-.00191
Stddev	.00044	.00121	.00070	.01626	.08879	.00348	.08939	.00126
%RSD	226.82	47.714	44.960	272.74	52.925	500.27	473.10	66.049
#1	-.00068	.00392	-.00085	-.00089	.18512	.00292	-.08304	-.00336
#2	-.00006	.00176	-.00226	-.02415	.07158	-.00331	.08391	-.00130
#3	.00016	.00191	-.00157	.00716	.24660	.00248	.05581	-.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00127	146.88	-.00010	-.00997	-.00192	-.00060	.00086	.01689
Stddev	.00007	2.32	.00022	.01062	.00306	.00058	.00486	.00219
%RSD	5.9044	1.5789	217.75	106.58	159.22	97.608	562.25	12.982
#1	.00123	147.49	-.00010	-.00418	.00110	-.00085	.00099	.01941
#2	.00122	144.32	-.00032	-.02223	-.00503	-.00101	-.00405	.01582
#3	.00135	148.83	.00012	-.00350	-.00184	.00007	.00565	.01544
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: F BLANK Acquired: 6/24/2016 11:52:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573594-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00019	.00465	-.00056	-.00077	.00385	.00047
Stddev	.00062	.00009	.00622	.00067	.00006	.00008	.00058
%RSD	351.13	48.859	133.64	119.24	7.9259	2.1598	122.28
#1	-.00018	.00019	.00196	-.00117	-.00080	.00376	.00110
#2	.00090	.00028	.00023	-.00067	-.00082	.00387	.00035
#3	-.00018	.00010	.01176	.00016	-.00070	.00392	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9082.3	57649.	3191.0
Stddev	16.5	168.	36.6
%RSD	.18193	.29213	1.1475
#1	9087.4	57544.	3194.2
#2	9063.8	57561.	3225.9
#3	9095.7	57844.	3152.9

Approved: June 25, 2016

Sample Name: F BLANK Acquired: 6/24/2016 11:56:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573594-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00027**	**.00681**	**-.00106**	**.00396**	**-.00038**	**.00008**	**.00787**
Stddev	.00115	.00552	.00081	.00188	.00038	.00004	.02622
%RSD	428.61	81.084	76.687	47.340	102.50	53.257	333.03
#1	.00038	.01319	-.00187	.00403	-.00074	.00010	-.00305
#2	-.00094	.00367	-.00107	.00205	.00003	.00010	-.01112
#3	.00136	.00358	-.00024	.00580	-.00042	.00003	.03779
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**-.00070**	**.00137**	**-.00027**	**-.00002**	**.15945**	**-.00128**
Stddev	.00010	.00002	.00054	.00110	.02466	.06888	.00479
%RSD	101.48	2.8007	39.168	401.57	161320.	43.197	373.14
#1	-.00002	-.00067	.00075	-.00109	-.02191	.10599	.00293
#2	.00017	-.00071	.00165	-.00072	-.00485	.13518	-.00650
#3	.00015	-.00071	.00170	.00098	.02671	.23717	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.01684**	F **-.00418**	**.00067**	**.09707**	**-.00070**	**-.01284**	**.00022**
Stddev	.07248	.00187	.00051	.02145	.00086	.00271	.00131
%RSD	430.41	44.681	75.988	22.093	121.92	21.113	591.13
#1	-.09127	-.00633	.00026	.09161	-.00137	-.01596	.00169
#2	-.01277	-.00318	.00124	.12072	.00026	-.01112	-.00022
#3	.05352	-.00303	.00051	.07889	-.00100	-.01143	-.00081
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		36.000					
Low Limit		-.00300					

Approved: June 25, 2016

Sample Name: F BLANK Acquired: 6/24/2016 11:56:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573594-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	-.00165	.01154	-.00016	-.00000	.00524	-.00258
Stddev	.00243	.00564	.00134	.00055	.00028	.00100	.00016
%RSD	433.82	342.87	11.581	341.26	38088.	19.138	6.0823
#1	.00049	-.00470	.01307	-.00007	.00005	.00482	-.00263
#2	-.00334	.00486	.01061	.00034	.00025	.00451	-.00270
#3	.00117	-.00510	.01094	-.00075	-.00031	.00638	-.00240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00082	.00321	.00040
Stddev	.00090	.00006	.00064
%RSD	109.84	1.7754	160.28
#1	-.00106	.00319	-.00006
#2	-.00159	.00327	.00013
#3	.00017	.00316	.00114
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9251.2	59193.	3228.6
Stddev	29.0	219.	50.6
%RSD	.31309	.36916	1.5681
#1	9282.5	58943.	3171.4
#2	9245.5	59348.	3246.5
#3	9225.4	59289.	3267.8

Approved: June 25, 2016

Sample Name: L1606115101 Acquired: 6/24/2016 12:00:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	.15830	.00196	.12061	.07888	-.00001	37.815	.00010
Stddev	.00120	.00530	.00056	.00140	.00081	.00003	.248	.00022
%RSD	304.15	3.3498	28.525	1.1602	1.0231	231.96	.65454	212.58
#1	-.00079	.16067	.00184	.12082	.07945	-.00001	38.100	.00001
#2	.00095	.15223	.00257	.12189	.07796	.00002	37.690	-.00006
#3	-.00134	.16201	.00147	.11912	.07925	-.00005	37.655	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00054	.00290	.00097	.21119	2.5400	.00368	20.418	.06424
Stddev	.00015	.00059	.00066	.01074	.0733	.00380	.216	.00165
%RSD	27.920	20.440	67.678	5.0831	2.8878	103.15	1.0559	2.5751
#1	-.00061	.00239	.00022	.21267	2.5710	.00761	20.667	.06262
#2	-.00065	.00277	.00126	.22111	2.4562	.00340	20.289	.06593
#3	-.00037	.00355	.00144	.19979	2.5927	.00003	20.297	.06416
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00311	101.77	.00045	.04117	.00135	.00380	.00157	5.3677
Stddev	.00045	.72	.00047	.00987	.00181	.00230	.00252	.0303
%RSD	14.570	.71009	104.97	23.979	133.91	60.522	159.90	.56381
#1	.00300	102.57	.00075	.03748	.00144	.00202	.00106	5.3896
#2	.00272	101.55	.00069	.05236	.00312	.00299	-.00065	5.3804
#3	.00360	101.18	-.00009	.03367	-.00050	.00640	.00431	5.3332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115101 Acquired: 6/24/2016 12:00:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00053**	**.24842**	**-.00797**	**-.00198**	**.00331**	**.01122**	**.00043**
Stddev	.00079	.00184	.00414	.00305	.00081	.00007	.00023
%RSD	148.48	.74257	51.976	153.47	24.555	.58389	52.792
#1	-.00089	.25043	-.00512	-.00050	.00292	.01123	.00048
#2	.00038	.24800	-.01272	-.00549	.00277	.01128	.00018
#3	-.00108	.24682	-.00607	.00004	.00425	.01115	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9014.8**	**57274.**	**3214.0**
Stddev	3.7	444.	16.2
%RSD	.04144	.77607	.50389
#1	9010.8	56777.	3196.3
#2	9018.1	57410.	3228.0
#3	9015.6	57634.	3217.6

Approved: June 25, 2016

Sample Name: L1606115103S Acquired: 6/24/2016 12:04:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19866**	**5.2333**	**.20489**	**1.0841**	**.58829**	**.02453**	**41.795**	**.02565**
Stddev	.00248	.0391	.00312	.0094	.00934	.00022	.762	.00024
%RSD	1.2478	.74796	1.5219	.86801	1.5872	.88296	1.8223	.94310
#1	.20143	5.2782	.20405	1.0949	.59855	.02478	42.664	.02538
#2	.19665	5.2065	.20834	1.0778	.58603	.02443	41.476	.02586
#3	.19791	5.2153	.20228	1.0795	.58029	.02438	41.245	.02571
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10099**	**.24641**	**.25195**	**2.2589**	**28.126**	**.51539**	**24.622**	**.31292**
Stddev	.00052	.00196	.00102	.0296	.653	.00581	.350	.00628
%RSD	.51212	.79406	.40526	1.3088	2.3212	1.1278	1.4196	2.0063
#1	.10114	.24829	.25234	2.2928	28.857	.52178	24.997	.31972
#2	.10142	.24656	.25272	2.2452	27.918	.51397	24.564	.31172
#3	.10041	.24438	.25079	2.2387	27.601	.51042	24.305	.30733
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52635**	**123.51**	**.24930**	**5.0586**	**.24835**	**.61205**	**.20210**	**7.9483**
Stddev	.00263	2.21	.00102	.0099	.00401	.00458	.01142	.0147
%RSD	.50034	1.7930	.40840	.19611	1.6157	.74825	5.6519	.18492
#1	.52939	126.01	.25035	5.0677	.24616	.61628	.19120	7.9616
#2	.52472	122.75	.24832	5.0480	.25298	.61267	.20111	7.9508
#3	.52495	121.78	.24922	5.0600	.24590	.60719	.21398	7.9325
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115103S Acquired: 6/24/2016 12:04:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50472	.74393	.51319	.24877	.50017	.50921	.00163
Stddev	.00229	.01406	.00107	.00330	.00462	.00094	.00046
%RSD	.45343	1.8895	.20946	1.3249	.92272	.18364	28.196
#1	.50713	.75976	.51270	.24643	.50544	.51012	.00133
#2	.50447	.73914	.51244	.24733	.49686	.50925	.00215
#3	.50257	.73289	.51442	.25254	.49821	.50826	.00140
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8967.8	56968.	3188.4
Stddev	14.4	310.	46.6
%RSD	.16024	.54356	1.4614
#1	8982.4	56611.	3137.2
#2	8953.6	57142.	3228.2
#3	8967.3	57152.	3199.9

Approved: June 25, 2016

Sample Name: L1606115104SD Acquired: 6/24/2016 12:08:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20050**	**5.5362**	**.21145**	**1.1171**	**.60094**	**.02473**	**43.628**	**.02602**
Stddev	.00367	.0392	.00196	.0038	.00661	.00023	.422	.00015
%RSD	1.8310	.70851	.92588	.33636	1.0992	.92800	.96702	.56220
#1	.20453	5.5755	.20937	1.1208	.60449	.02497	43.830	.02607
#2	.19734	5.5360	.21326	1.1133	.60501	.02469	43.911	.02586
#3	.19964	5.4970	.21172	1.1174	.59332	.02452	43.143	.02614
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10332**	**.25201**	**.25751**	**2.4745**	**28.765**	**.52930**	**25.537**	**.32828**
Stddev	.00022	.00113	.00140	.0515	.250	.00229	.203	.00242
%RSD	.20838	.44890	.54386	2.0800	.86748	.43222	.79310	.73866
#1	.10312	.25327	.25864	2.4622	28.794	.52881	25.355	.33071
#2	.10331	.25107	.25594	2.5310	28.999	.53179	25.755	.32826
#3	.10355	.25171	.25796	2.4303	28.503	.52730	25.502	.32586
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53696**	**128.06**	**.25435**	**5.1848**	**.25573**	**.62539**	**.20371**	**8.6826**
Stddev	.00235	1.16	.00112	.0104	.00231	.00094	.00431	.0179
%RSD	.43756	.90349	.43872	.20045	.90135	.15109	2.1170	.20639
#1	.53930	128.62	.25342	5.1916	.25485	.62446	.19905	8.6946
#2	.53698	128.84	.25558	5.1899	.25835	.62536	.20453	8.6911
#3	.53460	126.73	.25403	5.1728	.25400	.62635	.20756	8.6620
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115104SD Acquired: 6/24/2016 12:08:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51403**	**.76306**	**.52079**	**.25353**	**.50800**	**.54740**	**.00120**
Stddev	.00207	.00813	.00728	.00246	.00215	.00115	.00023
%RSD	.40270	1.0651	1.3976	.96966	.42297	.21071	19.008
#1	.51525	.76972	.51741	.25073	.51047	.54816	.00120
#2	.51521	.76547	.52914	.25449	.50702	.54797	.00097
#3	.51164	.75401	.51581	.25536	.50652	.54608	.00143
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8971.1**	**57029.**	**3176.4**
Stddev	7.5	275.	37.9
%RSD	.08397	.48302	1.1936
#1	8971.7	56728.	3149.0
#2	8963.3	57269.	3160.4
#3	8978.3	57089.	3219.6

Approved: June 25, 2016

Sample Name: L1606114001 Acquired: 6/24/2016 12:11:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00112	.02288	.00406	.04082	.07775	.00002	146.18	.00803
Stddev	.00117	.00176	.00168	.00145	.00148	.00006	1.41	.00013
%RSD	105.07	7.7135	41.352	3.5486	1.9065	431.51	.96792	1.6005
#1	-.00015	.02175	.00435	.04246	.07857	-.00005	147.59	.00799
#2	.00217	.02197	.00557	.04032	.07604	.00008	144.76	.00794
#3	.00133	.02491	.00225	.03970	.07864	.00002	146.20	.00818
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.00113	.15059	.00257	2.0589	.00836	2.1895	.15039
Stddev	.00020	.00056	.00328	.04967	.1178	.00105	.0405	.00204
%RSD	197.71	50.139	2.1779	1935.6	5.7222	12.511	1.8515	1.3546
#1	-.00033	.00053	.15163	.05781	2.1539	.00743	2.1519	.15272
#2	.00004	.00166	.15323	-.01173	1.9271	.00816	2.2324	.14950
#3	-.00002	.00119	.14692	-.03838	2.0957	.00949	2.1841	.14894
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00097	4.5457	.00499	.37451	.09772	.00116	.00727	.91983
Stddev	.00011	.0157	.00049	.00549	.00291	.00520	.00545	.00530
%RSD	11.074	.34568	9.8108	1.4647	2.9765	448.88	74.937	.57580
#1	.00106	4.5461	.00536	.38066	.10096	.00620	.00098	.92472
#2	.00085	4.5299	.00444	.37010	.09534	-.00419	.01057	.92057
#3	.00099	4.5613	.00518	.37278	.09685	.00146	.01027	.91421
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114001 Acquired: 6/24/2016 12:11:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00079**	**.43857**	**-.02336**	**-.00142**	**-.00154**	**.50322**	**.00005**
Stddev	.00104	.00448	.00196	.00344	.00065	.00330	.00027
%RSD	131.08	1.0215	8.3791	242.90	42.008	.65521	545.16
#1	.00012	.44211	-.02243	-.00473	-.00200	.50529	-.00008
#2	-.00193	.43353	-.02204	-.00165	-.00182	.50495	.00036
#3	-.00058	.44006	-.02561	.00214	-.00080	.49942	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9099.5**	**58355.**	**3254.5**
Stddev	20.8	103.	52.9
%RSD	.22848	.17565	1.6262
#1	9103.9	58241.	3200.3
#2	9076.9	58438.	3306.0
#3	9117.7	58387.	3257.0

Approved: June 25, 2016

Sample Name: L1606114001SDL Acquired: 6/24/2016 12:15:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574055-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00037	.01331	.00099	.00780	.01560	.00000	29.557	.00158
Stddev	.00087	.00321	.00169	.00203	.00098	.00002	.054	.00027
%RSD	236.49	24.147	171.32	26.026	6.2683	4328.2	.18417	17.124
#1	.00062	.01694	-.00029	.00636	.01450	-.00002	29.529	.00183
#2	-.00104	.01084	.00035	.00692	.01636	.00002	29.620	.00130
#3	-.00069	.01214	.00290	.01013	.01596	.00000	29.522	.00162
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	.00132	.03151	.00499	.41194	.00149	.47888	.02876
Stddev	.00033	.00049	.00083	.01420	.07529	.00168	.04968	.00203
%RSD	299.16	36.877	2.6222	284.58	18.277	112.60	10.373	7.0541
#1	.00017	.00076	.03108	.02107	.49470	.00200	.52478	.03053
#2	-.00047	.00152	.03098	-.00580	.34749	-.00038	.48574	.02654
#3	-.00003	.00167	.03246	-.00031	.39365	.00285	.42614	.02921
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.89244	.00037	.07391	.02034	.00194	-.00119	.19852
Stddev	.00030	.03461	.00035	.00616	.00060	.00167	.00867	.00138
%RSD	58.379	3.8778	96.553	8.3343	2.9674	86.300	729.26	.69508
#1	.00070	.85307	.00064	.08066	.02076	.00316	-.00830	.19746
#2	.00017	.90617	.00049	.07249	.02062	.00003	.00847	.19802
#3	.00070	.91807	-.00003	.06859	.01965	.00263	-.00373	.20008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114001SDL Acquired: 6/24/2016 12:15:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574055-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00039**	**.08546**	**-.00162**	**-.00038**	**-.00143**	**.10505**	**.00026**
Stddev	.00052	.00084	.00796	.00370	.00041	.00083	.00026
%RSD	132.53	.98750	491.04	963.99	29.011	.78998	99.384
#1	-.00083	.08458	.00175	-.00262	-.00159	.10430	-.00004
#2	.00018	.08626	.00410	-.00242	-.00096	.10490	.00043
#3	-.00052	.08553	-.01071	.00389	-.00173	.10594	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9347.7**	**59748.**	**3254.8**
Stddev	37.4	288.	18.3
%RSD	.39956	.48239	.56188
#1	9390.7	59990.	3243.3
#2	9323.6	59429.	3245.1
#3	9328.6	59825.	3275.9

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 12:19:26 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.42650**	**10.713**	**.42746**	**.52823**	**1.0913**	**.05212**	**10.834**
Stddev	.00317	.052	.00096	.00261	.0070	.00012	.031
%RSD	.74327	.48970	.22392	.49473	.63946	.22148	.28418
#1	.43016	10.771	.42726	.53089	1.0867	.05225	10.857
#2	.42452	10.698	.42850	.52814	1.0879	.05204	10.799
#3	.42483	10.670	.42662	.52566	1.0994	.05205	10.846
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05499**	**.21760**	**.52572**	**.54475**	**4.2777**	**54.613**	**1.0769**
Stddev	.00032	.00106	.00228	.00053	.0326	.264	.0102
%RSD	.58459	.48849	.43328	.09756	.76212	.48255	.94636
#1	.05491	.21872	.52812	.54439	4.2464	54.561	1.0684
#2	.05534	.21660	.52545	.54450	4.2752	54.379	1.0742
#3	.05472	.21750	.52359	.54536	4.3115	54.899	1.0882
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.527**	**.54567**	**1.0931**	**54.266**	**.54162**	**10.766**	**.54062**
Stddev	.021	.00325	.0051	.187	.00238	.011	.00023
%RSD	.20378	.59558	.46292	.34370	.43925	.10654	.04330
#1	10.503	.54270	1.0987	54.187	.54208	10.764	.54087
#2	10.533	.54517	1.0919	54.131	.53904	10.778	.54059
#3	10.545	.54914	1.0888	54.479	.54373	10.755	.54040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 12:19:26 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2945**	**.43428**	F **5.6098**	**1.0799**	**1.0949**	F **1.1021**	**.54481**
Stddev	.0041	.00361	.0019	.0026	.0045	.0067	.00469
%RSD	.31714	.83239	.03336	.24374	.40814	.60549	.86133
#1	1.2974	.43838	5.6080	1.0827	1.0928	1.1058	.54545
#2	1.2963	.43289	5.6096	1.0794	1.0919	1.0944	.54914
#3	1.2898	.43156	5.6117	1.0775	1.1000	1.1060	.53983
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Pass
Value			5.0000			1.0000	
Range			10.000%			10.000%	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0454**	**1.0803**	**1.0570**
Stddev	.0034	.0013	.0088
%RSD	.32628	.12126	.82774
#1	1.0490	1.0816	1.0630
#2	1.0452	1.0790	1.0470
#3	1.0422	1.0802	1.0611
Check ?	Chk Pass	Chk Pass	Chk Pass
Value			
Range			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8984.8**	**56710.**	**3113.2**
Stddev	45.5	317.	15.4
%RSD	.50651	.55948	.49324
#1	8944.0	56442.	3100.3
#2	9033.9	56628.	3130.2
#3	8976.6	57060.	3109.1

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 12:23:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00033**	**.00344**	**.00145**	**.00294**	**.00035**	**-.00004**	**.02215**	**-.00021**
Stddev	.00041	.00219	.00240	.00079	.00121	.00010	.03194	.00009
%RSD	124.54	63.593	165.80	26.762	344.83	259.48	144.18	42.051
#1	.00029	.00529	.00096	.00384	-.00003	.00006	.00228	-.00030
#2	-.00006	.00400	.00406	.00262	.00171	-.00003	.00518	-.00013
#3	.00075	.00102	-.00067	.00237	-.00062	-.00014	.05900	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00035**	**.00201**	**-.00150**	**-.01822**	**.10568**	**.00099**	**.05713**	**-.00256**
Stddev	.00021	.00106	.00016	.00191	.02617	.00205	.07243	.00079
%RSD	59.613	52.971	10.403	10.463	24.764	207.53	126.79	30.925
#1	-.00051	.00267	-.00144	-.02010	.13480	-.00038	.04350	-.00234
#2	-.00011	.00078	-.00167	-.01829	.08413	-.00000	.13541	-.00189
#3	-.00044	.00258	-.00137	-.01629	.09812	.00334	-.00752	-.00343
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00363**	**.06866**	**.00015**	**-.00196**	**-.00068**	**.00350**	**-.00029**	**.00611**
Stddev	.00028	.01714	.00016	.00299	.00126	.00201	.00292	.00286
%RSD	7.7510	24.965	113.48	152.53	184.92	57.392	1023.3	46.714
#1	.00336	.04977	.00032	-.00175	-.00073	.00541	.00071	.00898
#2	.00392	.08323	.00011	.00092	.00060	.00371	.00201	.00327
#3	.00361	.07297	-.00000	-.00506	-.00193	.00140	-.00357	.00609
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 12:23:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00057**	**.00010**	**.00153**	**.00025**	**-.00049**	**.00022**	**.00163**
Stddev	.00020	.00030	.00816	.00155	.00055	.00013	.00062
%RSD	35.071	304.81	532.55	618.43	111.20	57.646	37.867
#1	-.00034	-.00011	.00782	-.00052	-.00106	.00017	.00094
#2	-.00065	.00044	.00447	.00204	-.00045	.00013	.00184
#3	-.00071	-.00004	-.00769	-.00077	.00003	.00037	.00211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9479.9**	**60625.**	**3266.1**
Stddev	27.2	250.	24.0
%RSD	.28740	.41169	.73490
#1	9455.0	60338.	3293.8
#2	9475.6	60791.	3252.7
#3	9509.0	60746.	3251.7

Approved: June 25, 2016

Sample Name: L1606114001PS Acquired: 6/24/2016 12:27:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574055-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20275**	**5.1419**	**.21333**	**1.0253**	**.59504**	**.02467**	**139.85**	**.03335**
Stddev	.00382	.0464	.00182	.0020	.00731	.00012	1.53	.00017
%RSD	1.8833	.90229	.85200	.19620	1.2293	.48386	1.0954	.51011
#1	.20665	5.1917	.21522	1.0245	.60106	.02477	141.22	.03328
#2	.20258	5.0999	.21318	1.0237	.58690	.02454	138.19	.03323
#3	.19902	5.1341	.21159	1.0275	.59717	.02471	140.14	.03355
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10344**	**.25015**	**.39465**	**2.0433**	**28.277**	**.53767**	**7.1211**	**.39716**
Stddev	.00038	.00249	.00031	.0120	.363	.00734	.1390	.00381
%RSD	.37083	.99698	.07885	.58514	1.2820	1.3649	1.9524	.95928
#1	.10301	.25285	.39486	2.0474	28.575	.54252	7.2778	.40080
#2	.10376	.24793	.39481	2.0298	27.873	.52923	7.0126	.39320
#3	.10354	.24968	.39430	2.0526	28.383	.54126	7.0729	.39748
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53753**	**30.414**	**.25886**	**5.5881**	**.34388**	**.63595**	**.21104**	**3.5188**
Stddev	.00106	.282	.00133	.0038	.00319	.00220	.00441	.0017
%RSD	.19634	.92682	.51475	.06847	.92887	.34549	2.0903	.04959
#1	.53826	30.705	.25820	5.5918	.34514	.63840	.21585	3.5208
#2	.53800	30.142	.26040	5.5842	.34625	.63530	.21010	3.5182
#3	.53632	30.394	.25800	5.5882	.34025	.63416	.20718	3.5175
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114001PS Acquired: 6/24/2016 12:27:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574055-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51595**	**.91725**	**.50579**	**.25689**	**.50349**	**.95723**	**.00511**
Stddev	.00180	.01150	.00924	.00144	.00222	.00117	.00123
%RSD	.34968	1.2533	1.8261	.55957	.44179	.12188	24.042
#1	.51532	.92818	.50881	.25546	.50563	.95817	.00409
#2	.51798	.90526	.49543	.25686	.50119	.95761	.00476
#3	.51455	.91830	.51315	.25834	.50365	.95593	.00647
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8910.4**	**56997.**	**3158.7**
Stddev	14.9	491.	36.1
%RSD	.16773	.86203	1.1429
#1	8920.8	56440.	3132.1
#2	8917.3	57366.	3199.8
#3	8893.3	57187.	3144.2

Approved: June 25, 2016

Sample Name: L1606114003 Acquired: 6/24/2016 12:30:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	.01986	.00301	.09457	.03965	-.00002	99.687	.00252
Stddev	.00131	.00825	.00228	.00100	.00036	.00012	.899	.00019
%RSD	294.41	41.551	75.602	1.0569	.91914	587.37	.90168	7.4764
#1	.00190	.01049	.00563	.09524	.04006	.00003	99.938	.00273
#2	.00009	.02603	.00186	.09504	.03938	.00007	98.690	.00241
#3	-.00065	.02306	.00154	.09342	.03950	-.00016	100.43	.00241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00021	.00208	.10263	.00520	1.9156	.00501	1.6642	.08675
Stddev	.00011	.00029	.00205	.01228	.0169	.00341	.0459	.00101
%RSD	52.022	14.106	2.0016	236.15	.88223	68.128	2.7554	1.1666
#1	-.00011	.00239	.10453	-.00392	1.9128	.00145	1.6708	.08733
#2	-.00033	.00205	.10292	.01917	1.9003	.00533	1.6155	.08558
#3	-.00020	.00181	.10045	.00036	1.9337	.00825	1.7065	.08735
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00442	143.17	.00079	-.00261	.00210	.00294	.00376	1.6066
Stddev	.00010	1.44	.00082	.00325	.00305	.00131	.00329	.0083
%RSD	2.2634	1.0055	104.33	124.46	145.56	44.519	87.514	.51571
#1	.00431	143.63	.00159	-.00023	.00390	.00415	.00530	1.6124
#2	.00444	141.56	.00083	-.00129	-.00143	.00311	-.00002	1.6103
#3	.00450	144.33	-.00005	-.00631	.00382	.00155	.00599	1.5971
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114003 Acquired: 6/24/2016 12:30:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**.24737**	**-.01388**	**-.00120**	**-.00079**	**.01628**	**.00040**
Stddev	.00066	.00187	.00938	.00377	.00043	.00034	.00030
%RSD	1229.4	.75472	67.590	313.73	54.177	2.1058	74.950
#1	-.00005	.24839	-.01059	-.00290	-.00056	.01656	.00005
#2	-.00054	.24522	-.00658	-.00383	-.00128	.01637	.00055
#3	.00076	.24851	-.02446	.00312	-.00053	.01589	.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8916.0**	**56782.**	**3182.3**
Stddev	15.2	240.	28.8
%RSD	.17040	.42235	.90629
#1	8911.2	56706.	3188.3
#2	8903.7	56590.	3207.7
#3	8933.0	57051.	3151.0

Approved: June 25, 2016

Sample Name: PBW 61 Acquired: 6/24/2016 12:34:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	.00076	-.00110	.00309	.00002	-.00001	.04326	.00013
Stddev	.00120	.00826	.00369	.00133	.00052	.00010	.01711	.00011
%RSD	135.53	1088.1	334.09	43.079	2914.6	1198.4	39.552	82.637
#1	.00082	.00363	-.00464	.00435	-.00058	.00006	.02365	.00001
#2	.00212	.00720	-.00139	.00170	.00038	-.00013	.05514	.00017
#3	-.00028	-.00856	.00272	.00323	.00025	.00004	.05100	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	.00182	-.00080	-.00810	.10020	-.00237	-.01055	-.00142
Stddev	.00016	.00010	.00134	.00626	.03798	.00342	.06161	.00080
%RSD	28.563	5.2588	167.88	77.374	37.898	144.42	583.87	56.732
#1	-.00040	.00172	-.00029	-.01312	.14090	.00069	-.02862	-.00057
#2	-.00073	.00183	-.00231	-.01009	.09401	-.00173	.05807	-.00217
#3	-.00055	.00191	.00021	-.00108	.06571	-.00606	-.06110	-.00152
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	.11467	.00021	-.00772	.00041	.00316	.00139	.00970
Stddev	.00036	.04360	.00087	.00814	.00175	.00439	.00571	.00153
%RSD	54.368	38.021	410.51	105.39	431.56	139.19	411.25	15.736
#1	.00069	.16070	-.00007	-.00034	.00056	.00189	-.00497	.00794
#2	.00029	.10932	.00118	-.00638	-.00141	-.00047	.00607	.01053
#3	.00101	.07400	-.00048	-.01645	.00207	.00804	.00307	.01063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: PBW 61 Acquired: 6/24/2016 12:34:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	.00027	-.00192	-.00257	-.00043	.00076	.00010
Stddev	.00031	.00059	.00385	.00044	.00062	.00010	.00031
%RSD	110.25	220.35	200.29	17.018	145.00	13.528	301.29
#1	.00056	.00090	-.00630	-.00275	.00014	.00080	.00026
#2	-.00005	.00016	.00092	-.00207	-.00033	.00065	.00030
#3	.00034	-.00026	-.00038	-.00288	-.00109	.00084	-.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9302.1	60410.	3281.7
Stddev	66.0	229.	39.4
%RSD	.71003	.37905	1.2004
#1	9378.1	60509.	3291.2
#2	9269.4	60574.	3315.5
#3	9258.7	60149.	3238.5

Approved: June 25, 2016

Sample Name: LCSW 61 Acquired: 6/24/2016 12:38:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20555	5.1784	.21096	1.0013	.53967	.02506	5.4631	.02661
Stddev	.00138	.0089	.00216	.0010	.00107	.00006	.0285	.00023
%RSD	.67151	.17182	1.0226	.10140	.19803	.23645	.52091	.86362
#1	.20492	5.1749	.20961	1.0025	.54073	.02507	5.4711	.02660
#2	.20459	5.1885	.21345	1.0007	.53859	.02511	5.4315	.02684
#3	.20713	5.1718	.20982	1.0007	.53967	.02500	5.4867	.02638
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10709	.25748	.26833	2.1158	26.774	.53895	5.2920	.26712
Stddev	.00110	.00150	.00102	.0163	.146	.00177	.0899	.00207
%RSD	1.0293	.58418	.37911	.77089	.54628	.32794	1.6996	.77309
#1	.10822	.25770	.26921	2.1123	26.910	.54072	5.3158	.26847
#2	.10704	.25587	.26857	2.1015	26.620	.53718	5.1925	.26474
#3	.10601	.25886	.26722	2.1335	26.793	.53894	5.3676	.26814
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.54645	26.922	.26606	5.0982	.26690	.63372	.20697	2.6537
Stddev	.00284	.049	.00199	.0187	.00116	.00467	.00438	.0104
%RSD	.51896	.18215	.74936	.36751	.43630	.73649	2.1177	.39305
#1	.54806	26.978	.26787	5.1053	.26563	.63639	.20777	2.6597
#2	.54811	26.888	.26639	5.1123	.26792	.63643	.21090	2.6598
#3	.54317	26.899	.26392	5.0769	.26714	.62833	.20224	2.6417
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LCSW 61 Acquired: 6/24/2016 12:38:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52855	.54930	.53444	.26386	.50928	.52661	.00239
Stddev	.00351	.00114	.00402	.00245	.00130	.00227	.00045
%RSD	.66494	.20774	.75201	.92725	.25500	.43047	18.960
#1	.53111	.55029	.53018	.26437	.51078	.52813	.00281
#2	.53000	.54956	.53500	.26601	.50848	.52769	.00191
#3	.52455	.54805	.53816	.26120	.50859	.52400	.00243
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8971.4	57490.	3144.1
Stddev	22.2	244.	32.0
%RSD	.24747	.42367	1.0188
#1	8950.2	57763.	3107.1
#2	8969.5	57293.	3162.4
#3	8994.5	57415.	3162.7

Approved: June 25, 2016

Sample Name: L1606073201 Acquired: 6/24/2016 12:42:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	.02820	.00033	.03332	.25570	.00005	29.348
Stddev	.00081	.00477	.00048	.00258	.00135	.00008	.107
%RSD	1060.6	16.901	146.21	7.7292	.52666	149.81	.36550
#1	-.00060	.02574	.00042	.03159	.25466	.00010	29.343
#2	.00085	.02517	.00076	.03208	.25522	.00010	29.244
#3	-.00048	.03370	-.00019	.03628	.25722	-.00004	29.458
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.00130	.00737	-.00082	.13349	1.5334	.02731
Stddev	.00012	.00035	.00052	.00188	.00764	.0113	.00141
%RSD	74.130	26.900	7.0457	230.52	5.7259	.73635	5.1517
#1	.00029	.00115	.00727	-.00281	.12571	1.5462	.02848
#2	.00008	.00170	.00692	-.00056	.14099	1.5249	.02772
#3	.00010	.00105	.00794	.00093	.13376	1.5292	.02575
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	39.404	.04547	.00090	F 358.79	.00311	1.6349	.00068
Stddev	.236	.00197	.00021	5.43	.00059	.0190	.00121
%RSD	.60011	4.3318	23.625	1.5145	19.047	1.1597	178.50
#1	39.143	.04349	.00067	363.98	.00244	1.6526	-.00059
#2	39.604	.04743	.00109	359.24	.00355	1.6374	.00080
#3	39.464	.04549	.00094	353.14	.00335	1.6149	.00182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 25, 2016

Sample Name: L1606073201 Acquired: 6/24/2016 12:42:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00056**	**-.00067**	**16.076**	**-.00001**	**.55040**	**-.00810**	**-.00164**
Stddev	.00164	.00536	.145	.00052	.00274	.00406	.00137
%RSD	293.19	800.42	.90295	6770.2	.49860	50.069	83.155
#1	.00126	.00045	16.195	.00001	.55128	-.00732	-.00243
#2	-.00103	.00404	16.119	.00051	.54733	-.01249	-.00007
#3	-.00191	-.00650	15.914	-.00054	.55260	-.00449	-.00243
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00202**	**.11146**	**.00024**
Stddev	.00089	.00179	.00037
%RSD	44.331	1.6093	152.52
#1	-.00107	.11286	-.00010
#2	-.00215	.11208	.00019
#3	-.00284	.10944	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8764.9**	**55502.**	**3127.7**
Stddev	30.2	118.	26.0
%RSD	.34400	.21327	.83247
#1	8763.7	55639.	3097.6
#2	8735.4	55438.	3142.4
#3	8795.6	55430.	3143.0

Approved: June 25, 2016

Sample Name: L1606079601 Acquired: 6/24/2016 12:46:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00158	3.2297	-.00034	1.2911	.04906	.00162	186.51	.23531
Stddev	.00208	.0109	.00397	.0030	.00128	.00007	1.50	.00040
%RSD	132.18	.33690	1166.8	.23101	2.6157	4.4542	.80345	.17130
#1	.00186	3.2175	-.00327	1.2892	.05043	.00168	188.24	.23541
#2	-.00064	3.2328	.00418	1.2895	.04885	.00163	185.56	.23565
#3	.00350	3.2386	-.00192	1.2945	.04789	.00154	185.75	.23486
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00732	.00840	.45442	1.2197	3.3021	.04141	30.000	3.1182
Stddev	.00026	.00095	.00241	.0142	.0440	.00123	.108	.0244
%RSD	3.6023	11.313	.53119	1.1615	1.3334	2.9646	.35889	.78321
#1	.00761	.00870	.45446	1.2311	3.3071	.04020	30.001	3.1462
#2	.00710	.00734	.45681	1.2038	3.2557	.04266	30.107	3.1009
#3	.00725	.00917	.45198	1.2241	3.3434	.04138	29.892	3.1075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00312	11.561	.03416	.23588	1.4062	.27976	.00687	32.216
Stddev	.00020	.096	.00128	.00330	.0033	.00623	.00652	.075
%RSD	6.5058	.82760	3.7349	1.4007	.23470	2.2270	94.974	.23255
#1	.00335	11.669	.03517	.23243	1.4095	.28680	.00689	32.264
#2	.00296	11.487	.03459	.23620	1.4062	.27751	.01338	32.254
#3	.00305	11.527	.03273	.23902	1.4029	.27496	.00033	32.130
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606079601 Acquired: 6/24/2016 12:46:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00507	.47885	.00429	-.00276	-.00000	9.0027	.00215
Stddev	.00101	.00357	.00463	.00394	.00060	.0349	.00057
%RSD	19.835	.74545	107.79	142.73	15473.	.38752	26.596
#1	.00531	.48291	.00292	-.00082	-.00067	9.0287	.00188
#2	.00397	.47741	.00051	-.00017	.00016	9.0163	.00176
#3	.00594	.47623	.00946	-.00729	.00049	8.9631	.00280
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8969.1	57515.	3201.7
Stddev	26.5	246.	24.8
%RSD	.29529	.42843	.77548
#1	8939.3	57271.	3173.1
#2	8989.8	57764.	3217.4
#3	8978.3	57511.	3214.7

Approved: June 25, 2016

Sample Name: L1606079602S Acquired: 6/24/2016 12:50:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20637**	**8.4667**	**.21215**	**2.3299**	**.55765**	**.02670**	**211.15**
Stddev	.00096	.0253	.00204	.0051	.00324	.00014	1.09
%RSD	.46531	.29867	.96304	.22080	.58025	.52132	.51779
#1	.20600	8.4950	.21018	2.3354	.56090	.02681	212.24
#2	.20746	8.4589	.21426	2.3291	.55443	.02675	210.05
#3	.20566	8.4462	.21202	2.3252	.55761	.02655	211.18
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.22906**	**.10963**	**.25719**	**.36273**	**3.8155**	**30.167**	**.57896**
Stddev	.00047	.00050	.00101	.00163	.0076	.190	.00294
%RSD	.20432	.45993	.39435	.45055	.20055	.62859	.50762
#1	.22922	.11004	.25752	.36247	3.8169	30.297	.58056
#2	.22942	.10977	.25800	.36448	3.8224	29.949	.57557
#3	.22853	.10907	.25606	.36125	3.8073	30.255	.58076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**37.556**	**3.7302**	**.53671**	**36.032**	**.27262**	**5.4147**	**1.3723**
Stddev	.123	.0178	.00271	.149	.00159	.0196	.0051
%RSD	.32741	.47715	.50439	.41445	.58430	.36193	.37180
#1	37.642	3.7506	.53723	36.198	.27244	5.4232	1.3668
#2	37.610	3.7181	.53911	35.908	.27429	5.4287	1.3769
#3	37.415	3.7219	.53377	35.990	.27112	5.3923	1.3731
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 25, 2016

Sample Name: L1606079602S Acquired: 6/24/2016 12:50:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.83295**	**.19904**	F **39.559**	**.51924**	**1.0206**	**.52855**	**.25056**
Stddev	.00381	.00362	.080	.00060	.0057	.00488	.00264
%RSD	.45758	1.8206	.20246	.11565	.55920	.92319	1.0541
#1	.83134	.19546	39.613	.51864	1.0248	.53056	.24812
#2	.83021	.20271	39.596	.51984	1.0141	.53210	.25336
#3	.83731	.19894	39.467	.51925	1.0230	.52298	.25020
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-1.0000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.50387**	**8.9533**	**.00345**
Stddev	.00127	.0255	.00012
%RSD	.25293	.28527	3.4468
#1	.50516	8.9684	.00349
#2	.50262	8.9677	.00353
#3	.50382	8.9238	.00331
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8874.4**	**56986.**	**3197.8**
Stddev	22.9	183.	31.1
%RSD	.25749	.32104	.97251
#1	8874.8	56794.	3162.9
#2	8851.3	57004.	3208.1
#3	8897.0	57159.	3222.4

Approved: June 25, 2016

Sample Name: L1606079603SD Acquired: 6/24/2016 12:53:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20348**	**8.3907**	**.20803**	**2.3205**	**.55659**	**.02675**	**210.01**
Stddev	.00067	.0070	.00227	.0041	.00308	.00007	1.03
%RSD	.32994	.08394	1.0916	.17615	.55344	.27317	.49200
#1	.20367	8.3952	.20541	2.3200	.55995	.02674	211.18
#2	.20273	8.3942	.20930	2.3249	.55593	.02682	209.61
#3	.20403	8.3826	.20938	2.3168	.55390	.02668	209.24
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.22784**	**.10941**	**.25693**	**.36070**	**3.7620**	**30.137**	**.57482**
Stddev	.00074	.00005	.00145	.00097	.0431	.085	.00367
%RSD	.32525	.04726	.56542	.26971	1.1460	.28231	.63776
#1	.22787	.10946	.25585	.36143	3.8070	30.228	.57882
#2	.22856	.10941	.25858	.36107	3.7577	30.060	.57405
#3	.22708	.10936	.25635	.35959	3.7211	30.123	.57161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**37.283**	**3.7093**	**.53679**	**35.887**	**.27192**	**5.4059**	**1.3646**
Stddev	.065	.0166	.00208	.175	.00166	.0027	.0036
%RSD	.17309	.44772	.38783	.48671	.61140	.04904	.26708
#1	37.346	3.7273	.53879	36.088	.27204	5.4084	1.3687
#2	37.217	3.6945	.53693	35.772	.27352	5.4063	1.3630
#3	37.287	3.7060	.53464	35.802	.27020	5.4031	1.3620
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 25, 2016

Sample Name: L1606079603SD Acquired: 6/24/2016 12:53:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.82814**	**.20815**	F **39.014**	**.51935**	**1.0179**	**.52731**	**.25200**
Stddev	.00575	.00609	.081	.00143	.0071	.00449	.00183
%RSD	.69405	2.9239	.20860	.27470	.69999	.85144	.72692
#1	.83047	.20229	39.103	.52035	1.0259	.52320	.25130
#2	.83236	.21444	38.997	.52000	1.0123	.53210	.25063
#3	.82159	.20773	38.943	.51772	1.0154	.52662	.25408
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-1.0000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.50350**	**8.8879**	**.00305**
Stddev	.00153	.0209	.00040
%RSD	.30487	.23506	13.114
#1	.50377	8.9078	.00308
#2	.50488	8.8897	.00344
#3	.50184	8.8661	.00264
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8883.7**	**57187.**	**3189.9**
Stddev	10.5	142.	22.6
%RSD	.11868	.24879	.70751
#1	8871.6	57137.	3171.1
#2	8889.1	57077.	3183.6
#3	8890.5	57348.	3214.9

Approved: June 25, 2016

Sample Name: L1606073202 Acquired: 6/24/2016 12:57:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00053**	**.02813**	**.00029**	**.04299**	**.22283**	**-.00000**	**25.162**
Stddev	.00134	.00280	.00082	.00132	.00277	.00003	.241
%RSD	252.84	9.9565	284.55	3.0648	1.2409	1017.5	.95893
#1	.00086	.02578	-.00044	.04447	.22588	-.00003	25.435
#2	-.00095	.03123	.00118	.04255	.22048	-.00000	24.976
#3	.00168	.02737	.00013	.04195	.22213	.00002	25.076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00035**	**.00120**	**.00613**	**.00149**	**.12035**	**1.4886**	**.02096**
Stddev	.00024	.00046	.00062	.00013	.01000	.0590	.00309
%RSD	67.894	38.073	10.067	8.8118	8.3106	3.9648	14.734
#1	.00061	.00150	.00611	.00148	.12839	1.5495	.01933
#2	.00031	.00067	.00552	.00163	.10915	1.4316	.01904
#3	.00014	.00141	.00675	.00137	.12352	1.4846	.02453
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**34.325**	**.04040**	**.00125**	F **349.63**	**.00292**	**1.6666**	**-.00030**
Stddev	.171	.00030	.00019	3.15	.00063	.0019	.00596
%RSD	.49775	.74283	15.066	.90066	21.672	.11272	1957.9
#1	34.517	.04074	.00107	353.18	.00219	1.6662	-.00079
#2	34.189	.04026	.00124	347.17	.00327	1.6687	.00588
#3	34.268	.04019	.00144	348.55	.00329	1.6650	-.00601
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 25, 2016

Sample Name: L1606073202 Acquired: 6/24/2016 12:57:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00152	-.00482	14.835	.00019	.47317	-.00604	-.00166
Stddev	.00130	.00284	.080	.00103	.00252	.00346	.00171
%RSD	85.788	58.877	.53712	538.43	.53296	57.319	103.01
#1	.00271	-.00798	14.887	-.00082	.47605	-.00268	-.00297
#2	.00013	-.00397	14.874	.00125	.47138	-.00959	-.00227
#3	.00172	-.00250	14.743	.00015	.47207	-.00585	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00139	.05739	-.00049
Stddev	.00087	.00042	.00019
%RSD	62.489	.72596	39.112
#1	-.00058	.05772	-.00067
#2	-.00129	.05752	-.00029
#3	-.00232	.05692	-.00049
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8802.2	55900.	3156.1
Stddev	11.1	153.	34.7
%RSD	.12621	.27340	1.0995
#1	8812.1	55724.	3124.8
#2	8804.3	55980.	3193.4
#3	8790.1	55996.	3150.2

Approved: June 25, 2016

Sample Name: L1606079401 Acquired: 6/24/2016 13:01:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.02285	.00059	.01157	.02302	.00000	4.1138	-.00026
Stddev	.00123	.00652	.00275	.00121	.00057	.00006	.0762	.00008
%RSD	894.56	28.519	469.79	10.441	2.4922	18199.	1.8516	31.902
#1	.00152	.03028	.00311	.01119	.02254	.00007	4.0311	-.00021
#2	-.00086	.01808	-.00234	.01292	.02366	-.00004	4.1811	-.00035
#3	-.00024	.02020	.00099	.01059	.02287	-.00003	4.1291	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00282	.00194	-.00143	1.2835	.37695	-.00156	.69132	.35802
Stddev	.00007	.00024	.00107	.0207	.07463	.00067	.08990	.00400
%RSD	2.5452	12.396	74.963	1.6127	19.797	43.171	13.004	1.1172
#1	.00277	.00188	-.00074	1.2630	.41442	-.00084	.58775	.35346
#2	.00278	.00173	-.00266	1.2831	.42541	-.00165	.73706	.35965
#3	.00290	.00220	-.00088	1.3044	.29101	-.00218	.74916	.36094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	1.0149	.00037	.00773	.00315	-.00108	-.00499	.64556
Stddev	.00014	.0157	.00052	.00611	.00167	.00193	.00347	.00397
%RSD	56.327	1.5446	141.49	79.119	52.980	178.21	69.644	.61433
#1	.00011	1.0219	.00010	.00835	.00264	.00009	-.00688	.64105
#2	.00039	.99693	.00097	.00133	.00501	-.00331	-.00098	.64715
#3	.00023	1.0258	.00003	.01351	.00179	-.00003	-.00710	.64849
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606079401 Acquired: 6/24/2016 13:01:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00092	.05805	-.00327	-.00056	-.00053	.00096	.00059
Stddev	.00114	.00063	.00604	.00146	.00079	.00036	.00072
%RSD	123.36	1.0876	184.48	261.81	147.56	37.712	123.27
#1	.00038	.05734	-.01006	-.00036	-.00137	.00094	.00093
#2	-.00142	.05854	-.00127	-.00211	-.00042	.00132	.00107
#3	-.00173	.05828	.00151	.00080	.00019	.00060	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9564.9	61114.	3314.5
Stddev	38.3	230.	20.8
%RSD	.40006	.37594	.62656
#1	9609.1	60917.	3337.8
#2	9542.4	61367.	3307.7
#3	9543.2	61059.	3298.0

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 13:05:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41271	10.424	.41660	.51679	1.0602	.05053	10.566	.05362
Stddev	.00072	.006	.00234	.00241	.0072	.00015	.111	.00017
%RSD	.17421	.06111	.56160	.46715	.67846	.30430	1.0504	.32244
#1	.41217	10.431	.41393	.51409	1.0550	.05068	10.515	.05356
#2	.41352	10.425	.41825	.51875	1.0572	.05054	10.490	.05381
#3	.41242	10.418	.41764	.51753	1.0684	.05038	10.693	.05348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21181	.51018	.52957	4.1573	53.268	1.0472	10.263	.52911
Stddev	.00033	.00144	.00298	.0756	.251	.0098	.140	.00211
%RSD	.15714	.28312	.56359	1.8185	.47129	.93371	1.3615	.39822
#1	.21169	.51128	.52701	4.1046	53.131	1.0438	10.102	.52758
#2	.21219	.51070	.53285	4.1234	53.116	1.0395	10.336	.52824
#3	.21155	.50854	.52885	4.2439	53.558	1.0582	10.352	.53151
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0610	52.921	.52624	10.442	.52470	1.2541	.42316	5.4481
Stddev	.0035	.320	.00081	.014	.00136	.0015	.01147	.0021
%RSD	.33117	.60540	.15460	.13298	.25996	.12313	2.7101	.03871
#1	1.0639	52.775	.52615	10.457	.52471	1.2556	.42209	5.4501
#2	1.0620	52.700	.52548	10.441	.52332	1.2541	.43512	5.4484
#3	1.0571	53.289	.52710	10.429	.52605	1.2526	.41226	5.4459
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 13:05:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0484**	**1.0667**	**1.0685**	**.52661**	**1.0185**	**1.0523**	**1.0248**
Stddev	.0029	.0081	.0058	.00076	.0042	.0021	.0004
%RSD	.27896	.76213	.54537	.14465	.41241	.19459	.03894
#1	1.0494	1.0599	1.0694	.52577	1.0227	1.0505	1.0248
#2	1.0508	1.0645	1.0623	.52727	1.0143	1.0545	1.0251
#3	1.0451	1.0757	1.0739	.52677	1.0186	1.0520	1.0243
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8882.5**	**56177.**	**3089.4**
Stddev	29.7	314.	12.2
%RSD	.33414	.55818	.39365
#1	8886.9	55855.	3082.5
#2	8850.9	56481.	3103.4
#3	8909.8	56196.	3082.2

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 13:08:45 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.00717**	**.00127**	**.00627**	**.00069**	**-.00006**	**.00287**	**-.00006**
Stddev	.00063	.00318	.00265	.00132	.00023	.00015	.01707	.00010
%RSD	166.42	44.334	208.86	21.039	33.283	255.17	595.44	163.89
#1	-.00060	.00479	-.00178	.00475	.00046	-.00015	.01040	.00004
#2	-.00086	.00594	.00294	.00693	.00092	.00012	-.01667	-.00008
#3	.00033	.01078	.00264	.00712	.00068	-.00014	.01487	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00066**	**.00118**	**-.00013**	**.00795**	**.06402**	**.00192**	**.03240**	**-.00221**
Stddev	.00031	.00059	.00046	.01622	.02889	.00308	.06616	.00161
%RSD	46.769	49.794	363.48	203.93	45.129	160.88	204.20	72.497
#1	-.00075	.00088	-.00022	-.00484	.09445	.00205	.07082	-.00406
#2	-.00091	.00081	-.00053	.00251	.06064	.00493	.07038	-.00147
#3	-.00031	.00186	.00037	.02619	.03696	-.00123	-.04400	-.00112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00371**	**.05101**	**-.00022**	**.00146**	**-.00202**	**.00697**	**.00163**	**.00460**
Stddev	.00026	.03364	.00082	.00530	.00080	.00025	.00566	.00230
%RSD	6.8808	65.949	378.04	362.25	39.756	3.5609	347.26	49.896
#1	.00342	.02221	.00011	.00725	-.00248	.00705	-.00479	.00356
#2	.00389	.08799	-.00115	-.00314	-.00109	.00717	.00590	.00724
#3	.00383	.04284	.00039	.00027	-.00249	.00669	.00378	.00301
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 13:08:45 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.00033**	**.00076**	**.00152**	**-.00024**	**.00025**	**.00081**
Stddev	.00122	.00031	.00671	.00233	.00128	.00006	.00064
%RSD	703.43	94.176	886.46	153.63	523.84	22.798	78.759
#1	-.00032	.00041	-.00664	.00398	-.00158	.00031	.00152
#2	.00111	-.00001	.00247	-.00065	-.00011	.00025	.00027
#3	-.00131	.00061	.00645	.00122	.00096	.00019	.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9421.6**	**60299.**	**3256.8**
Stddev	40.2	274.	24.0
%RSD	.42621	.45387	.73587
#1	9409.1	60564.	3247.8
#2	9466.5	60316.	3284.0
#3	9389.1	60018.	3238.7

Approved: June 25, 2016

Sample Name: L1606079404 Acquired: 6/24/2016 13:12:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00130	.03039	.00126	.01940	.01369	-.00002	1.1950	-.00001
Stddev	.00260	.00196	.00092	.00094	.00095	.00007	.0239	.00007
%RSD	199.44	6.4564	73.167	4.8262	6.9231	344.58	2.0032	832.28
#1	.00428	.03265	.00020	.01939	.01470	-.00010	1.1970	-.00005
#2	-.00048	.02933	.00188	.02034	.01282	.00002	1.2179	.00007
#3	.00011	.02918	.00170	.01847	.01356	.00002	1.1702	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00476	.00102	-.00131	.16723	.50681	.00113	.89694	.29822
Stddev	.00006	.00143	.00104	.01047	.10066	.00302	.04328	.00708
%RSD	1.2851	139.37	79.584	6.2602	19.860	268.19	4.8253	2.3747
#1	.00479	.00230	-.00080	.16355	.51557	-.00071	.91414	.29874
#2	.00479	.00129	-.00063	.17904	.60281	.00461	.84771	.29089
#3	.00469	-.00052	-.00251	.15910	.40207	-.00053	.92899	.30502
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	1.7317	.00193	.00148	-.00119	.00062	-.00351	.47199
Stddev	.00027	.0084	.00075	.00037	.00298	.00284	.00231	.00520
%RSD	36.771	.48737	38.705	24.708	250.89	456.80	65.733	1.1011
#1	.00105	1.7226	.00246	.00187	.00075	-.00174	-.00431	.47009
#2	.00065	1.7392	.00108	.00115	-.00462	-.00018	-.00531	.47787
#3	.00053	1.7334	.00225	.00142	.00031	.00378	-.00091	.46801
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606079404 Acquired: 6/24/2016 13:12:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00037	.01018	-.00222	-.00094	-.00079	.00167	-.00018
Stddev	.00054	.00018	.00543	.00236	.00070	.00023	.00054
%RSD	144.91	1.8060	245.09	251.26	89.393	13.688	304.63
#1	-.00075	.01035	.00066	-.00355	-.00160	.00168	.00043
#2	.00024	.00998	.00118	.00103	-.00040	.00190	-.00060
#3	-.00060	.01019	-.00848	-.00029	-.00036	.00144	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9520.7	60796.	3261.1
Stddev	19.0	197.	21.3
%RSD	.19963	.32380	.65193
#1	9542.3	60651.	3283.6
#2	9506.7	61020.	3258.3
#3	9513.1	60717.	3241.3

Approved: June 25, 2016

Sample Name: L1606079604 Acquired: 6/24/2016 13:16:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.21348	.00260	.19976	.03690	-.00001	52.193	.22780
Stddev	.00107	.00411	.00425	.00172	.00071	.00003	.631	.00068
%RSD	113.51	1.9260	163.38	.86255	1.9207	405.78	1.2096	.29779
#1	.00212	.21057	.00526	.20093	.03689	-.00005	52.321	.22786
#2	.00003	.21818	-.00230	.20058	.03620	.00001	51.507	.22845
#3	.00068	.21169	.00486	.19779	.03761	.00001	52.750	.22710
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05125	.00479	.36483	1.6560	14.660	.00877	5.5763	1.7147
Stddev	.00059	.00039	.00218	.0283	.159	.00350	.1053	.0147
%RSD	1.1535	8.1173	.59715	1.7093	1.0875	39.833	1.8880	.85941
#1	.05172	.00435	.36580	1.6545	14.708	.00650	5.6506	1.7174
#2	.05144	.00493	.36636	1.6284	14.482	.00702	5.4558	1.6988
#3	.05059	.00509	.36234	1.6850	14.789	.01280	5.6224	1.7279
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00313	144.14	.03035	1.0211	.07552	1.1557	.00411	6.5697
Stddev	.00027	1.70	.00122	.0047	.00250	.0045	.00525	.0440
%RSD	8.5563	1.1770	4.0360	.45700	3.3107	.39015	127.81	.67014
#1	.00330	144.93	.02943	1.0218	.07815	1.1592	.00478	6.5572
#2	.00282	142.19	.02987	1.0254	.07523	1.1572	-.00145	6.6186
#3	.00326	145.29	.03174	1.0161	.07318	1.1506	.00899	6.5332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606079604 Acquired: 6/24/2016 13:16:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.18481	-.00844	-.00188	-.00071	5.6059	.00341
Stddev	.00069	.00240	.00426	.00360	.00127	.0265	.00050
%RSD	794.10	1.2974	50.412	191.50	178.39	.47276	14.789
#1	-.00018	.18518	-.01246	-.00564	-.00052	5.6217	.00292
#2	.00087	.18225	-.00889	.00153	-.00206	5.6207	.00337
#3	-.00043	.18700	-.00398	-.00152	.00045	5.5753	.00393
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8988.0	57229.	3212.0
Stddev	23.6	64.	31.1
%RSD	.26299	.11256	.96670
#1	8965.7	57166.	3192.3
#2	9012.7	57227.	3247.8
#3	8985.6	57294.	3196.0

Approved: June 25, 2016

Sample Name: L1606079604PS Acquired: 6/24/2016 13:20:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573149-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20280**	**5.3027**	**.21231**	**1.1801**	**.55540**	**.02495**	**51.809**	**.23407**
Stddev	.00015	.0166	.00321	.0002	.00387	.00010	.375	.00041
%RSD	.07637	.31377	1.5120	.01812	.69757	.40956	.72434	.17452
#1	.20297	5.3201	.20923	1.1802	.55963	.02507	52.222	.23449
#2	.20267	5.2869	.21564	1.1802	.55202	.02492	51.489	.23404
#3	.20275	5.3010	.21207	1.1798	.55456	.02487	51.718	.23367
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.15079**	**.25382**	**.59150**	**3.4910**	**39.388**	**.53018**	**9.9531**	**1.8085**
Stddev	.00020	.00094	.00182	.0662	.329	.00406	.0974	.0116
%RSD	.13400	.36852	.30736	1.8955	.83526	.76532	.97892	.64231
#1	.15097	.25482	.59345	3.5674	39.766	.53137	9.9424	1.8174
#2	.15082	.25365	.58986	3.4523	39.170	.52566	10.055	1.7953
#3	.15057	.25298	.59118	3.4533	39.227	.53351	9.8614	1.8127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53968**	**156.98**	**.28383**	**6.1212**	**.32198**	**1.6775**	**.20819**	**8.6076**
Stddev	.00242	1.04	.00051	.0203	.00460	.0049	.00352	.0069
%RSD	.44873	.66195	.17819	.33148	1.4283	.29355	1.6930	.08070
#1	.54031	158.15	.28435	6.1431	.31988	1.6722	.20467	8.6149
#2	.54173	156.18	.28379	6.1177	.32725	1.6786	.21172	8.6066
#3	.53701	156.60	.28334	6.1030	.31880	1.6818	.20817	8.6011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606079604PS Acquired: 6/24/2016 13:20:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573149-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51592**	**.68475**	**.51913**	**.25074**	**.50296**	**5.5697**	**.00437**
Stddev	.00194	.00530	.00608	.00071	.00238	.0089	.00064
%RSD	.37560	.77350	1.1715	.28316	.47332	.16068	14.638
#1	.51652	.69043	.51759	.25150	.50454	5.5773	.00374
#2	.51749	.67994	.51397	.25009	.50413	5.5720	.00435
#3	.51376	.68387	.52584	.25065	.50022	5.5599	.00502
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8909.6**	**56843.**	**3204.4**
Stddev	1.8	290.	30.2
%RSD	.02032	.50970	.94121
#1	8908.8	56575.	3171.8
#2	8911.6	56804.	3210.2
#3	8908.2	57150.	3231.3

Approved: June 25, 2016

Sample Name: L1606079604SDL Acquired: 6/24/2016 13:24:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573149-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	.04368	.00122	.04349	.00806	.00002	10.277	.04768
Stddev	.00134	.00228	.00094	.00292	.00145	.00002	.058	.00062
%RSD	180.24	5.2256	77.601	6.7258	18.013	78.531	.56466	1.2952
#1	.00171	.04149	.00122	.04259	.00639	.00001	10.219	.04698
#2	-.00079	.04604	.00027	.04676	.00878	.00002	10.275	.04788
#3	.00130	.04352	.00216	.04112	.00901	.00005	10.335	.04817
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01026	.00202	.07565	.33169	2.8985	.00465	1.0790	.33882
Stddev	.00047	.00069	.00245	.00173	.0396	.00433	.0895	.00405
%RSD	4.6085	33.927	3.2368	.52127	1.3666	93.002	8.2910	1.1946
#1	.01002	.00234	.07292	.33127	2.9371	.00369	1.1027	.33415
#2	.00994	.00249	.07637	.33358	2.9004	.00938	1.1541	.34103
#3	.01080	.00123	.07766	.33020	2.8580	.00089	.98002	.34129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00099	28.363	.00700	.21122	.01400	.23816	-.00306	1.3640
Stddev	.00041	.289	.00119	.00332	.00222	.00413	.00166	.0164
%RSD	40.909	1.0206	17.017	1.5709	15.868	1.7347	54.387	1.2062
#1	.00110	28.030	.00564	.20999	.01155	.23760	-.00373	1.3521
#2	.00054	28.554	.00752	.20870	.01588	.24255	-.00116	1.3571
#3	.00133	28.504	.00785	.21498	.01456	.23435	-.00428	1.3828
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606079604SDL Acquired: 6/24/2016 13:24:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573149-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00035**	**.03606**	**-.00264**	**.00053**	**-.00029**	**1.2005**	**.00050**
Stddev	.00043	.00042	.00853	.00500	.00064	.0141	.00037
%RSD	124.76	1.1669	322.65	938.33	219.25	1.1743	73.895
#1	-.00085	.03565	.00325	-.00513	-.00080	1.1865	.00067
#2	-.00013	.03603	.00124	.00430	.00042	1.2003	.00008
#3	-.00007	.03649	-.01242	.00243	-.00049	1.2147	.00076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9105.6**	**58170.**	**3212.7**
Stddev	27.3	280.	23.5
%RSD	.30017	.48123	.73253
#1	9103.8	58409.	3225.9
#2	9133.8	57862.	3185.5
#3	9079.2	58239.	3226.6

Approved: June 25, 2016

Sample Name: L1606079604SDL Acquired: 6/24/2016 13:28:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573149-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00040**	**.00857**	**.00134**	**.01061**	**.00165**	**-.00001**	**1.9132**	**.00874**
Stddev	.00181	.00667	.00234	.00249	.00017	.00001	.0173	.00010
%RSD	455.89	77.825	174.32	23.446	10.373	116.47	.90342	1.1541
#1	-.00243	.00394	-.00136	.01199	.00166	-.00002	1.8935	.00866
#2	.00104	.01621	.00261	.01210	.00181	.00000	1.9199	.00871
#3	.00020	.00555	.00278	.00774	.00147	-.00001	1.9261	.00885
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00120**	**.00140**	**.01276**	**.04419**	**.61000**	**-.00198**	**.19513**	**.06168**
Stddev	.00016	.00155	.00074	.02220	.04844	.00354	.07685	.00239
%RSD	13.116	110.63	5.7727	50.228	7.9412	178.84	39.385	3.8731
#1	.00124	-.00031	.01191	.06977	.66578	-.00239	.22434	.06192
#2	.00103	.00272	.01324	.03282	.57847	.00175	.25310	.06394
#3	.00134	.00179	.01313	.02998	.58575	-.00529	.10796	.05918
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**5.4833**	**.00115**	**.03698**	**.00356**	**.04416**	**-.00362**	**.25512**
Stddev	.00017	.0430	.00058	.00189	.00182	.00432	.00289	.00216
%RSD	41.091	.78460	50.355	5.1167	51.028	9.7754	79.738	.84721
#1	.00022	5.4343	.00122	.03480	.00150	.04644	-.00041	.25572
#2	.00054	5.5006	.00054	.03817	.00427	.04686	-.00445	.25692
#3	.00047	5.5150	.00169	.03798	.00492	.03918	-.00600	.25272
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606079604SDL Acquired: 6/24/2016 13:28:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573149-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00062	.00660	-.00393	.00088	-.00118	.21826	.00069
Stddev	.00041	.00021	.00248	.00276	.00061	.00108	.00021
%RSD	65.439	3.1746	63.297	315.82	51.724	.49261	30.159
#1	-.00015	.00666	-.00674	-.00231	-.00182	.21725	.00045
#2	-.00090	.00637	-.00302	.00267	-.00111	.21814	.00079
#3	-.00081	.00678	-.00202	.00226	-.00060	.21939	.00083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9580.6	61020.	3283.6
Stddev	11.6	138.	12.0
%RSD	.12149	.22602	.36655
#1	9581.4	60926.	3271.0
#2	9591.8	60956.	3294.9
#3	9568.6	61178.	3284.8

Approved: June 25, 2016

Sample Name: PBW 96 Acquired: 6/24/2016 13:31:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	.05750	-.00115	.00379	.00035	.00004	.14547	-.00001
Stddev	.00114	.00534	.00113	.00242	.00047	.00004	.01120	.00032
%RSD	155.47	9.2868	98.477	63.976	132.21	109.74	7.6992	4547.8
#1	-.00055	.06232	.00006	.00550	.00089	.00008	.15412	.00029
#2	.00165	.05843	-.00133	.00485	.00009	.00004	.13282	-.00034
#3	.00110	.05176	-.00218	.00102	.00008	-.00000	.14948	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	.00132	-.00117	.07602	.06648	-.00036	.02744	.00190
Stddev	.00018	.00131	.00109	.00738	.09369	.00127	.07199	.00082
%RSD	89.489	99.783	93.607	9.7097	140.92	355.05	262.29	42.953
#1	-.00009	.00101	-.00242	.07287	.07235	-.00017	-.04949	.00102
#2	-.00011	.00276	-.00042	.08445	.15710	.00081	.09317	.00263
#3	-.00041	.00019	-.00066	.07074	-.03000	-.00171	.03866	.00205
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.10510	.00092	-.01236	.00247	-.00114	-.00226	.03159
Stddev	.00026	.02680	.00039	.01242	.00253	.00255	.00507	.00112
%RSD	54.501	25.498	41.922	100.45	102.42	223.14	224.49	3.5471
#1	.00035	.09773	.00136	-.02382	-.00008	-.00396	-.00341	.03261
#2	.00078	.08276	.00067	-.01410	.00250	-.00049	.00329	.03178
#3	.00031	.13482	.00072	.00083	.00497	.00102	-.00665	.03039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: PBW 96 Acquired: 6/24/2016 13:31:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00097	.00038	-.00465	.00081	-.00039	.00272	.00004
Stddev	.00085	.00027	.00283	.00149	.00021	.00004	.00053
%RSD	87.746	71.935	60.728	183.22	53.537	1.5511	1208.2
#1	-.00022	.00065	-.00629	.00062	-.00015	.00268	-.00031
#2	-.00189	.00011	-.00139	-.00057	-.00048	.00274	.00065
#3	-.00079	.00036	-.00628	.00240	-.00054	.00276	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9001.9	57577.	3145.6
Stddev	5.1	289.	25.4
%RSD	.05668	.50260	.80877
#1	9003.5	57315.	3116.7
#2	8996.2	57888.	3155.1
#3	9006.1	57528.	3164.8

Approved: June 25, 2016

Sample Name: LCSW 96 Acquired: 6/24/2016 13:35:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19950**	**5.0939**	**.20372**	**1.0208**	**.52299**	**.02445**	**5.3163**	**.02590**
Stddev	.00336	.0048	.00192	.0030	.00511	.00010	.0742	.00036
%RSD	1.6828	.09397	.94086	.29468	.97686	.41134	1.3965	1.3919
#1	.20287	5.0993	.20151	1.0195	.52801	.02450	5.4020	.02630
#2	.19946	5.0902	.20478	1.0242	.51780	.02452	5.2747	.02561
#3	.19616	5.0921	.20487	1.0186	.52318	.02434	5.2723	.02578
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10423**	**.25027**	**.26092**	**2.0255**	**26.189**	**.52677**	**5.1629**	**.25877**
Stddev	.00040	.00138	.00033	.0200	.298	.00291	.1198	.00454
%RSD	.38380	.55012	.12503	.98782	1.1361	.55208	2.3196	1.7548
#1	.10469	.25146	.26057	2.0378	26.464	.52733	5.0560	.26368
#2	.10408	.24876	.26099	2.0025	25.873	.52362	5.2924	.25792
#3	.10393	.25058	.26122	2.0363	26.231	.52935	5.1404	.25472
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53131**	**26.270**	**.25798**	**4.9905**	**.25688**	**.61782**	**.20100**	**2.6938**
Stddev	.00094	.237	.00094	.0107	.00325	.00214	.00148	.0078
%RSD	.17719	.90374	.36573	.21426	1.2655	.34651	.73738	.28974
#1	.53238	26.488	.25831	5.0026	.26007	.61978	.20078	2.7028
#2	.53091	26.017	.25692	4.9867	.25701	.61816	.20257	2.6890
#3	.53063	26.306	.25872	4.9822	.25357	.61554	.19963	2.6897
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LCSW 96 Acquired: 6/24/2016 13:35:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51498**	**.53518**	**.52231**	**.25730**	**.49620**	**.51662**	**.00156**
Stddev	.00201	.00522	.00398	.00216	.00213	.00142	.00028
%RSD	.38972	.97497	.76237	.83781	.43000	.27422	18.205
#1	.51604	.54037	.52691	.25811	.49794	.51823	.00133
#2	.51624	.52993	.51991	.25486	.49685	.51608	.00147
#3	.51266	.53524	.52012	.25893	.49382	.51556	.00188
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8976.4**	**57450.**	**3148.6**
Stddev	16.7	311.	9.0
%RSD	.18579	.54143	.28702
#1	8994.0	57165.	3138.5
#2	8960.8	57403.	3156.0
#3	8974.5	57782.	3151.2

Approved: June 25, 2016

Sample Name: L1606127902 Acquired: 6/24/2016 13:39:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	15.737	.00504	.17704	.19989	.00100	197.77	.00050
Stddev	.00231	.039	.00324	.00132	.00099	.00006	.59	.00022
%RSD	1507.6	.25058	64.174	.74832	.49635	5.6554	.29748	43.504
#1	.00250	15.783	.00357	.17765	.20103	.00098	198.43	.00025
#2	-.00170	15.713	.00280	.17553	.19919	.00095	197.29	.00066
#3	-.00126	15.717	.00875	.17796	.19946	.00106	197.58	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01128	.04276	.02006	22.872	6.2512	.04284	80.521	2.6589
Stddev	.00030	.00028	.00041	.038	.0825	.00592	.183	.0133
%RSD	2.6928	.64348	2.0282	.16663	1.3204	13.819	.22689	.50023
#1	.01147	.04247	.01996	22.869	6.1704	.04629	80.723	2.6697
#2	.01143	.04279	.02051	22.835	6.3354	.03601	80.469	2.6441
#3	.01093	.04302	.01971	22.911	6.2479	.04623	80.369	2.6630
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00681	18.837	.02941	.79338	.01403	-.00060	.00131	29.051
Stddev	.00038	.047	.00138	.00484	.00107	.00255	.00127	.105
%RSD	5.5050	.25020	4.6749	.61023	7.5974	423.13	97.049	.36059
#1	.00646	18.890	.03067	.78819	.01333	-.00349	.00219	29.106
#2	.00720	18.818	.02794	.79419	.01526	.00035	-.00015	29.116
#3	.00678	18.801	.02963	.79777	.01350	.00133	.00188	28.930
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606127902 Acquired: 6/24/2016 13:39:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	.96724	.15250	.00117	.03346	.15890	.00476
Stddev	.00040	.00326	.00547	.00105	.00024	.00053	.00041
%RSD	34.705	.33744	3.5900	89.594	.72954	.33381	8.5619
#1	.00163	.97101	.14892	.00229	.03370	.15915	.00519
#2	.00097	.96527	.14979	.00101	.03348	.15926	.00472
#3	.00090	.96545	.15881	.00021	.03321	.15829	.00438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8809.1	56197.	3156.2
Stddev	17.1	169.	15.4
%RSD	.19391	.29996	.48903
#1	8823.3	56057.	3138.5
#2	8813.9	56150.	3167.0
#3	8790.1	56384.	3163.0

Approved: June 25, 2016

Sample Name: L1606127903S Acquired: 6/24/2016 13:43:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19326**	**20.629**	**.20505**	**1.1242**	**.67887**	**.02411**	**202.49**	**.02516**
Stddev	.00124	.031	.00568	.0038	.00396	.00002	1.42	.00004
%RSD	.63990	.14876	2.7693	.33476	.58405	.08259	.70154	.15637
#1	.19467	20.662	.20382	1.1250	.68345	.02412	204.10	.02518
#2	.19238	20.624	.21124	1.1275	.67642	.02413	201.40	.02512
#3	.19273	20.601	.20009	1.1201	.67675	.02409	201.97	.02518
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10665**	**.26645**	**.25704**	**21.289**	**30.486**	**.53447**	**84.560**	**2.9029**
Stddev	.00029	.00084	.00157	.139	.180	.01012	.672	.0309
%RSD	.27245	.31377	.61183	.65337	.58896	1.8942	.79485	1.0632
#1	.10698	.26680	.25771	21.445	30.561	.54519	85.295	2.9385
#2	.10646	.26550	.25817	21.245	30.281	.52507	83.976	2.8873
#3	.10650	.26706	.25524	21.177	30.616	.53315	84.410	2.8830
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50244**	**43.573**	**.26189**	**5.8590**	**.25372**	**.55116**	**.19410**	**32.382**
Stddev	.00157	.327	.00132	.0159	.00269	.00988	.00408	.058
%RSD	.31334	.74940	.50585	.27121	1.0586	1.7922	2.1037	.17891
#1	.50275	43.950	.26334	5.8677	.25501	.56055	.18982	32.390
#2	.50384	43.381	.26161	5.8686	.25064	.54086	.19452	32.435
#3	.50074	43.388	.26073	5.8406	.25553	.55206	.19795	32.320
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606127903S Acquired: 6/24/2016 13:43:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48639**	**1.4540**	**.59410**	**.23913**	**.50539**	**.70433**	**.01017**
Stddev	.00047	.0117	.00764	.00139	.00117	.00111	.00008
%RSD	.09761	.80721	1.2860	.58290	.23204	.15818	.79769
#1	.48692	1.4674	.59934	.23991	.50616	.70442	.01015
#2	.48623	1.4457	.58533	.23752	.50597	.70539	.01010
#3	.48602	1.4488	.59762	.23995	.50404	.70317	.01026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8732.4**	**55709.**	**3136.3**
Stddev	12.8	133.	9.5
%RSD	.14604	.23913	.30143
#1	8741.8	55582.	3125.8
#2	8737.4	55848.	3138.8
#3	8717.9	55698.	3144.2

Approved: June 25, 2016

Sample Name: L1606127904SD Acquired: 6/24/2016 13:47:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19840**	**21.664**	**.21549**	**1.1518**	**.68554**	**.02470**	**203.86**
Stddev	.00350	.173	.00239	.0093	.00255	.00012	.48
%RSD	1.7631	.79987	1.1079	.81137	.37163	.47958	.23568
#1	.19923	21.766	.21789	1.1585	.68363	.02482	204.27
#2	.20141	21.762	.21547	1.1557	.68843	.02468	203.97
#3	.19456	21.464	.21311	1.1411	.68456	.02459	203.33
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02560**	**.10985**	**.27087**	**.26369**	**21.250**	**31.671**	**.54653**
Stddev	.00010	.00064	.00286	.00112	.102	.097	.00418
%RSD	.40730	.58209	1.0577	.42589	.48182	.30643	.76563
#1	.02572	.11059	.27368	.26496	21.309	31.764	.54887
#2	.02555	.10947	.27099	.26284	21.310	31.678	.54902
#3	.02554	.10950	.26795	.26328	21.132	31.570	.54170
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**85.131**	**2.9406**	**.52074**	**44.518**	**.26846**	**6.1103**	**.26144**
Stddev	.178	.0135	.00200	.085	.00112	.0182	.00268
%RSD	.20906	.45814	.38482	.19000	.41689	.29863	1.0264
#1	84.960	2.9560	.52294	44.584	.26874	6.1155	.26438
#2	85.315	2.9345	.52024	44.548	.26723	6.0900	.26081
#3	85.119	2.9312	.51903	44.423	.26941	6.1253	.25913
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 25, 2016

Sample Name: L1606127904SD Acquired: 6/24/2016 13:47:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.57453**	**.19709**	F **36.344**	**.50382**	**1.4735**	**.64850**	**.24413**
Stddev	.00418	.00789	.056	.00257	.0019	.00602	.00132
%RSD	.72824	4.0016	.15274	.50962	.13256	.92766	.53874
#1	.57287	.19772	36.404	.50677	1.4750	.65107	.24435
#2	.57929	.20464	36.334	.50206	1.4742	.65280	.24272
#3	.57143	.18890	36.295	.50263	1.4713	.64162	.24532
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-1.0000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.52196**	**.56684**	**.01080**
Stddev	.00375	.00342	.00015
%RSD	.71940	.60354	1.3985
#1	.52583	.56511	.01079
#2	.52171	.56462	.01095
#3	.51833	.57078	.01065
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8712.5**	**55773.**	**3120.2**
Stddev	3.2	331.	12.8
%RSD	.03729	.59418	.41169
#1	8713.6	55403.	3119.9
#2	8708.8	55873.	3107.5
#3	8715.0	56043.	3133.2

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 13:50:42 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38140**	**9.6036**	**.38549**	**.47990**	**.97583**	**.04697**	**9.6736**	**.04936**
Stddev	.00083	.0155	.00161	.00272	.00700	.00039	.0481	.00043
%RSD	.21651	.16083	.41796	.56755	.71776	.83544	.49724	.87879
#1	.38093	9.6166	.38518	.48096	.97193	.04728	9.6575	.04905
#2	.38235	9.6078	.38723	.48193	.97165	.04709	9.6356	.04986
#3	.38091	9.5866	.38405	.47680	.98392	.04652	9.7277	.04917
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19524**	**.47322**	**.49109**	**3.8323**	**49.097**	**.96492**	**9.4888**	**.48870**
Stddev	.00085	.00448	.00144	.0650	.263	.00666	.0433	.00395
%RSD	.43326	.94684	.29398	1.6953	.53510	.68973	.45628	.80862
#1	.19584	.47670	.49055	3.7748	48.999	.96096	9.4388	.48630
#2	.19562	.47480	.49272	3.8193	48.897	.96120	9.5117	.48654
#3	.19427	.46817	.48999	3.9028	49.395	.97260	9.5158	.49326
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.98079**	**48.817**	**.48770**	**9.6771**	**.48808**	**1.1568**	**.39117**	**5.0500**
Stddev	.00652	.291	.00120	.0180	.00541	.0169	.00115	.0077
%RSD	.66469	.59531	.24539	.18616	1.1087	1.4624	.29359	.15164
#1	.98623	48.688	.48889	9.6790	.49412	1.1640	.39004	5.0445
#2	.98257	48.614	.48771	9.6941	.48368	1.1689	.39234	5.0588
#3	.97357	49.150	.48649	9.6582	.48644	1.1374	.39112	5.0467
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 13:50:42 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.97107	.97794	.98195	.48922	.94029	.97547	.95262
Stddev	.00207	.00590	.00292	.00294	.00290	.00075	.01313
%RSD	.21287	.60287	.29764	.60052	.30843	.07725	1.3786
#1	.97343	.97629	.98320	.49172	.94213	.97546	.93766
#2	.96960	.97304	.97861	.48994	.93695	.97623	.95795
#3	.97018	.98448	.98404	.48598	.94180	.97472	.96224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9252.7	58629.	3212.3
Stddev	24.3	490.	28.7
%RSD	.26211	.83545	.89213
#1	9236.4	58082.	3245.1
#2	9241.1	58779.	3198.9
#3	9280.5	59026.	3192.7

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 13:54:19 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	-.00051	.00183	.00655	.00026	-.00000	.00852	-.00022
Stddev	.00064	.00733	.00105	.00104	.00009	.00005	.04466	.00023
%RSD	179.80	1430.7	57.749	15.843	35.947	4708.9	523.90	106.47
#1	.00048	.00366	.00121	.00743	.00035	-.00005	.04854	-.00006
#2	-.00034	-.00897	.00123	.00681	.00027	-.00001	-.03965	-.00048
#3	.00092	.00378	.00304	.00540	.00016	.00005	.01668	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.00227	-.00072	-.01318	.07124	.00049	.08648	-.00199
Stddev	.00023	.00064	.00050	.02673	.03864	.00139	.01953	.00183
%RSD	260.70	28.077	69.839	202.79	54.246	286.14	22.586	92.121
#1	-.00012	.00157	-.00036	-.03888	.08538	-.00076	.08196	-.00332
#2	-.00029	.00242	-.00130	-.01513	.10082	.00022	.10787	-.00274
#3	.00016	.00282	-.00051	.01447	.02752	.00199	.06960	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00342	.05697	-.00032	.00309	.00127	.00324	.00119	.00515
Stddev	.00032	.02946	.00116	.00580	.00261	.00123	.00629	.00054
%RSD	9.4112	51.713	361.47	187.66	205.38	38.030	528.76	10.506
#1	.00378	.04217	.00100	-.00305	.00285	.00465	.00735	.00465
#2	.00317	.09090	-.00078	.00846	.00271	.00268	.00143	.00572
#3	.00331	.03785	-.00118	.00386	-.00175	.00238	-.00522	.00507
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 13:54:19 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00031**	**.00036**	**.00418**	**-.00158**	**-.00051**	**.00017**	**.00102**
Stddev	.00053	.00033	.01062	.00055	.00051	.00029	.00036
%RSD	171.93	91.019	254.34	34.602	100.39	177.91	35.103
#1	-.00010	.00004	.00137	-.00145	-.00031	.00038	.00135
#2	-.00091	.00035	.01591	-.00218	-.00013	.00029	.00064
#3	.00009	.00069	-.00476	-.00111	-.00109	-.00017	.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9545.2**	**60729.**	**3266.7**
Stddev	24.9	237.	23.8
%RSD	.26058	.39065	.72829
#1	9540.3	60493.	3240.2
#2	9523.2	60727.	3286.2
#3	9572.2	60967.	3273.7

Approved: June 25, 2016

Sample Name: L1606096103 Acquired: 6/24/2016 13:58:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00012	.09140	.00112	.03611	.03358	-.00001	50.084	.00013
Stddev	.00022	.00238	.00188	.00195	.00041	.00008	.422	.00018
%RSD	185.41	2.6039	167.01	5.3975	1.2258	580.55	.84237	141.64
#1	.00013	.08878	-.00078	.03488	.03351	-.00003	50.499	.00032
#2	-.00026	.09197	.00117	.03835	.03321	.00007	49.656	-.00003
#3	-.00023	.09344	.00297	.03508	.03403	-.00009	50.096	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	.00184	-.00114	.03656	1.3467	.00581	15.245	.00051
Stddev	.00014	.00073	.00091	.02407	.0686	.00337	.260	.00254
%RSD	61.138	39.585	79.397	65.853	5.0911	58.003	1.7074	500.61
#1	-.00015	.00167	-.00218	.01202	1.2696	.00901	15.489	.00250
#2	-.00015	.00121	-.00074	.03751	1.4008	.00612	14.971	.00138
#3	-.00040	.00264	-.00050	.06014	1.3699	.00229	15.275	-.00236
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00260	9.6468	.00019	-.00521	-.00233	.00331	.00457	4.0826
Stddev	.00028	.0838	.00028	.00366	.00219	.00207	.00459	.0345
%RSD	10.599	.86900	141.53	70.238	94.267	62.612	100.63	.84571
#1	.00231	9.7410	.00004	-.00109	.00018	.00092	.00224	4.1042
#2	.00263	9.6187	.00051	-.00810	-.00328	.00434	.00160	4.1009
#3	.00286	9.5806	.00003	-.00645	-.00389	.00466	.00986	4.0428
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606096103 Acquired: 6/24/2016 13:58:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00067**	**.25691**	**-.00637**	**-.00259**	**-.00050**	**.00292**	**.00135**
Stddev	.00049	.00223	.00705	.00153	.00034	.00040	.00049
%RSD	72.565	.86751	110.76	58.917	67.376	13.663	36.114
#1	-.00091	.25924	-.00795	-.00331	-.00034	.00317	.00087
#2	-.00099	.25480	.00134	-.00084	-.00090	.00314	.00133
#3	-.00011	.25669	-.01249	-.00363	-.00028	.00246	.00185
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8942.3**	**57388.**	**3165.4**
Stddev	36.0	169.	10.5
%RSD	.40295	.29363	.33091
#1	8915.6	57232.	3155.7
#2	8928.0	57367.	3176.5
#3	8983.2	57567.	3163.9

Approved: June 25, 2016

Sample Name: L1606096103PS Acquired: 6/24/2016 14:02:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574076-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20212**	**5.1577**	**.20995**	**1.0218**	**.55067**	**.02458**	**50.301**	**.02595**
Stddev	.00257	.0134	.00150	.0020	.00278	.00001	.286	.00016
%RSD	1.2694	.25951	.71236	.19511	.50565	.03510	.56934	.61701
#1	.20209	5.1522	.20849	1.0233	.55372	.02459	50.529	.02608
#2	.19957	5.1479	.20988	1.0196	.54826	.02458	49.980	.02599
#3	.20470	5.1729	.21148	1.0227	.55003	.02457	50.394	.02577
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10297**	**.25008**	**.25544**	**2.0785**	**27.389**	**.52844**	**18.834**	**.25830**
Stddev	.00023	.00157	.00241	.0113	.185	.00335	.039	.00347
%RSD	.22302	.62649	.94504	.54163	.67510	.63326	.20820	1.3448
#1	.10320	.25049	.25823	2.0826	27.472	.53144	18.843	.26189
#2	.10274	.25140	.25409	2.0658	27.177	.52483	18.867	.25495
#3	.10299	.24834	.25401	2.0872	27.518	.52905	18.790	.25805
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53490**	**34.932**	**.25626**	**5.1271**	**.25681**	**.62874**	**.20828**	**6.2999**
Stddev	.00204	.144	.00031	.0135	.00377	.00039	.00270	.0306
%RSD	.38190	.41152	.12115	.26248	1.4693	.06250	1.2974	.48507
#1	.53528	35.050	.25602	5.1233	.25437	.62829	.20809	6.2859
#2	.53673	34.772	.25661	5.1420	.26116	.62899	.21107	6.2787
#3	.53270	34.975	.25617	5.1159	.25492	.62895	.20567	6.3349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606096103PS Acquired: 6/24/2016 14:02:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574076-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51595	.74881	.52242	.25818	.49972	.51357	.00455
Stddev	.00103	.00313	.00297	.00309	.00213	.00106	.00114
%RSD	.19954	.41852	.56925	1.1985	.42627	.20581	24.932
#1	.51562	.75083	.52020	.25542	.50129	.51430	.00341
#2	.51710	.74520	.52125	.26152	.49729	.51406	.00457
#3	.51512	.75039	.52580	.25759	.50057	.51236	.00568
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8833.6	56651.	3119.7
Stddev	9.3	223.	21.6
%RSD	.10547	.39347	.69133
#1	8823.9	56539.	3116.6
#2	8834.3	56908.	3142.7
#3	8842.5	56506.	3099.9

Approved: June 25, 2016

Sample Name: L1606096103SDL Acquired: 6/24/2016 14:05:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574076-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.01743	-.00053	.01293	.00637	.00006	9.8603	-.00009
Stddev	.00112	.00543	.00066	.00212	.00093	.00006	.1510	.00026
%RSD	749.50	31.156	123.78	16.425	14.637	106.44	1.5314	273.36
#1	.00120	.01486	-.00015	.01142	.00533	.00013	9.7000	-.00016
#2	-.00103	.01376	-.00130	.01536	.00714	.00001	9.8810	.00019
#3	.00028	.02366	-.00015	.01201	.00663	.00003	9.9999	-.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	.00166	-.00081	.01557	.34726	.00184	3.0327	-.00090
Stddev	.00014	.00107	.00071	.01602	.05466	.00348	.0951	.00076
%RSD	37.681	64.012	87.782	102.86	15.742	189.11	3.1367	84.164
#1	-.00021	.00202	-.00151	.03338	.29666	.00458	2.9721	-.00121
#2	-.00048	.00047	-.00085	.00235	.40524	-.00207	2.9836	-.00147
#3	-.00039	.00251	-.00008	.01099	.33988	.00301	3.1423	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00101	1.9887	-.00002	.00349	-.00035	.00256	.00530	.86568
Stddev	.00011	.0321	.00087	.00714	.00172	.00490	.00381	.00616
%RSD	11.175	1.6161	4064.9	204.77	495.04	191.24	71.852	.71180
#1	.00095	1.9586	.00085	.00447	-.00202	.00804	.00476	.85861
#2	.00114	1.9850	-.00088	.01010	.00141	-.00140	.00179	.86846
#3	.00094	2.0226	-.00004	-.00409	-.00043	.00105	.00936	.86996
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606096103SDL Acquired: 6/24/2016 14:05:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574076-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.05064**	**-.00115**	**-.00120**	**-.00043**	**.00102**	**.00056**
Stddev	.00024	.00069	.00525	.00297	.00106	.00012	.00014
%RSD	123.48	1.3651	458.63	247.68	244.53	11.508	24.672
#1	-.00046	.05019	-.00523	.00208	-.00117	.00096	.00072
#2	.00002	.05028	.00478	-.00371	.00078	.00115	.00045
#3	-.00016	.05143	-.00298	-.00197	-.00092	.00094	.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9336.0**	**59375.**	**3208.5**
Stddev	30.5	401.	15.3
%RSD	.32641	.67506	.47725
#1	9354.3	58920.	3216.8
#2	9352.8	59525.	3217.8
#3	9300.8	59678.	3190.8

Approved: June 25, 2016

Sample Name: L1606096103SDL Acquired: 6/24/2016 14:09:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574076-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00011**	**-.00610**	**.00005**	**.00302**	**.00139**	**.00003**	**1.6849**
Stddev	.00180	.00456	.00220	.00222	.00079	.00007	.0160
%RSD	1577.6	74.679	4707.9	73.380	56.616	247.76	.94725
#1	-.00191	-.00084	.00190	.00055	.00194	-.00002	1.6688
#2	.00156	-.00881	-.00239	.00484	.00049	.00011	1.6853
#3	.00069	-.00865	.00063	.00368	.00173	-.00000	1.7007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**-.00034**	**.00088**	**-.00158**	**-.01440**	**.06844**	**-.00175**
Stddev	.00002	.00023	.00083	.00061	.02220	.06326	.00363
%RSD	17.353	67.549	94.267	38.708	154.12	92.431	206.96
#1	-.00013	-.00058	.00179	-.00208	-.00955	.00265	-.00311
#2	-.00013	-.00034	.00017	-.00175	.00496	.07385	.00236
#3	-.00017	-.00012	.00067	-.00090	-.03863	.12882	-.00450
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50957**	F **-.00383**	**.00039**	**.34445**	**-.00062**	**.00381**	**.00016**
Stddev	.01311	.00095	.00039	.03811	.00071	.00070	.00411
%RSD	2.5722	24.725	100.59	11.064	115.35	18.437	2540.0
#1	.51930	-.00358	.00051	.30657	-.00144	.00305	.00427
#2	.49466	-.00488	-.00005	.34400	-.00029	.00397	.00016
#3	.51474	-.00303	.00071	.38278	-.00013	.00443	-.00394
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		36.000					
Low Limit		-.00300					

Approved: June 25, 2016

Sample Name: L1606096103SDL Acquired: 6/24/2016 14:09:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574076-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00087	-.00357	.15888	-.00031	.00850	-.00426	-.00009
Stddev	.00426	.00083	.00168	.00044	.00026	.00237	.00296
%RSD	491.21	23.304	1.0573	142.12	3.0361	55.651	3369.4
#1	-.00335	-.00426	.16039	-.00013	.00878	-.00423	-.00261
#2	.00077	-.00382	.15707	.00001	.00827	-.00191	-.00083
#3	.00518	-.00265	.15920	-.00080	.00846	-.00665	.00318
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00092	.00058	.00040
Stddev	.00059	.00015	.00004
%RSD	63.347	25.599	9.4015
#1	-.00155	.00045	.00043
#2	-.00084	.00056	.00036
#3	-.00039	.00074	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9633.6	61477.	3283.0
Stddev	23.5	199.	25.8
%RSD	.24437	.32309	.78547
#1	9635.1	61706.	3253.9
#2	9656.4	61364.	3291.9
#3	9609.4	61360.	3303.1

Approved: June 25, 2016

Sample Name: L1606122701 Acquired: 6/24/2016 14:13:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	2.0538	.00424	.05679	.30137	.00008	160.95	.00040
Stddev	.00099	.0179	.00360	.00161	.00191	.00003	.73	.00020
%RSD	625.72	.87190	84.976	2.8342	.63262	40.857	.45089	48.680
#1	.00035	2.0639	.00523	.05846	.30342	.00005	161.69	.00049
#2	.00047	2.0331	.00724	.05525	.30104	.00011	160.24	.00018
#3	-.00129	2.0644	.00025	.05665	.29964	.00010	160.92	.00054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.05022	.00244	.06600	6.7325	.04174	.86990	-.00077
Stddev	.00001	.00071	.00046	.01751	.0793	.00094	.03086	.00154
%RSD	53.643	1.4082	18.989	26.534	1.1771	2.2575	3.5476	200.44
#1	.00001	.04993	.00251	.08607	6.8151	.04258	.83482	-.00255
#2	.00004	.04971	.00286	.05817	6.6571	.04192	.89287	.00018
#3	.00002	.05103	.00194	.05378	6.7254	.04072	.88200	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00363	48.508	-.00031	.00741	.00060	.00514	.00422	24.472
Stddev	.00063	.271	.00042	.00441	.00602	.00302	.00618	.118
%RSD	17.442	.55872	138.52	59.544	1003.1	58.729	146.53	.48061
#1	.00434	48.810	.00008	.00233	-.00322	.00761	.00742	24.541
#2	.00342	48.287	-.00076	.00957	-.00252	.00604	.00813	24.539
#3	.00313	48.427	-.00023	.01033	.00753	.00178	-.00291	24.336
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606122701 Acquired: 6/24/2016 14:13:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	5.2882	-.02037	.00182	.05925	.00281	.00089
Stddev	.00045	.0260	.00947	.00098	.00078	.00019	.00080
%RSD	393.62	.49150	46.471	53.984	1.3207	6.6303	89.786
#1	.00029	5.3179	-.02819	.00291	.05902	.00280	.00160
#2	-.00060	5.2694	-.00985	.00102	.05861	.00264	.00002
#3	-.00003	5.2773	-.02308	.00151	.06012	.00301	.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8732.6	55925.	3130.6
Stddev	32.6	420.	35.3
%RSD	.37294	.75148	1.1265
#1	8752.4	55468.	3120.1
#2	8695.0	56294.	3101.8
#3	8750.3	56014.	3169.9

Approved: June 25, 2016

Sample Name: L1606122703 Acquired: 6/24/2016 14:17:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00125	.01521	-.00287	.00860	.24123	.00006	11.154	.00028
Stddev	.00085	.00707	.00119	.00183	.00246	.00004	.069	.00007
%RSD	68.571	46.481	41.621	21.280	1.0214	57.404	.61514	23.989
#1	-.00147	.01209	-.00178	.00649	.24385	.00010	11.223	.00034
#2	-.00030	.02330	-.00414	.00957	.24090	.00003	11.086	.00021
#3	-.00196	.01024	-.00269	.00975	.23895	.00006	11.152	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00080	.00213	-.00033	6.2073	1.5140	.01688	6.1835	.21929
Stddev	.00038	.00091	.00079	.0143	.0539	.00306	.0220	.00289
%RSD	47.624	42.694	240.58	.23060	3.5610	18.131	.35514	1.3175
#1	-.00036	.00194	-.00091	6.2218	1.4901	.01738	6.2077	.21708
#2	-.00104	.00133	-.00064	6.2069	1.5757	.01967	6.1777	.22256
#3	-.00101	.00312	.00057	6.1932	1.4762	.01361	6.1650	.21823
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	22.350	-.00018	.00938	-.00137	-.00029	-.00050	19.516
Stddev	.00056	.096	.00083	.00138	.00104	.00383	.01117	.085
%RSD	465.42	.43143	468.12	14.678	75.834	1305.1	2216.4	.43604
#1	.00023	22.450	-.00078	.01058	-.00249	.00050	.00759	19.566
#2	-.00049	22.343	.00077	.00788	-.00044	.00308	-.01325	19.564
#3	.00062	22.257	-.00052	.00969	-.00117	-.00445	.00414	19.418
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606122703 Acquired: 6/24/2016 14:17:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**.28084**	**-.00425**	**-.00304**	**-.00105**	**.00790**	**.00058**
Stddev	.00052	.00163	.00869	.00081	.00050	.00008	.00060
%RSD	129.02	.57971	204.61	26.615	47.317	.97873	103.43
#1	.00050	.28163	-.01407	-.00299	-.00104	.00799	-.00005
#2	-.00016	.28192	-.00109	-.00388	-.00056	.00785	.00113
#3	.00088	.27897	.00242	-.00226	-.00155	.00786	.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8914.3**	**56961.**	**3130.5**
Stddev	14.2	82.	32.4
%RSD	.15879	.14313	1.0351
#1	8914.6	56997.	3101.6
#2	8928.4	57018.	3165.5
#3	8900.0	56867.	3124.5

Approved: June 25, 2016

Sample Name: L1606122705 Acquired: 6/24/2016 14:21:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	.01545	-.00191	.01058	.23750	.00006	11.195	.00012
Stddev	.00118	.00798	.00344	.00158	.00031	.00003	.021	.00013
%RSD	328.15	51.664	180.02	14.936	.13063	48.409	.18618	104.64
#1	-.00055	.02466	-.00569	.01043	.23772	.00010	11.181	.00021
#2	-.00143	.01046	-.00109	.01223	.23762	.00004	11.184	-.00002
#3	.00090	.01124	.00105	.00908	.23714	.00005	11.219	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00044	.00085	.00038	5.7661	1.5123	.01984	5.9756	.21100
Stddev	.00025	.00106	.00080	.0245	.0653	.00200	.0212	.00231
%RSD	56.521	123.64	211.76	.42500	4.3208	10.094	.35441	1.0971
#1	-.00018	.00141	.00088	5.7931	1.5331	.01943	5.9657	.21198
#2	-.00046	-.00036	.00081	5.7454	1.5646	.02202	5.9611	.20836
#3	-.00068	.00152	-.00055	5.7597	1.4390	.01808	5.9999	.21267
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	21.980	.00038	.00585	.00105	.00337	.00431	19.270
Stddev	.00021	.073	.00055	.00335	.00503	.00336	.00279	.078
%RSD	47.614	.33289	144.30	57.337	476.55	99.815	64.659	.40393
#1	.00067	22.029	.00075	.00771	.00214	-.00034	.00547	19.312
#2	.00029	21.896	-.00025	.00198	-.00442	.00622	.00113	19.317
#3	.00034	22.015	.00065	.00787	.00545	.00421	.00633	19.180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606122705 Acquired: 6/24/2016 14:21:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	.27996	-.00062	-.00391	-.00113	.00732	.00022
Stddev	.00053	.00057	.00735	.00180	.00037	.00025	.00038
%RSD	211.26	.20369	1193.3	46.137	32.740	3.4555	174.33
#1	.00056	.27981	-.00799	-.00285	-.00106	.00752	.00033
#2	-.00036	.27948	-.00055	-.00288	-.00079	.00740	.00052
#3	.00056	.28059	.00670	-.00599	-.00152	.00703	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8854.7	56642.	3127.3
Stddev	12.3	243.	13.9
%RSD	.13917	.42956	.44340
#1	8861.1	56590.	3116.3
#2	8840.5	56906.	3122.8
#3	8862.4	56428.	3142.9

Approved: June 25, 2016

Sample Name: L1606122706 Acquired: 6/24/2016 14:25:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	.21684	.00222	.01917	.58049	.00013	F 284.46
Stddev	.00156	.00289	.00054	.00104	.00288	.00003	1.45
%RSD	398.54	1.3347	24.456	5.4065	.49594	21.763	.51127
#1	-.00197	.21619	.00253	.01999	.58052	.00015	284.58
#2	-.00036	.22000	.00160	.01951	.57760	.00015	282.95
#3	.00116	.21433	.00254	.01800	.58336	.00010	285.86
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.01684	.00998	.00007	1.9553	6.3020	.09974
Stddev	.00017	.00034	.00117	.00099	.0143	.1315	.00214
%RSD	224.89	2.0370	11.743	1484.4	.73067	2.0859	2.1442
#1	.00026	.01703	.01112	-.00102	1.9407	6.1530	.09856
#2	-.00001	.01704	.01006	.00031	1.9692	6.3513	.10221
#3	-.00004	.01644	.00877	.00091	1.9560	6.4016	.09846
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	176.37	2.2714	.00006	F 731.74	.01123	.01665	.00357
Stddev	1.24	.0213	.00040	6.78	.00115	.00399	.00138
%RSD	.70410	.93819	724.13	.92699	10.201	23.948	38.657
#1	175.84	2.2688	.00050	724.41	.01123	.01905	.00394
#2	175.48	2.2515	-.00029	737.80	.01238	.01886	.00473
#3	177.79	2.2938	-.00004	733.01	.01008	.01205	.00204
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 25, 2016

Sample Name: L1606122706 Acquired: 6/24/2016 14:25:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00122**	**.00616**	**15.356**	**.00023**	**6.6069**	F **-.03816**	**-.00311**
Stddev	.00529	.00300	.153	.00037	.0311	.00253	.00229
%RSD	434.20	48.780	.99792	161.00	.47035	6.6290	73.823
#1	.00695	.00959	15.424	.00029	6.6061	-.03560	-.00215
#2	.00016	.00487	15.464	.00056	6.5762	-.04066	-.00573
#3	-.00346	.00401	15.181	-.00017	6.6383	-.03822	-.00145
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00168**	**.01200**	**.00044**
Stddev	.00075	.00025	.00035
%RSD	44.955	2.0469	79.672
#1	-.00143	.01227	.00080
#2	-.00252	.01195	.00041
#3	-.00108	.01179	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8072.3**	**51267.**	**2974.1**
Stddev	26.3	41.	21.1
%RSD	.32607	.08087	.70892
#1	8102.7	51312.	2967.6
#2	8056.8	51231.	2997.7
#3	8057.4	51256.	2957.1

Approved: June 25, 2016

Sample Name: L1606122701 Acquired: 6/24/2016 14:29:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	s -.00023	s -.00927	s .00164	s .00296	F -10.167	s .00041
Stddev	.00419	.07786	.00312	.00485	17.626	.00078
%RSD	1785.1	839.67	190.10	164.03	173.37	190.38
#1	k .00417	k -.06650	s .00369	k .00589	-30.520	k -.00012
#2	-.00072	-.04071	-.00195	-.00264	.0178	.00004
#3	s -.00416	s .07939	s .00318	s .00563	.0011	s .00131
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit					45.000	
Low Limit					-.00500	

Elem	Ca4226	Cd2288	Co2286	Cr2677	Cu2247	Fe2611
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	40.030	sF -.00051	s -.00092	s .00395	sF -.01544	k 24.560
Stddev	69.051	.00101	.00091	.00756	.02567	42.585
%RSD	172.50	198.69	98.282	191.07	166.28	173.39
#1	119.76	s -.00168	s -.00047	k -.00260	s -.04508	73.733
#2	.3162	.00002	-.00033	.00225	-.00024	-.06625
#3	.0107	s .00013	s -.00197	s .01222	s -.00100	k .01283
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit		4.5000			180.00	
Low Limit		-.00050			-.00500	

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	372.11	8.6195	k 47.738	k .33032	s .00028	133.30
Stddev	645.21	14.952	82.949	.57767	.00009	230.76
%RSD	173.39	173.47	173.76	174.88	32.225	173.11
#1	1117.1	25.884	k 143.52	k .99736	s .00023	399.76
#2	-.711	-.02432	-.3221	-.00440	.00022	-.0382
#3	-.088	-.00165	k .0166	k -.00198	s .00038	.1779
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Approved: June 25, 2016

Sample Name: L1606122701 Acquired: 6/24/2016 14:29:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	s **-.00045**	s **-.03655**	s **.00172**	s **-.00108**	s **.00075**	s **.01008**
Stddev	.00179	.02808	.00469	.00283	.00609	.01972
%RSD	400.97	76.830	273.03	261.89	809.17	195.59
#1	s -.00054	s -.06589	s .00446	s -.00311	s .00551	s -.00694
#2	.00139	-.00993	.00440	.00215	.00286	.00550
#3	s -.00220	s -.03383	s -.00370	s -.00228	s -.00611	s .03169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	s **-.00057**	F **-1.1360**	k **20.365**	s **.00055**	s **-.00167**	s **.00003**
Stddev	.00097	1.9693	35.298	.00527	.00210	.00029
%RSD	171.04	173.35	173.32	963.15	126.00	986.03
#1	s -.00081	-3.4099	k 61.124	s .00555	k -.00082	s -.00019
#2	-.00139	.00126	-.03016	.00104	-.00012	-.00009
#3	s .00050	.00067	k .00214	s -.00495	s -.00406	s .00036
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		9.0000				
Low Limit		-.01000				

Elem	Zr3391
Units	ppm
Avg	k **4.7431**
Stddev	8.2177
%RSD	173.26
#1	14.232
#2	-.00307
#3	k .00025
Check ?	Chk Pass
High Limit	
Low Limit	

Approved: June 25, 2016

Sample Name: L1606122701 Acquired: 6/24/2016 14:29:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	^ *****	^ *****	**1491.6**
Stddev	-----	-----	1744.8
%RSD	-----	-----	116.98
#1	^ -----	96744.	-.833
#2	11739.	67740.	1065.6
#3	^ -----	^ -----	3409.9

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 14:33:26 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41166**	**10.425**	**.41797**	**.51029**	**1.0577**	**.05047**	**10.520**	**.05316**
Stddev	.00099	.032	.00238	.00238	.0098	.00020	.066	.00029
%RSD	.24027	.31060	.57018	.46712	.92494	.40032	.62805	.55014
#1	.41078	10.417	.41616	.50822	1.0524	.05037	10.498	.05343
#2	.41273	10.461	.42067	.50975	1.0690	.05033	10.595	.05285
#3	.41147	10.398	.41708	.51289	1.0516	.05070	10.468	.05319
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21206**	**.51386**	**.53059**	**4.1899**	**53.263**	**1.0467**	**10.468**	**.52856**
Stddev	.00073	.00321	.00100	.0374	.462	.0063	.076	.00530
%RSD	.34314	.62500	.18884	.89375	.86682	.60297	.72564	1.0030
#1	.21259	.51287	.52997	4.1684	53.043	1.0454	10.485	.52611
#2	.21236	.51126	.53175	4.2331	53.794	1.0536	10.535	.53465
#3	.21123	.51745	.53006	4.1681	52.952	1.0412	10.385	.52494
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0576**	**52.995**	**.52777**	**10.435**	**.52686**	**1.2496**	**.41651**	**5.4396**
Stddev	.0040	.485	.00212	.015	.00639	.0066	.00244	.0073
%RSD	.37921	.91430	.40168	.14821	1.2125	.52987	.58470	.13514
#1	1.0613	52.838	.52972	10.450	.53351	1.2484	.41859	5.4468
#2	1.0581	53.538	.52809	10.437	.52631	1.2567	.41712	5.4400
#3	1.0533	52.608	.52552	10.419	.52077	1.2437	.41383	5.4321
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 14:33:26 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0505**	**1.0599**	**1.0626**	**.52487**	**1.0199**	**1.0599**	**1.0481**
Stddev	.0030	.0080	.0069	.00177	.0063	.0016	.0076
%RSD	.28497	.75748	.64716	.33685	.61433	.14858	.72179
#1	1.0520	1.0581	1.0658	.52283	1.0139	1.0617	1.0532
#2	1.0524	1.0687	1.0673	.52604	1.0264	1.0591	1.0518
#3	1.0471	1.0529	1.0547	.52572	1.0194	1.0589	1.0394
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8638.4**	**54702.**	**2962.1**
Stddev	25.7	232.	26.1
%RSD	.29729	.42351	.88130
#1	8638.5	54949.	2963.0
#2	8664.0	54489.	2935.5
#3	8612.6	54670.	2987.7

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 14:37:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00059**	**.00701**	**.00029**	**.00414**	**.00107**	**.00004**	**.00238**	**-.00012**
Stddev	.00084	.00406	.00078	.00126	.00076	.00005	.01029	.00020
%RSD	141.95	57.911	270.00	30.394	71.506	123.23	431.54	160.84
#1	-.00109	.01100	-.00061	.00436	.00031	-.00001	.01410	-.00018
#2	.00038	.00714	.00070	.00527	.00106	.00009	-.00516	-.00029
#3	-.00106	.00289	.00078	.00278	.00183	.00005	-.00179	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**.00101**	**-.00109**	**-.00812**	**.09168**	**-.00067**	**.00355**	**-.00145**
Stddev	.00012	.00041	.00020	.01093	.16535	.00286	.05597	.00191
%RSD	587.69	41.101	17.982	134.63	180.37	426.73	1575.4	131.49
#1	-.00012	.00144	-.00126	-.01947	.12855	-.00390	-.02086	.00074
#2	.00007	.00098	-.00088	.00235	.23548	.00155	.06758	-.00233
#3	.00010	.00061	-.00113	-.00724	-.08900	.00034	-.03606	-.00276
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00376**	**.06309**	**-.00078**	**-.00146**	**-.00295**	**.00728**	**.00080**	**.00640**
Stddev	.00004	.00813	.00031	.00130	.00447	.00341	.00273	.00142
%RSD	1.1880	12.887	39.066	89.596	151.30	46.848	341.20	22.217
#1	.00379	.05447	-.00081	-.00002	-.00292	.00343	-.00228	.00491
#2	.00377	.07062	-.00047	-.00257	.00150	.00849	.00178	.00774
#3	.00371	.06419	-.00108	-.00177	-.00745	.00993	.00291	.00656
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 14:37:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**-.00030**	**-.00170**	**-.00383**	**-.00049**	**.00017**	**.00063**
Stddev	.00071	.00015	.00190	.00217	.00068	.00011	.00064
%RSD	416.03	50.304	111.76	56.611	138.47	65.323	100.79
#1	-.00090	-.00046	-.00195	-.00355	.00013	.00005	.00048
#2	.00053	-.00016	.00031	-.00613	-.00121	.00020	.00009
#3	-.00015	-.00029	-.00347	-.00182	-.00039	.00026	.00134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8962.4**	**57043.**	**3076.8**
Stddev	9.4	202.	30.1
%RSD	.10495	.35434	.97741
#1	8959.6	57191.	3062.7
#2	8973.0	57124.	3056.5
#3	8954.8	56812.	3111.4

Approved: June 25, 2016

Sample Name: LLCCV Acquired: 6/24/2016 14:41:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00718	.16778	.00705	.07965	.00910	.00164	.41639	.00077
Stddev	.00111	.00850	.00155	.00224	.00038	.00008	.03685	.00016
%RSD	15.437	5.0649	22.016	2.8126	4.2151	4.9707	8.8498	21.171
#1	.00835	.16257	.00591	.07934	.00933	.00163	.41364	.00096
#2	.00706	.17759	.00643	.08204	.00930	.00156	.38099	.00069
#3	.00615	.16318	.00882	.07759	.00865	.00172	.45453	.00067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00372	.00553	.00388	.09928	.97152	.08315	.41379	.00739
Stddev	.00019	.00133	.00032	.02549	.05199	.00523	.08500	.00248
%RSD	5.0726	23.979	8.3772	25.673	5.3513	6.2898	20.543	33.559
#1	.00382	.00499	.00359	.11432	.99435	.08891	.42868	.00950
#2	.00350	.00456	.00423	.06985	1.0082	.08183	.49036	.00801
#3	.00383	.00704	.00382	.11368	.91202	.07870	.32232	.00466
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00887	.47333	.01623	.81221	.00542	.09064	.01323	.80543
Stddev	.00034	.01785	.00027	.00285	.00284	.00218	.00846	.00484
%RSD	3.8186	3.7704	1.6489	.35135	52.439	2.4043	63.964	.60120
#1	.00857	.45283	.01639	.81336	.00707	.09020	.00353	.80991
#2	.00924	.48541	.01638	.81431	.00704	.08871	.01911	.80609
#3	.00882	.48176	.01592	.80897	.00214	.09300	.01705	.80029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LLCCV Acquired: 6/24/2016 14:41:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40870**	**.04207**	**.01931**	**.15366**	**.00710**	**.01712**	**.04603**
Stddev	.00512	.00019	.00171	.00094	.00077	.00047	.00074
%RSD	1.2534	.44963	8.8459	.61383	10.891	2.7601	1.5991
#1	.41191	.04225	.01832	.15474	.00771	.01740	.04532
#2	.41140	.04187	.02128	.15326	.00736	.01737	.04598
#3	.40280	.04210	.01832	.15299	.00623	.01657	.04679
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8982.1**	**57067.**	**3060.2**
Stddev	26.2	300.	11.7
%RSD	.29148	.52636	.38103
#1	8991.8	56753.	3059.1
#2	8952.5	57352.	3072.4
#3	9002.1	57094.	3049.1

Approved: June 25, 2016

Sample Name: LLCCV Acquired: 6/24/2016 14:45:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01869	.41297	.02026	.19746	.02185	.00383	1.0200	.00188
Stddev	.00035	.00586	.00154	.00067	.00147	.00014	.0338	.00015
%RSD	1.8526	1.4186	7.6007	.34025	6.7142	3.6282	3.3179	7.8964
#1	.01874	.40831	.01848	.19818	.02288	.00367	1.0151	.00196
#2	.01900	.41106	.02109	.19686	.02017	.00390	1.0560	.00198
#3	.01832	.41955	.02120	.19732	.02249	.00393	.98885	.00171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00984	.01123	.00919	.18681	2.1247	.20721	.93148	.01619
Stddev	.00014	.00068	.00093	.01106	.0926	.00369	.07781	.00078
%RSD	1.4606	6.0688	10.105	5.9217	4.3598	1.7823	8.3530	4.8206
#1	.01001	.01162	.00904	.19951	2.2112	.20690	.86422	.01547
#2	.00973	.01162	.00834	.18161	2.0269	.21106	.91352	.01702
#3	.00979	.01044	.01018	.17930	2.1360	.20369	1.0167	.01609
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02014	1.0870	.04071	1.9977	.02135	.21673	.03821	1.9741
Stddev	.00016	.0210	.00055	.0167	.00069	.00325	.00268	.0082
%RSD	.80007	1.9300	1.3616	.83571	3.2506	1.4993	7.0016	.41651
#1	.02032	1.0994	.04122	2.0148	.02110	.22042	.03544	1.9835
#2	.02003	1.0989	.04080	1.9969	.02082	.21547	.04077	1.9682
#3	.02006	1.0628	.04012	1.9814	.02214	.21430	.03841	1.9708
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LLCCV Acquired: 6/24/2016 14:45:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0107**	**.10392**	**.05575**	**.37550**	**.01879**	**.04191**	**.10568**
Stddev	.0090	.00047	.00558	.00228	.00032	.00016	.00084
%RSD	.89117	.44849	9.9995	.60763	1.6789	.38616	.79660
#1	1.0189	.10438	.05893	.37732	.01895	.04186	.10565
#2	1.0122	.10392	.05901	.37624	.01842	.04209	.10485
#3	1.0011	.10345	.04932	.37294	.01899	.04177	.10653
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9009.7**	**57472.**	**3066.3**
Stddev	19.1	37.	13.0
%RSD	.21156	.06500	.42365
#1	9017.9	57429.	3056.0
#2	9023.2	57498.	3080.9
#3	8987.9	57490.	3062.1

Approved: June 25, 2016

Sample Name: L1606122707 Acquired: 6/24/2016 14:48:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00038	.02228	-.00310	.03187	.86009	.00012	39.489	.00003
Stddev	.00018	.00656	.00152	.00057	.00717	.00003	.379	.00032
%RSD	46.468	29.432	49.079	1.8038	.83341	26.472	.96018	1147.1
#1	-.00055	.02985	-.00161	.03125	.86719	.00008	39.879	-.00019
#2	-.00020	.01820	-.00302	.03199	.86023	.00013	39.466	-.00011
#3	-.00040	.01880	-.00465	.03238	.85285	.00015	39.122	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00072	-.00028	.00013	59.587	2.9995	.04414	25.073	1.2878
Stddev	.00057	.00083	.00110	.643	.1016	.00412	.231	.0116
%RSD	79.076	299.88	865.71	1.0796	3.3860	9.3424	.92024	.90415
#1	-.00051	.00068	-.00113	60.213	3.0838	.04323	25.311	1.3011
#2	-.00137	-.00084	.00089	59.621	2.8867	.04865	25.057	1.2792
#3	-.00029	-.00068	.00062	58.928	3.0279	.04055	24.851	1.2831
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	115.27	.04203	.01368	.00281	-.00143	.00296	14.747
Stddev	.00037	1.33	.00072	.00307	.00173	.00239	.00365	.039
%RSD	499.83	1.1534	1.7107	22.425	61.439	167.46	123.56	.26370
#1	.00026	116.59	.04143	.01139	.00244	-.00272	.00713	14.784
#2	-.00048	115.27	.04283	.01716	.00130	.00133	.00141	14.750
#3	-.00000	113.93	.04183	.01248	.00470	-.00289	.00033	14.707
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606122707 Acquired: 6/24/2016 14:48:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.95862**	**.00605**	**-.00068**	**-.00091**	**.00548**	**.00149**
Stddev	.00073	.01229	.00320	.00267	.00068	.00026	.00022
%RSD	553.72	1.2819	52.980	390.15	74.575	4.7467	14.628
#1	-.00098	.96985	.00245	.00197	-.00106	.00564	.00171
#2	.00022	.96050	.00860	-.00066	-.00151	.00563	.00127
#3	.00036	.94549	.00708	-.00336	-.00017	.00518	.00148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8796.8**	**55980.**	**3081.4**
Stddev	13.6	173.	49.3
%RSD	.15430	.30941	1.6006
#1	8782.9	56135.	3034.1
#2	8810.1	56011.	3077.6
#3	8797.3	55793.	3132.6

Approved: June 25, 2016

Sample Name: L1606128901 Acquired: 6/24/2016 14:52:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	.04962	.00112	.00988	5.2736	-.00000	172.96
Stddev	.00150	.00386	.00106	.00285	.0237	.00005	.90
%RSD	521.82	7.7690	94.694	28.895	.44889	7806.7	.52141
#1	.00036	.05342	.00225	.00730	5.2908	-.00004	173.59
#2	.00175	.04571	.00014	.00938	5.2466	.00005	171.93
#3	-.00125	.04974	.00097	.01295	5.2835	-.00001	173.36
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00136	.04532	.13640	.02803	.82377	2.0910	.06524
Stddev	.00008	.00075	.00127	.00169	.01843	.0634	.00121
%RSD	6.1045	1.6593	.93452	6.0401	2.2378	3.0301	1.8477
#1	.00135	.04615	.13543	.02951	.80742	2.1500	.06406
#2	.00144	.04511	.13594	.02618	.82014	2.0990	.06519
#3	.00128	.04469	.13784	.02838	.84375	2.0241	.06647
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	132.57	1.5484	.00399	F 475.43	.60664	-.00181	.00112
Stddev	1.22	.0105	.00019	6.67	.00940	.00176	.00123
%RSD	.92353	.67771	4.8057	1.4023	1.5491	97.473	109.90
#1	133.54	1.5549	.00379	480.67	.61634	-.00043	.00090
#2	131.19	1.5363	.00417	477.68	.60602	-.00120	.00245
#3	132.97	1.5541	.00401	467.92	.59758	-.00379	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 25, 2016

Sample Name: L1606128901 Acquired: 6/24/2016 14:52:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00043**	**.00044**	**20.411**	**-.00001**	**3.3220**	**-.02680**	**-.00165**
Stddev	.00177	.00688	.223	.00059	.0144	.00356	.00200
%RSD	411.04	1578.1	1.0946	9208.5	.43324	13.269	121.77
#1	-.00012	.00683	20.657	.00066	3.3359	-.02623	-.00015
#2	-.00234	.00133	20.356	-.00024	3.3072	-.03061	-.00392
#3	.00117	-.00685	20.220	-.00044	3.3229	-.02356	-.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00230**	**.01606**	**-.00030**
Stddev	.00111	.00038	.00039
%RSD	48.336	2.3357	128.61
#1	-.00215	.01640	.00003
#2	-.00348	.01614	-.00073
#3	-.00127	.01566	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8386.8**	**53296.**	**3021.6**
Stddev	37.8	223.	29.3
%RSD	.45026	.41852	.97129
#1	8352.5	53490.	2991.9
#2	8427.3	53347.	3050.6
#3	8380.7	53052.	3022.3

Approved: June 25, 2016

Sample Name: L1606128904 Acquired: 6/24/2016 14:56:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00078**	**.89254**	**-.00069**	**.01964**	**.04255**	**.00011**	**5.6683**	**.00028**
Stddev	.00076	.01581	.00109	.00257	.00109	.00004	.0152	.00014
%RSD	98.022	1.7713	158.41	13.060	2.5725	41.643	.26758	50.825
#1	-.00164	.87537	-.00125	.01833	.04129	.00015	5.6815	.00024
#2	-.00048	.89576	.00057	.01800	.04324	.00007	5.6517	.00016
#3	-.00021	.90650	-.00137	.02260	.04312	.00010	5.6716	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**.00425**	**.00494**	**1.2848**	**1.7945**	**.00004**	**1.0750**	**.06944**
Stddev	.00027	.00147	.00133	.0357	.1112	.00319	.1047	.00259
%RSD	122.02	34.538	27.001	2.7795	6.1951	7919.7	9.7411	3.7251
#1	-.00019	.00333	.00648	1.3254	1.8687	-.00206	1.1443	.06646
#2	-.00051	.00594	.00405	1.2582	1.8481	.00371	1.1263	.07089
#3	.00003	.00347	.00430	1.2709	1.6666	-.00153	.95457	.07099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00253**	**11.300**	**.00403**	**.05743**	**-.00017**	**-.00179**	**.00195**	**3.8550**
Stddev	.00020	.072	.00110	.00105	.00329	.00658	.00226	.1069
%RSD	7.7182	.63637	27.173	1.8233	1906.1	368.28	115.87	2.7717
#1	.00264	11.368	.00517	.05829	.00210	-.00819	-.00037	3.9182
#2	.00264	11.309	.00299	.05627	-.00395	.00496	.00208	3.9152
#3	.00230	11.225	.00394	.05774	.00133	-.00213	.00413	3.7317
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606128904 Acquired: 6/24/2016 14:56:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.05757**	**.02633**	**-.00071**	**.00137**	**.00722**	**.00200**
Stddev	.00035	.00023	.00560	.00355	.00071	.00007	.00033
%RSD	91.722	.39740	21.269	498.75	51.627	.91462	16.350
#1	-.00073	.05778	.02000	-.00383	.00175	.00716	.00162
#2	-.00038	.05732	.02834	-.00145	.00181	.00729	.00222
#3	-.00003	.05760	.03065	.00315	.00055	.00719	.00216
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8865.6**	**56649.**	**3059.6**
Stddev	13.5	96.	21.0
%RSD	.15270	.17031	.68631
#1	8866.0	56591.	3042.3
#2	8878.9	56761.	3053.7
#3	8851.9	56596.	3083.0

Approved: June 25, 2016

Sample Name: L1606129003 Acquired: 6/24/2016 15:00:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00079**	**.23085**	**.01034**	**.01559**	**.36719**	**.00005**	**21.705**	**.00048**
Stddev	.00066	.01132	.00405	.00112	.00034	.00003	.125	.00008
%RSD	83.316	4.9053	39.209	7.1670	.09361	52.637	.57576	16.613
#1	-.00053	.21806	.00670	.01651	.36734	.00007	21.802	.00057
#2	-.00154	.23489	.01470	.01592	.36743	.00007	21.749	.00042
#3	-.00030	.23961	.00961	.01435	.36680	.00002	21.564	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00832**	**.00224**	**.00061**	**33.420**	**3.2767**	**.01261**	**13.855**	**.58209**
Stddev	.00025	.00111	.00133	.070	.0433	.00234	.192	.00232
%RSD	3.0553	49.670	217.79	.20879	1.3202	18.546	1.3850	.39779
#1	.00834	.00100	.00061	33.467	3.2844	.00992	14.064	.58474
#2	.00805	.00316	.00195	33.452	3.3155	.01415	13.814	.58108
#3	.00856	.00256	-.00072	33.340	3.2300	.01376	13.686	.58045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**119.40**	**.01660**	**.07210**	**.00341**	**.00143**	**.00513**	**10.118**
Stddev	.00033	.47	.00077	.00340	.00220	.00378	.00738	.080
%RSD	1430.2	.39268	4.6557	4.7101	64.624	264.86	143.85	.79057
#1	.00020	119.78	.01610	.06894	.00133	.00564	-.00235	10.112
#2	-.00035	119.55	.01749	.07569	.00317	-.00168	.00533	10.200
#3	.00022	118.87	.01621	.07166	.00572	.00033	.01240	10.041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606129003 Acquired: 6/24/2016 15:00:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00825	.48338	.01285	-.00007	-.00099	.02470	.00130
Stddev	.00046	.00133	.00609	.00020	.00008	.00029	.00043
%RSD	5.5459	.27526	47.375	267.50	8.5468	1.1648	33.241
#1	.00847	.48381	.01168	-.00026	-.00091	.02465	.00080
#2	.00855	.48444	.00743	-.00009	-.00108	.02501	.00160
#3	.00772	.48189	.01943	.00013	-.00099	.02444	.00149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8589.3	54682.	3050.6
Stddev	24.0	271.	24.0
%RSD	.27972	.49573	.78517
#1	8590.4	54964.	3023.0
#2	8564.7	54423.	3063.9
#3	8612.7	54659.	3065.0

Approved: June 25, 2016

Sample Name: L1606129005 Acquired: 6/24/2016 15:04:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00093	2.8940	.00006	.01007	.07684	.00018	1.8409	.00000
Stddev	.00144	.0184	.00220	.00073	.00162	.00006	.0138	.00046
%RSD	154.30	.63640	3601.3	7.2287	2.1026	31.323	.75067	9347.2
#1	-.00260	2.9086	-.00247	.00925	.07870	.00012	1.8257	.00046
#2	-.00011	2.9000	.00139	.01032	.07576	.00019	1.8444	.00000
#3	-.00010	2.8733	.00126	.01063	.07607	.00023	1.8526	-.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	.00434	-.00038	3.1829	.55321	.00872	1.5188	.02267
Stddev	.00018	.00090	.00079	.0133	.03931	.00184	.0455	.00119
%RSD	20.184	20.776	205.81	.41668	7.1064	21.146	2.9981	5.2528
#1	.00112	.00469	-.00125	3.1779	.59786	.01068	1.4921	.02373
#2	.00082	.00502	.00029	3.1979	.52378	.00846	1.5714	.02138
#3	.00078	.00332	-.00019	3.1728	.53798	.00702	1.4930	.02289
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	27.020	.00272	.08458	.00016	.00433	.00430	18.456
Stddev	.00073	.100	.00065	.00188	.00203	.00206	.00371	.304
%RSD	171.02	.37092	23.861	2.2211	1248.4	47.523	86.151	1.6472
#1	-.00010	27.134	.00249	.08421	.00247	.00531	.00264	18.631
#2	.00012	26.983	.00222	.08662	-.00061	.00572	.00172	18.633
#3	.00126	26.944	.00345	.08292	-.00137	.00197	.00855	18.105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606129005 Acquired: 6/24/2016 15:04:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00100	.03803	.06036	-.00240	.00545	.00944	.00214
Stddev	.00054	.00054	.00300	.00069	.00057	.00004	.00035
%RSD	54.381	1.4172	4.9720	28.734	10.423	.45223	16.538
#1	.00056	.03865	.06382	-.00184	.00519	.00939	.00180
#2	.00160	.03778	.05850	-.00219	.00610	.00947	.00213
#3	.00083	.03766	.05876	-.00318	.00505	.00946	.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8715.6	55373.	3004.3
Stddev	28.8	88.	20.9
%RSD	.33098	.15973	.69504
#1	8735.4	55391.	2980.2
#2	8728.9	55276.	3014.4
#3	8682.5	55450.	3018.2

Approved: June 25, 2016

Sample Name: L1606112901 Acquired: 6/24/2016 15:08:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00153	.04742	-.00095	.03453	.02713	.00001	86.360	.00034
Stddev	.00217	.00415	.00049	.00360	.00063	.00009	.224	.00044
%RSD	141.80	8.7609	51.957	10.417	2.3220	657.60	.25919	128.64
#1	-.00346	.04486	-.00039	.03082	.02758	-.00008	86.344	.00072
#2	-.00196	.04519	-.00115	.03800	.02641	.00009	86.145	-.00014
#3	.00082	.05221	-.00131	.03476	.02740	.00002	86.592	.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.00312	.00177	.94597	3.2694	-.00206	18.533	.11547
Stddev	.00014	.00126	.00037	.01236	.0834	.00303	.037	.00006
%RSD	78.771	40.351	21.042	1.3061	2.5502	147.38	.19767	.05424
#1	-.00029	.00408	.00217	.94560	3.3573	-.00518	18.524	.11541
#2	-.00002	.00169	.00170	.93380	3.1914	.00088	18.501	.11554
#3	-.00020	.00357	.00144	.95851	3.2594	-.00189	18.573	.11545
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	63.757	.00088	-.00345	-.00001	.00390	.00201	4.3369
Stddev	.00012	.098	.00080	.00790	.00073	.00356	.00350	.0154
%RSD	20.681	.15440	91.170	229.23	11400.	91.387	174.14	.35496
#1	.00052	63.708	.00165	-.00774	-.00051	.00796	-.00076	4.3485
#2	.00048	63.692	.00005	.00567	-.00034	.00129	.00594	4.3428
#3	.00070	63.870	.00094	-.00827	.00083	.00245	.00085	4.3194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606112901 Acquired: 6/24/2016 15:08:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00155	.26173	-.00856	-.00313	-.00118	.00293	.00052
Stddev	.00080	.00134	.00446	.00054	.00143	.00016	.00098
%RSD	51.891	.51077	52.060	17.221	121.68	5.3885	189.16
#1	.00076	.26032	-.01247	-.00264	-.00215	.00304	.00128
#2	.00236	.26190	-.00951	-.00371	.00047	.00300	.00086
#3	.00153	.26298	-.00371	-.00305	-.00185	.00275	-.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8540.9	54113.	2989.8
Stddev	45.6	156.	19.9
%RSD	.53331	.28793	.66720
#1	8508.8	54182.	2978.9
#2	8520.8	53935.	2977.6
#3	8593.0	54223.	3012.8

Approved: June 25, 2016

Sample Name: L1606112902 Acquired: 6/24/2016 15:12:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	.29983	.00210	.00463	.01662	.00001	61.912	.00008
Stddev	.00140	.00599	.00218	.00166	.00062	.00006	.415	.00006
%RSD	851.26	1.9983	103.64	35.749	3.7122	644.92	.67074	85.148
#1	.00063	.30673	.00242	.00653	.01642	-.00001	62.250	.00000
#2	.00065	.29672	.00410	.00344	.01613	.00007	61.449	.00009
#3	-.00178	.29603	-.00022	.00393	.01731	-.00004	62.038	.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.01059	.00129	.94804	2.0675	.00069	20.139	.47034
Stddev	.00027	.00122	.00016	.02696	.0775	.00357	.320	.00402
%RSD	2948.5	11.527	12.380	2.8436	3.7492	519.77	1.5901	.85492
#1	-.00008	.00944	.00121	.97580	2.0012	.00465	20.332	.47062
#2	-.00020	.01048	.00148	.92196	2.0486	-.00226	19.770	.46619
#3	.00031	.01187	.00119	.94637	2.1528	-.00033	20.317	.47422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00109	30.320	.00364	.05395	.00396	.00836	-.00176	4.3013
Stddev	.00027	.212	.00081	.00668	.00208	.00440	.00252	.0395
%RSD	24.472	.70024	22.172	12.380	52.449	52.578	143.06	.91824
#1	.00086	30.527	.00437	.06160	.00615	.01344	-.00322	4.3162
#2	.00138	30.102	.00277	.04930	.00201	.00571	.00115	4.3312
#3	.00102	30.330	.00377	.05095	.00373	.00594	-.00320	4.2566
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606112902 Acquired: 6/24/2016 15:12:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.22725**	**.00528**	**-.00256**	**-.00043**	**.00529**	**.00068**
Stddev	.00083	.00096	.00459	.00338	.00037	.00010	.00058
%RSD	564.50	.42062	86.815	132.11	87.049	1.8289	84.780
#1	-.00087	.22693	.00443	-.00640	-.00011	.00518	.00078
#2	.00076	.22649	.00118	-.00002	-.00084	.00537	.00006
#3	-.00033	.22832	.01024	-.00126	-.00035	.00532	.00120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8571.6**	**54279.**	**2969.2**
Stddev	16.1	210.	28.2
%RSD	.18756	.38604	.95029
#1	8572.3	54497.	2938.5
#2	8555.3	54260.	2975.3
#3	8587.4	54079.	2993.9

Approved: June 25, 2016

Sample Name: L1606112903 Acquired: 6/24/2016 15:16:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00206	.02810	.00131	.04316	.02401	.00003	88.103	-.00001
Stddev	.00163	.00424	.00349	.00036	.00097	.00004	.414	.00006
%RSD	79.332	15.095	266.64	.84369	4.0298	138.71	.47027	1013.7
#1	-.00372	.03153	.00085	.04353	.02406	.00000	88.569	-.00003
#2	-.00046	.02336	-.00193	.04281	.02302	.00007	87.962	-.00006
#3	-.00199	.02942	.00501	.04314	.02496	.00001	87.777	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00060	.00253	.00131	.96589	1.3495	.00123	21.585	.10128
Stddev	.00042	.00035	.00067	.03405	.0842	.00325	.244	.00173
%RSD	70.727	13.720	51.685	3.5257	6.2420	263.39	1.1308	1.7072
#1	-.00095	.00223	.00070	.96112	1.2530	.00259	21.821	.10325
#2	-.00013	.00291	.00203	1.0021	1.4081	.00359	21.599	.10062
#3	-.00070	.00244	.00119	.93447	1.3875	-.00247	21.334	.09998
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	45.687	-.00078	-.00721	.00004	.00503	.00046	5.7282
Stddev	.00004	.226	.00053	.00474	.00119	.00065	.00200	.0193
%RSD	10.964	.49543	68.227	65.769	3232.3	13.018	432.45	.33624
#1	.00035	45.948	-.00018	-.00213	-.00052	.00542	.00277	5.7412
#2	.00034	45.538	-.00095	-.00799	.00140	.00427	-.00053	5.7373
#3	.00041	45.576	-.00121	-.01151	-.00077	.00539	-.00085	5.7061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606112903 Acquired: 6/24/2016 15:16:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.26833**	**-.01816**	**-.00283**	**-.00066**	**.00168**	**-.00020**
Stddev	.00078	.00133	.00789	.00034	.00071	.00025	.00040
%RSD	532.76	.49719	43.454	11.860	108.55	14.856	199.35
#1	-.00105	.26982	-.01296	-.00288	-.00092	.00197	-.00067
#2	.00022	.26790	-.02724	-.00248	.00015	.00158	-.00001
#3	.00038	.26726	-.01427	-.00314	-.00120	.00151	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8598.7**	**54568.**	**2985.2**
Stddev	14.7	155.	28.7
%RSD	.17099	.28360	.96063
#1	8589.5	54461.	2952.2
#2	8615.7	54497.	2998.6
#3	8591.0	54745.	3004.7

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 15:20:08 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40824	10.420	.41623	.50512	1.0434	.05077	10.410	.05303
Stddev	.00102	.011	.00166	.00159	.0051	.00011	.048	.00003
%RSD	.24985	.10317	.39821	.31537	.48909	.20971	.45682	.05731
#1	.40928	10.415	.41742	.50640	1.0406	.05065	10.460	.05302
#2	.40724	10.413	.41433	.50561	1.0402	.05085	10.366	.05306
#3	.40821	10.433	.41693	.50333	1.0493	.05082	10.403	.05300
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21118	.51349	.53049	4.1296	52.613	1.0448	10.282	.52373
Stddev	.00035	.00153	.00198	.0197	.215	.0121	.119	.00095
%RSD	.16775	.29847	.37336	.47674	.40803	1.1621	1.1607	.18074
#1	.21141	.51175	.53242	4.1285	52.846	1.0585	10.343	.52404
#2	.21135	.51410	.53058	4.1499	52.423	1.0356	10.145	.52448
#3	.21077	.51463	.52847	4.1106	52.571	1.0402	10.359	.52266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0543	52.234	.52970	10.421	.53044	1.2449	.41601	5.4104
Stddev	.0058	.138	.00167	.015	.00320	.0077	.00786	.0069
%RSD	.55132	.26343	.31583	.14051	.60281	.61774	1.8884	.12671
#1	1.0591	52.228	.53040	10.408	.52788	1.2425	.41688	5.4032
#2	1.0560	52.100	.53092	10.437	.53402	1.2535	.42340	5.4168
#3	1.0478	52.375	.52780	10.419	.52942	1.2386	.40776	5.4113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 15:20:08 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0527**	**1.0427**	**1.0445**	**.52624**	**1.0215**	**1.0629**	**1.0377**
Stddev	.0032	.0041	.0034	.00504	.0054	.0007	.0080
%RSD	.30129	.38916	.32629	.95804	.53233	.06397	.77418
#1	1.0545	1.0426	1.0412	.52173	1.0217	1.0629	1.0451
#2	1.0546	1.0387	1.0480	.53168	1.0159	1.0636	1.0389
#3	1.0491	1.0468	1.0444	.52530	1.0268	1.0623	1.0291
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8453.3**	**53500.**	**2924.6**
Stddev	46.2	193.	16.5
%RSD	.54695	.36073	.56251
#1	8402.3	53503.	2906.8
#2	8492.4	53692.	2927.9
#3	8465.1	53306.	2939.2

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 15:23:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00065	.00992	.00234	.00351	.00116	.00005	.02900	-.00001
Stddev	.00127	.00415	.00228	.00015	.00102	.00007	.00886	.00016
%RSD	194.64	41.872	97.529	4.1352	87.524	137.88	30.568	1159.7
#1	-.00112	.01430	-.00008	.00361	.00056	.00012	.03894	-.00002
#2	-.00162	.00942	.00265	.00358	.00234	-.00001	.02614	.00015
#3	.00078	.00604	.00445	.00334	.00060	.00004	.02192	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00032	.00116	-.00112	-.00648	.12931	-.00349	.00279	-.00148
Stddev	.00033	.00174	.00093	.02647	.07085	.00052	.12182	.00041
%RSD	102.16	151.03	83.446	408.59	54.789	15.028	4365.9	27.406
#1	-.00027	.00292	-.00056	-.01439	.08320	-.00296	.07318	-.00103
#2	-.00002	.00111	-.00220	.02304	.09384	-.00350	-.13788	-.00160
#3	-.00068	-.00057	-.00060	-.02808	.21088	-.00401	.07307	-.00182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00377	.03069	-.00012	-.00362	.00099	.00980	-.00258	.00553
Stddev	.00021	.00731	.00017	.00052	.00072	.00250	.00356	.00133
%RSD	5.5503	23.828	141.85	14.411	72.602	25.470	137.60	24.033
#1	.00400	.03907	-.00021	-.00421	.00089	.01055	-.00604	.00429
#2	.00359	.02561	-.00021	-.00320	.00174	.01183	.00106	.00693
#3	.00372	.02739	.00007	-.00346	.00032	.00701	-.00278	.00538
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 15:23:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00006	.00390	-.00184	-.00019	.00017	.00074
Stddev	.00034	.00047	.00298	.00079	.00043	.00010	.00028
%RSD	126.24	847.27	76.444	42.940	222.76	60.338	37.477
#1	.00001	-.00046	.00433	-.00204	-.00069	.00029	.00091
#2	.00066	.00046	.00665	-.00251	.00004	.00014	.00042
#3	.00015	.00017	.00073	-.00097	.00007	.00009	.00089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9150.0	58046.	3103.6
Stddev	34.2	243.	28.5
%RSD	.37419	.41787	.91849
#1	9166.8	58132.	3091.9
#2	9172.6	58235.	3082.8
#3	9110.6	57773.	3136.1

Approved: June 25, 2016

Sample Name: L1606112904 Acquired: 6/24/2016 15:27:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.30610	.00349	.00484	.01680	-.00005	61.162	.00024
Stddev	.00266	.00425	.00225	.00067	.00024	.00004	.150	.00011
%RSD	1354.1	1.3879	64.385	13.909	1.4087	89.396	.24565	45.340
#1	-.00149	.30821	.00608	.00459	.01688	-.00002	61.102	.00011
#2	-.00119	.30889	.00214	.00560	.01653	-.00010	61.332	.00032
#3	.00327	.30121	.00224	.00432	.01699	-.00002	61.050	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.01616	.00247	1.0511	2.1639	.00265	19.710	.53272
Stddev	.00012	.00059	.00049	.0193	.0834	.00241	.173	.00246
%RSD	129.55	3.6203	19.814	1.8330	3.8560	91.029	.87731	.46259
#1	-.00009	.01640	.00191	1.0288	2.1065	.00152	19.534	.52992
#2	.00002	.01659	.00280	1.0622	2.1255	.00541	19.716	.53455
#3	-.00022	.01550	.00269	1.0622	2.2596	.00101	19.880	.53369
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00224	29.844	.00743	.06304	.00618	.01638	.00390	4.1954
Stddev	.00008	.159	.00126	.00450	.00021	.00264	.00288	.0213
%RSD	3.3560	.53301	16.998	7.1387	3.3773	16.138	73.999	.50670
#1	.00231	29.838	.00709	.06811	.00642	.01793	.00356	4.2121
#2	.00224	30.006	.00883	.05951	.00606	.01788	.00693	4.2026
#3	.00216	29.688	.00638	.06151	.00605	.01333	.00119	4.1715
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606112904 Acquired: 6/24/2016 15:27:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	.22406	.00181	.00036	-.00058	.00615	.00172
Stddev	.00007	.00022	.00734	.00244	.00087	.00015	.00076
%RSD	17.459	.09649	406.25	670.43	150.42	2.4773	44.222
#1	.00049	.22431	-.00276	.00318	.00042	.00630	.00086
#2	.00040	.22393	-.00209	-.00113	-.00100	.00600	.00231
#3	.00035	.22394	.01028	-.00095	-.00117	.00614	.00197
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8744.7	55412.	3026.9
Stddev	38.5	169.	22.6
%RSD	.44021	.30480	.74756
#1	8749.8	55267.	3016.4
#2	8780.4	55372.	3011.4
#3	8703.9	55597.	3052.8

Approved: June 25, 2016

Sample Name: L1606112905 Acquired: 6/24/2016 15:31:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	.01140	.00022	.00122	.00193	.00011	.07553	.00012
Stddev	.00193	.01011	.00272	.00166	.00083	.00003	.00088	.00020
%RSD	340.70	88.707	1246.3	135.40	43.103	31.594	1.1614	171.20
#1	.00179	.01735	.00330	.00313	.00287	.00010	.07465	-.00009
#2	.00157	.01711	-.00076	.00011	.00161	.00008	.07641	.00013
#3	-.00166	-.00028	-.00188	.00044	.00131	.00014	.07552	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	.00179	-.00013	-.00208	.05937	-.00493	.01993	-.00020
Stddev	.00039	.00092	.00162	.01996	.01936	.00171	.04297	.00398
%RSD	69.405	51.134	1287.4	957.73	32.612	34.778	215.57	2030.5
#1	-.00019	.00143	.00175	.00550	.07429	-.00691	-.01080	-.00459
#2	-.00097	.00283	-.00102	-.02473	.03749	-.00396	.06904	.00316
#3	-.00052	.00111	-.00111	.01297	.06632	-.00392	.00157	.00084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	.19673	.00066	-.00598	-.00007	.00185	.00246	.04335
Stddev	.00032	.01934	.00099	.00702	.00356	.00034	.00251	.00410
%RSD	52.254	9.8320	149.70	117.31	5122.7	18.375	102.19	9.4602
#1	.00034	.21710	.00051	-.01339	.00401	.00225	.00393	.03880
#2	.00096	.17861	-.00025	-.00514	-.00170	.00164	-.00044	.04677
#3	.00053	.19448	.00171	.00057	-.00252	.00167	.00389	.04446
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606112905 Acquired: 6/24/2016 15:31:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00101	.00050	.00137	-.00139	-.00093	.00257	-.00038
Stddev	.00056	.00024	.01168	.00187	.00042	.00002	.00017
%RSD	55.495	48.882	850.09	134.64	45.297	.75245	45.272
#1	.00129	.00076	.00019	-.00328	-.00062	.00258	-.00051
#2	.00036	.00028	.01360	.00046	-.00076	.00255	-.00018
#3	.00137	.00046	-.00967	-.00135	-.00142	.00257	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8734.1	55771.	2977.0
Stddev	61.0	169.	16.5
%RSD	.69849	.30321	.55417
#1	8730.3	55638.	2990.1
#2	8797.0	55713.	2958.5
#3	8675.1	55961.	2982.4

Approved: June 25, 2016

Sample Name: L1606127201 Acquired: 6/24/2016 15:35:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.02906	.00201	.10271	.01218	.00003	20.213	.00009
Stddev	.00117	.00902	.00030	.00201	.00114	.00005	.197	.00012
%RSD	4520.9	31.026	14.913	1.9615	9.3835	162.60	.97382	138.86
#1	.00128	.03946	.00223	.10504	.01090	.00001	20.371	.00012
#2	-.00038	.02417	.00215	.10159	.01253	-.00000	19.992	.00020
#3	-.00097	.02355	.00167	.10152	.01310	.00009	20.275	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	.00322	.00018	.00370	.50036	.00507	3.7531	-.00235
Stddev	.00050	.00044	.00072	.02394	.09084	.00627	.0578	.00152
%RSD	321.71	13.795	410.19	646.53	18.154	123.69	1.5413	64.541
#1	.00023	.00369	.00101	-.02389	.60518	.00467	3.7411	-.00063
#2	.00003	.00318	-.00019	.01903	.44485	-.00099	3.8160	-.00291
#3	-.00072	.00280	-.00029	.01596	.45103	.01152	3.7022	-.00351
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00122	138.48	-.00049	.00895	.00151	.00220	.00648	4.7916
Stddev	.00020	.68	.00066	.00484	.00341	.00275	.00555	.0247
%RSD	16.240	.49155	133.40	54.067	226.53	125.05	85.629	.51620
#1	.00108	138.86	-.00055	.01077	-.00143	.00260	.01252	4.8079
#2	.00145	137.70	.00019	.01263	.00069	-.00073	.00536	4.8036
#3	.00114	138.89	-.00113	.00347	.00525	.00472	.00158	4.7631
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606127201 Acquired: 6/24/2016 15:35:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	.06627	-.00304	-.00129	.00718	.00237	.00290
Stddev	.00103	.00053	.00409	.00463	.00068	.00008	.00098
%RSD	265.57	.80562	134.51	357.80	9.5384	3.2543	33.907
#1	.00080	.06650	-.00069	-.00660	.00664	.00231	.00179
#2	-.00096	.06566	-.00067	.00082	.00695	.00246	.00367
#3	-.00101	.06665	-.00777	.00190	.00795	.00235	.00323
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8640.6	54537.	2976.3
Stddev	33.4	414.	2.8
%RSD	.38600	.75997	.09304
#1	8644.3	54100.	2977.4
#2	8672.0	54589.	2978.3
#3	8605.6	54924.	2973.1

Approved: June 25, 2016

Sample Name: L1606127202 Acquired: 6/24/2016 15:39:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00186	.20642	.00481	.36475	.06011	.00013	99.662
Stddev	.00151	.00493	.00284	.00380	.00039	.00009	.247
%RSD	81.194	2.3881	58.969	1.0428	.65090	70.313	.24793
#1	-.00316	.20852	.00188	.36055	.06036	.00024	99.944
#2	-.00221	.20995	.00754	.36574	.06030	.00009	99.557
#3	-.00020	.20079	.00500	.36796	.05966	.00007	99.485
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	-.00019	.00432	.00026	.09326	2.6088	.04279
Stddev	.00015	.00023	.00087	.00198	.00865	.0720	.00422
%RSD	400.35	123.60	20.116	760.87	9.2780	2.7582	9.8647
#1	.00014	-.00025	.00365	-.00200	.10250	2.6023	.04293
#2	-.00013	.00007	.00402	.00170	.09194	2.6838	.03850
#3	.00011	-.00038	.00531	.00108	.08535	2.5403	.04694
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	56.637	.00259	.00352	F 291.42	.00153	.00653	.00125
Stddev	.045	.00205	.00017	.68	.00123	.00611	.00197
%RSD	.08009	79.394	4.9276	.23185	80.436	93.561	157.56
#1	56.602	.00444	.00340	292.14	.00132	.01203	-.00086
#2	56.688	.00294	.00372	291.32	.00042	.00760	.00158
#3	56.620	.00038	.00344	290.80	.00286	-.00004	.00304
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 25, 2016

Sample Name: L1606127202 Acquired: 6/24/2016 15:39:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00336**	**.01090**	**9.4240**	**.00071**	**1.0342**	**-.01392**	**-.00220**
Stddev	.00383	.00615	.0240	.00151	.0037	.00663	.00343
%RSD	114.00	56.427	.25425	212.99	.35481	47.596	156.09
#1	.00463	.00381	9.4269	.00142	1.0381	-.00964	-.00233
#2	-.00094	.01477	9.4464	-.00103	1.0335	-.02155	-.00556
#3	.00639	.01413	9.3988	.00174	1.0309	-.01057	.00130
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00964**	**.00621**	**.00119**
Stddev	.00038	.00006	.00099
%RSD	3.9446	.99408	82.742
#1	.00988	.00626	.00026
#2	.00920	.00614	.00109
#3	.00983	.00622	.00223
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8435.9**	**53530.**	**2970.9**
Stddev	12.7	193.	17.9
%RSD	.15053	.36100	.60288
#1	8449.6	53485.	2950.4
#2	8433.7	53742.	2979.1
#3	8424.5	53363.	2983.2

Approved: June 25, 2016

Sample Name: L1606127901 Acquired: 6/24/2016 15:43:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00142**	**4.7663**	**.00159**	**.19149**	**.18987**	**.00044**	**117.30**	**.00019**
Stddev	.00097	.0101	.00508	.00228	.00171	.00003	.36	.00019
%RSD	68.564	.21115	319.18	1.1931	.90121	7.9858	.30828	101.16
#1	-.00138	4.7733	-.00262	.19304	.18994	.00044	117.72	.00036
#2	-.00047	4.7548	.00724	.19255	.18812	.00047	117.12	-.00002
#3	-.00241	4.7708	.00015	.18886	.19154	.00040	117.06	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00381**	**.02665**	**.00736**	**7.4592**	**1.7020**	**.01711**	**47.630**	**.93316**
Stddev	.00023	.00138	.00126	.0357	.0635	.00342	.150	.00698
%RSD	6.1636	5.1938	17.091	.47804	3.7303	19.974	.31555	.74834
#1	.00401	.02594	.00596	7.4987	1.7516	.02100	47.481	.93898
#2	.00386	.02577	.00840	7.4496	1.7241	.01458	47.626	.92542
#3	.00355	.02825	.00770	7.4293	1.6305	.01576	47.782	.93509
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00556**	**8.7030**	**.01355**	**.23085**	**.00447**	**-.00025**	**.00322**	**15.121**
Stddev	.00008	.0290	.00146	.00413	.00381	.00657	.00291	.053
%RSD	1.3705	.33347	10.784	1.7907	85.136	2585.4	90.596	.35335
#1	.00557	8.7074	.01369	.22722	.00571	.00305	.00109	15.155
#2	.00548	8.6721	.01493	.23000	.00751	.00401	.00202	15.147
#3	.00563	8.7296	.01202	.23535	.00020	-.00782	.00654	15.059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606127901 Acquired: 6/24/2016 15:43:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00095	.60203	.04472	-.00029	.01037	.12433	.00197
Stddev	.00031	.00068	.00309	.00162	.00044	.00100	.00042
%RSD	32.369	.11312	6.9034	565.97	4.2747	.80201	21.277
#1	.00130	.60249	.04781	-.00207	.01047	.12469	.00218
#2	.00073	.60125	.04470	.00012	.00988	.12510	.00223
#3	.00082	.60235	.04164	.00109	.01075	.12321	.00149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8541.6	54387.	2958.0
Stddev	16.9	129.	6.0
%RSD	.19780	.23665	.20194
#1	8551.3	54242.	2952.3
#2	8522.0	54430.	2964.2
#3	8551.3	54488.	2957.4

Approved: June 25, 2016

Sample Name: L1606127905 Acquired: 6/24/2016 15:47:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	8.8519	.00642	.19520	.18168	.00060	88.855	.00021
Stddev	.00244	.0381	.00178	.00225	.00180	.00002	.745	.00017
%RSD	304.73	.43060	27.774	1.1510	.99112	4.1261	.83808	83.018
#1	-.00092	8.8959	.00767	.19423	.18198	.00060	88.810	.00015
#2	.00359	8.8302	.00438	.19361	.18331	.00058	89.621	.00007
#3	-.00027	8.8295	.00720	.19777	.17975	.00063	88.133	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00371	.01642	.00773	9.7705	2.6089	.02290	51.286	.37067
Stddev	.00016	.00003	.00088	.0365	.0601	.00215	.182	.00572
%RSD	4.3765	.17741	11.436	.37305	2.3051	9.3850	.35555	1.5433
#1	.00374	.01645	.00699	9.7786	2.6549	.02048	51.464	.37725
#2	.00353	.01639	.00870	9.8021	2.5408	.02367	51.099	.36781
#3	.00386	.01643	.00749	9.7306	2.6308	.02456	51.296	.36694
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00429	17.960	.01399	.58938	.00723	.00345	.01660	21.595
Stddev	.00025	.178	.00089	.00540	.00230	.00161	.00485	.031
%RSD	5.7811	.99221	6.3701	.91546	31.747	46.678	29.224	.14556
#1	.00411	17.965	.01309	.59443	.00477	.00160	.01386	21.612
#2	.00457	18.136	.01402	.58370	.00760	.00453	.01374	21.615
#3	.00418	17.779	.01487	.59001	.00932	.00422	.02220	21.559
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606127905 Acquired: 6/24/2016 15:47:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00678	.39124	.08635	-.00072	.01938	.20486	.00337
Stddev	.00081	.00258	.00286	.00091	.00084	.00112	.00043
%RSD	12.000	.65984	3.3097	126.77	4.3495	.54646	12.804
#1	.00772	.39217	.08786	-.00156	.01996	.20592	.00287
#2	.00628	.39323	.08814	.00025	.01978	.20498	.00362
#3	.00633	.38833	.08306	-.00084	.01842	.20369	.00361
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8506.2	53713.	2954.1
Stddev	7.0	248.	24.6
%RSD	.08199	.46129	.83302
#1	8500.8	53999.	2935.6
#2	8503.6	53563.	2944.7
#3	8514.1	53577.	2982.0

Approved: June 25, 2016

Sample Name: L1606072901 Acquired: 6/24/2016 15:51:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	1.8041	.00151	.01140	.10342	.00036	3.3368	.00006
Stddev	.00108	.0244	.00306	.00144	.00016	.00001	.0325	.00013
%RSD	427.84	1.3517	203.06	12.597	.15291	1.6360	.97262	213.80
#1	-.00004	1.8139	.00460	.01195	.10325	.00036	3.3478	.00020
#2	.00071	1.7764	.00145	.01248	.10357	.00035	3.3623	.00000
#3	-.00142	1.8221	-.00153	.00977	.10345	.00036	3.3003	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00601	.00511	.00285	8.2259	3.9554	.00145	2.3354	.17823
Stddev	.00015	.00146	.00144	.0492	.0266	.00103	.0397	.00509
%RSD	2.5410	28.552	50.611	.59798	.67201	71.162	1.7012	2.8559
#1	.00590	.00675	.00119	8.2785	3.9276	.00182	2.3174	.17617
#2	.00596	.00394	.00359	8.2184	3.9579	.00029	2.3079	.18402
#3	.00619	.00465	.00379	8.1810	3.9806	.00225	2.3809	.17449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	8.3779	.00603	.06450	.00384	.00090	.00053	7.1161
Stddev	.00020	.1155	.00102	.00385	.00543	.00485	.00847	.0228
%RSD	31.960	1.3781	16.958	5.9688	141.68	539.69	1590.2	.32114
#1	.00082	8.4900	.00592	.06848	.00179	-.00460	.00777	7.1376
#2	.00068	8.3843	.00710	.06080	-.00028	.00272	-.00879	7.1186
#3	.00042	8.2593	.00507	.06423	.01000	.00457	.00261	7.0921
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606072901 Acquired: 6/24/2016 15:51:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.04015	.03567	-.00369	.00716	.03681	.00098
Stddev	.00043	.00039	.00196	.00299	.00019	.00045	.00038
%RSD	304.20	.97044	5.5017	80.892	2.6476	1.2228	39.254
#1	.00025	.04034	.03670	-.00592	.00694	.03696	.00089
#2	-.00033	.04041	.03689	-.00486	.00725	.03716	.00065
#3	.00052	.03970	.03340	-.00030	.00729	.03630	.00140
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8601.0	55071.	2949.1
Stddev	22.1	435.	50.8
%RSD	.25740	.79039	1.7219
#1	8576.7	54573.	2940.0
#2	8620.1	55377.	2903.5
#3	8606.2	55264.	3003.9

Approved: June 25, 2016

Sample Name: L1606072902 Acquired: 6/24/2016 15:55:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00183	.07171	-.00004	.00877	.08968	.00017	3.1101	.00014
Stddev	.00133	.00367	.00088	.00181	.00076	.00008	.0257	.00041
%RSD	72.550	5.1181	2064.2	20.689	.84741	48.064	.82680	296.40
#1	-.00115	.07091	-.00060	.01060	.09049	.00019	3.1398	.00007
#2	-.00335	.06851	.00097	.00697	.08956	.00008	3.0951	.00058
#3	-.00098	.07572	-.00050	.00874	.08898	.00025	3.0953	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00206	.00242	-.00092	.10471	3.8808	.00116	2.1628	.09158
Stddev	.00017	.00058	.00163	.02662	.0547	.00465	.0847	.00129
%RSD	8.4444	23.790	177.68	25.419	1.4105	401.58	3.9169	1.4137
#1	.00216	.00221	-.00063	.12487	3.9348	.00494	2.1162	.09307
#2	.00216	.00307	-.00267	.07454	3.8824	.00256	2.1116	.09074
#3	.00186	.00198	.00055	.11471	3.8253	-.00403	2.2606	.09093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	8.6660	.00357	-.01372	-.00186	.00337	.00433	5.4192
Stddev	.00050	.0276	.00104	.00287	.00136	.00414	.00201	.0141
%RSD	81.607	.31795	29.178	20.893	72.911	123.08	46.400	.26036
#1	.00102	8.6437	.00292	-.01305	-.00038	.00625	.00365	5.4112
#2	.00005	8.6574	.00477	-.01686	-.00305	-.00138	.00275	5.4355
#3	.00077	8.6968	.00302	-.01125	-.00214	.00523	.00659	5.4109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606072902 Acquired: 6/24/2016 15:55:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.04141	.00013	-.00361	-.00026	.00979	-.00013
Stddev	.00063	.00072	.00249	.00115	.00139	.00018	.00021
%RSD	803.32	1.7354	1938.9	31.844	526.60	1.8652	168.23
#1	.00042	.04184	.00137	-.00388	-.00173	.00988	.00006
#2	.00046	.04058	.00175	-.00235	-.00009	.00991	-.00008
#3	-.00065	.04180	-.00274	-.00460	.00103	.00958	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8610.5	55271.	2985.6
Stddev	26.5	458.	16.5
%RSD	.30752	.82920	.55375
#1	8583.1	55190.	2988.7
#2	8612.5	55764.	2967.7
#3	8635.9	54858.	3000.3

Approved: June 25, 2016

Sample Name: L1606072903 Acquired: 6/24/2016 15:59:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00118	3.0417	.00235	.05187	.04806	.00261	52.177	.00034
Stddev	.00191	.0195	.00046	.00139	.00143	.00010	.964	.00029
%RSD	162.37	.64007	19.486	2.6772	2.9802	3.6445	1.8470	86.323
#1	-.00068	3.0605	.00250	.05336	.04904	.00255	52.373	.00001
#2	.00314	3.0430	.00183	.05062	.04641	.00272	51.130	.00058
#3	.00108	3.0216	.00270	.05162	.04872	.00256	53.027	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05155	.00163	.00615	3.2341	2.3681	.00264	15.355	.83166
Stddev	.00029	.00223	.00059	.0481	.0794	.00380	.178	.01170
%RSD	.56184	136.36	9.6575	1.4861	3.3536	143.97	1.1614	1.4068
#1	.05176	.00341	.00624	3.2584	2.3449	-.00169	15.410	.84099
#2	.05167	.00234	.00669	3.1788	2.4565	.00542	15.156	.81853
#3	.05122	-.00086	.00552	3.2652	2.3028	.00418	15.500	.83544
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	6.0920	.02162	-.00809	.00351	.00212	-.00139	5.6304
Stddev	.00023	.0506	.00096	.00241	.00275	.00391	.00054	.0235
%RSD	26.502	.83131	4.4295	29.822	78.325	184.24	38.556	.41692
#1	.00068	6.1333	.02268	-.00867	.00452	-.00008	-.00126	5.6575
#2	.00079	6.0355	.02082	-.00544	.00040	-.00019	-.00198	5.6160
#3	.00112	6.1071	.02136	-.01016	.00562	.00664	-.00093	5.6178
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606072903 Acquired: 6/24/2016 15:59:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.47657**	**-.00608**	**-.00476**	**-.00070**	**.06207**	**.00194**
Stddev	.00020	.00492	.00552	.00119	.00050	.00066	.00073
%RSD	500.65	1.0315	90.719	25.070	72.152	1.0565	37.457
#1	-.00001	.48049	.00025	-.00490	-.00086	.06272	.00252
#2	-.00026	.47105	-.00862	-.00588	-.00110	.06208	.00113
#3	.00015	.47816	-.00987	-.00350	-.00013	.06141	.00218
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8765.4**	**55697.**	**3007.0**
Stddev	29.6	471.	42.7
%RSD	.33730	.84576	1.4194
#1	8742.0	55550.	2962.9
#2	8755.4	55316.	3048.1
#3	8798.6	56224.	3009.9

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 16:03:03 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41289	10.450	.41348	.51043	1.0555	.05100	10.588	.05276
Stddev	.00257	.033	.00046	.00258	.0038	.00013	.036	.00002
%RSD	.62124	.31280	.11216	.50484	.35613	.25797	.33694	.04519
#1	.41200	10.430	.41401	.50751	1.0515	.05085	10.563	.05275
#2	.41089	10.432	.41328	.51239	1.0590	.05106	10.629	.05274
#3	.41578	10.488	.41315	.51139	1.0561	.05109	10.571	.05278
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21164	.51432	.52788	4.1964	53.258	1.0465	10.545	.52810
Stddev	.00062	.00111	.00081	.0580	.178	.0014	.008	.00391
%RSD	.29347	.21487	.15291	1.3823	.33451	.13725	.07407	.74105
#1	.21169	.51306	.52786	4.1294	53.061	1.0455	10.542	.52435
#2	.21223	.51514	.52709	4.2295	53.408	1.0459	10.540	.52778
#3	.21099	.51475	.52870	4.2303	53.304	1.0481	10.554	.53216
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0563	52.905	.52985	10.441	.52745	1.2469	.41732	5.4599
Stddev	.0050	.293	.00133	.026	.00100	.0023	.00481	.0125
%RSD	.47494	.55369	.25035	.25038	.18928	.18400	1.1515	.22826
#1	1.0597	52.572	.53125	10.452	.52655	1.2494	.41899	5.4724
#2	1.0587	53.123	.52861	10.460	.52727	1.2448	.42108	5.4598
#3	1.0506	53.021	.52970	10.412	.52852	1.2466	.41191	5.4474
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 16:03:03 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0560**	**1.0590**	**1.0626**	**.52607**	**1.0260**	**1.0604**	**1.0440**
Stddev	.0044	.0030	.0208	.00455	.0043	.0021	.0098
%RSD	.42093	.28690	1.9614	.86396	.41541	.20224	.93608
#1	1.0595	1.0556	1.0394	.53131	1.0214	1.0614	1.0527
#2	1.0574	1.0601	1.0799	.52323	1.0298	1.0619	1.0458
#3	1.0510	1.0613	1.0685	.52368	1.0267	1.0580	1.0334
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8488.4**	**53377.**	**2896.8**
Stddev	8.3	364.	12.7
%RSD	.09787	.68148	.43965
#1	8479.0	53754.	2889.4
#2	8491.5	53348.	2889.4
#3	8494.7	53029.	2911.5

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 16:06:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00237	.00904	-.00013	.00126	.00087	.00009	-.03750	-.00001
Stddev	.00028	.00458	.00263	.00213	.00072	.00007	.02259	.00008
%RSD	11.906	50.683	2037.4	169.22	82.542	80.192	60.228	1296.7
#1	-.00241	.00648	.00161	-.00103	.00165	.00017	-.03103	-.00010
#2	-.00207	.01433	.00116	.00161	.00026	.00004	-.06261	.00006
#3	-.00263	.00631	-.00315	.00320	.00069	.00005	-.01886	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	.00163	-.00062	-.00620	.11573	-.00304	.01488	-.00078
Stddev	.00019	.00081	.00029	.01930	.05076	.00240	.08011	.00324
%RSD	50.224	49.496	47.487	311.51	43.862	78.989	538.48	412.93
#1	-.00042	.00249	-.00061	-.01546	.17426	-.00529	-.06290	.00186
#2	-.00056	.00088	-.00092	-.01911	.08368	-.00051	.01039	.00018
#3	-.00018	.00152	-.00033	.01599	.08926	-.00333	.09714	-.00439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00388	.01952	-.00090	.00067	.00140	.00754	.00367	.00739
Stddev	.00023	.03874	.00071	.00300	.00256	.00569	.00313	.00164
%RSD	6.0070	198.45	79.652	449.20	182.69	75.419	85.488	22.213
#1	.00376	.02524	-.00008	-.00038	.00209	.01012	.00682	.00912
#2	.00415	-.02176	-.00124	-.00167	-.00143	.01148	.00055	.00586
#3	.00373	.05509	-.00138	.00405	.00355	.00102	.00364	.00718
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 16:06:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00018**	**.00023**	**-.00285**	**.00152**	**-.00011**	**.00008**	**.00116**
Stddev	.00056	.00010	.00052	.00103	.00094	.00006	.00015
%RSD	318.85	44.632	18.333	67.447	850.45	74.145	12.905
#1	.00055	.00034	-.00230	.00197	.00080	.00011	.00132
#2	-.00047	.00013	-.00334	.00225	-.00005	.00011	.00114
#3	.00045	.00022	-.00292	.00035	-.00108	.00001	.00103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8999.0**	**56919.**	**3062.6**
Stddev	9.4	30.	18.0
%RSD	.10413	.05237	.58755
#1	9009.8	56950.	3042.1
#2	8994.5	56918.	3075.7
#3	8992.7	56890.	3070.0

Approved: June 25, 2016

Sample Name: L1606114801 Acquired: 6/24/2016 16:10:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00053	.79294	.00201	.13513	.08691	.00012	28.737	.00030
Stddev	.00214	.00688	.00416	.00148	.00038	.00006	.282	.00020
%RSD	404.68	.86711	206.32	1.0978	.43964	55.958	.98042	65.656
#1	-.00285	.79770	.00316	.13676	.08683	.00010	28.751	.00014
#2	-.00010	.78505	.00548	.13388	.08658	.00006	28.449	.00052
#3	.00136	.79606	-.00260	.13474	.08733	.00019	29.012	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	.00303	.00093	.48318	5.0170	.00697	15.013	.02622
Stddev	.00047	.00140	.00169	.02352	.0508	.00319	.317	.00088
%RSD	624.02	46.131	181.65	4.8676	1.0122	45.790	2.1109	3.3547
#1	-.00062	.00464	.00230	.46183	4.9691	.00964	14.955	.02533
#2	.00023	.00225	.00145	.50839	5.0118	.00344	14.729	.02708
#3	.00016	.00220	-.00096	.47933	5.0702	.00783	15.355	.02625
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00263	68.950	.00101	.04783	-.00130	.00580	.00131	4.7242
Stddev	.00040	.584	.00074	.00541	.00251	.00495	.00256	.0383
%RSD	15.214	.84747	72.757	11.317	193.03	85.336	195.73	.81053
#1	.00232	69.030	.00034	.05397	-.00090	.00563	.00084	4.7496
#2	.00249	68.330	.00180	.04371	-.00398	.00094	.00407	4.7429
#3	.00308	69.490	.00090	.04583	.00099	.01083	-.00099	4.6802
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114801 Acquired: 6/24/2016 16:10:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.27997**	**.00221**	**-.00090**	**.00318**	**.00551**	**.00289**
Stddev	.00064	.00232	.00318	.00103	.00034	.00004	.00087
%RSD	411.94	.83018	144.19	113.71	10.535	.75135	29.945
#1	.00041	.28044	.00583	.00027	.00296	.00549	.00189
#2	-.00003	.27744	-.00015	-.00131	.00357	.00556	.00344
#3	-.00085	.28201	.00094	-.00166	.00301	.00548	.00335
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8599.5**	**54385.**	**2981.3**
Stddev	16.0	89.	24.9
%RSD	.18617	.16380	.83644
#1	8603.2	54438.	2974.6
#2	8613.3	54435.	3008.9
#3	8581.9	54282.	2960.3

Approved: June 25, 2016

Sample Name: L1606114802 Acquired: 6/24/2016 16:14:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00204**	**.04975**	**.00299**	**.13869**	**.15047**	**-.00005**	**55.818**	**.00017**
Stddev	.00109	.01051	.00093	.00193	.00152	.00005	.396	.00020
%RSD	53.121	21.121	30.942	1.3904	1.0132	102.05	.70964	116.40
#1	-.00265	.04009	.00388	.13978	.15223	-.00009	56.185	-.00006
#2	-.00269	.06094	.00203	.13983	.14951	.00001	55.872	.00027
#3	-.00079	.04821	.00306	.13647	.14968	-.00007	55.398	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.00481**	**.00009**	**.04662**	**2.9224**	**.00713**	**49.316**	**.00366**
Stddev	.00044	.00030	.00072	.01678	.0836	.00442	.171	.00293
%RSD	1148.5	6.2977	802.56	35.999	2.8609	61.973	.34731	80.138
#1	-.00051	.00471	-.00074	.03351	2.9561	.00300	49.393	.00341
#2	.00002	.00515	.00053	.04082	2.8272	.00660	49.435	.00671
#3	.00037	.00456	.00048	.06554	2.9839	.01179	49.119	.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00188**	**121.90**	**.00147**	**.02233**	**.00149**	**.00278**	**.01025**	**6.1560**
Stddev	.00035	.74	.00041	.00365	.00184	.00274	.00234	.0472
%RSD	18.786	.61102	27.946	16.368	123.30	98.711	22.816	.76606
#1	.00151	122.69	.00179	.01811	-.00020	.00379	.01254	6.1806
#2	.00191	121.83	.00160	.02439	.00122	-.00033	.01035	6.1857
#3	.00221	121.20	.00101	.02449	.00344	.00487	.00787	6.1016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114802 Acquired: 6/24/2016 16:14:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.39251**	**-.00823**	**-.00167**	**.00748**	**.00735**	**.00172**
Stddev	.00093	.00157	.00304	.00302	.00088	.00035	.00065
%RSD	461.50	.40050	36.982	180.68	11.724	4.7920	38.067
#1	-.00008	.39329	-.00720	-.00346	.00697	.00775	.00121
#2	.00066	.39355	-.00584	-.00336	.00697	.00723	.00149
#3	-.00119	.39070	-.01166	.00181	.00849	.00708	.00246
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8495.3**	**54006.**	**2982.2**
Stddev	21.4	124.	30.9
%RSD	.25175	.22933	1.0346
#1	8477.7	53900.	2949.3
#2	8519.1	54142.	3010.5
#3	8489.1	53977.	2986.7

Approved: June 25, 2016

Sample Name: L1606115001 Acquired: 6/24/2016 16:18:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	1.0029	.00299	.14279	.11041	.00016	35.956	.00009
Stddev	.00251	.0141	.00281	.00105	.00192	.00007	.317	.00003
%RSD	627.75	1.4010	94.062	.73688	1.7392	40.398	.88245	32.058
#1	.00224	1.0135	.00421	.14372	.11062	.00023	36.172	.00007
#2	.00142	.98692	.00498	.14165	.10839	.00010	35.592	.00007
#3	-.00246	1.0082	-.00023	.14300	.11222	.00016	36.105	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.00317	.00169	.71808	2.8256	.00873	22.732	.05335
Stddev	.00027	.00048	.00070	.01344	.0315	.00112	.258	.00149
%RSD	4893.9	15.268	41.765	1.8711	1.1137	12.865	1.1351	2.7844
#1	.00025	.00269	.00090	.73141	2.8424	.00751	22.933	.05174
#2	.00004	.00315	.00188	.70454	2.7893	.00972	22.441	.05367
#3	-.00028	.00366	.00227	.71827	2.8451	.00896	22.823	.05466
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00379	119.94	.00083	.11747	.00336	.00193	-.00362	5.3987
Stddev	.00029	.91	.00054	.00963	.00165	.00170	.00327	.0216
%RSD	7.6691	.75510	65.143	8.1950	48.899	88.260	90.387	.40081
#1	.00400	120.59	.00089	.11089	.00147	.00389	-.00507	5.4237
#2	.00392	118.90	.00135	.11301	.00415	.00109	.00013	5.3854
#3	.00346	120.32	.00027	.12852	.00447	.00081	-.00591	5.3870
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115001 Acquired: 6/24/2016 16:18:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**.24860**	**.00831**	**.00040**	**.00721**	**.00897**	**.00156**
Stddev	.00102	.00079	.00563	.00208	.00033	.00019	.00032
%RSD	900.41	.31800	67.748	518.71	4.6076	2.0684	20.721
#1	-.00127	.24885	.00936	.00280	.00755	.00907	.00137
#2	.00028	.24771	.00223	-.00097	.00689	.00909	.00139
#3	.00065	.24923	.01334	-.00062	.00718	.00876	.00194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8658.5**	**54840.**	**3032.2**
Stddev	11.5	83.	32.1
%RSD	.13234	.15154	1.0598
#1	8653.8	54773.	3000.1
#2	8671.6	54933.	3064.4
#3	8650.2	54814.	3032.3

Approved: June 25, 2016

Sample Name: L1606115002 Acquired: 6/24/2016 16:22:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00114	.54802	.00239	.07237	.04756	.00011	17.868	-.00002
Stddev	.00116	.00304	.00234	.00183	.00074	.00011	.296	.00023
%RSD	101.69	.55434	98.297	2.5331	1.5569	98.769	1.6590	1035.8
#1	-.00186	.54599	.00388	.07434	.04758	.00024	18.086	-.00007
#2	.00020	.55151	.00360	.07071	.04682	.00003	17.530	-.00022
#3	-.00176	.54656	-.00032	.07205	.04830	.00007	17.987	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	.00269	.00128	.42445	5.1441	.00730	5.7440	.01494
Stddev	.00045	.00114	.00159	.02138	.0765	.00321	.0131	.00279
%RSD	2112.8	42.310	124.60	5.0376	1.4863	44.008	.22880	18.670
#1	.00037	.00359	.00010	.43132	5.0900	.01003	5.7588	.01523
#2	.00009	.00307	.00065	.40047	5.1108	.00376	5.7337	.01757
#3	-.00052	.00141	.00309	.44154	5.2316	.00811	5.7395	.01202
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00098	41.148	.00106	.06447	-.00062	.00281	.00337	1.7279
Stddev	.00070	.471	.00049	.00342	.00129	.00199	.00517	.0310
%RSD	71.365	1.1451	45.916	5.3017	208.13	70.714	153.38	1.7951
#1	.00087	41.063	.00159	.06818	.00051	.00505	.00033	1.7430
#2	.00034	40.725	.00095	.06144	-.00034	.00212	.00044	1.7484
#3	.00173	41.656	.00063	.06379	-.00203	.00126	.00935	1.6922
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115002 Acquired: 6/24/2016 16:22:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.10093**	**.00308**	**-.00183**	**.00519**	**.00618**	**.00126**
Stddev	.00067	.00110	.00218	.00277	.00055	.00020	.00057
%RSD	398.57	1.0927	70.842	151.99	10.532	3.3140	45.733
#1	-.00011	.10080	.00275	.00082	.00488	.00640	.00076
#2	-.00086	.09989	.00108	-.00159	.00582	.00617	.00189
#3	.00047	.10209	.00541	-.00471	.00488	.00599	.00112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8768.3**	**55601.**	**3006.8**
Stddev	44.8	353.	32.6
%RSD	.51146	.63549	1.0826
#1	8739.7	56008.	3020.9
#2	8745.2	55379.	3029.9
#3	8820.0	55415.	2969.6

Approved: June 25, 2016

Sample Name: L1606115102 Acquired: 6/24/2016 16:26:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00157**	**.16673**	**-.00164**	**.11324**	**.07508**	**.00006**	**35.965**	**.00009**
Stddev	.00123	.00968	.00381	.00123	.00110	.00006	.070	.00012
%RSD	78.798	5.8070	231.94	1.0834	1.4713	89.197	.19353	140.18
#1	-.00058	.15593	.00273	.11273	.07407	.00011	35.891	.00006
#2	-.00295	.17462	-.00340	.11236	.07626	.00000	35.974	.00023
#3	-.00117	.16964	-.00425	.11464	.07493	.00008	36.029	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00021**	**.00268**	**.00078**	**.22571**	**2.4607**	**.00715**	**20.455**	**.06028**
Stddev	.00017	.00071	.00110	.01627	.0572	.00329	.118	.00255
%RSD	80.425	26.322	141.38	7.2093	2.3240	45.999	.57620	4.2253
#1	-.00019	.00196	.00195	.23780	2.5245	.01081	20.570	.06072
#2	-.00005	.00272	-.00023	.23211	2.4140	.00618	20.461	.06258
#3	-.00038	.00337	.00061	.20721	2.4435	.00445	20.335	.05755
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00276**	**97.835**	**-.00067**	**.04806**	**-.00242**	**.00513**	**.00378**	**5.3799**
Stddev	.00044	.396	.00100	.00252	.00339	.00529	.00744	.2322
%RSD	15.877	.40451	148.20	5.2532	139.98	103.15	196.88	4.3153
#1	.00319	97.412	.00043	.04730	.00016	.00550	.01195	5.2447
#2	.00231	98.197	-.00093	.05087	-.00625	.01022	-.00261	5.2471
#3	.00278	97.896	-.00151	.04600	-.00116	-.00034	.00199	5.6480
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115102 Acquired: 6/24/2016 16:26:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00071**	**.23607**	**-.00930**	**.00015**	**.00351**	**.01289**	**.00068**
Stddev	.00028	.00125	.00346	.00259	.00142	.00062	.00031
%RSD	39.765	.53152	37.213	1786.3	40.411	4.8488	45.284
#1	-.00042	.23498	-.00585	.00230	.00418	.01260	.00081
#2	-.00072	.23744	-.00927	.00087	.00188	.01246	.00090
#3	-.00098	.23579	-.01277	-.00273	.00448	.01361	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8582.8**	**55285.**	**3037.3**
Stddev	259.2	168.	27.1
%RSD	3.0201	.30413	.89376
#1	8731.0	55097.	3068.5
#2	8733.8	55422.	3018.9
#3	8283.5	55335.	3024.5

Approved: June 25, 2016

Sample Name: L1606115105 Acquired: 6/24/2016 16:30:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00162	.10538	.00245	.14951	.09631	.00009	45.968	.00027
Stddev	.00070	.00798	.00198	.00195	.00083	.00004	.579	.00038
%RSD	42.968	7.5757	80.657	1.3067	.86692	43.233	1.2597	142.70
#1	-.00098	.11396	.00050	.14740	.09536	.00011	46.292	.00068
#2	-.00153	.09816	.00240	.15125	.09664	.00005	45.300	-.00007
#3	-.00237	.10403	.00446	.14988	.09693	.00012	46.313	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	.00270	-.00048	.17572	2.0276	.00721	26.821	.07924
Stddev	.00018	.00083	.00087	.01470	.0656	.00380	.415	.00616
%RSD	45.378	30.889	179.73	8.3676	3.2368	52.699	1.5460	7.7799
#1	-.00018	.00343	-.00076	.15875	2.0306	.00292	26.890	.08485
#2	-.00050	.00179	-.00118	.18434	2.0917	.01014	26.377	.07264
#3	-.00048	.00289	.00049	.18408	1.9605	.00857	27.198	.08022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00327	129.55	-.00083	.03925	.00528	.00057	.00250	6.3879
Stddev	.00022	1.74	.00110	.00683	.00391	.00168	.00309	.0293
%RSD	6.5817	1.3407	132.79	17.395	74.018	296.78	123.71	.45807
#1	.00302	130.39	-.00047	.04701	.00428	.00171	.00164	6.4058
#2	.00340	127.55	-.00206	.03419	.00959	-.00136	-.00008	6.4037
#3	.00339	130.71	.00005	.03653	.00197	.00136	.00592	6.3541
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115105 Acquired: 6/24/2016 16:30:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00073**	**.30328**	**-.00537**	**-.00168**	**.00336**	**.00866**	**.00060**
Stddev	.00061	.00418	.00652	.00091	.00046	.00013	.00023
%RSD	83.700	1.3769	121.45	54.113	13.812	1.5061	38.244
#1	-.00141	.30492	-.01282	-.00078	.00283	.00877	.00050
#2	-.00022	.29853	-.00064	-.00260	.00371	.00870	.00044
#3	-.00057	.30639	-.00266	-.00165	.00352	.00851	.00087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8543.0**	**54064.**	**2974.7**
Stddev	21.3	458.	55.5
%RSD	.24931	.84639	1.8656
#1	8566.3	53562.	2939.2
#2	8524.4	54174.	3038.7
#3	8538.3	54457.	2946.3

Approved: June 25, 2016

Sample Name: L1606115401 Acquired: 6/24/2016 16:34:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00112**	**.08710**	**.00114**	**1.7588**	**.02106**	**.00002**	F **475.73**
Stddev	.00180	.00226	.00412	.0043	.00048	.00007	2.70
%RSD	160.71	2.5955	360.37	.24448	2.2952	394.51	.56675
#1	.00049	.08967	-.00088	1.7610	.02071	.00002	477.13
#2	-.00307	.08544	.00589	1.7616	.02085	.00009	472.62
#3	-.00079	.08619	-.00158	1.7539	.02161	-.00005	477.44
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**.00093**	**.00346**	**.00194**	**.05481**	**4.3815**	**.10949**
Stddev	.00005	.00052	.00138	.00145	.01743	.0383	.00511
%RSD	50.448	56.000	39.846	74.561	31.801	.87412	4.6701
#1	.00014	.00075	.00476	.00027	.04818	4.4220	.10952
#2	.00007	.00053	.00201	.00283	.07458	4.3766	.10437
#3	.00006	.00152	.00360	.00271	.04166	4.3458	.11459
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**113.88**	**.27248**	**.02443**	F **962.52**	**-.00144**	**.02893**	**.00007**
Stddev	.66	.00359	.00021	16.50	.00136	.00999	.00237
%RSD	.58361	1.3185	.87734	1.7144	94.283	34.540	3393.1
#1	114.28	.27132	.02429	980.75	-.00065	.03963	-.00254
#2	113.11	.26961	.02467	958.20	-.00301	.02733	.00065
#3	114.24	.27651	.02431	948.60	-.00067	.01983	.00210
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 25, 2016

Sample Name: L1606115401 Acquired: 6/24/2016 16:34:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00227**	**.05452**	**5.3738**	**-.00180**	**8.7578**	F **-.06233**	**-.00181**
Stddev	.00372	.01187	.0403	.00058	.0451	.00486	.00179
%RSD	164.10	21.769	.74949	32.077	.51456	7.7978	98.539
#1	.00553	.05924	5.3959	-.00119	8.7791	-.06137	-.00108
#2	-.00178	.06330	5.3982	-.00185	8.7060	-.06760	-.00385
#3	.00305	.04102	5.3273	-.00234	8.7883	-.05802	-.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.01547**	**.00549**	**.00090**
Stddev	.00027	.00005	.00051
%RSD	1.7389	.84148	56.410
#1	.01521	.00546	.00038
#2	.01575	.00554	.00139
#3	.01545	.00546	.00093
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7824.9**	**49741.**	**2897.8**
Stddev	25.7	56.	41.7
%RSD	.32891	.11264	1.4378
#1	7852.3	49711.	2855.6
#2	7801.3	49805.	2938.9
#3	7821.1	49706.	2898.8

Approved: June 25, 2016

Sample Name: L1606115402S Acquired: 6/24/2016 16:38:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20827**	**5.3848**	**.22077**	**2.7748**	**.54172**	**.02512**	F **481.48**
Stddev	.00188	.0082	.00532	.0041	.00285	.00016	3.09
%RSD	.90285	.15294	2.4089	.14749	.52604	.62525	.64217
#1	.20610	5.3941	.22023	2.7718	.54377	.02494	484.49
#2	.20928	5.3784	.21574	2.7795	.53847	.02524	478.32
#3	.20943	5.3820	.22633	2.7732	.54294	.02519	481.64
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02719**	**.10282**	**.25237**	**.25450**	**2.0775**	**32.155**	**.65463**
Stddev	.00089	.00263	.00138	.00503	.0009	.192	.00487
%RSD	3.2606	2.5533	.54827	1.9758	.04312	.59849	.74370
#1	.02745	.10267	.25157	.25657	2.0772	32.268	.65849
#2	.02620	.10027	.25158	.24877	2.0768	31.933	.64916
#3	.02792	.10551	.25397	.25816	2.0785	32.264	.65623
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**118.98**	**.51147**	**.55840**	F **977.71**	**.24997**	**5.5144**	**.24919**
Stddev	.84	.00370	.01031	13.22	.00452	.1131	.00286
%RSD	.70668	.72420	1.8456	1.3517	1.8092	2.0516	1.1484
#1	119.22	.51132	.56227	988.78	.25125	5.5401	.24784
#2	118.05	.50785	.54671	963.08	.24494	5.3907	.24725
#3	119.67	.51526	.56620	981.27	.25371	5.6125	.25247
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 25, 2016

Sample Name: L1606115402S Acquired: 6/24/2016 16:38:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-07

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.65290	.26530	8.4198	.51035	F 9.1325	.46797	.23861
Stddev	.01747	.00322	.1773	.00998	.0563	.00190	.00481
%RSD	2.6758	1.2148	2.1060	1.9552	.61631	.40567	2.0152
#1	.65559	.26528	8.4639	.51157	9.1879	.46964	.23992
#2	.63423	.26208	8.2246	.49982	9.0754	.46837	.23329
#3	.66886	.26853	8.5709	.51967	9.1341	.46591	.24263
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.52988	.50936	.00371
Stddev	.00272	.00898	.00129
%RSD	.51319	1.7635	34.695
#1	.52752	.51212	.00232
#2	.53285	.49932	.00397
#3	.52929	.51664	.00486
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7884.5	49106.	2856.5
Stddev	105.8	326.	14.3
%RSD	1.3422	.66476	.50060
#1	7820.3	49374.	2840.1
#2	8006.6	48742.	2866.5
#3	7826.4	49201.	2863.0

Approved: June 25, 2016

Sample Name: L1606115403SD Acquired: 6/24/2016 16:41:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21318**	**5.5219**	**.22092**	**2.8411**	**.55147**	**.02575**	F **492.79**
Stddev	.00065	.0112	.00589	.0011	.00218	.00014	1.50
%RSD	.30664	.20191	2.6650	.03940	.39554	.52600	.30476
#1	.21335	5.5119	.22701	2.8414	.55201	.02561	493.55
#2	.21373	5.5198	.21525	2.8420	.55334	.02574	493.76
#3	.21246	5.5339	.22050	2.8398	.54907	.02588	491.06
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02750**	**.10490**	**.25795**	**.25725**	**2.1243**	**32.619**	**.67266**
Stddev	.00021	.00070	.00047	.00265	.0074	.077	.00146
%RSD	.77118	.66790	.18314	1.0291	.34930	.23491	.21692
#1	.02742	.10569	.25827	.25739	2.1327	32.707	.67327
#2	.02774	.10437	.25740	.25983	2.1215	32.578	.67371
#3	.02733	.10462	.25816	.25454	2.1186	32.570	.67099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**121.94**	**.53555**	**.56884**	F **1003.0**	**.25497**	**5.6115**	**.25353**
Stddev	1.03	.00255	.00183	18.6	.00121	.0201	.00219
%RSD	.84627	.47696	.32086	1.8553	.47333	.35743	.86324
#1	122.15	.53804	.57050	985.68	.25562	5.6230	.25369
#2	122.86	.53294	.56914	1022.7	.25358	5.6231	.25563
#3	120.83	.53569	.56689	1000.7	.25572	5.5883	.25126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 25, 2016

Sample Name: L1606115403SD Acquired: 6/24/2016 16:41:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-08

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.65696	.26457	8.4131	.52165	F 9.4226	.46735	.23912
Stddev	.00333	.00374	.0316	.00269	.0362	.01011	.00184
%RSD	.50727	1.4118	.37513	.51544	.38375	2.1625	.76932
#1	.65370	.26813	8.4363	.52387	9.4401	.47243	.24121
#2	.65681	.26068	8.4259	.52242	9.4467	.47392	.23839
#3	.66036	.26490	8.3772	.51866	9.3810	.45571	.23775
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.54896	.51795	.00121
Stddev	.00138	.00177	.00029
%RSD	.25147	.34088	23.705
#1	.54994	.51962	.00099
#2	.54738	.51811	.00110
#3	.54956	.51610	.00153
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7860.1	48589.	2847.4
Stddev	50.1	121.	22.3
%RSD	.63713	.24945	.78175
#1	7818.4	48525.	2848.5
#2	7915.7	48729.	2824.6
#3	7846.2	48513.	2869.0

Approved: June 25, 2016

Sample Name: L1606115404 Acquired: 6/24/2016 16:45:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00122	.01860	-.00030	.01638	.00225	.00005	.28683	-.00012
Stddev	.00163	.00994	.00314	.00092	.00043	.00004	.01104	.00018
%RSD	133.72	53.451	1055.5	5.6210	18.855	79.103	3.8486	155.68
#1	-.00307	.02997	-.00390	.01572	.00263	.00002	.29952	-.00004
#2	-.00060	.01154	.00185	.01743	.00234	.00010	.27937	.00001
#3	.00001	.01428	.00116	.01599	.00179	.00004	.28161	-.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00024	.01568	.00001	.06012	.09546	-.00324	.00979	.00031
Stddev	.00056	.00036	.00106	.01420	.11597	.00346	.08319	.00089
%RSD	231.82	2.2719	10907.	23.626	121.49	106.87	849.48	288.55
#1	-.00089	.01585	.00111	.07503	.19093	-.00003	.06904	.00129
#2	.00009	.01527	-.00008	.05858	.12903	-.00690	.04565	.00007
#3	.00007	.01593	-.00101	.04675	-.03359	-.00278	-.08531	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00255	.66337	.00857	-.00604	-.00185	.00349	.00131	.15854
Stddev	.00019	.05593	.00126	.00424	.00110	.00087	.00666	.00230
%RSD	7.5264	8.4316	14.741	70.198	59.693	24.819	509.73	1.4538
#1	.00259	.72482	.00746	-.00130	-.00068	.00343	.00738	.16031
#2	.00235	.64984	.00994	-.00737	-.00288	.00439	.00236	.15939
#3	.00273	.61544	.00829	-.00947	-.00198	.00266	-.00582	.15593
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115404 Acquired: 6/24/2016 16:45:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00114	.00192	-.00273	-.00024	-.00105	.00380	-.00006
Stddev	.00043	.00049	.00812	.00123	.00122	.00012	.00020
%RSD	38.035	25.716	297.07	517.69	116.94	3.1680	325.23
#1	.00113	.00170	.00647	.00075	.00015	.00366	.00009
#2	.00071	.00158	-.00889	-.00162	-.00230	.00388	.00001
#3	.00157	.00249	-.00577	.00015	-.00099	.00385	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8580.0	54662.	2910.1
Stddev	27.2	355.	25.0
%RSD	.31663	.64995	.85931
#1	8600.6	54561.	2884.9
#2	8549.2	54369.	2910.5
#3	8590.1	55057.	2934.9

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 16:49:41 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.43680	F 11.176	.43789	.54982	F 1.1171	.05445	F 11.119
Stddev	.00172	.018	.00189	.00440	.0014	.00015	.036
%RSD	.39299	.15765	.43249	.80088	.12620	.27540	.32719
#1	.43691	11.183	.43822	.54528	1.1178	.05443	11.142
#2	.43503	11.190	.43585	.55010	1.1155	.05461	11.077
#3	.43846	11.156	.43959	.55407	1.1181	.05432	11.138
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Fail
Value		10.000			1.0000		10.000
Range		10.000%			10.000%		10.000%

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .05633	F .22617	F .55126	F .56533	F 4.4609	F 55.977	F 1.1059
Stddev	.00017	.00064	.00319	.00048	.0397	.128	.0055
%RSD	.29635	.28432	.57821	.08567	.88958	.22829	.49468
#1	.05616	.22640	.55107	.56585	4.4151	56.054	1.1075
#2	.05649	.22544	.55454	.56490	4.4847	56.049	1.0998
#3	.05636	.22667	.54818	.56522	4.4829	55.830	1.1104
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.05000	.20000	.50000	.50000	4.0000	50.000	1.0000
Range	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 11.384	F .56189	F 1.1214	F 56.250	F .56448	F 11.114	F .56389
Stddev	.114	.00225	.0062	.207	.00324	.010	.00157
%RSD	1.0047	.39966	.55197	.36872	.57382	.08753	.27797
#1	11.258	.56141	1.1267	56.351	.56745	11.125	.56213
#2	11.411	.55993	1.1229	56.011	.56498	11.108	.56513
#3	11.482	.56434	1.1146	56.388	.56103	11.109	.56440
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	10.000	.50000	1.0000	50.000	.50000	10.000	.50000
Range	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 16:49:41 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 1.3274	F .44356	F 5.7903	F 1.1245	F 1.1149	F 1.1307	F .56203
Stddev	.0049	.00768	.0098	.0024	.0021	.0005	.00057
%RSD	.36997	1.7311	.16930	.21252	.19132	.04240	.10129
#1	1.3317	.45066	5.7923	1.1260	1.1167	1.1307	.56147
#2	1.3285	.43541	5.7990	1.1258	1.1126	1.1312	.56261
#3	1.3221	.44459	5.7797	1.1218	1.1155	1.1302	.56203
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	1.2000	.40000	5.0000	1.0000	1.0000	1.0000	.50000
Range	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0960	F 1.1347	F 1.1407
Stddev	.0015	.0007	.0035
%RSD	.13658	.06108	.30311
#1	1.0952	1.1349	1.1440
#2	1.0977	1.1353	1.1410
#3	1.0950	1.1339	1.1371
Check ?	Chk Pass	Chk Fail	Chk Fail
Value		1.0000	1.0000
Range		10.000%	10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8096.2	51142.	2733.9
Stddev	29.8	63.	5.0
%RSD	.36765	.12288	.18140
#1	8130.4	51179.	2732.9
#2	8076.4	51177.	2739.3
#3	8081.7	51069.	2729.5

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 16:53:19 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00033	.01327	.00238	.00643	.00121	.00007	-.00167	-.00005
Stddev	.00141	.01171	.00342	.00125	.00080	.00010	.03044	.00029
%RSD	426.78	88.245	144.15	19.490	66.292	147.81	1819.0	607.59
#1	.00128	.01371	-.00152	.00772	.00190	.00009	.02045	.00023
#2	-.00132	.00135	.00372	.00522	.00033	-.00004	.01093	-.00002
#3	-.00095	.02475	.00492	.00636	.00140	.00016	-.03639	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00040	.00240	-.00122	.00892	.06454	-.00208	.01293	-.00217
Stddev	.00023	.00085	.00133	.03053	.04042	.00235	.09468	.00444
%RSD	57.271	35.494	108.62	342.28	62.627	112.51	732.17	204.98
#1	-.00056	.00224	-.00068	.03546	.02108	.00042	-.02621	-.00033
#2	-.00049	.00164	-.00274	-.02444	.10100	-.00423	-.05591	-.00724
#3	-.00014	.00333	-.00025	.01574	.07154	-.00243	.12091	.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00412	.05925	-.00060	.00128	-.00151	.00790	.00028	.00721
Stddev	.00047	.02488	.00110	.00409	.00218	.00364	.00257	.00069
%RSD	11.345	41.996	183.24	319.65	144.28	46.033	911.72	9.6357
#1	.00409	.04650	-.00151	.00204	-.00359	.00755	.00027	.00786
#2	.00461	.04332	-.00091	.00493	.00076	.00445	-.00228	.00728
#3	.00367	.08792	.00062	-.00314	-.00171	.01170	.00286	.00648
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 16:53:19 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00079	.00010	-.00054	-.00150	-.00005	-.00017	.00104
Stddev	.00040	.00035	.00043	.00099	.00012	.00015	.00121
%RSD	50.261	334.74	79.697	65.771	246.62	83.311	116.20
#1	-.00103	.00027	-.00013	-.00083	-.00015	-.00024	-.00027
#2	-.00033	-.00030	-.00099	-.00264	-.00008	-.00027	.00129
#3	-.00101	.00034	-.00050	-.00104	.00008	-.00001	.00211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8805.7	55774.	2937.7
Stddev	23.4	137.	34.1
%RSD	.26594	.24637	1.1609
#1	8792.6	55618.	2899.6
#2	8791.8	55877.	2948.2
#3	8832.7	55828.	2965.3

Approved: June 25, 2016

Sample Name: L1606115501 Acquired: 6/24/2016 16:57:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00057	.02931	.00224	.28378	.19240	.00016	48.483	.00005
Stddev	.00217	.00495	.00248	.00304	.00180	.00006	.260	.00014
%RSD	383.36	16.898	111.07	1.0699	.93528	36.773	.53700	254.61
#1	-.00028	.02866	.00462	.28285	.19438	.00013	48.783	.00004
#2	-.00287	.03456	.00243	.28717	.19087	.00022	48.333	-.00007
#3	.00145	.02472	-.00034	.28131	.19193	.00012	48.332	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	.00176	-.00033	.06151	1.8575	.00843	30.251	1.7892
Stddev	.00026	.00067	.00098	.00944	.0885	.00304	.179	.0058
%RSD	228.27	38.060	297.98	15.343	4.7667	36.016	.59249	.32588
#1	-.00041	.00253	.00018	.05715	1.7633	.00492	30.428	1.7956
#2	.00007	.00133	-.00146	.05504	1.9389	.01012	30.255	1.7880
#3	-.00000	.00141	.00029	.07234	1.8704	.01024	30.070	1.7841
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00582	81.691	.00244	.01501	-.00223	-.00056	-.00145	7.4745
Stddev	.00028	.416	.00117	.00629	.00029	.00368	.01007	.0211
%RSD	4.7345	.50929	48.012	41.908	13.132	656.69	696.09	.28232
#1	.00551	82.168	.00344	.01672	-.00255	-.00468	.00744	7.4894
#2	.00592	81.495	.00115	.00804	-.00198	.00243	-.01239	7.4839
#3	.00603	81.408	.00271	.02027	-.00215	.00056	.00060	7.4504
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115501 Acquired: 6/24/2016 16:57:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.33344	-.00658	-.00209	.00011	.00570	.00257
Stddev	.00106	.00035	.00428	.00263	.00083	.00010	.00078
%RSD	223.38	.10616	65.090	125.54	754.41	1.8064	30.180
#1	-.00065	.33321	-.01123	-.00333	-.00033	.00562	.00170
#2	.00062	.33384	-.00281	-.00388	.00107	.00566	.00320
#3	.00146	.33325	-.00569	.00092	-.00041	.00581	.00281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8634.4	54473.	2945.1
Stddev	22.0	176.	15.6
%RSD	.25462	.32393	.53091
#1	8609.5	54271.	2929.8
#2	8642.5	54551.	2944.5
#3	8651.2	54598.	2961.1

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 17:03:38 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.42367	10.747	.42629	.52762	1.0843	.05276	10.761
Stddev	.00097	.006	.00332	.00473	.0045	.00023	.022
%RSD	.22915	.05727	.77849	.89635	.41439	.43445	.20363
#1	.42292	10.740	.42268	.53147	1.0830	.05302	10.738
#2	.42477	10.748	.42699	.52904	1.0893	.05268	10.782
#3	.42334	10.752	.42920	.52234	1.0807	.05258	10.765
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05458	.21800	.53531	.54481	4.3293	54.482	1.0763
Stddev	.00018	.00077	.00463	.00133	.0649	.210	.0028
%RSD	.33409	.35513	.86430	.24390	1.5001	.38571	.26065
#1	.05444	.21711	.54060	.54342	4.3823	54.397	1.0795
#2	.05451	.21849	.53336	.54493	4.2568	54.722	1.0741
#3	.05479	.21841	.53198	.54607	4.3486	54.328	1.0754
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.954	.53768	1.0810	54.597	.54494	10.746	.54224
Stddev	.073	.00516	.0021	.145	.00206	.017	.00691
%RSD	.66315	.95904	.19634	.26611	.37752	.15638	1.2744
#1	10.974	.53636	1.0834	54.523	.54602	10.734	.54106
#2	10.873	.54337	1.0793	54.764	.54257	10.738	.53600
#3	11.014	.53331	1.0802	54.503	.54624	10.765	.54966
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 17:03:38 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2878**	**.42218**	F **5.5868**	**1.0842**	**1.0823**	**1.0915**	**.53968**
Stddev	.0066	.00770	.0181	.0027	.0008	.0080	.00486
%RSD	.51604	1.8246	.32415	.25252	.07373	.73397	.90080
#1	1.2824	.41329	5.5712	1.0822	1.0817	1.0897	.54355
#2	1.2952	.42684	5.5826	1.0830	1.0832	1.1002	.53422
#3	1.2859	.42641	5.6067	1.0873	1.0820	1.0845	.54127
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value			5.0000				
Range			10.000%				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0672**	**1.0954**	F **1.1050**
Stddev	.0073	.0020	.0196
%RSD	.68319	.18139	1.7744
#1	1.0743	1.0932	1.1148
#2	1.0677	1.0971	1.1179
#3	1.0597	1.0957	1.0825
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8333.6**	**52219.**	**2792.6**
Stddev	32.6	347.	29.8
%RSD	.39073	.66376	1.0675
#1	8369.0	52505.	2785.6
#2	8326.7	52317.	2766.9
#3	8305.0	51833.	2825.3

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 17:07:15 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00168	.00948	.00107	.00396	.00131	.00016	.00218	.00005
Stddev	.00109	.00336	.00285	.00104	.00055	.00007	.03388	.00013
%RSD	65.124	35.414	267.10	26.281	42.238	42.512	1551.9	288.80
#1	-.00279	.00607	.00431	.00399	.00120	.00015	.00227	-.00009
#2	-.00060	.01278	-.00104	.00499	.00081	.00009	.03602	.00018
#3	-.00165	.00957	-.00007	.00291	.00190	.00023	-.03174	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00068	.00204	-.00144	.00580	.12922	-.00361	-.07098	-.00320
Stddev	.00007	.00108	.00019	.02952	.06584	.00293	.01475	.00096
%RSD	10.271	52.987	13.402	509.07	50.955	81.051	20.781	29.927
#1	-.00071	.00324	-.00131	.01437	.20522	-.00696	-.05840	-.00311
#2	-.00072	.00112	-.00134	.03009	.09285	-.00151	-.06732	-.00419
#3	-.00060	.00177	-.00166	-.02706	.08958	-.00237	-.08722	-.00228
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00408	.05994	-.00013	-.00144	-.00210	.00616	.00859	.00767
Stddev	.00025	.02279	.00056	.00665	.00161	.00436	.00553	.00095
%RSD	6.1054	38.019	429.27	461.82	76.927	70.723	64.392	12.387
#1	.00379	.03723	-.00071	-.00577	-.00238	.01090	.01202	.00667
#2	.00424	.05979	.00040	.00621	-.00355	.00232	.00221	.00777
#3	.00421	.08281	-.00008	-.00476	-.00036	.00527	.01155	.00857
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 17:07:15 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00018**	**.00001**	**-.00517**	**-.00304**	**-.00045**	**.00003**	**.00076**
Stddev	.00048	.00019	.00338	.00065	.00042	.00018	.00062
%RSD	261.79	1449.3	65.434	21.349	94.527	672.09	81.583
#1	-.00007	-.00010	-.00269	-.00319	-.00035	-.00018	.00059
#2	-.00071	.00023	-.00379	-.00360	-.00091	.00016	.00024
#3	.00023	-.00009	-.00902	-.00233	-.00008	.00010	.00144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8894.8**	**56498.**	**2997.3**
Stddev	31.9	155.	19.4
%RSD	.35842	.27403	.64771
#1	8872.9	56642.	2988.9
#2	8931.4	56516.	2983.4
#3	8880.1	56335.	3019.5

Approved: June 25, 2016

Sample Name: LLCCV Acquired: 6/24/2016 17:11:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00729	.17062	.00725	.08257	.00939	.00166	.43404	.00082
Stddev	.00150	.00550	.00171	.00143	.00067	.00000	.00453	.00026
%RSD	20.543	3.2221	23.640	1.7280	7.1418	.27584	1.0437	32.305
#1	.00698	.16434	.00552	.08412	.00866	.00166	.43775	.00111
#2	.00892	.17298	.00895	.08230	.00999	.00167	.42899	.00059
#3	.00598	.17455	.00726	.08130	.00952	.00166	.43538	.00075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00316	.00622	.00237	.08729	.82404	.07713	.38089	.00688
Stddev	.00032	.00044	.00096	.00991	.11097	.00284	.04555	.00202
%RSD	10.108	7.0265	40.647	11.357	13.466	3.6833	11.960	29.313
#1	.00327	.00595	.00209	.09021	.69916	.08037	.42142	.00748
#2	.00280	.00598	.00158	.07624	.86164	.07506	.38965	.00853
#3	.00341	.00672	.00344	.09542	.91132	.07596	.33159	.00463
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00923	.49030	.01578	.78636	.00525	.08658	.01834	.78477
Stddev	.00007	.03975	.00067	.00747	.00099	.00290	.00535	.00340
%RSD	.74996	8.1063	4.2563	.94991	18.916	3.3503	29.197	.43361
#1	.00926	.45824	.01504	.78721	.00446	.08899	.01320	.78668
#2	.00928	.47789	.01596	.79336	.00636	.08336	.01794	.78678
#3	.00915	.53477	.01635	.77850	.00492	.08740	.02388	.78084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LLCCV Acquired: 6/24/2016 17:11:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40023**	**.04088**	**.01998**	**.14896**	**.00689**	**.01796**	**.04648**
Stddev	.00496	.00040	.00962	.00157	.00043	.00056	.00102
%RSD	1.2386	.97028	48.154	1.0558	6.1789	3.1279	2.2003
#1	.40336	.04052	.01081	.14857	.00653	.01791	.04580
#2	.40281	.04082	.02999	.15069	.00680	.01855	.04599
#3	.39451	.04131	.01914	.14762	.00736	.01743	.04766
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8990.7**	**57102.**	**2996.8**
Stddev	6.3	282.	27.6
%RSD	.06972	.49387	.92128
#1	8985.6	56782.	2987.6
#2	8988.8	57212.	2975.0
#3	8997.7	57313.	3027.9

Approved: June 25, 2016

Sample Name: LLCCV Acquired: 6/24/2016 17:15:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01993	.40715	.01910	.19302	.02123	.00379	.98840	.00192
Stddev	.00107	.00875	.00166	.00240	.00062	.00009	.02416	.00014
%RSD	5.3570	2.1496	8.6872	1.2431	2.9288	2.2601	2.4441	7.0566
#1	.01892	.40857	.02077	.19136	.02062	.00370	.96658	.00208
#2	.01983	.41511	.01745	.19577	.02121	.00387	.98425	.00184
#3	.02105	.39778	.01908	.19192	.02186	.00380	1.0144	.00186
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00956	.01134	.01016	.19020	1.9527	.19631	.96503	.01651
Stddev	.00018	.00018	.00095	.01584	.0809	.00356	.08170	.00201
%RSD	1.8827	1.5892	9.3610	8.3286	4.1432	1.8125	8.4664	12.178
#1	.00947	.01153	.01097	.18785	1.9630	.19792	1.0093	.01700
#2	.00944	.01133	.01040	.20708	2.0279	.19878	1.0150	.01822
#3	.00976	.01117	.00911	.17566	1.8671	.19223	.87074	.01429
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01930	1.0243	.04009	1.9435	.01831	.21107	.04027	1.9113
Stddev	.00016	.0191	.00077	.0087	.00305	.00083	.00398	.0011
%RSD	.83239	1.8612	1.9166	.44854	16.636	.39124	9.8865	.05610
#1	.01914	1.0212	.03957	1.9465	.02165	.21172	.03698	1.9101
#2	.01929	1.0447	.04097	1.9503	.01761	.21014	.03912	1.9122
#3	.01946	1.0070	.03972	1.9336	.01568	.21134	.04469	1.9117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LLCCV Acquired: 6/24/2016 17:15:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98617	.09828	.05324	.36623	.01818	.04214	.10201
Stddev	.00140	.00119	.00120	.00194	.00049	.00021	.00105
%RSD	.14233	1.2069	2.2499	.53068	2.7064	.48792	1.0280
#1	.98608	.09782	.05188	.36811	.01820	.04207	.10169
#2	.98481	.09963	.05376	.36635	.01768	.04237	.10318
#3	.98762	.09739	.05410	.36423	.01866	.04197	.10116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9036.2	57273.	3074.0
Stddev	31.1	288.	33.7
%RSD	.34415	.50309	1.0950
#1	9072.0	57245.	3047.1
#2	9015.3	57573.	3063.1
#3	9021.4	56999.	3111.7

Approved: June 25, 2016

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000236	0.051213	0.000000	1.000000
Al 308.215 {109}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000796	0.008044	0.000000	1.000000
As 189.042 {478}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000007	0.025071	0.000000	1.000000
B 249.678 {135}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000040	0.023963	0.000000	1.000000
Ba 455.403 { 74}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.044484	2.168568	0.000000	1.000000
Be 313.107 {108}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000479	0.930119	0.000000	1.000000
Ca 422.673 { 80}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.002874	0.045862	0.000000	1.000000
Cd 228.802 {447}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000038	0.570455	0.000000	1.000000
Co 228.616 {447}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000129	0.339574	0.000000	1.000000
Cr 267.716 {126}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000254	0.058743	0.000000	1.000000
Cu 224.700 {450}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000063	0.129645	0.000000	1.000000
Fe 261.187 {129}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000714	0.024119	0.000000	1.000000
K 766.490 { 44}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.006604	0.061274	0.000000	1.000000
Li 670.784 { 50}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.009415	1.520559	0.000000	1.000000
Mg 279.079 {121}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000260	0.008000	0.000000	1.000000
Mn 257.610 {131}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000470	0.289814	0.000000	1.000000
Mo 202.030 {467}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000054	0.182736	0.000000	1.000000
Na 589.592 { 57}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.047777	0.184477	0.000000	1.000000
Ni 231.604 {446}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000734	0.138990	0.000000	1.000000
P 214.914 {457}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000172	0.014319	0.000000	1.000000
Pb 220.353 {453}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.001186	0.065283	0.000000	1.000000
Sb 206.833 {463}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000368	0.031084	0.000000	1.000000
Se 196.090 {472}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000508	0.017412	0.000000	1.000000
Si 212.412 {459}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.001467	0.039573	0.000000	1.000000
Sn 189.989 {477}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000022	0.066307	0.000000	1.000000
Sr 407.771 { 83}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.001060	3.591964	0.000000	1.000000
Ti 337.280 {100}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.002630	0.122957	0.000000	1.000000
Tl 190.856 {477}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000329	0.028655	0.000000	1.000000
V 292.402 {115}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000071	0.067328	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000142	0.437417	0.000000	1.000000
Zr 339.198 { 99}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.007106	1.219765	0.000000	1.000000

Approved: June 27, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999680	0.000003	0.002344	0.007814	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999950	0.000005	0.010188	0.033959	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999909	0.000001	0.003189	0.010630	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999961	0.000001	0.002963	0.009878	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999951	0.000136	0.001119	0.003729	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999766	0.000007	0.000105	0.000348	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999890	0.000043	0.043792	0.145974	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999970	0.000002	0.000282	0.000940	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999977	0.000003	0.000454	0.001514	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999978	0.000001	0.001307	0.004355	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999889	0.000006	0.001405	0.004682	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999330	0.000022	0.023003	0.076675	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999988	0.000096	0.104199	0.347330	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999977	0.000100	0.004201	0.014002	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999990	0.000003	0.092396	0.307987	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999236	0.000036	0.002652	0.008839	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999956	0.000011	0.000450	0.001500	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999990	0.000264	0.032289	0.107629	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999932	0.000005	0.001180	0.003935	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999990	0.000004	0.007138	0.023792	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999383	0.000007	0.003667	0.012223	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999854	0.000004	0.004516	0.015054	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999238	0.000003	0.006704	0.022346	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999594	0.000036	0.002443	0.008145	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999980	0.000003	0.000986	0.003287	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999952	0.000224	0.000467	0.001557	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999579	0.000023	0.007453	0.024845	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999831	0.000002	0.003284	0.010945	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999969	0.000003	0.001095	0.003650	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999941	0.000030	0.000202	0.000675	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.596446	0.010414	0.001594	0.005312	OK.	1.000000	0.000000	1	0

Approved: June 27, 2016

Sample Name: S0 Acquired: 6/25/2016 12:21:04 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00024**	**.00080**	**-.00001**	**.00004**	**.04448**	**.00048**	**.00288**
Stddev	.00008	.00004	.00007	.00002	.00170	.00005	.00169
%RSD	35.712	4.5527	977.99	54.959	3.8148	10.198	58.629
#1	-.00024	.00076	-.00006	.00003	.04635	.00042	.00096
#2	-.00015	.00081	.00007	.00006	.04405	.00050	.00353
#3	-.00032	.00083	-.00004	.00003	.04304	.00052	.00414

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00004**	**-.00013**	**.00025**	**-.00006**	**-.00071**	**-.00661**	**-.00941**
Stddev	.00006	.00005	.00003	.00023	.00026	.00355	.00965
%RSD	153.97	36.064	10.924	367.85	35.978	53.724	102.48
#1	-.00002	-.00016	.00028	-.00022	-.00093	-.00948	-.01508
#2	-.00010	-.00015	.00025	.00020	-.00043	-.00769	.00173
#3	.00001	-.00008	.00023	-.00018	-.00078	-.00264	-.01488

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00026**	**.00047**	**.00005**	**-.04778**	**-.00073**	**-.00017**	**-.00119**
Stddev	.00066	.00061	.00004	.00421	.00008	.00002	.00008
%RSD	255.00	128.77	78.942	8.8105	11.011	13.180	6.4052
#1	.00045	-.00015	.00007	-.05263	-.00065	-.00015	-.00110
#2	-.00086	.00049	.00001	-.04509	-.00082	-.00019	-.00123
#3	-.00037	.00107	.00009	-.04563	-.00073	-.00017	-.00123

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00037**	**-.00051**	**.00147**	**.00002**	**.00106**	**-.00263**	**-.00033**
Stddev	.00001	.00007	.00009	.00003	.00137	.00025	.00002
%RSD	3.7153	13.815	6.2921	126.34	130.24	9.4020	7.1687
#1	.00035	-.00043	.00157	.00002	.00203	-.00235	-.00030
#2	.00038	-.00057	.00145	-.00000	.00165	-.00283	-.00033
#3	.00037	-.00052	.00138	.00005	-.00052	-.00270	-.00035

Approved: June 27, 2016

Sample Name: S0 Acquired: 6/25/2016 12:21:04 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**-.00007**	**.00014**	**-.00710**
Stddev	.00004	.00005	.00324
%RSD	58.279	35.146	45.700
#1	-.00004	.00009	-.00457
#2	-.00005	.00016	-.01076
#3	-.00012	.00018	-.00597
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9736.8**	**58329.**	**2962.8**
Stddev	24.6	275.	12.4
%RSD	.25315	.47180	.41783
#1	9719.4	58177.	2949.0
#2	9725.9	58162.	2966.1
#3	9765.0	58646.	2973.1

Approved: June 27, 2016

Sample Name: S1 Acquired: 6/25/2016 12:25:02 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00000**	**.00148**	**.06336**	**.00097**	**.00582**	**.00018**	**.00038**
Stddev	.00004	.00005	.00419	.00009	.00234	.00011	.00006
%RSD	838.91	3.6655	6.6080	8.8478	40.284	60.110	16.615
#1	.00001	.00145	.05987	.00105	.00569	.00026	.00043
#2	-.00004	.00145	.06800	.00097	.00822	.00006	.00031
#3	.00004	.00155	.06221	.00088	.00354	.00023	.00041

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00050**	**.00053**	**.00033**	**.01950**	**.00077**	**.00143**	**.02669**
Stddev	.00003	.00011	.00021	.00355	.00009	.00011	.00332
%RSD	5.5692	20.305	62.737	18.223	11.862	7.4791	12.449
#1	.00049	.00060	.00053	.01550	.00083	.00145	.02356
#2	.00048	.00041	.00012	.02070	.00066	.00152	.03018
#3	.00053	.00058	.00034	.02230	.00081	.00131	.02634

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00018**	**.00100**	**-.00086**	**.00059**	**.00297**	**.00055**	**.03302**
Stddev	.00009	.00012	.00030	.00014	.00005	.00006	.00089
%RSD	52.159	12.366	34.406	23.539	1.7045	10.953	2.6942
#1	-.00010	.00113	-.00102	.00051	.00294	.00050	.03225
#2	-.00028	.00098	-.00052	.00075	.00302	.00062	.03399
#3	-.00016	.00088	-.00105	.00050	.00293	.00055	.03280

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00218**	**.00050**	**.00363**	**-.00591**
Stddev	.00071	.00003	.00003	.00134
%RSD	32.781	5.1557	.77751	22.659
#1	-.00139	.00050	.00365	-.00576
#2	-.00277	.00048	.00360	-.00465
#3	-.00237	.00053	.00364	-.00732

Approved: June 27, 2016

Sample Name: S1 Acquired: 6/25/2016 12:25:02 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9839.2**	**59021.**	**2974.6**
Stddev	35.8	140.	1.9
%RSD	.36397	.23691	.06440
#1	9811.4	58880.	2976.5
#2	9826.5	59023.	2972.7
#3	9879.6	59160.	2974.8

Approved: June 27, 2016

Sample Name: S2 Acquired: 6/25/2016 12:29:00 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00011**	**.00220**	**.00018**	**.00025**	**.08112**	**.00139**	**.00931**
Stddev	.00003	.00006	.00005	.00002	.00125	.00003	.00047
%RSD	29.658	2.5782	25.201	8.0082	1.5417	1.8740	5.0396
#1	.00012	.00221	.00013	.00026	.08191	.00140	.00905
#2	.00012	.00214	.00022	.00027	.08177	.00136	.00985
#3	.00007	.00225	.00019	.00023	.07968	.00140	.00903

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00041**	**.00102**	**.00072**	**.00104**	**.00148**	**.04190**	**.01415**
Stddev	.00007	.00003	.00001	.00014	.00030	.00236	.00012
%RSD	16.350	3.0292	1.5873	13.319	20.240	5.6312	.86545
#1	.00045	.00101	.00072	.00109	.00137	.04369	.01405
#2	.00033	.00099	.00073	.00088	.00125	.03923	.01429
#3	.00045	.00105	.00071	.00115	.00182	.04279	.01411

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00109**	**.00274**	**.00298**	**.10797**	**.00048**	**.00211**	**-.00045**
Stddev	.00041	.00057	.00005	.00406	.00013	.00008	.00017
%RSD	37.607	20.931	1.7509	3.7561	26.749	3.7519	39.075
#1	.00144	.00213	.00304	.11260	.00057	.00211	-.00064
#2	.00064	.00283	.00295	.10501	.00033	.00203	-.00031
#3	.00120	.00327	.00295	.10631	.00054	.00219	-.00039

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00105**	**-.00034**	**.00448**	**.00108**	**.06082**	**-.00047**	**-.00014**
Stddev	.00006	.00004	.00009	.00004	.00131	.00089	.00005
%RSD	6.0784	12.562	2.0565	3.6593	2.1502	187.41	36.276
#1	.00109	-.00029	.00447	.00110	.05950	-.00104	-.00016
#2	.00107	-.00037	.00458	.00110	.06212	-.00093	-.00008
#3	.00097	-.00035	.00440	.00103	.06083	.00055	-.00017

Approved: June 27, 2016

Sample Name: S2 Acquired: 6/25/2016 12:29:00 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00105	.00728	-.00437
Stddev	.00006	.00006	.00132
%RSD	5.7588	.85058	30.251
#1	.00102	.00735	-.00588
#2	.00112	.00727	-.00376
#3	.00101	.00722	-.00345
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9827.0	59373.	3004.6
Stddev	11.4	114.	4.0
%RSD	.11574	.19273	.13472
#1	9814.0	59255.	3000.6
#2	9832.7	59484.	3008.7
#3	9834.5	59381.	3004.6

Approved: June 27, 2016

Sample Name: S3 Acquired: 6/25/2016 12:32:56 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.02035	.08278	.00992	.01198	2.2359	.04820	.46599	.03126
Stddev	.00007	.00029	.00007	.00002	.0069	.00016	.00236	.00006
%RSD	.36344	.34990	.73624	.13878	.30693	.33862	.50730	.19965
#1	.02029	.08301	.00987	.01198	2.2433	.04825	.46861	.03126
#2	.02044	.08286	.01000	.01199	2.2346	.04833	.46401	.03132
#3	.02033	.08245	.00988	.01196	2.2297	.04802	.46536	.03119

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.06810	.02991	.06581	.09648	3.0722	1.5250	.07962	.14725
Stddev	.00012	.00021	.00002	.00063	.0027	.0048	.00098	.00051
%RSD	.17879	.70022	.03611	.65013	.08880	.31624	1.2353	.34909
#1	.06804	.03009	.06584	.09719	3.0745	1.5268	.07965	.14783
#2	.06801	.02997	.06579	.09600	3.0692	1.5288	.07861	.14685
#3	.06824	.02968	.06581	.09626	3.0730	1.5196	.08058	.14706

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.18510	9.1987	.06966	.14157	.03222	.03693	.00649	.20808
Stddev	.00068	.0276	.00008	.00029	.00023	.00011	.00003	.00004
%RSD	.36712	.29975	.11504	.20555	.70478	.30304	.43769	.01830
#1	.18567	9.2297	.06963	.14170	.03236	.03694	.00648	.20811
#2	.18529	9.1894	.06975	.14177	.03196	.03703	.00652	.20808
#3	.18435	9.1769	.06959	.14123	.03234	.03681	.00647	.20804

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.06680	3.6291	.12115	.01313	.06767	.44396	3.5474
Stddev	.00012	.0161	.00039	.00012	.00004	.00054	.0233
%RSD	.17282	.44347	.32200	.91385	.05243	.12075	.65596
#1	.06677	3.6476	.12157	.01325	.06770	.44451	3.5656
#2	.06671	3.6220	.12107	.01301	.06768	.44393	3.5554
#3	.06693	3.6179	.12080	.01311	.06763	.44344	3.5212

Approved: June 27, 2016

Sample Name: S3 Acquired: 6/25/2016 12:32:56 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9929.1	59890.	3083.9
Stddev	18.0	90.	16.7
%RSD	.18173	.14986	.54188
#1	9944.3	59787.	3069.2
#2	9933.7	59947.	3080.5
#3	9909.1	59936.	3102.1

Approved: June 27, 2016

Sample Name: S4 Acquired: 6/25/2016 12:36:34 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.04037	.16212	.01994	.02391	4.3553	.09476	.91725	.06225
Stddev	.00010	.00009	.00010	.00008	.0282	.00010	.00714	.00008
%RSD	.26004	.05310	.51424	.32854	.64632	.10278	.77855	.12431
#1	.04040	.16220	.02005	.02399	4.3445	.09472	.91430	.06220
#2	.04046	.16203	.01991	.02383	4.3342	.09469	.91205	.06220
#3	.04026	.16211	.01985	.02390	4.3873	.09487	.92539	.06233

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13502	.05877	.12834	.19056	6.1046	3.0186	.15914	.28946
Stddev	.00023	.00007	.00015	.00161	.0456	.0309	.00223	.00202
%RSD	.17276	.12518	.11394	.84544	.74756	1.0253	1.3995	.69732
#1	.13475	.05870	.12846	.19050	6.0869	3.0140	.15736	.28818
#2	.13515	.05878	.12838	.18897	6.0705	2.9902	.15842	.28841
#3	.13517	.05884	.12818	.19219	6.1564	3.0516	.16164	.29179

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.36324	18.368	.13725	.28094	.06365	.07367	.01336	.39092
Stddev	.00176	.146	.00020	.00054	.00019	.00012	.00006	.00048
%RSD	.48547	.79728	.14492	.19364	.30628	.15884	.42128	.12331
#1	.36486	18.303	.13728	.28153	.06355	.07380	.01339	.39147
#2	.36349	18.266	.13744	.28083	.06388	.07365	.01329	.39059
#3	.36136	18.536	.13705	.28046	.06354	.07357	.01339	.39071

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13179	7.1439	.24230	.02560	.13357	.86773	.12255
Stddev	.00029	.0568	.00280	.00005	.00025	.00172	.00222
%RSD	.21785	.79476	1.1551	.20145	.18401	.19856	1.8114
#1	.13210	7.1181	.24103	.02555	.13357	.86947	.12020
#2	.13172	7.1045	.24036	.02563	.13332	.86769	.12285
#3	.13154	7.2090	.24551	.02564	.13382	.86603	.12461

Approved: June 27, 2016

Sample Name: S4 Acquired: 6/25/2016 12:36:34 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9795.6	59125.	3064.9
Stddev	6.6	26.	19.7
%RSD	.06757	.04412	.64222
#1	9799.1	59120.	3071.1
#2	9799.7	59153.	3080.8
#3	9787.9	59102.	3042.9

Approved: June 27, 2016

Sample Name: ICV Acquired: 6/25/2016 12:40:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40482	10.096	.40189	.50535	1.0085	.05038	10.096
Stddev	.00169	.009	.00320	.00259	.0096	.00007	.103
%RSD	.41792	.09100	.79651	.51179	.95284	.13225	1.0175
#1	.40318	10.095	.40558	.50259	.99972	.05037	10.065
#2	.40656	10.106	.40020	.50771	1.0070	.05032	10.013
#3	.40473	10.088	.39988	.50575	1.0188	.05045	10.211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05022	.20172	.50610	.50772	4.0459	50.287	1.0069
Stddev	.00031	.00057	.00078	.00110	.0398	.526	.0059
%RSD	.61395	.28458	.15454	.21701	.98466	1.0464	.58082
#1	.05048	.20224	.50644	.50864	4.0020	49.775	1.0012
#2	.05030	.20181	.50521	.50650	4.0559	50.260	1.0067
#3	.04988	.20110	.50666	.50803	4.0798	50.827	1.0128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.117	.50795	1.0200	50.068	.50832	10.053	.50460
Stddev	.152	.00312	.0050	.377	.00054	.029	.00016
%RSD	1.5029	.61369	.49437	.75311	.10596	.28628	.03077
#1	9.9425	.50440	1.0241	49.665	.50829	10.073	.50452
#2	10.219	.50922	1.0214	50.126	.50888	10.066	.50449
#3	10.191	.51024	1.0144	50.412	.50780	10.020	.50477
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: ICV Acquired: 6/25/2016 12:40:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2132**	**.39981**	**5.2115**	**1.0100**	**1.0094**	**1.0076**	**.50967**
Stddev	.0090	.00367	.0220	.0047	.0093	.0117	.00340
%RSD	.74499	.91900	.42193	.46646	.92212	1.1612	.66719
#1	1.2228	.39652	5.1880	1.0139	.99976	.99418	.50608
#2	1.2117	.40378	5.2316	1.0112	1.0100	1.0128	.51284
#3	1.2049	.39915	5.2149	1.0048	1.0183	1.0157	.51010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0117**	**1.0154**	F **2.9010**
Stddev	.0015	.0015	.0057
%RSD	.14666	.14385	.19619
#1	1.0111	1.0164	2.9026
#2	1.0134	1.0160	2.8946
#3	1.0106	1.0137	2.9057
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			5.0000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9887.2**	**59604.**	**3090.1**
Stddev	2.6	87.	8.3
%RSD	.02633	.14631	.26858
#1	9888.5	59705.	3098.3
#2	9884.2	59557.	3090.3
#3	9888.9	59551.	3081.7

Approved: June 27, 2016

Sample Name: ICB Acquired: 6/25/2016 12:43:48 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00131	-.00019	.00035	.00523	.00097	.00005	-.00769	-.00024
Stddev	.00204	.00299	.00150	.00175	.00089	.00006	.00734	.00011
%RSD	155.46	1561.3	426.44	33.377	91.849	115.36	95.505	46.996
#1	.00317	-.00362	.00181	.00349	.00060	.00012	-.01556	-.00036
#2	-.00088	.00114	-.00118	.00522	.00198	.00002	-.00104	-.00017
#3	.00165	.00191	.00042	.00699	.00032	.00001	-.00646	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00000	.00019	.00069	.02190	.04427	.00252	.00787	.00050
Stddev	.00033	.00096	.00130	.00895	.02254	.00192	.08048	.00146
%RSD	40694.	494.95	189.51	40.889	50.920	76.061	1022.8	292.29
#1	-.00026	-.00067	-.00034	.02348	.04464	.00424	-.08504	-.00108
#2	-.00012	.00002	.00215	.01226	.06662	.00045	.05249	.00079
#3	.00038	.00123	.00025	.02996	.02154	.00288	.05615	.00179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00437	.07087	.00070	.00285	.00118	.00678	.00870	.00121
Stddev	.00041	.01151	.00054	.00868	.00197	.00381	.00450	.00189
%RSD	9.2912	16.248	77.044	304.78	167.53	56.206	51.723	156.22
#1	.00395	.08310	.00020	-.00283	.00108	.00337	.00854	.00310
#2	.00476	.06927	.00064	-.00147	.00320	.00608	.00428	.00120
#3	.00442	.06023	.00127	.01284	-.00074	.01090	.01328	-.00068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: ICB Acquired: 6/25/2016 12:43:48 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00063**	**.00059**	**.00116**	**.00143**	**.00111**	**.00117**	**.00345**
Stddev	.00049	.00006	.00559	.00387	.00033	.00016	.00039
%RSD	77.601	9.5579	481.47	269.75	29.521	13.916	11.209
#1	.00050	.00059	.00521	.00260	.00135	.00105	.00361
#2	.00117	.00064	.00349	-.00288	.00074	.00111	.00300
#3	.00022	.00053	-.00522	.00459	.00124	.00135	.00372
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9709.0**	**58834.**	**2997.3**
Stddev	13.6	105.	11.0
%RSD	.13963	.17854	.36570
#1	9693.7	58895.	2985.3
#2	9713.8	58895.	3006.9
#3	9719.5	58713.	2999.6

Approved: June 27, 2016

Sample Name: LLICV Acquired: 6/25/2016 12:47:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00947**	**.16517**	**.00750**	**.08209**	**.00794**	**.00166**	**.41368**	**.00078**
Stddev	.00234	.00914	.00427	.00134	.00096	.00002	.01542	.00015
%RSD	24.742	5.5361	56.913	1.6344	12.112	1.4530	3.7271	18.963
#1	.01038	.17315	.00639	.08214	.00810	.00169	.40911	.00061
#2	.01123	.15519	.01222	.08341	.00690	.00166	.40107	.00083
#3	.00681	.16717	.00390	.08073	.00880	.00164	.43087	.00089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00435**	**.00476**	**.00462**	**.09393**	**.88733**	**.08419**	**.44121**	**.00701**
Stddev	.00017	.00091	.00136	.00523	.14622	.00363	.12107	.00237
%RSD	3.8803	19.165	29.360	5.5689	16.479	4.3143	27.441	33.765
#1	.00455	.00411	.00608	.08852	.75945	.08105	.39471	.00889
#2	.00425	.00438	.00436	.09433	.85580	.08335	.57864	.00779
#3	.00425	.00581	.00341	.09896	1.0467	.08816	.35028	.00435
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00866**	**.44156**	**.01715**	**.79893**	**.00705**	**.08442**	**.02038**	**.79310**
Stddev	.00052	.01049	.00062	.00929	.00266	.00215	.00191	.00106
%RSD	5.9984	2.3750	3.6174	1.1626	37.766	2.5524	9.3696	.13338
#1	.00809	.45038	.01661	.80194	.00796	.08678	.01818	.79326
#2	.00879	.42997	.01783	.80634	.00405	.08394	.02136	.79407
#3	.00910	.44434	.01701	.78851	.00913	.08255	.02160	.79197
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LLICV Acquired: 6/25/2016 12:47:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41130**	**.04174**	**.02562**	**.15269**	**.00881**	**.01717**	**.13277**
Stddev	.00223	.00064	.00303	.00060	.00064	.00024	.00310
%RSD	.54293	1.5249	11.843	.39147	7.2679	1.3907	2.3338
#1	.41347	.04173	.02710	.15201	.00926	.01741	.13005
#2	.41142	.04111	.02213	.15292	.00808	.01715	.13211
#3	.40901	.04238	.02764	.15314	.00909	.01694	.13614
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9760.6**	**59445.**	**3032.4**
Stddev	2.7	49.	16.0
%RSD	.02790	.08308	.52659
#1	9758.1	59502.	3050.3
#2	9763.5	59418.	3027.2
#3	9760.2	59415.	3019.7

Approved: June 27, 2016

Sample Name: LLICV Acquired: 6/25/2016 12:51:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02232**	**.40482**	**.02105**	**.19795**	**.01981**	**.00414**	**.94713**	**.00209**
Stddev	.00322	.01572	.00276	.00137	.00013	.00016	.01328	.00025
%RSD	14.431	3.8838	13.088	.69255	.67950	3.8114	1.4024	12.129
#1	.02018	.38785	.01788	.19912	.01996	.00396	.94307	.00218
#2	.02076	.40770	.02252	.19644	.01971	.00427	.93634	.00229
#3	.02603	.41890	.02277	.19828	.01975	.00419	.96196	.00181
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00992**	**.00950**	**.01082**	**.20111**	**1.9275**	**.20201**	**.97307**	**.01841**
Stddev	.00043	.00028	.00021	.02025	.1498	.00564	.04542	.00186
%RSD	4.3042	2.9103	1.9731	10.069	7.7699	2.7925	4.6682	10.079
#1	.01005	.00935	.01089	.20826	1.8000	.20412	1.0187	.02052
#2	.00945	.00934	.01100	.21682	1.8900	.19562	.97274	.01702
#3	.01028	.00982	.01059	.17825	2.0924	.20630	.92781	.01771
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01972**	**1.0340**	**.04153**	**1.9482**	**.02271**	**.20123**	**.04411**	**1.9392**
Stddev	.00048	.0096	.00031	.0042	.00204	.00295	.00361	.0022
%RSD	2.4591	.93077	.75288	.21380	8.9612	1.4657	8.1900	.11326
#1	.01969	1.0240	.04132	1.9520	.02496	.20436	.04094	1.9404
#2	.01925	1.0432	.04139	1.9437	.02217	.20085	.04804	1.9406
#3	.02022	1.0348	.04189	1.9488	.02100	.19850	.04333	1.9367
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LLICV Acquired: 6/25/2016 12:51:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0099**	**.10045**	**.06134**	**.37714**	**.02003**	**.04134**	**.29456**
Stddev	.0057	.00069	.00459	.00090	.00046	.00030	.00329
%RSD	.56948	.68667	7.4856	.23976	2.2900	.72946	1.1169
#1	1.0145	.09991	.06229	.37809	.02052	.04128	.29317
#2	1.0117	.10021	.05634	.37629	.01997	.04166	.29219
#3	1.0035	.10123	.06538	.37705	.01961	.04107	.29832
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9725.0**	**59145.**	**3053.0**
Stddev	6.0	91.	15.9
%RSD	.06216	.15348	.52133
#1	9731.9	59116.	3042.4
#2	9721.3	59247.	3071.3
#3	9721.7	59072.	3045.2

Approved: June 27, 2016

Sample Name: ICSA Acquired: 6/25/2016 12:55:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00027**	**265.97**	**.00161**	**-.00823**	**.00056**	**.00011**	**243.96**	**-.00018**
Stddev	.00121	.27	.00172	.00296	.00012	.00009	1.89	.00042
%RSD	450.36	.10204	106.61	35.970	21.237	81.140	.77435	230.52
#1	-.00046	265.69	.00220	-.01033	.00047	.00017	241.81	-.00048
#2	.00103	265.97	-.00032	-.00484	.00069	.00014	245.35	.00030
#3	-.00137	266.24	.00295	-.00951	.00051	.00001	244.72	-.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00099**	**-.00100**	**-.00098**	**96.848**	**.05329**	**.01035**	**248.71**	**-.00176**
Stddev	.00039	.00071	.00330	.692	.06120	.00255	1.99	.00096
%RSD	39.651	70.751	335.23	.71414	114.86	24.670	.80129	54.809
#1	-.00142	-.00119	.00263	96.056	.12150	.01230	246.41	-.00274
#2	-.00085	-.00160	-.00175	97.332	.03517	.00746	249.90	-.00082
#3	-.00068	-.00022	-.00383	97.155	.00318	.01129	249.83	-.00171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00066**	**.04038**	**-.00089**	**.02257**	**.00214**	**-.00550**	**-.00224**	**.00879**
Stddev	.00023	.00410	.00050	.00580	.00444	.00318	.00753	.00258
%RSD	34.448	10.162	56.288	25.707	206.94	57.856	337.10	29.379
#1	-.00088	.04493	-.00121	.01613	.00721	-.00186	.00631	.00581
#2	-.00043	.03696	-.00115	.02418	.00024	-.00776	-.00511	.01037
#3	-.00066	.03925	-.00031	.02740	-.00103	-.00688	-.00791	.01019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: ICSA Acquired: 6/25/2016 12:55:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00053**	**.00100**	**-.00403**	**-.00373**	**-.00305**	**-.00596**	**-.01388**
Stddev	.00149	.00018	.00805	.00252	.00022	.00010	.00081
%RSD	284.28	18.415	199.81	67.478	7.0947	1.6059	5.8325
#1	.00144	.00117	.00514	-.00549	-.00300	-.00603	-.01379
#2	.00134	.00081	-.00728	-.00085	-.00329	-.00601	-.01311
#3	-.00120	.00101	-.00995	-.00485	-.00287	-.00585	-.01473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9184.9**	**55126.**	**2960.9**
Stddev	19.5	129.	17.9
%RSD	.21199	.23455	.60311
#1	9165.3	55274.	2981.6
#2	9185.3	55069.	2950.7
#3	9204.2	55035.	2950.6

Approved: June 27, 2016

Sample Name: ICSAB Acquired: 6/25/2016 12:59:21 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51819**	**267.93**	**.25992**	**-.00749**	**.25012**	**.24499**	**247.43**	**.48653**
Stddev	.00274	.82	.00577	.00323	.00127	.00111	.96	.00069
%RSD	.52949	.30727	2.2185	43.201	.50926	.45301	.38893	.14255
#1	.51744	268.20	.26633	-.00904	.25065	.24547	247.63	.48716
#2	.52123	268.59	.25826	-.00965	.24866	.24578	246.38	.48579
#3	.51590	267.01	.25516	-.00377	.25104	.24372	248.28	.48665
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.24114**	**.25272**	**.25219**	**96.482**	**5.1931**	**.01181**	**249.25**	**.24440**
Stddev	.00029	.00219	.00111	.527	.0571	.00427	1.99	.00318
%RSD	.11831	.86807	.44033	.54597	1.0995	36.192	.80021	1.3017
#1	.24081	.25379	.25307	96.524	5.1297	.01134	249.32	.24432
#2	.24135	.25418	.25256	95.936	5.2405	.00779	247.22	.24763
#3	.24125	.25020	.25095	96.987	5.2091	.01630	251.20	.24127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00056**	**5.3241**	**.48364**	**.08508**	**.49426**	**.50665**	**.24857**	**.00554**
Stddev	.00038	.0216	.00155	.00195	.00579	.00649	.00790	.00251
%RSD	68.178	.40548	.32037	2.2888	1.1716	1.2807	3.1773	45.410
#1	-.00097	5.3151	.48290	.08463	.49996	.50736	.25719	.00434
#2	-.00022	5.3084	.48260	.08721	.48838	.49984	.24167	.00842
#3	-.00048	5.3487	.48542	.08340	.49443	.51276	.24687	.00384
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: ICSAB Acquired: 6/25/2016 12:59:21 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00018**	**.00065**	**-.00404**	**.46188**	**.25332**	**.48100**	**-.01374**
Stddev	.00129	.00010	.00503	.00318	.00107	.00194	.00218
%RSD	732.71	15.906	124.53	.68769	.42266	.40303	15.888
#1	.00146	.00072	-.00979	.45913	.25376	.48104	-.01122
#2	-.00112	.00053	-.00192	.46116	.25410	.48293	-.01498
#3	.00019	.00071	-.00042	.46536	.25210	.47905	-.01502
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9278.3**	**55833.**	**2985.5**
Stddev	15.8	186.	18.9
%RSD	.17001	.33320	.63177
#1	9263.8	55869.	2984.2
#2	9295.1	55632.	3004.9
#3	9275.9	55999.	2967.3

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 13:03:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39792**	**10.019**	**.39868**	**.49351**	**.99429**	**.04982**	**9.9377**
Stddev	.00072	.017	.00144	.00412	.00753	.00017	.0996
%RSD	.18044	.17228	.36151	.83518	.75700	.33966	1.0022
#1	.39861	10.034	.39833	.49827	.98705	.04987	9.8876
#2	.39796	10.022	.40027	.49123	1.0021	.04997	10.052
#3	.39718	10.000	.39745	.49104	.99375	.04964	9.8731
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04945**	**.20002**	**.50114**	**.50617**	**3.9950**	**49.191**	**.99914**
Stddev	.00013	.00034	.00115	.00138	.0385	.327	.00262
%RSD	.25449	.17079	.22943	.27257	.96478	.66521	.26204
#1	.04957	.20034	.49991	.50465	3.9625	48.889	.99615
#2	.04946	.20007	.50219	.50735	4.0376	49.538	1.0010
#3	.04932	.19966	.50132	.50650	3.9848	49.146	1.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.9162**	**.49766**	**1.0071**	**49.316**	**.50460**	**9.9534**	**.50217**
Stddev	.1345	.00161	.0027	.281	.00141	.0056	.00090
%RSD	1.3564	.32258	.27182	.56936	.27993	.05661	.17861
#1	9.8004	.49634	1.0102	49.069	.50585	9.9507	.50282
#2	10.064	.49945	1.0061	49.622	.50307	9.9496	.50115
#3	9.8846	.49718	1.0051	49.257	.50488	9.9599	.50255
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 13:03:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1997**	**.40476**	**5.1642**	**1.0026**	**.99432**	**.99050**	**.50900**
Stddev	.0011	.00080	.0031	.0008	.00541	.00261	.00166
%RSD	.09538	.19644	.06047	.08057	.54374	.26324	.32573
#1	1.2008	.40408	5.1631	1.0035	.99081	.99348	.51044
#2	1.1985	.40563	5.1678	1.0020	1.0005	.98942	.50718
#3	1.1997	.40457	5.1618	1.0022	.99161	.98862	.50937
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0019**	**1.0053**	F **2.8691**
Stddev	.0036	.0009	.0111
%RSD	.35558	.09150	.38634
#1	.99784	1.0055	2.8628
#2	1.0045	1.0043	2.8819
#3	1.0033	1.0060	2.8625
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9877.8**	**59691.**	**3097.9**
Stddev	6.1	104.	11.8
%RSD	.06196	.17495	.38081
#1	9880.1	59766.	3105.5
#2	9870.8	59572.	3084.3
#3	9882.4	59736.	3103.8

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 13:06:41 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00082	.00013	.00057	.00151	.00063	.00002	-.01871	-.00022
Stddev	.00151	.00746	.00362	.00174	.00068	.00003	.02739	.00016
%RSD	185.23	5748.5	636.07	114.92	108.39	116.80	146.42	72.359
#1	.00201	.00304	-.00315	-.00049	.00141	.00001	-.04795	-.00036
#2	-.00088	-.00835	.00078	.00262	.00031	.00006	.00637	-.00027
#3	.00132	.00570	.00408	.00241	.00017	.00001	-.01455	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	.00054	.00076	.03608	.09214	-.00181	-.01859	-.00071
Stddev	.00025	.00025	.00080	.01975	.18930	.00302	.07756	.00052
%RSD	1039.3	46.422	105.73	54.731	205.46	166.60	417.27	72.248
#1	.00013	.00063	.00047	.01630	-.12492	-.00468	-.09449	-.00012
#2	.00011	.00026	.00167	.05580	.17827	.00135	-.02180	-.00101
#3	-.00032	.00073	.00014	.03615	.22306	-.00212	.06053	-.00101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00274	.04401	-.00040	.00332	.00144	-.00005	.00482	-.00649
Stddev	.00039	.03341	.00024	.00918	.00111	.00350	.00394	.00014
%RSD	14.320	75.897	59.933	276.22	77.091	6590.6	81.757	2.1187
#1	.00273	.08068	-.00054	-.00157	.00018	-.00177	.00919	-.00633
#2	.00236	.03606	-.00012	.01392	.00189	-.00236	.00153	-.00657
#3	.00314	.01530	-.00055	-.00237	.00225	.00397	.00375	-.00656
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 13:06:41 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.00039	.00186	-.00089	-.00002	.00003	.00447
Stddev	.00029	.00029	.00050	.00195	.00109	.00004	.00129
%RSD	58.864	74.770	26.876	218.22	5660.3	163.33	28.933
#1	.00018	.00056	.00153	-.00246	.00118	.00003	.00395
#2	.00076	.00054	.00162	-.00151	-.00095	.00007	.00352
#3	.00054	.00005	.00244	.00129	-.00029	-.00002	.00594
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9714.8	59220.	3006.6
Stddev	20.8	167.	18.8
%RSD	.21426	.28151	.62581
#1	9691.7	59319.	2985.4
#2	9732.2	59028.	3021.3
#3	9720.4	59314.	3013.1

Approved: June 27, 2016

Sample Name: PBW MC Acquired: 6/25/2016 13:18:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.00511**	**.00086**	**-.00212**	**.00115**	**.00002**	**-.06747**	**.00005**
Stddev	.00209	.01093	.00117	.00067	.00097	.00011	.03960	.00035
%RSD	552.93	213.69	135.59	31.434	84.150	461.31	58.695	692.60
#1	-.00263	-.00536	-.00048	-.00211	.00011	.00001	-.09775	.00040
#2	.00149	.00426	.00140	-.00146	.00202	-.00008	-.02265	-.00029
#3	.00000	.01644	.00166	-.00279	.00133	.00014	-.08201	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**-.00006**	**.00212**	**.02866**	**-.06431**	**.00509**	**.02259**	**-.00086**
Stddev	.00040	.00091	.00173	.01678	.07316	.00381	.05174	.00149
%RSD	400.23	1393.8	81.515	58.547	113.75	74.903	229.03	173.59
#1	.00052	-.00104	.00296	.02246	-.13473	.00394	-.01043	-.00102
#2	.00004	.00075	.00325	.01586	-.06951	.00199	-.00402	.00071
#3	-.00026	.00010	.00013	.04766	.01130	.00934	.08222	-.00227
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00087**	**-.00687**	**.00001**	**-.00017**	**.00005**	**-.00551**	**.00627**	**.00390**
Stddev	.00030	.03350	.00031	.00833	.00114	.00506	.00234	.00374
%RSD	34.257	487.68	3374.4	4899.3	2181.8	91.834	37.291	95.869
#1	.00091	.01218	.00037	.00506	.00058	-.00133	.00544	.00713
#2	.00056	-.04555	-.00014	-.00978	.00083	-.01113	.00446	-.00020
#3	.00115	.01276	-.00019	.00420	-.00126	-.00406	.00891	.00477
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: PBW MC Acquired: 6/25/2016 13:18:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00012**	**-.00022**	**-.00094**	**-.00120**	**.00059**	**.00019**	**.00136**
Stddev	.00090	.00014	.01001	.00401	.00016	.00009	.00212
%RSD	728.27	61.668	1066.1	333.15	27.157	48.058	155.52
#1	-.00022	-.00007	.00771	-.00405	.00041	.00016	-.00108
#2	.00115	-.00034	-.01190	.00338	.00070	.00012	.00241
#3	-.00056	-.00026	.00137	-.00294	.00066	.00029	.00275
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9802.9**	**59937.**	**3028.8**
Stddev	9.7	136.	16.1
%RSD	.09849	.22735	.53011
#1	9794.7	59785.	3046.3
#2	9813.5	59979.	3014.8
#3	9800.5	60047.	3025.3

Approved: June 27, 2016

Sample Name: LCSW MC Acquired: 6/25/2016 13:22:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19140**	**4.8040**	**.19266**	**.92897**	**.49049**	**.02396**	**4.9270**	**.02412**
Stddev	.00110	.0096	.00124	.00283	.00119	.00006	.0588	.00019
%RSD	.57611	.19942	.64179	.30493	.24273	.25817	1.1941	.78757
#1	.19253	4.7978	.19184	.92575	.49050	.02398	4.9121	.02430
#2	.19133	4.7992	.19408	.93105	.49168	.02402	4.8771	.02392
#3	.19033	4.8151	.19206	.93012	.48929	.02390	4.9919	.02415
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09725**	**.24390**	**.24732**	**1.9838**	**23.909**	**.49943**	**4.9211**	**.24209**
Stddev	.00025	.00056	.00120	.0346	.055	.00048	.0513	.00093
%RSD	.26181	.22973	.48504	1.7424	.23189	.09613	1.0429	.38463
#1	.09749	.24389	.24597	1.9470	23.904	.49915	4.9459	.24237
#2	.09699	.24447	.24774	1.9888	23.968	.49916	4.8621	.24284
#3	.09727	.24335	.24825	2.0156	23.857	.49999	4.9553	.24105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49737**	**24.381**	**.24620**	**4.6982**	**.24508**	**.58185**	**.18662**	**2.4109**
Stddev	.00101	.058	.00194	.0026	.00506	.00206	.00438	.0033
%RSD	.20378	.23960	.78649	.05522	2.0646	.35379	2.3449	.13777
#1	.49803	24.349	.24767	4.6983	.25078	.58403	.18417	2.4135
#2	.49787	24.449	.24692	4.7007	.24112	.57994	.18402	2.4071
#3	.49620	24.346	.24401	4.6956	.24334	.58158	.19167	2.4120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LCSW MC Acquired: 6/25/2016 13:22:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48537**	**.49494**	**.49102**	**.24360**	**.48594**	**.48236**	**.01763**
Stddev	.00248	.00157	.00916	.00175	.00116	.00127	.00304
%RSD	.51037	.31733	1.8663	.71814	.23927	.26228	17.214
#1	.48605	.49357	.49562	.24211	.48702	.48137	.01600
#2	.48744	.49666	.49698	.24315	.48610	.48194	.01576
#3	.48263	.49460	.48047	.24553	.48471	.48379	.02113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9802.2**	**59979.**	**3063.3**
Stddev	16.1	75.	6.7
%RSD	.16429	.12520	.21884
#1	9786.8	59978.	3070.3
#2	9800.7	59904.	3056.9
#3	9818.9	60054.	3062.8

Approved: June 27, 2016

Sample Name: L1606080801 Acquired: 6/25/2016 13:25:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00120	-.00080	-.00163	.02599	.00717	.00000	50.564	.00016
Stddev	.00152	.00397	.00290	.00206	.00115	.00005	.112	.00037
%RSD	125.91	493.45	178.32	7.9153	16.060	1214.4	.22137	235.03
#1	.00226	.00203	-.00429	.02577	.00588	.00002	50.480	.00003
#2	-.00053	.00090	.00147	.02405	.00757	.00004	50.521	-.00014
#3	.00188	-.00534	-.00207	.02815	.00807	-.00005	50.691	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.00083	.00107	.26409	1.2826	.00250	14.201	.11783
Stddev	.00018	.00044	.00061	.01139	.1290	.00132	.067	.00387
%RSD	127.01	53.307	57.172	4.3115	10.056	52.928	.47527	3.2872
#1	.00035	.00131	.00089	.27352	1.4315	.00167	14.162	.12070
#2	.00008	.00073	.00057	.25144	1.2130	.00180	14.162	.11343
#3	.00000	.00044	.00175	.26731	1.2035	.00402	14.279	.11937
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	15.281	.00045	.01127	-.00029	-.00250	-.00036	4.8502
Stddev	.00031	.048	.00109	.00496	.00257	.00086	.00870	.0263
%RSD	48.719	.31261	245.14	44.009	886.73	34.260	2404.6	.54311
#1	.00028	15.230	.00169	.00618	-.00269	-.00223	.00526	4.8717
#2	.00080	15.325	-.00034	.01609	.00243	-.00181	.00404	4.8581
#3	.00082	15.288	-.00001	.01154	-.00061	-.00346	-.01039	4.8208
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606080801 Acquired: 6/25/2016 13:25:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.16531	-.00520	-.00297	.00071	.00304	.00248
Stddev	.00021	.00042	.00147	.00169	.00080	.00019	.00016
%RSD	26.039	.25638	28.334	56.894	114.04	6.1375	6.5372
#1	.00100	.16514	-.00627	-.00112	.00132	.00299	.00242
#2	.00058	.16499	-.00352	-.00336	-.00020	.00288	.00235
#3	.00084	.16579	-.00581	-.00443	.00100	.00324	.00266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9767.4	60311.	3068.7
Stddev	25.3	182.	4.5
%RSD	.25865	.30239	.14809
#1	9787.8	60238.	3069.0
#2	9775.3	60177.	3064.1
#3	9739.2	60519.	3073.1

Approved: June 27, 2016

Sample Name: L1606080803S Acquired: 6/25/2016 13:29:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19425**	**4.8313**	**.19559**	**.97188**	**.49949**	**.02391**	**55.138**	**.02433**
Stddev	.00175	.0086	.00291	.00386	.00064	.00006	.286	.00001
%RSD	.89899	.17760	1.4870	.39759	.12859	.26078	.51899	.03982
#1	.19471	4.8260	.19892	.97122	.49908	.02384	54.823	.02434
#2	.19571	4.8412	.19357	.96839	.49916	.02394	55.383	.02434
#3	.19231	4.8266	.19428	.97603	.50023	.02395	55.206	.02432
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09623**	**.24025**	**.24291**	**2.2142**	**25.706**	**.49995**	**18.850**	**.36055**
Stddev	.00052	.00032	.00081	.0203	.056	.00310	.060	.00310
%RSD	.54129	.13263	.33315	.91450	.21668	.61973	.31584	.86069
#1	.09635	.23989	.24328	2.2335	25.718	.49651	18.866	.35746
#2	.09668	.24035	.24198	2.2161	25.755	.50082	18.784	.36367
#3	.09566	.24050	.24346	2.1931	25.645	.50252	18.899	.36052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50273**	**39.946**	**.24148**	**4.8211**	**.24377**	**.58841**	**.19283**	**7.2475**
Stddev	.00069	.089	.00226	.0078	.00185	.00329	.00168	.0253
%RSD	.13674	.22372	.93733	.16218	.76094	.55837	.87085	.34834
#1	.50346	39.846	.24394	4.8298	.24591	.59218	.19095	7.2767
#2	.50266	40.018	.24099	4.8187	.24276	.58614	.19336	7.2326
#3	.50209	39.974	.23950	4.8148	.24264	.58690	.19419	7.2333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606080803S Acquired: 6/25/2016 13:29:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48600**	**.66572**	**.49120**	**.24058**	**.48625**	**.48121**	**.00549**
Stddev	.00062	.00113	.00488	.00183	.00111	.00310	.00062
%RSD	.12721	.16988	.99375	.75886	.22783	.64511	11.331
#1	.48664	.66443	.49684	.23968	.48515	.48355	.00538
#2	.48596	.66654	.48839	.24268	.48622	.48240	.00493
#3	.48540	.66619	.48838	.23938	.48737	.47769	.00616
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9640.1**	**59155.**	**3051.9**
Stddev	28.9	91.	4.4
%RSD	.29949	.15374	.14285
#1	9607.9	59063.	3056.9
#2	9648.6	59158.	3049.0
#3	9663.8	59244.	3049.8

Approved: June 27, 2016

Sample Name: L1606080804SD Acquired: 6/25/2016 13:33:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19367**	**4.8696**	**.19395**	**.97468**	**.50079**	**.02428**	**55.592**	**.02458**
Stddev	.00103	.0189	.00351	.00126	.00119	.00004	.087	.00002
%RSD	.53221	.38806	1.8082	.12977	.23838	.15828	.15705	.06402
#1	.19313	4.8871	.19259	.97422	.49995	.02427	55.687	.02459
#2	.19486	4.8723	.19133	.97371	.50216	.02425	55.574	.02456
#3	.19302	4.8496	.19794	.97611	.50027	.02433	55.515	.02458
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09687**	**.24382**	**.24330**	**2.1942**	**25.602**	**.50391**	**18.927**	**.35670**
Stddev	.00034	.00139	.00044	.0216	.187	.00317	.145	.00440
%RSD	.35450	.56820	.18086	.98630	.73073	.62836	.76565	1.2346
#1	.09649	.24542	.24364	2.2182	25.415	.50090	18.778	.36166
#2	.09698	.24295	.24347	2.1881	25.600	.50721	19.067	.35519
#3	.09715	.24309	.24280	2.1762	25.789	.50361	18.935	.35325
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50687**	**40.011**	**.24239**	**4.8324**	**.24609**	**.59184**	**.19199**	**7.3269**
Stddev	.00174	.019	.00180	.0039	.00113	.00410	.00494	.0108
%RSD	.34421	.04769	.74422	.07995	.45954	.69206	2.5730	.14791
#1	.50863	40.009	.24329	4.8354	.24728	.59240	.18629	7.3276
#2	.50684	40.031	.24358	4.8338	.24503	.59563	.19457	7.3373
#3	.50514	39.993	.24032	4.8281	.24594	.58749	.19509	7.3157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606080804SD Acquired: 6/25/2016 13:33:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48884	.66564	.48806	.24641	.49385	.48167	.00481
Stddev	.00243	.00060	.00210	.00100	.00262	.00319	.00105
%RSD	.49731	.09007	.43005	.40687	.53028	.66320	21.781
#1	.48902	.66631	.48604	.24752	.49576	.48059	.00363
#2	.49118	.66515	.49023	.24612	.49493	.48526	.00518
#3	.48633	.66545	.48792	.24558	.49086	.47916	.00563
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9643.8	58961.	3032.4
Stddev	19.6	179.	14.4
%RSD	.20367	.30279	.47352
#1	9664.0	58941.	3022.3
#2	9624.8	58793.	3026.2
#3	9642.5	59149.	3048.8

Approved: June 27, 2016

Sample Name: L1606082203 Acquired: 6/25/2016 13:37:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	.03250	.00108	.03413	.76881	.00001	31.323	.00009
Stddev	.00326	.00113	.00298	.00231	.00291	.00007	.069	.00003
%RSD	461.08	3.4738	274.98	6.7818	.37861	986.76	.21967	35.456
#1	-.00056	.03174	-.00033	.03677	.76753	-.00000	31.323	.00006
#2	.00440	.03379	-.00093	.03317	.76676	.00008	31.255	.00011
#3	-.00173	.03195	.00451	.03246	.77215	-.00006	31.393	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00298	.00799	.00175	5.1531	49.440	.10315	14.307	.17132
Stddev	.00036	.00030	.00156	.0220	.158	.00201	.082	.00563
%RSD	12.200	3.7657	89.202	.42624	.31871	1.9519	.57045	3.2873
#1	.00316	.00823	.00355	5.1330	49.302	.10173	14.214	.17528
#2	.00323	.00810	.00078	5.1498	49.405	.10227	14.338	.17381
#3	.00256	.00765	.00092	5.1766	49.612	.10546	14.368	.16487
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	90.168	.00369	.00788	-.00122	.00230	.00147	11.287
Stddev	.00023	.210	.00039	.00442	.00289	.00119	.00467	.027
%RSD	50.114	.23246	10.480	56.105	237.50	51.496	317.01	.23968
#1	.00031	90.009	.00403	.01267	.00108	.00337	.00397	11.318
#2	.00033	90.090	.00327	.00394	-.00447	.00102	-.00391	11.275
#3	.00071	90.405	.00377	.00704	-.00027	.00252	.00436	11.268
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606082203 Acquired: 6/25/2016 13:37:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.79119**	**.00045**	**-.00075**	**.00043**	**.00534**	**-.00006**
Stddev	.00030	.00071	.00315	.00229	.00033	.00006	.00108
%RSD	437.99	.09029	691.72	303.10	75.619	1.1956	1667.5
#1	-.00035	.79036	-.00147	.00135	.00018	.00529	-.00108
#2	-.00009	.79165	-.00125	-.00319	.00032	.00542	.00108
#3	.00024	.79155	.00408	-.00042	.00080	.00532	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9649.6**	**58766.**	**3005.5**
Stddev	29.5	106.	1.2
%RSD	.30621	.18076	.04053
#1	9617.1	58644.	3006.7
#2	9657.0	58831.	3005.5
#3	9674.8	58825.	3004.3

Approved: June 27, 2016

Sample Name: L1606082202 Acquired: 6/25/2016 13:40:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573973-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00163	.00700	-.00255	.09063	.14584	.00010	6.2202	-.00011
Stddev	.00068	.00493	.00215	.00172	.00146	.00002	.0817	.00004
%RSD	41.927	70.458	84.324	1.8967	.99792	21.043	1.3126	39.110
#1	.00225	.01016	-.00441	.09032	.14618	.00008	6.1515	-.00007
#2	.00090	.00132	-.00302	.08908	.14425	.00013	6.1986	-.00016
#3	.00175	.00952	-.00020	.09248	.14710	.00010	6.3104	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	.00096	.00077	2.0756	1.5049	.02492	4.3992	.07622
Stddev	.00041	.00002	.00085	.0056	.1629	.00329	.1257	.00201
%RSD	1133.0	2.0322	110.52	.26897	10.822	13.197	2.8567	2.6344
#1	-.00024	.00097	.00165	2.0692	1.6925	.02131	4.4123	.07724
#2	.00043	.00097	.00070	2.0781	1.3995	.02572	4.2675	.07752
#3	-.00030	.00094	-.00004	2.0795	1.4227	.02774	4.5178	.07391
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00024	83.246	.00061	.10079	.00421	-.00520	.00452	12.135
Stddev	.00009	.263	.00086	.00636	.00131	.00271	.00174	.029
%RSD	36.387	.31568	140.09	6.3065	31.208	52.125	38.464	.24257
#1	-.00033	83.275	.00060	.10060	.00298	-.00301	.00254	12.154
#2	-.00015	82.970	.00147	.10724	.00559	-.00823	.00579	12.151
#3	-.00025	83.493	-.00024	.09454	.00404	-.00437	.00523	12.101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606082202 Acquired: 6/25/2016 13:40:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573973-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	.21054	.00087	-.00133	-.00012	.00182	.00052
Stddev	.00041	.00091	.00263	.00076	.00048	.00007	.00152
%RSD	145.47	.43126	300.38	57.105	397.63	3.7016	294.24
#1	.00007	.21002	.00237	-.00045	.00028	.00184	-.00094
#2	.00003	.21002	.00241	-.00174	.00001	.00175	.00210
#3	.00076	.21159	-.00216	-.00179	-.00065	.00188	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9729.1	59376.	3030.4
Stddev	8.6	260.	19.9
%RSD	.08835	.43738	.65516
#1	9720.3	59079.	3018.5
#2	9729.3	59490.	3053.3
#3	9737.5	59559.	3019.5

Approved: June 27, 2016

Sample Name: L1606082202PS Acquired: 6/25/2016 13:44:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573973-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19375**	**4.8752**	**.19613**	**1.0291**	**.62833**	**.02428**	**10.648**	**.02477**
Stddev	.00051	.0099	.00160	.0019	.00588	.00006	.170	.00011
%RSD	.26273	.20232	.81334	.18131	.93614	.24036	1.5959	.45206
#1	.19417	4.8642	.19702	1.0298	.63084	.02431	10.660	.02468
#2	.19391	4.8782	.19429	1.0305	.63254	.02431	10.812	.02489
#3	.19319	4.8832	.19709	1.0270	.62161	.02421	10.473	.02473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09829**	**.24324**	**.24855**	**3.8486**	**25.821**	**.52335**	**8.7582**	**.31225**
Stddev	.00082	.00053	.00056	.0314	.285	.00671	.0434	.00355
%RSD	.83225	.21842	.22566	.81716	1.1038	1.2812	.49530	1.1380
#1	.09742	.24374	.24849	3.8714	25.861	.52361	8.7634	.31338
#2	.09905	.24330	.24914	3.8618	26.083	.52993	8.7125	.31510
#3	.09841	.24268	.24802	3.8128	25.517	.51653	8.7988	.30827
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50486**	**99.997**	**.24562**	**4.8721**	**.24648**	**.59017**	**.19243**	**13.471**
Stddev	.00060	.660	.00153	.0054	.00424	.00393	.00054	.013
%RSD	.11858	.66045	.62190	.11137	1.7208	.66559	.28037	.09301
#1	.50422	100.35	.24553	4.8783	.24168	.58648	.19181	13.458
#2	.50541	100.41	.24414	4.8682	.24971	.59430	.19267	13.471
#3	.50494	99.235	.24719	4.8698	.24807	.58975	.19281	13.483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606082202PS Acquired: 6/25/2016 13:44:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573973-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48807**	**.68216**	**.50019**	**.24323**	**.49372**	**.48957**	**.00258**
Stddev	.00205	.00533	.01089	.00117	.00097	.00018	.00106
%RSD	.41999	.78112	2.1777	.48173	.19621	.03662	41.003
#1	.49029	.68537	.51266	.24188	.49454	.48951	.00281
#2	.48770	.68509	.49539	.24396	.49265	.48978	.00349
#3	.48624	.67601	.49252	.24385	.49397	.48943	.00142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9652.9**	**58738.**	**3022.5**
Stddev	16.4	44.	32.4
%RSD	.17031	.07498	1.0716
#1	9668.7	58757.	3005.1
#2	9654.1	58688.	3002.5
#3	9635.9	58769.	3059.8

Approved: June 27, 2016

Sample Name: L1606082202SDL Acquired: 6/25/2016 13:48:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573973-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00041	-.00874	.00232	.01966	.02846	.00012	1.1981	-.00020
Stddev	.00102	.00520	.00129	.00166	.00164	.00003	.0364	.00029
%RSD	249.96	59.552	55.713	8.4558	5.7787	28.080	3.0406	145.60
#1	-.00049	-.00387	.00244	.02114	.03034	.00013	1.2234	-.00054
#2	.00065	-.00812	.00098	.01996	.02778	.00008	1.1564	-.00008
#3	-.00139	-.01423	.00356	.01786	.02727	.00014	1.2146	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	.00097	.00049	.42314	.31666	.00414	.84994	.01478
Stddev	.00036	.00092	.00031	.02269	.03395	.00078	.10125	.00159
%RSD	202.36	94.832	64.039	5.3615	10.720	18.849	11.912	10.770
#1	-.00059	-.00007	.00031	.40193	.27970	.00483	.89447	.01388
#2	-.00002	.00128	.00031	.42043	.32384	.00429	.92129	.01385
#3	.00008	.00169	.00086	.44706	.34645	.00330	.73406	.01662
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	16.797	-.00010	.02573	.00379	-.00654	-.00062	2.4606
Stddev	.00016	.116	.00075	.00347	.00211	.00206	.00121	.0014
%RSD	105.18	.68795	766.63	13.470	55.760	31.494	195.90	.05654
#1	-.00025	16.870	-.00048	.02714	.00159	-.00786	-.00167	2.4590
#2	-.00024	16.856	-.00058	.02827	.00580	-.00417	-.00090	2.4616
#3	.00003	16.663	.00077	.02178	.00399	-.00761	.00071	2.4611
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606082202SDL Acquired: 6/25/2016 13:48:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573973-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00034**	**.04233**	**.00225**	**-.00298**	**.00005**	**.00069**	**.00014**
Stddev	.00035	.00076	.00380	.00312	.00068	.00008	.00023
%RSD	102.54	1.7878	169.10	104.78	1298.3	11.967	160.88
#1	-.00033	.04309	.00306	.00056	-.00034	.00074	-.00011
#2	.00000	.04232	.00558	-.00534	-.00035	.00059	.00032
#3	-.00071	.04157	-.00189	-.00415	.00084	.00073	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10112.**	**61959.**	**3102.5**
Stddev	25.	335.	21.2
%RSD	.24804	.54051	.68302
#1	10140.	62322.	3081.9
#2	10091.	61890.	3101.4
#3	10107.	61663.	3124.2

Approved: June 27, 2016

Sample Name: L1606082202SDL Acquired: 6/25/2016 13:52:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573973-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**-.00201**	**.00162**	**.00506**	**.00674**	**.00009**	**.22194**	**.00006**
Stddev	.00098	.00612	.00099	.00223	.00036	.00007	.03121	.00010
%RSD	701.06	303.84	61.332	44.136	5.3564	71.933	14.062	159.17
#1	-.00091	-.00825	.00149	.00575	.00715	.00008	.25227	.00003
#2	-.00048	-.00177	.00268	.00256	.00663	.00004	.22363	-.00001
#3	.00097	.00398	.00070	.00686	.00645	.00017	.18992	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.00003**	**.00093**	**.10294**	**.07211**	**-.00053**	**.11677**	**.00303**
Stddev	.00044	.00176	.00026	.00844	.06933	.00190	.04489	.00266
%RSD	660.12	5191.6	27.598	8.2017	96.144	360.65	38.441	87.562
#1	-.00052	.00076	.00092	.11264	.12436	-.00025	.12873	.00344
#2	.00037	-.00197	.00068	.09726	-.00654	-.00255	.06712	.00020
#3	-.00005	.00131	.00120	.09891	.09851	.00122	.15447	.00546
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00046**	**3.4626**	**-.00095**	**.01102**	**.00309**	**-.00448**	**.00254**	**.52285**
Stddev	.00009	.0579	.00053	.00740	.00233	.00663	.00646	.00911
%RSD	18.881	1.6714	55.686	67.190	75.440	147.88	254.92	1.7427
#1	-.00041	3.4180	-.00056	.01783	.00042	-.00172	-.00323	.51493
#2	-.00042	3.4418	-.00074	.01207	.00473	-.01205	.00952	.52082
#3	-.00056	3.5280	-.00155	.00314	.00412	.00032	.00131	.53281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606082202SDL Acquired: 6/25/2016 13:52:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573973-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00039**	**.00876**	**-.00160**	**-.00170**	**.00064**	**.00048**	**.00025**
Stddev	.00024	.00020	.00243	.00072	.00151	.00001	.00052
%RSD	61.212	2.3382	151.62	42.632	234.58	1.6034	205.72
#1	-.00036	.00876	-.00015	-.00219	-.00097	.00048	.00032
#2	-.00064	.00897	-.00025	-.00087	.00088	.00049	-.00030
#3	-.00017	.00856	-.00441	-.00204	.00202	.00048	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10010.**	**61091.**	**3050.7**
Stddev	14.	94.	16.7
%RSD	.14368	.15455	.54708
#1	9999.9	61099.	3067.0
#2	10027.	60993.	3033.7
#3	10004.	61182.	3051.5

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 13:56:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39703	9.8823	.39208	.48360	.99649	.04877	9.9442
Stddev	.00097	.0185	.00108	.00155	.00485	.00012	.0391
%RSD	.24464	.18766	.27635	.32015	.48698	.23806	.39293
#1	.39651	9.9033	.39094	.48432	.99107	.04885	9.8991
#2	.39815	9.8682	.39222	.48182	1.0004	.04883	9.9670
#3	.39642	9.8754	.39309	.48466	.99796	.04864	9.9665
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04952	.19590	.48861	.49872	3.9553	49.086	.99832
Stddev	.00026	.00028	.00039	.00131	.0110	.181	.00236
%RSD	.52554	.14170	.07934	.26171	.27922	.36920	.23624
#1	.04970	.19602	.48888	.50017	3.9554	48.878	.99571
#2	.04922	.19610	.48816	.49764	3.9662	49.210	1.0003
#3	.04964	.19559	.48877	.49836	3.9441	49.170	.99895
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.6989	.49966	.99513	49.378	.49577	9.7713	.49937
Stddev	.0286	.00128	.00487	.189	.00112	.0077	.00125
%RSD	.29470	.25687	.48908	.38358	.22653	.07875	.25024
#1	9.6936	.49933	.99926	49.226	.49626	9.7672	.49899
#2	9.6733	.50107	.99636	49.590	.49656	9.7802	.50076
#3	9.7297	.49857	.98976	49.317	.49448	9.7665	.49835
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 13:56:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.1744	.39516	5.0749	.97934	.99997	.99747	.49995
Stddev	.0050	.00337	.0045	.00061	.00261	.00842	.00315
%RSD	.42778	.85272	.08873	.06267	.26098	.84451	.63052
#1	1.1693	.39868	5.0732	.98005	.99777	.99280	.50104
#2	1.1793	.39197	5.0800	.97900	1.0028	1.0072	.49639
#3	1.1748	.39484	5.0715	.97897	.99928	.99242	.50240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.98727	.98962	F 2.8790
Stddev	.00224	.00122	.0125
%RSD	.22699	.12332	.43408
#1	.98696	.98924	2.8649
#2	.98519	.99098	2.8888
#3	.98965	.98864	2.8834
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9881.8	60025.	3051.6
Stddev	7.5	117.	13.0
%RSD	.07613	.19437	.42745
#1	9874.3	60038.	3066.6
#2	9889.3	60134.	3043.0
#3	9881.9	59902.	3045.3

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 14:00:01 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**.00384**	**.00171**	**.00288**	**.00164**	**.00016**	**-.02160**	**-.00002**
Stddev	.00056	.00607	.00179	.00157	.00101	.00008	.03268	.00008
%RSD	153.00	158.06	104.81	54.496	61.686	49.488	151.32	357.31
#1	-.00082	.00133	.00363	.00341	.00099	.00008	-.05876	.00002
#2	-.00054	.01077	.00142	.00412	.00280	.00016	-.00868	-.00011
#3	.00026	-.00057	.00008	.00112	.00111	.00023	.00265	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**.00089**	**.00145**	**.02539**	**.05830**	**-.00178**	**-.00516**	**-.00289**
Stddev	.00025	.00059	.00085	.02878	.16368	.00331	.04118	.00267
%RSD	184.36	65.782	58.421	113.33	280.73	185.62	797.74	92.366
#1	-.00007	.00150	.00078	.04856	-.06991	-.00470	-.03370	-.00034
#2	.00042	.00086	.00240	.03444	.24267	-.00246	.04205	-.00265
#3	.00006	.00033	.00117	-.00682	.00216	.00181	-.02383	-.00566
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00312**	**.01750**	**-.00036**	**.00463**	**.00110**	**.00408**	**.00171**	**-.00349**
Stddev	.00035	.01788	.00074	.00054	.00119	.00430	.00409	.00216
%RSD	11.208	102.15	207.33	11.581	107.78	105.36	238.51	61.802
#1	.00276	.00856	.00044	.00497	-.00027	-.00057	.00622	-.00129
#2	.00346	.03809	-.00047	.00401	.00175	.00791	-.00177	-.00560
#3	.00314	.00586	-.00104	.00491	.00181	.00489	.00070	-.00357
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 14:00:01 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.00055	-.00034	-.00341	.00088	.00013	.00321
Stddev	.00088	.00013	.00661	.00148	.00029	.00021	.00123
%RSD	577.33	24.369	1964.7	43.438	32.521	159.30	38.279
#1	-.00076	.00044	.00453	-.00437	.00106	-.00009	.00194
#2	.00100	.00070	.00232	-.00416	.00055	.00032	.00329
#3	.00022	.00052	-.00786	-.00171	.00104	.00016	.00439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9674.1	59179.	2989.6
Stddev	10.8	80.	18.0
%RSD	.11204	.13474	.60268
#1	9680.4	59116.	2972.7
#2	9661.6	59269.	3008.6
#3	9680.2	59153.	2987.4

Approved: June 27, 2016

Sample Name: L1606082302 Acquired: 6/25/2016 14:03:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.01235**	**.00398**	**.02065**	**7.6114**	**.00014**	**242.99**
Stddev	.00016	.00738	.00092	.00248	.0086	.00009	.50
%RSD	156.01	59.723	23.024	12.009	.11234	64.318	.20416
#1	-.00023	.01740	.00411	.01789	7.6202	.00016	242.85
#2	-.00014	.01576	.00483	.02137	7.6109	.00023	243.54
#3	.00007	.00389	.00301	.02270	7.6032	.00004	242.58
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00045**	**.05380**	**.00122**	**.00261**	**4.4999**	**3.4068**	**.13022**
Stddev	.00043	.00087	.00035	.00011	.0119	.0234	.00431
%RSD	95.240	1.6084	28.402	4.2649	.26410	.68699	3.3105
#1	-.00003	.05465	.00142	.00253	4.4869	3.3837	.13493
#2	.00060	.05384	.00143	.00274	4.5026	3.4062	.12925
#3	.00078	.05292	.00082	.00256	4.5101	3.4305	.12648
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**186.55**	**.80417**	**.00043**	F **676.67**	**.01798**	**.04840**	**.00356**
Stddev	.43	.00344	.00029	5.78	.00081	.00767	.00232
%RSD	.22901	.42830	67.402	.85481	4.4962	15.839	65.024
#1	186.94	.80321	.00050	676.18	.01876	.05723	.00107
#2	186.09	.80800	.00067	682.68	.01714	.04349	.00566
#3	186.63	.80131	.00011	671.15	.01803	.04447	.00396
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 27, 2016

Sample Name: L1606082302 Acquired: 6/25/2016 14:03:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00329**	**-.00499**	**17.541**	**.00002**	**5.8024**	F **-.03279**	**-.00373**
Stddev	.00417	.00266	.115	.00016	.0077	.00249	.00217
%RSD	126.77	53.331	.65409	771.83	.13255	7.6037	58.233
#1	-.00765	-.00207	17.622	-.00016	5.8086	-.03219	-.00297
#2	-.00289	-.00563	17.591	.00008	5.8048	-.03065	-.00619
#3	.00066	-.00727	17.409	.00014	5.7938	-.03553	-.00205
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00105**	**.00822**	**.00588**
Stddev	.00081	.00012	.00100
%RSD	77.437	1.5051	16.931
#1	-.00020	.00826	.00695
#2	-.00112	.00832	.00498
#3	-.00182	.00808	.00571
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9001.2**	**54623.**	**2943.0**
Stddev	12.7	293.	11.3
%RSD	.14121	.53595	.38250
#1	8986.8	54359.	2937.9
#2	9010.8	54574.	2935.3
#3	9006.1	54938.	2955.9

Approved: June 27, 2016

Sample Name: L1606082303 Acquired: 6/25/2016 14:07:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00097**	**.07689**	**.00082**	**.01317**	**4.0611**	**.00008**	**194.35**
Stddev	.00087	.00794	.00214	.00140	.0013	.00002	.19
%RSD	89.857	10.324	259.83	10.655	.03277	29.564	.09947
#1	.00177	.08422	.00140	.01160	4.0625	.00007	194.28
#2	.00005	.07798	.00261	.01363	4.0599	.00006	194.19
#3	.00109	.06846	-.00155	.01429	4.0610	.00010	194.56
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**.00720**	**.00128**	**.00172**	**.48254**	**1.5553**	**.05921**
Stddev	.00016	.00037	.00008	.00037	.03011	.0518	.00214
%RSD	37.982	5.1555	6.4501	21.255	6.2390	3.3303	3.6194
#1	.00025	.00709	.00125	.00159	.48289	1.5549	.05878
#2	.00056	.00690	.00137	.00144	.45226	1.5037	.05732
#3	.00044	.00762	.00121	.00214	.51247	1.6073	.06154
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**110.52**	**2.3053**	**-.00008**	F **614.40**	**.00312**	**.00621**	**.00333**
Stddev	.38	.0070	.00038	4.80	.00050	.00738	.00101
%RSD	.34277	.30352	457.85	.78181	15.943	118.75	30.264
#1	110.96	2.3090	-.00052	609.47	.00307	-.00184	.00218
#2	110.30	2.2972	.00010	614.65	.00363	.01264	.00406
#3	110.30	2.3096	.00018	619.07	.00264	.00783	.00375
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 27, 2016

Sample Name: L1606082303 Acquired: 6/25/2016 14:07:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00131	-.00398	12.572	-.00061	3.7282	-.02186	-.00195
Stddev	.00101	.00138	.069	.00058	.0049	.00737	.00114
%RSD	77.475	34.690	.54565	95.484	.12996	33.713	58.500
#1	-.00178	-.00242	12.599	.00005	3.7247	-.01374	-.00282
#2	-.00014	-.00503	12.623	-.00084	3.7262	-.02372	-.00066
#3	-.00200	-.00451	12.494	-.00105	3.7337	-.02812	-.00237
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00017	.00519	.00587
Stddev	.00034	.00017	.00146
%RSD	196.61	3.3392	24.813
#1	.00020	.00538	.00454
#2	-.00026	.00515	.00565
#3	-.00046	.00504	.00743
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9113.2	55170.	2962.5
Stddev	17.2	284.	10.8
%RSD	.18895	.51491	.36572
#1	9120.9	54953.	2952.0
#2	9093.5	55065.	2973.6
#3	9125.3	55492.	2961.9

Approved: June 27, 2016

Sample Name: L1606082304 Acquired: 6/25/2016 14:12:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00108**	**.00282**	**.00375**	**.01195**	**1.2873**	**.00004**	**44.812**	**-.00032**
Stddev	.00081	.00175	.00233	.00191	.0068	.00003	.140	.00033
%RSD	75.442	62.066	62.147	15.958	.52861	68.482	.31190	102.13
#1	-.00032	.00374	.00333	.01352	1.2889	.00004	44.884	-.00060
#2	-.00194	.00392	.00166	.00983	1.2799	.00001	44.651	.00004
#3	-.00098	.00080	.00626	.01250	1.2932	.00007	44.900	-.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00062**	**-.00235**	**.00403**	**80.696**	**3.0351**	**.04425**	**27.190**	**1.4212**
Stddev	.00024	.00090	.00186	.288	.0674	.00194	.251	.0124
%RSD	38.213	38.227	46.192	.35704	2.2197	4.3802	.92249	.86964
#1	.00059	-.00132	.00534	80.883	2.9579	.04406	26.967	1.4224
#2	.00088	-.00276	.00485	80.364	3.0650	.04628	27.141	1.4083
#3	.00040	-.00297	.00190	80.840	3.0823	.04242	27.462	1.4329
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00083**	**136.40**	**.00117**	**.05473**	**.00702**	**-.00148**	**-.00406**	**16.093**
Stddev	.00029	.62	.00056	.00919	.00288	.00326	.00473	.052
%RSD	35.125	.45656	47.701	16.792	41.072	220.80	116.61	.32014
#1	-.00064	136.42	.00054	.06475	.00887	-.00465	-.00925	16.145
#2	-.00116	135.77	.00135	.05277	.00848	.00187	.00003	16.091
#3	-.00068	137.01	.00161	.04668	.00370	-.00165	-.00296	16.042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606082304 Acquired: 6/25/2016 14:12:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00141**	**1.0265**	**.02088**	**-.00129**	**-.00025**	**.01157**	**-.01042**
Stddev	.00052	.0054	.00601	.00283	.00173	.00020	.00036
%RSD	36.987	.52659	28.762	219.55	704.92	1.7611	3.4676
#1	.00201	1.0281	.02616	-.00374	-.00225	.01176	-.01080
#2	.00117	1.0205	.01435	.00181	.00074	.01159	-.01039
#3	.00105	1.0309	.02213	-.00193	.00077	.01136	-.01008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9584.5**	**58328.**	**2992.4**
Stddev	11.8	87.	5.0
%RSD	.12317	.14881	.16820
#1	9573.1	58228.	2986.6
#2	9583.6	58387.	2995.2
#3	9596.7	58368.	2995.4

Approved: June 27, 2016

Sample Name: L1606114801 Acquired: 6/25/2016 14:15:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00263	.73135	.00385	.12210	.08262	.00020	27.646	.00018
Stddev	.00073	.00428	.00128	.00118	.00156	.00004	.096	.00015
%RSD	27.764	.58467	33.324	.96789	1.8866	19.880	.34678	80.450
#1	.00220	.73627	.00263	.12346	.08403	.00016	27.689	.00009
#2	.00223	.72927	.00372	.12147	.08287	.00024	27.713	.00035
#3	.00348	.72851	.00519	.12136	.08095	.00020	27.536	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	.00138	.00319	.50952	4.5430	.00820	13.834	.02681
Stddev	.00058	.00089	.00080	.00314	.0592	.00406	.158	.00190
%RSD	107.78	64.361	25.113	.61565	1.3042	49.473	1.1398	7.0691
#1	-.00010	.00066	.00412	.50590	4.4785	.00685	13.879	.02807
#2	.00067	.00110	.00265	.51133	4.5951	.01276	13.964	.02463
#3	.00103	.00237	.00282	.51133	4.5554	.00499	13.658	.02774
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00124	65.018	.00157	.05465	.00287	-.00148	.00632	4.3760
Stddev	.00020	.232	.00022	.00221	.00233	.00288	.00218	.0207
%RSD	16.215	.35629	13.957	4.0445	81.267	194.34	34.507	.47244
#1	.00141	65.009	.00133	.05367	.00373	-.00288	.00878	4.3946
#2	.00130	65.254	.00176	.05719	.00465	-.00339	.00555	4.3795
#3	.00102	64.791	.00160	.05310	.00023	.00183	.00463	4.3537
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606114801 Acquired: 6/25/2016 14:15:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00055**	**.26681**	**.01202**	**-.00269**	**.00480**	**.00516**	**.00567**
Stddev	.00125	.00125	.00081	.00070	.00038	.00011	.00071
%RSD	227.21	.46986	6.7372	25.927	7.9446	2.0641	12.451
#1	-.00072	.26656	.01275	-.00259	.00452	.00521	.00488
#2	.00178	.26818	.01115	-.00205	.00524	.00504	.00622
#3	.00058	.26571	.01216	-.00344	.00465	.00524	.00592
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9685.5**	**59237.**	**3013.9**
Stddev	15.3	70.	21.8
%RSD	.15804	.11840	.72168
#1	9667.9	59212.	3004.6
#2	9692.8	59182.	2998.3
#3	9695.8	59316.	3038.7

Approved: June 27, 2016

Sample Name: L1606114802 Acquired: 6/25/2016 14:19:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00086	.02576	.00392	.13054	.14235	.00004	53.032	.00013
Stddev	.00161	.00264	.00128	.00304	.00093	.00006	.088	.00011
%RSD	186.85	10.249	32.777	2.3320	.65273	165.85	.16643	81.772
#1	-.00048	.02479	.00505	.13055	.14272	-.00002	52.942	.00017
#2	.00053	.02374	.00418	.13357	.14130	.00011	53.037	.00022
#3	-.00263	.02875	.00252	.12748	.14305	.00003	53.119	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.00416	.00255	.05069	2.7172	.00979	45.232	.00619
Stddev	.00057	.00090	.00135	.00895	.0969	.00331	.213	.00128
%RSD	70.201	21.666	53.148	17.648	3.5679	33.803	.47142	20.757
#1	.00109	.00488	.00157	.05068	2.6091	.01132	44.992	.00715
#2	.00016	.00315	.00198	.05964	2.7964	.01206	45.307	.00668
#3	.00119	.00444	.00409	.04175	2.7463	.00599	45.398	.00473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	113.30	.00198	.03363	.00397	-.00032	.00108	5.7426
Stddev	.00005	.15	.00097	.00220	.00496	.00242	.00246	.0270
%RSD	9.2544	.13423	48.767	6.5321	124.89	765.53	227.39	.46957
#1	.00062	113.13	.00098	.03204	.00115	-.00095	-.00128	5.7131
#2	.00062	113.39	.00206	.03614	.00107	.00236	.00363	5.7660
#3	.00052	113.39	.00290	.03272	.00971	-.00236	.00090	5.7486
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606114802 Acquired: 6/25/2016 14:19:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**.36906**	**-.00370**	**-.00072**	**.00779**	**.00692**	**.00331**
Stddev	.00028	.00064	.00411	.00265	.00075	.00021	.00138
%RSD	191.03	.17400	110.98	366.07	9.6620	3.0569	41.716
#1	-.00017	.36882	.00101	-.00049	.00853	.00671	.00489
#2	.00034	.36857	-.00557	.00180	.00703	.00713	.00270
#3	.00027	.36978	-.00654	-.00348	.00781	.00694	.00235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9627.8**	**58951.**	**3062.4**
Stddev	26.1	26.	1.9
%RSD	.27151	.04447	.06237
#1	9657.6	58927.	3060.7
#2	9617.0	58947.	3062.0
#3	9608.7	58979.	3064.5

Approved: June 27, 2016

Sample Name: L1606115001 Acquired: 6/25/2016 14:23:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00134	.94860	.00623	.13672	.10593	.00014	35.066	.00002
Stddev	.00163	.01243	.00298	.00233	.00120	.00009	.208	.00013
%RSD	122.05	1.3105	47.819	1.7071	1.1370	65.235	.59262	741.62
#1	-.00020	.96246	.00332	.13853	.10456	.00018	34.826	.00011
#2	.00116	.93843	.00928	.13754	.10682	.00004	35.168	-.00013
#3	.00306	.94490	.00609	.13408	.10640	.00021	35.202	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00095	.00115	.00402	.75423	2.6231	.00517	21.361	.05361
Stddev	.00038	.00077	.00076	.00983	.0329	.00134	.091	.00159
%RSD	39.586	67.102	19.015	1.3028	1.2541	25.927	.42723	2.9705
#1	.00055	.00114	.00333	.74497	2.6490	.00636	21.310	.05382
#2	.00102	.00192	.00389	.75319	2.6342	.00372	21.307	.05192
#3	.00129	.00038	.00484	.76454	2.5861	.00543	21.467	.05508
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00320	114.16	.00202	.11444	.00566	-.00032	.00352	5.0408
Stddev	.00062	.45	.00043	.00615	.00453	.00176	.00035	.0084
%RSD	19.542	.39163	21.028	5.3725	80.076	549.83	10.037	.16741
#1	.00290	113.69	.00211	.12072	.00935	.00043	.00314	5.0497
#2	.00278	114.20	.00240	.11417	.00060	.00094	.00356	5.0330
#3	.00392	114.58	.00156	.10843	.00702	-.00233	.00385	5.0397
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115001 Acquired: 6/25/2016 14:23:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**.24066**	**.01417**	**-.00245**	**.00766**	**.00892**	**.00404**
Stddev	.00021	.00154	.00348	.00225	.00065	.00011	.00127
%RSD	805.05	.63820	24.568	91.853	8.5297	1.1926	31.485
#1	.00024	.23889	.01059	-.00116	.00840	.00901	.00275
#2	.00001	.24171	.01754	-.00114	.00737	.00895	.00530
#3	-.00018	.24137	.01438	-.00504	.00719	.00880	.00407
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9688.5**	**58932.**	**3057.0**
Stddev	25.8	93.	13.7
%RSD	.26652	.15746	.44955
#1	9698.0	58835.	3047.2
#2	9708.3	59020.	3072.7
#3	9659.3	58940.	3051.0

Approved: June 27, 2016

Sample Name: L1606115002 Acquired: 6/25/2016 14:27:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00203	.48878	.00167	.06520	.04585	.00006	17.152	.00001
Stddev	.00268	.01554	.00141	.00090	.00204	.00009	.173	.00009
%RSD	131.70	3.1791	84.852	1.3869	4.4598	167.56	1.0064	934.85
#1	.00187	.50660	.00286	.06544	.04801	.00015	17.256	-.00009
#2	-.00056	.47801	.00204	.06596	.04394	-.00004	16.953	.00007
#3	.00479	.48175	.00010	.06420	.04559	.00005	17.247	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00168	.00243	.39846	4.7446	.00319	5.4375	.01729
Stddev	.00031	.00066	.00184	.00667	.1185	.00289	.0385	.00153
%RSD	100.89	39.152	75.822	1.6749	2.4966	90.823	.70870	8.8325
#1	.00065	.00096	.00122	.39954	4.7392	.00001	5.4553	.01884
#2	.00006	.00183	.00151	.39131	4.6289	.00567	5.3932	.01727
#3	.00020	.00224	.00454	.40452	4.8657	.00387	5.4638	.01578
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	38.880	.00010	.07228	.00433	-.00020	.00027	1.5503
Stddev	.00033	.402	.00056	.00820	.00375	.00324	.00590	.0251
%RSD	119.49	1.0347	568.40	11.341	86.648	1601.4	2189.5	1.6195
#1	-.00010	39.210	-.00001	.06867	.00198	.00127	.00262	1.5658
#2	.00053	38.432	.00070	.06650	.00235	-.00392	-.00644	1.5637
#3	.00040	38.999	-.00040	.08166	.00865	.00205	.00464	1.5213
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115002 Acquired: 6/25/2016 14:27:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.09712	.00701	-.00122	.00599	.00508	.00239
Stddev	.00062	.00057	.00249	.00352	.00080	.00018	.00169
%RSD	1544.5	.58817	35.547	288.53	13.353	3.5369	70.760
#1	.00058	.09776	.00445	-.00524	.00624	.00503	.00322
#2	-.00064	.09666	.00715	.00026	.00510	.00528	.00044
#3	.00018	.09693	.00942	.00132	.00664	.00493	.00349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9845.3	59884.	3057.5
Stddev	61.7	141.	28.2
%RSD	.62651	.23463	.92251
#1	9792.5	59732.	3034.3
#2	9830.2	60008.	3088.9
#3	9913.1	59914.	3049.2

Approved: June 27, 2016

Sample Name: L1606115102 Acquired: 6/25/2016 14:31:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00159	.14924	.00211	.10945	.07344	.00012	35.265	.00011
Stddev	.00084	.00304	.00150	.00214	.00141	.00005	.199	.00019
%RSD	53.011	2.0340	71.147	1.9507	1.9218	40.963	.56552	183.34
#1	.00069	.14626	.00205	.10856	.07211	.00007	35.174	.00027
#2	.00171	.15233	.00364	.10790	.07329	.00017	35.493	-.00011
#3	.00236	.14912	.00064	.11188	.07492	.00013	35.127	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.00053	.00363	.24070	2.2004	.00754	18.847	.05800
Stddev	.00037	.00064	.00076	.00439	.0134	.00192	.227	.00368
%RSD	71.691	119.20	20.837	1.8247	.61086	25.451	1.2033	6.3535
#1	.00009	-.00001	.00323	.23564	2.1949	.00870	18.615	.05962
#2	.00071	.00038	.00450	.24286	2.2158	.00532	19.068	.05378
#3	.00075	.00124	.00316	.24359	2.1907	.00860	18.858	.06059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00267	93.416	.00066	.05411	.00356	-.00299	.00235	4.9794
Stddev	.00025	.232	.00043	.00846	.00271	.00266	.00452	.0235
%RSD	9.2843	.24821	65.257	15.640	76.210	88.939	192.50	.47215
#1	.00239	93.189	.00082	.06384	.00043	-.00008	-.00245	4.9968
#2	.00274	93.652	.00099	.04849	.00522	-.00529	.00653	4.9888
#3	.00288	93.408	.00017	.05000	.00501	-.00360	.00296	4.9527
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115102 Acquired: 6/25/2016 14:31:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.22720	-.00049	-.00434	.00477	.01199	.00282
Stddev	.00094	.00191	.00341	.00316	.00052	.00018	.00083
%RSD	624.90	.83946	689.70	72.807	10.840	1.4772	29.345
#1	.00091	.22526	.00103	-.00351	.00496	.01201	.00271
#2	-.00090	.22907	-.00440	-.00783	.00516	.01216	.00370
#3	.00043	.22727	.00189	-.00168	.00418	.01181	.00206
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9596.9	58682.	3041.4
Stddev	35.1	192.	10.5
%RSD	.36599	.32727	.34598
#1	9558.5	58834.	3032.3
#2	9605.0	58747.	3039.1
#3	9627.4	58466.	3052.9

Approved: June 27, 2016

Sample Name: L1606115105 Acquired: 6/25/2016 14:35:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	.08611	.00385	.13923	.09101	.00009	44.089	.00002
Stddev	.00149	.00500	.00146	.00310	.00028	.00009	.047	.00004
%RSD	320.61	5.8036	37.928	2.2254	.30236	102.05	.10587	146.93
#1	-.00016	.08678	.00262	.14146	.09069	.00015	44.139	.00006
#2	-.00061	.09074	.00347	.13569	.09114	.00014	44.082	.00002
#3	.00216	.08081	.00547	.14055	.09119	-.00002	44.046	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.00077	.00300	.22257	1.9197	.00784	24.665	.07651
Stddev	.00017	.00044	.00144	.01624	.0794	.00414	.178	.00017
%RSD	34.605	57.594	48.079	7.2986	4.1341	52.815	.72144	.22200
#1	.00066	.00116	.00292	.22095	1.8333	.01224	24.592	.07669
#2	.00046	.00029	.00448	.23956	1.9894	.00402	24.534	.07635
#3	.00033	.00086	.00160	.20719	1.9365	.00726	24.867	.07649
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00251	121.52	.00039	.04724	.00176	-.00202	.00114	5.9103
Stddev	.00040	.42	.00024	.00471	.00159	.00145	.00478	.0521
%RSD	16.119	.34732	62.165	9.9710	90.693	71.551	420.31	.88218
#1	.00228	121.85	.00064	.05267	.00005	-.00053	.00361	5.8778
#2	.00297	121.67	.00016	.04481	.00202	-.00342	.00418	5.9704
#3	.00227	121.04	.00037	.04425	.00320	-.00211	-.00437	5.8826
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115105 Acquired: 6/25/2016 14:35:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00058	.28912	-.00001	-.00113	.00539	.00821	.00159
Stddev	.00104	.00030	.00390	.00110	.00033	.00010	.00078
%RSD	180.18	.10436	27479.	97.280	6.0662	1.2671	48.813
#1	.00169	.28878	.00322	.00014	.00577	.00817	.00171
#2	.00041	.28919	.00108	-.00182	.00517	.00833	.00230
#3	-.00037	.28937	-.00434	-.00172	.00524	.00813	.00076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9591.1	58078.	3001.7
Stddev	50.0	111.	7.0
%RSD	.52084	.19101	.23475
#1	9648.1	57963.	2993.9
#2	9554.9	58185.	3007.6
#3	9570.3	58085.	3003.7

Approved: June 27, 2016

Sample Name: L1606115401 Acquired: 6/25/2016 14:39:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**.06369**	**.00211**	**1.6713**	**.01926**	**.00010**	F **452.03**
Stddev	.00322	.00656	.00351	.0005	.00118	.00010	.89
%RSD	1157.9	10.295	166.24	.02810	6.1016	104.76	.19751
#1	.00114	.06870	-.00193	1.6717	.01795	.00008	451.94
#2	.00198	.05626	.00441	1.6715	.02023	.00000	452.97
#3	-.00396	.06610	.00386	1.6708	.01959	.00021	451.19
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**.00175**	**.00336**	**.00358**	**.08657**	**4.0470**	**.10636**
Stddev	.00024	.00006	.00098	.00171	.01546	.0608	.00217
%RSD	56.333	3.4162	29.186	47.723	17.854	1.5017	2.0382
#1	.00015	.00180	.00230	.00410	.09591	4.0001	.10764
#2	.00053	.00168	.00424	.00167	.09508	4.1156	.10386
#3	.00059	.00177	.00354	.00498	.06873	4.0251	.10759
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**104.45**	**.25861**	**.02316**	F **889.97**	**.00046**	**.03619**	**.00320**
Stddev	.32	.00175	.00063	8.94	.00094	.00407	.00206
%RSD	.30573	.67823	2.7369	1.0045	203.65	11.246	64.428
#1	104.40	.26014	.02389	897.40	-.00019	.03795	.00082
#2	104.79	.25898	.02276	892.47	.00155	.03153	.00442
#3	104.16	.25670	.02283	880.05	.00003	.03907	.00435
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 27, 2016

Sample Name: L1606115401 Acquired: 6/25/2016 14:39:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.04556**	**5.0652**	**-.00092**	**8.3910**	F **-.05563**	**-.00220**
Stddev	.00340	.00461	.0400	.00030	.0291	.00259	.00257
%RSD	2618.0	10.119	.78890	32.506	.34723	4.6498	116.61
#1	-.00398	.04208	5.1054	-.00114	8.4061	-.05807	-.00507
#2	.00246	.05079	5.0645	-.00058	8.4095	-.05590	-.00010
#3	.00113	.04380	5.0255	-.00104	8.3574	-.05292	-.00145
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.01649**	**.00488**	**.00303**
Stddev	.00056	.00014	.00088
%RSD	3.4018	2.9544	29.046
#1	.01604	.00505	.00374
#2	.01712	.00480	.00205
#3	.01632	.00480	.00329
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8680.3**	**53198.**	**2985.6**
Stddev	180.6	1315.	22.8
%RSD	2.0805	2.4712	.76305
#1	8472.3	54211.	3004.6
#2	8770.9	53671.	2960.4
#3	8797.6	51712.	2991.9

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 14:43:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41555	10.459	.41251	.50877	1.0374	.05191	10.456
Stddev	.00198	.038	.00049	.00412	.0216	.00011	.214
%RSD	.47730	.36575	.11809	.80911	2.0778	.21811	2.0454
#1	.41688	10.435	.41304	.50472	1.0594	.05178	10.677
#2	.41327	10.438	.41238	.51295	1.0163	.05199	10.250
#3	.41650	10.503	.41210	.50863	1.0364	.05195	10.439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05257	.20726	.51590	.53004	4.1313	50.651	1.0395
Stddev	.00009	.00077	.00185	.00200	.0874	1.016	.0162
%RSD	.16567	.37212	.35803	.37798	2.1147	2.0061	1.5578
#1	.05256	.20724	.51397	.52980	4.1823	51.735	1.0578
#2	.05249	.20650	.51606	.52817	4.0304	49.720	1.0270
#3	.05266	.20804	.51766	.53216	4.1811	50.499	1.0337
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.150	.52278	1.0570	51.369	.52494	10.305	.52104
Stddev	.208	.00621	.0043	.990	.00089	.023	.00138
%RSD	2.0459	1.1888	.41022	1.9281	.16882	.22613	.26480
#1	10.382	.52905	1.0620	52.419	.52481	10.311	.51949
#2	10.083	.51662	1.0546	50.452	.52412	10.279	.52151
#3	9.9835	.52267	1.0544	51.234	.52588	10.325	.52213
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 14:43:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2435**	**.41340**	**5.3297**	**1.0365**	**1.0404**	**1.0490**	**.52867**
Stddev	.0031	.00239	.0078	.0027	.0194	.0184	.00366
%RSD	.25127	.57838	.14640	.26182	1.8676	1.7498	.69286
#1	1.2461	.41607	5.3340	1.0379	1.0597	1.0678	.52786
#2	1.2400	.41146	5.3207	1.0334	1.0208	1.0311	.53267
#3	1.2443	.41266	5.3345	1.0383	1.0408	1.0483	.52548
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0507**	**1.0444**	F **3.0477**
Stddev	.0007	.0005	.0535
%RSD	.06848	.05207	1.7552
#1	1.0503	1.0446	3.1080
#2	1.0502	1.0438	3.0059
#3	1.0515	1.0449	3.0292
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9539.3**	**57751.**	**2940.1**
Stddev	31.6	140.	48.7
%RSD	.33120	.24295	1.6549
#1	9524.0	57816.	2886.9
#2	9575.6	57847.	2982.3
#3	9518.3	57590.	2951.2

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 14:46:39 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00165	.00284	.00176	.00388	.00113	.00012	-.05362	.00014
Stddev	.00125	.01178	.00236	.00154	.00084	.00005	.04538	.00017
%RSD	75.692	415.29	134.23	39.663	74.227	41.354	84.617	118.22
#1	.00309	-.01077	.00340	.00450	.00053	.00007	-.00140	.00006
#2	.00089	.00942	.00281	.00212	.00078	.00011	-.07612	.00034
#3	.00097	.00986	-.00094	.00500	.00209	.00017	-.08336	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.00081	-.00057	.03333	.05011	.00030	.06903	-.00046
Stddev	.00028	.00137	.00241	.00857	.04565	.00118	.08939	.00080
%RSD	113.95	168.04	420.16	25.719	91.103	392.02	129.50	172.20
#1	.00053	-.00076	.00045	.02973	.09790	.00058	.12386	.00033
#2	.00023	.00164	-.00333	.02715	.04546	-.00100	-.03412	-.00045
#3	-.00003	.00157	.00116	.04312	.00696	.00132	.11734	-.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00329	.09636	-.00015	.00820	-.00027	.00540	.00512	-.00542
Stddev	.00036	.02670	.00052	.00425	.00262	.00178	.00316	.00074
%RSD	10.874	27.706	348.06	51.818	968.89	32.864	61.650	13.619
#1	.00316	.11195	.00032	.01302	.00232	.00377	.00634	-.00562
#2	.00301	.11159	-.00071	.00662	-.00021	.00729	.00749	-.00604
#3	.00369	.06553	-.00007	.00498	-.00292	.00514	.00154	-.00460
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 14:46:39 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00030**	**.00084**	**-.00314**	**-.00152**	**.00124**	**-.00002**	**.00422**
Stddev	.00043	.00035	.00315	.00163	.00162	.00008	.00071
%RSD	142.14	41.948	100.51	107.27	131.28	387.02	16.743
#1	.00054	.00124	-.00369	-.00248	.00007	.00002	.00481
#2	.00057	.00059	.00026	.00036	.00055	-.00012	.00343
#3	-.00019	.00069	-.00597	-.00244	.00309	.00004	.00441
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9509.0**	**57769.**	**2936.8**
Stddev	19.9	100.	17.6
%RSD	.20940	.17266	.59912
#1	9496.2	57883.	2947.5
#2	9532.0	57728.	2946.4
#3	9498.9	57697.	2916.5

Approved: June 27, 2016

Sample Name: L1606115402S Acquired: 6/25/2016 14:50:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20060**	**4.9650**	**.19517**	**2.5768**	**.50183**	**.02406**	F **444.38**
Stddev	.00064	.0130	.00068	.0061	.00191	.00013	.71
%RSD	.32075	.26173	.35003	.23805	.38088	.54060	.15891
#1	.20131	4.9565	.19473	2.5781	.50380	.02409	444.63
#2	.20005	4.9586	.19596	2.5701	.50170	.02392	443.58
#3	.20045	4.9800	.19484	2.5821	.49998	.02418	444.92
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02442**	**.09295**	**.23551**	**.23263**	**1.9191**	**28.985**	**.61166**
Stddev	.00012	.00006	.00093	.00115	.0123	.093	.00400
%RSD	.49172	.06109	.39479	.49604	.64319	.32038	.65326
#1	.02431	.09291	.23631	.23296	1.9231	29.086	.60738
#2	.02455	.09302	.23573	.23359	1.9290	28.966	.61529
#3	.02440	.09293	.23449	.23135	1.9053	28.904	.61230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**105.95**	**.47454**	**.51043**	F **884.75**	**.22811**	**4.9353**	**.22750**
Stddev	.25	.00567	.00309	9.80	.00122	.0272	.00524
%RSD	.23467	1.1953	.60519	1.1073	.53281	.55168	2.3044
#1	105.68	.47627	.51271	882.43	.22677	4.9309	.23221
#2	106.17	.47914	.51168	876.32	.22915	4.9645	.22843
#3	105.99	.46820	.50692	895.49	.22841	4.9105	.22185
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 27, 2016

Sample Name: L1606115402S Acquired: 6/25/2016 14:50:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-07

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.58292	.23516	7.5230	.45764	8.4638	.43138	.22024
Stddev	.00661	.00590	.0386	.00329	.0240	.00658	.00196
%RSD	1.1347	2.5090	.51250	.71986	.28403	1.5254	.88967
#1	.58964	.23313	7.5444	.46024	8.4871	.43835	.22044
#2	.58270	.23054	7.5461	.45874	8.4651	.43053	.22209
#3	.57642	.24181	7.4785	.45394	8.4391	.42527	.21819
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.50974	.45745	.02017
Stddev	.00182	.00152	.00279
%RSD	.35750	.33182	13.807
#1	.50798	.45815	.01724
#2	.50964	.45849	.02049
#3	.51162	.45571	.02279
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8784.0	53813.	2939.5
Stddev	58.9	564.	26.0
%RSD	.67031	1.0483	.88591
#1	8819.5	54202.	2951.8
#2	8816.5	54070.	2957.2
#3	8716.1	53166.	2909.6

Approved: June 27, 2016

Sample Name: L1606115403SD Acquired: 6/25/2016 14:54:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19884**	**5.0097**	**.20311**	**2.5960**	**.50146**	**.02443**	F **447.43**
Stddev	.00024	.0049	.00234	.0007	.00093	.00023	1.15
%RSD	.12160	.09827	1.1515	.02603	.18621	.94697	.25628
#1	.19893	5.0097	.20547	2.5958	.50254	.02464	447.39
#2	.19857	5.0047	.20308	2.5967	.50101	.02419	446.31
#3	.19903	5.0146	.20079	2.5954	.50084	.02448	448.60
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02483**	**.09451**	**.23821**	**.23915**	**1.9535**	**28.902**	**.60873**
Stddev	.00032	.00036	.00123	.00189	.0137	.108	.00282
%RSD	1.3026	.38369	.51502	.78901	.69899	.37351	.46252
#1	.02509	.09492	.23941	.23914	1.9479	29.020	.60854
#2	.02447	.09421	.23696	.23726	1.9691	28.808	.61163
#3	.02493	.09441	.23826	.24103	1.9435	28.877	.60601
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**106.60**	**.48110**	**.52231**	F **881.76**	**.23168**	**5.0586**	**.22685**
Stddev	.66	.00483	.00325	3.70	.00136	.0426	.00410
%RSD	.61507	1.0048	.62269	.41950	.58652	.84170	1.8079
#1	107.35	.47570	.52433	877.70	.23164	5.0964	.23130
#2	106.14	.48502	.51856	884.94	.23034	5.0125	.22604
#3	106.32	.48257	.52404	882.64	.23305	5.0670	.22322
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 27, 2016

Sample Name: L1606115403SD Acquired: 6/25/2016 14:54:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-08

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.59871**	**.24615**	**7.5687**	**.46699**	**8.5686**	**.42893**	**.22250**
Stddev	.00609	.00268	.0516	.00318	.0150	.00524	.00079
%RSD	1.0180	1.0870	.68153	.68125	.17550	1.2224	.35602
#1	.60575	.24920	7.6059	.46994	8.5810	.42717	.22334
#2	.59510	.24505	7.5098	.46362	8.5519	.42478	.22177
#3	.59529	.24419	7.5903	.46740	8.5730	.43482	.22237
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.51554**	**.46791**	**.00590**
Stddev	.00333	.00294	.00185
%RSD	.64552	.62860	31.408
#1	.51938	.47002	.00382
#2	.51356	.46455	.00651
#3	.51367	.46915	.00737
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8900.3**	**52138.**	**2849.7**
Stddev	61.9	226.	11.1
%RSD	.69538	.43440	.38823
#1	8858.0	51879.	2838.3
#2	8971.3	52295.	2860.4
#3	8871.6	52242.	2850.4

Approved: June 27, 2016

Sample Name: L1606115404 Acquired: 6/25/2016 14:58:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.00639	-.00036	.01270	.00241	.00013	.28017	.00009
Stddev	.00146	.00656	.00244	.00114	.00043	.00008	.03044	.00010
%RSD	248.07	102.69	686.61	9.0101	18.005	61.828	10.864	104.11
#1	.00089	-.00046	-.00313	.01156	.00227	.00022	.24651	.00012
#2	.00188	.01261	.00061	.01385	.00206	.00012	.28824	-.00001
#3	-.00100	.00700	.00146	.01270	.00289	.00005	.30576	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.01305	.00240	.07792	.04064	-.00228	.12469	.00253
Stddev	.00039	.00070	.00120	.00694	.09353	.00295	.18212	.00145
%RSD	747.32	5.3526	50.113	8.9064	230.14	129.38	146.06	57.512
#1	.00045	.01376	.00301	.08066	.00523	-.00157	.14106	.00090
#2	-.00033	.01305	.00317	.08306	.14671	-.00552	.29807	.00300
#3	.00004	.01236	.00101	.07002	-.03002	.00025	-.06507	.00369
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00228	.75291	.00807	.00690	.00300	-.00255	.00146	.13135
Stddev	.00024	.01638	.00065	.00315	.00148	.00424	.00328	.00151
%RSD	10.641	2.1753	8.1061	45.563	49.471	166.69	225.01	1.1485
#1	.00245	.73694	.00868	.00525	.00160	-.00242	-.00127	.13296
#2	.00238	.75210	.00738	.01053	.00455	-.00685	.00055	.13112
#3	.00200	.76967	.00814	.00493	.00285	.00163	.00509	.12997
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115404 Acquired: 6/25/2016 14:58:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00160	.00282	.00431	-.00324	.00105	.00371	.00033
Stddev	.00036	.00041	.00156	.00193	.00089	.00012	.00066
%RSD	22.302	14.434	36.136	59.618	84.281	3.3596	201.18
#1	.00136	.00295	.00420	-.00210	.00202	.00385	-.00028
#2	.00201	.00236	.00592	-.00547	.00085	.00361	.00023
#3	.00143	.00314	.00281	-.00214	.00028	.00369	.00104
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9713.7	59908.	3002.7
Stddev	32.6	164.	34.0
%RSD	.33561	.27353	1.1337
#1	9740.1	60011.	2965.4
#2	9677.2	59995.	3032.2
#3	9723.7	59719.	3010.3

Approved: June 27, 2016

Sample Name: L1606115501 Acquired: 6/25/2016 15:02:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00226	.00780	.00401	.26646	.17918	.00000	45.474	-.00004
Stddev	.00287	.00301	.00103	.00133	.00076	.00004	.222	.00008
%RSD	126.68	38.602	25.778	.50014	.42327	919.30	.48843	228.57
#1	.00509	.01128	.00462	.26750	.17974	.00002	45.718	.00006
#2	.00233	.00600	.00459	.26694	.17949	-.00004	45.422	-.00008
#3	-.00064	.00613	.00281	.26496	.17832	.00004	45.283	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.00088	.00134	.05774	1.5654	.00884	27.038	1.6699
Stddev	.00027	.00028	.00194	.01943	.1007	.00205	.083	.0027
%RSD	44.880	31.682	144.85	33.650	6.4312	23.214	.30796	.16065
#1	.00083	.00056	-.00088	.03531	1.4495	.00687	26.967	1.6730
#2	.00063	.00109	.00219	.06938	1.6158	.01096	27.130	1.6684
#3	.00031	.00099	.00272	.06852	1.6309	.00869	27.018	1.6684
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00414	74.521	.00232	.02280	.00145	-.00333	.00418	6.9589
Stddev	.00012	.362	.00063	.00622	.00648	.00099	.00335	.0172
%RSD	2.8693	.48589	27.089	27.292	447.38	29.598	80.140	.24675
#1	.00419	74.939	.00163	.02521	-.00229	-.00322	.00046	6.9755
#2	.00400	74.314	.00245	.02746	-.00229	-.00437	.00510	6.9601
#3	.00421	74.311	.00286	.01573	.00893	-.00240	.00696	6.9412
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115501 Acquired: 6/25/2016 15:02:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.31080**	**-.00408**	**-.00246**	**.00074**	**.00517**	**.00097**
Stddev	.00101	.00127	.01220	.00176	.00032	.00009	.00026
%RSD	589.50	.40720	299.39	71.557	43.195	1.7947	26.599
#1	.00067	.31223	.00838	-.00158	.00040	.00528	.00122
#2	-.00129	.30982	-.01601	-.00449	.00079	.00510	.00071
#3	.00011	.31036	-.00459	-.00131	.00103	.00514	.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9554.2**	**58064.**	**2987.7**
Stddev	24.6	152.	17.9
%RSD	.25722	.26211	.59940
#1	9527.5	57892.	2971.4
#2	9576.0	58182.	2984.9
#3	9559.0	58118.	3006.9

Approved: June 27, 2016

Sample Name: L1606115502 Acquired: 6/25/2016 15:05:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00077	.00104	.00250	.19417	.33327	.00001	49.969	.00011
Stddev	.00225	.00260	.00021	.00180	.00208	.00007	.144	.00004
%RSD	293.51	250.20	8.2634	.92950	.62356	535.11	.28842	36.458
#1	.00053	-.00100	.00271	.19484	.33088	.00006	50.109	.00015
#2	-.00336	.00396	.00251	.19555	.33470	.00004	49.821	.00012
#3	.00053	.00015	.00229	.19213	.33422	-.00007	49.978	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	.00039	.00161	4.4932	.30074	.00699	33.094	.46968
Stddev	.00024	.00046	.00055	.0210	.07361	.00374	.139	.00201
%RSD	82.593	118.92	34.456	.46819	24.475	53.562	.42105	.42764
#1	.00002	-.00012	.00218	4.4716	.35097	.00318	33.254	.46985
#2	.00046	.00051	.00108	4.5136	.21625	.00712	33.021	.47160
#3	.00039	.00078	.00156	4.4944	.33501	.01067	33.006	.46759
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00134	56.528	.00048	.02851	.00540	-.00461	.00421	7.9465
Stddev	.00013	.068	.00114	.00462	.00195	.00412	.00583	.0128
%RSD	9.8009	.11946	234.80	16.220	36.120	89.402	138.37	.16106
#1	.00123	56.559	.00179	.03249	.00375	-.00852	-.00246	7.9518
#2	.00130	56.451	-.00006	.02962	.00489	-.00500	.00681	7.9559
#3	.00149	56.575	-.00027	.02344	.00755	-.00031	.00829	7.9320
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115502 Acquired: 6/25/2016 15:05:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.41936**	**-.00337**	**-.00247**	**.00035**	**.00337**	**.00091**
Stddev	.00022	.00050	.00295	.00045	.00041	.00006	.00160
%RSD	168.21	.11997	87.675	18.352	119.11	1.8649	175.07
#1	.00016	.41971	-.00131	-.00286	-.00012	.00341	-.00093
#2	.00033	.41958	-.00675	-.00259	.00050	.00330	.00173
#3	-.00010	.41878	-.00204	-.00197	.00066	.00341	.00194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9627.3**	**58565.**	**2988.6**
Stddev	17.2	39.	5.1
%RSD	.17881	.06667	.17070
#1	9625.0	58521.	2993.1
#2	9645.6	58579.	2989.5
#3	9611.4	58596.	2983.0

Approved: June 27, 2016

Sample Name: L1606115503 Acquired: 6/25/2016 15:09:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00133	.01981	.00070	.15980	.12508	.00001	47.416	.00012
Stddev	.00149	.00690	.00351	.00313	.00043	.00010	.201	.00026
%RSD	112.43	34.815	504.28	1.9589	.34619	838.85	.42403	214.19
#1	.00108	.02777	-.00104	.15681	.12534	.00005	47.373	.00032
#2	-.00003	.01583	-.00161	.16306	.12532	.00009	47.635	.00022
#3	.00292	.01581	.00474	.15953	.12458	-.00010	47.240	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	.00032	.00351	1.3413	.87483	.00900	17.381	.47700
Stddev	.00046	.00045	.00082	.0140	.08308	.00172	.089	.00081
%RSD	429.81	139.46	23.247	1.0398	9.4971	19.124	.51021	.16934
#1	.00045	.00052	.00286	1.3297	.89461	.00799	17.319	.47725
#2	-.00041	.00065	.00443	1.3568	.78364	.01099	17.483	.47609
#3	.00028	-.00019	.00325	1.3373	.94624	.00803	17.342	.47764
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	48.369	.00082	.10919	.00167	-.00062	.00179	5.8799
Stddev	.00025	.203	.00140	.00660	.00170	.00395	.00827	.0280
%RSD	97.415	.41932	171.45	6.0459	101.94	641.48	462.74	.47549
#1	-.00003	48.343	.00233	.10833	.00101	-.00514	.00952	5.8933
#2	-.00053	48.584	.00055	.10306	.00039	.00119	.00277	5.8478
#3	-.00022	48.181	-.00043	.11618	.00360	.00211	-.00693	5.8986
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115503 Acquired: 6/25/2016 15:09:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**.26600**	**-.00537**	**-.00338**	**.00017**	**.00914**	**.00020**
Stddev	.00067	.00095	.00241	.00310	.00116	.00022	.00114
%RSD	345.33	.35889	44.987	91.459	671.24	2.4286	566.35
#1	-.00057	.26556	-.00315	-.00551	-.00106	.00889	.00099
#2	.00050	.26710	-.00794	.00017	.00033	.00931	-.00111
#3	.00065	.26535	-.00501	-.00481	.00125	.00922	.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9587.2**	**58263.**	**2972.1**
Stddev	19.6	279.	4.9
%RSD	.20409	.47925	.16604
#1	9598.2	58004.	2969.9
#2	9598.7	58226.	2968.6
#3	9564.6	58559.	2977.8

Approved: June 27, 2016

Sample Name: L1606117801 Acquired: 6/25/2016 15:13:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00123	.01562	.00788	.04060	.02600	.00012	2.4592	.00007
Stddev	.00244	.00616	.00118	.00330	.00129	.00005	.0606	.00006
%RSD	197.99	39.461	15.044	8.1358	4.9545	44.901	2.4620	79.703
#1	.00387	.02096	.00725	.04075	.02646	.00010	2.5149	.00002
#2	-.00097	.00887	.00713	.04382	.02700	.00008	2.4680	.00013
#3	.00081	.01703	.00924	.03722	.02455	.00018	2.3948	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.00074	.00609	.02685	.43656	.00432	.57708	-.00111
Stddev	.00033	.00144	.00018	.01358	.05030	.00166	.05180	.00137
%RSD	1012.2	194.14	2.9070	50.575	11.522	38.411	8.9754	123.48
#1	-.00025	.00070	.00629	.04250	.40355	.00528	.52291	-.00216
#2	.00039	.00219	.00602	.01809	.49445	.00241	.62611	-.00159
#3	-.00004	-.00068	.00595	.01997	.41167	.00528	.58223	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00299	95.163	-.00070	.01050	.00222	-.00635	.00641	3.4783
Stddev	.00029	.186	.00058	.00517	.00074	.00345	.00307	.0048
%RSD	9.6245	.19542	82.717	49.206	33.276	54.334	47.947	.13892
#1	.00325	95.230	-.00082	.01297	.00142	-.01032	.00356	3.4792
#2	.00268	95.306	-.00121	.00456	.00236	-.00408	.00600	3.4827
#3	.00303	94.953	-.00007	.01396	.00287	-.00464	.00966	3.4731
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606117801 Acquired: 6/25/2016 15:13:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.11699	.00044	-.00188	.00105	.00210	.00054
Stddev	.00103	.00010	.00531	.00109	.00009	.00007	.00166
%RSD	275.08	.08958	1212.8	57.943	8.6567	3.2366	310.87
#1	.00154	.11703	-.00019	-.00063	.00114	.00212	-.00081
#2	-.00042	.11707	-.00453	-.00235	.00105	.00215	.00002
#3	-.00000	.11687	.00604	-.00264	.00096	.00202	.00240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9648.4	58829.	2994.3
Stddev	5.2	37.	6.7
%RSD	.05359	.06360	.22320
#1	9653.7	58809.	2992.7
#2	9643.3	58806.	2988.6
#3	9648.3	58873.	3001.7

Approved: June 27, 2016

Sample Name: L1606122701 Acquired: 6/25/2016 15:17:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00116	.09783	-.00055	.00242	.01519	.00006	7.7326	-.00002
Stddev	.00092	.00377	.00239	.00147	.00198	.00002	.1171	.00010
%RSD	79.355	3.8537	437.80	60.740	13.003	38.615	1.5138	459.39
#1	-.00047	.10163	-.00294	.00351	.01401	.00007	7.7569	.00006
#2	-.00220	.09409	.00184	.00075	.01747	.00007	7.8356	-.00013
#3	-.00081	.09776	-.00054	.00300	.01410	.00003	7.6053	.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00227	.00167	.03463	.33602	-.00038	-.01109	-.00127
Stddev	.00016	.00059	.00051	.00142	.06178	.00154	.10836	.00134
%RSD	58.524	25.933	30.520	4.0976	18.384	404.83	977.09	105.32
#1	.00014	.00159	.00133	.03617	.30512	-.00005	-.09610	-.00256
#2	.00023	.00261	.00225	.03337	.29580	-.00206	.11092	-.00136
#3	.00045	.00260	.00142	.03436	.40715	.00097	-.04809	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	2.3350	.00044	.00731	.00430	-.00426	.00383	1.1328
Stddev	.00020	.0307	.00076	.00233	.00100	.00159	.00576	.0032
%RSD	132.69	1.3153	170.74	31.908	23.273	37.398	150.44	.27905
#1	.00005	2.3000	.00116	.00516	.00531	-.00538	.00306	1.1309
#2	-.00036	2.3574	.00052	.00700	.00430	-.00496	-.00151	1.1310
#3	-.00016	2.3476	-.00035	.00979	.00330	-.00244	.00992	1.1364
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606122701 Acquired: 6/25/2016 15:17:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.25125	.00414	.00180	.00364	.00056	.00136
Stddev	.00018	.00103	.01324	.00145	.00074	.00007	.00130
%RSD	364.81	.41002	320.05	80.159	20.271	13.218	96.223
#1	.00011	.25131	-.01092	.00207	.00450	.00061	.00115
#2	.00019	.25224	.00936	.00024	.00328	.00047	.00016
#3	-.00016	.25018	.01397	.00310	.00316	.00058	.00275
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9969.0	60494.	3048.9
Stddev	15.1	129.	13.3
%RSD	.15159	.21283	.43564
#1	9969.3	60641.	3055.8
#2	9983.9	60438.	3033.6
#3	9953.7	60402.	3057.3

Approved: June 27, 2016

Sample Name: L1606122706 Acquired: 6/25/2016 15:21:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	.00567	.00083	.00123	.02806	.00015	13.472	-.00038
Stddev	.00250	.00554	.00101	.00202	.00007	.00007	.038	.00019
%RSD	395.00	97.673	121.57	163.43	.25882	47.682	.28032	49.732
#1	.00247	-.00071	.00042	-.00047	.02810	.00007	13.487	-.00023
#2	.00165	.00924	.00199	.00346	.02810	.00021	13.429	-.00032
#3	-.00222	.00849	.00010	.00072	.02797	.00018	13.501	-.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00101	.00061	.00157	.10367	.20316	.00472	8.1185	.10636
Stddev	.00008	.00062	.00064	.01594	.00836	.00156	.1274	.00158
%RSD	8.0012	102.28	40.873	15.374	4.1155	32.981	1.5689	1.4897
#1	.00092	-.00009	.00190	.11049	.21157	.00610	7.9808	.10550
#2	.00107	.00111	.00198	.11507	.19485	.00503	8.2322	.10539
#3	.00104	.00079	.00083	.08546	.20306	.00303	8.1425	.10819
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00044	33.974	.00004	.00429	-.00079	-.00333	.00187	.74797
Stddev	.00043	.239	.00011	.00671	.00165	.00196	.00470	.01610
%RSD	97.916	.70374	251.40	156.52	208.37	58.883	251.58	2.1527
#1	-.00064	33.727	-.00007	.01191	-.00018	-.00196	-.00208	.73053
#2	-.00073	33.993	.00015	-.00074	.00047	-.00558	.00061	.75112
#3	.00005	34.204	.00006	.00169	-.00266	-.00246	.00707	.76226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606122706 Acquired: 6/25/2016 15:21:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.30857**	**.00233**	**-.00259**	**.00019**	**.00158**	**.00089**
Stddev	.00012	.00270	.00311	.00390	.00060	.00013	.00062
%RSD	87.894	.87470	133.51	150.50	319.58	8.2216	69.559
#1	-.00001	.30602	.00364	-.00319	-.00046	.00143	.00122
#2	-.00015	.30828	-.00122	.00157	.00073	.00163	.00127
#3	-.00026	.31139	.00457	-.00615	.00030	.00167	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9924.8**	**59991.**	**2995.5**
Stddev	18.6	172.	10.6
%RSD	.18782	.28732	.35313
#1	9924.0	59808.	2993.5
#2	9943.8	60150.	3007.0
#3	9906.6	60016.	2986.1

Approved: June 27, 2016

Sample Name: L1606127902 Acquired: 6/25/2016 15:25:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573994-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00298**	**.77289**	**.00033**	**.00803**	**.01053**	**.00016**	**9.3649**	**-.00023**
Stddev	.00188	.01227	.00104	.00267	.00091	.00007	.0910	.00007
%RSD	63.015	1.5872	311.80	33.213	8.6722	42.111	.97197	32.230
#1	.00105	.75975	.00114	.01109	.01057	.00009	9.3786	-.00026
#2	.00309	.78404	.00069	.00619	.01142	.00023	9.4483	-.00028
#3	.00480	.77489	-.00084	.00682	.00960	.00016	9.2678	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00067**	**.00209**	**.00225**	**1.1046**	**.20587**	**.00183**	**3.8329**	**.12468**
Stddev	.00025	.00124	.00151	.0075	.05413	.00323	.0374	.00185
%RSD	36.537	59.143	66.907	.67811	26.294	176.78	.97568	1.4875
#1	.00057	.00084	.00284	1.1048	.18555	.00515	3.8178	.12286
#2	.00096	.00331	.00337	1.1121	.26722	.00166	3.8755	.12657
#3	.00050	.00212	.00054	1.0971	.16483	-.00131	3.8054	.12461
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**.91553**	**.00104**	**.04284**	**.00087**	**-.00434**	**.00416**	**1.4218**
Stddev	.00049	.02558	.00097	.00374	.00128	.00145	.00383	.0304
%RSD	448.71	2.7944	92.896	8.7405	147.22	33.355	92.023	2.1368
#1	.00043	.88763	.00204	.04714	.00040	-.00289	.00799	1.3901
#2	-.00054	.92105	.00011	.04033	-.00011	-.00435	.00416	1.4246
#3	-.00022	.93790	.00097	.04105	.00232	-.00579	.00033	1.4507
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127902 Acquired: 6/25/2016 15:25:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573994-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**.04596**	**.00940**	**.00124**	**.00257**	**.00907**	**.00122**
Stddev	.00038	.00038	.00559	.00152	.00046	.00027	.00089
%RSD	147.88	.81748	59.487	122.54	17.946	3.0009	73.195
#1	.00017	.04588	.00305	-.00019	.00219	.00893	.00224
#2	-.00038	.04637	.01155	.00284	.00243	.00890	.00056
#3	-.00056	.04564	.01360	.00108	.00308	.00938	.00087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10039.**	**61079.**	**3063.3**
Stddev	16.	87.	16.8
%RSD	.15707	.14311	.54820
#1	10022.	60979.	3046.2
#2	10041.	61122.	3064.0
#3	10054.	61137.	3079.8

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 15:29:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41474**	**10.480**	**.41122**	**.51129**	**1.0445**	**.05223**	**10.384**
Stddev	.00157	.008	.00187	.00319	.0019	.00016	.024
%RSD	.37799	.07401	.45408	.62455	.18188	.31144	.22798
#1	.41325	10.484	.41182	.51035	1.0465	.05219	10.387
#2	.41461	10.484	.41272	.50866	1.0441	.05241	10.359
#3	.41637	10.471	.40913	.51484	1.0428	.05209	10.407
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05244**	**.20643**	**.51777**	**.52807**	**4.1528**	**50.626**	**1.0452**
Stddev	.00019	.00026	.00163	.00025	.0357	.257	.0080
%RSD	.36313	.12673	.31564	.04665	.85968	.50669	.76446
#1	.05244	.20669	.51592	.52825	4.1190	50.704	1.0431
#2	.05226	.20644	.51838	.52817	4.1901	50.835	1.0540
#3	.05264	.20617	.51902	.52779	4.1492	50.340	1.0385
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.9629**	**.52245**	**1.0531**	**51.247**	**.52506**	**10.312**	**.52216**
Stddev	.0274	.00433	.0047	.134	.00127	.013	.00461
%RSD	.27495	.82847	.44799	.26095	.24264	.12919	.88203
#1	9.9944	.51946	1.0578	51.179	.52653	10.320	.51773
#2	9.9492	.52742	1.0532	51.401	.52432	10.296	.52692
#3	9.9451	.52049	1.0484	51.161	.52433	10.319	.52182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 15:29:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2356**	**.41239**	**5.3381**	**1.0346**	**1.0460**	**1.0497**	**.53160**
Stddev	.0017	.00642	.0057	.0013	.0038	.0052	.00142
%RSD	.13528	1.5556	.10675	.12483	.36598	.49394	.26637
#1	1.2362	.41861	5.3408	1.0357	1.0443	1.0445	.53322
#2	1.2337	.40580	5.3420	1.0349	1.0504	1.0497	.53096
#3	1.2369	.41277	5.3316	1.0332	1.0433	1.0549	.53062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0558**	**1.0420**	F **3.0350**
Stddev	.0013	.0007	.0090
%RSD	.12612	.06683	.29605
#1	1.0548	1.0423	3.0277
#2	1.0553	1.0412	3.0451
#3	1.0573	1.0426	3.0323
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9586.8**	**58077.**	**2975.5**
Stddev	6.0	176.	6.3
%RSD	.06238	.30386	.21060
#1	9587.3	57874.	2969.1
#2	9592.5	58193.	2975.6
#3	9580.6	58165.	2981.7

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 15:32:48 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00000**	**.00002**	**-.00010**	**.00491**	**.00210**	**.00011**	**.00565**	**-.00003**
Stddev	.00087	.00719	.00078	.00229	.00030	.00005	.00049	.00029
%RSD	26249.	33697.	808.92	46.626	14.233	46.346	8.5911	909.94
#1	.00025	.00801	-.00086	.00753	.00176	.00017	.00542	-.00000
#2	.00073	-.00593	.00069	.00390	.00223	.00007	.00533	-.00034
#3	-.00097	-.00201	-.00012	.00330	.00231	.00010	.00621	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00020**	**.00011**	**.00064**	**.03500**	**.03424**	**-.00179**	**.02594**	**-.00052**
Stddev	.00009	.00046	.00051	.01471	.03973	.00240	.07741	.00156
%RSD	43.655	413.87	80.028	42.019	116.03	134.20	298.41	302.41
#1	.00012	-.00018	.00036	.01804	-.01111	-.00218	.05944	-.00155
#2	.00020	.00064	.00123	.04417	.05092	-.00397	.08095	.00128
#3	.00029	-.00013	.00033	.04280	.06290	.00078	-.06257	-.00128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00316**	**.04507**	**.00037**	**.00106**	**.00080**	**.00374**	**.00412**	**.00990**
Stddev	.00041	.02068	.00057	.00881	.00149	.00197	.00171	.00085
%RSD	13.022	45.885	154.95	828.64	185.93	52.502	41.416	8.5529
#1	.00281	.06772	-.00005	.00994	-.00040	.00294	.00217	.01067
#2	.00361	.02718	.00102	.00092	.00033	.00230	.00488	.01002
#3	.00306	.04031	.00014	-.00767	.00246	.00598	.00532	.00899
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 15:32:48 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00048**	**.00057**	**.00333**	**-.00225**	**.00169**	**-.00006**	**.00439**
Stddev	.00073	.00051	.00753	.00264	.00040	.00020	.00135
%RSD	152.10	89.662	226.48	117.22	23.766	306.69	30.851
#1	.00129	.00079	-.00329	-.00367	.00165	-.00017	.00283
#2	-.00014	-.00001	.01153	-.00387	.00130	-.00018	.00508
#3	.00029	.00092	.00174	.00079	.00210	.00016	.00526
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9759.3**	**59359.**	**3013.9**
Stddev	2.3	121.	1.6
%RSD	.02366	.20394	.05186
#1	9761.6	59292.	3015.4
#2	9759.3	59287.	3013.9
#3	9756.9	59499.	3012.3

Approved: June 27, 2016

Sample Name: L1606127903S Acquired: 6/25/2016 15:36:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573994-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01197	1.1036	.01087	.05712	.03304	.00134	9.9729	.00124
Stddev	.00119	.0059	.00187	.00108	.00116	.00008	.0996	.00005
%RSD	9.9297	.53710	17.218	1.8903	3.5218	6.1377	.99838	3.7414
#1	.01115	1.1017	.01246	.05619	.03414	.00126	10.019	.00125
#2	.01142	1.1103	.00881	.05688	.03182	.00135	9.8587	.00119
#3	.01333	1.0989	.01134	.05830	.03317	.00142	10.041	.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00560	.01397	.01462	1.0767	1.4208	.02780	4.2261	.14457
Stddev	.00014	.00108	.00214	.0241	.1192	.00407	.0440	.00290
%RSD	2.4102	7.7598	14.602	2.2369	8.3867	14.648	1.0401	2.0070
#1	.00574	.01498	.01254	1.0620	1.3125	.02932	4.2372	.14280
#2	.00559	.01283	.01680	1.0635	1.4014	.02319	4.1777	.14299
#3	.00547	.01411	.01453	1.1045	1.5484	.03090	4.2635	.14792
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02152	2.1329	.01322	.29583	.01584	.02588	.00942	1.7458
Stddev	.00098	.0418	.00158	.00727	.00355	.00244	.00136	.0125
%RSD	4.5315	1.9579	11.965	2.4574	22.390	9.4200	14.478	.71438
#1	.02231	2.1343	.01139	.30417	.01767	.02397	.01094	1.7523
#2	.02182	2.0905	.01413	.29245	.01809	.02862	.00829	1.7537
#3	.02043	2.1740	.01413	.29086	.01175	.02503	.00905	1.7314
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127903S Acquired: 6/25/2016 15:36:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573994-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02137**	**.07160**	**.03468**	**.01383**	**.02654**	**.02985**	**.00242**
Stddev	.00036	.00081	.00438	.00291	.00046	.00010	.00158
%RSD	1.6937	1.1317	12.615	21.070	1.7354	.32151	65.388
#1	.02178	.07099	.02963	.01549	.02613	.02986	.00141
#2	.02110	.07130	.03735	.01047	.02704	.02975	.00424
#3	.02123	.07252	.03706	.01554	.02644	.02994	.00160
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9975.1**	**60274.**	**3041.7**
Stddev	49.0	118.	22.7
%RSD	.49139	.19506	.74582
#1	9940.1	60350.	3061.9
#2	9954.2	60332.	3046.1
#3	10031.	60138.	3017.2

Approved: June 27, 2016

Sample Name: L1606127904SD Acquired: 6/25/2016 15:40:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573994-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01103**	**1.1028**	**.01203**	**.05464**	**.03364**	**.00143**	**9.8642**	**.00121**
Stddev	.00186	.0090	.00180	.00231	.00086	.00004	.1305	.00006
%RSD	16.883	.81742	14.963	4.2286	2.5577	2.6326	1.3231	5.3301
#1	.00912	1.0960	.01267	.05217	.03303	.00146	9.7151	.00122
#2	.01113	1.1130	.00999	.05675	.03463	.00143	9.9198	.00114
#3	.01284	1.0994	.01342	.05499	.03327	.00139	9.9577	.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00590**	**.01420**	**.01484**	**1.0576**	**1.4598**	**.02493**	**4.2188**	**.14616**
Stddev	.00020	.00048	.00068	.0082	.1286	.00072	.1177	.00241
%RSD	3.3297	3.4140	4.5711	.77893	8.8104	2.9051	2.7895	1.6455
#1	.00602	.01364	.01562	1.0663	1.6059	.02466	4.0843	.14411
#2	.00567	.01444	.01454	1.0499	1.4099	.02439	4.2697	.14557
#3	.00601	.01451	.01437	1.0566	1.3636	.02576	4.3025	.14881
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02217**	**2.1040**	**.01418**	**.30006**	**.01556**	**.02408**	**.01453**	**1.7577**
Stddev	.00072	.0376	.00057	.00408	.00448	.00503	.00712	.0151
%RSD	3.2386	1.7891	4.0074	1.3597	28.796	20.896	49.023	.85907
#1	.02294	2.0606	.01353	.29698	.01280	.02854	.02252	1.7414
#2	.02203	2.1275	.01453	.30469	.02073	.02509	.00885	1.7604
#3	.02153	2.1239	.01449	.29851	.01315	.01862	.01221	1.7712
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127904SD Acquired: 6/25/2016 15:40:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573994-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02276**	**.07116**	**.03577**	**.01268**	**.02759**	**.03003**	**.00230**
Stddev	.00014	.00090	.00737	.00234	.00032	.00029	.00174
%RSD	.61715	1.2587	20.620	18.483	1.1623	.96154	75.576
#1	.02272	.07054	.03703	.01291	.02794	.02969	.00432
#2	.02292	.07076	.02784	.01490	.02752	.03021	.00132
#3	.02264	.07219	.04242	.01023	.02731	.03018	.00128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10006.**	**60810.**	**3063.3**
Stddev	5.	192.	18.4
%RSD	.04992	.31626	.60150
#1	10009.	61010.	3082.6
#2	10009.	60627.	3061.4
#3	10000.	60793.	3045.9

Approved: June 27, 2016

Sample Name: L1606128901 Acquired: 6/25/2016 15:44:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00215	.00687	.00324	.00036	.25940	.00003	8.5369	.00005
Stddev	.00051	.01020	.00141	.00225	.00475	.00006	.1296	.00011
%RSD	23.677	148.57	43.630	628.60	1.8323	170.08	1.5176	227.30
#1	.00216	.01614	.00358	-.00039	.25471	.00001	8.3890	.00017
#2	.00265	.00852	.00169	.00289	.26421	.00010	8.6303	-.00003
#3	.00163	-.00406	.00445	-.00143	.25928	-.00000	8.5913	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00259	.00588	.00175	.08631	.04218	.00151	6.5072	.07542
Stddev	.00040	.00134	.00073	.02244	.04887	.00193	.2142	.00074
%RSD	15.316	22.711	41.571	26.002	115.87	127.81	3.2912	.97595
#1	.00214	.00436	.00096	.06469	.09555	-.00070	6.2873	.07459
#2	.00279	.00683	.00239	.10949	-.00039	.00286	6.5191	.07570
#3	.00285	.00647	.00190	.08474	.03137	.00237	6.7151	.07598
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	23.216	.03092	.00614	.00300	-.00111	.00640	.97050
Stddev	.00039	.461	.00078	.00363	.00087	.00404	.00265	.00247
%RSD	280.63	1.9852	2.5231	59.153	29.021	362.80	41.403	.25451
#1	-.00028	22.689	.03110	.00526	.00208	-.00358	.00616	.97332
#2	.00048	23.539	.03160	.01013	.00311	-.00330	.00916	.96949
#3	.00022	23.422	.03007	.00303	.00381	.00355	.00387	.96870
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606128901 Acquired: 6/25/2016 15:44:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00051**	**.16522**	**-.00360**	**-.00090**	**.00125**	**.00115**	**.00088**
Stddev	.00057	.00251	.00574	.00300	.00085	.00009	.00100
%RSD	111.15	1.5196	159.60	334.58	68.243	8.1341	114.01
#1	-.00005	.16233	-.01006	-.00433	.00031	.00125	.00060
#2	.00108	.16651	.00089	.00117	.00197	.00107	.00199
#3	.00050	.16682	-.00162	.00047	.00148	.00112	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9940.0**	**60088.**	**3038.6**
Stddev	4.2	150.	44.1
%RSD	.04218	.24912	1.4500
#1	9935.3	60256.	3084.8
#2	9941.7	60040.	2997.0
#3	9943.1	59969.	3034.2

Approved: June 27, 2016

Sample Name: L1606112901 Acquired: 6/25/2016 15:48:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00126	-.00046	-.00005	-.00065	.00318	.00006	4.1415	-.00016
Stddev	.00197	.00573	.00201	.00160	.00151	.00005	.0124	.00023
%RSD	156.91	1238.2	4274.9	245.00	47.612	81.871	.30015	142.20
#1	.00341	-.00015	-.00215	-.00141	.00362	.00006	4.1534	-.00032
#2	-.00045	.00511	.00185	.00118	.00150	.00012	4.1425	.00010
#3	.00081	-.00635	.00016	-.00173	.00443	.00001	4.1286	-.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.00058	.00066	.05376	.10451	-.00223	.92501	.00486
Stddev	.00022	.00057	.00151	.01103	.06065	.00348	.08081	.00144
%RSD	3258.5	98.481	227.65	20.514	58.030	156.17	8.7365	29.653
#1	-.00025	.00121	.00094	.05934	.12513	.00172	.91232	.00510
#2	.00010	.00039	-.00097	.04105	.03624	-.00357	1.0114	.00331
#3	.00016	.00012	.00201	.06088	.15216	-.00484	.85130	.00616
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	3.0376	-.00008	.00578	.00044	-.00230	.00144	.21434
Stddev	.00025	.0744	.00053	.00529	.00227	.00178	.00420	.00577
%RSD	93.741	2.4506	639.89	91.432	509.94	77.275	291.44	2.6916
#1	-.00011	2.9794	.00051	.00238	.00289	-.00166	.00573	.20865
#2	-.00014	3.0119	-.00050	.00310	-.00159	-.00431	-.00267	.21418
#3	-.00056	3.1215	-.00026	.01187	.00003	-.00093	.00126	.22019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606112901 Acquired: 6/25/2016 15:48:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.01265**	**.00270**	**.00064**	**.00099**	**.00067**	**.00092**
Stddev	.00055	.00035	.00371	.00238	.00052	.00018	.00051
%RSD	272.21	2.7272	137.50	373.62	52.293	26.328	55.163
#1	-.00083	.01259	.00376	-.00183	.00159	.00059	.00050
#2	.00008	.01234	-.00143	.00082	.00070	.00087	.00077
#3	.00015	.01303	.00576	.00292	.00069	.00054	.00148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9969.3**	**60775.**	**3044.6**
Stddev	21.9	129.	15.2
%RSD	.22015	.21273	.49841
#1	9984.3	60920.	3056.8
#2	9944.1	60732.	3049.4
#3	9979.5	60672.	3027.6

Approved: June 27, 2016

Sample Name: L1606112902 Acquired: 6/25/2016 15:52:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	.00804	.00035	-.00128	.00288	.00010	2.9594	-.00006
Stddev	.00058	.00641	.00226	.00137	.00187	.00003	.0055	.00010
%RSD	221.07	79.747	653.27	107.46	64.882	33.893	.18419	164.92
#1	.00004	.00818	.00185	.00031	.00398	.00007	2.9654	.00000
#2	.00011	.00156	.00144	-.00200	.00072	.00009	2.9582	-.00001
#3	-.00094	.01439	-.00226	-.00213	.00394	.00014	2.9547	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.00045	.00076	.08667	.10793	.00221	.95476	.02200
Stddev	.00021	.00074	.00096	.00189	.05164	.00058	.08086	.00168
%RSD	3252.3	165.35	125.16	2.1842	47.845	26.260	8.4687	7.6363
#1	.00009	.00055	.00166	.08573	.06794	.00282	.86999	.02017
#2	-.00024	-.00034	.00088	.08885	.16623	.00215	.96327	.02346
#3	.00016	.00114	-.00024	.08543	.08961	.00166	1.0310	.02238
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	1.4239	.00014	.00542	.00025	-.00059	.00178	.20161
Stddev	.00013	.0489	.00086	.00331	.00120	.00643	.00247	.00182
%RSD	52.086	3.4352	596.95	60.989	470.84	1086.5	138.88	.90303
#1	-.00010	1.4077	-.00013	.00438	-.00113	.00173	.00080	.20089
#2	-.00031	1.4789	-.00055	.00913	.00091	-.00786	-.00005	.20368
#3	-.00033	1.3852	.00110	.00276	.00098	.00435	.00459	.20026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606112902 Acquired: 6/25/2016 15:52:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00083	.01066	.00349	-.00281	.00049	.00074	-.00046
Stddev	.00025	.00027	.00348	.00166	.00046	.00011	.00023
%RSD	30.685	2.4916	99.744	59.148	94.747	14.382	50.877
#1	.00087	.01070	.00643	-.00461	.00075	.00069	-.00046
#2	.00056	.01090	.00439	-.00132	-.00005	.00087	-.00023
#3	.00106	.01038	-.00035	-.00252	.00076	.00067	-.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9989.3	60825.	3066.0
Stddev	18.4	89.	4.0
%RSD	.18402	.14693	.13203
#1	10008.	60870.	3065.9
#2	9971.8	60722.	3062.0
#3	9987.6	60883.	3070.1

Approved: June 27, 2016

Sample Name: L1606112903 Acquired: 6/25/2016 15:56:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00034**	**-.00746**	**.00009**	**.00007**	**.00214**	**.00016**	**4.2282**	**-.00031**
Stddev	.00178	.00543	.00185	.00098	.00088	.00001	.1021	.00011
%RSD	518.14	72.757	1962.2	1427.6	41.098	3.6332	2.4147	36.326
#1	-.00212	-.00132	-.00121	.00003	.00116	.00017	4.2310	-.00019
#2	.00143	-.00942	.00221	-.00089	.00287	.00016	4.3288	-.00035
#3	-.00034	-.01164	-.00072	.00107	.00238	.00015	4.1247	-.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00027**	**-.00057**	**-.00029**	**.07902**	**-.03881**	**.00121**	**1.0358**	**.00397**
Stddev	.00063	.00094	.00019	.01076	.01948	.00237	.1206	.00030
%RSD	236.86	166.12	66.025	13.622	50.186	195.96	11.648	7.4974
#1	-.00020	-.00113	-.00052	.06755	-.06059	-.00026	.93657	.00379
#2	.00099	.00052	-.00021	.08890	-.02305	-.00005	1.1701	.00431
#3	.00002	-.00109	-.00016	.08063	-.03281	.00395	1.0007	.00380
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00055**	**2.1503**	**-.00065**	**.00144**	**.00315**	**-.00171**	**-.00059**	**.27406**
Stddev	.00026	.0349	.00083	.00721	.00266	.00193	.00290	.00085
%RSD	47.062	1.6229	127.58	500.84	84.421	112.70	495.02	.31027
#1	-.00082	2.1700	-.00132	-.00288	.00271	.00020	-.00182	.27322
#2	-.00053	2.1710	.00028	-.00257	.00074	-.00366	.00273	.27492
#3	-.00030	2.1101	-.00091	.00976	.00599	-.00168	-.00267	.27403
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606112903 Acquired: 6/25/2016 15:56:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.01267	.00761	-.00035	.00044	.00047	.00034
Stddev	.00036	.00010	.00488	.00192	.00076	.00017	.00099
%RSD	75.051	.78508	64.089	556.65	172.53	36.380	290.00
#1	.00045	.01256	.01172	-.00046	-.00009	.00039	-.00046
#2	.00086	.01267	.00891	.00163	.00010	.00066	.00145
#3	.00013	.01276	.00222	-.00221	.00131	.00034	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9986.0	60665.	3026.9
Stddev	20.7	145.	17.8
%RSD	.20708	.23844	.58822
#1	10007.	60770.	3014.6
#2	9984.8	60726.	3018.9
#3	9966.0	60500.	3047.3

Approved: June 27, 2016

Sample Name: L1606112904 Acquired: 6/25/2016 16:00:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00143	.00782	.00014	-.00105	.00318	.00018	2.9065	-.00009
Stddev	.00049	.00478	.00214	.00233	.00102	.00003	.0438	.00019
%RSD	34.335	61.153	1520.7	221.14	32.071	15.659	1.5085	207.21
#1	.00199	.01026	-.00194	.00103	.00202	.00019	2.8571	-.00015
#2	.00122	.00231	.00002	-.00063	.00358	.00019	2.9407	.00012
#3	.00108	.01088	.00233	-.00357	.00394	.00014	2.9218	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	.00045	.00112	.05226	.04902	.00077	.91311	.02436
Stddev	.00068	.00160	.00112	.00414	.07439	.00531	.01971	.00311
%RSD	135.32	357.44	99.972	7.9272	151.77	691.64	2.1590	12.769
#1	.00007	.00219	.00019	.05089	.09310	-.00511	.93142	.02095
#2	.00129	.00012	.00080	.04898	.09083	.00221	.91566	.02510
#3	.00015	-.00096	.00236	.05692	-.03687	.00521	.89224	.02704
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	1.3676	-.00081	.00778	.00502	-.00289	.00478	.20680
Stddev	.00041	.0202	.00063	.00381	.00153	.00221	.00206	.00531
%RSD	176.12	1.4731	77.366	49.002	30.478	76.529	43.075	2.5661
#1	-.00056	1.3492	-.00140	.01136	.00503	-.00266	.00633	.20082
#2	-.00037	1.3644	-.00015	.00819	.00655	-.00520	.00556	.20859
#3	.00023	1.3891	-.00088	.00377	.00348	-.00080	.00244	.21097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606112904 Acquired: 6/25/2016 16:00:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.01047	.00111	-.00019	.00078	.00080	-.00006
Stddev	.00022	.00018	.00665	.00270	.00041	.00022	.00073
%RSD	116.67	1.7478	597.28	1390.3	52.913	27.125	1123.9
#1	.00044	.01026	.00785	.00028	.00121	.00056	.00012
#2	.00008	.01056	.00093	.00224	.00075	.00085	.00055
#3	.00005	.01059	-.00544	-.00310	.00038	.00099	-.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9957.7	60557.	3030.1
Stddev	15.8	177.	8.6
%RSD	.15901	.29213	.28426
#1	9975.9	60586.	3020.4
#2	9949.3	60718.	3033.0
#3	9947.7	60368.	3036.9

Approved: June 27, 2016

Sample Name: L1606127201 Acquired: 6/25/2016 16:04:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	-.00887	-.00183	.00197	.00056	.00010	.95406	-.00003
Stddev	.00091	.01117	.00052	.00188	.00043	.00011	.05017	.00010
%RSD	325.46	125.87	28.528	95.488	77.565	107.58	5.2586	289.02
#1	.00022	-.02176	-.00218	.00027	.00085	.00010	.90480	.00002
#2	.00122	-.00213	-.00123	.00398	.00076	-.00001	.95228	.00003
#3	-.00060	-.00272	-.00207	.00165	.00006	.00021	1.0051	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	-.00128	.00046	.02799	-.07233	.00197	.21481	.00019
Stddev	.00061	.00045	.00022	.01180	.06961	.00022	.12156	.00200
%RSD	1838.2	35.569	48.564	42.171	96.239	11.394	56.590	1042.3
#1	-.00013	-.00080	.00028	.03989	-.13804	.00212	.34118	.00130
#2	-.00048	-.00170	.00071	.01628	.00061	.00171	.09871	-.00212
#3	.00071	-.00133	.00040	.02780	-.07955	.00208	.20454	.00139
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00067	6.5927	-.00041	.00599	.00226	-.00187	.00139	.23314
Stddev	.00039	.0563	.00074	.00538	.00192	.00575	.00169	.00199
%RSD	58.032	.85407	180.55	89.733	84.902	308.02	122.23	.85400
#1	-.00069	6.5318	-.00010	.00974	.00276	.00008	.00216	.23308
#2	-.00105	6.6428	-.00125	-.00017	.00014	-.00834	-.00056	.23517
#3	-.00027	6.6034	.00012	.00842	.00389	.00266	.00255	.23118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127201 Acquired: 6/25/2016 16:04:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**.00331**	**.00248**	**.00096**	**.00107**	**.00085**	**.00133**
Stddev	.00044	.00056	.00254	.00297	.00078	.00012	.00063
%RSD	192.52	16.945	102.26	309.29	73.373	14.693	47.329
#1	.00017	.00395	.00360	.00246	.00196	.00094	.00062
#2	-.00070	.00291	.00428	.00288	.00074	.00089	.00180
#3	-.00016	.00306	-.00042	-.00246	.00050	.00071	.00159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9972.6**	**60217.**	**3037.7**
Stddev	14.0	83.	14.1
%RSD	.14049	.13799	.46569
#1	9988.5	60309.	3026.4
#2	9967.3	60146.	3033.1
#3	9962.1	60196.	3053.5

Approved: June 27, 2016

Sample Name: L1606127202 Acquired: 6/25/2016 16:08:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**.01060**	**.00084**	**.01591**	**.00482**	**.00013**	**4.8874**	**.00012**
Stddev	.00147	.00116	.00295	.00196	.00045	.00002	.0512	.00031
%RSD	570.05	10.898	350.53	12.303	9.3008	12.581	1.0477	272.03
#1	-.00187	.01061	.00261	.01812	.00447	.00014	4.8299	.00013
#2	.00100	.00945	-.00256	.01523	.00533	.00015	4.9279	.00042
#3	.00009	.01176	.00248	.01439	.00467	.00011	4.9046	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**-.00046**	**.00025**	**.03059**	**.03395**	**.00208**	**2.7028**	**-.00061**
Stddev	.00015	.00087	.00083	.01638	.06594	.00230	.1335	.00149
%RSD	81.112	189.49	337.36	53.558	194.25	110.69	4.9393	243.32
#1	.00003	-.00146	.00109	.04846	-.00968	-.00038	2.8372	-.00173
#2	.00034	.00002	-.00057	.01628	.00172	.00418	2.5702	.00108
#3	.00021	.00006	.00022	.02703	.10981	.00243	2.7010	-.00120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**13.742**	**-.00085**	**.00227**	**.00279**	**-.00269**	**-.00193**	**.47645**
Stddev	.00056	.155	.00030	.00745	.00217	.00177	.00170	.00665
%RSD	217.74	1.1297	35.156	328.49	77.588	65.958	88.159	1.3954
#1	-.00002	13.587	-.00065	-.00435	.00526	-.00088	-.00382	.46927
#2	-.00089	13.898	-.00120	.00082	.00118	-.00276	-.00050	.47768
#3	.00014	13.742	-.00071	.01033	.00194	-.00443	-.00148	.48240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127202 Acquired: 6/25/2016 16:08:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00018**	**.05092**	**.00177**	**.00024**	**.00137**	**.00071**	**.00162**
Stddev	.00083	.00100	.00998	.00193	.00052	.00009	.00084
%RSD	474.40	1.9658	565.04	789.52	37.663	12.612	51.686
#1	-.00049	.05003	.00781	-.00019	.00196	.00074	.00252
#2	-.00081	.05200	-.00975	.00235	.00120	.00078	.00148
#3	.00077	.05072	.00724	-.00143	.00097	.00061	.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9920.3**	**59957.**	**3053.1**
Stddev	9.3	97.	28.1
%RSD	.09367	.16197	.92019
#1	9910.9	59874.	3056.5
#2	9929.5	60064.	3023.5
#3	9920.6	59932.	3079.4

Approved: June 27, 2016

Sample Name: L1606127901 Acquired: 6/25/2016 16:12:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00079	.23343	-.00035	.00697	.01048	.00010	5.5956	-.00004
Stddev	.00151	.00808	.00093	.00046	.00038	.00003	.0897	.00007
%RSD	191.07	3.4604	268.33	6.6127	3.6255	27.106	1.6038	155.88
#1	-.00012	.24183	.00073	.00738	.01041	.00014	5.5127	-.00007
#2	.00027	.23274	-.00087	.00647	.01090	.00009	5.5834	-.00010
#3	-.00251	.22572	-.00090	.00704	.01015	.00009	5.6909	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.00040	.00104	.37949	.02999	.00120	2.2214	.04375
Stddev	.00022	.00063	.00117	.02000	.03448	.00297	.1047	.00042
%RSD	72.888	155.32	112.12	5.2704	114.98	248.44	4.7142	.95613
#1	.00020	.00102	-.00030	.35646	.01685	.00172	2.1668	.04335
#2	.00015	-.00023	.00181	.39248	.06911	.00387	2.1552	.04372
#3	.00056	.00042	.00162	.38953	.00401	-.00200	2.3421	.04419
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	.40372	.00002	.01800	.00182	-.00229	.00534	.76285
Stddev	.00016	.02832	.00029	.00724	.00294	.00133	.00501	.02556
%RSD	124.97	7.0152	1295.9	40.230	161.43	58.036	93.812	3.3508
#1	-.00031	.38955	.00035	.01067	.00373	-.00090	.01054	.73582
#2	-.00001	.38528	-.00008	.01820	-.00157	-.00355	.00492	.76609
#3	-.00007	.43633	-.00020	.02515	.00330	-.00243	.00055	.78664
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127901 Acquired: 6/25/2016 16:12:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00000**	**.02802**	**.00639**	**-.00424**	**.00104**	**.00686**	**-.00053**
Stddev	.00059	.00084	.00088	.00033	.00039	.00027	.00162
%RSD	12664.	3.0023	13.821	7.8780	37.381	4.0081	307.76
#1	.00044	.02706	.00703	-.00390	.00138	.00661	.00100
#2	.00022	.02835	.00538	-.00425	.00062	.00681	-.00222
#3	-.00068	.02864	.00675	-.00456	.00114	.00715	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9995.1**	**60569.**	**3072.5**
Stddev	18.8	83.	17.9
%RSD	.18798	.13702	.58354
#1	10017.	60498.	3093.1
#2	9983.0	60660.	3060.2
#3	9985.6	60548.	3064.2

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 16:16:03 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41279**	**10.433**	**.40298**	**.50323**	**1.0184**	**.05236**	**10.146**
Stddev	.00062	.023	.00491	.00242	.0037	.00006	.030
%RSD	.14995	.22399	1.2186	.48043	.36729	.12018	.29415
#1	.41231	10.415	.40384	.50055	1.0220	.05229	10.131
#2	.41349	10.459	.39769	.50390	1.0146	.05241	10.126
#3	.41257	10.425	.40740	.50524	1.0186	.05238	10.180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05206**	**.20294**	**.51645**	**.52099**	**4.0952**	**49.051**	**1.0295**
Stddev	.00043	.00065	.00457	.00121	.0025	.142	.0088
%RSD	.83054	.31937	.88415	.23159	.06120	.28862	.85476
#1	.05248	.20360	.51186	.52157	4.0943	49.074	1.0305
#2	.05210	.20291	.52099	.52180	4.0933	48.900	1.0203
#3	.05161	.20230	.51649	.51960	4.0980	49.180	1.0378
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.7277**	**.51414**	**1.0402**	**49.935**	**.51586**	**10.134**	**.51189**
Stddev	.0462	.00321	.0047	.095	.00165	.031	.00166
%RSD	.47447	.62359	.45388	.19063	.31918	.30495	.32486
#1	9.7465	.51782	1.0451	50.021	.51766	10.168	.51381
#2	9.6751	.51192	1.0398	49.833	.51549	10.123	.51086
#3	9.7615	.51270	1.0357	49.951	.51442	10.109	.51101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 16:16:03 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2153**	**.40661**	**5.2188**	**1.0211**	**1.0187**	**1.0271**	**.52415**
Stddev	.0058	.00386	.0120	.0013	.0031	.0069	.00046
%RSD	.47598	.95000	.22957	.12690	.30817	.67428	.08834
#1	1.2162	.40345	5.2255	1.0218	1.0207	1.0286	.52363
#2	1.2206	.41091	5.2258	1.0219	1.0150	1.0195	.52433
#3	1.2091	.40546	5.2049	1.0196	1.0203	1.0331	.52450
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0611**	**1.0269**	F **2.9985**
Stddev	.0021	.0010	.0124
%RSD	.19830	.09638	.41405
#1	1.0631	1.0270	3.0047
#2	1.0614	1.0279	2.9842
#3	1.0589	1.0259	3.0065
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9559.6**	**57599.**	**2986.8**
Stddev	4.9	130.	10.5
%RSD	.05148	.22635	.35191
#1	9564.0	57612.	2977.9
#2	9560.6	57462.	2998.4
#3	9554.3	57722.	2984.0

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 16:19:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00185	.00626	-.00023	.00044	.00278	.00005	-.04464	.00001
Stddev	.00025	.00998	.00075	.00197	.00045	.00006	.01589	.00008
%RSD	13.751	159.28	328.05	451.88	16.156	122.09	35.589	834.92
#1	.00158	.01229	-.00019	.00230	.00236	.00010	-.04122	-.00004
#2	.00190	-.00525	.00050	.00063	.00326	-.00002	-.03074	-.00004
#3	.00208	.01176	-.00099	-.00162	.00274	.00006	-.06195	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	.00030	.00108	.01891	-.08883	.00028	.04170	-.00007
Stddev	.00014	.00149	.00123	.02463	.04133	.00158	.04172	.00069
%RSD	37.231	490.44	114.38	130.22	46.533	569.52	100.03	937.33
#1	-.00023	.00135	.00225	.04102	-.10527	-.00061	.02819	.00053
#2	-.00043	.00096	-.00021	.02335	-.11941	.00210	.00842	.00008
#3	-.00050	-.00140	.00119	-.00763	-.04180	-.00066	.08850	-.00082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00343	.00251	-.00012	.00363	.00401	.00489	.00879	-.00487
Stddev	.00038	.01645	.00050	.00608	.00167	.00193	.00298	.00028
%RSD	11.063	654.49	431.61	167.28	41.713	39.486	33.953	5.7618
#1	.00299	.00408	-.00004	.00277	.00588	.00378	.00970	-.00459
#2	.00370	-.01467	-.00065	-.00196	.00352	.00712	.01122	-.00515
#3	.00359	.01813	.00034	.01010	.00264	.00378	.00546	-.00487
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 16:19:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**.00057**	**.00214**	**-.00157**	**.00060**	**-.00006**	**.00421**
Stddev	.00055	.00026	.00424	.00416	.00034	.00004	.00038
%RSD	193.42	45.468	198.11	264.68	55.851	78.634	9.1291
#1	-.00056	.00032	.00612	.00235	.00061	-.00008	.00456
#2	-.00063	.00083	-.00232	-.00593	.00093	-.00001	.00426
#3	.00035	.00056	.00262	-.00114	.00026	-.00008	.00380
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9751.1**	**59011.**	**2998.0**
Stddev	16.0	92.	16.9
%RSD	.16409	.15669	.56327
#1	9735.8	59057.	2997.7
#2	9767.8	59072.	2981.2
#3	9749.7	58905.	3015.0

Approved: June 27, 2016

Sample Name: L1606127905 Acquired: 6/25/2016 16:23:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00112**	**.42892**	**.00254**	**.00885**	**.00931**	**.00014**	**4.1101**	**-.00014**
Stddev	.00085	.00960	.00110	.00026	.00054	.00008	.0226	.00009
%RSD	76.091	2.2373	43.205	2.9736	5.7541	61.416	.54879	60.631
#1	.00187	.41894	.00336	.00888	.00991	.00015	4.0848	-.00017
#2	.00019	.43809	.00129	.00858	.00890	.00022	4.1178	-.00005
#3	.00131	.42973	.00298	.00910	.00911	.00005	4.1279	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00064**	**.00072**	**.00093**	**.46806**	**-.04215**	**.00375**	**2.3175**	**.01534**
Stddev	.00025	.00122	.00082	.01630	.03381	.00237	.0180	.00171
%RSD	38.393	169.05	88.133	3.4825	80.210	63.236	.77530	11.156
#1	.00092	.00051	.00011	.45372	-.08111	.00533	2.3322	.01684
#2	.00057	-.00038	.00092	.46467	-.02046	.00102	2.2974	.01572
#3	.00044	.00203	.00175	.48579	-.02489	.00491	2.3228	.01348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**.79830**	**.00036**	**.03423**	**.00164**	**-.00327**	**.00568**	**1.0453**
Stddev	.00055	.00874	.00054	.00334	.00066	.00436	.00399	.0205
%RSD	130.46	1.0949	148.73	9.7489	39.962	133.66	70.190	1.9601
#1	-.00012	.80324	-.00001	.03061	.00234	-.00815	.00802	1.0252
#2	.00040	.78821	.00099	.03719	.00155	-.00191	.00794	1.0445
#3	.00099	.80344	.00012	.03489	.00104	.00026	.00108	1.0662
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127905 Acquired: 6/25/2016 16:23:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.01799	.00482	-.00230	.00189	.01109	.00007
Stddev	.00065	.00037	.00226	.00232	.00074	.00029	.00211
%RSD	715.49	2.0334	47.005	100.92	39.126	2.6113	3180.6
#1	-.00003	.01830	.00310	.00003	.00148	.01082	.00082
#2	.00080	.01809	.00396	-.00232	.00274	.01107	-.00231
#3	-.00049	.01759	.00738	-.00462	.00144	.01140	.00169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9972.5	60381.	3064.6
Stddev	33.3	69.	2.8
%RSD	.33435	.11363	.09242
#1	10010.	60351.	3061.5
#2	9961.5	60333.	3067.1
#3	9946.1	60460.	3065.2

Approved: June 27, 2016

Sample Name: L1606114801 Acquired: 6/25/2016 16:27:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.03462	.00065	.00821	.00587	.00014	1.4096	-.00013
Stddev	.00034	.00628	.00229	.00098	.00178	.00003	.0346	.00033
%RSD	57.407	18.141	351.58	11.960	30.235	19.203	2.4561	248.47
#1	.00054	.03990	-.00071	.00924	.00790	.00011	1.3926	.00011
#2	.00095	.02767	-.00063	.00729	.00463	.00014	1.4495	-.00000
#3	.00028	.03630	.00329	.00809	.00508	.00016	1.3868	-.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00001	.00030	.04215	.21418	.00024	.69121	.00161
Stddev	.00012	.00038	.00134	.02269	.07335	.00510	.07378	.00189
%RSD	127.75	2953.4	439.05	53.849	34.250	2116.0	10.674	117.34
#1	.00006	.00044	.00117	.03668	.16871	.00256	.67687	-.00053
#2	-.00001	-.00026	.00097	.06707	.29880	.00377	.77111	.00305
#3	.00022	-.00014	-.00123	.02268	.17502	-.00561	.62565	.00230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00000	3.4091	-.00039	.01019	-.00019	-.00195	.00226	.25600
Stddev	.00027	.0299	.00017	.00142	.00263	.00116	.00241	.00788
%RSD	8569.8	.87827	42.602	13.923	1405.5	59.228	106.91	3.0774
#1	.00029	3.3757	-.00048	.01168	-.00018	-.00094	.00166	.24819
#2	-.00005	3.4183	-.00020	.01005	.00244	-.00171	.00492	.25587
#3	-.00025	3.4335	-.00049	.00885	-.00282	-.00321	.00020	.26394
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606114801 Acquired: 6/25/2016 16:27:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00043**	**.01395**	**.00070**	**-.00087**	**.00132**	**.00137**	**.00142**
Stddev	.00051	.00044	.00486	.00154	.00026	.00005	.00170
%RSD	118.61	3.1779	695.33	177.20	19.933	3.3203	119.70
#1	-.00063	.01431	.00581	-.00155	.00155	.00135	.00002
#2	.00015	.01345	.00013	-.00194	.00103	.00135	.00093
#3	-.00082	.01408	-.00385	.00089	.00136	.00143	.00331
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9913.2**	**60132.**	**3023.4**
Stddev	14.6	83.	23.3
%RSD	.14679	.13818	.77035
#1	9929.6	60151.	3030.8
#2	9901.6	60041.	2997.3
#3	9908.5	60204.	3042.1

Approved: June 27, 2016

Sample Name: L1606114802 Acquired: 6/25/2016 16:31:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00158	-.00408	.00026	.00633	.00904	.00015	2.7703	-.00011
Stddev	.00108	.00521	.00166	.00204	.00121	.00009	.0227	.00014
%RSD	68.438	127.59	628.67	32.297	13.379	59.313	.82092	123.10
#1	.00072	-.00923	-.00155	.00429	.00969	.00008	2.7476	-.00002
#2	.00123	.00119	.00169	.00631	.00978	.00025	2.7930	-.00027
#3	.00279	-.00421	.00065	.00838	.00764	.00012	2.7703	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.00002	.00060	.02383	.06717	.00040	2.3757	.00083
Stddev	.00028	.00081	.00057	.01240	.09428	.00275	.0633	.00197
%RSD	81.635	5221.9	93.832	52.028	140.36	693.38	2.6650	237.49
#1	.00044	-.00078	.00046	.02298	.16159	-.00259	2.3743	.00224
#2	.00003	-.00000	.00012	.01188	-.02697	.00095	2.4397	.00167
#3	.00055	.00084	.00122	.03663	.06688	.00283	2.3131	-.00142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	6.0259	-.00040	.00438	.00227	-.00140	.00185	.32995
Stddev	.00024	.0927	.00045	.00883	.00074	.00370	.00550	.00769
%RSD	208.31	1.5391	111.52	201.54	32.728	264.56	298.09	2.3316
#1	.00039	5.9438	-.00070	.01456	.00143	-.00567	.00483	.32126
#2	-.00003	6.1265	.00011	-.00011	.00282	.00058	.00521	.33270
#3	-.00002	6.0074	-.00061	-.00130	.00258	.00089	-.00450	.33589
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606114802 Acquired: 6/25/2016 16:31:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.01996	.00356	-.00001	.00116	.00095	-.00024
Stddev	.00040	.00029	.00718	.00102	.00055	.00026	.00029
%RSD	136.64	1.4402	201.93	7537.5	47.304	27.165	121.82
#1	-.00006	.02008	.00861	-.00117	.00177	.00075	-.00049
#2	.00022	.02016	-.00466	.00037	.00099	.00086	-.00028
#3	.00074	.01963	.00672	.00076	.00071	.00124	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9925.6	60099.	3031.8
Stddev	7.7	64.	18.1
%RSD	.07799	.10696	.59652
#1	9922.2	60109.	3022.9
#2	9920.2	60157.	3019.9
#3	9934.5	60030.	3052.6

Approved: June 27, 2016

Sample Name: L1606115001 Acquired: 6/25/2016 16:35:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00166	.05641	.00050	.00663	.00676	.00016	1.7818	.00015
Stddev	.00049	.00787	.00304	.00311	.00055	.00011	.0479	.00031
%RSD	29.631	13.947	601.42	46.927	8.1582	71.613	2.6886	203.48
#1	.00200	.06510	-.00294	.00991	.00739	.00005	1.7526	.00038
#2	.00109	.05435	.00166	.00372	.00635	.00014	1.8371	-.00020
#3	.00188	.04978	.00279	.00626	.00655	.00027	1.7557	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.00048	.00100	.04970	.00137	.00112	1.1341	.00143
Stddev	.00049	.00051	.00115	.01548	.09645	.00218	.0897	.00096
%RSD	745.24	106.17	114.47	31.142	7038.5	195.00	7.9106	67.253
#1	-.00002	.00105	.00223	.06756	-.03266	.00315	1.0361	.00043
#2	-.00057	.00034	.00081	.04145	.11022	-.00118	1.2123	.00235
#3	.00040	.00005	-.00004	.04010	-.07346	.00137	1.1537	.00152
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	5.9717	-.00015	.00950	-.00176	-.00302	.00622	.28058
Stddev	.00014	.0718	.00043	.00093	.00081	.00221	.00277	.00537
%RSD	53.804	1.2031	276.46	9.7789	45.909	73.167	44.558	1.9140
#1	-.00010	5.9074	-.00014	.01003	-.00249	-.00320	.00355	.27441
#2	-.00036	6.0493	-.00058	.01005	-.00089	-.00072	.00603	.28316
#3	-.00034	5.9584	.00027	.00843	-.00189	-.00513	.00908	.28418
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115001 Acquired: 6/25/2016 16:35:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**.01287**	**.00136**	**-.00194**	**.00110**	**.00114**	**.00062**
Stddev	.00058	.00017	.00295	.00426	.00072	.00013	.00087
%RSD	762.02	1.3177	217.51	219.83	65.867	11.722	140.33
#1	.00015	.01301	.00162	-.00450	.00182	.00119	.00034
#2	-.00054	.01292	.00417	-.00429	.00110	.00099	-.00008
#3	.00061	.01268	-.00172	.00298	.00038	.00124	.00159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9919.3**	**60059.**	**3016.8**
Stddev	34.5	56.	13.7
%RSD	.34767	.09285	.45386
#1	9942.2	60062.	3013.8
#2	9936.0	60114.	3004.8
#3	9879.6	60002.	3031.7

Approved: June 27, 2016

Sample Name: L1606115102 Acquired: 6/25/2016 16:39:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00105**	**.00214**	**.00018**	**.00362**	**.00526**	**.00013**	**1.7820**	**.00006**
Stddev	.00166	.00346	.00084	.00176	.00021	.00005	.0144	.00011
%RSD	158.53	161.68	476.67	48.690	4.0116	41.814	.80931	182.53
#1	.00213	.00451	-.00003	.00223	.00549	.00009	1.7780	.00003
#2	-.00086	-.00183	-.00054	.00560	.00521	.00010	1.7700	-.00003
#3	.00188	.00375	.00110	.00302	.00507	.00019	1.7980	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00024**	**.00030**	**.00081**	**.02568**	**-.04054**	**.00233**	**1.0068**	**.00278**
Stddev	.00009	.00056	.00053	.02210	.04687	.00374	.0618	.00296
%RSD	39.196	184.13	65.165	86.089	115.61	160.62	6.1428	106.56
#1	.00032	.00005	.00046	.05079	-.00224	.00526	1.0696	.00587
#2	.00013	-.00008	.00055	.00916	-.02657	.00361	.94591	-.00003
#3	.00026	.00094	.00141	.01708	-.09281	-.00188	1.0048	.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00000**	**4.8272**	**.00042**	**.00764**	**.00031**	**-.00602**	**.00252**	**.26699**
Stddev	.00027	.0498	.00058	.00427	.00107	.00140	.00418	.00420
%RSD	7088.8	1.0326	136.65	55.913	346.71	23.202	166.24	1.5735
#1	-.00018	4.7713	.00031	.01044	.00076	-.00742	-.00226	.26233
#2	-.00015	4.8672	-.00009	.00272	.00108	-.00462	.00551	.26815
#3	.00031	4.8430	.00105	.00974	-.00091	-.00602	.00431	.27049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115102 Acquired: 6/25/2016 16:39:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	.01171	-.00105	-.00167	.00048	.00111	-.00010
Stddev	.00036	.00032	.00211	.00218	.00034	.00004	.00053
%RSD	98.761	2.7498	200.92	130.51	71.305	3.3481	503.34
#1	-.00064	.01138	-.00295	-.00411	.00028	.00107	-.00046
#2	-.00048	.01174	.00122	-.00099	.00029	.00113	.00050
#3	.00004	.01202	-.00143	.00009	.00088	.00113	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9924.7	60209.	3035.9
Stddev	21.0	164.	13.4
%RSD	.21110	.27319	.44278
#1	9945.2	60212.	3050.8
#2	9925.5	60043.	3024.7
#3	9903.3	60372.	3032.1

Approved: June 27, 2016

Sample Name: L1606115105 Acquired: 6/25/2016 16:43:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00211	.00219	.00055	.00586	.00711	.00018	2.2105	.00001
Stddev	.00101	.00795	.00092	.00071	.00025	.00010	.0174	.00025
%RSD	47.839	363.29	167.06	12.119	3.4464	53.942	.78551	4197.7
#1	.00096	-.00697	.00162	.00634	.00685	.00013	2.1935	-.00020
#2	.00251	.00621	-.00001	.00619	.00715	.00012	2.2282	.00029
#3	.00286	.00732	.00005	.00504	.00733	.00030	2.2098	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	-.00001	.00002	.02737	.01189	.00109	1.3118	.00125
Stddev	.00029	.00051	.00146	.02301	.05921	.00366	.0639	.00239
%RSD	827.06	7244.7	6104.0	84.080	497.84	335.35	4.8727	191.19
#1	.00035	.00040	.00134	.00788	.02968	-.00236	1.3142	.00227
#2	-.00003	.00015	.00027	.02147	.06017	.00070	1.3745	.00297
#3	-.00022	-.00058	-.00154	.05276	-.05417	.00493	1.2467	-.00148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	6.1621	.00034	.00603	.00215	-.00121	.00114	.31741
Stddev	.00059	.0852	.00146	.00590	.00148	.00098	.00444	.00674
%RSD	252.32	1.3824	433.95	97.933	68.608	80.696	390.40	2.1227
#1	-.00086	6.0786	-.00133	.00455	.00384	-.00161	.00564	.31056
#2	-.00015	6.2489	.00098	.00101	.00153	-.00010	.00100	.31765
#3	.00031	6.1588	.00136	.01253	.00108	-.00192	-.00323	.32403
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115105 Acquired: 6/25/2016 16:43:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.01487**	**-.00053**	**-.00166**	**.00081**	**.00090**	**.00078**
Stddev	.00083	.00056	.00515	.00250	.00073	.00004	.00134
%RSD	533.32	3.7472	973.66	150.50	89.693	4.1812	172.14
#1	-.00110	.01433	.00470	-.00448	.00103	.00087	.00219
#2	.00015	.01545	-.00069	-.00074	.00000	.00094	.00064
#3	.00048	.01482	-.00560	.00025	.00141	.00089	-.00049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9886.5**	**59788.**	**3007.6**
Stddev	13.0	185.	33.5
%RSD	.13157	.30931	1.1137
#1	9901.4	60001.	3037.0
#2	9880.8	59677.	2971.1
#3	9877.4	59685.	3014.8

Approved: June 27, 2016

Sample Name: L1606115401 Acquired: 6/25/2016 16:47:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573707-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	.00056	-.00040	.08474	.00202	.00013	25.077	-.00002
Stddev	.00048	.01146	.00100	.00137	.00093	.00006	.183	.00004
%RSD	125.93	2038.5	249.32	1.6179	46.237	47.434	.73077	179.25
#1	-.00014	.00766	-.00156	.08632	.00308	.00006	25.288	-.00005
#2	.00079	.00669	.00017	.08409	.00131	.00017	24.966	-.00003
#3	.00048	-.01266	.00019	.08382	.00167	.00016	24.976	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	-.00049	.00090	.03824	.13932	.00586	5.7156	.01284
Stddev	.00012	.00049	.00033	.01141	.04539	.00340	.0899	.00260
%RSD	49.754	99.993	36.739	29.841	32.583	57.965	1.5726	20.218
#1	.00011	-.00085	.00123	.04902	.09367	.00206	5.7030	.01056
#2	.00028	-.00069	.00089	.02629	.18446	.00861	5.6327	.01230
#3	.00036	.00007	.00057	.03940	.13984	.00691	5.8112	.01567
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	48.626	-.00075	.01117	.00114	-.00491	.00349	.27480
Stddev	.00026	.111	.00066	.00745	.00133	.00248	.00272	.00312
%RSD	52.573	.22800	87.964	66.704	116.26	50.491	77.811	1.1358
#1	.00024	48.499	-.00062	.01513	.00176	-.00250	.00652	.27222
#2	.00075	48.707	-.00147	.01582	.00206	-.00745	.00269	.27392
#3	.00048	48.670	-.00016	.00258	-.00038	-.00478	.00127	.27827
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115401 Acquired: 6/25/2016 16:47:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573707-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**.45176**	**-.00366**	**.00143**	**.00149**	**.00078**	**.00089**
Stddev	.00028	.00268	.00362	.00047	.00058	.00004	.00106
%RSD	304.19	.59263	98.732	33.094	39.124	5.2122	119.26
#1	.00040	.44867	-.00000	.00088	.00209	.00083	-.00013
#2	-.00012	.45326	-.00375	.00168	.00093	.00076	.00081
#3	-.00001	.45335	-.00723	.00172	.00145	.00075	.00200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9797.1**	**59243.**	**3012.9**
Stddev	17.5	107.	17.7
%RSD	.17826	.18036	.58631
#1	9776.9	59361.	2997.1
#2	9806.9	59214.	3009.7
#3	9807.4	59153.	3032.0

Approved: June 27, 2016

Sample Name: L1606115402S Acquired: 6/25/2016 16:51:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: ~~WG573994-~~04 WG573707-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01309**	**.25824**	**.01110**	**.13590**	**.02825**	**.00141**	**24.615**	**.00126**
Stddev	.00068	.00760	.00152	.00169	.00035	.00008	.204	.00013
%RSD	5.1924	2.9441	13.682	1.2425	1.2428	5.6800	.82995	10.655
#1	.01329	.24951	.01277	.13422	.02816	.00148	24.549	.00132
#2	.01365	.26341	.01072	.13589	.02864	.00133	24.844	.00111
#3	.01234	.26179	.00981	.13760	.02795	.00143	24.452	.00136
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00516**	**.01347**	**.01556**	**.12663**	**1.3534**	**.03179**	**5.7750**	**.02544**
Stddev	.00029	.00054	.00043	.02761	.0228	.00410	.0699	.00285
%RSD	5.6307	4.0382	2.7758	21.808	1.6862	12.889	1.2101	11.189
#1	.00539	.01407	.01514	.12414	1.3303	.03536	5.8428	.02774
#2	.00525	.01301	.01552	.15541	1.3541	.02732	5.7789	.02226
#3	.00483	.01334	.01600	.10034	1.3759	.03267	5.7032	.02633
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02479**	**48.072**	**.01332**	**.27819**	**.01575**	**.03066**	**.01661**	**.41681**
Stddev	.00011	.553	.00070	.01153	.00513	.00307	.00921	.00803
%RSD	.43243	1.1513	5.2238	4.1456	32.553	10.027	55.466	1.9271
#1	.02491	47.545	.01404	.27355	.01630	.02789	.02173	.40846
#2	.02475	48.649	.01266	.26969	.02058	.03397	.02212	.41747
#3	.02470	48.023	.01326	.29132	.01037	.03013	.00597	.42449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115402S Acquired: 6/25/2016 16:51:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: ~~WG573994-04~~ WG573707-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02366**	**.45706**	**.02085**	**.01353**	**.02750**	**.02826**	**.00274**
Stddev	.00062	.00423	.00301	.00109	.00044	.00035	.00077
%RSD	2.6070	.92537	14.446	8.0746	1.5967	1.2498	28.151
#1	.02338	.45248	.01904	.01478	.02755	.02786	.00198
#2	.02436	.46082	.01917	.01306	.02704	.02846	.00352
#3	.02323	.45789	.02432	.01275	.02792	.02848	.00271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9814.2**	**59172.**	**3008.6**
Stddev	14.0	133.	22.5
%RSD	.14277	.22528	.74717
#1	9829.8	59323.	3030.6
#2	9810.3	59073.	2985.6
#3	9802.6	59119.	3009.6

Approved: June 27, 2016

Sample Name: L1606115403SD Acquired: 6/25/2016 16:54:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: ~~WG573994-05~~ WG573707-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01239	.28748	.01145	.14150	.02764	.00148	24.958	.00130
Stddev	.00114	.00888	.00065	.00093	.00147	.00009	.077	.00038
%RSD	9.2124	3.0872	5.6507	.65421	5.3298	6.1781	.30772	29.306
#1	.01125	.28330	.01179	.14053	.02888	.00144	25.006	.00087
#2	.01353	.28146	.01070	.14159	.02802	.00141	24.999	.00161
#3	.01238	.29767	.01185	.14238	.02601	.00158	24.870	.00142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00611	.01431	.01527	.13086	1.3857	.03280	5.7817	.02287
Stddev	.00054	.00136	.00145	.01260	.0370	.00239	.0561	.00299
%RSD	8.8509	9.4861	9.4751	9.6283	2.6697	7.2716	.97114	13.075
#1	.00671	.01585	.01436	.14435	1.3780	.03556	5.7473	.02433
#2	.00566	.01329	.01452	.11939	1.4259	.03138	5.8465	.01943
#3	.00597	.01379	.01694	.12885	1.3532	.03147	5.7513	.02484
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02737	48.881	.01504	.29126	.01658	.02795	.01955	.43672
Stddev	.00021	.600	.00152	.00741	.00249	.00243	.00943	.00693
%RSD	.75532	1.2279	10.076	2.5426	15.013	8.6768	48.242	1.5861
#1	.02720	48.195	.01331	.29382	.01763	.03060	.01049	.42891
#2	.02732	49.311	.01567	.29705	.01373	.02742	.02931	.43914
#3	.02760	49.136	.01613	.28292	.01836	.02584	.01885	.44211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115403SD Acquired: 6/25/2016 16:54:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: ~~WG573994-05~~ WG573707-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02590**	**.47018**	**.02569**	**.01379**	**.02893**	**.02996**	**.00113**
Stddev	.00080	.00475	.00439	.00029	.00110	.00076	.00027
%RSD	3.0868	1.0106	17.097	2.0910	3.8168	2.5433	23.745
#1	.02499	.46471	.02819	.01349	.02776	.02918	.00138
#2	.02647	.47252	.02061	.01406	.02908	.03000	.00115
#3	.02625	.47331	.02825	.01382	.02996	.03071	.00085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9727.4**	**58906.**	**3022.7**
Stddev	40.6	23.	25.7
%RSD	.41767	.03969	.84864
#1	9765.9	58911.	3039.9
#2	9731.2	58926.	2993.2
#3	9685.0	58880.	3035.0

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 16:58:48 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41361**	**10.445**	**.40516**	**.50612**	**1.0259**	**.05224**	**10.203**
Stddev	.00260	.021	.00144	.00287	.0033	.00020	.046
%RSD	.62922	.20256	.35469	.56757	.31739	.38953	.44884
#1	.41655	10.462	.40524	.50908	1.0271	.05242	10.224
#2	.41159	10.421	.40656	.50592	1.0284	.05202	10.235
#3	.41269	10.451	.40369	.50335	1.0222	.05229	10.150
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05215**	**.20471**	**.51698**	**.52477**	**4.0648**	**49.423**	**1.0320**
Stddev	.00013	.00021	.00148	.00103	.0369	.189	.0006
%RSD	.23994	.10391	.28587	.19687	.90838	.38306	.06170
#1	.05201	.20470	.51640	.52461	4.1007	49.428	1.0316
#2	.05218	.20450	.51865	.52588	4.0269	49.610	1.0327
#3	.05226	.20492	.51587	.52383	4.0668	49.231	1.0316
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.8590**	**.51551**	**1.0404**	**50.331**	**.51945**	**10.229**	**.51430**
Stddev	.0965	.00144	.0039	.173	.00106	.010	.00570
%RSD	.97927	.27876	.37864	.34422	.20472	.09385	1.1081
#1	9.9705	.51433	1.0396	50.428	.51822	10.232	.51032
#2	9.8060	.51711	1.0369	50.435	.52013	10.218	.51175
#3	9.8006	.51508	1.0447	50.131	.51999	10.236	.52083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 16:58:48 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2288	.41352	5.2624	1.0315	1.0269	1.0279	.53017
Stddev	.0104	.00168	.0015	.0026	.0016	.0023	.00514
%RSD	.84208	.40618	.02811	.25583	.15527	.22255	.96993
#1	1.2288	.41198	5.2628	1.0285	1.0283	1.0298	.53564
#2	1.2391	.41326	5.2608	1.0336	1.0273	1.0286	.52543
#3	1.2184	.41531	5.2637	1.0323	1.0252	1.0254	.52943
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0564	1.0308	F 3.0180
Stddev	.0015	.0001	.0119
%RSD	.14240	.01349	.39369
#1	1.0580	1.0307	3.0121
#2	1.0561	1.0310	3.0317
#3	1.0550	1.0308	3.0102
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9528.1	57486.	2960.8
Stddev	9.3	201.	17.3
%RSD	.09776	.34979	.58425
#1	9517.6	57273.	2962.9
#2	9535.3	57514.	2942.6
#3	9531.5	57672.	2977.0

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 17:02:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00045**	**.00226**	**.00067**	**.00055**	**.00185**	**.00013**	**-.07167**	**-.00014**
Stddev	.00085	.00279	.00119	.00264	.00042	.00005	.02175	.00033
%RSD	189.88	123.24	177.00	483.17	22.573	35.869	30.346	234.73
#1	.00019	-.00053	.00152	-.00019	.00233	.00018	-.09322	-.00050
#2	-.00141	.00505	-.00069	-.00165	.00153	.00012	-.04973	.00014
#3	-.00012	.00226	.00119	.00348	.00171	.00009	-.07206	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.00057**	**.00076**	**.03056**	**-.09613**	**.00228**	**-.13259**	**.00051**
Stddev	.00039	.00056	.00130	.01338	.02053	.00471	.02062	.00136
%RSD	1720.9	98.019	170.60	43.800	21.361	206.77	15.553	268.18
#1	.00020	.00017	-.00074	.01806	-.09726	-.00131	-.14855	-.00092
#2	.00020	.00121	.00148	.02892	-.07505	.00054	-.10931	.00179
#3	-.00047	.00034	.00155	.04468	-.11607	.00761	-.13993	.00066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00325**	**.04047**	**-.00081**	**.00150**	**.00148**	**.00530**	**.00256**	**-.00673**
Stddev	.00022	.01175	.00096	.00183	.00289	.00260	.00237	.00167
%RSD	6.7467	29.033	119.00	121.89	195.62	48.929	92.639	24.783
#1	.00325	.05342	-.00016	.00278	.00470	.00570	.00309	-.00596
#2	.00303	.03049	-.00036	.00231	.00063	.00768	-.00003	-.00558
#3	.00347	.03751	-.00192	-.00059	-.00090	.00253	.00461	-.00864
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 17:02:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**.00044**	**.00426**	**-.00209**	**.00094**	**.00001**	**.00353**
Stddev	.00052	.00045	.00463	.00321	.00096	.00021	.00070
%RSD	128.76	102.93	108.80	153.83	102.68	1611.6	19.702
#1	.00048	.00069	.00959	-.00418	.00024	-.00012	.00320
#2	.00089	.00071	.00120	.00161	.00204	-.00009	.00306
#3	-.00015	-.00008	.00198	-.00369	.00053	.00025	.00433
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9729.2**	**58924.**	**2982.2**
Stddev	14.1	124.	20.8
%RSD	.14444	.21107	.69802
#1	9725.0	58912.	2962.2
#2	9744.9	58806.	3003.8
#3	9717.8	59054.	2980.7

Approved: June 27, 2016

Sample Name: L1606115501 Acquired: 6/25/2016 17:06:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00033**	**.00180**	**.00125**	**.01161**	**.01032**	**.00011**	**2.3136**	**-.00007**
Stddev	.00230	.00043	.00160	.00137	.00099	.00007	.0269	.00019
%RSD	694.54	23.757	128.16	11.776	9.5715	61.393	1.1630	281.96
#1	.00225	.00218	.00194	.01272	.00925	.00003	2.3397	.00009
#2	-.00214	.00134	.00239	.01008	.01120	.00016	2.2860	-.00001
#3	-.00111	.00188	-.00058	.01203	.01051	.00015	2.3151	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.00014**	**-.00018**	**.02935**	**.09569**	**-.00047**	**1.4383**	**.08572**
Stddev	.00040	.00048	.00052	.00252	.08702	.00314	.0635	.00277
%RSD	831.42	341.03	289.17	8.5796	90.931	664.03	4.4136	3.2299
#1	.00005	.00069	-.00054	.02667	.18563	.00276	1.4626	.08626
#2	.00029	-.00017	.00042	.03166	.01192	-.00066	1.4861	.08273
#3	-.00048	-.00010	-.00042	.02972	.08953	-.00352	1.3663	.08818
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00023**	**3.8750**	**.00064**	**.00454**	**.00264**	**-.00168**	**.00429**	**.37174**
Stddev	.00028	.0249	.00026	.00324	.00293	.00204	.00272	.00091
%RSD	124.52	.64140	39.830	71.430	111.04	121.37	63.452	.24386
#1	-.00008	3.8959	.00063	.00081	.00037	-.00400	.00736	.37278
#2	.00028	3.8475	.00040	.00665	.00594	-.00087	.00338	.37129
#3	.00048	3.8816	.00091	.00616	.00160	-.00017	.00214	.37115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115501 Acquired: 6/25/2016 17:06:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.01613**	**.00436**	**.00049**	**-.00004**	**.00087**	**.00142**
Stddev	.00092	.00051	.00120	.00199	.00066	.00012	.00191
%RSD	2230.2	3.1791	27.456	410.68	1766.6	13.339	134.89
#1	.00087	.01607	.00571	.00178	-.00027	.00083	.00247
#2	-.00002	.01565	.00341	-.00181	.00071	.00100	-.00079
#3	-.00097	.01667	.00397	.00149	-.00055	.00078	.00257
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9938.9**	**60110.**	**3041.6**
Stddev	14.3	99.	8.4
%RSD	.14384	.16440	.27454
#1	9922.4	60057.	3050.1
#2	9946.9	60224.	3033.5
#3	9947.4	60049.	3041.2

Approved: June 27, 2016

Sample Name: L1606115502 Acquired: 6/25/2016 17:10:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	-.00453	-.00033	.00989	.01794	.00013	2.4889	.00011
Stddev	.00144	.01600	.00099	.00264	.00078	.00009	.0280	.00014
%RSD	216.56	353.18	295.78	26.673	4.3403	71.235	1.1261	129.84
#1	.00231	.00655	-.00001	.00702	.01871	.00024	2.4937	.00027
#2	.00001	-.02287	-.00144	.01220	.01715	.00010	2.5143	-.00000
#3	-.00033	.00273	.00045	.01047	.01798	.00006	2.4588	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	-.00044	.00104	.24605	-.07520	-.00217	1.6643	.02363
Stddev	.00022	.00012	.00019	.01179	.12175	.00286	.0624	.00224
%RSD	272.66	27.286	18.718	4.7938	161.89	131.42	3.7522	9.4751
#1	.00027	-.00041	.00090	.23638	.00559	-.00035	1.5996	.02553
#2	.00015	-.00033	.00126	.24256	-.01597	-.00070	1.6689	.02116
#3	-.00017	-.00057	.00095	.25919	-.21524	-.00546	1.7243	.02420
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00021	2.8989	.00016	.00365	.00260	-.00217	.00870	.42450
Stddev	.00065	.0101	.00120	.00396	.00147	.00150	.00507	.00601
%RSD	314.77	.35003	759.93	108.45	56.477	68.876	58.304	1.4160
#1	-.00082	2.8946	-.00099	.00772	.00422	-.00382	.01102	.41775
#2	-.00027	2.9105	.00140	-.00019	.00221	-.00091	.01219	.42650
#3	.00047	2.8917	.00006	.00342	.00137	-.00178	.00288	.42926
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115502 Acquired: 6/25/2016 17:10:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	.02139	.00454	-.00050	.00021	.00050	.00118
Stddev	.00016	.00022	.00843	.00114	.00027	.00017	.00137
%RSD	41.986	1.0329	185.67	229.51	129.67	34.277	116.06
#1	.00030	.02116	.00016	.00076	.00041	.00055	-.00040
#2	.00027	.02139	.01426	-.00146	.00031	.00031	.00208
#3	.00056	.02161	-.00080	-.00078	-.00010	.00064	.00187
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9945.8	60248.	3055.3
Stddev	9.2	94.	11.4
%RSD	.09217	.15541	.37444
#1	9945.9	60314.	3061.2
#2	9954.9	60289.	3042.1
#3	9936.5	60141.	3062.6

Approved: June 27, 2016

Sample Name: L1606115503 Acquired: 6/25/2016 17:14:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00200	-.00135	-.00104	.00757	.00737	.00014	2.3997	-.00010
Stddev	.00192	.00661	.00046	.00116	.00061	.00003	.0309	.00022
%RSD	96.141	489.89	44.488	15.290	8.2167	21.217	1.2897	218.06
#1	.00406	-.00575	-.00051	.00624	.00716	.00012	2.3659	-.00020
#2	.00025	-.00456	-.00131	.00835	.00689	.00017	2.4268	-.00025
#3	.00170	.00625	-.00131	.00813	.00805	.00012	2.4063	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	-.00044	-.00019	.10432	-.04481	.00004	.91519	.02191
Stddev	.00035	.00082	.00101	.01415	.09851	.00279	.09371	.00121
%RSD	3296.1	188.98	541.26	13.565	219.83	6329.0	10.240	5.5295
#1	-.00033	.00027	.00027	.10406	-.13456	.00163	.99135	.02326
#2	-.00007	-.00023	-.00134	.09030	-.06048	.00168	.94369	.02093
#3	.00037	-.00134	.00052	.11860	.06059	-.00317	.81054	.02153
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	2.4900	.00017	.00956	.00115	-.00111	.00305	.32330
Stddev	.00005	.0408	.00057	.00296	.00162	.00041	.00349	.00479
%RSD	56.574	1.6398	345.24	30.912	140.85	37.279	114.64	1.4819
#1	-.00011	2.4429	.00078	.00752	.00187	-.00066	-.00055	.31801
#2	-.00013	2.5161	.00008	.00822	-.00070	-.00119	.00642	.32454
#3	-.00003	2.5109	-.00036	.01295	.00229	-.00148	.00327	.32735
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115503 Acquired: 6/25/2016 17:14:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**.01387**	**.00305**	**-.00065**	**.00052**	**.00084**	**.00071**
Stddev	.00081	.00016	.00789	.00174	.00073	.00004	.00140
%RSD	953.07	1.1448	258.94	265.86	139.13	5.0666	198.28
#1	-.00013	.01403	.00198	-.00023	.00032	.00082	.00133
#2	-.00088	.01386	-.00426	.00083	-.00008	.00082	.00169
#3	.00075	.01371	.01142	-.00257	.00133	.00089	-.00090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9910.7**	**60184.**	**3019.4**
Stddev	10.3	175.	9.0
%RSD	.10381	.29035	.29953
#1	9910.7	60334.	3026.1
#2	9921.0	60225.	3023.1
#3	9900.4	59992.	3009.1

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 17:18:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41531**	**10.447**	**.40916**	**.50533**	**1.0238**	**.05217**	**10.225**
Stddev	.00091	.032	.00132	.00054	.0034	.00011	.030
%RSD	.21998	.31066	.32348	.10618	.32870	.20293	.29201
#1	.41613	10.474	.41061	.50566	1.0229	.05229	10.191
#2	.41432	10.411	.40886	.50561	1.0276	.05213	10.247
#3	.41546	10.455	.40801	.50471	1.0211	.05209	10.235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05225**	**.20370**	**.51712**	**.52549**	**4.0444**	**49.392**	**1.0301**
Stddev	.00031	.00034	.00175	.00197	.0184	.117	.0048
%RSD	.59442	.16603	.33927	.37570	.45604	.23752	.46659
#1	.05229	.20396	.51906	.52418	4.0394	49.465	1.0330
#2	.05254	.20382	.51666	.52776	4.0648	49.455	1.0327
#3	.05192	.20332	.51564	.52452	4.0290	49.257	1.0245
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.7951**	**.51327**	**1.0423**	**50.236**	**.51912**	**10.208**	**.51997**
Stddev	.0472	.00504	.0084	.169	.00170	.017	.00372
%RSD	.48165	.98200	.80990	.33677	.32826	.16636	.71476
#1	9.7523	.51223	1.0511	50.262	.52046	10.219	.52035
#2	9.7875	.51875	1.0343	50.391	.51968	10.189	.51607
#3	9.8457	.50883	1.0415	50.056	.51720	10.217	.52348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 17:18:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2238**	**.40709**	**5.2468**	**1.0260**	**1.0230**	**1.0304**	**.52875**
Stddev	.0084	.00511	.0098	.0012	.0023	.0127	.00327
%RSD	.68659	1.2545	.18586	.11540	.22459	1.2311	.61859
#1	1.2260	.40344	5.2580	1.0271	1.0231	1.0165	.53252
#2	1.2308	.40491	5.2428	1.0262	1.0252	1.0415	.52673
#3	1.2145	.41292	5.2398	1.0248	1.0206	1.0331	.52699
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0570**	**1.0310**	F **3.0075**
Stddev	.0056	.0001	.0207
%RSD	.53103	.00939	.68856
#1	1.0633	1.0311	3.0004
#2	1.0553	1.0309	3.0308
#3	1.0525	1.0310	2.9913
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9557.2**	**57623.**	**2979.5**
Stddev	9.7	193.	16.3
%RSD	.10109	.33465	.54600
#1	9546.7	57405.	2979.8
#2	9565.7	57771.	2963.0
#3	9559.4	57693.	2995.6

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 17:21:42 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**-.00563**	**.00200**	**-.00100**	**.00189**	**.00009**	**-.01127**	**-.00004**
Stddev	.00104	.00334	.00233	.00184	.00120	.00004	.03123	.00010
%RSD	1246.5	59.297	116.54	184.11	63.245	40.940	277.20	226.69
#1	-.00074	-.00335	.00466	-.00138	.00302	.00011	-.03377	.00004
#2	-.00027	-.00407	.00108	-.00263	.00202	.00005	.02439	-.00015
#3	.00126	-.00946	.00027	.00100	.00064	.00010	-.02442	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**.00048**	**.00089**	**.00955**	**-.03243**	**.00071**	**-.01124**	**-.00013**
Stddev	.00017	.00075	.00043	.01226	.03763	.00268	.07316	.00129
%RSD	103.61	157.05	48.720	128.38	116.03	378.57	650.98	975.30
#1	.00002	.00095	.00059	-.00410	-.06003	-.00175	-.02665	-.00039
#2	.00035	.00087	.00069	.01962	.01043	.00031	-.07547	-.00128
#3	.00012	-.00039	.00138	.01314	-.04771	.00356	.06840	.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00323**	**.02898**	**-.00046**	**.00432**	**.00328**	**.00454**	**.00410**	**-.00425**
Stddev	.00029	.02008	.00095	.00359	.00221	.00123	.00133	.00064
%RSD	9.1168	69.292	208.78	82.910	67.490	26.995	32.528	15.135
#1	.00298	.02490	-.00038	.00845	.00352	.00323	.00275	-.00470
#2	.00356	.01126	-.00144	.00261	.00095	.00566	.00541	-.00351
#3	.00316	.05079	.00046	.00192	.00536	.00474	.00413	-.00454
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 17:21:42 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	.00021	.00375	-.00110	.00108	-.00009	.00393
Stddev	.00059	.00011	.00446	.00333	.00027	.00003	.00087
%RSD	86.694	51.296	119.05	302.86	25.045	36.058	22.188
#1	.00135	.00012	.00567	.00135	.00136	-.00006	.00491
#2	.00024	.00018	-.00135	.00024	.00107	-.00012	.00363
#3	.00044	.00033	.00692	-.00489	.00082	-.00008	.00324
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9706.7	59138.	3007.6
Stddev	9.6	122.	14.5
%RSD	.09901	.20648	.48341
#1	9697.1	58997.	2992.2
#2	9716.3	59217.	3009.4
#3	9706.6	59200.	3021.1

Approved: June 27, 2016

Sample Name: LLCCV Acquired: 6/25/2016 17:25:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00682	.16326	.00787	.08110	.01015	.00172	.37504	.00080
Stddev	.00230	.01176	.00393	.00058	.00060	.00002	.03274	.00014
%RSD	33.789	7.2031	49.909	.72089	5.8834	1.2548	8.7301	17.457
#1	.00456	.16635	.01239	.08173	.01084	.00173	.33805	.00070
#2	.00916	.17317	.00587	.08058	.00985	.00173	.40031	.00075
#3	.00674	.15026	.00534	.08099	.00976	.00169	.38675	.00096
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00446	.00390	.00484	.09497	.71355	.08241	.33888	.00741
Stddev	.00036	.00087	.00066	.01610	.00812	.00379	.00870	.00176
%RSD	8.1660	22.291	13.622	16.951	1.1379	4.5949	2.5673	23.707
#1	.00488	.00490	.00494	.08463	.70937	.08497	.33660	.00920
#2	.00426	.00332	.00413	.08675	.70838	.08419	.34850	.00734
#3	.00424	.00348	.00544	.11352	.72291	.07806	.33155	.00569
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00855	.40833	.01678	.78916	.01199	.08269	.02089	.77549
Stddev	.00007	.02661	.00076	.00972	.00016	.00111	.00270	.00482
%RSD	.82014	6.5175	4.5074	1.2317	1.3733	1.3390	12.938	.62171
#1	.00856	.42291	.01686	.80033	.01215	.08397	.01985	.78057
#2	.00847	.42447	.01749	.78261	.01182	.08216	.01886	.77494
#3	.00861	.37762	.01598	.78454	.01200	.08195	.02396	.77097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LLCCV Acquired: 6/25/2016 17:25:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40481	.04214	.02257	.15413	.00994	.01699	.13476
Stddev	.00262	.00003	.00404	.00144	.00108	.00007	.00396
%RSD	.64734	.07891	17.895	.93373	10.832	.40613	2.9378
#1	.40763	.04217	.02259	.15502	.01117	.01705	.13268
#2	.40435	.04210	.02661	.15491	.00942	.01692	.13226
#3	.40245	.04214	.01853	.15247	.00922	.01700	.13932
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9757.6	59331.	3007.6
Stddev	3.7	156.	34.2
%RSD	.03744	.26375	1.1357
#1	9754.3	59400.	3008.1
#2	9757.0	59152.	3041.5
#3	9761.5	59441.	2973.2

Approved: June 27, 2016

Sample Name: PBW Y5 Acquired: 6/25/2016 17:29:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00185	.00116	-.00112	-.00084	.00120	.00011	-.01961	-.00006
Stddev	.00045	.01041	.00198	.00240	.00080	.00010	.05200	.00016
%RSD	24.231	897.41	176.31	284.10	67.234	89.198	265.17	288.76
#1	.00153	-.00604	-.00020	.00070	.00046	.00020	.01383	-.00024
#2	.00236	-.00358	.00023	-.00360	.00107	.00014	-.07952	.00007
#3	.00166	.01310	-.00339	.00037	.00206	.00000	.00686	.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	-.00018	.00105	.03412	-.07407	.00236	.02694	.00162
Stddev	.00024	.00064	.00070	.02542	.08098	.00211	.02742	.00224
%RSD	248.33	362.92	67.168	74.514	109.32	89.477	101.81	137.94
#1	.00030	-.00083	.00024	.00498	-.16192	.00417	.01237	.00092
#2	.00016	-.00014	.00146	.05181	-.05788	.00285	.00987	.00413
#3	-.00017	.00044	.00145	.04557	-.00242	.00004	.05857	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	.01025	-.00077	.00507	.00386	-.00192	-.00109	.00437
Stddev	.00004	.01479	.00185	.00580	.00053	.00084	.00245	.00068
%RSD	28.058	144.27	239.74	114.27	13.817	43.798	224.68	15.497
#1	-.00010	.02026	-.00256	.00797	.00348	-.00273	.00112	.00408
#2	-.00015	-.00674	.00113	.00885	.00447	-.00198	-.00067	.00389
#3	-.00017	.01724	-.00088	-.00160	.00363	-.00105	-.00372	.00515
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: PBW Y5 Acquired: 6/25/2016 17:29:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	.00044	.00538	-.00184	.00071	.00062	.00198
Stddev	.00057	.00040	.00350	.00250	.00039	.00016	.00115
%RSD	73.146	89.773	65.128	135.94	54.397	26.345	58.223
#1	.00143	.00035	.00942	-.00427	.00062	.00079	.00279
#2	.00040	.00088	.00331	.00073	.00114	.00048	.00066
#3	.00049	.00010	.00340	-.00198	.00038	.00058	.00249
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9880.3	60109.	3027.1
Stddev	31.5	73.	6.6
%RSD	.31885	.12179	.21761
#1	9847.3	60149.	3030.6
#2	9910.1	60154.	3019.5
#3	9883.5	60025.	3031.2

Approved: June 27, 2016

Sample Name: LCSW Y5 Acquired: 6/25/2016 17:33:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18967**	**4.7620**	**.18828**	**.90013**	**.47555**	**.02395**	**4.7950**	**.02373**
Stddev	.00250	.0081	.00104	.00471	.00273	.00006	.0213	.00018
%RSD	1.3192	.17078	.55148	.52284	.57347	.24848	.44480	.74408
#1	.18907	4.7578	.18718	.89893	.47827	.02388	4.7819	.02392
#2	.19242	4.7714	.18841	.90532	.47282	.02399	4.8196	.02370
#3	.18753	4.7569	.18924	.89614	.47557	.02397	4.7835	.02357
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09489**	**.23803**	**.24292**	**1.9123**	**22.817**	**.48875**	**4.5669**	**.24181**
Stddev	.00039	.00120	.00156	.0298	.036	.00284	.0465	.00007
%RSD	.41346	.50457	.64104	1.5597	.15629	.58110	1.0173	.02751
#1	.09520	.23794	.24291	1.9317	22.780	.48603	4.5750	.24188
#2	.09501	.23927	.24447	1.8779	22.852	.49170	4.5170	.24174
#3	.09445	.23687	.24136	1.9272	22.818	.48851	4.6088	.24180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49027**	**23.490**	**.24091**	**4.5553**	**.24063**	**.56646**	**.18382**	**2.3525**
Stddev	.00145	.113	.00040	.0084	.00352	.00190	.00239	.0014
%RSD	.29550	.48187	.16805	.18553	1.4632	.33509	1.2995	.06062
#1	.48963	23.608	.24065	4.5528	.24014	.56531	.18109	2.3541
#2	.49193	23.382	.24137	4.5647	.24437	.56542	.18555	2.3519
#3	.48925	23.480	.24069	4.5484	.23738	.56865	.18482	2.3515
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LCSW Y5 Acquired: 6/25/2016 17:33:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47085**	**.48454**	**.47923**	**.24546**	**.48968**	**.47202**	**.01198**
Stddev	.00082	.00070	.00116	.00117	.00078	.00042	.00247
%RSD	.17390	.14504	.24256	.47677	.15993	.08855	20.639
#1	.47170	.48509	.47789	.24652	.48877	.47178	.00945
#2	.47079	.48375	.47984	.24421	.49011	.47251	.01208
#3	.47006	.48479	.47995	.24566	.49015	.47178	.01439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9888.6**	**60001.**	**3090.1**
Stddev	19.1	149.	26.5
%RSD	.19299	.24892	.85667
#1	9894.9	60052.	3063.1
#2	9867.1	59834.	3091.3
#3	9903.7	60119.	3116.0

Approved: June 27, 2016

Sample Name: F BLANK Acquired: 6/25/2016 17:37:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00166	-.00148	.00090	.00227	.00163	.00011	-.00468	.00008
Stddev	.00130	.00490	.00188	.00068	.00037	.00003	.02546	.00022
%RSD	78.305	330.55	208.29	29.974	22.968	25.204	544.18	269.24
#1	.00033	-.00239	.00275	.00286	.00197	.00009	-.03398	.00015
#2	.00173	.00381	-.00100	.00243	.00123	.00014	.01206	.00026
#3	.00293	-.00586	.00096	.00153	.00167	.00010	.00788	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.00058	.00129	.04476	.01060	-.00161	-.05710	.00063
Stddev	.00029	.00122	.00029	.02153	.02075	.00622	.06303	.00318
%RSD	276.09	211.55	22.793	48.099	195.81	387.03	110.39	502.59
#1	-.00039	.00184	.00121	.03412	-.00619	.00062	-.09553	.00029
#2	.00018	-.00059	.00161	.06953	.03381	.00319	-.09140	.00397
#3	-.00010	.00048	.00104	.03061	.00418	-.00863	.01564	-.00236
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.05677	-.00011	.00316	.00576	-.00381	.00560	-.00010
Stddev	.00040	.03222	.00050	.00162	.00079	.00329	.00231	.00141
%RSD	72.047	56.761	453.37	51.247	13.705	86.399	41.256	1388.8
#1	.00085	.07680	-.00069	.00292	.00611	-.00013	.00434	-.00092
#2	.00073	.01960	.00014	.00168	.00631	-.00483	.00420	-.00091
#3	.00010	.07391	.00021	.00489	.00485	-.00647	.00827	.00153
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: F BLANK Acquired: 6/25/2016 17:37:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.00021	-.00396	-.00081	.00112	.00164	.00166
Stddev	.00084	.00011	.00377	.00288	.00053	.00013	.00011
%RSD	1212.1	52.839	95.183	357.63	47.087	8.1028	6.9152
#1	-.00082	.00025	-.00813	-.00413	.00144	.00151	.00159
#2	.00085	.00029	-.00300	.00065	.00141	.00165	.00179
#3	.00018	.00008	-.00077	.00106	.00051	.00177	.00159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10015.	61314.	3090.8
Stddev	16.	177.	23.0
%RSD	.15522	.28891	.74279
#1	10012.	61143.	3064.6
#2	10032.	61303.	3107.1
#3	10001.	61497.	3100.8

Approved: June 27, 2016

Sample Name: L1606098602 Acquired: 6/25/2016 17:41:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	-.00042	-.00040	.09099	.02315	.00010	31.081	-.00006
Stddev	.00141	.00402	.00168	.00026	.00060	.00002	.292	.00002
%RSD	160.55	951.46	416.45	.28845	2.5949	20.817	.93935	37.551
#1	.00197	.00339	-.00222	.09093	.02306	.00008	31.173	-.00006
#2	-.00072	-.00463	.00109	.09127	.02259	.00012	30.754	-.00004
#3	.00139	-.00003	-.00008	.09076	.02379	.00010	31.315	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.00059	.00094	.04555	.98402	.01199	5.7014	.03480
Stddev	.00048	.00016	.00041	.01573	.08850	.00357	.0718	.00212
%RSD	197.55	26.299	43.232	34.544	8.9935	29.756	1.2595	6.0810
#1	.00072	.00042	.00054	.02747	.88485	.01459	5.6202	.03718
#2	-.00024	.00064	.00135	.05303	1.0122	.01345	5.7566	.03314
#3	.00026	.00072	.00092	.05614	1.0550	.00792	5.7274	.03406
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00142	119.95	.00080	.00488	.00205	-.00278	-.00166	3.2347
Stddev	.00007	.78	.00132	.00386	.00179	.00227	.00673	.0109
%RSD	4.5853	.65032	165.26	79.044	87.096	81.844	406.14	.33815
#1	.00137	120.20	.00201	.00062	.00137	-.00037	-.00009	3.2461
#2	.00149	119.07	.00100	.00813	.00409	-.00489	.00415	3.2336
#3	.00140	120.57	-.00061	.00590	.00071	-.00307	-.00903	3.2243
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098602 Acquired: 6/25/2016 17:41:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00169	.54147	-.00161	-.00445	.00062	.00187	.00166
Stddev	.00060	.00457	.00418	.00188	.00027	.00011	.00091
%RSD	35.360	.84355	259.35	42.200	43.191	5.8148	54.635
#1	.00106	.54395	-.00040	-.00269	.00035	.00198	.00205
#2	.00225	.53620	.00182	-.00642	.00063	.00186	.00062
#3	.00175	.54425	-.00626	-.00422	.00089	.00176	.00230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9793.0	59457.	3063.6
Stddev	12.2	310.	25.9
%RSD	.12488	.52191	.84399
#1	9783.4	59142.	3057.4
#2	9788.8	59467.	3092.0
#3	9806.7	59762.	3041.4

Approved: June 27, 2016

Sample Name: L1606098604 Acquired: 6/25/2016 17:45:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00188**	**.00192**	**.00240**	**.01933**	**.01606**	**.00017**	**258.27**
Stddev	.00168	.00663	.00025	.00142	.00064	.00002	.74
%RSD	89.608	344.23	10.527	7.3208	4.0034	12.550	.28551
#1	.00265	-.00052	.00267	.01828	.01569	.00019	258.08
#2	.00303	-.00313	.00217	.01877	.01568	.00016	257.65
#3	-.00005	.00943	.00237	.02094	.01680	.00015	259.09
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00045**	**.00038**	**.00085**	**.01097**	**.02808**	**1.7243**	**.01739**
Stddev	.00023	.00042	.00027	.00107	.01426	.0758	.00077
%RSD	50.915	110.30	31.401	9.7605	50.795	4.3949	4.4280
#1	.00057	.00083	.00065	.01199	.02723	1.7078	.01656
#2	.00019	.00033	.00115	.00986	.01426	1.6581	.01808
#3	.00061	-.00001	.00075	.01107	.04275	1.8069	.01753
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**67.436**	**1.3917**	**.00099**	**14.380**	**.00387**	**.00116**	**.00177**
Stddev	.211	.0043	.00004	.031	.00051	.00485	.00143
%RSD	.31235	.30797	4.3492	.21337	13.178	419.65	80.619
#1	67.195	1.3899	.00099	14.411	.00414	.00253	.00287
#2	67.533	1.3886	.00103	14.350	.00328	-.00423	.00229
#3	67.581	1.3966	.00095	14.377	.00419	.00517	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 27, 2016

Sample Name: L1606098604 Acquired: 6/25/2016 17:45:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00130**	**.00146**	**3.7576**	**.00044**	**1.2471**	F **-.03982**	**-.00203**
Stddev	.00495	.00434	.0110	.00062	.0034	.00406	.00082
%RSD	381.66	297.39	.29276	142.20	.26857	10.186	40.503
#1	-.00325	.00313	3.7635	.00113	1.2483	-.04298	-.00122
#2	.00433	.00472	3.7644	.00025	1.2433	-.03524	-.00200
#3	-.00498	-.00347	3.7449	-.00007	1.2496	-.04122	-.00286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00050**	**.03051**	**.00151**
Stddev	.00029	.00016	.00074
%RSD	57.554	.53953	48.929
#1	-.00084	.03044	.00164
#2	-.00033	.03070	.00216
#3	-.00034	.03040	.00071
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9610.5**	**58897.**	**3044.6**
Stddev	3.8	97.	5.6
%RSD	.03917	.16551	.18408
#1	9614.6	58944.	3043.4
#2	9607.2	58961.	3050.7
#3	9609.7	58785.	3039.7

Approved: June 27, 2016

Sample Name: L1606098606 Acquired: 6/25/2016 17:48:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00223	.00972	-.00038	.01373	.06613	.00026	77.440	.00018
Stddev	.00105	.00309	.00132	.00205	.00021	.00009	.075	.00021
%RSD	47.129	31.833	346.72	14.955	.32162	33.087	.09643	116.74
#1	.00235	.00691	-.00086	.01602	.06623	.00027	77.417	.00042
#2	.00112	.00920	-.00139	.01205	.06589	.00034	77.379	.00001
#3	.00321	.01303	.00111	.01311	.06628	.00017	77.523	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00039	.00108	.01311	.03469	1.0666	.00528	22.814	.00226
Stddev	.00015	.00032	.00053	.01962	.0266	.00092	.288	.00095
%RSD	37.987	29.419	4.0055	56.546	2.4929	17.478	1.2638	41.753
#1	.00056	.00082	.01330	.03776	1.0701	.00541	22.650	.00309
#2	.00027	.00143	.01252	.05259	1.0384	.00430	22.645	.00123
#3	.00036	.00097	.01352	.01372	1.0912	.00613	23.147	.00247
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	16.230	.00086	.01073	.00099	-.00405	.00160	2.3863
Stddev	.00023	.056	.00046	.00069	.00181	.00317	.00143	.0169
%RSD	59.834	.34372	53.276	6.4188	182.38	78.406	89.367	.70593
#1	.00032	16.197	.00073	.01029	.00246	-.00129	-.00004	2.4028
#2	.00063	16.198	.00137	.01153	-.00103	-.00752	.00258	2.3871
#3	.00019	16.294	.00048	.01038	.00155	-.00333	.00227	2.3691
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098606 Acquired: 6/25/2016 17:48:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00004**	**.39726**	**-.00928**	**-.00135**	**-.00044**	**.03812**	**.00202**
Stddev	.00081	.00077	.00327	.00251	.00044	.00033	.00118
%RSD	1967.6	.19375	35.277	185.96	101.24	.85896	58.324
#1	.00088	.39645	-.00551	-.00111	-.00048	.03844	.00108
#2	-.00002	.39799	-.01103	.00103	.00002	.03814	.00334
#3	-.00074	.39735	-.01131	-.00397	-.00086	.03779	.00164
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9875.4**	**60112.**	**3085.9**
Stddev	17.7	60.	4.4
%RSD	.17969	.09972	.14239
#1	9863.6	60084.	3084.9
#2	9866.7	60181.	3090.7
#3	9895.8	60072.	3082.1

Approved: June 27, 2016

Sample Name: L1606098608 Acquired: 6/25/2016 17:52:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.00115	.00027	.01585	.03262	.00011	84.217	.00013
Stddev	.00235	.00513	.00111	.00136	.00141	.00004	.314	.00017
%RSD	2475.5	446.86	409.02	8.5842	4.3250	37.715	.37277	125.68
#1	-.00262	.00404	-.00099	.01740	.03376	.00010	84.484	.00019
#2	.00142	-.00477	.00110	.01531	.03104	.00016	84.297	.00026
#3	.00149	.00417	.00071	.01485	.03305	.00008	83.871	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	.00177	.00567	.03434	1.2401	.01415	23.228	.02727
Stddev	.00046	.00068	.00058	.01787	.0425	.00095	.227	.00106
%RSD	299.90	38.444	10.195	52.028	3.4256	6.6956	.97712	3.8827
#1	-.00049	.00241	.00506	.05413	1.2665	.01352	23.122	.02850
#2	.00037	.00184	.00573	.01939	1.1911	.01369	23.489	.02663
#3	-.00034	.00105	.00621	.02950	1.2628	.01524	23.073	.02669
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	12.660	.00033	.00413	.00179	-.00334	-.00002	3.4869
Stddev	.00017	.055	.00044	.00392	.00093	.00378	.00639	.0225
%RSD	23.632	.43231	134.67	94.801	51.837	113.14	36088.	.64396
#1	.00093	12.716	.00084	.00852	.00134	-.00400	-.00400	3.4968
#2	.00069	12.657	.00002	.00099	.00117	-.00675	-.00341	3.5027
#3	.00059	12.607	.00013	.00288	.00285	.00073	.00736	3.4612
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098608 Acquired: 6/25/2016 17:52:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	**.83876**	**-.00998**	**-.00331**	**.00001**	**.01681**	**.00058**
Stddev	.00022	.00442	.00442	.00242	.00077	.00018	.00259
%RSD	112.09	.52651	44.282	73.168	6824.2	1.0650	446.63
#1	-.00039	.84240	-.01091	-.00183	-.00011	.01673	-.00103
#2	-.00022	.84004	-.00517	-.00610	-.00069	.01701	.00357
#3	.00004	.83385	-.01387	-.00199	.00083	.01668	-.00080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9863.7**	**59966.**	**3069.4**
Stddev	33.8	107.	16.4
%RSD	.34299	.17793	.53396
#1	9879.3	59844.	3052.8
#2	9824.9	60042.	3069.7
#3	9886.9	60012.	3085.6

Approved: June 27, 2016

Sample Name: L1606098608PS Acquired: 6/25/2016 17:56:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574216-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19012	4.7962	.18985	.92761	.50579	.02416	80.589	.02376
Stddev	.00115	.0181	.00324	.00188	.00153	.00010	.509	.00031
%RSD	.60416	.37710	1.7085	.20237	.30247	.42369	.63122	1.3080
#1	.18881	4.7997	.18690	.92863	.50534	.02415	80.494	.02389
#2	.19096	4.8123	.19332	.92876	.50750	.02427	81.138	.02341
#3	.19058	4.7766	.18933	.92544	.50454	.02406	80.134	.02399
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09205	.23624	.24131	1.9065	24.291	.50517	25.434	.26103
Stddev	.00018	.00146	.00130	.0143	.039	.00496	.150	.00626
%RSD	.19260	.61641	.53797	.74911	.16017	.98165	.59175	2.3977
#1	.09210	.23659	.24071	1.9177	24.287	.49968	25.563	.26590
#2	.09186	.23464	.24280	1.9113	24.254	.50647	25.268	.26320
#3	.09221	.23749	.24041	1.8904	24.332	.50934	25.470	.25397
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49345	34.822	.23345	4.6884	.23609	.56850	.18268	5.5114
Stddev	.00019	.169	.00142	.0142	.00258	.00539	.00604	.0369
%RSD	.03860	.48533	.60979	.30359	1.0940	.94754	3.3047	.66920
#1	.49323	34.790	.23475	4.6782	.23789	.57472	.18356	5.4689
#2	.49357	35.005	.23367	4.6823	.23725	.56528	.18824	5.5341
#3	.49354	34.671	.23193	4.7047	.23313	.56551	.17626	5.5313
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098608PS Acquired: 6/25/2016 17:56:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574216-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47094**	**1.2232**	**.47334**	**.23988**	**.49331**	**.47631**	**.00522**
Stddev	.00189	.0075	.00962	.00117	.00125	.00347	.00156
%RSD	.40190	.61543	2.0323	.48785	.25347	.72879	29.825
#1	.47068	1.2227	.46319	.24082	.49476	.47230	.00351
#2	.47295	1.2310	.48233	.23857	.49254	.47818	.00558
#3	.46920	1.2160	.47451	.24025	.49265	.47845	.00657
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9831.9**	**59526.**	**3075.8**
Stddev	15.2	194.	19.0
%RSD	.15421	.32611	.61679
#1	9829.8	59604.	3066.0
#2	9817.9	59305.	3063.8
#3	9848.0	59669.	3097.7

Approved: June 27, 2016

Sample Name: L1606098608SDL Acquired: 6/25/2016 18:00:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574216-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00260	-.00514	.00187	.00508	.00868	.00012	17.605	-.00015
Stddev	.00156	.01146	.00424	.00200	.00063	.00008	.142	.00010
%RSD	60.035	222.87	226.36	39.430	7.2120	66.284	.80739	66.159
#1	.00437	.00780	.00118	.00739	.00923	.00013	17.451	-.00025
#2	.00143	-.00924	.00642	.00396	.00881	.00020	17.731	-.00007
#3	.00199	-.01399	-.00198	.00389	.00800	.00004	17.633	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	.00006	.00193	.02399	.21059	-.00038	4.9921	.00509
Stddev	.00017	.00044	.00078	.00583	.02318	.00216	.0797	.00111
%RSD	97.856	772.57	40.443	24.318	11.008	572.98	1.5970	21.792
#1	-.00004	-.00041	.00282	.01859	.23319	.00193	5.0036	.00623
#2	-.00037	.00046	.00138	.03017	.18686	-.00072	4.9072	.00402
#3	-.00011	.00012	.00158	.02319	.21171	-.00234	5.0654	.00500
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	2.6677	-.00071	.00513	.00009	-.00286	-.00058	.72991
Stddev	.00017	.0114	.00035	.00552	.00151	.00279	.00302	.00273
%RSD	51.097	.42653	49.400	107.62	1685.9	97.489	522.92	.37384
#1	.00017	2.6710	-.00044	.00122	.00180	.00001	.00149	.72939
#2	.00033	2.6550	-.00058	.01144	-.00102	-.00304	-.00405	.73285
#3	.00051	2.6770	-.00110	.00273	-.00051	-.00555	.00083	.72747
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098608SDL Acquired: 6/25/2016 18:00:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574216-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.17684**	**.00226**	**.00019**	**.00052**	**.00413**	**.00011**
Stddev	.00027	.00102	.00232	.00368	.00057	.00014	.00068
%RSD	464.39	.57572	102.44	1951.0	110.67	3.3962	623.50
#1	-.00013	.17748	.00403	.00128	.00008	.00397	.00059
#2	.00024	.17567	-.00036	.00320	.00031	.00420	.00041
#3	-.00028	.17737	.00312	-.00392	.00117	.00423	-.00067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9896.0**	**60261.**	**3042.3**
Stddev	25.0	81.	28.3
%RSD	.25242	.13391	.92921
#1	9907.7	60289.	3040.8
#2	9913.0	60324.	3071.3
#3	9867.3	60170.	3014.9

Approved: June 27, 2016

Sample Name: L1606098608SDL Acquired: 6/25/2016 18:04:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574216-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00175**	**-.00807**	**-.00063**	**-.00078**	**.00182**	**.00014**	**3.3399**	**-.00019**
Stddev	.00147	.00382	.00127	.00273	.00016	.00003	.0946	.00023
%RSD	83.969	47.279	200.74	348.35	8.5330	23.588	2.8330	121.57
#1	.00097	-.00874	.00010	.00038	.00196	.00018	3.2721	-.00045
#2	.00084	-.00396	.00010	.00117	.00166	.00011	3.4480	-.00012
#3	.00344	-.01151	-.00210	-.00390	.00185	.00014	3.2995	-.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**-.00037**	**.00107**	**.01769**	**-.08284**	**.00119**	**.94569**	**.00052**
Stddev	.00047	.00133	.00130	.01702	.09737	.00358	.05932	.00055
%RSD	1445.4	360.33	120.72	96.212	117.53	302.26	6.2728	105.20
#1	.00035	-.00086	.00167	-.00174	-.18470	.00532	.88043	.00057
#2	-.00050	-.00138	-.00041	.02995	-.07314	-.00085	.96028	.00105
#3	.00025	.00113	.00196	.02486	.00931	-.00092	.99635	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00012**	**.49987**	**-.00021**	**.00755**	**.00303**	**-.00541**	**.00850**	**.13812**
Stddev	.00032	.04592	.00020	.00386	.00188	.00314	.00116	.00966
%RSD	265.16	9.1856	96.762	51.054	62.049	58.070	13.660	6.9939
#1	.00001	.44687	-.00020	.01173	.00086	-.00531	.00838	.12921
#2	-.00049	.52761	-.00041	.00680	.00410	-.00232	.00740	.13676
#3	.00011	.52513	-.00001	.00413	.00413	-.00859	.00972	.14839
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098608SDL Acquired: 6/25/2016 18:04:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574216-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00039**	**.03350**	**.00349**	**.00073**	**.00046**	**.00106**	**.00161**
Stddev	.00032	.00105	.00672	.00069	.00093	.00001	.00112
%RSD	80.289	3.1425	192.33	93.894	202.19	.93440	69.701
#1	.00063	.03282	.00553	-.00006	-.00031	.00105	.00058
#2	.00051	.03471	.00896	.00114	.00020	.00107	.00146
#3	.00004	.03296	-.00401	.00113	.00149	.00107	.00281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10400.**	**61068.**	**3085.8**
Stddev	302.	416.	38.3
%RSD	2.9005	.68044	1.2414
#1	10744.	61402.	3085.7
#2	10277.	61200.	3047.5
#3	10180.	60603.	3124.1

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 18:08:15 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40600	10.196	.39897	.49353	1.0097	.05111	10.072
Stddev	.00134	.005	.00384	.00145	.0055	.00016	.108
%RSD	.32964	.04609	.96241	.29468	.54041	.30777	1.0683
#1	.40454	10.197	.40224	.49289	1.0058	.05115	10.014
#2	.40717	10.200	.39474	.49519	1.0073	.05125	10.006
#3	.40630	10.191	.39992	.49250	1.0159	.05094	10.196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05085	.19930	.50343	.51248	4.0210	48.769	1.0170
Stddev	.00016	.00069	.00173	.00042	.0444	.141	.0095
%RSD	.31221	.34558	.34304	.08145	1.1049	.29004	.93218
#1	.05072	.20005	.50491	.51259	3.9923	48.842	1.0084
#2	.05079	.19915	.50386	.51282	3.9985	48.605	1.0154
#3	.05103	.19869	.50153	.51201	4.0722	48.858	1.0271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.6470	.50568	1.0217	49.589	.50657	9.9463	.50897
Stddev	.0505	.00379	.0050	.266	.00174	.0145	.00224
%RSD	.52402	.74931	.49273	.53683	.34444	.14541	.44016
#1	9.7040	.50521	1.0275	49.574	.50855	9.9602	.50639
#2	9.6294	.50215	1.0196	49.330	.50589	9.9313	.51042
#3	9.6076	.50969	1.0181	49.862	.50527	9.9474	.51010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 18:08:15 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1949**	**.39405**	**5.1402**	**1.0022**	**1.0107**	**.99866**	**.51518**
Stddev	.0031	.00179	.0100	.0005	.0053	.01659	.00058
%RSD	.25554	.45308	.19427	.05270	.52786	1.6608	.11222
#1	1.1981	.39492	5.1482	1.0028	1.0100	1.0024	.51475
#2	1.1944	.39525	5.1290	1.0020	1.0058	.98052	.51584
#3	1.1920	.39200	5.1434	1.0018	1.0164	1.0131	.51497
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0309**	**1.0070**	F **2.9451**
Stddev	.0008	.0014	.0223
%RSD	.08066	.13880	.75803
#1	1.0316	1.0084	2.9555
#2	1.0300	1.0069	2.9195
#3	1.0311	1.0056	2.9603
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9649.2**	**58096.**	**2982.6**
Stddev	5.7	114.	17.5
%RSD	.05915	.19560	.58802
#1	9648.4	58223.	2978.9
#2	9644.0	58003.	3001.7
#3	9655.3	58062.	2967.2

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 18:11:52 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00062**	**.00113**	**.00060**	**-.00134**	**.00269**	**.00016**	**-.00509**	**-.00011**
Stddev	.00447	.01287	.00139	.00141	.00058	.00006	.00999	.00008
%RSD	723.56	1142.0	234.30	105.23	21.456	39.000	196.19	75.399
#1	-.00262	.00580	.00212	.00028	.00233	.00022	-.01646	-.00020
#2	.00450	-.01343	-.00061	-.00230	.00238	.00017	.00228	-.00009
#3	-.00373	.01101	.00028	-.00199	.00335	.00009	-.00109	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.00031**	**.00131**	**.01880**	**-.14052**	**-.00173**	**.03086**	**-.00243**
Stddev	.00043	.00144	.00103	.01556	.08453	.00290	.07623	.00189
%RSD	438.61	470.86	78.889	82.745	60.152	168.14	247.00	77.536
#1	.00038	.00014	.00051	.03667	-.04368	.00153	-.05463	-.00186
#2	-.00045	-.00104	.00248	.01148	-.17839	-.00266	.09175	-.00090
#3	-.00022	.00182	.00094	.00826	-.19949	-.00404	.05546	-.00454
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00375**	**-.00702**	**.00000**	**.00544**	**-.00002**	**.00180**	**.00158**	**.03715**
Stddev	.00019	.01848	.00030	.00537	.00129	.00320	.00255	.00232
%RSD	5.0585	263.40	8008.1	98.759	6600.5	177.29	161.59	6.2433
#1	.00382	-.02711	-.00030	.01149	.00142	.00145	-.00134	.03895
#2	.00354	-.00319	.00002	.00357	-.00108	.00516	.00266	.03453
#3	.00390	.00925	.00029	.00125	-.00040	-.00120	.00341	.03795
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 18:11:52 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	.00036	-.00017	-.00186	.00075	.00012	.00425
Stddev	.00040	.00044	.01020	.00315	.00028	.00007	.00095
%RSD	153.60	122.95	5879.7	169.59	36.989	59.021	22.345
#1	.00000	.00086	.00219	-.00527	.00044	.00006	.00508
#2	.00073	.00017	.00864	-.00126	.00081	.00010	.00321
#3	.00006	.00004	-.01135	.00095	.00098	.00019	.00446
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9372.1	56632.	2874.9
Stddev	24.8	50.	14.1
%RSD	.26420	.08878	.48885
#1	9350.8	56589.	2886.0
#2	9366.2	56619.	2859.1
#3	9399.3	56687.	2879.7

Approved: June 27, 2016

Sample Name: L1606098610 Acquired: 6/25/2016 18:15:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00168	.00613	.00026	.00622	.01341	.00005	115.37	.00029
Stddev	.00132	.00327	.00219	.00120	.00108	.00003	.56	.00010
%RSD	78.702	53.342	840.89	19.355	8.0675	55.551	.48696	35.866
#1	.00017	.00551	-.00222	.00662	.01310	.00009	115.81	.00019
#2	.00222	.00322	.00107	.00487	.01252	.00003	114.73	.00040
#3	.00265	.00967	.00193	.00717	.01462	.00004	115.55	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	.00098	.00166	.06083	.38326	.00831	27.726	.01242
Stddev	.00045	.00011	.00061	.01132	.08932	.00154	.200	.00158
%RSD	1035.7	11.515	36.634	18.614	23.306	18.467	.72137	12.708
#1	-.00034	.00088	.00210	.06356	.35599	.00912	27.699	.01068
#2	-.00027	.00110	.00191	.04839	.48304	.00927	27.542	.01377
#3	.00048	.00096	.00096	.07054	.31076	.00654	27.939	.01280
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	14.397	.00169	.00670	.00176	-.00418	.00480	3.9389
Stddev	.00003	.096	.00045	.00675	.00408	.00345	.00343	.0208
%RSD	3.3704	.66673	26.485	100.67	231.83	82.446	71.530	.52736
#1	.00075	14.373	.00205	.00909	-.00024	-.00395	.00094	3.9592
#2	.00074	14.315	.00119	.01193	.00646	-.00774	.00595	3.9398
#3	.00079	14.503	.00185	-.00091	-.00093	-.00086	.00752	3.9176
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098610 Acquired: 6/25/2016 18:15:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00034**	**.52737**	**-.01662**	**-.00476**	**.00053**	**.01128**	**.00653**
Stddev	.00061	.00238	.00515	.00157	.00069	.00008	.00193
%RSD	181.06	.45087	31.015	32.913	130.43	.73884	29.481
#1	-.00078	.52702	-.01240	-.00297	.00012	.01121	.00451
#2	.00036	.52519	-.01509	-.00547	.00132	.01137	.00674
#3	-.00059	.52991	-.02236	-.00585	.00014	.01126	.00835
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9795.7**	**59337.**	**3075.9**
Stddev	21.1	178.	25.1
%RSD	.21493	.29915	.81568
#1	9771.4	59262.	3048.2
#2	9807.4	59210.	3082.7
#3	9808.3	59540.	3097.0

Approved: June 27, 2016

Sample Name: L1606098612 Acquired: 6/25/2016 18:19:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00237	.00267	-.00060	.08716	.06662	.00041	142.66	.00007
Stddev	.00073	.00275	.00337	.00141	.00149	.00002	1.19	.00021
%RSD	30.688	102.87	562.71	1.6192	2.2393	3.9782	.83233	319.26
#1	.00315	.00518	-.00334	.08576	.06575	.00041	141.33	.00027
#2	.00225	-.00027	-.00161	.08858	.06577	.00039	143.01	.00007
#3	.00171	.00310	.00316	.08713	.06835	.00042	143.63	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.00135	.04528	.02649	1.6602	.01963	40.720	.03253
Stddev	.00034	.00053	.00134	.03733	.1018	.00353	.262	.00324
%RSD	339.50	39.036	2.9680	140.93	6.1325	17.994	.64244	9.9559
#1	.00034	.00170	.04668	.04343	1.6128	.02218	40.440	.02879
#2	-.00029	.00162	.04400	-.01631	1.5907	.02112	40.763	.03448
#3	.00024	.00075	.04516	.05234	1.7770	.01560	40.958	.03432
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00115	26.540	.00106	.02312	.00172	-.00084	.00204	2.4275
Stddev	.00029	.172	.00094	.00593	.00284	.00147	.00269	.0046
%RSD	25.080	.64693	88.979	25.661	164.80	174.96	131.78	.18880
#1	.00089	26.345	.00153	.02349	.00164	-.00125	.00490	2.4289
#2	.00110	26.607	.00167	.01701	.00461	-.00205	-.00043	2.4311
#3	.00146	26.668	-.00003	.02886	-.00107	.00079	.00165	2.4223
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098612 Acquired: 6/25/2016 18:19:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**1.7410**	**-.01626**	**-.00241**	**.00038**	**.05602**	**.00415**
Stddev	.00061	.0138	.00313	.00137	.00051	.00009	.00053
%RSD	273.86	.79166	19.237	56.738	134.14	.16489	12.835
#1	-.00019	1.7255	-.01265	-.00306	.00050	.05591	.00443
#2	.00092	1.7457	-.01795	-.00084	.00081	.05608	.00354
#3	-.00006	1.7519	-.01818	-.00334	-.00018	.05607	.00449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9747.5**	**58989.**	**3047.5**
Stddev	4.1	78.	13.8
%RSD	.04198	.13200	.45213
#1	9749.1	58936.	3063.4
#2	9750.6	59079.	3039.1
#3	9742.9	58952.	3040.0

Approved: June 27, 2016

Sample Name: L1606098614 Acquired: 6/25/2016 18:23:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00279	.01008	-.00066	.03390	.03124	.00010	196.20	.00021
Stddev	.00112	.00383	.00147	.00206	.00013	.00007	.85	.00008
%RSD	40.043	38.038	221.13	6.0906	.42986	73.782	.43251	39.178
#1	.00183	.00766	.00090	.03506	.03108	.00016	195.71	.00030
#2	.00402	.00807	-.00201	.03513	.03132	.00002	195.70	.00014
#3	.00253	.01449	-.00089	.03152	.03131	.00013	197.18	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.00088	.00840	.02428	2.9211	.02334	75.647	.04008
Stddev	.00023	.00045	.00064	.00605	.0291	.00193	.677	.00318
%RSD	446.71	50.770	7.6701	24.929	.99693	8.2676	.89445	7.9254
#1	-.00007	.00063	.00780	.03006	2.8958	.02251	74.950	.04023
#2	.00031	.00062	.00908	.02477	2.9529	.02197	75.691	.03683
#3	-.00009	.00140	.00832	.01799	2.9145	.02555	76.301	.04318
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	22.556	.00040	.01184	.00385	-.00016	.00418	3.4833
Stddev	.00033	.097	.00156	.00464	.00193	.00051	.00681	.0215
%RSD	46.348	.43032	390.32	39.236	50.052	315.18	162.82	.61768
#1	.00068	22.526	-.00110	.00655	.00167	-.00006	.01171	3.5066
#2	.00040	22.478	.00029	.01372	.00533	-.00072	-.00154	3.4792
#3	.00106	22.665	.00201	.01524	.00455	.00029	.00237	3.4641
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098614 Acquired: 6/25/2016 18:23:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**2.3670**	**-.02425**	**-.00232**	**-.00024**	**.02160**	**.00232**
Stddev	.00092	.0076	.00398	.00117	.00100	.00003	.00161
%RSD	715.81	.32195	16.401	50.456	415.47	.12320	69.325
#1	.00091	2.3659	-.02580	-.00236	.00091	.02157	.00413
#2	-.00082	2.3599	-.02722	-.00113	-.00075	.02159	.00107
#3	-.00048	2.3751	-.01973	-.00348	-.00089	.02163	.00175
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9640.5**	**58425.**	**3058.6**
Stddev	20.6	100.	4.7
%RSD	.21337	.17110	.15390
#1	9631.4	58473.	3059.7
#2	9664.1	58492.	3062.6
#3	9626.1	58310.	3053.4

Approved: June 27, 2016

Sample Name: L1606098616 Acquired: 6/25/2016 18:27:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00115	.03265	.00256	.11861	.01251	.00029	229.75	.00020
Stddev	.00195	.00899	.00533	.00161	.00061	.00014	.36	.00016
%RSD	169.27	27.532	208.27	1.3580	4.8819	47.504	.15530	78.536
#1	.00069	.04218	-.00197	.11885	.01280	.00014	229.65	.00038
#2	-.00053	.02433	.00844	.12008	.01292	.00030	229.45	.00006
#3	.00329	.03143	.00122	.11689	.01181	.00042	230.15	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00062	.00178	.06744	.03108	3.2126	.03682	84.360	.29574
Stddev	.00023	.00069	.00047	.01537	.1307	.00386	.426	.00133
%RSD	37.410	38.666	.69994	49.454	4.0677	10.480	.50488	.44809
#1	.00042	.00192	.06781	.02007	3.0741	.03526	83.896	.29633
#2	.00087	.00239	.06691	.04863	3.2299	.03400	84.450	.29422
#3	.00056	.00104	.06760	.02452	3.3338	.04122	84.734	.29667
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00072	71.143	.00123	.03078	.00375	-.00200	.00018	5.1619
Stddev	.00027	.049	.00055	.00199	.00114	.00238	.00481	.0107
%RSD	37.642	.06818	44.575	6.4658	30.424	119.08	2715.0	.20775
#1	.00061	71.192	.00158	.03108	.00244	-.00009	.00517	5.1511
#2	.00102	71.095	.00060	.02865	.00425	-.00467	-.00442	5.1621
#3	.00051	71.141	.00151	.03260	.00456	-.00125	-.00023	5.1725
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098616 Acquired: 6/25/2016 18:27:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	6.5212	-.02963	-.00177	-.00109	.08946	.00332
Stddev	.00060	.0079	.00654	.00230	.00079	.00019	.00190
%RSD	161.30	.12151	22.085	130.49	72.258	.21177	57.202
#1	.00105	6.5204	-.02657	.00051	-.00123	.08936	.00540
#2	.00018	6.5138	-.02518	-.00171	-.00179	.08968	.00287
#3	-.00011	6.5296	-.03715	-.00409	-.00024	.08933	.00168
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9566.8	58078.	3050.1
Stddev	16.9	52.	19.7
%RSD	.17631	.08955	.64584
#1	9563.8	58018.	3068.4
#2	9585.0	58111.	3029.2
#3	9551.7	58106.	3052.7

Approved: June 27, 2016

Sample Name: L1606098618 Acquired: 6/25/2016 18:31:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00155	-.00096	.00289	.04251	.02915	.00005	62.293	-.00011
Stddev	.00038	.00238	.00029	.00109	.00082	.00008	.092	.00019
%RSD	24.410	246.77	9.9664	2.5737	2.7985	149.80	.14819	166.73
#1	.00113	.00168	.00257	.04189	.03009	-.00003	62.335	-.00017
#2	.00185	-.00164	.00314	.04186	.02874	.00005	62.357	.00010
#3	.00168	-.00294	.00296	.04377	.02862	.00013	62.187	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00031	.00347	.01624	1.9071	.02198	20.259	.01093
Stddev	.00021	.00046	.00016	.00938	.1214	.00171	.067	.00376
%RSD	243.30	146.24	4.6588	57.772	6.3644	7.7782	.33311	34.347
#1	.00028	.00083	.00329	.00573	1.8306	.02394	20.336	.01303
#2	.00011	.00015	.00350	.01922	2.0470	.02118	20.230	.00660
#3	-.00013	-.00004	.00361	.02377	1.8435	.02082	20.211	.01318
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00102	25.999	-.00042	.00444	.00244	-.00359	.00392	3.1846
Stddev	.00023	.100	.00069	.00545	.00095	.00188	.00301	.0187
%RSD	22.864	.38558	161.73	122.87	39.121	52.433	76.809	.58628
#1	.00106	26.085	-.00101	-.00067	.00273	-.00311	.00526	3.2018
#2	.00123	26.024	.00033	.00381	.00321	-.00199	.00047	3.1874
#3	.00077	25.889	-.00059	.01018	.00137	-.00566	.00602	3.1647
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098618 Acquired: 6/25/2016 18:31:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	1.4545	-.00154	-.00233	.00037	.00832	.00208
Stddev	.00132	.0032	.00357	.00066	.00141	.00007	.00021
%RSD	228.95	.22347	232.21	28.221	386.86	.88012	10.206
#1	.00206	1.4546	-.00325	-.00241	-.00025	.00825	.00199
#2	-.00043	1.4577	-.00393	-.00294	-.00063	.00831	.00233
#3	.00009	1.4512	.00257	-.00163	.00198	.00839	.00193
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9841.2	59299.	3061.4
Stddev	105.5	272.	4.9
%RSD	1.0718	.45797	.16152
#1	9746.5	58986.	3061.4
#2	9822.2	59458.	3056.4
#3	9954.9	59454.	3066.3

Approved: June 27, 2016

Sample Name: L1606098620 Acquired: 6/25/2016 18:35:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.03312	.00066	.07608	.03474	.00017	4.5650	.00010
Stddev	.00141	.00304	.00168	.00356	.00133	.00010	.0156	.00016
%RSD	3777.7	9.1736	255.45	4.6823	3.8419	59.446	.34129	166.50
#1	-.00004	.03663	-.00075	.08018	.03521	.00029	4.5712	.00011
#2	.00149	.03142	.00252	.07372	.03577	.00014	4.5766	.00025
#3	-.00133	.03132	.00020	.07433	.03323	.00009	4.5473	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00112	.00060	.00299	.05475	.56414	.00988	1.7714	.01450
Stddev	.00021	.00082	.00143	.01752	.07965	.00243	.0462	.00322
%RSD	18.384	137.46	47.864	31.992	14.119	24.596	2.6071	22.223
#1	.00132	.00110	.00244	.06300	.59505	.00894	1.8247	.01687
#2	.00115	.00105	.00462	.03463	.62370	.00806	1.7436	.01579
#3	.00091	-.00035	.00192	.06662	.47367	.01264	1.7459	.01083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00137	251.01	-.00057	.03777	.00214	-.00589	.00108	2.0603
Stddev	.00029	.75	.00178	.00427	.00057	.00380	.00694	.0083
%RSD	21.156	.29997	313.28	11.296	26.364	64.542	640.75	.40056
#1	.00125	251.39	-.00025	.04217	.00279	-.00381	-.00651	2.0621
#2	.00170	251.50	-.00248	.03365	.00178	-.01028	.00710	2.0676
#3	.00115	250.15	.00103	.03749	.00186	-.00358	.00266	2.0514
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098620 Acquired: 6/25/2016 18:35:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00101**	**.14703**	**.00470**	**-.00231**	**.00100**	**.00923**	**.00423**
Stddev	.00046	.00057	.00299	.00179	.00041	.00019	.00094
%RSD	44.993	.38637	63.686	77.674	41.001	2.0938	22.219
#1	.00049	.14737	.00735	-.00044	.00130	.00917	.00391
#2	.00129	.14734	.00531	-.00246	.00116	.00906	.00349
#3	.00126	.14637	.00145	-.00402	.00053	.00944	.00529
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9725.3**	**58367.**	**3028.8**
Stddev	17.5	120.	15.3
%RSD	.18040	.20576	.50451
#1	9742.7	58420.	3020.7
#2	9707.6	58451.	3019.2
#3	9725.6	58230.	3046.4

Approved: June 27, 2016

Sample Name: L1606098622 Acquired: 6/25/2016 18:39:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	-.00596	.00037	.05747	.02764	.00023	127.72	.00011
Stddev	.00093	.00925	.00122	.00204	.00088	.00005	1.04	.00012
%RSD	79.226	155.22	327.64	3.5486	3.1759	23.660	.81279	108.09
#1	.00125	-.01464	.00026	.05716	.02813	.00022	127.35	.00021
#2	.00205	-.00701	-.00078	.05560	.02662	.00018	126.92	.00013
#3	.00020	.00377	.00164	.05965	.02815	.00028	128.89	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00090	.01009	.02031	2.5853	.01995	32.558	.04793
Stddev	.00056	.00109	.00042	.00894	.0945	.00518	.278	.00190
%RSD	208.67	121.92	4.1494	44.026	3.6562	25.950	.85453	3.9665
#1	.00085	.00146	.01042	.02811	2.6682	.02326	32.522	.05007
#2	.00021	-.00036	.01022	.02229	2.4824	.01399	32.299	.04730
#3	-.00026	.00160	.00962	.01055	2.6053	.02261	32.852	.04643
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	46.975	.00038	.00992	.00378	-.00381	.00198	3.5382
Stddev	.00001	.389	.00033	.00514	.00270	.00385	.00283	.0119
%RSD	1.5146	.82774	87.053	51.791	71.542	100.88	142.89	.33659
#1	.00038	46.842	.00000	.00464	.00569	-.00293	.00001	3.5245
#2	.00039	46.670	.00061	.01491	.00068	-.00048	.00522	3.5450
#3	.00039	47.413	.00052	.01022	.00497	-.00802	.00070	3.5451
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098622 Acquired: 6/25/2016 18:39:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	1.7827	-.01653	-.00317	-.00057	.00858	.00262
Stddev	.00056	.0144	.00634	.00502	.00088	.00017	.00024
%RSD	326.45	.80805	38.350	158.35	154.19	1.9458	9.0067
#1	-.00048	1.7747	-.02093	-.00538	-.00155	.00859	.00236
#2	.00051	1.7740	-.00927	.00258	.00014	.00841	.00281
#3	.00049	1.7993	-.01940	-.00671	-.00029	.00875	.00270
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9602.2	57749.	2959.9
Stddev	40.4	252.	26.3
%RSD	.42032	.43708	.88902
#1	9555.9	57561.	2977.4
#2	9630.3	57650.	2972.6
#3	9620.3	58036.	2929.6

Approved: June 27, 2016

Sample Name: L1606098624 Acquired: 6/25/2016 18:42:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00037**	**.00561**	**.00154**	**.40348**	**.02348**	**.00039**	**237.24**
Stddev	.00142	.00394	.00506	.00070	.00039	.00006	.43
%RSD	386.92	70.246	327.66	.17357	1.6661	16.452	.18001
#1	.00014	.00128	.00004	.40369	.02381	.00037	237.56
#2	-.00093	.00658	-.00259	.40270	.02305	.00046	237.41
#3	.00189	.00898	.00718	.40405	.02358	.00034	236.75
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**-.00007**	**.00152**	**.02649**	**.02448**	**5.9223**	**.01174**
Stddev	.00017	.00052	.00056	.00200	.00699	.0587	.00396
%RSD	362.68	725.31	36.507	7.5377	28.540	.99123	33.722
#1	-.00014	.00052	.00185	.02553	.03123	5.8563	.01398
#2	-.00015	-.00040	.00183	.02879	.02493	5.9416	.00717
#3	.00015	-.00034	.00088	.02516	.01728	5.9689	.01408
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**66.698**	**.32515**	**.00019**	**63.762**	**.00021**	**.01502**	**.00144**
Stddev	.426	.00095	.00039	.087	.00030	.00323	.00065
%RSD	.63897	.29073	207.41	.13653	145.82	21.500	44.732
#1	66.222	.32513	-.00023	63.794	-.00012	.01765	.00108
#2	67.045	.32421	.00055	63.829	.00049	.01601	.00219
#3	66.826	.32610	.00024	63.663	.00025	.01142	.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 27, 2016

Sample Name: L1606098624 Acquired: 6/25/2016 18:42:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00149**	**.00522**	**3.3709**	**-.00072**	**1.6690**	F **-.03355**	**-.00155**
Stddev	.00099	.00177	.0249	.00122	.0015	.00264	.00229
%RSD	66.177	33.876	.73770	169.83	.08806	7.8818	147.53
#1	-.00080	.00419	3.3514	-.00109	1.6686	-.03207	.00107
#2	-.00262	.00726	3.3989	-.00171	1.6706	-.03199	-.00316
#3	-.00106	.00421	3.3624	.00064	1.6678	-.03661	-.00256
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00040**	**.00877**	**.00210**
Stddev	.00049	.00015	.00054
%RSD	123.14	1.7509	25.986
#1	-.00082	.00894	.00208
#2	.00014	.00865	.00156
#3	-.00050	.00870	.00265
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9491.7**	**57630.**	**3009.2**
Stddev	78.4	156.	15.6
%RSD	.82592	.27138	.51996
#1	9550.0	57451.	2991.3
#2	9402.6	57694.	3015.7
#3	9522.6	57743.	3020.5

Approved: June 27, 2016

Sample Name: L1606098626 Acquired: 6/25/2016 18:46:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00327	.00679	.00038	.03972	.02631	.00014	117.32	.00023
Stddev	.00072	.00538	.00107	.00258	.00068	.00005	.34	.00019
%RSD	22.022	79.326	284.61	6.5079	2.6006	35.377	.28683	83.944
#1	.00409	.00166	-.00067	.03695	.02674	.00014	117.70	.00003
#2	.00295	.01240	.00033	.04014	.02552	.00019	117.19	.00023
#3	.00276	.00630	.00147	.04206	.02666	.00009	117.07	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.00126	.00604	.03025	1.5600	.01598	35.418	-.00162
Stddev	.00014	.00104	.00157	.00896	.0430	.00117	.155	.00177
%RSD	71.567	82.474	25.938	29.612	2.7589	7.3145	.43775	108.92
#1	.00004	.00238	.00775	.03493	1.5696	.01501	35.426	-.00126
#2	.00029	.00033	.00573	.01992	1.5974	.01567	35.569	-.00006
#3	.00026	.00107	.00466	.03588	1.5130	.01728	35.259	-.00354
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	17.994	-.00024	.00950	.00273	-.00253	.00429	2.8578
Stddev	.00029	.066	.00113	.00146	.00267	.00313	.00183	.0046
%RSD	65.363	.36928	461.23	15.318	98.010	123.57	42.598	.16060
#1	.00011	18.060	.00031	.00854	.00072	.00062	.00280	2.8530
#2	.00057	17.927	.00050	.00879	.00170	-.00564	.00374	2.8621
#3	.00066	17.996	-.00154	.01118	.00576	-.00258	.00633	2.8583
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098626 Acquired: 6/25/2016 18:46:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.95352	-.01676	-.00181	.00025	.00656	.00282
Stddev	.00004	.00361	.00400	.00055	.00086	.00005	.00124
%RSD	36.480	.37812	23.874	30.252	341.08	.79230	44.156
#1	.00017	.95765	-.01632	-.00120	.00116	.00654	.00348
#2	.00013	.95102	-.02097	-.00198	-.00055	.00661	.00138
#3	.00008	.95189	-.01300	-.00225	.00014	.00651	.00358
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9709.6	59301.	3058.5
Stddev	45.7	137.	18.4
%RSD	.47038	.23115	.60138
#1	9758.2	59149.	3039.9
#2	9703.1	59336.	3058.7
#3	9667.6	59417.	3076.7

Approved: June 27, 2016

Sample Name: L1606098628 Acquired: 6/25/2016 18:50:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00127**	**.00062**	**.00226**	**.03408**	**.02631**	**.00011**	**202.60**
Stddev	.00142	.00505	.00320	.00146	.00145	.00006	1.09
%RSD	111.97	810.26	141.74	4.2925	5.4989	52.470	.53642
#1	.00192	-.00172	.00570	.03364	.02795	.00015	202.20
#2	.00225	-.00283	-.00063	.03289	.02521	.00012	201.76
#3	-.00036	.00642	.00171	.03571	.02576	.00005	203.83
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**-.00018**	**.00230**	**.00706**	**.02884**	**3.1108**	**.02231**
Stddev	.00015	.00008	.00109	.00066	.02764	.1253	.00468
%RSD	173.92	43.590	47.288	9.3696	95.862	4.0286	20.962
#1	.00015	-.00019	.00355	.00741	.06027	3.2199	.01700
#2	-.00008	-.00010	.00186	.00630	.00830	2.9739	.02412
#3	.00019	-.00026	.00151	.00747	.01794	3.1385	.02581
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**77.982**	**.03186**	**.00054**	**22.893**	**.00124**	**.00646**	**.00417**
Stddev	.421	.00093	.00029	.135	.00089	.00201	.00077
%RSD	.53979	2.9039	53.423	.59091	71.804	31.048	18.563
#1	77.763	.03137	.00064	22.869	.00109	.00439	.00500
#2	77.715	.03128	.00078	22.771	.00220	.00660	.00405
#3	78.467	.03292	.00022	23.039	.00044	.00839	.00347
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 27, 2016

Sample Name: L1606098628 Acquired: 6/25/2016 18:50:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00202**	**.00107**	**3.6233**	**.00060**	**2.4441**	F **-.03051**	**-.00323**
Stddev	.00386	.00287	.0015	.00175	.0120	.00406	.00089
%RSD	190.96	268.98	.04080	291.82	.49257	13.319	27.545
#1	.00200	.00365	3.6232	-.00046	2.4407	-.03513	-.00322
#2	-.00236	-.00203	3.6248	-.00036	2.4341	-.02890	-.00413
#3	-.00571	.00158	3.6218	.00262	2.4575	-.02750	-.00235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00057**	**.01373**	**.00279**
Stddev	.00055	.00005	.00121
%RSD	96.088	.39414	43.503
#1	-.00086	.01376	.00139
#2	-.00092	.01376	.00355
#3	.00006	.01367	.00343
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9549.4**	**58061.**	**2994.7**
Stddev	10.8	342.	16.3
%RSD	.11322	.58988	.54589
#1	9556.3	57786.	2984.2
#2	9554.9	57953.	3013.5
#3	9536.9	58445.	2986.3

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 18:54:37 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.36142	9.0966	F .35164	F .43504	F .88841	.04556	F 8.8985
Stddev	.00063	.0241	.00214	.00359	.00668	.00015	.0636
%RSD	.17458	.26527	.60772	.82605	.75211	.32062	.71530
#1	.36081	9.1069	.35253	.43880	.88074	.04567	8.8250
#2	.36138	9.0691	.35318	.43467	.89150	.04539	8.9365
#3	.36207	9.1139	.34920	.43164	.89299	.04562	8.9341
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Fail
Value			.40000	.50000	1.0000		10.000
Range			-10.000%	-10.000%	-10.000%		-10.000%

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04504	F .17683	F .44843	.45584	F 3.5682	F 43.223	.90012
Stddev	.00036	.00059	.00210	.00028	.0180	.402	.00642
%RSD	.79578	.33417	.46848	.06078	.50416	.93081	.71346
#1	.04493	.17615	.45006	.45571	3.5475	42.758	.89283
#2	.04475	.17711	.44916	.45565	3.5796	43.446	.90262
#3	.04544	.17723	.44606	.45616	3.5775	43.464	.90492
Check ?	Chk Pass	Chk Fail	Chk Fail	Chk Pass	Chk Fail	Chk Fail	Chk Pass
Value		.20000	.50000		4.0000	50.000	
Range		-10.000%	-10.000%		-10.000%	-10.000%	

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 8.4568	F .44683	.90610	F 43.837	.45006	F 8.8106	F .44997
Stddev	.1941	.00153	.00307	.290	.00031	.0184	.00285
%RSD	2.2957	.34349	.33891	.66256	.06941	.20845	.63417
#1	8.2816	.44509	.90942	43.504	.44975	8.7897	.44790
#2	8.6655	.44738	.90552	43.973	.45037	8.8181	.44879
#3	8.4231	.44801	.90336	44.035	.45007	8.8241	.45322
Check ?	Chk Fail	Chk Fail	Chk Pass	Chk Fail	Chk Pass	Chk Fail	Chk Fail
Value	10.000	.50000		50.000		10.000	.50000
Range	-10.000%	-10.000%		-10.000%		-10.000%	-10.000%

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 18:54:37 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 1.0511	F .35868	4.5430	F .88663	F .88982	F .89732	.46317
Stddev	.0038	.00393	.0064	.00114	.00700	.00126	.00115
%RSD	.35733	1.0963	.14052	.12909	.78679	.14039	.24883
#1	1.0514	.35522	4.5358	.88537	.88186	.89705	.46442
#2	1.0547	.35787	4.5453	.88691	.89256	.89622	.46295
#3	1.0472	.36295	4.5480	.88760	.89503	.89870	.46215
Check ?	Chk Fail	Chk Fail	Chk Pass	Chk Fail	Chk Fail	Chk Fail	Chk Pass
Value	1.2000	.40000		1.0000	1.0000	1.0000	
Range	-10.000%	-10.000%		-10.000%	-10.000%	-10.000%	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.92451	F .89326	F 2.6142
Stddev	.00239	.00079	.0303
%RSD	.25806	.08826	1.1591
#1	.92697	.89416	2.5794
#2	.92435	.89291	2.6285
#3	.92221	.89270	2.6347
Check ?	Chk Pass	Chk Fail	Chk Fail
Value		1.0000	1.0000
Range		-10.000%	10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10436.	62603.	3229.6
Stddev	7.	58.	39.3
%RSD	.06851	.09259	1.2179
#1	10435.	62597.	3274.8
#2	10443.	62548.	3203.4
#3	10429.	62663.	3210.5

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 18:58:15 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00102	-.00634	.00315	-.00143	.00123	.00009	-.03120	-.00001
Stddev	.00036	.00615	.00146	.00223	.00014	.00007	.03757	.00022
%RSD	35.623	96.910	46.271	156.16	11.328	79.889	120.40	3000.5
#1	.00142	-.00623	.00470	-.00112	.00129	.00016	.01024	.00017
#2	.00091	-.01255	.00293	-.00379	.00133	.00004	-.06303	-.00025
#3	.00072	-.00026	.00181	.00063	.00107	.00005	-.04081	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	-.00012	.00040	.00652	.00729	-.00094	.01960	-.00009
Stddev	.00003	.00070	.00057	.00448	.10732	.00258	.12813	.00039
%RSD	340.66	581.54	142.03	68.614	1471.3	275.05	653.72	408.22
#1	-.00000	.00019	-.00025	.00247	.06763	-.00204	-.01079	.00011
#2	.00004	-.00093	.00068	.01133	.07087	.00201	.16019	-.00054
#3	-.00001	.00037	.00077	.00577	-.11662	-.00279	-.09060	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00312	.01765	-.00021	.00497	.00440	.00279	.00542	.03094
Stddev	.00023	.01443	.00123	.00520	.00590	.00458	.00181	.00198
%RSD	7.4573	81.775	586.87	104.64	134.12	164.15	33.357	6.4039
#1	.00298	.03423	-.00101	.00374	.00273	.00293	.00481	.03016
#2	.00339	.00793	-.00083	.01067	.01095	-.00186	.00399	.03319
#3	.00300	.01078	.00121	.00049	-.00049	.00730	.00745	.02947
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 18:58:15 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	.00057	.00328	-.00363	.00052	.00010	.00222
Stddev	.00020	.00050	.00575	.00205	.00106	.00011	.00064
%RSD	66.832	88.088	175.09	56.396	206.25	116.18	28.891
#1	.00017	.00114	-.00137	-.00544	-.00047	.00019	.00164
#2	.00052	.00028	.00971	-.00141	.00038	-.00003	.00291
#3	.00019	.00027	.00151	-.00405	.00164	.00012	.00210
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10029.	60890.	3064.8
Stddev	14.	97.	13.9
%RSD	.13680	.15850	.45397
#1	10045.	60780.	3055.3
#2	10022.	60930.	3080.8
#3	10020.	60960.	3058.3

Approved: June 27, 2016

Sample Name: L1606098630 Acquired: 6/25/2016 19:02:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00160**	**.04734**	**-.00156**	**.13569**	**.01871**	**.00015**	**238.04**
Stddev	.00181	.00348	.00404	.00135	.00123	.00008	.85
%RSD	113.48	7.3553	258.52	.99665	6.5967	52.824	.35679
#1	.00017	.04905	-.00155	.13421	.01822	.00022	239.01
#2	.00364	.04964	.00247	.13685	.01779	.00007	237.71
#3	.00098	.04333	-.00561	.13603	.02011	.00014	237.41
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00026**	**.00032**	**.00251**	**.01182**	**.03060**	**3.4183**	**.04090**
Stddev	.00010	.00018	.00081	.00072	.01332	.0462	.00200
%RSD	39.577	56.009	32.204	6.0677	43.540	1.3506	4.8796
#1	.00014	.00047	.00287	.01260	.01963	3.3856	.03874
#2	.00034	.00036	.00308	.01119	.04543	3.4711	.04128
#3	.00028	.00012	.00159	.01167	.02674	3.3981	.04268
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**90.439**	**.21655**	**.00156**	**78.879**	**.00140**	**.01756**	**.00033**
Stddev	.173	.00121	.00013	.416	.00068	.00677	.00046
%RSD	.19086	.55720	8.0204	.52709	48.349	38.536	138.30
#1	90.626	.21726	.00143	79.353	.00191	.01647	.00076
#2	90.405	.21515	.00168	78.710	.00063	.02480	-.00016
#3	90.286	.21722	.00157	78.574	.00166	.01140	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 27, 2016

Sample Name: L1606098630 Acquired: 6/25/2016 19:02:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00294**	**-.00177**	**5.6111**	**-.00017**	**7.0275**	F **-.03316**	**-.00254**
Stddev	.00229	.00087	.0076	.00038	.0379	.00293	.00099
%RSD	77.743	49.294	.13521	227.38	.53946	8.8247	38.798
#1	-.00354	-.00250	5.6121	-.00026	7.0707	-.03043	-.00171
#2	-.00042	-.00199	5.6030	-.00050	7.0124	-.03625	-.00363
#3	-.00488	-.00081	5.6181	.00025	6.9995	-.03280	-.00229
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00065**	**.02003**	**.00667**
Stddev	.00064	.00007	.00116
%RSD	98.374	.34297	17.407
#1	-.00116	.01996	.00557
#2	-.00088	.02003	.00654
#3	.00007	.02010	.00788
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9361.9**	**56594.**	**2990.6**
Stddev	23.4	147.	20.1
%RSD	.24995	.25968	.67365
#1	9379.7	56762.	2967.6
#2	9370.7	56528.	3005.2
#3	9335.4	56491.	2998.9

Approved: June 27, 2016

Sample Name: L1606098632S Acquired: 6/25/2016 19:06:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18902**	**4.8212**	**.19116**	**.97374**	**.50077**	**.02402**	**134.52**	**.02388**
Stddev	.00088	.0081	.00239	.00462	.00118	.00003	.34	.00017
%RSD	.46488	.16867	1.2481	.47438	.23617	.14314	.25228	.70472
#1	.18980	4.8271	.19377	.97198	.50123	.02406	134.68	.02373
#2	.18919	4.8246	.18910	.97898	.49943	.02400	134.13	.02406
#3	.18807	4.8119	.19060	.97026	.50165	.02400	134.75	.02386
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09189**	**.23665**	**.24218**	**1.8859**	**25.617**	**.51395**	**37.596**	**.28166**
Stddev	.00021	.00120	.00028	.0089	.037	.00043	.192	.00203
%RSD	.23170	.50673	.11712	.47202	.14467	.08375	.50984	.71945
#1	.09190	.23534	.24190	1.8828	25.580	.51444	37.585	.28070
#2	.09167	.23691	.24247	1.8960	25.619	.51376	37.792	.28399
#3	.09210	.23769	.24219	1.8790	25.654	.51365	37.409	.28029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49448**	**71.230**	**.23175**	**4.7310**	**.23416**	**.56777**	**.18400**	**6.1097**
Stddev	.00088	.164	.00128	.0060	.00191	.00602	.00319	.0038
%RSD	.17884	.22978	.55101	.12688	.81554	1.0604	1.7354	.06148
#1	.49529	71.252	.23067	4.7327	.23616	.57278	.18033	6.1129
#2	.49354	71.056	.23316	4.7244	.23394	.56944	.18613	6.1108
#3	.49461	71.382	.23142	4.7360	.23236	.56109	.18555	6.1056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098632S Acquired: 6/25/2016 19:06:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.46869	2.2839	.45630	.23531	.49366	.46774	.01477
Stddev	.00224	.0055	.00571	.00163	.00079	.00046	.00310
%RSD	.47718	.23955	1.2515	.69229	.16011	.09871	21.022
#1	.47047	2.2847	.45118	.23550	.49390	.46819	.01151
#2	.46942	2.2781	.45528	.23360	.49431	.46777	.01510
#3	.46618	2.2889	.46246	.23684	.49278	.46726	.01769
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9505.1	57443.	2995.1
Stddev	12.6	181.	7.9
%RSD	.13263	.31567	.26290
#1	9490.9	57238.	2989.7
#2	9509.8	57583.	3004.2
#3	9514.8	57507.	2991.6

Approved: June 27, 2016

Sample Name: L1606098634S Acquired: 6/25/2016 19:09:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19165**	**4.8639**	**.19259**	**.98224**	**.50433**	**.02434**	**136.41**	**.02397**
Stddev	.00283	.0058	.00215	.00673	.00181	.00002	.41	.00039
%RSD	1.4742	.11932	1.1143	.68564	.35885	.08391	.29851	1.6453
#1	.19474	4.8576	.19410	.97512	.50399	.02434	136.06	.02438
#2	.19099	4.8690	.19014	.98851	.50272	.02431	136.30	.02394
#3	.18921	4.8651	.19354	.98310	.50629	.02435	136.86	.02359
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09370**	**.23944**	**.24457**	**1.9014**	**25.851**	**.51838**	**38.336**	**.27292**
Stddev	.00027	.00087	.00143	.0128	.044	.00156	.167	.00356
%RSD	.28910	.36336	.58497	.67456	.17178	.30011	.43499	1.3028
#1	.09395	.23880	.24603	1.9045	25.902	.51991	38.172	.27676
#2	.09341	.23909	.24449	1.9124	25.822	.51842	38.330	.27226
#3	.09373	.24043	.24318	1.8873	25.829	.51680	38.505	.26974
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49947**	**74.848**	**.23412**	**4.7760**	**.23373**	**.57493**	**.18272**	**6.1711**
Stddev	.00101	.224	.00114	.0149	.00097	.00427	.00635	.0140
%RSD	.20163	.29965	.48754	.31111	.41349	.74220	3.4752	.22725
#1	.50053	74.661	.23450	4.7820	.23289	.57819	.18571	6.1610
#2	.49852	74.786	.23283	4.7591	.23352	.57010	.18702	6.1652
#3	.49936	75.096	.23502	4.7869	.23478	.57650	.17542	6.1871
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098634S Acquired: 6/25/2016 19:09:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47482**	**2.3307**	**.45927**	**.23900**	**.49848**	**.47191**	**.00533**
Stddev	.00086	.0091	.01368	.00122	.00164	.00108	.00076
%RSD	.18068	.39132	2.9792	.51192	.32871	.22881	14.237
#1	.47581	2.3242	.47279	.23871	.49842	.47284	.00492
#2	.47440	2.3268	.44543	.23794	.50015	.47073	.00620
#3	.47425	2.3411	.45961	.24034	.49687	.47217	.00485
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9464.2**	**57182.**	**2975.2**
Stddev	11.1	55.	14.2
%RSD	.11755	.09672	.47580
#1	9463.1	57128.	2991.6
#2	9475.9	57180.	2967.1
#3	9453.7	57239.	2967.1

Approved: June 27, 2016

Sample Name: L1606098636SD Acquired: 6/25/2016 19:13:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19162	4.8756	.19532	1.3252	.50705	.02431	243.19	.02436
Stddev	.00178	.0135	.00259	.0039	.00540	.00016	2.22	.00014
%RSD	.92905	.27765	1.3247	.29569	1.0646	.65896	.91281	.56637
#1	.19240	4.8805	.19500	1.3207	.51326	.02435	245.71	.02449
#2	.18958	4.8859	.19805	1.3282	.50441	.02444	242.33	.02421
#3	.19287	4.8603	.19291	1.3265	.50349	.02413	241.52	.02439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09290	.23671	.29685	1.9145	29.596	.51587	71.839	.60737
Stddev	.00022	.00172	.00059	.0369	.191	.00194	.252	.00417
%RSD	.23161	.72762	.19867	1.9280	.64372	.37694	.35080	.68663
#1	.09280	.23499	.29694	1.9564	29.779	.51781	72.039	.61218
#2	.09315	.23843	.29739	1.9005	29.610	.51588	71.921	.60495
#3	.09276	.23672	.29622	1.8867	29.399	.51393	71.556	.60497
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49958	89.482	.23320	4.8335	.23655	.57885	.18210	6.3388
Stddev	.00153	.784	.00050	.0076	.00169	.00511	.00473	.0094
%RSD	.30585	.87569	.21296	.15803	.71424	.88252	2.5997	.14817
#1	.49951	90.366	.23335	4.8331	.23580	.57825	.18575	6.3355
#2	.50114	89.209	.23361	4.8414	.23849	.57407	.18379	6.3494
#3	.49809	88.872	.23265	4.8261	.23537	.58424	.17675	6.3314
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098636SD Acquired: 6/25/2016 19:13:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47318**	**2.1504**	**.45196**	**.23380**	**.49243**	**.47726**	**.00396**
Stddev	.00235	.0203	.01296	.00229	.00254	.00239	.00140
%RSD	.49768	.94209	2.8683	.97909	.51630	.50171	35.414
#1	.47220	2.1736	.45301	.23117	.49302	.48002	.00408
#2	.47587	2.1417	.46436	.23534	.49462	.47583	.00530
#3	.47148	2.1359	.43850	.23489	.48964	.47592	.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9466.5**	**57687.**	**3000.7**
Stddev	28.5	42.	21.4
%RSD	.30105	.07212	.71153
#1	9499.3	57706.	2976.5
#2	9448.1	57639.	3017.0
#3	9452.0	57716.	3008.4

Approved: June 27, 2016

Sample Name: L1606098638SD Acquired: 6/25/2016 19:16:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-09

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19635**	**5.0111**	**.19662**	**1.3658**	**.50590**	**.02455**	**238.74**	**.02470**
Stddev	.00189	.0495	.00202	.0129	.00507	.00013	2.44	.00046
%RSD	.96164	.98714	1.0288	.94297	1.0027	.51871	1.0237	1.8632
#1	.19421	4.9540	.19875	1.3513	.50004	.02440	236.05	.02465
#2	.19777	5.0396	.19638	1.3761	.50894	.02464	240.82	.02518
#3	.19706	5.0398	.19472	1.3699	.50872	.02461	239.35	.02426
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09456**	**.24315**	**.24888**	**1.9280**	**29.506**	**.51676**	**69.466**	**.60260**
Stddev	.00054	.00286	.00145	.0328	.362	.00473	.757	.00806
%RSD	.56749	1.1744	.58163	1.6990	1.2271	.91552	1.0898	1.3377
#1	.09518	.24020	.24797	1.8914	29.119	.51186	68.628	.59529
#2	.09432	.24590	.25055	1.9547	29.837	.52131	70.101	.61124
#3	.09419	.24336	.24812	1.9378	29.562	.51712	69.668	.60126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50828**	**86.839**	**.23731**	**4.9079**	**.23796**	**.58722**	**.18727**	**6.3571**
Stddev	.00153	.812	.00040	.0105	.00122	.00763	.00717	.0147
%RSD	.30188	.93521	.16702	.21476	.51147	1.2987	3.8265	.23138
#1	.50998	85.938	.23758	4.9185	.23889	.59365	.18466	6.3682
#2	.50784	87.516	.23685	4.9076	.23841	.58922	.19537	6.3627
#3	.50701	87.061	.23748	4.8975	.23659	.57879	.18177	6.3405
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098638SD Acquired: 6/25/2016 19:16:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-09

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48230**	**2.1413**	**.45206**	**.24148**	**.50819**	**.47197**	**.00465**
Stddev	.00016	.0221	.00841	.00203	.00480	.00162	.00175
%RSD	.03337	1.0323	1.8614	.84256	.94539	.34380	37.692
#1	.48228	2.1164	.44367	.23931	.50264	.47335	.00633
#2	.48215	2.1586	.45201	.24177	.51108	.47237	.00283
#3	.48247	2.1488	.46050	.24334	.51084	.47018	.00481
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9367.1**	**56617.**	**3005.4**
Stddev	24.2	279.	8.9
%RSD	.25886	.49353	.29743
#1	9345.0	56900.	3015.6
#2	9363.2	56609.	2998.7
#3	9393.0	56341.	3002.0

Approved: June 27, 2016

Sample Name: L1606098640 Acquired: 6/25/2016 19:20:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00070	.00014	.00047	.01204	.00394	.00013	2.2418	.00009
Stddev	.00052	.00246	.00354	.00206	.00041	.00015	.0448	.00026
%RSD	75.327	1722.8	753.06	17.114	10.437	111.96	1.9977	298.05
#1	-.00120	.00298	.00434	.01328	.00360	.00001	2.2906	-.00017
#2	-.00073	-.00107	-.00032	.00966	.00384	.00009	2.2025	.00008
#3	-.00016	-.00148	-.00261	.01318	.00440	.00029	2.2324	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	-.00023	.00162	.03197	.19488	-.00199	.70657	-.00157
Stddev	.00020	.00043	.00063	.03003	.05117	.00159	.10487	.00034
%RSD	172.28	188.43	38.822	93.912	26.255	79.698	14.843	21.723
#1	-.00014	.00024	.00129	.06510	.20250	-.00219	.77648	-.00118
#2	.00010	-.00061	.00122	.00654	.14033	-.00346	.58598	-.00170
#3	-.00030	-.00032	.00234	.02429	.24180	-.00031	.75725	-.00182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	1.3245	-.00000	-.00132	.00155	-.00034	.00103	1.8661
Stddev	.00043	.0047	.00128	.00539	.00283	.00334	.00522	.0030
%RSD	69.622	.35334	42382.	408.47	183.18	979.63	508.03	.16155
#1	.00110	1.3264	-.00135	.00378	-.00057	-.00417	-.00062	1.8696
#2	.00029	1.3279	.00121	-.00695	.00477	.00193	.00687	1.8648
#3	.00045	1.3192	.00013	-.00078	.00045	.00122	-.00317	1.8641
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098640 Acquired: 6/25/2016 19:20:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	.02890	-.00018	-.00245	.00125	.00316	.00092
Stddev	.00104	.00022	.00313	.00122	.00036	.00008	.00187
%RSD	172.87	.75581	1755.3	49.848	28.928	2.5446	202.44
#1	-.00053	.02865	.00335	-.00105	.00165	.00322	-.00102
#2	.00152	.02900	-.00128	-.00328	.00095	.00320	.00271
#3	.00082	.02905	-.00260	-.00302	.00115	.00307	.00108
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9902.6	60698.	3047.4
Stddev	11.3	88.	21.1
%RSD	.11376	.14441	.69149
#1	9915.6	60659.	3066.8
#2	9895.9	60798.	3025.0
#3	9896.3	60636.	3050.3

Approved: June 27, 2016

Sample Name: L1606098642 Acquired: 6/25/2016 19:24:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00084	-.00125	.00012	.00714	.00291	.00014	2.2957	-.00008
Stddev	.00151	.00416	.00315	.00149	.00136	.00010	.0287	.00011
%RSD	179.62	331.72	2535.0	20.853	46.790	76.580	1.2503	140.66
#1	.00086	.00295	-.00350	.00543	.00443	.00023	2.2645	-.00020
#2	-.00134	-.00134	.00221	.00806	.00180	.00015	2.3210	.00001
#3	-.00204	-.00537	.00167	.00794	.00250	.00002	2.3016	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00054	.00126	.01879	.13459	.00101	.70251	-.00031
Stddev	.00021	.00073	.00033	.01779	.06299	.00139	.04015	.00188
%RSD	76.216	135.58	26.342	94.669	46.805	137.70	5.7150	613.21
#1	.00043	.00109	.00162	.03687	.13442	.00244	.65916	.00151
#2	.00035	-.00029	.00096	.01820	.19766	.00092	.73842	-.00224
#3	.00004	.00081	.00121	.00130	.07167	-.00034	.70994	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	1.3914	-.00012	.00599	-.00050	-.00197	.00192	1.9147
Stddev	.00031	.0274	.00128	.00446	.00248	.00478	.00405	.0013
%RSD	265.01	1.9704	1039.6	74.477	491.66	243.04	211.10	.06740
#1	-.00017	1.4067	.00078	.00869	.00158	.00334	.00542	1.9141
#2	.00008	1.4078	.00044	.00843	.00015	-.00331	-.00251	1.9137
#3	.00044	1.3598	-.00159	.00084	-.00325	-.00593	.00284	1.9161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098642 Acquired: 6/25/2016 19:24:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.02978**	**.00659**	**-.00224**	**.00021**	**.00288**	**.00046**
Stddev	.00041	.00031	.00898	.00218	.00024	.00011	.00203
%RSD	319.77	1.0309	136.22	97.103	115.48	3.6974	442.65
#1	.00034	.02969	.01094	-.00308	.00030	.00286	-.00018
#2	-.00043	.03012	.01258	.00023	.00040	.00300	.00273
#3	-.00030	.02953	-.00373	-.00388	-.00006	.00279	-.00117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9910.0**	**60405.**	**3027.1**
Stddev	8.6	109.	25.1
%RSD	.08719	.18086	.83024
#1	9909.0	60400.	3001.0
#2	9919.1	60298.	3029.3
#3	9901.9	60516.	3051.1

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 19:28:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.38218	9.6308	.37557	.46431	.95962	.04828	9.5695
Stddev	.00218	.0178	.00127	.00116	.00217	.00012	.0717
%RSD	.57165	.18471	.33835	.24921	.22635	.23895	.74942
#1	.37992	9.6388	.37606	.46299	.96032	.04841	9.5557
#2	.38232	9.6104	.37652	.46516	.96137	.04820	9.6471
#3	.38429	9.6432	.37413	.46479	.95719	.04823	9.5057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04801	.18801	.47395	.48473	3.7689	46.355	.97311
Stddev	.00014	.00020	.00045	.00153	.0264	.220	.00378
%RSD	.29427	.10445	.09483	.31643	.70136	.47512	.38849
#1	.04785	.18823	.47438	.48634	3.7952	46.500	.97746
#2	.04812	.18785	.47399	.48328	3.7693	46.464	.97068
#3	.04806	.18795	.47348	.48458	3.7423	46.102	.97118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.0717	.47590	.96524	47.107	.47852	9.3733	.47882
Stddev	.0608	.00396	.00399	.173	.00072	.0111	.00296
%RSD	.67059	.83199	.41378	.36832	.15104	.11884	.61810
#1	9.0038	.47335	.96959	47.188	.47773	9.3765	.47551
#2	9.1213	.48046	.96440	47.226	.47916	9.3609	.48123
#3	9.0900	.47388	.96173	46.908	.47866	9.3825	.47971
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 19:28:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1223**	**.37795**	**4.8400**	**.94463**	**.95969**	**.96684**	**.48966**
Stddev	.0016	.00541	.0100	.00151	.00470	.01176	.00307
%RSD	.14404	1.4313	.20631	.15941	.49016	1.2167	.62598
#1	1.1238	.37410	4.8492	.94636	.96229	.96908	.48613
#2	1.1206	.37562	4.8414	.94360	.96253	.97732	.49169
#3	1.1224	.38414	4.8294	.94394	.95426	.95412	.49116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.97958**	**.95235**	F **2.8246**
Stddev	.00154	.00042	.0035
%RSD	.15724	.04377	.12384
#1	.97882	.95263	2.8278
#2	.97857	.95254	2.8252
#3	.98136	.95187	2.8208
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10132.**	**61264.**	**3100.4**
Stddev	.	134.	6.9
%RSD	.00202	.21941	.22117
#1	10132.	61202.	3092.6
#2	10132.	61418.	3103.3
#3	10132.	61171.	3105.3

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 19:32:05 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00027**	**-.00034**	**.00165**	**-.00065**	**.00143**	**.00014**	**-.04509**	**-.00015**
Stddev	.00053	.00835	.00116	.00135	.00075	.00012	.04632	.00018
%RSD	198.69	2437.1	70.395	208.11	52.425	84.191	102.74	120.05
#1	.00081	.00499	.00229	-.00108	.00058	.00001	-.09453	-.00022
#2	.00023	-.00997	.00235	-.00174	.00173	.00020	-.03804	.00005
#3	-.00025	.00395	.00031	.00087	.00199	.00023	-.00270	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**-.00017**	**.00065**	**.02423**	**-.06433**	**-.00295**	**-.01903**	**-.00066**
Stddev	.00013	.00077	.00059	.01555	.07126	.00237	.08401	.00260
%RSD	162.10	456.13	90.441	64.178	110.77	80.373	441.41	395.33
#1	-.00022	-.00087	-.00002	.03897	.01654	-.00026	-.10302	.00036
#2	-.00006	.00066	.00091	.02575	-.09166	-.00387	.06499	-.00361
#3	.00004	-.00030	.00106	.00798	-.11789	-.00472	-.01907	.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00313**	**.02145**	**.00120**	**.00197**	**.00164**	**.00212**	**.00101**	**.04112**
Stddev	.00013	.00743	.00050	.00366	.00312	.00166	.00069	.00272
%RSD	4.1237	34.660	41.579	185.66	190.04	78.472	68.223	6.6255
#1	.00318	.03002	.00170	.00620	.00310	.00128	.00172	.03946
#2	.00323	.01754	.00070	-.00004	.00377	.00104	.00035	.04426
#3	.00298	.01678	.00121	-.00024	-.00194	.00404	.00097	.03964
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 19:32:05 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00072**	**.00051**	**-.00006**	**-.00149**	**-.00026**	**.00006**	**.00316**
Stddev	.00004	.00041	.00466	.00123	.00016	.00032	.00144
%RSD	4.9365	80.523	8195.1	82.501	61.089	521.42	45.405
#1	.00073	.00010	.00498	-.00182	-.00044	-.00016	.00318
#2	.00068	.00091	-.00094	-.00252	-.00020	.00042	.00172
#3	.00075	.00050	-.00421	-.00013	-.00014	-.00008	.00459
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9625.9**	**58446.**	**2947.7**
Stddev	17.4	102.	8.2
%RSD	.18036	.17465	.27941
#1	9605.9	58491.	2954.6
#2	9635.9	58518.	2950.0
#3	9636.0	58329.	2938.6

Approved: June 27, 2016

Sample Name: PBW LH Acquired: 6/25/2016 19:36:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	-.00480	.00297	-.00088	.00071	.00016	-.03609	-.00030
Stddev	.00096	.00538	.00061	.00047	.00081	.00006	.00576	.00022
%RSD	436.54	112.05	20.402	53.250	112.94	41.040	15.975	74.291
#1	-.00063	-.00271	.00258	-.00071	.00057	.00010	-.04014	-.00038
#2	.00002	-.00078	.00267	-.00141	-.00001	.00022	-.03863	-.00005
#3	.00126	-.01092	.00367	-.00052	.00158	.00014	-.02949	-.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.00027	.00021	.03551	.02057	.00058	-.03422	.00199
Stddev	.00019	.00046	.00040	.00062	.11033	.00127	.05831	.00213
%RSD	211.66	173.58	192.44	1.7348	536.36	218.26	170.39	107.33
#1	.00009	.00043	-.00014	.03559	.14793	.00205	.01703	.00051
#2	-.00029	.00063	.00065	.03485	-.04548	-.00019	-.09766	.00101
#3	-.00007	-.00025	.00012	.03607	-.04075	-.00011	-.02203	.00443
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	.01920	-.00013	.00015	.00308	-.00169	.00218	.00530
Stddev	.00020	.01381	.00043	.00436	.00410	.00157	.00344	.00135
%RSD	72.649	71.919	323.98	2952.6	133.25	92.573	157.59	25.417
#1	-.00050	.00540	-.00047	-.00185	.00268	-.00008	.00514	.00605
#2	-.00014	.01919	.00035	-.00286	.00737	-.00321	.00301	.00374
#3	-.00017	.03301	-.00027	.00515	-.00081	-.00179	-.00160	.00610
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: PBW LH Acquired: 6/25/2016 19:36:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.00001**	**.00007**	**-.00205**	**.00056**	**-.00012**	**.00138**
Stddev	.00105	.00006	.00526	.00274	.00041	.00008	.00122
%RSD	278.35	503.89	7708.4	133.89	73.183	68.172	88.458
#1	.00057	-.00005	.00045	-.00401	.00011	-.00018	.00093
#2	-.00020	.00002	-.00537	-.00321	.00065	-.00003	.00045
#3	-.00151	.00007	.00513	.00108	.00091	-.00016	.00276
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10355.**	**62690.**	**3143.1**
Stddev	14.	21.	40.1
%RSD	.13810	.03356	1.2743
#1	10371.	62711.	3176.8
#2	10343.	62669.	3098.8
#3	10351.	62689.	3153.6

Approved: June 27, 2016

Sample Name: LCSW LH Acquired: 6/25/2016 19:39:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19366**	**4.9137**	**.19220**	**.93203**	**.49068**	**.02467**	**4.9632**	**.02443**
Stddev	.00070	.0138	.00341	.00396	.00423	.00007	.0538	.00016
%RSD	.36335	.28142	1.7740	.42472	.86189	.28277	1.0835	.64799
#1	.19288	4.8983	.19002	.92766	.48616	.02461	4.9413	.02459
#2	.19385	4.9180	.19044	.93305	.49453	.02465	5.0244	.02441
#3	.19425	4.9249	.19613	.93537	.49136	.02474	4.9238	.02428
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09715**	**.24544**	**.24999**	**1.9443**	**23.472**	**.50293**	**4.6813**	**.24132**
Stddev	.00066	.00263	.00041	.0106	.182	.00291	.0938	.00318
%RSD	.68088	1.0726	.16565	.54556	.77586	.57762	2.0038	1.3188
#1	.09680	.24301	.25039	1.9373	23.301	.50365	4.6704	.23802
#2	.09792	.24824	.24956	1.9391	23.664	.50540	4.7800	.24157
#3	.09674	.24506	.25002	1.9565	23.450	.49973	4.5934	.24437
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50304**	**24.148**	**.24571**	**4.6828**	**.24554**	**.57884**	**.18202**	**2.4064**
Stddev	.00049	.122	.00061	.0125	.00123	.00461	.00367	.0046
%RSD	.09743	.50324	.24625	.26789	.50266	.79649	2.0171	.19316
#1	.50339	24.028	.24640	4.6758	.24587	.57352	.17868	2.4078
#2	.50325	24.271	.24545	4.6973	.24658	.58167	.18595	2.4102
#3	.50248	24.145	.24528	4.6753	.24418	.58132	.18143	2.4012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LCSW LH Acquired: 6/25/2016 19:39:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48493**	**.49684**	**.48674**	**.24907**	**.50464**	**.48284**	**.01676**
Stddev	.00108	.00397	.00310	.00041	.00236	.00325	.00211
%RSD	.22287	.79928	.63744	.16637	.46686	.67256	12.564
#1	.48462	.49378	.48665	.24947	.50200	.48055	.01435
#2	.48613	.50133	.48369	.24909	.50538	.48656	.01775
#3	.48404	.49542	.48989	.24864	.50653	.48141	.01820
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9761.3**	**59171.**	**3026.9**
Stddev	5.3	58.	23.7
%RSD	.05400	.09751	.78195
#1	9766.4	59236.	3050.7
#2	9755.9	59148.	3003.3
#3	9761.7	59127.	3026.7

Approved: June 27, 2016

Sample Name: L1606090723 Acquired: 6/25/2016 19:43:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	.01800	.14333	.20159	.04322	.00011	82.135	.00062
Stddev	.00074	.00440	.00262	.00108	.00176	.00009	.153	.00002
%RSD	81.113	24.457	1.8284	.53531	4.0750	85.790	.18660	3.6806
#1	.00039	.02274	.14560	.20094	.04396	.00020	82.043	.00061
#2	.00058	.01723	.14046	.20283	.04121	.00011	82.051	.00064
#3	.00176	.01403	.14393	.20099	.04450	.00001	82.312	.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00085	.00186	.00181	3.0759	4.3146	.03826	51.383	.03252
Stddev	.00009	.00076	.00070	.0448	.0921	.00398	.083	.00353
%RSD	10.346	41.113	38.683	1.4576	2.1337	10.401	.16137	10.870
#1	.00081	.00098	.00242	3.0253	4.2316	.04144	51.475	.03488
#2	.00094	.00223	.00197	3.0916	4.4136	.03380	51.362	.02845
#3	.00078	.00237	.00105	3.1108	4.2984	.03956	51.313	.03422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00258	133.73	-.00015	.01191	.00179	-.00228	.00665	8.0891
Stddev	.00008	.12	.00113	.00694	.00129	.00283	.00532	.0280
%RSD	3.2153	.09189	747.26	58.268	71.933	124.12	79.994	.34670
#1	.00264	133.81	-.00126	.01916	.00318	-.00553	.01195	8.1130
#2	.00249	133.59	.00099	.00533	.00159	-.00033	.00671	8.0582
#3	.00262	133.80	-.00018	.01123	.00062	-.00099	.00131	8.0960
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606090723 Acquired: 6/25/2016 19:43:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**2.6416**	**-.00732**	**-.00182**	**-.00046**	**.00542**	**.00128**
Stddev	.00038	.0023	.00771	.00082	.00062	.00021	.00019
%RSD	7616.2	.08543	105.44	45.025	136.48	3.8805	14.578
#1	.00020	2.6400	-.01112	-.00260	-.00073	.00544	.00120
#2	.00025	2.6406	.00156	-.00189	.00026	.00563	.00115
#3	-.00044	2.6441	-.01239	-.00097	-.00089	.00521	.00149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9566.3**	**57706.**	**3016.3**
Stddev	21.2	40.	8.6
%RSD	.22170	.06981	.28561
#1	9583.7	57737.	3006.9
#2	9572.5	57660.	3023.9
#3	9542.7	57721.	3018.2

Approved: June 27, 2016

Sample Name: L1606098601 Acquired: 6/25/2016 19:47:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	.63226	.00101	.09520	.04126	.00012	31.325	.00014
Stddev	.00183	.00734	.00119	.00196	.00050	.00007	.135	.00021
%RSD	298.65	1.1612	118.08	2.0630	1.2197	57.984	.43030	153.25
#1	.00185	.62395	-.00028	.09744	.04176	.00005	31.451	-.00001
#2	-.00149	.63786	.00207	.09436	.04076	.00018	31.183	.00005
#3	.00148	.63498	.00124	.09379	.04125	.00013	31.342	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	.00251	.00378	1.4621	1.2075	.01677	5.9028	.04892
Stddev	.00024	.00020	.00199	.0362	.0294	.00358	.0605	.00066
%RSD	20.175	7.8011	52.767	2.4785	2.4351	21.330	1.0243	1.3538
#1	.00129	.00246	.00338	1.4981	1.1821	.01735	5.9016	.04861
#2	.00090	.00272	.00594	1.4256	1.2008	.02003	5.8430	.04848
#3	.00133	.00234	.00201	1.4624	1.2397	.01294	5.9639	.04969
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00119	122.45	.00122	.03952	.00058	-.00189	.00677	4.0503
Stddev	.00024	.35	.00124	.00581	.00157	.00112	.00463	.0371
%RSD	19.925	.28250	101.52	14.694	270.52	59.209	68.294	.91471
#1	.00135	122.68	.00181	.04077	.00200	-.00256	.00933	4.0789
#2	.00131	122.05	-.00020	.04460	-.00110	-.00252	.00956	4.0634
#3	.00092	122.62	.00206	.03319	.00084	-.00060	.00143	4.0084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098601 Acquired: 6/25/2016 19:47:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.54428**	**.01566**	**-.00252**	**.00147**	**.03503**	**.00138**
Stddev	.00052	.00100	.00262	.00158	.00115	.00040	.00180
%RSD	330.58	.18426	16.757	62.766	78.497	1.1335	130.15
#1	-.00032	.54517	.01814	-.00107	.00112	.03533	.00331
#2	-.00057	.54319	.01592	-.00228	.00275	.03517	-.00024
#3	.00042	.54448	.01291	-.00422	.00053	.03458	.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9674.1**	**58435.**	**3018.4**
Stddev	45.2	129.	18.2
%RSD	.46720	.22152	.60258
#1	9673.0	58340.	2997.4
#2	9719.9	58382.	3028.7
#3	9629.5	58582.	3029.1

Approved: June 27, 2016

Sample Name: L1606098603 Acquired: 6/25/2016 19:51:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00113**	**.08091**	**.00257**	**.02612**	**.02343**	**.00026**	**258.72**
Stddev	.00364	.00403	.00338	.00065	.00023	.00010	.22
%RSD	322.73	4.9793	131.60	2.5002	.99712	37.911	.08495
#1	-.00201	.07953	.00151	.02617	.02317	.00019	258.95
#2	.00512	.08545	-.00015	.02675	.02363	.00037	258.52
#3	.00028	.07776	.00635	.02545	.02348	.00021	258.68
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00056**	**.00486**	**.00101**	**.01760**	**1.6277**	**1.7887**	**.01926**
Stddev	.00018	.00049	.00101	.00048	.0214	.0748	.00269
%RSD	32.935	10.099	100.65	2.7241	1.3157	4.1799	13.963
#1	.00053	.00446	.00070	.01814	1.6519	1.7719	.02232
#2	.00040	.00472	.00018	.01725	1.6198	1.8705	.01729
#3	.00076	.00541	.00214	.01740	1.6113	1.7238	.01816
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**67.571**	**3.7591**	**.00091**	**16.176**	**.00450**	**.03792**	**.00200**
Stddev	.265	.0091	.00013	.042	.00050	.00459	.00102
%RSD	.39176	.24313	14.640	.25963	11.081	12.099	51.049
#1	67.875	3.7689	.00083	16.148	.00428	.03292	.00317
#2	67.391	3.7508	.00083	16.224	.00415	.03891	.00158
#3	67.448	3.7575	.00106	16.157	.00507	.04193	.00126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 27, 2016

Sample Name: L1606098603 Acquired: 6/25/2016 19:51:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00201**	**-.00717**	**3.9929**	**.00071**	**1.4034**	F **-.03512**	**-.00302**
Stddev	.00033	.00269	.0187	.00006	.0013	.00376	.00159
%RSD	16.650	37.521	.46951	8.6416	.08919	10.706	52.853
#1	-.00201	-.00583	3.9724	.00069	1.4035	-.03701	-.00329
#2	-.00234	-.01026	3.9969	.00078	1.4046	-.03756	-.00130
#3	-.00167	-.00541	4.0093	.00066	1.4021	-.03079	-.00446
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00011**	**.03959**	**.00096**
Stddev	.00028	.00012	.00361
%RSD	248.38	.29182	376.14
#1	.00034	.03947	.00158
#2	-.00020	.03969	.00421
#3	.00020	.03962	-.00292
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9451.5**	**57637.**	**3009.6**
Stddev	22.8	186.	22.0
%RSD	.24088	.32311	.72999
#1	9477.8	57852.	2986.4
#2	9439.3	57520.	3012.4
#3	9437.5	57540.	3030.0

Approved: June 27, 2016

Sample Name: L1606098605 Acquired: 6/25/2016 19:55:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00137	.11904	-.00057	.01716	.07339	.00069	79.533	.00007
Stddev	.00111	.00237	.00183	.00141	.00107	.00010	.468	.00014
%RSD	81.063	1.9908	322.69	8.2448	1.4582	14.460	.58849	215.58
#1	-.00160	.12158	.00130	.01581	.07215	.00080	78.994	-.00002
#2	-.00016	.11865	-.00237	.01703	.07401	.00066	79.770	-.00001
#3	-.00235	.11689	-.00063	.01863	.07401	.00061	79.836	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00197	.03453	.22031	1.0996	.00600	23.636	.02412
Stddev	.00010	.00062	.00164	.01719	.0321	.00378	.124	.00114
%RSD	58.539	31.534	4.7611	7.8016	2.9198	62.984	.52590	4.7055
#1	.00028	.00148	.03642	.22738	1.1284	.00174	23.677	.02484
#2	.00008	.00176	.03343	.23283	1.0650	.00731	23.734	.02281
#3	.00016	.00266	.03374	.20072	1.1054	.00895	23.496	.02471
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	16.543	.00139	.02145	.00230	-.00291	.00287	2.5906
Stddev	.00010	.077	.00029	.00514	.00167	.00113	.00378	.0043
%RSD	11.067	.46265	20.622	23.950	72.689	38.933	132.03	.16499
#1	.00094	16.521	.00147	.02583	.00422	-.00367	.00465	2.5950
#2	.00093	16.628	.00163	.02271	.00152	-.00161	-.00148	2.5865
#3	.00076	16.480	.00107	.01580	.00116	-.00345	.00543	2.5902
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098605 Acquired: 6/25/2016 19:55:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.41216	-.00457	-.00401	.00095	.08292	.00137
Stddev	.00045	.00253	.00113	.00092	.00095	.00025	.00112
%RSD	198.91	.61368	24.692	22.922	99.932	.30169	82.337
#1	.00020	.40988	-.00328	-.00486	-.00009	.08312	.00008
#2	.00068	.41488	-.00504	-.00303	.00116	.08301	.00218
#3	-.00021	.41173	-.00539	-.00414	.00177	.08264	.00183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9691.4	59019.	3013.1
Stddev	15.7	113.	12.9
%RSD	.16185	.19156	.42939
#1	9673.9	58889.	3028.0
#2	9704.2	59073.	3004.1
#3	9696.2	59095.	3007.4

Approved: June 27, 2016

Sample Name: L1606098607 Acquired: 6/25/2016 19:59:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00078	.03854	.00139	.01595	.03639	.00021	86.351	.00013
Stddev	.00196	.00438	.00171	.00299	.00069	.00005	.183	.00018
%RSD	252.38	11.356	122.54	18.743	1.8946	25.559	.21179	130.52
#1	-.00064	.04027	.00252	.01429	.03564	.00026	86.561	.00033
#2	-.00004	.03356	-.00057	.01941	.03654	.00022	86.226	.00007
#3	.00302	.04179	.00223	.01417	.03700	.00015	86.267	-.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	.00096	.00901	.09595	1.3588	.01896	23.947	.13765
Stddev	.00012	.00155	.00054	.00336	.0905	.00285	.152	.00156
%RSD	14.271	161.05	6.0176	3.5057	6.6619	15.032	.63449	1.1314
#1	.00074	.00257	.00840	.09606	1.2544	.01772	23.782	.13585
#2	.00084	-.00052	.00942	.09926	1.4148	.02223	24.081	.13859
#3	.00099	.00083	.00922	.09254	1.4072	.01695	23.978	.13851
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	12.868	.00006	.00776	.00294	-.00141	.00160	3.6487
Stddev	.00036	.033	.00069	.00647	.00245	.00292	.00413	.0140
%RSD	74.294	.25857	1239.7	83.320	83.569	207.44	258.10	.38292
#1	.00008	12.905	-.00031	.01172	.00013	.00158	.00626	3.6621
#2	.00078	12.859	.00085	.01126	.00466	-.00154	-.00162	3.6496
#3	.00059	12.840	-.00038	.00030	.00403	-.00426	.00017	3.6342
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098607 Acquired: 6/25/2016 19:59:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.85925**	**-.01297**	**-.00261**	**.00027**	**.01872**	**-.00023**
Stddev	.00058	.00368	.00482	.00118	.00049	.00005	.00100
%RSD	1135.5	.42821	37.150	45.319	182.28	.27976	440.95
#1	.00028	.86236	-.00802	-.00398	-.00019	.01878	.00007
#2	-.00072	.86019	-.01323	-.00183	.00021	.01871	.00059
#3	.00028	.85519	-.01765	-.00203	.00079	.01868	-.00134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9667.2**	**58651.**	**3007.8**
Stddev	38.0	90.	17.4
%RSD	.39269	.15372	.57760
#1	9636.2	58610.	2989.6
#2	9655.8	58589.	3009.4
#3	9709.5	58755.	3024.3

Approved: June 27, 2016

Sample Name: L1606098607PS Acquired: 6/25/2016 20:03:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574215-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19549**	**4.9683**	**.19699**	**.95431**	**.52192**	**.02489**	**83.384**	**.02448**
Stddev	.00145	.0012	.00037	.00069	.00335	.00004	.351	.00015
%RSD	.74419	.02324	.18968	.07193	.64144	.17436	.42141	.59448
#1	.19431	4.9671	.19669	.95367	.51889	.02485	83.062	.02455
#2	.19712	4.9693	.19740	.95504	.52551	.02494	83.759	.02458
#3	.19505	4.9687	.19686	.95422	.52137	.02490	83.330	.02431
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09612**	**.24445**	**.24901**	**2.0095**	**25.021**	**.52274**	**26.551**	**.36466**
Stddev	.00060	.00204	.00132	.0079	.209	.00262	.211	.00375
%RSD	.62715	.83504	.52860	.39401	.83514	.50106	.79467	1.0287
#1	.09620	.24322	.24870	2.0100	24.845	.52124	26.458	.36188
#2	.09668	.24681	.25046	2.0172	25.252	.52577	26.792	.36317
#3	.09548	.24332	.24788	2.0014	24.965	.52123	26.403	.36893
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50539**	**35.868**	**.24056**	**4.8300**	**.24330**	**.58213**	**.19141**	**5.6770**
Stddev	.00256	.121	.00174	.0165	.00225	.00117	.00102	.0113
%RSD	.50685	.33731	.72421	.34266	.92572	.20086	.53487	.19978
#1	.50625	35.730	.24173	4.8368	.24292	.58281	.19254	5.6837
#2	.50742	35.956	.24138	4.8421	.24572	.58078	.19056	5.6833
#3	.50251	35.919	.23856	4.8112	.24127	.58280	.19112	5.6639
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098607PS Acquired: 6/25/2016 20:03:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574215-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48483**	**1.2623**	**.48068**	**.24615**	**.50488**	**.48944**	**.00427**
Stddev	.00147	.0060	.00508	.00275	.00238	.00115	.00064
%RSD	.30392	.47569	1.0573	1.1154	.47121	.23489	15.068
#1	.48451	1.2555	.47807	.24920	.50216	.48999	.00389
#2	.48644	1.2668	.48654	.24388	.50587	.49021	.00501
#3	.48354	1.2646	.47744	.24537	.50660	.48812	.00390
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9610.5**	**58019.**	**3004.1**
Stddev	20.4	180.	8.2
%RSD	.21278	.31055	.27313
#1	9607.7	58202.	3005.9
#2	9591.6	58012.	2995.2
#3	9632.2	57842.	3011.3

Approved: June 27, 2016

Sample Name: L1606098607SDL Acquired: 6/25/2016 20:06:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574215-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	.00334	.00170	.00445	.00847	.00009	17.139	.00008
Stddev	.00049	.00730	.00411	.00207	.00008	.00007	.249	.00023
%RSD	88.649	218.69	241.70	46.624	.94243	75.660	1.4519	290.72
#1	.00089	.00593	.00612	.00219	.00843	.00006	17.426	.00034
#2	-.00001	.00899	-.00200	.00488	.00843	.00004	17.001	-.00003
#3	.00078	-.00490	.00098	.00627	.00857	.00017	16.989	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.00037	.00191	.01894	.32539	.00400	4.9234	.02615
Stddev	.00005	.00023	.00083	.00475	.10069	.00194	.1236	.00303
%RSD	9.1063	60.795	43.755	25.087	30.943	48.604	2.5107	11.568
#1	.00062	.00059	.00284	.02402	.21108	.00176	4.9976	.02622
#2	.00053	.00038	.00165	.01821	.40094	.00496	4.9918	.02914
#3	.00053	.00014	.00123	.01460	.36416	.00527	4.7807	.02309
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	2.5977	.00028	.00852	.00297	.00160	.00156	.72149
Stddev	.00021	.0380	.00123	.00414	.00293	.00068	.00366	.00246
%RSD	66.333	1.4636	438.92	48.637	98.645	42.261	235.25	.34147
#1	.00008	2.6376	-.00081	.01268	-.00028	.00113	-.00104	.72244
#2	.00048	2.5938	.00004	.00439	.00377	.00130	.00574	.71869
#3	.00037	2.5619	.00161	.00849	.00542	.00238	-.00003	.72333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098607SDL Acquired: 6/25/2016 20:06:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574215-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.17255**	**.00033**	**-.00095**	**.00100**	**.00419**	**.00060**
Stddev	.00072	.00063	.00618	.00123	.00055	.00013	.00060
%RSD	1344.6	.36773	1857.8	129.31	55.083	2.9985	99.890
#1	-.00060	.17322	-.00395	-.00224	.00116	.00417	-.00009
#2	.00076	.17246	-.00247	-.00083	.00039	.00432	.00094
#3	-.00032	.17196	.00742	.00021	.00145	.00407	.00094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10100.**	**61152.**	**3087.7**
Stddev	17.	221.	3.3
%RSD	.16887	.36180	.10673
#1	10112.	61407.	3088.4
#2	10080.	61005.	3090.6
#3	10107.	61046.	3084.1

Approved: June 27, 2016

Sample Name: L1606098607SDL Acquired: 6/25/2016 20:10:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574215-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**-.00220**	**-.00032**	**-.00063**	**.00197**	**.00015**	**3.3784**	**-.00009**
Stddev	.00281	.00599	.00141	.00122	.00070	.00004	.0403	.00029
%RSD	1738.4	271.64	438.98	193.96	35.714	23.124	1.1918	310.09
#1	.00289	-.00340	.00101	-.00187	.00220	.00018	3.3321	-.00013
#2	-.00273	.00429	-.00181	-.00058	.00253	.00017	3.3977	-.00037
#3	.00033	-.00751	-.00017	.00056	.00118	.00011	3.4054	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**-.00057**	**.00039**	**.03496**	**.02799**	**.00189**	**.96584**	**.00502**
Stddev	.00041	.00109	.00122	.02559	.02173	.00316	.06365	.00248
%RSD	5673.0	191.57	314.78	73.189	77.636	167.39	6.5899	49.517
#1	.00017	-.00161	.00178	.00957	.03029	.00425	1.0133	.00340
#2	.00028	-.00067	-.00011	.06074	.04847	.00313	.99069	.00377
#3	-.00047	.00057	-.00050	.03458	.00520	-.00171	.89352	.00788
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**.48659**	**-.00001**	**.00389**	**.00194**	**-.00589**	**.00123**	**.14706**
Stddev	.00019	.02107	.00027	.00257	.00032	.00198	.00158	.00411
%RSD	50.403	4.3293	3257.2	66.021	16.675	33.653	128.28	2.7928
#1	-.00035	.50181	-.00003	.00472	.00177	-.00726	-.00048	.14268
#2	-.00056	.46255	.00027	.00101	.00173	-.00680	.00263	.15082
#3	-.00019	.49542	-.00027	.00595	.00231	-.00362	.00154	.14770
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098607SDL Acquired: 6/25/2016 20:10:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574215-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**.03404**	**-.00096**	**.00109**	**.00053**	**.00095**	**-.00050**
Stddev	.00021	.00026	.00497	.00270	.00028	.00007	.00147
%RSD	93.819	.76060	519.10	248.53	53.226	6.9237	292.99
#1	-.00042	.03414	.00415	-.00145	.00059	.00088	.00090
#2	-.00001	.03374	-.00578	.00079	.00078	.00097	-.00204
#3	-.00022	.03423	-.00124	.00392	.00022	.00101	-.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10132.**	**61150.**	**3069.8**
Stddev	20.	142.	13.8
%RSD	.19324	.23287	.44985
#1	10144.	61269.	3085.6
#2	10109.	61188.	3063.7
#3	10143.	60992.	3060.0

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 20:14:26 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39742**	**10.037**	**.39212**	**.48448**	**.99926**	**.05007**	**9.9665**
Stddev	.00078	.015	.00234	.00170	.00686	.00012	.0639
%RSD	.19741	.14886	.59686	.35046	.68696	.24571	.64080
#1	.39794	10.020	.39189	.48304	1.0007	.05009	10.032
#2	.39780	10.040	.39457	.48635	.99181	.05018	9.9043
#3	.39651	10.049	.38991	.48406	1.0053	.04994	9.9633
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04995**	**.19662**	**.49719**	**.50408**	**3.9345**	**48.425**	**1.0056**
Stddev	.00017	.00028	.00293	.00085	.0512	.336	.0066
%RSD	.33202	.14096	.58868	.16772	1.3013	.69474	.65876
#1	.05012	.19642	.49505	.50367	3.9195	48.601	1.0066
#2	.04993	.19694	.50053	.50505	3.8924	48.037	.99858
#3	.04979	.19651	.49600	.50351	3.9915	48.637	1.0117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.6539**	**.49874**	**1.0057**	**49.161**	**.50061**	**9.8144**	**.49889**
Stddev	.1152	.00402	.0014	.263	.00048	.0158	.00214
%RSD	1.1928	.80691	.13850	.53437	.09607	.16108	.42961
#1	9.7007	.49641	1.0053	49.311	.50117	9.7964	.49662
#2	9.5228	.49643	1.0072	48.858	.50038	9.8207	.49919
#3	9.7383	.50339	1.0045	49.316	.50029	9.8261	.50087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 20:14:26 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1787**	**.38972**	**5.0552**	**.98705**	**.99934**	**.99527**	**.50770**
Stddev	.0014	.00525	.0102	.00133	.00573	.00628	.00313
%RSD	.12146	1.3477	.20130	.13498	.57306	.63102	.61635
#1	1.1790	.38370	5.0434	.98688	1.0013	.99951	.50582
#2	1.1772	.39212	5.0610	.98581	.99288	.98805	.50598
#3	1.1800	.39334	5.0611	.98846	1.0038	.99824	.51132
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0147**	**.99253**	F **2.9496**
Stddev	.0017	.00087	.0127
%RSD	.16286	.08813	.43029
#1	1.0131	.99259	2.9390
#2	1.0147	.99336	2.9462
#3	1.0164	.99162	2.9637
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9868.5**	**58806.**	**2964.6**
Stddev	19.7	151.	1.8
%RSD	.19965	.25680	.06126
#1	9885.2	58672.	2966.0
#2	9873.5	58776.	2965.4
#3	9846.8	58969.	2962.6

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 20:18:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00132	-.00340	-.00049	.00031	.00192	.00008	-.02002	-.00008
Stddev	.00216	.00700	.00114	.00069	.00099	.00015	.01568	.00025
%RSD	163.88	205.77	232.07	221.43	51.768	179.89	78.343	317.94
#1	.00112	.00138	-.00179	.00077	.00240	-.00004	-.03265	.00011
#2	.00357	-.00014	-.00002	.00066	.00258	.00004	-.00247	-.00036
#3	-.00074	-.01144	.00034	-.00049	.00078	.00025	-.02493	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	.00038	.00063	.02332	-.07555	-.00123	.02786	-.00147
Stddev	.00036	.00095	.00188	.02448	.09270	.00682	.09570	.00329
%RSD	47.976	247.76	298.28	104.94	122.70	553.52	343.47	223.66
#1	.00080	.00146	-.00061	.04476	-.06611	.00634	-.06528	.00195
#2	.00036	.00002	.00279	-.00335	-.17262	-.00687	.02294	-.00462
#3	.00107	-.00033	-.00029	.02856	.01207	-.00317	.12594	-.00174
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00377	.03770	.00015	.00241	-.00006	.00325	.00675	.03903
Stddev	.00019	.01915	.00084	.00431	.00100	.00269	.00806	.00132
%RSD	5.0202	50.799	576.30	178.78	1573.6	82.788	119.45	3.3700
#1	.00388	.01718	.00046	.00371	.00063	.00040	.01512	.04015
#2	.00389	.04082	.00078	-.00240	-.00121	.00574	.00608	.03936
#3	.00355	.05510	-.00080	.00592	.00039	.00360	-.00096	.03758
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 20:18:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.00027**	**.00088**	**-.00106**	**.00004**	**-.00003**	**.00449**
Stddev	.00046	.00064	.00516	.00225	.00089	.00028	.00124
%RSD	6827.2	239.61	583.41	212.27	2439.5	892.40	27.555
#1	.00053	-.00043	-.00417	-.00308	-.00098	.00021	.00367
#2	-.00031	.00040	.00068	.00137	.00041	.00004	.00389
#3	-.00023	.00082	.00615	-.00147	.00068	-.00034	.00592
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9631.9**	**58363.**	**2969.7**
Stddev	4.5	93.	16.5
%RSD	.04685	.16010	.55454
#1	9627.4	58461.	2965.8
#2	9636.4	58275.	2987.8
#3	9631.8	58353.	2955.6

Approved: June 27, 2016

Sample Name: L1606098609 Acquired: 6/25/2016 20:22:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.68625	.00096	.00637	.02063	.00019	116.68	.00011
Stddev	.00130	.00243	.00203	.00124	.00115	.00006	.34	.00020
%RSD	161.33	.35410	210.74	19.489	5.5807	30.863	.28955	179.93
#1	.00013	.68352	.00323	.00768	.02147	.00021	116.54	.00014
#2	.00231	.68708	-.00070	.00521	.01932	.00023	116.43	-.00010
#3	-.00002	.68816	.00037	.00620	.02109	.00012	117.06	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.00251	.00589	.80058	.71511	.00736	28.613	.02306
Stddev	.00014	.00088	.00100	.02799	.18771	.00368	.079	.00071
%RSD	23.262	34.910	17.057	3.4966	26.250	49.956	.27754	3.0949
#1	.00051	.00150	.00680	.80914	.91494	.01159	28.526	.02382
#2	.00075	.00293	.00481	.76931	.68792	.00556	28.632	.02293
#3	.00052	.00310	.00605	.82330	.54247	.00492	28.681	.02241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	14.713	.00303	.03333	.00106	-.00272	.00365	4.8889
Stddev	.00024	.075	.00054	.00378	.00114	.00271	.00111	.0101
%RSD	32.746	.50774	17.920	11.335	108.20	99.808	30.510	.20564
#1	.00047	14.684	.00299	.03128	.00107	-.00577	.00444	4.8999
#2	.00095	14.656	.00359	.03769	-.00009	-.00056	.00238	4.8868
#3	.00081	14.797	.00251	.03102	.00220	-.00183	.00413	4.8801
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098609 Acquired: 6/25/2016 20:22:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**.51888**	**.00260**	**-.00246**	**.00196**	**.03426**	**.00729**
Stddev	.00032	.00275	.00453	.00099	.00037	.00011	.00028
%RSD	1222.6	.53076	174.15	40.180	18.856	.31556	3.8509
#1	.00009	.51844	-.00256	-.00245	.00220	.03417	.00723
#2	-.00032	.51637	.00591	-.00346	.00153	.03438	.00705
#3	.00031	.52183	.00446	-.00148	.00215	.03423	.00760
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9797.7**	**59515.**	**3093.6**
Stddev	11.0	17.	11.2
%RSD	.11267	.02773	.36079
#1	9791.0	59496.	3083.8
#2	9810.4	59520.	3105.7
#3	9791.6	59528.	3091.1

Approved: June 27, 2016

Sample Name: L1606098611 Acquired: 6/25/2016 20:25:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	.67808	-.00318	.08715	.06918	.00114	148.14	.00017
Stddev	.00037	.00569	.00382	.00198	.00070	.00012	.69	.00021
%RSD	151.84	.83972	120.10	2.2728	1.0151	10.946	.46623	125.05
#1	-.00014	.67215	-.00172	.08491	.06933	.00099	148.49	.00006
#2	.00061	.68350	-.00031	.08867	.06980	.00119	147.34	.00003
#3	.00027	.67861	-.00751	.08788	.06842	.00123	148.59	.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00363	.00334	.07531	1.1555	1.9378	.02263	43.443	.16489
Stddev	.00025	.00064	.00057	.0192	.0114	.00045	.331	.00288
%RSD	6.9167	19.099	.75123	1.6613	.58882	1.9873	.76282	1.7487
#1	.00388	.00297	.07511	1.1584	1.9507	.02262	43.610	.16408
#2	.00338	.00297	.07595	1.1731	1.9292	.02219	43.061	.16250
#3	.00362	.00407	.07487	1.1351	1.9335	.02309	43.657	.16809
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00248	25.675	.00454	.04285	.00455	-.00035	-.00286	3.7826
Stddev	.00024	.125	.00067	.00695	.00113	.00106	.00555	.0053
%RSD	9.7863	.48812	14.843	16.217	24.766	306.62	194.07	.13999
#1	.00260	25.775	.00423	.04366	.00585	.00053	-.00927	3.7791
#2	.00220	25.535	.00409	.03554	.00387	-.00004	.00020	3.7887
#3	.00264	25.716	.00532	.04936	.00394	-.00153	.00049	3.7799
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098611 Acquired: 6/25/2016 20:25:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	2.0876	-.00638	-.00280	.00142	.06566	.00394
Stddev	.00055	.0096	.00925	.00066	.00022	.00017	.00141
%RSD	713.59	.45905	144.86	23.607	15.199	.25178	35.771
#1	-.00017	2.0923	-.00754	-.00222	.00163	.06585	.00254
#2	-.00031	2.0765	-.01500	-.00266	.00143	.06556	.00536
#3	.00071	2.0939	.00339	-.00351	.00120	.06556	.00393
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9695.5	58902.	3054.3
Stddev	10.1	156.	10.7
%RSD	.10398	.26470	.35100
#1	9691.1	59006.	3048.2
#2	9688.3	58978.	3066.6
#3	9707.0	58723.	3048.0

Approved: June 27, 2016

Sample Name: L1606098613 Acquired: 6/25/2016 20:29:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00174	5.5730	.00432	.03801	.11035	.00130	203.09	-.00001
Stddev	.00149	.0359	.00264	.00141	.00031	.00003	.17	.00016
%RSD	85.559	.64338	61.135	3.7127	.27868	2.0129	.08522	1090.1
#1	.00010	5.6007	.00735	.03819	.11034	.00128	203.27	.00012
#2	.00211	5.5858	.00310	.03932	.11006	.00133	203.05	.00003
#3	.00302	5.5325	.00251	.03651	.11067	.00131	202.93	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00373	.00967	.08024	7.4517	4.1196	.03087	79.593	.34313
Stddev	.00008	.00046	.00072	.0194	.0319	.00148	.239	.00219
%RSD	2.0959	4.7129	.90070	.26051	.77317	4.7986	.30050	.63957
#1	.00364	.00917	.07941	7.4293	4.0890	.03222	79.370	.34059
#2	.00377	.01007	.08072	7.4635	4.1171	.03112	79.565	.34436
#3	.00379	.00978	.08059	7.4624	4.1526	.02929	79.846	.34443
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00182	24.658	.00975	.17618	.00825	.00008	.00248	10.141
Stddev	.00040	.019	.00024	.00598	.00295	.00311	.00271	.073
%RSD	21.744	.07518	2.5015	3.3961	35.754	3886.1	109.35	.72041
#1	.00146	24.670	.00990	.17816	.00502	.00353	.00373	10.058
#2	.00175	24.669	.00947	.16946	.00891	-.00250	.00433	10.169
#3	.00224	24.637	.00989	.18093	.01080	-.00079	-.00063	10.196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098613 Acquired: 6/25/2016 20:29:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	2.4743	.05397	-.00080	.01073	.41856	.00624
Stddev	.00027	.0052	.00665	.00236	.00131	.00229	.00115
%RSD	39.960	.21077	12.313	294.11	12.169	.54671	18.419
#1	.00089	2.4751	.05254	-.00353	.01217	.41596	.00756
#2	.00073	2.4791	.04816	.00063	.00962	.42027	.00548
#3	.00037	2.4687	.06122	.00049	.01040	.41945	.00567
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9619.4	58503.	3058.9
Stddev	38.3	135.	15.7
%RSD	.39844	.23102	.51315
#1	9576.0	58658.	3041.4
#2	9633.7	58414.	3071.7
#3	9648.5	58435.	3063.7

Approved: June 27, 2016

Sample Name: L1606098615 Acquired: 6/25/2016 20:33:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00201	.53689	.00109	.12769	.02932	.00091	261.33	.00014
Stddev	.00048	.01300	.00276	.00142	.00104	.00011	1.37	.00008
%RSD	23.740	2.4215	252.93	1.1120	3.5600	12.063	.52322	55.108
#1	.00148	.54532	.00299	.12707	.02978	.00081	261.04	.00021
#2	.00215	.54344	.00237	.12931	.03005	.00088	262.83	.00006
#3	.00240	.52192	-.00208	.12669	.02812	.00103	260.14	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	.00167	.04808	1.7755	3.9837	.04482	96.121	.35461
Stddev	.00009	.00172	.00105	.0329	.0639	.00305	.330	.00305
%RSD	12.352	103.13	2.1885	1.8532	1.6044	6.8091	.34352	.86008
#1	.00068	.00125	.04714	1.8121	3.9806	.04242	96.172	.35269
#2	.00071	.00356	.04922	1.7483	4.0491	.04379	96.422	.35813
#3	.00085	.00020	.04788	1.7662	3.9214	.04825	95.768	.35302
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	71.586	.00152	.06528	.00543	-.00023	-.00042	6.3830
Stddev	.00049	.359	.00083	.00282	.00224	.00292	.00309	.0073
%RSD	60.493	.50193	55.060	4.3183	41.272	1275.7	729.65	.11354
#1	.00036	71.588	.00097	.06827	.00795	-.00316	.00167	6.3913
#2	.00132	71.945	.00248	.06488	.00468	-.00019	.00103	6.3782
#3	.00072	71.227	.00110	.06267	.00366	.00267	-.00398	6.3795
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098615 Acquired: 6/25/2016 20:33:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00066**	**6.9477**	**-.01868**	**-.00208**	**-.00036**	**.07416**	**.00363**
Stddev	.00094	.0407	.00365	.00070	.00044	.00028	.00062
%RSD	142.12	.58617	19.553	33.577	122.09	.37861	17.066
#1	.00171	6.9428	-.02024	-.00215	-.00034	.07441	.00412
#2	.00039	6.9907	-.01451	-.00134	-.00081	.07386	.00293
#3	-.00011	6.9097	-.02130	-.00273	.00007	.07420	.00382
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9482.1**	**57521.**	**3041.1**
Stddev	15.4	119.	13.0
%RSD	.16231	.20772	.42869
#1	9472.3	57649.	3053.5
#2	9499.8	57500.	3027.5
#3	9474.1	57412.	3042.2

Approved: June 27, 2016

Sample Name: L1606098617 Acquired: 6/25/2016 20:37:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00154	.20547	.00214	.04863	.05628	.00015	62.798	.00005
Stddev	.00260	.00707	.00399	.00222	.00076	.00003	.506	.00026
%RSD	168.84	3.4433	186.39	4.5608	1.3548	21.842	.80652	579.39
#1	.00162	.19836	-.00117	.04752	.05710	.00015	63.380	-.00016
#2	.00410	.20553	.00657	.05118	.05613	.00018	62.459	.00034
#3	-.00110	.21251	.00102	.04718	.05560	.00012	62.555	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.00139	.00754	.49751	2.0420	.02056	20.601	.01571
Stddev	.00024	.00096	.00096	.02565	.1117	.00244	.034	.00089
%RSD	70.093	68.878	12.744	5.1552	5.4689	11.879	.16418	5.6341
#1	.00059	.00246	.00739	.47113	2.0254	.02185	20.628	.01672
#2	.00012	.00112	.00857	.52236	1.9395	.01774	20.613	.01507
#3	.00031	.00060	.00666	.49904	2.1610	.02209	20.563	.01535
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00090	26.598	.00080	.00703	.00246	-.00325	.00131	3.4906
Stddev	.00064	.178	.00058	.00500	.00246	.00605	.00554	.0173
%RSD	70.655	.66988	72.589	71.163	99.983	186.20	421.53	.49585
#1	.00155	26.804	.00039	.00280	.00327	-.00237	-.00267	3.5042
#2	.00088	26.495	.00146	.00574	-.00030	-.00969	.00764	3.4966
#3	.00027	26.495	.00054	.01256	.00441	.00231	-.00103	3.4711
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098617 Acquired: 6/25/2016 20:37:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	1.5150	-.00311	-.00236	-.00015	.01447	.00341
Stddev	.00072	.0088	.00641	.00068	.00005	.00011	.00060
%RSD	226.25	.58268	206.23	28.717	34.447	.73139	17.615
#1	.00066	1.5251	-.00263	-.00291	-.00009	.01435	.00287
#2	.00080	1.5088	.00305	-.00160	-.00015	.01454	.00406
#3	-.00051	1.5111	-.00975	-.00256	-.00020	.01452	.00331
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9830.7	59822.	3082.9
Stddev	15.5	147.	23.6
%RSD	.15717	.24641	.76693
#1	9813.6	59963.	3057.5
#2	9843.5	59835.	3104.4
#3	9835.1	59669.	3086.7

Approved: June 27, 2016

Sample Name: L1606098619 Acquired: 6/25/2016 20:41:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00113	.27749	.00069	.06930	.05323	.00039	10.214	.00034
Stddev	.00263	.00318	.00178	.00081	.00134	.00007	.065	.00038
%RSD	232.09	1.1459	258.13	1.1649	2.5186	17.965	.63738	111.28
#1	.00355	.27762	.00105	.06852	.05477	.00042	10.240	.00066
#2	-.00167	.28061	.00227	.06924	.05251	.00044	10.140	.00044
#3	.00153	.27425	-.00125	.07014	.05240	.00031	10.262	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00108	.00071	.02585	.24748	1.2811	.01465	4.6162	.00999
Stddev	.00051	.00114	.00067	.00474	.0573	.00378	.0318	.00359
%RSD	46.988	159.40	2.5887	1.9167	4.4759	25.817	.68816	35.904
#1	.00062	.00202	.02645	.25048	1.2371	.01153	4.5886	.01278
#2	.00162	-.00003	.02513	.24201	1.3460	.01356	4.6509	.01123
#3	.00099	.00015	.02599	.24994	1.2604	.01885	4.6090	.00594
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00123	228.52	.00044	.07963	.00371	-.00207	.00619	2.5103
Stddev	.00028	1.82	.00063	.00808	.00266	.00077	.00393	.0173
%RSD	22.669	.79720	141.35	10.151	71.562	37.379	63.490	.68709
#1	.00153	229.52	.00003	.07034	.00201	-.00126	.00175	2.5018
#2	.00118	226.42	.00013	.08504	.00235	-.00280	.00758	2.4989
#3	.00097	229.62	.00117	.08351	.00677	-.00216	.00924	2.5301
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098619 Acquired: 6/25/2016 20:41:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.22967	.00683	-.00264	.00219	.02256	.00408
Stddev	.00091	.00074	.00628	.00047	.00030	.00021	.00266
%RSD	1371.8	.32350	91.943	17.727	13.766	.92425	65.101
#1	-.00024	.23041	.00516	-.00255	.00222	.02259	.00112
#2	-.00065	.22892	.00155	-.00314	.00188	.02235	.00625
#3	.00109	.22967	.01377	-.00222	.00248	.02276	.00487
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9702.8	58480.	3067.3
Stddev	45.7	28.	15.6
%RSD	.47062	.04775	.50880
#1	9725.9	58510.	3053.5
#2	9732.4	58474.	3084.2
#3	9650.3	58455.	3064.3

Approved: June 27, 2016

Sample Name: L1606098621 Acquired: 6/25/2016 20:45:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	.00121	.00179	.05746	.02986	.00029	128.59	-.00000
Stddev	.00056	.00275	.00384	.00358	.00132	.00008	.53	.00025
%RSD	97.573	226.34	214.60	6.2318	4.4201	27.216	.41011	6271.6
#1	.00040	-.00100	.00602	.06157	.03100	.00034	129.12	-.00029
#2	.00120	.00036	-.00148	.05576	.03017	.00020	128.07	.00019
#3	.00012	.00429	.00083	.05504	.02841	.00032	128.57	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.00173	.01434	.05981	2.5098	.02550	33.269	.15420
Stddev	.00017	.00097	.00185	.00891	.0950	.00146	.060	.00170
%RSD	92.832	55.806	12.905	14.892	3.7837	5.7272	.18077	1.1012
#1	.00010	.00269	.01260	.05052	2.5555	.02390	33.334	.15465
#2	.00007	.00177	.01629	.06064	2.4007	.02586	33.216	.15563
#3	.00038	.00075	.01412	.06828	2.5733	.02675	33.257	.15232
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	47.893	-.00000	.01004	.00162	-.00276	-.00417	3.5790
Stddev	.00060	.257	.00189	.00801	.00056	.00235	.00172	.0047
%RSD	106.13	.53712	269880.	79.763	34.469	85.173	41.117	.13102
#1	.00071	48.149	.00182	.00080	.00218	-.00406	-.00514	3.5827
#2	-.00009	47.634	.00013	.01426	.00163	-.00417	-.00519	3.5737
#3	.00107	47.897	-.00195	.01505	.00106	-.00005	-.00219	3.5806
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098621 Acquired: 6/25/2016 20:45:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**1.8050**	**-.02231**	**-.00291**	**.00001**	**.01004**	**.00207**
Stddev	.00095	.0120	.00564	.00294	.00125	.00002	.00101
%RSD	393.73	.66689	25.288	100.88	21161.	.16952	48.549
#1	.00057	1.8173	-.02371	-.00622	-.00119	.01005	.00218
#2	-.00128	1.7932	-.02711	-.00189	.00130	.01004	.00102
#3	-.00001	1.8046	-.01610	-.00062	-.00009	.01002	.00302
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9662.5**	**58180.**	**3042.4**
Stddev	14.0	47.	7.3
%RSD	.14521	.08141	.24078
#1	9658.0	58146.	3035.1
#2	9678.2	58161.	3042.4
#3	9651.2	58234.	3049.8

Approved: June 27, 2016

Sample Name: L1606098623 Acquired: 6/25/2016 20:49:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00139	.10705	.00198	.41392	.02623	.00027	243.17	.00017
Stddev	.00218	.00541	.00096	.00428	.00052	.00003	1.41	.00011
%RSD	157.63	5.0515	48.506	1.0332	1.9773	12.148	.58072	65.505
#1	.00177	.11044	.00295	.41225	.02682	.00026	243.56	.00005
#2	.00336	.10081	.00102	.41878	.02603	.00030	244.34	.00020
#3	-.00096	.10989	.00198	.41074	.02584	.00024	241.60	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.00125	.02256	.13395	6.1008	.01177	68.965	.45308
Stddev	.00021	.00090	.00053	.00942	.0335	.00473	.254	.00553
%RSD	267.67	72.031	2.3661	7.0298	.54942	40.196	.36871	1.2196
#1	-.00012	.00056	.02318	.12309	6.1028	.01598	68.820	.44996
#2	.00031	.00093	.02221	.13890	6.0663	.00665	69.259	.45946
#3	.00005	.00227	.02231	.13986	6.1333	.01267	68.816	.44983
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00044	66.667	.00075	.01360	.00015	-.00234	.00238	3.6345
Stddev	.00039	.343	.00118	.00476	.00283	.00395	.00376	.0082
%RSD	88.357	.51401	157.96	35.012	1938.3	168.93	158.02	.22548
#1	.00001	66.765	.00108	.01427	-.00296	-.00415	.00669	3.6345
#2	.00056	66.950	-.00056	.00853	.00082	.00219	.00057	3.6426
#3	.00076	66.286	.00172	.01798	.00259	-.00506	-.00014	3.6263
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098623 Acquired: 6/25/2016 20:49:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	1.6999	-.02956	-.00156	.00030	.00857	.00329
Stddev	.00028	.0081	.00507	.00230	.00048	.00011	.00135
%RSD	598.12	.47536	17.163	147.79	160.42	1.3327	41.067
#1	.00005	1.7017	-.03255	.00072	-.00015	.00844	.00173
#2	.00033	1.7069	-.02370	-.00388	.00023	.00859	.00400
#3	-.00023	1.6911	-.03242	-.00151	.00081	.00866	.00415
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9416.4	57429.	3035.8
Stddev	48.0	130.	25.1
%RSD	.51009	.22575	.82551
#1	9467.2	57482.	3016.2
#2	9410.3	57282.	3027.1
#3	9371.8	57525.	3064.1

Approved: June 27, 2016

Sample Name: L1606098625 Acquired: 6/25/2016 20:52:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00225	2.3612	.00034	.04147	.11975	.00023	121.59	.00037
Stddev	.00036	.0069	.00441	.00209	.00117	.00012	.33	.00010
%RSD	15.843	.29306	1297.6	5.0487	.97876	50.808	.26806	27.630
#1	.00211	2.3674	.00539	.03961	.11950	.00036	121.76	.00028
#2	.00199	2.3537	-.00273	.04106	.11872	.00014	121.21	.00033
#3	.00266	2.3625	-.00164	.04374	.12102	.00019	121.79	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00161	.00414	.00666	2.3953	2.5999	.01491	37.526	1.0679
Stddev	.00025	.00072	.00102	.0202	.0477	.00333	.332	.0124
%RSD	15.696	17.478	15.382	.84513	1.8346	22.308	.88561	1.1598
#1	.00188	.00385	.00549	2.3789	2.6109	.01808	37.493	1.0637
#2	.00138	.00496	.00714	2.4179	2.5476	.01145	37.212	1.0581
#3	.00156	.00361	.00736	2.3890	2.6411	.01519	37.874	1.0818
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	18.226	.00269	.05391	.00651	-.00190	.00505	5.9129
Stddev	.00020	.052	.00077	.00146	.00208	.00291	.00127	.0400
%RSD	30.881	.28797	28.786	2.7065	31.918	152.94	25.077	.67624
#1	.00067	18.245	.00228	.05412	.00658	-.00209	.00366	5.9121
#2	.00082	18.167	.00221	.05526	.00440	.00110	.00533	5.9533
#3	.00043	18.267	.00358	.05236	.00855	-.00472	.00614	5.8733
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098625 Acquired: 6/25/2016 20:52:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00035**	**.99462**	**.03044**	**-.00185**	**.00457**	**.15726**	**.00437**
Stddev	.00053	.00442	.00913	.00019	.00047	.00042	.00072
%RSD	150.91	.44485	29.990	10.187	10.282	.27017	16.565
#1	.00010	.99601	.03923	-.00207	.00503	.15763	.00393
#2	-.00093	.98967	.02100	-.00171	.00410	.15735	.00520
#3	-.00022	.99819	.03111	-.00178	.00457	.15680	.00397
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9574.3**	**58285.**	**3022.7**
Stddev	18.0	80.	21.3
%RSD	.18820	.13801	.70548
#1	9553.8	58363.	3008.3
#2	9581.8	58202.	3047.2
#3	9587.4	58291.	3012.6

Approved: June 27, 2016

Sample Name: L1606098627 Acquired: 6/25/2016 20:56:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00254	4.6384	.00407	.03588	.08487	.00132	200.73	.00005
Stddev	.00192	.0173	.00097	.00149	.00032	.00011	.32	.00023
%RSD	75.499	.37394	23.741	4.1641	.37451	8.4866	.15998	422.09
#1	.00186	4.6215	.00464	.03631	.08521	.00120	200.37	.00006
#2	.00106	4.6377	.00461	.03711	.08483	.00141	200.85	-.00018
#3	.00471	4.6561	.00295	.03422	.08457	.00136	200.98	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00295	.00847	.07661	6.3761	4.0467	.02688	78.393	.28594
Stddev	.00029	.00096	.00098	.0153	.0946	.00177	.290	.00214
%RSD	9.9470	11.337	1.2842	.24023	2.3374	6.5906	.37011	.74836
#1	.00263	.00958	.07761	6.3586	3.9534	.02860	78.140	.28832
#2	.00299	.00791	.07658	6.3825	4.0443	.02506	78.709	.28419
#3	.00322	.00791	.07564	6.3872	4.1425	.02698	78.329	.28530
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00106	25.068	.00713	.15173	.00678	-.00194	.00054	8.9965
Stddev	.00058	.104	.00038	.00131	.00344	.00137	.00531	.0286
%RSD	55.068	.41293	5.2660	.86550	50.818	70.752	976.81	.31838
#1	.00130	24.949	.00680	.15078	.01021	-.00340	-.00348	9.0111
#2	.00040	25.140	.00754	.15323	.00679	-.00068	-.00144	9.0150
#3	.00149	25.114	.00704	.15117	.00333	-.00174	.00656	8.9635
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098627 Acquired: 6/25/2016 20:56:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00089**	**2.4772**	**.04490**	**-.00127**	**.00901**	**.16031**	**.00422**
Stddev	.00154	.0067	.00796	.00182	.00061	.00117	.00055
%RSD	173.10	.26965	17.717	142.95	6.7328	.72957	12.944
#1	.00142	2.4695	.04447	-.00241	.00911	.16067	.00359
#2	.00210	2.4809	.03717	.00082	.00836	.16126	.00459
#3	-.00085	2.4812	.05306	-.00223	.00956	.15900	.00448
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9465.6**	**57841.**	**2995.1**
Stddev	68.7	160.	17.6
%RSD	.72586	.27642	.58883
#1	9445.1	57701.	3013.7
#2	9409.5	58015.	2978.6
#3	9542.2	57807.	2993.1

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 21:00:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40235**	**10.185**	**.39842**	**.49195**	**1.0203**	**.05034**	**10.153**
Stddev	.00325	.028	.00193	.00194	.0055	.00031	.030
%RSD	.80675	.27855	.48505	.39452	.53912	.62290	.29151
#1	.39985	10.214	.39899	.49235	1.0140	.05068	10.126
#2	.40602	10.183	.40000	.49365	1.0227	.05026	10.185
#3	.40118	10.157	.39627	.48984	1.0242	.05007	10.150
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05123**	**.19988**	**.50288**	**.51330**	**4.0070**	**49.596**	**1.0284**
Stddev	.00026	.00047	.00335	.00193	.0033	.230	.0041
%RSD	.51360	.23712	.66679	.37527	.08271	.46359	.40302
#1	.05102	.20030	.50672	.51551	4.0072	49.649	1.0258
#2	.05153	.19997	.50051	.51234	4.0102	49.344	1.0261
#3	.05115	.19937	.50141	.51204	4.0036	49.795	1.0332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.5669**	**.50781**	**1.0249**	**50.362**	**.50842**	**9.9814**	**.50557**
Stddev	.0485	.00742	.0065	.234	.00100	.0181	.00207
%RSD	.50657	1.4609	.62973	.46520	.19680	.18135	.40980
#1	9.6226	.50131	1.0311	50.266	.50877	9.9736	.50596
#2	9.5340	.50622	1.0255	50.191	.50920	10.002	.50742
#3	9.5442	.51589	1.0183	50.629	.50729	9.9685	.50333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 21:00:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2045**	**.39202**	**5.1444**	**1.0010**	**1.0190**	**1.0190**	**.51206**
Stddev	.0033	.00153	.0072	.0031	.0045	.0084	.00251
%RSD	.27464	.38961	.14055	.30711	.44063	.82168	.49020
#1	1.2010	.39059	5.1361	1.0039	1.0167	1.0152	.51490
#2	1.2047	.39363	5.1492	1.0015	1.0162	1.0132	.51015
#3	1.2076	.39184	5.1479	.99778	1.0242	1.0286	.51112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0223**	**1.0141**	F **2.9929**
Stddev	.0031	.0001	.0241
%RSD	.30006	.01208	.80650
#1	1.0229	1.0141	3.0133
#2	1.0190	1.0142	2.9663
#3	1.0251	1.0139	2.9992
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9649.2**	**58649.**	**2955.6**
Stddev	2.7	54.	16.9
%RSD	.02842	.09258	.57071
#1	9646.1	58667.	2944.4
#2	9650.3	58588.	2975.0
#3	9651.2	58692.	2947.5

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 21:04:14 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00098**	**-.00081**	**.00091**	**.00315**	**.00292**	**.00009**	**-.03474**	**.00002**
Stddev	.00124	.00864	.00092	.00201	.00133	.00005	.02919	.00008
%RSD	125.96	1064.0	100.48	64.019	45.548	52.705	84.022	417.72
#1	.00043	-.00670	.00067	.00330	.00336	.00005	-.02620	.00002
#2	-.00151	.00910	.00014	.00508	.00142	.00009	-.01077	-.00006
#3	-.00188	-.00483	.00193	.00106	.00397	.00014	-.06724	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.00125**	**.00083**	**.02088**	**-.14334**	**.00212**	**-.02955**	**.00114**
Stddev	.00066	.00051	.00122	.01391	.04593	.00105	.09306	.00075
%RSD	1530.9	41.168	147.43	66.595	32.046	49.608	314.87	66.235
#1	.00067	.00069	.00144	.03293	-.09030	.00098	-.05631	.00047
#2	-.00016	.00170	-.00058	.02406	-.17011	.00232	-.10630	.00196
#3	-.00064	.00135	.00162	.00566	-.16960	.00305	.07395	.00100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00323**	**.05080**	**-.00020**	**.00483**	**.00058**	**.00191**	**.00111**	**.03921**
Stddev	.00021	.02575	.00089	.00353	.00235	.00387	.00242	.00153
%RSD	6.4882	50.676	441.28	73.104	406.34	202.21	216.78	3.9059
#1	.00300	.07783	.00045	.00259	-.00201	.00626	-.00135	.03746
#2	.00339	.02657	-.00122	.00300	.00257	.00062	.00121	.03991
#3	.00331	.04802	.00016	.00889	.00117	-.00114	.00348	.04027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 21:04:14 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.00029	-.00007	-.00513	.00041	-.00001	.00470
Stddev	.00027	.00000	.00626	.00369	.00015	.00012	.00055
%RSD	55.343	1.4693	8856.4	71.949	37.134	916.05	11.589
#1	.00081	.00028	.00338	-.00666	.00031	.00010	.00427
#2	.00033	.00029	-.00730	-.00092	.00059	.00000	.00453
#3	.00034	.00028	.00370	-.00780	.00035	-.00014	.00531
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9506.6	58497.	2929.7
Stddev	22.3	113.	12.0
%RSD	.23433	.19372	.40841
#1	9532.3	58628.	2919.5
#2	9494.8	58435.	2926.6
#3	9492.6	58429.	2942.8

Approved: June 27, 2016

Sample Name: L1606098629 Acquired: 6/25/2016 21:08:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00070	1.3154	-.00179	.12516	.05800	.00081	247.18	.00018
Stddev	.00097	.0064	.00105	.00195	.00108	.00003	.31	.00008
%RSD	137.44	.48564	58.530	1.5550	1.8687	3.6829	.12350	43.911
#1	.00160	1.3100	-.00292	.12302	.05810	.00083	246.92	.00018
#2	.00082	1.3224	-.00085	.12682	.05904	.00078	247.52	.00010
#3	-.00032	1.3138	-.00160	.12563	.05687	.00083	247.09	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00119	.00401	.04528	2.4364	3.9714	.04409	89.669	.34274
Stddev	.00048	.00063	.00072	.0178	.1152	.00255	.458	.00095
%RSD	40.012	15.569	1.5917	.73079	2.9014	5.7752	.51098	.27642
#1	.00152	.00449	.04490	2.4275	3.9851	.04702	90.007	.34368
#2	.00141	.00424	.04612	2.4569	4.0792	.04281	89.852	.34276
#3	.00065	.00331	.04484	2.4248	3.8500	.04243	89.147	.34178
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00084	72.159	.00306	.12842	.00472	-.00245	-.00232	7.1068
Stddev	.00019	.103	.00116	.00307	.00202	.00283	.00582	.0122
%RSD	22.591	.14315	38.091	2.3898	42.715	115.64	250.20	.17182
#1	.00062	72.124	.00297	.12975	.00386	-.00541	-.00257	7.1178
#2	.00090	72.275	.00194	.13059	.00327	-.00216	-.00801	7.1089
#3	.00099	72.077	.00426	.12491	.00702	.00023	.00361	7.0937
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098629 Acquired: 6/25/2016 21:08:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	6.8039	.00261	-.00311	.00203	.14656	.00713
Stddev	.00109	.0140	.00201	.00153	.00039	.00030	.00139
%RSD	174.70	.20570	77.238	49.135	18.962	.20399	19.505
#1	.00026	6.7979	.00196	-.00298	.00228	.14634	.00715
#2	-.00024	6.8199	.00487	-.00165	.00159	.14690	.00573
#3	.00185	6.7939	.00100	-.00469	.00223	.14643	.00851
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9470.9	57988.	3007.5
Stddev	19.0	71.	5.1
%RSD	.20079	.12320	.16890
#1	9472.3	57910.	3001.8
#2	9451.2	58005.	3011.5
#3	9489.2	58049.	3009.1

Approved: June 27, 2016

Sample Name: L1606098631S Acquired: 6/25/2016 21:12:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18827**	**4.8059**	**.19457**	**.97775**	**.51082**	**.02368**	**136.28**	**.02401**
Stddev	.00146	.0060	.00214	.00486	.00158	.00008	.55	.00011
%RSD	.77669	.12402	1.0980	.49690	.30853	.31910	.40245	.44044
#1	.18949	4.8104	.19700	.98276	.50954	.02372	135.66	.02402
#2	.18665	4.7991	.19298	.97305	.51258	.02359	136.67	.02389
#3	.18867	4.8083	.19374	.97744	.51033	.02373	136.53	.02410
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09298**	**.23341**	**.25035**	**1.9823**	**26.282**	**.52091**	**38.371**	**.48555**
Stddev	.00063	.00083	.00168	.0210	.198	.00132	.105	.00060
%RSD	.67753	.35580	.67127	1.0601	.75241	.25420	.27268	.12393
#1	.09358	.23411	.25193	1.9586	26.065	.52066	38.253	.48489
#2	.09232	.23249	.25054	1.9895	26.453	.52234	38.408	.48570
#3	.09303	.23364	.24858	1.9987	26.329	.51972	38.452	.48607
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49539**	**77.049**	**.23394**	**4.7766**	**.23491**	**.57914**	**.18644**	**6.1257**
Stddev	.00233	.345	.00087	.0076	.00312	.00333	.00623	.0072
%RSD	.47123	.44745	.37273	.15954	1.3288	.57493	3.3395	.11822
#1	.49753	76.664	.23461	4.7848	.23800	.57665	.18760	6.1339
#2	.49574	77.327	.23426	4.7754	.23176	.57786	.17971	6.1201
#3	.49290	77.158	.23296	4.7697	.23495	.58292	.19200	6.1230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098631S Acquired: 6/25/2016 21:12:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47308**	**2.3488**	**.46537**	**.23713**	**.48550**	**.47406**	**.01603**
Stddev	.00180	.0057	.00826	.00130	.00209	.00072	.00324
%RSD	.38025	.24432	1.7741	.54866	.42967	.15151	20.234
#1	.47478	2.3426	.46034	.23744	.48500	.47482	.01233
#2	.47325	2.3539	.46086	.23825	.48371	.47397	.01737
#3	.47120	2.3498	.47490	.23571	.48779	.47340	.01839
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9509.0**	**58216.**	**3011.6**
Stddev	7.0	203.	15.7
%RSD	.07407	.34863	.52135
#1	9501.0	58067.	3028.6
#2	9511.6	58447.	2997.6
#3	9514.3	58134.	3008.7

Approved: June 27, 2016

Sample Name: L1606098633SD Acquired: 6/25/2016 21:15:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19322**	**4.9340**	**.19821**	**1.0094**	**.52302**	**.02438**	**139.13**	**.02459**
Stddev	.00378	.0145	.00351	.0014	.00226	.00009	.67	.00034
%RSD	1.9571	.29336	1.7708	.13572	.43296	.36107	.48341	1.3705
#1	.18918	4.9313	.20201	1.0102	.52283	.02442	139.33	.02427
#2	.19667	4.9211	.19752	1.0078	.52537	.02443	139.68	.02494
#3	.19382	4.9497	.19509	1.0102	.52086	.02428	138.38	.02455
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09514**	**.23910**	**.25336**	**2.0284**	**26.984**	**.53592**	**39.198**	**.43704**
Stddev	.00042	.00077	.00150	.0114	.096	.00060	.184	.00451
%RSD	.44105	.32091	.59054	.56072	.35526	.11184	.46916	1.0308
#1	.09541	.23859	.25475	2.0343	27.015	.53581	38.996	.43232
#2	.09535	.23873	.25356	2.0357	27.059	.53539	39.242	.44129
#3	.09465	.23999	.25178	2.0153	26.876	.53657	39.356	.43751
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50931**	**78.441**	**.23759**	**4.8949**	**.24046**	**.58794**	**.19015**	**6.2655**
Stddev	.00186	.336	.00142	.0178	.00324	.00596	.00110	.0092
%RSD	.36520	.42898	.59954	.36432	1.3470	1.0133	.57938	.14668
#1	.51115	78.549	.23885	4.9125	.24157	.58732	.19136	6.2719
#2	.50933	78.710	.23604	4.8953	.23682	.59419	.18990	6.2695
#3	.50743	78.063	.23787	4.8768	.24301	.58232	.18920	6.2549
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098633SD Acquired: 6/25/2016 21:15:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48269**	**2.3976**	**.47749**	**.23961**	**.50144**	**.48370**	**.00655**
Stddev	.00278	.0083	.00742	.00256	.00242	.00154	.00139
%RSD	.57608	.34786	1.5549	1.0679	.48318	.31822	21.270
#1	.48505	2.3997	.47422	.24207	.50191	.48531	.00572
#2	.48340	2.4047	.47226	.23981	.49882	.48355	.00816
#3	.47963	2.3884	.48599	.23696	.50360	.48224	.00577
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9541.3**	**57975.**	**3017.9**
Stddev	6.7	58.	25.7
%RSD	.06977	.09979	.85022
#1	9537.4	57946.	3002.1
#2	9549.0	58042.	3004.1
#3	9537.6	57938.	3047.5

Approved: June 27, 2016

Sample Name: L1606098635S Acquired: 6/25/2016 21:19:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19277	4.9885	.19579	1.3512	.50932	.02402	246.59	.02462
Stddev	.00213	.0073	.00137	.0073	.00284	.00001	1.33	.00040
%RSD	1.1047	.14711	.70076	.54069	.55753	.03190	.53842	1.6295
#1	.19260	4.9802	.19687	1.3428	.50650	.02402	245.12	.02488
#2	.19498	4.9915	.19425	1.3565	.50929	.02401	246.97	.02416
#3	.19074	4.9939	.19626	1.3542	.51218	.02403	247.69	.02483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09311	.23510	.26651	1.9710	30.025	.51865	72.396	.67936
Stddev	.00111	.00066	.00283	.0124	.152	.00282	.624	.00361
%RSD	1.1973	.28134	1.0623	.63080	.50639	.54413	.86161	.53080
#1	.09375	.23474	.26754	1.9611	29.892	.51908	71.843	.67568
#2	.09182	.23470	.26331	1.9669	29.993	.51564	72.272	.67951
#3	.09375	.23586	.26869	1.9849	30.191	.52123	73.072	.68289
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49951	91.017	.23206	4.8553	.23760	.58301	.18517	6.5213
Stddev	.00475	.491	.00241	.0437	.00246	.00711	.00329	.0728
%RSD	.95179	.53976	1.0367	.89938	1.0354	1.2190	1.7758	1.1160
#1	.50253	90.509	.23402	4.8765	.23815	.58650	.18639	6.5577
#2	.49403	91.051	.22938	4.8051	.23491	.57483	.18144	6.4375
#3	.50197	91.490	.23278	4.8843	.23974	.58769	.18767	6.5687
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098635S Acquired: 6/25/2016 21:19:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47340**	**2.1822**	**.45682**	**.23569**	**.48957**	**.47212**	**.00440**
Stddev	.00586	.0116	.00441	.00472	.00317	.00386	.00078
%RSD	1.2388	.53009	.96525	2.0030	.64754	.81664	17.679
#1	.47626	2.1692	.45177	.23827	.48595	.47646	.00457
#2	.46666	2.1856	.45986	.23024	.49090	.46909	.00508
#3	.47729	2.1916	.45885	.23856	.49186	.47080	.00355
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9474.0**	**57681.**	**2990.6**
Stddev	86.2	193.	10.0
%RSD	.90991	.33483	.33371
#1	9421.7	57902.	3000.6
#2	9573.5	57545.	2990.5
#3	9426.8	57595.	2980.6

Approved: June 27, 2016

Sample Name: L1606098637SD Acquired: 6/25/2016 21:22:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18854**	**4.9112**	**.19745**	**1.3462**	**.50578**	**.02318**	**246.84**	**.02457**
Stddev	.00237	.0122	.00114	.0020	.00229	.00008	1.01	.00037
%RSD	1.2581	.24857	.57516	.14562	.45291	.33396	.40736	1.5133
#1	.18824	4.9085	.19618	1.3456	.50836	.02311	247.86	.02498
#2	.18633	4.9245	.19780	1.3447	.50496	.02326	245.85	.02445
#3	.19105	4.9006	.19837	1.3484	.50401	.02315	246.80	.02427
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09368**	**.23124**	**.24645**	**1.9652**	**29.866**	**.51243**	**71.961**	**.67062**
Stddev	.00032	.00174	.00162	.0103	.162	.00260	.245	.00120
%RSD	.34157	.75435	.65887	.52496	.54204	.50740	.33982	.17871
#1	.09405	.23044	.24793	1.9540	30.010	.51110	72.114	.67080
#2	.09349	.23325	.24471	1.9744	29.691	.51543	71.679	.66935
#3	.09350	.23005	.24671	1.9671	29.897	.51077	72.089	.67172
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50362**	**90.574**	**.23429**	**4.8998**	**.23803**	**.58838**	**.19013**	**6.6122**
Stddev	.00184	.311	.00137	.0310	.00392	.00166	.00571	.0196
%RSD	.36548	.34377	.58644	.63360	1.6481	.28131	3.0018	.29638
#1	.50535	90.891	.23522	4.9314	.24008	.58995	.18521	6.6237
#2	.50169	90.269	.23272	4.8693	.24051	.58666	.19639	6.5896
#3	.50382	90.562	.23494	4.8987	.23351	.58854	.18878	6.6233
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098637SD Acquired: 6/25/2016 21:22:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47518**	**2.1930**	**.45556**	**.23535**	**.47970**	**.47047**	**.00421**
Stddev	.00224	.0050	.00619	.00164	.00083	.00231	.00126
%RSD	.47229	.22774	1.3595	.69822	.17220	.49043	29.868
#1	.47661	2.1987	.46015	.23423	.48048	.47206	.00301
#2	.47259	2.1891	.45801	.23458	.47883	.46782	.00552
#3	.47634	2.1914	.44851	.23723	.47980	.47152	.00409
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9517.7**	**58425.**	**3034.0**
Stddev	30.6	371.	4.3
%RSD	.32191	.63434	.14141
#1	9523.8	58332.	3029.9
#2	9544.8	58110.	3038.5
#3	9484.5	58834.	3033.6

Approved: June 27, 2016

Sample Name: L1606098639 Acquired: 6/25/2016 21:26:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.00422**	**.00040**	**.00975**	**.00108**	**.00009**	**.14419**	**-.00005**
Stddev	.00042	.00758	.00073	.00126	.00087	.00008	.01744	.00009
%RSD	1118.0	179.89	181.74	12.897	80.476	90.859	12.096	178.96
#1	.00028	.01060	-.00028	.01106	.00209	.00013	.16280	-.00014
#2	.00012	-.00417	.00116	.00964	.00057	-.00000	.14155	-.00004
#3	-.00051	.00622	.00032	.00856	.00059	.00013	.12822	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00044**	**.00035**	**.00305**	**.04079**	**-.00706**	**.00203**	**-.02733**	**-.00024**
Stddev	.00042	.00030	.00090	.02484	.04162	.00092	.03833	.00264
%RSD	93.882	85.053	29.494	60.907	589.18	45.533	140.24	1117.6
#1	.00013	.00037	.00205	.05000	-.05467	.00295	-.00835	-.00277
#2	.00091	.00004	.00332	.05971	.01106	.00204	-.00220	-.00044
#3	.00028	.00063	.00378	.01266	.02242	.00110	-.07145	.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00046**	**.23384**	**.00002**	**.00301**	**.00223**	**-.00336**	**.00424**	**.10834**
Stddev	.00025	.02078	.00057	.00488	.00185	.00118	.00213	.00216
%RSD	54.203	8.8874	3135.0	161.94	83.035	35.176	50.129	1.9925
#1	.00023	.25768	.00001	-.00120	.00258	-.00441	.00208	.11078
#2	.00073	.22428	.00059	.00188	.00389	-.00208	.00633	.10755
#3	.00043	.21955	-.00055	.00835	.00023	-.00360	.00432	.10668
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098639 Acquired: 6/25/2016 21:26:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.00188	.00201	-.00117	.00072	.00941	.00130
Stddev	.00073	.00051	.00315	.00081	.00019	.00001	.00060
%RSD	203.49	27.359	156.60	69.426	26.854	.12705	46.035
#1	.00061	.00146	.00564	-.00068	.00081	.00940	.00116
#2	.00093	.00173	.00038	-.00211	.00085	.00941	.00078
#3	-.00047	.00245	.00001	-.00072	.00050	.00942	.00196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9979.7	61621.	3102.9
Stddev	10.2	118.	6.8
%RSD	.10173	.19116	.21926
#1	9983.1	61738.	3101.0
#2	9987.7	61621.	3110.5
#3	9968.3	61503.	3097.3

Approved: June 27, 2016

Sample Name: L1606098641 Acquired: 6/25/2016 21:30:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00155	.00228	-.00074	.00681	.00240	.00007	2.3285	.00015
Stddev	.00195	.00437	.00132	.00259	.00010	.00002	.0225	.00014
%RSD	125.93	191.41	178.17	38.016	4.0011	29.007	.96410	94.650
#1	.00016	.00624	-.00146	.00963	.00251	.00005	2.3542	.00003
#2	.00071	.00302	-.00156	.00453	.00235	.00009	2.3184	.00011
#3	.00378	-.00241	.00078	.00628	.00234	.00008	2.3128	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00014	.00163	.03413	.24665	.00092	.81266	-.00079
Stddev	.00068	.00062	.00075	.01156	.02854	.00423	.01745	.00318
%RSD	1106.1	456.64	45.829	33.860	11.573	458.16	2.1475	404.35
#1	-.00033	.00085	.00092	.03095	.24915	.00580	.81529	.00231
#2	.00085	-.00023	.00241	.02450	.27386	-.00166	.79404	-.00404
#3	-.00034	-.00022	.00156	.04694	.21693	-.00138	.82864	-.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	1.5234	-.00034	.00759	.00193	-.00110	-.00056	1.9225
Stddev	.00028	.0181	.00053	.00504	.00328	.00190	.00524	.0055
%RSD	316.47	1.1895	155.07	66.429	170.02	173.25	938.70	.28386
#1	-.00021	1.5412	-.00096	.00263	.00004	-.00329	-.00638	1.9218
#2	.00035	1.5240	.00002	.00743	.00571	-.00014	.00092	1.9283
#3	.00013	1.5050	-.00009	.01271	.00003	.00014	.00379	1.9175
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098641 Acquired: 6/25/2016 21:30:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.02979**	**.00925**	**-.00425**	**.00079**	**.00575**	**.00161**
Stddev	.00070	.00033	.00260	.00161	.00118	.00006	.00128
%RSD	2613.1	1.1094	28.082	37.920	148.25	1.0430	79.495
#1	-.00014	.02957	.00917	-.00541	.00147	.00579	.00219
#2	.00072	.03017	.01188	-.00492	.00148	.00578	.00014
#3	-.00067	.02963	.00669	-.00241	-.00057	.00568	.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9984.0**	**61505.**	**3103.5**
Stddev	25.4	97.	8.6
%RSD	.25425	.15693	.27670
#1	10013.	61422.	3093.7
#2	9966.4	61611.	3106.9
#3	9972.6	61483.	3109.8

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 21:34:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40382**	**10.228**	**.39903**	**.49252**	**1.0184**	**.05057**	**10.132**
Stddev	.00317	.045	.00339	.00303	.0029	.00010	.084
%RSD	.78510	.44126	.84879	.61522	.28786	.20129	.82686
#1	.40329	10.193	.40176	.48985	1.0165	.05045	10.103
#2	.40723	10.279	.39524	.49189	1.0170	.05064	10.066
#3	.40095	10.211	.40009	.49581	1.0218	.05061	10.226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05109**	**.20032**	**.50425**	**.51389**	**3.9993**	**49.456**	**1.0271**
Stddev	.00034	.00030	.00243	.00134	.0288	.230	.0087
%RSD	.66912	.15054	.48104	.26170	.72080	.46581	.84751
#1	.05096	.20027	.50150	.51248	3.9697	49.237	1.0193
#2	.05148	.20064	.50519	.51515	4.0273	49.435	1.0365
#3	.05084	.20004	.50607	.51404	4.0011	49.697	1.0255
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.5965**	**.50354**	**1.0171**	**50.205**	**.50852**	**9.9839**	**.50630**
Stddev	.0605	.00125	.0104	.188	.00105	.0190	.00443
%RSD	.63000	.24843	1.0188	.37433	.20655	.18977	.87552
#1	9.5498	.50228	1.0149	50.026	.50872	9.9714	.50177
#2	9.5748	.50478	1.0283	50.189	.50945	10.006	.51063
#3	9.6648	.50354	1.0080	50.400	.50738	9.9747	.50650
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 21:34:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2057**	**.39535**	**5.1622**	**1.0068**	**1.0152**	**1.0163**	**.51868**
Stddev	.0009	.00724	.0066	.0035	.0056	.0047	.00189
%RSD	.07645	1.8317	.12822	.34938	.55282	.46463	.36343
#1	1.2067	.40045	5.1563	1.0056	1.0088	1.0109	.51803
#2	1.2055	.39854	5.1610	1.0107	1.0174	1.0194	.51721
#3	1.2048	.38706	5.1694	1.0040	1.0193	1.0187	.52081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0297**	**1.0108**	F **2.9654**
Stddev	.0010	.0013	.0124
%RSD	.09618	.12981	.41944
#1	1.0297	1.0109	2.9530
#2	1.0307	1.0120	2.9654
#3	1.0287	1.0094	2.9779
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9765.3**	**59222.**	**3028.4**
Stddev	12.6	103.	19.9
%RSD	.12950	.17379	.65564
#1	9777.2	59331.	3048.9
#2	9752.0	59127.	3027.1
#3	9766.5	59207.	3009.2

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 21:38:07 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00048**	**-.00056**	**.00159**	**.00238**	**.00173**	**.00014**	**-.05704**	**-.00011**
Stddev	.00089	.00372	.00374	.00230	.00036	.00002	.05178	.00017
%RSD	185.89	660.56	234.30	96.559	20.708	14.400	90.783	156.11
#1	-.00133	.00080	.00118	.00024	.00195	.00012	-.11682	-.00027
#2	-.00055	-.00477	-.00192	.00481	.00132	.00016	-.02846	-.00014
#3	.00045	.00228	.00552	.00209	.00192	.00015	-.02584	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00017**	**.00048**	**.00001**	**.01554**	**-.08094**	**.00031**	**-.00960**	**.00059**
Stddev	.00009	.00037	.00173	.01679	.11260	.00565	.05873	.00171
%RSD	56.610	77.335	20230.	108.07	139.11	1853.2	611.58	288.38
#1	.00024	.00066	.00194	-.00104	.01136	.00158	-.02063	.00007
#2	.00020	.00072	-.00054	.03254	-.20639	-.00588	.05386	.00251
#3	.00006	.00005	-.00138	.01511	-.04780	.00521	-.06203	-.00080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00336**	**.02885**	**-.00050**	**.00712**	**.00213**	**.00602**	**-.00054**	**.04214**
Stddev	.00024	.02974	.00074	.00312	.00180	.00158	.00069	.00013
%RSD	7.0582	103.10	148.29	43.907	84.214	26.247	127.12	.29697
#1	.00323	-.00548	.00008	.00759	.00359	.00782	.00008	.04201
#2	.00321	.04496	-.00024	.00998	.00013	.00485	-.00042	.04226
#3	.00363	.04705	-.00133	.00378	.00268	.00540	-.00129	.04215
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 21:38:07 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00047**	**.00065**	**-.00177**	**-.00021**	**.00113**	**.00005**	**.00375**
Stddev	.00100	.00044	.00221	.00418	.00029	.00020	.00087
%RSD	212.41	68.047	125.42	1958.4	25.944	435.57	23.135
#1	.00160	.00080	.00075	-.00080	.00139	-.00005	.00437
#2	-.00031	.00015	-.00341	-.00407	.00081	.00028	.00276
#3	.00012	.00100	-.00264	.00422	.00119	-.00009	.00413
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9540.4**	**58573.**	**2934.4**
Stddev	6.2	75.	17.1
%RSD	.06498	.12729	.58178
#1	9533.2	58646.	2919.8
#2	9543.3	58575.	2953.2
#3	9544.6	58497.	2930.3

Approved: June 27, 2016

Sample Name: PBW 9A Acquired: 6/25/2016 21:42:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.00614**	**.00175**	**.00056**	**.00231**	**.00012**	**-.04646**	**-.00007**
Stddev	.00171	.00204	.00393	.00252	.00071	.00020	.04124	.00026
%RSD	1283.4	33.141	224.26	449.74	30.683	160.24	88.765	365.50
#1	.00182	.00611	.00626	-.00197	.00237	.00018	-.00258	-.00036
#2	-.00137	.00820	-.00088	.00057	.00157	.00029	-.08442	.00014
#3	-.00085	.00413	-.00013	.00307	.00298	-.00010	-.05240	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**.00010**	**.00080**	**.02407**	**-.12665**	**.00141**	**-.00997**	**-.00231**
Stddev	.00033	.00034	.00081	.01192	.12266	.00378	.02213	.00072
%RSD	90.436	329.64	101.91	49.545	96.850	267.21	222.01	31.042
#1	-.00000	-.00017	-.00014	.03113	-.25310	.00322	.01487	-.00193
#2	-.00045	.00048	.00118	.03078	-.11869	.00395	-.02759	-.00185
#3	-.00065	-.00000	.00135	.01030	-.00816	-.00293	-.01718	-.00313
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00037**	**.03613**	**.00006**	**.00672**	**.00326**	**-.00431**	**-.00184**	**.00566**
Stddev	.00007	.03275	.00077	.00152	.00253	.00485	.00591	.00059
%RSD	18.235	90.627	1212.2	22.673	77.664	112.59	322.28	10.478
#1	.00035	.07347	.00060	.00612	.00546	-.00044	-.00125	.00618
#2	.00032	.02263	-.00082	.00846	.00049	-.00975	.00376	.00501
#3	.00045	.01230	.00041	.00559	.00385	-.00274	-.00802	.00578
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: PBW 9A Acquired: 6/25/2016 21:42:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	.00033	-.00143	-.00317	.00125	.00161	.00218
Stddev	.00053	.00015	.00130	.00329	.00039	.00011	.00081
%RSD	84.270	46.594	90.758	103.97	30.982	7.0758	37.192
#1	.00094	.00050	-.00075	-.00532	.00080	.00148	.00195
#2	.00002	.00020	-.00062	-.00481	.00145	.00171	.00150
#3	.00092	.00028	-.00293	.00062	.00150	.00162	.00308
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9585.8	59115.	2963.7
Stddev	26.3	98.	6.0
%RSD	.27487	.16506	.20388
#1	9574.9	59148.	2962.9
#2	9615.8	59005.	2958.2
#3	9566.6	59192.	2970.2

Approved: June 27, 2016

Sample Name: LCSW 9A Acquired: 6/25/2016 21:45:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19278**	**4.8645**	**.19357**	**.92620**	**.49567**	**.02388**	**4.9744**	**.02438**
Stddev	.00059	.0150	.00172	.00296	.00123	.00001	.0131	.00027
%RSD	.30529	.30879	.88618	.31973	.24905	.05168	.26315	1.0959
#1	.19266	4.8773	.19194	.92961	.49521	.02387	4.9745	.02469
#2	.19342	4.8480	.19536	.92439	.49707	.02389	4.9613	.02424
#3	.19226	4.8682	.19339	.92458	.49473	.02389	4.9875	.02421
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09756**	**.24011**	**.24908**	**1.9287**	**23.845**	**.50347**	**4.7458**	**.24452**
Stddev	.00018	.00063	.00057	.0379	.076	.00304	.1100	.00304
%RSD	.18802	.26044	.22811	1.9678	.32025	.60437	2.3184	1.2446
#1	.09771	.24070	.24970	1.9204	23.902	.50653	4.7834	.24200
#2	.09761	.23946	.24858	1.9701	23.875	.50343	4.6218	.24790
#3	.09735	.24018	.24895	1.8956	23.758	.50044	4.8320	.24367
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50361**	**24.550**	**.24652**	**4.6792**	**.24585**	**.57643**	**.18945**	**2.4007**
Stddev	.00079	.045	.00091	.0152	.00374	.00321	.00289	.0038
%RSD	.15600	.18503	.37091	.32489	1.5220	.55613	1.5253	.15739
#1	.50355	24.561	.24748	4.6824	.24789	.57981	.19277	2.4049
#2	.50442	24.588	.24565	4.6926	.24153	.57604	.18748	2.3993
#3	.50285	24.500	.24642	4.6627	.24812	.57343	.18811	2.3978
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LCSW 9A Acquired: 6/25/2016 21:45:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48346**	**.50078**	**.49876**	**.24644**	**.49280**	**.48316**	**.01652**
Stddev	.00157	.00182	.00430	.00290	.00093	.00040	.00416
%RSD	.32431	.36335	.86149	1.1750	.18883	.08190	25.157
#1	.48465	.50112	.49719	.24479	.49339	.48270	.01275
#2	.48404	.50241	.49547	.24978	.49173	.48334	.01583
#3	.48168	.49882	.50362	.24474	.49328	.48342	.02097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9876.1**	**60275.**	**3070.8**
Stddev	6.3	180.	12.0
%RSD	.06355	.29822	.39033
#1	9874.5	60221.	3071.7
#2	9883.0	60476.	3058.4
#3	9870.8	60129.	3082.3

Approved: June 27, 2016

Sample Name: F BLANK Acquired: 6/25/2016 21:49:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	-.00126	-.00015	.00486	.00128	.00012	-.00459	.00000
Stddev	.00056	.00100	.00110	.00023	.00095	.00001	.02969	.00020
%RSD	100.53	79.131	736.67	4.6731	74.371	6.7718	646.26	7554.0
#1	.00064	-.00237	-.00130	.00509	.00028	.00012	.02032	.00019
#2	.00106	-.00043	-.00004	.00484	.00217	.00011	-.03745	-.00020
#3	-.00004	-.00099	.00090	.00463	.00139	.00012	.00335	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.00026	.00088	.03134	-.11502	-.00026	.03535	-.00044
Stddev	.00018	.00121	.00068	.00659	.05233	.00265	.10514	.00096
%RSD	49.613	468.36	76.871	21.019	45.492	1017.6	297.45	218.87
#1	.00058	.00075	.00159	.02374	-.13830	.00130	-.07629	.00060
#2	.00024	.00114	.00082	.03485	-.15168	.00124	.13249	-.00129
#3	.00028	-.00112	.00024	.03543	-.05510	-.00331	.04985	-.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.07370	.00132	.00313	.00117	-.00091	.00077	-.00309
Stddev	.00026	.00588	.00035	.00217	.00118	.00090	.00482	.00173
%RSD	45.817	7.9801	26.636	69.209	100.20	98.397	629.48	56.034
#1	.00085	.06695	.00170	.00515	.00095	-.00029	-.00041	-.00378
#2	.00042	.07645	.00125	.00084	.00245	-.00194	-.00336	-.00438
#3	.00040	.07770	.00101	.00340	.00013	-.00050	.00606	-.00112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: F BLANK Acquired: 6/25/2016 21:49:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00033**	**.00302**	**-.00048**	**-.00333**	**.00002**	**.00245**	**.00132**
Stddev	.00077	.00023	.00928	.00236	.00016	.00009	.00057
%RSD	230.12	7.5634	1914.7	70.982	654.43	3.7966	42.974
#1	.00023	.00325	-.01051	-.00146	-.00016	.00251	.00071
#2	.00115	.00279	.00127	-.00253	.00008	.00234	.00183
#3	-.00038	.00303	.00779	-.00598	.00016	.00250	.00143
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9948.0**	**61128.**	**3082.2**
Stddev	8.3	35.	19.2
%RSD	.08376	.05747	.62310
#1	9943.7	61136.	3060.8
#2	9942.7	61089.	3097.9
#3	9957.6	61158.	3087.8

Approved: June 27, 2016

Sample Name: L1606078709 Acquired: 6/25/2016 21:53:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00106	.32067	.00199	.03822	.08666	.00012	52.298	.00025
Stddev	.00033	.00225	.00178	.00083	.00065	.00013	.384	.00005
%RSD	31.425	.70249	89.821	2.1841	.74667	104.78	.73398	21.021
#1	.00100	.32316	.00023	.03790	.08700	-.00002	52.414	.00024
#2	.00077	.32010	.00380	.03760	.08707	.00018	51.870	.00021
#3	.00143	.31876	.00193	.03917	.08592	.00021	52.611	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.00232	.00233	.31407	.84091	.00625	16.422	.01281
Stddev	.00025	.00123	.00162	.01381	.09733	.00295	.087	.00086
%RSD	177.99	52.851	69.798	4.3981	11.574	47.203	.53048	6.7172
#1	-.00001	.00331	.00164	.32378	.73706	.00531	16.422	.01228
#2	.00000	.00271	.00116	.32018	.93004	.00389	16.510	.01236
#3	.00043	.00095	.00418	.29826	.85562	.00956	16.336	.01381
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	3.5331	.00030	.18004	.00409	-.00180	.00164	8.5479
Stddev	.00032	.0286	.00045	.00328	.00158	.00258	.00446	.0078
%RSD	137.02	.80985	147.61	1.8192	38.579	143.43	271.62	.09172
#1	-.00011	3.5554	-.00012	.17874	.00498	-.00359	.00673	8.5558
#2	.00052	3.5008	.00077	.17762	.00503	-.00297	-.00020	8.5477
#3	.00028	3.5432	.00026	.18377	.00227	.00116	-.00161	8.5401
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078709 Acquired: 6/25/2016 21:53:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.13816	-.00281	-.00107	.00371	.00875	.00154
Stddev	.00042	.00078	.00681	.00141	.00081	.00007	.00044
%RSD	132.89	.56285	242.62	131.61	21.926	.80395	28.630
#1	-.00012	.13842	.00500	-.00130	.00416	.00881	.00162
#2	.00035	.13728	-.00586	-.00235	.00277	.00878	.00193
#3	.00072	.13877	-.00757	.00044	.00421	.00867	.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9876.5	60888.	3069.7
Stddev	11.3	192.	3.6
%RSD	.11437	.31559	.11816
#1	9889.0	60702.	3066.7
#2	9866.9	60874.	3073.8
#3	9873.6	61086.	3068.7

Approved: June 27, 2016

Sample Name: L1606078711S Acquired: 6/25/2016 21:57:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19226**	**5.2769**	**.19700**	**.97637**	**.57407**	**.02377**	**55.412**	**.02464**
Stddev	.00232	.0172	.00210	.00695	.00123	.00006	.275	.00018
%RSD	1.2075	.32678	1.0663	.71175	.21357	.23547	.49636	.71677
#1	.19492	5.2928	.19484	.98432	.57271	.02383	55.376	.02446
#2	.19066	5.2586	.19711	.97142	.57439	.02373	55.156	.02465
#3	.19119	5.2792	.19903	.97337	.57510	.02375	55.703	.02481
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09590**	**.23900**	**.24525**	**2.2503**	**24.873**	**.51320**	**20.375**	**.25171**
Stddev	.00047	.00136	.00161	.0156	.173	.01009	.023	.00267
%RSD	.48644	.56990	.65491	.69491	.69517	1.9665	.11329	1.0594
#1	.09633	.24013	.24639	2.2591	25.016	.52369	20.389	.25241
#2	.09595	.23749	.24595	2.2322	24.681	.50356	20.349	.25396
#3	.09541	.23938	.24342	2.2595	24.921	.51234	20.388	.24877
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50427**	**27.841**	**.24087**	**4.9542**	**.24449**	**.58622**	**.18341**	**11.076**
Stddev	.00227	.102	.00131	.0062	.00416	.00262	.00666	.019
%RSD	.45102	.36806	.54487	.12407	1.6996	.44696	3.6299	.17466
#1	.50494	27.874	.24041	4.9608	.24621	.58442	.18291	11.063
#2	.50614	27.726	.24235	4.9486	.23975	.58502	.19031	11.099
#3	.50174	27.923	.23985	4.9531	.24750	.58923	.17702	11.068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078711S Acquired: 6/25/2016 21:57:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48537**	**.63044**	**.49547**	**.24660**	**.49048**	**.48728**	**.00709**
Stddev	.00041	.00808	.00649	.00259	.00192	.00292	.00024
%RSD	.08494	1.2823	1.3100	1.0500	.39154	.59943	3.4352
#1	.48528	.63362	.48907	.24492	.49247	.49009	.00732
#2	.48501	.63645	.50205	.24958	.48864	.48426	.00711
#3	.48582	.62125	.49531	.24529	.49034	.48750	.00684
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9767.2**	**59939.**	**3081.9**
Stddev	8.4	151.	2.2
%RSD	.08617	.25130	.07156
#1	9776.8	59826.	3083.9
#2	9761.1	60110.	3082.2
#3	9763.8	59880.	3079.5

Approved: June 27, 2016

Sample Name: L1606078712SD Acquired: 6/25/2016 22:01:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19422**	**6.5547**	**.19616**	**.97909**	**.58447**	**.02412**	**57.272**	**.02449**
Stddev	.00043	.0174	.00206	.00320	.00356	.00008	.255	.00025
%RSD	.22056	.26500	1.0502	.32643	.60985	.31860	.44461	1.0216
#1	.19468	6.5722	.19401	.98024	.58211	.02413	57.018	.02471
#2	.19383	6.5546	.19811	.97548	.58857	.02404	57.527	.02422
#3	.19415	6.5375	.19636	.98156	.58273	.02419	57.272	.02454
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09680**	**.24221**	**.24688**	**3.2519**	**25.085**	**.51256**	**21.272**	**.29044**
Stddev	.00024	.00084	.00160	.0305	.123	.00182	.123	.00255
%RSD	.25204	.34673	.64632	.93681	.48984	.35468	.57596	.87927
#1	.09682	.24178	.24538	3.2175	24.965	.51125	21.131	.28769
#2	.09704	.24318	.24856	3.2756	25.081	.51179	21.342	.29274
#3	.09655	.24168	.24672	3.2624	25.210	.51464	21.344	.29089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50646**	**28.018**	**.24386**	**4.9818**	**.24358**	**.58240**	**.18769**	**13.764**
Stddev	.00076	.167	.00147	.0053	.00228	.00382	.00425	.008
%RSD	.15029	.59670	.60238	.10534	.93711	.65545	2.2629	.06131
#1	.50691	27.825	.24251	4.9763	.24111	.57903	.18298	13.756
#2	.50690	28.112	.24543	4.9823	.24561	.58163	.18886	13.772
#3	.50558	28.117	.24364	4.9868	.24402	.58655	.19123	13.765
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078712SD Acquired: 6/25/2016 22:01:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48752**	**.63979**	**.50344**	**.24632**	**.49636**	**.48329**	**.00682**
Stddev	.00123	.00383	.00416	.00077	.00180	.00044	.00097
%RSD	.25232	.59818	.82653	.31336	.36344	.09176	14.263
#1	.48785	.63646	.50591	.24591	.49538	.48373	.00713
#2	.48616	.64397	.49864	.24584	.49525	.48329	.00761
#3	.48856	.63895	.50578	.24721	.49844	.48284	.00573
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9745.6**	**59867.**	**3081.8**
Stddev	9.9	91.	26.0
%RSD	.10194	.15198	.84468
#1	9734.5	59851.	3110.8
#2	9753.6	59965.	3060.5
#3	9748.6	59785.	3074.0

Approved: June 27, 2016

Sample Name: L1606078701 Acquired: 6/25/2016 22:04:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00206	-.00089	-.00017	.00563	.00151	.00011	.08615	.00015
Stddev	.00234	.00167	.00131	.00160	.00060	.00001	.02054	.00021
%RSD	113.42	187.14	751.31	28.470	39.897	9.3705	23.846	140.35
#1	.00316	-.00269	.00118	.00529	.00196	.00012	.07852	-.00008
#2	-.00062	-.00061	-.00144	.00737	.00083	.00010	.07052	.00033
#3	.00364	.00062	-.00027	.00422	.00173	.00012	.10942	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.00093	.00322	.06115	.01246	.00241	.02800	.00003
Stddev	.00003	.00076	.00095	.00519	.08806	.00216	.01589	.00083
%RSD	20.822	82.163	29.586	8.4819	706.92	89.891	56.731	2625.4
#1	.00011	.00029	.00408	.06573	-.03307	.00026	.04634	-.00085
#2	.00017	.00177	.00219	.05552	.11396	.00458	.01831	.00015
#3	.00013	.00071	.00338	.06220	-.04352	.00238	.01936	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	.44862	.00009	.00157	.00319	-.00012	.00644	.10535
Stddev	.00015	.01169	.00041	.00200	.00252	.00436	.00247	.00160
%RSD	36.378	2.6064	429.23	127.80	78.785	3632.8	38.299	1.5199
#1	.00041	.45408	.00056	-.00069	.00238	-.00321	.00918	.10450
#2	.00025	.45659	-.00021	.00226	.00118	.00487	.00438	.10720
#3	.00054	.43520	-.00006	.00313	.00602	-.00202	.00577	.10436
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078701 Acquired: 6/25/2016 22:04:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00114	.00134	.00464	-.00236	.00126	.00852	.00204
Stddev	.00023	.00031	.01117	.00170	.00022	.00013	.00133
%RSD	19.939	23.344	240.52	72.025	17.171	1.4749	64.993
#1	.00100	.00168	-.00728	-.00407	.00147	.00841	.00183
#2	.00140	.00106	.01487	-.00232	.00127	.00866	.00083
#3	.00102	.00128	.00634	-.00068	.00104	.00851	.00346
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9978.6	61725.	3108.7
Stddev	25.8	52.	12.8
%RSD	.25894	.08436	.41157
#1	9949.5	61751.	3109.2
#2	9998.7	61759.	3121.3
#3	9987.8	61665.	3095.7

Approved: June 27, 2016

Sample Name: L1606078701PS Acquired: 6/25/2016 22:08:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573561-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19562**	**4.8670**	**.19417**	**.93274**	**.49617**	**.02396**	**5.0466**	**.02449**
Stddev	.00101	.0014	.00206	.00077	.00126	.00015	.0443	.00024
%RSD	.51610	.02767	1.0615	.08264	.25431	.60837	.87718	.96002
#1	.19561	4.8655	.19531	.93216	.49577	.02379	5.0119	.02471
#2	.19461	4.8672	.19179	.93245	.49515	.02407	5.0964	.02451
#3	.19663	4.8682	.19541	.93362	.49758	.02401	5.0313	.02424
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09815**	**.24178**	**.25186**	**1.9475**	**23.902**	**.50912**	**4.6690**	**.24615**
Stddev	.00038	.00032	.00085	.0476	.079	.00280	.1745	.00176
%RSD	.38848	.13325	.33570	2.4417	.33116	.54926	3.7379	.71493
#1	.09847	.24215	.25095	2.0020	23.984	.51180	4.5199	.24606
#2	.09825	.24158	.25263	1.9144	23.825	.50622	4.6262	.24443
#3	.09773	.24160	.25200	1.9261	23.897	.50934	4.8609	.24795
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50547**	**24.979**	**.24871**	**4.7191**	**.25003**	**.58513**	**.18331**	**2.5397**
Stddev	.00148	.047	.00145	.0045	.00153	.00133	.00963	.0085
%RSD	.29370	.18695	.58415	.09482	.61173	.22744	5.2541	.33396
#1	.50679	24.962	.24995	4.7237	.24937	.58423	.17385	2.5470
#2	.50576	24.943	.24906	4.7186	.24895	.58665	.18298	2.5417
#3	.50387	25.032	.24711	4.7148	.25178	.58449	.19310	2.5304
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078701PS Acquired: 6/25/2016 22:08:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573561-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48806**	**.50437**	**.49939**	**.24983**	**.48939**	**.48880**	**.00250**
Stddev	.00273	.00349	.00591	.00248	.00296	.00032	.00045
%RSD	.55970	.69122	1.1836	.99157	.60527	.06447	18.096
#1	.48918	.50154	.50066	.25202	.49256	.48872	.00242
#2	.49005	.50331	.49295	.25032	.48893	.48914	.00298
#3	.48494	.50827	.50457	.24714	.48669	.48853	.00209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9876.1**	**60662.**	**3087.6**
Stddev	12.0	38.	4.3
%RSD	.12163	.06253	.13975
#1	9869.1	60619.	3083.6
#2	9869.3	60677.	3092.2
#3	9890.0	60690.	3087.1

Approved: June 27, 2016

Sample Name: L1606078701SDL Acquired: 6/25/2016 22:12:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573561-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00226**	**-.00962**	**.00257**	**.00372**	**.00008**	**.00010**	**-.05467**	**-.00005**
Stddev	.00390	.01062	.00091	.00131	.00131	.00006	.03854	.00004
%RSD	172.35	110.37	35.549	35.155	1747.1	57.750	70.491	84.699
#1	.00675	-.01272	.00350	.00225	-.00089	.00014	-.04307	-.00000
#2	.00027	-.01835	.00254	.00475	.00157	.00012	-.09767	-.00007
#3	-.00023	.00220	.00167	.00417	-.00046	.00003	-.02326	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.00076**	**.00146**	**.02792**	**-.10756**	**-.00176**	**-.01577**	**.00085**
Stddev	.00022	.00111	.00071	.01781	.06853	.00352	.01010	.00145
%RSD	144.06	146.16	48.411	63.806	63.714	199.76	64.076	169.31
#1	.00010	.00182	.00216	.04804	-.06727	-.00153	-.01532	-.00005
#2	-.00026	-.00038	.00146	.01416	-.18668	.00163	-.02609	.00009
#3	-.00029	.00083	.00075	.02156	-.06871	-.00539	-.00589	.00252
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00035**	**.12025**	**-.00037**	**.00742**	**.00388**	**-.00036**	**.00693**	**.02501**
Stddev	.00028	.02622	.00009	.00699	.00334	.00491	.00079	.00132
%RSD	80.313	21.803	23.237	94.157	86.143	1346.9	11.341	5.2920
#1	.00057	.14797	-.00041	.00450	.00651	.00107	.00746	.02626
#2	.00045	.09585	-.00027	.01539	.00501	-.00584	.00603	.02362
#3	.00003	.11693	-.00042	.00237	.00012	.00367	.00731	.02515
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078701SDL Acquired: 6/25/2016 22:12:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573561-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.00027	.00391	-.00239	.00091	.00198	.00117
Stddev	.00062	.00058	.00259	.00083	.00057	.00021	.00105
%RSD	170.80	217.03	66.210	34.804	62.977	10.839	89.133
#1	.00032	-.00015	.00203	-.00335	.00041	.00217	.00108
#2	-.00024	.00003	.00686	-.00188	.00153	.00175	.00018
#3	.00100	.00093	.00284	-.00194	.00079	.00202	.00227
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10481.	64804.	3221.0
Stddev	25.	98.	4.2
%RSD	.23393	.15113	.13029
#1	10501.	64916.	3225.8
#2	10489.	64737.	3219.2
#3	10454.	64758.	3217.9

Approved: June 27, 2016

Sample Name: L1606078701SDL Acquired: 6/25/2016 22:16:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573561-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00050**	**-.01671**	**.00066**	**.00174**	**.00117**	**.00007**	**-.03873**	**-.00006**
Stddev	.00055	.00595	.00077	.00373	.00047	.00003	.02526	.00023
%RSD	110.50	35.627	115.52	214.66	39.929	36.665	65.224	418.10
#1	.00087	-.01063	-.00016	.00037	.00065	.00010	-.06018	.00018
#2	-.00014	-.02253	.00136	-.00111	.00156	.00005	-.01089	-.00029
#3	.00077	-.01699	.00080	.00596	.00129	.00006	-.04513	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00020**	**-.00027**	**.00015**	**.01537**	**-.08473**	**-.00313**	**-.04452**	**.00037**
Stddev	.00041	.00031	.00072	.00667	.12317	.00148	.02793	.00217
%RSD	208.97	115.52	489.41	43.427	145.37	47.326	62.733	580.66
#1	.00051	-.00025	-.00010	.01465	-.11440	-.00155	-.01300	-.00212
#2	-.00027	-.00059	-.00042	.02238	.05057	-.00335	-.06618	.00176
#3	.00035	.00003	.00096	.00908	-.19035	-.00448	-.05440	.00148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00052**	**.04068**	**-.00002**	**.00630**	**.00223**	**-.00439**	**.00789**	**.00775**
Stddev	.00014	.01560	.00098	.00605	.00105	.00119	.00333	.00034
%RSD	26.596	38.347	4828.5	96.010	47.199	27.128	42.126	4.3419
#1	-.00068	.05533	-.00110	-.00065	.00121	-.00319	.01093	.00736
#2	-.00042	.02428	.00080	.00920	.00218	-.00557	.00434	.00794
#3	-.00046	.04243	.00023	.01036	.00331	-.00443	.00841	.00794
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078701SDL Acquired: 6/25/2016 22:16:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573561-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00078**	**.00049**	**.00611**	**-.00169**	**-.00019**	**.00076**	**.00104**
Stddev	.00047	.00028	.00364	.00121	.00086	.00008	.00084
%RSD	59.598	55.989	59.553	71.357	443.84	10.636	80.846
#1	-.00025	.00020	.00285	-.00078	-.00105	.00067	.00138
#2	-.00100	.00075	.00545	-.00306	-.00021	.00078	.00165
#3	-.00110	.00052	.01004	-.00123	.00067	.00082	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10473.**	**64343.**	**3185.8**
Stddev	11.	88.	33.4
%RSD	.10369	.13736	1.0486
#1	10479.	64432.	3210.0
#2	10479.	64255.	3199.9
#3	10461.	64342.	3147.7

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 22:20:12 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39676**	**10.011**	**.39200**	**.48774**	**1.0072**	**.04931**	**9.9627**
Stddev	.00166	.042	.00060	.00247	.0020	.00016	.0336
%RSD	.41961	.41526	.15324	.50705	.19487	.32345	.33737
#1	.39852	10.036	.39268	.48499	1.0052	.04934	9.9285
#2	.39656	10.035	.39180	.48843	1.0074	.04945	9.9639
#3	.39521	9.9633	.39153	.48979	1.0091	.04914	9.9956
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05046**	**.19748**	**.49159**	**.50549**	**3.9250**	**48.860**	**1.0117**
Stddev	.00033	.00063	.00167	.00263	.0491	.051	.0023
%RSD	.66275	.32062	.34000	.52017	1.2522	.10387	.22425
#1	.05068	.19812	.49231	.50540	3.8948	48.907	1.0140
#2	.05064	.19745	.49279	.50817	3.9817	48.806	1.0118
#3	.05008	.19686	.48968	.50291	3.8986	48.867	1.0095
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.4449**	**.49486**	**1.0080**	**49.891**	**.50156**	**9.8436**	**.50078**
Stddev	.0163	.00095	.0079	.070	.00172	.0350	.00128
%RSD	.17297	.19183	.78730	.13958	.34250	.35531	.25500
#1	9.4275	.49541	1.0170	49.848	.50286	9.8791	.50070
#2	9.4600	.49376	1.0019	49.971	.50221	9.8426	.49954
#3	9.4471	.49540	1.0052	49.853	.49961	9.8092	.50209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 22:20:12 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1892**	**.38968**	**5.0794**	**.99180**	**1.0052**	**1.0145**	**.50829**
Stddev	.0070	.00637	.0139	.00335	.0009	.0065	.00390
%RSD	.58775	1.6349	.27365	.33789	.09319	.64413	.76634
#1	1.1970	.39094	5.0928	.99452	1.0044	1.0072	.50887
#2	1.1869	.38277	5.0804	.99283	1.0062	1.0197	.51187
#3	1.1836	.39532	5.0651	.98805	1.0048	1.0166	.50414
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0022**	**.99700**	F **2.9158**
Stddev	.0042	.00301	.0038
%RSD	.42153	.30191	.13010
#1	1.0066	.99806	2.9128
#2	1.0017	.99934	2.9201
#3	.99824	.99361	2.9145
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9930.6**	**60612.**	**3086.3**
Stddev	10.1	73.	9.8
%RSD	.10207	.12111	.31687
#1	9941.9	60647.	3097.4
#2	9922.1	60528.	3082.4
#3	9927.9	60661.	3079.1

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 22:23:49 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00100**	**-.00695**	**.00023**	**.00246**	**.00203**	**.00014**	**-.01220**	**.00014**
Stddev	.00181	.00287	.00117	.00195	.00133	.00002	.03027	.00029
%RSD	181.13	41.303	500.29	79.096	65.555	16.180	248.16	212.80
#1	-.00109	-.00504	-.00098	.00360	.00305	.00017	-.03745	.00025
#2	.00205	-.00555	.00136	.00021	.00053	.00014	.02136	-.00019
#3	.00203	-.01025	.00032	.00357	.00251	.00013	-.02050	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**-.00000**	**.00097**	**.02954**	**-.02965**	**-.00129**	**.00088**	**.00163**
Stddev	.00011	.00082	.00136	.00883	.01713	.00234	.03199	.00271
%RSD	74.595	562770.	140.78	29.900	57.784	181.57	3634.1	165.69
#1	.00008	.00083	.00213	.03726	-.04191	-.00397	.03754	.00233
#2	.00008	-.00001	.00130	.01991	-.03697	-.00018	-.01355	.00393
#3	.00027	-.00081	-.00053	.03145	-.01007	.00029	-.02135	-.00135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00354**	**.01474**	**-.00023**	**.00359**	**.00237**	**.00219**	**.00418**	**.03627**
Stddev	.00058	.04847	.00031	.00245	.00060	.00526	.00484	.00058
%RSD	16.314	328.86	136.11	68.357	25.126	240.59	115.86	1.6055
#1	.00288	-.00030	-.00040	.00322	.00284	.00365	.00822	.03616
#2	.00384	.06894	.00013	.00134	.00170	.00656	.00551	.03575
#3	.00391	-.02443	-.00042	.00620	.00257	-.00365	-.00119	.03690
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 22:23:49 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**.00039**	**.00181**	**-.00370**	**.00020**	**.00004**	**.00435**
Stddev	.00110	.00025	.00867	.00085	.00051	.00012	.00191
%RSD	689.85	64.301	479.78	22.978	253.56	271.57	43.946
#1	-.00106	.00012	.00915	-.00439	-.00031	.00014	.00375
#2	.00108	.00042	.00404	-.00397	.00020	.00008	.00281
#3	.00046	.00061	-.00776	-.00275	.00071	-.00009	.00649
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9799.0**	**60424.**	**3020.0**
Stddev	11.5	135.	11.0
%RSD	.11760	.22419	.36496
#1	9789.9	60445.	3025.5
#2	9795.1	60547.	3027.2
#3	9812.0	60279.	3007.3

Approved: June 27, 2016

Sample Name: L1606078710 Acquired: 6/25/2016 22:27:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.22720	.00214	.03806	.08552	.00012	52.208	.00022
Stddev	.00078	.00436	.00063	.00014	.00079	.00005	.232	.00016
%RSD	450.39	1.9170	29.562	.37345	.92041	43.173	.44436	71.173
#1	.00025	.22486	.00206	.03796	.08534	.00008	52.380	.00034
#2	.00030	.22452	.00280	.03822	.08638	.00018	52.301	.00028
#3	-.00108	.23223	.00155	.03799	.08484	.00010	51.944	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.00186	.00266	.23670	.85794	.00848	16.196	.00759
Stddev	.00014	.00018	.00107	.03451	.05555	.00209	.053	.00200
%RSD	849.17	9.9559	40.055	14.580	6.4743	24.705	.32764	26.366
#1	-.00011	.00187	.00273	.22408	.80379	.01054	16.251	.00990
#2	.00017	.00167	.00156	.27574	.91479	.00636	16.192	.00643
#3	-.00001	.00204	.00369	.21027	.85526	.00853	16.145	.00644
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00109	3.4758	.00069	.17816	.00790	-.00197	-.00080	8.3609
Stddev	.00043	.0348	.00145	.00114	.00265	.00100	.00335	.0283
%RSD	39.553	1.0002	208.84	.63768	33.519	50.807	416.39	.33868
#1	.00115	3.5101	.00211	.17685	.00777	-.00150	.00187	8.3874
#2	.00149	3.4766	.00076	.17877	.00531	-.00312	.00028	8.3643
#3	.00063	3.4406	-.00079	.17886	.01060	-.00129	-.00456	8.3311
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078710 Acquired: 6/25/2016 22:27:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00106	.13692	-.00198	-.00343	.00351	.00457	.00538
Stddev	.00037	.00076	.00399	.00152	.00135	.00005	.00158
%RSD	34.945	.55142	201.79	44.378	38.390	1.0573	29.298
#1	.00117	.13773	-.00276	-.00427	.00288	.00452	.00538
#2	.00136	.13624	.00235	-.00167	.00505	.00462	.00381
#3	.00065	.13680	-.00552	-.00433	.00259	.00458	.00696
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9837.0	60854.	3075.5
Stddev	21.0	87.	13.2
%RSD	.21328	.14286	.42972
#1	9813.4	60881.	3070.1
#2	9853.7	60757.	3065.8
#3	9843.8	60924.	3090.5

Approved: June 27, 2016

Sample Name: L1606078718 Acquired: 6/25/2016 22:31:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	1.2702	.00086	.07193	.15344	.00016	53.535	.00010
Stddev	.00088	.0133	.00129	.00289	.00068	.00006	.315	.00014
%RSD	504.87	1.0437	151.37	4.0242	.44552	39.145	.58814	143.56
#1	.00078	1.2717	-.00017	.07191	.15299	.00023	53.705	-.00002
#2	-.00096	1.2563	.00043	.07484	.15310	.00014	53.172	.00025
#3	-.00034	1.2827	.00231	.06905	.15423	.00011	53.729	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00093	.00320	.00404	1.3343	1.2661	.00990	20.655	.10718
Stddev	.00038	.00017	.00073	.0192	.0597	.00249	.173	.00269
%RSD	40.455	5.3029	17.991	1.4379	4.7192	25.172	.83716	2.5057
#1	.00050	.00331	.00423	1.3126	1.1986	.01278	20.828	.10559
#2	.00122	.00328	.00465	1.3416	1.2875	.00842	20.482	.11029
#3	.00107	.00300	.00324	1.3489	1.3123	.00851	20.655	.10568
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00197	9.5571	.00271	.15727	.00713	-.00001	-.00213	9.2004
Stddev	.00025	.0745	.00060	.00312	.00099	.00396	.00180	.0136
%RSD	12.754	.77965	22.028	1.9854	13.840	44119.	84.428	.14793
#1	.00222	9.6099	.00232	.16018	.00745	-.00238	-.00366	9.2098
#2	.00198	9.4719	.00242	.15397	.00602	-.00222	-.00015	9.2066
#3	.00172	9.5895	.00340	.15765	.00792	.00457	-.00260	9.1848
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078718 Acquired: 6/25/2016 22:31:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.21832	.00935	-.00138	.00550	.00807	.00587
Stddev	.00077	.00070	.00368	.00189	.00037	.00008	.00139
%RSD	1050.3	.31961	39.319	137.43	6.8010	.96236	23.773
#1	.00067	.21839	.00655	-.00216	.00508	.00811	.00494
#2	-.00003	.21758	.00798	.00078	.00561	.00812	.00519
#3	-.00086	.21897	.01351	-.00275	.00580	.00798	.00747
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9846.3	60728.	3091.9
Stddev	3.6	208.	32.5
%RSD	.03671	.34247	1.0518
#1	9850.4	60702.	3069.6
#2	9844.9	60535.	3129.2
#3	9843.6	60948.	3076.8

Approved: June 27, 2016

Sample Name: L1606078719 Acquired: 6/25/2016 22:35:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	-.00125	.00081	-.00052	.00163	.00015	.05700	.00032
Stddev	.00275	.01314	.00222	.00254	.00035	.00003	.05177	.00012
%RSD	1222.4	1048.7	273.08	489.15	21.203	21.890	90.827	38.965
#1	-.00200	-.00415	-.00134	.00209	.00158	.00017	.05365	.00040
#2	.00294	.01310	.00068	-.00066	.00200	.00012	.00698	.00018
#3	-.00162	-.01271	.00310	-.00298	.00131	.00018	.11035	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00052	.00450	.02391	-.05991	-.00020	.04697	-.00036
Stddev	.00016	.00162	.00035	.01615	.07304	.00309	.12538	.00213
%RSD	276.80	313.97	7.6965	67.537	121.91	1526.0	266.94	591.72
#1	.00015	.00207	.00475	.04225	-.11673	.00336	-.03849	-.00282
#2	-.00012	.00065	.00464	.01187	-.08546	-.00225	-.01151	.00086
#3	.00015	-.00117	.00410	.01759	.02247	-.00171	.19090	.00088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.25593	-.00012	.00090	.00315	-.00362	.00327	.05573
Stddev	.00023	.02584	.00048	.00460	.00186	.00138	.00112	.00365
%RSD	74.483	10.098	393.31	510.33	59.051	38.233	34.210	6.5471
#1	.00052	.27908	.00017	.00590	.00100	-.00516	.00452	.05848
#2	.00007	.22805	.00014	-.00005	.00421	-.00248	.00234	.05711
#3	.00032	.26066	-.00068	-.00315	.00425	-.00323	.00296	.05159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078719 Acquired: 6/25/2016 22:35:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00098	.00207	-.00026	-.00547	.00052	.00525	.00241
Stddev	.00027	.00008	.00293	.00052	.00032	.00008	.00097
%RSD	27.115	4.0421	1136.5	9.5358	61.869	1.5786	40.264
#1	.00096	.00217	-.00025	-.00546	.00057	.00519	.00232
#2	.00073	.00203	-.00319	-.00495	.00081	.00521	.00342
#3	.00126	.00203	.00267	-.00599	.00017	.00534	.00149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9914.0	61492.	3065.3
Stddev	9.7	119.	10.3
%RSD	.09735	.19352	.33672
#1	9905.1	61523.	3061.5
#2	9924.3	61360.	3057.3
#3	9912.7	61592.	3076.9

Approved: June 27, 2016

Sample Name: L1606078709 Acquired: 6/25/2016 22:39:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573102-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	.01725	.00020	.00148	.00412	.00007	2.5193	.00009
Stddev	.00160	.00300	.00146	.00122	.00055	.00007	.0273	.00025
%RSD	256.33	17.406	733.70	82.744	13.249	105.70	1.0828	269.34
#1	-.00115	.01430	.00189	.00205	.00368	.00003	2.5430	-.00015
#2	.00106	.02030	-.00065	.00007	.00396	.00002	2.4895	.00008
#3	.00197	.01716	-.00064	.00231	.00474	.00015	2.5253	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.00087	.00073	.04349	.03288	.00266	.76988	-.00075
Stddev	.00037	.00063	.00114	.01165	.16835	.00415	.07900	.00106
%RSD	107.35	72.316	156.53	26.779	512.03	155.84	10.261	141.15
#1	.00070	.00029	.00142	.03927	-.06801	.00606	.83027	.00043
#2	-.00004	.00153	.00135	.03454	-.06058	.00390	.79891	-.00163
#3	.00039	.00078	-.00059	.05665	.22723	-.00196	.68048	-.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	.20336	.00039	.01881	.00195	-.00218	-.00099	.41497
Stddev	.00052	.02965	.00044	.00286	.00086	.00256	.00440	.00248
%RSD	323.08	14.579	115.44	15.203	44.305	117.44	445.87	.59653
#1	-.00058	.19785	-.00012	.01994	.00207	-.00390	.00409	.41320
#2	.00043	.23538	.00054	.02093	.00103	-.00339	-.00379	.41391
#3	-.00033	.17686	.00073	.01556	.00275	.00076	-.00326	.41779
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078709 Acquired: 6/25/2016 22:39:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573102-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**.00684**	**.01005**	**.00002**	**.00088**	**.00094**	**.00070**
Stddev	.00032	.00012	.00959	.00200	.00079	.00012	.00147
%RSD	375.67	1.7762	95.434	11093.	88.946	12.687	210.40
#1	.00028	.00687	.01212	-.00222	.00129	.00101	.00212
#2	.00025	.00693	-.00041	.00064	.00138	.00101	.00079
#3	-.00028	.00670	.01844	.00163	-.00002	.00080	-.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10438.**	**64428.**	**3210.2**
Stddev	16.	116.	22.5
%RSD	.15594	.18047	.70191
#1	10456.	64522.	3184.5
#2	10433.	64464.	3226.3
#3	10424.	64298.	3219.8

Approved: June 27, 2016

Sample Name: L1606078711S Acquired: 6/25/2016 22:43:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573102-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00901	.25091	.00908	.04716	.02857	.00129	2.7206	.00112
Stddev	.00226	.00893	.00272	.00090	.00098	.00003	.0190	.00018
%RSD	25.135	3.5576	29.953	1.9149	3.4212	2.0076	.69811	15.952
#1	.00654	.24156	.01090	.04731	.02948	.00128	2.7394	.00096
#2	.00949	.25183	.00595	.04798	.02754	.00132	2.7210	.00131
#3	.01099	.25934	.01039	.04620	.02870	.00128	2.7014	.00109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00484	.01138	.01241	.12881	1.1056	.02562	.95895	.01155
Stddev	.00047	.00095	.00054	.02178	.0733	.00325	.08330	.00186
%RSD	9.6843	8.3365	4.3248	16.912	6.6280	12.671	8.6861	16.074
#1	.00430	.01246	.01288	.12748	1.1086	.02193	.86824	.01328
#2	.00510	.01069	.01253	.10772	1.1774	.02802	1.0320	.00959
#3	.00513	.01099	.01183	.15123	1.0309	.02692	.97661	.01179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02077	1.4247	.01204	.24038	.01720	.02493	.01091	.53474
Stddev	.00067	.0371	.00126	.00484	.00256	.00194	.00301	.00121
%RSD	3.2317	2.6069	10.481	2.0127	14.893	7.7710	27.534	.22565
#1	.02144	1.3934	.01127	.24412	.01465	.02673	.00768	.53472
#2	.02075	1.4149	.01350	.23492	.01719	.02518	.01362	.53595
#3	.02010	1.4657	.01136	.24211	.01977	.02288	.01143	.53354
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078711S Acquired: 6/25/2016 22:43:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573102-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02007**	**.03079**	**.02489**	**.01057**	**.02372**	**.02477**	**.00180**
Stddev	.00062	.00022	.00917	.00037	.00088	.00015	.00112
%RSD	3.0692	.70951	36.838	3.4629	3.6971	.59147	62.402
#1	.02076	.03087	.02809	.01029	.02425	.02492	.00062
#2	.01959	.03097	.01455	.01045	.02271	.02462	.00193
#3	.01984	.03055	.03204	.01098	.02420	.02478	.00285
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10426.**	**64070.**	**3185.9**
Stddev	11.	72.	10.0
%RSD	.10672	.11272	.31382
#1	10417.	64076.	3184.7
#2	10423.	64138.	3176.5
#3	10439.	63994.	3196.4

Approved: June 27, 2016

Sample Name: L1606078712SD Acquired: 6/25/2016 22:47:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573102-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00985	.31033	.01141	.04692	.02793	.00122	2.7514	.00123
Stddev	.00217	.01120	.00035	.00183	.00030	.00009	.0322	.00017
%RSD	21.999	3.6078	3.0998	3.8902	1.0783	7.5455	1.1711	13.538
#1	.00744	.30133	.01139	.04489	.02771	.00131	2.7147	.00104
#2	.01165	.32286	.01106	.04746	.02780	.00124	2.7644	.00130
#3	.01046	.30678	.01177	.04842	.02827	.00112	2.7751	.00135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00442	.01187	.01326	.16770	1.1233	.02635	1.0271	.01377
Stddev	.00036	.00059	.00082	.01226	.1089	.00034	.0701	.00235
%RSD	8.1823	4.9929	6.1530	7.3088	9.6965	1.2889	6.8269	17.054
#1	.00413	.01121	.01277	.16233	1.0153	.02615	1.0429	.01385
#2	.00482	.01235	.01421	.15905	1.2332	.02617	1.0881	.01607
#3	.00430	.01207	.01281	.18173	1.1215	.02675	.95049	.01138
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02146	1.3700	.01235	.24640	.01637	.02615	.01276	.67342
Stddev	.00028	.0367	.00082	.00464	.00030	.00374	.00186	.00470
%RSD	1.2904	2.6782	6.6457	1.8816	1.8039	14.304	14.555	.69838
#1	.02172	1.3476	.01220	.24696	.01603	.02416	.01223	.67004
#2	.02148	1.3500	.01162	.25073	.01656	.02383	.01483	.67143
#3	.02117	1.4123	.01324	.24151	.01651	.03046	.01123	.67879
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078712SD Acquired: 6/25/2016 22:47:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573102-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02141**	**.03084**	**.02074**	**.01089**	**.02357**	**.02510**	**.00112**
Stddev	.00030	.00031	.00329	.00303	.00061	.00018	.00144
%RSD	1.3990	1.0105	15.854	27.843	2.5684	.72342	128.59
#1	.02165	.03055	.02352	.00739	.02416	.02497	-.00034
#2	.02107	.03117	.01711	.01260	.02359	.02501	.00117
#3	.02151	.03078	.02157	.01268	.02295	.02530	.00254
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10421.**	**63887.**	**3174.5**
Stddev	13.	153.	11.8
%RSD	.12017	.23969	.37110
#1	10421.	64063.	3186.8
#2	10434.	63786.	3163.4
#3	10409.	63811.	3173.3

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 22:51:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39829**	**10.014**	**.39328**	**.48763**	**1.0098**	**.04913**	**9.9981**
Stddev	.00170	.014	.00352	.00156	.0114	.00024	.0222
%RSD	.42599	.13477	.89524	.31896	1.1283	.49183	.22224
#1	.39634	10.025	.39615	.48872	1.0228	.04926	10.024
#2	.39905	9.9992	.38935	.48585	1.0049	.04885	9.9823
#3	.39946	10.019	.39433	.48833	1.0016	.04927	9.9886
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05040**	**.19854**	**.49076**	**.50671**	**3.9457**	**49.325**	**1.0128**
Stddev	.00023	.00052	.00245	.00059	.0608	.368	.0109
%RSD	.45580	.25959	.49941	.11597	1.5404	.74655	1.0755
#1	.05026	.19800	.48916	.50736	4.0058	49.743	1.0249
#2	.05027	.19858	.48954	.50622	3.9470	49.185	1.0101
#3	.05066	.19903	.49358	.50654	3.8842	49.047	1.0036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.4894**	**.49712**	**1.0151**	**50.056**	**.50217**	**9.8694**	**.50095**
Stddev	.2168	.00232	.0035	.479	.00145	.0113	.00387
%RSD	2.2847	.46695	.34803	.95643	.28811	.11418	.77216
#1	9.7395	.49968	1.0186	50.588	.50383	9.8565	.50471
#2	9.3739	.49655	1.0152	49.919	.50140	9.8745	.49698
#3	9.3548	.49515	1.0115	49.660	.50126	9.8772	.50116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 22:51:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1957**	**.39554**	**5.0959**	**.99417**	**1.0077**	**1.0177**	**.50994**
Stddev	.0055	.00372	.0051	.00169	.0107	.0101	.00264
%RSD	.46066	.94108	.09932	.17029	1.0641	.98980	.51770
#1	1.1919	.39655	5.0908	.99223	1.0196	1.0259	.51299
#2	1.2020	.39866	5.0958	.99500	1.0048	1.0064	.50861
#3	1.1932	.39142	5.1010	.99530	.99871	1.0207	.50824
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.99906**	**1.0000**	F **2.9202**
Stddev	.00128	.0004	.0305
%RSD	.12818	.03891	1.0450
#1	1.0005	1.0005	2.9552
#2	.99795	.99972	2.9065
#3	.99877	.99993	2.8990
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9918.3**	**60256.**	**3072.6**
Stddev	6.2	156.	34.9
%RSD	.06223	.25822	1.1374
#1	9919.7	60085.	3032.6
#2	9923.7	60388.	3088.2
#3	9911.6	60295.	3097.1

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 22:54:51 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.00017**	**.00165**	**.00199**	**.00201**	**.00011**	**-.05290**	**-.00006**
Stddev	.00211	.00653	.00321	.00079	.00009	.00008	.03288	.00016
%RSD	1282.1	3936.0	193.87	39.670	4.4194	70.107	62.164	240.48
#1	-.00117	.00347	.00046	.00135	.00191	.00015	-.05612	-.00004
#2	.00226	-.00735	.00528	.00288	.00202	.00015	-.08405	.00008
#3	-.00158	.00438	-.00078	.00176	.00209	.00002	-.01852	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.00100**	**.00120**	**.03069**	**-.03948**	**.00003**	**-.00536**	**.00015**
Stddev	.00013	.00044	.00061	.00550	.07927	.00292	.09167	.00308
%RSD	995.60	43.627	50.884	17.919	200.80	8764.3	1709.0	2010.9
#1	-.00014	.00145	.00060	.03538	.05200	-.00061	-.10767	.00091
#2	.00000	.00096	.00116	.03205	-.08238	-.00251	.06932	.00278
#3	.00011	.00058	.00182	.02464	-.08805	.00322	.02226	-.00324
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00351**	**.02455**	**-.00057**	**.00388**	**.00014**	**.00562**	**.00087**	**.03540**
Stddev	.00076	.01905	.00055	.00530	.00438	.00343	.00632	.00172
%RSD	21.717	77.584	95.045	136.67	3025.0	61.032	726.47	4.8534
#1	.00266	.03539	-.00120	-.00182	.00487	.00872	.00338	.03589
#2	.00374	.03571	-.00017	.00867	-.00067	.00193	.00554	.03683
#3	.00413	.00256	-.00036	.00480	-.00377	.00622	-.00632	.03349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 22:54:51 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00099**	**.00045**	**.00606**	**-.00120**	**.00030**	**-.00008**	**.00363**
Stddev	.00065	.00027	.00156	.00179	.00040	.00006	.00038
%RSD	65.956	60.056	25.746	148.69	132.31	80.432	10.554
#1	.00115	.00019	.00786	-.00316	.00076	-.00006	.00364
#2	.00155	.00073	.00529	-.00079	.00014	-.00015	.00325
#3	.00027	.00044	.00504	.00034	.00001	-.00003	.00401
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9678.8**	**59649.**	**2985.7**
Stddev	6.9	105.	9.5
%RSD	.07084	.17603	.31957
#1	9671.2	59575.	2994.0
#2	9681.0	59769.	2975.3
#3	9684.3	59604.	2987.7

Approved: June 27, 2016

Sample Name: PBW LJ Acquired: 6/25/2016 22:58:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00058**	**-.00592**	**.00193**	**-.00086**	**.00070**	**.00018**	**-.07344**	**-.00023**
Stddev	.00178	.00410	.00330	.00167	.00093	.00007	.04096	.00010
%RSD	307.62	69.294	170.45	194.42	133.02	36.643	55.774	43.143
#1	-.00092	-.00625	.00300	-.00003	-.00002	.00015	-.02635	-.00025
#2	-.00217	-.00166	.00456	.00023	.00174	.00026	-.10082	-.00033
#3	.00135	-.00985	-.00176	-.00279	.00036	.00013	-.09313	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.00069**	**.00074**	**.03692**	**-.07694**	**.00146**	**.06376**	**.00092**
Stddev	.00002	.00038	.00020	.01230	.06836	.00025	.04368	.00067
%RSD	10.723	54.599	26.935	33.312	88.851	16.877	68.506	72.982
#1	-.00017	.00098	.00051	.02894	-.09438	.00132	.11194	.00086
#2	-.00017	.00026	.00082	.03073	-.13489	.00174	.05264	.00161
#3	-.00014	.00084	.00088	.05108	-.00155	.00131	.02672	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**.03492**	**.00034**	**.00729**	**.00159**	**-.00194**	**.00113**	**.00052**
Stddev	.00031	.01196	.00046	.00336	.00147	.00263	.00402	.00268
%RSD	159.07	34.258	134.06	46.125	92.547	135.75	357.58	520.37
#1	.00038	.02883	.00039	.00624	.00208	.00024	-.00125	.00071
#2	.00036	.04870	-.00014	.00458	.00275	-.00120	-.00114	.00309
#3	-.00016	.02722	.00078	.01105	-.00006	-.00487	.00577	-.00226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: PBW LJ Acquired: 6/25/2016 22:58:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**-.00008**	**.00508**	**-.00273**	**.00114**	**.00044**	**.00066**
Stddev	.00164	.00051	.01008	.00394	.00109	.00015	.00112
%RSD	14590.	648.58	198.46	144.23	96.326	34.462	168.97
#1	.00174	.00051	.01609	.00176	.00157	.00053	.00180
#2	-.00150	-.00033	-.00371	-.00561	-.00011	.00026	-.00044
#3	-.00028	-.00041	.00287	-.00433	.00195	.00052	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10135.**	**62589.**	**3095.8**
Stddev	24.	186.	5.7
%RSD	.23247	.29671	.18319
#1	10143.	62746.	3101.4
#2	10152.	62637.	3095.9
#3	10108.	62384.	3090.1

Approved: June 27, 2016

Sample Name: LCSW LJ Acquired: 6/25/2016 23:02:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19432**	**4.8961**	**.19607**	**.95390**	**.50477**	**.02378**	**5.0869**	**.02467**
Stddev	.00176	.0169	.00036	.00515	.00157	.00015	.0469	.00006
%RSD	.90778	.34589	.18422	.54033	.31152	.61673	.92299	.23915
#1	.19242	4.8827	.19640	.95171	.50641	.02365	5.1361	.02462
#2	.19591	4.9152	.19569	.95978	.50463	.02394	5.0425	.02466
#3	.19461	4.8905	.19612	.95020	.50328	.02375	5.0822	.02474
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09889**	**.24063**	**.25385**	**1.9878**	**24.436**	**.51652**	**4.7044**	**.24710**
Stddev	.00023	.00063	.00116	.0095	.067	.00203	.0278	.00275
%RSD	.23212	.26116	.45751	.47691	.27355	.39333	.59179	1.1124
#1	.09867	.24099	.25369	1.9863	24.386	.51588	4.7289	.24429
#2	.09913	.24100	.25509	1.9791	24.512	.51880	4.6741	.24978
#3	.09888	.23991	.25278	1.9979	24.411	.51489	4.7100	.24724
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51030**	**25.148**	**.24989**	**4.7689**	**.24945**	**.59139**	**.18766**	**2.4779**
Stddev	.00067	.056	.00070	.0091	.00347	.00400	.01211	.0014
%RSD	.13092	.22440	.27941	.19073	1.3920	.67662	6.4536	.05441
#1	.50970	25.212	.24981	4.7624	.25341	.58680	.17389	2.4770
#2	.51102	25.108	.25063	4.7793	.24803	.59411	.19668	2.4795
#3	.51019	25.124	.24924	4.7649	.24691	.59326	.19239	2.4773
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LCSW LJ Acquired: 6/25/2016 23:02:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49047**	**.51082**	**.50961**	**.24925**	**.49196**	**.48864**	**.01928**
Stddev	.00103	.00205	.00391	.00102	.00174	.00019	.00329
%RSD	.20978	.40119	.76774	.40835	.35306	.03834	17.088
#1	.49156	.51042	.51051	.24964	.49257	.48859	.01592
#2	.49032	.50900	.50533	.25000	.49331	.48848	.01940
#3	.48952	.51304	.51300	.24809	.49000	.48885	.02251
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9771.5**	**60209.**	**3050.2**
Stddev	3.0	103.	25.9
%RSD	.03108	.17103	.84982
#1	9769.0	60280.	3044.5
#2	9774.9	60091.	3027.6
#3	9770.6	60258.	3078.5

Approved: June 27, 2016

Sample Name: L1606076404 Acquired: 6/25/2016 23:06:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00050**	**.02745**	**.00034**	**.00861**	**.00996**	**.00009**	**36.605**	**.00012**
Stddev	.00060	.00628	.00209	.00113	.00041	.00005	.105	.00023
%RSD	119.14	22.865	609.72	13.086	4.1637	53.570	.28645	187.24
#1	.00015	.03394	.00014	.00762	.01044	.00014	36.606	.00007
#2	.00016	.02699	-.00164	.00984	.00971	.00010	36.500	.00038
#3	.00120	.02142	.00253	.00837	.00974	.00004	36.710	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**.01147**	**.00175**	**.46715**	**4.7234**	**.00625**	**13.388**	**.09951**
Stddev	.00015	.00054	.00191	.01948	.0341	.00248	.058	.00203
%RSD	171.91	4.6728	109.26	4.1703	.72246	39.751	.43505	2.0444
#1	.00001	.01158	-.00043	.45694	4.6849	.00912	13.373	.10058
#2	-.00027	.01194	.00254	.48961	4.7498	.00477	13.339	.09716
#3	-.00001	.01088	.00314	.45489	4.7356	.00486	13.453	.10078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00119**	**34.643**	**.00396**	**.03562**	**.00752**	**.00339**	**.00429**	**4.0453**
Stddev	.00028	.078	.00076	.00870	.00150	.00394	.00341	.0166
%RSD	23.933	.22458	19.114	24.436	19.891	116.11	79.423	.40956
#1	.00087	34.732	.00311	.02910	.00894	.00791	.00692	4.0642
#2	.00131	34.587	.00454	.03225	.00766	.00162	.00551	4.0386
#3	.00140	34.610	.00424	.04550	.00596	.00065	.00044	4.0331
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606076404 Acquired: 6/25/2016 23:06:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	.19364	.00117	-.00333	.00101	.00286	.00160
Stddev	.00025	.00044	.00456	.00363	.00019	.00020	.00097
%RSD	28.325	.22814	391.45	108.96	18.806	7.1675	60.613
#1	.00083	.19387	-.00007	-.00660	.00107	.00306	.00048
#2	.00116	.19313	.00622	-.00396	.00116	.00265	.00224
#3	.00066	.19392	-.00265	.00057	.00080	.00286	.00207
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9727.8	59976.	3053.1
Stddev	23.9	148.	4.4
%RSD	.24547	.24636	.14325
#1	9700.3	60146.	3049.4
#2	9741.5	59877.	3057.9
#3	9741.8	59905.	3052.0

Approved: June 27, 2016

Sample Name: L1606076405S Acquired: 6/25/2016 23:10:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19582	4.9527	.19879	.95673	.51438	.02432	42.805	.02505
Stddev	.00335	.0137	.00128	.00425	.00065	.00003	.112	.00030
%RSD	1.7110	.27715	.64557	.44412	.12542	.14170	.26049	1.1988
#1	.19856	4.9529	.19764	.95186	.51480	.02435	42.707	.02530
#2	.19683	4.9664	.19856	.95967	.51471	.02433	42.926	.02513
#3	.19208	4.9389	.20017	.95866	.51364	.02429	42.781	.02472
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09757	.25598	.24917	2.4354	29.536	.52338	18.805	.34995
Stddev	.00078	.00042	.00127	.0181	.040	.00393	.025	.00506
%RSD	.79936	.16278	.51136	.74393	.13605	.74997	.13071	1.4469
#1	.09813	.25630	.25060	2.4222	29.582	.51885	18.805	.34467
#2	.09790	.25551	.24817	2.4278	29.516	.52547	18.830	.35476
#3	.09668	.25612	.24874	2.4560	29.509	.52582	18.780	.35044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51541	61.224	.25128	4.8968	.24942	.59855	.19087	6.6449
Stddev	.00129	.228	.00073	.0088	.00234	.00299	.00293	.0075
%RSD	.25084	.37164	.28907	.17909	.93699	.50010	1.5365	.11257
#1	.51663	61.311	.25055	4.9006	.24863	.59583	.18976	6.6461
#2	.51554	61.394	.25129	4.9031	.24758	.60176	.19420	6.6517
#3	.51406	60.965	.25200	4.8868	.25205	.59805	.18866	6.6369
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606076405S Acquired: 6/25/2016 23:10:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49233	.70070	.50542	.24860	.50000	.48511	.00505
Stddev	.00086	.00402	.00572	.00107	.00163	.00066	.00072
%RSD	.17371	.57387	1.1319	.43103	.32683	.13619	14.263
#1	.49184	.70101	.51171	.24742	.49924	.48572	.00441
#2	.49332	.70456	.50403	.24884	.49889	.48521	.00491
#3	.49184	.69653	.50053	.24953	.50188	.48441	.00583
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9652.6	59187.	3022.5
Stddev	17.6	118.	14.2
%RSD	.18215	.19875	.46825
#1	9645.4	59224.	3018.6
#2	9639.7	59281.	3010.7
#3	9672.6	59055.	3038.2

Approved: June 27, 2016

Sample Name: L1606076406SD Acquired: 6/25/2016 23:13:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19161**	**4.9186**	**.19913**	**.95429**	**.51211**	**.02396**	**42.977**	**.02467**
Stddev	.00161	.0125	.00343	.00448	.00436	.00009	.276	.00017
%RSD	.83957	.25322	1.7203	.46971	.85098	.36242	.64279	.68812
#1	.19148	4.9258	.19753	.95898	.51664	.02396	43.237	.02475
#2	.19328	4.9042	.19680	.95004	.51174	.02387	43.008	.02479
#3	.19007	4.9258	.20306	.95385	.50794	.02404	42.687	.02448
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09706**	**.25178**	**.24789**	**2.4233**	**29.585**	**.51807**	**18.712**	**.35011**
Stddev	.00057	.00068	.00034	.0356	.112	.00327	.182	.00396
%RSD	.58951	.26961	.13796	1.4688	.37990	.63166	.97051	1.1325
#1	.09772	.25103	.24806	2.4608	29.711	.51534	18.898	.35283
#2	.09684	.25235	.24811	2.4189	29.497	.52170	18.704	.34556
#3	.09664	.25196	.24749	2.3900	29.545	.51719	18.535	.35193
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51262**	**61.425**	**.24874**	**4.8787**	**.24757**	**.59558**	**.18865**	**6.6917**
Stddev	.00159	.310	.00133	.0141	.00184	.00348	.00465	.0131
%RSD	.30991	.50524	.53301	.28958	.74220	.58390	2.4654	.19574
#1	.51304	61.773	.24994	4.8746	.24617	.59720	.19309	6.6816
#2	.51396	61.322	.24897	4.8944	.24965	.59795	.18905	6.7065
#3	.51087	61.178	.24732	4.8670	.24689	.59159	.18381	6.6870
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606076406SD Acquired: 6/25/2016 23:13:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48585**	**.69992**	**.50428**	**.08491**	**.49039**	**.49499**	**.00464**
Stddev	.00076	.00443	.00835	.00108	.00225	.00372	.00157
%RSD	.15628	.63319	1.6562	1.2751	.45854	.75207	33.818
#1	.48649	.70500	.51389	.08368	.49168	.49197	.00317
#2	.48606	.69789	.49873	.08571	.48779	.49386	.00446
#3	.48501	.69687	.50023	.08535	.49169	.49915	.00630
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9674.4**	**59675.**	**3057.4**
Stddev	5.6	128.	11.6
%RSD	.05826	.21445	.38044
#1	9670.2	59575.	3048.3
#2	9680.8	59819.	3053.4
#3	9672.1	59630.	3070.5

Approved: June 27, 2016

Sample Name: L1606099102 Acquired: 6/25/2016 23:17:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00035	.08527	.00559	.04109	.01538	.00019	.57467	.00159
Stddev	.00233	.00869	.00189	.00114	.00133	.00004	.01094	.00013
%RSD	663.84	10.192	33.720	2.7694	8.6207	22.830	1.9043	7.9131
#1	.00210	.09496	.00628	.04240	.01605	.00016	.56261	.00167
#2	-.00061	.08272	.00346	.04040	.01386	.00017	.57746	.00145
#3	-.00255	.07815	.00704	.04046	.01624	.00024	.58395	.00167
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00096	.05412	.00582	.38755	1.2527	.00289	.47003	.00071
Stddev	.00015	.00024	.00026	.01093	.0635	.00116	.03189	.00162
%RSD	15.476	.43524	4.4250	2.8204	5.0656	40.155	6.7852	226.02
#1	.00113	.05437	.00590	.40001	1.1922	.00164	.49884	-.00098
#2	.00091	.05406	.00602	.38303	1.3188	.00308	.43576	.00089
#3	.00085	.05391	.00553	.37960	1.2473	.00394	.47550	.00224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00360	218.01	.00389	.36041	.01046	-.00372	.00482	1.3728
Stddev	.00017	.12	.00068	.00488	.00162	.00083	.00193	.0038
%RSD	4.7149	.05666	17.447	1.3551	15.457	22.416	40.114	.27490
#1	.00375	218.03	.00311	.35572	.01225	-.00460	.00284	1.3685
#2	.00365	218.13	.00423	.36547	.01003	-.00293	.00492	1.3754
#3	.00341	217.88	.00434	.36004	.00911	-.00364	.00670	1.3745
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606099102 Acquired: 6/25/2016 23:17:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00632**	**.09765**	**.07700**	**-.00067**	**.01524**	**.07845**	**.01879**
Stddev	.00056	.00044	.00219	.00203	.00068	.00014	.00089
%RSD	8.9139	.45291	2.8381	300.30	4.4598	.18118	4.7496
#1	.00609	.09718	.07562	.00166	.01602	.07833	.01918
#2	.00590	.09770	.07952	-.00172	.01485	.07841	.01777
#3	.00696	.09806	.07586	-.00197	.01484	.07861	.01943
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10241.**	**62264.**	**3185.5**
Stddev	15.	196.	4.7
%RSD	.14516	.31405	.14616
#1	10253.	62395.	3189.9
#2	10245.	62357.	3185.8
#3	10224.	62039.	3180.6

Approved: June 27, 2016

Sample Name: L1606099102PS Acquired: 6/25/2016 23:21:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG573952-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20426**	**5.2585**	**.21569**	**1.0545**	**.53374**	**.02552**	**5.8510**	**.02789**
Stddev	.00128	.0258	.00476	.0057	.01070	.00022	.0799	.00005
%RSD	.62816	.49053	2.2048	.54061	2.0041	.85107	1.3656	.17945
#1	.20288	5.2399	.21984	1.0489	.54587	.02533	5.9343	.02786
#2	.20446	5.2478	.21673	1.0543	.52973	.02547	5.7750	.02786
#3	.20543	5.2880	.21050	1.0603	.52563	.02576	5.8438	.02795
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10258**	**.30280**	**.26705**	**2.4069**	**27.035**	**.52853**	**5.3059**	**.25725**
Stddev	.00041	.00101	.00181	.0614	.546	.00889	.1709	.00709
%RSD	.40425	.33448	.67841	2.5526	2.0183	1.6821	3.2205	2.7577
#1	.10253	.30184	.26742	2.4708	27.658	.53822	5.4655	.26479
#2	.10301	.30272	.26864	2.4018	26.642	.52076	5.1256	.25071
#3	.10219	.30386	.26508	2.3482	26.805	.52661	5.3266	.25626
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52291**	**252.79**	**.26034**	**5.5827**	**.26863**	**.62508**	**.20920**	**4.0596**
Stddev	.00363	5.13	.00069	.0240	.00232	.00165	.00657	.0117
%RSD	.69330	2.0298	.26564	.43012	.86233	.26363	3.1385	.28905
#1	.52662	258.69	.26066	5.6009	.26650	.62318	.21182	4.0655
#2	.52272	250.27	.26082	5.5917	.26829	.62599	.21406	4.0673
#3	.51938	249.40	.25955	5.5555	.27109	.62608	.20173	4.0461
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606099102PS Acquired: 6/25/2016 23:21:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG573952-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51599**	**.62613**	**.61043**	**.25381**	**.52664**	**.60277**	**.02286**
Stddev	.00198	.01306	.01573	.00527	.00286	.00158	.00057
%RSD	.38295	2.0851	2.5770	2.0756	.54391	.26285	2.4777
#1	.51752	.64119	.62824	.25887	.52456	.60412	.02234
#2	.51668	.61903	.59844	.25420	.52545	.60318	.02277
#3	.51376	.61815	.60462	.24835	.52991	.60103	.02347
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9624.7**	**58159.**	**2980.0**
Stddev	48.4	89.	45.7
%RSD	.50312	.15320	1.5350
#1	9582.5	58170.	2928.1
#2	9614.0	58242.	2997.3
#3	9677.6	58064.	3014.5

Approved: June 27, 2016

Sample Name: L1606099102SDL Acquired: 6/25/2016 23:25:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 50 Custom ID2: Custom ID3:
Comment: WG573952-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	.01283	.00236	.01119	.00550	.00018	.08026	.00026
Stddev	.00047	.00301	.00204	.00193	.00071	.00008	.03574	.00006
%RSD	40.405	23.474	86.372	17.221	12.910	46.045	44.534	24.105
#1	.00083	.01247	.00021	.01333	.00520	.00027	.04235	.00026
#2	.00098	.01601	.00261	.01064	.00630	.00011	.11335	.00020
#3	.00172	.01002	.00427	.00960	.00498	.00015	.08510	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.01258	.00098	.10105	.18990	-.00151	.06238	.00028
Stddev	.00006	.00091	.00048	.00767	.08103	.00626	.02555	.00271
%RSD	25.732	7.2135	49.236	7.5891	42.670	413.92	40.953	970.07
#1	.00026	.01275	.00118	.09700	.21903	.00544	.04558	.00279
#2	.00015	.01339	.00043	.10990	.09833	-.00328	.04979	.00064
#3	.00024	.01160	.00132	.09626	.25235	-.00669	.09179	-.00259
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00205	47.703	.00017	.08239	.00525	-.00365	.00219	.31315
Stddev	.00019	.192	.00051	.00485	.00385	.00400	.00870	.00335
%RSD	9.3003	.40144	294.11	5.8889	73.348	109.43	397.40	1.0688
#1	.00183	47.834	.00076	.07694	.00083	-.00754	.00399	.31041
#2	.00217	47.483	-.00009	.08400	.00786	-.00387	-.00727	.31216
#3	.00215	47.792	-.00015	.08624	.00708	.00045	.00985	.31688
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606099102SDL Acquired: 6/25/2016 23:25:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 50 Custom ID2: Custom ID3:
Comment: WG573952-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00128**	**.02176**	**.02063**	**.00132**	**.00408**	**.01800**	**.00415**
Stddev	.00053	.00039	.00638	.00109	.00052	.00037	.00045
%RSD	41.627	1.7773	30.936	82.221	12.786	2.0724	10.786
#1	.00158	.02176	.02171	.00142	.00446	.01762	.00425
#2	.00067	.02138	.02640	.00236	.00348	.01802	.00454
#3	.00160	.02215	.01377	.00019	.00429	.01836	.00366
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9804.5**	**59680.**	**2983.6**
Stddev	22.5	103.	15.3
%RSD	.22901	.17203	.51306
#1	9824.1	59682.	2991.0
#2	9809.6	59782.	2993.9
#3	9780.0	59577.	2966.0

Approved: June 27, 2016

Sample Name: L1606099501 Acquired: 6/25/2016 23:29:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	.00231	.00190	.02254	.12371	.00015	15.528	-.00008
Stddev	.00014	.00712	.00142	.00137	.00163	.00003	.200	.00022
%RSD	16.093	308.09	74.696	6.0976	1.3212	21.126	1.2862	282.14
#1	.00100	.01032	.00271	.02232	.12196	.00014	15.307	.00002
#2	.00072	-.00013	.00272	.02129	.12520	.00012	15.695	.00008
#3	.00085	-.00326	.00026	.02401	.12396	.00018	15.583	-.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00027	.00136	.08102	.36083	.08036	1.7207	.01281
Stddev	.00017	.00026	.00081	.01723	.08162	.00488	.0426	.00381
%RSD	55.449	94.239	59.356	21.269	22.620	6.0696	2.4776	29.711
#1	.00018	.00004	.00043	.07010	.45158	.07724	1.7124	.01021
#2	.00026	.00024	.00186	.07209	.29342	.07785	1.6828	.01718
#3	.00051	.00055	.00179	.10089	.33750	.08598	1.7669	.01103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	40.169	.00020	.00739	.00147	-.00261	.00048	.01475
Stddev	.00007	.358	.00037	.00186	.00129	.00197	.00359	.00082
%RSD	116.52	.89035	187.93	25.143	87.719	75.441	741.63	5.5637
#1	.00010	39.803	.00022	.00902	.00206	-.00263	-.00044	.01382
#2	.00008	40.518	.00056	.00537	.00236	-.00063	-.00256	.01539
#3	-.00002	40.186	-.00019	.00779	-.00001	-.00456	.00445	.01503
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606099501 Acquired: 6/25/2016 23:29:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	2.0444	.00152	-.00059	-.00017	.00315	.00110
Stddev	.00034	.0207	.00598	.00278	.00059	.00019	.00107
%RSD	58.480	1.0109	393.49	469.74	343.26	6.1207	97.322
#1	.00020	2.0228	.00742	-.00167	.00024	.00305	.00162
#2	.00070	2.0639	.00167	-.00267	-.00085	.00303	-.00013
#3	.00086	2.0465	-.00453	.00256	.00009	.00337	.00180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9773.4	59741.	3000.7
Stddev	10.5	113.	31.9
%RSD	.10719	.18996	1.0628
#1	9785.4	59856.	3037.0
#2	9766.5	59737.	2977.2
#3	9768.1	59629.	2987.9

Approved: June 27, 2016

Sample Name: L1606099502 Acquired: 6/25/2016 23:32:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	-.00479	-.00049	.02240	.12357	.00014	15.278	-.00007
Stddev	.00142	.00423	.00253	.00505	.00148	.00006	.144	.00014
%RSD	22192.	88.307	518.91	22.533	1.1984	44.965	.94397	206.25
#1	.00014	-.00965	-.00218	.02478	.12272	.00011	15.115	-.00014
#2	.00133	-.00281	-.00170	.02581	.12271	.00021	15.329	.00010
#3	-.00149	-.00191	.00242	.01660	.12528	.00010	15.390	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.00065	.00042	.06837	.37746	.07803	1.6184	.01419
Stddev	.00041	.00112	.00027	.00656	.03147	.00401	.0513	.00310
%RSD	83.614	171.25	62.991	9.6001	8.3371	5.1380	3.1674	21.849
#1	.00050	-.00064	.00063	.07323	.35510	.08210	1.6690	.01383
#2	.00090	.00123	.00012	.06091	.36384	.07791	1.6197	.01745
#3	.00007	.00137	.00052	.07098	.41345	.07408	1.5665	.01128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	39.920	-.00037	.00510	.00199	-.00064	.00335	.01167
Stddev	.00036	.366	.00054	.01025	.00130	.00317	.00244	.00126
%RSD	102.18	.91613	144.37	200.85	65.670	494.36	72.931	10.832
#1	-.00077	39.520	-.00039	.00961	.00071	-.00417	.00384	.01302
#2	-.00018	40.239	-.00090	.01233	.00193	.00029	.00550	.01150
#3	-.00011	40.000	.00017	-.00663	.00331	.00196	.00070	.01051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606099502 Acquired: 6/25/2016 23:32:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00055**	**2.0217**	**-.00337**	**-.00055**	**.00074**	**.00315**	**.00087**
Stddev	.00116	.0191	.00559	.00170	.00084	.00020	.00103
%RSD	210.74	.94683	165.64	307.06	114.28	6.4714	118.16
#1	-.00142	2.0010	.00194	-.00241	.00129	.00330	.00185
#2	.00077	2.0388	-.00920	-.00018	-.00023	.00292	.00097
#3	-.00100	2.0253	-.00287	.00093	.00117	.00324	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9730.5**	**59619.**	**2989.3**
Stddev	18.2	229.	29.6
%RSD	.18733	.38360	.99126
#1	9750.6	59882.	3021.9
#2	9715.1	59468.	2964.1
#3	9725.8	59506.	2981.9

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 23:36:47 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40930**	**10.238**	**.40819**	**.50228**	**1.0459**	**.04973**	**10.404**
Stddev	.00043	.021	.00043	.00341	.0044	.00005	.020
%RSD	.10460	.20815	.10461	.67892	.41689	.09834	.19571
#1	.40883	10.251	.40851	.50622	1.0496	.04974	10.381
#2	.40944	10.250	.40771	.50027	1.0411	.04968	10.418
#3	.40965	10.214	.40835	.50036	1.0470	.04978	10.414
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05210**	**.20379**	**.49816**	**.52303**	**4.0622**	**51.067**	**1.0469**
Stddev	.00019	.00042	.00279	.00142	.0372	.160	.0078
%RSD	.35747	.20724	.56062	.27079	.91500	.31299	.74725
#1	.05231	.20342	.50024	.52229	4.1047	51.143	1.0555
#2	.05194	.20371	.49926	.52467	4.0462	50.883	1.0402
#3	.05207	.20425	.49499	.52215	4.0357	51.175	1.0449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.7214**	**.51746**	**1.0407**	**52.052**	**.51652**	**10.202**	**.51928**
Stddev	.0660	.00152	.0096	.278	.00085	.015	.00145
%RSD	.67863	.29343	.92144	.53407	.16386	.14443	.27838
#1	9.7320	.51900	1.0479	52.343	.51582	10.200	.51894
#2	9.7814	.51597	1.0444	51.789	.51627	10.218	.52086
#3	9.6508	.51742	1.0298	52.022	.51746	10.189	.51803
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 23:36:47 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2277**	**.40544**	**5.2555**	**1.0220**	**1.0464**	**1.0514**	**.52265**
Stddev	.0051	.00303	.0032	.0024	.0054	.0078	.00372
%RSD	.41461	.74796	.06070	.23053	.51974	.73901	.71099
#1	1.2332	.40616	5.2590	1.0221	1.0521	1.0443	.52536
#2	1.2232	.40805	5.2526	1.0196	1.0413	1.0597	.52418
#3	1.2265	.40211	5.2550	1.0243	1.0458	1.0502	.51841
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0117**	**1.0320**	F **2.9933**
Stddev	.0025	.0009	.0109
%RSD	.24458	.08681	.36389
#1	1.0144	1.0330	3.0053
#2	1.0111	1.0312	2.9841
#3	1.0096	1.0318	2.9905
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9691.0**	**59432.**	**3012.0**
Stddev	5.1	44.	12.8
%RSD	.05245	.07397	.42554
#1	9696.2	59404.	2998.2
#2	9686.1	59410.	3023.6
#3	9690.7	59483.	3014.1

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 23:40:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00145**	**-.00660**	**-.00143**	**.00292**	**.00177**	**.00016**	**-.01784**	**.00008**
Stddev	.00180	.00657	.00282	.00130	.00082	.00003	.03649	.00007
%RSD	124.44	99.487	197.72	44.383	46.493	20.281	204.59	79.919
#1	.00061	-.01208	-.00468	.00217	.00185	.00015	-.05680	.00016
#2	-.00276	-.00840	.00028	.00442	.00255	.00019	-.01224	.00005
#3	-.00219	.00068	.00012	.00218	.00091	.00013	.01553	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.00038**	**.00052**	**.02154**	**-.09198**	**-.00110**	**-.01322**	**.00018**
Stddev	.00024	.00088	.00138	.01483	.10535	.00141	.06861	.00246
%RSD	523.34	234.01	265.29	68.833	114.54	127.62	519.13	1371.8
#1	-.00015	.00090	-.00012	.01936	.02327	-.00076	.06137	-.00117
#2	-.00022	-.00064	-.00042	.03733	-.18333	-.00265	-.02738	.00302
#3	.00023	.00086	.00210	.00792	-.11589	.00010	-.07365	-.00132
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00348**	**.04821**	**.00016**	**.00585**	**.00443**	**.00314**	**.00156**	**.03553**
Stddev	.00065	.02773	.00095	.00367	.00371	.00275	.00114	.00188
%RSD	18.560	57.517	582.95	62.725	83.852	87.739	73.200	5.2906
#1	.00289	.07448	.00125	.00268	.00440	.00563	.00189	.03713
#2	.00338	.05093	-.00027	.00499	.00073	.00018	.00029	.03346
#3	.00417	.01922	-.00050	.00987	.00816	.00360	.00249	.03599
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 23:40:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00025**	**.00051**	**.00604**	**-.00528**	**.00062**	**.00012**	**.00482**
Stddev	.00070	.00006	.00458	.00163	.00029	.00008	.00094
%RSD	280.85	11.978	75.793	30.927	46.562	68.537	19.510
#1	.00047	.00050	.00150	-.00357	.00036	.00006	.00376
#2	.00081	.00057	.01066	-.00682	.00057	.00008	.00556
#3	-.00053	.00045	.00597	-.00546	.00093	.00021	.00513
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9759.5**	**60265.**	**3013.5**
Stddev	10.8	85.	17.4
%RSD	.11040	.14047	.57599
#1	9754.6	60307.	3032.0
#2	9771.9	60320.	2997.5
#3	9752.1	60167.	3011.1

Approved: June 27, 2016

Sample Name: ICSA Acquired: 6/25/2016 23:44:20 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -.00562	263.10	.00178	-.00976	.00140	.00014	248.10
Stddev	.00117	.16	.00383	.00309	.00113	.00004	.61
%RSD	20.823	.06041	215.50	31.614	80.449	26.067	.24782
#1	-.00542	263.25	-.00154	-.01064	.00266	.00012	248.67
#2	-.00456	262.94	.00597	-.00633	.00047	.00013	247.45
#3	-.00688	263.13	.00090	-.01231	.00109	.00019	248.17
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.00400						
Low Limit	-.00400						

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	-.00060	-.00056	F .01039	95.630	-.04599	.01242
Stddev	.00016	.00022	.00039	.00101	.248	.03226	.00307
%RSD	92.869	36.608	70.420	9.7281	.25928	70.136	24.681
#1	-.00031	-.00080	-.00098	.00928	95.904	-.06101	.01295
#2	-.00020	-.00063	-.00021	.01127	95.420	-.06800	.01519
#3	.00000	-.00037	-.00048	.01062	95.566	-.00896	.00913
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				.00400			
Low Limit				-.00400			

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	236.10	.00050	-.00055	.08182	-.00122	.03425	.00395
Stddev	.41	.00175	.00028	.01035	.00129	.00383	.00558
%RSD	.17524	347.68	51.671	12.652	105.94	11.172	141.13
#1	236.13	.00226	-.00079	.09323	-.00097	.03151	-.00194
#2	235.67	.00051	-.00062	.07920	-.00262	.03262	.00465
#3	236.50	-.00125	-.00024	.07303	-.00007	.03862	.00916
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 27, 2016

Sample Name: ICSA Acquired: 6/25/2016 23:44:20 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00072	-.00782	.00827	.00013	.00094	-.00929	-.00404
Stddev	.00319	.00204	.00198	.00005	.00018	.00784	.00342
%RSD	442.40	26.134	23.931	35.338	18.766	84.463	84.650
#1	.00212	-.01015	.01018	.00009	.00088	-.00188	-.00347
#2	-.00417	-.00696	.00842	.00012	.00080	-.01750	-.00771
#3	-.00012	-.00634	.00622	.00018	.00114	-.00848	-.00094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00163	-.00560	-.01351
Stddev	.00058	.00018	.00078
%RSD	35.475	3.3032	5.7782
#1	-.00221	-.00565	-.01421
#2	-.00162	-.00574	-.01366
#3	-.00105	-.00539	-.01267
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9256.6	56705.	2976.7
Stddev	13.6	91.	12.8
%RSD	.14727	.16098	.43054
#1	9241.1	56650.	2963.0
#2	9266.9	56811.	2988.4
#3	9261.8	56655.	2978.7

Approved: June 27, 2016

Sample Name: ICSAB Acquired: 6/25/2016 23:48:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52011**	**271.09**	**.26014**	**-.01193**	**.26131**	**.24391**	**254.06**	**.49893**
Stddev	.00309	.31	.00108	.00072	.00207	.00022	1.57	.00035
%RSD	.59470	.11617	.41599	6.0451	.79127	.08930	.61634	.06930
#1	.51910	271.29	.26138	-.01172	.26259	.24374	255.54	.49856
#2	.51765	270.73	.25938	-.01274	.26241	.24383	254.23	.49898
#3	.52358	271.26	.25965	-.01134	.25892	.24415	252.42	.49925
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.24094**	**.25041**	**.26416**	**96.077**	**5.2095**	**.01124**	**238.55**	**.24627**
Stddev	.00056	.00142	.00058	.420	.1352	.00179	1.07	.00329
%RSD	.23299	.56520	.21819	.43687	2.5957	15.928	.44935	1.3378
#1	.24046	.25065	.26387	96.381	5.3478	.01132	239.59	.24346
#2	.24081	.24889	.26378	96.252	5.2032	.00941	238.63	.24545
#3	.24156	.25169	.26482	95.598	5.0776	.01299	237.45	.24990
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00041**	**5.4959**	**.48742**	**.09841**	**.49766**	**.51195**	**.23776**	**.00256**
Stddev	.00052	.0364	.00161	.00635	.00144	.00162	.00501	.00193
%RSD	128.92	.66237	.33105	6.4479	.28893	.31661	2.1076	75.415
#1	-.00068	5.5313	.48557	.09364	.49656	.51344	.24335	.00339
#2	-.00073	5.4979	.48847	.09597	.49929	.51023	.23366	.00393
#3	.00020	5.4586	.48823	.10561	.49712	.51219	.23626	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: ICSAB Acquired: 6/25/2016 23:48:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00140**	**.00103**	**-.00323**	**.47273**	**.25455**	**.48271**	**-.01305**
Stddev	.00059	.00027	.00250	.00229	.00097	.00045	.00046
%RSD	41.750	26.302	77.431	.48347	.38190	.09250	3.5206
#1	.00144	.00120	-.00356	.47420	.25352	.48220	-.01343
#2	.00197	.00072	-.00058	.47010	.25467	.48293	-.01317
#3	.00080	.00116	-.00555	.47390	.25546	.48302	-.01254
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9240.5**	**56174.**	**2955.7**
Stddev	9.6	118.	17.7
%RSD	.10383	.20921	.59797
#1	9251.6	56039.	2946.0
#2	9234.1	56253.	2944.9
#3	9235.9	56229.	2976.1

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 23:51:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41108**	**10.316**	**.40843**	**.50327**	**1.0436**	**.05024**	**10.459**
Stddev	.00161	.013	.00298	.00077	.0011	.00011	.030
%RSD	.39215	.12124	.73007	.15382	.10203	.22382	.28694
#1	.41119	10.324	.40804	.50264	1.0446	.05015	10.464
#2	.41263	10.302	.40566	.50304	1.0438	.05037	10.487
#3	.40941	10.323	.41158	.50413	1.0425	.05022	10.428
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05234**	**.20485**	**.50201**	**.52446**	**4.0759**	**51.088**	**1.0484**
Stddev	.00020	.00025	.00165	.00123	.0669	.060	.0059
%RSD	.38699	.12298	.32889	.23505	1.6409	.11683	.55819
#1	.05251	.20498	.50023	.52357	4.1126	51.031	1.0491
#2	.05240	.20456	.50349	.52586	3.9987	51.083	1.0423
#3	.05212	.20501	.50230	.52393	4.1164	51.150	1.0539
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.8126**	**.50786**	**1.0468**	**51.847**	**.51713**	**10.210**	**.51778**
Stddev	.0274	.00264	.0020	.030	.00045	.013	.00098
%RSD	.27960	.52030	.19073	.05848	.08757	.13121	.18906
#1	9.8005	.51090	1.0485	51.876	.51722	10.201	.51858
#2	9.7933	.50648	1.0474	51.816	.51663	10.204	.51807
#3	9.8440	.50619	1.0446	51.848	.51752	10.226	.51669
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 23:51:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2406**	**.41201**	**5.2627**	**1.0255**	**1.0428**	**1.0401**	**.52263**
Stddev	.0022	.00564	.0065	.0018	.0016	.0094	.00276
%RSD	.17501	1.3693	.12412	.17227	.15774	.90409	.52737
#1	1.2431	.41191	5.2553	1.0271	1.0421	1.0459	.52461
#2	1.2392	.40642	5.2651	1.0236	1.0417	1.0292	.52380
#3	1.2396	.41770	5.2677	1.0258	1.0447	1.0451	.51948
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0216**	**1.0330**	F **3.0271**
Stddev	.0027	.0013	.0163
%RSD	.26838	.12831	.53748
#1	1.0227	1.0315	3.0446
#2	1.0236	1.0335	3.0125
#3	1.0185	1.0340	3.0242
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9680.4**	**59250.**	**3000.1**
Stddev	28.5	27.	16.9
%RSD	.29390	.04497	.56388
#1	9711.9	59280.	2982.6
#2	9672.8	59242.	3016.3
#3	9656.6	59229.	3001.5

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 23:55:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00125**	**.00182**	**.00085**	**.00036**	**.00255**	**.00017**	**-.02838**	**-.00012**
Stddev	.00082	.00761	.00304	.00225	.00150	.00005	.02296	.00019
%RSD	65.454	418.99	358.52	623.67	58.837	28.075	80.890	157.58
#1	.00189	-.00688	.00358	-.00006	.00362	.00012	-.00325	-.00021
#2	.00153	.00513	.00139	-.00165	.00321	.00020	-.04827	-.00024
#3	.00033	.00720	-.00242	.00279	.00083	.00021	-.03363	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**.00075**	**.00113**	**.02762**	**-.02056**	**.00086**	**-.01380**	**-.00101**
Stddev	.00025	.00070	.00060	.00527	.01321	.00185	.01535	.00114
%RSD	279.31	93.710	52.614	19.071	64.270	216.68	111.21	112.81
#1	-.00016	.00013	.00054	.02156	-.02746	-.00001	-.01846	.00029
#2	.00010	.00151	.00112	.03019	-.02889	-.00040	-.02627	-.00181
#3	.00033	.00061	.00173	.03110	-.00532	.00298	.00334	-.00151
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00326**	**.05197**	**-.00006**	**.00537**	**-.00040**	**.00432**	**.00298**	**.03440**
Stddev	.00030	.03661	.00066	.00611	.00131	.00120	.00482	.00043
%RSD	9.1019	70.433	1169.2	113.80	328.70	27.704	161.98	1.2407
#1	.00299	.03235	.00066	.00591	.00062	.00425	-.00005	.03422
#2	.00322	.09421	-.00018	.01119	-.00187	.00556	.00044	.03489
#3	.00358	.02936	-.00065	-.00099	.00005	.00317	.00854	.03409
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 23:55:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**.00044**	**.00562**	**-.00278**	**.00100**	**.00010**	**.00427**
Stddev	.00044	.00041	.00677	.00064	.00081	.00020	.00057
%RSD	558.27	93.814	120.49	22.928	80.799	205.25	13.474
#1	.00052	-.00002	.00467	-.00264	.00112	.00024	.00360
#2	.00007	.00078	.01282	-.00348	.00014	-.00013	.00461
#3	-.00036	.00055	-.00063	-.00223	.00174	.00017	.00459
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9746.4**	**60216.**	**3006.7**
Stddev	3.8	76.	7.9
%RSD	.03876	.12554	.26429
#1	9742.9	60301.	3002.9
#2	9746.0	60157.	3001.3
#3	9750.4	60189.	3015.8

Approved: June 27, 2016

Sample Name: LLCCV Acquired: 6/25/2016 23:59:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00916	.16469	.00814	.08024	.01010	.00165	.38196	.00067
Stddev	.00085	.00884	.00209	.00058	.00103	.00003	.03578	.00008
%RSD	9.3027	5.3671	25.632	.71975	10.222	1.6058	9.3673	12.378
#1	.00982	.16059	.01037	.08090	.01024	.00166	.39925	.00061
#2	.00944	.15864	.00624	.07981	.01105	.00162	.40581	.00076
#3	.00820	.17483	.00780	.08002	.00900	.00168	.34082	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00411	.00454	.00520	.10552	.68660	.08825	.42307	.00800
Stddev	.00033	.00070	.00174	.01827	.09614	.00099	.09575	.00252
%RSD	7.9024	15.364	33.422	17.313	14.002	1.1218	22.633	31.490
#1	.00383	.00377	.00720	.10444	.59286	.08799	.31358	.00534
#2	.00447	.00514	.00437	.12431	.68197	.08934	.49110	.01035
#3	.00404	.00471	.00403	.08782	.78497	.08741	.46454	.00831
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00870	.45736	.01598	.79373	.00972	.08303	.01581	.78238
Stddev	.00060	.01151	.00062	.00779	.00188	.00162	.00507	.00288
%RSD	6.8723	2.5158	3.9084	.98133	19.382	1.9461	32.090	.36823
#1	.00805	.45897	.01600	.80272	.00902	.08401	.02162	.78192
#2	.00924	.44514	.01534	.78909	.01186	.08117	.01226	.78546
#3	.00881	.46798	.01659	.78938	.00829	.08392	.01355	.77975
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LLCCV Acquired: 6/25/2016 23:59:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40813**	**.04261**	**.02883**	**.15405**	**.00896**	**.01738**	**.13453**
Stddev	.00156	.00009	.00723	.00166	.00036	.00005	.00136
%RSD	.38342	.20072	25.085	1.0771	4.0551	.28767	1.0139
#1	.40866	.04260	.02755	.15254	.00855	.01741	.13450
#2	.40935	.04253	.02233	.15583	.00907	.01742	.13318
#3	.40636	.04270	.03662	.15377	.00925	.01733	.13591
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9793.5**	**60446.**	**3011.5**
Stddev	14.7	195.	8.9
%RSD	.15029	.32191	.29401
#1	9810.3	60377.	3006.1
#2	9783.4	60295.	3006.7
#3	9786.6	60666.	3021.7

Approved: June 27, 2016

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000196	0.047990	0.000000	1.000000
Al 308.215 {109}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	0.000901	0.007651	0.000000	1.000000
As 189.042 {478}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000059	0.022693	0.000000	1.000000
B 249.678 {135}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	0.000011	0.021306	0.000000	1.000000
Ba 455.403 { 74}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	0.025239	2.033102	0.000000	1.000000
Be 313.107 {108}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	0.000137	0.920722	0.000000	1.000000
Ca 422.673 { 80}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000203	0.043704	0.000000	1.000000
Cd 228.802 {447}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000064	0.534006	0.000000	1.000000
Co 228.616 {447}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000100	0.338487	0.000000	1.000000
Cr 267.716 {126}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	0.000351	0.055455	0.000000	1.000000
Cu 224.700 {450}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000309	0.117342	0.000000	1.000000
Fe 261.187 {129}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000420	0.020311	0.000000	1.000000
K 766.490 { 44}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.012203	0.064990	0.000000	1.000000
Li 670.784 { 50}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.010371	1.550017	0.000000	1.000000
Mg 279.079 {121}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000313	0.008074	0.000000	1.000000
Mn 257.610 {131}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	0.000062	0.258342	0.000000	1.000000
Mo 202.030 {467}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000039	0.171526	0.000000	1.000000
Na 589.592 { 57}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.057864	0.176430	0.000000	1.000000
Ni 231.604 {446}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000833	0.127737	0.000000	1.000000
P 214.914 {457}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000207	0.012452	0.000000	1.000000
Pb 220.353 {453}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000812	0.059494	0.000000	1.000000
Sb 206.833 {463}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	0.000048	0.028410	0.000000	1.000000
Se 196.090 {472}	6/29/2016 10:10:57	6/29/2016 10:10:57	Linear	1/Conc	-0.000299	0.014866	0.000000	1.000000
Si 212.412 {459}	6/29/2016 10:10:58	6/29/2016 10:10:58	Linear	1/Conc	0.001678	0.037859	0.000000	1.000000
Sn 189.989 {477}	6/29/2016 10:10:58	6/29/2016 10:10:58	Linear	1/Conc	0.000047	0.065871	0.000000	1.000000
Sr 407.771 { 83}	6/29/2016 10:10:58	6/29/2016 10:10:58	Linear	1/Conc	0.003016	3.365181	0.000000	1.000000
Ti 337.280 {100}	6/29/2016 10:10:58	6/29/2016 10:10:58	Linear	1/Conc	-0.003144	0.113188	0.000000	1.000000
Tl 190.856 {477}	6/29/2016 10:10:58	6/29/2016 10:10:58	Linear	1/Conc	-0.000461	0.027273	0.000000	1.000000
V 292.402 {115}	6/29/2016 10:10:58	6/29/2016 10:10:58	Linear	1/Conc	-0.000106	0.064790	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	6/29/2016 10:10:58	6/29/2016 10:10:58	Linear	1/Conc	0.000213	0.399755	0.000000	1.000000
Zr 339.198 { 99}	6/29/2016 10:10:58	6/29/2016 10:10:58	Linear	1/Conc	-0.018311	3.321003	0.000000	1.000000

Approved: June 29, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999904	0.000002	0.002705	0.009018	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999990	0.000002	0.011613	0.038710	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999844	0.000002	0.003811	0.012703	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999248	0.000004	0.003627	0.012092	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999993	0.000049	0.001401	0.004669	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999899	0.000004	0.000119	0.000398	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.998775	0.000137	0.053968	0.179895	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999581	0.000005	0.000328	0.001095	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999972	0.000003	0.000498	0.001659	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999958	0.000002	0.001490	0.004968	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999726	0.000009	0.001692	0.005639	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999702	0.000013	0.036905	0.123018	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999964	0.000176	0.118817	0.396058	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999889	0.000227	0.004949	0.016497	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999747	0.000018	0.104463	0.348210	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999861	0.000014	0.003389	0.011296	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999994	0.000004	0.000521	0.001736	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999966	0.000465	0.040386	0.134618	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999894	0.000006	0.001398	0.004661	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999991	0.000003	0.008925	0.029749	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.998411	0.000011	0.004359	0.014529	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999872	0.000003	0.005409	0.018030	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999294	0.000002	0.008435	0.028117	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999891	0.000018	0.002773	0.009244	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999973	0.000003	0.001075	0.003584	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999996	0.000063	0.000581	0.001938	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999125	0.000030	0.009303	0.031011	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999951	0.000001	0.003749	0.012498	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999987	0.000002	0.001236	0.004120	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999996	0.000007	0.000241	0.000803	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.999991	0.000089	0.000706	0.002352	OK.	1.000000	0.000000	1	0

Approved: June 29, 2016

Sample Name: S0 Acquired: 6/29/2016 9:52:02 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00020**	**.00090**	**-.00006**	**.00001**	**.02524**	**.00014**	**-.00021**
Stddev	.00004	.00001	.00006	.00003	.00310	.00002	.00346
%RSD	22.411	.98399	104.57	240.96	12.265	12.424	1673.7
#1	-.00015	.00091	-.00011	.00003	.02283	.00015	.00154
#2	-.00020	.00091	-.00007	.00002	.02415	.00012	-.00419
#3	-.00024	.00089	.00001	-.00002	.02873	.00014	.00203

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00006**	**-.00010**	**.00035**	**-.00031**	**-.00042**	**-.01221**	**-.01037**
Stddev	.00014	.00018	.00006	.00025	.00031	.00332	.00949
%RSD	221.14	179.29	16.915	81.782	72.829	27.169	91.545
#1	.00008	-.00028	.00039	-.00014	-.00014	-.01249	-.00990
#2	-.00020	-.00009	.00038	-.00060	-.00038	-.01537	-.02008
#3	-.00007	.00007	.00028	-.00019	-.00074	-.00876	-.00112

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00031**	**.00006**	**-.00004**	**-.05787**	**-.00083**	**-.00021**	**-.00081**
Stddev	.00048	.00065	.00007	.00436	.00011	.00003	.00011
%RSD	153.72	1050.1	186.66	7.5353	12.837	16.794	13.738
#1	.00023	.00081	.00004	-.06291	-.00075	-.00022	-.00087
#2	-.00047	-.00032	-.00006	-.05532	-.00080	-.00023	-.00089
#3	-.00069	-.00031	-.00010	-.05539	-.00095	-.00017	-.00068

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00005**	**-.00030**	**.00168**	**.00005**	**.00302**	**-.00314**	**-.00046**
Stddev	.00012	.00011	.00005	.00005	.00223	.00113	.00011
%RSD	247.95	37.856	3.1434	111.20	73.864	36.032	23.262
#1	-.00008	-.00022	.00167	.00006	.00519	-.00401	-.00048
#2	.00016	-.00025	.00173	.00009	.00074	-.00186	-.00056
#3	.00007	-.00043	.00163	-.00001	.00311	-.00356	-.00034

Approved: June 29, 2016

Sample Name: S0 Acquired: 6/29/2016 9:52:02 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**-.00011**	**.00021**	**-.01831**
Stddev	.00008	.00009	.00440
%RSD	72.585	40.463	24.022
#1	-.00012	.00024	-.01431
#2	-.00002	.00012	-.01760
#3	-.00018	.00028	-.02302
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9115.5**	**54884.**	**2480.1**
Stddev	24.2	210.	22.3
%RSD	.26510	.38244	.90045
#1	9143.2	55110.	2454.9
#2	9099.0	54695.	2497.5
#3	9104.3	54847.	2488.0

Approved: June 29, 2016

Sample Name: S1 Acquired: 6/29/2016 9:55:58 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00003**	**.00149**	**.04238**	**.00061**	**.00581**	**.00027**	**.00038**
Stddev	.00014	.00004	.00174	.00001	.00174	.00016	.00008
%RSD	493.35	2.7596	4.1174	2.1805	29.926	60.533	21.804
#1	-.00006	.00145	.04420	.00060	.00395	.00044	.00048
#2	.00012	.00150	.04221	.00062	.00611	.00027	.00032
#3	-.00015	.00154	.04073	.00062	.00739	.00011	.00035

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00054**	**.00038**	**-.00008**	**.01707**	**.00101**	**.00131**	**.01790**
Stddev	.00006	.00006	.00059	.00268	.00063	.00008	.00342
%RSD	10.750	15.855	770.56	15.692	61.961	6.4456	19.090
#1	.00058	.00044	.00001	.01723	.00042	.00131	.02178
#2	.00048	.00033	-.00071	.01966	.00096	.00140	.01661
#3	.00057	.00035	.00047	.01431	.00167	.00123	.01532

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00043**	**.00074**	**-.00031**	**.00040**	**.00286**	**.00052**	**.02991**
Stddev	.00015	.00014	.00022	.00001	.00006	.00003	.00266
%RSD	34.679	18.970	71.060	2.7952	2.0014	6.7309	8.8928
#1	-.00037	.00078	-.00038	.00039	.00280	.00056	.02685
#2	-.00033	.00086	-.00049	.00040	.00291	.00050	.03167
#3	-.00061	.00059	-.00006	.00041	.00287	.00050	.03120

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00153**	**.00043**	**.00328**	**.00747**
Stddev	.00060	.00005	.00017	.00219
%RSD	39.113	10.913	5.1911	29.317
#1	-.00220	.00047	.00332	.00993
#2	-.00136	.00043	.00342	.00678
#3	-.00104	.00038	.00309	.00571

Approved: June 29, 2016

Sample Name: S1 Acquired: 6/29/2016 9:55:58 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9108.0**	**54989.**	**2477.7**
Stddev	25.7	207.	10.2
%RSD	.28175	.37676	.41037
#1	9129.4	55084.	2488.2
#2	9079.6	54752.	2467.9
#3	9115.0	55132.	2477.2

Approved: June 29, 2016

Sample Name: S2 Acquired: 6/29/2016 9:59:53 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00016**	**.00216**	**.00012**	**.00027**	**.05721**	**.00091**	**.00981**
Stddev	.00014	.00005	.00001	.00002	.00061	.00004	.00076
%RSD	87.206	2.3473	6.3239	6.2998	1.0584	4.4038	7.7890
#1	.00026	.00210	.00012	.00029	.05687	.00087	.01007
#2	.00000	.00220	.00012	.00026	.05686	.00092	.01041
#3	.00021	.00218	.00011	.00026	.05791	.00095	.00895

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00042**	**.00093**	**.00077**	**.00069**	**.00085**	**.03865**	**.00938**
Stddev	.00028	.00003	.00003	.00001	.00045	.00490	.00149
%RSD	66.365	3.0403	3.7171	1.8776	53.045	12.668	15.907
#1	.00059	.00096	.00074	.00069	.00137	.03348	.00933
#2	.00059	.00091	.00077	.00070	.00064	.04321	.01090
#3	.00010	.00092	.00080	.00067	.00054	.03926	.00792

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00058**	**.00168**	**.00261**	**.09115**	**.00006**	**.00175**	**-.00031**
Stddev	.00098	.00052	.00014	.00432	.00032	.00013	.00028
%RSD	167.86	31.183	5.3329	4.7388	537.39	7.2792	90.400
#1	.00132	.00108	.00264	.08842	-.00027	.00190	.00000
#2	.00095	.00192	.00273	.09613	.00008	.00165	-.00039
#3	-.00052	.00204	.00246	.08890	.00036	.00170	-.00053

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00056**	**-.00025**	**.00443**	**.00103**	**.05569**	**-.00158**	**-.00025**
Stddev	.00015	.00008	.00005	.00004	.00034	.00116	.00005
%RSD	27.350	31.837	1.1615	4.3714	.60840	73.502	21.152
#1	.00073	-.00018	.00438	.00107	.05552	-.00032	-.00020
#2	.00053	-.00034	.00448	.00102	.05547	-.00180	-.00030
#3	.00042	-.00024	.00443	.00099	.05608	-.00261	-.00024

Approved: June 29, 2016

Sample Name: S2 Acquired: 6/29/2016 9:59:53 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00098	.00643	.03194
Stddev	.00008	.00014	.00127
%RSD	8.1381	2.0985	3.9732
#1	.00089	.00650	.03225
#2	.00102	.00652	.03054
#3	.00104	.00628	.03302

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9104.6	54986.	2500.4
Stddev	11.8	96.	11.1
%RSD	.13007	.17414	.44486
#1	9116.7	54945.	2501.3
#2	9093.1	55096.	2488.9
#3	9103.9	54918.	2511.1

Approved: June 29, 2016

Sample Name: S3 Acquired: 6/29/2016 10:03:48 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.01869	.07766	.00885	.01052	2.0517	.04687	.42972	.02883
Stddev	.00010	.00016	.00008	.00004	.0032	.00034	.00080	.00010
%RSD	.55151	.20479	.90829	.38019	.15653	.72788	.18609	.33451
#1	.01881	.07784	.00891	.01051	2.0489	.04676	.43025	.02887
#2	.01863	.07754	.00876	.01048	2.0510	.04660	.42880	.02890
#3	.01863	.07761	.00888	.01056	2.0552	.04725	.43010	.02872

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.06718	.02796	.05899	.08098	3.2121	1.5387	.08004	.12886
Stddev	.00017	.00020	.00014	.00085	.0066	.0107	.00043	.00031
%RSD	.25123	.72026	.24482	1.0474	.20656	.69238	.54007	.24346
#1	.06716	.02788	.05915	.08049	3.2116	1.5363	.07955	.12919
#2	.06703	.02782	.05893	.08195	3.2056	1.5293	.08018	.12857
#3	.06736	.02819	.05888	.08048	3.2189	1.5503	.08038	.12881

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.17205	8.6822	.06315	.12174	.02914	.03341	.00565	.19356
Stddev	.00031	.0256	.00007	.00018	.00011	.00021	.00007	.00013
%RSD	.18051	.29494	.10895	.14761	.36256	.62587	1.1963	.06718
#1	.17198	8.6568	.06317	.12178	.02917	.03341	.00571	.19347
#2	.17178	8.6819	.06321	.12154	.02922	.03320	.00558	.19350
#3	.17239	8.7080	.06307	.12189	.02902	.03362	.00566	.19371

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.06591	3.3569	.10885	.01218	.06423	.39984	3.3046
Stddev	.00009	.0081	.00139	.00005	.00041	.00013	.0223
%RSD	.13520	.24258	1.2796	.40879	.63272	.03282	.67478
#1	.06594	3.3482	.10985	.01212	.06402	.39998	3.2853
#2	.06581	3.3581	.10726	.01221	.06397	.39981	3.2995
#3	.06598	3.3643	.10945	.01220	.06470	.39972	3.3290

Approved: June 29, 2016

Sample Name: S3 Acquired: 6/29/2016 10:03:48 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8936.5**	**53607.**	**2459.5**
Stddev	17.8	172.	16.5
%RSD	.19869	.32046	.67053
#1	8948.3	53558.	2468.9
#2	8916.1	53798.	2469.2
#3	8945.2	53465.	2440.5

Approved: June 29, 2016

Sample Name: S4 Acquired: 6/29/2016 10:07:26 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.03809	.15568	.01806	.02127	4.0977	.09410	.87546	.05845
Stddev	.00006	.00018	.00005	.00005	.0047	.00010	.00176	.00012
%RSD	.15008	.11845	.28737	.24709	.11559	.10855	.20067	.20874
#1	.03804	.15555	.01806	.02127	4.0931	.09422	.87715	.05832
#2	.03808	.15589	.01812	.02132	4.0975	.09404	.87365	.05856
#3	.03815	.15560	.01802	.02122	4.1026	.09405	.87559	.05848

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13549	.05605	.11769	.16222	6.5100	3.0957	.16128	.25943
Stddev	.00014	.00010	.00021	.00068	.0186	.0116	.00066	.00120
%RSD	.10476	.18095	.18082	.41633	.28563	.37530	.40965	.46423
#1	.13535	.05603	.11756	.16145	6.4930	3.0828	.16069	.25809
#2	.13564	.05616	.11759	.16267	6.5070	3.0989	.16199	.25977
#3	.13547	.05595	.11794	.16256	6.5298	3.1054	.16114	.26043

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.34251	17.654	.12703	.24567	.05867	.06706	.01164	.38042
Stddev	.00035	.052	.00035	.00016	.00046	.00002	.00006	.00039
%RSD	.10335	.29675	.27610	.06413	.78699	.02879	.52045	.10268
#1	.34211	17.621	.12664	.24575	.05814	.06708	.01160	.38040
#2	.34262	17.626	.12712	.24549	.05886	.06704	.01160	.38083
#3	.34279	17.714	.12732	.24578	.05900	.06708	.01171	.38004

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13155	6.7464	.22309	.02436	.12935	.79951	6.6243
Stddev	.00008	.0203	.00179	.00008	.00009	.00117	.0174
%RSD	.06203	.30098	.80453	.32304	.06859	.14600	.26196
#1	.13147	6.7274	.22250	.02431	.12945	.79836	6.6092
#2	.13163	6.7440	.22165	.02433	.12931	.79947	6.6432
#3	.13155	6.7678	.22510	.02445	.12929	.80069	6.6204

Approved: June 29, 2016

Sample Name: S4 Acquired: 6/29/2016 10:07:26 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8921.2**	**53238.**	**2473.0**
Stddev	18.3	108.	7.0
%RSD	.20479	.20318	.28323
#1	8919.4	53202.	2476.9
#2	8903.9	53152.	2464.9
#3	8940.3	53359.	2477.3

Approved: June 29, 2016

Sample Name: ICV Acquired: 6/29/2016 10:11:02 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40442	10.286	.41098	.50592	1.0366	.05070	10.092
Stddev	.00330	.017	.00346	.00271	.0026	.00003	.054
%RSD	.81540	.16712	.84291	.53476	.24579	.06427	.53421
#1	.40613	10.305	.41012	.50573	1.0391	.05071	10.144
#2	.40062	10.279	.41479	.50331	1.0340	.05067	10.037
#3	.40651	10.273	.40802	.50871	1.0367	.05073	10.095
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05076	.20318	.50598	.50845	4.0917	51.004	1.0197
Stddev	.00051	.00054	.00159	.00095	.0399	.219	.0093
%RSD	1.0116	.26720	.31500	.18732	.97540	.42916	.91103
#1	.05134	.20361	.50423	.50846	4.0711	51.243	1.0299
#2	.05035	.20336	.50734	.50940	4.0664	50.814	1.0175
#3	.05060	.20257	.50638	.50749	4.1377	50.954	1.0117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.296	.51552	.96471	50.940	.50720	9.6966	.51063
Stddev	.141	.00366	.00146	.130	.00148	.0073	.00218
%RSD	1.3690	.71030	.15108	.25486	.29239	.07577	.42637
#1	10.212	.51660	.96636	51.086	.50872	9.6973	.50842
#2	10.216	.51144	.96419	50.892	.50575	9.7036	.51071
#3	10.458	.51852	.96359	50.840	.50712	9.6890	.51277
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 29, 2016

Sample Name: ICV Acquired: 6/29/2016 10:11:02 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2312**	**.40824**	F **4.7353**	**1.0396**	**1.0085**	**1.0166**	**.51532**
Stddev	.0046	.00693	.0040	.0016	.0042	.0078	.00390
%RSD	.37161	1.6986	.08505	.15478	.41422	.76488	.75613
#1	1.2294	.40991	4.7343	1.0415	1.0119	1.0250	.51933
#2	1.2364	.41418	4.7320	1.0387	1.0098	1.0096	.51509
#3	1.2278	.40062	4.7398	1.0387	1.0038	1.0153	.51155
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value			5.0000				
Range			-5.0000%				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0066**	**1.0167**	**1.0346**
Stddev	.0019	.0012	.0034
%RSD	.19382	.12004	.33211
#1	1.0066	1.0180	1.0376
#2	1.0085	1.0156	1.0352
#3	1.0046	1.0166	1.0308
Check ?	Chk Pass	Chk Pass	Chk Pass
Value			
Range			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9016.8**	**54198.**	**2484.7**
Stddev	34.4	67.	10.4
%RSD	.38098	.12315	.41934
#1	8978.8	54206.	2472.8
#2	9045.6	54260.	2489.2
#3	9026.1	54128.	2492.2

Approved: June 29, 2016

Sample Name: ICB Acquired: 6/29/2016 10:14:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00201	.01836	-.00141	.00781	.00152	-.00001	.08366
Stddev	.00082	.00200	.00208	.00229	.00035	.00006	.01618
%RSD	40.698	10.891	147.26	29.310	23.077	485.21	19.340
#1	.00256	.01613	-.00355	.01041	.00168	.00003	.10066
#2	.00240	.02000	-.00131	.00608	.00177	.00002	.08186
#3	.00107	.01894	.00061	.00695	.00112	-.00008	.06845
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	-.00008	-.00032	.00181	-.01955	.27921	.00178
Stddev	.00029	.00013	.00086	.00127	.03923	.09246	.00456
%RSD	372.03	169.87	270.02	70.363	200.64	33.116	256.70
#1	.00039	.00006	-.00040	.00064	-.02314	.17263	-.00171
#2	-.00019	-.00020	-.00113	.00162	.02135	.33788	.00694
#3	.00003	-.00008	.00058	.00317	-.05688	.32713	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.06410	.00147	.00078	.10419	.00112	F .01118	.00327
Stddev	.06961	.00309	.00063	.03713	.00057	.00173	.00107
%RSD	108.59	209.72	81.088	35.632	50.549	15.489	32.666
#1	.00071	.00251	.00146	.09352	.00159	.01283	.00317
#2	-.05535	-.00200	.00068	.14549	.00128	.00938	.00226
#3	-.13768	.00391	.00020	.07357	.00049	.01133	.00439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						.01000	
Low Limit						-.01000	

Approved: June 29, 2016

Sample Name: ICB Acquired: 6/29/2016 10:14:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00086	-.00340	-.01473	.00060	.00124	.00125	.00059
Stddev	.00143	.00785	.00191	.00077	.00074	.00777	.00202
%RSD	166.00	230.78	13.002	128.34	59.622	619.73	344.29
#1	-.00250	-.01070	-.01252	.00136	.00133	.00946	.00101
#2	-.00011	.00490	-.01567	.00061	.00193	.00028	.00236
#3	.00003	-.00441	-.01599	-.00017	.00046	-.00599	-.00161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00253	.00100	.00081
Stddev	.00074	.00035	.00047
%RSD	29.384	34.824	58.912
#1	.00232	.00132	.00069
#2	.00335	.00106	.00040
#3	.00191	.00063	.00133
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9084.4	54980.	2488.4
Stddev	135.8	68.	2.1
%RSD	1.4949	.12377	.08443
#1	8930.5	55059.	2490.1
#2	9135.2	54945.	2489.0
#3	9187.4	54938.	2486.1

Approved: June 29, 2016

Sample Name: LLICV Acquired: 6/29/2016 10:18:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00872**	**.17063**	**.00885**	**.08373**	**.00860**	**.00157**	**.42073**	**.00073**
Stddev	.00123	.00534	.00231	.00067	.00138	.00006	.03113	.00038
%RSD	14.065	3.1304	26.064	.79719	16.041	4.0340	7.3981	51.856
#1	.00819	.17652	.00868	.08307	.00712	.00164	.38707	.00037
#2	.01012	.16609	.00663	.08440	.00885	.00152	.42664	.00113
#3	.00785	.16929	.01123	.08372	.00984	.00155	.44848	.00069
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00391**	**.00455**	**.00624**	**.10276**	**1.0619**	**.07782**	**.31322**	**.00827**
Stddev	.00043	.00092	.00112	.03246	.0112	.00430	.09347	.00037
%RSD	10.917	20.252	17.906	31.585	1.0560	5.5298	29.841	4.5346
#1	.00438	.00353	.00531	.07196	1.0586	.07424	.21886	.00787
#2	.00354	.00533	.00748	.09967	1.0743	.07662	.31502	.00831
#3	.00383	.00480	.00594	.13665	1.0526	.08260	.40577	.00862
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00805**	**.42286**	**.01644**	**.79611**	**.01299**	**.08354**	**.01434**	**.72436**
Stddev	.00028	.00902	.00098	.00141	.00416	.00232	.01207	.00478
%RSD	3.4369	2.1335	5.9790	.17658	32.054	2.7721	84.200	.65952
#1	.00810	.43087	.01534	.79702	.01757	.08599	.00418	.72986
#2	.00776	.42462	.01724	.79449	.01196	.08325	.01115	.72188
#3	.00831	.41309	.01675	.79681	.00943	.08139	.02769	.72132
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LLICV Acquired: 6/29/2016 10:18:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40263**	**.04084**	**.02518**	**.15168**	**.00937**	**.01675**	**.04172**
Stddev	.00091	.00036	.00443	.00197	.00116	.00020	.00069
%RSD	.22645	.89206	17.576	1.3007	12.341	1.2016	1.6651
#1	.40366	.04125	.02007	.15388	.00804	.01687	.04096
#2	.40231	.04055	.02772	.15110	.01016	.01687	.04233
#3	.40192	.04073	.02775	.15006	.00991	.01652	.04187
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9183.9**	**55097.**	**2506.7**
Stddev	28.5	155.	11.4
%RSD	.31037	.28188	.45399
#1	9209.7	55255.	2496.9
#2	9153.3	55090.	2504.1
#3	9188.9	54945.	2519.2

Approved: June 29, 2016

Sample Name: ICSA Acquired: 6/29/2016 10:22:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00084**	**256.78**	**-.00093**	**.01473**	**-.00127**	**-.00007**	**241.44**	**-.00048**
Stddev	.00094	.72	.00227	.00118	.00156	.00011	1.66	.00020
%RSD	111.40	.27959	242.95	8.0158	122.68	145.05	.68673	41.517
#1	-.00043	256.01	-.00202	.01467	-.00302	.00001	241.06	-.00037
#2	-.00191	256.91	.00168	.01595	-.00076	-.00019	243.25	-.00071
#3	-.00018	257.43	-.00246	.01359	-.00003	-.00004	240.00	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00193**	**-.00215**	**-.00098**	**96.233**	**.18223**	**.00799**	**245.73**	**.00118**
Stddev	.00010	.00124	.00101	.819	.15413	.00679	1.81	.00175
%RSD	5.1935	57.417	102.42	.85122	84.579	84.964	.73485	148.16
#1	-.00182	-.00123	-.00147	96.033	.32674	.01197	246.38	.00301
#2	-.00197	-.00168	.00018	97.134	.19995	.01185	247.11	-.00048
#3	-.00201	-.00356	-.00165	95.533	.02001	.00015	243.68	.00101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00086**	**.01054**	**-.00048**	**.04095**	**-.00008**	**-.00728**	**.00425**	**-.01488**
Stddev	.00034	.02123	.00188	.01874	.00416	.00372	.00642	.00348
%RSD	39.777	201.47	393.65	45.749	5111.4	51.146	151.05	23.403
#1	-.00126	.02786	-.00189	.05055	.00446	-.00298	-.00308	-.01456
#2	-.00067	.01688	-.00120	.05295	-.00099	-.00943	.00887	-.01156
#3	-.00065	-.01314	.00166	.01936	-.00371	-.00943	.00697	-.01850
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: ICSA Acquired: 6/29/2016 10:22:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00054**	**.00073**	**.02193**	**-.00014**	**-.00166**	**-.00668**	**.00332**
Stddev	.00061	.00100	.00144	.00351	.00076	.00007	.00048
%RSD	112.55	136.67	6.5637	2422.7	45.900	1.0941	14.413
#1	-.00076	.00033	.02256	-.00301	-.00254	-.00665	.00376
#2	-.00100	-.00001	.02029	-.00120	-.00118	-.00663	.00339
#3	.00015	.00186	.02296	.00377	-.00126	-.00677	.00281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8736.9**	**52049.**	**2498.5**
Stddev	24.9	58.	18.1
%RSD	.28538	.11097	.72548
#1	8711.7	52105.	2503.9
#2	8737.5	52051.	2478.3
#3	8761.6	51990.	2513.3

Approved: June 29, 2016

Sample Name: ICSAB Acquired: 6/29/2016 10:26:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50532	257.64	.24041	.01593	.24782	.25031	243.08	.48094
Stddev	.00171	.66	.00247	.00567	.00099	.00074	.60	.00095
%RSD	.33818	.25546	1.0272	35.576	.40061	.29554	.24559	.19763
#1	.50548	258.11	.23817	.01042	.24888	.25076	243.61	.48009
#2	.50694	257.93	.23999	.01562	.24691	.25072	242.43	.48077
#3	.50354	256.89	.24306	.02174	.24768	.24946	243.19	.48196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.23496	.24688	.24059	94.984	5.3181	.00767	241.98	.24053
Stddev	.00079	.00037	.00198	.300	.0452	.00698	.24	.00042
%RSD	.33424	.14899	.82504	.31541	.84893	90.971	.09967	.17601
#1	.23490	.24729	.24016	95.186	5.3643	.00114	242.07	.24026
#2	.23577	.24675	.24276	94.640	5.2741	.00684	242.17	.24032
#3	.23421	.24659	.23886	95.126	5.3159	.01502	241.71	.24102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00045	5.2047	.46980	.03085	.48046	.48169	.25661	-.00890
Stddev	.00021	.0640	.00232	.00572	.00164	.00298	.00285	.00179
%RSD	46.426	1.2289	.49319	18.555	.34062	.61826	1.1093	20.104
#1	-.00036	5.2773	.46718	.02681	.48229	.48409	.25349	-.01095
#2	-.00069	5.1806	.47063	.03740	.47996	.48262	.25727	-.00770
#3	-.00031	5.1564	.47158	.02833	.47913	.47836	.25907	-.00803
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: ICSAB Acquired: 6/29/2016 10:26:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00044	.00077	.02203	.45802	.24979	.46986	.00245
Stddev	.00180	.00022	.00309	.00630	.00104	.00013	.00049
%RSD	408.40	28.979	14.011	1.3750	.41683	.02831	19.880
#1	.00248	.00101	.01849	.45999	.24918	.46991	.00235
#2	-.00021	.00058	.02346	.46310	.24919	.46995	.00202
#3	-.00094	.00070	.02414	.45097	.25099	.46970	.00298
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8714.2	52027.	2490.8
Stddev	13.4	71.	10.7
%RSD	.15385	.13668	.42866
#1	8720.3	52047.	2479.5
#2	8723.4	51948.	2492.0
#3	8698.8	52086.	2500.8

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 10:29:53 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.38545	9.7565	.37968	.47556	.96130	.04802	9.7563	.04801
Stddev	.00149	.0491	.00049	.00509	.00395	.00037	.1577	.00039
%RSD	.38566	.50355	.12878	1.0695	.41099	.76364	1.6159	.82135
#1	.38586	9.8125	.38024	.47673	.96416	.04784	9.8713	.04814
#2	.38380	9.7209	.37931	.47996	.96295	.04844	9.8211	.04833
#3	.38669	9.7360	.37950	.46999	.95679	.04777	9.5766	.04757
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19120	.47822	.47994	3.9564	48.202	.97060	9.9602	.48155
Stddev	.00043	.00297	.00073	.0398	.102	.01545	.2137	.00456
%RSD	.22626	.62097	.15125	1.0060	.21204	1.5918	2.1455	.94698
#1	.19093	.47906	.48045	4.0011	48.250	.98467	10.152	.47813
#2	.19170	.48067	.47911	3.9248	48.272	.97306	9.9994	.47980
#3	.19096	.47491	.48026	3.9433	48.085	.95407	9.7296	.48673
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.96357	47.886	.48088	9.5345	.47920	1.1504	.38429	4.8575
Stddev	.00295	.120	.00075	.0224	.00446	.0029	.00064	.0081
%RSD	.30570	.24971	.15493	.23468	.93138	.25485	.16589	.16756
#1	.96520	47.982	.48163	9.5372	.48008	1.1536	.38445	4.8590
#2	.96534	47.923	.48085	9.5554	.47437	1.1497	.38359	4.8649
#3	.96017	47.752	.48014	9.5109	.48317	1.1478	.38483	4.8488
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 10:29:53 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.95817	.96154	.97251	.48359	.95998	.95642	.95740
Stddev	.00212	.00517	.00473	.00288	.00538	.00175	.00901
%RSD	.22176	.53814	.48620	.59624	.56006	.18293	.94112
#1	.95810	.96589	.97320	.48316	.96144	.95616	.96570
#2	.96032	.96292	.97685	.48094	.96448	.95481	.95868
#3	.95607	.95582	.96747	.48666	.95403	.95828	.94782
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9329.2	56053.	2575.1
Stddev	2.5	209.	17.9
%RSD	.02702	.37346	.69466
#1	9328.4	55913.	2557.2
#2	9332.1	56294.	2575.2
#3	9327.3	55953.	2592.9

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 10:33:33 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00159	.04378	.00092	.00232	.00099	.00010	.10123	-.00004
Stddev	.00231	.01305	.00241	.00272	.00047	.00006	.02043	.00004
%RSD	145.46	29.810	262.06	117.36	47.745	62.131	20.182	114.14
#1	.00341	.05304	.00368	.00105	.00154	.00016	.12224	-.00004
#2	-.00101	.04945	-.00075	.00543	.00069	.00004	.08144	-.00008
#3	.00238	.02885	-.00018	.00046	.00075	.00011	.10001	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.00062	.00170	-.00155	.25334	.00056	-.00187	.00192
Stddev	.00020	.00064	.00189	.00533	.06368	.00243	.07462	.00456
%RSD	222.29	102.61	111.38	344.66	25.136	433.45	3980.0	237.69
#1	.00014	.00070	.00306	-.00090	.21902	-.00061	-.07603	-.00263
#2	-.00021	.00122	.00250	-.00717	.21418	.00336	-.00280	.00190
#3	-.00020	-.00005	-.00046	.00343	.32682	-.00107	.07321	.00650
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00065	.04437	.00005	.00934	.00350	.00059	.00215	-.01774
Stddev	.00011	.04353	.00107	.00336	.00137	.00309	.00560	.00305
%RSD	17.530	98.104	2366.4	36.014	39.191	524.62	259.85	17.208
#1	.00066	.06944	-.00035	.01067	.00499	.00416	.00846	-.01471
#2	.00053	.06957	.00126	.01184	.00322	-.00108	.00023	-.01769
#3	.00076	-.00589	-.00077	.00552	.00229	-.00131	-.00222	-.02081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 10:33:33 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00032**	**.00049**	**.00458**	**.00189**	**.00092**	**.00197**	**.00039**
Stddev	.00025	.00045	.00174	.00327	.00053	.00007	.00094
%RSD	77.695	91.451	38.085	173.43	57.187	3.4706	242.63
#1	-.00060	.00046	.00257	.00351	.00093	.00199	.00131
#2	-.00021	.00094	.00553	-.00188	.00039	.00202	.00043
#3	-.00014	.00005	.00564	.00403	.00144	.00189	-.00057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9485.3**	**57413.**	**2581.2**
Stddev	17.0	57.	12.7
%RSD	.17947	.09957	.49264
#1	9465.7	57380.	2584.4
#2	9493.7	57380.	2592.0
#3	9496.5	57479.	2567.2

Approved: June 29, 2016

Sample Name: PBW FB Acquired: 6/29/2016 10:37:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00054**	**.00760**	**.00035**	**.00218**	**-.00053**	**-.00002**	**.03562**	**-.00013**
Stddev	.00198	.00612	.00271	.00167	.00078	.00003	.04893	.00014
%RSD	364.60	80.490	783.97	76.555	147.09	135.34	137.36	102.88
#1	.00122	.01052	-.00215	.00135	-.00070	-.00003	.06148	-.00018
#2	-.00015	.01171	.00323	.00108	-.00121	-.00005	-.02081	.00002
#3	-.00269	.00057	-.00005	.00409	.00032	.00001	.06620	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00025**	**-.00052**	**.00169**	**.01996**	**.05997**	**-.00167**	**-.04418**	**.00199**
Stddev	.00020	.00118	.00100	.00706	.14566	.00254	.04322	.00383
%RSD	82.183	224.92	58.747	35.368	242.89	152.22	97.836	192.33
#1	-.00012	.00029	.00069	.02783	.21959	-.00044	-.07189	.00586
#2	-.00014	.00001	.00171	.01789	-.06574	-.00459	-.06627	.00191
#3	-.00048	-.00188	.00268	.01417	.02605	.00002	.00563	-.00180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00031**	**.05592**	**.00048**	**.00581**	**.00515**	**-.00331**	**.00202**	**-.00473**
Stddev	.00015	.04015	.00103	.00347	.00220	.00443	.00614	.00147
%RSD	47.719	71.802	215.60	59.752	42.733	133.91	303.26	31.020
#1	.00043	.03372	-.00059	.00869	.00763	.00172	.00313	-.00379
#2	.00015	.10227	.00055	.00195	.00437	-.00500	.00753	-.00642
#3	.00034	.03177	.00147	.00678	.00344	-.00663	-.00459	-.00399
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: PBW FB Acquired: 6/29/2016 10:37:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.00049	.00691	.00109	.00028	.00077	.00045
Stddev	.00124	.00017	.00278	.00259	.00091	.00020	.00020
%RSD	344.68	34.296	40.227	238.75	329.09	25.996	44.233
#1	-.00012	.00038	.00665	.00014	.00131	.00066	.00068
#2	-.00057	.00041	.00981	-.00090	-.00042	.00066	.00029
#3	.00176	.00069	.00427	.00402	-.00006	.00100	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9661.3	58506.	2641.9
Stddev	8.4	39.	4.1
%RSD	.08722	.06636	.15529
#1	9654.6	58462.	2643.1
#2	9670.8	58536.	2637.3
#3	9658.6	58521.	2645.2

Approved: June 29, 2016

Sample Name: LCSW FB Acquired: 6/29/2016 10:41:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20370**	**5.1376**	**.20101**	**.98179**	**.51698**	**.02494**	**5.2688**	**.02554**
Stddev	.00114	.0040	.00301	.00487	.00277	.00006	.0279	.00009
%RSD	.55949	.07726	1.4964	.49570	.53639	.22903	.52991	.34850
#1	.20502	5.1375	.20328	.97672	.51912	.02487	5.2372	.02563
#2	.20306	5.1337	.19760	.98220	.51797	.02495	5.2792	.02545
#3	.20303	5.1417	.20215	.98643	.51385	.02499	5.2900	.02553
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10323**	**.25700**	**.25880**	**2.0709**	**25.781**	**.52295**	**5.1906**	**.26094**
Stddev	.00023	.00047	.00162	.0098	.125	.00625	.1782	.00370
%RSD	.22183	.18355	.62622	.47068	.48649	1.1960	3.4341	1.4198
#1	.10340	.25753	.25784	2.0688	25.869	.52659	5.3964	.26359
#2	.10297	.25685	.26067	2.0815	25.837	.52654	5.0906	.26253
#3	.10331	.25662	.25789	2.0624	25.638	.51573	5.0847	.25671
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52023**	**25.915**	**.25965**	**4.9668**	**.26247**	**.61292**	**.19435**	**2.4853**
Stddev	.00079	.143	.00151	.0220	.00148	.00281	.00301	.0027
%RSD	.15259	.55270	.58218	.44282	.56222	.45892	1.5506	.10988
#1	.51932	26.010	.26100	4.9735	.26381	.61059	.19229	2.4822
#2	.52060	25.985	.25802	4.9422	.26271	.61604	.19295	2.4875
#3	.52078	25.751	.25992	4.9846	.26089	.61213	.19781	2.4862
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LCSW FB Acquired: 6/29/2016 10:41:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51760**	**.52472**	**.51670**	**.26018**	**.51344**	**.51480**	**.00106**
Stddev	.00084	.00343	.00531	.00450	.00220	.00032	.00068
%RSD	.16154	.65377	1.0277	1.7311	.42871	.06150	64.585
#1	.51772	.52728	.52254	.25881	.51503	.51503	.00153
#2	.51671	.52607	.51216	.25652	.51437	.51492	.00028
#3	.51837	.52083	.51541	.26521	.51093	.51444	.00137
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9014.6**	**54430.**	**2511.5**
Stddev	17.6	205.	22.8
%RSD	.19522	.37586	.90940
#1	9034.7	54306.	2501.7
#2	9006.8	54318.	2495.1
#3	9002.2	54666.	2537.6

Approved: June 29, 2016

Sample Name: L1606117701 Acquired: 6/29/2016 10:45:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.02570	.00379	.09957	.00036	.00012	.06954	.00009
Stddev	.00188	.01108	.00366	.00112	.00044	.00008	.05770	.00023
%RSD	502.08	43.121	96.396	1.1256	123.03	65.043	82.983	264.23
#1	-.00172	.03569	.00193	.10021	.00070	.00019	.08438	.00006
#2	.00093	.02763	.00801	.09827	.00052	.00004	.00586	-.00013
#3	.00192	.01378	.00145	.10022	-.00014	.00013	.11837	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	-.00003	.00182	.03157	.25886	-.00017	-.03062	.00402
Stddev	.00021	.00044	.00154	.02412	.07495	.00077	.10924	.00214
%RSD	234.47	1384.7	84.513	76.424	28.952	444.60	356.80	53.262
#1	-.00009	-.00022	.00346	.03078	.34415	-.00011	-.10112	.00381
#2	.00031	.00047	.00041	.00784	.20352	.00056	-.08595	.00199
#3	.00004	-.00035	.00159	.05607	.22892	-.00098	.09522	.00625
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00689	115.28	.00054	.01609	.00211	.00016	.00064	4.1138
Stddev	.00033	.89	.00124	.00512	.00208	.00316	.00335	.0042
%RSD	4.7528	.77547	231.01	31.846	98.898	1988.7	523.66	.10156
#1	.00714	114.59	.00118	.01368	.00303	-.00237	-.00302	4.1168
#2	.00652	116.29	-.00089	.01262	-.00028	.00370	.00140	4.1156
#3	.00702	114.95	.00133	.02198	.00356	-.00085	.00354	4.1090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606117701 Acquired: 6/29/2016 10:45:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00045	-.00027	.00449	.00390	.00174	.04403	.00026
Stddev	.00025	.00048	.01014	.00210	.00045	.00018	.00052
%RSD	55.323	177.85	226.06	53.721	25.860	.39798	196.34
#1	-.00048	-.00013	-.00582	.00168	.00123	.04416	.00086
#2	-.00019	-.00080	.01446	.00420	.00208	.04383	.00000
#3	-.00069	.00012	.00483	.00584	.00191	.04409	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9044.4	54361.	2502.1
Stddev	23.6	58.	19.2
%RSD	.26040	.10713	.76910
#1	9021.8	54294.	2520.4
#2	9068.8	54392.	2482.1
#3	9042.5	54397.	2503.7

Approved: June 29, 2016

Sample Name: L1606117702S Acquired: 6/29/2016 10:49:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19530**	**4.8939**	**.19914**	**1.0404**	**.49612**	**.02417**	**5.0444**	**.02435**
Stddev	.00251	.0122	.00165	.0028	.00442	.00010	.0185	.00056
%RSD	1.2864	.24990	.82634	.27278	.89114	.40757	.36689	2.3025
#1	.19406	4.8978	.20076	1.0389	.50121	.02422	5.0389	.02499
#2	.19365	4.8802	.19917	1.0387	.49326	.02406	5.0651	.02396
#3	.19819	4.9038	.19747	1.0437	.49389	.02423	5.0294	.02411
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09720**	**.24421**	**.24503**	**1.9907**	**24.978**	**.50490**	**4.9655**	**.24535**
Stddev	.00108	.00153	.00339	.0160	.316	.00383	.1207	.00378
%RSD	1.1061	.62627	1.3815	.80251	1.2655	.75893	2.4314	1.5417
#1	.09784	.24393	.24719	1.9872	25.343	.50799	5.0551	.24575
#2	.09779	.24284	.24678	1.9768	24.788	.50061	4.8282	.24891
#3	.09596	.24586	.24113	2.0081	24.803	.50609	5.0131	.24138
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49956**	**136.35**	**.24473**	**4.8026**	**.24494**	**.58098**	**.18789**	**6.4038**
Stddev	.00321	1.15	.00190	.0434	.00352	.00719	.00523	.0341
%RSD	.64184	.84473	.77812	.90272	1.4356	1.2369	2.7839	.53200
#1	.50201	137.68	.24501	4.8241	.24136	.58754	.18314	6.4187
#2	.50073	135.72	.24648	4.8309	.24839	.58208	.18703	6.4279
#3	.49593	135.65	.24270	4.7526	.24507	.57330	.19349	6.3648
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606117702S Acquired: 6/29/2016 10:49:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48929	.50112	.49418	.24358	.48863	.53562	.00050
Stddev	.00591	.00300	.00180	.00026	.00134	.00435	.00021
%RSD	1.2084	.59800	.36509	.10578	.27453	.81172	41.703
#1	.49224	.50455	.49562	.24333	.48964	.53849	.00070
#2	.49314	.49899	.49215	.24357	.48711	.53774	.00054
#3	.48248	.49983	.49475	.24385	.48914	.53061	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9081.9	54484.	2525.1
Stddev	10.5	190.	32.2
%RSD	.11569	.34939	1.2735
#1	9086.1	54548.	2488.8
#2	9070.0	54633.	2536.5
#3	9089.7	54269.	2550.0

Approved: June 29, 2016

Sample Name: L1606117703SD Acquired: 6/29/2016 10:52:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19451**	**4.8952**	**.20314**	**1.0415**	**.49496**	**.02429**	**5.0340**	**.02406**
Stddev	.00108	.0218	.00109	.0053	.00293	.00021	.0434	.00009
%RSD	.55729	.44561	.53676	.50951	.59283	.88227	.86146	.35903
#1	.19551	4.8713	.20438	1.0360	.49820	.02412	4.9842	.02411
#2	.19335	4.9141	.20231	1.0465	.49419	.02454	5.0552	.02412
#3	.19466	4.9001	.20274	1.0421	.49248	.02423	5.0628	.02396
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09901**	**.24380**	**.24679**	**1.9923**	**25.016**	**.50362**	**4.9359**	**.24624**
Stddev	.00059	.00289	.00206	.0277	.040	.00536	.0290	.00314
%RSD	.59286	1.1873	.83568	1.3898	.15802	1.0648	.58693	1.2753
#1	.09948	.24100	.24820	1.9793	24.975	.50095	4.9342	.24285
#2	.09835	.24364	.24442	2.0240	25.054	.50013	4.9657	.24905
#3	.09920	.24678	.24775	1.9734	25.019	.50980	4.9078	.24681
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50578**	**135.15**	**.24586**	**4.8228**	**.24334**	**.58373**	**.18718**	**6.3663**
Stddev	.00085	.49	.00076	.0032	.00233	.00442	.00776	.0382
%RSD	.16843	.36540	.31021	.06703	.95674	.75665	4.1467	.59942
#1	.50657	135.27	.24671	4.8249	.24602	.58882	.17991	6.3664
#2	.50589	135.58	.24561	4.8243	.24217	.58089	.19536	6.4044
#3	.50488	134.61	.24525	4.8190	.24183	.58147	.18626	6.3281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606117703SD Acquired: 6/29/2016 10:52:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573828-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49637	.50255	.50979	.24641	.49557	.53975	.00058
Stddev	.00126	.00135	.01203	.00206	.00096	.00059	.00047
%RSD	.25315	.26867	2.3607	.83654	.19399	.10848	80.198
#1	.49603	.50372	.49709	.24704	.49511	.54043	.00110
#2	.49776	.50287	.51125	.24808	.49492	.53942	.00044
#3	.49531	.50107	.52102	.24410	.49667	.53941	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9098.0	54719.	2550.7
Stddev	23.7	61.	3.5
%RSD	.26096	.11196	.13807
#1	9075.7	54671.	2553.6
#2	9095.4	54699.	2546.8
#3	9123.0	54788.	2551.7

Approved: June 29, 2016

Sample Name: L16060114201 Acquired: 6/29/2016 10:56:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00029	.05384	-.00032	.01684	.07761	-.00004	2.2488	.00021
Stddev	.00119	.00770	.00187	.00396	.00106	.00006	.0225	.00011
%RSD	415.52	14.296	577.94	23.515	1.3614	145.16	.99944	50.495
#1	.00096	.06269	-.00245	.01306	.07883	.00002	2.2683	.00009
#2	-.00140	.04866	.00040	.02096	.07698	-.00004	2.2538	.00025
#3	-.00041	.05019	.00108	.01650	.07701	-.00010	2.2242	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00590	.00097	.00195	4.6344	1.1664	.00930	1.6448	.22938
Stddev	.00022	.00098	.00114	.0386	.0250	.00305	.1018	.00282
%RSD	3.6669	101.51	58.513	.83227	2.1468	32.789	6.1907	1.2305
#1	.00612	.00192	.00228	4.6599	1.1924	.00816	1.7294	.23103
#2	.00587	.00101	.00068	4.5901	1.1645	.00698	1.6731	.23098
#3	.00569	-.00004	.00290	4.6534	1.1425	.01275	1.5318	.22612
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	19.811	.00759	.07218	.00239	.00125	-.00008	15.664
Stddev	.00040	.035	.00122	.00329	.00158	.00636	.00432	.082
%RSD	128.61	.17766	16.039	4.5625	66.322	506.95	5476.0	.52147
#1	-.00014	19.840	.00899	.06838	.00176	.00486	-.00406	15.721
#2	.00062	19.822	.00680	.07423	.00121	-.00609	.00451	15.701
#3	.00046	19.772	.00697	.07394	.00419	.00499	-.00069	15.571
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L16060114201 Acquired: 6/29/2016 10:56:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.04063	.00787	.00205	.00169	.01008	.00074
Stddev	.00031	.00072	.00259	.00031	.00086	.00030	.00060
%RSD	130.29	1.7665	32.862	14.961	51.026	2.9613	81.471
#1	.00031	.04071	.01082	.00236	.00268	.01018	.00029
#2	-.00010	.04131	.00603	.00205	.00112	.01033	.00142
#3	.00050	.03988	.00675	.00174	.00127	.00975	.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9265.1	56620.	2599.8
Stddev	32.3	57.	16.0
%RSD	.34816	.10067	.61596
#1	9300.8	56597.	2581.4
#2	9256.7	56685.	2607.4
#3	9237.9	56579.	2610.6

Approved: June 29, 2016

Sample Name: L16060114203 Acquired: 6/29/2016 11:00:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00198	.26266	-.00256	.01654	.04946	.00008	7.0396	.00052
Stddev	.00042	.01082	.00139	.00188	.00123	.00012	.0573	.00004
%RSD	21.424	4.1184	54.375	11.371	2.4882	142.01	.81409	7.7118
#1	.00178	.27101	-.00401	.01835	.05088	.00020	7.0973	.00051
#2	.00169	.25044	-.00243	.01669	.04881	.00009	7.0386	.00049
#3	.00247	.26653	-.00124	.01459	.04869	-.00004	6.9827	.00056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	-.00005	.00274	3.9448	1.6398	.00224	1.1106	.20239
Stddev	.00010	.00092	.00066	.0326	.1612	.00458	.0425	.00281
%RSD	13.101	1790.3	24.128	.82696	9.8324	204.48	3.8273	1.3861
#1	.00073	.00101	.00240	3.9720	1.8259	-.00214	1.0675	.19923
#2	.00088	-.00060	.00232	3.9087	1.5415	.00186	1.1525	.20459
#3	.00069	-.00056	.00350	3.9539	1.5520	.00700	1.1119	.20335
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	4.1156	.00378	.08391	.00282	-.00087	-.00174	5.1219
Stddev	.00015	.0406	.00051	.00804	.00259	.00234	.00831	.0495
%RSD	20.086	.98643	13.451	9.5772	91.737	267.84	478.76	.96697
#1	.00063	4.1179	.00323	.07573	.00011	.00046	.00046	5.1453
#2	.00071	4.1550	.00423	.08423	.00527	.00049	-.01093	5.1553
#3	.00092	4.0739	.00388	.09179	.00309	-.00357	.00526	5.0650
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L16060114203 Acquired: 6/29/2016 11:00:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00030	.05567	.01313	.00192	.00335	.00373	.00101
Stddev	.00129	.00058	.00273	.00330	.00039	.00020	.00009
%RSD	430.22	1.0337	20.797	172.02	11.633	5.2474	8.8281
#1	.00027	.05537	.01143	.00545	.00300	.00376	.00109
#2	.00060	.05633	.01628	.00140	.00377	.00352	.00103
#3	-.00177	.05531	.01168	-.00109	.00328	.00390	.00091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9288.4	56422.	2559.6
Stddev	3.9	105.	13.3
%RSD	.04169	.18677	.51831
#1	9290.7	56395.	2551.0
#2	9284.0	56538.	2552.9
#3	9290.6	56332.	2574.9

Approved: June 29, 2016

Sample Name: L16060114205 Acquired: 6/29/2016 11:04:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00267	.31454	-.00074	.01756	.05047	.00008	6.9218	.00008
Stddev	.00260	.00412	.00201	.00145	.00123	.00006	.0836	.00022
%RSD	97.281	1.3114	271.27	8.2833	2.4347	78.389	1.2080	281.44
#1	.00126	.31884	.00027	.01892	.05118	.00001	6.9917	.00020
#2	.00108	.31061	-.00306	.01772	.05117	.00011	6.9446	-.00018
#3	.00567	.31418	.00056	.01603	.04905	.00012	6.8292	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.00084	.00163	3.9780	1.4777	.00255	1.1076	.20275
Stddev	.00016	.00108	.00090	.0271	.0869	.00126	.1639	.00081
%RSD	31.175	128.55	55.227	.67991	5.8832	49.328	14.796	.39818
#1	.00060	.00178	.00084	3.9938	1.4991	.00201	.91841	.20198
#2	.00060	.00108	.00261	3.9935	1.3821	.00399	1.1975	.20269
#3	.00033	-.00034	.00145	3.9468	1.5520	.00166	1.2068	.20359
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	3.9762	.00428	.09393	.00314	.00006	-.00349	5.0942
Stddev	.00050	.0505	.00061	.00534	.00346	.00302	.00814	.1419
%RSD	105.07	1.2700	14.343	5.6804	110.23	5362.3	232.89	2.7854
#1	-.00008	4.0322	.00467	.09370	.00372	.00154	-.00756	5.1798
#2	.00089	3.9623	.00458	.08871	-.00058	-.00341	-.00880	5.1725
#3	.00063	3.9341	.00357	.09938	.00627	.00204	.00588	4.9304
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L16060114205 Acquired: 6/29/2016 11:04:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.05376	.01657	.00180	.00232	.00388	.00099
Stddev	.00062	.00025	.00776	.00362	.00126	.00017	.00040
%RSD	848.78	.47096	46.800	201.27	54.318	4.2990	39.956
#1	.00015	.05405	.00962	-.00229	.00335	.00404	.00138
#2	-.00077	.05360	.01516	.00309	.00270	.00388	.00059
#3	.00040	.05362	.02493	.00459	.00091	.00371	.00099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9261.4	56467.	2570.5
Stddev	29.2	271.	24.3
%RSD	.31523	.48004	.94686
#1	9257.6	56373.	2553.3
#2	9234.3	56773.	2559.8
#3	9292.3	56255.	2598.3

Approved: June 29, 2016

Sample Name: L16060114205PS Acquired: 6/29/2016 11:08:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574350-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19698**	**5.1836**	**.19690**	**.95704**	**.54220**	**.02421**	**11.138**	**.02453**
Stddev	.00135	.0090	.00208	.00306	.00204	.00007	.014	.00029
%RSD	.68306	.17341	1.0563	.32007	.37665	.29489	.12834	1.1976
#1	.19571	5.1940	.19609	.95996	.54402	.02421	11.124	.02467
#2	.19684	5.1782	.19927	.95385	.54259	.02428	11.138	.02473
#3	.19839	5.1786	.19536	.95732	.53999	.02414	11.153	.02419
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09992**	**.24885**	**.24937**	**5.5654**	**26.142**	**.50983**	**5.9583**	**.42668**
Stddev	.00040	.00150	.00134	.0652	.048	.00495	.0267	.00252
%RSD	.39603	.60158	.53809	1.1713	.18369	.97095	.44863	.59093
#1	.09959	.24796	.24783	5.6405	26.194	.51229	5.9767	.42684
#2	.10036	.24801	.25032	5.5232	26.100	.51307	5.9277	.42408
#3	.09980	.25058	.24994	5.5325	26.132	.50413	5.9706	.42912
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50145**	**28.500**	**.25395**	**4.8917**	**.24863**	**.58871**	**.19215**	**6.9581**
Stddev	.00313	.082	.00223	.0255	.00074	.00657	.00526	.0108
%RSD	.62474	.28814	.87906	.52166	.29696	1.1164	2.7355	.15503
#1	.49785	28.540	.25157	4.8626	.24945	.58282	.18674	6.9490
#2	.50361	28.555	.25600	4.9103	.24801	.58751	.19245	6.9700
#3	.50288	28.406	.25429	4.9023	.24844	.59580	.19724	6.9553
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L16060114205PS Acquired: 6/29/2016 11:08:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574350-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49659	.55312	.50515	.25176	.49354	.49936	.00053
Stddev	.00055	.00203	.00972	.00430	.00287	.00203	.00043
%RSD	.11132	.36752	1.9241	1.7078	.58090	.40709	81.497
#1	.49601	.55084	.50654	.24787	.49023	.49713	.00005
#2	.49663	.55474	.51410	.25103	.49532	.50111	.00063
#3	.49712	.55377	.49481	.25637	.49506	.49984	.00089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9168.3	55703.	2548.0
Stddev	10.0	145.	9.7
%RSD	.10905	.26037	.37880
#1	9175.4	55714.	2537.0
#2	9156.9	55553.	2551.5
#3	9172.8	55843.	2555.3

Approved: June 29, 2016

Sample Name: L16060114205SDL Acquired: 6/29/2016 11:11:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574350-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00237	.06917	.00008	.00708	.01120	.00005	1.4792	-.00005
Stddev	.00168	.00656	.00232	.00425	.00087	.00009	.0060	.00021
%RSD	70.898	9.4785	2824.2	60.070	7.7802	181.44	.40789	419.89
#1	.00108	.07431	.00214	.01059	.01168	-.00000	1.4731	-.00025
#2	.00177	.06178	-.00244	.00829	.01172	.00015	1.4795	-.00008
#3	.00428	.07140	.00054	.00235	.01019	-.00000	1.4851	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	-.00071	.00091	.83418	.42736	-.00138	.22801	.04289
Stddev	.00018	.00036	.00109	.02527	.03815	.00129	.10671	.00196
%RSD	512.99	51.088	118.89	3.0288	8.9277	93.122	46.801	4.5585
#1	.00017	-.00110	.00134	.83970	.40128	-.00154	.10601	.04084
#2	-.00012	-.00064	.00172	.80661	.47115	-.00259	.30399	.04310
#3	-.00015	-.00039	-.00032	.85623	.40964	-.00002	.27405	.04473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.85799	.00103	.02194	.00462	-.00136	-.00758	1.0687
Stddev	.00004	.00336	.00071	.00142	.00524	.00412	.00289	.0208
%RSD	26.931	.39213	68.406	6.4793	113.23	303.12	38.205	1.9437
#1	.00020	.86186	.00128	.02038	.00673	.00320	-.00885	1.0772
#2	.00014	.85578	.00024	.02229	.00848	-.00246	-.00961	1.0839
#3	.00013	.85633	.00158	.02316	-.00134	-.00482	-.00426	1.0450
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L16060114205SDL Acquired: 6/29/2016 11:11:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574350-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.01111**	**.00591**	**.00103**	**.00120**	**.00132**	**.00010**
Stddev	.00009	.00032	.00950	.00060	.00074	.00008	.00021
%RSD	23.226	2.8851	160.92	57.789	61.352	5.8407	213.09
#1	-.00042	.01076	.01610	.00110	.00193	.00124	-.00012
#2	-.00028	.01139	-.00271	.00040	.00122	.00139	.00012
#3	-.00044	.01117	.00433	.00159	.00046	.00132	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9326.3**	**56292.**	**2538.0**
Stddev	30.3	71.	19.8
%RSD	.32487	.12632	.77960
#1	9326.4	56243.	2531.8
#2	9295.9	56374.	2560.1
#3	9356.5	56260.	2522.0

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 11:15:39 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39775**	**9.8980**	**.39330**	**.49118**	**.99618**	**.04916**	**9.9003**	**.04913**
Stddev	.00028	.0560	.00344	.00440	.01235	.00018	.1516	.00043
%RSD	.07093	.56566	.87509	.89603	1.2396	.37112	1.5313	.87815
#1	.39800	9.8583	.39274	.48610	1.0087	.04918	10.059	.04947
#2	.39782	9.9620	.39698	.49355	.99581	.04933	9.8861	.04928
#3	.39744	9.8736	.39017	.49388	.98402	.04897	9.7563	.04864
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19705**	**.49096**	**.49572**	**3.9516**	**49.948**	**.99803**	**9.8895**	**.49836**
Stddev	.00190	.00200	.00583	.0450	.591	.01343	.1159	.00804
%RSD	.96321	.40673	1.1755	1.1386	1.1829	1.3461	1.1717	1.6141
#1	.19783	.49013	.50017	4.0012	50.569	1.0122	9.8805	.50704
#2	.19843	.49324	.49786	3.9403	49.885	.99645	10.010	.49690
#3	.19488	.48952	.48912	3.9133	49.392	.98546	9.7784	.49115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99282**	**49.820**	**.49528**	**9.8340**	**.49480**	**1.1873**	**.39399**	**5.0133**
Stddev	.00974	.654	.00462	.0602	.00114	.0096	.00750	.0260
%RSD	.98116	1.3132	.93375	.61242	.23105	.81129	1.9029	.51928
#1	.99790	50.506	.49591	9.8634	.49609	1.1933	.39907	5.0261
#2	.99897	49.752	.49955	9.8740	.49439	1.1925	.39752	5.0304
#3	.98159	49.202	.49037	9.7648	.49392	1.1762	.38538	4.9833
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 11:15:39 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98633	.99784	.99276	.49829	.98981	.98431	.99417
Stddev	.01201	.01332	.00694	.00399	.00642	.00973	.01444
%RSD	1.2180	1.3354	.69883	.80127	.64872	.98812	1.4527
#1	.99356	1.0107	.99799	.49978	.98669	.98877	1.0096
#2	.99298	.99878	.98489	.50132	.99720	.99101	.99184
#3	.97246	.98407	.99539	.49376	.98555	.97315	.98103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9186.3	54900.	2516.8
Stddev	45.8	223.	34.6
%RSD	.49897	.40661	1.3751
#1	9171.0	55098.	2480.3
#2	9150.1	54658.	2520.8
#3	9237.8	54946.	2549.2

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 11:19:16 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	.00004	.00204	.00557	-.00049	-.00001	.02351
Stddev	.00401	.00403	.00167	.00294	.00175	.00006	.04614
%RSD	755.35	9033.9	81.596	52.893	355.36	1009.0	196.26
#1	-.00253	-.00049	.00303	.00681	-.00252	-.00002	.06775
#2	-.00095	-.00369	.00012	.00768	.00050	.00006	.02710
#3	.00507	.00431	.00298	.00220	.00054	-.00006	-.02432
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	-.00012	-.00057	.00179	.02465	.20659	.00034
Stddev	.00019	.00060	.00072	.00137	.02370	.15089	.00074
%RSD	121.13	518.86	127.53	76.416	96.147	73.040	220.06
#1	-.00021	-.00076	-.00051	.00098	.05094	.21592	.00063
#2	.00005	-.00002	.00013	.00337	.00490	.35260	.00089
#3	-.00032	.00043	-.00132	.00102	.01812	.05125	-.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.05204	.00035	.00076	.01493	.00059	-.00104	F .00757
Stddev	.09746	.00246	.00010	.03176	.00037	.00811	.00219
%RSD	187.29	699.20	13.005	212.77	62.419	781.27	28.939
#1	.04085	.00315	.00085	.05137	.00088	-.00126	.00749
#2	-.04345	-.00145	.00078	.00022	.00072	.00718	.00542
#3	-.15351	-.00064	.00066	-.00682	.00018	-.00903	.00980
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							.00500
Low Limit							-.00500

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 11:19:16 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00467	-.00035	-.01690	.00078	-.00014	.00673	.00379
Stddev	.00277	.00516	.00351	.00037	.00010	.00281	.00201
%RSD	59.320	1473.1	20.751	47.408	71.238	41.680	52.985
#1	.00374	-.00628	-.01299	.00070	-.00020	.00667	.00592
#2	.00248	.00305	-.01976	.00118	-.00003	.00957	.00354
#3	.00779	.00218	-.01795	.00045	-.00019	.00396	.00192
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00120	.00155	.00079
Stddev	.00106	.00004	.00058
%RSD	88.613	2.8281	73.063
#1	.00020	.00158	.00024
#2	.00231	.00155	.00140
#3	.00108	.00150	.00074
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9303.5	56275.	2550.5
Stddev	46.8	137.	4.0
%RSD	.50277	.24398	.15699
#1	9269.0	56271.	2549.9
#2	9356.7	56140.	2546.8
#3	9284.8	56415.	2554.8

Approved: June 29, 2016

Sample Name: L1606090707 Acquired: 6/29/2016 11:23:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00070	.00642	.01308	.00774	.00097	.00006	.04094	-.00017
Stddev	.00308	.00957	.00153	.00083	.00054	.00005	.05492	.00015
%RSD	443.75	149.09	11.694	10.686	55.811	85.531	134.17	91.439
#1	.00317	.01345	.01352	.00718	.00083	.00011	.04123	-.00006
#2	.00167	-.00448	.01138	.00869	.00052	.00000	.09572	-.00034
#3	-.00276	.01027	.01434	.00735	.00157	.00007	-.01413	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.00042	.00267	.01617	.10414	.00178	.06017	.00283
Stddev	.00030	.00142	.00121	.01849	.09074	.00164	.06430	.00090
%RSD	175.42	336.02	45.126	114.35	87.136	91.951	106.87	31.946
#1	-.00017	-.00115	.00284	-.00445	.03631	.00287	.00821	.00205
#2	.00039	.00160	.00379	.03127	.06888	.00258	.04022	.00262
#3	.00028	.00082	.00139	.02168	.20722	-.00010	.13208	.00382
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	6.7723	-.00046	.01207	.00641	-.00331	.00104	.04216
Stddev	.00018	.0474	.00104	.00626	.00490	.00324	.00440	.00349
%RSD	173.51	.70044	225.49	51.855	76.397	97.995	422.65	8.2776
#1	-.00011	6.7197	.00016	.01921	.01139	.00043	.00612	.03859
#2	.00023	6.7856	-.00167	.00752	.00626	-.00501	-.00121	.04556
#3	.00019	6.8117	.00012	.00948	.00159	-.00533	-.00178	.04233
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090707 Acquired: 6/29/2016 11:23:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00058**	**.00614**	**-.00204**	**-.00136**	**.00101**	**.00038**	**-.00005**
Stddev	.00033	.00021	.00654	.00236	.00067	.00012	.00051
%RSD	57.776	3.4898	320.10	173.56	66.707	30.990	1055.7
#1	-.00075	.00635	.00273	-.00400	.00027	.00051	.00054
#2	-.00078	.00616	-.00950	-.00058	.00158	.00032	-.00032
#3	-.00019	.00592	.00064	.00051	.00118	.00030	-.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9018.4**	**54413.**	**2480.7**
Stddev	10.7	126.	2.2
%RSD	.11833	.23069	.08723
#1	9030.1	54490.	2480.6
#2	9016.0	54268.	2483.0
#3	9009.2	54481.	2478.6

Approved: June 29, 2016

Sample Name: L1606090710 Acquired: 6/29/2016 11:27:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	-.00080	.01196	.00653	.00077	.00000	.09228	-.00016
Stddev	.00195	.00455	.00605	.00233	.00085	.00006	.02540	.00014
%RSD	321.96	565.38	50.605	35.715	110.15	21021.	27.529	86.232
#1	.00271	-.00596	.01675	.00727	.00121	-.00000	.12116	-.00001
#2	-.00115	.00088	.00516	.00392	-.00021	.00006	.07341	-.00028
#3	.00025	.00266	.01396	.00841	.00130	-.00006	.08226	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	-.00028	.00205	.02121	.05093	-.00416	.07609	.00177
Stddev	.00043	.00042	.00125	.05029	.14808	.00259	.06210	.00182
%RSD	196.49	148.59	61.188	237.14	290.73	62.230	81.617	102.51
#1	-.00060	.00015	.00113	-.01674	.22192	-.00655	.14733	.00387
#2	-.00030	-.00069	.00154	.00211	-.03371	-.00451	.04756	.00070
#3	.00024	-.00031	.00347	.07824	-.03541	-.00141	.03338	.00075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	6.7027	-.00060	.01357	.00560	-.00133	-.00797	.04302
Stddev	.00007	.0621	.00099	.00377	.00298	.00183	.00822	.00114
%RSD	26.393	.92649	164.56	27.775	53.184	137.72	103.16	2.6388
#1	.00019	6.6531	.00054	.01713	.00406	-.00257	-.00080	.04171
#2	.00027	6.6826	-.00123	.00962	.00372	-.00219	-.01695	.04375
#3	.00032	6.7724	-.00112	.01396	.00904	.00077	-.00616	.04360
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090710 Acquired: 6/29/2016 11:27:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.00591	.00284	.00190	.00143	.00046	-.00031
Stddev	.00037	.00010	.00142	.00261	.00107	.00012	.00039
%RSD	72.988	1.6223	50.200	137.59	74.960	26.873	123.18
#1	.00063	.00590	.00447	.00250	.00210	.00033	-.00048
#2	.00080	.00582	.00218	-.00096	.00019	.00058	.00013
#3	.00009	.00601	.00186	.00416	.00199	.00048	-.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8995.4	54163.	2477.2
Stddev	21.3	65.	3.8
%RSD	.23688	.11987	.15296
#1	9016.5	54234.	2477.5
#2	8973.9	54146.	2473.3
#3	8995.9	54108.	2480.9

Approved: June 29, 2016

Sample Name: L1606090712 Acquired: 6/29/2016 11:31:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 500 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	.01896	-.00058	.00565	.00121	.00006	.01835
Stddev	.00187	.00807	.00645	.00089	.00110	.00007	.04026
%RSD	214.15	42.553	1103.8	15.709	90.202	133.41	219.45
#1	.00293	.02231	.00055	.00483	.00007	.00014	.04911
#2	-.00073	.00975	-.00753	.00553	.00226	.00000	.03316
#3	.00042	.02480	.00523	.00660	.00132	.00002	-.02722
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	-.00021	.00200	.00076	F -.02009	.10524	-.00315
Stddev	.00013	.00056	.00100	.00046	.03765	.07386	.00106
%RSD	70.958	263.43	50.245	61.050	187.40	70.178	33.537
#1	.00019	-.00077	.00270	.00104	-.06176	.06677	-.00337
#2	.00029	.00035	.00085	.00101	-.00999	.19040	-.00407
#3	.00004	-.00022	.00244	.00022	.01148	.05857	-.00200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.02634	-.00050	.00009	4.1202	-.00044	.01785	.00118
Stddev	.02096	.00133	.00029	.0340	.00078	.00425	.00251
%RSD	79.590	264.37	333.72	.82527	175.42	23.835	213.44
#1	-.04939	-.00200	-.00025	4.1500	.00046	.01986	.00360
#2	-.02124	-.00008	.00025	4.0832	-.00086	.01296	.00134
#3	-.00840	.00057	.00027	4.1274	-.00092	.02071	-.00141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 29, 2016

Sample Name: L1606090712 Acquired: 6/29/2016 11:31:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 500 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00160	-.00679	.01586	-.00087	.00309	-.00100	.00219
Stddev	.00258	.00308	.00057	.00061	.00014	.00496	.00259
%RSD	160.60	45.324	3.5701	69.809	4.4010	495.43	118.52
#1	.00436	-.00954	.01645	-.00065	.00295	-.00520	.00081
#2	.00119	-.00346	.01532	-.00155	.00310	-.00227	.00058
#3	-.00074	-.00736	.01581	-.00040	.00322	.00447	.00518
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00163	.00262	-.00052
Stddev	.00061	.00030	.00108
%RSD	37.672	11.355	208.41
#1	.00220	.00249	-.00175
#2	.00171	.00240	-.00002
#3	.00098	.00295	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8859.6	53426.	2419.2
Stddev	22.6	111.	13.9
%RSD	.25560	.20706	.57304
#1	8855.4	53529.	2418.3
#2	8884.1	53439.	2433.4
#3	8839.4	53309.	2405.8

Approved: June 29, 2016

Sample Name: L1606090714 Acquired: 6/29/2016 11:35:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG573685-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00029**	**.00510**	**.00399**	**.00362**	**.00127**	**.00005**	**.58262**	**-.00010**
Stddev	.00173	.00299	.00186	.00149	.00148	.00015	.01830	.00029
%RSD	597.57	58.669	46.546	41.233	116.79	271.31	3.1402	278.65
#1	.00065	.00687	.00608	.00232	-.00037	-.00011	.60314	.00023
#2	.00076	.00165	.00341	.00330	.00166	.00015	.56800	-.00025
#3	-.00228	.00679	.00250	.00525	.00252	.00013	.57673	-.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00058**	**-.00007**	**.00094**	**.00525**	**.06024**	**.00065**	**.06442**	**-.00265**
Stddev	.00047	.00092	.00185	.05553	.17905	.00338	.05158	.00254
%RSD	80.962	1408.9	196.96	1057.4	297.23	520.94	80.076	95.684
#1	-.00004	-.00109	.00199	-.03472	.17108	.00412	.00583	-.00557
#2	-.00077	.00069	-.00119	.06865	-.14633	.00047	.08444	-.00146
#3	-.00091	.00020	.00202	-.01818	.15597	-.00264	.10299	-.00093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00004**	**4.8479**	**-.00053**	**.01156**	**.00233**	**.00108**	**-.00182**	**.08400**
Stddev	.00026	.0811	.00033	.00405	.00279	.00409	.00693	.00108
%RSD	702.98	1.6732	62.836	35.045	119.52	379.17	380.96	1.2822
#1	.00031	4.7775	-.00082	.01496	.00306	-.00207	-.00746	.08288
#2	-.00021	4.8297	-.00061	.01262	.00468	.00570	.00592	.08503
#3	.00000	4.9366	-.00017	.00708	-.00075	-.00039	-.00391	.08409
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090714 Acquired: 6/29/2016 11:35:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG573685-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.00775**	**.00275**	**.00198**	**.00091**	**.00057**	**-.00060**
Stddev	.00031	.00043	.00297	.00184	.00113	.00033	.00031
%RSD	206.37	5.5462	108.08	92.892	123.55	57.792	50.999
#1	-.00046	.00726	.00143	.00362	.00222	.00084	-.00039
#2	-.00013	.00797	.00067	.00234	.00036	.00020	-.00095
#3	.00015	.00803	.00615	-.00001	.00017	.00068	-.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8955.2**	**53721.**	**2433.6**
Stddev	24.8	47.	8.7
%RSD	.27678	.08839	.35709
#1	8929.5	53679.	2443.6
#2	8957.2	53773.	2429.5
#3	8978.9	53711.	2427.7

Approved: June 29, 2016

Sample Name: L1606090717S Acquired: 6/29/2016 11:38:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG573685-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00409	.07103	.00385	.01209	.00597	.00020	.73321	.00048
Stddev	.00201	.00400	.00261	.00266	.00149	.00003	.02661	.00015
%RSD	49.153	5.6316	67.876	21.985	25.026	13.360	3.6293	30.401
#1	.00600	.07445	.00488	.00937	.00524	.00018	.76390	.00052
#2	.00199	.07201	.00088	.01222	.00768	.00023	.71897	.00061
#3	.00429	.06663	.00579	.01468	.00498	.00020	.71674	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00113	.00285	.00361	.04803	.41005	.00365	.14563	.00566
Stddev	.00020	.00031	.00028	.03389	.12460	.00311	.08051	.00310
%RSD	17.840	10.940	7.6373	70.562	30.386	85.115	55.284	54.744
#1	.00090	.00266	.00332	.07245	.36366	.00669	.22910	.00831
#2	.00129	.00320	.00365	.06230	.31531	.00048	.06844	.00225
#3	.00121	.00267	.00386	.00934	.55119	.00378	.13935	.00643
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00546	5.1203	.00301	.06957	.00458	.00313	.00098	.10974
Stddev	.00004	.0766	.00041	.00538	.00059	.00477	.00430	.00403
%RSD	.71454	1.4950	13.793	7.7375	12.967	152.61	437.47	3.6722
#1	.00542	5.0411	.00260	.07294	.00510	.00222	.00045	.10670
#2	.00549	5.1258	.00299	.07241	.00393	-.00113	-.00302	.11431
#3	.00547	5.1939	.00343	.06336	.00470	.00829	.00552	.10821
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090717S Acquired: 6/29/2016 11:38:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG573685-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00597	.01280	.00744	.00501	.00595	.00686	.00015
Stddev	.00062	.00032	.00844	.00181	.00114	.00010	.00021
%RSD	10.308	2.4761	113.38	36.111	19.232	1.4153	137.53
#1	.00598	.01246	-.00160	.00688	.00570	.00675	.00030
#2	.00657	.01309	.01511	.00327	.00495	.00690	-.00009
#3	.00534	.01283	.00882	.00488	.00719	.00694	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9118.4	54908.	2482.3
Stddev	18.5	107.	24.0
%RSD	.20329	.19521	.96747
#1	9118.0	54839.	2504.8
#2	9100.0	54853.	2485.1
#3	9137.1	55032.	2457.0

Approved: June 29, 2016

Sample Name: L1606090719SD Acquired: 6/29/2016 11:42:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG573685-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00246	.06591	.00542	.01296	.00584	.00032	.69080	.00026
Stddev	.00143	.00624	.00267	.00164	.00050	.00005	.03527	.00009
%RSD	58.193	9.4623	49.158	12.639	8.5256	15.303	5.1052	34.475
#1	.00097	.07304	.00374	.01474	.00553	.00031	.67080	.00016
#2	.00257	.06322	.00850	.01152	.00641	.00027	.67008	.00034
#3	.00383	.06147	.00404	.01261	.00558	.00037	.73152	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00105	.00245	.00307	.03604	.35441	.00514	.14600	.00348
Stddev	.00021	.00145	.00151	.02124	.06524	.00248	.02243	.00129
%RSD	20.162	59.060	49.275	58.941	18.409	48.372	15.361	36.881
#1	.00117	.00189	.00284	.05986	.28084	.00633	.14299	.00353
#2	.00081	.00137	.00169	.02920	.37718	.00228	.12523	.00218
#3	.00118	.00410	.00469	.01906	.40523	.00680	.16978	.00475
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00610	5.0747	.00169	.06420	.00756	.00316	-.00333	.11191
Stddev	.00055	.0846	.00018	.00170	.00069	.00241	.00590	.00158
%RSD	9.0498	1.6668	10.601	2.6545	9.0655	76.054	177.28	1.4102
#1	.00572	4.9771	.00149	.06581	.00678	.00511	-.00488	.11026
#2	.00585	5.1201	.00182	.06242	.00808	.00390	.00319	.11207
#3	.00673	5.1269	.00176	.06437	.00782	.00047	-.00829	.11340
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606090719SD Acquired: 6/29/2016 11:42:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG573685-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00511	.01246	.00522	.00524	.00731	.00639	.00004
Stddev	.00014	.00019	.00999	.00107	.00096	.00021	.00043
%RSD	2.7424	1.5379	191.31	20.455	13.197	3.3635	1034.5
#1	.00515	.01267	.01170	.00647	.00839	.00622	.00040
#2	.00496	.01229	.01026	.00450	.00653	.00631	-.00043
#3	.00523	.01242	-.00629	.00476	.00702	.00663	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9084.2	54806.	2516.4
Stddev	17.9	225.	16.0
%RSD	.19752	.40979	.63660
#1	9100.7	54871.	2534.9
#2	9086.8	54990.	2506.1
#3	9065.1	54556.	2508.3

Approved: June 29, 2016

Sample Name: L1606138001 Acquired: 6/29/2016 11:46:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00079	1.1667	.00020	.00408	.01597	.00013	4.9938	-.00017
Stddev	.00019	.0222	.00398	.00252	.00035	.00005	.1237	.00004
%RSD	24.691	1.9019	1956.1	61.841	2.2144	35.146	2.4774	25.063
#1	-.00094	1.1490	.00460	.00140	.01556	.00016	4.9039	-.00021
#2	-.00057	1.1594	-.00314	.00640	.01615	.00016	4.9426	-.00013
#3	-.00085	1.1916	-.00085	.00443	.01619	.00008	5.1349	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	.00133	.00290	1.4752	.28705	-.00033	1.6814	.08145
Stddev	.00016	.00069	.00109	.0428	.05712	.00383	.0556	.00614
%RSD	19.902	51.826	37.557	2.9000	19.900	1174.2	3.3072	7.5336
#1	.00067	.00078	.00275	1.4561	.23781	-.00418	1.7308	.07457
#2	.00098	.00110	.00406	1.4452	.27367	.00348	1.6212	.08341
#3	.00075	.00210	.00190	1.5241	.34968	-.00028	1.6922	.08637
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.38691	.00104	.05759	.00309	-.00157	-.00552	1.5832
Stddev	.00033	.05150	.00062	.00607	.00414	.00724	.00334	.0344
%RSD	204.05	13.310	60.083	10.538	133.91	460.69	60.490	2.1733
#1	-.00021	.33554	.00104	.05351	.00668	-.00972	-.00251	1.5443
#2	.00042	.38666	.00041	.05469	-.00144	.00087	-.00494	1.5955
#3	.00026	.43854	.00165	.06456	.00404	.00413	-.00911	1.6097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606138001 Acquired: 6/29/2016 11:46:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00062**	**.01816**	**.01395**	**.00473**	**.00341**	**.03308**	**.00038**
Stddev	.00041	.00010	.01270	.00264	.00070	.00082	.00043
%RSD	66.236	.55650	91.059	55.864	20.624	2.4793	111.37
#1	-.00019	.01825	.00675	.00199	.00284	.03213	.00003
#2	-.00102	.01816	.02862	.00727	.00420	.03351	.00086
#3	-.00066	.01805	.00648	.00493	.00319	.03359	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9144.8**	**55027.**	**2512.8**
Stddev	28.1	259.	16.1
%RSD	.30702	.47067	.63939
#1	9117.7	55113.	2531.3
#2	9143.0	55231.	2504.6
#3	9173.8	54736.	2502.4

Approved: June 29, 2016

Sample Name: L1606138002 Acquired: 6/29/2016 11:50:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00158**	**1.2783**	**.00236**	**.00735**	**.01468**	**.00009**	**4.8914**	**-.00002**
Stddev	.00195	.0110	.00294	.00192	.00057	.00008	.0458	.00032
%RSD	123.26	.86212	124.17	26.126	3.8829	83.161	.93618	1366.6
#1	-.00336	1.2812	.00574	.00897	.01518	.00001	4.8513	-.00023
#2	.00051	1.2875	.00098	.00786	.01480	.00010	4.9413	.00034
#3	-.00190	1.2661	.00037	.00523	.01406	.00016	4.8815	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**.00144**	**.00285**	**1.6811**	**.39676**	**-.00124**	**1.7322**	**.07966**
Stddev	.00025	.00026	.00072	.0633	.11078	.00243	.1159	.00213
%RSD	60.651	18.048	25.338	3.7640	27.922	196.25	6.6890	2.6737
#1	.00028	.00119	.00312	1.6276	.29955	-.00167	1.6330	.07756
#2	.00026	.00171	.00203	1.6648	.37336	.00138	1.7041	.08182
#3	.00070	.00141	.00339	1.7509	.51738	-.00343	1.8596	.07959
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00046**	**.34155**	**.00192**	**.05378**	**.00662**	**-.00042**	**-.00699**	**1.6268**
Stddev	.00020	.03838	.00088	.00515	.00130	.00140	.00800	.0234
%RSD	44.748	11.237	45.515	9.5799	19.632	329.79	114.44	1.4417
#1	.00032	.37444	.00183	.04800	.00798	-.00150	-.01542	1.6033
#2	.00036	.29938	.00110	.05790	.00539	-.00094	-.00603	1.6271
#3	.00069	.35085	.00285	.05543	.00648	.00116	.00048	1.6502
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606138002 Acquired: 6/29/2016 11:50:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00065**	**.01800**	**.01045**	**.00374**	**.00287**	**.01012**	**.00034**
Stddev	.00116	.00037	.00673	.00355	.00097	.00034	.00009
%RSD	178.85	2.0304	64.422	94.960	33.958	3.3659	25.301
#1	-.00137	.01838	.01821	.00077	.00358	.00978	.00025
#2	-.00126	.01799	.00686	.00278	.00327	.01013	.00042
#3	.00069	.01764	.00627	.00767	.00176	.01046	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9065.8**	**54756.**	**2463.3**
Stddev	8.9	95.	2.1
%RSD	.09787	.17393	.08672
#1	9058.1	54717.	2464.0
#2	9075.5	54687.	2465.0
#3	9063.7	54865.	2460.9

Approved: June 29, 2016

Sample Name: L1606122707 Acquired: 6/29/2016 11:54:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00031	.00440	-.00011	.00328	.04214	.00006	1.9802	-.00005
Stddev	.00164	.00893	.00346	.00245	.00073	.00001	.0281	.00027
%RSD	521.57	202.86	3196.9	74.893	1.7389	15.703	1.4203	591.52
#1	-.00205	.00381	.00012	.00501	.04272	.00007	1.9590	.00005
#2	.00122	.01361	-.00367	.00047	.04238	.00005	2.0121	.00016
#3	-.00011	-.00422	.00323	.00435	.04132	.00006	1.9694	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00038	-.00170	.00213	3.1213	.16126	.00327	1.3586	.06579
Stddev	.00011	.00044	.00065	.0243	.02784	.00383	.0505	.00051
%RSD	27.317	26.051	30.481	.77969	17.265	117.27	3.7158	.77306
#1	-.00027	-.00128	.00138	3.1145	.18303	-.00100	1.3676	.06616
#2	-.00040	-.00166	.00254	3.1011	.12989	.00440	1.4039	.06521
#3	-.00048	-.00216	.00247	3.1483	.17087	.00641	1.3042	.06600
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	5.8464	.00204	.00518	.00310	.00048	-.00259	.72429
Stddev	.00047	.0604	.00061	.00185	.00254	.00200	.00554	.00430
%RSD	93.786	1.0330	29.977	35.701	81.965	416.48	213.52	.59411
#1	.00042	5.7801	.00206	.00460	.00186	.00033	.00336	.71961
#2	.00008	5.8982	.00142	.00725	.00142	.00255	-.00354	.72807
#3	.00101	5.8608	.00264	.00368	.00603	-.00144	-.00760	.72520
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606122707 Acquired: 6/29/2016 11:54:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00069**	**.04887**	**.00096**	**-.00153**	**.00119**	**.00082**	**.00021**
Stddev	.00043	.00042	.00368	.00165	.00078	.00003	.00017
%RSD	61.997	.85230	384.33	108.21	65.432	3.1027	80.254
#1	-.00052	.04842	.00226	-.00147	.00052	.00084	.00030
#2	-.00037	.04924	.00380	-.00320	.00205	.00079	.00002
#3	-.00118	.04895	-.00319	.00010	.00101	.00083	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9100.9**	**54688.**	**2494.3**
Stddev	28.1	202.	5.1
%RSD	.30861	.36873	.20433
#1	9090.5	54493.	2494.5
#2	9079.6	54677.	2499.2
#3	9132.7	54896.	2489.0

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 11:58:33 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39688	9.8512	.39413	.49321	.99016	.04879	9.7997	.04959
Stddev	.00059	.0088	.00450	.00624	.00545	.00031	.0491	.00026
%RSD	.14819	.08921	1.1421	1.2646	.55075	.63457	.50130	.53290
#1	.39706	9.8586	.38893	.48858	.98907	.04866	9.7569	.04929
#2	.39735	9.8535	.39656	.50030	.99608	.04914	9.7889	.04977
#3	.39622	9.8415	.39689	.49075	.98534	.04857	9.8534	.04971
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19882	.49248	.49963	3.9490	49.398	.98997	9.9063	.49440
Stddev	.00152	.00367	.00355	.0476	.248	.00145	.0824	.00539
%RSD	.76310	.74448	.71137	1.2049	.50245	.14604	.83135	1.0893
#1	.19707	.48982	.49699	3.9059	49.346	.99147	9.8769	.48866
#2	.19983	.49666	.49824	4.0000	49.668	.98859	9.8427	.49934
#3	.19955	.49095	.50367	3.9411	49.180	.98985	9.9993	.49521
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0011	49.330	.49897	9.9418	.50080	1.1989	.40286	5.0396
Stddev	.0055	.294	.00338	.0547	.00281	.0006	.00365	.0347
%RSD	.55045	.59550	.67763	.54993	.56158	.04604	.90574	.68936
#1	.99477	49.221	.49536	9.8787	.50335	1.1983	.40072	5.0010
#2	1.0037	49.663	.49950	9.9712	.50126	1.1990	.40079	5.0498
#3	1.0048	49.106	.50206	9.9754	.49778	1.1993	.40708	5.0682
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 11:58:33 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99492	.98797	.99267	.50603	.99004	.99110	.97683
Stddev	.00681	.00569	.02039	.00492	.00660	.00435	.00879
%RSD	.68434	.57612	2.0539	.97323	.66682	.43920	.89996
#1	.98706	.98517	.97657	.50037	.98733	.98654	.96886
#2	.99882	.99452	1.0156	.50832	.99756	.99154	.97537
#3	.99889	.98422	.98586	.50939	.98522	.99521	.98626
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9140.1	54735.	2547.5
Stddev	23.3	354.	7.8
%RSD	.25497	.64585	.30650
#1	9137.6	54500.	2556.1
#2	9118.2	54563.	2540.9
#3	9164.6	55142.	2545.5

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 12:02:11 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**.00980**	**.00159**	**.00301**	**-.00231**	**-.00002**	**.05137**	**-.00003**
Stddev	.00080	.00182	.00313	.00160	.00141	.00005	.01990	.00032
%RSD	505.26	18.548	196.74	53.049	61.050	215.07	38.737	920.88
#1	.00042	.00836	.00201	.00131	-.00237	.00000	.07431	-.00028
#2	.00079	.00921	.00450	.00449	-.00088	.00001	.03866	-.00014
#3	-.00074	.01185	-.00173	.00325	-.00370	-.00008	.04115	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**-.00073**	**.00126**	**.00388**	**.19440**	**.00155**	**.00560**	**.00227**
Stddev	.00037	.00155	.00089	.02431	.04073	.00153	.02007	.00307
%RSD	183.17	213.46	70.395	626.79	20.950	98.550	358.11	135.41
#1	.00014	-.00231	.00074	.02353	.18263	.00179	-.00548	.00135
#2	-.00015	-.00066	.00076	.01142	.23971	.00296	.02877	.00569
#3	-.00060	.00079	.00229	-.02331	.16085	-.00008	-.00648	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.01512**	**.00140**	**.00444**	**.00378**	**.00415**	**.00061**	**-.01344**
Stddev	.00040	.03252	.00069	.00073	.00574	.00471	.00394	.00053
%RSD	319.62	215.15	49.153	16.405	151.98	113.38	647.74	3.9630
#1	.00019	.01151	.00071	.00432	.00792	-.00090	-.00163	-.01395
#2	.00049	-.01545	.00141	.00377	-.00278	.00842	-.00170	-.01289
#3	-.00030	.04929	.00209	.00521	.00620	.00494	.00516	-.01348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 12:02:11 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00084**	**-.00035**	**.00368**	**.00167**	**.00096**	**.00170**	**.00042**
Stddev	.00080	.00025	.00390	.00263	.00105	.00007	.00065
%RSD	95.968	71.594	105.89	157.91	108.47	3.9451	155.39
#1	-.00164	-.00013	-.00072	.00344	.00144	.00164	-.00028
#2	-.00084	-.00063	.00507	-.00136	.00169	.00169	.00099
#3	-.00003	-.00030	.00670	.00292	-.00024	.00178	.00054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9151.3**	**55942.**	**2592.6**
Stddev	7.3	441.	22.9
%RSD	.08030	.78823	.88137
#1	9159.1	56371.	2600.0
#2	9150.4	55964.	2567.0
#3	9144.5	55490.	2610.8

Approved: June 29, 2016

Sample Name: ICSA Acquired: 6/29/2016 12:06:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00060	255.94	-.00165	.01120	.00020	-.00007	243.01	-.00009
Stddev	.00151	.50	.00310	.00093	.00011	.00009	1.98	.00034
%RSD	253.76	.19515	188.20	8.3312	56.041	136.74	.81639	356.18
#1	-.00159	255.93	-.00519	.01174	.00034	-.00017	244.75	.00029
#2	.00114	255.44	-.00038	.01174	.00013	-.00004	243.43	-.00028
#3	-.00134	256.44	.00062	.01012	.00015	.00001	240.85	-.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00153	-.00160	-.00060	96.491	.02735	.00278	246.20	-.00125
Stddev	.00044	.00072	.00047	.805	.05129	.00162	2.62	.00339
%RSD	28.875	45.065	78.040	.83461	187.56	58.278	1.0622	271.35
#1	-.00170	-.00208	-.00101	97.354	.08389	.00139	248.59	-.00516
#2	-.00103	-.00194	-.00009	96.359	.01433	.00240	246.60	.00054
#3	-.00186	-.00077	-.00071	95.760	-.01618	.00456	243.41	.00087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00063	.01110	-.00126	.04392	-.00149	-.00898	.00783	-.01528
Stddev	.00059	.02615	.00118	.00571	.00362	.00187	.00432	.00266
%RSD	92.708	235.62	93.325	13.010	243.00	20.819	55.216	17.436
#1	-.00119	.03843	-.00263	.03972	.00235	-.00709	.00686	-.01366
#2	-.00069	.00854	-.00059	.04162	-.00198	-.01083	.01255	-.01836
#3	-.00002	-.01368	-.00058	.05043	-.00484	-.00904	.00407	-.01383
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: ICSA Acquired: 6/29/2016 12:06:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.00023**	**.02224**	**.00386**	**-.00165**	**-.00654**	**.00214**
Stddev	.00041	.00067	.00086	.00086	.00091	.00017	.00039
%RSD	252.56	288.37	3.8484	22.351	55.189	2.6355	18.132
#1	-.00064	.00034	.02237	.00449	-.00126	-.00672	.00207
#2	.00010	.00084	.02132	.00421	-.00269	-.00638	.00256
#3	.00005	-.00048	.02302	.00288	-.00100	-.00653	.00180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8766.0**	**52087.**	**2495.6**
Stddev	15.9	170.	14.3
%RSD	.18130	.32719	.57463
#1	8770.4	51898.	2479.2
#2	8748.4	52230.	2501.8
#3	8779.3	52132.	2505.8

Approved: June 29, 2016

Sample Name: ICSAB Acquired: 6/29/2016 12:09:59 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50734	257.51	.24131	.01272	.24807	.25068	241.07	.48446
Stddev	.00412	.51	.00069	.00050	.00312	.00028	.90	.00013
%RSD	.81232	.19627	.28760	3.9448	1.2596	.11114	.37397	.02689
#1	.50266	256.93	.24196	.01329	.25140	.25037	241.62	.48432
#2	.51041	257.72	.24140	.01255	.24760	.25078	241.56	.48457
#3	.50896	257.88	.24058	.01233	.24520	.25090	240.03	.48449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.23503	.24726	.24440	94.269	5.2006	.00821	240.90	.23840
Stddev	.00077	.00242	.00071	.402	.0996	.00307	1.07	.00309
%RSD	.32939	.97772	.29206	.42640	1.9143	37.378	.44384	1.2979
#1	.23436	.24536	.24387	94.628	5.3098	.00478	242.06	.23780
#2	.23487	.24645	.24412	94.344	5.1772	.01070	240.71	.24176
#3	.23588	.24998	.24521	93.834	5.1149	.00916	239.95	.23566
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00055	5.2614	.47336	.02875	.48433	.48657	.26422	-.00770
Stddev	.00022	.0150	.00189	.00931	.00753	.00736	.00883	.00451
%RSD	40.746	.28490	.39985	32.374	1.5551	1.5123	3.3416	58.647
#1	-.00080	5.2539	.47134	.03926	.47614	.48324	.27429	-.00256
#2	-.00038	5.2516	.47509	.02157	.48588	.49500	.26057	-.01103
#3	-.00046	5.2786	.47365	.02541	.49096	.48145	.25781	-.00951
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: ICSAB Acquired: 6/29/2016 12:09:59 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00048**	**.00030**	**.02351**	**.45762**	**.24854**	**.47227**	**.00297**
Stddev	.00061	.00056	.01175	.00173	.00079	.00099	.00060
%RSD	127.26	185.36	49.987	.37759	.31592	.20864	20.120
#1	-.00014	.00093	.01146	.45652	.24882	.47114	.00229
#2	-.00011	-.00012	.03494	.45674	.24765	.47274	.00320
#3	-.00118	.00008	.02412	.45961	.24914	.47294	.00341
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8731.8**	**52174.**	**2509.6**
Stddev	26.4	65.	18.6
%RSD	.30284	.12375	.74252
#1	8706.6	52246.	2488.6
#2	8759.3	52121.	2516.0
#3	8729.4	52155.	2524.2

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 12:13:42 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40609	10.157	.40230	.50343	1.0188	.05040	10.091	.05079
Stddev	.00218	.021	.00331	.00384	.0017	.00017	.104	.00019
%RSD	.53746	.20256	.82232	.76263	.16380	.33206	1.0316	.36956
#1	.40725	10.157	.40572	.50548	1.0182	.05059	10.041	.05066
#2	.40744	10.137	.39912	.49900	1.0175	.05033	10.211	.05069
#3	.40357	10.178	.40205	.50581	1.0207	.05028	10.021	.05100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20237	.50550	.50987	4.0350	51.084	1.0203	10.173	.50788
Stddev	.00061	.00069	.00213	.0944	.085	.0107	.095	.00114
%RSD	.30016	.13658	.41783	2.3400	.16629	1.0496	.93296	.22508
#1	.20306	.50497	.51045	4.0483	51.023	1.0301	10.074	.50898
#2	.20209	.50628	.50751	4.1221	51.181	1.0220	10.182	.50796
#3	.20195	.50526	.51165	3.9346	51.047	1.0089	10.263	.50670
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0221	50.841	.51050	10.150	.50802	1.2227	.40322	5.1413
Stddev	.0020	.110	.00140	.032	.00139	.0051	.00211	.0071
%RSD	.19823	.21590	.27448	.31495	.27358	.41346	.52414	.13833
#1	1.0244	50.756	.51103	10.186	.50962	1.2261	.40506	5.1426
#2	1.0208	50.802	.51156	10.139	.50738	1.2250	.40091	5.1336
#3	1.0210	50.965	.50891	10.124	.50707	1.2169	.40368	5.1476
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 12:13:42 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0183**	**1.0207**	**1.0265**	**.51107**	**1.0132**	**1.0148**	**1.0193**
Stddev	.0024	.0008	.0082	.00055	.0045	.0019	.0027
%RSD	.23717	.07303	.79675	.10719	.44532	.18624	.26154
#1	1.0210	1.0209	1.0170	.51071	1.0179	1.0169	1.0163
#2	1.0174	1.0199	1.0314	.51170	1.0089	1.0143	1.0202
#3	1.0164	1.0214	1.0309	.51080	1.0127	1.0132	1.0214
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9052.4**	**54332.**	**2495.9**
Stddev	5.6	56.	2.1
%RSD	.06235	.10276	.08611
#1	9053.4	54286.	2498.0
#2	9057.4	54394.	2495.9
#3	9046.3	54316.	2493.7

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 12:17:18 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.00938	.00073	.00484	.00056	-.00003	.02976	.00014
Stddev	.00272	.00587	.00360	.00166	.00093	.00003	.02753	.00025
%RSD	3952.1	62.651	491.07	34.255	167.01	104.78	92.512	178.01
#1	-.00116	.00889	.00444	.00607	-.00046	-.00007	.05769	-.00010
#2	-.00182	.00376	.00050	.00296	.00137	-.00000	.02894	.00012
#3	.00318	.01548	-.00274	.00550	.00077	-.00002	.00265	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00062	-.00026	.00147	-.00293	.12048	-.00272	-.04259	.00250
Stddev	.00021	.00113	.00101	.00343	.05999	.00447	.05629	.00398
%RSD	34.132	429.11	68.864	117.02	49.796	164.55	132.18	159.06
#1	-.00078	-.00017	.00147	-.00611	.14692	-.00687	.00904	.00356
#2	-.00038	.00081	.00249	.00070	.05181	-.00330	-.10260	.00584
#3	-.00069	-.00143	.00046	-.00339	.16272	.00202	-.03421	-.00190
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.05530	.00038	.00467	.00162	-.00085	-.00242	-.01369
Stddev	.00031	.01142	.00006	.00335	.00208	.00309	.01054	.00284
%RSD	52.972	20.647	15.524	71.745	128.71	365.68	436.19	20.744
#1	.00023	.05338	.00031	.00408	.00120	-.00340	-.00437	-.01086
#2	.00082	.04497	.00040	.00166	-.00022	.00259	.00896	-.01368
#3	.00072	.06756	.00042	.00828	.00388	-.00173	-.01183	-.01654
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 12:17:18 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00132**	**-.00047**	**.00392**	**.00026**	**.00123**	**.00140**	**.00038**
Stddev	.00028	.00080	.00476	.00140	.00083	.00017	.00066
%RSD	21.568	168.21	121.48	547.41	67.923	11.972	173.11
#1	-.00117	-.00135	.00198	.00188	.00035	.00122	.00025
#2	-.00165	-.00029	.00043	-.00058	.00201	.00145	.00110
#3	-.00114	.00021	.00934	-.00052	.00133	.00154	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9021.4**	**54197.**	**2477.1**
Stddev	17.7	72.	12.5
%RSD	.19625	.13312	.50281
#1	9012.0	54182.	2480.1
#2	9010.4	54135.	2463.5
#3	9041.8	54276.	2487.8

Approved: June 29, 2016

Sample Name: LLCCV Acquired: 6/29/2016 12:21:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00930	.18527	.00831	.08680	.00908	.00161	.46292	.00077
Stddev	.00154	.01126	.00208	.00248	.00073	.00005	.03175	.00030
%RSD	16.577	6.0796	25.075	2.8560	8.0173	3.0639	6.8582	38.937
#1	.00816	.18000	.01045	.08705	.00824	.00158	.43180	.00107
#2	.00868	.19820	.00628	.08421	.00939	.00159	.49526	.00074
#3	.01106	.17761	.00820	.08915	.00959	.00167	.46172	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00379	.00286	.00752	.07010	.88858	.08506	.33804	.00800
Stddev	.00040	.00061	.00070	.03490	.07168	.00359	.06707	.00189
%RSD	10.603	21.467	9.3740	49.790	8.0672	4.2234	19.840	23.594
#1	.00350	.00350	.00702	.04132	.97072	.08650	.27131	.01017
#2	.00425	.00280	.00721	.06005	.85638	.08771	.33737	.00668
#3	.00362	.00228	.00832	.10892	.83864	.08097	.40544	.00717
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00788	.43352	.01602	.82021	.01274	.08681	.01319	.74946
Stddev	.00004	.05212	.00057	.00536	.00288	.00276	.00456	.00433
%RSD	.56667	12.022	3.5785	.65372	22.621	3.1751	34.563	.57752
#1	.00787	.49352	.01554	.81561	.01320	.08794	.01438	.75216
#2	.00785	.39951	.01666	.82609	.01537	.08883	.00816	.75175
#3	.00794	.40753	.01587	.81892	.00966	.08367	.01704	.74446
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LLCCV Acquired: 6/29/2016 12:21:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41310	.04246	.03184	.15616	.00889	.01771	.04320
Stddev	.00463	.00051	.00473	.00028	.00097	.00035	.00058
%RSD	1.1201	1.2065	14.851	.17819	10.855	1.9758	1.3315
#1	.41617	.04188	.02840	.15646	.00862	.01807	.04384
#2	.41536	.04283	.02988	.15612	.00996	.01768	.04304
#3	.40778	.04268	.03723	.15590	.00809	.01737	.04272
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9101.1	54266.	2460.7
Stddev	26.1	395.	5.7
%RSD	.28689	.72780	.23021
#1	9083.8	53891.	2466.7
#2	9088.3	54227.	2460.1
#3	9131.1	54679.	2455.4

Approved: June 29, 2016

Sample Name: PBW 1A Acquired: 6/29/2016 12:25:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572926-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	.00969	.00038	.00219	.00001	-.00001	.03841	.00000
Stddev	.00208	.00740	.00389	.00299	.00060	.00005	.03188	.00011
%RSD	490.47	76.386	1019.5	136.75	9720.9	1068.5	83.004	4065.3
#1	-.00163	.00771	-.00079	.00162	-.00061	-.00004	.00538	-.00006
#2	.00253	.00348	-.00279	.00542	.00059	-.00003	.06900	.00013
#3	.00037	.01788	.00473	-.00048	.00004	.00006	.04083	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	-.00114	.00101	-.00743	.05403	-.00461	.00807	.00265
Stddev	.00016	.00115	.00139	.03073	.12944	.00184	.04739	.00241
%RSD	80.693	100.57	138.13	413.72	239.57	39.969	587.23	91.000
#1	-.00010	-.00093	-.00008	.02742	.18957	-.00661	-.02026	.00319
#2	-.00039	-.00012	.00257	-.03064	-.06829	-.00298	.06278	.00001
#3	-.00012	-.00239	.00052	-.01906	.04081	-.00425	-.01831	.00474
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.01638	-.00012	-.00282	.00313	.00156	-.00004	-.01726
Stddev	.00031	.01737	.00058	.00451	.00088	.00443	.00754	.00313
%RSD	341.98	106.08	491.56	159.75	28.092	284.40	18390.	18.103
#1	-.00041	.02925	.00054	.00166	.00247	-.00307	-.00321	-.02086
#2	.00021	-.00339	-.00033	-.00735	.00279	.00198	-.00548	-.01579
#3	-.00007	.02327	-.00056	-.00277	.00413	.00577	.00856	-.01515
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: PBW 1A Acquired: 6/29/2016 12:25:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v985) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572926-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	-.00037	.00835	.00044	.00061	.00070	.00098
Stddev	.00035	.00043	.00581	.00403	.00043	.00006	.00029
%RSD	115.51	115.48	69.571	911.33	69.936	8.7596	29.722
#1	.00036	.00009	.00689	.00493	.00095	.00064	.00130
#2	-.00007	-.00075	.01476	-.00074	.00013	.00070	.00090
#3	.00063	-.00045	.00341	-.00287	.00076	.00076	.00074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9077.8	55403.	2547.2
Stddev	29.0	136.	11.6
%RSD	.31944	.24610	.45692
#1	9090.8	55492.	2560.5
#2	9098.0	55246.	2541.9
#3	9044.6	55471.	2539.2

Approved: June 29, 2016

Sample Name: L1606000317 Acquired: 6/29/2016 12:51:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19942	4.9152	.19467	.94685	.49734	.02416	5.0301	.02449
Stddev	.00255	.0117	.00420	.00146	.00228	.00009	.0426	.00032
%RSD	1.2773	.23807	2.1585	.15423	.45856	.39192	.84644	1.2871
#1	.20196	4.9030	.19717	.94606	.49912	.02407	4.9810	.02484
#2	.19686	4.9263	.19702	.94595	.49814	.02414	5.0529	.02441
#3	.19945	4.9164	.18982	.94853	.49477	.02426	5.0564	.02422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09914	.24528	.24831	1.9921	24.590	.50338	4.9364	.24982
Stddev	.00028	.00273	.00169	.0121	.169	.00088	.1699	.00058
%RSD	.28422	1.1127	.68258	.60865	.68881	.17436	3.4428	.23154
#1	.09933	.24822	.24886	1.9942	24.551	.50339	5.0948	.25044
#2	.09928	.24282	.24641	1.9790	24.775	.50249	4.9575	.24929
#3	.09882	.24481	.24966	2.0030	24.443	.50425	4.7568	.24974
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49762	24.927	.24842	4.7827	.24600	.58372	.18760	2.3385
Stddev	.00152	.049	.00111	.0046	.00502	.00040	.00394	.0041
%RSD	.30447	.19534	.44745	.09557	2.0396	.06777	2.1019	.17592
#1	.49904	24.918	.24747	4.7873	.24576	.58326	.18318	2.3426
#2	.49603	24.979	.24815	4.7781	.25113	.58396	.19076	2.3344
#3	.49780	24.883	.24964	4.7828	.24110	.58393	.18887	2.3384
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606000317 Acquired: 6/29/2016 12:51:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49497	.50184	.49529	.24845	.49224	.49191	.50492
Stddev	.00275	.00140	.00808	.00021	.00139	.00069	.00249
%RSD	.55508	.27961	1.6310	.08451	.28222	.13974	.49288
#1	.49807	.50189	.50355	.24861	.49286	.49225	.50678
#2	.49397	.50322	.49491	.24821	.49321	.49112	.50588
#3	.49285	.50041	.48740	.24852	.49065	.49236	.50209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9106.9	54839.	2510.9
Stddev	31.7	98.	10.0
%RSD	.34778	.17793	.39937
#1	9070.5	54743.	2503.6
#2	9122.5	54837.	2506.9
#3	9127.7	54938.	2522.4

Approved: June 29, 2016

Sample Name: L1606000318 Acquired: 6/29/2016 12:54:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20311**	**5.0093**	**.20024**	**.96622**	**.50492**	**.02463**	**5.1020**	**.02493**
Stddev	.00134	.0069	.00123	.00653	.00175	.00006	.0248	.00009
%RSD	.65845	.13814	.61617	.67574	.34616	.23578	.48634	.37015
#1	.20259	5.0148	.19919	.97000	.50693	.02456	5.1289	.02499
#2	.20463	5.0115	.19994	.95868	.50405	.02465	5.0971	.02482
#3	.20211	5.0015	.20160	.96999	.50378	.02468	5.0800	.02497
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10159**	**.25237**	**.25344**	**2.0243**	**25.196**	**.50983**	**4.9947**	**.25208**
Stddev	.00022	.00097	.00010	.0071	.064	.00473	.0322	.00383
%RSD	.21200	.38555	.03998	.34981	.25307	.92753	.64516	1.5175
#1	.10168	.25147	.25337	2.0230	25.166	.51502	5.0116	.25643
#2	.10134	.25340	.25339	2.0319	25.269	.50576	4.9576	.24922
#3	.10175	.25222	.25355	2.0179	25.153	.50870	5.0150	.25061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51133**	**25.314**	**.25403**	**4.8909**	**.25346**	**.59729**	**.19152**	**2.3900**
Stddev	.00025	.101	.00164	.0074	.00202	.00300	.01053	.0036
%RSD	.04800	.39933	.64387	.15059	.79518	.50201	5.4987	.15132
#1	.51138	25.371	.25300	4.8825	.25574	.59947	.18873	2.3859
#2	.51107	25.375	.25316	4.8948	.25274	.59387	.20316	2.3915
#3	.51155	25.198	.25591	4.8955	.25191	.59853	.18266	2.3926
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606000318 Acquired: 6/29/2016 12:54:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50607	.51174	.50420	.25663	.50263	.50496	.50908
Stddev	.00055	.00020	.00568	.00381	.00128	.00087	.00229
%RSD	.10798	.03949	1.1259	1.4837	.25367	.17237	.45012
#1	.50554	.51151	.49897	.26069	.50259	.50421	.50995
#2	.50604	.51186	.51023	.25313	.50137	.50476	.51082
#3	.50663	.51185	.50339	.25606	.50392	.50592	.50648
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9125.2	55317.	2535.5
Stddev	23.7	132.	16.3
%RSD	.26019	.23790	.64140
#1	9101.1	55178.	2528.3
#2	9125.8	55335.	2524.1
#3	9148.6	55439.	2554.1

Approved: June 29, 2016

Sample Name: L1606000319 Acquired: 6/29/2016 12:58:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20259	4.9748	.19670	.96312	.50177	.02447	5.1150	.02478
Stddev	.00335	.0120	.00105	.00730	.00329	.00011	.0459	.00019
%RSD	1.6539	.24134	.53322	.75754	.65553	.43752	.89800	.77153
#1	.20645	4.9806	.19550	.96677	.49884	.02441	5.0929	.02465
#2	.20083	4.9827	.19718	.95472	.50533	.02459	5.1678	.02500
#3	.20048	4.9610	.19743	.96787	.50112	.02441	5.0844	.02470
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10071	.24983	.25372	1.9968	25.135	.51049	5.0317	.24909
Stddev	.00057	.00136	.00115	.0570	.092	.00078	.1042	.00287
%RSD	.57056	.54283	.45193	2.8535	.36573	.15242	2.0711	1.1532
#1	.10016	.24978	.25491	1.9675	25.037	.51039	5.1497	.24614
#2	.10067	.24850	.25364	2.0625	25.220	.51131	4.9934	.25187
#3	.10131	.25121	.25262	1.9605	25.147	.50977	4.9521	.24926
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50759	25.260	.25300	4.8539	.25419	.59776	.19000	2.3625
Stddev	.00112	.047	.00099	.0055	.00338	.00476	.00429	.0019
%RSD	.21968	.18448	.39174	.11346	1.3288	.79571	2.2577	.07826
#1	.50884	25.244	.25400	4.8572	.25062	.59919	.19488	2.3643
#2	.50670	25.313	.25298	4.8570	.25460	.60164	.18834	2.3626
#3	.50723	25.224	.25202	4.8476	.25734	.59245	.18679	2.3606
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606000319 Acquired: 6/29/2016 12:58:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50413**	**.51002**	**.49861**	**.25226**	**.49804**	**.50117**	**.50899**
Stddev	.00077	.00178	.00782	.00363	.00110	.00076	.00148
%RSD	.15230	.34965	1.5686	1.4399	.22145	.15205	.29136
#1	.50501	.50928	.49725	.25039	.49679	.50174	.50957
#2	.50370	.51205	.49156	.25644	.49845	.50146	.50731
#3	.50367	.50873	.50702	.24994	.49888	.50030	.51010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9138.5**	**55370.**	**2535.2**
Stddev	33.9	132.	12.4
%RSD	.37093	.23838	.49071
#1	9127.8	55226.	2523.7
#2	9176.5	55486.	2548.4
#3	9111.3	55399.	2533.4

Approved: June 29, 2016

Sample Name: L1606000320 Acquired: 6/29/2016 13:01:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20245**	**4.9702**	**.19985**	**.96406**	**.50180**	**.02434**	**5.0941**	**.02476**
Stddev	.00212	.0121	.00304	.00165	.00115	.00010	.0121	.00025
%RSD	1.0488	.24344	1.5231	.17079	.22884	.43136	.23714	1.0220
#1	.20099	4.9792	.20327	.96261	.50290	.02434	5.0979	.02471
#2	.20148	4.9750	.19888	.96372	.50061	.02423	5.1038	.02503
#3	.20489	4.9565	.19742	.96585	.50189	.02444	5.0806	.02453
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10089**	**.24943**	**.25316**	**2.0222**	**24.982**	**.50705**	**5.0147**	**.25129**
Stddev	.00012	.00066	.00186	.0200	.034	.00254	.1081	.00517
%RSD	.12332	.26387	.73297	.98746	.13790	.50173	2.1552	2.0577
#1	.10080	.25017	.25499	2.0000	25.004	.50412	4.9990	.24775
#2	.10103	.24921	.25320	2.0276	25.000	.50842	4.9153	.25722
#3	.10083	.24891	.25128	2.0388	24.942	.50862	5.1297	.24889
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50686**	**25.213**	**.25335**	**4.8622**	**.25304**	**.59399**	**.19598**	**2.3602**
Stddev	.00079	.047	.00040	.0043	.00210	.00132	.00508	.0044
%RSD	.15635	.18575	.15834	.08895	.83025	.22140	2.5942	.18605
#1	.50769	25.260	.25297	4.8659	.25387	.59512	.19014	2.3653
#2	.50679	25.167	.25330	4.8631	.25460	.59430	.19839	2.3584
#3	.50611	25.211	.25377	4.8575	.25065	.59255	.19942	2.3571
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606000320 Acquired: 6/29/2016 13:01:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50362	.51051	.50103	.25257	.50156	.50166	.46823
Stddev	.00072	.00045	.00604	.00391	.00108	.00067	.00088
%RSD	.14335	.08821	1.2065	1.5475	.21506	.13395	.18846
#1	.50381	.51034	.50396	.25632	.50267	.50161	.46861
#2	.50423	.51102	.49408	.25286	.50149	.50235	.46722
#3	.50282	.51017	.50505	.24852	.50052	.50101	.46886
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9124.0	55260.	2545.8
Stddev	21.0	111.	3.4
%RSD	.23034	.20049	.13548
#1	9099.7	55218.	2542.6
#2	9137.3	55177.	2549.4
#3	9134.8	55386.	2545.3

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 13:05:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41728	10.443	.40824	.52559	1.0322	.05136	10.162	.05182
Stddev	.00237	.025	.00050	.00501	.0032	.00014	.032	.00015
%RSD	.56738	.23872	.12193	.95267	.30669	.26937	.31037	.28513
#1	.41466	10.419	.40772	.53075	1.0302	.05152	10.197	.05196
#2	.41928	10.441	.40828	.52075	1.0358	.05129	10.136	.05183
#3	.41789	10.469	.40871	.52528	1.0305	.05127	10.154	.05167
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20840	.52211	.52309	4.1083	51.248	1.0398	10.307	.51344
Stddev	.00024	.00275	.00166	.0550	.066	.0053	.136	.00123
%RSD	.11505	.52680	.31759	1.3384	.12825	.50870	1.3228	.24045
#1	.20812	.52522	.52492	4.0977	51.292	1.0343	10.153	.51232
#2	.20852	.52000	.52270	4.1679	51.279	1.0449	10.411	.51476
#3	.20855	.52113	.52167	4.0595	51.173	1.0402	10.357	.51322
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0440	51.386	.52438	10.412	.52053	1.2552	.42317	5.2692
Stddev	.0008	.067	.00122	.014	.00415	.0027	.01133	.0060
%RSD	.07805	.13026	.23220	.13293	.79813	.21836	2.6770	.11421
#1	1.0446	51.436	.52317	10.397	.52193	1.2543	.43284	5.2639
#2	1.0443	51.412	.52561	10.423	.52381	1.2530	.41071	5.2758
#3	1.0431	51.310	.52436	10.418	.51586	1.2583	.42597	5.2679
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 13:05:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0436**	**1.0279**	**1.0340**	**.52273**	**1.0431**	**1.0402**	**1.0378**
Stddev	.0017	.0015	.0024	.00377	.0024	.0010	.0044
%RSD	.16567	.15092	.23240	.72085	.22837	.09675	.42077
#1	1.0418	1.0270	1.0313	.51970	1.0446	1.0399	1.0426
#2	1.0453	1.0297	1.0348	.52153	1.0404	1.0413	1.0368
#3	1.0436	1.0270	1.0359	.52695	1.0444	1.0394	1.0340
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8816.9**	**52768.**	**2460.8**
Stddev	25.4	35.	11.8
%RSD	.28757	.06597	.47754
#1	8803.8	52804.	2449.9
#2	8800.7	52734.	2459.2
#3	8846.1	52767.	2473.3

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 13:09:00 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00144	.02092	.00499	.00875	.00130	.00004	.04368	-.00006
Stddev	.00139	.00906	.00291	.00167	.00046	.00007	.03569	.00034
%RSD	96.487	43.295	58.180	19.023	35.727	172.04	81.714	579.33
#1	-.00003	.03119	.00427	.00901	.00142	.00008	.07806	.00020
#2	.00161	.01746	.00819	.00698	.00168	.00009	.04617	-.00044
#3	.00273	.01409	.00252	.01028	.00078	-.00004	.00681	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	.00027	.00060	.01159	.31430	-.00299	-.07103	.00030
Stddev	.00017	.00035	.00102	.02144	.01113	.00849	.06707	.00165
%RSD	89.290	130.31	170.26	185.01	3.5420	284.33	94.418	543.54
#1	-.00016	.00064	-.00052	.03505	.32409	.00279	-.03511	.00134
#2	-.00038	-.00004	.00147	.00668	.30219	.00098	-.02957	-.00160
#3	-.00004	.00020	.00085	-.00697	.31662	-.01273	-.14840	.00118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	.03858	.00079	.00525	-.00017	-.00129	.00458	-.01015
Stddev	.00031	.05294	.00163	.00742	.00058	.00315	.00322	.00163
%RSD	57.139	137.21	205.93	141.12	341.19	244.71	70.209	16.103
#1	.00086	.07534	-.00107	.01276	-.00034	.00051	.00776	-.00828
#2	.00025	.06251	.00198	-.00207	-.00064	.00056	.00468	-.01133
#3	.00050	-.02210	.00147	.00507	.00047	-.00493	.00132	-.01083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 13:09:00 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00110	.00088	.00633	.00294	.00284	.00275	.00099
Stddev	.00009	.00010	.00393	.00140	.00074	.00017	.00049
%RSD	8.3685	11.846	62.098	47.766	25.940	6.0078	49.647
#1	.00119	.00080	.00973	.00137	.00199	.00268	.00093
#2	.00111	.00083	.00723	.00339	.00331	.00263	.00151
#3	.00100	.00099	.00203	.00407	.00320	.00294	.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9069.1	54567.	2459.8
Stddev	34.3	946.	2.7
%RSD	.37865	1.7328	.10952
#1	9101.3	53961.	2456.7
#2	9072.9	54082.	2460.8
#3	9033.0	55656.	2461.9

Approved: June 29, 2016

Sample Name: PBW 9A Acquired: 6/29/2016 13:12:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00156	.01277	-.00057	.00128	.00058	.00012	.02846	-.00015
Stddev	.00243	.01074	.00129	.00102	.00108	.00009	.03509	.00028
%RSD	156.09	84.047	228.10	79.795	185.93	79.077	123.28	187.74
#1	.00307	.02394	-.00144	.00015	.00172	.00006	-.01063	.00011
#2	.00284	.00253	.00091	.00155	-.00043	.00006	.05722	-.00045
#3	-.00125	.01185	-.00117	.00214	.00046	.00022	.03879	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00012	-.00060	.00271	-.00172	.10278	-.00435	-.05155	.00144
Stddev	.00026	.00014	.00059	.02008	.11040	.00141	.03391	.00194
%RSD	215.36	23.355	21.966	1166.1	107.41	32.304	65.786	134.90
#1	-.00034	-.00045	.00248	-.02335	.22979	-.00298	-.08390	.00338
#2	.00017	-.00062	.00226	.00183	.04875	-.00429	-.01626	-.00050
#3	-.00019	-.00073	.00338	.01635	.02981	-.00578	-.05450	.00144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	-.00949	-.00074	.00015	.00305	.00458	-.00220	-.00408
Stddev	.00019	.05710	.00110	.00555	.00336	.00036	.00500	.00163
%RSD	82.720	601.37	148.14	3741.8	110.48	7.8763	227.58	39.866
#1	-.00003	.00344	.00052	-.00258	.00028	.00434	.00356	-.00318
#2	-.00026	.04002	-.00124	-.00351	.00206	.00500	-.00470	-.00309
#3	-.00041	-.07195	-.00152	.00653	.00679	.00441	-.00544	-.00595
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: PBW 9A Acquired: 6/29/2016 13:12:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00000**	**-.00017**	**.00835**	**.00399**	**.00221**	**.00058**	**-.00007**
Stddev	.00032	.00034	.00260	.00541	.00092	.00007	.00034
%RSD	15258.	200.35	31.148	135.71	41.862	12.717	487.57
#1	.00036	-.00025	.00932	.00647	.00302	.00051	-.00045
#2	-.00009	.00021	.01032	-.00222	.00239	.00057	.00015
#3	-.00026	-.00047	.00540	.00771	.00120	.00065	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8979.3**	**53829.**	**2438.6**
Stddev	13.3	47.	17.0
%RSD	.14830	.08639	.69821
#1	8964.6	53864.	2422.5
#2	8982.6	53776.	2436.9
#3	8990.6	53846.	2456.4

Approved: June 29, 2016

Sample Name: LCSW 9A Acquired: 6/29/2016 13:16:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19153**	**4.8242**	**.19643**	**.93765**	**.48784**	**.02348**	**4.9390**	**.02367**
Stddev	.00023	.0092	.00257	.00737	.00434	.00005	.0641	.00018
%RSD	.11813	.19160	1.3078	.78564	.88908	.23086	1.2976	.76226
#1	.19126	4.8142	.19451	.94494	.48814	.02344	4.8736	.02347
#2	.19164	4.8259	.19935	.93779	.48336	.02354	4.9419	.02383
#3	.19167	4.8324	.19543	.93021	.49201	.02347	5.0016	.02369
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09709**	**.24274**	**.24500**	**1.9526**	**24.264**	**.49676**	**4.8975**	**.24566**
Stddev	.00023	.00123	.00204	.0603	.156	.00276	.1134	.00298
%RSD	.24128	.50688	.83346	3.0892	.64109	.55474	2.3145	1.2147
#1	.09706	.24399	.24387	2.0191	24.150	.49989	4.8090	.24872
#2	.09733	.24270	.24736	1.9375	24.201	.49568	4.8582	.24275
#3	.09686	.24153	.24377	1.9014	24.441	.49470	5.0252	.24551
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48960**	**24.489**	**.24515**	**4.7214**	**.24653**	**.57645**	**.19208**	**2.2961**
Stddev	.00187	.110	.00154	.0246	.00069	.00338	.00416	.0083
%RSD	.38239	.44956	.62743	.52045	.28063	.58690	2.1678	.36040
#1	.48896	24.569	.24362	4.7202	.24577	.57275	.19660	2.2976
#2	.49171	24.364	.24670	4.7465	.24713	.57938	.18839	2.3035
#3	.48813	24.535	.24515	4.6974	.24668	.57723	.19124	2.2871
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: LCSW 9A Acquired: 6/29/2016 13:16:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48754	.49440	.49346	.24467	.48567	.48631	.00100
Stddev	.00247	.00085	.00185	.00469	.00086	.00164	.00051
%RSD	.50612	.17214	.37585	1.9151	.17727	.33744	51.175
#1	.48669	.49487	.49132	.24095	.48611	.48510	.00106
#2	.49032	.49342	.49462	.24312	.48621	.48818	.00147
#3	.48562	.49491	.49443	.24993	.48467	.48564	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9069.4	54722.	2517.9
Stddev	20.8	63.	2.3
%RSD	.22881	.11570	.09293
#1	9045.5	54658.	2515.6
#2	9079.4	54722.	2520.2
#3	9083.3	54784.	2518.0

Approved: June 29, 2016

Sample Name: F BLANK Acquired: 6/29/2016 13:20:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574515-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00047**	**.01538**	**-.00286**	**.01085**	**.00013**	**.00010**	**.02649**	**.00006**
Stddev	.00233	.01023	.00247	.00313	.00061	.00008	.06500	.00010
%RSD	494.84	66.496	86.406	28.893	457.32	73.499	245.39	174.09
#1	.00221	.02702	-.00051	.01142	-.00013	.00005	-.03588	.00014
#2	-.00166	.00785	-.00264	.01365	-.00029	.00007	.02150	-.00005
#3	-.00197	.01126	-.00544	.00746	.00083	.00019	.09384	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.00036**	**.00207**	**.00408**	**.13839**	**-.00066**	**.00872**	**.00046**
Stddev	.00031	.00065	.00059	.02388	.03067	.00271	.00917	.00060
%RSD	184.06	183.11	28.679	586.09	22.159	413.43	105.15	130.31
#1	-.00037	-.00035	.00254	.03155	.16581	.00225	.01333	-.00014
#2	-.00031	.00093	.00225	-.01178	.14409	-.00312	-.00184	.00106
#3	.00019	.00049	.00140	-.00754	.10528	-.00109	.01466	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00054**	**.07025**	**.00090**	**.00198**	**.00563**	**-.00130**	**.00142**	**-.01125**
Stddev	.00037	.02627	.00077	.00663	.00114	.00219	.00085	.00286
%RSD	68.038	37.398	84.813	335.31	20.209	168.94	59.973	25.454
#1	.00097	.07572	.00026	-.00335	.00545	-.00054	.00074	-.00976
#2	.00033	.09337	.00175	.00941	.00684	.00041	.00113	-.00943
#3	.00033	.04168	.00070	-.00013	.00458	-.00377	.00237	-.01455
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: F BLANK Acquired: 6/29/2016 13:20:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574515-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.00033	.00749	.00139	.00161	.00366	.00033
Stddev	.00034	.00035	.00360	.00082	.00107	.00016	.00020
%RSD	875.38	106.02	48.045	59.255	66.263	4.2389	61.205
#1	.00037	.00050	.01150	.00203	.00236	.00357	.00056
#2	.00005	-.00007	.00452	.00046	.00039	.00384	.00018
#3	-.00031	.00056	.00646	.00167	.00209	.00357	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9236.9	55682.	2578.1
Stddev	14.9	456.	8.4
%RSD	.16086	.81916	.32679
#1	9251.7	55556.	2569.8
#2	9222.0	55302.	2577.9
#3	9237.0	56188.	2586.6

Approved: June 29, 2016

Sample Name: L1606153901 Acquired: 6/29/2016 13:24:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	.04503	.00049	.02211	.17570	-.00002	50.971	.00006
Stddev	.00098	.00339	.00086	.00379	.00296	.00012	.598	.00011
%RSD	129.22	7.5349	175.62	17.128	1.6847	620.32	1.1738	202.33
#1	.00186	.04145	.00146	.02564	.17860	-.00014	51.468	.00019
#2	-.00001	.04542	.00020	.01811	.17268	.00009	50.307	-.00001
#3	.00042	.04821	-.00019	.02258	.17581	-.00001	51.138	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	-.00042	.00313	.01681	.98433	-.00212	4.8021	.00732
Stddev	.00016	.00050	.00067	.04138	.14623	.00172	.0876	.00134
%RSD	114.87	117.94	21.271	246.08	14.855	80.977	1.8235	18.291
#1	.00000	.00015	.00379	.05311	1.1527	-.00347	4.7574	.00857
#2	.00032	-.00074	.00246	-.02824	.88915	-.00271	4.7459	.00591
#3	.00010	-.00067	.00314	.02556	.91113	-.00019	4.9030	.00748
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	31.048	-.00039	-.00056	.00278	-.00117	.00307	4.4799
Stddev	.00023	.353	.00054	.00326	.00085	.00361	.00456	.0307
%RSD	97.571	1.1354	139.05	585.12	30.622	307.41	148.29	.68488
#1	.00008	31.353	-.00087	-.00289	.00268	.00154	.00769	4.4736
#2	.00013	30.662	.00019	.00316	.00368	-.00526	.00295	4.5132
#3	.00049	31.128	-.00049	-.00194	.00199	.00021	-.00142	4.4528
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606153901 Acquired: 6/29/2016 13:24:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00049**	**.24437**	**-.00150**	**.00320**	**.00048**	**.00260**	**.00024**
Stddev	.00033	.00337	.00539	.00295	.00098	.00005	.00067
%RSD	66.819	1.3809	358.87	92.105	205.70	2.0652	282.05
#1	-.00061	.24636	-.00695	.00055	.00052	.00263	-.00005
#2	-.00075	.24048	.00382	.00267	.00143	.00263	-.00024
#3	-.00012	.24628	-.00137	.00638	-.00052	.00253	.00100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9084.0**	**54917.**	**2530.0**
Stddev	37.9	437.	39.4
%RSD	.41716	.79561	1.5565
#1	9064.6	54983.	2496.9
#2	9059.8	55317.	2573.5
#3	9127.7	54450.	2519.5

Approved: June 29, 2016

Sample Name: L1606149601 Acquired: 6/29/2016 13:27:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.04490	.00155	.04404	.08099	-.00000	152.38	.00387
Stddev	.00184	.01056	.00185	.00277	.00097	.00005	1.60	.00031
%RSD	2651.7	23.512	119.01	6.2792	1.2002	3186.0	1.0468	8.0000
#1	-.00197	.05188	.00369	.04382	.08022	.00005	151.97	.00400
#2	.00161	.05006	.00038	.04138	.08208	-.00001	154.14	.00352
#3	.00057	.03276	.00059	.04690	.08067	-.00004	151.03	.00410
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	.00078	.08572	.03952	2.3284	.00873	2.1016	.14257
Stddev	.00016	.00011	.00159	.02088	.1056	.00542	.0733	.00470
%RSD	91.389	14.348	1.8525	52.820	4.5346	62.073	3.4891	3.2950
#1	-.00001	.00067	.08649	.06019	2.4297	.00391	2.0986	.14083
#2	-.00033	.00077	.08678	.01844	2.2190	.01460	2.1763	.13899
#3	-.00019	.00090	.08390	.03994	2.3365	.00769	2.0298	.14789
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	3.9437	.00213	.48417	.04082	-.00093	.00085	.68513
Stddev	.00021	.0307	.00050	.01401	.00231	.00060	.00505	.00752
%RSD	196.10	.77890	23.717	2.8944	5.6647	64.335	591.18	1.0973
#1	-.00006	3.9619	.00255	.49011	.03817	-.00116	.00014	.69065
#2	.00004	3.9610	.00226	.49423	.04240	-.00137	.00622	.68818
#3	.00034	3.9082	.00157	.46816	.04190	-.00025	-.00380	.67657
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606149601 Acquired: 6/29/2016 13:27:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.33940	-.01837	.00131	.00158	.15825	.00049
Stddev	.00026	.00192	.00599	.00263	.00030	.00187	.00017
%RSD	327.05	.56694	32.634	201.60	18.811	1.1847	35.786
#1	.00006	.34018	-.02023	.00434	.00192	.15890	.00029
#2	-.00017	.34080	-.01166	-.00037	.00138	.15971	.00056
#3	.00035	.33720	-.02321	-.00006	.00144	.15613	.00061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9083.0	55048.	2572.1
Stddev	12.4	106.	20.0
%RSD	.13696	.19313	.77824
#1	9096.9	54966.	2569.4
#2	9073.0	55010.	2553.6
#3	9079.0	55168.	2593.3

Approved: June 29, 2016

Sample Name: L1606149601S Acquired: 6/29/2016 13:31:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-09

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19901**	**5.0835**	**.20422**	**1.0200**	**.58673**	**.02474**	**152.60**	**.02902**
Stddev	.00268	.0032	.00478	.0050	.02151	.00017	5.66	.00010
%RSD	1.3471	.06200	2.3428	.48536	3.6654	.67464	3.7112	.33393
#1	.20137	5.0799	.20951	1.0256	.57631	.02491	149.80	.02906
#2	.19956	5.0853	.20018	1.0181	.57242	.02473	148.88	.02909
#3	.19609	5.0854	.20299	1.0163	.61146	.02458	159.12	.02891
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09935**	**.25120**	**.32839**	**2.0167**	**27.699**	**.52373**	**7.0826**	**.38660**
Stddev	.00019	.00042	.00321	.1390	1.135	.02634	.2402	.01337
%RSD	.19025	.16720	.97706	6.8918	4.0974	5.0297	3.3916	3.4593
#1	.09957	.25142	.32884	1.9876	27.155	.50789	7.1811	.37541
#2	.09926	.25071	.33135	1.8945	26.939	.50916	6.8087	.38299
#3	.09923	.25146	.32498	2.1679	29.004	.55414	7.2578	.40141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51367**	**29.242**	**.25007**	**5.5779**	**.28995**	**.61217**	**.19415**	**3.1202**
Stddev	.00224	1.120	.00162	.0326	.00216	.00586	.00396	.0141
%RSD	.43553	3.8309	.64653	.58366	.74661	.95659	2.0391	.45211
#1	.51394	28.687	.25099	5.5840	.28950	.61568	.18974	3.1244
#2	.51576	28.508	.25102	5.6070	.29230	.61543	.19530	3.1318
#3	.51131	30.531	.24820	5.5427	.28804	.60541	.19741	3.1045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606149601S Acquired: 6/29/2016 13:31:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-09

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50841**	**.83006**	**.48317**	**.25181**	**.50876**	**.64056**	**.00125**
Stddev	.00279	.02809	.02264	.00257	.00177	.00306	.00069
%RSD	.54937	3.3838	4.6851	1.0190	.34844	.47814	55.275
#1	.51067	.82564	.48407	.24885	.50672	.64257	.00045
#2	.50927	.80445	.46010	.25339	.50984	.64208	.00164
#3	.50529	.86010	.50535	.25319	.50973	.63703	.00164
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8925.7**	**53605.**	**2514.8**
Stddev	32.1	114.	66.8
%RSD	.35995	.21348	2.6578
#1	8904.1	53541.	2533.4
#2	8910.5	53737.	2570.4
#3	8962.6	53536.	2440.7

Approved: June 29, 2016

Sample Name: L1606149601SD Acquired: 6/29/2016 13:35:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-10

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20298**	**5.1471**	**.20841**	**1.0355**	**.59469**	**.02517**	**161.77**	**.02948**
Stddev	.00333	.0076	.00366	.0045	.00331	.00008	.91	.00026
%RSD	1.6408	.14687	1.7558	.43354	.55680	.30956	.56220	.87127
#1	.20648	5.1503	.20791	1.0374	.59848	.02514	162.81	.02959
#2	.19985	5.1525	.21230	1.0303	.59237	.02511	161.35	.02966
#3	.20260	5.1385	.20503	1.0387	.59321	.02526	161.13	.02918
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10040**	**.25341**	**.33794**	**2.0523**	**28.211**	**.52968**	**7.2091**	**.39606**
Stddev	.00033	.00261	.00159	.0236	.021	.00241	.0455	.00457
%RSD	.32394	1.0290	.46924	1.1505	.07537	.45466	.63062	1.1537
#1	.10022	.25630	.33827	2.0301	28.213	.53240	7.1616	.40061
#2	.10078	.25270	.33934	2.0771	28.231	.52782	7.2135	.39609
#3	.10021	.25123	.33622	2.0497	28.188	.52882	7.2522	.39147
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52134**	**29.781**	**.25290**	**5.6983**	**.29509**	**.61618**	**.20300**	**3.2091**
Stddev	.00203	.140	.00096	.0096	.00142	.00461	.00627	.0089
%RSD	.38917	.46857	.37998	.16896	.48273	.74876	3.0907	.27566
#1	.52173	29.911	.25390	5.6911	.29670	.61861	.20133	3.2129
#2	.52315	29.799	.25283	5.7092	.29460	.61907	.20994	3.2154
#3	.51915	29.633	.25198	5.6946	.29398	.61086	.19773	3.1990
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606149601SD Acquired: 6/29/2016 13:35:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-10

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51305**	**.85393**	**.50073**	**.25713**	**.51551**	**.65641**	**.00038**
Stddev	.00264	.01335	.00656	.00188	.00222	.00100	.00089
%RSD	.51363	1.5635	1.3091	.73265	.43057	.15215	234.39
#1	.51277	.86930	.50785	.25842	.51412	.65597	.00001
#2	.51581	.84733	.49495	.25497	.51434	.65755	.00139
#3	.51056	.84517	.49940	.25800	.51807	.65570	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8935.7**	**53938.**	**2524.0**
Stddev	22.6	87.	20.2
%RSD	.25300	.16207	.79942
#1	8946.9	54038.	2502.6
#2	8909.7	53879.	2527.0
#3	8950.6	53896.	2542.6

Approved: June 29, 2016

Sample Name: L1606149601PS Acquired: 6/29/2016 13:38:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574645-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20054**	**5.1036**	**.20832**	**1.0283**	**.58081**	**.02493**	**145.21**	**.02893**
Stddev	.00093	.0139	.00310	.0064	.00420	.00017	1.06	.00029
%RSD	.46402	.27197	1.4885	.62248	.72276	.66614	.73188	1.0052
#1	.19971	5.0879	.20511	1.0209	.58524	.02475	146.21	.02918
#2	.20155	5.1142	.21130	1.0317	.58029	.02497	145.32	.02899
#3	.20037	5.1087	.20854	1.0323	.57690	.02508	144.09	.02861
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10016**	**.25150**	**.32808**	**1.9934**	**27.533**	**.52384**	**6.9324**	**.37604**
Stddev	.00016	.00018	.00185	.0266	.147	.00167	.1202	.00194
%RSD	.16020	.07268	.56512	1.3335	.53434	.31836	1.7343	.51548
#1	.10014	.25167	.32966	2.0240	27.661	.52244	6.9856	.37778
#2	.10001	.25131	.32855	1.9805	27.565	.52569	7.0169	.37639
#3	.10033	.25151	.32604	1.9757	27.372	.52341	6.7948	.37395
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51962**	**29.049**	**.25255**	**5.6296**	**.29024**	**.61643**	**.20214**	**3.1122**
Stddev	.00075	.199	.00072	.0105	.00168	.00611	.01025	.0067
%RSD	.14413	.68651	.28652	.18630	.58005	.99164	5.0693	.21625
#1	.52008	29.270	.25178	5.6175	.29130	.61427	.19110	3.1145
#2	.52003	28.996	.25322	5.6359	.28830	.61169	.20398	3.1176
#3	.51876	28.882	.25264	5.6354	.29113	.62333	.21134	3.1047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606149601PS Acquired: 6/29/2016 13:38:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574645-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51169**	**.81148**	**.48297**	**.25279**	**.51036**	**.64217**	**.00009**
Stddev	.00096	.01402	.00273	.00253	.00157	.00146	.00054
%RSD	.18795	1.7283	.56579	.99895	.30669	.22793	566.34
#1	.51206	.82676	.48178	.25490	.51034	.64384	-.00036
#2	.51242	.80849	.48104	.24999	.50880	.64158	-.00005
#3	.51060	.79919	.48610	.25347	.51193	.64109	.00069
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8974.4**	**53921.**	**2529.2**
Stddev	18.9	362.	17.1
%RSD	.21065	.67063	.67636
#1	8952.7	53771.	2512.0
#2	8987.7	53659.	2529.4
#3	8982.6	54334.	2546.2

Approved: June 29, 2016

Sample Name: L1606149601SDL Acquired: 6/29/2016 13:42:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574645-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00267	.02265	.00439	.01861	.01991	.00001	34.038	.00076
Stddev	.00237	.00623	.00284	.00283	.00055	.00008	.351	.00013
%RSD	88.809	27.485	64.694	15.181	2.7467	583.76	1.0315	16.599
#1	.00540	.02732	.00767	.02173	.01932	.00010	33.853	.00073
#2	.00109	.02506	.00277	.01786	.02039	-.00004	33.818	.00066
#3	.00153	.01558	.00273	.01623	.02002	-.00002	34.443	.00090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	.00062	.02070	.01263	.64040	-.00117	.47919	.03072
Stddev	.00027	.00059	.00049	.02795	.07398	.00191	.11296	.00112
%RSD	120.29	95.891	2.3478	221.37	11.553	162.93	23.573	3.6479
#1	-.00024	.00108	.02099	-.01237	.70940	-.00228	.43966	.03057
#2	.00005	.00082	.02097	.04281	.56228	.00103	.60660	.03191
#3	-.00050	-.00005	.02014	.00744	.64953	-.00227	.39131	.02968
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	.87973	.00039	.11914	.01170	.00038	.00064	.15165
Stddev	.00069	.03146	.00108	.00344	.00381	.00470	.00283	.00126
%RSD	1754.8	3.5762	278.53	2.8862	32.581	1243.0	444.64	.83076
#1	.00075	.89723	-.00063	.11919	.00995	.00542	-.00262	.15021
#2	-.00033	.84341	.00027	.12255	.01607	-.00387	.00211	.15222
#3	-.00054	.89854	.00153	.11567	.00907	-.00041	.00242	.15252
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606149601SDL Acquired: 6/29/2016 13:42:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574645-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.07377	.00394	.00294	.00223	.03691	.00004
Stddev	.00105	.00059	.00619	.00218	.00071	.00013	.00071
%RSD	283.17	.80195	157.13	74.208	31.723	.34011	2011.1
#1	.00026	.07309	.00295	.00509	.00149	.03696	.00081
#2	-.00062	.07407	-.00170	.00073	.00229	.03677	-.00059
#3	.00147	.07415	.01056	.00299	.00290	.03700	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8856.7	53491.	2431.8
Stddev	12.0	145.	16.6
%RSD	.13541	.27109	.68401
#1	8870.2	53328.	2432.6
#2	8852.6	53606.	2448.0
#3	8847.3	53539.	2414.7

Approved: June 29, 2016

Sample Name: L1606149601SDL Acquired: 6/29/2016 13:46:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574645-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00062**	**.01470**	**.00246**	**.00724**	**.00491**	**.00005**	**6.6349**	**-.00015**
Stddev	.00282	.00852	.00115	.00218	.00150	.00009	.0736	.00025
%RSD	451.73	57.984	46.707	30.143	30.632	193.02	1.1088	164.73
#1	-.00099	.00499	.00287	.00765	.00563	-.00000	6.5913	.00009
#2	-.00324	.01818	.00116	.00918	.00318	.00015	6.5937	-.00014
#3	.00236	.02093	.00335	.00488	.00592	-.00001	6.7199	-.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**-.00122**	**.00474**	**.03942**	**.19051**	**-.00406**	**.04822**	**.00545**
Stddev	.00034	.00021	.00192	.01779	.11336	.00307	.07286	.00352
%RSD	1047.4	17.030	40.519	45.138	59.504	75.613	151.09	64.471
#1	-.00030	-.00121	.00678	.05654	.17314	-.00053	.05234	.00330
#2	.00038	-.00143	.00448	.02103	.31155	-.00557	.11894	.00951
#3	.00002	-.00101	.00297	.04068	.08684	-.00608	-.02661	.00354
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00077**	**.12457**	**.00002**	**.02721**	**.00302**	**-.00078**	**.00898**	**.02532**
Stddev	.00015	.01454	.00074	.00142	.00426	.00453	.00442	.00181
%RSD	19.478	11.672	3733.6	5.2076	141.20	578.54	49.243	7.1430
#1	.00088	.10778	.00072	.02560	.00160	.00186	.01203	.02733
#2	.00060	.13316	.00009	.02773	-.00035	-.00602	.01100	.02480
#3	.00082	.13275	-.00075	.02828	.00780	.00181	.00391	.02382
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 29, 2016

Sample Name: L1606149601SDL Acquired: 6/29/2016 13:46:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574645-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.01430	.00089	.00259	.00141	.00761	.00062
Stddev	.00074	.00024	.00368	.00450	.00065	.00017	.00019
%RSD	391.61	1.6814	415.80	174.00	46.484	2.1887	30.376
#1	.00037	.01408	-.00013	.00638	.00166	.00743	.00076
#2	.00082	.01455	-.00218	-.00238	.00066	.00767	.00070
#3	-.00062	.01428	.00497	.00376	.00189	.00775	.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8865.8	53275.	2415.4
Stddev	4.0	113.	10.8
%RSD	.04531	.21270	.44617
#1	8867.2	53400.	2402.9
#2	8861.3	53179.	2421.7
#3	8869.0	53246.	2421.5

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 13:50:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.43655	10.978	.43937	.54785	1.0971	.05438	10.826
Stddev	.00135	.026	.00061	.00327	.0027	.00007	.060
%RSD	.30979	.23937	.13954	.59651	.24424	.12669	.55629
#1	.43586	10.995	.43886	.54528	1.1000	.05445	10.888
#2	.43811	10.991	.44005	.54675	1.0947	.05439	10.823
#3	.43568	10.947	.43920	.55153	1.0965	.05431	10.768
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05470	.21964	.54715	F .55305	4.3512	54.438	1.0930
Stddev	.00008	.00037	.00087	.00183	.0224	.086	.0063
%RSD	.13926	.16924	.15951	.33062	.51567	.15724	.58110
#1	.05476	.21935	.54786	.55269	4.3680	54.532	1.0877
#2	.05473	.21950	.54618	.55503	4.3258	54.363	1.0911
#3	.05462	.22006	.54740	.55143	4.3599	54.420	1.1000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value				.50000			
Range				10.000%			

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.965	.54340	F 1.1048	54.727	F .55602	F 11.063	.54591
Stddev	.158	.00449	.0014	.079	.00146	.021	.00195
%RSD	1.4388	.82627	.12456	.14502	.26234	.18692	.35775
#1	10.792	.54102	1.1054	54.637	.55599	11.077	.54587
#2	11.001	.54858	1.1032	54.756	.55458	11.040	.54398
#3	11.101	.54060	1.1057	54.787	.55750	11.073	.54788
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Fail	Chk Fail	Chk Pass
Value			1.0000		.50000	10.000	
Range			10.000%		10.000%	10.000%	

Approved: June 29, 2016

Sample Name: CCV Acquired: 6/29/2016 13:50:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 1.3300	.43998	F 5.5688	F 1.1051	1.0953	1.0953	.54932
Stddev	.0066	.00256	.0043	.0016	.0007	.0085	.00440
%RSD	.49866	.58162	.07732	.14659	.06456	.77643	.80171
#1	1.3301	.44292	5.5647	1.1068	1.0952	1.0927	.55160
#2	1.3233	.43876	5.5685	1.1050	1.0960	1.1048	.54425
#3	1.3366	.43826	5.5733	1.1036	1.0946	1.0884	.55212
Check ?	Chk Fail	Chk Pass	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Pass
Value	1.2000		5.0000	1.0000			
Range	10.000%		10.000%	10.000%			

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0920	F 1.1025	F 1.1012
Stddev	.0020	.0007	.0052
%RSD	.18361	.06332	.47550
#1	1.0932	1.1031	1.1050
#2	1.0931	1.1018	1.0952
#3	1.0897	1.1027	1.1034
Check ?	Chk Pass	Chk Fail	Chk Fail
Value		1.0000	1.0000
Range		10.000%	10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8606.2	51334.	2377.1
Stddev	13.1	255.	10.7
%RSD	.15266	.49713	.44883
#1	8591.7	51291.	2365.7
#2	8609.4	51102.	2386.9
#3	8617.4	51607.	2378.8

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 13:53:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00124	.03388	.00187	.00598	.00209	.00006	.08905
Stddev	.00312	.00279	.00177	.00274	.00071	.00009	.03047
%RSD	252.10	8.2384	94.700	45.781	34.047	152.64	34.214
#1	.00089	.03254	.00070	.00844	.00286	-.00002	.07588
#2	-.00170	.03709	.00391	.00647	.00146	.00004	.06738
#3	.00452	.03202	.00101	.00303	.00195	.00015	.12389
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	-.00042	.00159	.00116	.00800	.16229	-.00336
Stddev	.00030	.00021	.00063	.00099	.05432	.13072	.00219
%RSD	163.94	50.275	39.779	85.074	679.20	80.545	65.297
#1	-.00048	-.00038	.00092	.00029	.00967	.31233	-.00486
#2	-.00018	-.00065	.00169	.00223	.06147	.07307	-.00438
#3	.00012	-.00023	.00218	.00096	-.04714	.10147	-.00084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01753	.00154	.00064	.09416	-.00033	F .01257	.00484
Stddev	.06865	.00210	.00048	.02475	.00047	.00868	.00535
%RSD	391.63	136.30	73.800	26.283	142.42	69.055	110.46
#1	.07238	-.00008	.00070	.09247	.00021	.01642	.00150
#2	.03967	.00391	.00109	.11972	-.00055	.01865	.00202
#3	-.05946	.00078	.00014	.07031	-.00064	.00263	.01101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						.01000	
Low Limit						-.01000	

Approved: June 29, 2016

Sample Name: CCB Acquired: 6/29/2016 13:53:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v986) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00070	-.00632	-.00767	-.00022	.00107	.00097	-.00047
Stddev	.00830	.00559	.00085	.00084	.00074	.00244	.00305
%RSD	1178.3	88.429	11.038	380.90	69.167	251.33	652.95
#1	-.00453	-.01035	-.00808	-.00056	.00181	.00204	.00282
#2	.01028	-.00867	-.00670	.00073	.00108	-.00182	-.00100
#3	-.00363	.00006	-.00824	-.00083	.00033	.00270	-.00322
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00266	.00298	.00156
Stddev	.00122	.00013	.00075
%RSD	45.925	4.4612	48.080
#1	.00394	.00304	.00243
#2	.00150	.00308	.00105
#3	.00253	.00283	.00121
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8689.4	52522.	2390.6
Stddev	12.8	95.	7.5
%RSD	.14773	.18164	.31458
#1	8704.2	52437.	2381.9
#2	8683.0	52504.	2394.6
#3	8681.0	52625.	2395.2

Approved: June 29, 2016

2.3.2 Metals ICP-MS Data

2.3.2.1 Summary Data

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW22-062116	**Prep Method:**	3015	**Prep Date:**	06/23/2016 10:15
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574742	**Analyst:**	JYH	**Run Date:**	06/30/2016 12:55
Collect Date:	06/21/2016 07:55	**Dilution:**	1	**File ID:**	NI.063016.125503
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00523		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.114		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00110	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00449		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.00227	J	0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00569	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.0767		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW22-062116	**Prep Method:**	3015	**Prep Date:**	06/23/2016 10:15
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574742	**Analyst:**	JYH	**Run Date:**	06/30/2016 14:42
Collect Date:	06/21/2016 07:55	**Dilution:**	20	**File ID:**	NI.063016.144253
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.353		0.120	0.0600	0.0300

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	C04F-062116	**Prep Method:**	3015	**Prep Date:**	06/23/2016 10:15
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574742	**Analyst:**	JYH	**Run Date:**	06/30/2016 12:58
Collect Date:	06/21/2016 08:55	**Dilution:**	1	**File ID:**	NI.063016.125815
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.000967	J	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00355	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00100	U	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00200	U	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.00400	U	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	C04F-062116	**Prep Method:**	3015	**Prep Date:**	06/23/2016 10:15
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574742	**Analyst:**	JYH	**Run Date:**	06/30/2016 14:46
Collect Date:	06/21/2016 08:55	**Dilution:**	20	**File ID:**	NI.063016.144605
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.311		0.120	0.0600	0.0300
Manganese, Total	7439-96-5	0.287		0.0800	0.0400	0.0200

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	C04FFD-062116	**Prep Method:**	3015	**Prep Date:**	06/23/2016 10:15
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574742	**Analyst:**	JYH	**Run Date:**	06/30/2016 13:01
Collect Date:	06/21/2016 08:55	**Dilution:**	1	**File ID:**	NI.063016.130126
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.000991	J	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00186	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00100	U	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00200	U	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.247		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00400	U	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	C04FFD-062116	**Prep Method:**	3015	**Prep Date:**	06/23/2016 10:15
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574742	**Analyst:**	JYH	**Run Date:**	06/30/2016 14:49
Collect Date:	06/21/2016 08:55	**Dilution:**	20	**File ID:**	NI.063016.144917
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.288		0.120	0.0600	0.0300

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW18-062116	**Prep Method:**	3015	**Prep Date:**	06/23/2016 10:15
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574742	**Analyst:**	JYH	**Run Date:**	06/30/2016 13:04
Collect Date:	06/21/2016 10:05	**Dilution:**	1	**File ID:**	NI.063016.130438
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.0161		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.0130		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.0229		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00266	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0270		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000115	J	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00313		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0175	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW18-062116	**Prep Method:**	3015	**Prep Date:**	06/23/2016 10:15
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574742	**Analyst:**	JYH	**Run Date:**	06/30/2016 14:52
Collect Date:	06/21/2016 10:05	**Dilution:**	100	**File ID:**	NI.063016.145228
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.713		0.600	0.300	0.150
Manganese, Total	7439-96-5	2.81		0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW18-062116	**Prep Method:**	3015	**Prep Date:**	06/23/2016 10:15
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574742	**Analyst:**	JYH	**Run Date:**	06/30/2016 13:07
Collect Date:	06/21/2016 11:15	**Dilution:**	1	**File ID:**	NI.063016.130749
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00541		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00126	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00100	U	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00107	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0497		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW18-062116	**Prep Method:**	3015	**Prep Date:**	06/23/2016 10:15
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/30/2016 10:48
Workgroup #:	WG574742	**Analyst:**	JYH	**Run Date:**	06/30/2016 14:55
Collect Date:	06/21/2016 11:15	**Dilution:**	100	**File ID:**	NI.063016.145540
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	1.01		0.600	0.300	0.150
Manganese, Total	7439-96-5	1.55		0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer NexION 300X

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	100
Vi = Initial volume	40
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/L)	0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	200
Vi = Initial volume	0.5
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/kg)	40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	40
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	50

50 ug/kg = 0.050 mg/kg

Perkin Elmer NexION ICP/MS

STANDARDS KEY

QC Std 1 - ICV
QC Std 2 - ICB
QC Std 3 - LLICV
QC Std 4 - ICSA
QC Std 5 - ICSAB
QC Std 6 - CCV
QC Std 7 - CCB
QC Std 8 - LLCCV

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.00005	0.05	0.1
Sb	10	0	0.00005	0.05	0.1
As	10	0	0.00005	0.05	0.1
Ba	10	0	0.00005	0.05	0.1
Be	10	0	0.00005	0.05	0.1
Ca	1000	0	0.005	5	10
Cd	10	0	0.0005	0.05	0.1
Cr	10	0	0.0005	0.05	0.1
Co	10	0	0.0005	0.05	0.1
Cu	10	0	0.0005	0.05	0.1
Fe	1000	0	0.005	5	10
Pb	10	0	0.00005	0.05	0.1
Mg	1000	0	0.005	5	10
Mn	10	0	0.00005	0.05	0.1
Ni	10	0	0.00005	0.05	0.1
K	1000	0	0.005	5	10
Se	10	0	0.00005	0.05	0.1
Ag	10	0	0.00005	0.05	0.1
Na	1000	0	0.005	5	10
Tl	10	0	0.00005	0.05	0.1
V	10	0	0.00005	0.05	0.1
U	1000	0	0.00005	0.05	0.1
Zn	10	0	0.00005	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG573868
Analyst: AC
Spike Analyst: AC
Run Date: 06/23/2016 10:15
Method: 3015
Balance: BAL016
Instrument: MW-3
Instrument Start: 06/23/2016 10:15

SOP: ME407 Revison 19
Spike Solution: STD75998
Spike Witness: ERP
HNO3 Lot #: COA18905
40 & 50 ML. DIGESTION TU COA18987
MS Filters- fisher-Lot#R RGT35621

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG573868-03	BLANK	1	20 mL	50 mL	183.491 g	183.497 g		
2	WG573868-04	LCS	1	20 mL	50 mL	183.538 g	183.527 g	.25 mL	
3	L16061129-01	SAMP	1	20 mL	50 mL	181.701 g	181.693 g		07/05/16
4	L16061129-02	SAMP	1	20 mL	50 mL	182.443 g	182.444 g		07/05/16
5	L16061129-03	SAMP	1	20 mL	50 mL	183.101 g	183.112 g		07/05/16
6	L16061129-04	SAMP	1	20 mL	50 mL	182.339 g	182.35 g		07/05/16
7	L16061129-05	SAMP	1	20 mL	50 mL	182.59 g	182.593 g		07/05/16
8	L16061130-01	SAMP	1	20 mL	50 mL	184.585 g	184.589 g		07/05/16
9	L16061130-02	SAMP	1	20 mL	50 mL	182.792 g	182.795 g		07/05/16
10	L16061130-03	SAMP	1	20 mL	50 mL	183.111 g	183.091 g		07/05/16
11	L16061130-04	SAMP	1	20 mL	50 mL	181.715 g	181.705 g		07/05/16
12	WG573868-01	REF	1	20 mL	50 mL	183.707 g	183.717 g		
13	L16061130-05	SAMP	1	20 mL	50 mL	183.707 g	183.717 g		07/05/16
14	L16061227-01	SAMP	1	20 mL	50 mL	183.249 g	183.249 g		07/01/16
15	L16061227-03	SAMP	1	20 mL	50 mL	183.479 g	183.48 g		07/01/16
16	L16061227-05	SAMP	1	20 mL	50 mL	182.421 g	182.42 g		07/01/16
17	L16061227-06	SAMP	1	20 mL	50 mL	182.489 g	182.485 g		07/01/16
18	L16061227-07	SAMP	1	20 mL	50 mL	181.61 g	181.617 g		07/01/16
19	WG573868-02	REF	2	20 mL	50 mL	182.633 g	182.61 g		
20	L16061229-03	SAMP	2	20 mL	50 mL	182.633 g	182.61 g		06/27/16
21	L16061238-01	SAMP	1	20 mL	50 mL	184.12 g	184.112 g		06/29/16
22	L16061238-02	SAMP	1	20 mL	50 mL	183.506 g	183.45 g		06/29/16
23	WG573868-05	MS	1	20 mL	50 mL	182.719 g	182.686 g	.25 mL	
24	WG573868-06	MSD	1	20 mL	50 mL	183.296 g	183.257 g	.25 mL	
25	WG573868-07	DUP	1	20 mL	50 mL	182.441 g	182.416 g		

Analyst: [signature]

Reviewer: [signature]

MW_DIG - Modified 09/30/2009
PDF ID: 4821140
Report generated: 06/23/2016 13:27

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 063016A.REP

Analyst1: JYH Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705

ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607

CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345

Stannous : Hydroxylamine :

Workgroups: 574744,574571,574742,574807,574804,574806,574849

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.063016.103549	Blank	Blank		1		06/30/16 10:35
2	NI.063016.103900	WG574800-01	Calibration Point		1		06/30/16 10:39
3	NI.063016.104212	WG574800-02	Calibration Point		1		06/30/16 10:42
4	NI.063016.104523	WG574800-03	Calibration Point		1		06/30/16 10:45
5	NI.063016.104835	WG574800-04	Calibration Point		1		06/30/16 10:48
6	NI.063016.105148	WG574800-05	Initial Calibration Verification		1		06/30/16 10:51
7	NI.063016.105501	WG574800-06	Initial Calib Blank		1		06/30/16 10:55
8	NI.063016.105814	WG574800-07	Low Level Initial Calibration V		1		06/30/16 10:58
9	NI.063016.110126	WG574800-08	Interference Check		1		06/30/16 11:01
10	NI.063016.110437	WG574800-09	Interference Check		1		06/30/16 11:04
11	NI.063016.110750	WG574800-10	CCV		1		06/30/16 11:07
12	NI.063016.111102	WG574800-11	CCB		1		06/30/16 11:11
13	NI.063016.111415	WG574201-01	Method/Prep Blank	10/100	1		06/30/16 11:14
14	NI.063016.111727	WG574201-02	Laboratory Control S	10/100	1		06/30/16 11:17
15	NI.063016.112039	WG574201-03	Laboratory Control S	10/100	1		06/30/16 11:20
16	NI.063016.112351	L16061384-01	BFB-16-019	10.031/100	1		06/30/16 11:23
17	NI.063016.112702	L16061384-03	BFB-16-020	10.038/100	1		06/30/16 11:27
18	NI.063016.113014	L16061384-05	BFB-16-021	10.027/100	1		06/30/16 11:30
19	NI.063016.113325	L16061384-07	BFB-16-022	10.009/100	1		06/30/16 11:33
20	NI.063016.113637	L16061384-09	BFB-16-023	10.025/100	1		06/30/16 11:36
21	NI.063016.113948	L16061384-11	BFB-16-024	10.048/100	1		06/30/16 11:39
22	NI.063016.114300	WG574744-01	Post Digestion Spike		1	L16061384-11	06/30/16 11:43
23	NI.063016.114613	WG574800-12	CCV		1		06/30/16 11:46
24	NI.063016.114924	WG574800-13	CCB		1		06/30/16 11:49
25	NI.063016.115237	WG574744-02	Serial Dilution		5	L16061384-11	06/30/16 11:52
26	NI.063016.115550	WG574800-14	CCV		1		06/30/16 11:55
27	NI.063016.115902	WG574800-15	CCB		1		06/30/16 11:59
28	NI.063016.120956	WG573868-03	Method/Prep Blank	20/50	1		06/30/16 12:09
29	NI.063016.121308	WG573868-04	Laboratory Control S	20/50	1		06/30/16 12:13
30	NI.063016.121619	WG573868-01	Reference Sample		1	L16061130-05	06/30/16 12:16
31	NI.063016.121931	WG573868-05	Matrix Spike	20/50	1	L16061130-05	06/30/16 12:19
32	NI.063016.122242	WG573868-06	Matrix Spike Duplica	20/50	1	L16061130-05	06/30/16 12:22
33	NI.063016.122554	L16061238-01	LF003MW0306-007	20/50	1		06/30/16 12:25
34	NI.063016.122905	L16061238-02	LF003MW0307-007	20/50	1		06/30/16 12:29

Page: 1 Approved: June 30, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 063016A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 574744,574571,574742,574807,574804,574806,574849

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.063016.123217	WG574742-01	Post Digestion Spike		1	L16061238-02	06/30/16 12:32
36	NI.063016.123551	WG574742-02	Serial Dilution		5	L16061238-02	06/30/16 12:35
37	NI.063016.123903	WG574742-02	Serial Dilution		25	L16061238-02	06/30/16 12:39
38	NI.063016.124216	WG574800-16	CCV		1		06/30/16 12:42
39	NI.063016.124527	WG574800-17	CCB		1		06/30/16 12:45
40	NI.063016.124840	WG573868-02	Reference Sample		1	L16061229-03	06/30/16 12:48
41	NI.063016.125152	WG573868-07	Duplicate	20/50	1	L16061229-03	06/30/16 12:51
42	NI.063016.125503	L16061227-01	18WW22-062116	20/50	1		06/30/16 12:55
43	NI.063016.125815	L16061227-03	C04F-062116	20/50	1		06/30/16 12:58
44	NI.063016.130126	L16061227-05	C04FFD-062116	20/50	1		06/30/16 13:01
45	NI.063016.130438	L16061227-06	18CPTMW18-062116	20/50	1		06/30/16 13:04
46	NI.063016.130749	L16061227-07	18WW18-062116	20/50	1		06/30/16 13:07
47	NI.063016.131101	L16061129-01	MW-22-002	20/50	1		06/30/16 13:11
48	NI.063016.131412	L16061129-02	MW-22-010	20/50	1		06/30/16 13:14
49	NI.063016.131724	L16061129-03	MW-22-007	20/50	1		06/30/16 13:17
50	NI.063016.132037	WG574800-18	CCV		1		06/30/16 13:20
51	NI.063016.132348	WG574800-19	CCB		1		06/30/16 13:23
52	NI.063016.132701	L16061129-04	FD061716	20/50	1		06/30/16 13:27
53	NI.063016.133013	L16061129-05	EB-WATER A	20/50	1		06/30/16 13:30
54	NI.063016.133324	L16061130-01	MW-23-012	20/50	1		06/30/16 13:33
55	NI.063016.133636	L16061130-02	MW-23-003	20/50	1		06/30/16 13:36
56	NI.063016.133947	L16061130-03	MW-23-013	20/50	1		06/30/16 13:39
57	NI.063016.134259	L16061130-04	MW-23-001	20/50	1		06/30/16 13:42
58	NI.063016.134610	L16061380-01	XU936TW003A	20/50	50		06/30/16 13:46
59	NI.063016.134922	L16061380-02	XU936TW003C	20/50	50		06/30/16 13:49
60	NI.063016.135234	WG574800-20	CCV		1		06/30/16 13:52
61	NI.063016.135546	WG574800-21	CCB		1		06/30/16 13:55
62	NI.063016.135859	WG574800-22	Low Level Continuing Calibra		1		06/30/16 13:58
63	NI.063016.140445	WG574262-01	Method/Prep Blank	.25/100	1		06/30/16 14:04
64	NI.063016.140756	WG574262-02	Laboratory Control S	.25/100	1		06/30/16 14:07
65	NI.063016.141108	WG574262-03	Laboratory Control S	.25/100	1		06/30/16 14:11
66	NI.063016.141419	L16061291-01	V6F0270-01	.251/100	1		06/30/16 14:14
67	NI.063016.141731	WG574807-01	Post Digestion Spike		1	L16061291-01	06/30/16 14:17
68	NI.063016.142042	WG574807-02	Serial Dilution		5	L16061291-01	06/30/16 14:20

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 063016A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 574744,574571,574742,574807,574804,574806,574849

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.063016.142354	WG574807-02	Serial Dilution		25	L16061291-01	06/30/16 14:23
70	NI.063016.142707	WG574800-23	CCV		1		06/30/16 14:27
71	NI.063016.143019	WG574800-24	CCB		1		06/30/16 14:30
72	NI.063016.143630	WG573868-02	Reference Sample		1000	L16061229-03	06/30/16 14:36
73	NI.063016.143942	WG573868-07	Duplicate	20/50	1000	L16061229-03	06/30/16 14:39
74	NI.063016.144253	L16061227-01	18WW22-062116	20/50	20		06/30/16 14:42
75	NI.063016.144605	L16061227-03	C04F-062116	20/50	20		06/30/16 14:46
76	NI.063016.144917	L16061227-05	C04FFD-062116	20/50	20		06/30/16 14:49
77	NI.063016.145228	L16061227-06	18CPTMW18-062116	20/50	100		06/30/16 14:52
78	NI.063016.145540	L16061227-07	18WW18-062116	20/50	100		06/30/16 14:55
79	NI.063016.145853	WG574800-25	CCV		1		06/30/16 14:58
80	NI.063016.150204	WG574800-26	CCB		1		06/30/16 15:02
81	NI.063016.150517	WG574800-27	Low Level Continuing Calibra		1		06/30/16 15:05
82	NI.063016.151448	WG573728-03	Method/Prep Blank	20/50	1		06/30/16 15:14
83	NI.063016.151800	WG573728-04	Laboratory Control S	20/50	1		06/30/16 15:18
84	NI.063016.152111	L16060996-01	MW-21-007		1	WG573728-01	06/30/16 15:21
85	NI.063016.152423	L16060996-02	MW-21-007 MS	20/50	1	WG573728-05	06/30/16 15:24
86	NI.063016.152734	L16060996-03	MW-21-007 MSD	20/50	1	WG573728-06	06/30/16 15:27
87	NI.063016.153046	L16061148-01	DP005SW0513-007	20/50	1		06/30/16 15:30
88	NI.063016.153357	L16061148-02	DP005SW0514-007	20/50	1		06/30/16 15:33
89	NI.063016.153709	WG574806-01	Post Digestion Spike		1	L16061148-02	06/30/16 15:37
90	NI.063016.154020	WG574806-02	Serial Dilution		5	L16061148-02	06/30/16 15:40
91	NI.063016.154332	WG574806-02	Serial Dilution		25	L16061148-02	06/30/16 15:43
92	NI.063016.154645	WG574800-28	CCV		1		06/30/16 15:46
93	NI.063016.154956	WG574800-29	CCB		1		06/30/16 15:49
94	NI.063016.155309	L16061150-01	SS007SW0709-007	20/50	1		06/30/16 15:53
95	NI.063016.155621	L16061150-02	SS007SW0710-007	20/50	1		06/30/16 15:56
96	NI.063016.155932	L16060996-04	MW-21-006	20/50	1		06/30/16 15:59
97	NI.063016.160243	L16060996-05	MW-21-002	20/50	1		06/30/16 16:02
98	NI.063016.160555	L16060996-06	FD-061516-21	20/50	1		06/30/16 16:05
99	NI.063016.160906	L16060996-07	MW-21-009	20/50	1		06/30/16 16:09
100	NI.063016.161218	L16060996-08	MW-21-005	20/50	1		06/30/16 16:12
101	NI.063016.161529	L16060996-09	MW-21-004	20/50	1		06/30/16 16:15
102	NI.063016.161840	L16061030-02	SW1A-322-14	20/50	1		06/30/16 16:18

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 063016A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 574744,574571,574742,574807,574804,574806,574849

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.063016.162152	L16061030-05	SW1B-322-14	20/50	1		06/30/16 16:21
104	NI.063016.162505	WG574800-30	CCV		1		06/30/16 16:25
105	NI.063016.162816	WG574800-31	CCB		1		06/30/16 16:28
106	NI.063016.163129	L16061030-08	SW2A-322-14	20/50	1		06/30/16 16:31
107	NI.063016.163440	L16061030-13	SW3A-322-14		1	WG573728-02	06/30/16 16:34
108	NI.063016.163752	L16061030-14	SW3A-322-14	20/50	1	WG573728-07	06/30/16 16:37
109	NI.063016.164103	L16061030-15	SW3A-322-14	20/50	1	WG573728-08	06/30/16 16:41
110	NI.063016.164415	L16061030-20	SW4A-322-14	20/50	1		06/30/16 16:44
111	NI.063016.170207	L16061030-23	SW5A-322-14	20/50	1		06/30/16 17:02
112	NI.063016.170519	WG574800-32	CCV		1		06/30/16 17:05
113	NI.063016.170831	WG574800-33	CCB		1		06/30/16 17:08
114	NI.063016.171143	WG573840-02	Method/Prep Blank	20/50	1		06/30/16 17:11
115	NI.063016.171455	WG573840-03	Laboratory Control S	20/50	1		06/30/16 17:14
116	NI.063016.171806	WG573840-01	Reference Sample		1	L16061068-13	06/30/16 17:18
117	NI.063016.172118	WG573840-04	Matrix Spike	20/50	1	L16061068-13	06/30/16 17:21
118	NI.063016.172429	WG573840-05	Matrix Spike Duplica	20/50	1	L16061068-13	06/30/16 17:24
119	NI.063016.172741	L16061228-01	SS007MWOB03-007	20/50	1		06/30/16 17:27
120	NI.063016.173052	L16061228-02	SS007MWN751-007	20/50	1		06/30/16 17:30
121	NI.063016.173403	WG574804-01	Post Digestion Spike		1	L16061228-02	06/30/16 17:34
122	NI.063016.173715	WG574804-02	Serial Dilution		5	L16061228-02	06/30/16 17:37
123	NI.063016.174026	WG574804-02	Serial Dilution		25	L16061228-02	06/30/16 17:40
124	NI.063016.174340	WG574800-34	CCV		1		06/30/16 17:43
125	NI.063016.174651	WG574800-35	CCB		1		06/30/16 17:46
126	NI.063016.175004	L16061065-01	MW-23-007	20/50	1		06/30/16 17:50
127	NI.063016.175316	L16061065-02	MW-23-006	20/50	1		06/30/16 17:53
128	NI.063016.175627	L16061065-03	MW-23-008	20/50	1		06/30/16 17:56
129	NI.063016.175939	L16061065-04	MW-23-009	20/50	1		06/30/16 17:59
130	NI.063016.180250	L16061065-05	MW-23-010	20/50	1		06/30/16 18:02
131	NI.063016.180602	L16061065-06	MW-23-011	20/50	1		06/30/16 18:06
132	NI.063016.180913	L16061068-04	C01-061716	20/50	1		06/30/16 18:09
133	NI.063016.181225	L16061068-05	C01FD-061716	20/50	1		06/30/16 18:12
134	NI.063016.181536	L16061068-11	MW19F-061716	20/50	1		06/30/16 18:15
135	NI.063016.181847	L16061228-03	SS007MWN753-007	20/50	1		06/30/16 18:18
136	NI.063016.182201	WG574800-36	CCV		1		06/30/16 18:22

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 063016A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 574744,574571,574742,574807,574804,574806,574849

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	NI.063016.182512	WG574800-37	CCB		1		06/30/16 18:25
138	NI.063016.182825	L16061231-01	FT002MW0205-007	20/50	1		06/30/16 18:28
139	NI.063016.183136	L16061237-01	SS007MWN769-007	20/50	1		06/30/16 18:31
140	NI.063016.183448	L16061237-02	SS007MWN740-007	20/50	1		06/30/16 18:34
141	NI.063016.183759	L16061237-03	SS007MWN740-007 DUP	20/50	1		06/30/16 18:37
142	NI.063016.184111	L16061237-04	SS007MWN738-007	20/50	1		06/30/16 18:41
143	NI.063016.184422	L16061237-05	SS007MWN741-007	20/50	1		06/30/16 18:44
144	NI.063016.184734	L16061237-06	SS007MWNOB09-007	20/50	1		06/30/16 18:47
145	NI.063016.185046	WG574800-38	CCV		1		06/30/16 18:50
146	NI.063016.185358	WG574800-39	CCB		1		06/30/16 18:53
147	NI.063016.185710	WG574593-02	Method/Prep Blank	20/50	1		06/30/16 18:57
148	NI.063016.190021	WG574593-03	Laboratory Control S	20/50	1		06/30/16 19:00
149	NI.063016.190333	WG574519-01	Fluid Blank 2		1		06/30/16 19:03
150	NI.063016.190644	WG574593-01	Reference Sample		1	L16061536-01	06/30/16 19:06
151	NI.063016.190956	WG574593-04	Duplicate	20/50	1	L16061536-01	06/30/16 19:09
152	NI.063016.191307	WG574593-05	Matrix Spike	20/50	1	L16061536-01	06/30/16 19:13
153	NI.063016.191619	WG574593-06	Matrix Spike Duplica	20/50	1	L16061536-01	06/30/16 19:16
154	NI.063016.191930	L16061496-02	60500-SSP0043-SSP0043	20/50	1		06/30/16 19:19
155	NI.063016.192242	WG574849-01	Post Digestion Spike		1	L16061496-02	06/30/16 19:22
156	NI.063016.192553	L16061496-02	60500-SSP0043-SSP0043		5		06/30/16 19:25
157	NI.063016.192906	WG574800-40	CCV		1		06/30/16 19:29
158	NI.063016.193217	WG574800-41	CCB		1		06/30/16 19:32
159	NI.063016.193530	WG574849-02	Serial Dilution		25	L16061496-02	06/30/16 19:35
160	NI.063016.193841	L16061498-01	AG6056	20/50	1		06/30/16 19:38
161	NI.063016.194153	L16061529-01	J6E1295-01	20/50	1		06/30/16 19:41
162	NI.063016.194506	L16061529-02	J6E1295-02	20/50	1		06/30/16 19:45
163	NI.063016.194817	L16061529-03	J6E1295-03	20/50	1		06/30/16 19:48
164	NI.063016.195129	L16061529-04	J6E1295-04	20/50	1		06/30/16 19:51
165	NI.063016.195440	L16061529-05	J6E1295-05	20/50	1		06/30/16 19:54
166	NI.063016.195752	L16061529-06	J6E1295-06	20/50	1		06/30/16 19:57
167	NI.063016.200103	L16061529-07	J6E1295-07	20/50	1		06/30/16 20:01
168	NI.063016.200415	L16061529-08	J6E1295-08	20/50	1		06/30/16 20:04
169	NI.063016.200728	WG574800-42	CCV		1		06/30/16 20:07
170	NI.063016.201039	WG574800-43	CCB		1		06/30/16 20:10

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 063016A.REP

Analyst1: JYH Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705

ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607

CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345

Stannous : Hydroxylamine :

Workgroups: 574744,574571,574742,574807,574804,574806,574849

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
171	NI.063016.201352	L16061529-09	J6E1295-09	20/50	1		06/30/16 20:13
172	NI.063016.201704	L16061529-10	J6E1295-10	20/50	1		06/30/16 20:17
173	NI.063016.202016	L16061529-11	J6E1295-11	20/50	1		06/30/16 20:20
174	NI.063016.202327	L16061529-12	J6E1295-12	20/50	1		06/30/16 20:23
175	NI.063016.202639	L16061529-13	J6E1295-13	20/50	1		06/30/16 20:26
176	NI.063016.202950	L16061532-01	TS935TW011A	20/50	1		06/30/16 20:29
177	NI.063016.203303	WG574800-44	CCV		1		06/30/16 20:33
178	NI.063016.203614	WG574800-45	CCB		1		06/30/16 20:36
179	NI.063016.203927	WG574800-46	Low Level Continuing Calibra		1		06/30/16 20:39
180	NI.063016.204240	L16060362-03	6060227-03		25		06/30/16 20:42
181	NI.063016.204553	WG574800-47	QC Std 6		1		06/30/16 20:45
182	NI.063016.204904	WG574800-48	QC Std 7		1		06/30/16 20:49

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Microbac Laboratories Inc.

Data Checklist

Date: 30-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 574800
Runlog ID: 76036
Analytical Workgroups: 574744,574571,574742,574807,574804,574806,574849

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1384,1129,1130,1065,996,1532
Level 4	1380,1227,1238,1068,1228,1231
	1237,1148,1150,1496,1498
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	BKT
Comments	

Primary Reviewer:
30-JUN-2016

Secondary Reviewer:
01-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-01-2016 12:44:08

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG574742

Login Number: L16061227

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW22-062116	01	06/21/16					06/23/2016	2.1	180		06/30/16	9.3	180	
18WW22-062116	01	06/21/16					06/23/2016	2.1	180		06/30/16	9.2	180	
C04F-062116	03	06/21/16					06/23/2016	2.1	180		06/30/16	9.2	180	
C04F-062116	03	06/21/16					06/23/2016	2.1	180		06/30/16	9.2	180	
C04FFD-062116	05	06/21/16					06/23/2016	2.1	180		06/30/16	9.2	180	
C04FFD-062116	05	06/21/16					06/23/2016	2.1	180		06/30/16	9.2	180	
18CPTMW18-062116	06	06/21/16					06/23/2016	2	180		06/30/16	9.2	180	
18CPTMW18-062116	06	06/21/16					06/23/2016	2	180		06/30/16	9.1	180	
18WW18-062116	07	06/21/16					06/23/2016	2	180		06/30/16	9.2	180	
18WW18-062116	07	06/21/16					06/23/2016	2	180		06/30/16	9.1	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4833722
Report generated 06/30/2016 15:34

METHOD BLANK SUMMARY

Login Number: L16061227
Blank File ID: NI.063016.120956
Prep Date: 06/23/16 10:15
Analyzed Date: 06/30/16 12:09
Analyst: JYH

Work Group: WG574742
Blank Sample ID: WG573868-03
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573868-04	NI.063016.121308	06/30/16 12:13	01
DUP	WG573868-07	NI.063016.125152	06/30/16 12:51	01
18WW22-062116	L16061227-01	NI.063016.125503	06/30/16 12:55	01
C04F-062116	L16061227-03	NI.063016.125815	06/30/16 12:58	01
C04FFD-062116	L16061227-05	NI.063016.130126	06/30/16 13:01	01
18CPTMW18-062116	L16061227-06	NI.063016.130438	06/30/16 13:04	01
18WW18-062116	L16061227-07	NI.063016.130749	06/30/16 13:07	01
DUP	WG573868-07	NI.063016.143942	06/30/16 14:39	DL01
18WW22-062116	L16061227-01	NI.063016.144253	06/30/16 14:42	DL01
C04F-062116	L16061227-03	NI.063016.144605	06/30/16 14:46	DL01
C04FFD-062116	L16061227-05	NI.063016.144917	06/30/16 14:49	DL01
18CPTMW18-062116	L16061227-06	NI.063016.145228	06/30/16 14:52	DL01
18WW18-062116	L16061227-07	NI.063016.145540	06/30/16 14:55	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4833723
Report generated 06/30/2016 15:34

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061227 Prep Date: 06/23/16 10:15 Sample ID: WG573868-03
Instrument ID: ICP-MS2 Run Date: 06/30/16 12:09 Prep Method: 3015
File ID: NI.063016.120956 Analyst: JYH Method: 6020A
Workgroup (AAB#): WG574742 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-30-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Antimony, Total	0.000500	0.00200	0.000500	1	U
Arsenic, Total	0.000500	0.00200	0.000500	1	U
Barium, Total	0.00150	0.00600	0.00150	1	U
Cadmium, Total	0.000300	0.00120	0.000300	1	U
Chromium, Total	0.00100	0.00400	0.00100	1	U
Cobalt, Total	0.000500	0.00200	0.000500	1	U
Copper, Total	0.00100	0.00400	0.00100	1	U
Lead, Total	0.000500	0.00200	0.000500	1	U
Manganese, Total	0.00100	0.00400	0.00100	1	U
Nickel, Total	0.00200	0.00800	0.00200	1	U
Silver, Total	0.000500	0.00200	0.000500	1	U
Thallium, Total	0.000100	0.000400	0.000100	1	U
Vanadium, Total	0.000500	0.00200	0.000500	1	U
Zinc, Total	0.0125	0.0500	0.0125	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4833724
30-JUN-2016 15:34

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061227 Run Date: 06/30/2016 Sample ID: WG573868-04
Instrument ID: ICP-MS2 Run Time: 12:13 Prep Method: 3015
File ID: NI.063016.121308 Analyst: JYH Method: 6020A
Workgroup (AAB#): WG574742 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD75998 Cal ID: ICP-MS-30-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Antimony, Total	0.125	0.127	101	80 - 120	
Arsenic, Total	0.125	0.128	102	80 - 120	
Barium, Total	0.125	0.126	100	80 - 120	
Cadmium, Total	0.125	0.125	99.8	80 - 120	
Chromium, Total	0.125	0.129	103	80 - 120	
Cobalt, Total	0.125	0.132	105	80 - 120	
Copper, Total	0.125	0.131	105	80 - 120	
Lead, Total	0.125	0.130	104	80 - 120	
Manganese, Total	0.125	0.131	104	80 - 120	
Nickel, Total	0.125	0.130	104	80 - 120	
Silver, Total	0.125	0.129	103	80 - 120	
Thallium, Total	0.125	0.127	102	80 - 120	
Vanadium, Total	0.125	0.127	102	80 - 120	
Zinc, Total	0.125	0.128	102	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4833725
Report generated: 06/30/2016 15:34

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061227 Cal ID: ICP-MS2- Worknum: WG574742
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG573868-01 File ID: NI.063016.121619 Dil: 1 Matrix: WATER
Sample ID: WG573868-05 MS File ID: NI.063016.121931 Dil: 1 Units: mg/L
Sample ID: WG573868-06 MSD File ID: NI.063016.122242 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Antimony	ND	0.125	0.117	93.8	0.125	0.119	95.1	1.39	80 - 120	20	
Arsenic	ND	0.125	0.124	99.3	0.125	0.122	97.4	1.91	80 - 120	20	
Barium	ND	0.125	0.122	97.7	0.125	0.124	99.3	1.58	80 - 120	20	
Cadmium	ND	0.125	0.122	97.7	0.125	0.123	98.3	0.675	80 - 120	20	
Chromium	ND	0.125	0.126	100	0.125	0.125	100	0.362	80 - 120	20	
Cobalt	ND	0.125	0.127	102	0.125	0.126	101	0.848	80 - 120	20	
Copper	0.00163	0.125	0.130	103	0.125	0.130	102	0.639	80 - 120	20	
Lead	ND	0.125	0.126	101	0.125	0.127	101	0.425	80 - 120	20	
Manganese	ND	0.125	0.125	100	0.125	0.125	99.6	0.448	80 - 120	20	
Nickel	ND	0.125	0.125	100	0.125	0.126	101	0.986	80 - 120	20	
Silver	ND	0.125	0.125	100	0.125	0.127	102	1.60	80 - 120	20	
Thallium	0.000112	0.125	0.123	98.7	0.125	0.125	99.5	0.891	80 - 120	20	
Vanadium	ND	0.125	0.124	99.3	0.125	0.124	99.1	0.212	80 - 120	20	
Zinc	ND	0.125	0.127	101	0.125	0.127	101	0.128	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4833726
Report generated 06/30/2016 15:34

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16061227 **Worknum:** WG574742
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG574742-02 **File ID:** NI.063016.123551 **Dil:** 5 **Units:** ug/L
Sample: L16061238-02 **File ID:** NI.063016.122905 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	ND	U	1.02	F	544.00	
Arsenic	2.91	X	3.02	F	3.50	
Barium	11.1	X	10.7	F	2.93	
Cadmium	ND	U	ND	U		
Chromium	1.91	X	ND	U		
Cobalt	ND	U	ND	U		
Copper	0.667	F	ND	U		
Lead	ND	U	ND	U		
Manganese	0.783	F	ND	U		
Nickel	1.28	F	ND	U		
Silver	ND	U	ND	U		
Thallium	ND	U	ND	U		
Vanadium	6.62	X	6.82	X	3.00	
Zinc	ND	U	ND	U		

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4833720
06/30/2016 15:34

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061227 **Worknum:** WG574742
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG574742-01 **File ID:** NI.063016.123217 **Dil:** 1 **Units:** ug/L
Sample ID: L16061238-02 **File ID:** NI.063016.122905 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	46.7		0	U	50	93.4	75 - 125	
ARSENIC	51.7		2.91		50	97.6	75 - 125	
BARIUM	57.6		11.1		50	93.0	75 - 125	
CADMIUM	47.1		0	U	50	94.1	75 - 125	
CHROMIUM	49.0		1.91		50	94.3	75 - 125	
COBALT	47.0		0	U	50	94.0	75 - 125	
COPPER	46.4		0.667	F	50	91.6	75 - 125	
LEAD	48.7		0	U	50	97.4	75 - 125	
MANGANESE	47.7		0.783	F	50	93.9	75 - 125	
NICKEL	46.6		1.28	F	50	90.6	75 - 125	
SILVER	44.7		0	U	50	89.3	75 - 125	
THALLIUM	48.1		0	U	50	96.1	75 - 125	
VANADIUM	55.1		6.62		50	96.9	75 - 125	
ZINC	49.2		0	U	50	98.5	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4833721
Report generated: 06/30/2016 15:34

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061227	Workgroup (AAB#):	WG574742
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG574800	Initial Calibration Date:	30-JUN-2016 10:48

	WG574800-01		WG574800-02		WG574800-03		WG574800-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	70.5	.4	244	50	257000	100	505000	.999999	
ARSENIC	0	-57.0	.4	-7.10	50	66000	100	130000	.999996	
BARIUM	0	88.3	.4	161	50	111000	100	218000	1	
CADMIUM	0	5.70	.4	103	50	117000	100	230000	.999999	
CHROMIUM	0	9640	.4	9940	50	454000	100	879000	.999978	
COBALT	0	279	.4	601	50	400000	100	794000	.999998	
COPPER	0	114	.4	243	50	110000	100	211000	.999876	
LEAD	0	884	.4	1800	50	996000	100	1960000	.999999	
MANGANESE	0	954	.4	1350	50	423000	100	839000	1	
NICKEL	0	359	.4	445	50	112000	100	216000	.999936	
SILVER	0	123	.4	427	50	368000	100	716000	.999987	
THALLIUM	0	39.7	.4	401	50	446000	100	873000	.999999	
VANADIUM	0	1950	.4	2310	50	460000	100	897000	.99998	
ZINC	0	366	.4	523	50	64900	100	126000	.999968	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4833729
Report generated: 30-JUN-2016 15:34

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061227
Run Date: 06/30/2016
Sample ID: WG574800-06
Instrument ID: ICP-MS2
Run Time: 10:55
Method: 6020A
File ID: NI.063016.105501
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574742
Cal ID: ICP-MS2 - 30-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
COPPER	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.2	U
THALLIUM	.04	.16	.04	U
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4833731
Report generated 06/30/2016 15:34

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/30/2016
Sample ID: WG574800-11
Instrument ID: ICP-MS2
Run Time: 11:11
Method: 6020A
File ID: NI.063016.111102
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574742
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4833734
Report generated 06/30/2016 15:34

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/30/2016
Sample ID: WG574800-15
Instrument ID: ICP-MS2
Run Time: 11:59
Method: 6020A
File ID: NI.063016.115902
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574742
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4833734
Report generated 06/30/2016 15:34

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/30/2016
Sample ID: WG574800-17
Instrument ID: ICP-MS2
Run Time: 12:45
Method: 6020A
File ID: NI.063016.124527
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574742
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4833734
Report generated 06/30/2016 15:34

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/30/2016
Sample ID: WG574800-19
Instrument ID: ICP-MS2
Run Time: 13:23
Method: 6020A
File ID: NI.063016.132348
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574742
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4833734
Report generated 06/30/2016 15:34

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/30/2016
Sample ID: WG574800-24
Instrument ID: ICP-MS2
Run Time: 14:30
Method: 6020A
File ID: NI.063016.143019
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574742
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4833734
Report generated 06/30/2016 15:34

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/30/2016
Sample ID: WG574800-26
Instrument ID: ICP-MS2
Run Time: 15:02
Method: 6020A
File ID: NI.063016.150204
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574742
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4833734
Report generated 06/30/2016 15:34

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061227 Run Date: 06/30/2016 Sample ID: WG574800-05
Instrument ID: ICP-MS2 Run Time: 10:51 Method: 6020A
File ID: NI.063016.105148 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG574742 Cal ID: ICP-MS - 30-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	49.0	98.1	90 - 110	
Arsenic		50	49.6	99.2	90 - 110	
Barium		50	49.4	98.8	90 - 110	
Cadmium		50	49.6	99.2	90 - 110	
Chromium		50	49.3	98.7	90 - 110	
Cobalt		50	50.0	99.9	90 - 110	
Copper		50	49.9	99.9	90 - 110	
Lead		50	50.0	99.9	90 - 110	
Manganese		50	49.5	99.0	90 - 110	
Nickel		50	49.8	99.6	90 - 110	
Silver		50	49.5	98.9	90 - 110	
Thallium		50	50.0	100	90 - 110	
Vanadium		50	49.7	99.4	90 - 110	
Zinc		50	50.5	101	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4833730
Report generated 06/30/2016 15:34

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/30/2016
Sample ID: WG574800-10
Instrument ID: ICP-MS2
Run Time: 11:07
Method: 6020A
File ID: NI.063016.110750
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574742
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0497	mg/L	99.4	90 - 110		
Arsenic		0.0500	0.0500	mg/L	100	90 - 110		
Barium		0.0500	0.0490	mg/L	98.0	90 - 110		
Cadmium		0.0500	0.0493	mg/L	98.6	90 - 110		
Chromium		0.0500	0.0496	mg/L	99.1	90 - 110		
Cobalt		0.0500	0.0509	mg/L	102	90 - 110		
Copper		0.0500	0.0502	mg/L	100	90 - 110		
Lead		0.0500	0.0502	mg/L	100	90 - 110		
Manganese		0.0500	0.0497	mg/L	99.4	90 - 110		
Nickel		0.0500	0.0499	mg/L	99.7	90 - 110		
Silver		0.0500	0.0494	mg/L	98.7	90 - 110		
Thallium		0.0500	0.0500	mg/L	100	90 - 110		
Vanadium		0.0500	0.0501	mg/L	100	90 - 110		
Zinc		0.0500	0.0501	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4833733
Report generated 06/30/2016 15:34

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/30/2016
Sample ID: WG574800-14
Instrument ID: ICP-MS2
Run Time: 11:55
Method: 6020A
File ID: NI.063016.115550
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574742
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0489	mg/L	97.9	90 - 110		
Arsenic		0.0500	0.0505	mg/L	101	90 - 110		
Barium		0.0500	0.0491	mg/L	98.2	90 - 110		
Cadmium		0.0500	0.0492	mg/L	98.5	90 - 110		
Chromium		0.0500	0.0499	mg/L	99.7	90 - 110		
Cobalt		0.0500	0.0516	mg/L	103	90 - 110		
Copper		0.0500	0.0511	mg/L	102	90 - 110		
Lead		0.0500	0.0510	mg/L	102	90 - 110		
Manganese		0.0500	0.0498	mg/L	99.6	90 - 110		
Nickel		0.0500	0.0505	mg/L	101	90 - 110		
Silver		0.0500	0.0493	mg/L	98.5	90 - 110		
Thallium		0.0500	0.0504	mg/L	101	90 - 110		
Vanadium		0.0500	0.0505	mg/L	101	90 - 110		
Zinc		0.0500	0.0504	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4833733
Report generated 06/30/2016 15:34

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/30/2016
Sample ID: WG574800-16
Instrument ID: ICP-MS2
Run Time: 12:42
Method: 6020A
File ID: NI.063016.124216
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574742
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0492	mg/L	98.4	90 - 110		
Arsenic		0.0500	0.0497	mg/L	99.4	90 - 110		
Barium		0.0500	0.0483	mg/L	96.7	90 - 110		
Cadmium		0.0500	0.0492	mg/L	98.3	90 - 110		
Chromium		0.0500	0.0498	mg/L	99.6	90 - 110		
Cobalt		0.0500	0.0506	mg/L	101	90 - 110		
Copper		0.0500	0.0505	mg/L	101	90 - 110		
Lead		0.0500	0.0513	mg/L	103	90 - 110		
Manganese		0.0500	0.0494	mg/L	98.7	90 - 110		
Nickel		0.0500	0.0501	mg/L	100	90 - 110		
Silver		0.0500	0.0491	mg/L	98.1	90 - 110		
Thallium		0.0500	0.0503	mg/L	101	90 - 110		
Vanadium		0.0500	0.0498	mg/L	99.5	90 - 110		
Zinc		0.0500	0.0500	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4833733
Report generated 06/30/2016 15:34

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/30/2016
Sample ID: WG574800-18
Instrument ID: ICP-MS2
Run Time: 13:20
Method: 6020A
File ID: NI.063016.132037
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574742
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0482	mg/L	96.5	90 - 110		
Arsenic		0.0500	0.0485	mg/L	97.1	90 - 110		
Barium		0.0500	0.0477	mg/L	95.5	90 - 110		
Cadmium		0.0500	0.0484	mg/L	96.8	90 - 110		
Chromium		0.0500	0.0498	mg/L	99.6	90 - 110		
Cobalt		0.0500	0.0497	mg/L	99.5	90 - 110		
Copper		0.0500	0.0489	mg/L	97.8	90 - 110		
Lead		0.0500	0.0510	mg/L	102	90 - 110		
Manganese		0.0500	0.0488	mg/L	97.6	90 - 110		
Nickel		0.0500	0.0489	mg/L	97.9	90 - 110		
Silver		0.0500	0.0482	mg/L	96.3	90 - 110		
Thallium		0.0500	0.0494	mg/L	98.7	90 - 110		
Vanadium		0.0500	0.0487	mg/L	97.4	90 - 110		
Zinc		0.0500	0.0490	mg/L	98.1	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4833733
Report generated 06/30/2016 15:34

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227 Run Date: 06/30/2016 Sample ID: WG574800-23
Instrument ID: ICP-MS2 Run Time: 14:27 Method: 6020A
File ID: NI.063016.142707 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG574742 Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0499	mg/L	99.8	90 - 110		
Arsenic		0.0500	0.0511	mg/L	102	90 - 110		
Barium		0.0500	0.0496	mg/L	99.1	90 - 110		
Cadmium		0.0500	0.0503	mg/L	101	90 - 110		
Chromium		0.0500	0.0525	mg/L	105	90 - 110		
Cobalt		0.0500	0.0506	mg/L	101	90 - 110		
Copper		0.0500	0.0522	mg/L	104	90 - 110		
Lead		0.0500	0.0528	mg/L	106	90 - 110		
Manganese		0.0500	0.0521	mg/L	104	90 - 110		
Nickel		0.0500	0.0525	mg/L	105	90 - 110		
Silver		0.0500	0.0494	mg/L	98.9	90 - 110		
Thallium		0.0500	0.0512	mg/L	102	90 - 110		
Vanadium		0.0500	0.0519	mg/L	104	90 - 110		
Zinc		0.0500	0.0518	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4833733
Report generated 06/30/2016 15:34

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/30/2016
Sample ID: WG574800-25
Instrument ID: ICP-MS2
Run Time: 14:58
Method: 6020A
File ID: NI.063016.145853
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574742
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0495	mg/L	98.9	90 - 110		
Arsenic		0.0500	0.0504	mg/L	101	90 - 110		
Barium		0.0500	0.0491	mg/L	98.2	90 - 110		
Cadmium		0.0500	0.0498	mg/L	99.6	90 - 110		
Chromium		0.0500	0.0504	mg/L	101	90 - 110		
Cobalt		0.0500	0.0496	mg/L	99.2	90 - 110		
Copper		0.0500	0.0507	mg/L	101	90 - 110		
Lead		0.0500	0.0521	mg/L	104	90 - 110		
Manganese		0.0500	0.0493	mg/L	98.5	90 - 110		
Nickel		0.0500	0.0508	mg/L	102	90 - 110		
Silver		0.0500	0.0490	mg/L	97.9	90 - 110		
Thallium		0.0500	0.0502	mg/L	100	90 - 110		
Vanadium		0.0500	0.0499	mg/L	99.8	90 - 110		
Zinc		0.0500	0.0507	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4833733
Report generated 06/30/2016 15:34

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061227
Run Date: 06/30/2016
Sample ID: WG574800-07
Instrument ID: ICP-MS2
Run Time: 10:58
Method: 6020A
File ID: NI.063016.105814
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574742
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.420	ug/L	105	70 - 130		
Arsenic		0.400	0.398	ug/L	99.5	70 - 130		
Barium		0.750	0.731	ug/L	97.5	70 - 130		
Cadmium		0.240	0.241	ug/L	101	70 - 130		
Chromium		0.800	0.644	ug/L	80.6	70 - 130		
Cobalt		0.400	0.390	ug/L	97.6	70 - 130		
Copper		0.800	0.780	ug/L	97.4	70 - 130		
Lead		0.200	0.204	ug/L	102	70 - 130		
Manganese		0.500	0.454	ug/L	90.8	70 - 130		
Nickel		1.60	1.54	ug/L	96.3	70 - 130		
Silver		0.400	0.401	ug/L	100	70 - 130		
Thallium		0.0800	0.0893	ug/L	112	70 - 130		
Vanadium		0.400	0.355	ug/L	88.7	70 - 130		
Zinc		6.25	5.98	ug/L	95.7	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4834007
Report generated 06/30/2016 15:40

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061227
Run Date: 06/30/2016
Sample ID: WG574800-22
Instrument ID: ICP-MS2
Run Time: 13:58
Method: 6020A
File ID: NI.063016.135859
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574742
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.406	ug/L	101	70 - 130		
Arsenic		0.400	0.408	ug/L	102	70 - 130		
Barium		0.750	0.678	ug/L	90.4	70 - 130		
Cadmium		0.240	0.242	ug/L	101	70 - 130		
Chromium		0.800	0.711	ug/L	88.8	70 - 130		
Cobalt		0.400	0.382	ug/L	95.5	70 - 130		
Copper		0.800	0.787	ug/L	98.3	70 - 130		
Lead		0.200	0.207	ug/L	104	70 - 130		
Manganese		0.500	0.471	ug/L	94.1	70 - 130		
Nickel		1.60	1.52	ug/L	94.8	70 - 130		
Silver		0.400	0.386	ug/L	96.5	70 - 130		
Thallium		0.0800	0.0865	ug/L	108	70 - 130		
Vanadium		0.400	0.336	ug/L	84.0	70 - 130		
Zinc		6.25	6.19	ug/L	99.1	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4834007
Report generated 06/30/2016 15:40

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061227
Run Date: 06/30/2016
Sample ID: WG574800-27
Instrument ID: ICP-MS2
Run Time: 15:05
Method: 6020A
File ID: NI.063016.150517
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574742
Cal ID: ICP-MS - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.411	ug/L	103	70 - 130		
Arsenic		0.400	0.411	ug/L	103	70 - 130		
Barium		0.750	0.703	ug/L	93.7	70 - 130		
Cadmium		0.240	0.234	ug/L	97.6	70 - 130		
Chromium		0.800	0.673	ug/L	84.1	70 - 130		
Cobalt		0.400	0.384	ug/L	95.9	70 - 130		
Copper		0.800	0.777	ug/L	97.1	70 - 130		
Lead		0.200	0.209	ug/L	104	70 - 130		
Manganese		0.500	0.449	ug/L	89.8	70 - 130		
Nickel		1.60	1.52	ug/L	95.3	70 - 130		
Silver		0.400	0.382	ug/L	95.4	70 - 130		
Thallium		0.0800	0.0853	ug/L	107	70 - 130		
Vanadium		0.400	0.356	ug/L	89.0	70 - 130		
Zinc		6.25	6.28	ug/L	101	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4834007
Report generated 06/30/2016 15:40

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061227
Instrument ID: ICP-MS2
Sol. A : WG574800-08 **File ID:** NI.063016.110126
Sol. AB : WG574800-09 **File ID:** NI.063016.110437

Workgroup (AAB#): WG574742
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.0513	NS	100	96.0	96.0	
Arsenic	NS	0.0233	NS	100	97.5	97.5	
Barium	NS	0.348	NS	100	95.6	95.6	
Cadmium	NS	-0.0809	NS	100	95.8	95.8	
Chromium	NS	0.0229	NS	100	94.9	94.9	
Cobalt	NS	0.0396	NS	100	94.9	94.9	
Copper	NS	0.304	NS	100	95.5	95.5	
Lead	NS	0.0556	NS	100	95.9	95.9	
Manganese	NS	0.116	NS	100	94.4	94.4	
Nickel	NS	0.412	NS	100	94.4	94.4	
Silver	NS	0.0314	NS	100	85.1	85.1	
Thallium	NS	0.0458	NS	100	95.8	95.8	
Vanadium	NS	0.0260	NS	100	96.0	96.0	
Zinc	NS	0.752	NS	100	98.3	98.3	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4833732
Report generated 06/30/2016 15:34

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16061227 **Analytical Method:** 6020
Analytical Workgroup: WG574742 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** JYH
ICAL Date: 30-JUN-2016 10:39

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16061227-01	SAMP	30-JUN-2016 12:55	101.015	98.12	101.781
L16061227-01	SAMP	30-JUN-2016 14:42	97.5	95.157	95.407
L16061227-03	SAMP	30-JUN-2016 12:58	105.245	101.267	104.105
L16061227-03	SAMP	30-JUN-2016 14:46	97.14	92.809	94.364
L16061227-05	SAMP	30-JUN-2016 13:01	106.025	102.883	105.48
L16061227-05	SAMP	30-JUN-2016 14:49	97.991	95.281	95.051
L16061227-06	SAMP	30-JUN-2016 13:04	87.362	90.224	90.497
L16061227-06	SAMP	30-JUN-2016 14:52	96.151	94.165	94.047
L16061227-07	SAMP	30-JUN-2016 13:07	99.844	102.737	101.972
L16061227-07	SAMP	30-JUN-2016 14:55	96.708	93.392	94.534
L16061238-02	SAMP	30-JUN-2016 12:29	94.171	96.354	95.307
WG573868-03	BLANK	30-JUN-2016 12:09	103.004	103.328	103.43
WG573868-04	LCS	30-JUN-2016 12:13	103.552	103.12	104.225
WG574742-01	PSPK	30-JUN-2016 12:32	94.902	98.669	95.916
WG574742-02	SERIAL	30-JUN-2016 12:35	95.76	95.909	94.745
WG574800-05	ICV	30-JUN-2016 10:51	97.371	98.497	97.785
WG574800-06	ICB	30-JUN-2016 10:55	98.231	98.427	97.708
WG574800-07	LLICV	30-JUN-2016 10:58	96.27	95.948	95.14
WG574800-08	ICS	30-JUN-2016 11:01	97.491	98.02	97.584
WG574800-09	ICS	30-JUN-2016 11:04	99.493	99.441	97.601
WG574800-10	CCV	30-JUN-2016 11:07	99.729	98.935	99.965
WG574800-11	CCB	30-JUN-2016 11:11	100.592	99.112	100.515
WG574800-14	CCV	30-JUN-2016 11:55	101.591	102.163	103.177
WG574800-15	CCB	30-JUN-2016 11:59	100.977	101.082	102.951
WG574800-16	CCV	30-JUN-2016 12:42	101.699	101.496	102.347
WG574800-17	CCB	30-JUN-2016 12:45	103.288	101.341	103.248
WG574800-18	CCV	30-JUN-2016 13:20	102.934	102.779	103.615
WG574800-19	CCB	30-JUN-2016 13:23	103.648	100.514	103.714
WG574800-22	LLCCV	30-JUN-2016 13:58	98.475	97.374	97.764
WG574800-23	CCV	30-JUN-2016 14:27	101.156	103.023	103.961
WG574800-24	CCB	30-JUN-2016 14:30	102.646	103.506	105.125
WG574800-25	CCV	30-JUN-2016 14:58	96.703	96.852	97.257
WG574800-26	CCB	30-JUN-2016 15:02	98.306	98.137	98.523
WG574800-27	LLCCV	30-JUN-2016 15:05	98.002	96.511	98.029

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4833728
Report generated: 06/30/2016 15:34

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16061227 **Date:** 04/19/2016
Insturment ID: ICP-MS2 **Method:** 6020A

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Uranium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4833727
Report generated: 06/30/2016 15:34

2.3.2.3 Raw Data

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Thursday, June 30, 2016 10:16:38

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1328	2024	0.711	
Mg	23.985	23.975	4505	2020	0.704	
Co	58.933	58.925	11694	2022	0.703	
In	114.904	114.925	22865	2028	0.690	
U	238.050	238.075	47462	2043	0.688	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	7.630
5.575	5.349
5.625	5.081
5.675	3.334
5.725	4.033
5.775	2.990
5.825	2.517
5.875	2.463
5.925	2.363
5.975	1.901
6.025	1.768
6.075	2.257
6.125	3.087
6.175	2.374
6.225	3.065
6.275	23.027
6.325	91.287
6.375	104.583
6.425	79.057
6.475	31.882
6.525	13.481
6.575	6.091
6.625	4.743
6.675	2.806
6.725	1.215
6.775	1.960
6.825	1.716

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6.875	1.994
6.925	0.718
6.975	0.930
7.025	1.375
7.075	2.469
7.125	1.868
7.175	1.445
7.225	1.854
7.275	2.308
7.325	12.753
7.375	83.853
7.425	70.711
7.475	70.711
7.525	93.541
7.575	60.858
7.625	46.481
7.675	70.711
7.725	34.401
7.775	119.523
7.825	50.000
7.875	37.268
7.925	127.476
7.975	34.233
8.025	91.287
8.075	38.030
8.125	35.355
8.175	60.858
8.225	81.223
8.275	81.441
8.325	81.441
8.375	108.327
8.425	136.931
8.475	55.902
22.525	70.711
22.575	39.033
22.625	61.341
22.675	56.983
22.725	46.220
22.775	20.787
22.825	34.401
22.875	19.357
22.925	29.463
22.975	26.998
23.025	25.078
23.075	21.812
23.125	32.010
23.175	13.608

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23.225	32.341
23.275	38.828
23.325	30.053
23.375	30.859
23.425	25.074
23.475	16.686
23.525	2.987
23.575	2.068
23.625	1.912
23.675	1.479
23.725	1.430
23.775	0.814
23.825	0.812
23.875	0.782
23.925	1.354
23.975	0.967
24.025	1.220
24.075	1.436
24.125	1.501
24.175	1.650
24.225	1.929
24.275	3.295
24.325	8.839
24.375	20.738
24.425	26.143
24.475	8.190
24.525	2.847
24.575	2.081
24.625	0.816
24.675	1.083
24.725	1.324
24.775	1.693
24.825	1.461
24.875	0.765
24.925	0.362
24.975	0.884
25.025	1.720
25.075	1.315
25.125	1.430
25.175	1.294
25.225	3.746
25.275	11.806
25.325	62.251
25.375	39.219
25.425	15.767
25.475	12.071
57.525	1.335

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57.575	1.767
57.625	2.181
57.675	2.009
57.725	2.029
57.775	2.254
57.825	2.922
57.875	2.887
57.925	1.630
57.975	0.949
58.025	1.557
58.075	1.747
58.125	1.182
58.175	2.238
58.225	3.336
58.275	23.538
58.325	30.609
58.375	13.574
58.425	14.809
58.475	3.919
58.525	2.582
58.575	1.791
58.625	2.908
58.675	2.527
58.725	1.367
58.775	1.571
58.825	1.717
58.875	1.142
58.925	2.124
58.975	0.937
59.025	1.704
59.075	1.389
59.125	1.584
59.175	2.144
59.225	3.699
59.275	31.869
59.325	40.825
59.375	45.799
59.425	31.345
59.475	10.995
59.525	6.778
59.575	1.800
59.625	2.865
59.675	3.974
59.725	4.516
59.775	2.063
59.825	2.491
59.875	2.616

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59.925	2.954
59.975	2.919
60.025	2.174
60.075	3.080
60.125	2.036
60.175	4.733
60.225	16.194
60.275	23.923
60.325	52.705
60.375	71.261
60.425	42.592
60.475	38.540
113.525	6.475
113.575	2.639
113.625	3.226
113.675	0.931
113.725	0.501
113.775	1.524
113.825	1.495
113.875	2.496
113.925	1.825
113.975	1.532
114.025	1.933
114.075	0.733
114.125	2.194
114.175	1.035
114.225	3.370
114.275	8.850
114.325	18.763
114.375	48.230
114.425	17.246
114.475	8.898
114.525	2.048
114.575	2.379
114.625	1.068
114.675	1.539
114.725	1.194
114.775	2.031
114.825	1.123
114.875	1.770
114.925	1.834
114.975	1.824
115.025	1.759
115.075	1.250
115.125	0.617
115.175	2.122
115.225	1.801

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115.275	5.203
115.325	13.734
115.375	42.592
115.425	21.114
115.475	17.678
115.525	14.002
115.575	6.607
115.625	3.973
115.675	2.459
115.725	3.163
115.775	1.631
115.825	3.014
115.875	3.357
115.925	1.866
115.975	3.156
116.025	3.757
116.075	2.834
116.125	2.480
116.175	4.209
116.225	6.098
116.275	20.916
116.325	64.359
116.375	109.139
116.425	32.969
116.475	54.772
236.525	
236.575	32.723
236.625	28.020
236.675	32.394
236.725	27.217
236.775	29.607
236.825	46.481
236.875	38.528
236.925	40.232
236.975	25.495
237.025	28.917
237.075	16.767
237.125	20.306
237.175	41.714
237.225	28.144
237.275	25.377
237.325	14.678
237.375	15.811
237.425	32.785
237.475	27.741
237.525	21.495
237.575	7.610

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237.625	6.358
237.675	0.613
237.725	2.011
237.775	1.691
237.825	0.412
237.875	0.870
237.925	0.892
237.975	0.832
238.025	0.851
238.075	1.242
238.125	0.975
238.175	0.909
238.225	1.242
238.275	1.635
238.325	2.249
238.375	2.589
238.425	3.619
238.475	2.494
238.525	6.239
238.575	22.114
238.625	31.950
238.675	23.742
238.725	41.271
238.775	13.284
238.825	23.799
238.875	20.490
238.925	20.729
238.975	25.009
239.025	10.012
239.075	10.866
239.125	21.209
239.175	17.275
239.225	8.810
239.275	26.290
239.325	15.160
239.375	31.836
239.425	35.067
239.475	24.022

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SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 6/30/2016 10:25:18 AM
End Time: 6/30/2016 10:27:30 AM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 7351.05
        Obtained Intensity (Mg 23.985): 182663.43
        Obtained Intensity (In 114.904): 78892.53
        Obtained Intensity (U 238.05): 164664.04
        Obtained Intensity (Bkgd 220): 0.27
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.021 (=4819.37 / 231640.41)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.012 (=2694.11 / 231640.41)
```

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SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 6/30/2016 10:25:18 AM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 7351.05
                Obtained Intensity (Mg 23.985): 182663.43
                Obtained Intensity (In 114.904): 78892.53
                Obtained Intensity (U 238.05): 164664.04
                Obtained Intensity (Bkgd 220): 0.27
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.021 (=4819.37 / 231640.41)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.012 (=2694.11 / 231640.41)
[Passed]  Optimum value(s): N/A

End Time: 6/30/2016 10:27:30 AM
```


Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Thursday, June 30, 2016 10:35:49
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74916.4	0.4				ug/L		Standard
	Be	9	10.0	50.0				ug/L		Standard
	Al	27	1821.8	4.2				ug/L		Standard
	Sc	45	55220.5	2.3				ug/L		Standard
	Ti	47	34.0	19.3				ug/L		Standard
	V	51	1937.5	2.5				ug/L		Standard
	Cr	52	9521.7	0.5				ug/L		Standard
	Cr	53	395.0	15.6				ug/L		Standard
	Mn	55	902.0	1.6				ug/L		Standard
	Co	59	262.3	7.9				ug/L		Standard
	Ni	60	370.7	8.4				ug/L		Standard
	Cu	65	105.7	3.8				ug/L		Standard
	Zn	66	398.3	3.8				ug/L		Standard
>	Ge	72	535147.0	1.3				ug/L		Standard
	As	75	-43.2	36.5				ug/L		Standard
	Se	82	13.7	13.4				ug/L		Standard
	Se-1	77	65.0	13.8				ug/L		Standard
>	Ga	71	96.7	26.0				mg/L		Standard
	Rb	85	15.0	88.2				ug/L		Standard
	Y	89	465703.7	0.2				ug/L		Standard
>	Rh	103	10.0	50.0				ug/L		Standard
	Mo	98	9.3	22.2				ug/L		Standard
	Ag	107	82.3	22.3				ug/L		Standard
	Cd	111	6.7	31.3				mg/L		Standard
	Cd	114	21.4	79.6				ug/L		Standard
>	In	115	619034.9	0.4				ug/L		Standard
	Sn	118	508.3	11.8				ug/L		Standard
	Sb	123	86.5	9.9				ug/L		Standard
	Ba	135	79.3	8.0				ug/L		Standard
	Ce	140	68.3	51.9				ug/L		Standard
>	Tb	159	986981.5	1.1				ug/L		Standard
	Ho	165	10.0	50.0				ug/L		Standard
	Tl	203	13.0	73.4				ug/L		Standard
	Tl	205	10.0	50.0				ug/L		Standard
	Pb	206	263.7	6.5				ug/L		Standard
	Pb	207	227.0	4.2				ug/L		Standard
	Pb	208	867.7	4.8				ug/L		Standard
	U	238	8.3	45.4				ug/L		Standard
>	Bi	209	541014.1	1.0				ug/L		Standard

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Na	23	1.7	173.2	mg/L	Standard
Mg	24	53.3	14.3	mg/L	Standard
K	39	53.3	37.9	mg/L	Standard
Ca	43	28.3	36.7	mg/L	Standard
Fe	54	180.5	24.2	mg/L	Standard
Fe	57	256.7	3.0	mg/L	Standard
> **Sc-1**	45	55220.5	2.3	mg/L	Standard
Cl	35	35503.6	2.5	ug/L	Standard
Kr	83	1.7	69.3	ug/L	Standard
Br	81	2040.1	4.5	ug/L	Standard
P	31	20435.5	5.2	ug/L	Standard
S	34	2430.2	2.4	ug/L	Standard
Sr	88	75.0	24.0	ug/L	Standard
C	12	293.3	19.4	mg/L	Standard
N	14	0.0		mg/L	Standard
Hg	202	6.7	86.6	mg/L	Standard
Dy	164	8.9	104.8	mg/L	Standard
Ho-1	165	10.0	50.0	mg/L	Standard
Er	166	23.3	89.2	mg/L	Standard
I	127	1808.4	6.4	mg/L	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Thursday, June 30, 2016 10:39:00
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73168.0	2.3				ug/L	74916	Standard
	Be	9	18.3	41.7				ug/L	10	Standard
	Al	27	1861.8	6.0				ug/L	1822	Standard
	Sc	45	55454.6	1.0				ug/L	55220	Standard
	Ti	47	36.7	1.6				ug/L	34	Standard
	V	51	1952.1	3.2				ug/L	1938	Standard
	Cr	52	9643.4	1.2				ug/L	9522	Standard
	Cr	53	401.7	8.7				ug/L	395	Standard
	Mn	55	953.7	5.3				ug/L	902	Standard
	Co	59	279.0	21.4				ug/L	262	Standard
	Ni	60	359.3	5.8				ug/L	371	Standard
	Cu	65	114.3	1.0				ug/L	106	Standard
	Zn	66	366.0	3.4				ug/L	398	Standard
>	Ge	72	539086.2	1.2				ug/L	535147	Standard
	As	75	-57.0	25.6				ug/L	-43	Standard
	Se	82	17.9	18.3				ug/L	14	Standard
	Se-1	77	61.7	4.7				ug/L	65	Standard
>	Ga	71	95.0	29.3				mg/L	97	Standard
	Rb	85	35.0	24.7				ug/L	15	Standard
	Y	89	475042.0	0.3				ug/L	465704	Standard
>	Rh	103	18.3	15.7				ug/L	10	Standard
	Mo	98	4.2	10.7				ug/L	9	Standard
	Ag	107	122.7	49.1				ug/L	82	Standard
	Cd	111	5.7	113.6				mg/L	7	Standard
	Cd	114	21.7	100.9				ug/L	21	Standard
>	In	115	616759.5	0.1				ug/L	619035	Standard
	Sn	118	495.0	9.3				ug/L	508	Standard
	Sb	123	70.5	74.4				ug/L	86	Standard
	Ba	135	88.3	26.2				ug/L	79	Standard
	Ce	140	181.7	151.8				ug/L	68	Standard
>	Tb	159	989061.2	1.8				ug/L	986982	Standard
	Ho	165	8.3	124.9				ug/L	10	Standard
	Tl	203	39.7	160.1				ug/L	13	Standard
	Tl	205	28.3	142.6				ug/L	10	Standard
	Pb	206	285.3	17.3				ug/L	264	Standard
	Pb	207	226.7	15.6				ug/L	227	Standard
	Pb	208	883.7	9.2				ug/L	868	Standard
	U	238	17.7	134.0				ug/L	8	Standard
>	Bi	209	540861.9	0.7				ug/L	541014	Standard

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	Na	23	0.0		mg/L	2	Standard
	Mg	24	56.7	41.7	mg/L	53	Standard
	K	39	36.7	41.7	mg/L	53	Standard
	Ca	43	46.7	16.4	mg/L	28	Standard
	Fe	54	178.9	5.0	mg/L	181	Standard
	Fe	57	258.3	9.5	mg/L	257	Standard
>	**Sc-1**	45	55454.6	1.0	mg/L	55220	Standard
	Cl	35	35327.8	0.4	ug/L	35504	Standard
	Kr	83	2.7	57.3	ug/L	2	Standard
	Br	81	2013.5	0.6	ug/L	2040	Standard
	P	31	20338.7	3.7	ug/L	20435	Standard
	S	34	2328.5	3.8	ug/L	2430	Standard
	Sr	88	75.0	33.3	ug/L	75	Standard
	C	12	266.7	24.4	mg/L	293	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	0.0		mg/L	7	Standard
	Dy	164	2.2	285.5	mg/L	9	Standard
	Ho-1	165	8.3	124.9	mg/L	10	Standard
	Er	166	23.3	49.5	mg/L	23	Standard
	I	127	1715.1	9.7	mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: Standard 1
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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 1
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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Thursday, June 30, 2016 10:42:12
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72707.4	2.7				ug/L	74916	Standard
	Be	9	55.0	24.1				ug/L	10	Standard
	Al	27	8810.9	6.1				ug/L	1822	Standard
	Sc	45	55881.2	1.6				ug/L	55220	Standard
	Ti	47	71.3	25.6				ug/L	34	Standard
	V	51	2314.2	6.8				ug/L	1938	Standard
	Cr	52	9938.6	0.7				ug/L	9522	Standard
	Cr	53	495.0	15.3				ug/L	395	Standard
	Mn	55	1353.1	1.7				ug/L	902	Standard
	Co	59	601.3	1.5				ug/L	262	Standard
	Ni	60	444.7	3.8				ug/L	371	Standard
	Cu	65	243.3	5.3				ug/L	106	Standard
	Zn	66	523.0	8.5				ug/L	398	Standard
>	Ge	72	542852.5	0.7				ug/L	535147	Standard
	As	75	-7.1	315.0				ug/L	-43	Standard
	Se	82	20.2	32.1				ug/L	14	Standard
	Se-1	77	57.7	10.6				ug/L	65	Standard
>	Ga	71	103.3	22.9				mg/L	97	Standard
	Rb	85	45.0	48.4				ug/L	15	Standard
	Y	89	482686.3	1.8				ug/L	465704	Standard
>	Rh	103	15.0	57.7				ug/L	10	Standard
	Mo	98	276.1	8.9				ug/L	9	Standard
	Ag	107	427.3	2.1				ug/L	82	Standard
	Cd	111	102.5	11.8				mg/L	7	Standard
	Cd	114	241.2	14.1				ug/L	21	Standard
>	In	115	624979.9	1.0				ug/L	619035	Standard
	Sn	118	1010.0	34.3				ug/L	508	Standard
	Sb	123	243.8	4.7				ug/L	86	Standard
	Ba	135	160.7	8.2				ug/L	79	Standard
	Ce	140	43.3	35.3				ug/L	68	Standard
>	Tb	159	995051.3	1.5				ug/L	986982	Standard
	Ho	165	11.7	107.9				ug/L	10	Standard
	Tl	203	401.3	6.5				ug/L	13	Standard
	Tl	205	330.0	13.5				ug/L	10	Standard
	Pb	206	514.0	4.8				ug/L	264	Standard
	Pb	207	440.3	5.0				ug/L	227	Standard
	Pb	208	1803.0	2.1				ug/L	868	Standard
	U	238	318.0	5.0				ug/L	8	Standard
>	Bi	209	540720.8	0.8				ug/L	541014	Standard

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	Na	23	0.0		mg/L	2	Standard
	Mg	24	36.7	105.9	mg/L	53	Standard
	K	39	48.3	57.0	mg/L	53	Standard
	Ca	43	30.0	33.3	mg/L	28	Standard
	Fe	54	184.1	19.1	mg/L	181	Standard
	Fe	57	255.0	7.1	mg/L	257	Standard
>	**Sc-1**	45	55881.2	1.6	mg/L	55220	Standard
	Cl	35	35839.7	1.1	ug/L	35504	Standard
	Kr	83	1.3	43.3	ug/L	2	Standard
	Br	81	1970.1	12.0	ug/L	2040	Standard
	P	31	19911.4	2.6	ug/L	20435	Standard
	S	34	2461.9	5.7	ug/L	2430	Standard
	Sr	88	85.0	31.1	ug/L	75	Standard
	C	12	176.7	8.6	mg/L	293	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	0.0		mg/L	7	Standard
	Dy	164	149.0	35.5	mg/L	9	Standard
	Ho-1	165	11.7	107.9	mg/L	10	Standard
	Er	166	20.0	0.0	mg/L	23	Standard
	I	127	2015.1	5.0	mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Thursday, June 30, 2016 10:45:23
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68983.4	2.1				ug/L	74916	Standard
	Be	9	48367.2	4.1	**50.0000**	1.404	2.8	ug/L	10	Standard
	Al	27	7972073.9	2.0	**50.0000**	0.467	0.9	ug/L	1822	Standard
	Sc	45	52755.0	2.1				ug/L	55220	Standard
	Ti	47	40601.0	0.6	**100.0000**	1.612	1.6	ug/L	34	Standard
	V	51	460078.2	1.8	**50.0000**	0.531	1.1	ug/L	1938	Standard
	Cr	52	454436.3	1.4	**50.0000**	0.663	1.3	ug/L	9522	Standard
	Cr	53	55469.7	2.6	**50.0000**	1.635	3.3	ug/L	395	Standard
	Mn	55	423456.2	1.6	**50.0000**	0.702	1.4	ug/L	902	Standard
	Co	59	399872.6	2.0	**50.0000**	0.614	1.2	ug/L	262	Standard
	Ni	60	111808.1	1.4	**50.0000**	0.643	1.3	ug/L	371	Standard
	Cu	65	110333.0	1.1	**50.0000**	0.836	1.7	ug/L	106	Standard
	Zn	66	64857.2	2.2	**50.0000**	1.100	2.2	ug/L	398	Standard
>	**Ge**	72	526457.8	1.2				ug/L	535147	Standard
	As	75	65989.7	1.5	**50.0000**	0.778	1.6	ug/L	-43	Standard
	Se	82	6684.8	2.5	**50.0000**	0.729	1.5	ug/L	14	Standard
	Se-1	77	4547.7	2.0	**50.0000**	0.855	1.7	ug/L	65	Standard
>	**Ga**	71	88.3	42.5				mg/L	97	Standard
	Rb	85	925.0	7.6				ug/L	15	Standard
	Y	89	458987.7	1.5				ug/L	465704	Standard
>	**Rh**	103	40.0	50.0				ug/L	10	Standard
	Mo	98	300517.9	1.7	**100.0000**	1.196	1.2	ug/L	9	Standard
	Ag	107	368336.5	1.3	**50.0000**	0.495	1.0	ug/L	82	Standard
	Cd	111	117284.8	2.5	**50.0000**	0.847	1.7	mg/L	7	Standard
	Cd	114	285421.9	3.9	**50.0000**	1.210	2.4	ug/L	21	Standard
>	**In**	115	601036.1	1.7				ug/L	619035	Standard
	Sn	118	316578.1	2.8	**50.0000**	1.497	3.0	ug/L	508	Standard
	Sb	123	256746.9	1.1	**50.0000**	0.856	1.7	ug/L	86	Standard
	Ba	135	110969.6	1.5	**50.0000**	0.201	0.4	ug/L	79	Standard
	Ce	140	148.3	71.5				ug/L	68	Standard
>	**Tb**	159	962177.6	0.4				ug/L	986982	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	446239.6	0.2	**50.0000**	0.331	0.7	ug/L	13	Standard
	Tl	205	381081.2	0.4	**50.0000**	0.342	0.7	ug/L	10	Standard
	Pb	206	286636.0	1.6	**50.0000**	1.103	2.2	ug/L	264	Standard
	Pb	207	258526.4	1.8	**50.0000**	1.236	2.5	ug/L	227	Standard
	Pb	208	996447.9	1.4	**50.0000**	0.992	2.0	ug/L	868	Standard
	U	238	363811.3	1.8	**50.0000**	1.240	2.5	ug/L	8	Standard
>	**Bi**	209	528328.4	0.7				ug/L	541014	Standard

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Na	23	1.7	173.2	**5.0000**	8.652	173.0	mg/L	2	Standard
Mg	24	4435.6	3.0	**5.0000**	0.174	3.5	mg/L	53	Standard
K	39	2920.3	4.4	**5.0000**	0.139	2.8	mg/L	53	Standard
Ca	43	115.0	17.4	**5.0000**	1.130	22.6	mg/L	28	Standard
Fe	54	7160.1	1.1	**5.0000**	0.062	1.2	mg/L	181	Standard
Fe	57	2058.5	5.3	**5.0000**	0.343	6.9	mg/L	257	Standard
> **Sc-1**	45	52755.0	2.1				mg/L	55220	Standard
Cl	35	36143.1	1.7				ug/L	35504	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1956.8	4.7				ug/L	2040	Standard
P	31	21276.6	4.0				ug/L	20435	Standard
S	34	2776.9	2.8				ug/L	2430	Standard
Sr	88	73.3	3.9				ug/L	75	Standard
C	12	156.7	9.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	7	Standard
Dy	164	5.4	211.7				mg/L	9	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	26.7	21.7				mg/L	23	Standard
I	127	1676.8	9.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 3
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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Thursday, June 30, 2016 10:48:35
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67369.5	1.7				ug/L	74916	Standard
	Be	9	95332.6	4.2	**100.4528**	2.854	2.8	ug/L	10	Standard
	Al	27	15638994.9	1.2	**100.2191**	0.593	0.6	ug/L	1822	Standard
	Sc	45	52572.7	1.6				ug/L	55220	Standard
	Ti	47	80471.2	2.1	**200.1947**	3.941	2.0	ug/L	34	Standard
	V	51	897077.3	1.5	**99.3635**	0.751	0.8	ug/L	1938	Standard
	Cr	52	878500.8	1.1	**99.3377**	0.531	0.5	ug/L	9522	Standard
	Cr	53	108574.4	1.8	**99.6484**	2.481	2.5	ug/L	395	Standard
	Mn	55	838539.2	2.6	**100.0892**	2.008	2.0	ug/L	902	Standard
	Co	59	794185.3	2.3	**100.1981**	1.503	1.5	ug/L	262	Standard
	Ni	60	215992.5	1.4	**98.8706**	0.739	0.7	ug/L	371	Standard
	Cu	65	211433.7	0.6	**98.4255**	0.669	0.7	ug/L	106	Standard
	Zn	66	125887.2	1.2	**99.2056**	0.438	0.4	ug/L	398	Standard
>	Ge	72	520828.8	0.8				ug/L	535147	Standard
	As	75	129933.5	1.4	**99.7289**	1.641	1.6	ug/L	-43	Standard
	Se	82	13193.5	0.9	**99.9295**	1.041	1.0	ug/L	14	Standard
	Se-1	77	8690.2	2.7	**98.5326**	2.339	2.4	ug/L	65	Standard
>	Ga	71	120.0	7.2				mg/L	97	Standard
	Rb	85	1946.8	5.2				ug/L	15	Standard
	Y	89	455643.2	0.7				ug/L	465704	Standard
>	Rh	103	55.0	27.3				ug/L	10	Standard
	Mo	98	599287.7	1.5	**201.5560**	2.360	1.2	ug/L	9	Standard
	Ag	107	715847.1	1.4	**99.4950**	1.075	1.1	ug/L	82	Standard
	Cd	111	229739.0	1.4	**99.8878**	1.448	1.4	mg/L	7	Standard
	Cd	114	547495.4	2.0	**98.8512**	2.232	2.3	ug/L	21	Standard
>	In	115	589960.6	0.7				ug/L	619035	Standard
	Sn	118	620778.1	1.3	**99.9891**	1.397	1.4	ug/L	508	Standard
	Sb	123	505252.4	1.5	**100.1114**	1.378	1.4	ug/L	86	Standard
	Ba	135	218020.5	1.0	**100.0495**	1.309	1.3	ug/L	79	Standard
	Ce	140	136.7	11.2				ug/L	68	Standard
>	Tb	159	952291.8	0.6				ug/L	986982	Standard
	Ho	165	18.3	31.5				ug/L	10	Standard
	Tl	203	872534.7	0.8	**99.8943**	0.590	0.6	ug/L	13	Standard
	Tl	205	745726.0	1.8	**99.9319**	1.346	1.3	ug/L	10	Standard
	Pb	206	560083.0	1.8	**99.8785**	1.571	1.6	ug/L	264	Standard
	Pb	207	507226.4	1.1	**100.0807**	0.918	0.9	ug/L	227	Standard
	Pb	208	1956705.3	0.7	**100.1279**	0.743	0.7	ug/L	868	Standard
	U	238	732371.6	1.4	**101.3423**	0.755	0.7	ug/L	8	Standard
>	Bi	209	517571.9	0.7				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	8717.5	4.3	**9.9469**	0.489	4.9	mg/L	53	Standard
K	39	5526.0	4.4	**9.7799**	0.589	6.0	mg/L	53	Standard
Ca	43	191.7	6.6	**9.7213**	0.568	5.8	mg/L	28	Standard
Fe	54	14164.2	4.7	**10.0228**	0.580	5.8	mg/L	181	Standard
Fe	57	3798.8	6.3	**9.9068**	0.665	6.7	mg/L	257	Standard
Sc-1	45	52572.7	1.6				mg/L	55220	Standard
Cl	35	35283.0	1.9				ug/L	35504	Standard
Kr	83	3.3	69.3				ug/L	2	Standard
Br	81	1953.5	1.5				ug/L	2040	Standard
P	31	22002.6	2.6				ug/L	20435	Standard
S	34	2656.9	6.5				ug/L	2430	Standard
Sr	88	53.3	23.6				ug/L	75	Standard
C	12	190.0	13.9				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	16.0	70.4				mg/L	9	Standard
Ho-1	165	18.3	31.5				mg/L	10	Standard
Er	166	13.3	86.6				mg/L	23	Standard
I	127	1825.1	3.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998

Sample ID: Standard 4
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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Thursday, June 30, 2016 10:51:48
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67351.1	1.6				ug/L	74916	Standard
	Be	9	48467.4	1.1	**51.0988**	0.634	1.2	ug/L	10	Standard
	Al	27	7996341.6	4.4	**51.2380**	1.451	2.8	ug/L	1822	Standard
	Sc	45	52557.8	3.9				ug/L	55220	Standard
	Ti	47	40171.9	1.7	**98.7092**	0.932	0.9	ug/L	34	Standard
	V	51	454957.7	1.1	**49.6959**	0.243	0.5	ug/L	1938	Standard
	Cr	52	446215.6	1.6	**49.3363**	0.396	0.8	ug/L	9522	Standard
	Cr	53	54578.1	1.1	**49.2937**	0.265	0.5	ug/L	395	Standard
	Mn	55	420081.9	2.7	**49.4914**	1.060	2.1	ug/L	902	Standard
	Co	59	400918.1	2.1	**49.9700**	0.795	1.6	ug/L	262	Standard
	Ni	60	110250.7	0.8	**49.7955**	0.072	0.1	ug/L	371	Standard
	Cu	65	108650.5	0.5	**49.9472**	0.257	0.5	ug/L	106	Standard
	Zn	66	65025.6	2.2	**50.4617**	0.801	1.6	ug/L	398	Standard
>	Ge	72	527102.6	0.8				ug/L	535147	Standard
	As	75	65350.8	1.2	**49.5867**	0.180	0.4	ug/L	-43	Standard
	Se	82	6565.5	1.3	**49.0843**	0.359	0.7	ug/L	14	Standard
	Se-1	77	4457.7	1.3	**49.6612**	0.976	2.0	ug/L	65	Standard
>	Ga	71	85.0	25.6				mg/L	97	Standard
	Rb	85	945.0	13.2				ug/L	15	Standard
	Y	89	464922.4	1.0				ug/L	465704	Standard
>	Rh	103	41.7	38.6				ug/L	10	Standard
	Mo	98	296691.4	1.5	**97.2606**	1.381	1.4	ug/L	9	Standard
	Ag	107	365082.9	0.7	**49.4519**	0.182	0.4	ug/L	82	Standard
	Cd	111	117076.7	0.2	**49.6152**	0.191	0.4	mg/L	7	Standard
	Cd	114	282101.6	2.6	**49.6402**	1.043	2.1	ug/L	21	Standard
>	In	115	605322.8	0.5				ug/L	619035	Standard
	Sn	118	311722.6	1.2	**48.8804**	0.420	0.9	ug/L	508	Standard
	Sb	123	253974.8	1.6	**49.0470**	0.652	1.3	ug/L	86	Standard
	Ba	135	110464.9	1.5	**49.3927**	0.528	1.1	ug/L	79	Standard
	Ce	140	80.0	31.3				ug/L	68	Standard
>	Tb	159	956299.2	0.4				ug/L	986982	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	444248.1	0.5	**49.9754**	0.316	0.6	ug/L	13	Standard
	Tl	205	381176.1	1.8	**50.1891**	0.437	0.9	ug/L	10	Standard
	Pb	206	285348.0	1.6	**49.9780**	0.770	1.5	ug/L	264	Standard
	Pb	207	258242.5	1.6	**50.0467**	0.816	1.6	ug/L	227	Standard
	Pb	208	994320.7	1.0	**49.9713**	0.343	0.7	ug/L	868	Standard
	U	238	366904.6	1.5	**49.8902**	0.853	1.7	ug/L	8	Standard
>	Bi	209	526788.4	0.9				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4402.3	4.6	**5.0055**	0.082	1.6	mg/L	53	Standard
K	39	2796.9	1.7	**4.9164**	0.229	4.7	mg/L	53	Standard
Ca	43	118.3	31.7	**5.3755**	2.210	41.1	mg/L	28	Standard
Fe	54	7106.9	6.1	**4.9714**	0.301	6.1	mg/L	181	Standard
Fe	57	2026.8	5.0	**4.9813**	0.301	6.0	mg/L	257	Standard
Sc-1	45	52557.8	3.9				mg/L	55220	Standard
Cl	35	34358.3	1.5				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	2053.5	3.5				ug/L	2040	Standard
P	31	21905.8	4.8				ug/L	20435	Standard
S	34	2591.9	2.6				ug/L	2430	Standard
Sr	88	80.0	27.2				ug/L	75	Standard
C	12	160.0	38.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	6.3	86.6				mg/L	9	Standard
Ho-1	165	8.3	69.3				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	23	Standard
I	127	26471.4	2.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.198		
Al	27	102.476		
Sc	45			
Ti	47	98.709		
V	51	99.392		
Cr	52	98.673		
Cr	53			
Mn	55	98.983		
Co	59	99.940		
Ni	60	99.591		
Cu	65	99.894		
Zn	66	100.923		
Ge	72		98.497	
As	75	99.173		
Se	82	98.169		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	97.261		
Ag	107	98.904		
Cd	111	99.230		
Cd	114			
In	115		97.785	
Sn	118	97.761		
Sb	123	98.094		
Ba	135	98.785		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.951		
Tl	205			
Pb	206	99.956		
Pb	207	100.093		
Pb	208	99.943		
U	238	99.780		
Bi	209		97.371	
Na	23	0.100		
Mg	24	100.110		
K	39	98.328		
Ca	43	107.510		
Fe	54	99.429		
Fe	57	99.625		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Thursday, June 30, 2016 10:55:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67078.2	2.4				ug/L	74916	Standard
	Be	9	50.0	69.3	**0.0488**	0.035	71.6	ug/L	10	Standard
	Al	27	6411.8	70.9	**0.0385**	0.028	72.5	ug/L	1822	Standard
	Sc	45	54151.6	2.7				ug/L	55220	Standard
	Ti	47	64.0	40.2	**0.0867**	0.061	70.7	ug/L	34	Standard
	V	51	1644.8	9.3	**-0.0159**	0.016	101.1	ug/L	1938	Standard
	Cr	52	8148.5	4.3	**-0.1190**	0.032	26.5	ug/L	9522	Standard
	Cr	53	370.0	15.6	**-0.0506**	0.049	96.6	ug/L	395	Standard
	Mn	55	1219.4	21.0	**0.0389**	0.029	75.7	ug/L	902	Standard
	Co	59	552.3	35.6	**0.0460**	0.024	52.4	ug/L	262	Standard
	Ni	60	412.0	16.2	**0.0410**	0.028	69.1	ug/L	371	Standard
	Cu	65	206.0	25.8	**0.0359**	0.023	65.3	ug/L	106	Standard
	Zn	66	425.0	8.2	**-0.0140**	0.033	233.6	ug/L	398	Standard
>	**Ge**	72	526727.6	1.9				ug/L	535147	Standard
	As	75	12.2	412.1	**0.0647**	0.038	58.5	ug/L	-43	Standard
	Se	82	20.7	24.7	**0.0587**	0.041	69.9	ug/L	14	Standard
	Se-1	77	56.7	22.1	**0.0564**	0.131	231.2	ug/L	65	Standard
>	**Ga**	71	90.0	25.5				mg/L	97	Standard
	Rb	85	36.7	7.9				ug/L	15	Standard
	Y	89	462493.1	2.2				ug/L	465704	Standard
>	**Rh**	103	10.0	86.6				ug/L	10	Standard
	Mo	98	363.4	28.8	**0.1314**	0.033	25.2	ug/L	9	Standard
	Ag	107	282.0	43.5	**0.0321**	0.016	50.6	ug/L	82	Standard
	Cd	111	62.7	87.0	**0.0343**	0.023	66.4	mg/L	7	Standard
	Cd	114	166.3	71.5	**0.0381**	0.021	54.1	ug/L	21	Standard
>	**In**	115	604846.6	0.9				ug/L	619035	Standard
	Sn	118	1070.0	10.6	**0.0649**	0.019	29.1	ug/L	508	Standard
	Sb	123	524.8	1.2	**0.1058**	0.002	1.7	ug/L	86	Standard
	Ba	135	121.3	57.5	**0.0345**	0.031	88.8	ug/L	79	Standard
	Ce	140	45.0	50.9				ug/L	68	Standard
>	**Tb**	159	962411.6	1.0				ug/L	986982	Standard
	Ho	165	10.0	86.6				ug/L	10	Standard
	Tl	203	249.3	85.5	**0.0336**	0.023	69.7	ug/L	13	Standard
	Tl	205	243.3	73.6	**0.0393**	0.023	58.5	ug/L	10	Standard
	Pb	206	433.7	30.1	**0.0374**	0.022	58.2	ug/L	264	Standard
	Pb	207	379.0	24.0	**0.0395**	0.017	41.9	ug/L	227	Standard
	Pb	208	1619.7	32.3	**0.0422**	0.025	59.6	ug/L	868	Standard
	U	238	218.3	75.0	**0.0372**	0.022	58.4	ug/L	8	Standard
>	**Bi**	209	531441.7	1.6				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	50.0	43.6	**0.0208**	0.023	110.8	mg/L	53	Standard
K	39	51.7	24.4	**0.0138**	0.024	174.4	mg/L	53	Standard
Ca	43	30.0	33.3	**0.0685**	0.625	913.0	mg/L	28	Standard
Fe	54	162.6	13.7	**-0.0054**	0.018	338.9	mg/L	181	Standard
Fe	57	263.3	25.3	**0.0455**	0.163	357.3	mg/L	257	Standard
Sc-1	45	54151.6	2.7				mg/L	55220	Standard
Cl	35	33892.5	1.8				ug/L	35504	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1836.8	9.3				ug/L	2040	Standard
P	31	20765.9	1.7				ug/L	20435	Standard
S	34	2595.2	6.8				ug/L	2430	Standard
Sr	88	70.0	49.5				ug/L	75	Standard
C	12	130.0	27.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	586.2	22.6				mg/L	9	Standard
Ho-1	165	10.0	86.6				mg/L	10	Standard
Er	166	80.0	45.1				mg/L	23	Standard
I	127	16415.6	0.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.427	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.708
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.231
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Thursday, June 30, 2016 10:58:14
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64500.4	2.4				ug/L	74916	Standard
	Be	9	203.3	8.6	**0.2203**	0.020	9.0	ug/L	10	Standard
	Al	27	1753.4	16.3	**0.0094**	0.002	18.5	ug/L	1822	Standard
	Sc	45	50965.6	0.7				ug/L	55220	Standard
	Ti	47	28.7	28.0	**0.0021**	0.020	920.6	ug/L	34	Standard
	V	51	4896.0	2.8	**0.3548**	0.008	2.3	ug/L	1938	Standard
	Cr	52	14526.3	1.1	**0.6444**	0.040	6.2	ug/L	9522	Standard
	Cr	53	1280.1	8.5	**0.8090**	0.103	12.7	ug/L	395	Standard
	Mn	55	4612.7	1.2	**0.4540**	0.004	0.9	ug/L	902	Standard
	Co	59	3227.7	0.8	**0.3904**	0.004	1.1	ug/L	262	Standard
	Ni	60	3626.4	2.5	**1.5413**	0.064	4.1	ug/L	371	Standard
	Cu	65	1774.1	3.8	**0.7795**	0.031	3.9	ug/L	106	Standard
	Zn	66	7890.1	0.7	**5.9833**	0.114	1.9	ug/L	398	Standard
>	**Ge**	72	513465.0	1.3				ug/L	535147	Standard
	As	75	440.5	6.0	**0.3981**	0.023	5.9	ug/L	-43	Standard
	Se	82	66.6	10.6	**0.4154**	0.058	14.0	ug/L	14	Standard
	Se-1	77	87.0	3.0	**0.4255**	0.041	9.7	ug/L	65	Standard
>	**Ga**	71	58.3	17.8				mg/L	97	Standard
	Rb	85	26.7	43.3				ug/L	15	Standard
	Y	89	439375.0	1.0				ug/L	465704	Standard
>	**Rh**	103	10.0	86.6				ug/L	10	Standard
	Mo	98	96.4	30.1	**0.0448**	0.010	21.6	ug/L	9	Standard
	Ag	107	2923.6	0.8	**0.4010**	0.002	0.6	ug/L	82	Standard
	Cd	111	535.9	6.0	**0.2413**	0.014	6.0	mg/L	7	Standard
	Cd	114	1345.3	5.7	**0.2523**	0.016	6.4	ug/L	21	Standard
>	**In**	115	588951.2	1.0				ug/L	619035	Standard
	Sn	118	551.7	21.2	**-0.0144**	0.018	127.8	ug/L	508	Standard
	Sb	123	2094.7	0.9	**0.4201**	0.001	0.2	ug/L	86	Standard
	Ba	135	1633.1	2.2	**0.7313**	0.020	2.7	ug/L	79	Standard
	Ce	140	21.7	53.3				ug/L	68	Standard
>	**Tb**	159	931014.3	1.3				ug/L	986982	Standard
	Ho	165	6.7	114.6				ug/L	10	Standard
	Tl	203	732.7	7.5	**0.0893**	0.006	6.6	ug/L	13	Standard
	Tl	205	583.3	9.7	**0.0854**	0.008	9.3	ug/L	10	Standard
	Pb	206	1436.4	1.9	**0.2169**	0.006	2.8	ug/L	264	Standard
	Pb	207	1236.7	1.0	**0.2094**	0.002	0.7	ug/L	227	Standard
	Pb	208	4768.0	1.4	**0.2042**	0.003	1.4	ug/L	868	Standard
	U	238	2803.9	2.1	**0.3935**	0.009	2.3	ug/L	8	Standard
>	**Bi**	209	520833.4	0.5				ug/L	541014	Standard

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Na	23	1.7	173.2	**10.0840**	17.457	173.1	mg/L	2	Standard
Mg	24	35.0	65.5	**0.0068**	0.027	399.5	mg/L	53	Standard
K	39	51.7	29.6	**0.0189**	0.027	145.5	mg/L	53	Standard
Ca	43	41.7	13.9	**0.8836**	0.370	41.8	mg/L	28	Standard
Fe	54	120.1	2.6	**-0.0301**	0.003	9.4	mg/L	181	Standard
Fe	57	306.7	15.8	**0.2172**	0.139	63.9	mg/L	257	Standard
Sc-1	45	50965.6	0.7				mg/L	55220	Standard
Cl	35	32699.9	0.7				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1686.8	5.7				ug/L	2040	Standard
P	31	13986.5	2.7				ug/L	20435	Standard
S	34	2311.8	5.0				ug/L	2430	Standard
Sr	88	78.3	28.8				ug/L	75	Standard
C	12	143.3	10.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	25.4	58.0				mg/L	9	Standard
Ho-1	165	6.7	114.6				mg/L	10	Standard
Er	166	26.7	78.1				mg/L	23	Standard
I	127	1528.4	10.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	110.150		
Al	27	0.939		
Sc	45			
Ti	47			
V	51	88.689		
Cr	52	80.551		
Cr	53			
Mn	55	90.794		
Co	59	97.600		
Ni	60	96.329		
Cu	65	97.433		
Zn	66	95.733		
Ge	72		95.948	
As	75	99.531		
Se	82	103.853		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	100.254		
Cd	111	100.534		
Cd	114			
> In	115			95.140
Sn	118			
Sb	123	105.037		
Ba	135	97.502		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	111.679		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.099		
U	238	98.364		
> Bi	209			96.270
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

Sample ID: QC Std 3
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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Thursday, June 30, 2016 11:01:26
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69047.0	1.6				ug/L	74916	Standard
	Be	9	30.0	28.9	**0.0273**	0.009	34.6	ug/L	10	Standard
	Al	27	7980071.2	1.4	**49.8949**	0.509	1.0	ug/L	1822	Standard
	Sc	45	53713.4	1.0				ug/L	55220	Standard
	Ti	47	44903.8	1.5	**110.8893**	1.899	1.7	ug/L	34	Standard
	V	51	2017.2	8.6	**0.0260**	0.020	77.0	ug/L	1938	Standard
	Cr	52	9364.2	1.6	**0.0229**	0.019	84.6	ug/L	9522	Standard
	Cr	53	2848.6	9.1	**2.2177**	0.229	10.3	ug/L	395	Standard
	Mn	55	1866.1	2.8	**0.1163**	0.006	5.5	ug/L	902	Standard
	Co	59	498.3	2.8	**0.0396**	0.002	5.1	ug/L	262	Standard
	Ni	60	1225.4	1.5	**0.4122**	0.009	2.1	ug/L	371	Standard
	Cu	65	783.4	1.7	**0.3035**	0.005	1.6	ug/L	106	Standard
	Zn	66	1398.7	2.4	**0.7516**	0.026	3.4	ug/L	398	Standard
>	**Ge**	72	524552.7	0.4				ug/L	535147	Standard
	As	75	-41.9	71.7	**0.0233**	0.023	98.3	ug/L	-43	Standard
	Se	82	17.8	18.1	**0.0369**	0.024	64.7	ug/L	14	Standard
	Se-1	77	315.0	3.8	**2.9861**	0.140	4.7	ug/L	65	Standard
>	**Ga**	71	231.7	8.7				mg/L	97	Standard
	Rb	85	1228.4	9.5				ug/L	15	Standard
	Y	89	457479.6	1.4				ug/L	465704	Standard
>	**Rh**	103	8.3	34.6				ug/L	10	Standard
	Mo	98	298868.9	1.0	**98.1743**	0.505	0.5	ug/L	9	Standard
	Ag	107	276.3	5.3	**0.0314**	0.002	6.3	ug/L	82	Standard
	Cd	111	-209.1	3.3	**-0.0809**	0.003	4.0	mg/L	7	Standard
	Cd	114	585.9	7.2	**0.1122**	0.007	6.1	ug/L	21	Standard
>	**In**	115	604081.8	0.6				ug/L	619035	Standard
	Sn	118	835.0	7.9	**0.0281**	0.011	39.5	ug/L	508	Standard
	Sb	123	241.9	20.1	**0.0513**	0.010	18.8	ug/L	86	Standard
	Ba	135	819.7	4.2	**0.3477**	0.013	3.8	ug/L	79	Standard
	Ce	140	243.3	11.3				ug/L	68	Standard
>	**Tb**	159	958745.4	0.6				ug/L	986982	Standard
	Ho	165	28.3	50.9				ug/L	10	Standard
	Tl	203	353.7	19.3	**0.0458**	0.008	17.2	ug/L	13	Standard
	Tl	205	340.0	24.1	**0.0525**	0.011	21.0	ug/L	10	Standard
	Pb	206	540.3	0.6	**0.0568**	0.001	1.7	ug/L	264	Standard
	Pb	207	482.3	2.7	**0.0602**	0.003	4.2	ug/L	227	Standard
	Pb	208	1869.4	0.5	**0.0556**	0.000	0.7	ug/L	868	Standard
	U	238	22.7	9.2	**0.0110**	0.000	2.7	ug/L	8	Standard
>	**Bi**	209	527440.0	0.7				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	11219.2	1.9	**12.5374**	0.364	2.9	mg/L	53	Standard
K	39	2653.6	10.5	**4.5535**	0.480	10.5	mg/L	53	Standard
Ca	43	296.7	13.7	**15.6039**	2.413	15.5	mg/L	28	Standard
Fe	54	17937.8	2.3	**12.4450**	0.170	1.4	mg/L	181	Standard
Fe	57	4687.4	2.3	**12.1000**	0.169	1.4	mg/L	257	Standard
Sc-1	45	53713.4	1.0				mg/L	55220	Standard
Cl	35	32003.8	1.7				ug/L	35504	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	1996.8	3.9				ug/L	2040	Standard
P	31	20527.4	12.6				ug/L	20435	Standard
S	34	2190.2	4.6				ug/L	2430	Standard
Sr	88	61.7	9.4				ug/L	75	Standard
C	12	220.0	16.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	86.7	40.5				mg/L	7	Standard
Dy	164	12.5	45.0				mg/L	9	Standard
Ho-1	165	28.3	50.9				mg/L	10	Standard
Er	166	16.7	34.6				mg/L	23	Standard
I	127	2538.5	6.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27	0.998		
Sc	45			
Ti	47	110.889		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.020	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.174		
Ag	107			
Cd	111			
Cd	114			
> In	115			97.584
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209			97.491
Na	23	0.040		
Mg	24	250.748		
K	39	91.069		
Ca	43	104.026		
Fe	54	99.560		
Fe	57	96.800		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Tl	203	
QC Std 4	Na	23	

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QC Std 4	Mg	24

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Thursday, June 30, 2016 11:04:37
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72463.0	3.2				ug/L	74916	Standard
	Be	9	98297.8	0.6	**96.3910**	3.517	3.6	ug/L	10	Standard
	Al	27	8447942.1	1.6	**50.3585**	1.657	3.3	ug/L	1822	Standard
	Sc	45	52367.0	0.4				ug/L	55220	Standard
	Ti	47	44980.0	1.7	**109.4960**	2.514	2.3	ug/L	34	Standard
	V	51	885855.9	1.8	**96.0355**	2.157	2.2	ug/L	1938	Standard
	Cr	52	857497.0	0.9	**94.8597**	1.504	1.6	ug/L	9522	Standard
	Cr	53	107918.0	1.0	**96.9200**	1.348	1.4	ug/L	395	Standard
	Mn	55	808410.1	1.8	**94.4490**	2.273	2.4	ug/L	902	Standard
	Co	59	768641.5	1.6	**94.9270**	2.168	2.3	ug/L	262	Standard
	Ni	60	210790.5	0.8	**94.4332**	0.812	0.9	ug/L	371	Standard
	Cu	65	209564.5	1.5	**95.4828**	2.026	2.1	ug/L	106	Standard
	Zn	66	127430.0	0.9	**98.2863**	1.219	1.2	ug/L	398	Standard
>	Ge	72	532155.6	0.7				ug/L	535147	Standard
	As	75	129733.9	1.2	**97.4561**	1.333	1.4	ug/L	-43	Standard
	Se	82	12863.9	0.1	**95.3546**	0.676	0.7	ug/L	14	Standard
	Se-1	77	9072.4	1.9	**100.6971**	2.031	2.0	ug/L	65	Standard
>	Ga	71	191.7	3.0				mg/L	97	Standard
	Rb	85	1040.0	3.4				ug/L	15	Standard
	Y	89	459617.2	0.7				ug/L	465704	Standard
>	Rh	103	48.3	36.3				ug/L	10	Standard
	Mo	98	300627.9	1.7	**98.7341**	1.433	1.5	ug/L	9	Standard
	Ag	107	626834.5	7.6	**85.0619**	6.265	7.4	ug/L	82	Standard
	Cd	111	225712.2	0.8	**95.8236**	0.304	0.3	mg/L	7	Standard
	Cd	114	546974.4	1.4	**96.4250**	0.861	0.9	ug/L	21	Standard
>	In	115	604185.2	0.5				ug/L	619035	Standard
	Sn	118	951.7	2.0	**0.0464**	0.002	5.3	ug/L	508	Standard
	Sb	123	496035.7	1.5	**95.9684**	1.123	1.2	ug/L	86	Standard
	Ba	135	213321.7	1.3	**95.5818**	0.880	0.9	ug/L	79	Standard
	Ce	140	56.7	10.2				ug/L	68	Standard
>	Tb	159	980693.1	0.1				ug/L	986982	Standard
	Ho	165	15.0	88.2				ug/L	10	Standard
	Tl	203	870360.2	0.9	**95.8131**	0.800	0.8	ug/L	13	Standard
	Tl	205	746193.3	0.5	**96.1523**	0.552	0.6	ug/L	10	Standard
	Pb	206	567035.9	1.4	**97.2301**	1.451	1.5	ug/L	264	Standard
	Pb	207	493132.7	0.8	**93.5550**	0.631	0.7	ug/L	227	Standard
	Pb	208	1948151.9	0.5	**95.8535**	0.504	0.5	ug/L	868	Standard
	U	238	709733.2	0.4	**94.4363**	0.351	0.4	ug/L	8	Standard
>	Bi	209	538272.1	0.1				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.9241**	17.180	173.1	mg/L	2	Standard
Mg	24	11447.7	3.7	**13.1199**	0.448	3.4	mg/L	53	Standard
K	39	2688.6	4.4	**4.7356**	0.226	4.8	mg/L	53	Standard
Ca	43	285.0	16.7	**15.3503**	2.879	18.8	mg/L	28	Standard
Fe	54	17502.0	3.9	**12.4563**	0.493	4.0	mg/L	181	Standard
Fe	57	4882.5	2.9	**12.9742**	0.403	3.1	mg/L	257	Standard
Sc-1	45	52367.0	0.4				mg/L	55220	Standard
Cl	35	31680.4	0.6				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2006.8	4.1				ug/L	2040	Standard
P	31	17386.6	2.6				ug/L	20435	Standard
S	34	2086.8	9.8				ug/L	2430	Standard
Sr	88	73.3	20.8				ug/L	75	Standard
C	12	173.3	37.5				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	8.9	6.2				mg/L	9	Standard
Ho-1	165	15.0	88.2				mg/L	10	Standard
Er	166	23.3	49.5				mg/L	23	Standard
I	127	19968.2	3.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	96.391		
Al	27	1.007		
Sc	45			
Ti	47	109.496		
V	51	96.035		
Cr	52	94.860		
Cr	53			
Mn	55	94.449		
Co	59	94.927		
Ni	60	94.433		
Cu	65	95.483		
Zn	66	98.286		
Ge	72		99.441	
As	75	97.456		
Se	82	95.355		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.734		
Ag	107	85.062		
Cd	111	95.824		
Cd	114			
> In	115		97.601	
Sn	118			
Sb	123	95.968		
Ba	135	95.582		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	95.813		
Tl	205			
Pb	206			
Pb	207			
Pb	208	95.853		
U	238	94.436		
> Bi	209		99.493	
Na	23	79.393		
Mg	24	262.398		
K	39	94.712		
Ca	43	102.336		
Fe	54	99.650		
Fe	57	103.794		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 11:07:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72536.7	3.7				ug/L	74916	Standard
	Be	9	50693.0	0.3	**49.6607**	1.688	3.4	ug/L	10	Standard
	Al	27	8327113.6	2.9	**49.5669**	0.426	0.9	ug/L	1822	Standard
	Sc	45	53057.7	1.0				ug/L	55220	Standard
	Ti	47	40618.4	1.5	**99.3748**	1.991	2.0	ug/L	34	Standard
	V	51	460379.9	0.4	**50.0683**	0.385	0.8	ug/L	1938	Standard
	Cr	52	450102.7	2.7	**49.5570**	1.580	3.2	ug/L	9522	Standard
	Cr	53	55635.3	1.9	**50.0358**	1.215	2.4	ug/L	395	Standard
	Mn	55	423500.2	1.5	**49.6797**	0.961	1.9	ug/L	902	Standard
	Co	59	409881.4	1.9	**50.8666**	1.204	2.4	ug/L	262	Standard
	Ni	60	110889.0	0.9	**49.8637**	0.615	1.2	ug/L	371	Standard
	Cu	65	109608.1	1.3	**50.1660**	0.894	1.8	ug/L	106	Standard
	Zn	66	64818.0	1.3	**50.0808**	0.895	1.8	ug/L	398	Standard
>	**Ge**	72	529450.1	0.5				ug/L	535147	Standard
	As	75	66239.4	0.3	**50.0394**	0.294	0.6	ug/L	-43	Standard
	Se	82	6726.4	0.5	**50.0674**	0.227	0.5	ug/L	14	Standard
	Se-1	77	4648.4	2.9	**51.5794**	1.744	3.4	ug/L	65	Standard
>	**Ga**	71	66.7	22.9				mg/L	97	Standard
	Rb	85	955.0	7.9				ug/L	15	Standard
	Y	89	458931.7	0.2				ug/L	465704	Standard
>	**Rh**	103	26.7	10.8				ug/L	10	Standard
	Mo	98	304032.3	1.1	**97.4918**	0.468	0.5	ug/L	9	Standard
	Ag	107	372476.9	0.7	**49.3535**	0.113	0.2	ug/L	82	Standard
	Cd	111	118909.2	1.2	**49.2913**	0.303	0.6	mg/L	7	Standard
	Cd	114	290136.7	0.3	**49.9462**	0.493	1.0	ug/L	21	Standard
>	**In**	115	618815.7	0.7				ug/L	619035	Standard
	Sn	118	323168.7	1.1	**49.5729**	0.500	1.0	ug/L	508	Standard
	Sb	123	263073.5	1.0	**49.6963**	0.188	0.4	ug/L	86	Standard
	Ba	135	112084.1	1.1	**49.0241**	0.233	0.5	ug/L	79	Standard
	Ce	140	163.3	15.7				ug/L	68	Standard
>	**Tb**	159	982022.6	0.6				ug/L	986982	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	455658.8	1.2	**50.0475**	0.793	1.6	ug/L	13	Standard
	Tl	205	396748.5	1.8	**51.0037**	0.610	1.2	ug/L	10	Standard
	Pb	206	292830.3	0.4	**50.0750**	0.191	0.4	ug/L	264	Standard
	Pb	207	264806.7	0.5	**50.1043**	0.182	0.4	ug/L	227	Standard
	Pb	208	1023180.7	1.1	**50.2060**	0.575	1.1	ug/L	868	Standard
	U	238	378257.3	1.4	**50.2134**	0.362	0.7	ug/L	8	Standard
>	**Bi**	209	539549.6	0.7				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.6749**	16.749	173.1	mg/L	2	Standard
Mg	24	4524.0	6.4	**5.0993**	0.385	7.5	mg/L	53	Standard
K	39	2573.6	1.7	**4.4700**	0.112	2.5	mg/L	53	Standard
Ca	43	131.7	2.2	**6.0879**	0.249	4.1	mg/L	28	Standard
Fe	54	7333.9	2.8	**5.0822**	0.153	3.0	mg/L	181	Standard
Fe	57	2120.1	7.9	**5.1834**	0.493	9.5	mg/L	257	Standard
> **Sc-1**	45	53057.7	1.0				mg/L	55220	Standard
Cl	35	34119.7	1.1				ug/L	35504	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	1983.5	11.5				ug/L	2040	Standard
P	31	20664.1	0.8				ug/L	20435	Standard
S	34	2381.9	5.4				ug/L	2430	Standard
Sr	88	63.3	9.1				ug/L	75	Standard
C	12	150.0	6.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	7	Standard
Dy	164	12.5	122.8				mg/L	9	Standard
Ho-1	165	8.3	34.6				mg/L	10	Standard
Er	166	16.7	69.3				mg/L	23	Standard
I	127	16197.0	2.5				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	99.321		
	Al	27	99.134		
	Sc	45			
	Ti	47	99.375		
	V	51	100.137		
	Cr	52	99.114		
	Cr	53			
	Mn	55	99.359		
	Co	59	101.733		
	Ni	60	99.727		
	Cu	65	100.332		
	Zn	66	100.162		
>	Ge	72		98.935	
	As	75	100.079		
	Se	82	100.135		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	97.492		
Ag	107	98.707		
Cd	111	98.583		
Cd	114			
In	115			99.965
Sn	118	99.146		
Sb	123	99.393		
Ba	135	98.048		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.095		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.412		
U	238	100.427		
Bi	209			99.729
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 11:11:02
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73134.5	2.3				ug/L	74916	Standard
	Be	9	38.3	7.5	**0.0336**	0.003	7.6	ug/L	10	Standard
	Al	27	3792.2	44.9	**0.0199**	0.009	47.4	ug/L	1822	Standard
	Sc	45	54190.1	0.5				ug/L	55220	Standard
	Ti	47	48.3	19.2	**0.0478**	0.021	44.7	ug/L	34	Standard
	V	51	1584.9	7.6	**-0.0237**	0.012	50.3	ug/L	1938	Standard
	Cr	52	7959.1	2.1	**-0.1465**	0.013	8.8	ug/L	9522	Standard
	Cr	53	491.7	4.1	**0.0574**	0.016	27.6	ug/L	395	Standard
	Mn	55	1049.0	8.7	**0.0179**	0.009	49.9	ug/L	902	Standard
	Co	59	426.3	10.5	**0.0300**	0.005	16.8	ug/L	262	Standard
	Ni	60	348.0	13.6	**0.0110**	0.021	186.8	ug/L	371	Standard
	Cu	65	167.7	18.3	**0.0179**	0.014	75.9	ug/L	106	Standard
	Zn	66	414.7	7.1	**-0.0248**	0.018	72.5	ug/L	398	Standard
>	**Ge**	72	530396.1	2.0				ug/L	535147	Standard
	As	75	-26.7	180.7	**0.0347**	0.037	105.8	ug/L	-43	Standard
	Se	82	16.6	86.9	**0.0271**	0.107	394.5	ug/L	14	Standard
	Se-1	77	63.0	18.0	**0.1234**	0.118	95.9	ug/L	65	Standard
>	**Ga**	71	83.3	33.0				mg/L	97	Standard
	Rb	85	18.3	15.7				ug/L	15	Standard
	Y	89	465262.4	0.7				ug/L	465704	Standard
>	**Rh**	103	18.3	63.0				ug/L	10	Standard
	Mo	98	279.5	14.4	**0.1015**	0.013	12.7	ug/L	9	Standard
	Ag	107	219.7	28.5	**0.0229**	0.008	36.2	ug/L	82	Standard
	Cd	111	34.5	55.0	**0.0221**	0.008	35.5	mg/L	7	Standard
	Cd	114	80.2	45.7	**0.0226**	0.006	27.8	ug/L	21	Standard
>	**In**	115	622224.2	0.3				ug/L	619035	Standard
	Sn	118	925.0	9.2	**0.0380**	0.013	34.2	ug/L	508	Standard
	Sb	123	983.6	25.4	**0.1892**	0.047	24.8	ug/L	86	Standard
	Ba	135	87.3	18.7	**0.0184**	0.007	38.9	ug/L	79	Standard
	Ce	140	26.7	78.1				ug/L	68	Standard
>	**Tb**	159	965445.1	0.7				ug/L	986982	Standard
	Ho	165	21.7	13.3				ug/L	10	Standard
	Tl	203	154.0	63.6	**0.0228**	0.011	46.9	ug/L	13	Standard
	Tl	205	146.7	58.8	**0.0264**	0.011	41.8	ug/L	10	Standard
	Pb	206	392.0	15.8	**0.0287**	0.011	37.2	ug/L	264	Standard
	Pb	207	329.3	12.9	**0.0286**	0.008	28.3	ug/L	227	Standard
	Pb	208	1276.7	12.2	**0.0238**	0.008	32.6	ug/L	868	Standard
	U	238	109.0	69.7	**0.0223**	0.010	45.1	ug/L	8	Standard
>	**Bi**	209	544217.1	0.5				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.4960**	16.439	173.1	mg/L	2	Standard
Mg	24	38.3	39.8	**0.0080**	0.017	212.6	mg/L	53	Standard
K	39	48.3	39.2	**0.0075**	0.032	430.4	mg/L	53	Standard
Ca	43	36.7	28.4	**0.4397**	0.593	134.8	mg/L	28	Standard
Fe	54	180.9	15.5	**0.0069**	0.020	289.3	mg/L	181	Standard
Fe	57	275.0	14.2	**0.0792**	0.103	130.6	mg/L	257	Standard
Sc-1	45	54190.1	0.5				mg/L	55220	Standard
Cl	35	34690.3	0.7				ug/L	35504	Standard
Kr	83	3.3	45.8				ug/L	2	Standard
Br	81	1803.4	1.8				ug/L	2040	Standard
P	31	20203.5	2.8				ug/L	20435	Standard
S	34	2368.5	5.0				ug/L	2430	Standard
Sr	88	71.7	21.3				ug/L	75	Standard
C	12	163.3	23.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	541.4	14.2				mg/L	9	Standard
Ho-1	165	21.7	13.3				mg/L	10	Standard
Er	166	110.0	18.2				mg/L	23	Standard
I	127	15639.7	0.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.112	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.515
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.592
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW M6 WG574201-01
Sample Date/Time: Thursday, June 30, 2016 11:14:15
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66206.1	3.3				ug/L	74916	Standard
	Be	9	25.0	20.0	**0.0233**	0.006	25.2	ug/L	10	Standard
	Al	27	2728.6	2.0	**0.0155**	0.000	2.2	ug/L	1822	Standard
	Sc	45	49101.1	1.0				ug/L	55220	Standard
	Ti	47	33.3	12.5	**0.0177**	0.011	61.7	ug/L	34	Standard
	V	51	1448.5	2.2	**-0.0261**	0.004	15.6	ug/L	1938	Standard
	Cr	52	6056.9	2.1	**-0.3065**	0.017	5.5	ug/L	9522	Standard
	Cr	53	286.7	2.0	**-0.1076**	0.007	6.6	ug/L	395	Standard
	Mn	55	618.3	12.3	**-0.0269**	0.010	35.9	ug/L	902	Standard
	Co	59	318.7	5.7	**0.0198**	0.003	12.7	ug/L	262	Standard
	Ni	60	362.3	3.8	**0.0303**	0.006	18.8	ug/L	371	Standard
	Cu	65	99.7	13.6	**-0.0096**	0.007	69.2	ug/L	106	Standard
	Zn	66	633.3	59.2	**0.1836**	0.314	171.0	ug/L	398	Standard
>	**Ge**	72	491721.1	0.6				ug/L	535147	Standard
	As	75	-19.8	15.7	**0.0391**	0.003	6.6	ug/L	-43	Standard
	Se	82	19.7	30.5	**0.0611**	0.049	79.6	ug/L	14	Standard
	Se-1	77	63.7	13.1	**0.1875**	0.097	51.7	ug/L	65	Standard
>	**Ga**	71	55.0	24.1				mg/L	97	Standard
	Rb	85	18.3	15.7				ug/L	15	Standard
	Y	89	428431.8	1.3				ug/L	465704	Standard
>	**Rh**	103	13.3	57.3				ug/L	10	Standard
	Mo	98	53.7	29.6	**0.0311**	0.006	17.7	ug/L	9	Standard
	Ag	107	174.0	16.4	**0.0191**	0.004	21.5	ug/L	82	Standard
	Cd	111	22.2	17.0	**0.0179**	0.002	9.4	mg/L	7	Standard
	Cd	114	51.3	23.3	**0.0185**	0.002	12.1	ug/L	21	Standard
>	**In**	115	566677.7	0.5				ug/L	619035	Standard
	Sn	118	201.7	12.5	**-0.0696**	0.004	6.0	ug/L	508	Standard
	Sb	123	254.5	16.3	**0.0569**	0.009	15.1	ug/L	86	Standard
	Ba	135	59.7	19.4	**0.0089**	0.006	63.6	ug/L	79	Standard
	Ce	140	6.7	114.6				ug/L	68	Standard
>	**Tb**	159	901324.0	1.3				ug/L	986982	Standard
	Ho	165	0.0					ug/L	10	Standard
	Tl	203	103.0	43.3	**0.0179**	0.005	29.0	ug/L	13	Standard
	Tl	205	81.7	30.8	**0.0187**	0.003	18.3	ug/L	10	Standard
	Pb	206	284.0	15.4	**0.0131**	0.008	60.7	ug/L	264	Standard
	Pb	207	248.0	13.5	**0.0160**	0.007	42.8	ug/L	227	Standard
	Pb	208	1008.0	8.1	**0.0135**	0.004	32.6	ug/L	868	Standard
	U	238	45.7	20.3	**0.0142**	0.001	9.1	ug/L	8	Standard
>	**Bi**	209	515556.1	0.5				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	50.0	30.0	**0.0268**	0.019	70.2	mg/L	53	Standard
K	39	56.7	51.7	**0.0318**	0.055	171.6	mg/L	53	Standard
Ca	43	30.0	44.1	**0.2337**	0.839	359.0	mg/L	28	Standard
Fe	54	72.8	37.4	**-0.0631**	0.020	32.2	mg/L	181	Standard
Fe	57	295.0	9.0	**0.2156**	0.073	33.8	mg/L	257	Standard
Sc-1	45	49101.1	1.0				mg/L	55220	Standard
Cl	35	31979.7	0.9				ug/L	35504	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	1776.8	5.5				ug/L	2040	Standard
P	31	7448.6	24.8				ug/L	20435	Standard
S	34	2298.5	2.2				ug/L	2430	Standard
Sr	88	85.0	31.1				ug/L	75	Standard
C	12	140.0	46.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	-0.3	86.6				mg/L	9	Standard
Ho-1	165	0.0					mg/L	10	Standard
Er	166	6.7	86.6				mg/L	23	Standard
I	127	1355.1	9.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		88.373	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		91.885	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.542
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.294
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW M6 WG574201-02
Sample Date/Time: Thursday, June 30, 2016 11:17:27
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64644.4	3.5				ug/L	74916	Standard
	Be	9	24256.1	3.2	**26.6512**	0.918	3.4	ug/L	10	Standard
	Al	27	4295.6	5.2	**0.0264**	0.001	4.2	ug/L	1822	Standard
	Sc	45	48622.9	0.9				ug/L	55220	Standard
	Ti	47	37.7	9.3	**0.0291**	0.010	32.8	ug/L	34	Standard
	V	51	152090.0	9.7	**17.6711**	1.731	9.8	ug/L	1938	Standard
	Cr	52	215188.7	5.2	**24.9908**	1.463	5.9	ug/L	9522	Standard
	Cr	53	26019.0	4.3	**24.9885**	1.195	4.8	ug/L	395	Standard
	Mn	55	204766.0	5.1	**25.7989**	1.420	5.5	ug/L	902	Standard
	Co	59	189845.6	5.0	**25.3420**	1.375	5.4	ug/L	262	Standard
	Ni	60	54086.9	5.9	**26.1050**	1.650	6.3	ug/L	371	Standard
	Cu	65	53131.2	5.7	**26.1413**	1.611	6.2	ug/L	106	Standard
	Zn	66	36319.6	5.1	**30.0605**	1.673	5.6	ug/L	398	Standard
>	**Ge**	72	492035.7	0.4				ug/L	535147	Standard
	As	75	33099.6	0.8	**26.9307**	0.104	0.4	ug/L	-43	Standard
	Se	82	3603.6	1.9	**28.8201**	0.426	1.5	ug/L	14	Standard
	Se-1	77	2458.5	4.3	**29.0987**	1.177	4.0	ug/L	65	Standard
>	**Ga**	71	58.3	17.8				mg/L	97	Standard
	Rb	85	31.7	24.1				ug/L	15	Standard
	Y	89	422389.7	3.5				ug/L	465704	Standard
>	**Rh**	103	25.0	34.6				ug/L	10	Standard
	Mo	98	48.7	16.4	**0.0291**	0.003	9.1	ug/L	9	Standard
	Ag	107	180030.5	4.8	**25.6238**	1.186	4.6	ug/L	82	Standard
	Cd	111	60091.4	5.4	**26.7643**	1.380	5.2	mg/L	7	Standard
	Cd	114	145971.9	7.3	**26.9991**	1.950	7.2	ug/L	21	Standard
>	**In**	115	575992.2	0.7				ug/L	619035	Standard
	Sn	118	266.7	15.3	**-0.0594**	0.006	10.8	ug/L	508	Standard
	Sb	123	124962.0	1.4	**25.3655**	0.466	1.8	ug/L	86	Standard
	Ba	135	54723.2	6.3	**25.7054**	1.592	6.2	ug/L	79	Standard
	Ce	140	33.3	31.2				ug/L	68	Standard
>	**Tb**	159	900033.6	0.8				ug/L	986982	Standard
	Ho	165	3.3	86.6				ug/L	10	Standard
	Tl	203	216597.6	4.6	**24.8274**	1.034	4.2	ug/L	13	Standard
	Tl	205	186399.3	4.4	**25.0109**	0.997	4.0	ug/L	10	Standard
	Pb	206	132845.1	5.7	**23.6873**	1.326	5.6	ug/L	264	Standard
	Pb	207	115019.5	5.7	**22.6941**	1.280	5.6	ug/L	227	Standard
	Pb	208	460646.0	5.9	**23.5670**	1.321	5.6	ug/L	868	Standard
	U	238	142871.0	4.4	**19.8025**	0.973	4.9	ug/L	8	Standard
>	**Bi**	209	516996.9	0.9				ug/L	541014	Standard

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Na	23	1.7	173.2	**10.5453**	18.256	173.1	mg/L	2	Standard
Mg	24	33.3	34.6	**0.0068**	0.015	214.9	mg/L	53	Standard
K	39	51.7	22.3	**0.0236**	0.022	94.8	mg/L	53	Standard
Ca	43	36.7	43.8	**0.6853**	1.038	151.5	mg/L	28	Standard
Fe	54	45.4	21.0	**-0.0836**	0.007	8.8	mg/L	181	Standard
Fe	57	285.0	16.1	**0.1940**	0.134	69.1	mg/L	257	Standard
Sc-1	45	48622.9	0.9				mg/L	55220	Standard
Cl	35	31751.2	1.3				ug/L	35504	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	2096.8	15.6				ug/L	2040	Standard
P	31	6428.0	0.9				ug/L	20435	Standard
S	34	2303.5	8.7				ug/L	2430	Standard
Sr	88	73.3	37.6				ug/L	75	Standard
C	12	120.0	52.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	2.7	219.6				mg/L	9	Standard
Ho-1	165	3.3	86.6				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	1255.1	14.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		86.289	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		91.944	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.047
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.561
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW M6 WG574201-02
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Method 6020 - Summary Report

Sample ID: LCSW DP WG574201-03
Sample Date/Time: Thursday, June 30, 2016 11:20:39
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63201.6	1.5				ug/L	74916	Standard
	Be	9	23903.8	2.4	**26.8556**	0.733	2.7	ug/L	10	Standard
	Al	27	5737.8	6.2	**0.0369**	0.003	8.1	ug/L	1822	Standard
	Sc	45	48599.5	2.0				ug/L	55220	Standard
	Ti	47	46.3	53.8	**0.0520**	0.065	124.8	ug/L	34	Standard
	V	51	154520.0	8.3	**18.0168**	1.629	9.0	ug/L	1938	Standard
	Cr	52	211595.7	4.7	**24.6240**	1.093	4.4	ug/L	9522	Standard
	Cr	53	25357.9	3.6	**24.4081**	0.661	2.7	ug/L	395	Standard
	Mn	55	201667.5	4.7	**25.4735**	1.044	4.1	ug/L	902	Standard
	Co	59	189508.2	5.6	**25.3626**	1.278	5.0	ug/L	262	Standard
	Ni	60	53391.4	5.8	**25.8339**	1.363	5.3	ug/L	371	Standard
	Cu	65	52719.7	4.6	**26.0057**	1.035	4.0	ug/L	106	Standard
	Zn	66	36052.3	5.5	**29.9141**	1.463	4.9	ug/L	398	Standard
>	**Ge**	72	490614.4	0.9				ug/L	535147	Standard
	As	75	32692.3	1.1	**26.6791**	0.430	1.6	ug/L	-43	Standard
	Se	82	3581.2	1.2	**28.7291**	0.612	2.1	ug/L	14	Standard
	Se-1	77	2389.9	4.2	**28.3511**	1.007	3.6	ug/L	65	Standard
>	**Ga**	71	53.3	47.2				mg/L	97	Standard
	Rb	85	35.0	37.8				ug/L	15	Standard
	Y	89	419941.8	0.4				ug/L	465704	Standard
>	**Rh**	103	26.7	28.6				ug/L	10	Standard
	Mo	98	176.7	7.0	**0.0744**	0.004	5.7	ug/L	9	Standard
	Ag	107	179573.6	4.0	**26.0599**	0.863	3.3	ug/L	82	Standard
	Cd	111	59106.0	5.8	**26.8419**	1.431	5.3	mg/L	7	Standard
	Cd	114	142189.6	5.2	**26.8137**	1.236	4.6	ug/L	21	Standard
>	**In**	115	564866.5	1.0				ug/L	619035	Standard
	Sn	118	215.0	6.2	**-0.0672**	0.003	3.9	ug/L	508	Standard
	Sb	123	123122.3	1.2	**25.4843**	0.405	1.6	ug/L	86	Standard
	Ba	135	53570.4	6.3	**25.6553**	1.465	5.7	ug/L	79	Standard
	Ce	140	26.7	10.8				ug/L	68	Standard
>	**Tb**	159	893274.9	1.5				ug/L	986982	Standard
	Ho	165	10.0	132.3				ug/L	10	Standard
	Tl	203	214845.2	4.9	**24.7144**	1.262	5.1	ug/L	13	Standard
	Tl	205	185089.1	5.4	**24.9242**	1.414	5.7	ug/L	10	Standard
	Pb	206	130951.6	5.5	**23.4302**	1.330	5.7	ug/L	264	Standard
	Pb	207	113903.8	5.8	**22.5513**	1.338	5.9	ug/L	227	Standard
	Pb	208	456214.5	6.4	**23.4221**	1.520	6.5	ug/L	868	Standard
	U	238	142740.1	5.2	**19.8466**	1.002	5.1	ug/L	8	Standard
>	**Bi**	209	515247.5	0.5				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	36.7	20.8	**0.0109**	0.010	89.9	mg/L	53	Standard
K	39	50.0	69.3	**0.0209**	0.068	326.3	mg/L	53	Standard
Ca	43	36.7	56.8	**0.6973**	1.372	196.8	mg/L	28	Standard
Fe	54	53.5	29.3	**-0.0772**	0.013	16.4	mg/L	181	Standard
Fe	57	311.7	4.0	**0.2758**	0.054	19.4	mg/L	257	Standard
> **Sc-1**	45	48599.5	2.0				mg/L	55220	Standard
Cl	35	31866.1	1.4				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	2513.5	3.9				ug/L	2040	Standard
P	31	6396.4	2.4				ug/L	20435	Standard
S	34	2231.8	5.4				ug/L	2430	Standard
Sr	88	76.7	33.5				ug/L	75	Standard
C	12	163.3	31.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	9.8	2.8				mg/L	9	Standard
Ho-1	165	10.0	132.3				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	23	Standard
I	127	1581.7	3.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		84.363	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		91.678	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.250
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.237
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW DP WG574201-03
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Method 6020 - Summary Report

Sample ID: L1606138401
Sample Date/Time: Thursday, June 30, 2016 11:23:51
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63507.9	2.7				ug/L	74916	Standard
	Be	9	45.0	0.0	**0.0467**	0.001	2.9	ug/L	10	Standard
	Al	27	579151.6	9.1	**3.9324**	0.299	7.6	ug/L	1822	Standard
	Sc	45	50261.6	2.0				ug/L	55220	Standard
	Ti	47	4807.4	10.2	**12.3788**	1.356	11.0	ug/L	34	Standard
	V	51	25206.6	26.1	**2.7183**	0.794	29.2	ug/L	1938	Standard
	Cr	52	66822.6	12.8	**6.9055**	1.063	15.4	ug/L	9522	Standard
	Cr	53	7641.9	11.2	**6.9388**	0.872	12.6	ug/L	395	Standard
	Mn	55	107364.1	9.0	**13.2318**	1.102	8.3	ug/L	902	Standard
	Co	59	1594.4	3.9	**0.1865**	0.008	4.5	ug/L	262	Standard
	Ni	60	5128.5	1.3	**2.2995**	0.031	1.3	ug/L	371	Standard
	Cu	65	1796.8	11.4	**0.8122**	0.107	13.2	ug/L	106	Standard
	Zn	66	6372.3	6.5	**4.8961**	0.382	7.8	ug/L	398	Standard
>	**Ge**	72	500812.1	1.0				ug/L	535147	Standard
	As	75	1116.8	10.4	**0.9467**	0.100	10.6	ug/L	-43	Standard
	Se	82	60.3	14.3	**0.3791**	0.073	19.4	ug/L	14	Standard
	Se-1	77	93.3	11.5	**0.5250**	0.117	22.2	ug/L	65	Standard
>	**Ga**	71	813.4	13.8				mg/L	97	Standard
	Rb	85	11027.4	9.6				ug/L	15	Standard
	Y	89	442099.3	1.0				ug/L	465704	Standard
>	**Rh**	103	20.0	43.3				ug/L	10	Standard
	Mo	98	5434.4	24.6	**1.8757**	0.486	25.9	ug/L	9	Standard
	Ag	107	172.0	1.5	**0.0182**	0.001	4.1	ug/L	82	Standard
	Cd	111	46.3	23.7	**0.0284**	0.005	17.2	mg/L	7	Standard
	Cd	114	171.4	15.4	**0.0404**	0.005	12.9	ug/L	21	Standard
>	**In**	115	580272.2	1.6				ug/L	619035	Standard
	Sn	118	256.7	21.4	**-0.0613**	0.009	14.7	ug/L	508	Standard
	Sb	123	1175.2	1.3	**0.2412**	0.007	2.8	ug/L	86	Standard
	Ba	135	26741.6	14.3	**12.4444**	1.604	12.9	ug/L	79	Standard
	Ce	140	16634.3	18.2				ug/L	68	Standard
>	**Tb**	159	906690.0	0.8				ug/L	986982	Standard
	Ho	165	818.4	17.3				ug/L	10	Standard
	Tl	203	327.3	4.6	**0.0436**	0.002	5.4	ug/L	13	Standard
	Tl	205	313.3	30.7	**0.0497**	0.013	25.8	ug/L	10	Standard
	Pb	206	746.4	9.3	**0.0958**	0.014	15.0	ug/L	264	Standard
	Pb	207	580.3	13.5	**0.0818**	0.017	21.2	ug/L	227	Standard
	Pb	208	2569.8	12.6	**0.0937**	0.019	19.8	ug/L	868	Standard
	U	238	407.7	27.8	**0.0646**	0.017	25.6	ug/L	8	Standard
>	**Bi**	209	516339.8	1.8				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	568.3	5.2	**0.6464**	0.045	7.0	mg/L	53	Standard
K	39	398.3	4.0	**0.6670**	0.037	5.6	mg/L	53	Standard
Ca	43	43.3	24.0	**1.0309**	0.707	68.6	mg/L	28	Standard
Fe	54	401.5	20.0	**0.1821**	0.061	33.6	mg/L	181	Standard
Fe	57	360.0	7.7	**0.3843**	0.068	17.7	mg/L	257	Standard
> **Sc-1**	45	50261.6	2.0				mg/L	55220	Standard
Cl	35	31812.1	3.4				ug/L	35504	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	2060.1	7.3				ug/L	2040	Standard
P	31	9829.9	2.5				ug/L	20435	Standard
S	34	1978.5	8.8				ug/L	2430	Standard
Sr	88	105.0	29.0				ug/L	75	Standard
C	12	246.7	30.4				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	33.3	105.4				mg/L	7	Standard
Dy	164	1002.4	17.9				mg/L	9	Standard
Ho-1	165	818.4	17.3				mg/L	10	Standard
Er	166	786.7	22.3				mg/L	23	Standard
I	127	4182.2	12.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		84.772	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.584	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.738
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.439
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606138403
Sample Date/Time: Thursday, June 30, 2016 11:27:02
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64930.5	1.2				ug/L	74916	Standard
	Be	9	30.0	16.7	**0.0292**	0.006	19.5	ug/L	10	Standard
	Al	27	1828795.5	14.8	**12.1666**	1.899	15.6	ug/L	1822	Standard
	Sc	45	51057.6	1.6				ug/L	55220	Standard
	Ti	47	1084.7	9.7	**2.6861**	0.266	9.9	ug/L	34	Standard
	V	51	32038.5	18.5	**3.4344**	0.672	19.6	ug/L	1938	Standard
	Cr	52	18396.2	5.5	**1.1067**	0.115	10.4	ug/L	9522	Standard
	Cr	53	1613.4	13.1	**1.1304**	0.201	17.7	ug/L	395	Standard
	Mn	55	121230.5	36.9	**14.6904**	5.474	37.3	ug/L	902	Standard
	Co	59	2783.6	25.6	**0.3360**	0.092	27.4	ug/L	262	Standard
	Ni	60	3626.8	8.1	**1.5522**	0.140	9.0	ug/L	371	Standard
	Cu	65	1153.4	7.6	**0.4897**	0.041	8.3	ug/L	106	Standard
	Zn	66	1516.1	18.4	**0.8777**	0.227	25.8	ug/L	398	Standard
>	**Ge**	72	510077.1	0.2				ug/L	535147	Standard
	As	75	1089.9	4.7	**0.9089**	0.038	4.2	ug/L	-43	Standard
	Se	82	41.3	17.6	**0.2229**	0.055	24.9	ug/L	14	Standard
	Se-1	77	73.7	2.1	**0.2766**	0.019	7.0	ug/L	65	Standard
>	**Ga**	71	165.0	19.9				mg/L	97	Standard
	Rb	85	5817.8	8.8				ug/L	15	Standard
	Y	89	441072.2	2.5				ug/L	465704	Standard
>	**Rh**	103	18.3	56.8				ug/L	10	Standard
	Mo	98	6803.9	9.9	**2.3308**	0.237	10.2	ug/L	9	Standard
	Ag	107	181.7	60.0	**0.0194**	0.015	77.8	ug/L	82	Standard
	Cd	111	51.3	53.5	**0.0304**	0.012	39.1	mg/L	7	Standard
	Cd	114	129.3	66.9	**0.0325**	0.016	48.0	ug/L	21	Standard
>	**In**	115	582444.7	1.2				ug/L	619035	Standard
	Sn	118	211.7	14.2	**-0.0689**	0.005	6.6	ug/L	508	Standard
	Sb	123	980.7	9.5	**0.2012**	0.018	8.8	ug/L	86	Standard
	Ba	135	33140.8	28.4	**15.3771**	4.302	28.0	ug/L	79	Standard
	Ce	140	5237.6	5.3				ug/L	68	Standard
>	**Tb**	159	914520.5	1.3				ug/L	986982	Standard
	Ho	165	355.0	24.1				ug/L	10	Standard
	Tl	203	250.0	41.9	**0.0344**	0.012	33.6	ug/L	13	Standard
	Tl	205	195.0	43.1	**0.0337**	0.011	32.6	ug/L	10	Standard
	Pb	206	406.3	9.3	**0.0344**	0.006	16.8	ug/L	264	Standard
	Pb	207	335.7	15.4	**0.0328**	0.009	28.5	ug/L	227	Standard
	Pb	208	1363.7	20.3	**0.0311**	0.013	42.6	ug/L	868	Standard
	U	238	178.3	24.1	**0.0325**	0.006	17.3	ug/L	8	Standard
>	**Bi**	209	519165.0	1.3				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	873.4	10.4	**0.9960**	0.122	12.2	mg/L	53	Standard
K	39	440.0	19.4	**0.7317**	0.159	21.7	mg/L	53	Standard
Ca	43	106.7	42.5	**4.8817**	2.847	58.3	mg/L	28	Standard
Fe	54	130.3	11.2	**-0.0228**	0.010	44.2	mg/L	181	Standard
Fe	57	360.0	10.8	**0.3692**	0.122	33.0	mg/L	257	Standard
> **Sc-1**	45	51057.6	1.6				mg/L	55220	Standard
Cl	35	32742.0	1.8				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2203.5	4.1				ug/L	2040	Standard
P	31	9269.5	5.3				ug/L	20435	Standard
S	34	2001.8	9.6				ug/L	2430	Standard
Sr	88	98.3	5.9				ug/L	75	Standard
C	12	460.0	18.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	70.0	14.3				mg/L	7	Standard
Dy	164	417.4	5.7				mg/L	9	Standard
Ho-1	165	355.0	24.1				mg/L	10	Standard
Er	166	403.3	16.5				mg/L	23	Standard
I	127	4218.9	8.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		86.671	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.315	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.089
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.961
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606138405
Sample Date/Time: Thursday, June 30, 2016 11:30:14
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66576.0	3.1				ug/L	74916	Standard
	Be	9	26.7	60.3	**0.0246**	0.017	67.2	ug/L	10	Standard
	Al	27	782618.5	17.0	**5.0937**	1.037	20.4	ug/L	1822	Standard
	Sc	45	52681.5	3.6				ug/L	55220	Standard
	Ti	47	2692.2	14.0	**6.7525**	0.884	13.1	ug/L	34	Standard
	V	51	29525.5	27.9	**3.1409**	0.924	29.4	ug/L	1938	Standard
	Cr	52	36356.6	11.5	**3.1921**	0.449	14.1	ug/L	9522	Standard
	Cr	53	3823.8	11.5	**3.2008**	0.380	11.9	ug/L	395	Standard
	Mn	55	71662.3	35.6	**8.6456**	3.216	37.2	ug/L	902	Standard
	Co	59	1638.1	13.8	**0.1882**	0.032	16.8	ug/L	262	Standard
	Ni	60	4089.9	5.4	**1.7667**	0.129	7.3	ug/L	371	Standard
	Cu	65	1490.4	17.3	**0.6484**	0.119	18.4	ug/L	106	Standard
	Zn	66	3492.4	0.7	**2.4690**	0.059	2.4	ug/L	398	Standard
>	**Ge**	72	510976.4	1.4				ug/L	535147	Standard
	As	75	1205.8	5.9	**0.9977**	0.044	4.4	ug/L	-43	Standard
	Se	82	64.4	6.1	**0.4011**	0.034	8.4	ug/L	14	Standard
	Se-1	77	83.3	19.2	**0.3870**	0.184	47.4	ug/L	65	Standard
>	**Ga**	71	375.0	12.2				mg/L	97	Standard
	Rb	85	5906.2	3.9				ug/L	15	Standard
	Y	89	447665.9	1.1				ug/L	465704	Standard
>	**Rh**	103	23.3	49.5				ug/L	10	Standard
	Mo	98	14254.7	18.6	**4.8045**	0.870	18.1	ug/L	9	Standard
	Ag	107	108.0	4.0	**0.0089**	0.000	4.9	ug/L	82	Standard
	Cd	111	15.8	87.9	**0.0148**	0.006	41.1	mg/L	7	Standard
	Cd	114	128.0	25.5	**0.0321**	0.006	19.1	ug/L	21	Standard
>	**In**	115	589791.5	1.1				ug/L	619035	Standard
	Sn	118	200.0	31.2	**-0.0711**	0.010	14.6	ug/L	508	Standard
	Sb	123	861.9	5.1	**0.1752**	0.007	3.9	ug/L	86	Standard
	Ba	135	24057.3	38.8	**11.0457**	4.375	39.6	ug/L	79	Standard
	Ce	140	12245.0	12.8				ug/L	68	Standard
>	**Tb**	159	925423.5	1.9				ug/L	986982	Standard
	Ho	165	598.3	14.1				ug/L	10	Standard
	Tl	203	114.7	18.8	**0.0189**	0.002	11.7	ug/L	13	Standard
	Tl	205	115.0	19.0	**0.0229**	0.003	12.0	ug/L	10	Standard
	Pb	206	491.7	10.8	**0.0487**	0.009	19.0	ug/L	264	Standard
	Pb	207	396.7	4.3	**0.0440**	0.003	7.1	ug/L	227	Standard
	Pb	208	1699.4	6.7	**0.0474**	0.005	11.4	ug/L	868	Standard
	U	238	237.7	18.5	**0.0403**	0.006	14.7	ug/L	8	Standard
>	**Bi**	209	524816.3	1.6				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	765.0	11.5	**0.8403**	0.110	13.0	mg/L	53	Standard
K	39	351.7	11.5	**0.5493**	0.066	12.0	mg/L	53	Standard
Ca	43	48.3	36.3	**1.1962**	1.066	89.1	mg/L	28	Standard
Fe	54	235.5	17.5	**0.0492**	0.027	54.6	mg/L	181	Standard
Fe	57	333.3	10.6	**0.2631**	0.102	38.9	mg/L	257	Standard
> **Sc-1**	45	52681.5	3.6				mg/L	55220	Standard
Cl	35	32550.9	0.2				ug/L	35504	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	1960.1	15.1				ug/L	2040	Standard
P	31	10708.8	2.7				ug/L	20435	Standard
S	34	1863.4	4.2				ug/L	2430	Standard
Sr	88	111.7	20.2				ug/L	75	Standard
C	12	300.0	18.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	160.0	22.5				mg/L	7	Standard
Dy	164	774.6	21.6				mg/L	9	Standard
Ho-1	165	598.3	14.1				mg/L	10	Standard
Er	166	670.0	14.4				mg/L	23	Standard
I	127	3110.3	17.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.867	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.483	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.276
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.006
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606138407
Sample Date/Time: Thursday, June 30, 2016 11:33:25
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68944.9	2.8				ug/L	74916	Standard
	Be	9	65.0	46.8	**0.0639**	0.033	51.1	ug/L	10	Standard
	Al	27	579198.2	6.0	**3.6270**	0.255	7.0	ug/L	1822	Standard
	Sc	45	52994.2	2.6				ug/L	55220	Standard
	Ti	47	12552.6	16.4	**31.7432**	5.355	16.9	ug/L	34	Standard
	V	51	48414.4	28.6	**5.2766**	1.580	29.9	ug/L	1938	Standard
	Cr	52	170208.6	13.9	**18.7642**	2.854	15.2	ug/L	9522	Standard
	Cr	53	19978.3	13.2	**18.3538**	2.570	14.0	ug/L	395	Standard
	Mn	55	153875.3	17.2	**18.5999**	3.136	16.9	ug/L	902	Standard
	Co	59	4428.0	10.9	**0.5458**	0.059	10.8	ug/L	262	Standard
	Ni	60	12470.8	1.4	**5.6734**	0.108	1.9	ug/L	371	Standard
	Cu	65	4762.8	15.1	**2.2003**	0.350	15.9	ug/L	106	Standard
	Zn	66	14572.4	10.3	**11.3866**	1.269	11.1	ug/L	398	Standard
>	**Ge**	72	511732.4	0.5				ug/L	535147	Standard
	As	75	1713.1	6.8	**1.3930**	0.098	7.0	ug/L	-43	Standard
	Se	82	63.5	10.7	**0.3930**	0.055	14.0	ug/L	14	Standard
	Se-1	77	85.3	17.1	**0.4098**	0.173	42.3	ug/L	65	Standard
>	**Ga**	71	2083.5	15.4				mg/L	97	Standard
	Rb	85	24605.1	10.7				ug/L	15	Standard
	Y	89	487990.5	2.6				ug/L	465704	Standard
>	**Rh**	103	21.7	26.6				ug/L	10	Standard
	Mo	98	13071.8	23.3	**4.4058**	1.007	22.9	ug/L	9	Standard
	Ag	107	195.3	16.3	**0.0211**	0.005	22.9	ug/L	82	Standard
	Cd	111	83.6	29.8	**0.0443**	0.011	24.6	mg/L	7	Standard
	Cd	114	202.5	11.5	**0.0455**	0.004	9.2	ug/L	21	Standard
>	**In**	115	590114.0	1.7				ug/L	619035	Standard
	Sn	118	465.0	11.6	**-0.0284**	0.009	32.2	ug/L	508	Standard
	Sb	123	1175.4	1.8	**0.2373**	0.008	3.3	ug/L	86	Standard
	Ba	135	25691.2	16.9	**11.7737**	2.016	17.1	ug/L	79	Standard
	Ce	140	43623.8	16.3				ug/L	68	Standard
>	**Tb**	159	927358.9	1.0				ug/L	986982	Standard
	Ho	165	2205.2	13.9				ug/L	10	Standard
	Tl	203	354.7	15.2	**0.0460**	0.006	13.9	ug/L	13	Standard
	Tl	205	273.3	18.4	**0.0438**	0.007	15.7	ug/L	10	Standard
	Pb	206	1450.7	13.7	**0.2170**	0.035	16.0	ug/L	264	Standard
	Pb	207	1153.0	13.5	**0.1909**	0.031	16.0	ug/L	227	Standard
	Pb	208	4825.6	12.1	**0.2049**	0.030	14.8	ug/L	868	Standard
	U	238	954.0	24.1	**0.1379**	0.032	23.0	ug/L	8	Standard
>	**Bi**	209	525755.1	1.0				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	751.7	4.3	**0.8196**	0.047	5.7	mg/L	53	Standard
K	39	433.3	5.7	**0.6912**	0.060	8.6	mg/L	53	Standard
Ca	43	45.0	40.1	**0.9976**	1.122	112.5	mg/L	28	Standard
Fe	54	1005.3	16.4	**0.5974**	0.137	22.9	mg/L	181	Standard
Fe	57	478.3	11.2	**0.6589**	0.161	24.5	mg/L	257	Standard
Sc-1	45	52994.2	2.6				mg/L	55220	Standard
Cl	35	31149.3	0.8				ug/L	35504	Standard
Kr	83	1.0	173.2				ug/L	2	Standard
Br	81	1960.1	22.3				ug/L	2040	Standard
P	31	11923.0	5.3				ug/L	20435	Standard
S	34	1808.4	9.5				ug/L	2430	Standard
Sr	88	90.0	14.7				ug/L	75	Standard
C	12	273.3	2.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	126.7	43.5				mg/L	7	Standard
Dy	164	2923.5	15.8				mg/L	9	Standard
Ho-1	165	2205.2	13.9				mg/L	10	Standard
Er	166	2160.2	11.2				mg/L	23	Standard
I	127	4143.9	13.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		92.029	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.625	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.328
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.180
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606138409
Sample Date/Time: Thursday, June 30, 2016 11:36:37
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71031.2	3.3				ug/L	74916	Standard
	Be	9	78.3	85.0	**0.0733**	0.063	85.7	ug/L	10	Standard
	Al	27	507801.3	1.9	**3.0867**	0.135	4.4	ug/L	1822	Standard
	Sc	45	54725.4	2.4				ug/L	55220	Standard
	Ti	47	7734.0	16.1	**19.1317**	3.053	16.0	ug/L	34	Standard
	V	51	40746.1	29.7	**4.3199**	1.365	31.6	ug/L	1938	Standard
	Cr	52	147373.0	14.9	**15.7599**	2.464	15.6	ug/L	9522	Standard
	Cr	53	17555.3	14.4	**15.7489**	2.305	14.6	ug/L	395	Standard
	Mn	55	34382.5	8.3	**3.9955**	0.352	8.8	ug/L	902	Standard
	Co	59	1254.7	3.7	**0.1352**	0.005	3.7	ug/L	262	Standard
	Ni	60	5111.5	10.0	**2.1928**	0.235	10.7	ug/L	371	Standard
	Cu	65	1596.4	19.1	**0.6834**	0.143	20.9	ug/L	106	Standard
	Zn	66	11716.9	11.6	**8.8995**	1.072	12.1	ug/L	398	Standard
>	**Ge**	72	521945.8	1.0				ug/L	535147	Standard
	As	75	1724.1	6.8	**1.3750**	0.090	6.6	ug/L	-43	Standard
	Se	82	46.2	10.0	**0.2522**	0.035	13.8	ug/L	14	Standard
	Se-1	77	78.3	9.2	**0.3101**	0.080	25.8	ug/L	65	Standard
>	**Ga**	71	1711.8	21.6				mg/L	97	Standard
	Rb	85	20609.2	14.7				ug/L	15	Standard
	Y	89	447841.8	2.7				ug/L	465704	Standard
>	**Rh**	103	13.3	108.3				ug/L	10	Standard
	Mo	98	4630.6	25.0	**1.5695**	0.394	25.1	ug/L	9	Standard
	Ag	107	199.3	39.5	**0.0217**	0.011	51.4	ug/L	82	Standard
	Cd	111	48.6	50.9	**0.0291**	0.011	37.5	mg/L	7	Standard
	Cd	114	117.9	23.7	**0.0302**	0.005	17.1	ug/L	21	Standard
>	**In**	115	590335.8	0.6				ug/L	619035	Standard
	Sn	118	451.7	7.4	**-0.0307**	0.005	16.4	ug/L	508	Standard
	Sb	123	1230.5	5.8	**0.2481**	0.015	6.0	ug/L	86	Standard
	Ba	135	6241.3	3.7	**2.8432**	0.109	3.8	ug/L	79	Standard
	Ce	140	17900.9	20.2				ug/L	68	Standard
>	**Tb**	159	927670.3	0.0				ug/L	986982	Standard
	Ho	165	476.7	22.1				ug/L	10	Standard
	Tl	203	214.7	41.9	**0.0301**	0.010	33.0	ug/L	13	Standard
	Tl	205	171.7	25.4	**0.0303**	0.006	18.5	ug/L	10	Standard
	Pb	206	875.7	18.6	**0.1158**	0.028	24.0	ug/L	264	Standard
	Pb	207	701.7	14.4	**0.1030**	0.019	18.5	ug/L	227	Standard
	Pb	208	2799.4	14.3	**0.1025**	0.019	18.9	ug/L	868	Standard
	U	238	455.3	22.3	**0.0698**	0.014	19.4	ug/L	8	Standard
>	**Bi**	209	526233.6	0.6				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.2734**	16.053	173.1	mg/L	2	Standard
Mg	24	760.0	1.1	**0.8014**	0.015	1.8	mg/L	53	Standard
K	39	358.3	21.9	**0.5397**	0.147	27.2	mg/L	53	Standard
Ca	43	60.0	28.9	**1.7401**	0.925	53.2	mg/L	28	Standard
Fe	54	574.4	11.0	**0.2769**	0.051	18.3	mg/L	181	Standard
Fe	57	445.0	7.9	**0.5259**	0.078	14.8	mg/L	257	Standard
> **Sc-1**	45	54725.4	2.4				mg/L	55220	Standard
Cl	35	30822.0	1.4				ug/L	35504	Standard
Kr	83	3.0	88.2				ug/L	2	Standard
Br	81	1956.8	6.5				ug/L	2040	Standard
P	31	12046.5	9.0				ug/L	20435	Standard
S	34	1585.1	5.2				ug/L	2430	Standard
Sr	88	81.7	24.7				ug/L	75	Standard
C	12	240.0	29.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	69.3				mg/L	7	Standard
Dy	164	622.3	8.0				mg/L	9	Standard
Ho-1	165	476.7	22.1				mg/L	10	Standard
Er	166	510.0	10.9				mg/L	23	Standard
I	127	5877.8	8.8				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		94.814	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.533	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.364
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.268
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606138411
Sample Date/Time: Thursday, June 30, 2016 11:39:48
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68988.4	0.8				ug/L	74916	Standard
	Be	9	63.3	27.7	**0.0617**	0.018	29.8	ug/L	10	Standard
	Al	27	533128.9	2.3	**3.3336**	0.057	1.7	ug/L	1822	Standard
	Sc	45	54469.4	1.5				ug/L	55220	Standard
	Ti	47	12265.4	15.6	**30.2589**	4.795	15.8	ug/L	34	Standard
	V	51	40732.1	26.3	**4.2961**	1.190	27.7	ug/L	1938	Standard
	Cr	52	160641.9	15.5	**17.1981**	2.864	16.7	ug/L	9522	Standard
	Cr	53	19144.0	17.4	**17.1367**	3.079	18.0	ug/L	395	Standard
	Mn	55	58616.6	4.2	**6.8526**	0.278	4.1	ug/L	902	Standard
	Co	59	2370.5	6.4	**0.2744**	0.019	6.8	ug/L	262	Standard
	Ni	60	7541.5	7.2	**3.2892**	0.256	7.8	ug/L	371	Standard
	Cu	65	2431.5	17.8	**1.0666**	0.202	19.0	ug/L	106	Standard
	Zn	66	13971.2	12.7	**10.6309**	1.416	13.3	ug/L	398	Standard
>	**Ge**	72	524288.1	0.2				ug/L	535147	Standard
	As	75	1576.3	4.9	**1.2565**	0.062	4.9	ug/L	-43	Standard
	Se	82	45.1	8.0	**0.2430**	0.026	10.9	ug/L	14	Standard
	Se-1	77	74.0	5.9	**0.2571**	0.049	19.1	ug/L	65	Standard
>	**Ga**	71	2193.5	19.5				mg/L	97	Standard
	Rb	85	24783.9	14.8				ug/L	15	Standard
	Y	89	461274.1	2.5				ug/L	465704	Standard
>	**Rh**	103	10.0	86.6				ug/L	10	Standard
	Mo	98	4756.2	29.4	**1.6006**	0.481	30.1	ug/L	9	Standard
	Ag	107	280.7	5.2	**0.0326**	0.002	6.8	ug/L	82	Standard
	Cd	111	53.5	28.3	**0.0309**	0.006	20.4	mg/L	7	Standard
	Cd	114	152.2	14.8	**0.0362**	0.004	11.9	ug/L	21	Standard
>	**In**	115	595368.5	1.0				ug/L	619035	Standard
	Sn	118	478.3	5.4	**-0.0270**	0.003	12.4	ug/L	508	Standard
	Sb	123	1264.5	1.8	**0.2527**	0.007	2.7	ug/L	86	Standard
	Ba	135	20157.8	10.1	**9.1433**	0.846	9.2	ug/L	79	Standard
	Ce	140	32943.3	19.1				ug/L	68	Standard
>	**Tb**	159	929811.0	1.1				ug/L	986982	Standard
	Ho	165	1143.4	16.9				ug/L	10	Standard
	Tl	203	188.0	9.8	**0.0269**	0.002	7.5	ug/L	13	Standard
	Tl	205	165.0	29.2	**0.0292**	0.006	21.4	ug/L	10	Standard
	Pb	206	1392.7	15.1	**0.2034**	0.036	17.6	ug/L	264	Standard
	Pb	207	1112.4	15.4	**0.1799**	0.032	18.0	ug/L	227	Standard
	Pb	208	4576.3	16.6	**0.1891**	0.037	19.7	ug/L	868	Standard
	U	238	725.4	20.4	**0.1053**	0.020	18.7	ug/L	8	Standard
>	**Bi**	209	533013.4	0.3				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	523.3	4.0	**0.5436**	0.020	3.8	mg/L	53	Standard
K	39	300.0	13.2	**0.4408**	0.075	17.0	mg/L	53	Standard
Ca	43	31.7	39.7	**0.1483**	0.737	497.2	mg/L	28	Standard
Fe	54	892.2	12.2	**0.4978**	0.078	15.8	mg/L	181	Standard
Fe	57	511.7	7.3	**0.7120**	0.117	16.4	mg/L	257	Standard
> **Sc-1**	45	54469.4	1.5				mg/L	55220	Standard
Cl	35	30870.8	3.1				ug/L	35504	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	2210.2	6.3				ug/L	2040	Standard
P	31	11792.9	4.9				ug/L	20435	Standard
S	34	1665.1	3.4				ug/L	2430	Standard
Sr	88	70.0	32.7				ug/L	75	Standard
C	12	196.7	25.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	70.0	37.8				mg/L	7	Standard
Dy	164	1450.0	22.0				mg/L	9	Standard
Ho-1	165	1143.4	16.9				mg/L	10	Standard
Er	166	1323.4	16.6				mg/L	23	Standard
I	127	4440.7	16.0				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		92.087	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.971	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.177
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.521
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606138411PS WG574744-01
Sample Date/Time: Thursday, June 30, 2016 11:43:00
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	70420.1	3.3				ug/L	74916	Standard
	Be	9	51515.8	1.6	**51.9868**	2.203	4.2	ug/L	10	Standard
	Al	27	613547.1	3.5	**3.7594**	0.075	2.0	ug/L	1822	Standard
	Sc	45	53633.1	1.0				ug/L	55220	Standard
	Ti	47	14734.5	10.7	**36.8395**	4.069	11.0	ug/L	34	Standard
	V	51	391216.4	6.5	**43.4919**	2.747	6.3	ug/L	1938	Standard
	Cr	52	587022.8	7.6	**66.4671**	5.340	8.0	ug/L	9522	Standard
	Cr	53	71068.6	7.9	**65.5072**	5.411	8.3	ug/L	395	Standard
	Mn	55	474064.1	4.8	**56.8941**	2.524	4.4	ug/L	902	Standard
	Co	59	383376.7	5.2	**48.6588**	2.335	4.8	ug/L	262	Standard
	Ni	60	116221.4	3.7	**53.4665**	1.823	3.4	ug/L	371	Standard
	Cu	65	109294.3	2.9	**51.1653**	1.259	2.5	ug/L	106	Standard
	Zn	66	88905.1	1.2	**70.4032**	0.762	1.1	ug/L	398	Standard
>	Ge	72	517573.1	0.5				ug/L	535147	Standard
	As	75	68907.6	0.8	**53.2464**	0.584	1.1	ug/L	-43	Standard
	Se	82	7342.5	1.8	**55.9224**	1.238	2.2	ug/L	14	Standard
	Se-1	77	4919.1	1.4	**55.8814**	1.046	1.9	ug/L	65	Standard
>	Ga	71	2736.9	9.9				mg/L	97	Standard
	Rb	85	30353.9	10.3				ug/L	15	Standard
	Y	89	452230.9	1.7				ug/L	465704	Standard
>	Rh	103	18.3	31.5				ug/L	10	Standard
	Mo	98	4465.2	8.1	**1.5113**	0.128	8.5	ug/L	9	Standard
	Ag	107	358914.4	3.0	**49.7747**	1.333	2.7	ug/L	82	Standard
	Cd	111	120938.7	5.0	**52.4694**	2.453	4.7	mg/L	7	Standard
	Cd	114	290724.6	3.9	**52.3777**	1.851	3.5	ug/L	21	Standard
>	In	115	591206.5	0.5				ug/L	619035	Standard
	Sn	118	663.3	18.1	**0.0033**	0.019	582.6	ug/L	508	Standard
	Sb	123	203333.4	8.8	**40.2163**	3.682	9.2	ug/L	86	Standard
	Ba	135	130878.8	4.1	**59.9209**	2.362	3.9	ug/L	79	Standard
	Ce	140	36251.9	10.0				ug/L	68	Standard
>	Tb	159	935141.5	0.6				ug/L	986982	Standard
	Ho	165	1171.7	15.8				ug/L	10	Standard
	Tl	203	430773.5	3.8	**48.3242**	2.170	4.5	ug/L	13	Standard
	Tl	205	368331.0	3.9	**48.3645**	2.148	4.4	ug/L	10	Standard
	Pb	206	258429.5	2.9	**45.1283**	1.492	3.3	ug/L	264	Standard
	Pb	207	224906.3	3.0	**43.4532**	1.377	3.2	ug/L	227	Standard
	Pb	208	907951.0	3.5	**45.4984**	1.868	4.1	ug/L	868	Standard
	U	238	238863.4	8.2	**32.3797**	2.553	7.9	ug/L	8	Standard
>	Bi	209	528361.0	0.9				ug/L	541014	Standard

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	Na	23	1.7	173.2	**9.7609**	16.898	173.1	mg/L	2	Standard
	Mg	24	540.0	14.9	**0.5711**	0.087	15.3	mg/L	53	Standard
	K	39	353.3	15.1	**0.5413**	0.093	17.1	mg/L	53	Standard
	Ca	43	46.7	27.0	**1.0501**	0.758	72.2	mg/L	28	Standard
	Fe	54	1043.5	12.3	**0.6128**	0.084	13.6	mg/L	181	Standard
	Fe	57	565.0	6.4	**0.8781**	0.100	11.4	mg/L	257	Standard
>	**Sc-1**	45	53633.1	1.0				mg/L	55220	Standard
	Cl	35	30508.7	0.4				ug/L	35504	Standard
	Kr	83	2.7	94.4				ug/L	2	Standard
	Br	81	1973.5	7.0				ug/L	2040	Standard
	P	31	12516.8	3.2				ug/L	20435	Standard
	S	34	1548.4	4.5				ug/L	2430	Standard
	Sr	88	85.0	41.2				ug/L	75	Standard
	C	12	176.7	29.0				mg/L	293	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	46.7	101.3				mg/L	7	Standard
	Dy	164	1455.1	24.6				mg/L	9	Standard
	Ho-1	165	1171.7	15.8				mg/L	10	Standard
	Er	166	1146.7	6.8				mg/L	23	Standard
	I	127	4585.7	8.7				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		93.998	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.716	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.505
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.661
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 11:46:13
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74928.3	3.4				ug/L	74916	Standard
	Be	9	53902.4	2.4	**51.0924**	0.960	1.9	ug/L	10	Standard
	Al	27	8626351.3	2.3	**49.7131**	0.749	1.5	ug/L	1822	Standard
	Sc	45	55387.8	2.6				ug/L	55220	Standard
	Ti	47	42382.5	2.0	**99.7465**	1.271	1.3	ug/L	34	Standard
	V	51	476315.9	2.5	**49.8302**	0.848	1.7	ug/L	1938	Standard
	Cr	52	470347.2	1.2	**49.8229**	0.501	1.0	ug/L	9522	Standard
	Cr	53	57733.1	1.8	**49.9468**	0.607	1.2	ug/L	395	Standard
	Mn	55	435418.4	0.8	**49.1370**	0.250	0.5	ug/L	902	Standard
	Co	59	421451.6	1.1	**50.3155**	0.452	0.9	ug/L	262	Standard
	Ni	60	115400.2	1.1	**49.9232**	0.424	0.8	ug/L	371	Standard
	Cu	65	114595.1	0.8	**50.4588**	0.504	1.0	ug/L	106	Standard
	Zn	66	67289.4	0.9	**50.0169**	0.513	1.0	ug/L	398	Standard
>	Ge	72	550336.8	1.3				ug/L	535147	Standard
	As	75	68538.5	1.1	**49.8127**	0.452	0.9	ug/L	-43	Standard
	Se	82	6897.2	0.4	**49.3931**	0.532	1.1	ug/L	14	Standard
	Se-1	77	4689.7	2.2	**50.0397**	0.834	1.7	ug/L	65	Standard
>	Ga	71	76.7	16.4				mg/L	97	Standard
	Rb	85	945.0	0.5				ug/L	15	Standard
	Y	89	476720.2	0.4				ug/L	465704	Standard
>	Rh	103	28.3	36.7				ug/L	10	Standard
	Mo	98	312410.4	2.2	**98.2077**	0.907	0.9	ug/L	9	Standard
	Ag	107	383396.7	0.8	**49.8064**	0.368	0.7	ug/L	82	Standard
	Cd	111	122235.8	0.9	**49.6791**	0.213	0.4	mg/L	7	Standard
	Cd	114	295258.0	0.8	**49.8307**	0.249	0.5	ug/L	21	Standard
>	In	115	631197.2	1.3				ug/L	619035	Standard
	Sn	118	332451.6	1.5	**49.9960**	0.217	0.4	ug/L	508	Standard
	Sb	123	270852.4	1.8	**50.1613**	0.406	0.8	ug/L	86	Standard
	Ba	135	115106.0	1.9	**49.3590**	0.653	1.3	ug/L	79	Standard
	Ce	140	496.7	33.3				ug/L	68	Standard
>	Tb	159	994881.4	0.9				ug/L	986982	Standard
	Ho	165	15.0	57.7				ug/L	10	Standard
	Tl	203	464133.7	1.0	**50.4278**	0.348	0.7	ug/L	13	Standard
	Tl	205	400913.7	1.2	**50.9890**	0.656	1.3	ug/L	10	Standard
	Pb	206	295146.5	1.0	**49.9276**	0.367	0.7	ug/L	264	Standard
	Pb	207	267176.6	1.9	**50.0076**	0.811	1.6	ug/L	227	Standard
	Pb	208	1048172.1	0.4	**50.8801**	0.254	0.5	ug/L	868	Standard
	U	238	382634.6	1.1	**50.2498**	0.381	0.8	ug/L	8	Standard
>	Bi	209	545406.3	0.3				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4579.0	2.2	**4.9409**	0.019	0.4	mg/L	53	Standard
K	39	2495.2	2.5	**4.1457**	0.017	0.4	mg/L	53	Standard
Ca	43	118.3	21.3	**4.9969**	1.350	27.0	mg/L	28	Standard
Fe	54	7373.6	3.8	**4.8932**	0.257	5.3	mg/L	181	Standard
Fe	57	2095.1	7.9	**4.8722**	0.455	9.3	mg/L	257	Standard
Sc-1	45	55387.8	2.6				mg/L	55220	Standard
Cl	35	37239.0	1.0				ug/L	35504	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1966.8	6.4				ug/L	2040	Standard
P	31	20163.4	0.1				ug/L	20435	Standard
S	34	2090.1	11.6				ug/L	2430	Standard
Sr	88	75.0	17.6				ug/L	75	Standard
C	12	90.0	29.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	9.4	109.6				mg/L	9	Standard
Ho-1	165	15.0	57.7				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	15120.9	2.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.185		
Al	27	99.426		
Sc	45			
Ti	47	99.747		
V	51	99.660		
Cr	52	99.646		
Cr	53			
Mn	55	98.274		
Co	59	100.631		
Ni	60	99.846		
Cu	65	100.918		
Zn	66	100.034		
Ge	72		102.838	
As	75	99.625		
Se	82	98.786		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	98.208		
Ag	107	99.613		
Cd	111	99.358		
Cd	114			
In	115			101.965
Sn	118	99.992		
Sb	123	100.323		
Ba	135	98.718		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.856		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.760		
U	238	100.500		
Bi	209			100.812
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 11:49:24
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74094.1	1.5				ug/L	74916	Standard
	Be	9	30.0	44.1	**0.0252**	0.013	50.7	ug/L	10	Standard
	Al	27	3078.6	12.8	**0.0156**	0.002	13.6	ug/L	1822	Standard
	Sc	45	54076.4	3.3				ug/L	55220	Standard
	Ti	47	61.3	20.6	**0.0770**	0.032	41.9	ug/L	34	Standard
	V	51	2046.2	3.0	**0.0221**	0.003	15.1	ug/L	1938	Standard
	Cr	52	9408.9	2.6	**-0.0053**	0.025	474.4	ug/L	9522	Standard
	Cr	53	521.7	3.9	**0.0752**	0.024	31.5	ug/L	395	Standard
	Mn	55	1218.7	3.2	**0.0349**	0.003	8.7	ug/L	902	Standard
	Co	59	397.7	13.6	**0.0254**	0.006	23.9	ug/L	262	Standard
	Ni	60	304.0	4.8	**-0.0116**	0.005	40.4	ug/L	371	Standard
	Cu	65	197.0	8.8	**0.0296**	0.009	29.9	ug/L	106	Standard
	Zn	66	431.7	5.1	**-0.0181**	0.021	114.0	ug/L	398	Standard
>	**Ge**	72	541436.6	1.5				ug/L	535147	Standard
	As	75	-19.0	261.9	**0.0415**	0.036	87.2	ug/L	-43	Standard
	Se	82	25.8	36.4	**0.0920**	0.070	76.5	ug/L	14	Standard
	Se-1	77	59.0	6.1	**0.0658**	0.032	48.9	ug/L	65	Standard
>	**Ga**	71	76.7	10.0				mg/L	97	Standard
	Rb	85	128.3	31.3				ug/L	15	Standard
	Y	89	473142.7	1.0				ug/L	465704	Standard
>	**Rh**	103	11.7	107.9				ug/L	10	Standard
	Mo	98	265.7	17.4	**0.0959**	0.014	14.2	ug/L	9	Standard
	Ag	107	244.3	17.5	**0.0257**	0.005	19.8	ug/L	82	Standard
	Cd	111	26.2	12.3	**0.0186**	0.001	7.8	mg/L	7	Standard
	Cd	114	60.2	29.1	**0.0191**	0.003	15.5	ug/L	21	Standard
>	**In**	115	630319.4	1.4				ug/L	619035	Standard
	Sn	118	863.4	18.4	**0.0271**	0.026	94.2	ug/L	508	Standard
	Sb	123	1310.0	30.1	**0.2480**	0.076	30.7	ug/L	86	Standard
	Ba	135	87.3	7.0	**0.0179**	0.003	17.3	ug/L	79	Standard
	Ce	140	170.0	74.6				ug/L	68	Standard
>	**Tb**	159	978400.2	1.6				ug/L	986982	Standard
	Ho	165	13.3	21.7				ug/L	10	Standard
	Tl	203	215.0	15.4	**0.0293**	0.004	12.6	ug/L	13	Standard
	Tl	205	185.0	13.5	**0.0312**	0.003	10.3	ug/L	10	Standard
	Pb	206	438.7	10.6	**0.0363**	0.008	21.0	ug/L	264	Standard
	Pb	207	354.7	1.3	**0.0331**	0.001	3.0	ug/L	227	Standard
	Pb	208	1461.0	8.2	**0.0324**	0.006	17.2	ug/L	868	Standard
	U	238	225.3	16.3	**0.0374**	0.005	13.1	ug/L	8	Standard
>	**Bi**	209	546754.7	0.4				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	30.0	88.2	**-0.0009**	0.030	3396.7	mg/L	53	Standard
K	39	36.7	47.9	**-0.0119**	0.033	273.8	mg/L	53	Standard
Ca	43	28.3	20.4	**-0.0367**	0.324	884.9	mg/L	28	Standard
Fe	54	202.3	1.2	**0.0221**	0.006	25.7	mg/L	181	Standard
Fe	57	298.3	9.2	**0.1443**	0.072	49.7	mg/L	257	Standard
Sc-1	45	54076.4	3.3				mg/L	55220	Standard
Cl	35	37355.3	1.2				ug/L	35504	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	2116.8	5.4				ug/L	2040	Standard
P	31	19372.4	0.8				ug/L	20435	Standard
S	34	2241.8	5.0				ug/L	2430	Standard
Sr	88	56.7	18.4				ug/L	75	Standard
C	12	126.7	4.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	576.3	20.2				mg/L	9	Standard
Ho-1	165	13.3	21.7				mg/L	10	Standard
Er	166	76.7	32.8				mg/L	23	Standard
I	127	14990.7	2.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.175	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.823
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.061
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

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Method 6020 - Summary Report

Sample ID: L1606138411SDL WG574744-02
Sample Date/Time: Thursday, June 30, 2016 11:52:37
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66753.5	3.8				ug/L	74916	Standard
	Be	9	20.0	43.3	**0.0179**	0.010	55.7	ug/L	10	Standard
	Al	27	109583.5	3.6	**0.7064**	0.002	0.3	ug/L	1822	Standard
	Sc	45	49285.0	1.3				ug/L	55220	Standard
	Ti	47	2714.6	18.5	**6.9773**	1.363	19.5	ug/L	34	Standard
	V	51	8460.6	22.2	**0.7823**	0.217	27.8	ug/L	1938	Standard
	Cr	52	42071.6	15.6	**3.9736**	0.814	20.5	ug/L	9522	Standard
	Cr	53	4567.4	19.1	**4.0006**	0.862	21.5	ug/L	395	Standard
	Mn	55	11799.3	6.6	**1.3637**	0.086	6.3	ug/L	902	Standard
	Co	59	683.7	6.0	**0.0671**	0.005	7.4	ug/L	262	Standard
	Ni	60	1724.8	10.4	**0.6788**	0.092	13.6	ug/L	371	Standard
	Cu	65	611.3	19.9	**0.2382**	0.061	25.5	ug/L	106	Standard
	Zn	66	3527.1	6.4	**2.5607**	0.207	8.1	ug/L	398	Standard
>	**Ge**	72	499847.4	1.0				ug/L	535147	Standard
	As	75	293.4	16.2	**0.2897**	0.037	12.9	ug/L	-43	Standard
	Se	82	20.7	11.8	**0.0664**	0.019	28.0	ug/L	14	Standard
	Se-1	77	57.0	3.0	**0.0961**	0.020	21.2	ug/L	65	Standard
>	**Ga**	71	548.3	22.0				mg/L	97	Standard
	Rb	85	5541.0	15.0				ug/L	15	Standard
	Y	89	428396.1	1.6				ug/L	465704	Standard
>	**Rh**	103	13.3	57.3				ug/L	10	Standard
	Mo	98	811.0	25.3	**0.2924**	0.072	24.5	ug/L	9	Standard
	Ag	107	188.7	5.3	**0.0208**	0.001	6.6	ug/L	82	Standard
	Cd	111	19.9	11.6	**0.0168**	0.001	6.4	mg/L	7	Standard
	Cd	114	65.0	38.7	**0.0210**	0.005	22.4	ug/L	21	Standard
>	**In**	115	574769.4	0.5				ug/L	619035	Standard
	Sn	118	250.0	12.2	**-0.0621**	0.005	7.8	ug/L	508	Standard
	Sb	123	633.4	7.5	**0.1332**	0.009	6.8	ug/L	86	Standard
	Ba	135	3566.4	8.8	**1.6609**	0.154	9.3	ug/L	79	Standard
	Ce	140	6809.9	20.4				ug/L	68	Standard
>	**Tb**	159	905865.7	1.8				ug/L	986982	Standard
	Ho	165	275.0	21.0				ug/L	10	Standard
	Tl	203	97.0	21.5	**0.0171**	0.002	14.0	ug/L	13	Standard
	Tl	205	83.3	33.0	**0.0188**	0.004	19.6	ug/L	10	Standard
	Pb	206	526.3	11.0	**0.0559**	0.010	18.5	ug/L	264	Standard
	Pb	207	434.7	15.7	**0.0524**	0.014	25.8	ug/L	227	Standard
	Pb	208	1770.7	11.0	**0.0521**	0.010	19.0	ug/L	868	Standard
	U	238	198.0	23.7	**0.0352**	0.006	18.3	ug/L	8	Standard
>	**Bi**	209	518831.3	0.3				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	151.7	10.1	**0.1508**	0.020	13.4	mg/L	53	Standard
K	39	90.0	16.7	**0.0953**	0.030	31.3	mg/L	53	Standard
Ca	43	26.7	43.3	**0.0229**	0.756	3307.7	mg/L	28	Standard
Fe	54	233.3	5.5	**0.0594**	0.011	18.2	mg/L	181	Standard
Fe	57	301.7	6.7	**0.2328**	0.067	29.0	mg/L	257	Standard
> **Sc-1**	45	49285.0	1.3				mg/L	55220	Standard
Cl	35	32605.7	1.4				ug/L	35504	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	1956.8	5.5				ug/L	2040	Standard
P	31	7258.4	2.9				ug/L	20435	Standard
S	34	1698.4	1.5				ug/L	2430	Standard
Sr	88	61.7	28.5				ug/L	75	Standard
C	12	96.7	15.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	339.0	40.1				mg/L	9	Standard
Ho-1	165	275.0	21.0				mg/L	10	Standard
Er	166	230.0	47.8				mg/L	23	Standard
I	127	26713.5	1.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.104	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.404	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		92.849
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.900
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 11:55:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73471.1	1.5				ug/L	74916	Standard
	Be	9	53803.7	2.7	**51.9914**	0.927	1.8	ug/L	10	Standard
	Al	27	8617402.5	1.0	**50.6396**	0.854	1.7	ug/L	1822	Standard
	Sc	45	55560.0	1.1				ug/L	55220	Standard
	Ti	47	42477.1	1.5	**100.6323**	0.276	0.3	ug/L	34	Standard
	V	51	479326.5	1.4	**50.4824**	0.031	0.1	ug/L	1938	Standard
	Cr	52	467744.0	1.6	**49.8733**	0.359	0.7	ug/L	9522	Standard
	Cr	53	57450.4	2.8	**50.0258**	0.734	1.5	ug/L	395	Standard
	Mn	55	438319.0	2.2	**49.7885**	0.650	1.3	ug/L	902	Standard
	Co	59	429053.6	1.5	**51.5613**	0.502	1.0	ug/L	262	Standard
	Ni	60	116039.3	0.4	**50.5360**	0.520	1.0	ug/L	371	Standard
	Cu	65	115333.0	0.7	**51.1200**	0.359	0.7	ug/L	106	Standard
	Zn	66	67421.7	1.0	**50.4480**	0.173	0.3	ug/L	398	Standard
>	Ge	72	546720.8	1.3				ug/L	535147	Standard
	As	75	69011.0	1.2	**50.4869**	0.429	0.8	ug/L	-43	Standard
	Se	82	6880.5	0.7	**49.5985**	0.367	0.7	ug/L	14	Standard
	Se-1	77	4803.4	0.4	**51.6156**	0.560	1.1	ug/L	65	Standard
>	Ga	71	91.7	11.4				mg/L	97	Standard
	Rb	85	968.4	7.8				ug/L	15	Standard
	Y	89	476399.1	3.4				ug/L	465704	Standard
>	Rh	103	40.0	21.7				ug/L	10	Standard
	Mo	98	317271.3	0.9	**98.5797**	0.807	0.8	ug/L	9	Standard
	Ag	107	383771.0	1.9	**49.2667**	0.500	1.0	ug/L	82	Standard
	Cd	111	122621.3	2.1	**49.2465**	0.412	0.8	mg/L	7	Standard
	Cd	114	298584.6	2.3	**49.7946**	0.426	0.9	ug/L	21	Standard
>	In	115	638699.7	1.6				ug/L	619035	Standard
	Sn	118	330125.0	1.7	**49.0640**	0.589	1.2	ug/L	508	Standard
	Sb	123	267358.3	1.7	**48.9342**	0.249	0.5	ug/L	86	Standard
	Ba	135	115832.8	1.6	**49.0883**	0.336	0.7	ug/L	79	Standard
	Ce	140	405.0	17.3				ug/L	68	Standard
>	Tb	159	985370.4	0.8				ug/L	986982	Standard
	Ho	165	18.3	41.7				ug/L	10	Standard
	Tl	203	467550.0	0.1	**50.4119**	0.413	0.8	ug/L	13	Standard
	Tl	205	409083.0	1.4	**51.6282**	0.628	1.2	ug/L	10	Standard
	Pb	206	295016.7	1.2	**49.5226**	0.377	0.8	ug/L	264	Standard
	Pb	207	268860.1	1.3	**49.9385**	0.602	1.2	ug/L	227	Standard
	Pb	208	1058510.8	0.5	**50.9882**	0.179	0.4	ug/L	868	Standard
	U	238	383137.6	0.8	**49.9325**	0.552	1.1	ug/L	8	Standard
>	Bi	209	549624.3	0.8				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4540.7	2.6	**4.8831**	0.083	1.7	mg/L	53	Standard
K	39	2480.2	4.4	**4.1088**	0.230	5.6	mg/L	53	Standard
Ca	43	106.7	21.1	**4.3314**	1.274	29.4	mg/L	28	Standard
Fe	54	7391.6	1.2	**4.8870**	0.066	1.4	mg/L	181	Standard
Fe	57	2151.8	3.3	**5.0036**	0.248	5.0	mg/L	257	Standard
> **Sc-1**	45	55560.0	1.1				mg/L	55220	Standard
Cl	35	39075.0	0.9				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	2100.1	2.1				ug/L	2040	Standard
P	31	22523.4	5.5				ug/L	20435	Standard
S	34	2553.5	5.9				ug/L	2430	Standard
Sr	88	76.7	39.3				ug/L	75	Standard
C	12	140.0	37.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	6.2	186.8				mg/L	9	Standard
Ho-1	165	18.3	41.7				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	15276.0	3.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	103.983		
Al	27	101.279		
Sc	45			
Ti	47	100.632		
V	51	100.965		
Cr	52	99.747		
Cr	53			
Mn	55	99.577		
Co	59	103.123		
Ni	60	101.072		
Cu	65	102.240		
Zn	66	100.896		
> Ge	72		102.163	
As	75	100.974		
Se	82	99.197		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	98.580		
Ag	107	98.533		
Cd	111	98.493		
Cd	114			
In	115			103.177
Sn	118	98.128		
Sb	123	97.868		
Ba	135	98.177		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.824		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.976		
U	238	99.865		
Bi	209			101.591
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 11:59:02
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73266.9	3.6				ug/L	74916	Standard
	Be	9	38.3	30.1	**0.0335**	0.011	32.9	ug/L	10	Standard
	Al	27	2666.9	9.7	**0.0134**	0.001	8.7	ug/L	1822	Standard
	Sc	45	54129.9	0.6				ug/L	55220	Standard
	Ti	47	47.7	19.5	**0.0440**	0.021	48.7	ug/L	34	Standard
	V	51	1815.6	3.2	**-0.0022**	0.009	417.7	ug/L	1938	Standard
	Cr	52	8908.6	1.0	**-0.0592**	0.025	41.9	ug/L	9522	Standard
	Cr	53	500.0	6.1	**0.0561**	0.023	41.9	ug/L	395	Standard
	Mn	55	1168.7	1.2	**0.0293**	0.002	8.4	ug/L	902	Standard
	Co	59	347.7	9.3	**0.0194**	0.003	17.6	ug/L	262	Standard
	Ni	60	307.0	17.4	**-0.0098**	0.026	261.6	ug/L	371	Standard
	Cu	65	163.7	7.9	**0.0146**	0.005	33.6	ug/L	106	Standard
	Zn	66	431.7	0.7	**-0.0179**	0.007	39.9	ug/L	398	Standard
>	**Ge**	72	540936.2	1.7				ug/L	535147	Standard
	As	75	-11.2	339.5	**0.0471**	0.028	59.8	ug/L	-43	Standard
	Se	82	27.6	38.1	**0.1053**	0.080	75.7	ug/L	14	Standard
	Se-1	77	58.7	11.3	**0.0634**	0.079	124.5	ug/L	65	Standard
>	**Ga**	71	86.7	33.3				mg/L	97	Standard
	Rb	85	66.7	30.3				ug/L	15	Standard
	Y	89	467928.3	2.4				ug/L	465704	Standard
>	**Rh**	103	20.0	43.3				ug/L	10	Standard
	Mo	98	236.1	20.7	**0.0858**	0.015	17.2	ug/L	9	Standard
	Ag	107	190.0	14.6	**0.0184**	0.003	18.5	ug/L	82	Standard
	Cd	111	20.6	21.1	**0.0162**	0.002	10.4	mg/L	7	Standard
	Cd	114	68.1	34.7	**0.0203**	0.004	19.3	ug/L	21	Standard
>	**In**	115	637305.2	0.8				ug/L	619035	Standard
	Sn	118	880.0	7.4	**0.0280**	0.010	37.2	ug/L	508	Standard
	Sb	123	794.1	27.5	**0.1502**	0.041	27.2	ug/L	86	Standard
	Ba	135	64.0	4.1	**0.0076**	0.001	17.3	ug/L	79	Standard
	Ce	140	128.3	54.6				ug/L	68	Standard
>	**Tb**	159	982464.6	1.0				ug/L	986982	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	126.7	23.9	**0.0197**	0.003	16.6	ug/L	13	Standard
	Tl	205	91.7	36.3	**0.0193**	0.004	21.6	ug/L	10	Standard
	Pb	206	366.0	3.4	**0.0241**	0.001	6.0	ug/L	264	Standard
	Pb	207	305.7	8.4	**0.0239**	0.004	18.4	ug/L	227	Standard
	Pb	208	1216.7	5.0	**0.0206**	0.002	11.7	ug/L	868	Standard
	U	238	92.0	19.6	**0.0199**	0.002	11.6	ug/L	8	Standard
>	**Bi**	209	546299.6	1.1				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	21.7	48.0	**-0.0105**	0.011	109.1	mg/L	53	Standard
K	39	50.0	26.5	**0.0105**	0.023	214.7	mg/L	53	Standard
Ca	43	33.3	22.9	**0.2493**	0.431	172.8	mg/L	28	Standard
Fe	54	190.9	6.0	**0.0139**	0.008	54.2	mg/L	181	Standard
Fe	57	266.7	23.9	**0.0573**	0.169	295.2	mg/L	257	Standard
> **Sc-1**	45	54129.9	0.6				mg/L	55220	Standard
Cl	35	39084.3	0.8				ug/L	35504	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	2156.8	6.9				ug/L	2040	Standard
P	31	20552.3	1.5				ug/L	20435	Standard
S	34	2501.9	1.6				ug/L	2430	Standard
Sr	88	81.7	17.7				ug/L	75	Standard
C	12	106.7	23.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	608.4	11.8				mg/L	9	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	103.3	24.4				mg/L	23	Standard
I	127	15052.5	1.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.082	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.951
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.977
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW DM WG573868-03
Sample Date/Time: Thursday, June 30, 2016 12:09:56
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75042.1	2.4				ug/L	74916	Standard
	Be	9	46.7	12.4	**0.0406**	0.006	15.0	ug/L	10	Standard
	Al	27	5130.9	23.4	**0.0272**	0.007	24.3	ug/L	1822	Standard
	Sc	45	55277.3	0.3				ug/L	55220	Standard
	Ti	47	46.0	12.1	**0.0376**	0.012	32.6	ug/L	34	Standard
	V	51	2344.5	6.5	**0.0487**	0.015	30.2	ug/L	1938	Standard
	Cr	52	10404.6	0.1	**0.0803**	0.013	15.7	ug/L	9522	Standard
	Cr	53	568.3	11.8	**0.1058**	0.058	54.8	ug/L	395	Standard
	Mn	55	2002.8	7.0	**0.1203**	0.016	13.2	ug/L	902	Standard
	Co	59	509.3	18.1	**0.0377**	0.011	28.5	ug/L	262	Standard
	Ni	60	393.3	5.9	**0.0243**	0.011	44.9	ug/L	371	Standard
	Cu	65	237.7	6.1	**0.0455**	0.005	11.8	ug/L	106	Standard
	Zn	66	1297.4	2.8	**0.6198**	0.029	4.7	ug/L	398	Standard
>	**Ge**	72	552956.0	1.0				ug/L	535147	Standard
	As	75	-28.9	102.6	**0.0343**	0.022	62.8	ug/L	-43	Standard
	Se	82	25.5	33.7	**0.0856**	0.062	72.0	ug/L	14	Standard
	Se-1	77	56.3	5.4	**0.0240**	0.037	152.5	ug/L	65	Standard
>	**Ga**	71	51.7	11.2				mg/L	97	Standard
	Rb	85	58.3	26.2				ug/L	15	Standard
	Y	89	476604.2	1.4				ug/L	465704	Standard
>	**Rh**	103	16.7	34.6				ug/L	10	Standard
	Mo	98	110.0	34.7	**0.0464**	0.011	24.7	ug/L	9	Standard
	Ag	107	470.0	14.4	**0.0541**	0.008	15.0	ug/L	82	Standard
	Cd	111	86.8	29.8	**0.0426**	0.010	23.4	mg/L	7	Standard
	Cd	114	200.3	71.6	**0.0421**	0.023	55.6	ug/L	21	Standard
>	**In**	115	640268.8	1.4				ug/L	619035	Standard
	Sn	118	798.4	8.9	**0.0152**	0.010	67.0	ug/L	508	Standard
	Sb	123	661.5	7.4	**0.1252**	0.009	7.3	ug/L	86	Standard
	Ba	135	127.0	35.5	**0.0340**	0.018	54.2	ug/L	79	Standard
	Ce	140	86.7	17.6				ug/L	68	Standard
>	**Tb**	159	987703.0	0.6				ug/L	986982	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	278.0	36.9	**0.0355**	0.011	29.9	ug/L	13	Standard
	Tl	205	215.0	34.7	**0.0344**	0.009	26.1	ug/L	10	Standard
	Pb	206	476.7	15.4	**0.0411**	0.012	28.1	ug/L	264	Standard
	Pb	207	439.0	17.9	**0.0472**	0.014	29.4	ug/L	227	Standard
	Pb	208	1642.0	10.9	**0.0397**	0.008	20.0	ug/L	868	Standard
	U	238	87.0	72.6	**0.0190**	0.008	41.9	ug/L	8	Standard
>	**Bi**	209	557268.1	1.1				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.3804**	16.239	173.1	mg/L	2	Standard
Mg	24	45.0	19.2	**0.0144**	0.009	65.7	mg/L	53	Standard
K	39	50.0	34.6	**0.0088**	0.030	334.6	mg/L	53	Standard
Ca	43	25.0	40.0	**-0.2606**	0.566	217.2	mg/L	28	Standard
Fe	54	165.8	13.9	**-0.0058**	0.016	274.6	mg/L	181	Standard
Fe	57	281.7	14.8	**0.0827**	0.112	135.9	mg/L	257	Standard
Sc-1	45	55277.3	0.3				mg/L	55220	Standard
Cl	35	39960.6	0.9				ug/L	35504	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	2270.2	3.8				ug/L	2040	Standard
P	31	20181.8	3.6				ug/L	20435	Standard
S	34	2101.8	5.3				ug/L	2430	Standard
Sr	88	70.0	14.3				ug/L	75	Standard
C	12	103.3	14.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	8.4	6.6				mg/L	9	Standard
Ho-1	165	8.3	91.7				mg/L	10	Standard
Er	166	33.3	34.6				mg/L	23	Standard
I	127	14196.7	3.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.168	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.328	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.430
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.004
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW DM WG573868-04
Sample Date/Time: Thursday, June 30, 2016 12:13:08
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75614.9	0.8				ug/L	74916	Standard
	Be	9	56461.7	2.6	**53.0158**	1.254	2.4	ug/L	10	Standard
	Al	27	8238.9	4.9	**0.0447**	0.003	6.0	ug/L	1822	Standard
	Sc	45	54966.2	2.3				ug/L	55220	Standard
	Ti	47	53.7	13.5	**0.0559**	0.016	29.5	ug/L	34	Standard
	V	51	486782.8	1.3	**50.7926**	0.588	1.2	ug/L	1938	Standard
	Cr	52	487122.6	0.7	**51.4915**	0.441	0.9	ug/L	9522	Standard
	Cr	53	59874.8	2.0	**51.6707**	0.958	1.9	ug/L	395	Standard
	Mn	55	464127.5	0.4	**52.2382**	0.073	0.1	ug/L	902	Standard
	Co	59	442230.6	0.3	**52.6518**	0.339	0.6	ug/L	262	Standard
	Ni	60	120110.9	0.7	**51.8238**	0.534	1.0	ug/L	371	Standard
	Cu	65	119462.5	1.3	**52.4568**	0.612	1.2	ug/L	106	Standard
	Zn	66	69006.1	0.8	**51.1577**	0.387	0.8	ug/L	398	Standard
>	**Ge**	72	551846.0	0.4				ug/L	535147	Standard
	As	75	70485.8	0.5	**51.0842**	0.120	0.2	ug/L	-43	Standard
	Se	82	6971.9	1.5	**49.7873**	0.613	1.2	ug/L	14	Standard
	Se-1	77	4835.1	1.1	**51.4687**	0.717	1.4	ug/L	65	Standard
>	**Ga**	71	75.0	11.5				mg/L	97	Standard
	Rb	85	53.3	19.5				ug/L	15	Standard
	Y	89	480514.9	1.4				ug/L	465704	Standard
>	**Rh**	103	46.7	16.4				ug/L	10	Standard
	Mo	98	72.7	13.4	**0.0347**	0.003	8.3	ug/L	9	Standard
	Ag	107	405687.5	0.3	**51.5601**	0.578	1.1	ug/L	82	Standard
	Cd	111	125440.7	0.4	**49.8773**	0.557	1.1	mg/L	7	Standard
	Cd	114	303151.0	0.5	**50.0526**	0.311	0.6	ug/L	21	Standard
>	**In**	115	645186.9	0.8				ug/L	619035	Standard
	Sn	118	700.0	7.4	**-0.0002**	0.007	3014.2	ug/L	508	Standard
	Sb	123	279461.7	1.0	**50.6399**	0.925	1.8	ug/L	86	Standard
	Ba	135	119660.3	0.8	**50.2013**	0.454	0.9	ug/L	79	Standard
	Ce	140	271.7	32.7				ug/L	68	Standard
>	**Tb**	159	996230.2	1.7				ug/L	986982	Standard
	Ho	165	10.0	86.6				ug/L	10	Standard
	Tl	203	481064.0	0.4	**50.8871**	0.487	1.0	ug/L	13	Standard
	Tl	205	418584.1	1.5	**51.8251**	0.426	0.8	ug/L	10	Standard
	Pb	206	313866.3	0.6	**51.6940**	0.593	1.1	ug/L	264	Standard
	Pb	207	273492.3	0.3	**49.8395**	0.528	1.1	ug/L	227	Standard
	Pb	208	1100367.2	0.4	**52.0040**	0.604	1.2	ug/L	868	Standard
	U	238	390238.6	0.2	**49.8959**	0.511	1.0	ug/L	8	Standard
>	**Bi**	209	560231.5	0.8				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	45.0	29.4	**0.0145**	0.014	94.0	mg/L	53	Standard
K	39	45.0	48.4	**0.0003**	0.036	11085.7	mg/L	53	Standard
Ca	43	20.0	50.0	**-0.5429**	0.546	100.5	mg/L	28	Standard
Fe	54	187.7	16.1	**0.0100**	0.023	229.2	mg/L	181	Standard
Fe	57	243.3	9.3	**-0.0154**	0.058	378.3	mg/L	257	Standard
> **Sc-1**	45	54966.2	2.3				mg/L	55220	Standard
Cl	35	39538.2	1.9				ug/L	35504	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	1870.1	8.4				ug/L	2040	Standard
P	31	20659.1	1.9				ug/L	20435	Standard
S	34	2180.2	6.0				ug/L	2430	Standard
Sr	88	70.0	46.8				ug/L	75	Standard
C	12	96.7	31.6				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	19.5	53.7				mg/L	9	Standard
Ho-1	165	10.0	86.6				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	1283.4	22.1				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		100.932	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		103.120	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.225
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.552
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW DM WG573868-04
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Method 6020 - Summary Report

Sample ID: L1606113005 WG573868-01
Sample Date/Time: Thursday, June 30, 2016 12:16:19
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74224.7	0.4				ug/L	74916	Standard
	Be	9	33.3	48.2	**0.0282**	0.015	54.1	ug/L	10	Standard
	Al	27	13729.6	1.9	**0.0775**	0.002	2.4	ug/L	1822	Standard
	Sc	45	54909.3	1.4				ug/L	55220	Standard
	Ti	47	52.0	26.9	**0.0519**	0.035	66.5	ug/L	34	Standard
	V	51	2026.8	1.1	**0.0153**	0.002	15.9	ug/L	1938	Standard
	Cr	52	11350.9	1.2	**0.1808**	0.031	17.2	ug/L	9522	Standard
	Cr	53	698.3	8.0	**0.2175**	0.040	18.4	ug/L	395	Standard
	Mn	55	1997.1	1.0	**0.1194**	0.005	4.2	ug/L	902	Standard
	Co	59	345.0	7.0	**0.0182**	0.003	18.0	ug/L	262	Standard
	Ni	60	400.0	6.0	**0.0269**	0.011	41.9	ug/L	371	Standard
	Cu	65	1623.4	1.5	**0.6528**	0.021	3.2	ug/L	106	Standard
	Zn	66	1888.5	2.6	**1.0587**	0.056	5.3	ug/L	398	Standard
>	**Ge**	72	553668.9	1.4				ug/L	535147	Standard
	As	75	-49.2	51.8	**0.0198**	0.018	91.0	ug/L	-43	Standard
	Se	82	21.8	46.3	**0.0578**	0.071	122.1	ug/L	14	Standard
	Se-1	77	61.7	9.5	**0.0798**	0.054	67.4	ug/L	65	Standard
>	**Ga**	71	58.3	9.9				mg/L	97	Standard
	Rb	85	98.3	41.4				ug/L	15	Standard
	Y	89	487175.7	1.2				ug/L	465704	Standard
>	**Rh**	103	6.7	43.3				ug/L	10	Standard
	Mo	98	43.2	20.0	**0.0257**	0.003	10.5	ug/L	9	Standard
	Ag	107	172.0	10.9	**0.0160**	0.003	16.1	ug/L	82	Standard
	Cd	111	16.2	29.1	**0.0144**	0.002	13.5	mg/L	7	Standard
	Cd	114	56.3	71.8	**0.0183**	0.007	37.0	ug/L	21	Standard
>	**In**	115	640857.1	0.9				ug/L	619035	Standard
	Sn	118	2248.5	21.6	**0.2299**	0.069	29.9	ug/L	508	Standard
	Sb	123	230.9	14.3	**0.0465**	0.006	12.2	ug/L	86	Standard
	Ba	135	326.0	5.8	**0.1181**	0.009	7.4	ug/L	79	Standard
	Ce	140	65.0	23.1				ug/L	68	Standard
>	**Tb**	159	1002952.3	1.1				ug/L	986982	Standard
	Ho	165	16.7	17.3				ug/L	10	Standard
	Tl	203	365.3	26.2	**0.0447**	0.010	22.4	ug/L	13	Standard
	Tl	205	333.3	33.3	**0.0490**	0.014	27.8	ug/L	10	Standard
	Pb	206	323.3	11.2	**0.0156**	0.006	39.8	ug/L	264	Standard
	Pb	207	298.3	7.9	**0.0213**	0.005	21.2	ug/L	227	Standard
	Pb	208	1114.7	7.9	**0.0144**	0.004	30.0	ug/L	868	Standard
	U	238	59.7	41.1	**0.0155**	0.003	20.4	ug/L	8	Standard
>	**Bi**	209	559636.4	0.4				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.4552**	16.368	173.1	mg/L	2	Standard
Mg	24	115.0	19.0	**0.0914**	0.023	25.7	mg/L	53	Standard
K	39	31.7	48.2	**-0.0217**	0.026	121.6	mg/L	53	Standard
Ca	43	25.0	40.0	**-0.2454**	0.589	240.0	mg/L	28	Standard
Fe	54	195.2	12.5	**0.0152**	0.019	122.1	mg/L	181	Standard
Fe	57	260.0	19.5	**0.0288**	0.127	440.0	mg/L	257	Standard
> **Sc-1**	45	54909.3	1.4				mg/L	55220	Standard
Cl	35	39663.8	0.4				ug/L	35504	Standard
Kr	83	2.3	89.2				ug/L	2	Standard
Br	81	2350.2	5.6				ug/L	2040	Standard
P	31	21443.5	2.9				ug/L	20435	Standard
S	34	2165.2	3.8				ug/L	2430	Standard
Sr	88	63.3	31.9				ug/L	75	Standard
C	12	160.0	6.3				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	22.2	26.6				mg/L	9	Standard
Ho-1	165	16.7	17.3				mg/L	10	Standard
Er	166	23.3	24.7				mg/L	23	Standard
I	127	1581.8	15.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.077	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.461	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.525
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.442
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606113005S WG573868-05
Sample Date/Time: Thursday, June 30, 2016 12:19:31
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75859.5	1.7				ug/L	74916	Standard
	Be	9	53517.7	0.7	**50.0953**	0.496	1.0	ug/L	10	Standard
	Al	27	14822.3	4.1	**0.0821**	0.005	5.9	ug/L	1822	Standard
	Sc	45	55769.1	1.4				ug/L	55220	Standard
	Ti	47	56.7	12.4	**0.0625**	0.018	28.2	ug/L	34	Standard
	V	51	477963.8	1.8	**49.6645**	1.337	2.7	ug/L	1938	Standard
	Cr	52	477361.7	1.3	**50.2263**	1.123	2.2	ug/L	9522	Standard
	Cr	53	57509.0	1.8	**49.4101**	1.327	2.7	ug/L	395	Standard
	Mn	55	446297.6	2.8	**50.0240**	1.838	3.7	ug/L	902	Standard
	Co	59	429160.2	2.4	**50.8864**	1.638	3.2	ug/L	262	Standard
	Ni	60	116532.1	0.5	**50.0630**	0.586	1.2	ug/L	371	Standard
	Cu	65	119264.3	1.8	**52.1555**	1.404	2.7	ug/L	106	Standard
	Zn	66	68742.9	1.2	**50.7470**	0.887	1.7	ug/L	398	Standard
>	**Ge**	72	554202.5	0.9				ug/L	535147	Standard
	As	75	68808.0	1.4	**49.6622**	0.974	2.0	ug/L	-43	Standard
	Se	82	6870.4	2.1	**48.8573**	1.250	2.6	ug/L	14	Standard
	Se-1	77	4643.4	2.5	**49.1971**	1.525	3.1	ug/L	65	Standard
>	**Ga**	71	91.7	24.6				mg/L	97	Standard
	Rb	85	131.7	35.3				ug/L	15	Standard
	Y	89	486292.9	2.1				ug/L	465704	Standard
>	**Rh**	103	33.3	37.7				ug/L	10	Standard
	Mo	98	56.7	2.0	**0.0297**	0.000	0.2	ug/L	9	Standard
	Ag	107	395086.0	1.7	**50.0359**	0.832	1.7	ug/L	82	Standard
	Cd	111	123225.4	2.1	**48.8369**	1.711	3.5	mg/L	7	Standard
	Cd	114	293682.5	0.4	**48.3309**	1.240	2.6	ug/L	21	Standard
>	**In**	115	647535.4	2.3				ug/L	619035	Standard
	Sn	118	1893.5	3.7	**0.1750**	0.016	9.3	ug/L	508	Standard
	Sb	123	259785.3	2.7	**46.9064**	1.211	2.6	ug/L	86	Standard
	Ba	135	116849.2	1.2	**48.8634**	1.506	3.1	ug/L	79	Standard
	Ce	140	153.3	39.8				ug/L	68	Standard
>	**Tb**	159	1011084.7	1.8				ug/L	986982	Standard
	Ho	165	20.0	66.1				ug/L	10	Standard
	Tl	203	469188.2	1.0	**49.3773**	0.843	1.7	ug/L	13	Standard
	Tl	205	410523.6	2.0	**50.5675**	0.970	1.9	ug/L	10	Standard
	Pb	206	306453.9	0.8	**50.2156**	0.970	1.9	ug/L	264	Standard
	Pb	207	266953.5	1.4	**48.4007**	1.172	2.4	ug/L	227	Standard
	Pb	208	1071921.5	1.1	**50.3960**	0.627	1.2	ug/L	868	Standard
	U	238	385204.2	1.1	**49.0033**	1.122	2.3	ug/L	8	Standard
>	**Bi**	209	563202.7	2.1				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	121.7	16.6	**0.0969**	0.023	24.0	mg/L	53	Standard
K	39	41.7	36.7	**-0.0062**	0.025	403.7	mg/L	53	Standard
Ca	43	30.0	44.1	**0.0050**	0.728	14524.7	mg/L	28	Standard
Fe	54	196.3	28.3	**0.0135**	0.036	268.0	mg/L	181	Standard
Fe	57	255.0	3.9	**0.0060**	0.028	467.7	mg/L	257	Standard
Sc-1	45	55769.1	1.4				mg/L	55220	Standard
Cl	35	39136.5	1.8				ug/L	35504	Standard
Kr	83	3.7	31.5				ug/L	2	Standard
Br	81	2323.5	7.6				ug/L	2040	Standard
P	31	21603.7	3.7				ug/L	20435	Standard
S	34	2060.1	5.2				ug/L	2430	Standard
Sr	88	75.0	24.0				ug/L	75	Standard
C	12	180.0	0.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	2.9	187.9				mg/L	9	Standard
Ho-1	165	20.0	66.1				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	1540.1	16.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		101.259	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.561	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606113005S WG573868-05
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.604
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.101
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606113005SD WG573868-06
Sample Date/Time: Thursday, June 30, 2016 12:22:42
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74551.4	3.4				ug/L	74916	Standard
	Be	9	53178.2	3.2	**50.6600**	1.356	2.7	ug/L	10	Standard
	Al	27	18813.3	1.8	**0.1067**	0.003	2.5	ug/L	1822	Standard
	Sc	45	55598.5	1.6				ug/L	55220	Standard
	Ti	47	42.7	9.8	**0.0300**	0.010	32.2	ug/L	34	Standard
	V	51	475255.0	2.5	**49.5591**	1.214	2.5	ug/L	1938	Standard
	Cr	52	473969.7	2.1	**50.0448**	1.014	2.0	ug/L	9522	Standard
	Cr	53	57654.5	2.6	**49.7179**	1.462	2.9	ug/L	395	Standard
	Mn	55	442756.2	1.2	**49.8003**	0.298	0.6	ug/L	902	Standard
	Co	59	424024.9	0.7	**50.4565**	0.397	0.8	ug/L	262	Standard
	Ni	60	117258.1	2.1	**50.5593**	0.859	1.7	ug/L	371	Standard
	Cu	65	118084.1	1.1	**51.8235**	0.506	1.0	ug/L	106	Standard
	Zn	66	68404.8	2.2	**50.6819**	1.115	2.2	ug/L	398	Standard
>	Ge	72	552141.6	0.7				ug/L	535147	Standard
	As	75	67261.4	1.0	**48.7232**	0.168	0.3	ug/L	-43	Standard
	Se	82	6897.0	1.0	**49.2249**	0.173	0.4	ug/L	14	Standard
	Se-1	77	4659.0	1.2	**49.5452**	0.522	1.1	ug/L	65	Standard
>	Ga	71	111.7	11.3				mg/L	97	Standard
	Rb	85	128.3	11.9				ug/L	15	Standard
	Y	89	474313.0	0.2				ug/L	465704	Standard
>	Rh	103	28.3	40.8				ug/L	10	Standard
	Mo	98	52.5	25.1	**0.0287**	0.004	14.2	ug/L	9	Standard
	Ag	107	396093.4	0.8	**50.8417**	0.342	0.7	ug/L	82	Standard
	Cd	111	122436.6	0.5	**49.1678**	0.301	0.6	mg/L	7	Standard
	Cd	114	294291.4	1.0	**49.0751**	0.426	0.9	ug/L	21	Standard
>	In	115	638789.3	0.1				ug/L	619035	Standard
	Sn	118	1938.5	7.0	**0.1852**	0.020	10.9	ug/L	508	Standard
	Sb	123	259908.8	1.7	**47.5638**	0.768	1.6	ug/L	86	Standard
	Ba	135	117151.2	0.5	**49.6392**	0.187	0.4	ug/L	79	Standard
	Ce	140	143.3	62.0				ug/L	68	Standard
>	Tb	159	992320.5	0.6				ug/L	986982	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	470616.6	0.7	**49.8191**	0.719	1.4	ug/L	13	Standard
	Tl	205	411651.5	1.7	**51.0100**	1.168	2.3	ug/L	10	Standard
	Pb	206	306649.7	1.4	**50.5436**	1.089	2.2	ug/L	264	Standard
	Pb	207	268147.6	1.2	**48.9019**	0.972	2.0	ug/L	227	Standard
	Pb	208	1070133.8	1.2	**50.6106**	0.852	1.7	ug/L	868	Standard
	U	238	382139.7	1.1	**48.8973**	0.909	1.9	ug/L	8	Standard
>	Bi	209	559832.8	0.8				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	91.7	16.7	**0.0647**	0.017	26.6	mg/L	53	Standard
K	39	50.0	45.8	**0.0087**	0.040	460.5	mg/L	53	Standard
Ca	43	38.3	41.9	**0.4906**	0.931	189.7	mg/L	28	Standard
Fe	54	189.1	25.8	**0.0093**	0.033	357.3	mg/L	181	Standard
Fe	57	263.3	12.9	**0.0307**	0.097	316.1	mg/L	257	Standard
> **Sc-1**	45	55598.5	1.6				mg/L	55220	Standard
Cl	35	37237.1	2.9				ug/L	35504	Standard
Kr	83	4.3	13.3				ug/L	2	Standard
Br	81	2256.8	14.5				ug/L	2040	Standard
P	31	21346.7	0.5				ug/L	20435	Standard
S	34	2086.8	9.4				ug/L	2430	Standard
Sr	88	66.7	31.2				ug/L	75	Standard
C	12	123.3	54.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	9.7	98.4				mg/L	9	Standard
Ho-1	165	8.3	69.3				mg/L	10	Standard
Er	166	6.7	173.2				mg/L	23	Standard
I	127	1585.1	16.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.513	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.176	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.191
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.478
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606123801
Sample Date/Time: Thursday, June 30, 2016 12:25:54
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74244.9	2.3				ug/L	74916	Standard
	Be	9	36.7	70.0	**0.0311**	0.024	75.7	ug/L	10	Standard
	Al	27	40987674.7	0.3	**238.4014**	4.801	2.0	ug/L	1822	Standard
	Sc	45	55571.8	3.6				ug/L	55220	Standard
	Ti	47	299.3	4.5	**0.6581**	0.032	4.9	ug/L	34	Standard
	V	51	36979.9	0.9	**3.8159**	0.038	1.0	ug/L	1938	Standard
	Cr	52	12709.3	1.3	**0.3801**	0.018	4.8	ug/L	9522	Standard
	Cr	53	5606.0	4.8	**4.6613**	0.240	5.1	ug/L	395	Standard
	Mn	55	421396.0	1.1	**49.1212**	0.583	1.2	ug/L	902	Standard
	Co	59	2301.5	3.1	**0.2611**	0.009	3.5	ug/L	262	Standard
	Ni	60	3910.8	2.1	**1.6070**	0.034	2.1	ug/L	371	Standard
	Cu	65	773.7	4.5	**0.2935**	0.015	5.3	ug/L	106	Standard
	Zn	66	2818.3	1.7	**1.8321**	0.037	2.0	ug/L	398	Standard
>	**Ge**	72	532768.3	0.2				ug/L	535147	Standard
	As	75	1369.2	3.1	**1.0820**	0.033	3.1	ug/L	-43	Standard
	Se	82	398.0	0.6	**2.8528**	0.021	0.7	ug/L	14	Standard
	Se-1	77	449.3	10.0	**4.4287**	0.501	11.3	ug/L	65	Standard
>	**Ga**	71	101.7	22.7				mg/L	97	Standard
	Rb	85	1325.1	2.3				ug/L	15	Standard
	Y	89	455634.3	1.9				ug/L	465704	Standard
>	**Rh**	103	173.3	7.3				ug/L	10	Standard
	Mo	98	459.2	2.9	**0.1632**	0.005	3.1	ug/L	9	Standard
	Ag	107	240.0	1.4	**0.0265**	0.000	1.4	ug/L	82	Standard
	Cd	111	29.9	2.0	**0.0206**	0.000	1.7	mg/L	7	Standard
	Cd	114	75.2	10.3	**0.0222**	0.001	6.1	ug/L	21	Standard
>	**In**	115	604246.1	1.1				ug/L	619035	Standard
	Sn	118	613.3	11.1	**-0.0069**	0.010	141.5	ug/L	508	Standard
	Sb	123	2719.5	28.6	**0.5309**	0.152	28.5	ug/L	86	Standard
	Ba	135	92033.0	0.8	**41.2277**	0.772	1.9	ug/L	79	Standard
	Ce	140	1463.4	3.8				ug/L	68	Standard
>	**Tb**	159	962887.3	0.3				ug/L	986982	Standard
	Ho	165	45.0	11.1				ug/L	10	Standard
	Tl	203	365.3	3.0	**0.0480**	0.002	3.3	ug/L	13	Standard
	Tl	205	323.3	10.3	**0.0512**	0.005	9.3	ug/L	10	Standard
	Pb	206	14023.2	0.8	**2.4745**	0.030	1.2	ug/L	264	Standard
	Pb	207	11750.2	0.5	**2.2958**	0.019	0.8	ug/L	227	Standard
	Pb	208	47567.6	0.7	**2.4069**	0.020	0.8	ug/L	868	Standard
	U	238	42987.9	0.7	**5.9811**	0.044	0.7	ug/L	8	Standard
>	**Bi**	209	515414.9	0.8				ug/L	541014	Standard

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Na	23	10.0	50.0	**56.5003**	29.382	52.0	mg/L	2	Standard
Mg	24	58837.4	0.7	**63.7321**	2.198	3.4	mg/L	53	Standard
K	39	145.0	6.0	**0.1689**	0.020	12.1	mg/L	53	Standard
Ca	43	801.7	4.7	**43.5056**	3.217	7.4	mg/L	28	Standard
Fe	54	230.3	10.8	**0.0375**	0.020	53.1	mg/L	181	Standard
Fe	57	665.0	0.0	**1.0889**	0.062	5.7	mg/L	257	Standard
> **Sc-1**	45	55571.8	3.6				mg/L	55220	Standard
Cl	35	43493.7	1.2				ug/L	35504	Standard
Kr	83	3.0	100.0				ug/L	2	Standard
Br	81	78305.5	5.1				ug/L	2040	Standard
P	31	26029.0	0.6				ug/L	20435	Standard
S	34	2565.2	4.1				ug/L	2430	Standard
Sr	88	583.3	1.0				ug/L	75	Standard
C	12	400.0	19.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	86.2	51.0				mg/L	9	Standard
Ho-1	165	45.0	11.1				mg/L	10	Standard
Er	166	80.0	21.7				mg/L	23	Standard
I	127	592701.8	6.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.104	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.556	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606123801
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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.611
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.268
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606123802
Sample Date/Time: Thursday, June 30, 2016 12:29:05
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85281.0	1.8				ug/L	74916	Standard
	Be	9	31.7	55.5	**0.0229**	0.015	65.8	ug/L	10	Standard
	Al	27	40832774.8	0.8	**206.7413**	3.781	1.8	ug/L	1822	Standard
	Sc	45	54113.1	1.6				ug/L	55220	Standard
	Ti	47	761.0	62.9	**1.8316**	1.167	63.7	ug/L	34	Standard
	V	51	60819.6	2.4	**6.6233**	0.223	3.4	ug/L	1938	Standard
	Cr	52	25517.8	0.5	**1.9058**	0.034	1.8	ug/L	9522	Standard
	Cr	53	20120.0	5.6	**18.3399**	1.146	6.2	ug/L	395	Standard
	Mn	55	7353.8	0.4	**0.7825**	0.010	1.3	ug/L	902	Standard
	Co	59	1110.7	5.5	**0.1187**	0.006	5.1	ug/L	262	Standard
	Ni	60	3088.6	0.9	**1.2848**	0.020	1.6	ug/L	371	Standard
	Cu	65	1541.7	3.9	**0.6667**	0.032	4.7	ug/L	106	Standard
	Zn	66	2653.2	4.4	**1.7721**	0.063	3.6	ug/L	398	Standard
>	**Ge**	72	515636.8	1.5				ug/L	535147	Standard
	As	75	3689.9	1.3	**2.9149**	0.078	2.7	ug/L	-43	Standard
	Se	82	1133.1	0.7	**8.5813**	0.174	2.0	ug/L	14	Standard
	Se-1	77	2001.1	4.2	**22.4732**	0.911	4.1	ug/L	65	Standard
>	**Ga**	71	131.7	22.3				mg/L	97	Standard
	Rb	85	21328.3	1.6				ug/L	15	Standard
	Y	89	452149.0	0.4				ug/L	465704	Standard
>	**Rh**	103	435.0	5.0				ug/L	10	Standard
	Mo	98	14977.2	1.8	**5.0495**	0.111	2.2	ug/L	9	Standard
	Ag	107	143.0	11.3	**0.0138**	0.002	16.7	ug/L	82	Standard
	Cd	111	11.4	2.3	**0.0128**	0.000	0.6	mg/L	7	Standard
	Cd	114	91.8	27.3	**0.0255**	0.005	18.1	ug/L	21	Standard
>	**In**	115	589985.2	0.7				ug/L	619035	Standard
	Sn	118	803.4	29.4	**0.0262**	0.038	147.0	ug/L	508	Standard
	Sb	123	773.1	32.3	**0.1578**	0.050	32.0	ug/L	86	Standard
	Ba	135	24159.6	0.8	**11.0685**	0.049	0.4	ug/L	79	Standard
	Ce	140	1713.4	3.5				ug/L	68	Standard
>	**Tb**	159	962435.5	0.7				ug/L	986982	Standard
	Ho	165	66.7	17.3				ug/L	10	Standard
	Tl	203	153.3	12.4	**0.0238**	0.002	9.0	ug/L	13	Standard
	Tl	205	135.0	13.4	**0.0261**	0.002	9.4	ug/L	10	Standard
	Pb	206	668.3	3.9	**0.0833**	0.005	5.5	ug/L	264	Standard
	Pb	207	559.7	2.3	**0.0790**	0.002	3.1	ug/L	227	Standard
	Pb	208	2297.4	1.6	**0.0811**	0.002	2.6	ug/L	868	Standard
	U	238	87580.4	0.3	**12.3190**	0.088	0.7	ug/L	8	Standard
>	**Bi**	209	509478.2	0.4				ug/L	541014	Standard

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Na	23	3.3	173.2	**19.0801**	33.039	173.2	mg/L	2	Standard
Mg	24	163394.8	1.7	**181.6976**	3.675	2.0	mg/L	53	Standard
K	39	673.3	8.2	**1.0905**	0.102	9.3	mg/L	53	Standard
Ca	43	636.7	6.7	**35.1510**	3.000	8.5	mg/L	28	Standard
Fe	54	221.2	1.4	**0.0350**	0.001	3.4	mg/L	181	Standard
Fe	57	676.7	6.7	**1.1677**	0.151	12.9	mg/L	257	Standard
> **Sc-1**	45	54113.1	1.6				mg/L	55220	Standard
Cl	35	50047.9	0.7				ug/L	35504	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	37272.5	1.7				ug/L	2040	Standard
P	31	24598.3	1.7				ug/L	20435	Standard
S	34	2330.2	6.3				ug/L	2430	Standard
Sr	88	1316.7	9.4				ug/L	75	Standard
C	12	223.3	21.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	106.6	56.7				mg/L	9	Standard
Ho-1	165	66.7	17.3				mg/L	10	Standard
Er	166	70.0	28.6				mg/L	23	Standard
I	127	129859.3	2.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.835	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.354	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.307
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.171
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606123802
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Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606123802PS WG574742-01
Sample Date/Time: Thursday, June 30, 2016 12:32:17
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	90026.7	0.8				ug/L	74916	Standard
	Be	9	55156.9	1.4	**43.5024**	0.777	1.8	ug/L	10	Standard
	Al	27	42431963.2	0.5	**203.4865**	2.596	1.3	ug/L	1822	Standard
	Sc	45	55210.4	0.9				ug/L	55220	Standard
	Ti	47	633.0	44.3	**1.4860**	0.698	47.0	ug/L	34	Standard
	V	51	504685.6	0.5	**55.0548**	0.569	1.0	ug/L	1938	Standard
	Cr	52	444386.3	0.9	**49.0453**	0.582	1.2	ug/L	9522	Standard
	Cr	53	73665.3	1.6	**66.5494**	0.802	1.2	ug/L	395	Standard
	Mn	55	405919.8	1.3	**47.7397**	0.682	1.4	ug/L	902	Standard
	Co	59	377751.7	1.5	**47.0009**	0.675	1.4	ug/L	262	Standard
	Ni	60	103282.8	0.4	**46.5576**	0.059	0.1	ug/L	371	Standard
	Cu	65	101218.0	0.8	**46.4456**	0.553	1.2	ug/L	106	Standard
	Zn	66	63559.7	1.1	**49.2342**	0.736	1.5	ug/L	398	Standard
>	Ge	72	528026.7	0.5				ug/L	535147	Standard
	As	75	68292.3	0.5	**51.7282**	0.517	1.0	ug/L	-43	Standard
	Se	82	7467.2	1.7	**55.7421**	0.954	1.7	ug/L	14	Standard
	Se-1	77	6291.3	1.6	**70.2008**	1.328	1.9	ug/L	65	Standard
>	Ga	71	175.0	14.8				mg/L	97	Standard
	Rb	85	21011.2	0.9				ug/L	15	Standard
	Y	89	457532.3	0.8				ug/L	465704	Standard
>	Rh	103	456.7	13.1				ug/L	10	Standard
	Mo	98	15165.9	1.5	**5.0804**	0.082	1.6	ug/L	9	Standard
	Ag	107	323469.9	0.7	**44.6696**	0.305	0.7	ug/L	82	Standard
	Cd	111	108927.2	1.0	**47.0605**	0.163	0.3	mg/L	7	Standard
	Cd	114	263052.0	1.9	**47.1909**	0.546	1.2	ug/L	21	Standard
>	In	115	593751.2	0.8				ug/L	619035	Standard
	Sn	118	850.0	1.8	**0.0328**	0.003	9.1	ug/L	508	Standard
	Sb	123	237149.8	1.1	**46.6930**	0.618	1.3	ug/L	86	Standard
	Ba	135	126318.4	0.3	**57.5882**	0.301	0.5	ug/L	79	Standard
	Ce	140	1838.4	16.1				ug/L	68	Standard
>	Tb	159	963825.5	0.9				ug/L	986982	Standard
	Ho	165	66.7	11.5				ug/L	10	Standard
	Tl	203	416503.8	1.0	**48.0712**	0.216	0.4	ug/L	13	Standard
	Tl	205	364432.7	1.0	**49.2380**	0.756	1.5	ug/L	10	Standard
	Pb	206	277275.5	0.4	**49.8264**	0.163	0.3	ug/L	264	Standard
	Pb	207	240482.5	0.7	**47.8168**	0.618	1.3	ug/L	227	Standard
	Pb	208	944780.0	0.6	**48.7174**	0.550	1.1	ug/L	868	Standard
	U	238	449702.3	0.7	**62.7382**	0.887	1.4	ug/L	8	Standard
>	Bi	209	513434.3	0.7				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	167045.9	1.0	**182.0647**	3.413	1.9	mg/L	53	Standard
K	39	685.0	5.1	**1.0865**	0.051	4.7	mg/L	53	Standard
Ca	43	726.7	3.3	**39.4999**	1.706	4.3	mg/L	28	Standard
Fe	54	191.1	19.7	**0.0113**	0.024	215.3	mg/L	181	Standard
Fe	57	611.7	9.9	**0.9585**	0.173	18.1	mg/L	257	Standard
Sc-1	45	55210.4	0.9				mg/L	55220	Standard
Cl	35	51236.5	0.7				ug/L	35504	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	36838.1	1.4				ug/L	2040	Standard
P	31	25471.4	2.3				ug/L	20435	Standard
S	34	2350.2	6.0				ug/L	2430	Standard
Sr	88	1250.1	5.2				ug/L	75	Standard
C	12	160.0	43.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	90.3	45.9				mg/L	9	Standard
Ho-1	165	66.7	11.5				mg/L	10	Standard
Er	166	63.3	18.2				mg/L	23	Standard
I	127	224161.3	1.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		120.169	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.669	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.916
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.902
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606123802SDL WG574742-02
Sample Date/Time: Thursday, June 30, 2016 12:35:51
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78422.5	2.5				ug/L	74916	Standard
	Be	9	26.7	54.1	**0.0204**	0.013	62.5	ug/L	10	Standard
	Al	27	7894596.4	0.6	**43.4738**	1.073	2.5	ug/L	1822	Standard
	Sc	45	50880.3	1.7				ug/L	55220	Standard
	Ti	47	93.3	15.0	**0.1657**	0.036	22.0	ug/L	34	Standard
	V	51	13858.3	1.7	**1.3644**	0.019	1.4	ug/L	1938	Standard
	Cr	52	12210.9	1.6	**0.3763**	0.020	5.3	ug/L	9522	Standard
	Cr	53	6824.9	3.0	**5.9924**	0.168	2.8	ug/L	395	Standard
	Mn	55	1982.8	2.7	**0.1353**	0.008	5.6	ug/L	902	Standard
	Co	59	409.3	8.6	**0.0296**	0.005	16.0	ug/L	262	Standard
	Ni	60	855.7	2.2	**0.2525**	0.010	4.1	ug/L	371	Standard
	Cu	65	595.7	3.8	**0.2228**	0.009	4.2	ug/L	106	Standard
	Zn	66	1650.8	2.8	**0.9781**	0.040	4.1	ug/L	398	Standard
>	**Ge**	72	513253.1	0.5				ug/L	535147	Standard
	As	75	704.2	3.4	**0.6034**	0.021	3.5	ug/L	-43	Standard
	Se	82	253.3	1.6	**1.8520**	0.037	2.0	ug/L	14	Standard
	Se-1	77	538.0	7.6	**5.6470**	0.495	8.8	ug/L	65	Standard
>	**Ga**	71	78.3	35.2				mg/L	97	Standard
	Rb	85	4115.6	0.1				ug/L	15	Standard
	Y	89	440141.7	0.8				ug/L	465704	Standard
>	**Rh**	103	96.7	7.9				ug/L	10	Standard
	Mo	98	2789.6	1.1	**0.9561**	0.010	1.1	ug/L	9	Standard
	Ag	107	1217.4	41.0	**0.1640**	0.069	42.2	ug/L	82	Standard
	Cd	111	12.7	36.1	**0.0134**	0.002	14.7	mg/L	7	Standard
	Cd	114	22.3	33.6	**0.0130**	0.001	10.3	ug/L	21	Standard
>	**In**	115	586501.7	0.5				ug/L	619035	Standard
	Sn	118	471.7	13.0	**-0.0269**	0.010	35.8	ug/L	508	Standard
	Sb	123	997.7	34.2	**0.2031**	0.067	33.1	ug/L	86	Standard
	Ba	135	4696.7	0.6	**2.1488**	0.020	0.9	ug/L	79	Standard
	Ce	140	410.0	20.1				ug/L	68	Standard
>	**Tb**	159	933616.4	0.4				ug/L	986982	Standard
	Ho	165	13.3	43.3				ug/L	10	Standard
	Tl	203	145.3	15.9	**0.0226**	0.003	12.3	ug/L	13	Standard
	Tl	205	143.3	16.5	**0.0269**	0.003	11.1	ug/L	10	Standard
	Pb	206	439.7	6.2	**0.0406**	0.005	13.4	ug/L	264	Standard
	Pb	207	372.7	3.4	**0.0403**	0.002	5.6	ug/L	227	Standard
	Pb	208	1457.4	0.9	**0.0362**	0.001	1.6	ug/L	868	Standard
	U	238	16942.1	0.5	**2.3501**	0.026	1.1	ug/L	8	Standard
>	**Bi**	209	518073.0	1.1				ug/L	541014	Standard

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Na	23	5.0	0.0	**30.5280**	0.517	1.7	mg/L	2	Standard
Mg	24	31290.6	1.2	**36.9770**	0.268	0.7	mg/L	53	Standard
K	39	196.7	12.8	**0.2861**	0.044	15.2	mg/L	53	Standard
Ca	43	151.7	14.9	**7.6575**	1.462	19.1	mg/L	28	Standard
Fe	54	77.0	4.2	**-0.0618**	0.002	3.0	mg/L	181	Standard
Fe	57	371.7	22.4	**0.4076**	0.254	62.4	mg/L	257	Standard
> **Sc-1**	45	50880.3	1.7				mg/L	55220	Standard
Cl	35	45617.9	1.5				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	8455.7	2.8				ug/L	2040	Standard
P	31	10917.3	3.3				ug/L	20435	Standard
S	34	2505.2	2.7				ug/L	2430	Standard
Sr	88	308.3	21.6				ug/L	75	Standard
C	12	96.7	26.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	47.6	1.0				mg/L	9	Standard
Ho-1	165	13.3	43.3				mg/L	10	Standard
Er	166	50.0	20.0				mg/L	23	Standard
I	127	59592.1	3.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.680	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.909	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606123802SDL WG574742-02
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.745
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.760
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606123802SDL WG574742-02
Sample Date/Time: Thursday, June 30, 2016 12:39:03
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75372.2	4.0				ug/L	74916	Standard
	Be	9	30.0	72.6	**0.0245**	0.020	83.7	ug/L	10	Standard
	Al	27	1600639.2	0.2	**9.1751**	0.352	3.8	ug/L	1822	Standard
	Sc	45	50582.7	2.6				ug/L	55220	Standard
	Ti	47	58.0	22.6	**0.0771**	0.033	42.3	ug/L	34	Standard
	V	51	4717.2	3.0	**0.3382**	0.019	5.5	ug/L	1938	Standard
	Cr	52	9867.5	1.6	**0.1115**	0.021	19.2	ug/L	9522	Standard
	Cr	53	2166.8	4.2	**1.6508**	0.095	5.8	ug/L	395	Standard
	Mn	55	821.4	7.8	**-0.0049**	0.008	164.9	ug/L	902	Standard
	Co	59	285.3	8.5	**0.0140**	0.003	23.1	ug/L	262	Standard
	Ni	60	404.0	1.0	**0.0435**	0.001	2.2	ug/L	371	Standard
	Cu	65	238.7	6.0	**0.0547**	0.007	13.1	ug/L	106	Standard
	Zn	66	1106.4	4.4	**0.5465**	0.041	7.4	ug/L	398	Standard
>	**Ge**	72	510181.7	0.5				ug/L	535147	Standard
	As	75	100.9	42.8	**0.1342**	0.034	25.0	ug/L	-43	Standard
	Se	82	61.7	16.0	**0.3807**	0.077	20.3	ug/L	14	Standard
	Se-1	77	146.7	6.6	**1.1261**	0.104	9.2	ug/L	65	Standard
>	**Ga**	71	45.0	38.5				mg/L	97	Standard
	Rb	85	865.0	3.5				ug/L	15	Standard
	Y	89	433642.8	2.8				ug/L	465704	Standard
>	**Rh**	103	33.3	34.6				ug/L	10	Standard
	Mo	98	535.4	7.6	**0.1938**	0.015	7.6	ug/L	9	Standard
	Ag	107	569.3	32.2	**0.0736**	0.026	34.7	ug/L	82	Standard
	Cd	111	6.7	46.2	**0.0108**	0.001	12.6	mg/L	7	Standard
	Cd	114	18.0	67.5	**0.0122**	0.002	18.1	ug/L	21	Standard
>	**In**	115	585624.8	0.6				ug/L	619035	Standard
	Sn	118	200.0	9.0	**-0.0709**	0.003	4.1	ug/L	508	Standard
	Sb	123	260.8	21.9	**0.0565**	0.011	20.1	ug/L	86	Standard
	Ba	135	967.7	4.5	**0.4279**	0.022	5.2	ug/L	79	Standard
	Ce	140	76.7	26.4				ug/L	68	Standard
>	**Tb**	159	921991.9	1.3				ug/L	986982	Standard
	Ho	165	16.7	17.3				ug/L	10	Standard
	Tl	203	123.0	10.0	**0.0199**	0.001	6.8	ug/L	13	Standard
	Tl	205	121.7	45.3	**0.0238**	0.007	30.5	ug/L	10	Standard
	Pb	206	323.0	1.2	**0.0190**	0.000	2.6	ug/L	264	Standard
	Pb	207	289.0	4.0	**0.0230**	0.002	10.7	ug/L	227	Standard
	Pb	208	1206.4	16.5	**0.0225**	0.010	44.0	ug/L	868	Standard
	U	238	3304.4	1.2	**0.4586**	0.005	1.0	ug/L	8	Standard
>	**Bi**	209	525074.7	0.4				ug/L	541014	Standard

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Na	23	3.3	86.6	**20.3518**	17.635	86.7	mg/L	2	Standard
Mg	24	6017.9	1.4	**7.1295**	0.269	3.8	mg/L	53	Standard
K	39	73.3	37.6	**0.0607**	0.054	88.7	mg/L	53	Standard
Ca	43	56.7	33.4	**1.8502**	1.244	67.2	mg/L	28	Standard
Fe	54	74.1	7.0	**-0.0637**	0.003	4.3	mg/L	181	Standard
Fe	57	323.3	0.9	**0.2726**	0.032	11.8	mg/L	257	Standard
> **Sc-1**	45	50582.7	2.6				mg/L	55220	Standard
Cl	35	46106.0	1.0				ug/L	35504	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	3507.1	3.6				ug/L	2040	Standard
P	31	7600.2	0.1				ug/L	20435	Standard
S	34	2533.5	3.1				ug/L	2430	Standard
Sr	88	113.3	29.4				ug/L	75	Standard
C	12	116.7	26.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	15.4	95.6				mg/L	9	Standard
Ho-1	165	16.7	17.3				mg/L	10	Standard
Er	166	26.7	57.3				mg/L	23	Standard
I	127	45802.5	1.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.608	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.335	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.603
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.054
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 12:42:16
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77730.6	1.0				ug/L	74916	Standard
	Be	9	55872.9	2.6	**51.0301**	0.838	1.6	ug/L	10	Standard
	Al	27	8818314.5	1.2	**48.9746**	0.498	1.0	ug/L	1822	Standard
	Sc	45	53661.6	3.0				ug/L	55220	Standard
	Ti	47	41807.6	2.3	**99.7069**	2.778	2.8	ug/L	34	Standard
	V	51	469384.7	2.2	**49.7616**	1.319	2.7	ug/L	1938	Standard
	Cr	52	463904.9	1.3	**49.7905**	0.855	1.7	ug/L	9522	Standard
	Cr	53	57698.0	1.0	**50.5840**	0.668	1.3	ug/L	395	Standard
	Mn	55	431644.5	2.1	**49.3591**	1.304	2.6	ug/L	902	Standard
	Co	59	418478.5	3.1	**50.6270**	1.835	3.6	ug/L	262	Standard
	Ni	60	114350.9	0.9	**50.1243**	0.603	1.2	ug/L	371	Standard
	Cu	65	113158.0	1.0	**50.4839**	0.666	1.3	ug/L	106	Standard
	Zn	66	66443.1	1.6	**50.0419**	1.022	2.0	ug/L	398	Standard
>	Ge	72	543150.6	0.7				ug/L	535147	Standard
	As	75	67490.4	1.3	**49.7017**	0.938	1.9	ug/L	-43	Standard
	Se	82	6792.4	0.9	**49.2836**	0.563	1.1	ug/L	14	Standard
	Se-1	77	4663.4	3.0	**50.4291**	1.813	3.6	ug/L	65	Standard
>	Ga	71	68.3	40.3				mg/L	97	Standard
	Rb	85	936.7	6.3				ug/L	15	Standard
	Y	89	469758.9	1.6				ug/L	465704	Standard
>	Rh	103	28.3	27.0				ug/L	10	Standard
	Mo	98	307857.4	1.2	**96.4230**	1.296	1.3	ug/L	9	Standard
	Ag	107	379112.3	1.0	**49.0635**	0.518	1.1	ug/L	82	Standard
	Cd	111	121432.1	1.0	**49.1667**	0.548	1.1	mg/L	7	Standard
	Cd	114	297834.1	2.1	**50.0762**	1.086	2.2	ug/L	21	Standard
>	In	115	633565.8	0.1				ug/L	619035	Standard
	Sn	118	328806.4	1.1	**49.2628**	0.581	1.2	ug/L	508	Standard
	Sb	123	266594.0	0.8	**49.1899**	0.443	0.9	ug/L	86	Standard
	Ba	135	113121.8	1.5	**48.3272**	0.793	1.6	ug/L	79	Standard
	Ce	140	240.0	16.5				ug/L	68	Standard
>	Tb	159	981551.7	1.4				ug/L	986982	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	466879.4	0.1	**50.2861**	0.324	0.6	ug/L	13	Standard
	Tl	205	410945.2	0.6	**51.8097**	0.429	0.8	ug/L	10	Standard
	Pb	206	296756.7	0.8	**49.7637**	0.390	0.8	ug/L	264	Standard
	Pb	207	268967.1	0.7	**49.9087**	0.694	1.4	ug/L	227	Standard
	Pb	208	1065082.8	0.6	**51.2536**	0.698	1.4	ug/L	868	Standard
	U	238	392731.7	0.9	**51.1307**	0.815	1.6	ug/L	8	Standard
>	Bi	209	550204.1	0.8				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.9874**	17.290	173.1	mg/L	2	Standard
Mg	24	4752.4	2.6	**5.2959**	0.091	1.7	mg/L	53	Standard
K	39	2363.5	6.0	**4.0498**	0.162	4.0	mg/L	53	Standard
Ca	43	123.3	6.2	**5.5087**	0.243	4.4	mg/L	28	Standard
Fe	54	7245.6	3.9	**4.9629**	0.195	3.9	mg/L	181	Standard
Fe	57	2031.8	2.2	**4.8789**	0.223	4.6	mg/L	257	Standard
Sc-1	45	53661.6	3.0				mg/L	55220	Standard
Cl	35	43630.8	3.7				ug/L	35504	Standard
Kr	83	2.7	86.6				ug/L	2	Standard
Br	81	2263.5	7.1				ug/L	2040	Standard
P	31	23681.8	1.1				ug/L	20435	Standard
S	34	2846.9	4.6				ug/L	2430	Standard
Sr	88	75.0	6.7				ug/L	75	Standard
C	12	113.3	20.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	12.5	41.8				mg/L	9	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	16.7	91.7				mg/L	23	Standard
I	127	16178.7	6.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.060		
Al	27	97.949		
Sc	45			
Ti	47	99.707		
V	51	99.523		
Cr	52	99.581		
Cr	53			
Mn	55	98.718		
Co	59	101.254		
Ni	60	100.249		
Cu	65	100.968		
Zn	66	100.084		
Ge	72		101.496	
As	75	99.403		
Se	82	98.567		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	96.423		
Ag	107	98.127		
Cd	111	98.333		
Cd	114			
In	115			102.347
Sn	118	98.526		
Sb	123	98.380		
Ba	135	96.654		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.572		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.507		
U	238	102.261		
Bi	209			101.699
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 12:45:27
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77417.4	3.5				ug/L	74916	Standard
	Be	9	31.7	9.1	**0.0255**	0.003	12.9	ug/L	10	Standard
	Al	27	4240.7	47.8	**0.0211**	0.010	48.9	ug/L	1822	Standard
	Sc	45	55407.8	0.6				ug/L	55220	Standard
	Ti	47	36.0	20.0	**0.0157**	0.016	101.7	ug/L	34	Standard
	V	51	1596.0	4.9	**-0.0263**	0.006	23.6	ug/L	1938	Standard
	Cr	52	8222.6	1.2	**-0.1370**	0.021	15.5	ug/L	9522	Standard
	Cr	53	661.7	6.4	**0.1982**	0.039	19.6	ug/L	395	Standard
	Mn	55	1028.0	4.8	**0.0128**	0.005	42.4	ug/L	902	Standard
	Co	59	346.3	6.7	**0.0191**	0.002	11.5	ug/L	262	Standard
	Ni	60	276.0	2.5	**-0.0241**	0.004	15.7	ug/L	371	Standard
	Cu	65	182.7	11.5	**0.0229**	0.009	38.9	ug/L	106	Standard
	Zn	66	445.0	4.2	**-0.0088**	0.009	99.3	ug/L	398	Standard
>	**Ge**	72	542321.0	1.6				ug/L	535147	Standard
	As	75	-31.6	107.4	**0.0321**	0.025	77.0	ug/L	-43	Standard
	Se	82	18.9	31.9	**0.0405**	0.042	104.1	ug/L	14	Standard
	Se-1	77	62.7	19.2	**0.1064**	0.142	133.5	ug/L	65	Standard
>	**Ga**	71	90.0	11.1				mg/L	97	Standard
	Rb	85	33.3	8.7				ug/L	15	Standard
	Y	89	470192.8	2.1				ug/L	465704	Standard
>	**Rh**	103	20.0	25.0				ug/L	10	Standard
	Mo	98	190.1	19.8	**0.0713**	0.011	15.7	ug/L	9	Standard
	Ag	107	372.7	4.1	**0.0418**	0.002	5.4	ug/L	82	Standard
	Cd	111	16.6	60.6	**0.0145**	0.004	27.3	mg/L	7	Standard
	Cd	114	35.0	68.8	**0.0147**	0.004	26.8	ug/L	21	Standard
>	**In**	115	639140.0	0.9				ug/L	619035	Standard
	Sn	118	995.0	15.0	**0.0448**	0.023	52.0	ug/L	508	Standard
	Sb	123	844.2	29.0	**0.1590**	0.046	28.8	ug/L	86	Standard
	Ba	135	51.7	22.7	**0.0022**	0.005	213.6	ug/L	79	Standard
	Ce	140	45.0	58.8				ug/L	68	Standard
>	**Tb**	159	987254.5	1.0				ug/L	986982	Standard
	Ho	165	13.3	78.1				ug/L	10	Standard
	Tl	203	117.7	28.5	**0.0185**	0.003	18.9	ug/L	13	Standard
	Tl	205	120.0	18.2	**0.0226**	0.003	11.6	ug/L	10	Standard
	Pb	206	372.3	4.1	**0.0237**	0.002	9.3	ug/L	264	Standard
	Pb	207	300.3	6.7	**0.0217**	0.003	15.9	ug/L	227	Standard
	Pb	208	1211.4	10.7	**0.0191**	0.006	30.6	ug/L	868	Standard
	U	238	72.7	61.6	**0.0172**	0.006	33.0	ug/L	8	Standard
>	**Bi**	209	558803.9	0.6				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.2851**	16.074	173.1	mg/L	2	Standard
Mg	24	46.7	27.0	**0.0161**	0.013	83.2	mg/L	53	Standard
K	39	41.7	36.7	**-0.0055**	0.026	464.8	mg/L	53	Standard
Ca	43	38.3	71.8	**0.4831**	1.537	318.2	mg/L	28	Standard
Fe	54	144.3	15.9	**-0.0207**	0.016	77.5	mg/L	181	Standard
Fe	57	238.3	11.6	**-0.0334**	0.076	227.3	mg/L	257	Standard
Sc-1	45	55407.8	0.6				mg/L	55220	Standard
Cl	35	41950.7	1.1				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	2033.5	3.2				ug/L	2040	Standard
P	31	22096.1	1.2				ug/L	20435	Standard
S	34	2886.9	1.7				ug/L	2430	Standard
Sr	88	81.7	24.7				ug/L	75	Standard
C	12	63.3	24.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	573.3	4.2				mg/L	9	Standard
Ho-1	165	13.3	78.1				mg/L	10	Standard
Er	166	70.0	28.6				mg/L	23	Standard
I	127	15613.0	3.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.341	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.248
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.288
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 12:47:44
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Method 6020 - Summary Report

Sample ID: L1606122903 WG573868-02
Sample Date/Time: Thursday, June 30, 2016 12:48:40
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	94380.1	4.5				ug/L	74916	Standard
	Be	9	91.7	46.4	**0.0649**	0.030	46.7	ug/L	10	Standard
	Al	27	56152566.3	1.4	**257.2159**	12.825	5.0	ug/L	1822	Standard
	Sc	45	62458.5	1.2				ug/L	55220	Standard
	Ti	47	6162.3	1.2	**15.3008**	0.117	0.8	ug/L	34	Standard
	V	51	-1368040.2	24.0	**-152.4696**	37.213	24.4	ug/L	1938	Standard
	Cr	52	303770668.6	0.3	**34789.2143**	189.541	0.5	ug/L	9522	Standard
	Cr	53	37580913.2	1.3	**34701.2797**	393.777	1.1	ug/L	395	Standard
	Mn	55	935139.8	1.8	**111.8980**	1.925	1.7	ug/L	902	Standard
	Co	59	8549.4	1.5	**1.0587**	0.020	1.9	ug/L	262	Standard
	Ni	60	57727.8	0.7	**26.3802**	0.080	0.3	ug/L	371	Standard
	Cu	65	923440.4	1.1	**431.0563**	3.244	0.8	ug/L	106	Standard
	Zn	66	28421.6	0.6	**22.1821**	0.114	0.5	ug/L	398	Standard
>	Ge	72	519619.4	0.5				ug/L	535147	Standard
	As	75	2730.2	5.0	**2.1547**	0.113	5.2	ug/L	-43	Standard
	Se	82	284.1	19.2	**2.0630**	0.425	20.6	ug/L	14	Standard
	Se-1	77	149.3	6.3	**1.1260**	0.111	9.9	ug/L	65	Standard
>	Ga	71	1333.4	6.8				mg/L	97	Standard
	Rb	85	9376.2	2.7				ug/L	15	Standard
	Y	89	468015.9	2.4				ug/L	465704	Standard
>	Rh	103	323.3	26.4				ug/L	10	Standard
	Mo	98	16962.4	0.8	**5.5363**	0.107	1.9	ug/L	9	Standard
	Ag	107	8753.2	2.7	**1.1721**	0.038	3.2	ug/L	82	Standard
	Cd	111	125.5	27.5	**0.0608**	0.015	24.4	mg/L	7	Standard
	Cd	114	1547.5	12.5	**0.2792**	0.031	11.2	ug/L	21	Standard
>	In	115	609353.2	1.3				ug/L	619035	Standard
	Sn	118	416991.6	1.9	**65.0044**	1.914	2.9	ug/L	508	Standard
	Sb	123	15244.9	1.6	**2.9290**	0.048	1.7	ug/L	86	Standard
	Ba	135	18235.3	1.1	**8.0851**	0.190	2.4	ug/L	79	Standard
	Ce	140	12727.0	2.4				ug/L	68	Standard
>	Tb	159	990288.0	1.8				ug/L	986982	Standard
	Ho	165	530.0	9.6				ug/L	10	Standard
	Tl	203	209.3	34.5	**0.0291**	0.008	26.5	ug/L	13	Standard
	Tl	205	321.7	99.2	**0.0491**	0.041	83.1	ug/L	10	Standard
	Pb	206	50254.9	1.5	**8.6142**	0.134	1.6	ug/L	264	Standard
	Pb	207	41617.8	1.8	**7.8938**	0.131	1.7	ug/L	227	Standard
	Pb	208	169789.1	1.6	**8.3491**	0.099	1.2	ug/L	868	Standard
	U	238	5823.1	6.5	**0.7851**	0.041	5.2	ug/L	8	Standard
>	Bi	209	536398.7	2.1				ug/L	541014	Standard

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Na	23	6.7	86.6	**33.3226**	28.857	86.6	mg/L	2	Standard
Mg	24	147252.4	2.8	**141.8564**	4.249	3.0	mg/L	53	Standard
K	39	266.7	7.6	**0.3241**	0.030	9.1	mg/L	53	Standard
Ca	43	1293.4	2.0	**63.1046**	2.005	3.2	mg/L	28	Standard
Fe	54	297.2	172.5	**0.0616**	0.311	504.8	mg/L	181	Standard
Fe	57	1773.4	1.2	**3.4905**	0.068	2.0	mg/L	257	Standard
> **Sc-1**	45	62458.5	1.2				mg/L	55220	Standard
Cl	35	78157.1	1.3				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	33710.8	0.9				ug/L	2040	Standard
P	31	48081.3	5.7				ug/L	20435	Standard
S	34	2281.8	3.8				ug/L	2430	Standard
Sr	88	218.3	16.6				ug/L	75	Standard
C	12	343.3	14.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	53.3	28.6				mg/L	7	Standard
Dy	164	582.4	13.8				mg/L	9	Standard
Ho-1	165	530.0	9.6				mg/L	10	Standard
Er	166	506.7	16.8				mg/L	23	Standard
I	127	9578.1	12.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		125.981	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.098	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.436	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.147	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
V 51 Lower	V	51	

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Cr 52 Upper, S, EEE	Cr	52
Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Cu 65 Upper, S, EEE	Cu	65

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Method 6020 - Summary Report

Sample ID: L1606122903DP WG573868-07
Sample Date/Time: Thursday, June 30, 2016 12:51:52
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	102134.9	2.7				ug/L	74916	Standard
	Be	9	65.0	7.7	**0.0416**	0.003	6.2	ug/L	10	Standard
	Al	27	63183038.5	1.4	**267.1354**	4.535	1.7	ug/L	1822	Standard
	Sc	45	61847.6	0.8				ug/L	55220	Standard
	Ti	47	6523.1	1.8	**16.3700**	0.289	1.8	ug/L	34	Standard
	V	51	-1546049.9	24.4	**-174.0618**	43.049	24.7	ug/L	1938	Standard
	Cr	52	322112934.4	0.5	**37272.4484**	238.200	0.6	ug/L	9522	Standard
	Cr	53	40248349.1	2.6	**37550.7455**	1017.902	2.7	ug/L	395	Standard
	Mn	55	991053.0	0.6	**119.8276**	0.634	0.5	ug/L	902	Standard
	Co	59	9179.1	1.7	**1.1504**	0.025	2.2	ug/L	262	Standard
	Ni	60	61487.9	1.0	**28.4024**	0.406	1.4	ug/L	371	Standard
	Cu	65	986874.2	0.3	**465.4613**	2.052	0.4	ug/L	106	Standard
	Zn	66	29767.2	0.6	**23.4933**	0.092	0.4	ug/L	398	Standard
>	Ge	72	514287.8	0.6				ug/L	535147	Standard
	As	75	2574.5	2.7	**2.0554**	0.064	3.1	ug/L	-43	Standard
	Se	82	170.7	18.5	**1.2147**	0.250	20.5	ug/L	14	Standard
	Se-1	77	129.7	5.8	**0.9161**	0.078	8.5	ug/L	65	Standard
>	Ga	71	1410.1	8.2				mg/L	97	Standard
	Rb	85	10441.9	2.4				ug/L	15	Standard
	Y	89	466018.5	0.9				ug/L	465704	Standard
>	Rh	103	426.7	22.7				ug/L	10	Standard
	Mo	98	18201.3	0.8	**5.9257**	0.036	0.6	ug/L	9	Standard
	Ag	107	9323.9	0.4	**1.2459**	0.006	0.5	ug/L	82	Standard
	Cd	111	110.5	8.8	**0.0543**	0.004	7.4	mg/L	7	Standard
	Cd	114	1615.9	15.1	**0.2908**	0.043	14.8	ug/L	21	Standard
>	In	115	610696.5	0.2				ug/L	619035	Standard
	Sn	118	452746.6	0.6	**70.4160**	0.471	0.7	ug/L	508	Standard
	Sb	123	16308.6	1.8	**3.1260**	0.057	1.8	ug/L	86	Standard
	Ba	135	19306.3	0.3	**8.5405**	0.036	0.4	ug/L	79	Standard
	Ce	140	13217.4	1.5				ug/L	68	Standard
>	Tb	159	985335.9	1.7				ug/L	986982	Standard
	Ho	165	581.7	8.6				ug/L	10	Standard
	Tl	203	112.3	1.9	**0.0185**	0.000	0.7	ug/L	13	Standard
	Tl	205	83.3	44.2	**0.0185**	0.005	25.2	ug/L	10	Standard
	Pb	206	55262.3	0.5	**9.5451**	0.116	1.2	ug/L	264	Standard
	Pb	207	45375.2	0.7	**8.6726**	0.152	1.8	ug/L	227	Standard
	Pb	208	184377.7	1.0	**9.1363**	0.157	1.7	ug/L	868	Standard
	U	238	6422.7	5.7	**0.8719**	0.053	6.0	ug/L	8	Standard
>	Bi	209	532502.1	1.0				ug/L	541014	Standard

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Na	23	11.7	24.7	**58.6291**	14.787	25.2	mg/L	2	Standard
Mg	24	164201.8	1.9	**159.7280**	1.904	1.2	mg/L	53	Standard
K	39	261.7	31.1	**0.3212**	0.126	39.2	mg/L	53	Standard
Ca	43	1280.1	10.5	**63.0199**	6.216	9.9	mg/L	28	Standard
Fe	54	-649.5	82.1	**-0.5146**	0.327	63.5	mg/L	181	Standard
Fe	57	1908.5	2.3	**3.8509**	0.127	3.3	mg/L	257	Standard
> **Sc-1**	45	61847.6	0.8				mg/L	55220	Standard
Cl	35	81436.9	0.5				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	5651.1	3.4				ug/L	2040	Standard
P	31	51477.3	1.5				ug/L	20435	Standard
S	34	2203.5	4.6				ug/L	2430	Standard
Sr	88	213.3	3.6				ug/L	75	Standard
C	12	343.3	19.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	57.3				mg/L	7	Standard
Dy	164	753.9	5.1				mg/L	9	Standard
Ho-1	165	581.7	8.6				mg/L	10	Standard
Er	166	476.7	7.9				mg/L	23	Standard
I	127	8432.3	4.1				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		136.332	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.102	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.653	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.427	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
V 51 Lower	V	51	

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Cr 52 Upper, S, EEE	Cr	52
Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Cu 65 Upper, S, EEE	Cu	65

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Method 6020 - Summary Report

Sample ID: L1606122701
Sample Date/Time: Thursday, June 30, 2016 12:55:03
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	102041.0	2.8				ug/L	74916	Standard
	Be	9	35.0	51.5	**0.0206**	0.012	57.3	ug/L	10	Standard
	Al	27	877585.3	5.4	**3.7089**	0.106	2.9	ug/L	1822	Standard
	Sc	45	57673.0	4.5				ug/L	55220	Standard
	Ti	47	923.7	10.3	**2.2096**	0.231	10.4	ug/L	34	Standard
	V	51	280479.4	0.6	**30.6810**	0.258	0.8	ug/L	1938	Standard
	Cr	52	412149.7	45.4	**45.6590**	21.122	46.3	ug/L	9522	Standard
	Cr	53	51894.5	42.9	**47.0217**	20.264	43.1	ug/L	395	Standard
	Mn	55	8554.1	4.7	**0.9087**	0.046	5.1	ug/L	902	Standard
	Co	59	3701.5	3.9	**0.4405**	0.018	4.1	ug/L	262	Standard
	Ni	60	5324.9	0.7	**2.2758**	0.025	1.1	ug/L	371	Standard
	Cu	65	4018.2	14.3	**1.7976**	0.265	14.7	ug/L	106	Standard
	Zn	66	3367.4	2.2	**2.2947**	0.059	2.6	ug/L	398	Standard
>	**Ge**	72	525083.9	0.3				ug/L	535147	Standard
	As	75	2675.8	0.8	**2.0911**	0.017	0.8	ug/L	-43	Standard
	Se	82	317.4	3.1	**2.2898**	0.080	3.5	ug/L	14	Standard
	Se-1	77	341.7	12.7	**3.2841**	0.491	15.0	ug/L	65	Standard
>	**Ga**	71	5656.1	0.7				mg/L	97	Standard
	Rb	85	72886.6	1.0				ug/L	15	Standard
	Y	89	468551.4	0.6				ug/L	465704	Standard
>	**Rh**	103	1286.7	17.9				ug/L	10	Standard
	Mo	98	5009.6	1.7	**1.5899**	0.024	1.5	ug/L	9	Standard
	Ag	107	213.0	12.1	**0.0217**	0.003	15.6	ug/L	82	Standard
	Cd	111	122.6	10.7	**0.0578**	0.005	9.1	mg/L	7	Standard
	Cd	114	318.0	10.0	**0.0627**	0.005	8.6	ug/L	21	Standard
>	**In**	115	630059.3	0.2				ug/L	619035	Standard
	Sn	118	2871.9	7.6	**0.3302**	0.034	10.2	ug/L	508	Standard
	Sb	123	786.4	8.9	**0.1503**	0.013	8.8	ug/L	86	Standard
	Ba	135	330955.0	1.0	**142.2106**	1.127	0.8	ug/L	79	Standard
	Ce	140	2098.5	1.9				ug/L	68	Standard
>	**Tb**	159	1001039.4	1.3				ug/L	986982	Standard
	Ho	165	38.3	39.8				ug/L	10	Standard
	Tl	203	173.7	17.6	**0.0248**	0.003	12.9	ug/L	13	Standard
	Tl	205	130.0	20.0	**0.0242**	0.003	13.1	ug/L	10	Standard
	Pb	206	1142.7	8.1	**0.1552**	0.014	8.9	ug/L	264	Standard
	Pb	207	990.7	5.6	**0.1520**	0.010	6.4	ug/L	227	Standard
	Pb	208	3988.2	2.6	**0.1550**	0.003	2.2	ug/L	868	Standard
	U	238	1917.5	4.2	**0.2592**	0.011	4.2	ug/L	8	Standard
>	**Bi**	209	546503.3	1.0				ug/L	541014	Standard

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Na	23	8.3	91.7	**45.9105**	41.804	91.1	mg/L	2	Standard
Mg	24	22995.8	4.3	**23.9915**	1.464	6.1	mg/L	53	Standard
K	39	1361.7	7.2	**2.1440**	0.254	11.8	mg/L	53	Standard
Ca	43	1233.4	0.5	**65.2887**	2.661	4.1	mg/L	28	Standard
Fe	54	200.5	26.1	**0.0125**	0.036	289.4	mg/L	181	Standard
Fe	57	838.4	5.4	**1.4641**	0.099	6.7	mg/L	257	Standard
> **Sc-1**	45	57673.0	4.5				mg/L	55220	Standard
Cl	35	40206.6	2.3				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	36911.7	6.6				ug/L	2040	Standard
P	31	38662.6	2.7				ug/L	20435	Standard
S	34	2288.5	1.5				ug/L	2430	Standard
Sr	88	4789.1	4.8				ug/L	75	Standard
C	12	1030.0	20.9				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	88.2				mg/L	7	Standard
Dy	164	58.4	35.1				mg/L	9	Standard
Ho-1	165	38.3	39.8				mg/L	10	Standard
Er	166	33.3	75.5				mg/L	23	Standard
I	127	81289.4	3.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		136.206	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.120	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.781
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.015
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606122701
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Method 6020 - Summary Report

Sample ID: L1606122703
Sample Date/Time: Thursday, June 30, 2016 12:58:15
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	98106.7	2.3				ug/L	74916	Standard
	Be	9	41.7	18.3	**0.0266**	0.006	21.6	ug/L	10	Standard
	Al	27	5810039.6	1.6	**25.5754**	0.828	3.2	ug/L	1822	Standard
	Sc	45	59551.8	1.0				ug/L	55220	Standard
	Ti	47	617.0	1.7	**1.4056**	0.024	1.7	ug/L	34	Standard
	V	51	2392.4	22.7	**0.0588**	0.058	98.6	ug/L	1938	Standard
	Cr	52	22416.9	23.9	**1.4217**	0.586	41.2	ug/L	9522	Standard
	Cr	53	5614.4	11.2	**4.5831**	0.554	12.1	ug/L	395	Standard
	Mn	55	913432.0	1.5	**104.7943**	1.499	1.4	ug/L	902	Standard
	Co	59	617.7	4.3	**0.0521**	0.003	6.1	ug/L	262	Standard
	Ni	60	965.7	2.7	**0.2799**	0.012	4.3	ug/L	371	Standard
	Cu	65	623.3	6.9	**0.2203**	0.019	8.7	ug/L	106	Standard
	Zn	66	5970.5	1.7	**4.1910**	0.074	1.8	ug/L	398	Standard
>	**Ge**	72	541927.7	0.1				ug/L	535147	Standard
	As	75	449.9	5.6	**0.3869**	0.018	4.8	ug/L	-43	Standard
	Se	82	197.0	3.3	**1.3386**	0.047	3.5	ug/L	14	Standard
	Se-1	77	248.0	4.4	**2.1371**	0.119	5.6	ug/L	65	Standard
>	**Ga**	71	100.0	30.0				mg/L	97	Standard
	Rb	85	7907.1	1.3				ug/L	15	Standard
	Y	89	476065.1	1.9				ug/L	465704	Standard
>	**Rh**	103	83.3	15.1				ug/L	10	Standard
	Mo	98	66.3	20.6	**0.0328**	0.004	12.6	ug/L	9	Standard
	Ag	107	168.7	5.1	**0.0154**	0.001	6.8	ug/L	82	Standard
	Cd	111	68.6	10.2	**0.0352**	0.003	8.0	mg/L	7	Standard
	Cd	114	201.3	8.0	**0.0422**	0.003	6.1	ug/L	21	Standard
>	**In**	115	644446.3	0.4				ug/L	619035	Standard
	Sn	118	1071.7	18.0	**0.0549**	0.029	53.2	ug/L	508	Standard
	Sb	123	213.7	27.5	**0.0432**	0.011	25.0	ug/L	86	Standard
	Ba	135	271145.0	0.5	**113.9061**	0.186	0.2	ug/L	79	Standard
	Ce	140	188.3	15.1				ug/L	68	Standard
>	**Tb**	159	1013875.1	0.8				ug/L	986982	Standard
	Ho	165	15.0	0.0				ug/L	10	Standard
	Tl	203	102.3	14.0	**0.0167**	0.002	9.1	ug/L	13	Standard
	Tl	205	103.3	26.6	**0.0203**	0.003	16.3	ug/L	10	Standard
	Pb	206	355.0	8.5	**0.0198**	0.005	24.1	ug/L	264	Standard
	Pb	207	281.7	6.3	**0.0173**	0.003	17.1	ug/L	227	Standard
	Pb	208	1217.4	4.7	**0.0183**	0.003	15.0	ug/L	868	Standard
	U	238	30.7	15.1	**0.0117**	0.001	4.8	ug/L	8	Standard
>	**Bi**	209	569392.8	0.7				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	11045.7	0.8	**11.1276**	0.030	0.3	mg/L	53	Standard
K	39	341.7	6.1	**0.4615**	0.027	6.0	mg/L	53	Standard
Ca	43	123.3	8.4	**4.7990**	0.478	10.0	mg/L	28	Standard
Fe	54	4422.1	3.5	**2.6747**	0.078	2.9	mg/L	181	Standard
Fe	57	1381.7	8.6	**2.7305**	0.286	10.5	mg/L	257	Standard
> **Sc-1**	45	59551.8	1.0				mg/L	55220	Standard
Cl	35	40835.6	1.8				ug/L	35504	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	38221.7	8.1				ug/L	2040	Standard
P	31	36084.6	1.8				ug/L	20435	Standard
S	34	2403.5	2.3				ug/L	2430	Standard
Sr	88	328.3	5.8				ug/L	75	Standard
C	12	643.3	16.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	12.9	44.9				mg/L	9	Standard
Ho-1	165	15.0	0.0				mg/L	10	Standard
Er	166	10.0					mg/L	23	Standard
I	127	25898.8	2.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		130.955	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.267	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.105
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.245
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606122705
Sample Date/Time: Thursday, June 30, 2016 13:01:26
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	96506.5	2.9				ug/L	74916	Standard
	Be	9	36.7	7.9	**0.0234**	0.001	6.3	ug/L	10	Standard
	Al	27	5814534.7	1.0	**26.0187**	0.549	2.1	ug/L	1822	Standard
	Sc	45	59138.6	2.8				ug/L	55220	Standard
	Ti	47	595.3	2.1	**1.3327**	0.069	5.2	ug/L	34	Standard
	V	51	2547.8	6.4	**0.0710**	0.011	15.2	ug/L	1938	Standard
	Cr	52	16464.5	19.5	**0.7433**	0.369	49.6	ug/L	9522	Standard
	Cr	53	4032.2	4.4	**3.1302**	0.228	7.3	ug/L	395	Standard
	Mn	55	875048.2	0.7	**98.8596**	2.763	2.8	ug/L	902	Standard
	Co	59	594.3	2.9	**0.0482**	0.003	6.6	ug/L	262	Standard
	Ni	60	892.4	4.9	**0.2413**	0.014	5.8	ug/L	371	Standard
	Cu	65	427.7	5.9	**0.1296**	0.006	4.5	ug/L	106	Standard
	Zn	66	5518.3	4.4	**3.7857**	0.265	7.0	ug/L	398	Standard
>	**Ge**	72	550577.4	2.9				ug/L	535147	Standard
	As	75	469.6	4.0	**0.3963**	0.019	4.9	ug/L	-43	Standard
	Se	82	206.6	5.7	**1.3866**	0.118	8.5	ug/L	14	Standard
	Se-1	77	232.0	11.2	**1.9274**	0.337	17.5	ug/L	65	Standard
>	**Ga**	71	91.7	32.0				mg/L	97	Standard
	Rb	85	7670.3	2.1				ug/L	15	Standard
	Y	89	479075.3	1.4				ug/L	465704	Standard
>	**Rh**	103	90.0	38.5				ug/L	10	Standard
	Mo	98	31.3	29.0	**0.0219**	0.003	12.6	ug/L	9	Standard
	Ag	107	144.7	4.6	**0.0121**	0.001	6.5	ug/L	82	Standard
	Cd	111	65.9	4.6	**0.0338**	0.001	3.7	mg/L	7	Standard
	Cd	114	199.2	12.6	**0.0414**	0.004	9.7	ug/L	21	Standard
>	**In**	115	652958.1	0.4				ug/L	619035	Standard
	Sn	118	963.4	13.3	**0.0370**	0.019	51.8	ug/L	508	Standard
	Sb	123	203.8	29.6	**0.0409**	0.011	26.5	ug/L	86	Standard
	Ba	135	265341.0	0.7	**110.0166**	1.085	1.0	ug/L	79	Standard
	Ce	140	121.7	4.7				ug/L	68	Standard
>	**Tb**	159	1011433.0	1.5				ug/L	986982	Standard
	Ho	165	21.7	53.3				ug/L	10	Standard
	Tl	203	92.3	7.8	**0.0155**	0.001	4.8	ug/L	13	Standard
	Tl	205	78.3	25.8	**0.0172**	0.003	14.9	ug/L	10	Standard
	Pb	206	346.3	1.6	**0.0180**	0.001	3.8	ug/L	264	Standard
	Pb	207	288.0	8.7	**0.0181**	0.004	22.3	ug/L	227	Standard
	Pb	208	1142.0	2.8	**0.0144**	0.001	5.8	ug/L	868	Standard
	U	238	12.0	30.0	**0.0094**	0.000	4.6	ug/L	8	Standard
>	**Bi**	209	573608.2	1.2				ug/L	541014	Standard

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Na	23	5.0	100.0	**26.7481**	26.895	100.6	mg/L	2	Standard
Mg	24	10548.7	1.0	**10.7032**	0.190	1.8	mg/L	53	Standard
K	39	330.0	18.4	**0.4476**	0.100	22.4	mg/L	53	Standard
Ca	43	113.3	22.2	**4.2973**	1.158	26.9	mg/L	28	Standard
Fe	54	4122.2	2.3	**2.5063**	0.133	5.3	mg/L	181	Standard
Fe	57	1295.1	5.7	**2.5384**	0.096	3.8	mg/L	257	Standard
> **Sc-1**	45	59138.6	2.8				mg/L	55220	Standard
Cl	35	40393.1	1.6				ug/L	35504	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	37803.8	3.7				ug/L	2040	Standard
P	31	37417.9	4.6				ug/L	20435	Standard
S	34	2318.5	3.4				ug/L	2430	Standard
Sr	88	295.0	9.0				ug/L	75	Standard
C	12	586.7	12.6				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	2.4	243.9				mg/L	9	Standard
Ho-1	165	21.7	53.3				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	23	Standard
I	127	24688.5	5.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.819	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.883	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.480
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.025
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606122706
Sample Date/Time: Thursday, June 30, 2016 13:04:38
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	103189.4	6.0				ug/L	74916	Standard
	Be	9	78.3	22.4	**0.0508**	0.014	28.2	ug/L	10	Standard
	Al	27	157081868.9	2.1	**658.2050**	26.291	4.0	ug/L	1822	Standard
	Sc	45	54901.0	0.9				ug/L	55220	Standard
	Ti	47	1394.7	5.0	**3.6738**	0.174	4.7	ug/L	34	Standard
	V	51	12108.3	4.2	**1.2535**	0.069	5.5	ug/L	1938	Standard
	Cr	52	50501.1	3.4	**5.1868**	0.274	5.3	ug/L	9522	Standard
	Cr	53	39827.3	3.4	**39.1856**	0.945	2.4	ug/L	395	Standard
	Mn	55	8765989.5	1.5	**1129.8039**	8.440	0.7	ug/L	902	Standard
	Co	59	67581.4	0.8	**9.1778**	0.069	0.8	ug/L	262	Standard
	Ni	60	22113.8	2.0	**10.7894**	0.112	1.0	ug/L	371	Standard
	Cu	65	2237.8	4.4	**1.0654**	0.040	3.8	ug/L	106	Standard
	Zn	66	8636.1	3.9	**7.0189**	0.198	2.8	ug/L	398	Standard
>	**Ge**	72	482829.1	1.2				ug/L	535147	Standard
	As	75	7723.0	1.7	**6.4468**	0.173	2.7	ug/L	-43	Standard
	Se	82	2488.9	2.3	**20.2630**	0.714	3.5	ug/L	14	Standard
	Se-1	77	4611.4	5.0	**56.1401**	2.313	4.1	ug/L	65	Standard
>	**Ga**	71	616.7	10.3				mg/L	97	Standard
	Rb	85	83239.7	1.6				ug/L	15	Standard
	Y	89	441272.2	0.8				ug/L	465704	Standard
>	**Rh**	103	1876.8	2.2				ug/L	10	Standard
	Mo	98	400.8	3.8	**0.1543**	0.004	2.9	ug/L	9	Standard
	Ag	107	193.3	2.6	**0.0222**	0.001	4.5	ug/L	82	Standard
	Cd	111	149.9	12.0	**0.0766**	0.009	11.3	mg/L	7	Standard
	Cd	114	385.7	11.9	**0.0822**	0.008	10.1	ug/L	21	Standard
>	**In**	115	560210.1	1.0				ug/L	619035	Standard
	Sn	118	2025.1	7.5	**0.2406**	0.029	12.0	ug/L	508	Standard
	Sb	123	366.2	10.2	**0.0809**	0.009	10.5	ug/L	86	Standard
	Ba	135	599986.5	1.1	**290.0146**	5.707	2.0	ug/L	79	Standard
	Ce	140	48873.7	0.5				ug/L	68	Standard
>	**Tb**	159	930027.9	1.3				ug/L	986982	Standard
	Ho	165	370.0	19.9				ug/L	10	Standard
	Tl	203	317.7	4.5	**0.0458**	0.002	3.9	ug/L	13	Standard
	Tl	205	268.3	14.5	**0.0471**	0.006	11.8	ug/L	10	Standard
	Pb	206	1015.4	2.5	**0.1606**	0.004	2.5	ug/L	264	Standard
	Pb	207	852.4	2.5	**0.1510**	0.005	3.3	ug/L	227	Standard
	Pb	208	3285.5	3.6	**0.1458**	0.007	4.7	ug/L	868	Standard
	U	238	64724.3	1.1	**9.8156**	0.160	1.6	ug/L	8	Standard
>	**Bi**	209	472641.5	0.5				ug/L	541014	Standard

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Na	23	15.0	33.3	**84.9355**	28.778	33.9	mg/L	2	Standard
Mg	24	364289.1	2.5	**399.2375**	6.419	1.6	mg/L	53	Standard
K	39	1398.4	2.4	**2.3110**	0.059	2.5	mg/L	53	Standard
Ca	43	2235.2	4.9	**125.6306**	5.283	4.2	mg/L	28	Standard
Fe	54	1417.5	4.9	**0.8526**	0.043	5.0	mg/L	181	Standard
Fe	57	1791.8	4.1	**4.1118**	0.229	5.6	mg/L	257	Standard
> **Sc-1**	45	54901.0	0.9				mg/L	55220	Standard
Cl	35	43736.4	0.7				ug/L	35504	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	643090.2	1.8				ug/L	2040	Standard
P	31	32297.7	2.1				ug/L	20435	Standard
S	34	2658.6	4.5				ug/L	2430	Standard
Sr	88	5339.3	3.0				ug/L	75	Standard
C	12	726.7	12.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	540.1	10.6				mg/L	9	Standard
Ho-1	165	370.0	19.9				mg/L	10	Standard
Er	166	346.7	6.0				mg/L	23	Standard
I	127	615711.5	8.6				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		137.739	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		90.224	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	90.497
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	87.362
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606122707
Sample Date/Time: Thursday, June 30, 2016 13:07:49
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90026.7	0.8				ug/L	74916	Standard
	Be	9	63.3	46.3	**0.0463**	0.023	49.7	ug/L	10	Standard
	Al	27	22111709.1	2.8	**106.0268**	2.597	2.4	ug/L	1822	Standard
	Sc	45	58884.2	2.2				ug/L	55220	Standard
	Ti	47	569.0	6.3	**1.2718**	0.095	7.5	ug/L	34	Standard
	V	51	3560.4	9.4	**0.1782**	0.038	21.4	ug/L	1938	Standard
	Cr	52	14246.9	22.2	**0.5041**	0.353	70.0	ug/L	9522	Standard
	Cr	53	11462.7	6.7	**9.6195**	0.734	7.6	ug/L	395	Standard
	Mn	55	5192834.3	1.2	**587.7850**	12.002	2.0	ug/L	902	Standard
	Co	59	1334.4	2.6	**0.1367**	0.003	2.0	ug/L	262	Standard
	Ni	60	46100.4	1.9	**19.8780**	0.544	2.7	ug/L	371	Standard
	Cu	65	1099.7	5.6	**0.4266**	0.030	7.1	ug/L	106	Standard
	Zn	66	4252.3	1.5	**2.8393**	0.076	2.7	ug/L	398	Standard
>	**Ge**	72	549794.8	0.8				ug/L	535147	Standard
	As	75	2904.0	2.8	**2.1652**	0.041	1.9	ug/L	-43	Standard
	Se	82	568.7	1.4	**3.9870**	0.030	0.7	ug/L	14	Standard
	Se-1	77	817.0	3.1	**8.2479**	0.326	4.0	ug/L	65	Standard
>	**Ga**	71	196.7	8.9				mg/L	97	Standard
	Rb	85	24827.0	1.2				ug/L	15	Standard
	Y	89	478508.6	0.4				ug/L	465704	Standard
>	**Rh**	103	468.3	13.2				ug/L	10	Standard
	Mo	98	430.7	1.8	**0.1478**	0.005	3.5	ug/L	9	Standard
	Ag	107	156.0	11.2	**0.0142**	0.002	13.2	ug/L	82	Standard
	Cd	111	89.1	5.9	**0.0441**	0.002	3.6	mg/L	7	Standard
	Cd	114	247.5	23.5	**0.0506**	0.009	18.3	ug/L	21	Standard
>	**In**	115	631239.9	2.0				ug/L	619035	Standard
	Sn	118	1025.0	5.8	**0.0511**	0.011	21.1	ug/L	508	Standard
	Sb	123	219.0	11.9	**0.0450**	0.005	12.2	ug/L	86	Standard
	Ba	135	919087.1	0.8	**394.2935**	4.746	1.2	ug/L	79	Standard
	Ce	140	1991.8	1.0				ug/L	68	Standard
>	**Tb**	159	999394.7	1.6				ug/L	986982	Standard
	Ho	165	48.3	29.9				ug/L	10	Standard
	Tl	203	86.7	8.7	**0.0155**	0.001	4.5	ug/L	13	Standard
	Tl	205	88.3	26.1	**0.0190**	0.003	14.9	ug/L	10	Standard
	Pb	206	364.3	2.5	**0.0245**	0.001	5.9	ug/L	264	Standard
	Pb	207	309.7	1.7	**0.0254**	0.002	6.2	ug/L	227	Standard
	Pb	208	1253.4	0.3	**0.0231**	0.001	3.4	ug/L	868	Standard
	U	238	58.7	15.8	**0.0157**	0.001	7.5	ug/L	8	Standard
>	**Bi**	209	540168.7	1.4				ug/L	541014	Standard

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Na	23	5.0	100.0	**26.2781**	25.903	98.6	mg/L	2	Standard
Mg	24	53879.0	2.6	**55.0404**	1.546	2.8	mg/L	53	Standard
K	39	575.0	9.2	**0.8404**	0.102	12.1	mg/L	53	Standard
Ca	43	341.7	4.5	**16.4847**	1.095	6.6	mg/L	28	Standard
Fe	54	40703.3	2.2	**25.8984**	0.856	3.3	mg/L	181	Standard
Fe	57	10752.1	1.3	**26.0580**	0.936	3.6	mg/L	257	Standard
Sc-1	45	58884.2	2.2				mg/L	55220	Standard
Cl	35	40587.7	3.8				ug/L	35504	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	120692.1	0.4				ug/L	2040	Standard
P	31	34541.0	0.8				ug/L	20435	Standard
S	34	2881.9	4.0				ug/L	2430	Standard
Sr	88	800.0	10.7				ug/L	75	Standard
C	12	423.3	20.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	7	Standard
Dy	164	84.0	14.1				mg/L	9	Standard
Ho-1	165	48.3	29.9				mg/L	10	Standard
Er	166	56.7	36.7				mg/L	23	Standard
I	127	191486.3	2.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		120.169	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.737	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.972	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.844	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606112901
Sample Date/Time: Thursday, June 30, 2016 13:11:01
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84503.5	2.9				ug/L	74916	Standard
	Be	9	21.7	53.3	**0.0147**	0.010	68.3	ug/L	10	Standard
	Al	27	16220096.8	1.2	**82.9137**	2.826	3.4	ug/L	1822	Standard
	Sc	45	57890.4	2.0				ug/L	55220	Standard
	Ti	47	277.3	7.3	**0.5737**	0.044	7.7	ug/L	34	Standard
	V	51	4780.4	3.2	**0.2988**	0.019	6.5	ug/L	1938	Standard
	Cr	52	21846.1	18.6	**1.2922**	0.456	35.3	ug/L	9522	Standard
	Cr	53	5070.9	10.0	**3.9738**	0.470	11.8	ug/L	395	Standard
	Mn	55	476221.8	2.4	**52.9921**	1.410	2.7	ug/L	902	Standard
	Co	59	1995.8	4.6	**0.2122**	0.011	5.2	ug/L	262	Standard
	Ni	60	3903.8	4.2	**1.5242**	0.069	4.6	ug/L	371	Standard
	Cu	65	2599.9	4.7	**1.0712**	0.055	5.1	ug/L	106	Standard
	Zn	66	4040.2	0.5	**2.6346**	0.043	1.6	ug/L	398	Standard
>	**Ge**	72	558230.7	0.9				ug/L	535147	Standard
	As	75	429.9	0.7	**0.3629**	0.002	0.5	ug/L	-43	Standard
	Se	82	53.3	9.3	**0.2803**	0.036	12.9	ug/L	14	Standard
	Se-1	77	312.3	6.8	**2.7435**	0.245	8.9	ug/L	65	Standard
>	**Ga**	71	161.7	7.1				mg/L	97	Standard
	Rb	85	10201.8	1.2				ug/L	15	Standard
	Y	89	483396.8	0.2				ug/L	465704	Standard
>	**Rh**	103	161.7	17.6				ug/L	10	Standard
	Mo	98	174.3	4.4	**0.0663**	0.003	4.5	ug/L	9	Standard
	Ag	107	141.3	8.2	**0.0120**	0.001	11.0	ug/L	82	Standard
	Cd	111	74.3	11.3	**0.0376**	0.003	8.3	mg/L	7	Standard
	Cd	114	171.0	24.5	**0.0373**	0.007	17.8	ug/L	21	Standard
>	**In**	115	641638.0	1.2				ug/L	619035	Standard
	Sn	118	1328.4	11.2	**0.0934**	0.020	21.3	ug/L	508	Standard
	Sb	123	3845.7	1.8	**0.7050**	0.005	0.7	ug/L	86	Standard
	Ba	135	27836.9	0.8	**11.7294**	0.230	2.0	ug/L	79	Standard
	Ce	140	16030.1	2.6				ug/L	68	Standard
>	**Tb**	159	1018893.0	1.0				ug/L	986982	Standard
	Ho	165	438.3	9.3				ug/L	10	Standard
	Tl	203	96.3	8.6	**0.0163**	0.001	5.7	ug/L	13	Standard
	Tl	205	76.7	18.8	**0.0173**	0.002	10.7	ug/L	10	Standard
	Pb	206	2082.1	3.5	**0.3098**	0.014	4.4	ug/L	264	Standard
	Pb	207	1675.8	3.3	**0.2763**	0.011	3.9	ug/L	227	Standard
	Pb	208	7081.3	3.8	**0.3009**	0.014	4.6	ug/L	868	Standard
	U	238	1271.1	2.6	**0.1725**	0.005	2.8	ug/L	8	Standard
>	**Bi**	209	553112.0	0.5				ug/L	541014	Standard

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Na	23	6.7	86.6	**36.1091**	31.274	86.6	mg/L	2	Standard
Mg	24	29747.5	1.6	**30.8906**	0.128	0.4	mg/L	53	Standard
K	39	685.0	9.5	**1.0344**	0.125	12.1	mg/L	53	Standard
Ca	43	770.0	9.0	**39.9826**	4.567	11.4	mg/L	28	Standard
Fe	54	700.4	9.7	**0.3361**	0.038	11.2	mg/L	181	Standard
Fe	57	773.4	13.1	**1.2886**	0.222	17.2	mg/L	257	Standard
> **Sc-1**	45	57890.4	2.0				mg/L	55220	Standard
Cl	35	44774.8	2.3				ug/L	35504	Standard
Kr	83	3.3	17.3				ug/L	2	Standard
Br	81	8082.2	5.4				ug/L	2040	Standard
P	31	26997.4	2.1				ug/L	20435	Standard
S	34	2950.3	2.8				ug/L	2430	Standard
Sr	88	258.3	7.8				ug/L	75	Standard
C	12	320.0	5.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	589.4	11.7				mg/L	9	Standard
Ho-1	165	438.3	9.3				mg/L	10	Standard
Er	166	430.0	16.8				mg/L	23	Standard
I	127	41294.5	1.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.797	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.314	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.651
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.236
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606112902
Sample Date/Time: Thursday, June 30, 2016 13:14:12
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85505.7	2.3				ug/L	74916	Standard
	Be	9	33.3	22.9	**0.0242**	0.007	28.1	ug/L	10	Standard
	Al	27	16102936.0	1.9	**81.3052**	0.536	0.7	ug/L	1822	Standard
	Sc	45	57932.2	1.6				ug/L	55220	Standard
	Ti	47	2060.8	3.3	**4.7290**	0.220	4.7	ug/L	34	Standard
	V	51	4721.3	7.2	**0.2934**	0.027	9.1	ug/L	1938	Standard
	Cr	52	35568.7	1.9	**2.7621**	0.066	2.4	ug/L	9522	Standard
	Cr	53	8937.6	4.2	**7.3181**	0.424	5.8	ug/L	395	Standard
	Mn	55	1621057.9	0.9	**181.0990**	2.157	1.2	ug/L	902	Standard
	Co	59	1572.7	3.6	**0.1628**	0.004	2.6	ug/L	262	Standard
	Ni	60	5510.0	0.7	**2.2174**	0.036	1.6	ug/L	371	Standard
	Cu	65	2590.2	3.6	**1.0697**	0.035	3.3	ug/L	106	Standard
	Zn	66	3882.5	2.8	**2.5247**	0.020	0.8	ug/L	398	Standard
>	**Ge**	72	556858.5	2.1				ug/L	535147	Standard
	As	75	211.6	19.7	**0.2074**	0.033	15.7	ug/L	-43	Standard
	Se	82	51.6	4.8	**0.2690**	0.017	6.5	ug/L	14	Standard
	Se-1	77	366.0	5.3	**3.3266**	0.275	8.3	ug/L	65	Standard
>	**Ga**	71	345.0	9.5				mg/L	97	Standard
	Rb	85	15703.1	3.3				ug/L	15	Standard
	Y	89	488405.3	0.2				ug/L	465704	Standard
>	**Rh**	103	76.7	16.4				ug/L	10	Standard
	Mo	98	790.6	4.1	**0.2527**	0.010	4.0	ug/L	9	Standard
	Ag	107	120.7	4.1	**0.0091**	0.001	7.2	ug/L	82	Standard
	Cd	111	117.9	12.2	**0.0543**	0.006	10.8	mg/L	7	Standard
	Cd	114	308.0	18.6	**0.0592**	0.009	15.8	ug/L	21	Standard
>	**In**	115	652556.8	0.6				ug/L	619035	Standard
	Sn	118	1316.7	6.5	**0.0886**	0.014	15.5	ug/L	508	Standard
	Sb	123	21644.9	1.1	**3.8815**	0.026	0.7	ug/L	86	Standard
	Ba	135	14730.5	1.3	**6.0925**	0.048	0.8	ug/L	79	Standard
	Ce	140	14029.8	0.5				ug/L	68	Standard
>	**Tb**	159	1019421.4	0.9				ug/L	986982	Standard
	Ho	165	286.7	1.0				ug/L	10	Standard
	Tl	203	75.0	13.1	**0.0138**	0.001	7.2	ug/L	13	Standard
	Tl	205	75.0	24.0	**0.0168**	0.002	13.3	ug/L	10	Standard
	Pb	206	7804.7	3.4	**1.2275**	0.036	2.9	ug/L	264	Standard
	Pb	207	6506.7	1.9	**1.1340**	0.015	1.3	ug/L	227	Standard
	Pb	208	26754.3	1.1	**1.2065**	0.021	1.7	ug/L	868	Standard
	U	238	142.7	8.3	**0.0258**	0.001	5.4	ug/L	8	Standard
>	**Bi**	209	569462.3	0.6				ug/L	541014	Standard

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Na	23	6.7	43.3	**35.5921**	14.804	41.6	mg/L	2	Standard
Mg	24	12573.6	3.7	**13.0310**	0.597	4.6	mg/L	53	Standard
K	39	395.0	17.5	**0.5640**	0.121	21.5	mg/L	53	Standard
Ca	43	470.0	8.0	**23.7149**	2.271	9.6	mg/L	28	Standard
Fe	54	715.7	12.6	**0.3456**	0.052	15.2	mg/L	181	Standard
Fe	57	633.3	9.1	**0.9355**	0.130	13.9	mg/L	257	Standard
Sc-1	45	57932.2	1.6				mg/L	55220	Standard
Cl	35	45353.8	0.9				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	7928.7	1.2				ug/L	2040	Standard
P	31	25888.8	1.3				ug/L	20435	Standard
S	34	2683.6	7.3				ug/L	2430	Standard
Sr	88	223.3	12.3				ug/L	75	Standard
C	12	250.0	24.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	477.4	5.5				mg/L	9	Standard
Ho-1	165	286.7	1.0				mg/L	10	Standard
Er	166	263.3	4.4				mg/L	23	Standard
I	127	15045.8	4.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.135	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.057	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.415
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.258
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606112903
Sample Date/Time: Thursday, June 30, 2016 13:17:24
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82633.1	1.9				ug/L	74916	Standard
	Be	9	20.0	25.0	**0.0136**	0.005	33.2	ug/L	10	Standard
	Al	27	18202343.0	1.2	**95.1067**	1.298	1.4	ug/L	1822	Standard
	Sc	45	55814.3	0.5				ug/L	55220	Standard
	Ti	47	223.7	14.6	**0.4591**	0.076	16.7	ug/L	34	Standard
	V	51	4195.5	5.9	**0.2465**	0.028	11.6	ug/L	1938	Standard
	Cr	52	27579.5	15.9	**1.9555**	0.460	23.5	ug/L	9522	Standard
	Cr	53	5416.0	8.1	**4.3562**	0.370	8.5	ug/L	395	Standard
	Mn	55	392743.5	2.6	**44.5235**	1.406	3.2	ug/L	902	Standard
	Co	59	1595.1	5.5	**0.1686**	0.011	6.8	ug/L	262	Standard
	Ni	60	3333.0	3.6	**1.3071**	0.044	3.3	ug/L	371	Standard
	Cu	65	1548.7	3.7	**0.6272**	0.027	4.3	ug/L	106	Standard
	Zn	66	2008.1	1.8	**1.1634**	0.033	2.8	ug/L	398	Standard
>	**Ge**	72	547762.6	0.7				ug/L	535147	Standard
	As	75	427.4	24.0	**0.3670**	0.075	20.5	ug/L	-43	Standard
	Se	82	64.6	10.5	**0.3686**	0.052	14.1	ug/L	14	Standard
	Se-1	77	228.0	3.9	**1.8916**	0.108	5.7	ug/L	65	Standard
>	**Ga**	71	103.3	31.5				mg/L	97	Standard
	Rb	85	1483.4	6.2				ug/L	15	Standard
	Y	89	490402.3	1.1				ug/L	465704	Standard
>	**Rh**	103	81.7	14.1				ug/L	10	Standard
	Mo	98	101.9	43.0	**0.0443**	0.014	31.9	ug/L	9	Standard
	Ag	107	130.3	13.8	**0.0108**	0.002	23.0	ug/L	82	Standard
	Cd	111	69.2	11.0	**0.0359**	0.003	8.1	mg/L	7	Standard
	Cd	114	161.1	11.1	**0.0359**	0.003	7.2	ug/L	21	Standard
>	**In**	115	634377.7	1.8				ug/L	619035	Standard
	Sn	118	768.4	11.6	**0.0118**	0.014	115.6	ug/L	508	Standard
	Sb	123	460.4	5.5	**0.0893**	0.006	6.9	ug/L	86	Standard
	Ba	135	20721.8	1.8	**8.8253**	0.041	0.5	ug/L	79	Standard
	Ce	140	2230.2	1.6				ug/L	68	Standard
>	**Tb**	159	984576.1	0.8				ug/L	986982	Standard
	Ho	165	148.3	30.6				ug/L	10	Standard
	Tl	203	120.0	9.5	**0.0191**	0.001	6.1	ug/L	13	Standard
	Tl	205	143.3	31.3	**0.0260**	0.006	21.9	ug/L	10	Standard
	Pb	206	464.0	15.1	**0.0412**	0.012	28.7	ug/L	264	Standard
	Pb	207	399.3	27.5	**0.0420**	0.021	49.1	ug/L	227	Standard
	Pb	208	1631.7	10.6	**0.0414**	0.008	19.8	ug/L	868	Standard
	U	238	1095.4	6.1	**0.1526**	0.009	5.6	ug/L	8	Standard
>	**Bi**	209	542130.4	0.7				ug/L	541014	Standard

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Na	23	3.3	86.6	**18.5012**	16.018	86.6	mg/L	2	Standard
Mg	24	20070.0	1.5	**21.6062**	0.429	2.0	mg/L	53	Standard
K	39	331.7	13.6	**0.4809**	0.076	15.8	mg/L	53	Standard
Ca	43	756.7	4.0	**40.7258**	1.691	4.2	mg/L	28	Standard
Fe	54	718.9	5.9	**0.3658**	0.026	7.2	mg/L	181	Standard
Fe	57	738.4	9.3	**1.2715**	0.173	13.6	mg/L	257	Standard
> **Sc-1**	45	55814.3	0.5				mg/L	55220	Standard
Cl	35	48250.7	0.2				ug/L	35504	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	8635.8	2.1				ug/L	2040	Standard
P	31	28111.1	1.2				ug/L	20435	Standard
S	34	3018.6	3.5				ug/L	2430	Standard
Sr	88	258.3	19.9				ug/L	75	Standard
C	12	273.3	27.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	198.8	15.4				mg/L	9	Standard
Ho-1	165	148.3	30.6				mg/L	10	Standard
Er	166	163.3	3.5				mg/L	23	Standard
I	127	31669.8	6.8				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		110.300	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		102.357	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.479
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.206
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 13:20:37
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79900.1	1.3				ug/L	74916	Standard
	Be	9	57147.7	3.5	**50.7735**	1.148	2.3	ug/L	10	Standard
	Al	27	8732343.3	1.3	**47.1819**	0.598	1.3	ug/L	1822	Standard
	Sc	45	54700.3	2.6				ug/L	55220	Standard
	Ti	47	41369.1	1.0	**97.4428**	1.470	1.5	ug/L	34	Standard
	V	51	465247.6	2.0	**48.7108**	1.117	2.3	ug/L	1938	Standard
	Cr	52	469969.5	3.8	**49.7995**	0.789	1.6	ug/L	9522	Standard
	Cr	53	58365.7	5.2	**50.5062**	1.411	2.8	ug/L	395	Standard
	Mn	55	432273.8	1.1	**48.8242**	1.117	2.3	ug/L	902	Standard
	Co	59	416250.9	0.9	**49.7343**	0.779	1.6	ug/L	262	Standard
	Ni	60	113064.7	1.4	**48.9451**	0.549	1.1	ug/L	371	Standard
	Cu	65	110972.6	1.3	**48.8962**	0.559	1.1	ug/L	106	Standard
	Zn	66	65922.5	1.5	**49.0279**	0.565	1.2	ug/L	398	Standard
>	**Ge**	72	550016.3	2.5				ug/L	535147	Standard
	As	75	66744.8	1.7	**48.5447**	0.633	1.3	ug/L	-43	Standard
	Se	82	6814.9	1.8	**48.8345**	0.706	1.4	ug/L	14	Standard
	Se-1	77	4558.7	4.2	**48.6414**	0.883	1.8	ug/L	65	Standard
>	**Ga**	71	101.7	15.0				mg/L	97	Standard
	Rb	85	965.0	6.3				ug/L	15	Standard
	Y	89	475534.6	1.4				ug/L	465704	Standard
>	**Rh**	103	45.0	57.7				ug/L	10	Standard
	Mo	98	309899.2	0.8	**95.8767**	0.846	0.9	ug/L	9	Standard
	Ag	107	376812.4	1.5	**48.1670**	0.339	0.7	ug/L	82	Standard
	Cd	111	120977.0	0.1	**48.3850**	0.394	0.8	mg/L	7	Standard
	Cd	114	290674.6	2.4	**48.2748**	1.126	2.3	ug/L	21	Standard
>	**In**	115	641413.4	0.8				ug/L	619035	Standard
	Sn	118	325899.3	0.0	**48.2296**	0.409	0.8	ug/L	508	Standard
	Sb	123	264734.5	1.7	**48.2480**	0.637	1.3	ug/L	86	Standard
	Ba	135	113119.7	1.1	**47.7337**	0.198	0.4	ug/L	79	Standard
	Ce	140	205.0	7.3				ug/L	68	Standard
>	**Tb**	159	985502.5	1.0				ug/L	986982	Standard
	Ho	165	11.7	49.5				ug/L	10	Standard
	Tl	203	463987.5	1.7	**49.3714**	0.337	0.7	ug/L	13	Standard
	Tl	205	412712.2	0.6	**51.4082**	0.207	0.4	ug/L	10	Standard
	Pb	206	293514.0	1.2	**48.6270**	0.208	0.4	ug/L	264	Standard
	Pb	207	268313.2	1.4	**49.1873**	0.628	1.3	ug/L	227	Standard
	Pb	208	1073164.4	0.3	**51.0218**	0.412	0.8	ug/L	868	Standard
	U	238	392652.3	0.9	**50.5036**	0.130	0.3	ug/L	8	Standard
>	**Bi**	209	556886.0	1.0				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.2171**	15.956	173.1	mg/L	2	Standard
Mg	24	4832.4	1.8	**5.2834**	0.116	2.2	mg/L	53	Standard
K	39	2306.8	5.1	**3.8800**	0.278	7.2	mg/L	53	Standard
Ca	43	108.3	10.7	**4.5322**	0.800	17.7	mg/L	28	Standard
Fe	54	7100.8	3.3	**4.7668**	0.174	3.6	mg/L	181	Standard
Fe	57	1925.1	9.0	**4.4864**	0.474	10.6	mg/L	257	Standard
Sc-1	45	54700.3	2.6				mg/L	55220	Standard
Cl	35	45320.4	2.2				ug/L	35504	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	2546.9	7.9				ug/L	2040	Standard
P	31	25962.2	1.5				ug/L	20435	Standard
S	34	3140.3	2.5				ug/L	2430	Standard
Sr	88	63.3	19.9				ug/L	75	Standard
C	12	110.0	55.3				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	22.9	66.2				mg/L	9	Standard
Ho-1	165	11.7	49.5				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	13801.3	1.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	101.547		
Al	27	94.364		
Sc	45			
Ti	47	97.443		
V	51	97.422		
Cr	52	99.599		
Cr	53			
Mn	55	97.648		
Co	59	99.469		
Ni	60	97.890		
Cu	65	97.792		
Zn	66	98.056		
Ge	72		102.779	
As	75	97.089		
Se	82	97.669		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	95.877		
Ag	107	96.334		
Cd	111	96.770		
Cd	114			
In	115			103.615
Sn	118	96.459		
Sb	123	96.496		
Ba	135	95.467		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.743		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.044		
U	238	101.007		
Bi	209			102.934
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 13:23:48
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77613.3	1.9				ug/L	74916	Standard
	Be	9	26.7	43.3	**0.0209**	0.011	53.1	ug/L	10	Standard
	Al	27	4013.9	16.5	**0.0200**	0.004	17.8	ug/L	1822	Standard
	Sc	45	53790.4	4.1				ug/L	55220	Standard
	Ti	47	40.3	9.4	**0.0270**	0.008	30.9	ug/L	34	Standard
	V	51	1570.4	7.2	**-0.0277**	0.011	39.7	ug/L	1938	Standard
	Cr	52	9530.3	6.1	**0.0150**	0.066	439.7	ug/L	9522	Standard
	Cr	53	931.7	7.4	**0.4437**	0.060	13.6	ug/L	395	Standard
	Mn	55	1144.7	6.3	**0.0273**	0.008	28.2	ug/L	902	Standard
	Co	59	305.7	2.6	**0.0145**	0.001	6.6	ug/L	262	Standard
	Ni	60	276.0	3.8	**-0.0231**	0.005	19.8	ug/L	371	Standard
	Cu	65	184.3	7.4	**0.0244**	0.006	25.2	ug/L	106	Standard
	Zn	66	412.0	4.9	**-0.0312**	0.015	47.5	ug/L	398	Standard
>	**Ge**	72	537897.6	0.8				ug/L	535147	Standard
	As	75	-29.0	115.0	**0.0336**	0.025	73.8	ug/L	-43	Standard
	Se	82	25.6	45.5	**0.0905**	0.084	93.0	ug/L	14	Standard
	Se-1	77	72.3	17.8	**0.2171**	0.138	63.7	ug/L	65	Standard
>	**Ga**	71	76.7	30.8				mg/L	97	Standard
	Rb	85	48.3	29.9				ug/L	15	Standard
	Y	89	473909.1	0.5				ug/L	465704	Standard
>	**Rh**	103	26.7	39.0				ug/L	10	Standard
	Mo	98	194.3	6.6	**0.0724**	0.004	5.0	ug/L	9	Standard
	Ag	107	137.3	5.8	**0.0115**	0.001	9.8	ug/L	82	Standard
	Cd	111	16.0	28.2	**0.0143**	0.002	12.6	mg/L	7	Standard
	Cd	114	32.7	50.4	**0.0143**	0.003	18.9	ug/L	21	Standard
>	**In**	115	642024.4	0.6				ug/L	619035	Standard
	Sn	118	1080.0	19.1	**0.0567**	0.031	55.0	ug/L	508	Standard
	Sb	123	653.6	26.6	**0.1235**	0.032	26.0	ug/L	86	Standard
	Ba	135	66.0	27.6	**0.0082**	0.008	92.5	ug/L	79	Standard
	Ce	140	51.7	64.4				ug/L	68	Standard
>	**Tb**	159	985804.8	1.4				ug/L	986982	Standard
	Ho	165	10.0					ug/L	10	Standard
	Tl	203	80.7	0.7	**0.0145**	0.000	0.6	ug/L	13	Standard
	Tl	205	80.0	48.8	**0.0176**	0.005	27.3	ug/L	10	Standard
	Pb	206	345.7	6.1	**0.0191**	0.003	17.6	ug/L	264	Standard
	Pb	207	300.0	5.8	**0.0215**	0.003	15.2	ug/L	227	Standard
	Pb	208	1211.7	4.6	**0.0189**	0.002	12.6	ug/L	868	Standard
	U	238	57.7	11.5	**0.0153**	0.001	5.4	ug/L	8	Standard
>	**Bi**	209	560751.9	0.5				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.8776**	17.100	173.1	mg/L	2	Standard
Mg	24	55.0	32.8	**0.0275**	0.022	80.3	mg/L	53	Standard
K	39	63.3	22.8	**0.0338**	0.020	59.7	mg/L	53	Standard
Ca	43	26.7	57.3	**-0.1261**	0.902	714.8	mg/L	28	Standard
Fe	54	179.2	2.8	**0.0067**	0.003	42.6	mg/L	181	Standard
Fe	57	313.3	24.0	**0.1951**	0.234	119.7	mg/L	257	Standard
Sc-1	45	53790.4	4.1				mg/L	55220	Standard
Cl	35	43643.5	2.6				ug/L	35504	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	2146.8	4.3				ug/L	2040	Standard
P	31	24579.9	2.6				ug/L	20435	Standard
S	34	3047.0	2.1				ug/L	2430	Standard
Sr	88	68.3	34.6				ug/L	75	Standard
C	12	106.7	21.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	506.5	5.5				mg/L	9	Standard
Ho-1	165	10.0					mg/L	10	Standard
Er	166	73.3	43.8				mg/L	23	Standard
I	127	13424.3	1.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.514	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.714
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.648
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, June 30, 2016 13:26:05
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Method 6020 - Summary Report

Sample ID: L1606112904
Sample Date/Time: Thursday, June 30, 2016 13:27:01
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77697.1	2.0				ug/L	74916	Standard
	Be	9	33.3	8.7	**0.0269**	0.003	11.5	ug/L	10	Standard
	Al	27	16310108.0	0.1	**90.6465**	1.855	2.0	ug/L	1822	Standard
	Sc	45	54240.3	1.9				ug/L	55220	Standard
	Ti	47	2684.6	9.0	**6.4077**	0.517	8.1	ug/L	34	Standard
	V	51	5386.0	5.4	**0.3834**	0.027	7.0	ug/L	1938	Standard
	Cr	52	59624.2	3.8	**5.5699**	0.256	4.6	ug/L	9522	Standard
	Cr	53	11434.3	7.4	**9.8353**	0.821	8.3	ug/L	395	Standard
	Mn	55	2048984.2	1.0	**237.4175**	0.335	0.1	ug/L	902	Standard
	Co	59	2103.5	0.9	**0.2347**	0.004	1.6	ug/L	262	Standard
	Ni	60	8758.5	1.6	**3.7494**	0.024	0.6	ug/L	371	Standard
	Cu	65	3653.8	1.9	**1.5923**	0.032	2.0	ug/L	106	Standard
	Zn	66	5799.1	0.9	**4.1028**	0.085	2.1	ug/L	398	Standard
>	**Ge**	72	536880.0	1.0				ug/L	535147	Standard
	As	75	231.4	23.5	**0.2276**	0.042	18.4	ug/L	-43	Standard
	Se	82	45.8	24.7	**0.2394**	0.081	33.8	ug/L	14	Standard
	Se-1	77	363.0	9.0	**3.4362**	0.377	11.0	ug/L	65	Standard
>	**Ga**	71	441.7	11.8				mg/L	97	Standard
	Rb	85	19058.6	2.2				ug/L	15	Standard
	Y	89	472702.6	0.9				ug/L	465704	Standard
>	**Rh**	103	60.0	25.0				ug/L	10	Standard
	Mo	98	1134.3	1.4	**0.3728**	0.006	1.7	ug/L	9	Standard
	Ag	107	154.7	13.8	**0.0142**	0.003	19.3	ug/L	82	Standard
	Cd	111	242.3	0.5	**0.1074**	0.000	0.4	mg/L	7	Standard
	Cd	114	593.2	7.6	**0.1101**	0.008	7.4	ug/L	21	Standard
>	**In**	115	624500.1	0.5				ug/L	619035	Standard
	Sn	118	1746.8	10.4	**0.1627**	0.028	17.3	ug/L	508	Standard
	Sb	123	35311.2	0.7	**6.6139**	0.066	1.0	ug/L	86	Standard
	Ba	135	17076.0	0.7	**7.3843**	0.040	0.5	ug/L	79	Standard
	Ce	140	16609.1	2.5				ug/L	68	Standard
>	**Tb**	159	963913.5	0.7				ug/L	986982	Standard
	Ho	165	328.3	17.7				ug/L	10	Standard
	Tl	203	125.0	8.4	**0.0197**	0.001	6.1	ug/L	13	Standard
	Tl	205	111.7	21.2	**0.0220**	0.003	13.4	ug/L	10	Standard
	Pb	206	11629.5	2.3	**1.9498**	0.046	2.4	ug/L	264	Standard
	Pb	207	9793.5	1.8	**1.8187**	0.034	1.9	ug/L	227	Standard
	Pb	208	40243.5	0.8	**1.9354**	0.028	1.5	ug/L	868	Standard
	U	238	155.3	6.0	**0.0285**	0.001	4.4	ug/L	8	Standard
>	**Bi**	209	540255.5	0.7				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	13307.5	0.8	**14.7349**	0.397	2.7	mg/L	53	Standard
K	39	520.0	18.8	**0.8223**	0.165	20.1	mg/L	53	Standard
Ca	43	530.0	5.3	**28.8936**	1.711	5.9	mg/L	28	Standard
Fe	54	887.4	6.5	**0.4967**	0.036	7.2	mg/L	181	Standard
Fe	57	678.3	10.1	**1.1688**	0.216	18.4	mg/L	257	Standard
> **Sc-1**	45	54240.3	1.9				mg/L	55220	Standard
Cl	35	47467.6	0.6				ug/L	35504	Standard
Kr	83	3.7	83.3				ug/L	2	Standard
Br	81	6017.9	4.8				ug/L	2040	Standard
P	31	26616.7	1.5				ug/L	20435	Standard
S	34	2893.6	3.7				ug/L	2430	Standard
Sr	88	215.0	14.0				ug/L	75	Standard
C	12	130.0	15.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	514.2	11.9				mg/L	9	Standard
Ho-1	165	328.3	17.7				mg/L	10	Standard
Er	166	330.0	3.0				mg/L	23	Standard
I	127	12760.4	2.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.712	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.324	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.883
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.860
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606112905
Sample Date/Time: Thursday, June 30, 2016 13:30:13
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76432.3	1.6				ug/L	74916	Standard
	Be	9	20.0	50.0	**0.0149**	0.009	60.7	ug/L	10	Standard
	Al	27	21059.7	6.5	**0.1166**	0.006	5.1	ug/L	1822	Standard
	Sc	45	55068.2	0.9				ug/L	55220	Standard
	Ti	47	71.3	78.5	**0.1025**	0.137	134.1	ug/L	34	Standard
	V	51	2275.4	3.5	**0.0479**	0.011	22.5	ug/L	1938	Standard
	Cr	52	12553.5	2.2	**0.3476**	0.018	5.2	ug/L	9522	Standard
	Cr	53	1180.0	9.4	**0.6649**	0.110	16.6	ug/L	395	Standard
	Mn	55	2619.6	6.4	**0.1975**	0.017	8.4	ug/L	902	Standard
	Co	59	251.3	8.1	**0.0079**	0.003	32.9	ug/L	262	Standard
	Ni	60	534.3	6.1	**0.0914**	0.016	17.5	ug/L	371	Standard
	Cu	65	1121.4	3.9	**0.4466**	0.026	5.8	ug/L	106	Standard
	Zn	66	2738.6	2.1	**1.7481**	0.056	3.2	ug/L	398	Standard
>	**Ge**	72	538551.7	1.2				ug/L	535147	Standard
	As	75	-45.8	92.9	**0.0214**	0.032	147.1	ug/L	-43	Standard
	Se	82	21.1	26.0	**0.0570**	0.038	67.1	ug/L	14	Standard
	Se-1	77	67.0	15.7	**0.1572**	0.111	70.4	ug/L	65	Standard
>	**Ga**	71	81.7	19.7				mg/L	97	Standard
	Rb	85	188.3	17.7				ug/L	15	Standard
	Y	89	473580.7	1.9				ug/L	465704	Standard
>	**Rh**	103	18.3	41.7				ug/L	10	Standard
	Mo	98	50.8	10.6	**0.0283**	0.002	6.1	ug/L	9	Standard
	Ag	107	104.3	14.0	**0.0074**	0.002	25.2	ug/L	82	Standard
	Cd	111	60.2	6.3	**0.0322**	0.002	4.8	mg/L	7	Standard
	Cd	114	143.9	6.1	**0.0331**	0.001	4.2	ug/L	21	Standard
>	**In**	115	634449.3	0.3				ug/L	619035	Standard
	Sn	118	2651.9	5.9	**0.2942**	0.025	8.3	ug/L	508	Standard
	Sb	123	239.5	12.9	**0.0486**	0.006	12.0	ug/L	86	Standard
	Ba	135	1220.7	4.5	**0.5013**	0.023	4.6	ug/L	79	Standard
	Ce	140	88.3	3.3				ug/L	68	Standard
>	**Tb**	159	971722.3	0.5				ug/L	986982	Standard
	Ho	165	18.3	15.7				ug/L	10	Standard
	Tl	203	37.0	9.7	**0.0100**	0.000	3.9	ug/L	13	Standard
	Tl	205	21.7	53.3	**0.0104**	0.001	14.0	ug/L	10	Standard
	Pb	206	308.7	3.9	**0.0141**	0.002	13.9	ug/L	264	Standard
	Pb	207	282.7	6.0	**0.0193**	0.003	16.1	ug/L	227	Standard
	Pb	208	1180.0	5.4	**0.0185**	0.003	16.1	ug/L	868	Standard
	U	238	13.7	33.0	**0.0097**	0.001	6.0	ug/L	8	Standard
>	**Bi**	209	549756.7	0.3				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	105.0	28.6	**0.0803**	0.033	41.2	mg/L	53	Standard
K	39	48.3	33.3	**0.0064**	0.028	435.5	mg/L	53	Standard
Ca	43	25.0	40.0	**-0.2535**	0.571	225.2	mg/L	28	Standard
Fe	54	191.9	18.9	**0.0123**	0.024	193.0	mg/L	181	Standard
Fe	57	288.3	10.5	**0.1032**	0.082	79.8	mg/L	257	Standard
> **Sc-1**	45	55068.2	0.9				mg/L	55220	Standard
Cl	35	49489.4	0.8				ug/L	35504	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	2563.6	6.4				ug/L	2040	Standard
P	31	25469.7	2.1				ug/L	20435	Standard
S	34	2828.6	6.1				ug/L	2430	Standard
Sr	88	71.7	4.0				ug/L	75	Standard
C	12	150.0	26.7				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	19.2	2.9				mg/L	9	Standard
Ho-1	165	18.3	15.7				mg/L	10	Standard
Er	166	16.7	69.3				mg/L	23	Standard
I	127	2351.9	22.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.023	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.636	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.490
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.616
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606113001
Sample Date/Time: Thursday, June 30, 2016 13:33:24
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76874.5	1.2				ug/L	74916	Standard
	Be	9	26.7	10.8	**0.0210**	0.002	11.3	ug/L	10	Standard
	Al	27	12263160.4	0.1	**68.8716**	0.858	1.2	ug/L	1822	Standard
	Sc	45	57164.3	2.3				ug/L	55220	Standard
	Ti	47	1058.4	44.6	**2.4597**	1.148	46.7	ug/L	34	Standard
	V	51	3268.4	50.6	**0.1520**	0.179	117.7	ug/L	1938	Standard
	Cr	52	382346.8	1.5	**40.8212**	0.179	0.4	ug/L	9522	Standard
	Cr	53	51346.9	1.0	**44.9410**	0.414	0.9	ug/L	395	Standard
	Mn	55	630931.5	0.9	**72.1420**	0.853	1.2	ug/L	902	Standard
	Co	59	4405.0	2.3	**0.5098**	0.007	1.4	ug/L	262	Standard
	Ni	60	48386.1	1.4	**21.1104**	0.303	1.4	ug/L	371	Standard
	Cu	65	3249.3	1.8	**1.3918**	0.043	3.1	ug/L	106	Standard
	Zn	66	4252.3	1.2	**2.8756**	0.019	0.6	ug/L	398	Standard
>	**Ge**	72	543540.1	1.2				ug/L	535147	Standard
	As	75	1132.6	1.7	**0.8878**	0.020	2.2	ug/L	-43	Standard
	Se	82	40.0	4.8	**0.1938**	0.012	6.2	ug/L	14	Standard
	Se-1	77	291.7	2.4	**2.6072**	0.110	4.2	ug/L	65	Standard
>	**Ga**	71	198.3	15.2				mg/L	97	Standard
	Rb	85	8367.3	3.6				ug/L	15	Standard
	Y	89	471596.4	1.6				ug/L	465704	Standard
>	**Rh**	103	86.7	3.3				ug/L	10	Standard
	Mo	98	3531.2	1.4	**1.1178**	0.027	2.4	ug/L	9	Standard
	Ag	107	112.0	10.7	**0.0084**	0.002	20.0	ug/L	82	Standard
	Cd	111	203.8	12.5	**0.0903**	0.009	10.1	mg/L	7	Standard
	Cd	114	530.5	18.4	**0.0979**	0.015	15.1	ug/L	21	Standard
>	**In**	115	633938.3	1.8				ug/L	619035	Standard
	Sn	118	1660.1	48.1	**0.1459**	0.120	82.6	ug/L	508	Standard
	Sb	123	21130.8	0.3	**3.9014**	0.063	1.6	ug/L	86	Standard
	Ba	135	17189.4	1.0	**7.3234**	0.083	1.1	ug/L	79	Standard
	Ce	140	2903.6	0.7				ug/L	68	Standard
>	**Tb**	159	976943.8	0.9				ug/L	986982	Standard
	Ho	165	68.3	23.5				ug/L	10	Standard
	Tl	203	64.0	8.3	**0.0129**	0.001	4.6	ug/L	13	Standard
	Tl	205	63.3	18.2	**0.0157**	0.001	9.3	ug/L	10	Standard
	Pb	206	10722.5	1.0	**1.7726**	0.017	1.0	ug/L	264	Standard
	Pb	207	8993.7	2.1	**1.6468**	0.032	1.9	ug/L	227	Standard
	Pb	208	37818.9	1.6	**1.7939**	0.033	1.8	ug/L	868	Standard
	U	238	31.3	24.4	**0.0120**	0.001	8.3	ug/L	8	Standard
>	**Bi**	209	546875.5	0.4				ug/L	541014	Standard

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Na	23	1.7	173.2	**8.8932**	15.395	173.1	mg/L	2	Standard
Mg	24	10813.9	0.6	**11.3543**	0.313	2.8	mg/L	53	Standard
K	39	456.7	9.6	**0.6723**	0.064	9.5	mg/L	53	Standard
Ca	43	280.0	11.7	**13.6756**	2.132	15.6	mg/L	28	Standard
Fe	54	698.7	8.5	**0.3411**	0.036	10.6	mg/L	181	Standard
Fe	57	571.7	2.7	**0.8008**	0.066	8.2	mg/L	257	Standard
> **Sc-1**	45	57164.3	2.3				mg/L	55220	Standard
Cl	35	47684.3	0.4				ug/L	35504	Standard
Kr	83	3.3	34.6				ug/L	2	Standard
Br	81	5371.0	10.5				ug/L	2040	Standard
P	31	29385.2	3.0				ug/L	20435	Standard
S	34	3042.0	6.9				ug/L	2430	Standard
Sr	88	291.7	13.0				ug/L	75	Standard
C	12	226.7	24.3				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	126.8	13.5				mg/L	9	Standard
Ho-1	165	68.3	23.5				mg/L	10	Standard
Er	166	66.7	31.2				mg/L	23	Standard
I	127	23603.4	6.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.614	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.568	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.408
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.083
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606113002
Sample Date/Time: Thursday, June 30, 2016 13:36:36
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75750.7	3.6				ug/L	74916	Standard
	Be	9	26.7	10.8	**0.0214**	0.003	12.3	ug/L	10	Standard
	Al	27	11634446.9	1.1	**66.3450**	1.758	2.7	ug/L	1822	Standard
	Sc	45	56353.0	3.1				ug/L	55220	Standard
	Ti	47	431.3	4.2	**0.9744**	0.043	4.4	ug/L	34	Standard
	V	51	3495.9	3.5	**0.1812**	0.014	7.5	ug/L	1938	Standard
	Cr	52	11350.3	2.8	**0.2223**	0.028	12.7	ug/L	9522	Standard
	Cr	53	1553.4	8.7	**1.0047**	0.114	11.3	ug/L	395	Standard
	Mn	55	4216711.0	2.3	**490.1772**	10.857	2.2	ug/L	902	Standard
	Co	59	3782.5	2.5	**0.4416**	0.009	2.1	ug/L	262	Standard
	Ni	60	2748.2	4.1	**1.0802**	0.044	4.1	ug/L	371	Standard
	Cu	65	535.3	3.2	**0.1839**	0.009	4.8	ug/L	106	Standard
	Zn	66	3704.1	0.8	**2.5036**	0.016	0.6	ug/L	398	Standard
>	**Ge**	72	535262.1	0.6				ug/L	535147	Standard
	As	75	2494.4	2.2	**1.9171**	0.042	2.2	ug/L	-43	Standard
	Se	82	35.6	7.5	**0.1655**	0.020	12.1	ug/L	14	Standard
	Se-1	77	139.7	14.2	**0.9686**	0.220	22.7	ug/L	65	Standard
>	**Ga**	71	176.7	9.1				mg/L	97	Standard
	Rb	85	16689.2	1.7				ug/L	15	Standard
	Y	89	462143.9	0.4				ug/L	465704	Standard
>	**Rh**	103	81.7	36.9				ug/L	10	Standard
	Mo	98	207.5	9.5	**0.0780**	0.006	7.8	ug/L	9	Standard
	Ag	107	137.0	4.1	**0.0118**	0.001	6.3	ug/L	82	Standard
	Cd	111	22.6	13.2	**0.0171**	0.001	6.7	mg/L	7	Standard
	Cd	114	39.1	90.4	**0.0155**	0.006	38.5	ug/L	21	Standard
>	**In**	115	627598.6	0.8				ug/L	619035	Standard
	Sn	118	1151.7	9.3	**0.0712**	0.018	24.9	ug/L	508	Standard
	Sb	123	245.7	16.9	**0.0502**	0.008	16.1	ug/L	86	Standard
	Ba	135	33514.4	0.9	**14.4409**	0.208	1.4	ug/L	79	Standard
	Ce	140	2736.9	4.6				ug/L	68	Standard
>	**Tb**	159	967343.4	0.5				ug/L	986982	Standard
	Ho	165	148.3	25.5				ug/L	10	Standard
	Tl	203	52.0	5.8	**0.0118**	0.000	3.3	ug/L	13	Standard
	Tl	205	51.7	39.1	**0.0144**	0.003	17.8	ug/L	10	Standard
	Pb	206	383.3	6.7	**0.0284**	0.004	14.3	ug/L	264	Standard
	Pb	207	326.7	5.6	**0.0292**	0.004	13.2	ug/L	227	Standard
	Pb	208	1332.4	2.3	**0.0277**	0.002	6.0	ug/L	868	Standard
	U	238	25.0	6.9	**0.0112**	0.000	2.3	ug/L	8	Standard
>	**Bi**	209	534662.1	1.0				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	16000.1	0.9	**17.0625**	0.541	3.2	mg/L	53	Standard
K	39	658.3	3.2	**1.0198**	0.059	5.8	mg/L	53	Standard
Ca	43	578.3	5.6	**30.4220**	1.440	4.7	mg/L	28	Standard
Fe	54	23523.9	1.9	**15.5957**	0.506	3.2	mg/L	181	Standard
Fe	57	6413.0	2.7	**15.9835**	0.084	0.5	mg/L	257	Standard
> **Sc-1**	45	56353.0	3.1				mg/L	55220	Standard
Cl	35	44150.9	2.7				ug/L	35504	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	6244.6	1.0				ug/L	2040	Standard
P	31	30246.8	2.0				ug/L	20435	Standard
S	34	3203.7	4.2				ug/L	2430	Standard
Sr	88	215.0	8.1				ug/L	75	Standard
C	12	320.0	13.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	223.4	21.9				mg/L	9	Standard
Ho-1	165	148.3	25.5				mg/L	10	Standard
Er	166	206.7	34.0				mg/L	23	Standard
I	127	27950.8	5.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.114	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.022	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.383
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.826
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606113003
Sample Date/Time: Thursday, June 30, 2016 13:39:47
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74740.6	1.1				ug/L	74916	Standard
	Be	9	16.7	34.6	**0.0122**	0.005	44.6	ug/L	10	Standard
	Al	27	13368183.3	1.6	**77.2132**	0.803	1.0	ug/L	1822	Standard
	Sc	45	55762.4	1.9				ug/L	55220	Standard
	Ti	47	527.3	8.8	**1.2065**	0.109	9.1	ug/L	34	Standard
	V	51	3916.1	16.0	**0.2266**	0.069	30.3	ug/L	1938	Standard
	Cr	52	268317.4	0.8	**28.7872**	0.180	0.6	ug/L	9522	Standard
	Cr	53	35839.0	3.9	**31.7355**	1.282	4.0	ug/L	395	Standard
	Mn	55	1553349.7	1.3	**180.4784**	2.032	1.1	ug/L	902	Standard
	Co	59	3514.1	2.0	**0.4086**	0.008	1.9	ug/L	262	Standard
	Ni	60	33947.0	1.5	**14.9951**	0.229	1.5	ug/L	371	Standard
	Cu	65	2559.5	1.0	**1.1011**	0.014	1.3	ug/L	106	Standard
	Zn	66	4152.6	2.2	**2.8481**	0.062	2.2	ug/L	398	Standard
>	**Ge**	72	535340.3	0.2				ug/L	535147	Standard
	As	75	424.2	19.4	**0.3718**	0.061	16.5	ug/L	-43	Standard
	Se	82	47.2	17.3	**0.2512**	0.061	24.1	ug/L	14	Standard
	Se-1	77	298.3	8.0	**2.7294**	0.271	9.9	ug/L	65	Standard
>	**Ga**	71	196.7	3.9				mg/L	97	Standard
	Rb	85	8317.3	3.6				ug/L	15	Standard
	Y	89	467785.5	1.3				ug/L	465704	Standard
>	**Rh**	103	95.0	18.2				ug/L	10	Standard
	Mo	98	2007.8	2.4	**0.6473**	0.017	2.5	ug/L	9	Standard
	Ag	107	133.7	2.3	**0.0114**	0.000	3.3	ug/L	82	Standard
	Cd	111	151.4	8.0	**0.0698**	0.005	7.0	mg/L	7	Standard
	Cd	114	336.2	22.3	**0.0660**	0.013	19.1	ug/L	21	Standard
>	**In**	115	627458.4	0.3				ug/L	619035	Standard
	Sn	118	1385.1	8.9	**0.1066**	0.019	18.0	ug/L	508	Standard
	Sb	123	5747.5	1.5	**1.0752**	0.019	1.8	ug/L	86	Standard
	Ba	135	21568.7	1.5	**9.2884**	0.155	1.7	ug/L	79	Standard
	Ce	140	2366.9	7.4				ug/L	68	Standard
>	**Tb**	159	959954.6	0.2				ug/L	986982	Standard
	Ho	165	168.3	12.0				ug/L	10	Standard
	Tl	203	81.7	11.9	**0.0150**	0.001	6.6	ug/L	13	Standard
	Tl	205	88.3	36.4	**0.0191**	0.004	22.1	ug/L	10	Standard
	Pb	206	3173.3	0.5	**0.5063**	0.006	1.1	ug/L	264	Standard
	Pb	207	2755.9	3.1	**0.4897**	0.019	4.0	ug/L	227	Standard
	Pb	208	11492.7	0.7	**0.5271**	0.004	0.8	ug/L	868	Standard
	U	238	31.7	14.9	**0.0121**	0.001	5.5	ug/L	8	Standard
>	**Bi**	209	538551.6	1.2				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	19093.7	2.4	**20.5730**	0.433	2.1	mg/L	53	Standard
K	39	375.0	7.1	**0.5539**	0.037	6.6	mg/L	53	Standard
Ca	43	406.7	8.6	**21.1628**	2.370	11.2	mg/L	28	Standard
Fe	54	1312.8	4.1	**0.7668**	0.019	2.5	mg/L	181	Standard
Fe	57	795.0	14.9	**1.4192**	0.269	18.9	mg/L	257	Standard
> **Sc-1**	45	55762.4	1.9				mg/L	55220	Standard
Cl	35	45442.7	1.1				ug/L	35504	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	6418.0	8.0				ug/L	2040	Standard
P	31	27555.0	2.1				ug/L	20435	Standard
S	34	2735.2	2.3				ug/L	2430	Standard
Sr	88	291.7	1.0				ug/L	75	Standard
C	12	200.0	10.0				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	195.0	15.6				mg/L	9	Standard
Ho-1	165	168.3	12.0				mg/L	10	Standard
Er	166	243.3	16.6				mg/L	23	Standard
I	127	20867.7	4.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.765	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.036	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.361	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.545	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606113004
Sample Date/Time: Thursday, June 30, 2016 13:42:59
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74399.0	3.1				ug/L	74916	Standard
	Be	9	23.3	44.6	**0.0189**	0.011	56.8	ug/L	10	Standard
	Al	27	10856638.5	1.5	**63.0208**	1.392	2.2	ug/L	1822	Standard
	Sc	45	56719.3	2.1				ug/L	55220	Standard
	Ti	47	289.3	2.4	**0.6229**	0.017	2.7	ug/L	34	Standard
	V	51	2332.0	5.7	**0.0527**	0.013	25.2	ug/L	1938	Standard
	Cr	52	18336.1	70.5	**0.9802**	1.432	146.1	ug/L	9522	Standard
	Cr	53	2213.5	70.4	**1.5784**	1.391	88.2	ug/L	395	Standard
	Mn	55	3385468.4	0.9	**389.2475**	3.227	0.8	ug/L	902	Standard
	Co	59	20336.3	2.5	**2.4471**	0.048	2.0	ug/L	262	Standard
	Ni	60	6018.2	2.5	**2.5095**	0.053	2.1	ug/L	371	Standard
	Cu	65	683.7	4.2	**0.2478**	0.014	5.7	ug/L	106	Standard
	Zn	66	2766.9	0.8	**1.7594**	0.028	1.6	ug/L	398	Standard
>	**Ge**	72	541153.6	0.5				ug/L	535147	Standard
	As	75	4598.6	0.6	**3.4503**	0.025	0.7	ug/L	-43	Standard
	Se	82	72.3	2.2	**0.4309**	0.014	3.2	ug/L	14	Standard
	Se-1	77	125.7	8.0	**0.7981**	0.109	13.6	ug/L	65	Standard
>	**Ga**	71	170.0	5.9				mg/L	97	Standard
	Rb	85	5877.8	6.1				ug/L	15	Standard
	Y	89	480882.2	0.7				ug/L	465704	Standard
>	**Rh**	103	90.0	44.4				ug/L	10	Standard
	Mo	98	176.8	20.1	**0.0686**	0.011	15.6	ug/L	9	Standard
	Ag	107	142.3	33.1	**0.0126**	0.006	47.4	ug/L	82	Standard
	Cd	111	30.0	68.4	**0.0202**	0.008	41.1	mg/L	7	Standard
	Cd	114	64.9	65.0	**0.0200**	0.007	35.5	ug/L	21	Standard
>	**In**	115	623102.8	1.4				ug/L	619035	Standard
	Sn	118	1121.7	18.6	**0.0677**	0.031	45.2	ug/L	508	Standard
	Sb	123	309.3	18.9	**0.0624**	0.011	17.1	ug/L	86	Standard
	Ba	135	39415.9	0.4	**17.1108**	0.208	1.2	ug/L	79	Standard
	Ce	140	28894.2	0.7				ug/L	68	Standard
>	**Tb**	159	964868.0	0.6				ug/L	986982	Standard
	Ho	165	706.7	6.7				ug/L	10	Standard
	Tl	203	147.0	43.1	**0.0222**	0.007	31.4	ug/L	13	Standard
	Tl	205	111.7	18.6	**0.0221**	0.003	12.0	ug/L	10	Standard
	Pb	206	529.0	2.6	**0.0530**	0.002	3.5	ug/L	264	Standard
	Pb	207	469.3	7.6	**0.0559**	0.006	11.5	ug/L	227	Standard
	Pb	208	1889.4	2.0	**0.0547**	0.002	4.3	ug/L	868	Standard
	U	238	168.3	8.3	**0.0303**	0.002	5.9	ug/L	8	Standard
>	**Bi**	209	538123.0	0.8				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	7290.1	2.6	**7.7040**	0.321	4.2	mg/L	53	Standard
K	39	425.0	5.4	**0.6269**	0.052	8.4	mg/L	53	Standard
Ca	43	673.3	11.7	**35.4983**	4.811	13.6	mg/L	28	Standard
Fe	54	38438.3	1.9	**25.3833**	0.501	2.0	mg/L	181	Standard
Fe	57	10161.7	2.0	**25.5443**	0.445	1.7	mg/L	257	Standard
> **Sc-1**	45	56719.3	2.1				mg/L	55220	Standard
Cl	35	42442.1	2.9				ug/L	35504	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	11864.7	6.7				ug/L	2040	Standard
P	31	30823.0	1.5				ug/L	20435	Standard
S	34	3190.3	5.5				ug/L	2430	Standard
Sr	88	306.7	12.2				ug/L	75	Standard
C	12	283.3	5.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	1112.5	6.7				mg/L	9	Standard
Ho-1	165	706.7	6.7				mg/L	10	Standard
Er	166	783.4	12.8				mg/L	23	Standard
I	127	26803.8	6.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.309	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.122	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.657
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.466
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606138001
Sample Date/Time: Thursday, June 30, 2016 13:46:10
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66387.0	4.2				ug/L	74916	Standard
	Be	9	23.3	53.9	**0.0211**	0.013	59.7	ug/L	10	Standard
	Al	27	474015.9	0.8	**3.0843**	0.149	4.8	ug/L	1822	Standard
	Sc	45	49494.0	0.4				ug/L	55220	Standard
	Ti	47	793.4	2.4	**1.9681**	0.061	3.1	ug/L	34	Standard
	V	51	4262.8	2.5	**0.2920**	0.015	5.2	ug/L	1938	Standard
	Cr	52	8768.2	4.3	**-0.0054**	0.043	793.3	ug/L	9522	Standard
	Cr	53	776.7	11.5	**0.3512**	0.085	24.3	ug/L	395	Standard
	Mn	55	107808.6	1.7	**13.1935**	0.309	2.3	ug/L	902	Standard
	Co	59	1257.7	3.9	**0.1410**	0.006	4.0	ug/L	262	Standard
	Ni	60	924.7	1.2	**0.2920**	0.007	2.5	ug/L	371	Standard
	Cu	65	658.7	3.7	**0.2580**	0.013	5.0	ug/L	106	Standard
	Zn	66	5538.7	2.4	**4.1749**	0.133	3.2	ug/L	398	Standard
>	**Ge**	72	504580.1	0.6				ug/L	535147	Standard
	As	75	106.1	35.6	**0.1391**	0.029	21.1	ug/L	-43	Standard
	Se	82	23.2	11.2	**0.0848**	0.020	23.6	ug/L	14	Standard
	Se-1	77	60.7	8.3	**0.1327**	0.055	41.4	ug/L	65	Standard
>	**Ga**	71	403.3	13.0				mg/L	97	Standard
	Rb	85	5115.9	3.3				ug/L	15	Standard
	Y	89	435874.1	0.5				ug/L	465704	Standard
>	**Rh**	103	26.7	28.6				ug/L	10	Standard
	Mo	98	145.8	11.1	**0.0616**	0.005	8.8	ug/L	9	Standard
	Ag	107	85.0	3.1	**0.0058**	0.000	4.6	ug/L	82	Standard
	Cd	111	7.4	15.9	**0.0111**	0.000	4.4	mg/L	7	Standard
	Cd	114	25.0	106.1	**0.0135**	0.005	36.4	ug/L	21	Standard
>	**In**	115	587323.3	1.4				ug/L	619035	Standard
	Sn	118	246.7	18.7	**-0.0635**	0.007	11.4	ug/L	508	Standard
	Sb	123	113.1	13.5	**0.0269**	0.003	11.9	ug/L	86	Standard
	Ba	135	5777.8	2.5	**2.6441**	0.052	2.0	ug/L	79	Standard
	Ce	140	18709.9	0.8				ug/L	68	Standard
>	**Tb**	159	897694.4	1.4				ug/L	986982	Standard
	Ho	165	320.0	15.4				ug/L	10	Standard
	Tl	203	53.7	11.4	**0.0121**	0.001	5.5	ug/L	13	Standard
	Tl	205	31.7	59.8	**0.0119**	0.003	21.2	ug/L	10	Standard
	Pb	206	1993.5	2.0	**0.3137**	0.004	1.2	ug/L	264	Standard
	Pb	207	1692.8	5.1	**0.2972**	0.020	6.7	ug/L	227	Standard
	Pb	208	6900.0	0.7	**0.3108**	0.005	1.7	ug/L	868	Standard
	U	238	131.3	1.9	**0.0259**	0.000	0.7	ug/L	8	Standard
>	**Bi**	209	523640.4	1.0				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	76.7	21.0	**0.0587**	0.020	33.9	mg/L	53	Standard
K	39	73.3	23.9	**0.0629**	0.034	53.6	mg/L	53	Standard
Ca	43	31.7	9.1	**0.3261**	0.183	56.0	mg/L	28	Standard
Fe	54	350.6	2.1	**0.1478**	0.007	4.4	mg/L	181	Standard
Fe	57	360.0	23.6	**0.4013**	0.253	63.0	mg/L	257	Standard
> **Sc-1**	45	49494.0	0.4				mg/L	55220	Standard
Cl	35	38474.1	1.0				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1776.8	4.7				ug/L	2040	Standard
P	31	8579.1	1.3				ug/L	20435	Standard
S	34	2888.6	5.6				ug/L	2430	Standard
Sr	88	68.3	25.7				ug/L	75	Standard
C	12	90.0	22.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	509.3	4.1				mg/L	9	Standard
Ho-1	165	320.0	15.4				mg/L	10	Standard
Er	166	293.3	2.0				mg/L	23	Standard
I	127	34252.0	1.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.615	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.288	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.877
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.789
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606138002
Sample Date/Time: Thursday, June 30, 2016 13:49:22
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64661.1	2.8				ug/L	74916	Standard
	Be	9	26.7	10.8	**0.0256**	0.002	9.4	ug/L	10	Standard
	Al	27	495451.4	1.5	**3.3071**	0.100	3.0	ug/L	1822	Standard
	Sc	45	48776.7	0.9				ug/L	55220	Standard
	Ti	47	742.0	0.2	**1.8391**	0.000	0.0	ug/L	34	Standard
	V	51	4463.4	1.4	**0.3158**	0.008	2.5	ug/L	1938	Standard
	Cr	52	8324.3	1.7	**-0.0561**	0.015	27.6	ug/L	9522	Standard
	Cr	53	671.7	3.0	**0.2524**	0.018	7.3	ug/L	395	Standard
	Mn	55	108883.9	0.8	**13.3471**	0.085	0.6	ug/L	902	Standard
	Co	59	1323.4	2.1	**0.1499**	0.003	2.2	ug/L	262	Standard
	Ni	60	977.4	1.6	**0.3176**	0.007	2.3	ug/L	371	Standard
	Cu	65	833.7	3.1	**0.3427**	0.011	3.3	ug/L	106	Standard
	Zn	66	7284.8	2.1	**5.6095**	0.112	2.0	ug/L	398	Standard
>	**Ge**	72	503742.7	0.2				ug/L	535147	Standard
	As	75	106.0	30.1	**0.1393**	0.026	18.3	ug/L	-43	Standard
	Se	82	20.2	50.4	**0.0616**	0.080	130.3	ug/L	14	Standard
	Se-1	77	55.3	13.6	**0.0712**	0.088	123.9	ug/L	65	Standard
>	**Ga**	71	383.3	15.1				mg/L	97	Standard
	Rb	85	5436.0	3.7				ug/L	15	Standard
	Y	89	434664.1	1.5				ug/L	465704	Standard
>	**Rh**	103	23.3	44.6				ug/L	10	Standard
	Mo	98	161.8	10.2	**0.0673**	0.006	8.5	ug/L	9	Standard
	Ag	107	84.7	21.5	**0.0058**	0.003	44.3	ug/L	82	Standard
	Cd	111	7.0	16.1	**0.0110**	0.001	4.6	mg/L	7	Standard
	Cd	114	16.7	21.5	**0.0120**	0.001	5.5	ug/L	21	Standard
>	**In**	115	583990.8	0.3				ug/L	619035	Standard
	Sn	118	248.3	18.7	**-0.0630**	0.007	11.9	ug/L	508	Standard
	Sb	123	91.7	16.4	**0.0228**	0.003	13.0	ug/L	86	Standard
	Ba	135	5793.1	1.4	**2.6664**	0.038	1.4	ug/L	79	Standard
	Ce	140	20100.0	3.3				ug/L	68	Standard
>	**Tb**	159	899230.7	0.5				ug/L	986982	Standard
	Ho	165	273.3	23.9				ug/L	10	Standard
	Tl	203	40.3	14.5	**0.0106**	0.001	6.1	ug/L	13	Standard
	Tl	205	30.0	72.6	**0.0117**	0.003	24.7	ug/L	10	Standard
	Pb	206	2067.1	0.3	**0.3277**	0.002	0.5	ug/L	264	Standard
	Pb	207	1625.1	2.8	**0.2847**	0.008	2.9	ug/L	227	Standard
	Pb	208	7094.0	1.0	**0.3216**	0.006	1.8	ug/L	868	Standard
	U	238	139.3	5.8	**0.0270**	0.001	4.5	ug/L	8	Standard
>	**Bi**	209	522174.4	0.6				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	128.3	9.8	**0.1239**	0.017	13.7	mg/L	53	Standard
K	39	65.0	20.4	**0.0490**	0.026	53.8	mg/L	53	Standard
Ca	43	36.7	20.8	**0.6732**	0.466	69.2	mg/L	28	Standard
Fe	54	429.0	3.1	**0.2121**	0.009	4.3	mg/L	181	Standard
Fe	57	321.7	18.0	**0.3028**	0.182	60.2	mg/L	257	Standard
> **Sc-1**	45	48776.7	0.9				mg/L	55220	Standard
Cl	35	39347.0	2.0				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1716.8	13.9				ug/L	2040	Standard
P	31	8409.0	1.8				ug/L	20435	Standard
S	34	2855.3	5.2				ug/L	2430	Standard
Sr	88	81.7	7.1				ug/L	75	Standard
C	12	90.0	11.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	575.7	17.1				mg/L	9	Standard
Ho-1	165	273.3	23.9				mg/L	10	Standard
Er	166	230.0	22.6				mg/L	23	Standard
I	127	34921.9	3.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		86.311	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.132	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.339
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.518
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 13:52:34
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	70351.3	1.5				ug/L	74916	Standard
	Be	9	53402.3	3.1	**53.8872**	0.854	1.6	ug/L	10	Standard
	Al	27	8536698.5	1.6	**52.3825**	0.048	0.1	ug/L	1822	Standard
	Sc	45	54668.5	1.7				ug/L	55220	Standard
	Ti	47	42118.1	1.1	**99.2640**	0.592	0.6	ug/L	34	Standard
	V	51	468509.2	1.7	**49.0833**	0.889	1.8	ug/L	1938	Standard
	Cr	52	469374.8	1.2	**49.7880**	0.672	1.3	ug/L	9522	Standard
	Cr	53	57157.6	1.3	**49.5191**	0.959	1.9	ug/L	395	Standard
	Mn	55	435423.3	1.0	**49.2040**	0.253	0.5	ug/L	902	Standard
	Co	59	416954.7	1.7	**49.8454**	0.726	1.5	ug/L	262	Standard
	Ni	60	115262.5	1.0	**49.9318**	0.466	0.9	ug/L	371	Standard
	Cu	65	113776.3	0.6	**50.1650**	0.265	0.5	ug/L	106	Standard
	Zn	66	67512.8	0.9	**50.2512**	0.160	0.3	ug/L	398	Standard
>	Ge	72	549568.6	0.6				ug/L	535147	Standard
	As	75	67559.3	2.0	**49.1657**	0.725	1.5	ug/L	-43	Standard
	Se	82	6897.1	2.3	**49.4551**	0.984	2.0	ug/L	14	Standard
	Se-1	77	4799.8	3.4	**51.2947**	1.457	2.8	ug/L	65	Standard
>	Ga	71	81.7	35.3				mg/L	97	Standard
	Rb	85	1100.0	8.1				ug/L	15	Standard
	Y	89	472317.5	0.9				ug/L	465704	Standard
>	Rh	103	28.3	56.7				ug/L	10	Standard
	Mo	98	311318.4	1.2	**96.8405**	0.751	0.8	ug/L	9	Standard
	Ag	107	375352.2	0.6	**48.2459**	0.186	0.4	ug/L	82	Standard
	Cd	111	121680.2	1.5	**48.9299**	0.512	1.0	mg/L	7	Standard
	Cd	114	295402.6	1.0	**49.3283**	0.334	0.7	ug/L	21	Standard
>	In	115	637918.9	0.9				ug/L	619035	Standard
	Sn	118	329220.1	0.8	**48.9878**	0.167	0.3	ug/L	508	Standard
	Sb	123	266012.3	1.4	**48.7461**	0.223	0.5	ug/L	86	Standard
	Ba	135	113369.9	1.1	**48.1056**	0.773	1.6	ug/L	79	Standard
	Ce	140	228.3	8.3				ug/L	68	Standard
>	Tb	159	969024.1	1.7				ug/L	986982	Standard
	Ho	165	15.0	33.3				ug/L	10	Standard
	Tl	203	459036.6	1.0	**50.0510**	0.294	0.6	ug/L	13	Standard
	Tl	205	406627.8	0.8	**51.9013**	0.775	1.5	ug/L	10	Standard
	Pb	206	289135.8	0.6	**49.0844**	0.241	0.5	ug/L	264	Standard
	Pb	207	262963.0	0.7	**49.3945**	0.173	0.4	ug/L	227	Standard
	Pb	208	1066285.7	1.0	**51.9429**	0.371	0.7	ug/L	868	Standard
	U	238	384760.4	0.1	**50.7102**	0.365	0.7	ug/L	8	Standard
>	Bi	209	543486.8	0.8				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.5241**	16.488	173.1	mg/L	2	Standard
Mg	24	4477.3	3.3	**4.8941**	0.142	2.9	mg/L	53	Standard
K	39	2273.5	4.9	**3.8219**	0.208	5.4	mg/L	53	Standard
Ca	43	113.3	2.5	**4.8087**	0.120	2.5	mg/L	28	Standard
Fe	54	7203.2	2.1	**4.8406**	0.177	3.7	mg/L	181	Standard
Fe	57	2146.8	2.6	**5.0804**	0.063	1.2	mg/L	257	Standard
Sc-1	45	54668.5	1.7				mg/L	55220	Standard
Cl	35	43784.5	1.4				ug/L	35504	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	2276.8	5.5				ug/L	2040	Standard
P	31	25897.1	0.8				ug/L	20435	Standard
S	34	3145.3	2.1				ug/L	2430	Standard
Sr	88	68.3	40.3				ug/L	75	Standard
C	12	126.7	18.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	5.4	118.7				mg/L	9	Standard
Ho-1	165	15.0	33.3				mg/L	10	Standard
Er	166	26.7	86.6				mg/L	23	Standard
I	127	12495.2	4.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	107.774		
Al	27	104.765		
Sc	45			
Ti	47	99.264		
V	51	98.167		
Cr	52	99.576		
Cr	53			
Mn	55	98.408		
Co	59	99.691		
Ni	60	99.864		
Cu	65	100.330		
Zn	66	100.502		
Ge	72		102.695	
As	75	98.331		
Se	82	98.910		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	96.840		
Ag	107	96.492		
Cd	111	97.860		
Cd	114			
In	115			103.051
Sn	118	97.976		
Sb	123	97.492		
Ba	135	96.211		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.102		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.886		
U	238	101.420		
Bi	209			100.457
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 13:55:46
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68432.6	2.4				ug/L	74916	Standard
	Be	9	28.3	53.9	**0.0256**	0.015	58.8	ug/L	10	Standard
	Al	27	2561.9	32.4	**0.0138**	0.005	34.8	ug/L	1822	Standard
	Sc	45	53586.3	0.9				ug/L	55220	Standard
	Ti	47	42.3	12.1	**0.0323**	0.013	39.8	ug/L	34	Standard
	V	51	1520.6	0.6	**-0.0323**	0.002	6.2	ug/L	1938	Standard
	Cr	52	8093.5	1.4	**-0.1406**	0.009	6.2	ug/L	9522	Standard
	Cr	53	538.3	14.4	**0.0944**	0.066	69.8	ug/L	395	Standard
	Mn	55	1064.7	10.1	**0.0185**	0.012	62.7	ug/L	902	Standard
	Co	59	307.0	14.2	**0.0148**	0.005	34.3	ug/L	262	Standard
	Ni	60	268.3	6.5	**-0.0260**	0.008	31.4	ug/L	371	Standard
	Cu	65	165.0	7.9	**0.0159**	0.005	33.7	ug/L	106	Standard
	Zn	66	438.3	7.7	**-0.0099**	0.023	238.2	ug/L	398	Standard
>	Ge	72	535819.1	0.7				ug/L	535147	Standard
	As	75	6.6	376.3	**0.0602**	0.018	30.6	ug/L	-43	Standard
	Se	82	29.3	22.0	**0.1194**	0.049	40.9	ug/L	14	Standard
	Se-1	77	62.3	8.8	**0.1100**	0.066	59.7	ug/L	65	Standard
>	Ga	71	78.3	3.7				mg/L	97	Standard
	Rb	85	63.3	4.6				ug/L	15	Standard
	Y	89	473768.5	2.1				ug/L	465704	Standard
>	Rh	103	23.3	24.7				ug/L	10	Standard
	Mo	98	199.2	14.8	**0.0746**	0.009	11.9	ug/L	9	Standard
	Ag	107	161.7	32.4	**0.0148**	0.007	44.5	ug/L	82	Standard
	Cd	111	30.9	74.3	**0.0203**	0.009	45.0	mg/L	7	Standard
	Cd	114	72.9	104.0	**0.0211**	0.013	59.7	ug/L	21	Standard
>	In	115	634159.9	0.7				ug/L	619035	Standard
	Sn	118	1073.4	13.8	**0.0577**	0.023	40.3	ug/L	508	Standard
	Sb	123	669.6	26.7	**0.1280**	0.034	26.4	ug/L	86	Standard
	Ba	135	70.3	49.0	**0.0103**	0.014	139.7	ug/L	79	Standard
	Ce	140	51.7	14.8				ug/L	68	Standard
>	Tb	159	954941.3	1.5				ug/L	986982	Standard
	Ho	165	5.0	100.0				ug/L	10	Standard
	Tl	203	115.0	46.4	**0.0185**	0.006	31.0	ug/L	13	Standard
	Tl	205	83.3	39.0	**0.0183**	0.004	22.3	ug/L	10	Standard
	Pb	206	359.0	17.2	**0.0229**	0.010	44.1	ug/L	264	Standard
	Pb	207	292.3	15.1	**0.0215**	0.008	37.8	ug/L	227	Standard
	Pb	208	1243.7	10.1	**0.0220**	0.006	26.7	ug/L	868	Standard
	U	238	65.7	33.2	**0.0165**	0.003	17.1	ug/L	8	Standard
>	Bi	209	546073.6	0.7				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	40.0	21.7	**0.0104**	0.010	95.4	mg/L	53	Standard
K	39	33.3	37.7	**-0.0178**	0.022	121.3	mg/L	53	Standard
Ca	43	18.3	31.5	**-0.6058**	0.332	54.7	mg/L	28	Standard
Fe	54	221.0	21.5	**0.0364**	0.033	90.5	mg/L	181	Standard
Fe	57	250.0	10.4	**0.0200**	0.078	387.9	mg/L	257	Standard
Sc-1	45	53586.3	0.9				mg/L	55220	Standard
Cl	35	43438.9	0.9				ug/L	35504	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1990.1	6.9				ug/L	2040	Standard
P	31	24860.4	1.5				ug/L	20435	Standard
S	34	3005.3	2.2				ug/L	2430	Standard
Sr	88	78.3	30.2				ug/L	75	Standard
C	12	70.0	24.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	486.3	15.6				mg/L	9	Standard
Ho-1	165	5.0	100.0				mg/L	10	Standard
Er	166	76.7	7.5				mg/L	23	Standard
I	127	11689.5	2.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.126	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.443
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.935
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, June 30, 2016 13:58:59
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	66356.7	2.1				ug/L	74916	Standard
	Be	9	215.0	30.2	**0.2261**	0.067	29.5	ug/L	10	Standard
	Al	27	2230.2	26.9	**0.0121**	0.004	30.1	ug/L	1822	Standard
	Sc	45	51398.8	4.2				ug/L	55220	Standard
	Ti	47	25.3	9.1	**-0.0071**	0.006	81.8	ug/L	34	Standard
	V	51	4800.2	0.2	**0.3361**	0.003	1.0	ug/L	1938	Standard
	Cr	52	15323.7	1.7	**0.7106**	0.037	5.2	ug/L	9522	Standard
	Cr	53	1368.4	10.2	**0.8729**	0.133	15.2	ug/L	395	Standard
	Mn	55	4821.4	3.0	**0.4707**	0.018	3.9	ug/L	902	Standard
	Co	59	3207.7	2.8	**0.3818**	0.013	3.3	ug/L	262	Standard
	Ni	60	3628.8	1.0	**1.5172**	0.022	1.5	ug/L	371	Standard
	Cu	65	1815.4	2.8	**0.7865**	0.027	3.5	ug/L	106	Standard
	Zn	66	8275.6	1.0	**6.1944**	0.041	0.7	ug/L	398	Standard
>	Ge	72	521093.1	0.5				ug/L	535147	Standard
	As	75	460.0	12.9	**0.4079**	0.046	11.2	ug/L	-43	Standard
	Se	82	70.4	16.5	**0.4369**	0.090	20.5	ug/L	14	Standard
	Se-1	77	95.3	6.1	**0.5056**	0.071	14.1	ug/L	65	Standard
>	Ga	71	38.3	15.1				mg/L	97	Standard
	Rb	85	53.3	32.9				ug/L	15	Standard
	Y	89	448899.9	1.0				ug/L	465704	Standard
>	Rh	103	10.0	50.0				ug/L	10	Standard
	Mo	98	59.4	30.1	**0.0318**	0.006	18.4	ug/L	9	Standard
	Ag	107	2890.9	2.6	**0.3858**	0.015	3.8	ug/L	82	Standard
	Cd	111	552.2	6.1	**0.2421**	0.017	7.1	mg/L	7	Standard
	Cd	114	1357.9	4.8	**0.2480**	0.014	5.6	ug/L	21	Standard
>	In	115	605194.8	1.2				ug/L	619035	Standard
	Sn	118	515.0	7.9	**-0.0225**	0.006	26.7	ug/L	508	Standard
	Sb	123	2078.3	0.9	**0.4059**	0.008	1.9	ug/L	86	Standard
	Ba	135	1558.4	3.6	**0.6779**	0.033	4.9	ug/L	79	Standard
	Ce	140	20.0	50.0				ug/L	68	Standard
>	Tb	159	919439.0	1.0				ug/L	986982	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	723.7	5.0	**0.0865**	0.004	4.4	ug/L	13	Standard
	Tl	205	610.0	5.0	**0.0871**	0.004	4.3	ug/L	10	Standard
	Pb	206	1404.1	3.4	**0.2056**	0.009	4.2	ug/L	264	Standard
	Pb	207	1193.0	5.7	**0.1956**	0.014	6.9	ug/L	227	Standard
	Pb	208	4933.3	1.7	**0.2070**	0.004	2.0	ug/L	868	Standard
	U	238	2866.6	0.7	**0.3932**	0.004	0.9	ug/L	8	Standard
>	Bi	209	532763.8	0.3				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	37.1	**0.0158**	0.017	109.9	mg/L	53	Standard
K	39	51.7	20.1	**0.0188**	0.023	119.9	mg/L	53	Standard
Ca	43	20.0	25.0	**-0.4483**	0.353	78.6	mg/L	28	Standard
Fe	54	110.3	26.1	**-0.0377**	0.022	58.6	mg/L	181	Standard
Fe	57	295.0	19.3	**0.1805**	0.189	104.9	mg/L	257	Standard
> **Sc-1**	45	51398.8	4.2				mg/L	55220	Standard
Cl	35	41676.6	0.2				ug/L	35504	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	1763.4	7.5				ug/L	2040	Standard
P	31	16789.3	2.3				ug/L	20435	Standard
S	34	2972.0	1.4				ug/L	2430	Standard
Sr	88	86.7	37.1				ug/L	75	Standard
C	12	83.3	56.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	26.2	77.7				mg/L	9	Standard
Ho-1	165	8.3	91.7				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	1693.4	6.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	113.025		
Al	27			
Sc	45			
Ti	47			
V	51	84.035		
Cr	52	88.826		
Cr	53			
Mn	55	94.146		
Co	59	95.456		
Ni	60	94.822		
Cu	65	98.312		
Zn	66	99.111		
> Ge	72		97.374	
As	75	101.977		
Se	82	109.236		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	96.443		
Cd	111	100.863		
Cd	114			
> In	115			97.764
Sn	118			
Sb	123	101.469		
Ba	135	90.385		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	108.104		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.497		
U	238	98.309		
> Bi	209			98.475
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBS H1 WG574262-01
Sample Date/Time: Thursday, June 30, 2016 14:04:45
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	111427.1	4.3				ug/L	74916	Standard
	Be	9	20.0	50.0	**0.0091**	0.006	66.0	ug/L	10	Standard
	Al	27	34110.0	3.0	**0.1301**	0.010	7.5	ug/L	1822	Standard
	Sc	45	55491.4	1.6				ug/L	55220	Standard
	Ti	47	93.7	9.9	**0.1555**	0.021	13.4	ug/L	34	Standard
	V	51	44354.0	10.5	**4.5741**	0.536	11.7	ug/L	1938	Standard
	Cr	52	24972.9	1.3	**1.7243**	0.040	2.3	ug/L	9522	Standard
	Cr	53	206771.4	0.9	**184.1210**	2.288	1.2	ug/L	395	Standard
	Mn	55	2545.9	11.7	**0.1894**	0.034	17.7	ug/L	902	Standard
	Co	59	293.3	5.8	**0.0131**	0.002	18.0	ug/L	262	Standard
	Ni	60	590.0	1.9	**0.1164**	0.005	4.0	ug/L	371	Standard
	Cu	65	308.7	4.1	**0.0805**	0.005	6.0	ug/L	106	Standard
	Zn	66	2132.5	3.9	**1.2865**	0.055	4.3	ug/L	398	Standard
>	Ge	72	537728.3	0.8				ug/L	535147	Standard
	As	75	-342.5	41.1	**-0.1988**	0.103	51.7	ug/L	-43	Standard
	Se	82	13.2	70.1	**0.0001**	0.068	64311.6	ug/L	14	Standard
	Se-1	77	13334.2	2.7	**146.7115**	2.985	2.0	ug/L	65	Standard
>	Ga	71	400.0	17.7				mg/L	97	Standard
	Rb	85	110.0	7.9				ug/L	15	Standard
	Y	89	464081.2	3.2				ug/L	465704	Standard
>	Rh	103	21.7	26.6				ug/L	10	Standard
	Mo	98	72.0	26.8	**0.0362**	0.006	16.8	ug/L	9	Standard
	Ag	107	244.3	35.1	**0.0275**	0.012	44.4	ug/L	82	Standard
	Cd	111	11.2	43.6	**0.0127**	0.002	15.9	mg/L	7	Standard
	Cd	114	31.3	132.5	**0.0144**	0.007	50.8	ug/L	21	Standard
>	In	115	598667.1	1.4				ug/L	619035	Standard
	Sn	118	1255.1	7.6	**0.0959**	0.014	14.1	ug/L	508	Standard
	Sb	123	515.3	19.6	**0.1048**	0.018	17.4	ug/L	86	Standard
	Ba	135	222.0	9.0	**0.0808**	0.010	12.4	ug/L	79	Standard
	Ce	140	90.0	5.6				ug/L	68	Standard
>	Tb	159	1033304.5	1.5				ug/L	986982	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	164.0	23.2	**0.0228**	0.004	16.5	ug/L	13	Standard
	Tl	205	150.0	32.8	**0.0257**	0.006	22.3	ug/L	10	Standard
	Pb	206	730.0	3.3	**0.0790**	0.004	4.7	ug/L	264	Standard
	Pb	207	653.0	3.6	**0.0824**	0.003	3.7	ug/L	227	Standard
	Pb	208	2412.7	7.2	**0.0724**	0.007	9.6	ug/L	868	Standard
	U	238	18.0	34.7	**0.0101**	0.001	7.7	ug/L	8	Standard
>	Bi	209	576949.5	1.0				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	173.3	12.0	**0.1533**	0.021	13.6	mg/L	53	Standard
K	39	86.7	14.5	**0.0706**	0.023	32.6	mg/L	53	Standard
Ca	43	38.3	39.8	**0.4775**	0.824	172.5	mg/L	28	Standard
Fe	54	234.1	8.4	**0.0399**	0.011	27.2	mg/L	181	Standard
Fe	57	311.7	11.6	**0.1597**	0.107	67.0	mg/L	257	Standard
> **Sc-1**	45	55491.4	1.6				mg/L	55220	Standard
Cl	35	48185.2	0.8				ug/L	35504	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	3143.7	18.1				ug/L	2040	Standard
P	31	26150.9	3.2				ug/L	20435	Standard
S	34	3633.8	3.2				ug/L	2430	Standard
Sr	88	83.3	38.1				ug/L	75	Standard
C	12	210.0	17.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	18.9	88.9				mg/L	9	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	23.3	99.0				mg/L	23	Standard
I	127	4142.2	20.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		148.735	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.482	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.710
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	106.642
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cr 53 Upper, S, EEE	Cr	53	
Se-1 77 Upper, S, EEE	Se-1	77	

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Method 6020 - Summary Report

Sample ID: LCSS H1 WG574262-02
Sample Date/Time: Thursday, June 30, 2016 14:07:56
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	118705.1	2.8				ug/L	74916	Standard
	Be	9	30489.0	1.7	**18.2429**	0.579	3.2	ug/L	10	Standard
	Al	27	43652.8	2.8	**0.1565**	0.004	2.8	ug/L	1822	Standard
	Sc	45	57107.4	1.6				ug/L	55220	Standard
	Ti	47	126.0	33.1	**0.2335**	0.102	43.6	ug/L	34	Standard
	V	51	282984.6	2.3	**30.1957**	0.715	2.4	ug/L	1938	Standard
	Cr	52	267745.2	1.3	**28.5638**	0.368	1.3	ug/L	9522	Standard
	Cr	53	268659.4	1.0	**239.1157**	2.898	1.2	ug/L	395	Standard
	Mn	55	234777.4	0.6	**27.0428**	0.266	1.0	ug/L	902	Standard
	Co	59	209564.0	0.3	**25.5696**	0.025	0.1	ug/L	262	Standard
	Ni	60	59639.5	0.6	**26.3110**	0.073	0.3	ug/L	371	Standard
	Cu	65	58354.2	1.2	**26.2421**	0.236	0.9	ug/L	106	Standard
	Zn	66	35510.6	0.8	**26.8274**	0.127	0.5	ug/L	398	Standard
>	**Ge**	72	538233.9	0.4				ug/L	535147	Standard
	As	75	33844.9	1.4	**25.1769**	0.299	1.2	ug/L	-43	Standard
	Se	82	3497.5	1.2	**25.5605**	0.204	0.8	ug/L	14	Standard
	Se-1	77	17979.3	2.3	**197.8649**	5.115	2.6	ug/L	65	Standard
>	**Ga**	71	533.3	3.8				mg/L	97	Standard
	Rb	85	116.7	16.2				ug/L	15	Standard
	Y	89	475379.4	0.9				ug/L	465704	Standard
>	**Rh**	103	73.3	15.7				ug/L	10	Standard
	Mo	98	117.3	1.7	**0.0504**	0.001	2.0	ug/L	9	Standard
	Ag	107	196226.5	0.5	**26.3032**	0.390	1.5	ug/L	82	Standard
	Cd	111	59719.2	0.8	**25.0507**	0.363	1.4	mg/L	7	Standard
	Cd	114	142846.1	1.2	**24.8855**	0.615	2.5	ug/L	21	Standard
>	**In**	115	611695.2	1.3				ug/L	619035	Standard
	Sn	118	1348.4	18.1	**0.1062**	0.037	35.0	ug/L	508	Standard
	Sb	123	130294.2	0.5	**24.9051**	0.309	1.2	ug/L	86	Standard
	Ba	135	59084.0	0.8	**26.1372**	0.352	1.3	ug/L	79	Standard
	Ce	140	145.0	12.4				ug/L	68	Standard
>	**Tb**	159	1051581.5	1.7				ug/L	986982	Standard
	Ho	165	3.3	86.6				ug/L	10	Standard
	Tl	203	245132.2	1.0	**25.0319**	0.229	0.9	ug/L	13	Standard
	Tl	205	199766.7	0.8	**23.8798**	0.208	0.9	ug/L	10	Standard
	Pb	206	167820.3	0.1	**26.6612**	0.130	0.5	ug/L	264	Standard
	Pb	207	146254.2	0.5	**25.7104**	0.260	1.0	ug/L	227	Standard
	Pb	208	546991.8	0.5	**24.9321**	0.005	0.0	ug/L	868	Standard
	U	238	197816.1	1.2	**24.4178**	0.329	1.3	ug/L	8	Standard
>	**Bi**	209	580382.8	0.5				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	166.7	19.1	**0.1411**	0.034	24.0	mg/L	53	Standard
K	39	66.7	37.0	**0.0338**	0.042	125.4	mg/L	53	Standard
Ca	43	25.0	34.6	**-0.3097**	0.453	146.2	mg/L	28	Standard
Fe	54	238.6	14.6	**0.0384**	0.022	57.8	mg/L	181	Standard
Fe	57	386.7	7.1	**0.3279**	0.077	23.5	mg/L	257	Standard
> **Sc-1**	45	57107.4	1.6				mg/L	55220	Standard
Cl	35	50166.9	1.4				ug/L	35504	Standard
Kr	83	4.0	43.3				ug/L	2	Standard
Br	81	2546.9	4.7				ug/L	2040	Standard
P	31	28042.6	1.7				ug/L	20435	Standard
S	34	4057.2	1.9				ug/L	2430	Standard
Sr	88	80.0	43.8				ug/L	75	Standard
C	12	186.7	21.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	12.9	41.7				mg/L	9	Standard
Ho-1	165	3.3	86.6				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	2561.9	7.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		158.450	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.577	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.814	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	107.277	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cr 53 Upper, S, EEE	Cr	53	
Se-1 77 Upper, S, EEE	Se-1	77	

Sample ID: LCSS H1 WG574262-02
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Method 6020 - Summary Report

Sample ID: LCSS DP WG574262-03
Sample Date/Time: Thursday, June 30, 2016 14:11:08
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	114514.6	2.6				ug/L	74916	Standard
	Be	9	30086.5	2.3	**18.6673**	0.911	4.9	ug/L	10	Standard
	Al	27	129250.6	0.9	**0.4851**	0.012	2.4	ug/L	1822	Standard
	Sc	45	57239.6	2.3				ug/L	55220	Standard
	Ti	47	1106.0	4.7	**2.5727**	0.127	4.9	ug/L	34	Standard
	V	51	289939.1	2.5	**30.6971**	0.593	1.9	ug/L	1938	Standard
	Cr	52	264631.1	0.9	**27.9911**	0.161	0.6	ug/L	9522	Standard
	Cr	53	289850.1	4.7	**255.9465**	10.660	4.2	ug/L	395	Standard
	Mn	55	238961.9	1.3	**27.3127**	0.531	1.9	ug/L	902	Standard
	Co	59	201360.2	1.9	**24.3779**	0.587	2.4	ug/L	262	Standard
	Ni	60	58898.3	1.1	**25.7800**	0.411	1.6	ug/L	371	Standard
	Cu	65	56438.9	1.1	**25.1818**	0.356	1.4	ug/L	106	Standard
	Zn	66	35755.5	0.8	**26.8015**	0.156	0.6	ug/L	398	Standard
>	Ge	72	542467.4	0.7				ug/L	535147	Standard
	As	75	33447.4	0.4	**24.6888**	0.116	0.5	ug/L	-43	Standard
	Se	82	3346.9	2.1	**24.2654**	0.536	2.2	ug/L	14	Standard
	Se-1	77	17587.9	2.2	**192.0071**	3.086	1.6	ug/L	65	Standard
>	Ga	71	565.0	4.9				mg/L	97	Standard
	Rb	85	913.4	4.6				ug/L	15	Standard
	Y	89	475199.5	1.5				ug/L	465704	Standard
>	Rh	103	48.3	11.9				ug/L	10	Standard
	Mo	98	76.0	14.5	**0.0371**	0.003	9.2	ug/L	9	Standard
	Ag	107	188124.0	0.2	**25.2909**	0.357	1.4	ug/L	82	Standard
	Cd	111	57273.6	1.5	**24.0990**	0.674	2.8	mg/L	7	Standard
	Cd	114	134913.9	4.3	**23.5802**	1.336	5.7	ug/L	21	Standard
>	In	115	609922.1	1.6				ug/L	619035	Standard
	Sn	118	1498.4	2.2	**0.1303**	0.003	2.6	ug/L	508	Standard
	Sb	123	125319.3	0.3	**24.0264**	0.455	1.9	ug/L	86	Standard
	Ba	135	58846.4	1.1	**26.1123**	0.678	2.6	ug/L	79	Standard
	Ce	140	3812.1	2.8				ug/L	68	Standard
>	Tb	159	1052434.7	0.3				ug/L	986982	Standard
	Ho	165	50.0	17.3				ug/L	10	Standard
	Tl	203	234636.2	0.2	**24.0570**	0.089	0.4	ug/L	13	Standard
	Tl	205	196194.2	2.2	**23.5474**	0.544	2.3	ug/L	10	Standard
	Pb	206	161998.1	0.3	**25.8385**	0.086	0.3	ug/L	264	Standard
	Pb	207	140338.3	0.2	**24.7681**	0.109	0.4	ug/L	227	Standard
	Pb	208	529789.6	0.6	**24.2446**	0.181	0.7	ug/L	868	Standard
	U	238	192680.1	0.7	**23.8795**	0.155	0.6	ug/L	8	Standard
>	Bi	209	578052.1	0.4				ug/L	541014	Standard

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Na	23	3.3	86.6	**18.3214**	15.864	86.6	mg/L	2	Standard
Mg	24	131.7	13.3	**0.1041**	0.020	19.5	mg/L	53	Standard
K	39	91.7	6.3	**0.0743**	0.013	17.0	mg/L	53	Standard
Ca	43	28.3	10.2	**-0.1281**	0.135	105.5	mg/L	28	Standard
Fe	54	380.9	6.7	**0.1319**	0.022	16.6	mg/L	181	Standard
Fe	57	421.7	3.0	**0.4155**	0.056	13.5	mg/L	257	Standard
> **Sc-1**	45	57239.6	2.3				mg/L	55220	Standard
Cl	35	49730.2	1.6				ug/L	35504	Standard
Kr	83	4.3	48.0				ug/L	2	Standard
Br	81	2426.9	6.4				ug/L	2040	Standard
P	31	26623.4	1.6				ug/L	20435	Standard
S	34	3945.5	4.4				ug/L	2430	Standard
Sr	88	90.0	27.8				ug/L	75	Standard
C	12	146.7	35.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	107.4	41.5				mg/L	9	Standard
Ho-1	165	50.0	17.3				mg/L	10	Standard
Er	166	53.3	57.3				mg/L	23	Standard
I	127	2481.9	7.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		152.857	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.368	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.528
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	106.846
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cr 53 Upper, S, EEE	Cr	53	
Se-1 77 Upper, S, EEE	Se-1	77	

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Method 6020 - Summary Report

Sample ID: L1606129101
Sample Date/Time: Thursday, June 30, 2016 14:14:19
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	136791.5	2.0				ug/L	74916	Standard
	Be	9	410.0	7.3	**0.2095**	0.020	9.4	ug/L	10	Standard
	Al	27	3957239.7	0.8	**12.4898**	0.265	2.1	ug/L	1822	Standard
	Sc	45	64274.4	0.7				ug/L	55220	Standard
	Ti	47	37116.7	1.5	**82.1121**	2.399	2.9	ug/L	34	Standard
	V	51	159473.8	6.8	**15.5386**	0.866	5.6	ug/L	1938	Standard
	Cr	52	194818.3	1.3	**18.7600**	0.052	0.3	ug/L	9522	Standard
	Cr	53	485561.2	9.7	**397.1547**	32.903	8.3	ug/L	395	Standard
	Mn	55	4685341.6	1.1	**497.9063**	5.101	1.0	ug/L	902	Standard
	Co	59	14989.7	0.8	**1.6600**	0.023	1.4	ug/L	262	Standard
	Ni	60	22506.0	2.0	**9.0310**	0.065	0.7	ug/L	371	Standard
	Cu	65	1154642.9	0.3	**478.3618**	6.685	1.4	ug/L	106	Standard
	Zn	66	719355.1	0.7	**505.7123**	7.702	1.5	ug/L	398	Standard
>	**Ge**	72	585562.6	1.5				ug/L	535147	Standard
	As	75	27055.7	0.9	**18.5158**	0.109	0.6	ug/L	-43	Standard
	Se	82	499.7	4.6	**3.2713**	0.105	3.2	ug/L	14	Standard
	Se-1	77	28362.9	7.1	**286.9992**	16.378	5.7	ug/L	65	Standard
>	**Ga**	71	48631.3	1.2				mg/L	97	Standard
	Rb	85	34325.5	2.8				ug/L	15	Standard
	Y	89	546871.9	2.0				ug/L	465704	Standard
>	**Rh**	103	260.0	20.4				ug/L	10	Standard
	Mo	98	23134.5	1.9	**7.2534**	0.176	2.4	ug/L	9	Standard
	Ag	107	13335.2	0.3	**1.7191**	0.035	2.0	ug/L	82	Standard
	Cd	111	1545.2	1.1	**0.6331**	0.012	1.9	mg/L	7	Standard
	Cd	114	4005.6	5.5	**0.6822**	0.045	6.6	ug/L	21	Standard
>	**In**	115	634028.9	1.9				ug/L	619035	Standard
	Sn	118	103292.6	1.9	**15.3936**	0.108	0.7	ug/L	508	Standard
	Sb	123	23726.3	0.7	**4.3794**	0.067	1.5	ug/L	86	Standard
	Ba	135	1097968.8	1.1	**468.9492**	5.140	1.1	ug/L	79	Standard
	Ce	140	189814.9	0.4				ug/L	68	Standard
>	**Tb**	159	1115555.5	1.1				ug/L	986982	Standard
	Ho	165	3177.0	3.1				ug/L	10	Standard
	Tl	203	398.0	13.3	**0.0298**	0.003	11.3	ug/L	13	Standard
	Tl	205	275.0	1.8	**0.0269**	0.000	1.3	ug/L	10	Standard
	Pb	206	135768.6	0.4	**12.6181**	0.185	1.5	ug/L	264	Standard
	Pb	207	111855.0	0.8	**11.5025**	0.175	1.5	ug/L	227	Standard
	Pb	208	420883.1	1.5	**11.2180**	0.045	0.4	ug/L	868	Standard
	U	238	83413.0	0.8	**6.0384**	0.067	1.1	ug/L	8	Standard
>	**Bi**	209	990639.1	1.2				ug/L	541014	Standard

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Na	23	3.3	86.6	**16.0553**	13.900	86.6	mg/L	2	Standard
Mg	24	1075.0	2.8	**0.9719**	0.023	2.3	mg/L	53	Standard
K	39	608.3	6.4	**0.8109**	0.056	6.9	mg/L	53	Standard
Ca	43	246.7	25.8	**10.3407**	3.184	30.8	mg/L	28	Standard
Fe	54	11770.2	2.4	**6.7715**	0.174	2.6	mg/L	181	Standard
Fe	57	3402.0	3.7	**7.0779**	0.244	3.5	mg/L	257	Standard
> **Sc-1**	45	64274.4	0.7				mg/L	55220	Standard
Cl	35	50261.9	0.4				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	6027.9	5.6				ug/L	2040	Standard
P	31	27798.8	3.8				ug/L	20435	Standard
S	34	3652.1	2.9				ug/L	2430	Standard
Sr	88	426.7	4.9				ug/L	75	Standard
C	12	2326.8	12.0				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	1986.8	9.0				mg/L	7	Standard
Dy	164	5283.4	7.8				mg/L	9	Standard
Ho-1	165	3177.0	3.1				mg/L	10	Standard
Er	166	3080.3	6.2				mg/L	23	Standard
I	127	363370.9	6.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		182.592	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.421	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.422
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		183.108
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

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Cu 65 Upper, S, EEE	Cu	65	
Zn 66 Upper, S, EEE	Zn	66	
Se-1 77 Upper, S, EEE	Se-1	77	
Ba 135 Upper, S, EEE	Ba	135	
Bi 209 Int Std for sample	Bi	209	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606129101PS WG574807-01
Sample Date/Time: Thursday, June 30, 2016 14:17:31
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	137356.6	1.7				ug/L	74916	Standard
	Be	9	73022.2	1.5	**37.7466**	0.373	1.0	ug/L	10	Standard
	Al	27	3943616.7	1.3	**12.3930**	0.084	0.7	ug/L	1822	Standard
	Sc	45	65189.9	0.9				ug/L	55220	Standard
	Ti	47	36612.5	0.8	**81.3955**	1.449	1.8	ug/L	34	Standard
	V	51	693082.3	3.3	**68.5607**	1.598	2.3	ug/L	1938	Standard
	Cr	52	704324.1	2.0	**70.9025**	1.024	1.4	ug/L	9522	Standard
	Cr	53	593558.0	2.1	**488.4612**	9.661	2.0	ug/L	395	Standard
	Mn	55	5186923.2	0.6	**554.0487**	8.324	1.5	ug/L	902	Standard
	Co	59	457572.6	0.9	**51.6104**	1.113	2.2	ug/L	262	Standard
	Ni	60	146331.3	1.2	**59.8276**	0.645	1.1	ug/L	371	Standard
	Cu	65	1261675.7	0.8	**525.3316**	5.515	1.0	ug/L	106	Standard
	Zn	66	790446.1	0.9	**558.4915**	2.109	0.4	ug/L	398	Standard
>	Ge	72	582600.4	1.2				ug/L	535147	Standard
	As	75	100050.5	1.0	**68.6729**	1.245	1.8	ug/L	-43	Standard
	Se	82	8037.2	0.3	**54.3795**	0.650	1.2	ug/L	14	Standard
	Se-1	77	34422.7	1.2	**350.4177**	3.188	0.9	ug/L	65	Standard
>	Ga	71	48439.0	1.5				mg/L	97	Standard
	Rb	85	34302.1	0.7				ug/L	15	Standard
	Y	89	560244.3	1.3				ug/L	465704	Standard
>	Rh	103	265.0	6.8				ug/L	10	Standard
	Mo	98	23546.3	1.5	**7.2772**	0.183	2.5	ug/L	9	Standard
	Ag	107	402679.1	0.9	**51.3383**	0.793	1.5	ug/L	82	Standard
	Cd	111	124289.9	0.8	**49.5788**	1.072	2.2	mg/L	7	Standard
	Cd	114	296329.0	2.2	**49.0902**	1.678	3.4	ug/L	21	Standard
>	In	115	643202.9	1.3				ug/L	619035	Standard
	Sn	118	103962.4	3.2	**15.2770**	0.682	4.5	ug/L	508	Standard
	Sb	123	282944.1	1.2	**51.4255**	0.352	0.7	ug/L	86	Standard
	Ba	135	1219389.4	0.7	**513.4112**	10.544	2.1	ug/L	79	Standard
	Ce	140	188144.4	1.0				ug/L	68	Standard
>	Tb	159	1119010.8	0.9				ug/L	986982	Standard
	Ho	165	3330.4	3.1				ug/L	10	Standard
	Tl	203	501006.2	0.8	**29.6691**	0.152	0.5	ug/L	13	Standard
	Tl	205	410582.2	0.7	**28.4622**	0.185	0.7	ug/L	10	Standard
	Pb	206	478829.8	0.2	**44.1422**	0.371	0.8	ug/L	264	Standard
	Pb	207	409096.7	0.2	**41.7280**	0.339	0.8	ug/L	227	Standard
	Pb	208	1506380.0	0.6	**39.8439**	0.360	0.9	ug/L	868	Standard
	U	238	493440.1	1.0	**35.3203**	0.414	1.2	ug/L	8	Standard
>	Bi	209	1000776.7	1.0				ug/L	541014	Standard

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Na	23	1.7	173.2	**7.9268**	13.721	173.1	mg/L	2	Standard
Mg	24	1058.4	10.0	**0.9421**	0.092	9.7	mg/L	53	Standard
K	39	655.0	4.0	**0.8658**	0.046	5.3	mg/L	53	Standard
Ca	43	301.7	12.7	**12.8093**	1.958	15.3	mg/L	28	Standard
Fe	54	12093.5	1.4	**6.8610**	0.073	1.1	mg/L	181	Standard
Fe	57	3442.1	2.4	**7.0600**	0.173	2.4	mg/L	257	Standard
Sc-1	45	65189.9	0.9				mg/L	55220	Standard
Cl	35	50684.0	1.4				ug/L	35504	Standard
Kr	83	4.7	12.4				ug/L	2	Standard
Br	81	6251.3	6.5				ug/L	2040	Standard
P	31	28184.5	3.4				ug/L	20435	Standard
S	34	3433.7	8.7				ug/L	2430	Standard
Sr	88	411.7	1.4				ug/L	75	Standard
C	12	2223.5	8.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	2036.8	4.9				mg/L	7	Standard
Dy	164	5113.6	4.0				mg/L	9	Standard
Ho-1	165	3330.4	3.1				mg/L	10	Standard
Er	166	3213.7	9.7				mg/L	23	Standard
I	127	366302.3	5.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		183.346	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.867	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.904
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		184.982
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

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Cu 65 Upper, S, EEE	Cu	65	
Zn 66 Upper, S, EEE	Zn	66	
Se-1 77 Upper, S, EEE	Se-1	77	
Ba 135 Upper, S, EEE	Ba	135	
Bi 209 Int Std for sample	Bi	209	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606129101SDL WG574807-02
Sample Date/Time: Thursday, June 30, 2016 14:20:42
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	84778.3	2.6				ug/L	74916	Standard
	Be	9	85.0	20.4	**0.0674**	0.013	19.8	ug/L	10	Standard
	Al	27	784608.7	4.3	**3.9933**	0.151	3.8	ug/L	1822	Standard
	Sc	45	56118.8	3.1				ug/L	55220	Standard
	Ti	47	7615.9	4.4	**18.3302**	0.823	4.5	ug/L	34	Standard
	V	51	41825.9	2.6	**4.3105**	0.135	3.1	ug/L	1938	Standard
	Cr	52	46751.4	2.9	**4.1463**	0.146	3.5	ug/L	9522	Standard
	Cr	53	151049.7	3.3	**134.6990**	4.336	3.2	ug/L	395	Standard
	Mn	55	1013716.5	2.5	**117.4885**	2.767	2.4	ug/L	902	Standard
	Co	59	3251.0	2.2	**0.3755**	0.009	2.4	ug/L	262	Standard
	Ni	60	5095.2	1.9	**2.1218**	0.025	1.2	ug/L	371	Standard
	Cu	65	253476.6	2.6	**114.5518**	2.601	2.3	ug/L	106	Standard
	Zn	66	171185.0	2.4	**131.0753**	3.077	2.3	ug/L	398	Standard
>	Ge	72	536506.8	0.7				ug/L	535147	Standard
	As	75	5955.2	2.7	**4.4894**	0.086	1.9	ug/L	-43	Standard
	Se	82	125.7	8.1	**0.8282**	0.081	9.7	ug/L	14	Standard
	Se-1	77	6593.1	2.1	**72.4177**	1.202	1.7	ug/L	65	Standard
>	Ga	71	10615.4	4.2				mg/L	97	Standard
	Rb	85	7655.3	7.1				ug/L	15	Standard
	Y	89	475904.2	2.9				ug/L	465704	Standard
>	Rh	103	76.7	22.9				ug/L	10	Standard
	Mo	98	5094.8	3.1	**1.6733**	0.029	1.8	ug/L	9	Standard
	Ag	107	2964.0	1.4	**0.3933**	0.002	0.5	ug/L	82	Standard
	Cd	111	386.8	5.4	**0.1708**	0.006	3.4	mg/L	7	Standard
	Cd	114	995.4	1.9	**0.1832**	0.006	3.0	ug/L	21	Standard
>	In	115	608564.8	1.9				ug/L	619035	Standard
	Sn	118	22663.6	0.3	**3.4400**	0.079	2.3	ug/L	508	Standard
	Sb	123	6417.2	8.6	**1.2360**	0.085	6.9	ug/L	86	Standard
	Ba	135	241358.8	2.2	**107.3691**	0.797	0.7	ug/L	79	Standard
	Ce	140	40357.0	2.8				ug/L	68	Standard
>	Tb	159	999005.0	0.9				ug/L	986982	Standard
	Ho	165	710.0	6.7				ug/L	10	Standard
	Tl	203	184.0	3.8	**0.0230**	0.001	4.1	ug/L	13	Standard
	Tl	205	153.3	5.0	**0.0243**	0.001	5.1	ug/L	10	Standard
	Pb	206	28820.1	1.7	**4.1128**	0.036	0.9	ug/L	264	Standard
	Pb	207	23942.6	2.0	**3.7816**	0.020	0.5	ug/L	227	Standard
	Pb	208	95916.8	3.1	**3.9247**	0.050	1.3	ug/L	868	Standard
	U	238	17748.4	3.2	**1.9900**	0.014	0.7	ug/L	8	Standard
>	Bi	209	641212.3	2.5				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.0341**	15.639	173.1	mg/L	2	Standard
Mg	24	218.3	8.0	**0.1994**	0.013	6.7	mg/L	53	Standard
K	39	170.0	17.6	**0.2082**	0.051	24.5	mg/L	53	Standard
Ca	43	78.3	9.8	**2.6961**	0.479	17.8	mg/L	28	Standard
Fe	54	2573.4	1.9	**1.6074**	0.052	3.2	mg/L	181	Standard
Fe	57	951.7	4.5	**1.8193**	0.139	7.6	mg/L	257	Standard
> **Sc-1**	45	56118.8	3.1				mg/L	55220	Standard
Cl	35	41388.5	2.2				ug/L	35504	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	2593.6	6.0				ug/L	2040	Standard
P	31	11646.1	0.6				ug/L	20435	Standard
S	34	2718.6	6.0				ug/L	2430	Standard
Sr	88	143.3	23.2				ug/L	75	Standard
C	12	423.3	13.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	493.3	9.6				mg/L	7	Standard
Dy	164	1023.2	11.7				mg/L	9	Standard
Ho-1	165	710.0	6.7				mg/L	10	Standard
Er	166	630.0	11.4				mg/L	23	Standard
I	127	124802.9	5.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.164	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.254	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.309	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	118.520	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	
Cu 65 Upper, S, EEE	Cu	65	

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Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606129101SDL WG574807-02
Sample Date/Time: Thursday, June 30, 2016 14:23:54
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63330.4	1.3				ug/L	74916	Standard
	Be	9	35.0	28.6	**0.0356**	0.011	31.3	ug/L	10	Standard
	Al	27	99549.4	1.6	**0.6763**	0.005	0.8	ug/L	1822	Standard
	Sc	45	51612.8	1.8				ug/L	55220	Standard
	Ti	47	1006.4	1.1	**2.4929**	0.034	1.4	ug/L	34	Standard
	V	51	8517.7	5.7	**0.7710**	0.055	7.2	ug/L	1938	Standard
	Cr	52	12355.0	0.7	**0.4051**	0.008	2.1	ug/L	9522	Standard
	Cr	53	32528.3	6.5	**30.2729**	1.833	6.1	ug/L	395	Standard
	Mn	55	137959.7	1.8	**16.7647**	0.258	1.5	ug/L	902	Standard
	Co	59	665.0	5.6	**0.0631**	0.004	6.8	ug/L	262	Standard
	Ni	60	946.7	3.1	**0.2985**	0.014	4.6	ug/L	371	Standard
	Cu	65	35169.4	0.7	**16.7056**	0.215	1.3	ug/L	106	Standard
	Zn	66	25495.4	0.9	**20.2867**	0.240	1.2	ug/L	398	Standard
>	Ge	72	508951.4	0.6				ug/L	535147	Standard
	As	75	790.5	1.3	**0.6758**	0.007	1.1	ug/L	-43	Standard
	Se	82	35.4	16.1	**0.1781**	0.046	25.8	ug/L	14	Standard
	Se-1	77	1243.1	9.7	**13.9220**	1.318	9.5	ug/L	65	Standard
>	Ga	71	1495.1	12.1				mg/L	97	Standard
	Rb	85	1045.0	0.5				ug/L	15	Standard
	Y	89	449338.0	1.4				ug/L	465704	Standard
>	Rh	103	15.0	33.3				ug/L	10	Standard
	Mo	98	650.9	6.9	**0.2299**	0.012	5.0	ug/L	9	Standard
	Ag	107	513.3	5.0	**0.0649**	0.003	4.5	ug/L	82	Standard
	Cd	111	59.7	4.3	**0.0337**	0.001	3.8	mg/L	7	Standard
	Cd	114	106.1	28.4	**0.0279**	0.005	18.6	ug/L	21	Standard
>	In	115	593483.3	1.6				ug/L	619035	Standard
	Sn	118	2942.0	7.5	**0.3679**	0.029	7.8	ug/L	508	Standard
	Sb	123	1026.7	7.2	**0.2068**	0.018	8.5	ug/L	86	Standard
	Ba	135	32307.1	0.7	**14.7222**	0.195	1.3	ug/L	79	Standard
	Ce	140	5164.2	2.0				ug/L	68	Standard
>	Tb	159	921813.6	1.0				ug/L	986982	Standard
	Ho	165	81.7	12.7				ug/L	10	Standard
	Tl	203	97.7	17.9	**0.0168**	0.002	12.0	ug/L	13	Standard
	Tl	205	90.0	48.1	**0.0193**	0.005	28.2	ug/L	10	Standard
	Pb	206	4051.5	1.7	**0.6581**	0.018	2.8	ug/L	264	Standard
	Pb	207	3282.4	3.0	**0.5904**	0.011	1.9	ug/L	227	Standard
	Pb	208	13848.5	1.0	**0.6441**	0.002	0.3	ug/L	868	Standard
	U	238	2342.2	3.0	**0.3198**	0.007	2.1	ug/L	8	Standard
>	Bi	209	537647.1	1.3				ug/L	541014	Standard

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Na	23	1.7	173.2	**10.2440**	17.735	173.1	mg/L	2	Standard
Mg	24	55.0	24.1	**0.0296**	0.016	52.8	mg/L	53	Standard
K	39	53.3	35.5	**0.0206**	0.033	161.7	mg/L	53	Standard
Ca	43	36.7	39.4	**0.5519**	0.889	161.1	mg/L	28	Standard
Fe	54	390.8	3.9	**0.1663**	0.015	9.2	mg/L	181	Standard
Fe	57	398.3	18.2	**0.4684**	0.225	48.0	mg/L	257	Standard
> **Sc-1**	45	51612.8	1.8				mg/L	55220	Standard
Cl	35	38530.3	1.2				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1890.1	1.6				ug/L	2040	Standard
P	31	7296.8	0.9				ug/L	20435	Standard
S	34	2378.5	3.4				ug/L	2430	Standard
Sr	88	105.0	20.8				ug/L	75	Standard
C	12	113.3	5.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	93.3	12.4				mg/L	7	Standard
Dy	164	131.2	34.9				mg/L	9	Standard
Ho-1	165	81.7	12.7				mg/L	10	Standard
Er	166	113.3	18.4				mg/L	23	Standard
I	127	52358.7	3.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		84.535	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.105	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.872
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.378
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 14:27:07
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68343.8	2.4				ug/L	74916	Standard
	Be	9	56163.9	2.0	**58.3572**	1.048	1.8	ug/L	10	Standard
	Al	27	8830999.9	0.8	**55.7964**	1.064	1.9	ug/L	1822	Standard
	Sc	45	58071.1	2.8				ug/L	55220	Standard
	Ti	47	45017.8	1.7	**105.7692**	1.704	1.6	ug/L	34	Standard
	V	51	497045.5	1.8	**51.9188**	0.868	1.7	ug/L	1938	Standard
	Cr	52	495709.7	1.9	**52.4701**	1.037	2.0	ug/L	9522	Standard
	Cr	53	70055.1	4.3	**60.5778**	2.429	4.0	ug/L	395	Standard
	Mn	55	462411.6	0.5	**52.0973**	0.505	1.0	ug/L	902	Standard
	Co	59	424961.0	1.2	**50.6465**	0.859	1.7	ug/L	262	Standard
	Ni	60	121622.6	1.9	**52.5260**	0.778	1.5	ug/L	371	Standard
	Cu	65	118686.2	2.0	**52.1658**	0.919	1.8	ug/L	106	Standard
	Zn	66	69781.7	0.6	**51.7876**	0.302	0.6	ug/L	398	Standard
>	Ge	72	551326.3	1.2				ug/L	535147	Standard
	As	75	70449.1	0.9	**51.1091**	0.602	1.2	ug/L	-43	Standard
	Se	82	7143.6	1.1	**51.0674**	0.624	1.2	ug/L	14	Standard
	Se-1	77	5368.0	2.2	**57.2636**	1.497	2.6	ug/L	65	Standard
>	Ga	71	118.3	2.4				mg/L	97	Standard
	Rb	85	1088.4	7.6				ug/L	15	Standard
	Y	89	480107.6	2.5				ug/L	465704	Standard
>	Rh	103	30.0	72.6				ug/L	10	Standard
	Mo	98	318527.8	2.0	**98.2098**	1.420	1.4	ug/L	9	Standard
	Ag	107	387998.0	1.7	**49.4315**	0.536	1.1	ug/L	82	Standard
	Cd	111	126141.1	1.3	**50.2785**	0.366	0.7	mg/L	7	Standard
	Cd	114	307281.4	1.2	**50.8610**	0.443	0.9	ug/L	21	Standard
>	In	115	643557.7	0.6				ug/L	619035	Standard
	Sn	118	339017.2	3.5	**50.0007**	1.537	3.1	ug/L	508	Standard
	Sb	123	274626.2	1.2	**49.8837**	0.350	0.7	ug/L	86	Standard
	Ba	135	117839.2	0.8	**49.5604**	0.140	0.3	ug/L	79	Standard
	Ce	140	300.0	6.7				ug/L	68	Standard
>	Tb	159	984962.7	1.4				ug/L	986982	Standard
	Ho	165	13.3	94.4				ug/L	10	Standard
	Tl	203	472528.9	1.5	**51.1647**	0.526	1.0	ug/L	13	Standard
	Tl	205	414817.5	1.4	**52.5782**	0.784	1.5	ug/L	10	Standard
	Pb	206	301319.0	1.2	**50.7986**	0.331	0.7	ug/L	264	Standard
	Pb	207	273907.5	1.1	**51.0948**	0.336	0.7	ug/L	227	Standard
	Pb	208	1090776.5	0.6	**52.7697**	0.252	0.5	ug/L	868	Standard
	U	238	393854.7	0.3	**51.5487**	0.145	0.3	ug/L	8	Standard
>	Bi	209	547266.1	0.6				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4749.1	4.8	**4.8851**	0.096	2.0	mg/L	53	Standard
K	39	2540.2	4.0	**4.0230**	0.115	2.8	mg/L	53	Standard
Ca	43	111.7	38.6	**4.3113**	2.199	51.0	mg/L	28	Standard
Fe	54	7412.1	3.0	**4.6841**	0.099	2.1	mg/L	181	Standard
Fe	57	2123.5	3.1	**4.6907**	0.294	6.3	mg/L	257	Standard
Sc-1	45	58071.1	2.8				mg/L	55220	Standard
Cl	35	44907.8	1.0				ug/L	35504	Standard
Kr	83	2.3	99.0				ug/L	2	Standard
Br	81	2173.5	4.5				ug/L	2040	Standard
P	31	23653.5	2.5				ug/L	20435	Standard
S	34	3143.7	3.9				ug/L	2430	Standard
Sr	88	71.7	31.5				ug/L	75	Standard
C	12	93.3	27.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	12.7	40.1				mg/L	9	Standard
Ho-1	165	13.3	94.4				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	13696.2	3.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	116.714		
Al	27	111.593		
Sc	45			
Ti	47	105.769		
V	51	103.838		
Cr	52	104.940		
Cr	53			
Mn	55	104.195		
Co	59	101.293		
Ni	60	105.052		
Cu	65	104.332		
Zn	66	103.575		
Ge	72		103.023	
As	75	102.218		
Se	82	102.135		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	98.210		
Ag	107	98.863		
Cd	111	100.557		
Cd	114			
In	115		103.961	
Sn	118	100.001		
Sb	123	99.767		
Ba	135	99.121		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.329		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.539		
U	238	103.097		
Bi	209		101.156	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 14:30:19
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68849.4	1.0				ug/L	74916	Standard
	Be	9	15.0	57.7	**0.0118**	0.009	74.9	ug/L	10	Standard
	Al	27	2420.2	16.4	**0.0129**	0.003	20.5	ug/L	1822	Standard
	Sc	45	57243.0	2.9				ug/L	55220	Standard
	Ti	47	47.3	29.6	**0.0406**	0.033	81.0	ug/L	34	Standard
	V	51	2278.3	14.7	**0.0415**	0.036	86.5	ug/L	1938	Standard
	Cr	52	8862.6	0.5	**-0.0873**	0.009	10.2	ug/L	9522	Standard
	Cr	53	4424.0	2.9	**3.4446**	0.093	2.7	ug/L	395	Standard
	Mn	55	1178.0	6.8	**0.0272**	0.008	31.0	ug/L	902	Standard
	Co	59	321.3	5.0	**0.0153**	0.002	11.4	ug/L	262	Standard
	Ni	60	306.3	4.9	**-0.0136**	0.006	43.3	ug/L	371	Standard
	Cu	65	168.7	6.5	**0.0151**	0.005	30.0	ug/L	106	Standard
	Zn	66	485.3	2.1	**0.0142**	0.006	41.5	ug/L	398	Standard
>	**Ge**	72	553907.6	0.5				ug/L	535147	Standard
	As	75	-16.9	53.1	**0.0430**	0.006	15.1	ug/L	-43	Standard
	Se	82	16.0	5.1	**0.0173**	0.006	36.6	ug/L	14	Standard
	Se-1	77	229.0	12.9	**1.8737**	0.305	16.3	ug/L	65	Standard
>	**Ga**	71	66.7	21.7				mg/L	97	Standard
	Rb	85	46.7	27.0				ug/L	15	Standard
	Y	89	490579.9	1.4				ug/L	465704	Standard
>	**Rh**	103	11.7	65.5				ug/L	10	Standard
	Mo	98	229.1	14.3	**0.0822**	0.010	12.1	ug/L	9	Standard
	Ag	107	158.3	1.6	**0.0139**	0.000	3.0	ug/L	82	Standard
	Cd	111	11.9	34.7	**0.0126**	0.002	12.8	mg/L	7	Standard
	Cd	114	37.6	66.1	**0.0151**	0.004	26.8	ug/L	21	Standard
>	**In**	115	650758.6	0.5				ug/L	619035	Standard
	Sn	118	1208.4	21.8	**0.0732**	0.039	52.8	ug/L	508	Standard
	Sb	123	885.2	32.8	**0.1635**	0.052	32.0	ug/L	86	Standard
	Ba	135	75.0	19.2	**0.0116**	0.006	50.8	ug/L	79	Standard
	Ce	140	85.0	40.8				ug/L	68	Standard
>	**Tb**	159	989894.2	0.6				ug/L	986982	Standard
	Ho	165	16.7	45.8				ug/L	10	Standard
	Tl	203	140.0	14.3	**0.0209**	0.002	10.4	ug/L	13	Standard
	Tl	205	108.3	13.3	**0.0212**	0.002	8.1	ug/L	10	Standard
	Pb	206	351.7	5.1	**0.0207**	0.003	15.3	ug/L	264	Standard
	Pb	207	323.0	8.8	**0.0262**	0.005	20.8	ug/L	227	Standard
	Pb	208	1309.7	7.2	**0.0242**	0.005	20.1	ug/L	868	Standard
	U	238	69.0	10.9	**0.0168**	0.001	6.1	ug/L	8	Standard
>	**Bi**	209	555329.7	0.6				ug/L	541014	Standard

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Na	23	1.7	173.2	**8.8680**	15.351	173.1	mg/L	2	Standard
Mg	24	30.0	16.7	**-0.0031**	0.005	148.3	mg/L	53	Standard
K	39	38.3	27.2	**-0.0129**	0.019	148.3	mg/L	53	Standard
Ca	43	31.7	24.1	**0.0538**	0.398	740.6	mg/L	28	Standard
Fe	54	182.6	11.1	**0.0013**	0.013	999.6	mg/L	181	Standard
Fe	57	265.0	1.9	**0.0147**	0.025	169.8	mg/L	257	Standard
> **Sc-1**	45	57243.0	2.9				mg/L	55220	Standard
Cl	35	44938.6	1.8				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1873.4	1.9				ug/L	2040	Standard
P	31	23655.1	0.6				ug/L	20435	Standard
S	34	2910.3	4.5				ug/L	2430	Standard
Sr	88	90.0	28.9				ug/L	75	Standard
C	12	113.3	35.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	508.4	17.1				mg/L	9	Standard
Ho-1	165	16.7	45.8				mg/L	10	Standard
Er	166	103.3	39.1				mg/L	23	Standard
I	127	12196.6	4.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.506	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.125
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.646
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606122903 WG573868-02
Sample Date/Time: Thursday, June 30, 2016 14:36:30
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 1000
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71002.7	1.3				ug/L	74916	Standard
	Be	9	110.0	13.6	**0.1065**	0.016	15.4	ug/L	10	Standard
	Al	27	60587.6	0.3	**0.3661**	0.006	1.7	ug/L	1822	Standard
	Sc	45	57154.3	2.4				ug/L	55220	Standard
	Ti	47	49.7	4.6	**0.0452**	0.006	12.3	ug/L	34	Standard
	V	51	2081.7	41.8	**0.0190**	0.089	470.9	ug/L	1938	Standard
	Cr	52	346396.8	0.8	**35.8869**	0.159	0.4	ug/L	9522	Standard
	Cr	53	45784.1	2.4	**38.9623**	0.821	2.1	ug/L	395	Standard
	Mn	55	59947.8	3.6	**6.5779**	0.223	3.4	ug/L	902	Standard
	Co	59	915.7	3.6	**0.0850**	0.004	5.0	ug/L	262	Standard
	Ni	60	812.7	5.7	**0.2020**	0.021	10.2	ug/L	371	Standard
	Cu	65	1727.4	1.0	**0.6919**	0.010	1.5	ug/L	106	Standard
	Zn	66	13300.5	3.0	**9.4660**	0.258	2.7	ug/L	398	Standard
>	**Ge**	72	558242.0	0.4				ug/L	535147	Standard
	As	75	65.8	23.6	**0.1023**	0.011	11.0	ug/L	-43	Standard
	Se	82	32.9	6.0	**0.1355**	0.014	10.2	ug/L	14	Standard
	Se-1	77	178.0	8.3	**1.3130**	0.161	12.3	ug/L	65	Standard
>	**Ga**	71	481.7	9.6				mg/L	97	Standard
	Rb	85	121.7	24.8				ug/L	15	Standard
	Y	89	491956.7	1.3				ug/L	465704	Standard
>	**Rh**	103	28.3	10.2				ug/L	10	Standard
	Mo	98	708.5	1.9	**0.2258**	0.004	1.8	ug/L	9	Standard
	Ag	107	255.7	1.4	**0.0258**	0.000	1.8	ug/L	82	Standard
	Cd	111	186.7	8.9	**0.0806**	0.007	8.1	mg/L	7	Standard
	Cd	114	502.9	6.7	**0.0902**	0.005	6.0	ug/L	21	Standard
>	**In**	115	658594.5	0.1				ug/L	619035	Standard
	Sn	118	3992.2	4.0	**0.4732**	0.023	4.8	ug/L	508	Standard
	Sb	123	704.6	13.7	**0.1294**	0.017	13.2	ug/L	86	Standard
	Ba	135	280.0	7.2	**0.0955**	0.008	8.8	ug/L	79	Standard
	Ce	140	160.0	17.4				ug/L	68	Standard
>	**Tb**	159	987064.7	0.5				ug/L	986982	Standard
	Ho	165	13.3	114.6				ug/L	10	Standard
	Tl	203	732.7	2.9	**0.0833**	0.003	3.4	ug/L	13	Standard
	Tl	205	638.3	8.7	**0.0866**	0.007	8.2	ug/L	10	Standard
	Pb	206	3147.7	1.8	**0.4799**	0.013	2.6	ug/L	264	Standard
	Pb	207	2938.3	1.9	**0.5014**	0.008	1.6	ug/L	227	Standard
	Pb	208	11735.4	1.5	**0.5154**	0.012	2.3	ug/L	868	Standard
	U	238	27.7	44.9	**0.0114**	0.002	13.9	ug/L	8	Standard
>	**Bi**	209	561516.9	1.0				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	218.3	14.0	**0.1956**	0.034	17.5	mg/L	53	Standard
K	39	48.3	11.9	**0.0034**	0.011	334.1	mg/L	53	Standard
Ca	43	26.7	28.6	**-0.2176**	0.401	184.1	mg/L	28	Standard
Fe	54	154.6	2.8	**-0.0169**	0.005	31.7	mg/L	181	Standard
Fe	57	288.3	11.3	**0.0751**	0.082	108.7	mg/L	257	Standard
> **Sc-1**	45	57154.3	2.4				mg/L	55220	Standard
Cl	35	44364.2	1.0				ug/L	35504	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	1986.8	12.1				ug/L	2040	Standard
P	31	23139.3	3.0				ug/L	20435	Standard
S	34	2735.2	5.6				ug/L	2430	Standard
Sr	88	70.0	28.6				ug/L	75	Standard
C	12	96.7	33.3				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	16.3	38.7				mg/L	9	Standard
Ho-1	165	13.3	114.6				mg/L	10	Standard
Er	166	6.7	173.2				mg/L	23	Standard
I	127	17933.9	2.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.776	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.316	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.391
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.790
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606122903DP WG573868-07
Sample Date/Time: Thursday, June 30, 2016 14:39:42
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 1000
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70982.6	0.4				ug/L	74916	Standard
	Be	9	78.3	3.7	**0.0748**	0.003	3.9	ug/L	10	Standard
	Al	27	58663.4	0.8	**0.3545**	0.004	1.2	ug/L	1822	Standard
	Sc	45	54899.3	2.2				ug/L	55220	Standard
	Ti	47	42.0	20.3	**0.0291**	0.021	71.9	ug/L	34	Standard
	V	51	1986.2	67.7	**0.0123**	0.141	1143.9	ug/L	1938	Standard
	Cr	52	368969.5	1.4	**38.9458**	0.615	1.6	ug/L	9522	Standard
	Cr	53	47358.9	1.3	**40.9908**	0.314	0.8	ug/L	395	Standard
	Mn	55	2494.5	1.0	**0.1776**	0.003	2.0	ug/L	902	Standard
	Co	59	853.7	4.1	**0.0794**	0.004	5.4	ug/L	262	Standard
	Ni	60	516.0	2.0	**0.0787**	0.003	3.9	ug/L	371	Standard
	Cu	65	1366.4	1.5	**0.5448**	0.003	0.6	ug/L	106	Standard
	Zn	66	1813.8	2.6	**1.0140**	0.049	4.9	ug/L	398	Standard
>	**Ge**	72	549160.2	1.0				ug/L	535147	Standard
	As	75	46.3	32.0	**0.0889**	0.011	12.0	ug/L	-43	Standard
	Se	82	26.7	16.3	**0.0953**	0.032	33.7	ug/L	14	Standard
	Se-1	77	149.3	11.4	**1.0347**	0.194	18.7	ug/L	65	Standard
>	**Ga**	71	50.0	30.0				mg/L	97	Standard
	Rb	85	33.3	48.2				ug/L	15	Standard
	Y	89	479449.5	0.7				ug/L	465704	Standard
>	**Rh**	103	15.0	57.7				ug/L	10	Standard
	Mo	98	48.2	16.0	**0.0272**	0.002	8.7	ug/L	9	Standard
	Ag	107	307.3	5.2	**0.0331**	0.002	6.4	ug/L	82	Standard
	Cd	111	175.3	12.3	**0.0777**	0.009	11.4	mg/L	7	Standard
	Cd	114	457.7	16.6	**0.0845**	0.012	14.3	ug/L	21	Standard
>	**In**	115	644130.8	0.8				ug/L	619035	Standard
	Sn	118	1141.7	10.3	**0.0651**	0.016	25.2	ug/L	508	Standard
	Sb	123	451.3	16.0	**0.0863**	0.012	14.5	ug/L	86	Standard
	Ba	135	215.0	11.9	**0.0707**	0.010	14.2	ug/L	79	Standard
	Ce	140	68.3	18.4				ug/L	68	Standard
>	**Tb**	159	972427.1	1.7				ug/L	986982	Standard
	Ho	165	20.0	0.0				ug/L	10	Standard
	Tl	203	724.0	1.3	**0.0829**	0.001	1.0	ug/L	13	Standard
	Tl	205	615.0	10.6	**0.0841**	0.007	8.9	ug/L	10	Standard
	Pb	206	746.7	2.4	**0.0858**	0.004	4.4	ug/L	264	Standard
	Pb	207	647.3	1.0	**0.0853**	0.002	2.5	ug/L	227	Standard
	Pb	208	2717.1	0.5	**0.0907**	0.001	1.6	ug/L	868	Standard
	U	238	17.7	21.4	**0.0102**	0.000	4.9	ug/L	8	Standard
>	**Bi**	209	557965.7	0.8				ug/L	541014	Standard

Sample ID: L1606122903DP WG573868-07
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Na	23	1.7	173.2	**9.6831**	16.763	173.1	mg/L	2	Standard
Mg	24	153.3	12.3	**0.1335**	0.020	14.8	mg/L	53	Standard
K	39	50.0	10.0	**0.0093**	0.007	74.0	mg/L	53	Standard
Ca	43	20.0	25.0	**-0.5355**	0.280	52.3	mg/L	28	Standard
Fe	54	168.8	9.1	**-0.0030**	0.011	377.3	mg/L	181	Standard
Fe	57	223.3	12.9	**-0.0670**	0.085	126.8	mg/L	257	Standard
Sc-1	45	54899.3	2.2				mg/L	55220	Standard
Cl	35	43575.9	0.9				ug/L	35504	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	2043.5	8.3				ug/L	2040	Standard
P	31	21959.2	2.7				ug/L	20435	Standard
S	34	2773.6	3.8				ug/L	2430	Standard
Sr	88	75.0	48.1				ug/L	75	Standard
C	12	73.3	43.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	2.4	262.3				mg/L	9	Standard
Ho-1	165	20.0	0.0				mg/L	10	Standard
Er	166	20.0	86.6				mg/L	23	Standard
I	127	17311.6	2.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.749	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.619	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.054
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.133
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122701
Sample Date/Time: Thursday, June 30, 2016 14:42:53
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 20
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64442.1	6.0				ug/L	74916	Standard
	Be	9	23.3	44.6	**0.0225**	0.013	55.8	ug/L	10	Standard
	Al	27	35175.8	1.1	**0.2340**	0.016	6.9	ug/L	1822	Standard
	Sc	45	50300.1	3.5				ug/L	55220	Standard
	Ti	47	56.7	10.6	**0.0742**	0.016	21.5	ug/L	34	Standard
	V	51	14543.2	1.3	**1.4556**	0.051	3.5	ug/L	1938	Standard
	Cr	52	16900.1	1.3	**0.9376**	0.092	9.8	ug/L	9522	Standard
	Cr	53	4118.9	6.8	**3.4933**	0.222	6.4	ug/L	395	Standard
	Mn	55	789.4	1.1	**-0.0086**	0.004	47.1	ug/L	902	Standard
	Co	59	369.0	1.5	**0.0249**	0.002	7.9	ug/L	262	Standard
	Ni	60	498.7	1.5	**0.0883**	0.007	7.9	ug/L	371	Standard
	Cu	65	272.3	6.6	**0.0713**	0.013	17.7	ug/L	106	Standard
	Zn	66	1142.7	4.6	**0.5789**	0.068	11.7	ug/L	398	Standard
>	**Ge**	72	509231.3	3.4				ug/L	535147	Standard
	As	75	106.3	53.1	**0.1395**	0.046	33.0	ug/L	-43	Standard
	Se	82	31.1	9.4	**0.1446**	0.027	18.8	ug/L	14	Standard
	Se-1	77	158.7	4.8	**1.2722**	0.136	10.7	ug/L	65	Standard
>	**Ga**	71	300.0	13.3				mg/L	97	Standard
	Rb	85	3572.1	5.2				ug/L	15	Standard
	Y	89	437515.1	1.9				ug/L	465704	Standard
>	**Rh**	103	71.7	10.7				ug/L	10	Standard
	Mo	98	198.8	4.5	**0.0792**	0.004	5.4	ug/L	9	Standard
	Ag	107	89.3	7.3	**0.0064**	0.001	17.9	ug/L	82	Standard
	Cd	111	8.3	13.6	**0.0115**	0.001	4.7	mg/L	7	Standard
	Cd	114	18.2	68.8	**0.0122**	0.002	18.7	ug/L	21	Standard
>	**In**	115	590604.5	2.1				ug/L	619035	Standard
	Sn	118	255.0	10.9	**-0.0623**	0.005	8.3	ug/L	508	Standard
	Sb	123	116.1	9.8	**0.0274**	0.003	9.8	ug/L	86	Standard
	Ba	135	15449.5	1.2	**7.0659**	0.187	2.7	ug/L	79	Standard
	Ce	140	106.7	7.2				ug/L	68	Standard
>	**Tb**	159	903950.3	1.9				ug/L	986982	Standard
	Ho	165	21.7	35.3				ug/L	10	Standard
	Tl	203	50.3	8.0	**0.0117**	0.000	3.4	ug/L	13	Standard
	Tl	205	38.3	45.8	**0.0127**	0.002	18.4	ug/L	10	Standard
	Pb	206	305.7	8.4	**0.0157**	0.004	23.6	ug/L	264	Standard
	Pb	207	250.0	2.2	**0.0152**	0.001	9.4	ug/L	227	Standard
	Pb	208	1046.3	3.9	**0.0142**	0.001	8.1	ug/L	868	Standard
	U	238	78.7	9.6	**0.0186**	0.001	6.5	ug/L	8	Standard
>	**Bi**	209	527486.6	1.9				ug/L	541014	Standard

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Na	23	1.7	173.2	**10.7038**	18.531	173.1	mg/L	2	Standard
Mg	24	1011.7	4.5	**1.1779**	0.093	7.9	mg/L	53	Standard
K	39	111.7	29.8	**0.1312**	0.056	42.9	mg/L	53	Standard
Ca	43	86.7	26.0	**3.6971**	1.306	35.3	mg/L	28	Standard
Fe	54	57.1	5.7	**-0.0760**	0.003	4.3	mg/L	181	Standard
Fe	57	325.0	12.3	**0.2811**	0.098	34.8	mg/L	257	Standard
Sc-1	45	50300.1	3.5				mg/L	55220	Standard
Cl	35	38597.1	1.2				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	3163.7	4.8				ug/L	2040	Standard
P	31	8620.8	3.4				ug/L	20435	Standard
S	34	2843.6	2.8				ug/L	2430	Standard
Sr	88	275.0	7.9				ug/L	75	Standard
C	12	80.0	25.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	7	Standard
Dy	164	15.9	34.8				mg/L	9	Standard
Ho-1	165	21.7	35.3				mg/L	10	Standard
Er	166	16.7	69.3				mg/L	23	Standard
I	127	41971.4	3.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		86.019	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.157	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.407
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.500
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122703
Sample Date/Time: Thursday, June 30, 2016 14:46:05
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 20
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63872.8	3.9				ug/L	74916	Standard
	Be	9	23.3	24.7	**0.0225**	0.007	31.7	ug/L	10	Standard
	Al	27	262731.8	0.7	**1.7750**	0.062	3.5	ug/L	1822	Standard
	Sc	45	50567.6	1.4				ug/L	55220	Standard
	Ti	47	69.3	15.9	**0.1109**	0.030	26.6	ug/L	34	Standard
	V	51	2022.9	3.1	**0.0391**	0.010	24.6	ug/L	1938	Standard
	Cr	52	7400.1	4.1	**-0.1526**	0.044	28.8	ug/L	9522	Standard
	Cr	53	2908.6	10.0	**2.4248**	0.310	12.8	ug/L	395	Standard
	Mn	55	46636.0	2.9	**5.7392**	0.181	3.2	ug/L	902	Standard
	Co	59	313.3	27.7	**0.0187**	0.012	62.9	ug/L	262	Standard
	Ni	60	333.7	4.3	**0.0149**	0.008	57.2	ug/L	371	Standard
	Cu	65	411.3	45.3	**0.1419**	0.091	63.9	ug/L	106	Standard
	Zn	66	1541.7	7.1	**0.9319**	0.091	9.7	ug/L	398	Standard
>	**Ge**	72	496662.3	1.1				ug/L	535147	Standard
	As	75	3.0	487.9	**0.0576**	0.012	20.3	ug/L	-43	Standard
	Se	82	30.5	8.2	**0.1453**	0.022	15.3	ug/L	14	Standard
	Se-1	77	151.7	4.4	**1.2325**	0.068	5.5	ug/L	65	Standard
>	**Ga**	71	56.7	43.5				mg/L	97	Standard
	Rb	85	436.7	11.5				ug/L	15	Standard
	Y	89	430441.7	1.9				ug/L	465704	Standard
>	**Rh**	103	13.3	57.3				ug/L	10	Standard
	Mo	98	41.9	29.5	**0.0266**	0.004	15.8	ug/L	9	Standard
	Ag	107	143.3	22.7	**0.0141**	0.005	33.0	ug/L	82	Standard
	Cd	111	32.9	51.0	**0.0224**	0.007	33.2	mg/L	7	Standard
	Cd	114	121.0	17.4	**0.0310**	0.004	12.5	ug/L	21	Standard
>	**In**	115	584144.8	1.3				ug/L	619035	Standard
	Sn	118	585.0	3.1	**-0.0082**	0.002	22.4	ug/L	508	Standard
	Sb	123	122.5	19.2	**0.0289**	0.005	16.2	ug/L	86	Standard
	Ba	135	13459.0	1.0	**6.2201**	0.123	2.0	ug/L	79	Standard
	Ce	140	33.3	70.9				ug/L	68	Standard
>	**Tb**	159	898212.6	0.3				ug/L	986982	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	141.3	39.5	**0.0219**	0.006	28.4	ug/L	13	Standard
	Tl	205	166.7	95.7	**0.0296**	0.021	70.6	ug/L	10	Standard
	Pb	206	307.3	15.5	**0.0162**	0.008	50.6	ug/L	264	Standard
	Pb	207	261.7	12.6	**0.0177**	0.006	35.9	ug/L	227	Standard
	Pb	208	1296.0	32.2	**0.0269**	0.021	77.0	ug/L	868	Standard
	U	238	118.7	114.1	**0.0240**	0.018	76.4	ug/L	8	Standard
>	**Bi**	209	525541.8	0.4				ug/L	541014	Standard

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Na	23	1.7	173.2	**10.0978**	17.481	173.1	mg/L	2	Standard
Mg	24	535.0	18.8	**0.6015**	0.115	19.1	mg/L	53	Standard
K	39	66.7	18.9	**0.0477**	0.025	51.7	mg/L	53	Standard
Ca	43	23.3	53.9	**-0.2274**	0.784	344.8	mg/L	28	Standard
Fe	54	255.7	31.1	**0.0710**	0.056	79.3	mg/L	181	Standard
Fe	57	321.7	7.0	**0.2673**	0.059	22.0	mg/L	257	Standard
> **Sc-1**	45	50567.6	1.4				mg/L	55220	Standard
Cl	35	40072.9	1.5				ug/L	35504	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	3260.4	4.3				ug/L	2040	Standard
P	31	8352.3	6.8				ug/L	20435	Standard
S	34	2655.2	6.2				ug/L	2430	Standard
Sr	88	96.7	7.9				ug/L	75	Standard
C	12	113.3	18.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	6.0	193.9				mg/L	9	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	39451.3	3.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		85.259	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.809	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	94.364
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	97.140
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122705
Sample Date/Time: Thursday, June 30, 2016 14:49:17
Number of Replicates: 3
Autosampler Position: 227
Sample Description: 20
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63382.3	2.1				ug/L	74916	Standard
	Be	9	8.3	34.6	**0.0058**	0.003	58.5	ug/L	10	Standard
	Al	27	247230.8	0.5	**1.6820**	0.028	1.7	ug/L	1822	Standard
	Sc	45	49723.1	1.2				ug/L	55220	Standard
	Ti	47	51.0	13.6	**0.0595**	0.017	28.9	ug/L	34	Standard
	V	51	2118.9	4.8	**0.0438**	0.011	24.7	ug/L	1938	Standard
	Cr	52	7443.8	2.2	**-0.1708**	0.014	8.1	ug/L	9522	Standard
	Cr	53	2696.9	4.2	**2.1505**	0.105	4.9	ug/L	395	Standard
	Mn	55	42329.4	0.7	**5.0615**	0.004	0.1	ug/L	902	Standard
	Co	59	228.7	1.8	**0.0067**	0.000	7.3	ug/L	262	Standard
	Ni	60	308.3	7.9	**-0.0013**	0.011	847.7	ug/L	371	Standard
	Cu	65	124.0	4.3	**0.0002**	0.002	938.4	ug/L	106	Standard
	Zn	66	1239.4	3.7	**0.6545**	0.038	5.8	ug/L	398	Standard
>	**Ge**	72	509892.2	0.6				ug/L	535147	Standard
	As	75	-21.0	156.3	**0.0386**	0.026	66.7	ug/L	-43	Standard
	Se	82	22.8	3.9	**0.0799**	0.006	7.4	ug/L	14	Standard
	Se-1	77	129.3	5.0	**0.9258**	0.084	9.0	ug/L	65	Standard
>	**Ga**	71	36.7	43.8				mg/L	97	Standard
	Rb	85	353.3	8.3				ug/L	15	Standard
	Y	89	434937.9	2.2				ug/L	465704	Standard
>	**Rh**	103	18.3	78.7				ug/L	10	Standard
	Mo	98	13.3	4.9	**0.0169**	0.000	1.3	ug/L	9	Standard
	Ag	107	93.3	9.6	**0.0069**	0.001	17.6	ug/L	82	Standard
	Cd	111	5.6	41.0	**0.0104**	0.001	9.7	mg/L	7	Standard
	Cd	114	19.8	80.0	**0.0125**	0.003	23.0	ug/L	21	Standard
>	**In**	115	588399.0	0.2				ug/L	619035	Standard
	Sn	118	255.0	18.9	**-0.0622**	0.008	12.6	ug/L	508	Standard
	Sb	123	79.2	9.4	**0.0201**	0.002	7.5	ug/L	86	Standard
	Ba	135	12570.5	1.2	**5.7652**	0.070	1.2	ug/L	79	Standard
	Ce	140	25.0	34.6				ug/L	68	Standard
>	**Tb**	159	905028.5	0.8				ug/L	986982	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	44.3	15.4	**0.0110**	0.001	7.0	ug/L	13	Standard
	Tl	205	45.0	22.2	**0.0136**	0.001	9.7	ug/L	10	Standard
	Pb	206	333.3	5.0	**0.0203**	0.003	14.2	ug/L	264	Standard
	Pb	207	266.3	5.4	**0.0181**	0.003	14.7	ug/L	227	Standard
	Pb	208	1164.0	1.9	**0.0198**	0.001	6.0	ug/L	868	Standard
	U	238	8.7	24.0	**0.0091**	0.000	3.0	ug/L	8	Standard
>	**Bi**	209	530144.0	0.4				ug/L	541014	Standard

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Na	23	1.7	173.2	**10.3550**	17.927	173.1	mg/L	2	Standard
Mg	24	483.3	4.3	**0.5506**	0.030	5.5	mg/L	53	Standard
K	39	80.0	16.5	**0.0747**	0.024	32.2	mg/L	53	Standard
Ca	43	26.7	10.8	**0.0040**	0.203	5081.3	mg/L	28	Standard
Fe	54	226.1	14.7	**0.0524**	0.025	48.2	mg/L	181	Standard
Fe	57	310.0	11.3	**0.2484**	0.095	38.1	mg/L	257	Standard
> **Sc-1**	45	49723.1	1.2				mg/L	55220	Standard
Cl	35	40435.9	0.5				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	3133.7	7.1				ug/L	2040	Standard
P	31	8177.2	1.9				ug/L	20435	Standard
S	34	2473.5	1.8				ug/L	2430	Standard
Sr	88	75.0	52.9				ug/L	75	Standard
C	12	90.0	44.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	2.7	221.0				mg/L	9	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	38071.1	2.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		84.604	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.281	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.051
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.991
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122706
Sample Date/Time: Thursday, June 30, 2016 14:52:28
Number of Replicates: 3
Autosampler Position: 228
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63995.1	4.9				ug/L	74916	Standard
	Be	9	25.0	20.0	**0.0243**	0.007	27.2	ug/L	10	Standard
	Al	27	1452158.4	1.3	**9.8063**	0.384	3.9	ug/L	1822	Standard
	Sc	45	49316.8	2.6				ug/L	55220	Standard
	Ti	47	38.0	22.8	**0.0277**	0.023	81.9	ug/L	34	Standard
	V	51	2307.6	6.8	**0.0683**	0.017	24.7	ug/L	1938	Standard
	Cr	52	7271.4	1.4	**-0.1808**	0.007	3.7	ug/L	9522	Standard
	Cr	53	3968.9	5.0	**3.3927**	0.215	6.3	ug/L	395	Standard
	Mn	55	91787.5	1.0	**11.2317**	0.163	1.5	ug/L	902	Standard
	Co	59	876.0	4.6	**0.0915**	0.006	6.4	ug/L	262	Standard
	Ni	60	474.7	3.4	**0.0793**	0.009	11.3	ug/L	371	Standard
	Cu	65	164.7	34.4	**0.0207**	0.028	135.8	ug/L	106	Standard
	Zn	66	988.0	6.5	**0.4611**	0.057	12.4	ug/L	398	Standard
>	**Ge**	72	503918.8	0.8				ug/L	535147	Standard
	As	75	46.2	85.3	**0.0918**	0.031	33.8	ug/L	-43	Standard
	Se	82	41.0	23.8	**0.2246**	0.078	34.8	ug/L	14	Standard
	Se-1	77	170.7	3.4	**1.4303**	0.053	3.7	ug/L	65	Standard
>	**Ga**	71	73.3	25.8				mg/L	97	Standard
	Rb	85	820.0	1.8				ug/L	15	Standard
	Y	89	428133.2	0.9				ug/L	465704	Standard
>	**Rh**	103	33.3	56.8				ug/L	10	Standard
	Mo	98	14.7	37.7	**0.0174**	0.002	10.6	ug/L	9	Standard
	Ag	107	85.0	6.2	**0.0059**	0.001	12.3	ug/L	82	Standard
	Cd	111	6.3	105.4	**0.0107**	0.003	27.8	mg/L	7	Standard
	Cd	114	17.2	88.0	**0.0121**	0.003	23.1	ug/L	21	Standard
>	**In**	115	582185.3	1.1				ug/L	619035	Standard
	Sn	118	228.3	17.7	**-0.0661**	0.006	9.7	ug/L	508	Standard
	Sb	123	73.7	18.3	**0.0192**	0.003	13.8	ug/L	86	Standard
	Ba	135	6171.3	2.4	**2.8508**	0.076	2.7	ug/L	79	Standard
	Ce	140	311.7	26.7				ug/L	68	Standard
>	**Tb**	159	900041.5	0.2				ug/L	986982	Standard
	Ho	165	11.7	49.5				ug/L	10	Standard
	Tl	203	78.0	18.9	**0.0149**	0.002	11.2	ug/L	13	Standard
	Tl	205	86.7	37.5	**0.0192**	0.004	22.2	ug/L	10	Standard
	Pb	206	268.7	7.4	**0.0099**	0.004	38.8	ug/L	264	Standard
	Pb	207	237.7	0.5	**0.0135**	0.000	1.2	ug/L	227	Standard
	Pb	208	982.0	12.1	**0.0117**	0.006	49.8	ug/L	868	Standard
	U	238	573.7	13.6	**0.0868**	0.010	12.0	ug/L	8	Standard
>	**Bi**	209	520191.7	0.7				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3188.7	3.7	**3.8557**	0.044	1.1	mg/L	53	Standard
K	39	53.3	28.6	**0.0251**	0.027	108.2	mg/L	53	Standard
Ca	43	46.7	27.0	**1.2792**	0.771	60.3	mg/L	28	Standard
Fe	54	69.3	57.6	**-0.0655**	0.032	48.3	mg/L	181	Standard
Fe	57	315.0	11.1	**0.2703**	0.086	31.9	mg/L	257	Standard
> **Sc-1**	45	49316.8	2.6				mg/L	55220	Standard
Cl	35	40068.9	0.3				ug/L	35504	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	6631.5	4.6				ug/L	2040	Standard
P	31	7241.7	2.9				ug/L	20435	Standard
S	34	2561.9	3.4				ug/L	2430	Standard
Sr	88	133.3	36.4				ug/L	75	Standard
C	12	60.0					mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	19.8	51.6				mg/L	9	Standard
Ho-1	165	11.7	49.5				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	23	Standard
I	127	44420.0	2.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		85.422	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.165	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.047
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.151
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122707
Sample Date/Time: Thursday, June 30, 2016 14:55:40
Number of Replicates: 3
Autosampler Position: 229
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62577.4	3.3				ug/L	74916	Standard
	Be	9	6.7	86.6	**0.0039**	0.007	166.0	ug/L	10	Standard
	Al	27	198944.4	1.5	**1.3707**	0.026	1.9	ug/L	1822	Standard
	Sc	45	50035.9	2.6				ug/L	55220	Standard
	Ti	47	30.0	20.8	**0.0075**	0.015	197.5	ug/L	34	Standard
	V	51	2013.9	5.4	**0.0366**	0.012	33.1	ug/L	1938	Standard
	Cr	52	7046.6	1.7	**-0.2000**	0.028	13.8	ug/L	9522	Standard
	Cr	53	2293.5	0.8	**1.8158**	0.076	4.2	ug/L	395	Standard
	Mn	55	50488.3	0.7	**6.1844**	0.145	2.3	ug/L	902	Standard
	Co	59	221.0	2.5	**0.0063**	0.001	23.6	ug/L	262	Standard
	Ni	60	712.4	1.1	**0.1948**	0.006	2.9	ug/L	371	Standard
	Cu	65	141.3	12.8	**0.0098**	0.008	84.8	ug/L	106	Standard
	Zn	66	1168.4	4.0	**0.6160**	0.014	2.2	ug/L	398	Standard
>	**Ge**	72	499784.8	2.6				ug/L	535147	Standard
	As	75	-33.5	115.4	**0.0280**	0.031	111.0	ug/L	-43	Standard
	Se	82	22.8	19.0	**0.0842**	0.039	46.9	ug/L	14	Standard
	Se-1	77	125.0	5.8	**0.9050**	0.091	10.1	ug/L	65	Standard
>	**Ga**	71	46.7	50.6				mg/L	97	Standard
	Rb	85	270.0	11.6				ug/L	15	Standard
	Y	89	429135.1	1.7				ug/L	465704	Standard
>	**Rh**	103	16.7	45.8				ug/L	10	Standard
	Mo	98	13.7	25.0	**0.0170**	0.001	6.4	ug/L	9	Standard
	Ag	107	80.0	11.9	**0.0051**	0.001	26.5	ug/L	82	Standard
	Cd	111	5.0	40.2	**0.0101**	0.001	9.0	mg/L	7	Standard
	Cd	114	10.0	53.1	**0.0107**	0.001	8.9	ug/L	21	Standard
>	**In**	115	585198.1	1.8				ug/L	619035	Standard
	Sn	118	186.7	13.5	**-0.0730**	0.005	6.3	ug/L	508	Standard
	Sb	123	75.9	10.6	**0.0196**	0.002	8.4	ug/L	86	Standard
	Ba	135	8760.9	0.3	**4.0349**	0.067	1.7	ug/L	79	Standard
	Ce	140	36.7	7.9				ug/L	68	Standard
>	**Tb**	159	899376.2	1.9				ug/L	986982	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	44.3	10.7	**0.0110**	0.001	5.1	ug/L	13	Standard
	Tl	205	46.7	24.7	**0.0139**	0.001	10.7	ug/L	10	Standard
	Pb	206	244.3	3.1	**0.0053**	0.002	35.8	ug/L	264	Standard
	Pb	207	230.3	8.7	**0.0118**	0.004	32.8	ug/L	227	Standard
	Pb	208	925.0	2.8	**0.0085**	0.001	11.3	ug/L	868	Standard
	U	238	3.7	56.8	**0.0084**	0.000	3.3	ug/L	8	Standard
>	**Bi**	209	523201.8	1.3				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	508.3	2.8	**0.5773**	0.030	5.2	mg/L	53	Standard
K	39	55.0	18.2	**0.0274**	0.021	77.1	mg/L	53	Standard
Ca	43	28.3	36.7	**0.1031**	0.676	655.6	mg/L	28	Standard
Fe	54	462.6	3.9	**0.2290**	0.007	3.0	mg/L	181	Standard
Fe	57	376.7	12.0	**0.4365**	0.105	24.0	mg/L	257	Standard
> **Sc-1**	45	50035.9	2.6				mg/L	55220	Standard
Cl	35	40185.2	1.9				ug/L	35504	Standard
Kr	83	1.7	124.9				ug/L	2	Standard
Br	81	2750.3	5.5				ug/L	2040	Standard
P	31	7351.8	4.8				ug/L	20435	Standard
S	34	2616.9	2.6				ug/L	2430	Standard
Sr	88	65.0	15.4				ug/L	75	Standard
C	12	113.3	27.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	2.5	239.4				mg/L	9	Standard
Ho-1	165	8.3	69.3				mg/L	10	Standard
Er	166	16.7	69.3				mg/L	23	Standard
I	127	39342.7	1.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		83.530	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.392	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.534
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.708
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 14:58:53
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64391.5	0.8				ug/L	74916	Standard
	Be	9	49959.0	3.9	**55.0785**	1.704	3.1	ug/L	10	Standard
	Al	27	8042298.7	3.0	**53.9109**	1.197	2.2	ug/L	1822	Standard
	Sc	45	52713.3	3.1				ug/L	55220	Standard
	Ti	47	40282.8	2.2	**100.6643**	0.597	0.6	ug/L	34	Standard
	V	51	449362.5	2.0	**49.9229**	0.786	1.6	ug/L	1938	Standard
	Cr	52	448068.9	1.4	**50.4103**	0.341	0.7	ug/L	9522	Standard
	Cr	53	56742.8	3.7	**52.1353**	1.373	2.6	ug/L	395	Standard
	Mn	55	411079.3	2.0	**49.2603**	0.827	1.7	ug/L	902	Standard
	Co	59	391313.5	1.8	**49.6052**	0.544	1.1	ug/L	262	Standard
	Ni	60	110525.4	1.2	**50.7752**	0.447	0.9	ug/L	371	Standard
	Cu	65	108521.4	2.5	**50.7316**	0.511	1.0	ug/L	106	Standard
	Zn	66	64187.3	0.5	**50.6710**	0.790	1.6	ug/L	398	Standard
>	Ge	72	518300.5	1.9				ug/L	535147	Standard
	As	75	65315.7	1.3	**50.4052**	0.285	0.6	ug/L	-43	Standard
	Se	82	6637.9	2.0	**50.4718**	0.221	0.4	ug/L	14	Standard
	Se-1	77	4485.7	1.7	**50.8352**	0.703	1.4	ug/L	65	Standard
>	Ga	71	66.7	30.3				mg/L	97	Standard
	Rb	85	938.4	3.4				ug/L	15	Standard
	Y	89	452750.4	1.1				ug/L	465704	Standard
>	Rh	103	43.3	58.1				ug/L	10	Standard
	Mo	98	290978.1	1.9	**95.9061**	1.779	1.9	ug/L	9	Standard
	Ag	107	359437.5	1.1	**48.9522**	0.523	1.1	ug/L	82	Standard
	Cd	111	116831.1	2.1	**49.7787**	0.939	1.9	mg/L	7	Standard
	Cd	114	283363.8	1.4	**50.1376**	0.775	1.5	ug/L	21	Standard
>	In	115	602055.6	0.7				ug/L	619035	Standard
	Sn	118	319610.8	2.7	**50.3915**	1.220	2.4	ug/L	508	Standard
	Sb	123	254703.1	1.5	**49.4555**	0.671	1.4	ug/L	86	Standard
	Ba	135	109175.3	1.2	**49.0837**	0.702	1.4	ug/L	79	Standard
	Ce	140	180.0	7.3				ug/L	68	Standard
>	Tb	159	909220.9	1.0				ug/L	986982	Standard
	Ho	165	13.3	21.7				ug/L	10	Standard
	Tl	203	443311.4	0.8	**50.2200**	0.968	1.9	ug/L	13	Standard
	Tl	205	389649.1	1.6	**51.6702**	1.301	2.5	ug/L	10	Standard
	Pb	206	277554.0	1.2	**48.9549**	1.120	2.3	ug/L	264	Standard
	Pb	207	252521.8	1.1	**49.2813**	1.032	2.1	ug/L	227	Standard
	Pb	208	1029674.4	0.9	**52.1136**	0.991	1.9	ug/L	868	Standard
	U	238	368061.3	1.2	**50.3996**	1.185	2.4	ug/L	8	Standard
>	Bi	209	523176.7	1.1				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4247.3	2.1	**4.8159**	0.107	2.2	mg/L	53	Standard
K	39	2163.5	3.7	**3.7700**	0.073	1.9	mg/L	53	Standard
Ca	43	123.3	16.9	**5.6653**	1.407	24.8	mg/L	28	Standard
Fe	54	7090.0	0.4	**4.9449**	0.156	3.2	mg/L	181	Standard
Fe	57	1908.5	4.2	**4.6381**	0.337	7.3	mg/L	257	Standard
Sc-1	45	52713.3	3.1				mg/L	55220	Standard
Cl	35	43291.8	1.4				ug/L	35504	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1943.5	0.8				ug/L	2040	Standard
P	31	22641.9	1.4				ug/L	20435	Standard
S	34	3180.3	0.4				ug/L	2430	Standard
Sr	88	60.0	33.3				ug/L	75	Standard
C	12	106.7	21.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	12.7	46.6				mg/L	9	Standard
Ho-1	165	13.3	21.7				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	10243.5	6.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	110.157		
Al	27	107.822		
Sc	45			
Ti	47	100.664		
V	51	99.846		
Cr	52	100.821		
Cr	53			
Mn	55	98.521		
Co	59	99.210		
Ni	60	101.550		
Cu	65	101.463		
Zn	66	101.342		
Ge	72		96.852	
As	75	100.810		
Se	82	100.944		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	95.906		
Ag	107	97.904		
Cd	111	99.557		
Cd	114			
In	115		97.257	
Sn	118	100.783		
Sb	123	98.911		
Ba	135	98.167		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.440		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.227		
U	238	100.799		
Bi	209		96.703	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 15:02:04
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64908.8	2.4				ug/L	74916	Standard
	Be	9	33.3	70.9	**0.0325**	0.025	76.1	ug/L	10	Standard
	Al	27	5675.1	97.0	**0.0349**	0.035	101.2	ug/L	1822	Standard
	Sc	45	52479.1	1.7				ug/L	55220	Standard
	Ti	47	57.0	36.8	**0.0705**	0.052	73.1	ug/L	34	Standard
	V	51	1708.7	5.1	**-0.0083**	0.009	105.1	ug/L	1938	Standard
	Cr	52	8255.6	3.6	**-0.1041**	0.031	29.6	ug/L	9522	Standard
	Cr	53	1440.1	4.9	**0.9282**	0.060	6.5	ug/L	395	Standard
	Mn	55	1694.5	64.0	**0.0955**	0.128	134.1	ug/L	902	Standard
	Co	59	484.7	54.7	**0.0378**	0.033	87.5	ug/L	262	Standard
	Ni	60	327.0	14.6	**0.0030**	0.021	704.8	ug/L	371	Standard
	Cu	65	269.7	59.2	**0.0657**	0.073	111.8	ug/L	106	Standard
	Zn	66	495.3	20.2	**0.0417**	0.078	186.4	ug/L	398	Standard
>	**Ge**	72	525176.3	0.7				ug/L	535147	Standard
	As	75	14.9	238.4	**0.0664**	0.027	40.6	ug/L	-43	Standard
	Se	82	26.6	22.2	**0.1030**	0.043	42.0	ug/L	14	Standard
	Se-1	77	111.7	16.6	**0.6809**	0.202	29.7	ug/L	65	Standard
>	**Ga**	71	71.7	24.5				mg/L	97	Standard
	Rb	85	48.3	15.8				ug/L	15	Standard
	Y	89	456993.2	1.0				ug/L	465704	Standard
>	**Rh**	103	21.7	58.1				ug/L	10	Standard
	Mo	98	281.0	44.7	**0.1038**	0.041	39.5	ug/L	9	Standard
	Ag	107	192.3	43.4	**0.0198**	0.011	56.9	ug/L	82	Standard
	Cd	111	40.5	99.9	**0.0249**	0.017	68.3	mg/L	7	Standard
	Cd	114	98.3	87.3	**0.0261**	0.015	57.5	ug/L	21	Standard
>	**In**	115	609890.0	0.3				ug/L	619035	Standard
	Sn	118	1120.0	5.0	**0.0713**	0.008	11.7	ug/L	508	Standard
	Sb	123	687.4	14.9	**0.1361**	0.019	14.3	ug/L	86	Standard
	Ba	135	123.0	77.9	**0.0350**	0.043	121.7	ug/L	79	Standard
	Ce	140	38.3	32.8				ug/L	68	Standard
>	**Tb**	159	927551.9	2.0				ug/L	986982	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	179.3	52.1	**0.0260**	0.010	40.3	ug/L	13	Standard
	Tl	205	265.0	97.2	**0.0423**	0.034	79.6	ug/L	10	Standard
	Pb	206	399.3	16.9	**0.0316**	0.012	37.7	ug/L	264	Standard
	Pb	207	341.0	19.1	**0.0323**	0.013	39.3	ug/L	227	Standard
	Pb	208	1776.4	50.1	**0.0502**	0.045	88.7	ug/L	868	Standard
	U	238	255.0	121.7	**0.0423**	0.042	99.0	ug/L	8	Standard
>	**Bi**	209	531848.0	0.6				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	33.3	**0.0150**	0.016	104.4	mg/L	53	Standard
K	39	43.3	40.5	**0.0013**	0.031	2462.6	mg/L	53	Standard
Ca	43	21.7	81.0	**-0.3788**	1.065	281.3	mg/L	28	Standard
Fe	54	192.3	23.9	**0.0189**	0.031	166.4	mg/L	181	Standard
Fe	57	313.3	16.0	**0.2091**	0.125	59.8	mg/L	257	Standard
Sc-1	45	52479.1	1.7				mg/L	55220	Standard
Cl	35	43387.4	1.0				ug/L	35504	Standard
Kr	83	3.3	75.5				ug/L	2	Standard
Br	81	1960.1	2.6				ug/L	2040	Standard
P	31	23142.7	2.3				ug/L	20435	Standard
S	34	3065.3	5.7				ug/L	2430	Standard
Sr	88	78.3	20.5				ug/L	75	Standard
C	12	70.0	24.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	540.6	19.0				mg/L	9	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	56.7	53.9				mg/L	23	Standard
I	127	9673.1	2.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.137	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.523
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.306
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, June 30, 2016 15:05:17
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64547.2	0.8				ug/L	74916	Standard
	Be	9	225.0	18.2	**0.2441**	0.046	19.0	ug/L	10	Standard
	Al	27	1113.4	11.1	**0.0051**	0.001	15.2	ug/L	1822	Standard
	Sc	45	51576.0	1.5				ug/L	55220	Standard
	Ti	47	25.3	14.9	**-0.0066**	0.009	139.6	ug/L	34	Standard
	V	51	4935.8	2.7	**0.3561**	0.015	4.2	ug/L	1938	Standard
	Cr	52	14861.3	0.5	**0.6731**	0.027	4.0	ug/L	9522	Standard
	Cr	53	2343.5	4.8	**1.7902**	0.113	6.3	ug/L	395	Standard
	Mn	55	4597.0	1.4	**0.4488**	0.007	1.5	ug/L	902	Standard
	Co	59	3194.0	4.3	**0.3837**	0.017	4.4	ug/L	262	Standard
	Ni	60	3611.4	1.8	**1.5243**	0.046	3.0	ug/L	371	Standard
	Cu	65	1778.8	1.1	**0.7768**	0.003	0.4	ug/L	106	Standard
	Zn	66	8315.3	1.6	**6.2844**	0.025	0.4	ug/L	398	Standard
>	Ge	72	516477.7	1.2				ug/L	535147	Standard
	As	75	460.5	11.9	**0.4113**	0.041	10.0	ug/L	-43	Standard
	Se	82	69.8	4.3	**0.4368**	0.024	5.5	ug/L	14	Standard
	Se-1	77	131.3	8.7	**0.9301**	0.143	15.4	ug/L	65	Standard
>	Ga	71	43.3	58.1				mg/L	97	Standard
	Rb	85	33.3	22.9				ug/L	15	Standard
	Y	89	450395.4	2.4				ug/L	465704	Standard
>	Rh	103	21.7	13.3				ug/L	10	Standard
	Mo	98	72.5	11.1	**0.0360**	0.002	6.1	ug/L	9	Standard
	Ag	107	2867.6	1.4	**0.3815**	0.008	2.2	ug/L	82	Standard
	Cd	111	535.5	0.4	**0.2343**	0.005	2.3	mg/L	7	Standard
	Cd	114	1336.0	8.1	**0.2432**	0.015	6.0	ug/L	21	Standard
>	In	115	606832.4	2.2				ug/L	619035	Standard
	Sn	118	650.0	14.7	**-0.0017**	0.013	760.6	ug/L	508	Standard
	Sb	123	2113.1	2.9	**0.4114**	0.005	1.3	ug/L	86	Standard
	Ba	135	1618.8	1.5	**0.7028**	0.007	1.0	ug/L	79	Standard
	Ce	140	13.3	94.4				ug/L	68	Standard
>	Tb	159	927835.7	0.6				ug/L	986982	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	710.0	3.9	**0.0853**	0.003	3.4	ug/L	13	Standard
	Tl	205	648.3	3.6	**0.0925**	0.003	3.6	ug/L	10	Standard
	Pb	206	1383.7	2.8	**0.2032**	0.006	2.9	ug/L	264	Standard
	Pb	207	1185.7	2.7	**0.1952**	0.005	2.7	ug/L	227	Standard
	Pb	208	4940.3	2.3	**0.2085**	0.005	2.3	ug/L	868	Standard
	U	238	2890.9	1.4	**0.3984**	0.007	1.8	ug/L	8	Standard
>	Bi	209	530205.9	0.5				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	30.0	44.1	**0.0005**	0.016	3421.5	mg/L	53	Standard
K	39	45.0	11.1	**0.0058**	0.010	165.5	mg/L	53	Standard
Ca	43	26.7	57.3	**-0.0502**	0.938	1867.4	mg/L	28	Standard
Fe	54	103.5	36.2	**-0.0433**	0.027	62.6	mg/L	181	Standard
Fe	57	285.0	9.3	**0.1447**	0.062	43.1	mg/L	257	Standard
Sc-1	45	51576.0	1.5				mg/L	55220	Standard
Cl	35	41973.4	2.1				ug/L	35504	Standard
Kr	83	0.0					ug/L	2	Standard
Br	81	1820.1	12.4				ug/L	2040	Standard
P	31	16265.4	2.1				ug/L	20435	Standard
S	34	2886.9	1.2				ug/L	2430	Standard
Sr	88	58.3	4.9				ug/L	75	Standard
C	12	63.3	9.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	9.2	103.5				mg/L	9	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	16.7	69.3				mg/L	23	Standard
I	127	1938.5	24.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	122.033		
Al	27			
Sc	45			
Ti	47			
V	51	89.021		
Cr	52	84.133		
Cr	53			
Mn	55	89.765		
Co	59	95.918		
Ni	60	95.267		
Cu	65	97.095		
Zn	66	100.550		
Ge	72		96.511	
As	75	102.824		
Se	82	109.192		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	95.385		
Cd	111	97.634		
Cd	114			
> In	115			98.029
Sn	118			
Sb	123	102.852		
Ba	135	93.700		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	106.681		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.258		
U	238	99.600		
> Bi	209			98.002
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: PBW A1 WG573728-03
Sample Date/Time: Thursday, June 30, 2016 15:14:48
Number of Replicates: 3
Autosampler Position: 230
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63953.1	2.1				ug/L	74916	Standard
	Be	9	18.3	56.8	**0.0169**	0.012	71.1	ug/L	10	Standard
	Al	27	6076.2	2.5	**0.0387**	0.001	3.8	ug/L	1822	Standard
	Sc	45	51092.7	3.3				ug/L	55220	Standard
	Ti	47	34.0	12.8	**0.0177**	0.013	71.0	ug/L	34	Standard
	V	51	1827.5	7.0	**0.0140**	0.018	130.2	ug/L	1938	Standard
	Cr	52	8456.0	0.5	**-0.0382**	0.019	49.8	ug/L	9522	Standard
	Cr	53	1518.4	1.3	**1.0626**	0.043	4.0	ug/L	395	Standard
	Mn	55	964.0	3.9	**0.0142**	0.005	32.9	ug/L	902	Standard
	Co	59	219.3	2.5	**0.0059**	0.001	14.0	ug/L	262	Standard
	Ni	60	319.7	1.5	**0.0062**	0.000	6.3	ug/L	371	Standard
	Cu	65	205.3	3.5	**0.0404**	0.005	12.4	ug/L	106	Standard
	Zn	66	994.0	3.0	**0.4683**	0.037	7.9	ug/L	398	Standard
>	**Ge**	72	502641.9	1.7				ug/L	535147	Standard
	As	75	-49.4	116.2	**0.0160**	0.046	287.1	ug/L	-43	Standard
	Se	82	19.2	30.7	**0.0534**	0.045	84.3	ug/L	14	Standard
	Se-1	77	89.0	25.4	**0.4682**	0.250	53.5	ug/L	65	Standard
>	**Ga**	71	48.3	15.8				mg/L	97	Standard
	Rb	85	38.3	45.8				ug/L	15	Standard
	Y	89	435665.6	1.4				ug/L	465704	Standard
>	**Rh**	103	18.3	56.8				ug/L	10	Standard
	Mo	98	138.2	11.7	**0.0588**	0.005	8.0	ug/L	9	Standard
	Ag	107	81.0	9.9	**0.0052**	0.001	17.5	ug/L	82	Standard
	Cd	111	3.1	49.7	**0.0092**	0.001	7.2	mg/L	7	Standard
	Cd	114	20.0	81.9	**0.0125**	0.003	23.8	ug/L	21	Standard
>	**In**	115	590439.5	1.9				ug/L	619035	Standard
	Sn	118	560.0	26.7	**-0.0135**	0.022	164.8	ug/L	508	Standard
	Sb	123	160.9	21.8	**0.0362**	0.006	17.9	ug/L	86	Standard
	Ba	135	36.3	1.6	**-0.0030**	0.001	18.2	ug/L	79	Standard
	Ce	140	40.0	54.5				ug/L	68	Standard
>	**Tb**	159	901092.5	1.7				ug/L	986982	Standard
	Ho	165	10.0	132.3				ug/L	10	Standard
	Tl	203	21.7	14.8	**0.0084**	0.000	4.1	ug/L	13	Standard
	Tl	205	16.7	45.8	**0.0099**	0.001	10.0	ug/L	10	Standard
	Pb	206	270.3	3.4	**0.0096**	0.002	19.5	ug/L	264	Standard
	Pb	207	243.7	5.8	**0.0141**	0.003	19.2	ug/L	227	Standard
	Pb	208	961.0	2.2	**0.0100**	0.001	12.7	ug/L	868	Standard
	U	238	8.7	37.1	**0.0091**	0.000	4.9	ug/L	8	Standard
>	**Bi**	209	526478.0	0.7				ug/L	541014	Standard

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Na	23	1.7	173.2	**10.2562**	17.756	173.1	mg/L	2	Standard
Mg	24	31.7	32.9	**0.0025**	0.011	445.9	mg/L	53	Standard
K	39	40.0		**-0.0026**	0.002	93.9	mg/L	53	Standard
Ca	43	16.7	17.3	**-0.6528**	0.190	29.1	mg/L	28	Standard
Fe	54	89.1	10.9	**-0.0529**	0.009	17.4	mg/L	181	Standard
Fe	57	250.0	2.0	**0.0530**	0.011	20.7	mg/L	257	Standard
Sc-1	45	51092.7	3.3				mg/L	55220	Standard
Cl	35	41081.0	0.6				ug/L	35504	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	2020.1	6.0				ug/L	2040	Standard
P	31	12546.9	2.1				ug/L	20435	Standard
S	34	2720.2	2.7				ug/L	2430	Standard
Sr	88	58.3	34.6				ug/L	75	Standard
C	12	103.3	14.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	16.2	38.3				mg/L	9	Standard
Ho-1	165	10.0	132.3				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	26366.3	0.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		85.366	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.926	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	95.381	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.313	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW A1 WG573728-03
Report Date/Time: Thursday, June 30, 2016 15:17:05
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Method 6020 - Summary Report

Sample ID: LCSW A1 WG573728-04
Sample Date/Time: Thursday, June 30, 2016 15:18:00
Number of Replicates: 3
Autosampler Position: 231
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67086.6	1.9				ug/L	74916	Standard
	Be	9	52004.2	3.6	**55.0288**	1.102	2.0	ug/L	10	Standard
	Al	27	19120.2	42.5	**0.1206**	0.052	42.9	ug/L	1822	Standard
	Sc	45	54313.9	2.0				ug/L	55220	Standard
	Ti	47	54.3	36.2	**0.0615**	0.047	76.8	ug/L	34	Standard
	V	51	458407.9	1.0	**49.3763**	0.378	0.8	ug/L	1938	Standard
	Cr	52	472124.0	3.2	**51.5201**	1.504	2.9	ug/L	9522	Standard
	Cr	53	58969.6	3.5	**52.5404**	1.552	3.0	ug/L	395	Standard
	Mn	55	441488.7	1.2	**51.2972**	0.389	0.8	ug/L	902	Standard
	Co	59	406379.7	1.4	**49.9477**	0.441	0.9	ug/L	262	Standard
	Ni	60	114871.8	0.8	**51.1656**	0.153	0.3	ug/L	371	Standard
	Cu	65	114058.0	0.4	**51.7070**	0.416	0.8	ug/L	106	Standard
	Zn	66	67996.2	0.9	**52.0496**	0.635	1.2	ug/L	398	Standard
>	Ge	72	534529.3	0.6				ug/L	535147	Standard
	As	75	67804.4	0.8	**50.7332**	0.210	0.4	ug/L	-43	Standard
	Se	82	6788.7	1.1	**50.0521**	0.627	1.3	ug/L	14	Standard
	Se-1	77	4642.0	1.2	**51.0109**	0.869	1.7	ug/L	65	Standard
>	Ga	71	63.3	18.2				mg/L	97	Standard
	Rb	85	53.3	10.8				ug/L	15	Standard
	Y	89	465214.1	0.4				ug/L	465704	Standard
>	Rh	103	33.3	37.7				ug/L	10	Standard
	Mo	98	49.8	4.8	**0.0281**	0.001	2.5	ug/L	9	Standard
	Ag	107	380273.7	0.6	**49.6011**	0.481	1.0	ug/L	82	Standard
	Cd	111	120281.8	0.6	**49.0834**	0.359	0.7	mg/L	7	Standard
	Cd	114	291528.7	1.2	**49.4009**	0.657	1.3	ug/L	21	Standard
>	In	115	628631.6	0.4				ug/L	619035	Standard
	Sn	118	995.0	12.2	**0.0471**	0.018	38.6	ug/L	508	Standard
	Sb	123	267507.3	0.0	**49.7461**	0.194	0.4	ug/L	86	Standard
	Ba	135	112861.8	0.6	**48.5948**	0.377	0.8	ug/L	79	Standard
	Ce	140	156.7	16.1				ug/L	68	Standard
>	Tb	159	955141.2	1.4				ug/L	986982	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	458925.6	0.3	**50.0906**	0.546	1.1	ug/L	13	Standard
	Tl	205	395986.2	0.4	**50.5921**	0.578	1.1	ug/L	10	Standard
	Pb	206	296512.1	1.1	**50.3892**	0.789	1.6	ug/L	264	Standard
	Pb	207	258480.9	0.5	**48.6004**	0.300	0.6	ug/L	227	Standard
	Pb	208	1067449.1	0.0	**52.0525**	0.416	0.8	ug/L	868	Standard
	U	238	376134.4	0.8	**49.6201**	0.107	0.2	ug/L	8	Standard
>	Bi	209	542955.6	0.8				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	58.3	48.7	**0.0301**	0.031	103.9	mg/L	53	Standard
K	39	45.0	29.4	**0.0015**	0.022	1442.6	mg/L	53	Standard
Ca	43	13.3	57.3	**-0.9037**	0.451	49.9	mg/L	28	Standard
Fe	54	183.7	5.0	**0.0086**	0.009	100.9	mg/L	181	Standard
Fe	57	281.7	19.8	**0.0947**	0.141	148.5	mg/L	257	Standard
Sc-1	45	54313.9	2.0				mg/L	55220	Standard
Cl	35	43485.7	1.5				ug/L	35504	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	13933.1	10.0				ug/L	2040	Standard
P	31	22263.0	3.5				ug/L	20435	Standard
S	34	2703.6	1.7				ug/L	2430	Standard
Sr	88	86.7	13.3				ug/L	75	Standard
C	12	143.3	10.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	12.5	48.3				mg/L	9	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	16.7	34.6				mg/L	23	Standard
I	127	1948.5	33.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		89.549	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.885	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.550
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.359
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW A1 WG573728-04
Report Date/Time: Thursday, June 30, 2016 15:20:17
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Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606099601 WG573728-01
Sample Date/Time: Thursday, June 30, 2016 15:21:11
Number of Replicates: 3
Autosampler Position: 232
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68291.9	1.3				ug/L	74916	Standard
	Be	9	28.3	66.8	**0.0257**	0.019	74.7	ug/L	10	Standard
	Al	27	18880570.9	2.2	**119.3426**	1.083	0.9	ug/L	1822	Standard
	Sc	45	56550.3	0.6				ug/L	55220	Standard
	Ti	47	199.7	6.4	**0.4065**	0.032	7.9	ug/L	34	Standard
	V	51	3186.4	2.3	**0.1428**	0.006	4.0	ug/L	1938	Standard
	Cr	52	15293.0	2.0	**0.6365**	0.040	6.3	ug/L	9522	Standard
	Cr	53	2076.8	2.7	**1.4480**	0.064	4.4	ug/L	395	Standard
	Mn	55	7278.7	1.9	**0.7290**	0.013	1.8	ug/L	902	Standard
	Co	59	936.0	3.1	**0.0905**	0.004	4.9	ug/L	262	Standard
	Ni	60	2428.9	2.8	**0.9224**	0.033	3.5	ug/L	371	Standard
	Cu	65	491.3	2.0	**0.1607**	0.003	2.0	ug/L	106	Standard
	Zn	66	1815.4	2.9	**1.0305**	0.051	4.9	ug/L	398	Standard
>	**Ge**	72	543038.8	0.8				ug/L	535147	Standard
	As	75	1683.9	5.9	**1.2940**	0.069	5.3	ug/L	-43	Standard
	Se	82	733.4	4.8	**5.2358**	0.250	4.8	ug/L	14	Standard
	Se-1	77	105.7	3.0	**0.5744**	0.026	4.5	ug/L	65	Standard
>	**Ga**	71	63.3	16.4				mg/L	97	Standard
	Rb	85	1220.0	3.5				ug/L	15	Standard
	Y	89	463241.7	0.6				ug/L	465704	Standard
>	**Rh**	103	35.0	14.3				ug/L	10	Standard
	Mo	98	59.8	4.4	**0.0313**	0.001	3.0	ug/L	9	Standard
	Ag	107	163.3	11.0	**0.0153**	0.002	14.7	ug/L	82	Standard
	Cd	111	50.6	15.0	**0.0286**	0.003	10.8	mg/L	7	Standard
	Cd	114	105.0	22.2	**0.0267**	0.004	14.6	ug/L	21	Standard
>	**In**	115	627040.8	1.0				ug/L	619035	Standard
	Sn	118	806.7	5.9	**0.0190**	0.008	42.7	ug/L	508	Standard
	Sb	123	257.7	17.6	**0.0525**	0.009	16.9	ug/L	86	Standard
	Ba	135	7603.2	0.4	**3.2639**	0.042	1.3	ug/L	79	Standard
	Ce	140	580.0	1.7				ug/L	68	Standard
>	**Tb**	159	960608.0	1.5				ug/L	986982	Standard
	Ho	165	45.0	0.0				ug/L	10	Standard
	Tl	203	590.7	38.6	**0.0712**	0.025	35.2	ug/L	13	Standard
	Tl	205	546.7	36.1	**0.0783**	0.025	32.4	ug/L	10	Standard
	Pb	206	366.0	2.4	**0.0252**	0.002	6.1	ug/L	264	Standard
	Pb	207	330.3	12.5	**0.0297**	0.008	26.7	ug/L	227	Standard
	Pb	208	1408.4	7.6	**0.0312**	0.005	17.2	ug/L	868	Standard
	U	238	478.7	3.5	**0.0718**	0.002	3.0	ug/L	8	Standard
>	**Bi**	209	536561.7	0.1				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	1728.4	2.5	**1.8049**	0.054	3.0	mg/L	53	Standard
K	39	103.3	7.4	**0.0953**	0.014	14.4	mg/L	53	Standard
Ca	43	473.3	5.2	**24.5092**	1.516	6.2	mg/L	28	Standard
Fe	54	206.7	15.5	**0.0188**	0.022	114.8	mg/L	181	Standard
Fe	57	471.7	6.2	**0.5573**	0.080	14.4	mg/L	257	Standard
> **Sc-1**	45	56550.3	0.6				mg/L	55220	Standard
Cl	35	49410.4	1.6				ug/L	35504	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	141239.5	4.6				ug/L	2040	Standard
P	31	24261.1	3.2				ug/L	20435	Standard
S	34	2875.3	3.8				ug/L	2430	Standard
Sr	88	131.7	18.7				ug/L	75	Standard
C	12	210.0	20.8				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	57.8	28.3				mg/L	9	Standard
Ho-1	165	45.0	0.0				mg/L	10	Standard
Er	166	46.7	53.9				mg/L	23	Standard
I	127	5429.3	1.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.157	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.475	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.293	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.177	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606099602S WG573728-05
Sample Date/Time: Thursday, June 30, 2016 15:24:23
Number of Replicates: 3
Autosampler Position: 233
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	69534.2	1.4				ug/L	74916	Standard
	Be	9	52693.2	3.1	**53.7987**	1.123	2.1	ug/L	10	Standard
	Al	27	18046739.9	1.3	**112.0655**	2.753	2.5	ug/L	1822	Standard
	Sc	45	55386.1	1.5				ug/L	55220	Standard
	Ti	47	175.3	7.1	**0.3486**	0.028	8.2	ug/L	34	Standard
	V	51	467682.0	0.4	**49.6221**	0.237	0.5	ug/L	1938	Standard
	Cr	52	466630.2	1.1	**50.1322**	0.425	0.8	ug/L	9522	Standard
	Cr	53	58007.5	2.3	**50.9027**	1.216	2.4	ug/L	395	Standard
	Mn	55	440702.3	1.3	**50.4380**	0.631	1.3	ug/L	902	Standard
	Co	59	400447.4	1.3	**48.4823**	0.666	1.4	ug/L	262	Standard
	Ni	60	114183.3	0.8	**50.0946**	0.387	0.8	ug/L	371	Standard
	Cu	65	109435.5	0.9	**48.8635**	0.353	0.7	ug/L	106	Standard
	Zn	66	67439.4	0.5	**50.8415**	0.459	0.9	ug/L	398	Standard
>	Ge	72	542657.5	0.4				ug/L	535147	Standard
	As	75	68318.6	1.2	**50.3522**	0.481	1.0	ug/L	-43	Standard
	Se	82	6810.7	0.7	**49.4600**	0.454	0.9	ug/L	14	Standard
	Se-1	77	4705.1	1.1	**50.9251**	0.579	1.1	ug/L	65	Standard
>	Ga	71	60.0	28.9				mg/L	97	Standard
	Rb	85	1110.0	1.8				ug/L	15	Standard
	Y	89	469941.9	0.8				ug/L	465704	Standard
>	Rh	103	56.7	39.8				ug/L	10	Standard
	Mo	98	72.7	12.4	**0.0352**	0.003	8.3	ug/L	9	Standard
	Ag	107	368953.1	1.0	**47.8031**	0.661	1.4	ug/L	82	Standard
	Cd	111	120061.4	1.0	**48.6669**	0.625	1.3	mg/L	7	Standard
	Cd	114	288235.3	0.9	**48.5174**	0.631	1.3	ug/L	21	Standard
>	In	115	632863.0	0.4				ug/L	619035	Standard
	Sn	118	848.4	8.8	**0.0241**	0.011	45.0	ug/L	508	Standard
	Sb	123	260105.2	1.3	**48.0476**	0.775	1.6	ug/L	86	Standard
	Ba	135	119215.2	0.6	**50.9874**	0.185	0.4	ug/L	79	Standard
	Ce	140	488.3	8.7				ug/L	68	Standard
>	Tb	159	969085.8	0.9				ug/L	986982	Standard
	Ho	165	61.7	28.5				ug/L	10	Standard
	Tl	203	454990.6	1.0	**49.7114**	0.424	0.9	ug/L	13	Standard
	Tl	205	400819.2	0.5	**51.2626**	0.436	0.9	ug/L	10	Standard
	Pb	206	289476.2	0.7	**49.2439**	0.528	1.1	ug/L	264	Standard
	Pb	207	253387.6	0.7	**47.6936**	0.544	1.1	ug/L	227	Standard
	Pb	208	1047648.0	0.8	**51.1394**	0.430	0.8	ug/L	868	Standard
	U	238	375994.5	0.5	**49.6560**	0.421	0.8	ug/L	8	Standard
>	Bi	209	542372.6	0.4				ug/L	541014	Standard

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Na	23	3.3	173.2	**18.8346**	32.614	173.2	mg/L	2	Standard
Mg	24	1690.1	1.5	**1.8023**	0.055	3.0	mg/L	53	Standard
K	39	70.0	31.1	**0.0421**	0.035	82.8	mg/L	53	Standard
Ca	43	493.3	5.8	**26.1715**	1.201	4.6	mg/L	28	Standard
Fe	54	219.2	11.1	**0.0301**	0.016	52.7	mg/L	181	Standard
Fe	57	555.0	8.6	**0.8025**	0.120	15.0	mg/L	257	Standard
> **Sc-1**	45	55386.1	1.5				mg/L	55220	Standard
Cl	35	50690.7	0.6				ug/L	35504	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	10120.1	13.0				ug/L	2040	Standard
P	31	24778.6	2.5				ug/L	20435	Standard
S	34	3147.0	5.5				ug/L	2430	Standard
Sr	88	123.3	6.2				ug/L	75	Standard
C	12	190.0	9.1				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	54.8	71.8				mg/L	9	Standard
Ho-1	165	61.7	28.5				mg/L	10	Standard
Er	166	40.0	66.1				mg/L	23	Standard
I	127	6076.2	4.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.816	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.403	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606099602S WG573728-05
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.234
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.251
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606099602S WG573728-05
Report Date/Time: Thursday, June 30, 2016 15:26:40
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Method 6020 - Summary Report

Sample ID: L1606099603SD WG573728-05
Sample Date/Time: Thursday, June 30, 2016 15:27:34
Number of Replicates: 3
Autosampler Position: 234
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69961.2	1.4				ug/L	74916	Standard
	Be	9	53945.9	1.9	**54.7452**	0.405	0.7	ug/L	10	Standard
	Al	27	18653584.9	0.9	**115.1220**	2.287	2.0	ug/L	1822	Standard
	Sc	45	56466.7	1.1				ug/L	55220	Standard
	Ti	47	199.0	12.0	**0.4023**	0.058	14.3	ug/L	34	Standard
	V	51	472536.7	1.2	**49.8306**	0.700	1.4	ug/L	1938	Standard
	Cr	52	478928.8	1.2	**51.1603**	0.702	1.4	ug/L	9522	Standard
	Cr	53	59648.9	1.2	**52.0306**	0.727	1.4	ug/L	395	Standard
	Mn	55	449264.4	1.6	**51.1046**	0.889	1.7	ug/L	902	Standard
	Co	59	408055.5	1.0	**49.1007**	0.567	1.2	ug/L	262	Standard
	Ni	60	115830.7	0.7	**50.5068**	0.402	0.8	ug/L	371	Standard
	Cu	65	112174.4	0.3	**49.7804**	0.170	0.3	ug/L	106	Standard
	Zn	66	68689.4	0.3	**51.4692**	0.201	0.4	ug/L	398	Standard
>	**Ge**	72	546008.7	0.2				ug/L	535147	Standard
	As	75	69065.1	0.3	**50.5905**	0.233	0.5	ug/L	-43	Standard
	Se	82	6889.2	0.9	**49.7234**	0.503	1.0	ug/L	14	Standard
	Se-1	77	4739.7	3.6	**50.9864**	1.857	3.6	ug/L	65	Standard
>	**Ga**	71	73.3	21.9				mg/L	97	Standard
	Rb	85	1075.0	5.7				ug/L	15	Standard
	Y	89	470734.4	2.1				ug/L	465704	Standard
>	**Rh**	103	43.3	6.7				ug/L	10	Standard
	Mo	98	111.0	13.4	**0.0473**	0.005	10.4	ug/L	9	Standard
	Ag	107	376890.2	1.0	**48.9233**	0.298	0.6	ug/L	82	Standard
	Cd	111	122069.6	1.2	**49.5773**	0.825	1.7	mg/L	7	Standard
	Cd	114	293598.8	0.4	**49.5146**	0.392	0.8	ug/L	21	Standard
>	**In**	115	631650.0	0.6				ug/L	619035	Standard
	Sn	118	958.4	7.0	**0.0409**	0.010	23.4	ug/L	508	Standard
	Sb	123	259515.9	2.0	**48.0341**	1.271	2.6	ug/L	86	Standard
	Ba	135	121213.3	0.4	**51.9434**	0.429	0.8	ug/L	79	Standard
	Ce	140	640.0	4.3				ug/L	68	Standard
>	**Tb**	159	965792.9	0.7				ug/L	986982	Standard
	Ho	165	28.3	27.0				ug/L	10	Standard
	Tl	203	464038.3	0.6	**50.7914**	0.508	1.0	ug/L	13	Standard
	Tl	205	403235.4	0.5	**51.6643**	0.627	1.2	ug/L	10	Standard
	Pb	206	296855.0	1.0	**50.5921**	0.885	1.7	ug/L	264	Standard
	Pb	207	258402.6	0.8	**48.7261**	0.763	1.6	ug/L	227	Standard
	Pb	208	1060861.7	0.8	**51.8784**	0.664	1.3	ug/L	868	Standard
	U	238	381780.9	1.2	**50.5117**	0.896	1.8	ug/L	8	Standard
>	**Bi**	209	541419.0	0.8				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.2826**	16.069	173.1	mg/L	2	Standard
Mg	24	1868.4	2.5	**1.9568**	0.048	2.5	mg/L	53	Standard
K	39	120.0	8.3	**0.1233**	0.018	14.8	mg/L	53	Standard
Ca	43	530.0	15.8	**27.6998**	4.765	17.2	mg/L	28	Standard
Fe	54	159.3	27.4	**-0.0125**	0.029	231.7	mg/L	181	Standard
Fe	57	513.3	2.2	**0.6671**	0.042	6.3	mg/L	257	Standard
> **Sc-1**	45	56466.7	1.1				mg/L	55220	Standard
Cl	35	51310.1	1.2				ug/L	35504	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	3180.3	3.0				ug/L	2040	Standard
P	31	26316.3	7.9				ug/L	20435	Standard
S	34	3025.3	7.4				ug/L	2430	Standard
Sr	88	130.0	20.4				ug/L	75	Standard
C	12	173.3	23.3				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	47.1	21.7				mg/L	9	Standard
Ho-1	165	28.3	27.0				mg/L	10	Standard
Er	166	60.0	16.7				mg/L	23	Standard
I	127	6022.9	1.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.386	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.030	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.038
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.075
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606099603SD WG573728-05
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Method 6020 - Summary Report

Sample ID: L1606114801
Sample Date/Time: Thursday, June 30, 2016 15:30:46
Number of Replicates: 3
Autosampler Position: 235
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69385.3	2.8				ug/L	74916	Standard
	Be	9	68.3	25.7	**0.0663**	0.017	26.3	ug/L	10	Standard
	Al	27	13382964.5	1.3	**83.3247**	3.301	4.0	ug/L	1822	Standard
	Sc	45	56610.6	1.5				ug/L	55220	Standard
	Ti	47	3988.2	1.6	**9.5598**	0.160	1.7	ug/L	34	Standard
	V	51	27071.1	1.9	**2.7187**	0.051	1.9	ug/L	1938	Standard
	Cr	52	21116.0	3.1	**1.3011**	0.053	4.1	ug/L	9522	Standard
	Cr	53	5205.9	4.1	**4.2645**	0.131	3.1	ug/L	395	Standard
	Mn	55	137023.2	1.4	**15.7833**	0.378	2.4	ug/L	902	Standard
	Co	59	2697.2	4.0	**0.3074**	0.009	2.8	ug/L	262	Standard
	Ni	60	3470.4	4.0	**1.3976**	0.040	2.9	ug/L	371	Standard
	Cu	65	2221.8	3.0	**0.9456**	0.043	4.5	ug/L	106	Standard
	Zn	66	5981.5	2.6	**4.2437**	0.160	3.8	ug/L	398	Standard
>	**Ge**	72	536829.4	1.4				ug/L	535147	Standard
	As	75	2382.3	2.0	**1.8286**	0.053	2.9	ug/L	-43	Standard
	Se	82	261.3	5.1	**1.8253**	0.111	6.1	ug/L	14	Standard
	Se-1	77	229.7	8.8	**1.9613**	0.241	12.3	ug/L	65	Standard
>	**Ga**	71	1473.4	14.4				mg/L	97	Standard
	Rb	85	48947.3	0.9				ug/L	15	Standard
	Y	89	472065.0	1.1				ug/L	465704	Standard
>	**Rh**	103	75.0	35.3				ug/L	10	Standard
	Mo	98	2018.4	1.7	**0.6566**	0.014	2.1	ug/L	9	Standard
	Ag	107	198.3	9.6	**0.0201**	0.003	13.2	ug/L	82	Standard
	Cd	111	74.8	29.3	**0.0387**	0.009	23.4	mg/L	7	Standard
	Cd	114	198.7	19.5	**0.0430**	0.007	15.6	ug/L	21	Standard
>	**In**	115	621679.0	1.3				ug/L	619035	Standard
	Sn	118	916.7	7.9	**0.0369**	0.011	31.0	ug/L	508	Standard
	Sb	123	4696.0	17.7	**0.8869**	0.151	17.1	ug/L	86	Standard
	Ba	135	102992.2	0.2	**44.8453**	0.700	1.6	ug/L	79	Standard
	Ce	140	26710.2	2.2				ug/L	68	Standard
>	**Tb**	159	959294.1	0.8				ug/L	986982	Standard
	Ho	165	378.3	19.8				ug/L	10	Standard
	Tl	203	275.7	1.5	**0.0368**	0.001	1.6	ug/L	13	Standard
	Tl	205	273.3	4.2	**0.0434**	0.001	3.2	ug/L	10	Standard
	Pb	206	2842.9	1.5	**0.4571**	0.006	1.3	ug/L	264	Standard
	Pb	207	2333.5	1.2	**0.4162**	0.007	1.6	ug/L	227	Standard
	Pb	208	9849.9	1.7	**0.4537**	0.010	2.2	ug/L	868	Standard
	U	238	5425.6	1.4	**0.7405**	0.013	1.7	ug/L	8	Standard
>	**Bi**	209	530404.9	0.4				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	32277.7	1.4	**34.2819**	0.620	1.8	mg/L	53	Standard
K	39	1353.4	4.1	**2.1637**	0.058	2.7	mg/L	53	Standard
Ca	43	298.3	4.8	**14.8059**	0.718	4.9	mg/L	28	Standard
Fe	54	711.7	5.2	**0.3546**	0.032	9.0	mg/L	181	Standard
Fe	57	595.0	21.3	**0.8781**	0.354	40.3	mg/L	257	Standard
> **Sc-1**	45	56610.6	1.5				mg/L	55220	Standard
Cl	35	47826.7	3.1				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	45294.3	2.0				ug/L	2040	Standard
P	31	25608.3	2.2				ug/L	20435	Standard
S	34	2995.3	1.7				ug/L	2430	Standard
Sr	88	291.7	4.9				ug/L	75	Standard
C	12	240.0	37.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	508.2	11.9				mg/L	9	Standard
Ho-1	165	378.3	19.8				mg/L	10	Standard
Er	166	316.7	9.6				mg/L	23	Standard
I	127	242809.3	7.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.617	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.314	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.427
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.039
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606114802
Sample Date/Time: Thursday, June 30, 2016 15:33:57
Number of Replicates: 3
Autosampler Position: 236
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73343.8	2.3				ug/L	74916	Standard
	Be	9	36.7	20.8	**0.0318**	0.007	20.7	ug/L	10	Standard
	Al	27	39865885.0	1.0	**234.7683**	7.638	3.3	ug/L	1822	Standard
	Sc	45	56650.7	0.3				ug/L	55220	Standard
	Ti	47	366.7	8.2	**0.8136**	0.076	9.3	ug/L	34	Standard
	V	51	42007.3	1.9	**4.3184**	0.122	2.8	ug/L	1938	Standard
	Cr	52	29051.8	1.5	**2.1749**	0.071	3.3	ug/L	9522	Standard
	Cr	53	8153.9	4.5	**6.8871**	0.365	5.3	ug/L	395	Standard
	Mn	55	29371.4	1.1	**3.2931**	0.013	0.4	ug/L	902	Standard
	Co	59	2064.1	1.7	**0.2294**	0.002	1.0	ug/L	262	Standard
	Ni	60	4963.1	3.4	**2.0578**	0.090	4.4	ug/L	371	Standard
	Cu	65	2302.8	3.2	**0.9800**	0.040	4.1	ug/L	106	Standard
	Zn	66	8387.7	1.3	**6.0765**	0.138	2.3	ug/L	398	Standard
>	**Ge**	72	537915.2	0.8				ug/L	535147	Standard
	As	75	1882.3	2.7	**1.4535**	0.047	3.3	ug/L	-43	Standard
	Se	82	460.8	5.7	**3.2863**	0.218	6.6	ug/L	14	Standard
	Se-1	77	487.0	5.2	**4.7975**	0.290	6.0	ug/L	65	Standard
>	**Ga**	71	151.7	8.3				mg/L	97	Standard
	Rb	85	15017.4	0.7				ug/L	15	Standard
	Y	89	469088.3	1.3				ug/L	465704	Standard
>	**Rh**	103	120.0	26.0				ug/L	10	Standard
	Mo	98	1940.6	1.7	**0.6336**	0.005	0.8	ug/L	9	Standard
	Ag	107	135.7	14.7	**0.0119**	0.002	20.9	ug/L	82	Standard
	Cd	111	83.6	10.2	**0.0425**	0.004	9.3	mg/L	7	Standard
	Cd	114	232.4	5.3	**0.0488**	0.002	3.2	ug/L	21	Standard
>	**In**	115	619836.2	2.0				ug/L	619035	Standard
	Sn	118	905.0	8.9	**0.0357**	0.015	42.4	ug/L	508	Standard
	Sb	123	1696.7	16.9	**0.3252**	0.060	18.5	ug/L	86	Standard
	Ba	135	155475.6	0.5	**67.9173**	1.375	2.0	ug/L	79	Standard
	Ce	140	1150.0	5.9				ug/L	68	Standard
>	**Tb**	159	966263.7	2.7				ug/L	986982	Standard
	Ho	165	68.3	25.7				ug/L	10	Standard
	Tl	203	177.0	9.9	**0.0261**	0.002	8.3	ug/L	13	Standard
	Tl	205	150.0	6.7	**0.0276**	0.001	4.5	ug/L	10	Standard
	Pb	206	690.3	2.9	**0.0841**	0.003	3.7	ug/L	264	Standard
	Pb	207	561.0	6.9	**0.0764**	0.008	10.1	ug/L	227	Standard
	Pb	208	2261.4	3.2	**0.0763**	0.003	4.4	ug/L	868	Standard
	U	238	14407.5	0.3	**1.9818**	0.012	0.6	ug/L	8	Standard
>	**Bi**	209	522746.9	0.9				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	53151.4	1.8	**56.4275**	1.028	1.8	mg/L	53	Standard
K	39	618.3	5.4	**0.9467**	0.052	5.5	mg/L	53	Standard
Ca	43	466.7	9.1	**24.0926**	2.415	10.0	mg/L	28	Standard
Fe	54	229.1	9.2	**0.0334**	0.014	40.5	mg/L	181	Standard
Fe	57	538.3	7.2	**0.7273**	0.104	14.4	mg/L	257	Standard
> **Sc-1**	45	56650.7	0.3				mg/L	55220	Standard
Cl	35	52351.0	1.2				ug/L	35504	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	65016.0	4.2				ug/L	2040	Standard
P	31	25988.9	2.7				ug/L	20435	Standard
S	34	2898.6	3.2				ug/L	2430	Standard
Sr	88	400.0	15.2				ug/L	75	Standard
C	12	300.0	8.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	65.5	28.8				mg/L	9	Standard
Ho-1	165	68.3	25.7				mg/L	10	Standard
Er	166	93.3	34.4				mg/L	23	Standard
I	127	177926.1	3.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.901	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.517	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.129	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.624	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606114802
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Method 6020 - Summary Report

Sample ID: L1606114802PS WG574806-01
Sample Date/Time: Thursday, June 30, 2016 15:37:09
Number of Replicates: 3
Autosampler Position: 237
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73739.0	1.9				ug/L	74916	Standard
	Be	9	54417.6	3.5	**52.3946**	1.365	2.6	ug/L	10	Standard
	Al	27	39247361.2	1.1	**229.7986**	2.118	0.9	ug/L	1822	Standard
	Sc	45	56950.2	2.8				ug/L	55220	Standard
	Ti	47	367.7	2.9	**0.8081**	0.024	3.0	ug/L	34	Standard
	V	51	505314.0	0.9	**53.6430**	1.115	2.1	ug/L	1938	Standard
	Cr	52	480659.8	0.9	**51.6795**	0.671	1.3	ug/L	9522	Standard
	Cr	53	64282.8	1.2	**56.4552**	0.246	0.4	ug/L	395	Standard
	Mn	55	460538.3	1.7	**52.7210**	1.043	2.0	ug/L	902	Standard
	Co	59	400762.5	0.8	**48.5257**	0.353	0.7	ug/L	262	Standard
	Ni	60	117749.1	0.6	**51.6704**	0.485	0.9	ug/L	371	Standard
	Cu	65	109931.1	1.2	**49.0902**	0.462	0.9	ug/L	106	Standard
	Zn	66	91227.5	0.7	**68.9095**	1.187	1.7	ug/L	398	Standard
>	**Ge**	72	542618.3	1.2				ug/L	535147	Standard
	As	75	69426.1	0.8	**51.1768**	0.749	1.5	ug/L	-43	Standard
	Se	82	7178.4	1.6	**52.1429**	0.991	1.9	ug/L	14	Standard
	Se-1	77	4969.5	0.6	**53.8312**	0.990	1.8	ug/L	65	Standard
>	**Ga**	71	151.7	18.2				mg/L	97	Standard
	Rb	85	15104.2	2.1				ug/L	15	Standard
	Y	89	473952.1	1.9				ug/L	465704	Standard
>	**Rh**	103	126.7	21.7				ug/L	10	Standard
	Mo	98	1955.0	1.7	**0.6317**	0.011	1.7	ug/L	9	Standard
	Ag	107	341042.7	1.4	**44.6484**	0.717	1.6	ug/L	82	Standard
	Cd	111	119331.3	1.6	**48.8732**	0.434	0.9	mg/L	7	Standard
	Cd	114	283552.8	3.0	**48.2253**	1.320	2.7	ug/L	21	Standard
>	**In**	115	626330.3	1.1				ug/L	619035	Standard
	Sn	118	1168.4	4.4	**0.0741**	0.009	12.8	ug/L	508	Standard
	Sb	123	255007.1	2.2	**47.6011**	1.260	2.6	ug/L	86	Standard
	Ba	135	266477.6	0.5	**115.1938**	1.488	1.3	ug/L	79	Standard
	Ce	140	2081.8	32.8				ug/L	68	Standard
>	**Tb**	159	960668.0	1.0				ug/L	986982	Standard
	Ho	165	70.0	18.9				ug/L	10	Standard
	Tl	203	450205.8	0.4	**50.2373**	0.703	1.4	ug/L	13	Standard
	Tl	205	391691.8	0.7	**51.1622**	0.808	1.6	ug/L	10	Standard
	Pb	206	290403.7	0.7	**50.4549**	0.842	1.7	ug/L	264	Standard
	Pb	207	253726.6	1.1	**48.7769**	1.023	2.1	ug/L	227	Standard
	Pb	208	1033949.6	0.4	**51.5458**	0.656	1.3	ug/L	868	Standard
	U	238	392544.5	1.2	**52.9480**	1.174	2.2	ug/L	8	Standard
>	**Bi**	209	531104.0	1.0				ug/L	541014	Standard

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Na	23	3.3	86.6	**18.0264**	15.619	86.6	mg/L	2	Standard
Mg	24	51765.0	1.9	**54.7079**	2.408	4.4	mg/L	53	Standard
K	39	630.0	7.6	**0.9625**	0.105	10.9	mg/L	53	Standard
Ca	43	441.7	10.5	**22.6115**	2.886	12.8	mg/L	28	Standard
Fe	54	202.4	2.0	**0.0151**	0.006	41.5	mg/L	181	Standard
Fe	57	538.3	5.7	**0.7218**	0.114	15.8	mg/L	257	Standard
> **Sc-1**	45	56950.2	2.8				mg/L	55220	Standard
Cl	35	53220.7	1.5				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	65718.9	1.0				ug/L	2040	Standard
P	31	25209.3	1.7				ug/L	20435	Standard
S	34	3057.0	2.8				ug/L	2430	Standard
Sr	88	331.7	9.7				ug/L	75	Standard
C	12	233.3	19.8				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	85.8	42.2				mg/L	9	Standard
Ho-1	165	70.0	18.9				mg/L	10	Standard
Er	166	86.7	13.3				mg/L	23	Standard
I	127	181175.5	2.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.428	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.396	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.179	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.168	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606114802SDL WG574806-02
Sample Date/Time: Thursday, June 30, 2016 15:40:20
Number of Replicates: 3
Autosampler Position: 238
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67563.7	2.3				ug/L	74916	Standard
	Be	9	18.3	41.7	**0.0157**	0.008	51.7	ug/L	10	Standard
	Al	27	7469662.9	0.3	**47.7405**	0.938	2.0	ug/L	1822	Standard
	Sc	45	52594.5	1.3				ug/L	55220	Standard
	Ti	47	86.0	9.2	**0.1438**	0.020	13.6	ug/L	34	Standard
	V	51	10002.6	2.6	**0.9133**	0.036	3.9	ug/L	1938	Standard
	Cr	52	13316.9	1.4	**0.4814**	0.031	6.5	ug/L	9522	Standard
	Cr	53	2925.3	1.6	**2.3063**	0.058	2.5	ug/L	395	Standard
	Mn	55	6250.6	3.1	**0.6413**	0.019	3.0	ug/L	902	Standard
	Co	59	635.7	4.6	**0.0574**	0.004	6.9	ug/L	262	Standard
	Ni	60	1430.4	0.6	**0.5098**	0.008	1.5	ug/L	371	Standard
	Cu	65	733.4	1.6	**0.2827**	0.008	2.8	ug/L	106	Standard
	Zn	66	2918.6	3.6	**1.9606**	0.098	5.0	ug/L	398	Standard
>	**Ge**	72	521117.4	0.7				ug/L	535147	Standard
	As	75	354.4	15.0	**0.3267**	0.039	12.0	ug/L	-43	Standard
	Se	82	103.1	2.3	**0.6843**	0.018	2.6	ug/L	14	Standard
	Se-1	77	171.3	10.3	**1.3721**	0.205	14.9	ug/L	65	Standard
>	**Ga**	71	60.0	28.9				mg/L	97	Standard
	Rb	85	2775.3	8.1				ug/L	15	Standard
	Y	89	435237.1	1.6				ug/L	465704	Standard
>	**Rh**	103	20.0	66.1				ug/L	10	Standard
	Mo	98	360.0	5.2	**0.1332**	0.006	4.8	ug/L	9	Standard
	Ag	107	249.7	3.1	**0.0286**	0.001	3.5	ug/L	82	Standard
	Cd	111	33.0	33.9	**0.0222**	0.005	21.8	mg/L	7	Standard
	Cd	114	69.1	29.2	**0.0214**	0.004	17.0	ug/L	21	Standard
>	**In**	115	591194.5	0.2				ug/L	619035	Standard
	Sn	118	343.3	13.1	**-0.0482**	0.007	14.9	ug/L	508	Standard
	Sb	123	1623.4	29.5	**0.3253**	0.094	28.9	ug/L	86	Standard
	Ba	135	29618.9	2.1	**13.5463**	0.286	2.1	ug/L	79	Standard
	Ce	140	233.3	8.1				ug/L	68	Standard
>	**Tb**	159	916411.8	1.4				ug/L	986982	Standard
	Ho	165	16.7	75.5				ug/L	10	Standard
	Tl	203	164.0	7.4	**0.0245**	0.001	5.3	ug/L	13	Standard
	Tl	205	153.3	9.4	**0.0280**	0.002	6.6	ug/L	10	Standard
	Pb	206	452.3	2.8	**0.0418**	0.003	6.2	ug/L	264	Standard
	Pb	207	393.3	7.5	**0.0434**	0.006	13.6	ug/L	227	Standard
	Pb	208	1569.4	6.7	**0.0409**	0.005	12.6	ug/L	868	Standard
	U	238	2803.6	2.3	**0.3904**	0.007	1.8	ug/L	8	Standard
>	**Bi**	209	524925.3	0.4				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	9916.6	3.7	**11.3168**	0.564	5.0	mg/L	53	Standard
K	39	163.3	7.1	**0.2151**	0.021	9.8	mg/L	53	Standard
Ca	43	110.0	25.3	**4.8532**	1.571	32.4	mg/L	28	Standard
Fe	54	113.4	15.9	**-0.0376**	0.013	34.6	mg/L	181	Standard
Fe	57	321.7	3.2	**0.2320**	0.037	16.1	mg/L	257	Standard
> **Sc-1**	45	52594.5	1.3				mg/L	55220	Standard
Cl	35	50654.5	0.8				ug/L	35504	Standard
Kr	83	3.3	45.8				ug/L	2	Standard
Br	81	13766.3	1.7				ug/L	2040	Standard
P	31	11045.7	1.4				ug/L	20435	Standard
S	34	2928.6	0.6				ug/L	2430	Standard
Sr	88	118.3	33.9				ug/L	75	Standard
C	12	100.0	26.5				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	32.4	99.3				mg/L	9	Standard
Ho-1	165	16.7	75.5				mg/L	10	Standard
Er	166	20.0	0.0				mg/L	23	Standard
I	127	64641.0	1.9				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		90.185	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.378	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.503
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.026
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606114802SDL WG574806-02
Sample Date/Time: Thursday, June 30, 2016 15:43:32
Number of Replicates: 3
Autosampler Position: 239
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64564.1	4.0				ug/L	74916	Standard
	Be	9	21.7	35.3	**0.0201**	0.008	39.4	ug/L	10	Standard
	Al	27	1491927.4	0.5	**9.9834**	0.370	3.7	ug/L	1822	Standard
	Sc	45	49999.1	4.2				ug/L	55220	Standard
	Ti	47	34.7	13.3	**0.0188**	0.013	66.8	ug/L	34	Standard
	V	51	4042.0	5.2	**0.2658**	0.027	10.2	ug/L	1938	Standard
	Cr	52	10343.9	0.9	**0.1779**	0.002	1.3	ug/L	9522	Standard
	Cr	53	1346.7	6.7	**0.8906**	0.086	9.6	ug/L	395	Standard
	Mn	55	1524.7	2.2	**0.0825**	0.003	4.1	ug/L	902	Standard
	Co	59	305.7	7.8	**0.0169**	0.003	16.8	ug/L	262	Standard
	Ni	60	472.0	2.7	**0.0773**	0.004	5.8	ug/L	371	Standard
	Cu	65	262.0	7.5	**0.0669**	0.009	12.9	ug/L	106	Standard
	Zn	66	1226.7	3.6	**0.6524**	0.029	4.5	ug/L	398	Standard
>	**Ge**	72	505648.6	0.7				ug/L	535147	Standard
	As	75	50.9	17.9	**0.0954**	0.007	7.3	ug/L	-43	Standard
	Se	82	36.8	18.2	**0.1905**	0.051	26.6	ug/L	14	Standard
	Se-1	77	105.7	7.7	**0.6606**	0.105	15.9	ug/L	65	Standard
>	**Ga**	71	55.0	41.7				mg/L	97	Standard
	Rb	85	618.3	12.5				ug/L	15	Standard
	Y	89	430100.5	1.9				ug/L	465704	Standard
>	**Rh**	103	18.3	83.3				ug/L	10	Standard
	Mo	98	84.8	5.3	**0.0413**	0.001	3.5	ug/L	9	Standard
	Ag	107	187.3	11.8	**0.0204**	0.003	16.0	ug/L	82	Standard
	Cd	111	14.2	42.3	**0.0142**	0.003	18.6	mg/L	7	Standard
	Cd	114	33.2	60.8	**0.0150**	0.004	24.5	ug/L	21	Standard
>	**In**	115	580789.9	0.7				ug/L	619035	Standard
	Sn	118	190.0	7.0	**-0.0723**	0.002	2.8	ug/L	508	Standard
	Sb	123	368.7	19.1	**0.0787**	0.015	18.6	ug/L	86	Standard
	Ba	135	5896.1	0.9	**2.7294**	0.036	1.3	ug/L	79	Standard
	Ce	140	55.0	18.2				ug/L	68	Standard
>	**Tb**	159	901658.2	1.0				ug/L	986982	Standard
	Ho	165	13.3	78.1				ug/L	10	Standard
	Tl	203	79.0	12.1	**0.0150**	0.001	7.2	ug/L	13	Standard
	Tl	205	78.3	44.8	**0.0181**	0.005	25.8	ug/L	10	Standard
	Pb	206	290.0	6.2	**0.0136**	0.003	23.6	ug/L	264	Standard
	Pb	207	233.3	1.7	**0.0125**	0.001	6.0	ug/L	227	Standard
	Pb	208	1074.7	3.5	**0.0163**	0.002	11.8	ug/L	868	Standard
	U	238	543.0	2.0	**0.0825**	0.001	1.7	ug/L	8	Standard
>	**Bi**	209	521078.1	0.1				ug/L	541014	Standard

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Na	23	1.7	173.2	**10.6993**	18.523	173.1	mg/L	2	Standard
Mg	24	1928.5	1.3	**2.2885**	0.073	3.2	mg/L	53	Standard
K	39	60.0	22.0	**0.0367**	0.026	71.3	mg/L	53	Standard
Ca	43	33.3	8.7	**0.4175**	0.262	62.8	mg/L	28	Standard
Fe	54	77.4	18.8	**-0.0607**	0.008	13.8	mg/L	181	Standard
Fe	57	326.7	3.2	**0.2947**	0.070	23.6	mg/L	257	Standard
> **Sc-1**	45	49999.1	4.2				mg/L	55220	Standard
Cl	35	49910.7	0.4				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	4307.3	7.8				ug/L	2040	Standard
P	31	8710.9	14.5				ug/L	20435	Standard
S	34	2932.0	5.4				ug/L	2430	Standard
Sr	88	100.0	26.0				ug/L	75	Standard
C	12	100.0	62.5				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	9.4	107.0				mg/L	9	Standard
Ho-1	165	13.3	78.1				mg/L	10	Standard
Er	166	13.3	86.6				mg/L	23	Standard
I	127	40771.5	0.6				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		86.181	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		94.488	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.822
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.315
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 15:46:45
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65648.6	1.2				ug/L	74916	Standard
	Be	9	52089.4	3.2	**56.3287**	1.251	2.2	ug/L	10	Standard
	Al	27	8382474.3	2.0	**55.1221**	0.938	1.7	ug/L	1822	Standard
	Sc	45	53922.5	1.2				ug/L	55220	Standard
	Ti	47	42402.9	1.4	**102.4543**	1.478	1.4	ug/L	34	Standard
	V	51	465387.0	1.0	**49.9862**	0.574	1.1	ug/L	1938	Standard
	Cr	52	469228.1	1.6	**51.0504**	0.895	1.8	ug/L	9522	Standard
	Cr	53	59473.3	3.8	**52.8395**	1.876	3.6	ug/L	395	Standard
	Mn	55	432583.6	0.9	**50.1157**	0.430	0.9	ug/L	902	Standard
	Co	59	410961.4	1.0	**50.3659**	0.420	0.8	ug/L	262	Standard
	Ni	60	114268.4	2.0	**50.7489**	1.027	2.0	ug/L	371	Standard
	Cu	65	112915.6	2.0	**51.0392**	1.019	2.0	ug/L	106	Standard
	Zn	66	66348.0	0.7	**50.6301**	0.393	0.8	ug/L	398	Standard
>	Ge	72	536080.5	0.4				ug/L	535147	Standard
	As	75	67443.3	1.3	**50.3166**	0.509	1.0	ug/L	-43	Standard
	Se	82	6849.4	0.6	**50.3529**	0.349	0.7	ug/L	14	Standard
	Se-1	77	4694.7	0.6	**51.4430**	0.420	0.8	ug/L	65	Standard
>	Ga	71	101.7	15.8				mg/L	97	Standard
	Rb	85	925.0	9.2				ug/L	15	Standard
	Y	89	470576.4	1.1				ug/L	465704	Standard
>	Rh	103	33.3	52.7				ug/L	10	Standard
	Mo	98	305436.2	1.2	**96.4896**	0.744	0.8	ug/L	9	Standard
	Ag	107	373900.7	2.0	**48.8034**	0.544	1.1	ug/L	82	Standard
	Cd	111	120993.1	0.1	**49.4148**	0.539	1.1	mg/L	7	Standard
	Cd	114	298857.5	0.7	**50.6847**	0.681	1.3	ug/L	21	Standard
>	In	115	628148.6	1.0				ug/L	619035	Standard
	Sn	118	330694.9	0.4	**49.9794**	0.746	1.5	ug/L	508	Standard
	Sb	123	266870.7	1.3	**49.6669**	0.635	1.3	ug/L	86	Standard
	Ba	135	114715.0	0.9	**49.4327**	0.539	1.1	ug/L	79	Standard
	Ce	140	148.3	30.2				ug/L	68	Standard
>	Tb	159	952045.6	0.7				ug/L	986982	Standard
	Ho	165	15.0	66.7				ug/L	10	Standard
	Tl	203	463255.3	1.5	**50.7530**	0.545	1.1	ug/L	13	Standard
	Tl	205	407629.0	0.5	**52.2795**	0.723	1.4	ug/L	10	Standard
	Pb	206	290785.0	1.1	**49.6010**	0.312	0.6	ug/L	264	Standard
	Pb	207	262146.4	0.7	**49.4786**	0.370	0.7	ug/L	227	Standard
	Pb	208	1078322.1	0.7	**52.7887**	1.009	1.9	ug/L	868	Standard
	U	238	388498.2	1.3	**51.4471**	0.537	1.0	ug/L	8	Standard
>	Bi	209	540906.6	1.3				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4492.3	1.5	**4.9799**	0.123	2.5	mg/L	53	Standard
K	39	2275.2	1.6	**3.8778**	0.020	0.5	mg/L	53	Standard
Ca	43	88.3	11.8	**3.4537**	0.669	19.4	mg/L	28	Standard
Fe	54	7294.4	2.9	**4.9718**	0.177	3.6	mg/L	181	Standard
Fe	57	2060.1	7.2	**4.9236**	0.362	7.4	mg/L	257	Standard
Sc-1	45	53922.5	1.2				mg/L	55220	Standard
Cl	35	47549.3	4.4				ug/L	35504	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	2193.5	8.6				ug/L	2040	Standard
P	31	25055.7	0.6				ug/L	20435	Standard
S	34	3182.0	0.1				ug/L	2430	Standard
Sr	88	88.3	28.5				ug/L	75	Standard
C	12	110.0	15.7				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	19.8	50.4				mg/L	9	Standard
Ho-1	165	15.0	66.7				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	23	Standard
I	127	6643.1	12.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	112.657		
Al	27	110.244		
Sc	45			
Ti	47	102.454		
V	51	99.972		
Cr	52	102.101		
Cr	53			
Mn	55	100.231		
Co	59	100.732		
Ni	60	101.498		
Cu	65	102.078		
Zn	66	101.260		
Ge	72		100.174	
As	75	100.633		
Se	82	100.706		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	96.490		
Ag	107	97.607		
Cd	111	98.830		
Cd	114			
In	115		101.472	
Sn	118	99.959		
Sb	123	99.334		
Ba	135	98.865		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.506		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.577		
U	238	102.894		
Bi	209		99.980	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 15:49:56
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	66639.6	2.5				ug/L	74916	Standard
	Be	9	33.3	60.6	**0.0321**	0.022	69.6	ug/L	10	Standard
	Al	27	3542.1	35.4	**0.0205**	0.008	36.9	ug/L	1822	Standard
	Sc	45	54986.3	1.0				ug/L	55220	Standard
	Ti	47	40.7	21.5	**0.0270**	0.021	78.9	ug/L	34	Standard
	V	51	1615.0	9.3	**-0.0245**	0.015	60.9	ug/L	1938	Standard
	Cr	52	8524.4	1.1	**-0.1054**	0.015	14.2	ug/L	9522	Standard
	Cr	53	1090.0	5.6	**0.5753**	0.043	7.5	ug/L	395	Standard
	Mn	55	884.7	10.0	**-0.0038**	0.010	252.5	ug/L	902	Standard
	Co	59	311.7	13.4	**0.0149**	0.005	31.0	ug/L	262	Standard
	Ni	60	266.3	3.4	**-0.0285**	0.003	12.2	ug/L	371	Standard
	Cu	65	144.7	13.4	**0.0058**	0.008	135.4	ug/L	106	Standard
	Zn	66	414.3	6.4	**-0.0324**	0.022	66.8	ug/L	398	Standard
>	Ge	72	543124.4	1.3				ug/L	535147	Standard
	As	75	-41.8	54.1	**0.0245**	0.017	68.0	ug/L	-43	Standard
	Se	82	21.7	29.1	**0.0613**	0.047	76.4	ug/L	14	Standard
	Se-1	77	87.7	8.4	**0.3783**	0.093	24.5	ug/L	65	Standard
>	Ga	71	50.0	20.0				mg/L	97	Standard
	Rb	85	35.0	37.8				ug/L	15	Standard
	Y	89	472361.0	1.4				ug/L	465704	Standard
>	Rh	103	10.0	50.0				ug/L	10	Standard
	Mo	98	282.6	18.8	**0.0997**	0.015	15.5	ug/L	9	Standard
	Ag	107	310.0	3.9	**0.0336**	0.001	3.2	ug/L	82	Standard
	Cd	111	18.2	51.7	**0.0151**	0.004	24.3	mg/L	7	Standard
	Cd	114	70.6	60.9	**0.0206**	0.007	34.5	ug/L	21	Standard
>	In	115	641519.0	1.3				ug/L	619035	Standard
	Sn	118	1156.7	11.1	**0.0682**	0.021	30.4	ug/L	508	Standard
	Sb	123	968.5	30.9	**0.1813**	0.056	30.9	ug/L	86	Standard
	Ba	135	64.3	15.1	**0.0075**	0.004	49.9	ug/L	79	Standard
	Ce	140	31.7	48.2				ug/L	68	Standard
>	Tb	159	964944.2	1.7				ug/L	986982	Standard
	Ho	165	6.7	173.2				ug/L	10	Standard
	Tl	203	115.0	23.5	**0.0183**	0.003	15.4	ug/L	13	Standard
	Tl	205	113.3	36.7	**0.0218**	0.005	23.4	ug/L	10	Standard
	Pb	206	340.7	14.1	**0.0188**	0.008	40.8	ug/L	264	Standard
	Pb	207	281.0	12.0	**0.0185**	0.006	32.3	ug/L	227	Standard
	Pb	208	1211.7	16.6	**0.0194**	0.009	47.7	ug/L	868	Standard
	U	238	81.7	46.4	**0.0184**	0.005	26.2	ug/L	8	Standard
>	Bi	209	555377.0	0.5				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.3685**	16.218	173.1	mg/L	2	Standard
Mg	24	35.0	24.7	**0.0038**	0.010	255.2	mg/L	53	Standard
K	39	31.7	24.1	**-0.0219**	0.014	61.8	mg/L	53	Standard
Ca	43	16.7	45.8	**-0.7275**	0.430	59.1	mg/L	28	Standard
Fe	54	160.7	15.7	**-0.0086**	0.018	213.4	mg/L	181	Standard
Fe	57	270.0	16.5	**0.0561**	0.126	223.8	mg/L	257	Standard
> **Sc-1**	45	54986.3	1.0				mg/L	55220	Standard
Cl	35	45581.8	1.4				ug/L	35504	Standard
Kr	83	2.7	43.3				ug/L	2	Standard
Br	81	2123.5	7.6				ug/L	2040	Standard
P	31	24367.9	2.6				ug/L	20435	Standard
S	34	3195.3	1.8				ug/L	2430	Standard
Sr	88	85.0	20.4				ug/L	75	Standard
C	12	100.0	52.9				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	138.7	12.7				mg/L	9	Standard
Ho-1	165	6.7	173.2				mg/L	10	Standard
Er	166	26.7	21.7				mg/L	23	Standard
I	127	4657.4	11.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.491	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.632
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.655
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606115001
Sample Date/Time: Thursday, June 30, 2016 15:53:09
Number of Replicates: 3
Autosampler Position: 240
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69448.8	1.7				ug/L	74916	Standard
	Be	9	58.3	48.7	**0.0563**	0.030	52.9	ug/L	10	Standard
	Al	27	19098580.6	1.6	**118.7603**	3.782	3.2	ug/L	1822	Standard
	Sc	45	55650.4	2.4				ug/L	55220	Standard
	Ti	47	3432.1	3.3	**8.2642**	0.310	3.7	ug/L	34	Standard
	V	51	42258.5	0.6	**4.3797**	0.011	0.2	ug/L	1938	Standard
	Cr	52	19237.2	0.4	**1.1052**	0.018	1.6	ug/L	9522	Standard
	Cr	53	9361.2	7.9	**8.0257**	0.644	8.0	ug/L	395	Standard
	Mn	55	244442.6	1.2	**28.3961**	0.499	1.8	ug/L	902	Standard
	Co	59	2880.3	1.8	**0.3319**	0.007	2.2	ug/L	262	Standard
	Ni	60	3429.7	1.5	**1.3885**	0.022	1.6	ug/L	371	Standard
	Cu	65	2716.6	2.8	**1.1758**	0.033	2.8	ug/L	106	Standard
	Zn	66	7591.2	0.7	**5.5106**	0.012	0.2	ug/L	398	Standard
>	**Ge**	72	533808.2	0.7				ug/L	535147	Standard
	As	75	2296.3	2.9	**1.7741**	0.060	3.4	ug/L	-43	Standard
	Se	82	359.0	1.7	**2.5586**	0.060	2.3	ug/L	14	Standard
	Se-1	77	426.3	4.8	**4.1634**	0.233	5.6	ug/L	65	Standard
>	**Ga**	71	968.4	6.5				mg/L	97	Standard
	Rb	85	26389.6	1.0				ug/L	15	Standard
	Y	89	472663.4	1.3				ug/L	465704	Standard
>	**Rh**	103	78.3	7.4				ug/L	10	Standard
	Mo	98	5034.9	1.4	**1.6224**	0.008	0.5	ug/L	9	Standard
	Ag	107	266.0	13.8	**0.0291**	0.005	17.4	ug/L	82	Standard
	Cd	111	130.9	11.9	**0.0620**	0.007	10.8	mg/L	7	Standard
	Cd	114	377.1	26.4	**0.0737**	0.017	23.2	ug/L	21	Standard
>	**In**	115	620464.9	1.3				ug/L	619035	Standard
	Sn	118	1413.4	10.5	**0.1135**	0.026	22.6	ug/L	508	Standard
	Sb	123	1646.3	9.2	**0.3148**	0.032	10.3	ug/L	86	Standard
	Ba	135	121578.6	1.5	**53.0407**	0.755	1.4	ug/L	79	Standard
	Ce	140	29600.6	0.9				ug/L	68	Standard
>	**Tb**	159	964507.4	1.4				ug/L	986982	Standard
	Ho	165	411.7	13.4				ug/L	10	Standard
	Tl	203	212.3	34.2	**0.0298**	0.008	27.0	ug/L	13	Standard
	Tl	205	173.3	23.5	**0.0305**	0.005	17.3	ug/L	10	Standard
	Pb	206	6350.7	0.5	**1.0737**	0.007	0.7	ug/L	264	Standard
	Pb	207	5312.6	0.8	**0.9955**	0.008	0.8	ug/L	227	Standard
	Pb	208	22281.1	1.2	**1.0806**	0.011	1.0	ug/L	868	Standard
	U	238	13222.1	0.6	**1.8027**	0.018	1.0	ug/L	8	Standard
>	**Bi**	209	527588.8	0.4				ug/L	541014	Standard

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Na	23	6.7	43.3	**37.4623**	17.162	45.8	mg/L	2	Standard
Mg	24	54078.0	0.9	**58.4711**	1.764	3.0	mg/L	53	Standard
K	39	603.3	6.7	**0.9395**	0.053	5.6	mg/L	53	Standard
Ca	43	305.0	10.2	**15.4711**	1.773	11.5	mg/L	28	Standard
Fe	54	731.9	3.1	**0.3764**	0.022	6.0	mg/L	181	Standard
Fe	57	566.7	6.0	**0.8265**	0.082	9.9	mg/L	257	Standard
> **Sc-1**	45	55650.4	2.4				mg/L	55220	Standard
Cl	35	49211.1	0.6				ug/L	35504	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	58559.7	2.6				ug/L	2040	Standard
P	31	26145.9	0.7				ug/L	20435	Standard
S	34	2950.3	3.8				ug/L	2430	Standard
Sr	88	243.3	12.4				ug/L	75	Standard
C	12	220.0	29.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	7	Standard
Dy	164	649.1	9.9				mg/L	9	Standard
Ho-1	165	411.7	13.4				mg/L	10	Standard
Er	166	366.7	9.6				mg/L	23	Standard
I	127	437609.2	7.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.702	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.750	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.231	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.518	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606115002
Sample Date/Time: Thursday, June 30, 2016 15:56:21
Number of Replicates: 3
Autosampler Position: 241
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71421.3	1.6				ug/L	74916	Standard
	Be	9	38.3	41.9	**0.0343**	0.016	45.2	ug/L	10	Standard
	Al	27	4797413.4	1.7	**28.9985**	0.514	1.8	ug/L	1822	Standard
	Sc	45	57023.8	2.0				ug/L	55220	Standard
	Ti	47	2029.8	1.6	**4.7502**	0.136	2.9	ug/L	34	Standard
	V	51	31492.8	2.0	**3.1383**	0.061	2.0	ug/L	1938	Standard
	Cr	52	16465.9	1.6	**0.7554**	0.015	2.0	ug/L	9522	Standard
	Cr	53	2970.3	6.2	**2.2222**	0.131	5.9	ug/L	395	Standard
	Mn	55	75113.4	1.3	**8.4578**	0.011	0.1	ug/L	902	Standard
	Co	59	1569.1	2.4	**0.1661**	0.002	1.4	ug/L	262	Standard
	Ni	60	1930.8	1.8	**0.6990**	0.023	3.3	ug/L	371	Standard
	Cu	65	1792.1	3.2	**0.7376**	0.024	3.2	ug/L	106	Standard
	Zn	66	6166.3	1.8	**4.3057**	0.077	1.8	ug/L	398	Standard
>	**Ge**	72	545929.0	1.3				ug/L	535147	Standard
	As	75	1087.1	3.4	**0.8507**	0.023	2.7	ug/L	-43	Standard
	Se	82	175.6	2.3	**1.1729**	0.025	2.1	ug/L	14	Standard
	Se-1	77	148.0	13.5	**1.0280**	0.205	19.9	ug/L	65	Standard
>	**Ga**	71	653.3	9.9				mg/L	97	Standard
	Rb	85	46049.9	2.1				ug/L	15	Standard
	Y	89	476995.8	1.0				ug/L	465704	Standard
>	**Rh**	103	53.3	14.3				ug/L	10	Standard
	Mo	98	796.8	2.4	**0.2623**	0.007	2.6	ug/L	9	Standard
	Ag	107	140.3	2.9	**0.0121**	0.000	3.6	ug/L	82	Standard
	Cd	111	49.8	18.3	**0.0281**	0.004	13.4	mg/L	7	Standard
	Cd	114	123.2	30.8	**0.0296**	0.006	21.2	ug/L	21	Standard
>	**In**	115	632511.4	0.5				ug/L	619035	Standard
	Sn	118	1000.0	3.6	**0.0470**	0.006	11.8	ug/L	508	Standard
	Sb	123	4032.4	3.6	**0.7496**	0.028	3.7	ug/L	86	Standard
	Ba	135	50380.0	1.5	**21.5471**	0.216	1.0	ug/L	79	Standard
	Ce	140	16629.1	0.9				ug/L	68	Standard
>	**Tb**	159	968713.2	1.4				ug/L	986982	Standard
	Ho	165	263.3	23.6				ug/L	10	Standard
	Tl	203	95.7	12.0	**0.0164**	0.001	7.7	ug/L	13	Standard
	Tl	205	76.7	19.9	**0.0174**	0.002	11.2	ug/L	10	Standard
	Pb	206	2363.9	1.7	**0.3622**	0.006	1.7	ug/L	264	Standard
	Pb	207	1924.1	2.9	**0.3270**	0.010	3.0	ug/L	227	Standard
	Pb	208	8281.6	1.5	**0.3638**	0.007	1.8	ug/L	868	Standard
	U	238	3906.2	1.8	**0.5205**	0.010	1.9	ug/L	8	Standard
>	**Bi**	209	545694.0	0.2				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	17430.0	1.5	**18.3641**	0.418	2.3	mg/L	53	Standard
K	39	1168.4	9.0	**1.8461**	0.201	10.9	mg/L	53	Standard
Ca	43	183.3	1.6	**8.3818**	0.186	2.2	mg/L	28	Standard
Fe	54	452.3	21.5	**0.1801**	0.067	37.4	mg/L	181	Standard
Fe	57	478.3	10.5	**0.5644**	0.133	23.6	mg/L	257	Standard
> **Sc-1**	45	57023.8	2.0				mg/L	55220	Standard
Cl	35	48759.0	3.0				ug/L	35504	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	26419.7	2.9				ug/L	2040	Standard
P	31	23984.0	4.7				ug/L	20435	Standard
S	34	2903.6	6.4				ug/L	2430	Standard
Sr	88	143.3	17.2				ug/L	75	Standard
C	12	193.3	38.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	319.1	7.7				mg/L	9	Standard
Ho-1	165	263.3	23.6				mg/L	10	Standard
Er	166	226.7	31.9				mg/L	23	Standard
I	127	274664.0	5.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.335	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.015	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.177
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.865
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606099604
Sample Date/Time: Thursday, June 30, 2016 15:59:32
Number of Replicates: 3
Autosampler Position: 242
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69961.2	0.6				ug/L	74916	Standard
	Be	9	28.3	44.4	**0.0252**	0.013	51.3	ug/L	10	Standard
	Al	27	19425781.4	1.6	**119.8632**	1.268	1.1	ug/L	1822	Standard
	Sc	45	56475.1	2.4				ug/L	55220	Standard
	Ti	47	262.7	6.3	**0.5661**	0.035	6.2	ug/L	34	Standard
	V	51	2779.8	5.1	**0.1041**	0.016	15.8	ug/L	1938	Standard
	Cr	52	12190.2	1.9	**0.3167**	0.027	8.6	ug/L	9522	Standard
	Cr	53	4825.8	5.1	**3.9420**	0.240	6.1	ug/L	395	Standard
	Mn	55	5701701.5	0.7	**663.2941**	6.907	1.0	ug/L	902	Standard
	Co	59	11754.6	1.3	**1.4216**	0.014	1.0	ug/L	262	Standard
	Ni	60	7372.1	1.0	**3.1451**	0.031	1.0	ug/L	371	Standard
	Cu	65	803.4	1.9	**0.3056**	0.005	1.6	ug/L	106	Standard
	Zn	66	2560.2	1.0	**1.6248**	0.030	1.8	ug/L	398	Standard
>	**Ge**	72	534918.8	0.8				ug/L	535147	Standard
	As	75	1357.7	6.6	**1.0696**	0.075	7.0	ug/L	-43	Standard
	Se	82	88.6	10.8	**0.5572**	0.074	13.3	ug/L	14	Standard
	Se-1	77	289.7	7.7	**2.6368**	0.271	10.3	ug/L	65	Standard
>	**Ga**	71	195.0	23.1				mg/L	97	Standard
	Rb	85	6686.5	2.4				ug/L	15	Standard
	Y	89	464786.7	1.0				ug/L	465704	Standard
>	**Rh**	103	205.0	4.2				ug/L	10	Standard
	Mo	98	826.4	4.1	**0.2776**	0.013	4.8	ug/L	9	Standard
	Ag	107	114.7	5.6	**0.0091**	0.001	8.8	ug/L	82	Standard
	Cd	111	186.2	3.7	**0.0851**	0.003	3.5	mg/L	7	Standard
	Cd	114	479.9	16.5	**0.0915**	0.013	14.2	ug/L	21	Standard
>	**In**	115	618323.1	1.1				ug/L	619035	Standard
	Sn	118	810.0	8.9	**0.0212**	0.011	52.1	ug/L	508	Standard
	Sb	123	314.7	22.7	**0.0639**	0.013	20.4	ug/L	86	Standard
	Ba	135	187252.0	0.4	**81.9858**	0.624	0.8	ug/L	79	Standard
	Ce	140	5165.9	2.9				ug/L	68	Standard
>	**Tb**	159	962521.7	0.2				ug/L	986982	Standard
	Ho	165	113.3	10.2				ug/L	10	Standard
	Tl	203	260.0	5.5	**0.0351**	0.001	4.1	ug/L	13	Standard
	Tl	205	283.3	27.4	**0.0449**	0.011	23.6	ug/L	10	Standard
	Pb	206	485.3	3.4	**0.0469**	0.003	7.0	ug/L	264	Standard
	Pb	207	410.0	1.1	**0.0459**	0.001	1.8	ug/L	227	Standard
	Pb	208	1780.4	10.3	**0.0508**	0.010	20.2	ug/L	868	Standard
	U	238	896.7	6.4	**0.1292**	0.009	7.0	ug/L	8	Standard
>	**Bi**	209	529472.6	1.3				ug/L	541014	Standard

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Na	23	5.0	0.0	**27.5091**	0.643	2.3	mg/L	2	Standard
Mg	24	28273.0	1.0	**30.1001**	0.507	1.7	mg/L	53	Standard
K	39	1395.1	3.9	**2.2385**	0.055	2.5	mg/L	53	Standard
Ca	43	991.7	11.7	**53.1667**	5.071	9.5	mg/L	28	Standard
Fe	54	5117.6	1.9	**3.2912**	0.059	1.8	mg/L	181	Standard
Fe	57	1863.4	1.4	**4.1644**	0.091	2.2	mg/L	257	Standard
> **Sc-1**	45	56475.1	2.4				mg/L	55220	Standard
Cl	35	47688.3	1.9				ug/L	35504	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	14860.6	1.2				ug/L	2040	Standard
P	31	27715.3	0.8				ug/L	20435	Standard
S	34	3085.3	5.7				ug/L	2430	Standard
Sr	88	611.7	3.7				ug/L	75	Standard
C	12	206.7	17.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	150.4	14.1				mg/L	9	Standard
Ho-1	165	113.3	10.2				mg/L	10	Standard
Er	166	130.0	23.1				mg/L	23	Standard
I	127	154687.6	2.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.386	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.957	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.885
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.867
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606099605
Sample Date/Time: Thursday, June 30, 2016 16:02:43
Number of Replicates: 3
Autosampler Position: 243
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69855.7	2.4				ug/L	74916	Standard
	Be	9	30.0	16.7	**0.0270**	0.006	21.6	ug/L	10	Standard
	Al	27	25298682.7	0.3	**156.4064**	3.966	2.5	ug/L	1822	Standard
	Sc	45	56075.3	2.8				ug/L	55220	Standard
	Ti	47	338.7	2.0	**0.7516**	0.018	2.5	ug/L	34	Standard
	V	51	3001.7	4.8	**0.1285**	0.018	13.9	ug/L	1938	Standard
	Cr	52	12584.6	0.7	**0.3623**	0.002	0.6	ug/L	9522	Standard
	Cr	53	5834.5	2.3	**4.8522**	0.084	1.7	ug/L	395	Standard
	Mn	55	2623286.7	0.8	**305.5121**	4.757	1.6	ug/L	902	Standard
	Co	59	15465.9	0.6	**1.8800**	0.016	0.8	ug/L	262	Standard
	Ni	60	6197.6	0.3	**2.6243**	0.013	0.5	ug/L	371	Standard
	Cu	65	2478.2	0.8	**1.0666**	0.013	1.3	ug/L	106	Standard
	Zn	66	7697.6	1.2	**5.5884**	0.116	2.1	ug/L	398	Standard
>	**Ge**	72	534251.5	0.8				ug/L	535147	Standard
	As	75	1974.2	4.3	**1.5314**	0.058	3.8	ug/L	-43	Standard
	Se	82	78.5	7.3	**0.4834**	0.046	9.5	ug/L	14	Standard
	Se-1	77	351.3	1.7	**3.3251**	0.044	1.3	ug/L	65	Standard
>	**Ga**	71	205.0	25.5				mg/L	97	Standard
	Rb	85	5237.6	3.5				ug/L	15	Standard
	Y	89	469644.5	0.7				ug/L	465704	Standard
>	**Rh**	103	150.0	26.0				ug/L	10	Standard
	Mo	98	1144.9	1.6	**0.3788**	0.004	1.1	ug/L	9	Standard
	Ag	107	102.0	8.4	**0.0074**	0.001	16.1	ug/L	82	Standard
	Cd	111	1652.0	2.2	**0.6914**	0.017	2.4	mg/L	7	Standard
	Cd	114	4129.0	3.7	**0.7182**	0.022	3.1	ug/L	21	Standard
>	**In**	115	619962.0	0.5				ug/L	619035	Standard
	Sn	118	1053.4	26.1	**0.0583**	0.043	73.2	ug/L	508	Standard
	Sb	123	326.9	12.9	**0.0660**	0.008	11.8	ug/L	86	Standard
	Ba	135	161983.3	0.3	**70.7294**	0.370	0.5	ug/L	79	Standard
	Ce	140	5751.1	4.0				ug/L	68	Standard
>	**Tb**	159	963142.2	0.8				ug/L	986982	Standard
	Ho	165	166.7	9.2				ug/L	10	Standard
	Tl	203	314.3	1.9	**0.0413**	0.001	1.6	ug/L	13	Standard
	Tl	205	290.0	12.1	**0.0458**	0.005	10.1	ug/L	10	Standard
	Pb	206	1740.4	1.2	**0.2666**	0.002	0.7	ug/L	264	Standard
	Pb	207	1409.4	1.4	**0.2395**	0.005	2.2	ug/L	227	Standard
	Pb	208	5876.8	1.0	**0.2566**	0.002	0.7	ug/L	868	Standard
	U	238	1185.0	1.4	**0.1687**	0.003	2.0	ug/L	8	Standard
>	**Bi**	209	527930.9	0.7				ug/L	541014	Standard

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Na	23	6.7	43.3	**36.6702**	14.812	40.4	mg/L	2	Standard
Mg	24	25957.2	2.0	**27.8323**	0.729	2.6	mg/L	53	Standard
K	39	1290.1	1.7	**2.0816**	0.095	4.6	mg/L	53	Standard
Ca	43	816.7	4.0	**43.9174**	2.717	6.2	mg/L	28	Standard
Fe	54	4281.2	3.8	**2.7565**	0.170	6.2	mg/L	181	Standard
Fe	57	1635.1	10.3	**3.5996**	0.392	10.9	mg/L	257	Standard
> **Sc-1**	45	56075.3	2.8				mg/L	55220	Standard
Cl	35	47329.8	0.8				ug/L	35504	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	13232.4	3.8				ug/L	2040	Standard
P	31	28035.9	1.3				ug/L	20435	Standard
S	34	3043.6	7.4				ug/L	2430	Standard
Sr	88	438.3	13.2				ug/L	75	Standard
C	12	256.7	31.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	7	Standard
Dy	164	199.3	28.2				mg/L	9	Standard
Ho-1	165	166.7	9.2				mg/L	10	Standard
Er	166	153.3	18.8				mg/L	23	Standard
I	127	169123.3	4.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.245	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.833	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.150
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.582
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606099606
Sample Date/Time: Thursday, June 30, 2016 16:05:55
Number of Replicates: 3
Autosampler Position: 244
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70334.6	1.5				ug/L	74916	Standard
	Be	9	38.3	49.4	**0.0352**	0.020	55.6	ug/L	10	Standard
	Al	27	25573073.5	2.7	**156.9735**	4.152	2.6	ug/L	1822	Standard
	Sc	45	56620.6	1.2				ug/L	55220	Standard
	Ti	47	326.7	6.1	**0.7228**	0.051	7.0	ug/L	34	Standard
	V	51	3018.6	3.6	**0.1304**	0.013	9.7	ug/L	1938	Standard
	Cr	52	12679.3	1.7	**0.3733**	0.027	7.4	ug/L	9522	Standard
	Cr	53	5749.4	2.4	**4.7779**	0.131	2.7	ug/L	395	Standard
	Mn	55	2623375.0	1.1	**305.5981**	3.639	1.2	ug/L	902	Standard
	Co	59	15436.5	1.3	**1.8770**	0.025	1.3	ug/L	262	Standard
	Ni	60	6020.2	2.8	**2.5457**	0.069	2.7	ug/L	371	Standard
	Cu	65	1658.8	4.6	**0.6948**	0.038	5.5	ug/L	106	Standard
	Zn	66	6334.0	1.2	**4.5379**	0.038	0.8	ug/L	398	Standard
>	**Ge**	72	534086.7	0.6				ug/L	535147	Standard
	As	75	1720.4	3.8	**1.3423**	0.053	4.0	ug/L	-43	Standard
	Se	82	76.2	11.8	**0.4665**	0.070	14.9	ug/L	14	Standard
	Se-1	77	341.0	8.1	**3.2125**	0.324	10.1	ug/L	65	Standard
>	**Ga**	71	150.0	6.7				mg/L	97	Standard
	Rb	85	5017.5	2.9				ug/L	15	Standard
	Y	89	460333.3	1.9				ug/L	465704	Standard
>	**Rh**	103	160.0	15.6				ug/L	10	Standard
	Mo	98	1159.9	2.1	**0.3857**	0.007	1.9	ug/L	9	Standard
	Ag	107	207.3	84.7	**0.0215**	0.023	108.6	ug/L	82	Standard
	Cd	111	1273.0	4.1	**0.5376**	0.022	4.2	mg/L	7	Standard
	Cd	114	3184.2	4.3	**0.5591**	0.023	4.1	ug/L	21	Standard
>	**In**	115	616398.5	0.2				ug/L	619035	Standard
	Sn	118	851.7	11.9	**0.0280**	0.016	56.5	ug/L	508	Standard
	Sb	123	420.7	41.3	**0.0842**	0.033	39.2	ug/L	86	Standard
	Ba	135	159545.0	0.6	**70.0658**	0.337	0.5	ug/L	79	Standard
	Ce	140	4699.1	1.6				ug/L	68	Standard
>	**Tb**	159	960648.2	1.0				ug/L	986982	Standard
	Ho	165	116.7	25.1				ug/L	10	Standard
	Tl	203	478.0	50.7	**0.0598**	0.027	45.7	ug/L	13	Standard
	Tl	205	370.0	32.5	**0.0565**	0.016	28.1	ug/L	10	Standard
	Pb	206	1075.7	12.0	**0.1509**	0.023	15.2	ug/L	264	Standard
	Pb	207	893.4	13.8	**0.1402**	0.024	17.1	ug/L	227	Standard
	Pb	208	3590.5	9.6	**0.1424**	0.017	12.3	ug/L	868	Standard
	U	238	1264.4	10.4	**0.1799**	0.018	10.0	ug/L	8	Standard
>	**Bi**	209	526401.5	0.2				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.1445**	15.830	173.1	mg/L	2	Standard
Mg	24	26034.0	1.2	**27.6407**	0.661	2.4	mg/L	53	Standard
K	39	1291.7	4.5	**2.0624**	0.110	5.3	mg/L	53	Standard
Ca	43	728.4	12.3	**38.5487**	4.806	12.5	mg/L	28	Standard
Fe	54	4004.2	3.4	**2.5420**	0.079	3.1	mg/L	181	Standard
Fe	57	1421.7	2.8	**3.0102**	0.115	3.8	mg/L	257	Standard
> **Sc-1**	45	56620.6	1.2				mg/L	55220	Standard
Cl	35	47091.1	1.5				ug/L	35504	Standard
Kr	83	3.3	62.4				ug/L	2	Standard
Br	81	12705.3	3.4				ug/L	2040	Standard
P	31	27217.8	1.2				ug/L	20435	Standard
S	34	3183.7	0.9				ug/L	2430	Standard
Sr	88	466.7	7.3				ug/L	75	Standard
C	12	233.3	22.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	147.1	4.2				mg/L	9	Standard
Ho-1	165	116.7	25.1				mg/L	10	Standard
Er	166	130.0	13.3				mg/L	23	Standard
I	127	166708.5	4.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.884	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.802	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.574
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.299
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606099607
Sample Date/Time: Thursday, June 30, 2016 16:09:06
Number of Replicates: 3
Autosampler Position: 245
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70116.9	1.0				ug/L	74916	Standard
	Be	9	10.0	50.0	**0.0065**	0.005	76.3	ug/L	10	Standard
	Al	27	19484010.1	0.8	**119.9707**	1.788	1.5	ug/L	1822	Standard
	Sc	45	56406.5	2.4				ug/L	55220	Standard
	Ti	47	205.0	2.4	**0.4191**	0.013	3.1	ug/L	34	Standard
	V	51	2940.0	2.1	**0.1165**	0.008	6.7	ug/L	1938	Standard
	Cr	52	15036.8	1.8	**0.6080**	0.037	6.2	ug/L	9522	Standard
	Cr	53	4282.3	0.5	**3.3954**	0.032	0.9	ug/L	395	Standard
	Mn	55	23551.6	2.3	**2.5932**	0.049	1.9	ug/L	902	Standard
	Co	59	903.4	6.4	**0.0865**	0.007	8.0	ug/L	262	Standard
	Ni	60	2782.6	1.3	**1.0776**	0.018	1.7	ug/L	371	Standard
	Cu	65	721.7	3.7	**0.2636**	0.013	5.0	ug/L	106	Standard
	Zn	66	2321.8	1.0	**1.4139**	0.018	1.2	ug/L	398	Standard
>	**Ge**	72	543181.9	0.5				ug/L	535147	Standard
	As	75	-0.1	61796.7	**0.0553**	0.039	70.5	ug/L	-43	Standard
	Se	82	37.3	3.2	**0.1744**	0.007	4.2	ug/L	14	Standard
	Se-1	77	228.0	4.5	**1.9126**	0.123	6.4	ug/L	65	Standard
>	**Ga**	71	105.0	17.2				mg/L	97	Standard
	Rb	85	1916.8	7.9				ug/L	15	Standard
	Y	89	473426.1	0.7				ug/L	465704	Standard
>	**Rh**	103	55.0	18.2				ug/L	10	Standard
	Mo	98	1137.2	3.5	**0.3746**	0.013	3.4	ug/L	9	Standard
	Ag	107	86.0	10.1	**0.0053**	0.001	21.9	ug/L	82	Standard
	Cd	111	110.6	8.1	**0.0534**	0.004	7.0	mg/L	7	Standard
	Cd	114	282.5	7.7	**0.0572**	0.004	6.6	ug/L	21	Standard
>	**In**	115	622869.2	0.1				ug/L	619035	Standard
	Sn	118	778.4	11.1	**0.0154**	0.013	84.2	ug/L	508	Standard
	Sb	123	258.9	21.0	**0.0530**	0.010	19.3	ug/L	86	Standard
	Ba	135	28644.1	0.6	**12.4326**	0.096	0.8	ug/L	79	Standard
	Ce	140	530.0	1.6				ug/L	68	Standard
>	**Tb**	159	966795.0	1.1				ug/L	986982	Standard
	Ho	165	28.3	40.8				ug/L	10	Standard
	Tl	203	79.7	11.9	**0.0148**	0.001	7.4	ug/L	13	Standard
	Tl	205	60.0	33.3	**0.0155**	0.003	16.9	ug/L	10	Standard
	Pb	206	402.3	7.1	**0.0317**	0.005	14.3	ug/L	264	Standard
	Pb	207	358.3	3.9	**0.0353**	0.002	6.5	ug/L	227	Standard
	Pb	208	1516.0	3.6	**0.0368**	0.002	6.3	ug/L	868	Standard
	U	238	1327.4	2.2	**0.1858**	0.004	2.0	ug/L	8	Standard
>	**Bi**	209	534294.5	0.6				ug/L	541014	Standard

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Na	23	3.3	86.6	**18.2896**	15.847	86.6	mg/L	2	Standard
Mg	24	16824.3	1.1	**17.9246**	0.605	3.4	mg/L	53	Standard
K	39	213.3	28.2	**0.2790**	0.104	37.2	mg/L	53	Standard
Ca	43	591.7	12.0	**31.1277**	3.829	12.3	mg/L	28	Standard
Fe	54	212.4	20.3	**0.0229**	0.028	124.6	mg/L	181	Standard
Fe	57	545.0	15.4	**0.7481**	0.193	25.8	mg/L	257	Standard
> **Sc-1**	45	56406.5	2.4				mg/L	55220	Standard
Cl	35	50090.0	0.6				ug/L	35504	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	4580.7	3.0				ug/L	2040	Standard
P	31	26423.0	1.3				ug/L	20435	Standard
S	34	3012.0	4.9				ug/L	2430	Standard
Sr	88	228.3	12.1				ug/L	75	Standard
C	12	143.3	29.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	7	Standard
Dy	164	29.2	60.3				mg/L	9	Standard
Ho-1	165	28.3	40.8				mg/L	10	Standard
Er	166	16.7	124.9				mg/L	23	Standard
I	127	18783.4	8.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.593	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.501	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.619
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.758
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606099608
Sample Date/Time: Thursday, June 30, 2016 16:12:18
Number of Replicates: 3
Autosampler Position: 246
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70543.9	1.8				ug/L	74916	Standard
	Be	9	15.0	66.7	**0.0116**	0.010	88.6	ug/L	10	Standard
	Al	27	22711632.2	0.7	**139.0134**	2.390	1.7	ug/L	1822	Standard
	Sc	45	57522.4	2.5				ug/L	55220	Standard
	Ti	47	207.0	5.1	**0.4278**	0.029	6.7	ug/L	34	Standard
	V	51	2735.9	11.5	**0.0971**	0.034	35.0	ug/L	1938	Standard
	Cr	52	13832.0	1.0	**0.4877**	0.005	1.1	ug/L	9522	Standard
	Cr	53	2311.8	2.6	**1.6707**	0.052	3.1	ug/L	395	Standard
	Mn	55	6443.0	0.6	**0.6388**	0.001	0.2	ug/L	902	Standard
	Co	59	926.4	2.1	**0.0902**	0.002	2.5	ug/L	262	Standard
	Ni	60	3521.7	0.7	**1.4145**	0.010	0.7	ug/L	371	Standard
	Cu	65	752.7	1.6	**0.2800**	0.006	2.2	ug/L	106	Standard
	Zn	66	2242.5	1.0	**1.3670**	0.024	1.8	ug/L	398	Standard
>	**Ge**	72	538990.2	0.6				ug/L	535147	Standard
	As	75	37.1	21.4	**0.0827**	0.006	7.0	ug/L	-43	Standard
	Se	82	41.4	4.3	**0.2064**	0.015	7.2	ug/L	14	Standard
	Se-1	77	141.3	6.0	**0.9761**	0.087	8.9	ug/L	65	Standard
>	**Ga**	71	86.7	17.6				mg/L	97	Standard
	Rb	85	4118.9	3.5				ug/L	15	Standard
	Y	89	476168.4	0.6				ug/L	465704	Standard
>	**Rh**	103	86.7	8.8				ug/L	10	Standard
	Mo	98	438.6	5.5	**0.1506**	0.008	5.2	ug/L	9	Standard
	Ag	107	104.0	20.1	**0.0075**	0.003	36.9	ug/L	82	Standard
	Cd	111	101.6	17.7	**0.0493**	0.007	14.5	mg/L	7	Standard
	Cd	114	228.0	17.1	**0.0475**	0.007	13.7	ug/L	21	Standard
>	**In**	115	629533.9	0.4				ug/L	619035	Standard
	Sn	118	818.4	4.9	**0.0202**	0.006	31.1	ug/L	508	Standard
	Sb	123	185.0	17.5	**0.0388**	0.006	15.9	ug/L	86	Standard
	Ba	135	43526.4	1.4	**18.7021**	0.263	1.4	ug/L	79	Standard
	Ce	140	235.0	5.6				ug/L	68	Standard
>	**Tb**	159	965281.9	1.5				ug/L	986982	Standard
	Ho	165	25.0	69.3				ug/L	10	Standard
	Tl	203	71.7	14.9	**0.0139**	0.001	8.0	ug/L	13	Standard
	Tl	205	46.7	27.0	**0.0137**	0.002	11.4	ug/L	10	Standard
	Pb	206	309.7	0.5	**0.0155**	0.001	4.7	ug/L	264	Standard
	Pb	207	267.0	9.4	**0.0176**	0.004	25.4	ug/L	227	Standard
	Pb	208	1122.3	2.1	**0.0171**	0.002	9.7	ug/L	868	Standard
	U	238	1061.4	2.9	**0.1496**	0.003	1.8	ug/L	8	Standard
>	**Bi**	209	536286.4	1.0				ug/L	541014	Standard

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Na	23	1.7	173.2	**8.7738**	15.188	173.1	mg/L	2	Standard
Mg	24	5964.5	3.7	**6.2055**	0.174	2.8	mg/L	53	Standard
K	39	355.0	11.2	**0.5027**	0.068	13.5	mg/L	53	Standard
Ca	43	778.4	4.5	**40.6775**	2.577	6.3	mg/L	28	Standard
Fe	54	170.4	9.8	**-0.0071**	0.012	174.8	mg/L	181	Standard
Fe	57	601.7	16.8	**0.8634**	0.218	25.3	mg/L	257	Standard
Sc-1	45	57522.4	2.5				mg/L	55220	Standard
Cl	35	50187.0	1.2				ug/L	35504	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	4597.4	6.9				ug/L	2040	Standard
P	31	26302.9	6.9				ug/L	20435	Standard
S	34	3048.6	5.1				ug/L	2430	Standard
Sr	88	291.7	3.6				ug/L	75	Standard
C	12	176.7	3.3				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	7	Standard
Dy	164	28.9	33.2				mg/L	9	Standard
Ho-1	165	25.0	69.3				mg/L	10	Standard
Er	166	23.3	107.9				mg/L	23	Standard
I	127	83376.0	6.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.163	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.718	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.696	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.126	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606099608
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Method 6020 - Summary Report

Sample ID: L1606099609
Sample Date/Time: Thursday, June 30, 2016 16:15:29
Number of Replicates: 3
Autosampler Position: 247
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	69845.6	0.9				ug/L	74916	Standard
	Be	9	16.7	96.4	**0.0133**	0.016	122.4	ug/L	10	Standard
	Al	27	21005224.6	0.5	**129.8402**	1.843	1.4	ug/L	1822	Standard
	Sc	45	56552.1	2.6				ug/L	55220	Standard
	Ti	47	228.0	3.9	**0.4775**	0.018	3.7	ug/L	34	Standard
	V	51	2703.5	12.7	**0.0933**	0.037	39.7	ug/L	1938	Standard
	Cr	52	13913.4	0.5	**0.4950**	0.006	1.3	ug/L	9522	Standard
	Cr	53	3350.4	0.8	**2.5921**	0.039	1.5	ug/L	395	Standard
	Mn	55	377039.5	0.8	**43.3828**	0.058	0.1	ug/L	902	Standard
	Co	59	1768.4	1.9	**0.1926**	0.003	1.3	ug/L	262	Standard
	Ni	60	3728.1	1.9	**1.5042**	0.035	2.3	ug/L	371	Standard
	Cu	65	882.4	2.6	**0.3379**	0.007	2.2	ug/L	106	Standard
	Zn	66	3312.7	1.9	**2.1819**	0.032	1.4	ug/L	398	Standard
>	Ge	72	539583.6	0.8				ug/L	535147	Standard
	As	75	211.7	19.5	**0.2119**	0.030	14.3	ug/L	-43	Standard
	Se	82	44.3	2.0	**0.2271**	0.007	3.0	ug/L	14	Standard
	Se-1	77	164.3	5.5	**1.2281**	0.103	8.4	ug/L	65	Standard
>	Ga	71	81.7	24.7				mg/L	97	Standard
	Rb	85	4610.7	3.0				ug/L	15	Standard
	Y	89	467092.7	1.0				ug/L	465704	Standard
>	Rh	103	156.7	9.8				ug/L	10	Standard
	Mo	98	4088.4	2.0	**1.3255**	0.024	1.8	ug/L	9	Standard
	Ag	107	151.7	8.6	**0.0141**	0.002	12.4	ug/L	82	Standard
	Cd	111	530.2	3.4	**0.2280**	0.007	3.0	mg/L	7	Standard
	Cd	114	1263.2	4.5	**0.2267**	0.009	4.2	ug/L	21	Standard
>	In	115	617728.7	0.2				ug/L	619035	Standard
	Sn	118	1375.1	33.7	**0.1082**	0.071	65.5	ug/L	508	Standard
	Sb	123	301.9	1.0	**0.0615**	0.001	1.0	ug/L	86	Standard
	Ba	135	43249.0	1.1	**18.9381**	0.206	1.1	ug/L	79	Standard
	Ce	140	308.3	12.2				ug/L	68	Standard
>	Tb	159	955749.7	1.1				ug/L	986982	Standard
	Ho	165	30.0	28.9				ug/L	10	Standard
	Tl	203	109.7	13.8	**0.0182**	0.002	9.5	ug/L	13	Standard
	Tl	205	103.3	34.0	**0.0212**	0.005	21.6	ug/L	10	Standard
	Pb	206	534.7	2.3	**0.0552**	0.002	3.4	ug/L	264	Standard
	Pb	207	441.3	2.8	**0.0517**	0.003	5.1	ug/L	227	Standard
	Pb	208	1853.7	3.0	**0.0542**	0.003	4.9	ug/L	868	Standard
	U	238	762.0	2.3	**0.1107**	0.003	2.5	ug/L	8	Standard
>	Bi	209	530937.1	0.4				ug/L	541014	Standard

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Na	23	5.0	100.0	**27.1983**	27.396	100.7	mg/L	2	Standard
Mg	24	7133.3	3.1	**7.5562**	0.118	1.6	mg/L	53	Standard
K	39	415.0	10.3	**0.6114**	0.064	10.5	mg/L	53	Standard
Ca	43	686.7	4.0	**36.3056**	1.365	3.8	mg/L	28	Standard
Fe	54	1208.6	8.4	**0.6860**	0.076	11.1	mg/L	181	Standard
Fe	57	823.4	2.3	**1.4684**	0.104	7.1	mg/L	257	Standard
> **Sc-1**	45	56552.1	2.6				mg/L	55220	Standard
Cl	35	50053.9	2.1				ug/L	35504	Standard
Kr	83	3.7	15.7				ug/L	2	Standard
Br	81	7205.1	9.6				ug/L	2040	Standard
P	31	26600.0	1.7				ug/L	20435	Standard
S	34	2965.3	2.8				ug/L	2430	Standard
Sr	88	376.7	10.1				ug/L	75	Standard
C	12	183.3	16.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	22.5	25.0				mg/L	9	Standard
Ho-1	165	30.0	28.9				mg/L	10	Standard
Er	166	16.7	34.6				mg/L	23	Standard
I	127	44396.6	1.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.231	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.829	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.789
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.137
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606103002
Sample Date/Time: Thursday, June 30, 2016 16:18:40
Number of Replicates: 3
Autosampler Position: 248
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69760.3	2.4				ug/L	74916	Standard
	Be	9	13.3	86.6	**0.0101**	0.012	117.4	ug/L	10	Standard
	Al	27	740653.6	2.0	**4.5836**	0.173	3.8	ug/L	1822	Standard
	Sc	45	56779.5	1.3				ug/L	55220	Standard
	Ti	47	352.0	6.0	**0.7588**	0.067	8.8	ug/L	34	Standard
	V	51	3517.2	3.2	**0.1726**	0.008	4.9	ug/L	1938	Standard
	Cr	52	13903.4	3.0	**0.4622**	0.042	9.0	ug/L	9522	Standard
	Cr	53	2013.5	2.9	**1.3664**	0.059	4.4	ug/L	395	Standard
	Mn	55	55706.2	1.6	**6.1883**	0.152	2.5	ug/L	902	Standard
	Co	59	1079.7	0.9	**0.1060**	0.002	2.2	ug/L	262	Standard
	Ni	60	1229.0	0.4	**0.3871**	0.010	2.6	ug/L	371	Standard
	Cu	65	533.7	9.3	**0.1760**	0.017	9.9	ug/L	106	Standard
	Zn	66	3869.5	1.0	**2.5467**	0.076	3.0	ug/L	398	Standard
>	**Ge**	72	551015.3	2.1				ug/L	535147	Standard
	As	75	98.2	11.1	**0.1264**	0.007	5.5	ug/L	-43	Standard
	Se	82	54.6	6.8	**0.2946**	0.030	10.2	ug/L	14	Standard
	Se-1	77	78.3	5.2	**0.2634**	0.045	17.3	ug/L	65	Standard
>	**Ga**	71	133.3	13.2				mg/L	97	Standard
	Rb	85	4482.3	4.1				ug/L	15	Standard
	Y	89	487384.7	2.5				ug/L	465704	Standard
>	**Rh**	103	13.3	21.7				ug/L	10	Standard
	Mo	98	79.3	5.3	**0.0369**	0.001	3.8	ug/L	9	Standard
	Ag	107	110.3	7.7	**0.0080**	0.001	13.7	ug/L	82	Standard
	Cd	111	13.9	7.2	**0.0134**	0.000	3.0	mg/L	7	Standard
	Cd	114	54.8	20.1	**0.0180**	0.002	10.1	ug/L	21	Standard
>	**In**	115	642536.0	0.9				ug/L	619035	Standard
	Sn	118	813.4	8.4	**0.0170**	0.011	62.4	ug/L	508	Standard
	Sb	123	143.8	24.4	**0.0306**	0.006	21.1	ug/L	86	Standard
	Ba	135	10242.1	2.0	**4.2969**	0.104	2.4	ug/L	79	Standard
	Ce	140	11245.8	1.1				ug/L	68	Standard
>	**Tb**	159	974036.2	1.2				ug/L	986982	Standard
	Ho	165	155.0	23.3				ug/L	10	Standard
	Tl	203	30.0	5.8	**0.0092**	0.000	2.1	ug/L	13	Standard
	Tl	205	23.3	65.5	**0.0106**	0.002	18.2	ug/L	10	Standard
	Pb	206	1023.7	2.5	**0.1315**	0.002	1.9	ug/L	264	Standard
	Pb	207	847.0	4.7	**0.1218**	0.006	4.7	ug/L	227	Standard
	Pb	208	3461.5	0.8	**0.1259**	0.001	0.4	ug/L	868	Standard
	U	238	63.3	7.9	**0.0160**	0.001	3.8	ug/L	8	Standard
>	**Bi**	209	558238.3	1.1				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	700.0	10.4	**0.7068**	0.068	9.6	mg/L	53	Standard
K	39	126.7	12.7	**0.1329**	0.024	18.3	mg/L	53	Standard
Ca	43	31.7	36.5	**0.0684**	0.631	922.5	mg/L	28	Standard
Fe	54	408.8	4.5	**0.1521**	0.009	6.0	mg/L	181	Standard
Fe	57	358.3	8.9	**0.2610**	0.094	35.8	mg/L	257	Standard
> **Sc-1**	45	56779.5	1.3				mg/L	55220	Standard
Cl	35	48396.5	2.0				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	8715.8	6.7				ug/L	2040	Standard
P	31	25454.7	3.1				ug/L	20435	Standard
S	34	2967.0	5.2				ug/L	2430	Standard
Sr	88	95.0	13.9				ug/L	75	Standard
C	12	143.3	26.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	7	Standard
Dy	164	300.0	13.4				mg/L	9	Standard
Ho-1	165	155.0	23.3				mg/L	10	Standard
Er	166	140.0	25.8				mg/L	23	Standard
I	127	23847.1	3.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.117	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.965	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.796
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.184
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606103005
Sample Date/Time: Thursday, June 30, 2016 16:21:52
Number of Replicates: 3
Autosampler Position: 249
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71014.4	1.4				ug/L	74916	Standard
	Be	9	36.7	55.1	**0.0329**	0.020	60.1	ug/L	10	Standard
	Al	27	717718.3	2.7	**4.3622**	0.171	3.9	ug/L	1822	Standard
	Sc	45	58608.3	4.0				ug/L	55220	Standard
	Ti	47	356.7	10.5	**0.7684**	0.093	12.1	ug/L	34	Standard
	V	51	3250.2	2.0	**0.1443**	0.006	4.2	ug/L	1938	Standard
	Cr	52	13800.9	1.1	**0.4496**	0.006	1.2	ug/L	9522	Standard
	Cr	53	1710.1	0.8	**1.1004**	0.000	0.0	ug/L	395	Standard
	Mn	55	53809.4	0.9	**5.9671**	0.056	0.9	ug/L	902	Standard
	Co	59	1072.7	2.4	**0.1050**	0.004	3.7	ug/L	262	Standard
	Ni	60	1245.1	3.8	**0.3933**	0.017	4.2	ug/L	371	Standard
	Cu	65	488.3	4.9	**0.1561**	0.012	7.7	ug/L	106	Standard
	Zn	66	4184.6	0.6	**2.7785**	0.022	0.8	ug/L	398	Standard
>	**Ge**	72	551518.7	0.8				ug/L	535147	Standard
	As	75	30.2	104.8	**0.0772**	0.023	29.8	ug/L	-43	Standard
	Se	82	28.0	24.6	**0.1034**	0.050	48.7	ug/L	14	Standard
	Se-1	77	77.3	8.3	**0.2515**	0.067	26.5	ug/L	65	Standard
>	**Ga**	71	118.3	27.5				mg/L	97	Standard
	Rb	85	4068.9	5.6				ug/L	15	Standard
	Y	89	482786.2	0.5				ug/L	465704	Standard
>	**Rh**	103	13.3	43.3				ug/L	10	Standard
	Mo	98	68.4	19.7	**0.0333**	0.004	12.0	ug/L	9	Standard
	Ag	107	143.7	25.9	**0.0121**	0.005	37.8	ug/L	82	Standard
	Cd	111	28.2	75.9	**0.0190**	0.008	44.0	mg/L	7	Standard
	Cd	114	64.3	75.6	**0.0195**	0.008	40.6	ug/L	21	Standard
>	**In**	115	647732.5	0.7				ug/L	619035	Standard
	Sn	118	833.4	12.9	**0.0190**	0.016	84.0	ug/L	508	Standard
	Sb	123	159.5	29.5	**0.0332**	0.008	25.1	ug/L	86	Standard
	Ba	135	9910.6	2.3	**4.1231**	0.071	1.7	ug/L	79	Standard
	Ce	140	11327.6	1.9				ug/L	68	Standard
>	**Tb**	159	970710.1	0.2				ug/L	986982	Standard
	Ho	165	156.7	7.4				ug/L	10	Standard
	Tl	203	65.3	101.0	**0.0129**	0.007	54.3	ug/L	13	Standard
	Tl	205	46.7	37.6	**0.0135**	0.002	16.3	ug/L	10	Standard
	Pb	206	1011.0	5.5	**0.1282**	0.010	8.1	ug/L	264	Standard
	Pb	207	823.0	5.9	**0.1162**	0.008	6.8	ug/L	227	Standard
	Pb	208	3448.2	2.5	**0.1240**	0.005	4.1	ug/L	868	Standard
	U	238	82.7	18.8	**0.0184**	0.002	11.2	ug/L	8	Standard
>	**Bi**	209	562677.9	0.7				ug/L	541014	Standard

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Na	23	3.3	173.2	**17.7615**	30.755	173.2	mg/L	2	Standard
Mg	24	670.0	4.2	**0.6549**	0.055	8.5	mg/L	53	Standard
K	39	98.3	10.6	**0.0811**	0.012	14.9	mg/L	53	Standard
Ca	43	48.3	26.0	**0.8897**	0.576	64.7	mg/L	28	Standard
Fe	54	422.0	23.4	**0.1541**	0.074	47.7	mg/L	181	Standard
Fe	57	358.3	7.9	**0.2330**	0.089	38.0	mg/L	257	Standard
> **Sc-1**	45	58608.3	4.0				mg/L	55220	Standard
Cl	35	47519.1	2.1				ug/L	35504	Standard
Kr	83	3.3	17.3				ug/L	2	Standard
Br	81	3033.6	9.1				ug/L	2040	Standard
P	31	25564.9	4.9				ug/L	20435	Standard
S	34	2915.3	4.9				ug/L	2430	Standard
Sr	88	93.3	35.7				ug/L	75	Standard
C	12	126.7	31.9				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	250.9	22.7				mg/L	9	Standard
Ho-1	165	156.7	7.4				mg/L	10	Standard
Er	166	120.0	14.4				mg/L	23	Standard
I	127	18065.8	5.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.791	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.059	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.636
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.004
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 16:25:05
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68409.2	3.0				ug/L	74916	Standard
	Be	9	52770.2	5.1	**54.7618**	1.986	3.6	ug/L	10	Standard
	Al	27	8495126.3	2.5	**53.6326**	1.834	3.4	ug/L	1822	Standard
	Sc	45	55150.2	3.0				ug/L	55220	Standard
	Ti	47	42922.7	1.8	**102.7322**	1.643	1.6	ug/L	34	Standard
	V	51	470082.4	0.9	**50.0153**	0.422	0.8	ug/L	1938	Standard
	Cr	52	473487.4	0.8	**51.0277**	0.278	0.5	ug/L	9522	Standard
	Cr	53	59402.9	1.8	**52.2791**	0.810	1.5	ug/L	395	Standard
	Mn	55	439411.4	1.3	**50.4278**	0.536	1.1	ug/L	902	Standard
	Co	59	415321.2	1.6	**50.4208**	0.645	1.3	ug/L	262	Standard
	Ni	60	115571.1	0.7	**50.8447**	0.188	0.4	ug/L	371	Standard
	Cu	65	113338.0	1.1	**50.7471**	0.414	0.8	ug/L	106	Standard
	Zn	66	66667.7	0.4	**50.3945**	0.324	0.6	ug/L	398	Standard
>	Ge	72	541166.6	0.3				ug/L	535147	Standard
	As	75	67552.5	0.5	**49.9255**	0.120	0.2	ug/L	-43	Standard
	Se	82	6820.0	2.0	**49.6629**	0.906	1.8	ug/L	14	Standard
	Se-1	77	4680.1	1.7	**50.7942**	1.014	2.0	ug/L	65	Standard
>	Ga	71	88.3	11.8				mg/L	97	Standard
	Rb	85	988.4	2.8				ug/L	15	Standard
	Y	89	475342.9	0.3				ug/L	465704	Standard
>	Rh	103	28.3	20.4				ug/L	10	Standard
	Mo	98	308161.4	1.1	**96.6686**	2.040	2.1	ug/L	9	Standard
	Ag	107	378642.8	1.0	**49.0786**	0.942	1.9	ug/L	82	Standard
	Cd	111	122873.2	0.7	**49.8265**	0.844	1.7	mg/L	7	Standard
	Cd	114	299328.2	0.9	**50.4045**	0.935	1.9	ug/L	21	Standard
>	In	115	632664.3	1.1				ug/L	619035	Standard
	Sn	118	332294.9	1.6	**49.8630**	1.097	2.2	ug/L	508	Standard
	Sb	123	268364.2	0.7	**49.5926**	0.839	1.7	ug/L	86	Standard
	Ba	135	114660.2	0.5	**49.0565**	0.431	0.9	ug/L	79	Standard
	Ce	140	131.7	35.9				ug/L	68	Standard
>	Tb	159	965300.2	0.9				ug/L	986982	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	465432.8	0.6	**50.6040**	0.185	0.4	ug/L	13	Standard
	Tl	205	408743.6	0.9	**52.0229**	0.823	1.6	ug/L	10	Standard
	Pb	206	293608.2	0.5	**49.7024**	0.334	0.7	ug/L	264	Standard
	Pb	207	265313.8	0.4	**49.6947**	0.197	0.4	ug/L	227	Standard
	Pb	208	1077488.9	0.3	**52.3406**	0.343	0.7	ug/L	868	Standard
	U	238	391420.8	0.1	**51.4409**	0.405	0.8	ug/L	8	Standard
>	Bi	209	545041.9	0.8				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4614.0	2.3	**5.0053**	0.264	5.3	mg/L	53	Standard
K	39	2398.5	2.1	**4.0028**	0.184	4.6	mg/L	53	Standard
Ca	43	113.3	12.7	**4.7722**	1.026	21.5	mg/L	28	Standard
Fe	54	7252.1	4.5	**4.8280**	0.125	2.6	mg/L	181	Standard
Fe	57	2030.1	4.0	**4.7230**	0.221	4.7	mg/L	257	Standard
Sc-1	45	55150.2	3.0				mg/L	55220	Standard
Cl	35	45835.2	2.1				ug/L	35504	Standard
Kr	83	3.0	57.7				ug/L	2	Standard
Br	81	1923.5	9.2				ug/L	2040	Standard
P	31	25456.4	2.5				ug/L	20435	Standard
S	34	3473.7	4.0				ug/L	2430	Standard
Sr	88	76.7	13.6				ug/L	75	Standard
C	12	90.0	0.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	9.0	113.3				mg/L	9	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	23	Standard
I	127	5842.8	18.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	109.524		
Al	27	107.265		
Sc	45			
Ti	47	102.732		
V	51	100.031		
Cr	52	102.055		
Cr	53			
Mn	55	100.856		
Co	59	100.842		
Ni	60	101.689		
Cu	65	101.494		
Zn	66	100.789		
Ge	72		101.125	
As	75	99.851		
Se	82	99.326		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	96.669		
Ag	107	98.157		
Cd	111	99.653		
Cd	114			
In	115			102.202
Sn	118	99.726		
Sb	123	99.185		
Ba	135	98.113		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.208		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.681		
U	238	102.882		
Bi	209			100.744
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 16:28:16
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67131.8	2.8				ug/L	74916	Standard
	Be	9	28.3	40.8	**0.0262**	0.012	45.2	ug/L	10	Standard
	Al	27	2920.3	34.7	**0.0163**	0.006	36.2	ug/L	1822	Standard
	Sc	45	56267.7	3.6				ug/L	55220	Standard
	Ti	47	38.0	2.6	**0.0210**	0.004	16.8	ug/L	34	Standard
	V	51	1661.2	5.6	**-0.0188**	0.009	47.1	ug/L	1938	Standard
	Cr	52	8418.7	1.4	**-0.1130**	0.019	16.9	ug/L	9522	Standard
	Cr	53	883.4	4.8	**0.3966**	0.043	10.8	ug/L	395	Standard
	Mn	55	915.7	3.3	**0.0002**	0.003	1118.4	ug/L	902	Standard
	Co	59	280.3	8.3	**0.0113**	0.003	23.7	ug/L	262	Standard
	Ni	60	270.3	5.6	**-0.0262**	0.007	28.6	ug/L	371	Standard
	Cu	65	136.3	8.6	**0.0024**	0.006	231.2	ug/L	106	Standard
	Zn	66	465.7	3.7	**0.0080**	0.015	185.4	ug/L	398	Standard
>	**Ge**	72	540817.2	1.3				ug/L	535147	Standard
	As	75	-34.0	85.0	**0.0299**	0.022	73.2	ug/L	-43	Standard
	Se	82	21.5	42.4	**0.0591**	0.065	109.7	ug/L	14	Standard
	Se-1	77	70.3	7.2	**0.1909**	0.046	24.3	ug/L	65	Standard
>	**Ga**	71	63.3	19.9				mg/L	97	Standard
	Rb	85	45.0	29.4				ug/L	15	Standard
	Y	89	468523.8	0.5				ug/L	465704	Standard
>	**Rh**	103	15.0	33.3				ug/L	10	Standard
	Mo	98	291.3	18.3	**0.1025**	0.015	14.9	ug/L	9	Standard
	Ag	107	139.7	15.6	**0.0118**	0.003	21.7	ug/L	82	Standard
	Cd	111	16.4	55.4	**0.0145**	0.004	24.7	mg/L	7	Standard
	Cd	114	48.7	43.6	**0.0170**	0.003	20.4	ug/L	21	Standard
>	**In**	115	639875.7	1.4				ug/L	619035	Standard
	Sn	118	1166.7	8.1	**0.0701**	0.016	22.8	ug/L	508	Standard
	Sb	123	660.1	27.5	**0.1253**	0.035	27.6	ug/L	86	Standard
	Ba	135	57.3	38.1	**0.0045**	0.009	195.0	ug/L	79	Standard
	Ce	140	36.7	20.8				ug/L	68	Standard
>	**Tb**	159	969041.7	1.0				ug/L	986982	Standard
	Ho	165	13.3	43.3				ug/L	10	Standard
	Tl	203	78.3	14.8	**0.0144**	0.001	8.4	ug/L	13	Standard
	Tl	205	63.3	52.6	**0.0156**	0.004	26.4	ug/L	10	Standard
	Pb	206	295.0	18.9	**0.0113**	0.009	80.3	ug/L	264	Standard
	Pb	207	276.3	20.0	**0.0177**	0.010	56.3	ug/L	227	Standard
	Pb	208	1191.7	6.8	**0.0186**	0.004	19.5	ug/L	868	Standard
	U	238	60.3	49.7	**0.0157**	0.004	24.5	ug/L	8	Standard
>	**Bi**	209	554738.2	0.5				ug/L	541014	Standard

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Na	23	1.7	173.2	**8.8353**	15.295	173.1	mg/L	2	Standard
Mg	24	35.0	42.9	**0.0026**	0.015	574.6	mg/L	53	Standard
K	39	45.0	29.4	**-0.0007**	0.024	3568.2	mg/L	53	Standard
Ca	43	20.0	25.0	**-0.5678**	0.244	42.9	mg/L	28	Standard
Fe	54	167.8	9.1	**-0.0064**	0.012	182.5	mg/L	181	Standard
Fe	57	263.3	17.1	**0.0197**	0.094	478.7	mg/L	257	Standard
Sc-1	45	56267.7	3.6				mg/L	55220	Standard
Cl	35	46157.5	0.4				ug/L	35504	Standard
Kr	83	3.3	34.6				ug/L	2	Standard
Br	81	2056.8	3.2				ug/L	2040	Standard
P	31	24833.7	3.8				ug/L	20435	Standard
S	34	3113.7	3.7				ug/L	2430	Standard
Sr	88	50.0	26.5				ug/L	75	Standard
C	12	90.0	11.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	168.7	37.2				mg/L	9	Standard
Ho-1	165	13.3	43.3				mg/L	10	Standard
Er	166	26.7	43.3				mg/L	23	Standard
I	127	4048.9	10.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.060	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.367
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.537
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606103008
Sample Date/Time: Thursday, June 30, 2016 16:31:29
Number of Replicates: 3
Autosampler Position: 250
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67414.7	2.6				ug/L	74916	Standard
	Be	9	23.3	24.7	**0.0211**	0.007	31.0	ug/L	10	Standard
	Al	27	697703.1	1.5	**4.4665**	0.053	1.2	ug/L	1822	Standard
	Sc	45	56883.3	3.1				ug/L	55220	Standard
	Ti	47	374.3	11.3	**0.8209**	0.099	12.1	ug/L	34	Standard
	V	51	3031.5	6.1	**0.1256**	0.021	17.0	ug/L	1938	Standard
	Cr	52	13310.2	0.8	**0.4153**	0.020	4.7	ug/L	9522	Standard
	Cr	53	1890.1	4.4	**1.2785**	0.079	6.2	ug/L	395	Standard
	Mn	55	49832.8	1.5	**5.5910**	0.086	1.5	ug/L	902	Standard
	Co	59	881.4	5.0	**0.0836**	0.005	5.8	ug/L	262	Standard
	Ni	60	1075.7	3.9	**0.3261**	0.016	4.9	ug/L	371	Standard
	Cu	65	445.3	2.7	**0.1397**	0.005	3.6	ug/L	106	Standard
	Zn	66	3558.4	0.9	**2.3451**	0.015	0.6	ug/L	398	Standard
>	**Ge**	72	544476.9	0.6				ug/L	535147	Standard
	As	75	37.1	82.1	**0.0823**	0.022	27.1	ug/L	-43	Standard
	Se	82	25.7	9.9	**0.0891**	0.018	19.8	ug/L	14	Standard
	Se-1	77	81.7	9.9	**0.3096**	0.087	28.2	ug/L	65	Standard
>	**Ga**	71	90.0	22.2				mg/L	97	Standard
	Rb	85	3642.1	3.5				ug/L	15	Standard
	Y	89	476384.2	2.4				ug/L	465704	Standard
>	**Rh**	103	21.7	74.2				ug/L	10	Standard
	Mo	98	124.4	15.8	**0.0511**	0.006	12.0	ug/L	9	Standard
	Ag	107	111.3	7.2	**0.0082**	0.001	12.5	ug/L	82	Standard
	Cd	111	22.8	8.9	**0.0171**	0.001	4.8	mg/L	7	Standard
	Cd	114	58.8	19.4	**0.0187**	0.002	10.1	ug/L	21	Standard
>	**In**	115	637810.6	0.1				ug/L	619035	Standard
	Sn	118	851.7	7.3	**0.0236**	0.009	39.2	ug/L	508	Standard
	Sb	123	241.7	16.4	**0.0487**	0.007	15.0	ug/L	86	Standard
	Ba	135	9792.2	0.8	**4.1375**	0.040	1.0	ug/L	79	Standard
	Ce	140	7248.4	1.1				ug/L	68	Standard
>	**Tb**	159	972412.9	0.5				ug/L	986982	Standard
	Ho	165	118.3	14.8				ug/L	10	Standard
	Tl	203	47.0	27.2	**0.0111**	0.001	12.5	ug/L	13	Standard
	Tl	205	40.0	12.5	**0.0127**	0.001	4.9	ug/L	10	Standard
	Pb	206	772.0	3.0	**0.0916**	0.004	4.5	ug/L	264	Standard
	Pb	207	671.7	2.4	**0.0914**	0.003	3.0	ug/L	227	Standard
	Pb	208	2701.1	2.6	**0.0916**	0.004	4.0	ug/L	868	Standard
	U	238	61.7	16.6	**0.0159**	0.001	8.3	ug/L	8	Standard
>	**Bi**	209	550857.6	0.2				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	663.3	5.7	**0.6669**	0.021	3.2	mg/L	53	Standard
K	39	96.7	6.0	**0.0832**	0.007	9.0	mg/L	53	Standard
Ca	43	33.3	8.7	**0.1622**	0.212	130.8	mg/L	28	Standard
Fe	54	363.8	6.2	**0.1221**	0.018	14.7	mg/L	181	Standard
Fe	57	288.3	10.5	**0.0801**	0.094	117.2	mg/L	257	Standard
> **Sc-1**	45	56883.3	3.1				mg/L	55220	Standard
Cl	35	46234.4	1.6				ug/L	35504	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	3327.0	3.1				ug/L	2040	Standard
P	31	24850.4	2.2				ug/L	20435	Standard
S	34	2960.3	3.4				ug/L	2430	Standard
Sr	88	66.7	24.1				ug/L	75	Standard
C	12	120.0	44.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	124.3	19.8				mg/L	9	Standard
Ho-1	165	118.3	14.8				mg/L	10	Standard
Er	166	120.0	33.3				mg/L	23	Standard
I	127	13813.0	2.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.987	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.743	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606103008
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.033
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.819
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606103013 WG573728-02
Sample Date/Time: Thursday, June 30, 2016 16:34:40
Number of Replicates: 3
Autosampler Position: 251
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67988.9	0.4				ug/L	74916	Standard
	Be	9	13.3	94.4	**0.0104**	0.013	127.2	ug/L	10	Standard
	Al	27	820817.4	1.2	**5.2095**	0.042	0.8	ug/L	1822	Standard
	Sc	45	58102.9	0.4				ug/L	55220	Standard
	Ti	47	348.7	6.4	**0.7490**	0.042	5.6	ug/L	34	Standard
	V	51	3037.8	4.0	**0.1221**	0.014	11.5	ug/L	1938	Standard
	Cr	52	13485.0	2.0	**0.4159**	0.029	6.9	ug/L	9522	Standard
	Cr	53	1880.1	4.5	**1.2495**	0.097	7.7	ug/L	395	Standard
	Mn	55	48555.0	1.2	**5.3761**	0.139	2.6	ug/L	902	Standard
	Co	59	705.7	1.6	**0.0613**	0.002	3.3	ug/L	262	Standard
	Ni	60	823.7	3.3	**0.2110**	0.010	4.6	ug/L	371	Standard
	Cu	65	477.7	3.8	**0.1514**	0.008	5.4	ug/L	106	Standard
	Zn	66	2294.5	2.6	**1.3677**	0.067	4.9	ug/L	398	Standard
>	**Ge**	72	551432.0	1.3				ug/L	535147	Standard
	As	75	61.7	53.3	**0.1002**	0.025	24.5	ug/L	-43	Standard
	Se	82	25.1	14.7	**0.0831**	0.029	34.7	ug/L	14	Standard
	Se-1	77	81.3	5.1	**0.2948**	0.041	13.8	ug/L	65	Standard
>	**Ga**	71	106.7	23.1				mg/L	97	Standard
	Rb	85	3122.0	4.7				ug/L	15	Standard
	Y	89	476977.3	1.4				ug/L	465704	Standard
>	**Rh**	103	23.3	53.9				ug/L	10	Standard
	Mo	98	80.0	20.0	**0.0372**	0.005	13.7	ug/L	9	Standard
	Ag	107	90.0	10.9	**0.0055**	0.001	24.8	ug/L	82	Standard
	Cd	111	8.2	7.2	**0.0112**	0.000	1.8	mg/L	7	Standard
	Cd	114	12.6	96.2	**0.0110**	0.002	18.1	ug/L	21	Standard
>	**In**	115	639996.7	2.1				ug/L	619035	Standard
	Sn	118	836.7	12.0	**0.0208**	0.013	62.4	ug/L	508	Standard
	Sb	123	169.8	31.7	**0.0353**	0.009	26.2	ug/L	86	Standard
	Ba	135	10432.3	1.4	**4.3955**	0.116	2.6	ug/L	79	Standard
	Ce	140	5774.4	3.1				ug/L	68	Standard
>	**Tb**	159	976928.2	1.0				ug/L	986982	Standard
	Ho	165	96.7	23.3				ug/L	10	Standard
	Tl	203	29.7	12.8	**0.0092**	0.000	4.1	ug/L	13	Standard
	Tl	205	30.0	44.1	**0.0115**	0.002	14.7	ug/L	10	Standard
	Pb	206	595.0	6.4	**0.0616**	0.006	9.8	ug/L	264	Standard
	Pb	207	524.7	2.4	**0.0638**	0.001	2.3	ug/L	227	Standard
	Pb	208	2121.1	2.9	**0.0633**	0.002	3.3	ug/L	868	Standard
	U	238	43.3	13.9	**0.0135**	0.001	5.9	ug/L	8	Standard
>	**Bi**	209	552576.0	0.9				ug/L	541014	Standard

Sample ID: L1606103013 WG573728-02
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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	903.4	7.9	**0.9013**	0.077	8.5	mg/L	53	Standard
K	39	136.7	7.6	**0.1445**	0.018	12.2	mg/L	53	Standard
Ca	43	45.0	40.1	**0.7451**	0.962	129.2	mg/L	28	Standard
Fe	54	370.4	5.4	**0.1211**	0.012	10.2	mg/L	181	Standard
Fe	57	331.7	15.5	**0.1724**	0.132	76.7	mg/L	257	Standard
Sc-1	45	58102.9	0.4				mg/L	55220	Standard
Cl	35	45958.3	0.9				ug/L	35504	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	3450.4	5.0				ug/L	2040	Standard
P	31	26236.1	5.3				ug/L	20435	Standard
S	34	2760.3	4.3				ug/L	2430	Standard
Sr	88	101.7	11.4				ug/L	75	Standard
C	12	123.3	30.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	220.1	21.3				mg/L	9	Standard
Ho-1	165	96.7	23.3				mg/L	10	Standard
Er	166	66.7	17.3				mg/L	23	Standard
I	127	17006.2	5.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		90.753	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.043	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.386
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.137
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606103014S WG573728-07
Sample Date/Time: Thursday, June 30, 2016 16:37:52
Number of Replicates: 3
Autosampler Position: 252
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68017.4	2.0				ug/L	74916	Standard
	Be	9	52571.1	2.8	**54.8746**	0.821	1.5	ug/L	10	Standard
	Al	27	884621.2	0.8	**5.6134**	0.073	1.3	ug/L	1822	Standard
	Sc	45	57954.0	0.7				ug/L	55220	Standard
	Ti	47	382.3	7.1	**0.8317**	0.058	7.0	ug/L	34	Standard
	V	51	465045.2	1.2	**48.7359**	0.671	1.4	ug/L	1938	Standard
	Cr	52	472423.2	0.7	**50.1344**	0.252	0.5	ug/L	9522	Standard
	Cr	53	57743.2	0.8	**50.0432**	0.144	0.3	ug/L	395	Standard
	Mn	55	488346.3	1.0	**55.2189**	0.761	1.4	ug/L	902	Standard
	Co	59	406334.6	1.8	**48.5919**	0.790	1.6	ug/L	262	Standard
	Ni	60	115552.7	1.0	**50.0738**	0.232	0.5	ug/L	371	Standard
	Cu	65	114149.7	0.6	**50.3465**	0.021	0.0	ug/L	106	Standard
	Zn	66	68167.7	1.0	**50.7601**	0.485	1.0	ug/L	398	Standard
>	Ge	72	549382.7	0.6				ug/L	535147	Standard
	As	75	67432.6	1.3	**49.0917**	0.378	0.8	ug/L	-43	Standard
	Se	82	6675.7	1.0	**47.8820**	0.199	0.4	ug/L	14	Standard
	Se-1	77	4509.0	1.5	**48.1752**	0.774	1.6	ug/L	65	Standard
>	Ga	71	138.3	18.2				mg/L	97	Standard
	Rb	85	3512.1	1.5				ug/L	15	Standard
	Y	89	477860.5	2.0				ug/L	465704	Standard
>	Rh	103	38.3	41.9				ug/L	10	Standard
	Mo	98	89.1	17.4	**0.0398**	0.005	11.5	ug/L	9	Standard
	Ag	107	377521.2	0.7	**48.0780**	0.610	1.3	ug/L	82	Standard
	Cd	111	120236.4	0.9	**47.9064**	0.701	1.5	mg/L	7	Standard
	Cd	114	288334.3	2.5	**47.7095**	1.480	3.1	ug/L	21	Standard
>	In	115	643866.4	0.7				ug/L	619035	Standard
	Sn	118	865.0	13.7	**0.0243**	0.017	68.5	ug/L	508	Standard
	Sb	123	254042.3	1.7	**46.1289**	1.092	2.4	ug/L	86	Standard
	Ba	135	122514.7	0.7	**51.5064**	0.720	1.4	ug/L	79	Standard
	Ce	140	6418.0	1.5				ug/L	68	Standard
>	Tb	159	971839.6	1.4				ug/L	986982	Standard
	Ho	165	113.3	29.4				ug/L	10	Standard
	Tl	203	461326.3	0.5	**49.0175**	0.465	0.9	ug/L	13	Standard
	Tl	205	409190.2	0.5	**50.8922**	0.391	0.8	ug/L	10	Standard
	Pb	206	298682.3	0.5	**49.4115**	0.539	1.1	ug/L	264	Standard
	Pb	207	258990.8	0.6	**47.4056**	0.459	1.0	ug/L	227	Standard
	Pb	208	1072240.4	0.4	**50.8994**	0.435	0.9	ug/L	868	Standard
	U	238	379514.5	1.0	**48.7426**	0.751	1.5	ug/L	8	Standard
>	Bi	209	557731.9	0.6				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	893.4	2.6	**0.8930**	0.020	2.2	mg/L	53	Standard
K	39	115.0	34.8	**0.1103**	0.066	59.8	mg/L	53	Standard
Ca	43	55.0		**1.2933**	0.021	1.6	mg/L	28	Standard
Fe	54	390.4	4.9	**0.1347**	0.011	8.2	mg/L	181	Standard
Fe	57	333.3	10.0	**0.1788**	0.089	49.6	mg/L	257	Standard
> **Sc-1**	45	57954.0	0.7				mg/L	55220	Standard
Cl	35	44711.9	2.2				ug/L	35504	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	9322.9	2.7				ug/L	2040	Standard
P	31	26069.1	1.5				ug/L	20435	Standard
S	34	2676.9	0.7				ug/L	2430	Standard
Sr	88	95.0	19.0				ug/L	75	Standard
C	12	133.3	21.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	242.2	12.0				mg/L	9	Standard
Ho-1	165	113.3	29.4				mg/L	10	Standard
Er	166	93.3	34.4				mg/L	23	Standard
I	127	30041.6	8.5				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		90.791	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		102.660	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606103014S WG573728-07
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.011
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.090
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606103015SD WG573728-08
Sample Date/Time: Thursday, June 30, 2016 16:41:03
Number of Replicates: 3
Autosampler Position: 253
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67875.1	2.1				ug/L	74916	Standard
	Be	9	54554.7	1.2	**57.0744**	0.504	0.9	ug/L	10	Standard
	Al	27	838737.2	2.0	**5.3339**	0.157	2.9	ug/L	1822	Standard
	Sc	45	58265.2	2.7				ug/L	55220	Standard
	Ti	47	412.3	3.3	**0.9165**	0.047	5.2	ug/L	34	Standard
	V	51	473565.2	1.0	**50.3192**	0.324	0.6	ug/L	1938	Standard
	Cr	52	480110.1	0.9	**51.6869**	0.596	1.2	ug/L	9522	Standard
	Cr	53	59545.1	0.6	**52.3429**	1.066	2.0	ug/L	395	Standard
	Mn	55	496384.2	1.0	**56.9038**	0.381	0.7	ug/L	902	Standard
	Co	59	417941.4	1.2	**50.6714**	0.393	0.8	ug/L	262	Standard
	Ni	60	118225.1	0.4	**51.9492**	0.656	1.3	ug/L	371	Standard
	Cu	65	116537.8	0.5	**52.1164**	0.812	1.6	ug/L	106	Standard
	Zn	66	69765.3	0.6	**52.6823**	0.565	1.1	ug/L	398	Standard
>	**Ge**	72	541933.8	1.6				ug/L	535147	Standard
	As	75	68942.8	1.1	**50.8879**	0.915	1.8	ug/L	-43	Standard
	Se	82	6922.4	1.2	**50.3465**	0.857	1.7	ug/L	14	Standard
	Se-1	77	4676.4	2.8	**50.6984**	2.081	4.1	ug/L	65	Standard
>	**Ga**	71	123.3	11.7				mg/L	97	Standard
	Rb	85	3528.7	4.8				ug/L	15	Standard
	Y	89	475192.3	2.2				ug/L	465704	Standard
>	**Rh**	103	30.0	33.3				ug/L	10	Standard
	Mo	98	122.2	2.5	**0.0500**	0.001	2.7	ug/L	9	Standard
	Ag	107	382714.4	1.3	**48.7537**	1.201	2.5	ug/L	82	Standard
	Cd	111	123349.9	0.8	**49.1552**	0.647	1.3	mg/L	7	Standard
	Cd	114	297106.9	0.9	**49.1645**	0.530	1.1	ug/L	21	Standard
>	**In**	115	643770.2	1.2				ug/L	619035	Standard
	Sn	118	871.7	14.1	**0.0254**	0.018	71.1	ug/L	508	Standard
	Sb	123	262546.4	2.1	**47.6862**	1.532	3.2	ug/L	86	Standard
	Ba	135	127056.2	0.5	**53.4280**	0.875	1.6	ug/L	79	Standard
	Ce	140	6346.3	1.8				ug/L	68	Standard
>	**Tb**	159	973181.1	1.9				ug/L	986982	Standard
	Ho	165	133.3	20.7				ug/L	10	Standard
	Tl	203	470669.9	1.0	**50.3691**	1.346	2.7	ug/L	13	Standard
	Tl	205	417244.6	1.5	**52.2657**	1.466	2.8	ug/L	10	Standard
	Pb	206	303673.3	0.1	**50.5928**	0.859	1.7	ug/L	264	Standard
	Pb	207	264554.7	0.6	**48.7688**	0.992	2.0	ug/L	227	Standard
	Pb	208	1097482.5	0.3	**52.4671**	0.888	1.7	ug/L	868	Standard
	U	238	389241.3	1.7	**50.3480**	1.440	2.9	ug/L	8	Standard
>	**Bi**	209	553900.9	1.6				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	865.0	7.4	**0.8583**	0.047	5.4	mg/L	53	Standard
K	39	138.3	19.9	**0.1469**	0.047	31.9	mg/L	53	Standard
Ca	43	51.7	14.8	**1.1028**	0.453	41.0	mg/L	28	Standard
Fe	54	385.4	8.6	**0.1300**	0.019	14.7	mg/L	181	Standard
Fe	57	286.7	1.0	**0.0570**	0.013	21.9	mg/L	257	Standard
> **Sc-1**	45	58265.2	2.7				mg/L	55220	Standard
Cl	35	44248.5	1.6				ug/L	35504	Standard
Kr	83	2.0	132.3				ug/L	2	Standard
Br	81	16452.3	2.0				ug/L	2040	Standard
P	31	25105.8	2.2				ug/L	20435	Standard
S	34	2581.9	7.2				ug/L	2430	Standard
Sr	88	71.7	28.2				ug/L	75	Standard
C	12	160.0	12.5				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	221.6	21.3				mg/L	9	Standard
Ho-1	165	133.3	20.7				mg/L	10	Standard
Er	166	106.7	14.3				mg/L	23	Standard
I	127	27847.3	6.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.601	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.268	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606103015SD WG573728-08
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.996
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.382
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606103020
Sample Date/Time: Thursday, June 30, 2016 16:44:15
Number of Replicates: 3
Autosampler Position: 254
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67717.7	1.6				ug/L	74916	Standard
	Be	9	31.7	55.5	**0.0296**	0.019	62.9	ug/L	10	Standard
	Al	27	18491.3	2.9	**0.1156**	0.005	4.0	ug/L	1822	Standard
	Sc	45	57242.9	0.8				ug/L	55220	Standard
	Ti	47	66.0	12.9	**0.0864**	0.020	23.2	ug/L	34	Standard
	V	51	2032.2	8.1	**0.0187**	0.019	103.0	ug/L	1938	Standard
	Cr	52	12676.3	1.6	**0.3406**	0.022	6.4	ug/L	9522	Standard
	Cr	53	1410.1	13.3	**0.8516**	0.178	20.9	ug/L	395	Standard
	Mn	55	2390.5	1.9	**0.1670**	0.004	2.5	ug/L	902	Standard
	Co	59	400.0	5.6	**0.0253**	0.002	9.8	ug/L	262	Standard
	Ni	60	453.3	1.7	**0.0524**	0.002	2.9	ug/L	371	Standard
	Cu	65	1268.4	3.5	**0.5041**	0.018	3.5	ug/L	106	Standard
	Zn	66	1962.1	0.6	**1.1318**	0.007	0.6	ug/L	398	Standard
>	**Ge**	72	546628.1	1.1				ug/L	535147	Standard
	As	75	-22.1	178.4	**0.0388**	0.029	75.1	ug/L	-43	Standard
	Se	82	22.8	7.2	**0.0680**	0.010	15.1	ug/L	14	Standard
	Se-1	77	71.3	6.3	**0.1942**	0.057	29.2	ug/L	65	Standard
>	**Ga**	71	41.7	36.7				mg/L	97	Standard
	Rb	85	108.3	25.4				ug/L	15	Standard
	Y	89	478150.4	1.6				ug/L	465704	Standard
>	**Rh**	103	8.3	34.6				ug/L	10	Standard
	Mo	98	29.5	24.1	**0.0215**	0.002	9.9	ug/L	9	Standard
	Ag	107	170.0	12.2	**0.0157**	0.003	17.2	ug/L	82	Standard
	Cd	111	31.9	35.5	**0.0207**	0.005	21.9	mg/L	7	Standard
	Cd	114	83.7	51.2	**0.0228**	0.007	30.7	ug/L	21	Standard
>	**In**	115	641678.7	0.9				ug/L	619035	Standard
	Sn	118	920.0	3.8	**0.0329**	0.004	12.7	ug/L	508	Standard
	Sb	123	3097.0	31.5	**0.5680**	0.176	30.9	ug/L	86	Standard
	Ba	135	1108.0	1.5	**0.4480**	0.008	1.8	ug/L	79	Standard
	Ce	140	60.0	25.0				ug/L	68	Standard
>	**Tb**	159	980127.5	0.7				ug/L	986982	Standard
	Ho	165	5.0	0.0				ug/L	10	Standard
	Tl	203	200.0	29.5	**0.0275**	0.006	23.1	ug/L	13	Standard
	Tl	205	186.7	29.5	**0.0312**	0.007	22.3	ug/L	10	Standard
	Pb	206	522.0	6.9	**0.0496**	0.006	12.3	ug/L	264	Standard
	Pb	207	476.3	8.8	**0.0551**	0.008	14.1	ug/L	227	Standard
	Pb	208	1956.0	3.0	**0.0557**	0.003	5.3	ug/L	868	Standard
	U	238	100.3	29.1	**0.0209**	0.004	18.2	ug/L	8	Standard
>	**Bi**	209	551371.4	0.1				ug/L	541014	Standard

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Na	23	3.3	86.6	**18.0048**	15.588	86.6	mg/L	2	Standard
Mg	24	676.7	6.7	**0.6767**	0.044	6.4	mg/L	53	Standard
K	39	40.0	33.1	**-0.0106**	0.021	201.8	mg/L	53	Standard
Ca	43	20.0	43.3	**-0.5833**	0.468	80.3	mg/L	28	Standard
Fe	54	171.4	3.1	**-0.0061**	0.003	50.1	mg/L	181	Standard
Fe	57	270.0	8.1	**0.0269**	0.052	193.9	mg/L	257	Standard
Sc-1	45	57242.9	0.8				mg/L	55220	Standard
Cl	35	44467.2	1.4				ug/L	35504	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	2603.6	5.0				ug/L	2040	Standard
P	31	23429.8	1.3				ug/L	20435	Standard
S	34	2785.3	4.1				ug/L	2430	Standard
Sr	88	71.7	8.1				ug/L	75	Standard
C	12	156.7	25.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	19.8	50.4				mg/L	9	Standard
Ho-1	165	5.0	0.0				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	23	Standard
I	127	2625.2	29.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		90.391	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.145	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.658
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.914
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606103023
Sample Date/Time: Thursday, June 30, 2016 17:02:07
Number of Replicates: 3
Autosampler Position: 260
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63782.3	1.2				ug/L	74916	Standard
	Be	9	10.0	50.0	**0.0075**	0.006	73.8	ug/L	10	Standard
	Al	27	21553.7	3.8	**0.1436**	0.007	4.9	ug/L	1822	Standard
	Sc	45	53141.4	2.4				ug/L	55220	Standard
	Ti	47	62.3	15.2	**0.0841**	0.024	28.6	ug/L	34	Standard
	V	51	1922.2	10.9	**0.0157**	0.023	148.6	ug/L	1938	Standard
	Cr	52	11950.0	1.2	**0.3174**	0.013	4.0	ug/L	9522	Standard
	Cr	53	1446.7	3.8	**0.9371**	0.045	4.8	ug/L	395	Standard
	Mn	55	1521.4	1.0	**0.0755**	0.003	3.6	ug/L	902	Standard
	Co	59	290.7	3.0	**0.0136**	0.001	9.6	ug/L	262	Standard
	Ni	60	439.0	5.6	**0.0544**	0.012	21.6	ug/L	371	Standard
	Cu	65	1254.4	3.8	**0.5219**	0.022	4.3	ug/L	106	Standard
	Zn	66	2074.8	3.1	**1.2840**	0.054	4.2	ug/L	398	Standard
>	**Ge**	72	524092.0	0.7				ug/L	535147	Standard
	As	75	297.5	25.4	**0.2818**	0.056	19.8	ug/L	-43	Standard
	Se	82	160.0	13.1	**1.1075**	0.150	13.6	ug/L	14	Standard
	Se-1	77	81.3	3.8	**0.3406**	0.037	10.7	ug/L	65	Standard
>	**Ga**	71	43.3	6.7				mg/L	97	Standard
	Rb	85	115.0	19.9				ug/L	15	Standard
	Y	89	459127.5	0.2				ug/L	465704	Standard
>	**Rh**	103	13.3	43.3				ug/L	10	Standard
	Mo	98	28.3	20.3	**0.0216**	0.002	8.1	ug/L	9	Standard
	Ag	107	113.3	10.8	**0.0092**	0.001	15.9	ug/L	82	Standard
	Cd	111	10.6	35.6	**0.0124**	0.002	12.8	mg/L	7	Standard
	Cd	114	7.7	60.4	**0.0103**	0.001	8.1	ug/L	21	Standard
>	**In**	115	609200.4	1.8				ug/L	619035	Standard
	Sn	118	1141.7	8.1	**0.0747**	0.012	15.6	ug/L	508	Standard
	Sb	123	1005.9	32.6	**0.1969**	0.061	30.9	ug/L	86	Standard
	Ba	135	1059.0	1.3	**0.4512**	0.012	2.8	ug/L	79	Standard
	Ce	140	61.7	20.4				ug/L	68	Standard
>	**Tb**	159	932555.9	1.8				ug/L	986982	Standard
	Ho	165	13.3	43.3				ug/L	10	Standard
	Tl	203	35.7	18.2	**0.0100**	0.001	6.7	ug/L	13	Standard
	Tl	205	33.3	37.7	**0.0121**	0.002	14.2	ug/L	10	Standard
	Pb	206	284.0	7.9	**0.0117**	0.003	27.8	ug/L	264	Standard
	Pb	207	253.0	6.7	**0.0155**	0.003	16.6	ug/L	227	Standard
	Pb	208	1027.7	2.8	**0.0130**	0.001	5.3	ug/L	868	Standard
	U	238	10.3	22.3	**0.0093**	0.000	3.2	ug/L	8	Standard
>	**Bi**	209	529997.9	1.5				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.5487**	16.530	173.1	mg/L	2	Standard
Mg	24	645.0	4.7	**0.6963**	0.042	6.1	mg/L	53	Standard
K	39	45.0	22.2	**0.0036**	0.019	534.5	mg/L	53	Standard
Ca	43	33.3	31.2	**0.2833**	0.596	210.3	mg/L	28	Standard
Fe	54	148.6	19.1	**-0.0131**	0.023	172.7	mg/L	181	Standard
Fe	57	245.0	7.1	**0.0124**	0.064	512.5	mg/L	257	Standard
Sc-1	45	53141.4	2.4				mg/L	55220	Standard
Cl	35	44686.5	0.9				ug/L	35504	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	29882.8	4.2				ug/L	2040	Standard
P	31	23481.5	1.6				ug/L	20435	Standard
S	34	2808.6	5.2				ug/L	2430	Standard
Sr	88	83.3	6.9				ug/L	75	Standard
C	12	106.7	39.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	26.2	45.7				mg/L	9	Standard
Ho-1	165	13.3	43.3				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	9686.4	4.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		85.138	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.934	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.411
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.964
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 17:05:19
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63849.3	3.2				ug/L	74916	Standard
	Be	9	49356.9	1.6	**54.9095**	1.251	2.3	ug/L	10	Standard
	Al	27	8088490.1	1.6	**54.7076**	1.005	1.8	ug/L	1822	Standard
	Sc	45	53355.5	2.2				ug/L	55220	Standard
	Ti	47	41943.3	0.2	**100.6143**	0.393	0.4	ug/L	34	Standard
	V	51	462586.4	1.2	**49.3276**	0.830	1.7	ug/L	1938	Standard
	Cr	52	460362.3	0.6	**49.6985**	0.340	0.7	ug/L	9522	Standard
	Cr	53	57448.8	3.1	**50.6666**	1.791	3.5	ug/L	395	Standard
	Mn	55	437257.5	0.7	**50.2932**	0.228	0.5	ug/L	902	Standard
	Co	59	407514.6	0.3	**49.5851**	0.254	0.5	ug/L	262	Standard
	Ni	60	112856.8	0.5	**49.7588**	0.040	0.1	ug/L	371	Standard
	Cu	65	110957.8	0.5	**49.7932**	0.409	0.8	ug/L	106	Standard
	Zn	66	66373.7	0.9	**50.2844**	0.584	1.2	ug/L	398	Standard
>	Ge	72	539959.0	0.4				ug/L	535147	Standard
	As	75	65894.6	0.6	**48.8109**	0.285	0.6	ug/L	-43	Standard
	Se	82	6708.7	1.0	**48.9625**	0.610	1.2	ug/L	14	Standard
	Se-1	77	4564.0	1.3	**49.6319**	0.771	1.6	ug/L	65	Standard
>	Ga	71	60.0	38.2				mg/L	97	Standard
	Rb	85	991.7	7.3				ug/L	15	Standard
	Y	89	461440.3	2.3				ug/L	465704	Standard
>	Rh	103	25.0	34.6				ug/L	10	Standard
	Mo	98	299758.4	0.9	**95.3056**	1.188	1.2	ug/L	9	Standard
	Ag	107	368040.6	0.9	**48.3525**	0.807	1.7	ug/L	82	Standard
	Cd	111	118857.8	1.6	**48.8478**	0.437	0.9	mg/L	7	Standard
	Cd	114	294881.5	2.1	**50.3254**	0.867	1.7	ug/L	21	Standard
>	In	115	624167.7	1.1				ug/L	619035	Standard
	Sn	118	320651.0	1.0	**48.7698**	0.986	2.0	ug/L	508	Standard
	Sb	123	261017.7	0.8	**48.8877**	0.350	0.7	ug/L	86	Standard
	Ba	135	112221.4	0.2	**48.6682**	0.594	1.2	ug/L	79	Standard
	Ce	140	108.3	19.2				ug/L	68	Standard
>	Tb	159	953179.7	0.3				ug/L	986982	Standard
	Ho	165	15.0	57.7				ug/L	10	Standard
	Tl	203	451684.9	1.1	**49.9622**	0.209	0.4	ug/L	13	Standard
	Tl	205	402076.6	2.1	**52.0628**	1.208	2.3	ug/L	10	Standard
	Pb	206	286059.5	0.5	**49.2676**	0.522	1.1	ug/L	264	Standard
	Pb	207	259413.7	0.9	**49.4369**	0.743	1.5	ug/L	227	Standard
	Pb	208	1045434.4	0.6	**51.6654**	0.223	0.4	ug/L	868	Standard
	U	238	381876.9	0.6	**51.0597**	0.529	1.0	ug/L	8	Standard
>	Bi	209	535721.3	0.7				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4462.3	3.0	**4.9989**	0.129	2.6	mg/L	53	Standard
K	39	2393.5	1.6	**4.1281**	0.026	0.6	mg/L	53	Standard
Ca	43	101.7	19.9	**4.2731**	1.076	25.2	mg/L	28	Standard
Fe	54	7194.1	2.2	**4.9576**	0.224	4.5	mg/L	181	Standard
Fe	57	2128.5	5.2	**5.1769**	0.405	7.8	mg/L	257	Standard
> **Sc-1**	45	53355.5	2.2				mg/L	55220	Standard
Cl	35	44134.9	1.1				ug/L	35504	Standard
Kr	83	3.3	34.6				ug/L	2	Standard
Br	81	2123.5	11.5				ug/L	2040	Standard
P	31	25097.4	2.7				ug/L	20435	Standard
S	34	3133.7	1.4				ug/L	2430	Standard
Sr	88	83.3	18.3				ug/L	75	Standard
C	12	53.3	28.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	7	Standard
Dy	164	6.2	87.4				mg/L	9	Standard
Ho-1	165	15.0	57.7				mg/L	10	Standard
Er	166	10.0	173.2				mg/L	23	Standard
I	127	17556.8	1.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	109.819		
Al	27	109.415		
Sc	45			
Ti	47	100.614		
V	51	98.655		
Cr	52	99.397		
Cr	53			
Mn	55	100.586		
Co	59	99.170		
Ni	60	99.518		
Cu	65	99.586		
Zn	66	100.569		
> Ge	72		100.899	
As	75	97.622		
Se	82	97.925		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	95.306		
Ag	107	96.705		
Cd	111	97.696		
Cd	114			
In	115		100.829	
Sn	118	97.540		
Sb	123	97.775		
Ba	135	97.336		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.924		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.331		
U	238	102.119		
Bi	209		99.022	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 17:08:31
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64853.5	1.7				ug/L	74916	Standard
	Be	9	11.7	49.5	**0.0092**	0.006	70.0	ug/L	10	Standard
	Al	27	2441.9	26.4	**0.0139**	0.004	28.7	ug/L	1822	Standard
	Sc	45	55307.4	1.7				ug/L	55220	Standard
	Ti	47	39.3	16.9	**0.0231**	0.017	73.0	ug/L	34	Standard
	V	51	1667.1	3.6	**-0.0203**	0.008	40.7	ug/L	1938	Standard
	Cr	52	8265.9	0.8	**-0.1408**	0.008	5.6	ug/L	9522	Standard
	Cr	53	790.0	9.9	**0.3047**	0.061	20.2	ug/L	395	Standard
	Mn	55	874.0	4.5	**-0.0057**	0.006	96.3	ug/L	902	Standard
	Co	59	299.7	6.5	**0.0132**	0.003	20.8	ug/L	262	Standard
	Ni	60	269.0	3.5	**-0.0282**	0.005	18.6	ug/L	371	Standard
	Cu	65	120.0	19.6	**-0.0055**	0.011	201.6	ug/L	106	Standard
	Zn	66	403.7	3.9	**-0.0430**	0.010	24.3	ug/L	398	Standard
>	**Ge**	72	547396.9	1.1				ug/L	535147	Standard
	As	75	-23.1	181.6	**0.0385**	0.031	79.4	ug/L	-43	Standard
	Se	82	20.9	23.9	**0.0541**	0.036	66.4	ug/L	14	Standard
	Se-1	77	81.0	11.8	**0.2976**	0.102	34.1	ug/L	65	Standard
>	**Ga**	71	48.3	33.3				mg/L	97	Standard
	Rb	85	41.7	30.2				ug/L	15	Standard
	Y	89	475064.4	0.3				ug/L	465704	Standard
>	**Rh**	103	13.3	21.7				ug/L	10	Standard
	Mo	98	285.8	27.9	**0.1014**	0.024	24.0	ug/L	9	Standard
	Ag	107	160.3	23.1	**0.0146**	0.005	31.9	ug/L	82	Standard
	Cd	111	19.5	53.6	**0.0157**	0.004	26.4	mg/L	7	Standard
	Cd	114	57.3	51.9	**0.0185**	0.005	26.6	ug/L	21	Standard
>	**In**	115	636477.0	0.5				ug/L	619035	Standard
	Sn	118	1158.4	16.3	**0.0698**	0.029	41.4	ug/L	508	Standard
	Sb	123	730.1	29.4	**0.1386**	0.040	28.9	ug/L	86	Standard
	Ba	135	55.7	46.2	**0.0040**	0.011	269.0	ug/L	79	Standard
	Ce	140	30.0	28.9				ug/L	68	Standard
>	**Tb**	159	957058.2	1.0				ug/L	986982	Standard
	Ho	165	3.3	173.2				ug/L	10	Standard
	Tl	203	95.0	41.0	**0.0162**	0.004	25.7	ug/L	13	Standard
	Tl	205	71.7	33.0	**0.0167**	0.003	17.6	ug/L	10	Standard
	Pb	206	321.7	12.5	**0.0162**	0.007	41.2	ug/L	264	Standard
	Pb	207	271.0	17.9	**0.0171**	0.009	52.3	ug/L	227	Standard
	Pb	208	1145.0	12.1	**0.0168**	0.007	39.7	ug/L	868	Standard
	U	238	62.7	41.3	**0.0160**	0.003	20.9	ug/L	8	Standard
>	**Bi**	209	550463.7	0.4				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.3779**	16.234	173.1	mg/L	2	Standard
Mg	24	28.3	27.0	**-0.0037**	0.009	235.7	mg/L	53	Standard
K	39	41.7	61.6	**-0.0052**	0.044	841.2	mg/L	53	Standard
Ca	43	13.3	78.1	**-0.9220**	0.590	63.9	mg/L	28	Standard
Fe	54	174.2	10.0	**-0.0003**	0.010	3275.9	mg/L	181	Standard
Fe	57	268.3	11.2	**0.0460**	0.067	146.1	mg/L	257	Standard
> **Sc-1**	45	55307.4	1.7				mg/L	55220	Standard
Cl	35	45000.1	2.4				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	2080.1	6.5				ug/L	2040	Standard
P	31	24610.0	2.1				ug/L	20435	Standard
S	34	3330.4	2.0				ug/L	2430	Standard
Sr	88	71.7	17.6				ug/L	75	Standard
C	12	130.0	30.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	128.6	20.1				mg/L	9	Standard
Ho-1	165	3.3	173.2				mg/L	10	Standard
Er	166	30.0	88.2				mg/L	23	Standard
I	127	6899.9	5.5				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		102.289	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.818
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.747
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW 2C WG573840-02
Sample Date/Time: Thursday, June 30, 2016 17:11:43
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60134.2	2.9				ug/L	74916	Standard
	Be	9	26.7	10.8	**0.0279**	0.004	13.9	ug/L	10	Standard
	Al	27	2303.5	2.7	**0.0142**	0.000	1.4	ug/L	1822	Standard
	Sc	45	52908.9	1.9				ug/L	55220	Standard
	Ti	47	32.7	61.9	**0.0123**	0.051	414.4	ug/L	34	Standard
	V	51	1551.2	8.5	**-0.0217**	0.015	69.8	ug/L	1938	Standard
	Cr	52	6813.9	1.4	**-0.2496**	0.013	5.2	ug/L	9522	Standard
	Cr	53	650.0	8.1	**0.2202**	0.049	22.4	ug/L	395	Standard
	Mn	55	521.7	1.8	**-0.0419**	0.001	2.6	ug/L	902	Standard
	Co	59	225.3	10.2	**0.0060**	0.003	47.7	ug/L	262	Standard
	Ni	60	258.3	15.9	**-0.0255**	0.019	74.1	ug/L	371	Standard
	Cu	65	124.3	5.4	**-0.0000**	0.000	210884.2	ug/L	106	Standard
	Zn	66	1158.0	4.1	**0.5824**	0.036	6.3	ug/L	398	Standard
>	**Ge**	72	513337.9	0.2				ug/L	535147	Standard
	As	75	-72.9	25.6	**-0.0015**	0.015	951.7	ug/L	-43	Standard
	Se	82	16.3	51.8	**0.0282**	0.065	229.6	ug/L	14	Standard
	Se-1	77	62.0	9.8	**0.1360**	0.069	50.7	ug/L	65	Standard
>	**Ga**	71	40.0	37.5				mg/L	97	Standard
	Rb	85	28.3	27.0				ug/L	15	Standard
	Y	89	442812.9	2.2				ug/L	465704	Standard
>	**Rh**	103	16.7	45.8				ug/L	10	Standard
	Mo	98	60.6	6.2	**0.0328**	0.001	3.7	ug/L	9	Standard
	Ag	107	98.7	12.8	**0.0077**	0.002	23.6	ug/L	82	Standard
	Cd	111	5.2	10.9	**0.0102**	0.000	2.5	mg/L	7	Standard
	Cd	114	16.2	115.2	**0.0119**	0.003	28.6	ug/L	21	Standard
>	**In**	115	588076.1	0.4				ug/L	619035	Standard
	Sn	118	390.0	24.7	**-0.0403**	0.016	38.6	ug/L	508	Standard
	Sb	123	152.7	23.1	**0.0348**	0.007	20.3	ug/L	86	Standard
	Ba	135	25.3	29.6	**-0.0080**	0.003	42.8	ug/L	79	Standard
	Ce	140	5.0	100.0				ug/L	68	Standard
>	**Tb**	159	902943.7	0.5				ug/L	986982	Standard
	Ho	165	15.0	66.7				ug/L	10	Standard
	Tl	203	33.3	39.2	**0.0098**	0.001	15.1	ug/L	13	Standard
	Tl	205	41.7	48.5	**0.0132**	0.003	20.2	ug/L	10	Standard
	Pb	206	263.0	1.5	**0.0084**	0.001	8.1	ug/L	264	Standard
	Pb	207	234.0	5.6	**0.0123**	0.003	21.2	ug/L	227	Standard
	Pb	208	980.7	3.9	**0.0111**	0.002	17.9	ug/L	868	Standard
	U	238	12.0	30.0	**0.0095**	0.000	5.2	ug/L	8	Standard
>	**Bi**	209	525698.7	0.1				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.9894**	17.293	173.1	mg/L	2	Standard
Mg	24	45.0	29.4	**0.0166**	0.015	89.5	mg/L	53	Standard
K	39	58.3	34.6	**0.0269**	0.034	125.5	mg/L	53	Standard
Ca	43	26.7	28.6	**-0.0940**	0.479	509.5	mg/L	28	Standard
Fe	54	89.3	21.9	**-0.0554**	0.013	23.0	mg/L	181	Standard
Fe	57	223.3	17.4	**-0.0467**	0.096	206.3	mg/L	257	Standard
> **Sc-1**	45	52908.9	1.9				mg/L	55220	Standard
Cl	35	41658.5	0.8				ug/L	35504	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	2276.8	4.6				ug/L	2040	Standard
P	31	11304.2	3.8				ug/L	20435	Standard
S	34	2982.0	1.4				ug/L	2430	Standard
Sr	88	63.3	4.6				ug/L	75	Standard
C	12	60.0	28.9				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	12.9	48.5				mg/L	9	Standard
Ho-1	165	15.0	66.7				mg/L	10	Standard
Er	166	10.0	173.2				mg/L	23	Standard
I	127	27787.1	2.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		80.268	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.925	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.999
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.169
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 2C WG573840-03
Sample Date/Time: Thursday, June 30, 2016 17:14:55
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64058.5	2.3				ug/L	74916	Standard
	Be	9	50870.3	3.1	**56.3929**	1.713	3.0	ug/L	10	Standard
	Al	27	13599.5	6.8	**0.0893**	0.006	7.0	ug/L	1822	Standard
	Sc	45	55821.0	2.8				ug/L	55220	Standard
	Ti	47	45.7	17.7	**0.0367**	0.018	49.2	ug/L	34	Standard
	V	51	483182.7	1.2	**50.2459**	0.127	0.3	ug/L	1938	Standard
	Cr	52	488742.8	1.3	**51.4889**	0.346	0.7	ug/L	9522	Standard
	Cr	53	60345.0	1.6	**51.9074**	0.879	1.7	ug/L	395	Standard
	Mn	55	457613.2	1.8	**51.3293**	0.603	1.2	ug/L	902	Standard
	Co	59	422454.4	1.2	**50.1274**	0.388	0.8	ug/L	262	Standard
	Ni	60	120601.1	1.4	**51.8594**	0.313	0.6	ug/L	371	Standard
	Cu	65	118799.3	1.3	**51.9910**	0.427	0.8	ug/L	106	Standard
	Zn	66	70445.7	1.1	**52.0559**	0.152	0.3	ug/L	398	Standard
>	**Ge**	72	553696.9	1.0				ug/L	535147	Standard
	As	75	67356.4	1.3	**48.6560**	0.417	0.9	ug/L	-43	Standard
	Se	82	6884.8	0.9	**49.0024**	0.551	1.1	ug/L	14	Standard
	Se-1	77	4835.4	1.6	**51.2958**	0.557	1.1	ug/L	65	Standard
>	**Ga**	71	53.3	28.6				mg/L	97	Standard
	Rb	85	113.3	21.8				ug/L	15	Standard
	Y	89	469203.9	2.5				ug/L	465704	Standard
>	**Rh**	103	38.3	19.9				ug/L	10	Standard
	Mo	98	79.6	14.3	**0.0370**	0.003	8.5	ug/L	9	Standard
	Ag	107	391921.4	0.8	**50.2702**	0.420	0.8	ug/L	82	Standard
	Cd	111	124239.8	0.9	**49.8552**	0.355	0.7	mg/L	7	Standard
	Cd	114	299345.2	1.9	**49.8798**	0.788	1.6	ug/L	21	Standard
>	**In**	115	639302.5	1.6				ug/L	619035	Standard
	Sn	118	836.7	4.5	**0.0211**	0.007	33.7	ug/L	508	Standard
	Sb	123	262807.0	2.6	**48.0511**	0.600	1.2	ug/L	86	Standard
	Ba	135	118153.6	1.3	**50.0298**	0.818	1.6	ug/L	79	Standard
	Ce	140	73.3	17.2				ug/L	68	Standard
>	**Tb**	159	964089.7	1.6				ug/L	986982	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	477074.5	0.5	**51.4398**	0.122	0.2	ug/L	13	Standard
	Tl	205	415235.0	1.1	**52.4076**	0.524	1.0	ug/L	10	Standard
	Pb	206	305633.8	1.2	**51.3093**	0.493	1.0	ug/L	264	Standard
	Pb	207	268222.4	0.6	**49.8228**	0.265	0.5	ug/L	227	Standard
	Pb	208	1106889.2	0.5	**53.3229**	0.200	0.4	ug/L	868	Standard
	U	238	390961.0	1.3	**50.9526**	0.530	1.0	ug/L	8	Standard
>	**Bi**	209	549588.4	0.3				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	31.7	32.9	**-0.0002**	0.012	6226.9	mg/L	53	Standard
K	39	75.0	33.3	**0.0507**	0.045	88.8	mg/L	53	Standard
Ca	43	25.0	20.0	**-0.2728**	0.293	107.4	mg/L	28	Standard
Fe	54	199.1	3.0	**0.0156**	0.007	47.8	mg/L	181	Standard
Fe	57	235.0	25.5	**-0.0464**	0.163	351.9	mg/L	257	Standard
> **Sc-1**	45	55821.0	2.8				mg/L	55220	Standard
Cl	35	44818.9	2.3				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	2590.2	4.5				ug/L	2040	Standard
P	31	24174.3	4.1				ug/L	20435	Standard
S	34	2943.6	1.1				ug/L	2430	Standard
Sr	88	83.3	18.3				ug/L	75	Standard
C	12	100.0	10.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	-0.5	173.2				mg/L	9	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	10.0	173.2				mg/L	23	Standard
I	127	2098.5	24.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		85.507	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.466	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.274
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.585
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606106813 WG573840-01
Sample Date/Time: Thursday, June 30, 2016 17:18:06
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66825.4	2.4				ug/L	74916	Standard
	Be	9	133.3	4.3	**0.1380**	0.003	2.3	ug/L	10	Standard
	Al	27	4241117.0	1.3	**27.4025**	0.478	1.7	ug/L	1822	Standard
	Sc	45	59376.1	1.4				ug/L	55220	Standard
	Ti	47	6584.8	3.7	**16.1909**	0.531	3.3	ug/L	34	Standard
	V	51	39736.5	3.0	**4.1806**	0.143	3.4	ug/L	1938	Standard
	Cr	52	57987.8	0.9	**5.5358**	0.042	0.8	ug/L	9522	Standard
	Cr	53	28570.3	7.4	**25.7373**	2.017	7.8	ug/L	395	Standard
	Mn	55	1241189.6	1.3	**147.0826**	1.783	1.2	ug/L	902	Standard
	Co	59	29402.2	0.3	**3.6596**	0.010	0.3	ug/L	262	Standard
	Ni	60	55711.6	0.6	**25.2006**	0.129	0.5	ug/L	371	Standard
	Cu	65	3990.9	1.2	**1.7861**	0.030	1.7	ug/L	106	Standard
	Zn	66	25472.7	2.2	**19.6446**	0.438	2.2	ug/L	398	Standard
>	**Ge**	72	524817.3	0.4				ug/L	535147	Standard
	As	75	2992.7	2.8	**2.3334**	0.058	2.5	ug/L	-43	Standard
	Se	82	764.6	1.8	**5.6555**	0.104	1.8	ug/L	14	Standard
	Se-1	77	980.4	8.6	**10.5178**	0.994	9.4	ug/L	65	Standard
>	**Ga**	71	2516.9	4.2				mg/L	97	Standard
	Rb	85	45387.9	1.0				ug/L	15	Standard
	Y	89	471788.9	1.6				ug/L	465704	Standard
>	**Rh**	103	80.0	6.3				ug/L	10	Standard
	Mo	98	2138.6	3.5	**0.7142**	0.028	4.0	ug/L	9	Standard
	Ag	107	157.0	9.4	**0.0152**	0.002	14.0	ug/L	82	Standard
	Cd	111	2099.6	3.0	**0.8986**	0.033	3.6	mg/L	7	Standard
	Cd	114	5226.5	4.6	**0.9297**	0.049	5.2	ug/L	21	Standard
>	**In**	115	604671.8	0.7				ug/L	619035	Standard
	Sn	118	1033.4	9.5	**0.0592**	0.017	28.1	ug/L	508	Standard
	Sb	123	3055.1	27.0	**0.5957**	0.163	27.3	ug/L	86	Standard
	Ba	135	139944.7	1.3	**62.6537**	1.221	1.9	ug/L	79	Standard
	Ce	140	55800.9	2.4				ug/L	68	Standard
>	**Tb**	159	948910.8	2.6				ug/L	986982	Standard
	Ho	165	1046.7	5.9				ug/L	10	Standard
	Tl	203	390.3	7.2	**0.0509**	0.004	7.6	ug/L	13	Standard
	Tl	205	276.7	8.9	**0.0449**	0.003	7.7	ug/L	10	Standard
	Pb	206	5380.3	2.6	**0.9266**	0.031	3.4	ug/L	264	Standard
	Pb	207	4252.6	1.3	**0.8100**	0.016	1.9	ug/L	227	Standard
	Pb	208	18395.1	1.9	**0.9076**	0.011	1.2	ug/L	868	Standard
	U	238	1322.7	2.5	**0.1917**	0.002	1.1	ug/L	8	Standard
>	**Bi**	209	515245.5	1.5				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	85376.6	1.5	**86.4979**	0.694	0.8	mg/L	53	Standard
K	39	520.0	15.3	**0.7438**	0.115	15.4	mg/L	53	Standard
Ca	43	115.0	27.2	**4.3841**	1.643	37.5	mg/L	28	Standard
Fe	54	6737.0	2.5	**4.1500**	0.071	1.7	mg/L	181	Standard
Fe	57	1958.5	2.2	**4.1618**	0.107	2.6	mg/L	257	Standard
> **Sc-1**	45	59376.1	1.4				mg/L	55220	Standard
Cl	35	44962.0	1.2				ug/L	35504	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	154271.8	2.6				ug/L	2040	Standard
P	31	29709.1	1.2				ug/L	20435	Standard
S	34	2896.9	2.7				ug/L	2430	Standard
Sr	88	188.3	6.7				ug/L	75	Standard
C	12	266.7	21.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	173.2				mg/L	7	Standard
Dy	164	1604.1	12.5				mg/L	9	Standard
Ho-1	165	1046.7	5.9				mg/L	10	Standard
Er	166	1100.0	8.8				mg/L	23	Standard
I	127	327312.3	8.5				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		89.200	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.070	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.680
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.237
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606106815S WG573840-04
Sample Date/Time: Thursday, June 30, 2016 17:21:18
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67680.9	1.9				ug/L	74916	Standard
	Be	9	51052.5	0.1	**53.5693**	0.995	1.9	ug/L	10	Standard
	Al	27	3368816.2	1.1	**21.4929**	0.585	2.7	ug/L	1822	Standard
	Sc	45	58536.3	3.3				ug/L	55220	Standard
	Ti	47	5172.5	1.1	**12.4067**	0.155	1.3	ug/L	34	Standard
	V	51	488672.2	1.1	**52.3707**	0.516	1.0	ug/L	1938	Standard
	Cr	52	519795.4	1.0	**56.5266**	0.672	1.2	ug/L	9522	Standard
	Cr	53	80134.7	1.1	**71.1659**	0.792	1.1	ug/L	395	Standard
	Mn	55	1422478.1	1.3	**164.6477**	2.416	1.5	ug/L	902	Standard
	Co	59	415646.2	0.7	**50.8197**	0.346	0.7	ug/L	262	Standard
	Ni	60	153457.9	0.5	**68.0410**	0.220	0.3	ug/L	371	Standard
	Cu	65	110950.8	0.9	**50.0307**	0.453	0.9	ug/L	106	Standard
	Zn	66	84002.9	0.2	**64.0414**	0.177	0.3	ug/L	398	Standard
>	**Ge**	72	537355.1	0.2				ug/L	535147	Standard
	As	75	70214.5	0.8	**52.2590**	0.480	0.9	ug/L	-43	Standard
	Se	82	7282.6	0.6	**53.4169**	0.409	0.8	ug/L	14	Standard
	Se-1	77	5276.3	1.5	**57.7485**	0.932	1.6	ug/L	65	Standard
>	**Ga**	71	2600.2	1.0				mg/L	97	Standard
	Rb	85	34761.5	1.6				ug/L	15	Standard
	Y	89	471549.9	1.5				ug/L	465704	Standard
>	**Rh**	103	131.7	12.2				ug/L	10	Standard
	Mo	98	1846.2	2.7	**0.6134**	0.022	3.6	ug/L	9	Standard
	Ag	107	345199.2	0.6	**46.4387**	0.773	1.7	ug/L	82	Standard
	Cd	111	118493.6	1.5	**49.8650**	0.385	0.8	mg/L	7	Standard
	Cd	114	289951.9	1.8	**50.6671**	0.404	0.8	ug/L	21	Standard
>	**In**	115	609561.0	1.1				ug/L	619035	Standard
	Sn	118	1016.7	8.9	**0.0553**	0.014	26.2	ug/L	508	Standard
	Sb	123	244619.3	0.4	**46.9151**	0.346	0.7	ug/L	86	Standard
	Ba	135	220516.2	0.7	**97.9426**	1.108	1.1	ug/L	79	Standard
	Ce	140	48158.1	1.0				ug/L	68	Standard
>	**Tb**	159	947264.5	1.2				ug/L	986982	Standard
	Ho	165	921.7	8.3				ug/L	10	Standard
	Tl	203	434639.0	0.4	**49.9317**	0.347	0.7	ug/L	13	Standard
	Tl	205	380633.7	0.9	**51.1887**	0.936	1.8	ug/L	10	Standard
	Pb	206	288741.7	0.6	**51.6468**	0.449	0.9	ug/L	264	Standard
	Pb	207	251536.6	1.1	**49.7801**	0.446	0.9	ug/L	227	Standard
	Pb	208	1036183.7	0.5	**53.1850**	0.617	1.2	ug/L	868	Standard
	U	238	374057.3	1.4	**51.9465**	1.232	2.4	ug/L	8	Standard
>	**Bi**	209	515850.6	1.0				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.0953**	15.745	173.1	mg/L	2	Standard
Mg	24	66515.7	1.7	**68.3869**	2.109	3.1	mg/L	53	Standard
K	39	388.3	10.0	**0.5473**	0.079	14.4	mg/L	53	Standard
Ca	43	78.3	9.8	**2.5142**	0.451	17.9	mg/L	28	Standard
Fe	54	5869.1	3.9	**3.6575**	0.229	6.3	mg/L	181	Standard
Fe	57	1700.1	7.0	**3.5827**	0.199	5.6	mg/L	257	Standard
> **Sc-1**	45	58536.3	3.3				mg/L	55220	Standard
Cl	35	44802.2	3.0				ug/L	35504	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	127443.9	1.8				ug/L	2040	Standard
P	31	28511.8	1.0				ug/L	20435	Standard
S	34	2775.3	1.9				ug/L	2430	Standard
Sr	88	178.3	30.9				ug/L	75	Standard
C	12	230.0	19.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	7	Standard
Dy	164	1365.5	5.5				mg/L	9	Standard
Ho-1	165	921.7	8.3				mg/L	10	Standard
Er	166	930.0	6.7				mg/L	23	Standard
I	127	255438.3	5.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.342	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.413	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.470
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.349
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606106817SD WG573840-05
Sample Date/Time: Thursday, June 30, 2016 17:24:29
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	71317.5	0.5				ug/L	74916	Standard
	Be	9	52868.7	0.7	**52.6345**	0.351	0.7	ug/L	10	Standard
	Al	27	4849961.3	0.9	**29.3561**	0.184	0.6	ug/L	1822	Standard
	Sc	45	62463.5	1.2				ug/L	55220	Standard
	Ti	47	15053.8	0.9	**36.7934**	0.200	0.5	ug/L	34	Standard
	V	51	538418.4	0.4	**58.6061**	0.527	0.9	ug/L	1938	Standard
	Cr	52	650223.4	0.7	**72.0695**	0.889	1.2	ug/L	9522	Standard
	Cr	53	98390.1	1.1	**88.8086**	1.445	1.6	ug/L	395	Standard
	Mn	55	1763132.6	1.1	**207.2200**	3.342	1.6	ug/L	902	Standard
	Co	59	428512.3	1.2	**53.1932**	0.793	1.5	ug/L	262	Standard
	Ni	60	172907.0	0.5	**77.8539**	0.550	0.7	ug/L	371	Standard
	Cu	65	113260.4	0.2	**51.8526**	0.333	0.6	ug/L	106	Standard
	Zn	66	93640.5	0.5	**72.5211**	0.161	0.2	ug/L	398	Standard
>	Ge	72	529298.6	0.5				ug/L	535147	Standard
	As	75	70275.1	0.8	**53.0999**	0.493	0.9	ug/L	-43	Standard
	Se	82	7438.1	1.0	**55.3925**	0.719	1.3	ug/L	14	Standard
	Se-1	77	5341.3	1.2	**59.3683**	0.990	1.7	ug/L	65	Standard
>	Ga	71	7857.0	3.6				mg/L	97	Standard
	Rb	85	80878.6	1.0				ug/L	15	Standard
	Y	89	485637.4	2.2				ug/L	465704	Standard
>	Rh	103	135.0	12.8				ug/L	10	Standard
	Mo	98	2900.7	2.5	**0.9572**	0.026	2.7	ug/L	9	Standard
	Ag	107	343502.7	1.0	**46.2351**	0.223	0.5	ug/L	82	Standard
	Cd	111	120117.5	0.6	**50.5847**	0.556	1.1	mg/L	7	Standard
	Cd	114	292092.4	0.7	**51.0777**	0.183	0.4	ug/L	21	Standard
>	In	115	609154.8	0.5				ug/L	619035	Standard
	Sn	118	1316.7	6.3	**0.1022**	0.014	13.4	ug/L	508	Standard
	Sb	123	230647.1	1.3	**44.2618**	0.385	0.9	ug/L	86	Standard
	Ba	135	273668.5	0.7	**121.6298**	0.962	0.8	ug/L	79	Standard
	Ce	140	109752.8	1.4				ug/L	68	Standard
>	Tb	159	952644.8	0.6				ug/L	986982	Standard
	Ho	165	1935.1	9.2				ug/L	10	Standard
	Tl	203	436763.9	0.6	**50.0972**	0.134	0.3	ug/L	13	Standard
	Tl	205	378561.1	0.9	**50.8280**	0.601	1.2	ug/L	10	Standard
	Pb	206	295590.9	0.8	**52.7895**	0.146	0.3	ug/L	264	Standard
	Pb	207	255520.9	0.4	**50.4919**	0.303	0.6	ug/L	227	Standard
	Pb	208	1035519.8	0.6	**53.0684**	0.588	1.1	ug/L	868	Standard
	U	238	372267.1	1.1	**51.6142**	0.831	1.6	ug/L	8	Standard
>	Bi	209	516637.7	0.5				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	87984.8	1.4	**84.7490**	2.157	2.5	mg/L	53	Standard
K	39	573.3	13.5	**0.7848**	0.124	15.8	mg/L	53	Standard
Ca	43	141.7	10.2	**5.4143**	0.660	12.2	mg/L	28	Standard
Fe	54	10646.8	1.6	**6.2957**	0.178	2.8	mg/L	181	Standard
Fe	57	2967.0	0.4	**6.2851**	0.079	1.3	mg/L	257	Standard
> **Sc-1**	45	62463.5	1.2				mg/L	55220	Standard
Cl	35	43456.9	3.2				ug/L	35504	Standard
Kr	83	2.3	107.9				ug/L	2	Standard
Br	81	183975.0	4.4				ug/L	2040	Standard
P	31	35738.8	3.0				ug/L	20435	Standard
S	34	2516.9	2.9				ug/L	2430	Standard
Sr	88	236.7	13.6				ug/L	75	Standard
C	12	223.3	25.5				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	43.3				mg/L	7	Standard
Dy	164	3296.7	5.8				mg/L	9	Standard
Ho-1	165	1935.1	9.2				mg/L	10	Standard
Er	166	1886.8	7.5				mg/L	23	Standard
I	127	363130.0	8.1				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		95.196	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.907	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.404
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.494
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122801
Sample Date/Time: Thursday, June 30, 2016 17:27:41
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70219.0	1.1				ug/L	74916	Standard
	Be	9	55.0	48.1	**0.0522**	0.028	52.7	ug/L	10	Standard
	Al	27	23221144.3	0.6	**142.7741**	1.838	1.3	ug/L	1822	Standard
	Sc	45	57070.6	2.2				ug/L	55220	Standard
	Ti	47	534.7	8.5	**1.2366**	0.117	9.5	ug/L	34	Standard
	V	51	7446.5	8.6	**0.6149**	0.067	10.9	ug/L	1938	Standard
	Cr	52	12430.1	1.9	**0.3548**	0.021	6.0	ug/L	9522	Standard
	Cr	53	7560.2	15.2	**6.4485**	1.018	15.8	ug/L	395	Standard
	Mn	55	2113807.9	0.6	**247.8805**	0.738	0.3	ug/L	902	Standard
	Co	59	1074.4	19.7	**0.1103**	0.026	23.6	ug/L	262	Standard
	Ni	60	2096.5	2.0	**0.7980**	0.018	2.2	ug/L	371	Standard
	Cu	65	989.4	3.5	**0.3937**	0.017	4.4	ug/L	106	Standard
	Zn	66	2275.2	1.6	**1.4198**	0.027	1.9	ug/L	398	Standard
>	**Ge**	72	530492.6	0.4				ug/L	535147	Standard
	As	75	1618.0	1.0	**1.2738**	0.017	1.3	ug/L	-43	Standard
	Se	82	532.9	5.0	**3.8697**	0.199	5.1	ug/L	14	Standard
	Se-1	77	405.0	3.4	**3.9543**	0.170	4.3	ug/L	65	Standard
>	**Ga**	71	131.7	28.5				mg/L	97	Standard
	Rb	85	1008.4	5.5				ug/L	15	Standard
	Y	89	463829.6	1.0				ug/L	465704	Standard
>	**Rh**	103	183.3	15.5				ug/L	10	Standard
	Mo	98	288.7	15.5	**0.1064**	0.014	12.8	ug/L	9	Standard
	Ag	107	262.7	61.3	**0.0292**	0.021	72.9	ug/L	82	Standard
	Cd	111	64.1	52.5	**0.0348**	0.014	39.8	mg/L	7	Standard
	Cd	114	151.5	64.1	**0.0353**	0.017	47.2	ug/L	21	Standard
>	**In**	115	608837.3	1.5				ug/L	619035	Standard
	Sn	118	688.3	15.3	**0.0040**	0.015	381.7	ug/L	508	Standard
	Sb	123	748.4	25.1	**0.1478**	0.034	23.1	ug/L	86	Standard
	Ba	135	323132.0	0.2	**143.7088**	1.894	1.3	ug/L	79	Standard
	Ce	140	1510.1	6.1				ug/L	68	Standard
>	**Tb**	159	942636.2	0.9				ug/L	986982	Standard
	Ho	165	71.7	42.1				ug/L	10	Standard
	Tl	203	221.7	39.3	**0.0318**	0.010	31.8	ug/L	13	Standard
	Tl	205	200.0	49.8	**0.0349**	0.014	38.7	ug/L	10	Standard
	Pb	206	3260.4	7.1	**0.5527**	0.041	7.5	ug/L	264	Standard
	Pb	207	2764.6	8.4	**0.5208**	0.046	8.8	ug/L	227	Standard
	Pb	208	11354.3	4.2	**0.5518**	0.024	4.4	ug/L	868	Standard
	U	238	6271.3	2.3	**0.8889**	0.020	2.2	ug/L	8	Standard
>	**Bi**	209	509768.6	0.1				ug/L	541014	Standard

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Na	23	5.0	100.0	**27.4457**	27.277	99.4	mg/L	2	Standard
Mg	24	105167.2	2.0	**110.8934**	3.210	2.9	mg/L	53	Standard
K	39	93.3	34.9	**0.0778**	0.055	70.6	mg/L	53	Standard
Ca	43	381.7	4.2	**19.2352**	0.454	2.4	mg/L	28	Standard
Fe	54	383.9	11.8	**0.1342**	0.028	21.1	mg/L	181	Standard
Fe	57	550.0	11.8	**0.7475**	0.173	23.1	mg/L	257	Standard
Sc-1	45	57070.6	2.2				mg/L	55220	Standard
Cl	35	45817.2	1.5				ug/L	35504	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	102824.5	2.2				ug/L	2040	Standard
P	31	27136.0	2.5				ug/L	20435	Standard
S	34	2881.9	4.6				ug/L	2430	Standard
Sr	88	315.0	13.0				ug/L	75	Standard
C	12	273.3	15.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	91.2	16.9				mg/L	9	Standard
Ho-1	165	71.7	42.1				mg/L	10	Standard
Er	166	113.3	13.5				mg/L	23	Standard
I	127	577318.3	6.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.730	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.130	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.353	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	94.225	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606122802
Sample Date/Time: Thursday, June 30, 2016 17:30:52
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84553.6	0.8				ug/L	74916	Standard
	Be	9	40.0	54.5	**0.0301**	0.019	61.7	ug/L	10	Standard
	Al	27	72687440.4	0.6	**371.1272**	1.759	0.5	ug/L	1822	Standard
	Sc	45	56028.5	3.6				ug/L	55220	Standard
	Ti	47	1271.7	12.9	**3.1264**	0.427	13.7	ug/L	34	Standard
	V	51	45357.8	2.5	**4.8857**	0.105	2.1	ug/L	1938	Standard
	Cr	52	27926.4	2.4	**2.1818**	0.066	3.0	ug/L	9522	Standard
	Cr	53	41080.8	6.8	**37.8153**	2.480	6.6	ug/L	395	Standard
	Mn	55	18342.1	1.0	**2.1077**	0.024	1.2	ug/L	902	Standard
	Co	59	1867.8	1.8	**0.2152**	0.003	1.5	ug/L	262	Standard
	Ni	60	5585.0	3.9	**2.4394**	0.105	4.3	ug/L	371	Standard
	Cu	65	2253.2	2.2	**1.0007**	0.019	1.9	ug/L	106	Standard
	Zn	66	5947.8	1.6	**4.4020**	0.073	1.7	ug/L	398	Standard
>	**Ge**	72	515884.0	0.5				ug/L	535147	Standard
	As	75	4431.5	3.5	**3.4872**	0.124	3.6	ug/L	-43	Standard
	Se	82	1759.9	1.3	**13.3742**	0.232	1.7	ug/L	14	Standard
	Se-1	77	4138.2	6.7	**47.0651**	3.039	6.5	ug/L	65	Standard
>	**Ga**	71	275.0	12.7				mg/L	97	Standard
	Rb	85	9714.8	2.0				ug/L	15	Standard
	Y	89	451972.4	0.7				ug/L	465704	Standard
>	**Rh**	103	713.4	15.1				ug/L	10	Standard
	Mo	98	14249.3	0.9	**4.8390**	0.048	1.0	ug/L	9	Standard
	Ag	107	130.3	28.3	**0.0122**	0.005	41.7	ug/L	82	Standard
	Cd	111	36.6	50.8	**0.0239**	0.008	33.8	mg/L	7	Standard
	Cd	114	111.4	48.8	**0.0291**	0.010	33.6	ug/L	21	Standard
>	**In**	115	585793.5	1.5				ug/L	619035	Standard
	Sn	118	695.0	14.0	**0.0094**	0.015	159.8	ug/L	508	Standard
	Sb	123	298.3	27.7	**0.0638**	0.016	24.8	ug/L	86	Standard
	Ba	135	17524.8	1.5	**8.0809**	0.009	0.1	ug/L	79	Standard
	Ce	140	4882.5	7.2				ug/L	68	Standard
>	**Tb**	159	939211.6	2.4				ug/L	986982	Standard
	Ho	165	90.0	20.0				ug/L	10	Standard
	Tl	203	117.0	31.8	**0.0200**	0.004	22.4	ug/L	13	Standard
	Tl	205	85.0	11.8	**0.0196**	0.001	7.6	ug/L	10	Standard
	Pb	206	1637.8	1.8	**0.2684**	0.004	1.3	ug/L	264	Standard
	Pb	207	1331.4	4.1	**0.2422**	0.012	4.8	ug/L	227	Standard
	Pb	208	5486.4	2.8	**0.2560**	0.008	3.1	ug/L	868	Standard
	U	238	60169.2	1.1	**8.7341**	0.107	1.2	ug/L	8	Standard
>	**Bi**	209	493823.0	0.7				ug/L	541014	Standard

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Na	23	6.7	43.3	**36.6454**	14.539	39.7	mg/L	2	Standard
Mg	24	244255.3	2.0	**262.4118**	4.079	1.6	mg/L	53	Standard
K	39	685.0	6.4	**1.0706**	0.082	7.6	mg/L	53	Standard
Ca	43	993.4	8.8	**53.9378**	6.881	12.8	mg/L	28	Standard
Fe	54	260.7	6.9	**0.0567**	0.018	32.0	mg/L	181	Standard
Fe	57	821.7	9.3	**1.4845**	0.220	14.8	mg/L	257	Standard
> **Sc-1**	45	56028.5	3.6				mg/L	55220	Standard
Cl	35	59927.6	0.3				ug/L	35504	Standard
Kr	83	3.3	45.8				ug/L	2	Standard
Br	81	52735.1	4.5				ug/L	2040	Standard
P	31	28319.8	2.2				ug/L	20435	Standard
S	34	2893.6	4.6				ug/L	2430	Standard
Sr	88	1485.1	3.7				ug/L	75	Standard
C	12	193.3	24.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	129.7	23.0				mg/L	9	Standard
Ho-1	165	90.0	20.0				mg/L	10	Standard
Er	166	76.7	19.9				mg/L	23	Standard
I	127	106629.1	3.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.864	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.400	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.630
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.277
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606122802PS WG574804-01
Sample Date/Time: Thursday, June 30, 2016 17:34:03
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	86437.6	1.7				ug/L	74916	Standard
	Be	9	56613.9	1.0	**46.5070**	0.399	0.9	ug/L	10	Standard
	Al	27	75487495.4	1.1	**377.0591**	5.028	1.3	ug/L	1822	Standard
	Sc	45	58174.8	1.4				ug/L	55220	Standard
	Ti	47	1182.0	2.8	**2.8538**	0.084	2.9	ug/L	34	Standard
	V	51	506511.3	0.9	**55.6793**	0.488	0.9	ug/L	1938	Standard
	Cr	52	468582.8	0.8	**52.1771**	0.411	0.8	ug/L	9522	Standard
	Cr	53	98380.1	1.2	**89.6982**	1.261	1.4	ug/L	395	Standard
	Mn	55	437615.2	0.5	**51.8710**	0.153	0.3	ug/L	902	Standard
	Co	59	384345.6	1.3	**48.1889**	0.577	1.2	ug/L	262	Standard
	Ni	60	109797.1	1.5	**49.8850**	0.779	1.6	ug/L	371	Standard
	Cu	65	103193.2	1.1	**47.7166**	0.590	1.2	ug/L	106	Standard
	Zn	66	67753.5	1.0	**52.9106**	0.608	1.1	ug/L	398	Standard
>	Ge	72	523997.6	0.2				ug/L	535147	Standard
	As	75	70632.2	0.6	**53.9078**	0.320	0.6	ug/L	-43	Standard
	Se	82	8300.6	0.5	**62.4519**	0.357	0.6	ug/L	14	Standard
	Se-1	77	8649.5	1.4	**97.4766**	1.453	1.5	ug/L	65	Standard
>	Ga	71	280.0	25.2				mg/L	97	Standard
	Rb	85	9468.0	1.9				ug/L	15	Standard
	Y	89	467656.1	0.8				ug/L	465704	Standard
>	Rh	103	703.3	13.1				ug/L	10	Standard
	Mo	98	14547.0	0.8	**4.8010**	0.023	0.5	ug/L	9	Standard
	Ag	107	298779.8	0.3	**40.6443**	0.013	0.0	ug/L	82	Standard
	Cd	111	110559.1	0.6	**47.0556**	0.428	0.9	mg/L	7	Standard
	Cd	114	270298.7	1.3	**47.7731**	0.754	1.6	ug/L	21	Standard
>	In	115	602726.9	0.3				ug/L	619035	Standard
	Sn	118	4093.9	2.1	**0.5427**	0.016	2.9	ug/L	508	Standard
	Sb	123	242329.1	0.5	**47.0003**	0.122	0.3	ug/L	86	Standard
	Ba	135	123107.1	0.7	**55.2866**	0.431	0.8	ug/L	79	Standard
	Ce	140	5095.9	1.4				ug/L	68	Standard
>	Tb	159	959859.0	1.9				ug/L	986982	Standard
	Ho	165	75.0	30.6				ug/L	10	Standard
	Tl	203	419623.5	0.5	**49.1426**	0.528	1.1	ug/L	13	Standard
	Tl	205	367995.8	1.3	**50.4422**	0.282	0.6	ug/L	10	Standard
	Pb	206	277925.9	0.4	**50.6764**	0.491	1.0	ug/L	264	Standard
	Pb	207	242544.6	0.3	**48.9335**	0.558	1.1	ug/L	227	Standard
	Pb	208	972336.7	0.8	**50.8744**	0.701	1.4	ug/L	868	Standard
	U	238	429336.0	0.6	**60.7713**	0.490	0.8	ug/L	8	Standard
>	Bi	209	506035.4	0.9				ug/L	541014	Standard

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Na	23	16.7	62.4	**88.6640**	54.789	61.8	mg/L	2	Standard
Mg	24	250054.9	0.8	**258.6884**	5.747	2.2	mg/L	53	Standard
K	39	701.7	10.7	**1.0553**	0.133	12.6	mg/L	53	Standard
Ca	43	950.0	7.6	**49.4071**	4.026	8.1	mg/L	28	Standard
Fe	54	280.5	29.8	**0.0629**	0.056	88.2	mg/L	181	Standard
Fe	57	826.7	0.9	**1.4157**	0.014	1.0	mg/L	257	Standard
> **Sc-1**	45	58174.8	1.4				mg/L	55220	Standard
Cl	35	60997.2	1.1				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	53979.4	3.0				ug/L	2040	Standard
P	31	27292.9	1.1				ug/L	20435	Standard
S	34	2830.3	11.9				ug/L	2430	Standard
Sr	88	1463.4	6.1				ug/L	75	Standard
C	12	156.7	9.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	110.9	27.4				mg/L	9	Standard
Ho-1	165	75.0	30.6				mg/L	10	Standard
Er	166	50.0	34.6				mg/L	23	Standard
I	127	137947.1	7.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.379	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.917	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.366
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.535
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606122802PS WG574804-01
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Method 6020 - Summary Report

Sample ID: L1606122802SDL WG574804-02
Sample Date/Time: Thursday, June 30, 2016 17:37:15
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73360.5	0.4				ug/L	74916	Standard
	Be	9	36.7	28.4	**0.0319**	0.010	31.8	ug/L	10	Standard
	Al	27	14509056.2	0.6	**85.3818**	0.806	0.9	ug/L	1822	Standard
	Sc	45	53337.1	1.3				ug/L	55220	Standard
	Ti	47	286.3	19.2	**0.6411**	0.136	21.2	ug/L	34	Standard
	V	51	11459.1	1.9	**1.0730**	0.021	2.0	ug/L	1938	Standard
	Cr	52	13335.2	2.1	**0.4814**	0.035	7.2	ug/L	9522	Standard
	Cr	53	12733.7	2.1	**11.3211**	0.206	1.8	ug/L	395	Standard
	Mn	55	4720.1	19.9	**0.4581**	0.114	24.9	ug/L	902	Standard
	Co	59	731.4	36.8	**0.0694**	0.034	49.4	ug/L	262	Standard
	Ni	60	1482.7	3.8	**0.5329**	0.028	5.2	ug/L	371	Standard
	Cu	65	730.7	5.4	**0.2810**	0.019	6.8	ug/L	106	Standard
	Zn	66	2863.9	0.8	**1.9140**	0.025	1.3	ug/L	398	Standard
>	**Ge**	72	521806.3	0.3				ug/L	535147	Standard
	As	75	1017.6	2.9	**0.8344**	0.023	2.8	ug/L	-43	Standard
	Se	82	430.4	3.6	**3.1599**	0.109	3.4	ug/L	14	Standard
	Se-1	77	993.7	4.8	**10.7325**	0.584	5.4	ug/L	65	Standard
>	**Ga**	71	96.7	20.9				mg/L	97	Standard
	Rb	85	1926.8	6.7				ug/L	15	Standard
	Y	89	447616.0	1.0				ug/L	465704	Standard
>	**Rh**	103	160.0	13.6				ug/L	10	Standard
	Mo	98	2746.4	1.1	**0.9278**	0.002	0.2	ug/L	9	Standard
	Ag	107	402.0	70.3	**0.0495**	0.039	79.7	ug/L	82	Standard
	Cd	111	119.5	146.0	**0.0597**	0.076	126.8	mg/L	7	Standard
	Cd	114	348.7	133.0	**0.0717**	0.084	116.6	ug/L	21	Standard
>	**In**	115	595231.3	1.1				ug/L	619035	Standard
	Sn	118	358.3	13.7	**-0.0462**	0.007	15.6	ug/L	508	Standard
	Sb	123	1318.5	18.5	**0.2630**	0.045	17.1	ug/L	86	Standard
	Ba	135	3850.8	7.3	**1.7328**	0.140	8.1	ug/L	79	Standard
	Ce	140	1061.7	17.4				ug/L	68	Standard
>	**Tb**	159	941612.4	1.0				ug/L	986982	Standard
	Ho	165	26.7	47.2				ug/L	10	Standard
	Tl	203	404.7	120.4	**0.0518**	0.055	106.0	ug/L	13	Standard
	Tl	205	258.3	86.3	**0.0420**	0.029	69.9	ug/L	10	Standard
	Pb	206	715.7	32.4	**0.0890**	0.040	44.9	ug/L	264	Standard
	Pb	207	616.7	41.1	**0.0876**	0.049	55.4	ug/L	227	Standard
	Pb	208	2314.4	25.3	**0.0794**	0.029	36.2	ug/L	868	Standard
	U	238	12021.4	3.5	**1.6624**	0.041	2.5	ug/L	8	Standard
>	**Bi**	209	520254.4	1.0				ug/L	541014	Standard

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Na	23	5.0	100.0	**28.8752**	28.736	99.5	mg/L	2	Standard
Mg	24	47109.8	2.2	**53.1337**	1.841	3.5	mg/L	53	Standard
K	39	183.3	6.9	**0.2463**	0.025	10.1	mg/L	53	Standard
Ca	43	235.0	10.6	**12.1008**	1.406	11.6	mg/L	28	Standard
Fe	54	82.5	6.4	**-0.0605**	0.004	6.3	mg/L	181	Standard
Fe	57	368.3	12.6	**0.3480**	0.137	39.4	mg/L	257	Standard
> **Sc-1**	45	53337.1	1.3				mg/L	55220	Standard
Cl	35	51990.4	1.9				ug/L	35504	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	12571.9	2.3				ug/L	2040	Standard
P	31	11519.4	2.2				ug/L	20435	Standard
S	34	2808.6	3.0				ug/L	2430	Standard
Sr	88	361.7	8.4				ug/L	75	Standard
C	12	96.7	31.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	34.1	18.0				mg/L	9	Standard
Ho-1	165	26.7	47.2				mg/L	10	Standard
Er	166	53.3	39.0				mg/L	23	Standard
I	127	50790.0	2.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.923	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.507	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.155
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.163
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606122802SDL WG574804-02
Sample Date/Time: Thursday, June 30, 2016 17:40:26
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71461.5	2.2				ug/L	74916	Standard
	Be	9	26.7	47.2	**0.0228**	0.012	52.7	ug/L	10	Standard
	Al	27	2806825.1	1.4	**16.9567**	0.202	1.2	ug/L	1822	Standard
	Sc	45	52559.4	2.1				ug/L	55220	Standard
	Ti	47	72.0	6.4	**0.1108**	0.011	9.9	ug/L	34	Standard
	V	51	4274.9	5.1	**0.2826**	0.022	7.9	ug/L	1938	Standard
	Cr	52	10369.5	1.5	**0.1568**	0.015	9.6	ug/L	9522	Standard
	Cr	53	3978.9	3.6	**3.3142**	0.151	4.6	ug/L	395	Standard
	Mn	55	1206.4	7.1	**0.0403**	0.008	21.0	ug/L	902	Standard
	Co	59	303.7	11.1	**0.0159**	0.004	25.6	ug/L	262	Standard
	Ni	60	502.7	11.1	**0.0869**	0.023	26.1	ug/L	371	Standard
	Cu	65	277.0	15.4	**0.0714**	0.019	26.4	ug/L	106	Standard
	Zn	66	1164.0	1.9	**0.5827**	0.010	1.7	ug/L	398	Standard
>	**Ge**	72	515849.3	1.3				ug/L	535147	Standard
	As	75	184.2	24.2	**0.1976**	0.033	16.5	ug/L	-43	Standard
	Se	82	106.6	2.9	**0.7192**	0.027	3.7	ug/L	14	Standard
	Se-1	77	263.0	1.7	**2.4473**	0.021	0.8	ug/L	65	Standard
>	**Ga**	71	55.0	18.2				mg/L	97	Standard
	Rb	85	421.7	3.8				ug/L	15	Standard
	Y	89	442472.4	1.7				ug/L	465704	Standard
>	**Rh**	103	45.0	19.2				ug/L	10	Standard
	Mo	98	520.7	1.7	**0.1853**	0.004	2.0	ug/L	9	Standard
	Ag	107	154.3	12.7	**0.0151**	0.003	17.8	ug/L	82	Standard
	Cd	111	12.3	92.1	**0.0132**	0.005	36.7	mg/L	7	Standard
	Cd	114	44.3	52.1	**0.0168**	0.004	24.1	ug/L	21	Standard
>	**In**	115	597577.3	0.8				ug/L	619035	Standard
	Sn	118	213.3	23.6	**-0.0694**	0.008	11.7	ug/L	508	Standard
	Sb	123	262.1	15.7	**0.0557**	0.008	14.9	ug/L	86	Standard
	Ba	135	716.7	2.2	**0.3051**	0.005	1.5	ug/L	79	Standard
	Ce	140	191.7	15.7				ug/L	68	Standard
>	**Tb**	159	921013.3	2.2				ug/L	986982	Standard
	Ho	165	13.3	43.3				ug/L	10	Standard
	Tl	203	102.3	27.2	**0.0174**	0.003	17.1	ug/L	13	Standard
	Tl	205	156.7	95.9	**0.0281**	0.019	68.9	ug/L	10	Standard
	Pb	206	348.0	6.3	**0.0228**	0.003	15.2	ug/L	264	Standard
	Pb	207	266.7	6.0	**0.0182**	0.003	14.2	ug/L	227	Standard
	Pb	208	1386.0	20.7	**0.0309**	0.014	44.1	ug/L	868	Standard
	U	238	2294.8	6.4	**0.3179**	0.016	5.2	ug/L	8	Standard
>	**Bi**	209	529934.8	1.1				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	9147.8	1.6	**10.4409**	0.172	1.6	mg/L	53	Standard
K	39	70.0	28.6	**0.0490**	0.037	75.3	mg/L	53	Standard
Ca	43	71.7	21.3	**2.5839**	0.860	33.3	mg/L	28	Standard
Fe	54	76.1	10.2	**-0.0643**	0.006	8.7	mg/L	181	Standard
Fe	57	308.3	5.7	**0.1952**	0.046	23.6	mg/L	257	Standard
> **Sc-1**	45	52559.4	2.1				mg/L	55220	Standard
Cl	35	50844.5	1.6				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	4347.3	5.7				ug/L	2040	Standard
P	31	8237.2	1.9				ug/L	20435	Standard
S	34	2880.3	4.6				ug/L	2430	Standard
Sr	88	123.3	26.1				ug/L	75	Standard
C	12	56.7	40.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	12.4	43.3				mg/L	9	Standard
Ho-1	165	13.3	43.3				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	23	Standard
I	127	38066.1	1.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.388	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.394	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.534
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.952
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 17:43:40
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72258.6	1.9				ug/L	74916	Standard
	Be	9	57037.2	1.8	**56.0506**	0.953	1.7	ug/L	10	Standard
	Al	27	9091492.0	2.1	**54.3234**	1.304	2.4	ug/L	1822	Standard
	Sc	45	56784.6	2.3				ug/L	55220	Standard
	Ti	47	44286.6	0.4	**103.4553**	1.782	1.7	ug/L	34	Standard
	V	51	485675.3	0.3	**50.4329**	0.546	1.1	ug/L	1938	Standard
	Cr	52	490309.2	1.8	**51.5847**	1.331	2.6	ug/L	9522	Standard
	Cr	53	61139.8	2.4	**52.5078**	0.692	1.3	ug/L	395	Standard
	Mn	55	447615.4	1.9	**50.1306**	0.806	1.6	ug/L	902	Standard
	Co	59	428562.6	1.7	**50.7726**	0.436	0.9	ug/L	262	Standard
	Ni	60	119106.3	1.0	**51.1440**	1.025	2.0	ug/L	371	Standard
	Cu	65	116860.6	1.3	**51.0638**	0.517	1.0	ug/L	106	Standard
	Zn	66	68880.9	0.3	**50.8192**	0.775	1.5	ug/L	398	Standard
>	Ge	72	554559.8	1.3				ug/L	535147	Standard
	As	75	69238.1	0.3	**49.9414**	0.660	1.3	ug/L	-43	Standard
	Se	82	6963.6	0.6	**49.4910**	0.758	1.5	ug/L	14	Standard
	Se-1	77	4796.4	3.0	**50.7976**	1.329	2.6	ug/L	65	Standard
>	Ga	71	75.0	24.0				mg/L	97	Standard
	Rb	85	1118.4	7.6				ug/L	15	Standard
	Y	89	481212.4	0.6				ug/L	465704	Standard
>	Rh	103	43.3	24.0				ug/L	10	Standard
	Mo	98	315125.8	0.5	**97.1128**	1.487	1.5	ug/L	9	Standard
	Ag	107	386205.1	0.9	**49.1797**	0.968	2.0	ug/L	82	Standard
	Cd	111	125400.2	0.7	**49.9571**	0.795	1.6	mg/L	7	Standard
	Cd	114	304281.3	0.4	**50.3344**	0.343	0.7	ug/L	21	Standard
>	In	115	643980.7	1.1				ug/L	619035	Standard
	Sn	118	345428.6	1.3	**50.9205**	0.539	1.1	ug/L	508	Standard
	Sb	123	275057.7	1.1	**49.9373**	1.011	2.0	ug/L	86	Standard
	Ba	135	118011.5	0.9	**49.6017**	0.296	0.6	ug/L	79	Standard
	Ce	140	126.7	32.9				ug/L	68	Standard
>	Tb	159	982270.0	1.2				ug/L	986982	Standard
	Ho	165	6.7	114.6				ug/L	10	Standard
	Tl	203	481075.9	0.7	**51.0955**	0.420	0.8	ug/L	13	Standard
	Tl	205	420488.3	0.5	**52.2771**	0.384	0.7	ug/L	10	Standard
	Pb	206	300589.6	1.1	**49.7077**	0.665	1.3	ug/L	264	Standard
	Pb	207	271260.3	0.3	**49.6331**	0.176	0.4	ug/L	227	Standard
	Pb	208	1111622.2	0.7	**52.7489**	0.293	0.6	ug/L	868	Standard
	U	238	405342.1	0.3	**52.0374**	0.347	0.7	ug/L	8	Standard
>	Bi	209	557941.2	0.4				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4927.5	4.8	**5.1899**	0.290	5.6	mg/L	53	Standard
K	39	2308.5	3.7	**3.7365**	0.212	5.7	mg/L	53	Standard
Ca	43	113.3	16.7	**4.5567**	0.927	20.3	mg/L	28	Standard
Fe	54	7483.3	2.8	**4.8432**	0.248	5.1	mg/L	181	Standard
Fe	57	2221.8	7.9	**5.0628**	0.482	9.5	mg/L	257	Standard
Sc-1	45	56784.6	2.3				mg/L	55220	Standard
Cl	35	48383.9	3.9				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2723.6	12.6				ug/L	2040	Standard
P	31	25431.3	1.5				ug/L	20435	Standard
S	34	3180.3	4.3				ug/L	2430	Standard
Sr	88	90.0	33.3				ug/L	75	Standard
C	12	123.3	20.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	19.4	50.5				mg/L	9	Standard
Ho-1	165	6.7	114.6				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	18646.5	4.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	112.101		
Al	27	108.647		
Sc	45			
Ti	47	103.455		
V	51	100.866		
Cr	52	103.169		
Cr	53			
Mn	55	100.261		
Co	59	101.545		
Ni	60	102.288		
Cu	65	102.128		
Zn	66	101.638		
Ge	72		103.628	
As	75	99.883		
Se	82	98.982		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	97.113		
Ag	107	98.359		
Cd	111	99.914		
Cd	114			
In	115			104.030
Sn	118	101.841		
Sb	123	99.875		
Ba	135	99.203		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.191		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.498		
U	238	104.075		
Bi	209			103.129
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	

Sample ID: QC Std 6
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Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 17:46:51
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71546.9	1.6				ug/L	74916	Standard
	Be	9	70.0	65.5	**0.0656**	0.045	68.4	ug/L	10	Standard
	Al	27	20191.3	127.2	**0.1188**	0.154	129.5	ug/L	1822	Standard
	Sc	45	56650.7	0.9				ug/L	55220	Standard
	Ti	47	55.3	41.9	**0.0588**	0.053	89.4	ug/L	34	Standard
	V	51	1898.8	4.3	**0.0014**	0.006	433.4	ug/L	1938	Standard
	Cr	52	8671.5	6.2	**-0.1096**	0.049	45.1	ug/L	9522	Standard
	Cr	53	1248.4	8.8	**0.6919**	0.084	12.2	ug/L	395	Standard
	Mn	55	1063.4	23.8	**0.0140**	0.027	193.5	ug/L	902	Standard
	Co	59	356.0	39.3	**0.0193**	0.016	83.4	ug/L	262	Standard
	Ni	60	347.3	30.1	**0.0036**	0.043	1191.3	ug/L	371	Standard
	Cu	65	223.7	29.9	**0.0389**	0.028	72.4	ug/L	106	Standard
	Zn	66	452.3	14.9	**-0.0111**	0.047	419.6	ug/L	398	Standard
>	**Ge**	72	554751.4	1.2				ug/L	535147	Standard
	As	75	-55.9	25.8	**0.0150**	0.010	68.9	ug/L	-43	Standard
	Se	82	21.4	11.6	**0.0557**	0.019	33.3	ug/L	14	Standard
	Se-1	77	90.0	12.2	**0.3821**	0.113	29.6	ug/L	65	Standard
>	**Ga**	71	58.3	27.6				mg/L	97	Standard
	Rb	85	45.0	19.2				ug/L	15	Standard
	Y	89	482380.1	2.6				ug/L	465704	Standard
>	**Rh**	103	40.0	37.5				ug/L	10	Standard
	Mo	98	322.1	29.1	**0.1093**	0.028	25.5	ug/L	9	Standard
	Ag	107	381.0	21.2	**0.0413**	0.010	23.7	ug/L	82	Standard
	Cd	111	46.7	121.4	**0.0260**	0.022	84.3	mg/L	7	Standard
	Cd	114	87.7	82.5	**0.0231**	0.012	50.3	ug/L	21	Standard
>	**In**	115	658696.5	1.3				ug/L	619035	Standard
	Sn	118	1141.7	4.6	**0.0615**	0.007	12.2	ug/L	508	Standard
	Sb	123	938.2	24.9	**0.1709**	0.041	24.1	ug/L	86	Standard
	Ba	135	89.7	82.5	**0.0172**	0.030	175.6	ug/L	79	Standard
	Ce	140	43.3	43.7				ug/L	68	Standard
>	**Tb**	159	992991.8	0.3				ug/L	986982	Standard
	Ho	165	10.0	100.0				ug/L	10	Standard
	Tl	203	200.3	77.5	**0.0268**	0.016	60.0	ug/L	13	Standard
	Tl	205	213.3	103.0	**0.0337**	0.027	79.3	ug/L	10	Standard
	Pb	206	385.0	24.3	**0.0247**	0.015	61.1	ug/L	264	Standard
	Pb	207	327.3	27.0	**0.0256**	0.016	61.6	ug/L	227	Standard
	Pb	208	1329.0	23.3	**0.0235**	0.014	60.8	ug/L	868	Standard
	U	238	207.7	109.3	**0.0340**	0.029	83.9	ug/L	8	Standard
>	**Bi**	209	568921.4	0.2				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	126.7	81.5	**0.1003**	0.111	110.3	mg/L	53	Standard
K	39	40.0	25.0	**-0.0098**	0.017	170.2	mg/L	53	Standard
Ca	43	23.3	32.7	**-0.3870**	0.423	109.2	mg/L	28	Standard
Fe	54	159.2	11.3	**-0.0131**	0.011	86.4	mg/L	181	Standard
Fe	57	273.3	4.6	**0.0429**	0.033	77.3	mg/L	257	Standard
> **Sc-1**	45	56650.7	0.9				mg/L	55220	Standard
Cl	35	45940.2	1.2				ug/L	35504	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	2093.5	11.0				ug/L	2040	Standard
P	31	24581.6	1.1				ug/L	20435	Standard
S	34	3042.0	8.5				ug/L	2430	Standard
Sr	88	70.0	14.3				ug/L	75	Standard
C	12	76.7	30.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	172.7	9.0				mg/L	9	Standard
Ho-1	165	10.0	100.0				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	8235.6	8.5				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		103.663	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 7
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.407
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.158
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606106501
Sample Date/Time: Thursday, June 30, 2016 17:50:04
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73635.2	0.9				ug/L	74916	Standard
	Be	9	30.0	16.7	**0.0253**	0.005	19.6	ug/L	10	Standard
	Al	27	16116931.3	0.8	**94.4932**	1.153	1.2	ug/L	1822	Standard
	Sc	45	57662.9	0.8				ug/L	55220	Standard
	Ti	47	336.7	9.7	**0.7312**	0.081	11.1	ug/L	34	Standard
	V	51	5982.0	43.5	**0.4395**	0.279	63.4	ug/L	1938	Standard
	Cr	52	611766.7	0.6	**65.8027**	0.537	0.8	ug/L	9522	Standard
	Cr	53	86462.7	0.9	**75.7804**	0.701	0.9	ug/L	395	Standard
	Mn	55	887838.0	0.5	**101.3493**	1.401	1.4	ug/L	902	Standard
	Co	59	4582.7	1.6	**0.5302**	0.006	1.1	ug/L	262	Standard
	Ni	60	41104.7	0.5	**17.8736**	0.095	0.5	ug/L	371	Standard
	Cu	65	2756.3	3.3	**1.1692**	0.052	4.4	ug/L	106	Standard
	Zn	66	17435.4	1.2	**12.8391**	0.252	2.0	ug/L	398	Standard
>	**Ge**	72	544681.4	1.0				ug/L	535147	Standard
	As	75	162.3	16.8	**0.1743**	0.020	11.4	ug/L	-43	Standard
	Se	82	40.0	22.7	**0.1928**	0.065	33.7	ug/L	14	Standard
	Se-1	77	588.7	14.2	**5.8405**	0.920	15.7	ug/L	65	Standard
>	**Ga**	71	186.7	6.7				mg/L	97	Standard
	Rb	85	47365.6	1.2				ug/L	15	Standard
	Y	89	471520.5	1.5				ug/L	465704	Standard
>	**Rh**	103	111.7	9.3				ug/L	10	Standard
	Mo	98	9357.1	1.9	**2.9396**	0.067	2.3	ug/L	9	Standard
	Ag	107	194.0	23.5	**0.0190**	0.006	31.8	ug/L	82	Standard
	Cd	111	169.3	4.2	**0.0764**	0.004	4.7	mg/L	7	Standard
	Cd	114	469.8	16.7	**0.0878**	0.013	14.9	ug/L	21	Standard
>	**In**	115	634293.5	1.1				ug/L	619035	Standard
	Sn	118	1250.1	5.7	**0.0841**	0.011	12.7	ug/L	508	Standard
	Sb	123	10516.4	0.9	**1.9427**	0.039	2.0	ug/L	86	Standard
	Ba	135	14835.6	0.8	**6.3138**	0.040	0.6	ug/L	79	Standard
	Ce	140	1355.1	1.3				ug/L	68	Standard
>	**Tb**	159	980205.4	1.5				ug/L	986982	Standard
	Ho	165	105.0	24.7				ug/L	10	Standard
	Tl	203	91.3	17.4	**0.0161**	0.002	11.0	ug/L	13	Standard
	Tl	205	81.7	33.7	**0.0182**	0.003	19.1	ug/L	10	Standard
	Pb	206	2801.3	0.6	**0.4427**	0.006	1.4	ug/L	264	Standard
	Pb	207	2407.5	0.5	**0.4237**	0.002	0.4	ug/L	227	Standard
	Pb	208	10014.6	0.8	**0.4546**	0.008	1.7	ug/L	868	Standard
	U	238	1288.7	2.6	**0.1794**	0.006	3.1	ug/L	8	Standard
>	**Bi**	209	538332.6	0.8				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.0499**	15.666	173.1	mg/L	2	Standard
Mg	24	46080.0	1.0	**48.0607**	0.867	1.8	mg/L	53	Standard
K	39	1136.7	6.1	**1.7713**	0.112	6.3	mg/L	53	Standard
Ca	43	476.7	19.5	**24.1522**	4.825	20.0	mg/L	28	Standard
Fe	54	806.2	1.9	**0.4073**	0.006	1.4	mg/L	181	Standard
Fe	57	648.3	5.1	**0.9822**	0.098	9.9	mg/L	257	Standard
> **Sc-1**	45	57662.9	0.8				mg/L	55220	Standard
Cl	35	49425.8	0.4				ug/L	35504	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	5294.3	1.6				ug/L	2040	Standard
P	31	27229.5	2.2				ug/L	20435	Standard
S	34	3085.3	3.6				ug/L	2430	Standard
Sr	88	235.0	9.3				ug/L	75	Standard
C	12	146.7	23.9				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	128.2	58.4				mg/L	9	Standard
Ho-1	165	105.0	24.7				mg/L	10	Standard
Er	166	106.7	19.5				mg/L	23	Standard
I	127	7078.3	4.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.290	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.782	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.465	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.504	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606106502
Sample Date/Time: Thursday, June 30, 2016 17:53:16
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72146.4	2.3				ug/L	74916	Standard
	Be	9	33.3	69.3	**0.0291**	0.022	76.7	ug/L	10	Standard
	Al	27	9143805.5	1.7	**54.7197**	0.658	1.2	ug/L	1822	Standard
	Sc	45	57748.2	1.1				ug/L	55220	Standard
	Ti	47	387.0	7.8	**0.8501**	0.073	8.6	ug/L	34	Standard
	V	51	16858.0	80.2	**1.5917**	1.431	89.9	ug/L	1938	Standard
	Cr	52	4964026.3	0.6	**540.8487**	6.495	1.2	ug/L	9522	Standard
	Cr	53	629499.0	1.4	**553.7238**	13.816	2.5	ug/L	395	Standard
	Mn	55	883241.4	1.3	**100.7267**	1.452	1.4	ug/L	902	Standard
	Co	59	24044.4	1.3	**2.8764**	0.057	2.0	ug/L	262	Standard
	Ni	60	51740.2	1.0	**22.5158**	0.325	1.4	ug/L	371	Standard
	Cu	65	17579.9	1.8	**7.7639**	0.133	1.7	ug/L	106	Standard
	Zn	66	2765.6	0.3	**1.7428**	0.016	0.9	ug/L	398	Standard
>	Ge	72	545188.7	1.1				ug/L	535147	Standard
	As	75	735.7	13.4	**0.5948**	0.076	12.8	ug/L	-43	Standard
	Se	82	41.0	14.1	**0.2003**	0.044	22.2	ug/L	14	Standard
	Se-1	77	481.7	5.4	**4.6670**	0.276	5.9	ug/L	65	Standard
>	Ga	71	550.0	8.8				mg/L	97	Standard
	Rb	85	5659.4	1.5				ug/L	15	Standard
	Y	89	495236.8	0.4				ug/L	465704	Standard
>	Rh	103	58.3	34.6				ug/L	10	Standard
	Mo	98	53760.2	0.9	**16.9630**	0.070	0.4	ug/L	9	Standard
	Ag	107	191.3	10.8	**0.0189**	0.003	14.6	ug/L	82	Standard
	Cd	111	62.5	16.0	**0.0334**	0.004	11.9	mg/L	7	Standard
	Cd	114	293.6	17.4	**0.0586**	0.009	14.9	ug/L	21	Standard
>	In	115	629265.6	0.6				ug/L	619035	Standard
	Sn	118	2848.6	5.3	**0.3272**	0.024	7.4	ug/L	508	Standard
	Sb	123	804.0	3.9	**0.1538**	0.006	3.9	ug/L	86	Standard
	Ba	135	14742.2	1.9	**6.3237**	0.092	1.5	ug/L	79	Standard
	Ce	140	2671.9	4.0				ug/L	68	Standard
>	Tb	159	977403.9	1.3				ug/L	986982	Standard
	Ho	165	1240.1	9.1				ug/L	10	Standard
	Tl	203	196.7	16.2	**0.0277**	0.004	12.6	ug/L	13	Standard
	Tl	205	168.3	6.2	**0.0295**	0.001	4.2	ug/L	10	Standard
	Pb	206	866.4	7.6	**0.1114**	0.011	10.1	ug/L	264	Standard
	Pb	207	763.4	10.1	**0.1122**	0.014	12.8	ug/L	227	Standard
	Pb	208	3091.5	4.1	**0.1144**	0.006	5.3	ug/L	868	Standard
	U	238	383.7	7.3	**0.0591**	0.004	6.2	ug/L	8	Standard
>	Bi	209	536269.8	0.5				ug/L	541014	Standard

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Na	23	3.3	86.6	**17.8230**	15.431	86.6	mg/L	2	Standard
Mg	24	50808.4	2.5	**52.9253**	1.876	3.5	mg/L	53	Standard
K	39	263.3	23.9	**0.3507**	0.098	27.9	mg/L	53	Standard
Ca	43	335.0	14.2	**16.4838**	2.751	16.7	mg/L	28	Standard
Fe	54	3770.4	4.9	**2.3376**	0.113	4.8	mg/L	181	Standard
Fe	57	1288.4	9.4	**2.6008**	0.312	12.0	mg/L	257	Standard
> **Sc-1**	45	57748.2	1.1				mg/L	55220	Standard
Cl	35	47216.1	1.9				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	5644.4	5.9				ug/L	2040	Standard
P	31	28563.6	2.2				ug/L	20435	Standard
S	34	3062.0	5.7				ug/L	2430	Standard
Sr	88	153.3	16.4				ug/L	75	Standard
C	12	156.7	14.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	33.3				mg/L	7	Standard
Dy	164	1576.7	5.4				mg/L	9	Standard
Ho-1	165	1240.1	9.1				mg/L	10	Standard
Er	166	1183.4	13.0				mg/L	23	Standard
I	127	11782.9	3.7				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		96.303	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.876	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.653	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.123	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606106503
Sample Date/Time: Thursday, June 30, 2016 17:56:27
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72267.1	3.4				ug/L	74916	Standard
	Be	9	25.0	20.0	**0.0211**	0.005	25.9	ug/L	10	Standard
	Al	27	9609222.0	1.3	**57.4380**	1.746	3.0	ug/L	1822	Standard
	Sc	45	56719.3	1.4				ug/L	55220	Standard
	Ti	47	314.0	8.3	**0.6892**	0.070	10.2	ug/L	34	Standard
	V	51	9882.7	51.2	**0.8691**	0.548	63.1	ug/L	1938	Standard
	Cr	52	1188107.4	0.9	**130.8093**	1.119	0.9	ug/L	9522	Standard
	Cr	53	157236.7	1.1	**140.2942**	0.188	0.1	ug/L	395	Standard
	Mn	55	1593129.9	0.6	**184.7936**	1.923	1.0	ug/L	902	Standard
	Co	59	5302.6	0.8	**0.6272**	0.010	1.6	ug/L	262	Standard
	Ni	60	52859.7	0.7	**23.3912**	0.318	1.4	ug/L	371	Standard
	Cu	65	4676.1	1.5	**2.0568**	0.050	2.4	ug/L	106	Standard
	Zn	66	13695.9	1.8	**10.1747**	0.313	3.1	ug/L	398	Standard
>	**Ge**	72	536277.7	1.2				ug/L	535147	Standard
	As	75	582.2	21.2	**0.4890**	0.092	18.9	ug/L	-43	Standard
	Se	82	45.5	5.6	**0.2385**	0.021	8.7	ug/L	14	Standard
	Se-1	77	720.0	2.4	**7.3963**	0.270	3.6	ug/L	65	Standard
>	**Ga**	71	248.3	30.8				mg/L	97	Standard
	Rb	85	4008.9	1.2				ug/L	15	Standard
	Y	89	473754.3	0.1				ug/L	465704	Standard
>	**Rh**	103	110.0	7.9				ug/L	10	Standard
	Mo	98	4459.5	1.0	**1.4370**	0.027	1.9	ug/L	9	Standard
	Ag	107	169.7	20.5	**0.0163**	0.005	28.3	ug/L	82	Standard
	Cd	111	27.4	24.2	**0.0192**	0.003	14.6	mg/L	7	Standard
	Cd	114	98.3	29.5	**0.0258**	0.005	19.6	ug/L	21	Standard
>	**In**	115	621152.9	1.0				ug/L	619035	Standard
	Sn	118	1058.4	7.6	**0.0588**	0.014	23.7	ug/L	508	Standard
	Sb	123	419.5	13.7	**0.0834**	0.011	13.3	ug/L	86	Standard
	Ba	135	41508.4	0.6	**18.0760**	0.194	1.1	ug/L	79	Standard
	Ce	140	6071.2	3.4				ug/L	68	Standard
>	**Tb**	159	964455.2	0.8				ug/L	986982	Standard
	Ho	165	346.7	14.4				ug/L	10	Standard
	Tl	203	247.0	3.9	**0.0337**	0.001	3.3	ug/L	13	Standard
	Tl	205	235.0	9.8	**0.0386**	0.003	8.2	ug/L	10	Standard
	Pb	206	1431.7	0.2	**0.2128**	0.001	0.5	ug/L	264	Standard
	Pb	207	1231.7	1.9	**0.2053**	0.005	2.2	ug/L	227	Standard
	Pb	208	5055.0	0.8	**0.2155**	0.001	0.4	ug/L	868	Standard
	U	238	897.7	3.9	**0.1297**	0.005	3.8	ug/L	8	Standard
>	**Bi**	209	527610.6	0.5				ug/L	541014	Standard

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Na	23	5.0	100.0	**27.1787**	27.209	100.1	mg/L	2	Standard
Mg	24	76226.3	1.0	**80.8465**	0.780	1.0	mg/L	53	Standard
K	39	330.0	9.5	**0.4690**	0.047	10.1	mg/L	53	Standard
Ca	43	416.7	13.3	**21.2780**	2.769	13.0	mg/L	28	Standard
Fe	54	2258.1	2.4	**1.3795**	0.049	3.6	mg/L	181	Standard
Fe	57	981.7	1.6	**1.8687**	0.018	1.0	mg/L	257	Standard
Sc-1	45	56719.3	1.4				mg/L	55220	Standard
Cl	35	47083.0	0.3				ug/L	35504	Standard
Kr	83	4.7	53.9				ug/L	2	Standard
Br	81	8569.1	2.3				ug/L	2040	Standard
P	31	27803.8	2.0				ug/L	20435	Standard
S	34	3010.3	4.7				ug/L	2430	Standard
Sr	88	171.7	11.0				ug/L	75	Standard
C	12	170.0	56.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	69.3				mg/L	7	Standard
Dy	164	380.7	13.5				mg/L	9	Standard
Ho-1	165	346.7	14.4				mg/L	10	Standard
Er	166	403.3	12.7				mg/L	23	Standard
I	127	14363.5	3.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		96.464	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.211	
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	100.342
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	97.523
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606106504
Sample Date/Time: Thursday, June 30, 2016 17:59:39
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73044.0	0.7				ug/L	74916	Standard
	Be	9	20.0	66.1	**0.0158**	0.013	81.1	ug/L	10	Standard
	Al	27	14890059.6	1.9	**88.0112**	2.233	2.5	ug/L	1822	Standard
	Sc	45	56127.1	2.5				ug/L	55220	Standard
	Ti	47	684.7	0.3	**1.5842**	0.013	0.8	ug/L	34	Standard
	V	51	13946.2	28.3	**1.3048**	0.416	31.8	ug/L	1938	Standard
	Cr	52	1670670.6	1.4	**184.2918**	1.683	0.9	ug/L	9522	Standard
	Cr	53	217611.9	1.9	**194.2485**	3.221	1.7	ug/L	395	Standard
	Mn	55	1043368.4	2.0	**120.9446**	2.516	2.1	ug/L	902	Standard
	Co	59	41859.4	0.7	**5.1062**	0.013	0.3	ug/L	262	Standard
	Ni	60	94446.5	0.6	**41.8919**	0.141	0.3	ug/L	371	Standard
	Cu	65	5341.9	1.9	**2.3570**	0.039	1.7	ug/L	106	Standard
	Zn	66	14047.2	1.9	**10.4384**	0.166	1.6	ug/L	398	Standard
>	Ge	72	536441.4	0.6				ug/L	535147	Standard
	As	75	633.5	11.9	**0.5272**	0.058	11.0	ug/L	-43	Standard
	Se	82	31.7	5.9	**0.1362**	0.013	9.3	ug/L	14	Standard
	Se-1	77	649.7	1.0	**6.6130**	0.043	0.7	ug/L	65	Standard
>	Ga	71	410.0	14.8				mg/L	97	Standard
	Rb	85	132130.3	1.2				ug/L	15	Standard
	Y	89	474946.5	2.3				ug/L	465704	Standard
>	Rh	103	93.3	29.5				ug/L	10	Standard
	Mo	98	5272.3	2.4	**1.7093**	0.050	2.9	ug/L	9	Standard
	Ag	107	231.7	10.6	**0.0248**	0.003	13.3	ug/L	82	Standard
	Cd	111	395.6	5.6	**0.1725**	0.010	5.9	mg/L	7	Standard
	Cd	114	1048.3	2.6	**0.1900**	0.004	2.0	ug/L	21	Standard
>	In	115	616493.3	0.5				ug/L	619035	Standard
	Sn	118	1433.4	5.0	**0.1177**	0.011	9.0	ug/L	508	Standard
	Sb	123	13013.0	1.3	**2.4718**	0.035	1.4	ug/L	86	Standard
	Ba	135	13824.0	1.2	**6.0522**	0.083	1.4	ug/L	79	Standard
	Ce	140	7013.3	4.1				ug/L	68	Standard
>	Tb	159	964332.8	2.1				ug/L	986982	Standard
	Ho	165	1006.7	4.5				ug/L	10	Standard
	Tl	203	208.7	13.6	**0.0294**	0.003	10.0	ug/L	13	Standard
	Tl	205	180.0	43.3	**0.0314**	0.010	33.1	ug/L	10	Standard
	Pb	206	6744.2	1.3	**1.1438**	0.024	2.1	ug/L	264	Standard
	Pb	207	5755.1	0.8	**1.0824**	0.023	2.1	ug/L	227	Standard
	Pb	208	23463.1	0.3	**1.1412**	0.017	1.5	ug/L	868	Standard
	U	238	640.0	6.0	**0.0949**	0.006	6.0	ug/L	8	Standard
>	Bi	209	527082.8	1.3				ug/L	541014	Standard

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Na	23	8.3	69.3	**46.3620**	32.662	70.5	mg/L	2	Standard
Mg	24	54382.5	2.9	**58.2709**	0.521	0.9	mg/L	53	Standard
K	39	2045.1	8.2	**3.3436**	0.351	10.5	mg/L	53	Standard
Ca	43	306.7	14.2	**15.4474**	2.730	17.7	mg/L	28	Standard
Fe	54	2616.1	3.9	**1.6351**	0.060	3.7	mg/L	181	Standard
Fe	57	1056.7	7.6	**2.0939**	0.256	12.2	mg/L	257	Standard
> **Sc-1**	45	56127.1	2.5				mg/L	55220	Standard
Cl	35	46950.6	1.7				ug/L	35504	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	5627.7	2.5				ug/L	2040	Standard
P	31	28496.8	5.3				ug/L	20435	Standard
S	34	3097.0	2.4				ug/L	2430	Standard
Sr	88	225.0	25.6				ug/L	75	Standard
C	12	120.0	22.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	124.9				mg/L	7	Standard
Dy	164	1300.3	7.6				mg/L	9	Standard
Ho-1	165	1006.7	4.5				mg/L	10	Standard
Er	166	900.0	5.9				mg/L	23	Standard
I	127	8590.8	4.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.501	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.242	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.589
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.425
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606106505
Sample Date/Time: Thursday, June 30, 2016 18:02:50
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74521.2	1.6				ug/L	74916	Standard
	Be	9	11.7	89.2	**0.0075**	0.010	132.8	ug/L	10	Standard
	Al	27	21478597.1	0.8	**124.4554**	2.868	2.3	ug/L	1822	Standard
	Sc	45	57492.2	2.1				ug/L	55220	Standard
	Ti	47	252.3	5.2	**0.5312**	0.026	5.0	ug/L	34	Standard
	V	51	5121.6	17.5	**0.3486**	0.101	28.9	ug/L	1938	Standard
	Cr	52	70044.2	0.4	**6.6263**	0.112	1.7	ug/L	9522	Standard
	Cr	53	18946.8	3.0	**16.3331**	0.630	3.9	ug/L	395	Standard
	Mn	55	443945.6	0.8	**50.7064**	0.748	1.5	ug/L	902	Standard
	Co	59	1061.4	2.8	**0.1055**	0.005	4.7	ug/L	262	Standard
	Ni	60	12700.7	1.0	**5.4312**	0.085	1.6	ug/L	371	Standard
	Cu	65	1736.8	1.8	**0.7160**	0.009	1.3	ug/L	106	Standard
	Zn	66	3357.7	1.7	**2.1967**	0.054	2.5	ug/L	398	Standard
>	**Ge**	72	543813.6	1.1				ug/L	535147	Standard
	As	75	48.4	94.1	**0.0908**	0.034	37.0	ug/L	-43	Standard
	Se	82	48.8	16.1	**0.2573**	0.058	22.6	ug/L	14	Standard
	Se-1	77	599.7	2.9	**5.9687**	0.138	2.3	ug/L	65	Standard
>	**Ga**	71	270.0	25.7				mg/L	97	Standard
	Rb	85	463340.4	1.4				ug/L	15	Standard
	Y	89	469105.6	1.4				ug/L	465704	Standard
>	**Rh**	103	75.0	17.6				ug/L	10	Standard
	Mo	98	1754.4	2.2	**0.5694**	0.017	3.0	ug/L	9	Standard
	Ag	107	196.0	47.6	**0.0197**	0.012	62.6	ug/L	82	Standard
	Cd	111	159.1	1.3	**0.0732**	0.001	1.9	mg/L	7	Standard
	Cd	114	395.1	15.1	**0.0762**	0.010	12.9	ug/L	21	Standard
>	**In**	115	625024.6	0.8				ug/L	619035	Standard
	Sn	118	990.0	15.1	**0.0473**	0.023	48.5	ug/L	508	Standard
	Sb	123	5564.4	1.8	**1.0452**	0.025	2.4	ug/L	86	Standard
	Ba	135	10303.2	1.2	**4.4444**	0.086	1.9	ug/L	79	Standard
	Ce	140	1150.0	11.1				ug/L	68	Standard
>	**Tb**	159	978171.3	1.4				ug/L	986982	Standard
	Ho	165	78.3	13.3				ug/L	10	Standard
	Tl	203	125.3	56.3	**0.0199**	0.008	39.6	ug/L	13	Standard
	Tl	205	88.3	25.5	**0.0191**	0.003	15.4	ug/L	10	Standard
	Pb	206	1646.1	2.8	**0.2461**	0.009	3.7	ug/L	264	Standard
	Pb	207	1373.4	5.0	**0.2288**	0.014	6.2	ug/L	227	Standard
	Pb	208	5691.1	0.6	**0.2433**	0.003	1.2	ug/L	868	Standard
	U	238	70.0	35.1	**0.0173**	0.003	19.3	ug/L	8	Standard
>	**Bi**	209	535475.4	0.5				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	34121.7	1.4	**35.6859**	0.355	1.0	mg/L	53	Standard
K	39	9759.8	0.3	**15.8371**	0.382	2.4	mg/L	53	Standard
Ca	43	246.7	6.2	**11.7374**	0.613	5.2	mg/L	28	Standard
Fe	54	445.3	11.1	**0.1732**	0.039	22.4	mg/L	181	Standard
Fe	57	443.3	5.7	**0.4651**	0.060	13.0	mg/L	257	Standard
> **Sc-1**	45	57492.2	2.1				mg/L	55220	Standard
Cl	35	51043.8	0.6				ug/L	35504	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	7035.0	6.1				ug/L	2040	Standard
P	31	27479.9	4.1				ug/L	20435	Standard
S	34	2850.3	7.2				ug/L	2430	Standard
Sr	88	156.7	14.4				ug/L	75	Standard
C	12	150.0	33.3				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	7	Standard
Dy	164	57.0	65.8				mg/L	9	Standard
Ho-1	165	78.3	13.3				mg/L	10	Standard
Er	166	63.3	71.2				mg/L	23	Standard
I	127	8402.3	4.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.472	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.619	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.968	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.976	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606106506
Sample Date/Time: Thursday, June 30, 2016 18:06:02
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71069.7	2.2				ug/L	74916	Standard
	Be	9	30.0	33.3	**0.0265**	0.010	39.6	ug/L	10	Standard
	Al	27	11143825.1	2.6	**67.6893**	0.868	1.3	ug/L	1822	Standard
	Sc	45	56048.5	1.5				ug/L	55220	Standard
	Ti	47	477.7	3.5	**1.0979**	0.040	3.7	ug/L	34	Standard
	V	51	4437.6	7.8	**0.2877**	0.039	13.6	ug/L	1938	Standard
	Cr	52	45979.0	2.0	**4.1225**	0.083	2.0	ug/L	9522	Standard
	Cr	53	13444.3	4.2	**11.7831**	0.524	4.4	ug/L	395	Standard
	Mn	55	3575608.0	1.6	**419.7161**	4.801	1.1	ug/L	902	Standard
	Co	59	2220.8	1.8	**0.2526**	0.003	1.3	ug/L	262	Standard
	Ni	60	7995.4	0.2	**3.4561**	0.023	0.7	ug/L	371	Standard
	Cu	65	2743.2	1.7	**1.1967**	0.016	1.3	ug/L	106	Standard
	Zn	66	4451.7	1.5	**3.1126**	0.058	1.9	ug/L	398	Standard
>	**Ge**	72	530048.9	0.6				ug/L	535147	Standard
	As	75	2032.0	2.8	**1.5868**	0.042	2.6	ug/L	-43	Standard
	Se	82	76.9	9.6	**0.4758**	0.054	11.4	ug/L	14	Standard
	Se-1	77	672.7	3.2	**6.9571**	0.208	3.0	ug/L	65	Standard
>	**Ga**	71	185.0	9.7				mg/L	97	Standard
	Rb	85	7120.0	1.7				ug/L	15	Standard
	Y	89	462046.4	1.0				ug/L	465704	Standard
>	**Rh**	103	118.3	34.2				ug/L	10	Standard
	Mo	98	710.5	3.3	**0.2430**	0.007	3.1	ug/L	9	Standard
	Ag	107	224.0	3.1	**0.0240**	0.001	3.7	ug/L	82	Standard
	Cd	111	47.0	19.1	**0.0276**	0.004	13.4	mg/L	7	Standard
	Cd	114	113.0	29.7	**0.0286**	0.006	20.3	ug/L	21	Standard
>	**In**	115	611324.6	0.3				ug/L	619035	Standard
	Sn	118	1256.7	33.6	**0.0923**	0.066	71.8	ug/L	508	Standard
	Sb	123	729.4	5.3	**0.1439**	0.008	5.4	ug/L	86	Standard
	Ba	135	23684.8	0.9	**10.4710**	0.067	0.6	ug/L	79	Standard
	Ce	140	3487.1	5.2				ug/L	68	Standard
>	**Tb**	159	950376.7	0.4				ug/L	986982	Standard
	Ho	165	113.3	16.7				ug/L	10	Standard
	Tl	203	194.3	13.6	**0.0282**	0.003	10.7	ug/L	13	Standard
	Tl	205	166.7	7.5	**0.0300**	0.002	5.4	ug/L	10	Standard
	Pb	206	868.0	3.2	**0.1167**	0.005	4.3	ug/L	264	Standard
	Pb	207	745.7	6.4	**0.1136**	0.009	8.0	ug/L	227	Standard
	Pb	208	2985.1	1.3	**0.1141**	0.002	1.4	ug/L	868	Standard
	U	238	143.0	9.5	**0.0276**	0.002	6.8	ug/L	8	Standard
>	**Bi**	209	518904.1	0.3				ug/L	541014	Standard

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Na	23	5.0	100.0	**27.6637**	27.875	100.8	mg/L	2	Standard
Mg	24	64789.9	2.1	**69.5287**	0.838	1.2	mg/L	53	Standard
K	39	358.3	15.4	**0.5231**	0.092	17.6	mg/L	53	Standard
Ca	43	758.4	6.6	**40.6443**	2.815	6.9	mg/L	28	Standard
Fe	54	4937.5	1.5	**3.1958**	0.022	0.7	mg/L	181	Standard
Fe	57	1738.4	3.5	**3.8759**	0.222	5.7	mg/L	257	Standard
> **Sc-1**	45	56048.5	1.5				mg/L	55220	Standard
Cl	35	46920.6	2.0				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	14326.8	1.4				ug/L	2040	Standard
P	31	27583.5	4.6				ug/L	20435	Standard
S	34	3072.0	2.6				ug/L	2430	Standard
Sr	88	263.3	13.3				ug/L	75	Standard
C	12	206.7	12.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	7	Standard
Dy	164	203.6	27.1				mg/L	9	Standard
Ho-1	165	113.3	16.7				mg/L	10	Standard
Er	166	133.3	8.7				mg/L	23	Standard
I	127	19841.3	3.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.865	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.047	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.754
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.913
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606106804
Sample Date/Time: Thursday, June 30, 2016 18:09:13
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77459.2	1.8				ug/L	74916	Standard
	Be	9	18.3	68.6	**0.0131**	0.011	86.1	ug/L	10	Standard
	Al	27	41020836.0	0.1	**228.6660**	3.747	1.6	ug/L	1822	Standard
	Sc	45	58899.3	1.4				ug/L	55220	Standard
	Ti	47	683.7	2.2	**1.6300**	0.029	1.8	ug/L	34	Standard
	V	51	10480.9	2.8	**0.9661**	0.034	3.5	ug/L	1938	Standard
	Cr	52	17903.6	1.0	**1.0049**	0.037	3.7	ug/L	9522	Standard
	Cr	53	28528.6	6.8	**25.8846**	1.981	7.7	ug/L	395	Standard
	Mn	55	109383.8	1.1	**12.9559**	0.037	0.3	ug/L	902	Standard
	Co	59	3379.4	2.6	**0.4033**	0.008	2.0	ug/L	262	Standard
	Ni	60	4055.2	0.8	**1.7121**	0.017	1.0	ug/L	371	Standard
	Cu	65	1283.7	4.3	**0.5389**	0.030	5.6	ug/L	106	Standard
	Zn	66	4828.4	1.2	**3.4689**	0.012	0.4	ug/L	398	Standard
>	**Ge**	72	521209.6	0.9				ug/L	535147	Standard
	As	75	2211.0	8.9	**1.7504**	0.158	9.0	ug/L	-43	Standard
	Se	82	893.2	6.4	**6.6723**	0.493	7.4	ug/L	14	Standard
	Se-1	77	1913.1	8.8	**21.2303**	2.028	9.6	ug/L	65	Standard
>	**Ga**	71	136.7	5.6				mg/L	97	Standard
	Rb	85	8235.6	0.7				ug/L	15	Standard
	Y	89	458447.5	0.6				ug/L	465704	Standard
>	**Rh**	103	401.7	9.0				ug/L	10	Standard
	Mo	98	249.5	8.0	**0.0959**	0.007	7.1	ug/L	9	Standard
	Ag	107	181.3	9.8	**0.0190**	0.002	13.0	ug/L	82	Standard
	Cd	111	300.2	7.7	**0.1378**	0.009	6.7	mg/L	7	Standard
	Cd	114	734.2	11.4	**0.1410**	0.016	11.2	ug/L	21	Standard
>	**In**	115	592465.9	1.1				ug/L	619035	Standard
	Sn	118	775.0	11.8	**0.0209**	0.013	64.4	ug/L	508	Standard
	Sb	123	603.9	4.2	**0.1235**	0.004	3.4	ug/L	86	Standard
	Ba	135	545541.8	0.5	**249.3393**	4.016	1.6	ug/L	79	Standard
	Ce	140	2048.5	7.3				ug/L	68	Standard
>	**Tb**	159	949095.6	1.2				ug/L	986982	Standard
	Ho	165	88.3	18.2				ug/L	10	Standard
	Tl	203	97.3	8.7	**0.0173**	0.001	5.4	ug/L	13	Standard
	Tl	205	90.0	16.7	**0.0199**	0.002	10.1	ug/L	10	Standard
	Pb	206	978.0	0.7	**0.1390**	0.001	0.7	ug/L	264	Standard
	Pb	207	802.4	6.7	**0.1273**	0.011	8.8	ug/L	227	Standard
	Pb	208	3285.1	1.3	**0.1321**	0.002	1.4	ug/L	868	Standard
	U	238	1121.4	2.1	**0.1651**	0.002	1.4	ug/L	8	Standard
>	**Bi**	209	510708.2	0.8				ug/L	541014	Standard

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Na	23	5.0	100.0	**26.2857**	26.048	99.1	mg/L	2	Standard
Mg	24	118017.9	1.0	**120.5636**	2.169	1.8	mg/L	53	Standard
K	39	473.3	3.2	**0.6774**	0.033	4.9	mg/L	53	Standard
Ca	43	628.3	1.2	**31.6956**	0.741	2.3	mg/L	28	Standard
Fe	54	284.4	4.9	**0.0630**	0.011	17.3	mg/L	181	Standard
Fe	57	583.3	4.1	**0.7864**	0.079	10.0	mg/L	257	Standard
Sc-1	45	58899.3	1.4				mg/L	55220	Standard
Cl	35	47927.0	0.5				ug/L	35504	Standard
Kr	83	2.7	43.3				ug/L	2	Standard
Br	81	177183.7	2.3				ug/L	2040	Standard
P	31	33166.3	1.4				ug/L	20435	Standard
S	34	3038.6	3.6				ug/L	2430	Standard
Sr	88	1120.0	5.8				ug/L	75	Standard
C	12	333.3	41.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	78.9	41.1				mg/L	9	Standard
Ho-1	165	88.3	18.2				mg/L	10	Standard
Er	166	93.3	16.4				mg/L	23	Standard
I	127	490251.5	7.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.394	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.396	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.708
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.398
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606106805
Sample Date/Time: Thursday, June 30, 2016 18:12:25
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78762.6	2.6				ug/L	74916	Standard
	Be	9	20.0	50.0	**0.0144**	0.009	60.4	ug/L	10	Standard
	Al	27	41204374.5	1.8	**225.9730**	8.404	3.7	ug/L	1822	Standard
	Sc	45	61672.0	2.2				ug/L	55220	Standard
	Ti	47	674.3	4.5	**1.5812**	0.070	4.5	ug/L	34	Standard
	V	51	11529.2	6.0	**1.0631**	0.082	7.7	ug/L	1938	Standard
	Cr	52	18039.7	0.8	**0.9888**	0.007	0.7	ug/L	9522	Standard
	Cr	53	31686.4	2.6	**28.3390**	0.782	2.8	ug/L	395	Standard
	Mn	55	109122.6	0.6	**12.7266**	0.120	0.9	ug/L	902	Standard
	Co	59	3320.0	3.2	**0.3895**	0.012	3.0	ug/L	262	Standard
	Ni	60	4079.5	2.0	**1.6947**	0.030	1.7	ug/L	371	Standard
	Cu	65	1241.4	3.2	**0.5103**	0.020	4.0	ug/L	106	Standard
	Zn	66	4815.1	1.9	**3.4002**	0.053	1.5	ug/L	398	Standard
>	**Ge**	72	529274.8	0.6				ug/L	535147	Standard
	As	75	2209.6	7.3	**1.7236**	0.131	7.6	ug/L	-43	Standard
	Se	82	896.1	1.4	**6.5882**	0.124	1.9	ug/L	14	Standard
	Se-1	77	2079.1	4.3	**22.7577**	1.102	4.8	ug/L	65	Standard
>	**Ga**	71	145.0	12.4				mg/L	97	Standard
	Rb	85	8400.7	1.3				ug/L	15	Standard
	Y	89	462821.0	0.8				ug/L	465704	Standard
>	**Rh**	103	420.0	13.3				ug/L	10	Standard
	Mo	98	221.4	13.0	**0.0855**	0.010	11.2	ug/L	9	Standard
	Ag	107	161.0	24.1	**0.0159**	0.005	33.2	ug/L	82	Standard
	Cd	111	299.9	12.1	**0.1359**	0.015	11.3	mg/L	7	Standard
	Cd	114	712.8	9.3	**0.1352**	0.011	8.5	ug/L	21	Standard
>	**In**	115	600962.3	0.2				ug/L	619035	Standard
	Sn	118	703.3	5.7	**0.0079**	0.006	79.0	ug/L	508	Standard
	Sb	123	530.9	6.4	**0.1077**	0.006	6.0	ug/L	86	Standard
	Ba	135	542029.2	0.7	**244.1998**	1.171	0.5	ug/L	79	Standard
	Ce	140	1825.1	4.0				ug/L	68	Standard
>	**Tb**	159	958625.4	0.8				ug/L	986982	Standard
	Ho	165	46.7	16.4				ug/L	10	Standard
	Tl	203	87.3	19.7	**0.0161**	0.002	12.5	ug/L	13	Standard
	Tl	205	65.0	20.4	**0.0165**	0.002	10.9	ug/L	10	Standard
	Pb	206	1118.4	2.4	**0.1631**	0.005	2.8	ug/L	264	Standard
	Pb	207	947.7	3.3	**0.1551**	0.006	4.1	ug/L	227	Standard
	Pb	208	3928.5	2.1	**0.1641**	0.004	2.3	ug/L	868	Standard
	U	238	1138.7	0.9	**0.1665**	0.002	1.1	ug/L	8	Standard
>	**Bi**	209	514052.9	0.4				ug/L	541014	Standard

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Na	23	6.7	114.6	**34.1484**	39.564	115.9	mg/L	2	Standard
Mg	24	120082.3	0.4	**117.1865**	3.113	2.7	mg/L	53	Standard
K	39	458.3	18.1	**0.6225**	0.142	22.8	mg/L	53	Standard
Ca	43	670.0	12.3	**32.3531**	4.666	14.4	mg/L	28	Standard
Fe	54	211.5	10.0	**0.0101**	0.010	102.2	mg/L	181	Standard
Fe	57	595.0	16.8	**0.7476**	0.225	30.2	mg/L	257	Standard
> **Sc-1**	45	61672.0	2.2				mg/L	55220	Standard
Cl	35	48429.3	0.5				ug/L	35504	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	177803.9	0.6				ug/L	2040	Standard
P	31	34178.5	1.4				ug/L	20435	Standard
S	34	3103.7	2.6				ug/L	2430	Standard
Sr	88	1121.7	7.1				ug/L	75	Standard
C	12	310.0	12.9				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	98.9	29.5				mg/L	9	Standard
Ho-1	165	46.7	16.4				mg/L	10	Standard
Er	166	93.3	12.4				mg/L	23	Standard
I	127	532134.0	7.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.134	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.903	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	97.081	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	95.017	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606106811
Sample Date/Time: Thursday, June 30, 2016 18:15:36
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78749.2	2.6				ug/L	74916	Standard
	Be	9	3210.3	2.9	**2.8931**	0.138	4.8	ug/L	10	Standard
	Al	27	8276123.8	2.0	**45.3731**	0.379	0.8	ug/L	1822	Standard
	Sc	45	110165.8	2.1				ug/L	55220	Standard
	Ti	47	71798.4	1.1	**163.8727**	1.830	1.1	ug/L	34	Standard
	V	51	597395.3	2.2	**60.6469**	1.875	3.1	ug/L	1938	Standard
	Cr	52	454287.2	0.3	**46.5886**	0.601	1.3	ug/L	9522	Standard
	Cr	53	59023.1	2.1	**49.5051**	1.218	2.5	ug/L	395	Standard
	Mn	55	4104131.7	1.4	**449.9024**	9.422	2.1	ug/L	902	Standard
	Co	59	94928.8	1.1	**10.9690**	0.039	0.4	ug/L	262	Standard
	Ni	60	95168.6	0.3	**39.8855**	0.353	0.9	ug/L	371	Standard
	Cu	65	119473.9	0.7	**50.9995**	0.248	0.5	ug/L	106	Standard
	Zn	66	542722.9	0.9	**393.4429**	2.381	0.6	ug/L	398	Standard
>	**Ge**	72	567664.4	0.9				ug/L	535147	Standard
	As	75	7285.2	0.6	**5.1825**	0.021	0.4	ug/L	-43	Standard
	Se	82	272.3	1.4	**1.7973**	0.037	2.1	ug/L	14	Standard
	Se-1	77	303.7	6.5	**2.5954**	0.179	6.9	ug/L	65	Standard
>	**Ga**	71	56776.2	2.2				mg/L	97	Standard
	Rb	85	477870.7	0.6				ug/L	15	Standard
	Y	89	822359.5	0.5				ug/L	465704	Standard
>	**Rh**	103	91.7	11.4				ug/L	10	Standard
	Mo	98	1727.7	2.3	**0.5395**	0.015	2.9	ug/L	9	Standard
	Ag	107	1194.0	7.9	**0.1445**	0.011	7.9	ug/L	82	Standard
	Cd	111	5005.8	0.8	**1.9818**	0.018	0.9	mg/L	7	Standard
	Cd	114	12202.2	2.0	**2.0071**	0.047	2.3	ug/L	21	Standard
>	**In**	115	650434.8	0.8				ug/L	619035	Standard
	Sn	118	1160.0	0.4	**0.0662**	0.001	1.3	ug/L	508	Standard
	Sb	123	470.0	9.1	**0.0889**	0.008	8.8	ug/L	86	Standard
	Ba	135	653420.0	0.4	**272.0161**	3.332	1.2	ug/L	79	Standard
	Ce	140	1323543.4	0.9				ug/L	68	Standard
>	**Tb**	159	1024977.1	0.6				ug/L	986982	Standard
	Ho	165	25294.4	0.4				ug/L	10	Standard
	Tl	203	3087.0	0.8	**0.3285**	0.001	0.2	ug/L	13	Standard
	Tl	205	2636.9	5.2	**0.3302**	0.020	5.9	ug/L	10	Standard
	Pb	206	174438.4	0.1	**28.3571**	0.235	0.8	ug/L	264	Standard
	Pb	207	142402.4	0.8	**25.6126**	0.261	1.0	ug/L	227	Standard
	Pb	208	605823.5	0.5	**28.2596**	0.349	1.2	ug/L	868	Standard
	U	238	20875.4	0.8	**2.6436**	0.041	1.5	ug/L	8	Standard
>	**Bi**	209	567257.9	0.9				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	7990.4	1.6	**4.3309**	0.069	1.6	mg/L	53	Standard
K	39	1378.4	4.7	**1.0972**	0.070	6.4	mg/L	53	Standard
Ca	43	161.7	15.3	**2.9254**	0.802	27.4	mg/L	28	Standard
Fe	54	40769.5	0.5	**13.8094**	0.314	2.3	mg/L	181	Standard
Fe	57	10608.7	0.8	**13.4263**	0.334	2.5	mg/L	257	Standard
Sc-1	45	110165.8	2.1				mg/L	55220	Standard
Cl	35	42049.6	2.4				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	8065.5	16.8				ug/L	2040	Standard
P	31	76226.3	1.5				ug/L	20435	Standard
S	34	2406.9	13.6				ug/L	2430	Standard
Sr	88	263.3	4.8				ug/L	75	Standard
C	12	300.0	8.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	330.0	8.0				mg/L	7	Standard
Dy	164	39232.4	1.8				mg/L	9	Standard
Ho-1	165	25294.4	0.4				mg/L	10	Standard
Er	166	23965.6	1.4				mg/L	23	Standard
I	127	64313.6	9.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.116	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.076	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	105.072
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	104.851
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606122803
Sample Date/Time: Thursday, June 30, 2016 18:18:47
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75779.1	1.5				ug/L	74916	Standard
	Be	9	38.3	58.8	**0.0323**	0.021	65.8	ug/L	10	Standard
	Al	27	3674175.9	1.4	**20.9293**	0.040	0.2	ug/L	1822	Standard
	Sc	45	59863.0	1.4				ug/L	55220	Standard
	Ti	47	3033.0	2.3	**6.9943**	0.222	3.2	ug/L	34	Standard
	V	51	34608.1	1.8	**3.3978**	0.044	1.3	ug/L	1938	Standard
	Cr	52	15251.3	1.0	**0.5912**	0.011	1.9	ug/L	9522	Standard
	Cr	53	2611.9	4.9	**1.8640**	0.098	5.3	ug/L	395	Standard
	Mn	55	71329.9	1.8	**7.8706**	0.081	1.0	ug/L	902	Standard
	Co	59	2238.5	2.9	**0.2415**	0.006	2.5	ug/L	262	Standard
	Ni	60	3339.7	0.4	**1.2872**	0.012	1.0	ug/L	371	Standard
	Cu	65	1994.5	2.1	**0.8106**	0.016	2.0	ug/L	106	Standard
	Zn	66	26090.8	0.0	**18.9622**	0.156	0.8	ug/L	398	Standard
>	**Ge**	72	556570.8	0.8				ug/L	535147	Standard
	As	75	428.1	4.3	**0.3626**	0.015	4.1	ug/L	-43	Standard
	Se	82	54.7	2.8	**0.2909**	0.008	2.8	ug/L	14	Standard
	Se-1	77	100.3	12.7	**0.4889**	0.128	26.1	ug/L	65	Standard
>	**Ga**	71	608.3	10.3				mg/L	97	Standard
	Rb	85	60132.4	1.0				ug/L	15	Standard
	Y	89	491612.9	1.6				ug/L	465704	Standard
>	**Rh**	103	56.7	13.5				ug/L	10	Standard
	Mo	98	1351.1	5.5	**0.4221**	0.022	5.3	ug/L	9	Standard
	Ag	107	131.3	13.4	**0.0104**	0.002	21.4	ug/L	82	Standard
	Cd	111	30.5	14.2	**0.0198**	0.002	8.5	mg/L	7	Standard
	Cd	114	65.9	55.0	**0.0196**	0.006	29.6	ug/L	21	Standard
>	**In**	115	654259.7	0.8				ug/L	619035	Standard
	Sn	118	898.4	13.5	**0.0271**	0.017	61.8	ug/L	508	Standard
	Sb	123	278.2	7.9	**0.0541**	0.004	6.7	ug/L	86	Standard
	Ba	135	59563.9	1.2	**24.6321**	0.281	1.1	ug/L	79	Standard
	Ce	140	17551.8	3.2				ug/L	68	Standard
>	**Tb**	159	989788.8	0.3				ug/L	986982	Standard
	Ho	165	365.0	9.6				ug/L	10	Standard
	Tl	203	48.7	12.0	**0.0112**	0.001	6.0	ug/L	13	Standard
	Tl	205	31.7	32.9	**0.0117**	0.001	10.9	ug/L	10	Standard
	Pb	206	2053.5	2.8	**0.3045**	0.009	2.9	ug/L	264	Standard
	Pb	207	1720.8	1.5	**0.2842**	0.004	1.3	ug/L	227	Standard
	Pb	208	7157.7	1.4	**0.3040**	0.006	1.8	ug/L	868	Standard
	U	238	756.0	3.0	**0.1056**	0.002	1.7	ug/L	8	Standard
>	**Bi**	209	553931.3	1.3				ug/L	541014	Standard

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Na	23	3.3	173.2	**17.5709**	30.425	173.2	mg/L	2	Standard
Mg	24	1763.4	6.2	**1.7389**	0.124	7.2	mg/L	53	Standard
K	39	2405.2	5.0	**3.6880**	0.142	3.8	mg/L	53	Standard
Ca	43	323.3	6.2	**15.2296**	1.297	8.5	mg/L	28	Standard
Fe	54	694.0	3.8	**0.3175**	0.017	5.4	mg/L	181	Standard
Fe	57	510.0	14.8	**0.5849**	0.200	34.1	mg/L	257	Standard
> **Sc-1**	45	59863.0	1.4				mg/L	55220	Standard
Cl	35	43270.4	1.0				ug/L	35504	Standard
Kr	83	3.3	45.8				ug/L	2	Standard
Br	81	5717.7	4.6				ug/L	2040	Standard
P	31	27109.2	1.6				ug/L	20435	Standard
S	34	2391.9	8.1				ug/L	2430	Standard
Sr	88	230.0	4.3				ug/L	75	Standard
C	12	243.3	15.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	7	Standard
Dy	164	578.5	3.4				mg/L	9	Standard
Ho-1	165	365.0	9.6				mg/L	10	Standard
Er	166	310.0	8.5				mg/L	23	Standard
I	127	16976.2	8.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.151	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.003	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.690
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.388
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 18:22:01
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73578.2	1.0				ug/L	74916	Standard
	Be	9	56436.6	1.3	**54.4597**	0.400	0.7	ug/L	10	Standard
	Al	27	8718982.3	2.0	**51.1525**	0.630	1.2	ug/L	1822	Standard
	Sc	45	57758.2	1.5				ug/L	55220	Standard
	Ti	47	42985.6	0.8	**101.1406**	1.072	1.1	ug/L	34	Standard
	V	51	473388.7	2.1	**49.5193**	1.553	3.1	ug/L	1938	Standard
	Cr	52	474882.2	1.7	**50.3019**	1.317	2.6	ug/L	9522	Standard
	Cr	53	59704.1	2.5	**51.6666**	2.064	4.0	ug/L	395	Standard
	Mn	55	443343.2	1.1	**50.0227**	1.138	2.3	ug/L	902	Standard
	Co	59	419267.7	1.3	**50.0452**	1.250	2.5	ug/L	262	Standard
	Ni	60	115798.5	1.3	**50.0800**	0.779	1.6	ug/L	371	Standard
	Cu	65	112988.1	1.7	**49.7307**	0.715	1.4	ug/L	106	Standard
	Zn	66	67467.2	1.8	**50.1266**	0.166	0.3	ug/L	398	Standard
>	Ge	72	550545.3	1.5				ug/L	535147	Standard
	As	75	67527.8	0.8	**49.0676**	0.992	2.0	ug/L	-43	Standard
	Se	82	6913.0	1.7	**49.4991**	1.588	3.2	ug/L	14	Standard
	Se-1	77	4680.4	2.0	**49.9384**	1.760	3.5	ug/L	65	Standard
>	Ga	71	65.0	13.3				mg/L	97	Standard
	Rb	85	991.7	6.3				ug/L	15	Standard
	Y	89	482982.4	0.6				ug/L	465704	Standard
>	Rh	103	33.3	17.3				ug/L	10	Standard
	Mo	98	313121.3	1.1	**96.7874**	0.451	0.5	ug/L	9	Standard
	Ag	107	378687.7	0.4	**48.3701**	0.519	1.1	ug/L	82	Standard
	Cd	111	123318.4	0.8	**49.2782**	0.374	0.8	mg/L	7	Standard
	Cd	114	303262.6	0.8	**50.3224**	0.349	0.7	ug/L	21	Standard
>	In	115	641990.0	1.5				ug/L	619035	Standard
	Sn	118	335969.9	1.8	**49.6749**	0.360	0.7	ug/L	508	Standard
	Sb	123	267416.7	1.1	**48.6961**	0.330	0.7	ug/L	86	Standard
	Ba	135	114466.8	0.3	**48.2658**	0.663	1.4	ug/L	79	Standard
	Ce	140	326.7	13.7				ug/L	68	Standard
>	Tb	159	988094.4	1.2				ug/L	986982	Standard
	Ho	165	20.0	75.0				ug/L	10	Standard
	Tl	203	462310.9	1.0	**50.1285**	0.295	0.6	ug/L	13	Standard
	Tl	205	410772.5	1.1	**52.1362**	0.458	0.9	ug/L	10	Standard
	Pb	206	293921.2	0.6	**49.6204**	0.144	0.3	ug/L	264	Standard
	Pb	207	267372.5	0.4	**49.9456**	0.275	0.6	ug/L	227	Standard
	Pb	208	1079740.5	0.7	**52.3080**	0.393	0.8	ug/L	868	Standard
	U	238	394495.8	0.5	**51.7037**	0.139	0.3	ug/L	8	Standard
>	Bi	209	546511.9	0.6				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4735.7	5.0	**4.8993**	0.220	4.5	mg/L	53	Standard
K	39	2316.8	4.3	**3.6831**	0.157	4.3	mg/L	53	Standard
Ca	43	126.7	26.3	**5.2012**	1.908	36.7	mg/L	28	Standard
Fe	54	7170.8	0.5	**4.5533**	0.090	2.0	mg/L	181	Standard
Fe	57	2145.2	10.2	**4.7726**	0.596	12.5	mg/L	257	Standard
Sc-1	45	57758.2	1.5				mg/L	55220	Standard
Cl	35	43470.3	1.1				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2583.6	3.3				ug/L	2040	Standard
P	31	22620.2	1.5				ug/L	20435	Standard
S	34	2977.0	2.9				ug/L	2430	Standard
Sr	88	95.0	27.3				ug/L	75	Standard
C	12	76.7	15.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	7	Standard
Dy	164	23.3	49.5				mg/L	9	Standard
Ho-1	165	20.0	75.0				mg/L	10	Standard
Er	166	0.0					mg/L	23	Standard
I	127	17932.3	2.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	108.919		
Al	27	102.305		
Sc	45			
Ti	47	101.141		
V	51	99.039		
Cr	52	100.604		
Cr	53			
Mn	55	100.045		
Co	59	100.090		
Ni	60	100.160		
Cu	65	99.461		
Zn	66	100.253		
Ge	72		102.877	
As	75	98.135		
Se	82	98.998		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	96.787		
Ag	107	96.740		
Cd	111	98.556		
Cd	114			
In	115			103.708
Sn	118	99.350		
Sb	123	97.392		
Ba	135	96.532		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.257		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.616		
U	238	103.407		
Bi	209			101.016
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 18:25:12
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72625.4	2.0				ug/L	74916	Standard
	Be	9	35.0	37.8	**0.0306**	0.013	41.6	ug/L	10	Standard
	Al	27	5221.2	75.4	**0.0289**	0.024	83.2	ug/L	1822	Standard
	Sc	45	56361.3	2.2				ug/L	55220	Standard
	Ti	47	43.7	24.3	**0.0330**	0.026	77.4	ug/L	34	Standard
	V	51	1667.3	7.1	**-0.0209**	0.013	60.6	ug/L	1938	Standard
	Cr	52	8464.0	0.3	**-0.1225**	0.003	2.7	ug/L	9522	Standard
	Cr	53	1203.4	5.2	**0.6637**	0.049	7.4	ug/L	395	Standard
	Mn	55	1135.4	33.1	**0.0236**	0.043	182.8	ug/L	902	Standard
	Co	59	286.0	2.4	**0.0114**	0.001	7.5	ug/L	262	Standard
	Ni	60	298.3	5.7	**-0.0159**	0.008	48.2	ug/L	371	Standard
	Cu	65	147.7	21.4	**0.0065**	0.014	218.6	ug/L	106	Standard
	Zn	66	427.7	12.3	**-0.0259**	0.041	158.3	ug/L	398	Standard
>	**Ge**	72	549268.9	0.5				ug/L	535147	Standard
	As	75	-50.0	72.3	**0.0189**	0.026	137.7	ug/L	-43	Standard
	Se	82	24.5	32.5	**0.0791**	0.056	71.3	ug/L	14	Standard
	Se-1	77	77.3	5.8	**0.2550**	0.048	18.7	ug/L	65	Standard
>	**Ga**	71	38.3	52.7				mg/L	97	Standard
	Rb	85	70.0	50.0				ug/L	15	Standard
	Y	89	475993.8	1.4				ug/L	465704	Standard
>	**Rh**	103	10.0	100.0				ug/L	10	Standard
	Mo	98	316.0	18.8	**0.1102**	0.018	16.8	ug/L	9	Standard
	Ag	107	191.0	14.7	**0.0184**	0.004	20.1	ug/L	82	Standard
	Cd	111	15.8	57.1	**0.0142**	0.004	25.5	mg/L	7	Standard
	Cd	114	106.5	47.8	**0.0266**	0.009	32.0	ug/L	21	Standard
>	**In**	115	641247.5	0.4				ug/L	619035	Standard
	Sn	118	1061.7	14.0	**0.0541**	0.022	41.0	ug/L	508	Standard
	Sb	123	624.1	28.9	**0.1182**	0.033	27.9	ug/L	86	Standard
	Ba	135	118.7	74.4	**0.0306**	0.037	122.6	ug/L	79	Standard
	Ce	140	183.3	31.6				ug/L	68	Standard
>	**Tb**	159	974124.5	0.5				ug/L	986982	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	104.0	35.3	**0.0171**	0.004	23.3	ug/L	13	Standard
	Tl	205	90.0	45.5	**0.0190**	0.005	27.4	ug/L	10	Standard
	Pb	206	345.0	10.3	**0.0196**	0.006	30.4	ug/L	264	Standard
	Pb	207	284.3	1.6	**0.0192**	0.001	5.0	ug/L	227	Standard
	Pb	208	1190.4	5.2	**0.0185**	0.003	17.1	ug/L	868	Standard
	U	238	79.3	52.6	**0.0181**	0.005	29.9	ug/L	8	Standard
>	**Bi**	209	554720.3	0.6				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	51.7	31.1	**0.0208**	0.018	88.3	mg/L	53	Standard
K	39	43.3	48.0	**-0.0038**	0.035	936.1	mg/L	53	Standard
Ca	43	30.0	16.7	**-0.0077**	0.294	3799.4	mg/L	28	Standard
Fe	54	184.1	9.6	**0.0040**	0.009	229.0	mg/L	181	Standard
Fe	57	265.0	3.3	**0.0254**	0.037	145.9	mg/L	257	Standard
Sc-1	45	56361.3	2.2				mg/L	55220	Standard
Cl	35	42936.1	1.9				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	2356.9	5.5				ug/L	2040	Standard
P	31	21977.6	2.3				ug/L	20435	Standard
S	34	2853.6	3.4				ug/L	2430	Standard
Sr	88	71.7	16.1				ug/L	75	Standard
C	12	63.3	18.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	101.3	25.6				mg/L	9	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	43.3	48.0				mg/L	23	Standard
I	127	8230.6	10.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.639	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.588
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.533
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606123101
Sample Date/Time: Thursday, June 30, 2016 18:28:25
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73708.9	1.2				ug/L	74916	Standard
	Be	9	23.3	24.7	**0.0189**	0.006	29.4	ug/L	10	Standard
	Al	27	21182916.8	0.4	**124.0736**	1.102	0.9	ug/L	1822	Standard
	Sc	45	55145.2	2.0				ug/L	55220	Standard
	Ti	47	356.7	5.4	**0.8173**	0.044	5.4	ug/L	34	Standard
	V	51	77183.8	0.8	**8.3694**	0.088	1.1	ug/L	1938	Standard
	Cr	52	15236.3	0.8	**0.7013**	0.022	3.1	ug/L	9522	Standard
	Cr	53	5759.4	6.2	**4.9190**	0.351	7.1	ug/L	395	Standard
	Mn	55	155667.6	0.4	**18.4949**	0.121	0.7	ug/L	902	Standard
	Co	59	787.7	0.8	**0.0766**	0.000	0.6	ug/L	262	Standard
	Ni	60	2258.8	3.8	**0.8898**	0.039	4.4	ug/L	371	Standard
	Cu	65	1302.1	4.1	**0.5477**	0.026	4.7	ug/L	106	Standard
	Zn	66	2771.6	0.7	**1.8449**	0.007	0.4	ug/L	398	Standard
>	**Ge**	72	520875.8	0.5				ug/L	535147	Standard
	As	75	4494.6	3.5	**3.5023**	0.105	3.0	ug/L	-43	Standard
	Se	82	1105.2	3.5	**8.2806**	0.249	3.0	ug/L	14	Standard
	Se-1	77	364.3	11.2	**3.5731**	0.452	12.7	ug/L	65	Standard
>	**Ga**	71	78.3	9.8				mg/L	97	Standard
	Rb	85	3303.7	4.4				ug/L	15	Standard
	Y	89	460451.9	0.5				ug/L	465704	Standard
>	**Rh**	103	130.0	34.2				ug/L	10	Standard
	Mo	98	529.4	5.8	**0.1869**	0.011	6.0	ug/L	9	Standard
	Ag	107	127.3	19.5	**0.0113**	0.003	29.3	ug/L	82	Standard
	Cd	111	29.7	34.4	**0.0205**	0.004	21.3	mg/L	7	Standard
	Cd	114	78.1	54.1	**0.0227**	0.007	32.8	ug/L	21	Standard
>	**In**	115	602147.0	0.8				ug/L	619035	Standard
	Sn	118	753.4	10.9	**0.0155**	0.012	78.4	ug/L	508	Standard
	Sb	123	275.0	25.5	**0.0577**	0.013	22.9	ug/L	86	Standard
	Ba	135	65480.9	0.3	**29.4275**	0.311	1.1	ug/L	79	Standard
	Ce	140	2970.3	9.9				ug/L	68	Standard
>	**Tb**	159	936456.7	0.9				ug/L	986982	Standard
	Ho	165	58.3	50.2				ug/L	10	Standard
	Tl	203	145.7	21.0	**0.0233**	0.004	15.7	ug/L	13	Standard
	Tl	205	150.0	5.8	**0.0285**	0.001	4.1	ug/L	10	Standard
	Pb	206	385.3	9.6	**0.0336**	0.007	21.0	ug/L	264	Standard
	Pb	207	324.3	3.1	**0.0332**	0.002	5.0	ug/L	227	Standard
	Pb	208	1371.0	3.4	**0.0345**	0.002	5.9	ug/L	868	Standard
	U	238	12005.1	0.6	**1.7315**	0.001	0.1	ug/L	8	Standard
>	**Bi**	209	498820.7	0.6				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.3575**	16.199	173.1	mg/L	2	Standard
Mg	24	165723.2	1.4	**180.8485**	3.237	1.8	mg/L	53	Standard
K	39	150.0	26.5	**0.1787**	0.066	36.9	mg/L	53	Standard
Ca	43	341.7	28.9	**17.7757**	6.017	33.8	mg/L	28	Standard
Fe	54	356.7	11.8	**0.1243**	0.024	19.5	mg/L	181	Standard
Fe	57	510.0	18.9	**0.6879**	0.236	34.2	mg/L	257	Standard
Sc-1	45	55145.2	2.0				mg/L	55220	Standard
Cl	35	47507.0	1.1				ug/L	35504	Standard
Kr	83	3.3	75.5				ug/L	2	Standard
Br	81	197000.1	3.5				ug/L	2040	Standard
P	31	26680.1	1.8				ug/L	20435	Standard
S	34	2485.2	5.2				ug/L	2430	Standard
Sr	88	211.7	3.6				ug/L	75	Standard
C	12	373.3	13.5				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	69.5	16.6				mg/L	9	Standard
Ho-1	165	58.3	50.2				mg/L	10	Standard
Er	166	80.0	0.0				mg/L	23	Standard
I	127	132259.0	4.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		98.388	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.333	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.272
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.201
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606123701
Sample Date/Time: Thursday, June 30, 2016 18:31:36
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73556.5	1.2				ug/L	74916	Standard
	Be	9	58.3	32.5	**0.0528**	0.019	35.9	ug/L	10	Standard
	Al	27	4324633.9	1.0	**25.3836**	0.546	2.1	ug/L	1822	Standard
	Sc	45	59757.6	2.1				ug/L	55220	Standard
	Ti	47	3697.1	2.8	**8.5949**	0.280	3.3	ug/L	34	Standard
	V	51	30410.5	0.4	**2.9820**	0.028	0.9	ug/L	1938	Standard
	Cr	52	16342.1	1.7	**0.7189**	0.031	4.3	ug/L	9522	Standard
	Cr	53	2475.2	0.7	**1.7600**	0.025	1.4	ug/L	395	Standard
	Mn	55	379098.1	1.5	**42.5563**	0.890	2.1	ug/L	902	Standard
	Co	59	3754.1	1.8	**0.4234**	0.010	2.3	ug/L	262	Standard
	Ni	60	3304.0	1.2	**1.2808**	0.026	2.0	ug/L	371	Standard
	Cu	65	2883.3	0.8	**1.2059**	0.010	0.8	ug/L	106	Standard
	Zn	66	7248.1	0.7	**5.0510**	0.037	0.7	ug/L	398	Standard
>	**Ge**	72	553085.4	0.6				ug/L	535147	Standard
	As	75	1716.7	1.4	**1.2953**	0.018	1.4	ug/L	-43	Standard
	Se	82	81.3	6.0	**0.4831**	0.033	6.9	ug/L	14	Standard
	Se-1	77	107.0	12.4	**0.5683**	0.148	26.0	ug/L	65	Standard
>	**Ga**	71	810.0	1.9				mg/L	97	Standard
	Rb	85	16889.4	2.8				ug/L	15	Standard
	Y	89	489914.2	2.5				ug/L	465704	Standard
>	**Rh**	103	76.7	22.9				ug/L	10	Standard
	Mo	98	1118.4	2.5	**0.3544**	0.012	3.4	ug/L	9	Standard
	Ag	107	270.0	17.0	**0.0280**	0.005	19.1	ug/L	82	Standard
	Cd	111	122.3	24.0	**0.0562**	0.011	19.7	mg/L	7	Standard
	Cd	114	310.2	20.0	**0.0598**	0.010	16.0	ug/L	21	Standard
>	**In**	115	648962.0	1.2				ug/L	619035	Standard
	Sn	118	985.0	7.7	**0.0409**	0.010	23.4	ug/L	508	Standard
	Sb	123	515.7	10.8	**0.0972**	0.009	9.2	ug/L	86	Standard
	Ba	135	122438.4	1.1	**51.0753**	1.105	2.2	ug/L	79	Standard
	Ce	140	33540.4	1.4				ug/L	68	Standard
>	**Tb**	159	977369.7	0.8				ug/L	986982	Standard
	Ho	165	413.3	5.7				ug/L	10	Standard
	Tl	203	119.7	46.0	**0.0187**	0.006	30.3	ug/L	13	Standard
	Tl	205	90.0	0.0	**0.0189**	0.000	0.7	ug/L	10	Standard
	Pb	206	5921.8	1.6	**0.9478**	0.023	2.4	ug/L	264	Standard
	Pb	207	4892.8	0.9	**0.8677**	0.011	1.2	ug/L	227	Standard
	Pb	208	20732.2	0.4	**0.9517**	0.016	1.7	ug/L	868	Standard
	U	238	400.3	10.4	**0.0596**	0.005	9.1	ug/L	8	Standard
>	**Bi**	209	554872.4	1.2				ug/L	541014	Standard

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Na	23	1.7	173.2	**8.8665**	15.349	173.1	mg/L	2	Standard
Mg	24	3070.3	3.5	**3.0576**	0.096	3.2	mg/L	53	Standard
K	39	1061.7	12.7	**1.5864**	0.179	11.3	mg/L	53	Standard
Ca	43	296.7	9.7	**13.8539**	1.502	10.8	mg/L	28	Standard
Fe	54	956.9	9.5	**0.4831**	0.045	9.3	mg/L	181	Standard
Fe	57	635.0	5.2	**0.8916**	0.078	8.7	mg/L	257	Standard
Sc-1	45	59757.6	2.1				mg/L	55220	Standard
Cl	35	44313.4	1.9				ug/L	35504	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	10370.3	12.9				ug/L	2040	Standard
P	31	28954.3	0.4				ug/L	20435	Standard
S	34	2603.6	2.1				ug/L	2430	Standard
Sr	88	181.7	10.4				ug/L	75	Standard
C	12	193.3	35.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	668.5	3.4				mg/L	9	Standard
Ho-1	165	413.3	5.7				mg/L	10	Standard
Er	166	310.0	11.2				mg/L	23	Standard
I	127	85175.8	4.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		98.185	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.352	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.834
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.562
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606123702
Sample Date/Time: Thursday, June 30, 2016 18:34:48
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73352.1	1.1				ug/L	74916	Standard
	Be	9	26.7	84.5	**0.0223**	0.022	99.0	ug/L	10	Standard
	Al	27	7425346.7	1.3	**43.7005**	0.575	1.3	ug/L	1822	Standard
	Sc	45	57823.5	1.1				ug/L	55220	Standard
	Ti	47	1820.8	1.7	**4.3369**	0.098	2.3	ug/L	34	Standard
	V	51	80652.9	0.8	**8.5090**	0.056	0.7	ug/L	1938	Standard
	Cr	52	12307.0	0.7	**0.3281**	0.011	3.2	ug/L	9522	Standard
	Cr	53	4964.1	4.9	**4.0597**	0.199	4.9	ug/L	395	Standard
	Mn	55	1685034.1	0.2	**195.7157**	0.610	0.3	ug/L	902	Standard
	Co	59	7064.0	1.4	**0.8442**	0.013	1.5	ug/L	262	Standard
	Ni	60	5946.2	2.4	**2.5055**	0.069	2.8	ug/L	371	Standard
	Cu	65	5548.3	1.0	**2.4546**	0.034	1.4	ug/L	106	Standard
	Zn	66	9347.5	1.2	**6.8425**	0.092	1.3	ug/L	398	Standard
>	**Ge**	72	535545.9	0.5				ug/L	535147	Standard
	As	75	3482.5	0.9	**2.6532**	0.030	1.1	ug/L	-43	Standard
	Se	82	238.3	4.8	**1.6603**	0.091	5.5	ug/L	14	Standard
	Se-1	77	234.0	3.7	**2.0146**	0.108	5.3	ug/L	65	Standard
>	**Ga**	71	255.0	7.8				mg/L	97	Standard
	Rb	85	5642.7	7.3				ug/L	15	Standard
	Y	89	471263.7	0.8				ug/L	465704	Standard
>	**Rh**	103	85.0	25.6				ug/L	10	Standard
	Mo	98	13076.1	0.6	**4.1371**	0.046	1.1	ug/L	9	Standard
	Ag	107	263.3	11.3	**0.0283**	0.004	14.8	ug/L	82	Standard
	Cd	111	497.9	3.4	**0.2109**	0.005	2.3	mg/L	7	Standard
	Cd	114	1167.5	7.5	**0.2067**	0.017	8.2	ug/L	21	Standard
>	**In**	115	629037.3	1.1				ug/L	619035	Standard
	Sn	118	780.0	7.1	**0.0146**	0.010	65.8	ug/L	508	Standard
	Sb	123	581.4	7.1	**0.1125**	0.009	7.6	ug/L	86	Standard
	Ba	135	116448.2	1.3	**50.1063**	0.307	0.6	ug/L	79	Standard
	Ce	140	12521.8	1.9				ug/L	68	Standard
>	**Tb**	159	952242.5	1.2				ug/L	986982	Standard
	Ho	165	245.0	12.4				ug/L	10	Standard
	Tl	203	124.0	10.8	**0.0197**	0.001	7.4	ug/L	13	Standard
	Tl	205	106.7	25.8	**0.0215**	0.003	16.3	ug/L	10	Standard
	Pb	206	1649.1	1.4	**0.2467**	0.003	1.2	ug/L	264	Standard
	Pb	207	1450.7	3.9	**0.2437**	0.011	4.5	ug/L	227	Standard
	Pb	208	5966.8	1.9	**0.2570**	0.004	1.6	ug/L	868	Standard
	U	238	7288.1	1.1	**0.9830**	0.017	1.7	ug/L	8	Standard
>	**Bi**	209	535292.5	0.6				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	22827.2	2.1	**23.7220**	0.371	1.6	mg/L	53	Standard
K	39	1010.0	3.9	**1.5614**	0.080	5.1	mg/L	53	Standard
Ca	43	435.0	10.0	**21.8568**	2.379	10.9	mg/L	28	Standard
Fe	54	340.7	1.7	**0.1030**	0.002	2.1	mg/L	181	Standard
Fe	57	453.3	2.5	**0.4839**	0.031	6.4	mg/L	257	Standard
> **Sc-1**	45	57823.5	1.1				mg/L	55220	Standard
Cl	35	45303.6	1.3				ug/L	35504	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	41754.2	3.5				ug/L	2040	Standard
P	31	25987.3	4.3				ug/L	20435	Standard
S	34	2758.6	5.7				ug/L	2430	Standard
Sr	88	278.3	12.7				ug/L	75	Standard
C	12	160.0	34.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	57.3				mg/L	7	Standard
Dy	164	280.6	10.5				mg/L	9	Standard
Ho-1	165	245.0	12.4				mg/L	10	Standard
Er	166	266.7	5.7				mg/L	23	Standard
I	127	176316.0	8.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.912	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.075	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.616
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.942
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606123703
Sample Date/Time: Thursday, June 30, 2016 18:37:59
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72498.1	1.7				ug/L	74916	Standard
	Be	9	26.7	39.0	**0.0226**	0.011	46.6	ug/L	10	Standard
	Al	27	6795709.4	1.3	**40.4705**	0.708	1.7	ug/L	1822	Standard
	Sc	45	57423.7	3.0				ug/L	55220	Standard
	Ti	47	1820.1	1.8	**4.3278**	0.121	2.8	ug/L	34	Standard
	V	51	78659.2	1.4	**8.2782**	0.041	0.5	ug/L	1938	Standard
	Cr	52	12166.2	1.2	**0.3100**	0.009	2.9	ug/L	9522	Standard
	Cr	53	5002.5	3.4	**4.0874**	0.181	4.4	ug/L	395	Standard
	Mn	55	1702026.4	1.6	**197.3278**	1.748	0.9	ug/L	902	Standard
	Co	59	7405.1	1.8	**0.8844**	0.008	0.9	ug/L	262	Standard
	Ni	60	5681.7	2.6	**2.3836**	0.093	3.9	ug/L	371	Standard
	Cu	65	5142.5	1.2	**2.2667**	0.036	1.6	ug/L	106	Standard
	Zn	66	6961.3	1.2	**4.9979**	0.091	1.8	ug/L	398	Standard
>	**Ge**	72	536520.8	1.2				ug/L	535147	Standard
	As	75	3464.6	2.2	**2.6350**	0.044	1.7	ug/L	-43	Standard
	Se	82	269.5	3.6	**1.8872**	0.094	5.0	ug/L	14	Standard
	Se-1	77	236.7	10.7	**2.0415**	0.311	15.3	ug/L	65	Standard
>	**Ga**	71	298.3	5.4				mg/L	97	Standard
	Rb	85	5194.2	1.7				ug/L	15	Standard
	Y	89	463947.8	0.3				ug/L	465704	Standard
>	**Rh**	103	70.0	14.3				ug/L	10	Standard
	Mo	98	12098.0	1.5	**3.8608**	0.077	2.0	ug/L	9	Standard
	Ag	107	294.0	6.8	**0.0326**	0.003	8.0	ug/L	82	Standard
	Cd	111	385.0	8.6	**0.1662**	0.014	8.5	mg/L	7	Standard
	Cd	114	1056.2	4.6	**0.1893**	0.009	4.9	ug/L	21	Standard
>	**In**	115	623767.0	0.6				ug/L	619035	Standard
	Sn	118	825.0	8.5	**0.0224**	0.010	45.0	ug/L	508	Standard
	Sb	123	491.1	2.7	**0.0964**	0.003	3.1	ug/L	86	Standard
	Ba	135	110200.0	1.0	**47.8191**	0.607	1.3	ug/L	79	Standard
	Ce	140	11742.9	0.5				ug/L	68	Standard
>	**Tb**	159	959960.3	0.5				ug/L	986982	Standard
	Ho	165	215.0	15.2				ug/L	10	Standard
	Tl	203	112.0	12.3	**0.0185**	0.001	8.1	ug/L	13	Standard
	Tl	205	103.3	15.6	**0.0212**	0.002	10.0	ug/L	10	Standard
	Pb	206	1564.7	1.6	**0.2337**	0.004	1.6	ug/L	264	Standard
	Pb	207	1332.7	0.8	**0.2227**	0.002	0.9	ug/L	227	Standard
	Pb	208	5440.7	0.5	**0.2326**	0.001	0.5	ug/L	868	Standard
	U	238	6741.8	1.0	**0.9153**	0.006	0.6	ug/L	8	Standard
>	**Bi**	209	532066.3	0.4				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	21246.6	2.8	**22.2476**	1.022	4.6	mg/L	53	Standard
K	39	896.7	3.2	**1.3874**	0.024	1.7	mg/L	53	Standard
Ca	43	366.7	13.0	**18.3580**	3.195	17.4	mg/L	28	Standard
Fe	54	347.3	8.8	**0.1093**	0.026	24.1	mg/L	181	Standard
Fe	57	465.0	9.9	**0.5199**	0.082	15.8	mg/L	257	Standard
> **Sc-1**	45	57423.7	3.0				mg/L	55220	Standard
Cl	35	45819.2	1.3				ug/L	35504	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	41774.3	5.0				ug/L	2040	Standard
P	31	25414.6	2.7				ug/L	20435	Standard
S	34	2805.3	1.7				ug/L	2430	Standard
Sr	88	228.3	2.5				ug/L	75	Standard
C	12	220.0	12.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	0.0				mg/L	7	Standard
Dy	164	388.8	30.1				mg/L	9	Standard
Ho-1	165	215.0	15.2				mg/L	10	Standard
Er	166	233.3	21.1				mg/L	23	Standard
I	127	161422.8	6.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		96.772	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.257	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.764	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.346	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606123704
Sample Date/Time: Thursday, June 30, 2016 18:41:11
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74700.4	1.5				ug/L	74916	Standard
	Be	9	25.0	34.6	**0.0202**	0.008	41.6	ug/L	10	Standard
	Al	27	15133453.9	0.8	**87.4746**	1.860	2.1	ug/L	1822	Standard
	Sc	45	57433.7	3.1				ug/L	55220	Standard
	Ti	47	1116.0	5.6	**2.6964**	0.124	4.6	ug/L	34	Standard
	V	51	43724.0	1.3	**4.6399**	0.118	2.6	ug/L	1938	Standard
	Cr	52	15434.2	1.7	**0.7179**	0.043	6.0	ug/L	9522	Standard
	Cr	53	7095.0	3.2	**6.1276**	0.285	4.7	ug/L	395	Standard
	Mn	55	24493.4	0.5	**2.8116**	0.050	1.8	ug/L	902	Standard
	Co	59	1370.4	1.3	**0.1495**	0.002	1.5	ug/L	262	Standard
	Ni	60	4008.2	1.6	**1.6853**	0.020	1.2	ug/L	371	Standard
	Cu	65	1042.4	0.5	**0.4251**	0.007	1.6	ug/L	106	Standard
	Zn	66	3012.6	1.2	**2.0275**	0.051	2.5	ug/L	398	Standard
>	**Ge**	72	522710.1	1.2				ug/L	535147	Standard
	As	75	1352.2	5.0	**1.0884**	0.041	3.7	ug/L	-43	Standard
	Se	82	371.1	3.5	**2.7067**	0.122	4.5	ug/L	14	Standard
	Se-1	77	381.0	2.0	**3.7490**	0.094	2.5	ug/L	65	Standard
>	**Ga**	71	253.3	13.4				mg/L	97	Standard
	Rb	85	4595.7	5.5				ug/L	15	Standard
	Y	89	464468.4	0.3				ug/L	465704	Standard
>	**Rh**	103	88.3	8.6				ug/L	10	Standard
	Mo	98	1006.4	1.0	**0.3415**	0.002	0.7	ug/L	9	Standard
	Ag	107	123.0	6.5	**0.0106**	0.001	10.7	ug/L	82	Standard
	Cd	111	26.8	11.4	**0.0192**	0.001	6.6	mg/L	7	Standard
	Cd	114	58.4	32.7	**0.0192**	0.003	17.6	ug/L	21	Standard
>	**In**	115	606613.6	0.4				ug/L	619035	Standard
	Sn	118	680.0	9.7	**0.0032**	0.011	331.8	ug/L	508	Standard
	Sb	123	230.7	6.4	**0.0489**	0.003	5.9	ug/L	86	Standard
	Ba	135	49480.7	1.3	**22.0679**	0.363	1.6	ug/L	79	Standard
	Ce	140	11719.5	2.2				ug/L	68	Standard
>	**Tb**	159	942397.8	0.6				ug/L	986982	Standard
	Ho	165	170.0	24.1				ug/L	10	Standard
	Tl	203	103.0	13.1	**0.0178**	0.002	8.6	ug/L	13	Standard
	Tl	205	86.7	23.3	**0.0193**	0.003	13.9	ug/L	10	Standard
	Pb	206	883.7	2.1	**0.1195**	0.002	2.1	ug/L	264	Standard
	Pb	207	732.4	2.3	**0.1110**	0.003	2.8	ug/L	227	Standard
	Pb	208	3144.5	0.5	**0.1223**	0.001	1.2	ug/L	868	Standard
	U	238	11938.4	1.8	**1.6560**	0.021	1.3	ug/L	8	Standard
>	**Bi**	209	518732.9	0.6				ug/L	541014	Standard

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Na	23	5.0	100.0	**26.5771**	26.100	98.2	mg/L	2	Standard
Mg	24	58492.7	1.9	**61.2716**	0.950	1.6	mg/L	53	Standard
K	39	303.3	9.7	**0.4202**	0.062	14.8	mg/L	53	Standard
Ca	43	820.0	3.2	**42.9785**	0.015	0.0	mg/L	28	Standard
Fe	54	269.9	23.5	**0.0573**	0.035	61.8	mg/L	181	Standard
Fe	57	703.3	12.9	**1.1251**	0.179	15.9	mg/L	257	Standard
> **Sc-1**	45	57433.7	3.1				mg/L	55220	Standard
Cl	35	47952.4	0.9				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	58556.3	2.6				ug/L	2040	Standard
P	31	27825.5	1.9				ug/L	20435	Standard
S	34	2730.2	2.0				ug/L	2430	Standard
Sr	88	346.7	24.6				ug/L	75	Standard
C	12	183.3	38.3				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	7	Standard
Dy	164	293.3	8.9				mg/L	9	Standard
Ho-1	165	170.0	24.1				mg/L	10	Standard
Er	166	140.0	12.4				mg/L	23	Standard
I	127	160434.3	4.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.712	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.676	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.993
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.882
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606123705
Sample Date/Time: Thursday, June 30, 2016 18:44:22
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75807.6	2.4				ug/L	74916	Standard
	Be	9	15.0	57.7	**0.0105**	0.008	78.4	ug/L	10	Standard
	Al	27	16819757.9	1.0	**95.8103**	1.874	2.0	ug/L	1822	Standard
	Sc	45	56911.8	3.1				ug/L	55220	Standard
	Ti	47	333.7	8.3	**0.7492**	0.070	9.3	ug/L	34	Standard
	V	51	26190.8	1.8	**2.6713**	0.044	1.7	ug/L	1938	Standard
	Cr	52	11710.2	0.4	**0.2805**	0.003	1.1	ug/L	9522	Standard
	Cr	53	8892.6	3.9	**7.6943**	0.295	3.8	ug/L	395	Standard
	Mn	55	750738.1	1.3	**88.3994**	1.378	1.6	ug/L	902	Standard
	Co	59	3620.4	4.0	**0.4280**	0.018	4.3	ug/L	262	Standard
	Ni	60	5830.8	1.3	**2.4915**	0.033	1.3	ug/L	371	Standard
	Cu	65	3275.0	2.4	**1.4462**	0.037	2.6	ug/L	106	Standard
	Zn	66	11576.1	3.0	**8.6847**	0.271	3.1	ug/L	398	Standard
>	**Ge**	72	527929.6	0.2				ug/L	535147	Standard
	As	75	1507.7	7.3	**1.1960**	0.081	6.8	ug/L	-43	Standard
	Se	82	264.0	5.2	**1.8774**	0.098	5.2	ug/L	14	Standard
	Se-1	77	452.3	3.8	**4.5083**	0.185	4.1	ug/L	65	Standard
>	**Ga**	71	91.7	8.3				mg/L	97	Standard
	Rb	85	1790.1	1.5				ug/L	15	Standard
	Y	89	459787.3	0.7				ug/L	465704	Standard
>	**Rh**	103	98.3	10.6				ug/L	10	Standard
	Mo	98	7598.5	2.3	**2.4593**	0.046	1.9	ug/L	9	Standard
	Ag	107	107.7	23.2	**0.0083**	0.003	39.7	ug/L	82	Standard
	Cd	111	203.4	9.7	**0.0926**	0.008	9.0	mg/L	7	Standard
	Cd	114	563.4	13.5	**0.1064**	0.014	12.7	ug/L	21	Standard
>	**In**	115	616088.9	0.4				ug/L	619035	Standard
	Sn	118	741.7	6.4	**0.0111**	0.007	65.9	ug/L	508	Standard
	Sb	123	228.7	4.8	**0.0478**	0.002	4.0	ug/L	86	Standard
	Ba	135	72026.8	1.1	**31.6368**	0.353	1.1	ug/L	79	Standard
	Ce	140	1040.0	1.0				ug/L	68	Standard
>	**Tb**	159	950323.7	0.5				ug/L	986982	Standard
	Ho	165	100.0	8.7				ug/L	10	Standard
	Tl	203	79.0	12.8	**0.0150**	0.001	7.3	ug/L	13	Standard
	Tl	205	88.3	55.8	**0.0194**	0.007	33.7	ug/L	10	Standard
	Pb	206	683.0	11.0	**0.0831**	0.013	16.0	ug/L	264	Standard
	Pb	207	594.0	10.8	**0.0831**	0.012	14.6	ug/L	227	Standard
	Pb	208	2416.7	6.3	**0.0844**	0.008	9.2	ug/L	868	Standard
	U	238	5401.0	1.5	**0.7494**	0.012	1.6	ug/L	8	Standard
>	**Bi**	209	521632.3	0.7				ug/L	541014	Standard

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Na	23	3.3	86.6	**18.0428**	15.638	86.7	mg/L	2	Standard
Mg	24	60197.7	2.6	**63.6892**	3.459	5.4	mg/L	53	Standard
K	39	146.7	5.2	**0.1657**	0.016	9.6	mg/L	53	Standard
Ca	43	673.3	4.4	**35.3839**	2.707	7.6	mg/L	28	Standard
Fe	54	201.8	23.4	**0.0146**	0.031	210.5	mg/L	181	Standard
Fe	57	551.7	4.6	**0.7557**	0.075	9.9	mg/L	257	Standard
> **Sc-1**	45	56911.8	3.1				mg/L	55220	Standard
Cl	35	51354.2	2.0				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	48855.3	1.4				ug/L	2040	Standard
P	31	27864.0	4.9				ug/L	20435	Standard
S	34	2916.9	4.4				ug/L	2430	Standard
Sr	88	280.0	3.1				ug/L	75	Standard
C	12	166.7	21.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	7	Standard
Dy	164	92.8	23.1				mg/L	9	Standard
Ho-1	165	100.0	8.7				mg/L	10	Standard
Er	166	150.0	23.1				mg/L	23	Standard
I	127	215352.8	3.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.190	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.651	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.524
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.417
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606123706
Sample Date/Time: Thursday, June 30, 2016 18:47:34
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74487.7	1.5				ug/L	74916	Standard
	Be	9	13.3	86.6	**0.0092**	0.011	120.4	ug/L	10	Standard
	Al	27	11820936.1	1.6	**68.5203**	1.611	2.4	ug/L	1822	Standard
	Sc	45	55595.2	2.1				ug/L	55220	Standard
	Ti	47	326.7	7.2	**0.7343**	0.060	8.2	ug/L	34	Standard
	V	51	44071.1	2.3	**4.6430**	0.103	2.2	ug/L	1938	Standard
	Cr	52	11553.4	1.3	**0.2666**	0.021	8.0	ug/L	9522	Standard
	Cr	53	8779.2	2.1	**7.6152**	0.191	2.5	ug/L	395	Standard
	Mn	55	39929.6	1.2	**4.6157**	0.059	1.3	ug/L	902	Standard
	Co	59	1062.0	2.5	**0.1098**	0.004	3.7	ug/L	262	Standard
	Ni	60	1866.1	1.2	**0.7008**	0.009	1.3	ug/L	371	Standard
	Cu	65	1098.0	1.4	**0.4473**	0.010	2.2	ug/L	106	Standard
	Zn	66	3754.1	1.4	**2.5907**	0.036	1.4	ug/L	398	Standard
>	**Ge**	72	526406.1	0.6				ug/L	535147	Standard
	As	75	1178.8	3.3	**0.9500**	0.034	3.6	ug/L	-43	Standard
	Se	82	190.1	10.6	**1.3289**	0.156	11.7	ug/L	14	Standard
	Se-1	77	429.0	5.7	**4.2598**	0.267	6.3	ug/L	65	Standard
>	**Ga**	71	83.3	3.5				mg/L	97	Standard
	Rb	85	1408.4	8.6				ug/L	15	Standard
	Y	89	458293.2	0.9				ug/L	465704	Standard
>	**Rh**	103	70.0	31.1				ug/L	10	Standard
	Mo	98	14819.1	1.5	**4.8262**	0.045	0.9	ug/L	9	Standard
	Ag	107	103.3	12.6	**0.0078**	0.002	21.3	ug/L	82	Standard
	Cd	111	10.4	71.6	**0.0123**	0.003	26.0	mg/L	7	Standard
	Cd	114	89.6	37.9	**0.0245**	0.006	23.5	ug/L	21	Standard
>	**In**	115	610793.1	1.1				ug/L	619035	Standard
	Sn	118	760.0	10.3	**0.0149**	0.011	73.7	ug/L	508	Standard
	Sb	123	308.5	0.3	**0.0634**	0.001	0.8	ug/L	86	Standard
	Ba	135	63587.8	1.8	**28.1686**	0.196	0.7	ug/L	79	Standard
	Ce	140	1448.4	6.8				ug/L	68	Standard
>	**Tb**	159	948916.9	1.3				ug/L	986982	Standard
	Ho	165	36.7	7.9				ug/L	10	Standard
	Tl	203	79.3	4.1	**0.0150**	0.000	2.3	ug/L	13	Standard
	Tl	205	61.7	12.4	**0.0158**	0.001	6.1	ug/L	10	Standard
	Pb	206	411.0	2.8	**0.0344**	0.002	7.0	ug/L	264	Standard
	Pb	207	364.0	2.9	**0.0376**	0.002	5.3	ug/L	227	Standard
	Pb	208	1486.0	1.0	**0.0366**	0.000	1.1	ug/L	868	Standard
	U	238	7610.9	2.4	**1.0452**	0.021	2.0	ug/L	8	Standard
>	**Bi**	209	525407.3	0.6				ug/L	541014	Standard

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Na	23	5.0	0.0	**27.9422**	0.578	2.1	mg/L	2	Standard
Mg	24	52755.1	2.4	**57.0711**	0.842	1.5	mg/L	53	Standard
K	39	150.0	8.8	**0.1772**	0.027	15.2	mg/L	53	Standard
Ca	43	313.3	20.8	**15.9633**	3.778	23.7	mg/L	28	Standard
Fe	54	212.3	15.3	**0.0252**	0.024	97.0	mg/L	181	Standard
Fe	57	398.3	20.7	**0.3868**	0.230	59.5	mg/L	257	Standard
> **Sc-1**	45	55595.2	2.1				mg/L	55220	Standard
Cl	35	49423.8	1.2				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	35855.7	2.9				ug/L	2040	Standard
P	31	26942.3	1.6				ug/L	20435	Standard
S	34	3012.0	1.5				ug/L	2430	Standard
Sr	88	220.0	11.8				ug/L	75	Standard
C	12	180.0	25.5				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	40.5	37.0				mg/L	9	Standard
Ho-1	165	36.7	7.9				mg/L	10	Standard
Er	166	60.0	16.7				mg/L	23	Standard
I	127	561335.4	4.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.428	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.367	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.669
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.115
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 18:50:46
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	71687.5	1.4				ug/L	74916	Standard
	Be	9	56212.4	2.2	**55.6744**	0.981	1.8	ug/L	10	Standard
	Al	27	8771268.2	2.9	**52.8124**	0.842	1.6	ug/L	1822	Standard
	Sc	45	55598.5	1.4				ug/L	55220	Standard
	Ti	47	42411.0	2.0	**101.9404**	1.750	1.7	ug/L	34	Standard
	V	51	469521.3	1.1	**50.1684**	0.092	0.2	ug/L	1938	Standard
	Cr	52	465815.6	1.0	**50.4026**	0.203	0.4	ug/L	9522	Standard
	Cr	53	56885.0	2.2	**50.2601**	0.777	1.5	ug/L	395	Standard
	Mn	55	437945.4	1.3	**50.4742**	0.337	0.7	ug/L	902	Standard
	Co	59	417548.6	1.4	**50.9095**	0.645	1.3	ug/L	262	Standard
	Ni	60	114353.6	1.4	**50.5212**	0.176	0.3	ug/L	371	Standard
	Cu	65	111446.1	0.9	**50.1133**	0.291	0.6	ug/L	106	Standard
	Zn	66	66488.2	1.0	**50.4769**	0.800	1.6	ug/L	398	Standard
>	Ge	72	538875.7	1.1				ug/L	535147	Standard
	As	75	67522.2	0.5	**50.1175**	0.341	0.7	ug/L	-43	Standard
	Se	82	6846.0	0.7	**50.0674**	0.209	0.4	ug/L	14	Standard
	Se-1	77	4653.4	1.8	**50.7142**	0.391	0.8	ug/L	65	Standard
>	Ga	71	71.7	28.2				mg/L	97	Standard
	Rb	85	916.7	4.0				ug/L	15	Standard
	Y	89	469799.8	1.4				ug/L	465704	Standard
>	Rh	103	31.7	32.9				ug/L	10	Standard
	Mo	98	311161.5	0.9	**97.3135**	1.276	1.3	ug/L	9	Standard
	Ag	107	375662.4	1.9	**48.5477**	1.199	2.5	ug/L	82	Standard
	Cd	111	121621.4	0.4	**49.1707**	0.522	1.1	mg/L	7	Standard
	Cd	114	296179.2	0.5	**49.7223**	0.142	0.3	ug/L	21	Standard
>	In	115	634529.9	0.8				ug/L	619035	Standard
	Sn	118	329929.0	3.1	**49.3536**	1.344	2.7	ug/L	508	Standard
	Sb	123	267054.5	1.3	**49.2021**	0.782	1.6	ug/L	86	Standard
	Ba	135	113140.9	0.4	**48.2634**	0.467	1.0	ug/L	79	Standard
	Ce	140	128.3	20.0				ug/L	68	Standard
>	Tb	159	957418.9	1.2				ug/L	986982	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	464958.9	0.7	**50.5990**	0.829	1.6	ug/L	13	Standard
	Tl	205	415202.1	0.2	**52.8880**	0.585	1.1	ug/L	10	Standard
	Pb	206	294687.8	1.3	**49.9241**	0.223	0.4	ug/L	264	Standard
	Pb	207	268350.0	0.9	**50.3058**	0.452	0.9	ug/L	227	Standard
	Pb	208	1083165.8	0.6	**52.6601**	0.325	0.6	ug/L	868	Standard
	U	238	400940.3	0.4	**52.7360**	0.496	0.9	ug/L	8	Standard
>	Bi	209	544596.2	1.1				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4615.7	1.6	**4.9627**	0.144	2.9	mg/L	53	Standard
K	39	2171.8	4.6	**3.5842**	0.149	4.2	mg/L	53	Standard
Ca	43	113.3	19.9	**4.6898**	1.182	25.2	mg/L	28	Standard
Fe	54	7351.4	3.6	**4.8564**	0.179	3.7	mg/L	181	Standard
Fe	57	2108.5	1.8	**4.8855**	0.174	3.6	mg/L	257	Standard
Sc-1	45	55598.5	1.4				mg/L	55220	Standard
Cl	35	45959.6	2.2				ug/L	35504	Standard
Kr	83	1.0	173.2				ug/L	2	Standard
Br	81	3020.3	12.7				ug/L	2040	Standard
P	31	25206.0	4.0				ug/L	20435	Standard
S	34	3005.3	2.9				ug/L	2430	Standard
Sr	88	63.3	24.1				ug/L	75	Standard
C	12	83.3	48.5				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	9.0	105.7				mg/L	9	Standard
Ho-1	165	8.3	34.6				mg/L	10	Standard
Er	166	20.0	100.0				mg/L	23	Standard
I	127	27561.4	28.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	111.349		
Al	27	105.625		
Sc	45			
Ti	47	101.940		
V	51	100.337		
Cr	52	100.805		
Cr	53			
Mn	55	100.948		
Co	59	101.819		
Ni	60	101.042		
Cu	65	100.227		
Zn	66	100.954		
Ge	72		100.697	
As	75	100.235		
Se	82	100.135		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	97.314		
Ag	107	97.095		
Cd	111	98.341		
Cd	114			
In	115		102.503	
Sn	118	98.707		
Sb	123	98.404		
Ba	135	96.527		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.198		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.320		
U	238	105.472		
Bi	209		100.662	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 18:53:58
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70564.0	1.3				ug/L	74916	Standard
	Be	9	15.0	33.3	**0.0115**	0.005	43.9	ug/L	10	Standard
	Al	27	2650.2	30.0	**0.0138**	0.005	33.3	ug/L	1822	Standard
	Sc	45	55267.3	1.7				ug/L	55220	Standard
	Ti	47	37.0	13.5	**0.0193**	0.013	65.6	ug/L	34	Standard
	V	51	1576.6	11.5	**-0.0265**	0.021	77.8	ug/L	1938	Standard
	Cr	52	7930.7	1.2	**-0.1603**	0.016	10.0	ug/L	9522	Standard
	Cr	53	933.4	10.2	**0.4468**	0.083	18.5	ug/L	395	Standard
	Mn	55	838.0	6.3	**-0.0080**	0.007	83.7	ug/L	902	Standard
	Co	59	260.3	20.6	**0.0091**	0.007	74.5	ug/L	262	Standard
	Ni	60	289.7	5.8	**-0.0167**	0.008	49.3	ug/L	371	Standard
	Cu	65	145.0	9.6	**0.0068**	0.007	97.5	ug/L	106	Standard
	Zn	66	383.3	2.1	**-0.0525**	0.008	14.8	ug/L	398	Standard
>	**Ge**	72	536805.7	0.6				ug/L	535147	Standard
	As	75	-7.0	257.8	**0.0500**	0.013	26.7	ug/L	-43	Standard
	Se	82	26.0	21.0	**0.0939**	0.039	41.6	ug/L	14	Standard
	Se-1	77	74.7	11.4	**0.2452**	0.098	39.8	ug/L	65	Standard
>	**Ga**	71	61.7	9.4				mg/L	97	Standard
	Rb	85	28.3	40.8				ug/L	15	Standard
	Y	89	474941.0	0.9				ug/L	465704	Standard
>	**Rh**	103	26.7	43.3				ug/L	10	Standard
	Mo	98	254.5	24.8	**0.0910**	0.019	21.1	ug/L	9	Standard
	Ag	107	150.0	15.4	**0.0131**	0.003	21.8	ug/L	82	Standard
	Cd	111	14.2	26.1	**0.0136**	0.001	10.7	mg/L	7	Standard
	Cd	114	40.6	40.8	**0.0157**	0.003	17.7	ug/L	21	Standard
>	**In**	115	641699.1	0.5				ug/L	619035	Standard
	Sn	118	1158.4	8.6	**0.0683**	0.015	22.5	ug/L	508	Standard
	Sb	123	594.0	22.6	**0.1127**	0.025	22.0	ug/L	86	Standard
	Ba	135	49.7	37.8	**0.0013**	0.008	600.3	ug/L	79	Standard
	Ce	140	31.7	9.1				ug/L	68	Standard
>	**Tb**	159	966472.8	1.2				ug/L	986982	Standard
	Ho	165	6.7	173.2				ug/L	10	Standard
	Tl	203	80.0	13.5	**0.0146**	0.001	8.2	ug/L	13	Standard
	Tl	205	70.0	44.6	**0.0165**	0.004	24.0	ug/L	10	Standard
	Pb	206	303.7	8.6	**0.0128**	0.004	35.1	ug/L	264	Standard
	Pb	207	290.3	16.5	**0.0204**	0.009	44.6	ug/L	227	Standard
	Pb	208	1089.7	9.1	**0.0138**	0.005	35.9	ug/L	868	Standard
	U	238	63.3	36.3	**0.0161**	0.003	18.6	ug/L	8	Standard
>	**Bi**	209	554130.2	0.5				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.2510**	16.015	173.1	mg/L	2	Standard
Mg	24	65.0	27.7	**0.0364**	0.020	56.2	mg/L	53	Standard
K	39	26.7	47.2	**-0.0306**	0.022	72.6	mg/L	53	Standard
Ca	43	23.3	53.9	**-0.3468**	0.734	211.7	mg/L	28	Standard
Fe	54	170.8	15.9	**-0.0024**	0.019	821.1	mg/L	181	Standard
Fe	57	275.0	25.8	**0.0671**	0.202	300.2	mg/L	257	Standard
Sc-1	45	55267.3	1.7				mg/L	55220	Standard
Cl	35	45791.8	1.4				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2516.9	9.5				ug/L	2040	Standard
P	31	24761.9	0.5				ug/L	20435	Standard
S	34	3220.3	7.0				ug/L	2430	Standard
Sr	88	55.0	15.7				ug/L	75	Standard
C	12	86.7	24.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	188.9	23.3				mg/L	9	Standard
Ho-1	165	6.7	173.2				mg/L	10	Standard
Er	166	23.3	65.5				mg/L	23	Standard
I	127	10310.2	12.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.310	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.661
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.424
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW V WG574593-02
Sample Date/Time: Thursday, June 30, 2016 18:57:10
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65124.7	1.8				ug/L	74916	Standard
	Be	9	11.7	65.5	**0.0092**	0.009	93.5	ug/L	10	Standard
	Al	27	3680.5	10.6	**0.0221**	0.002	10.9	ug/L	1822	Standard
	Sc	45	50311.7	1.8				ug/L	55220	Standard
	Ti	47	25.7	4.5	**-0.0034**	0.003	74.9	ug/L	34	Standard
	V	51	1415.1	5.7	**-0.0324**	0.008	25.8	ug/L	1938	Standard
	Cr	52	6107.2	3.0	**-0.3108**	0.016	5.2	ug/L	9522	Standard
	Cr	53	671.7	16.0	**0.2590**	0.104	40.1	ug/L	395	Standard
	Mn	55	484.7	5.0	**-0.0447**	0.003	6.4	ug/L	902	Standard
	Co	59	221.0	5.2	**0.0063**	0.001	21.0	ug/L	262	Standard
	Ni	60	295.3	4.9	**-0.0042**	0.006	140.7	ug/L	371	Standard
	Cu	65	138.0	4.5	**0.0084**	0.003	37.2	ug/L	106	Standard
	Zn	66	1155.7	3.5	**0.6080**	0.040	6.5	ug/L	398	Standard
>	Ge	72	498696.9	0.9				ug/L	535147	Standard
	As	75	-30.1	128.0	**0.0313**	0.031	98.7	ug/L	-43	Standard
	Se	82	15.4	57.0	**0.0257**	0.071	276.7	ug/L	14	Standard
	Se-1	77	65.3	19.4	**0.1978**	0.158	79.8	ug/L	65	Standard
>	Ga	71	40.0	12.5				mg/L	97	Standard
	Rb	85	30.0	60.1				ug/L	15	Standard
	Y	89	430247.5	1.6				ug/L	465704	Standard
>	Rh	103	13.3	57.3				ug/L	10	Standard
	Mo	98	65.4	31.6	**0.0347**	0.007	20.3	ug/L	9	Standard
	Ag	107	108.0	15.3	**0.0092**	0.002	24.8	ug/L	82	Standard
	Cd	111	4.6	83.0	**0.0099**	0.002	16.8	mg/L	7	Standard
	Cd	114	17.9	60.7	**0.0122**	0.002	16.5	ug/L	21	Standard
>	In	115	580808.3	0.9				ug/L	619035	Standard
	Sn	118	326.7	5.4	**-0.0499**	0.002	4.8	ug/L	508	Standard
	Sb	123	160.5	9.7	**0.0367**	0.003	7.8	ug/L	86	Standard
	Ba	135	36.3	21.4	**-0.0027**	0.003	127.5	ug/L	79	Standard
	Ce	140	20.0	66.1				ug/L	68	Standard
>	Tb	159	893130.6	0.7				ug/L	986982	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	31.0	11.6	**0.0095**	0.000	4.3	ug/L	13	Standard
	Tl	205	31.7	63.8	**0.0119**	0.003	22.4	ug/L	10	Standard
	Pb	206	260.7	7.5	**0.0079**	0.003	43.1	ug/L	264	Standard
	Pb	207	227.0	12.1	**0.0108**	0.005	49.4	ug/L	227	Standard
	Pb	208	965.7	3.1	**0.0102**	0.002	14.8	ug/L	868	Standard
	U	238	17.7	34.1	**0.0103**	0.001	8.0	ug/L	8	Standard
>	Bi	209	526979.7	0.1				ug/L	541014	Standard

Sample ID: PBW V WG574593-02
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Na	23	3.3	86.6	**20.3871**	17.653	86.6	mg/L	2	Standard
Mg	24	35.0	65.5	**0.0070**	0.027	380.2	mg/L	53	Standard
K	39	43.3	13.3	**0.0049**	0.012	251.2	mg/L	53	Standard
Ca	43	28.3	27.0	**0.0854**	0.465	544.9	mg/L	28	Standard
Fe	54	62.8	35.8	**-0.0719**	0.016	22.9	mg/L	181	Standard
Fe	57	288.3	11.5	**0.1765**	0.108	61.2	mg/L	257	Standard
> **Sc-1**	45	50311.7	1.8				mg/L	55220	Standard
Cl	35	42044.3	0.6				ug/L	35504	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1890.1	2.3				ug/L	2040	Standard
P	31	9644.7	4.6				ug/L	20435	Standard
S	34	2881.9	2.9				ug/L	2430	Standard
Sr	88	75.0	13.3				ug/L	75	Standard
C	12	90.0	19.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	6.0	88.0				mg/L	9	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	13.3	173.2				mg/L	23	Standard
I	127	31466.0	4.3				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		86.930	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		93.189	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.825
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.406
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW V WG574593-02
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Method 6020 - Summary Report

Sample ID: LCSW V WG574593-03
Sample Date/Time: Thursday, June 30, 2016 19:00:21
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69562.7	1.6				ug/L	74916	Standard
	Be	9	55881.3	3.5	**57.0358**	1.690	3.0	ug/L	10	Standard
	Al	27	38980.1	2.0	**0.2396**	0.002	0.8	ug/L	1822	Standard
	Sc	45	55707.3	3.2				ug/L	55220	Standard
	Ti	47	72.0	69.8	**0.0984**	0.116	117.8	ug/L	34	Standard
	V	51	471085.8	1.2	**49.2051**	0.573	1.2	ug/L	1938	Standard
	Cr	52	475883.4	0.8	**50.3369**	0.146	0.3	ug/L	9522	Standard
	Cr	53	57898.8	2.5	**50.0104**	1.177	2.4	ug/L	395	Standard
	Mn	55	437440.5	1.3	**49.2849**	0.589	1.2	ug/L	902	Standard
	Co	59	411129.2	1.4	**49.0012**	0.470	1.0	ug/L	262	Standard
	Ni	60	115394.5	1.9	**49.8345**	0.439	0.9	ug/L	371	Standard
	Cu	65	114293.6	1.9	**50.2386**	0.553	1.1	ug/L	106	Standard
	Zn	66	68137.2	1.6	**50.5638**	0.366	0.7	ug/L	398	Standard
>	**Ge**	72	551232.8	1.0				ug/L	535147	Standard
	As	75	67324.2	1.0	**48.8502**	0.240	0.5	ug/L	-43	Standard
	Se	82	6755.6	1.9	**48.2934**	0.688	1.4	ug/L	14	Standard
	Se-1	77	4626.4	0.4	**49.2779**	0.338	0.7	ug/L	65	Standard
>	**Ga**	71	48.3	11.9				mg/L	97	Standard
	Rb	85	60.0	8.3				ug/L	15	Standard
	Y	89	471884.7	1.3				ug/L	465704	Standard
>	**Rh**	103	28.3	44.4				ug/L	10	Standard
	Mo	98	78.0	23.1	**0.0363**	0.006	15.3	ug/L	9	Standard
	Ag	107	382843.9	0.7	**48.5758**	0.339	0.7	ug/L	82	Standard
	Cd	111	121706.1	1.5	**48.3134**	0.813	1.7	mg/L	7	Standard
	Cd	114	293415.4	2.3	**48.3681**	1.191	2.5	ug/L	21	Standard
>	**In**	115	646223.1	0.3				ug/L	619035	Standard
	Sn	118	735.0	7.2	**0.0048**	0.008	161.7	ug/L	508	Standard
	Sb	123	258744.8	2.4	**46.8067**	1.129	2.4	ug/L	86	Standard
	Ba	135	113648.3	0.8	**47.6009**	0.461	1.0	ug/L	79	Standard
	Ce	140	66.7	21.7				ug/L	68	Standard
>	**Tb**	159	978173.5	0.6				ug/L	986982	Standard
	Ho	165	13.3	21.7				ug/L	10	Standard
	Tl	203	464890.4	0.6	**49.4533**	0.267	0.5	ug/L	13	Standard
	Tl	205	415961.1	0.9	**51.7944**	0.478	0.9	ug/L	10	Standard
	Pb	206	301601.6	0.3	**49.9520**	0.137	0.3	ug/L	264	Standard
	Pb	207	262116.2	0.6	**48.0334**	0.260	0.5	ug/L	227	Standard
	Pb	208	1097299.1	0.6	**52.1501**	0.236	0.5	ug/L	868	Standard
	U	238	389833.0	0.4	**50.1241**	0.175	0.3	ug/L	8	Standard
>	**Bi**	209	557069.2	0.1				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	56.7	13.5	**0.0267**	0.008	31.7	mg/L	53	Standard
K	39	53.3	32.9	**0.0139**	0.031	220.8	mg/L	53	Standard
Ca	43	15.0	66.7	**-0.8437**	0.534	63.2	mg/L	28	Standard
Fe	54	206.4	18.6	**0.0203**	0.023	111.4	mg/L	181	Standard
Fe	57	230.0	7.8	**-0.0594**	0.033	54.8	mg/L	257	Standard
Sc-1	45	55707.3	3.2				mg/L	55220	Standard
Cl	35	46169.6	0.9				ug/L	35504	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	2390.2	11.5				ug/L	2040	Standard
P	31	24085.8	0.8				ug/L	20435	Standard
S	34	3070.3	3.9				ug/L	2430	Standard
Sr	88	66.7	30.3				ug/L	75	Standard
C	12	90.0	44.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	8.6	117.2				mg/L	9	Standard
Ho-1	165	13.3	21.7				mg/L	10	Standard
Er	166	30.0	57.7				mg/L	23	Standard
I	127	17955.6	2.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.854	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.006	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.392
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.968
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW V WG574593-03
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Method 6020 - Summary Report

Sample ID: F BLANK WG574519-01
Sample Date/Time: Thursday, June 30, 2016 19:03:33
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68901.4	2.7				ug/L	74916	Standard
	Be	9	35.0	0.0	**0.0325**	0.001	3.0	ug/L	10	Standard
	Al	27	13376.7	44.8	**0.0815**	0.037	45.8	ug/L	1822	Standard
	Sc	45	56279.3	1.3				ug/L	55220	Standard
	Ti	47	49.0	26.8	**0.0449**	0.030	66.9	ug/L	34	Standard
	V	51	1904.9	20.7	**0.0032**	0.040	1261.0	ug/L	1938	Standard
	Cr	52	10709.8	1.1	**0.1165**	0.013	11.0	ug/L	9522	Standard
	Cr	53	1201.7	3.2	**0.6585**	0.031	4.7	ug/L	395	Standard
	Mn	55	2313.5	41.6	**0.1557**	0.107	68.9	ug/L	902	Standard
	Co	59	426.0	48.2	**0.0279**	0.024	86.7	ug/L	262	Standard
	Ni	60	451.0	5.0	**0.0498**	0.011	22.6	ug/L	371	Standard
	Cu	65	885.0	3.9	**0.3307**	0.016	4.9	ug/L	106	Standard
	Zn	66	2763.6	4.2	**1.7184**	0.104	6.0	ug/L	398	Standard
>	**Ge**	72	551340.8	0.9				ug/L	535147	Standard
	As	75	68.9	33.8	**0.1051**	0.017	15.8	ug/L	-43	Standard
	Se	82	69.5	11.0	**0.4005**	0.051	12.7	ug/L	14	Standard
	Se-1	77	56.7	8.2	**0.0295**	0.055	187.8	ug/L	65	Standard
>	**Ga**	71	41.7	13.9				mg/L	97	Standard
	Rb	85	55.0	24.1				ug/L	15	Standard
	Y	89	480211.7	1.0				ug/L	465704	Standard
>	**Rh**	103	6.7	114.6				ug/L	10	Standard
	Mo	98	108.4	79.8	**0.0458**	0.027	59.7	ug/L	9	Standard
	Ag	107	229.0	50.7	**0.0230**	0.015	66.8	ug/L	82	Standard
	Cd	111	25.6	32.6	**0.0180**	0.003	17.7	mg/L	7	Standard
	Cd	114	68.1	31.3	**0.0200**	0.003	16.5	ug/L	21	Standard
>	**In**	115	649486.2	1.9				ug/L	619035	Standard
	Sn	118	630.0	14.3	**-0.0111**	0.013	120.8	ug/L	508	Standard
	Sb	123	2763.7	29.7	**0.5029**	0.152	30.2	ug/L	86	Standard
	Ba	135	521.0	3.5	**0.1976**	0.008	4.3	ug/L	79	Standard
	Ce	140	36.7	15.7				ug/L	68	Standard
>	**Tb**	159	966307.5	1.5				ug/L	986982	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	189.7	17.5	**0.0262**	0.004	13.7	ug/L	13	Standard
	Tl	205	248.3	56.4	**0.0386**	0.017	45.1	ug/L	10	Standard
	Pb	206	868.4	21.3	**0.1061**	0.031	28.8	ug/L	264	Standard
	Pb	207	771.7	25.0	**0.1083**	0.035	32.6	ug/L	227	Standard
	Pb	208	3058.8	10.1	**0.1071**	0.015	13.6	ug/L	868	Standard
	U	238	127.3	60.3	**0.0243**	0.010	40.6	ug/L	8	Standard
>	**Bi**	209	557094.5	0.3				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.1066**	15.764	173.1	mg/L	2	Standard
Mg	24	351.7	14.8	**0.3415**	0.055	16.2	mg/L	53	Standard
K	39	33.3	22.9	**-0.0204**	0.013	64.6	mg/L	53	Standard
Ca	43	13.3	57.3	**-0.9375**	0.417	44.5	mg/L	28	Standard
Fe	54	189.3	9.4	**0.0079**	0.013	163.4	mg/L	181	Standard
Fe	57	275.0	14.2	**0.0511**	0.094	183.1	mg/L	257	Standard
Sc-1	45	56279.3	1.3				mg/L	55220	Standard
Cl	35	45061.6	0.5				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	10497.0	6.0				ug/L	2040	Standard
P	31	23987.3	1.8				ug/L	20435	Standard
S	34	2932.0	0.8				ug/L	2430	Standard
Sr	88	76.7	15.1				ug/L	75	Standard
C	12	106.7	10.8				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	16.0	72.9				mg/L	9	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	29338.4	1.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.971	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.026	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.919
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.972
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606153601 WG574593-01
Sample Date/Time: Thursday, June 30, 2016 19:06:44
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	122673.1	2.2				ug/L	74916	Standard
	Be	9	31.7	55.5	**0.0146**	0.010	66.7	ug/L	10	Standard
	Al	27	18994381.1	0.9	**66.8555**	0.955	1.4	ug/L	1822	Standard
	Sc	45	46431.0	0.5				ug/L	55220	Standard
	Ti	47	683.3	6.3	**1.9112**	0.129	6.8	ug/L	34	Standard
	V	51	30052.2	22.2	**3.6833**	0.821	22.3	ug/L	1938	Standard
	Cr	52	21130.7	1.8	**1.7730**	0.033	1.8	ug/L	9522	Standard
	Cr	53	14517.2	22.9	**15.1703**	3.419	22.5	ug/L	395	Standard
	Mn	55	85596.1	0.7	**11.8105**	0.088	0.7	ug/L	902	Standard
	Co	59	116786.7	0.4	**17.1478**	0.141	0.8	ug/L	262	Standard
	Ni	60	17742.0	0.6	**9.3298**	0.063	0.7	ug/L	371	Standard
	Cu	65	20615.4	1.5	**11.1291**	0.283	2.5	ug/L	106	Standard
	Zn	66	13403.6	4.3	**12.0053**	0.643	5.4	ug/L	398	Standard
>	Ge	72	447096.6	1.2				ug/L	535147	Standard
	As	75	6308.4	1.3	**5.6928**	0.101	1.8	ug/L	-43	Standard
	Se	82	571.1	6.9	**4.9502**	0.406	8.2	ug/L	14	Standard
	Se-1	77	1142.4	10.9	**14.5869**	1.497	10.3	ug/L	65	Standard
>	Ga	71	756.7	6.7				mg/L	97	Standard
	Rb	85	264851.7	1.4				ug/L	15	Standard
	Y	89	428599.5	1.0				ug/L	465704	Standard
>	Rh	103	428.3	16.9				ug/L	10	Standard
	Mo	98	1248169.6	0.3	**472.3040**	4.038	0.9	ug/L	9	Standard
	Ag	107	334.0	12.0	**0.0462**	0.007	14.2	ug/L	82	Standard
	Cd	111	-881.1	2.5	**-0.4230**	0.010	2.3	mg/L	7	Standard
	Cd	114	2092.7	7.3	**0.4339**	0.031	7.1	ug/L	21	Standard
>	In	115	524373.9	0.6				ug/L	619035	Standard
	Sn	118	1396.7	7.2	**0.1500**	0.019	12.5	ug/L	508	Standard
	Sb	123	2763.9	2.3	**0.6205**	0.015	2.4	ug/L	86	Standard
	Ba	135	74756.0	0.3	**38.5832**	0.154	0.4	ug/L	79	Standard
	Ce	140	973.4	5.1				ug/L	68	Standard
>	Tb	159	853344.7	1.3				ug/L	986982	Standard
	Ho	165	58.3	32.5				ug/L	10	Standard
	Tl	203	937.0	32.6	**0.1350**	0.042	31.4	ug/L	13	Standard
	Tl	205	240.0	27.2	**0.0464**	0.011	23.2	ug/L	10	Standard
	Pb	206	737.0	5.6	**0.1202**	0.009	7.3	ug/L	264	Standard
	Pb	207	643.7	9.2	**0.1195**	0.015	12.3	ug/L	227	Standard
	Pb	208	2580.4	7.6	**0.1204**	0.013	10.9	ug/L	868	Standard
	U	238	2118.5	4.2	**0.3601**	0.017	4.6	ug/L	8	Standard
>	Bi	209	430851.9	0.7				ug/L	541014	Standard

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Na	23	25.0	69.3	**167.1204**	115.560	69.1	mg/L	2	Standard
Mg	24	1041469.6	1.5	**1349.8898**	27.206	2.0	mg/L	53	Standard
K	39	1346.7	6.5	**2.6416**	0.167	6.3	mg/L	53	Standard
Ca	43	1193.4	7.9	**78.6907**	5.988	7.6	mg/L	28	Standard
Fe	54	146.8	27.2	**0.0001**	0.032	25226.5	mg/L	181	Standard
Fe	57	1303.4	10.9	**3.4417**	0.428	12.4	mg/L	257	Standard
> **Sc-1**	45	46431.0	0.5				mg/L	55220	Standard
Cl	35	221401.2	0.1				ug/L	35504	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	60055.9	7.2				ug/L	2040	Standard
P	31	21758.9	1.5				ug/L	20435	Standard
S	34	2653.6	2.7				ug/L	2430	Standard
Sr	88	396.7	13.9				ug/L	75	Standard
C	12	190.0	18.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	52377.1	40.9				mg/L	7	Standard
Dy	164	11.9	128.4				mg/L	9	Standard
Ho-1	165	58.3	32.5				mg/L	10	Standard
Er	166	30.0	0.0				mg/L	23	Standard
I	127	199806.6	8.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		163.747	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		83.547	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	84.708	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	79.638	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

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Method 6020 - Summary Report

Sample ID: L1606153601DP WG574593-04
Sample Date/Time: Thursday, June 30, 2016 19:09:56
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	145131.3	5.2				ug/L	74916	Standard
	Be	9	38.3	78.6	**0.0153**	0.015	95.1	ug/L	10	Standard
	Al	27	20839638.7	6.3	**61.9647**	1.121	1.8	ug/L	1822	Standard
	Sc	45	51571.0	4.0				ug/L	55220	Standard
	Ti	47	849.0	9.4	**2.1919**	0.167	7.6	ug/L	34	Standard
	V	51	36447.2	16.7	**4.1501**	0.825	19.9	ug/L	1938	Standard
	Cr	52	21907.5	2.6	**1.6433**	0.067	4.1	ug/L	9522	Standard
	Cr	53	10825.5	4.5	**10.3076**	0.649	6.3	ug/L	395	Standard
	Mn	55	90738.7	2.8	**11.5133**	0.066	0.6	ug/L	902	Standard
	Co	59	125381.0	4.5	**16.9279**	0.346	2.0	ug/L	262	Standard
	Ni	60	18867.8	4.3	**9.1206**	0.188	2.1	ug/L	371	Standard
	Cu	65	22283.4	4.1	**11.0610**	0.229	2.1	ug/L	106	Standard
	Zn	66	14870.3	6.1	**12.2488**	0.518	4.2	ug/L	398	Standard
>	**Ge**	72	486033.9	2.5				ug/L	535147	Standard
	As	75	6634.4	6.0	**5.5055**	0.197	3.6	ug/L	-43	Standard
	Se	82	622.2	14.5	**4.9508**	0.649	13.1	ug/L	14	Standard
	Se-1	77	954.7	5.1	**11.0985**	0.821	7.4	ug/L	65	Standard
>	**Ga**	71	735.0	6.2				mg/L	97	Standard
	Rb	85	280985.0	3.3				ug/L	15	Standard
	Y	89	467730.0	3.9				ug/L	465704	Standard
>	**Rh**	103	991.7	26.1				ug/L	10	Standard
	Mo	98	1366675.1	3.4	**465.0197**	2.989	0.6	ug/L	9	Standard
	Ag	107	341.7	18.3	**0.0422**	0.010	24.6	ug/L	82	Standard
	Cd	111	-916.3	0.9	**-0.3953**	0.011	2.8	mg/L	7	Standard
	Cd	114	2215.8	6.2	**0.4142**	0.035	8.4	ug/L	21	Standard
>	**In**	115	583122.3	3.2				ug/L	619035	Standard
	Sn	118	1590.1	4.2	**0.1562**	0.015	9.4	ug/L	508	Standard
	Sb	123	2817.7	3.8	**0.5692**	0.005	0.8	ug/L	86	Standard
	Ba	135	79167.7	3.0	**36.7444**	0.151	0.4	ug/L	79	Standard
	Ce	140	1018.4	6.7				ug/L	68	Standard
>	**Tb**	159	945728.6	2.5				ug/L	986982	Standard
	Ho	165	63.3	52.6				ug/L	10	Standard
	Tl	203	1194.7	26.8	**0.1568**	0.046	29.2	ug/L	13	Standard
	Tl	205	235.0	25.1	**0.0424**	0.010	23.6	ug/L	10	Standard
	Pb	206	779.7	7.0	**0.1149**	0.016	13.8	ug/L	264	Standard
	Pb	207	712.7	3.3	**0.1211**	0.010	8.5	ug/L	227	Standard
	Pb	208	2715.1	2.2	**0.1140**	0.006	5.4	ug/L	868	Standard
	U	238	2279.8	3.7	**0.3534**	0.005	1.4	ug/L	8	Standard
>	**Bi**	209	472522.9	3.5				ug/L	541014	Standard

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Na	23	11.7	99.0	**69.7203**	68.154	97.8	mg/L	2	Standard
Mg	24	1137339.3	3.2	**1327.4723**	16.520	1.2	mg/L	53	Standard
K	39	1246.7	8.6	**2.1884**	0.146	6.7	mg/L	53	Standard
Ca	43	1193.4	9.8	**70.6867**	6.151	8.7	mg/L	28	Standard
Fe	54	172.3	23.9	**0.0064**	0.026	410.4	mg/L	181	Standard
Fe	57	1273.4	6.7	**2.9462**	0.106	3.6	mg/L	257	Standard
Sc-1	45	51571.0	4.0				mg/L	55220	Standard
Cl	35	236472.8	3.0				ug/L	35504	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	63175.0	5.0				ug/L	2040	Standard
P	31	23453.2	4.9				ug/L	20435	Standard
S	34	2768.6	5.1				ug/L	2430	Standard
Sr	88	461.7	3.3				ug/L	75	Standard
C	12	266.7	15.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	71212.3	32.9				mg/L	7	Standard
Dy	164	41.9	56.1				mg/L	9	Standard
Ho-1	165	63.3	52.6				mg/L	10	Standard
Er	166	30.0	33.3				mg/L	23	Standard
I	127	118564.9	6.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		193.724	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.823	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	94.199	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	87.340	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

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Method 6020 - Summary Report

Sample ID: L1606153601S WG574593-05
Sample Date/Time: Thursday, June 30, 2016 19:13:07
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	143015.1	0.4				ug/L	74916	Standard
	Be	9	64930.5	1.9	**32.2330**	0.549	1.7	ug/L	10	Standard
	Al	27	19624790.6	1.8	**59.2354**	0.841	1.4	ug/L	1822	Standard
	Sc	45	46411.0	0.4				ug/L	55220	Standard
	Ti	47	889.0	11.4	**2.4697**	0.264	10.7	ug/L	34	Standard
	V	51	363710.8	13.8	**46.1270**	5.796	12.6	ug/L	1938	Standard
	Cr	52	383056.0	1.4	**49.2423**	0.433	0.9	ug/L	9522	Standard
	Cr	53	54581.5	1.5	**57.3821**	0.914	1.6	ug/L	395	Standard
	Mn	55	429579.9	1.5	**58.8649**	0.091	0.2	ug/L	902	Standard
	Co	59	480081.2	1.5	**69.5797**	0.229	0.3	ug/L	262	Standard
	Ni	60	101825.7	0.5	**53.4866**	0.655	1.2	ug/L	371	Standard
	Cu	65	103347.9	0.3	**55.2467**	0.559	1.0	ug/L	106	Standard
	Zn	66	65133.7	0.7	**58.8316**	0.616	1.0	ug/L	398	Standard
>	Ge	72	453366.3	1.4				ug/L	535147	Standard
	As	75	67998.6	1.4	**59.9775**	0.350	0.6	ug/L	-43	Standard
	Se	82	8004.7	1.5	**69.6196**	0.663	1.0	ug/L	14	Standard
	Se-1	77	5747.1	0.6	**74.7297**	0.858	1.1	ug/L	65	Standard
>	Ga	71	700.0	7.7				mg/L	97	Standard
	Rb	85	262612.4	2.7				ug/L	15	Standard
	Y	89	431755.5	0.9				ug/L	465704	Standard
>	Rh	103	1180.0	12.1				ug/L	10	Standard
	Mo	98	1268678.8	1.5	**462.4618**	7.325	1.6	ug/L	9	Standard
	Ag	107	289362.3	0.2	**43.5874**	0.122	0.3	ug/L	82	Standard
	Cd	111	94792.1	0.8	**44.6737**	0.366	0.8	mg/L	7	Standard
	Cd	114	230907.1	2.6	**45.1893**	1.189	2.6	ug/L	21	Standard
>	In	115	544320.7	0.1				ug/L	619035	Standard
	Sn	118	1760.1	2.7	**0.2042**	0.008	3.9	ug/L	508	Standard
	Sb	123	233383.2	0.4	**50.1222**	0.236	0.5	ug/L	86	Standard
	Ba	135	165124.3	0.9	**82.1221**	0.708	0.9	ug/L	79	Standard
	Ce	140	966.7	8.2				ug/L	68	Standard
>	Tb	159	884416.1	0.7				ug/L	986982	Standard
	Ho	165	73.3	38.8				ug/L	10	Standard
	Tl	203	384991.2	0.4	**50.4813**	0.655	1.3	ug/L	13	Standard
	Tl	205	341869.1	1.1	**52.4681**	0.385	0.7	ug/L	10	Standard
	Pb	206	255668.8	0.9	**52.1981**	0.879	1.7	ug/L	264	Standard
	Pb	207	224089.7	0.5	**50.6200**	0.634	1.3	ug/L	227	Standard
	Pb	208	888698.2	0.6	**52.0591**	0.157	0.3	ug/L	868	Standard
	U	238	358665.5	0.3	**56.8418**	0.316	0.6	ug/L	8	Standard
>	Bi	209	451966.0	0.9				ug/L	541014	Standard

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Na	23	16.7	34.6	**111.6222**	38.965	34.9	mg/L	2	Standard
Mg	24	1057684.2	1.3	**1371.3823**	13.464	1.0	mg/L	53	Standard
K	39	1123.4	9.3	**2.1927**	0.220	10.0	mg/L	53	Standard
Ca	43	1163.4	6.7	**76.7147**	5.120	6.7	mg/L	28	Standard
Fe	54	172.0	23.7	**0.0208**	0.033	160.7	mg/L	181	Standard
Fe	57	1135.0	4.0	**2.9145**	0.156	5.4	mg/L	257	Standard
Sc-1	45	46411.0	0.4				mg/L	55220	Standard
Cl	35	218214.2	0.7				ug/L	35504	Standard
Kr	83	1.7	124.9				ug/L	2	Standard
Br	81	60607.7	2.8				ug/L	2040	Standard
P	31	22690.3	1.8				ug/L	20435	Standard
S	34	2575.2	6.7				ug/L	2430	Standard
Sr	88	481.7	15.9				ug/L	75	Standard
C	12	266.7	14.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	103574.1	22.0				mg/L	7	Standard
Dy	164	22.2	113.4				mg/L	9	Standard
Ho-1	165	73.3	38.8				mg/L	10	Standard
Er	166	23.3	24.7				mg/L	23	Standard
I	127	121412.0	5.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		190.900	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		84.718	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		87.931
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		83.541
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	

Sample ID: L1606153601S WG574593-05
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Method 6020 - Summary Report

Sample ID: L1606153601SD WG574593-06
Sample Date/Time: Thursday, June 30, 2016 19:16:19
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	144320.8	1.4				ug/L	74916	Standard
	Be	9	67036.4	2.5	**32.9766**	0.573	1.7	ug/L	10	Standard
	Al	27	19028383.5	1.6	**56.9163**	0.252	0.4	ug/L	1822	Standard
	Sc	45	45364.5	1.2				ug/L	55220	Standard
	Ti	47	864.0	14.8	**2.4561**	0.339	13.8	ug/L	34	Standard
	V	51	409554.8	7.4	**53.2416**	3.343	6.3	ug/L	1938	Standard
	Cr	52	373963.3	2.3	**49.2139**	0.515	1.0	ug/L	9522	Standard
	Cr	53	52440.6	1.0	**56.4442**	1.146	2.0	ug/L	395	Standard
	Mn	55	414320.5	2.9	**58.1196**	1.024	1.8	ug/L	902	Standard
	Co	59	481049.2	2.9	**71.3749**	1.274	1.8	ug/L	262	Standard
	Ni	60	100627.5	1.8	**54.1113**	0.263	0.5	ug/L	371	Standard
	Cu	65	101353.6	1.2	**55.4683**	0.248	0.4	ug/L	106	Standard
	Zn	66	63976.8	1.0	**59.1634**	0.288	0.5	ug/L	398	Standard
>	Ge	72	442808.8	1.3				ug/L	535147	Standard
	As	75	65657.0	1.0	**59.2943**	0.212	0.4	ug/L	-43	Standard
	Se	82	7691.2	2.1	**68.4817**	0.661	1.0	ug/L	14	Standard
	Se-1	77	5384.6	1.6	**71.6561**	0.754	1.1	ug/L	65	Standard
>	Ga	71	658.3	9.6				mg/L	97	Standard
	Rb	85	255749.5	2.4				ug/L	15	Standard
	Y	89	419777.3	0.4				ug/L	465704	Standard
>	Rh	103	1070.0	9.0				ug/L	10	Standard
	Mo	98	1236104.0	2.4	**461.4124**	4.988	1.1	ug/L	9	Standard
	Ag	107	281437.4	2.3	**43.4126**	0.448	1.0	ug/L	82	Standard
	Cd	111	91534.3	1.0	**44.1809**	0.328	0.7	mg/L	7	Standard
	Cd	114	225320.4	3.6	**45.1561**	1.335	3.0	ug/L	21	Standard
>	In	115	531495.6	1.3				ug/L	619035	Standard
	Sn	118	1726.8	2.8	**0.2057**	0.012	6.1	ug/L	508	Standard
	Sb	123	227797.6	2.3	**50.0991**	0.600	1.2	ug/L	86	Standard
	Ba	135	161039.8	1.6	**82.0212**	0.257	0.3	ug/L	79	Standard
	Ce	140	906.7	5.3				ug/L	68	Standard
>	Tb	159	880141.6	0.9				ug/L	986982	Standard
	Ho	165	85.0	65.5				ug/L	10	Standard
	Tl	203	378471.8	2.5	**50.0289**	0.587	1.2	ug/L	13	Standard
	Tl	205	343724.7	2.2	**53.1854**	0.518	1.0	ug/L	10	Standard
	Pb	206	251355.3	1.3	**51.7382**	0.295	0.6	ug/L	264	Standard
	Pb	207	219297.8	1.2	**49.9444**	0.068	0.1	ug/L	227	Standard
	Pb	208	870795.0	1.8	**51.4295**	0.358	0.7	ug/L	868	Standard
	U	238	351344.4	2.1	**56.1378**	0.462	0.8	ug/L	8	Standard
>	Bi	209	448252.8	1.3				ug/L	541014	Standard

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Na	23	13.3	43.3	**91.5778**	40.783	44.5	mg/L	2	Standard
Mg	24	1030234.6	3.5	**1366.3947**	31.771	2.3	mg/L	53	Standard
K	39	1185.0	3.3	**2.3727**	0.105	4.4	mg/L	53	Standard
Ca	43	1123.4	8.6	**75.7793**	6.723	8.9	mg/L	28	Standard
Fe	54	146.6	6.0	**0.0029**	0.008	282.1	mg/L	181	Standard
Fe	57	1080.0	9.4	**2.8172**	0.286	10.2	mg/L	257	Standard
> **Sc-1**	45	45364.5	1.2				mg/L	55220	Standard
Cl	35	210550.8	2.6				ug/L	35504	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	57964.0	1.3				ug/L	2040	Standard
P	31	21213.2	2.6				ug/L	20435	Standard
S	34	2423.5	4.0				ug/L	2430	Standard
Sr	88	468.3	4.4				ug/L	75	Standard
C	12	256.7	25.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	116534.2	19.4				mg/L	7	Standard
Dy	164	45.4	89.4				mg/L	9	Standard
Ho-1	165	85.0	65.5				mg/L	10	Standard
Er	166	26.7	57.3				mg/L	23	Standard
I	127	133412.5	5.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		192.642	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		82.745	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		85.859
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		82.854
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	

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Method 6020 - Summary Report

Sample ID: L1606149602
Sample Date/Time: Thursday, June 30, 2016 19:19:30
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	104772.7	1.5				ug/L	74916	Standard
	Be	9	263.3	12.2	**0.1749**	0.022	12.8	ug/L	10	Standard
	Al	27	2327206.5	2.0	**9.5886**	0.259	2.7	ug/L	1822	Standard
	Sc	45	53544.5	2.5				ug/L	55220	Standard
	Ti	47	16761.3	1.7	**42.3552**	0.341	0.8	ug/L	34	Standard
	V	51	72697.7	4.2	**8.0120**	0.394	4.9	ug/L	1938	Standard
	Cr	52	31803.0	2.2	**2.6563**	0.048	1.8	ug/L	9522	Standard
	Cr	53	4635.7	2.8	**3.9573**	0.155	3.9	ug/L	395	Standard
	Mn	55	461938.0	0.8	**56.0400**	0.179	0.3	ug/L	902	Standard
	Co	59	7731.6	1.0	**0.9697**	0.004	0.4	ug/L	262	Standard
	Ni	60	5444.3	1.5	**2.3929**	0.012	0.5	ug/L	371	Standard
	Cu	65	244497.6	1.7	**115.7696**	0.937	0.8	ug/L	106	Standard
	Zn	66	95689.3	2.3	**76.6174**	1.133	1.5	ug/L	398	Standard
>	**Ge**	72	512059.6	1.0				ug/L	535147	Standard
	As	75	8368.8	9.3	**6.5821**	0.557	8.5	ug/L	-43	Standard
	Se	82	699.3	44.3	**5.2835**	2.351	44.5	ug/L	14	Standard
	Se-1	77	162.7	7.3	**1.3050**	0.119	9.1	ug/L	65	Standard
>	**Ga**	71	4504.0	7.0				mg/L	97	Standard
	Rb	85	91165.1	0.7				ug/L	15	Standard
	Y	89	475204.6	1.4				ug/L	465704	Standard
>	**Rh**	103	323.3	28.1				ug/L	10	Standard
	Mo	98	9970.5	0.6	**3.1545**	0.012	0.4	ug/L	9	Standard
	Ag	107	1999.8	4.1	**0.2544**	0.011	4.2	ug/L	82	Standard
	Cd	111	985.7	2.2	**0.4094**	0.008	1.8	mg/L	7	Standard
	Cd	114	2510.2	4.6	**0.4335**	0.018	4.3	ug/L	21	Standard
>	**In**	115	629593.3	0.4				ug/L	619035	Standard
	Sn	118	8885.9	1.2	**1.2391**	0.014	1.1	ug/L	508	Standard
	Sb	123	35324.6	0.9	**6.5627**	0.043	0.7	ug/L	86	Standard
	Ba	135	56638.7	0.7	**24.3393**	0.085	0.3	ug/L	79	Standard
	Ce	140	132589.5	2.3				ug/L	68	Standard
>	**Tb**	159	989187.3	1.2				ug/L	986982	Standard
	Ho	165	2191.8	5.2				ug/L	10	Standard
	Tl	203	653.7	11.2	**0.0726**	0.007	9.8	ug/L	13	Standard
	Tl	205	521.7	4.9	**0.0699**	0.003	3.8	ug/L	10	Standard
	Pb	206	450058.3	0.7	**71.4171**	0.502	0.7	ug/L	264	Standard
	Pb	207	375040.1	0.8	**65.8445**	0.305	0.5	ug/L	227	Standard
	Pb	208	1541570.9	0.9	**70.1911**	0.206	0.3	ug/L	868	Standard
	U	238	768.7	10.1	**0.1025**	0.009	8.9	ug/L	8	Standard
>	**Bi**	209	581585.4	1.2				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.4621**	16.380	173.1	mg/L	2	Standard
Mg	24	17518.5	1.6	**19.6574**	0.180	0.9	mg/L	53	Standard
K	39	1336.7	7.1	**2.2625**	0.136	6.0	mg/L	53	Standard
Ca	43	150.0	29.6	**7.1161**	2.698	37.9	mg/L	28	Standard
Fe	54	2445.9	4.8	**1.6003**	0.084	5.2	mg/L	181	Standard
Fe	57	911.7	10.0	**1.8244**	0.187	10.3	mg/L	257	Standard
> **Sc-1**	45	53544.5	2.5				mg/L	55220	Standard
Cl	35	39591.0	3.0				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	8435.7	4.1				ug/L	2040	Standard
P	31	32474.8	3.9				ug/L	20435	Standard
S	34	1970.1	2.2				ug/L	2430	Standard
Sr	88	191.7	12.9				ug/L	75	Standard
C	12	316.7	11.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6454.7	14.8				mg/L	7	Standard
Dy	164	3364.1	3.4				mg/L	9	Standard
Ho-1	165	2191.8	5.2				mg/L	10	Standard
Er	166	2080.1	5.8				mg/L	23	Standard
I	127	47278.7	1.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		139.853	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.686	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.706	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	107.499	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: L1606149602PS WG574849-01
Sample Date/Time: Thursday, June 30, 2016 19:22:42
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	103109.8	2.5				ug/L	74916	Standard
	Be	9	77933.4	3.7	**53.6569**	0.981	1.8	ug/L	10	Standard
	Al	27	2281277.1	0.1	**9.5530**	0.236	2.5	ug/L	1822	Standard
	Sc	45	55926.4	2.7				ug/L	55220	Standard
	Ti	47	16573.4	0.4	**41.7070**	0.077	0.2	ug/L	34	Standard
	V	51	525181.9	0.5	**58.8445**	0.516	0.9	ug/L	1938	Standard
	Cr	52	452407.5	2.1	**51.3173**	0.938	1.8	ug/L	9522	Standard
	Cr	53	55755.8	1.8	**51.6383**	0.780	1.5	ug/L	395	Standard
	Mn	55	853926.6	1.8	**103.2487**	1.685	1.6	ug/L	902	Standard
	Co	59	433237.1	1.5	**55.3580**	0.766	1.4	ug/L	262	Standard
	Ni	60	108738.9	1.6	**50.3458**	0.626	1.2	ug/L	371	Standard
	Cu	65	348102.0	1.0	**164.1687**	1.118	0.7	ug/L	106	Standard
	Zn	66	154688.6	0.4	**123.5626**	0.566	0.5	ug/L	398	Standard
>	Ge	72	514197.3	0.4				ug/L	535147	Standard
	As	75	72841.3	0.6	**56.6505**	0.211	0.4	ug/L	-43	Standard
	Se	82	6978.0	1.8	**53.4868**	0.860	1.6	ug/L	14	Standard
	Se-1	77	4469.7	1.0	**51.0555**	0.341	0.7	ug/L	65	Standard
>	Ga	71	4263.9	4.0				mg/L	97	Standard
	Rb	85	89092.9	2.1				ug/L	15	Standard
	Y	89	475816.2	1.0				ug/L	465704	Standard
>	Rh	103	153.3	18.0				ug/L	10	Standard
	Mo	98	8345.8	1.9	**2.6468**	0.068	2.6	ug/L	9	Standard
	Ag	107	375316.3	0.2	**48.9550**	0.354	0.7	ug/L	82	Standard
	Cd	111	119990.1	0.1	**48.9662**	0.427	0.9	mg/L	7	Standard
	Cd	114	291500.4	1.2	**49.4012**	1.030	2.1	ug/L	21	Standard
>	In	115	628633.7	0.9				ug/L	619035	Standard
	Sn	118	9141.1	1.5	**1.2797**	0.012	0.9	ug/L	508	Standard
	Sb	123	292476.1	1.8	**54.3852**	0.550	1.0	ug/L	86	Standard
	Ba	135	165631.8	0.7	**71.3277**	0.810	1.1	ug/L	79	Standard
	Ce	140	132476.6	0.4				ug/L	68	Standard
>	Tb	159	983495.9	0.8				ug/L	986982	Standard
	Ho	165	2075.1	6.5				ug/L	10	Standard
	Tl	203	481149.5	0.7	**49.1296**	0.206	0.4	ug/L	13	Standard
	Tl	205	428530.6	0.3	**51.2204**	0.373	0.7	ug/L	10	Standard
	Pb	206	759727.2	0.9	**120.8333**	0.725	0.6	ug/L	264	Standard
	Pb	207	644523.9	0.7	**113.4180**	0.527	0.5	ug/L	227	Standard
	Pb	208	2619689.3	1.3	**119.5658**	2.190	1.8	ug/L	868	Standard
	U	238	425453.5	0.8	**52.5108**	0.557	1.1	ug/L	8	Standard
>	Bi	209	580355.7	0.8				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.5408**	16.516	173.1	mg/L	2	Standard
Mg	24	17336.6	1.6	**18.6304**	0.635	3.4	mg/L	53	Standard
K	39	1470.1	3.9	**2.3880**	0.102	4.3	mg/L	53	Standard
Ca	43	176.7	13.4	**8.1890**	1.121	13.7	mg/L	28	Standard
Fe	54	2425.7	5.9	**1.5136**	0.097	6.4	mg/L	181	Standard
Fe	57	908.4	11.3	**1.7168**	0.315	18.3	mg/L	257	Standard
> **Sc-1**	45	55926.4	2.7				mg/L	55220	Standard
Cl	35	38868.5	1.9				ug/L	35504	Standard
Kr	83	2.0	132.3				ug/L	2	Standard
Br	81	6991.6	0.9				ug/L	2040	Standard
P	31	33233.1	4.0				ug/L	20435	Standard
S	34	2060.1	7.2				ug/L	2430	Standard
Sr	88	165.0	22.9				ug/L	75	Standard
C	12	266.7	16.9				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3680.5	18.4				mg/L	7	Standard
Dy	164	3273.9	7.2				mg/L	9	Standard
Ho-1	165	2075.1	6.5				mg/L	10	Standard
Er	166	1943.5	5.4				mg/L	23	Standard
I	127	42986.0	4.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		137.633	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.085	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.551	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	107.272	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Cu 65 Upper, S, EEE	Cu	65	

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Zn 66 Upper, S, EEE	Zn	66
Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1606149602SDL WG574849-02
Sample Date/Time: Thursday, June 30, 2016 19:25:53
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	93955.5	2.3				ug/L	74916	Standard
	Be	9	91.7	17.5	**0.0655**	0.010	15.9	ug/L	10	Standard
	Al	27	435016.7	0.6	**1.9970**	0.036	1.8	ug/L	1822	Standard
	Sc	45	46536.4	2.0				ug/L	55220	Standard
	Ti	47	3197.0	1.4	**8.6280**	0.173	2.0	ug/L	34	Standard
	V	51	13935.8	2.3	**1.4943**	0.029	1.9	ug/L	1938	Standard
	Cr	52	10481.3	2.0	**0.2696**	0.018	6.9	ug/L	9522	Standard
	Cr	53	1375.1	5.2	**0.9976**	0.076	7.6	ug/L	395	Standard
	Mn	55	87248.2	0.4	**11.2920**	0.055	0.5	ug/L	902	Standard
	Co	59	1639.4	0.1	**0.2034**	0.002	0.8	ug/L	262	Standard
	Ni	60	1658.1	1.3	**0.6854**	0.012	1.8	ug/L	371	Standard
	Cu	65	48737.9	1.7	**24.7594**	0.542	2.2	ug/L	106	Standard
	Zn	66	20637.7	1.3	**17.4959**	0.332	1.9	ug/L	398	Standard
>	**Ge**	72	476439.4	0.6				ug/L	535147	Standard
	As	75	1518.5	3.9	**1.3286**	0.052	3.9	ug/L	-43	Standard
	Se	82	100.8	12.1	**0.7385**	0.104	14.1	ug/L	14	Standard
	Se-1	77	79.3	11.4	**0.4075**	0.109	26.8	ug/L	65	Standard
>	**Ga**	71	933.4	1.6				mg/L	97	Standard
	Rb	85	17089.6	2.7				ug/L	15	Standard
	Y	89	412058.7	1.4				ug/L	465704	Standard
>	**Rh**	103	76.7	16.4				ug/L	10	Standard
	Mo	98	2801.6	5.5	**0.9655**	0.045	4.6	ug/L	9	Standard
	Ag	107	478.7	1.2	**0.0613**	0.001	1.1	ug/L	82	Standard
	Cd	111	212.2	7.2	**0.1012**	0.005	5.3	mg/L	7	Standard
	Cd	114	512.0	11.8	**0.1024**	0.010	10.1	ug/L	21	Standard
>	**In**	115	583106.0	1.4				ug/L	619035	Standard
	Sn	118	1851.8	10.2	**0.1986**	0.029	14.8	ug/L	508	Standard
	Sb	123	7851.0	3.4	**1.5782**	0.048	3.0	ug/L	86	Standard
	Ba	135	10949.6	1.5	**5.0661**	0.131	2.6	ug/L	79	Standard
	Ce	140	25568.2	2.5				ug/L	68	Standard
>	**Tb**	159	919967.3	0.8				ug/L	986982	Standard
	Ho	165	418.3	9.0				ug/L	10	Standard
	Tl	203	262.3	17.9	**0.0346**	0.006	15.9	ug/L	13	Standard
	Tl	205	165.0	10.5	**0.0287**	0.002	7.8	ug/L	10	Standard
	Pb	206	87208.3	0.6	**14.7596**	0.282	1.9	ug/L	264	Standard
	Pb	207	73088.5	0.1	**13.6871**	0.203	1.5	ug/L	227	Standard
	Pb	208	296893.6	0.2	**14.4164**	0.196	1.4	ug/L	868	Standard
	U	238	176.3	3.2	**0.0311**	0.001	3.2	ug/L	8	Standard
>	**Bi**	209	544255.4	1.3				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3300.4	1.0	**4.2345**	0.101	2.4	mg/L	53	Standard
K	39	323.3	12.4	**0.5743**	0.069	12.0	mg/L	53	Standard
Ca	43	48.3	21.5	**1.5801**	0.742	46.9	mg/L	28	Standard
Fe	54	545.8	9.2	**0.3226**	0.042	13.0	mg/L	181	Standard
Fe	57	365.0	2.7	**0.4843**	0.015	3.2	mg/L	257	Standard
> **Sc-1**	45	46536.4	2.0				mg/L	55220	Standard
Cl	35	36777.9	2.4				ug/L	35504	Standard
Kr	83	2.0	132.3				ug/L	2	Standard
Br	81	2873.6	9.8				ug/L	2040	Standard
P	31	12638.6	1.3				ug/L	20435	Standard
S	34	2045.1	7.4				ug/L	2430	Standard
Sr	88	75.0	6.7				ug/L	75	Standard
C	12	160.0	39.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6728.2	24.0				mg/L	7	Standard
Dy	164	640.1	13.9				mg/L	9	Standard
Ho-1	165	418.3	9.0				mg/L	10	Standard
Er	166	416.7	9.7				mg/L	23	Standard
I	127	34769.9	1.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		125.414	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		89.030	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.196
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.599
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 19:29:06
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	95961.4	2.2				ug/L	74916	Standard
	Be	9	71707.6	1.6	**53.0606**	0.339	0.6	ug/L	10	Standard
	Al	27	9500292.9	1.0	**42.7499**	0.969	2.3	ug/L	1822	Standard
	Sc	45	50089.4	2.7				ug/L	55220	Standard
	Ti	47	38126.9	2.2	**97.2767**	2.761	2.8	ug/L	34	Standard
	V	51	450805.6	0.8	**51.1303**	0.535	1.0	ug/L	1938	Standard
	Cr	52	420207.7	1.8	**48.2152**	0.947	2.0	ug/L	9522	Standard
	Cr	53	53022.6	1.5	**49.7332**	1.518	3.1	ug/L	395	Standard
	Mn	55	391804.7	0.8	**47.9236**	0.476	1.0	ug/L	902	Standard
	Co	59	416314.6	0.9	**53.8746**	0.457	0.8	ug/L	262	Standard
	Ni	60	103681.5	0.6	**48.6168**	0.702	1.4	ug/L	371	Standard
	Cu	65	103376.1	0.5	**49.3415**	0.927	1.9	ug/L	106	Standard
	Zn	66	61988.9	0.5	**49.9450**	0.714	1.4	ug/L	398	Standard
>	Ge	72	507763.0	1.8				ug/L	535147	Standard
	As	75	63276.7	1.7	**49.8427**	0.076	0.2	ug/L	-43	Standard
	Se	82	6646.2	1.2	**51.5894**	0.295	0.6	ug/L	14	Standard
	Se-1	77	4399.3	1.0	**50.9034**	1.388	2.7	ug/L	65	Standard
>	Ga	71	58.3	13.1				mg/L	97	Standard
	Rb	85	1000.0	0.9				ug/L	15	Standard
	Y	89	450523.8	1.1				ug/L	465704	Standard
>	Rh	103	90.0	11.1				ug/L	10	Standard
	Mo	98	316138.3	1.2	**100.4613**	1.010	1.0	ug/L	9	Standard
	Ag	107	370934.7	1.2	**48.7051**	0.350	0.7	ug/L	82	Standard
	Cd	111	116910.7	0.9	**48.0288**	0.583	1.2	mg/L	7	Standard
	Cd	114	288182.6	1.1	**49.1611**	0.548	1.1	ug/L	21	Standard
>	In	115	624446.9	0.6				ug/L	619035	Standard
	Sn	118	331269.7	1.8	**50.3563**	0.616	1.2	ug/L	508	Standard
	Sb	123	262483.0	1.1	**49.1376**	0.313	0.6	ug/L	86	Standard
	Ba	135	107920.0	0.7	**46.7768**	0.061	0.1	ug/L	79	Standard
	Ce	140	183.3	21.2				ug/L	68	Standard
>	Tb	159	959700.8	0.1				ug/L	986982	Standard
	Ho	165	10.0	86.6				ug/L	10	Standard
	Tl	203	468303.5	0.6	**50.0474**	0.369	0.7	ug/L	13	Standard
	Tl	205	420837.0	1.6	**52.6432**	0.744	1.4	ug/L	10	Standard
	Pb	206	303018.9	0.9	**50.4205**	0.564	1.1	ug/L	264	Standard
	Pb	207	273947.8	0.7	**50.4360**	0.330	0.7	ug/L	227	Standard
	Pb	208	1103991.7	0.7	**52.7123**	0.440	0.8	ug/L	868	Standard
	U	238	418677.6	1.5	**54.0799**	0.566	1.0	ug/L	8	Standard
>	Bi	209	554524.6	1.2				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4905.8	6.0	**5.8628**	0.392	6.7	mg/L	53	Standard
K	39	1735.1	5.2	**3.1692**	0.112	3.5	mg/L	53	Standard
Ca	43	81.7	18.7	**3.4095**	0.825	24.2	mg/L	28	Standard
Fe	54	6899.3	0.6	**5.0657**	0.116	2.3	mg/L	181	Standard
Fe	57	1910.1	3.7	**4.9138**	0.067	1.4	mg/L	257	Standard
> **Sc-1**	45	50089.4	2.7				mg/L	55220	Standard
Cl	35	40319.6	2.9				ug/L	35504	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	2363.5	4.5				ug/L	2040	Standard
P	31	24077.5	2.6				ug/L	20435	Standard
S	34	2363.5	3.5				ug/L	2430	Standard
Sr	88	58.3	13.1				ug/L	75	Standard
C	12	160.0	25.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1323.4	28.0				mg/L	7	Standard
Dy	164	12.5	48.3				mg/L	9	Standard
Ho-1	165	10.0	86.6				mg/L	10	Standard
Er	166	16.7	34.6				mg/L	23	Standard
I	127	14271.7	4.4				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	106.121		
	Al	27	85.500		
	Sc	45			
	Ti	47	97.277		
	V	51	102.261		
	Cr	52	96.430		
	Cr	53			
	Mn	55	95.847		
	Co	59	107.749		
	Ni	60	97.234		
	Cu	65	98.683		
	Zn	66	99.890		
>	Ge	72		94.883	
	As	75	99.685		
	Se	82	103.179		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	100.461		
Ag	107	97.410		
Cd	111	96.058		
Cd	114			
In	115			100.874
Sn	118	100.713		
Sb	123	98.275		
Ba	135	93.554		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.095		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.425		
U	238	108.160		
Bi	209			102.497
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 19:32:17
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	94958.3	1.5				ug/L	74916	Standard
	Be	9	71.7	82.6	**0.0499**	0.044	88.3	ug/L	10	Standard
	Al	27	9098.7	74.8	**0.0390**	0.031	78.9	ug/L	1822	Standard
	Sc	45	49644.5	1.0				ug/L	55220	Standard
	Ti	47	45.7	39.5	**0.0472**	0.046	97.8	ug/L	34	Standard
	V	51	2791.6	18.3	**0.1237**	0.059	47.6	ug/L	1938	Standard
	Cr	52	7193.7	1.7	**-0.1906**	0.014	7.3	ug/L	9522	Standard
	Cr	53	800.0	4.9	**0.3739**	0.038	10.1	ug/L	395	Standard
	Mn	55	1181.1	42.2	**0.0406**	0.061	151.1	ug/L	902	Standard
	Co	59	509.7	61.6	**0.0436**	0.041	93.5	ug/L	262	Standard
	Ni	60	774.4	5.5	**0.2210**	0.020	8.8	ug/L	371	Standard
	Cu	65	680.7	12.0	**0.2687**	0.039	14.4	ug/L	106	Standard
	Zn	66	686.0	7.0	**0.2136**	0.039	18.3	ug/L	398	Standard
>	**Ge**	72	504271.2	0.2				ug/L	535147	Standard
	As	75	83.8	41.5	**0.1215**	0.027	22.6	ug/L	-43	Standard
	Se	82	62.6	2.3	**0.3930**	0.012	3.2	ug/L	14	Standard
	Se-1	77	70.0	16.5	**0.2432**	0.135	55.5	ug/L	65	Standard
>	**Ga**	71	45.0	50.9				mg/L	97	Standard
	Rb	85	325.0	113.3				ug/L	15	Standard
	Y	89	445052.8	1.6				ug/L	465704	Standard
>	**Rh**	103	61.7	4.7				ug/L	10	Standard
	Mo	98	1074.0	56.8	**0.3517**	0.190	54.0	ug/L	9	Standard
	Ag	107	419.0	95.5	**0.0485**	0.052	106.6	ug/L	82	Standard
	Cd	111	151.8	148.4	**0.0696**	0.091	131.3	mg/L	7	Standard
	Cd	114	348.7	131.1	**0.0678**	0.077	113.4	ug/L	21	Standard
>	**In**	115	626263.5	0.8				ug/L	619035	Standard
	Sn	118	1168.4	25.1	**0.0739**	0.043	58.7	ug/L	508	Standard
	Sb	123	1254.8	36.8	**0.2384**	0.085	35.8	ug/L	86	Standard
	Ba	135	263.3	119.9	**0.0935**	0.135	144.4	ug/L	79	Standard
	Ce	140	171.7	100.3				ug/L	68	Standard
>	**Tb**	159	957711.4	0.6				ug/L	986982	Standard
	Ho	165	13.3	21.7				ug/L	10	Standard
	Tl	203	528.0	116.8	**0.0611**	0.064	104.7	ug/L	13	Standard
	Tl	205	238.3	87.9	**0.0368**	0.025	68.8	ug/L	10	Standard
	Pb	206	736.4	72.7	**0.0822**	0.086	104.7	ug/L	264	Standard
	Pb	207	625.4	66.7	**0.0796**	0.074	93.2	ug/L	227	Standard
	Pb	208	2292.7	50.7	**0.0690**	0.053	77.3	ug/L	868	Standard
	U	238	238.0	86.6	**0.0379**	0.026	67.9	ug/L	8	Standard
>	**Bi**	209	564278.1	1.0				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	300.0	91.6	**0.3285**	0.332	101.1	mg/L	53	Standard
K	39	25.0	20.0	**-0.0288**	0.009	32.0	mg/L	53	Standard
Ca	43	23.3	65.5	**-0.1997**	0.980	490.8	mg/L	28	Standard
Fe	54	159.1	21.8	**0.0019**	0.027	1411.1	mg/L	181	Standard
Fe	57	241.7	30.5	**0.0479**	0.210	438.9	mg/L	257	Standard
Sc-1	45	49644.5	1.0				mg/L	55220	Standard
Cl	35	39558.9	1.4				ug/L	35504	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	2310.2	6.8				ug/L	2040	Standard
P	31	23586.7	1.9				ug/L	20435	Standard
S	34	2100.1	9.6				ug/L	2430	Standard
Sr	88	58.3	27.6				ug/L	75	Standard
C	12	140.0	21.4				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	1126.7	22.7				mg/L	7	Standard
Dy	164	149.2	23.8				mg/L	9	Standard
Ho-1	165	13.3	21.7				mg/L	10	Standard
Er	166	16.7	91.7				mg/L	23	Standard
I	127	6298.0	6.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		94.230	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.168
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.300
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Se	82	
QC Std 7	Sb	123	
QC Std 7	Tl	203	

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Method 6020 - Summary Report

Sample ID: L1606149602SDL WG574849-02
Sample Date/Time: Thursday, June 30, 2016 19:35:30
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86523.1	2.7				ug/L	74916	Standard
	Be	9	51.7	20.1	**0.0388**	0.009	22.1	ug/L	10	Standard
	Al	27	85953.1	1.3	**0.4266**	0.006	1.4	ug/L	1822	Standard
	Sc	45	44204.4	2.0				ug/L	55220	Standard
	Ti	47	638.0	1.7	**1.7181**	0.027	1.6	ug/L	34	Standard
	V	51	3723.6	3.4	**0.2691**	0.016	6.1	ug/L	1938	Standard
	Cr	52	5946.2	3.6	**-0.2743**	0.028	10.1	ug/L	9522	Standard
	Cr	53	650.0	6.7	**0.2870**	0.043	15.0	ug/L	395	Standard
	Mn	55	17352.3	1.1	**2.2302**	0.028	1.3	ug/L	902	Standard
	Co	59	498.7	4.3	**0.0481**	0.003	6.5	ug/L	262	Standard
	Ni	60	834.7	0.4	**0.2854**	0.001	0.5	ug/L	371	Standard
	Cu	65	9780.8	1.7	**5.0724**	0.097	1.9	ug/L	106	Standard
	Zn	66	4901.1	2.1	**4.0187**	0.097	2.4	ug/L	398	Standard
>	**Ge**	72	462436.6	0.3				ug/L	535147	Standard
	As	75	327.6	12.6	**0.3383**	0.036	10.7	ug/L	-43	Standard
	Se	82	51.2	11.5	**0.3404**	0.050	14.5	ug/L	14	Standard
	Se-1	77	60.0	8.7	**0.1895**	0.069	36.3	ug/L	65	Standard
>	**Ga**	71	176.7	1.6				mg/L	97	Standard
	Rb	85	3545.4	4.6				ug/L	15	Standard
	Y	89	406227.1	0.6				ug/L	465704	Standard
>	**Rh**	103	36.7	34.3				ug/L	10	Standard
	Mo	98	2525.0	10.4	**0.8922**	0.089	10.0	ug/L	9	Standard
	Ag	107	182.0	6.8	**0.0201**	0.002	8.7	ug/L	82	Standard
	Cd	111	42.0	26.3	**0.0268**	0.005	18.8	mg/L	7	Standard
	Cd	114	102.8	20.6	**0.0281**	0.004	13.9	ug/L	21	Standard
>	**In**	115	569300.6	0.3				ug/L	619035	Standard
	Sn	118	516.7	3.0	**-0.0171**	0.003	16.4	ug/L	508	Standard
	Sb	123	1444.7	2.0	**0.3011**	0.007	2.3	ug/L	86	Standard
	Ba	135	1949.5	3.3	**0.9076**	0.031	3.4	ug/L	79	Standard
	Ce	140	2333.5	42.9				ug/L	68	Standard
>	**Tb**	159	887901.9	0.9				ug/L	986982	Standard
	Ho	165	38.3	49.4				ug/L	10	Standard
	Tl	203	180.7	33.0	**0.0262**	0.007	25.5	ug/L	13	Standard
	Tl	205	65.0	7.7	**0.0162**	0.001	4.1	ug/L	10	Standard
	Pb	206	12240.0	6.5	**2.0913**	0.139	6.6	ug/L	264	Standard
	Pb	207	10224.5	8.0	**1.9345**	0.157	8.1	ug/L	227	Standard
	Pb	208	42832.7	7.1	**2.0996**	0.152	7.2	ug/L	868	Standard
	U	238	39.0	11.2	**0.0132**	0.001	4.5	ug/L	8	Standard
>	**Bi**	209	530821.4	0.2				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	690.0	6.2	**0.9057**	0.074	8.2	mg/L	53	Standard
K	39	100.0	13.2	**0.1364**	0.033	23.8	mg/L	53	Standard
Ca	43	25.0	40.0	**0.0946**	0.702	741.5	mg/L	28	Standard
Fe	54	134.2	3.6	**-0.0044**	0.006	141.6	mg/L	181	Standard
Fe	57	263.3	10.5	**0.2076**	0.076	36.8	mg/L	257	Standard
> **Sc-1**	45	44204.4	2.0				mg/L	55220	Standard
Cl	35	36845.4	0.7				ug/L	35504	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	2000.1	11.3				ug/L	2040	Standard
P	31	8230.6	2.2				ug/L	20435	Standard
S	34	2098.5	4.7				ug/L	2430	Standard
Sr	88	76.7	26.4				ug/L	75	Standard
C	12	116.7	52.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	7835.6	37.8				mg/L	7	Standard
Dy	164	81.3	50.6				mg/L	9	Standard
Ho-1	165	38.3	49.4				mg/L	10	Standard
Er	166	43.3	48.0				mg/L	23	Standard
I	127	27107.6	5.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.493	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		86.413	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.966
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.116
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606149801
Sample Date/Time: Thursday, June 30, 2016 19:38:41
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92592.1	1.4				ug/L	74916	Standard
	Be	9	475.0	12.8	**0.3603**	0.042	11.6	ug/L	10	Standard
	Al	27	2387958.6	1.4	**11.1329**	0.209	1.9	ug/L	1822	Standard
	Sc	45	53171.6	4.4				ug/L	55220	Standard
	Ti	47	1016.4	8.9	**2.5223**	0.237	9.4	ug/L	34	Standard
	V	51	9109.0	1.7	**0.8397**	0.021	2.5	ug/L	1938	Standard
	Cr	52	15164.6	1.4	**0.7361**	0.022	3.0	ug/L	9522	Standard
	Cr	53	2218.5	3.8	**1.7070**	0.078	4.6	ug/L	395	Standard
	Mn	55	3141097.9	0.7	**384.5503**	5.509	1.4	ug/L	902	Standard
	Co	59	3810.1	1.2	**0.4700**	0.010	2.1	ug/L	262	Standard
	Ni	60	3766.5	3.0	**1.6237**	0.049	3.0	ug/L	371	Standard
	Cu	65	12779.1	1.2	**6.0408**	0.064	1.1	ug/L	106	Standard
	Zn	66	24001.7	0.6	**19.1045**	0.183	1.0	ug/L	398	Standard
>	**Ge**	72	508257.5	0.8				ug/L	535147	Standard
	As	75	18152.4	1.0	**14.3247**	0.198	1.4	ug/L	-43	Standard
	Se	82	412.3	6.1	**3.1067**	0.212	6.8	ug/L	14	Standard
	Se-1	77	116.7	10.0	**0.7827**	0.142	18.2	ug/L	65	Standard
>	**Ga**	71	261.7	14.1				mg/L	97	Standard
	Rb	85	55121.8	2.1				ug/L	15	Standard
	Y	89	489107.7	0.8				ug/L	465704	Standard
>	**Rh**	103	106.7	5.4				ug/L	10	Standard
	Mo	98	1661.3	4.5	**0.5375**	0.026	4.9	ug/L	9	Standard
	Ag	107	107.0	20.9	**0.0079**	0.003	37.3	ug/L	82	Standard
	Cd	111	37.4	15.9	**0.0232**	0.002	10.7	mg/L	7	Standard
	Cd	114	92.1	17.7	**0.0245**	0.003	11.0	ug/L	21	Standard
>	**In**	115	627819.2	0.5				ug/L	619035	Standard
	Sn	118	976.7	4.1	**0.0446**	0.007	14.9	ug/L	508	Standard
	Sb	123	512.0	14.1	**0.0998**	0.014	13.9	ug/L	86	Standard
	Ba	135	49828.5	0.8	**21.4712**	0.164	0.8	ug/L	79	Standard
	Ce	140	95005.3	0.3				ug/L	68	Standard
>	**Tb**	159	963158.8	1.0				ug/L	986982	Standard
	Ho	165	2865.3	5.4				ug/L	10	Standard
	Tl	203	114.7	11.1	**0.0182**	0.001	7.6	ug/L	13	Standard
	Tl	205	115.0	19.9	**0.0220**	0.003	12.7	ug/L	10	Standard
	Pb	206	7845.0	1.2	**1.2640**	0.010	0.8	ug/L	264	Standard
	Pb	207	6721.5	1.1	**1.2009**	0.019	1.6	ug/L	227	Standard
	Pb	208	28270.4	0.7	**1.3079**	0.016	1.2	ug/L	868	Standard
	U	238	1735.4	2.9	**0.2313**	0.006	2.6	ug/L	8	Standard
>	**Bi**	209	556405.3	0.5				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	9029.4	2.0	**10.2038**	0.653	6.4	mg/L	53	Standard
K	39	611.7	14.2	**1.0024**	0.150	15.0	mg/L	53	Standard
Ca	43	315.0	3.2	**16.8679**	0.705	4.2	mg/L	28	Standard
Fe	54	5107.8	1.9	**3.5012**	0.205	5.9	mg/L	181	Standard
Fe	57	1653.4	5.6	**3.8905**	0.307	7.9	mg/L	257	Standard
> **Sc-1**	45	53171.6	4.4				mg/L	55220	Standard
Cl	35	41246.7	1.0				ug/L	35504	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	75966.9	4.8				ug/L	2040	Standard
P	31	30046.4	2.6				ug/L	20435	Standard
S	34	2270.2	2.0				ug/L	2430	Standard
Sr	88	276.7	15.2				ug/L	75	Standard
C	12	276.7	8.3				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1063.4	31.5				mg/L	7	Standard
Dy	164	3847.0	8.9				mg/L	9	Standard
Ho-1	165	2865.3	5.4				mg/L	10	Standard
Er	166	2716.9	5.5				mg/L	23	Standard
I	127	73848.4	6.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.594	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.975	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.419
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.845
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606152901
Sample Date/Time: Thursday, June 30, 2016 19:41:53
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	91623.0	2.3				ug/L	74916	Standard
	Be	9	86.7	16.7	**0.0635**	0.010	16.5	ug/L	10	Standard
	Al	27	4709098.2	0.6	**22.1945**	0.581	2.6	ug/L	1822	Standard
	Sc	45	51331.9	3.4				ug/L	55220	Standard
	Ti	47	1675.8	1.3	**4.2896**	0.030	0.7	ug/L	34	Standard
	V	51	11556.6	2.3	**1.1447**	0.038	3.4	ug/L	1938	Standard
	Cr	52	17512.1	1.2	**1.0523**	0.009	0.8	ug/L	9522	Standard
	Cr	53	6754.8	3.1	**6.1208**	0.292	4.8	ug/L	395	Standard
	Mn	55	746180.8	1.6	**93.1169**	1.892	2.0	ug/L	902	Standard
	Co	59	8081.8	1.5	**1.0435**	0.010	1.0	ug/L	262	Standard
	Ni	60	4978.8	0.9	**2.2406**	0.017	0.8	ug/L	371	Standard
	Cu	65	6989.9	0.8	**3.3456**	0.078	2.3	ug/L	106	Standard
	Zn	66	20923.8	0.6	**16.9547**	0.359	2.1	ug/L	398	Standard
>	**Ge**	72	498217.9	1.5				ug/L	535147	Standard
	As	75	1319.8	6.1	**1.1135**	0.062	5.6	ug/L	-43	Standard
	Se	82	63.1	11.7	**0.4025**	0.053	13.2	ug/L	14	Standard
	Se-1	77	328.3	1.7	**3.3348**	0.125	3.7	ug/L	65	Standard
>	**Ga**	71	1348.4	1.4				mg/L	97	Standard
	Rb	85	12897.2	1.9				ug/L	15	Standard
	Y	89	461979.9	1.5				ug/L	465704	Standard
>	**Rh**	103	55.0	32.8				ug/L	10	Standard
	Mo	98	459.3	18.5	**0.1621**	0.026	16.2	ug/L	9	Standard
	Ag	107	773.7	5.2	**0.0982**	0.004	4.6	ug/L	82	Standard
	Cd	111	127.2	6.3	**0.0616**	0.004	6.3	mg/L	7	Standard
	Cd	114	327.6	9.9	**0.0663**	0.006	8.9	ug/L	21	Standard
>	**In**	115	608144.3	1.0				ug/L	619035	Standard
	Sn	118	1706.8	6.6	**0.1634**	0.015	9.3	ug/L	508	Standard
	Sb	123	406.4	11.1	**0.0825**	0.008	9.7	ug/L	86	Standard
	Ba	135	76054.7	0.3	**33.8456**	0.317	0.9	ug/L	79	Standard
	Ce	140	91810.7	1.2				ug/L	68	Standard
>	**Tb**	159	945758.0	1.2				ug/L	986982	Standard
	Ho	165	2055.1	5.3				ug/L	10	Standard
	Tl	203	176.0	6.7	**0.0254**	0.001	5.0	ug/L	13	Standard
	Tl	205	150.0	26.7	**0.0271**	0.005	19.0	ug/L	10	Standard
	Pb	206	15554.6	0.9	**2.6358**	0.029	1.1	ug/L	264	Standard
	Pb	207	12984.9	1.6	**2.4360**	0.034	1.4	ug/L	227	Standard
	Pb	208	54505.7	0.9	**2.6500**	0.024	0.9	ug/L	868	Standard
	U	238	2232.5	0.5	**0.3055**	0.001	0.3	ug/L	8	Standard
>	**Bi**	209	537187.0	0.3				ug/L	541014	Standard

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Na	23	3.3	86.6	**20.2016**	17.522	86.7	mg/L	2	Standard
Mg	24	27080.8	0.6	**31.7349**	0.931	2.9	mg/L	53	Standard
K	39	478.3	11.6	**0.8002**	0.131	16.3	mg/L	53	Standard
Ca	43	121.7	30.8	**5.7176**	2.206	38.6	mg/L	28	Standard
Fe	54	2158.6	4.4	**1.4639**	0.066	4.5	mg/L	181	Standard
Fe	57	796.7	8.5	**1.6086**	0.202	12.6	mg/L	257	Standard
> **Sc-1**	45	51331.9	3.4				mg/L	55220	Standard
Cl	35	38716.7	1.3				ug/L	35504	Standard
Kr	83	4.3	13.3				ug/L	2	Standard
Br	81	6661.5	7.7				ug/L	2040	Standard
P	31	25903.8	4.0				ug/L	20435	Standard
S	34	2286.8	0.8				ug/L	2430	Standard
Sr	88	106.7	13.5				ug/L	75	Standard
C	12	213.3	11.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1103.4	22.2				mg/L	7	Standard
Dy	164	3539.8	4.8				mg/L	9	Standard
Ho-1	165	2055.1	5.3				mg/L	10	Standard
Er	166	1753.4	7.2				mg/L	23	Standard
I	127	24299.5	0.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		122.300	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.099	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.241
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.293
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606152902
Sample Date/Time: Thursday, June 30, 2016 19:45:06
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89491.9	2.0				ug/L	74916	Standard
	Be	9	40.0	37.5	**0.0283**	0.012	43.3	ug/L	10	Standard
	Al	27	3621131.6	1.0	**17.4718**	0.464	2.7	ug/L	1822	Standard
	Sc	45	50005.7	0.5				ug/L	55220	Standard
	Ti	47	186.0	5.7	**0.4056**	0.025	6.1	ug/L	34	Standard
	V	51	2851.9	15.6	**0.1288**	0.049	37.7	ug/L	1938	Standard
	Cr	52	10083.7	2.1	**0.1447**	0.018	12.3	ug/L	9522	Standard
	Cr	53	4102.2	8.9	**3.4960**	0.321	9.2	ug/L	395	Standard
	Mn	55	1495187.5	0.6	**183.5547**	1.977	1.1	ug/L	902	Standard
	Co	59	626.3	5.8	**0.0585**	0.005	8.5	ug/L	262	Standard
	Ni	60	2963.0	0.3	**1.2507**	0.009	0.7	ug/L	371	Standard
	Cu	65	1204.4	3.7	**0.5179**	0.024	4.6	ug/L	106	Standard
	Zn	66	3026.3	1.7	**2.1136**	0.057	2.7	ug/L	398	Standard
>	**Ge**	72	506688.0	0.6				ug/L	535147	Standard
	As	75	90.5	44.9	**0.1266**	0.032	25.5	ug/L	-43	Standard
	Se	82	35.5	16.2	**0.1801**	0.046	25.7	ug/L	14	Standard
	Se-1	77	219.0	2.5	**1.9866**	0.080	4.0	ug/L	65	Standard
>	**Ga**	71	131.7	11.0				mg/L	97	Standard
	Rb	85	958.4	12.3				ug/L	15	Standard
	Y	89	439630.2	0.1				ug/L	465704	Standard
>	**Rh**	103	50.0	36.1				ug/L	10	Standard
	Mo	98	275.6	14.7	**0.1016**	0.014	13.4	ug/L	9	Standard
	Ag	107	112.0	14.9	**0.0089**	0.002	26.1	ug/L	82	Standard
	Cd	111	187.9	10.7	**0.0866**	0.009	10.5	mg/L	7	Standard
	Cd	114	408.8	6.5	**0.0799**	0.004	4.8	ug/L	21	Standard
>	**In**	115	612882.5	1.2				ug/L	619035	Standard
	Sn	118	851.7	4.8	**0.0288**	0.008	26.8	ug/L	508	Standard
	Sb	123	226.6	12.9	**0.0477**	0.006	12.5	ug/L	86	Standard
	Ba	135	40616.4	0.3	**17.9264**	0.197	1.1	ug/L	79	Standard
	Ce	140	943.4	9.0				ug/L	68	Standard
>	**Tb**	159	940407.6	1.0				ug/L	986982	Standard
	Ho	165	56.7	28.4				ug/L	10	Standard
	Tl	203	106.3	8.9	**0.0176**	0.001	5.9	ug/L	13	Standard
	Tl	205	98.3	20.5	**0.0203**	0.003	13.0	ug/L	10	Standard
	Pb	206	909.7	3.7	**0.1168**	0.005	4.4	ug/L	264	Standard
	Pb	207	833.4	5.4	**0.1235**	0.008	6.5	ug/L	227	Standard
	Pb	208	3440.5	1.6	**0.1295**	0.003	2.6	ug/L	868	Standard
	U	238	49.0	17.4	**0.0144**	0.001	8.0	ug/L	8	Standard
>	**Bi**	209	543200.5	0.4				ug/L	541014	Standard

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Na	23	1.7	173.2	**10.3002**	17.832	173.1	mg/L	2	Standard
Mg	24	16630.8	0.5	**19.9803**	0.197	1.0	mg/L	53	Standard
K	39	245.0	9.4	**0.3831**	0.042	11.1	mg/L	53	Standard
Ca	43	105.0	39.0	**4.8835**	2.523	51.7	mg/L	28	Standard
Fe	54	242.6	15.8	**0.0637**	0.028	44.2	mg/L	181	Standard
Fe	57	298.3	17.0	**0.2102**	0.151	72.1	mg/L	257	Standard
> **Sc-1**	45	50005.7	0.5				mg/L	55220	Standard
Cl	35	40569.6	2.3				ug/L	35504	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	3843.8	4.3				ug/L	2040	Standard
P	31	24364.6	0.7				ug/L	20435	Standard
S	34	2188.5	1.6				ug/L	2430	Standard
Sr	88	121.7	10.3				ug/L	75	Standard
C	12	146.7	21.9				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	760.0	11.8				mg/L	7	Standard
Dy	164	64.0	46.2				mg/L	9	Standard
Ho-1	165	56.7	28.4				mg/L	10	Standard
Er	166	56.7	27.0				mg/L	23	Standard
I	127	16871.1	2.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.456	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.682	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.006
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.404
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606152903
Sample Date/Time: Thursday, June 30, 2016 19:48:17
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88668.7	1.5				ug/L	74916	Standard
	Be	9	25.0	34.6	**0.0165**	0.007	42.9	ug/L	10	Standard
	Al	27	2429020.7	0.7	**11.8263**	0.241	2.0	ug/L	1822	Standard
	Sc	45	50766.6	1.1				ug/L	55220	Standard
	Ti	47	147.3	12.6	**0.3072**	0.051	16.7	ug/L	34	Standard
	V	51	2755.9	8.9	**0.1183**	0.031	26.5	ug/L	1938	Standard
	Cr	52	10269.1	0.8	**0.1669**	0.008	4.5	ug/L	9522	Standard
	Cr	53	1963.5	3.7	**1.4731**	0.090	6.1	ug/L	395	Standard
	Mn	55	759929.8	0.9	**93.2604**	0.396	0.4	ug/L	902	Standard
	Co	59	556.0	7.1	**0.0494**	0.006	12.2	ug/L	262	Standard
	Ni	60	1145.7	1.5	**0.3945**	0.015	3.8	ug/L	371	Standard
	Cu	65	965.7	2.3	**0.4038**	0.016	4.0	ug/L	106	Standard
	Zn	66	2386.2	0.8	**1.5936**	0.017	1.1	ug/L	398	Standard
>	**Ge**	72	506574.4	1.3				ug/L	535147	Standard
	As	75	89.2	7.4	**0.1255**	0.005	3.7	ug/L	-43	Standard
	Se	82	36.5	5.9	**0.1873**	0.019	9.9	ug/L	14	Standard
	Se-1	77	120.7	5.8	**0.8332**	0.065	7.8	ug/L	65	Standard
>	**Ga**	71	70.0	37.8				mg/L	97	Standard
	Rb	85	908.4	21.5				ug/L	15	Standard
	Y	89	439406.6	1.6				ug/L	465704	Standard
>	**Rh**	103	51.7	20.1				ug/L	10	Standard
	Mo	98	233.6	20.0	**0.0875**	0.014	16.3	ug/L	9	Standard
	Ag	107	88.7	7.9	**0.0057**	0.001	18.5	ug/L	82	Standard
	Cd	111	24.3	42.4	**0.0180**	0.004	24.2	mg/L	7	Standard
	Cd	114	70.1	12.6	**0.0211**	0.002	7.9	ug/L	21	Standard
>	**In**	115	615742.1	1.2				ug/L	619035	Standard
	Sn	118	678.3	9.2	**0.0014**	0.010	728.8	ug/L	508	Standard
	Sb	123	346.9	9.1	**0.0702**	0.006	8.1	ug/L	86	Standard
	Ba	135	55523.6	0.7	**24.3984**	0.182	0.7	ug/L	79	Standard
	Ce	140	605.0	45.8				ug/L	68	Standard
>	**Tb**	159	948538.7	0.6				ug/L	986982	Standard
	Ho	165	45.0	11.1				ug/L	10	Standard
	Tl	203	70.3	11.4	**0.0136**	0.001	6.2	ug/L	13	Standard
	Tl	205	48.3	6.0	**0.0138**	0.000	2.8	ug/L	10	Standard
	Pb	206	1011.0	4.4	**0.1313**	0.008	5.9	ug/L	264	Standard
	Pb	207	869.4	2.6	**0.1276**	0.004	3.4	ug/L	227	Standard
	Pb	208	3745.8	1.5	**0.1414**	0.002	1.5	ug/L	868	Standard
	U	238	63.3	4.0	**0.0161**	0.000	1.9	ug/L	8	Standard
>	**Bi**	209	552170.5	0.3				ug/L	541014	Standard

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Na	23	1.7	173.2	**10.1205**	17.521	173.1	mg/L	2	Standard
Mg	24	3732.1	6.2	**4.3881**	0.232	5.3	mg/L	53	Standard
K	39	163.3	11.6	**0.2258**	0.039	17.1	mg/L	53	Standard
Ca	43	71.7	10.7	**2.7382**	0.440	16.1	mg/L	28	Standard
Fe	54	167.4	12.3	**0.0054**	0.017	305.4	mg/L	181	Standard
Fe	57	313.3	14.5	**0.2407**	0.138	57.5	mg/L	257	Standard
> **Sc-1**	45	50766.6	1.1				mg/L	55220	Standard
Cl	35	41918.6	1.0				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	3617.1	7.3				ug/L	2040	Standard
P	31	24186.0	2.2				ug/L	20435	Standard
S	34	2338.5	5.2				ug/L	2430	Standard
Sr	88	80.0	12.5				ug/L	75	Standard
C	12	133.3	15.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	543.3	6.5				mg/L	7	Standard
Dy	164	61.9	49.6				mg/L	9	Standard
Ho-1	165	45.0	11.1				mg/L	10	Standard
Er	166	30.0	33.3				mg/L	23	Standard
I	127	16812.7	1.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.357	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.661	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.468	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	102.062	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606152904
Sample Date/Time: Thursday, June 30, 2016 19:51:29
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88900.1	1.3				ug/L	74916	Standard
	Be	9	21.7	35.3	**0.0138**	0.006	45.8	ug/L	10	Standard
	Al	27	3998039.8	0.6	**19.4159**	0.368	1.9	ug/L	1822	Standard
	Sc	45	49693.0	1.5				ug/L	55220	Standard
	Ti	47	194.3	21.7	**0.4277**	0.108	25.3	ug/L	34	Standard
	V	51	2612.2	1.6	**0.1020**	0.005	5.3	ug/L	1938	Standard
	Cr	52	11628.5	1.2	**0.3279**	0.013	3.9	ug/L	9522	Standard
	Cr	53	2001.8	3.5	**1.5108**	0.071	4.7	ug/L	395	Standard
	Mn	55	10984.6	3.3	**1.2459**	0.048	3.8	ug/L	902	Standard
	Co	59	463.7	6.9	**0.0374**	0.004	11.5	ug/L	262	Standard
	Ni	60	1092.7	5.1	**0.3700**	0.027	7.3	ug/L	371	Standard
	Cu	65	737.0	3.4	**0.2946**	0.013	4.4	ug/L	106	Standard
	Zn	66	2118.5	2.2	**1.3776**	0.043	3.1	ug/L	398	Standard
>	**Ge**	72	506051.1	0.3				ug/L	535147	Standard
	As	75	112.3	24.9	**0.1439**	0.022	15.3	ug/L	-43	Standard
	Se	82	40.3	12.6	**0.2177**	0.039	18.1	ug/L	14	Standard
	Se-1	77	104.3	9.6	**0.6436**	0.121	18.8	ug/L	65	Standard
>	**Ga**	71	90.0	9.6				mg/L	97	Standard
	Rb	85	821.7	18.7				ug/L	15	Standard
	Y	89	444347.1	1.2				ug/L	465704	Standard
>	**Rh**	103	38.3	7.5				ug/L	10	Standard
	Mo	98	243.7	25.7	**0.0907**	0.020	22.2	ug/L	9	Standard
	Ag	107	114.7	8.7	**0.0092**	0.001	13.7	ug/L	82	Standard
	Cd	111	19.3	16.3	**0.0159**	0.001	8.2	mg/L	7	Standard
	Cd	114	30.1	71.3	**0.0141**	0.004	26.1	ug/L	21	Standard
>	**In**	115	617612.1	0.5				ug/L	619035	Standard
	Sn	118	616.7	15.4	**-0.0084**	0.015	178.7	ug/L	508	Standard
	Sb	123	212.8	12.7	**0.0447**	0.005	11.4	ug/L	86	Standard
	Ba	135	14500.9	0.4	**6.3380**	0.042	0.7	ug/L	79	Standard
	Ce	140	393.3	3.9				ug/L	68	Standard
>	**Tb**	159	944897.7	0.4				ug/L	986982	Standard
	Ho	165	25.0	34.6				ug/L	10	Standard
	Tl	203	86.7	13.4	**0.0153**	0.001	7.9	ug/L	13	Standard
	Tl	205	90.0	38.9	**0.0190**	0.004	22.9	ug/L	10	Standard
	Pb	206	664.7	9.3	**0.0737**	0.010	13.8	ug/L	264	Standard
	Pb	207	565.7	6.5	**0.0718**	0.007	9.8	ug/L	227	Standard
	Pb	208	2395.1	4.9	**0.0769**	0.005	6.9	ug/L	868	Standard
	U	238	50.0	29.9	**0.0144**	0.002	13.3	ug/L	8	Standard
>	**Bi**	209	550432.3	0.4				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	1671.8	5.6	**1.9912**	0.140	7.0	mg/L	53	Standard
K	39	100.0	10.0	**0.1127**	0.021	18.2	mg/L	53	Standard
Ca	43	96.7	24.4	**4.3968**	1.414	32.2	mg/L	28	Standard
Fe	54	166.7	18.4	**0.0074**	0.022	304.6	mg/L	181	Standard
Fe	57	231.7	12.3	**0.0184**	0.075	407.9	mg/L	257	Standard
> **Sc-1**	45	49693.0	1.5				mg/L	55220	Standard
Cl	35	43809.9	1.0				ug/L	35504	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	4597.4	0.6				ug/L	2040	Standard
P	31	24069.1	1.8				ug/L	20435	Standard
S	34	2253.5	3.8				ug/L	2430	Standard
Sr	88	86.7	17.6				ug/L	75	Standard
C	12	156.7	44.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	386.7	23.5				mg/L	7	Standard
Dy	164	25.2	56.3				mg/L	9	Standard
Ho-1	165	25.0	34.6				mg/L	10	Standard
Er	166	30.0	88.2				mg/L	23	Standard
I	127	5777.8	11.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.666	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.563	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.770	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	101.741	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606152905
Sample Date/Time: Thursday, June 30, 2016 19:54:40
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88234.5	1.5				ug/L	74916	Standard
	Be	9	30.0	28.9	**0.0206**	0.007	34.9	ug/L	10	Standard
	Al	27	9752429.2	0.2	**47.7217**	0.808	1.7	ug/L	1822	Standard
	Sc	45	51669.7	2.6				ug/L	55220	Standard
	Ti	47	350.0	16.4	**0.8315**	0.150	18.0	ug/L	34	Standard
	V	51	3730.5	9.1	**0.2322**	0.039	17.0	ug/L	1938	Standard
	Cr	52	10952.0	1.4	**0.2556**	0.021	8.3	ug/L	9522	Standard
	Cr	53	5461.0	1.8	**4.8193**	0.089	1.8	ug/L	395	Standard
	Mn	55	47373.3	0.6	**5.7534**	0.020	0.3	ug/L	902	Standard
	Co	59	1253.7	0.7	**0.1409**	0.001	0.6	ug/L	262	Standard
	Ni	60	2141.2	3.2	**0.8702**	0.031	3.6	ug/L	371	Standard
	Cu	65	1030.7	3.9	**0.4381**	0.020	4.7	ug/L	106	Standard
	Zn	66	2315.8	0.5	**1.5487**	0.011	0.7	ug/L	398	Standard
>	**Ge**	72	503246.7	0.2				ug/L	535147	Standard
	As	75	161.2	14.7	**0.1832**	0.019	10.3	ug/L	-43	Standard
	Se	82	43.0	18.6	**0.2408**	0.064	26.4	ug/L	14	Standard
	Se-1	77	266.3	6.2	**2.5624**	0.191	7.4	ug/L	65	Standard
>	**Ga**	71	105.0	26.5				mg/L	97	Standard
	Rb	85	1428.4	7.3				ug/L	15	Standard
	Y	89	446734.5	1.6				ug/L	465704	Standard
>	**Rh**	103	60.0	38.2				ug/L	10	Standard
	Mo	98	183.5	11.0	**0.0713**	0.006	8.8	ug/L	9	Standard
	Ag	107	94.0	23.0	**0.0064**	0.003	46.3	ug/L	82	Standard
	Cd	111	28.0	21.5	**0.0195**	0.002	12.3	mg/L	7	Standard
	Cd	114	70.6	28.1	**0.0211**	0.003	16.2	ug/L	21	Standard
>	**In**	115	617799.5	0.9				ug/L	619035	Standard
	Sn	118	660.0	5.3	**-0.0018**	0.004	243.1	ug/L	508	Standard
	Sb	123	178.8	10.8	**0.0382**	0.003	8.9	ug/L	86	Standard
	Ba	135	61705.1	1.0	**27.0252**	0.152	0.6	ug/L	79	Standard
	Ce	140	2460.2	6.7				ug/L	68	Standard
>	**Tb**	159	954272.1	1.0				ug/L	986982	Standard
	Ho	165	108.3	27.0				ug/L	10	Standard
	Tl	203	105.3	13.3	**0.0175**	0.001	8.4	ug/L	13	Standard
	Tl	205	90.0	20.0	**0.0192**	0.002	12.1	ug/L	10	Standard
	Pb	206	1384.4	2.5	**0.1982**	0.006	2.8	ug/L	264	Standard
	Pb	207	1158.0	4.5	**0.1852**	0.009	4.6	ug/L	227	Standard
	Pb	208	4790.0	0.8	**0.1959**	0.003	1.7	ug/L	868	Standard
	U	238	78.7	1.5	**0.0183**	0.000	0.7	ug/L	8	Standard
>	**Bi**	209	541699.6	0.6				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	14490.3	0.8	**16.8507**	0.519	3.1	mg/L	53	Standard
K	39	288.3	22.6	**0.4455**	0.109	24.4	mg/L	53	Standard
Ca	43	256.7	12.7	**13.9005**	2.373	17.1	mg/L	28	Standard
Fe	54	272.4	10.1	**0.0800**	0.025	31.8	mg/L	181	Standard
Fe	57	385.0	5.7	**0.4270**	0.055	12.8	mg/L	257	Standard
> **Sc-1**	45	51669.7	2.6				mg/L	55220	Standard
Cl	35	43979.7	0.5				ug/L	35504	Standard
Kr	83	3.0	88.2				ug/L	2	Standard
Br	81	5497.7	7.6				ug/L	2040	Standard
P	31	25977.3	3.5				ug/L	20435	Standard
S	34	2546.9	1.9				ug/L	2430	Standard
Sr	88	131.7	36.5				ug/L	75	Standard
C	12	196.7	22.9				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	430.0	6.2				mg/L	7	Standard
Dy	164	205.8	13.7				mg/L	9	Standard
Ho-1	165	108.3	27.0				mg/L	10	Standard
Er	166	86.7	56.9				mg/L	23	Standard
I	127	28657.1	4.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.777	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.039	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606152905
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.800	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.127	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606152906
Sample Date/Time: Thursday, June 30, 2016 19:57:52
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88056.9	2.0				ug/L	74916	Standard
	Be	9	15.0	57.7	**0.0084**	0.007	81.7	ug/L	10	Standard
	Al	27	7293528.8	3.4	**35.7503**	0.696	1.9	ug/L	1822	Standard
	Sc	45	51325.1	1.9				ug/L	55220	Standard
	Ti	47	171.0	28.9	**0.3652**	0.123	33.6	ug/L	34	Standard
	V	51	2943.0	7.9	**0.1382**	0.027	19.3	ug/L	1938	Standard
	Cr	52	10991.3	1.7	**0.2469**	0.029	11.7	ug/L	9522	Standard
	Cr	53	4732.4	3.5	**4.0787**	0.184	4.5	ug/L	395	Standard
	Mn	55	122498.9	0.8	**14.8876**	0.143	1.0	ug/L	902	Standard
	Co	59	819.7	2.4	**0.0832**	0.003	3.8	ug/L	262	Standard
	Ni	60	2285.5	3.4	**0.9274**	0.030	3.2	ug/L	371	Standard
	Cu	65	1080.4	6.5	**0.4565**	0.030	6.6	ug/L	106	Standard
	Zn	66	2925.3	2.5	**2.0226**	0.047	2.3	ug/L	398	Standard
>	**Ge**	72	508515.8	0.7				ug/L	535147	Standard
	As	75	134.3	28.3	**0.1607**	0.029	18.2	ug/L	-43	Standard
	Se	82	79.0	16.8	**0.5164**	0.106	20.5	ug/L	14	Standard
	Se-1	77	251.3	2.3	**2.3551**	0.087	3.7	ug/L	65	Standard
>	**Ga**	71	68.3	8.4				mg/L	97	Standard
	Rb	85	355.0	7.3				ug/L	15	Standard
	Y	89	444542.1	0.1				ug/L	465704	Standard
>	**Rh**	103	30.0	44.1				ug/L	10	Standard
	Mo	98	287.9	12.2	**0.1049**	0.011	10.7	ug/L	9	Standard
	Ag	107	119.0	11.7	**0.0098**	0.002	19.3	ug/L	82	Standard
	Cd	111	50.9	20.7	**0.0291**	0.004	14.9	mg/L	7	Standard
	Cd	114	87.9	23.8	**0.0241**	0.004	14.8	ug/L	21	Standard
>	**In**	115	616933.2	0.3				ug/L	619035	Standard
	Sn	118	1260.1	2.9	**0.0909**	0.006	6.7	ug/L	508	Standard
	Sb	123	189.4	11.8	**0.0403**	0.004	10.3	ug/L	86	Standard
	Ba	135	52065.6	0.7	**22.8327**	0.232	1.0	ug/L	79	Standard
	Ce	140	241.7	4.3				ug/L	68	Standard
>	**Tb**	159	941735.5	0.8				ug/L	986982	Standard
	Ho	165	46.7	12.4				ug/L	10	Standard
	Tl	203	87.0	11.0	**0.0155**	0.001	7.3	ug/L	13	Standard
	Tl	205	80.0	25.0	**0.0179**	0.003	14.8	ug/L	10	Standard
	Pb	206	587.3	5.7	**0.0619**	0.005	8.7	ug/L	264	Standard
	Pb	207	507.7	1.5	**0.0621**	0.002	3.2	ug/L	227	Standard
	Pb	208	2102.1	1.1	**0.0640**	0.001	1.5	ug/L	868	Standard
	U	238	41.0	12.2	**0.0133**	0.001	5.4	ug/L	8	Standard
>	**Bi**	209	544076.0	1.0				ug/L	541014	Standard

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Na	23	3.3	173.2	**20.1139**	34.830	173.2	mg/L	2	Standard
Mg	24	12645.3	2.6	**14.7908**	0.138	0.9	mg/L	53	Standard
K	39	298.3	26.8	**0.4670**	0.136	29.1	mg/L	53	Standard
Ca	43	208.3	9.1	**11.0229**	1.168	10.6	mg/L	28	Standard
Fe	54	180.7	11.0	**0.0136**	0.013	92.2	mg/L	181	Standard
Fe	57	301.7	11.8	**0.1964**	0.095	48.2	mg/L	257	Standard
Sc-1	45	51325.1	1.9				mg/L	55220	Standard
Cl	35	45896.7	0.8				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	13415.9	5.3				ug/L	2040	Standard
P	31	24930.5	1.7				ug/L	20435	Standard
S	34	2516.9	2.2				ug/L	2430	Standard
Sr	88	135.0	20.6				ug/L	75	Standard
C	12	196.7	28.9				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	456.7	20.2				mg/L	7	Standard
Dy	164	40.9	56.4				mg/L	9	Standard
Ho-1	165	46.7	12.4				mg/L	10	Standard
Er	166	50.0	20.0				mg/L	23	Standard
I	127	36985.1	2.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.540	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.024	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.660
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.566
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606152907
Sample Date/Time: Thursday, June 30, 2016 20:01:03
Number of Replicates: 3
Autosampler Position: 346
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86590.1	1.5				ug/L	74916	Standard
	Be	9	23.3	32.7	**0.0156**	0.007	41.8	ug/L	10	Standard
	Al	27	7288041.0	1.9	**36.3329**	0.405	1.1	ug/L	1822	Standard
	Sc	45	51350.2	1.2				ug/L	55220	Standard
	Ti	47	157.7	3.1	**0.3305**	0.011	3.3	ug/L	34	Standard
	V	51	3007.3	5.0	**0.1445**	0.016	10.9	ug/L	1938	Standard
	Cr	52	10947.0	1.6	**0.2378**	0.018	7.6	ug/L	9522	Standard
	Cr	53	4819.1	2.2	**4.1468**	0.112	2.7	ug/L	395	Standard
	Mn	55	107294.6	0.9	**12.9884**	0.118	0.9	ug/L	902	Standard
	Co	59	789.7	3.4	**0.0790**	0.004	5.0	ug/L	262	Standard
	Ni	60	2216.5	1.5	**0.8921**	0.015	1.7	ug/L	371	Standard
	Cu	65	856.4	2.4	**0.3486**	0.008	2.2	ug/L	106	Standard
	Zn	66	3147.3	0.8	**2.1952**	0.028	1.3	ug/L	398	Standard
>	**Ge**	72	509995.2	0.5				ug/L	535147	Standard
	As	75	109.6	15.3	**0.1411**	0.013	9.1	ug/L	-43	Standard
	Se	82	74.9	2.1	**0.4827**	0.010	2.1	ug/L	14	Standard
	Se-1	77	253.7	10.3	**2.3725**	0.290	12.2	ug/L	65	Standard
>	**Ga**	71	65.0	13.3				mg/L	97	Standard
	Rb	85	353.3	31.5				ug/L	15	Standard
	Y	89	444447.1	1.6				ug/L	465704	Standard
>	**Rh**	103	51.7	29.6				ug/L	10	Standard
	Mo	98	174.2	8.5	**0.0687**	0.004	6.4	ug/L	9	Standard
	Ag	107	114.7	15.4	**0.0093**	0.002	24.6	ug/L	82	Standard
	Cd	111	47.1	5.2	**0.0276**	0.001	3.6	mg/L	7	Standard
	Cd	114	112.5	18.8	**0.0284**	0.004	12.7	ug/L	21	Standard
>	**In**	115	613045.3	0.7				ug/L	619035	Standard
	Sn	118	715.0	9.8	**0.0075**	0.010	135.8	ug/L	508	Standard
	Sb	123	161.1	10.6	**0.0351**	0.003	8.8	ug/L	86	Standard
	Ba	135	53387.2	0.8	**23.5616**	0.255	1.1	ug/L	79	Standard
	Ce	140	331.7	4.4				ug/L	68	Standard
>	**Tb**	159	944449.4	0.4				ug/L	986982	Standard
	Ho	165	43.3	59.2				ug/L	10	Standard
	Tl	203	92.3	8.8	**0.0161**	0.001	5.4	ug/L	13	Standard
	Tl	205	83.3	12.5	**0.0184**	0.001	7.5	ug/L	10	Standard
	Pb	206	592.3	4.9	**0.0632**	0.005	7.5	ug/L	264	Standard
	Pb	207	542.0	8.1	**0.0691**	0.008	12.0	ug/L	227	Standard
	Pb	208	2230.1	0.4	**0.0708**	0.001	1.1	ug/L	868	Standard
	U	238	38.7	24.4	**0.0130**	0.001	9.5	ug/L	8	Standard
>	**Bi**	209	541519.6	0.4				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	12728.7	2.0	**14.8819**	0.155	1.0	mg/L	53	Standard
K	39	308.3	6.1	**0.4867**	0.034	7.0	mg/L	53	Standard
Ca	43	193.3	38.9	**10.0877**	4.505	44.7	mg/L	28	Standard
Fe	54	165.4	7.7	**0.0025**	0.010	409.5	mg/L	181	Standard
Fe	57	355.0	2.8	**0.3486**	0.041	11.7	mg/L	257	Standard
> **Sc-1**	45	51350.2	1.2				mg/L	55220	Standard
Cl	35	46325.4	1.2				ug/L	35504	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	11614.5	3.1				ug/L	2040	Standard
P	31	24781.9	0.8				ug/L	20435	Standard
S	34	2535.2	2.6				ug/L	2430	Standard
Sr	88	126.7	18.7				ug/L	75	Standard
C	12	233.3	36.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	473.3	22.2				mg/L	7	Standard
Dy	164	27.4	75.5				mg/L	9	Standard
Ho-1	165	43.3	59.2				mg/L	10	Standard
Er	166	53.3	39.0				mg/L	23	Standard
I	127	36998.5	2.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.582	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.300	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.032	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.093	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606152908
Sample Date/Time: Thursday, June 30, 2016 20:04:15
Number of Replicates: 3
Autosampler Position: 347
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	87356.1	0.7				ug/L	74916	Standard
	Be	9	16.7	124.9	**0.0100**	0.017	170.0	ug/L	10	Standard
	Al	27	5800884.1	0.6	**28.6654**	0.017	0.1	ug/L	1822	Standard
	Sc	45	51183.0	1.5				ug/L	55220	Standard
	Ti	47	397.3	11.7	**0.9365**	0.122	13.0	ug/L	34	Standard
	V	51	2921.7	9.2	**0.1337**	0.032	23.8	ug/L	1938	Standard
	Cr	52	11373.6	0.2	**0.2830**	0.010	3.5	ug/L	9522	Standard
	Cr	53	3103.7	1.4	**2.5224**	0.030	1.2	ug/L	395	Standard
	Mn	55	14821.9	0.6	**1.6973**	0.005	0.3	ug/L	902	Standard
	Co	59	1000.7	2.1	**0.1057**	0.003	3.1	ug/L	262	Standard
	Ni	60	2624.2	2.0	**1.0787**	0.027	2.5	ug/L	371	Standard
	Cu	65	1039.0	1.7	**0.4338**	0.011	2.4	ug/L	106	Standard
	Zn	66	2372.5	1.6	**1.5627**	0.032	2.0	ug/L	398	Standard
>	**Ge**	72	511783.4	0.6				ug/L	535147	Standard
	As	75	213.0	16.3	**0.2214**	0.026	11.8	ug/L	-43	Standard
	Se	82	74.1	2.2	**0.4750**	0.010	2.1	ug/L	14	Standard
	Se-1	77	150.3	2.8	**1.1637**	0.050	4.3	ug/L	65	Standard
>	**Ga**	71	95.0	13.9				mg/L	97	Standard
	Rb	85	968.4	2.5				ug/L	15	Standard
	Y	89	451673.5	0.3				ug/L	465704	Standard
>	**Rh**	103	30.0	28.9				ug/L	10	Standard
	Mo	98	173.2	5.3	**0.0678**	0.003	4.0	ug/L	9	Standard
	Ag	107	91.7	12.4	**0.0061**	0.001	24.3	ug/L	82	Standard
	Cd	111	17.7	27.9	**0.0152**	0.002	13.4	mg/L	7	Standard
	Cd	114	48.1	60.1	**0.0172**	0.005	29.0	ug/L	21	Standard
>	**In**	115	619434.4	0.4				ug/L	619035	Standard
	Sn	118	753.4	10.6	**0.0123**	0.012	98.4	ug/L	508	Standard
	Sb	123	177.3	16.5	**0.0378**	0.005	14.3	ug/L	86	Standard
	Ba	135	31784.0	0.8	**13.8741**	0.090	0.6	ug/L	79	Standard
	Ce	140	6034.7	39.1				ug/L	68	Standard
>	**Tb**	159	948600.3	1.0				ug/L	986982	Standard
	Ho	165	146.7	17.5				ug/L	10	Standard
	Tl	203	81.0	4.3	**0.0148**	0.000	3.0	ug/L	13	Standard
	Tl	205	66.7	37.7	**0.0162**	0.003	19.4	ug/L	10	Standard
	Pb	206	958.0	0.9	**0.1252**	0.002	1.4	ug/L	264	Standard
	Pb	207	787.0	3.2	**0.1149**	0.003	3.0	ug/L	227	Standard
	Pb	208	3386.1	2.7	**0.1270**	0.005	3.8	ug/L	868	Standard
	U	238	520.7	2.4	**0.0766**	0.002	2.8	ug/L	8	Standard
>	**Bi**	209	542764.0	0.9				ug/L	541014	Standard

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Na	23	3.3	86.6	**20.2036**	17.498	86.6	mg/L	2	Standard
Mg	24	10431.9	4.4	**12.2290**	0.439	3.6	mg/L	53	Standard
K	39	275.0	13.7	**0.4279**	0.073	17.1	mg/L	53	Standard
Ca	43	170.0	16.4	**8.6979**	1.544	17.7	mg/L	28	Standard
Fe	54	239.2	0.3	**0.0571**	0.002	3.7	mg/L	181	Standard
Fe	57	291.7	20.7	**0.1691**	0.160	94.5	mg/L	257	Standard
> **Sc-1**	45	51183.0	1.5				mg/L	55220	Standard
Cl	35	47035.6	1.5				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	13913.1	0.7				ug/L	2040	Standard
P	31	24708.5	3.0				ug/L	20435	Standard
S	34	2581.9	2.1				ug/L	2430	Standard
Sr	88	108.3	18.7				ug/L	75	Standard
C	12	163.3	18.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	420.0	10.9				mg/L	7	Standard
Dy	164	173.5	54.2				mg/L	9	Standard
Ho-1	165	146.7	17.5				mg/L	10	Standard
Er	166	136.7	46.5				mg/L	23	Standard
I	127	34858.4	3.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.605	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.634	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606152908
Report Date/Time: Thursday, June 30, 2016 20:06:32
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.065
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.323
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 20:07:28
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85472.1	1.7				ug/L	74916	Standard
	Be	9	65108.0	3.0	**54.0823**	1.154	2.1	ug/L	10	Standard
	Al	27	9105473.5	0.5	**45.9972**	0.825	1.8	ug/L	1822	Standard
	Sc	45	49731.5	2.5				ug/L	55220	Standard
	Ti	47	38285.3	0.5	**97.9042**	1.148	1.2	ug/L	34	Standard
	V	51	442931.2	1.2	**50.3540**	0.833	1.7	ug/L	1938	Standard
	Cr	52	426545.4	1.3	**49.0741**	0.566	1.2	ug/L	9522	Standard
	Cr	53	52663.1	2.1	**49.4989**	1.008	2.0	ug/L	395	Standard
	Mn	55	386900.6	0.1	**47.4345**	0.333	0.7	ug/L	902	Standard
	Co	59	401578.1	1.0	**52.0897**	0.499	1.0	ug/L	262	Standard
	Ni	60	104374.0	1.3	**49.0555**	0.650	1.3	ug/L	371	Standard
	Cu	65	102991.9	0.9	**49.2674**	0.136	0.3	ug/L	106	Standard
	Zn	66	61809.5	1.0	**49.9152**	0.561	1.1	ug/L	398	Standard
>	**Ge**	72	506525.9	0.8				ug/L	535147	Standard
	As	75	62357.5	1.0	**49.2419**	0.735	1.5	ug/L	-43	Standard
	Se	82	6465.3	1.5	**50.3023**	0.653	1.3	ug/L	14	Standard
	Se-1	77	4276.3	1.3	**49.5714**	0.657	1.3	ug/L	65	Standard
>	**Ga**	71	65.0	40.0				mg/L	97	Standard
	Rb	85	945.0	8.0				ug/L	15	Standard
	Y	89	445522.7	1.3				ug/L	465704	Standard
>	**Rh**	103	31.7	9.1				ug/L	10	Standard
	Mo	98	306532.4	0.5	**98.3988**	0.768	0.8	ug/L	9	Standard
	Ag	107	364777.1	1.0	**48.3842**	0.587	1.2	ug/L	82	Standard
	Cd	111	115886.4	1.0	**48.0888**	0.315	0.7	mg/L	7	Standard
	Cd	114	282581.5	2.0	**48.6942**	0.954	2.0	ug/L	21	Standard
>	**In**	115	618174.7	0.4				ug/L	619035	Standard
	Sn	118	319592.1	0.3	**49.0738**	0.056	0.1	ug/L	508	Standard
	Sb	123	258837.8	1.5	**48.9487**	0.795	1.6	ug/L	86	Standard
	Ba	135	107239.8	0.2	**46.9543**	0.164	0.3	ug/L	79	Standard
	Ce	140	115.0	41.9				ug/L	68	Standard
>	**Tb**	159	940862.5	1.3				ug/L	986982	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	460304.9	0.5	**50.0911**	0.197	0.4	ug/L	13	Standard
	Tl	205	410842.8	1.2	**52.3373**	1.020	1.9	ug/L	10	Standard
	Pb	206	293474.6	0.0	**49.7248**	0.447	0.9	ug/L	264	Standard
	Pb	207	266458.3	0.3	**49.9548**	0.482	1.0	ug/L	227	Standard
	Pb	208	1078784.7	0.3	**52.4507**	0.478	0.9	ug/L	868	Standard
	U	238	405046.7	0.5	**53.2776**	0.329	0.6	ug/L	8	Standard
>	**Bi**	209	544562.5	0.9				ug/L	541014	Standard

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Na	23	3.3	86.6	**21.1233**	18.289	86.6	mg/L	2	Standard
Mg	24	4860.8	2.2	**5.8517**	0.266	4.5	mg/L	53	Standard
K	39	1825.1	0.7	**3.3646**	0.096	2.9	mg/L	53	Standard
Ca	43	85.0	15.6	**3.6635**	0.753	20.6	mg/L	28	Standard
Fe	54	6850.5	3.8	**5.0682**	0.296	5.8	mg/L	181	Standard
Fe	57	1940.1	1.6	**5.0449**	0.134	2.7	mg/L	257	Standard
Sc-1	45	49731.5	2.5				mg/L	55220	Standard
Cl	35	43548.5	1.9				ug/L	35504	Standard
Kr	83	2.3	99.0				ug/L	2	Standard
Br	81	2076.8	5.4				ug/L	2040	Standard
P	31	25009.0	3.0				ug/L	20435	Standard
S	34	2823.6	2.3				ug/L	2430	Standard
Sr	88	101.7	5.7				ug/L	75	Standard
C	12	100.0	50.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	343.3	14.4				mg/L	7	Standard
Dy	164	2.2	267.0				mg/L	9	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	23.3	24.7				mg/L	23	Standard
I	127	12311.7	2.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	108.165		
Al	27	91.994		
Sc	45			
Ti	47	97.904		
V	51	100.708		
Cr	52	98.148		
Cr	53			
Mn	55	94.869		
Co	59	104.179		
Ni	60	98.111		
Cu	65	98.535		
Zn	66	99.830		
Ge	72		94.652	
As	75	98.484		
Se	82	100.605		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	98.399		
Ag	107	96.768		
Cd	111	96.178		
Cd	114			
In	115			99.861
Sn	118	98.148		
Sb	123	97.897		
Ba	135	93.909		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.182		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.901		
U	238	106.555		
Bi	209			100.656
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 20:10:39
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84508.4	1.1				ug/L	74916	Standard
	Be	9	33.3	8.7	**0.0244**	0.002	10.1	ug/L	10	Standard
	Al	27	4085.6	35.3	**0.0185**	0.007	39.4	ug/L	1822	Standard
	Sc	45	51201.4	1.2				ug/L	55220	Standard
	Ti	47	49.3	13.5	**0.0547**	0.017	31.7	ug/L	34	Standard
	V	51	1705.1	7.3	**-0.0039**	0.015	396.5	ug/L	1938	Standard
	Cr	52	7223.1	1.3	**-0.2003**	0.017	8.7	ug/L	9522	Standard
	Cr	53	643.3	12.9	**0.2153**	0.078	36.3	ug/L	395	Standard
	Mn	55	817.4	1.3	**-0.0058**	0.002	33.6	ug/L	902	Standard
	Co	59	278.0	3.7	**0.0129**	0.001	11.6	ug/L	262	Standard
	Ni	60	472.0	2.2	**0.0744**	0.006	7.9	ug/L	371	Standard
	Cu	65	242.0	9.3	**0.0559**	0.012	20.6	ug/L	106	Standard
	Zn	66	406.0	4.9	**-0.0203**	0.014	69.6	ug/L	398	Standard
>	**Ge**	72	512276.8	0.7				ug/L	535147	Standard
	As	75	-39.3	24.4	**0.0246**	0.008	30.9	ug/L	-43	Standard
	Se	82	24.7	25.4	**0.0935**	0.047	50.3	ug/L	14	Standard
	Se-1	77	61.7	4.7	**0.1339**	0.036	27.1	ug/L	65	Standard
>	**Ga**	71	40.0	21.7				mg/L	97	Standard
	Rb	85	40.0	33.1				ug/L	15	Standard
	Y	89	451013.8	2.6				ug/L	465704	Standard
>	**Rh**	103	33.3	75.5				ug/L	10	Standard
	Mo	98	337.7	6.2	**0.1193**	0.006	5.0	ug/L	9	Standard
	Ag	107	160.7	20.3	**0.0149**	0.004	27.5	ug/L	82	Standard
	Cd	111	17.1	27.4	**0.0149**	0.002	12.5	mg/L	7	Standard
	Cd	114	56.9	45.7	**0.0186**	0.004	23.4	ug/L	21	Standard
>	**In**	115	626686.9	1.0				ug/L	619035	Standard
	Sn	118	1108.4	17.2	**0.0649**	0.029	45.4	ug/L	508	Standard
	Sb	123	719.1	31.0	**0.1386**	0.041	29.9	ug/L	86	Standard
	Ba	135	66.7	26.7	**0.0091**	0.008	82.3	ug/L	79	Standard
	Ce	140	33.3	52.7				ug/L	68	Standard
>	**Tb**	159	951647.1	1.9				ug/L	986982	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	116.3	23.3	**0.0185**	0.003	15.8	ug/L	13	Standard
	Tl	205	81.7	12.7	**0.0179**	0.001	7.3	ug/L	10	Standard
	Pb	206	355.3	7.9	**0.0215**	0.005	21.8	ug/L	264	Standard
	Pb	207	296.0	5.5	**0.0215**	0.003	14.0	ug/L	227	Standard
	Pb	208	1251.0	8.8	**0.0216**	0.005	24.5	ug/L	868	Standard
	U	238	86.3	22.6	**0.0191**	0.003	13.3	ug/L	8	Standard
>	**Bi**	209	553114.9	0.1				ug/L	541014	Standard

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Na	23	1.7	173.2	**10.0447**	17.389	173.1	mg/L	2	Standard
Mg	24	65.0	30.8	**0.0419**	0.023	55.9	mg/L	53	Standard
K	39	46.7	22.3	**0.0095**	0.020	207.6	mg/L	53	Standard
Ca	43	30.0	33.3	**0.1622**	0.633	390.4	mg/L	28	Standard
Fe	54	137.1	20.9	**-0.0179**	0.021	119.5	mg/L	181	Standard
Fe	57	260.0	20.1	**0.0806**	0.154	191.3	mg/L	257	Standard
Sc-1	45	51201.4	1.2				mg/L	55220	Standard
Cl	35	42811.7	0.8				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2026.8	15.5				ug/L	2040	Standard
P	31	24645.0	3.2				ug/L	20435	Standard
S	34	2743.6	4.8				ug/L	2430	Standard
Sr	88	56.7	28.4				ug/L	75	Standard
C	12	133.3	24.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	330.0	15.2				mg/L	7	Standard
Dy	164	142.7	35.5				mg/L	9	Standard
Ho-1	165	8.3	91.7				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	5080.9	5.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.726	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.236
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.237
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606152909
Sample Date/Time: Thursday, June 30, 2016 20:13:52
Number of Replicates: 3
Autosampler Position: 348
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84981.0	1.6				ug/L	74916	Standard
	Be	9	46.7	55.0	**0.0355**	0.022	61.8	ug/L	10	Standard
	Al	27	2649760.5	1.0	**13.4599**	0.154	1.1	ug/L	1822	Standard
	Sc	45	50823.5	2.2				ug/L	55220	Standard
	Ti	47	621.0	35.7	**1.4839**	0.544	36.6	ug/L	34	Standard
	V	51	3519.7	4.6	**0.1968**	0.015	7.5	ug/L	1938	Standard
	Cr	52	11065.7	1.5	**0.2335**	0.024	10.4	ug/L	9522	Standard
	Cr	53	2253.5	7.1	**1.7037**	0.164	9.6	ug/L	395	Standard
	Mn	55	69223.4	0.5	**8.2230**	0.056	0.7	ug/L	902	Standard
	Co	59	1262.7	2.4	**0.1376**	0.003	2.2	ug/L	262	Standard
	Ni	60	1836.1	2.2	**0.7020**	0.028	4.0	ug/L	371	Standard
	Cu	65	1478.1	2.8	**0.6345**	0.023	3.6	ug/L	106	Standard
	Zn	66	2676.9	1.2	**1.7846**	0.014	0.8	ug/L	398	Standard
>	**Ge**	72	517327.5	1.1				ug/L	535147	Standard
	As	75	137.8	11.9	**0.1615**	0.012	7.3	ug/L	-43	Standard
	Se	82	34.2	7.9	**0.1643**	0.022	13.6	ug/L	14	Standard
	Se-1	77	107.3	5.7	**0.6510**	0.064	9.8	ug/L	65	Standard
>	**Ga**	71	211.7	15.4				mg/L	97	Standard
	Rb	85	3202.0	8.6				ug/L	15	Standard
	Y	89	457604.0	1.9				ug/L	465704	Standard
>	**Rh**	103	46.7	43.3				ug/L	10	Standard
	Mo	98	197.3	18.3	**0.0741**	0.012	16.5	ug/L	9	Standard
	Ag	107	138.3	23.5	**0.0118**	0.004	37.8	ug/L	82	Standard
	Cd	111	22.7	32.9	**0.0171**	0.003	18.4	mg/L	7	Standard
	Cd	114	85.9	11.7	**0.0233**	0.002	8.1	ug/L	21	Standard
>	**In**	115	635294.3	1.4				ug/L	619035	Standard
	Sn	118	773.4	8.1	**0.0124**	0.011	85.2	ug/L	508	Standard
	Sb	123	378.6	23.7	**0.0742**	0.017	23.5	ug/L	86	Standard
	Ba	135	24337.9	0.6	**10.3548**	0.129	1.2	ug/L	79	Standard
	Ce	140	2685.2	8.1				ug/L	68	Standard
>	**Tb**	159	947650.0	0.1				ug/L	986982	Standard
	Ho	165	105.0	4.8				ug/L	10	Standard
	Tl	203	119.3	21.9	**0.0188**	0.003	15.5	ug/L	13	Standard
	Tl	205	95.0	24.1	**0.0196**	0.003	14.9	ug/L	10	Standard
	Pb	206	1284.1	2.8	**0.1765**	0.004	2.5	ug/L	264	Standard
	Pb	207	1133.4	4.1	**0.1762**	0.011	6.0	ug/L	227	Standard
	Pb	208	4625.6	1.4	**0.1833**	0.005	2.8	ug/L	868	Standard
	U	238	95.0	19.5	**0.0202**	0.002	12.2	ug/L	8	Standard
>	**Bi**	209	553131.1	1.0				ug/L	541014	Standard

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Na	23	1.7	173.2	**10.1205**	17.521	173.1	mg/L	2	Standard
Mg	24	4830.8	0.8	**5.6868**	0.096	1.7	mg/L	53	Standard
K	39	253.3	8.9	**0.3908**	0.035	8.9	mg/L	53	Standard
Ca	43	75.0	37.1	**2.9439**	1.706	58.0	mg/L	28	Standard
Fe	54	370.2	13.4	**0.1556**	0.039	25.3	mg/L	181	Standard
Fe	57	308.3	7.7	**0.2243**	0.061	27.3	mg/L	257	Standard
> **Sc-1**	45	50823.5	2.2				mg/L	55220	Standard
Cl	35	43236.9	0.7				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	5484.3	4.6				ug/L	2040	Standard
P	31	25227.7	0.7				ug/L	20435	Standard
S	34	2473.5	6.7				ug/L	2430	Standard
Sr	88	61.7	9.4				ug/L	75	Standard
C	12	146.7	28.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	313.3	32.0				mg/L	7	Standard
Dy	164	144.7	24.7				mg/L	9	Standard
Ho-1	165	105.0	4.8				mg/L	10	Standard
Er	166	110.0	18.2				mg/L	23	Standard
I	127	10783.8	0.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.434	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.670	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.627
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.240
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606152910
Sample Date/Time: Thursday, June 30, 2016 20:17:04
Number of Replicates: 3
Autosampler Position: 349
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85247.6	3.1				ug/L	74916	Standard
	Be	9	43.3	74.2	**0.0327**	0.027	84.0	ug/L	10	Standard
	Al	27	8510555.6	2.4	**43.1028**	0.408	0.9	ug/L	1822	Standard
	Sc	45	51932.2	1.1				ug/L	55220	Standard
	Ti	47	1029.0	29.8	**2.5664**	0.783	30.5	ug/L	34	Standard
	V	51	4367.2	5.7	**0.3028**	0.026	8.6	ug/L	1938	Standard
	Cr	52	12079.8	6.1	**0.3817**	0.071	18.7	ug/L	9522	Standard
	Cr	53	7580.2	7.2	**6.8071**	0.547	8.0	ug/L	395	Standard
	Mn	55	83482.7	1.3	**10.1707**	0.156	1.5	ug/L	902	Standard
	Co	59	1517.7	1.1	**0.1745**	0.002	1.4	ug/L	262	Standard
	Ni	60	2542.5	1.9	**1.0552**	0.032	3.0	ug/L	371	Standard
	Cu	65	1783.1	4.1	**0.7965**	0.026	3.3	ug/L	106	Standard
	Zn	66	3302.0	2.8	**2.3428**	0.055	2.3	ug/L	398	Standard
>	**Ge**	72	505645.1	1.0				ug/L	535147	Standard
	As	75	610.8	2.8	**0.5379**	0.016	2.9	ug/L	-43	Standard
	Se	82	184.7	4.6	**1.3451**	0.069	5.2	ug/L	14	Standard
	Se-1	77	372.3	2.8	**3.7934**	0.138	3.6	ug/L	65	Standard
>	**Ga**	71	258.3	14.8				mg/L	97	Standard
	Rb	85	3520.4	5.7				ug/L	15	Standard
	Y	89	444968.3	1.2				ug/L	465704	Standard
>	**Rh**	103	56.7	22.2				ug/L	10	Standard
	Mo	98	154.0	19.6	**0.0625**	0.010	15.9	ug/L	9	Standard
	Ag	107	132.7	1.6	**0.0118**	0.000	1.4	ug/L	82	Standard
	Cd	111	45.0	32.2	**0.0268**	0.006	22.7	mg/L	7	Standard
	Cd	114	116.9	9.5	**0.0293**	0.002	7.0	ug/L	21	Standard
>	**In**	115	609907.5	0.7				ug/L	619035	Standard
	Sn	118	613.3	11.5	**-0.0077**	0.012	151.4	ug/L	508	Standard
	Sb	123	344.4	18.6	**0.0705**	0.013	18.0	ug/L	86	Standard
	Ba	135	83944.9	0.2	**37.2499**	0.298	0.8	ug/L	79	Standard
	Ce	140	3115.3	6.4				ug/L	68	Standard
>	**Tb**	159	935811.2	1.5				ug/L	986982	Standard
	Ho	165	168.3	13.4				ug/L	10	Standard
	Tl	203	140.0	23.9	**0.0216**	0.004	16.7	ug/L	13	Standard
	Tl	205	133.3	16.9	**0.0251**	0.003	12.1	ug/L	10	Standard
	Pb	206	1608.8	2.7	**0.2416**	0.006	2.4	ug/L	264	Standard
	Pb	207	1470.7	2.8	**0.2494**	0.006	2.4	ug/L	227	Standard
	Pb	208	5963.5	0.4	**0.2589**	0.002	0.8	ug/L	868	Standard
	U	238	80.7	14.5	**0.0188**	0.001	8.0	ug/L	8	Standard
>	**Bi**	209	531560.9	0.7				ug/L	541014	Standard

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Na	23	3.3	173.2	**19.8680**	34.404	173.2	mg/L	2	Standard
Mg	24	21381.8	3.6	**24.7466**	1.006	4.1	mg/L	53	Standard
K	39	523.3	2.0	**0.8684**	0.016	1.9	mg/L	53	Standard
Ca	43	270.0	6.4	**14.5888**	1.106	7.6	mg/L	28	Standard
Fe	54	425.4	9.3	**0.1894**	0.028	14.9	mg/L	181	Standard
Fe	57	405.0	10.1	**0.4787**	0.128	26.8	mg/L	257	Standard
> **Sc-1**	45	51932.2	1.1				mg/L	55220	Standard
Cl	35	45101.7	0.8				ug/L	35504	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	35307.8	3.0				ug/L	2040	Standard
P	31	25357.9	2.1				ug/L	20435	Standard
S	34	2631.9	4.1				ug/L	2430	Standard
Sr	88	215.0	14.5				ug/L	75	Standard
C	12	140.0	25.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	256.7	22.5				mg/L	7	Standard
Dy	164	243.1	25.1				mg/L	9	Standard
Ho-1	165	168.3	13.4				mg/L	10	Standard
Er	166	143.3	8.1				mg/L	23	Standard
I	127	21702.2	1.6				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.790	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.487	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.526
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.253
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606152911
Sample Date/Time: Thursday, June 30, 2016 20:20:16
Number of Replicates: 3
Autosampler Position: 350
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83573.2	1.5				ug/L	74916	Standard
	Be	9	33.3	31.2	**0.0246**	0.008	34.0	ug/L	10	Standard
	Al	27	6861949.3	1.6	**35.4458**	0.495	1.4	ug/L	1822	Standard
	Sc	45	51285.0	2.1				ug/L	55220	Standard
	Ti	47	288.0	39.4	**0.6733**	0.294	43.6	ug/L	34	Standard
	V	51	5266.7	5.9	**0.4099**	0.037	9.1	ug/L	1938	Standard
	Cr	52	11325.9	1.0	**0.3025**	0.009	2.9	ug/L	9522	Standard
	Cr	53	11184.1	2.5	**10.2982**	0.304	3.0	ug/L	395	Standard
	Mn	55	786461.8	1.3	**97.3526**	1.294	1.3	ug/L	902	Standard
	Co	59	906.4	7.2	**0.0958**	0.008	8.5	ug/L	262	Standard
	Ni	60	1758.4	4.4	**0.6903**	0.035	5.1	ug/L	371	Standard
	Cu	65	1982.8	0.9	**0.8990**	0.012	1.3	ug/L	106	Standard
	Zn	66	4952.8	2.7	**3.7149**	0.093	2.5	ug/L	398	Standard
>	**Ge**	72	502233.2	0.4				ug/L	535147	Standard
	As	75	80.3	74.3	**0.1190**	0.047	39.6	ug/L	-43	Standard
	Se	82	58.8	12.4	**0.3655**	0.056	15.3	ug/L	14	Standard
	Se-1	77	491.7	3.9	**5.2344**	0.231	4.4	ug/L	65	Standard
>	**Ga**	71	93.3	34.4				mg/L	97	Standard
	Rb	85	896.7	7.1				ug/L	15	Standard
	Y	89	441710.6	1.7				ug/L	465704	Standard
>	**Rh**	103	41.7	42.1				ug/L	10	Standard
	Mo	98	608.7	10.2	**0.2107**	0.020	9.6	ug/L	9	Standard
	Ag	107	240.0	4.4	**0.0262**	0.001	5.4	ug/L	82	Standard
	Cd	111	212.4	8.7	**0.0973**	0.008	8.0	mg/L	7	Standard
	Cd	114	534.1	15.2	**0.1023**	0.014	13.8	ug/L	21	Standard
>	**In**	115	609038.8	0.0				ug/L	619035	Standard
	Sn	118	1090.0	7.3	**0.0668**	0.012	18.5	ug/L	508	Standard
	Sb	123	607.9	4.4	**0.1211**	0.005	4.2	ug/L	86	Standard
	Ba	135	74342.3	1.0	**33.0325**	0.340	1.0	ug/L	79	Standard
	Ce	140	740.0	10.4				ug/L	68	Standard
>	**Tb**	159	934924.8	1.9				ug/L	986982	Standard
	Ho	165	50.0	36.1				ug/L	10	Standard
	Tl	203	320.3	3.0	**0.0420**	0.001	2.9	ug/L	13	Standard
	Tl	205	230.0	20.7	**0.0379**	0.006	16.2	ug/L	10	Standard
	Pb	206	1171.7	7.8	**0.1672**	0.015	9.1	ug/L	264	Standard
	Pb	207	1041.0	6.0	**0.1683**	0.011	6.6	ug/L	227	Standard
	Pb	208	4335.9	3.1	**0.1793**	0.006	3.4	ug/L	868	Standard
	U	238	130.3	27.9	**0.0256**	0.005	19.0	ug/L	8	Standard
>	**Bi**	209	527772.3	0.4				ug/L	541014	Standard

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Na	23	5.0	0.0	**30.2905**	0.643	2.1	mg/L	2	Standard
Mg	24	32406.3	1.7	**37.9987**	0.770	2.0	mg/L	53	Standard
K	39	553.3	8.6	**0.9359**	0.099	10.6	mg/L	53	Standard
Ca	43	206.7	9.8	**10.9494**	1.494	13.6	mg/L	28	Standard
Fe	54	231.8	8.1	**0.0516**	0.017	33.5	mg/L	181	Standard
Fe	57	361.7	9.7	**0.3683**	0.092	24.9	mg/L	257	Standard
> **Sc-1**	45	51285.0	2.1				mg/L	55220	Standard
Cl	35	45860.6	1.0				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	8892.6	1.4				ug/L	2040	Standard
P	31	25207.6	2.0				ug/L	20435	Standard
S	34	2685.2	1.5				ug/L	2430	Standard
Sr	88	123.3	8.4				ug/L	75	Standard
C	12	156.7	40.5				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	290.0	15.0				mg/L	7	Standard
Dy	164	82.7	18.2				mg/L	9	Standard
Ho-1	165	50.0	36.1				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	22520.1	0.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.555	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.850	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.385
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.552
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606152912
Sample Date/Time: Thursday, June 30, 2016 20:23:27
Number of Replicates: 3
Autosampler Position: 351
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83561.5	0.3				ug/L	74916	Standard
	Be	9	28.3	71.3	**0.0204**	0.017	83.8	ug/L	10	Standard
	Al	27	1142457.6	1.7	**5.8999**	0.089	1.5	ug/L	1822	Standard
	Sc	45	51276.7	3.0				ug/L	55220	Standard
	Ti	47	232.3	25.2	**0.5169**	0.147	28.4	ug/L	34	Standard
	V	51	2883.0	4.8	**0.1286**	0.017	12.9	ug/L	1938	Standard
	Cr	52	11199.8	2.3	**0.2601**	0.034	13.3	ug/L	9522	Standard
	Cr	53	1680.1	8.8	**1.1848**	0.143	12.1	ug/L	395	Standard
	Mn	55	43442.2	2.6	**5.1670**	0.156	3.0	ug/L	902	Standard
	Co	59	648.0	14.5	**0.0603**	0.012	20.5	ug/L	262	Standard
	Ni	60	894.4	4.8	**0.2708**	0.022	8.0	ug/L	371	Standard
	Cu	65	891.7	2.5	**0.3630**	0.011	3.0	ug/L	106	Standard
	Zn	66	2132.8	2.9	**1.3664**	0.058	4.3	ug/L	398	Standard
>	**Ge**	72	512862.3	0.5				ug/L	535147	Standard
	As	75	81.9	16.5	**0.1190**	0.010	8.6	ug/L	-43	Standard
	Se	82	28.4	3.0	**0.1217**	0.006	5.1	ug/L	14	Standard
	Se-1	77	79.0	9.1	**0.3340**	0.087	26.1	ug/L	65	Standard
>	**Ga**	71	108.3	23.7				mg/L	97	Standard
	Rb	85	1580.1	11.7				ug/L	15	Standard
	Y	89	444358.6	0.5				ug/L	465704	Standard
>	**Rh**	103	28.3	27.0				ug/L	10	Standard
	Mo	98	213.2	48.6	**0.0802**	0.032	40.5	ug/L	9	Standard
	Ag	107	93.3	6.1	**0.0062**	0.001	13.2	ug/L	82	Standard
	Cd	111	14.1	53.6	**0.0137**	0.003	22.4	mg/L	7	Standard
	Cd	114	58.8	32.6	**0.0190**	0.003	16.9	ug/L	21	Standard
>	**In**	115	622593.9	0.6				ug/L	619035	Standard
	Sn	118	730.0	4.8	**0.0081**	0.006	69.0	ug/L	508	Standard
	Sb	123	256.5	2.9	**0.0526**	0.002	3.0	ug/L	86	Standard
	Ba	135	10960.0	1.4	**4.7469**	0.041	0.9	ug/L	79	Standard
	Ce	140	2988.7	39.7				ug/L	68	Standard
>	**Tb**	159	943687.8	0.6				ug/L	986982	Standard
	Ho	165	93.3	3.1				ug/L	10	Standard
	Tl	203	49.0	26.8	**0.0113**	0.001	12.1	ug/L	13	Standard
	Tl	205	68.3	69.5	**0.0163**	0.006	36.2	ug/L	10	Standard
	Pb	206	812.7	1.1	**0.0982**	0.002	2.2	ug/L	264	Standard
	Pb	207	747.4	8.3	**0.1051**	0.010	9.4	ug/L	227	Standard
	Pb	208	3105.8	7.7	**0.1107**	0.010	8.9	ug/L	868	Standard
	U	238	95.0	67.5	**0.0202**	0.008	40.4	ug/L	8	Standard
>	**Bi**	209	551731.2	1.1				ug/L	541014	Standard

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Na	23	1.7	173.2	**10.0978**	17.481	173.1	mg/L	2	Standard
Mg	24	1641.8	2.8	**1.8923**	0.008	0.4	mg/L	53	Standard
K	39	116.7	8.9	**0.1376**	0.024	17.2	mg/L	53	Standard
Ca	43	55.0	27.3	**1.6998**	1.016	59.7	mg/L	28	Standard
Fe	54	252.5	19.8	**0.0659**	0.031	47.4	mg/L	181	Standard
Fe	57	290.0	8.6	**0.1634**	0.047	28.6	mg/L	257	Standard
Sc-1	45	51276.7	3.0				mg/L	55220	Standard
Cl	35	45886.1	2.5				ug/L	35504	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	2533.5	8.3				ug/L	2040	Standard
P	31	24920.5	1.8				ug/L	20435	Standard
S	34	2648.6	4.3				ug/L	2430	Standard
Sr	88	91.7	31.5				ug/L	75	Standard
C	12	140.0	56.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	296.7	10.3				mg/L	7	Standard
Dy	164	126.3	16.4				mg/L	9	Standard
Ho-1	165	93.3	3.1				mg/L	10	Standard
Er	166	76.7	19.9				mg/L	23	Standard
I	127	12023.1	1.2				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		111.540	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.836	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.575
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.981
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606152913
Sample Date/Time: Thursday, June 30, 2016 20:26:39
Number of Replicates: 3
Autosampler Position: 352
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83144.2	1.2				ug/L	74916	Standard
	Be	9	203.3	14.4	**0.1702**	0.026	15.4	ug/L	10	Standard
	Al	27	3075507.5	1.9	**15.9662**	0.187	1.2	ug/L	1822	Standard
	Sc	45	53502.6	0.3				ug/L	55220	Standard
	Ti	47	4717.7	9.5	**11.9495**	1.106	9.3	ug/L	34	Standard
	V	51	34500.2	1.6	**3.7245**	0.081	2.2	ug/L	1938	Standard
	Cr	52	39833.6	0.7	**3.6208**	0.008	0.2	ug/L	9522	Standard
	Cr	53	5310.9	1.3	**4.6226**	0.076	1.6	ug/L	395	Standard
	Mn	55	1581170.6	1.4	**193.3537**	1.958	1.0	ug/L	902	Standard
	Co	59	20948.8	1.4	**2.6842**	0.032	1.2	ug/L	262	Standard
	Ni	60	12333.4	1.4	**5.6440**	0.100	1.8	ug/L	371	Standard
	Cu	65	14731.2	0.9	**6.9673**	0.099	1.4	ug/L	106	Standard
	Zn	66	35391.6	1.1	**28.3108**	0.153	0.5	ug/L	398	Standard
>	**Ge**	72	508664.2	0.9				ug/L	535147	Standard
	As	75	3470.9	0.5	**2.7815**	0.034	1.2	ug/L	-43	Standard
	Se	82	38.3	17.2	**0.2009**	0.054	26.8	ug/L	14	Standard
	Se-1	77	81.7	12.7	**0.3727**	0.124	33.3	ug/L	65	Standard
>	**Ga**	71	4624.0	2.2				mg/L	97	Standard
	Rb	85	73009.0	3.5				ug/L	15	Standard
	Y	89	476478.1	0.8				ug/L	465704	Standard
>	**Rh**	103	26.7	10.8				ug/L	10	Standard
	Mo	98	302.0	8.4	**0.1093**	0.009	8.6	ug/L	9	Standard
	Ag	107	240.0	5.1	**0.0258**	0.002	6.4	ug/L	82	Standard
	Cd	111	64.8	9.4	**0.0348**	0.003	8.2	mg/L	7	Standard
	Cd	114	166.0	9.3	**0.0375**	0.003	7.6	ug/L	21	Standard
>	**In**	115	618372.2	1.3				ug/L	619035	Standard
	Sn	118	1020.0	3.8	**0.0535**	0.006	10.7	ug/L	508	Standard
	Sb	123	609.5	9.9	**0.1196**	0.012	9.8	ug/L	86	Standard
	Ba	135	96258.1	0.3	**42.1337**	0.419	1.0	ug/L	79	Standard
	Ce	140	67600.5	0.7				ug/L	68	Standard
>	**Tb**	159	945334.0	0.5				ug/L	986982	Standard
	Ho	165	2460.2	3.8				ug/L	10	Standard
	Tl	203	331.0	2.6	**0.0419**	0.001	1.8	ug/L	13	Standard
	Tl	205	320.0	12.4	**0.0483**	0.005	10.3	ug/L	10	Standard
	Pb	206	22992.8	0.9	**3.8513**	0.058	1.5	ug/L	264	Standard
	Pb	207	19230.5	1.0	**3.5656**	0.061	1.7	ug/L	227	Standard
	Pb	208	81163.7	0.4	**3.9008**	0.028	0.7	ug/L	868	Standard
	U	238	1044.7	1.1	**0.1449**	0.002	1.4	ug/L	8	Standard
>	**Bi**	209	545921.2	0.7				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	1895.1	5.1	**2.0969**	0.103	4.9	mg/L	53	Standard
K	39	446.7	21.3	**0.7061**	0.165	23.3	mg/L	53	Standard
Ca	43	40.0	33.1	**0.6617**	0.767	115.9	mg/L	28	Standard
Fe	54	7059.5	3.4	**4.8453**	0.151	3.1	mg/L	181	Standard
Fe	57	1893.5	2.2	**4.5135**	0.117	2.6	mg/L	257	Standard
> **Sc-1**	45	53502.6	0.3				mg/L	55220	Standard
Cl	35	40968.1	5.2				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	5170.9	1.0				ug/L	2040	Standard
P	31	28127.8	1.6				ug/L	20435	Standard
S	34	2423.5	2.4				ug/L	2430	Standard
Sr	88	96.7	16.6				ug/L	75	Standard
C	12	116.7	9.9				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	356.7	18.7				mg/L	7	Standard
Dy	164	4073.6	6.6				mg/L	9	Standard
Ho-1	165	2460.2	3.8				mg/L	10	Standard
Er	166	2093.5	6.5				mg/L	23	Standard
I	127	13008.9	1.7				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.983	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.051	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.893	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.907	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606153201
Sample Date/Time: Thursday, June 30, 2016 20:29:50
Number of Replicates: 3
Autosampler Position: 353
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89644.5	2.1				ug/L	74916	Standard
	Be	9	1925.1	4.6	**1.5220**	0.084	5.5	ug/L	10	Standard
	Al	27	33731374.7	1.7	**162.4486**	0.616	0.4	ug/L	1822	Standard
	Sc	45	75308.4	0.7				ug/L	55220	Standard
	Ti	47	72764.3	0.8	**185.9893**	1.903	1.0	ug/L	34	Standard
	V	51	344344.8	0.6	**39.0709**	0.350	0.9	ug/L	1938	Standard
	Cr	52	198511.1	1.2	**22.2654**	0.288	1.3	ug/L	9522	Standard
	Cr	53	24231.0	2.1	**22.5510**	0.638	2.8	ug/L	395	Standard
	Mn	55	8234177.7	0.9	**1010.8489**	9.075	0.9	ug/L	902	Standard
	Co	59	97114.6	1.1	**12.5705**	0.202	1.6	ug/L	262	Standard
	Ni	60	61192.7	0.5	**28.6787**	0.338	1.2	ug/L	371	Standard
	Cu	65	39756.1	0.2	**18.9676**	0.120	0.6	ug/L	106	Standard
	Zn	66	80311.0	0.5	**64.9085**	0.202	0.3	ug/L	398	Standard
>	**Ge**	72	506918.0	0.7				ug/L	535147	Standard
	As	75	9147.0	1.2	**7.2641**	0.054	0.7	ug/L	-43	Standard
	Se	82	190.4	12.1	**1.3851**	0.168	12.1	ug/L	14	Standard
	Se-1	77	196.3	6.5	**1.7188**	0.132	7.7	ug/L	65	Standard
>	**Ga**	71	30931.6	3.2				mg/L	97	Standard
	Rb	85	428695.1	2.1				ug/L	15	Standard
	Y	89	798406.2	0.4				ug/L	465704	Standard
>	**Rh**	103	131.7	21.6				ug/L	10	Standard
	Mo	98	12612.1	2.1	**4.1093**	0.084	2.0	ug/L	9	Standard
	Ag	107	391.7	4.3	**0.0465**	0.002	4.6	ug/L	82	Standard
	Cd	111	394.2	3.5	**0.1734**	0.005	3.1	mg/L	7	Standard
	Cd	114	1131.0	10.9	**0.2061**	0.021	10.3	ug/L	21	Standard
>	**In**	115	610796.2	0.3				ug/L	619035	Standard
	Sn	118	1331.7	3.0	**0.1040**	0.007	6.6	ug/L	508	Standard
	Sb	123	931.7	3.6	**0.1827**	0.007	3.6	ug/L	86	Standard
	Ba	135	545599.0	0.7	**241.8530**	1.754	0.7	ug/L	79	Standard
	Ce	140	1545043.5	0.7				ug/L	68	Standard
>	**Tb**	159	969755.6	0.5				ug/L	986982	Standard
	Ho	165	30089.9	1.2				ug/L	10	Standard
	Tl	203	1941.8	1.7	**0.2255**	0.004	1.9	ug/L	13	Standard
	Tl	205	1686.8	1.8	**0.2309**	0.003	1.3	ug/L	10	Standard
	Pb	206	82334.1	0.7	**14.4679**	0.157	1.1	ug/L	264	Standard
	Pb	207	67724.4	0.4	**13.1675**	0.052	0.4	ug/L	227	Standard
	Pb	208	285782.6	1.0	**14.4086**	0.082	0.6	ug/L	868	Standard
	U	238	14378.2	1.4	**1.9726**	0.018	0.9	ug/L	8	Standard
>	**Bi**	209	524096.0	0.5				ug/L	541014	Standard

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Na	23	5.0	100.0	**20.6926**	20.779	100.4	mg/L	2	Standard
Mg	24	3587.1	4.9	**2.8326**	0.159	5.6	mg/L	53	Standard
K	39	1336.7	2.1	**1.5875**	0.046	2.9	mg/L	53	Standard
Ca	43	956.7	5.7	**38.0674**	2.553	6.7	mg/L	28	Standard
Fe	54	24191.2	1.4	**11.9678**	0.197	1.6	mg/L	181	Standard
Fe	57	6944.9	2.7	**12.8265**	0.406	3.2	mg/L	257	Standard
> **Sc-1**	45	75308.4	0.7				mg/L	55220	Standard
Cl	35	41309.6	1.0				ug/L	35504	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	13139.1	8.9				ug/L	2040	Standard
P	31	56287.7	1.7				ug/L	20435	Standard
S	34	2321.8	4.4				ug/L	2430	Standard
Sr	88	488.3	4.8				ug/L	75	Standard
C	12	296.7	22.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	476.7	37.7				mg/L	7	Standard
Dy	164	49979.9	0.8				mg/L	9	Standard
Ho-1	165	30089.9	1.2				mg/L	10	Standard
Er	166	27070.8	2.7				mg/L	23	Standard
I	127	56145.8	6.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.659	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.725	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.669
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.873
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 20:33:03
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	82411.9	2.0				ug/L	74916	Standard
	Be	9	63501.2	2.9	**54.7156**	1.591	2.9	ug/L	10	Standard
	Al	27	8936275.0	1.1	**46.8272**	1.363	2.9	ug/L	1822	Standard
	Sc	45	50709.8	2.6				ug/L	55220	Standard
	Ti	47	38704.7	1.1	**97.1505**	0.850	0.9	ug/L	34	Standard
	V	51	446648.8	0.9	**49.8380**	0.325	0.7	ug/L	1938	Standard
	Cr	52	432283.2	1.8	**48.8135**	0.759	1.6	ug/L	9522	Standard
	Cr	53	54529.6	1.8	**50.3157**	0.783	1.6	ug/L	395	Standard
	Mn	55	397792.4	1.2	**47.8745**	0.756	1.6	ug/L	902	Standard
	Co	59	408707.4	1.0	**52.0384**	0.389	0.7	ug/L	262	Standard
	Ni	60	106814.3	1.7	**49.2774**	0.643	1.3	ug/L	371	Standard
	Cu	65	105225.1	1.0	**49.4116**	0.576	1.2	ug/L	106	Standard
	Zn	66	62698.8	0.8	**49.7004**	0.463	0.9	ug/L	398	Standard
>	Ge	72	516010.1	0.4				ug/L	535147	Standard
	As	75	64411.7	0.4	**49.9261**	0.328	0.7	ug/L	-43	Standard
	Se	82	6628.1	1.4	**50.6222**	0.759	1.5	ug/L	14	Standard
	Se-1	77	4396.6	2.5	**50.0358**	1.361	2.7	ug/L	65	Standard
>	Ga	71	61.7	28.5				mg/L	97	Standard
	Rb	85	996.7	10.1				ug/L	15	Standard
	Y	89	456681.8	1.9				ug/L	465704	Standard
>	Rh	103	46.7	6.2				ug/L	10	Standard
	Mo	98	310943.7	0.9	**98.7097**	0.997	1.0	ug/L	9	Standard
	Ag	107	368163.3	0.1	**48.2932**	0.364	0.8	ug/L	82	Standard
	Cd	111	118493.3	0.3	**48.6275**	0.278	0.6	mg/L	7	Standard
	Cd	114	292362.7	1.4	**49.8198**	0.391	0.8	ug/L	21	Standard
>	In	115	625098.4	0.7				ug/L	619035	Standard
	Sn	118	328088.5	2.1	**49.8247**	1.168	2.3	ug/L	508	Standard
	Sb	123	260509.7	0.6	**48.7212**	0.650	1.3	ug/L	86	Standard
	Ba	135	109479.1	0.8	**47.4058**	0.586	1.2	ug/L	79	Standard
	Ce	140	758.4	29.4				ug/L	68	Standard
>	Tb	159	940749.3	1.4				ug/L	986982	Standard
	Ho	165	26.7	60.3				ug/L	10	Standard
	Tl	203	458765.3	0.6	**50.6626**	0.208	0.4	ug/L	13	Standard
	Tl	205	413032.5	0.8	**53.3915**	0.514	1.0	ug/L	10	Standard
	Pb	206	292542.6	0.8	**50.2992**	0.212	0.4	ug/L	264	Standard
	Pb	207	262126.4	0.9	**49.8679**	0.237	0.5	ug/L	227	Standard
	Pb	208	1068253.8	1.0	**52.7083**	0.744	1.4	ug/L	868	Standard
	U	238	400138.0	0.8	**53.4122**	0.638	1.2	ug/L	8	Standard
>	Bi	209	536606.7	0.4				ug/L	541014	Standard

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Na	23	1.7	173.2	**9.9269**	17.185	173.1	mg/L	2	Standard
Mg	24	4815.8	3.0	**5.6803**	0.067	1.2	mg/L	53	Standard
K	39	1883.5	5.5	**3.4038**	0.145	4.3	mg/L	53	Standard
Ca	43	110.0	12.0	**5.1122**	0.842	16.5	mg/L	28	Standard
Fe	54	6834.6	1.8	**4.9544**	0.153	3.1	mg/L	181	Standard
Fe	57	1956.8	6.8	**4.9772**	0.240	4.8	mg/L	257	Standard
Sc-1	45	50709.8	2.6				mg/L	55220	Standard
Cl	35	41202.0	1.9				ug/L	35504	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	2030.1	11.2				ug/L	2040	Standard
P	31	23463.2	2.4				ug/L	20435	Standard
S	34	2733.6	7.5				ug/L	2430	Standard
Sr	88	60.0	22.0				ug/L	75	Standard
C	12	116.7	47.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	220.0	41.7				mg/L	7	Standard
Dy	164	31.9	43.5				mg/L	9	Standard
Ho-1	165	26.7	60.3				mg/L	10	Standard
Er	166	30.0	100.0				mg/L	23	Standard
I	127	12453.5	8.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	109.431		
Al	27	93.654		
Sc	45			
Ti	47	97.150		
V	51	99.676		
Cr	52	97.627		
Cr	53			
Mn	55	95.749		
Co	59	104.077		
Ni	60	98.555		
Cu	65	98.823		
Zn	66	99.401		
Ge	72		96.424	
As	75	99.852		
Se	82	101.244		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	98.710		
Ag	107	96.586		
Cd	111	97.255		
Cd	114			
In	115		100.980	
Sn	118	99.649		
Sb	123	97.442		
Ba	135	94.812		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.325		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.417		
U	238	106.824		
Bi	209		99.185	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 20:36:14
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82128.7	1.1				ug/L	74916	Standard
	Be	9	30.0	16.7	**0.0223**	0.004	18.3	ug/L	10	Standard
	Al	27	5192.6	9.2	**0.0250**	0.002	9.1	ug/L	1822	Standard
	Sc	45	51186.4	3.6				ug/L	55220	Standard
	Ti	47	43.3	23.6	**0.0390**	0.025	64.9	ug/L	34	Standard
	V	51	1718.2	4.9	**-0.0032**	0.009	291.6	ug/L	1938	Standard
	Cr	52	7393.1	1.8	**-0.1840**	0.014	7.8	ug/L	9522	Standard
	Cr	53	693.3	17.3	**0.2598**	0.114	43.8	ug/L	395	Standard
	Mn	55	1321.1	4.6	**0.0547**	0.007	13.5	ug/L	902	Standard
	Co	59	293.7	10.4	**0.0147**	0.004	27.4	ug/L	262	Standard
	Ni	60	410.0	7.5	**0.0448**	0.015	32.9	ug/L	371	Standard
	Cu	65	188.3	4.3	**0.0301**	0.004	13.0	ug/L	106	Standard
	Zn	66	383.3	1.0	**-0.0397**	0.004	10.4	ug/L	398	Standard
>	**Ge**	72	514250.8	0.4				ug/L	535147	Standard
	As	75	-54.4	100.9	**0.0129**	0.043	331.1	ug/L	-43	Standard
	Se	82	19.7	51.7	**0.0538**	0.077	143.9	ug/L	14	Standard
	Se-1	77	63.0	5.7	**0.1465**	0.044	30.1	ug/L	65	Standard
>	**Ga**	71	55.0	36.4				mg/L	97	Standard
	Rb	85	68.3	22.4				ug/L	15	Standard
	Y	89	449659.4	1.7				ug/L	465704	Standard
>	**Rh**	103	23.3	24.7				ug/L	10	Standard
	Mo	98	335.6	19.0	**0.1188**	0.020	16.7	ug/L	9	Standard
	Ag	107	154.3	7.0	**0.0142**	0.001	9.5	ug/L	82	Standard
	Cd	111	22.4	30.8	**0.0171**	0.003	16.3	mg/L	7	Standard
	Cd	114	51.4	43.4	**0.0177**	0.004	21.3	ug/L	21	Standard
>	**In**	115	625232.6	0.5				ug/L	619035	Standard
	Sn	118	1065.0	15.1	**0.0587**	0.025	42.6	ug/L	508	Standard
	Sb	123	705.8	28.7	**0.1365**	0.038	28.0	ug/L	86	Standard
	Ba	135	108.3	3.0	**0.0273**	0.001	4.4	ug/L	79	Standard
	Ce	140	348.3	13.3				ug/L	68	Standard
>	**Tb**	159	943281.6	0.4				ug/L	986982	Standard
	Ho	165	11.7	107.9				ug/L	10	Standard
	Tl	203	113.3	12.2	**0.0182**	0.001	8.2	ug/L	13	Standard
	Tl	205	100.0	30.0	**0.0203**	0.004	18.7	ug/L	10	Standard
	Pb	206	363.3	6.5	**0.0234**	0.004	17.0	ug/L	264	Standard
	Pb	207	296.3	6.8	**0.0220**	0.004	17.0	ug/L	227	Standard
	Pb	208	1320.0	5.6	**0.0254**	0.004	14.1	ug/L	868	Standard
	U	238	99.0	19.9	**0.0208**	0.003	12.3	ug/L	8	Standard
>	**Bi**	209	548536.9	0.0				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	75.0	48.1	**0.0541**	0.045	82.5	mg/L	53	Standard
K	39	33.3	31.2	**-0.0153**	0.017	109.6	mg/L	53	Standard
Ca	43	23.3	32.7	**-0.2522**	0.460	182.3	mg/L	28	Standard
Fe	54	165.6	21.1	**0.0031**	0.027	859.8	mg/L	181	Standard
Fe	57	250.0	23.1	**0.0548**	0.181	330.7	mg/L	257	Standard
Sc-1	45	51186.4	3.6				mg/L	55220	Standard
Cl	35	41182.6	1.6				ug/L	35504	Standard
Kr	83	2.3	107.9				ug/L	2	Standard
Br	81	1913.5	4.1				ug/L	2040	Standard
P	31	22580.1	1.2				ug/L	20435	Standard
S	34	2533.5	8.6				ug/L	2430	Standard
Sr	88	78.3	30.2				ug/L	75	Standard
C	12	96.7	52.1				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	230.0	4.3				mg/L	7	Standard
Dy	164	171.3	13.6				mg/L	9	Standard
Ho-1	165	11.7	107.9				mg/L	10	Standard
Er	166	43.3	58.1				mg/L	23	Standard
I	127	5109.2	12.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.095	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.001
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.390
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, June 30, 2016 20:39:27
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80112.9	1.5				ug/L	74916	Standard
	Be	9	261.7	14.3	**0.2284**	0.034	15.1	ug/L	10	Standard
	Al	27	1921.8	14.3	**0.0080**	0.001	16.8	ug/L	1822	Standard
	Sc	45	48402.2	0.5				ug/L	55220	Standard
	Ti	47	27.3	11.8	**0.0013**	0.008	664.7	ug/L	34	Standard
	V	51	4894.0	1.7	**0.3738**	0.012	3.1	ug/L	1938	Standard
	Cr	52	13943.7	1.3	**0.6328**	0.015	2.4	ug/L	9522	Standard
	Cr	53	1380.1	5.0	**0.9470**	0.060	6.3	ug/L	395	Standard
	Mn	55	4302.6	2.0	**0.4346**	0.013	2.9	ug/L	902	Standard
	Co	59	3213.7	1.7	**0.4029**	0.007	1.8	ug/L	262	Standard
	Ni	60	3515.4	1.2	**1.5461**	0.028	1.8	ug/L	371	Standard
	Cu	65	1705.1	1.9	**0.7749**	0.015	2.0	ug/L	106	Standard
	Zn	66	7760.7	0.6	**6.0954**	0.054	0.9	ug/L	398	Standard
>	**Ge**	72	496193.5	0.5				ug/L	535147	Standard
	As	75	427.1	10.4	**0.3992**	0.036	9.1	ug/L	-43	Standard
	Se	82	66.0	22.5	**0.4286**	0.118	27.6	ug/L	14	Standard
	Se-1	77	89.7	9.7	**0.4918**	0.099	20.1	ug/L	65	Standard
>	**Ga**	71	40.0	33.1				mg/L	97	Standard
	Rb	85	45.0	11.1				ug/L	15	Standard
	Y	89	428520.5	0.7				ug/L	465704	Standard
>	**Rh**	103	26.7	47.2				ug/L	10	Standard
	Mo	98	135.3	10.3	**0.0568**	0.005	8.2	ug/L	9	Standard
	Ag	107	2893.9	2.4	**0.3865**	0.009	2.3	ug/L	82	Standard
	Cd	111	514.8	5.0	**0.2263**	0.011	4.7	mg/L	7	Standard
	Cd	114	1337.4	8.6	**0.2445**	0.020	8.1	ug/L	21	Standard
>	**In**	115	604537.0	0.2				ug/L	619035	Standard
	Sn	118	533.3	11.2	**-0.0195**	0.010	49.0	ug/L	508	Standard
	Sb	123	1880.2	1.4	**0.3679**	0.005	1.3	ug/L	86	Standard
	Ba	135	1521.1	0.6	**0.6617**	0.004	0.6	ug/L	79	Standard
	Ce	140	56.7	48.6				ug/L	68	Standard
>	**Tb**	159	922348.4	0.4				ug/L	986982	Standard
	Ho	165	10.0	100.0				ug/L	10	Standard
	Tl	203	698.7	3.6	**0.0831**	0.002	2.8	ug/L	13	Standard
	Tl	205	633.3	15.8	**0.0896**	0.013	14.7	ug/L	10	Standard
	Pb	206	1409.4	1.3	**0.2047**	0.004	2.1	ug/L	264	Standard
	Pb	207	1194.0	0.4	**0.1941**	0.002	0.9	ug/L	227	Standard
	Pb	208	5007.3	0.9	**0.2089**	0.001	0.3	ug/L	868	Standard
	U	238	2975.6	1.6	**0.4051**	0.008	2.0	ug/L	8	Standard
>	**Bi**	209	536583.7	0.6				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	50.0	52.0	**0.0277**	0.033	118.0	mg/L	53	Standard
K	39	30.0	60.1	**-0.0180**	0.035	192.8	mg/L	53	Standard
Ca	43	25.0	20.0	**-0.0605**	0.317	523.5	mg/L	28	Standard
Fe	54	115.1	13.0	**-0.0293**	0.011	38.4	mg/L	181	Standard
Fe	57	271.7	24.0	**0.1575**	0.193	122.6	mg/L	257	Standard
Sc-1	45	48402.2	0.5				mg/L	55220	Standard
Cl	35	40155.8	1.0				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1830.1	7.5				ug/L	2040	Standard
P	31	15689.8	3.7				ug/L	20435	Standard
S	34	2581.9	4.2				ug/L	2430	Standard
Sr	88	76.7	16.4				ug/L	75	Standard
C	12	103.3	43.6				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	213.3	35.5				mg/L	7	Standard
Dy	164	11.7	90.2				mg/L	9	Standard
Ho-1	165	10.0	100.0				mg/L	10	Standard
Er	166	33.3	62.5				mg/L	23	Standard
I	127	1745.1	30.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	114.223		
Al	27			
Sc	45			
Ti	47			
V	51	93.449		
Cr	52	79.097		
Cr	53			
Mn	55	86.911		
Co	59	100.725		
Ni	60	96.630		
Cu	65	96.860		
Zn	66	97.527		
Ge	72		92.721	
As	75	99.789		
Se	82	107.150		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	96.620		
Cd	111	94.287		
Cd	114			
> In	115			97.658
Sn	118			
Sb	123	91.986		
Ba	135	88.222		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	103.934		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.449		
U	238	101.266		
> Bi	209			99.181
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606036203
Sample Date/Time: Thursday, June 30, 2016 20:42:40
Number of Replicates: 3
Autosampler Position: 354
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76651.8	1.2				ug/L	74916	Standard
	Be	9	28.3	50.9	**0.0227**	0.014	60.0	ug/L	10	Standard
	Al	27	640328.6	1.2	**3.6044**	0.062	1.7	ug/L	1822	Standard
	Sc	45	43241.6	2.8				ug/L	55220	Standard
	Ti	47	248.0	8.7	**0.6477**	0.062	9.5	ug/L	34	Standard
	V	51	2583.8	3.1	**0.1372**	0.011	7.8	ug/L	1938	Standard
	Cr	52	5507.0	1.7	**-0.3077**	0.014	4.4	ug/L	9522	Standard
	Cr	53	3593.8	14.6	**3.4628**	0.558	16.1	ug/L	395	Standard
	Mn	55	5635941.5	0.8	**783.1928**	7.420	0.9	ug/L	902	Standard
	Co	59	6792.5	0.8	**0.9742**	0.006	0.6	ug/L	262	Standard
	Ni	60	2130.5	1.5	**0.9904**	0.019	1.9	ug/L	371	Standard
	Cu	65	2467.9	3.3	**1.2782**	0.046	3.6	ug/L	106	Standard
	Zn	66	6137.2	2.5	**5.2984**	0.146	2.8	ug/L	398	Standard
>	**Ge**	72	447801.7	0.2				ug/L	535147	Standard
	As	75	1508.3	2.0	**1.4009**	0.025	1.8	ug/L	-43	Standard
	Se	82	238.5	5.9	**2.0064**	0.127	6.3	ug/L	14	Standard
	Se-1	77	249.0	8.1	**2.7217**	0.263	9.7	ug/L	65	Standard
>	**Ga**	71	240.0	4.2				mg/L	97	Standard
	Rb	85	63461.0	2.7				ug/L	15	Standard
	Y	89	391275.2	1.5				ug/L	465704	Standard
>	**Rh**	103	106.7	13.5				ug/L	10	Standard
	Mo	98	1073579.5	0.4	**401.7377**	3.626	0.9	ug/L	9	Standard
	Ag	107	87.3	13.7	**0.0074**	0.002	25.3	ug/L	82	Standard
	Cd	111	-818.3	3.2	**-0.3880**	0.016	4.0	mg/L	7	Standard
	Cd	114	1651.3	10.4	**0.3409**	0.038	11.2	ug/L	21	Standard
>	**In**	115	530268.9	1.2				ug/L	619035	Standard
	Sn	118	203.3	18.1	**-0.0670**	0.006	9.2	ug/L	508	Standard
	Sb	123	1149.6	6.1	**0.2577**	0.013	5.0	ug/L	86	Standard
	Ba	135	3359.0	0.8	**1.6958**	0.031	1.8	ug/L	79	Standard
	Ce	140	3432.1	5.6				ug/L	68	Standard
>	**Tb**	159	837304.0	0.6				ug/L	986982	Standard
	Ho	165	81.7	27.6				ug/L	10	Standard
	Tl	203	136.7	19.4	**0.0233**	0.004	15.2	ug/L	13	Standard
	Tl	205	88.3	23.6	**0.0208**	0.003	15.2	ug/L	10	Standard
	Pb	206	550.7	4.5	**0.0708**	0.005	7.7	ug/L	264	Standard
	Pb	207	451.7	9.0	**0.0654**	0.010	14.9	ug/L	227	Standard
	Pb	208	1928.7	2.6	**0.0708**	0.004	5.7	ug/L	868	Standard
	U	238	98.0	36.2	**0.0229**	0.006	24.4	ug/L	8	Standard
>	**Bi**	209	468325.2	1.1				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	119319.7	0.6	**166.1256**	5.606	3.4	mg/L	53	Standard
K	39	5299.3	3.8	**11.4085**	0.316	2.8	mg/L	53	Standard
Ca	43	215.0	20.9	**13.8398**	2.992	21.6	mg/L	28	Standard
Fe	54	637.3	4.6	**0.4356**	0.010	2.3	mg/L	181	Standard
Fe	57	536.7	4.4	**1.1520**	0.042	3.7	mg/L	257	Standard
> **Sc-1**	45	43241.6	2.8				mg/L	55220	Standard
Cl	35	58098.5	1.3				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	34676.3	1.4				ug/L	2040	Standard
P	31	6889.9	4.6				ug/L	20435	Standard
S	34	2093.5	2.2				ug/L	2430	Standard
Sr	88	331.7	15.3				ug/L	75	Standard
C	12	116.7	54.4				mg/L	293	Standard
N	14	6.7	173.2				mg/L	0	Standard
Hg	202	3307.0	25.9				mg/L	7	Standard
Dy	164	130.0	8.2				mg/L	9	Standard
Ho-1	165	81.7	27.6				mg/L	10	Standard
Er	166	70.0	24.7				mg/L	23	Standard
I	127	366229.6	3.2				mg/L	1808	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		102.316	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		83.678	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	85.661	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	86.564	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 20:45:53
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83990.5	1.6				ug/L	74916	Standard
	Be	9	65171.5	1.4	**55.0945**	0.393	0.7	ug/L	10	Standard
	Al	27	8906533.3	1.1	**45.7799**	0.406	0.9	ug/L	1822	Standard
	Sc	45	48572.8	1.9				ug/L	55220	Standard
	Ti	47	37751.3	1.5	**97.3003**	0.891	0.9	ug/L	34	Standard
	V	51	436290.7	1.3	**49.9895**	0.349	0.7	ug/L	1938	Standard
	Cr	52	422974.4	1.0	**49.0536**	0.698	1.4	ug/L	9522	Standard
	Cr	53	52040.9	1.9	**49.3027**	0.910	1.8	ug/L	395	Standard
	Mn	55	384063.1	1.2	**47.4615**	0.495	1.0	ug/L	902	Standard
	Co	59	398080.6	0.9	**52.0523**	0.925	1.8	ug/L	262	Standard
	Ni	60	103678.2	0.6	**49.1206**	0.741	1.5	ug/L	371	Standard
	Cu	65	102993.3	1.5	**49.6596**	0.307	0.6	ug/L	106	Standard
	Zn	66	61365.7	1.8	**49.9467**	0.087	0.2	ug/L	398	Standard
>	Ge	72	502569.8	2.0				ug/L	535147	Standard
	As	75	61842.1	1.6	**49.2214**	0.636	1.3	ug/L	-43	Standard
	Se	82	6409.0	1.2	**50.2632**	0.606	1.2	ug/L	14	Standard
	Se-1	77	4323.6	1.1	**50.5321**	0.649	1.3	ug/L	65	Standard
>	Ga	71	70.0	43.4				mg/L	97	Standard
	Rb	85	973.4	6.4				ug/L	15	Standard
	Y	89	445280.6	2.4				ug/L	465704	Standard
>	Rh	103	56.7	13.5				ug/L	10	Standard
	Mo	98	305918.8	0.8	**98.0968**	1.357	1.4	ug/L	9	Standard
	Ag	107	361617.9	0.6	**47.9187**	1.063	2.2	ug/L	82	Standard
	Cd	111	115336.2	1.8	**47.8055**	0.563	1.2	mg/L	7	Standard
	Cd	114	283581.1	0.5	**48.8167**	0.800	1.6	ug/L	21	Standard
>	In	115	618947.1	2.1				ug/L	619035	Standard
	Sn	118	321189.0	1.3	**49.2793**	1.581	3.2	ug/L	508	Standard
	Sb	123	254680.3	1.4	**48.1148**	1.181	2.5	ug/L	86	Standard
	Ba	135	105862.2	0.1	**46.3075**	1.051	2.3	ug/L	79	Standard
	Ce	140	278.3	15.3				ug/L	68	Standard
>	Tb	159	931972.9	1.4				ug/L	986982	Standard
	Ho	165	15.0	33.3				ug/L	10	Standard
	Tl	203	450548.5	1.4	**49.5430**	0.196	0.4	ug/L	13	Standard
	Tl	205	402706.3	2.1	**51.8449**	1.535	3.0	ug/L	10	Standard
	Pb	206	286824.8	0.4	**49.1101**	0.587	1.2	ug/L	264	Standard
	Pb	207	262479.7	0.1	**49.7276**	0.566	1.1	ug/L	227	Standard
	Pb	208	1067833.3	1.0	**52.4694**	1.100	2.1	ug/L	868	Standard
	U	238	395668.2	0.7	**52.5954**	0.841	1.6	ug/L	8	Standard
>	Bi	209	538895.0	1.1				ug/L	541014	Standard

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Na	23	1.7	173.2	**10.4524**	18.095	173.1	mg/L	2	Standard
Mg	24	4662.4	2.7	**5.7440**	0.220	3.8	mg/L	53	Standard
K	39	1790.1	8.6	**3.3791**	0.319	9.4	mg/L	53	Standard
Ca	43	108.3	7.1	**5.2962**	0.370	7.0	mg/L	28	Standard
Fe	54	6691.4	1.9	**5.0646**	0.058	1.1	mg/L	181	Standard
Fe	57	1865.1	3.8	**4.9539**	0.208	4.2	mg/L	257	Standard
Sc-1	45	48572.8	1.9				mg/L	55220	Standard
Cl	35	40060.9	1.3				ug/L	35504	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	2233.5	7.2				ug/L	2040	Standard
P	31	22233.0	3.1				ug/L	20435	Standard
S	34	2528.5	7.9				ug/L	2430	Standard
Sr	88	91.7	8.3				ug/L	75	Standard
C	12	140.0	32.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	850.0	27.5				mg/L	7	Standard
Dy	164	19.4	103.3				mg/L	9	Standard
Ho-1	165	15.0	33.3				mg/L	10	Standard
Er	166	13.3	86.6				mg/L	23	Standard
I	127	15705.0	17.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	110.189		
Al	27	91.560		
Sc	45			
Ti	47	97.300		
V	51	99.979		
Cr	52	98.107		
Cr	53			
Mn	55	94.923		
Co	59	104.105		
Ni	60	98.241		
Cu	65	99.319		
Zn	66	99.893		
Ge	72		93.912	
As	75	98.443		
Se	82	100.526		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.097		
Ag	107	95.837		
Cd	111	95.611		
Cd	114			
> In	115			99.986
Sn	118	98.559		
Sb	123	96.230		
Ba	135	92.615		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.086		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.939		
U	238	105.191		
> Bi	209			99.608
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 20:49:04
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81895.8	2.0				ug/L	74916	Standard
	Be	9	26.7	39.0	**0.0195**	0.009	45.9	ug/L	10	Standard
	Al	27	3003.6	21.0	**0.0135**	0.003	23.7	ug/L	1822	Standard
	Sc	45	48704.8	1.8				ug/L	55220	Standard
	Ti	47	37.3	15.5	**0.0267**	0.015	54.4	ug/L	34	Standard
	V	51	1722.1	9.7	**0.0031**	0.020	658.5	ug/L	1938	Standard
	Cr	52	6815.5	0.8	**-0.2272**	0.010	4.5	ug/L	9522	Standard
	Cr	53	573.3	10.8	**0.1635**	0.057	35.1	ug/L	395	Standard
	Mn	55	1172.7	8.8	**0.0410**	0.012	29.7	ug/L	902	Standard
	Co	59	290.0	11.9	**0.0153**	0.004	28.6	ug/L	262	Standard
	Ni	60	366.0	6.0	**0.0294**	0.010	34.3	ug/L	371	Standard
	Cu	65	230.7	7.0	**0.0533**	0.008	14.8	ug/L	106	Standard
	Zn	66	407.3	7.7	**-0.0106**	0.027	252.5	ug/L	398	Standard
>	**Ge**	72	499312.8	0.6				ug/L	535147	Standard
	As	75	-29.2	59.1	**0.0319**	0.014	43.1	ug/L	-43	Standard
	Se	82	22.7	5.9	**0.0825**	0.012	14.0	ug/L	14	Standard
	Se-1	77	47.0	27.2	**-0.0227**	0.150	659.5	ug/L	65	Standard
>	**Ga**	71	36.7	28.4				mg/L	97	Standard
	Rb	85	51.7	29.6				ug/L	15	Standard
	Y	89	445183.0	1.4				ug/L	465704	Standard
>	**Rh**	103	50.0	43.6				ug/L	10	Standard
	Mo	98	1174.7	4.2	**0.3885**	0.018	4.5	ug/L	9	Standard
	Ag	107	153.3	11.2	**0.0142**	0.002	15.5	ug/L	82	Standard
	Cd	111	17.6	18.0	**0.0152**	0.001	8.4	mg/L	7	Standard
	Cd	114	83.5	22.5	**0.0233**	0.003	13.5	ug/L	21	Standard
>	**In**	115	619708.4	0.7				ug/L	619035	Standard
	Sn	118	988.4	8.9	**0.0483**	0.013	27.6	ug/L	508	Standard
	Sb	123	746.5	30.0	**0.1454**	0.043	29.6	ug/L	86	Standard
	Ba	135	57.7	13.9	**0.0055**	0.003	60.4	ug/L	79	Standard
	Ce	140	110.0	20.8				ug/L	68	Standard
>	**Tb**	159	926404.8	1.4				ug/L	986982	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	111.0	16.0	**0.0181**	0.002	10.0	ug/L	13	Standard
	Tl	205	75.0	11.5	**0.0173**	0.001	5.8	ug/L	10	Standard
	Pb	206	345.0	8.6	**0.0210**	0.005	24.9	ug/L	264	Standard
	Pb	207	301.0	12.6	**0.0235**	0.007	27.7	ug/L	227	Standard
	Pb	208	1232.7	3.5	**0.0219**	0.002	9.1	ug/L	868	Standard
	U	238	74.3	13.5	**0.0177**	0.001	7.2	ug/L	8	Standard
>	**Bi**	209	541724.9	1.0				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	81.7	30.8	**0.0665**	0.032	48.4	mg/L	53	Standard
K	39	30.0	60.1	**-0.0186**	0.034	180.1	mg/L	53	Standard
Ca	43	16.7	34.6	**-0.6009**	0.384	63.8	mg/L	28	Standard
Fe	54	179.0	19.4	**0.0193**	0.025	127.5	mg/L	181	Standard
Fe	57	233.3	32.7	**0.0373**	0.225	603.1	mg/L	257	Standard
Sc-1	45	48704.8	1.8				mg/L	55220	Standard
Cl	35	39728.7	1.2				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1956.8	2.4				ug/L	2040	Standard
P	31	21510.3	0.9				ug/L	20435	Standard
S	34	2288.5	1.5				ug/L	2430	Standard
Sr	88	70.0	32.7				ug/L	75	Standard
C	12	173.3	17.6				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	363.3	43.9				mg/L	7	Standard
Dy	164	148.9	37.7				mg/L	9	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	23.3	89.2				mg/L	23	Standard
I	127	6463.1	9.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		93.304	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.109
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.131
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 20:52:16
Number of Replicates: 3
Autosampler Position: 115
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74727.2	2.6				ug/L	74916	Standard
	Be	9	25.0	80.0	**0.0199**	0.018	92.2	ug/L	10	Standard
	Al	27	5329.3	24.9	**0.0285**	0.008	27.8	ug/L	1822	Standard
	Sc	45	43377.0	2.4				ug/L	55220	Standard
	Ti	47	95.7	19.0	**0.2005**	0.047	23.3	ug/L	34	Standard
	V	51	4034.0	3.0	**0.3136**	0.012	4.0	ug/L	1938	Standard
	Cr	52	16438.9	5.2	**1.0993**	0.075	6.8	ug/L	9522	Standard
	Cr	53	685.0	9.8	**0.3309**	0.059	17.8	ug/L	395	Standard
	Mn	55	2971.0	23.2	**0.3001**	0.100	33.3	ug/L	902	Standard
	Co	59	289.7	6.6	**0.0189**	0.003	18.3	ug/L	262	Standard
	Ni	60	402.7	3.2	**0.0647**	0.006	10.0	ug/L	371	Standard
	Cu	65	334.0	2.3	**0.1185**	0.004	3.2	ug/L	106	Standard
	Zn	66	962.7	2.9	**0.5205**	0.017	3.3	ug/L	398	Standard
>	**Ge**	72	457222.8	1.7				ug/L	535147	Standard
	As	75	-15.7	124.6	**0.0417**	0.017	40.7	ug/L	-43	Standard
	Se	82	18.9	33.3	**0.0666**	0.057	85.8	ug/L	14	Standard
	Se-1	77	54.0	10.3	**0.1196**	0.060	50.6	ug/L	65	Standard
>	**Ga**	71	70.0	31.1				mg/L	97	Standard
	Rb	85	136.7	13.9				ug/L	15	Standard
	Y	89	396044.5	2.4				ug/L	465704	Standard
>	**Rh**	103	15.0	0.0				ug/L	10	Standard
	Mo	98	6104.3	29.3	**2.1953**	0.662	30.2	ug/L	9	Standard
	Ag	107	146.0	16.1	**0.0155**	0.003	22.0	ug/L	82	Standard
	Cd	111	22.1	12.0	**0.0181**	0.001	7.5	mg/L	7	Standard
	Cd	114	72.7	19.8	**0.0229**	0.003	12.7	ug/L	21	Standard
>	**In**	115	556161.3	1.4				ug/L	619035	Standard
	Sn	118	1453.4	5.0	**0.1451**	0.011	7.5	ug/L	508	Standard
	Sb	123	235.3	31.1	**0.0540**	0.016	29.5	ug/L	86	Standard
	Ba	135	137.3	10.9	**0.0472**	0.007	14.8	ug/L	79	Standard
	Ce	140	118.3	17.6				ug/L	68	Standard
>	**Tb**	159	853667.4	0.8				ug/L	986982	Standard
	Ho	165	16.7	45.8				ug/L	10	Standard
	Tl	203	839.7	20.5	**0.1050**	0.021	20.1	ug/L	13	Standard
	Tl	205	71.7	33.0	**0.0176**	0.003	18.3	ug/L	10	Standard
	Pb	206	351.7	6.0	**0.0268**	0.004	16.6	ug/L	264	Standard
	Pb	207	304.0	1.1	**0.0285**	0.001	4.5	ug/L	227	Standard
	Pb	208	1256.4	10.7	**0.0278**	0.007	25.6	ug/L	868	Standard
	U	238	77.3	38.0	**0.0189**	0.004	22.5	ug/L	8	Standard
>	**Bi**	209	503236.8	1.0				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	275.0	13.7	**0.3470**	0.051	14.8	mg/L	53	Standard
K	39	20.0	25.0	**-0.0326**	0.012	36.3	mg/L	53	Standard
Ca	43	31.7	50.8	**0.6274**	1.227	195.5	mg/L	28	Standard
Fe	54	68.3	18.4	**-0.0594**	0.012	19.5	mg/L	181	Standard
Fe	57	256.7	12.4	**0.2034**	0.114	56.2	mg/L	257	Standard
> **Sc-1**	45	43377.0	2.4				mg/L	55220	Standard
Cl	35	35122.0	1.2				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1736.8	10.5				ug/L	2040	Standard
P	31	8842.6	4.7				ug/L	20435	Standard
S	34	2135.2	4.7				ug/L	2430	Standard
Sr	88	68.3	18.4				ug/L	75	Standard
C	12	3483.7	8.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	57892.0	25.9				mg/L	7	Standard
Dy	164	3.2	186.4				mg/L	9	Standard
Ho-1	165	16.7	45.8				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	23	Standard
I	127	2947.0	35.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.747	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		85.439	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.843
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.017
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L
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Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 20:55:28
Number of Replicates: 3
Autosampler Position: 115
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74107.6	3.4				ug/L	74916	Standard
	Be	9	18.3	31.5	**0.0141**	0.006	42.8	ug/L	10	Standard
	Al	27	4844.5	86.9	**0.0263**	0.026	97.1	ug/L	1822	Standard
	Sc	45	44092.4	0.2				ug/L	55220	Standard
	Ti	47	70.3	15.9	**0.1280**	0.034	26.6	ug/L	34	Standard
	V	51	4108.2	2.7	**0.3192**	0.020	6.3	ug/L	1938	Standard
	Cr	52	16358.2	1.0	**1.0734**	0.017	1.6	ug/L	9522	Standard
	Cr	53	638.3	11.9	**0.2775**	0.078	28.3	ug/L	395	Standard
	Mn	55	3246.8	71.9	**0.3361**	0.323	96.1	ug/L	902	Standard
	Co	59	336.3	57.6	**0.0254**	0.028	112.0	ug/L	262	Standard
	Ni	60	401.7	10.9	**0.0628**	0.025	40.4	ug/L	371	Standard
	Cu	65	302.7	3.1	**0.1006**	0.005	4.6	ug/L	106	Standard
	Zn	66	958.0	2.9	**0.5097**	0.017	3.3	ug/L	398	Standard
>	**Ge**	72	460737.3	1.2				ug/L	535147	Standard
	As	75	-51.4	19.2	**0.0107**	0.008	79.3	ug/L	-43	Standard
	Se	82	17.6	15.9	**0.0542**	0.026	47.9	ug/L	14	Standard
	Se-1	77	52.0	10.7	**0.0890**	0.070	78.3	ug/L	65	Standard
>	**Ga**	71	48.3	15.8				mg/L	97	Standard
	Rb	85	86.7	23.3				ug/L	15	Standard
	Y	89	392306.0	1.1				ug/L	465704	Standard
>	**Rh**	103	26.7	75.8				ug/L	10	Standard
	Mo	98	3317.0	55.2	**1.2027**	0.666	55.4	ug/L	9	Standard
	Ag	107	87.3	8.1	**0.0068**	0.001	17.4	ug/L	82	Standard
	Cd	111	7.2	41.2	**0.0112**	0.001	11.8	mg/L	7	Standard
	Cd	114	32.4	63.2	**0.0151**	0.004	26.2	ug/L	21	Standard
>	**In**	115	555514.4	1.5				ug/L	619035	Standard
	Sn	118	1463.4	7.7	**0.1472**	0.019	12.7	ug/L	508	Standard
	Sb	123	120.8	37.8	**0.0299**	0.010	33.0	ug/L	86	Standard
	Ba	135	91.7	10.3	**0.0250**	0.004	16.5	ug/L	79	Standard
	Ce	140	56.7	58.8				ug/L	68	Standard
>	**Tb**	159	847707.0	2.4				ug/L	986982	Standard
	Ho	165	16.7	86.6				ug/L	10	Standard
	Tl	203	394.0	52.5	**0.0527**	0.025	47.6	ug/L	13	Standard
	Tl	205	63.3	139.1	**0.0165**	0.012	74.7	ug/L	10	Standard
	Pb	206	291.3	3.6	**0.0157**	0.003	16.4	ug/L	264	Standard
	Pb	207	294.3	19.3	**0.0266**	0.012	46.6	ug/L	227	Standard
	Pb	208	1276.7	28.9	**0.0290**	0.020	70.5	ug/L	868	Standard
	U	238	51.3	151.3	**0.0153**	0.011	73.4	ug/L	8	Standard
>	**Bi**	209	503355.5	1.6				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	240.0	22.0	**0.2930**	0.072	24.6	mg/L	53	Standard
K	39	33.3	17.3	**-0.0052**	0.012	235.9	mg/L	53	Standard
Ca	43	15.0	33.3	**-0.6108**	0.355	58.1	mg/L	28	Standard
Fe	54	49.8	55.4	**-0.0762**	0.024	30.8	mg/L	181	Standard
Fe	57	285.0	10.7	**0.2825**	0.101	35.6	mg/L	257	Standard
> **Sc-1**	45	44092.4	0.2				mg/L	55220	Standard
Cl	35	35796.9	0.4				ug/L	35504	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	1746.8	6.3				ug/L	2040	Standard
P	31	8695.8	2.3				ug/L	20435	Standard
S	34	2180.2	3.8				ug/L	2430	Standard
Sr	88	55.0	41.7				ug/L	75	Standard
C	12	3950.5	2.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	28517.7	48.5				mg/L	7	Standard
Dy	164	5.7	108.5				mg/L	9	Standard
Ho-1	165	16.7	86.6				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	23	Standard
I	127	1731.8	10.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.920	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		86.095	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.739
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.039
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 20:58:40
Number of Replicates: 3
Autosampler Position: 115
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72422.8	2.6				ug/L	74916	Standard
	Be	9	18.3	56.8	**0.0142**	0.010	68.2	ug/L	10	Standard
	Al	27	2110.1	8.4	**0.0102**	0.001	9.1	ug/L	1822	Standard
	Sc	45	43602.7	1.2				ug/L	55220	Standard
	Ti	47	62.3	13.8	**0.1046**	0.022	21.3	ug/L	34	Standard
	V	51	4028.3	2.4	**0.3078**	0.013	4.3	ug/L	1938	Standard
	Cr	52	16458.3	3.4	**1.0804**	0.041	3.8	ug/L	9522	Standard
	Cr	53	546.7	4.5	**0.1805**	0.026	14.2	ug/L	395	Standard
	Mn	55	1820.4	5.7	**0.1401**	0.013	9.1	ug/L	902	Standard
	Co	59	213.3	4.3	**0.0075**	0.001	16.9	ug/L	262	Standard
	Ni	60	381.0	3.9	**0.0513**	0.005	10.6	ug/L	371	Standard
	Cu	65	257.7	3.0	**0.0766**	0.006	8.0	ug/L	106	Standard
	Zn	66	935.0	3.8	**0.4873**	0.039	8.0	ug/L	398	Standard
>	**Ge**	72	461930.2	1.5				ug/L	535147	Standard
	As	75	-37.3	19.8	**0.0230**	0.006	26.4	ug/L	-43	Standard
	Se	82	18.4	28.2	**0.0606**	0.045	74.8	ug/L	14	Standard
	Se-1	77	54.7	14.7	**0.1228**	0.114	93.0	ug/L	65	Standard
>	**Ga**	71	36.7	34.3				mg/L	97	Standard
	Rb	85	78.3	20.5				ug/L	15	Standard
	Y	89	395553.6	0.8				ug/L	465704	Standard
>	**Rh**	103	25.0	40.0				ug/L	10	Standard
	Mo	98	1932.5	55.0	**0.7046**	0.386	54.7	ug/L	9	Standard
	Ag	107	81.0	10.1	**0.0059**	0.001	18.7	ug/L	82	Standard
	Cd	111	4.7	45.9	**0.0100**	0.001	10.0	mg/L	7	Standard
	Cd	114	20.4	173.1	**0.0128**	0.007	52.5	ug/L	21	Standard
>	**In**	115	555907.9	1.0				ug/L	619035	Standard
	Sn	118	1288.4	3.8	**0.1170**	0.006	5.4	ug/L	508	Standard
	Sb	123	110.1	37.8	**0.0276**	0.009	32.4	ug/L	86	Standard
	Ba	135	80.7	1.9	**0.0197**	0.001	5.7	ug/L	79	Standard
	Ce	140	45.0	19.2				ug/L	68	Standard
>	**Tb**	159	849258.9	2.2				ug/L	986982	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	249.3	55.6	**0.0354**	0.017	46.9	ug/L	13	Standard
	Tl	205	13.3	43.3	**0.0095**	0.001	8.6	ug/L	10	Standard
	Pb	206	280.0	3.7	**0.0134**	0.002	17.0	ug/L	264	Standard
	Pb	207	248.0	10.3	**0.0169**	0.005	27.4	ug/L	227	Standard
	Pb	208	1027.7	1.3	**0.0156**	0.001	3.2	ug/L	868	Standard
	U	238	6.7	62.4	**0.0088**	0.001	6.7	ug/L	8	Standard
>	**Bi**	209	504972.6	1.1				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	248.3	7.6	**0.3084**	0.030	9.7	mg/L	53	Standard
K	39	43.3	13.3	**0.0172**	0.013	78.0	mg/L	53	Standard
Ca	43	26.7	10.8	**0.2394**	0.228	95.3	mg/L	28	Standard
Fe	54	66.3	9.6	**-0.0616**	0.006	9.0	mg/L	181	Standard
Fe	57	245.0	13.4	**0.1599**	0.120	74.9	mg/L	257	Standard
> **Sc-1**	45	43602.7	1.2				mg/L	55220	Standard
Cl	35	35767.5	0.9				ug/L	35504	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	1663.4	4.1				ug/L	2040	Standard
P	31	8655.8	4.9				ug/L	20435	Standard
S	34	2086.8	3.5				ug/L	2430	Standard
Sr	88	85.0	5.9				ug/L	75	Standard
C	12	3550.4	2.0				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	17669.1	55.9				mg/L	7	Standard
Dy	164	16.2	33.1				mg/L	9	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	1548.4	10.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		96.671	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		86.318	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.802
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.338
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 21:01:53
Number of Replicates: 3
Autosampler Position: 115
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70967.6	3.2				ug/L	74916	Standard
	Be	9	10.0	50.0	**0.0065**	0.005	81.8	ug/L	10	Standard
	Al	27	1825.1	2.1	**0.0088**	0.001	6.7	ug/L	1822	Standard
	Sc	45	43183.1	1.3				ug/L	55220	Standard
	Ti	47	46.3	10.0	**0.0615**	0.015	24.5	ug/L	34	Standard
	V	51	4031.9	5.4	**0.3136**	0.018	5.7	ug/L	1938	Standard
	Cr	52	16465.3	2.4	**1.1053**	0.012	1.1	ug/L	9522	Standard
	Cr	53	573.3	5.6	**0.2154**	0.045	21.0	ug/L	395	Standard
	Mn	55	1795.8	0.8	**0.1395**	0.003	1.9	ug/L	902	Standard
	Co	59	228.3	2.0	**0.0100**	0.000	2.6	ug/L	262	Standard
	Ni	60	389.7	3.5	**0.0581**	0.009	14.9	ug/L	371	Standard
	Cu	65	286.3	12.8	**0.0934**	0.020	21.5	ug/L	106	Standard
	Zn	66	959.7	10.4	**0.5177**	0.074	14.3	ug/L	398	Standard
>	**Ge**	72	456824.0	1.9				ug/L	535147	Standard
	As	75	-60.5	32.8	**0.0024**	0.017	692.6	ug/L	-43	Standard
	Se	82	14.4	53.7	**0.0273**	0.066	241.8	ug/L	14	Standard
	Se-1	77	56.3	14.3	**0.1501**	0.094	62.3	ug/L	65	Standard
>	**Ga**	71	46.7	22.3				mg/L	97	Standard
	Rb	85	66.7	8.7				ug/L	15	Standard
	Y	89	394406.6	2.8				ug/L	465704	Standard
>	**Rh**	103	28.3	81.5				ug/L	10	Standard
	Mo	98	1379.0	55.6	**0.5084**	0.282	55.5	ug/L	9	Standard
	Ag	107	93.3	14.9	**0.0077**	0.002	24.1	ug/L	82	Standard
	Cd	111	2.7	63.5	**0.0091**	0.001	8.5	mg/L	7	Standard
	Cd	114	13.3	104.0	**0.0114**	0.003	22.5	ug/L	21	Standard
>	**In**	115	555788.7	2.3				ug/L	619035	Standard
	Sn	118	1306.7	4.4	**0.1202**	0.006	5.3	ug/L	508	Standard
	Sb	123	85.1	34.7	**0.0224**	0.007	29.2	ug/L	86	Standard
	Ba	135	84.7	11.8	**0.0216**	0.005	23.1	ug/L	79	Standard
	Ce	140	26.7	43.3				ug/L	68	Standard
>	**Tb**	159	844220.8	1.6				ug/L	986982	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	157.7	52.2	**0.0247**	0.010	40.0	ug/L	13	Standard
	Tl	205	8.3	69.3	**0.0088**	0.001	8.9	ug/L	10	Standard
	Pb	206	291.7	1.0	**0.0159**	0.001	6.1	ug/L	264	Standard
	Pb	207	254.3	4.8	**0.0186**	0.002	11.0	ug/L	227	Standard
	Pb	208	1047.3	0.4	**0.0170**	0.000	2.4	ug/L	868	Standard
	U	238	3.7	15.7	**0.0084**	0.000	1.0	ug/L	8	Standard
>	**Bi**	209	501630.8	0.9				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	171.7	16.0	**0.2049**	0.040	19.6	mg/L	53	Standard
K	39	36.7	7.9	**0.0036**	0.007	182.4	mg/L	53	Standard
Ca	43	20.0	43.3	**-0.2251**	0.633	281.0	mg/L	28	Standard
Fe	54	62.0	32.2	**-0.0648**	0.017	25.9	mg/L	181	Standard
Fe	57	311.7	15.6	**0.3918**	0.153	39.0	mg/L	257	Standard
> **Sc-1**	45	43183.1	1.3				mg/L	55220	Standard
Cl	35	36534.0	0.8				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1630.1	4.4				ug/L	2040	Standard
P	31	8617.5	1.2				ug/L	20435	Standard
S	34	2181.8	2.4				ug/L	2430	Standard
Sr	88	70.0	7.1				ug/L	75	Standard
C	12	3767.1	7.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	12269.4	57.6				mg/L	7	Standard
Dy	164	9.4	117.2				mg/L	9	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	13.3	173.2				mg/L	23	Standard
I	127	1266.7	12.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.729	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		85.364	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.783
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.720
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 21:05:05
Number of Replicates: 3
Autosampler Position: 115
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71520.1	2.1				ug/L	74916	Standard
	Be	9	11.7	65.5	**0.0081**	0.008	97.6	ug/L	10	Standard
	Al	27	1998.5	3.6	**0.0097**	0.001	7.1	ug/L	1822	Standard
	Sc	45	44115.8	2.0				ug/L	55220	Standard
	Ti	47	47.7	12.6	**0.0657**	0.019	28.6	ug/L	34	Standard
	V	51	4000.4	3.0	**0.3117**	0.010	3.2	ug/L	1938	Standard
	Cr	52	16493.6	3.3	**1.1165**	0.023	2.1	ug/L	9522	Standard
	Cr	53	511.7	6.5	**0.1519**	0.031	20.7	ug/L	395	Standard
	Mn	55	1810.4	3.6	**0.1425**	0.010	6.8	ug/L	902	Standard
	Co	59	200.3	4.5	**0.0061**	0.001	16.1	ug/L	262	Standard
	Ni	60	365.0	4.2	**0.0460**	0.012	26.4	ug/L	371	Standard
	Cu	65	258.7	3.1	**0.0791**	0.002	2.4	ug/L	106	Standard
	Zn	66	938.4	6.5	**0.5027**	0.058	11.5	ug/L	398	Standard
>	**Ge**	72	455193.4	2.3				ug/L	535147	Standard
	As	75	-21.6	123.1	**0.0365**	0.023	63.2	ug/L	-43	Standard
	Se	82	21.3	13.5	**0.0879**	0.025	28.1	ug/L	14	Standard
	Se-1	77	54.0	21.0	**0.1214**	0.131	107.7	ug/L	65	Standard
>	**Ga**	71	41.7	36.7				mg/L	97	Standard
	Rb	85	68.3	29.6				ug/L	15	Standard
	Y	89	395254.2	2.3				ug/L	465704	Standard
>	**Rh**	103	31.7	9.1				ug/L	10	Standard
	Mo	98	1044.1	52.0	**0.3862**	0.198	51.3	ug/L	9	Standard
	Ag	107	86.3	9.3	**0.0066**	0.001	15.4	ug/L	82	Standard
	Cd	111	1.5	101.2	**0.0086**	0.001	8.3	mg/L	7	Standard
	Cd	114	22.1	38.8	**0.0131**	0.002	12.5	ug/L	21	Standard
>	**In**	115	556687.6	1.3				ug/L	619035	Standard
	Sn	118	1351.7	12.8	**0.1278**	0.032	25.1	ug/L	508	Standard
	Sb	123	82.0	27.7	**0.0217**	0.005	23.0	ug/L	86	Standard
	Ba	135	86.0	10.1	**0.0222**	0.005	20.9	ug/L	79	Standard
	Ce	140	31.7	59.8				ug/L	68	Standard
>	**Tb**	159	840648.0	0.2				ug/L	986982	Standard
	Ho	165	1.7	173.2				ug/L	10	Standard
	Tl	203	128.7	56.4	**0.0213**	0.009	41.0	ug/L	13	Standard
	Tl	205	13.3	43.3	**0.0095**	0.001	8.7	ug/L	10	Standard
	Pb	206	282.3	1.0	**0.0143**	0.001	9.6	ug/L	264	Standard
	Pb	207	227.7	8.2	**0.0133**	0.005	34.0	ug/L	227	Standard
	Pb	208	1009.3	4.5	**0.0151**	0.003	19.8	ug/L	868	Standard
	U	238	9.0	29.4	**0.0092**	0.000	4.0	ug/L	8	Standard
>	**Bi**	209	500253.7	1.7				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	211.7	3.6	**0.2541**	0.005	2.0	mg/L	53	Standard
K	39	25.0	40.0	**-0.0231**	0.020	87.4	mg/L	53	Standard
Ca	43	18.3	15.7	**-0.3774**	0.183	48.6	mg/L	28	Standard
Fe	54	62.0	25.1	**-0.0660**	0.012	18.6	mg/L	181	Standard
Fe	57	230.0	10.0	**0.0993**	0.068	68.3	mg/L	257	Standard
Sc-1	45	44115.8	2.0				mg/L	55220	Standard
Cl	35	36965.0	0.6				ug/L	35504	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	1676.8	11.7				ug/L	2040	Standard
P	31	8922.6	3.5				ug/L	20435	Standard
S	34	2015.1	2.7				ug/L	2430	Standard
Sr	88	75.0	24.0				ug/L	75	Standard
C	12	3437.1	3.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	8963.2	57.5				mg/L	7	Standard
Dy	164	6.0	93.6				mg/L	9	Standard
Ho-1	165	1.7	173.2				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	1223.4	8.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		95.467	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		85.060	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.928
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.466
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 21:08:17
Number of Replicates: 3
Autosampler Position: 115
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79091.8	20.9				ug/L	74916	Standard
	Be	9	11.7	89.2	**0.0084**	0.011	129.8	ug/L	10	Standard
	Al	27	2535.3	65.2	**0.0130**	0.012	88.5	ug/L	1822	Standard
	Sc	45	46831.6	14.3				ug/L	55220	Standard
	Ti	47	69.7	56.4	**0.1207**	0.113	93.8	ug/L	34	Standard
	V	51	2046.5	53.7	**0.0549**	0.148	270.3	ug/L	1938	Standard
	Cr	52	8324.7	51.7	**0.0115**	0.602	5252.2	ug/L	9522	Standard
	Cr	53	435.0	32.0	**0.0505**	0.173	343.3	ug/L	395	Standard
	Mn	55	1487.1	61.3	**0.0934**	0.137	146.6	ug/L	902	Standard
	Co	59	228.0	22.1	**0.0085**	0.010	121.0	ug/L	262	Standard
	Ni	60	318.3	14.8	**0.0117**	0.033	284.7	ug/L	371	Standard
	Cu	65	185.0	23.0	**0.0347**	0.028	81.3	ug/L	106	Standard
	Zn	66	569.7	56.9	**0.1528**	0.310	203.0	ug/L	398	Standard
>	**Ge**	72	489383.6	10.3				ug/L	535147	Standard
	As	75	12.9	27.7	**0.0660**	0.004	5.6	ug/L	-43	Standard
	Se	82	28.6	46.2	**0.1408**	0.122	86.4	ug/L	14	Standard
	Se-1	77	40.0	7.5	**-0.0938**	0.040	42.9	ug/L	65	Standard
>	**Ga**	71	38.3	27.2				mg/L	97	Standard
	Rb	85	101.7	56.8				ug/L	15	Standard
	Y	89	433042.0	13.5				ug/L	465704	Standard
>	**Rh**	103	33.3	56.8				ug/L	10	Standard
	Mo	98	897.2	72.7	**0.3249**	0.253	77.9	ug/L	9	Standard
	Ag	107	121.0	8.1	**0.0105**	0.004	35.8	ug/L	82	Standard
	Cd	111	8.3	145.2	**0.0119**	0.006	50.5	mg/L	7	Standard
	Cd	114	50.3	126.0	**0.0188**	0.013	70.7	ug/L	21	Standard
>	**In**	115	612202.9	13.4				ug/L	619035	Standard
	Sn	118	860.0	54.7	**0.0372**	0.087	234.5	ug/L	508	Standard
	Sb	123	103.8	56.3	**0.0253**	0.013	52.6	ug/L	86	Standard
	Ba	135	77.7	64.8	**0.0170**	0.027	158.0	ug/L	79	Standard
	Ce	140	131.7	91.5				ug/L	68	Standard
>	**Tb**	159	976671.3	15.8				ug/L	986982	Standard
	Ho	165	13.3	57.3				ug/L	10	Standard
	Tl	203	125.3	82.5	**0.0201**	0.013	66.3	ug/L	13	Standard
	Tl	205	36.7	90.8	**0.0126**	0.005	40.2	ug/L	10	Standard
	Pb	206	330.0	2.8	**0.0154**	0.009	56.4	ug/L	264	Standard
	Pb	207	286.0	5.8	**0.0176**	0.007	41.7	ug/L	227	Standard
	Pb	208	1154.7	6.9	**0.0148**	0.007	44.9	ug/L	868	Standard
	U	238	30.3	130.6	**0.0122**	0.006	48.8	ug/L	8	Standard
>	**Bi**	209	583026.9	16.2				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	126.7	59.8	**0.1391**	0.115	82.4	mg/L	53	Standard
K	39	33.3	56.8	**-0.0074**	0.041	553.5	mg/L	53	Standard
Ca	43	25.0	52.9	**0.0888**	1.136	1278.0	mg/L	28	Standard
Fe	54	85.7	21.5	**-0.0476**	0.024	49.4	mg/L	181	Standard
Fe	57	338.3	4.3	**0.4110**	0.186	45.2	mg/L	257	Standard
> **Sc-1**	45	46831.6	14.3				mg/L	55220	Standard
Cl	35	23783.5	26.5				ug/L	35504	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	970.0	32.6				ug/L	2040	Standard
P	31	9866.7	27.4				ug/L	20435	Standard
S	34	1328.4	29.5				ug/L	2430	Standard
Sr	88	88.3	25.5				ug/L	75	Standard
C	12	1143.4	80.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6285.3	85.7				mg/L	7	Standard
Dy	164	19.4	2.9				mg/L	9	Standard
Ho-1	165	13.3	57.3				mg/L	10	Standard
Er	166	13.3	86.6				mg/L	23	Standard
I	127	1403.4	57.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.573	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		91.448	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.896
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.766
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 21:11:29
Number of Replicates: 3
Autosampler Position: 116
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68032.5	2.4				ug/L	74916	Standard
	Be	9	15.0	33.3	**0.0121**	0.005	44.8	ug/L	10	Standard
	Al	27	1520.1	11.9	**0.0073**	0.001	12.3	ug/L	1822	Standard
	Sc	45	44854.6	1.7				ug/L	55220	Standard
	Ti	47	28.3	13.4	**0.0111**	0.011	99.2	ug/L	34	Standard
	V	51	1373.4	4.7	**-0.0209**	0.006	27.4	ug/L	1938	Standard
	Cr	52	6353.7	0.6	**-0.2036**	0.017	8.4	ug/L	9522	Standard
	Cr	53	455.0	13.2	**0.0946**	0.057	59.7	ug/L	395	Standard
	Mn	55	597.0	2.1	**-0.0230**	0.002	9.0	ug/L	902	Standard
	Co	59	202.7	3.0	**0.0066**	0.001	9.2	ug/L	262	Standard
	Ni	60	304.3	5.9	**0.0151**	0.011	70.9	ug/L	371	Standard
	Cu	65	150.7	0.8	**0.0220**	0.001	3.9	ug/L	106	Standard
	Zn	66	281.0	12.5	**-0.0907**	0.034	37.1	ug/L	398	Standard
>	**Ge**	72	452431.5	1.5				ug/L	535147	Standard
	As	75	-52.0	87.3	**0.0089**	0.041	462.8	ug/L	-43	Standard
	Se	82	17.7	69.0	**0.0566**	0.104	184.5	ug/L	14	Standard
	Se-1	77	45.3	9.9	**0.0146**	0.068	469.5	ug/L	65	Standard
>	**Ga**	71	31.7	9.1				mg/L	97	Standard
	Rb	85	43.3	56.9				ug/L	15	Standard
	Y	89	399241.3	2.0				ug/L	465704	Standard
>	**Rh**	103	28.3	20.4				ug/L	10	Standard
	Mo	98	105.1	18.7	**0.0502**	0.008	15.0	ug/L	9	Standard
	Ag	107	88.0	11.0	**0.0070**	0.001	18.6	ug/L	82	Standard
	Cd	111	2.8	95.0	**0.0092**	0.001	13.5	mg/L	7	Standard
	Cd	114	12.9	40.7	**0.0114**	0.001	8.9	ug/L	21	Standard
>	**In**	115	552377.7	1.3				ug/L	619035	Standard
	Sn	118	451.7	11.2	**-0.0256**	0.010	37.7	ug/L	508	Standard
	Sb	123	75.5	18.8	**0.0204**	0.003	15.3	ug/L	86	Standard
	Ba	135	23.0	26.4	**-0.0084**	0.003	34.2	ug/L	79	Standard
	Ce	140	28.3	27.0				ug/L	68	Standard
>	**Tb**	159	829888.8	1.2				ug/L	986982	Standard
	Ho	165	6.7	173.2				ug/L	10	Standard
	Tl	203	11.3	5.1	**0.0074**	0.000	1.0	ug/L	13	Standard
	Tl	205	6.7	43.3	**0.0086**	0.000	4.8	ug/L	10	Standard
	Pb	206	245.0	4.9	**0.0084**	0.002	26.2	ug/L	264	Standard
	Pb	207	199.0	4.6	**0.0083**	0.002	29.5	ug/L	227	Standard
	Pb	208	835.0	4.7	**0.0068**	0.002	35.3	ug/L	868	Standard
	U	238	6.3	24.1	**0.0088**	0.000	2.4	ug/L	8	Standard
>	**Bi**	209	490010.4	1.3				ug/L	541014	Standard

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Na	23	3.3	173.2	**23.0691**	39.948	173.2	mg/L	2	Standard
Mg	24	63.3	39.7	**0.0506**	0.034	67.3	mg/L	53	Standard
K	39	40.0	33.1	**0.0078**	0.029	370.2	mg/L	53	Standard
Ca	43	28.3	50.9	**0.2915**	0.970	332.9	mg/L	28	Standard
Fe	54	92.7	32.9	**-0.0409**	0.026	63.3	mg/L	181	Standard
Fe	57	283.3	28.6	**0.2638**	0.276	104.6	mg/L	257	Standard
> **Sc-1**	45	44854.6	1.7				mg/L	55220	Standard
Cl	35	38032.3	1.6				ug/L	35504	Standard
Kr	83	1.7	124.9				ug/L	2	Standard
Br	81	1593.4	9.4				ug/L	2040	Standard
P	31	12683.6	1.9				ug/L	20435	Standard
S	34	2303.5	2.6				ug/L	2430	Standard
Sr	88	75.0	40.6				ug/L	75	Standard
C	12	130.0	23.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	7	Standard
Dy	164	9.5	100.0				mg/L	9	Standard
Ho-1	165	6.7	173.2				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	7281.8	4.1				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.811	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		84.543	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	89.232	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	90.573	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 21:14:41
Number of Replicates: 3
Autosampler Position: 116
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68866.2	2.2				ug/L	74916	Standard
	Be	9	16.7	69.3	**0.0137**	0.012	89.8	ug/L	10	Standard
	Al	27	1236.7	3.0	**0.0054**	0.000	5.6	ug/L	1822	Standard
	Sc	45	44744.3	1.5				ug/L	55220	Standard
	Ti	47	30.0	20.3	**0.0150**	0.018	118.2	ug/L	34	Standard
	V	51	1428.1	4.2	**-0.0156**	0.010	66.8	ug/L	1938	Standard
	Cr	52	6350.3	0.8	**-0.2124**	0.008	3.9	ug/L	9522	Standard
	Cr	53	480.0	13.8	**0.1161**	0.062	53.6	ug/L	395	Standard
	Mn	55	557.7	5.1	**-0.0292**	0.003	9.3	ug/L	902	Standard
	Co	59	199.3	4.1	**0.0059**	0.002	26.9	ug/L	262	Standard
	Ni	60	314.0	9.2	**0.0186**	0.016	87.6	ug/L	371	Standard
	Cu	65	165.7	14.8	**0.0292**	0.013	43.5	ug/L	106	Standard
	Zn	66	281.7	4.8	**-0.0928**	0.011	11.9	ug/L	398	Standard
>	**Ge**	72	456950.4	1.7				ug/L	535147	Standard
	As	75	-61.8	37.2	**0.0010**	0.021	1957.9	ug/L	-43	Standard
	Se	82	14.6	27.6	**0.0286**	0.033	115.8	ug/L	14	Standard
	Se-1	77	52.0	10.7	**0.0956**	0.084	88.0	ug/L	65	Standard
>	**Ga**	71	45.0	33.3				mg/L	97	Standard
	Rb	85	35.0	37.8				ug/L	15	Standard
	Y	89	396910.4	1.2				ug/L	465704	Standard
>	**Rh**	103	31.7	32.9				ug/L	10	Standard
	Mo	98	81.1	8.9	**0.0413**	0.003	7.1	ug/L	9	Standard
	Ag	107	76.0	10.8	**0.0051**	0.001	22.4	ug/L	82	Standard
	Cd	111	3.5	58.0	**0.0095**	0.001	10.0	mg/L	7	Standard
	Cd	114	10.4	54.7	**0.0109**	0.001	10.0	ug/L	21	Standard
>	**In**	115	555953.8	1.2				ug/L	619035	Standard
	Sn	118	483.3	6.3	**-0.0208**	0.004	20.6	ug/L	508	Standard
	Sb	123	61.7	27.5	**0.0174**	0.004	21.0	ug/L	86	Standard
	Ba	135	17.7	31.2	**-0.0110**	0.003	25.3	ug/L	79	Standard
	Ce	140	28.3	66.8				ug/L	68	Standard
>	**Tb**	159	835275.0	2.0				ug/L	986982	Standard
	Ho	165	3.3	173.2				ug/L	10	Standard
	Tl	203	9.3	27.0	**0.0071**	0.000	4.1	ug/L	13	Standard
	Tl	205	10.0	50.0	**0.0091**	0.001	7.6	ug/L	10	Standard
	Pb	206	244.3	4.5	**0.0079**	0.002	19.6	ug/L	264	Standard
	Pb	207	203.3	6.9	**0.0089**	0.003	36.3	ug/L	227	Standard
	Pb	208	837.0	0.4	**0.0066**	0.000	5.6	ug/L	868	Standard
	U	238	3.7	41.7	**0.0084**	0.000	2.6	ug/L	8	Standard
>	**Bi**	209	493679.8	1.1				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	55.0	39.6	**0.0391**	0.028	71.6	mg/L	53	Standard
K	39	40.0	21.7	**0.0077**	0.018	229.4	mg/L	53	Standard
Ca	43	25.0	52.9	**0.0694**	0.922	1328.8	mg/L	28	Standard
Fe	54	86.2	14.3	**-0.0462**	0.011	23.1	mg/L	181	Standard
Fe	57	240.0	17.8	**0.1228**	0.148	120.6	mg/L	257	Standard
> **Sc-1**	45	44744.3	1.5				mg/L	55220	Standard
Cl	35	38930.6	1.7				ug/L	35504	Standard
Kr	83	2.7	43.3				ug/L	2	Standard
Br	81	1423.4	8.1				ug/L	2040	Standard
P	31	13542.8	9.7				ug/L	20435	Standard
S	34	2230.2	9.6				ug/L	2430	Standard
Sr	88	63.3	9.1				ug/L	75	Standard
C	12	106.7	30.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	2.9	203.0				mg/L	9	Standard
Ho-1	165	3.3	173.2				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	6659.8	6.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.924	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		85.388	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.810
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.251
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 21:17:53
Number of Replicates: 3
Autosampler Position: 116
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70512.1	1.9				ug/L	74916	Standard
	Be	9	13.3	43.3	**0.0099**	0.006	60.9	ug/L	10	Standard
	Al	27	1230.1	5.1	**0.0052**	0.000	6.2	ug/L	1822	Standard
	Sc	45	44657.4	2.0				ug/L	55220	Standard
	Ti	47	30.3	8.3	**0.0141**	0.007	48.4	ug/L	34	Standard
	V	51	1454.2	3.5	**-0.0161**	0.007	40.6	ug/L	1938	Standard
	Cr	52	6462.0	1.0	**-0.2150**	0.011	5.0	ug/L	9522	Standard
	Cr	53	418.3	0.7	**0.0430**	0.002	3.9	ug/L	395	Standard
	Mn	55	584.3	4.9	**-0.0272**	0.004	13.4	ug/L	902	Standard
	Co	59	213.0	12.1	**0.0072**	0.004	49.4	ug/L	262	Standard
	Ni	60	312.0	8.6	**0.0141**	0.013	94.7	ug/L	371	Standard
	Cu	65	165.7	5.6	**0.0274**	0.005	16.7	ug/L	106	Standard
	Zn	66	335.7	3.3	**-0.0503**	0.010	20.4	ug/L	398	Standard
>	**Ge**	72	466403.1	0.3				ug/L	535147	Standard
	As	75	-67.3	42.7	**-0.0024**	0.024	1031.7	ug/L	-43	Standard
	Se	82	8.0	106.3	**-0.0291**	0.072	247.4	ug/L	14	Standard
	Se-1	77	52.3	11.7	**0.0854**	0.080	93.8	ug/L	65	Standard
>	**Ga**	71	36.7	15.7				mg/L	97	Standard
	Rb	85	40.0	45.1				ug/L	15	Standard
	Y	89	406679.9	1.7				ug/L	465704	Standard
>	**Rh**	103	23.3	32.7				ug/L	10	Standard
	Mo	98	61.6	19.4	**0.0342**	0.004	12.7	ug/L	9	Standard
	Ag	107	80.7	11.5	**0.0057**	0.002	26.5	ug/L	82	Standard
	Cd	111	1.5	73.6	**0.0086**	0.001	6.0	mg/L	7	Standard
	Cd	114	20.3	46.0	**0.0128**	0.002	14.3	ug/L	21	Standard
>	**In**	115	560994.2	1.3				ug/L	619035	Standard
	Sn	118	548.3	9.6	**-0.0104**	0.009	90.2	ug/L	508	Standard
	Sb	123	47.7	27.8	**0.0144**	0.003	19.7	ug/L	86	Standard
	Ba	135	21.3	18.9	**-0.0093**	0.002	22.4	ug/L	79	Standard
	Ce	140	30.0	28.9				ug/L	68	Standard
>	**Tb**	159	855592.5	2.2				ug/L	986982	Standard
	Ho	165	6.7	114.6				ug/L	10	Standard
	Tl	203	5.7	97.2	**0.0067**	0.001	9.7	ug/L	13	Standard
	Tl	205	5.0	100.0	**0.0084**	0.001	8.3	ug/L	10	Standard
	Pb	206	239.0	2.2	**0.0064**	0.001	19.4	ug/L	264	Standard
	Pb	207	213.7	6.3	**0.0105**	0.003	29.4	ug/L	227	Standard
	Pb	208	840.3	4.1	**0.0062**	0.002	26.2	ug/L	868	Standard
	U	238	2.0	86.6	**0.0082**	0.000	3.1	ug/L	8	Standard
>	**Bi**	209	499713.5	0.8				ug/L	541014	Standard

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Na	23	1.7	173.2	**11.8358**	20.492	173.1	mg/L	2	Standard
Mg	24	53.3	51.6	**0.0373**	0.037	99.4	mg/L	53	Standard
K	39	40.0	45.1	**0.0081**	0.038	469.6	mg/L	53	Standard
Ca	43	18.3	78.7	**-0.3787**	1.044	275.8	mg/L	28	Standard
Fe	54	101.0	12.3	**-0.0336**	0.011	33.4	mg/L	181	Standard
Fe	57	258.3	8.1	**0.1828**	0.058	31.5	mg/L	257	Standard
Sc-1	45	44657.4	2.0				mg/L	55220	Standard
Cl	35	39868.4	0.5				ug/L	35504	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	1683.4	14.1				ug/L	2040	Standard
P	31	12468.5	0.6				ug/L	20435	Standard
S	34	2168.5	4.3				ug/L	2430	Standard
Sr	88	93.3	15.5				ug/L	75	Standard
C	12	116.7	60.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	-0.3	86.6				mg/L	9	Standard
Ho-1	165	6.7	114.6				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	23	Standard
I	127	5404.3	1.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		94.121	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		87.154	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.624
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.366
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 21:21:05
Number of Replicates: 3
Autosampler Position: 116
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69532.6	2.0				ug/L	74916	Standard
	Be	9	11.7	107.9	**0.0085**	0.013	155.7	ug/L	10	Standard
	Al	27	1261.7	3.6	**0.0055**	0.000	2.4	ug/L	1822	Standard
	Sc	45	44276.3	1.0				ug/L	55220	Standard
	Ti	47	26.3	4.4	**0.0035**	0.004	105.2	ug/L	34	Standard
	V	51	1388.4	2.7	**-0.0233**	0.006	24.3	ug/L	1938	Standard
	Cr	52	6486.7	0.7	**-0.2072**	0.012	5.7	ug/L	9522	Standard
	Cr	53	405.0	7.7	**0.0316**	0.032	101.9	ug/L	395	Standard
	Mn	55	617.7	1.1	**-0.0223**	0.002	7.0	ug/L	902	Standard
	Co	59	191.7	5.3	**0.0043**	0.001	28.3	ug/L	262	Standard
	Ni	60	323.7	12.1	**0.0210**	0.020	95.1	ug/L	371	Standard
	Cu	65	161.0	6.1	**0.0255**	0.006	22.4	ug/L	106	Standard
	Zn	66	333.3	4.6	**-0.0507**	0.012	23.5	ug/L	398	Standard
>	**Ge**	72	463825.0	0.7				ug/L	535147	Standard
	As	75	-56.2	16.5	**0.0068**	0.008	122.5	ug/L	-43	Standard
	Se	82	14.4	38.9	**0.0256**	0.047	183.0	ug/L	14	Standard
	Se-1	77	48.3	14.7	**0.0375**	0.088	235.9	ug/L	65	Standard
>	**Ga**	71	38.3	15.1				mg/L	97	Standard
	Rb	85	58.3	40.5				ug/L	15	Standard
	Y	89	397444.4	1.5				ug/L	465704	Standard
>	**Rh**	103	26.7	10.8				ug/L	10	Standard
	Mo	98	51.9	31.6	**0.0306**	0.006	18.6	ug/L	9	Standard
	Ag	107	86.0	9.9	**0.0065**	0.001	19.9	ug/L	82	Standard
	Cd	111	4.9	70.0	**0.0101**	0.002	15.3	mg/L	7	Standard
	Cd	114	3.6	328.3	**0.0096**	0.002	23.6	ug/L	21	Standard
>	**In**	115	562767.5	0.4				ug/L	619035	Standard
	Sn	118	671.7	10.1	**0.0101**	0.011	112.0	ug/L	508	Standard
	Sb	123	46.8	27.2	**0.0141**	0.003	18.5	ug/L	86	Standard
	Ba	135	23.7	6.5	**-0.0082**	0.001	9.0	ug/L	79	Standard
	Ce	140	21.7	35.3				ug/L	68	Standard
>	**Tb**	159	855180.1	0.4				ug/L	986982	Standard
	Ho	165	15.0	0.0				ug/L	10	Standard
	Tl	203	4.3	53.3	**0.0065**	0.000	4.2	ug/L	13	Standard
	Tl	205	5.0	100.0	**0.0084**	0.001	8.3	ug/L	10	Standard
	Pb	206	232.0	5.4	**0.0050**	0.002	45.1	ug/L	264	Standard
	Pb	207	201.0	15.5	**0.0079**	0.006	81.5	ug/L	227	Standard
	Pb	208	859.0	5.1	**0.0072**	0.002	32.4	ug/L	868	Standard
	U	238	1.3	43.3	**0.0081**	0.000	1.0	ug/L	8	Standard
>	**Bi**	209	500150.3	0.1				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	45.0	11.1	**0.0266**	0.006	23.2	mg/L	53	Standard
K	39	30.0	16.7	**-0.0125**	0.010	81.0	mg/L	53	Standard
Ca	43	8.3	91.7	**-1.0898**	0.535	49.1	mg/L	28	Standard
Fe	54	107.5	47.5	**-0.0271**	0.044	162.7	mg/L	181	Standard
Fe	57	278.3	8.5	**0.2562**	0.070	27.4	mg/L	257	Standard
> **Sc-1**	45	44276.3	1.0				mg/L	55220	Standard
Cl	35	39463.3	1.3				ug/L	35504	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1523.4	10.0				ug/L	2040	Standard
P	31	12618.6	4.2				ug/L	20435	Standard
S	34	2155.2	2.4				ug/L	2430	Standard
Sr	88	71.7	16.1				ug/L	75	Standard
C	12	113.3	5.1				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	9.4	114.5				mg/L	9	Standard
Ho-1	165	15.0	0.0				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	4117.2	7.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.814	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		86.672	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.910
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.447
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 21:24:18
Number of Replicates: 3
Autosampler Position: 116
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70078.4	0.8				ug/L	74916	Standard
	Be	9	13.3	21.7	**0.0099**	0.003	28.6	ug/L	10	Standard
	Al	27	1280.1	5.4	**0.0056**	0.000	7.4	ug/L	1822	Standard
	Sc	45	43723.0	1.0				ug/L	55220	Standard
	Ti	47	22.0	27.3	**-0.0089**	0.017	187.8	ug/L	34	Standard
	V	51	1515.7	2.4	**-0.0081**	0.005	58.8	ug/L	1938	Standard
	Cr	52	6681.5	1.2	**-0.1853**	0.011	5.9	ug/L	9522	Standard
	Cr	53	398.3	6.2	**0.0232**	0.024	105.4	ug/L	395	Standard
	Mn	55	625.7	3.4	**-0.0215**	0.002	11.4	ug/L	902	Standard
	Co	59	201.3	5.6	**0.0056**	0.002	30.5	ug/L	262	Standard
	Ni	60	326.3	2.3	**0.0218**	0.004	17.5	ug/L	371	Standard
	Cu	65	154.3	1.5	**0.0217**	0.001	6.3	ug/L	106	Standard
	Zn	66	362.7	5.5	**-0.0257**	0.019	73.1	ug/L	398	Standard
>	**Ge**	72	465484.6	0.4				ug/L	535147	Standard
	As	75	-39.2	24.9	**0.0216**	0.008	39.2	ug/L	-43	Standard
	Se	82	20.1	13.2	**0.0734**	0.022	30.6	ug/L	14	Standard
	Se-1	77	53.7	1.1	**0.1036**	0.010	10.0	ug/L	65	Standard
>	**Ga**	71	48.3	43.1				mg/L	97	Standard
	Rb	85	31.7	32.9				ug/L	15	Standard
	Y	89	401219.7	0.7				ug/L	465704	Standard
>	**Rh**	103	23.3	24.7				ug/L	10	Standard
	Mo	98	48.8	19.7	**0.0296**	0.003	11.4	ug/L	9	Standard
	Ag	107	74.7	8.6	**0.0048**	0.001	19.9	ug/L	82	Standard
	Cd	111	0.9	187.5	**0.0083**	0.001	9.4	mg/L	7	Standard
	Cd	114	23.8	79.8	**0.0134**	0.004	26.8	ug/L	21	Standard
>	**In**	115	561226.5	0.2				ug/L	619035	Standard
	Sn	118	665.0	10.1	**0.0093**	0.011	121.3	ug/L	508	Standard
	Sb	123	39.5	34.5	**0.0126**	0.003	22.4	ug/L	86	Standard
	Ba	135	21.0	21.8	**-0.0095**	0.002	23.5	ug/L	79	Standard
	Ce	140	16.7	34.6				ug/L	68	Standard
>	**Tb**	159	856155.5	0.8				ug/L	986982	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	3.7	15.7	**0.0064**	0.000	1.1	ug/L	13	Standard
	Tl	205	6.7	43.3	**0.0086**	0.000	4.6	ug/L	10	Standard
	Pb	206	233.3	6.1	**0.0051**	0.003	54.7	ug/L	264	Standard
	Pb	207	213.0	0.5	**0.0101**	0.000	2.5	ug/L	227	Standard
	Pb	208	875.7	2.1	**0.0079**	0.001	9.3	ug/L	868	Standard
	U	238	1.7	34.6	**0.0081**	0.000	1.0	ug/L	8	Standard
>	**Bi**	209	502169.3	0.6				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	48.3	21.5	**0.0320**	0.015	46.4	mg/L	53	Standard
K	39	40.0	33.1	**0.0099**	0.029	291.7	mg/L	53	Standard
Ca	43	8.3	69.3	**-1.0765**	0.420	39.0	mg/L	28	Standard
Fe	54	107.5	10.9	**-0.0263**	0.009	35.6	mg/L	181	Standard
Fe	57	255.0	17.0	**0.1894**	0.137	72.3	mg/L	257	Standard
Sc-1	45	43723.0	1.0				mg/L	55220	Standard
Cl	35	39852.4	2.0				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1556.7	12.4				ug/L	2040	Standard
P	31	12406.7	1.2				ug/L	20435	Standard
S	34	2413.5	4.0				ug/L	2430	Standard
Sr	88	101.7	15.8				ug/L	75	Standard
C	12	100.0	55.7				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	5.7	195.1				mg/L	9	Standard
Ho-1	165	8.3	69.3				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	23	Standard
I	127	3485.4	2.0				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.542	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		86.983	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.662
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.820
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 21:27:30
Number of Replicates: 3
Autosampler Position: 116
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70600.8	1.5				ug/L	74916	Standard
	Be	9	20.0	50.0	**0.0165**	0.010	61.3	ug/L	10	Standard
	Al	27	1301.7	8.3	**0.0056**	0.001	9.6	ug/L	1822	Standard
	Sc	45	43522.4	1.4				ug/L	55220	Standard
	Ti	47	21.0	16.5	**-0.0110**	0.010	89.8	ug/L	34	Standard
	V	51	1508.1	3.3	**-0.0070**	0.007	95.9	ug/L	1938	Standard
	Cr	52	6601.4	1.0	**-0.1862**	0.010	5.4	ug/L	9522	Standard
	Cr	53	400.0	3.3	**0.0296**	0.015	49.5	ug/L	395	Standard
	Mn	55	637.0	2.8	**-0.0190**	0.002	13.1	ug/L	902	Standard
	Co	59	213.0	3.3	**0.0076**	0.001	13.6	ug/L	262	Standard
	Ni	60	333.3	8.7	**0.0272**	0.015	54.0	ug/L	371	Standard
	Cu	65	145.7	8.0	**0.0180**	0.006	32.9	ug/L	106	Standard
	Zn	66	331.0	7.1	**-0.0506**	0.021	41.5	ug/L	398	Standard
>	**Ge**	72	460390.3	0.2				ug/L	535147	Standard
	As	75	-39.3	50.2	**0.0211**	0.017	80.5	ug/L	-43	Standard
	Se	82	18.5	30.7	**0.0620**	0.049	79.1	ug/L	14	Standard
	Se-1	77	51.3	11.4	**0.0811**	0.077	94.7	ug/L	65	Standard
>	**Ga**	71	43.3	6.7				mg/L	97	Standard
	Rb	85	43.3	35.3				ug/L	15	Standard
	Y	89	401358.3	0.8				ug/L	465704	Standard
>	**Rh**	103	31.7	63.8				ug/L	10	Standard
	Mo	98	50.7	21.3	**0.0304**	0.004	13.2	ug/L	9	Standard
	Ag	107	75.7	9.7	**0.0051**	0.001	19.9	ug/L	82	Standard
	Cd	111	3.3	17.8	**0.0094**	0.000	3.0	mg/L	7	Standard
	Cd	114	20.2	20.8	**0.0128**	0.001	6.2	ug/L	21	Standard
>	**In**	115	557303.8	1.0				ug/L	619035	Standard
	Sn	118	676.7	8.9	**0.0121**	0.010	86.8	ug/L	508	Standard
	Sb	123	37.0	29.8	**0.0122**	0.002	19.2	ug/L	86	Standard
	Ba	135	17.7	17.3	**-0.0110**	0.002	14.1	ug/L	79	Standard
	Ce	140	11.7	107.9				ug/L	68	Standard
>	**Tb**	159	848865.5	0.9				ug/L	986982	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	2.3	49.5	**0.0063**	0.000	2.2	ug/L	13	Standard
	Tl	205	6.7	114.6	**0.0086**	0.001	12.4	ug/L	10	Standard
	Pb	206	256.3	4.3	**0.0096**	0.001	15.5	ug/L	264	Standard
	Pb	207	197.3	10.3	**0.0072**	0.005	64.2	ug/L	227	Standard
	Pb	208	847.7	4.4	**0.0067**	0.002	30.4	ug/L	868	Standard
	U	238	2.0	100.0	**0.0082**	0.000	3.5	ug/L	8	Standard
>	**Bi**	209	499010.5	1.3				ug/L	541014	Standard

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Na	23	1.7	173.2	**11.7084**	20.271	173.1	mg/L	2	Standard
Mg	24	63.3	19.9	**0.0529**	0.016	30.8	mg/L	53	Standard
K	39	20.0	66.1	**-0.0329**	0.029	87.3	mg/L	53	Standard
Ca	43	28.3	56.7	**0.3528**	1.137	322.2	mg/L	28	Standard
Fe	54	82.7	9.2	**-0.0473**	0.006	11.9	mg/L	181	Standard
Fe	57	270.0	16.7	**0.2433**	0.139	57.0	mg/L	257	Standard
Sc-1	45	43522.4	1.4				mg/L	55220	Standard
Cl	35	39770.1	1.0				ug/L	35504	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1510.1	10.0				ug/L	2040	Standard
P	31	12520.2	3.3				ug/L	20435	Standard
S	34	2190.2	0.6				ug/L	2430	Standard
Sr	88	75.0	46.7				ug/L	75	Standard
C	12	93.3	44.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	2.9	202.3				mg/L	9	Standard
Ho-1	165	8.3	34.6				mg/L	10	Standard
Er	166	10.0					mg/L	23	Standard
I	127	3380.4	5.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.239	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		86.031	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	90.028	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	92.236	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 21:30:42
Number of Replicates: 3
Autosampler Position: 116
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69370.1	1.4				ug/L	74916	Standard
	Be	9	21.7	58.1	**0.0186**	0.013	70.4	ug/L	10	Standard
	Al	27	1571.8	27.3	**0.0074**	0.003	34.1	ug/L	1822	Standard
	Sc	45	44480.2	0.8				ug/L	55220	Standard
	Ti	47	21.7	19.2	**-0.0093**	0.012	124.9	ug/L	34	Standard
	V	51	1499.6	0.8	**-0.0084**	0.002	24.0	ug/L	1938	Standard
	Cr	52	6590.4	1.1	**-0.1892**	0.009	4.5	ug/L	9522	Standard
	Cr	53	373.3	4.7	**0.0010**	0.019	1762.9	ug/L	395	Standard
	Mn	55	653.0	18.5	**-0.0170**	0.016	94.4	ug/L	902	Standard
	Co	59	211.3	7.9	**0.0073**	0.002	31.5	ug/L	262	Standard
	Ni	60	313.3	3.1	**0.0166**	0.005	29.3	ug/L	371	Standard
	Cu	65	154.0	8.0	**0.0222**	0.006	28.1	ug/L	106	Standard
	Zn	66	375.0	3.1	**-0.0118**	0.011	92.9	ug/L	398	Standard
>	**Ge**	72	461224.5	0.2				ug/L	535147	Standard
	As	75	-46.0	23.6	**0.0154**	0.009	60.6	ug/L	-43	Standard
	Se	82	16.5	5.6	**0.0443**	0.008	17.8	ug/L	14	Standard
	Se-1	77	46.7	16.2	**0.0196**	0.097	493.7	ug/L	65	Standard
>	**Ga**	71	41.7	30.2				mg/L	97	Standard
	Rb	85	48.3	93.9				ug/L	15	Standard
	Y	89	394283.2	1.4				ug/L	465704	Standard
>	**Rh**	103	41.7	56.7				ug/L	10	Standard
	Mo	98	53.6	27.3	**0.0317**	0.005	16.9	ug/L	9	Standard
	Ag	107	102.3	32.4	**0.0091**	0.005	54.6	ug/L	82	Standard
	Cd	111	13.2	154.6	**0.0140**	0.009	67.7	mg/L	7	Standard
	Cd	114	40.7	92.9	**0.0168**	0.007	43.7	ug/L	21	Standard
>	**In**	115	552172.5	0.5				ug/L	619035	Standard
	Sn	118	720.0	11.5	**0.0206**	0.014	67.3	ug/L	508	Standard
	Sb	123	47.0	26.3	**0.0144**	0.003	18.5	ug/L	86	Standard
	Ba	135	50.7	104.9	**0.0053**	0.026	496.0	ug/L	79	Standard
	Ce	140	40.0	86.6				ug/L	68	Standard
>	**Tb**	159	844324.6	0.6				ug/L	986982	Standard
	Ho	165	6.7	86.6				ug/L	10	Standard
	Tl	203	37.7	143.5	**0.0105**	0.006	61.4	ug/L	13	Standard
	Tl	205	6.7	43.3	**0.0086**	0.000	4.7	ug/L	10	Standard
	Pb	206	266.7	10.1	**0.0118**	0.005	42.1	ug/L	264	Standard
	Pb	207	223.7	12.9	**0.0128**	0.006	46.1	ug/L	227	Standard
	Pb	208	861.0	3.8	**0.0076**	0.002	22.5	ug/L	868	Standard
	U	238	6.7	96.4	**0.0089**	0.001	10.5	ug/L	8	Standard
>	**Bi**	209	496597.9	0.1				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	70.0	32.7	**0.0603**	0.032	52.9	mg/L	53	Standard
K	39	43.3	6.7	**0.0153**	0.007	43.0	mg/L	53	Standard
Ca	43	20.0	66.1	**-0.2660**	0.936	352.0	mg/L	28	Standard
Fe	54	87.5	28.3	**-0.0447**	0.021	47.5	mg/L	181	Standard
Fe	57	265.0	11.5	**0.2083**	0.096	45.9	mg/L	257	Standard
> **Sc-1**	45	44480.2	0.8				mg/L	55220	Standard
Cl	35	39214.7	1.5				ug/L	35504	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1540.1	12.0				ug/L	2040	Standard
P	31	12109.8	3.8				ug/L	20435	Standard
S	34	2268.5	5.2				ug/L	2430	Standard
Sr	88	85.0	17.6				ug/L	75	Standard
C	12	106.7	46.2				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	7	Standard
Dy	164	8.7	192.2				mg/L	9	Standard
Ho-1	165	6.7	86.6				mg/L	10	Standard
Er	166	26.7	43.3				mg/L	23	Standard
I	127	3217.0	6.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.597	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		86.187	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	89.199	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	91.790	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L
Sample Date/Time: Thursday, June 30, 2016 21:33:54
Number of Replicates: 3
Autosampler Position: 116
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90450.1	20.6				ug/L	74916	Standard
	Be	9	5.0	0.0	**0.0004**	0.001	173.7	ug/L	10	Standard
	Al	27	775.0	31.7	**0.0016**	0.002	112.9	ug/L	1822	Standard
	Sc	45	50978.4	13.8				ug/L	55220	Standard
	Ti	47	26.0	7.7	**-0.0042**	0.020	469.4	ug/L	34	Standard
	V	51	784.9	9.1	**-0.1080**	0.026	24.3	ug/L	1938	Standard
	Cr	52	4060.9	14.4	**-0.5718**	0.120	21.0	ug/L	9522	Standard
	Cr	53	301.7	12.0	**-0.1069**	0.079	74.2	ug/L	395	Standard
	Mn	55	609.3	28.1	**-0.0297**	0.032	107.2	ug/L	902	Standard
	Co	59	219.7	9.5	**0.0048**	0.004	91.0	ug/L	262	Standard
	Ni	60	252.3	20.8	**-0.0270**	0.042	155.2	ug/L	371	Standard
	Cu	65	108.7	4.1	**-0.0076**	0.013	170.5	ug/L	106	Standard
	Zn	66	183.3	13.9	**-0.2033**	0.019	9.2	ug/L	398	Standard
>	**Ge**	72	535510.2	22.8				ug/L	535147	Standard
	As	75	37.6	99.0	**0.0872**	0.030	34.3	ug/L	-43	Standard
	Se	82	42.1	65.8	**0.2494**	0.250	100.3	ug/L	14	Standard
	Se-1	77	40.0	31.9	**-0.1439**	0.061	42.7	ug/L	65	Standard
>	**Ga**	71	35.0	0.0				mg/L	97	Standard
	Rb	85	48.3	33.3				ug/L	15	Standard
	Y	89	411465.1	30.1				ug/L	465704	Standard
>	**Rh**	103	28.3	36.7				ug/L	10	Standard
	Mo	98	125.1	60.3	**0.0647**	0.038	58.9	ug/L	9	Standard
	Ag	107	83.3	17.1	**0.0065**	0.002	37.8	ug/L	82	Standard
	Cd	111	2.1	24.7	**0.0090**	0.001	6.1	mg/L	7	Standard
	Cd	114	-0.7	1078.9	**0.0089**	0.002	18.4	ug/L	21	Standard
>	**In**	115	564958.1	33.0				ug/L	619035	Standard
	Sn	118	335.0	22.6	**-0.0453**	0.011	24.3	ug/L	508	Standard
	Sb	123	18.4	50.3	**0.0089**	0.003	36.4	ug/L	86	Standard
	Ba	135	15.7	9.8	**-0.0117**	0.002	17.4	ug/L	79	Standard
	Ce	140	20.0	25.0				ug/L	68	Standard
>	**Tb**	159	950315.9	31.4				ug/L	986982	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	8.3	73.3	**0.0070**	0.001	13.0	ug/L	13	Standard
	Tl	205	10.0	100.0	**0.0091**	0.001	14.1	ug/L	10	Standard
	Pb	206	274.0	27.4	**0.0059**	0.002	29.0	ug/L	264	Standard
	Pb	207	238.7	22.5	**0.0093**	0.001	16.0	ug/L	227	Standard
	Pb	208	974.0	15.7	**0.0072**	0.005	71.7	ug/L	868	Standard
	U	238	2.3	49.5	**0.0082**	0.000	1.4	ug/L	8	Standard
>	**Bi**	209	577512.8	26.0				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	18.3	**0.0162**	0.017	104.0	mg/L	53	Standard
K	39	18.3	15.7	**-0.0423**	0.002	4.5	mg/L	53	Standard
Ca	43	20.0	25.0	**-0.4400**	0.295	67.1	mg/L	28	Standard
Fe	54	111.2	48.2	**-0.0326**	0.048	147.4	mg/L	181	Standard
Fe	57	305.0	8.5	**0.2171**	0.057	26.1	mg/L	257	Standard
Sc-1	45	50978.4	13.8				mg/L	55220	Standard
Cl	35	19130.1	4.6				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	666.7	5.7				ug/L	2040	Standard
P	31	12328.9	39.2				ug/L	20435	Standard
S	34	1113.4	14.8				ug/L	2430	Standard
Sr	88	68.3	15.2				ug/L	75	Standard
C	12	93.3	55.0				mg/L	293	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	290.0	88.7				mg/L	7	Standard
Dy	164	12.9	45.1				mg/L	9	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	1068.4	17.3				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		120.735	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.068	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	91.264	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	106.746	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cr 52 Lower	Cr	52	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 30, 2016 21:37:07
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67431.4	0.9				ug/L	74916	Standard
	Be	9	53817.1	2.2	**56.6770**	1.756	3.1	ug/L	10	Standard
	Al	27	7915196.4	0.8	**50.6766**	0.779	1.5	ug/L	1822	Standard
	Sc	45	47487.7	2.6				ug/L	55220	Standard
	Ti	47	35585.1	0.5	**95.4658**	2.604	2.7	ug/L	34	Standard
	V	51	402119.5	0.8	**47.9478**	1.257	2.6	ug/L	1938	Standard
	Cr	52	400703.0	0.9	**48.3435**	0.787	1.6	ug/L	9522	Standard
	Cr	53	48943.9	1.1	**48.2440**	0.640	1.3	ug/L	395	Standard
	Mn	55	360303.0	0.3	**46.3376**	1.024	2.2	ug/L	902	Standard
	Co	59	357130.9	0.5	**48.6003**	1.378	2.8	ug/L	262	Standard
	Ni	60	97761.7	1.2	**48.1917**	0.589	1.2	ug/L	371	Standard
	Cu	65	97541.7	1.0	**48.9446**	0.765	1.6	ug/L	106	Standard
	Zn	66	58233.7	1.4	**49.3295**	1.243	2.5	ug/L	398	Standard
>	**Ge**	72	482994.3	2.4				ug/L	535147	Standard
	As	75	58332.8	0.8	**48.3177**	0.741	1.5	ug/L	-43	Standard
	Se	82	5861.9	0.6	**47.8385**	0.901	1.9	ug/L	14	Standard
	Se-1	77	3960.9	1.5	**48.1496**	1.207	2.5	ug/L	65	Standard
>	**Ga**	71	76.7	26.4				mg/L	97	Standard
	Rb	85	853.4	5.7				ug/L	15	Standard
	Y	89	414125.8	1.6				ug/L	465704	Standard
>	**Rh**	103	40.0	43.3				ug/L	10	Standard
	Mo	98	272355.1	0.4	**93.5687**	1.700	1.8	ug/L	9	Standard
	Ag	107	332621.4	0.0	**47.2188**	0.947	2.0	ug/L	82	Standard
	Cd	111	107165.6	0.8	**47.5953**	0.983	2.1	mg/L	7	Standard
	Cd	114	257847.8	1.0	**47.5584**	1.267	2.7	ug/L	21	Standard
>	**In**	115	577731.0	1.9				ug/L	619035	Standard
	Sn	118	300594.3	0.7	**49.4050**	1.294	2.6	ug/L	508	Standard
	Sb	123	236808.1	0.3	**47.9277**	0.854	1.8	ug/L	86	Standard
	Ba	135	99562.7	0.8	**46.6609**	1.297	2.8	ug/L	79	Standard
	Ce	140	140.0	35.2				ug/L	68	Standard
>	**Tb**	159	867654.4	1.3				ug/L	986982	Standard
	Ho	165	11.7	89.2				ug/L	10	Standard
	Tl	203	416289.5	1.3	**48.9625**	1.155	2.4	ug/L	13	Standard
	Tl	205	366754.2	0.8	**50.4878**	0.642	1.3	ug/L	10	Standard
	Pb	206	263152.9	0.6	**48.1874**	0.951	2.0	ug/L	264	Standard
	Pb	207	238074.2	0.7	**48.2372**	0.963	2.0	ug/L	227	Standard
	Pb	208	984369.0	1.0	**51.7197**	0.568	1.1	ug/L	868	Standard
	U	238	358515.6	1.0	**50.9636**	0.777	1.5	ug/L	8	Standard
>	**Bi**	209	503932.6	1.4				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4042.2	2.5	**5.0922**	0.253	5.0	mg/L	53	Standard
K	39	1623.4	6.5	**3.1316**	0.276	8.8	mg/L	53	Standard
Ca	43	90.0	9.6	**4.2482**	0.483	11.4	mg/L	28	Standard
Fe	54	5975.1	4.2	**4.6170**	0.222	4.8	mg/L	181	Standard
Fe	57	1913.5	4.0	**5.2334**	0.291	5.6	mg/L	257	Standard
> **Sc-1**	45	47487.7	2.6				mg/L	55220	Standard
Cl	35	39379.1	1.8				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1633.4	6.7				ug/L	2040	Standard
P	31	21400.1	1.3				ug/L	20435	Standard
S	34	2506.9	6.2				ug/L	2430	Standard
Sr	88	65.0	23.1				ug/L	75	Standard
C	12	90.0	29.4				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	20.0				mg/L	7	Standard
Dy	164	13.2	117.5				mg/L	9	Standard
Ho-1	165	11.7	89.2				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	23	Standard
I	127	8260.6	4.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	113.354		
Al	27	101.353		
Sc	45			
Ti	47	95.466		
V	51	95.896		
Cr	52	96.687		
Cr	53			
Mn	55	92.675		
Co	59	97.201		
Ni	60	96.383		
Cu	65	97.889		
Zn	66	98.659		
> Ge	72		90.255	
As	75	96.635		
Se	82	95.677		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	93.569		
Ag	107	94.438		
Cd	111	95.191		
Cd	114			
In	115		93.328	
Sn	118	98.810		
Sb	123	95.855		
Ba	135	93.322		
Ce	140			
Tb	159			
Ho	165			
Tl	203	97.925		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.439		
U	238	101.927		
Bi	209		93.146	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 30, 2016 21:40:19
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71900.2	1.6				ug/L	74916	Standard
	Be	9	21.7	35.3	**0.0178**	0.007	41.7	ug/L	10	Standard
	Al	27	2898.6	45.2	**0.0150**	0.008	50.6	ug/L	1822	Standard
	Sc	45	47536.1	1.4				ug/L	55220	Standard
	Ti	47	35.0	11.4	**0.0223**	0.010	42.7	ug/L	34	Standard
	V	51	1200.3	7.6	**-0.0548**	0.011	19.7	ug/L	1938	Standard
	Cr	52	6500.4	2.4	**-0.2503**	0.022	8.8	ug/L	9522	Standard
	Cr	53	503.3	12.8	**0.1049**	0.058	55.7	ug/L	395	Standard
	Mn	55	738.0	10.0	**-0.0115**	0.009	80.1	ug/L	902	Standard
	Co	59	292.0	26.9	**0.0163**	0.010	63.6	ug/L	262	Standard
	Ni	60	263.0	4.6	**-0.0175**	0.005	26.1	ug/L	371	Standard
	Cu	65	174.0	18.1	**0.0273**	0.015	54.7	ug/L	106	Standard
	Zn	66	341.7	8.5	**-0.0597**	0.023	38.4	ug/L	398	Standard
>	**Ge**	72	490224.0	1.2				ug/L	535147	Standard
	As	75	-42.6	38.6	**0.0204**	0.014	66.6	ug/L	-43	Standard
	Se	82	20.2	27.9	**0.0662**	0.046	69.7	ug/L	14	Standard
	Se-1	77	49.7	18.7	**0.0213**	0.119	560.0	ug/L	65	Standard
>	**Ga**	71	36.7	43.8				mg/L	97	Standard
	Rb	85	28.3	44.4				ug/L	15	Standard
	Y	89	430929.4	1.2				ug/L	465704	Standard
>	**Rh**	103	25.0	80.0				ug/L	10	Standard
	Mo	98	240.0	28.0	**0.0921**	0.022	24.4	ug/L	9	Standard
	Ag	107	163.3	39.5	**0.0164**	0.009	54.4	ug/L	82	Standard
	Cd	111	16.9	26.3	**0.0152**	0.002	12.7	mg/L	7	Standard
	Cd	114	59.4	58.0	**0.0195**	0.006	31.5	ug/L	21	Standard
>	**In**	115	597612.9	0.2				ug/L	619035	Standard
	Sn	118	955.0	17.0	**0.0486**	0.026	53.0	ug/L	508	Standard
	Sb	123	608.2	26.3	**0.1233**	0.031	25.2	ug/L	86	Standard
	Ba	135	47.3	46.9	**0.0018**	0.010	554.4	ug/L	79	Standard
	Ce	140	30.0	28.9				ug/L	68	Standard
>	**Tb**	159	896744.8	0.6				ug/L	986982	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	106.0	37.4	**0.0180**	0.004	24.3	ug/L	13	Standard
	Tl	205	63.3	40.5	**0.0161**	0.003	20.7	ug/L	10	Standard
	Pb	206	303.7	6.4	**0.0158**	0.003	18.7	ug/L	264	Standard
	Pb	207	270.0	14.7	**0.0195**	0.007	37.4	ug/L	227	Standard
	Pb	208	1117.7	11.7	**0.0182**	0.006	33.3	ug/L	868	Standard
	U	238	78.7	54.5	**0.0186**	0.006	30.9	ug/L	8	Standard
>	**Bi**	209	523387.9	0.9				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	40.0	76.0	**0.0164**	0.039	240.4	mg/L	53	Standard
K	39	20.0	90.1	**-0.0368**	0.035	96.4	mg/L	53	Standard
Ca	43	15.0	115.5	**-0.6879**	1.140	165.7	mg/L	28	Standard
Fe	54	175.7	28.7	**0.0207**	0.042	202.0	mg/L	181	Standard
Fe	57	243.3	3.1	**0.0857**	0.013	15.5	mg/L	257	Standard
> **Sc-1**	45	47536.1	1.4				mg/L	55220	Standard
Cl	35	37912.7	0.7				ug/L	35504	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1596.8	8.8				ug/L	2040	Standard
P	31	20108.3	2.8				ug/L	20435	Standard
S	34	2458.5	3.7				ug/L	2430	Standard
Sr	88	83.3	3.5				ug/L	75	Standard
C	12	106.7	10.8				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	100.0				mg/L	7	Standard
Dy	164	112.2	18.7				mg/L	9	Standard
Ho-1	165	8.3	69.3				mg/L	10	Standard
Er	166	23.3	49.5				mg/L	23	Standard
I	127	3290.4	8.4				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		91.605	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.539
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.742
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 01, 2016

Method 6020 - Summary Report

Sample ID: L1606036203
Sample Date/Time: Friday, July 01, 2016 08:32:04
Number of Replicates: 3
Autosampler Position: 354
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	93006.3	1.1				ug/L	74916	Standard
	Be	9	20.0	25.0	**0.0116**	0.004	31.7	ug/L	10	Standard
	Al	27	1552992.1	1.0	**7.2064**	0.052	0.7	ug/L	1822	Standard
	Sc	45	39419.6	2.0				ug/L	55220	Standard
	Ti	47	501.0	4.3	**1.5380**	0.050	3.3	ug/L	34	Standard
	V	51	2620.2	6.3	**0.1790**	0.027	14.9	ug/L	1938	Standard
	Cr	52	5440.0	0.8	**-0.2376**	0.005	2.2	ug/L	9522	Standard
	Cr	53	2233.5	15.4	**2.2669**	0.406	17.9	ug/L	395	Standard
	Mn	55	12884096.7	1.2	**1986.1988**	24.888	1.3	ug/L	902	Standard
	Co	59	14555.7	5.3	**2.3470**	0.122	5.2	ug/L	262	Standard
	Ni	60	4131.6	1.3	**2.2980**	0.028	1.2	ug/L	371	Standard
	Cu	65	3742.1	7.4	**2.1908**	0.182	8.3	ug/L	106	Standard
	Zn	66	6948.6	3.1	**6.7442**	0.282	4.2	ug/L	398	Standard
>	Ge	72	403717.5	1.3				ug/L	535147	Standard
	As	75	3272.2	1.7	**3.2933**	0.019	0.6	ug/L	-43	Standard
	Se	82	468.8	5.1	**4.4884**	0.233	5.2	ug/L	14	Standard
	Se-1	77	300.0	5.5	**3.8347**	0.277	7.2	ug/L	65	Standard
>	Ga	71	398.3	16.6				mg/L	97	Standard
	Rb	85	145071.3	1.5				ug/L	15	Standard
	Y	89	367799.2	1.0				ug/L	465704	Standard
>	Rh	103	268.3	26.2				ug/L	10	Standard
	Mo	98	2447721.3	1.3	**1045.0964**	23.451	2.2	ug/L	9	Standard
	Ag	107	96.3	15.8	**0.0109**	0.002	22.8	ug/L	82	Standard
	Cd	111	-2684.4	2.0	**-1.4735**	0.029	2.0	mg/L	7	Standard
	Cd	114	3116.6	4.8	**0.7235**	0.043	6.0	ug/L	21	Standard
>	In	115	464778.6	1.3				ug/L	619035	Standard
	Sn	118	200.0	24.6	**-0.0626**	0.010	15.4	ug/L	508	Standard
	Sb	123	1153.1	15.2	**0.2941**	0.041	13.9	ug/L	86	Standard
	Ba	135	7861.0	1.3	**4.5603**	0.044	1.0	ug/L	79	Standard
	Ce	140	10441.9	1.0				ug/L	68	Standard
>	Tb	159	822223.0	0.9				ug/L	986982	Standard
	Ho	165	268.3	15.6				ug/L	10	Standard
	Tl	203	82.3	15.6	**0.0175**	0.002	10.1	ug/L	13	Standard
	Tl	205	100.0	25.0	**0.0241**	0.004	17.6	ug/L	10	Standard
	Pb	206	1074.0	1.8	**0.1970**	0.007	3.8	ug/L	264	Standard
	Pb	207	905.4	2.5	**0.1858**	0.006	3.3	ug/L	227	Standard
	Pb	208	3476.2	0.7	**0.1797**	0.005	2.7	ug/L	868	Standard
	U	238	205.3	7.0	**0.0427**	0.002	4.1	ug/L	8	Standard
>	Bi	209	422495.5	2.5				ug/L	541014	Standard

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Na	23	3.3	173.2	**25.7144**	44.530	173.2	mg/L	2	Standard
Mg	24	307341.0	3.0	**469.1675**	11.229	2.4	mg/L	53	Standard
K	39	16730.9	4.5	**39.6882**	1.267	3.2	mg/L	53	Standard
Ca	43	478.3	5.8	**36.2580**	1.470	4.1	mg/L	28	Standard
Fe	54	1582.4	11.9	**1.3903**	0.161	11.6	mg/L	181	Standard
Fe	57	835.0	11.0	**2.4319**	0.278	11.5	mg/L	257	Standard
> **Sc-1**	45	39419.6	2.0				mg/L	55220	Standard
Cl	35	63976.8	1.8				ug/L	35504	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	84877.1	1.1				ug/L	2040	Standard
P	31	5806.1	1.9				ug/L	20435	Standard
S	34	1706.8	4.3				ug/L	2430	Standard
Sr	88	715.0	4.9				ug/L	75	Standard
C	12	340.0	5.9				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	150.0	63.6				mg/L	7	Standard
Dy	164	347.7	31.7				mg/L	9	Standard
Ho-1	165	268.3	15.6				mg/L	10	Standard
Er	166	186.7	25.3				mg/L	23	Standard
I	127	685083.8	4.9				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.147	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		75.440	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	75.081	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	78.093	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Mo 98 Upper, S, EEE	Mo	98	

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Cd 111 Lower	Cd	111

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 08:35:16
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	104652.1	3.1				ug/L	74916	Standard
	Be	9	65190.0	1.7	**44.2562**	1.577	3.6	ug/L	10	Standard
	Al	27	8981432.3	0.8	**37.0663**	0.908	2.4	ug/L	1822	Standard
	Sc	45	43714.6	1.6				ug/L	55220	Standard
	Ti	47	31848.4	0.7	**91.2042**	0.432	0.5	ug/L	34	Standard
	V	51	397692.8	1.5	**50.6325**	0.695	1.4	ug/L	1938	Standard
	Cr	52	364036.8	0.6	**46.8611**	0.164	0.3	ug/L	9522	Standard
	Cr	53	44369.9	2.1	**46.6840**	0.901	1.9	ug/L	395	Standard
	Mn	55	343511.4	1.2	**47.1649**	0.503	1.1	ug/L	902	Standard
	Co	59	365301.7	0.5	**53.0684**	0.242	0.5	ug/L	262	Standard
	Ni	60	88054.5	0.3	**46.3416**	0.215	0.5	ug/L	371	Standard
	Cu	65	88641.2	0.7	**47.4878**	0.316	0.7	ug/L	106	Standard
	Zn	66	53665.6	1.4	**48.5266**	0.608	1.3	ug/L	398	Standard
>	Ge	72	452264.7	0.2				ug/L	535147	Standard
	As	75	54576.0	1.2	**48.2651**	0.498	1.0	ug/L	-43	Standard
	Se	82	5913.9	1.8	**51.5338**	0.825	1.6	ug/L	14	Standard
	Se-1	77	3667.1	0.9	**47.5865**	0.510	1.1	ug/L	65	Standard
>	Ga	71	155.0	28.1				mg/L	97	Standard
	Rb	85	930.0	4.1				ug/L	15	Standard
	Y	89	421703.0	0.5				ug/L	465704	Standard
>	Rh	103	63.3	70.8				ug/L	10	Standard
	Mo	98	269466.6	0.9	**95.0402**	0.819	0.9	ug/L	9	Standard
	Ag	107	324401.6	1.1	**47.2760**	0.478	1.0	ug/L	82	Standard
	Cd	111	100577.6	0.8	**45.8578**	0.287	0.6	mg/L	7	Standard
	Cd	114	250730.0	1.0	**47.4721**	0.488	1.0	ug/L	21	Standard
>	In	115	562623.8	0.4				ug/L	619035	Standard
	Sn	118	281805.1	1.3	**47.5397**	0.439	0.9	ug/L	508	Standard
	Sb	123	224039.7	0.6	**46.5502**	0.156	0.3	ug/L	86	Standard
	Ba	135	98585.4	0.5	**47.4267**	0.184	0.4	ug/L	79	Standard
	Ce	140	163.3	18.5				ug/L	68	Standard
>	Tb	159	931867.2	1.5				ug/L	986982	Standard
	Ho	165	13.3	21.7				ug/L	10	Standard
	Tl	203	411636.8	0.3	**47.3597**	0.319	0.7	ug/L	13	Standard
	Tl	205	368917.7	1.2	**49.6846**	0.789	1.6	ug/L	10	Standard
	Pb	206	265065.5	0.3	**47.4786**	0.117	0.2	ug/L	264	Standard
	Pb	207	240273.2	0.7	**47.6208**	0.337	0.7	ug/L	227	Standard
	Pb	208	920376.8	1.1	**47.3047**	0.501	1.1	ug/L	868	Standard
	U	238	372261.0	0.4	**51.7673**	0.178	0.3	ug/L	8	Standard
>	Bi	209	515073.7	0.4				ug/L	541014	Standard

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Na	23	3.3	173.2	**23.6206**	40.903	173.2	mg/L	2	Standard
Mg	24	4920.8	2.5	**6.7416**	0.245	3.6	mg/L	53	Standard
K	39	1953.5	3.3	**4.1118**	0.137	3.3	mg/L	53	Standard
Ca	43	80.0	47.2	**4.0631**	2.720	67.0	mg/L	28	Standard
Fe	54	6442.0	0.3	**5.4265**	0.076	1.4	mg/L	181	Standard
Fe	57	1820.1	1.5	**5.4286**	0.169	3.1	mg/L	257	Standard
Sc-1	45	43714.6	1.6				mg/L	55220	Standard
Cl	35	25342.5	0.5				ug/L	35504	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	2553.5	7.8				ug/L	2040	Standard
P	31	17611.9	2.0				ug/L	20435	Standard
S	34	1886.8	9.4				ug/L	2430	Standard
Sr	88	51.7	22.3				ug/L	75	Standard
C	12	216.7	11.6				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	7	Standard
Dy	164	12.9	41.7				mg/L	9	Standard
Ho-1	165	13.3	21.7				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	9761.8	38.8				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	88.512		
Al	27	74.133		
Sc	45			
Ti	47	91.204		
V	51	101.265		
Cr	52	93.722		
Cr	53			
Mn	55	94.330		
Co	59	106.137		
Ni	60	92.683		
Cu	65	94.976		
Zn	66	97.053		
Ge	72		84.512	
As	75	96.530		
Se	82	103.068		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	95.040		
Ag	107	94.552		
Cd	111	91.716		
Cd	114			
> In	115		90.887	
Sn	118	95.079		
Sb	123	93.100		
Ba	135	94.853		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	94.719		
Tl	205			
Pb	206			
Pb	207			
Pb	208	94.609		
U	238	103.535		
> Bi	209		95.205	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 08:38:28
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	101832.7	0.1				ug/L	74916	Standard
	Be	9	21.7	13.3	**0.0115**	0.002	17.5	ug/L	10	Standard
	Al	27	3402.1	40.5	**0.0121**	0.006	48.4	ug/L	1822	Standard
	Sc	45	43323.5	1.5				ug/L	55220	Standard
	Ti	47	47.7	4.4	**0.0655**	0.006	9.3	ug/L	34	Standard
	V	51	1261.5	5.2	**-0.0363**	0.008	22.4	ug/L	1938	Standard
	Cr	52	6090.9	1.2	**-0.2438**	0.011	4.7	ug/L	9522	Standard
	Cr	53	543.3	24.4	**0.1852**	0.141	76.1	ug/L	395	Standard
	Mn	55	2328.9	74.2	**0.2134**	0.237	111.1	ug/L	902	Standard
	Co	59	267.0	18.5	**0.0157**	0.007	45.9	ug/L	262	Standard
	Ni	60	619.0	4.8	**0.1789**	0.016	9.1	ug/L	371	Standard
	Cu	65	403.7	9.0	**0.1563**	0.020	12.8	ug/L	106	Standard
	Zn	66	491.7	4.3	**0.0979**	0.020	20.8	ug/L	398	Standard
>	**Ge**	72	455524.9	0.3				ug/L	535147	Standard
	As	75	-12.5	248.3	**0.0443**	0.027	61.6	ug/L	-43	Standard
	Se	82	35.3	18.1	**0.2092**	0.056	26.8	ug/L	14	Standard
	Se-1	77	57.3	1.0	**0.1663**	0.008	4.8	ug/L	65	Standard
>	**Ga**	71	73.3	53.0				mg/L	97	Standard
	Rb	85	48.3	21.5				ug/L	15	Standard
	Y	89	420800.7	2.5				ug/L	465704	Standard
>	**Rh**	103	48.3	41.8				ug/L	10	Standard
	Mo	98	1359.7	4.4	**0.4956**	0.020	4.1	ug/L	9	Standard
	Ag	107	96.0	1.0	**0.0080**	0.000	3.1	ug/L	82	Standard
	Cd	111	11.8	64.2	**0.0133**	0.003	26.1	mg/L	7	Standard
	Cd	114	49.1	54.7	**0.0183**	0.005	27.7	ug/L	21	Standard
>	**In**	115	558184.5	0.7				ug/L	619035	Standard
	Sn	118	840.0	13.6	**0.0398**	0.020	49.3	ug/L	508	Standard
	Sb	123	615.3	27.1	**0.1333**	0.035	26.4	ug/L	86	Standard
	Ba	135	41.3	38.6	**0.0004**	0.008	1923.8	ug/L	79	Standard
	Ce	140	33.3	22.9				ug/L	68	Standard
>	**Tb**	159	919868.1	0.7				ug/L	986982	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	70.7	36.4	**0.0141**	0.003	20.9	ug/L	13	Standard
	Tl	205	83.3	59.2	**0.0189**	0.007	35.1	ug/L	10	Standard
	Pb	206	296.0	10.7	**0.0150**	0.006	38.5	ug/L	264	Standard
	Pb	207	242.3	9.3	**0.0146**	0.004	30.4	ug/L	227	Standard
	Pb	208	1060.7	19.5	**0.0159**	0.011	66.8	ug/L	868	Standard
	U	238	73.7	80.7	**0.0181**	0.008	45.5	ug/L	8	Standard
>	**Bi**	209	518253.1	0.4				ug/L	541014	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	108.3	23.2	**0.1158**	0.034	29.3	mg/L	53	Standard
K	39	28.3	44.4	**-0.0145**	0.028	192.8	mg/L	53	Standard
Ca	43	16.7	17.3	**-0.4722**	0.203	43.0	mg/L	28	Standard
Fe	54	122.7	13.1	**-0.0120**	0.015	126.5	mg/L	181	Standard
Fe	57	215.0	22.4	**0.0615**	0.153	249.0	mg/L	257	Standard
Sc-1	45	43323.5	1.5				mg/L	55220	Standard
Cl	35	25651.0	2.4				ug/L	35504	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	1796.8	2.2				ug/L	2040	Standard
P	31	17269.8	0.2				ug/L	20435	Standard
S	34	1768.4	7.7				ug/L	2430	Standard
Sr	88	51.7	11.2				ug/L	75	Standard
C	12	190.0	36.5				mg/L	293	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	0.0				mg/L	7	Standard
Dy	164	125.4	30.1				mg/L	9	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	26.7	21.7				mg/L	23	Standard
I	127	4757.4	13.5				mg/L	1808	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		85.121	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	90.170
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.793
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Se	82	
QC Std 7	Mo	98	

Sample ID: QC Std 7
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2.3.3 Metals CVAA Data (Mercury)

2.3.3.1 Summary Data

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-01	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18WW22-062116	**Prep Method:**	7470A	**Prep Date:**	06/23/2016 09:29
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/28/2016 14:32
Workgroup #:	WG574517	**Analyst:**	AMA	**Run Date:**	06/28/2016 16:38
Collect Date:	06/21/2016 07:55	**Dilution:**	1	**File ID:**	M7.062816.163856
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-03	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	C04F-062116	**Prep Method:**	7470A	**Prep Date:**	06/23/2016 09:29
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/28/2016 14:32
Workgroup #:	WG574517	**Analyst:**	AMA	**Run Date:**	06/28/2016 16:46
Collect Date:	06/21/2016 08:55	**Dilution:**	1	**File ID:**	M7.062816.164630
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-05	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	C04FFD-062116	**Prep Method:**	7470A	**Prep Date:**	06/23/2016 09:29
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/28/2016 14:32
Workgroup #:	WG574517	**Analyst:**	AMA	**Run Date:**	06/28/2016 16:49
Collect Date:	06/21/2016 08:55	**Dilution:**	1	**File ID:**	M7.062816.164902
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-06	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18CPTMW18-062116	**Prep Method:**	7470A	**Prep Date:**	06/23/2016 09:29
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/28/2016 14:32
Workgroup #:	WG574517	**Analyst:**	AMA	**Run Date:**	06/28/2016 16:51
Collect Date:	06/21/2016 10:05	**Dilution:**	1	**File ID:**	M7.062816.165134
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061227-07	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18WW18-062116	**Prep Method:**	7470A	**Prep Date:**	06/23/2016 09:29
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/28/2016 14:32
Workgroup #:	WG574517	**Analyst:**	AMA	**Run Date:**	06/28/2016 16:54
Collect Date:	06/21/2016 11:15	**Dilution:**	1	**File ID:**	M7.062816.165406
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061227
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.3.2 QC Summary

Example Cold Vapor Mercury Calculations
Hydra AA Mercury Analyzer / CETAC M-7600 Quick Trace Mercury Analyzer

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and five standards.

2.0 Calculating the concentration (C) of an element in water using data from run log and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to Volume (mL)	40
Vi = Aliquot Volume (mL)	40
D = Manual dilution factor, if required (10X = 10)	1
Cx = Concentration of element in ppb (ug/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Ws} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to volume (mL)	40
Ws = Aliquot weight (g)	0.6
D = Manual dilution factor	1
Cx = Concentration of element in ug/kg	6.67

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

1 Cx = Concentration calculated as received (wet basis)	6.67
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	8.33

8.33 ug/kg = 0.00833 mg/kg

TCLP Non-Volatile

Analyst(s): CPD
Date: 6/22/16
Filter Lot #: 9486030
Microbac SOP: TCLP 01 Rev #: 12

Analyst / Date		Analyst / Date	
CPD 6/22/16		CPD 6/23/16	
Time On	Temp On °C	Time Off	Temp Off °C
1457	23.1	0812	21.7

Agitator Speed 30 ± 2 rpm ☑

Jug #	Sample #	Tests	Method	Fluid #	Matrix *	% Solid	Pretest pH Initial	Pretest pH Final	Int. Wt. (g)	Fluid Vol. (mL)	Final extract pH
D	06-1191-01	9056	1312	SPLP FI-63	S	100	NA	NA	25.57	511	9.82
	-02								25.51	510	10.98
	-03								25.61	512	9.12
	-04								25.95	519	9.83
	-05								25.81	516	10.48
	-06								25.77	515	9.88
	-07								25.76	515	10.66
	-08								25.68	514	10.66
	-09								25.56	511	11.01
67	06-1164-11	ME, SV, Pest, Herb	1311	FI-182			7.27	3.78	100.99	2020	5.15
NA	FBIK1	ME, SV, Pest, Herb	1311	FI-182	NA	NA	NA	NA	100	100	4.91
NA	SPLP FI	9056	1312	SPLP FI-63	NA	NA	NA	NA	100	100	4.18

CPD 6/22/16

*Matrix Code: (S = solid, sand, soil or sludge) (P = paint) (O = organic) (W = water or aqueous waste)
D = Disposable plastic jug
TCLP Pretest weight will be 5.0 g (± 0.1) unless otherwise noted.
Temperature shall be maintained at 23° ± 2 for 18 ± 2 hours unless otherwise noted.

Comments: N/A

Peer Review By: Allie Alfred 06/23/2016

Microbac Laboratories Inc.
Metals Digest Log

Workgroup: WG573859
Analyst: REK
Spike Analyst: REK
Method: 7470A
Run Date: 06/23/2016 09:29
Hotblock Start Temp: 95.5 @ 09:25
Hotblock End Temp: 95.6 @ 11:25
Instrument: HB6

SOP: ME404 Revison 17
Spike Solution: STD76783
Spike Witness: AC
H2SO4 Lot #: COA18359
HNO3 Lot #: COA18905
40 & 50 ML. DIGESTION TU COA18987
K2S2O8 1:1 Lot #: RGT37046
KMnO4 1:1 Lot #: RGT37128
Mercury Water ICV Lot #: STD76785
HG H2O STDS 10PPM Lot #: STD76791

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Spike Amount	Due Date
1	WG573859-02	BLANK	1	40 mL	40 mL		
2	WG573699-01	FBLK1	17	4 mL	40 mL		
3	WG573859-03	LCS	1	40 mL	40 mL	4 mL	
4	L16061129-01	SAMP	1	40 mL	40 mL		07/05/16
5	L16061129-02	SAMP	1	40 mL	40 mL		07/05/16
6	L16061129-03	SAMP	1	40 mL	40 mL		07/05/16
7	L16061129-04	SAMP	1	40 mL	40 mL		07/05/16
8	L16061129-05	SAMP	1	40 mL	40 mL		07/05/16
9	WG573859-01	REF	17	4 mL	40 mL		
10	L16061164-11	SAMP	17	4 mL	40 mL		06/28/16
11	L16061190-01	SAMP	1	40 mL	40 mL		06/28/16
12	L16061190-02	SAMP	1	40 mL	40 mL		06/28/16
13	L16061227-01	SAMP	1	40 mL	40 mL		07/01/16
14	L16061227-03	SAMP	1	40 mL	40 mL		07/01/16
15	L16061227-05	SAMP	1	40 mL	40 mL		07/01/16
16	L16061227-06	SAMP	1	40 mL	40 mL		07/01/16
17	L16061227-07	SAMP	1	40 mL	40 mL		07/01/16
18	L16061242-01	SAMP	1	40 mL	40 mL		06/29/16
19	L16061242-02	SAMP	1	40 mL	40 mL		06/29/16
20	L16061242-03	SAMP	1	40 mL	40 mL		06/29/16
21	L16061242-04	SAMP	1	40 mL	40 mL		06/29/16
22	L16061242-05	SAMP	1	40 mL	40 mL		06/29/16
23	L16061242-06	SAMP	1	40 mL	40 mL		06/29/16
24	WG573859-04	MS	1	36 mL	40 mL	4 mL	
25	WG573859-05	MSD	1	36 mL	40 mL	4 mL	

Analyst: [signature]

Reviewer: [signature]

* All calibration and check standards are prepared and digested with sample batch following the procedures in section 7.0 of SOP ME404/ME405.

HB_DIG - Modified 07/26/2012
PDF ID: 4821018
Report generated: 06/23/2016 12:45

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 062816E.CSV
Analyst1: AMA Analyst2: N/A
Method: 7470A/245.1 SOP: ME404 Rev: 17
Maintenance Log ID:

Calibration Std: STD76791 ICV Std: STD76785 Post Spike: STD76791
ICSA: N/A ICSAB: N/A Int. Std:
CCV: LLCCV: Tuning Sol :
Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 573905, 574517

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	M7.062816.141939	WG574627-01	Calibration Point		1		06/28/16 14:19
2	M7.062816.142210	WG574627-02	Calibration Point		1		06/28/16 14:22
3	M7.062816.142442	WG574627-03	Calibration Point		1		06/28/16 14:24
4	M7.062816.142715	WG574627-04	Calibration Point		1		06/28/16 14:27
5	M7.062816.142948	WG574627-05	Calibration Point		1		06/28/16 14:29
6	M7.062816.143221	WG574627-06	Calibration Point		1		06/28/16 14:32
7	M7.062816.143456	WG574627-07	Initial Calibration Verification		1		06/28/16 14:34
8	M7.062816.143726	WG574627-08	Initial Calib Blank		1		06/28/16 14:37
9	M7.062816.143959	WG574627-09	CCV		1		06/28/16 14:39
10	M7.062816.144230	WG574627-10	CCB		1		06/28/16 14:42
11	M7.062816.144500	WG573817-03	Method/Prep Blank	40/40	1		06/28/16 14:45
12	M7.062816.144731	WG573817-04	Laboratory Control S	40/40	1		06/28/16 14:47
13	M7.062816.145003	WG573817-01	Reference Sample	40/40	1	L16061193-01	06/28/16 14:50
14	M7.062816.145234	WG573817-05	Duplicate	40/40	1	L16061193-01	06/28/16 14:52
15	M7.062816.145506	L16061193-02	J6F0533-04	40/40	1		06/28/16 14:55
16	M7.062816.145739	L16061193-03	J6F0533-06	40/40	1		06/28/16 14:57
17	M7.062816.150011	L16061204-01	J6F0534-02	40/40	1		06/28/16 15:00
18	M7.062816.150244	L16061204-02	J6F0534-04	40/40	1		06/28/16 15:02
19	M7.062816.150517	WG573817-02	Reference Sample	40/40	1	L16061204-03	06/28/16 15:05
20	M7.062816.150750	WG573817-06	Matrix Spike	36/40	1	L16061204-03	06/28/16 15:07
21	M7.062816.151023	WG574627-11	CCV		1		06/28/16 15:10
22	M7.062816.151254	WG574627-12	CCB		1		06/28/16 15:12
23	M7.062816.151527	WG573817-07	Matrix Spike Duplica	36/40	1	L16061204-03	06/28/16 15:15
24	M7.062816.151801	L16061228-01	SS007MWOB03-007	40/40	1		06/28/16 15:18
25	M7.062816.152031	L16061228-02	SS007MWN751-007	40/40	1		06/28/16 15:20
26	M7.062816.152302	L16061228-03	SS007MWN753-007	40/40	1		06/28/16 15:23
27	M7.062816.152533	L16061231-01	FT002MW0205-007	40/40	1		06/28/16 15:25
28	M7.062816.152804	WG573905-01	Post Digestion Spike		1	L16061231-01	06/28/16 15:28
29	M7.062816.153035	L16061237-01	SS007MWN769-007	40/40	1		06/28/16 15:30
30	M7.062816.153307	L16061237-02	SS007MWN740-007	40/40	1		06/28/16 15:33
31	M7.062816.153539	L16061237-03	SS007MWN740-007 DUP	40/40	1		06/28/16 15:35
32	M7.062816.153811	L16061237-04	SS007MWN738-007	40/40	1		06/28/16 15:38
33	M7.062816.154044	WG574627-13	CCV		1		06/28/16 15:40
34	M7.062816.154315	WG574627-14	CCB		1		06/28/16 15:43

Page: 1 Approved: June 30, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 062816E.CSV
Analyst1: AMA Analyst2: N/A
Method: 7470A/245.1 SOP: ME404 Rev: 17
Maintenance Log ID:

Calibration Std: STD76791 ICV Std: STD76785 Post Spike: STD76791
ICSA: N/A ICSAB: N/A Int. Std:
CCV: LLCCV: Tuning Sol :
Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 573905, 574517

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	M7.062816.154547	L16061237-05	SS007MWN741-007	40/40	1		06/28/16 15:45
36	M7.062816.154820	L16061237-06	SS007MWNOB09-007	40/40	1		06/28/16 15:48
37	M7.062816.155053	L16061238-01	LF003MW0306-007	40/40	1		06/28/16 15:50
38	M7.062816.155326	L16061238-02	LF003MW0307-007	40/40	1		06/28/16 15:53
39	M7.062816.155557	WG573859-02	Method/Prep Blank	40/40	1		06/28/16 15:55
40	M7.062816.155827	WG573859-03	Laboratory Control S	40/40	1		06/28/16 15:58
41	M7.062816.160058	WG573699-01	Fluid Blank 1		1		06/28/16 16:00
42	M7.062816.160329	L16061129-01	MW-22-002	40/40	1		06/28/16 16:03
43	M7.062816.160601	WG574517-01	Post Digestion Spike		1	L16061129-01	06/28/16 16:06
44	M7.062816.160833	L16061129-02	MW-22-010	40/40	1		06/28/16 16:08
45	M7.062816.161105	WG574627-15	CCV		1		06/28/16 16:11
46	M7.062816.161336	WG574627-16	CCB		1		06/28/16 16:13
47	M7.062816.161608	L16061129-03	MW-22-007	40/40	1		06/28/16 16:16
48	M7.062816.161840	L16061129-04	FD061716	40/40	1		06/28/16 16:18
49	M7.062816.162112	L16061129-05	EB-WATER A	40/40	1		06/28/16 16:21
50	M7.062816.162345	WG573859-01	Reference Sample	4/40	1	L16061164-11	06/28/16 16:23
51	M7.062816.162619	WG574517-02	Post Digestion Spike		1	L16061164-11	06/28/16 16:26
52	M7.062816.162852	WG573859-04	Matrix Spike	36/40	1	L16061164-11	06/28/16 16:28
53	M7.062816.163123	WG573859-05	Matrix Spike Duplica	36/40	1	L16061164-11	06/28/16 16:31
54	M7.062816.163354	L16061190-01	USDA / 04/07/16	40/40	1		06/28/16 16:33
55	M7.062816.163625	L16061190-02	USDA / 05/06/16	40/40	1		06/28/16 16:36
56	M7.062816.163856	L16061227-01	18WW22-062116	40/40	1		06/28/16 16:38
57	M7.062816.164128	WG574627-17	CCV		1		06/28/16 16:41
58	M7.062816.164359	WG574627-18	CCB		1		06/28/16 16:43
59	M7.062816.164630	L16061227-03	C04F-062116	40/40	1		06/28/16 16:46
60	M7.062816.164902	L16061227-05	C04FFD-062116	40/40	1		06/28/16 16:49
61	M7.062816.165134	L16061227-06	18CPTMW18-062116	40/40	1		06/28/16 16:51
62	M7.062816.165406	L16061227-07	18WW18-062116	40/40	1		06/28/16 16:54
63	M7.062816.165639	L16061242-01	1602232-002B	40/40	1		06/28/16 16:56
64	M7.062816.165912	L16061242-02	1602232-003B	40/40	1		06/28/16 16:59
65	M7.062816.170145	L16061242-03	1602232-004B	40/40	1		06/28/16 17:01
66	M7.062816.170419	L16061242-04	1602232-005B	40/40	1		06/28/16 17:04
67	M7.062816.170650	L16061242-05	1602232-006B	40/40	1		06/28/16 17:06
68	M7.062816.170921	L16061242-06	1602232-007B	40/40	1		06/28/16 17:09

Page: 2 Approved: June 30, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 062816E.CSV

Analyst1: AMA Analyst2: N/A

Method: 7470A/245.1 SOP: ME404 Rev: 17

Maintenance Log ID:

Calibration Std: STD76791 ICV Std: STD76785 Post Spike: STD76791

ICSA: N/A ICSAB: N/A Int. Std:

CCV: LLCCV: Tuning Sol :

Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 573905, 574517

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	M7.062816.171154	WG574627-19	CCV		1		06/28/16 17:11
70	M7.062816.171424	WG574627-20	CCB		1		06/28/16 17:14

Page: 3 Approved: June 30, 2016

Microbac Laboratories Inc.

Data Checklist

Date: 28-JUN-2016
Analyst: AMA
Analyst: NA
Method: 7470A/245.1
Instrument: CVAA1
Curve Workgroup: 574627
Runlog ID: 75999
Analytical Workgroups: 573905, 574517

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	1129, 1164,1227,1228,1231,1237,1238
Client Forms	X
Level X	
Level 3	1129
Level 4	1227, 1228, 1231, 1237, 1238
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	AMA
Secondary Reviewer	BKT
Comments	

Primary Reviewer:
29-JUN-2016
Alexandra M. Alfred

Secondary Reviewer:
30-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-30-2016 13:36:00

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 7470A

AAB#: WG574517

Login Number: L16061227

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW22-062116	01	06/21/16					06/23/2016	2.1	28		06/28/16	7.4	28	
C04F-062116	03	06/21/16					06/23/2016	2	28		06/28/16	7.3	28	
C04FFD-062116	05	06/21/16					06/23/2016	2	28		06/28/16	7.3	28	
18CPTMW18-062116	06	06/21/16					06/23/2016	2	28		06/28/16	7.3	28	
18WW18-062116	07	06/21/16					06/23/2016	1.9	28		06/28/16	7.2	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4831072
Report generated 06/29/2016 11:34

METHOD BLANK SUMMARY

Login Number: L16061227
Blank File ID: M7.062816.155557
Prep Date: 06/23/16 09:29
Analyzed Date: 06/28/16 15:55
Analyst: AMA

Work Group: WG574517
Blank Sample ID: WG573859-02
Instrument ID: CVAA1
Method: 7470A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573859-03	M7.062816.155827	06/28/16 15:58	01
18WW22-062116	L16061227-01	M7.062816.163856	06/28/16 16:38	01
C04F-062116	L16061227-03	M7.062816.164630	06/28/16 16:46	01
C04FFD-062116	L16061227-05	M7.062816.164902	06/28/16 16:49	01
18CPTMW18-062116	L16061227-06	M7.062816.165134	06/28/16 16:51	01
18WW18-062116	L16061227-07	M7.062816.165406	06/28/16 16:54	01

Report Name: BLANK_SUMMARY
PDF File ID: 4831073
Report generated 06/29/2016 11:34

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061227 Prep Date: 06/23/16 09:29 Sample ID: WG573859-02
Instrument ID: CVAA1 Run Date: 06/28/16 15:55 Prep Method: 7470A
File ID: M7.062816.155557 Analyst: AMA Method: 7470A
Workgroup (AAB#): WG574517 Matrix: Water Units: mg/L
Contract #: Cal ID: CVAA1-28-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Mercury	0.000100	0.000400	0.000100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4831074
29-JUN-2016 11:34

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061227 Run Date: 06/28/2016 Sample ID: WG573859-03
Instrument ID: CVAA1 Run Time: 15:58 Prep Method: 7470A
File ID: M7.062816.155827 Analyst: AMA Method: 7470A
Workgroup (AAB#): WG574517 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76783 Cal ID: CVAA1-28-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Mercury	0.00400	0.00406	101	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4831075
Report generated: 06/29/2016 11:34

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061227 Cal ID: CVAA1 - Worknum: WG574517
Instrument ID: CVAA1 Contract #: Method: 7470A
Parent ID: WG573859-01 File ID: M7.062816.162345 Dil: 1 Matrix: WATER
Sample ID: WG573859-04 MS File ID: M7.062816.162852 Dil: 1 Units: mg/L
Sample ID: WG573859-05 MSD File ID: M7.062816.163123 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Mercury	ND	0.00444	0.00451	102	0.00444	0.00461	104	2.19	80 - 120	20	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4831076
Report generated 06/29/2016 11:34

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061227 **Worknum:** WG574517
Instrument ID: CVAA1 **Method:** 7470A
Post Spike ID: WG574517-01 **File ID:** M7.062816.160601 **Dil:** 1 **Units:** ug/L
Sample ID: L16061129-01 **File ID:** M7.062816.160329 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MERCURY	1.01		0	U	1	100.8	85 - 115	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4831071
Report generated: 06/29/2016 11:34

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061227
Analytical Method: 7470A
ICAL Worknum: WG574627

Workgroup (AAB#): WG574517
Instrument ID: CVAA1
Initial Calibration Date: 06/28/2016 14:32

Analyte	WG574627-01		WG574627-02		WG574627-03		WG574627-04		WG574627-05		WG574627-06	
	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT
Mercury	0	32.17	0.200	2983	1.00	13550	2.00	26780	5.00	66440	10.0	124400

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4831077
Report generated 06/29/2016 11:34

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061227
Analytical Method: 7470A
ICAL Worknum: WG574627

Workgroup (AAB#): WG574517
Instrument ID: CVAA1
Initial Calibration Date: 06/28/2016 14:32

Analyte	R	Q
Mercury	0.9995	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4831077
Report generated 06/29/2016 11:34

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061227
Instrument ID: CVAA1
File ID: M7.062816.143726
Workgroup (AAB#): WG574517
Matrix: WATER

Run Date: 06/28/2016
Run Time: 14:37
Analyst: AMA
Cal ID: CVAA1 - 28-JUN-16

Sample ID: WG574627-08
Method: 7470A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
MERCURY	.1	.4	.1	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4831079
Report generated 06/29/2016 11:34

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/28/2016
Sample ID: WG574627-10
Instrument ID: CVAA1
Run Time: 14:42
Method: 7470A
File ID: M7.062816.144230
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG574517
Cal ID: CVAA1 - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4831081
Report generated 06/29/2016 11:34

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/28/2016
Sample ID: WG574627-14
Instrument ID: CVAA1
Run Time: 15:43
Method: 7470A
File ID: M7.062816.154315
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG574517
Cal ID: CVAA1 - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4831081
Report generated 06/29/2016 11:34

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/28/2016
Sample ID: WG574627-16
Instrument ID: CVAA1
Run Time: 16:13
Method: 7470A
File ID: M7.062816.161336
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG574517
Cal ID: CVAA1 - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4831081
Report generated 06/29/2016 11:34

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/28/2016
Sample ID: WG574627-18
Instrument ID: CVAA1
Run Time: 16:43
Method: 7470A
File ID: M7.062816.164359
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG574517
Cal ID: CVAA1 - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4831081
Report generated 06/29/2016 11:34

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061227
Run Date: 06/28/2016
Sample ID: WG574627-20
Instrument ID: CVAA1
Run Time: 17:14
Method: 7470A
File ID: M7.062816.171424
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG574517
Cal ID: CVAA1 - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4831081
Report generated 06/29/2016 11:34

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061227
Run Date: 06/28/2016
Sample ID: WG574627-07
Instrument ID: CVAA1
Run Time: 14:34
Method: 7470A
File ID: M7.062816.143456
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG574517
Cal ID: CVAA1 - 28-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Mercury		2	1.98	99.2	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4831078
Report generated 06/29/2016 11:34

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/28/2016
Sample ID: WG574627-09
Instrument ID: CVAA1
Run Time: 14:39
Method: 7470A
File ID: M7.062816.143959
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG574517
Cal ID: CVAA1 - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00205	mg/L	103	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4831080
Report generated 06/29/2016 11:34

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/28/2016
Sample ID: WG574627-13
Instrument ID: CVAA1
Run Time: 15:40
Method: 7470A
File ID: M7.062816.154044
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG574517
Cal ID: CVAA1 - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00203	mg/L	101	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4831080
Report generated 06/29/2016 11:34

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/28/2016
Sample ID: WG574627-15
Instrument ID: CVAA1
Run Time: 16:11
Method: 7470A
File ID: M7.062816.161105
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG574517
Cal ID: CVAA1 - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00206	mg/L	103	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4831080
Report generated 06/29/2016 11:34

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/28/2016
Sample ID: WG574627-17
Instrument ID: CVAA1
Run Time: 16:41
Method: 7470A
File ID: M7.062816.164128
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG574517
Cal ID: CVAA1 - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00202	mg/L	101	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4831080
Report generated 06/29/2016 11:34

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061227
Run Date: 06/28/2016
Sample ID: WG574627-19
Instrument ID: CVAA1
Run Time: 17:11
Method: 7470A
File ID: M7.062816.171154
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG574517
Cal ID: CVAA1 - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00203	mg/L	101	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4831080
Report generated 06/29/2016 11:34

2.3.3.3 Raw Data

PDM CVAA1 245.1/7470/7471

Report Generated By CETAC QuickTrace
Analyst: VOA
Worksheet file: C:\Program Files (x86)\QuickTrace\Worksheets\062816E.wsz
Date Started: 6/28/2016 2:16:54 PM
Comment:

Results

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
Standard #0					STD	06/28/16 02:19:39 pm	0.0000	32	62.24		1.00
Replicates	12.7	39.8	19.4	56.8							
Standard #1 (0.2 ug/L)					STD	06/28/16 02:22:10 pm	0.2000	2983	1.00		1.00
Replicates	2956.1	2976.6	2974.0	3025.8							
Standard #2 (1.0 ug/L)					STD	06/28/16 02:24:42 pm	1.0000	13546	0.44		1.00
Replicates	13459.7	13552.0	13584.0	13589.5							
Standard #3 (2.0 ug/L)					STD	06/28/16 02:27:15 pm	2.0000	26777	0.38		1.00
Replicates	26638.6	26768.5	26840.4	26861.9							
Standard #4 (5.0 ug/L)					STD	06/28/16 02:29:48 pm	5.0000	66440	0.32		1.00
Replicates	66143.5	66428.4	66567.7	66619.2							
Standard #5 (10.0 ug/L)					STD	06/28/16 02:32:21 pm	10.0000	124445	0.34		1.00
Replicates	123848.4	124440.3	124724.9	124764.4							

Calibration

Equation: A = 1183.459 + 12479.250C
R2: 0.99891
SEE: 1785.5090
Flags:

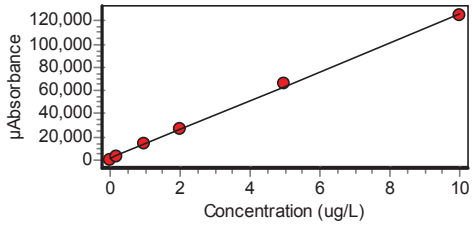

ICV					ICV	06/28/16 02:34:56 pm	1.9840	25941	0.32		1.00
Replicates	25817.7	25960.0	25984.3	26002.7							
% Recovery	99.20										

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Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
ICB					ICB	06/28/16 02:37:26 pm	-0.0935	16	167.13		1.00
Replicates	-18.1	40.0	7.5	35.3							
CCV					CCV	06/28/16 02:39:59 pm	2.0500	26765	0.43		1.00
Replicates	26605.2	26758.8	26823.3	26872.8							
% Recovery	102.50										
CCB					CCB	06/28/16 02:42:30 pm	-0.0936	16	28.49		1.00
Replicates	13.9	17.9	10.1	20.1							
WG573817-03					MB	06/28/16 02:45:00 pm	-0.0959	-13	143.58		1.00
Replicates	-29.6	-8.0	11.3	-26.2							
WG573817-04					LCS	06/28/16 02:47:31 pm	4.2950	54788	0.15		1.00
Replicates	54783.5	54869.0	54819.2	54679.5							
% Recovery	107.39										
L1606119301					UNK	06/28/16 02:50:03 pm	-0.0909	49	53.23		1.00
Replicates	48.8	59.4	73.4	12.9							
WG573817-05					DUP	06/28/16 02:52:34 pm	-0.0856	115	13.79		1.00
Replicates	115.4	99.5	137.0	109.2							
		RPD 0.00									
L1606119302					UNK	06/28/16 02:55:06 pm	-0.0736	266	3.59		1.00
Replicates	260.1	257.6	265.6	279.0							
L1606119303					UNK	06/28/16 02:57:39 pm	-0.0792	195	6.29		1.00
Replicates	180.8	209.6	198.1	189.9							
L1606120401					UNK	06/28/16 03:00:11 pm	-0.0880	85	6.88		1.00
Replicates	88.6	76.2	88.4	85.9							
L1606120402					UNK	06/28/16 03:02:44 pm	-0.0740	261	6.65		1.00
Replicates	250.8	282.9	243.5	264.9							
L1606120403					UNK	06/28/16 03:05:17 pm	-0.0818	163	8.22		1.00
Replicates	162.0	152.3	155.8	182.3							

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Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
WG573817-06					MSK	06/28/16 03:07:50 pm	4.1300	52719	0.99		1.00
Replicates	52057.2	52582.6	52985.9	53250.4							
% Recovery	105.29										
CCV					CCV	06/28/16 03:10:23 pm	2.0350	26576	0.52		1.00
Replicates	26407.4	26532.0	26635.5	26728.4							
% Recovery	101.74										
CCB					CCB	06/28/16 03:12:54 pm	-0.0930	23	65.71		1.00
Replicates	22.5	31.2	36.6	2.1							
WG573817-07					MSDUP	06/28/16 03:15:27 pm	4.1670	53186	0.15	D	1.00
Replicates	53073.2	53220.6	53257.4	53190.9							
% Recovery	106.22	RPD 209.13									
L1606122801					UNK	06/28/16 03:18:01 pm	-0.0787	201	8.54		1.00
Replicates	222.6	203.3	197.6	181.0							
L1606122802					UNK	06/28/16 03:20:31 pm	-0.0959	-14	72.51		1.00
Replicates	-6.1	-10.7	-27.9	-9.2							
L1606122803					UNK	06/28/16 03:23:02 pm	-0.0905	54	28.97		1.00
Replicates	45.9	72.7	61.8	37.5							
L1606123101					UNK	06/28/16 03:25:33 pm	-0.0937	14	87.11		1.00
Replicates	29.1	-1.3	16.9	12.9							
WG573905-01					SPK	06/28/16 03:28:04 pm	0.9802	13416	0.34		1.00
Replicates	13351.7	13421.7	13427.3	13461.8							
% Recovery	107.39										
L1606123701					UNK	06/28/16 03:30:35 pm	-0.0854	117	15.45		1.00
Replicates	111.5	101.6	143.4	112.6							
L1606123702					UNK	06/28/16 03:33:07 pm	-0.0872	96	13.35		1.00
Replicates	83.3	105.4	107.9	86.0							
L1606123703					UNK	06/28/16 03:35:39 pm	-0.0871	97	18.04		1.00
Replicates	80.1	84.1	110.4	113.9							

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Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1606123704					UNK	06/28/16 03:38:11 pm	-0.0865	104	24.52		1.00
Replicates	69.5	127.1	119.3	101.3							
CCV					CCV	06/28/16 03:40:44 pm	2.0280	26491	0.84		1.00
Replicates	26218.4	26428.3	26572.3	26743.8							
% Recovery	101.40										
CCB					CCB	06/28/16 03:43:15 pm	-0.0929	24	8.05		1.00
Replicates	24.0	21.2	25.4	25.2							
L1606123705					UNK	06/28/16 03:45:47 pm	-0.0936	16	119.29		1.00
Replicates	31.7	-8.7	28.3	11.0							
L1606123706					UNK	06/28/16 03:48:20 pm	-0.0953	-5	399.24		1.00
Replicates	14.4	-29.0	11.2	-18.1							
L1606123801					UNK	06/28/16 03:50:53 pm	-0.0948	1	849.32		1.00
Replicates	-10.7	-12.8	4.5	22.7							
L1606123802					UNK	06/28/16 03:53:26 pm	-0.0941	10	119.99		1.00
Replicates	11.7	-6.7	20.8	13.1							
WG573859-02					UNK	06/28/16 03:55:57 pm	-0.0949	-1	175.68		1.00
Replicates	19.5	-3.7	-10.3	-10.3							
WG573859-03					UNK	06/28/16 03:58:27 pm	4.0570	51817	0.25		1.00
Replicates	51633.9	51812.6	51893.3	51927.3							
WG573699-01					UNK	06/28/16 04:00:58 pm	-0.0983	-43	40.48		1.00
Replicates	-24.6	-65.1	-47.6	-35.0							
L160611290					UNK	06/28/16 04:03:29 pm	-0.0740	260	5.66		1.00
Replicates	245.6	263.7	278.3	250.5							
WG574517-01					UNK	06/28/16 04:06:01 pm	1.0080	13765	0.37		1.00
Replicates	13708.7	13734.7	13803.5	13812.7							

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Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1606112902					UNK	06/28/16 04:08:33 pm	-0.0952	-4	176.07		1.00
Replicates	-13.8	-0.3	-4.8	2.6							
CCV					CCV	06/28/16 04:11:05 pm	2.0580	26872	0.53		1.00
Replicates	26685.8	26840.7	26949.1	27010.4							
% Recovery	102.92										
CCB					CCB	06/28/16 04:13:36 pm	-0.0928	25	73.75		1.00
Replicates	29.9	46.6	22.5	1.8							
L1606112903					UNK	06/28/16 04:16:08 pm	-0.0946	3	379.85		1.00
Replicates	-5.3	10.9	-9.1	16.4							
L1606112904					UNK	06/28/16 04:18:40 pm	-0.0920	36	21.91		1.00
Replicates	45.6	27.3	32.4	37.6							
L1606112905					UNK	06/28/16 04:21:12 pm	-0.0948	1	176.29		1.00
Replicates	13.9	10.7	-10.3	-9.9							
L1606116411					UNK	06/28/16 04:23:45 pm	-0.0956	-9	118.39		1.00
Replicates	-5.1	-25.2	-3.0	-3.0							
WG574517-02					UNK	06/28/16 04:26:19 pm	1.0010	13675	0.24		1.00
Replicates	13633.8	13664.5	13709.5	13690.3							
WG573859-04					UNK	06/28/16 04:28:52 pm	4.0630	51881	0.47		1.00
Replicates	51555.3	51854.4	52005.3	52110.8							
WG573859-05					UNK	06/28/16 04:31:23 pm	4.1530	53005	0.55		1.00
Replicates	52616.8	52965.7	53158.6	53280.2							
L1606119001					UNK	06/28/16 04:33:54 pm	-0.0895	66	27.09		1.00
Replicates	45.9	57.1	85.3	76.4							
L1606119002					UNK	06/28/16 04:36:25 pm	-0.0945	5	391.70		1.00
Replicates	19.7	21.2	-3.7	-17.8							

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Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1606122701					UNK	06/28/16 04:38:56 pm	-0.0918	38	75.22		1.00
Replicates	58.3	57.1	38.8	-2.7							
CCV					CCV	06/28/16 04:41:28 pm	2.0200	26395	0.63		1.00
Replicates	26181.7	26354.5	26485.5	26559.0							
% Recovery	101.01										
CCB					CCB	06/28/16 04:43:59 pm	-0.0948	0	243.10		1.00
Replicates	2.7	25.0	-21.1	-7.1							
L1606122703					UNK	06/28/16 04:46:30 pm	-0.0923	32	45.97		1.00
Replicates	48.7	16.9	22.6	38.1							
L1606122705					UNK	06/28/16 04:49:02 pm	-0.0948	0	466.06		1.00
Replicates	-10.5	6.1	-4.9	9.1							
L1606122706					UNK	06/28/16 04:51:34 pm	-0.0909	49	46.13		1.00
Replicates	20.8	76.1	47.8	51.9							
L1606122707					UNK	06/28/16 04:54:06 pm	-0.0915	41	43.96		1.00
Replicates	15.4	44.5	57.5	47.5							
L1606124201					UNK	06/28/16 04:56:39 pm	-0.0928	25	58.43		1.00
Replicates	19.4	15.9	46.7	17.9							
L1606124202					UNK	06/28/16 04:59:12 pm	-0.0894	68	21.21		1.00
Replicates	87.9	53.0	67.7	64.9							
L1606124203					UNK	06/28/16 05:01:45 pm	-0.0882	82	20.32		1.00
Replicates	86.2	68.9	69.4	104.0							
L1606124204					UNK	06/28/16 05:04:19 pm	-0.0921	35	39.70		1.00
Replicates	17.7	51.3	33.1	36.8							
L1606124205					UNK	06/28/16 05:06:50 pm	-0.0886	77	12.50		1.00
Replicates	63.7	84.1	77.0	84.3							

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Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1606124206					UNK	06/28/16 05:09:21 pm	-0.0914	43	23.98		1.00
	Replicates	45.1	28.3	52.5	45.8						
CCV					CCV	06/28/16 05:11:54 pm	2.0260	26463	0.59		1.00
	Replicates	26243.6	26466.8	26559.3	26583.6						
	% Recovery	101.29									
CCB					CCB	06/28/16 05:14:24 pm	-0.0917	38	24.88		1.00
	Replicates	24.1	42.6	43.4	43.7						

Approved: June 29, 2016

Alexandra M. Alfred

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
July 12, 2016

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BNB - Brandi N. Bentley
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJQ - Cameron J. Quick
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
CV - Carl Volkman
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
EMW - ERIC M. WILKEN
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
HDC - Hanah D. Coe
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LJH - Lacey J. Hendershot
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
NPH - Natalie P. Hart
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
July 12, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
July 12, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Debra Richmann	Mail to:	Linda Raabe
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000		112 East Pecan STE. 400
	Marietta, OH 45750	Sampler (print):	Scott Beesinger		San Antonio, TX 78205
Phone:	1-800-373-4071				210-296-2000
Client:	AECOM	Signature:	Scott Beesinger	Fed Ex Airbill No:	
Address:	112 East Pecan Ste. 400				
	San Antonio, TX 78205			Program:	
Turn Around Time:	STANDARD	pH:			
Project Name/Location:	Longhorn				
Project Number:	60274185.0013BH 1824 MR10			ERPIMS REQUIRED FIELDS	

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Total Metals	1,4 - DIOXANE					SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 18/24	18WW22-062116			6/21/16	0755		✓	W	7	✓	✓	✓	✓									
	C04-062116			6/21/16	0855		✓	W	6	✓	✓		✓									
	C04F-062116			6/21/16	0855		✓	W	1			✓										
	C04FD-062116			6/21/16	0855		✓	W	6	✓	✓		✓									
	C04FFD-062116			6/21/16	0855		✓	W	1			✓										
	18GPTMW18-062116			6/21/16	1005		✓	W	7	✓	✓	✓	✓									
	18WW18-062116			6/21/16	1115		✓	W	7	✓	✓	✓	✓									
	18WW17-062116			6/21/16	1140		✓	W	4	✓	✓											
	TRIP BLANK			6/21/16			✓	W	2	✓												

Comments: **STANDARD TAT**

Relinquished by: (Signature) Scott Beesinger	Date 6/21/16	Time 1600	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Rece (Sign			Time	Remarks:

Microbac OVD
Received: 06/22/2016 10:14
By: BRENDA GREGORY 221000087524

Brenda Gregory

•Homogenize all composite samples prior to analysis

ager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061227
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061227-01	764671	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-JUN-2016 14:20	CLS		
2	ANALYZ	V1	ORG4	23-JUN-2016 07:48	AWE	CLS	
3	STORE	ORG4	A1	06-JUL-2016 07:37	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-JUN-2016 14:20	CLS		
2	ANALYZ	V1	ORG4	23-JUN-2016 07:48	AWE	CLS	
3	STORE	ORG4	A1	06-JUL-2016 07:37	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-JUN-2016 14:20	CLS		
2	ANALYZ	V1	ORG4	23-JUN-2016 07:48	AWE	CLS	
3	STORE	ORG4	A1	06-JUL-2016 07:37	CLS	AWE	

Samplenum	Container ID	Products
L16061227-01	764672	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	22-JUN-2016 14:20	CLS		
2	PREP	W1	EXT	23-JUN-2016 13:30	CPD	CLS	
3	ANALYZ*	EXT	SEMI	27-JUN-2016 10:41	NPH	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	22-JUN-2016 14:20	CLS		
2	STORE	W1	A1	24-JUN-2016 10:20	BRG	BRG	
3	PREP	A1	EXT	30-JUN-2016 16:18	CPD	CLS	
4	DISP	EXT	DISP	01-JUL-2016 08:21	BJO	BJO	
5	ANALYZ*	EXT	SEMI	01-JUL-2016 15:24	SCB	CPD	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061227
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061227-01	764673	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	22-JUN-2016 14:20	CLS		
2	ANALYZ	W1	SEM	29-JUN-2016 13:24	JWR	CLS	
3	STORE	SEM	A1	30-JUN-2016 15:32	CLS	JWR	

Samplenum	Container ID	Products
L16061227-01	764674	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	22-JUN-2016 14:20	CLS		
2	PREP	W1	DIG	22-JUN-2016 15:02	ERP	CLS	
3	ANALYZ*	DIG	METALS	24-JUN-2016 11:51	JYH	ERP	
4	STORE	DIG	A1	24-JUN-2016 14:18	BRG	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061227-02	764675	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-JUN-2016 14:20	CLS		
2	ANALYZ	V1	ORG4	23-JUN-2016 07:48	AWE	CLS	
3	STORE	ORG4	A1	06-JUL-2016 07:37	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-JUN-2016 14:20	CLS		
2	ANALYZ	V1	ORG4	23-JUN-2016 07:48	AWE	CLS	
3	STORE	ORG4	A1	06-JUL-2016 07:37	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	ORG4	22-JUN-2016 14:20	CLS		
2	STORE	ORG4	A1	06-JUL-2016 07:37	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061227
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061227-02	764676	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	22-JUN-2016 14:20	CLS		
2	ANALYZ	W1	SEM	29-JUN-2016 13:24	JWR	CLS	
3	STORE	SEM	A1	30-JUN-2016 15:32	CLS	JWR	

Samplenum	Container ID	Products
L16061227-03	764677	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	22-JUN-2016 14:20	CLS		
2	PREP	W1	DIG	22-JUN-2016 15:02	ERP	CLS	
3	ANALYZ*	DIG	METALS	24-JUN-2016 11:51	JYH	ERP	
4	STORE	DIG	A1	24-JUN-2016 14:18	BRG	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061227-04	764678	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-JUN-2016 14:20	CLS		
2	ANALYZ	V1	ORG4	23-JUN-2016 07:48	AWE	CLS	
3	STORE	ORG4	A1	06-JUL-2016 07:37	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-JUN-2016 14:20	CLS		
2	ANALYZ	V1	ORG4	23-JUN-2016 07:48	AWE	CLS	
3	STORE	ORG4	A1	06-JUL-2016 07:37	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-JUN-2016 14:20	CLS		
2	ANALYZ	V1	ORG4	23-JUN-2016 07:48	AWE	CLS	
3	STORE	ORG4	A1	06-JUL-2016 07:37	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061227
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061227-04	764679	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	22-JUN-2016 14:20	CLS		
2	ANALYZ	W1	SEM	29-JUN-2016 13:24	JWR	CLS	
3	STORE	SEM	A1	30-JUN-2016 15:33	CLS	JWR	

Samplenum	Container ID	Products
L16061227-05	764680	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	22-JUN-2016 14:20	CLS		
2	PREP	W1	DIG	22-JUN-2016 15:02	ERP	CLS	
3	ANALYZ*	DIG	METALS	24-JUN-2016 11:51	JYH	ERP	
4	STORE	DIG	A1	24-JUN-2016 14:18	BRG	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061227-06	764681	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-JUN-2016 14:20	CLS		
2	ANALYZ	V1	ORG4	23-JUN-2016 07:48	AWE	CLS	
3	STORE	ORG4	A1	06-JUL-2016 07:37	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-JUN-2016 14:20	CLS		
2	ANALYZ	V1	ORG4	23-JUN-2016 07:48	AWE	CLS	
3	STORE	ORG4	A1	06-JUL-2016 07:37	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-JUN-2016 14:20	CLS		
2	ANALYZ	V1	ORG4	23-JUN-2016 07:48	AWE	CLS	
3	STORE	ORG4	A1	06-JUL-2016 07:37	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061227
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061227-06	764682	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	22-JUN-2016 14:20	CLS		
2	PREP	W1	EXT	23-JUN-2016 13:30	CPD	CLS	
3	ANALYZ*	EXT	SEMI	27-JUN-2016 10:41	NPH	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	22-JUN-2016 14:20	CLS		
2	STORE	W1	A1	24-JUN-2016 09:59	BRG	BRG	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061227-06	764683	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	22-JUN-2016 14:20	CLS		
2	ANALYZ	W1	SEM	29-JUN-2016 13:24	JWR	CLS	
3	STORE	SEM	A1	30-JUN-2016 15:33	CLS	JWR	

Samplenum	Container ID	Products
L16061227-06	764684	CO-MS CR-MS CU-MS FE HG K MG MN-MS NA NI-MS PE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	22-JUN-2016 14:20	CLS		
2	PREP	W1	DIG	22-JUN-2016 15:02	ERP	CLS	
3	ANALYZ*	DIG	METALS	24-JUN-2016 11:51	JYH	ERP	
4	STORE	DIG	A1	24-JUN-2016 14:18	BRG	AC	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061227
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061227-07	764685	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-JUN-2016 14:20	CLS		
2	ANALYZ	V1	ORG4	23-JUN-2016 07:48	AWE	CLS	
3	STORE	ORG4	A1	06-JUL-2016 07:37	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-JUN-2016 14:20	CLS		
2	ANALYZ	V1	ORG4	23-JUN-2016 07:48	AWE	CLS	
3	STORE	ORG4	A1	06-JUL-2016 07:37	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-JUN-2016 14:20	CLS		
2	ANALYZ	V1	ORG4	23-JUN-2016 07:48	AWE	CLS	
3	STORE	ORG4	A1	06-JUL-2016 07:37	CLS	AWE	

Samplenum	Container ID	Products
L16061227-07	764686	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	22-JUN-2016 14:20	CLS		
2	PREP	W1	EXT	23-JUN-2016 13:30	CPD	CLS	
3	ANALYZ*	EXT	SEMI	27-JUN-2016 10:41	NPH	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	22-JUN-2016 14:20	CLS		
2	STORE	W1	A1	24-JUN-2016 10:00	BRG	BRG	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061227-07	764687	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	22-JUN-2016 14:20	CLS		
2	ANALYZ	W1	SEM	29-JUN-2016 13:24	JWR	CLS	
3	STORE	SEM	A1	30-JUN-2016 15:33	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061227
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061227-07	764688	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	22-JUN-2016 14:20	CLS		
2	PREP	W1	DIG	22-JUN-2016 15:02	ERP	CLS	
3	ANALYZ*	DIG	METALS	24-JUN-2016 11:51	JYH	ERP	
4	STORE	DIG	A1	24-JUN-2016 14:18	BRG	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061227-08	764689	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-JUN-2016 14:20	CLS		
2	ANALYZ	V1	ORG4	23-JUN-2016 07:48	AWE	CLS	
3	STORE	ORG4	A1	06-JUL-2016 07:37	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-JUN-2016 14:20	CLS		
2	ANALYZ	V1	ORG4	23-JUN-2016 07:48	AWE	CLS	
3	STORE	ORG4	A1	06-JUL-2016 07:37	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-JUN-2016 14:20	CLS		
2	ANALYZ	V1	ORG4	23-JUN-2016 07:48	AWE	CLS	
3	STORE	ORG4	A1	06-JUL-2016 07:37	CLS	AWE	

Samplenum	Container ID	Products
L16061227-08	764690	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	22-JUN-2016 14:20	CLS		
2	ANALYZ	W1	SEM	29-JUN-2016 13:24	JWR	CLS	
3	STORE	SEM	A1	30-JUN-2016 15:33	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061227
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 01-JUL-2016

Samplenum	Container ID	Products
L16061227-09	764691	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-JUN-2016 14:20	CLS		
2	ANALYZ	V1	ORG4	23-JUN-2016 07:48	AWE	CLS	
3	STORE	ORG4	A1	06-JUL-2016 07:37	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	22-JUN-2016 14:20	CLS		
2	ANALYZ	V1	ORG4	23-JUN-2016 07:48	AWE	CLS	
3	STORE	ORG4	A1	06-JUL-2016 07:37	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac REPORT L16061289
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG575084, WG575129	**Reviewer Name:**	Anthony Canter
LRC Date:	2016-07-14 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Anthony Canter	Anthony Canter	Analyst I	2016-07-14 20:02:56

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG575084, WG575129	**Reviewer Name:**	Anthony Canter
LRC Date:	2016-07-14 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG575084, WG575129	**Reviewer Name:**	Anthony Canter
LRC Date:	2016-07-14 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		X			1
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG575084, WG575129	**Reviewer Name:**	Anthony Canter
LRC Date:	2016-07-14 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			3
Was the ICAL curve verified for each analyte?		X			2
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG575084, WG575129	**Reviewer Name:**	Anthony Canter
LRC Date:	2016-07-14 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG575084, WG575129	**Reviewer Name:**	Anthony Canter
LRC Date:	2016-07-14 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) 1,1-Dichloroethene exceeded the LCL in the LCS analyzed 07/05/16 on HPMS6.

2) Chloromethane exceeded the LCL in the ICV analyzed 06/30/16 on HPMS6.

3). Carbon Tetrachloride, Dichlorodifluoromethane, and Trichlorofluoromethane the UCL in the CCV analyzed 07/05/16 on HPMS6.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG574286	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Wade DeLong	Wade DeLong	Chemist I	2016-07-06 14:39:02

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG574286	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?	X				
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?		X			1
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG574286	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG574286	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG574286	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG574286	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. Sample 01 surrogate recovery is above the upper control limit due to obvious sample matrix interference.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575005	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Wade DeLong	Wade DeLong	Chemist I	2016-07-06 18:19:53

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575005	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?	X		X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575005	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575005	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575005	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

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Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575005	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573994	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Maren Beery	Maren Beery	Metals Supervisor	2016-07-12 14:49:14

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573994	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				ER#1
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573994	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573994	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573994	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573994	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - Client sample 01 required dilution analysis in order to obtain results for calcium, magnesium and sodium within the calibration range.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG574416	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Maren Beery	Maren Beery	Metals Supervisor	2016-07-12 14:39:07

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG574416	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				ER#1
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG574416	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG574416	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG574416	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG574416	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - Client sample 01 required dilution analysis in order to obtain results for barium, manganese and nickel within the calibration range.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG574194	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Maren Beery	Maren Beery	Metals Supervisor	2016-07-12 14:37:21

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG574194	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG574194	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG574194	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG574194	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061289
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG574194	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	MW21-062216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG575129	**Analyst:**	TMB	**Run Date:**	07/05/2016 14:58
Collect Date:	06/22/2016 09:45	**Dilution:**	50	**File ID:**	6M140425
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	250	U	500	250	125
Benzene	71-43-2	12.5	U	50.0	12.5	6.25
Bromobenzene	108-86-1	12.5	U	50.0	12.5	6.25
Bromochloromethane	74-97-5	20.0	U	50.0	20.0	10.0
Bromodichloromethane	75-27-4	25.0	U	50.0	25.0	12.5
Bromoform	75-25-2	50.0	U	100	50.0	25.0
Bromomethane	74-83-9	50.0	U	100	50.0	25.0
2-Butanone	78-93-3	250	U	500	250	125
n-Butylbenzene	104-51-8	25.0	U	50.0	25.0	12.5
sec-Butylbenzene	135-98-8	25.0	U	50.0	25.0	12.5
tert-Butylbenzene	98-06-6	25.0	U	50.0	25.0	12.5
Carbon disulfide	75-15-0	50.0	U	100	50.0	25.0
Carbon tetrachloride	56-23-5	25.0	Q	50.0	25.0	12.5
Chlorobenzene	108-90-7	12.5	U	50.0	12.5	6.25
Chlorodibromomethane	124-48-1	25.0	U	50.0	25.0	12.5
Chloroethane	75-00-3	50.0	U	100	50.0	25.0
Chloroform	67-66-3	13.5	J	50.0	12.5	6.25
Chloromethane	74-87-3	50.0	U	100	50.0	25.0
2-Chlorotoluene	95-49-8	12.5	U	50.0	12.5	6.25
4-Chlorotoluene	106-43-4	25.0	U	50.0	25.0	12.5
1,2-Dibromo-3-chloropropane	96-12-8	100	U	250	100	50.0
1,2-Dibromoethane	106-93-4	25.0	U	50.0	25.0	12.5
Dibromomethane	74-95-3	25.0	U	50.0	25.0	12.5
1,2-Dichlorobenzene	95-50-1	12.5	U	50.0	12.5	6.25
1,3-Dichlorobenzene	541-73-1	25.0	U	50.0	25.0	12.5
1,4-Dichlorobenzene	106-46-7	12.5	U	50.0	12.5	6.25
Dichlorodifluoromethane	75-71-8	25.0	Q	50.0	25.0	12.5
1,1-Dichloroethane	75-34-3	12.5	U	50.0	12.5	6.25
1,2-Dichloroethane	107-06-2	35.2	J	50.0	25.0	12.5
1,1-Dichloroethene	75-35-4	50.0	U	100	50.0	25.0
cis-1,2-Dichloroethene	156-59-2	112		50.0	25.0	12.5
trans-1,2-Dichloroethene	156-60-5	25.0	U	50.0	25.0	12.5

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	20.0	U	50.0	20.0	10.0
1,3-Dichloropropane	142-28-9	20.0	U	50.0	20.0	10.0
2,2-Dichloropropane	594-20-7	25.0	U	50.0	25.0	12.5
cis-1,3-Dichloropropene	10061-01-5	25.0	U	50.0	25.0	12.5
trans-1,3-Dichloropropene	10061-02-6	50.0	U	100	50.0	25.0
1,1-Dichloropropene	563-58-6	25.0	U	50.0	25.0	12.5
Ethylbenzene	100-41-4	25.0	U	50.0	25.0	12.5
2-Hexanone	591-78-6	250	U	500	250	125
Hexachlorobutadiene	87-68-3	25.0	U	50.0	25.0	12.5
Isopropylbenzene	98-82-8	25.0	U	50.0	25.0	12.5
p-Isopropyltoluene	99-87-6	25.0	U	50.0	25.0	12.5
4-Methyl-2-pentanone	108-10-1	250	U	500	250	125
Methylene chloride	75-09-2	25.0	U	50.0	25.0	12.5
Naphthalene	91-20-3	20.0	U	50.0	20.0	10.0
n-Propylbenzene	103-65-1	12.5	U	50.0	12.5	6.25
Styrene	100-42-5	12.5	U	50.0	12.5	6.25
1,1,1,2-Tetrachloroethane	630-20-6	25.0	U	50.0	25.0	12.5
1,1,2,2-Tetrachloroethane	79-34-5	20.0	U	50.0	20.0	10.0
Tetrachloroethene	127-18-4	25.0	U	50.0	25.0	12.5
Toluene	108-88-3	25.0	U	50.0	25.0	12.5
1,2,3-Trichlorobenzene	87-61-6	15.0	U	50.0	15.0	7.50
1,2,4-Trichlorobenzene	120-82-1	20.0	U	50.0	20.0	10.0
1,1,1-Trichloroethane	71-55-6	25.0	U	50.0	25.0	12.5
1,1,2-Trichloroethane	79-00-5	25.0	U	50.0	25.0	12.5
Trichloroethene	79-01-6	6080		50.0	25.0	12.5
Trichlorofluoromethane	75-69-4	25.0	Q	50.0	25.0	12.5
1,2,3-Trichloropropane	96-18-4	50.0	U	100	50.0	25.0
1,2,4-Trimethylbenzene	95-63-6	25.0	U	50.0	25.0	12.5
1,3,5-Trimethylbenzene	108-67-8	25.0	U	50.0	25.0	12.5
Vinyl chloride	75-01-4	46.2	J	50.0	25.0	12.5
o-Xylene	95-47-6	25.0	U	50.0	25.0	12.5
m-,p-Xylene	179601-23-1	50.0	U	100	50.0	25.0

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	99.0	85	120	
4-Bromofluorobenzene	98.0	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	MW21-062216	**Prep Method:**	3520C	**Prep Date:**	06/27/2016 14:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574772	**Analyst:**	MES	**Run Date:**	06/30/2016 23:44
Collect Date:	06/22/2016 09:45	**Dilution:**	1	**File ID:**	15M18698
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.55	J	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	795	20	129	*

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW21-062216	**Prep Method:**	6850	**Prep Date:**	07/01/2016 13:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575005	**Analyst:**	JWR	**Run Date:**	07/01/2016 19:05
Collect Date:	06/22/2016 09:45	**Dilution:**	10000	**File ID:**	1LM.LM35578
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	26100		4000	2000	1000

Certificate of Analysis

Sample #:	L16061289-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW21-062216	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/24/2016 10:17
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/24/2016 14:52
Collect Date:	06/22/2016 09:45	**Dilution:**	1	**File ID:**	T3.062416.145235
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.0620	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	1.03		0.200	0.100	0.0500
Potassium, Total	7440-09-7	2.61		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW21-062216	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/25/2016 12:36
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/25/2016 15:44
Collect Date:	06/22/2016 09:45	**Dilution:**	20	**File ID:**	T3.062516.154432
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	213		10.0	5.00	2.50
Magnesium, Total	7439-95-4	163		20.0	10.0	5.00
Sodium, Total	7440-23-5	580		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW21-062216	**Prep Method:**	3015	**Prep Date:**	06/28/2016 07:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574808	**Analyst:**	JYH	**Run Date:**	07/01/2016 12:32
Collect Date:	06/22/2016 09:45	**Dilution:**	1	**File ID:**	NI.070116.123211
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00812		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.00132		0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.195		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.0569		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.0261		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00262		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0230	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW21-062216	**Prep Method:**	3015	**Prep Date:**	06/28/2016 07:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574808	**Analyst:**	JYH	**Run Date:**	07/01/2016 16:05
Collect Date:	06/22/2016 09:45	**Dilution:**	50	**File ID:**	NI.070116.160530
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	5.91		0.300	0.150	0.0750
Manganese, Total	7439-96-5	1.81		0.200	0.100	0.0500
Nickel, Total	7440-02-0	0.760		0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-01	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW21-062216	**Prep Method:**	7470A	**Prep Date:**	06/25/2016 11:30
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	07/01/2016 10:18
Workgroup #:	WG574691	**Analyst:**	AMA	**Run Date:**	07/01/2016 11:34
Collect Date:	06/22/2016 09:45	**Dilution:**	1	**File ID:**	M7.070116.113445
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	MW9-062216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG575084	**Analyst:**	TMB	**Run Date:**	07/02/2016 22:40
Collect Date:	06/22/2016 11:05	**Dilution:**	10	**File ID:**	6M140384
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	50.0	U	100	50.0	25.0
Benzene	71-43-2	2.50	U	10.0	2.50	1.25
Bromobenzene	108-86-1	2.50	U	10.0	2.50	1.25
Bromochloromethane	74-97-5	4.00	U	10.0	4.00	2.00
Bromodichloromethane	75-27-4	5.00	U	10.0	5.00	2.50
Bromoform	75-25-2	10.0	U	20.0	10.0	5.00
Bromomethane	74-83-9	10.0	U	20.0	10.0	5.00
2-Butanone	78-93-3	50.0	U	100	50.0	25.0
n-Butylbenzene	104-51-8	5.00	U	10.0	5.00	2.50
sec-Butylbenzene	135-98-8	5.00	U	10.0	5.00	2.50
tert-Butylbenzene	98-06-6	5.00	U	10.0	5.00	2.50
Carbon disulfide	75-15-0	10.0	U	20.0	10.0	5.00
Carbon tetrachloride	56-23-5	5.00	Q	10.0	5.00	2.50
Chlorobenzene	108-90-7	2.50	U	10.0	2.50	1.25
Chlorodibromomethane	124-48-1	5.00	U	10.0	5.00	2.50
Chloroethane	75-00-3	10.0	U	20.0	10.0	5.00
Chloroform	67-66-3	3.97	J	10.0	2.50	1.25
Chloromethane	74-87-3	10.0	U	20.0	10.0	5.00
2-Chlorotoluene	95-49-8	2.50	U	10.0	2.50	1.25
4-Chlorotoluene	106-43-4	5.00	U	10.0	5.00	2.50
1,2-Dibromo-3-chloropropane	96-12-8	20.0	U	50.0	20.0	10.0
1,2-Dibromoethane	106-93-4	5.00	U	10.0	5.00	2.50
Dibromomethane	74-95-3	5.00	U	10.0	5.00	2.50
1,2-Dichlorobenzene	95-50-1	2.50	U	10.0	2.50	1.25
1,3-Dichlorobenzene	541-73-1	5.00	U	10.0	5.00	2.50
1,4-Dichlorobenzene	106-46-7	2.50	U	10.0	2.50	1.25
Dichlorodifluoromethane	75-71-8	5.00	U	10.0	5.00	2.50
1,1-Dichloroethane	75-34-3	2.50	U	10.0	2.50	1.25
1,2-Dichloroethane	107-06-2	5.00	U	10.0	5.00	2.50
1,1-Dichloroethene	75-35-4	10.0	U	20.0	10.0	5.00
cis-1,2-Dichloroethene	156-59-2	64.7		10.0	5.00	2.50

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	5.00	U	10.0	5.00	2.50
1,2-Dichloropropane	78-87-5	4.00	U	10.0	4.00	2.00
1,3-Dichloropropane	142-28-9	4.00	U	10.0	4.00	2.00
2,2-Dichloropropane	594-20-7	5.00	U	10.0	5.00	2.50
cis-1,3-Dichloropropene	10061-01-5	5.00	U	10.0	5.00	2.50
trans-1,3-Dichloropropene	10061-02-6	10.0	U	20.0	10.0	5.00
1,1-Dichloropropene	563-58-6	5.00	U	10.0	5.00	2.50
Ethylbenzene	100-41-4	5.00	U	10.0	5.00	2.50
2-Hexanone	591-78-6	50.0	U	100	50.0	25.0
Hexachlorobutadiene	87-68-3	5.00	U	10.0	5.00	2.50
Isopropylbenzene	98-82-8	5.00	U	10.0	5.00	2.50
p-Isopropyltoluene	99-87-6	5.00	U	10.0	5.00	2.50
4-Methyl-2-pentanone	108-10-1	50.0	U	100	50.0	25.0
Methylene chloride	75-09-2	5.00	U	10.0	5.00	2.50
Naphthalene	91-20-3	4.00	U	10.0	4.00	2.00
n-Propylbenzene	103-65-1	2.50	U	10.0	2.50	1.25
Styrene	100-42-5	2.50	U	10.0	2.50	1.25
1,1,1,2-Tetrachloroethane	630-20-6	5.00	U	10.0	5.00	2.50
1,1,2,2-Tetrachloroethane	79-34-5	4.00	U	10.0	4.00	2.00
Tetrachloroethene	127-18-4	5.00	U	10.0	5.00	2.50
Toluene	108-88-3	5.00	U	10.0	5.00	2.50
1,2,3-Trichlorobenzene	87-61-6	3.00	U	10.0	3.00	1.50
1,2,4-Trichlorobenzene	120-82-1	4.00	U	10.0	4.00	2.00
1,1,1-Trichloroethane	71-55-6	5.00	U	10.0	5.00	2.50
1,1,2-Trichloroethane	79-00-5	5.00	U	10.0	5.00	2.50
Trichloroethene	79-01-6	1460		10.0	5.00	2.50
Trichlorofluoromethane	75-69-4	5.00	U	10.0	5.00	2.50
1,2,3-Trichloropropane	96-18-4	10.0	U	20.0	10.0	5.00
1,2,4-Trimethylbenzene	95-63-6	5.00	U	10.0	5.00	2.50
1,3,5-Trimethylbenzene	108-67-8	5.00	U	10.0	5.00	2.50
Vinyl chloride	75-01-4	5.00	U	10.0	5.00	2.50
o-Xylene	95-47-6	5.00	U	10.0	5.00	2.50
m-,p-Xylene	179601-23-1	10.0	U	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	99.8	85	120	
4-Bromofluorobenzene	98.9	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	MW9-062216	**Prep Method:**	3520C	**Prep Date:**	06/27/2016 14:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574772	**Analyst:**	MES	**Run Date:**	07/01/2016 00:06
Collect Date:	06/22/2016 11:05	**Dilution:**	1	**File ID:**	15M18699
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.77	J	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	116	20	129	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW9-062216	**Prep Method:**	6850	**Prep Date:**	07/01/2016 13:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575005	**Analyst:**	JWR	**Run Date:**	07/01/2016 19:24
Collect Date:	06/22/2016 11:05	**Dilution:**	100	**File ID:**	1LM.LM35579
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	263		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L16061289-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18WW02-062216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG575084	**Analyst:**	TMB	**Run Date:**	07/02/2016 18:55
Collect Date:	06/22/2016 13:40	**Dilution:**	1	**File ID:**	6M140377
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	4.31	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

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Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

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Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	104	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	100	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18WW02-062216	**Prep Method:**	3520C	**Prep Date:**	06/27/2016 14:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574772	**Analyst:**	MES	**Run Date:**	07/01/2016 00:29
Collect Date:	06/22/2016 13:40	**Dilution:**	1	**File ID:**	15M18700
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	53.4	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW02-062216	**Prep Method:**	6850	**Prep Date:**	07/01/2016 13:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575005	**Analyst:**	JWR	**Run Date:**	07/01/2016 19:43
Collect Date:	06/22/2016 13:40	**Dilution:**	1	**File ID:**	1LM.LM35580
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW02F-062216	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/24/2016 10:17
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/24/2016 14:56
Collect Date:	06/22/2016 13:40	**Dilution:**	1	**File ID:**	T3.062416.145634
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	1.12		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	7.09		0.500	0.250	0.125
Iron, Total	7439-89-6	1.61		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	1.34		1.00	0.500	0.250
Potassium, Total	7440-09-7	2.24		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	14.1		1.00	0.500	0.250

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW02F-062216	**Prep Method:**	3015	**Prep Date:**	06/28/2016 07:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574808	**Analyst:**	JYH	**Run Date:**	07/01/2016 12:35
Collect Date:	06/22/2016 13:40	**Dilution:**	1	**File ID:**	NI.070116.123523
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.000926	J	0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.0479		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00315	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00100	U	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00608		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00127	J	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.0851		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00419	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00226		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-04	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18WW02F-062216	**Prep Method:**	7470A	**Prep Date:**	06/25/2016 11:30
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	07/01/2016 10:18
Workgroup #:	WG574691	**Analyst:**	AMA	**Run Date:**	07/01/2016 11:37
Collect Date:	06/22/2016 13:40	**Dilution:**	1	**File ID:**	M7.070116.113718
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW10SW-062216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG575084	**Analyst:**	TMB	**Run Date:**	07/02/2016 19:27
Collect Date:	06/22/2016 14:55	**Dilution:**	1	**File ID:**	6M140378
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	102	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	99.3	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW10SW-062216	**Prep Method:**	3520C	**Prep Date:**	06/27/2016 14:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574772	**Analyst:**	MES	**Run Date:**	07/01/2016 00:51
Collect Date:	06/22/2016 14:55	**Dilution:**	1	**File ID:**	15M18701
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	55.3	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW10SW-062216	**Prep Method:**	6850	**Prep Date:**	07/01/2016 13:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575005	**Analyst:**	JWR	**Run Date:**	07/01/2016 20:58
Collect Date:	06/22/2016 14:55	**Dilution:**	1	**File ID:**	1LM.LM35584
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG575084	**Analyst:**	TMB	**Run Date:**	07/02/2016 16:15
Collect Date:	06/22/2016 00:01	**Dilution:**	1	**File ID:**	6M140372
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	101	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	103	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	MW21-062216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG575129	**Analyst:**	TMB	**Run Date:**	07/05/2016 14:58
Collect Date:	06/22/2016 09:45	**Dilution:**	50	**File ID:**	6M140425
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	250	U	500	250	125
Benzene	71-43-2	12.5	U	50.0	12.5	6.25
Bromobenzene	108-86-1	12.5	U	50.0	12.5	6.25
Bromochloromethane	74-97-5	20.0	U	50.0	20.0	10.0
Bromodichloromethane	75-27-4	25.0	U	50.0	25.0	12.5
Bromoform	75-25-2	50.0	U	100	50.0	25.0
Bromomethane	74-83-9	50.0	U	100	50.0	25.0
2-Butanone	78-93-3	250	U	500	250	125
n-Butylbenzene	104-51-8	25.0	U	50.0	25.0	12.5
sec-Butylbenzene	135-98-8	25.0	U	50.0	25.0	12.5
tert-Butylbenzene	98-06-6	25.0	U	50.0	25.0	12.5
Carbon disulfide	75-15-0	50.0	U	100	50.0	25.0
Carbon tetrachloride	56-23-5	25.0	Q	50.0	25.0	12.5
Chlorobenzene	108-90-7	12.5	U	50.0	12.5	6.25
Chlorodibromomethane	124-48-1	25.0	U	50.0	25.0	12.5
Chloroethane	75-00-3	50.0	U	100	50.0	25.0
Chloroform	67-66-3	13.5	J	50.0	12.5	6.25
Chloromethane	74-87-3	50.0	U	100	50.0	25.0
2-Chlorotoluene	95-49-8	12.5	U	50.0	12.5	6.25
4-Chlorotoluene	106-43-4	25.0	U	50.0	25.0	12.5
1,2-Dibromo-3-chloropropane	96-12-8	100	U	250	100	50.0
1,2-Dibromoethane	106-93-4	25.0	U	50.0	25.0	12.5
Dibromomethane	74-95-3	25.0	U	50.0	25.0	12.5
1,2-Dichlorobenzene	95-50-1	12.5	U	50.0	12.5	6.25
1,3-Dichlorobenzene	541-73-1	25.0	U	50.0	25.0	12.5
1,4-Dichlorobenzene	106-46-7	12.5	U	50.0	12.5	6.25
Dichlorodifluoromethane	75-71-8	25.0	Q	50.0	25.0	12.5
1,1-Dichloroethane	75-34-3	12.5	U	50.0	12.5	6.25
1,2-Dichloroethane	107-06-2	35.2	J	50.0	25.0	12.5
1,1-Dichloroethene	75-35-4	50.0	U	100	50.0	25.0
cis-1,2-Dichloroethene	156-59-2	112		50.0	25.0	12.5
trans-1,2-Dichloroethene	156-60-5	25.0	U	50.0	25.0	12.5

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	20.0	U	50.0	20.0	10.0
1,3-Dichloropropane	142-28-9	20.0	U	50.0	20.0	10.0
2,2-Dichloropropane	594-20-7	25.0	U	50.0	25.0	12.5
cis-1,3-Dichloropropene	10061-01-5	25.0	U	50.0	25.0	12.5
trans-1,3-Dichloropropene	10061-02-6	50.0	U	100	50.0	25.0
1,1-Dichloropropene	563-58-6	25.0	U	50.0	25.0	12.5
Ethylbenzene	100-41-4	25.0	U	50.0	25.0	12.5
2-Hexanone	591-78-6	250	U	500	250	125
Hexachlorobutadiene	87-68-3	25.0	U	50.0	25.0	12.5
Isopropylbenzene	98-82-8	25.0	U	50.0	25.0	12.5
p-Isopropyltoluene	99-87-6	25.0	U	50.0	25.0	12.5
4-Methyl-2-pentanone	108-10-1	250	U	500	250	125
Methylene chloride	75-09-2	25.0	U	50.0	25.0	12.5
Naphthalene	91-20-3	20.0	U	50.0	20.0	10.0
n-Propylbenzene	103-65-1	12.5	U	50.0	12.5	6.25
Styrene	100-42-5	12.5	U	50.0	12.5	6.25
1,1,1,2-Tetrachloroethane	630-20-6	25.0	U	50.0	25.0	12.5
1,1,2,2-Tetrachloroethane	79-34-5	20.0	U	50.0	20.0	10.0
Tetrachloroethene	127-18-4	25.0	U	50.0	25.0	12.5
Toluene	108-88-3	25.0	U	50.0	25.0	12.5
1,2,3-Trichlorobenzene	87-61-6	15.0	U	50.0	15.0	7.50
1,2,4-Trichlorobenzene	120-82-1	20.0	U	50.0	20.0	10.0
1,1,1-Trichloroethane	71-55-6	25.0	U	50.0	25.0	12.5
1,1,2-Trichloroethane	79-00-5	25.0	U	50.0	25.0	12.5
Trichloroethene	79-01-6	6080		50.0	25.0	12.5
Trichlorofluoromethane	75-69-4	25.0	Q	50.0	25.0	12.5
1,2,3-Trichloropropane	96-18-4	50.0	U	100	50.0	25.0
1,2,4-Trimethylbenzene	95-63-6	25.0	U	50.0	25.0	12.5
1,3,5-Trimethylbenzene	108-67-8	25.0	U	50.0	25.0	12.5
Vinyl chloride	75-01-4	46.2	J	50.0	25.0	12.5
o-Xylene	95-47-6	25.0	U	50.0	25.0	12.5
m-,p-Xylene	179601-23-1	50.0	U	100	50.0	25.0

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	99.0	85	120	
4-Bromofluorobenzene	98.0	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	MW9-062216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG575084	**Analyst:**	TMB	**Run Date:**	07/02/2016 22:40
Collect Date:	06/22/2016 11:05	**Dilution:**	10	**File ID:**	6M140384
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	50.0	U	100	50.0	25.0
Benzene	71-43-2	2.50	U	10.0	2.50	1.25
Bromobenzene	108-86-1	2.50	U	10.0	2.50	1.25
Bromochloromethane	74-97-5	4.00	U	10.0	4.00	2.00
Bromodichloromethane	75-27-4	5.00	U	10.0	5.00	2.50
Bromoform	75-25-2	10.0	U	20.0	10.0	5.00
Bromomethane	74-83-9	10.0	U	20.0	10.0	5.00
2-Butanone	78-93-3	50.0	U	100	50.0	25.0
n-Butylbenzene	104-51-8	5.00	U	10.0	5.00	2.50
sec-Butylbenzene	135-98-8	5.00	U	10.0	5.00	2.50
tert-Butylbenzene	98-06-6	5.00	U	10.0	5.00	2.50
Carbon disulfide	75-15-0	10.0	U	20.0	10.0	5.00
Carbon tetrachloride	56-23-5	5.00	Q	10.0	5.00	2.50
Chlorobenzene	108-90-7	2.50	U	10.0	2.50	1.25
Chlorodibromomethane	124-48-1	5.00	U	10.0	5.00	2.50
Chloroethane	75-00-3	10.0	U	20.0	10.0	5.00
Chloroform	67-66-3	3.97	J	10.0	2.50	1.25
Chloromethane	74-87-3	10.0	U	20.0	10.0	5.00
2-Chlorotoluene	95-49-8	2.50	U	10.0	2.50	1.25
4-Chlorotoluene	106-43-4	5.00	U	10.0	5.00	2.50
1,2-Dibromo-3-chloropropane	96-12-8	20.0	U	50.0	20.0	10.0
1,2-Dibromoethane	106-93-4	5.00	U	10.0	5.00	2.50
Dibromomethane	74-95-3	5.00	U	10.0	5.00	2.50
1,2-Dichlorobenzene	95-50-1	2.50	U	10.0	2.50	1.25
1,3-Dichlorobenzene	541-73-1	5.00	U	10.0	5.00	2.50
1,4-Dichlorobenzene	106-46-7	2.50	U	10.0	2.50	1.25
Dichlorodifluoromethane	75-71-8	5.00	U	10.0	5.00	2.50
1,1-Dichloroethane	75-34-3	2.50	U	10.0	2.50	1.25
1,2-Dichloroethane	107-06-2	5.00	U	10.0	5.00	2.50
1,1-Dichloroethene	75-35-4	10.0	U	20.0	10.0	5.00
cis-1,2-Dichloroethene	156-59-2	64.7		10.0	5.00	2.50

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	5.00	U	10.0	5.00	2.50
1,2-Dichloropropane	78-87-5	4.00	U	10.0	4.00	2.00
1,3-Dichloropropane	142-28-9	4.00	U	10.0	4.00	2.00
2,2-Dichloropropane	594-20-7	5.00	U	10.0	5.00	2.50
cis-1,3-Dichloropropene	10061-01-5	5.00	U	10.0	5.00	2.50
trans-1,3-Dichloropropene	10061-02-6	10.0	U	20.0	10.0	5.00
1,1-Dichloropropene	563-58-6	5.00	U	10.0	5.00	2.50
Ethylbenzene	100-41-4	5.00	U	10.0	5.00	2.50
2-Hexanone	591-78-6	50.0	U	100	50.0	25.0
Hexachlorobutadiene	87-68-3	5.00	U	10.0	5.00	2.50
Isopropylbenzene	98-82-8	5.00	U	10.0	5.00	2.50
p-Isopropyltoluene	99-87-6	5.00	U	10.0	5.00	2.50
4-Methyl-2-pentanone	108-10-1	50.0	U	100	50.0	25.0
Methylene chloride	75-09-2	5.00	U	10.0	5.00	2.50
Naphthalene	91-20-3	4.00	U	10.0	4.00	2.00
n-Propylbenzene	103-65-1	2.50	U	10.0	2.50	1.25
Styrene	100-42-5	2.50	U	10.0	2.50	1.25
1,1,1,2-Tetrachloroethane	630-20-6	5.00	U	10.0	5.00	2.50
1,1,2,2-Tetrachloroethane	79-34-5	4.00	U	10.0	4.00	2.00
Tetrachloroethene	127-18-4	5.00	U	10.0	5.00	2.50
Toluene	108-88-3	5.00	U	10.0	5.00	2.50
1,2,3-Trichlorobenzene	87-61-6	3.00	U	10.0	3.00	1.50
1,2,4-Trichlorobenzene	120-82-1	4.00	U	10.0	4.00	2.00
1,1,1-Trichloroethane	71-55-6	5.00	U	10.0	5.00	2.50
1,1,2-Trichloroethane	79-00-5	5.00	U	10.0	5.00	2.50
Trichloroethene	79-01-6	1460		10.0	5.00	2.50
Trichlorofluoromethane	75-69-4	5.00	U	10.0	5.00	2.50
1,2,3-Trichloropropane	96-18-4	10.0	U	20.0	10.0	5.00
1,2,4-Trimethylbenzene	95-63-6	5.00	U	10.0	5.00	2.50
1,3,5-Trimethylbenzene	108-67-8	5.00	U	10.0	5.00	2.50
Vinyl chloride	75-01-4	5.00	U	10.0	5.00	2.50
o-Xylene	95-47-6	5.00	U	10.0	5.00	2.50
m-,p-Xylene	179601-23-1	10.0	U	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	99.8	85	120	
4-Bromofluorobenzene	98.9	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18WW02-062216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG575084	**Analyst:**	TMB	**Run Date:**	07/02/2016 18:55
Collect Date:	06/22/2016 13:40	**Dilution:**	1	**File ID:**	6M140377
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	4.31	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	104	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	100	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW10SW-062216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG575084	**Analyst:**	TMB	**Run Date:**	07/02/2016 19:27
Collect Date:	06/22/2016 14:55	**Dilution:**	1	**File ID:**	6M140378
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	102	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	99.3	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG575084	**Analyst:**	TMB	**Run Date:**	07/02/2016 16:15
Collect Date:	06/22/2016 00:01	**Dilution:**	1	**File ID:**	6M140372
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	101	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	103	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 042416
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75498 Surrogate Standard: STD75498
CCV: STD75791 LCS: STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG566155

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M138749	RINSE	NA	1	1		04/24/16 16:05
6M138750	WG566155-01 50ng BFB 826-A9	NA	1	1	STD75485	04/24/16 16:33
6M138751	WG566155-02 5ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 16:59
6M138752	WG566155-03 20ug/L STD 826-A	NA	1	1	STD75791	04/24/16 17:31
6M138753	WG566155-04 50ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 18:03
6M138754	WG566155-05 100ug/L STD 826-A	NA	1	1	STD75791	04/24/16 18:36
6M138755	WG566155-06 200ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 19:08
6M138756	WG566155-07 300ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 19:40
6M138757	WG566155-08 400ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 20:12
6M138758	WG566155-09 500ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 20:44
6M138759	RINSE	NA	1	1		04/24/16 21:16
6M138760	RINSE	NA	1	1		04/24/16 21:49
6M138761	WG566155-10 100ug/L ALT SRC	NA	1	1	STD75801	04/24/16 22:21
6M138762	RINSE	NA	1	1		04/24/16 22:53
6M138763	RINSE	NA	1	1		04/24/16 23:25

Approved: April 29, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 063016
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53798

Internal Standard: STD76854 Surrogate Standard: STD76854
CCV: STD76892 LCS: STD76744 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG574723

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M140313	WG574723-01 50ng BFB STD 8260	NA	1	1	STD76496	06/30/16 11:36
6M140314	WG574723-02 0.3ug/L STD 8260	NA	1	1	STD76892	06/30/16 12:03
6M140315	WG574723-03 0.4ug/L STD 8260	NA	1	1	STD76892	06/30/16 12:35
6M140316	WG574723-04 1ug/L STD 8260	NA	1	1	STD76892	06/30/16 13:08
6M140317	WG574723-05 2ug/L STD 8260	NA	1	1	STD76892	06/30/16 13:40
6M140318	WG574723-06 5ug/L STD 8260	NA	1	1	STD76892	06/30/16 14:12
6M140319	WG574723-07 20ug/L STD 8260	NA	1	1	STD76892	06/30/16 14:44
6M140320	WG574723-08 50ug/L STD 8260	NA	1	1	STD76892	06/30/16 15:16
6M140321	WG574723-09 100ug/L STD 8260	NA	1	1	STD76892	06/30/16 15:48
6M140322	WG574723-10 200ug/L STD 8260	NA	1	1	STD76892	06/30/16 16:21
6M140323	WG574723-11 300ug/L STD 8260	NA	1	1	STD76892	06/30/16 16:53
6M140324	RINSE	NA	1	1		06/30/16 17:27
6M140325	RINSE	NA	1	1		06/30/16 17:59
6M140326	WG574723-12 50ug/L ALT SRC STD 8260	NA	1	1	STD76744	06/30/16 18:31
6M140327	RINSE	NA	1	1		06/30/16 19:04

Approved: July 07, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 070216
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD76854 Surrogate Standard: STD76854
CCV: STD76892 LCS: STD76870 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG575084

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M140362	WG575083-01 50ng BFB STD 8260	NA	1	1	STD76496	07/02/16 11:00
6M140363	WG575083-02 50ug/L CCV STD 8260	NA	1	1	STD76892	07/02/16 11:25
6M140364	WG575083-02 50ug/L CCV STD 8260	NA	1	1	STD76892	07/02/16 11:57
6M140365	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76432	07/02/16 12:29
6M140366	WG575084-01 VBLK0702 BLANK STD 826	NA	1	1		07/02/16 13:02
6M140367	WG575084-02 20ug/L LCS STD 8260	NA	1	1	STD76870	07/02/16 13:34
6M140368	WG575084-03 20ug/L LCS2 STD 8260	NA	1	1	STD76870	07/02/16 14:06
6M140369	L16061394-01 B 826-BETX	6	2	1		07/02/16 14:38
6M140370	L16061214-10 A TB 826-SPE	<2	1	1		07/02/16 15:10
6M140371	L16061214-09 A TB 826-SPE	<2	1	1		07/02/16 15:42
6M140372	L16061289-06 A TB 826-LOW	<2	1	1		07/02/16 16:15
6M140373	L16061567-01 B 826-SPE1	7	1	1		07/02/16 16:47
6M140374	L16061570-01 A 826-SPE	7	1	1		07/02/16 17:19
6M140375	L16061569-01 B 826-SPE	7	1	1		07/02/16 17:51
6M140376	L16061214-06 A 826-SPE	<2	1	1		07/02/16 18:23
6M140377	L16061289-03 A 826-LOW	<2	1	1		07/02/16 18:55
6M140378	L16061289-05 A 826-LOW	<2	1	1		07/02/16 19:27
6M140379	L16061214-03 A 826-SPE	<2	1	1		07/02/16 19:59
6M140380	L16061214-08 A 826-SPE	<2	1	1		07/02/16 20:31
6M140381	L16061214-02 A 826-SPE	<2	1	1		07/02/16 21:04
6M140382	L16061214-01 A 2.5X 826-SPE	<2	1	2.5		07/02/16 21:36
6M140383	L16061289-01 A 100X 826-LOW	<2	1	100		07/02/16 22:08
6M140384	L16061289-02 A 10X 826-LOW	<2	1	10		07/02/16 22:40
6M140385	CCV	NA	1	1		07/02/16 23:12
6M140386	RINSE	NA	1	1		07/02/16 23:44
6M140387	RINSE	NA	1	1		07/03/16 00:16

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 6M140363				
	Ketones were low, DNR.			
4				

Approved: July 06, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 070216
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD76854 Surrogate Standard: STD76854
CCV: STD76892 LCS: STD76870 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG575084

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
File ID: 6M140365				
	Not needed, DNR.			
22	X	50	Analyzed too dilute	
File ID: 6M140383				

Approved: July 06, 2016

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 070516
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53801

Internal Standard: STD75854 Surrogate Standard: STD75854
CCV: STD76892 LCS: STD76744 MS/MSD: STD76744

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG575129

Comments: File 6M140419 was not used. Computer froze and had to reboot.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M140415	RINSE	NA	1	1		07/05/16 09:08
6M140416	RINSE	NA	1	1		07/05/16 09:52
6M140417	WG575127-01 50ng BFB STD 8260	NA	1	1	STD76496	07/05/16 10:49
6M140418	WG575127-02 50ug/L CCV STD 8260	NA	1	1	STD76892	07/05/16 11:14
6M140420	WG575129-01 VBLK0705 BLANK STD 826	NA	1	1		07/05/16 12:18
6M140421	WG575129-02 20ugL LCS STD 8260	NA	1	1	STD76744	07/05/16 12:50
6M140422	L16061507-03 C 826-SPE2	<2	1	1		07/05/16 13:22
6M140423	L16061284-01 B 826-SPE	<2	1	1		07/05/16 13:55
6M140424	L16061417-09 RB A 826-SPE	<2	1	1		07/05/16 14:27
6M140425	L16061289-01 B 50X 826-LOW 00	<2	1	50		07/05/16 14:58
6M140426	L16061284-05 B 2.5X 826-SPE 00	7	1	2.5		07/05/16 15:31
6M140427	L16061417-06 A MS 826-SPE	<2	1	1	STD76744	07/05/16 16:03
6M140428	L16061417-07 A MSD 826-SPE	<2	1	1	STD76744	07/05/16 16:36
6M140429	L16061362-09 TB A 826-SPE	<2	1	1		07/05/16 17:08
6M140430	L16061405-01 A 826-SPE	<2	1	1		07/05/16 17:40
6M140431	L16061405-02 A 826-SPE	<2	1	1		07/05/16 18:13
6M140432	L16061417-01 A 826-SPE	<2	1	1		07/05/16 18:45
6M140433	L16061417-05 A REF 826-SPE	<2	1	1		07/05/16 19:16
6M140434	L16061417-08 A 826-SPE	<2	1	1		07/05/16 19:48
6M140435	L16061417-02 A 826-SPE	<2	1	1		07/05/16 20:20
6M140436	L16061417-03 A 826-SPE	<2	1	1		07/05/16 20:53
6M140437	L16061417-04 A 826-SPE	<2	1	1		07/05/16 21:25
6M140438	L16061401-01 A 10X 826-SPE	<2	1	10		07/05/16 21:57
6M140439	L16061402-01 A 100X 826-SPE	<2	1	100		07/05/16 22:29
6M140440	CCV	NA	1	1		07/05/16 23:01
6M140441	RINSE	NA	1	1		07/05/16 23:33
6M140442	RINSE	NA	1	1		07/06/16 00:05

Comments

Seq.	Rerun	Dil.	Reason	Analytes
19	X	5	Over Calibration Range	TCE
File ID: 6M140434				

Approved: July 07, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 070516
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53801

Internal Standard: STD75854 Surrogate Standard: STD75854
CCV: STD76892 LCS: STD76744 MS/MSD: STD76744

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG575129

Comments: File 6M140419 was not used. Computer froze and had to reboot.

Comments

Seq.	Rerun	Dil.	Reason	Analytes
23	X	100	Over Calibration Range	TCE
File ID: 6M140438				
24	X	100	Carry-over contamination	
File ID: 6M140439				
	DNR.			

Approved: July 07, 2016

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 24-APR-2016
Analyst: JDS
Analyst: NA
Method: 8260B/624
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 74754
Analytical Workgroups: WG566155

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
27-APR-2016
Tiffany Bailey

Secondary Reviewer:
29-APR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: APR-29-2016 12:29:57

Microbac Laboratories Inc.

Data Checklist

Date: 30-JUN-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 76082
Analytical Workgroups: WG574723

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
01-JUL-2016
Tiffany Bailey

Secondary Reviewer:
07-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-07-2016 13:59:59

Microbac Laboratories Inc.

Data Checklist

Date: 02-JUL-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 76114
Analytical Workgroups: WG575084

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
05-JUL-2016
Tiffany Bailey

Secondary Reviewer:
06-JUL-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-06-2016 11:18:53

Microbac Laboratories Inc.

Data Checklist

Date: 05-JUL-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 76154
Analytical Workgroups: WG575129

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
07-JUL-2016
Tiffany Bailey

Secondary Reviewer:
07-JUL-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-07-2016 15:37:06

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG575084

Login Number: L16061289

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW9-062216	02	06/22/16					07/02/2016	10.5	14		07/02/16	10.5	14	
18WW02-062216	03	06/22/16					07/02/2016	10.2	14		07/02/16	10.2	14	
18CPTMW10SW-062216	05	06/22/16					07/02/2016	10.2	14		07/02/16	10.2	14	
TRIP BLANK	06	06/22/16					07/02/2016	10.7	14		07/02/16	10.7	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4839893
Report generated 07/07/2016 11:58

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG575129

Login Number: L16061289

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW21-062216	01	06/22/16					07/05/2016	13.2	14		07/05/16	13.2	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4839893
Report generated 07/07/2016 11:58

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061289
Instrument Id: HPMS6
Workgroup (AAB#): WG575129

Method: 8260
CAL ID: HPMS6-30-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16061289-01	50.0	DL01	103	106	98.0	99.0
WG575129-01	1.00	01	101	104	98.9	101
WG575129-02	1.00	01	102	104	93.5	98.8

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4839899
Report generated: 07/07/2016 11:59

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061289
Instrument Id: HPMS6
Workgroup (AAB#): WG575084

Method: 8260
CAL ID: HPMS6-30-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16061289-02	10.0	DL01	103	104	98.9	99.8
L16061289-03	1.00	01	104	102	100	100
L16061289-05	1.00	01	102	103	99.3	101
L16061289-06	1.00	01	101	101	103	101
WG575084-01	1.00	01	101	100	103	100
WG575084-02	1.00	01	100	101	96.4	99.6
WG575084-03	1.00	01	100	100	97.9	99.8

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4839899
Report generated: 07/07/2016 11:59

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16061289 Prep Date: 07/02/16 13:02 Sample ID: WG575084-01
Instrument ID: HPMS6 Run Date: 07/02/16 13:02 Prep Method: 5030B/5030C/503
File ID: 6M140366 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG575084 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS6-30-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 4839894
07-JUL-2016 11:58

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061289 Prep Date: 07/02/16 13:02 Sample ID: WG575084-01
Instrument ID: HPMS6 Run Date: 07/02/16 13:02 Prep Method: 5030B/5030C/503
File ID: 6M140366 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG575084 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS6-30-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	100	85 - 115	PASS
1,2-Dichloroethane-d4	101	70 - 120	PASS
Toluene-d8	100	85 - 120	PASS
4-Bromofluorobenzene	103	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4839894
07-JUL-2016 11:58

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16061289 Prep Date: 07/05/16 12:18 Sample ID: WG575129-01
Instrument ID: HPMS6 Run Date: 07/05/16 12:18 Prep Method: 5030B/5030C/503
File ID: 6M140420 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG575129 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS6-30-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
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Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061289 Prep Date: 07/05/16 12:18 Sample ID: WG575129-01
Instrument ID: HPMS6 Run Date: 07/05/16 12:18 Prep Method: 5030B/5030C/503
File ID: 6M140420 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG575129 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS6-30-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	104	85 - 115	PASS
1,2-Dichloroethane-d4	101	70 - 120	PASS
Toluene-d8	101	85 - 120	PASS
4-Bromofluorobenzene	98.9	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4839894
07-JUL-2016 11:58

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061289 | Run Date: 07/02/2016 | Sample ID: WG575084-02
Instrument ID: HPMS6 | Run Time: 13:34 | Prep Method: 5030B/5030C/503
File ID: 6M140367 | Analyst: TMB | Method: 8260B
Workgroup (AAB#): WG575084 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD76870 | Cal ID: HPMS6-30-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	21.5	108	40 - 140	
Benzene	20.0	19.9	99.7	80 - 120	
Bromobenzene	20.0	21.0	105	75 - 125	
Bromochloromethane	20.0	20.3	102	65 - 130	
Bromodichloromethane	20.0	21.8	109	75 - 120	
Bromoform	20.0	20.9	104	70 - 130	
Bromomethane	20.0	15.2	76.2	30 - 145	
2-Butanone	20.0	20.5	103	30 - 150	
n-Butylbenzene	20.0	22.0	110	70 - 135	
sec-Butylbenzene	20.0	22.5	112	70 - 125	
tert-Butylbenzene	20.0	22.8	114	70 - 130	
Carbon disulfide	20.0	17.2	85.9	35 - 160	
Carbon tetrachloride	20.0	21.9	110	65 - 140	
Chlorobenzene	20.0	21.7	109	80 - 120	
Chlorodibromomethane	20.0	22.5	113	60 - 135	
Chloroethane	20.0	20.2	101	60 - 135	
Chloroform	20.0	20.2	101	65 - 135	
Chloromethane	20.0	13.3	66.4	40 - 125	
2-Chlorotoluene	20.0	20.9	105	75 - 125	
4-Chlorotoluene	20.0	22.8	114	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	23.6	118	50 - 130	
1,2-Dibromoethane	20.0	21.3	106	80 - 120	
Dibromomethane	20.0	20.4	102	75 - 125	
1,2-Dichlorobenzene	20.0	22.5	112	70 - 120	
1,3-Dichlorobenzene	20.0	21.7	108	75 - 125	
1,4-Dichlorobenzene	20.0	22.1	111	75 - 125	
Dichlorodifluoromethane	20.0	12.4	61.8	30 - 155	
1,1-Dichloroethane	20.0	18.8	94.2	70 - 135	
1,2-Dichloroethane	20.0	21.2	106	70 - 130	
1,1-Dichloroethene	20.0	17.6	88.0	70 - 130	
cis-1,2-Dichloroethene	20.0	20.1	101	70 - 125	
trans-1,2-Dichloroethene	20.0	18.9	94.4	60 - 140	
1,2-Dichloropropane	20.0	20.9	105	75 - 125	
1,3-Dichloropropane	20.0	22.1	111	75 - 125	
2,2-Dichloropropane	20.0	20.3	102	70 - 135	
cis-1,3-Dichloropropene	20.0	22.8	114	70 - 130	
trans-1,3-Dichloropropene	20.0	21.8	109	55 - 140	
1,1-Dichloropropene	20.0	19.4	96.9	75 - 130	
Ethylbenzene	20.0	21.6	108	75 - 125	
2-Hexanone	20.0	20.4	102	55 - 130	
Hexachlorobutadiene	20.0	22.1	111	50 - 140	

LCS - Modified 03/06/2008
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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061289 Run Date: 07/02/2016 Sample ID: WG575084-02
Instrument ID: HPMS6 Run Time: 13:34 Prep Method: 5030B/5030C/503
File ID: 6M140367 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG575084 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD76870 Cal ID: HPMS6-30-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	22.5	113	75 - 125	
p-Isopropyltoluene	20.0	22.3	112	75 - 130	
4-Methyl-2-pentanone	20.0	20.3	102	60 - 135	
Methylene chloride	20.0	19.0	95.1	55 - 140	
Naphthalene	20.0	19.2	95.9	55 - 140	
n-Propylbenzene	20.0	22.4	112	70 - 130	
Styrene	20.0	22.4	112	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	22.6	113	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	22.5	112	65 - 130	
Tetrachloroethene	20.0	20.4	102	45 - 150	
Toluene	20.0	20.5	103	75 - 120	
1,2,3-Trichlorobenzene	20.0	20.5	103	55 - 140	
1,2,4-Trichlorobenzene	20.0	21.1	106	65 - 135	
1,1,1-Trichloroethane	20.0	20.8	104	65 - 130	
1,1,2-Trichloroethane	20.0	22.1	110	75 - 125	
Trichloroethene	20.0	20.3	102	70 - 125	
Trichlorofluoromethane	20.0	24.2	121	60 - 145	
1,2,3-Trichloropropane	20.0	22.9	114	75 - 125	
1,2,4-Trimethylbenzene	20.0	22.1	110	75 - 130	
1,3,5-Trimethylbenzene	20.0	22.1	110	75 - 130	
Vinyl chloride	20.0	19.4	96.8	50 - 145	
o-Xylene	20.0	22.5	113	80 - 120	
m-,p-Xylene	40.0	44.5	111	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	101	85 - 115	PASS
1,2-Dichloroethane-d4	100	70 - 120	PASS
Toluene-d8	99.6	85 - 120	PASS
4-Bromofluorobenzene	96.4	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061289 Run Date: 07/05/2016 Sample ID: WG575129-02
Instrument ID: HPMS6 Run Time: 12:50 Prep Method: 5030B/5030C/503
File ID: 6M140421 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG575129 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD76870 Cal ID: HPMS6-30-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	21.1	106	40 - 140	
Benzene	20.0	19.4	97.0	80 - 120	
Bromobenzene	20.0	21.2	106	75 - 125	
Bromochloromethane	20.0	19.9	99.7	65 - 130	
Bromodichloromethane	20.0	22.4	112	75 - 120	
Bromoform	20.0	22.3	112	70 - 130	
Bromomethane	20.0	18.1	90.5	30 - 145	
2-Butanone	20.0	20.6	103	30 - 150	
n-Butylbenzene	20.0	22.2	111	70 - 135	
sec-Butylbenzene	20.0	22.3	112	70 - 125	
tert-Butylbenzene	20.0	22.7	113	70 - 130	
Carbon disulfide	20.0	18.4	91.8	35 - 160	
Carbon tetrachloride	20.0	22.0	110	65 - 140	
Chlorobenzene	20.0	21.7	109	80 - 120	
Chlorodibromomethane	20.0	23.3	116	60 - 135	
Chloroethane	20.0	21.3	107	60 - 135	
Chloroform	20.0	20.4	102	65 - 135	
Chloromethane	20.0	15.6	78.0	40 - 125	
2-Chlorotoluene	20.0	20.2	101	75 - 125	
4-Chlorotoluene	20.0	23.1	115	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	23.9	119	50 - 130	
1,2-Dibromoethane	20.0	21.4	107	80 - 120	
Dibromomethane	20.0	21.0	105	75 - 125	
1,2-Dichlorobenzene	20.0	23.2	116	70 - 120	
1,3-Dichlorobenzene	20.0	22.3	111	75 - 125	
1,4-Dichlorobenzene	20.0	22.5	112	75 - 125	
Dichlorodifluoromethane	20.0	12.8	63.9	30 - 155	
1,1-Dichloroethane	20.0	18.2	90.9	70 - 135	
1,2-Dichloroethane	20.0	21.5	107	70 - 130	
1,1-Dichloroethene	20.0	13.9	69.5	70 - 130	*
cis-1,2-Dichloroethene	20.0	19.9	99.3	70 - 125	
trans-1,2-Dichloroethene	20.0	17.5	87.6	60 - 140	
1,2-Dichloropropane	20.0	20.7	104	75 - 125	
1,3-Dichloropropane	20.0	21.7	109	75 - 125	
2,2-Dichloropropane	20.0	19.8	98.9	70 - 135	
cis-1,3-Dichloropropene	20.0	22.9	115	70 - 130	
trans-1,3-Dichloropropene	20.0	21.9	109	55 - 140	
1,1-Dichloropropene	20.0	18.3	91.4	75 - 130	
Ethylbenzene	20.0	21.8	109	75 - 125	
2-Hexanone	20.0	18.5	92.4	55 - 130	
Hexachlorobutadiene	20.0	23.6	118	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4842635
Report generated: 07/07/2016 11:59

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061289 Run Date: 07/05/2016 Sample ID: WG575129-02
Instrument ID: HPMS6 Run Time: 12:50 Prep Method: 5030B/5030C/503
File ID: 6M140421 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG575129 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD76870 Cal ID: HPMS6-30-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	22.7	114	75 - 125	
p-Isopropyltoluene	20.0	22.4	112	75 - 130	
4-Methyl-2-pentanone	20.0	18.7	93.7	60 - 135	
Methylene chloride	20.0	17.9	89.3	55 - 140	
Naphthalene	20.0	20.4	102	55 - 140	
n-Propylbenzene	20.0	22.1	111	70 - 130	
Styrene	20.0	22.8	114	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	23.2	116	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	22.3	112	65 - 130	
Tetrachloroethene	20.0	20.8	104	45 - 150	
Toluene	20.0	20.2	101	75 - 120	
1,2,3-Trichlorobenzene	20.0	22.2	111	55 - 140	
1,2,4-Trichlorobenzene	20.0	22.2	111	65 - 135	
1,1,1-Trichloroethane	20.0	20.5	103	65 - 130	
1,1,2-Trichloroethane	20.0	21.7	109	75 - 125	
Trichloroethene	20.0	20.5	102	70 - 125	
Trichlorofluoromethane	20.0	21.7	108	60 - 145	
1,2,3-Trichloropropane	20.0	23.3	116	75 - 125	
1,2,4-Trimethylbenzene	20.0	22.2	111	75 - 130	
1,3,5-Trimethylbenzene	20.0	21.8	109	75 - 130	
Vinyl chloride	20.0	20.6	103	50 - 145	
o-Xylene	20.0	22.6	113	80 - 120	
m-,p-Xylene	40.0	44.7	112	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	104	85 - 115	PASS
1,2-Dichloroethane-d4	102	70 - 120	PASS
Toluene-d8	98.8	85 - 120	PASS
4-Bromofluorobenzene	93.5	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4842635
Report generated: 07/07/2016 11:59

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061289 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS6 Matrix: Water Method: 8260B
Workgroup (AAB#): WG575084 Units: ug/L
QC Key: DOD4 Lot #: STD76870

Sample ID: WG575084-02 LCS File ID: 6M140367 Run Date: 07/02/2016 13:34
Sample ID: WG575084-03 LCS2 File ID: 6M140368 Run Date: 07/02/2016 14:06

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	22.6	113	20.0	22.3	111	1.43	80 - 130	30	
1,1,1-Trichloroethane	20.0	20.8	104	20.0	20.7	104	0.127	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	22.5	112	20.0	22.9	115	1.84	65 - 130	30	
1,1,2-Trichloroethane	20.0	22.1	110	20.0	22.0	110	0.355	75 - 125	30	
1,1-Dichloroethane	20.0	18.8	94.2	20.0	18.8	93.8	0.508	70 - 135	30	
1,1-Dichloroethene	20.0	17.6	88.0	20.0	17.2	86.2	2.11	70 - 130	30	
1,1-Dichloropropene	20.0	19.4	96.9	20.0	19.2	96.2	0.748	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	20.5	103	20.0	21.1	106	2.73	55 - 140	30	
1,2,3-Trichloropropane	20.0	22.9	114	20.0	23.2	116	1.54	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	21.1	106	20.0	21.8	109	3.05	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	22.1	110	20.0	22.1	110	0.0301	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	23.6	118	20.0	23.7	119	0.350	50 - 130	30	
1,2-Dibromoethane	20.0	21.3	106	20.0	21.5	108	1.11	80 - 120	30	
1,2-Dichlorobenzene	20.0	22.5	112	20.0	22.4	112	0.253	70 - 120	30	
1,2-Dichloroethane	20.0	21.2	106	20.0	21.2	106	0.251	70 - 130	30	
1,2-Dichloropropane	20.0	20.9	105	20.0	21.0	105	0.256	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	22.1	110	20.0	22.1	111	0.118	75 - 130	30	
1,3-Dichlorobenzene	20.0	21.7	108	20.0	22.1	110	1.74	75 - 125	30	
1,3-Dichloropropane	20.0	22.1	111	20.0	22.1	111	0.0437	75 - 125	30	
1,4-Dichlorobenzene	20.0	22.1	111	20.0	22.3	111	0.848	75 - 125	30	
2,2-Dichloropropane	20.0	20.3	102	20.0	20.8	104	2.31	70 - 135	30	
2-Butanone	20.0	20.5	103	20.0	20.8	104	1.27	30 - 150	30	
2-Chlorotoluene	20.0	20.9	105	20.0	20.4	102	2.37	75 - 125	30	
2-Hexanone	20.0	20.4	102	20.0	20.4	102	0.0305	55 - 130	30	
4-Chlorotoluene	20.0	22.8	114	20.0	23.4	117	2.65	75 - 130	30	
4-Methyl-2-pentanone	20.0	20.3	102	20.0	20.2	101	0.782	60 - 135	30	
Acetone	20.0	21.5	108	20.0	20.7	104	3.77	40 - 140	30	
Benzene	20.0	19.9	99.7	20.0	19.9	99.5	0.209	80 - 120	30	
Bromobenzene	20.0	21.0	105	20.0	20.9	105	0.309	75 - 125	30	
Bromochloromethane	20.0	20.3	102	20.0	20.2	101	0.774	65 - 130	30	
Bromodichloromethane	20.0	21.8	109	20.0	21.5	107	1.29	75 - 120	30	
Bromoform	20.0	20.9	104	20.0	21.2	106	1.56	70 - 130	30	
Bromomethane	20.0	15.2	76.2	20.0	15.4	77.1	1.18	30 - 145	30	
Carbon disulfide	20.0	17.2	85.9	20.0	16.9	84.7	1.35	35 - 160	30	
Carbon tetrachloride	20.0	21.9	110	20.0	21.6	108	1.27	65 - 140	30	
Chlorobenzene	20.0	21.7	109	20.0	21.5	108	0.937	80 - 120	30	
Chloroethane	20.0	20.2	101	20.0	20.3	101	0.470	60 - 135	30	
Chloroform	20.0	20.2	101	20.0	19.9	99.4	1.73	65 - 135	30	
Chloromethane	20.0	13.3	66.4	20.0	13.5	67.3	1.25	40 - 125	30	
cis-1,2-Dichloroethene	20.0	20.1	101	20.0	20.0	100	0.604	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4839895
Report generated: 07/05/2016 17:46

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061289 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS6 Matrix: Water Method: 8260B
Workgroup (AAB#): WG575084 Units: ug/L
QC Key: DOD4 Lot #: STD76870

Sample ID: WG575084-02 LCS File ID: 6M140367 Run Date: 07/02/2016 13:34
Sample ID: WG575084-03 LCS2 File ID: 6M140368 Run Date: 07/02/2016 14:06

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	22.8	114	20.0	23.0	115	0.647	70 - 130	30	
Chlorodibromomethane	20.0	22.5	113	20.0	22.5	113	0.0600	60 - 135	30	
Dibromomethane	20.0	20.4	102	20.0	20.4	102	0.151	75 - 125	30	
Dichlorodifluoromethane	20.0	12.4	61.8	20.0	12.5	62.3	0.730	30 - 155	30	
Ethylbenzene	20.0	21.6	108	20.0	21.8	109	0.569	75 - 125	30	
Hexachlorobutadiene	20.0	22.1	111	20.0	22.8	114	3.20	50 - 140	30	
Isopropylbenzene	20.0	22.5	113	20.0	22.6	113	0.152	75 - 125	30	
m-,p-Xylene	40.0	44.5	111	40.0	44.1	110	0.980	75 - 130	30	
Methylene chloride	20.0	19.0	95.1	20.0	18.8	94.1	1.10	55 - 140	30	
n-Butylbenzene	20.0	22.0	110	20.0	22.3	111	1.35	70 - 135	30	
n-Propylbenzene	20.0	22.4	112	20.0	22.5	112	0.0532	70 - 130	30	
Naphthalene	20.0	19.2	95.9	20.0	19.8	98.9	2.99	55 - 140	30	
o-Xylene	20.0	22.5	113	20.0	22.6	113	0.208	80 - 120	30	
p-Isopropyltoluene	20.0	22.3	112	20.0	22.4	112	0.533	75 - 130	30	
sec-Butylbenzene	20.0	22.5	112	20.0	22.6	113	0.463	70 - 125	30	
Styrene	20.0	22.4	112	20.0	22.4	112	0.118	65 - 135	30	
tert-Butylbenzene	20.0	22.8	114	20.0	22.6	113	1.14	70 - 130	30	
Tetrachloroethene	20.0	20.4	102	20.0	20.2	101	0.680	45 - 150	30	
Toluene	20.0	20.5	103	20.0	20.6	103	0.205	75 - 120	30	
trans-1,2-Dichloroethene	20.0	18.9	94.4	20.0	18.5	92.5	2.06	60 - 140	30	
trans-1,3-Dichloropropene	20.0	21.8	109	20.0	21.8	109	0.0874	55 - 140	30	
Trichloroethene	20.0	20.3	102	20.0	20.2	101	0.499	70 - 125	30	
Trichlorofluoromethane	20.0	24.2	121	20.0	21.8	109	10.3	60 - 145	30	
Vinyl chloride	20.0	19.4	96.8	20.0	19.4	97.1	0.257	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	100	100	70 - 120	PASS
Dibromofluoromethane	101	100	85 - 115	PASS
4-Bromofluorobenzene	96.4	97.9	75 - 120	PASS
Toluene-d8	99.6	99.8	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4839895
Report generated: 07/05/2016 17:46

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061289
Instrument: HPMS6
Analyst: JDS
Workgroup: WG566155

Tune ID: WG566155-01
Run Date: 04/24/2016
Run Time: 16:33
File ID: 6M138750
Cal ID: HPMS6 - 24-APR-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.5	10010	PASS
75.0	95.0	30.0	60.0	52.0	23152	PASS
95.0	95.0	100	100	100	44552	PASS
96.0	95.0	5.00	9.00	6.92	3085	PASS
173	174	0	2.00	0.346	113	PASS
174	95.0	50.0	100	73.2	32632	PASS
175	174	5.00	9.00	7.16	2336	PASS
176	174	95.0	101	99.2	32384	PASS
177	176	5.00	9.00	6.95	2251	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG566155-02	STD	01	04/24/2016 16:59	
WG566155-03	STD	01	04/24/2016 17:31	
WG566155-04	STD	01	04/24/2016 18:03	
WG566155-05	STD-CCV	01	04/24/2016 18:36	
WG566155-06	STD	01	04/24/2016 19:08	
WG566155-07	STD	01	04/24/2016 19:40	
WG566155-08	STD	01	04/24/2016 20:12	
WG566155-09	STD	01	04/24/2016 20:44	
WG566155-10	SSCV	01	04/24/2016 22:21	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4839897
Report generated 07/07/2016 11:59

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061289
Instrument: HPMS6
Analyst: TMB
Workgroup: WG574723

Tune ID: WG574723-01
Run Date: 06/30/2016
Run Time: 11:36
File ID: 6M140313
Cal ID: HPMS6 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.0	8707	PASS
75.0	95.0	30.0	60.0	49.7	19699	PASS
95.0	95.0	100	100	100	39664	PASS
96.0	95.0	5.00	9.00	6.69	2652	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	73.8	29282	PASS
175	174	5.00	9.00	7.28	2131	PASS
176	174	95.0	101	99.6	29157	PASS
177	176	5.00	9.00	6.75	1969	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG574723-02	STD	01	06/30/2016 12:03	
WG574723-03	STD	01	06/30/2016 12:35	
WG574723-04	STD	01	06/30/2016 13:08	
WG574723-05	STD	01	06/30/2016 13:40	
WG574723-06	STD	01	06/30/2016 14:12	
WG574723-07	STD	01	06/30/2016 14:44	
WG574723-08	STD-CCV	01	06/30/2016 15:16	
WG574723-09	STD	01	06/30/2016 15:48	
WG574723-10	STD	01	06/30/2016 16:21	
WG574723-11	STD	01	06/30/2016 16:53	
WG574723-12	SSCV	01	06/30/2016 18:31	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4839897
Report generated 07/07/2016 11:59

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061289
Instrument: HPMS6
Analyst: TMB
Workgroup: WG575083

Tune ID: WG575083-01
Run Date: 07/02/2016
Run Time: 11:00
File ID: 6M140362
Cal ID: HPMS6 - 30-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.7	6172	PASS
75.0	95.0	30.0	60.0	51.9	14114	PASS
95.0	95.0	100	100	100	27178	PASS
96.0	95.0	5.00	9.00	7.33	1992	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	72.6	19740	PASS
175	174	5.00	9.00	7.08	1398	PASS
176	174	95.0	101	98.9	19516	PASS
177	176	5.00	9.00	7.01	1368	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG575083-02	CCV	01	07/02/2016 11:57	
WG575084-01	BLANK	01	07/02/2016 13:02	
WG575084-02	LCS	01	07/02/2016 13:34	
WG575084-03	LCS2	01	07/02/2016 14:06	
L16061289-06	TRIP BLANK	01	07/02/2016 16:15	
L16061289-03	18WW02-062216	01	07/02/2016 18:55	
L16061289-05	18CPTMW10SW-062216	01	07/02/2016 19:27	
L16061289-02	MW9-062216	DL01	07/02/2016 22:40	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4839897
Report generated 07/07/2016 11:59

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061289
Instrument: HPMS6
Analyst: TMB
Workgroup: WG575127

Tune ID: WG575127-01
Run Date: 07/05/2016
Run Time: 10:49
File ID: 6M140417
Cal ID: HPMS6 - 30-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	24.2	7952	PASS
75.0	95.0	30.0	60.0	52.9	17407	PASS
95.0	95.0	100	100	100	32922	PASS
96.0	95.0	5.00	9.00	6.75	2223	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	75.4	24834	PASS
175	174	5.00	9.00	7.34	1823	PASS
176	174	95.0	101	96.0	23842	PASS
177	176	5.00	9.00	6.73	1605	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG575127-02	CCV	01	07/05/2016 11:14	
WG575129-01	BLANK	01	07/05/2016 12:18	
WG575129-02	LCS	01	07/05/2016 12:50	
L16061289-01	MW21-062216	DL01	07/05/2016 14:58	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4839897
Report generated 07/07/2016 11:59

Calibration Table Report
Method: A9FOOWT.M
Title: A9-FOO Water - IC: 042416 - HPMS6
Last Calibration: Wed Apr 27 16:03:33 2016
Curve: WG566155
Calibration Files

	Compound	5 6M138751.D	20 6M138752.D	50 6M138753.D	100 6M138754.D	200 6M138755.D	300 6M138756.D	400 6M138757.D	500 6M138758.D	Avg	%RSD
I	Fluorobenzene	ISTD									
T	Acetonitrile	0.036	0.037	0.039	0.038	0.038	0.038	0.038	0.036	0.037	2.606
T	3-Chloro-1-propene	0.567	0.621	0.656	0.672	0.635	0.622	0.617	0.603	0.624	5.157
T	2-Chloro-1,3-butadiene	0.415	0.507	0.558	0.590	0.558	0.553	0.556	0.548	0.535	10.001
T	Ethyl Acetate	0.229	0.259	0.279	0.281	0.277	0.272	0.279	0.268	0.268	6.419
T	Methacrylonitrile	0.071	0.089	0.099	0.099	0.097	0.095	0.096	0.093	0.092	9.852
T	Isobutyl Alcohol		0.008	0.008	0.007	0.007	0.008	0.010	0.010	0.009	13.654
T	1-Butanol									0.000	0.000
T	Methyl methacrylate	0.159	0.200	0.231	0.244	0.244	0.241	0.246	0.236	0.225	13.591
T	2-Nitropropane			0.079	0.082	0.085	0.085	0.088	0.084	0.084	3.643
I	Chlorobenzene-d5	ISTD									
I	1,4-Dichlorobenzene-d4	ISTD									
T	Cyclohexanone			0.026	0.027	0.032	0.034	0.035	0.033	0.031	12.127

Wed Apr 27 16:05:59 2016

Calibration Table Report
Method: 8260WTR.M
Title: 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Calibration: Fri Jul 01 09:28:30 2016
Curve: WG574723
Calibration Files

	Compound	0.3 6M140314.D	0.4 6M140315.D	1 6M140316.D	2 6M140317.D	5 6M140318.D	20 6M140319.D	50 6M140320.D	100 6M140321.D	200 6M140322.D	300 6M140323.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.401	0.398	0.362	0.449	0.438	0.462	0.444	0.391	0.418	8.327		
P	Chloromethane			0.564	0.519	0.446	0.512	0.463	0.436	0.411	0.381	0.467	13.089		
C	Vinyl Chloride		0.237	0.280	0.277	0.251	0.252	0.260	0.267	0.257	0.225	0.256	6.911		
T	1,3-Butadiene					0.175	0.204	0.154	0.154	0.147	0.132	0.161	15.792	0.991	
T	Bromomethane			0.179	0.184	0.166	0.178	0.161	0.164	0.170	0.160	0.170	5.344		
T	Chloroethane			0.158	0.158	0.155	0.170	0.162	0.163	0.168	0.162	0.162	3.146		
T	Trichlorofluoromethane		0.448	0.383	0.389	0.372	0.394	0.373	0.402	0.383	0.374	0.391	6.074		
T	Diethyl ether			0.240	0.244	0.238	0.231	0.237	0.234		0.190	0.231	7.911		
T	Isoprene					0.332	0.374	0.357	0.358	0.361	0.310	0.349	6.639		
T	Acrolein				0.039	0.038	0.038	0.038	0.039		0.039	0.038	1.589		
T	1,1,2-Trichloro-1,2,2-Trifluoroet			0.245	0.246	0.231	0.246	0.239	0.249	0.248	0.242	0.243	2.486		
T	Acetone					0.086	0.083	0.080	0.078	0.078	0.075	0.080	4.861		
C	1,1-Dichloroethene		0.475	0.488	0.483	0.447	0.475	0.469	0.477	0.473	0.459	0.472	2.614		
T	Tert-Butyl Alcohol			0.023	0.024	0.024	0.024	0.024	0.026		0.028	0.024	7.165		
T	Dimethyl Sulfide					0.197	0.217	0.208	0.206	0.206	0.201	0.206	3.230		
T	Iodomethane			0.076	0.076	0.099	0.149	0.180	0.188	0.180	0.164	0.139	34.268	0.996	
T	Methyl acetate					0.218	0.224	0.214	0.217	0.211	0.216	0.217	2.077		
T	Methylene Chloride			0.310	0.299	0.265	0.271	0.261	0.263	0.254	0.240	0.271	8.561		
T	Carbon Disulfide			0.926	0.900	0.839	0.925	0.868	0.856	0.834	0.768	0.864	6.148		
T	Acrylonitrile			0.090	0.096	0.098	0.098	0.102	0.104		0.108	0.099	5.795		
T	Methyl Tert Butyl Ether			0.716	0.725	0.704	0.737	0.716	0.729	0.714	0.694	0.717	1.916		
T	trans-1,2-Dichloroethene		0.263	0.254	0.262	0.245	0.253	0.250	0.255	0.251	0.241	0.253	2.748		
T	n-Hexane					0.432	0.456	0.424	0.426	0.424	0.412	0.429	3.449		
T	Diisopropyl ether			1.208	1.209	1.172	1.157	1.153	1.123		1.058	1.154	4.538		
T	Vinyl Acetate					0.458	0.448	0.486	0.493	0.523	0.482	0.482	5.502		
P	1,1-Dichloroethane		0.561	0.556	0.569	0.531	0.553	0.540	0.544	0.533	0.509	0.544	3.330		
T	Ethyl-Tert-Butyl ether			0.953	0.955	0.939	0.931	0.928	0.916		0.878	0.929	2.832		
T	2-Butanone					0.118	0.124	0.125	0.127	0.123	0.118	0.123	3.167		
T	Propionitrile			0.032	0.033	0.033	0.033	0.034	0.035		0.032	0.033	3.279		
T	2,2-Dichloropropane		0.396	0.421	0.439	0.414	0.411	0.401	0.411	0.407	0.393	0.410	3.381		
T	cis-1,2-Dichloroethene		0.295	0.285	0.269	0.267	0.280	0.277	0.280	0.274	0.262	0.277	3.558		
C	Chloroform	0.615	0.457	0.478	0.484	0.466	0.487	0.476	0.482	0.474	0.454	0.487	9.510		
T	1-Bromopropane			0.024	0.033	0.038	0.044	0.045	0.044	0.045	0.043	0.039	19.340	1.000	
T	Bromochloromethane		0.141	0.141	0.148	0.149	0.155	0.153	0.155	0.152	0.145	0.149	3.658		
T	Tetrahydrofuran			0.104	0.087	0.084	0.081	0.081	0.083		0.078	0.086	9.999		
S	Dibromofluoromethane				0.254	0.258	0.262	0.257	0.250	0.249	0.245	0.254	2.416		
T	1,1,1-Trichloroethane		0.395	0.436	0.430	0.412	0.430	0.430	0.438	0.432	0.414	0.424	3.334		
T	Cyclohexane			0.589	0.567	0.521	0.577	0.543	0.550	0.543	0.524	0.552	4.390		
T	1,1-Dichloropropene			0.377	0.376	0.356	0.370	0.367	0.375	0.373	0.362	0.370	2.060		
T	Tert-Amyl-Methyl ether			0.710	0.726	0.713	0.703	0.708	0.705		0.671	0.705	2.388		
T	Carbon Tetrachloride		0.271	0.305	0.33	0.33	0.37	0.377	0.39	0.391	0.371	0.3484	11.955		
S	1,2-Dichloroethane-d4				0.33	0.331	0.333	0.318	0.316	0.31	0.304	0.3202	3.5321		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.391	0.394	0.406	0.375	0.399	0.393	0.397	0.39	0.373	0.3907	2.7505		
T	Benzene		1.155	1.094	1.109	1.038	1.052	1.035	1.03	0.983	0.89	1.043	7.3599		
T	Trichloroethene		0.277	0.267	0.265	0.253	0.263	0.256	0.255	0.246	0.234	0.2574	4.9066		
T	Methylcyclohexane					0.396	0.428	0.4	0.409	0.404	0.387	0.404	3.4238		
C	1,2-Dichloropropane		0.311	0.293	0.305	0.293	0.306	0.302	0.305	0.3	0.288	0.3004	2.5217		
T	1,4-Dioxane					0.002	0.002	0.002	0.002		0.002	0.002	6.9968		
T	Bromodichloromethane		0.323	0.353	0.365	0.351	0.371	0.375	0.386	0.378	0.359	0.3624	5.1801		
T	Dibromomethane		0.125	0.137	0.148	0.143	0.153	0.151	0.156	0.151	0.145	0.1453	6.6336		
T	2-Chloroethyl Vinyl Ether				0.138	0.135	0.158	0.161	0.16	0.155	0.146	0.1506	7.0765		
T	4-Methyl-2-Pentanone					0.085	0.094	0.095	0.098	0.096	0.089	0.0927	5.3799		
T	cis-1,3-Dichloropropene		0.415	0.394	0.426	0.409	0.431	0.433	0.443	0.433	0.404	0.4208	3.888		
T	Dimethyl Disulfide					0.199	0.239	0.242	0.246	0.245	0.233	0.2342	7.589		
I	Chlorobenzene-d5	ISTD													
S	Toluene-d8				1.304	1.297	1.272	1.226	1.166	1.162	1.19	1.2311	4.9151		
C	Toluene		1.699	1.583	1.601	1.454	1.503	1.467	1.44	1.369	1.294	1.49	8.2924		
T	Ethyl Methacrylate			0.37	0.406	0.396	0.455	0.443	0.443	0.439	0.44	0.4239	6.9571		
T	Paraldehyde											0	0		
T	trans-1,3-Dichloropropene			0.49	0.514	0.506	0.547	0.548	0.551	0.543	0.539	0.5298	4.3368		
T	1,1,2-Trichloroethane		0.262	0.278	0.282	0.27	0.285	0.28	0.281	0.274	0.269	0.2757	2.687		
T	2-Hexanone					0.237	0.266	0.269	0.271	0.267	0.261	0.2618	4.9035		
T	1,3-Dichloropropane		0.55	0.526	0.539	0.51	0.52	0.519	0.517	0.503	0.493	0.5197	3.397		
T	Tetrachloroethene		0.362	0.364	0.373	0.351	0.354	0.353	0.352	0.344	0.343	0.3551	2.7537		
T	Dibromochloromethane		0.278	0.3	0.318	0.322	0.353	0.36	0.37	0.36	0.352	0.3348	9.4942		
T	1,2-Dibromoethane		0.238	0.259	0.265	0.259	0.277	0.274	0.281	0.274	0.268	0.2662	4.8464		
T	1-Chlorohexane		0.507	0.497	0.506	0.475	0.52	0.501	0.495	0.488	0.474	0.4959	3.0436		
P	Chlorobenzene		1.087	1.01	1.026	0.933	0.963	0.947	0.932	0.878	0.824	0.9556	8.2302		
T	1,1,1,2-Tetrachloroethane		0.327	0.335	0.343	0.328	0.352	0.354	0.356	0.342	0.323	0.34	3.6316		
C	Ethylbenzene		0.509	0.503	0.522	0.5	0.517	0.508	0.509	0.481	0.452	0.5002	4.2933		
T	m-,p-Xylene		0.651	0.636	0.652	0.606	0.626	0.612	0.603	0.553	0.501	0.6045	8.1404		
T	o-Xylene			0.61	0.633	0.59	0.625	0.619	0.618	0.585	0.544	0.6029	4.778		
T	Styrene		0.992	0.978	1.025	0.988	1.072	1.065	1.072	1.013	0.924	1.0143	4.9363		
P	Bromoform			0.172	0.184	0.183	0.215	0.22	0.234	0.231	0.222	0.2076	11.743		
T	Isopropylbenzene		1.684	1.642	1.648	1.582	1.619	1.599	1.602	1.477	1.304	1.5731	7.3897		
I	1,4-Dichlorobenzene-d4	ISTD													
P	1,1,2,2-Tetrachloroethane		0.542	0.561	0.589	0.589	0.619	0.616	0.651	0.654	0.639	0.6067	6.4625		
S	p-Bromofluorobenzene				1.007	1.02	1.012	0.972	0.933	0.96	0.949	0.9791	3.484		

T	1,2,3-Trichloropropane		0.131	0.176	0.189	0.19	0.187	0.19	0.191	0.185	0.1799	11.385
T	trans-1,4-Dichloro-2-Butene		0.158	0.209	0.218	0.244	0.244	0.253	0.256	0.254	0.2294	14.64
T	n-Propylbenzene	4.147	3.945	3.827	3.612	3.693	3.558	3.522	3.223	2.802	3.5921	11.066
T	Bromobenzene	0.822	0.753	0.776	0.753	0.761	0.736	0.737	0.723	0.695	0.7506	4.7215
T	1,3,5-Trimethylbenzene	2.687	2.633	2.638	2.51	2.587	2.52	2.523	2.394	2.166	2.5177	6.2882
T	2-Chlorotoluene	2.919	2.675	2.482	2.32	2.324	2.405	2.382	2.249	2.107	2.4293	9.9295
T	4-Chlorotoluene	2.561	2.355	2.535	2.399	2.452	2.211	2.223	2.179	1.93	2.316	8.6649
T	a-Methylstyrene				1.171	1.369	1.303	1.3	1.265	1.19	1.2663	5.9075
T	tert-Butylbenzene		0.522	0.53	0.496	0.527	0.502	0.507	0.492	0.47	0.5058	3.9858
T	1,2,4-Trimethylbenzene		2.731	2.759	2.607	2.688	2.607	2.616	2.454	2.207	2.5836	6.9171
T	sec-Butylbenzene		3.3	3.29	3.02	3.128	3.02	3.014	2.818	2.521	3.0139	8.4375
T	p-Isopropyltoluene		2.762	2.734	2.57	2.677	2.59	2.601	2.425	2.188	2.5685	7.2625
T	1,3-Dichlorobenzene	1.666	1.555	1.538	1.459	1.494	1.448	1.455	1.387	1.293	1.4773	7.1422
T	1,4-Dichlorobenzene	1.73	1.6	1.574	1.462	1.495	1.451	1.46	1.383	1.287	1.4936	8.6114
T	n-Butylbenzene		2.725	2.645	2.516	2.61	2.545	2.566	2.387	2.156	2.5188	7.0194
T	1,2-Dichlorobenzene	1.544	1.461	1.436	1.375	1.404	1.371	1.382	1.297	1.212	1.387	6.8449
T	1,2-Dibromo-3-Chloropropane			0.093	0.097	0.122	0.122	0.134	0.134	0.13	0.1188	14.398
T	1,2,4-Trichlorobenzene	1.156	0.963	0.98	0.936	0.999	0.975	0.988	0.944	0.882	0.9804	7.5963
T	Hexachlorobutadiene	0.47	0.405	0.413	0.39	0.407	0.402	0.408	0.395	0.377	0.4076	6.3393
T	Naphthalene	1.978	1.873	1.94	1.955	2.174	2.126	2.159	2.015	1.813	2.0036	6.3217
T	1,2,3-Trichlorobenzene	0.987	0.959	0.905	0.88	0.936	0.904	0.915	0.87	0.813	0.9078	5.6179

Fri Jul 01 14:48:52 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061289 Run Date: 06/30/2016 Sample ID: WG574723-12
Instrument ID: HPMS6 Run Time: 18:31 Method: 8260B
File ID: 6M140326 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG574723 Cal ID: HPMS6 - 30-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.9	ug/L	0.467	4.30	20	
1,1-Dichloroethene	CCC	50.0	44.2	ug/L	0.417	11.7	20	
1,2-Dichloropropane	CCC	50.0	52.0	ug/L	0.313	4.10	20	
Ethylbenzene	CCC	50.0	51.7	ug/L	0.517	3.40	20	
Toluene	CCC	50.0	50.2	ug/L	1.50	0.400	20	
Vinyl Chloride	CCC	50.0	46.1	ug/L	0.237	7.70	20	
Bromoform	SPCC	50.0	49.4	ug/L	0.205	1.20	20	
Chlorobenzene	SPCC	50.0	51.0	ug/L	0.974	1.90	20	
Chloromethane	SPCC	50.0	39.1	ug/L	0.365	21.7	20	*
1,1-Dichloroethane	SPCC	50.0	46.5	ug/L	0.506	7.10	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	55.5	ug/L	0.673	11.0	20	
Acetone		50.0	46.9	ug/L	0.0752	6.10	20	
Benzene		50.0	48.8	ug/L	1.02	2.40	20	
Bromobenzene		50.0	50.7	ug/L	0.761	1.40	20	
Bromochloromethane		50.0	48.9	ug/L	0.145	2.20	20	
Bromodichloromethane		50.0	51.3	ug/L	0.372	2.60	20	
Bromomethane		50.0	48.4	ug/L	0.165	3.20	20	
2-Butanone		50.0	50.7	ug/L	0.124	1.50	20	
n-Butylbenzene		50.0	51.3	ug/L	2.59	2.70	20	
sec-Butylbenzene		50.0	52.6	ug/L	3.17	5.10	20	
tert-Butylbenzene		50.0	53.2	ug/L	0.538	6.40	20	
Carbon Disulfide		50.0	43.6	ug/L	0.755	12.7	20	
Carbon Tetrachloride		50.0	51.4	ug/L	0.358	2.90	20	
Dibromochloromethane		50.0	53.8	ug/L	0.360	7.60	20	
Chloroethane		50.0	51.7	ug/L	0.168	3.50	20	
2-Chlorotoluene		50.0	52.8	ug/L	2.57	5.70	20	
4-Chlorotoluene		50.0	50.9	ug/L	2.36	1.80	20	
1,2-Dibromo-3-Chloropropane		50.0	55.7	ug/L	0.132	11.3	20	
1,2-Dibromoethane		50.0	52.4	ug/L	0.279	4.90	20	
Dibromomethane		50.0	49.0	ug/L	0.142	2.00	20	
1,2-Dichlorobenzene		50.0	52.5	ug/L	1.46	4.90	20	
1,3-Dichlorobenzene		50.0	51.3	ug/L	1.52	2.60	20	
1,4-Dichlorobenzene		50.0	51.8	ug/L	1.55	3.60	20	
Dichlorodifluoromethane		50.0	40.7	ug/L	0.340	18.6	20	
1,2-Dichloroethane		50.0	49.4	ug/L	0.386	1.20	20	
cis-1,2-Dichloroethene		50.0	49.8	ug/L	0.275	0.500	20	
trans-1,2-Dichloroethene		50.0	47.1	ug/L	0.238	5.90	20	
1,3-Dichloropropane		50.0	53.2	ug/L	0.553	6.30	20	
2,2-Dichloropropane		50.0	50.7	ug/L	0.416	1.40	20	
cis-1,3-Dichloropropene		50.0	56.3	ug/L	0.474	12.6	20	
trans-1,3-Dichloropropene		50.0	53.4	ug/L	0.565	6.70	20	
1,1-Dichloropropene		50.0	48.1	ug/L	0.356	3.80	20	

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Version 1.5 PDF File ID: 4839896
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Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061289 Run Date: 06/30/2016 Sample ID: WG574723-12
Instrument ID: HPMS6 Run Time: 18:31 Method: 8260B
File ID: 6M140326 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG574723 Cal ID: HPMS6 - 30-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	49.7	ug/L	0.260	0.600	20	
Hexachlorobutadiene		50.0	52.6	ug/L	0.429	5.20	20	
Isopropylbenzene		50.0	51.7	ug/L	1.63	3.30	20	
p-Isopropyltoluene		50.0	51.7	ug/L	2.65	3.40	20	
4-Methyl-2-Pentanone		50.0	50.7	ug/L	0.0939	1.40	20	
Methylene Chloride		50.0	46.6	ug/L	0.252	6.80	20	
Naphthalene		50.0	49.3	ug/L	1.98	1.40	20	
n-Propylbenzene		50.0	53.7	ug/L	3.86	7.40	20	
Styrene		50.0	52.9	ug/L	1.07	5.90	20	
1,1,1,2-Tetrachloroethane		50.0	52.6	ug/L	0.358	5.20	20	
Tetrachloroethene		50.0	48.7	ug/L	0.346	2.50	20	
1,2,3-Trichlorobenzene		50.0	51.1	ug/L	0.928	2.20	20	
1,2,4-Trichlorobenzene		50.0	51.4	ug/L	1.01	2.90	20	
1,1,1-Trichloroethane		50.0	49.4	ug/L	0.419	1.20	20	
1,1,2-Trichloroethane		50.0	52.1	ug/L	0.287	4.10	20	
Trichloroethene		50.0	49.0	ug/L	0.252	2.10	20	
Trichlorofluoromethane		50.0	47.1	ug/L	0.368	5.70	20	
1,2,3-Trichloropropane		50.0	54.9	ug/L	0.197	9.80	20	
1,2,4-Trimethylbenzene		50.0	51.6	ug/L	2.66	3.10	20	
1,3,5-Trimethylbenzene		50.0	52.6	ug/L	2.65	5.10	20	
o-Xylene		50.0	53.4	ug/L	0.644	6.80	20	
m-,p-Xylene		100	104	ug/L	0.627	3.70	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

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Version 1.5 PDF File ID: 4839896
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289 Run Date: 07/02/2016 Sample ID: WG575083-02
Instrument ID: HPMS6 Run Time: 11:57 Method: 8260B
File ID: 6M140364 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG575084 Cal ID: HPMS6 - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	52.5	ug/L	0.512	5.02	20	
1,1-Dichloroethene	CCC	50.0	53.6	ug/L	0.506	7.28	20	
1,2-Dichloropropane	CCC	50.0	51.8	ug/L	0.311	3.64	20	
Ethylbenzene	CCC	50.0	52.7	ug/L	0.527	5.32	20	
Toluene	CCC	50.0	50.9	ug/L	1.52	1.89	20	
Vinyl Chloride	CCC	50.0	56.3	ug/L	0.288	12.5	20	
Bromoform	SPCC	50.0	54.8	ug/L	0.228	9.68	20	
Chlorobenzene	SPCC	50.0	50.8	ug/L	0.971	1.61	20	
Chloromethane	SPCC	50.0	50.8	ug/L	0.474	1.64	20	
1,1-Dichloroethane	SPCC	50.0	52.2	ug/L	0.568	4.39	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	53.9	ug/L	0.654	7.84	20	
Xylenes		150	158	ug/L	0.639	5.42	20	
Acetone		50.0	50.8	ug/L	0.0813	1.51	20	
Benzene		50.0	51.5	ug/L	1.07	3.01	20	
Bromobenzene		50.0	51.2	ug/L	0.769	2.46	20	
Bromochloromethane		50.0	54.5	ug/L	0.162	9.09	20	
Bromodichloromethane		50.0	55.3	ug/L	0.401	10.6	20	
Bromomethane		50.0	40.0	ug/L	0.136	19.9	20	
2-Butanone		50.0	51.8	ug/L	0.127	3.59	20	
n-Butylbenzene		50.0	53.1	ug/L	2.68	6.22	20	
sec-Butylbenzene		50.0	52.4	ug/L	3.16	4.81	20	
tert-Butylbenzene		50.0	51.7	ug/L	0.523	3.46	20	
Carbon Disulfide		50.0	51.8	ug/L	0.896	3.65	20	
Carbon Tetrachloride		50.0	60.0	ug/L	0.418	20.0	20	
Dibromochloromethane		50.0	56.3	ug/L	0.377	12.6	20	
Chloroethane		50.0	53.9	ug/L	0.175	7.81	20	
2-Chlorotoluene		50.0	51.6	ug/L	2.51	3.18	20	
4-Chlorotoluene		50.0	50.6	ug/L	2.35	1.26	20	
1,2-Dibromo-3-Chloropropane		50.0	55.3	ug/L	0.131	10.5	20	
1,2-Dibromoethane		50.0	52.8	ug/L	0.281	5.55	20	
Dibromomethane		50.0	54.5	ug/L	0.159	9.10	20	
1,2-Dichlorobenzene		50.0	51.2	ug/L	1.42	2.32	20	
1,3-Dichlorobenzene		50.0	51.6	ug/L	1.52	3.11	20	
1,4-Dichlorobenzene		50.0	51.1	ug/L	1.53	2.12	20	
Dichlorodifluoromethane		50.0	59.3	ug/L	0.496	18.7	20	
1,2-Dichloroethane		50.0	53.9	ug/L	0.421	7.74	20	
cis-1,2-Dichloroethene		50.0	52.4	ug/L	0.290	4.82	20	
trans-1,2-Dichloroethene		50.0	52.3	ug/L	0.264	4.66	20	
1,3-Dichloropropane		50.0	50.4	ug/L	0.524	0.866	20	
2,2-Dichloropropane		50.0	56.9	ug/L	0.467	13.8	20	
cis-1,3-Dichloropropene		50.0	54.2	ug/L	0.456	8.47	20	
trans-1,3-Dichloropropene		50.0	53.9	ug/L	0.572	7.87	20	

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289 Run Date: 07/02/2016 Sample ID: WG575083-02
Instrument ID: HPMS6 Run Time: 11:57 Method: 8260B
File ID: 6M140364 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG575084 Cal ID: HPMS6 - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	52.9	ug/L	0.391	5.76	20	
2-Hexanone		50.0	51.4	ug/L	0.269	2.82	20	
Hexachlorobutadiene		50.0	50.2	ug/L	0.410	0.465	20	
Isopropylbenzene		50.0	53.0	ug/L	1.67	5.93	20	
p-Isopropyltoluene		50.0	53.0	ug/L	2.72	6.04	20	
4-Methyl-2-Pentanone		50.0	52.6	ug/L	0.0975	5.19	20	
Methylene Chloride		50.0	50.3	ug/L	0.272	0.588	20	
Naphthalene		50.0	51.4	ug/L	2.06	2.82	20	
n-Propylbenzene		50.0	52.4	ug/L	3.76	4.70	20	
Styrene		50.0	53.7	ug/L	1.09	7.38	20	
1,1,1,2-Tetrachloroethane		50.0	54.3	ug/L	0.369	8.57	20	
Tetrachloroethene		50.0	51.7	ug/L	0.367	3.37	20	
1,2,3-Trichlorobenzene		50.0	49.4	ug/L	0.898	1.11	20	
1,2,4-Trichlorobenzene		50.0	51.0	ug/L	1.00	1.96	20	
1,1,1-Trichloroethane		50.0	55.0	ug/L	0.467	10.1	20	
1,1,2-Trichloroethane		50.0	52.1	ug/L	0.287	4.22	20	
Trichloroethene		50.0	50.8	ug/L	0.262	1.59	20	
Trichlorofluoromethane		50.0	55.0	ug/L	0.430	10.1	20	
1,2,3-Trichloropropane		50.0	53.1	ug/L	0.191	6.13	20	
1,2,4-Trimethylbenzene		50.0	53.3	ug/L	2.75	6.55	20	
1,3,5-Trimethylbenzene		50.0	52.5	ug/L	2.64	4.93	20	
o-Xylene		50.0	53.4	ug/L	0.644	6.85	20	
m-,p-Xylene		100	105	ug/L	0.633	4.71	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289 Run Date: 07/05/2016 Sample ID: WG575127-02
Instrument ID: HPMS6 Run Time: 11:14 Method: 8260B
File ID: 6M140418 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG575129 Cal ID: HPMS6 - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	53.1	ug/L	0.518	6.21	20	
1,1-Dichloroethene	CCC	50.0	54.6	ug/L	0.515	9.21	20	
1,2-Dichloropropane	CCC	50.0	50.7	ug/L	0.305	1.40	20	
Ethylbenzene	CCC	50.0	52.9	ug/L	0.529	5.71	20	
Toluene	CCC	50.0	50.3	ug/L	1.50	0.699	20	
Vinyl Chloride	CCC	50.0	58.1	ug/L	0.298	16.2	20	
Bromoform	SPCC	50.0	51.3	ug/L	0.213	2.58	20	
Chlorobenzene	SPCC	50.0	51.2	ug/L	0.978	2.35	20	
Chloromethane	SPCC	50.0	50.5	ug/L	0.471	1.01	20	
1,1-Dichloroethane	SPCC	50.0	52.6	ug/L	0.572	5.13	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	47.9	ug/L	0.581	4.27	20	
Xylenes		150	158	ug/L	0.636	5.35	20	
Acetone		50.0	45.7	ug/L	0.0732	8.64	20	
Benzene		50.0	51.9	ug/L	1.08	3.86	20	
Bromobenzene		50.0	50.3	ug/L	0.756	0.696	20	
Bromochloromethane		50.0	54.3	ug/L	0.161	8.63	20	
Bromodichloromethane		50.0	54.8	ug/L	0.397	9.53	20	
Bromomethane		50.0	45.8	ug/L	0.156	8.36	20	
2-Butanone		50.0	44.7	ug/L	0.110	10.6	20	
n-Butylbenzene		50.0	53.9	ug/L	2.72	7.88	20	
sec-Butylbenzene		50.0	52.7	ug/L	3.18	5.38	20	
tert-Butylbenzene		50.0	53.2	ug/L	0.538	6.43	20	
Carbon Disulfide		50.0	53.7	ug/L	0.929	7.45	20	
Carbon Tetrachloride		50.0	63.2	ug/L	0.440	26.4	20	*
Dibromochloromethane		50.0	53.9	ug/L	0.361	7.90	20	
Chloroethane		50.0	54.9	ug/L	0.178	9.78	20	
2-Chlorotoluene		50.0	51.0	ug/L	2.48	1.90	20	
4-Chlorotoluene		50.0	50.0	ug/L	2.32	0.00560	20	
1,2-Dibromo-3-Chloropropane		50.0	48.7	ug/L	0.116	2.69	20	
1,2-Dibromoethane		50.0	48.4	ug/L	0.258	3.24	20	
Dibromomethane		50.0	52.5	ug/L	0.153	5.07	20	
1,2-Dichlorobenzene		50.0	50.8	ug/L	1.41	1.60	20	
1,3-Dichlorobenzene		50.0	51.7	ug/L	1.53	3.33	20	
1,4-Dichlorobenzene		50.0	50.7	ug/L	1.52	1.45	20	
Dichlorodifluoromethane		50.0	61.1	ug/L	0.511	22.2	20	*
1,2-Dichloroethane		50.0	52.4	ug/L	0.409	4.79	20	
cis-1,2-Dichloroethene		50.0	52.9	ug/L	0.293	5.85	20	
trans-1,2-Dichloroethene		50.0	53.2	ug/L	0.269	6.38	20	
1,3-Dichloropropane		50.0	46.6	ug/L	0.485	6.70	20	
2,2-Dichloropropane		50.0	57.3	ug/L	0.471	14.7	20	
cis-1,3-Dichloropropene		50.0	52.6	ug/L	0.443	5.26	20	
trans-1,3-Dichloropropene		50.0	50.7	ug/L	0.537	1.37	20	

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289 Run Date: 07/05/2016 Sample ID: WG575127-02
Instrument ID: HPMS6 Run Time: 11:14 Method: 8260B
File ID: 6M140418 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG575129 Cal ID: HPMS6 - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	53.4	ug/L	0.395	6.80	20	
2-Hexanone		50.0	43.7	ug/L	0.229	12.5	20	
Hexachlorobutadiene		50.0	53.2	ug/L	0.434	6.48	20	
Isopropylbenzene		50.0	53.2	ug/L	1.67	6.31	20	
p-Isopropyltoluene		50.0	53.6	ug/L	2.75	7.16	20	
4-Methyl-2-Pentanone		50.0	44.5	ug/L	0.0825	10.9	20	
Methylene Chloride		50.0	50.5	ug/L	0.273	0.918	20	
Naphthalene		50.0	48.1	ug/L	1.93	3.75	20	
n-Propylbenzene		50.0	51.8	ug/L	3.72	3.66	20	
Styrene		50.0	53.5	ug/L	1.09	7.07	20	
1,1,1,2-Tetrachloroethane		50.0	54.4	ug/L	0.370	8.86	20	
Tetrachloroethene		50.0	53.0	ug/L	0.376	5.92	20	
1,2,3-Trichlorobenzene		50.0	49.6	ug/L	0.901	0.790	20	
1,2,4-Trichlorobenzene		50.0	50.6	ug/L	0.992	1.14	20	
1,1,1-Trichloroethane		50.0	56.7	ug/L	0.481	13.4	20	
1,1,2-Trichloroethane		50.0	48.8	ug/L	0.269	2.33	20	
Trichloroethene		50.0	51.9	ug/L	0.267	3.73	20	
Trichlorofluoromethane		50.0	60.6	ug/L	0.474	21.2	20	*
1,2,3-Trichloropropane		50.0	46.6	ug/L	0.168	6.83	20	
1,2,4-Trimethylbenzene		50.0	53.2	ug/L	2.75	6.32	20	
1,3,5-Trimethylbenzene		50.0	52.3	ug/L	2.63	4.57	20	
o-Xylene		50.0	52.8	ug/L	0.636	5.54	20	
m-,p-Xylene		100	105	ug/L	0.636	5.25	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4839898
Report generated 07/07/2016 11:59

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070516\6M140425.D Vial: 9
Acq On : 5 Jul 2016 14:58 Operator: TMB
Sample : L16061289-01 B 50X 826-LOW 00 Inst : HPMS6
Misc : 1,50 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 06 08:37:26 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	522181	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	378187	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	196110	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	140052	26.4359 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 105.76%		
43) 1,2-Dichloroethane-d4	10.31	65	172994	25.8668 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.48%		
58) Toluene-d8	13.04	98	460837	24.7455 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.00%		
80) p-Bromofluorobenzene	17.02	95	188076	24.4878 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.96%		

Target Compounds					Qvalue
4) Vinyl Chloride	3.56	62	4949	0.9247 ug/L	94
9) Diethyl ether	5.79	59	11379	2.3627 ug/L #	11
10) Isoprene	5.76	67	3450	0.4736 ug/L #	10
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	1084075	213.4603 ug/L	97
13) Acetone	5.80	43	15969	9.5453 ug/L #	79
14) 1,1-Dichloroethene	6.11	61	1498	0.1520 ug/L #	43
32) cis-1,2-Dichloroethene	9.04	96	12913	2.2354 ug/L	88
33) Chloroform	9.26	83	2743	0.2695 ug/L #	79
36) Tetrahydrofuran	9.56	42	1826	1.0223 ug/L #	41
45) 1,2-Dichloroethane	10.45	62	5747	0.7042 ug/L #	75
47) Trichloroethene	11.35	130	653420	121.5515 ug/L	85
48) Methylcyclohexane	11.35	83	9315	1.1037 ug/L #	1
49) 1,2-Dichloropropane	11.35	63	2694	0.4294 ug/L #	35
63) 1,1,2-Trichloroethane	13.62	97	991	0.2376 ug/L #	50

(#) = qualifier out of range (m) = manual integration
6M140425.D 8260WTR.M Wed Jul 06 08:37:29 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070516\6M140425.D Vial: 9
Acq On : 5 Jul 2016 14:58 Operator: TMB
Sample : L16061289-01 B 50X 826-LOW 00 Inst : HPMS6
Misc : 1,50 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 6 8:37 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

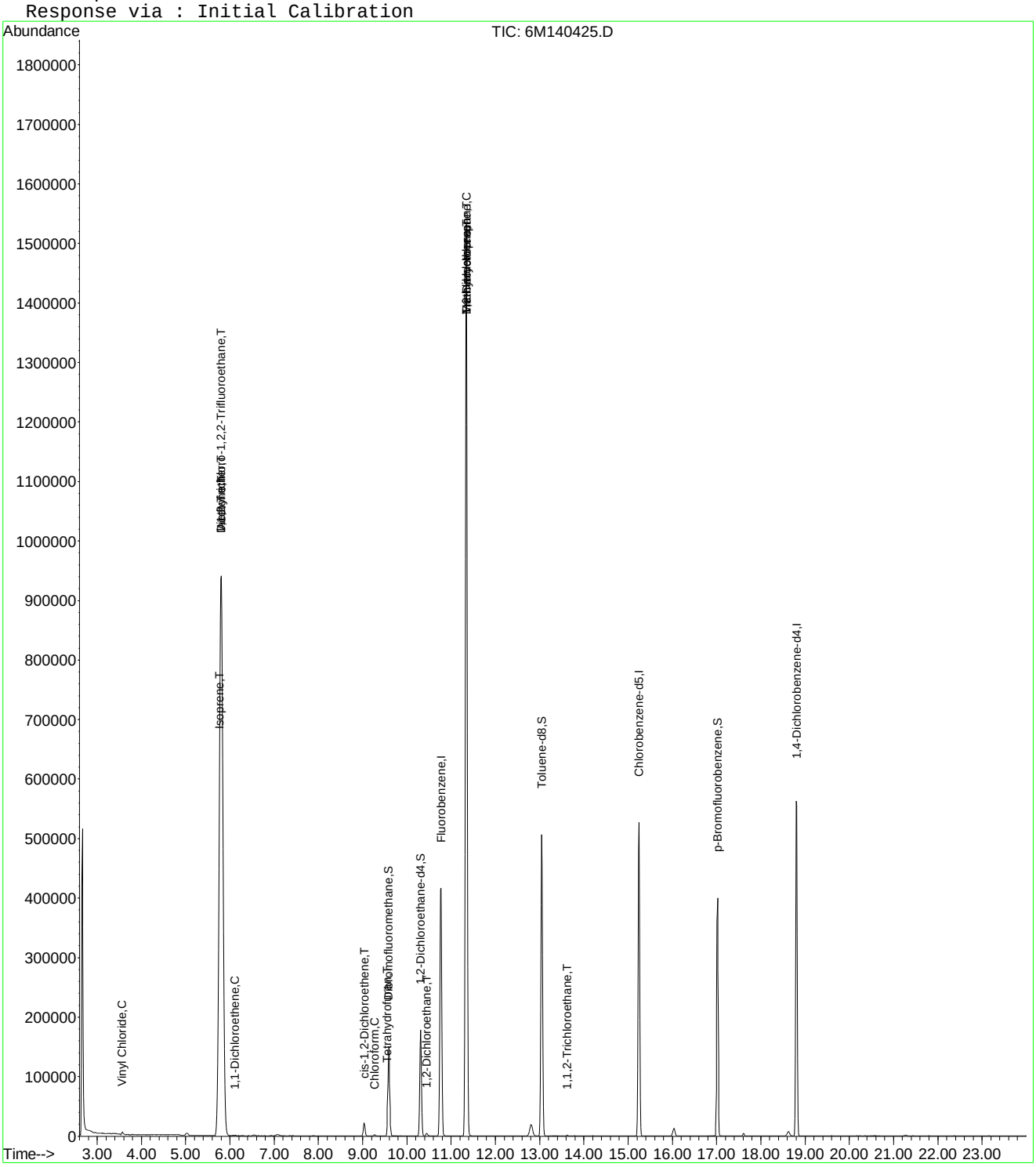

6M140425.D 8260WTR.M Wed Jul 06 08:37:29 2016 Page 2

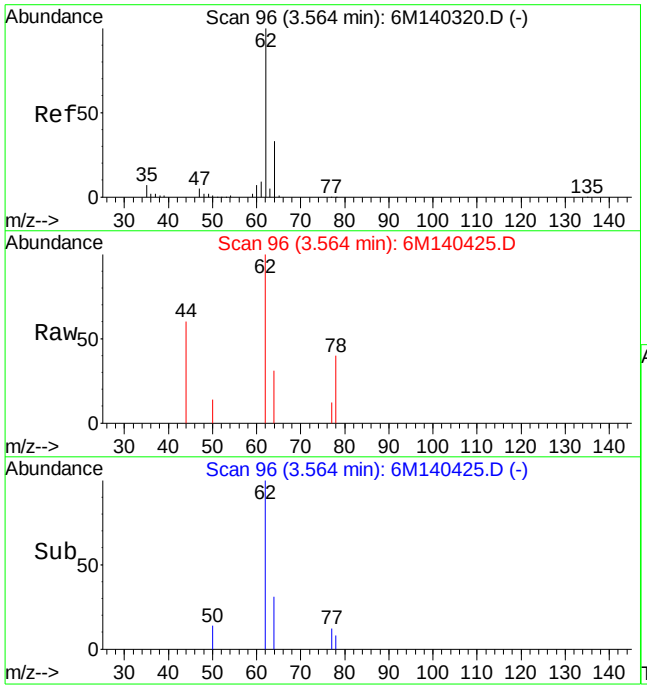

#4
Vinyl Chloride
Concen: 0.92 ug/L
RT: 3.56 min Scan# 96
Delta R.T. 0.01 min
Lab File: 6M140425.D
Acq: 5 Jul 2016 14:58

Tgt Ion: 62 Resp: 4949

Ion	Ratio	Lower	Upper
62	100		
64	29.0	19.3	45.1

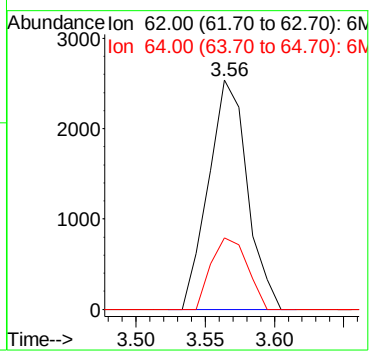

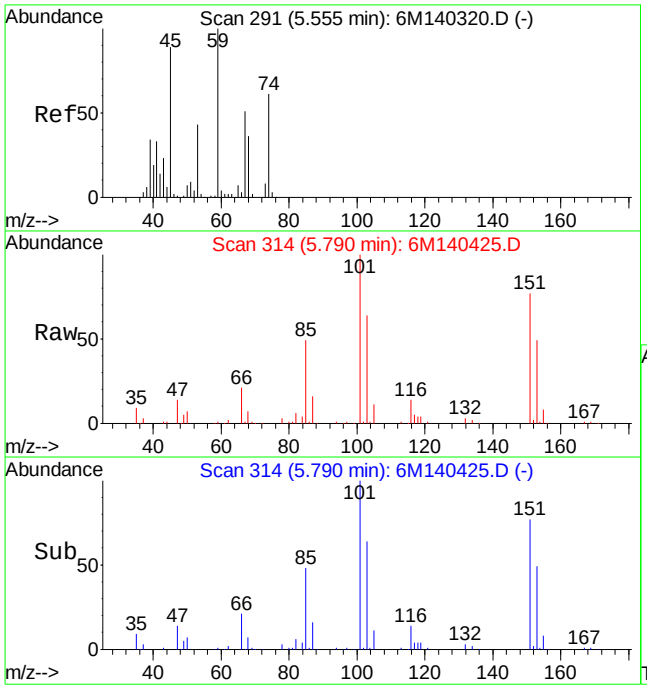

#9
Diethyl ether
Concen: 2.36 ug/L
RT: 5.79 min Scan# 314
Delta R.T. 0.24 min
Lab File: 6M140425.D
Acq: 5 Jul 2016 14:58

Tgt Ion: 59 Resp: 11379

Ion	Ratio	Lower	Upper
59	100		
45	0.0	51.5	120.3#
74	0.0	38.5	89.7#

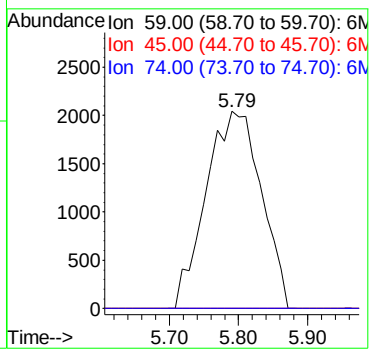

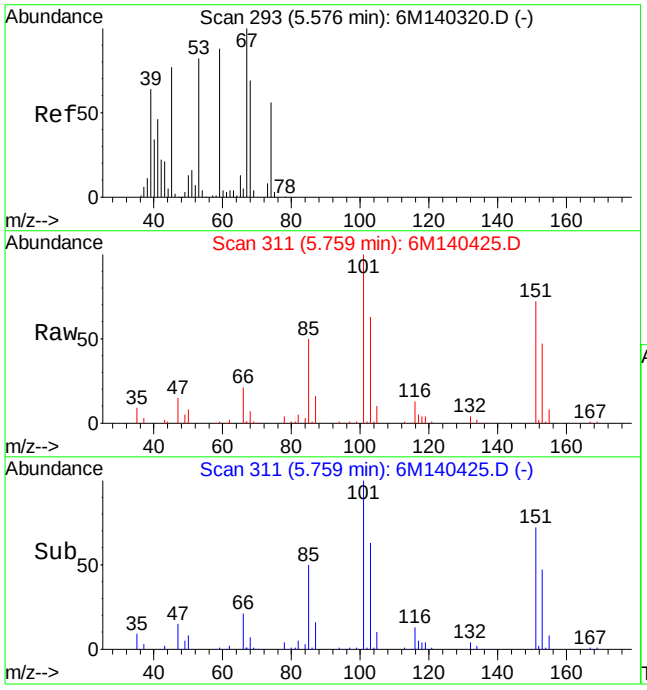

#10
Isoprene
Concen: 0.47 ug/L
RT: 5.76 min Scan# 311
Delta R.T. 0.19 min
Lab File: 6M140425.D
Acq: 5 Jul 2016 14:58

Tgt Ion: 67 Resp: 3450

Ion	Ratio	Lower	Upper
67	100		
53	0.0	47.4	110.6#

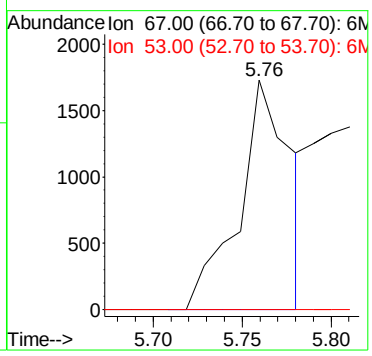

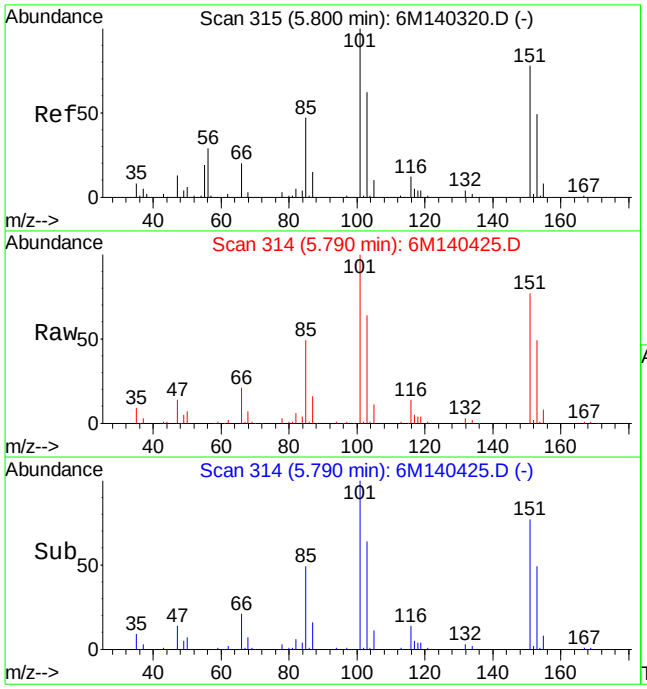

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 213.46 ug/L
RT: 5.79 min Scan# 314
Delta R.T. 0.01 min
Lab File: 6M140425.D
Acq: 5 Jul 2016 14:58

Tgt Ion:101 Resp: 1084075

Ion	Ratio	Lower	Upper
101	100		
151	77.7	49.4	115.2
103	64.8	38.8	90.4

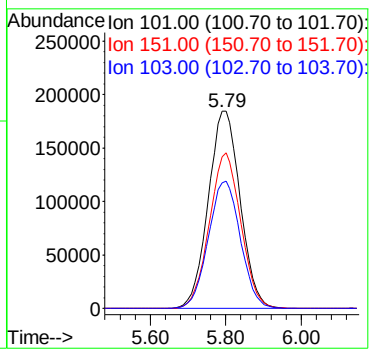

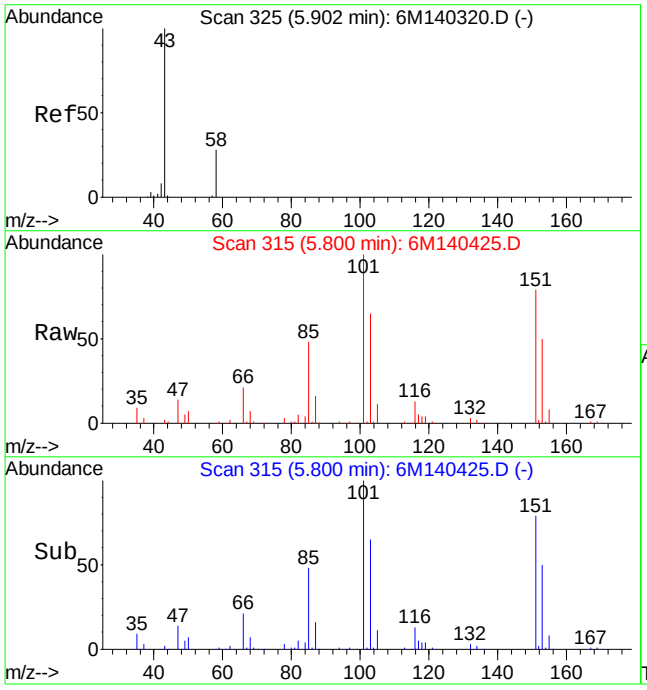

#13
Acetone
Concen: 9.55 ug/L
RT: 5.80 min Scan# 315
Delta R.T. -0.10 min
Lab File: 6M140425.D
Acq: 5 Jul 2016 14:58

Tgt Ion: 43 Resp: 15969

Ion	Ratio	Lower	Upper
43	100		
58	16.3	16.4	38.2#

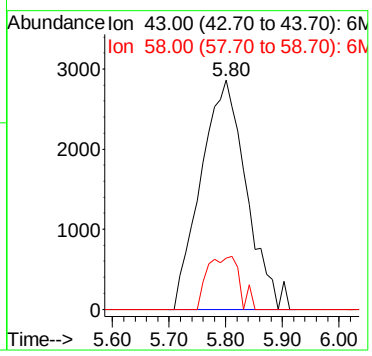

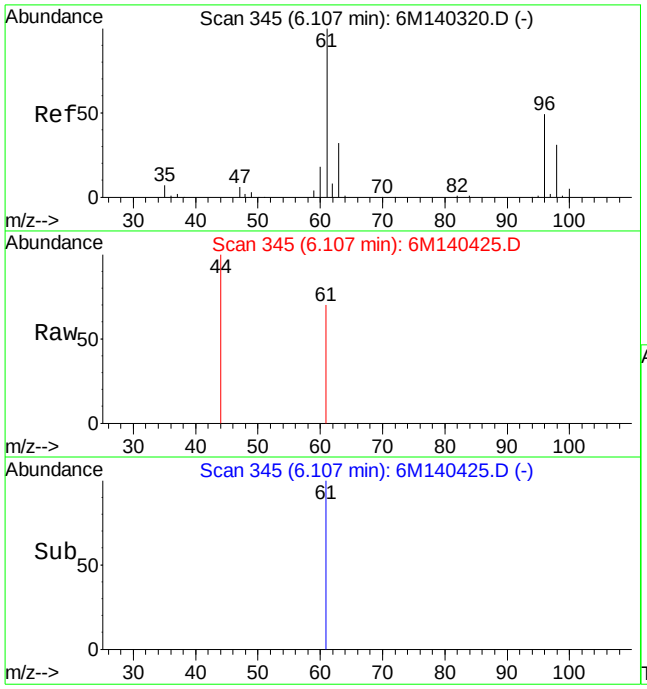

#14
1,1-Dichloroethene
Concen: 0.15 ug/L
RT: 6.11 min Scan# 345
Delta R.T. 0.01 min
Lab File: 6M140425.D
Acq: 5 Jul 2016 14:58

Tgt Ion: 61 Resp: 1498

Ion	Ratio	Lower	Upper
61	100		
96	12.6	32.0	74.6#

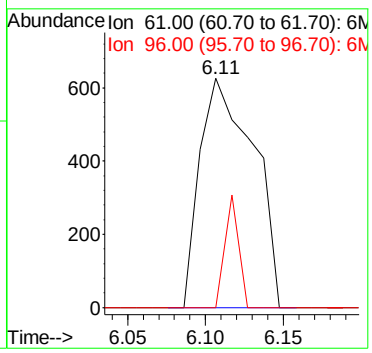

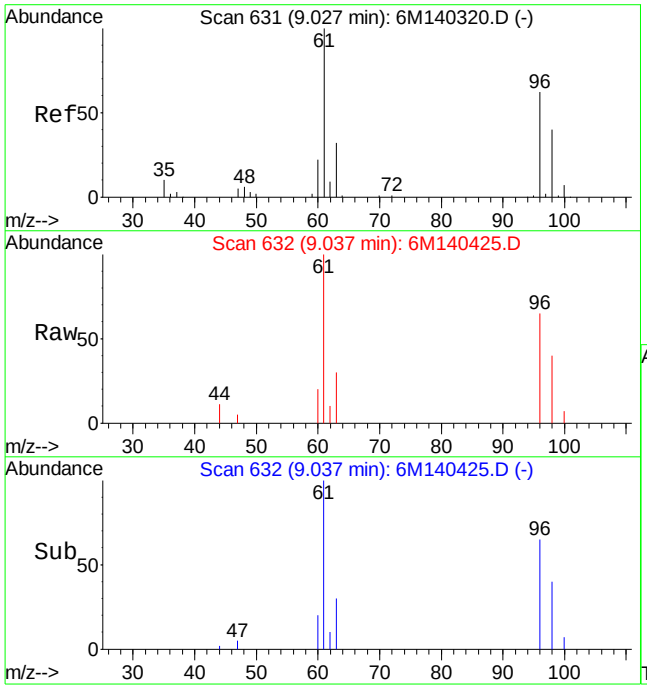

#32
cis-1,2-Dichloroethene
Concen: 2.24 ug/L
RT: 9.04 min Scan# 632
Delta R.T. 0.01 min
Lab File: 6M140425.D
Acq: 5 Jul 2016 14:58

Tgt Ion: 96 Resp: 12913

Ion	Ratio	Lower	Upper
96	100		
61	164.4	89.2	208.2

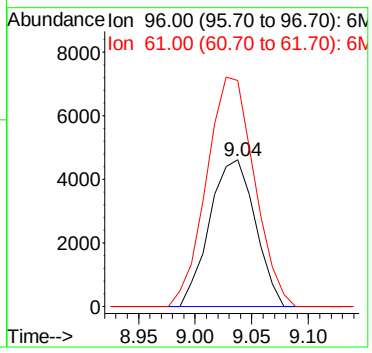

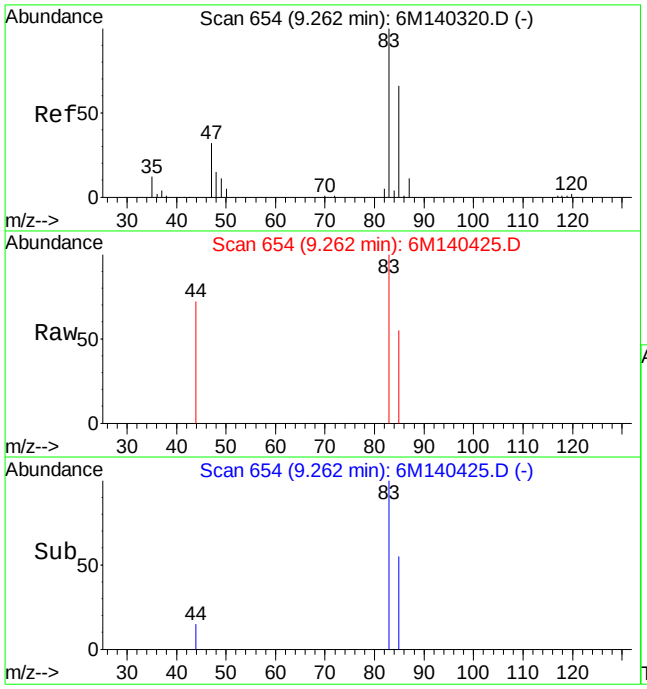

#33
Chloroform
Concen: 0.27 ug/L
RT: 9.26 min Scan# 654
Delta R.T. -0.00 min
Lab File: 6M140425.D
Acq: 5 Jul 2016 14:58

Tgt Ion: 83 Resp: 2743

Ion	Ratio	Lower	Upper
83	100		
85	57.1	39.0	91.0
47	6.9	18.5	43.1#

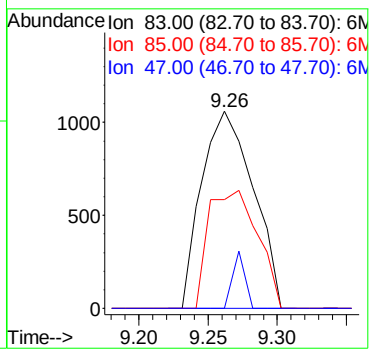

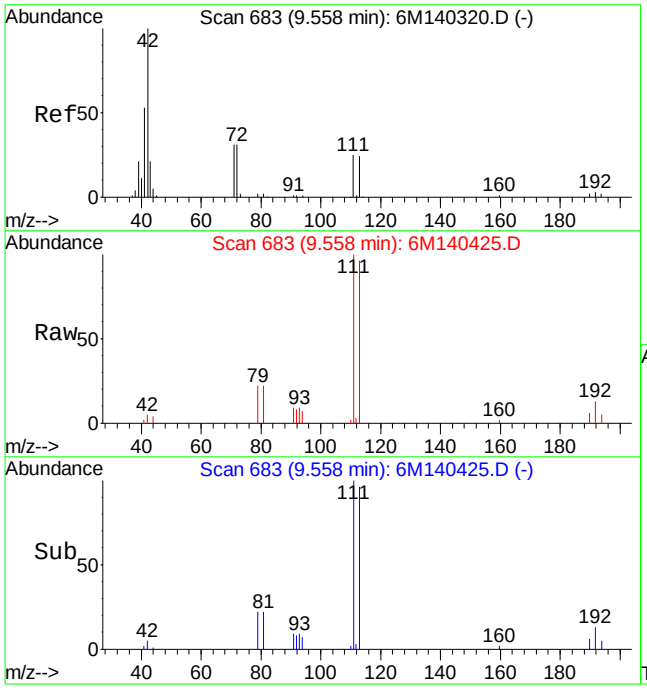

#36
Tetrahydrofuran
Concen: 1.02 ug/L
RT: 9.56 min Scan# 683
Delta R.T. -0.00 min
Lab File: 6M140425.D
Acq: 5 Jul 2016 14:58

Tgt Ion: 42 Resp: 1826

Ion	Ratio	Lower	Upper
42	100		
72	0.0	20.8	48.4#
71	0.0	19.9	46.5#

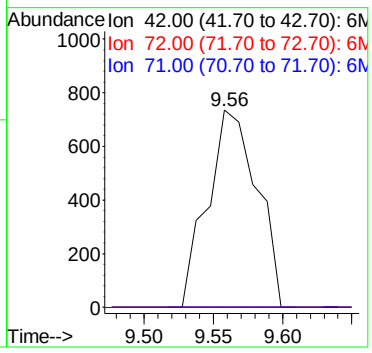

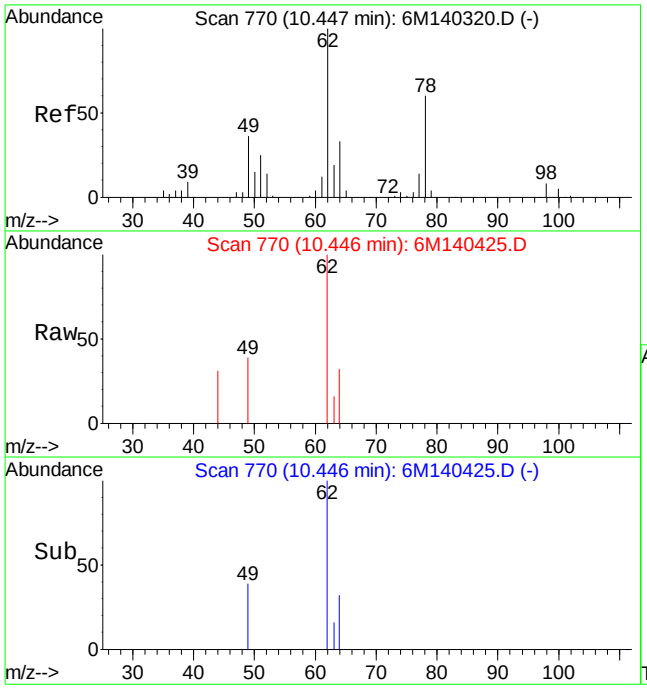

#45
1,2-Dichloroethane
Concen: 0.70 ug/L
RT: 10.45 min Scan# 770
Delta R.T. -0.00 min
Lab File: 6M140425.D
Acq: 5 Jul 2016 14:58

Tgt Ion: 62 Resp: 5747

Ion	Ratio	Lower	Upper
62	100		
49	25.8	25.1	58.5
98	0.0	5.2	12.0#

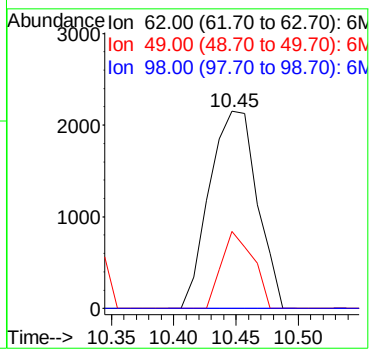

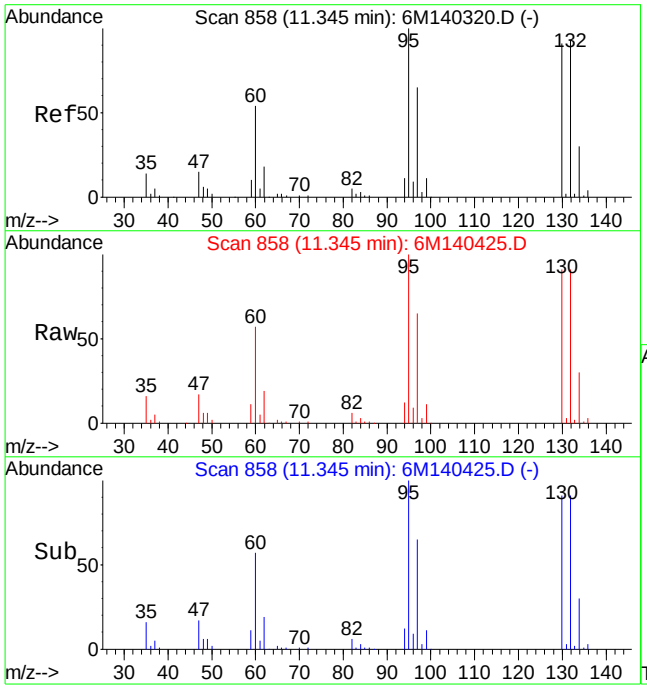

#47
Trichloroethene
Concen: 121.55 ug/L
RT: 11.35 min Scan# 858
Delta R.T. 0.01 min
Lab File: 6M140425.D
Acq: 5 Jul 2016 14:58

Tgt Ion:130 Resp: 653420

Ion	Ratio	Lower	Upper
130	100		
60	63.8	32.0	74.6

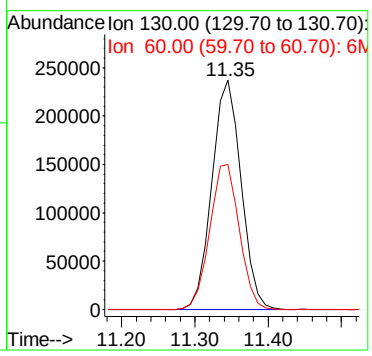

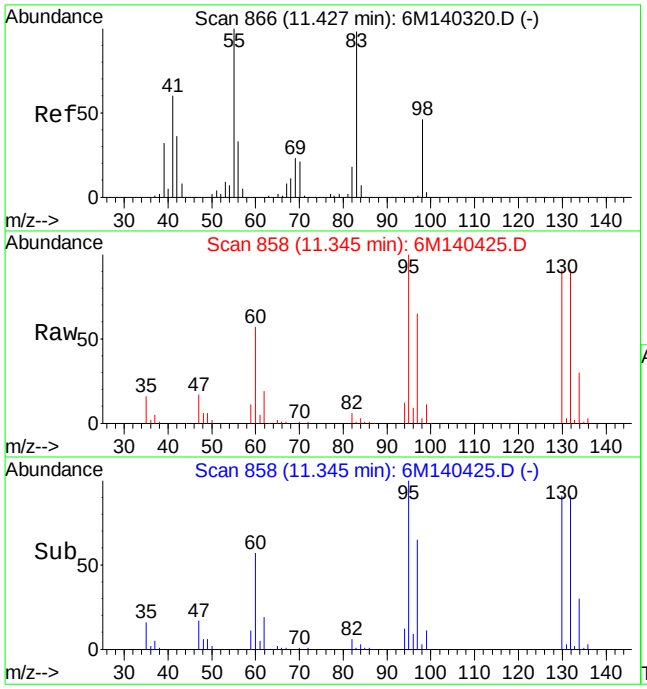

#48
Methylcyclohexane
Concen: 1.10 ug/L
RT: 11.35 min Scan# 858
Delta R.T. -0.08 min
Lab File: 6M140425.D
Acq: 5 Jul 2016 14:58

Tgt Ion: 83 Resp: 9315

Ion	Ratio	Lower	Upper
83	100		
55	0.0	56.3	131.3#
98	204.3	28.4	66.4#

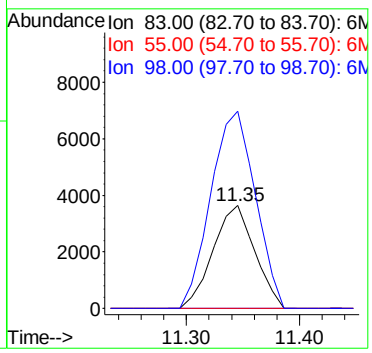

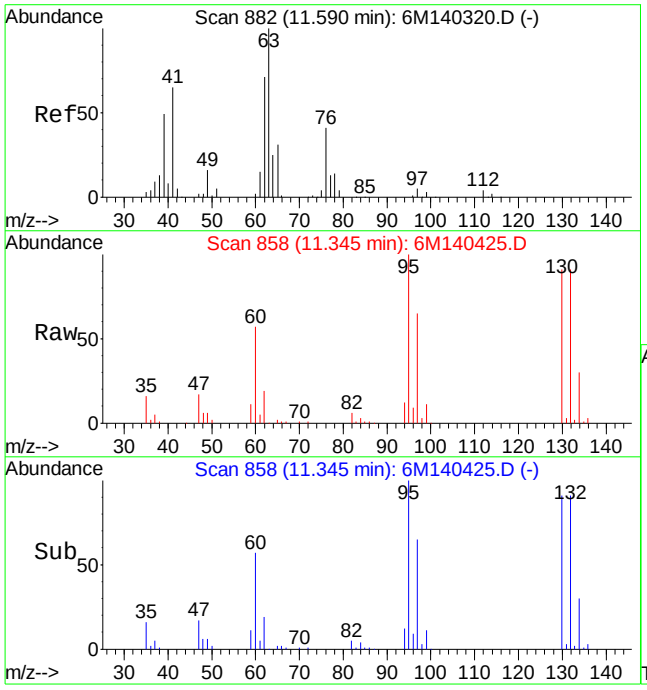

#49
1,2-Dichloropropane
Concen: 0.43 ug/L
RT: 11.35 min Scan# 858
Delta R.T. -0.25 min
Lab File: 6M140425.D
Acq: 5 Jul 2016 14:58

Tgt Ion: 63 Resp: 2694

Ion	Ratio	Lower	Upper
63	100		
76	0.0	24.2	56.4#

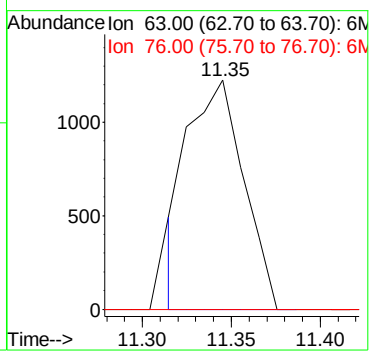

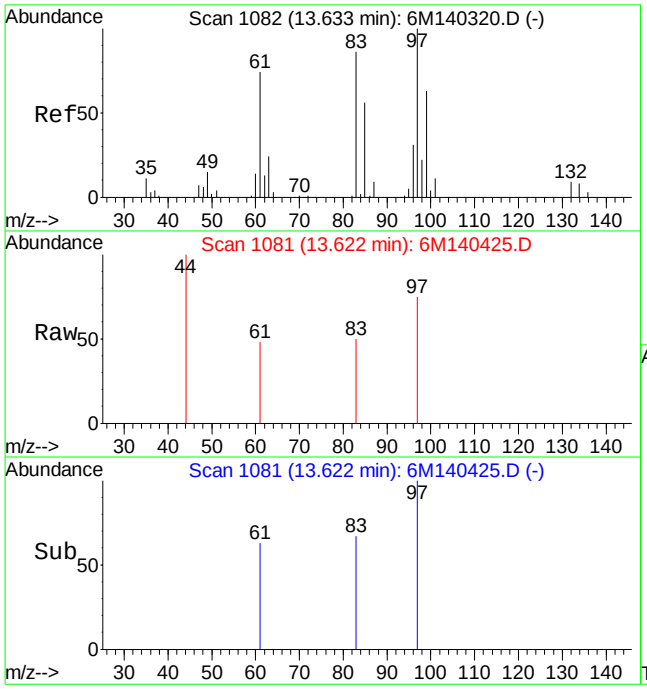

#63
1,1,2-Trichloroethane
Concen: 0.24 ug/L
RT: 13.62 min Scan# 1081
Delta R.T. -0.00 min
Lab File: 6M140425.D
Acq: 5 Jul 2016 14:58

Tgt Ion: 97 Resp: 991

Ion	Ratio	Lower	Upper
97	100		
83	44.3	51.4	120.0#
99	18.8	38.1	88.9#

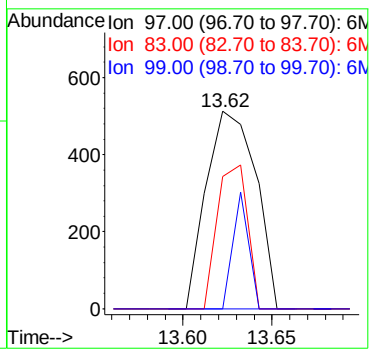

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070216\6M140384.D Vial: 23
Acq On : 2 Jul 2016 22:40 Operator: TMB
Sample : L16061289-02 A 10X 826-LOW Inst : HPMS6
Misc : 1,10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 03 10:11:19 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	490827	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	348544	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	181024	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	129816	26.0691 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.28%		
43) 1,2-Dichloroethane-d4	10.32	65	162495	25.8491 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.40%		
58) Toluene-d8	13.04	98	428155	24.9459 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.80%		
80) p-Bromofluorobenzene	17.01	95	175305	24.7272 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.92%		

Target Compounds					Qvalue
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	23210	4.8621 ug/L	98
13) Acetone	5.90	43	407	0.2588 ug/L #	48
14) 1,1-Dichloroethene	6.11	61	1646	0.1777 ug/L #	45
32) cis-1,2-Dichloroethene	9.03	96	35107	6.4655 ug/L	90
33) Chloroform	9.26	83	3797	0.3969 ug/L	96
36) Tetrahydrofuran	9.55	42	1959	1.1668 ug/L #	41
47) Trichloroethene	11.35	130	739192	146.2910 ug/L	83
48) Methylcyclohexane	11.34	83	11119	1.4017 ug/L #	1
49) 1,2-Dichloropropane	11.34	63	3095	0.5249 ug/L #	35

(#) = qualifier out of range (m) = manual integration
6M140384.D 8260WTR.M Sun Jul 03 10:11:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070216\6M140384.D Vial: 23
Acq On : 2 Jul 2016 22:40 Operator: TMB
Sample : L16061289-02 A 10X 826-LOW Inst : HPMS6
Misc : 1,10 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 3 10:11 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

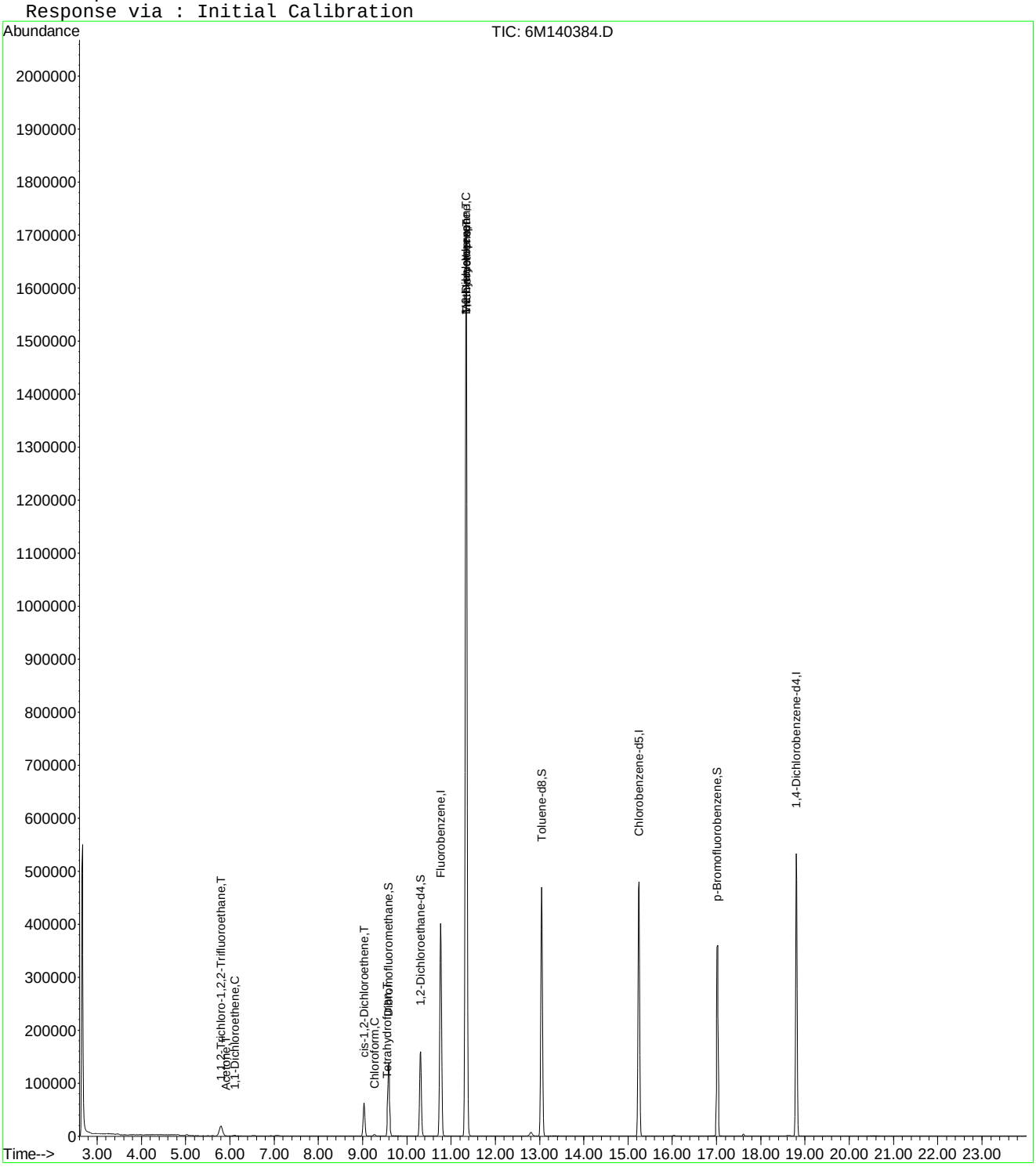

6M140384.D 8260WTR.M Sun Jul 03 10:11:22 2016 Page 2

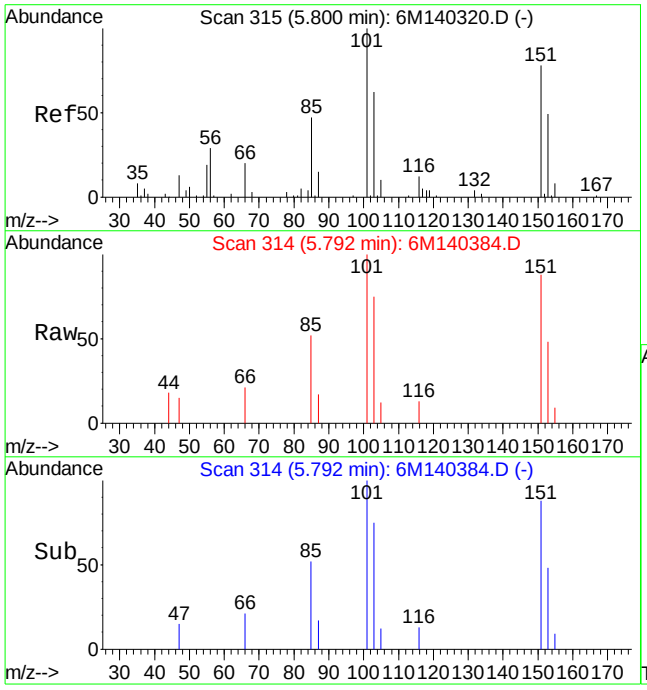

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 4.86 ug/L
RT: 5.79 min Scan# 314
Delta R.T. 0.01 min
Lab File: 6M140384.D
Acq: 2 Jul 2016 22:40

Tgt Ion:101 Resp: 23210

Ion	Ratio	Lower	Upper
101	100		
151	81.0	49.4	115.2
103	67.6	38.8	90.4

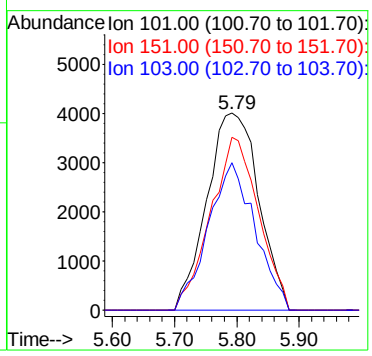

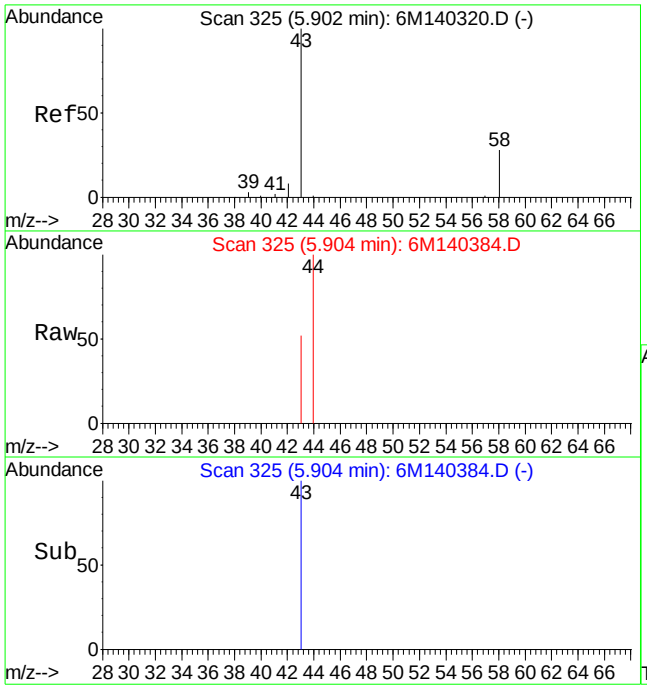

#13
Acetone
Concen: 0.26 ug/L
RT: 5.90 min Scan# 325
Delta R.T. -0.00 min
Lab File: 6M140384.D
Acq: 2 Jul 2016 22:40

Tgt Ion: 43 Resp: 407

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

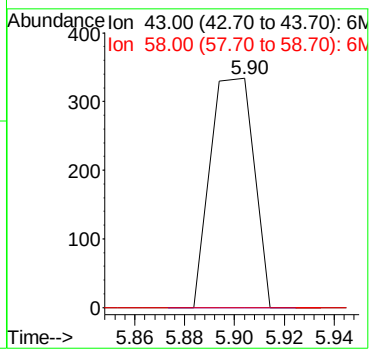

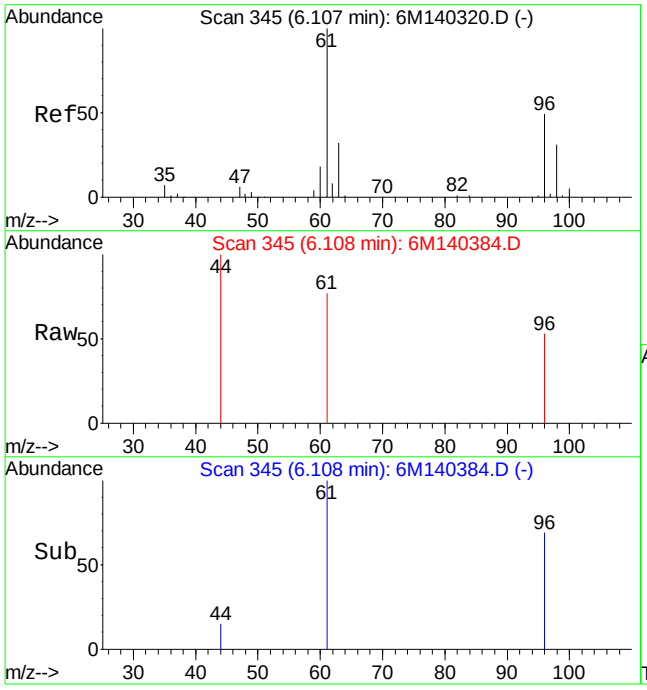

#14
1,1-Dichloroethene
Concen: 0.18 ug/L
RT: 6.11 min Scan# 345
Delta R.T. 0.01 min
Lab File: 6M140384.D
Acq: 2 Jul 2016 22:40

Tgt Ion: 61 Resp: 1646

Ion	Ratio	Lower	Upper
61	100		
96	14.5	32.0	74.6#

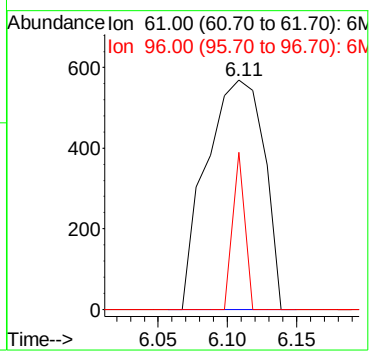

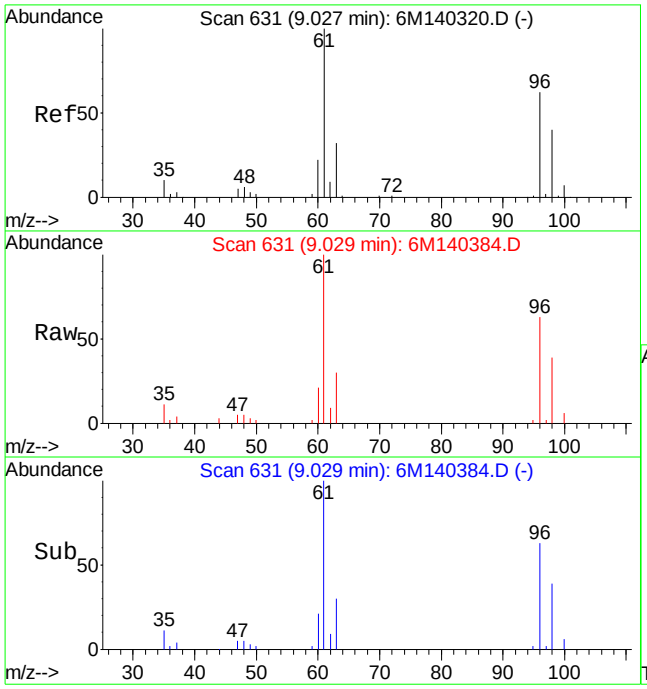

#32
cis-1,2-Dichloroethene
Concen: 6.47 ug/L
RT: 9.03 min Scan# 631
Delta R.T. -0.00 min
Lab File: 6M140384.D
Acq: 2 Jul 2016 22:40

Tgt Ion: 96 Resp: 35107

Ion	Ratio	Lower	Upper
96	100		
61	160.9	89.2	208.2

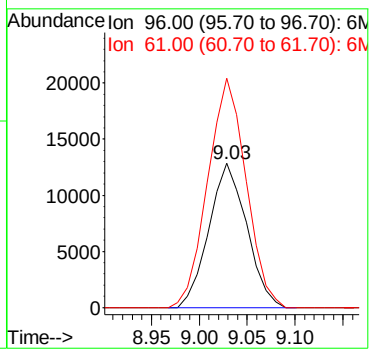

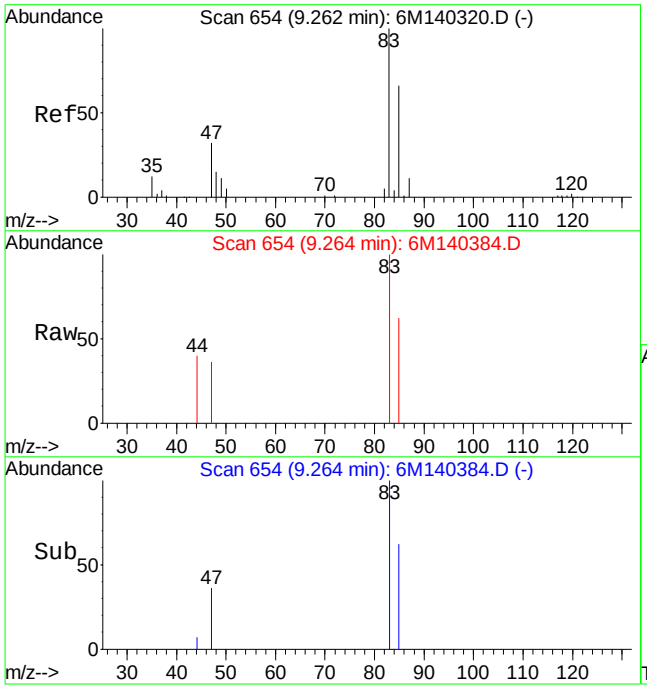

#33
Chloroform
Concen: 0.40 ug/L
RT: 9.26 min Scan# 654
Delta R.T. -0.00 min
Lab File: 6M140384.D
Acq: 2 Jul 2016 22:40

Tgt Ion: 83 Resp: 3797

Ion	Ratio	Lower	Upper
83	100		
85	64.3	39.0	91.0
47	24.8	18.5	43.1

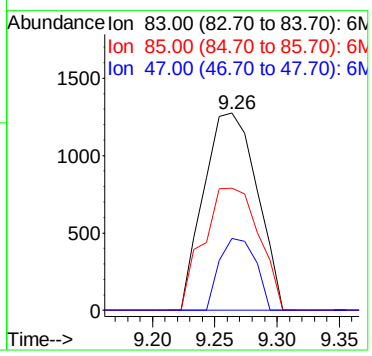

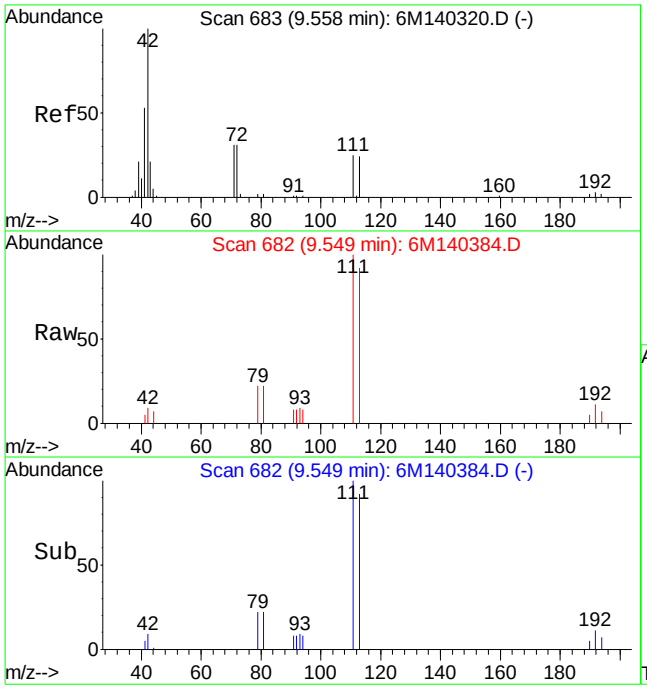

#36
Tetrahydrofuran
Concen: 1.17 ug/L
RT: 9.55 min Scan# 682
Delta R.T. -0.01 min
Lab File: 6M140384.D
Acq: 2 Jul 2016 22:40

Tgt Ion: 42 Resp: 1959

Ion	Ratio	Lower	Upper
42	100		
72	0.0	20.8	48.4#
71	0.0	19.9	46.5#

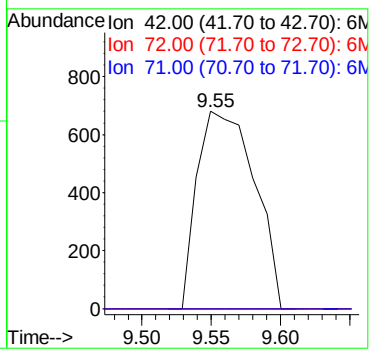

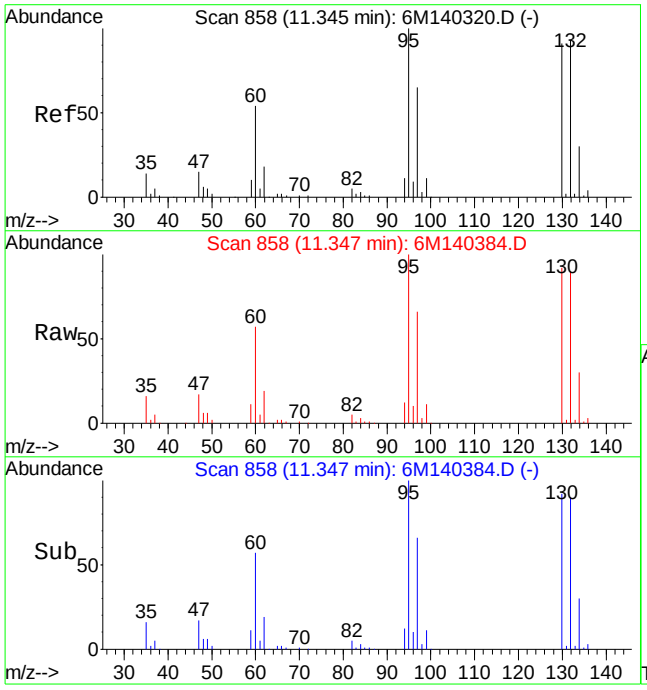

#47
Trichloroethene
Concen: 146.29 ug/L
RT: 11.35 min Scan# 858
Delta R.T. 0.01 min
Lab File: 6M140384.D
Acq: 2 Jul 2016 22:40

Tgt Ion:130 Resp: 739192

Ion	Ratio	Lower	Upper
130	100		
60	65.1	32.0	74.6

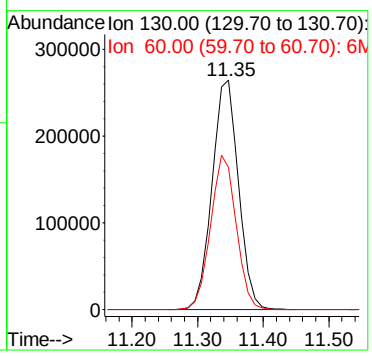

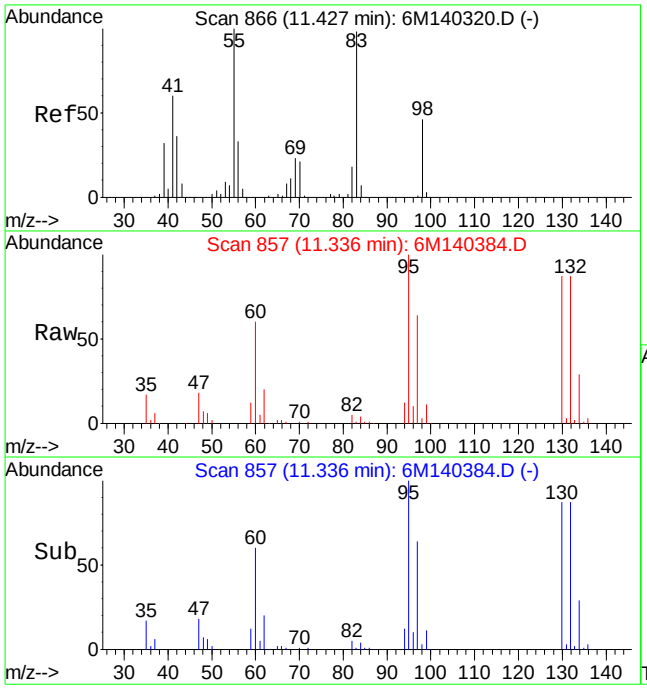

#48
Methylcyclohexane
Concen: 1.40 ug/L
RT: 11.34 min Scan# 857
Delta R.T. -0.09 min
Lab File: 6M140384.D
Acq: 2 Jul 2016 22:40

Tgt Ion: 83 Resp: 11119

Ion	Ratio	Lower	Upper
83	100		
55	0.0	56.3	131.3#
98	197.4	28.4	66.4#

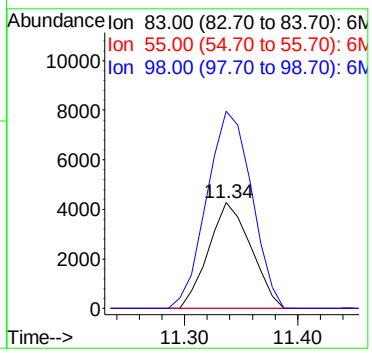

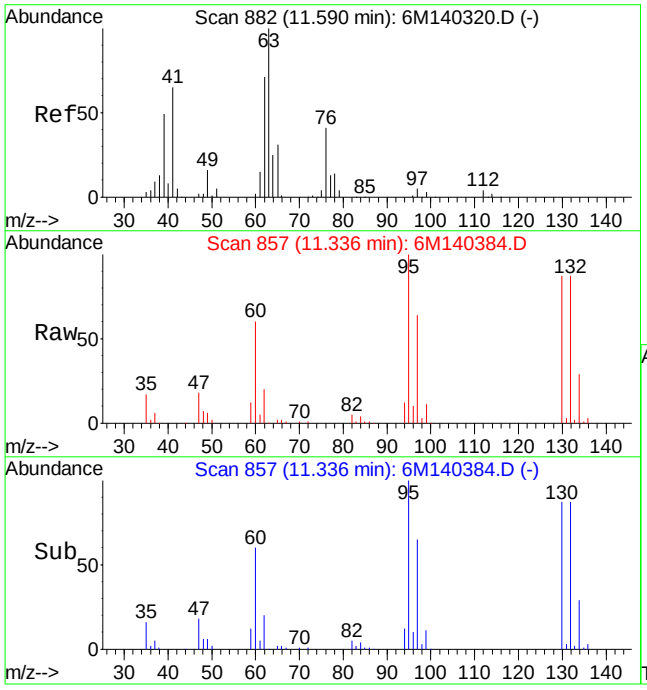

#49
1,2-Dichloropropane
Concen: 0.52 ug/L
RT: 11.34 min Scan# 857
Delta R.T. -0.26 min
Lab File: 6M140384.D
Acq: 2 Jul 2016 22:40

Tgt Ion: 63 Resp: 3095

Ion	Ratio	Lower	Upper
63	100		
76	0.0	24.2	56.4#

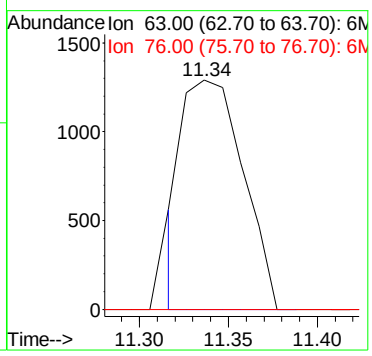

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070216\6M140377.D Vial: 16
Acq On : 2 Jul 2016 18:55 Operator: TMB
Sample : L16061289-03 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 03 10:10:35 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	511469	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.24	117	361927	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	187660	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.58	111	132949	25.6207 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.48%		
43) 1,2-Dichloroethane-d4	10.31	65	170075	25.9630 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.84%		
58) Toluene-d8	13.04	98	445821	25.0147 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.04%		
80) p-Bromofluorobenzene	17.02	95	184030	25.0399 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.16%		

Target Compounds					Qvalue
13) Acetone	5.91	43	7055	4.3054 ug/L	89

(#) = qualifier out of range (m) = manual integration
6M140377.D 8260WTR.M Sun Jul 03 10:10:38 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070216\6M140377.D Vial: 16
Acq On : 2 Jul 2016 18:55 Operator: TMB
Sample : L16061289-03 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 3 10:10 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

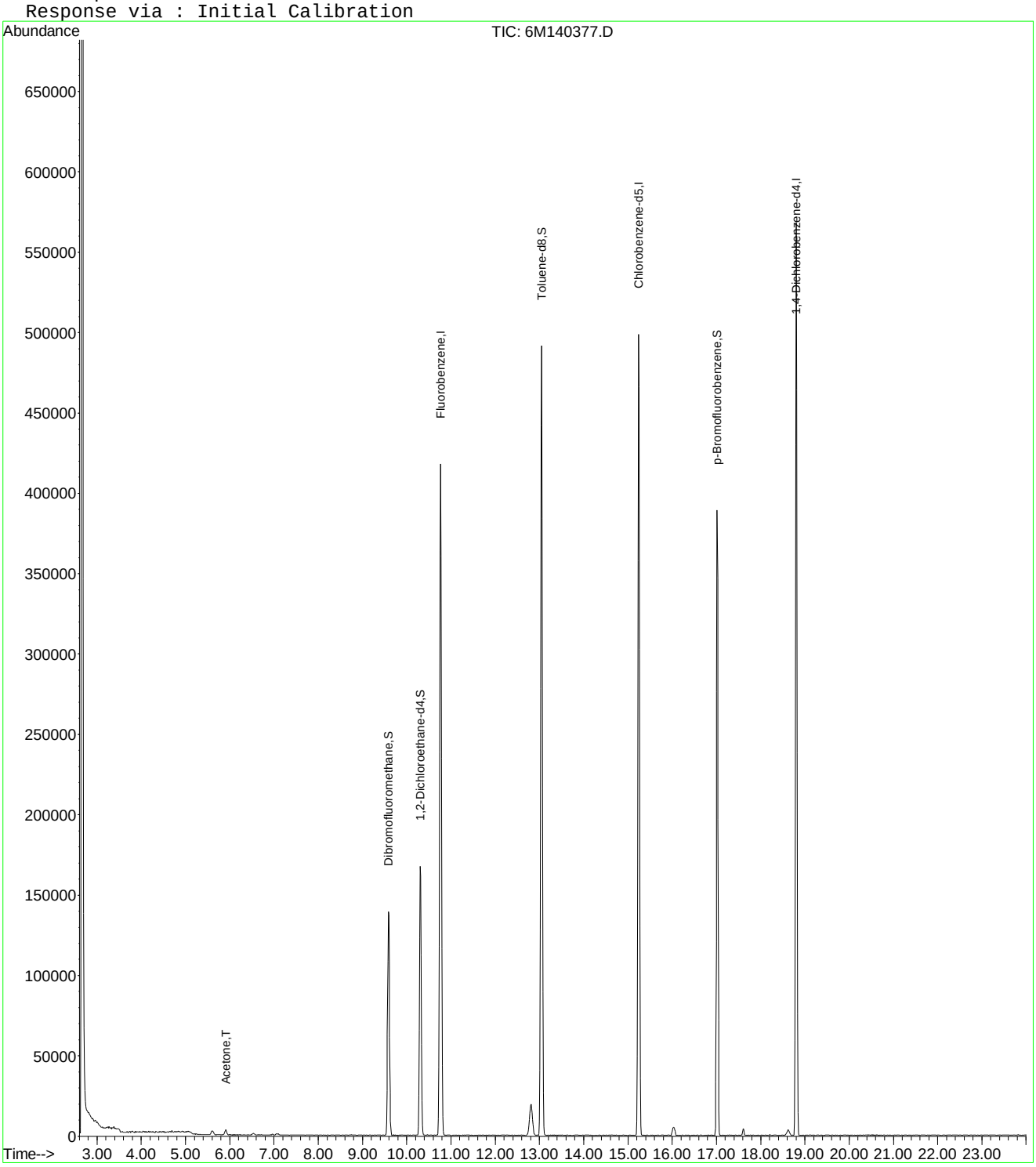

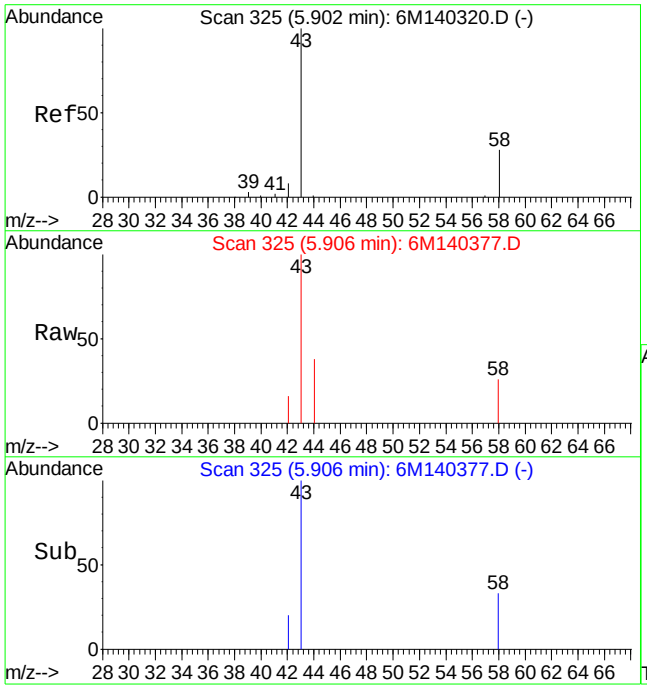

#13
Acetone
Concen: 4.31 ug/L
RT: 5.91 min Scan# 325
Delta R.T. 0.00 min
Lab File: 6M140377.D
Acq: 2 Jul 2016 18:55

Tgt Ion: 43 Resp: 7055

Ion	Ratio	Lower	Upper
43	100		
58	21.3	16.4	38.2

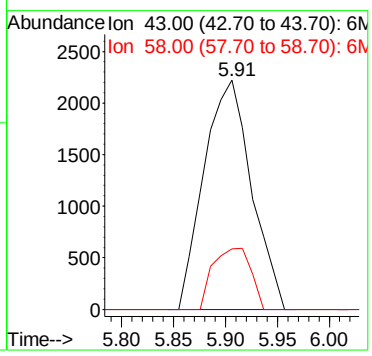

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070216\6M140378.D Vial: 17
Acq On : 2 Jul 2016 19:27 Operator: TMB
Sample : L16061289-05 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 03 10:10:40 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	506259	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	359213	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	187454	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	132586	25.8137 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.24%		
43) 1,2-Dichloroethane-d4	10.31	65	165603	25.5405 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.16%		
58) Toluene-d8	13.04	98	445568	25.1894 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.76%		
80) p-Bromofluorobenzene	17.02	95	182298	24.8315 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.32%		

Target Compounds

					Qvalue
3) Chloromethane	3.36	50	1294	0.1370 ug/L #	42
13) Acetone	5.90	43	3970	2.4477 ug/L #	78
55) cis-1,3-Dichloropropene	12.79	75	3263	0.3830 ug/L #	46

(#) = qualifier out of range (m) = manual integration
6M140378.D 8260WTR.M Sun Jul 03 10:10:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070216\6M140378.D Vial: 17
Acq On : 2 Jul 2016 19:27 Operator: TMB
Sample : L16061289-05 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 3 10:10 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

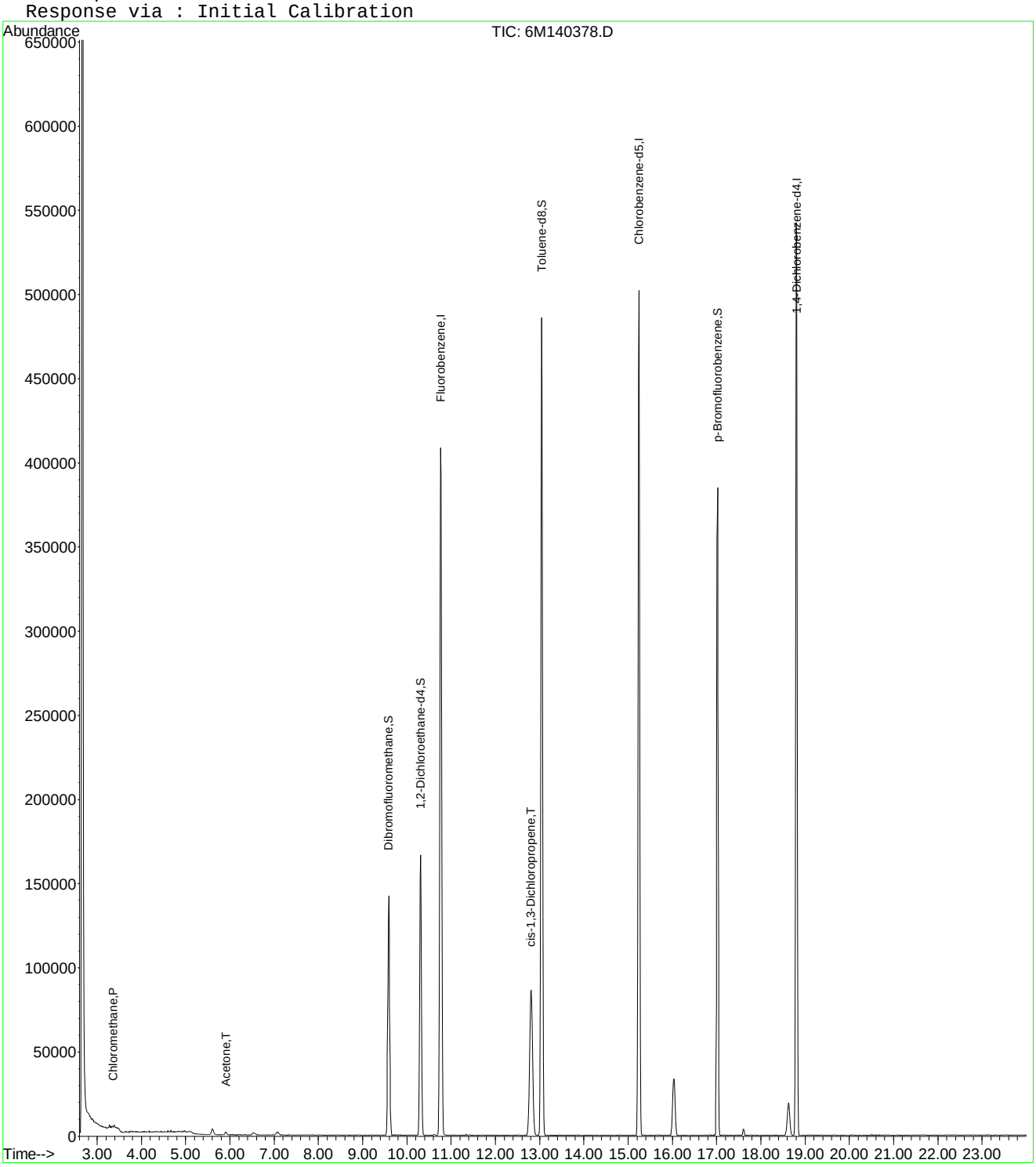

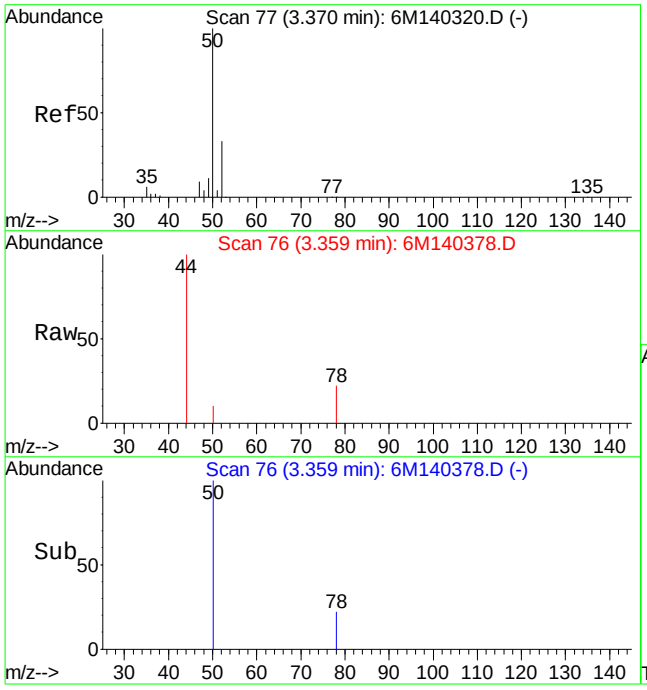

#3
Chloromethane
Concen: 0.14 ug/L
RT: 3.36 min Scan# 76
Delta R.T. -0.00 min
Lab File: 6M140378.D
Acq: 2 Jul 2016 19:27

Tgt Ion: 50 Resp: 1294

Ion	Ratio	Lower	Upper
50	100		
52	0.0	19.8	46.2#

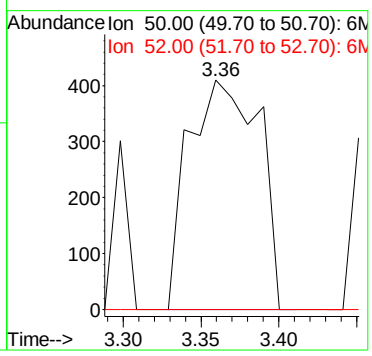

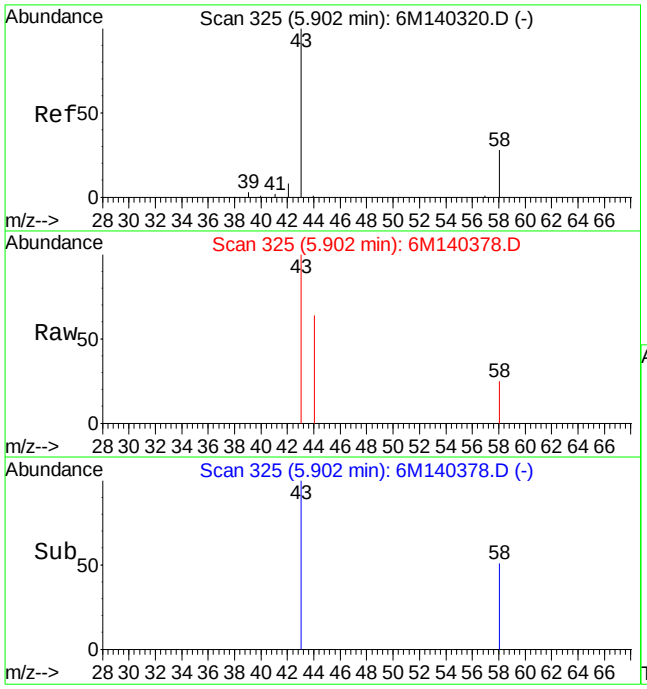

#13
Acetone
Concen: 2.45 ug/L
RT: 5.90 min Scan# 325
Delta R.T. -0.00 min
Lab File: 6M140378.D
Acq: 2 Jul 2016 19:27

Tgt Ion: 43 Resp: 3970

Ion	Ratio	Lower	Upper
43	100		
58	15.7	16.4	38.2#

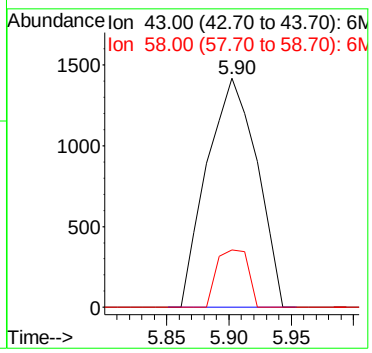

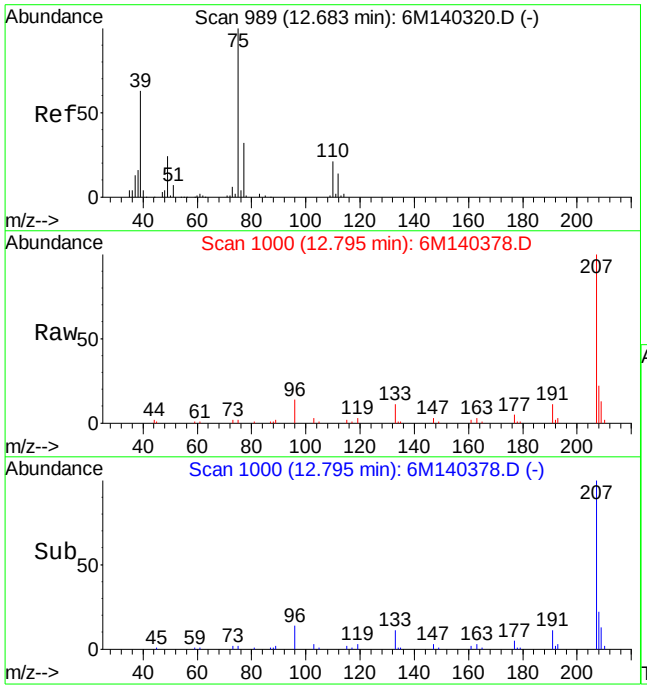

#55
cis-1,3-Dichloropropene
Concen: 0.38 ug/L
RT: 12.79 min Scan# 1000
Delta R.T. 0.11 min
Lab File: 6M140378.D
Acq: 2 Jul 2016 19:27

Tgt Ion: 75 Resp: 3263

Ion	Ratio	Lower	Upper
75	100		
77	0.0	19.5	45.5#
49	0.0	14.1	32.9#

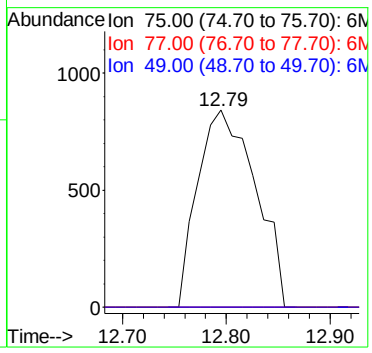

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070216\6M140372.D Vial: 11
Acq On : 2 Jul 2016 16:15 Operator: TMB
Sample : L16061289-06 A TB 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 03 10:10:18 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	542744	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	380150	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	194875	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	138470	25.1470 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.60%		
43) 1,2-Dichloroethane-d4	10.31	65	175575	25.2581 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.04%		
58) Toluene-d8	13.04	98	470453	25.1314 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.52%		
80) p-Bromofluorobenzene	17.02	95	195773	25.6515 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.60%		

Target Compounds					Qvalue
13) Acetone	5.89	43	1091	0.6274 ug/L #	48
36) Tetrahydrofuran	9.56	42	2674	1.4403 ug/L #	61
55) cis-1,3-Dichloropropene	12.81	75	2622	0.2870 ug/L #	46

(#) = qualifier out of range (m) = manual integration
6M140372.D 8260WTR.M Sun Jul 03 10:10:20 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070216\6M140372.D Vial: 11
Acq On : 2 Jul 2016 16:15 Operator: TMB
Sample : L16061289-06 A TB 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 3 10:10 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

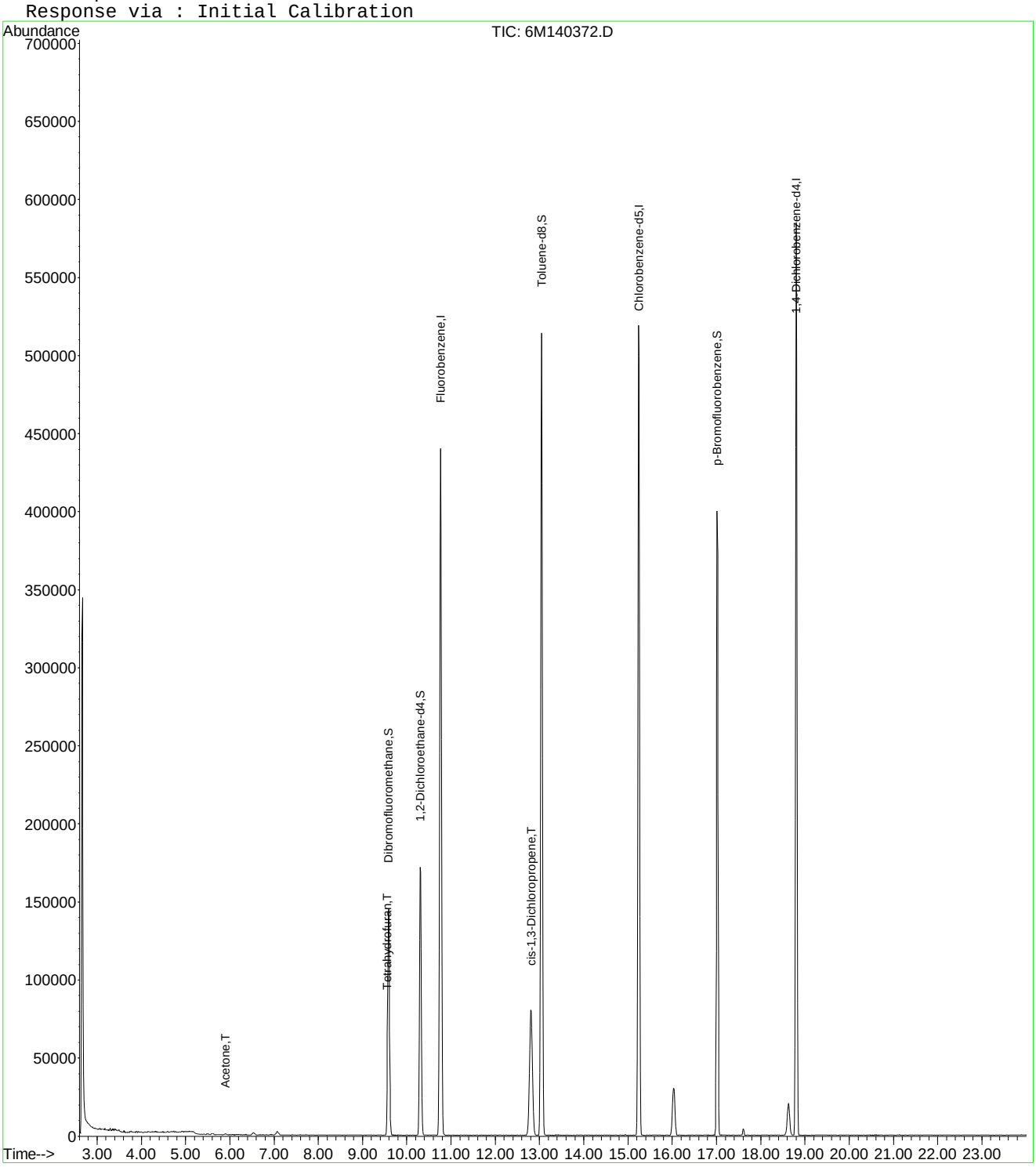

6M140372.D 8260WTR.M Sun Jul 03 10:10:21 2016 Page 2

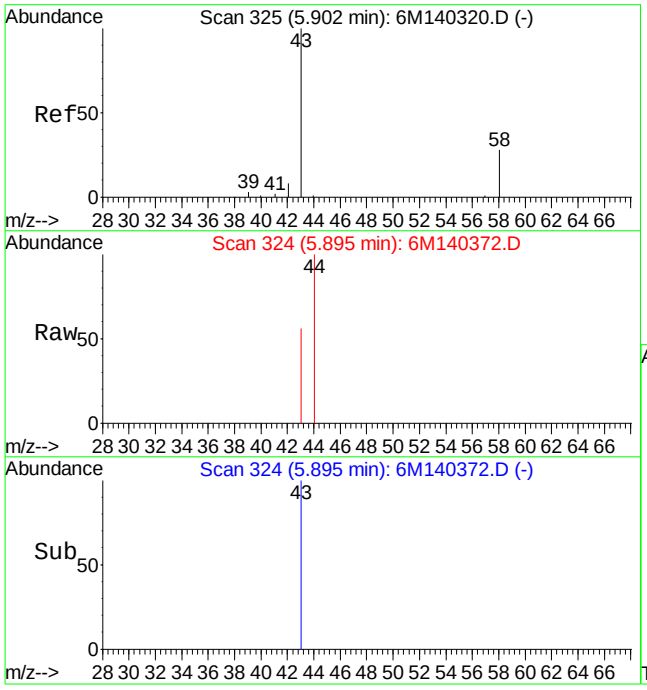

#13
Acetone
Concen: 0.63 ug/L
RT: 5.89 min Scan# 324
Delta R.T. -0.01 min
Lab File: 6M140372.D
Acq: 2 Jul 2016 16:15

Tgt Ion: 43 Resp: 1091

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

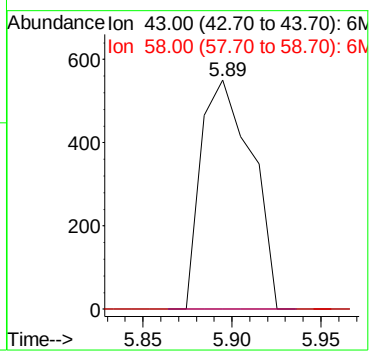

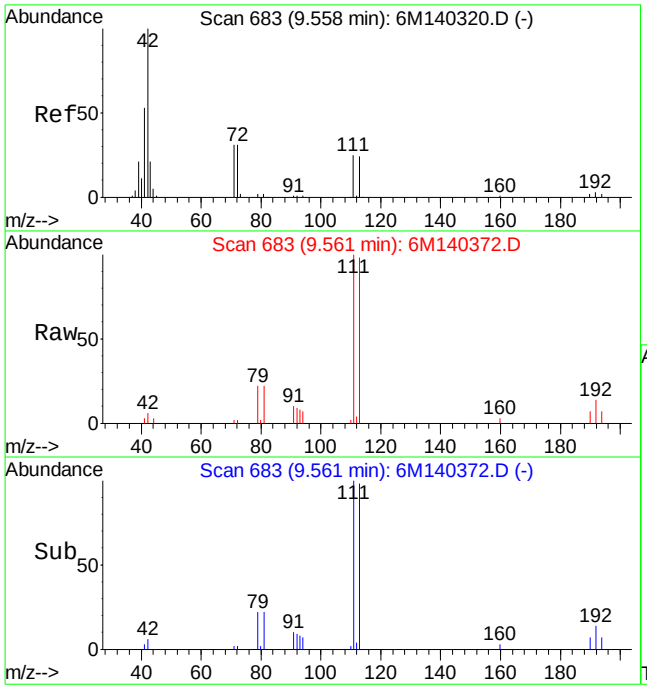

#36
Tetrahydrofuran
Concen: 1.44 ug/L
RT: 9.56 min Scan# 683
Delta R.T. -0.00 min
Lab File: 6M140372.D
Acq: 2 Jul 2016 16:15

Tgt Ion: 42 Resp: 2674

Ion	Ratio	Lower	Upper
42	100		
72	16.2	20.8	48.4#
71	7.4	19.9	46.5#

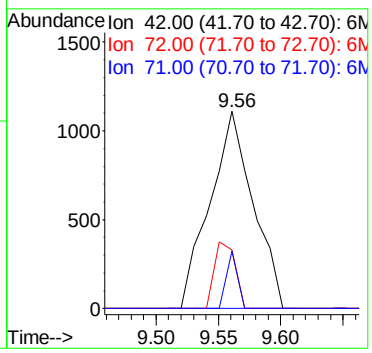

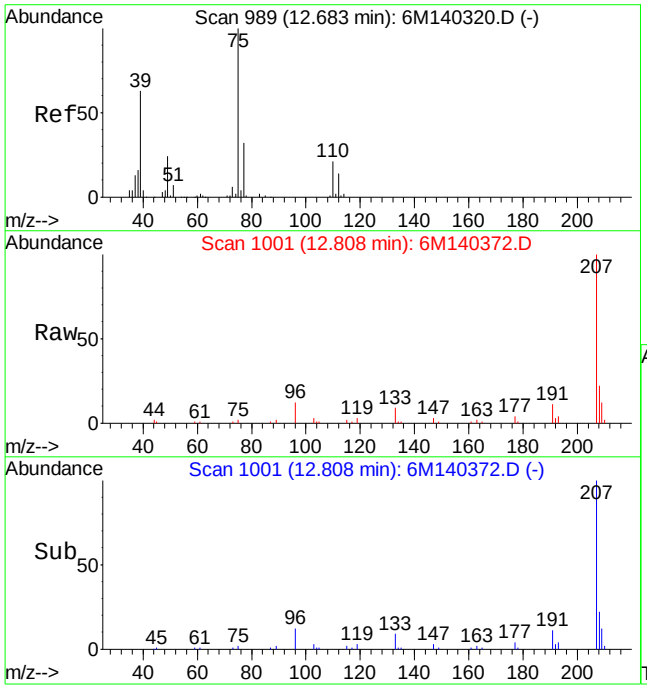

#55
cis-1,3-Dichloropropene
Concen: 0.29 ug/L
RT: 12.81 min Scan# 1001
Delta R.T. 0.12 min
Lab File: 6M140372.D
Acq: 2 Jul 2016 16:15

Tgt Ion: 75 Resp: 2622

Ion	Ratio	Lower	Upper
75	100		
77	0.0	19.5	45.5#
49	0.0	14.1	32.9#

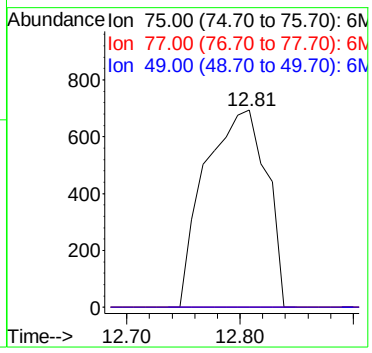

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:46 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	611118	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	473080	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	253718	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.40	111	173671	27.7488 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.00%		
43) 1,2-Dichloroethane-d4	11.12	65	203570	26.8000 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.20%		
58) Toluene-d8	13.86	98	554047	26.0139 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.04%		
80) p-Bromofluorobenzene	17.85	95	229998	27.1525 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 108.60%		

Target Compounds					Qvalue
13) Acetone	6.67	43	1325	0.6992 ug/L #	46
20) Carbon Disulfide	7.54	76	18747	0.9622 ug/L #	39
29) 2-Butanone	9.31	43	1188	0.4247 ug/L #	1
36) Tetrahydrofuran	10.36	42	2769	1.5196 ug/L #	58
60) Ethyl Methacrylate	13.87	69	899	0.1270 ug/L #	1

(#) = qualifier out of range (m) = manual integration
6M138751.D 8260WTR.M Mon Apr 25 09:22:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

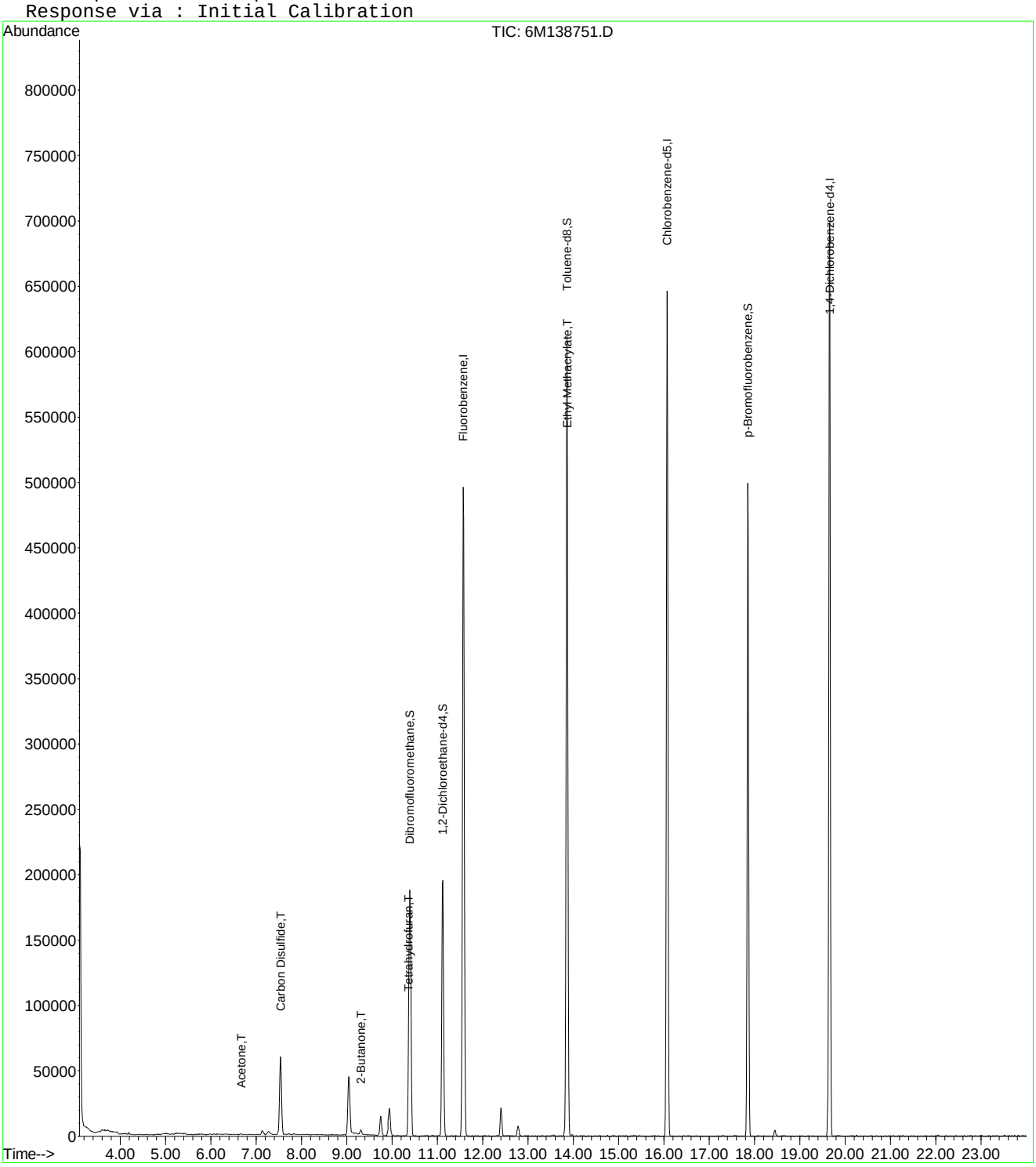

6M138751.D 8260WTR.M Mon Apr 25 09:22:46 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:52 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	611118	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	473080	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	253718	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.13	41	4366	3.7209 ug/L	76
3) 3-Chloro-1-propene	7.54	41	69268	4.2301 ug/L	92
4) 2-Chloro-1,3-butadiene	9.04	53	50753	3.6002 ug/L	85
5) Ethyl Acetate	9.75	43	28042	4.3499 ug/L #	90
6) Methacrylonitrile	9.94	67	8721	3.5173 ug/L #	55
7) Isobutyl Alcohol	9.94	43	1233	3.4767 ug/L #	85
9) Methyl methacrylate	12.40	41	19474	3.0338 ug/L	79
10) 2-Nitropropane	12.78	43	7076	3.7392 ug/L	93
13) Cyclohexanone	17.57	55	447	0.5159 ug/L #	25

(#) = qualifier out of range (m) = manual integration
6M138751.D A9FOOWT.M Mon Apr 25 15:45:52 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

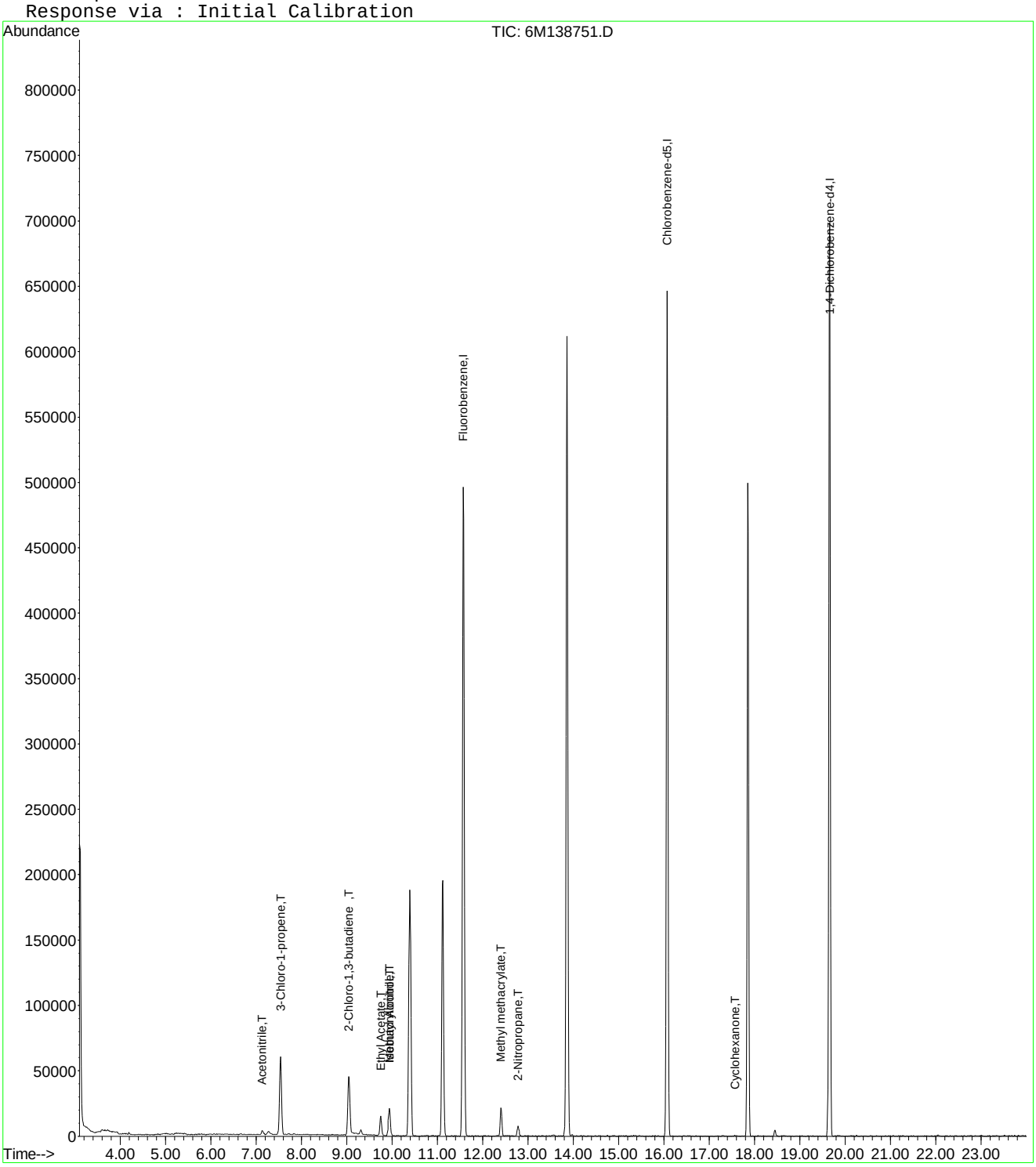

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:56 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	611118	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	473080	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	253718	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.13	41	4366	4.7698 ug/L	76
3) 3-Chloro-1-propene	7.54	41	69268	4.5408 ug/L	92
4) 2-Chloro-1,3-butadiene	9.04	53	50753	3.8775 ug/L	85
5) Ethyl Acetate	9.75	43	28042	4.2792 ug/L #	90
6) Methacrylonitrile	9.94	67	8721	3.8601 ug/L #	55
7) Isobutyl Alcohol	9.94	43	1233	5.9076 ug/L #	85
9) Methyl methacrylate	12.40	41	19474	3.5356 ug/L	79
10) 2-Nitropropane	12.78	43	7076	3.4543 ug/L	93
13) Cyclohexanone	17.57	55	447	1.4133 ug/L #	25

(#) = qualifier out of range (m) = manual integration
6M138751.D A9FOOWT.M Wed Apr 27 16:04:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

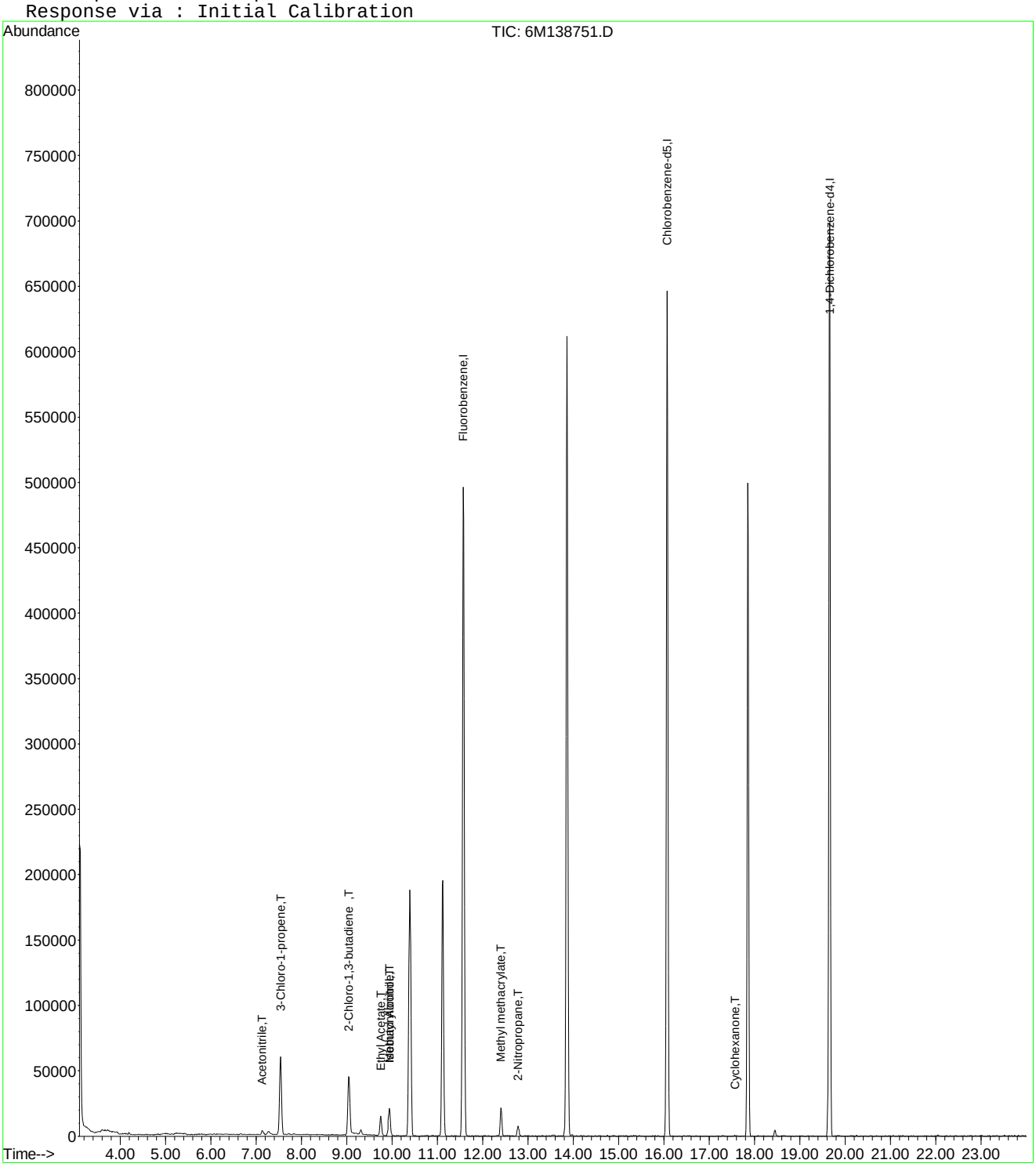

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	5.0000	4.7698	4.6	100	0.00
3	T	3-Chloro-1-propene	5.0000	4.5408	9.2	100	0.00
4	T	2-Chloro-1,3-butadiene	5.0000	3.8775	22.5	100	0.00
5	T	Ethyl Acetate	5.0000	4.2792	14.4	100	0.00
6	T	Methacrylonitrile	5.0000	3.8601	22.8	100	0.00
7	T	Isobutyl Alcohol	-1.0000	5.9076	0.0	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.99#
9	T	Methyl methacrylate	5.0000	3.5356	29.3	100	0.00
10	T	2-Nitropropane	-1.0000	3.4543	0.0	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	1.4133	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138751.D A9FOOWT.M Wed Apr 27 16:04:12 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:48 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	599043	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	463005	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	248475	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	171577	27.9669 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.88%		
43) 1,2-Dichloroethane-d4	11.12	65	207390	27.8532 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.40%		
58) Toluene-d8	13.86	98	547786	26.2796 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.12%		
80) p-Bromofluorobenzene	17.85	95	228171	27.5052 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 110.04%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	2739	1.4745 ug/L #	59
20) Carbon Disulfide	7.54	76	81493	4.2668 ug/L #	36
27) 1,1-Dichloroethane	9.05	63	3411	0.2688 ug/L #	42
29) 2-Butanone	9.31	43	3879	1.4148 ug/L #	1
36) Tetrahydrofuran	10.37	42	3350	1.8754 ug/L #	62
60) Ethyl Methacrylate	13.86	69	1183	0.1708 ug/L #	27

(#) = qualifier out of range (m) = manual integration
6M138752.D 8260WTR.M Mon Apr 25 09:22:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

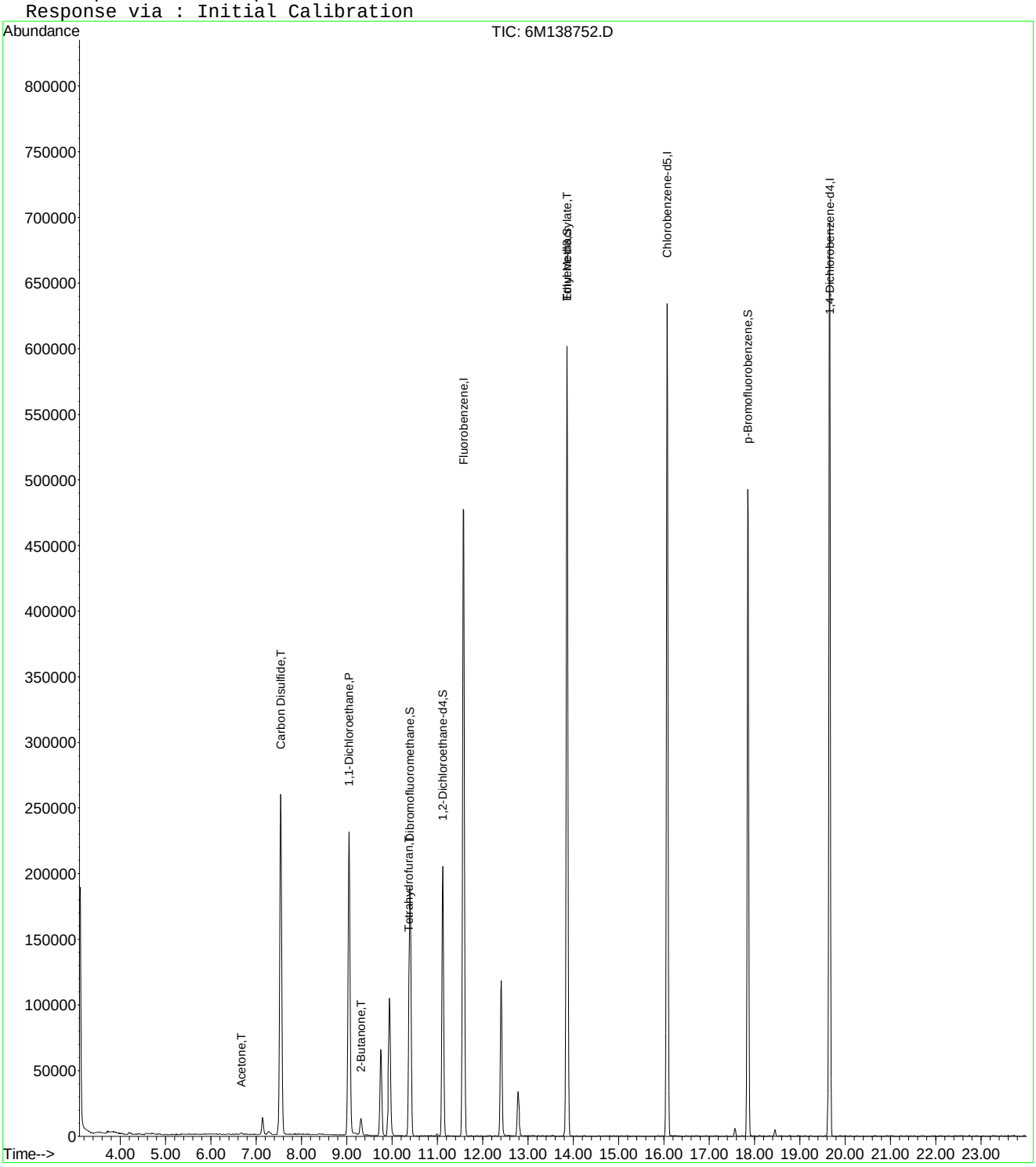

6M138752.D 8260WTR.M Mon Apr 25 09:22:48 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:54 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	599043	25.00 ug/L	-0.02
11) Chlorobenzene-d5	16.07	117	463005	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	248475	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	17741	15.4242 ug/L	95
3) 3-Chloro-1-propene	7.54	41	297686	18.5457 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	242962	17.5823 ug/L	84
5) Ethyl Acetate	9.75	43	124111	19.6403 ug/L	93
6) Methacrylonitrile	9.93	67	42708	17.5719 ug/L #	59
7) Isobutyl Alcohol	9.95	43	7968	22.9203 ug/L #	85
8) 1-Butanol	10.98	41	982	6.5662 ug/L #	52
9) Methyl methacrylate	12.41	41	95824	15.2291 ug/L	81
10) 2-Nitropropane	12.78	43	34207	18.4403 ug/L	92
13) Cyclohexanone	17.57	55	4053	4.7763 ug/L	81

(#) = qualifier out of range (m) = manual integration
6M138752.D A9FOOWT.M Mon Apr 25 15:45:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

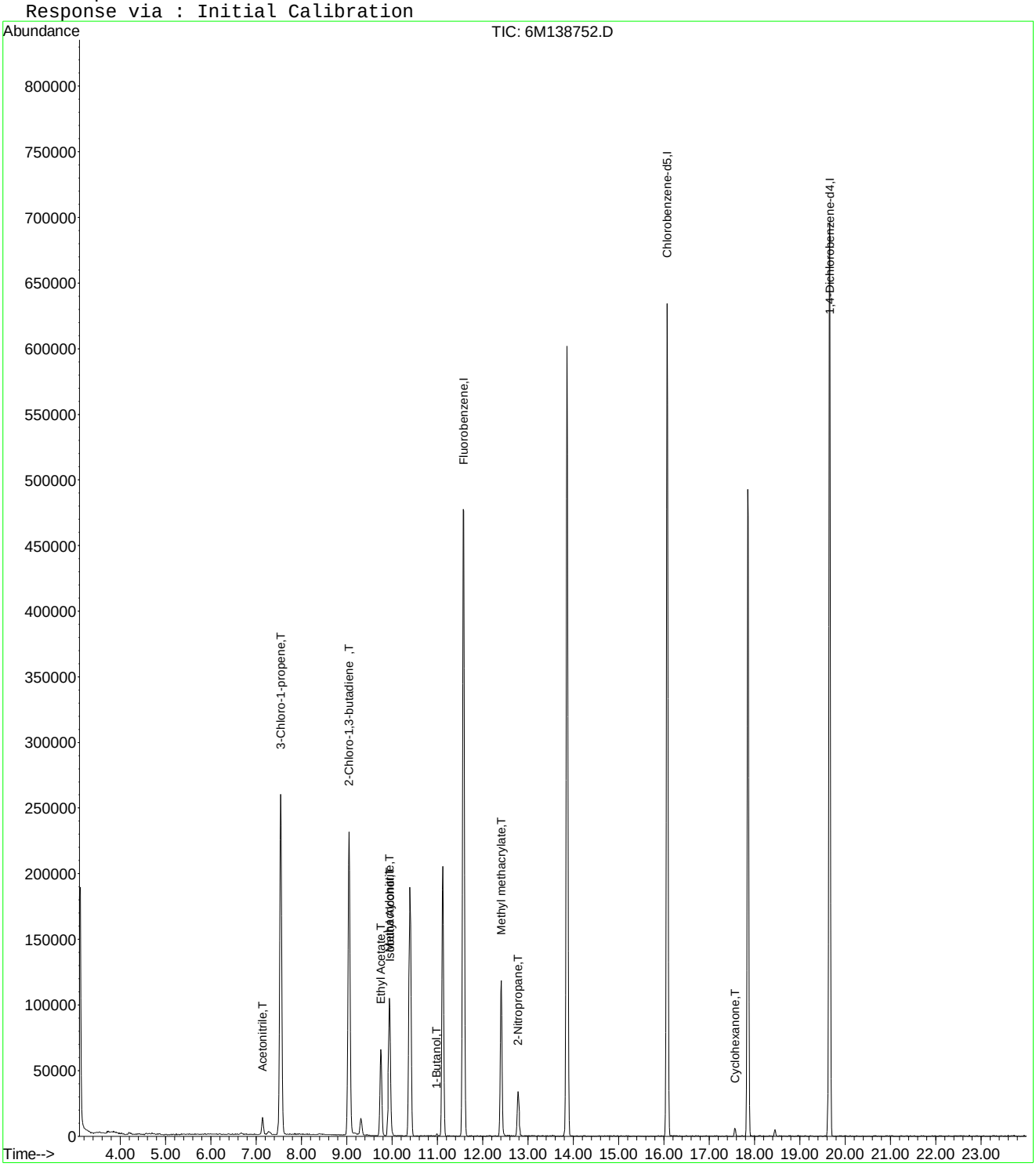

6M138752.D A9FOOWT.M Mon Apr 25 15:45:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:58 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	599043	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	463005	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	248475	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	17741	19.7725 ug/L	95
3) 3-Chloro-1-propene	7.54	41	297686	19.9080 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	242962	18.9362 ug/L	84
5) Ethyl Acetate	9.75	43	124111	19.3209 ug/L	93
6) Methacrylonitrile	9.93	67	42708	19.2846 ug/L #	59
7) Isobutyl Alcohol	9.95	43	7968	38.9462 ug/L #	85
9) Methyl methacrylate	12.41	41	95824	17.7480 ug/L	81
10) 2-Nitropropane	12.78	43	34207	17.0355 ug/L	92
13) Cyclohexanone	17.57	55	4053	13.0852 ug/L	81

(#) = qualifier out of range (m) = manual integration
6M138752.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

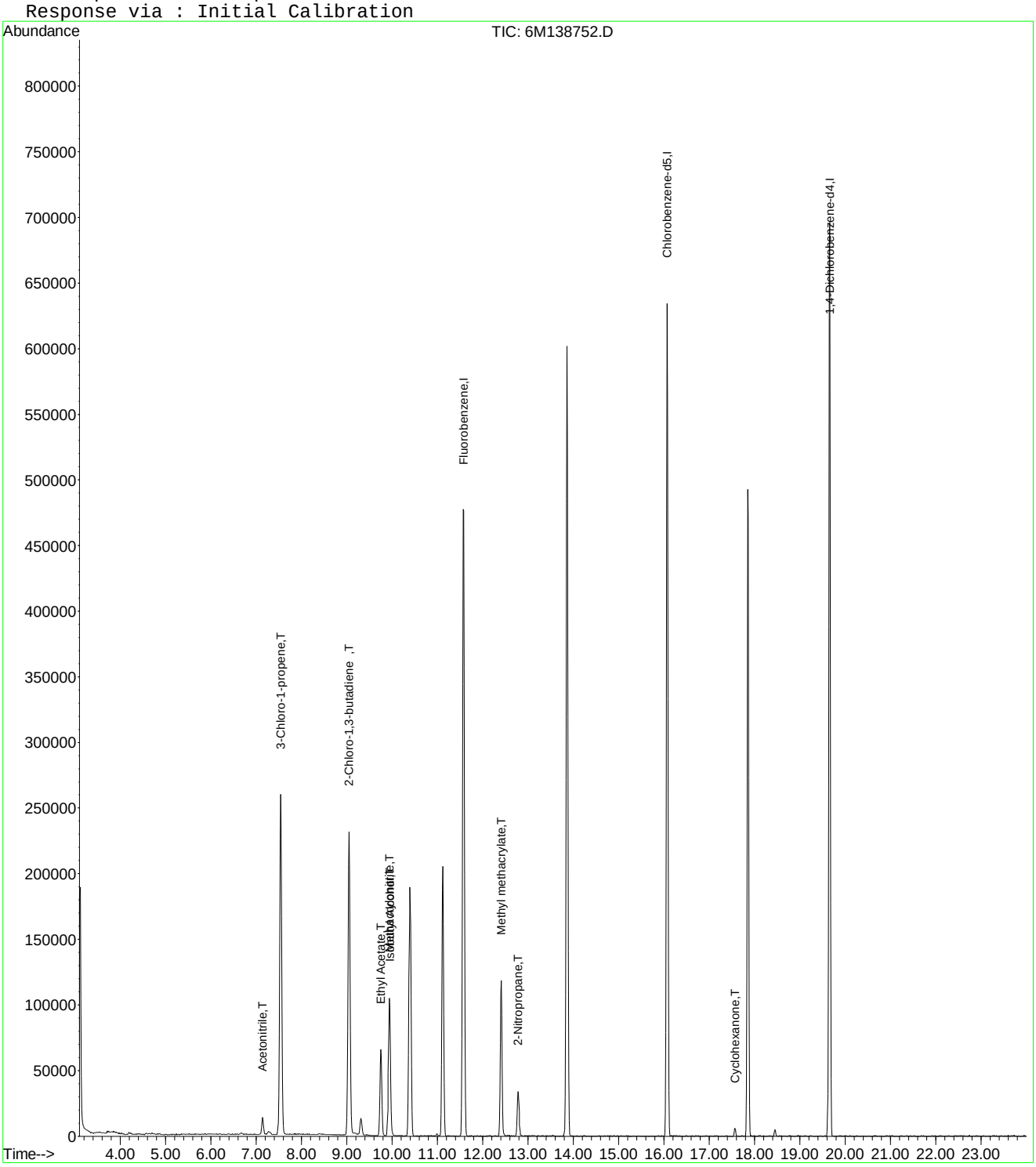

6M138752.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	19.7724	1.1	100	0.00
3	T	3-Chloro-1-propene	20.0000	19.9080	0.5	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	18.9362	5.3	100	0.00
5	T	Ethyl Acetate	20.0000	19.3209	3.4	100	0.00
6	T	Methacrylonitrile	20.0000	19.2846	3.6	100	0.00
7	T	Isobutyl Alcohol	40.0000	38.9462	2.6	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	20.0000	17.7480	11.3	100	0.00
10	T	2-Nitropropane	-1.0000	17.0355	0.0	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	13.0852	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138752.D A9FOOWT.M Wed Apr 27 16:04:26 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:48 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	604736	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	468574	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	254472	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.40	111	172256	27.8132 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.24%		
43) 1,2-Dichloroethane-d4	11.12	65	208744	27.7711 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.08%		
58) Toluene-d8	13.86	98	553191	26.2235 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.88%		
80) p-Bromofluorobenzene	17.85	95	239542	28.1954 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 112.80%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	3732	1.9901 ug/L #	57
20) Carbon Disulfide	7.54	76	220780	11.4508 ug/L #	36
26) Vinyl Acetate	9.04	43	2704	0.2791 ug/L #	8
27) 1,1-Dichloroethane	9.05	63	9803	0.7652 ug/L #	42
28) Ethyl-Tert-Butyl ether	9.31	59	152978	7.3579 ug/L #	39
29) 2-Butanone	9.53	43	660	0.2385 ug/L #	52
36) Tetrahydrofuran	10.37	42	3746	2.0774 ug/L #	62
60) Ethyl Methacrylate	13.86	69	1423	0.2030 ug/L #	9

(#) = qualifier out of range (m) = manual integration
6M138753.D 8260WTR.M Mon Apr 25 09:22:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

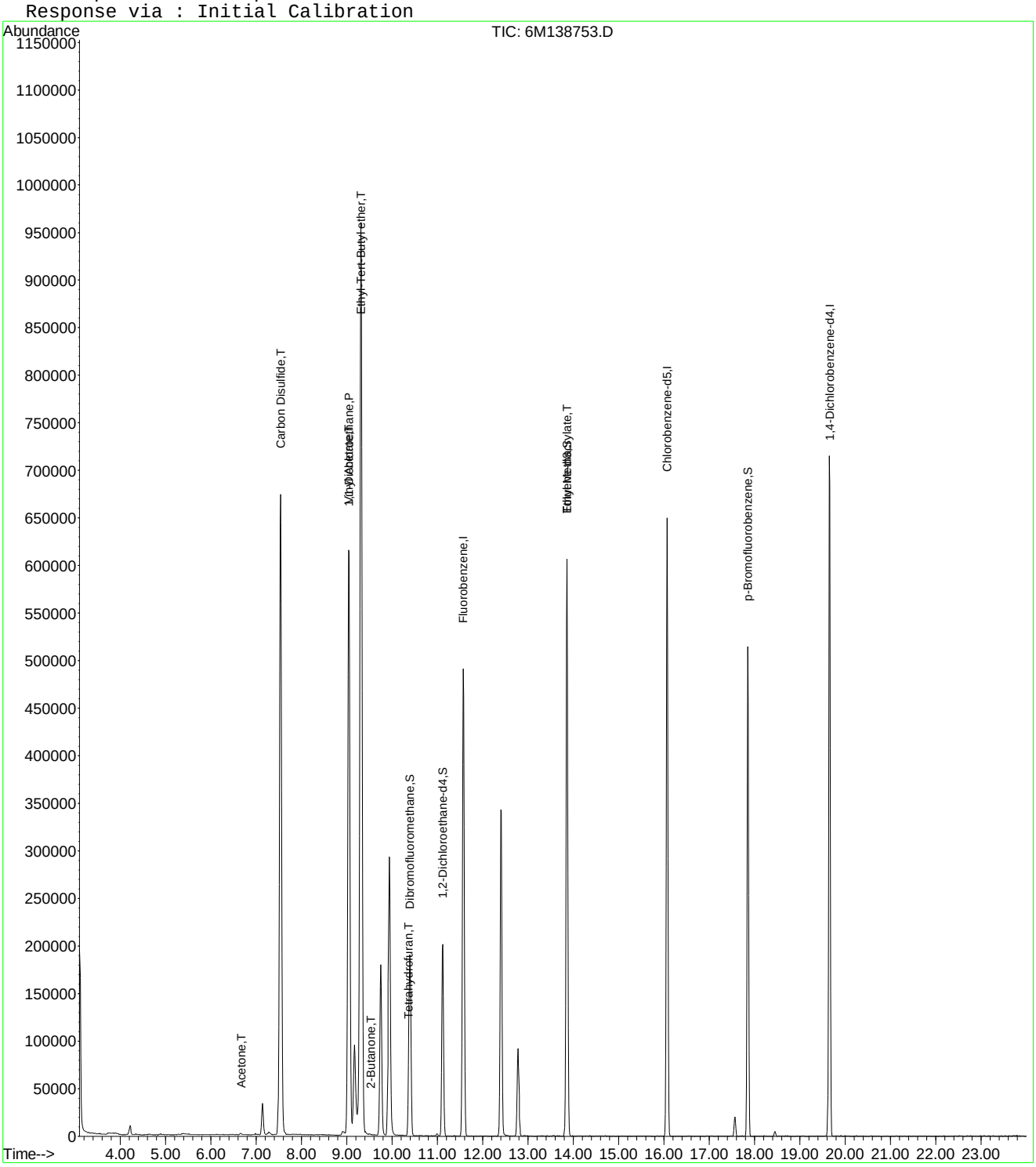

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:55 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	604736	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	468574	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	254472	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	46802	40.3072 ug/L	94
3) 3-Chloro-1-propene	7.54	41	793114	48.9454 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	674471	48.3496 ug/L	83
5) Ethyl Acetate	9.75	43	336975	52.8234 ug/L	93
6) Methacrylonitrile	9.94	67	119267	48.6097 ug/L #	62
7) Isobutyl Alcohol	9.95	43	20135	57.3741 ug/L #	99
8) 1-Butanol	10.98	41	1474	9.7632 ug/L	77
9) Methyl methacrylate	12.40	41	279157	43.9482 ug/L	81
10) 2-Nitropropane	12.79	43	95327	50.9052 ug/L	94
13) Cyclohexanone	17.56	55	13241	15.2363 ug/L	91

(#) = qualifier out of range (m) = manual integration
6M138753.D A9FOOWT.M Mon Apr 25 15:45:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

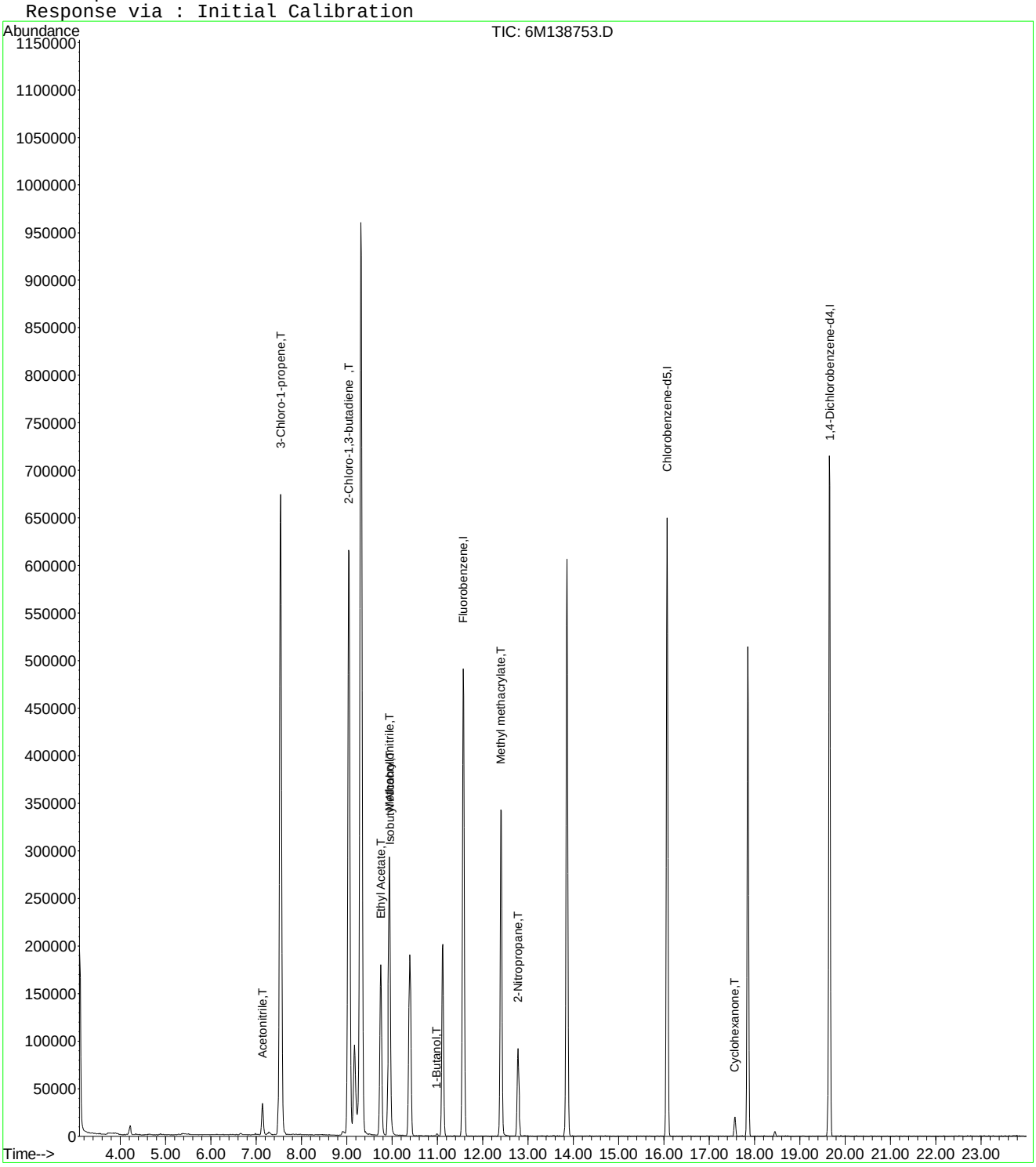

6M138753.D A9FOOWT.M Mon Apr 25 15:45:57 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:59 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	604736	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	468574	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	254472	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	46802	51.6701 ug/L	94
3) 3-Chloro-1-propene	7.54	41	793114	52.5409 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	674471	52.0726 ug/L	83
5) Ethyl Acetate	9.75	43	336975	51.9646 ug/L	93
6) Methacrylonitrile	9.94	67	119267	53.3476 ug/L #	62
7) Isobutyl Alcohol	9.95	43	20135	97.4900 ug/L #	99
9) Methyl methacrylate	12.40	41	279157	51.2171 ug/L	81
10) 2-Nitropropane	12.79	43	95327	47.0270 ug/L	94
13) Cyclohexanone	17.56	55	13241	41.7415 ug/L	91

(#) = qualifier out of range (m) = manual integration
6M138753.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

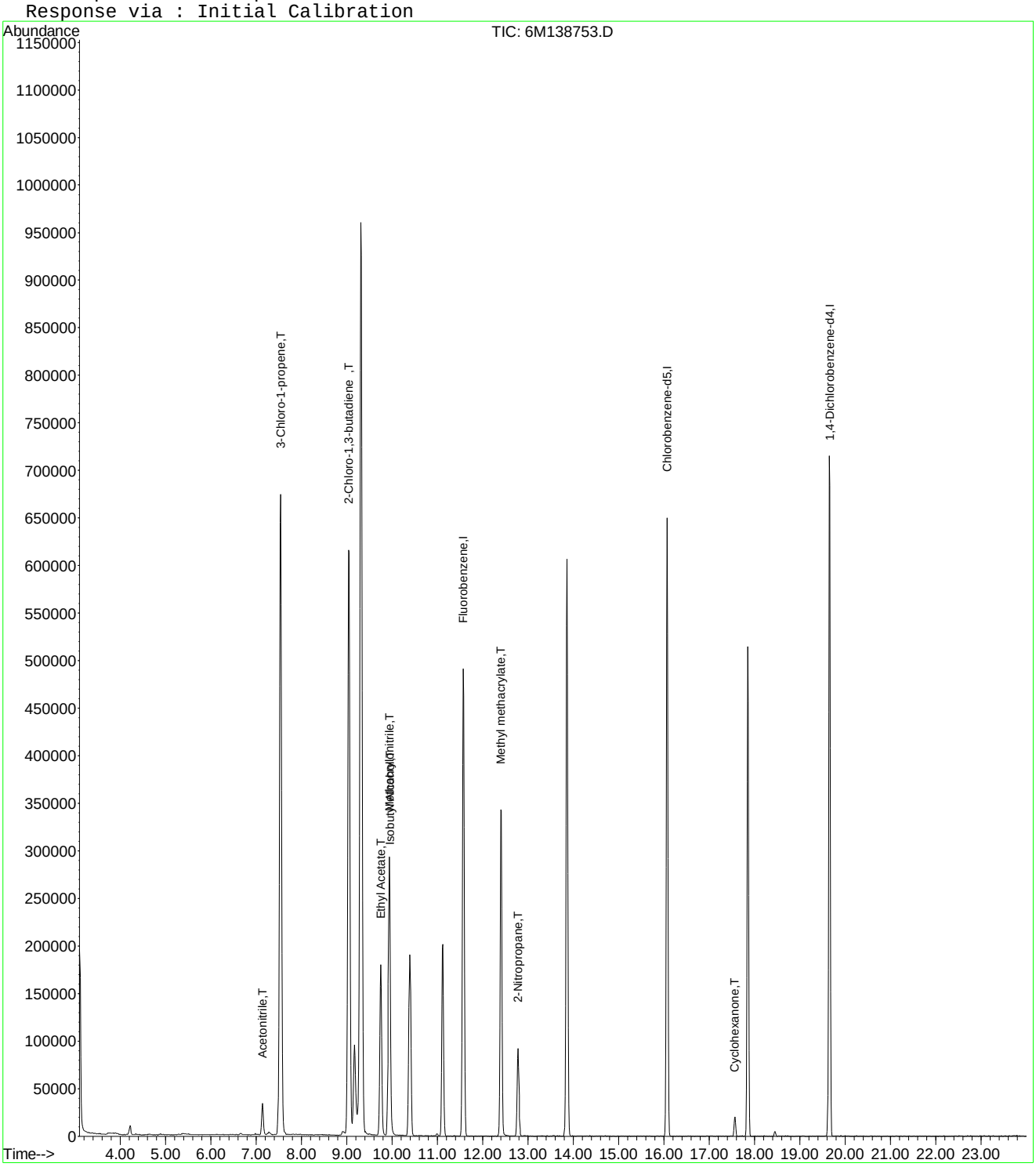

6M138753.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	51.6701	-3.3	100	0.00
3	T	3-Chloro-1-propene	50.0000	52.5409	-5.1	100	0.00
4	T	2-Chloro-1,3-butadiene	50.0000	52.0726	-4.1	100	0.00
5	T	Ethyl Acetate	50.0000	51.9646	-3.9	100	0.00
6	T	Methacrylonitrile	50.0000	53.3476	-6.7	100	0.00
7	T	Isobutyl Alcohol	100.0000	97.4900	2.5	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	50.0000	51.2171	-2.4	100	0.00
10	T	2-Nitropropane	50.0000	47.0270	5.9	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	50.0000	41.7415	16.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138753.D A9FOOWT.M Wed Apr 27 16:04:38 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:49 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	599121	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	467316	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	255798	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	169577	27.6373 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.56%		
43) 1,2-Dichloroethane-d4	11.12	65	210119	28.2161 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.88%		
58) Toluene-d8	13.86	98	550953	26.1877 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.76%		
80) p-Bromofluorobenzene	17.85	95	239480	28.0420 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 112.16%		

Target Compounds

					Qvalue
13) Acetone	6.66	43	6960	3.7463 ug/L	82
16) Dimethyl Sulfide	7.15	62	732	0.1448 ug/L #	1
18) Methyl acetate	7.53	43	1419	0.2750 ug/L #	1
22) Methyl Tert Butyl Ether	7.96	73	2141	0.1320 ug/L #	72
27) 1,1-Dichloroethane	9.05	63	20725	1.6328 ug/L #	42
28) Ethyl-Tert-Butyl ether	9.31	59	76666	3.7220 ug/L #	39
29) 2-Butanone	9.53	43	1176	0.4289 ug/L #	52
34) 1-Bromopropane	10.00	122	702	0.6817 ug/L #	1
36) Tetrahydrofuran	10.35	42	4425	2.4769 ug/L #	60
48) Methylcyclohexane	12.41	83	1461	0.1681 ug/L #	1
60) Ethyl Methacrylate	13.87	69	1083	0.1549 ug/L #	1
79) 1,1,2,2-Tetrachloroethane	17.57	83	1910	0.3066 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138754.D 8260WTR.M Mon Apr 25 09:22:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

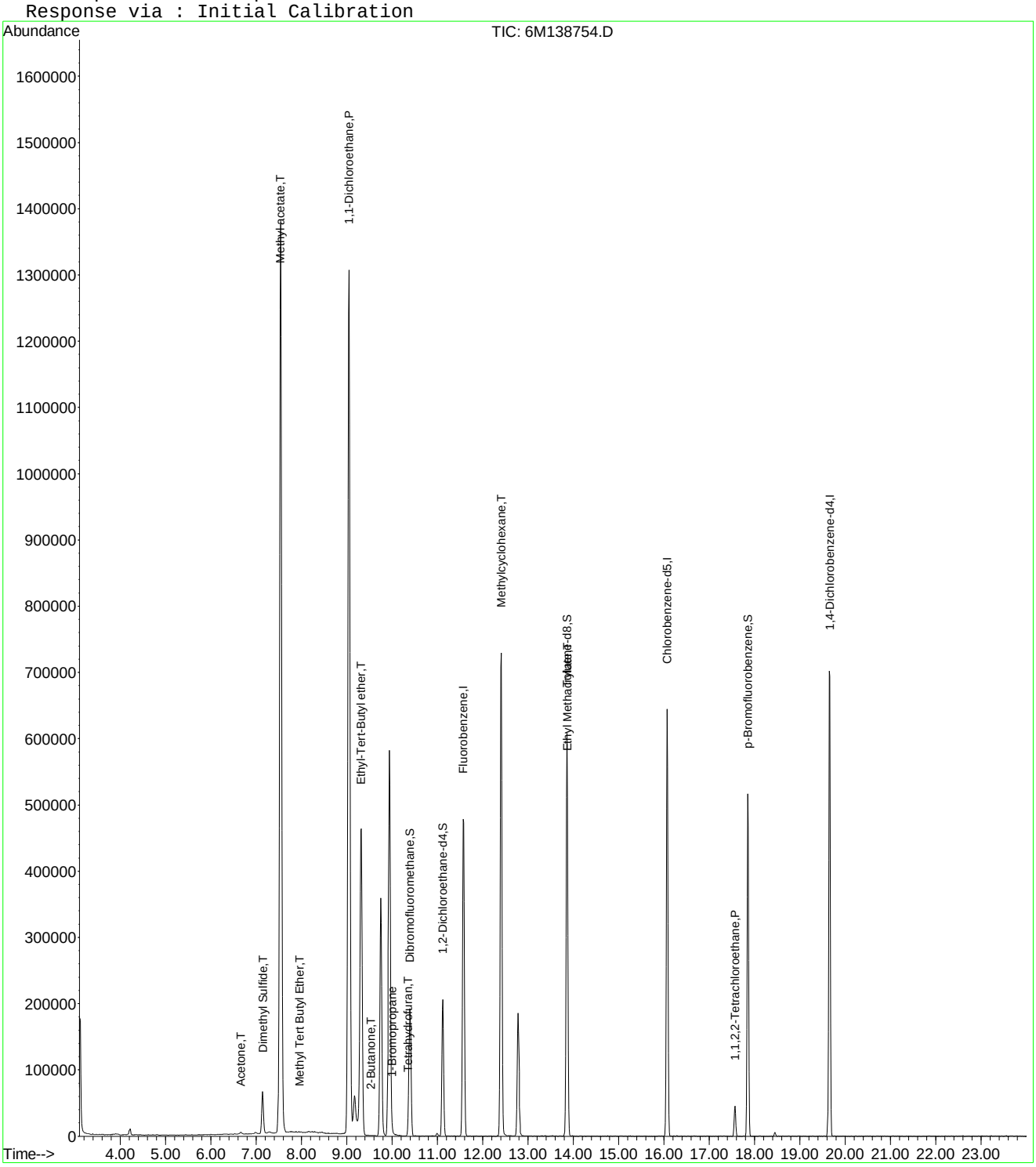

6M138754.D 8260WTR.M Mon Apr 25 09:22:50 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:57 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	599121	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	467316	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	255798	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	90880	79.0019 ug/L	95
3) 3-Chloro-1-propene	7.54	41	1610716	100.3335 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	1413663	102.2884 ug/L	83
5) Ethyl Acetate	9.75	43	673221	106.5217 ug/L	93
6) Methacrylonitrile	9.94	67	237219	97.5895 ug/L #	62
7) Isobutyl Alcohol	9.95	43	33897	97.4937 ug/L #	85
8) 1-Butanol	11.00	41	2978	19.9099 ug/L #	64
9) Methyl methacrylate	12.41	41	585839	93.0942 ug/L	80
10) 2-Nitropropane	12.78	43	197598	106.5074 ug/L	97
13) Cyclohexanone	17.57	55	27547	31.5338 ug/L	88

(#) = qualifier out of range (m) = manual integration
6M138754.D A9FOOWT.M Mon Apr 25 15:45:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

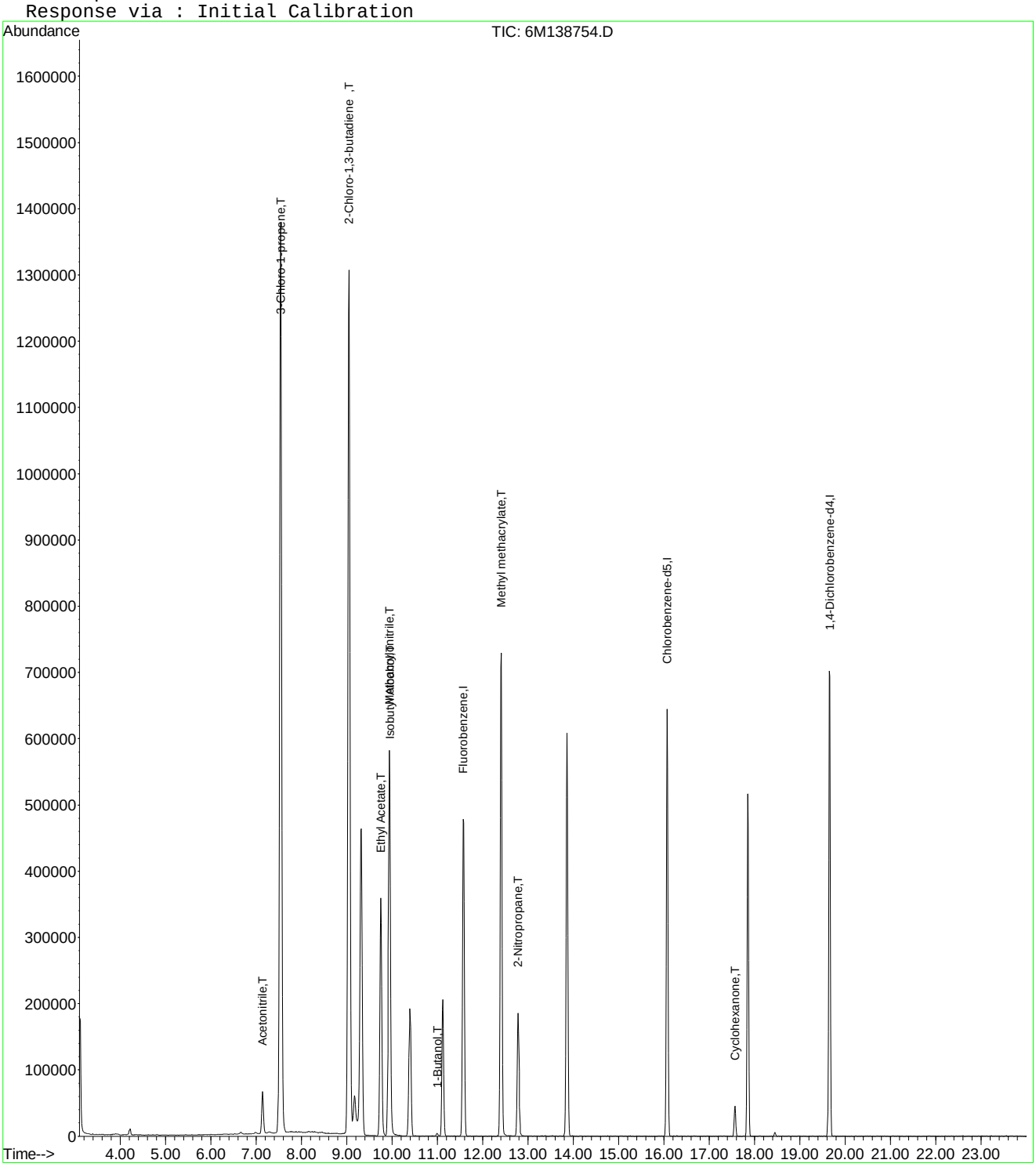

6M138754.D A9FOOWT.M Mon Apr 25 15:45:58 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:59 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	599121	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	467316	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	255798	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	90880	101.2731 ug/L	95
3) 3-Chloro-1-propene	7.54	41	1610716	107.7041 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	1413663	110.1648 ug/L	83
5) Ethyl Acetate	9.75	43	673221	104.7898 ug/L	93
6) Methacrylonitrile	9.94	67	237219	107.1014 ug/L #	62
7) Isobutyl Alcohol	9.95	43	33897	165.6613 ug/L #	85
9) Methyl methacrylate	12.41	41	585839	108.4917 ug/L	80
10) 2-Nitropropane	12.78	43	197598	98.3932 ug/L	97
13) Cyclohexanone	17.57	55	27547	86.3902 ug/L	88

(#) = qualifier out of range (m) = manual integration
6M138754.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

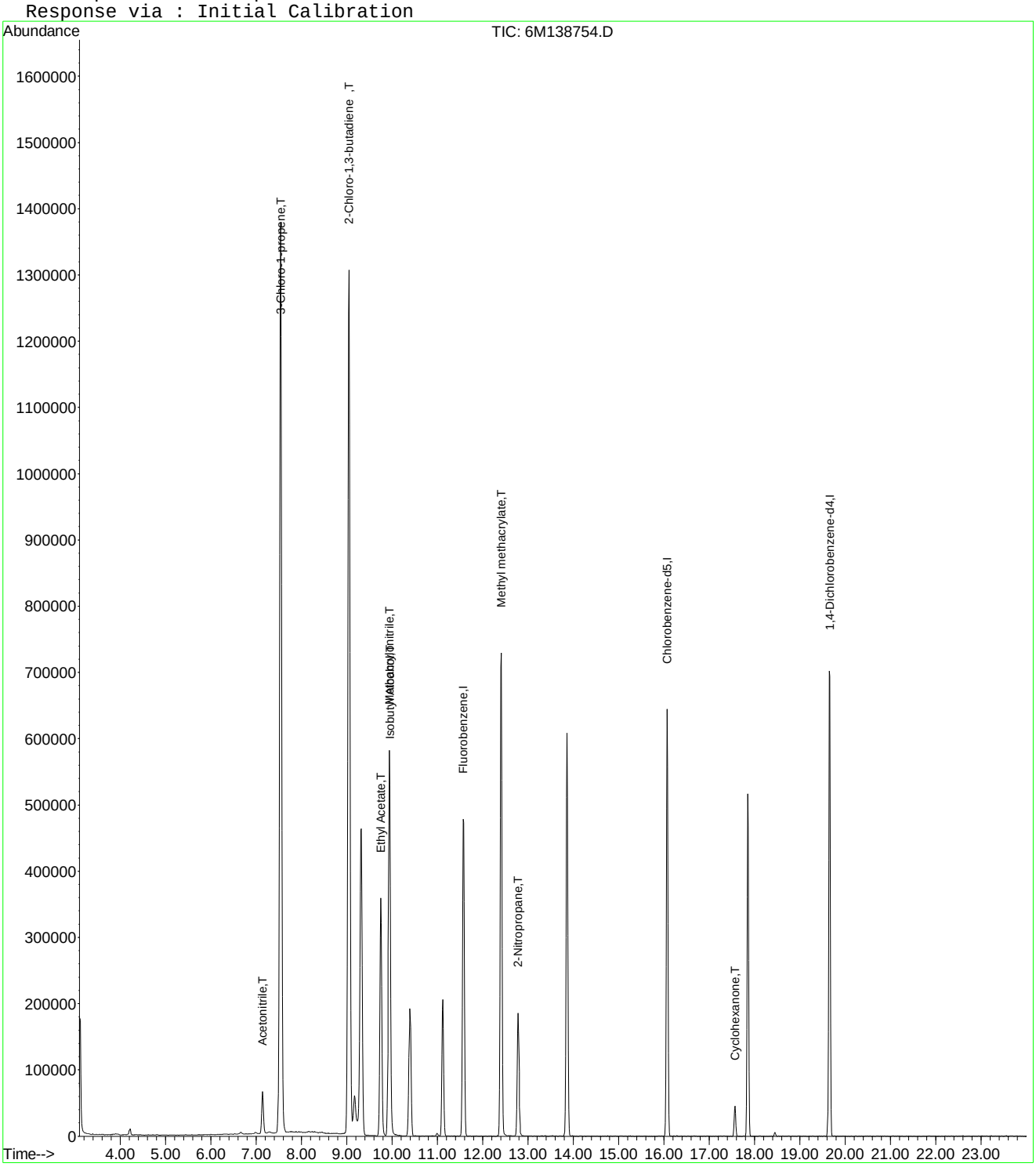

6M138754.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:50 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	607157	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	473187	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	259046	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.40	111	172341	27.7160 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.88%		
43) 1,2-Dichloroethane-d4	11.12	65	211249	27.9923 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.96%		
58) Toluene-d8	13.86	98	552831	25.9510 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.80%		
80) p-Bromofluorobenzene	17.85	95	247709	28.6419 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 114.56%		

Target Compounds

					Qvalue
9) Diethyl ether	6.31	59	653	0.1225 ug/L #	12
13) Acetone	6.66	43	9406	4.9959 ug/L #	64
15) Tert-Butyl Alcohol	6.98	59	449	0.8301 ug/L #	1
16) Dimethyl Sulfide	7.16	62	680	0.1328 ug/L #	1
22) Methyl Tert Butyl Ether	7.96	73	3926	0.2388 ug/L	83
24) n-Hexane	8.30	57	1777	0.2040 ug/L	87
27) 1,1-Dichloroethane	9.05	63	41640	3.2372 ug/L #	47
28) Ethyl-Tert-Butyl ether	9.31	59	272648	13.0615 ug/L #	38
29) 2-Butanone	9.51	43	2992	1.0767 ug/L #	67
30) Propionitrile	9.93	54	258	0.3232 ug/L #	57
34) 1-Bromopropane	9.99	122	1417	1.3579 ug/L #	1
36) Tetrahydrofuran	10.37	42	4839	2.6728 ug/L #	62
48) Methylcyclohexane	12.40	83	2976	0.3378 ug/L #	1
60) Ethyl Methacrylate	13.87	69	1202	0.1698 ug/L #	1
79) 1,1,2,2-Tetrachloroethane	17.57	83	5192	0.8231 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138755.D 8260WTR.M Mon Apr 25 09:22:50 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

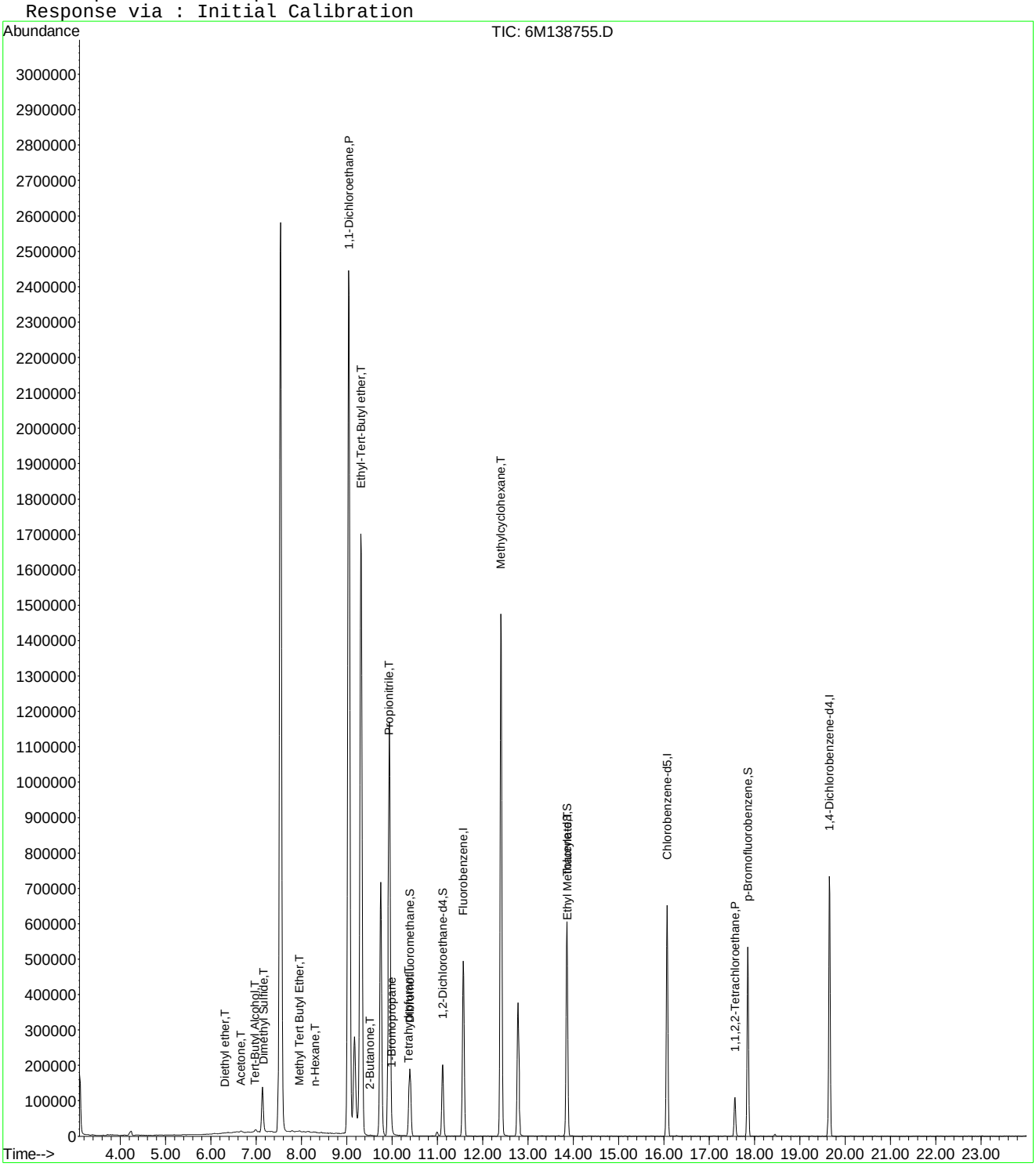

6M138755.D 8260WTR.M Mon Apr 25 09:22:50 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:58 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	607157	25.00	ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	473187	25.00	ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.65	152	259046	25.00	ug/L	-0.03

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	183628	157.5150	ug/L	93
3) 3-Chloro-1-propene	7.54	41	3085939	189.6828	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	2709180	193.4336	ug/L	83
5) Ethyl Acetate	9.75	43	1346541	210.2391	ug/L	94
6) Methacrylonitrile	9.94	67	471538	191.4186	ug/L #	64
7) Isobutyl Alcohol	9.95	43	72755	206.4864	ug/L #	92
8) 1-Butanol	10.99	41	8815	58.1542	ug/L #	64
9) Methyl methacrylate	12.40	41	1186381	186.0295	ug/L	80
10) 2-Nitropropane	12.79	43	410702	218.4428	ug/L	99
13) Cyclohexanone	17.57	55	67080	75.8254	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138755.D A9FOOWT.M Mon Apr 25 15:45:58 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

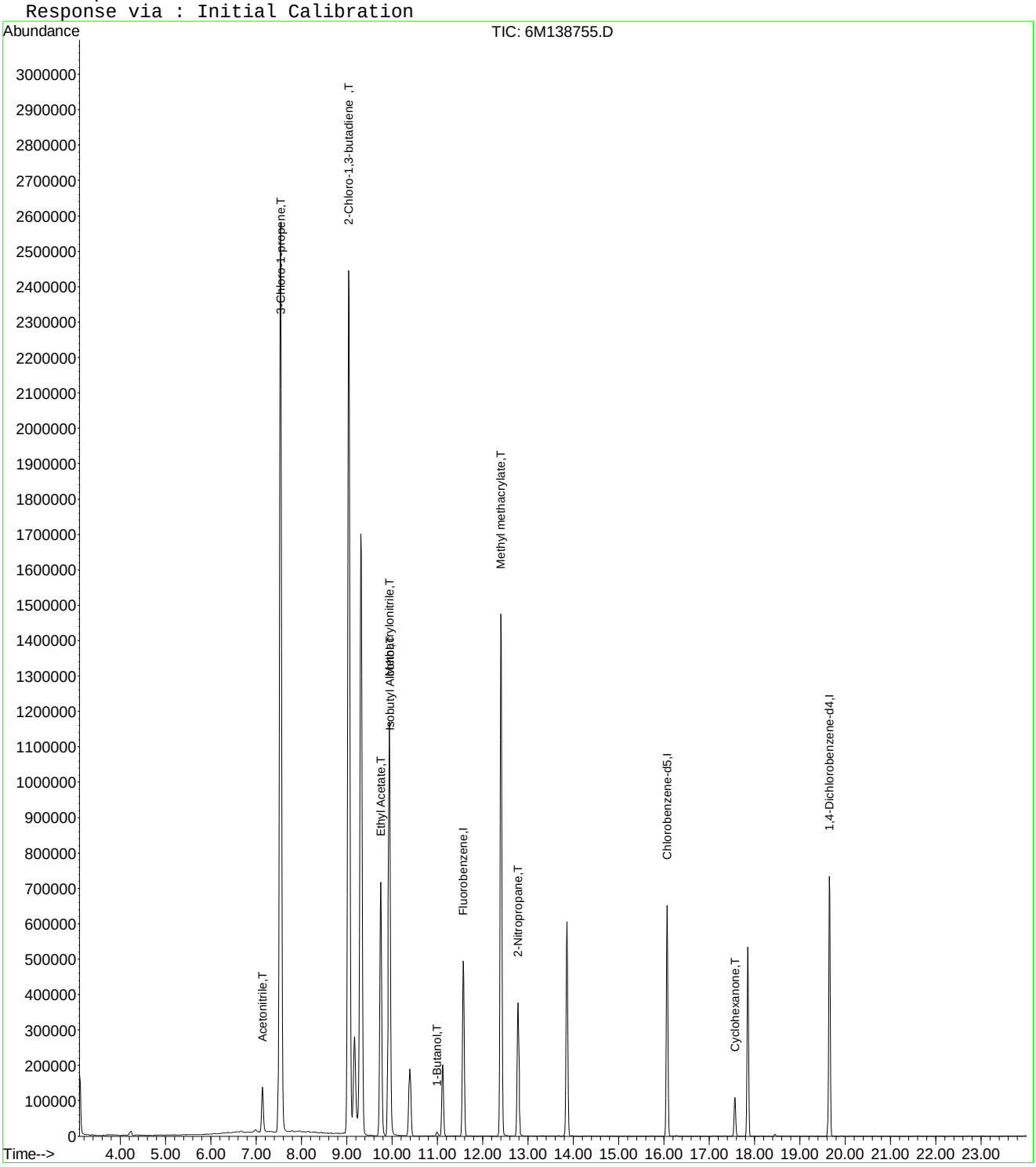

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	607157	25.00	ug/L	0.00
11) Chlorobenzene-d5	16.07	117	473187	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.65	152	259046	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	183628	201.9195	ug/L	93
3) 3-Chloro-1-propene	7.54	41	3085939	203.6170	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	2709180	208.3284	ug/L	83
5) Ethyl Acetate	9.75	43	1346541	206.8209	ug/L	94
6) Methacrylonitrile	9.94	67	471538	210.0757	ug/L #	64
7) Isobutyl Alcohol	9.95	43	72755	350.8618	ug/L #	92
9) Methyl methacrylate	12.40	41	1186381	216.7982	ug/L	80
10) 2-Nitropropane	12.79	43	410702	201.8008	ug/L	99
13) Cyclohexanone	17.57	55	67080	207.7320	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138755.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

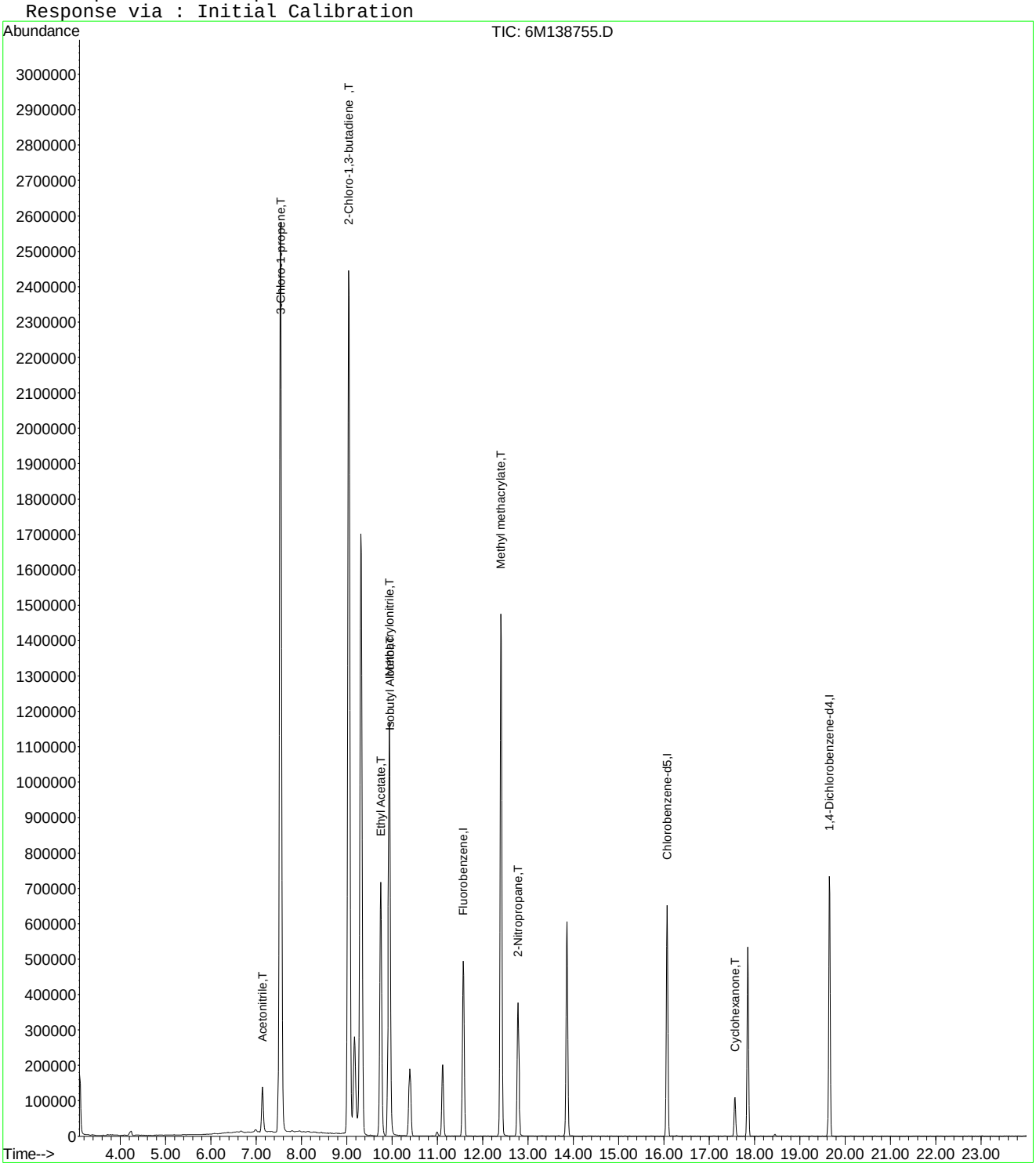

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:50 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	602356	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	472685	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	264650	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	169983	27.5546 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.20%		
43) 1,2-Dichloroethane-d4	11.12	65	207199	27.6745 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 110.68%		
58) Toluene-d8	13.86	98	553023	25.9875 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.96%		
80) p-Bromofluorobenzene	17.85	95	247939	28.0615 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 112.24%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	13666	7.3164 ug/L #	77
15) Tert-Butyl Alcohol	7.06	59	467	0.8703 ug/L #	59
16) Dimethyl Sulfide	7.14	62	668	0.1315 ug/L #	1
18) Methyl acetate	7.54	43	3262	0.6289 ug/L #	1
22) Methyl Tert Butyl Ether	7.97	73	10591	0.6492 ug/L #	53
24) n-Hexane	8.28	57	3576	0.4138 ug/L #	56
27) 1,1-Dichloroethane	9.04	63	60743	4.7600 ug/L #	48
28) Ethyl-Tert-Butyl ether	9.31	59	155796	7.5231 ug/L #	39
29) 2-Butanone	9.52	43	4002	1.4516 ug/L	97
30) Propionitrile	9.95	54	1113	1.4052 ug/L #	1
34) 1-Bromopropane	9.99	122	1450	1.4006 ug/L #	1
36) Tetrahydrofuran	10.36	42	4902	2.7292 ug/L #	61
48) Methylcyclohexane	12.41	83	4626	0.5293 ug/L #	1
60) Ethyl Methacrylate	13.88	69	1599	0.2261 ug/L #	1
72) Ethylbenzene	16.28	106	1349	0.1427 ug/L	56
73) m-,p-Xylene	16.28	106	1349	0.1203 ug/L	81
79) 1,1,2,2-Tetrachloroethane	17.57	83	8744	1.3569 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138756.D 8260WTR.M Mon Apr 25 09:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

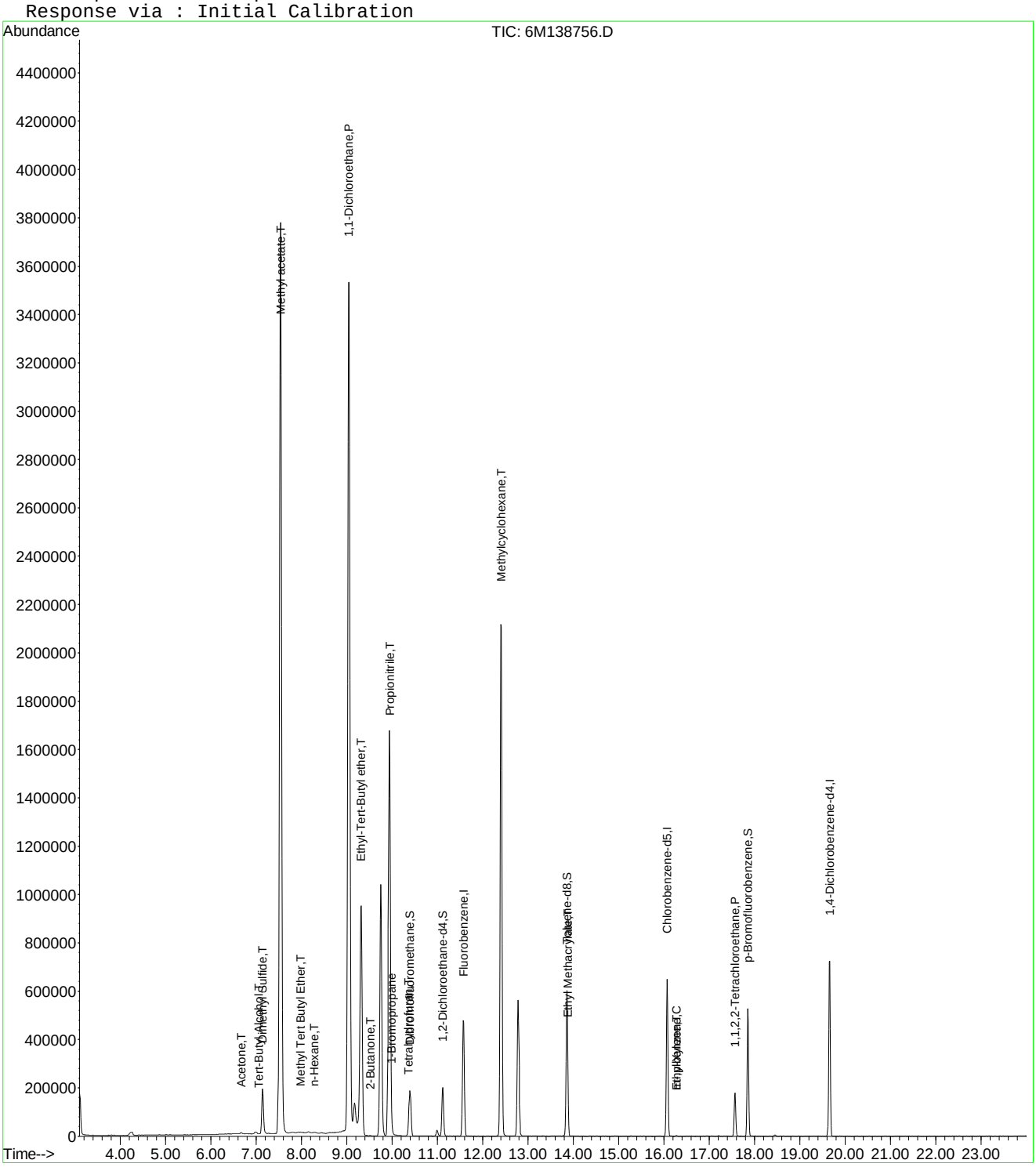

6M138756.D 8260WTR.M Mon Apr 25 09:22:51 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:59 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	602356	25.00 ug/L	-0.02
11) Chlorobenzene-d5	16.07	117	472685	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	264650	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	273003	236.0468 ug/L	93
3) 3-Chloro-1-propene	7.54	41	4493022	278.3729 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	3994938	287.5093 ug/L	83
5) Ethyl Acetate	9.75	43	1967613	309.6573 ug/L	94
6) Methacrylonitrile	9.94	67	686612	280.9484 ug/L #	63
7) Isobutyl Alcohol	9.95	43	121480	347.5212 ug/L #	90
8) 1-Butanol	10.99	41	18116	120.4672 ug/L	69
9) Methyl methacrylate	12.40	41	1742413	275.3954 ug/L	81
10) 2-Nitropropane	12.78	43	613081	328.6824 ug/L	99
13) Cyclohexanone	17.57	55	106618	117.9661 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138756.D A9FOOWT.M Mon Apr 25 15:45:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

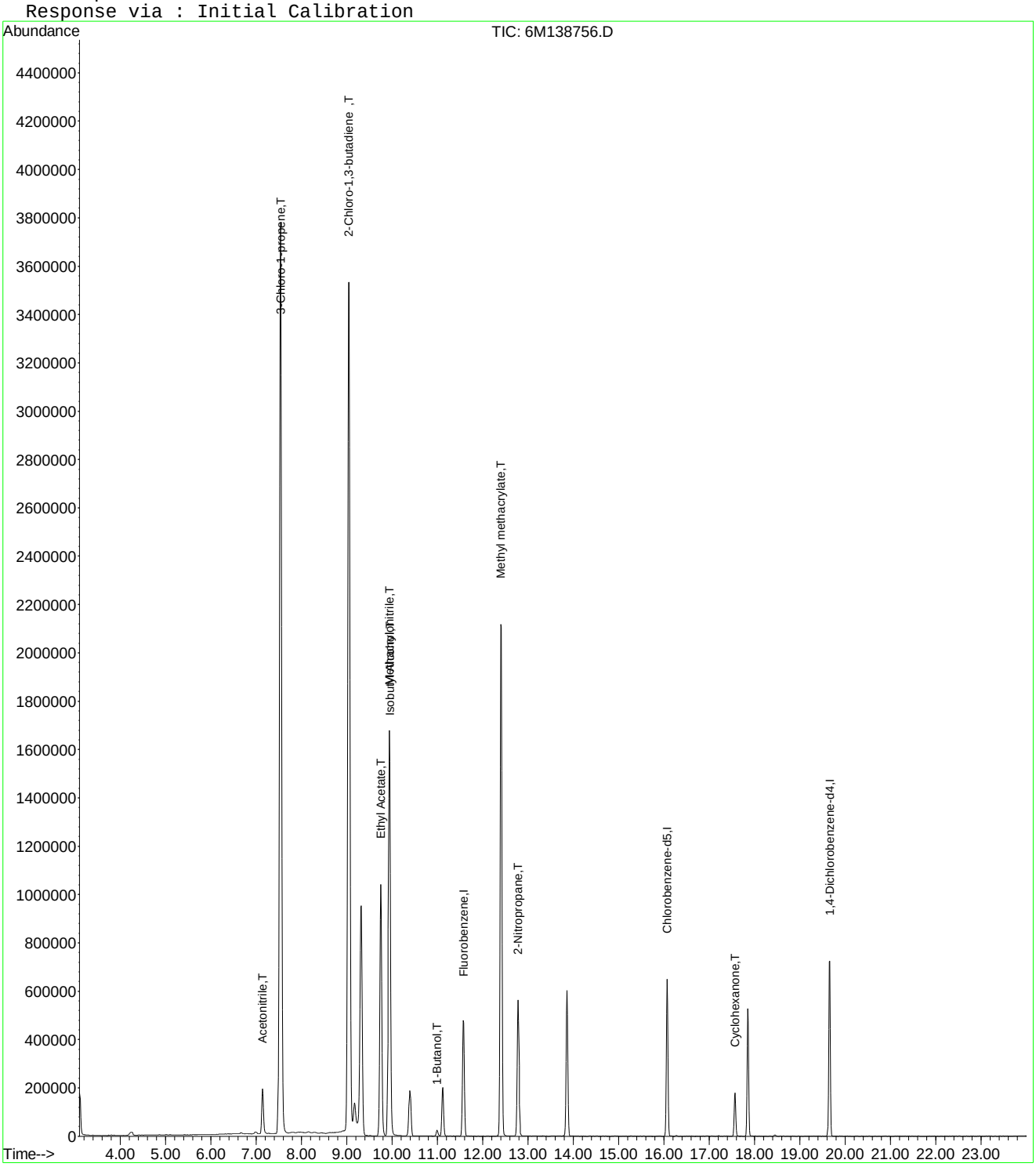

6M138756.D A9FOOWT.M Mon Apr 25 15:45:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.58	96	602356	25.00	ug/L	0.01
11) Chlorobenzene-d5	16.07	117	472685	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	264650	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	273003	302.5900	ug/L	93
3) 3-Chloro-1-propene	7.54	41	4493022	298.8224	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	3994938	309.6481	ug/L	83
5) Ethyl Acetate	9.75	43	1967613	304.6228	ug/L	94
6) Methacrylonitrile	9.94	67	686612	308.3318	ug/L #	63
7) Isobutyl Alcohol	9.95	43	121480	590.5081	ug/L #	90
9) Methyl methacrylate	12.40	41	1742413	320.9449	ug/L	81
10) 2-Nitropropane	12.78	43	613081	303.6419	ug/L	99
13) Cyclohexanone	17.57	55	106618	323.1811	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138756.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

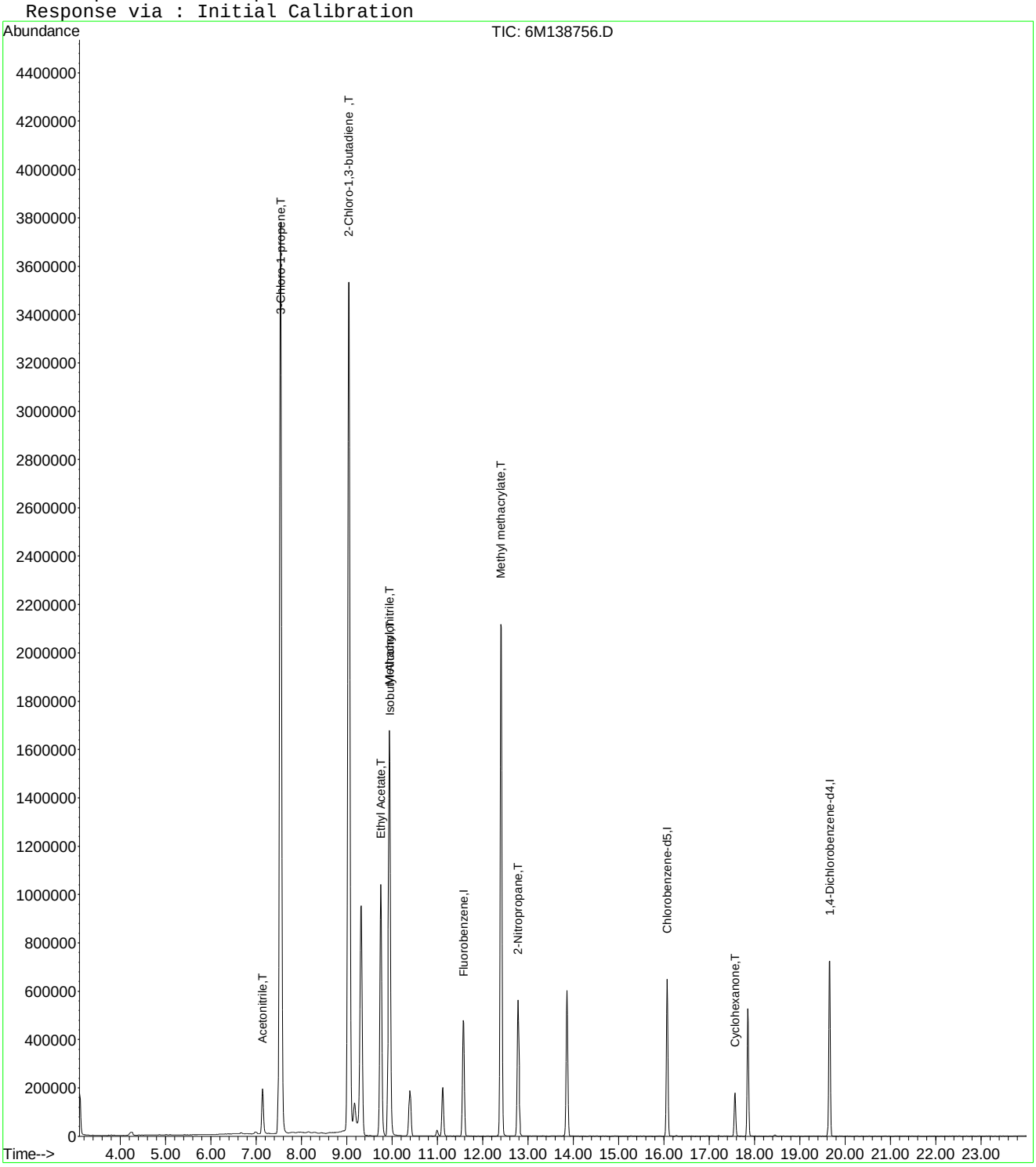

6M138756.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:51 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602625	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.08	117	475117	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	264739	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	170708	27.6598 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.64%		
43) 1,2-Dichloroethane-d4	11.11	65	208757	27.8702 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.48%		
58) Toluene-d8	13.86	98	554316	25.9150 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.64%		
80) p-Bromofluorobenzene	17.85	95	246698	27.9116 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 111.64%		

Target Compounds

					Qvalue
13) Acetone	6.66	43	14063	7.5256 ug/L	99
15) Tert-Butyl Alcohol	7.05	59	807	1.5033 ug/L #	59
16) Dimethyl Sulfide	7.16	62	1034	0.2034 ug/L #	1
18) Methyl acetate	7.48	43	1103	0.2125 ug/L #	60
19) Methylene Chloride	7.73	84	1123	0.1699 ug/L #	40
22) Methyl Tert Butyl Ether	7.97	73	18318	1.1224 ug/L #	53
24) n-Hexane	8.28	57	5609	0.6488 ug/L	75
27) 1,1-Dichloroethane	9.04	63	82912	6.4943 ug/L #	48
28) Ethyl-Tert-Butyl ether	9.32	59	139043	6.7111 ug/L #	38
29) 2-Butanone	9.53	43	4129	1.4970 ug/L	86
30) Propionitrile	9.72	54	202	0.2549 ug/L #	1
34) 1-Bromopropane	9.99	122	1978	1.9098 ug/L #	1
36) Tetrahydrofuran	10.37	42	5444	3.0296 ug/L #	63
48) Methylcyclohexane	12.40	83	6593	0.7540 ug/L #	1
60) Ethyl Methacrylate	13.85	69	1165	0.1639 ug/L #	1
73) m-,p-Xylene	16.28	106	1795	0.1593 ug/L	72
79) 1,1,2,2-Tetrachloroethane	17.57	83	12875	1.9973 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138757.D 8260WTR.M Mon Apr 25 09:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

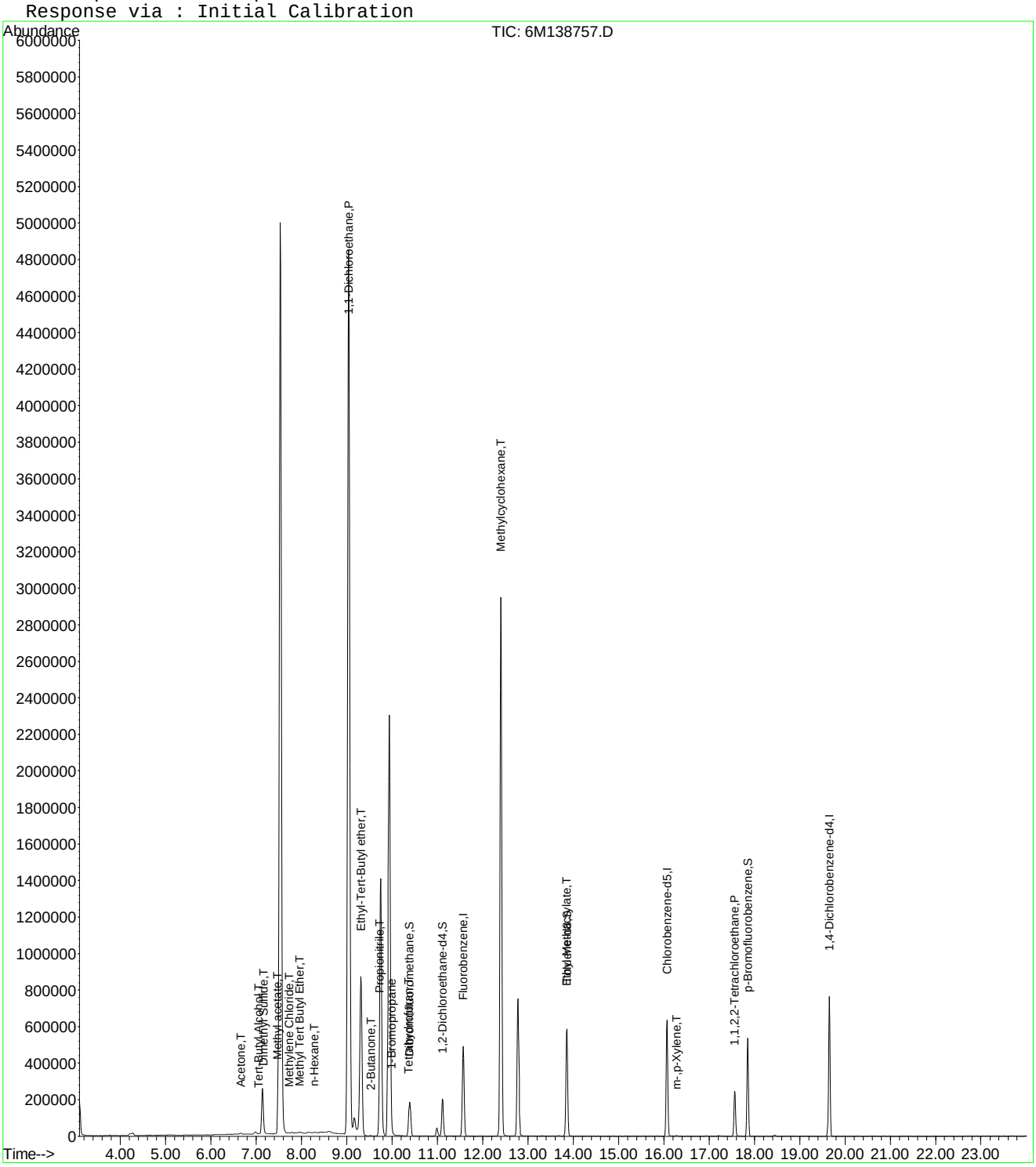

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602625	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.08	117	475117	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.65	152	264739	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	368012	318.0524 ug/L	93
3) 3-Chloro-1-propene	7.53	41	5948883	368.4088 ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	5359203	385.5211 ug/L	83
5) Ethyl Acetate	9.76	43	2690267	423.1975 ug/L	94
6) Methacrylonitrile	9.94	67	929265	380.0675 ug/L #	62
7) Isobutyl Alcohol	9.95	43	192560	550.6158 ug/L #	89
8) 1-Butanol	10.99	41	29815	198.1744 ug/L	75
9) Methyl methacrylate	12.40	41	2375132	375.2316 ug/L	81
10) 2-Nitropropane	12.79	43	849210	455.0717 ug/L	98
13) Cyclohexanone	17.57	55	149420	165.2683 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138757.D A9FOOWT.M Mon Apr 25 15:46:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

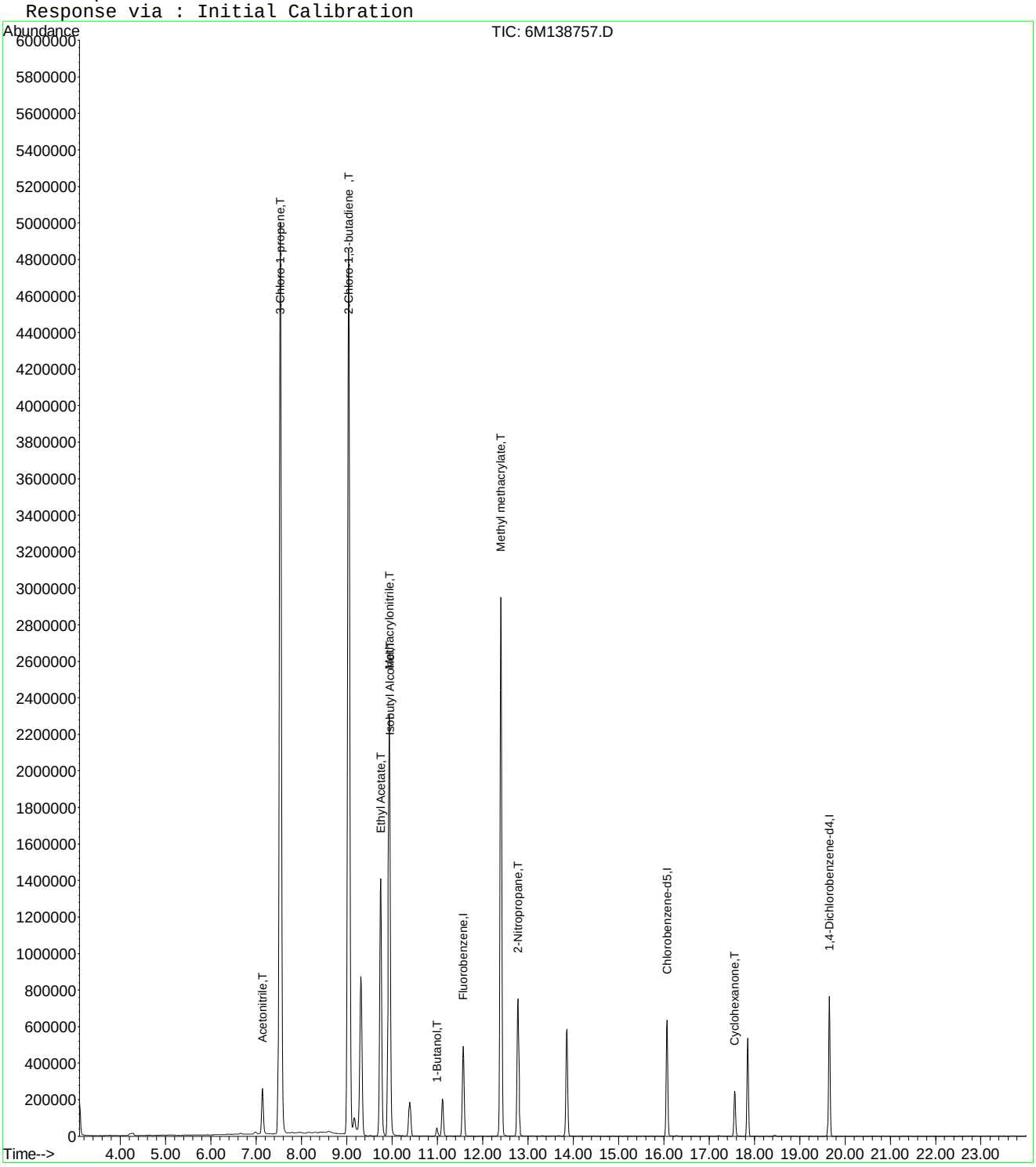

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:01 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602625	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.08	117	475117	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.65	152	264739	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	368012	407.7137 ug/L	93
3) 3-Chloro-1-propene	7.53	41	5948883	395.4723 ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	5359203	415.2070 ug/L	83
5) Ethyl Acetate	9.76	43	2690267	416.3170 ug/L	94
6) Methacrylonitrile	9.94	67	929265	417.1119 ug/L #	62
7) Isobutyl Alcohol	9.95	43	192560	935.6065 ug/L #	89
9) Methyl methacrylate	12.40	41	2375132	437.2937 ug/L	81
10) 2-Nitropropane	12.79	43	849210	420.4022 ug/L	98
13) Cyclohexanone	17.57	55	149420	452.7705 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138757.D A9FOOWT.M Wed Apr 27 16:05:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

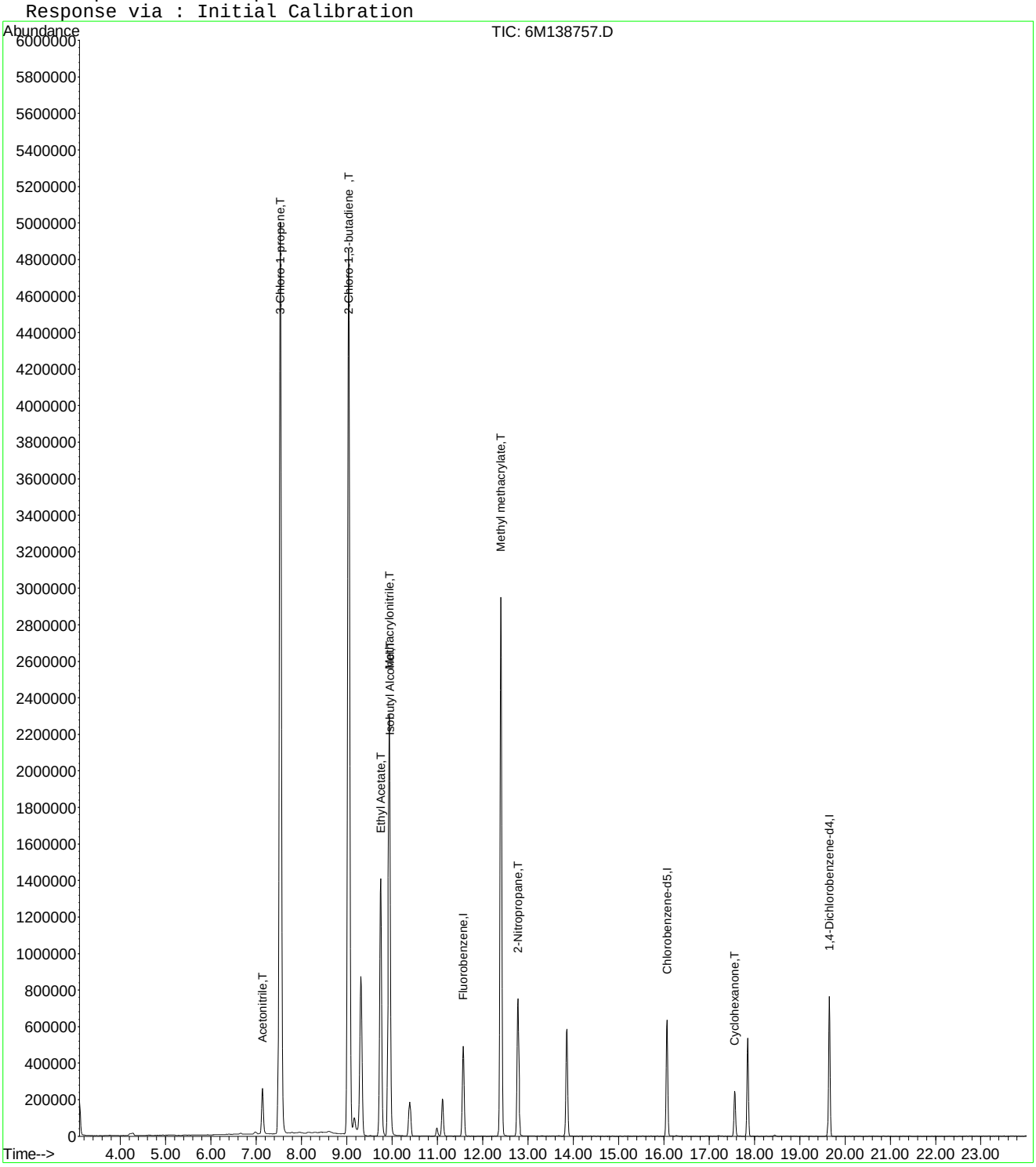

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:52 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	616486	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	485048	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	268890	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	175239	27.7556 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.04%		
43) 1,2-Dichloroethane-d4	11.12	65	210644	27.4898 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 109.96%		
58) Toluene-d8	13.86	98	563297	25.7957 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.20%		
80) p-Bromofluorobenzene	17.85	95	249406	27.7824 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 111.12%		

Target Compounds					Qvalue
13) Acetone	6.67	43	15233	7.9684 ug/L	89
15) Tert-Butyl Alcohol	7.06	59	370	0.6737 ug/L #	59
18) Methyl acetate	7.46	43	1079	0.2032 ug/L #	34
19) Methylene Chloride	7.73	84	1471	0.2176 ug/L	66
20) Carbon Disulfide	7.78	76	2765	0.1407 ug/L #	74
22) Methyl Tert Butyl Ether	7.96	73	25284	1.5144 ug/L #	53
24) n-Hexane	8.28	57	5266	0.5954 ug/L	97
27) 1,1-Dichloroethane	9.05	63	105121	8.0488 ug/L #	48
28) Ethyl-Tert-Butyl ether	9.31	59	124099	5.8551 ug/L #	39
29) 2-Butanone	9.52	43	4475	1.5860 ug/L #	72
30) Propionitrile	9.71	54	473	0.5835 ug/L #	1
34) 1-Bromopropane	10.00	122	2117	1.9980 ug/L #	1
36) Tetrahydrofuran	10.36	42	5652	3.0747 ug/L #	54
48) Methylcyclohexane	12.40	83	8011	0.8956 ug/L #	1
59) Toluene	13.98	91	3373	0.1249 ug/L	84
60) Ethyl Methacrylate	13.87	69	1585	0.2184 ug/L #	1
73) m-,p-Xylene	16.28	106	2521	0.2191 ug/L	79
79) 1,1,2,2-Tetrachloroethane	17.57	83	14350	2.1917 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138758.D 8260WTR.M Mon Apr 25 09:22:52 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

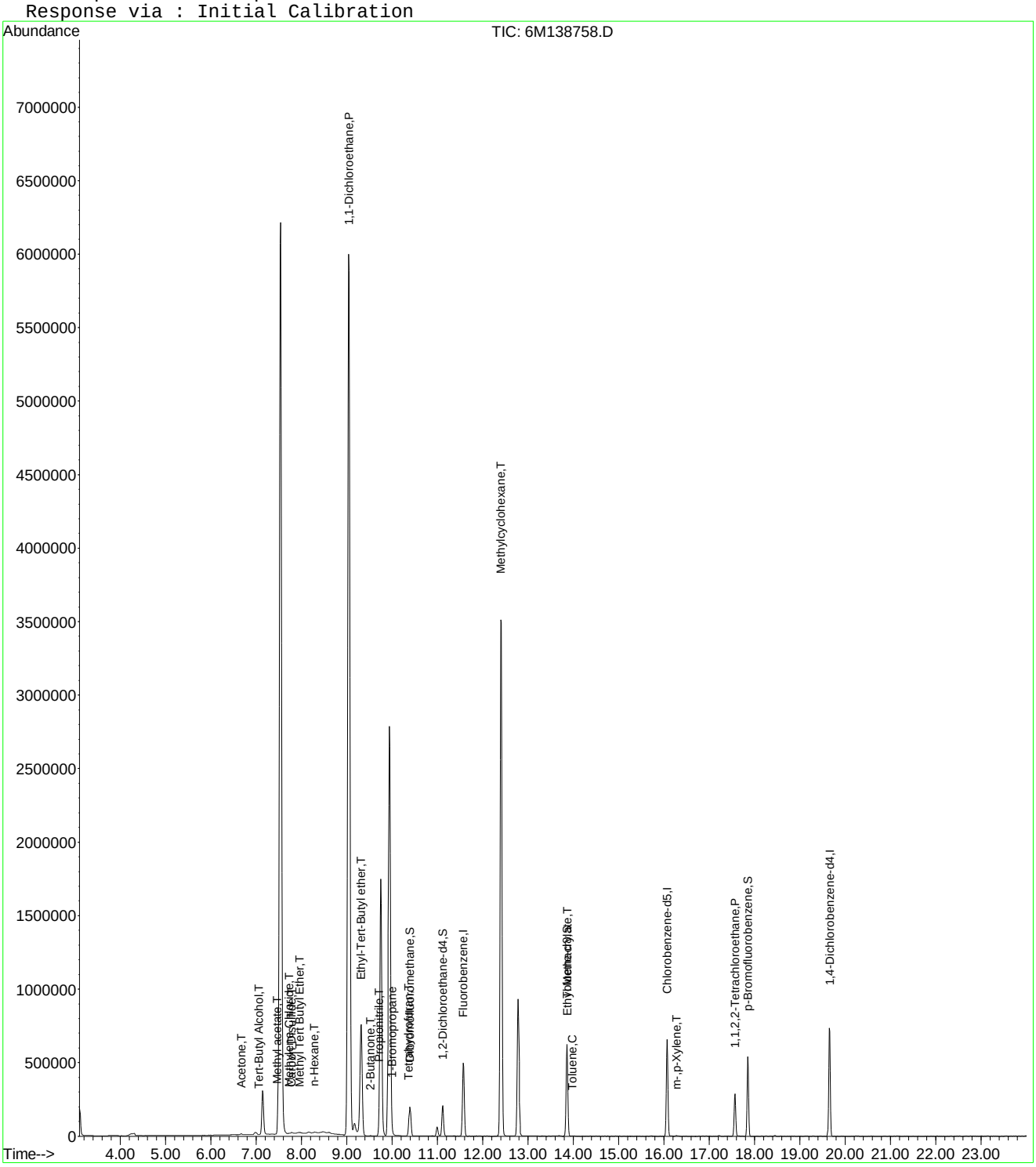

6M138758.D 8260WTR.M Mon Apr 25 09:22:52 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	616486	25.00	ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	485048	25.00	ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	268890	25.00	ug/L	-0.02

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	449583	379.8136	ug/L	92
3) 3-Chloro-1-propene	7.54	41	7430577	449.8223	ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	6752476	474.8265	ug/L	84
5) Ethyl Acetate	9.75	43	3307403	508.5794	ug/L	94
6) Methacrylonitrile	9.94	67	1145073	457.8027	ug/L #	63
7) Isobutyl Alcohol	9.95	43	251034	701.6799	ug/L #	90
8) 1-Butanol	10.99	41	42236	274.4224	ug/L	75
9) Methyl methacrylate	12.40	41	2914815	450.1389	ug/L	81
10) 2-Nitropropane	12.78	43	1036720	543.0629	ug/L	99
13) Cyclohexanone	17.57	55	176545	192.2558	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138758.D A9FOOWT.M Mon Apr 25 15:46:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

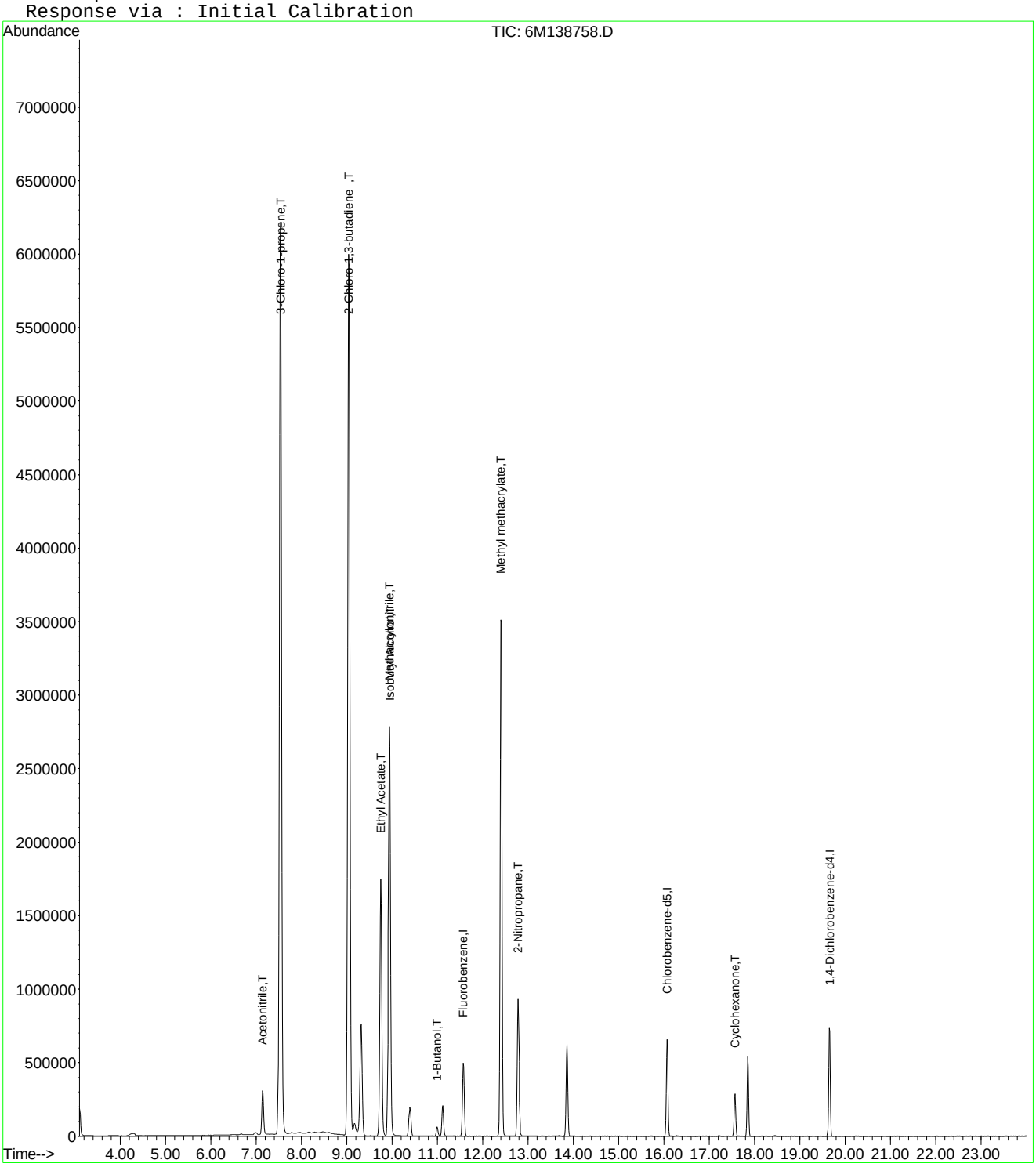

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:01 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	616486	25.00	ug/L	0.00
11) Chlorobenzene-d5	16.07	117	485048	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	268890	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	449583	486.8858	ug/L	92
3) 3-Chloro-1-propene	7.54	41	7430577	482.8665	ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	6752476	511.3891	ug/L	84
5) Ethyl Acetate	9.75	43	3307403	500.3107	ug/L	94
6) Methacrylonitrile	9.94	67	1145073	502.4237	ug/L #	63
7) Isobutyl Alcohol	9.95	43	251034	1192.2947	ug/L #	90
9) Methyl methacrylate	12.40	41	2914815	524.5904	ug/L	81
10) 2-Nitropropane	12.78	43	1036720	501.6898	ug/L	99
13) Cyclohexanone	17.57	55	176545	526.7057	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138758.D A9FOOWT.M Wed Apr 27 16:05:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

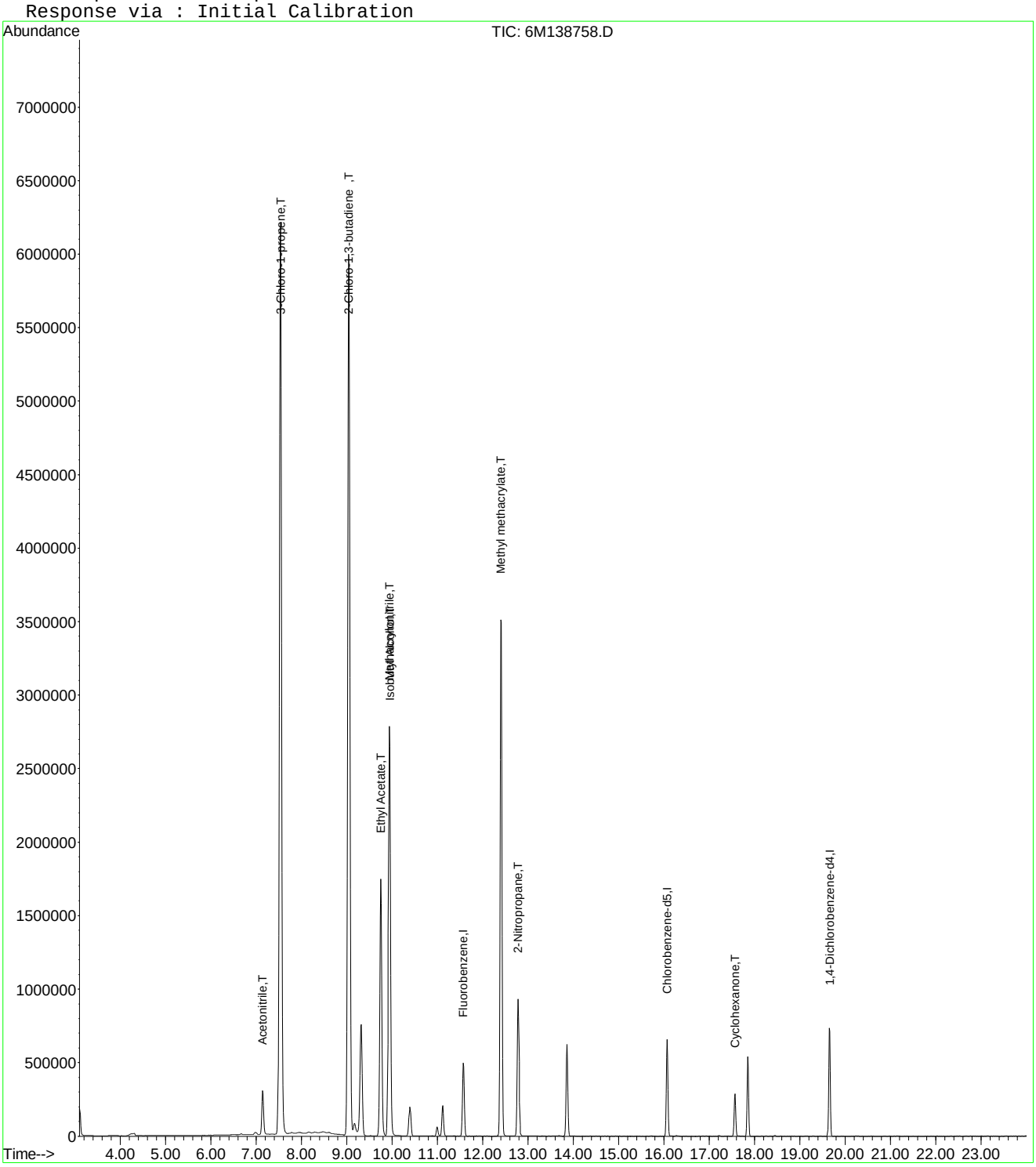

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:54 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602884	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	471639	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	256885	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.40	111	171708	27.8099 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.24%		
43) 1,2-Dichloroethane-d4	11.12	65	210067	28.0330 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.12%		
58) Toluene-d8	13.86	98	553825	26.0829 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.32%		
80) p-Bromofluorobenzene	17.85	95	243088	28.3441 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 113.36%		

Target Compounds					Qvalue
5) 1,3-Butadiene	4.21	54	367749	92.2302 ug/L	88
9) Diethyl ether	6.30	59	700386	132.3612 ug/L	92
13) Acetone	6.67	43	6570	3.5143 ug/L	81
16) Dimethyl Sulfide	7.14	62	2726	0.5361 ug/L #	1
20) Carbon Disulfide	7.54	76	432674	22.5096 ug/L #	36
22) Methyl Tert Butyl Ether	7.97	73	2916	0.1786 ug/L #	53
26) Vinyl Acetate	9.05	43	5230	0.5414 ug/L #	1
27) 1,1-Dichloroethane	9.04	63	22472	1.7594 ug/L #	42
28) Ethyl-Tert-Butyl ether	9.32	59	4063	0.1960 ug/L #	35
29) 2-Butanone	9.52	43	6076	2.2019 ug/L #	66
30) Propionitrile	9.64	54	91341	115.2239 ug/L	96
36) Tetrahydrofuran	10.36	42	4030	2.2418 ug/L #	52
39) Cyclohexane	10.69	56	2387	0.2138 ug/L	79
48) Methylcyclohexane	12.40	83	1353	0.1547 ug/L #	1
50) 1,4-Dioxane	12.73	88	9231	177.0935 ug/L	71
60) Ethyl Methacrylate	13.86	69	1222	0.1732 ug/L #	1
79) 1,1,2,2-Tetrachloroethane	17.57	83	1146	0.1832 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138761.D 8260WTR.M Mon Apr 25 09:22:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

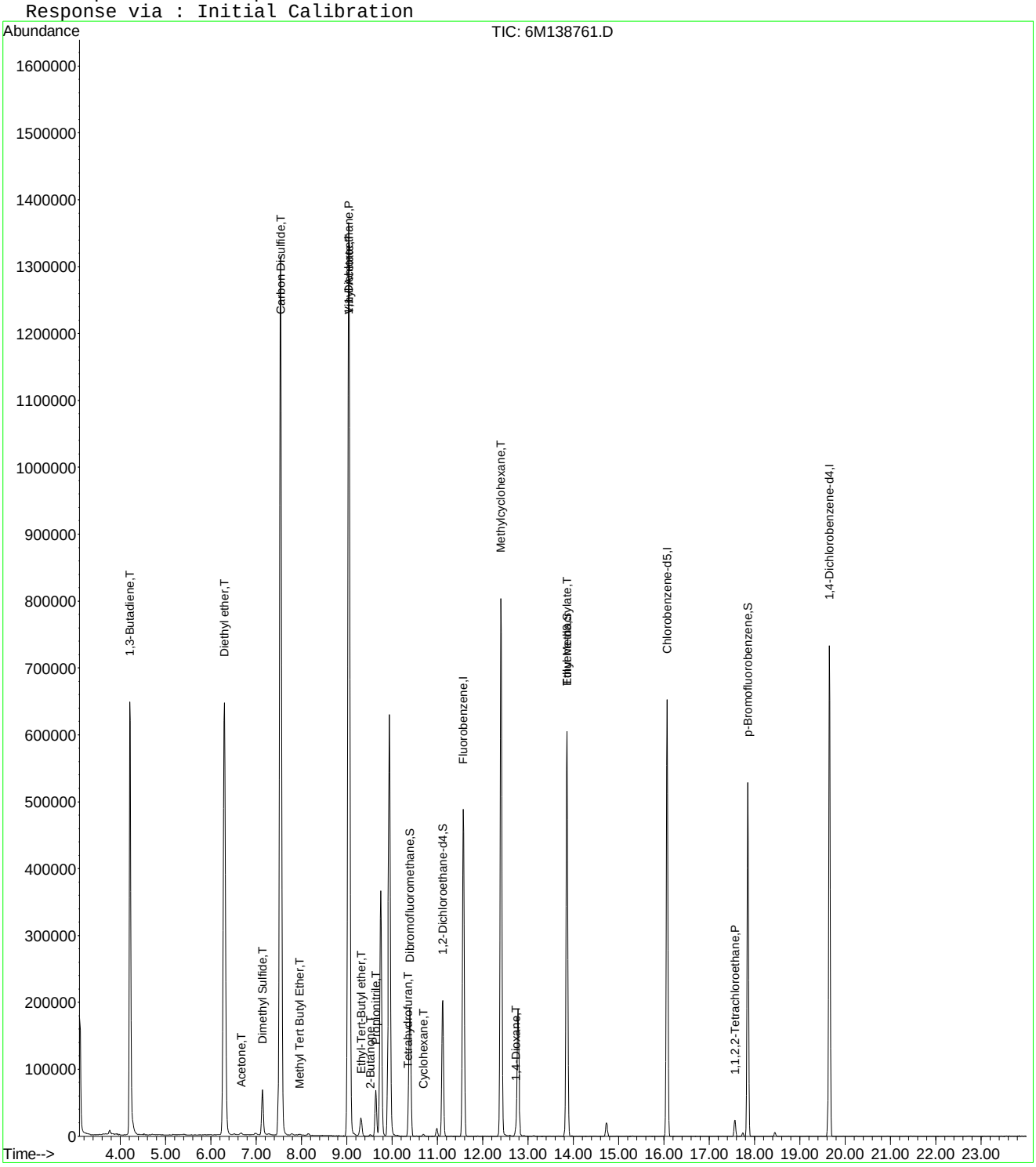

6M138761.D 8260WTR.M Mon Apr 25 09:22:54 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46:01 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	602884	25.00	ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	471639	25.00	ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.65	152	256885	25.00	ug/L	-0.03

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	96564	83.4191	ug/L	96
3) 3-Chloro-1-propene	7.54	41	1552115	96.0797	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	1512761	108.7756	ug/L	83
5) Ethyl Acetate	9.75	43	691566	108.7414	ug/L	93
6) Methacrylonitrile	9.94	67	252030	103.0355	ug/L #	63
7) Isobutyl Alcohol	9.95	43	51165	146.2409	ug/L #	93
8) 1-Butanol	10.99	41	7584	50.3877	ug/L	72
9) Methyl methacrylate	12.40	41	635574	100.3670	ug/L	81
10) 2-Nitropropane	12.79	43	211020	113.0321	ug/L	98
13) Cyclohexanone	17.57	55	15491	17.6579	ug/L	85

(#) = qualifier out of range (m) = manual integration
6M138761.D A9FOOWT.M Mon Apr 25 15:46:02 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

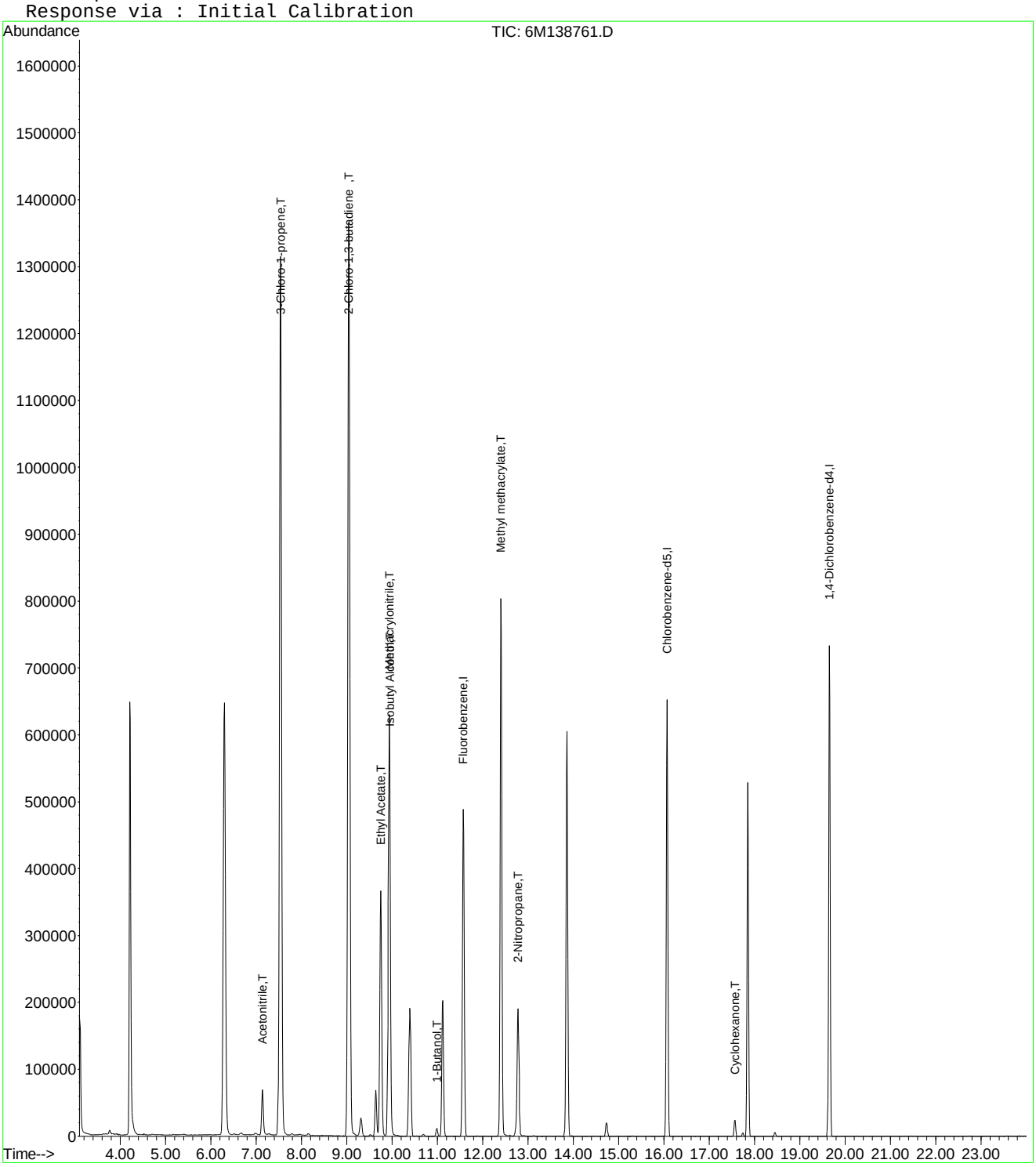

6M138761.D A9FOOWT.M Mon Apr 25 15:46:02 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:02 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	602884	25.00	ug/L	0.00
11) Chlorobenzene-d5	16.07	117	471639	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.65	152	256885	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	96564	106.9355	ug/L	96
3) 3-Chloro-1-propene	7.54	41	1552115	103.1378	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	1512761	117.1516	ug/L	83
5) Ethyl Acetate	9.75	43	691566	106.9734	ug/L	93
6) Methacrylonitrile	9.94	67	252030	113.0781	ug/L #	63
7) Isobutyl Alcohol	9.95	43	51165	248.4926	ug/L #	93
9) Methyl methacrylate	12.40	41	635574	116.9674	ug/L	81
10) 2-Nitropropane	12.79	43	211020	104.4208	ug/L	98
13) Cyclohexanone	17.57	55	15491	48.3758	ug/L	85

(#) = qualifier out of range (m) = manual integration
6M138761.D A9FOOWT.M Wed Apr 27 16:05:02 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

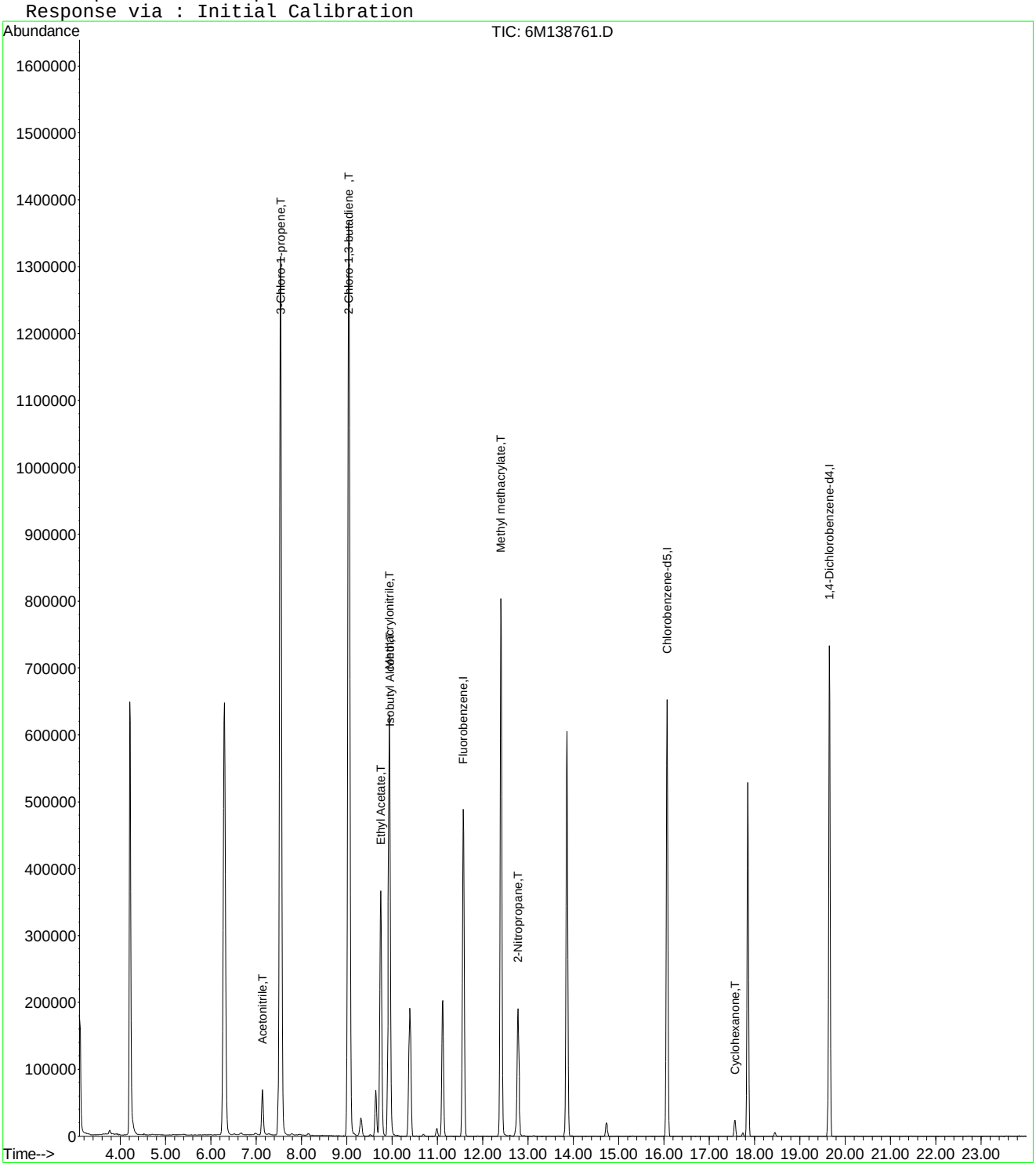

6M138761.D A9FOOWT.M Wed Apr 27 16:05:02 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	101	0.00
2	T	Acetonitrile	100.0000	106.9355	-6.9	106	0.00
3	T	3-Chloro-1-propene	100.0000	103.1378	-3.1	96	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	117.1516	-17.2	107	0.00
5	T	Ethyl Acetate	100.0000	106.9734	-7.0	103	0.00
6	T	Methacrylonitrile	100.0000	113.0781	-13.1	106	0.00
7	T	Isobutyl Alcohol	200.0000	248.4926	-24.2	151	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	100.0000	116.9674	-17.0	108	0.00
10	T	2-Nitropropane	100.0000	104.4208	-4.4	107	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	101	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	100.0000	48.3758	51.6	56	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138761.D A9FOOWT.M Wed Apr 27 16:05:40 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140314.D Vial: 2
Acq On : 30 Jun 2016 12:03 Operator: TMB
Sample : WG574723-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:20:28 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	782166	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	545154	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	278489	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	4426	0.5577 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	2.24%#	
43) 1,2-Dichloroethane-d4	10.31	65	6633	0.6621 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	2.64%#	
58) Toluene-d8	13.04	98	14915	0.5556 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.24%#	
80) p-Bromofluorobenzene	17.02	95	6529	0.5986 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.40%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	7859	0.6011 ug/L #	80
3) Chloromethane	3.36	50	10543	0.7222 ug/L	88
4) Vinyl Chloride	3.57	62	6524	0.8138 ug/L	85
5) 1,3-Butadiene	3.62	54	5236	Below Cal #	53
6) Bromomethane	4.39	94	2681	0.5033 ug/L	75
7) Chloroethane	4.55	64	2218	0.4379 ug/L #	74
8) Trichlorofluoromethane	5.01	101	7455	0.6097 ug/L #	89
10) Isoprene	5.58	67	5099	0.4673 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.81	101	3458	0.4546 ug/L	87
13) Acetone	5.90	43	5483	2.1880 ug/L	88
14) 1,1-Dichloroethene	6.11	61	8367	0.5669 ug/L	89
16) Dimethyl Sulfide	6.39	62	2618	0.4067 ug/L	92
17) Iodomethane	6.65	142	580	1.0028 ug/L #	32
18) Methyl acetate	6.68	43	2212	0.3262 ug/L #	66
19) Methylene Chloride	6.95	84	4491	0.5306 ug/L	87
20) Carbon Disulfide	6.97	76	28617	1.0581 ug/L	97
22) Methyl Tert Butyl Ether	7.17	73	6219	0.2772 ug/L #	56
23) trans-1,2-Dichloroethene	7.42	96	5255	0.6648 ug/L	83
24) n-Hexane	7.50	57	14948	1.1142 ug/L	95
26) Vinyl Acetate	8.09	43	2544	0.1688 ug/L #	78
27) 1,1-Dichloroethane	8.10	63	6467	0.3800 ug/L	91
29) 2-Butanone	8.74	43	738	0.1924 ug/L #	57
31) 2,2-Dichloropropane	8.96	77	4273	0.3328 ug/L	92
32) cis-1,2-Dichloroethene	9.04	96	4541	0.5248 ug/L	70
33) Chloroform	9.26	83	5775	0.3788 ug/L	94
35) Bromochloromethane	9.52	130	2012	0.4327 ug/L	92
36) Tetrahydrofuran	9.55	42	2953	1.1037 ug/L #	55
38) 1,1,1-Trichloroethane	9.86	97	4483	0.3377 ug/L	92
39) Cyclohexane	9.87	56	8253	0.4779 ug/L	90
40) 1,1-Dichloropropene	10.08	75	6696	0.5791 ug/L	91
42) Carbon Tetrachloride	10.23	117	3257	0.2988 ug/L #	92
45) 1,2-Dichloroethane	10.45	62	5310	0.4344 ug/L #	89
46) Benzene	10.48	78	15173	0.4650 ug/L	96
47) Trichloroethene	11.35	130	5387	0.6690 ug/L	99
48) Methylcyclohexane	11.43	83	7364	0.5825 ug/L	88
49) 1,2-Dichloropropane	11.58	63	3158	0.3361 ug/L	79
51) Bromodichloromethane	11.94	83	4017	0.3543 ug/L	95
52) Dibromomethane	12.03	93	2564	0.5639 ug/L	85
53) 2-Chloroethyl Vinyl Ether	12.31	63	1255	0.2664 ug/L #	41
55) cis-1,3-Dichloropropene	12.69	75	6354	0.4827 ug/L	93

(#) = qualifier out of range (m) = manual integration
6M140314.D 8260WTR.M Fri Jul 01 14:20:31 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140314.D Vial: 2
Acq On : 30 Jun 2016 12:03 Operator: TMB
Sample : WG574723-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:20:28 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
56)	Dimethyl Disulfide	12.96	79	2244	0.3062 ug/L #	47
59)	Toluene	13.16	91	16171	0.4977 ug/L	100
60)	Ethyl Methacrylate	13.33	69	2168	0.2345 ug/L	77
62)	trans-1,3-Dichloropropene	13.39	75	6685	0.5786 ug/L	82
63)	1,1,2-Trichloroethane	13.62	97	2098	0.3489 ug/L	91
64)	2-Hexanone	13.58	43	1202	0.2105 ug/L #	54
65)	1,3-Dichloropropane	13.99	76	4378	0.3863 ug/L	85
66)	Tetrachloroethene	14.10	166	4661	0.6020 ug/L	99
67)	Dibromochloromethane	14.41	129	2599	0.3560 ug/L	98
68)	1,2-Dibromoethane	14.71	107	3093	0.5329 ug/L	98
69)	1-Chlorohexane	14.85	91	5951	0.5504 ug/L	88
70)	Chlorobenzene	15.30	112	13354	0.6409 ug/L	99
71)	1,1,1,2-Tetrachloroethane	15.35	131	2310	0.3116 ug/L	94
72)	Ethylbenzene	15.35	106	5305	0.4864 ug/L	85
73)	m-,p-Xylene	15.45	106	13647	1.0353 ug/L	91
74)	o-Xylene	16.11	106	5438	0.4136 ug/L	85
75)	Styrene	16.16	104	10471	0.4734 ug/L	91
76)	Bromoform	16.71	173	1433	0.3165 ug/L #	50
77)	Isopropylbenzene	16.63	105	15560	0.4536 ug/L	92
79)	1,1,2,2-Tetrachloroethane	16.88	83	1987	0.2940 ug/L	77
81)	1,2,3-Trichloropropane	17.10	110	241	0.1203 ug/L #	1
82)	trans-1,4-Dichloro-2-Buten	17.19	53	903	0.3534 ug/L	88
83)	n-Propylbenzene	17.22	91	21456	0.5362 ug/L #	94
84)	Bromobenzene	17.34	156	5484	0.6559 ug/L	92
85)	1,3,5-Trimethylbenzene	17.44	105	12453	0.4440 ug/L	96
86)	2-Chlorotoluene	17.52	91	13840	0.5114 ug/L	95
87)	4-Chlorotoluene	17.59	91	17422	0.6753 ug/L	95
88)	a-Methylstyrene	17.92	118	6165	0.4370 ug/L	93
89)	tert-Butylbenzene	17.98	134	2101	0.3729 ug/L #	24
90)	1,2,4-Trimethylbenzene	18.05	105	13753	0.4779 ug/L	100
91)	sec-Butylbenzene	18.30	105	18042	0.5374 ug/L	92
92)	p-Isopropyltoluene	18.51	119	14633	0.5114 ug/L	94
93)	1,3-Dichlorobenzene	18.70	146	11689	0.7103 ug/L	99
94)	1,4-Dichlorobenzene	18.85	146	12500	0.7513 ug/L	97
95)	n-Butylbenzene	19.12	91	17799	0.6344 ug/L	93
96)	1,2-Dichlorobenzene	19.43	146	9545	0.6178 ug/L	96
97)	1,2-Dibromo-3-Chloropropan	20.62	75	229	0.1730 ug/L #	1
98)	1,2,4-Trichlorobenzene	21.96	180	8749	0.8011 ug/L	91
99)	Hexachlorobutadiene	22.15	225	2944	0.6484 ug/L	95
100)	Naphthalene	22.39	128	14249	0.6384 ug/L	95
101)	1,2,3-Trichlorobenzene	22.76	180	7092	0.7013 ug/L	96

(#) = qualifier out of range (m) = manual integration
6M140314.D 8260WTR.M Fri Jul 01 14:20:32 2016 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140314.D Vial: 2
Acq On : 30 Jun 2016 12:03 Operator: TMB
Sample : WG574723-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:20 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

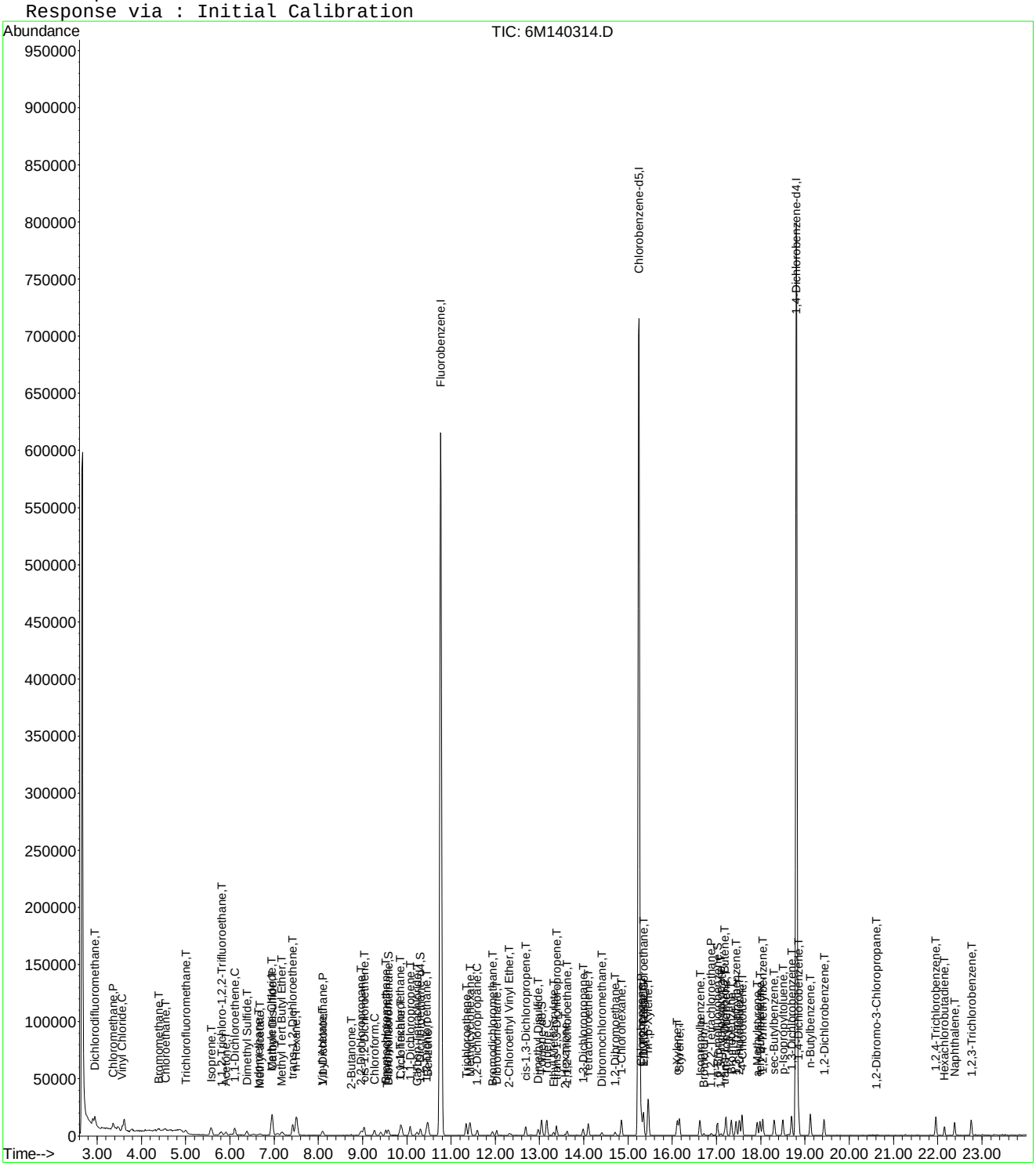

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140314.D Vial: 2
Acq On : 30 Jun 2016 12:03 Operator: TMB
Sample : WG574723-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.6011	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.7222	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.8138	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	-1.9896	0.0	0	0.03
6	T	Bromomethane	-1.0000	0.5033	0.0	100	0.02
7	T	Chloroethane	-1.0000	0.4379	0.0	100	0.02
8	T	Trichlorofluoromethane	-1.0000	0.6097	0.0	100	0.00
9	T	Diethyl ether	-1.0000	0.0280	0.0	100	0.00
10	T	Isoprene	-1.0000	0.4673	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-5.79#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.4546	0.0	100	0.03
13	T	Acetone	-1.0000	2.1880	0.0	100	0.00
14	C	1,1-Dichloroethene	-1.0000	0.5669	0.0	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.29#
16	T	Dimethyl Sulfide	-1.0000	0.4067	0.0	100	0.00
17	T	Iodomethane	-1.0000	1.0028	0.0	0	0.01
18	T	Methyl acetate	-1.0000	0.3262	0.0	100	-0.01
19	T	Methylene Chloride	-1.0000	0.5306	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	1.0581	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.15#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2772	0.0	100	-0.01
23	T	trans-1,2-Dichloroethene	-1.0000	0.6648	0.0	100	0.00
24	T	n-Hexane	-1.0000	1.1142	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-7.90#
26	T	Vinyl Acetate	-1.0000	0.1688	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.3800	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.53#
29	T	2-Butanone	-1.0000	0.1924	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.86#
31	T	2,2-Dichloropropane	-1.0000	0.3328	0.0	100	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.5248	0.0	100	0.00
33	C	Chloroform	0.3000	0.3788	-26.3#	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.41#
35	T	Bromochloromethane	-1.0000	0.4327	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	1.1037	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.5577	0.0	100	0.00
38	T	1,1,1-Trichloroethane	-1.0000	0.3377	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.4779	0.0	100	-0.01
40	T	1,1-Dichloropropene	-1.0000	0.5791	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0293	0.0	100	-0.13
42	T	Carbon Tetrachloride	-1.0000	0.2988	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.6621	0.0	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-10.21#
45	T	1,2-Dichloroethane	-1.0000	0.4344	0.0	100	0.00
46	T	Benzene	-1.0000	0.4650	0.0	100	0.00
47	T	Trichloroethene	-1.0000	0.6690	0.0	100	0.00
48	T	Methylcyclohexane	-1.0000	0.5825	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.3361	0.0	100	-0.01
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.94#
51	T	Bromodichloromethane	-1.0000	0.3543	0.0	100	0.00
52	T	Dibromomethane	-1.0000	0.5639	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2664	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0645	0.0	100	0.00

(#) = Out of Range

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140314.D Vial: 2
Acq On : 30 Jun 2016 12:03 Operator: TMB
Sample : WG574723-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.4827	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.3062	0.0	100	-0.01
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.5556	0.0	100	0.00
59	C	Toluene	-1.0000	0.4977	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2345	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	-1.0000	0.5786	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.3489	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.2105	0.0	100	0.00
65	T	1,3-Dichloropropane	-1.0000	0.3863	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.6020	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.3560	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.5329	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.5504	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.6409	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.3116	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.4864	0.0	100	0.00
73	T	m-,p-Xylene	-1.0000	1.0353	0.0	100	-0.01
74	T	o-Xylene	-1.0000	0.4136	0.0	100	-0.01
75	T	Styrene	-1.0000	0.4734	0.0	100	0.00
76	P	Bromoform	-1.0000	0.3165	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.4536	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	-0.01
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2940	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5986	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.1203	0.0	100	-0.01
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.3534	0.0	100	0.00
83	T	n-Propylbenzene	-1.0000	0.5362	0.0	100	0.00
84	T	Bromobenzene	-1.0000	0.6559	0.0	0	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.4440	0.0	100	-0.01
86	T	2-Chlorotoluene	-1.0000	0.5114	0.0	79	-0.01
87	T	4-Chlorotoluene	-1.0000	0.6753	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.4370	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3729	0.0	100	-0.01
90	T	1,2,4-Trimethylbenzene	-1.0000	0.4779	0.0	100	-0.01
91	T	sec-Butylbenzene	-1.0000	0.5374	0.0	100	-0.01
92	T	p-Isopropyltoluene	-1.0000	0.5114	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.7103	0.0	100	0.00
94	T	1,4-Dichlorobenzene	-1.0000	0.7513	0.0	0	0.00
95	T	n-Butylbenzene	-1.0000	0.6344	0.0	100	0.00
96	T	1,2-Dichlorobenzene	-1.0000	0.6178	0.0	0	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.1730	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	-1.0000	0.8011	0.0	100	-0.01
99	T	Hexachlorobutadiene	-1.0000	0.6484	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.6384	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	-1.0000	0.7013	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1
6M140314.D 8260WTR.M Fri Jul 01 14:34:29 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140315.D Vial: 3
Acq On : 30 Jun 2016 12:35 Operator: TMB
Sample : WG574723-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:20:36 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	711040	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	496934	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	254758	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	13.04	98	1118	0.0457 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.20%#	
80) p-Bromofluorobenzene	17.01	95	723	0.0725 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	4029	0.3390 ug/L #	64
3) Chloromethane	3.37	50	7908	0.5959 ug/L	82
4) Vinyl Chloride	3.56	62	2700	0.3705 ug/L	78
5) 1,3-Butadiene	3.62	54	3035	Below Cal #	51
6) Bromomethane	4.39	94	1885	0.3892 ug/L	95
7) Chloroethane	4.55	64	1384	0.3006 ug/L #	43
8) Trichlorofluoromethane	5.00	101	5096	0.4585 ug/L #	91
10) Isoprene	5.57	67	4197	0.4231 ug/L	86
12) 1,1,2-Trichloro-1,2,2-Trif	5.82	101	2196	0.3176 ug/L	83
13) Acetone	5.90	43	1650	0.7243 ug/L #	48
14) 1,1-Dichloroethene	6.11	61	5407	0.4030 ug/L	90
16) Dimethyl Sulfide	6.38	62	2288	0.3910 ug/L	87
18) Methyl acetate	6.69	43	1819	0.2951 ug/L #	66
19) Methylene Chloride	6.93	84	3320	0.4315 ug/L	82
20) Carbon Disulfide	6.97	76	11427	0.4648 ug/L	99
22) Methyl Tert Butyl Ether	7.18	73	8255	0.4048 ug/L #	75
23) trans-1,2-Dichloroethene	7.42	96	2988	0.4158 ug/L	82
24) n-Hexane	7.51	57	5670	0.4649 ug/L	92
26) Vinyl Acetate	8.09	43	2906	0.2121 ug/L #	78
27) 1,1-Dichloroethane	8.10	63	6380	0.4124 ug/L	89
29) 2-Butanone	8.74	43	1046	0.3000 ug/L #	57
31) 2,2-Dichloropropane	8.95	77	4509	0.3863 ug/L	96
32) cis-1,2-Dichloroethene	9.03	96	3353	0.4263 ug/L	94
33) Chloroform	9.27	83	5194	0.3747 ug/L	99
35) Bromochloromethane	9.53	130	1601	0.3788 ug/L	83
36) Tetrahydrofuran	9.56	42	3379	1.3892 ug/L #	67
38) 1,1,1-Trichloroethane	9.87	97	4496	0.3726 ug/L	93
39) Cyclohexane	9.89	56	6498	0.4139 ug/L	94
40) 1,1-Dichloropropene	10.08	75	4389	0.4176 ug/L	94
42) Carbon Tetrachloride	10.24	117	3081	0.3110 ug/L #	88
45) 1,2-Dichloroethane	10.45	62	4443	0.3998 ug/L #	81
46) Benzene	10.48	78	13145	0.4431 ug/L	97
47) Trichloroethene	11.34	130	3154	0.4309 ug/L	93
48) Methylcyclohexane	11.42	83	4969	0.4324 ug/L	87
49) 1,2-Dichloropropane	11.59	63	3543	0.4147 ug/L	87
51) Bromodichloromethane	11.93	83	3676	0.3566 ug/L	92
52) Dibromomethane	12.03	93	1420	0.3436 ug/L	100
53) 2-Chloroethyl Vinyl Ether	12.31	63	1186	0.2769 ug/L #	41
54) 4-Methyl-2-Pentanone	12.35	58	422	0.1601 ug/L #	38
55) cis-1,3-Dichloropropene	12.67	75	4716	0.3941 ug/L	96

(#) = qualifier out of range (m) = manual integration
6M140315.D 8260WTR.M Fri Jul 01 14:20:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140315.D Vial: 3
Acq On : 30 Jun 2016 12:35 Operator: TMB
Sample : WG574723-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:20:36 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
56)	Dimethyl Disulfide	12.97	79	1919	0.2881 ug/L #	68
59)	Toluene	13.16	91	13506	0.4560 ug/L	97
60)	Ethyl Methacrylate	13.32	69	2728	0.3238 ug/L	91
62)	trans-1,3-Dichloropropene	13.39	75	3780	0.3589 ug/L	86
63)	1,1,2-Trichloroethane	13.63	97	2086	0.3806 ug/L	93
64)	2-Hexanone	13.58	43	1538	0.2955 ug/L	72
65)	1,3-Dichloropropane	13.98	76	4376	0.4236 ug/L	95
66)	Tetrachloroethene	14.10	166	2876	0.4075 ug/L	95
67)	Dibromochloromethane	14.41	129	2210	0.3321 ug/L	93
68)	1,2-Dibromoethane	14.72	107	1896	0.3584 ug/L	87
69)	1-Chlorohexane	14.86	91	4030	0.4089 ug/L	91
70)	Chlorobenzene	15.30	112	8640	0.4549 ug/L	96
71)	1,1,1,2-Tetrachloroethane	15.35	131	2601	0.3848 ug/L	92
72)	Ethylbenzene	15.35	106	4049	0.4073 ug/L	76
73)	m-,p-Xylene	15.45	106	10358	0.8620 ug/L	87
74)	o-Xylene	16.10	106	5184	0.4326 ug/L	96
75)	Styrene	16.16	104	7888	0.3912 ug/L	83
76)	Bromoform	16.72	173	1146	0.2777 ug/L #	68
77)	Isopropylbenzene	16.62	105	13388	0.4282 ug/L	97
79)	1,1,2,2-Tetrachloroethane	16.88	83	2211	0.3576 ug/L	95
81)	1,2,3-Trichloropropane	17.11	110	427	0.2329 ug/L #	1
83)	n-Propylbenzene	17.22	91	16903	0.4618 ug/L #	94
84)	Bromobenzene	17.34	156	3349	0.4379 ug/L	93
85)	1,3,5-Trimethylbenzene	17.44	105	10954	0.4269 ug/L	99
86)	2-Chlorotoluene	17.51	91	11900	0.4807 ug/L	93
87)	4-Chlorotoluene	17.57	91	10437	0.4422 ug/L	94
88)	a-Methylstyrene	17.92	118	4645	0.3600 ug/L	98
89)	tert-Butylbenzene	17.98	134	2361	0.4580 ug/L	87
90)	1,2,4-Trimethylbenzene	18.04	105	11026	0.4188 ug/L	95
91)	sec-Butylbenzene	18.31	105	13954	0.4543 ug/L	95
92)	p-Isopropyltoluene	18.50	119	11850	0.4527 ug/L	94
93)	1,3-Dichlorobenzene	18.70	146	6789	0.4510 ug/L	100
94)	1,4-Dichlorobenzene	18.85	146	7052	0.4633 ug/L	99
95)	n-Butylbenzene	19.12	91	11908	0.4639 ug/L	90
96)	1,2-Dichlorobenzene	19.42	146	6295	0.4454 ug/L	99
97)	1,2-Dibromo-3-Chloropropan	20.62	75	204	0.1685 ug/L #	1
98)	1,2,4-Trichlorobenzene	21.96	180	4710	0.4715 ug/L	93
99)	Hexachlorobutadiene	22.15	225	1916	0.4613 ug/L	98
100)	Naphthalene	22.38	128	8061	0.3948 ug/L	90
101)	1,2,3-Trichlorobenzene	22.75	180	4023	0.4349 ug/L	96

(#) = qualifier out of range (m) = manual integration
6M140315.D 8260WTR.M Fri Jul 01 14:20:54 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140315.D Vial: 3
Acq On : 30 Jun 2016 12:35 Operator: TMB
Sample : WG574723-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:20 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

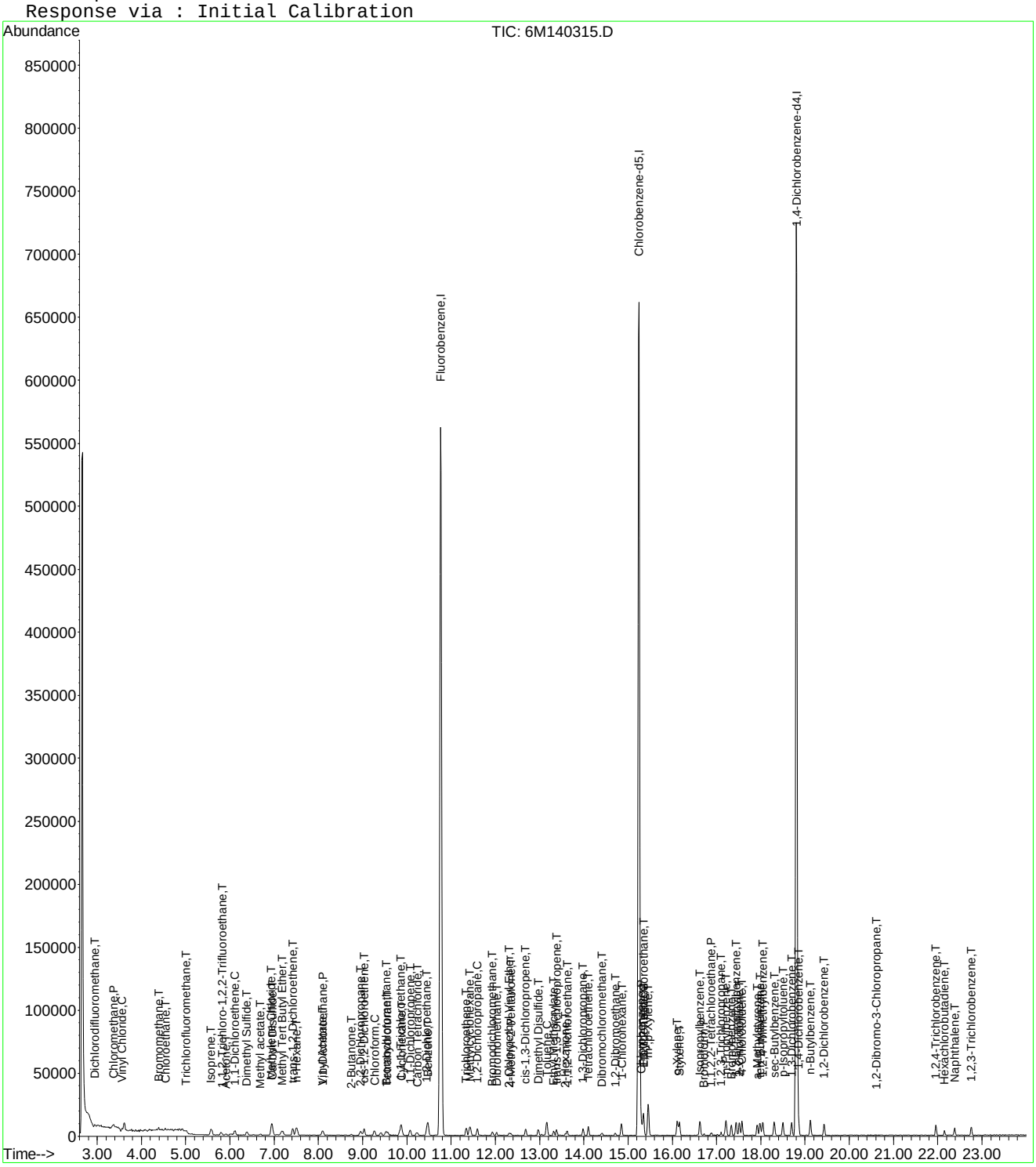

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140315.D Vial: 3
Acq On : 30 Jun 2016 12:35 Operator: TMB
Sample : WG574723-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.3390	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.5959	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.3705	7.4	100	0.00
5	T	1,3-Butadiene	-1.0000	-2.4246	0.0	0	0.03
6	T	Bromomethane	-1.0000	0.3892	0.0	100	0.02
7	T	Chloroethane	-1.0000	0.3006	0.0	100	0.02
8	T	Trichlorofluoromethane	0.4000	0.4585	-14.6	100	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.55#
10	T	Isoprene	-1.0000	0.4231	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-5.79#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3176	0.0	100	0.04
13	T	Acetone	-1.0000	0.7243	0.0	100	0.00
14	C	1,1-Dichloroethene	0.4000	0.4030	-0.7	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.29#
16	T	Dimethyl Sulfide	-1.0000	0.3910	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.64#
18	T	Methyl acetate	-1.0000	0.2951	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4315	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4648	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.15#
22	T	Methyl Tert Butyl Ether	-1.0000	0.4048	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.4158	-4.0	100	0.00
24	T	n-Hexane	-1.0000	0.4649	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-7.90#
26	T	Vinyl Acetate	-1.0000	0.2121	0.0	100	0.00
27	P	1,1-Dichloroethane	0.4000	0.4124	-3.1	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.53#
29	T	2-Butanone	-1.0000	0.3000	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.86#
31	T	2,2-Dichloropropane	0.4000	0.3863	3.4	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.4263	-6.6	100	0.00
33	C	Chloroform	0.4000	0.3747	6.3	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.41#
35	T	Bromochloromethane	0.4000	0.3787	5.3	100	0.00
36	T	Tetrahydrofuran	-1.0000	1.3892	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.59#
38	T	1,1,1-Trichloroethane	0.4000	0.3726	6.9	100	0.02
39	T	Cyclohexane	-1.0000	0.4139	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4176	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	0.4000	0.3110	22.3#	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-10.21#
45	T	1,2-Dichloroethane	0.4000	0.3998	0.1	100	0.00
46	T	Benzene	0.4000	0.4431	-10.8	100	0.00
47	T	Trichloroethene	0.4000	0.4309	-7.7	100	0.00
48	T	Methylcyclohexane	-1.0000	0.4324	0.0	100	-0.01
49	C	1,2-Dichloropropane	0.4000	0.4147	-3.7	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.94#
51	T	Bromodichloromethane	0.4000	0.3566	10.8	100	0.00
52	T	Dibromomethane	0.4000	0.3436	14.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2769	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.1601	0.0	100	0.00

(#) = Out of Range

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140315.D Vial: 3
Acq On : 30 Jun 2016 12:35 Operator: TMB
Sample : WG574723-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3941	1.5	100	-0.01
56	T	Dimethyl Disulfide	-1.0000	0.2881	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0457	0.0	100	0.00
59	C	Toluene	0.4000	0.4560	-14.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3238	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.16#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3589	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.3806	4.9	100	0.00
64	T	2-Hexanone	-1.0000	0.2955	0.0	100	0.00
65	T	1,3-Dichloropropane	0.4000	0.4236	-5.9	100	-0.01
66	T	Tetrachloroethene	0.4000	0.4075	-1.9	100	0.00
67	T	Dibromochloromethane	0.4000	0.3321	17.0	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.3584	10.4	100	0.00
69	T	1-Chlorohexane	0.4000	0.4089	-2.2	100	0.00
70	P	Chlorobenzene	0.4000	0.4549	-13.7	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3848	3.8	100	0.00
72	C	Ethylbenzene	0.4000	0.4073	-1.8	100	0.00
73	T	m-,p-Xylene	0.8000	0.8620	-7.8	100	-0.01
74	T	o-Xylene	-1.0000	0.4326	0.0	100	-0.01
75	T	Styrene	0.4000	0.3912	2.2	100	0.00
76	P	Bromoform	-1.0000	0.2777	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.4282	-7.0	100	-0.01
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.3576	10.6	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0725	0.0	100	-0.01
81	T	1,2,3-Trichloropropane	-1.0000	0.2329	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.1005	0.0	100	0.00
83	T	n-Propylbenzene	0.4000	0.4618	-15.4	100	0.00
84	T	Bromobenzene	0.4000	0.4379	-9.5	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.4270	-6.7	100	-0.01
86	T	2-Chlorotoluene	0.4000	0.4807	-20.2#	100	-0.01
87	T	4-Chlorotoluene	0.4000	0.4422	-10.6	100	-0.01
88	T	a-Methylstyrene	-1.0000	0.3600	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.4580	0.0	100	-0.01
90	T	1,2,4-Trimethylbenzene	-1.0000	0.4188	0.0	100	-0.01
91	T	sec-Butylbenzene	-1.0000	0.4543	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4527	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.4510	-12.7	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.4633	-15.8	100	0.00
95	T	n-Butylbenzene	-1.0000	0.4639	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.4454	-11.4	100	-0.01
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.1685	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	0.4000	0.4714	-17.9	100	-0.01
99	T	Hexachlorobutadiene	0.4000	0.4613	-15.3	100	0.00
100	T	Naphthalene	0.4000	0.3948	1.3	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.4349	-8.7	100	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140315.D 8260WTR.M Fri Jul 01 14:35:02 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140316.D Vial: 4
Acq On : 30 Jun 2016 13:08 Operator: TMB
Sample : WG574723-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:20:58 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	687429	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	485381	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	251587	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	3444	0.4938 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.96%#	
43) 1,2-Dichloroethane-d4	10.31	65	4418	0.5018 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	2.00%#	
58) Toluene-d8	13.04	98	12734	0.5328 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.12%#	
80) p-Bromofluorobenzene	17.01	95	5390	0.5470 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.20%#	
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	11016	0.9586 ug/L #	84
3) Chloromethane	3.37	50	15509	1.2088 ug/L	95
4) Vinyl Chloride	3.56	62	7694	1.0920 ug/L	94
5) 1,3-Butadiene	3.62	54	7756	Below Cal #	68
6) Bromomethane	4.39	94	4929	1.0528 ug/L	86
7) Chloroethane	4.53	64	4342	0.9753 ug/L	93
8) Trichlorofluoromethane	5.01	101	10531	0.9800 ug/L	96
9) Diethyl ether	5.55	59	32999	5.2047 ug/L	95
10) Isoprene	5.57	67	9716	1.0131 ug/L	99
11) Acrolein	5.79	56	2538	2.4066 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	6731	1.0068 ug/L	91
13) Acetone	5.90	43	3178	1.4430 ug/L #	76
14) 1,1-Dichloroethene	6.12	61	13411	1.0339 ug/L	87
15) Tert-Butyl Alcohol	6.25	59	6206	9.2151 ug/L #	84
16) Dimethyl Sulfide	6.38	62	5231	0.9246 ug/L	96
17) Iodomethane	6.65	142	2100	1.3352 ug/L	82
18) Methyl acetate	6.69	43	5561	0.9331 ug/L #	66
19) Methylene Chloride	6.94	84	8529	1.1466 ug/L	84
20) Carbon Disulfide	6.97	76	25467	1.0714 ug/L	99
21) Acrylonitrile	7.16	53	6206	2.2695 ug/L	94
22) Methyl Tert Butyl Ether	7.18	73	19700	0.9991 ug/L	95
23) trans-1,2-Dichloroethene	7.42	96	6984	1.0053 ug/L	82
24) n-Hexane	7.51	57	13051	1.1069 ug/L	96
25) Diisopropyl ether	7.90	45	166032	5.2317 ug/L	96
26) Vinyl Acetate	8.09	43	9104	0.6872 ug/L #	78
27) 1,1-Dichloroethane	8.10	63	15277	1.0213 ug/L	96
28) Ethyl-Tert-Butyl ether	8.53	59	131034	5.1323 ug/L	97
29) 2-Butanone	8.73	43	3268	0.9693 ug/L #	57
30) Propionitrile	8.85	54	4333	4.7359 ug/L	96
31) 2,2-Dichloropropane	8.95	77	11579	1.0261 ug/L	100
32) cis-1,2-Dichloroethene	9.03	96	7838	1.0307 ug/L	88
33) Chloroform	9.26	83	13154	0.9816 ug/L	99
34) 1-Bromopropane	9.41	122	659	1.0190 ug/L	80
35) Bromochloromethane	9.52	130	3868	0.9465 ug/L	100
36) Tetrahydrofuran	9.55	42	14306	6.0837 ug/L	89
38) 1,1,1-Trichloroethane	9.84	97	11995	1.0282 ug/L	99
39) Cyclohexane	9.89	56	16203	1.0675 ug/L	92
40) 1,1-Dichloropropene	10.08	75	10372	1.0207 ug/L	98
41) Tert-Amyl-Methyl ether	10.22	73	97548	5.0317 ug/L	97
42) Carbon Tetrachloride	10.22	117	8394	0.8763 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M140316.D 8260WTR.M Fri Jul 01 14:21:13 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140316.D Vial: 4
Acq On : 30 Jun 2016 13:08 Operator: TMB
Sample : WG574723-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:20:58 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	10834	1.0084 ug/L #	94
46)	Benzene	10.48	78	30089	1.0492 ug/L	98
47)	Trichloroethene	11.35	130	7344	1.0378 ug/L	95
48)	Methylcyclohexane	11.43	83	11566	1.0410 ug/L	92
49)	1,2-Dichloropropane	11.59	63	8057	0.9755 ug/L	94
51)	Bromodichloromethane	11.93	83	9704	0.9738 ug/L	95
52)	Dibromomethane	12.02	93	3754	0.9395 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.31	63	3750	0.9056 ug/L	89
54)	4-Methyl-2-Pentanone	12.35	58	1943	0.7624 ug/L #	38
55)	cis-1,3-Dichloropropene	12.68	75	10823	0.9354 ug/L	99
56)	Dimethyl Disulfide	12.97	79	5005	0.7771 ug/L	92
59)	Toluene	13.16	91	30726	1.0622 ug/L	99
60)	Ethyl Methacrylate	13.32	69	7189	0.8735 ug/L	94
62)	trans-1,3-Dichloropropene	13.39	75	9521	0.9256 ug/L	92
63)	1,1,2-Trichloroethane	13.63	97	5389	1.0066 ug/L	99
64)	2-Hexanone	13.58	43	4641	0.9130 ug/L	84
65)	1,3-Dichloropropane	13.99	76	10212	1.0121 ug/L	95
66)	Tetrachloroethene	14.10	166	7069	1.0254 ug/L	90
67)	Dibromochloromethane	14.41	129	5818	0.8951 ug/L	98
68)	1,2-Dibromoethane	14.71	107	5034	0.9742 ug/L	100
69)	1-Chlorohexane	14.85	91	9657	1.0031 ug/L	86
70)	Chlorobenzene	15.30	112	19612	1.0571 ug/L	95
71)	1,1,1,2-Tetrachloroethane	15.35	131	6511	0.9863 ug/L	95
72)	Ethylbenzene	15.35	106	9761	1.0051 ug/L	83
73)	m-,p-Xylene	15.45	106	24695	2.1041 ug/L	92
74)	o-Xylene	16.11	106	11834	1.0110 ug/L	92
75)	Styrene	16.16	104	18993	0.9644 ug/L	88
76)	Bromoform	16.72	173	3330	0.8262 ug/L #	88
77)	Isopropylbenzene	16.61	105	31878	1.0438 ug/L	96
79)	1,1,2,2-Tetrachloroethane	16.88	83	5647	0.9248 ug/L	93
81)	1,2,3-Trichloropropane	17.11	110	1314	0.7259 ug/L #	16
82)	trans-1,4-Dichloro-2-Buten	17.18	53	1593	0.6900 ug/L	82
83)	n-Propylbenzene	17.22	91	39699	1.0982 ug/L	95
84)	Bromobenzene	17.34	156	7581	1.0037 ug/L	87
85)	1,3,5-Trimethylbenzene	17.44	105	26502	1.0460 ug/L	94
86)	2-Chlorotoluene	17.51	91	26919	1.1011 ug/L	97
87)	4-Chlorotoluene	17.58	91	23704	1.0170 ug/L	96
88)	a-Methylstyrene	17.92	118	11597	0.9100 ug/L	97
89)	tert-Butylbenzene	17.98	134	5253	1.0319 ug/L	63
90)	1,2,4-Trimethylbenzene	18.04	105	27482	1.0570 ug/L	95
91)	sec-Butylbenzene	18.30	105	33207	1.0949 ug/L	94
92)	p-Isopropyltoluene	18.50	119	27800	1.0755 ug/L	94
93)	1,3-Dichlorobenzene	18.70	146	15649	1.0526 ug/L	95
94)	1,4-Dichlorobenzene	18.85	146	16097	1.0710 ug/L #	64
95)	n-Butylbenzene	19.12	91	27428	1.0821 ug/L	93
96)	1,2-Dichlorobenzene	19.43	146	14706	1.0536 ug/L	98
97)	1,2-Dibromo-3-Chloropropan	20.62	75	1058	0.8847 ug/L	65
98)	1,2,4-Trichlorobenzene	21.97	180	9695	0.9827 ug/L	98
99)	Hexachlorobutadiene	22.15	225	4079	0.9944 ug/L	93
100)	Naphthalene	22.38	128	18851	0.9349 ug/L	92
101)	1,2,3-Trichlorobenzene	22.75	180	9647	1.0560 ug/L	93

(#) = qualifier out of range (m) = manual integration
6M140316.D 8260WTR.M Fri Jul 01 14:21:14 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140316.D Vial: 4
Acq On : 30 Jun 2016 13:08 Operator: TMB
Sample : WG574723-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:21 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

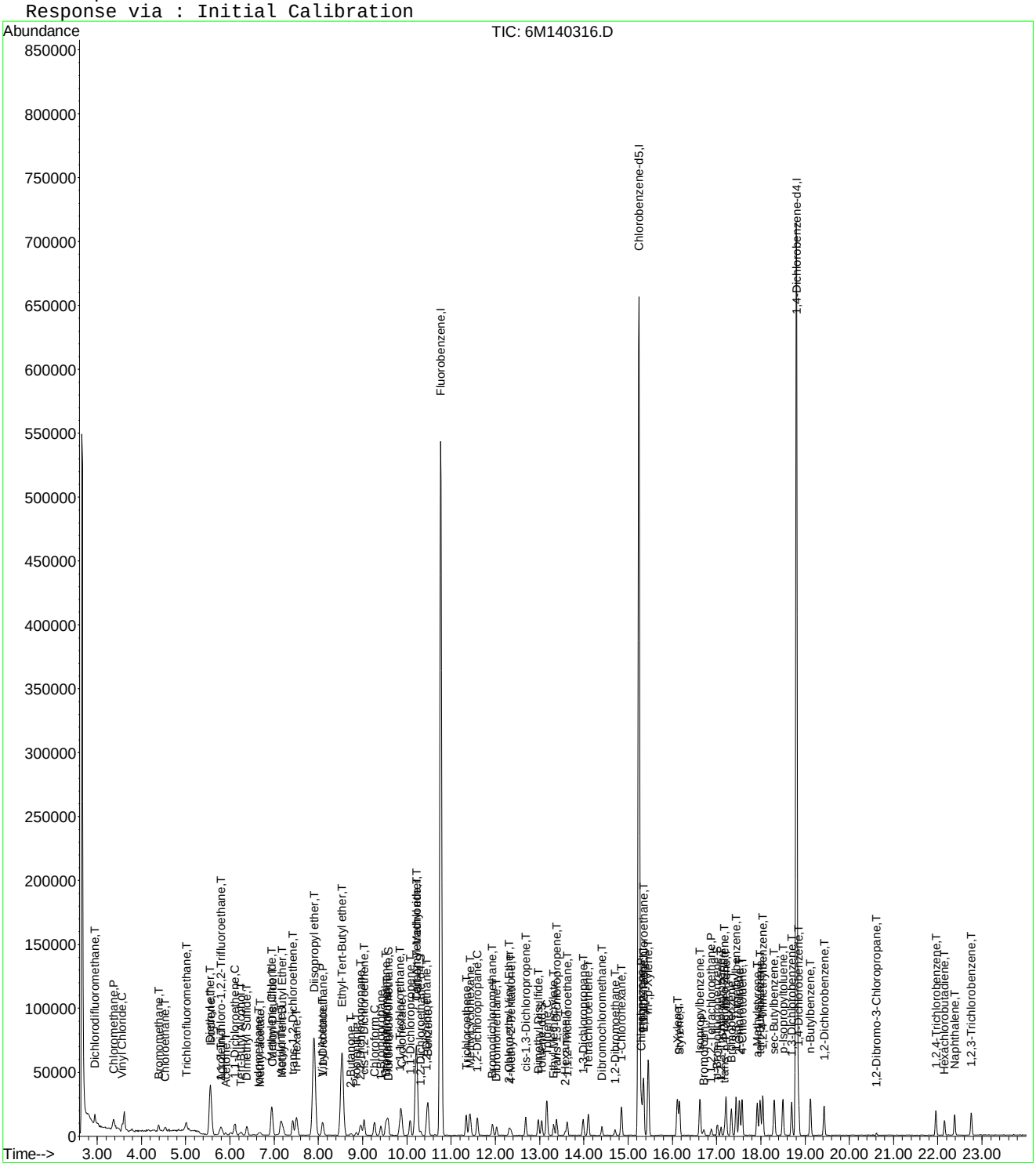

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140316.D Vial: 4
Acq On : 30 Jun 2016 13:08 Operator: TMB
Sample : WG574723-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9586	4.1	100	0.00
3	P	Chloromethane	1.0000	1.2088	-20.9#	100	0.00
4	C	Vinyl Chloride	1.0000	1.0920	-9.2	100	0.00
5	T	1,3-Butadiene	-1.0000	-1.1669	0.0	0	0.03
6	T	Bromomethane	1.0000	1.0528	-5.3	100	0.02
7	T	Chloroethane	1.0000	0.9753	2.5	100	0.00
8	T	Trichlorofluoromethane	1.0000	0.9800	2.0	100	0.02
9	T	Diethyl ether	5.0000	5.2047	-4.1	100	0.00
10	T	Isoprene	-1.0000	1.0131	0.0	100	0.00
11	T	Acrolein	-1.0000	2.4066	0.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0068	-0.7	100	0.00
13	T	Acetone	-1.0000	1.4430	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	1.0338	-3.4	100	0.02
15	T	Tert-Butyl Alcohol	10.0000	9.2151	7.8	100	-0.04
16	T	Dimethyl Sulfide	-1.0000	0.9246	0.0	100	0.00
17	T	Iodomethane	1.0000	1.3352	-33.5#	100	0.00
18	T	Methyl acetate	-1.0000	0.9331	0.0	100	0.00
19	T	Methylene Chloride	1.0000	1.1466	-14.7	100	0.00
20	T	Carbon Disulfide	1.0000	1.0714	-7.1	100	0.00
21	T	Acrylonitrile	2.5000	2.2695	9.2	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9991	0.1	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	1.0053	-0.5	100	0.00
24	T	n-Hexane	-1.0000	1.1069	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	5.2317	-4.6	100	0.00
26	T	Vinyl Acetate	-1.0000	0.6872	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0213	-2.1	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	5.1323	-2.6	100	0.00
29	T	2-Butanone	-1.0000	0.9693	0.0	100	0.00
30	T	Propionitrile	5.0000	4.7359	5.3	100	0.00
31	T	2,2-Dichloropropane	1.0000	1.0261	-2.6	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	1.0307	-3.1	100	0.00
33	C	Chloroform	1.0000	0.9816	1.8	100	0.00
34		1-Bromopropane	1.0000	1.0190	-1.9	100	0.00
35	T	Bromochloromethane	1.0000	0.9465	5.3	100	0.00
36	T	Tetrahydrofuran	5.0000	6.0837	-21.7#	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.4938	0.0	100	0.00
38	T	1,1,1-Trichloroethane	1.0000	1.0282	-2.8	100	0.00
39	T	Cyclohexane	1.0000	1.0675	-6.8	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0207	-2.1	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	5.0317	-0.6	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.8763	12.4	100	-0.01
43	S	1,2-Dichloroethane-d4	-1.0000	0.5018	0.0	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	-0.01
45	T	1,2-Dichloroethane	1.0000	1.0084	-0.8	100	0.00
46	T	Benzene	1.0000	1.0492	-4.9	100	0.00
47	T	Trichloroethene	1.0000	1.0378	-3.8	100	0.00
48	T	Methylcyclohexane	-1.0000	1.0410	0.0	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.9756	2.4	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.94#
51	T	Bromodichloromethane	1.0000	0.9738	2.6	100	0.00
52	T	Dibromomethane	1.0000	0.9395	6.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.9056	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.7624	0.0	100	0.00

(#) = Out of Range

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140316.D Vial: 4
Acq On : 30 Jun 2016 13:08 Operator: TMB
Sample : WG574723-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9355	6.5	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.7771	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.5328	0.0	100	0.00
59	C	Toluene	1.0000	1.0621	-6.2	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.8735	12.7	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	1.0000	0.9256	7.4	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	1.0066	-0.7	100	0.00
64	T	2-Hexanone	-1.0000	0.9130	0.0	100	0.00
65	T	1,3-Dichloropropane	1.0000	1.0121	-1.2	100	0.00
66	T	Tetrachloroethene	1.0000	1.0254	-2.5	100	0.00
67	T	Dibromochloromethane	1.0000	0.8951	10.5	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.9742	2.6	100	0.00
69	T	1-Chlorohexane	1.0000	1.0031	-0.3	100	0.00
70	P	Chlorobenzene	1.0000	1.0571	-5.7	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.9863	1.4	100	0.00
72	C	Ethylbenzene	1.0000	1.0051	-0.5	100	0.00
73	T	m-,p-Xylene	2.0000	2.1041	-5.2	100	-0.01
74	T	o-Xylene	1.0000	1.0110	-1.1	100	0.00
75	T	Styrene	1.0000	0.9645	3.6	100	0.00
76	P	Bromoform	1.0000	0.8262	17.4	100	0.00
77	T	Isopropylbenzene	1.0000	1.0438	-4.4	100	-0.01
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	0.9248	7.5	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5470	0.0	100	-0.01
81	T	1,2,3-Trichloropropane	1.0000	0.7259	27.4#	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	1.0000	0.6900	31.0#	100	0.00
83	T	n-Propylbenzene	1.0000	1.0982	-9.8	100	0.00
84	T	Bromobenzene	1.0000	1.0037	-0.4	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	1.0460	-4.6	100	-0.01
86	T	2-Chlorotoluene	1.0000	1.1011	-10.1	100	-0.01
87	T	4-Chlorotoluene	1.0000	1.0171	-1.7	100	0.00
88	T	a-Methylstyrene	-1.0000	0.9100	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	1.0319	-3.2	100	-0.01
90	T	1,2,4-Trimethylbenzene	1.0000	1.0570	-5.7	100	-0.01
91	T	sec-Butylbenzene	1.0000	1.0949	-9.5	100	-0.01
92	T	p-Isopropyltoluene	1.0000	1.0755	-7.6	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0526	-5.3	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	1.0710	-7.1	100	0.00
95	T	n-Butylbenzene	1.0000	1.0821	-8.2	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0536	-5.4	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.8847	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	1.0000	0.9827	1.7	100	0.00
99	T	Hexachlorobutadiene	1.0000	0.9944	0.6	100	0.00
100	T	Naphthalene	1.0000	0.9349	6.5	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	1.0560	-5.6	100	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140316.D 8260WTR.M Fri Jul 01 14:35:27 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140317.D Vial: 5
Acq On : 30 Jun 2016 13:40 Operator: TMB
Sample : WG574723-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:18 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	681288	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	479716	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	253621	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	6933	1.0030 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	4.00%#	
43) 1,2-Dichloroethane-d4	10.32	65	9000	1.0314 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	4.12%#	
58) Toluene-d8	13.04	98	25015	1.0589 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.24%#	
80) p-Bromofluorobenzene	17.02	95	10214	1.0283 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	21693	1.9048 ug/L	92
3) Chloromethane	3.37	50	28294	2.2252 ug/L	99
4) Vinyl Chloride	3.57	62	15095	2.1618 ug/L	90
5) 1,3-Butadiene	3.61	54	14228	0.5548 ug/L	81
6) Bromomethane	4.39	94	10021	2.1597 ug/L	92
7) Chloroethane	4.54	64	8637	1.9576 ug/L	99
8) Trichlorofluoromethane	5.01	101	21198	1.9905 ug/L	99
9) Diethyl ether	5.55	59	166163	26.4440 ug/L	96
10) Isoprene	5.58	67	20113	2.1161 ug/L	98
11) Acrolein	5.79	56	13232	12.6601 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.80	101	13403	2.0228 ug/L	98
13) Acetone	5.90	43	5431	2.4882 ug/L	86
14) 1,1-Dichloroethene	6.11	61	26310	2.0465 ug/L	95
15) Tert-Butyl Alcohol	6.25	59	32448	48.6151 ug/L	96
16) Dimethyl Sulfide	6.39	62	10884	1.9412 ug/L	92
17) Iodomethane	6.64	142	4160	1.7736 ug/L	99
18) Methyl acetate	6.68	43	11835	2.0038 ug/L #	83
19) Methylene Chloride	6.94	84	16307	2.2119 ug/L	88
20) Carbon Disulfide	6.96	76	49030	2.0813 ug/L	98
21) Acrylonitrile	7.14	53	32708	12.0688 ug/L	93
22) Methyl Tert Butyl Ether	7.17	73	39510	2.0219 ug/L	98
23) trans-1,2-Dichloroethene	7.43	96	14262	2.0714 ug/L	91
24) n-Hexane	7.51	57	25227	2.1588 ug/L	95
25) Diisopropyl ether	7.90	45	823711	26.1894 ug/L	97
26) Vinyl Acetate	8.09	43	22167	1.6883 ug/L	93
27) 1,1-Dichloroethane	8.10	63	31011	2.0919 ug/L	96
28) Ethyl-Tert-Butyl ether	8.53	59	650758	25.7185 ug/L	98
29) 2-Butanone	8.72	43	6560	1.9633 ug/L #	79
30) Propionitrile	8.86	54	22752	25.0916 ug/L	98
31) 2,2-Dichloropropane	8.95	77	23903	2.1372 ug/L	100
32) cis-1,2-Dichloroethene	9.03	96	14680	1.9478 ug/L	78
33) Chloroform	9.27	83	26391	1.9872 ug/L	98
34) 1-Bromopropane	9.42	122	1777	1.9534 ug/L	97
35) Bromochloromethane	9.52	130	8058	1.9896 ug/L	93
36) Tetrahydrofuran	9.55	42	58983	25.3089 ug/L	92
38) 1,1,1-Trichloroethane	9.86	97	23448	2.0280 ug/L	99
39) Cyclohexane	9.88	56	30890	2.0535 ug/L	95
40) 1,1-Dichloropropene	10.08	75	20511	2.0367 ug/L	98
41) Tert-Amyl-Methyl ether	10.22	73	494429	25.7332 ug/L	97
42) Carbon Tetrachloride	10.23	117	18006	1.8966 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140317.D 8260WTR.M Fri Jul 01 14:21:21 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140317.D Vial: 5
Acq On : 30 Jun 2016 13:40 Operator: TMB
Sample : WG574723-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:18 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	22120	2.0774 ug/L	98
46)	Benzene	10.48	78	60457	2.1271 ug/L	100
47)	Trichloroethene	11.35	130	14433	2.0579 ug/L	92
48)	Methylcyclohexane	11.43	83	23167	2.1040 ug/L	93
49)	1,2-Dichloropropane	11.59	63	16607	2.0289 ug/L	96
50)	1,4-Dioxane	11.94	88	2503	45.1726 ug/L	97
51)	Bromodichloromethane	11.93	83	19917	2.0166 ug/L	98
52)	Dibromomethane	12.02	93	8051	2.0330 ug/L	95
53)	2-Chloroethyl Vinyl Ether	12.31	63	7544	1.8383 ug/L	94
54)	4-Methyl-2-Pentanone	12.35	58	4674	1.8506 ug/L	83
55)	cis-1,3-Dichloropropene	12.69	75	23212	2.0243 ug/L	98
56)	Dimethyl Disulfide	12.97	79	10618	1.6635 ug/L	98
59)	Toluene	13.16	91	61452	2.1494 ug/L	98
60)	Ethyl Methacrylate	13.32	69	15594	1.9171 ug/L	93
62)	trans-1,3-Dichloropropene	13.38	75	19722	1.9399 ug/L	94
63)	1,1,2-Trichloroethane	13.63	97	10814	2.0438 ug/L	96
64)	2-Hexanone	13.59	43	9516	1.8942 ug/L	94
65)	1,3-Dichloropropane	13.98	76	20700	2.0758 ug/L	97
66)	Tetrachloroethene	14.11	166	14321	2.1019 ug/L	97
67)	Dibromochloromethane	14.41	129	12204	1.8998 ug/L	99
68)	1,2-Dibromoethane	14.71	107	10178	1.9929 ug/L	98
69)	1-Chlorohexane	14.85	91	19403	2.0392 ug/L	87
70)	Chlorobenzene	15.30	112	39367	2.1469 ug/L	81
71)	1,1,1,2-Tetrachloroethane	15.35	131	13145	2.0147 ug/L	96
72)	Ethylbenzene	15.35	106	20014	2.0853 ug/L	88
73)	m-,p-Xylene	15.45	106	50059	4.3155 ug/L	94
74)	o-Xylene	16.11	106	24284	2.0991 ug/L	92
75)	Styrene	16.16	104	39349	2.0217 ug/L	93
76)	Bromoform	16.71	173	7051	1.7700 ug/L	91
77)	Isopropylbenzene	16.62	105	63245	2.0952 ug/L	97
79)	1,1,2,2-Tetrachloroethane	16.87	83	11943	1.9403 ug/L	99
81)	1,2,3-Trichloropropane	17.11	110	3577	1.9601 ug/L	70
82)	trans-1,4-Dichloro-2-Buten	17.18	53	4235	1.8198 ug/L	92
83)	n-Propylbenzene	17.22	91	77640	2.1306 ug/L	97
84)	Bromobenzene	17.34	156	15737	2.0668 ug/L	90
85)	1,3,5-Trimethylbenzene	17.45	105	53524	2.0955 ug/L	96
86)	2-Chlorotoluene	17.52	91	50361	2.0435 ug/L	96
87)	4-Chlorotoluene	17.58	91	51425	2.1888 ug/L	96
88)	a-Methylstyrene	17.91	118	23705	1.8452 ug/L	90
89)	tert-Butylbenzene	17.99	134	10746	2.0941 ug/L	69
90)	1,2,4-Trimethylbenzene	18.05	105	55973	2.1356 ug/L	97
91)	sec-Butylbenzene	18.30	105	66761	2.1835 ug/L	94
92)	p-Isopropyltoluene	18.50	119	55466	2.1287 ug/L	97
93)	1,3-Dichlorobenzene	18.70	146	31212	2.0827 ug/L	98
94)	1,4-Dichlorobenzene	18.85	146	31934	2.1076 ug/L	79
95)	n-Butylbenzene	19.12	91	53671	2.1004 ug/L	95
96)	1,2-Dichlorobenzene	19.44	146	29144	2.0713 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	20.61	75	1880	1.5595 ug/L	96
98)	1,2,4-Trichlorobenzene	21.96	180	19883	1.9991 ug/L	99
99)	Hexachlorobutadiene	22.15	225	8377	2.0258 ug/L	98
100)	Naphthalene	22.38	128	39370	1.9369 ug/L	98
101)	1,2,3-Trichlorobenzene	22.75	180	18357	1.9933 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140317.D 8260WTR.M Fri Jul 01 14:21:22 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140317.D Vial: 5
Acq On : 30 Jun 2016 13:40 Operator: TMB
Sample : WG574723-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:21 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

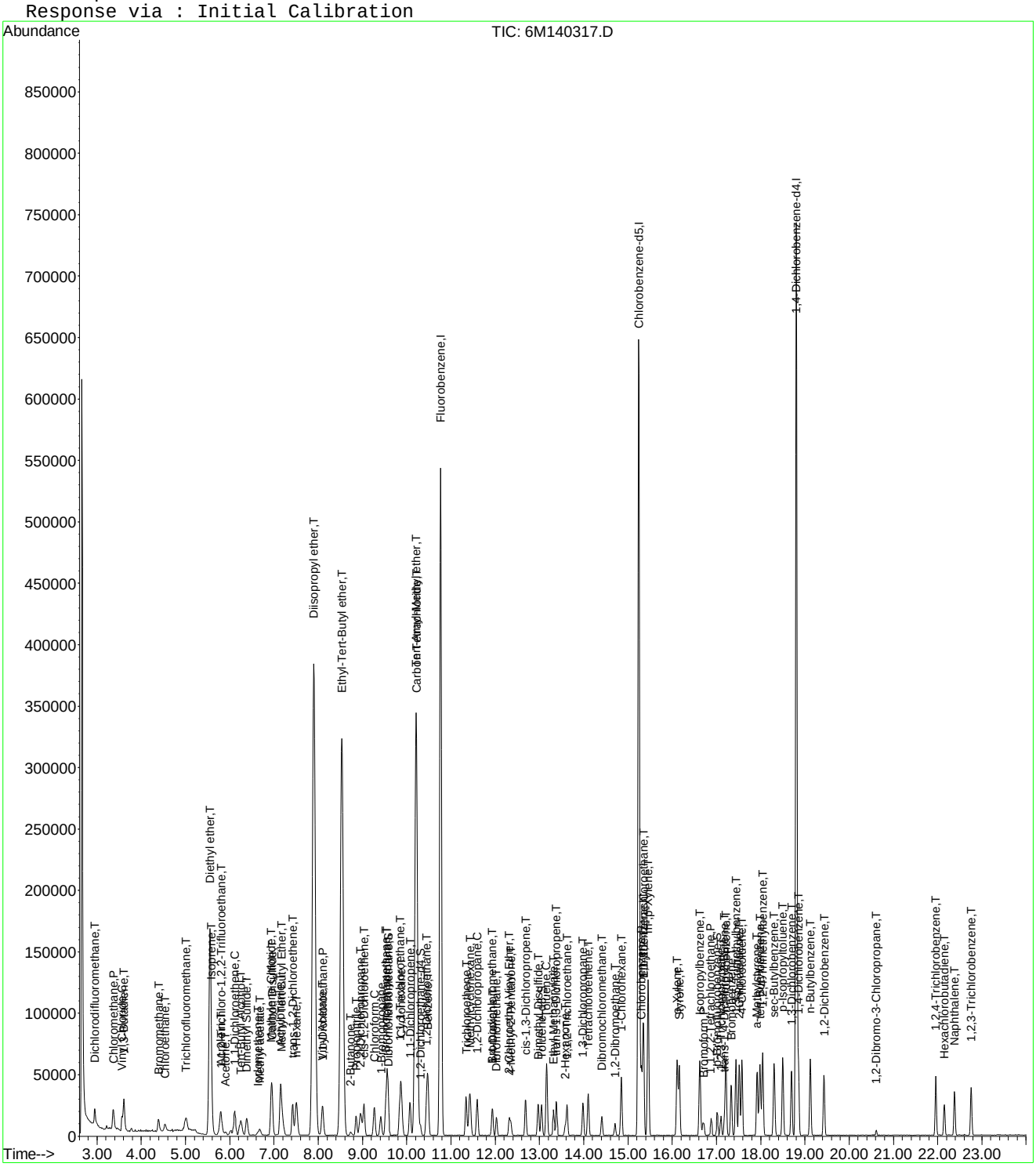

6M140317.D 8260WTR.M Fri Jul 01 14:21:24 2016 Page 3

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140317.D Vial: 5
Acq On : 30 Jun 2016 13:40 Operator: TMB
Sample : WG574723-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.9048	4.8	100	0.01
3	P	Chloromethane	2.0000	2.2252	-11.3	100	0.01
4	C	Vinyl Chloride	2.0000	2.1618	-8.1	100	0.01
5	T	1,3-Butadiene	-1.0000	0.5548	0.0	0	0.02
6	T	Bromomethane	2.0000	2.1597	-8.0	100	0.02
7	T	Chloroethane	2.0000	1.9576	2.1	100	0.01
8	T	Trichlorofluoromethane	2.0000	1.9905	0.5	100	0.01
9	T	Diethyl ether	25.0000	26.4441	-5.8	100	0.00
10	T	Isoprene	-1.0000	2.1161	0.0	100	0.01
11	T	Acrolein	12.5000	12.6601	-1.3	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	2.0228	-1.1	100	0.02
13	T	Acetone	-1.0000	2.4882	0.0	100	0.00
14	C	1,1-Dichloroethene	2.0000	2.0465	-2.3	100	0.01
15	T	Tert-Butyl Alcohol	50.0000	48.6152	2.8	100	-0.04
16	T	Dimethyl Sulfide	-1.0000	1.9412	0.0	100	0.00
17	T	Iodomethane	2.0000	1.7736	11.3	100	0.00
18	T	Methyl acetate	-1.0000	2.0038	0.0	100	0.00
19	T	Methylene Chloride	2.0000	2.2119	-10.6	100	0.00
20	T	Carbon Disulfide	2.0000	2.0813	-4.1	100	0.00
21	T	Acrylonitrile	12.5000	12.0688	3.4	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	2.0219	-1.1	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	2.0714	-3.6	100	0.01
24	T	n-Hexane	-1.0000	2.1588	0.0	100	0.01
25	T	Diisopropyl ether	25.0000	26.1894	-4.8	100	0.00
26	T	Vinyl Acetate	-1.0000	1.6883	0.0	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.0919	-4.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	25.7185	-2.9	100	0.00
29	T	2-Butanone	-1.0000	1.9633	0.0	100	0.00
30	T	Propionitrile	25.0000	25.0916	-0.4	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1372	-6.9	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	1.9478	2.6	100	0.00
33	C	Chloroform	2.0000	1.9872	0.6	100	0.00
34		1-Bromopropane	2.0000	1.9534	2.3	100	0.01
35	T	Bromochloromethane	2.0000	1.9896	0.5	100	0.00
36	T	Tetrahydrofuran	25.0000	25.3089	-1.2	100	0.00
37	S	Dibromofluoromethane	1.0000	1.0030	-0.3	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	2.0280	-1.4	100	0.01
39	T	Cyclohexane	2.0000	2.0535	-2.7	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0367	-1.8	100	0.01
41	T	Tert-Amyl-Methyl ether	25.0000	25.7333	-2.9	100	0.00
42	T	Carbon Tetrachloride	2.0000	1.8966	5.2	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0314	-3.1	100	0.01
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	T	1,2-Dichloroethane	2.0000	2.0774	-3.9	100	0.00
46	T	Benzene	2.0000	2.1271	-6.4	100	0.00
47	T	Trichloroethene	2.0000	2.0579	-2.9	100	0.01
48	T	Methylcyclohexane	-1.0000	2.1040	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0289	-1.4	100	0.00
50	T	1,4-Dioxane	-1.0000	45.1726	0.0	100	0.00
51	T	Bromodichloromethane	2.0000	2.0166	-0.8	100	0.00
52	T	Dibromomethane	2.0000	2.0330	-1.6	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	1.8383	8.1	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.8506	0.0	100	0.00

(#) = Out of Range

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140317.D Vial: 5
Acq On : 30 Jun 2016 13:40 Operator: TMB
Sample : WG574723-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	2.0243	-1.2	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.6635	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	1.0589	-5.9	100	0.00
59	C	Toluene	2.0000	2.1494	-7.5	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.9171	4.1	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	2.0000	1.9399	3.0	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	2.0438	-2.2	100	0.00
64	T	2-Hexanone	-1.0000	1.8942	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.0758	-3.8	100	0.00
66	T	Tetrachloroethene	2.0000	2.1019	-5.1	100	0.00
67	T	Dibromochloromethane	2.0000	1.8998	5.0	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.9929	0.4	100	0.00
69	T	1-Chlorohexane	2.0000	2.0392	-2.0	100	0.00
70	P	Chlorobenzene	2.0000	2.1469	-7.3	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	2.0147	-0.7	100	0.00
72	C	Ethylbenzene	2.0000	2.0853	-4.3	100	0.00
73	T	m-,p-Xylene	4.0000	4.3156	-7.9	100	0.00
74	T	o-Xylene	2.0000	2.0991	-5.0	100	0.00
75	T	Styrene	2.0000	2.0217	-1.1	100	0.00
76	P	Bromoform	2.0000	1.7700	11.5	100	0.00
77	T	Isopropylbenzene	2.0000	2.0952	-4.8	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	1.9403	3.0	100	0.00
80	S	p-Bromofluorobenzene	1.0000	1.0283	-2.8	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	1.9601	2.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	1.8198	9.0	100	0.00
83	T	n-Propylbenzene	2.0000	2.1306	-6.5	100	0.00
84	T	Bromobenzene	2.0000	2.0668	-3.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.0955	-4.8	100	0.00
86	T	2-Chlorotoluene	2.0000	2.0435	-2.2	100	0.00
87	T	4-Chlorotoluene	2.0000	2.1888	-9.4	100	0.00
88	T	a-Methylstyrene	-1.0000	1.8452	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	2.0941	-4.7	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.1356	-6.8	100	0.00
91	T	sec-Butylbenzene	2.0000	2.1835	-9.2	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.1287	-6.4	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.0827	-4.1	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.1076	-5.4	100	0.00
95	T	n-Butylbenzene	2.0000	2.1004	-5.0	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0713	-3.6	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.5595	22.0#	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	1.9991	0.0	100	0.00
99	T	Hexachlorobutadiene	2.0000	2.0258	-1.3	100	0.00
100	T	Naphthalene	2.0000	1.9369	3.2	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9933	0.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140317.D 8260WTR.M Fri Jul 01 14:35:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140318.D Vial: 6
Acq On : 30 Jun 2016 14:12 Operator: TMB
Sample : WG574723-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:25 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	665911	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	475530	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	251113	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	17208	2.5471 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 10.20%#		
43) 1,2-Dichloroethane-d4	10.32	65	22015	2.5813 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 10.32%#		
58) Toluene-d8	13.04	98	61675	2.6338 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 10.52%#		
80) p-Bromofluorobenzene	17.01	95	25621	2.6052 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 10.44%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	48247	4.3342 ug/L	98
3) Chloromethane	3.37	50	59455	4.7839 ug/L	98
4) Vinyl Chloride	3.57	62	33485	4.9063 ug/L	98
5) 1,3-Butadiene	3.60	54	23338	3.0943 ug/L	87
6) Bromomethane	4.39	94	22163	4.8867 ug/L	97
7) Chloroethane	4.54	64	20579	4.7720 ug/L	97
8) Trichlorofluoromethane	5.02	101	49493	4.7547 ug/L	100
9) Diethyl ether	5.55	59	316870	51.5928 ug/L	96
10) Isoprene	5.58	67	44245	4.7626 ug/L	95
11) Acrolein	5.79	56	25354	24.8183 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	5.80	101	30711	4.7419 ug/L	96
13) Acetone	5.90	43	11460	5.3716 ug/L	98
14) 1,1-Dichloroethene	6.11	61	59549	4.7390 ug/L	93
15) Tert-Butyl Alcohol	6.26	59	62697	96.1048 ug/L	99
16) Dimethyl Sulfide	6.39	62	26287	4.7966 ug/L	98
17) Iodomethane	6.65	142	13226	3.7502 ug/L	97
18) Methyl acetate	6.69	43	29044	5.0309 ug/L	94
19) Methylene Chloride	6.95	84	35243	4.8909 ug/L	87
20) Carbon Disulfide	6.97	76	111679	4.8502 ug/L	99
21) Acrylonitrile	7.15	53	65252	24.6331 ug/L	96
22) Methyl Tert Butyl Ether	7.18	73	93809	4.9114 ug/L	100
23) trans-1,2-Dichloroethene	7.43	96	32653	4.8519 ug/L	90
24) n-Hexane	7.51	57	57537	5.0375 ug/L	99
25) Diisopropyl ether	7.91	45	1560840	50.7720 ug/L	98
26) Vinyl Acetate	8.09	43	61001	4.7533 ug/L	96
27) 1,1-Dichloroethane	8.10	63	70715	4.8804 ug/L	99
28) Ethyl-Tert-Butyl ether	8.53	59	1249973	50.5407 ug/L	98
29) 2-Butanone	8.73	43	15743	4.8205 ug/L	90
30) Propionitrile	8.86	54	44610	50.3332 ug/L	100
31) 2,2-Dichloropropane	8.96	77	55177	5.0475 ug/L	100
32) cis-1,2-Dichloroethene	9.03	96	35623	4.8356 ug/L	87
33) Chloroform	9.26	83	62050	4.7802 ug/L	99
34) 1-Bromopropane	9.42	122	5012	4.7391 ug/L	100
35) Bromochloromethane	9.52	130	19897	5.0261 ug/L	99
36) Tetrahydrofuran	9.56	42	111306	48.8630 ug/L	94
38) 1,1,1-Trichloroethane	9.86	97	54902	4.8581 ug/L	98
39) Cyclohexane	9.88	56	69439	4.7228 ug/L	96
40) 1,1-Dichloropropene	10.08	75	47385	4.8139 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	949512	50.5598 ug/L	97
42) Carbon Tetrachloride	10.23	117	43932	4.7343 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140318.D 8260WTR.M Fri Jul 01 14:21:29 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140318.D Vial: 6
Acq On : 30 Jun 2016 14:12 Operator: TMB
Sample : WG574723-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:25 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	49969	4.8012	ug/L	99
46)	Benzene	10.48	78	138207	4.9748	ug/L	98
47)	Trichloroethene	11.35	130	33708	4.9171	ug/L	90
48)	Methylcyclohexane	11.43	83	52733	4.8997	ug/L	94
49)	1,2-Dichloropropane	11.59	63	39044	4.8802	ug/L	100
50)	1,4-Dioxane	11.94	88	4972	91.8036	ug/L	77
51)	Bromodichloromethane	11.93	83	46783	4.8462	ug/L	100
52)	Dibromomethane	12.02	93	19034	4.9173	ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.31	63	18004	4.4884	ug/L	97
54)	4-Methyl-2-Pentanone	12.35	58	11300	4.5774	ug/L	94
55)	cis-1,3-Dichloropropene	12.69	75	54408	4.8545	ug/L	99
56)	Dimethyl Disulfide	12.97	79	26532	4.2526	ug/L	100
59)	Toluene	13.15	91	138309	4.8802	ug/L	99
60)	Ethyl Methacrylate	13.32	69	37662	4.6708	ug/L	95
62)	trans-1,3-Dichloropropene	13.39	75	48146	4.7775	ug/L	95
63)	1,1,2-Trichloroethane	13.62	97	25707	4.9014	ug/L	99
64)	2-Hexanone	13.58	43	22497	4.5176	ug/L	99
65)	1,3-Dichloropropane	13.99	76	48531	4.9096	ug/L	95
66)	Tetrachloroethene	14.10	166	33388	4.9436	ug/L	96
67)	Dibromochloromethane	14.41	129	30609	4.8067	ug/L	100
68)	1,2-Dibromoethane	14.71	107	24604	4.8600	ug/L	99
69)	1-Chlorohexane	14.85	91	45159	4.7879	ug/L	91
70)	Chlorobenzene	15.30	112	88763	4.8834	ug/L	87
71)	1,1,1,2-Tetrachloroethane	15.35	131	31237	4.8298	ug/L	97
72)	Ethylbenzene	15.35	106	47581	5.0011	ug/L	93
73)	m-,p-Xylene	15.45	106	115328	10.0299	ug/L	93
74)	o-Xylene	16.11	106	56158	4.8969	ug/L	90
75)	Styrene	16.16	104	93922	4.8681	ug/L	93
76)	Bromoform	16.71	173	17414	4.4099	ug/L	98
77)	Isopropylbenzene	16.62	105	150490	5.0295	ug/L	96
79)	1,1,2,2-Tetrachloroethane	16.88	83	29598	4.8565	ug/L	100
81)	1,2,3-Trichloropropane	17.11	110	9483	5.2483	ug/L	91
82)	trans-1,4-Dichloro-2-Buten	17.18	53	10928	4.7426	ug/L	99
83)	n-Propylbenzene	17.22	91	181410	5.0279	ug/L	97
84)	Bromobenzene	17.34	156	37810	5.0153	ug/L	91
85)	1,3,5-Trimethylbenzene	17.44	105	126034	4.9837	ug/L	97
86)	2-Chlorotoluene	17.52	91	116508	4.7747	ug/L	100
87)	4-Chlorotoluene	17.58	91	120486	5.1793	ug/L	93
88)	a-Methylstyrene	17.92	118	58815	4.6239	ug/L	99
89)	tert-Butylbenzene	17.98	134	24935	4.9076	ug/L	64
90)	1,2,4-Trimethylbenzene	18.05	105	130919	5.0449	ug/L	98
91)	sec-Butylbenzene	18.30	105	151691	5.0108	ug/L	98
92)	p-Isopropyltoluene	18.50	119	129076	5.0032	ug/L	96
93)	1,3-Dichlorobenzene	18.70	146	73279	4.9385	ug/L	97
94)	1,4-Dichlorobenzene	18.85	146	73402	4.8928	ug/L	89
95)	n-Butylbenzene	19.12	91	126335	4.9935	ug/L	96
96)	1,2-Dichlorobenzene	19.43	146	69034	4.9553	ug/L	95
97)	1,2-Dibromo-3-Chloropropan	20.61	75	4890	4.0969	ug/L	84
98)	1,2,4-Trichlorobenzene	21.96	180	46999	4.7727	ug/L	99
99)	Hexachlorobutadiene	22.15	225	19578	4.7818	ug/L	97
100)	Naphthalene	22.39	128	98169	4.8780	ug/L	99
101)	1,2,3-Trichlorobenzene	22.75	180	44211	4.8487	ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140318.D Vial: 6
Acq On : 30 Jun 2016 14:12 Operator: TMB
Sample : WG574723-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:21 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

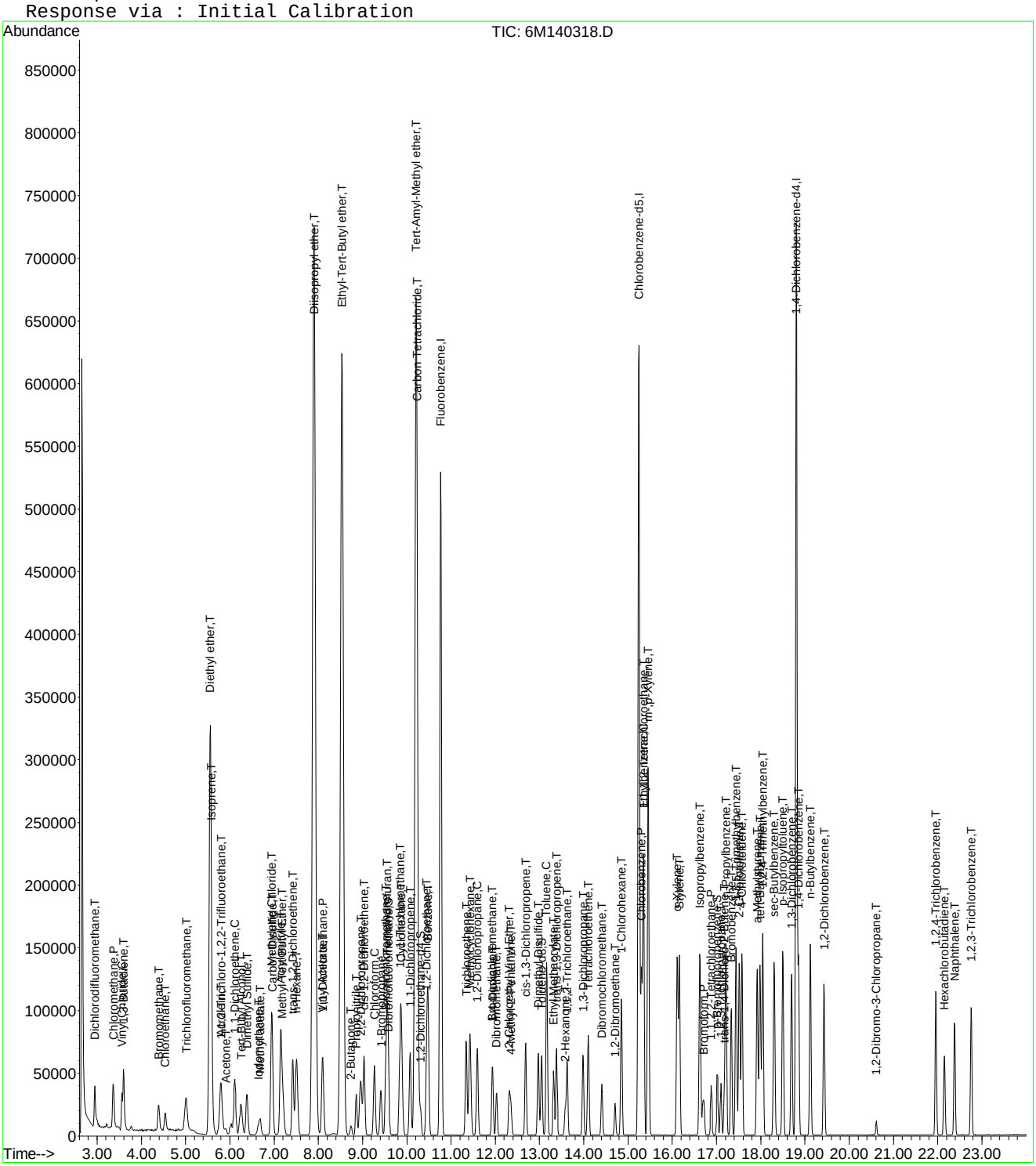

6M140318.D 8260WTR.M Fri Jul 01 14:21:32 2016 Page 3

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140318.D Vial: 6
Acq On : 30 Jun 2016 14:12 Operator: TMB
Sample : WG574723-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.3342	13.3	100	0.00
3	P	Chloromethane	5.0000	4.7839	4.3	100	0.00
4	C	Vinyl Chloride	5.0000	4.9063	1.9	100	0.00
5	T	1,3-Butadiene	5.0000	3.0943	38.1#	100	0.00
6	T	Bromomethane	5.0000	4.8868	2.3	100	0.02
7	T	Chloroethane	5.0000	4.7720	4.6	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.7547	4.9	100	0.02
9	T	Diethyl ether	50.0000	51.5928	-3.2	100	0.00
10	T	Isoprene	5.0000	4.7626	4.7	100	0.00
11	T	Acrolein	25.0000	24.8183	0.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.7420	5.2	100	0.02
13	T	Acetone	5.0000	5.3716	-7.4	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.7390	5.2	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	96.1048	3.9	100	-0.03
16	T	Dimethyl Sulfide	5.0000	4.7966	4.1	100	0.00
17	T	Iodomethane	5.0000	3.7502	25.0#	100	0.01
18	T	Methyl acetate	5.0000	5.0309	-0.6	100	0.00
19	T	Methylene Chloride	5.0000	4.8909	2.2	100	0.00
20	T	Carbon Disulfide	5.0000	4.8502	3.0	100	0.00
21	T	Acrylonitrile	25.0000	24.6331	1.5	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.9113	1.8	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.8519	3.0	100	0.00
24	T	n-Hexane	5.0000	5.0375	-0.7	100	0.00
25	T	Diisopropyl ether	50.0000	50.7719	-1.5	100	0.00
26	T	Vinyl Acetate	5.0000	4.7533	4.9	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.8804	2.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	50.5407	-1.1	100	0.00
29	T	2-Butanone	5.0000	4.8205	3.6	100	0.00
30	T	Propionitrile	50.0000	50.3332	-0.7	100	0.00
31	T	2,2-Dichloropropane	5.0000	5.0475	-0.9	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.8356	3.3	100	0.00
33	C	Chloroform	5.0000	4.7802	4.4	100	0.00
34		1-Bromopropane	5.0000	4.7391	5.2	100	0.01
35	T	Bromochloromethane	5.0000	5.0261	-0.5	100	0.00
36	T	Tetrahydrofuran	50.0000	48.8630	2.3	100	0.00
37	S	Dibromofluoromethane	2.5000	2.5471	-1.9	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.8581	2.8	100	0.00
39	T	Cyclohexane	5.0000	4.7228	5.5	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.8139	3.7	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	50.5598	-1.1	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.7344	5.3	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.5813	-3.3	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	T	1,2-Dichloroethane	5.0000	4.8012	4.0	100	0.00
46	T	Benzene	5.0000	4.9748	0.5	100	0.00
47	T	Trichloroethene	5.0000	4.9171	1.7	100	0.00
48	T	Methylcyclohexane	5.0000	4.8997	2.0	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.8802	2.4	100	0.00
50	T	1,4-Dioxane	100.0000	91.8036	8.2	100	0.00
51	T	Bromodichloromethane	5.0000	4.8463	3.1	100	0.00
52	T	Dibromomethane	5.0000	4.9173	1.7	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.4884	10.2	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.5774	8.5	100	0.00

(#) = Out of Range

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140318.D Vial: 6
Acq On : 30 Jun 2016 14:12 Operator: TMB
Sample : WG574723-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.8545	2.9	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.2526	14.9	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.6338	-5.4	100	0.00
59	C	Toluene	5.0000	4.8802	2.4	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.6708	6.6	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	5.0000	4.7775	4.4	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.9014	2.0	100	0.00
64	T	2-Hexanone	5.0000	4.5176	9.6	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.9096	1.8	100	0.00
66	T	Tetrachloroethene	5.0000	4.9436	1.1	100	0.00
67	T	Dibromochloromethane	5.0000	4.8067	3.9	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.8600	2.8	100	0.00
69	T	1-Chlorohexane	5.0000	4.7880	4.2	100	0.00
70	P	Chlorobenzene	5.0000	4.8834	2.3	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.8298	3.4	100	0.00
72	C	Ethylbenzene	5.0000	5.0011	-0.0	100	0.00
73	T	m-,p-Xylene	10.0000	10.0299	-0.3	100	-0.01
74	T	o-Xylene	5.0000	4.8970	2.1	100	-0.01
75	T	Styrene	5.0000	4.8681	2.6	100	0.00
76	P	Bromoform	5.0000	4.4099	11.8	100	0.00
77	T	Isopropylbenzene	5.0000	5.0295	-0.6	100	-0.01
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	-0.01
79	P	1,1,2,2-Tetrachloroethane	5.0000	4.8565	2.9	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.6052	-4.2	100	-0.01
81	T	1,2,3-Trichloropropane	5.0000	5.2483	-5.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.7426	5.1	100	0.00
83	T	n-Propylbenzene	5.0000	5.0279	-0.6	100	0.00
84	T	Bromobenzene	5.0000	5.0153	-0.3	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	4.9837	0.3	100	-0.01
86	T	2-Chlorotoluene	5.0000	4.7747	4.5	100	-0.01
87	T	4-Chlorotoluene	5.0000	5.1794	-3.6	100	-0.01
88	T	a-Methylstyrene	5.0000	4.6239	7.5	100	0.00
89	T	tert-Butylbenzene	5.0000	4.9076	1.8	100	-0.01
90	T	1,2,4-Trimethylbenzene	5.0000	5.0449	-0.9	100	-0.01
91	T	sec-Butylbenzene	5.0000	5.0108	-0.2	100	-0.01
92	T	p-Isopropyltoluene	5.0000	5.0032	-0.1	100	-0.01
93	T	1,3-Dichlorobenzene	5.0000	4.9385	1.2	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	4.8928	2.1	100	0.00
95	T	n-Butylbenzene	5.0000	4.9935	0.1	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	4.9553	0.9	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	4.0969	18.1	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.7727	4.5	100	-0.01
99	T	Hexachlorobutadiene	5.0000	4.7818	4.4	100	0.00
100	T	Naphthalene	5.0000	4.8780	2.4	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.8487	3.0	100	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140318.D 8260WTR.M Fri Jul 01 14:36:23 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140319.D Vial: 7
Acq On : 30 Jun 2016 14:44 Operator: TMB
Sample : WG574723-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:33 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	668919	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	478690	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	258443	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	70098	10.3290 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 41.32%#		
43) 1,2-Dichloroethane-d4	10.31	65	89020	10.3908 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 41.56%#		
58) Toluene-d8	13.04	98	243575	10.3332 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 41.32%#		
80) p-Bromofluorobenzene	17.01	95	104612	10.3355 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 41.36%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	240030	21.4659 ug/L	100
3) Chloromethane	3.37	50	274164	21.9607 ug/L	99
4) Vinyl Chloride	3.56	62	134656	19.6412 ug/L	99
5) 1,3-Butadiene	3.60	54	109113	26.0590 ug/L	94
6) Bromomethane	4.39	94	95323	20.9234 ug/L	99
7) Chloroethane	4.54	64	90881	20.9793 ug/L	97
8) Trichlorofluoromethane	5.00	101	210753	20.1557 ug/L	99
9) Diethyl ether	5.55	59	494080	80.0844 ug/L	96
10) Isoprene	5.58	67	199958	21.4269 ug/L	96
11) Acrolein	5.79	56	40308	39.2789 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	131653	20.2365 ug/L	96
13) Acetone	5.89	43	44542	20.7841 ug/L	99
14) 1,1-Dichloroethene	6.11	61	254255	20.1429 ug/L	95
15) Tert-Butyl Alcohol	6.25	59	101804	155.3480 ug/L	98
16) Dimethyl Sulfide	6.39	62	115970	21.0658 ug/L	96
17) Iodomethane	6.65	142	79774	18.0326 ug/L	94
18) Methyl acetate	6.69	43	119945	20.6831 ug/L	98
19) Methylene Chloride	6.93	84	145226	20.0632 ug/L	90
20) Carbon Disulfide	6.97	76	495098	21.4053 ug/L	100
21) Acrylonitrile	7.15	53	104807	39.3874 ug/L	95
22) Methyl Tert Butyl Ether	7.18	73	394607	20.5667 ug/L	100
23) trans-1,2-Dichloroethene	7.42	96	135387	20.0268 ug/L	87
24) n-Hexane	7.51	57	243963	21.2635 ug/L	99
25) Diisopropyl ether	7.89	45	2475744	80.1704 ug/L	98
26) Vinyl Acetate	8.09	43	239974	18.6153 ug/L	97
27) 1,1-Dichloroethane	8.10	63	295851	20.3263 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	1992124	80.1862 ug/L	98
29) 2-Butanone	8.73	43	66102	20.1493 ug/L	96
30) Propionitrile	8.85	54	71515	80.3272 ug/L	99
31) 2,2-Dichloropropane	8.96	77	220142	20.0476 ug/L	98
32) cis-1,2-Dichloroethene	9.03	96	149673	20.2260 ug/L	73
33) Chloroform	9.26	83	260745	19.9968 ug/L	99
34) 1-Bromopropane	9.42	122	23773	20.6056 ug/L	99
35) Bromochloromethane	9.52	130	82689	20.7938 ug/L	100
36) Tetrahydrofuran	9.56	42	173501	75.8239 ug/L	94
38) 1,1,1-Trichloroethane	9.86	97	230314	20.2881 ug/L	98
39) Cyclohexane	9.88	56	309021	20.9230 ug/L	96
40) 1,1-Dichloropropene	10.08	75	198240	20.0489 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	1504867	79.7712 ug/L	98
42) Carbon Tetrachloride	10.23	117	197807	21.2209 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140319.D 8260WTR.M Fri Jul 01 14:21:37 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140319.D Vial: 7
Acq On : 30 Jun 2016 14:44 Operator: TMB
Sample : WG574723-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:33 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	213475	20.4192 ug/L	98
46)	Benzene	10.48	78	563224	20.1824 ug/L	97
47)	Trichloroethene	11.35	130	140565	20.4123 ug/L	91
48)	Methylcyclohexane	11.43	83	229029	21.1847 ug/L	95
49)	1,2-Dichloropropane	11.59	63	163803	20.3822 ug/L	99
50)	1,4-Dioxane	11.94	88	8245	151.5521 ug/L	87
51)	Bromodichloromethane	11.94	83	198529	20.4731 ug/L	99
52)	Dibromomethane	12.02	93	81976	21.0826 ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.31	63	84440	20.9563 ug/L	100
54)	4-Methyl-2-Pentanone	12.35	58	50113	20.2084 ug/L	98
55)	cis-1,3-Dichloropropene	12.68	75	230873	20.5069 ug/L	99
56)	Dimethyl Disulfide	12.97	79	127875	20.4039 ug/L	99
59)	Toluene	13.15	91	575595	20.1756 ug/L	100
60)	Ethyl Methacrylate	13.32	69	174096	21.4487 ug/L	95
62)	trans-1,3-Dichloropropene	13.39	75	209635	20.6648 ug/L	96
63)	1,1,2-Trichloroethane	13.62	97	109279	20.6980 ug/L	99
64)	2-Hexanone	13.58	43	101714	20.2903 ug/L	96
65)	1,3-Dichloropropane	13.99	76	199227	20.0217 ug/L	94
66)	Tetrachloroethene	14.10	166	135754	19.9678 ug/L	93
67)	Dibromochloromethane	14.41	129	135289	21.1051 ug/L	100
68)	1,2-Dibromoethane	14.71	107	105892	20.7786 ug/L	100
69)	1-Chlorohexane	14.85	91	199253	20.9862 ug/L	90
70)	Chlorobenzene	15.30	112	368915	20.1622 ug/L	92
71)	1,1,1,2-Tetrachloroethane	15.35	131	134691	20.6882 ug/L	97
72)	Ethylbenzene	15.35	106	198149	20.6895 ug/L	94
73)	m-,p-Xylene	15.45	106	479614	41.4358 ug/L	94
74)	o-Xylene	16.10	106	239170	20.7178 ug/L	94
75)	Styrene	16.16	104	410666	21.1448 ug/L	94
76)	Bromoform	16.71	173	82284	20.7000 ug/L	97
77)	Isopropylbenzene	16.62	105	620142	20.5887 ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.88	83	128022	20.4105 ug/L	99
81)	1,2,3-Trichloropropane	17.11	110	39329	21.1491 ug/L	80
82)	trans-1,4-Dichloro-2-Buten	17.18	53	50449	21.2733 ug/L	99
83)	n-Propylbenzene	17.22	91	763535	20.5616 ug/L	97
84)	Bromobenzene	17.34	156	157241	20.2655 ug/L	90
85)	1,3,5-Trimethylbenzene	17.44	105	534922	20.5522 ug/L	97
86)	2-Chlorotoluene	17.52	91	480540	19.1348 ug/L	100
87)	4-Chlorotoluene	17.58	91	506904	21.1723 ug/L	93
88)	a-Methylstyrene	17.92	118	283013	21.6190 ug/L	99
89)	tert-Butylbenzene	17.98	134	108977	20.8400 ug/L	73
90)	1,2,4-Trimethylbenzene	18.04	105	555658	20.8047 ug/L	98
91)	sec-Butylbenzene	18.30	105	646673	20.7557 ug/L	97
92)	p-Isopropyltoluene	18.50	119	553560	20.8482 ug/L	98
93)	1,3-Dichlorobenzene	18.70	146	308829	20.2225 ug/L	96
94)	1,4-Dichlorobenzene	18.85	146	309174	20.0243 ug/L	95
95)	n-Butylbenzene	19.12	91	539602	20.7232 ug/L	96
96)	1,2-Dichlorobenzene	19.43	146	290193	20.2396 ug/L	95
97)	1,2-Dibromo-3-Chloropropan	20.61	75	25172	20.4911 ug/L	84
98)	1,2,4-Trichlorobenzene	21.96	180	206634	20.3883 ug/L	99
99)	Hexachlorobutadiene	22.15	225	84200	19.9820 ug/L	100
100)	Naphthalene	22.38	128	449397	21.6970 ug/L	99
101)	1,2,3-Trichlorobenzene	22.75	180	193555	20.6254 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140319.D 8260WTR.M Fri Jul 01 14:21:38 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140319.D Vial: 7
Acq On : 30 Jun 2016 14:44 Operator: TMB
Sample : WG574723-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:21 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

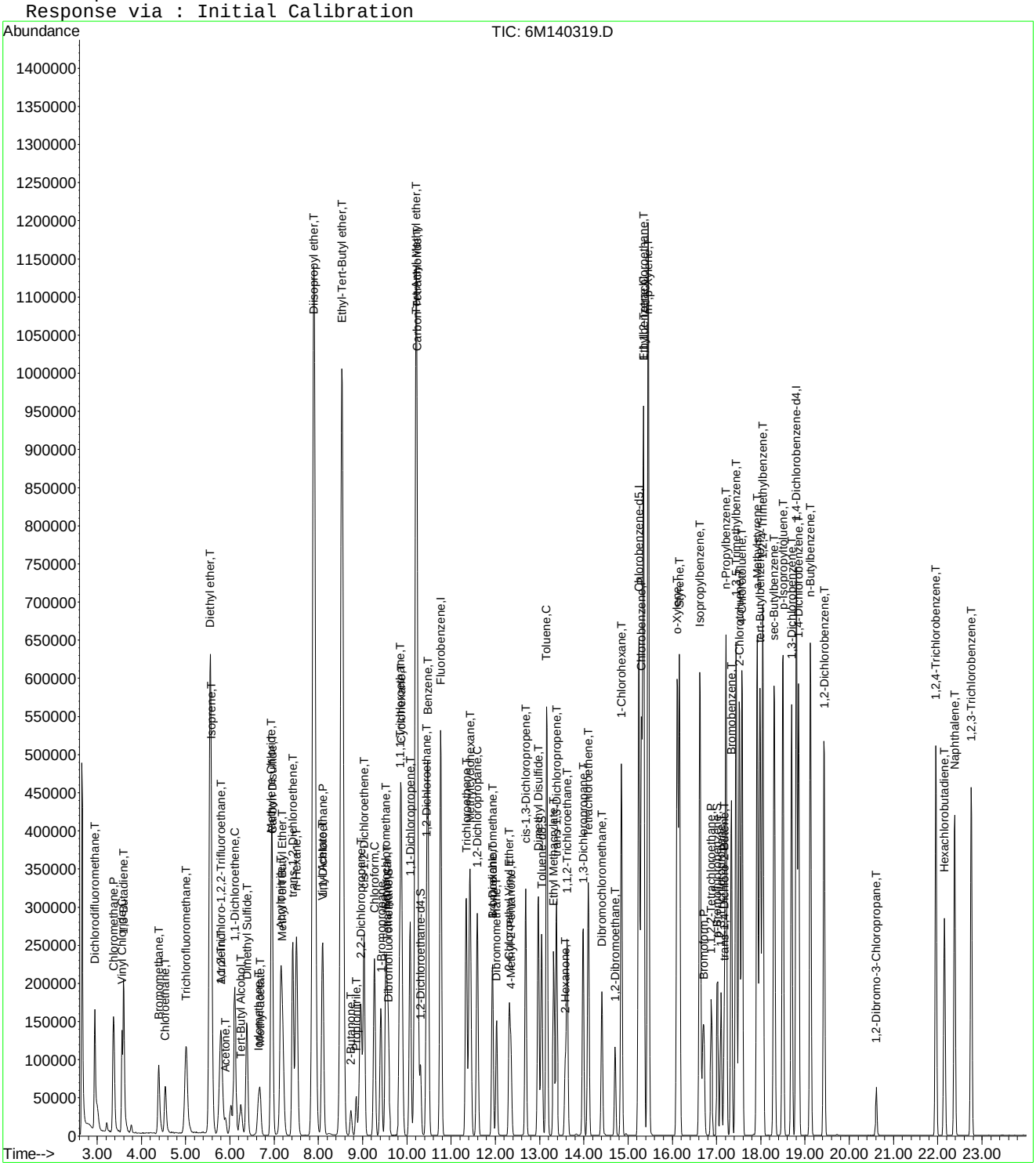

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140320.D Vial: 8
Acq On : 30 Jun 2016 15:16 Operator: TMB
Sample : WG574723-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:42 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	665194	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	476977	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	264882	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	171183	25.3652 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.48%		
43) 1,2-Dichloroethane-d4	10.31	65	211795	24.8600 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.44%		
58) Toluene-d8	13.04	98	584965	24.9051 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.64%		
80) p-Bromofluorobenzene	17.02	95	257496	24.8219 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.28%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	582153	52.3535 ug/L	99
3) Chloromethane	3.37	50	615809	49.6030 ug/L	100
4) Vinyl Chloride	3.56	62	346419	50.8123 ug/L	99
5) 1,3-Butadiene	3.59	54	204917	52.0480 ug/L	96
6) Bromomethane	4.39	94	214126	47.2638 ug/L	99
7) Chloroethane	4.53	64	215766	50.0871 ug/L	96
8) Trichlorofluoromethane	5.00	101	495602	47.6630 ug/L	100
9) Diethyl ether	5.56	59	630517	102.7715 ug/L	96
10) Isoprene	5.58	67	475494	51.2378 ug/L	96
11) Acrolein	5.79	56	50160	49.1531 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.80	101	318041	49.1602 ug/L	97
13) Acetone	5.90	43	105863	49.6741 ug/L	100
14) 1,1-Dichloroethene	6.11	61	623813	49.6972 ug/L	94
15) Tert-Butyl Alcohol	6.26	59	129177	198.2217 ug/L	99
16) Dimethyl Sulfide	6.39	62	276319	50.4741 ug/L	95
17) Iodomethane	6.65	142	239373	52.6044 ug/L	93
18) Methyl acetate	6.69	43	285035	49.4262 ug/L	98
19) Methylene Chloride	6.94	84	347634	48.2950 ug/L	88
20) Carbon Disulfide	6.96	76	1155252	50.2265 ug/L	100
21) Acrylonitrile	7.15	53	135608	51.2481 ug/L	98
22) Methyl Tert Butyl Ether	7.18	73	953213	49.9591 ug/L	100
23) trans-1,2-Dichloroethene	7.42	96	333111	49.5507 ug/L	89
24) n-Hexane	7.51	57	564061	49.4381 ug/L	98
25) Diisopropyl ether	7.90	45	3068443	99.9198 ug/L	98
26) Vinyl Acetate	8.09	43	646413	50.4243 ug/L	98
27) 1,1-Dichloroethane	8.10	63	718876	49.6666 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	2470202	99.9864 ug/L	98
29) 2-Butanone	8.73	43	166904	51.1609 ug/L	95
30) Propionitrile	8.85	54	90037	101.6978 ug/L	100
31) 2,2-Dichloropropane	8.96	77	533000	48.8104 ug/L	100
32) cis-1,2-Dichloroethene	9.03	96	368400	50.0623 ug/L	73
33) Chloroform	9.26	83	633467	48.8534 ug/L	99
34) 1-Bromopropane	9.42	122	59330	50.9944 ug/L	99
35) Bromochloromethane	9.52	130	203288	51.4071 ug/L	99
36) Tetrahydrofuran	9.56	42	216772	95.2648 ug/L	94
38) 1,1,1-Trichloroethane	9.85	97	572724	50.7331 ug/L	99
39) Cyclohexane	9.87	56	723056	49.2305 ug/L	96
40) 1,1-Dichloropropene	10.08	75	488493	49.6802 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	1883625	100.4078 ug/L	98
42) Carbon Tetrachloride	10.23	117	502186	54.1766 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140320.D 8260WTR.M Fri Jul 01 14:21:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140320.D Vial: 8
Acq On : 30 Jun 2016 15:16 Operator: TMB
Sample : WG574723-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:42 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	522936	50.2998 ug/L	99
46)	Benzene	10.48	78	1376892	49.6154 ug/L	97
47)	Trichloroethene	11.35	130	341168	49.8206 ug/L	91
48)	Methylcyclohexane	11.43	83	532584	49.5388 ug/L	95
49)	1,2-Dichloropropane	11.59	63	402187	50.3249 ug/L	99
50)	1,4-Dioxane	11.94	88	11316	209.1652 ug/L	91
51)	Bromodichloromethane	11.94	83	499306	51.7788 ug/L	99
52)	Dibromomethane	12.03	93	200679	51.8998 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.32	63	214371	53.5004 ug/L	99
54)	4-Methyl-2-Pentanone	12.35	58	126993	51.4974 ug/L	97
55)	cis-1,3-Dichloropropene	12.68	75	576590	51.5014 ug/L	99
56)	Dimethyl Disulfide	12.97	79	322099	51.6823 ug/L	98
59)	Toluene	13.15	91	1399906	49.2452 ug/L	99
60)	Ethyl Methacrylate	13.32	69	422208	52.2030 ug/L	95
62)	trans-1,3-Dichloropropene	13.39	75	522454	51.6858 ug/L	96
63)	1,1,2-Trichloroethane	13.63	97	267159	50.7830 ug/L	98
64)	2-Hexanone	13.58	43	256820	51.4155 ug/L	96
65)	1,3-Dichloropropane	13.99	76	494920	49.9167 ug/L	94
66)	Tetrachloroethene	14.10	166	336402	49.6585 ug/L	94
67)	Dibromochloromethane	14.41	129	343402	53.7632 ug/L	100
68)	1,2-Dibromoethane	14.70	107	261585	51.5137 ug/L	100
69)	1-Chlorohexane	14.85	91	477655	50.4894 ug/L	92
70)	Chlorobenzene	15.30	112	903124	49.5353 ug/L	93
71)	1,1,1,2-Tetrachloroethane	15.35	131	337691	52.0547 ug/L	98
72)	Ethylbenzene	15.35	106	484831	50.8048 ug/L	94
73)	m-,p-Xylene	15.46	106	1167250	101.2056 ug/L	95
74)	o-Xylene	16.11	106	590057	51.2966 ug/L	94
75)	Styrene	16.15	104	1015963	52.4987 ug/L	92
76)	Bromoform	16.72	173	210299	53.0943 ug/L	98
77)	Isopropylbenzene	16.62	105	1525364	50.8239 ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.88	83	326482	50.7855 ug/L	100
81)	1,2,3-Trichloropropane	17.10	110	98816	51.8463 ug/L	83
82)	trans-1,4-Dichloro-2-Buten	17.18	53	129320	53.2061 ug/L	97
83)	n-Propylbenzene	17.22	91	1885010	49.5285 ug/L	98
84)	Bromobenzene	17.34	156	390005	49.0426 ug/L	89
85)	1,3,5-Trimethylbenzene	17.44	105	1335066	50.0475 ug/L	97
86)	2-Chlorotoluene	17.52	91	1274044	49.4983 ug/L	96
87)	4-Chlorotoluene	17.58	91	1171374	47.7365 ug/L	96
88)	a-Methylstyrene	17.92	118	690404	51.4571 ug/L	95
89)	tert-Butylbenzene	17.98	134	265842	49.6018 ug/L	70
90)	1,2,4-Trimethylbenzene	18.04	105	1381292	50.4604 ug/L	98
91)	sec-Butylbenzene	18.31	105	1599719	50.0966 ug/L	98
92)	p-Isopropyltoluene	18.50	119	1372031	50.4173 ug/L	98
93)	1,3-Dichlorobenzene	18.70	146	767298	49.0222 ug/L	95
94)	1,4-Dichlorobenzene	18.85	146	768779	48.5813 ug/L	95
95)	n-Butylbenzene	19.12	91	1348420	50.5266 ug/L	97
96)	1,2-Dichlorobenzene	19.43	146	726470	49.4362 ug/L	95
97)	1,2-Dibromo-3-Chloropropan	20.62	75	64455	51.1937 ug/L	86
98)	1,2,4-Trichlorobenzene	21.97	180	516677	49.7405 ug/L	99
99)	Hexachlorobutadiene	22.16	225	213166	49.3581 ug/L	100
100)	Naphthalene	22.38	128	1126213	53.0520 ug/L	100
101)	1,2,3-Trichlorobenzene	22.76	180	479054	49.8076 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140320.D 8260WTR.M Fri Jul 01 14:21:46 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140320.D Vial: 8
Acq On : 30 Jun 2016 15:16 Operator: TMB
Sample : WG574723-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:21 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

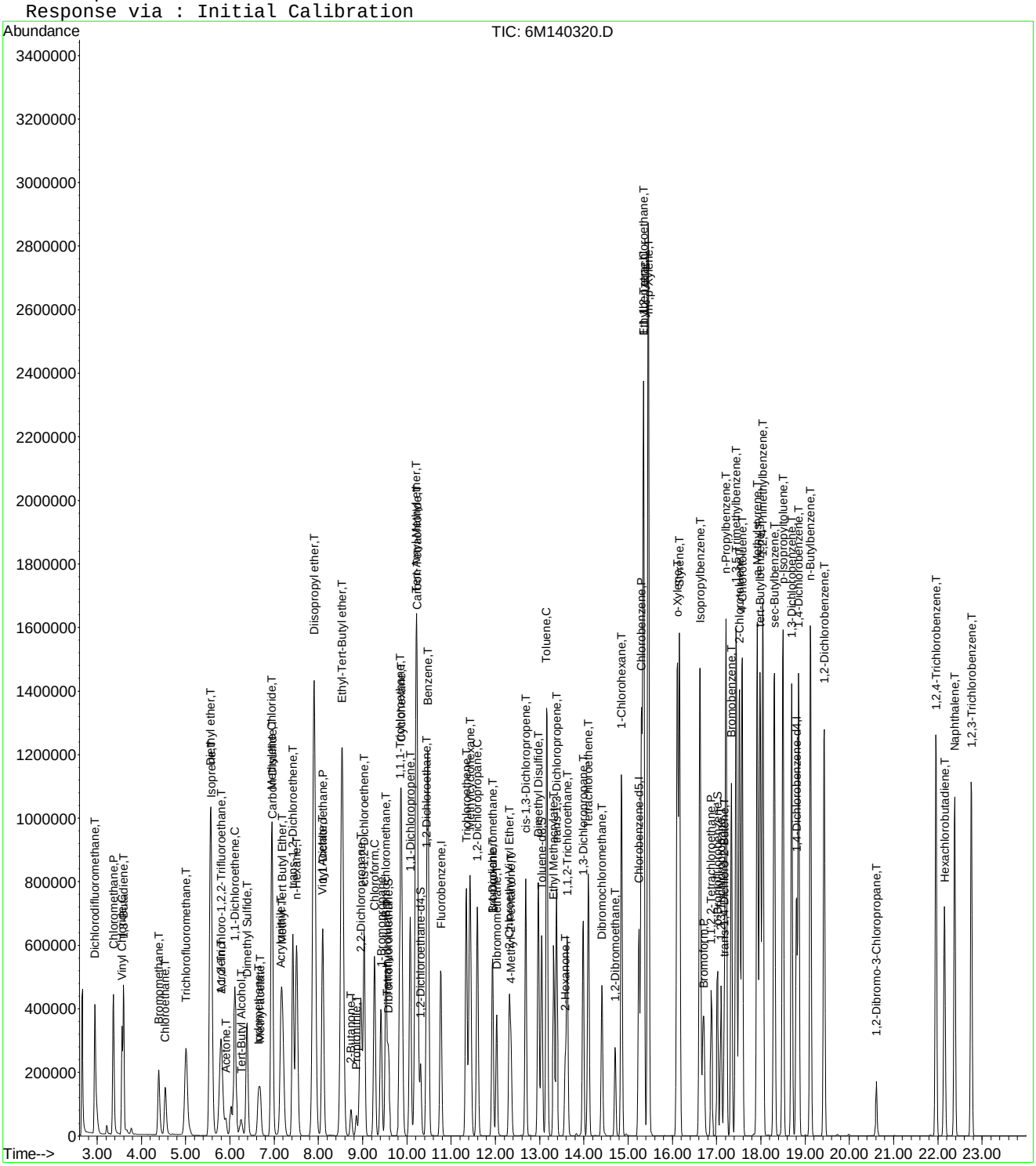

6M140320.D 8260WTR.M Fri Jul 01 14:21:49 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140321.D Vial: 9
Acq On : 30 Jun 2016 15:48 Operator: TMB
Sample : WG574723-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:51 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	646485	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	471613	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	268377	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	322733	49.2052 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 196.84%#		
43) 1,2-Dichloroethane-d4	10.31	65	408267	49.3082 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 197.24%#		
58) Toluene-d8	13.04	98	1099687	47.3521 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 189.40%#		
80) p-Bromofluorobenzene	17.02	95	500608	47.6287 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 190.52%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	1195098	110.5865 ug/L	100
3) Chloromethane	3.37	50	1126306	93.3487 ug/L	100
4) Vinyl Chloride	3.56	62	690730	104.2475 ug/L	100
5) 1,3-Butadiene	3.59	54	397047	106.9364 ug/L	97
6) Bromomethane	4.38	94	423232	96.1231 ug/L	100
7) Chloroethane	4.53	64	421078	100.5763 ug/L	96
8) Trichlorofluoromethane	5.00	101	1039911	102.9045 ug/L	99
9) Diethyl ether	5.56	59	1210825	203.0707 ug/L	96
10) Isoprene	5.57	67	926995	102.7810 ug/L	96
11) Acrolein	5.79	56	100610	101.4435 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	644973	102.5798 ug/L	97
13) Acetone	5.90	43	202374	97.7080 ug/L	98
14) 1,1-Dichloroethene	6.11	61	1233915	101.1469 ug/L	94
15) Tert-Butyl Alcohol	6.26	59	264298	417.3014 ug/L	98
16) Dimethyl Sulfide	6.39	62	533770	100.3234 ug/L	95
17) Iodomethane	6.65	142	485581	108.8245 ug/L	92
18) Methyl acetate	6.69	43	562111	100.2930 ug/L	98
19) Methylene Chloride	6.94	84	680086	97.2151 ug/L	90
20) Carbon Disulfide	6.96	76	2214357	99.0589 ug/L	100
21) Acrylonitrile	7.15	53	269273	104.7069 ug/L	97
22) Methyl Tert Butyl Ether	7.18	73	1885141	101.6619 ug/L	99
23) trans-1,2-Dichloroethene	7.42	96	659412	100.9269 ug/L	89
24) n-Hexane	7.51	57	1100352	99.2333 ug/L	97
25) Diisopropyl ether	7.90	45	5806079	194.5388 ug/L	99
26) Vinyl Acetate	8.09	43	1275603	102.3848 ug/L	98
27) 1,1-Dichloroethane	8.10	63	1407131	100.0311 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	4736533	197.2691 ug/L	99
29) 2-Butanone	8.73	43	329619	103.9617 ug/L	96
30) Propionitrile	8.85	54	180672	209.9768 ug/L	99
31) 2,2-Dichloropropane	8.96	77	1063724	100.2315 ug/L	99
32) cis-1,2-Dichloroethene	9.03	96	723748	101.1973 ug/L	73
33) Chloroform	9.26	83	1245839	98.8604 ug/L	99
34) 1-Bromopropane	9.42	122	114449	100.7473 ug/L	100
35) Bromochloromethane	9.52	130	399705	104.0018 ug/L	100
36) Tetrahydrofuran	9.56	42	431461	195.1016 ug/L	95
38) 1,1,1-Trichloroethane	9.85	97	1132312	103.2053 ug/L	98
39) Cyclohexane	9.87	56	1422141	99.6310 ug/L	96
40) 1,1-Dichloropropene	10.08	75	970489	101.5559 ug/L	98
41) Tert-Amyl-Methyl ether	10.22	73	3648605	200.1197 ug/L	98
42) Carbon Tetrachloride	10.23	117	1008047	111.8968 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140321.D 8260WTR.M Fri Jul 01 14:21:54 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140321.D Vial: 9
Acq On : 30 Jun 2016 15:48 Operator: TMB
Sample : WG574723-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:51 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	1026377	101.5814 ug/L	99
46)	Benzene	10.48	78	2663898	98.7698 ug/L	96
47)	Trichloroethene	11.35	130	659415	99.0807 ug/L	89
48)	Methylcyclohexane	11.43	83	1057163	101.1788 ug/L	95
49)	1,2-Dichloropropane	11.59	63	787420	101.3798 ug/L	97
50)	1,4-Dioxane	11.94	88	22910	435.7239 ug/L	83
51)	Bromodichloromethane	11.94	83	998026	106.4921 ug/L	100
52)	Dibromomethane	12.03	93	402229	107.0352 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.32	63	414426	106.4211 ug/L	99
54)	4-Methyl-2-Pentanone	12.35	58	253505	105.7748 ug/L	99
55)	cis-1,3-Dichloropropene	12.68	75	1145435	105.2719 ug/L	99
56)	Dimethyl Disulfide	12.97	79	637376	105.2297 ug/L	98
59)	Toluene	13.16	91	2716275	96.6387 ug/L	99
60)	Ethyl Methacrylate	13.32	69	835175	104.4378 ug/L	95
62)	trans-1,3-Dichloropropene	13.39	75	1039244	103.9807 ug/L	96
63)	1,1,2-Trichloroethane	13.63	97	530894	102.0629 ug/L	98
64)	2-Hexanone	13.58	43	511940	103.6564 ug/L	98
65)	1,3-Dichloropropane	13.99	76	975019	99.4570 ug/L	94
66)	Tetrachloroethene	14.10	166	663843	99.1087 ug/L	93
67)	Dibromochloromethane	14.41	129	698275	110.5657 ug/L	100
68)	1,2-Dibromoethane	14.70	107	530245	105.6082 ug/L	100
69)	1-Chlorohexane	14.86	91	934249	99.8757 ug/L	91
70)	Chlorobenzene	15.30	112	1757753	97.5073 ug/L	90
71)	1,1,1,2-Tetrachloroethane	15.35	131	672232	104.8024 ug/L	97
72)	Ethylbenzene	15.35	106	960737	101.8195 ug/L	96
73)	m-,p-Xylene	15.46	106	2273350	199.3511 ug/L	96
74)	o-Xylene	16.11	106	1166695	102.5802 ug/L	94
75)	Styrene	16.15	104	2021937	105.6696 ug/L	91
76)	Bromoform	16.72	173	442224	112.9184 ug/L	98
77)	Isopropylbenzene	16.62	105	3022582	101.8554 ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.88	83	699051	107.3240 ug/L	100
81)	1,2,3-Trichloropropane	17.10	110	204344	105.8180 ug/L	81
82)	trans-1,4-Dichloro-2-Buten	17.18	53	271253	110.1481 ug/L	96
83)	n-Propylbenzene	17.22	91	3780776	98.0459 ug/L	98
84)	Bromobenzene	17.34	156	791175	98.1936 ug/L	89
85)	1,3,5-Trimethylbenzene	17.44	105	2708977	100.2286 ug/L	97
86)	2-Chlorotoluene	17.52	91	2557008	98.0494 ug/L	97
87)	4-Chlorotoluene	17.58	91	2386130	95.9746 ug/L	97
88)	a-Methylstyrene	17.92	118	1396050	102.6951 ug/L	95
89)	tert-Butylbenzene	17.99	134	544776	100.3227 ug/L	72
90)	1,2,4-Trimethylbenzene	18.04	105	2808112	101.2481 ug/L	99
91)	sec-Butylbenzene	18.31	105	3235910	100.0157 ug/L	98
92)	p-Isopropyltoluene	18.50	119	2792332	101.2720 ug/L	98
93)	1,3-Dichlorobenzene	18.70	146	1561532	98.4661 ug/L	94
94)	1,4-Dichlorobenzene	18.86	146	1567098	97.7396 ug/L	94
95)	n-Butylbenzene	19.12	91	2754111	101.8553 ug/L	97
96)	1,2-Dichlorobenzene	19.43	146	1483394	99.6302 ug/L	93
97)	1,2-Dibromo-3-Chloropropan	20.62	75	143837	112.7555 ug/L	86
98)	1,2,4-Trichlorobenzene	21.97	180	1060844	100.7975 ug/L	98
99)	Hexachlorobutadiene	22.15	225	438054	100.1094 ug/L	100
100)	Naphthalene	22.38	128	2317282	107.7376 ug/L	99
101)	1,2,3-Trichlorobenzene	22.76	180	982434	100.8141 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140321.D Vial: 9
Acq On : 30 Jun 2016 15:48 Operator: TMB
Sample : WG574723-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:21 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

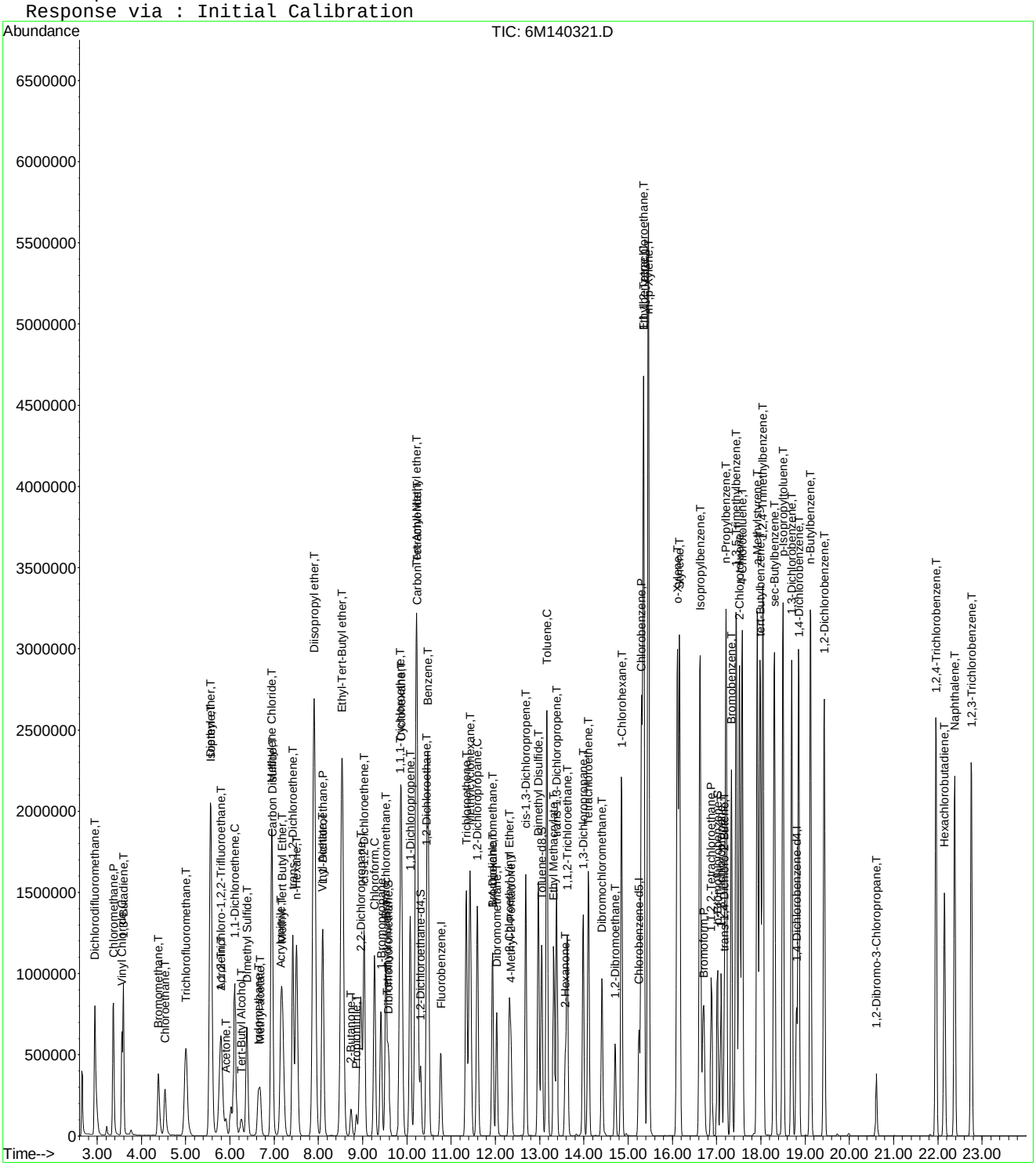

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140322.D Vial: 10
Acq On : 30 Jun 2016 16:21 Operator: TMB
Sample : WG574723-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:59 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	674210	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	486785	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	271900	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	671839	98.2191 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 392.88%#		
43) 1,2-Dichloroethane-d4	10.31	65	835948	96.8094 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 387.24%#		
58) Toluene-d8	13.04	98	2262915	94.4033 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 377.60%#		
80) p-Bromofluorobenzene	17.02	95	1044558	98.0934 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 392.36%#		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	2.95	85	2392226	212.2580 ug/L	100
3) Chloromethane	3.37	50	2218722	176.3266 ug/L	100
4) Vinyl Chloride	3.56	62	1383750	200.2527 ug/L	99
5) 1,3-Butadiene	3.59	54	790286	206.9928 ug/L	97
6) Bromomethane	4.38	94	916596	199.6138 ug/L	100
7) Chloroethane	4.53	64	905382	207.3615 ug/L	96
8) Trichlorofluoromethane	5.00	101	2065931	196.0277 ug/L	99
10) Isoprene	5.57	67	1944884	206.7723 ug/L	96
11) Acrolein	5.78	56	1541	1.4899 ug/L	69
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	1336247	203.7841 ug/L	97
13) Acetone	5.90	43	421648	195.2041 ug/L	99
14) 1,1-Dichloroethene	6.11	61	2551648	200.5632 ug/L	94
15) Tert-Butyl Alcohol	6.28	59	3198	4.8417 ug/L #	57
16) Dimethyl Sulfide	6.38	62	1109294	199.9208 ug/L	95
17) Iodomethane	6.65	142	972879	208.2422 ug/L	92
18) Methyl acetate	6.69	43	1135963	194.3462 ug/L	99
19) Methylene Chloride	6.94	84	1372201	188.0837 ug/L	89
20) Carbon Disulfide	6.96	76	4495945	192.8546 ug/L	99
21) Acrylonitrile	7.18	53	44700	16.6668 ug/L #	33
22) Methyl Tert Butyl Ether	7.18	73	3851369	199.1557 ug/L	99
23) trans-1,2-Dichloroethene	7.42	96	1353415	198.6299 ug/L	88
24) n-Hexane	7.51	57	2284673	197.5664 ug/L	97
26) Vinyl Acetate	8.09	43	2820141	217.0472 ug/L	98
27) 1,1-Dichloroethane	8.10	63	2873257	195.8566 ug/L	99
28) Ethyl-Tert-Butyl ether	8.56	59	6764	0.2701 ug/L #	47
29) 2-Butanone	8.73	43	664492	200.9620 ug/L	97
30) Propionitrile	8.74	54	1576	1.7563 ug/L #	81
31) 2,2-Dichloropropane	8.96	77	2196313	198.4415 ug/L	98
32) cis-1,2-Dichloroethene	9.03	96	1477699	198.1211 ug/L	88
33) Chloroform	9.26	83	2557143	194.5712 ug/L	99
34) 1-Bromopropane	9.41	122	241562	203.4107 ug/L	99
35) Bromochloromethane	9.52	130	819022	204.3432 ug/L	99
36) Tetrahydrofuran	9.56	42	4224	1.8315 ug/L #	75
38) 1,1,1-Trichloroethane	9.85	97	2330454	203.6760 ug/L	98
39) Cyclohexane	9.87	56	2930205	196.8399 ug/L	96
40) 1,1-Dichloropropene	10.08	75	2009314	201.6162 ug/L	98
42) Carbon Tetrachloride	10.23	117	2106944	224.2607 ug/L	99
45) 1,2-Dichloroethane	10.45	62	2101049	199.3915 ug/L	99
46) Benzene	10.48	78	5301493	188.4813 ug/L	94
47) Trichloroethene	11.34	130	1327069	191.1997 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M140322.D 8260WTR.M Fri Jul 01 14:22:03 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140322.D Vial: 10
Acq On : 30 Jun 2016 16:21 Operator: TMB
Sample : WG574723-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:59 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
48)	Methylcyclohexane	11.43	83	2178870	199.9595 ug/L	95
49)	1,2-Dichloropropane	11.59	63	1619228	199.9016 ug/L	98
50)	1,4-Dioxane	11.93	88	2818	51.3914 ug/L #	14
51)	Bromodichloromethane	11.94	83	2039115	208.6317 ug/L	99
52)	Dibromomethane	12.03	93	816650	208.3783 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.31	63	836577	205.9918 ug/L	100
54)	4-Methyl-2-Pentanone	12.35	58	515506	206.2494 ug/L	98
55)	cis-1,3-Dichloropropene	12.68	75	2333363	205.6305 ug/L	99
56)	Dimethyl Disulfide	12.97	79	1322167	209.3111 ug/L	97
59)	Toluene	13.16	91	5329560	183.7033 ug/L	98
60)	Ethyl Methacrylate	13.32	69	1710374	207.2144 ug/L	96
62)	trans-1,3-Dichloropropene	13.39	75	2115027	205.0216 ug/L	96
63)	1,1,2-Trichloroethane	13.63	97	1065320	198.4215 ug/L	98
64)	2-Hexanone	13.58	43	1038924	203.8025 ug/L	98
65)	1,3-Dichloropropane	13.99	76	1956962	193.3985 ug/L	94
66)	Tetrachloroethene	14.11	166	1338320	193.5775 ug/L	92
67)	Dibromochloromethane	14.41	129	1402954	215.2216 ug/L	99
68)	1,2-Dibromoethane	14.70	107	1067268	205.9412 ug/L	100
69)	1-Chlorohexane	14.86	91	1899241	196.7097 ug/L	91
70)	Chlorobenzene	15.31	112	3420251	183.8172 ug/L	87
71)	1,1,1,2-Tetrachloroethane	15.35	131	1330581	200.9750 ug/L	97
72)	Ethylbenzene	15.35	106	1873240	192.3394 ug/L	99
73)	m-,p-Xylene	15.46	106	4310843	366.2377 ug/L	95
74)	o-Xylene	16.11	106	2276447	193.9154 ug/L	96
75)	Styrene	16.16	104	3942983	199.6439 ug/L	88
76)	Bromoform	16.72	173	900340	222.7294 ug/L	97
77)	Isopropylbenzene	16.62	105	5752842	187.8178 ug/L	100
79)	1,1,2,2-Tetrachloroethane	16.88	83	1421698	215.4425 ug/L	100
81)	1,2,3-Trichloropropane	17.10	110	415115	212.1790 ug/L	84
82)	trans-1,4-Dichloro-2-Buten	17.19	53	555836	222.7847 ug/L	92
83)	n-Propylbenzene	17.22	91	7011461	179.4705 ug/L	99
84)	Bromobenzene	17.34	156	1573131	192.7133 ug/L	88
85)	1,3,5-Trimethylbenzene	17.45	105	5208297	190.2034 ug/L	98
86)	2-Chlorotoluene	17.52	91	4893039	185.1943 ug/L	96
87)	4-Chlorotoluene	17.58	91	4739568	188.1643 ug/L	97
88)	a-Methylstyrene	17.92	118	2750894	199.7372 ug/L	94
89)	tert-Butylbenzene	17.99	134	1070344	194.5543 ug/L	74
90)	1,2,4-Trimethylbenzene	18.05	105	5338361	189.9838 ug/L	98
91)	sec-Butylbenzene	18.31	105	6128752	186.9735 ug/L	99
92)	p-Isopropyltoluene	18.50	119	5274399	188.8129 ug/L	100
93)	1,3-Dichlorobenzene	18.70	146	3017581	187.8153 ug/L	92
94)	1,4-Dichlorobenzene	18.86	146	3009321	185.2589 ug/L	92
95)	n-Butylbenzene	19.13	91	5193206	189.5718 ug/L	98
96)	1,2-Dichlorobenzene	19.43	146	2821487	187.0461 ug/L	91
97)	1,2-Dibromo-3-Chloropropan	20.62	75	291664	225.6764 ug/L	84
98)	1,2,4-Trichlorobenzene	21.96	180	2052522	192.4961 ug/L	98
99)	Hexachlorobutadiene	22.16	225	860118	194.0178 ug/L	100
100)	Naphthalene	22.38	128	4383238	201.1498 ug/L	99
101)	1,2,3-Trichlorobenzene	22.76	180	1893203	191.7570 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M140322.D 8260WTR.M Fri Jul 01 14:22:03 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140322.D Vial: 10
Acq On : 30 Jun 2016 16:21 Operator: TMB
Sample : WG574723-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:22 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

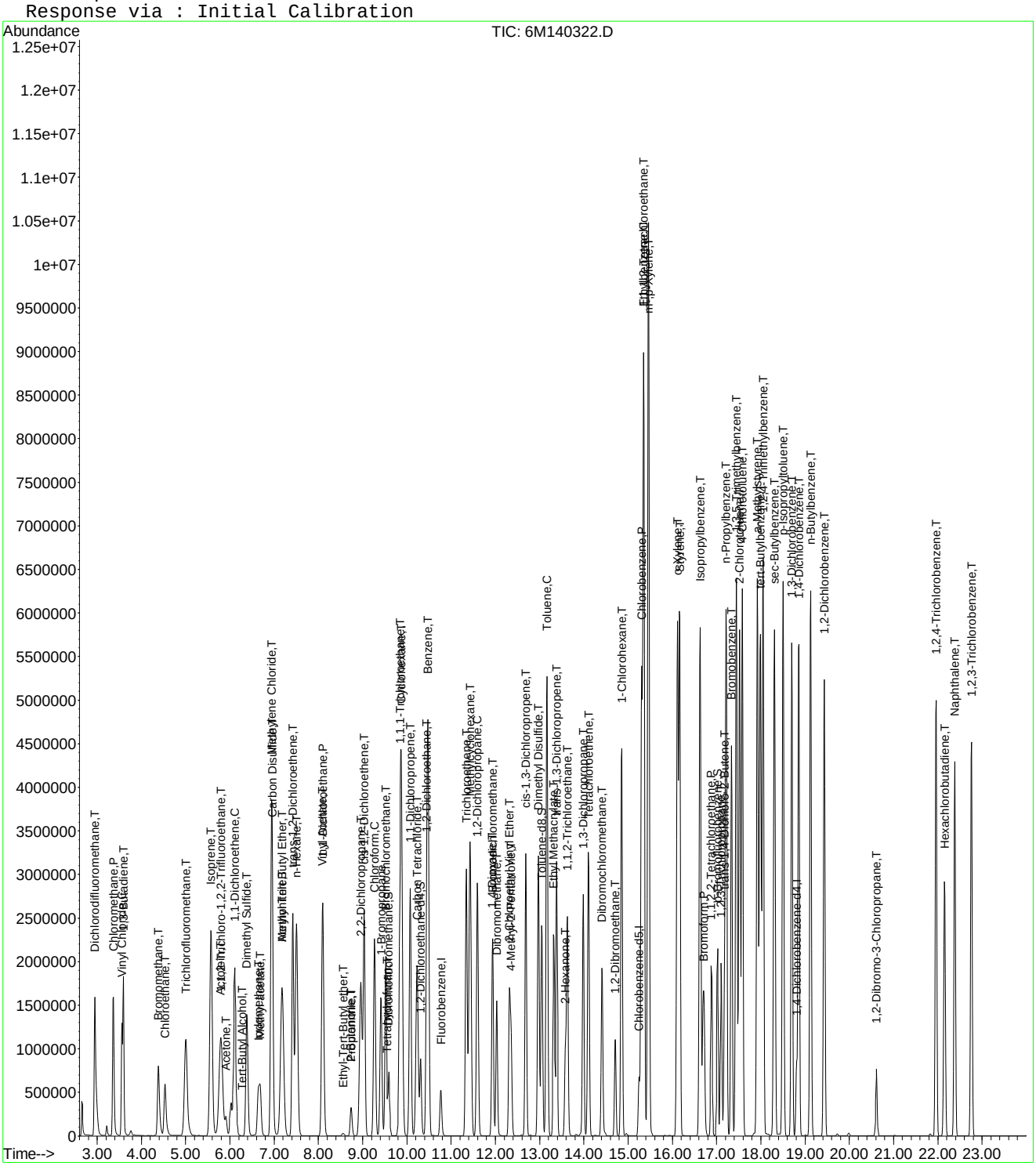

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140323.D Vial: 11
Acq On : 30 Jun 2016 16:53 Operator: TMB
Sample : WG574723-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:22:07 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	768752	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	513418	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	277427	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	1128188	144.6508 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 578.60%#		
43) 1,2-Dichloroethane-d4	10.31	65	1400537	142.2465 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 569.00%#		
58) Toluene-d8	13.04	98	3666921	145.0395 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 580.16%#		
80) p-Bromofluorobenzene	17.03	95	1580313	145.4490 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 581.80%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.94	85	3603130	280.3824 ug/L	99
3) Chloromethane	3.36	50	3514669	244.9674 ug/L	99
4) Vinyl Chloride	3.56	62	2074164	263.2526 ug/L	98
5) 1,3-Butadiene	3.59	54	1213545	279.8694 ug/L	97
6) Bromomethane	4.37	94	1474577	281.6365 ug/L	100
7) Chloroethane	4.53	64	1490836	299.4574 ug/L	96
8) Trichlorofluoromethane	5.00	101	3451196	287.1972 ug/L	99
9) Diethyl ether	5.55	59	1755505	247.5940 ug/L	97
10) Isoprene	5.57	67	2862617	266.9137 ug/L	94
11) Acrolein	5.79	56	179556	152.2492 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	5.78	101	2228863	298.1095 ug/L	97
13) Acetone	5.91	43	694471	281.9693 ug/L	98
14) 1,1-Dichloroethene	6.10	61	4231203	291.6778 ug/L	94
15) Tert-Butyl Alcohol	6.29	59	515078	683.9134 ug/L	92
16) Dimethyl Sulfide	6.39	62	1850710	292.5220 ug/L	96
17) Iodomethane	6.64	142	1511597	283.4374 ug/L	92
18) Methyl acetate	6.69	43	1992359	298.9430 ug/L	99
19) Methylene Chloride	6.94	84	2215285	266.3004 ug/L	89
20) Carbon Disulfide	6.96	76	7083320	266.4739 ug/L	98
21) Acrylonitrile	7.15	53	497546	162.7001 ug/L	96
22) Methyl Tert Butyl Ether	7.18	73	6401984	290.3361 ug/L	98
23) trans-1,2-Dichloroethene	7.42	96	2224367	286.3050 ug/L	87
24) n-Hexane	7.50	57	3799046	288.1194 ug/L	96
25) Diisopropyl ether	7.90	45	9759184	274.9849 ug/L	99
26) Vinyl Acetate	8.09	43	4448993	300.2991 ug/L	99
27) 1,1-Dichloroethane	8.10	63	4699381	280.9398 ug/L	99
28) Ethyl-Tert-Butyl ether	8.53	59	8098177	283.6338 ug/L	99
29) 2-Butanone	8.73	43	1086721	288.2380 ug/L	98
30) Propionitrile	8.86	54	298217	291.4641 ug/L	98
31) 2,2-Dichloropropane	8.95	77	3622985	287.0872 ug/L	98
32) cis-1,2-Dichloroethene	9.03	96	2417494	284.2622 ug/L	71
33) Chloroform	9.26	83	4185224	279.2874 ug/L	99
34) 1-Bromopropane	9.41	122	399109	294.5307 ug/L	100
35) Bromochloromethane	9.52	130	1339573	293.1163 ug/L	99
36) Tetrahydrofuran	9.56	42	723977	275.3063 ug/L	96
38) 1,1,1-Trichloroethane	9.85	97	3817009	292.5710 ug/L	97
39) Cyclohexane	9.88	56	4836948	284.9676 ug/L	96
40) 1,1-Dichloropropene	10.07	75	3335607	293.5361 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	6187488	285.3971 ug/L	98
42) Carbon Tetrachloride	10.23	117	3426898	319.8971 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140323.D 8260WTR.M Fri Jul 01 14:22:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140323.D Vial: 11
Acq On : 30 Jun 2016 16:53 Operator: TMB
Sample : WG574723-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:22:07 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	3436626	286.0301 ug/L	99
46)	Benzene	10.48	78	8206846	255.8911 ug/L	92
47)	Trichloroethene	11.34	130	2157856	272.6623 ug/L	85
48)	Methylcyclohexane	11.43	83	3572510	287.5366 ug/L	94
49)	1,2-Dichloropropane	11.59	63	2654885	287.4504 ug/L	98
50)	1,4-Dioxane	11.94	88	37500	599.7769 ug/L	90
51)	Bromodichloromethane	11.93	83	3309122	296.9343 ug/L	99
52)	Dibromomethane	12.02	93	1336996	299.1959 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.31	63	1349189	291.3572 ug/L	100
54)	4-Methyl-2-Pentanone	12.35	58	816641	286.5491 ug/L	98
55)	cis-1,3-Dichloropropene	12.69	75	3726475	288.0131 ug/L	98
56)	Dimethyl Disulfide	12.97	79	2153813	299.0355 ug/L	97
59)	Toluene	13.16	91	7972275	260.5398 ug/L	94
60)	Ethyl Methacrylate	13.32	69	2708040	311.0642 ug/L	96
62)	trans-1,3-Dichloropropene	13.39	75	3319850	305.1184 ug/L	96
63)	1,1,2-Trichloroethane	13.62	97	1658699	292.9155 ug/L	98
64)	2-Hexanone	13.58	43	1609874	299.4219 ug/L	99
65)	1,3-Dichloropropane	13.99	76	3035134	284.3902 ug/L	93
66)	Tetrachloroethene	14.10	166	2112313	289.6805 ug/L	90
67)	Dibromochloromethane	14.41	129	2168054	315.3397 ug/L	99
68)	1,2-Dibromoethane	14.71	107	1650327	301.9297 ug/L	99
69)	1-Chlorohexane	14.85	91	2920904	286.8330 ug/L	90
70)	Chlorobenzene	15.30	112	5078928	258.8012 ug/L	85
71)	1,1,1,2-Tetrachloroethane	15.35	131	1989897	284.9688 ug/L	97
72)	Ethylbenzene	15.35	106	2784005	271.0260 ug/L	89
73)	m-,p-Xylene	15.46	106	6169523	496.9567 ug/L	82
74)	o-Xylene	16.12	106	3353804	270.8685 ug/L	99
75)	Styrene	16.16	104	5692194	273.2606 ug/L	85
76)	Bromoform	16.71	173	1364903	320.1393 ug/L	96
77)	Isopropylbenzene	16.63	105	8032217	248.6314 ug/L	97
79)	1,1,2,2-Tetrachloroethane	16.88	83	2127089	315.9149 ug/L	100
81)	1,2,3-Trichloropropane	17.11	110	617415	309.2940 ug/L	88
82)	trans-1,4-Dichloro-2-Buten	17.18	53	846450	332.5067 ug/L	93
83)	n-Propylbenzene	17.22	91	9328034	234.0103 ug/L	95
84)	Bromobenzene	17.34	156	2312758	277.6754 ug/L	88
85)	1,3,5-Trimethylbenzene	17.45	105	7210752	258.0855 ug/L	99
86)	2-Chlorotoluene	17.53	91	7014220	260.1890 ug/L	97
87)	4-Chlorotoluene	17.59	91	6424073	249.9594 ug/L	98
88)	a-Methylstyrene	17.92	118	3960625	281.8443 ug/L	93
89)	tert-Butylbenzene	18.00	134	1565290	278.8513 ug/L	79
90)	1,2,4-Trimethylbenzene	18.06	105	7348747	256.3200 ug/L	97
91)	sec-Butylbenzene	18.31	105	8392860	250.9449 ug/L	98
92)	p-Isopropyltoluene	18.51	119	7284847	255.5874 ug/L	97
93)	1,3-Dichlorobenzene	18.70	146	4306096	262.6735 ug/L	90
94)	1,4-Dichlorobenzene	18.85	146	4284929	258.5323 ug/L	90
95)	n-Butylbenzene	19.12	91	7177388	256.7823 ug/L	99
96)	1,2-Dichlorobenzene	19.44	146	4035185	262.1770 ug/L	90
97)	1,2-Dibromo-3-Chloropropan	20.61	75	433780	328.9526 ug/L	84
98)	1,2,4-Trichlorobenzene	21.97	180	2937231	269.9807 ug/L	97
99)	Hexachlorobutadiene	22.15	225	1256182	277.7132 ug/L	99
100)	Naphthalene	22.39	128	6036194	271.4865 ug/L	97
101)	1,2,3-Trichlorobenzene	22.76	180	2707781	268.7993 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M140323.D 8260WTR.M Fri Jul 01 14:22:11 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140323.D Vial: 11
Acq On : 30 Jun 2016 16:53 Operator: TMB
Sample : WG574723-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:22 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

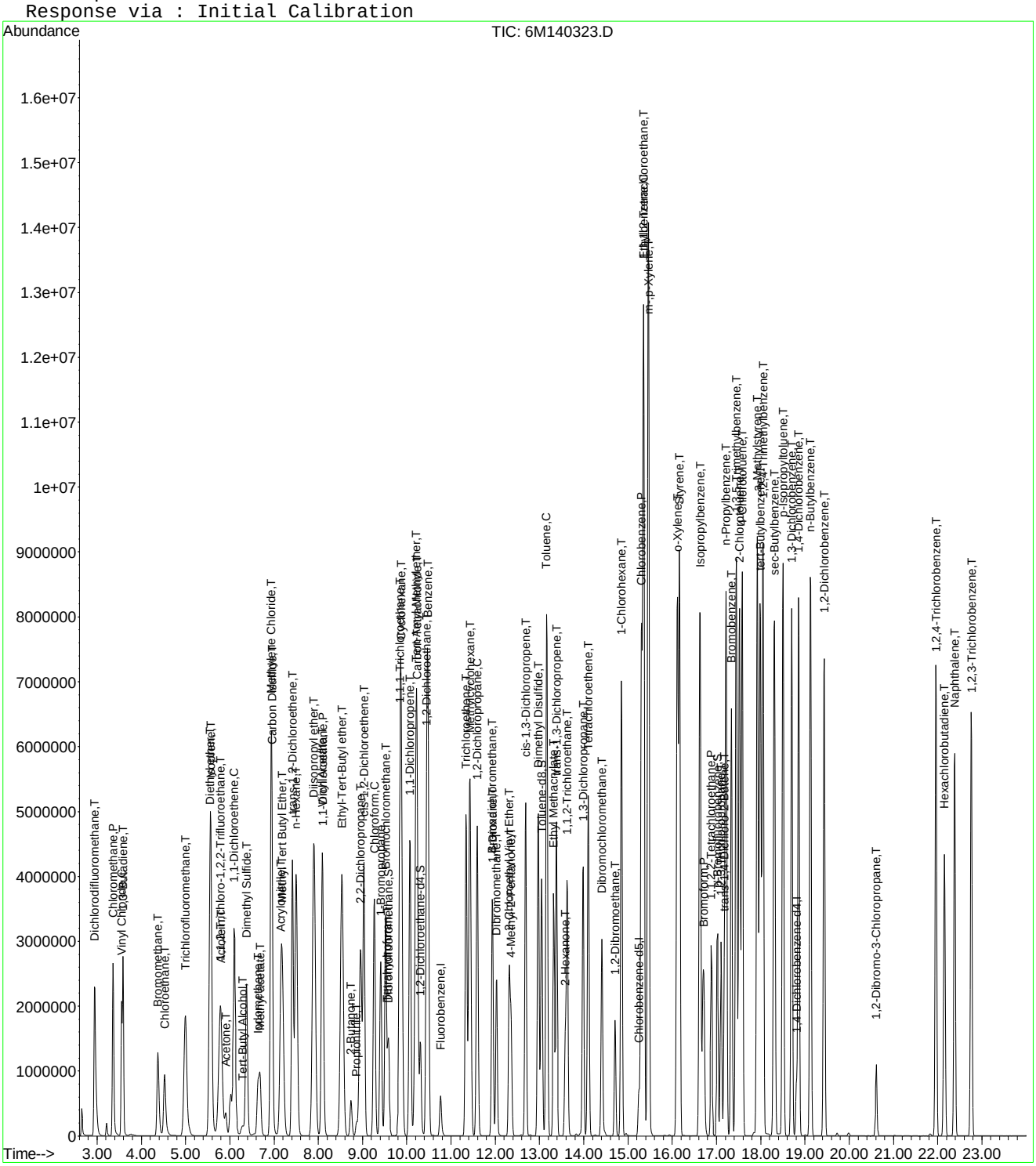

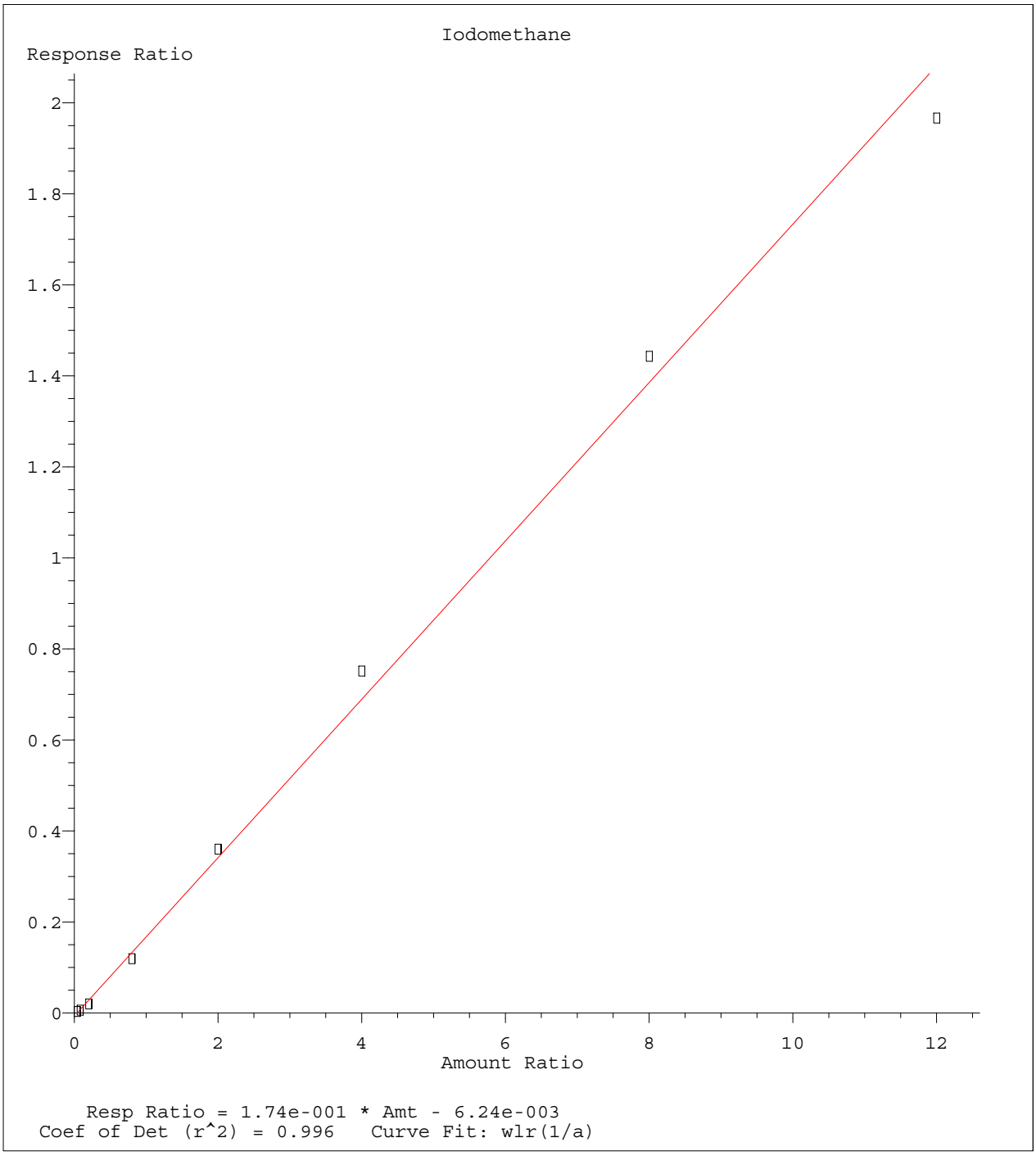

Method Name: K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M
Calibration Table Last Updated: Fri Jul 01 09:28:30 2016

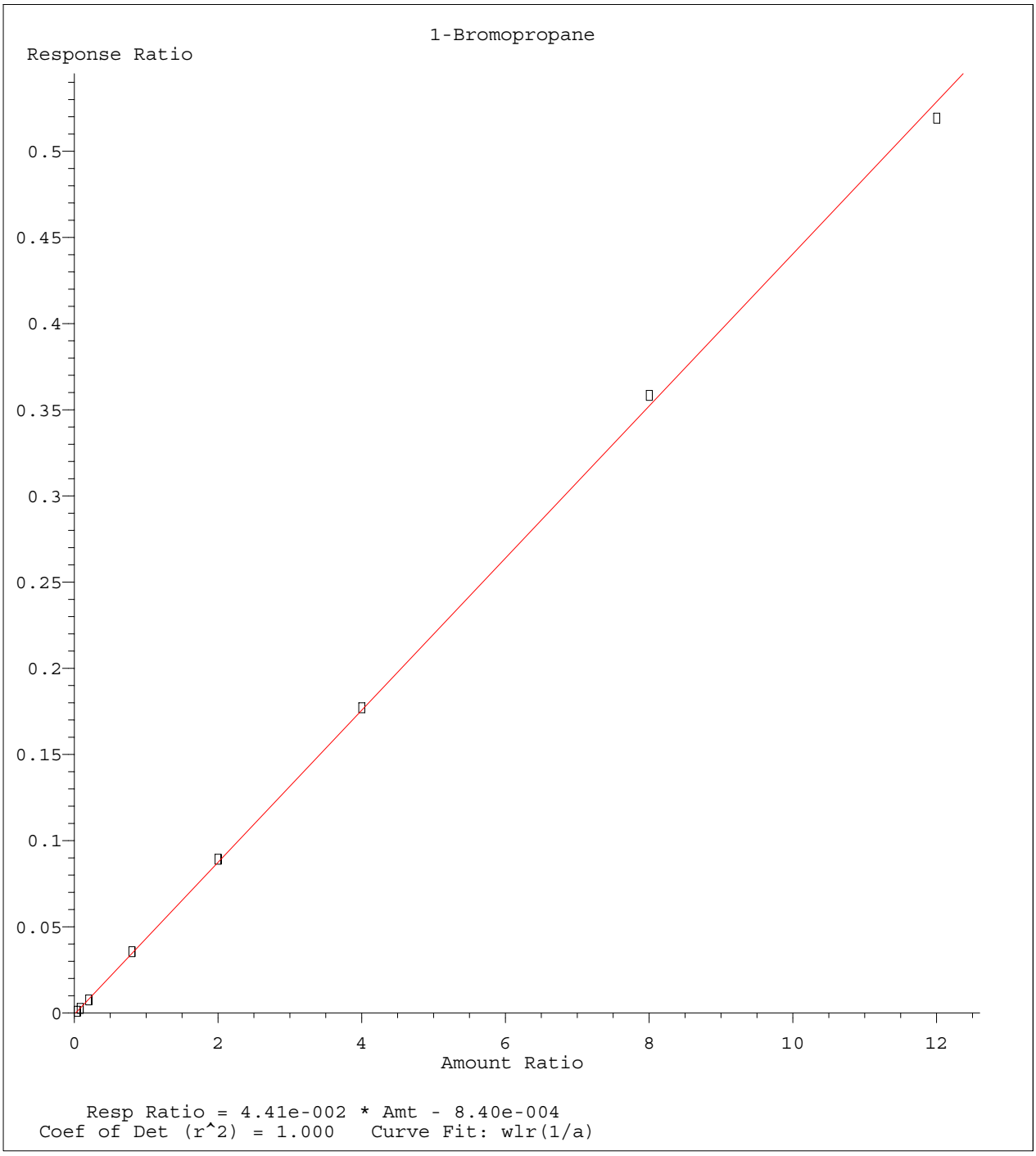

Method Name: K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M
Calibration Table Last Updated: Fri Jul 01 09:28:30 2016

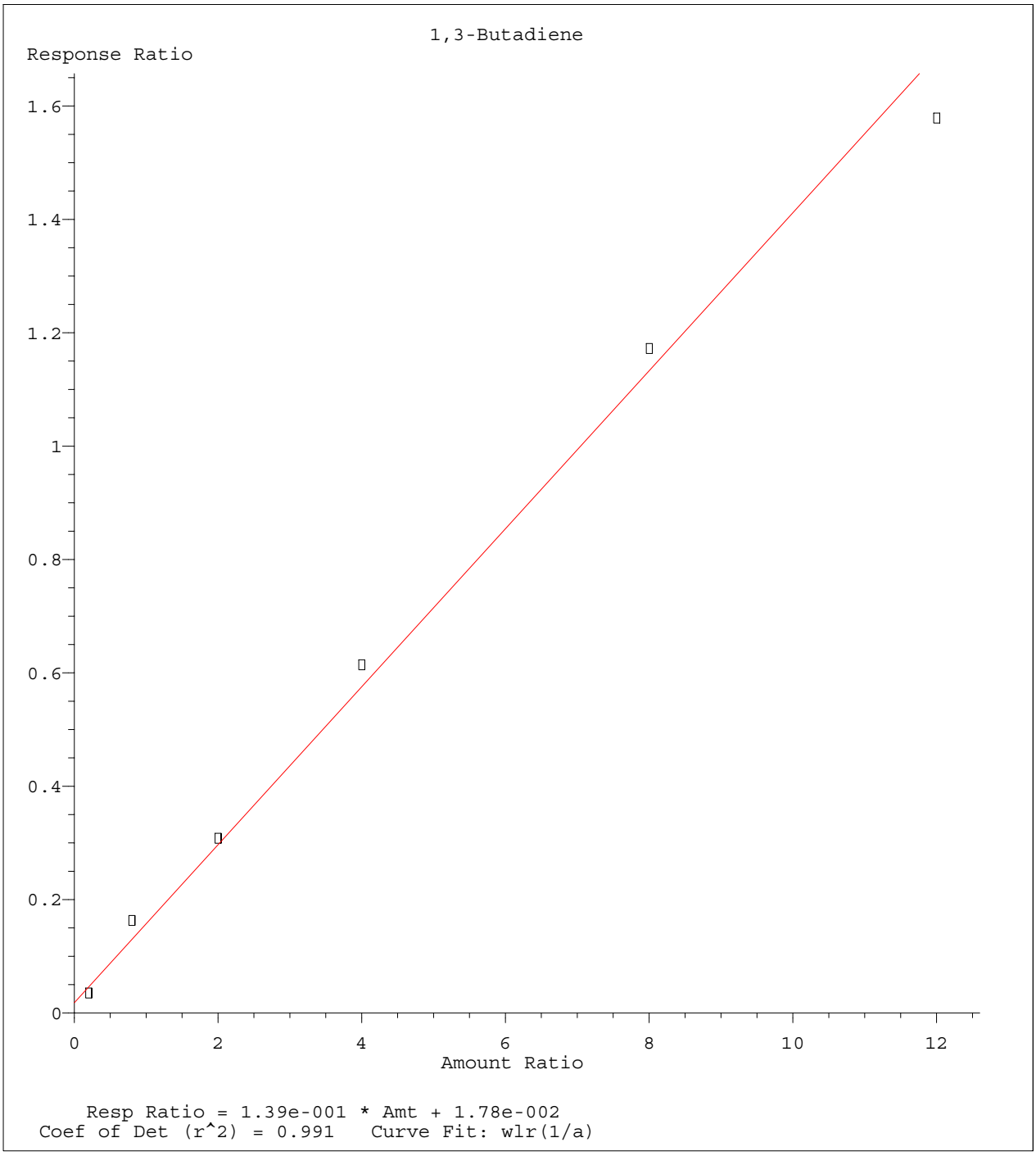

Method Name: K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M
Calibration Table Last Updated: Fri Jul 01 09:28:30 2016

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140326.D Vial: 14
Acq On : 30 Jun 2016 18:31 Operator: TMB
Sample : WG574723-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:22:31 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	713701	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	500221	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	261664	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	181470	25.0619 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.24%		
43) 1,2-Dichloroethane-d4	10.31	65	220889	24.1652 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.68%		
58) Toluene-d8	13.04	98	608395	24.6990 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.80%		
80) p-Bromofluorobenzene	17.02	95	256905	25.0695 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.28%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	485701	40.7108 ug/L	100
3) Chloromethane	3.37	50	521316	39.1377 ug/L	100
4) Vinyl Chloride	3.55	62	337528	46.1434 ug/L	100
5) 1,3-Butadiene	3.60	54	155736	35.9374 ug/L	97
6) Bromomethane	4.37	94	235295	48.4066 ug/L	100
7) Chloroethane	4.52	64	239156	51.7436 ug/L	97
8) Trichlorofluoromethane	4.99	101	525851	47.1350 ug/L	100
9) Diethyl ether	5.56	59	680169	103.3296 ug/L	97
10) Isoprene	5.57	67	555397	55.7803 ug/L	96
11) Acrolein	5.79	56	131596	120.1899 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	5.78	101	356202	51.3167 ug/L	97
13) Acetone	5.91	43	107340	46.9439 ug/L	98
14) 1,1-Dichloroethene	6.11	61	594692	44.1572 ug/L	95
15) Tert-Butyl Alcohol	6.28	59	140341	200.7163 ug/L	98
16) Dimethyl Sulfide	6.38	62	515949	87.8409 ug/L	96
17) Iodomethane	6.64	142	294876	60.2646 ug/L	92
18) Methyl acetate	6.69	43	338698	54.7398 ug/L	99
19) Methylene Chloride	6.93	84	359823	46.5909 ug/L	90
20) Carbon Disulfide	6.95	76	1077126	43.6470 ug/L	100
21) Acrylonitrile	7.15	53	146978	51.7699 ug/L	100
22) Methyl Tert Butyl Ether	7.18	73	1049922	51.2877 ug/L	100
23) trans-1,2-Dichloroethene	7.41	96	339388	47.0532 ug/L	88
24) n-Hexane	7.51	57	547762	44.7466 ug/L	97
25) Diisopropyl ether	7.90	45	3459050	104.9838 ug/L	98
26) Vinyl Acetate	8.09	43	697771	50.7312 ug/L	98
27) 1,1-Dichloroethane	8.10	63	721539	46.4625 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	2578321	97.2697 ug/L	98
29) 2-Butanone	8.73	43	177594	50.7378 ug/L	96
30) Propionitrile	8.85	54	95623	100.6665 ug/L	96
31) 2,2-Dichloropropane	8.96	77	593953	50.6955 ug/L	99
32) cis-1,2-Dichloroethene	9.03	96	392808	49.7512 ug/L	72
33) Chloroform	9.26	83	665890	47.8636 ug/L	100
34) 1-Bromopropane	9.41	122	83509	66.7495 ug/L	100
35) Bromochloromethane	9.52	130	207412	48.8852 ug/L	100
36) Tetrahydrofuran	9.56	42	224799	92.0780 ug/L	95
38) 1,1,1-Trichloroethane	9.85	97	598191	49.3876 ug/L	99
39) Cyclohexane	9.88	56	748359	47.4902 ug/L	96
40) 1,1-Dichloropropene	10.08	75	507584	48.1132 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	2097011	104.1851 ug/L	98
42) Carbon Tetrachloride	10.23	117	511641	51.4451 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140326.D 8260WTR.M Fri Jul 01 14:22:35 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140326.D Vial: 14
Acq On : 30 Jun 2016 18:31 Operator: TMB
Sample : WG574723-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:22:31 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	551012	49.3981 ug/L	98
46)	Benzene	10.48	78	1452601	48.7860 ug/L	97
47)	Trichloroethene	11.35	130	359806	48.9712 ug/L	90
48)	Methylcyclohexane	11.43	83	563704	48.8698 ug/L	95
49)	1,2-Dichloropropane	11.59	63	446228	52.0408 ug/L	99
50)	1,4-Dioxane	11.94	88	11529	198.6187 ug/L	84
51)	Bromodichloromethane	11.94	83	530754	51.2992 ug/L	100
52)	Dibromomethane	12.03	93	203238	48.9892 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.32	63	227435	52.9030 ug/L	100
54)	4-Methyl-2-Pentanone	12.35	58	134103	50.6846 ug/L	98
55)	cis-1,3-Dichloropropene	12.68	75	676117	56.2867 ug/L	100
56)	Dimethyl Disulfide	12.97	79	359470	53.7585 ug/L	98
59)	Toluene	13.15	91	1496307	50.1905 ug/L	99
60)	Ethyl Methacrylate	13.32	69	454272	53.5575 ug/L	96
62)	trans-1,3-Dichloropropene	13.39	75	565632	53.3572 ug/L	96
63)	1,1,2-Trichloroethane	13.63	97	287265	52.0675 ug/L	98
64)	2-Hexanone	13.58	43	260461	49.7214 ug/L	97
65)	1,3-Dichloropropane	13.99	76	552828	53.1662 ug/L	94
66)	Tetrachloroethene	14.10	166	346278	48.7411 ug/L	93
67)	Dibromochloromethane	14.41	129	360309	53.7889 ug/L	99
68)	1,2-Dibromoethane	14.71	107	279233	52.4339 ug/L	100
69)	1-Chlorohexane	14.85	91	508330	51.2350 ug/L	92
70)	Chlorobenzene	15.30	112	974362	50.9593 ug/L	92
71)	1,1,1,2-Tetrachloroethane	15.35	131	357715	52.5791 ug/L	98
72)	Ethylbenzene	15.35	106	517345	51.6928 ug/L	93
73)	m-,p-Xylene	15.46	106	1254856	103.7457 ug/L	95
74)	o-Xylene	16.11	106	643998	53.3844 ug/L	94
75)	Styrene	16.16	104	1074202	52.9288 ug/L	92
76)	Bromoform	16.72	173	205149	49.3874 ug/L	98
77)	Isopropylbenzene	16.62	105	1626117	51.6632 ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.88	83	352344	55.4825 ug/L	100
81)	1,2,3-Trichloropropane	17.10	110	103329	54.8809 ug/L	79
82)	trans-1,4-Dichloro-2-Buten	17.18	53	121642	50.6626 ug/L	96
83)	n-Propylbenzene	17.22	91	2019179	53.7062 ug/L	98
84)	Bromobenzene	17.34	156	398353	50.7084 ug/L	89
85)	1,3,5-Trimethylbenzene	17.44	105	1384872	52.5530 ug/L	97
86)	2-Chlorotoluene	17.52	91	1343673	52.8455 ug/L	96
87)	4-Chlorotoluene	17.58	91	1234147	50.9132 ug/L	97
88)	a-Methylstyrene	17.92	118	769488	58.0567 ug/L	95
89)	tert-Butylbenzene	17.98	134	281622	53.1924 ug/L	73
90)	1,2,4-Trimethylbenzene	18.04	105	1394233	51.5596 ug/L	98
91)	sec-Butylbenzene	18.30	105	1658086	52.5630 ug/L	97
92)	p-Isopropyltoluene	18.50	119	1389218	51.6766 ug/L	98
93)	1,3-Dichlorobenzene	18.70	146	793356	51.3104 ug/L	95
94)	1,4-Dichlorobenzene	18.85	146	809665	51.7942 ug/L	94
95)	n-Butylbenzene	19.12	91	1353617	51.3451 ug/L	96
96)	1,2-Dichlorobenzene	19.43	146	761556	52.4611 ug/L	94
97)	1,2-Dibromo-3-Chloropropan	20.62	75	69221	55.6553 ug/L	83
98)	1,2,4-Trichlorobenzene	21.97	180	527905	51.4464 ug/L	99
99)	Hexachlorobutadiene	22.15	225	224309	52.5770 ug/L	99
100)	Naphthalene	22.38	128	1033625	49.2893 ug/L	100
101)	1,2,3-Trichlorobenzene	22.76	180	485666	51.1160 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140326.D Vial: 14
Acq On : 30 Jun 2016 18:31 Operator: TMB
Sample : WG574723-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:22 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

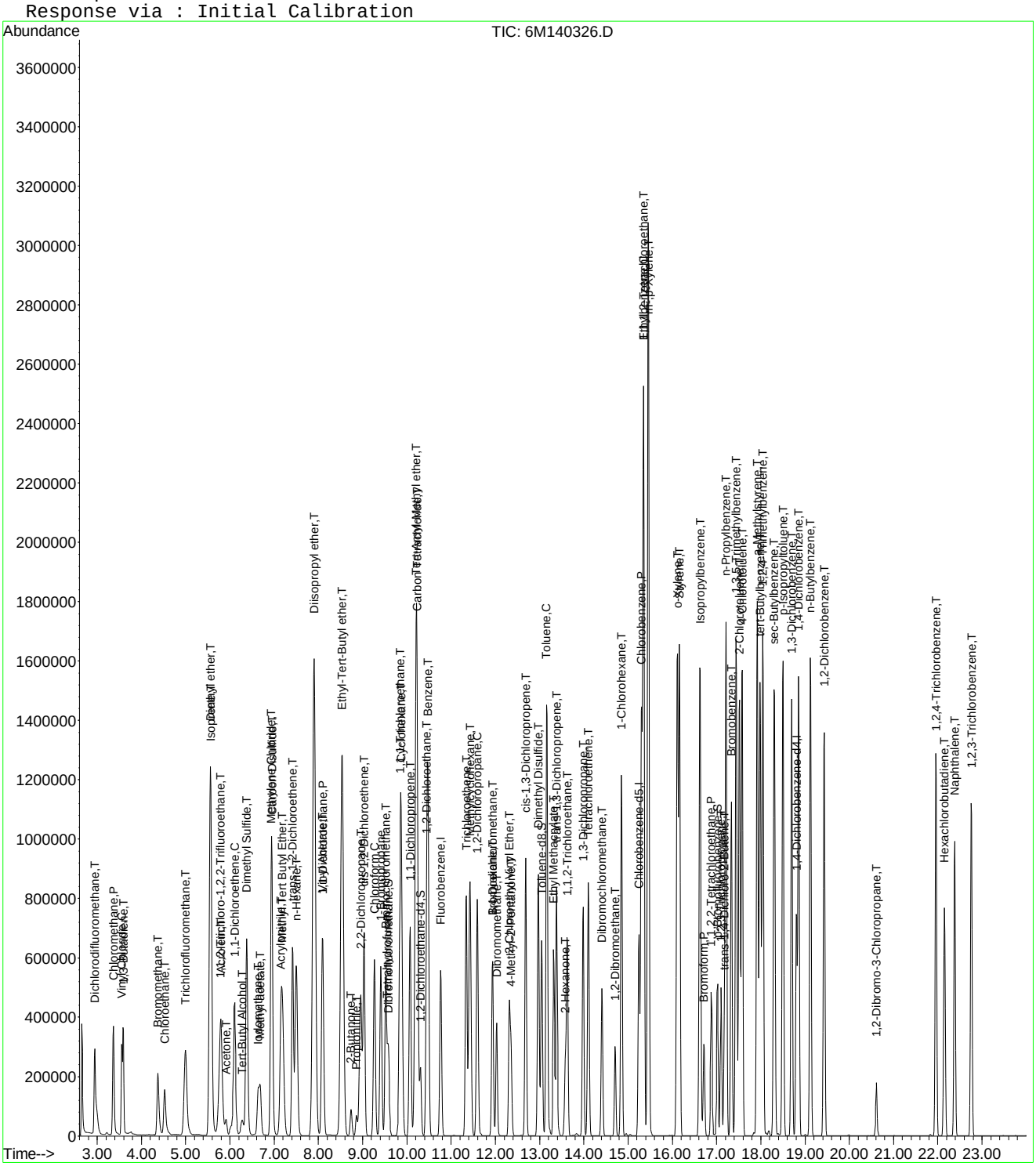

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140326.D Vial: 14
Acq On : 30 Jun 2016 18:31 Operator: TMB
Sample : WG574723-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	107	0.00
2	T	Dichlorodifluoromethane	50.0000	40.7108	18.6	83	0.00
3	P	Chloromethane	50.0000	39.1377	21.7#	85	0.00
4	C	Vinyl Chloride	50.0000	46.1434	7.7	97	0.00
5	T	1,3-Butadiene	50.0000	35.9374	28.1#	76	0.00
6	T	Bromomethane	50.0000	48.4066	3.2	110	0.00
7	T	Chloroethane	50.0000	51.7436	-3.5	111	0.00
8	T	Trichlorofluoromethane	50.0000	47.1350	5.7	106	0.00
9	T	Diethyl ether	100.0000	103.3296	-3.3	108	0.00
10	T	Isoprene	50.0000	55.7803	-11.6	117	0.00
11	T	Acrolein	50.0000	120.1899	-140.4#	262	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	51.3167	-2.6	112	0.00
13	T	Acetone	50.0000	46.9439	6.1	101	0.00
14	C	1,1-Dichloroethene	50.0000	44.1572	11.7	95	0.00
15	T	Tert-Butyl Alcohol	200.0000	200.7163	-0.4	109	-0.01
16	T	Dimethyl Sulfide	50.0000	87.8409	-75.7#	187	0.00
17	T	Iodomethane	50.0000	60.2646	-20.5#	123	0.00
18	T	Methyl acetate	50.0000	54.7398	-9.5	119	0.00
19	T	Methylene Chloride	50.0000	46.5909	6.8	104	0.00
20	T	Carbon Disulfide	50.0000	43.6470	12.7	93	0.00
21	T	Acrylonitrile	50.0000	51.7698	-3.5	108	0.00
22	T	Methyl Tert Butyl Ether	50.0000	51.2877	-2.6	110	0.00
23	T	trans-1,2-Dichloroethene	50.0000	47.0532	5.9	102	0.00
24	T	n-Hexane	50.0000	44.7466	10.5	97	0.00
25	T	Diisopropyl ether	100.0000	104.9838	-5.0	113	0.00
26	T	Vinyl Acetate	50.0000	50.7312	-1.5	108	0.00
27	P	1,1-Dichloroethane	50.0000	46.4625	7.1	100	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	97.2697	2.7	104	0.00
29	T	2-Butanone	50.0000	50.7378	-1.5	106	0.00
30	T	Propionitrile	100.0000	100.6665	-0.7	106	0.00
31	T	2,2-Dichloropropane	50.0000	50.6955	-1.4	111	0.00
32	T	cis-1,2-Dichloroethene	50.0000	49.7512	0.5	107	0.00
33	C	Chloroform	50.0000	47.8636	4.3	105	0.00
34		1-Bromopropane	50.0000	66.7495	-33.5#	141	0.00
35	T	Bromochloromethane	50.0000	48.8852	2.2	102	0.00
36	T	Tetrahydrofuran	100.0000	92.0780	7.9	104	0.00
37	S	Dibromofluoromethane	25.0000	25.0619	-0.2	106	0.00
38	T	1,1,1-Trichloroethane	50.0000	49.3876	1.2	104	0.00
39	T	Cyclohexane	50.0000	47.4902	5.0	103	0.00
40	T	1,1-Dichloropropene	50.0000	48.1132	3.8	104	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	104.1851	-4.2	111	0.00
42	T	Carbon Tetrachloride	50.0000	51.4451	-2.9	102	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.1652	3.3	104	0.00
44		Heptane	-1.0000	0.0000	0.0	111	0.00
45	T	1,2-Dichloroethane	50.0000	49.3981	1.2	105	0.00
46	T	Benzene	50.0000	48.7860	2.4	105	0.00
47	T	Trichloroethene	50.0000	48.9712	2.1	105	0.00
48	T	Methylcyclohexane	50.0000	48.8698	2.3	106	0.00
49	C	1,2-Dichloropropane	50.0000	52.0408	-4.1	111	0.00
50	T	1,4-Dioxane	200.0000	198.6187	0.7	102	0.00
51	T	Bromodichloromethane	50.0000	51.2992	-2.6	106	0.00
52	T	Dibromomethane	50.0000	48.9892	2.0	101	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	52.9030	-5.8	106	0.00
54	T	4-Methyl-2-Pentanone	50.0000	50.6846	-1.4	106	0.00

(#) = Out of Range

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140326.D Vial: 14
Acq On : 30 Jun 2016 18:31 Operator: TMB
Sample : WG574723-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	56.2867	-12.6	117	0.00
56	T	Dimethyl Disulfide	50.0000	53.7585	-7.5	112	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	105	0.00
58	S	Toluene-d8	25.0000	24.6990	1.2	104	0.00
59	C	Toluene	50.0000	50.1905	-0.4	107	0.00
60	T	Ethyl Methacrylate	50.0000	53.5575	-7.1	108	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	107	0.00
62	T	trans-1,3-Dichloropropene	50.0000	53.3572	-6.7	108	0.00
63	T	1,1,2-Trichloroethane	50.0000	52.0675	-4.1	108	0.00
64	T	2-Hexanone	50.0000	49.7214	0.6	101	0.00
65	T	1,3-Dichloropropane	50.0000	53.1662	-6.3	112	0.00
66	T	Tetrachloroethene	50.0000	48.7411	2.5	103	0.00
67	T	Dibromochloromethane	50.0000	53.7889	-7.6	105	0.00
68	T	1,2-Dibromoethane	50.0000	52.4339	-4.9	107	0.00
69	T	1-Chlorohexane	50.0000	51.2350	-2.5	106	0.00
70	P	Chlorobenzene	50.0000	50.9593	-1.9	108	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	52.5791	-5.2	106	0.00
72	C	Ethylbenzene	50.0000	51.6928	-3.4	107	0.00
73	T	m-,p-Xylene	100.0000	103.7457	-3.7	108	0.00
74	T	o-Xylene	50.0000	53.3844	-6.8	109	0.00
75	T	Styrene	50.0000	52.9288	-5.9	106	0.00
76	P	Bromoform	50.0000	49.3873	1.2	98	0.00
77	T	Isopropylbenzene	50.0000	51.6632	-3.3	107	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	99	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	55.4825	-11.0	108	0.00
80	S	p-Bromofluorobenzene	25.0000	25.0695	-0.3	100	0.00
81	T	1,2,3-Trichloropropane	50.0000	54.8809	-9.8	105	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	50.6626	-1.3	94	0.00
83	T	n-Propylbenzene	50.0000	53.7062	-7.4	107	0.00
84	T	Bromobenzene	50.0000	50.7084	-1.4	102	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	52.5530	-5.1	104	-0.01
86	T	2-Chlorotoluene	50.0000	52.8455	-5.7	105	0.00
87	T	4-Chlorotoluene	50.0000	50.9132	-1.8	105	0.00
88	T	a-Methylstyrene	50.0000	58.0567	-16.1	111	0.00
89	T	tert-Butylbenzene	50.0000	53.1924	-6.4	106	-0.01
90	T	1,2,4-Trimethylbenzene	50.0000	51.5596	-3.1	101	-0.01
91	T	sec-Butylbenzene	50.0000	52.5630	-5.1	104	-0.01
92	T	p-Isopropyltoluene	50.0000	51.6766	-3.4	101	0.00
93	T	1,3-Dichlorobenzene	50.0000	51.3104	-2.6	103	0.00
94	T	1,4-Dichlorobenzene	50.0000	51.7942	-3.6	105	0.00
95	T	n-Butylbenzene	50.0000	51.3451	-2.7	100	0.00
96	T	1,2-Dichlorobenzene	50.0000	52.4611	-4.9	105	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	55.6553	-11.3	107	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	51.4464	-2.9	102	0.00
99	T	Hexachlorobutadiene	50.0000	52.5770	-5.2	105	0.00
100	T	Naphthalene	50.0000	49.2893	1.4	92	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	51.1160	-2.2	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140326.D 8260WTR.M Fri Jul 01 14:37:39 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070216\6M140364.D Vial: 3
Acq On : 2 Jul 2016 11:57 Operator: TMB
Sample : WG575083-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 02 13:29:44 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	568476	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	413962	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	229176	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	146606	25.4194 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.68%		
43) 1,2-Dichloroethane-d4	10.31	65	181988	24.9956 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.00%		
58) Toluene-d8	13.04	98	505477	24.7969 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.20%		
80) p-Bromofluorobenzene	17.02	95	218569	24.3521 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.40%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	563991	59.3495 ug/L	100
3) Chloromethane	3.37	50	539203	50.8218 ug/L	99
4) Vinyl Chloride	3.56	62	327793	56.2605 ug/L	99
5) 1,3-Butadiene	3.59	54	205186	61.5308 ug/L	91
6) Bromomethane	4.39	94	154995	40.0326 ug/L	99
7) Chloroethane	4.53	64	198450	53.9052 ug/L	94
8) Trichlorofluoromethane	5.00	101	489092	55.0396 ug/L	99
9) Diethyl ether	5.54	59	533840	101.8177 ug/L	95
10) Isoprene	5.57	67	421113	53.0983 ug/L	95
11) Acrolein	5.79	56	44098	50.5648 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	300935	54.4301 ug/L	97
13) Acetone	5.90	43	92436	50.7532 ug/L	98
14) 1,1-Dichloroethene	6.11	61	575429	53.6420 ug/L	93
15) Tert-Butyl Alcohol	6.25	59	98113	176.1687 ug/L	99
16) Dimethyl Sulfide	6.39	62	226586	48.4314 ug/L	93
17) Iodomethane	6.65	142	213201	54.7863 ug/L	90
18) Methyl acetate	6.69	43	246736	50.0642 ug/L	98
19) Methylene Chloride	6.94	84	309384	50.2938 ug/L	86
20) Carbon Disulfide	6.96	76	1018712	51.8255 ug/L	100
21) Acrylonitrile	7.15	53	115300	50.9868 ug/L	99
22) Methyl Tert Butyl Ether	7.18	73	847352	51.9666 ug/L	100
23) trans-1,2-Dichloroethene	7.42	96	300633	52.3279 ug/L	88
24) n-Hexane	7.50	57	522840	53.6217 ug/L	96
25) Diisopropyl ether	7.90	45	2634922	100.4008 ug/L	99
26) Vinyl Acetate	8.09	43	698946	63.7984 ug/L	98
27) 1,1-Dichloroethane	8.10	63	645658	52.1974 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	2117500	100.2924 ug/L	98
29) 2-Butanone	8.73	43	144408	51.7963 ug/L	96
30) Propionitrile	8.85	54	74177	98.0384 ug/L	100
31) 2,2-Dichloropropane	8.95	77	530850	56.8844 ug/L	100
32) cis-1,2-Dichloroethene	9.03	96	329589	52.4084 ug/L	88
33) Chloroform	9.26	83	581874	52.5092 ug/L	100
34) 1-Bromopropane	9.41	122	51387	51.6753 ug/L	100
35) Bromochloromethane	9.52	130	184335	54.5451 ug/L	100
36) Tetrahydrofuran	9.56	42	179468	92.2896 ug/L	93
38) 1,1,1-Trichloroethane	9.85	97	531048	55.0448 ug/L	98
39) Cyclohexane	9.87	56	639753	50.9695 ug/L	95
40) 1,1-Dichloropropene	10.08	75	444375	52.8823 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1608749	100.3454 ug/L	98
42) Carbon Tetrachloride	10.23	117	475366	60.0083 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140364.D 8260WTR.M Sat Jul 02 13:29:48 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070216\6M140364.D Vial: 3
Acq On : 2 Jul 2016 11:57 Operator: TMB
Sample : WG575083-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 02 13:29:44 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	478637	53.8716 ug/L	98
46)	Benzene	10.48	78	1221523	51.5056 ug/L	96
47)	Trichloroethene	11.34	130	297265	50.7949 ug/L	88
48)	Methylcyclohexane	11.43	83	474700	51.6670 ug/L	95
49)	1,2-Dichloropropane	11.59	63	353907	51.8180 ug/L	96
50)	1,4-Dioxane	11.93	88	8103	175.2582 ug/L	85
51)	Bromodichloromethane	11.94	83	455573	55.2815 ug/L	99
52)	Dibromomethane	12.03	93	180252	54.5481 ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.31	63	177695	51.8922 ug/L	99
54)	4-Methyl-2-Pentanone	12.35	58	110845	52.5967 ug/L	96
55)	cis-1,3-Dichloropropene	12.68	75	518926	54.2367 ug/L	98
56)	Dimethyl Disulfide	12.97	79	278064	52.2076 ug/L	98
59)	Toluene	13.16	91	1256833	50.9425 ug/L	100
60)	Ethyl Methacrylate	13.32	69	363777	51.8252 ug/L	93
62)	trans-1,3-Dichloropropene	13.39	75	473158	53.9345 ug/L	96
63)	1,1,2-Trichloroethane	13.63	97	237912	52.1077 ug/L	98
64)	2-Hexanone	13.58	43	222861	51.4087 ug/L	97
65)	1,3-Dichloropropane	13.99	76	433977	50.4329 ug/L	92
66)	Tetrachloroethene	14.10	166	303880	51.6861 ug/L	92
67)	Dibromochloromethane	14.41	129	312163	56.3120 ug/L	100
68)	1,2-Dibromoethane	14.70	107	232582	52.7743 ug/L	99
69)	1-Chlorohexane	14.86	91	419410	51.0812 ug/L	89
70)	Chlorobenzene	15.31	112	803889	50.8043 ug/L	91
71)	1,1,1,2-Tetrachloroethane	15.35	131	305643	54.2865 ug/L	97
72)	Ethylbenzene	15.35	106	436127	52.6580 ug/L	93
73)	m-,p-Xylene	15.46	106	1048094	104.7075 ug/L	93
74)	o-Xylene	16.11	106	533357	53.4256 ug/L	94
75)	Styrene	16.15	104	901758	53.6906 ug/L	91
76)	Bromoform	16.72	173	188509	54.8378 ug/L	97
77)	Isopropylbenzene	16.62	105	1379626	52.9654 ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.88	83	299895	53.9179 ug/L	99
81)	1,2,3-Trichloropropane	17.10	110	87507	53.0660 ug/L	84
82)	trans-1,4-Dichloro-2-Buten	17.18	53	116657	55.4740 ug/L	100
83)	n-Propylbenzene	17.22	91	1723856	52.3511 ug/L	97
84)	Bromobenzene	17.34	156	352485	51.2304 ug/L	90
85)	1,3,5-Trimethylbenzene	17.45	105	1210912	52.4657 ug/L	97
86)	2-Chlorotoluene	17.52	91	1148937	51.5923 ug/L	96
87)	4-Chlorotoluene	17.58	91	1074895	50.6296 ug/L	96
88)	a-Methylstyrene	17.92	118	609579	52.5116 ug/L	100
89)	tert-Butylbenzene	17.98	134	239864	51.7276 ug/L	69
90)	1,2,4-Trimethylbenzene	18.04	105	1261697	53.2726 ug/L	98
91)	sec-Butylbenzene	18.31	105	1447831	52.4042 ug/L	97
92)	p-Isopropyltoluene	18.50	119	1248377	53.0206 ug/L	98
93)	1,3-Dichlorobenzene	18.70	146	698176	51.5557 ug/L	95
94)	1,4-Dichlorobenzene	18.85	146	699104	51.0614 ug/L	94
95)	n-Butylbenzene	19.12	91	1226253	53.1078 ug/L	96
96)	1,2-Dichlorobenzene	19.43	146	650461	51.1602 ug/L	93
97)	1,2-Dibromo-3-Chloropropan	20.62	75	60193	55.2573 ug/L	84
98)	1,2,4-Trichlorobenzene	21.96	180	458164	50.9795 ug/L	98
99)	Hexachlorobutadiene	22.15	225	187698	50.2323 ug/L	99
100)	Naphthalene	22.38	128	944272	51.4117 ug/L	100
101)	1,2,3-Trichlorobenzene	22.76	180	411449	49.4436 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140364.D 8260WTR.M Sat Jul 02 13:29:48 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070216\6M140364.D Vial: 3
Acq On : 2 Jul 2016 11:57 Operator: TMB
Sample : WG575083-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 2 13:29 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

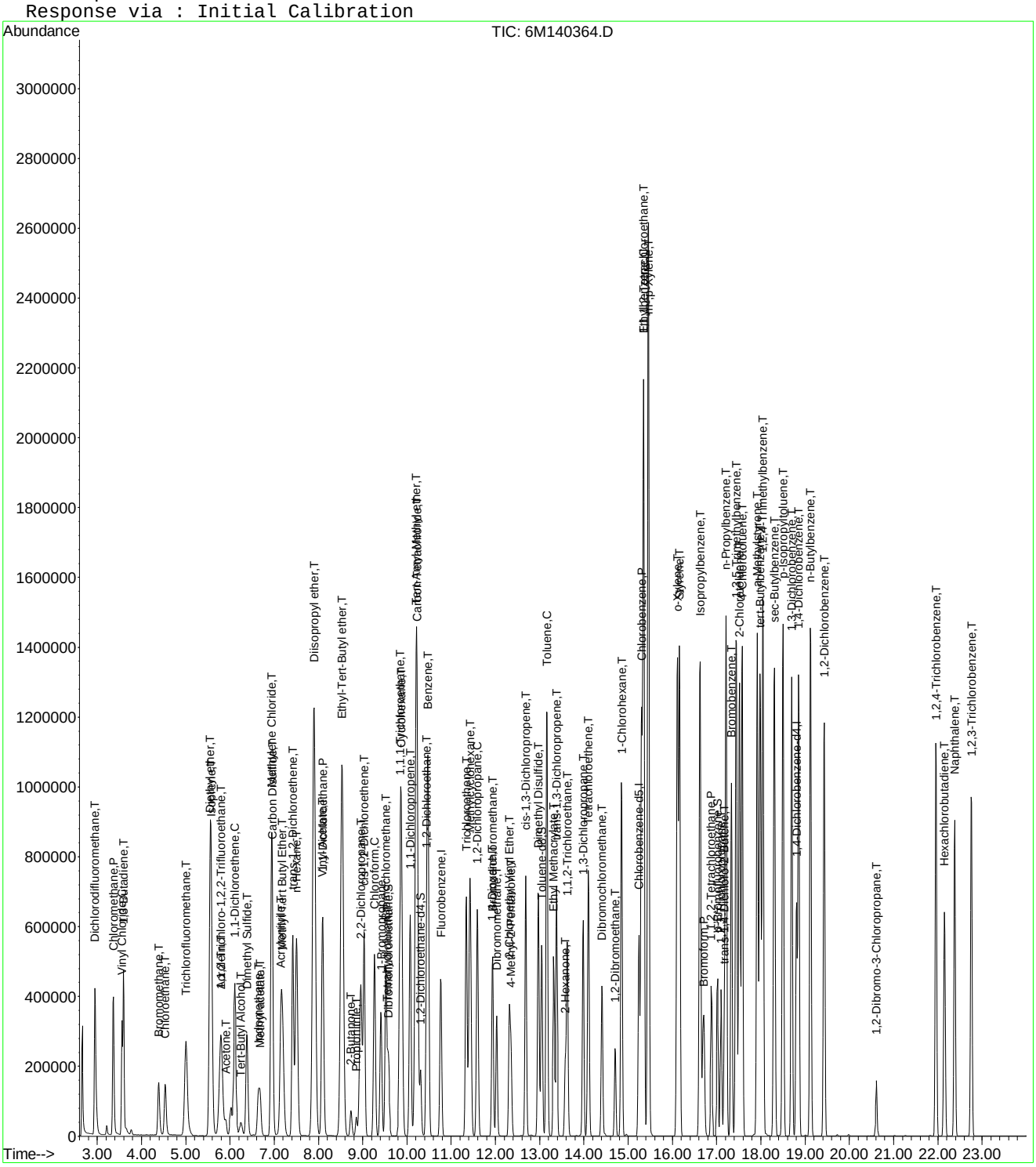

6M140364.D 8260WTR.M Sat Jul 02 13:29:50 2016 Page 3

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070216\6M140364.D Vial: 3
Acq On : 2 Jul 2016 11:57 Operator: TMB
Sample : WG575083-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	85	0.00
2	T	Dichlorodifluoromethane	0.4179	0.4961	-18.7	97	0.00
3	P	Chloromethane	0.4666	0.4743	-1.6	88	0.00
4	C	Vinyl Chloride	0.2562	0.2883	-12.5	95	0.00
5	T	1,3-Butadiene	0.1608	0.1805	-12.2	100	0.00
6	T	Bromomethane	0.1703	0.1363	19.9	72	0.02
7	T	Chloroethane	0.1619	0.1746	-7.8	92	0.00
8	T	Trichlorofluoromethane	0.3908	0.4302	-10.1	99	0.00
9	T	Diethyl ether	0.2306	0.2348	-1.8	85	0.00
10	T	Isoprene	0.3488	0.3704	-6.2	89	0.00
11	T	Acrolein	0.0384	0.0388	-1.1	88	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2431	0.2647	-8.9	95	0.00
13	T	Acetone	0.0801	0.0813	-1.5	87	0.00
14	C	1,1-Dichloroethene	0.4718	0.5061	-7.3	92	0.00
15	T	Tert-Butyl Alcohol	0.0245	0.0216	11.9	76	-0.04
16	T	Dimethyl Sulfide	0.2057	0.1993	3.1	82	0.00
17	T	Iodomethane	0.1391	0.1875	-34.8#	89	0.00
18	T	Methyl acetate	0.2167	0.2170	-0.1	87	0.00
19	T	Methylene Chloride	0.2705	0.2721	-0.6	89	0.00
20	T	Carbon Disulfide	0.8644	0.8960	-3.7	88	0.00
21	T	Acrylonitrile	0.0994	0.1014	-2.0	85	0.00
22	T	Methyl Tert Butyl Ether	0.7171	0.7453	-3.9	89	0.00
23	T	trans-1,2-Dichloroethene	0.2527	0.2644	-4.7	90	0.00
24	T	n-Hexane	0.4288	0.4599	-7.2	93	0.00
25	T	Diisopropyl ether	1.1541	1.1588	-0.4	86	0.00
26	T	Vinyl Acetate	0.4818	0.6148	-27.6#	108	0.00
27	P	1,1-Dichloroethane	0.5440	0.5679	-4.4	90	0.00
28	T	Ethyl-Tert-Butyl ether	0.9285	0.9312	-0.3	86	0.00
29	T	2-Butanone	0.1226	0.1270	-3.6	87	0.00
30	T	Propionitrile	0.0333	0.0326	2.0	82	0.00
31	T	2,2-Dichloropropane	0.4104	0.4669	-13.8	100	0.00
32	T	cis-1,2-Dichloroethene	0.2766	0.2899	-4.8	89	0.00
33	C	Chloroform	0.4873	0.5118	-5.0	92	0.00
34		1-Bromopropane	0.0394	0.0452	-14.6	87	0.00
35	T	Bromochloromethane	0.1486	0.1621	-9.1	91	0.00
36	T	Tetrahydrofuran	0.0855	0.0789	7.7	83	0.00
37	S	Dibromofluoromethane	0.2536	0.2579	-1.7	86	0.00
38	T	1,1,1-Trichloroethane	0.4243	0.4671	-10.1	93	0.00
39	T	Cyclohexane	0.5520	0.5627	-1.9	88	0.00
40	T	1,1-Dichloropropene	0.3695	0.3908	-5.8	91	0.00
41	T	Tert-Amyl-Methyl ether	0.7050	0.7075	-0.3	85	0.00
42	T	Carbon Tetrachloride	0.3484	0.4181	-20.0#	95	0.00
43	S	1,2-Dichloroethane-d4	0.3202	0.3201	0.0	86	0.00
44		Heptane	0.0000	0.0000	0.0	87	0.00
45	T	1,2-Dichloroethane	0.3907	0.4210	-7.7	92	0.00
46	T	Benzene	1.0430	1.0744	-3.0	89	0.00
47	T	Trichloroethene	0.2574	0.2615	-1.6	87	0.00
48	T	Methylcyclohexane	0.4041	0.4175	-3.3	89	0.00
49	C	1,2-Dichloropropane	0.3004	0.3113	-3.6	88	0.00
50	T	1,4-Dioxane	0.0020	0.0018	12.3	72	-0.01
51	T	Bromodichloromethane	0.3624	0.4007	-10.6	91	0.00
52	T	Dibromomethane	0.1453	0.1585	-9.1	90	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1506	0.1563	-3.8	83	0.00
54	T	4-Methyl-2-Pentanone	0.0927	0.0975	-5.2	87	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070216\6M140364.D Vial: 3
Acq On : 2 Jul 2016 11:57 Operator: TMB
Sample : WG575083-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4208	0.4564	-8.5	90	0.00
56	T	Dimethyl Disulfide	0.2342	0.2446	-4.4	86	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	87	0.00
58	S	Toluene-d8	1.2311	1.2211	0.8	86	0.00
59	C	Toluene	1.4900	1.5180	-1.9	90	0.00
60	T	Ethyl Methacrylate	0.4239	0.4394	-3.6	86	0.00
61		Paraldehyde	0.0000	0.0000	0.0	89	0.00
62	T	trans-1,3-Dichloropropene	0.5298	0.5715	-7.9	91	0.00
63	T	1,1,2-Trichloroethane	0.2757	0.2874	-4.2	89	0.00
64	T	2-Hexanone	0.2618	0.2692	-2.8	87	0.00
65	T	1,3-Dichloropropane	0.5197	0.5242	-0.9	88	0.00
66	T	Tetrachloroethene	0.3551	0.3670	-3.4	90	0.00
67	T	Dibromochloromethane	0.3348	0.3770	-12.6	91	0.00
68	T	1,2-Dibromoethane	0.2662	0.2809	-5.5	89	0.00
69	T	1-Chlorohexane	0.4959	0.5066	-2.2	88	0.00
70	P	Chlorobenzene	0.9556	0.9710	-1.6	89	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3400	0.3692	-8.6	91	0.00
72	C	Ethylbenzene	0.5002	0.5268	-5.3	90	0.00
73	T	m-,p-Xylene	0.6045	0.6330	-4.7	90	0.00
74	T	o-Xylene	0.6029	0.6442	-6.9	90	0.00
75	T	Styrene	1.0143	1.0892	-7.4	89	0.00
76	P	Bromoform	0.2076	0.2277	-9.7	90	0.00
77	T	Isopropylbenzene	1.5731	1.6664	-5.9	90	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	87	0.00
79	P	1,1,2,2-Tetrachloroethane	0.6068	0.6543	-7.8	92	0.00
80	S	p-Bromofluorobenzene	0.9791	0.9537	2.6	85	0.00
81	T	1,2,3-Trichloropropane	0.1799	0.1909	-6.1	89	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.2294	0.2545	-10.9	90	0.00
83	T	n-Propylbenzene	3.5921	3.7610	-4.7	91	0.00
84	T	Bromobenzene	0.7506	0.7690	-2.5	90	0.00
85	T	1,3,5-Trimethylbenzene	2.5177	2.6419	-4.9	91	0.00
86	T	2-Chlorotoluene	2.4293	2.5067	-3.2	90	0.00
87	T	4-Chlorotoluene	2.3160	2.3451	-1.3	92	0.00
88	T	a-Methylstyrene	1.2663	1.3299	-5.0	88	0.00
89	T	tert-Butylbenzene	0.5058	0.5233	-3.5	90	-0.01
90	T	1,2,4-Trimethylbenzene	2.5836	2.7527	-6.5	91	-0.01
91	T	sec-Butylbenzene	3.0139	3.1588	-4.8	91	0.00
92	T	p-Isopropyltoluene	2.5685	2.7236	-6.0	91	0.00
93	T	1,3-Dichlorobenzene	1.4773	1.5232	-3.1	91	0.00
94	T	1,4-Dichlorobenzene	1.4935	1.5253	-2.1	91	0.00
95	T	n-Butylbenzene	2.5188	2.6753	-6.2	91	0.00
96	T	1,2-Dichlorobenzene	1.3869	1.4191	-2.3	90	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1188	0.1313	-10.5	93	0.00
98	T	1,2,4-Trichlorobenzene	0.9804	0.9996	-2.0	89	0.00
99	T	Hexachlorobutadiene	0.4076	0.4095	-0.5	88	0.00
100	T	Naphthalene	2.0036	2.0602	-2.8	84	0.00
101	T	1,2,3-Trichlorobenzene	0.9078	0.8977	1.1	86	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140364.D 8260WTR.M Sat Jul 02 13:30:38 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070216\6M140364.D Vial: 3
Acq On : 2 Jul 2016 11:57 Operator: TMB
Sample : WG575083-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	85	0.00
2	T	Dichlorodifluoromethane	50.0000	59.3495	-18.7	97	0.00
3	P	Chloromethane	50.0000	50.8218	-1.6	88	0.00
4	C	Vinyl Chloride	50.0000	56.2605	-12.5	95	0.00
5	T	1,3-Butadiene	50.0000	61.5308	-23.1#	100	0.00
6	T	Bromomethane	50.0000	40.0326	19.9	72	0.02
7	T	Chloroethane	50.0000	53.9052	-7.8	92	0.00
8	T	Trichlorofluoromethane	50.0000	55.0396	-10.1	99	0.00
9	T	Diethyl ether	100.0000	101.8177	-1.8	85	0.00
10	T	Isoprene	50.0000	53.0983	-6.2	89	0.00
11	T	Acrolein	50.0000	50.5648	-1.1	88	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	54.4301	-8.9	95	0.00
13	T	Acetone	50.0000	50.7532	-1.5	87	0.00
14	C	1,1-Dichloroethene	50.0000	53.6420	-7.3	92	0.00
15	T	Tert-Butyl Alcohol	200.0000	176.1687	11.9	76	-0.04
16	T	Dimethyl Sulfide	50.0000	48.4314	3.1	82	0.00
17	T	Iodomethane	50.0000	54.7863	-9.6	89	0.00
18	T	Methyl acetate	50.0000	50.0642	-0.1	87	0.00
19	T	Methylene Chloride	50.0000	50.2938	-0.6	89	0.00
20	T	Carbon Disulfide	50.0000	51.8255	-3.7	88	0.00
21	T	Acrylonitrile	50.0000	50.9868	-2.0	85	0.00
22	T	Methyl Tert Butyl Ether	50.0000	51.9666	-3.9	89	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.3279	-4.7	90	0.00
24	T	n-Hexane	50.0000	53.6217	-7.2	93	0.00
25	T	Diisopropyl ether	100.0000	100.4008	-0.4	86	0.00
26	T	Vinyl Acetate	50.0000	63.7984	-27.6#	108	0.00
27	P	1,1-Dichloroethane	50.0000	52.1975	-4.4	90	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	100.2924	-0.3	86	0.00
29	T	2-Butanone	50.0000	51.7963	-3.6	87	0.00
30	T	Propionitrile	100.0000	98.0384	2.0	82	0.00
31	T	2,2-Dichloropropane	50.0000	56.8844	-13.8	100	0.00
32	T	cis-1,2-Dichloroethene	50.0000	52.4083	-4.8	89	0.00
33	C	Chloroform	50.0000	52.5092	-5.0	92	0.00
34		1-Bromopropane	50.0000	51.6753	-3.4	87	0.00
35	T	Bromochloromethane	50.0000	54.5451	-9.1	91	0.00
36	T	Tetrahydrofuran	100.0000	92.2896	7.7	83	0.00
37	S	Dibromofluoromethane	25.0000	25.4194	-1.7	86	0.00
38	T	1,1,1-Trichloroethane	50.0000	55.0448	-10.1	93	0.00
39	T	Cyclohexane	50.0000	50.9695	-1.9	88	0.00
40	T	1,1-Dichloropropene	50.0000	52.8823	-5.8	91	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	100.3454	-0.3	85	0.00
42	T	Carbon Tetrachloride	50.0000	60.0083	-20.0#	95	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.9956	0.0	86	0.00
44		Heptane	-1.0000	0.0000	0.0	87	0.00
45	T	1,2-Dichloroethane	50.0000	53.8716	-7.7	92	0.00
46	T	Benzene	50.0000	51.5056	-3.0	89	0.00
47	T	Trichloroethene	50.0000	50.7949	-1.6	87	0.00
48	T	Methylcyclohexane	50.0000	51.6670	-3.3	89	0.00
49	C	1,2-Dichloropropane	50.0000	51.8180	-3.6	88	0.00
50	T	1,4-Dioxane	200.0000	175.2582	12.4	72	-0.01
51	T	Bromodichloromethane	50.0000	55.2815	-10.6	91	0.00
52	T	Dibromomethane	50.0000	54.5481	-9.1	90	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	51.8922	-3.8	83	0.00
54	T	4-Methyl-2-Pentanone	50.0000	52.5966	-5.2	87	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070216\6M140364.D Vial: 3
Acq On : 2 Jul 2016 11:57 Operator: TMB
Sample : WG575083-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	54.2368	-8.5	90	0.00
56	T	Dimethyl Disulfide	50.0000	52.2076	-4.4	86	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	87	0.00
58	S	Toluene-d8	25.0000	24.7969	0.8	86	0.00
59	C	Toluene	50.0000	50.9425	-1.9	90	0.00
60	T	Ethyl Methacrylate	50.0000	51.8252	-3.7	86	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	89	0.00
62	T	trans-1,3-Dichloropropene	50.0000	53.9345	-7.9	91	0.00
63	T	1,1,2-Trichloroethane	50.0000	52.1077	-4.2	89	0.00
64	T	2-Hexanone	50.0000	51.4087	-2.8	87	0.00
65	T	1,3-Dichloropropane	50.0000	50.4329	-0.9	88	0.00
66	T	Tetrachloroethene	50.0000	51.6861	-3.4	90	0.00
67	T	Dibromochloromethane	50.0000	56.3120	-12.6	91	0.00
68	T	1,2-Dibromoethane	50.0000	52.7743	-5.5	89	0.00
69	T	1-Chlorohexane	50.0000	51.0812	-2.2	88	0.00
70	P	Chlorobenzene	50.0000	50.8043	-1.6	89	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	54.2865	-8.6	91	0.00
72	C	Ethylbenzene	50.0000	52.6580	-5.3	90	0.00
73	T	m-,p-Xylene	100.0000	104.7075	-4.7	90	0.00
74	T	o-Xylene	50.0000	53.4256	-6.9	90	0.00
75	T	Styrene	50.0000	53.6906	-7.4	89	0.00
76	P	Bromoform	50.0000	54.8378	-9.7	90	0.00
77	T	Isopropylbenzene	50.0000	52.9654	-5.9	90	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	87	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	53.9179	-7.8	92	0.00
80	S	p-Bromofluorobenzene	25.0000	24.3521	2.6	85	0.00
81	T	1,2,3-Trichloropropane	50.0000	53.0660	-6.1	89	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	55.4740	-10.9	90	0.00
83	T	n-Propylbenzene	50.0000	52.3511	-4.7	91	0.00
84	T	Bromobenzene	50.0000	51.2304	-2.5	90	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	52.4657	-4.9	91	0.00
86	T	2-Chlorotoluene	50.0000	51.5924	-3.2	90	0.00
87	T	4-Chlorotoluene	50.0000	50.6296	-1.3	92	0.00
88	T	a-Methylstyrene	50.0000	52.5116	-5.0	88	0.00
89	T	tert-Butylbenzene	50.0000	51.7276	-3.5	90	-0.01
90	T	1,2,4-Trimethylbenzene	50.0000	53.2726	-6.5	91	-0.01
91	T	sec-Butylbenzene	50.0000	52.4042	-4.8	91	0.00
92	T	p-Isopropyltoluene	50.0000	53.0206	-6.0	91	0.00
93	T	1,3-Dichlorobenzene	50.0000	51.5557	-3.1	91	0.00
94	T	1,4-Dichlorobenzene	50.0000	51.0614	-2.1	91	0.00
95	T	n-Butylbenzene	50.0000	53.1078	-6.2	91	0.00
96	T	1,2-Dichlorobenzene	50.0000	51.1602	-2.3	90	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	55.2573	-10.5	93	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	50.9795	-2.0	89	0.00
99	T	Hexachlorobutadiene	50.0000	50.2323	-0.5	88	0.00
100	T	Naphthalene	50.0000	51.4117	-2.8	84	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	49.4436	1.1	86	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140364.D 8260WTR.M Sat Jul 02 13:31:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070516\6M140418.D Vial: 2
Acq On : 5 Jul 2016 11:14 Operator: TMB
Sample : WG575127-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 05 12:19:44 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	563518	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	417834	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	235599	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	147974	25.8823 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.52%		
43) 1,2-Dichloroethane-d4	10.31	65	176318	24.4299 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.72%		
58) Toluene-d8	13.04	98	507034	24.6428 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.56%		
80) p-Bromofluorobenzene	17.02	95	220036	23.8472 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.40%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	575530	61.0966 ug/L	100
3) Chloromethane	3.37	50	531184	50.5065 ug/L	99
4) Vinyl Chloride	3.56	62	335485	58.0873 ug/L	99
5) 1,3-Butadiene	3.59	54	242490	73.9704 ug/L	95
6) Bromomethane	4.39	94	175863	45.8220 ug/L	100
7) Chloroethane	4.53	64	200312	54.8897 ug/L	92
8) Trichlorofluoromethane	5.00	101	533668	60.5843 ug/L	100
9) Diethyl ether	5.55	59	511110	98.3402 ug/L	96
10) Isoprene	5.58	67	429374	54.6162 ug/L	93
11) Acrolein	5.79	56	40188	46.4868 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	314666	57.4144 ug/L	98
13) Acetone	5.90	43	82471	45.6801 ug/L	96
14) 1,1-Dichloroethene	6.11	61	580632	54.6033 ug/L	94
15) Tert-Butyl Alcohol	6.25	59	86543	156.7612 ug/L	97
16) Dimethyl Sulfide	6.38	62	227441	49.0419 ug/L	92
17) Iodomethane	6.65	142	223584	57.9080 ug/L	89
18) Methyl acetate	6.69	43	225272	46.1112 ug/L	97
19) Methylene Chloride	6.93	84	307693	50.4590 ug/L	88
20) Carbon Disulfide	6.96	76	1046823	53.7242 ug/L	100
21) Acrylonitrile	7.15	53	106040	47.3045 ug/L	100
22) Methyl Tert Butyl Ether	7.18	73	757456	46.8622 ug/L	99
23) trans-1,2-Dichloroethene	7.42	96	302913	53.1886 ug/L	88
24) n-Hexane	7.51	57	540874	55.9593 ug/L	96
25) Diisopropyl ether	7.90	45	2641336	101.5307 ug/L	99
26) Vinyl Acetate	8.09	43	573093	52.7711 ug/L	97
27) 1,1-Dichloroethane	8.10	63	644516	52.5636 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	2051797	98.0355 ug/L	98
29) 2-Butanone	8.73	43	123593	44.7204 ug/L	96
30) Propionitrile	8.85	54	66668	88.8891 ug/L	98
31) 2,2-Dichloropropane	8.96	77	530334	57.3291 ug/L	98
32) cis-1,2-Dichloroethene	9.03	96	329922	52.9229 ug/L	90
33) Chloroform	9.26	83	583356	53.1061 ug/L	99
34) 1-Bromopropane	9.42	122	52517	53.2616 ug/L	99
35) Bromochloromethane	9.52	130	181959	54.3157 ug/L	99
36) Tetrahydrofuran	9.56	42	155575	80.7067 ug/L	94
38) 1,1,1-Trichloroethane	9.85	97	542021	56.6765 ug/L	99
39) Cyclohexane	9.87	56	651087	52.3289 ug/L	95
40) 1,1-Dichloropropene	10.08	75	444809	53.3997 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1517217	95.4688 ug/L	97
42) Carbon Tetrachloride	10.23	117	496212	63.1909 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140418.D 8260WTR.M Tue Jul 05 12:19:47 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070516\6M140418.D Vial: 2
Acq On : 5 Jul 2016 11:14 Operator: TMB
Sample : WG575127-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 05 12:19:44 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	461459	52.3951 ug/L	98
46)	Benzene	10.48	78	1220861	51.9306 ug/L	96
47)	Trichloroethene	11.35	130	300873	51.8638 ug/L	88
48)	Methylcyclohexane	11.43	83	491429	53.9584 ug/L	95
49)	1,2-Dichloropropane	11.59	63	343263	50.7017 ug/L	93
50)	1,4-Dioxane	11.94	88	7632	166.5234 ug/L	87
51)	Bromodichloromethane	11.94	83	447393	54.7665 ug/L	99
52)	Dibromomethane	12.03	93	172082	52.5339 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.32	63	157128	46.2898 ug/L	99
54)	4-Methyl-2-Pentanone	12.35	58	93032	44.5327 ug/L	98
55)	cis-1,3-Dichloropropene	12.68	75	499182	52.6322 ug/L	99
56)	Dimethyl Disulfide	12.97	79	268193	50.7973 ug/L	99
59)	Toluene	13.16	91	1253818	50.3493 ug/L	100
60)	Ethyl Methacrylate	13.32	69	325709	45.9719 ug/L	93
62)	trans-1,3-Dichloropropene	13.39	75	448803	50.6842 ug/L	95
63)	1,1,2-Trichloroethane	13.63	97	225062	48.8365 ug/L	98
64)	2-Hexanone	13.58	43	191326	43.7253 ug/L	95
65)	1,3-Dichloropropane	13.99	76	405170	46.6489 ug/L	92
66)	Tetrachloroethene	14.10	166	314268	52.9576 ug/L	93
67)	Dibromochloromethane	14.41	129	301854	53.9477 ug/L	99
68)	1,2-Dibromoethane	14.70	107	215203	48.3784 ug/L	100
69)	1-Chlorohexane	14.86	91	426897	51.5113 ug/L	89
70)	Chlorobenzene	15.31	112	817297	51.1731 ug/L	93
71)	1,1,1,2-Tetrachloroethane	15.35	131	309307	54.4282 ug/L	97
72)	Ethylbenzene	15.35	106	441843	52.8538 ug/L	94
73)	m-,p-Xylene	15.46	106	1063341	105.2463 ug/L	93
74)	o-Xylene	16.11	106	531755	52.7715 ug/L	93
75)	Styrene	16.15	104	907515	53.5326 ug/L	92
76)	Bromoform	16.72	173	177968	51.2916 ug/L	98
77)	Isopropylbenzene	16.62	105	1397460	53.1529 ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.88	83	273693	47.8656 ug/L	99
81)	1,2,3-Trichloropropane	17.10	110	78969	46.5829 ug/L	87
82)	trans-1,4-Dichloro-2-Buten	17.18	53	107120	49.5501 ug/L	99
83)	n-Propylbenzene	17.22	91	1754518	51.8296 ug/L	98
84)	Bromobenzene	17.34	156	356123	50.3480 ug/L	92
85)	1,3,5-Trimethylbenzene	17.44	105	1240566	52.2851 ug/L	97
86)	2-Chlorotoluene	17.52	91	1166485	50.9523 ug/L	97
87)	4-Chlorotoluene	17.58	91	1091341	50.0028 ug/L	96
88)	a-Methylstyrene	17.92	118	631999	52.9587 ug/L	100
89)	tert-Butylbenzene	17.98	134	253676	53.2148 ug/L	73
90)	1,2,4-Trimethylbenzene	18.04	105	1294338	53.1609 ug/L	98
91)	sec-Butylbenzene	18.31	105	1496581	52.6919 ug/L	98
92)	p-Isopropyltoluene	18.50	119	1296891	53.5794 ug/L	98
93)	1,3-Dichlorobenzene	18.70	146	719255	51.6643 ug/L	95
94)	1,4-Dichlorobenzene	18.86	146	713981	50.7263 ug/L	95
95)	n-Butylbenzene	19.13	91	1280392	53.9407 ug/L	97
96)	1,2-Dichlorobenzene	19.43	146	664011	50.8021 ug/L	94
97)	1,2-Dibromo-3-Chloropropan	20.62	75	54489	48.6573 ug/L	86
98)	1,2,4-Trichlorobenzene	21.97	180	467211	50.5688 ug/L	99
99)	Hexachlorobutadiene	22.15	225	204511	53.2397 ug/L	100
100)	Naphthalene	22.38	128	908714	48.1269 ug/L	100
101)	1,2,3-Trichlorobenzene	22.76	180	424361	49.6050 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140418.D 8260WTR.M Tue Jul 05 12:19:48 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070516\6M140418.D Vial: 2
Acq On : 5 Jul 2016 11:14 Operator: TMB
Sample : WG575127-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 5 12:19 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

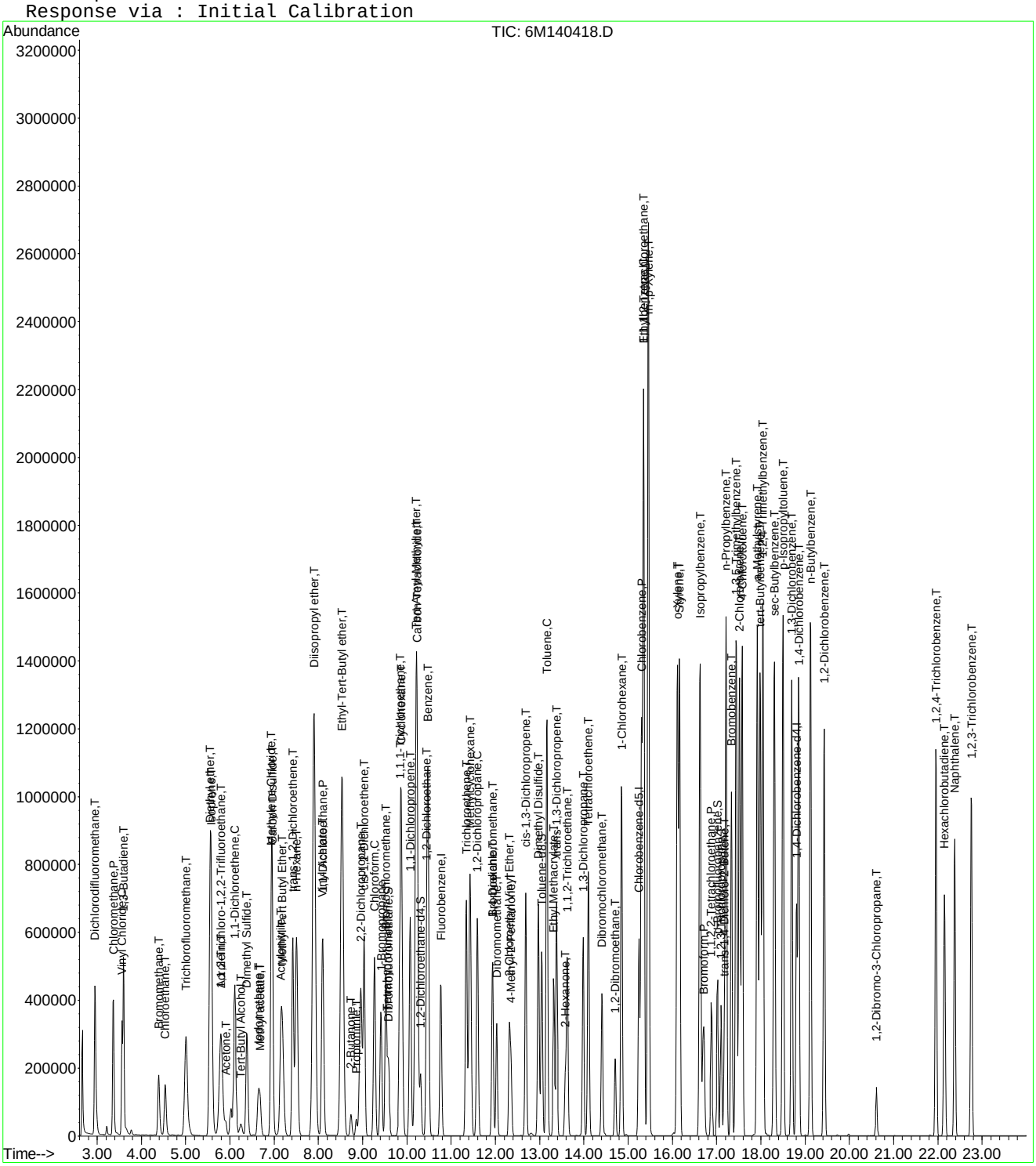

6M140418.D 8260WTR.M Tue Jul 05 12:19:50 2016 Page 3

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070516\6M140418.D Vial: 2
Acq On : 5 Jul 2016 11:14 Operator: TMB
Sample : WG575127-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	85	0.00
2	T	Dichlorodifluoromethane	0.4179	0.5107	-22.2#	99	0.00
3	P	Chloromethane	0.4666	0.4713	-1.0	86	0.00
4	C	Vinyl Chloride	0.2562	0.2977	-16.2	97	0.00
5	T	1,3-Butadiene	0.1608	0.2152	-33.8#	118	0.00
6	T	Bromomethane	0.1703	0.1560	8.4	82	0.02
7	T	Chloroethane	0.1619	0.1777	-9.8	93	0.00
8	T	Trichlorofluoromethane	0.3908	0.4735	-21.2#	108	0.00
9	T	Diethyl ether	0.2306	0.2268	1.7	81	0.00
10	T	Isoprene	0.3488	0.3810	-9.2	90	0.00
11	T	Acrolein	0.0384	0.0357	7.0	80	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2431	0.2792	-14.8	99	0.00
13	T	Acetone	0.0801	0.0732	8.6	78	0.00
14	C	1,1-Dichloroethene	0.4718	0.5152	-9.2	93	0.00
15	T	Tert-Butyl Alcohol	0.0245	0.0192	21.6#	67	-0.04
16	T	Dimethyl Sulfide	0.2057	0.2018	1.9	82	0.00
17	T	Iodomethane	0.1391	0.1984	-42.6#	93	0.00
18	T	Methyl acetate	0.2167	0.1999	7.8	79	0.00
19	T	Methylene Chloride	0.2705	0.2730	-0.9	89	0.00
20	T	Carbon Disulfide	0.8644	0.9288	-7.4	91	0.00
21	T	Acrylonitrile	0.0994	0.0941	5.4	78	0.00
22	T	Methyl Tert Butyl Ether	0.7171	0.6721	6.3	79	0.00
23	T	trans-1,2-Dichloroethene	0.2527	0.2688	-6.4	91	0.00
24	T	n-Hexane	0.4288	0.4799	-11.9	96	0.00
25	T	Diisopropyl ether	1.1541	1.1718	-1.5	86	0.00
26	T	Vinyl Acetate	0.4818	0.5085	-5.5	89	0.00
27	P	1,1-Dichloroethane	0.5440	0.5719	-5.1	90	0.00
28	T	Ethyl-Tert-Butyl ether	0.9285	0.9103	2.0	83	0.00
29	T	2-Butanone	0.1226	0.1097	10.6	74	0.00
30	T	Propionitrile	0.0333	0.0296	11.1	74	0.00
31	T	2,2-Dichloropropane	0.4104	0.4706	-14.7	99	0.00
32	T	cis-1,2-Dichloroethene	0.2766	0.2927	-5.8	90	0.00
33	C	Chloroform	0.4873	0.5176	-6.2	92	0.00
34		1-Bromopropane	0.0394	0.0466	-18.2	89	0.00
35	T	Bromochloromethane	0.1486	0.1615	-8.6	90	0.00
36	T	Tetrahydrofuran	0.0855	0.0690	19.3	72	0.00
37	S	Dibromofluoromethane	0.2536	0.2626	-3.5	86	0.00
38	T	1,1,1-Trichloroethane	0.4243	0.4809	-13.4	95	0.00
39	T	Cyclohexane	0.5520	0.5777	-4.7	90	0.00
40	T	1,1-Dichloropropene	0.3695	0.3947	-6.8	91	0.00
41	T	Tert-Amyl-Methyl ether	0.7050	0.6731	4.5	81	0.00
42	T	Carbon Tetrachloride	0.3484	0.4403	-26.4#	99	0.00
43	S	1,2-Dichloroethane-d4	0.3202	0.3129	2.3	83	0.00
44		Heptane	0.0000	0.0000	0.0	82	0.00
45	T	1,2-Dichloroethane	0.3907	0.4094	-4.8	88	0.00
46	T	Benzene	1.0430	1.0833	-3.9	89	0.00
47	T	Trichloroethene	0.2574	0.2670	-3.7	88	0.00
48	T	Methylcyclohexane	0.4041	0.4360	-7.9	92	0.00
49	C	1,2-Dichloropropane	0.3004	0.3046	-1.4	85	0.00
50	T	1,4-Dioxane	0.0020	0.0017	16.7	67	0.00
51	T	Bromodichloromethane	0.3624	0.3970	-9.5	90	0.00
52	T	Dibromomethane	0.1453	0.1527	-5.1	86	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1506	0.1394	7.4	73	0.00
54	T	4-Methyl-2-Pentanone	0.0927	0.0825	10.9	73	0.00

(#) = Out of Range

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070516\6M140418.D Vial: 2
Acq On : 5 Jul 2016 11:14 Operator: TMB
Sample : WG575127-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4208	0.4429	-5.3	87	0.00
56	T	Dimethyl Disulfide	0.2342	0.2380	-1.6	83	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	88	0.00
58	S	Toluene-d8	1.2311	1.2135	1.4	87	0.00
59	C	Toluene	1.4900	1.5004	-0.7	90	0.00
60	T	Ethyl Methacrylate	0.4239	0.3898	8.1	77	0.00
61		Paraldehyde	0.0000	0.0000	0.0	90	0.00
62	T	trans-1,3-Dichloropropene	0.5298	0.5371	-1.4	86	0.00
63	T	1,1,2-Trichloroethane	0.2757	0.2693	2.3	84	0.00
64	T	2-Hexanone	0.2618	0.2289	12.5	74	0.00
65	T	1,3-Dichloropropane	0.5197	0.4849	6.7	82	0.00
66	T	Tetrachloroethene	0.3551	0.3761	-5.9	93	0.00
67	T	Dibromochloromethane	0.3348	0.3612	-7.9	88	0.00
68	T	1,2-Dibromoethane	0.2662	0.2575	3.2	82	0.00
69	T	1-Chlorohexane	0.4959	0.5109	-3.0	89	0.00
70	P	Chlorobenzene	0.9556	0.9780	-2.3	90	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3400	0.3701	-8.9	92	0.00
72	C	Ethylbenzene	0.5002	0.5287	-5.7	91	0.00
73	T	m-,p-Xylene	0.6045	0.6362	-5.2	91	0.00
74	T	o-Xylene	0.6029	0.6363	-5.5	90	0.00
75	T	Styrene	1.0143	1.0860	-7.1	89	0.00
76	P	Bromoform	0.2076	0.2130	-2.6	85	0.00
77	T	Isopropylbenzene	1.5731	1.6723	-6.3	92	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	89	0.00
79	P	1,1,2,2-Tetrachloroethane	0.6068	0.5808	4.3	84	0.00
80	S	p-Bromofluorobenzene	0.9791	0.9339	4.6	85	0.00
81	T	1,2,3-Trichloropropane	0.1799	0.1676	6.8	80	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.2294	0.2273	0.9	83	0.00
83	T	n-Propylbenzene	3.5921	3.7235	-3.7	93	0.00
84	T	Bromobenzene	0.7506	0.7558	-0.7	91	0.00
85	T	1,3,5-Trimethylbenzene	2.5177	2.6328	-4.6	93	-0.01
86	T	2-Chlorotoluene	2.4293	2.4756	-1.9	92	0.00
87	T	4-Chlorotoluene	2.3160	2.3161	-0.0	93	0.00
88	T	a-Methylstyrene	1.2663	1.3413	-5.9	92	0.00
89	T	tert-Butylbenzene	0.5058	0.5384	-6.4	95	-0.01
90	T	1,2,4-Trimethylbenzene	2.5836	2.7469	-6.3	94	-0.01
91	T	sec-Butylbenzene	3.0139	3.1761	-5.4	94	0.00
92	T	p-Isopropyltoluene	2.5685	2.7523	-7.2	95	0.00
93	T	1,3-Dichlorobenzene	1.4773	1.5264	-3.3	94	0.00
94	T	1,4-Dichlorobenzene	1.4935	1.5153	-1.5	93	0.00
95	T	n-Butylbenzene	2.5188	2.7173	-7.9	95	0.00
96	T	1,2-Dichlorobenzene	1.3869	1.4092	-1.6	91	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1188	0.1156	2.7	85	0.00
98	T	1,2,4-Trichlorobenzene	0.9804	0.9915	-1.1	90	0.00
99	T	Hexachlorobutadiene	0.4076	0.4340	-6.5	96	0.00
100	T	Naphthalene	2.0036	1.9285	3.7	81	0.00
101	T	1,2,3-Trichlorobenzene	0.9078	0.9006	0.8	89	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140418.D 8260WTR.M Tue Jul 05 12:19:58 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070516\6M140418.D Vial: 2
Acq On : 5 Jul 2016 11:14 Operator: TMB
Sample : WG575127-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	85	0.00
2	T	Dichlorodifluoromethane	50.0000	61.0966	-22.2#	99	0.00
3	P	Chloromethane	50.0000	50.5065	-1.0	86	0.00
4	C	Vinyl Chloride	50.0000	58.0873	-16.2	97	0.00
5	T	1,3-Butadiene	50.0000	73.9703	-47.9#	118	0.00
6	T	Bromomethane	50.0000	45.8220	8.4	82	0.02
7	T	Chloroethane	50.0000	54.8897	-9.8	93	0.00
8	T	Trichlorofluoromethane	50.0000	60.5843	-21.2#	108	0.00
9	T	Diethyl ether	100.0000	98.3402	1.7	81	0.00
10	T	Isoprene	50.0000	54.6163	-9.2	90	0.00
11	T	Acrolein	50.0000	46.4868	7.0	80	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	57.4144	-14.8	99	0.00
13	T	Acetone	50.0000	45.6801	8.6	78	0.00
14	C	1,1-Dichloroethene	50.0000	54.6033	-9.2	93	0.00
15	T	Tert-Butyl Alcohol	200.0000	156.7612	21.6#	67	-0.04
16	T	Dimethyl Sulfide	50.0000	49.0419	1.9	82	0.00
17	T	Iodomethane	50.0000	57.9080	-15.8	93	0.00
18	T	Methyl acetate	50.0000	46.1112	7.8	79	0.00
19	T	Methylene Chloride	50.0000	50.4590	-0.9	89	0.00
20	T	Carbon Disulfide	50.0000	53.7242	-7.4	91	0.00
21	T	Acrylonitrile	50.0000	47.3045	5.4	78	0.00
22	T	Methyl Tert Butyl Ether	50.0000	46.8622	6.3	79	0.00
23	T	trans-1,2-Dichloroethene	50.0000	53.1886	-6.4	91	0.00
24	T	n-Hexane	50.0000	55.9593	-11.9	96	0.00
25	T	Diisopropyl ether	100.0000	101.5307	-1.5	86	0.00
26	T	Vinyl Acetate	50.0000	52.7711	-5.5	89	0.00
27	P	1,1-Dichloroethane	50.0000	52.5636	-5.1	90	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.0355	2.0	83	0.00
29	T	2-Butanone	50.0000	44.7204	10.6	74	0.00
30	T	Propionitrile	100.0000	88.8891	11.1	74	0.00
31	T	2,2-Dichloropropane	50.0000	57.3291	-14.7	99	0.00
32	T	cis-1,2-Dichloroethene	50.0000	52.9229	-5.8	90	0.00
33	C	Chloroform	50.0000	53.1061	-6.2	92	0.00
34		1-Bromopropane	50.0000	53.2616	-6.5	89	0.00
35	T	Bromochloromethane	50.0000	54.3157	-8.6	90	0.00
36	T	Tetrahydrofuran	100.0000	80.7067	19.3	72	0.00
37	S	Dibromofluoromethane	25.0000	25.8823	-3.5	86	0.00
38	T	1,1,1-Trichloroethane	50.0000	56.6765	-13.4	95	0.00
39	T	Cyclohexane	50.0000	52.3289	-4.7	90	0.00
40	T	1,1-Dichloropropene	50.0000	53.3997	-6.8	91	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	95.4688	4.5	81	0.00
42	T	Carbon Tetrachloride	50.0000	63.1909	-26.4#	99	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.4299	2.3	83	0.00
44		Heptane	-1.0000	0.0000	0.0	82	0.00
45	T	1,2-Dichloroethane	50.0000	52.3951	-4.8	88	0.00
46	T	Benzene	50.0000	51.9306	-3.9	89	0.00
47	T	Trichloroethene	50.0000	51.8638	-3.7	88	0.00
48	T	Methylcyclohexane	50.0000	53.9584	-7.9	92	0.00
49	C	1,2-Dichloropropane	50.0000	50.7017	-1.4	85	0.00
50	T	1,4-Dioxane	200.0000	166.5234	16.7	67	0.00
51	T	Bromodichloromethane	50.0000	54.7665	-9.5	90	0.00
52	T	Dibromomethane	50.0000	52.5339	-5.1	86	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	46.2898	7.4	73	0.00
54	T	4-Methyl-2-Pentanone	50.0000	44.5327	10.9	73	0.00

(#) = Out of Range
6M140418.D 8260WTR.M Tue Jul 05 12:20:00 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070516\6M140418.D Vial: 2
Acq On : 5 Jul 2016 11:14 Operator: TMB
Sample : WG575127-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	52.6322	-5.3	87	0.00
56	T	Dimethyl Disulfide	50.0000	50.7973	-1.6	83	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	88	0.00
58	S	Toluene-d8	25.0000	24.6427	1.4	87	0.00
59	C	Toluene	50.0000	50.3493	-0.7	90	0.00
60	T	Ethyl Methacrylate	50.0000	45.9719	8.1	77	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	90	0.00
62	T	trans-1,3-Dichloropropene	50.0000	50.6842	-1.4	86	0.00
63	T	1,1,2-Trichloroethane	50.0000	48.8365	2.3	84	0.00
64	T	2-Hexanone	50.0000	43.7253	12.5	74	0.00
65	T	1,3-Dichloropropane	50.0000	46.6489	6.7	82	0.00
66	T	Tetrachloroethene	50.0000	52.9576	-5.9	93	0.00
67	T	Dibromochloromethane	50.0000	53.9477	-7.9	88	0.00
68	T	1,2-Dibromoethane	50.0000	48.3784	3.2	82	0.00
69	T	1-Chlorohexane	50.0000	51.5113	-3.0	89	0.00
70	P	Chlorobenzene	50.0000	51.1731	-2.3	90	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	54.4282	-8.9	92	0.00
72	C	Ethylbenzene	50.0000	52.8538	-5.7	91	0.00
73	T	m-,p-Xylene	100.0000	105.2463	-5.2	91	0.00
74	T	o-Xylene	50.0000	52.7715	-5.5	90	0.00
75	T	Styrene	50.0000	53.5326	-7.1	89	0.00
76	P	Bromoform	50.0000	51.2916	-2.6	85	0.00
77	T	Isopropylbenzene	50.0000	53.1529	-6.3	92	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	89	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	47.8656	4.3	84	0.00
80	S	p-Bromofluorobenzene	25.0000	23.8472	4.6	85	0.00
81	T	1,2,3-Trichloropropane	50.0000	46.5829	6.8	80	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	49.5502	0.9	83	0.00
83	T	n-Propylbenzene	50.0000	51.8296	-3.7	93	0.00
84	T	Bromobenzene	50.0000	50.3480	-0.7	91	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	52.2851	-4.6	93	-0.01
86	T	2-Chlorotoluene	50.0000	50.9523	-1.9	92	0.00
87	T	4-Chlorotoluene	50.0000	50.0029	-0.0	93	0.00
88	T	a-Methylstyrene	50.0000	52.9587	-5.9	92	0.00
89	T	tert-Butylbenzene	50.0000	53.2148	-6.4	95	-0.01
90	T	1,2,4-Trimethylbenzene	50.0000	53.1609	-6.3	94	-0.01
91	T	sec-Butylbenzene	50.0000	52.6919	-5.4	94	0.00
92	T	p-Isopropyltoluene	50.0000	53.5794	-7.2	95	0.00
93	T	1,3-Dichlorobenzene	50.0000	51.6643	-3.3	94	0.00
94	T	1,4-Dichlorobenzene	50.0000	50.7263	-1.5	93	0.00
95	T	n-Butylbenzene	50.0000	53.9407	-7.9	95	0.00
96	T	1,2-Dichlorobenzene	50.0000	50.8021	-1.6	91	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	48.6573	2.7	85	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	50.5688	-1.1	90	0.00
99	T	Hexachlorobutadiene	50.0000	53.2397	-6.5	96	0.00
100	T	Naphthalene	50.0000	48.1269	3.7	81	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	49.6050	0.8	89	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

2.1.1.5 Raw QC Data

BFB

Data File : C:\MSDCHEM\1\DATA\042416\6M138750.D Vial: 1
Acq On : 24 Apr 2016 16:33 Operator: JDS
Sample : WG566155-01 50ng BFB 826-A9 Inst : HPMS6
Misc : 1,1 STD75485 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title : SOP: OVL MSV01

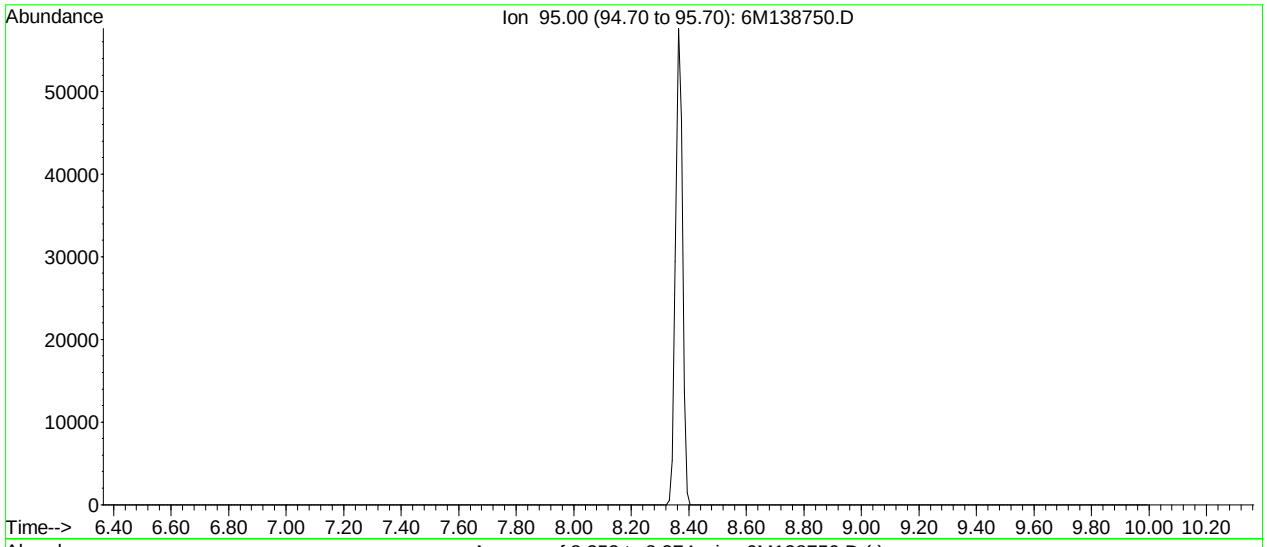

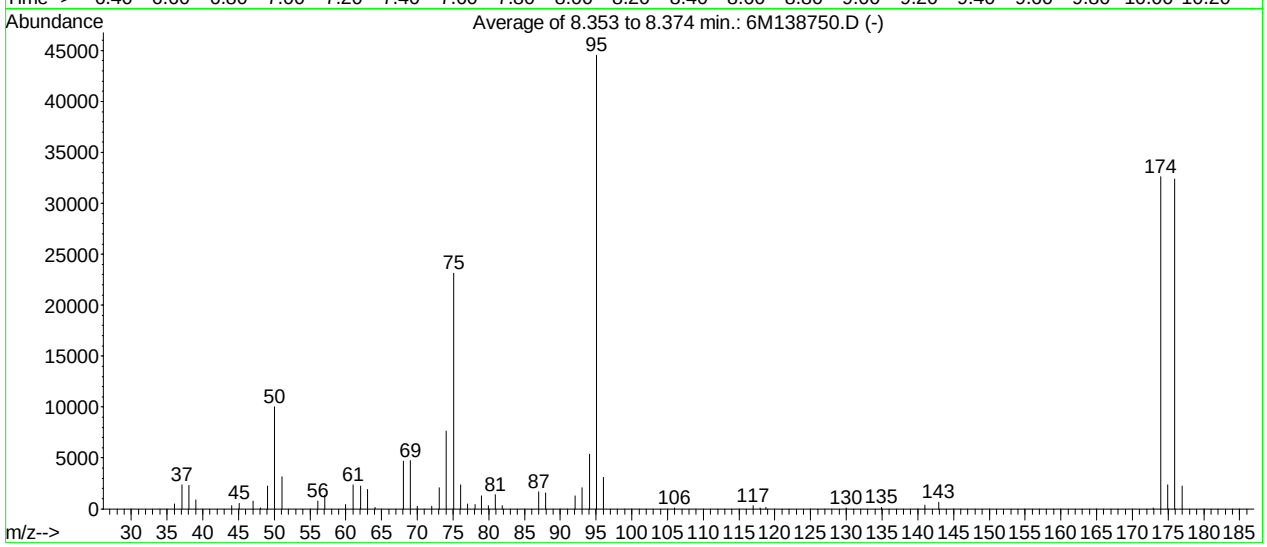

AutoFind: Scans 320, 321, 322; Background Corrected with Scan 315

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.5	10010	PASS
75	95	30	60	52.0	23152	PASS
95	95	100	100	100.0	44552	PASS
96	95	5	9	6.9	3085	PASS
173	174	0.00	2	0.3	113	PASS
174	95	50	100	73.2	32632	PASS
175	174	5	9	7.2	2336	PASS
176	174	95	101	99.2	32384	PASS
177	176	5	9	7.0	2251	PASS

6M138750.D BFB.M Mon Apr 25 09:21:54 2016

BFB

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140313.D Vial: 1
Acq On : 30 Jun 2016 11:36 Operator: TMB
Sample : WG574723-01 50ng BFB STD 8260 Inst : HPMS6
Misc : 1,1 STD76496 Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6

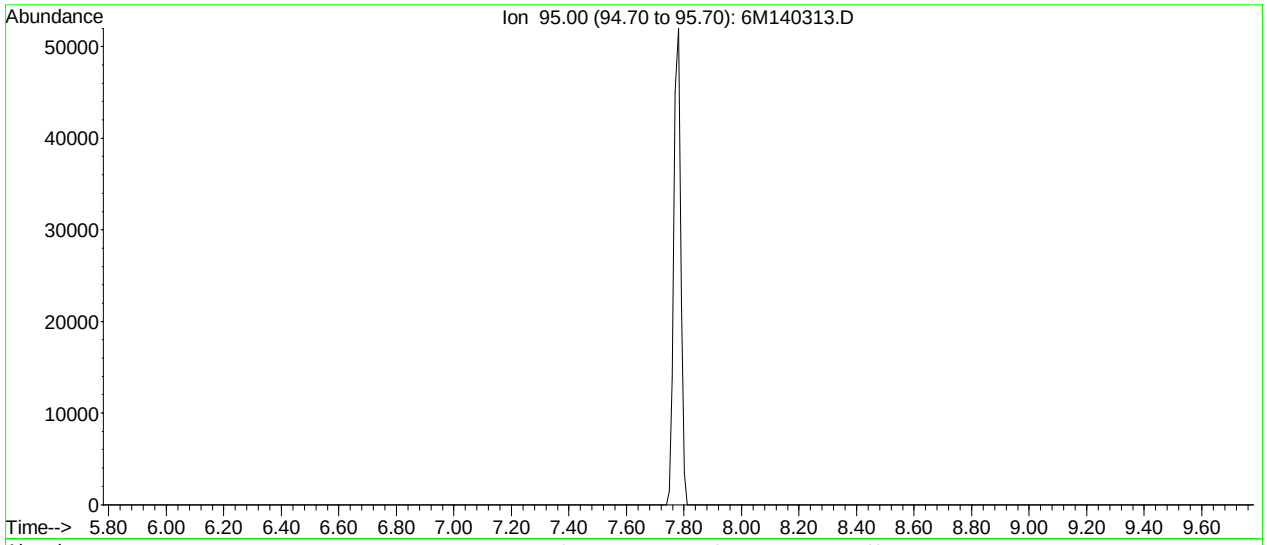

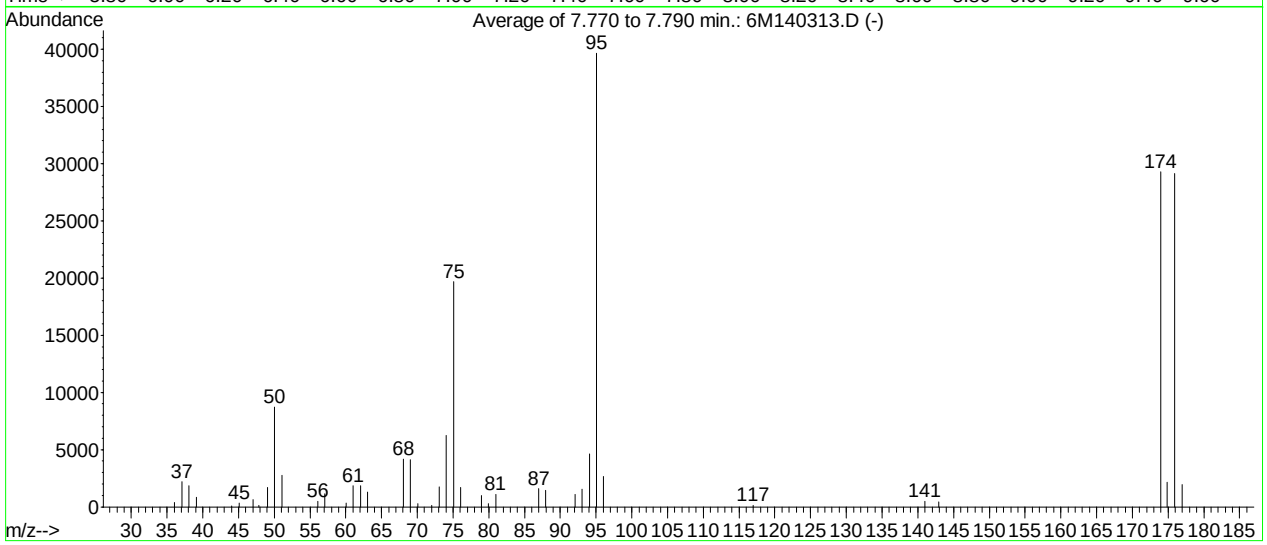

AutoFind: Scans 263, 264, 265; Background Corrected with Scan 258

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.0	8707	PASS
75	95	30	60	49.7	19699	PASS
95	95	100	100	100.0	39664	PASS
96	95	5	9	6.7	2652	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	73.8	29282	PASS
175	174	5	9	7.3	2131	PASS
176	174	95	101	99.6	29157	PASS
177	176	5	9	6.8	1969	PASS

6M140313.D 8260WTR.M Fri Jul 01 14:33:49 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070216\6M140362.D Vial: 1
Acq On    :  2 Jul 2016  11:00                        Operator: TMB
Sample    : WG575083-01 50ng BFB STD 8260             Inst    : HPMS6
Misc      : 1,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title     : 8260B/624_WATER SOP:MSV01  06-30-16 - HPMS6
```

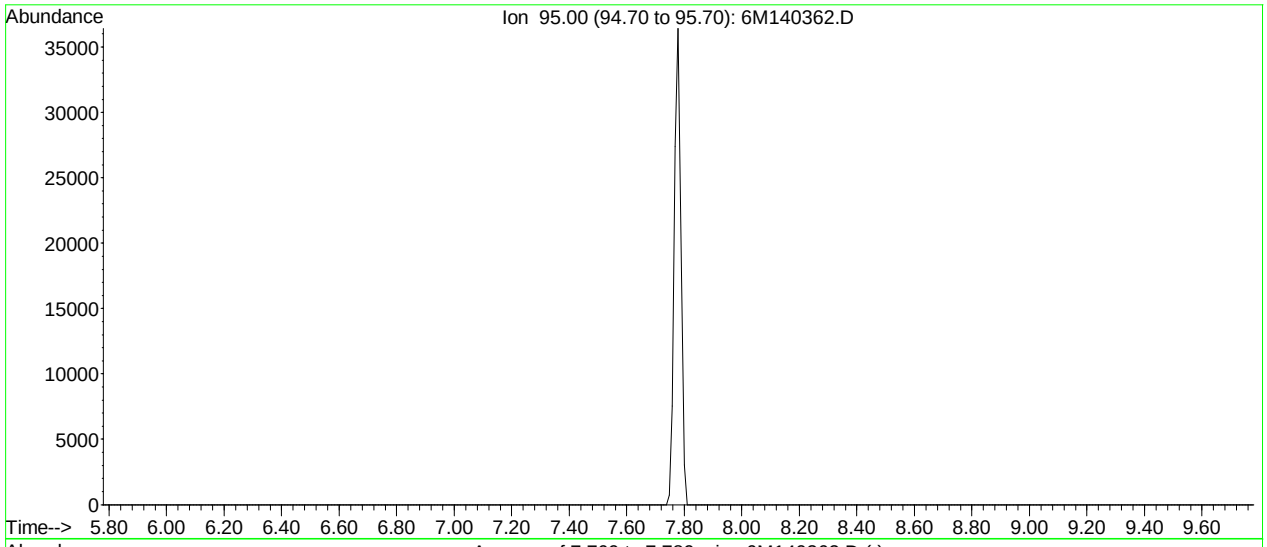

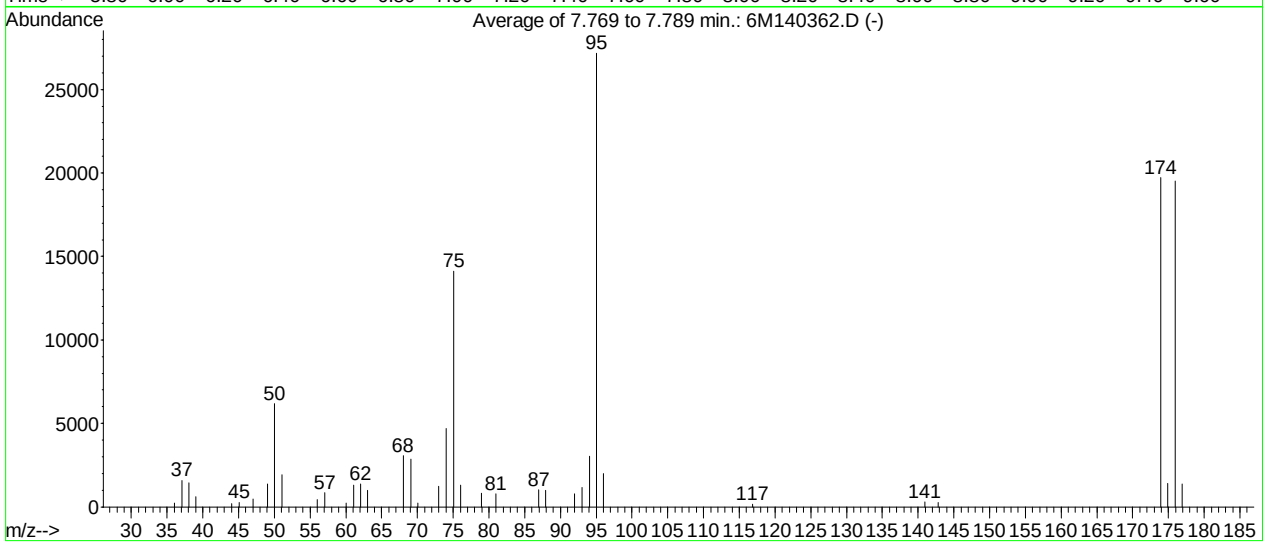

AutoFind: Scans 263, 264, 265; Background Corrected with Scan 258

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.7	6172	PASS
75	95	30	60	51.9	14114	PASS
95	95	100	100	100.0	27178	PASS
96	95	5	9	7.3	1992	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	72.6	19740	PASS
175	174	5	9	7.1	1398	PASS
176	174	95	101	98.9	19516	PASS
177	176	5	9	7.0	1368	PASS

6M140362.D 8260WTR.M Sat Jul 02 13:32:15 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070516\6M140417.D Vial: 1
Acq On    :  5 Jul 2016  10:49                        Operator: TMB
Sample    : WG575127-01 50ng BFB STD 8260             Inst    : HPMS6
Misc      : 1,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title     : 8260B/624_WATER SOP:MSV01  06-30-16 - HPMS6
```

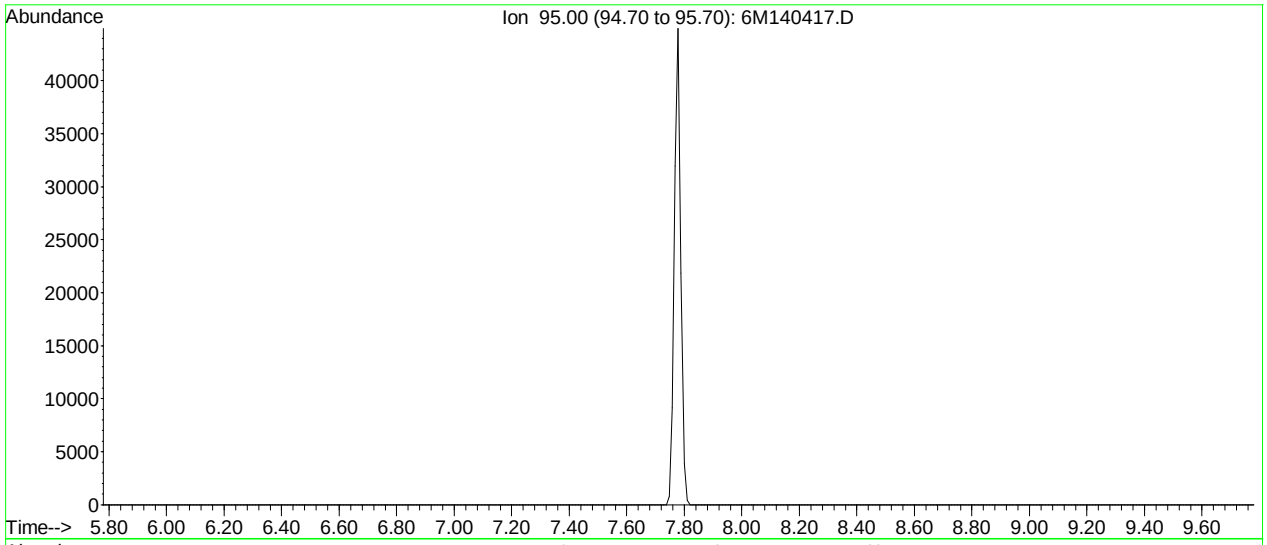

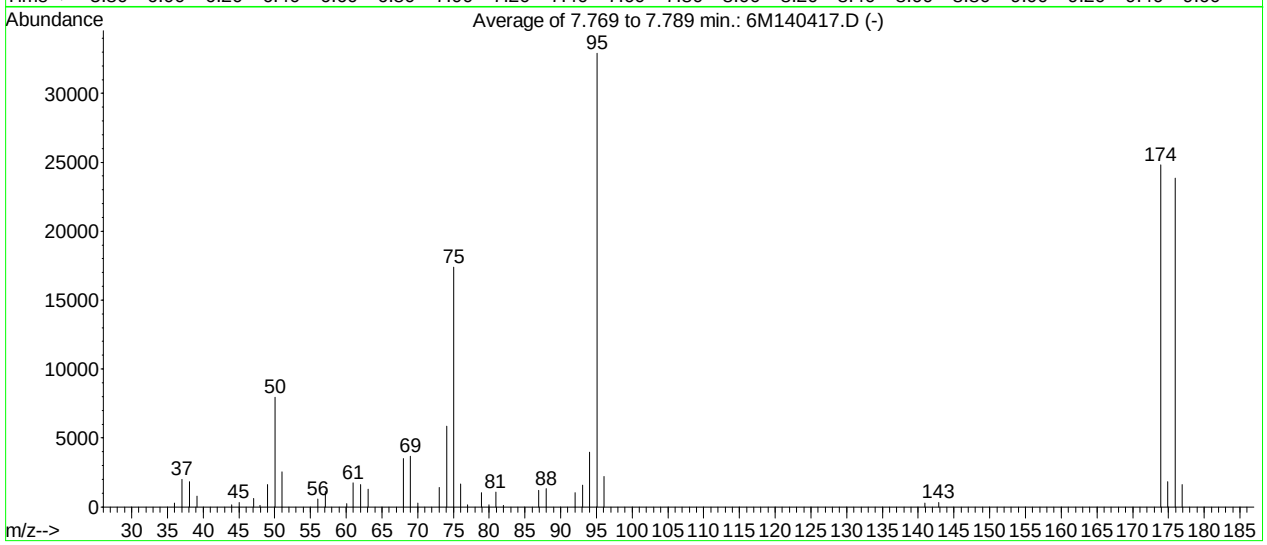

AutoFind: Scans 263, 264, 265; Background Corrected with Scan 258

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	24.2	7952	PASS
75	95	30	60	52.9	17407	PASS
95	95	100	100	100.0	32922	PASS
96	95	5	9	6.8	2223	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	75.4	24834	PASS
175	174	5	9	7.3	1823	PASS
176	174	95	101	96.0	23842	PASS
177	176	5	9	6.7	1605	PASS

6M140417.D 8260WTR.M Tue Jul 05 12:19:35 2016

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070216\6M140366.D Vial: 5
Acq On : 2 Jul 2016 13:02 Operator: TMB
Sample : WG575084-01 VBLK0702 BLANK STD 8260 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 03 10:09:50 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	550184	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	386464	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	197730	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	139793	25.0440 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.16%		
43) 1,2-Dichloroethane-d4	10.32	65	178512	25.3334 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.32%		
58) Toluene-d8	13.04	98	475884	25.0062 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.04%		
80) p-Bromofluorobenzene	17.02	95	198784	25.6700 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.68%		

Target Compounds					Qvalue
13) Acetone	5.91	43	214	0.1214 ug/L #	48
36) Tetrahydrofuran	9.56	42	1991	1.0579 ug/L #	41

(#) = qualifier out of range (m) = manual integration
6M140366.D 8260WTR.M Sun Jul 03 10:09:53 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070216\6M140366.D Vial: 5
Acq On : 2 Jul 2016 13:02 Operator: TMB
Sample : WG575084-01 VBLK0702 BLANK STD 8260 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 3 10:09 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

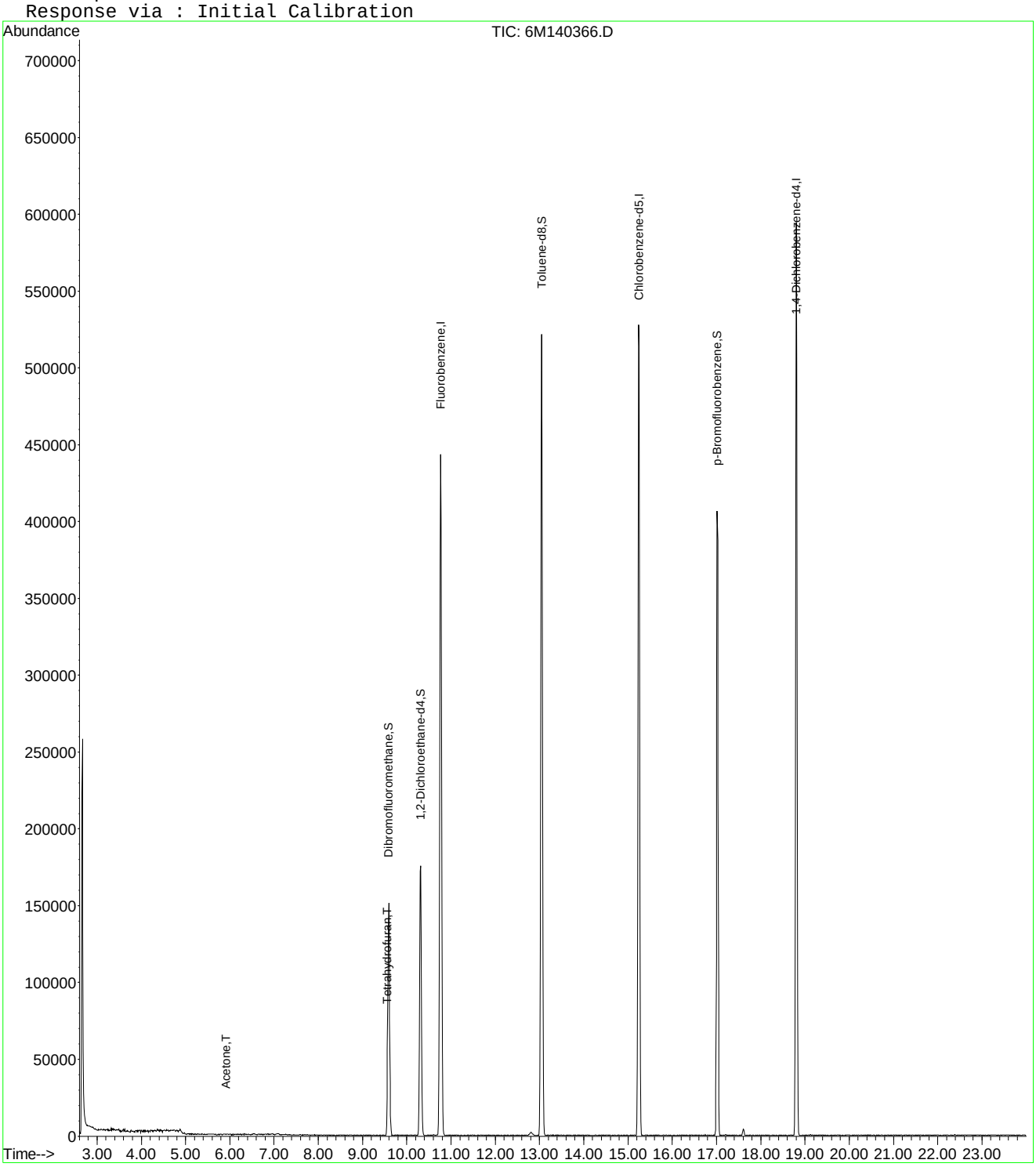

6M140366.D 8260WTR.M Sun Jul 03 10:09:54 2016 Page 2

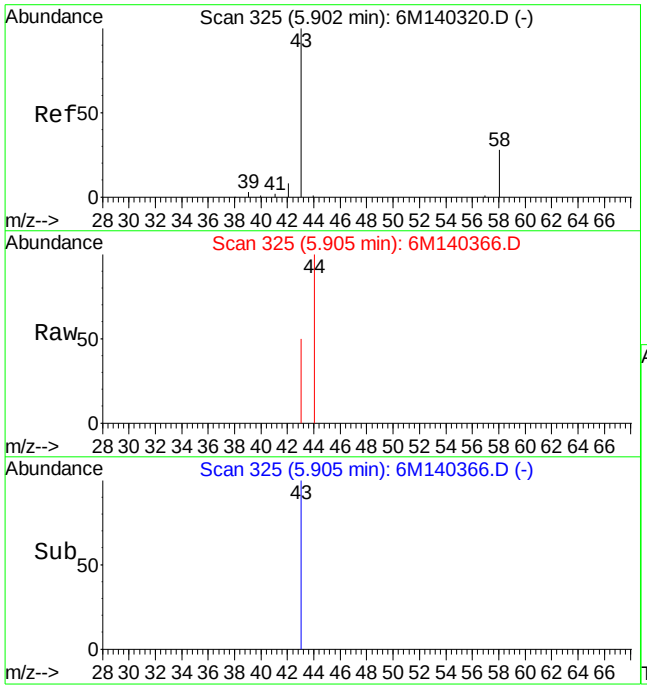

#13
Acetone
Concen: 0.12 ug/L
RT: 5.91 min Scan# 325
Delta R.T. 0.00 min
Lab File: 6M140366.D
Acq: 2 Jul 2016 13:02

Tgt Ion: 43 Resp: 214

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

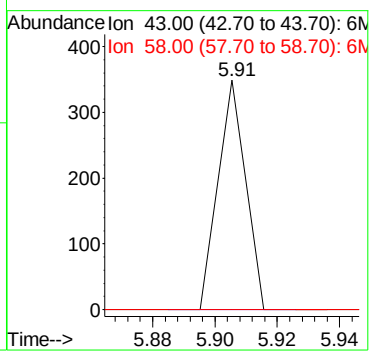

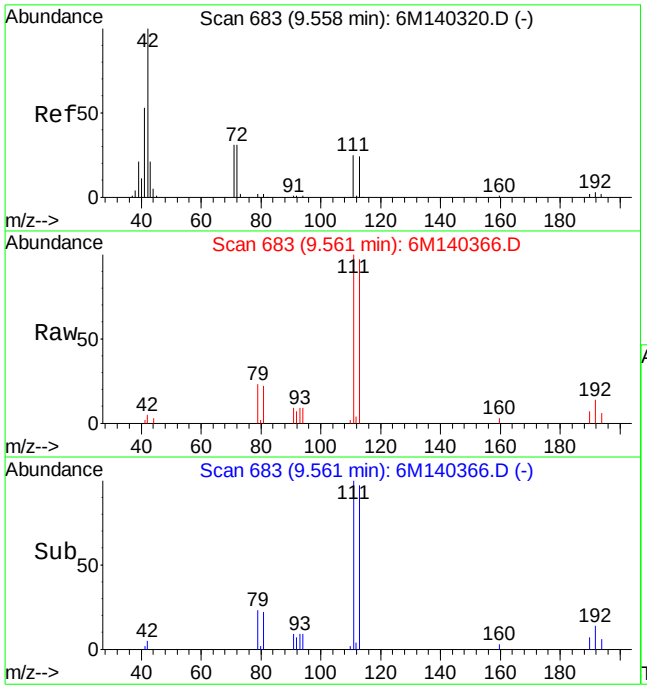

#36
Tetrahydrofuran
Concen: 1.06 ug/L
RT: 9.56 min Scan# 683
Delta R.T. 0.00 min
Lab File: 6M140366.D
Acq: 2 Jul 2016 13:02

Tgt Ion: 42 Resp: 1991

Ion	Ratio	Lower	Upper
42	100		
72	0.0	20.8	48.4#
71	0.0	19.9	46.5#

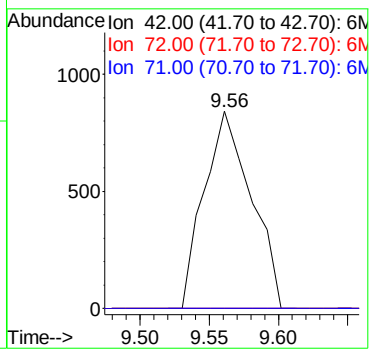

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070516\6M140420.D Vial: 4
Acq On : 5 Jul 2016 12:18 Operator: TMB
Sample : WG575129-01 VBLK0705 BLANK STD 8260 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 06 08:37:01 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	553256	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.24	117	394130	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	203903	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.58	111	145392	25.9024 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.60%		
43) 1,2-Dichloroethane-d4	10.31	65	179127	25.2795 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.12%		
58) Toluene-d8	13.04	98	488671	25.1787 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.72%		
80) p-Bromofluorobenzene	17.02	95	197362	24.7148 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.84%		
Target Compounds					Qvalue
8) Trichlorofluoromethane	5.24	101	14330	1.6570 ug/L #	1
36) Tetrahydrofuran	9.56	42	1995	1.0541 ug/L #	41
55) cis-1,3-Dichloropropene	12.76	75	8029	0.8623 ug/L #	70
56) Dimethyl Disulfide	12.77	79	1159	0.2236 ug/L #	1
98) 1,2,4-Trichlorobenzene	21.81	180	1188	0.1486 ug/L #	90
99) Hexachlorobutadiene	22.03	225	776	0.2334 ug/L #	53
100) Naphthalene	22.23	128	3277	0.2005 ug/L #	67
101) 1,2,3-Trichlorobenzene	22.64	180	1428	0.1929 ug/L #	66

(#) = qualifier out of range (m) = manual integration
6M140420.D 8260WTR.M Wed Jul 06 08:37:04 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070516\6M140420.D Vial: 4
Acq On : 5 Jul 2016 12:18 Operator: TMB
Sample : WG575129-01 VBLK0705 BLANK STD 8260 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 6 8:37 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

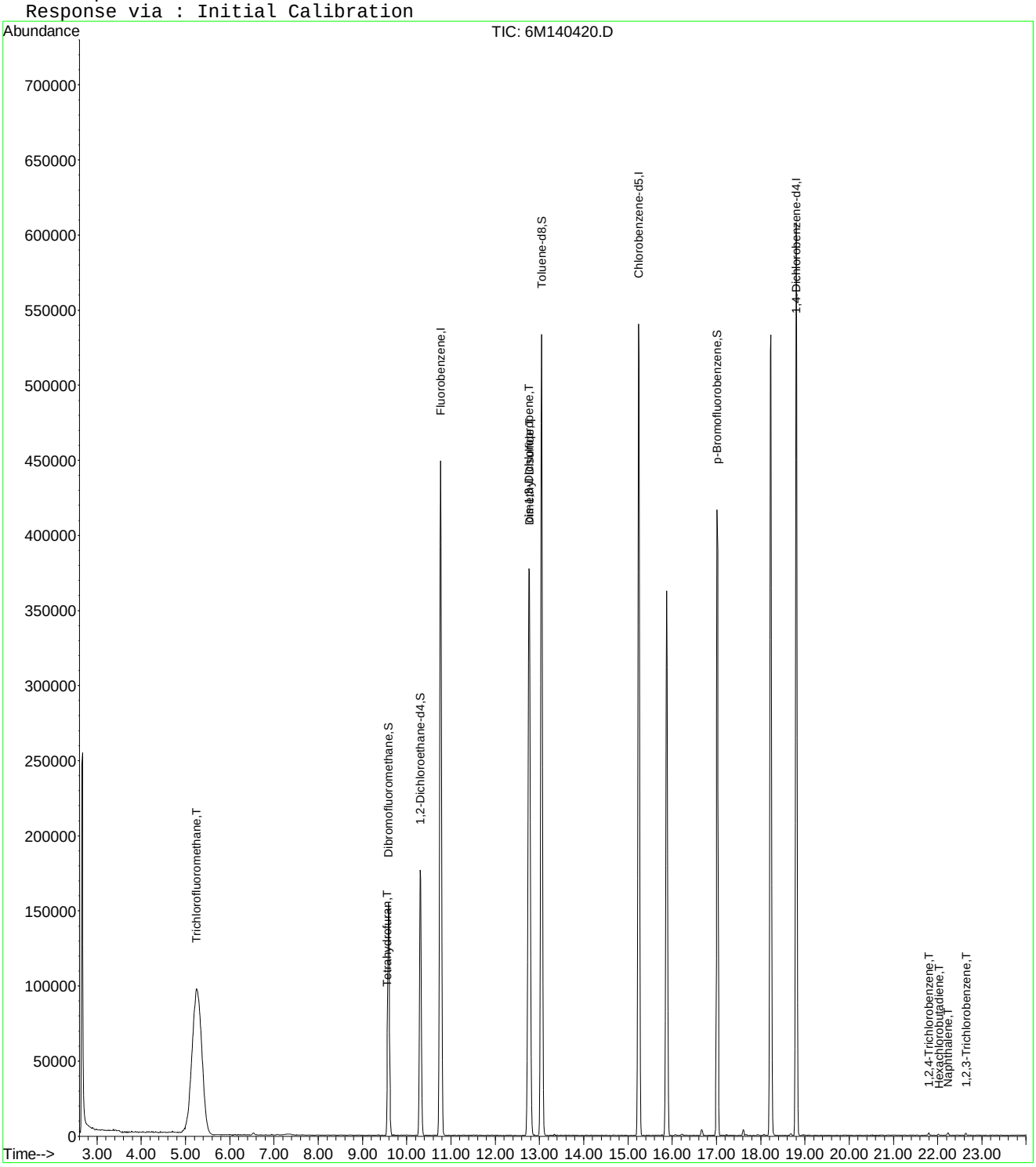

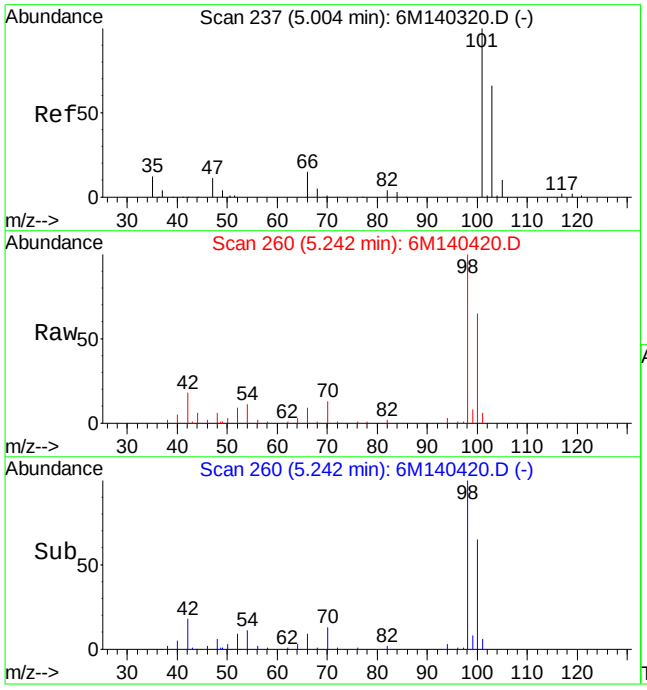

#8
Trichlorofluoromethane
Concen: 1.66 ug/L
RT: 5.24 min Scan# 260
Delta R.T. 0.25 min
Lab File: 6M140420.D
Acq: 5 Jul 2016 12:18

Tgt Ion:101 Resp: 14330

Ion	Ratio	Lower	Upper
101	100		
103	0.0	39.1	91.1#
66	154.5	8.3	19.5#

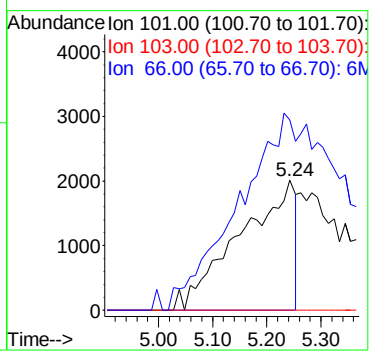

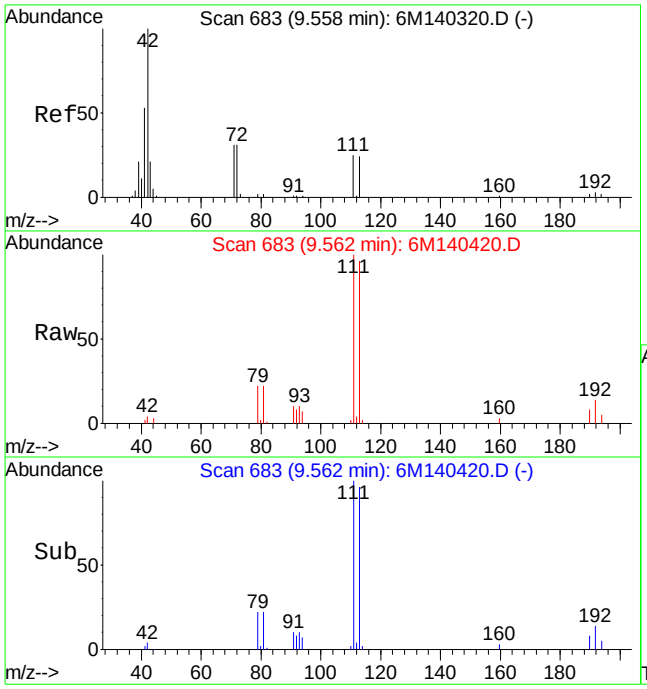

#36
Tetrahydrofuran
Concen: 1.05 ug/L
RT: 9.56 min Scan# 683
Delta R.T. 0.00 min
Lab File: 6M140420.D
Acq: 5 Jul 2016 12:18

Tgt Ion: 42 Resp: 1995

Ion	Ratio	Lower	Upper
42	100		
72	0.0	20.8	48.4#
71	0.0	19.9	46.5#

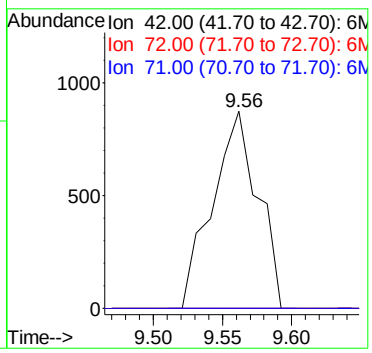

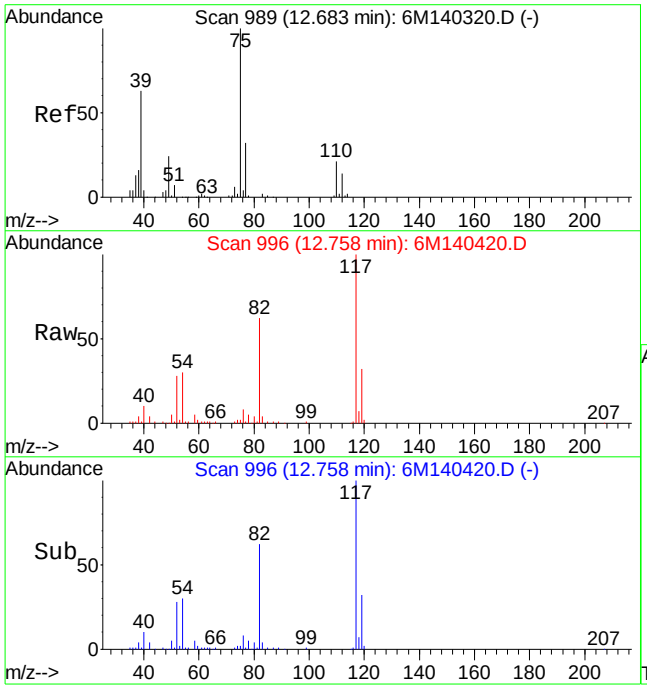

#55
cis-1,3-Dichloropropene
Concen: 0.86 ug/L
RT: 12.76 min Scan# 996
Delta R.T. 0.07 min
Lab File: 6M140420.D
Acq: 5 Jul 2016 12:18

Tgt Ion: 75 Resp: 8029

Ion	Ratio	Lower	Upper
75	100		
77	48.1	19.5	45.5#
49	7.3	14.1	32.9#

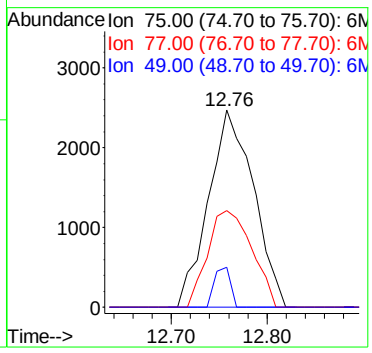

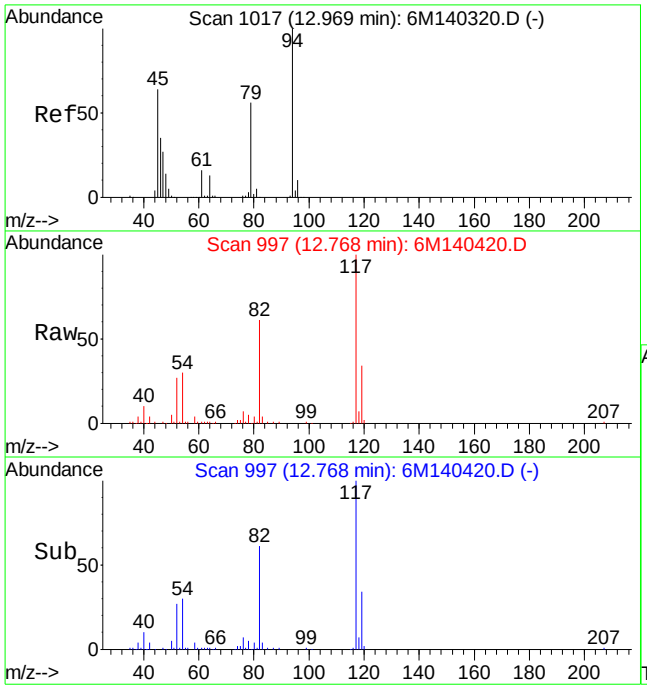

#56
Dimethyl Disulfide
Concen: 0.22 ug/L
RT: 12.77 min Scan# 997
Delta R.T. -0.20 min
Lab File: 6M140420.D
Acq: 5 Jul 2016 12:18

Tgt Ion: 79 Resp: 1159

Ion	Ratio	Lower	Upper
79	100		
61	350.1	16.4	38.4#

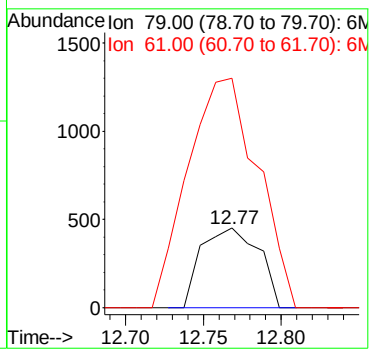

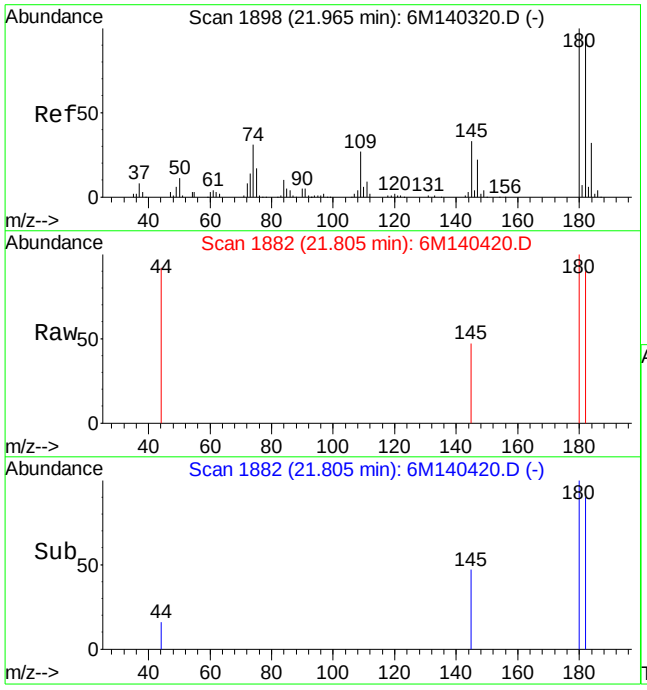

#98
1,2,4-Trichlorobenzene
Concen: 0.15 ug/L
RT: 21.81 min Scan# 1882
Delta R.T. -0.16 min
Lab File: 6M140420.D
Acq: 5 Jul 2016 12:18

Tgt Ion:180 Resp: 1188

Ion	Ratio	Lower	Upper
180	100		
182	100.3	57.7	134.5
145	16.9	19.0	44.4#

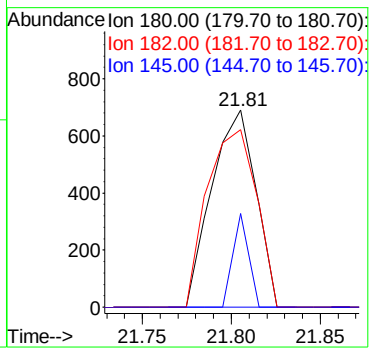

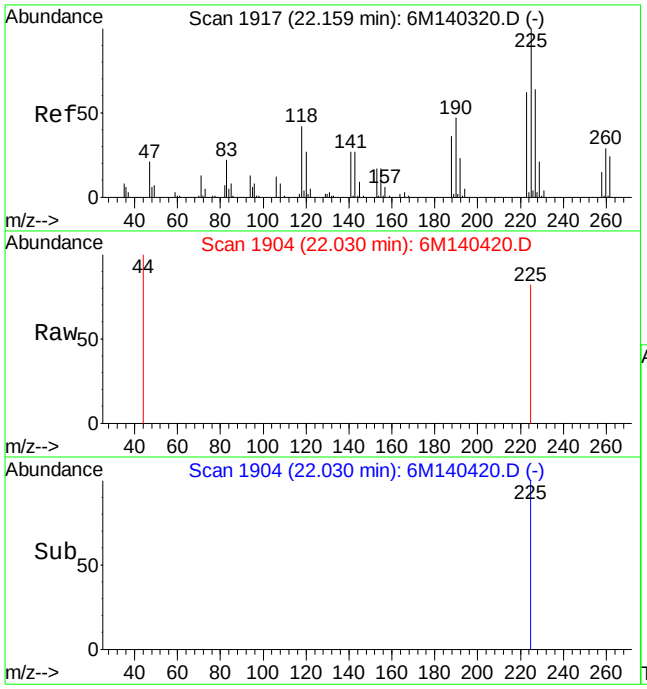

#99
Hexachlorobutadiene
Concen: 0.23 ug/L
RT: 22.03 min Scan# 1904
Delta R.T. -0.12 min
Lab File: 6M140420.D
Acq: 5 Jul 2016 12:18

Tgt Ion:225 Resp: 776

Ion	Ratio	Lower	Upper
225	100		
223	27.2	37.7	88.1#
227	26.2	38.6	90.0#

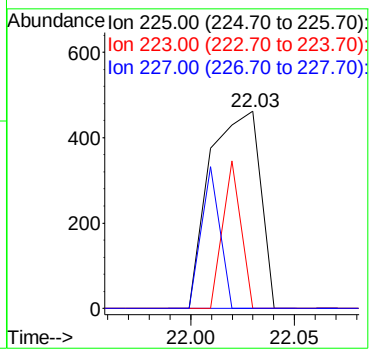

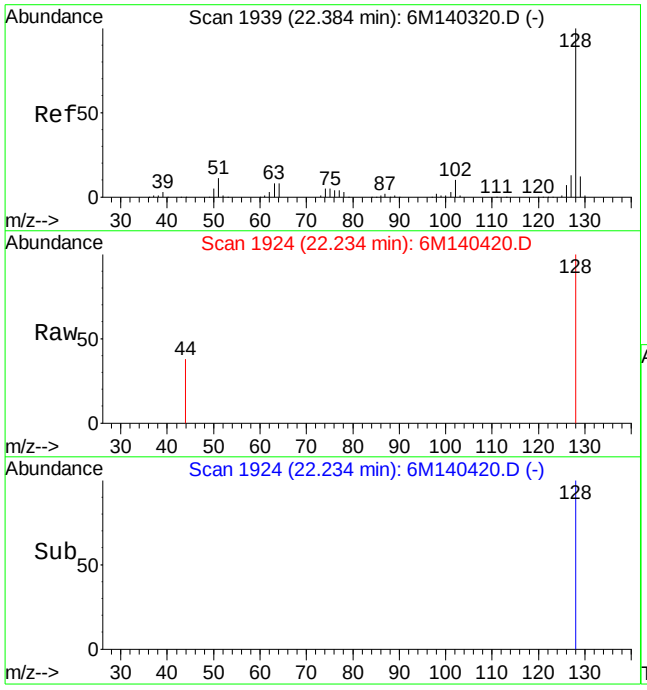

#100
Naphthalene
Concen: 0.20 ug/L
RT: 22.23 min Scan# 1924
Delta R.T. -0.15 min
Lab File: 6M140420.D
Acq: 5 Jul 2016 12:18

Tgt Ion:128 Resp: 3277

Ion	Ratio	Lower	Upper
128	100		
127	0.0	7.8	18.2#

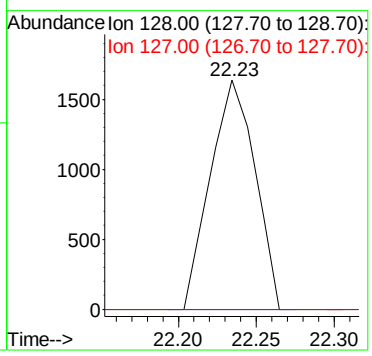

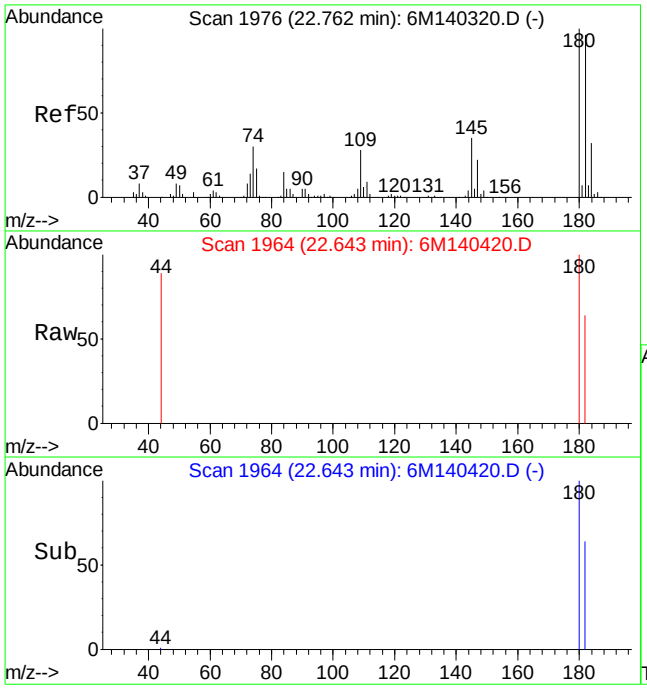

#101
1,2,3-Trichlorobenzene
Concen: 0.19 ug/L
RT: 22.64 min Scan# 1964
Delta R.T. -0.12 min
Lab File: 6M140420.D
Acq: 5 Jul 2016 12:18

Tgt Ion:180 Resp: 1428

Ion	Ratio	Lower	Upper
180	100		
182	72.5	57.8	135.0
145	0.0	20.5	47.7#

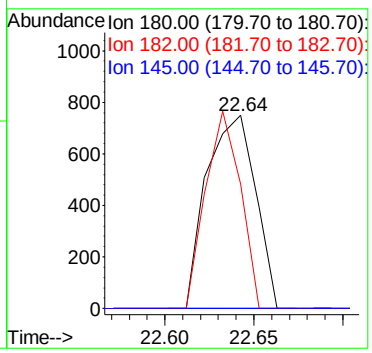

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070216\6M140367.D Vial: 6
Acq On : 2 Jul 2016 13:34 Operator: TMB
Sample : WG575084-02 20ug/L LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD76870 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 03 09:39:02 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	542920	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.24	117	388681	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	215626	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.58	111	138589	25.1605 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.64%		
43) 1,2-Dichloroethane-d4	10.31	65	174117	25.0403 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.16%		
58) Toluene-d8	13.04	98	476815	24.9122 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.64%		
80) p-Bromofluorobenzene	17.02	95	203456	24.0927 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.36%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	112225	12.3655 ug/L	99
3) Chloromethane	3.36	50	134644	13.2881 ug/L	100
4) Vinyl Chloride	3.56	62	107755	19.3650 ug/L	100
5) 1,3-Butadiene	3.59	54	61287	17.0514 ug/L	96
6) Bromomethane	4.37	94	56317	15.2304 ug/L	98
7) Chloroethane	4.53	64	71007	20.1956 ug/L	93
8) Trichlorofluoromethane	5.00	101	205024	24.1583 ug/L	100
9) Diethyl ether	5.55	59	478402	95.5392 ug/L	95
10) Isoprene	5.57	67	164494	21.7174 ug/L	95
11) Acrolein	5.79	56	90113	108.1915 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	5.78	101	111753	21.1642 ug/L	98
13) Acetone	5.91	43	37461	21.5366 ug/L	95
14) 1,1-Dichloroethene	6.11	61	180295	17.5984 ug/L	93
15) Tert-Butyl Alcohol	6.26	59	95636	179.8043 ug/L	100
16) Dimethyl Sulfide	6.39	62	153988	34.4633 ug/L	93
17) Iodomethane	6.64	142	93793	25.7199 ug/L	89
18) Methyl acetate	6.68	43	105446	22.4027 ug/L	98
19) Methylene Chloride	6.94	84	111768	19.0244 ug/L	88
20) Carbon Disulfide	6.96	76	322353	17.1712 ug/L	100
21) Acrylonitrile	7.15	53	45371	21.0079 ug/L	99
22) Methyl Tert Butyl Ether	7.18	73	328844	21.1167 ug/L	100
23) trans-1,2-Dichloroethene	7.42	96	103640	18.8886 ug/L	87
24) n-Hexane	7.50	57	168463	18.0906 ug/L	95
25) Diisopropyl ether	7.90	45	2597238	103.6233 ug/L	98
26) Vinyl Acetate	8.08	43	209248	19.9988 ug/L	97
27) 1,1-Dichloroethane	8.10	63	222655	18.8476 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	1918709	95.1547 ug/L	98
29) 2-Butanone	8.73	43	54677	20.5347 ug/L	94
30) Propionitrile	8.85	54	71565	99.0384 ug/L	97
31) 2,2-Dichloropropane	8.95	77	181360	20.3488 ug/L	98
32) cis-1,2-Dichloroethene	9.03	96	121005	20.1469 ug/L	82
33) Chloroform	9.27	83	214062	20.2266 ug/L	100
34) 1-Bromopropane	9.41	122	25037	26.5958 ug/L	99
35) Bromochloromethane	9.52	130	65675	20.3481 ug/L	98
36) Tetrahydrofuran	9.55	42	167052	89.9484 ug/L	93
38) 1,1,1-Trichloroethane	9.85	97	191400	20.7731 ug/L	99
39) Cyclohexane	9.88	56	234678	19.5770 ug/L	95
40) 1,1-Dichloropropene	10.07	75	155520	19.3786 ug/L	96
41) Tert-Amyl-Methyl ether	10.22	73	1567494	102.3744 ug/L	97
42) Carbon Tetrachloride	10.24	117	165737	21.9068 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140367.D 8260WTR.M Sun Jul 03 09:39:05 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070216\6M140367.D Vial: 6
Acq On : 2 Jul 2016 13:34 Operator: TMB
Sample : WG575084-02 20ug/L LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD76870 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 03 09:39:02 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	179665	21.1735 ug/L	97
46)	Benzene	10.48	78	451669	19.9411 ug/L	97
47)	Trichloroethene	11.34	130	113571	20.3198 ug/L	88
48)	Methylcyclohexane	11.43	83	177633	20.2439 ug/L	94
49)	1,2-Dichloropropane	11.59	63	136598	20.9417 ug/L	95
50)	1,4-Dioxane	11.94	88	6010	136.1079 ug/L	79
51)	Bromodichloromethane	11.93	83	171312	21.7664 ug/L	99
52)	Dibromomethane	12.02	93	64333	20.3850 ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.31	63	69555	21.2682 ug/L	98
54)	4-Methyl-2-Pentanone	12.35	58	40953	20.3472 ug/L	97
55)	cis-1,3-Dichloropropene	12.68	75	208566	22.8249 ug/L	99
56)	Dimethyl Disulfide	12.96	79	105580	20.7562 ug/L	98
59)	Toluene	13.16	91	475661	20.5337 ug/L	100
60)	Ethyl Methacrylate	13.32	69	140111	21.2591 ug/L	92
62)	trans-1,3-Dichloropropene	13.38	75	179767	21.8242 ug/L	94
63)	1,1,2-Trichloroethane	13.63	97	94684	22.0866 ug/L	98
64)	2-Hexanone	13.58	43	82915	20.3705 ug/L	94
65)	1,3-Dichloropropane	13.98	76	178617	22.1074 ug/L	92
66)	Tetrachloroethene	14.11	166	112372	20.3562 ug/L	92
67)	Dibromochloromethane	14.41	129	117302	22.5368 ug/L	99
68)	1,2-Dibromoethane	14.71	107	87994	21.2651 ug/L	98
69)	1-Chlorohexane	14.85	91	161538	20.9539 ug/L	88
70)	Chlorobenzene	15.30	112	322825	21.7290 ug/L	93
71)	1,1,1,2-Tetrachloroethane	15.35	131	119424	22.5910 ug/L	97
72)	Ethylbenzene	15.35	106	168216	21.6315 ug/L	91
73)	m-,p-Xylene	15.45	106	418492	44.5279 ug/L	94
74)	o-Xylene	16.11	106	211069	22.5176 ug/L	93
75)	Styrene	16.16	104	353243	22.4000 ug/L	92
76)	Bromoform	16.71	173	67326	20.8592 ug/L	98
77)	Isopropylbenzene	16.62	105	551071	22.5323 ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.88	83	117683	22.4877 ug/L	99
81)	1,2,3-Trichloropropane	17.11	110	35470	22.8614 ug/L	86
82)	trans-1,4-Dichloro-2-Buten	17.18	53	39009	19.7157 ug/L	96
83)	n-Propylbenzene	17.22	91	695249	22.4405 ug/L	98
84)	Bromobenzene	17.34	156	135907	20.9941 ug/L	90
85)	1,3,5-Trimethylbenzene	17.44	105	479726	22.0914 ug/L	97
86)	2-Chlorotoluene	17.52	91	438463	20.9262 ug/L	96
87)	4-Chlorotoluene	17.58	91	454785	22.7674 ug/L	96
88)	a-Methylstyrene	17.92	118	260179	23.8213 ug/L	95
89)	tert-Butylbenzene	17.99	134	99633	22.8365 ug/L	73
90)	1,2,4-Trimethylbenzene	18.05	105	491937	22.0763 ug/L	97
91)	sec-Butylbenzene	18.30	105	584431	22.4827 ug/L	97
92)	p-Isopropyltoluene	18.50	119	494263	22.3113 ug/L	97
93)	1,3-Dichlorobenzene	18.70	146	276274	21.6830 ug/L	94
94)	1,4-Dichlorobenzene	18.85	146	284825	22.1104 ug/L	94
95)	n-Butylbenzene	19.12	91	476922	21.9530 ug/L	96
96)	1,2-Dichlorobenzene	19.43	146	268610	22.4544 ug/L	95
97)	1,2-Dibromo-3-Chloropropan	20.61	75	24239	23.6497 ug/L	79
98)	1,2,4-Trichlorobenzene	21.96	180	178537	21.1140 ug/L	99
99)	Hexachlorobutadiene	22.15	225	77763	22.1190 ug/L	99
100)	Naphthalene	22.38	128	331568	19.1869 ug/L	99
101)	1,2,3-Trichlorobenzene	22.75	180	160807	20.5384 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140367.D 8260WTR.M Sun Jul 03 09:39:06 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070216\6M140367.D Vial: 6
Acq On : 2 Jul 2016 13:34 Operator: TMB
Sample : WG575084-02 20ug/L LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD76870 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 3 9:39 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

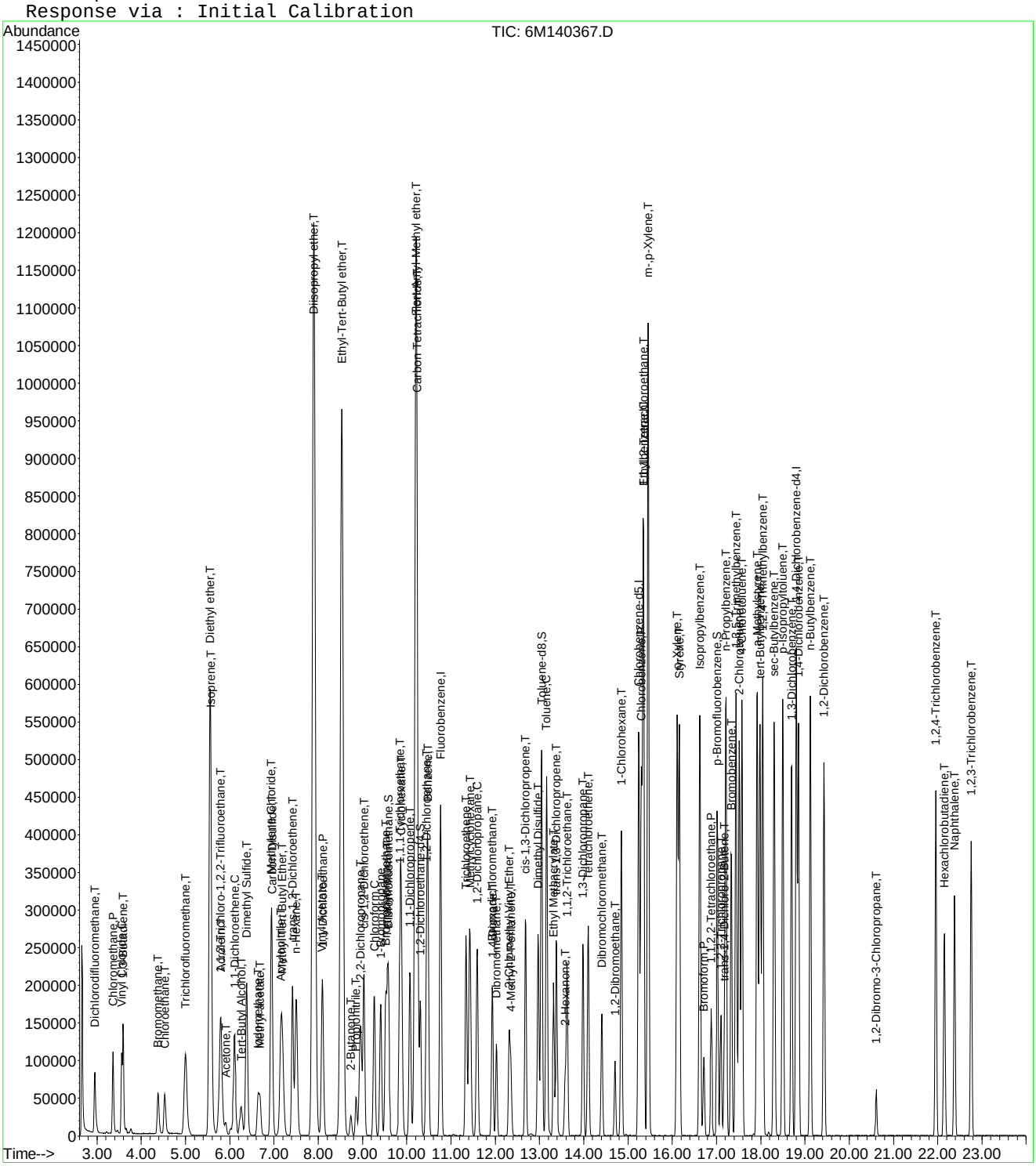

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070516\6M140421.D Vial: 5
Acq On : 5 Jul 2016 12:50 Operator: TMB
Sample : WG575129-02 20ugL LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 05 15:16:12 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	531079	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	387865	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	222211	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	140112	26.0041 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.00%		
43) 1,2-Dichloroethane-d4	10.31	65	173630	25.5270 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.12%		
58) Toluene-d8	13.04	98	471992	24.7121 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.84%		
80) p-Bromofluorobenzene	17.02	95	203379	23.3699 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.48%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	113375	12.7707 ug/L	99
3) Chloromethane	3.36	50	154627	15.6004 ug/L	99
4) Vinyl Chloride	3.56	62	112017	20.5798 ug/L	99
5) 1,3-Butadiene	3.59	54	54352	15.1612 ug/L	95
6) Bromomethane	4.38	94	65496	18.1077 ug/L	98
7) Chloroethane	4.53	64	73280	21.3068 ug/L	93
8) Trichlorofluoromethane	5.00	101	179989	21.6812 ug/L	99
9) Diethyl ether	5.55	59	434744	88.7562 ug/L	95
10) Isoprene	5.57	67	168028	22.6786 ug/L	92
11) Acrolein	5.79	56	84663	103.9144 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	108886	21.0810 ug/L	97
13) Acetone	5.90	43	35904	21.1017 ug/L	96
14) 1,1-Dichloroethene	6.11	61	139236	13.8937 ug/L	92
15) Tert-Butyl Alcohol	6.26	59	103785	199.4756 ug/L	97
16) Dimethyl Sulfide	6.38	62	153840	35.1979 ug/L	92
17) Iodomethane	6.64	142	89751	25.1798 ug/L	89
18) Methyl acetate	6.69	43	104365	22.6675 ug/L	98
19) Methylene Chloride	6.93	84	102590	17.8515 ug/L	88
20) Carbon Disulfide	6.95	76	337267	18.3662 ug/L	99
21) Acrylonitrile	7.15	53	43141	20.4208 ug/L	98
22) Methyl Tert Butyl Ether	7.18	73	311902	20.4754 ug/L	100
23) trans-1,2-Dichloroethene	7.41	96	94022	17.5178 ug/L	90
24) n-Hexane	7.51	57	172972	18.9889 ug/L	95
25) Diisopropyl ether	7.89	45	2512067	102.4599 ug/L	98
26) Vinyl Acetate	8.09	43	190721	18.6345 ug/L	96
27) 1,1-Dichloroethane	8.10	63	210183	18.1885 ug/L	99
28) Ethyl-Tert-Butyl ether	8.53	59	1862859	94.4447 ug/L	98
29) 2-Butanone	8.73	43	53673	20.6071 ug/L	96
30) Propionitrile	8.85	54	71277	100.8391 ug/L	97
31) 2,2-Dichloropropane	8.96	77	172471	19.7829 ug/L	99
32) cis-1,2-Dichloroethene	9.03	96	116659	19.8563 ug/L	72
33) Chloroform	9.26	83	210794	20.3619 ug/L	99
34) 1-Bromopropane	9.41	122	23437	25.4718 ug/L	100
35) Bromochloromethane	9.52	130	62967	19.9441 ug/L	99
36) Tetrahydrofuran	9.56	42	159616	87.8608 ug/L	93
38) 1,1,1-Trichloroethane	9.85	97	185147	20.5424 ug/L	99
39) Cyclohexane	9.87	56	227379	19.3911 ug/L	95
40) 1,1-Dichloropropene	10.08	75	143493	18.2787 ug/L	95
41) Tert-Amyl-Methyl ether	10.21	73	1513095	101.0249 ug/L	97
42) Carbon Tetrachloride	10.23	117	162442	21.9500 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140421.D 8260WTR.M Tue Jul 05 15:16:16 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070516\6M140421.D Vial: 5
Acq On : 5 Jul 2016 12:50 Operator: TMB
Sample : WG575129-02 20ugL LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 05 15:16:12 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	178428	21.4966 ug/L	97
46)	Benzene	10.48	78	429862	19.4015 ug/L	97
47)	Trichloroethene	11.35	130	111832	20.4548 ug/L	86
48)	Methylcyclohexane	11.43	83	173179	20.1763 ug/L	95
49)	1,2-Dichloropropane	11.59	63	132389	20.7490 ug/L	94
50)	1,4-Dioxane	11.94	88	7810	180.8159 ug/L	86
51)	Bromodichloromethane	11.93	83	172382	22.3906 ug/L	99
52)	Dibromomethane	12.02	93	64713	20.9626 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.31	63	61797	19.3173 ug/L	97
54)	4-Methyl-2-Pentanone	12.35	58	36881	18.7326 ug/L	100
55)	cis-1,3-Dichloropropene	12.68	75	204876	22.9209 ug/L	98
56)	Dimethyl Disulfide	12.97	79	100045	20.1065 ug/L	100
59)	Toluene	13.15	91	466629	20.1862 ug/L	99
60)	Ethyl Methacrylate	13.32	69	129468	19.6856 ug/L	92
62)	trans-1,3-Dichloropropene	13.39	75	179750	21.8680 ug/L	95
63)	1,1,2-Trichloroethane	13.62	97	92913	21.7191 ug/L	98
64)	2-Hexanone	13.58	43	75083	18.4852 ug/L	95
65)	1,3-Dichloropropane	13.99	76	175317	21.7446 ug/L	91
66)	Tetrachloroethene	14.10	166	114807	20.8411 ug/L	94
67)	Dibromochloromethane	14.41	129	120929	23.2825 ug/L	99
68)	1,2-Dibromoethane	14.70	107	88181	21.3551 ug/L	99
69)	1-Chlorohexane	14.85	91	151952	19.7519 ug/L	89
70)	Chlorobenzene	15.30	112	322456	21.7498 ug/L	92
71)	1,1,1,2-Tetrachloroethane	15.35	131	122355	23.1942 ug/L	97
72)	Ethylbenzene	15.35	106	169550	21.8489 ug/L	94
73)	m-,p-Xylene	15.46	106	419540	44.7333 ug/L	94
74)	o-Xylene	16.11	106	211016	22.5594 ug/L	92
75)	Styrene	16.15	104	358816	22.8013 ug/L	92
76)	Bromoform	16.72	173	71848	22.3071 ug/L	98
77)	Isopropylbenzene	16.62	105	554955	22.7389 ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.88	83	120331	22.3123 ug/L	100
81)	1,2,3-Trichloropropane	17.10	110	37207	23.2703 ug/L	89
82)	trans-1,4-Dichloro-2-Buten	17.18	53	37320	18.3031 ug/L	96
83)	n-Propylbenzene	17.22	91	706128	22.1163 ug/L	97
84)	Bromobenzene	17.34	156	141468	21.2055 ug/L	92
85)	1,3,5-Trimethylbenzene	17.44	105	486863	21.7557 ug/L	97
86)	2-Chlorotoluene	17.52	91	437115	20.2436 ug/L	99
87)	4-Chlorotoluene	17.57	91	475261	23.0874 ug/L	93
88)	a-Methylstyrene	17.92	118	253809	22.5494 ug/L	96
89)	tert-Butylbenzene	17.98	134	101966	22.6786 ug/L	72
90)	1,2,4-Trimethylbenzene	18.04	105	509742	22.1974 ug/L	98
91)	sec-Butylbenzene	18.31	105	598113	22.3272 ug/L	98
92)	p-Isopropyltoluene	18.50	119	512091	22.4310 ug/L	97
93)	1,3-Dichlorobenzene	18.70	146	292172	22.2512 ug/L	95
94)	1,4-Dichlorobenzene	18.85	146	298555	22.4894 ug/L	94
95)	n-Butylbenzene	19.12	91	497791	22.2346 ug/L	96
96)	1,2-Dichlorobenzene	19.43	146	286053	23.2039 ug/L	94
97)	1,2-Dibromo-3-Chloropropan	20.62	75	25217	23.8748 ug/L	83
98)	1,2,4-Trichlorobenzene	21.96	180	193849	22.2455 ug/L	99
99)	Hexachlorobutadiene	22.15	225	85492	23.5968 ug/L	98
100)	Naphthalene	22.38	128	363199	20.3945 ug/L	99
101)	1,2,3-Trichlorobenzene	22.75	180	179344	22.2272 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070516\6M140421.D Vial: 5
Acq On : 5 Jul 2016 12:50 Operator: TMB
Sample : WG575129-02 20ugL LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 5 15:16 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

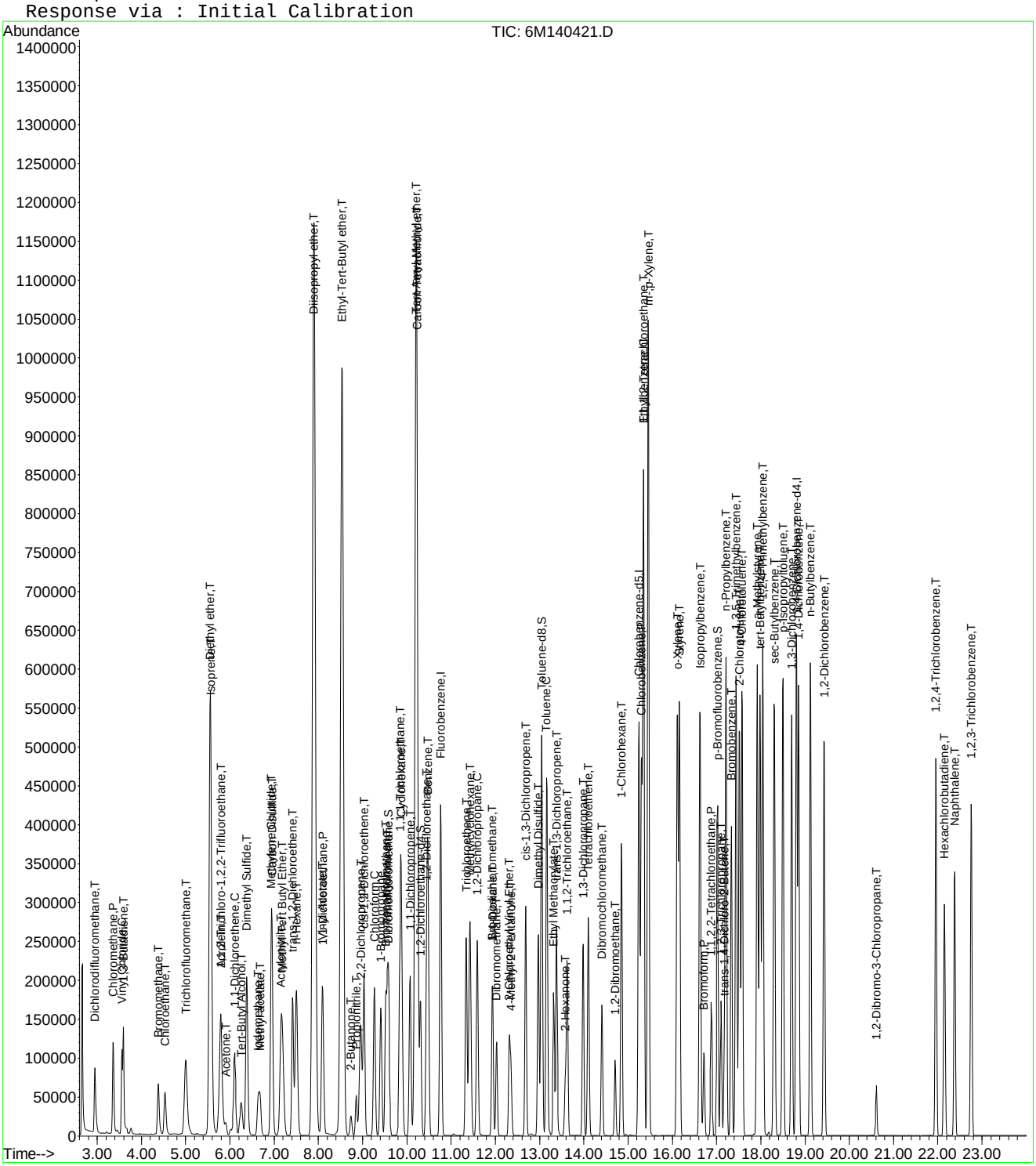

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070216\6M140368.D Vial: 7
Acq On : 2 Jul 2016 14:06 Operator: TMB
Sample : WG575084-03 20ug/L LCS2 STD 8260 Inst : HPMS6
Misc : 1,1 STD76870 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 03 09:39:10 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	542107	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	386421	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	213676	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	138109	25.1109 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.44%		
43) 1,2-Dichloroethane-d4	10.31	65	174059	25.0695 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.28%		
58) Toluene-d8	13.04	98	474586	24.9408 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.76%		
80) p-Bromofluorobenzene	17.01	95	204767	24.4693 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.88%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	112878	12.4561 ug/L	100
3) Chloromethane	3.36	50	136127	13.4546 ug/L	99
4) Vinyl Chloride	3.55	62	107870	19.4147 ug/L	99
5) 1,3-Butadiene	3.60	54	60426	16.7970 ug/L	96
6) Bromomethane	4.38	94	56899	15.4109 ug/L	97
7) Chloroethane	4.53	64	71235	20.2908 ug/L	93
8) Trichlorofluoromethane	5.00	101	184671	21.7927 ug/L	100
9) Diethyl ether	5.55	59	473571	94.7162 ug/L	95
10) Isoprene	5.57	67	162945	21.5452 ug/L	95
11) Acrolein	5.79	56	90389	108.6856 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	110922	21.0383 ug/L	97
13) Acetone	5.90	43	36020	20.7392 ug/L	94
14) 1,1-Dichloroethene	6.11	61	176271	17.2314 ug/L	92
15) Tert-Butyl Alcohol	6.26	59	101265	190.6728 ug/L	99
16) Dimethyl Sulfide	6.38	62	152760	34.2398 ug/L	92
17) Iodomethane	6.65	142	96705	26.5290 ug/L	89
18) Methyl acetate	6.69	43	105852	22.5227 ug/L	98
19) Methylene Chloride	6.93	84	110377	18.8158 ug/L	87
20) Carbon Disulfide	6.96	76	317544	16.9404 ug/L	100
21) Acrylonitrile	7.15	53	44104	20.4519 ug/L	98
22) Methyl Tert Butyl Ether	7.18	73	323811	20.8247 ug/L	99
23) trans-1,2-Dichloroethene	7.41	96	101370	18.5026 ug/L	86
24) n-Hexane	7.51	57	169786	18.2600 ug/L	96
25) Diisopropyl ether	7.90	45	2560799	102.3227 ug/L	98
26) Vinyl Acetate	8.09	43	218053	20.8716 ug/L	97
27) 1,1-Dichloroethane	8.10	63	221196	18.7522 ug/L	99
28) Ethyl-Tert-Butyl ether	8.53	59	1893583	94.0494 ug/L	98
29) 2-Butanone	8.73	43	55293	20.7972 ug/L	95
30) Propionitrile	8.85	54	73037	101.2271 ug/L	98
31) 2,2-Dichloropropane	8.96	77	185321	20.8244 ug/L	100
32) cis-1,2-Dichloroethene	9.03	96	120096	20.0255 ug/L	70
33) Chloroform	9.26	83	210083	19.8804 ug/L	99
34) 1-Bromopropane	9.41	122	24184	25.7438 ug/L	99
35) Bromochloromethane	9.52	130	65071	20.1912 ug/L	99
36) Tetrahydrofuran	9.56	42	168065	90.6296 ug/L	93
38) 1,1,1-Trichloroethane	9.84	97	190870	20.7466 ug/L	98
39) Cyclohexane	9.88	56	228895	19.1232 ug/L	95
40) 1,1-Dichloropropene	10.08	75	154130	19.2342 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1551014	101.4500 ug/L	97
42) Carbon Tetrachloride	10.23	117	163406	21.6311 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140368.D 8260WTR.M Sun Jul 03 09:39:13 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070216\6M140368.D Vial: 7
Acq On : 2 Jul 2016 14:06 Operator: TMB
Sample : WG575084-03 20ug/L LCS2 STD 8260 Inst : HPMS6
Misc : 1,1 STD76870 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 03 09:39:10 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	179847	21.2268	ug/L	97
46)	Benzene	10.48	78	450049	19.8994	ug/L	97
47)	Trichloroethene	11.35	130	112836	20.2186	ug/L	87
48)	Methylcyclohexane	11.43	83	174654	19.9342	ug/L	94
49)	1,2-Dichloropropane	11.59	63	136743	20.9954	ug/L	97
50)	1,4-Dioxane	11.94	88	7676	174.0984	ug/L	84
51)	Bromodichloromethane	11.93	83	168864	21.4875	ug/L	100
52)	Dibromomethane	12.02	93	64334	20.4158	ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.31	63	68752	21.0542	ug/L	98
54)	4-Methyl-2-Pentanone	12.35	58	40573	20.1886	ug/L	98
55)	cis-1,3-Dichloropropene	12.68	75	209605	22.9730	ug/L	99
56)	Dimethyl Disulfide	12.97	79	103817	20.4402	ug/L	98
59)	Toluene	13.15	91	473864	20.5758	ug/L	100
60)	Ethyl Methacrylate	13.32	69	138747	21.1753	ug/L	94
62)	trans-1,3-Dichloropropene	13.39	75	178878	21.8432	ug/L	95
63)	1,1,2-Trichloroethane	13.62	97	93800	22.0084	ug/L	99
64)	2-Hexanone	13.58	43	82458	20.3767	ug/L	96
65)	1,3-Dichloropropane	13.99	76	177656	22.1170	ug/L	92
66)	Tetrachloroethene	14.10	166	110962	20.2183	ug/L	92
67)	Dibromochloromethane	14.41	129	116550	22.5233	ug/L	99
68)	1,2-Dibromoethane	14.71	107	88462	21.5032	ug/L	99
69)	1-Chlorohexane	14.85	91	159716	20.8387	ug/L	89
70)	Chlorobenzene	15.30	112	317956	21.5264	ug/L	92
71)	1,1,1,2-Tetrachloroethane	15.35	131	117049	22.2713	ug/L	97
72)	Ethylbenzene	15.35	106	168193	21.7550	ug/L	93
73)	m-,p-Xylene	15.45	106	412003	44.0938	ug/L	93
74)	o-Xylene	16.10	106	210279	22.5646	ug/L	93
75)	Styrene	16.16	104	351603	22.4264	ug/L	92
76)	Bromoform	16.72	173	67986	21.1869	ug/L	98
77)	Isopropylbenzene	16.62	105	548700	22.5666	ug/L	97
79)	1,1,2,2-Tetrachloroethane	16.88	83	118781	22.9047	ug/L	99
81)	1,2,3-Trichloropropane	17.11	110	35696	23.2170	ug/L	87
82)	trans-1,4-Dichloro-2-Buten	17.18	53	39612	20.2031	ug/L	97
83)	n-Propylbenzene	17.22	91	689328	22.4525	ug/L	97
84)	Bromobenzene	17.34	156	134262	20.9292	ug/L	89
85)	1,3,5-Trimethylbenzene	17.44	105	475951	22.1176	ug/L	96
86)	2-Chlorotoluene	17.52	91	424327	20.4363	ug/L	99
87)	4-Chlorotoluene	17.58	91	462785	23.3793	ug/L	93
88)	a-Methylstyrene	17.92	118	256834	23.7296	ug/L	99
89)	tert-Butylbenzene	17.98	134	97617	22.5786	ug/L	70
90)	1,2,4-Trimethylbenzene	18.04	105	487635	22.0829	ug/L	98
91)	sec-Butylbenzene	18.30	105	581832	22.5870	ug/L	97
92)	p-Isopropyltoluene	18.50	119	492412	22.4306	ug/L	97
93)	1,3-Dichlorobenzene	18.70	146	278586	22.0640	ug/L	95
94)	1,4-Dichlorobenzene	18.85	146	284654	22.2988	ug/L	94
95)	n-Butylbenzene	19.12	91	479050	22.2522	ug/L	95
96)	1,2-Dichlorobenzene	19.43	146	265509	22.3977	ug/L	94
97)	1,2-Dibromo-3-Chloropropan	20.61	75	24104	23.7326	ug/L	81
98)	1,2,4-Trichlorobenzene	21.96	180	182400	21.7677	ug/L	98
99)	Hexachlorobutadiene	22.15	225	79563	22.8375	ug/L	100
100)	Naphthalene	22.38	128	338556	19.7701	ug/L	99
101)	1,2,3-Trichlorobenzene	22.75	180	163760	21.1065	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070216\6M140368.D Vial: 7
Acq On : 2 Jul 2016 14:06 Operator: TMB
Sample : WG575084-03 20ug/L LCS2 STD 8260 Inst : HPMS6
Misc : 1,1 STD76870 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 3 9:39 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

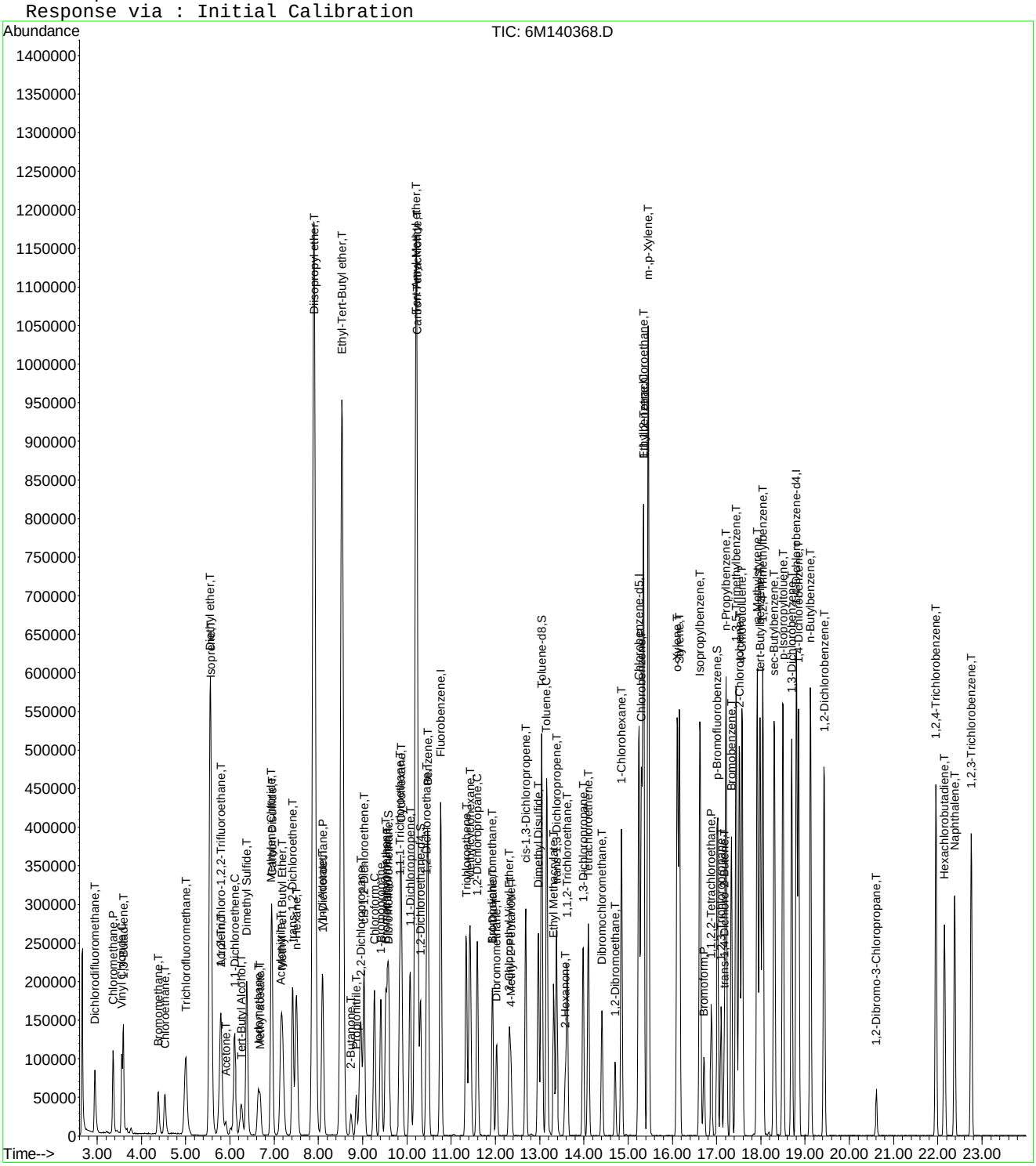

2.2 Semivolatiles Data

2.2.1 Semivolatiles GC/MS Data (Dioxane)

2.2.1.1 Summary Data

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	MW21-062216	**Prep Method:**	3520C	**Prep Date:**	06/27/2016 14:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574772	**Analyst:**	MES	**Run Date:**	06/30/2016 23:44
Collect Date:	06/22/2016 09:45	**Dilution:**	1	**File ID:**	15M18698
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.55	J	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	795	20	129	*

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	MW9-062216	**Prep Method:**	3520C	**Prep Date:**	06/27/2016 14:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574772	**Analyst:**	MES	**Run Date:**	07/01/2016 00:06
Collect Date:	06/22/2016 11:05	**Dilution:**	1	**File ID:**	15M18699
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.77	J	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	116	20	129	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18WW02-062216	**Prep Method:**	3520C	**Prep Date:**	06/27/2016 14:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574772	**Analyst:**	MES	**Run Date:**	07/01/2016 00:29
Collect Date:	06/22/2016 13:40	**Dilution:**	1	**File ID:**	15M18700
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	53.4	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW10SW-062216	**Prep Method:**	3520C	**Prep Date:**	06/27/2016 14:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574772	**Analyst:**	MES	**Run Date:**	07/01/2016 00:51
Collect Date:	06/22/2016 14:55	**Dilution:**	1	**File ID:**	15M18701
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	55.3	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.2.1.2 QC Summary Data

Example 8270 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	1261197
Cis = Concentration of the specific internal standard (ug/mL)	40
Ais = Area of the characteristic ion of the specific internal standard	608044
Cx = Concentration of the compound in the standard being measured (ug/mL)	50
RF = Calculated Response Factor	**1.65935**

2.0 Calculating the concentration (C) of a compound in water using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Vi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Vi = Initial volume of sample extracted from prep log (mL)	1021
Cx = Concentration of the compound in the sample being measured (ug/mL)	0.016947
Cx = Concentration of the compound in the sample being measured (ug/L)	**16.947**

3.0 Calculating the concentration (C) of a compound in soil using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Wi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Wi = Initial weight of sample extracted (g) from prep log	30
Cx = Concentration of the compound in the sample being measured (ug/g)	0.576763
Cx = Concentration of the compound in the sample being measured (ug/kg)	**576.7627**

Dry weight correction:

Percent solids (PCT_S)	50
Cd = (Cx) (100)/PCT_S	**1153.525** ug/kg

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve plot

b = intercept from curve plot

Step 2: Calculate y from Quantitation Report

y = 16790/784838 = 0.02139

Step 3: Solve for x

x = (y - b)/m = [(0.02139 -(- 0.0435)]/ 0.0783 = 0.829

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.829) = 20.72 ug/L

Example Spreadsheet Calculation:

Slope from curve, m:	0.0783	
Intercept from curve, b:	-0.0435	
Area of analyte, Ax:	16790	
Area of Internal Standard , Ais:	784484	
Concentration of IS, Cis	25.00	ug/L
Response Ratio (y) :	0.021403	
Amount Ratio:	0.828897	
Concentration (Cx):	20.72241	ug/L

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**0.0259**	
Value of B from plot:	**0.0596**	
Value of C from plot:	**-0.0165**	
Area of analyte from quantitation report:	**203233**	
Area of IS from quantiation report:	**1425653**	
Response ratio, y:	**0.142554**	
C - y:	**-0.15905**	
Root 1 - Computed amount ratio , X1:	**-3.88278**	
Root 2 - Computed amount ratio , X2:	**1.581623**	use this solution
Concentration of IS, Cis:	**40.00**	
Concentration of analyte, Cx:	**63.26**	ug/L

Microbac Laboratories Inc.
Continuous Sample Extract Log

Workgroup: WG574286
Analyst: CPD
Spike Analyst: CPD
Method: 3520C
Run Date: 06/27/2016 14:01
SOP: EXB01 Revison 20
Spike Witness: NPH
Surr Solution: STD76628

TIME ON: 17:30 OFF: 11:35 ON: 16:50 OFF: 10:35

CH2CL2 Lot #: COA18982
Sodium Sulfate Lot #: COA18814
10N NaOH Lot #: RGT37076
1:1 H2SO4 Lot #: RGT36755

	SAMPLE #	Type	Reference	Prod	pH	Init Amnt	Surr Amnt	Spike Amnt	Spike Sol	Final Vol	Color
1	L16061289-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
2	L16061289-02	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
3	L16061289-03	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Colored
4	L16061289-05	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
5	L16061290-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
6	L16061290-02	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
7	L16061290-05	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
8	L16061290-06	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
9	L16061345-04	RS01		827-DIOX	<2>12	810 mL	.05 mL			1 mL	Colored
10	L16061345-05	MS01	L16061345-04	827-DIOX	<2>12	760 mL	.05 mL	.5 mL	STD75268	1 mL	Colored
11	L16061345-06	SD01	L16061345-04	827-DIOX	<2>12	810 mL	.05 mL	.5 mL	STD75268	1 mL	Colored
12	L16061345-08	SAMP		827-DIOX	<2>12	950 mL	.05 mL			1 mL	Transparent
13	L16061413-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Colored
14	L16061450-04	SAMP		827-DIOX	<2>12	840 mL	.05 mL			1 mL	Colored
15	L16061450-05	SAMP		827-DIOX	<2>12	740 mL	.05 mL			1 mL	Transparent
16	L16061452-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
17	L16061452-02	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
18	L16061452-03	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
19	L16061453-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
20	L16061453-02	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
21	L16061453-03	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
22	WG574286-01	BLANK		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
23	WG574286-02	LCS		827-DIOXANE	<2>12	1000 mL	.05 mL	.05 mL	STD75256	1 mL	Transparent
24	WG574286-03	REF	L16061345-04	827-DIOX	<2>12	810 mL	.05 mL			1 mL	Colored
25	WG574286-04	MS	L16061345-04	827-DIOX	<2>12	760 mL	.05 mL	.5 mL	STD75268	1 mL	Colored
26	WG574286-05	MSD	L16061345-04	827-DIOX	<2>12	810 mL	.05 mL	.5 mL	STD75268	1 mL	Colored

Analyst: Chelsea Davis

Reviewer: Chris Hill

EXTRACT - Modified 01/23/2009
PDF ID: 4831963
Report generated: 06/29/2016 18:18

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062116
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573365

Internal STD: STD76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: STD74214 MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18455	BAKEOUT	1	1		06/21/16 08:46
2	15M18456	WG573501-01 5PPM DFTPP STD	1	1	STD75016	06/21/16 09:05
3	15M18457	WG573501-01 5PPM DFTPP STD	1	1	STD75016	06/21/16 09:34
4	15M18458	WG573501-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 09:52
5	15M18459	WG573501-03 10 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 10:27
6	15M18460	WG573501-04 7.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 10:49
7	15M18461	WG573501-05 2.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:12
8	15M18462	WG573501-06 1 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:34
9	15M18463	WG573501-07 0.4 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:57
10	15M18464	WG573501-08 5PPM 1,4-DIOXANE ALT SRC	1	1	STD74214	06/21/16 12:20
11	15M18465	WG572806-01 BLANK 6/15	1	1		06/21/16 12:54
12	15M18466	WG572806-02 LCS 6/15	1	1		06/21/16 13:17
13	15M18467	WG572806-03 LCSDUP 6/15	1	1		06/21/16 13:40
14	15M18468	WG573008-01 BLANK 6/17	7	1	SOIL	06/21/16 14:03
15	15M18469	WG573008-02 LCS 6/17	7	1	SOIL	06/21/16 14:26
16	15M18470	WG573008-03 LCSDUP 6/17	7	1	SOIL	06/21/16 14:48
17	15M18471	L16060730-01	1	1		06/21/16 15:11
18	15M18472	L16060730-02	1	1		06/21/16 15:34
19	15M18473	L16060854-01	1	1		06/21/16 15:57
20	15M18474	L16060730-03	1	1		06/21/16 16:19
21	15M18475	L16060756-04 827-DIOX	1	1		06/21/16 16:46
22	15M18476	L16060822-01	1	1		06/21/16 17:08
23	15M18477	L16060822-03	1	1		06/21/16 17:31
24	15M18478	L16060822-04	1	1		06/21/16 17:54
25	15M18479	L16060822-05	1	1		06/21/16 18:17
26	15M18480	L16060823-01	1	1		06/21/16 18:40
27	15M18481	L16060823-03	1	1		06/21/16 19:02
28	15M18482	L16060823-04	1	1		06/21/16 19:25
29	15M18483	L16060809-03 827-DIOX	1	1		06/21/16 19:48
30	15M18484	L16060854-01 2X	1	2		06/21/16 20:10
31	15M18485	BAKEOUT	1	1		06/21/16 20:33
32	15M18486	BAKEOUT	1	1		06/21/16 20:55
33	15M18487	BAKEOUT	1	1		06/21/16 21:18

Page: 1 Approved: 22-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062116

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573365

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD: STD74214

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
	WG573501-01 5PPM DFTPP STD rerun DFTPP, pentachlorophenol tailing >2.			
14				
	WG573008-01 BLANK 6/17 DNR-not needed.			
15				
	WG573008-02 LCS DNR-not needed.			
16				
	WG573008-03 LCSDUP DNR-not needed.			
19	X	2	Over Calibration Range	
	L16060854-01			

Page: 2 Approved: 22-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 063016
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574772,WG574775

Internal STD: STD76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18666	BAKEOUT	1	1		06/30/16 10:57
2	15M18667	WG574781-01 5PPM DFTPP STD	1	1	STD75016	06/30/16 11:17
3	15M18668	WG574781-01 5PPM DFTPP STD	1	1	STD75016	06/30/16 11:34
4	15M18669	WG574781-01 5PPM DFTPP STD	1	1	STD75016	06/30/16 12:17
5	15M18670	WG574781-01 5PPM DFTPP STD	1	1	STD75016	06/30/16 12:34
6	15M18671	WG574781-01 5PPM DFTPP STD	1	1	STD75016	06/30/16 13:23
7	15M18672	WG574781-01 5PPM DFTPP STD	1	1	STD75016	06/30/16 13:39
8	15M18673	WG574781-01 5PPM DFTPP STD	1	1	STD75016	06/30/16 14:24
9	15M18674	WG574781-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/30/16 14:42
10	15M18675	WG574543-01 BLANK 6/29	7	1	SOIL	06/30/16 15:04
11	15M18676	WG574543-02 LCS 6/29	7	1	SOIL	06/30/16 15:27
12	15M18677	WG574543-03 LCSDUP 6/29	7	1	SOIL	06/30/16 15:49
13	15M18678	WG574286-01 BLANK 6/27	1	1		06/30/16 16:12
14	15M18679	WG574286-02 LCS 6/27	1	1		06/30/16 16:34
15	15M18680	L16060637-02 RE 827-DIOX	7	1	SOIL	06/30/16 16:57
16	15M18681	L16060756-01 RE 827-DIOX	7	1	SOIL	06/30/16 17:19
17	15M18682	L16060756-02 RE 827-DIOX	7	1	SOIL	06/30/16 17:42
18	15M18683	L16060756-03 RE 827-DIOX	7	1	SOIL	06/30/16 18:05
19	15M18684	L16060809-01 RE 827-DIOX	7	1	SOIL	06/30/16 18:28
20	15M18685	L16060809-02 RE 827-DIOX	7	1	SOIL	06/30/16 18:50
21	15M18686	L16060930-01 RE 827-DIOX	7	1	SOIL	06/30/16 19:13
22	15M18687	L16060930-02 RE 827-DIOX	7	1	SOIL	06/30/16 19:35
23	15M18688	L16061413-01 827-DIOX	1	1		06/30/16 19:58
24	15M18689	L16061213-01 RE 827-DIOX	7	1	SOIL	06/30/16 20:21
25	15M18690	L16061213-02 RE 827-DIOX	7	1	SOIL	06/30/16 20:43
26	15M18691	L16061213-03 RE 827-DIOX	7	1	SOIL	06/30/16 21:06
27	15M18692	L16061213-04 RE 827-DIOX	7	1	SOIL	06/30/16 21:28
28	15M18693	L16061213-05 RE 827-DIOX	7	1	SOIL	06/30/16 21:51
29	15M18694	L16061213-06 RE 827-DIOX	7	1	SOIL	06/30/16 22:13
30	15M18695	L16061450-01 827-DIOX	7	1	SOIL	06/30/16 22:36
31	15M18696	L16061450-02 827-DIOX	7	1	SOIL	06/30/16 22:59
32	15M18697	L16061450-03 827-DIOX	7	1	SOIL	06/30/16 23:22
33	15M18698	L16061289-01 827-DIOX	1	1		06/30/16 23:44

Page: 1 Approved: 06-JUL-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 063016

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574772,WG574775

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	15M18699	L16061289-02 827-DIOX	1	1		07/01/16 00:06
35	15M18700	L16061289-03 827-DIOX	1	1		07/01/16 00:29
36	15M18701	L16061289-05 827-DIOX	1	1		07/01/16 00:51
37	15M18702	L16061290-01 827-DIOX	1	1		07/01/16 01:14
38	15M18703	L16061290-02 827-DIOX	1	1		07/01/16 01:36
39	15M18704	L16061290-05 827-DIOX	1	1		07/01/16 01:59
40	15M18705	BAKEOUT	1	1		07/01/16 02:21
41	15M18706	BAKEOUT	1	1		07/01/16 02:43
42	15M18707	BAKEOUT	1	1		07/01/16 03:06

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
	Rerun DFTPP, ion ratio failed.			
3				
	Rerun DFTPP, ion ratio failed. Performed a quicktune.			
4				
	Rerun DFTPP, ion ratio failed. Changed the liner.			
5				
	Rerun DFTPP, ion ratio failed. PCP tailing >2. Changed gold seal and clipped column.			
6				
	Rerun DFTPP, ion ratio failed. Retuned.			
7				
	Rerun DFTPP, ion ratio failed. Retuned.			
31				
	L16061450-02 827-DIOX surrogate recovery is less than 10%. Needs re-extracted.			
33	X	10	Surrogate standard failure	
	L16061289-01 827-DIOX surrogate is high due to SMI.			
38	X	5	Over Calibration Range	
	L16061290-02 827-DIOX			

Page: 2 Approved: 06-JUL-16

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Microbac Laboratories Inc.

Data Checklist

Date: 21-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75850
Analytical Workgroups: L16060730, 060756, 060809, 060822, 060823, 060854

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 22-JUN-2016

Secondary Reviewer: 22-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-22-2016 16:00:51

Microbac Laboratories Inc.

Data Checklist

Date: 30-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 76103
Analytical Workgroups: L16060637,0756,0809,0930,1213,1450,1289,1290,1413

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 05-JUL-2016

Secondary Reviewer: 06-JUL-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUL-06-2016 10:46:55

Microbac Laboratories Inc.

00685349

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8270D

AAB#: WG574772

Login Number: L16061289

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW21-062216	01	06/22/16					06/27/2016	5.2	7		06/30/16	3.4	40	
MW9-062216	02	06/22/16					06/27/2016	5.1	7		07/01/16	3.4	40	
18WW02-062216	03	06/22/16					06/27/2016	5	7		07/01/16	3.4	40	
18CPTMW10SW-062216	05	06/22/16					06/27/2016	5	7		07/01/16	3.5	40	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4838775
Report generated 07/06/2016 16:23

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061289
Instrument Id: HPMS15
Workgroup (AAB#): WG574772

Method: 827-DIOXANE
CAL ID: HPMS15-21-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1
L16061289-01	1.00	01	795
L16061289-02	1.00	01	116
L16061289-03	1.00	01	53.4
L16061289-05	1.00	01	55.3
WG574286-01	1.00	01	43.4
WG574286-02	1.00	01	48.9

Surrogates	Surrogate Limits		
1 - 1,4-Dioxane-d8	20	-	129

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4838790
Report generated: 07/06/2016 16:23

METHOD BLANK SUMMARY

Login Number: L16061289
Blank File ID: 15M18678
Prep Date: 06/27/16 14:01
Analyzed Date: 06/30/16 16:12
Analyst: MES

Work Group: WG574772
Blank Sample ID: WG574286-01
Instrument ID: HPMS15
Method: 8270D

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG574286-02	15M18679	06/30/16 16:34	01
MW21-062216	L16061289-01	15M18698	06/30/16 23:44	01
MW9-062216	L16061289-02	15M18699	07/01/16 00:06	01
18WW02-062216	L16061289-03	15M18700	07/01/16 00:29	01
18CPTMW10SW-062216	L16061289-05	15M18701	07/01/16 00:51	01

Report Name: BLANK_SUMMARY
PDF File ID: 4840124
Report generated 07/06/2016 16:23

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061289 Prep Date: 06/27/16 14:01 Sample ID: WG574286-01
Instrument ID: HPMS15 Run Date: 06/30/16 16:12 Prep Method: 3520C
File ID: 15M18678 Analyst: MES Method: 8270D
Workgroup (AAB#): WG574772 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS15-21-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
1,4-Dioxane	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	43.4	20 - 129	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4838776
06-JUL-2016 16:23

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061289 Run Date: 06/30/2016 Sample ID: WG574286-02
Instrument ID: HPMS15 Run Time: 16:34 Prep Method: 3520C
File ID: 15M18679 Analyst: MES Method: 8270D
Workgroup (AAB#): WG574772 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD75256 Cal ID: HPMS15-21-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
1,4-Dioxane	5.00	2.78	55.6	30 - 104	

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	48.9	20 - 129	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4838777
Report generated: 07/06/2016 16:23

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16061289
Instrument: HPMS15
Analyst: MES
Workgroup: WG573501

Tune ID: WG573501-01
Run Date: 06/21/2016
Run Time: 09:34
File ID: 15M18457
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	38.8	34488	PASS
68.0	69.0	0	2.00	1.36	500	PASS
69.0	198	0	100	41.4	36833	PASS
70.0	69.0	0	2.00	0.467	172	PASS
127	198	40.0	60.0	51.9	46131	PASS
197	198	0	1.00	0	0	PASS
198	198	100	100	100	88880	PASS
199	198	5.00	9.00	6.66	5918	PASS
275	198	10.0	30.0	24.9	22090	PASS
365	198	1.00	100	2.65	2358	PASS
441	443	0.0100	100	75.7	9586	PASS
442	198	40.0	100	73.4	65261	PASS
443	442	17.0	23.0	19.4	12659	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573501-02	STD-CCV	01	06/21/2016 09:52	
WG573501-03	STD	01	06/21/2016 10:27	
WG573501-04	STD	01	06/21/2016 10:49	
WG573501-05	STD	01	06/21/2016 11:12	
WG573501-06	STD	01	06/21/2016 11:34	
WG573501-07	STD	01	06/21/2016 11:57	
WG573501-08	SSCV	01	06/21/2016 12:20	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4838785
Report generated 07/06/2016 16:23

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16061289
Instrument: HPMS15
Analyst: MES
Workgroup: WG574781

Tune ID: WG574781-01
Run Date: 06/30/2016
Run Time: 14:24
File ID: 15M18673
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	44.6	24370	PASS
68.0	69.0	0	2.00	1.41	352	PASS
69.0	198	0	100	45.7	24921	PASS
70.0	69.0	0	2.00	0.959	239	PASS
127	198	40.0	60.0	57.0	31104	PASS
197	198	0	1.00	0.291	159	PASS
198	198	100	100	100	54589	PASS
199	198	5.00	9.00	7.03	3838	PASS
275	198	10.0	30.0	24.8	13523	PASS
365	198	1.00	100	2.78	1520	PASS
441	443	0.0100	100	75.2	5686	PASS
442	198	40.0	100	70.8	38669	PASS
443	442	17.0	23.0	19.5	7559	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG574781-02	CCV	01	06/30/2016 14:42	
WG574286-01	BLANK	01	06/30/2016 16:12	
WG574286-02	LCS	01	06/30/2016 16:34	
L16061289-01	MW21-062216	01	06/30/2016 23:44	
L16061289-02	MW9-062216	01	07/01/2016 00:06	
L16061289-03	18WW02-062216	01	07/01/2016 00:29	
L16061289-05	18CPTMW10SW-062216	01	07/01/2016 00:51	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4838785
Report generated 07/06/2016 16:23

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061289
Analytical Method: 8270D
ICAL Workgroup: WG573501

Instrument ID: HPMS15
Initial Calibration Date: 21-JUN-16 11:57
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
1,4-Dioxane		0.3060	2.56		

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4838778
Report generated 07/06/2016 16:23

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061289

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 21-JUN-16 11:57

Column ID: F

Analyte	WG573501-02			WG573501-03			WG573501-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	5.00	60883.0000	0.3073	10.0	138820.000	0.3164	7.50	103182.000	0.3106

INT_CAL - Modified 03/06/2008
PDF File ID: 4838778
Report generated 07/06/2016 16:23

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061289

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 21-JUN-16 11:57

Column ID: F

Analyte	WG573501-05			WG573501-06			WG573501-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	2.50	26333.0000	0.2969	1.00	13250.0000	0.2966	0.400	5650.00000	0.3081

INT_CAL - Modified 03/06/2008
PDF File ID: 4838778
Report generated 07/06/2016 16:23

Calibration Table Report
Method: DIOXANE_D8.M
Title: OVD MSS01 SIM 1,4-dioxane ICAL 062116
Last Calibration: Tue Jun 21 12:51:17 2016
Curve:WG573501
Calibration Files

Compound	10 15M18459.D	7.5 15M18460.D	5 15M18458.D	2.5 15M18461.D	1 15M18462.D	0.4 15M18463.D	Avg	%RSD
1,4-Dichlorobenzene-d4	ISTD							
1,4-Dioxane	0.316	0.311	0.307	0.297	0.297	0.308	0.306	2.558
1,4-Dioxane-d8	0.426	0.418	0.417	0.402	0.395		0.411	3.044
Nitrobenzene-d5	1.202	1.173	1.128	1.002	0.927	0.906	1.056	12.163
2-Fluorobiphenyl	2.735	2.736	2.691	2.621	2.563	2.651	2.666	2.548
p-Terphenyl-d14	2.793	2.774	2.622	2.460	2.367	2.405	2.570	7.266

Wed Jun 22 12:17:33 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061289 Run Date: 06/21/2016 Sample ID: WG573501-08
Instrument ID: HPMS15 Run Time: 12:20 Method: 8270D
File ID: 15M18464 Analyst: MES QC Key: DOD4
ICal Workgroup: WG573501 Cal ID: HPMS15 - 21-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
1,4-Dioxane		5000	5050	ug/L	0.309	0.900	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4838783
Report generated 07/06/2016 16:23

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289
Run Date: 06/30/2016
Sample ID: WG574781-02
Instrument ID: HPMS15
Run Time: 14:42
Method: 8270D
File ID: 15M18674
Analyst: MES
QC Key: DOD4
Workgroup (AAB#): WG574772
Cal ID: HPMS15 - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,4-Dioxane		5000	5210	ug/L	0.319	4.14	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4838786
Report generated 07/06/2016 16:23

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061289
Instrument ID: HPMS15
Workgroup (AAB#): WG574772

ICAL CCV Number: WG573501-02
CAL ID: HPMS15-21-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG573501-02	NA	NA	39637
Upper Limit	NA	NA	79274
Lower Limit	NA	NA	19819
L16061289-01	1.00	01	27764
L16061289-02	1.00	01	27917
L16061289-03	1.00	01	28600
L16061289-05	1.00	01	27476
WG574286-01	1.00	01	28516
WG574286-02	1.00	01	22815

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4838788
Report generated 07/06/2016 16:23

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061289
Instrument ID: HPMS15
Workgroup (AAB#): WG574772

ICAL CCV Number: WG573501-02
CAL ID: HPMS15 - 21-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG573501-02	NA	NA	6.93
Upper Limit	NA	NA	7.43
Lower Limit	NA	NA	6.43
L16061289-01	1.00	01	6.87
L16061289-02	1.00	01	6.87
L16061289-03	1.00	01	6.87
L16061289-05	1.00	01	6.87
WG574286-01	1.00	01	6.87
WG574286-02	1.00	01	6.87

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4840125
Report generated: 07/06/2016 16:23

2.2.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18698.D
Acq On : 30 Jun 2016 23:44
Operator : MES
Sample : L16061289-01 827-DIOX
Misc : 1,1
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Jul 05 08:20:00 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.870	152	27764	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.686	96	454265	39.7625	ug/L	-0.10
Spiked Amount 5.000			Recovery	= 795.20%		
4) Nitrobenzene-d5	7.377	82	3539	0.1207	ug/L	0.01
Spiked Amount 5.000			Recovery	= 2.40%		
5) 2-Fluorobiphenyl	8.856	172	1148	0.0155	ug/L	0.00
Spiked Amount 5.000			Recovery	= 0.40%		
6) p-Terphenyl-d14	12.074	244	544	0.0076	ug/L	-0.01
Spiked Amount 5.000			Recovery	= 0.20%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.813	58	13153	1.5484	ug/L	74

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18698.D
Acq On : 30 Jun 2016 23:44
Operator : MES
Sample : L16061289-01 827-DIOX
Misc : 1,1
ALS Vial : 26 Sample Multiplier: 1

Quant Time: Jul 05 08:20:00 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

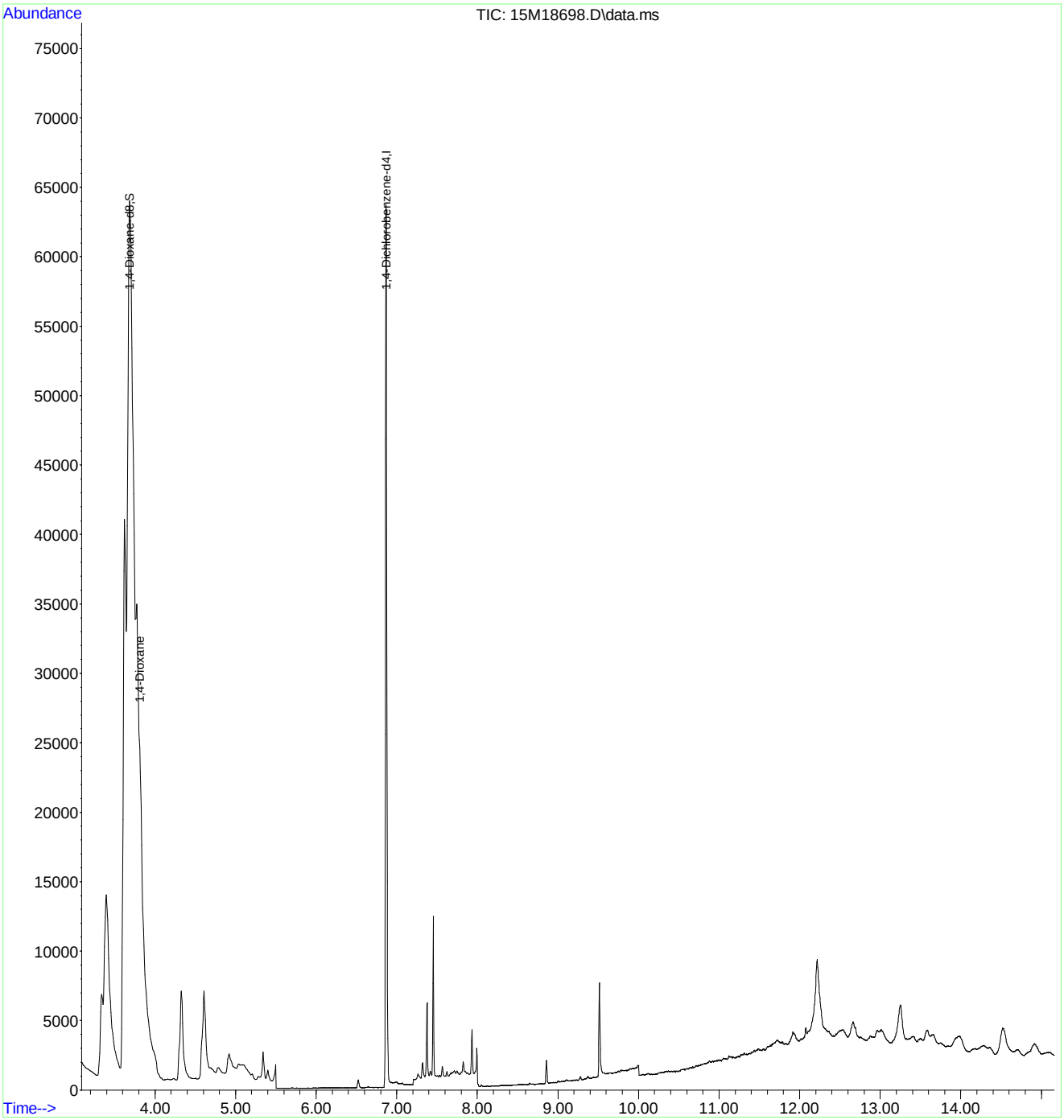

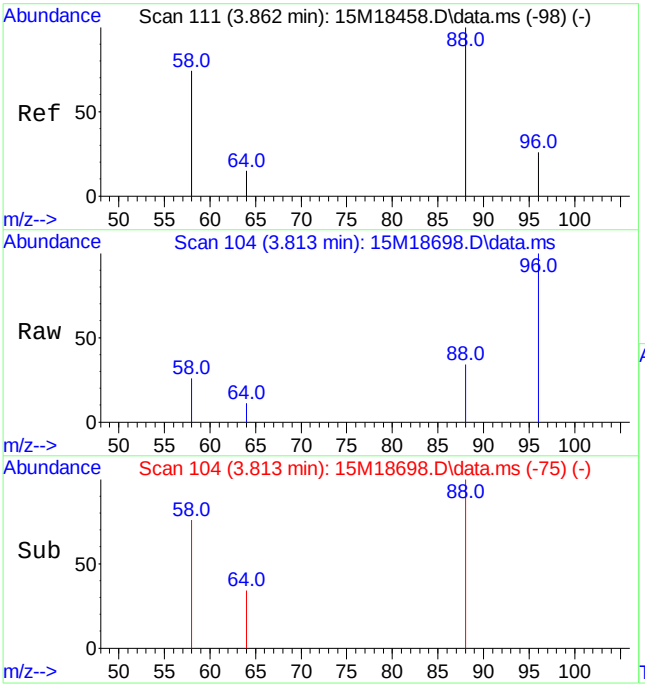

#2
1,4-Dioxane
Concen: 1.55 ug/L
RT: 3.813 min Scan# 104
Delta R.T. -0.007 min
Lab File: 15M18698.D
Acq: 30 Jun 2016 23:44

Tgt Ion: 58 Resp: 13153

Ion	Ratio	Lower	Upper
58	100		
88	135.5	103.1	240.7

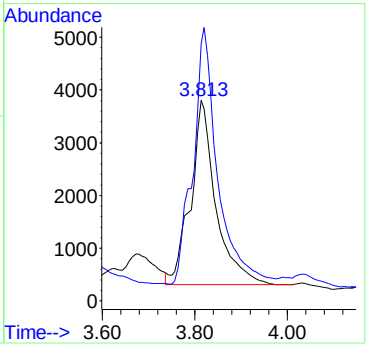

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18699.D
Acq On : 1 Jul 2016 00:06
Operator : MES
Sample : L16061289-02 827-DIOX
Misc : 1,1
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Jul 05 11:12:20 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.870	152	27917	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.777	96	66870m	5.8212	ug/L	0.00
Spiked Amount 5.000			Recovery	= 116.40%		
4) Nitrobenzene-d5	7.377	82	4337	0.1471	ug/L	0.01
Spiked Amount 5.000			Recovery	= 3.00%		
5) 2-Fluorobiphenyl	8.860	172	2926	0.0393	ug/L	0.00
Spiked Amount 5.000			Recovery	= 0.80%		
6) p-Terphenyl-d14	12.074	244	762	0.0106	ug/L	-0.01
Spiked Amount 5.000			Recovery	= 0.20%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.813	58	15113	1.7693	ug/L	79

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18699.D
Acq On : 1 Jul 2016 00:06
Operator : MES
Sample : L16061289-02 827-DIOX
Misc : 1,1
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Jul 05 11:12:20 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

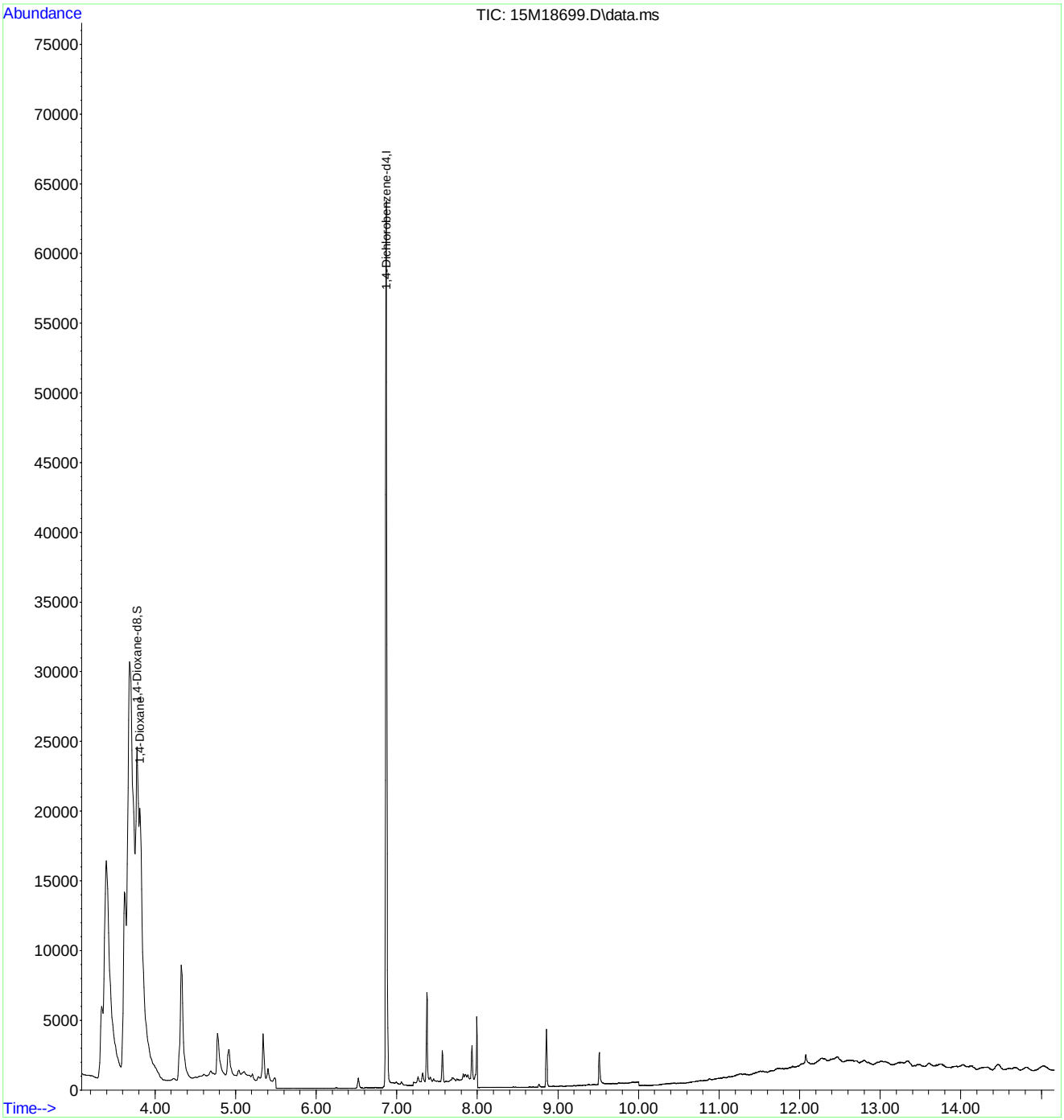

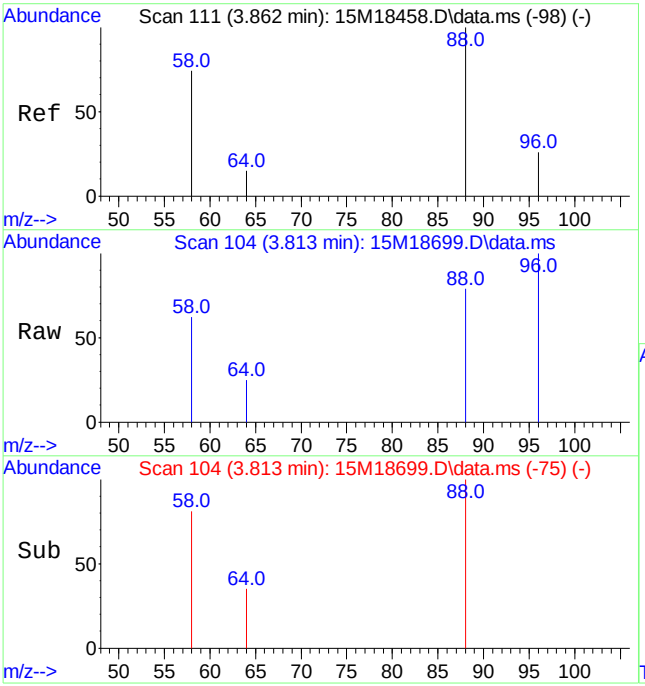

#2
1,4-Dioxane
Concen: 1.77 ug/L
RT: 3.813 min Scan# 104
Delta R.T. -0.007 min
Lab File: 15M18699.D
Acq: 1 Jul 2016 00:06

Tgt Ion: 58 Resp: 15113

Ion	Ratio	Lower	Upper
58	100		
88	143.2	103.1	240.7

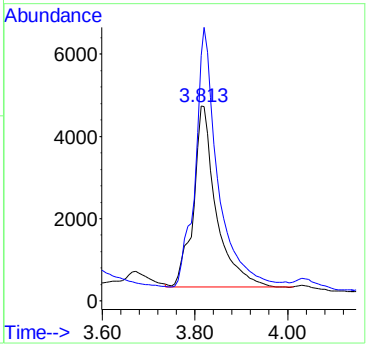

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18699.D
Acq On : 1 Jul 2016 00:06
Operator : MES
Sample : L16061289-02 827-DIOX
Misc : 1,1
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Jul 05 08:20:07 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

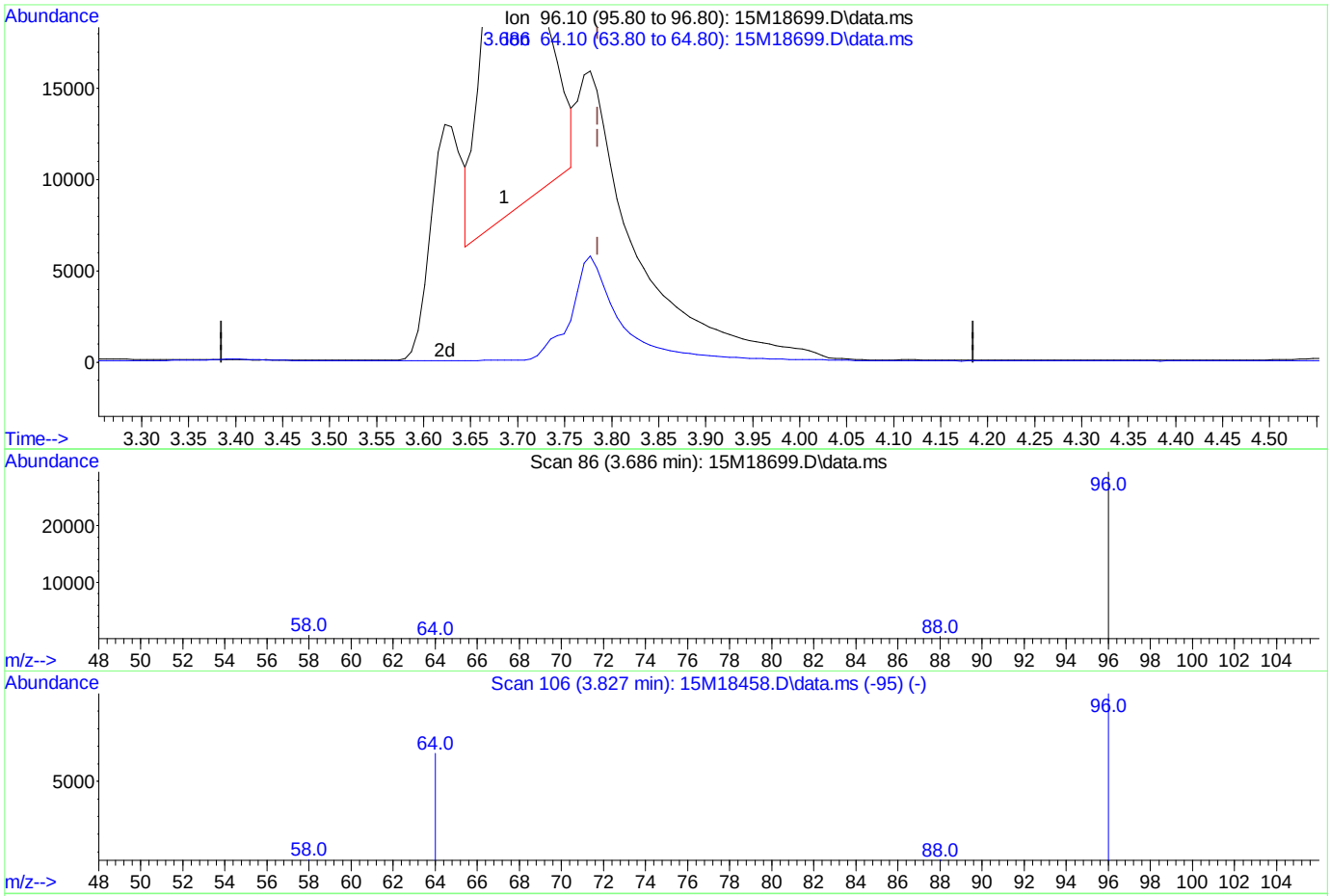

(3) 1,4-Dioxane-d8 (S)

3.686min (-0.099) 7.53 ug/L

response 86467

Ion	Exp%	Act%
96.10	100.00	100.00
64.10	74.80	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18699.D
Acq On : 1 Jul 2016 00:06
Operator : MES
Sample : L16061289-02 827-DIOX
Misc : 1,1
ALS Vial : 27 Sample Multiplier: 1

Quant Time: Jul 05 08:20:07 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

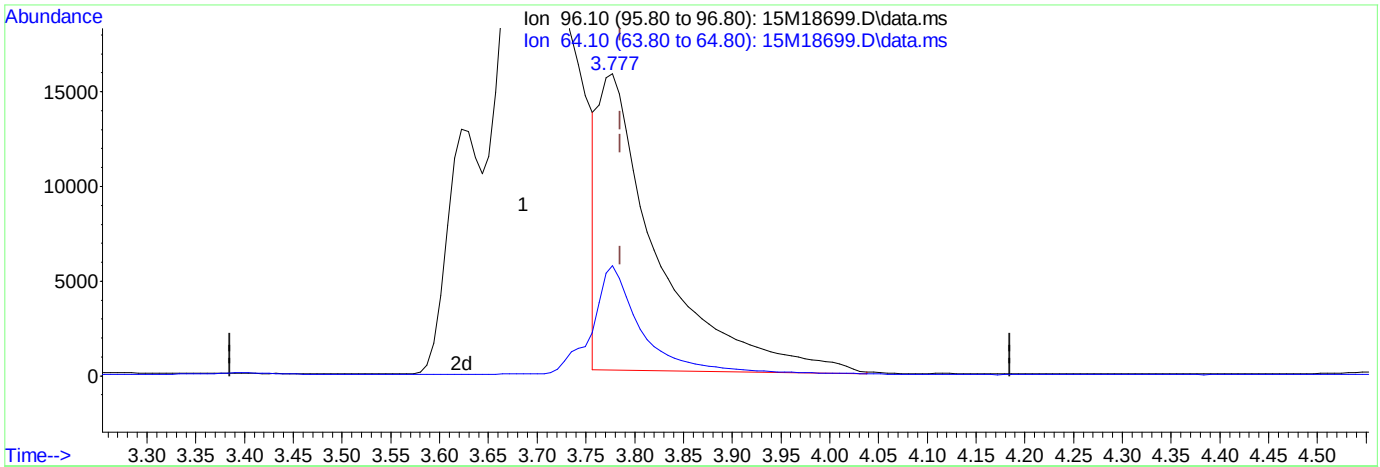

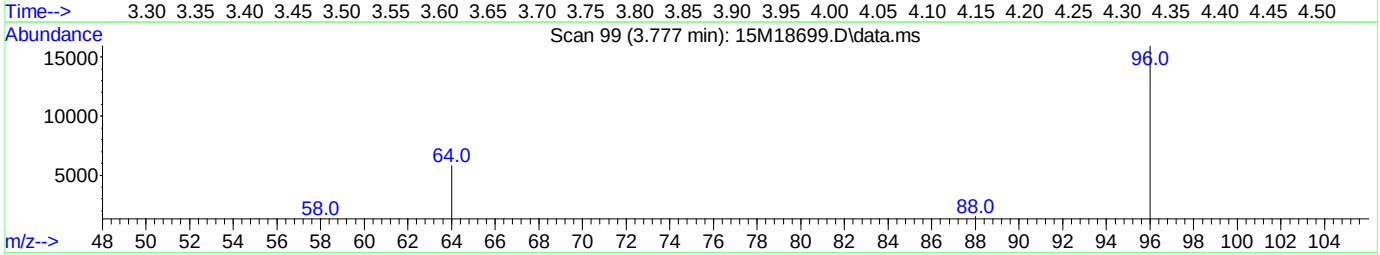

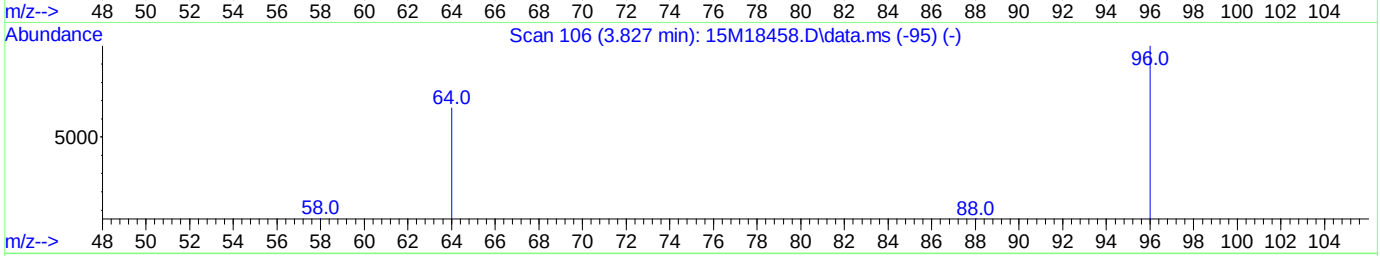

TIC: 15M18699.D\data.ms

(3) 1,4-Dioxane-d8 (S)

3.777min (-0.007) 5.82 ug/L mint

response 66870

Ion	Exp%	Act%
96.10	100.00	100.00
64.10	74.80	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

Analyst: 07/05/2016 12:35 Supervisor: 07/06/2016 10:01

#1 - Data system fails to select correct peak

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18700.D
Acq On : 1 Jul 2016 00:29
Operator : MES
Sample : L16061289-03 827-DIOX
Misc : 1,1
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Jul 05 08:20:10 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.870	152	28600	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.778	96	31443	2.6718	ug/L	0.00
Spiked Amount 5.000			Recovery	=	53.40%	
4) Nitrobenzene-d5	7.372	82	4120	0.1364	ug/L	0.00
Spiked Amount 5.000			Recovery	=	2.80%	
5) 2-Fluorobiphenyl	8.856	172	4381	0.0575	ug/L	0.00
Spiked Amount 5.000			Recovery	=	1.20%	
6) p-Terphenyl-d14	12.081	244	618	0.0084	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.20%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18700.D
Acq On : 1 Jul 2016 00:29
Operator : MES
Sample : L16061289-03 827-DIOX
Misc : 1,1
ALS Vial : 28 Sample Multiplier: 1

Quant Time: Jul 05 08:20:10 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

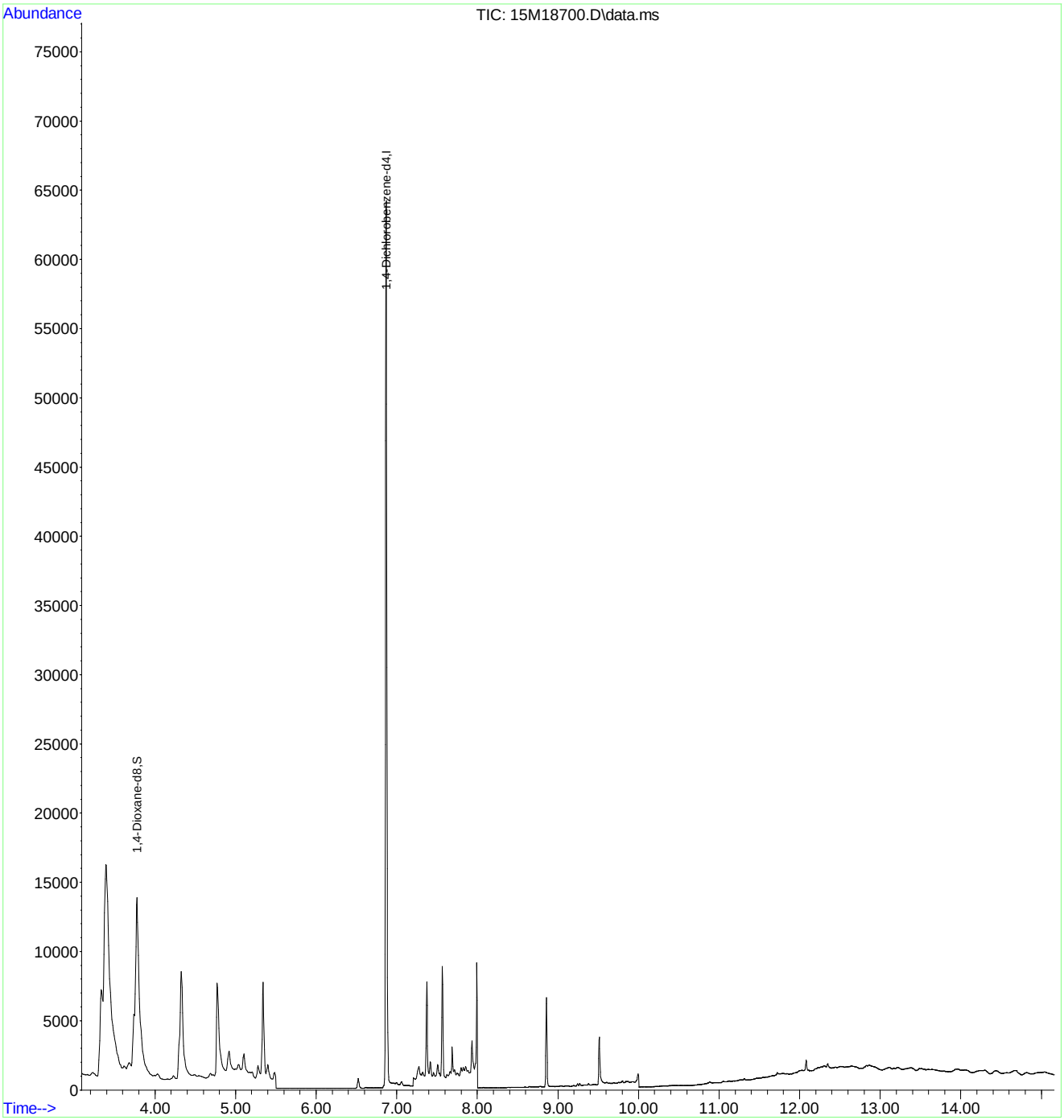

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18701.D
Acq On : 1 Jul 2016 00:51
Operator : MES
Sample : L16061289-05 827-DIOX
Misc : 1,1
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Jul 05 08:20:13 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.870	152	27476	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.778	96	31242	2.7633	ug/L	0.00
Spiked Amount 5.000			Recovery	=	55.20%	
4) Nitrobenzene-d5	7.377	82	1949	0.0672	ug/L	0.01
Spiked Amount 5.000			Recovery	=	1.40%	
5) 2-Fluorobiphenyl	8.856	172	188	0.0026	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.078	244	426	0.0060	ug/L	-0.01
Spiked Amount 5.000			Recovery	=	0.20%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18701.D
Acq On : 1 Jul 2016 00:51
Operator : MES
Sample : L16061289-05 827-DIOX
Misc : 1,1
ALS Vial : 29 Sample Multiplier: 1

Quant Time: Jul 05 08:20:13 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

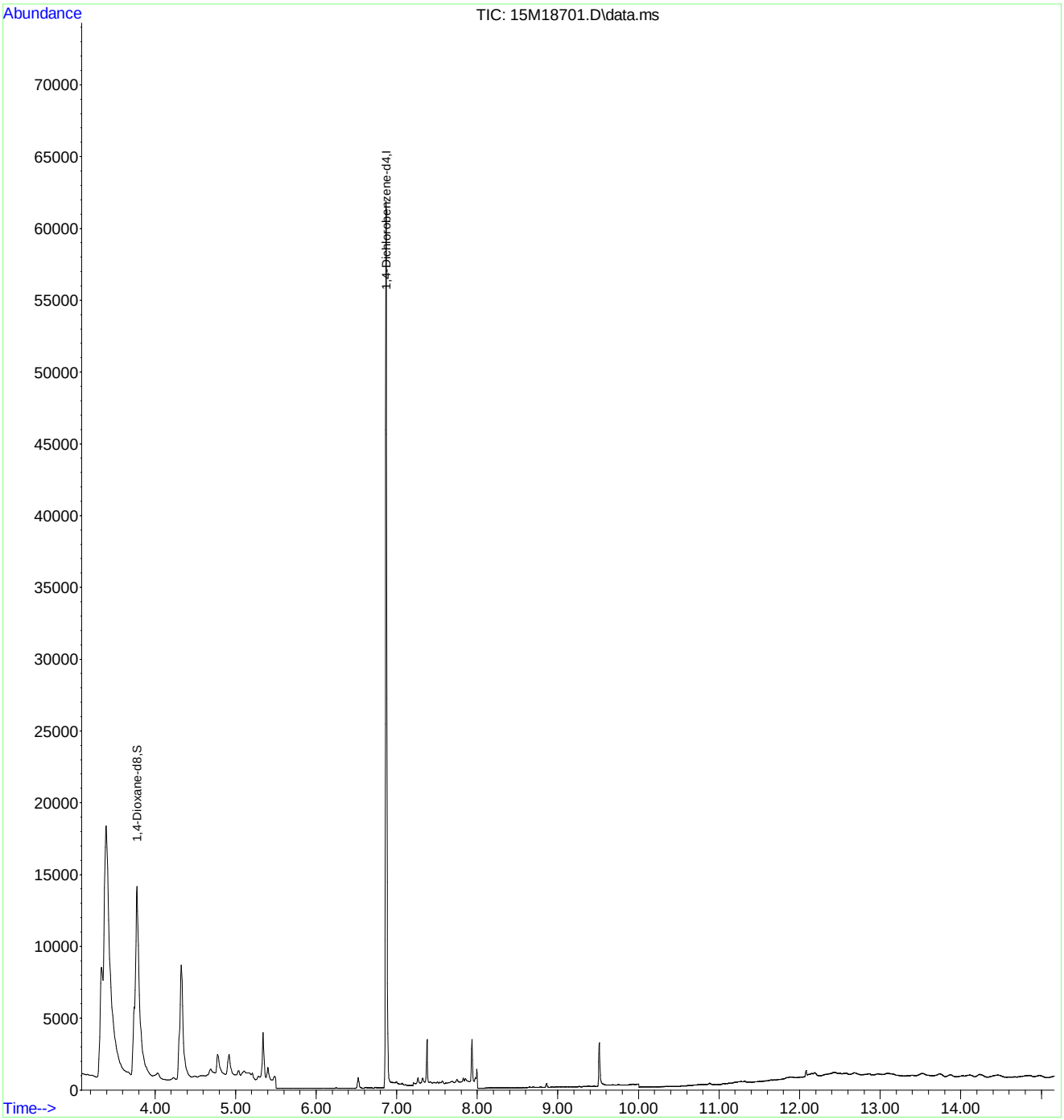

2.2.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 22 08:04:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	39637	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.827	96	82573	5.0627 ug/L	0.00
Spiked Amount 5.000			Recovery	= 101.20%	
4) Nitrobenzene-d5	7.431	82	223381	5.3353 ug/L	0.00
Spiked Amount 5.000			Recovery	= 106.80%	
5) 2-Fluorobiphenyl	8.922	172	533101	5.0444 ug/L	0.00
Spiked Amount 5.000			Recovery	= 100.80%	
6) p-Terphenyl-d14	12.184	244	519544	5.1003 ug/L	0.00
Spiked Amount 5.000			Recovery	= 102.00%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.862	58	60883	5.0202 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 22 08:04:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

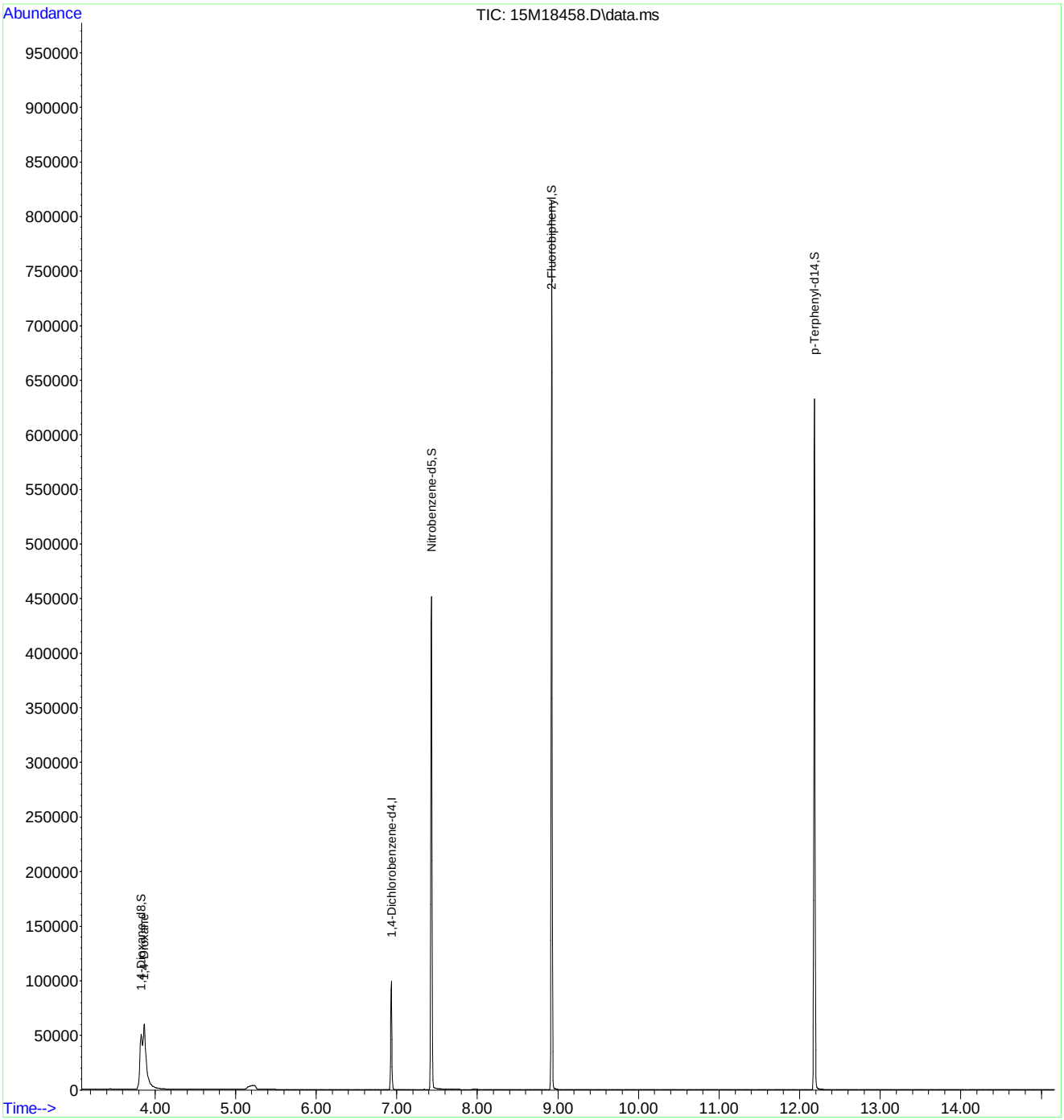

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18459.D
Acq On : 21 Jun 2016 10:27
Operator : MES
Sample : WG573501-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 22 08:04:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	43874	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	186767	10.3452	ug/L	0.00
Spiked Amount 5.000			Recovery = 207.00%			
4) Nitrobenzene-d5	7.431	82	527549	11.3834	ug/L	0.00
Spiked Amount 5.000			Recovery = 227.60%			
5) 2-Fluorobiphenyl	8.926	172	1199799	10.2565	ug/L	0.00
Spiked Amount 5.000			Recovery = 205.20%			
6) p-Terphenyl-d14	12.240	244	1225328	10.8672	ug/L	0.06
Spiked Amount 5.000			Recovery = 217.40%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	138820	10.3412	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18459.D
Acq On : 21 Jun 2016 10:27
Operator : MES
Sample : WG573501-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 22 08:04:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

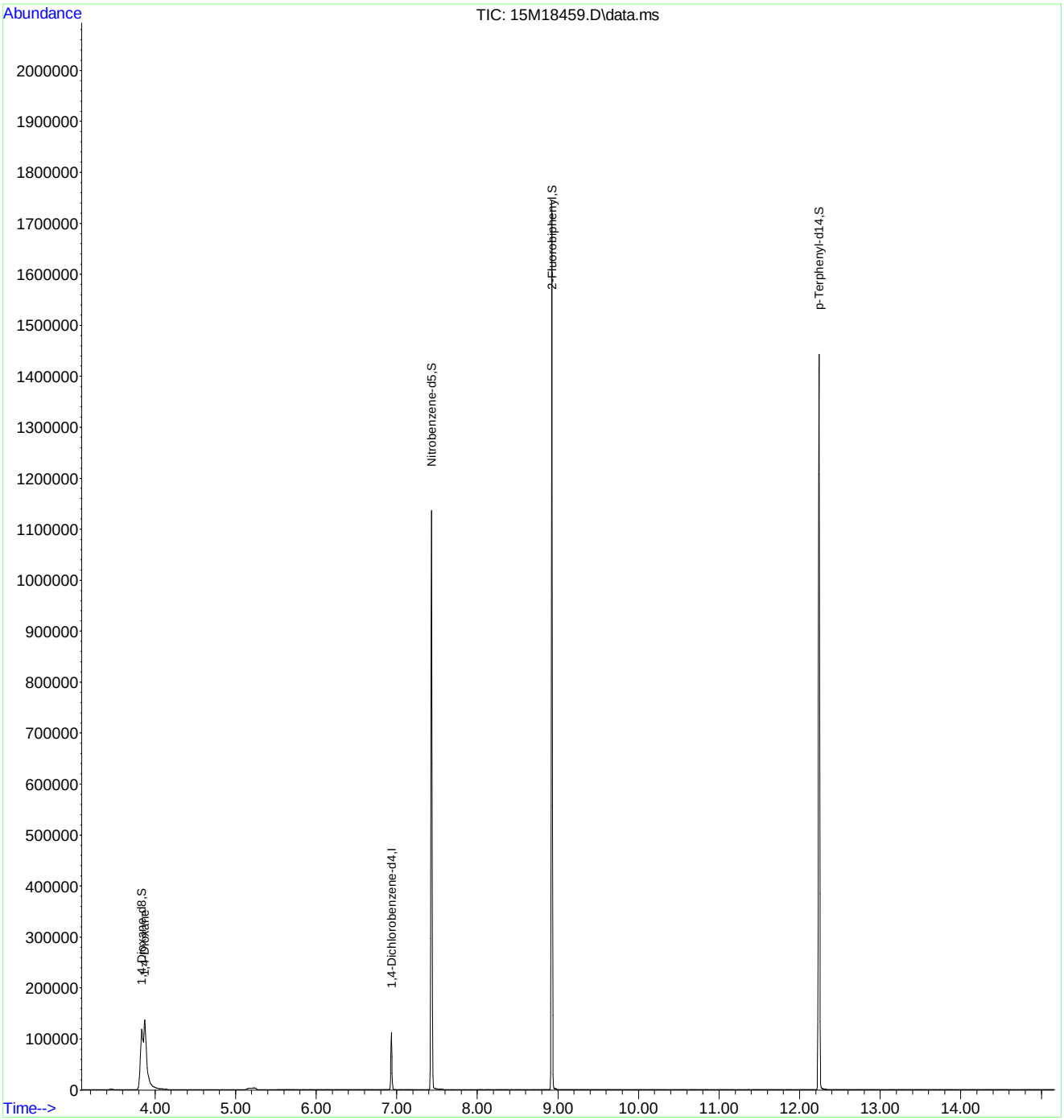

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18460.D
Acq On : 21 Jun 2016 10:49
Operator : MES
Sample : WG573501-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 22 08:04:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	44299	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.834	96	138833	7.6163 ug/L	0.00
Spiked Amount 5.000			Recovery	= 152.40%	
4) Nitrobenzene-d5	7.431	82	389810	8.3306 ug/L	0.00
Spiked Amount 5.000			Recovery	= 166.60%	
5) 2-Fluorobiphenyl	8.923	172	909050	7.6965 ug/L	0.00
Spiked Amount 5.000			Recovery	= 154.00%	
6) p-Terphenyl-d14	12.203	244	921380	8.0931 ug/L	0.02
Spiked Amount 5.000			Recovery	= 161.80%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.876	58	103182	7.6127 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18460.D
Acq On : 21 Jun 2016 10:49
Operator : MES
Sample : WG573501-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 22 08:04:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

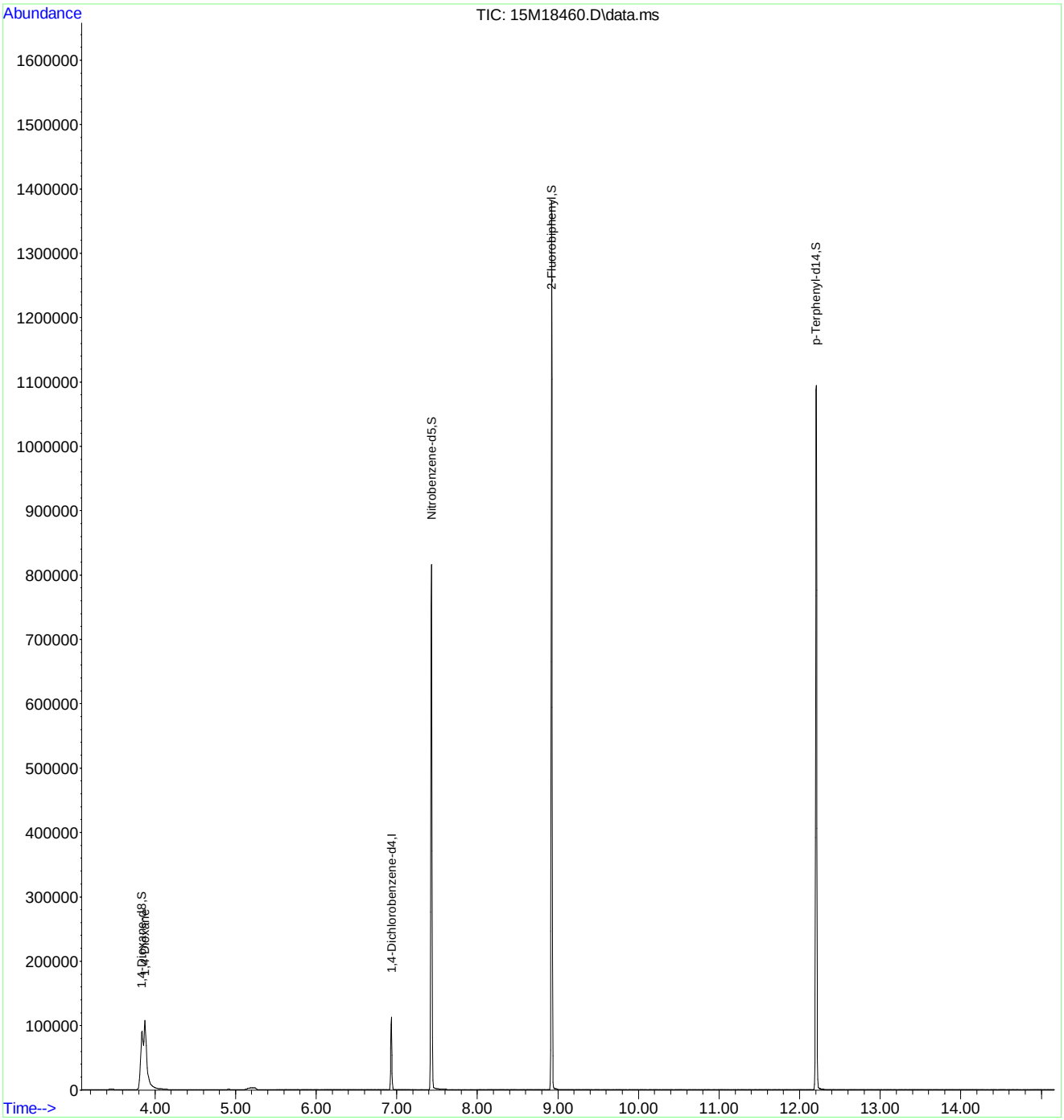

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18461.D
Acq On : 21 Jun 2016 11:12
Operator : MES
Sample : WG573501-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 22 08:04:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	35478	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.827	96	35630	2.4406	ug/L	0.00
Spiked Amount 5.000			Recovery = 48.80%			
4) Nitrobenzene-d5	7.431	82	88869	2.3714	ug/L	0.00
Spiked Amount 5.000			Recovery = 47.40%			
5) 2-Fluorobiphenyl	8.923	172	232500	2.4579	ug/L	0.00
Spiked Amount 5.000			Recovery = 49.20%			
6) p-Terphenyl-d14	12.199	244	218191	2.3930	ug/L	0.02
Spiked Amount 5.000			Recovery = 47.80%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.862	58	26333	2.4259	ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18461.D
Acq On : 21 Jun 2016 11:12
Operator : MES
Sample : WG573501-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 22 08:04:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

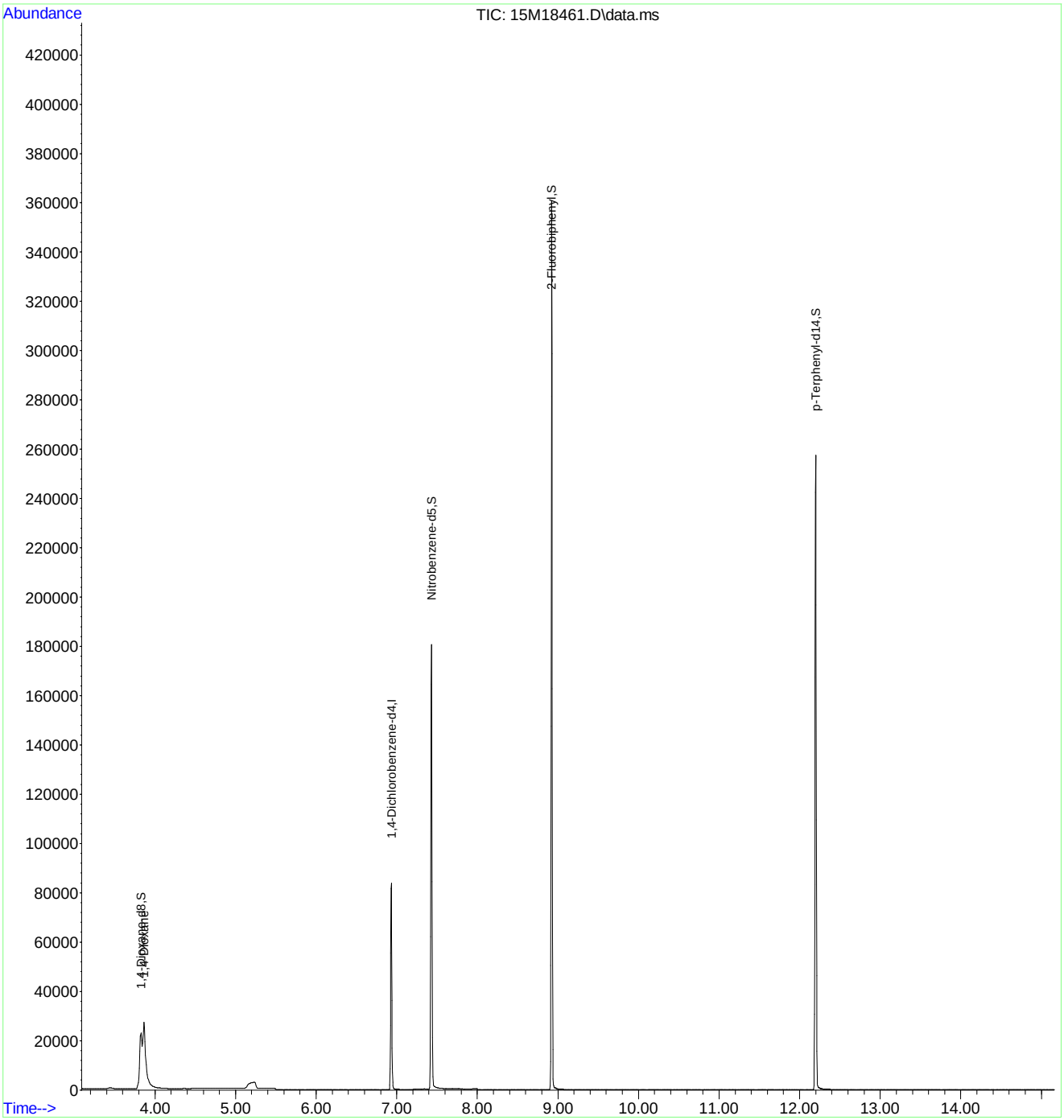

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18462.D
Acq On : 21 Jun 2016 11:34
Operator : MES
Sample : WG573501-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 22 08:04:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	44672	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.841	96	17660	0.9607	ug/L	0.01
Spiked Amount 5.000			Recovery	=	19.20%	
4) Nitrobenzene-d5	7.431	82	41409	0.8776	ug/L	0.00
Spiked Amount 5.000			Recovery	=	17.60%	
5) 2-Fluorobiphenyl	8.922	172	114491	0.9612	ug/L	0.00
Spiked Amount 5.000			Recovery	=	19.20%	
6) p-Terphenyl-d14	12.203	244	105713	0.9208	ug/L	0.02
Spiked Amount 5.000			Recovery	=	18.40%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.876	58	13250	0.9694	ug/L	82

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18462.D
Acq On : 21 Jun 2016 11:34
Operator : MES
Sample : WG573501-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 22 08:04:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

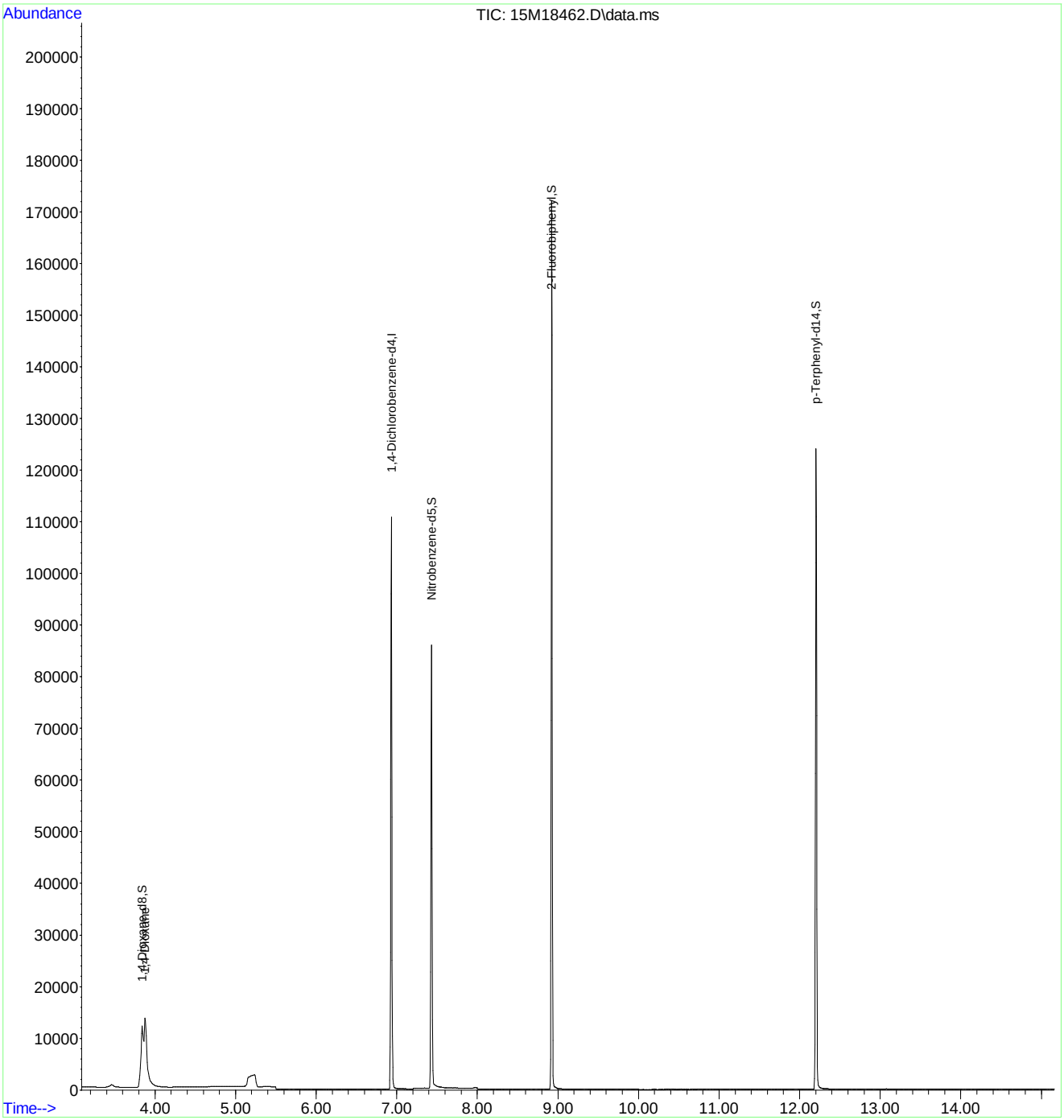

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18463.D
Acq On : 21 Jun 2016 11:57
Operator : MES
Sample : WG573501-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 22 08:04:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	45840	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.841	96	7629	0.4045	ug/L	0.01
Spiked Amount 5.000			Recovery	=	8.00%	
4) Nitrobenzene-d5	7.431	82	16604	0.3429	ug/L	0.00
Spiked Amount 5.000			Recovery	=	6.80%	
5) 2-Fluorobiphenyl	8.923	172	48617	0.3978	ug/L	0.00
Spiked Amount 5.000			Recovery	=	8.00%	
6) p-Terphenyl-d14	12.210	244	44097	0.3743	ug/L	0.03
Spiked Amount 5.000			Recovery	=	7.40%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.876	58	5650	0.4028	ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18463.D
Acq On : 21 Jun 2016 11:57
Operator : MES
Sample : WG573501-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 22 08:04:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

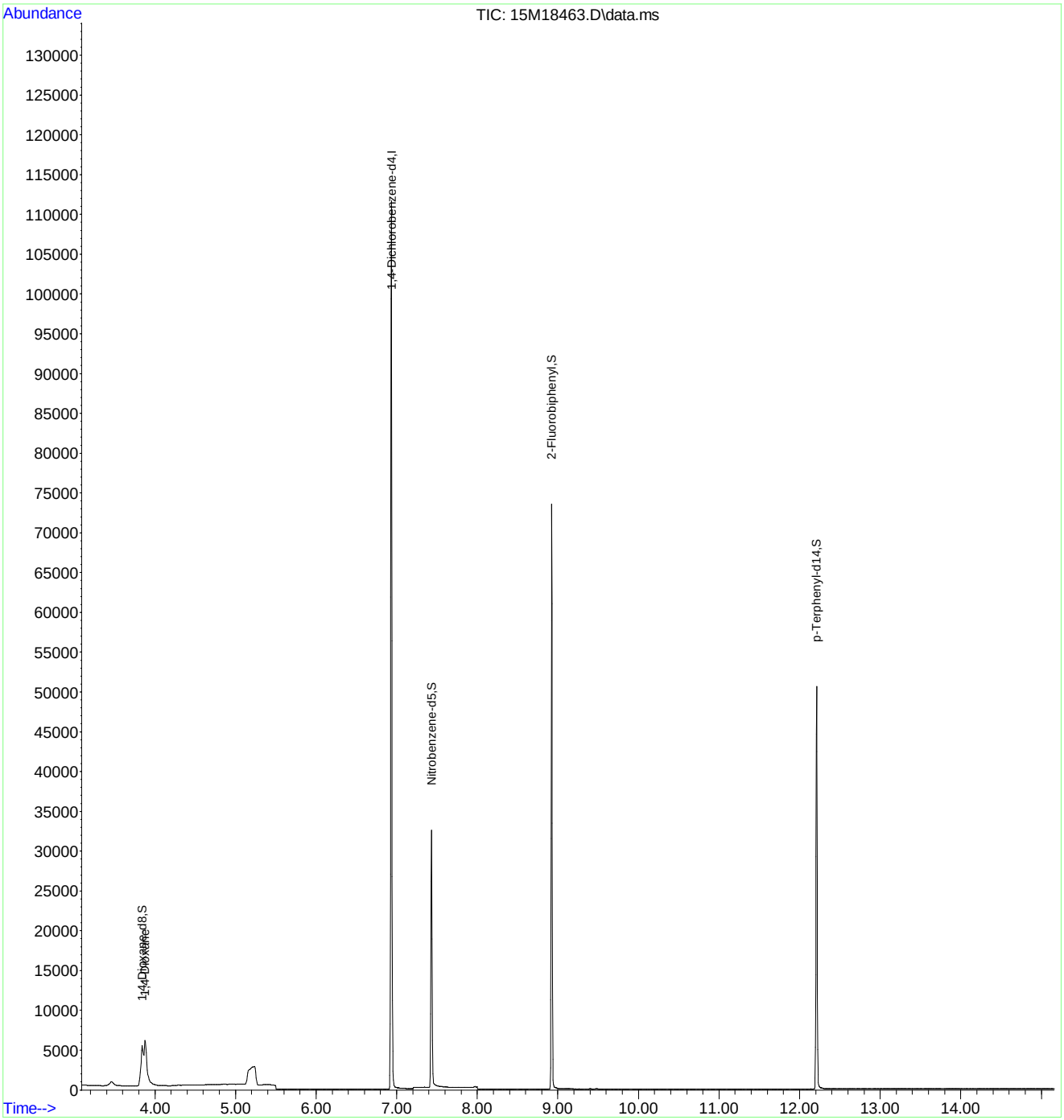

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	41944	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.792	96	22	0.0013	ug/L	-0.04
Spiked Amount 5.000			Recovery	=	0.00%	
4) Nitrobenzene-d5	7.436	82	56	0.0013	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
5) 2-Fluorobiphenyl	8.926	172	23	0.0002	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.214	244	128	0.0012	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	64750	5.0454	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

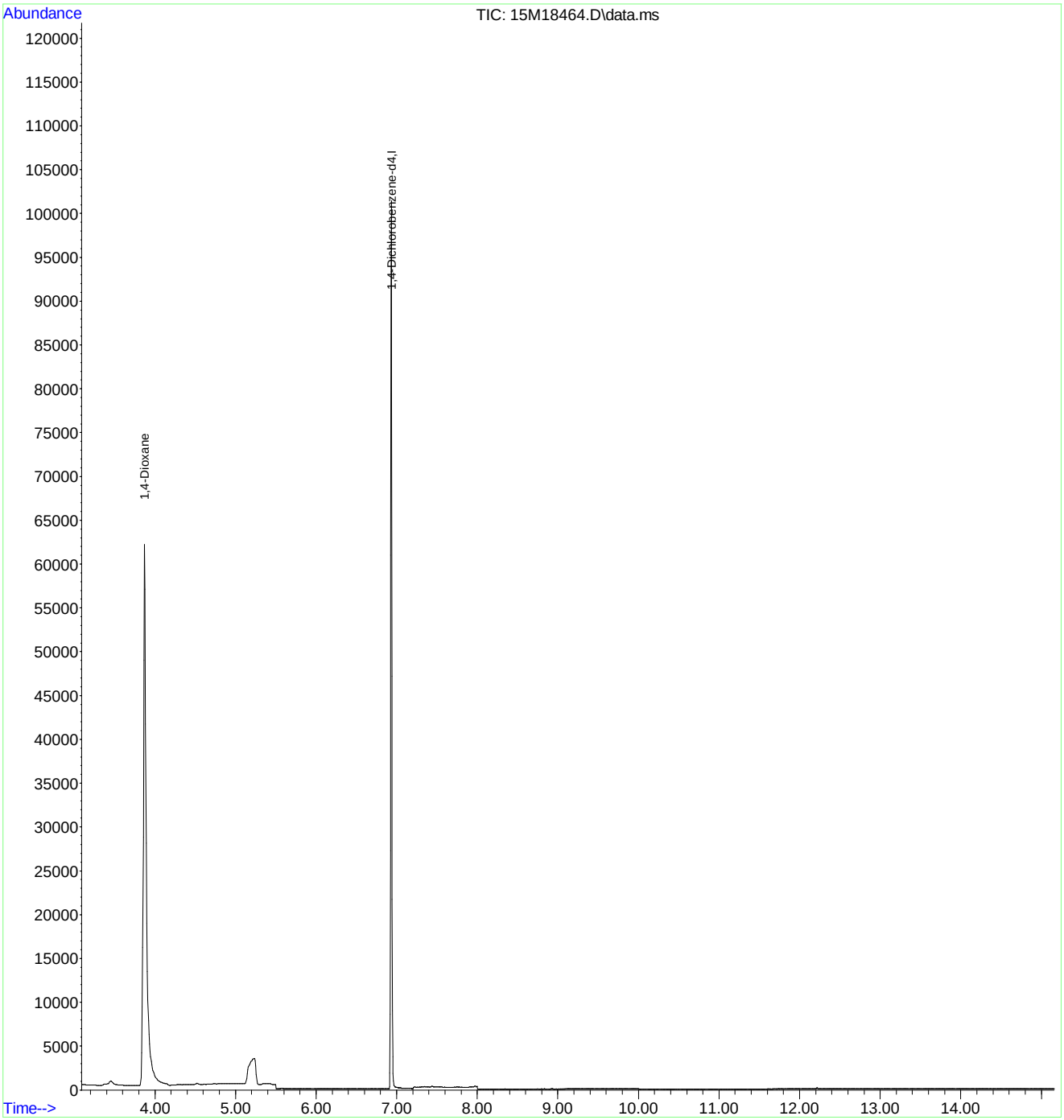

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	106	0.00
2		1,4-Dioxane	5.000	5.045	-0.9	106	0.00
3	S	1,4-Dioxane-d8	5.000	0.001	100.0#	0	-0.04
4	S	Nitrobenzene-d5	5.000	0.001	100.0#	0	0.00
5	S	2-Fluorobiphenyl	5.000	0.000	100.0#	0	0.00
6	S	p-Terphenyl-d14	5.000	0.001	100.0#	0	0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18674.D
Acq On : 30 Jun 2016 14:42
Operator : MES
Sample : WG574781-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 30 14:58:21 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.870	152	31348	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.777	96	62277	4.8280 ug/L	0.00
Spiked Amount 5.000			Recovery	= 96.60%	
4) Nitrobenzene-d5	7.366	82	199647	6.0293 ug/L	0.00
Spiked Amount 5.000			Recovery	= 120.60%	
5) 2-Fluorobiphenyl	8.856	172	445070	5.3250 ug/L	0.00
Spiked Amount 5.000			Recovery	= 106.40%	
6) p-Terphenyl-d14	12.147	244	423287	5.2541 ug/L	0.06
Spiked Amount 5.000			Recovery	= 105.00%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.813	58	49944	5.2072 ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18674.D
Acq On : 30 Jun 2016 14:42
Operator : MES
Sample : WG574781-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 30 14:58:21 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

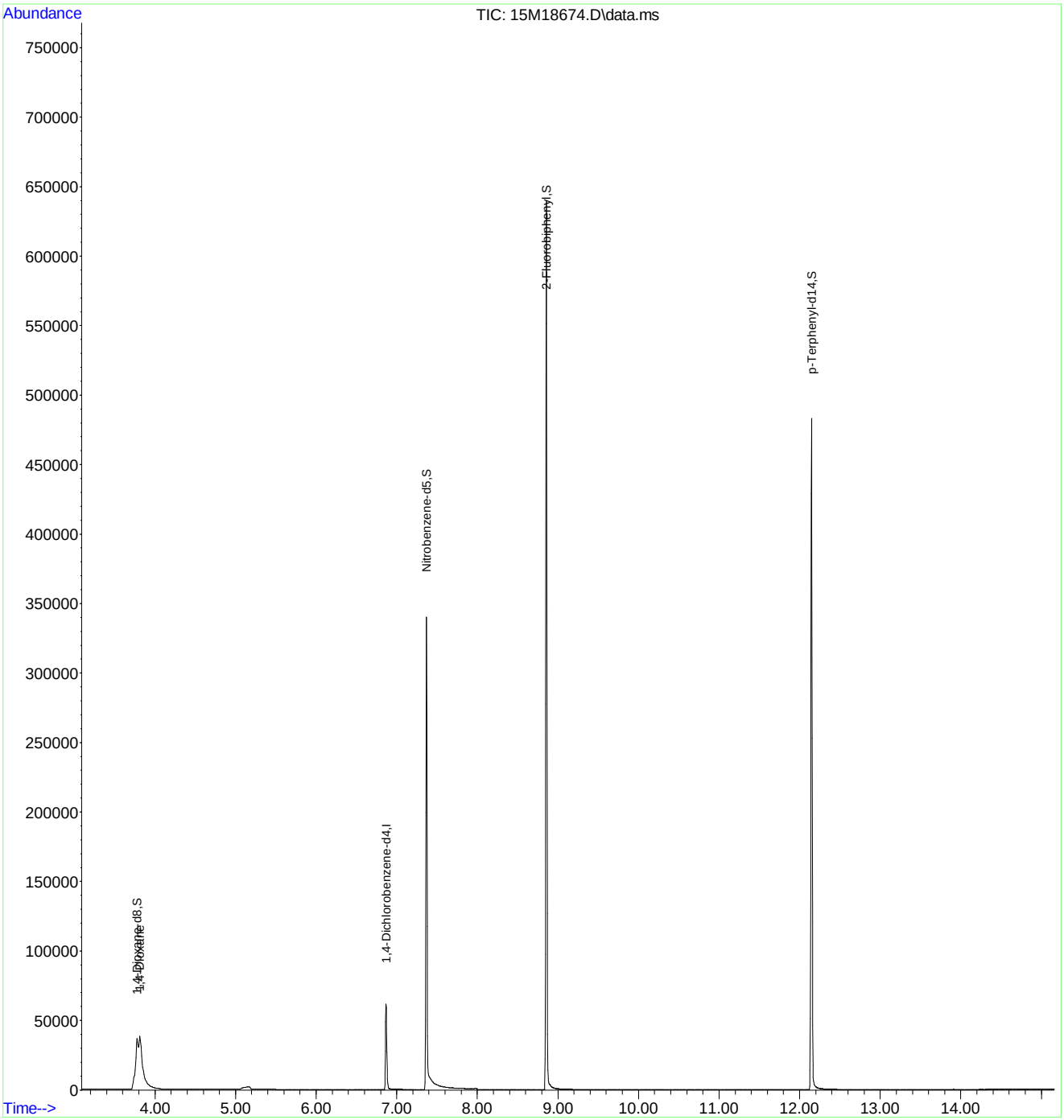

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18674.D
Acq On : 30 Jun 2016 14:42
Operator : MES
Sample : WG574781-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 30 14:58:21 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	79	0.00
2	1,4-Dioxane	5.000	5.207	-4.1	82	0.00
3 S	1,4-Dioxane-d8	5.000	4.828	3.4	75	0.00
4 S	Nitrobenzene-d5	5.000	6.029	-20.6	89	0.00
5 S	2-Fluorobiphenyl	5.000	5.325	-6.5	83	0.00
6 S	p-Terphenyl-d14	5.000	5.254	-5.1	82	0.06

(#) = Out of Range SPCC's out = 0 CCC's out = 0

2.2.1.5 Raw QC Data

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

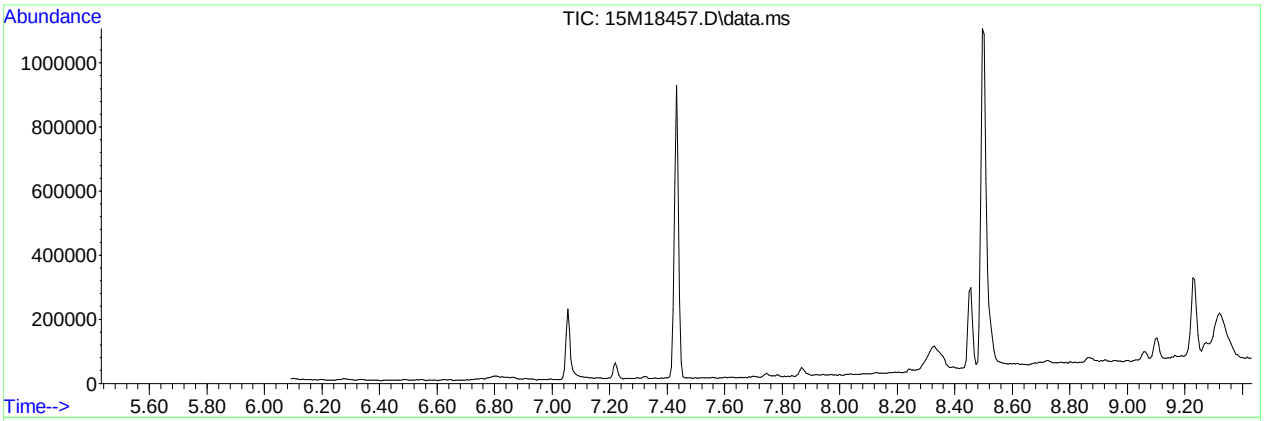

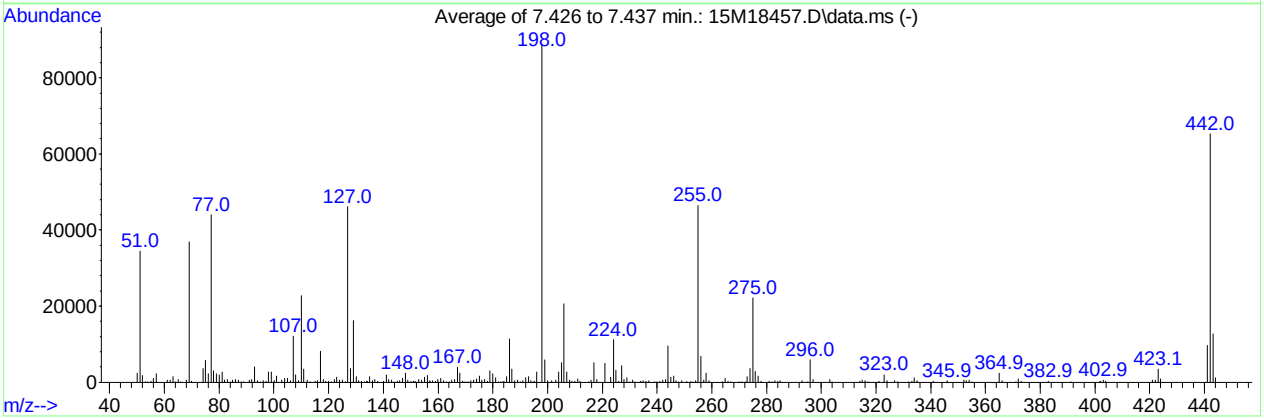

AutoFind: Scans 234, 235, 236; Background Corrected with Scan 228

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	38.8	34488	PASS
68	69	0.00	2	1.4	500	PASS
69	198	0.00	100	41.4	36833	PASS
70	69	0.00	2	0.5	172	PASS
127	198	40	60	51.9	46131	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	88880	PASS
199	198	5	9	6.7	5918	PASS
275	198	10	30	24.9	22090	PASS
365	198	1	100	2.7	2358	PASS
441	443	0.01	100	75.7	9586	PASS
442	198	40	100	73.4	65261	PASS
443	442	17	23	19.4	12659	PASS

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

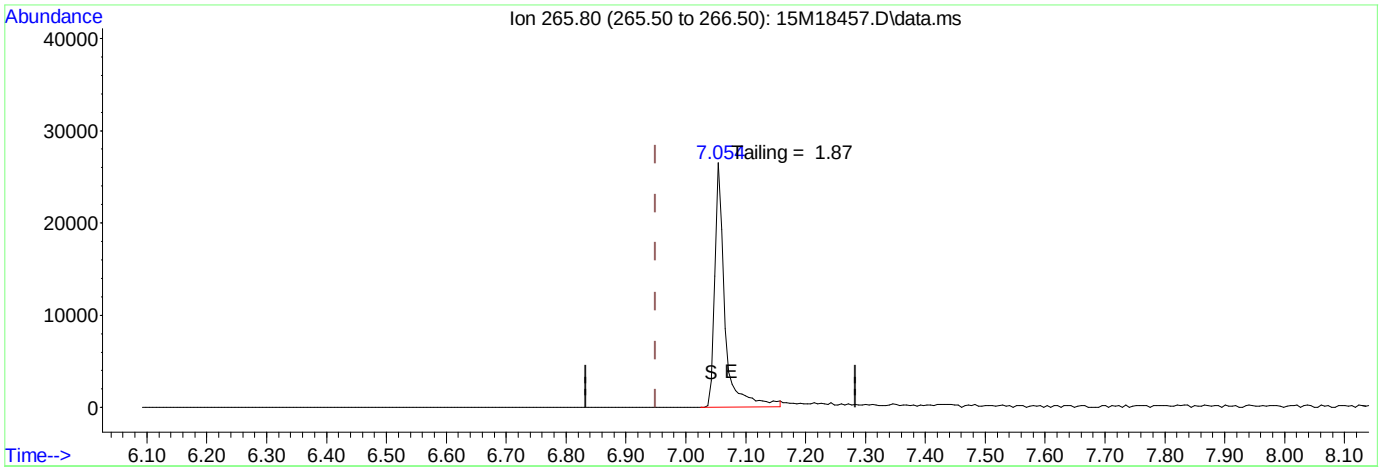

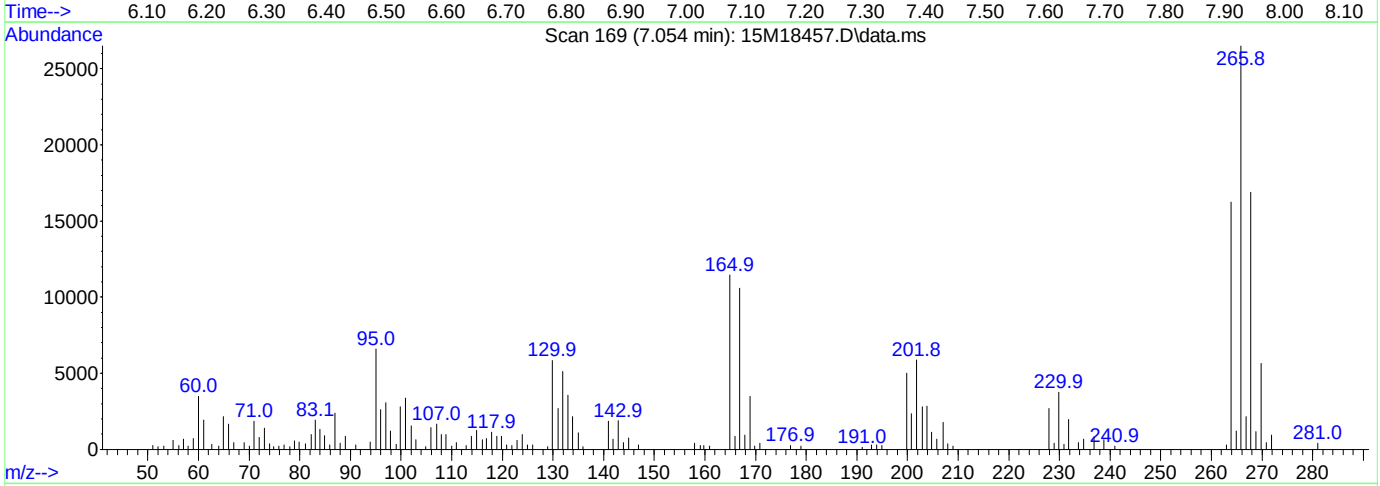

TIC: 15M18457.D\data.ms

(1) Pentachlorophenol

7.054min (+ 0.105) 0.00 ug/ml

response 30738

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

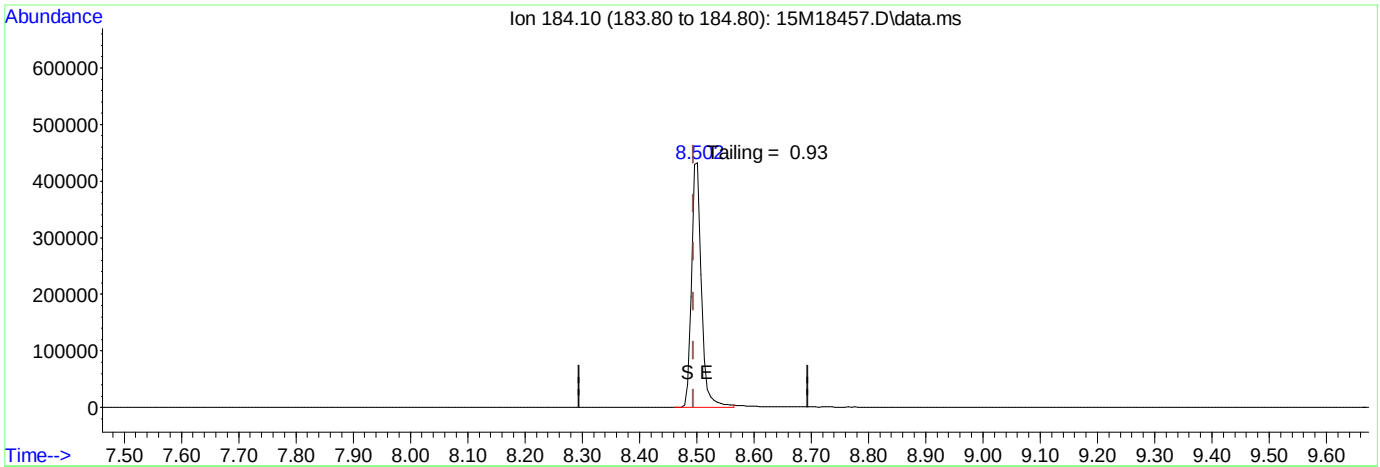

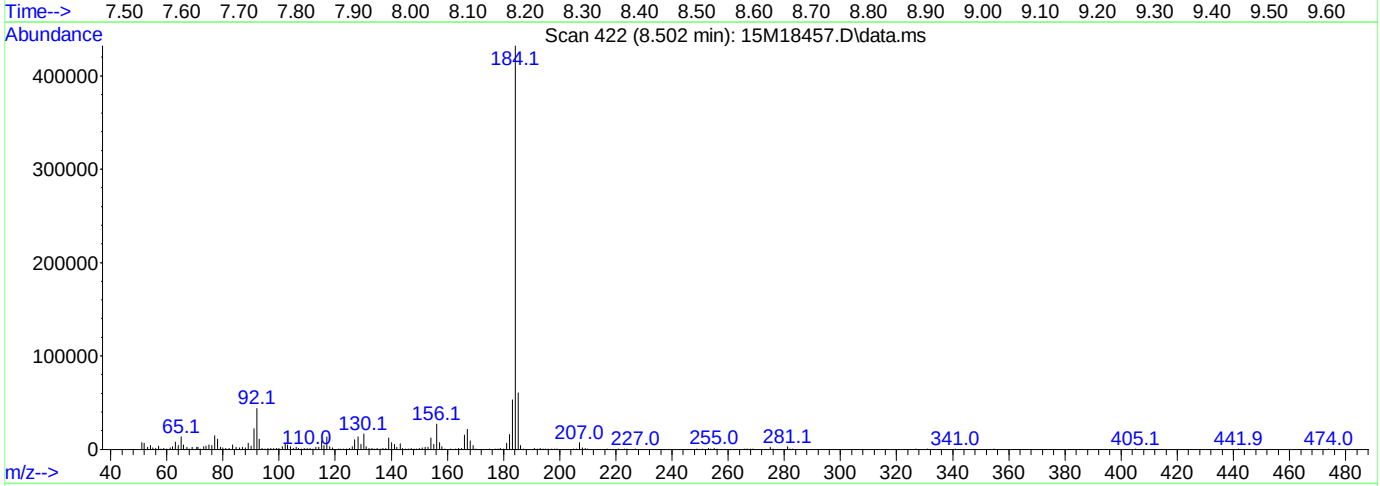

TIC: 15M18457.D\data.ms

(2) Benzidine

8.502min (+ 0.008) 0.00 ug/ml

response 532770

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

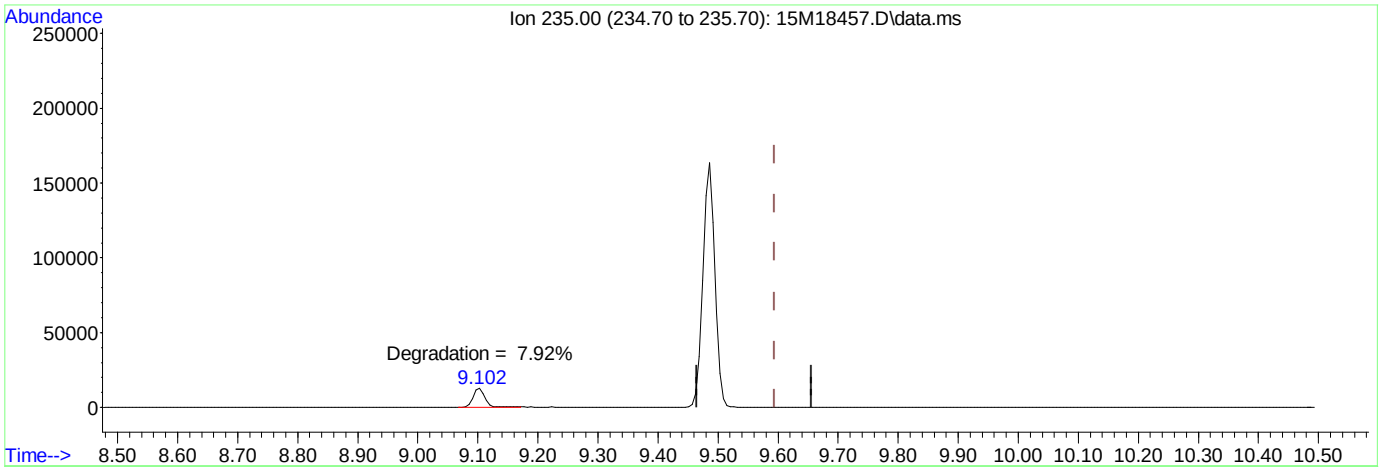

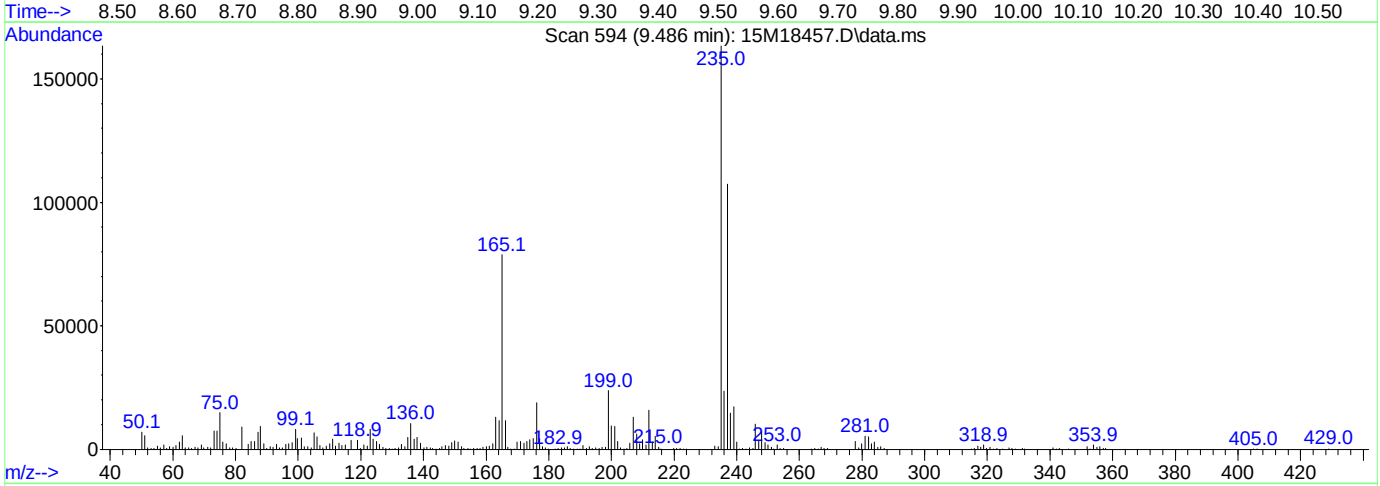

TIC: 15M18457.D\data.ms

(3) DDT

9.486min (-0.108) 0.00 ug/ml

response 180187

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18673.D
Acq On : 30 Jun 2016 14:24
Operator : MES
Sample : WG574781-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

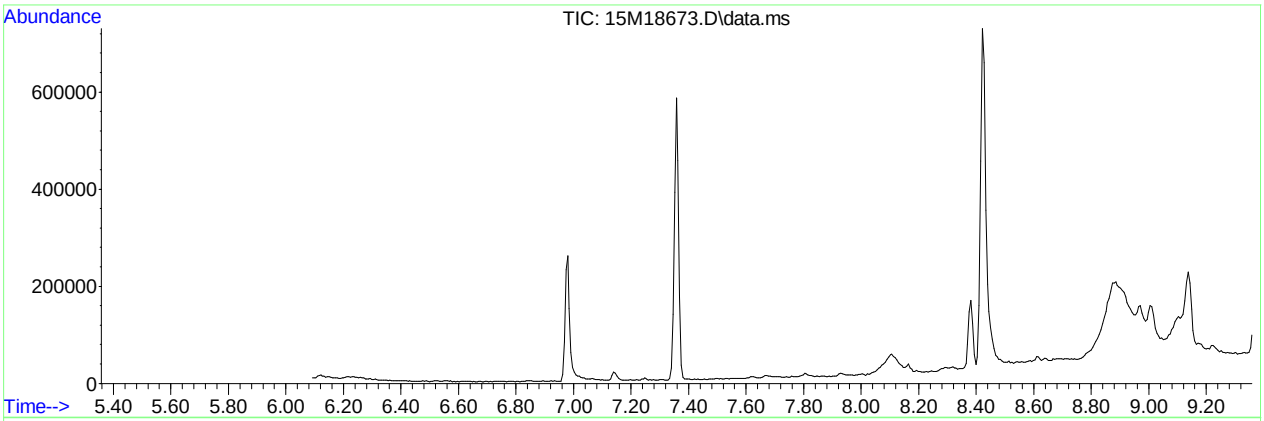

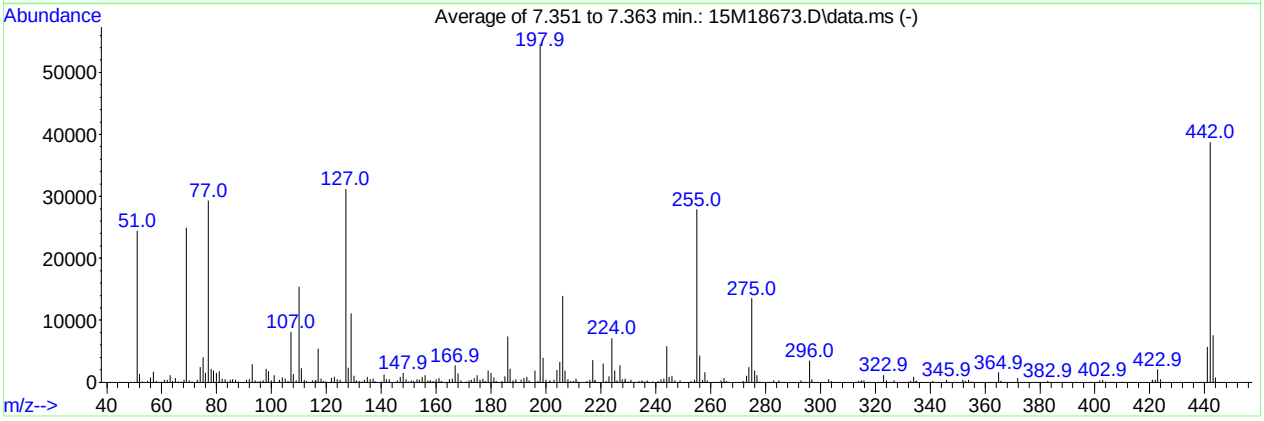

AutoFind: Scans 221, 222, 223; Background Corrected with Scan 215

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	44.6	24370	PASS
68	69	0.00	2	1.4	352	PASS
69	198	0.00	100	45.7	24921	PASS
70	69	0.00	2	1.0	239	PASS
127	198	40	60	57.0	31104	PASS
197	198	0.00	1	0.3	159	PASS
198	198	100	100	100.0	54589	PASS
199	198	5	9	7.0	3838	PASS
275	198	10	30	24.8	13523	PASS
365	198	1	100	2.8	1520	PASS
441	443	0.01	100	75.2	5686	PASS
442	198	40	100	70.8	38669	PASS
443	442	17	23	19.5	7559	PASS

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18673.D
Acq On : 30 Jun 2016 14:24
Operator : MES
Sample : WG574781-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 30 14:35:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

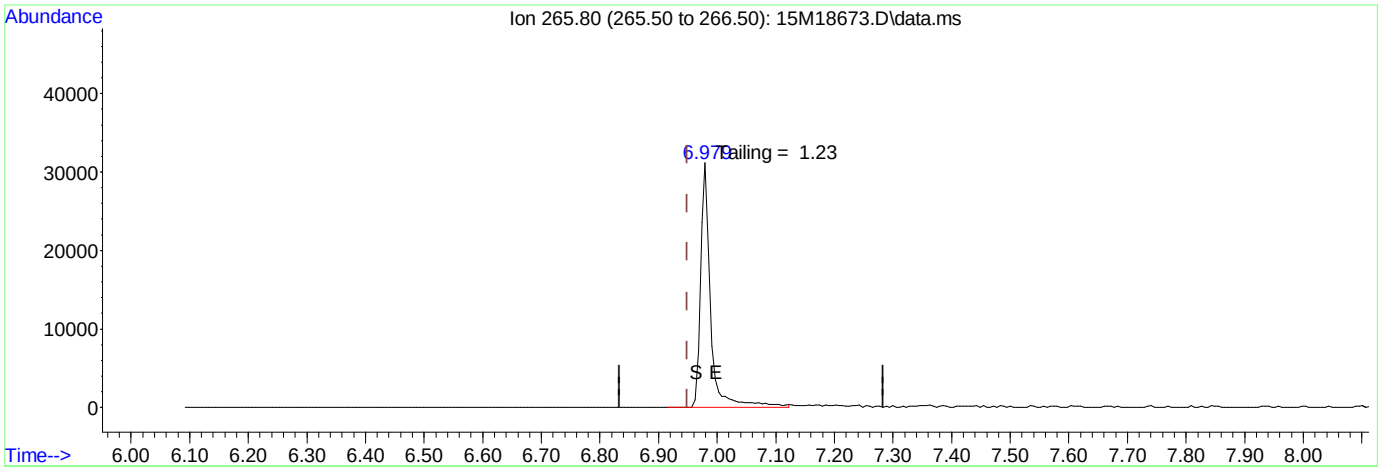

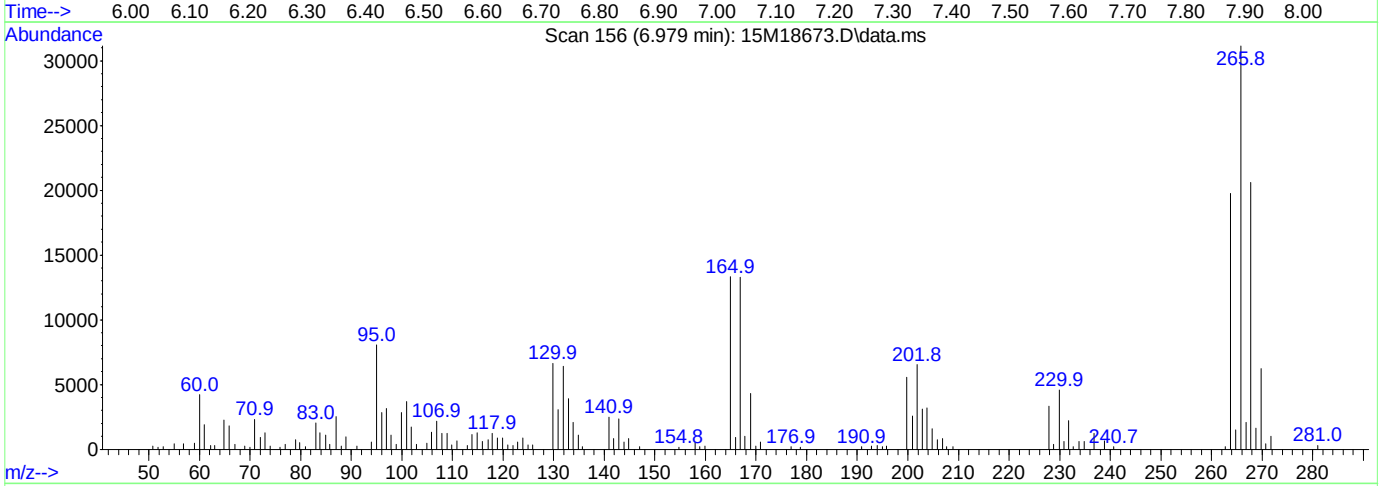

TIC: 15M18673.D\data.ms

(1) Pentachlorophenol

6.979min (+ 0.030) 0.00 ug/ml

response 37511

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18673.D
Acq On : 30 Jun 2016 14:24
Operator : MES
Sample : WG574781-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 30 14:35:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

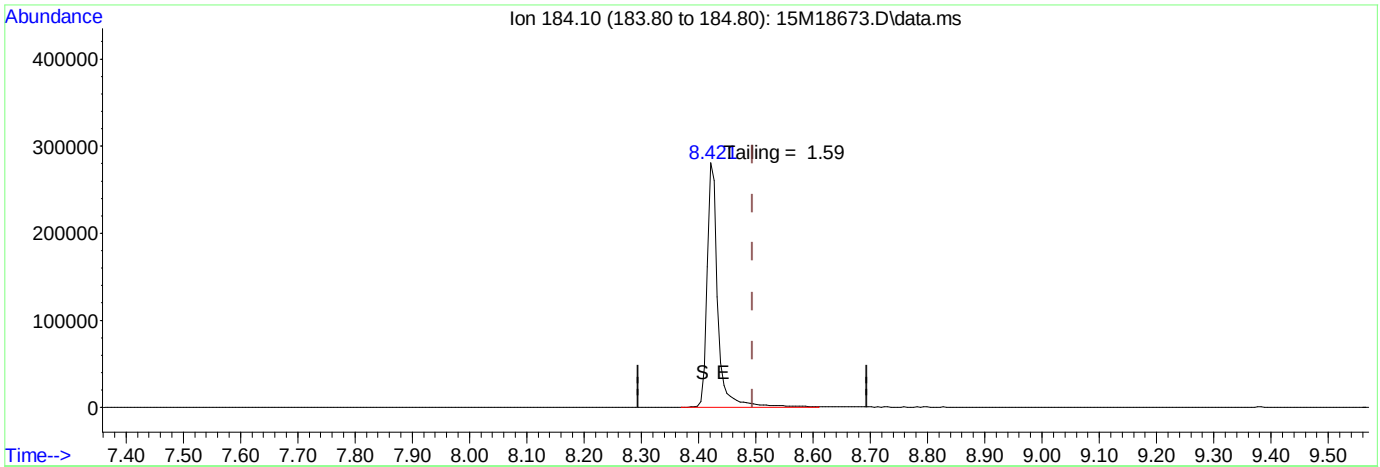

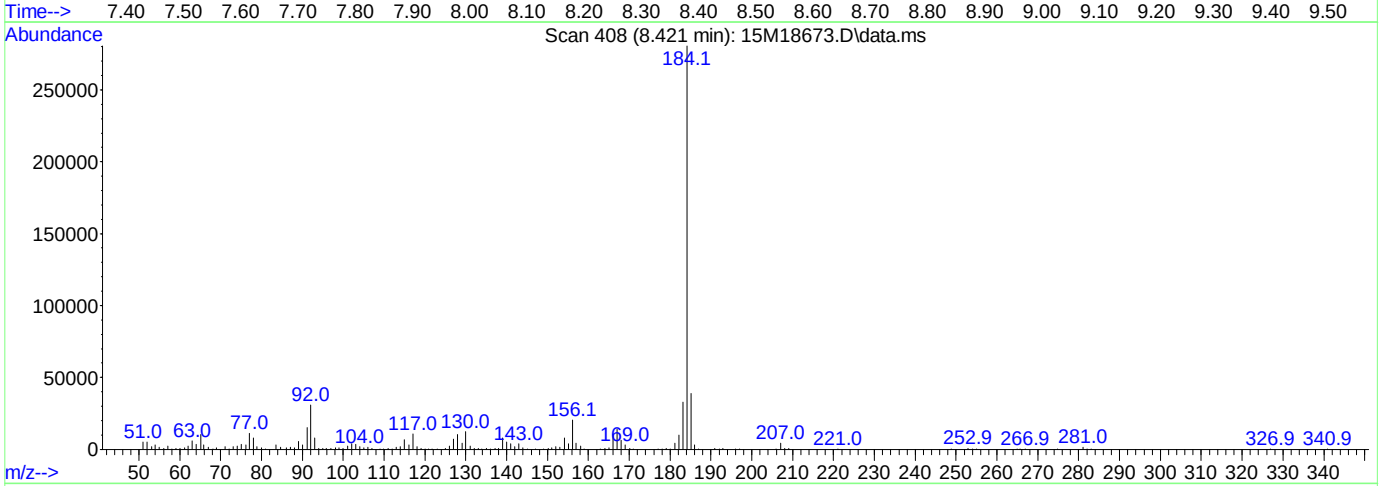

TIC: 15M18673.D\data.ms

(2) Benzidine

8.421min (-0.073) 0.00 ug/ml

response 363129

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18673.D
Acq On : 30 Jun 2016 14:24
Operator : MES
Sample : WG574781-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 30 14:35:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

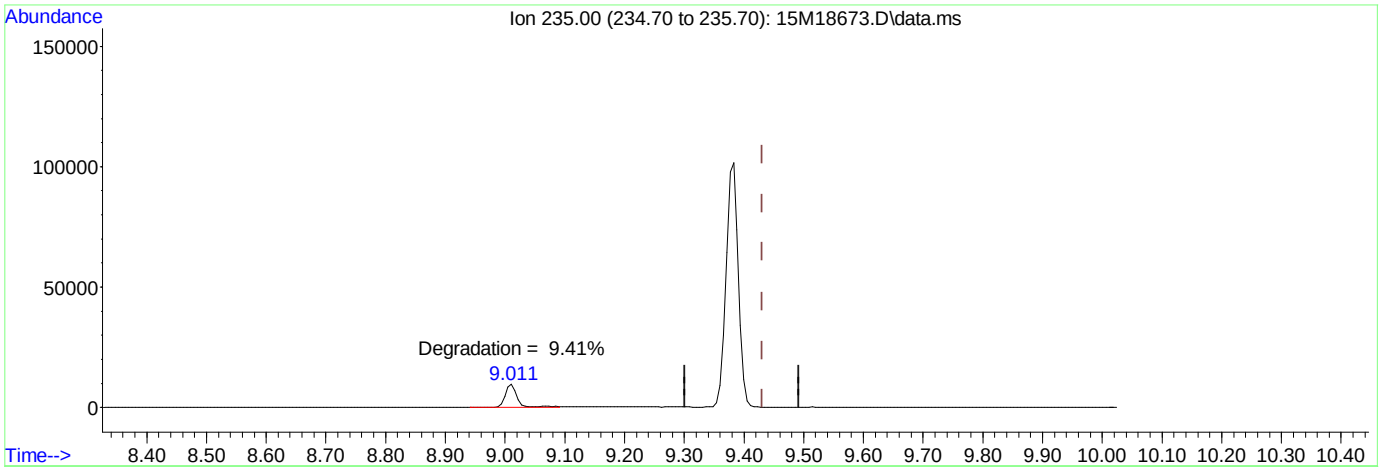

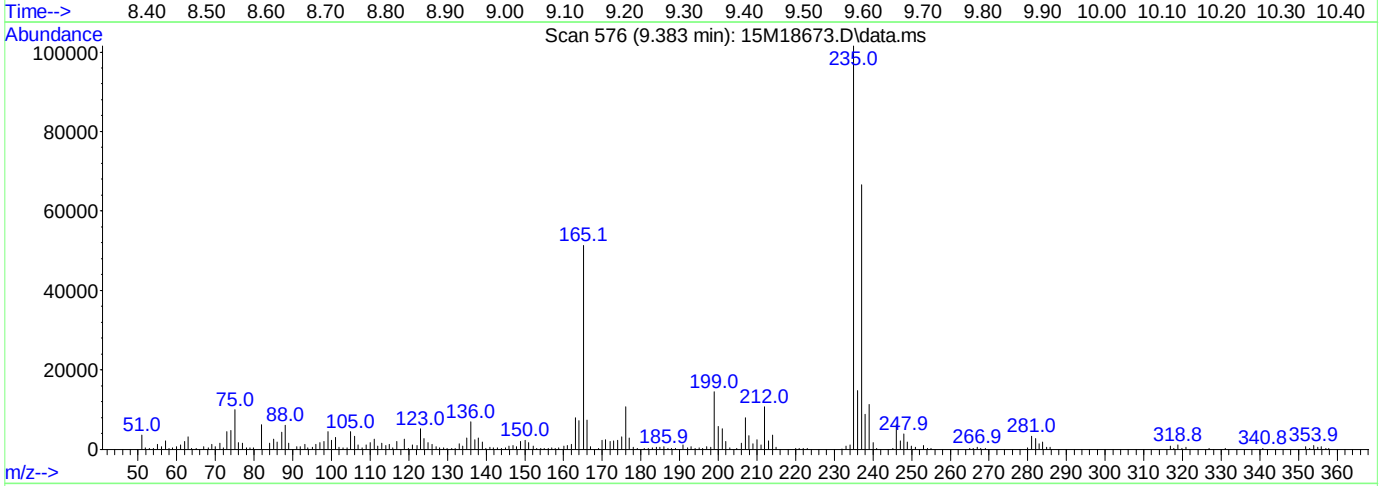

(3) DDT

9.383min (-0.047) 0.00 ug/ml

response 147438

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18678.D
Acq On : 30 Jun 2016 16:12
Operator : MES
Sample : WG574286-01 BLANK 6/27
Misc : 1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 30 16:57:35 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.870	152	28516	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.778	96	25448	2.1688	ug/L	0.00
Spiked Amount 5.000			Recovery = 43.40%			
4) Nitrobenzene-d5	7.367	82	1047426	34.7736	ug/L	0.00
Spiked Amount 5.000			Recovery = 695.40%			
5) 2-Fluorobiphenyl	8.856	172	1915171	25.1894	ug/L	0.00
Spiked Amount 5.000			Recovery = 503.80%			
6) p-Terphenyl-d14	12.137	244	2891842	39.4601	ug/L	0.05
Spiked Amount 5.000			Recovery = 789.20%			

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18678.D
Acq On : 30 Jun 2016 16:12
Operator : MES
Sample : WG574286-01 BLANK 6/27
Misc : 1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 30 16:57:35 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

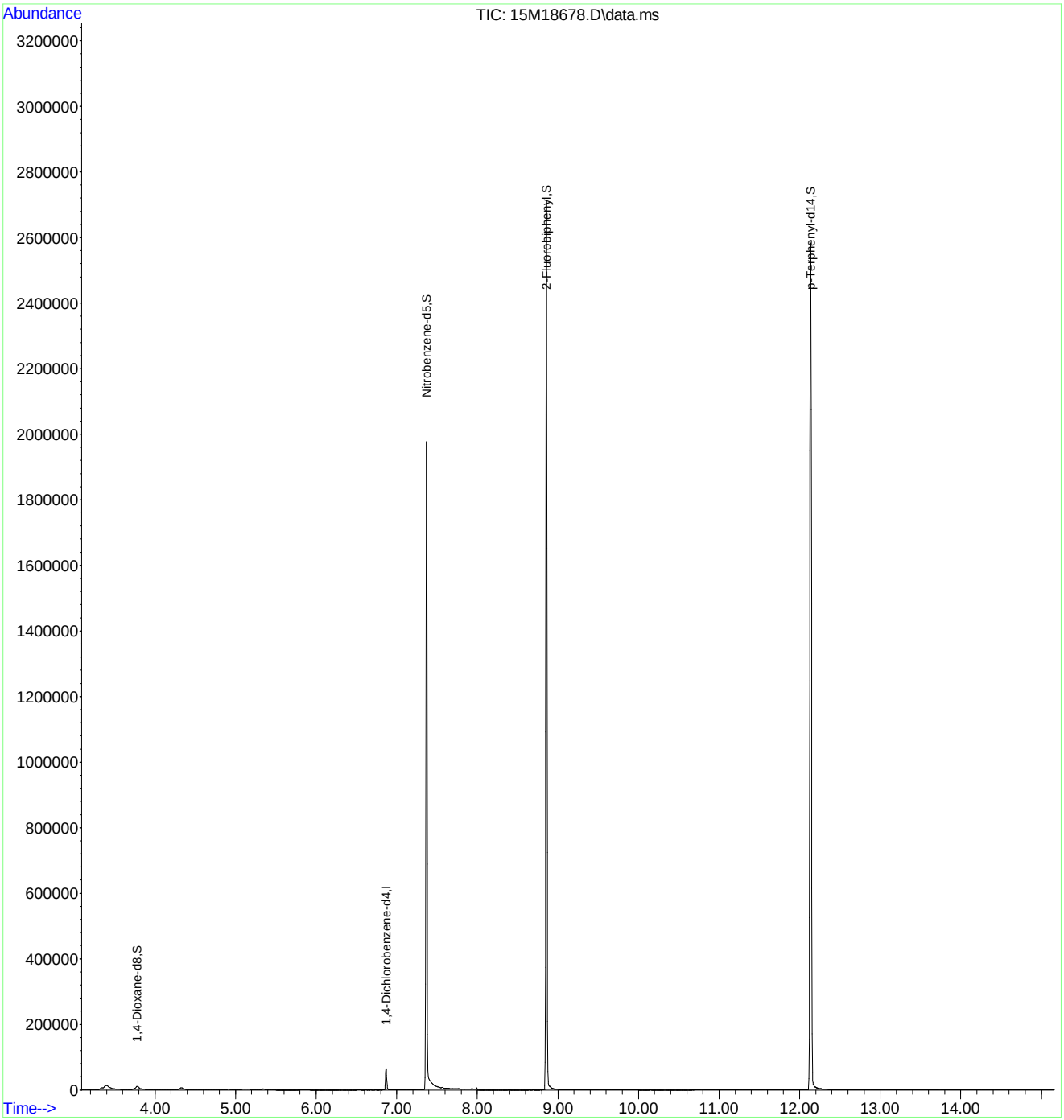

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18679.D
Acq On : 30 Jun 2016 16:34
Operator : MES
Sample : WG574286-02 LCS 6/27
Misc : 1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 30 16:57:20 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.870	152	22815	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.770	96	22955	2.4451	ug/L	-0.01
Spiked Amount 5.000			Recovery	=	49.00%	
4) Nitrobenzene-d5	7.372	82	1584	0.0657	ug/L	0.00
Spiked Amount 5.000			Recovery	=	1.40%	
5) 2-Fluorobiphenyl	8.860	172	964	0.0158	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.40%	
6) p-Terphenyl-d14	12.107	244	620	0.0106	ug/L	0.02
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.806	58	19389	2.7776	ug/L	67

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18679.D
Acq On : 30 Jun 2016 16:34
Operator : MES
Sample : WG574286-02 LCS 6/27
Misc : 1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 30 16:57:20 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

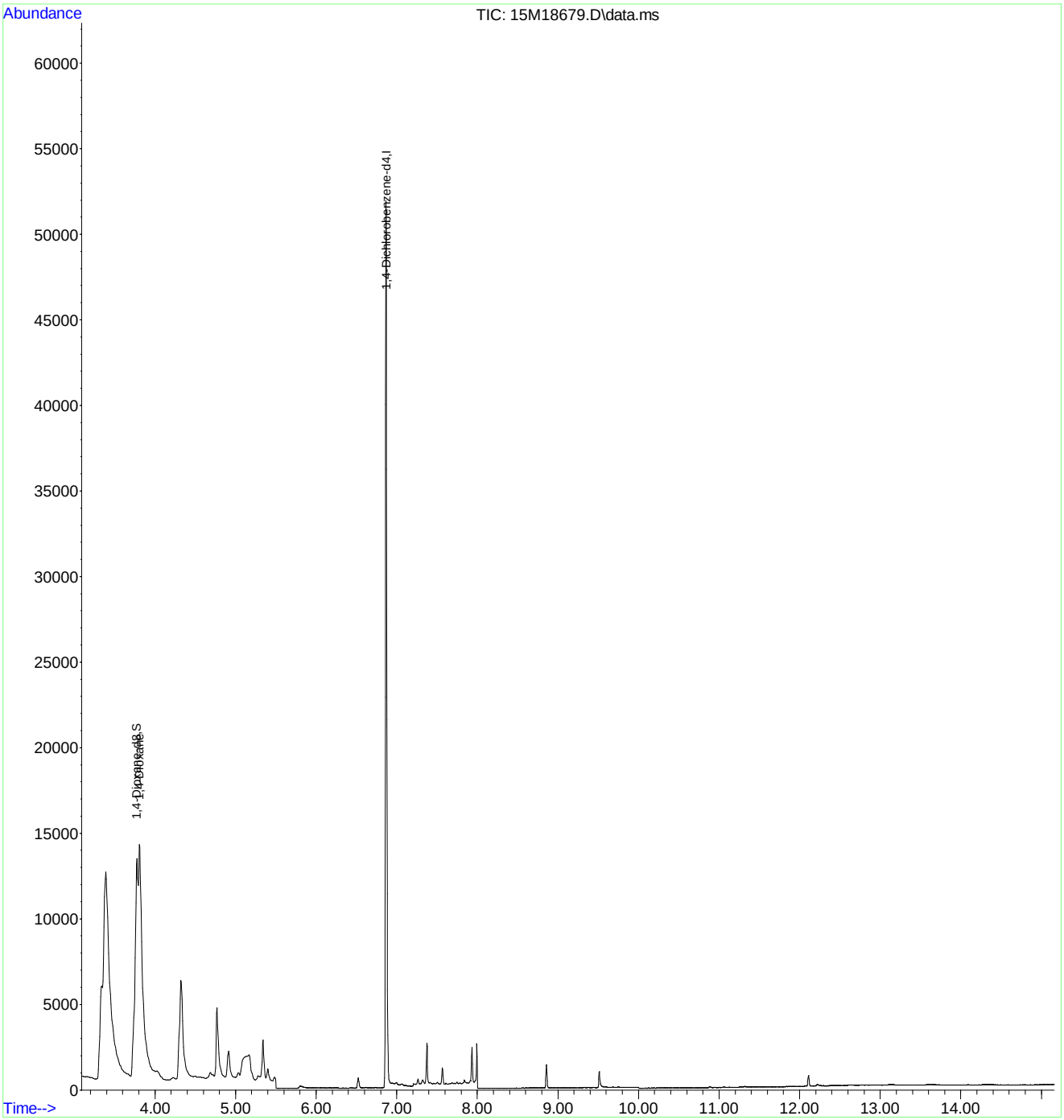

2.2 General Chromatography Data

2.2.2 6850 LC/MS Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW21-062216	**Prep Method:**	6850	**Prep Date:**	07/01/2016 13:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575005	**Analyst:**	JWR	**Run Date:**	07/01/2016 19:05
Collect Date:	06/22/2016 09:45	**Dilution:**	10000	**File ID:**	1LM.LM35578
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	26100		4000	2000	1000

Certificate of Analysis

Sample #:	L16061289-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW9-062216	**Prep Method:**	6850	**Prep Date:**	07/01/2016 13:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575005	**Analyst:**	JWR	**Run Date:**	07/01/2016 19:24
Collect Date:	06/22/2016 11:05	**Dilution:**	100	**File ID:**	1LM.LM35579
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	263		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L16061289-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW02-062216	**Prep Method:**	6850	**Prep Date:**	07/01/2016 13:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575005	**Analyst:**	JWR	**Run Date:**	07/01/2016 19:43
Collect Date:	06/22/2016 13:40	**Dilution:**	1	**File ID:**	1LM.LM35580
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW10SW-062216	**Prep Method:**	6850	**Prep Date:**	07/01/2016 13:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575005	**Analyst:**	JWR	**Run Date:**	07/01/2016 20:58
Collect Date:	06/22/2016 14:55	**Dilution:**	1	**File ID:**	1LM.LM35584
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.2.2.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1415 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG575005-01 MCT	10,020.	
-02 Blank	0.31	
-03 LCS	0.44	
-04 LCS2	0.41	
L16070001-01 LOD	0.38	
L16070003-01 LOQ	0.43	
-09 LOQ	0.45	
L16061289-01	6,210.	
-02	147.9	
-03	105.2	
-05	1,381.	
L16061290-01	594.	
-02	1,157.	
-04	219.	
-05	172.8	
-06	826.	
L16061452-01	1,890.	
-03	1,179.	
L16061453-01	2,610.	
-02	1,188.	
-03	1,101.	
L16061559-01	3,040.	
-02	3,140.	
L16061648-01	669.	

Analyst: John Richards

Date/Time: 07/01/16 19:50

DCN#119454

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

Page: 1 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

Page: 2 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 070116_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG575005 (waters)

Internal STD: STD18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments: Samples L16061289(-01,-02), L16061290-05 and L16061452-03 were analyzed at dilutions based on their historical results.
Samples L16061290-04 and L16061453-01 had inconsistent historical results. These samples were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35568	WG575015-01 CCB	1	1		07/01/16 15:55
2	1LM.LM35569	WG575015-02 CCV (1.0ug/L)	1	1	STD75510	07/01/16 16:14
3	1LM.LM35570	WG575005-05 MRL (0.2ug/L)	1	1	STD75510	07/01/16 16:33
4	1LM.LM35571	WG575005-01 MCT (0.2ug/L)	1	1	STD75512	07/01/16 16:52
5	1LM.LM35572	WG575005-02 BLANK	1	1		07/01/16 17:11
6	1LM.LM35573	WG575005-03 LCS (0.2ug/L)	1	1	STD75512	07/01/16 17:30
7	1LM.LM35574	WG575005-04 LCS2 (0.2ug/L)	1	1	STD75512	07/01/16 17:49
8	1LM.LM35575	L16070001-01 LOD (0.1ug/L)	1	1	STD75512	07/01/16 18:08
9	1LM.LM35576	L16070003-01 LOQ (0.2ug/L)	1	1	STD75512	07/01/16 18:27
10	1LM.LM35577	L16070003-09 LOQ (0.2ug/L)	1	1	STD75512	07/01/16 18:46
11	1LM.LM35578	L16061289-01 (10,000x)	1	10000		07/01/16 19:05
12	1LM.LM35579	L16061289-02 (100x)	1	100		07/01/16 19:24
13	1LM.LM35580	L16061289-03	1	1		07/01/16 19:43
14	1LM.LM35581	WG575015-03 CCV (1.0ug/L)	1	1	STD75510	07/01/16 20:02
15	1LM.LM35582	WG575005-06 MRL (0.2ug/L)	1	1	STD75510	07/01/16 20:21
16	1LM.LM35583	WG575015-04 CCB	1	1		07/01/16 20:39
17	1LM.LM35584	L16061289-05	1	1		07/01/16 20:58
18	1LM.LM35585	L16061290-01	1	1		07/01/16 21:17
19	1LM.LM35586	L16061290-02	1	1		07/01/16 21:36
20	1LM.LM35587	L16061290-04 (500x)	1	500		07/01/16 21:55
21	1LM.LM35588	L16061290-05 (10,000x) (NR)	1	10000		07/01/16 22:14
22	1LM.LM35589	L16061290-06	1	1		07/01/16 22:33
23	1LM.LM35590	L16061452-01	1	1		07/01/16 22:52
24	1LM.LM35591	L16061452-03 (10,000x)	1	10000		07/01/16 23:11
25	1LM.LM35592	L16061453-01 (10x)	1	10		07/01/16 23:30
26	1LM.LM35593	L16061453-02	1	1		07/01/16 23:49
27	1LM.LM35594	WG575015-05 CCV (1.0ug/L)	1	1	STD75510	07/02/16 00:08
28	1LM.LM35595	WG575005-07 MRL (0.2ug/L)	1	1	STD75510	07/02/16 00:27
29	1LM.LM35596	WG575015-06 CCB	1	1		07/02/16 00:46
30	1LM.LM35597	L16061453-03	1	1		07/02/16 01:05
31	1LM.LM35598	L16061559-01	1	1		07/02/16 01:23
32	1LM.LM35599	L16061559-02	1	1		07/02/16 01:42

Page: 1 Approved: 06-JUL-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 070116_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG575005 (waters)

Internal STD: STD18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 NA

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
33	1LM.LM35600	L16061648-01	1	1		07/02/16 02:01
34	1LM.LM35601	WG575015-07 CCV (1.0ug/L)	1	1	STD75510	07/02/16 02:20
35	1LM.LM35602	WG575005-08 MRL (0.2ug/L)	1	1	STD75510	07/02/16 02:39
36	1LM.LM35603	WG575015-08 CCB	1	1		07/02/16 02:58

Comments

Seq.	Rerun	Dil.	Reason	Analytes
21	X	1000	Analyzed too dilute	
	L16061290-05 (10,000x) (NR) : This sample did not conform to its historical results and was analyzed too dilute at 10,000x dilution. This sample will be ungrouped from this analytical batch and reanalyzed at a 1000x dilution on another day.			

Page: 2 Approved: 06-JUL-16

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
04-MAY-2016
John Richards

Secondary Reviewer:
05-MAY-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 01-JUL-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 76123
Analytical Workgroups: L16061289,1290,1452,1453,1559,1648 L16070001(LOD), 0003(LOQ)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 06-JUL-2016 John Richards

Secondary Reviewer: 06-JUL-2016 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-06-2016 14:48:43

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG575005

Login Number: L16061289

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW21-062216	01	06/22/16					07/01/2016	9.2	28		07/01/16	.2	28	
MW9-062216	02	06/22/16					07/01/2016	9.1	28		07/01/16	.2	28	
18WW02-062216	03	06/22/16					07/01/2016	9	28		07/01/16	.3	28	
18CPTMW10SW-062216	05	06/22/16					07/01/2016	8.9	28		07/01/16	.3	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4841027
Report generated 07/07/2016 08:59

METHOD BLANK SUMMARY

Login Number: L16061289
Blank File ID: 1LM.LM35572
Prep Date: 07/01/16 13:30
Analyzed Date: 07/01/16 17:11
Analyst: JWR

Work Group: WG575005
Blank Sample ID: WG575005-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG575005-05	1LM.LM35570	07/01/16 16:33	01
MCT	WG575005-01	1LM.LM35571	07/01/16 16:52	01
LCS	WG575005-03	1LM.LM35573	07/01/16 17:30	01
LCS2	WG575005-04	1LM.LM35574	07/01/16 17:49	01
MW21-062216	L16061289-01	1LM.LM35578	07/01/16 19:05	DL01
MW9-062216	L16061289-02	1LM.LM35579	07/01/16 19:24	DL01
18WW02-062216	L16061289-03	1LM.LM35580	07/01/16 19:43	01
QCMRL	WG575005-06	1LM.LM35582	07/01/16 20:21	01
18CPTMW10SW-062216	L16061289-05	1LM.LM35584	07/01/16 20:58	01
QCMRL	WG575005-07	1LM.LM35595	07/02/16 00:27	01
QCMRL	WG575005-08	1LM.LM35602	07/02/16 02:39	01

Report Name: BLANK_SUMMARY
PDF File ID: 4841028
Report generated 07/07/2016 08:59

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061289 Prep Date: 07/01/16 13:30 Sample ID: WG575005-02
Instrument ID: LCMS1 Run Date: 07/01/16 17:11 Prep Method: 6850
File ID: 1LM.LM35572 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575005 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4841029
07-JUL-2016 08:59

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061289 Analyst: JWR Prep Method: 6850
Instrument ID: LCMS1 Matrix: Water Method: 6850
Workgroup (AAB#): WG575005 Units: ug/L
QC Key: DOD4 Lot #: STD75512

Sample ID: WG575005-03 LCS File ID: 1LM.LM35573 Run Date: 07/01/2016 17:30
Sample ID: WG575005-04 LCS2 File ID: 1LM.LM35574 Run Date: 07/01/2016 17:49

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Perchlorate	0.200	0.201	101	0.200	0.211	106	4.85	80 - 120	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4841030
Report generated: 07/07/2016 08:59

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061289
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4841487
Report generated 07/07/2016 08:59

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061289

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4841487
Report generated 07/07/2016 08:59

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061289

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4841487
Report generated 07/07/2016 08:59

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061289

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008

PDF File ID: 4841487

Report generated 07/07/2016 08:59

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061289 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4841488
Report generated 07/07/2016 08:59

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575015-01
Instrument ID: LCMS1
Run Time: 15:55
Method: 6850
File ID: 1LM.LM35568
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4841033
Report generated 07/07/2016 08:59

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575015-04
Instrument ID: LCMS1
Run Time: 20:39
Method: 6850
File ID: 1LM.LM35583
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4841033
Report generated 07/07/2016 08:59

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061289
Run Date: 07/02/2016
Sample ID: WG575015-06
Instrument ID: LCMS1
Run Time: 00:46
Method: 6850
File ID: 1LM.LM35596
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4841033
Report generated 07/07/2016 08:59

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061289
Run Date: 07/02/2016
Sample ID: WG575015-08
Instrument ID: LCMS1
Run Time: 02:58
Method: 6850
File ID: 1LM.LM35603
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4841033
Report generated 07/07/2016 08:59

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289 Run Date: 07/01/2016 Sample ID: WG575015-02
Instrument ID: LCMS1 Run Time: 16:14 Method: 6850
File ID: 1LM.LM35569 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG575005 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.73	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4841032
Report generated 07/07/2016 08:59

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289 Run Date: 07/01/2016 Sample ID: WG575015-03
Instrument ID: LCMS1 Run Time: 20:02 Method: 6850
File ID: 1LM.LM35581 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG575005 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.72	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4841032
Report generated 07/07/2016 08:59

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289 Run Date: 07/02/2016 Sample ID: WG575015-05
Instrument ID: LCMS1 Run Time: 00:08 Method: 6850
File ID: 1LM.LM35594 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG575005 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.74	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4841032
Report generated 07/07/2016 08:59

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289 Run Date: 07/02/2016 Sample ID: WG575015-07
Instrument ID: LCMS1 Run Time: 02:20 Method: 6850
File ID: 1LM.LM35601 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG575005 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.71	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4841032
Report generated 07/07/2016 08:59

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061289 Run Date: 07/01/2016 Sample ID: WG575005-05
Instrument ID: LCMS1 Run Time: 16:33 Prep Method: 6850
File ID: 1LM.LM35570 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575005 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.207	104	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4841031
Report generated 07/07/2016 08:59

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061289 Run Date: 07/01/2016 Sample ID: WG575005-06
Instrument ID: LCMS1 Run Time: 20:21 Prep Method: 6850
File ID: 1LM.LM35582 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575005 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4841031
Report generated 07/07/2016 08:59

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061289 Run Date: 07/02/2016 Sample ID: WG575005-07
Instrument ID: LCMS1 Run Time: 00:27 Prep Method: 6850
File ID: 1LM.LM35595 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575005 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.207	104	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4841031
Report generated 07/07/2016 08:59

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061289 Run Date: 07/02/2016 Sample ID: WG575005-08
Instrument ID: LCMS1 Run Time: 02:39 Prep Method: 6850
File ID: 1LM.LM35602 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575005 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.209	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4841031
Report generated 07/07/2016 08:59

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16061289
Instrument ID: LCMS1
Workgroup (AAB#): WG575005

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16061289-01	10000	DL01	449000
L16061289-02	100	DL01	444000
L16061289-03	1.00	01	410000
L16061289-05	1.00	01	358000
WG575005-02	1.00	01	451000
WG575005-03	1.00	01	451000
WG575005-04	1.00	01	450000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4841034
Report generated 07/07/2016 09:00

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**	6850	**Samplenum:**	L16061289-01
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35578
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 19:05	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	395000	130000	3.04	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**	6850	**Samplenum:**	L16061289-02
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35579
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 19:24	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	393000	133000	2.95	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**	6850	**Samplenum:**	L16061289-03
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35580
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 19:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	3450	1050	3.29	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**	6850	**Samplenum:**	L16061289-05
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35584
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 20:58	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1690	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**	6850	**Samplenum:**	WG575005-01
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35571
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 16:52	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	30200	9940	3.04	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**	6850	**Samplenum:**	WG575005-02
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35572
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 17:11	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**	6850	**Samplenum:**	WG575005-03
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35573
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 17:30	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	31100	11300	2.75	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**	6850	**Samplenum:**	WG575005-04
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35574
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 17:49	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32500	11800	2.75	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**	6850	**Samplenum:**	WG575005-05
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35570
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 16:33	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	33000	11700	2.82	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**	6850	**Samplenum:**	WG575005-06
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35582
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 20:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32800	11400	2.88	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**	6850	**Samplenum:**	WG575005-07
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35595
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 00:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35700	12900	2.77	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**	6850	**Samplenum:**	WG575005-08
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35602
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 02:39	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36500	12300	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**		**Samplenum:**	WG575015-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35568
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 15:55	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**		**Samplenum:**	WG575015-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35569
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 16:14	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	163000	56900	2.86	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**		**Samplenum:**	WG575015-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35581
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 20:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	167000	58000	2.88	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**		**Samplenum:**	WG575015-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35583
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 20:39	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**		**Samplenum:**	WG575015-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35594
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 00:08	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	175000	57200	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**		**Samplenum:**	WG575015-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35596
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 00:46	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**		**Samplenum:**	WG575015-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35601
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 02:20	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	175000	58500	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061289	**Prep Method:**		**Samplenum:**	WG575015-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35603
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 02:58	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

2.2.2.3 Sample Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:29 PM

Data File	LM35578.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 7:05:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061289-01 (10,000x)	**Injection Vial**	11.00
Data File	LM35578.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 7:05:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	L16061289-01	**Dilution Factor**	1.00
Sample Comment	1,10000 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.490e+05	9.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.950e+05	9.71	N/A	2.61
Perchlorate conf	1.300e+05	9.70	N/A	2.57

O18LP (Internal Standard)

RT (Exp. RT): 9.70(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

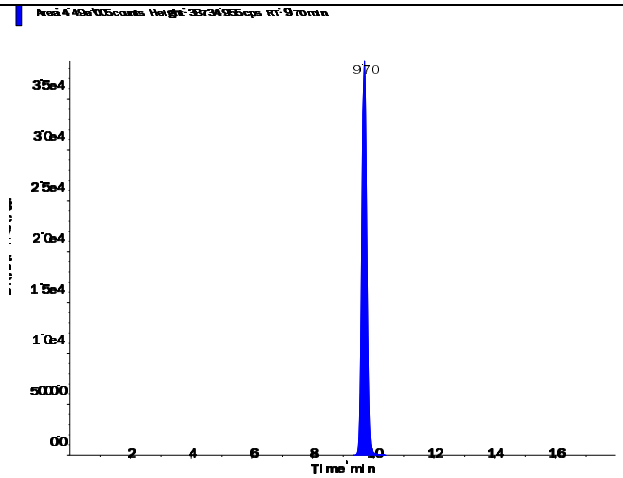

s.dataFile Page 1 of 2

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Printed: 7/5/2016 12:29 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.71 (9.84) min
Calculated conc:	2.61 ng/ml
Area Ratio:	0.879
Sample Type:	(Unknown)

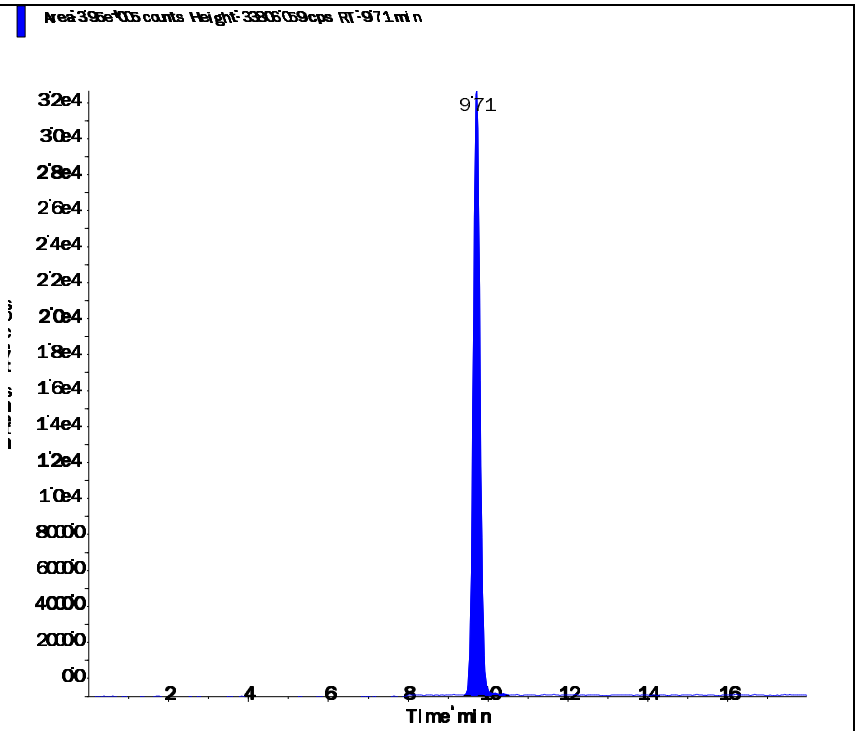

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.70 (9.84) min
Calculated conc:	2.57 ng/ml
Area Ratio:	0.289
Sample Type:	(Unknown)

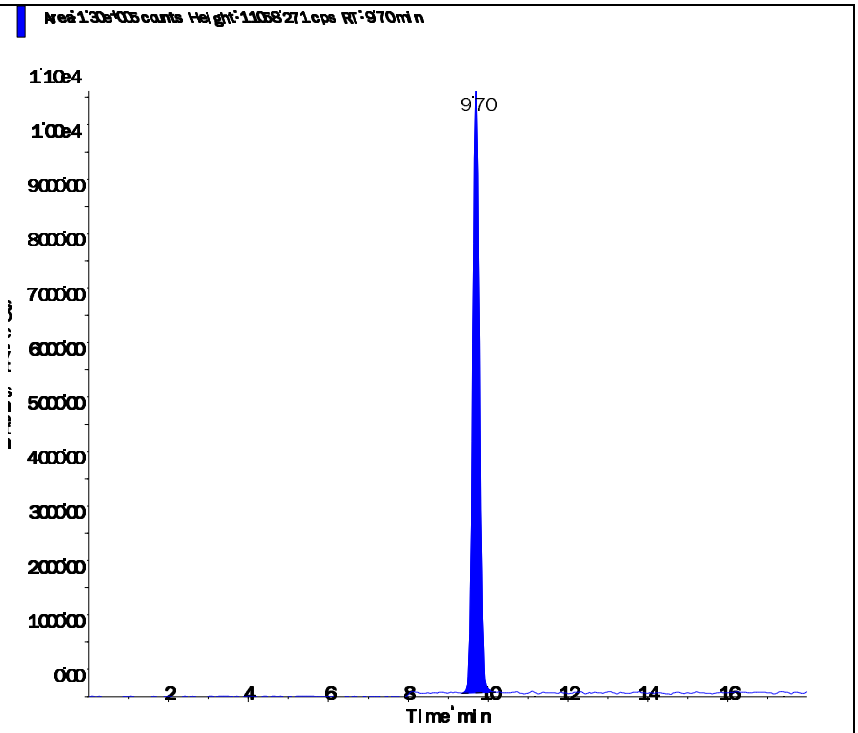

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:29 PM

Data File	LM35579.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 7:24:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061289-02 (100x)	**Injection Vial**	12.00
Data File	LM35579.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 7:24:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	L16061289-02	**Dilution Factor**	1.00
Sample Comment	1,100 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.440e+05	9.69	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.930e+05	9.71	N/A	2.63
Perchlorate conf	1.330e+05	9.69	N/A	2.66

O18LP (Internal Standard)

RT (Exp. RT): 9.69(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

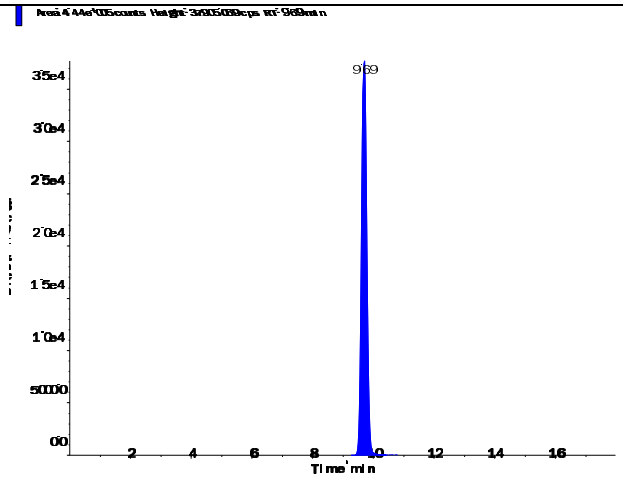

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:29 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.71 (9.84) min
Calculated conc:	2.63 ng/ml
Area Ratio:	0.885
Sample Type:	(Unknown)

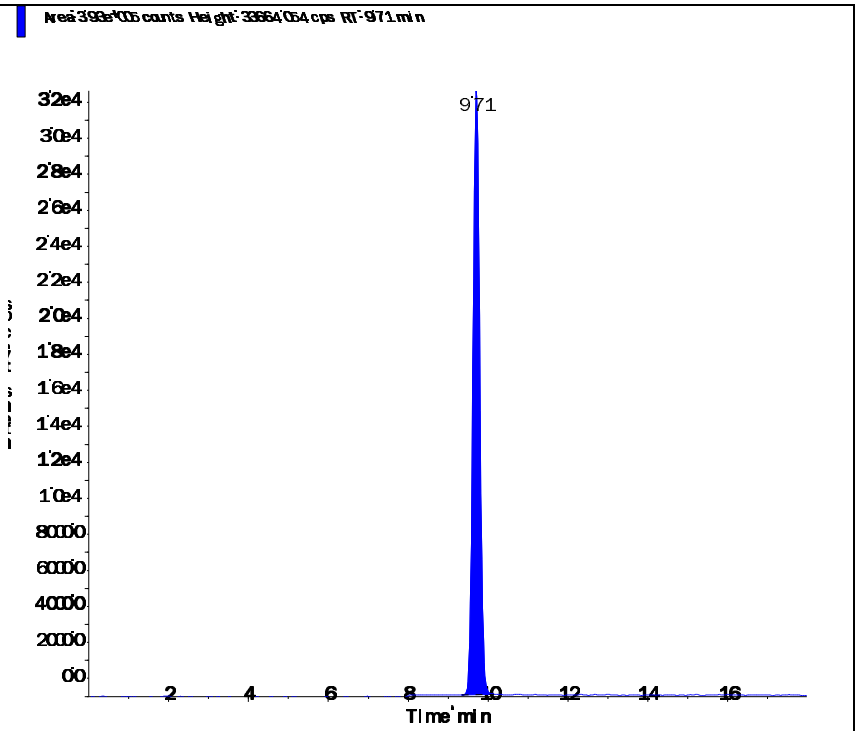

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.69 (9.84) min
Calculated conc:	2.66 ng/ml
Area Ratio:	0.30
Sample Type:	(Unknown)

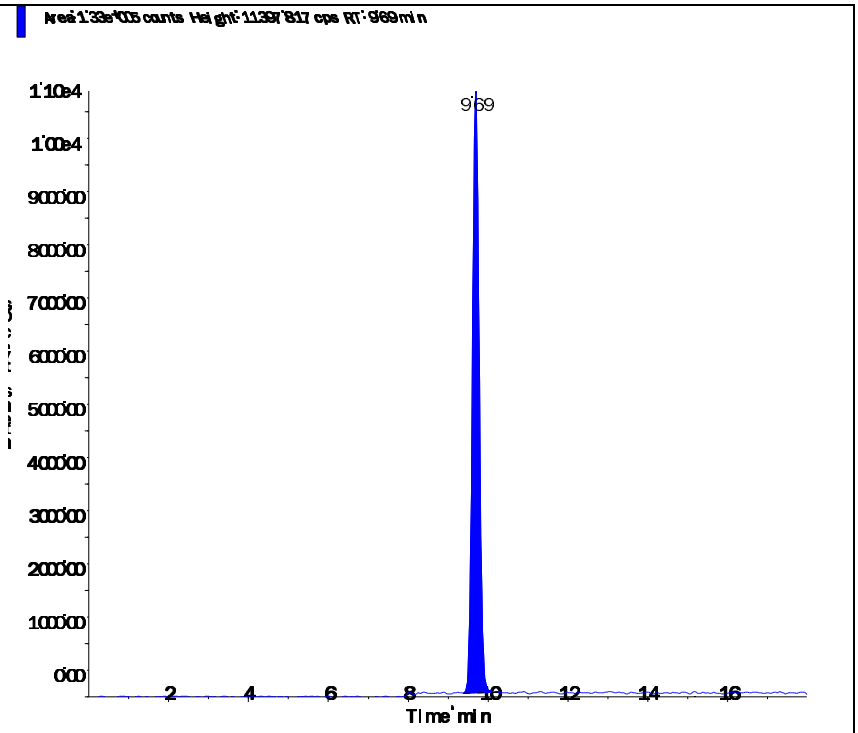

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Printed: 7/5/2016 12:30 PM

Data File	LM35580.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 7:43:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061289-03	**Injection Vial**	13.00
Data File	LM35580.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 7:43:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	L16061289-03	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.100e+05	9.64	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.450e+03	9.63	N/A	0.0212
Perchlorate conf	1.050e+03	9.62	N/A	0.0026

O18LP (Internal Standard)

RT (Exp. RT): 9.64(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

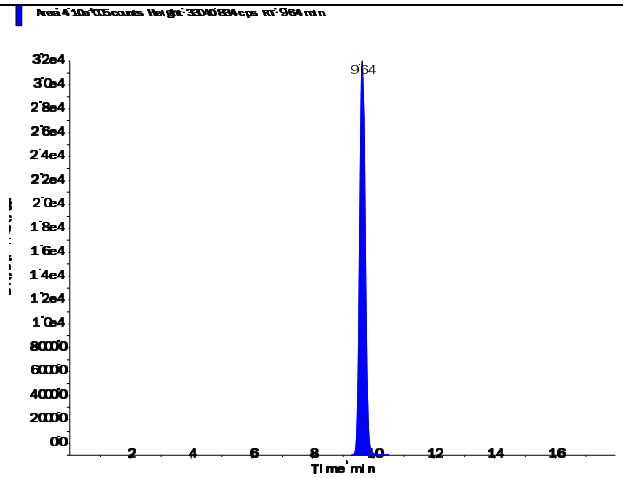

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	0.0212 ng/ml
Area Ratio:	0.008
Sample Type:	(Unknown)

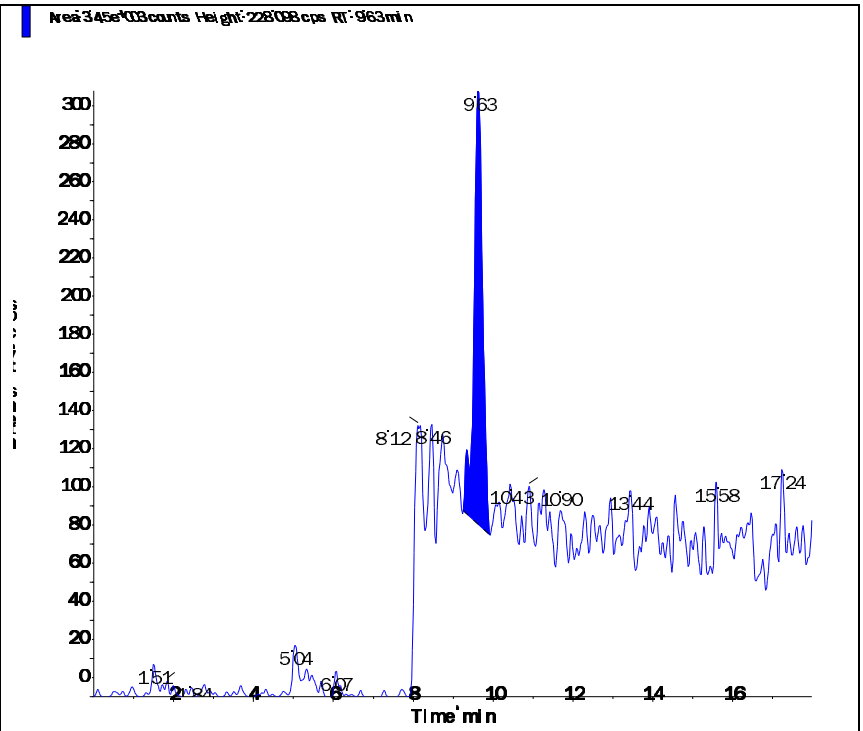

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.62 (9.84) min
Calculated conc:	0.0026 ng/ml
Area Ratio:	0.003
Sample Type:	(Unknown)

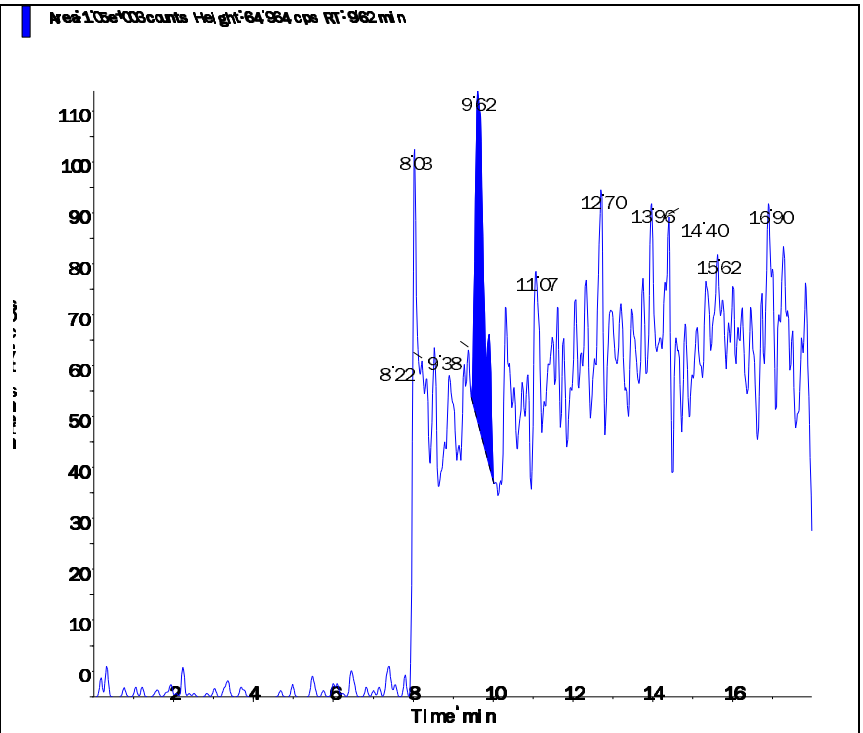

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Printed: 7/5/2016 12:31 PM

Data File	LM35584.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 8:58:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061289-05	**Injection Vial**	14.00
Data File	LM35584.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 8:58:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	L16061289-05	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.580e+05	9.37	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+03	9.42	N/A	0.0102
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.37(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

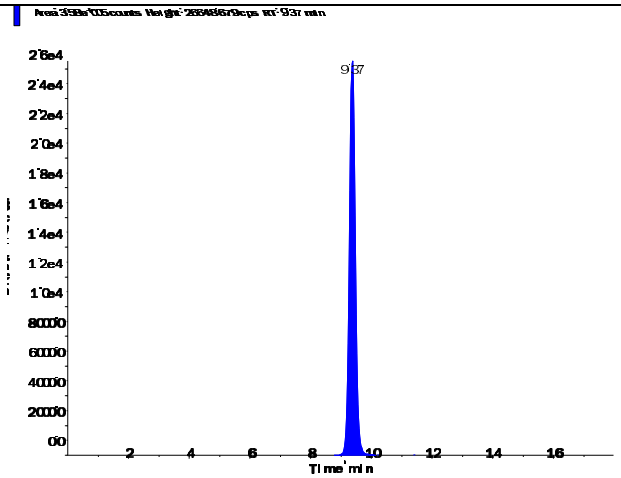

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.42 (9.84) min
Calculated conc:	0.0102 ng/ml
Area Ratio:	0.005
Sample Type:	(Unknown)

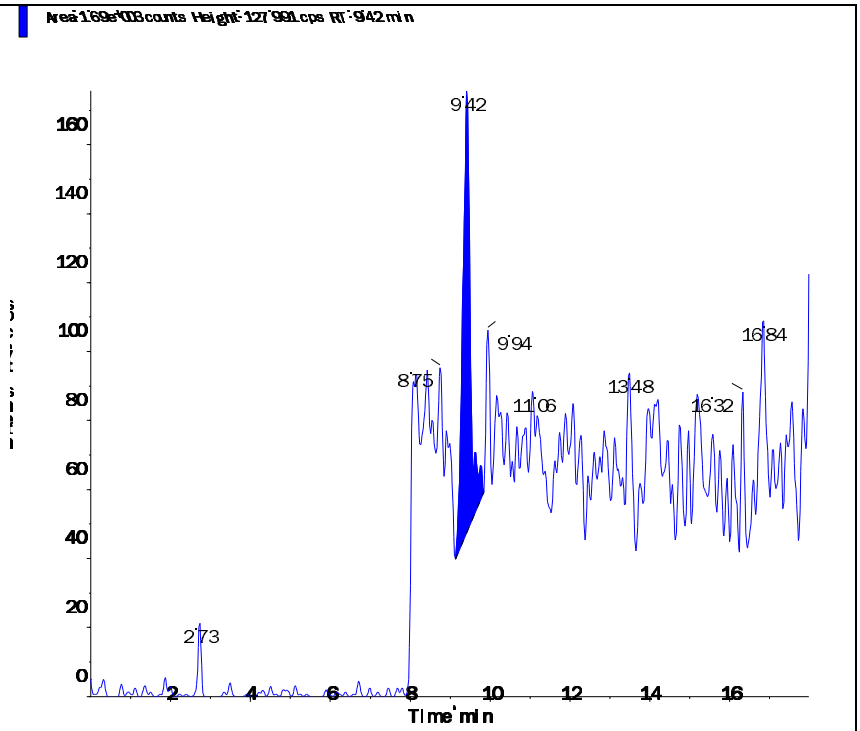

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

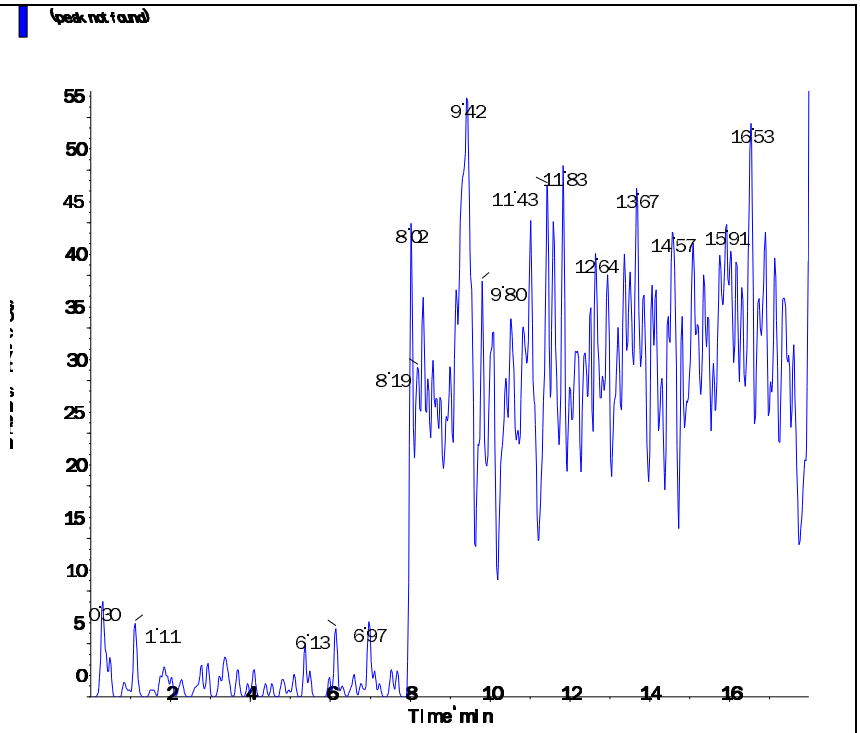

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2.2.2.4 Standards Data

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Data File	LM34686.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

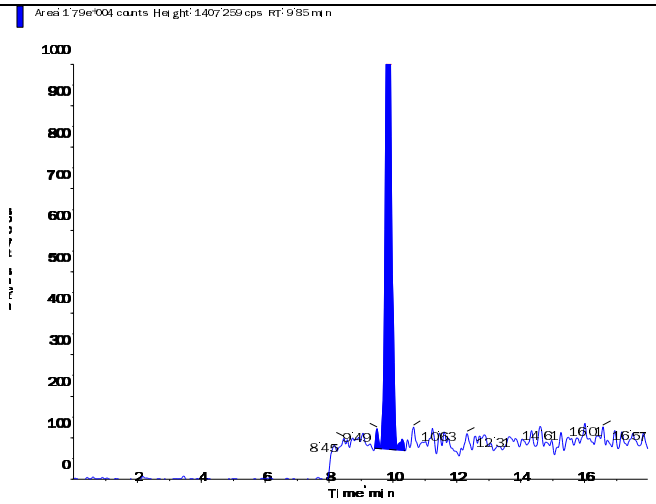

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Printed: 7/6/2016 10:53 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

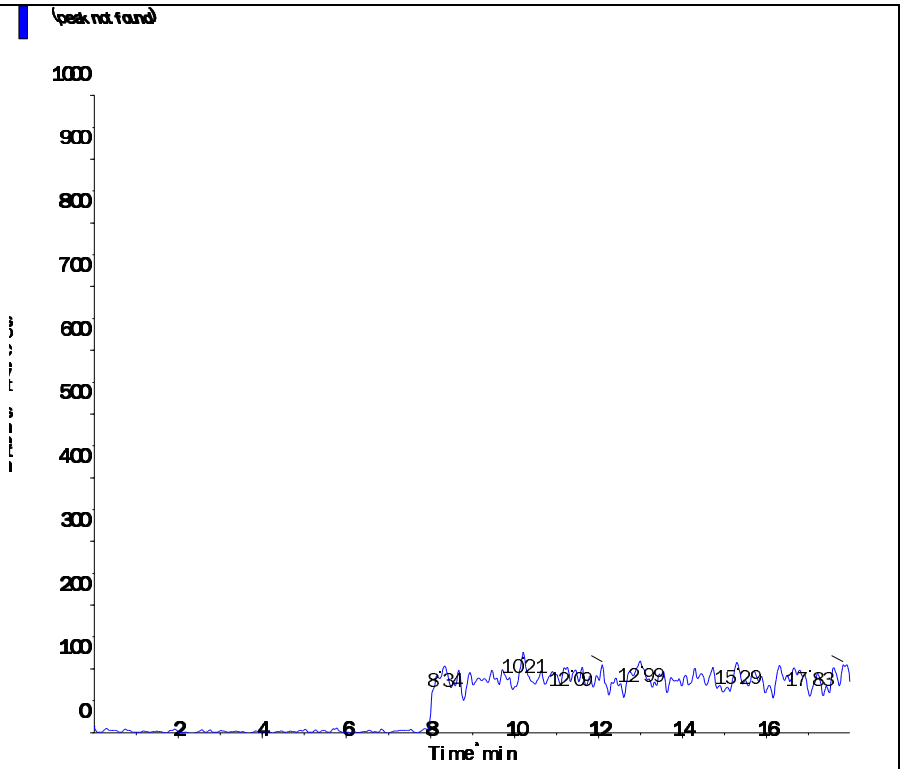

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

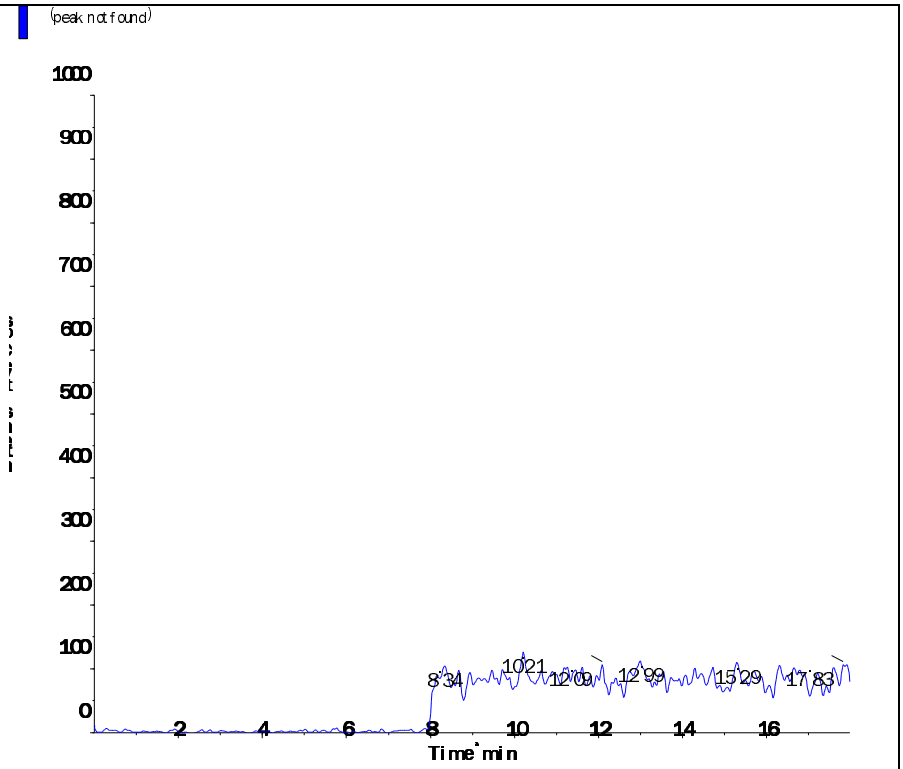

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Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

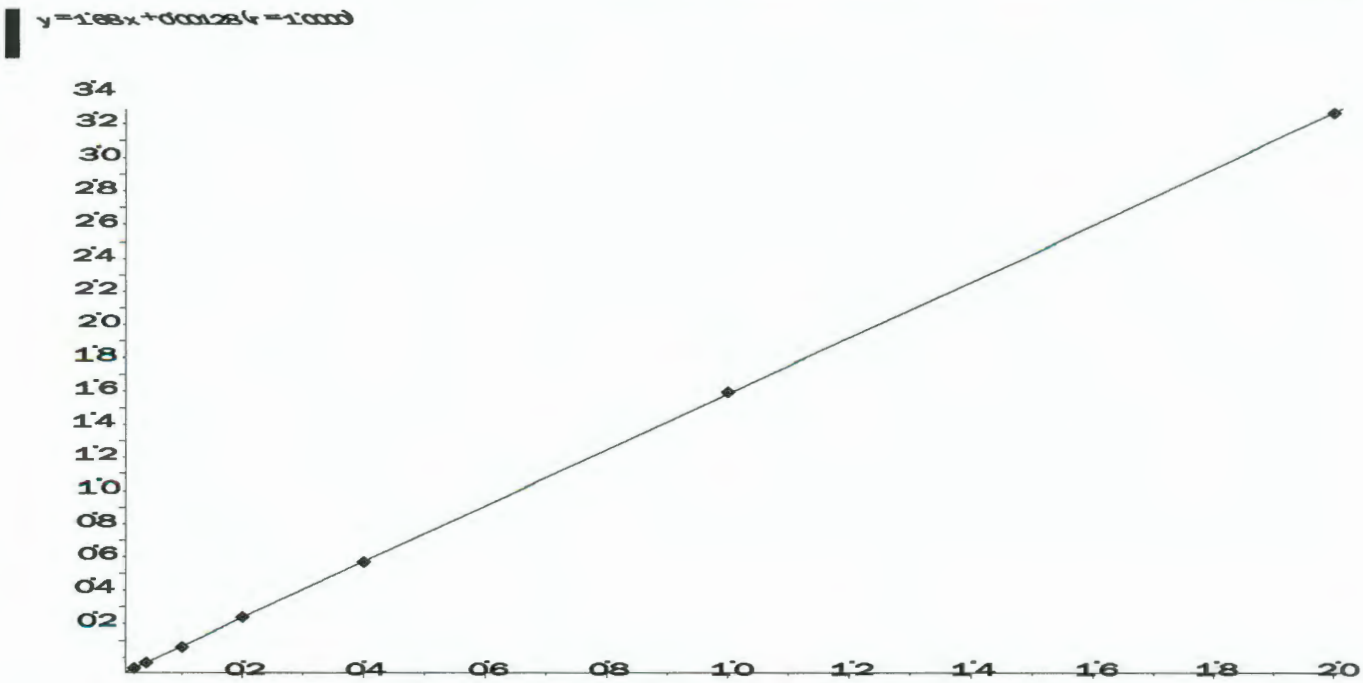

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Created with Analyst Reporter
Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

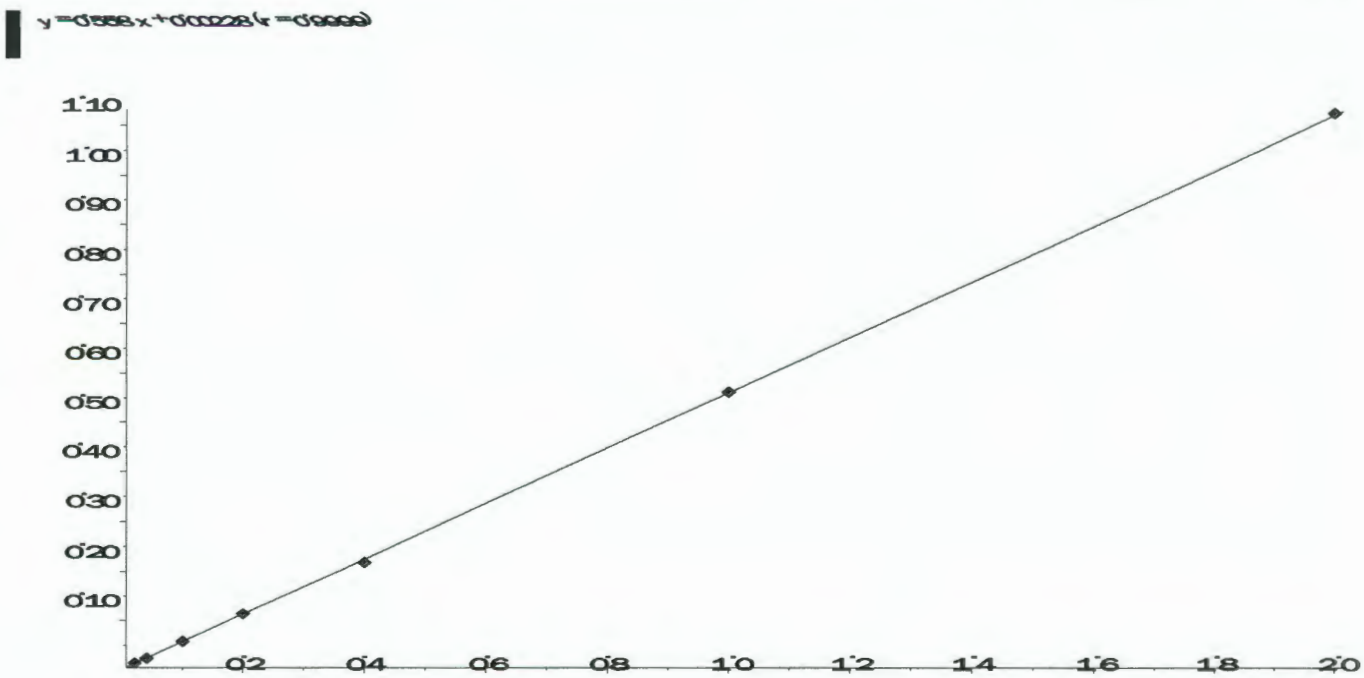

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Data File	LM34687.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

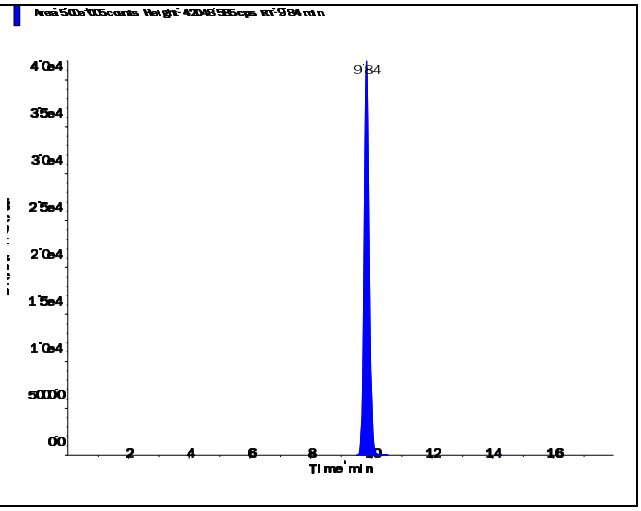

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 0.103 ng/ml Area Ratio: 0.036 Sample Type: (Standard)	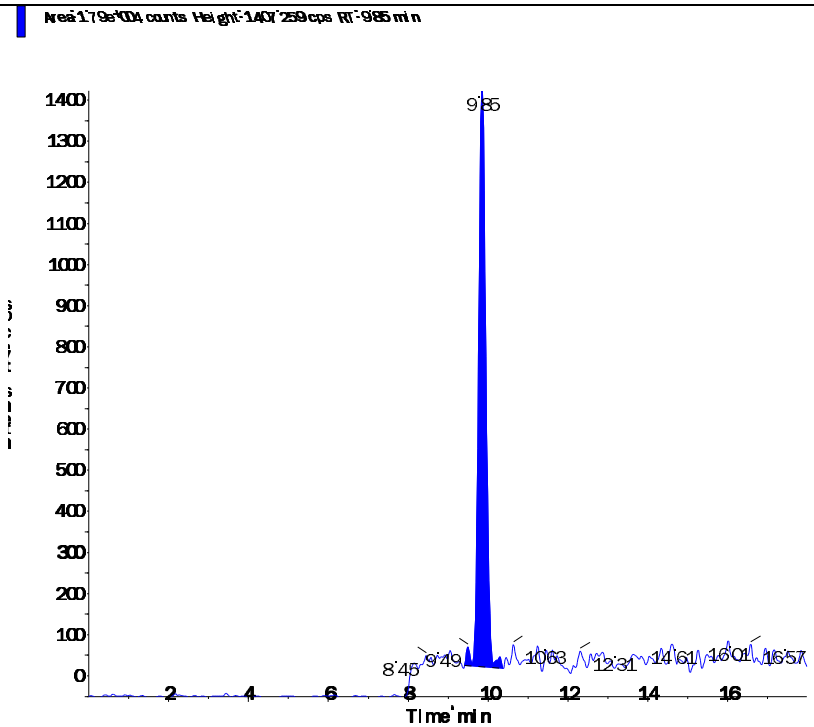
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 0.104 ng/ml Area Ratio: 0.014 Sample Type: (Standard)	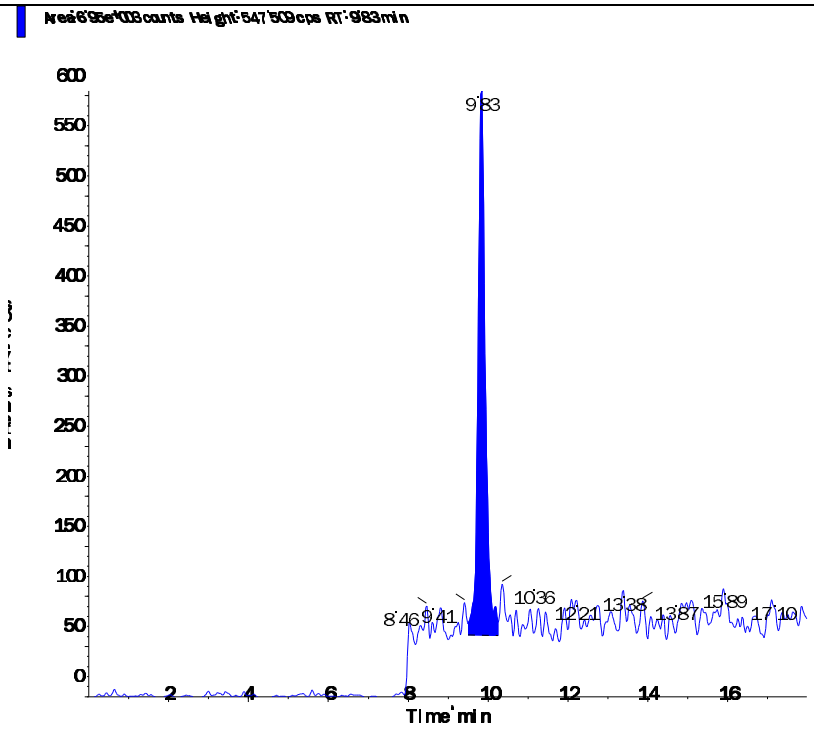

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Data File	LM34688.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

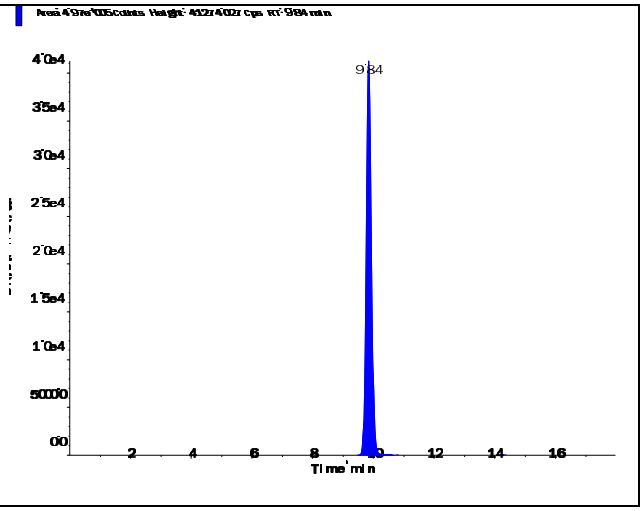

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

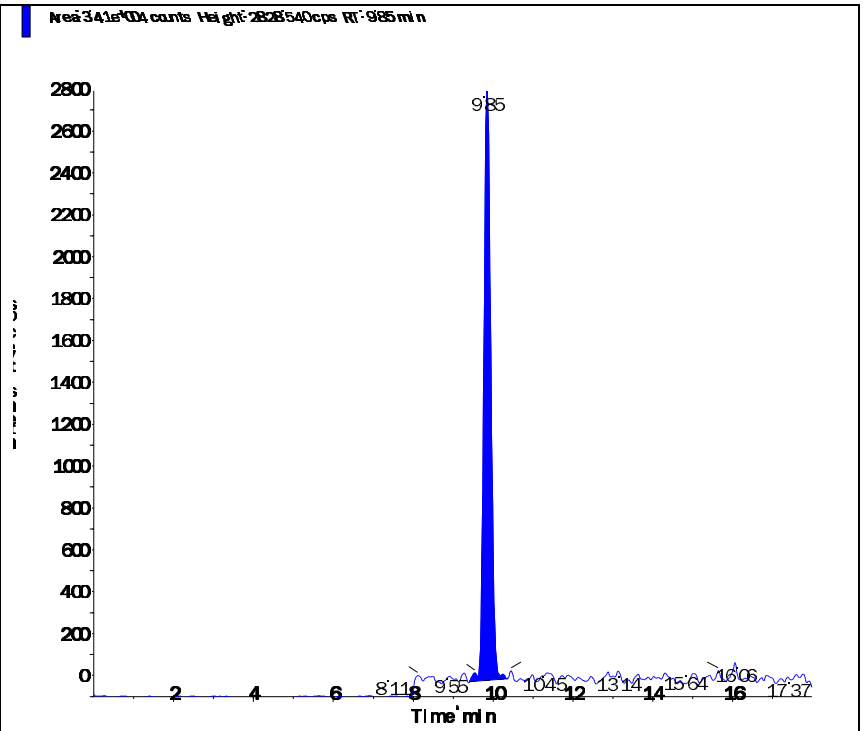

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

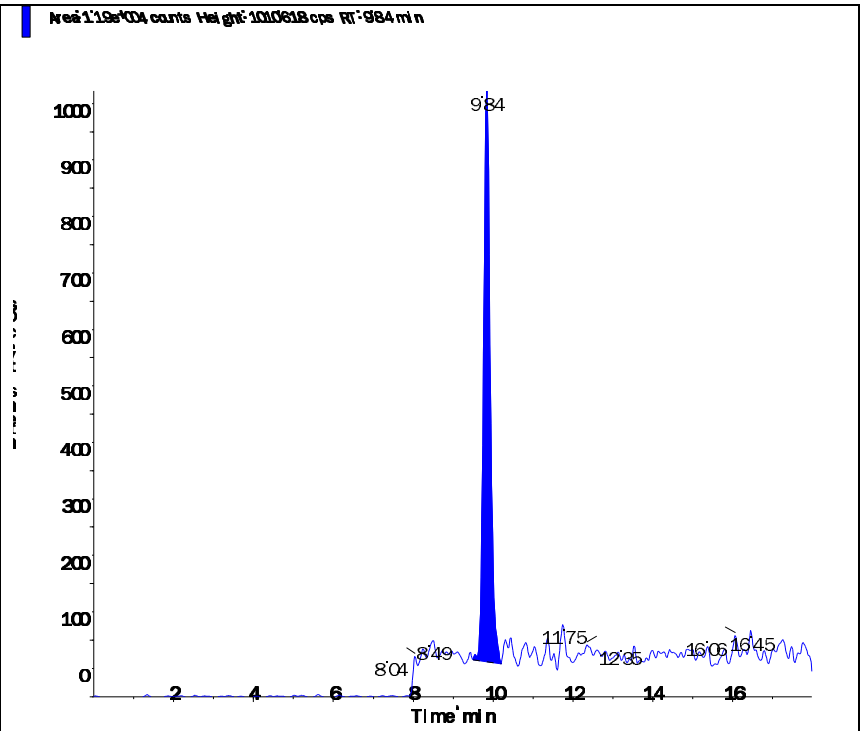

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Data File	LM34689.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

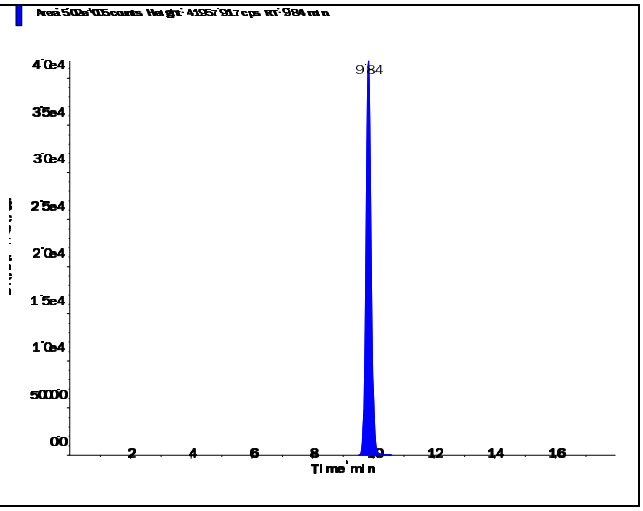

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.483 ng/ml
Area Ratio:	0.164
Sample Type:	(Standard)

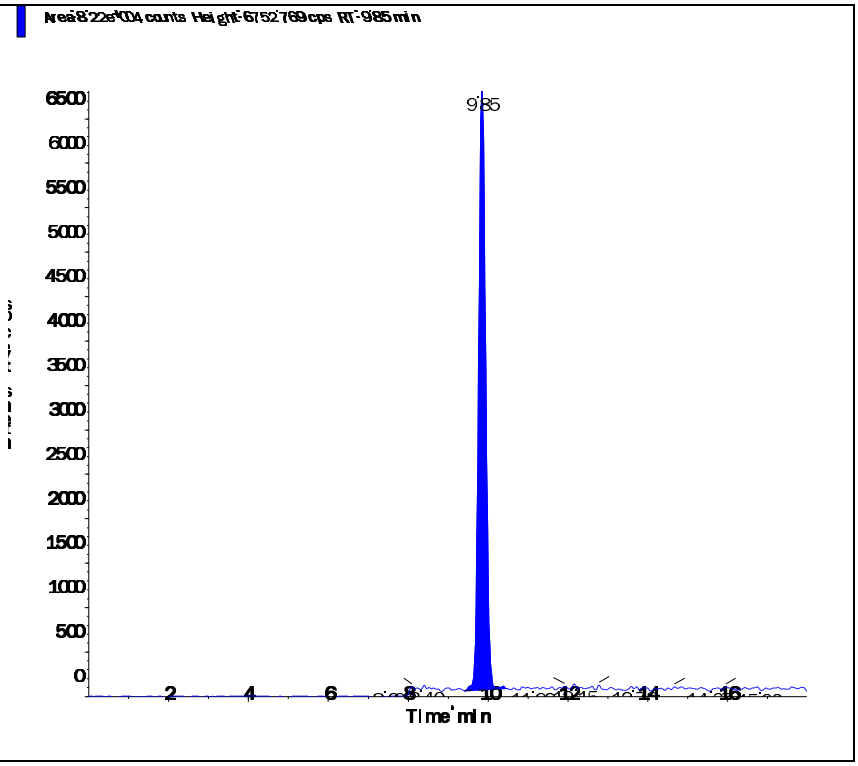

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.503 ng/ml
Area Ratio:	0.058
Sample Type:	(Standard)

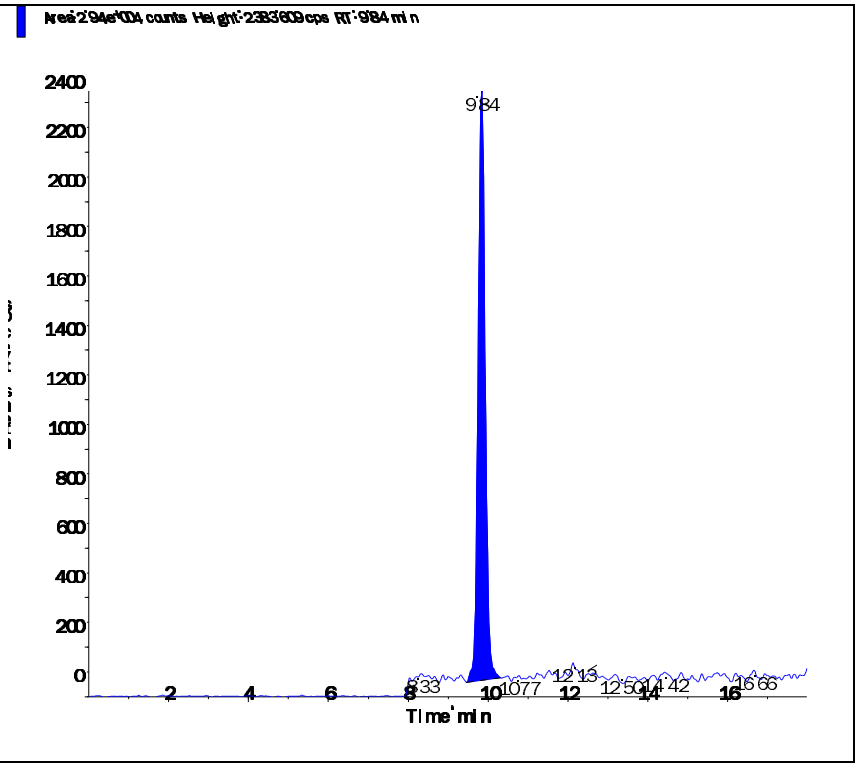

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Data File	LM34690.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

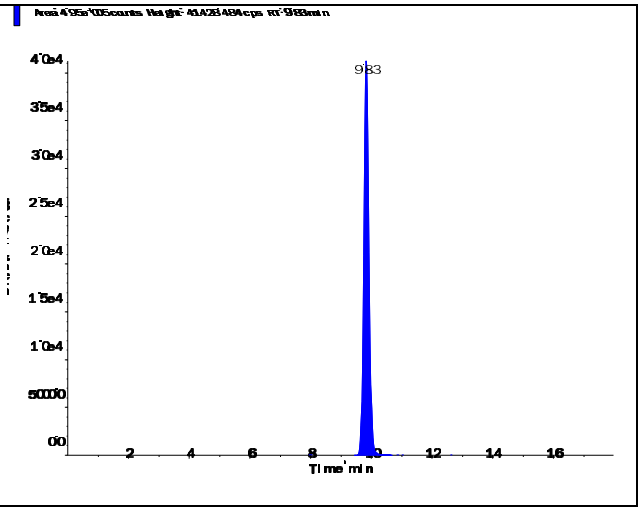

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

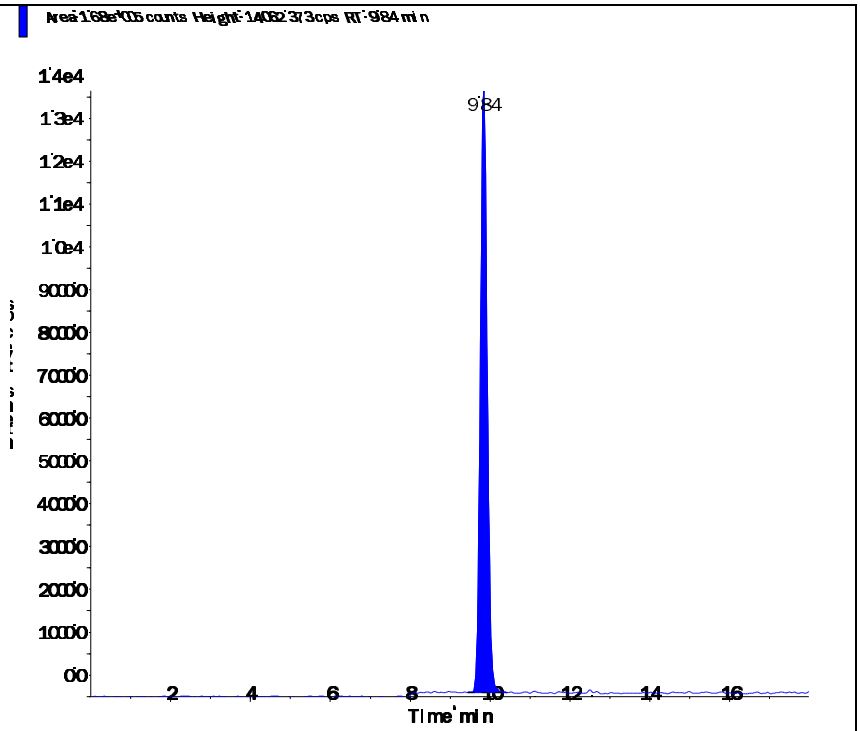

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

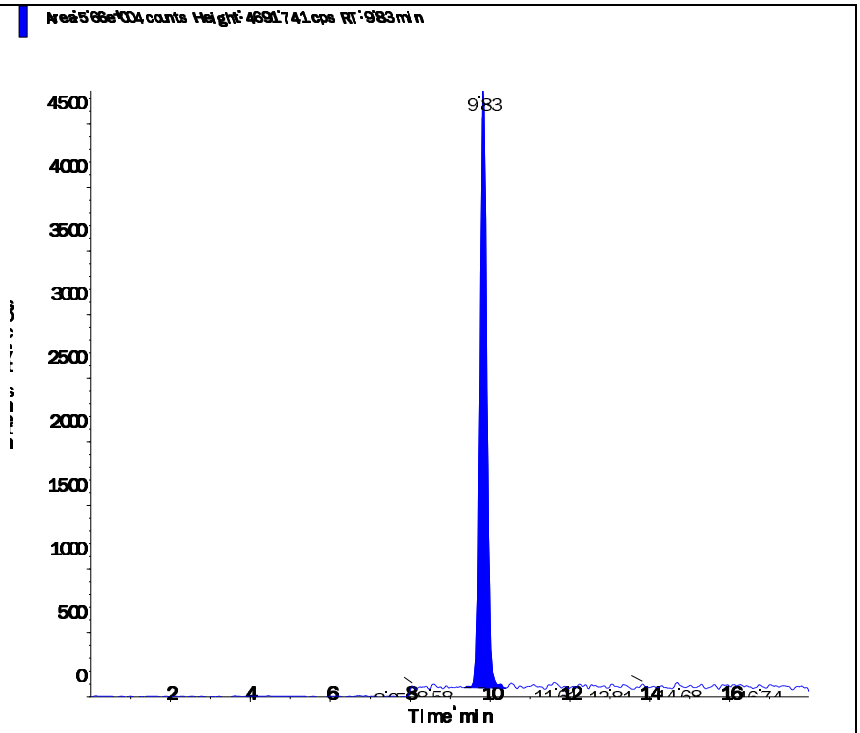

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Printed: 7/6/2016 10:55 AM

Data File	LM34691.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

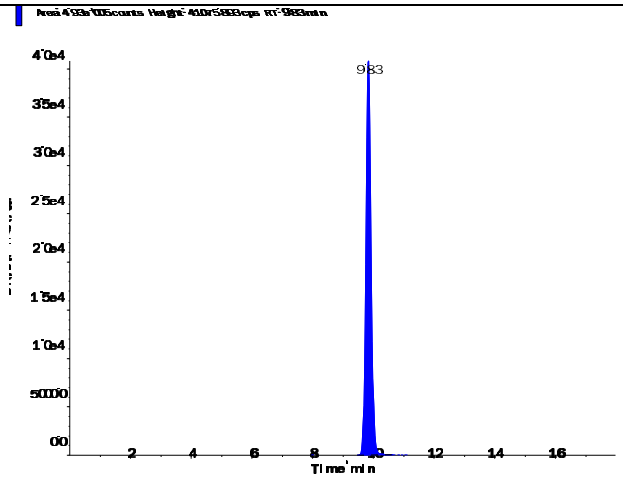

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 1.99 ng/ml Area Ratio: 0.669 Sample Type: (Standard)	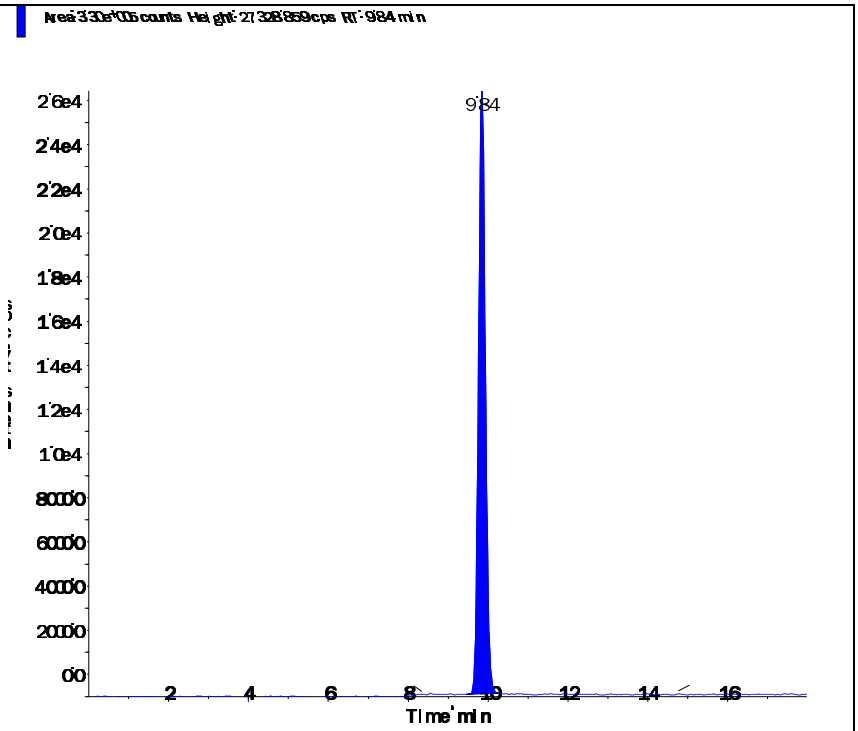
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 1.94 ng/ml Area Ratio: 0.219 Sample Type: (Standard)	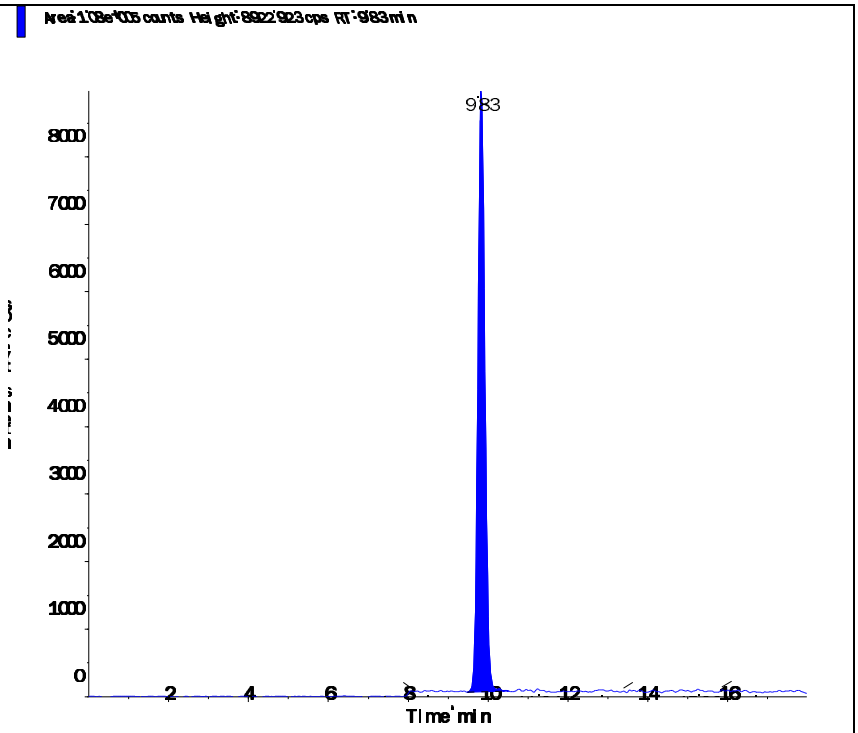

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Data File	LM34692.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

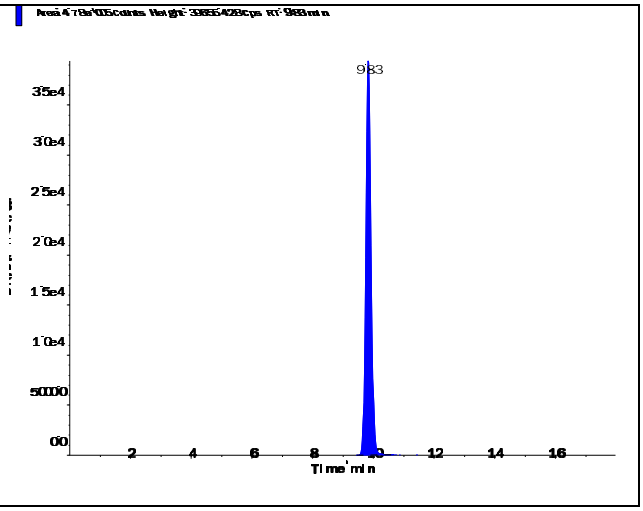

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

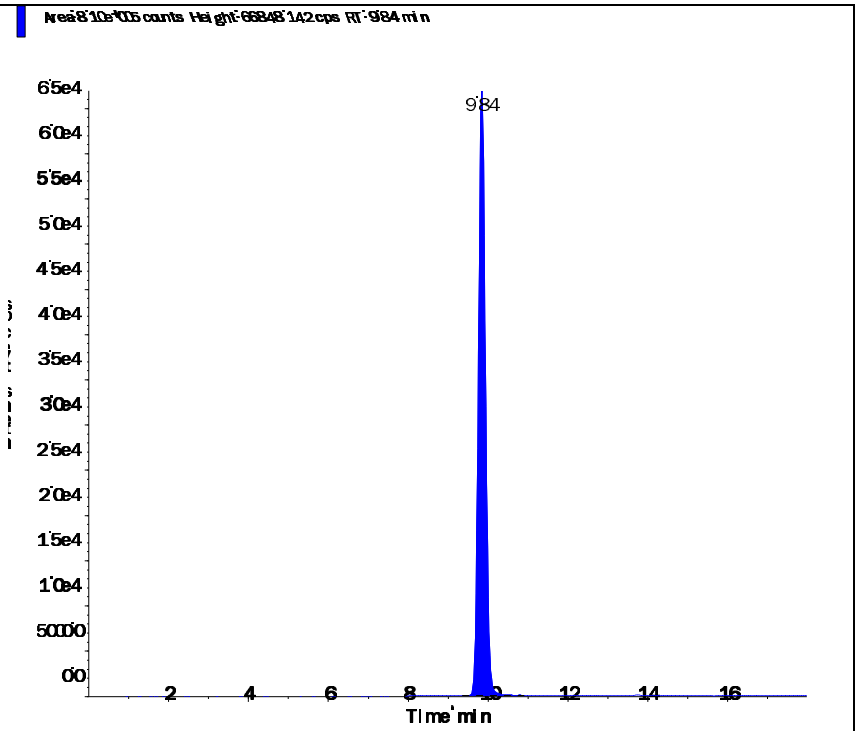

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

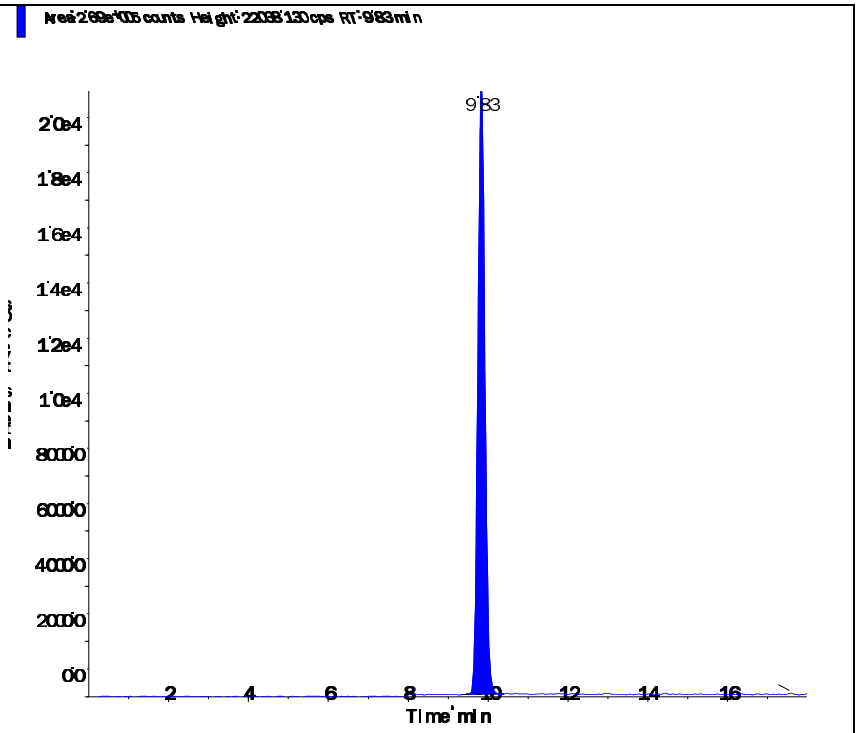

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Data File	LM34693.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

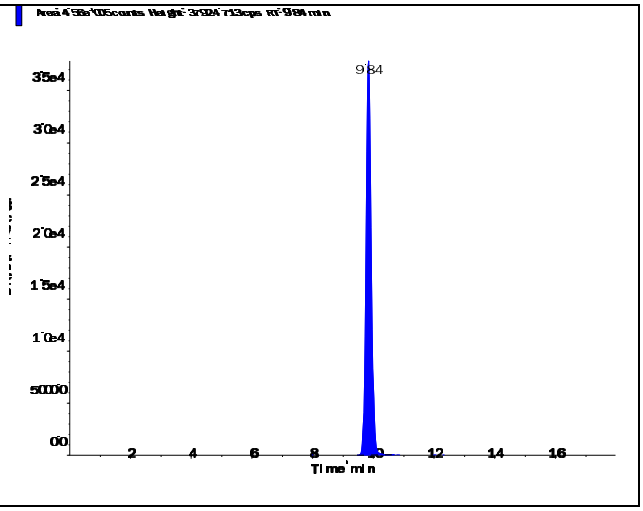

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	9.99 ng/ml
Area Ratio:	3.36
Sample Type:	(Standard)

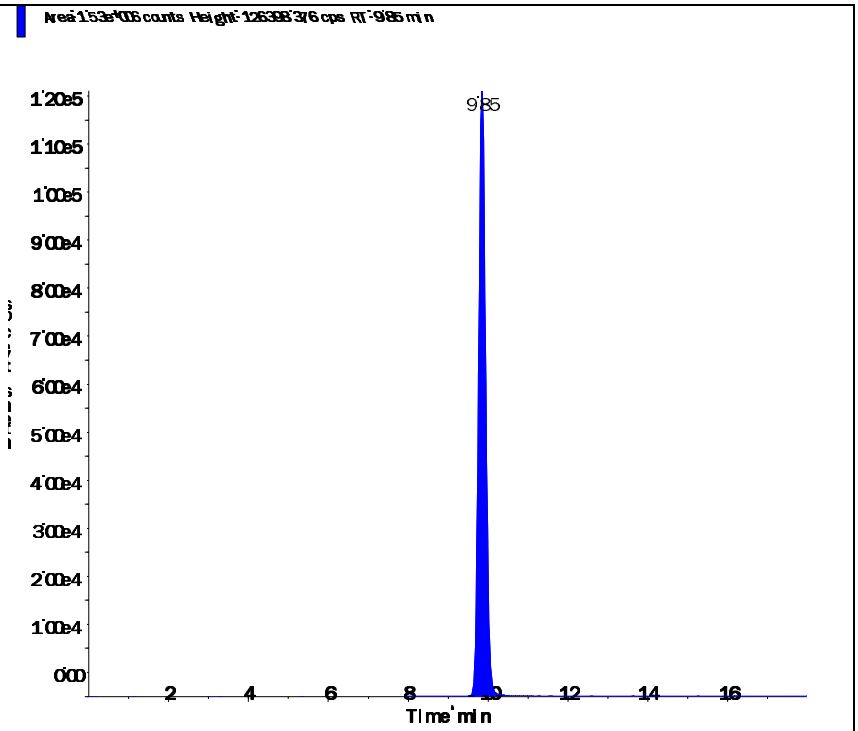

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	10.00 ng/ml
Area Ratio:	1.122
Sample Type:	(Standard)

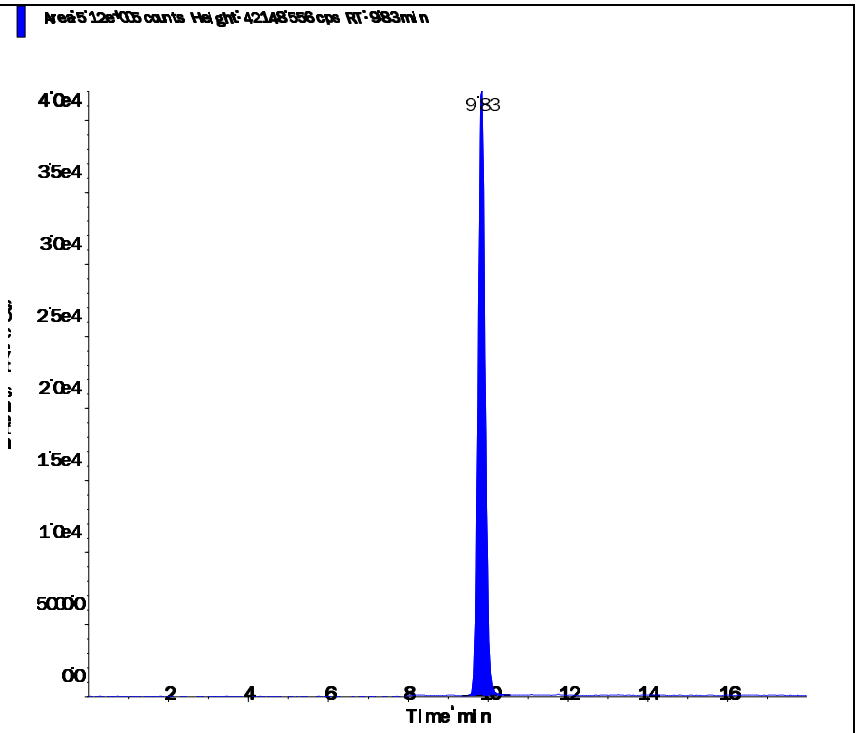

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Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

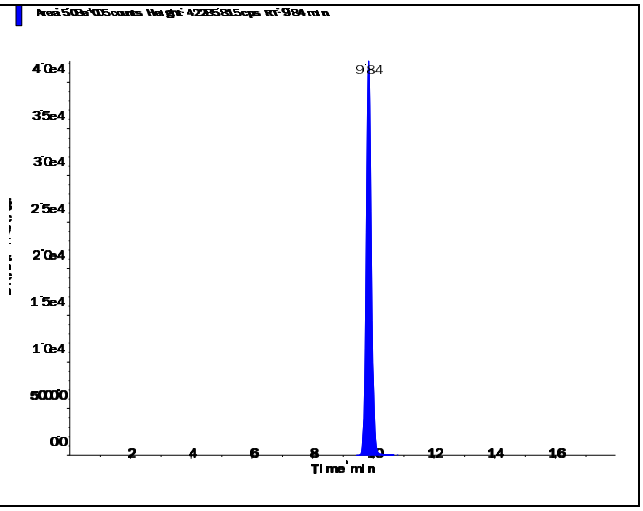

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.332
Sample Type:	(Quality Control)

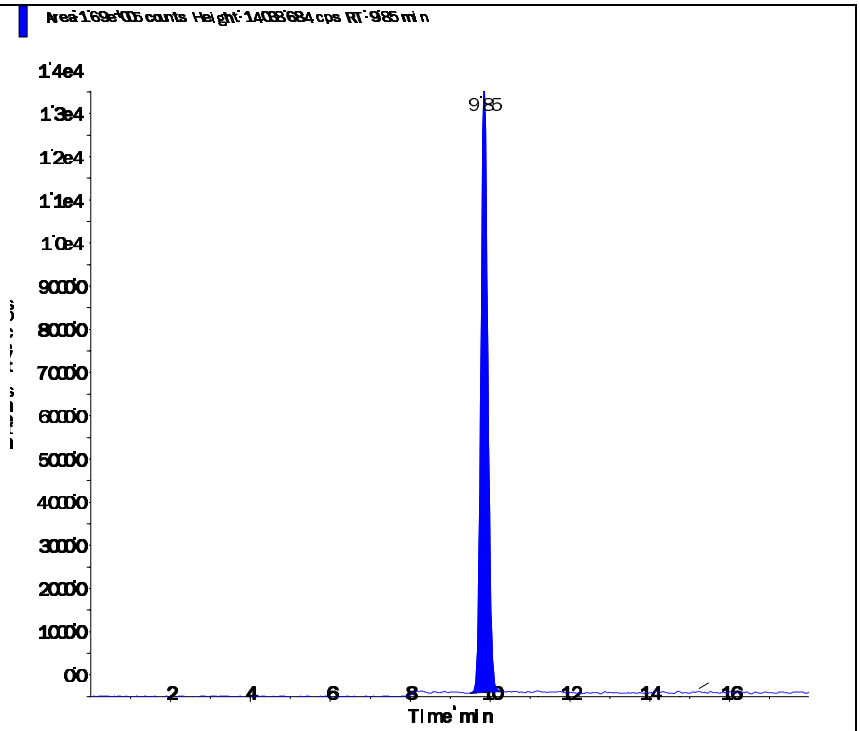

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

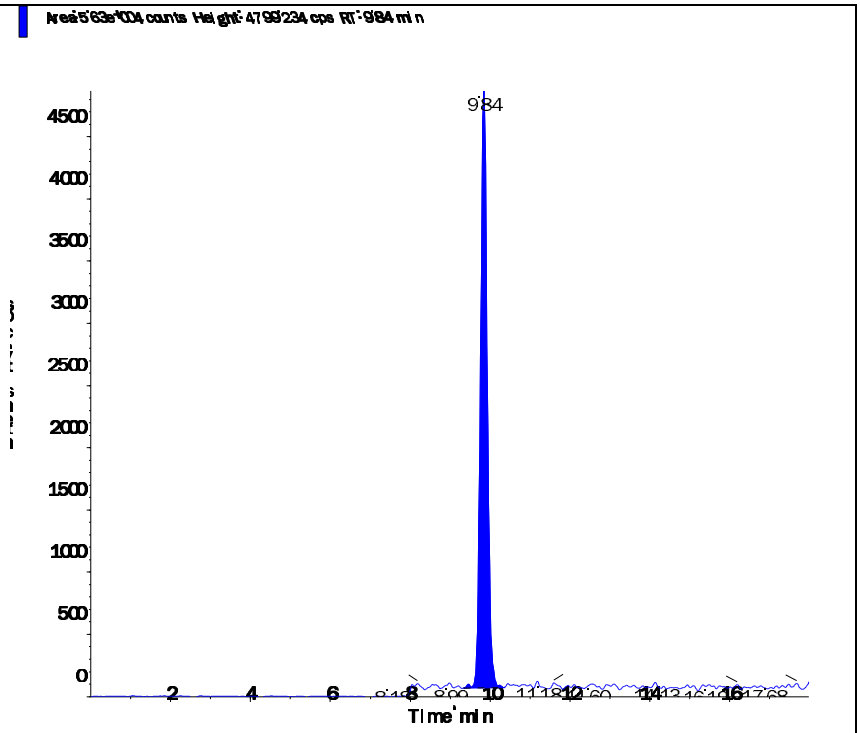

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Data File	LM35569.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 4:14:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35569.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 4:14:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.720e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.630e+05	9.40	1.00	1.03
Perchlorate conf	5.690e+04	9.38	1.00	1.06

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

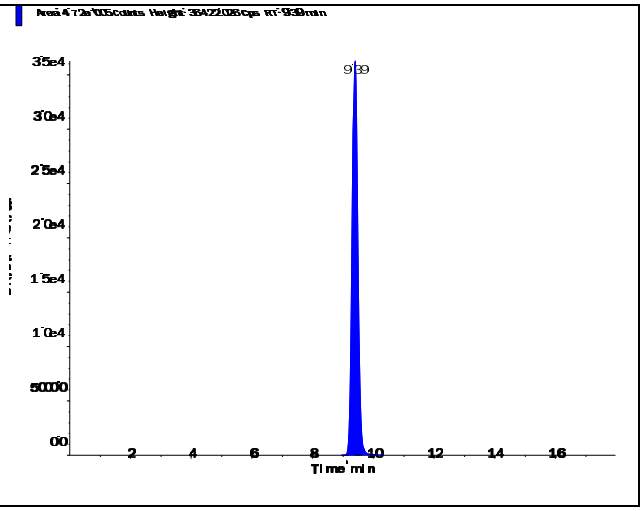

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.346
Sample Type:	(Quality Control)

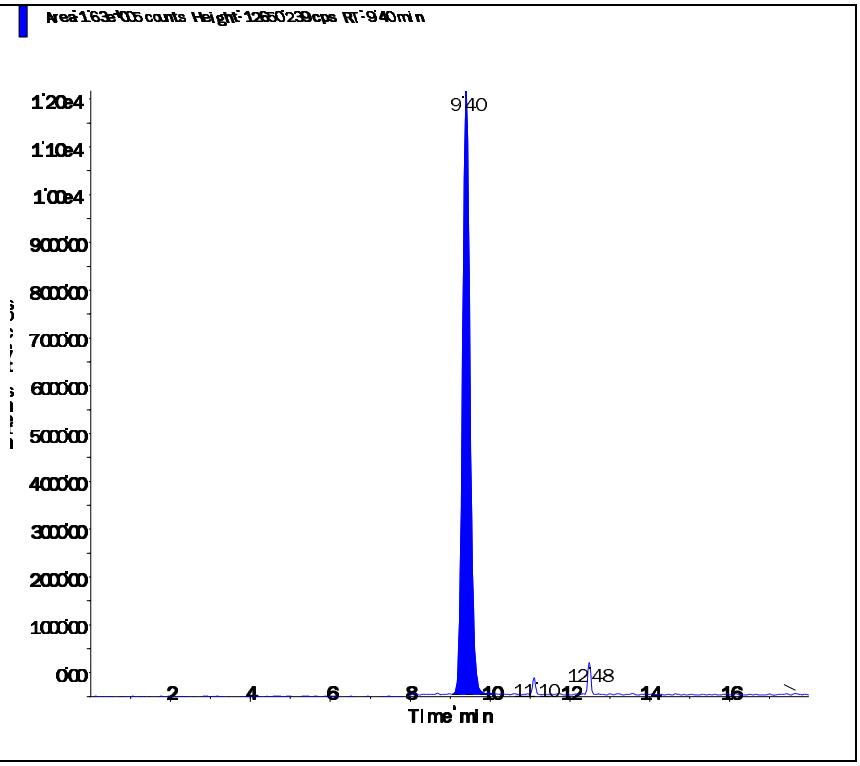

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.12
Sample Type:	(Quality Control)

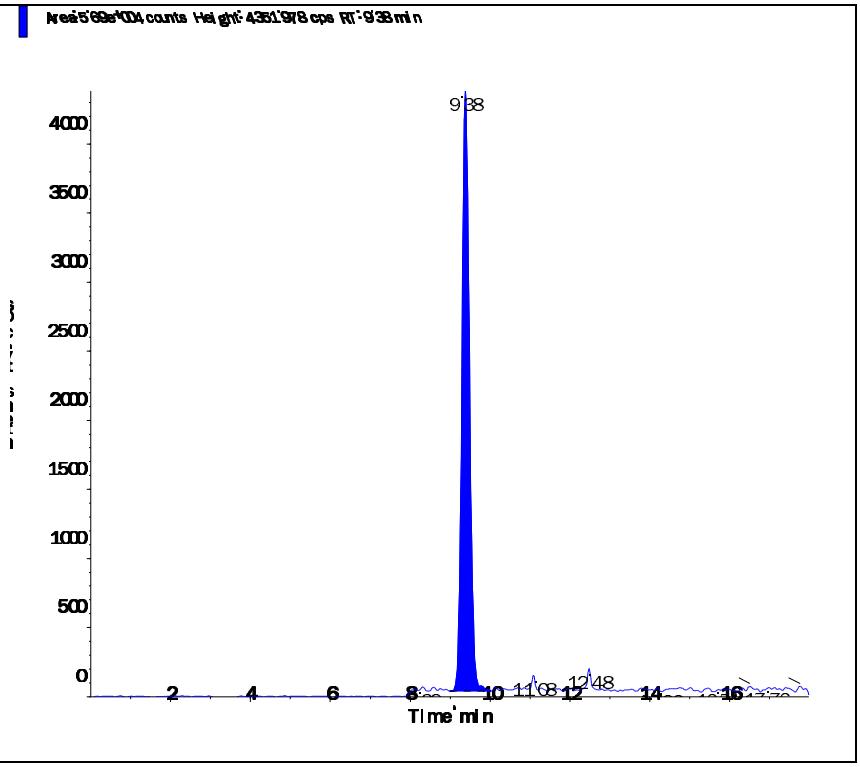

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Data File	LM35581.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 8:02:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35581.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 8:02:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.870e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.670e+05	9.40	1.00	1.02
Perchlorate conf	5.800e+04	9.39	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

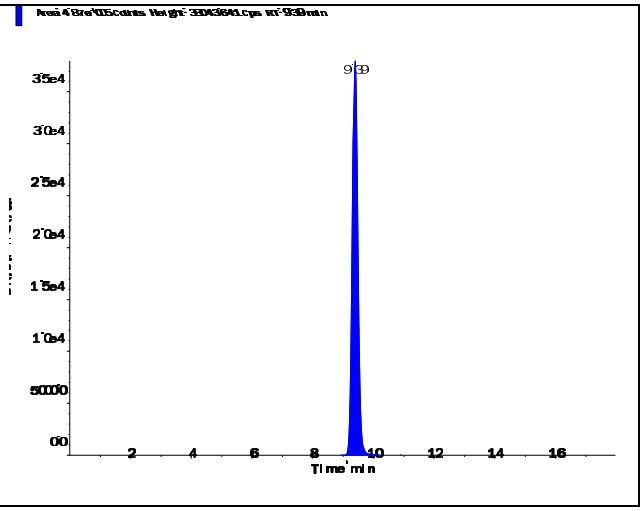

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.343
Sample Type:	(Quality Control)

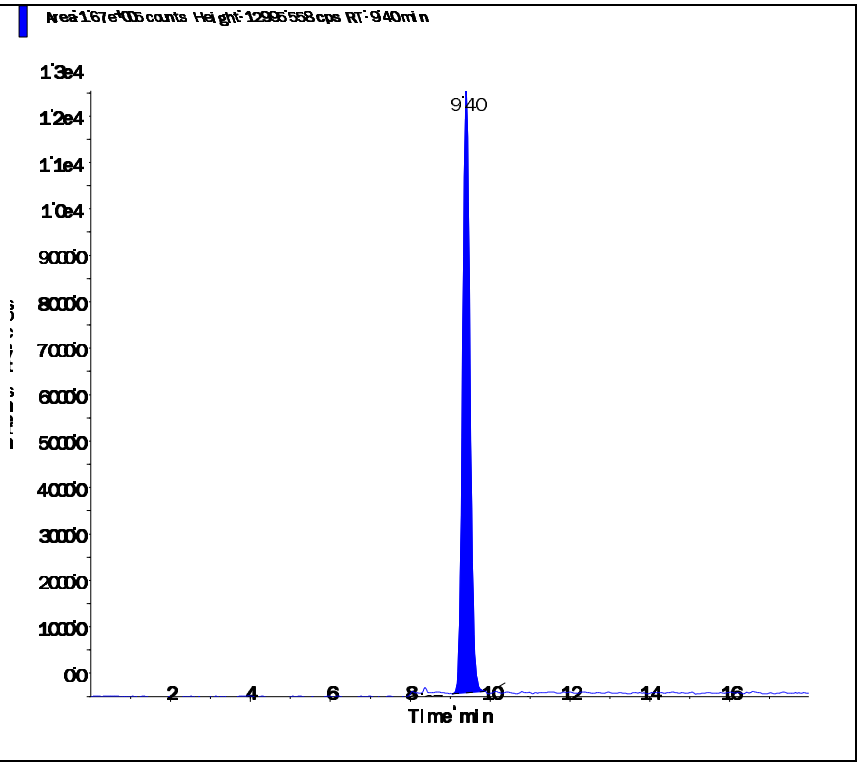

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

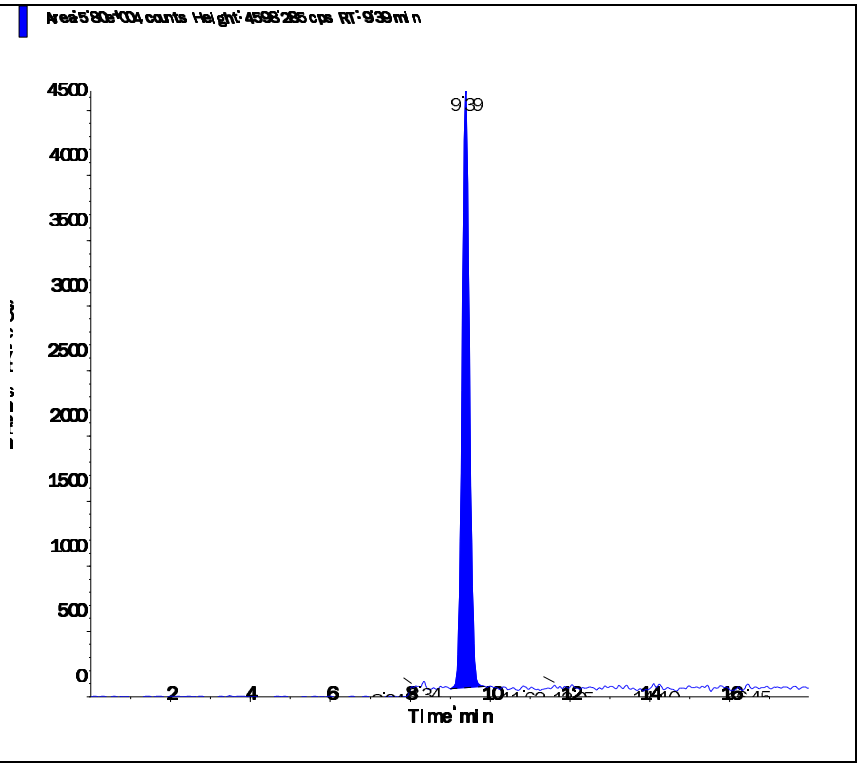

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Data File	LM35594.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 12:08:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35594.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 12:08:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.040e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.750e+05	9.40	1.00	1.03
Perchlorate conf	5.720e+04	9.39	1.00	0.997

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

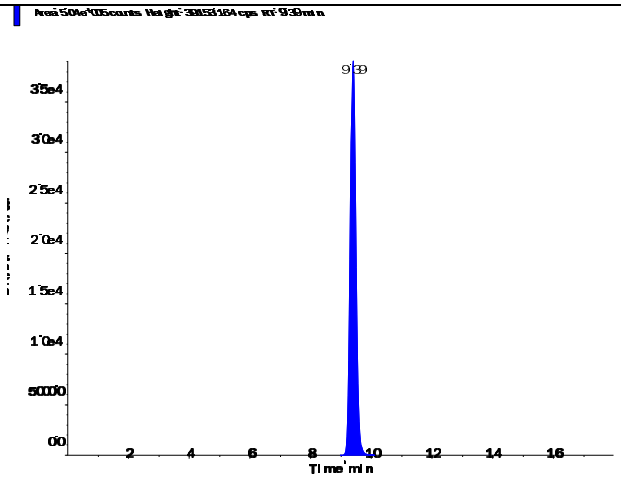

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.348
Sample Type:	(Quality Control)

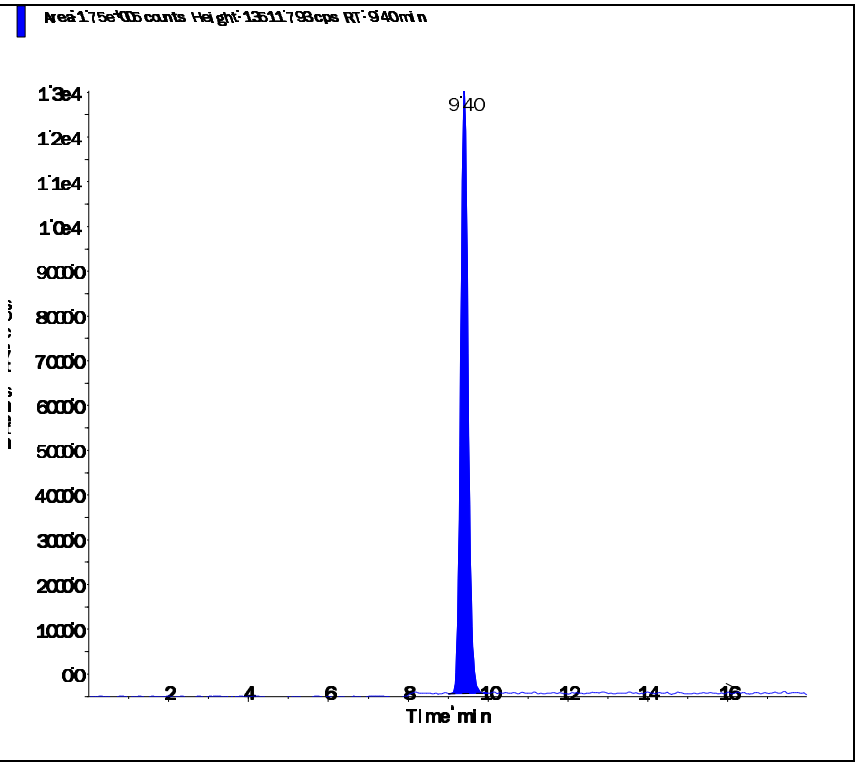

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	0.997 ng/ml
Area Ratio:	0.114
Sample Type:	(Quality Control)

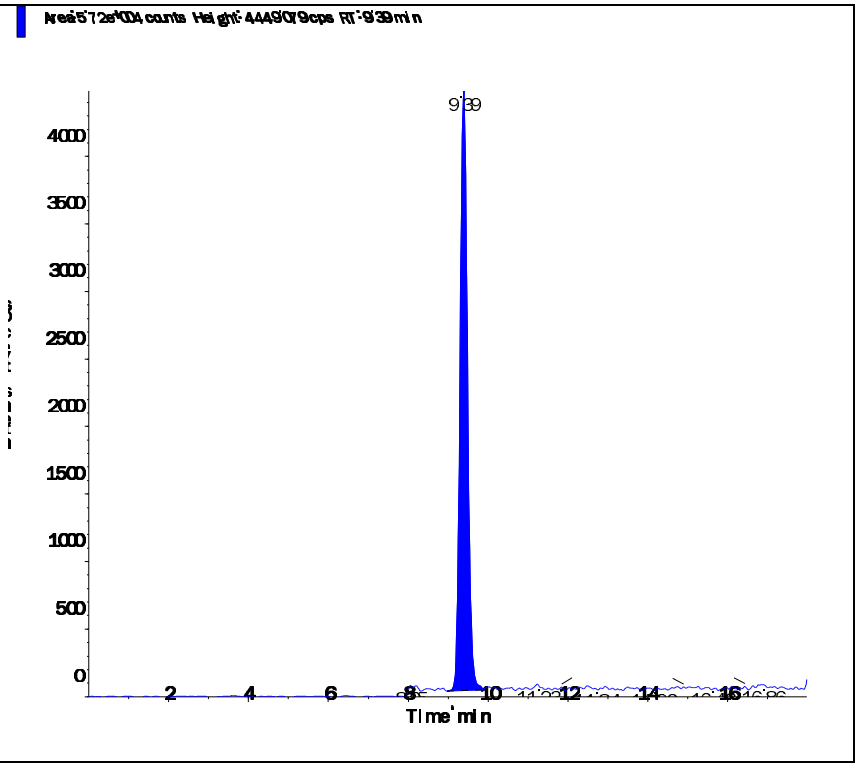

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Data File	LM35601.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 2:20:47 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35601.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 2:20:47 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.120e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.750e+05	9.40	1.00	1.01
Perchlorate conf	5.850e+04	9.38	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

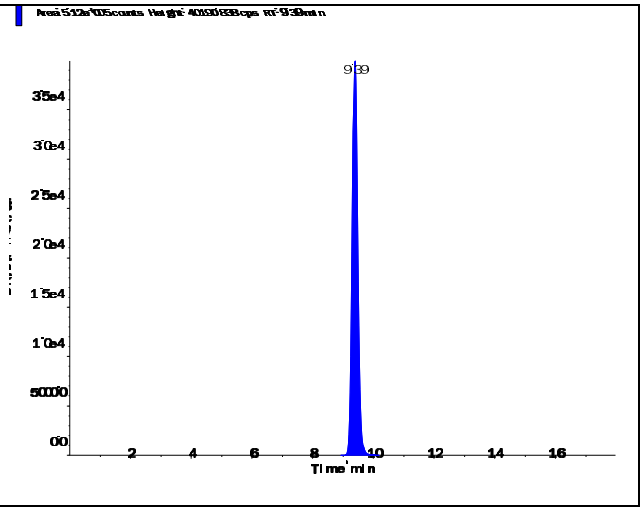

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.341
Sample Type:	(Quality Control)

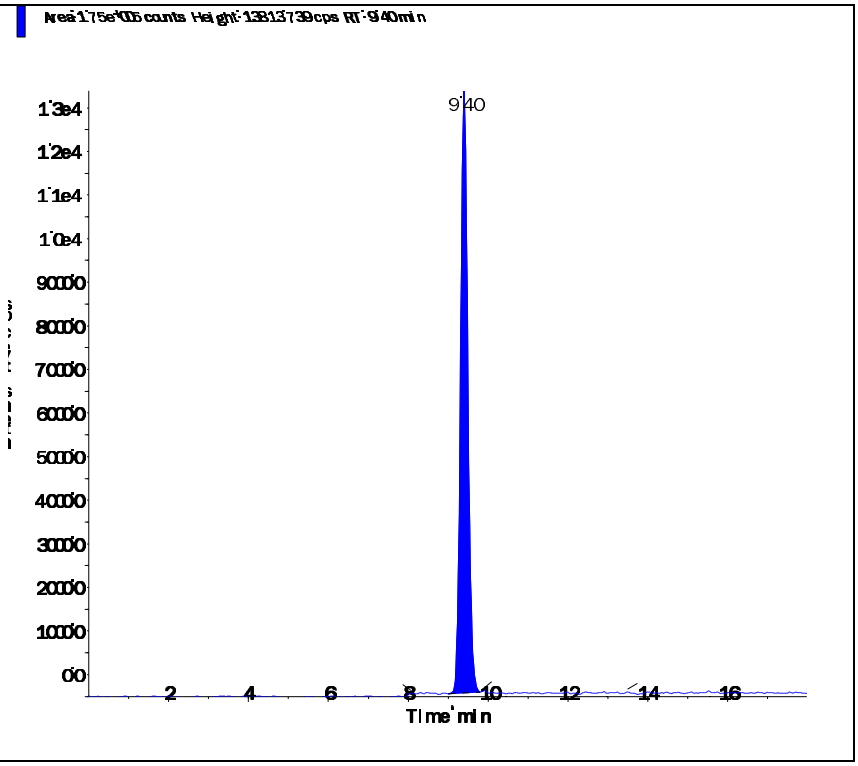

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Quality Control)

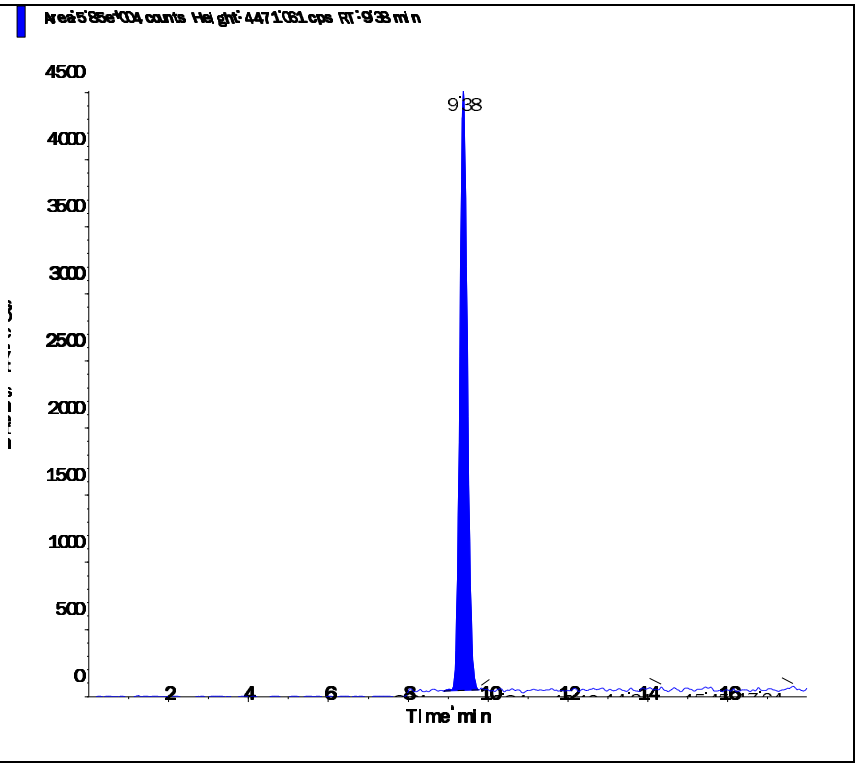

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Data File	LM35570.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 4:33:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-05 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35570.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 4:33:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.660e+05	9.44	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+04	9.44	N/A	0.207
Perchlorate conf	1.170e+04	9.44	N/A	0.204

O18LP (Internal Standard)

RT (Exp. RT): 9.44(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

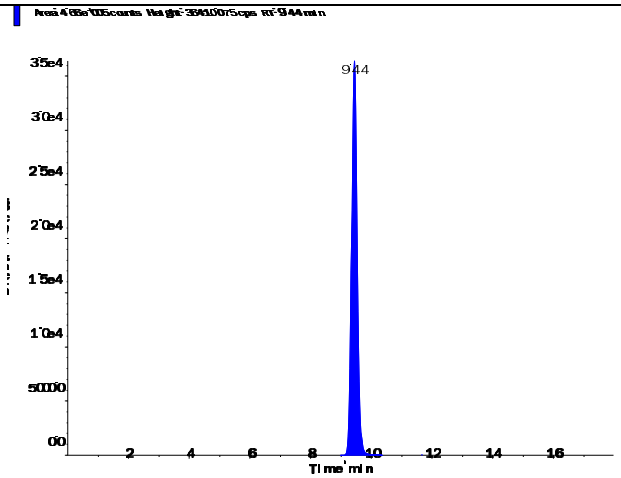

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.44 (9.84) min Calculated conc: 0.207 ng/ml Area Ratio: 0.071 Sample Type: (Unknown)	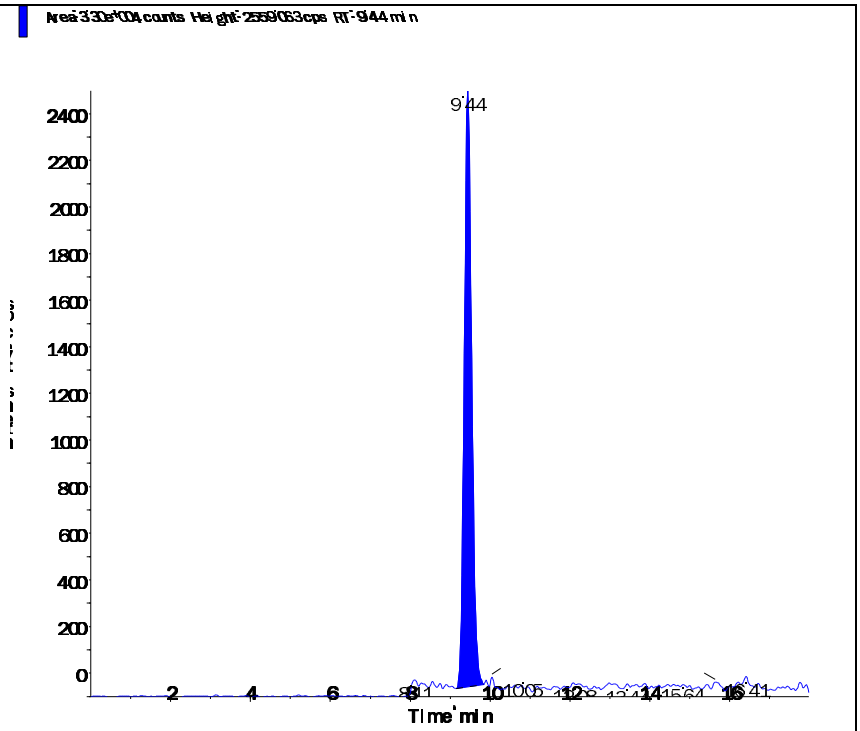
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.44 (9.84) min Calculated conc: 0.204 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	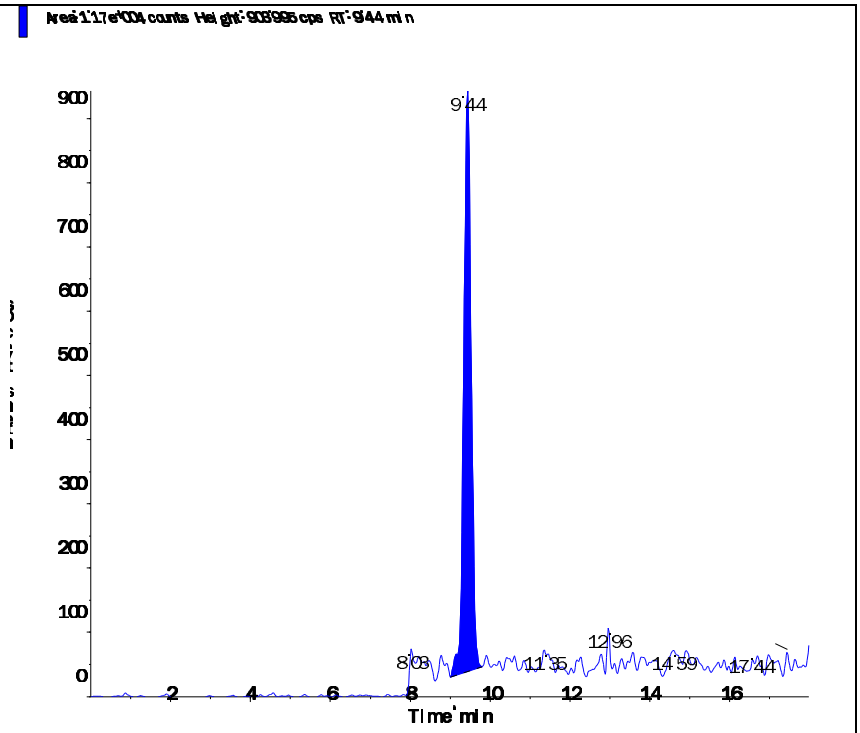

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Data File	LM35582.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 8:21:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-06 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35582.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 8:21:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.650e+05	9.43	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.280e+04	9.44	N/A	0.206
Perchlorate conf	1.140e+04	9.43	N/A	0.20

O18LP (Internal Standard)

RT (Exp. RT): 9.43(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

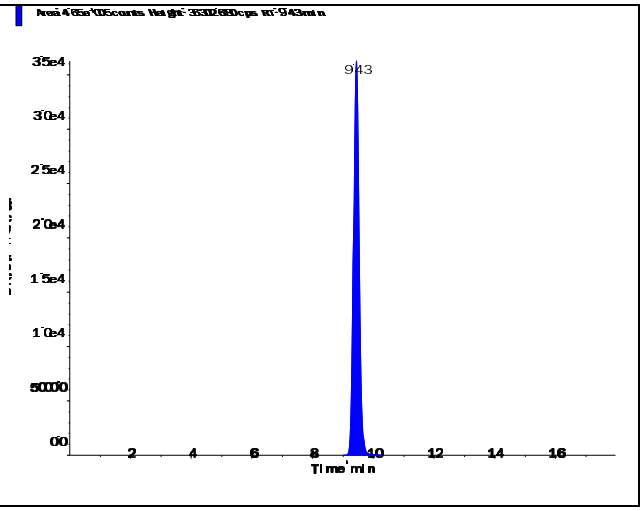

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

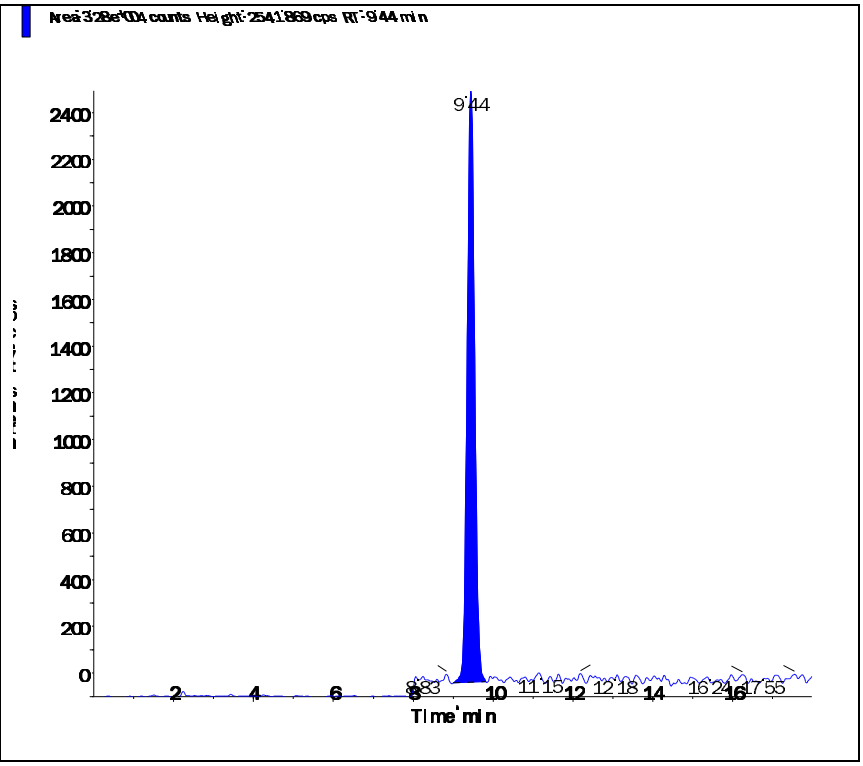

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.43 (9.84) min
Calculated conc:	0.20 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

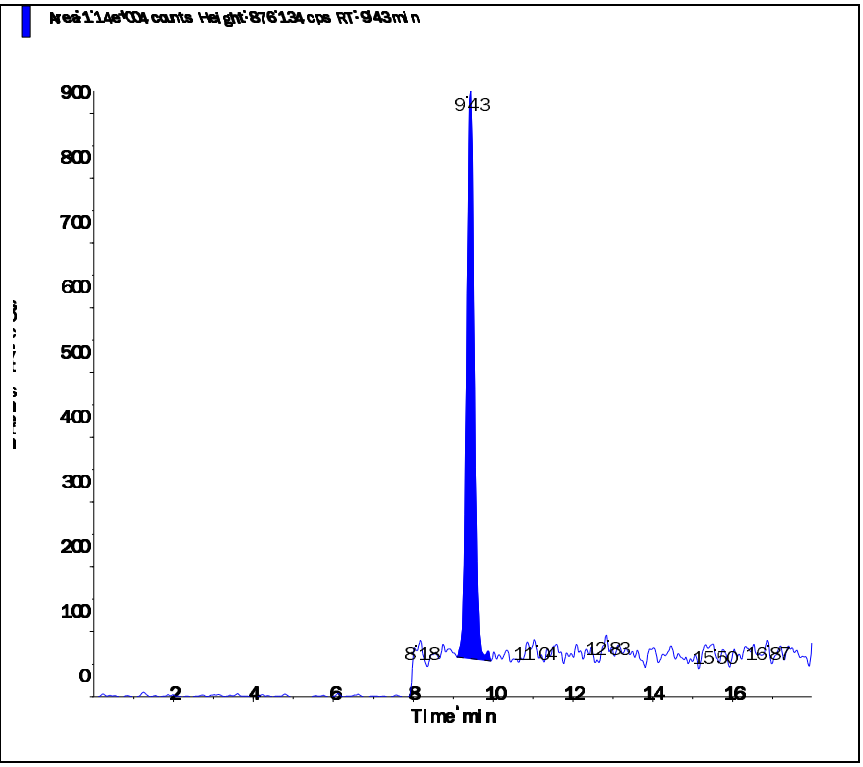

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Data File	LM35595.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 12:27:11 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35595.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 12:27:11 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.040e+05	9.43	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.570e+04	9.45	N/A	0.207
Perchlorate conf	1.290e+04	9.44	N/A	0.21

O18LP (Internal Standard)

RT (Exp. RT): 9.43(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

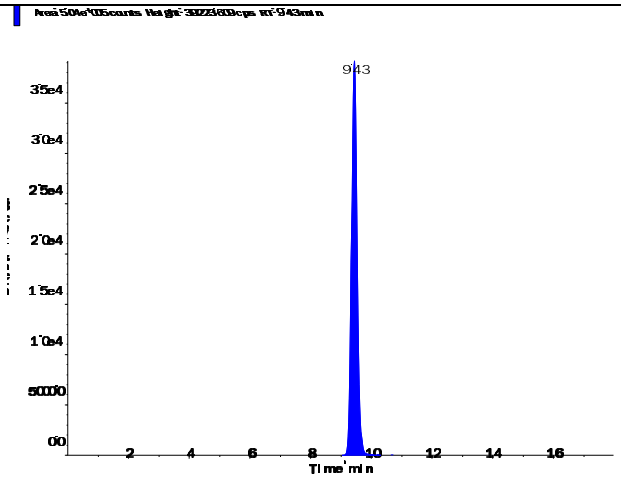

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.45 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

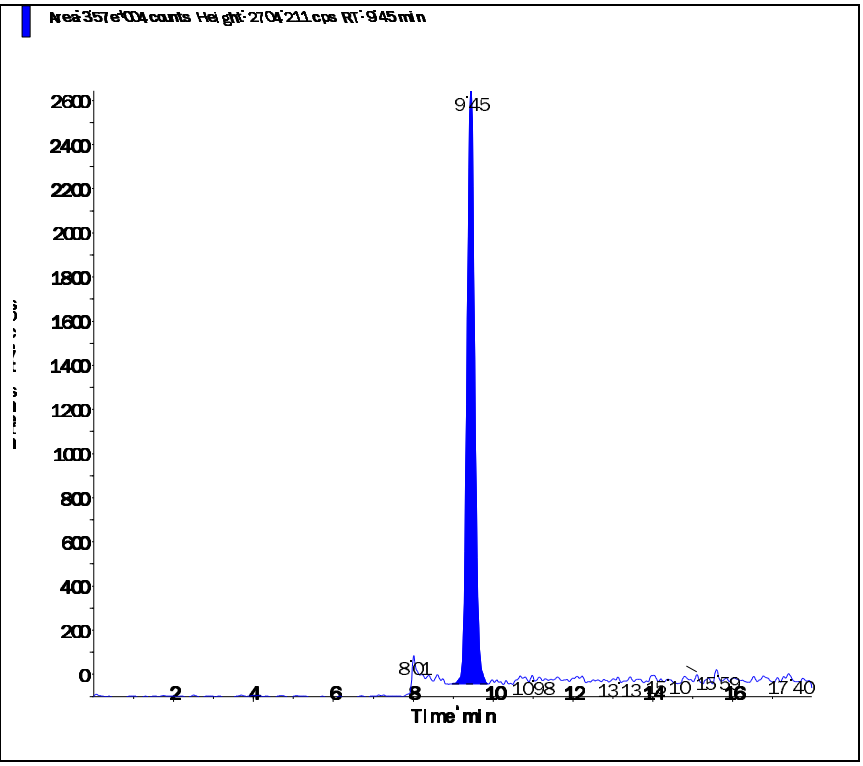

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

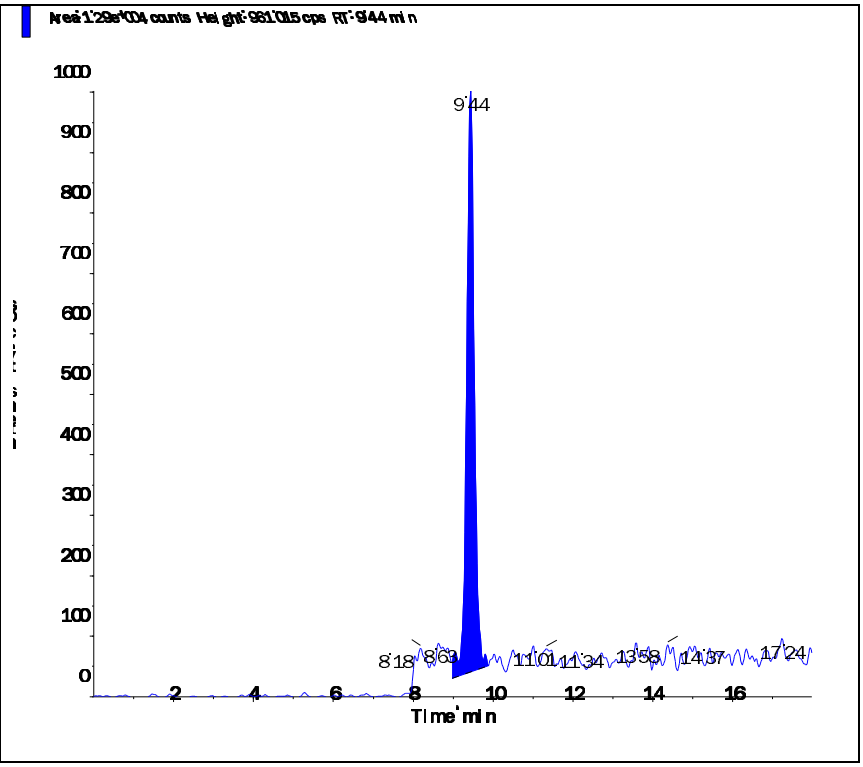

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Data File	LM35602.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 2:39:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-08 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35602.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 2:39:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.43	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.650e+04	9.44	N/A	0.209
Perchlorate conf	1.230e+04	9.42	N/A	0.196

O18LP (Internal Standard)

RT (Exp. RT): 9.43(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

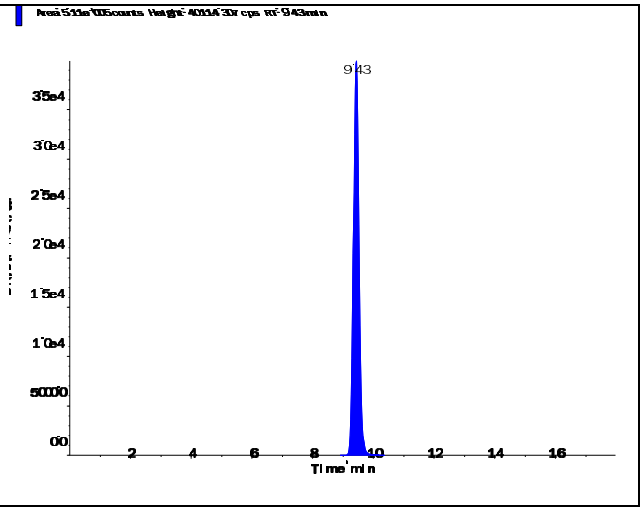

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	0.209 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

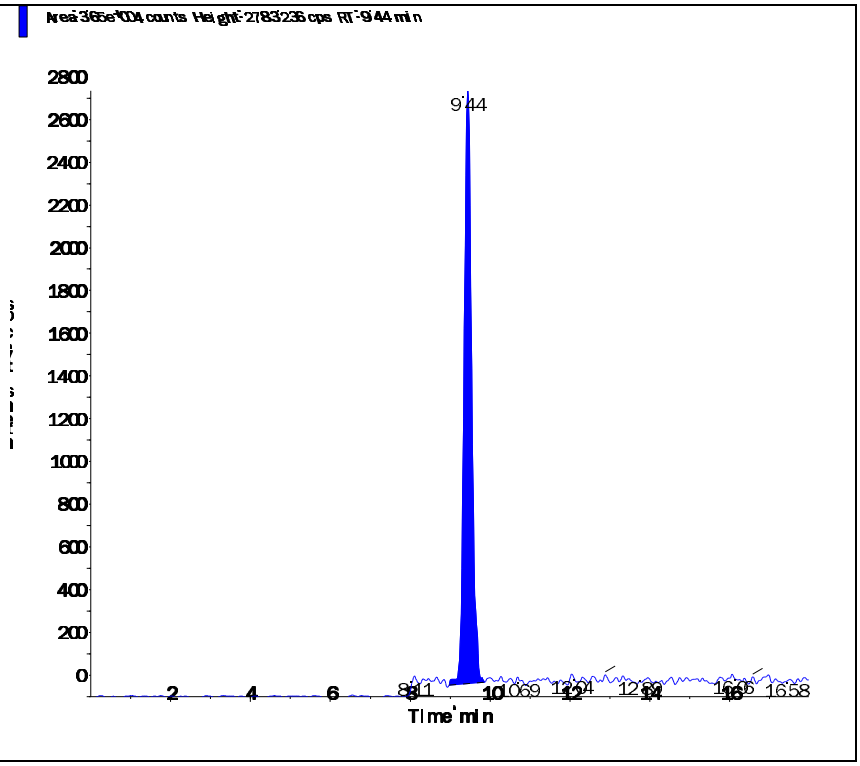

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.42 (9.84) min
Calculated conc:	0.196 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

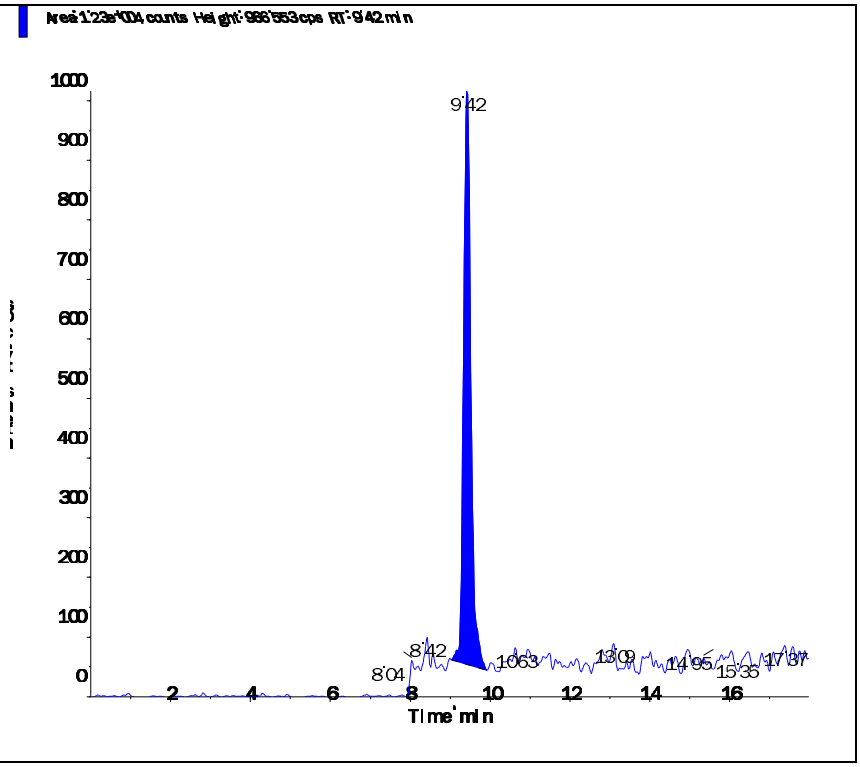

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Data File	LM35568.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 3:55:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-01 CCB	**Injection Vial**	1.00
Data File	LM35568.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 3:55:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.500e+05	9.68	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.68(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

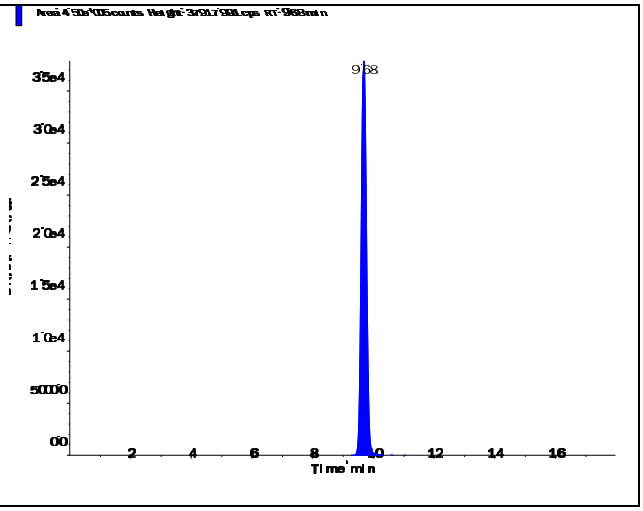

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

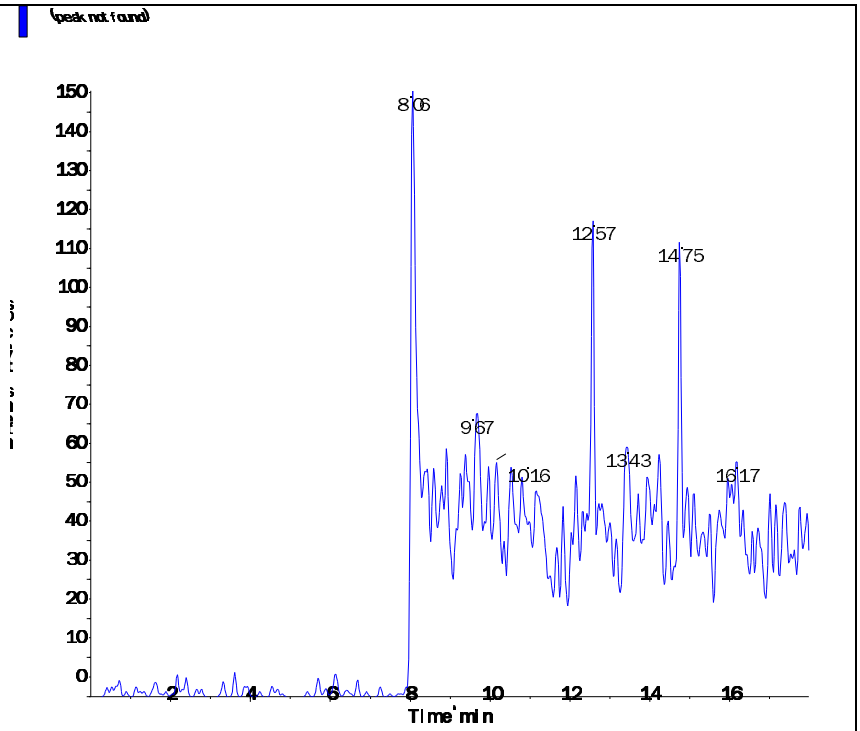

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

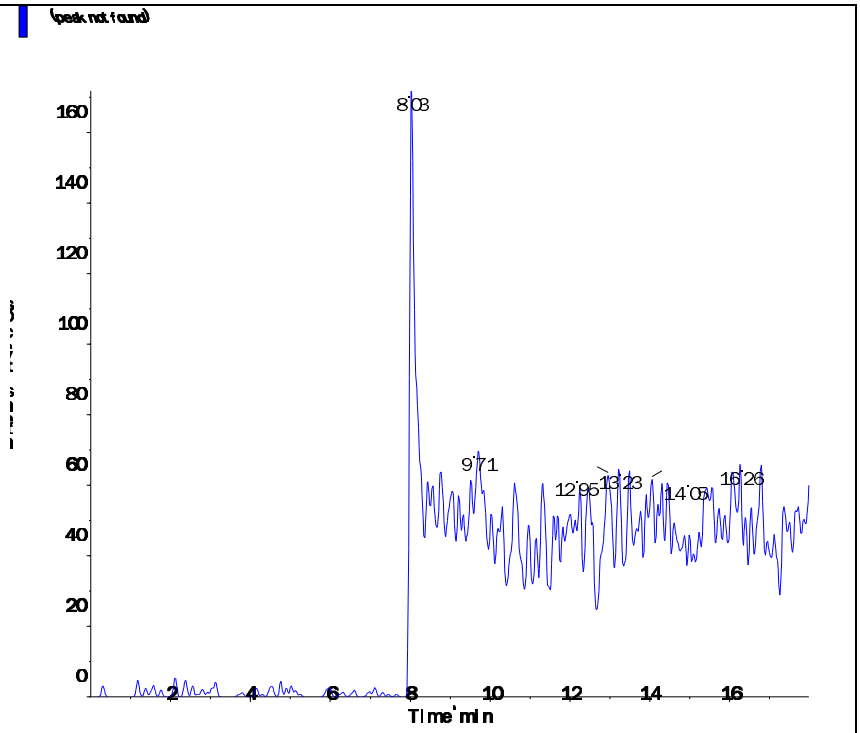

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Data File	LM35583.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 8:39:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-04 CCB	**Injection Vial**	1.00
Data File	LM35583.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 8:39:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

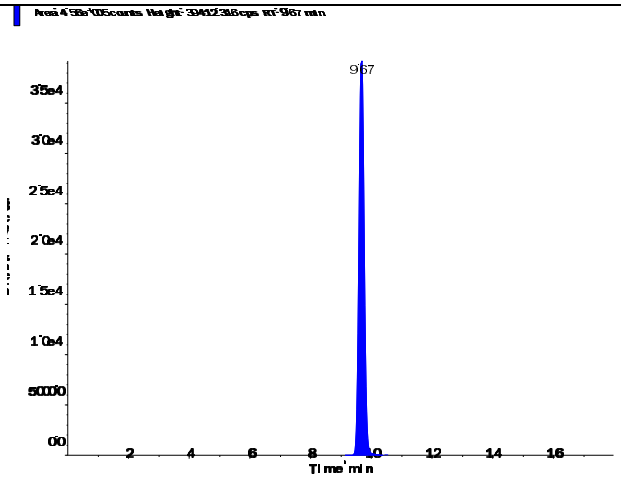

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

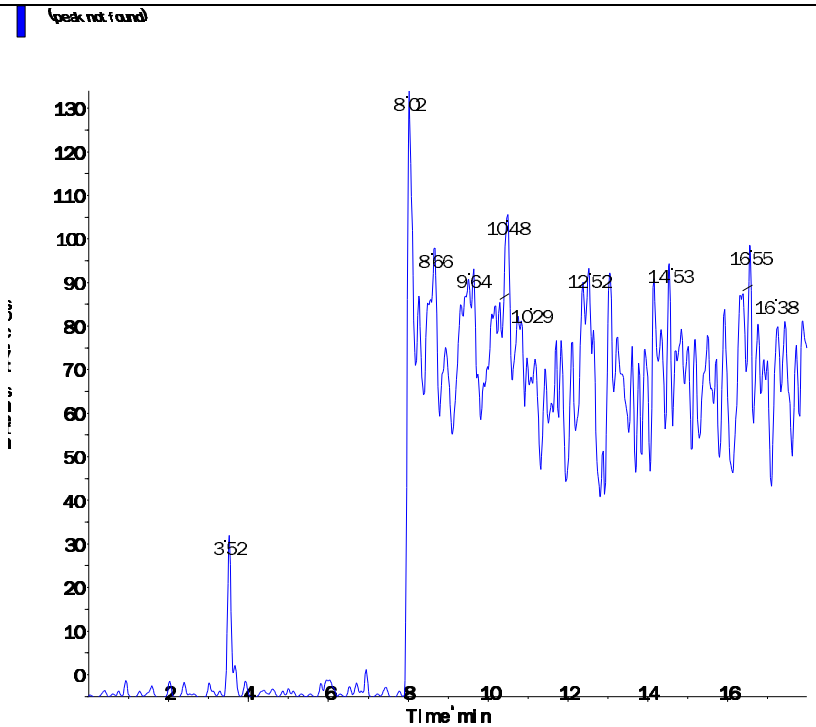

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

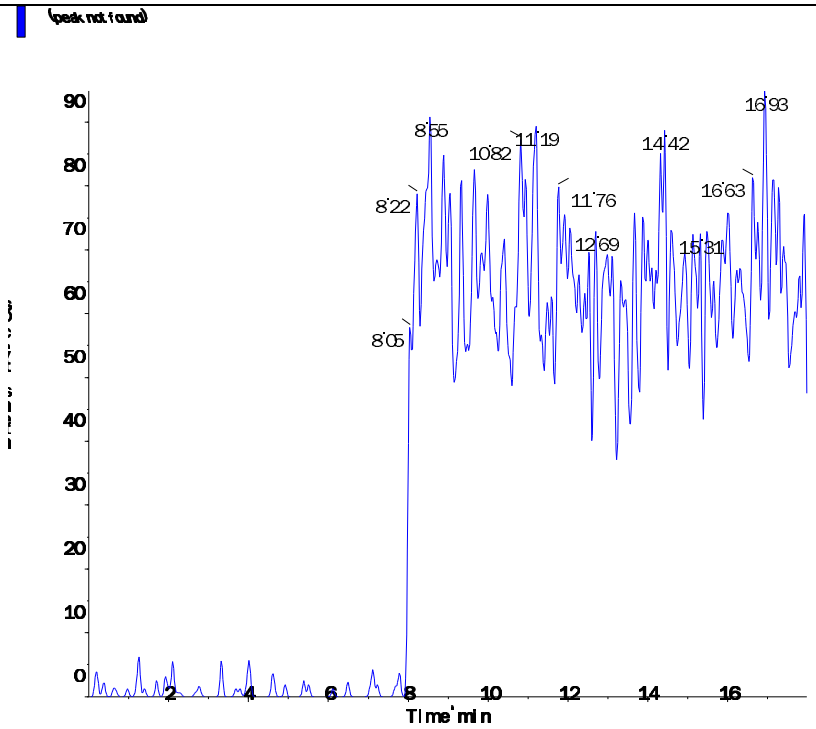

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Data File	LM35596.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 12:46:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-06 CCB	**Injection Vial**	1.00
Data File	LM35596.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 12:46:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.120e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

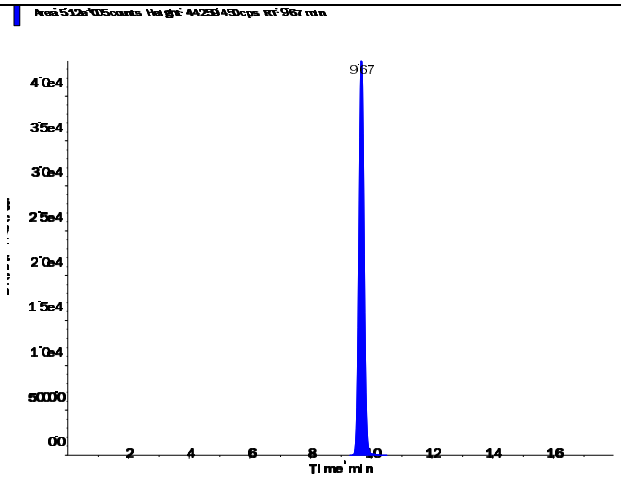

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

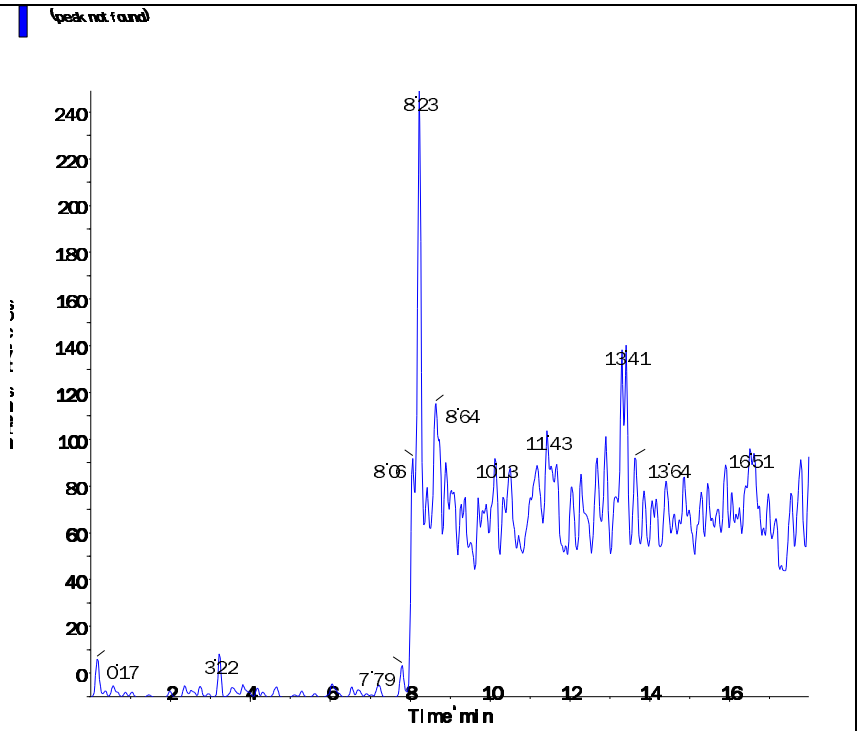

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

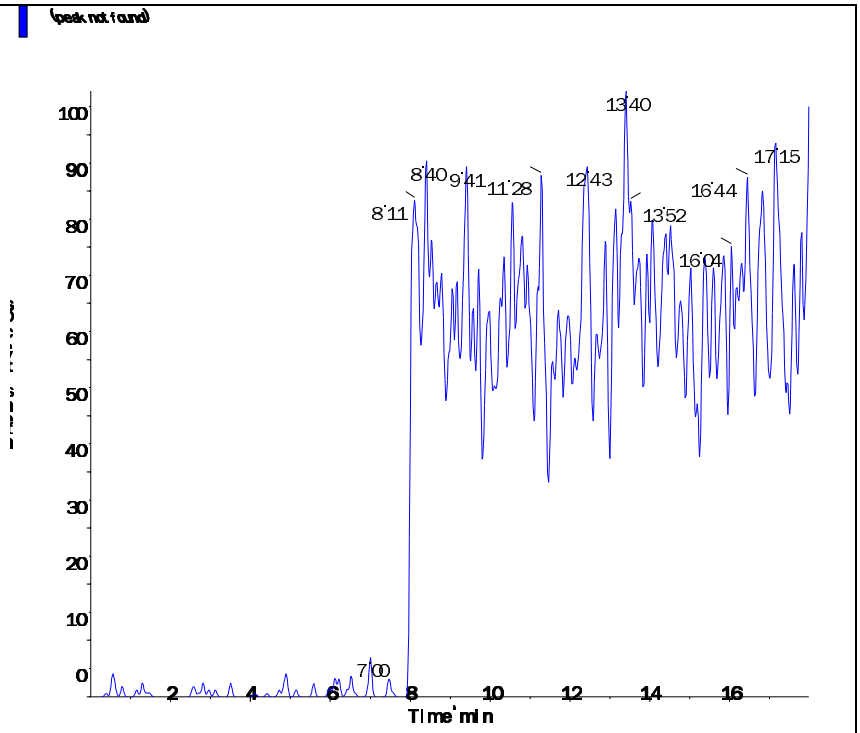

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:37 PM

Data File	LM35603.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 2:58:39 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-08 CCB	**Injection Vial**	1.00
Data File	LM35603.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 2:58:39 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.250e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

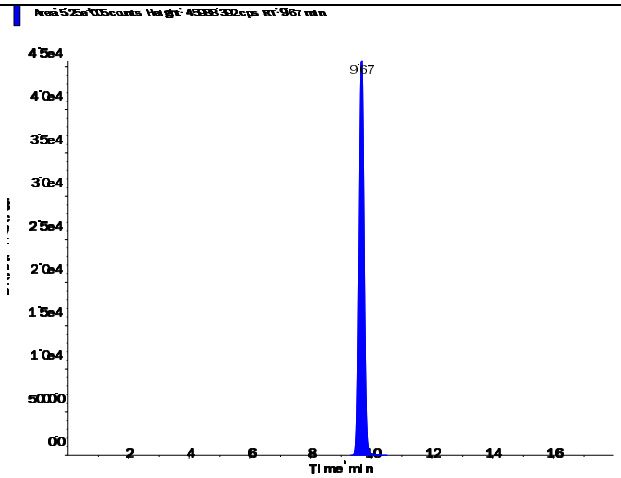

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:37 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

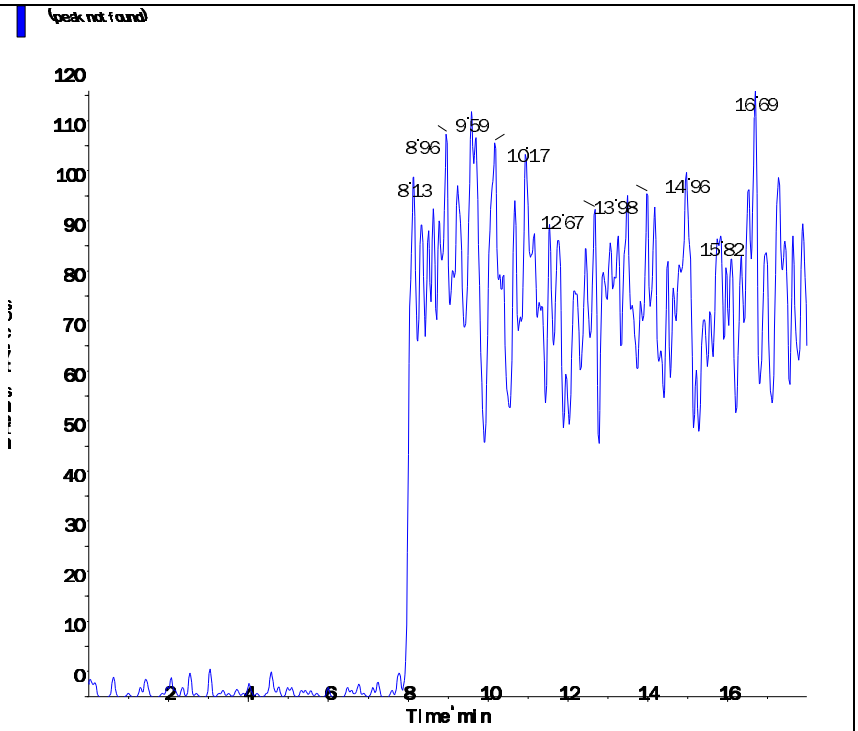

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

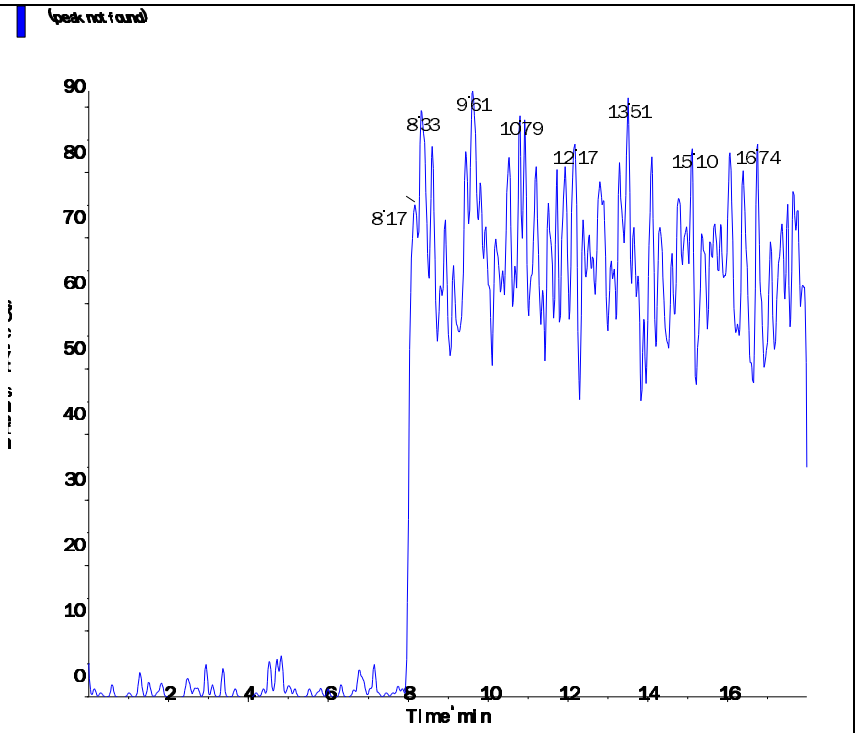

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:27 PM

Data File	LM35571.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 4:52:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM35571.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 4:52:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.330e+05	9.04	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.020e+04	9.05	N/A	0.204
Perchlorate conf	9.940e+03	9.05	N/A	0.185

O18LP (Internal Standard)

RT (Exp. RT): 9.04(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

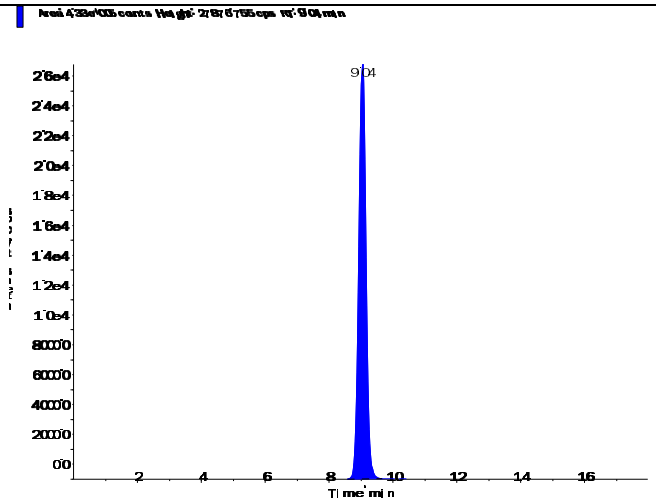

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:27 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.05 (9.84) min
Calculated conc:	0.204 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

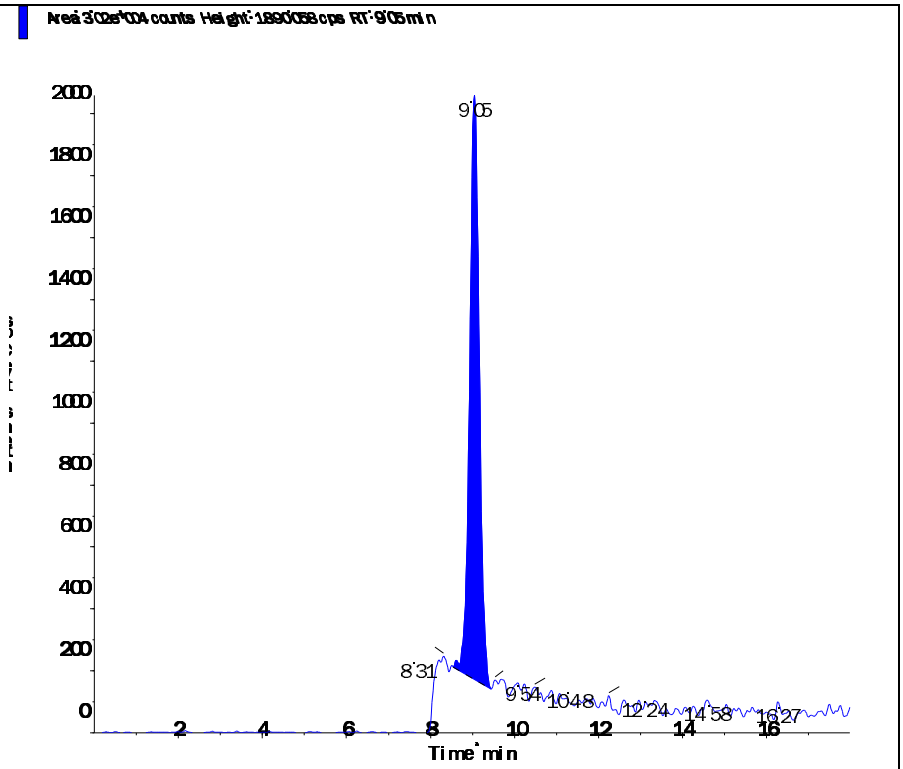

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.05 (9.84) min
Calculated conc:	0.185 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

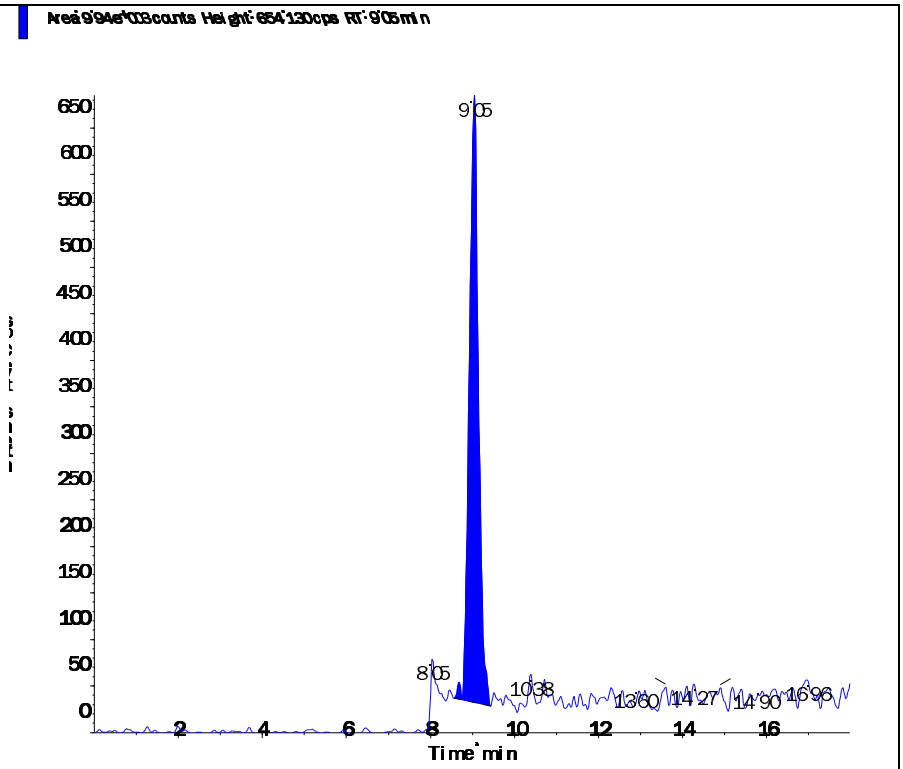

Printing Time: 6:47:51 PM
Printing Date: Friday, July 01, 2016

Sample Name: "WG575005-01 MCT (0.2ug/L)" Sample ID: "WG575005-01" File: "LM35571.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.231 ug/L
Acq. Date:	7/1/2016
Acq. Time:	4:52:43 PM
Modified:	No
Proc. Algorithm:	Analyst Classic
Bunching Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Exp. Width:	0.20
Exp. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Valley
Retention Time:	9.05 min
Area:	3.42e+004 counts
Height:	1959.447 cps
Start Time:	8.566 min
End Time:	9.457 min

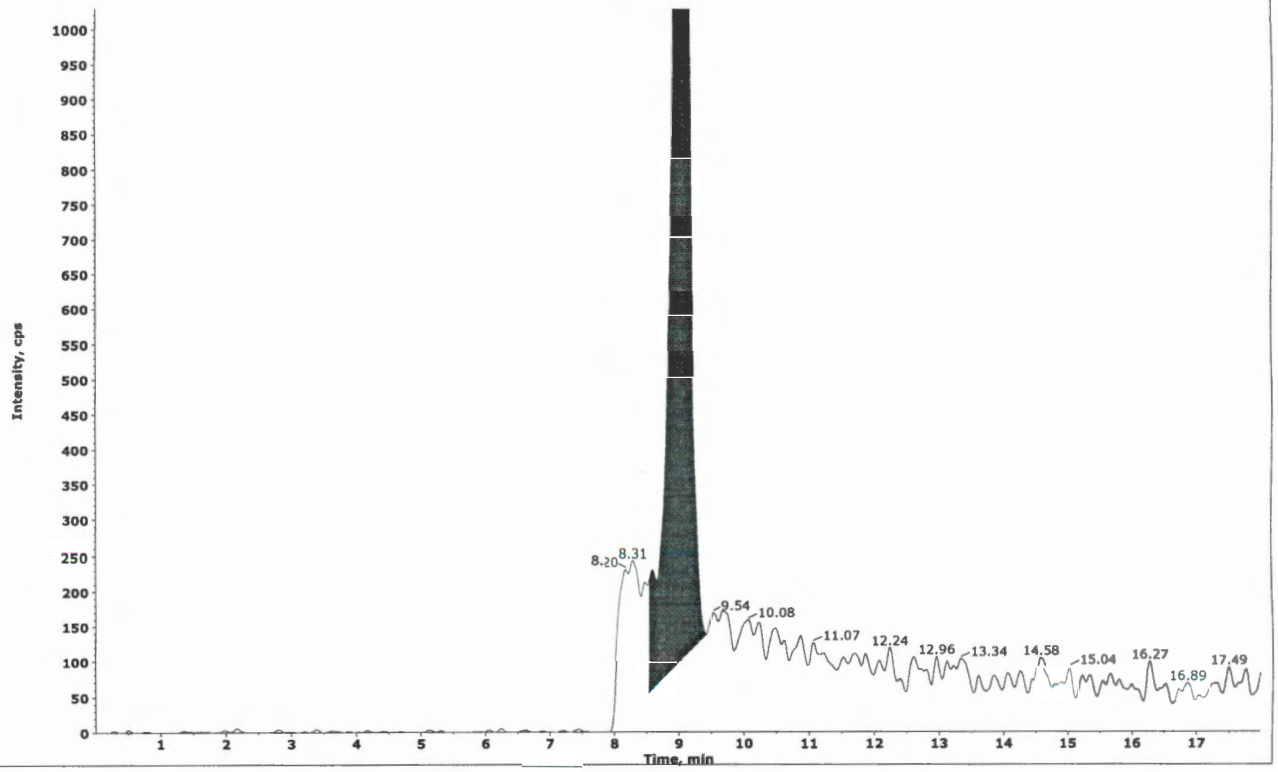

Collected by: N/A
Electronic Signature: no
Operator: lcms1

Printing Time: 6:51:20 PM
Printing Date: Friday, July 01, 2016

Sample Name: "WG575005-01 HCT (0.2ug/L)" Sample ID: "WG575005-01" File: "LM35571.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.204 ug/L
Acq. Date:	7/1/2016
Acq. Time:	4:52:43 PM
Modified:	Yes
Proc. Algorithm:	Analyst Classic
Smoothing Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Exp. Width:	0.20
Exp. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Manual
Retention Time:	9.05 min
Area:	3.02e+004 counts
Height:	1890.058 cps
Start Time:	8.546 min
End Time:	9.437 min

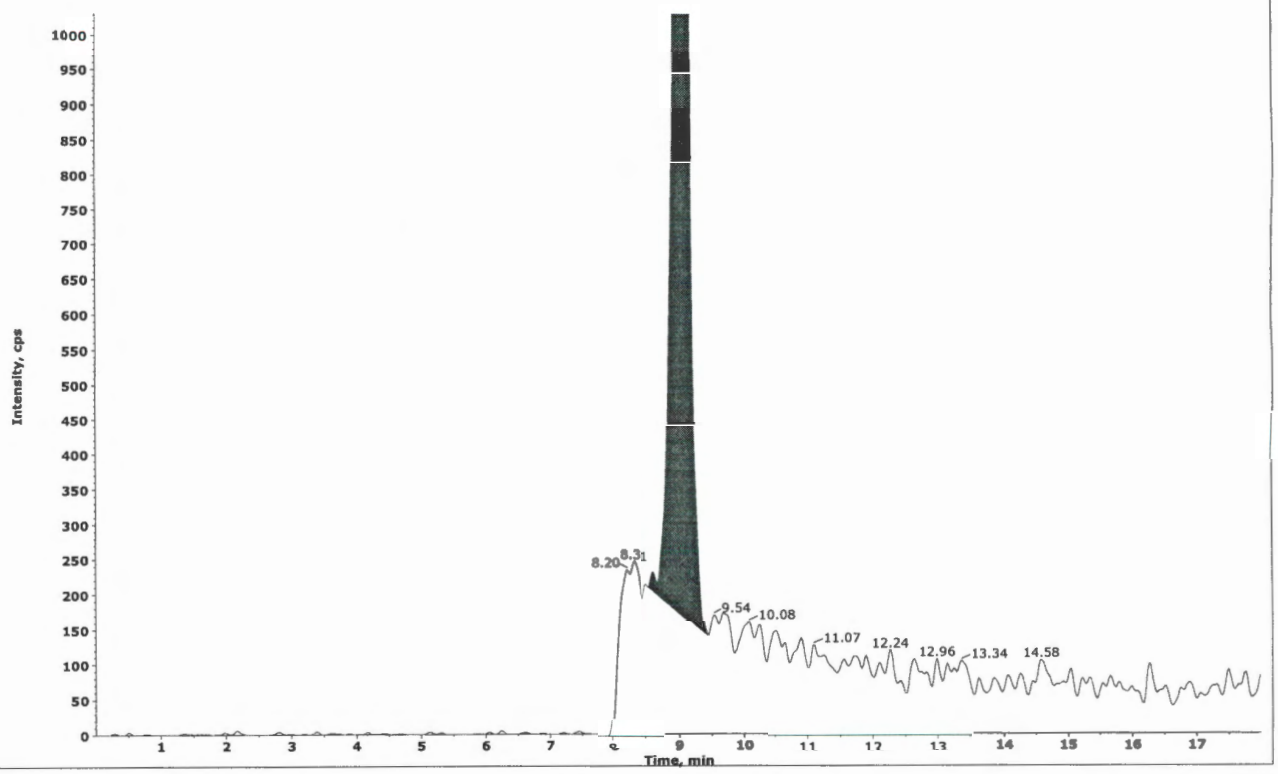

#4
JWR/07/01/16

✓ MED
7-6-16

Collected by: N/A
Electronic Signature: no
Operator: lcms1

2.2.2.5 Raw QC Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:27 PM

Data File	LM35572.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 5:11:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-02 BLANK	**Injection Vial**	5.00
Data File	LM35572.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 5:11:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.510e+05	9.58	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.58(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

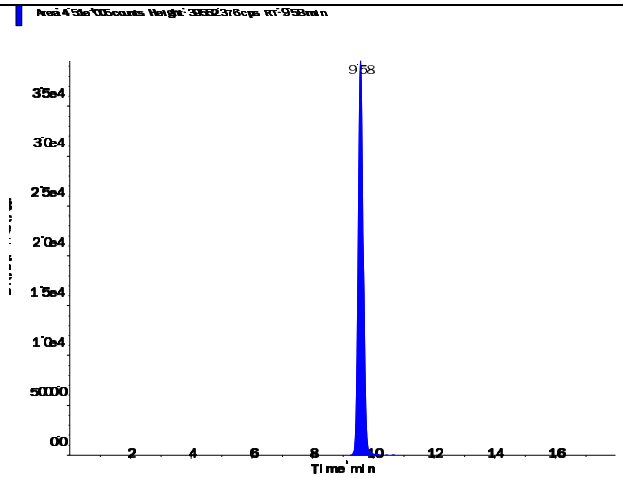

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:27 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

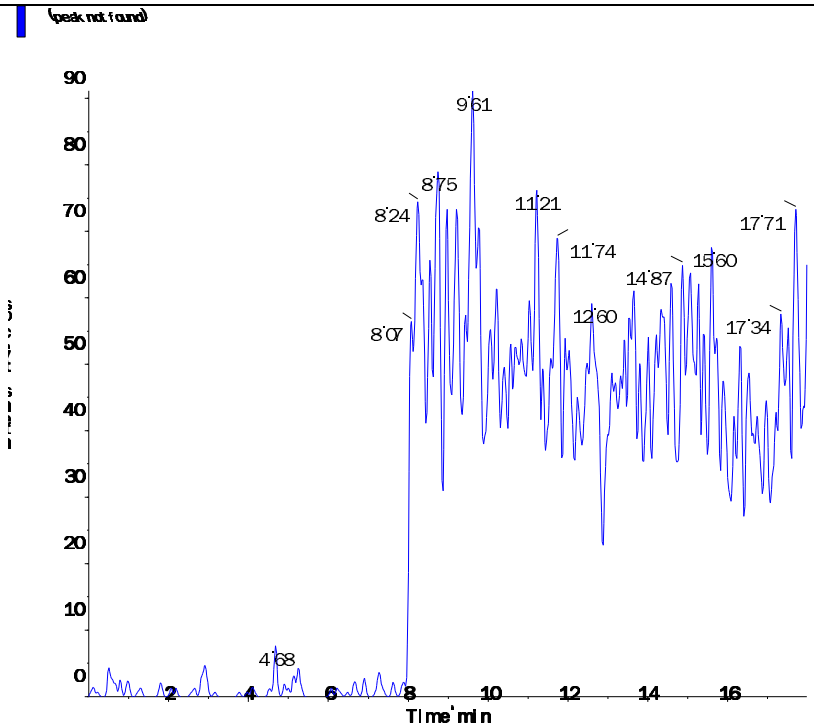

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

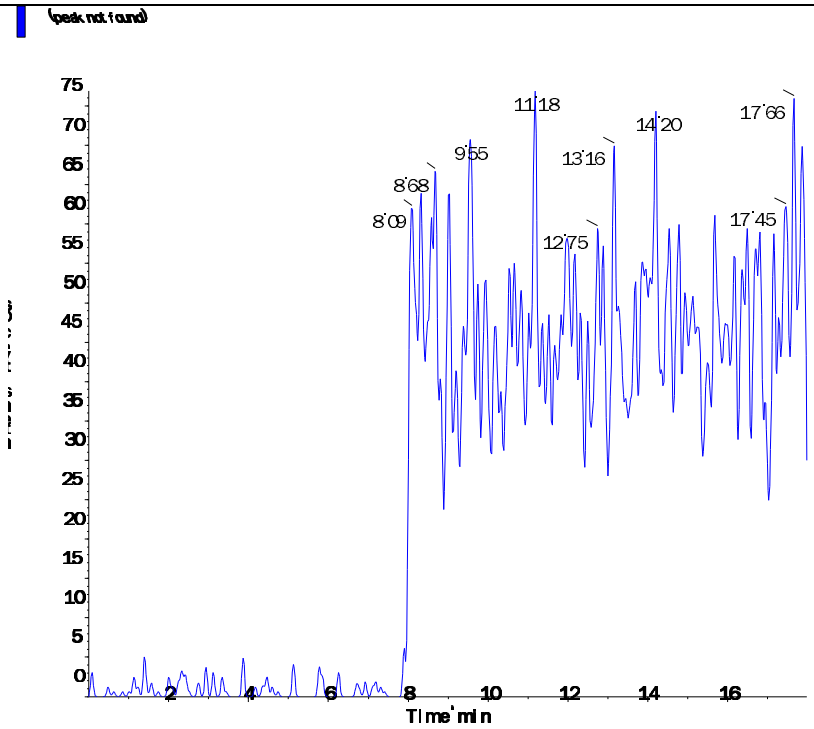

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:27 PM

Data File	LM35573.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 5:30:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM35573.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 5:30:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.510e+05	9.60	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.110e+04	9.61	N/A	0.201
Perchlorate conf	1.130e+04	9.60	N/A	0.204

O18LP (Internal Standard)

RT (Exp. RT): 9.60(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

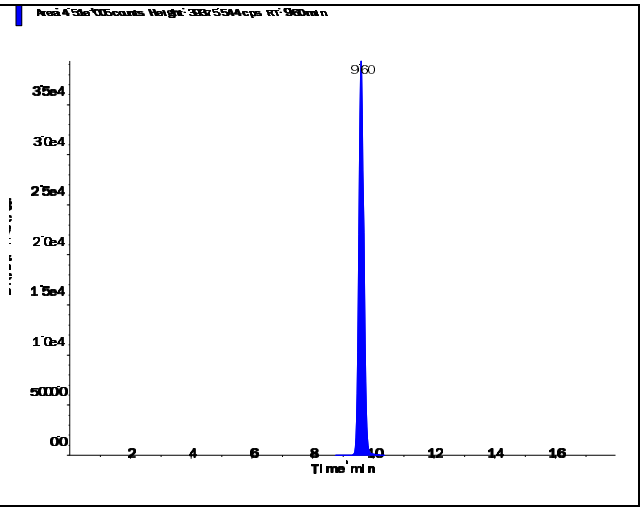

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:27 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.61 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

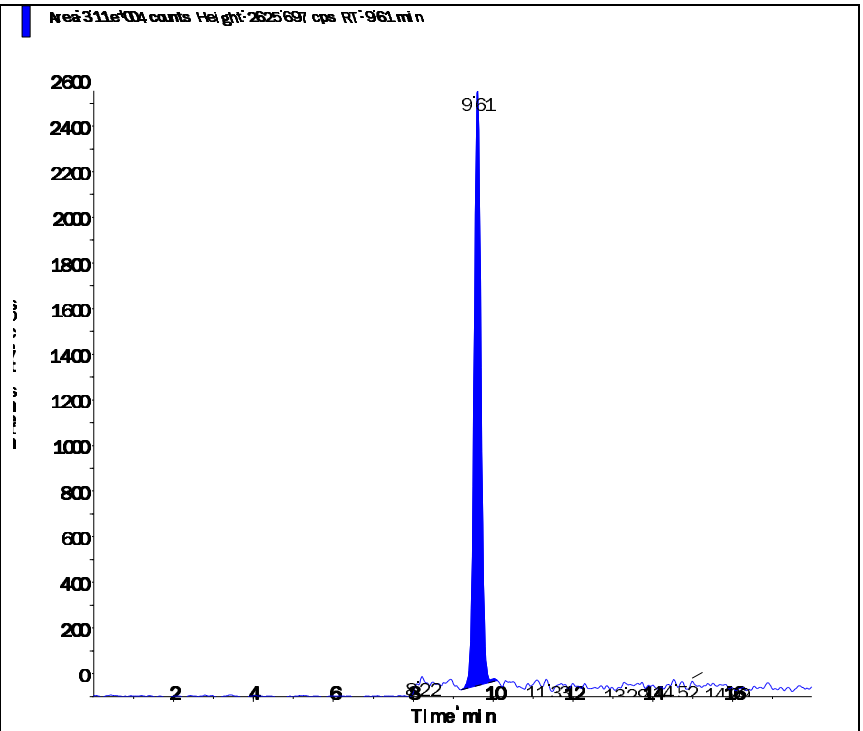

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.60 (9.84) min
Calculated conc:	0.204 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

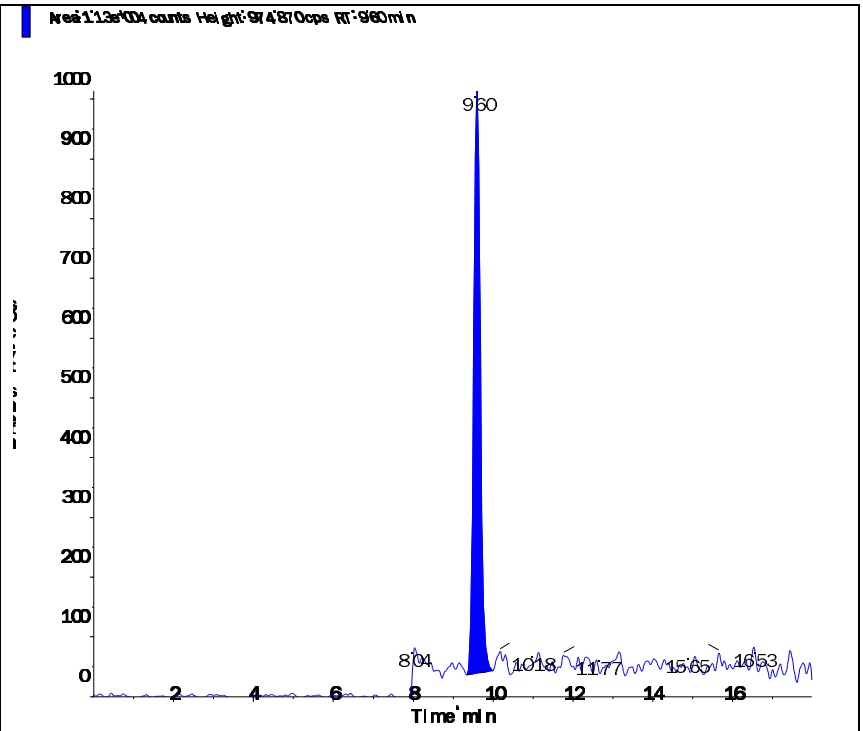

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:28 PM

Data File	LM35574.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 5:49:31 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-04 LCS2 (0.2ug/L)	**Injection Vial**	7.00
Data File	LM35574.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 5:49:31 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.500e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.250e+04	9.66	N/A	0.211
Perchlorate conf	1.180e+04	9.65	N/A	0.214

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

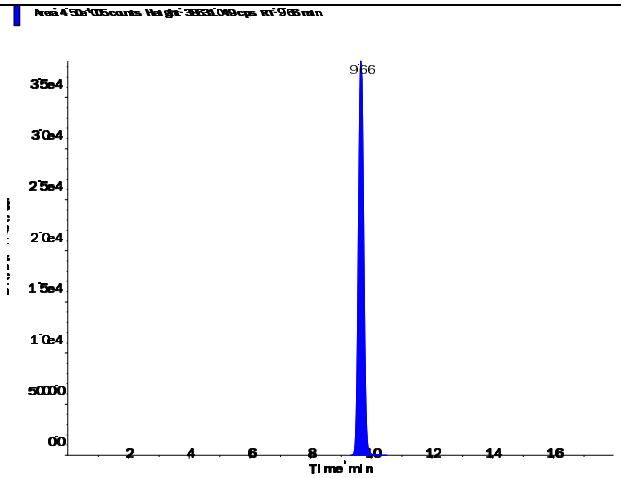

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.211 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

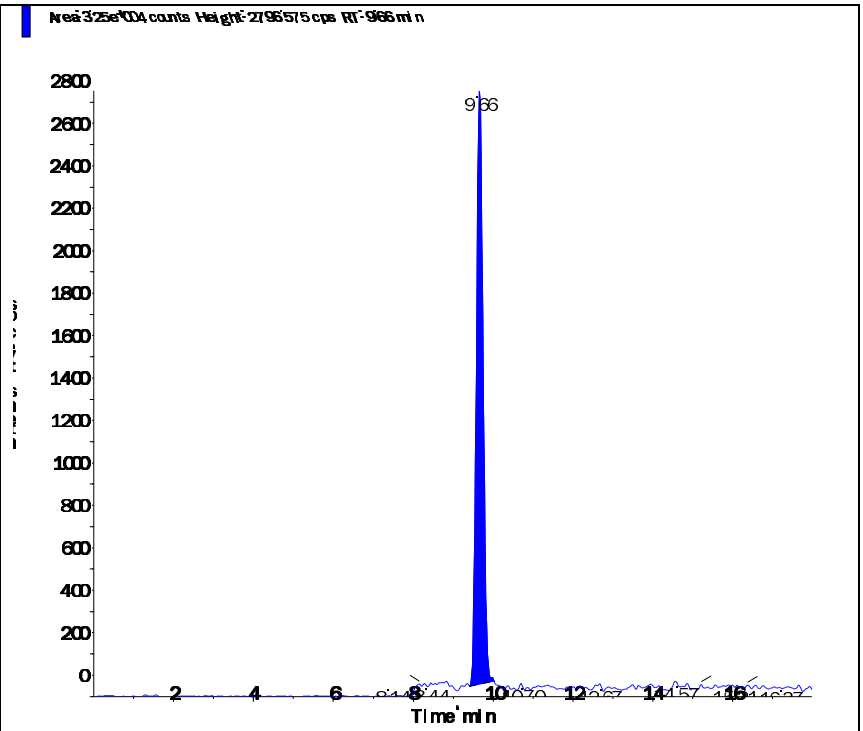

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.65 (9.84) min
Calculated conc:	0.214 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

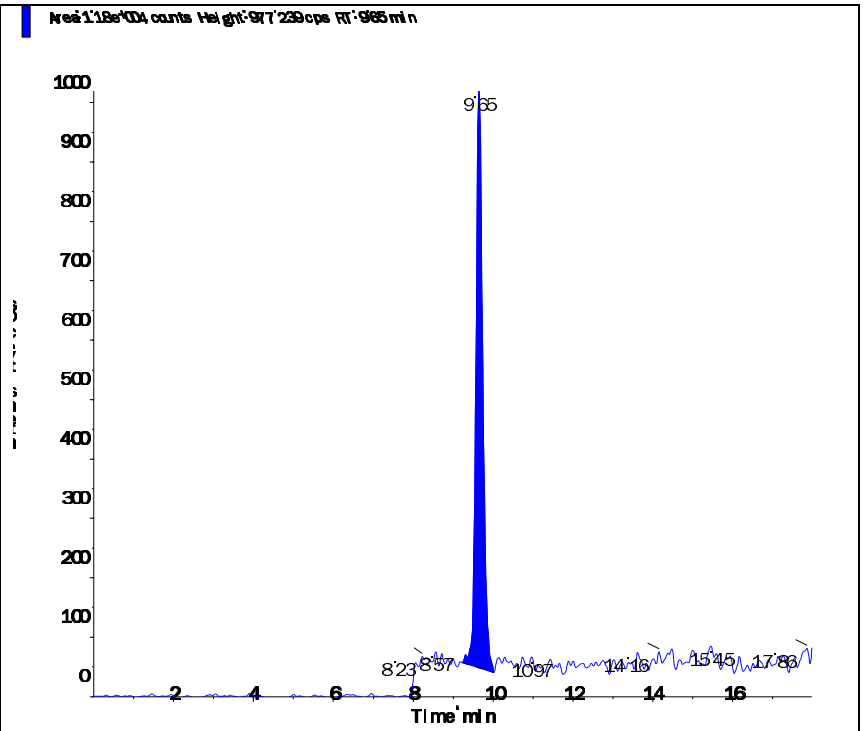

2.3 Metals Data

2.3.1 Metals I C P Data

2.3.1.1 Summary Data

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW21-062216	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/24/2016 10:17
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/24/2016 14:52
Collect Date:	06/22/2016 09:45	**Dilution:**	1	**File ID:**	T3.062416.145235
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.0620	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	1.03		0.200	0.100	0.0500
Potassium, Total	7440-09-7	2.61		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW21-062216	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/25/2016 12:36
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/25/2016 15:44
Collect Date:	06/22/2016 09:45	**Dilution:**	20	**File ID:**	T3.062516.154432
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	213		10.0	5.00	2.50
Magnesium, Total	7439-95-4	163		20.0	10.0	5.00
Sodium, Total	7440-23-5	580		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW02F-062216	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/24/2016 10:17
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/24/2016 14:56
Collect Date:	06/22/2016 13:40	**Dilution:**	1	**File ID:**	T3.062416.145634
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	1.12		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	7.09		0.500	0.250	0.125
Iron, Total	7439-89-6	1.61		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	1.34		1.00	0.500	0.250
Potassium, Total	7440-09-7	2.24		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	14.1		1.00	0.500	0.250

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.1.2 QC Summary Data

Example 6010 Calculations
Thermo Scientific iCAP

1.0 Initial Calibration (ICAL) Parameters
For a multi-point calibration, the system performs linear regression from data consisting of a blank and four standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG573994
Analyst: ERP
Spike Analyst: ERP
Run Date: 06/24/2016 07:18
Method: 3015
Balance: BAL019
Instrument: MW-1
Instrument Start: 06/24/2016 07:38

SOP: ME407 Revison 19
Spike Solution: STD76576
Spike Witness: VC
HNO3 Lot #: COA18905
HCL Lot #: COA18769
40 & 50 ML. DIGESTION TU COA18987
ICP Filters- fisher-Lot# RGT35619

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG573994-02	BLANK	1	40 mL	50 mL	205.799 g	205.793 g		
2	WG573994-03	LCS	1	40 mL	50 mL	211.523 g	211.513 g	5 mL	
3	L16060961-03	SAMP	1	40 mL	50 mL	205.052 g	205.037 g		06/24/16
4	L16061129-01	SAMP	1	40 mL	50 mL	206.124 g	206.112 g		07/05/16
5	L16061129-02	SAMP	1	40 mL	50 mL	206.489 g	206.476 g		07/05/16
6	L16061129-03	SAMP	1	40 mL	50 mL	205.825 g	205.808 g		07/05/16
7	L16061129-04	SAMP	1	40 mL	50 mL	205.354 g	205.348 g		07/05/16
8	L16061129-05	SAMP	1	40 mL	50 mL	205.317 g	205.299 g		07/05/16
9	L16061227-01	SAMP	1	40 mL	50 mL	204.465 g	204.443 g		07/01/16
10	L16061227-03	SAMP	1	40 mL	50 mL	204.813 g	204.793 g		07/01/16
11	L16061227-05	SAMP	1	40 mL	50 mL	206.069 g	206.05 g		07/01/16
12	L16061227-06	SAMP	1	40 mL	50 mL	202.826 g	202.812 g		07/01/16
13	L16061227-07	SAMP	1	40 mL	50 mL	205.408 g	205.392 g		07/01/16
14	L16061272-01	SAMP	1	40 mL	50 mL	206.813 g	206.794 g		06/30/16
15	L16061272-02	SAMP	1	40 mL	50 mL	208.22 g	208.202 g		06/30/16
16	L16061279-01	SAMP	1	40 mL	50 mL	206.107 g	206.09 g		06/28/16
17	WG573994-01	REF	1	40 mL	50 mL	204.432 g	204.415 g		
18	L16061279-02	RS01	1	40 mL	50 mL	204.432 g	204.415 g		06/28/16
19	WG573994-04	MS	1	40 mL	50 mL	213.413 g	213.398 g	5 mL	
20	L16061279-03	MS01	1	40 mL	50 mL	213.413 g	213.398 g	5 mL	06/28/16
21	WG573994-05	MSD	1	40 mL	50 mL	211.644 g	211.636 g	5 mL	
22	L16061279-04	SD01	1	40 mL	50 mL	211.644 g	211.636 g	5 mL	06/28/16
23	L16061279-05	SAMP	1	40 mL	50 mL	206.357 g	206.345 g		06/28/16
24	L16061289-01	SAMP	1	40 mL	50 mL	208.182 g	208.164 g		07/04/16
25	L16061289-04	SAMP	1	40 mL	50 mL	204.262 g	204.255 g		07/04/16
26	L16061290-03	SAMP	1	40 mL	50 mL	208.194 g	208.183 g		07/04/16
27	L16061290-05	SAMP	1	40 mL	50 mL	205.844 g	205.821 g		07/04/16

L16061279-03	filtered digestate
L16061279-04	filtered digestate
L16061279-01	filtered digestate
L16061279-02	filtered digestate
WG573994-01	filtered digestate
WG573994-04	filtered digestate
WG573994-05	filtered digestate
L16061279-05	filtered digestate

MW_DIG - Modified 09/30/2009
PDF ID: 4821836
Report generated: 06/24/2016 08:17

Microbac Laboratories Inc.
Microwave Digestion Log

Analyst: Erin Potter

SOP:
Spike Solution:
Reviewer: Jackie Collins
Spike Witness:

Method:
Balance:
Instrument:
Instrument Start:

MW_DIG - Modified 09/30/2009
PDF ID: 4821836
Report generated: 06/24/2016 08:17

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062416T3.1R.TXT

Analyst1: JYH Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 574050,574055,574076,573560,573149,573561

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.062416.100206	WG574123-01	Calibration Point		1		06/24/16 10:02
2	T3.062416.100606	WG574123-02	Calibration Point		1		06/24/16 10:06
3	T3.062416.101006	WG574123-03	Calibration Point		1		06/24/16 10:10
4	T3.062416.101405	WG574123-04	Calibration Point		1		06/24/16 10:14
5	T3.062416.101742	WG574123-05	Calibration Point		1		06/24/16 10:17
6	T3.062416.102118	WG574123-06	Initial Calibration Verification		1		06/24/16 10:21
7	T3.062416.102444	WG574123-07	Initial Calib Blank		1		06/24/16 10:24
8	T3.062416.102843	WG574123-08	Low Level Initial Calibration V		1		06/24/16 10:28
9	T3.062416.103239	WG574123-09	Low Level Initial Calibration V		1		06/24/16 10:32
10	T3.062416.103634	WG574123-10	Interference Check		1		06/24/16 10:36
11	T3.062416.104027	WG574123-11	Interference Check		1		06/24/16 10:40
12	T3.062416.104409	WG574123-12	CCV		1		06/24/16 10:44
13	T3.062416.104746	WG574123-13	CCB		1		06/24/16 10:47
14	T3.062416.105146	WG573823-01	Method/Prep Blank	1/50	1		06/24/16 10:51
15	T3.062416.105915	WG573823-02	Laboratory Control S	1/50	1		06/24/16 10:59
16	T3.062416.110255	WG573823-03	Laboratory Control S	1/50	1		06/24/16 11:02
17	T3.062416.110635	L16061143-01	500662-WP-002	1/50	1		06/24/16 11:06
18	T3.062416.111030	L16061143-02	500662-WP-003	1/50	1		06/24/16 11:10
19	T3.062416.111424	L16061143-03	500662-WP-004	1/50	1		06/24/16 11:14
20	T3.062416.111816	WG574050-01	Post Digestion Spike		1	L16061143-03	06/24/16 11:18
21	T3.062416.112154	WG574050-02	Serial Dilution		5	L16061143-03	06/24/16 11:21
22	T3.062416.112553	L16060724-01	ABW_06142016	40/50	1000		06/24/16 11:25
23	T3.062416.112949	L16060787-10	U517TW006C	40/50	10		06/24/16 11:29
24	T3.062416.113347	WG574123-14	CCV		1		06/24/16 11:33
25	T3.062416.113725	WG574123-15	CCB		1		06/24/16 11:37
26	T3.062416.114112	L16060787-18	U517TW008A	40/50	10		06/24/16 11:41
27	T3.062416.114510	WG573707-03	Method/Prep Blank	40/50	1		06/24/16 11:45
28	T3.062416.114908	WG573707-04	Laboratory Control S	40/50	1		06/24/16 11:49
29	T3.062416.115249	WG573594-01	Fluid Blank 1		1		06/24/16 11:52
30	T3.062416.115648	WG573594-02	Fluid Blank 2		1		06/24/16 11:56
31	T3.062416.120048	WG573707-01	Reference Sample		1	L16061151-01	06/24/16 12:00
32	T3.062416.120443	WG573707-05	Matrix Spike	40/50	1	L16061151-01	06/24/16 12:04
33	T3.062416.120811	WG573707-06	Matrix Spike Duplica	40/50	1	L16061151-01	06/24/16 12:08
34	T3.062416.121149	L16061140-01	60500-SSP0042-SSP0042	5/50	1		06/24/16 12:11

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Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062416T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574050,574055,574076,573560,573149,573561

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.062416.121541	WG574055-02	Serial Dilution		5	L16061140-01	06/24/16 12:15
36	T3.062416.121926	WG574123-16	CCV		1		06/24/16 12:19
37	T3.062416.122304	WG574123-17	CCB		1		06/24/16 12:23
38	T3.062416.122703	WG574055-01	Post Digestion Spike		1	L16061140-01	06/24/16 12:27
39	T3.062416.123043	L16061140-03	60500-SSP0037-SPLP023	5/50	1		06/24/16 12:30
40	T3.062416.123437	WG572980-02	Method/Prep Blank	40/50	1		06/24/16 12:34
41	T3.062416.123836	WG572980-03	Laboratory Control S	40/50	1		06/24/16 12:38
42	T3.062416.124216	L16060732-01	LH18/24-SP650-6371-GRAB	40/50	1		06/24/16 12:42
43	T3.062416.124614	WG572980-01	Reference Sample		1	L16060796-01	06/24/16 12:46
44	T3.062416.125002	WG572980-04	Matrix Spike	5/50	1	L16060796-01	06/24/16 12:50
45	T3.062416.125340	WG572980-05	Matrix Spike Duplica	5/50	1	L16060796-01	06/24/16 12:53
46	T3.062416.125716	L16060732-02	LH18/24-SP650-6371-COMP	40/50	1		06/24/16 12:57
47	T3.062416.130110	L16060794-01	A08-MW06-Y1S2	40/50	10		06/24/16 13:01
48	T3.062416.130507	WG574123-18	CCV		1		06/24/16 13:05
49	T3.062416.130845	WG574123-19	CCB		1		06/24/16 13:08
50	T3.062416.131244	L16060794-04	A09-MW07-Y1S2	40/50	10		06/24/16 13:12
51	T3.062416.131643	L16060796-04	500662-DS-002	5/50	1		06/24/16 13:16
52	T3.062416.132032	WG573149-01	Post Digestion Spike		1	L16060796-04	06/24/16 13:20
53	T3.062416.132408	WG573149-02	Serial Dilution		5	L16060796-04	06/24/16 13:24
54	T3.062416.132801	WG573149-02	Serial Dilution		25	L16060796-04	06/24/16 13:28
55	T3.062416.133159	WG573994-02	Method/Prep Blank	40/50	1		06/24/16 13:31
56	T3.062416.133557	WG573994-03	Laboratory Control S	40/50	1		06/24/16 13:35
57	T3.062416.133937	WG573994-01	Reference Sample		1	L16061279-02	06/24/16 13:39
58	T3.062416.134328	WG573994-04	Matrix Spike	40/50	1	L16061279-02	06/24/16 13:43
59	T3.062416.134705	WG573994-05	Matrix Spike Duplica	40/50	1	L16061279-02	06/24/16 13:47
60	T3.062416.135042	WG574123-20	CCV		1		06/24/16 13:50
61	T3.062416.135419	WG574123-21	CCB		1		06/24/16 13:54
62	T3.062416.135818	L16060961-03	GH58HS_MELZER_03-03-(	40/50	1		06/24/16 13:58
63	T3.062416.140215	WG574076-01	Post Digestion Spike		1	L16060961-03	06/24/16 14:02
64	T3.062416.140555	WG574076-02	Serial Dilution		5	L16060961-03	06/24/16 14:05
65	T3.062416.140952	WG574076-02	Serial Dilution		25	L16060961-03	06/24/16 14:09
66	T3.062416.141350	L16061227-01	18WW22-062116	40/50	1		06/24/16 14:13
67	T3.062416.141746	L16061227-03	C04F-062116	40/50	1		06/24/16 14:17
68	T3.062416.142142	L16061227-05	C04FFD-062116	40/50	1		06/24/16 14:21

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Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062416T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574050,574055,574076,573560,573149,573561

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.062416.142526	L16061227-06	18CPTMW18-062116	40/50	1		06/24/16 14:25
70	T3.062416.142928	L16061227-01	18WW22-062116		10		06/24/16 14:29
71	T3.062416.143326	WG574123-22	CCV		1		06/24/16 14:33
72	T3.062416.143703	WG574123-23	CCB		1		06/24/16 14:37
73	T3.062416.144104	WG574123-24	Low Level Continuing Calibra		1		06/24/16 14:41
74	T3.062416.144501	WG574123-25	Low Level Continuing Calibra		1		06/24/16 14:45
75	T3.062416.144853	L16061227-07	18WW18-062116	40/50	1		06/24/16 14:48
76	T3.062416.145235	L16061289-01	MW21-062216	40/50	1		06/24/16 14:52
77	T3.062416.145634	L16061289-04	18WW02F-062216	40/50	1		06/24/16 14:56
78	T3.062416.150030	L16061290-03	MW16F-062116	40/50	1		06/24/16 15:00
79	T3.062416.150424	L16061290-05	109-062216	40/50	1		06/24/16 15:04
80	T3.062416.150820	L16061129-01	MW-22-002	40/50	1		06/24/16 15:08
81	T3.062416.151215	L16061129-02	MW-22-010	40/50	1		06/24/16 15:12
82	T3.062416.151609	L16061129-03	MW-22-007	40/50	1		06/24/16 15:16
83	T3.062416.152008	WG574123-26	CCV		1		06/24/16 15:20
84	T3.062416.152346	WG574123-27	CCB		1		06/24/16 15:23
85	T3.062416.152745	L16061129-04	FD061716	40/50	1		06/24/16 15:27
86	T3.062416.153140	L16061129-05	EB-WATER A	40/50	1		06/24/16 15:31
87	T3.062416.153539	L16061272-01	SS007MW0B18-007	40/50	1		06/24/16 15:35
88	T3.062416.153937	L16061272-02	SS007MWN752-007	40/50	1		06/24/16 15:39
89	T3.062416.154332	L16061279-01	XU936TW007A	40/50	1		06/24/16 15:43
90	T3.062416.154725	L16061279-05	XU936TW019A	40/50	1		06/24/16 15:47
91	T3.062416.155118	L16060729-01	A09-MW10-Y1S2	40/50	1		06/24/16 15:51
92	T3.062416.155514	L16060729-02	A09-MW11-Y1S2	40/50	1		06/24/16 15:55
93	T3.062416.155910	L16060729-03	A09-MW12-Y1S2	40/50	1		06/24/16 15:59
94	T3.062416.160303	WG574123-28	CCV		1		06/24/16 16:03
95	T3.062416.160640	WG574123-29	CCB		1		06/24/16 16:06
96	T3.062416.161038	L16061148-01	DP005SW0513-007		1		06/24/16 16:10
97	T3.062416.161432	L16061148-02	DP005SW0514-007		1		06/24/16 16:14
98	T3.062416.161828	L16061150-01	SS007SW0709-007		1		06/24/16 16:18
99	T3.062416.162223	L16061150-02	SS007SW0710-007		1		06/24/16 16:22
100	T3.062416.162617	L16061151-02	LF003SW0311-007 DUP		1		06/24/16 16:26
101	T3.062416.163012	L16061151-05	LF003SW0312-007		1		06/24/16 16:30
102	T3.062416.163406	WG573707-02	Reference Sample		1	L16061154-01	06/24/16 16:34

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Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062416T3.1R.TXT

Analyst1: JYH Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 574050,574055,574076,573560,573149,573561

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T3.062416.163809	WG573707-07	Matrix Spike		1	L16061154-01	06/24/16 16:38
104	T3.062416.164156	WG573707-08	Matrix Spike Duplica		1	L16061154-01	06/24/16 16:41
105	T3.062416.164542	L16061154-04	FQC-RB06201601-CB		1		06/24/16 16:45
106	T3.062416.164941	WG574123-30	CCV		1		06/24/16 16:49
107	T3.062416.165319	WG574123-31	CCB		1		06/24/16 16:53
108	T3.062416.165718	L16061155-01	ST008MW0812-007		1		06/24/16 16:57
109	T3.062416.170338	WG574123-32	CCV		1		06/24/16 17:03
110	T3.062416.170715	WG574123-33	CCB		1		06/24/16 17:07
111	T3.062416.171114	WG574123-34	Low Level Continuing Calibra		1		06/24/16 17:11
112	T3.062416.171510	WG574123-35	Low Level Continuing Calibra		1		06/24/16 17:15

Page: 4 Approved: June 24, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062516T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,574055,574076,574216,574215,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.062516.122104	WG574249-01	Calibration Point		1		06/25/16 12:21
2	T3.062516.122502	WG574249-02	Calibration Point		1		06/25/16 12:25
3	T3.062516.122900	WG574249-03	Calibration Point		1		06/25/16 12:29
4	T3.062516.123256	WG574249-04	Calibration Point		1		06/25/16 12:32
5	T3.062516.123634	WG574249-05	Calibration Point		1		06/25/16 12:36
6	T3.062516.124009	WG574249-06	Initial Calibration Verification		1		06/25/16 12:40
7	T3.062516.124348	WG574249-07	Initial Calib Blank		1		06/25/16 12:43
8	T3.062516.124745	WG574249-08	Low Level Initial Calibration V		1		06/25/16 12:47
9	T3.062516.125139	WG574249-09	Low Level Initial Calibration V		1		06/25/16 12:51
10	T3.062516.125529	WG574249-10	Interference Check		1		06/25/16 12:55
11	T3.062516.125921	WG574249-11	Interference Check		1		06/25/16 12:59
12	T3.062516.130304	WG574249-12	CCV		1		06/25/16 13:03
13	T3.062516.130641	WG574249-13	CCB		1		06/25/16 13:06
14	T3.062516.131816	WG573190-03	Method/Prep Blank	40/50	1		06/25/16 13:18
15	T3.062516.132214	WG573190-04	Laboratory Control S	40/50	1		06/25/16 13:22
16	T3.062516.132554	WG573190-02	Reference Sample		1	L16060808-01	06/25/16 13:25
17	T3.062516.132950	WG573190-07	Matrix Spike	40/50	1	L16060808-01	06/25/16 13:29
18	T3.062516.133327	WG573190-08	Matrix Spike Duplica	40/50	1	L16060808-01	06/25/16 13:33
19	T3.062516.133704	L16060822-03	18CPTMW04SW-061416	40/50	1		06/25/16 13:37
20	T3.062516.134058	L16060822-02	18WW03F-061416	40/50	1		06/25/16 13:40
21	T3.062516.134452	WG573973-03	Post Digestion Spike		1	L16060822-02	06/25/16 13:44
22	T3.062516.134830	WG573973-04	Serial Dilution		5	L16060822-02	06/25/16 13:48
23	T3.062516.135227	WG573973-04	Serial Dilution		25	L16060822-02	06/25/16 13:52
24	T3.062516.135622	WG574249-14	CCV		1		06/25/16 13:56
25	T3.062516.140001	WG574249-15	CCB		1		06/25/16 14:00
26	T3.062516.140359	L16060823-02	126F-061416	40/50	1		06/25/16 14:03
27	T3.062516.140759	L16060823-03	C08-061416	40/50	1		06/25/16 14:07
28	T3.062516.141200	L16060823-04	C03-061416	40/50	1		06/25/16 14:12
29	T3.062516.141551	L16061148-01	DP005SW0513-007	40/50	1		06/25/16 14:15
30	T3.062516.141945	L16061148-02	DP005SW0514-007	40/50	1		06/25/16 14:19
31	T3.062516.142340	L16061150-01	SS007SW0709-007	40/50	1		06/25/16 14:23
32	T3.062516.142732	L16061150-02	SS007SW0710-007	40/50	1		06/25/16 14:27
33	T3.062516.143125	L16061151-02	LF003SW0311-007 DUP	40/50	1		06/25/16 14:31
34	T3.062516.143519	L16061151-05	LF003SW0312-007	40/50	1		06/25/16 14:35

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Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062516T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,574055,574076,574216,574215,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.062516.143913	WG573707-02	Reference Sample		1	L16061154-01	06/25/16 14:39
36	T3.062516.144313	WG574249-16	CCV		1		06/25/16 14:43
37	T3.062516.144639	WG574249-17	CCB		1		06/25/16 14:46
38	T3.062516.145037	WG573707-07	Matrix Spike	40/50	1	L16061154-01	06/25/16 14:50
39	T3.062516.145424	WG573707-08	Matrix Spike Duplica	40/50	1	L16061154-01	06/25/16 14:54
40	T3.062516.145809	L16061154-04	FQC-RB06201601-CB	40/50	1		06/25/16 14:58
41	T3.062516.150207	L16061155-01	ST008MW0812-007	40/50	1		06/25/16 15:02
42	T3.062516.150559	L16061155-02	ST008MW0809-007	40/50	1		06/25/16 15:05
43	T3.062516.150954	L16061155-03	ST008MW0816-007	40/50	1		06/25/16 15:09
44	T3.062516.151348	L16061178-01	2016PRE-7217NEWENGLAN	40/50	1		06/25/16 15:13
45	T3.062516.151743	L16061227-01	18WW22-062116	40/50	20		06/25/16 15:17
46	T3.062516.152125	L16061227-06	18CPTMW18-062116	40/50	20		06/25/16 15:21
47	T3.062516.152518	WG573994-01	Reference Sample		20	L16061279-02	06/25/16 15:25
48	T3.062516.152911	WG574249-18	CCV		1		06/25/16 15:29
49	T3.062516.153248	WG574249-19	CCB		1		06/25/16 15:32
50	T3.062516.153646	WG573994-04	Matrix Spike	40/50	20	L16061279-02	06/25/16 15:36
51	T3.062516.154039	WG573994-05	Matrix Spike Duplica	40/50	20	L16061279-02	06/25/16 15:40
52	T3.062516.154432	L16061289-01	MW21-062216	40/50	20		06/25/16 15:44
53	T3.062516.154826	L16061129-01	MW-22-002		20		06/25/16 15:48
54	T3.062516.155222	L16061129-02	MW-22-010		20		06/25/16 15:52
55	T3.062516.155620	L16061129-03	MW-22-007		20		06/25/16 15:56
56	T3.062516.160018	L16061129-04	FD061716		20		06/25/16 16:00
57	T3.062516.160415	L16061272-01	SS007MW0B18-007		20		06/25/16 16:04
58	T3.062516.160812	L16061272-02	SS007MWN752-007		20		06/25/16 16:08
59	T3.062516.161208	L16061279-01	XU936TW007A	40/50	20		06/25/16 16:12
60	T3.062516.161603	WG574249-20	CCV		1		06/25/16 16:16
61	T3.062516.161940	WG574249-21	CCB		1		06/25/16 16:19
62	T3.062516.162338	L16061279-05	XU936TW019A	40/50	20		06/25/16 16:23
63	T3.062516.162733	L16061148-01	DP005SW0513-007		20		06/25/16 16:27
64	T3.062516.163130	L16061148-02	DP005SW0514-007		20		06/25/16 16:31
65	T3.062516.163527	L16061150-01	SS007SW0709-007		20		06/25/16 16:35
66	T3.062516.163912	L16061151-02	LF003SW0311-007 DUP		20		06/25/16 16:39
67	T3.062516.164310	L16061151-05	LF003SW0312-007		20		06/25/16 16:43
68	T3.062516.164706	WG573707-02	Reference Sample		20	L16061154-01	06/25/16 16:47

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Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062516T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,574055,574076,574216,574215,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.062516.165101	WG573707-07	Matrix Spike	40/50	20	L16061154-01	06/25/16 16:51
70	T3.062516.165454	L16061279-08	XU936TW011MSD	40/50	20	WG573707-08	06/25/16 16:54
71	T3.062516.165848	WG574249-22	CCV		1		06/25/16 16:58
72	T3.062516.170225	WG574249-23	CCB		1		06/25/16 17:02
73	T3.062516.170624	L16061155-01	ST008MW0812-007		20		06/25/16 17:06
74	T3.062516.171010	L16061155-02	ST008MW0809-007		20		06/25/16 17:10
75	T3.062516.171407	L16061155-03	ST008MW0816-007		20		06/25/16 17:14
76	T3.062516.171804	WG574249-24	CCV		1		06/25/16 17:18
77	T3.062516.172142	WG574249-25	CCB		1		06/25/16 17:21
78	T3.062516.172540	WG574249-26	Low Level Continuing Calibra		1		06/25/16 17:25
79	T3.062516.172933	WG573530-03	Method/Prep Blank	40/50	1		06/25/16 17:29
80	T3.062516.173331	WG573530-04	Laboratory Control S	40/50	1		06/25/16 17:33
81	T3.062516.173711	WG573530-05	Filter Blank		1		06/25/16 17:37
82	T3.062516.174110	L16060986-02	MW-07-04	40/50	1		06/25/16 17:41
83	T3.062516.174505	L16060986-04	MW-01-10	40/50	1		06/25/16 17:45
84	T3.062516.174856	L16060986-06	MW-03-12	40/50	1		06/25/16 17:48
85	T3.062516.175251	L16060986-08	MW-01-07	40/50	1		06/25/16 17:52
86	T3.062516.175646	WG574216-01	Post Digestion Spike		1	L16060986-08	06/25/16 17:56
87	T3.062516.180025	WG574216-02	Serial Dilution		5	L16060986-08	06/25/16 18:00
88	T3.062516.180418	WG574216-02	Serial Dilution		25	L16060986-08	06/25/16 18:04
89	T3.062516.180815	WG574249-27	CCV		1		06/25/16 18:08
90	T3.062516.181152	WG574249-28	CCB		1		06/25/16 18:11
91	T3.062516.181548	L16060986-10	MW-03-11		1		06/25/16 18:15
92	T3.062516.181942	L16060986-12	MW-01-01		1		06/25/16 18:19
93	T3.062516.182332	L16060986-14	MW-03-09		1		06/25/16 18:23
94	T3.062516.182724	L16060986-16	MW-01-08		1		06/25/16 18:27
95	T3.062516.183114	L16060986-18	MW-03-06		1		06/25/16 18:31
96	T3.062516.183511	L16060986-20	MW-03-05		1		06/25/16 18:35
97	T3.062516.183905	WG573530-01	Reference Sample		1	L16060986-22	06/25/16 18:39
98	T3.062516.184258	WG573530-02	Reference Sample		1	L16060986-24	06/25/16 18:42
99	T3.062516.184649	L16060986-26	MW-01-02		1		06/25/16 18:46
100	T3.062516.185044	L16060986-28	DUP 1		1		06/25/16 18:50
101	T3.062516.185437	WG574249-29	CCV		1		06/25/16 18:54
102	T3.062516.185815	WG574249-30	CCB		1		06/25/16 18:58

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Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062516T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,574055,574076,574216,574215,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T3.062516.190211	L16060986-30	DUP 2		1		06/25/16 19:02
104	T3.062516.190604	WG573530-06	Matrix Spike		1	L16060986-22	06/25/16 19:06
105	T3.062516.190942	WG573530-07	Matrix Spike Duplica		1	L16060986-22	06/25/16 19:09
106	T3.062516.191321	WG573530-08	Matrix Spike		1	L16060986-24	06/25/16 19:13
107	T3.062516.191658	WG573530-09	Matrix Spike Duplica		1	L16060986-24	06/25/16 19:16
108	T3.062516.192035	L16060986-40	EQUIP BLANK 1		1		06/25/16 19:20
109	T3.062516.192431	L16060986-42	EQUIP BLANK 2		1		06/25/16 19:24
110	T3.062516.192827	WG574249-31	CCV		1		06/25/16 19:28
111	T3.062516.193205	WG574249-32	CCB		1		06/25/16 19:32
112	T3.062516.193603	WG573544-03	Method/Prep Blank	40/50	1		06/25/16 19:36
113	T3.062516.193959	WG573544-04	Laboratory Control S	40/50	1		06/25/16 19:39
114	T3.062516.194338	L16060907-23	MW36-061516	40/50	1		06/25/16 19:43
115	T3.062516.194731	L16060986-01	MW-07-04	40/50	1		06/25/16 19:47
116	T3.062516.195124	L16060986-03	MW-01-10	40/50	1		06/25/16 19:51
117	T3.062516.195515	L16060986-05	MW-03-12	40/50	1		06/25/16 19:55
118	T3.062516.195905	L16060986-07	MW-01-07	40/50	1		06/25/16 19:59
119	T3.062516.200300	WG574215-01	Post Digestion Spike		1	L16060986-07	06/25/16 20:03
120	T3.062516.200637	WG574215-02	Serial Dilution		5	L16060986-07	06/25/16 20:06
121	T3.062516.201030	WG574215-02	Serial Dilution		25	L16060986-07	06/25/16 20:10
122	T3.062516.201426	WG574249-33	CCV		1		06/25/16 20:14
123	T3.062516.201803	WG574249-34	CCB		1		06/25/16 20:18
124	T3.062516.202200	L16060986-09	MW-03-11	40/50	1		06/25/16 20:22
125	T3.062516.202553	L16060986-11	MW-01-01	40/50	1		06/25/16 20:25
126	T3.062516.202942	L16060986-13	MW-03-09	40/50	1		06/25/16 20:29
127	T3.062516.203332	L16060986-15	MW-01-08	40/50	1		06/25/16 20:33
128	T3.062516.203723	L16060986-17	MW-03-06	40/50	1		06/25/16 20:37
129	T3.062516.204116	L16060986-19	MW-03-05	40/50	1		06/25/16 20:41
130	T3.062516.204510	WG573544-01	Reference Sample		1	L16060986-21	06/25/16 20:45
131	T3.062516.204903	WG573544-02	Reference Sample		1	L16060986-23	06/25/16 20:49
132	T3.062516.205255	L16060986-25	MW-01-02	40/50	1		06/25/16 20:52
133	T3.062516.205646	L16060986-27	DUP 1	40/50	1		06/25/16 20:56
134	T3.062516.210036	WG574249-35	CCV		1		06/25/16 21:00
135	T3.062516.210414	WG574249-36	CCB		1		06/25/16 21:04
136	T3.062516.210812	L16060986-29	DUP 2	40/50	1		06/25/16 21:08

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062516T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,574055,574076,574216,574215,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	T3.062516.211202	WG573544-05	Matrix Spike	40/50	1	L16060986-21	06/25/16 21:12
138	T3.062516.211541	WG573544-06	Matrix Spike Duplica	40/50	1	L16060986-21	06/25/16 21:15
139	T3.062516.211919	WG573544-07	Matrix Spike	40/50	1	L16060986-23	06/25/16 21:19
140	T3.062516.212256	WG573544-08	Matrix Spike Duplica	40/50	1	L16060986-23	06/25/16 21:22
141	T3.062516.212633	L16060986-39	EQUIP BLANK 1	40/50	1		06/25/16 21:26
142	T3.062516.213031	L16060986-41	EQUIP BLANK 2	40/50	1		06/25/16 21:30
143	T3.062516.213430	WG574249-37	CCV		1		06/25/16 21:34
144	T3.062516.213807	WG574249-38	CCB		1		06/25/16 21:38
145	T3.062516.214203	WG573102-02	Method/Prep Blank	40/50	1		06/25/16 21:42
146	T3.062516.214559	WG573102-03	Laboratory Control S	40/50	1		06/25/16 21:45
147	T3.062516.214937	WG573102-04	Filter Blank		1		06/25/16 21:49
148	T3.062516.215335	WG573102-01	Reference Sample		1	L16060787-09	06/25/16 21:53
149	T3.062516.215728	WG573102-05	Matrix Spike	40/50	1	L16060787-09	06/25/16 21:57
150	T3.062516.220106	WG573102-06	Matrix Spike Duplica	40/50	1	L16060787-09	06/25/16 22:01
151	T3.062516.220444	L16060787-01	EB04	40/50	1		06/25/16 22:04
152	T3.062516.220842	WG573561-03	Post Digestion Spike		1	L16060787-01	06/25/16 22:08
153	T3.062516.221220	WG573561-04	Serial Dilution		5	L16060787-01	06/25/16 22:12
154	T3.062516.221616	WG573561-04	Serial Dilution		25	L16060787-01	06/25/16 22:16
155	T3.062516.222012	WG574249-39	CCV		1		06/25/16 22:20
156	T3.062516.222349	WG574249-40	CCB		1		06/25/16 22:23
157	T3.062516.222746	L16060787-10	U517TW006C	40/50	1		06/25/16 22:27
158	T3.062516.223140	L16060787-18	U517TW008A	40/50	1		06/25/16 22:31
159	T3.062516.223534	L16060787-19	EB05	40/50	1		06/25/16 22:35
160	T3.062516.223931	WG573102-01	Reference Sample		20	L16060787-09	06/25/16 22:39
161	T3.062516.224326	WG573102-05	Matrix Spike	40/50	20	L16060787-09	06/25/16 22:43
162	T3.062516.224719	WG573102-06	Matrix Spike Duplica	40/50	20	L16060787-09	06/25/16 22:47
163	T3.062516.225113	WG574249-41	CCV		1		06/25/16 22:51
164	T3.062516.225451	WG574249-42	CCB		1		06/25/16 22:54
165	T3.062516.225848	WG573484-02	Method/Prep Blank	40/50	1		06/25/16 22:58
166	T3.062516.230246	WG573484-03	Laboratory Control S	40/50	1		06/25/16 23:02
167	T3.062516.230624	WG573484-01	Reference Sample		1	L16060764-04	06/25/16 23:06
168	T3.062516.231017	WG573484-04	Matrix Spike	40/50	1	L16060764-04	06/25/16 23:10
169	T3.062516.231356	WG573484-05	Matrix Spike Duplica	40/50	1	L16060764-04	06/25/16 23:13
170	T3.062516.231733	L16060991-02	MW31-061616	40/50	10		06/25/16 23:17

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Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062516T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,574055,574076,574216,574215,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
171	T3.062516.232126	WG573952-03	Post Digestion Spike		10	L16060991-02	06/25/16 23:21
172	T3.062516.232503	WG573952-04	Serial Dilution		50	L16060991-02	06/25/16 23:25
173	T3.062516.232900	L16060995-01	UNTREATED	40/50	1000		06/25/16 23:29
174	T3.062516.233253	L16060995-02	AFTER	40/50	1000		06/25/16 23:32
175	T3.062516.233647	WG574249-43	CCV		1		06/25/16 23:36
176	T3.062516.234025	WG574249-44	CCB		1		06/25/16 23:40
177	T3.062516.234420	WG574249-45	Interference Check		1		06/25/16 23:44
178	T3.062516.234809	WG574249-46	Interference Check		1		06/25/16 23:48
179	T3.062516.235152	WG574249-47	CCV		1		06/25/16 23:51
180	T3.062516.235530	WG574249-48	CCB		1		06/25/16 23:55
181	T3.062516.235927	WG574249-49	Low Level Continuing Calibra		1		06/25/16 23:59

Comments

Seq.	Rerun	Dil.	Reason	Analytes
69				
Seq. 69-70: wrong WG numbers JYH				

Page: 6 Approved: June 27, 2016

Kim H. Rhoden

Microbac Laboratories Inc.

Data Checklist

Date: 24-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 574123
Runlog ID: 75912
Analytical Workgroups: 574050,574055,574076,573560,573149,573561

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1129
Level 4	1140,1143,1151,1227,1272,1279
	1289,1290,729,732,794,787,724
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer: Secondary Reviewer:
26-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-26-2016 10:34:20

Microbac Laboratories Inc.

Data Checklist

Date: 25-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 574249
Runlog ID: 75923
Analytical Workgroups: 573973,574055,574076,574216,574215,573952

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1178
Level 4	822,823,1148,1150,1151,1154,1155
	1227,1279,1289,986,787,991,995
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer: Secondary Reviewer: 27-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-27-2016 14:55:21

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010C

AAB#: WG574076

Login Number: L16061289

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW21-062216	01	06/22/16					06/24/2016	1.9	180		06/24/16	2.2	180	
MW21-062216	01	06/22/16					06/24/2016	1.9	180		06/25/16	3.2	180	
18WW02F-062216	04	06/22/16					06/24/2016	1.7	180		06/24/16	2.1	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4824715
Report generated 06/27/2016 11:06

METHOD BLANK SUMMARY

Login Number: L16061289
Blank File ID: T3.062416.133159
Prep Date: 06/24/16 07:18
Analyzed Date: 06/24/16 13:31
Analyst: JYH

Work Group: WG574076
Blank Sample ID: WG573994-02
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573994-03	T3.062416.133557	06/24/16 13:35	01
MW21-062216	L16061289-01	T3.062416.145235	06/24/16 14:52	01
18WW02F-062216	L16061289-04	T3.062416.145634	06/24/16 14:56	01
MW21-062216	L16061289-01	T3.062516.154432	06/25/16 15:44	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4824716
Report generated 06/27/2016 11:06

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061289 Prep Date: 06/24/16 07:18 Sample ID: WG573994-02
Instrument ID: ICP-THERMO3 Run Date: 06/24/16 13:31 Prep Method: 3015
File ID: T3.062416.133159 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG574076 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-24-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Aluminum, Total	0.0500	0.200	0.0719	1	J
Beryllium, Total	0.00500	0.0200	0.00500	1	U
Calcium, Total	0.125	0.500	0.182	1	J
Iron, Total	0.0500	0.200	0.0950	1	J
Magnesium, Total	0.250	1.00	0.250	1	U
Potassium, Total	0.500	2.00	0.500	1	U
Selenium, Total	0.00500	0.0200	0.00500	1	U
Sodium, Total	0.250	1.00	0.250	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4824717
27-JUN-2016 11:06

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061289 Run Date: 06/24/2016 Sample ID: WG573994-03
Instrument ID: ICP-THERMO3 Run Time: 13:35 Prep Method: 3015
File ID: T3.062416.133557 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG574076 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76576 Cal ID: ICP-TH-24-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Aluminum, Total	6.25	6.37	102	80 - 120	
Beryllium, Total	0.0313	0.0306	97.8	80 - 120	
Calcium, Total	6.25	6.65	106	80 - 120	
Iron, Total	2.50	2.53	101	80 - 120	
Magnesium, Total	6.25	6.45	103	80 - 120	
Potassium, Total	31.3	32.7	105	80 - 120	
Selenium, Total	0.250	0.251	101	80 - 120	
Sodium, Total	31.3	32.8	105	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4824718
Report generated: 06/27/2016 11:06

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061289 Cal ID: ICP-THERMO3 - Worknum: WG574076
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG573994-01 File ID: T3.062416.133937 Dil: 1 Matrix: WATER
Sample ID: WG573994-04 MS File ID: T3.062416.134328 Dil: 1 Units: mg/L
Sample ID: WG573994-05 MSD File ID: T3.062416.134705 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Aluminum	19.7	6.25	25.8	97.8	6.25	27.1	119	4.89	80 - 120	20	
Beryllium	ND	0.0313	0.0301	96.4	0.0313	0.0309	98.8	2.42	80 - 120	20	
Calcium	247	6.25	253	94.4	6.25	255	122	0.674	80 - 120	20	*
Iron	28.6	2.50	26.6	-79.2	2.50	26.6	-81.1	0.183	80 - 120	20	*
Magnesium	101	6.25	106	80.8	6.25	106	92.2	0.673	80 - 120	20	
Potassium	7.81	31.3	38.1	96.9	31.3	39.6	102	3.81	80 - 120	20	
Selenium	ND	0.250	0.243	97.1	0.250	0.246	98.5	1.53	80 - 120	20	
Sodium	23.5	31.3	54.5	98.9	31.3	55.6	103	2.15	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4824719
Report generated 06/25/2016 12:39

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16061289 **Worknum:** WG574076
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG574076-02 **File ID:** T3.062416.140555 **Dil:** 5 **Units:** ug/L
Sample: L16060961-03 **File ID:** T3.062416.135818 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	91.4		87.2		4.65	
Beryllium	ND	U	0.300		3100.00	
Calcium	50100		49300		1.56	
Iron	36.6		77.9		113.00	E
Magnesium	15200		15200		0.54	
Potassium	1350		1740		28.90	E
Selenium	4.57		26.5		480.00	E
Sodium	9650		9940		3.08	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4824713
06/27/2016 11:06

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061289 **Worknum:** WG574076
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG574076-01 **File ID:** T3.062416.140215 **Dil:** 1 **Units:** ug/L
Sample ID: L16060961-03 **File ID:** T3.062416.135818 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	5160		91.4	F	5000	101.5	75 - 125	
BERYLLIUM	24.6		0	U	25	98.3	75 - 125	
CALCIUM	50300		50100		5000	104.5	75 - 125	
IRON	2080		0	U	2000	103.9	75 - 125	
MAGNESIUM	18800		15200		5000	102.3	75 - 125	
POTASSIUM	27400		1350	F	25000	104.7	75 - 125	
SELENIUM	208		4.57	F	200	102.1	75 - 125	
SODIUM	34900		9650		25000	105.0	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4824714
Report generated: 06/27/2016 11:06

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061289	Workgroup (AAB#):	WG574076
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG574123	Initial Calibration Date:	24-JUN-2016 10:17

	WG574123-01		WG574123-02		WG574123-03		WG574123-04		WG574123-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000920	.1	0.00153	.2	0.00215	10	0.0811	20	0.159	.999969	
BERYLLIUM	0	0.000510	.0005	0.000790	.001	0.00116	.05	0.0467	.1	0.0919	.999879	
CALCIUM	0	0.000820	.1	0.00503	.2	0.00837	10	0.457	20	0.881	.999811	
IRON	0	-0.000100	.04	0.000570	.08	0.00116	4	0.0886	8	0.172	.999867	
MAGNESIUM	0	-0.000440	NA	NA	.2	0.000830	10	0.0815	20	0.157	.999846	
POTASSIUM	0	-0.0108	.5	0.0152	1	0.0397	50	3.07	100	5.95	.999864	
SELENIUM	0	-0.000160	NA	NA	.008	-0.000100	.4	0.00655	.8	0.0133	.999466	
SODIUM	0	-0.0319	.5	0.0316	1	0.0972	50	8.45	100	16.4	.999892	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4824722
Report generated: 27-JUN-2016 11:06

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061289	Workgroup (AAB#):	WG574076
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG574249	Initial Calibration Date:	25-JUN-2016 12:36

	WG574249-01		WG574249-02		WG574249-03		WG574249-04		WG574249-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000800	.1	0.00148	.2	0.00220	10	0.0828	20	0.162	.99995	
BERYLLIUM	0	0.000480	.0005	0.000970	.001	0.00139	.05	0.0482	.1	0.0948	.999766	
CALCIUM	0	0.00288	.1	0.00582	.2	0.00931	10	0.466	20	0.917	.99989	
IRON	0	-0.000710	.04	0.000330	.08	0.00148	4	0.0965	8	0.191	.99933	
MAGNESIUM	0	-0.000260	NA	NA	.2	0.00109	10	0.0796	20	0.159	.99999	
POTASSIUM	0	-0.00661	.5	0.0195	1	0.0419	50	3.07	100	6.10	.999988	
SELENIUM	0	-0.000510	NA	NA	.008	-0.000340	.4	0.00649	.8	0.0134	.999238	
SODIUM	0	-0.0478	.5	0.0267	1	0.108	50	9.20	100	18.4	.99999	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4824722
Report generated: 27-JUN-2016 11:06

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061289
Run Date: 06/24/2016
Sample ID: WG574123-07
Instrument ID: ICP-THERMO3
Run Time: 10:24
Method: 6010C
File ID: T3.062416.102444
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-THERI - 24-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	.0052	F
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4824724
Report generated 06/27/2016 11:06

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061289
Run Date: 06/25/2016
Sample ID: WG574249-07
Instrument ID: ICP-THERMO3
Run Time: 12:43
Method: 6010C
File ID: T3.062516.124348
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-THERI - 25-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	.0087	*
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4824724
Report generated 06/27/2016 11:06

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061289
Run Date: 06/24/2016
Sample ID: WG574123-13
Instrument ID: ICP-THERMO3
Run Time: 10:47
Method: 6010C
File ID: T3.062416.104746
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4824727
Report generated 06/27/2016 11:06

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061289
Run Date: 06/24/2016
Sample ID: WG574123-19
Instrument ID: ICP-THERMO3
Run Time: 13:08
Method: 6010C
File ID: T3.062416.130845
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4824727
Report generated 06/27/2016 11:06

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061289
Run Date: 06/24/2016
Sample ID: WG574123-21
Instrument ID: ICP-THERMO3
Run Time: 13:54
Method: 6010C
File ID: T3.062416.135419
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4824727
Report generated 06/27/2016 11:06

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061289
Run Date: 06/24/2016
Sample ID: WG574123-23
Instrument ID: ICP-THERMO3
Run Time: 14:37
Method: 6010C
File ID: T3.062416.143703
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4824727
Report generated 06/27/2016 11:06

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061289
Run Date: 06/24/2016
Sample ID: WG574123-27
Instrument ID: ICP-THERMO3
Run Time: 15:23
Method: 6010C
File ID: T3.062416.152346
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Login Number: L16061289
Run Date: 06/25/2016
Sample ID: WG574249-13
Instrument ID: ICP-THERMO3
Run Time: 13:06
Method: 6010C
File ID: T3.062516.130641
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00482	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Login Number: L16061289
Run Date: 06/25/2016
Sample ID: WG574249-19
Instrument ID: ICP-THERMO3
Run Time: 15:32
Method: 6010C
File ID: T3.062516.153248
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00412	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061289
Run Date: 06/25/2016
Sample ID: WG574249-21
Instrument ID: ICP-THERMO3
Run Time: 16:19
Method: 6010C
File ID: T3.062516.161940
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00879	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Login Number: L16061289
Run Date: 06/25/2016
Sample ID: WG574249-44
Instrument ID: ICP-THERMO3
Run Time: 23:40
Method: 6010C
File ID: T3.062516.234025
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061289
Run Date: 06/25/2016
Sample ID: WG574249-48
Instrument ID: ICP-THERMO3
Run Time: 23:55
Method: 6010C
File ID: T3.062516.235530
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061289 Run Date: 06/24/2016 Sample ID: WG574123-06
Instrument ID: ICP-THERMO3 Run Time: 10:21 Method: 6010C
File ID: T3.062416.102118 Analyst: JYH Units: mg/L
Workgroup (AAB#): WG574076 Cal ID: ICP-TH - 24-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	10.1	101	90 - 110	
Beryllium		.05	0.0499	99.9	90 - 110	
Calcium		10	9.97	99.7	90 - 110	
Iron		4	4.01	100	90 - 110	
Magnesium		10	10.1	101	90 - 110	
Potassium		50	50.4	101	90 - 110	
Selenium		.4	0.410	102	90 - 110	
Sodium		50	50.2	100	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4824723
Report generated 06/27/2016 11:06

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061289 Run Date: 06/25/2016 Sample ID: WG574249-06
Instrument ID: ICP-THERMO3 Run Time: 12:40 Method: 6010C
File ID: T3.062516.124009 Analyst: JYH Units: mg/L
Workgroup (AAB#): WG574076 Cal ID: ICP-TH - 25-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	10.1	101	90 - 110	
Beryllium		.05	0.0504	101	90 - 110	
Calcium		10	10.1	101	90 - 110	
Iron		4	4.05	101	90 - 110	
Magnesium		10	10.1	101	90 - 110	
Potassium		50	50.3	101	90 - 110	
Selenium		.4	0.400	100	90 - 110	
Sodium		50	50.1	100	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289
Run Date: 06/24/2016
Sample ID: WG574123-12
Instrument ID: ICP-THERMO3
Run Time: 10:44
Method: 6010C
File ID: T3.062416.104409
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.2	mg/L	102	90 - 110		
Beryllium		0.0500	0.0500	mg/L	100	90 - 110		
Calcium		10.0	10.2	mg/L	102	90 - 110		
Iron		4.00	4.08	mg/L	102	90 - 110		
Magnesium		10.0	10.1	mg/L	101	90 - 110		
Potassium		50.0	51.1	mg/L	102	90 - 110		
Selenium		0.400	0.409	mg/L	102	90 - 110		
Sodium		50.0	50.8	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4824726
Report generated 06/27/2016 11:06

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289
Run Date: 06/24/2016
Sample ID: WG574123-18
Instrument ID: ICP-THERMO3
Run Time: 13:05
Method: 6010C
File ID: T3.062416.130507
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.4	mg/L	104	90 - 110		
Beryllium		0.0500	0.0505	mg/L	101	90 - 110		
Calcium		10.0	10.6	mg/L	106	90 - 110		
Iron		4.00	4.16	mg/L	104	90 - 110		
Magnesium		10.0	10.3	mg/L	103	90 - 110		
Potassium		50.0	53.3	mg/L	107	90 - 110		
Selenium		0.400	0.423	mg/L	106	90 - 110		
Sodium		50.0	52.9	mg/L	106	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289
Run Date: 06/24/2016
Sample ID: WG574123-20
Instrument ID: ICP-THERMO3
Run Time: 13:50
Method: 6010C
File ID: T3.062416.135042
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.60	mg/L	96.0	90 - 110		
Beryllium		0.0500	0.0470	mg/L	93.9	90 - 110		
Calcium		10.0	9.67	mg/L	96.7	90 - 110		
Iron		4.00	3.83	mg/L	95.8	90 - 110		
Magnesium		10.0	9.49	mg/L	94.9	90 - 110		
Potassium		50.0	49.1	mg/L	98.2	90 - 110		
Selenium		0.400	0.391	mg/L	97.8	90 - 110		
Sodium		50.0	48.8	mg/L	97.6	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289
Run Date: 06/24/2016
Sample ID: WG574123-22
Instrument ID: ICP-THERMO3
Run Time: 14:33
Method: 6010C
File ID: T3.062416.143326
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.4	mg/L	104	90 - 110		
Beryllium		0.0500	0.0505	mg/L	101	90 - 110		
Calcium		10.0	10.5	mg/L	105	90 - 110		
Iron		4.00	4.19	mg/L	105	90 - 110		
Magnesium		10.0	10.5	mg/L	105	90 - 110		
Potassium		50.0	53.3	mg/L	107	90 - 110		
Selenium		0.400	0.417	mg/L	104	90 - 110		
Sodium		50.0	53.0	mg/L	106	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289
Run Date: 06/24/2016
Sample ID: WG574123-26
Instrument ID: ICP-THERMO3
Run Time: 15:20
Method: 6010C
File ID: T3.062416.152008
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.4	mg/L	104	90 - 110		
Beryllium		0.0500	0.0508	mg/L	102	90 - 110		
Calcium		10.0	10.4	mg/L	104	90 - 110		
Iron		4.00	4.13	mg/L	103	90 - 110		
Magnesium		10.0	10.3	mg/L	103	90 - 110		
Potassium		50.0	52.6	mg/L	105	90 - 110		
Selenium		0.400	0.416	mg/L	104	90 - 110		
Sodium		50.0	52.2	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289
Run Date: 06/25/2016
Sample ID: WG574249-12
Instrument ID: ICP-THERMO3
Run Time: 13:03
Method: 6010C
File ID: T3.062516.130304
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.0	mg/L	100	90 - 110		
Beryllium		0.0500	0.0498	mg/L	99.6	90 - 110		
Calcium		10.0	9.94	mg/L	99.4	90 - 110		
Iron		4.00	4.00	mg/L	99.9	90 - 110		
Magnesium		10.0	9.92	mg/L	99.2	90 - 110		
Potassium		50.0	49.2	mg/L	98.4	90 - 110		
Selenium		0.400	0.405	mg/L	101	90 - 110		
Sodium		50.0	49.3	mg/L	98.6	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289
Run Date: 06/25/2016
Sample ID: WG574249-18
Instrument ID: ICP-THERMO3
Run Time: 15:29
Method: 6010C
File ID: T3.062516.152911
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.5	mg/L	105	90 - 110		
Beryllium		0.0500	0.0522	mg/L	104	90 - 110		
Calcium		10.0	10.4	mg/L	104	90 - 110		
Iron		4.00	4.15	mg/L	104	90 - 110		
Magnesium		10.0	9.96	mg/L	99.6	90 - 110		
Potassium		50.0	50.6	mg/L	101	90 - 110		
Selenium		0.400	0.412	mg/L	103	90 - 110		
Sodium		50.0	51.2	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289
Run Date: 06/25/2016
Sample ID: WG574249-20
Instrument ID: ICP-THERMO3
Run Time: 16:16
Method: 6010C
File ID: T3.062516.161603
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.4	mg/L	104	90 - 110		
Beryllium		0.0500	0.0524	mg/L	105	90 - 110		
Calcium		10.0	10.1	mg/L	101	90 - 110		
Iron		4.00	4.10	mg/L	102	90 - 110		
Magnesium		10.0	9.73	mg/L	97.3	90 - 110		
Potassium		50.0	49.1	mg/L	98.1	90 - 110		
Selenium		0.400	0.407	mg/L	102	90 - 110		
Sodium		50.0	49.9	mg/L	99.9	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289
Run Date: 06/25/2016
Sample ID: WG574249-43
Instrument ID: ICP-THERMO3
Run Time: 23:36
Method: 6010C
File ID: T3.062516.233647
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.2	mg/L	102	90 - 110		
Beryllium		0.0500	0.0497	mg/L	99.5	90 - 110		
Calcium		10.0	10.4	mg/L	104	90 - 110		
Iron		4.00	4.06	mg/L	102	90 - 110		
Magnesium		10.0	9.72	mg/L	97.2	90 - 110		
Potassium		50.0	51.1	mg/L	102	90 - 110		
Selenium		0.400	0.405	mg/L	101	90 - 110		
Sodium		50.0	52.1	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289
Run Date: 06/25/2016
Sample ID: WG574249-47
Instrument ID: ICP-THERMO3
Run Time: 23:51
Method: 6010C
File ID: T3.062516.235152
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.3	mg/L	103	90 - 110		
Beryllium		0.0500	0.0502	mg/L	100	90 - 110		
Calcium		10.0	10.5	mg/L	105	90 - 110		
Iron		4.00	4.08	mg/L	102	90 - 110		
Magnesium		10.0	9.81	mg/L	98.1	90 - 110		
Potassium		50.0	51.1	mg/L	102	90 - 110		
Selenium		0.400	0.412	mg/L	103	90 - 110		
Sodium		50.0	51.8	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061289
Run Date: 06/24/2016
Sample ID: WG574123-08
Instrument ID: ICP-THERMO3
Run Time: 10:28
Method: 6010C
File ID: T3.062416.102843
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.175	mg/L	109	70 - 130		
Beryllium		0.00160	0.00162	mg/L	101	70 - 130		
Calcium		0.400	0.420	mg/L	105	70 - 130		
Iron		0.0800	0.0855	mg/L	107	70 - 130		
Magnesium		0.400	0.437	mg/L	109	70 - 130		
Potassium		0.800	0.954	mg/L	119	70 - 130		
Selenium		0.0160	0.0180	mg/L	112	70 - 130		
Sodium		0.400	0.448	mg/L	112	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4824728
Report generated 06/27/2016 11:06

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061289
Run Date: 06/24/2016
Sample ID: WG574123-24
Instrument ID: ICP-THERMO3
Run Time: 14:41
Method: 6010C
File ID: T3.062416.144104
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.168	mg/L	105	70 - 130		
Beryllium		0.00160	0.00164	mg/L	103	70 - 130		
Calcium		0.400	0.416	mg/L	104	70 - 130		
Iron		0.0800	0.0993	mg/L	124	70 - 130		
Magnesium		0.400	0.414	mg/L	103	70 - 130		
Potassium		0.800	0.972	mg/L	121	70 - 130		
Selenium		0.0160	0.0132	mg/L	82.7	70 - 130		
Sodium		0.400	0.473	mg/L	118	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4824728
Report generated 06/27/2016 11:06

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061289
Run Date: 06/24/2016
Sample ID: WG574123-34
Instrument ID: ICP-THERMO3
Run Time: 17:11
Method: 6010C
File ID: T3.062416.171114
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.171	mg/L	107	70 - 130		
Beryllium		0.00160	0.00166	mg/L	104	70 - 130		
Calcium		0.400	0.434	mg/L	109	70 - 130		
Iron		0.0800	0.0873	mg/L	109	70 - 130		
Magnesium		0.400	0.381	mg/L	95.2	70 - 130		
Potassium		0.800	0.824	mg/L	103	70 - 130		
Selenium		0.0160	0.0183	mg/L	115	70 - 130		
Sodium		0.400	0.490	mg/L	123	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4824728
Report generated 06/27/2016 11:06

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061289
Run Date: 06/25/2016
Sample ID: WG574249-08
Instrument ID: ICP-THERMO3
Run Time: 12:47
Method: 6010C
File ID: T3.062516.124745
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.165	mg/L	103	70 - 130		
Beryllium		0.00160	0.00166	mg/L	104	70 - 130		
Calcium		0.400	0.414	mg/L	103	70 - 130		
Iron		0.0800	0.0939	mg/L	117	70 - 130		
Magnesium		0.400	0.441	mg/L	110	70 - 130		
Potassium		0.800	0.887	mg/L	111	70 - 130		
Selenium		0.0160	0.0204	mg/L	127	70 - 130		
Sodium		0.400	0.442	mg/L	110	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
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Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061289
Run Date: 06/25/2016
Sample ID: WG574249-26
Instrument ID: ICP-THERMO3
Run Time: 17:25
Method: 6010C
File ID: T3.062516.172540
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.163	mg/L	102	70 - 130		
Beryllium		0.00160	0.00172	mg/L	108	70 - 130		
Calcium		0.400	0.375	mg/L	93.8	70 - 130		
Iron		0.0800	0.0950	mg/L	119	70 - 130		
Potassium		0.800	0.714	mg/L	89.2	70 - 130		
Selenium		0.0160	0.0209	mg/L	131	70 - 130		*
Sodium		0.400	0.408	mg/L	102	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4824728
Report generated 06/27/2016 11:06

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061289
Instrument ID: ICP-THERMO3
Sol. A : WG574123-10 **File ID:** T3.062416.103634
Sol. AB : WG574123-11 **File ID:** T3.062416.104027

Workgroup (AAB#): WG574076
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	272	109	250	274	110	
Beryllium	NS	-0.0000400	NS	0.250	0.246	98.4	
Calcium	250	256	102	250	255	102	
Iron	100	102	102	100	99.9	99.9	
Magnesium	250	260	104	250	256	102	
Potassium	NS	0.0930	NS	5.00	5.48	110	
Selenium	NS	0.00445	NS	0.250	0.267	107	
Sodium	NS	0.0388	NS	5.00	5.59	112	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

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Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061289
Instrument ID: ICP-THERMO3
Sol. A : WG574249-10 **File ID:** T3.062516.125529
Sol. AB : WG574249-11 **File ID:** T3.062516.125921

Workgroup (AAB#): WG574076
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	266	106	250	268	107	
Beryllium	NS	0.000110	NS	0.250	0.245	98.0	
Calcium	250	244	97.6	250	247	98.8	
Iron	100	96.8	96.8	100	96.5	96.5	
Magnesium	250	249	99.6	250	249	99.6	
Potassium	NS	0.0533	NS	5.00	5.19	104	
Selenium	NS	-0.00224	NS	0.250	0.249	99.6	
Sodium	NS	0.0404	NS	5.00	5.32	106	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
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Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061289
Instrument ID: ICP-THERMO3
Sol. A : WG574249-45 **File ID:** T3.062516.234420
Sol. AB : WG574249-46 **File ID:** T3.062516.234809

Workgroup (AAB#): WG574076
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	263	105	250	271	108	
Beryllium	NS	0.000140	NS	0.250	0.244	97.6	
Calcium	250	248	99.2	250	254	102	
Iron	100	95.6	95.6	100	96.1	96.1	
Magnesium	250	236	94.4	250	239	95.6	
Potassium	NS	-0.0460	NS	5.00	5.21	104	
Selenium	NS	-0.00782	NS	0.250	0.238	95.2	
Sodium	NS	0.0818	NS	5.00	5.50	110	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4824725
Report generated 06/27/2016 11:06

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061289 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	AG	AL	AS	B	BA
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000410	0	0	0
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0.0115	0	-0.0000800
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0.000260	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	-0.000289	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	-0.0000490	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.0000120	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0.0000300	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4824721
Report generated: 06/27/2016 11:06

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061289 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	BE	CA	CD	CO	CR
ALUMINUM	308.20	0	0	0	-0.000820	0
ANTIMONY	206.80	0	0	0	0	0.0200
ARSENIC	189.00	0	0	0	0	-0.00190
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0.00343	0
CADMIUM	228.80	0	0	0	-0.00390	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	-0.000200
COPPER	224.70	0	0	0	0.0000770	-0.00100
IRON	261.10	0	0	0	0	-0.00100
LEAD	220.30	0	0	0	-0.0000130	-0.000132
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.0000500
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	-0.000860	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0.00000500	0	0	0
THALLIUM	190.80	0	0	0	0.00240	0.000276
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	-0.00480
ZINC	206.20	0	0	0	0	-0.00180
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4824721
Report generated: 06/27/2016 11:06

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061289 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	CU	FE	K	LI	MG
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000560	0	0	0
ARSENIC	189.00	0	-0.0000500	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0.000300	0	0	0
CADMIUM	228.80	0	-0.0000190	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000500	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0.00160	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0.000609	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.00000300
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0.0000420	0	0	0
PHOSPHORUS	214.90	-0.323	0.000900	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000270	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000400	0	0	0
VANADIUM	292.40	0	0.00000700	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	-0.0000300	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4824721
Report generated: 06/27/2016 11:06

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061289 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	MN	MO	NA	NI	P
ALUMINUM	308.20	0	0.0163	0	0	0
ANTIMONY	206.80	0	-0.00310	0	-0.00350	0
ARSENIC	189.00	0	0.00120	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	-0.00190	0	0	0
CADMIUM	228.80	0	0.0000320	0	-0.000770	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0.000360	0	0	0	0
COBALT	228.60	0	-0.00200	0	0.000100	0
COPPER	224.70	0	0.00160	0	-0.0123	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	-0.00210	0	0.000110	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	-0.00290	-0.0230	0	0	0
MANGANESE	257.60	0	0.0000300	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0.00710	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0.000600	0.000580	0	0	0
SILICON	212.40	0	0.0187	0	0	0
SILVER	328.00	0	-0.0000430	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0.00100	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000153	0	0	0
VANADIUM	292.40	-0.000200	-0.00830	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
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Report generated: 06/27/2016 11:06

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061289 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	PB	SB	SE	SI	SN
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0	0	0	-0.0220
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0.00440	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4824721
Report generated: 06/27/2016 11:06

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061289 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	SR	TI	TL	V	ZN
ALUMINUM	308.20	0	0	0	0.0950	0
ANTIMONY	206.80	0	0.00110	0	-0.00360	0
ARSENIC	189.00	0	0	0	0.000107	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	-0.00000700	0	0.000990	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0.000102	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000550	0	0	0
COBALT	228.60	0	0.00210	0	0.0000200	0
COPPER	224.70	0	0.000269	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	-0.000126	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	-0.00290	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	-0.000110	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	-0.00100	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000720	0	-0.000260	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.000800	0	-0.00490	0
TIN	189.90	0	-0.00190	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0.000820	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4824721
Report generated: 06/27/2016 11:06

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061289 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	ZR
ALUMINUM	308.20	0
ANTIMONY	206.80	0
ARSENIC	189.00	0
BARIUM	455.40	0
BERYLLIUM	313.10	0
BORON	249.60	0
CADMIUM	228.80	0
CALCIUM	422.60	0
CHROMIUM	267.70	0
COBALT	228.60	0
COPPER	224.70	0
IRON	261.10	0
LEAD	220.30	0
LITHIUM	670.70	0
MAGNESIUM	279.00	0
MANGANESE	257.60	0
MOLYBDENUM	202.00	0
NICKEL	231.60	0
PHOSPHORUS	214.90	0
POTASSIUM	766.40	0
SELENIUM	196.00	0
SILICON	212.40	0
SILVER	328.00	0
SODIUM	589.50	0
STRONTIUM	407.70	0
THALLIUM	190.80	0
TIN	189.90	0
TITANIUM	337.20	0
VANADIUM	292.40	0
ZINC	206.20	0
ZIRCONIUM	339.10	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4824721
Report generated: 06/27/2016 11:06

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16061289 **Date:** 04/29/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	900.0
Antimony	20.00	45.0
Arsenic	10.00	45.0
Barium	10.00	45.0
Beryllium	10.00	1.8
Boron	20.00	45.0
Cadmium	20.00	4.5
Calcium	5.00	270.0
Chromium	20.00	36.0
Cobalt	20.00	45.0
Copper	20.00	180.0
Iron	5.00	720.0
Lead	20.00	225.0
Lithium	5.00	36.0
Magnesium	5.00	900.0
Manganese	10.00	36.0
Molybdenum	20.00	27.0
Nickel	20.00	90.0
Phosphorus	20.00	180.0
Potassium	5.00	450.0
Selenium	20.00	90.0
Silicon	20.00	36.0
Silver	10.00	9.0
Sodium	5.00	270.0
Strontium	5.00	9.0
Thallium	20.00	18.0
Tin	20.00	45.0
Titanium	5.00	36.0
Vanadium	20.00	27.0
Zinc	20.00	45.0
Zirconium	10.00	45.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4824720
Report generated: 06/27/2016 11:06

2.3.1.3 Raw Data

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000141	0.050748	0.000000	1.000000
Al 308.215 {109}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000916	0.007866	0.000000	1.000000
As 189.042 {478}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000058	0.023675	0.000000	1.000000
B 249.678 {135}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000060	0.022039	0.000000	1.000000
Ba 455.403 { 74}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.014298	2.093262	0.000000	1.000000
Be 313.107 {108}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000510	0.898055	0.000000	1.000000
Ca 422.673 { 80}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000824	0.044581	0.000000	1.000000
Cd 228.802 {447}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000030	0.563251	0.000000	1.000000
Co 228.616 {447}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000034	0.344510	0.000000	1.000000
Cr 267.716 {126}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000180	0.055863	0.000000	1.000000
Cu 224.700 {450}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000060	0.121643	0.000000	1.000000
Fe 261.187 {129}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000103	0.021701	0.000000	1.000000
K 766.490 { 44}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.010819	0.060325	0.000000	1.000000
Li 670.784 { 50}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.007531	1.496173	0.000000	1.000000
Mg 279.079 {121}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000442	0.008016	0.000000	1.000000
Mn 257.610 {131}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000827	0.279912	0.000000	1.000000
Mo 202.030 {467}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000039	0.179523	0.000000	1.000000
Na 589.592 { 57}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.031897	0.166281	0.000000	1.000000
Ni 231.604 {446}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000651	0.129323	0.000000	1.000000
P 214.914 {457}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000172	0.012827	0.000000	1.000000
Pb 220.353 {453}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000520	0.058788	0.000000	1.000000
Sb 206.833 {463}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000001	0.030127	0.000000	1.000000
Se 196.090 {472}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000164	0.016794	0.000000	1.000000
Si 212.412 {459}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000911	0.038950	0.000000	1.000000
Sn 189.989 {477}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000052	0.066907	0.000000	1.000000
Sr 407.771 { 83}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.002037	3.549642	0.000000	1.000000
Ti 337.280 {100}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.001943	0.119996	0.000000	1.000000
Tl 190.856 {477}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000361	0.028102	0.000000	1.000000
V 292.402 {115}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000023	0.065920	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000153	0.391840	0.000000	1.000000
Zr 339.198 { 99}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.012098	2.809224	0.000000	1.000000

Approved: June 25, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999737	0.000003	0.002049	0.006830	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999969	0.000004	0.009025	0.030084	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999986	0.000000	0.003104	0.010346	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999939	0.000001	0.002779	0.009264	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999858	0.000224	0.000982	0.003272	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999879	0.000005	0.000094	0.000312	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999811	0.000055	0.038318	0.127728	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999763	0.000004	0.000260	0.000866	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999919	0.000006	0.000408	0.001359	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999801	0.000004	0.001181	0.003936	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999857	0.000007	0.001355	0.004518	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999867	0.000009	0.021737	0.072458	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999864	0.000316	0.090153	0.300511	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999907	0.000200	0.003625	0.012085	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999846	0.000014	0.078797	0.262658	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999412	0.000030	0.002338	0.007792	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999986	0.000006	0.000418	0.001395	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999892	0.000776	0.030119	0.100396	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999935	0.000005	0.001154	0.003846	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999988	0.000004	0.007248	0.024159	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999843	0.000003	0.003678	0.012262	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999953	0.000002	0.004278	0.014260	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999466	0.000002	0.006279	0.020930	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999584	0.000036	0.002252	0.007507	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999937	0.000005	0.000895	0.002983	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999850	0.000390	0.000401	0.001336	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999443	0.000025	0.006504	0.021681	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999820	0.000002	0.003079	0.010263	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999965	0.000003	0.000964	0.003213	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999941	0.000027	0.000206	0.000686	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.999713	0.000427	0.000581	0.001936	OK.	1.000000	0.000000	1	0

Approved: June 25, 2016

Sample Name: S0 Acquired: 6/24/2016 10:02:06 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00014**	**.00092**	**-.00006**	**.00006**	**.01430**	**.00051**	**.00082**
Stddev	.00007	.00003	.00003	.00005	.00089	.00003	.00150
%RSD	48.462	3.7804	46.676	91.000	6.2407	5.9747	181.89
#1	-.00007	.00091	-.00009	.00011	.01533	.00048	-.00036
#2	-.00014	.00089	-.00003	.00007	.01383	.00054	.00251
#3	-.00021	.00095	-.00005	.00000	.01373	.00052	.00032

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00003**	**.00003**	**.00018**	**-.00006**	**-.00010**	**-.01082**	**-.00753**
Stddev	.00009	.00005	.00004	.00017	.00045	.00335	.00353
%RSD	281.39	147.40	23.426	287.67	438.41	30.962	46.865
#1	.00005	.00004	.00020	-.00025	.00041	-.00724	-.00439
#2	-.00003	-.00002	.00013	-.00002	-.00044	-.01389	-.00686
#3	-.00012	.00008	.00021	.00009	-.00028	-.01133	-.01135

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00044**	**.00083**	**-.00004**	**-.03189**	**-.00065**	**-.00017**	**-.00052**
Stddev	.00045	.00015	.00006	.00093	.00012	.00009	.00017
%RSD	102.79	17.791	163.60	2.9103	19.006	49.513	32.607
#1	-.00010	.00071	.00001	-.03192	-.00069	-.00027	-.00032
#2	-.00096	.00099	-.00002	-.03095	-.00051	-.00010	-.00062
#3	-.00026	.00079	-.00011	-.03280	-.00075	-.00015	-.00062

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00000**	**-.00016**	**.00091**	**.00005**	**.00204**	**-.00194**	**-.00036**
Stddev	.00012	.00004	.00007	.00002	.00021	.00013	.00002
%RSD	19810.	21.583	7.1930	34.140	10.449	6.4605	4.5673
#1	-.00014	-.00013	.00087	.00005	.00206	-.00182	-.00038
#2	.00005	-.00020	.00088	.00007	.00181	-.00194	-.00035
#3	.00009	-.00016	.00099	.00004	.00224	-.00207	-.00035

Approved: June 25, 2016

Sample Name: S0 Acquired: 6/24/2016 10:02:06 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00002	.00015	-.01209
Stddev	.00007	.00001	.00188
%RSD	312.68	7.9561	15.539
#1	.00011	.00015	-.01411
#2	-.00002	.00014	-.01039
#3	-.00002	.00017	-.01176
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10103.	63387.	3436.7
Stddev	24.	229.	8.8
%RSD	.23353	.36169	.25626
#1	10111.	63214.	3446.2
#2	10121.	63647.	3428.8
#3	10076.	63299.	3435.0

Approved: June 25, 2016

Sample Name: S1 Acquired: 6/24/2016 10:06:06 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00005**	**.00153**	**.03093**	**.00079**	**.00503**	**.00010**	**.00049**
Stddev	.00003	.00005	.00195	.00002	.00170	.00011	.00005
%RSD	59.232	2.9452	6.3135	3.1378	33.768	117.90	11.244
#1	-.00004	.00157	.02902	.00082	.00307	-.00000	.00053
#2	-.00008	.00153	.03085	.00078	.00607	.00007	.00051
#3	-.00003	.00148	.03292	.00077	.00594	.00022	.00042

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00047**	**.00031**	**.00057**	**.01522**	**.00155**	**.00132**	**.03160**
Stddev	.00005	.00001	.00017	.00200	.00074	.00003	.00575
%RSD	11.209	2.0951	30.554	13.113	47.893	2.1780	18.185
#1	.00046	.00031	.00053	.01296	.00101	.00135	.02748
#2	.00052	.00030	.00076	.01674	.00123	.00133	.02916
#3	.00042	.00031	.00042	.01597	.00239	.00129	.03817

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00014**	**.00081**	**-.00022**	**.00030**	**.00226**	**.00054**	**.03050**
Stddev	.00010	.00005	.00018	.00003	.00007	.00002	.00065
%RSD	73.955	5.5812	79.260	8.9775	2.9020	4.3963	2.1231
#1	-.00011	.00077	-.00030	.00033	.00229	.00052	.03078
#2	-.00005	.00086	-.00002	.00028	.00230	.00056	.02976
#3	-.00025	.00081	-.00035	.00030	.00218	.00052	.03096

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00144**	**.00052**	**.00324**	**.00445**
Stddev	.00042	.00004	.00013	.00179
%RSD	29.218	7.4619	4.0938	40.182
#1	-.00191	.00057	.00337	.00539
#2	-.00110	.00049	.00325	.00556
#3	-.00131	.00051	.00311	.00239

Approved: June 25, 2016

Sample Name: S1 Acquired: 6/24/2016 10:06:06 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10065.**	**62767.**	**3441.4**
Stddev	30.	97.	22.9
%RSD	.29930	.15510	.66663
#1	10069.	62771.	3417.8
#2	10093.	62861.	3463.7
#3	10033.	62667.	3442.7

Approved: June 25, 2016

Sample Name: S2 Acquired: 6/24/2016 10:10:06 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00021	.00215	.00010	.00026	.04762	.00116	.00837
Stddev	.00002	.00007	.00007	.00004	.00057	.00005	.00106
%RSD	8.9724	3.4344	65.774	15.619	1.1893	4.2144	12.640
#1	.00023	.00213	.00004	.00025	.04721	.00122	.00897
#2	.00020	.00223	.00018	.00022	.04739	.00114	.00715
#3	.00021	.00209	.00009	.00031	.04827	.00113	.00899

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00040	.00105	.00069	.00083	.00116	.03965	.01598
Stddev	.00005	.00003	.00003	.00008	.00031	.00217	.00181
%RSD	12.890	2.9404	4.0733	9.8734	26.550	5.4632	11.347
#1	.00035	.00103	.00067	.00092	.00083	.03746	.01389
#2	.00040	.00103	.00072	.00079	.00144	.03971	.01716
#3	.00045	.00108	.00068	.00077	.00121	.04179	.01688

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00083	.00238	.00276	.09724	.00041	.00174	-.00009
Stddev	.00012	.00062	.00011	.00164	.00010	.00006	.00030
%RSD	14.311	26.076	3.9026	1.6822	25.278	3.1866	350.41
#1	.00094	.00257	.00281	.09776	.00035	.00177	-.00007
#2	.00070	.00169	.00283	.09541	.00036	.00177	.00021
#3	.00086	.00289	.00264	.09856	.00053	.00168	-.00039

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00052	-.00010	.00385	.00103	.05810	-.00053	-.00015
Stddev	.00006	.00007	.00008	.00003	.00070	.00022	.00003
%RSD	12.430	68.938	2.1687	3.1112	1.2101	41.302	21.567
#1	.00055	-.00017	.00394	.00106	.05859	-.00045	-.00014
#2	.00056	-.00003	.00384	.00103	.05729	-.00036	-.00018
#3	.00045	-.00011	.00378	.00100	.05842	-.00077	-.00012

Approved: June 25, 2016

Sample Name: S2 Acquired: 6/24/2016 10:10:06 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00100	.00632	.02594
Stddev	.00007	.00019	.00102
%RSD	6.6145	2.9709	3.9200
#1	.00097	.00638	.02711
#2	.00108	.00648	.02521
#3	.00096	.00611	.02551
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10036.	62714.	3425.0
Stddev	5.	277.	24.9
%RSD	.04560	.44190	.72564
#1	10035.	62498.	3405.6
#2	10031.	62619.	3453.0
#3	10040.	63027.	3416.3

Approved: June 25, 2016

Sample Name: S3 Acquired: 6/24/2016 10:14:05 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.02012**	**.08112**	**.00937**	**.01100**	**2.1577**	**.04667**	**.45680**	**.03089**
Stddev	.00014	.00067	.00024	.00003	.0127	.00048	.00088	.00088
%RSD	.68506	.82535	2.5122	.26795	.58663	1.0260	.19280	2.8481
#1	.02016	.08148	.00911	.01102	2.1723	.04686	.45715	.02988
#2	.02024	.08154	.00955	.01102	2.1508	.04702	.45579	.03151
#3	.01997	.08035	.00946	.01097	2.1500	.04612	.45745	.03127

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.06952**	**.02847**	**.06168**	**.08857**	**3.0711**	**1.5176**	**.08149**	**.14484**
Stddev	.00185	.00019	.00161	.00089	.0148	.0183	.00050	.00149
%RSD	2.6617	.68366	2.6084	1.0060	.48208	1.2061	.60781	1.0306
#1	.06739	.02860	.05982	.08958	3.0854	1.5375	.08112	.14654
#2	.07070	.02858	.06252	.08789	3.0720	1.5016	.08130	.14374
#3	.07047	.02825	.06269	.08824	3.0558	1.5136	.08205	.14425

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.18057**	**8.4539**	**.06503**	**.12666**	**.02949**	**.03516**	**.00655**	**.20419**
Stddev	.00413	.0477	.00183	.00333	.00086	.00099	.00019	.00532
%RSD	2.2896	.56431	2.8080	2.6258	2.9031	2.8239	2.8275	2.6074
#1	.17586	8.5022	.06294	.12282	.02853	.03401	.00634	.19804
#2	.18358	8.4528	.06629	.12868	.02978	.03578	.00666	.20727
#3	.18229	8.4068	.06587	.12849	.03017	.03568	.00667	.20725

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.06764**	**3.6392**	**.12025**	**.01285**	**.06639**	**.39780**	**2.8658**
Stddev	.00187	.0221	.00095	.00032	.00069	.00999	.0226
%RSD	2.7649	.60748	.79359	2.4638	1.0447	2.5111	.78950
#1	.06551	3.6628	.12131	.01249	.06673	.38631	2.8817
#2	.06902	3.6359	.11996	.01298	.06685	.40437	2.8758
#3	.06839	3.6189	.11946	.01308	.06559	.40274	2.8399

Approved: June 25, 2016

Sample Name: S3 Acquired: 6/24/2016 10:14:05 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9803.5	60605.	3302.4
Stddev	185.3	628.	25.0
%RSD	1.8907	1.0370	.75704
#1	10017.	60237.	3292.4
#2	9686.1	60248.	3283.9
#3	9707.3	61331.	3330.8

Approved: June 25, 2016

Sample Name: S4 Acquired: 6/24/2016 10:17:42 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.04037	.15882	.01874	.02204	4.1509	.09188	.88125	.06147
Stddev	.00017	.00011	.00011	.00010	.0087	.00023	.00269	.00039
%RSD	.41570	.06765	.58871	.45251	.20975	.25568	.30549	.62850
#1	.04024	.15875	.01878	.02202	4.1571	.09190	.88218	.06177
#2	.04056	.15877	.01882	.02215	4.1547	.09211	.88335	.06161
#3	.04031	.15895	.01861	.02196	4.1410	.09164	.87821	.06104

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13710	.05562	.12100	.17176	5.9519	2.9563	.15745	.27789
Stddev	.00070	.00009	.00059	.00098	.0096	.0021	.00153	.00068
%RSD	.50874	.16610	.48875	.57160	.16058	.07181	.96992	.24355
#1	.13749	.05558	.12123	.17129	5.9624	2.9588	.15599	.27711
#2	.13751	.05557	.12144	.17289	5.9495	2.9553	.15904	.27832
#3	.13629	.05573	.12033	.17109	5.9438	2.9549	.15733	.27824

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.35800	16.431	.12763	.25198	.05815	.07137	.01334	.38448
Stddev	.00153	.049	.00061	.00022	.00023	.00008	.00003	.00032
%RSD	.42830	.29740	.47754	.08776	.39302	.10858	.22101	.08296
#1	.35959	16.449	.12796	.25213	.05792	.07142	.01337	.38462
#2	.35789	16.469	.12801	.25208	.05838	.07141	.01335	.38412
#3	.35653	16.376	.12693	.25172	.05815	.07128	.01331	.38471

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13295	7.0149	.23633	.02503	.13104	.77753	5.5495
Stddev	.00033	.0145	.00010	.00014	.00013	.00089	.0276
%RSD	.24509	.20672	.04320	.55584	.09686	.11476	.49668
#1	.13312	7.0177	.23635	.02504	.13089	.77820	5.5811
#2	.13314	7.0278	.23621	.02517	.13109	.77787	5.5303
#3	.13257	6.9992	.23641	.02489	.13113	.77652	5.5370

Approved: June 25, 2016

Sample Name: S4 Acquired: 6/24/2016 10:17:42 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9688.2**	**60219.**	**3370.4**
Stddev	7.1	189.	23.3
%RSD	.07324	.31409	.69082
#1	9691.6	60213.	3345.2
#2	9693.0	60033.	3375.0
#3	9680.0	60411.	3391.1

Approved: June 25, 2016

Sample Name: ICV Acquired: 6/24/2016 10:21:18 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39846	10.055	.40187	.50195	1.0043	.04994	9.9690	.05093
Stddev	.00107	.004	.00071	.00352	.0049	.00015	.0985	.00023
%RSD	.26882	.04093	.17558	.70141	.48280	.30027	.98769	.44509
#1	.39801	10.053	.40263	.49813	1.0045	.04992	9.9634	.05069
#2	.39768	10.052	.40124	.50265	1.0091	.04980	10.070	.05113
#3	.39968	10.059	.40172	.50506	.99939	.05010	9.8735	.05098
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20275	.50186	.50806	4.0077	50.412	.99409	10.076	.50349
Stddev	.00040	.00174	.00074	.0287	.156	.00370	.047	.00310
%RSD	.19601	.34705	.14641	.71708	.31025	.37246	.46653	.61637
#1	.20246	.50009	.50763	4.0406	50.449	.99815	10.023	.50004
#2	.20321	.50191	.50892	3.9950	50.546	.99323	10.093	.50606
#3	.20259	.50357	.50763	3.9874	50.240	.99090	10.113	.50436
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0161	50.208	.50900	10.102	.50737	1.1976	.40954	5.2491
Stddev	.0035	.189	.00106	.014	.00059	.0046	.00351	.0132
%RSD	.34222	.37709	.20816	.13865	.11567	.38093	.85796	.25182
#1	1.0181	50.185	.50781	10.089	.50756	1.1956	.40737	5.2341
#2	1.0182	50.408	.50932	10.117	.50784	1.2028	.40767	5.2590
#3	1.0121	50.031	.50986	10.099	.50671	1.1944	.41360	5.2542
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 25, 2016

Sample Name: ICV Acquired: 6/24/2016 10:21:18 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0142**	**1.0055**	**1.0016**	**.51308**	**1.0042**	**1.0176**	**1.0099**
Stddev	.0008	.0052	.0045	.00359	.0054	.0023	.0053
%RSD	.07353	.51381	.45332	.69940	.53899	.22236	.52327
#1	1.0146	1.0049	1.0056	.51163	1.0037	1.0169	1.0108
#2	1.0147	1.0110	.99666	.51043	.99912	1.0202	1.0042
#3	1.0134	1.0007	1.0027	.51716	1.0099	1.0158	1.0147
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9784.6**	**61155.**	**3360.6**
Stddev	16.4	126.	16.3
%RSD	.16756	.20531	.48534
#1	9800.9	61010.	3348.1
#2	9785.0	61229.	3379.0
#3	9768.1	61226.	3354.6

Approved: June 25, 2016

Sample Name: ICB Acquired: 6/24/2016 10:24:44 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	-.00039	.00064	.00491	.00035	-.00004	.01970	-.00008
Stddev	.00118	.00395	.00185	.00079	.00095	.00004	.02171	.00007
%RSD	1355.8	1016.1	287.94	16.133	270.92	92.692	110.19	83.262
#1	.00054	-.00464	.00266	.00474	.00126	-.00001	.02755	-.00005
#2	-.00125	.00030	-.00097	.00577	-.00064	-.00002	.03640	-.00016
#3	.00097	.00318	.00023	.00421	.00044	-.00008	-.00484	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00032	.00131	-.00137	.02320	.06358	-.00066	.03856	-.00312
Stddev	.00017	.00055	.00043	.00941	.08768	.00266	.00747	.00261
%RSD	51.480	41.866	31.575	40.581	137.91	406.13	19.360	83.590
#1	-.00049	.00166	-.00107	.01306	.06334	-.00147	.03003	-.00355
#2	-.00033	.00160	-.00186	.03167	.15137	-.00281	.04179	-.00549
#3	-.00015	.00068	-.00116	.02486	-.02399	.00232	.04387	-.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00441	.05025	.00065	-.00381	-.00087	.00778	.00520	.00608
Stddev	.00033	.01048	.00078	.00461	.00397	.00208	.00680	.00201
%RSD	7.4861	20.853	119.99	121.10	458.20	26.759	130.76	33.156
#1	.00405	.05291	.00003	-.00874	-.00277	.00736	.00296	.00721
#2	.00448	.03870	.00040	.00039	.00370	.01003	-.00020	.00727
#3	.00470	.05914	.00153	-.00306	-.00353	.00593	.01285	.00375
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: ICB Acquired: 6/24/2016 10:24:44 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**.00012**	**.00094**	**.00181**	**-.00101**	**.00060**	**.00145**
Stddev	.00042	.00009	.00041	.00207	.00005	.00020	.00038
%RSD	513.90	78.925	43.774	114.17	4.9873	33.766	26.340
#1	.00040	.00003	.00072	-.00054	-.00105	.00057	.00107
#2	-.00028	.00022	.00068	.00334	-.00102	.00042	.00183
#3	-.00036	.00011	.00141	.00262	-.00096	.00082	.00145
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9828.6**	**62200.**	**3394.8**
Stddev	28.2	217.	16.2
%RSD	.28655	.34911	.47848
#1	9855.6	62450.	3410.7
#2	9830.8	62058.	3378.2
#3	9799.4	62092.	3395.6

Approved: June 25, 2016

Sample Name: LLICV Acquired: 6/24/2016 10:28:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00861	.17456	.00875	.08415	.00845	.00162	.42018	.00080
Stddev	.00241	.00320	.00584	.00044	.00062	.00010	.04537	.00016
%RSD	28.028	1.8340	66.707	.52598	7.3619	6.0745	10.799	19.768
#1	.00915	.17680	.01356	.08464	.00808	.00156	.43983	.00091
#2	.00598	.17599	.00226	.08403	.00809	.00173	.36829	.00086
#3	.01071	.17089	.01043	.08378	.00916	.00156	.45241	.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00400	.00560	.00345	.08548	.95350	.08105	.43655	.00707
Stddev	.00008	.00034	.00088	.01230	.04581	.00390	.09350	.00382
%RSD	2.0075	6.1076	25.604	14.389	4.8041	4.8127	21.418	54.018
#1	.00403	.00571	.00253	.09530	.99396	.07722	.34739	.00473
#2	.00391	.00522	.00353	.07168	.96278	.08091	.42840	.01148
#3	.00406	.00588	.00429	.08946	.90376	.08502	.53386	.00500
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00937	.44836	.01641	.81013	.00755	.08949	.01796	.80576
Stddev	.00033	.00782	.00043	.01533	.00353	.00603	.00226	.00882
%RSD	3.5349	1.7431	2.6293	1.8922	46.785	6.7340	12.603	1.0947
#1	.00911	.45731	.01596	.82200	.00588	.09248	.01611	.81287
#2	.00974	.44487	.01647	.81558	.01161	.09343	.02049	.80853
#3	.00925	.44289	.01682	.79283	.00517	.08255	.01729	.79589
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LLICV Acquired: 6/24/2016 10:28:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41092**	**.04172**	**.02043**	**.15548**	**.00810**	**.01698**	**.04605**
Stddev	.00936	.00016	.00448	.00254	.00066	.00050	.00187
%RSD	2.2770	.37475	21.916	1.6360	8.1067	2.9288	4.0649
#1	.41622	.04190	.02523	.15718	.00756	.01728	.04465
#2	.41644	.04163	.01969	.15671	.00791	.01725	.04533
#3	.40012	.04164	.01637	.15256	.00883	.01640	.04818
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9545.8**	**59931.**	**3275.5**
Stddev	15.6	83.	34.7
%RSD	.16333	.13820	1.0584
#1	9534.4	59838.	3252.2
#2	9539.4	59961.	3315.3
#3	9563.5	59995.	3258.9

Approved: June 25, 2016

Sample Name: LLICV Acquired: 6/24/2016 10:32:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02155	.40824	.02077	.20167	.02174	.00400	1.0366	.00202
Stddev	.00054	.00443	.00281	.00124	.00028	.00001	.0243	.00009
%RSD	2.5225	1.0863	13.516	.61328	1.2824	.22063	2.3424	4.3173
#1	.02133	.41154	.02394	.20052	.02183	.00399	1.0194	.00205
#2	.02115	.40999	.01859	.20150	.02142	.00401	1.0644	.00192
#3	.02216	.40320	.01978	.20298	.02196	.00400	1.0260	.00209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00994	.01113	.01102	.16765	2.1953	.20551	1.0506	.01921
Stddev	.00018	.00047	.00052	.00874	.0565	.00363	.0388	.00199
%RSD	1.8457	4.1791	4.7625	5.2113	2.5738	1.7653	3.6929	10.372
#1	.01014	.01147	.01043	.15847	2.1428	.20211	1.0170	.02151
#2	.00990	.01060	.01123	.17586	2.2551	.20509	1.0931	.01818
#3	.00978	.01132	.01141	.16862	2.1879	.20933	1.0419	.01794
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02056	1.0699	.04161	2.0283	.02093	.22105	.04598	1.9872
Stddev	.00073	.0134	.00029	.0213	.00141	.00521	.00230	.0146
%RSD	3.5426	1.2493	.69643	1.0505	6.7264	2.3551	5.0056	.73437
#1	.02134	1.0745	.04129	2.0517	.02096	.22638	.04821	1.9992
#2	.02046	1.0548	.04165	2.0232	.01951	.21598	.04361	1.9913
#3	.01989	1.0803	.04187	2.0101	.02232	.22080	.04611	1.9709
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LLICV Acquired: 6/24/2016 10:32:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0190**	**.10349**	**.06088**	**.38102**	**.01945**	**.04193**	**.10461**
Stddev	.0194	.00012	.00319	.00475	.00050	.00058	.00065
%RSD	1.9018	.11797	5.2343	1.2466	2.5499	1.3820	.62471
#1	1.0324	.10361	.06403	.38543	.01945	.04208	.10441
#2	1.0279	.10348	.06095	.38164	.01995	.04242	.10534
#3	.99680	.10337	.05766	.37599	.01896	.04129	.10408
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9527.9**	**60013.**	**3283.4**
Stddev	15.1	148.	21.9
%RSD	.15821	.24736	.66596
#1	9513.0	59863.	3269.8
#2	9527.6	60160.	3271.8
#3	9543.1	60017.	3308.6

Approved: June 25, 2016

Sample Name: ICSA Acquired: 6/24/2016 10:36:34 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	272.29	-.00639	.01187	.00097	-.00004	255.70	-.00011
Stddev	.00186	.14	.00204	.00102	.00103	.00005	.88	.00012
%RSD	388.65	.05142	31.923	8.6029	106.35	111.27	.34460	113.29
#1	-.00160	272.44	-.00702	.01157	.00211	-.00001	256.63	-.00021
#2	.00199	272.24	-.00411	.01301	.00068	-.00002	255.62	.00003
#3	.00104	272.17	-.00804	.01104	.00011	-.00009	254.87	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00172	.00015	-.00116	101.53	.09300	.00567	259.96	-.00382
Stddev	.00042	.00130	.00167	.28	.03409	.00366	.64	.00294
%RSD	24.472	881.01	143.42	.27829	36.657	64.638	.24529	76.986
#1	-.00152	-.00007	-.00240	101.84	.05558	.00951	260.50	-.00473
#2	-.00143	-.00103	.00073	101.29	.10113	.00529	260.13	-.00620
#3	-.00220	.00155	-.00182	101.47	.12229	.00221	259.26	-.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	.03878	-.00045	.04376	.00245	-.00458	.00445	.01844
Stddev	.00046	.04600	.00064	.01101	.00539	.00310	.00348	.00549
%RSD	287.16	118.61	140.72	25.160	220.05	67.775	78.148	29.762
#1	.00025	.00054	.00028	.04277	.00150	-.00104	.00050	.01603
#2	-.00065	.08983	-.00075	.03327	.00825	-.00682	.00580	.01457
#3	-.00008	.02597	-.00089	.05522	-.00240	-.00589	.00705	.02472
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: ICSA Acquired: 6/24/2016 10:36:34 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.00019	-.01134	-.00093	-.00397	-.00488	.00384
Stddev	.00032	.00049	.00588	.00258	.00006	.00039	.00038
%RSD	95.122	259.22	51.833	278.90	1.5390	7.9827	9.8011
#1	.00019	.00071	-.01724	.00196	-.00401	-.00532	.00366
#2	.00071	-.00024	-.00549	-.00301	-.00400	-.00461	.00427
#3	.00012	.00009	-.01128	-.00172	-.00390	-.00469	.00359
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8869.1	55471.	3153.2
Stddev	26.5	151.	18.0
%RSD	.29867	.27155	.57209
#1	8897.8	55567.	3139.7
#2	8845.6	55550.	3146.3
#3	8864.0	55298.	3173.7

Approved: June 25, 2016

Sample Name: ICSAB Acquired: 6/24/2016 10:40:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52801	273.86	.25914	.01325	.26102	.24578	255.40	.50739
Stddev	.00250	.16	.00666	.00063	.00070	.00039	.53	.00146
%RSD	.47355	.05748	2.5695	4.7909	.26706	.16053	.20826	.28726
#1	.52830	274.03	.26069	.01398	.26152	.24535	255.50	.50785
#2	.52537	273.71	.26489	.01290	.26131	.24586	254.82	.50857
#3	.53035	273.85	.25184	.01286	.26022	.24613	255.87	.50576
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.24727	.25565	.25562	99.861	5.4779	.00519	256.26	.25260
Stddev	.00097	.00095	.00265	.277	.0348	.00184	.86	.00168
%RSD	.39106	.37321	1.0376	.27690	.63446	35.421	.33443	.66352
#1	.24802	.25466	.25814	99.853	5.4700	.00385	255.90	.25222
#2	.24762	.25656	.25586	99.588	5.5160	.00443	255.64	.25443
#3	.24618	.25572	.25285	100.14	5.4478	.00728	257.24	.25115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	5.5858	.49274	.02117	.50583	.50989	.26678	.01309
Stddev	.00050	.0197	.00095	.01408	.00041	.00290	.00610	.00127
%RSD	250.13	.35306	.19217	66.536	.08120	.56902	2.2850	9.6691
#1	.00037	5.6063	.49240	.00688	.50630	.51290	.26722	.01358
#2	-.00039	5.5669	.49381	.02158	.50553	.50963	.27265	.01404
#3	-.00058	5.5841	.49200	.03503	.50566	.50712	.26048	.01165
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: ICSAB Acquired: 6/24/2016 10:40:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00171	.00067	-.01040	.47266	.25528	.50449	.00315
Stddev	.00100	.00032	.00325	.00524	.00094	.00232	.00022
%RSD	58.680	47.423	31.248	1.1093	.36860	.45903	6.9061
#1	.00125	.00096	-.01186	.47276	.25634	.50607	.00293
#2	.00102	.00072	-.01267	.47786	.25494	.50556	.00318
#3	.00286	.00033	-.00668	.46737	.25455	.50183	.00336
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8976.9	56220.	3187.5
Stddev	14.0	172.	27.3
%RSD	.15560	.30511	.85579
#1	8966.6	56386.	3171.0
#2	8992.8	56232.	3219.0
#3	8971.4	56043.	3172.5

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 10:44:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40510**	**10.227**	**.40997**	**.50470**	**1.0199**	**.05000**	**10.224**	**.05209**
Stddev	.00259	.020	.00313	.00376	.0032	.00018	.050	.00003
%RSD	.63884	.19087	.76260	.74531	.31908	.36523	.48810	.05352
#1	.40303	10.211	.40694	.50216	1.0162	.04979	10.170	.05206
#2	.40800	10.220	.40978	.50293	1.0222	.05008	10.235	.05212
#3	.40426	10.248	.41318	.50902	1.0213	.05013	10.268	.05208
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20659**	**.50266**	**.51958**	**4.0815**	**51.148**	**1.0118**	**10.141**	**.51100**
Stddev	.00025	.00146	.00022	.0426	.163	.0071	.045	.00204
%RSD	.12249	.29059	.04172	1.0445	.31821	.70440	.43990	.39976
#1	.20659	.50117	.51956	4.0379	50.961	1.0054	10.140	.50966
#2	.20684	.50409	.51937	4.1230	51.259	1.0106	10.186	.51335
#3	.20634	.50270	.51980	4.0835	51.225	1.0195	10.097	.50999
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0360**	**50.833**	**.51458**	**10.241**	**.51207**	**1.2224**	**.40899**	**5.3321**
Stddev	.0063	.180	.00026	.014	.00288	.0026	.00371	.0135
%RSD	.60708	.35445	.05040	.13553	.56209	.21445	.90595	.25328
#1	1.0403	50.639	.51460	10.242	.51048	1.2194	.41231	5.3186
#2	1.0389	50.864	.51483	10.254	.51034	1.2245	.40499	5.3456
#3	1.0288	50.996	.51431	10.227	.51539	1.2232	.40965	5.3320
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 10:44:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0297**	**1.0232**	**1.0245**	**.52009**	**1.0074**	**1.0340**	**1.0135**
Stddev	.0029	.0039	.0041	.00364	.0035	.0016	.0058
%RSD	.27812	.38337	.40197	.69967	.34932	.15074	.57645
#1	1.0298	1.0187	1.0198	.51637	1.0034	1.0332	1.0152
#2	1.0325	1.0257	1.0262	.52364	1.0085	1.0358	1.0070
#3	1.0267	1.0252	1.0274	.52025	1.0102	1.0330	1.0183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9522.9**	**60073.**	**3307.5**
Stddev	11.7	184.	13.2
%RSD	.12286	.30629	.39835
#1	9509.8	60132.	3293.3
#2	9526.4	59867.	3319.3
#3	9532.4	60221.	3310.0

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 10:47:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	-.00231	.00174	.00317	.00089	.00008	.01478	-.00009
Stddev	.00098	.00197	.00138	.00099	.00051	.00008	.01897	.00016
%RSD	1615.6	85.585	79.150	31.308	57.430	97.913	128.33	176.75
#1	.00074	-.00458	.00332	.00208	.00145	.00015	-.00627	-.00026
#2	.00050	-.00127	.00081	.00403	.00044	.00008	.02007	-.00007
#3	-.00106	-.00107	.00109	.00339	.00079	.00000	.03055	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00069	.00201	-.00144	.01198	.09764	.00160	-.01376	-.00139
Stddev	.00007	.00062	.00140	.00633	.05541	.00323	.09391	.00206
%RSD	9.5195	30.966	97.276	52.810	56.748	201.98	682.68	147.81
#1	-.00064	.00243	-.00111	.01172	.03926	.00278	.06859	-.00281
#2	-.00066	.00129	-.00023	.00579	.14949	-.00205	-.11603	-.00233
#3	-.00076	.00231	-.00297	.01844	.10416	.00406	.00617	.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00327	.05554	.00020	-.00275	-.00017	.00433	.00267	.00326
Stddev	.00008	.01502	.00042	.00646	.00019	.00156	.00847	.00120
%RSD	2.3629	27.048	205.82	234.70	111.96	35.900	317.53	36.710
#1	.00322	.04802	.00003	.00456	-.00027	.00254	.00057	.00458
#2	.00336	.07283	-.00010	-.00514	.00005	.00529	.01198	.00225
#3	.00323	.04576	.00069	-.00769	-.00029	.00517	-.00456	.00295
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 10:47:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.00050**	**-.00470**	**-.00050**	**-.00052**	**.00020**	**.00116**
Stddev	.00046	.00047	.00508	.00198	.00127	.00011	.00086
%RSD	806.59	93.281	108.17	398.14	242.75	53.066	73.939
#1	.00001	.00104	-.00897	.00149	-.00184	.00011	.00135
#2	.00036	.00017	-.00606	-.00052	-.00043	.00032	.00022
#3	-.00055	.00030	.00092	-.00246	.00070	.00017	.00191
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9455.5**	**60247.**	**3262.6**
Stddev	21.9	389.	18.3
%RSD	.23119	.64505	.56229
#1	9449.8	59825.	3242.4
#2	9479.6	60328.	3267.4
#3	9437.0	60589.	3278.1

Approved: June 25, 2016

Sample Name: PBS DH Acquired: 6/24/2016 10:51:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573823-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.06424	.00963	.02920	.00211	-.00012	.91755	.00095
Stddev	.00146	.00403	.00255	.00180	.00069	.00002	.02625	.00023
%RSD	154.86	6.2780	26.453	6.1638	32.462	16.135	2.8607	24.438
#1	.00027	.06611	.00687	.03111	.00143	-.00014	.93724	.00119
#2	.00262	.05961	.01011	.02753	.00212	-.00010	.92766	.00096
#3	-.00006	.06700	.01190	.02897	.00280	-.00012	.88775	.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00034	.00196	.02606	.05611	.86754	-.00266	2.2157	.00096
Stddev	.00046	.00074	.00067	.01940	.03735	.00126	.0698	.00076
%RSD	132.65	37.622	2.5777	34.579	4.3057	47.393	3.1523	79.295
#1	-.00064	.00148	.02576	.06271	.88691	-.00288	2.1420	.00166
#2	.00018	.00281	.02683	.07136	.89123	-.00379	2.2810	.00015
#3	-.00057	.00159	.02558	.03427	.82448	-.00130	2.2241	.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00347	1.2358	.00309	.40462	.00290	.01813	.08932	.52615
Stddev	.00027	.0193	.00147	.02012	.00064	.00254	.00325	.01166
%RSD	7.8234	1.5654	47.492	4.9731	22.045	14.035	3.6331	2.2168
#1	.00357	1.2508	.00188	.42577	.00296	.01803	.09153	.53855
#2	.00367	1.2140	.00472	.40239	.00223	.02071	.09083	.52450
#3	.00316	1.2428	.00266	.38571	.00351	.01563	.08560	.51539
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: PBS DH Acquired: 6/24/2016 10:51:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573823-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01154	.00411	.00342	-.03779	-.00138	1.3066	.00905
Stddev	.00028	.00050	.00647	.00170	.00059	.0332	.00154
%RSD	2.4661	12.170	189.43	4.4933	42.724	2.5423	17.055
#1	.01162	.00444	.00927	-.03729	-.00161	1.3427	.00767
#2	.01122	.00436	-.00353	-.03639	-.00071	1.2998	.00877
#3	.01177	.00354	.00451	-.03968	-.00182	1.2773	.01072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9550.6	62753.	3709.8
Stddev	143.7	354.	18.2
%RSD	1.5048	.56355	.49089
#1	9384.7	62418.	3722.3
#2	9637.3	62720.	3688.9
#3	9629.7	63122.	3718.1

Approved: June 25, 2016

Sample Name: LCSS DH Acquired: 6/24/2016 10:59:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573823-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18247**	**4.5986**	**.19429**	**.89801**	**.50201**	**.02364**	**6.0280**	**.02381**
Stddev	.00498	.0862	.00294	.01488	.00719	.00048	.0822	.00026
%RSD	2.7299	1.8745	1.5140	1.6566	1.4323	2.0299	1.3633	1.0767
#1	.18767	4.6908	.19687	.91506	.49496	.02417	5.9363	.02410
#2	.18199	4.5849	.19109	.89128	.50174	.02351	6.0524	.02372
#3	.17774	4.5200	.19490	.88769	.50933	.02323	6.0952	.02362
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09575**	**.24396**	**.26604**	**2.0685**	**25.217**	**.49155**	**7.2727**	**.24507**
Stddev	.00128	.00454	.00424	.0072	.406	.00739	.2108	.00531
%RSD	1.3405	1.8602	1.5932	.34707	1.6111	1.5036	2.8983	2.1657
#1	.09698	.24884	.27087	2.0602	24.814	.48835	7.0584	.24165
#2	.09442	.24317	.26294	2.0726	25.211	.48631	7.2799	.24237
#3	.09586	.23987	.26432	2.0727	25.626	.50001	7.4798	.25118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49901**	**25.673**	**.23896**	**5.1500**	**.23582**	**.55555**	**.23212**	**3.3580**
Stddev	.00666	.317	.00299	.0593	.00138	.00716	.00897	.0420
%RSD	1.3352	1.2341	1.2511	1.1512	.58344	1.2890	3.8646	1.2518
#1	.50607	25.359	.24230	5.2165	.23738	.56336	.24189	3.4044
#2	.49283	25.668	.23655	5.1025	.23531	.54930	.22426	3.3223
#3	.49814	25.992	.23802	5.1310	.23477	.55398	.23021	3.3474
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LCSS DH Acquired: 6/24/2016 10:59:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573823-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47087**	**.50955**	**.50009**	**.22590**	**.48434**	**2.0632**	**.00627**
Stddev	.00683	.00732	.00690	.00326	.01049	.0277	.00044
%RSD	1.4508	1.4356	1.3790	1.4427	2.1662	1.3435	7.0255
#1	.47818	.50245	.49214	.22809	.49569	2.0928	.00585
#2	.46464	.50912	.50437	.22215	.48231	2.0378	.00625
#3	.46981	.51706	.50378	.22746	.47500	2.0590	.00673
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9997.3**	**62835.**	**3576.8**
Stddev	90.8	1056.	48.3
%RSD	.90842	1.6801	1.3504
#1	9896.1	61710.	3631.4
#2	10072.	62993.	3559.4
#3	10024.	63803.	3539.7

Approved: June 25, 2016

Sample Name: LCSS DP Acquired: 6/24/2016 11:02:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573823-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.17820**	**4.3366**	**.22875**	**.90184**	**.50529**	**.02446**	**5.8810**	**.02577**
Stddev	.00193	.0746	.01418	.01394	.01186	.00029	.1832	.00151
%RSD	1.0838	1.7190	6.1991	1.5457	2.3469	1.1886	3.1144	5.8704
#1	.17769	4.3180	.24506	.90296	.49226	.02426	5.6858	.02746
#2	.17657	4.2731	.22184	.88737	.51544	.02431	6.0491	.02530
#3	.18033	4.4187	.21935	.91519	.50818	.02479	5.9081	.02455
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10444**	**.24563**	**.28336**	**1.9956**	**24.666**	**.49175**	**7.0829**	**.24263**
Stddev	.00645	.00190	.01874	.0724	.577	.01385	.2327	.00720
%RSD	6.1730	.77249	6.6147	3.6300	2.3398	2.8160	3.2852	2.9669
#1	.11189	.24455	.30494	1.9215	24.049	.47780	6.8155	.23468
#2	.10090	.24453	.27395	2.0663	25.192	.50549	7.1939	.24871
#3	.10054	.24782	.27118	1.9991	24.758	.49196	7.2394	.24449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.55730**	**25.233**	**.26065**	**5.6927**	**.24891**	**.61155**	**.33091**	**3.1863**
Stddev	.03375	.569	.01436	.3577	.01270	.03374	.01816	.1852
%RSD	6.0554	2.2563	5.5090	6.2841	5.1039	5.5171	5.4865	5.8116
#1	.59622	24.626	.27718	6.1055	.26343	.65012	.35188	3.3998
#2	.53962	25.755	.25355	5.4986	.23984	.59708	.32033	3.0888
#3	.53608	25.317	.25122	5.4739	.24345	.58746	.32053	3.0702
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LCSS DP Acquired: 6/24/2016 11:02:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573823-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51198**	**.51153**	**.50880**	**.21284**	**.49128**	**2.1277**	**.00181**
Stddev	.03023	.01298	.01459	.01301	.00684	.1239	.00013
%RSD	5.9037	2.5381	2.8677	6.1112	1.3917	5.8220	7.2522
#1	.54684	.49772	.49512	.22747	.49101	2.2706	.00196
#2	.49599	.52349	.52416	.20844	.48458	2.0612	.00173
#3	.49310	.51336	.50711	.20260	.49825	2.0512	.00173
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9072.1**	**62124.**	**3651.9**
Stddev	334.9	431.	66.7
%RSD	3.6913	.69305	1.8269
#1	8685.5	62374.	3723.4
#2	9261.7	62371.	3591.3
#3	9269.2	61627.	3640.9

Approved: June 25, 2016

Sample Name: L1606114301 Acquired: 6/24/2016 11:06:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00340	.63384	.00605	.03311	.02504	-.00013	1.8306	.00360
Stddev	.00146	.01591	.00255	.00247	.00039	.00009	.0364	.00013
%RSD	42.981	2.5096	42.114	7.4636	1.5650	72.615	1.9881	3.6185
#1	.00487	.64708	.00405	.03597	.02496	-.00022	1.8648	.00356
#2	.00194	.61620	.00892	.03168	.02547	-.00004	1.8345	.00375
#3	.00340	.63825	.00519	.03170	.02471	-.00013	1.7924	.00350
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00160	.05627	.80386	5.1093	1.0547	.00294	1.5234	.06438
Stddev	.00009	.00071	.01373	.0178	.0718	.00145	.0795	.00165
%RSD	5.5825	1.2566	1.7075	.34819	6.8037	49.424	5.2181	2.5676
#1	.00161	.05677	.81424	5.0951	1.0867	.00418	1.5850	.06354
#2	.00168	.05546	.80905	5.1293	1.1049	.00329	1.5515	.06628
#3	.00150	.05659	.78830	5.1035	.97252	.00134	1.4337	.06332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00632	1.2820	.04272	.30849	.10441	.02066	.07677	.84241
Stddev	.00030	.0102	.00117	.00874	.00199	.00387	.00489	.01140
%RSD	4.8199	.79829	2.7325	2.8327	1.9073	18.733	6.3709	1.3529
#1	.00599	1.2908	.04257	.31674	.10484	.02431	.07533	.85254
#2	.00639	1.2708	.04396	.30939	.10616	.02107	.08222	.84461
#3	.00659	1.2845	.04164	.29933	.10225	.01660	.07276	.83007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114301 Acquired: 6/24/2016 11:06:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01737	.00705	.05358	-.03179	.00265	5.9842	.00421
Stddev	.00159	.00017	.00866	.00194	.00017	.0953	.00010
%RSD	9.1419	2.4404	16.162	6.1073	6.4079	1.5932	2.3093
#1	.01793	.00724	.04586	-.03088	.00248	6.0574	.00413
#2	.01859	.00700	.06294	-.03048	.00266	6.0188	.00432
#3	.01557	.00691	.05193	-.03402	.00282	5.8764	.00418
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9433.8	62273.	3673.3
Stddev	13.8	108.	33.0
%RSD	.14593	.17345	.89868
#1	9423.3	62153.	3665.0
#2	9449.4	62303.	3645.2
#3	9428.7	62363.	3709.6

Approved: June 25, 2016

Sample Name: L1606114302 Acquired: 6/24/2016 11:10:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.70974	.00483	.03211	.03431	-.00008	3.7526	.00880
Stddev	.00086	.00429	.00488	.00269	.00095	.00003	.0801	.00018
%RSD	286.06	.60458	101.04	8.3916	2.7576	37.081	2.1342	2.0709
#1	.00079	.71454	.00872	.03444	.03386	-.00010	3.7049	.00896
#2	.00080	.70628	.00640	.03273	.03367	-.00010	3.7078	.00884
#3	-.00069	.70840	-.00064	.02916	.03539	-.00005	3.8450	.00860
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03006	.01986	.07908	1.9614	1.7476	.00189	1.7739	.07217
Stddev	.00057	.00040	.00176	.0337	.0301	.00072	.0437	.00266
%RSD	1.8855	2.0050	2.2306	1.7184	1.7202	38.094	2.4665	3.6877
#1	.02997	.01958	.08079	1.9631	1.7210	.00189	1.7325	.07238
#2	.03067	.01968	.07918	1.9269	1.7417	.00118	1.8197	.06941
#3	.02955	.02032	.07727	1.9943	1.7802	.00262	1.7695	.07472
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00152	3.1867	.29445	.97828	.08164	.18406	.05191	.60601
Stddev	.00039	.0400	.00282	.02017	.00359	.00750	.00201	.00524
%RSD	25.606	1.2539	.95732	2.0615	4.3941	4.0727	3.8629	.86420
#1	.00122	3.1678	.29637	.99318	.08425	.18826	.05038	.60880
#2	.00138	3.1598	.29576	.98632	.08312	.18852	.05418	.60926
#3	.00195	3.2326	.29122	.95533	.07755	.17541	.05116	.59997
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114302 Acquired: 6/24/2016 11:10:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03851	.01220	.05871	-.02123	.00148	.92404	.00252
Stddev	.00125	.00043	.00052	.00163	.00043	.01192	.00035
%RSD	3.2486	3.5183	.88626	7.6964	29.162	1.2895	13.799
#1	.03869	.01230	.05838	-.02100	.00130	.93196	.00257
#2	.03966	.01173	.05843	-.02297	.00197	.92983	.00284
#3	.03718	.01257	.05931	-.01972	.00117	.91034	.00215
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9579.3	62698.	3582.6
Stddev	23.6	409.	31.5
%RSD	.24595	.65242	.88053
#1	9558.8	62230.	3582.4
#2	9574.2	62875.	3614.3
#3	9605.1	62989.	3551.2

Approved: June 25, 2016

Sample Name: L1606114303 Acquired: 6/24/2016 11:14:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00200	4.8207	.00231	.09925	.06384	-.00014	20.352	.03065
Stddev	.00115	.0169	.00244	.00272	.00062	.00004	.361	.00032
%RSD	57.119	.35023	105.60	2.7419	.97505	30.491	1.7725	1.0317
#1	.00068	4.8310	-.00033	.10036	.06456	-.00017	20.604	.03098
#2	.00273	4.8012	.00278	.09615	.06348	-.00009	19.939	.03063
#3	.00261	4.8299	.00448	.10125	.06347	-.00016	20.514	.03035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00385	.02269	.31038	.72640	3.9876	.00384	1.7996	.03505
Stddev	.00028	.00031	.00455	.03117	.1244	.00103	.0301	.00196
%RSD	7.3418	1.3582	1.4671	4.2904	3.1197	26.784	1.6740	5.6019
#1	.00418	.02300	.31423	.75545	4.1176	.00266	1.8228	.03702
#2	.00370	.02267	.31155	.69348	3.8697	.00453	1.7655	.03503
#3	.00368	.02239	.30535	.73028	3.9755	.00433	1.8103	.03309
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00143	69.304	.01792	.75789	.92900	.21972	.06124	1.0845
Stddev	.00052	1.191	.00091	.01147	.01251	.00309	.00193	.0066
%RSD	36.480	1.7182	5.0997	1.5130	1.3471	1.4069	3.1453	.61193
#1	.00085	70.245	.01893	.76639	.93239	.22277	.05909	1.0852
#2	.00156	67.965	.01715	.76244	.93946	.21982	.06281	1.0908
#3	.00187	69.701	.01768	.74485	.91513	.21659	.06183	1.0776
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114303 Acquired: 6/24/2016 11:14:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.06697	.02914	.17767	-.02618	.00084	1.1510	.00805
Stddev	.00103	.00029	.00367	.00124	.00100	.0176	.00078
%RSD	1.5441	1.0005	2.0643	4.7450	119.01	1.5335	9.6465
#1	.06805	.02923	.17998	-.02601	.00069	1.1598	.00715
#2	.06687	.02881	.17959	-.02504	.00191	1.1626	.00843
#3	.06599	.02937	.17344	-.02750	-.00008	1.1307	.00856
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9381.8	61970.	3689.1
Stddev	33.6	321.	57.3
%RSD	.35761	.51747	1.5540
#1	9391.7	61677.	3628.9
#2	9344.4	62313.	3743.0
#3	9409.2	61920.	3695.5

Approved: June 25, 2016

Sample Name: L1606114303PS Acquired: 6/24/2016 11:18:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574050-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19282**	**9.1030**	**.21930**	**1.0209**	**.57480**	**.02552**	**23.549**	**.05319**
Stddev	.00378	.1224	.00387	.0139	.00847	.00050	.384	.00014
%RSD	1.9610	1.3448	1.7659	1.3603	1.4741	1.9641	1.6292	.25923
#1	.19718	9.2398	.22265	1.0369	.57451	.02610	23.500	.05313
#2	.19085	9.0654	.22018	1.0119	.58342	.02525	23.955	.05335
#3	.19044	9.0038	.21506	1.0138	.56648	.02522	23.192	.05310
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10838**	**.27489**	**.53510**	**2.6325**	**28.426**	**.51916**	**6.4335**	**.28113**
Stddev	.00048	.00487	.00271	.0470	.438	.00652	.0658	.00732
%RSD	.44135	1.7702	.50609	1.7864	1.5402	1.2563	1.0234	2.6026
#1	.10883	.28050	.53765	2.6400	28.393	.51849	6.4132	.27737
#2	.10842	.27183	.53540	2.6753	28.879	.52600	6.5071	.28956
#3	.10788	.27234	.53226	2.5822	28.005	.51300	6.3802	.27645
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.55563**	**88.072**	**.27127**	**5.7330**	**1.0887**	**.80555**	**.28267**	**3.5801**
Stddev	.00233	1.489	.00140	.0340	.0052	.00245	.00476	.0110
%RSD	.41977	1.6902	.51481	.59236	.48130	.30394	1.6852	.30687
#1	.55781	87.868	.27253	5.7647	1.0876	.80600	.27727	3.5781
#2	.55592	89.652	.27153	5.7371	1.0944	.80774	.28448	3.5920
#3	.55317	86.695	.26977	5.6971	1.0841	.80291	.28627	3.5703
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114303PS Acquired: 6/24/2016 11:18:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574050-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.55832**	**.55250**	**.68468**	**.22830**	**.51898**	**1.4956**	**.00754**
Stddev	.00108	.00586	.00982	.00156	.00603	.0050	.00034
%RSD	.19343	1.0607	1.4349	.68445	1.1613	.33628	4.5321
#1	.55934	.55124	.67374	.23005	.52593	1.4982	.00780
#2	.55844	.55889	.69276	.22777	.51583	1.4988	.00765
#3	.55719	.54737	.68753	.22706	.51518	1.4898	.00715
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9369.0**	**61127.**	**3634.8**
Stddev	22.7	764.	54.2
%RSD	.24213	1.2496	1.4904
#1	9362.2	60252.	3618.8
#2	9350.5	61471.	3590.4
#3	9394.3	61659.	3695.1

Approved: June 25, 2016

Sample Name: L1606114303SDL Acquired: 6/24/2016 11:21:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574050-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	1.0261	.00297	.02318	.01266	-.00007	4.1845	.00623
Stddev	.00123	.0061	.00330	.00327	.00031	.00005	.0503	.00014
%RSD	365.72	.59880	111.06	14.127	2.4185	73.446	1.2012	2.2131
#1	-.00107	1.0196	.00542	.02404	.01302	-.00002	4.1771	.00614
#2	.00083	1.0267	-.00078	.01956	.01249	-.00012	4.1383	.00639
#3	.00124	1.0319	.00428	.02594	.01249	-.00008	4.2380	.00617
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.00540	.06226	.15898	.95529	-.00007	.39328	.00447
Stddev	.00025	.00082	.00151	.01807	.04331	.00277	.02612	.00106
%RSD	50.129	15.194	2.4288	11.369	4.5341	3914.2	6.6415	23.792
#1	.00077	.00446	.06382	.13919	.97561	-.00233	.38332	.00500
#2	.00037	.00596	.06216	.17463	.98470	.00302	.42292	.00517
#3	.00033	.00577	.06080	.16312	.90555	-.00090	.37361	.00325
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	14.368	.00341	.14113	.19112	.04241	.01311	.21447
Stddev	.00015	.033	.00044	.00572	.00278	.00110	.00399	.00347
%RSD	22.588	.22958	12.788	4.0544	1.4560	2.5835	30.424	1.6176
#1	.00054	14.331	.00376	.14763	.19272	.04265	.01583	.21733
#2	.00066	14.378	.00292	.13686	.19273	.04121	.00853	.21548
#3	.00085	14.394	.00355	.13890	.18791	.04336	.01496	.21061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114303SDL Acquired: 6/24/2016 11:21:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574050-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01266**	**.00566**	**.03785**	**-.00383**	**-.00075**	**.23612**	**.00185**
Stddev	.00065	.00028	.00383	.00311	.00045	.00453	.00029
%RSD	5.1470	5.0211	10.115	81.132	60.764	1.9188	15.554
#1	.01193	.00542	.03347	-.00556	-.00022	.23954	.00216
#2	.01290	.00558	.03952	-.00024	-.00102	.23784	.00159
#3	.01316	.00597	.04057	-.00569	-.00099	.23098	.00180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10057.**	**64667.**	**3566.1**
Stddev	24.	239.	18.3
%RSD	.24189	.36921	.51318
#1	10061.	64539.	3548.5
#2	10080.	64942.	3585.1
#3	10031.	64519.	3564.7

Approved: June 25, 2016

Sample Name: L1606072401 Acquired: 6/24/2016 11:25:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	-.00315	.00035	.10432	.27002	-.00002	19.485	-.00008
Stddev	.00044	.00317	.00249	.00108	.00200	.00009	.116	.00017
%RSD	1758.5	100.57	717.90	1.0354	.74150	535.21	.59419	213.12
#1	.00051	-.00633	.00240	.10390	.26802	.00008	19.352	-.00022
#2	-.00037	.00001	.00106	.10555	.27202	-.00009	19.546	-.00012
#3	-.00006	-.00313	-.00242	.10352	.27001	-.00003	19.558	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00054	.00046	-.00104	.04832	1.6362	.06448	1.9423	.00728
Stddev	.00032	.00099	.00074	.01250	.0309	.00265	.0169	.00214
%RSD	60.154	216.03	70.782	25.871	1.8896	4.1051	.87020	29.355
#1	-.00026	.00125	-.00020	.06077	1.6689	.06381	1.9502	.00486
#2	-.00046	.00077	-.00159	.04843	1.6074	.06740	1.9228	.00808
#3	-.00090	-.00065	-.00133	.03577	1.6323	.06224	1.9537	.00891
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	45.826	-.00085	.00269	-.00068	-.00086	.00607	.02783
Stddev	.00032	.230	.00099	.00141	.00111	.00064	.00697	.00182
%RSD	148.51	.50191	116.77	52.456	163.34	74.836	114.77	6.5364
#1	.00042	45.682	-.00200	.00191	-.00152	-.00014	.00291	.02894
#2	-.00016	46.091	-.00033	.00185	-.00108	-.00138	.01406	.02882
#3	.00039	45.704	-.00023	.00433	.00057	-.00105	.00124	.02573
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606072401 Acquired: 6/24/2016 11:25:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00043	3.7849	-.00208	.00102	-.00025	.00077	.00029
Stddev	.00032	.0200	.00520	.00060	.00104	.00010	.00043
%RSD	74.660	.52945	249.46	58.995	412.82	12.438	148.48
#1	-.00041	3.7649	.00110	.00076	-.00044	.00066	.00051
#2	-.00012	3.8049	.00073	.00059	.00087	.00082	-.00021
#3	-.00077	3.7849	-.00808	.00171	-.00118	.00083	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9875.5	62339.	3387.9
Stddev	19.3	92.	22.4
%RSD	.19558	.14698	.65977
#1	9880.5	62376.	3412.5
#2	9891.8	62234.	3382.5
#3	9854.1	62405.	3368.8

Approved: June 25, 2016

Sample Name: L1606078710 Acquired: 6/24/2016 11:29:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	.01245	.00093	.00672	.00888	-.00004	5.1268	-.00003
Stddev	.00207	.00513	.00062	.00160	.00032	.00006	.0280	.00009
%RSD	1015.8	41.172	67.473	23.880	3.6189	161.49	.54640	338.65
#1	-.00259	.01156	.00060	.00537	.00890	.00003	5.1020	.00003
#2	.00103	.01797	.00053	.00629	.00918	-.00004	5.1212	-.00013
#3	.00095	.00783	.00164	.00850	.00854	-.00010	5.1572	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	.00129	-.00031	.02121	.09124	.00142	1.6609	.00016
Stddev	.00030	.00103	.00028	.02108	.02779	.00443	.0362	.00043
%RSD	83.898	80.266	88.228	99.367	30.455	310.98	2.1784	267.47
#1	-.00002	.00013	-.00000	.02577	.07595	.00096	1.6192	.00066
#2	-.00047	.00163	-.00042	.03964	.12332	.00607	1.6798	-.00009
#3	-.00058	.00211	-.00052	-.00177	.07447	-.00275	1.6837	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.40629	-.00019	.02344	.00142	.00036	.00428	.86102
Stddev	.00008	.01566	.00070	.00293	.00389	.00131	.00308	.00301
%RSD	282.85	3.8547	375.84	12.494	274.41	367.61	71.795	.35006
#1	-.00005	.39122	-.00061	.02282	-.00202	-.00116	.00142	.85766
#2	.00002	.40516	.00062	.02087	.00564	.00112	.00390	.86349
#3	.00011	.42248	-.00056	.02663	.00064	.00110	.00753	.86190
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606078710 Acquired: 6/24/2016 11:29:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00084	.01418	.00262	.00104	-.00029	.00070	.00018
Stddev	.00037	.00086	.00142	.00185	.00024	.00007	.00067
%RSD	43.228	6.0990	54.198	178.45	83.020	9.6277	377.85
#1	-.00122	.01515	.00146	.00231	-.00032	.00062	-.00035
#2	-.00082	.01393	.00221	.00189	-.00003	.00073	.00093
#3	-.00049	.01347	.00421	-.00108	-.00051	.00074	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9908.1	62790.	3396.7
Stddev	24.3	134.	24.8
%RSD	.24489	.21371	.72925
#1	9883.2	62654.	3377.5
#2	9909.3	62793.	3388.0
#3	9931.7	62922.	3424.7

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 11:33:47 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38810**	**9.7098**	**.39689**	**.47714**	**.99058**	**.04739**	**9.8701**	**.05060**
Stddev	.00283	.0174	.01197	.00133	.00631	.00022	.0513	.00128
%RSD	.72928	.17891	3.0148	.27927	.63726	.46575	.51962	2.5352
#1	.39081	9.7194	.38991	.47646	.98553	.04761	9.8110	.04949
#2	.38516	9.6898	.39005	.47629	.99766	.04716	9.9033	.05031
#3	.38833	9.7203	.41070	.47868	.98855	.04739	9.8959	.05200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20045**	**.47745**	**.50304**	**3.8652**	**49.851**	**.98139**	**9.6090**	**.49428**
Stddev	.00476	.00182	.01308	.0187	.275	.00271	.1197	.00115
%RSD	2.3737	.38128	2.6009	.48458	.55213	.27645	1.2457	.23357
#1	.19707	.47916	.49332	3.8535	49.648	.97918	9.5187	.49428
#2	.19839	.47554	.49789	3.8554	50.165	.98442	9.7448	.49544
#3	.20589	.47766	.51792	3.8868	49.742	.98056	9.5635	.49313
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0051**	**49.395**	**.49829**	**9.9011**	**.49766**	**1.1837**	**.40223**	**5.1765**
Stddev	.0221	.266	.01338	.2380	.01263	.0295	.01301	.1331
%RSD	2.2022	.53859	2.6859	2.4036	2.5373	2.4958	3.2354	2.5717
#1	.99057	49.185	.48864	9.7382	.49052	1.1641	.39764	5.0820
#2	.99416	49.694	.49266	9.7909	.49023	1.1694	.39213	5.1189
#3	1.0306	49.307	.51357	10.174	.51224	1.2177	.41691	5.3288
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 11:33:47 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99780	.99494	.99460	.50316	.95384	.99778	.96366
Stddev	.02505	.00582	.00941	.01064	.00112	.02481	.00332
%RSD	2.5106	.58510	.94620	2.1156	.11735	2.4862	.34462
#1	.98222	.99006	.98399	.49648	.95510	.98037	.96166
#2	.98449	1.0014	.99788	.49756	.95296	.98679	.96750
#3	1.0267	.99339	1.0019	.51543	.95347	1.0262	.96183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9609.5	61484.	3367.3
Stddev	179.1	149.	17.5
%RSD	1.8637	.24184	.51943
#1	9727.0	61424.	3387.4
#2	9698.3	61653.	3355.3
#3	9403.4	61374.	3359.2

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 11:37:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00172**	**-.00134**	**.00309**	**.00209**	**.00125**	**-.00002**	**-.01440**	**-.00007**
Stddev	.00091	.00614	.00420	.00059	.00035	.00008	.00898	.00028
%RSD	52.779	459.15	136.12	28.437	28.440	502.17	62.405	405.50
#1	-.00077	-.00780	.00268	.00192	.00104	-.00008	-.01028	-.00013
#2	-.00183	-.00062	-.00090	.00275	.00104	-.00004	-.00821	-.00031
#3	-.00257	.00441	.00748	.00160	.00165	.00007	-.02470	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00058**	**.00219**	**-.00096**	**.01429**	**.07201**	**-.00051**	**-.01423**	**-.00338**
Stddev	.00025	.00091	.00116	.02391	.02885	.00127	.05533	.00160
%RSD	42.952	41.583	120.36	167.30	40.061	249.18	388.71	47.289
#1	-.00086	.00313	-.00216	.03857	.05729	-.00120	.01249	-.00407
#2	-.00049	.00132	.00015	-.00924	.05349	.00096	-.07785	-.00452
#3	-.00039	.00212	-.00087	.01355	.10524	-.00129	.02266	-.00155
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00397**	**.05772**	**.00049**	**.00166**	**.00060**	**.00709**	**.00415**	**.00501**
Stddev	.00025	.00897	.00091	.00777	.00062	.00346	.00064	.00058
%RSD	6.2010	15.535	183.67	469.35	103.11	48.715	15.417	11.538
#1	.00371	.06438	.00022	.00269	-.00009	.00377	.00431	.00485
#2	.00402	.04752	-.00024	.00886	.00078	.01067	.00470	.00452
#3	.00419	.06126	.00151	-.00658	.00112	.00684	.00345	.00565
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 11:37:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**-.00004**	**-.00290**	**-.00180**	**-.00095**	**.00026**	**.00127**
Stddev	.00126	.00040	.00531	.00104	.00030	.00018	.00033
%RSD	720.33	1037.6	182.93	57.739	31.840	69.543	26.201
#1	-.00138	.00030	.00232	-.00292	-.00094	.00041	.00115
#2	-.00028	-.00048	-.00273	-.00162	-.00066	.00030	.00101
#3	.00113	.00007	-.00830	-.00087	-.00126	.00006	.00164
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9475.4**	**60828.**	**3302.4**
Stddev	15.9	240.	28.2
%RSD	.16749	.39397	.85256
#1	9486.2	60837.	3325.2
#2	9482.7	61063.	3270.9
#3	9457.1	60584.	3311.0

Approved: June 25, 2016

Sample Name: L1606078718 Acquired: 6/24/2016 11:41:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00044**	**.12278**	**-.00107**	**.00913**	**.01523**	**.00001**	**5.3107**	**-.00005**
Stddev	.00135	.00087	.00075	.00238	.00045	.00002	.0439	.00007
%RSD	307.59	.71051	70.678	26.118	2.9624	290.46	.82581	147.98
#1	-.00119	.12179	-.00040	.01179	.01472	.00003	5.2601	-.00013
#2	-.00124	.12310	-.00188	.00842	.01537	.00000	5.3382	.00001
#3	.00112	.12344	-.00091	.00718	.01559	-.00001	5.3338	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.00156**	**.00001**	**.12761**	**.28289**	**-.00057**	**2.0930**	**.00966**
Stddev	.00025	.00095	.00078	.01136	.02940	.00292	.1311	.00143
%RSD	123.91	60.819	13550.	8.9048	10.391	511.67	6.2613	14.807
#1	.00004	.00136	.00041	.11857	.31451	-.00375	2.2066	.00912
#2	-.00046	.00072	.00051	.14037	.25639	.00005	1.9496	.00858
#3	-.00018	.00259	-.00090	.12389	.27778	.00199	2.1228	.01128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00091**	**.96070**	**.00021**	**.01639**	**.00142**	**.00012**	**.00174**	**.95670**
Stddev	.00022	.02144	.00152	.00378	.00110	.00353	.00315	.00064
%RSD	24.211	2.2317	705.53	23.047	77.668	2852.2	180.36	.06663
#1	.00066	.96380	-.00103	.01922	.00239	-.00367	.00218	.95743
#2	.00108	.98042	.00190	.01784	.00022	.00073	-.00160	.95644
#3	.00099	.93788	-.00022	.01210	.00165	.00331	.00465	.95624
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606078718 Acquired: 6/24/2016 11:41:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	.02113	-.00261	.00155	.00015	.00102	.00007
Stddev	.00039	.00013	.00231	.00262	.00009	.00008	.00015
%RSD	3458.6	.60621	88.436	169.06	60.666	7.5915	217.66
#1	-.00027	.02099	-.00355	.00304	.00004	.00110	-.00006
#2	.00044	.02124	.00002	-.00148	.00020	.00094	.00004
#3	-.00021	.02116	-.00429	.00309	.00019	.00102	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9833.8	62560.	3368.7
Stddev	10.6	179.	20.6
%RSD	.10814	.28665	.61199
#1	9837.0	62447.	3366.4
#2	9821.9	62767.	3349.3
#3	9842.4	62467.	3390.3

Approved: June 25, 2016

Sample Name: PBW 76 Acquired: 6/24/2016 11:45:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.00756**	**-.00027**	**.00227**	**.00060**	**.00001**	**.00703**	**.00010**
Stddev	.00134	.00214	.00202	.00255	.00065	.00005	.01557	.00013
%RSD	7726.0	28.331	745.35	112.37	108.24	426.81	221.55	123.75
#1	.00015	.00960	.00041	.00019	.00119	.00007	-.00446	.00001
#2	.00123	.00774	.00132	.00150	-.00010	-.00002	.02475	.00024
#3	-.00144	.00533	-.00255	.00512	.00071	-.00001	.00079	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00074**	**.00189**	**-.00169**	**.00228**	**.02645**	**-.00293**	**.08622**	**-.00171**
Stddev	.00036	.00154	.00145	.01650	.09764	.00154	.04513	.00322
%RSD	48.622	81.673	85.412	724.65	369.14	52.587	52.347	188.75
#1	-.00110	.00346	-.00193	.01977	.12997	-.00130	.13664	-.00066
#2	-.00076	.00182	-.00301	.00009	-.06399	-.00437	.04959	-.00532
#3	-.00037	.00038	-.00014	-.01302	.01337	-.00312	.07244	.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00066**	**.03990**	**-.00047**	**-.00713**	**-.00416**	**-.00155**	**-.00282**	**.01609**
Stddev	.00011	.02208	.00015	.00734	.00167	.00446	.00425	.00127
%RSD	17.385	55.332	31.359	102.96	40.213	287.62	150.70	7.8845
#1	.00065	.03197	-.00031	-.00456	-.00533	.00097	.00195	.01464
#2	.00055	.02288	-.00051	-.01540	-.00224	.00108	-.00421	.01696
#3	.00078	.06484	-.00059	-.00142	-.00490	-.00670	-.00621	.01668
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: PBW 76 Acquired: 6/24/2016 11:45:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00042**	**-.00012**	**-.00291**	**.00062**	**-.00065**	**.00076**	**.00063**
Stddev	.00117	.00017	.00323	.00163	.00060	.00007	.00005
%RSD	281.50	146.61	111.08	263.50	92.819	8.5570	7.9907
#1	.00066	.00000	-.00316	-.00124	-.00007	.00071	.00069
#2	-.00166	-.00004	-.00601	.00179	-.00127	.00074	.00060
#3	-.00025	-.00031	.00044	.00131	-.00060	.00084	.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9158.3**	**58514.**	**3173.6**
Stddev	21.5	54.	54.1
%RSD	.23481	.09167	1.7045
#1	9170.2	58456.	3116.8
#2	9171.2	58527.	3224.6
#3	9133.5	58561.	3179.5

Approved: June 25, 2016

Sample Name: LCSW 76 Acquired: 6/24/2016 11:49:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19957**	**5.0577**	**.20359**	**.97778**	**.51970**	**.02459**	**5.2560**	**.02583**
Stddev	.00111	.0209	.00144	.00585	.00573	.00009	.0253	.00026
%RSD	.55649	.41409	.70902	.59861	1.1018	.38272	.48154	.99696
#1	.19952	5.0735	.20526	.97949	.51449	.02469	5.2312	.02570
#2	.19848	5.0657	.20267	.98260	.51879	.02457	5.2550	.02613
#3	.20070	5.0340	.20285	.97127	.52583	.02451	5.2818	.02566
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10438**	**.25143**	**.25975**	**2.0526**	**25.715**	**.51843**	**5.1244**	**.25887**
Stddev	.00049	.00212	.00051	.0472	.222	.00558	.0767	.00446
%RSD	.46631	.84222	.19672	2.2997	.86399	1.0771	1.4961	1.7214
#1	.10490	.25326	.25929	2.0703	25.495	.51419	5.0400	.25801
#2	.10428	.25193	.25965	1.9991	25.711	.51635	5.1897	.25491
#3	.10394	.24911	.26030	2.0884	25.939	.52476	5.1436	.26370
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53107**	**25.841**	**.25948**	**4.9583**	**.25768**	**.61986**	**.20199**	**2.6208**
Stddev	.00128	.248	.00088	.0110	.00363	.00187	.00566	.0027
%RSD	.24060	.95967	.33951	.22193	1.4073	.30098	2.7997	.10443
#1	.53215	25.579	.25869	4.9612	.25468	.61882	.19650	2.6225
#2	.53139	25.870	.26043	4.9675	.25665	.62201	.20780	2.6222
#3	.52966	26.073	.25932	4.9461	.26171	.61875	.20168	2.6176
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LCSW 76 Acquired: 6/24/2016 11:49:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51623	.53123	.52244	.25565	.49959	.51393	.00579
Stddev	.00132	.00381	.00132	.00319	.00144	.00042	.00111
%RSD	.25652	.71784	.25180	1.2488	.28878	.08123	19.246
#1	.51555	.52808	.52357	.25635	.50112	.51432	.00458
#2	.51775	.53013	.52276	.25844	.49939	.51397	.00604
#3	.51538	.53547	.52100	.25217	.49826	.51349	.00677
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9055.9	57815.	3183.8
Stddev	4.9	347.	20.8
%RSD	.05361	.60036	.65296
#1	9054.8	57514.	3207.6
#2	9061.2	57737.	3174.7
#3	9051.7	58195.	3169.1

Approved: June 25, 2016

Sample Name: F BLANK Acquired: 6/24/2016 11:52:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573594-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.01913	.00045	.00564	.00075	.00006	.03446	.00003
Stddev	.00067	.00249	.00285	.00093	.00023	.00008	.05634	.00010
%RSD	248.40	13.009	640.39	16.412	30.810	153.80	163.51	360.07
#1	-.00005	.01749	.00372	.00458	.00101	.00001	.06139	-.00008
#2	-.00018	.01791	-.00146	.00604	.00070	.00015	-.03030	.00007
#3	.00104	.02200	-.00093	.00630	.00056	.00000	.07228	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	.00253	-.00156	-.00596	.16777	.00070	.01889	-.00191
Stddev	.00044	.00121	.00070	.01626	.08879	.00348	.08939	.00126
%RSD	226.82	47.714	44.960	272.74	52.925	500.27	473.10	66.049
#1	-.00068	.00392	-.00085	-.00089	.18512	.00292	-.08304	-.00336
#2	-.00006	.00176	-.00226	-.02415	.07158	-.00331	.08391	-.00130
#3	.00016	.00191	-.00157	.00716	.24660	.00248	.05581	-.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00127	146.88	-.00010	-.00997	-.00192	-.00060	.00086	.01689
Stddev	.00007	2.32	.00022	.01062	.00306	.00058	.00486	.00219
%RSD	5.9044	1.5789	217.75	106.58	159.22	97.608	562.25	12.982
#1	.00123	147.49	-.00010	-.00418	.00110	-.00085	.00099	.01941
#2	.00122	144.32	-.00032	-.02223	-.00503	-.00101	-.00405	.01582
#3	.00135	148.83	.00012	-.00350	-.00184	.00007	.00565	.01544
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: F BLANK Acquired: 6/24/2016 11:52:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573594-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00019	.00465	-.00056	-.00077	.00385	.00047
Stddev	.00062	.00009	.00622	.00067	.00006	.00008	.00058
%RSD	351.13	48.859	133.64	119.24	7.9259	2.1598	122.28
#1	-.00018	.00019	.00196	-.00117	-.00080	.00376	.00110
#2	.00090	.00028	.00023	-.00067	-.00082	.00387	.00035
#3	-.00018	.00010	.01176	.00016	-.00070	.00392	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9082.3	57649.	3191.0
Stddev	16.5	168.	36.6
%RSD	.18193	.29213	1.1475
#1	9087.4	57544.	3194.2
#2	9063.8	57561.	3225.9
#3	9095.7	57844.	3152.9

Approved: June 25, 2016

Sample Name: F BLANK Acquired: 6/24/2016 11:56:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573594-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00681	-.00106	.00396	-.00038	.00008	.00787
Stddev	.00115	.00552	.00081	.00188	.00038	.00004	.02622
%RSD	428.61	81.084	76.687	47.340	102.50	53.257	333.03
#1	.00038	.01319	-.00187	.00403	-.00074	.00010	-.00305
#2	-.00094	.00367	-.00107	.00205	.00003	.00010	-.01112
#3	.00136	.00358	-.00024	.00580	-.00042	.00003	.03779
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	-.00070	.00137	-.00027	-.00002	.15945	-.00128
Stddev	.00010	.00002	.00054	.00110	.02466	.06888	.00479
%RSD	101.48	2.8007	39.168	401.57	161320.	43.197	373.14
#1	-.00002	-.00067	.00075	-.00109	-.02191	.10599	.00293
#2	.00017	-.00071	.00165	-.00072	-.00485	.13518	-.00650
#3	.00015	-.00071	.00170	.00098	.02671	.23717	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.01684	F -.00418	.00067	.09707	-.00070	-.01284	.00022
Stddev	.07248	.00187	.00051	.02145	.00086	.00271	.00131
%RSD	430.41	44.681	75.988	22.093	121.92	21.113	591.13
#1	-.09127	-.00633	.00026	.09161	-.00137	-.01596	.00169
#2	-.01277	-.00318	.00124	.12072	.00026	-.01112	-.00022
#3	.05352	-.00303	.00051	.07889	-.00100	-.01143	-.00081
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		36.000					
Low Limit		-.00300					

Approved: June 25, 2016

Sample Name: F BLANK Acquired: 6/24/2016 11:56:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573594-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	-.00165	.01154	-.00016	-.00000	.00524	-.00258
Stddev	.00243	.00564	.00134	.00055	.00028	.00100	.00016
%RSD	433.82	342.87	11.581	341.26	38088.	19.138	6.0823
#1	.00049	-.00470	.01307	-.00007	.00005	.00482	-.00263
#2	-.00334	.00486	.01061	.00034	.00025	.00451	-.00270
#3	.00117	-.00510	.01094	-.00075	-.00031	.00638	-.00240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00082	.00321	.00040
Stddev	.00090	.00006	.00064
%RSD	109.84	1.7754	160.28
#1	-.00106	.00319	-.00006
#2	-.00159	.00327	.00013
#3	.00017	.00316	.00114
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9251.2	59193.	3228.6
Stddev	29.0	219.	50.6
%RSD	.31309	.36916	1.5681
#1	9282.5	58943.	3171.4
#2	9245.5	59348.	3246.5
#3	9225.4	59289.	3267.8

Approved: June 25, 2016

Sample Name: L1606115101 Acquired: 6/24/2016 12:00:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00039**	**.15830**	**.00196**	**.12061**	**.07888**	**-.00001**	**37.815**	**.00010**
Stddev	.00120	.00530	.00056	.00140	.00081	.00003	.248	.00022
%RSD	304.15	3.3498	28.525	1.1602	1.0231	231.96	.65454	212.58
#1	-.00079	.16067	.00184	.12082	.07945	-.00001	38.100	.00001
#2	.00095	.15223	.00257	.12189	.07796	.00002	37.690	-.00006
#3	-.00134	.16201	.00147	.11912	.07925	-.00005	37.655	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00054**	**.00290**	**.00097**	**.21119**	**2.5400**	**.00368**	**20.418**	**.06424**
Stddev	.00015	.00059	.00066	.01074	.0733	.00380	.216	.00165
%RSD	27.920	20.440	67.678	5.0831	2.8878	103.15	1.0559	2.5751
#1	-.00061	.00239	.00022	.21267	2.5710	.00761	20.667	.06262
#2	-.00065	.00277	.00126	.22111	2.4562	.00340	20.289	.06593
#3	-.00037	.00355	.00144	.19979	2.5927	.00003	20.297	.06416
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00311**	**101.77**	**.00045**	**.04117**	**.00135**	**.00380**	**.00157**	**5.3677**
Stddev	.00045	.72	.00047	.00987	.00181	.00230	.00252	.0303
%RSD	14.570	.71009	104.97	23.979	133.91	60.522	159.90	.56381
#1	.00300	102.57	.00075	.03748	.00144	.00202	.00106	5.3896
#2	.00272	101.55	.00069	.05236	.00312	.00299	-.00065	5.3804
#3	.00360	101.18	-.00009	.03367	-.00050	.00640	.00431	5.3332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115101 Acquired: 6/24/2016 12:00:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00053**	**.24842**	**-.00797**	**-.00198**	**.00331**	**.01122**	**.00043**
Stddev	.00079	.00184	.00414	.00305	.00081	.00007	.00023
%RSD	148.48	.74257	51.976	153.47	24.555	.58389	52.792
#1	-.00089	.25043	-.00512	-.00050	.00292	.01123	.00048
#2	.00038	.24800	-.01272	-.00549	.00277	.01128	.00018
#3	-.00108	.24682	-.00607	.00004	.00425	.01115	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9014.8**	**57274.**	**3214.0**
Stddev	3.7	444.	16.2
%RSD	.04144	.77607	.50389
#1	9010.8	56777.	3196.3
#2	9018.1	57410.	3228.0
#3	9015.6	57634.	3217.6

Approved: June 25, 2016

Sample Name: L1606115103S Acquired: 6/24/2016 12:04:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19866**	**5.2333**	**.20489**	**1.0841**	**.58829**	**.02453**	**41.795**	**.02565**
Stddev	.00248	.0391	.00312	.0094	.00934	.00022	.762	.00024
%RSD	1.2478	.74796	1.5219	.86801	1.5872	.88296	1.8223	.94310
#1	.20143	5.2782	.20405	1.0949	.59855	.02478	42.664	.02538
#2	.19665	5.2065	.20834	1.0778	.58603	.02443	41.476	.02586
#3	.19791	5.2153	.20228	1.0795	.58029	.02438	41.245	.02571
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10099**	**.24641**	**.25195**	**2.2589**	**28.126**	**.51539**	**24.622**	**.31292**
Stddev	.00052	.00196	.00102	.0296	.653	.00581	.350	.00628
%RSD	.51212	.79406	.40526	1.3088	2.3212	1.1278	1.4196	2.0063
#1	.10114	.24829	.25234	2.2928	28.857	.52178	24.997	.31972
#2	.10142	.24656	.25272	2.2452	27.918	.51397	24.564	.31172
#3	.10041	.24438	.25079	2.2387	27.601	.51042	24.305	.30733
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52635**	**123.51**	**.24930**	**5.0586**	**.24835**	**.61205**	**.20210**	**7.9483**
Stddev	.00263	2.21	.00102	.0099	.00401	.00458	.01142	.0147
%RSD	.50034	1.7930	.40840	.19611	1.6157	.74825	5.6519	.18492
#1	.52939	126.01	.25035	5.0677	.24616	.61628	.19120	7.9616
#2	.52472	122.75	.24832	5.0480	.25298	.61267	.20111	7.9508
#3	.52495	121.78	.24922	5.0600	.24590	.60719	.21398	7.9325
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115103S Acquired: 6/24/2016 12:04:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50472	.74393	.51319	.24877	.50017	.50921	.00163
Stddev	.00229	.01406	.00107	.00330	.00462	.00094	.00046
%RSD	.45343	1.8895	.20946	1.3249	.92272	.18364	28.196
#1	.50713	.75976	.51270	.24643	.50544	.51012	.00133
#2	.50447	.73914	.51244	.24733	.49686	.50925	.00215
#3	.50257	.73289	.51442	.25254	.49821	.50826	.00140
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8967.8	56968.	3188.4
Stddev	14.4	310.	46.6
%RSD	.16024	.54356	1.4614
#1	8982.4	56611.	3137.2
#2	8953.6	57142.	3228.2
#3	8967.3	57152.	3199.9

Approved: June 25, 2016

Sample Name: L1606115104SD Acquired: 6/24/2016 12:08:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20050**	**5.5362**	**.21145**	**1.1171**	**.60094**	**.02473**	**43.628**	**.02602**
Stddev	.00367	.0392	.00196	.0038	.00661	.00023	.422	.00015
%RSD	1.8310	.70851	.92588	.33636	1.0992	.92800	.96702	.56220
#1	.20453	5.5755	.20937	1.1208	.60449	.02497	43.830	.02607
#2	.19734	5.5360	.21326	1.1133	.60501	.02469	43.911	.02586
#3	.19964	5.4970	.21172	1.1174	.59332	.02452	43.143	.02614
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10332**	**.25201**	**.25751**	**2.4745**	**28.765**	**.52930**	**25.537**	**.32828**
Stddev	.00022	.00113	.00140	.0515	.250	.00229	.203	.00242
%RSD	.20838	.44890	.54386	2.0800	.86748	.43222	.79310	.73866
#1	.10312	.25327	.25864	2.4622	28.794	.52881	25.355	.33071
#2	.10331	.25107	.25594	2.5310	28.999	.53179	25.755	.32826
#3	.10355	.25171	.25796	2.4303	28.503	.52730	25.502	.32586
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53696**	**128.06**	**.25435**	**5.1848**	**.25573**	**.62539**	**.20371**	**8.6826**
Stddev	.00235	1.16	.00112	.0104	.00231	.00094	.00431	.0179
%RSD	.43756	.90349	.43872	.20045	.90135	.15109	2.1170	.20639
#1	.53930	128.62	.25342	5.1916	.25485	.62446	.19905	8.6946
#2	.53698	128.84	.25558	5.1899	.25835	.62536	.20453	8.6911
#3	.53460	126.73	.25403	5.1728	.25400	.62635	.20756	8.6620
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115104SD Acquired: 6/24/2016 12:08:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51403**	**.76306**	**.52079**	**.25353**	**.50800**	**.54740**	**.00120**
Stddev	.00207	.00813	.00728	.00246	.00215	.00115	.00023
%RSD	.40270	1.0651	1.3976	.96966	.42297	.21071	19.008
#1	.51525	.76972	.51741	.25073	.51047	.54816	.00120
#2	.51521	.76547	.52914	.25449	.50702	.54797	.00097
#3	.51164	.75401	.51581	.25536	.50652	.54608	.00143
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8971.1**	**57029.**	**3176.4**
Stddev	7.5	275.	37.9
%RSD	.08397	.48302	1.1936
#1	8971.7	56728.	3149.0
#2	8963.3	57269.	3160.4
#3	8978.3	57089.	3219.6

Approved: June 25, 2016

Sample Name: L1606114001 Acquired: 6/24/2016 12:11:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00112	.02288	.00406	.04082	.07775	.00002	146.18	.00803
Stddev	.00117	.00176	.00168	.00145	.00148	.00006	1.41	.00013
%RSD	105.07	7.7135	41.352	3.5486	1.9065	431.51	.96792	1.6005
#1	-.00015	.02175	.00435	.04246	.07857	-.00005	147.59	.00799
#2	.00217	.02197	.00557	.04032	.07604	.00008	144.76	.00794
#3	.00133	.02491	.00225	.03970	.07864	.00002	146.20	.00818
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.00113	.15059	.00257	2.0589	.00836	2.1895	.15039
Stddev	.00020	.00056	.00328	.04967	.1178	.00105	.0405	.00204
%RSD	197.71	50.139	2.1779	1935.6	5.7222	12.511	1.8515	1.3546
#1	-.00033	.00053	.15163	.05781	2.1539	.00743	2.1519	.15272
#2	.00004	.00166	.15323	-.01173	1.9271	.00816	2.2324	.14950
#3	-.00002	.00119	.14692	-.03838	2.0957	.00949	2.1841	.14894
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00097	4.5457	.00499	.37451	.09772	.00116	.00727	.91983
Stddev	.00011	.0157	.00049	.00549	.00291	.00520	.00545	.00530
%RSD	11.074	.34568	9.8108	1.4647	2.9765	448.88	74.937	.57580
#1	.00106	4.5461	.00536	.38066	.10096	.00620	.00098	.92472
#2	.00085	4.5299	.00444	.37010	.09534	-.00419	.01057	.92057
#3	.00099	4.5613	.00518	.37278	.09685	.00146	.01027	.91421
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114001 Acquired: 6/24/2016 12:11:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00079**	**.43857**	**-.02336**	**-.00142**	**-.00154**	**.50322**	**.00005**
Stddev	.00104	.00448	.00196	.00344	.00065	.00330	.00027
%RSD	131.08	1.0215	8.3791	242.90	42.008	.65521	545.16
#1	.00012	.44211	-.02243	-.00473	-.00200	.50529	-.00008
#2	-.00193	.43353	-.02204	-.00165	-.00182	.50495	.00036
#3	-.00058	.44006	-.02561	.00214	-.00080	.49942	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9099.5**	**58355.**	**3254.5**
Stddev	20.8	103.	52.9
%RSD	.22848	.17565	1.6262
#1	9103.9	58241.	3200.3
#2	9076.9	58438.	3306.0
#3	9117.7	58387.	3257.0

Approved: June 25, 2016

Sample Name: L1606114001SDL Acquired: 6/24/2016 12:15:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574055-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00037	.01331	.00099	.00780	.01560	.00000	29.557	.00158
Stddev	.00087	.00321	.00169	.00203	.00098	.00002	.054	.00027
%RSD	236.49	24.147	171.32	26.026	6.2683	4328.2	.18417	17.124
#1	.00062	.01694	-.00029	.00636	.01450	-.00002	29.529	.00183
#2	-.00104	.01084	.00035	.00692	.01636	.00002	29.620	.00130
#3	-.00069	.01214	.00290	.01013	.01596	.00000	29.522	.00162
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	.00132	.03151	.00499	.41194	.00149	.47888	.02876
Stddev	.00033	.00049	.00083	.01420	.07529	.00168	.04968	.00203
%RSD	299.16	36.877	2.6222	284.58	18.277	112.60	10.373	7.0541
#1	.00017	.00076	.03108	.02107	.49470	.00200	.52478	.03053
#2	-.00047	.00152	.03098	-.00580	.34749	-.00038	.48574	.02654
#3	-.00003	.00167	.03246	-.00031	.39365	.00285	.42614	.02921
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.89244	.00037	.07391	.02034	.00194	-.00119	.19852
Stddev	.00030	.03461	.00035	.00616	.00060	.00167	.00867	.00138
%RSD	58.379	3.8778	96.553	8.3343	2.9674	86.300	729.26	.69508
#1	.00070	.85307	.00064	.08066	.02076	.00316	-.00830	.19746
#2	.00017	.90617	.00049	.07249	.02062	.00003	.00847	.19802
#3	.00070	.91807	-.00003	.06859	.01965	.00263	-.00373	.20008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114001SDL Acquired: 6/24/2016 12:15:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574055-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	.08546	-.00162	-.00038	-.00143	.10505	.00026
Stddev	.00052	.00084	.00796	.00370	.00041	.00083	.00026
%RSD	132.53	.98750	491.04	963.99	29.011	.78998	99.384
#1	-.00083	.08458	.00175	-.00262	-.00159	.10430	-.00004
#2	.00018	.08626	.00410	-.00242	-.00096	.10490	.00043
#3	-.00052	.08553	-.01071	.00389	-.00173	.10594	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9347.7	59748.	3254.8
Stddev	37.4	288.	18.3
%RSD	.39956	.48239	.56188
#1	9390.7	59990.	3243.3
#2	9323.6	59429.	3245.1
#3	9328.6	59825.	3275.9

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 12:19:26 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.42650**	**10.713**	**.42746**	**.52823**	**1.0913**	**.05212**	**10.834**
Stddev	.00317	.052	.00096	.00261	.0070	.00012	.031
%RSD	.74327	.48970	.22392	.49473	.63946	.22148	.28418
#1	.43016	10.771	.42726	.53089	1.0867	.05225	10.857
#2	.42452	10.698	.42850	.52814	1.0879	.05204	10.799
#3	.42483	10.670	.42662	.52566	1.0994	.05205	10.846
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05499**	**.21760**	**.52572**	**.54475**	**4.2777**	**54.613**	**1.0769**
Stddev	.00032	.00106	.00228	.00053	.0326	.264	.0102
%RSD	.58459	.48849	.43328	.09756	.76212	.48255	.94636
#1	.05491	.21872	.52812	.54439	4.2464	54.561	1.0684
#2	.05534	.21660	.52545	.54450	4.2752	54.379	1.0742
#3	.05472	.21750	.52359	.54536	4.3115	54.899	1.0882
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.527**	**.54567**	**1.0931**	**54.266**	**.54162**	**10.766**	**.54062**
Stddev	.021	.00325	.0051	.187	.00238	.011	.00023
%RSD	.20378	.59558	.46292	.34370	.43925	.10654	.04330
#1	10.503	.54270	1.0987	54.187	.54208	10.764	.54087
#2	10.533	.54517	1.0919	54.131	.53904	10.778	.54059
#3	10.545	.54914	1.0888	54.479	.54373	10.755	.54040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 12:19:26 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2945**	**.43428**	F **5.6098**	**1.0799**	**1.0949**	F **1.1021**	**.54481**
Stddev	.0041	.00361	.0019	.0026	.0045	.0067	.00469
%RSD	.31714	.83239	.03336	.24374	.40814	.60549	.86133
#1	1.2974	.43838	5.6080	1.0827	1.0928	1.1058	.54545
#2	1.2963	.43289	5.6096	1.0794	1.0919	1.0944	.54914
#3	1.2898	.43156	5.6117	1.0775	1.1000	1.1060	.53983
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Pass
Value			5.0000			1.0000	
Range			10.000%			10.000%	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0454**	**1.0803**	**1.0570**
Stddev	.0034	.0013	.0088
%RSD	.32628	.12126	.82774
#1	1.0490	1.0816	1.0630
#2	1.0452	1.0790	1.0470
#3	1.0422	1.0802	1.0611
Check ?	Chk Pass	Chk Pass	Chk Pass
Value			
Range			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8984.8**	**56710.**	**3113.2**
Stddev	45.5	317.	15.4
%RSD	.50651	.55948	.49324
#1	8944.0	56442.	3100.3
#2	9033.9	56628.	3130.2
#3	8976.6	57060.	3109.1

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 12:23:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.00344	.00145	.00294	.00035	-.00004	.02215	-.00021
Stddev	.00041	.00219	.00240	.00079	.00121	.00010	.03194	.00009
%RSD	124.54	63.593	165.80	26.762	344.83	259.48	144.18	42.051
#1	.00029	.00529	.00096	.00384	-.00003	.00006	.00228	-.00030
#2	-.00006	.00400	.00406	.00262	.00171	-.00003	.00518	-.00013
#3	.00075	.00102	-.00067	.00237	-.00062	-.00014	.05900	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00035	.00201	-.00150	-.01822	.10568	.00099	.05713	-.00256
Stddev	.00021	.00106	.00016	.00191	.02617	.00205	.07243	.00079
%RSD	59.613	52.971	10.403	10.463	24.764	207.53	126.79	30.925
#1	-.00051	.00267	-.00144	-.02010	.13480	-.00038	.04350	-.00234
#2	-.00011	.00078	-.00167	-.01829	.08413	-.00000	.13541	-.00189
#3	-.00044	.00258	-.00137	-.01629	.09812	.00334	-.00752	-.00343
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00363	.06866	.00015	-.00196	-.00068	.00350	-.00029	.00611
Stddev	.00028	.01714	.00016	.00299	.00126	.00201	.00292	.00286
%RSD	7.7510	24.965	113.48	152.53	184.92	57.392	1023.3	46.714
#1	.00336	.04977	.00032	-.00175	-.00073	.00541	.00071	.00898
#2	.00392	.08323	.00011	.00092	.00060	.00371	.00201	.00327
#3	.00361	.07297	-.00000	-.00506	-.00193	.00140	-.00357	.00609
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 12:23:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00057**	**.00010**	**.00153**	**.00025**	**-.00049**	**.00022**	**.00163**
Stddev	.00020	.00030	.00816	.00155	.00055	.00013	.00062
%RSD	35.071	304.81	532.55	618.43	111.20	57.646	37.867
#1	-.00034	-.00011	.00782	-.00052	-.00106	.00017	.00094
#2	-.00065	.00044	.00447	.00204	-.00045	.00013	.00184
#3	-.00071	-.00004	-.00769	-.00077	.00003	.00037	.00211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9479.9**	**60625.**	**3266.1**
Stddev	27.2	250.	24.0
%RSD	.28740	.41169	.73490
#1	9455.0	60338.	3293.8
#2	9475.6	60791.	3252.7
#3	9509.0	60746.	3251.7

Approved: June 25, 2016

Sample Name: L1606114001PS Acquired: 6/24/2016 12:27:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574055-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20275**	**5.1419**	**.21333**	**1.0253**	**.59504**	**.02467**	**139.85**	**.03335**
Stddev	.00382	.0464	.00182	.0020	.00731	.00012	1.53	.00017
%RSD	1.8833	.90229	.85200	.19620	1.2293	.48386	1.0954	.51011
#1	.20665	5.1917	.21522	1.0245	.60106	.02477	141.22	.03328
#2	.20258	5.0999	.21318	1.0237	.58690	.02454	138.19	.03323
#3	.19902	5.1341	.21159	1.0275	.59717	.02471	140.14	.03355
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10344**	**.25015**	**.39465**	**2.0433**	**28.277**	**.53767**	**7.1211**	**.39716**
Stddev	.00038	.00249	.00031	.0120	.363	.00734	.1390	.00381
%RSD	.37083	.99698	.07885	.58514	1.2820	1.3649	1.9524	.95928
#1	.10301	.25285	.39486	2.0474	28.575	.54252	7.2778	.40080
#2	.10376	.24793	.39481	2.0298	27.873	.52923	7.0126	.39320
#3	.10354	.24968	.39430	2.0526	28.383	.54126	7.0729	.39748
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53753**	**30.414**	**.25886**	**5.5881**	**.34388**	**.63595**	**.21104**	**3.5188**
Stddev	.00106	.282	.00133	.0038	.00319	.00220	.00441	.0017
%RSD	.19634	.92682	.51475	.06847	.92887	.34549	2.0903	.04959
#1	.53826	30.705	.25820	5.5918	.34514	.63840	.21585	3.5208
#2	.53800	30.142	.26040	5.5842	.34625	.63530	.21010	3.5182
#3	.53632	30.394	.25800	5.5882	.34025	.63416	.20718	3.5175
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114001PS Acquired: 6/24/2016 12:27:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574055-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51595**	**.91725**	**.50579**	**.25689**	**.50349**	**.95723**	**.00511**
Stddev	.00180	.01150	.00924	.00144	.00222	.00117	.00123
%RSD	.34968	1.2533	1.8261	.55957	.44179	.12188	24.042
#1	.51532	.92818	.50881	.25546	.50563	.95817	.00409
#2	.51798	.90526	.49543	.25686	.50119	.95761	.00476
#3	.51455	.91830	.51315	.25834	.50365	.95593	.00647
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8910.4**	**56997.**	**3158.7**
Stddev	14.9	491.	36.1
%RSD	.16773	.86203	1.1429
#1	8920.8	56440.	3132.1
#2	8917.3	57366.	3199.8
#3	8893.3	57187.	3144.2

Approved: June 25, 2016

Sample Name: L1606114003 Acquired: 6/24/2016 12:30:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	.01986	.00301	.09457	.03965	-.00002	99.687	.00252
Stddev	.00131	.00825	.00228	.00100	.00036	.00012	.899	.00019
%RSD	294.41	41.551	75.602	1.0569	.91914	587.37	.90168	7.4764
#1	.00190	.01049	.00563	.09524	.04006	.00003	99.938	.00273
#2	.00009	.02603	.00186	.09504	.03938	.00007	98.690	.00241
#3	-.00065	.02306	.00154	.09342	.03950	-.00016	100.43	.00241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00021	.00208	.10263	.00520	1.9156	.00501	1.6642	.08675
Stddev	.00011	.00029	.00205	.01228	.0169	.00341	.0459	.00101
%RSD	52.022	14.106	2.0016	236.15	.88223	68.128	2.7554	1.1666
#1	-.00011	.00239	.10453	-.00392	1.9128	.00145	1.6708	.08733
#2	-.00033	.00205	.10292	.01917	1.9003	.00533	1.6155	.08558
#3	-.00020	.00181	.10045	.00036	1.9337	.00825	1.7065	.08735
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00442	143.17	.00079	-.00261	.00210	.00294	.00376	1.6066
Stddev	.00010	1.44	.00082	.00325	.00305	.00131	.00329	.0083
%RSD	2.2634	1.0055	104.33	124.46	145.56	44.519	87.514	.51571
#1	.00431	143.63	.00159	-.00023	.00390	.00415	.00530	1.6124
#2	.00444	141.56	.00083	-.00129	-.00143	.00311	-.00002	1.6103
#3	.00450	144.33	-.00005	-.00631	.00382	.00155	.00599	1.5971
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114003 Acquired: 6/24/2016 12:30:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.24737	-.01388	-.00120	-.00079	.01628	.00040
Stddev	.00066	.00187	.00938	.00377	.00043	.00034	.00030
%RSD	1229.4	.75472	67.590	313.73	54.177	2.1058	74.950
#1	-.00005	.24839	-.01059	-.00290	-.00056	.01656	.00005
#2	-.00054	.24522	-.00658	-.00383	-.00128	.01637	.00055
#3	.00076	.24851	-.02446	.00312	-.00053	.01589	.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8916.0	56782.	3182.3
Stddev	15.2	240.	28.8
%RSD	.17040	.42235	.90629
#1	8911.2	56706.	3188.3
#2	8903.7	56590.	3207.7
#3	8933.0	57051.	3151.0

Approved: June 25, 2016

Sample Name: PBW 61 Acquired: 6/24/2016 12:34:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	.00076	-.00110	.00309	.00002	-.00001	.04326	.00013
Stddev	.00120	.00826	.00369	.00133	.00052	.00010	.01711	.00011
%RSD	135.53	1088.1	334.09	43.079	2914.6	1198.4	39.552	82.637
#1	.00082	.00363	-.00464	.00435	-.00058	.00006	.02365	.00001
#2	.00212	.00720	-.00139	.00170	.00038	-.00013	.05514	.00017
#3	-.00028	-.00856	.00272	.00323	.00025	.00004	.05100	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	.00182	-.00080	-.00810	.10020	-.00237	-.01055	-.00142
Stddev	.00016	.00010	.00134	.00626	.03798	.00342	.06161	.00080
%RSD	28.563	5.2588	167.88	77.374	37.898	144.42	583.87	56.732
#1	-.00040	.00172	-.00029	-.01312	.14090	.00069	-.02862	-.00057
#2	-.00073	.00183	-.00231	-.01009	.09401	-.00173	.05807	-.00217
#3	-.00055	.00191	.00021	-.00108	.06571	-.00606	-.06110	-.00152
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	.11467	.00021	-.00772	.00041	.00316	.00139	.00970
Stddev	.00036	.04360	.00087	.00814	.00175	.00439	.00571	.00153
%RSD	54.368	38.021	410.51	105.39	431.56	139.19	411.25	15.736
#1	.00069	.16070	-.00007	-.00034	.00056	.00189	-.00497	.00794
#2	.00029	.10932	.00118	-.00638	-.00141	-.00047	.00607	.01053
#3	.00101	.07400	-.00048	-.01645	.00207	.00804	.00307	.01063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: PBW 61 Acquired: 6/24/2016 12:34:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	.00027	-.00192	-.00257	-.00043	.00076	.00010
Stddev	.00031	.00059	.00385	.00044	.00062	.00010	.00031
%RSD	110.25	220.35	200.29	17.018	145.00	13.528	301.29
#1	.00056	.00090	-.00630	-.00275	.00014	.00080	.00026
#2	-.00005	.00016	.00092	-.00207	-.00033	.00065	.00030
#3	.00034	-.00026	-.00038	-.00288	-.00109	.00084	-.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9302.1	60410.	3281.7
Stddev	66.0	229.	39.4
%RSD	.71003	.37905	1.2004
#1	9378.1	60509.	3291.2
#2	9269.4	60574.	3315.5
#3	9258.7	60149.	3238.5

Approved: June 25, 2016

Sample Name: LCSW 61 Acquired: 6/24/2016 12:38:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20555**	**5.1784**	**.21096**	**1.0013**	**.53967**	**.02506**	**5.4631**	**.02661**
Stddev	.00138	.0089	.00216	.0010	.00107	.00006	.0285	.00023
%RSD	.67151	.17182	1.0226	.10140	.19803	.23645	.52091	.86362
#1	.20492	5.1749	.20961	1.0025	.54073	.02507	5.4711	.02660
#2	.20459	5.1885	.21345	1.0007	.53859	.02511	5.4315	.02684
#3	.20713	5.1718	.20982	1.0007	.53967	.02500	5.4867	.02638
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10709**	**.25748**	**.26833**	**2.1158**	**26.774**	**.53895**	**5.2920**	**.26712**
Stddev	.00110	.00150	.00102	.0163	.146	.00177	.0899	.00207
%RSD	1.0293	.58418	.37911	.77089	.54628	.32794	1.6996	.77309
#1	.10822	.25770	.26921	2.1123	26.910	.54072	5.3158	.26847
#2	.10704	.25587	.26857	2.1015	26.620	.53718	5.1925	.26474
#3	.10601	.25886	.26722	2.1335	26.793	.53894	5.3676	.26814
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.54645**	**26.922**	**.26606**	**5.0982**	**.26690**	**.63372**	**.20697**	**2.6537**
Stddev	.00284	.049	.00199	.0187	.00116	.00467	.00438	.0104
%RSD	.51896	.18215	.74936	.36751	.43630	.73649	2.1177	.39305
#1	.54806	26.978	.26787	5.1053	.26563	.63639	.20777	2.6597
#2	.54811	26.888	.26639	5.1123	.26792	.63643	.21090	2.6598
#3	.54317	26.899	.26392	5.0769	.26714	.62833	.20224	2.6417
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LCSW 61 Acquired: 6/24/2016 12:38:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52855	.54930	.53444	.26386	.50928	.52661	.00239
Stddev	.00351	.00114	.00402	.00245	.00130	.00227	.00045
%RSD	.66494	.20774	.75201	.92725	.25500	.43047	18.960
#1	.53111	.55029	.53018	.26437	.51078	.52813	.00281
#2	.53000	.54956	.53500	.26601	.50848	.52769	.00191
#3	.52455	.54805	.53816	.26120	.50859	.52400	.00243
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8971.4	57490.	3144.1
Stddev	22.2	244.	32.0
%RSD	.24747	.42367	1.0188
#1	8950.2	57763.	3107.1
#2	8969.5	57293.	3162.4
#3	8994.5	57415.	3162.7

Approved: June 25, 2016

Sample Name: L1606073201 Acquired: 6/24/2016 12:42:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	.02820	.00033	.03332	.25570	.00005	29.348
Stddev	.00081	.00477	.00048	.00258	.00135	.00008	.107
%RSD	1060.6	16.901	146.21	7.7292	.52666	149.81	.36550
#1	-.00060	.02574	.00042	.03159	.25466	.00010	29.343
#2	.00085	.02517	.00076	.03208	.25522	.00010	29.244
#3	-.00048	.03370	-.00019	.03628	.25722	-.00004	29.458
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.00130	.00737	-.00082	.13349	1.5334	.02731
Stddev	.00012	.00035	.00052	.00188	.00764	.0113	.00141
%RSD	74.130	26.900	7.0457	230.52	5.7259	.73635	5.1517
#1	.00029	.00115	.00727	-.00281	.12571	1.5462	.02848
#2	.00008	.00170	.00692	-.00056	.14099	1.5249	.02772
#3	.00010	.00105	.00794	.00093	.13376	1.5292	.02575
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	39.404	.04547	.00090	F 358.79	.00311	1.6349	.00068
Stddev	.236	.00197	.00021	5.43	.00059	.0190	.00121
%RSD	.60011	4.3318	23.625	1.5145	19.047	1.1597	178.50
#1	39.143	.04349	.00067	363.98	.00244	1.6526	-.00059
#2	39.604	.04743	.00109	359.24	.00355	1.6374	.00080
#3	39.464	.04549	.00094	353.14	.00335	1.6149	.00182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 25, 2016

Sample Name: L1606073201 Acquired: 6/24/2016 12:42:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00056**	**-.00067**	**16.076**	**-.00001**	**.55040**	**-.00810**	**-.00164**
Stddev	.00164	.00536	.145	.00052	.00274	.00406	.00137
%RSD	293.19	800.42	.90295	6770.2	.49860	50.069	83.155
#1	.00126	.00045	16.195	.00001	.55128	-.00732	-.00243
#2	-.00103	.00404	16.119	.00051	.54733	-.01249	-.00007
#3	-.00191	-.00650	15.914	-.00054	.55260	-.00449	-.00243
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00202**	**.11146**	**.00024**
Stddev	.00089	.00179	.00037
%RSD	44.331	1.6093	152.52
#1	-.00107	.11286	-.00010
#2	-.00215	.11208	.00019
#3	-.00284	.10944	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8764.9**	**55502.**	**3127.7**
Stddev	30.2	118.	26.0
%RSD	.34400	.21327	.83247
#1	8763.7	55639.	3097.6
#2	8735.4	55438.	3142.4
#3	8795.6	55430.	3143.0

Approved: June 25, 2016

Sample Name: L1606079601 Acquired: 6/24/2016 12:46:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00158	3.2297	-.00034	1.2911	.04906	.00162	186.51	.23531
Stddev	.00208	.0109	.00397	.0030	.00128	.00007	1.50	.00040
%RSD	132.18	.33690	1166.8	.23101	2.6157	4.4542	.80345	.17130
#1	.00186	3.2175	-.00327	1.2892	.05043	.00168	188.24	.23541
#2	-.00064	3.2328	.00418	1.2895	.04885	.00163	185.56	.23565
#3	.00350	3.2386	-.00192	1.2945	.04789	.00154	185.75	.23486
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00732	.00840	.45442	1.2197	3.3021	.04141	30.000	3.1182
Stddev	.00026	.00095	.00241	.0142	.0440	.00123	.108	.0244
%RSD	3.6023	11.313	.53119	1.1615	1.3334	2.9646	.35889	.78321
#1	.00761	.00870	.45446	1.2311	3.3071	.04020	30.001	3.1462
#2	.00710	.00734	.45681	1.2038	3.2557	.04266	30.107	3.1009
#3	.00725	.00917	.45198	1.2241	3.3434	.04138	29.892	3.1075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00312	11.561	.03416	.23588	1.4062	.27976	.00687	32.216
Stddev	.00020	.096	.00128	.00330	.0033	.00623	.00652	.075
%RSD	6.5058	.82760	3.7349	1.4007	.23470	2.2270	94.974	.23255
#1	.00335	11.669	.03517	.23243	1.4095	.28680	.00689	32.264
#2	.00296	11.487	.03459	.23620	1.4062	.27751	.01338	32.254
#3	.00305	11.527	.03273	.23902	1.4029	.27496	.00033	32.130
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606079601 Acquired: 6/24/2016 12:46:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00507	.47885	.00429	-.00276	-.00000	9.0027	.00215
Stddev	.00101	.00357	.00463	.00394	.00060	.0349	.00057
%RSD	19.835	.74545	107.79	142.73	15473.	.38752	26.596
#1	.00531	.48291	.00292	-.00082	-.00067	9.0287	.00188
#2	.00397	.47741	.00051	-.00017	.00016	9.0163	.00176
#3	.00594	.47623	.00946	-.00729	.00049	8.9631	.00280
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8969.1	57515.	3201.7
Stddev	26.5	246.	24.8
%RSD	.29529	.42843	.77548
#1	8939.3	57271.	3173.1
#2	8989.8	57764.	3217.4
#3	8978.3	57511.	3214.7

Approved: June 25, 2016

Sample Name: L1606079602S Acquired: 6/24/2016 12:50:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20637**	**8.4667**	**.21215**	**2.3299**	**.55765**	**.02670**	**211.15**
Stddev	.00096	.0253	.00204	.0051	.00324	.00014	1.09
%RSD	.46531	.29867	.96304	.22080	.58025	.52132	.51779
#1	.20600	8.4950	.21018	2.3354	.56090	.02681	212.24
#2	.20746	8.4589	.21426	2.3291	.55443	.02675	210.05
#3	.20566	8.4462	.21202	2.3252	.55761	.02655	211.18
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.22906**	**.10963**	**.25719**	**.36273**	**3.8155**	**30.167**	**.57896**
Stddev	.00047	.00050	.00101	.00163	.0076	.190	.00294
%RSD	.20432	.45993	.39435	.45055	.20055	.62859	.50762
#1	.22922	.11004	.25752	.36247	3.8169	30.297	.58056
#2	.22942	.10977	.25800	.36448	3.8224	29.949	.57557
#3	.22853	.10907	.25606	.36125	3.8073	30.255	.58076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**37.556**	**3.7302**	**.53671**	**36.032**	**.27262**	**5.4147**	**1.3723**
Stddev	.123	.0178	.00271	.149	.00159	.0196	.0051
%RSD	.32741	.47715	.50439	.41445	.58430	.36193	.37180
#1	37.642	3.7506	.53723	36.198	.27244	5.4232	1.3668
#2	37.610	3.7181	.53911	35.908	.27429	5.4287	1.3769
#3	37.415	3.7219	.53377	35.990	.27112	5.3923	1.3731
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 25, 2016

Sample Name: L1606079602S Acquired: 6/24/2016 12:50:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.83295**	**.19904**	F **39.559**	**.51924**	**1.0206**	**.52855**	**.25056**
Stddev	.00381	.00362	.080	.00060	.0057	.00488	.00264
%RSD	.45758	1.8206	.20246	.11565	.55920	.92319	1.0541
#1	.83134	.19546	39.613	.51864	1.0248	.53056	.24812
#2	.83021	.20271	39.596	.51984	1.0141	.53210	.25336
#3	.83731	.19894	39.467	.51925	1.0230	.52298	.25020
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-1.0000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.50387**	**8.9533**	**.00345**
Stddev	.00127	.0255	.00012
%RSD	.25293	.28527	3.4468
#1	.50516	8.9684	.00349
#2	.50262	8.9677	.00353
#3	.50382	8.9238	.00331
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8874.4**	**56986.**	**3197.8**
Stddev	22.9	183.	31.1
%RSD	.25749	.32104	.97251
#1	8874.8	56794.	3162.9
#2	8851.3	57004.	3208.1
#3	8897.0	57159.	3222.4

Approved: June 25, 2016

Sample Name: L1606079603SD Acquired: 6/24/2016 12:53:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20348**	**8.3907**	**.20803**	**2.3205**	**.55659**	**.02675**	**210.01**
Stddev	.00067	.0070	.00227	.0041	.00308	.00007	1.03
%RSD	.32994	.08394	1.0916	.17615	.55344	.27317	.49200
#1	.20367	8.3952	.20541	2.3200	.55995	.02674	211.18
#2	.20273	8.3942	.20930	2.3249	.55593	.02682	209.61
#3	.20403	8.3826	.20938	2.3168	.55390	.02668	209.24
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.22784**	**.10941**	**.25693**	**.36070**	**3.7620**	**30.137**	**.57482**
Stddev	.00074	.00005	.00145	.00097	.0431	.085	.00367
%RSD	.32525	.04726	.56542	.26971	1.1460	.28231	.63776
#1	.22787	.10946	.25585	.36143	3.8070	30.228	.57882
#2	.22856	.10941	.25858	.36107	3.7577	30.060	.57405
#3	.22708	.10936	.25635	.35959	3.7211	30.123	.57161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**37.283**	**3.7093**	**.53679**	**35.887**	**.27192**	**5.4059**	**1.3646**
Stddev	.065	.0166	.00208	.175	.00166	.0027	.0036
%RSD	.17309	.44772	.38783	.48671	.61140	.04904	.26708
#1	37.346	3.7273	.53879	36.088	.27204	5.4084	1.3687
#2	37.217	3.6945	.53693	35.772	.27352	5.4063	1.3630
#3	37.287	3.7060	.53464	35.802	.27020	5.4031	1.3620
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 25, 2016

Sample Name: L1606079603SD Acquired: 6/24/2016 12:53:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.82814**	**.20815**	F **39.014**	**.51935**	**1.0179**	**.52731**	**.25200**
Stddev	.00575	.00609	.081	.00143	.0071	.00449	.00183
%RSD	.69405	2.9239	.20860	.27470	.69999	.85144	.72692
#1	.83047	.20229	39.103	.52035	1.0259	.52320	.25130
#2	.83236	.21444	38.997	.52000	1.0123	.53210	.25063
#3	.82159	.20773	38.943	.51772	1.0154	.52662	.25408
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-1.0000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.50350**	**8.8879**	**.00305**
Stddev	.00153	.0209	.00040
%RSD	.30487	.23506	13.114
#1	.50377	8.9078	.00308
#2	.50488	8.8897	.00344
#3	.50184	8.8661	.00264
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8883.7**	**57187.**	**3189.9**
Stddev	10.5	142.	22.6
%RSD	.11868	.24879	.70751
#1	8871.6	57137.	3171.1
#2	8889.1	57077.	3183.6
#3	8890.5	57348.	3214.9

Approved: June 25, 2016

Sample Name: L1606073202 Acquired: 6/24/2016 12:57:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00053**	**.02813**	**.00029**	**.04299**	**.22283**	**-.00000**	**25.162**
Stddev	.00134	.00280	.00082	.00132	.00277	.00003	.241
%RSD	252.84	9.9565	284.55	3.0648	1.2409	1017.5	.95893
#1	.00086	.02578	-.00044	.04447	.22588	-.00003	25.435
#2	-.00095	.03123	.00118	.04255	.22048	-.00000	24.976
#3	.00168	.02737	.00013	.04195	.22213	.00002	25.076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00035**	**.00120**	**.00613**	**.00149**	**.12035**	**1.4886**	**.02096**
Stddev	.00024	.00046	.00062	.00013	.01000	.0590	.00309
%RSD	67.894	38.073	10.067	8.8118	8.3106	3.9648	14.734
#1	.00061	.00150	.00611	.00148	.12839	1.5495	.01933
#2	.00031	.00067	.00552	.00163	.10915	1.4316	.01904
#3	.00014	.00141	.00675	.00137	.12352	1.4846	.02453
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**34.325**	**.04040**	**.00125**	F **349.63**	**.00292**	**1.6666**	**-.00030**
Stddev	.171	.00030	.00019	3.15	.00063	.0019	.00596
%RSD	.49775	.74283	15.066	.90066	21.672	.11272	1957.9
#1	34.517	.04074	.00107	353.18	.00219	1.6662	-.00079
#2	34.189	.04026	.00124	347.17	.00327	1.6687	.00588
#3	34.268	.04019	.00144	348.55	.00329	1.6650	-.00601
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 25, 2016

Sample Name: L1606073202 Acquired: 6/24/2016 12:57:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00152	-.00482	14.835	.00019	.47317	-.00604	-.00166
Stddev	.00130	.00284	.080	.00103	.00252	.00346	.00171
%RSD	85.788	58.877	.53712	538.43	.53296	57.319	103.01
#1	.00271	-.00798	14.887	-.00082	.47605	-.00268	-.00297
#2	.00013	-.00397	14.874	.00125	.47138	-.00959	-.00227
#3	.00172	-.00250	14.743	.00015	.47207	-.00585	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00139	.05739	-.00049
Stddev	.00087	.00042	.00019
%RSD	62.489	.72596	39.112
#1	-.00058	.05772	-.00067
#2	-.00129	.05752	-.00029
#3	-.00232	.05692	-.00049
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8802.2	55900.	3156.1
Stddev	11.1	153.	34.7
%RSD	.12621	.27340	1.0995
#1	8812.1	55724.	3124.8
#2	8804.3	55980.	3193.4
#3	8790.1	55996.	3150.2

Approved: June 25, 2016

Sample Name: L1606079401 Acquired: 6/24/2016 13:01:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.02285	.00059	.01157	.02302	.00000	4.1138	-.00026
Stddev	.00123	.00652	.00275	.00121	.00057	.00006	.0762	.00008
%RSD	894.56	28.519	469.79	10.441	2.4922	18199.	1.8516	31.902
#1	.00152	.03028	.00311	.01119	.02254	.00007	4.0311	-.00021
#2	-.00086	.01808	-.00234	.01292	.02366	-.00004	4.1811	-.00035
#3	-.00024	.02020	.00099	.01059	.02287	-.00003	4.1291	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00282	.00194	-.00143	1.2835	.37695	-.00156	.69132	.35802
Stddev	.00007	.00024	.00107	.0207	.07463	.00067	.08990	.00400
%RSD	2.5452	12.396	74.963	1.6127	19.797	43.171	13.004	1.1172
#1	.00277	.00188	-.00074	1.2630	.41442	-.00084	.58775	.35346
#2	.00278	.00173	-.00266	1.2831	.42541	-.00165	.73706	.35965
#3	.00290	.00220	-.00088	1.3044	.29101	-.00218	.74916	.36094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	1.0149	.00037	.00773	.00315	-.00108	-.00499	.64556
Stddev	.00014	.0157	.00052	.00611	.00167	.00193	.00347	.00397
%RSD	56.327	1.5446	141.49	79.119	52.980	178.21	69.644	.61433
#1	.00011	1.0219	.00010	.00835	.00264	.00009	-.00688	.64105
#2	.00039	.99693	.00097	.00133	.00501	-.00331	-.00098	.64715
#3	.00023	1.0258	.00003	.01351	.00179	-.00003	-.00710	.64849
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606079401 Acquired: 6/24/2016 13:01:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00092	.05805	-.00327	-.00056	-.00053	.00096	.00059
Stddev	.00114	.00063	.00604	.00146	.00079	.00036	.00072
%RSD	123.36	1.0876	184.48	261.81	147.56	37.712	123.27
#1	.00038	.05734	-.01006	-.00036	-.00137	.00094	.00093
#2	-.00142	.05854	-.00127	-.00211	-.00042	.00132	.00107
#3	-.00173	.05828	.00151	.00080	.00019	.00060	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9564.9	61114.	3314.5
Stddev	38.3	230.	20.8
%RSD	.40006	.37594	.62656
#1	9609.1	60917.	3337.8
#2	9542.4	61367.	3307.7
#3	9543.2	61059.	3298.0

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 13:05:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41271	10.424	.41660	.51679	1.0602	.05053	10.566	.05362
Stddev	.00072	.006	.00234	.00241	.0072	.00015	.111	.00017
%RSD	.17421	.06111	.56160	.46715	.67846	.30430	1.0504	.32244
#1	.41217	10.431	.41393	.51409	1.0550	.05068	10.515	.05356
#2	.41352	10.425	.41825	.51875	1.0572	.05054	10.490	.05381
#3	.41242	10.418	.41764	.51753	1.0684	.05038	10.693	.05348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21181	.51018	.52957	4.1573	53.268	1.0472	10.263	.52911
Stddev	.00033	.00144	.00298	.0756	.251	.0098	.140	.00211
%RSD	.15714	.28312	.56359	1.8185	.47129	.93371	1.3615	.39822
#1	.21169	.51128	.52701	4.1046	53.131	1.0438	10.102	.52758
#2	.21219	.51070	.53285	4.1234	53.116	1.0395	10.336	.52824
#3	.21155	.50854	.52885	4.2439	53.558	1.0582	10.352	.53151
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0610	52.921	.52624	10.442	.52470	1.2541	.42316	5.4481
Stddev	.0035	.320	.00081	.014	.00136	.0015	.01147	.0021
%RSD	.33117	.60540	.15460	.13298	.25996	.12313	2.7101	.03871
#1	1.0639	52.775	.52615	10.457	.52471	1.2556	.42209	5.4501
#2	1.0620	52.700	.52548	10.441	.52332	1.2541	.43512	5.4484
#3	1.0571	53.289	.52710	10.429	.52605	1.2526	.41226	5.4459
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 13:05:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0484**	**1.0667**	**1.0685**	**.52661**	**1.0185**	**1.0523**	**1.0248**
Stddev	.0029	.0081	.0058	.00076	.0042	.0021	.0004
%RSD	.27896	.76213	.54537	.14465	.41241	.19459	.03894
#1	1.0494	1.0599	1.0694	.52577	1.0227	1.0505	1.0248
#2	1.0508	1.0645	1.0623	.52727	1.0143	1.0545	1.0251
#3	1.0451	1.0757	1.0739	.52677	1.0186	1.0520	1.0243
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8882.5**	**56177.**	**3089.4**
Stddev	29.7	314.	12.2
%RSD	.33414	.55818	.39365
#1	8886.9	55855.	3082.5
#2	8850.9	56481.	3103.4
#3	8909.8	56196.	3082.2

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 13:08:45 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00038	.00717	.00127	.00627	.00069	-.00006	.00287	-.00006
Stddev	.00063	.00318	.00265	.00132	.00023	.00015	.01707	.00010
%RSD	166.42	44.334	208.86	21.039	33.283	255.17	595.44	163.89
#1	-.00060	.00479	-.00178	.00475	.00046	-.00015	.01040	.00004
#2	-.00086	.00594	.00294	.00693	.00092	.00012	-.01667	-.00008
#3	.00033	.01078	.00264	.00712	.00068	-.00014	.01487	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00066	.00118	-.00013	.00795	.06402	.00192	.03240	-.00221
Stddev	.00031	.00059	.00046	.01622	.02889	.00308	.06616	.00161
%RSD	46.769	49.794	363.48	203.93	45.129	160.88	204.20	72.497
#1	-.00075	.00088	-.00022	-.00484	.09445	.00205	.07082	-.00406
#2	-.00091	.00081	-.00053	.00251	.06064	.00493	.07038	-.00147
#3	-.00031	.00186	.00037	.02619	.03696	-.00123	-.04400	-.00112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00371	.05101	-.00022	.00146	-.00202	.00697	.00163	.00460
Stddev	.00026	.03364	.00082	.00530	.00080	.00025	.00566	.00230
%RSD	6.8808	65.949	378.04	362.25	39.756	3.5609	347.26	49.896
#1	.00342	.02221	.00011	.00725	-.00248	.00705	-.00479	.00356
#2	.00389	.08799	-.00115	-.00314	-.00109	.00717	.00590	.00724
#3	.00383	.04284	.00039	.00027	-.00249	.00669	.00378	.00301
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 13:08:45 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.00033**	**.00076**	**.00152**	**-.00024**	**.00025**	**.00081**
Stddev	.00122	.00031	.00671	.00233	.00128	.00006	.00064
%RSD	703.43	94.176	886.46	153.63	523.84	22.798	78.759
#1	-.00032	.00041	-.00664	.00398	-.00158	.00031	.00152
#2	.00111	-.00001	.00247	-.00065	-.00011	.00025	.00027
#3	-.00131	.00061	.00645	.00122	.00096	.00019	.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9421.6**	**60299.**	**3256.8**
Stddev	40.2	274.	24.0
%RSD	.42621	.45387	.73587
#1	9409.1	60564.	3247.8
#2	9466.5	60316.	3284.0
#3	9389.1	60018.	3238.7

Approved: June 25, 2016

Sample Name: L1606079404 Acquired: 6/24/2016 13:12:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00130	.03039	.00126	.01940	.01369	-.00002	1.1950	-.00001
Stddev	.00260	.00196	.00092	.00094	.00095	.00007	.0239	.00007
%RSD	199.44	6.4564	73.167	4.8262	6.9231	344.58	2.0032	832.28
#1	.00428	.03265	.00020	.01939	.01470	-.00010	1.1970	-.00005
#2	-.00048	.02933	.00188	.02034	.01282	.00002	1.2179	.00007
#3	.00011	.02918	.00170	.01847	.01356	.00002	1.1702	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00476	.00102	-.00131	.16723	.50681	.00113	.89694	.29822
Stddev	.00006	.00143	.00104	.01047	.10066	.00302	.04328	.00708
%RSD	1.2851	139.37	79.584	6.2602	19.860	268.19	4.8253	2.3747
#1	.00479	.00230	-.00080	.16355	.51557	-.00071	.91414	.29874
#2	.00479	.00129	-.00063	.17904	.60281	.00461	.84771	.29089
#3	.00469	-.00052	-.00251	.15910	.40207	-.00053	.92899	.30502
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	1.7317	.00193	.00148	-.00119	.00062	-.00351	.47199
Stddev	.00027	.0084	.00075	.00037	.00298	.00284	.00231	.00520
%RSD	36.771	.48737	38.705	24.708	250.89	456.80	65.733	1.1011
#1	.00105	1.7226	.00246	.00187	.00075	-.00174	-.00431	.47009
#2	.00065	1.7392	.00108	.00115	-.00462	-.00018	-.00531	.47787
#3	.00053	1.7334	.00225	.00142	.00031	.00378	-.00091	.46801
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606079404 Acquired: 6/24/2016 13:12:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**.01018**	**-.00222**	**-.00094**	**-.00079**	**.00167**	**-.00018**
Stddev	.00054	.00018	.00543	.00236	.00070	.00023	.00054
%RSD	144.91	1.8060	245.09	251.26	89.393	13.688	304.63
#1	-.00075	.01035	.00066	-.00355	-.00160	.00168	.00043
#2	.00024	.00998	.00118	.00103	-.00040	.00190	-.00060
#3	-.00060	.01019	-.00848	-.00029	-.00036	.00144	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9520.7**	**60796.**	**3261.1**
Stddev	19.0	197.	21.3
%RSD	.19963	.32380	.65193
#1	9542.3	60651.	3283.6
#2	9506.7	61020.	3258.3
#3	9513.1	60717.	3241.3

Approved: June 25, 2016

Sample Name: L1606079604 Acquired: 6/24/2016 13:16:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.21348	.00260	.19976	.03690	-.00001	52.193	.22780
Stddev	.00107	.00411	.00425	.00172	.00071	.00003	.631	.00068
%RSD	113.51	1.9260	163.38	.86255	1.9207	405.78	1.2096	.29779
#1	.00212	.21057	.00526	.20093	.03689	-.00005	52.321	.22786
#2	.00003	.21818	-.00230	.20058	.03620	.00001	51.507	.22845
#3	.00068	.21169	.00486	.19779	.03761	.00001	52.750	.22710
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05125	.00479	.36483	1.6560	14.660	.00877	5.5763	1.7147
Stddev	.00059	.00039	.00218	.0283	.159	.00350	.1053	.0147
%RSD	1.1535	8.1173	.59715	1.7093	1.0875	39.833	1.8880	.85941
#1	.05172	.00435	.36580	1.6545	14.708	.00650	5.6506	1.7174
#2	.05144	.00493	.36636	1.6284	14.482	.00702	5.4558	1.6988
#3	.05059	.00509	.36234	1.6850	14.789	.01280	5.6224	1.7279
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00313	144.14	.03035	1.0211	.07552	1.1557	.00411	6.5697
Stddev	.00027	1.70	.00122	.0047	.00250	.0045	.00525	.0440
%RSD	8.5563	1.1770	4.0360	.45700	3.3107	.39015	127.81	.67014
#1	.00330	144.93	.02943	1.0218	.07815	1.1592	.00478	6.5572
#2	.00282	142.19	.02987	1.0254	.07523	1.1572	-.00145	6.6186
#3	.00326	145.29	.03174	1.0161	.07318	1.1506	.00899	6.5332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606079604 Acquired: 6/24/2016 13:16:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.18481	-.00844	-.00188	-.00071	5.6059	.00341
Stddev	.00069	.00240	.00426	.00360	.00127	.0265	.00050
%RSD	794.10	1.2974	50.412	191.50	178.39	.47276	14.789
#1	-.00018	.18518	-.01246	-.00564	-.00052	5.6217	.00292
#2	.00087	.18225	-.00889	.00153	-.00206	5.6207	.00337
#3	-.00043	.18700	-.00398	-.00152	.00045	5.5753	.00393
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8988.0	57229.	3212.0
Stddev	23.6	64.	31.1
%RSD	.26299	.11256	.96670
#1	8965.7	57166.	3192.3
#2	9012.7	57227.	3247.8
#3	8985.6	57294.	3196.0

Approved: June 25, 2016

Sample Name: L1606079604PS Acquired: 6/24/2016 13:20:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573149-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20280**	**5.3027**	**.21231**	**1.1801**	**.55540**	**.02495**	**51.809**	**.23407**
Stddev	.00015	.0166	.00321	.0002	.00387	.00010	.375	.00041
%RSD	.07637	.31377	1.5120	.01812	.69757	.40956	.72434	.17452
#1	.20297	5.3201	.20923	1.1802	.55963	.02507	52.222	.23449
#2	.20267	5.2869	.21564	1.1802	.55202	.02492	51.489	.23404
#3	.20275	5.3010	.21207	1.1798	.55456	.02487	51.718	.23367
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.15079**	**.25382**	**.59150**	**3.4910**	**39.388**	**.53018**	**9.9531**	**1.8085**
Stddev	.00020	.00094	.00182	.0662	.329	.00406	.0974	.0116
%RSD	.13400	.36852	.30736	1.8955	.83526	.76532	.97892	.64231
#1	.15097	.25482	.59345	3.5674	39.766	.53137	9.9424	1.8174
#2	.15082	.25365	.58986	3.4523	39.170	.52566	10.055	1.7953
#3	.15057	.25298	.59118	3.4533	39.227	.53351	9.8614	1.8127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53968**	**156.98**	**.28383**	**6.1212**	**.32198**	**1.6775**	**.20819**	**8.6076**
Stddev	.00242	1.04	.00051	.0203	.00460	.0049	.00352	.0069
%RSD	.44873	.66195	.17819	.33148	1.4283	.29355	1.6930	.08070
#1	.54031	158.15	.28435	6.1431	.31988	1.6722	.20467	8.6149
#2	.54173	156.18	.28379	6.1177	.32725	1.6786	.21172	8.6066
#3	.53701	156.60	.28334	6.1030	.31880	1.6818	.20817	8.6011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606079604PS Acquired: 6/24/2016 13:20:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573149-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51592**	**.68475**	**.51913**	**.25074**	**.50296**	**5.5697**	**.00437**
Stddev	.00194	.00530	.00608	.00071	.00238	.0089	.00064
%RSD	.37560	.77350	1.1715	.28316	.47332	.16068	14.638
#1	.51652	.69043	.51759	.25150	.50454	5.5773	.00374
#2	.51749	.67994	.51397	.25009	.50413	5.5720	.00435
#3	.51376	.68387	.52584	.25065	.50022	5.5599	.00502
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8909.6**	**56843.**	**3204.4**
Stddev	1.8	290.	30.2
%RSD	.02032	.50970	.94121
#1	8908.8	56575.	3171.8
#2	8911.6	56804.	3210.2
#3	8908.2	57150.	3231.3

Approved: June 25, 2016

Sample Name: L1606079604SDL Acquired: 6/24/2016 13:24:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573149-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	.04368	.00122	.04349	.00806	.00002	10.277	.04768
Stddev	.00134	.00228	.00094	.00292	.00145	.00002	.058	.00062
%RSD	180.24	5.2256	77.601	6.7258	18.013	78.531	.56466	1.2952
#1	.00171	.04149	.00122	.04259	.00639	.00001	10.219	.04698
#2	-.00079	.04604	.00027	.04676	.00878	.00002	10.275	.04788
#3	.00130	.04352	.00216	.04112	.00901	.00005	10.335	.04817
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01026	.00202	.07565	.33169	2.8985	.00465	1.0790	.33882
Stddev	.00047	.00069	.00245	.00173	.0396	.00433	.0895	.00405
%RSD	4.6085	33.927	3.2368	.52127	1.3666	93.002	8.2910	1.1946
#1	.01002	.00234	.07292	.33127	2.9371	.00369	1.1027	.33415
#2	.00994	.00249	.07637	.33358	2.9004	.00938	1.1541	.34103
#3	.01080	.00123	.07766	.33020	2.8580	.00089	.98002	.34129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00099	28.363	.00700	.21122	.01400	.23816	-.00306	1.3640
Stddev	.00041	.289	.00119	.00332	.00222	.00413	.00166	.0164
%RSD	40.909	1.0206	17.017	1.5709	15.868	1.7347	54.387	1.2062
#1	.00110	28.030	.00564	.20999	.01155	.23760	-.00373	1.3521
#2	.00054	28.554	.00752	.20870	.01588	.24255	-.00116	1.3571
#3	.00133	28.504	.00785	.21498	.01456	.23435	-.00428	1.3828
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606079604SDL Acquired: 6/24/2016 13:24:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573149-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00035**	**.03606**	**-.00264**	**.00053**	**-.00029**	**1.2005**	**.00050**
Stddev	.00043	.00042	.00853	.00500	.00064	.0141	.00037
%RSD	124.76	1.1669	322.65	938.33	219.25	1.1743	73.895
#1	-.00085	.03565	.00325	-.00513	-.00080	1.1865	.00067
#2	-.00013	.03603	.00124	.00430	.00042	1.2003	.00008
#3	-.00007	.03649	-.01242	.00243	-.00049	1.2147	.00076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9105.6**	**58170.**	**3212.7**
Stddev	27.3	280.	23.5
%RSD	.30017	.48123	.73253
#1	9103.8	58409.	3225.9
#2	9133.8	57862.	3185.5
#3	9079.2	58239.	3226.6

Approved: June 25, 2016

Sample Name: L1606079604SDL Acquired: 6/24/2016 13:28:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573149-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00040	.00857	.00134	.01061	.00165	-.00001	1.9132	.00874
Stddev	.00181	.00667	.00234	.00249	.00017	.00001	.0173	.00010
%RSD	455.89	77.825	174.32	23.446	10.373	116.47	.90342	1.1541
#1	-.00243	.00394	-.00136	.01199	.00166	-.00002	1.8935	.00866
#2	.00104	.01621	.00261	.01210	.00181	.00000	1.9199	.00871
#3	.00020	.00555	.00278	.00774	.00147	-.00001	1.9261	.00885
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00120	.00140	.01276	.04419	.61000	-.00198	.19513	.06168
Stddev	.00016	.00155	.00074	.02220	.04844	.00354	.07685	.00239
%RSD	13.116	110.63	5.7727	50.228	7.9412	178.84	39.385	3.8731
#1	.00124	-.00031	.01191	.06977	.66578	-.00239	.22434	.06192
#2	.00103	.00272	.01324	.03282	.57847	.00175	.25310	.06394
#3	.00134	.00179	.01313	.02998	.58575	-.00529	.10796	.05918
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	5.4833	.00115	.03698	.00356	.04416	-.00362	.25512
Stddev	.00017	.0430	.00058	.00189	.00182	.00432	.00289	.00216
%RSD	41.091	.78460	50.355	5.1167	51.028	9.7754	79.738	.84721
#1	.00022	5.4343	.00122	.03480	.00150	.04644	-.00041	.25572
#2	.00054	5.5006	.00054	.03817	.00427	.04686	-.00445	.25692
#3	.00047	5.5150	.00169	.03798	.00492	.03918	-.00600	.25272
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606079604SDL Acquired: 6/24/2016 13:28:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573149-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00062	.00660	-.00393	.00088	-.00118	.21826	.00069
Stddev	.00041	.00021	.00248	.00276	.00061	.00108	.00021
%RSD	65.439	3.1746	63.297	315.82	51.724	.49261	30.159
#1	-.00015	.00666	-.00674	-.00231	-.00182	.21725	.00045
#2	-.00090	.00637	-.00302	.00267	-.00111	.21814	.00079
#3	-.00081	.00678	-.00202	.00226	-.00060	.21939	.00083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9580.6	61020.	3283.6
Stddev	11.6	138.	12.0
%RSD	.12149	.22602	.36655
#1	9581.4	60926.	3271.0
#2	9591.8	60956.	3294.9
#3	9568.6	61178.	3284.8

Approved: June 25, 2016

Sample Name: PBW 96 Acquired: 6/24/2016 13:31:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00073**	**.05750**	**-.00115**	**.00379**	**.00035**	**.00004**	**.14547**	**-.00001**
Stddev	.00114	.00534	.00113	.00242	.00047	.00004	.01120	.00032
%RSD	155.47	9.2868	98.477	63.976	132.21	109.74	7.6992	4547.8
#1	-.00055	.06232	.00006	.00550	.00089	.00008	.15412	.00029
#2	.00165	.05843	-.00133	.00485	.00009	.00004	.13282	-.00034
#3	.00110	.05176	-.00218	.00102	.00008	-.00000	.14948	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.00132**	**-.00117**	**.07602**	**.06648**	**-.00036**	**.02744**	**.00190**
Stddev	.00018	.00131	.00109	.00738	.09369	.00127	.07199	.00082
%RSD	89.489	99.783	93.607	9.7097	140.92	355.05	262.29	42.953
#1	-.00009	.00101	-.00242	.07287	.07235	-.00017	-.04949	.00102
#2	-.00011	.00276	-.00042	.08445	.15710	.00081	.09317	.00263
#3	-.00041	.00019	-.00066	.07074	-.03000	-.00171	.03866	.00205
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00048**	**.10510**	**.00092**	**-.01236**	**.00247**	**-.00114**	**-.00226**	**.03159**
Stddev	.00026	.02680	.00039	.01242	.00253	.00255	.00507	.00112
%RSD	54.501	25.498	41.922	100.45	102.42	223.14	224.49	3.5471
#1	.00035	.09773	.00136	-.02382	-.00008	-.00396	-.00341	.03261
#2	.00078	.08276	.00067	-.01410	.00250	-.00049	.00329	.03178
#3	.00031	.13482	.00072	.00083	.00497	.00102	-.00665	.03039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: PBW 96 Acquired: 6/24/2016 13:31:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00097**	**.00038**	**-.00465**	**.00081**	**-.00039**	**.00272**	**.00004**
Stddev	.00085	.00027	.00283	.00149	.00021	.00004	.00053
%RSD	87.746	71.935	60.728	183.22	53.537	1.5511	1208.2
#1	-.00022	.00065	-.00629	.00062	-.00015	.00268	-.00031
#2	-.00189	.00011	-.00139	-.00057	-.00048	.00274	.00065
#3	-.00079	.00036	-.00628	.00240	-.00054	.00276	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9001.9**	**57577.**	**3145.6**
Stddev	5.1	289.	25.4
%RSD	.05668	.50260	.80877
#1	9003.5	57315.	3116.7
#2	8996.2	57888.	3155.1
#3	9006.1	57528.	3164.8

Approved: June 25, 2016

Sample Name: LCSW 96 Acquired: 6/24/2016 13:35:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19950**	**5.0939**	**.20372**	**1.0208**	**.52299**	**.02445**	**5.3163**	**.02590**
Stddev	.00336	.0048	.00192	.0030	.00511	.00010	.0742	.00036
%RSD	1.6828	.09397	.94086	.29468	.97686	.41134	1.3965	1.3919
#1	.20287	5.0993	.20151	1.0195	.52801	.02450	5.4020	.02630
#2	.19946	5.0902	.20478	1.0242	.51780	.02452	5.2747	.02561
#3	.19616	5.0921	.20487	1.0186	.52318	.02434	5.2723	.02578
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10423**	**.25027**	**.26092**	**2.0255**	**26.189**	**.52677**	**5.1629**	**.25877**
Stddev	.00040	.00138	.00033	.0200	.298	.00291	.1198	.00454
%RSD	.38380	.55012	.12503	.98782	1.1361	.55208	2.3196	1.7548
#1	.10469	.25146	.26057	2.0378	26.464	.52733	5.0560	.26368
#2	.10408	.24876	.26099	2.0025	25.873	.52362	5.2924	.25792
#3	.10393	.25058	.26122	2.0363	26.231	.52935	5.1404	.25472
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53131**	**26.270**	**.25798**	**4.9905**	**.25688**	**.61782**	**.20100**	**2.6938**
Stddev	.00094	.237	.00094	.0107	.00325	.00214	.00148	.0078
%RSD	.17719	.90374	.36573	.21426	1.2655	.34651	.73738	.28974
#1	.53238	26.488	.25831	5.0026	.26007	.61978	.20078	2.7028
#2	.53091	26.017	.25692	4.9867	.25701	.61816	.20257	2.6890
#3	.53063	26.306	.25872	4.9822	.25357	.61554	.19963	2.6897
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LCSW 96 Acquired: 6/24/2016 13:35:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51498**	**.53518**	**.52231**	**.25730**	**.49620**	**.51662**	**.00156**
Stddev	.00201	.00522	.00398	.00216	.00213	.00142	.00028
%RSD	.38972	.97497	.76237	.83781	.43000	.27422	18.205
#1	.51604	.54037	.52691	.25811	.49794	.51823	.00133
#2	.51624	.52993	.51991	.25486	.49685	.51608	.00147
#3	.51266	.53524	.52012	.25893	.49382	.51556	.00188
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8976.4**	**57450.**	**3148.6**
Stddev	16.7	311.	9.0
%RSD	.18579	.54143	.28702
#1	8994.0	57165.	3138.5
#2	8960.8	57403.	3156.0
#3	8974.5	57782.	3151.2

Approved: June 25, 2016

Sample Name: L1606127902 Acquired: 6/24/2016 13:39:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	15.737	.00504	.17704	.19989	.00100	197.77	.00050
Stddev	.00231	.039	.00324	.00132	.00099	.00006	.59	.00022
%RSD	1507.6	.25058	64.174	.74832	.49635	5.6554	.29748	43.504
#1	.00250	15.783	.00357	.17765	.20103	.00098	198.43	.00025
#2	-.00170	15.713	.00280	.17553	.19919	.00095	197.29	.00066
#3	-.00126	15.717	.00875	.17796	.19946	.00106	197.58	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01128	.04276	.02006	22.872	6.2512	.04284	80.521	2.6589
Stddev	.00030	.00028	.00041	.038	.0825	.00592	.183	.0133
%RSD	2.6928	.64348	2.0282	.16663	1.3204	13.819	.22689	.50023
#1	.01147	.04247	.01996	22.869	6.1704	.04629	80.723	2.6697
#2	.01143	.04279	.02051	22.835	6.3354	.03601	80.469	2.6441
#3	.01093	.04302	.01971	22.911	6.2479	.04623	80.369	2.6630
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00681	18.837	.02941	.79338	.01403	-.00060	.00131	29.051
Stddev	.00038	.047	.00138	.00484	.00107	.00255	.00127	.105
%RSD	5.5050	.25020	4.6749	.61023	7.5974	423.13	97.049	.36059
#1	.00646	18.890	.03067	.78819	.01333	-.00349	.00219	29.106
#2	.00720	18.818	.02794	.79419	.01526	.00035	-.00015	29.116
#3	.00678	18.801	.02963	.79777	.01350	.00133	.00188	28.930
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606127902 Acquired: 6/24/2016 13:39:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	.96724	.15250	.00117	.03346	.15890	.00476
Stddev	.00040	.00326	.00547	.00105	.00024	.00053	.00041
%RSD	34.705	.33744	3.5900	89.594	.72954	.33381	8.5619
#1	.00163	.97101	.14892	.00229	.03370	.15915	.00519
#2	.00097	.96527	.14979	.00101	.03348	.15926	.00472
#3	.00090	.96545	.15881	.00021	.03321	.15829	.00438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8809.1	56197.	3156.2
Stddev	17.1	169.	15.4
%RSD	.19391	.29996	.48903
#1	8823.3	56057.	3138.5
#2	8813.9	56150.	3167.0
#3	8790.1	56384.	3163.0

Approved: June 25, 2016

Sample Name: L1606127903S Acquired: 6/24/2016 13:43:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19326**	**20.629**	**.20505**	**1.1242**	**.67887**	**.02411**	**202.49**	**.02516**
Stddev	.00124	.031	.00568	.0038	.00396	.00002	1.42	.00004
%RSD	.63990	.14876	2.7693	.33476	.58405	.08259	.70154	.15637
#1	.19467	20.662	.20382	1.1250	.68345	.02412	204.10	.02518
#2	.19238	20.624	.21124	1.1275	.67642	.02413	201.40	.02512
#3	.19273	20.601	.20009	1.1201	.67675	.02409	201.97	.02518
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10665**	**.26645**	**.25704**	**21.289**	**30.486**	**.53447**	**84.560**	**2.9029**
Stddev	.00029	.00084	.00157	.139	.180	.01012	.672	.0309
%RSD	.27245	.31377	.61183	.65337	.58896	1.8942	.79485	1.0632
#1	.10698	.26680	.25771	21.445	30.561	.54519	85.295	2.9385
#2	.10646	.26550	.25817	21.245	30.281	.52507	83.976	2.8873
#3	.10650	.26706	.25524	21.177	30.616	.53315	84.410	2.8830
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50244**	**43.573**	**.26189**	**5.8590**	**.25372**	**.55116**	**.19410**	**32.382**
Stddev	.00157	.327	.00132	.0159	.00269	.00988	.00408	.058
%RSD	.31334	.74940	.50585	.27121	1.0586	1.7922	2.1037	.17891
#1	.50275	43.950	.26334	5.8677	.25501	.56055	.18982	32.390
#2	.50384	43.381	.26161	5.8686	.25064	.54086	.19452	32.435
#3	.50074	43.388	.26073	5.8406	.25553	.55206	.19795	32.320
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606127903S Acquired: 6/24/2016 13:43:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48639**	**1.4540**	**.59410**	**.23913**	**.50539**	**.70433**	**.01017**
Stddev	.00047	.0117	.00764	.00139	.00117	.00111	.00008
%RSD	.09761	.80721	1.2860	.58290	.23204	.15818	.79769
#1	.48692	1.4674	.59934	.23991	.50616	.70442	.01015
#2	.48623	1.4457	.58533	.23752	.50597	.70539	.01010
#3	.48602	1.4488	.59762	.23995	.50404	.70317	.01026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8732.4**	**55709.**	**3136.3**
Stddev	12.8	133.	9.5
%RSD	.14604	.23913	.30143
#1	8741.8	55582.	3125.8
#2	8737.4	55848.	3138.8
#3	8717.9	55698.	3144.2

Approved: June 25, 2016

Sample Name: L1606127904SD Acquired: 6/24/2016 13:47:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19840**	**21.664**	**.21549**	**1.1518**	**.68554**	**.02470**	**203.86**
Stddev	.00350	.173	.00239	.0093	.00255	.00012	.48
%RSD	1.7631	.79987	1.1079	.81137	.37163	.47958	.23568
#1	.19923	21.766	.21789	1.1585	.68363	.02482	204.27
#2	.20141	21.762	.21547	1.1557	.68843	.02468	203.97
#3	.19456	21.464	.21311	1.1411	.68456	.02459	203.33
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02560**	**.10985**	**.27087**	**.26369**	**21.250**	**31.671**	**.54653**
Stddev	.00010	.00064	.00286	.00112	.102	.097	.00418
%RSD	.40730	.58209	1.0577	.42589	.48182	.30643	.76563
#1	.02572	.11059	.27368	.26496	21.309	31.764	.54887
#2	.02555	.10947	.27099	.26284	21.310	31.678	.54902
#3	.02554	.10950	.26795	.26328	21.132	31.570	.54170
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**85.131**	**2.9406**	**.52074**	**44.518**	**.26846**	**6.1103**	**.26144**
Stddev	.178	.0135	.00200	.085	.00112	.0182	.00268
%RSD	.20906	.45814	.38482	.19000	.41689	.29863	1.0264
#1	84.960	2.9560	.52294	44.584	.26874	6.1155	.26438
#2	85.315	2.9345	.52024	44.548	.26723	6.0900	.26081
#3	85.119	2.9312	.51903	44.423	.26941	6.1253	.25913
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 25, 2016

Sample Name: L1606127904SD Acquired: 6/24/2016 13:47:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.57453**	**.19709**	F **36.344**	**.50382**	**1.4735**	**.64850**	**.24413**
Stddev	.00418	.00789	.056	.00257	.0019	.00602	.00132
%RSD	.72824	4.0016	.15274	.50962	.13256	.92766	.53874
#1	.57287	.19772	36.404	.50677	1.4750	.65107	.24435
#2	.57929	.20464	36.334	.50206	1.4742	.65280	.24272
#3	.57143	.18890	36.295	.50263	1.4713	.64162	.24532
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-1.0000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.52196**	**.56684**	**.01080**
Stddev	.00375	.00342	.00015
%RSD	.71940	.60354	1.3985
#1	.52583	.56511	.01079
#2	.52171	.56462	.01095
#3	.51833	.57078	.01065
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8712.5**	**55773.**	**3120.2**
Stddev	3.2	331.	12.8
%RSD	.03729	.59418	.41169
#1	8713.6	55403.	3119.9
#2	8708.8	55873.	3107.5
#3	8715.0	56043.	3133.2

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 13:50:42 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38140**	**9.6036**	**.38549**	**.47990**	**.97583**	**.04697**	**9.6736**	**.04936**
Stddev	.00083	.0155	.00161	.00272	.00700	.00039	.0481	.00043
%RSD	.21651	.16083	.41796	.56755	.71776	.83544	.49724	.87879
#1	.38093	9.6166	.38518	.48096	.97193	.04728	9.6575	.04905
#2	.38235	9.6078	.38723	.48193	.97165	.04709	9.6356	.04986
#3	.38091	9.5866	.38405	.47680	.98392	.04652	9.7277	.04917
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19524**	**.47322**	**.49109**	**3.8323**	**49.097**	**.96492**	**9.4888**	**.48870**
Stddev	.00085	.00448	.00144	.0650	.263	.00666	.0433	.00395
%RSD	.43326	.94684	.29398	1.6953	.53510	.68973	.45628	.80862
#1	.19584	.47670	.49055	3.7748	48.999	.96096	9.4388	.48630
#2	.19562	.47480	.49272	3.8193	48.897	.96120	9.5117	.48654
#3	.19427	.46817	.48999	3.9028	49.395	.97260	9.5158	.49326
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.98079**	**48.817**	**.48770**	**9.6771**	**.48808**	**1.1568**	**.39117**	**5.0500**
Stddev	.00652	.291	.00120	.0180	.00541	.0169	.00115	.0077
%RSD	.66469	.59531	.24539	.18616	1.1087	1.4624	.29359	.15164
#1	.98623	48.688	.48889	9.6790	.49412	1.1640	.39004	5.0445
#2	.98257	48.614	.48771	9.6941	.48368	1.1689	.39234	5.0588
#3	.97357	49.150	.48649	9.6582	.48644	1.1374	.39112	5.0467
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 13:50:42 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.97107**	**.97794**	**.98195**	**.48922**	**.94029**	**.97547**	**.95262**
Stddev	.00207	.00590	.00292	.00294	.00290	.00075	.01313
%RSD	.21287	.60287	.29764	.60052	.30843	.07725	1.3786
#1	.97343	.97629	.98320	.49172	.94213	.97546	.93766
#2	.96960	.97304	.97861	.48994	.93695	.97623	.95795
#3	.97018	.98448	.98404	.48598	.94180	.97472	.96224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9252.7**	**58629.**	**3212.3**
Stddev	24.3	490.	28.7
%RSD	.26211	.83545	.89213
#1	9236.4	58082.	3245.1
#2	9241.1	58779.	3198.9
#3	9280.5	59026.	3192.7

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 13:54:19 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	-.00051	.00183	.00655	.00026	-.00000	.00852	-.00022
Stddev	.00064	.00733	.00105	.00104	.00009	.00005	.04466	.00023
%RSD	179.80	1430.7	57.749	15.843	35.947	4708.9	523.90	106.47
#1	.00048	.00366	.00121	.00743	.00035	-.00005	.04854	-.00006
#2	-.00034	-.00897	.00123	.00681	.00027	-.00001	-.03965	-.00048
#3	.00092	.00378	.00304	.00540	.00016	.00005	.01668	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.00227	-.00072	-.01318	.07124	.00049	.08648	-.00199
Stddev	.00023	.00064	.00050	.02673	.03864	.00139	.01953	.00183
%RSD	260.70	28.077	69.839	202.79	54.246	286.14	22.586	92.121
#1	-.00012	.00157	-.00036	-.03888	.08538	-.00076	.08196	-.00332
#2	-.00029	.00242	-.00130	-.01513	.10082	.00022	.10787	-.00274
#3	.00016	.00282	-.00051	.01447	.02752	.00199	.06960	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00342	.05697	-.00032	.00309	.00127	.00324	.00119	.00515
Stddev	.00032	.02946	.00116	.00580	.00261	.00123	.00629	.00054
%RSD	9.4112	51.713	361.47	187.66	205.38	38.030	528.76	10.506
#1	.00378	.04217	.00100	-.00305	.00285	.00465	.00735	.00465
#2	.00317	.09090	-.00078	.00846	.00271	.00268	.00143	.00572
#3	.00331	.03785	-.00118	.00386	-.00175	.00238	-.00522	.00507
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 13:54:19 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00031**	**.00036**	**.00418**	**-.00158**	**-.00051**	**.00017**	**.00102**
Stddev	.00053	.00033	.01062	.00055	.00051	.00029	.00036
%RSD	171.93	91.019	254.34	34.602	100.39	177.91	35.103
#1	-.00010	.00004	.00137	-.00145	-.00031	.00038	.00135
#2	-.00091	.00035	.01591	-.00218	-.00013	.00029	.00064
#3	.00009	.00069	-.00476	-.00111	-.00109	-.00017	.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9545.2**	**60729.**	**3266.7**
Stddev	24.9	237.	23.8
%RSD	.26058	.39065	.72829
#1	9540.3	60493.	3240.2
#2	9523.2	60727.	3286.2
#3	9572.2	60967.	3273.7

Approved: June 25, 2016

Sample Name: L1606096103 Acquired: 6/24/2016 13:58:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00012	.09140	.00112	.03611	.03358	-.00001	50.084	.00013
Stddev	.00022	.00238	.00188	.00195	.00041	.00008	.422	.00018
%RSD	185.41	2.6039	167.01	5.3975	1.2258	580.55	.84237	141.64
#1	.00013	.08878	-.00078	.03488	.03351	-.00003	50.499	.00032
#2	-.00026	.09197	.00117	.03835	.03321	.00007	49.656	-.00003
#3	-.00023	.09344	.00297	.03508	.03403	-.00009	50.096	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	.00184	-.00114	.03656	1.3467	.00581	15.245	.00051
Stddev	.00014	.00073	.00091	.02407	.0686	.00337	.260	.00254
%RSD	61.138	39.585	79.397	65.853	5.0911	58.003	1.7074	500.61
#1	-.00015	.00167	-.00218	.01202	1.2696	.00901	15.489	.00250
#2	-.00015	.00121	-.00074	.03751	1.4008	.00612	14.971	.00138
#3	-.00040	.00264	-.00050	.06014	1.3699	.00229	15.275	-.00236
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00260	9.6468	.00019	-.00521	-.00233	.00331	.00457	4.0826
Stddev	.00028	.0838	.00028	.00366	.00219	.00207	.00459	.0345
%RSD	10.599	.86900	141.53	70.238	94.267	62.612	100.63	.84571
#1	.00231	9.7410	.00004	-.00109	.00018	.00092	.00224	4.1042
#2	.00263	9.6187	.00051	-.00810	-.00328	.00434	.00160	4.1009
#3	.00286	9.5806	.00003	-.00645	-.00389	.00466	.00986	4.0428
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606096103 Acquired: 6/24/2016 13:58:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00067**	**.25691**	**-.00637**	**-.00259**	**-.00050**	**.00292**	**.00135**
Stddev	.00049	.00223	.00705	.00153	.00034	.00040	.00049
%RSD	72.565	.86751	110.76	58.917	67.376	13.663	36.114
#1	-.00091	.25924	-.00795	-.00331	-.00034	.00317	.00087
#2	-.00099	.25480	.00134	-.00084	-.00090	.00314	.00133
#3	-.00011	.25669	-.01249	-.00363	-.00028	.00246	.00185
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8942.3**	**57388.**	**3165.4**
Stddev	36.0	169.	10.5
%RSD	.40295	.29363	.33091
#1	8915.6	57232.	3155.7
#2	8928.0	57367.	3176.5
#3	8983.2	57567.	3163.9

Approved: June 25, 2016

Sample Name: L1606096103PS Acquired: 6/24/2016 14:02:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574076-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20212**	**5.1577**	**.20995**	**1.0218**	**.55067**	**.02458**	**50.301**	**.02595**
Stddev	.00257	.0134	.00150	.0020	.00278	.00001	.286	.00016
%RSD	1.2694	.25951	.71236	.19511	.50565	.03510	.56934	.61701
#1	.20209	5.1522	.20849	1.0233	.55372	.02459	50.529	.02608
#2	.19957	5.1479	.20988	1.0196	.54826	.02458	49.980	.02599
#3	.20470	5.1729	.21148	1.0227	.55003	.02457	50.394	.02577
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10297**	**.25008**	**.25544**	**2.0785**	**27.389**	**.52844**	**18.834**	**.25830**
Stddev	.00023	.00157	.00241	.0113	.185	.00335	.039	.00347
%RSD	.22302	.62649	.94504	.54163	.67510	.63326	.20820	1.3448
#1	.10320	.25049	.25823	2.0826	27.472	.53144	18.843	.26189
#2	.10274	.25140	.25409	2.0658	27.177	.52483	18.867	.25495
#3	.10299	.24834	.25401	2.0872	27.518	.52905	18.790	.25805
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53490**	**34.932**	**.25626**	**5.1271**	**.25681**	**.62874**	**.20828**	**6.2999**
Stddev	.00204	.144	.00031	.0135	.00377	.00039	.00270	.0306
%RSD	.38190	.41152	.12115	.26248	1.4693	.06250	1.2974	.48507
#1	.53528	35.050	.25602	5.1233	.25437	.62829	.20809	6.2859
#2	.53673	34.772	.25661	5.1420	.26116	.62899	.21107	6.2787
#3	.53270	34.975	.25617	5.1159	.25492	.62895	.20567	6.3349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606096103PS Acquired: 6/24/2016 14:02:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574076-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51595**	**.74881**	**.52242**	**.25818**	**.49972**	**.51357**	**.00455**
Stddev	.00103	.00313	.00297	.00309	.00213	.00106	.00114
%RSD	.19954	.41852	.56925	1.1985	.42627	.20581	24.932
#1	.51562	.75083	.52020	.25542	.50129	.51430	.00341
#2	.51710	.74520	.52125	.26152	.49729	.51406	.00457
#3	.51512	.75039	.52580	.25759	.50057	.51236	.00568
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8833.6**	**56651.**	**3119.7**
Stddev	9.3	223.	21.6
%RSD	.10547	.39347	.69133
#1	8823.9	56539.	3116.6
#2	8834.3	56908.	3142.7
#3	8842.5	56506.	3099.9

Approved: June 25, 2016

Sample Name: L1606096103SDL Acquired: 6/24/2016 14:05:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574076-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.01743	-.00053	.01293	.00637	.00006	9.8603	-.00009
Stddev	.00112	.00543	.00066	.00212	.00093	.00006	.1510	.00026
%RSD	749.50	31.156	123.78	16.425	14.637	106.44	1.5314	273.36
#1	.00120	.01486	-.00015	.01142	.00533	.00013	9.7000	-.00016
#2	-.00103	.01376	-.00130	.01536	.00714	.00001	9.8810	.00019
#3	.00028	.02366	-.00015	.01201	.00663	.00003	9.9999	-.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	.00166	-.00081	.01557	.34726	.00184	3.0327	-.00090
Stddev	.00014	.00107	.00071	.01602	.05466	.00348	.0951	.00076
%RSD	37.681	64.012	87.782	102.86	15.742	189.11	3.1367	84.164
#1	-.00021	.00202	-.00151	.03338	.29666	.00458	2.9721	-.00121
#2	-.00048	.00047	-.00085	.00235	.40524	-.00207	2.9836	-.00147
#3	-.00039	.00251	-.00008	.01099	.33988	.00301	3.1423	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00101	1.9887	-.00002	.00349	-.00035	.00256	.00530	.86568
Stddev	.00011	.0321	.00087	.00714	.00172	.00490	.00381	.00616
%RSD	11.175	1.6161	4064.9	204.77	495.04	191.24	71.852	.71180
#1	.00095	1.9586	.00085	.00447	-.00202	.00804	.00476	.85861
#2	.00114	1.9850	-.00088	.01010	.00141	-.00140	.00179	.86846
#3	.00094	2.0226	-.00004	-.00409	-.00043	.00105	.00936	.86996
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606096103SDL Acquired: 6/24/2016 14:05:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574076-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.05064**	**-.00115**	**-.00120**	**-.00043**	**.00102**	**.00056**
Stddev	.00024	.00069	.00525	.00297	.00106	.00012	.00014
%RSD	123.48	1.3651	458.63	247.68	244.53	11.508	24.672
#1	-.00046	.05019	-.00523	.00208	-.00117	.00096	.00072
#2	.00002	.05028	.00478	-.00371	.00078	.00115	.00045
#3	-.00016	.05143	-.00298	-.00197	-.00092	.00094	.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9336.0**	**59375.**	**3208.5**
Stddev	30.5	401.	15.3
%RSD	.32641	.67506	.47725
#1	9354.3	58920.	3216.8
#2	9352.8	59525.	3217.8
#3	9300.8	59678.	3190.8

Approved: June 25, 2016

Sample Name: L1606096103SDL Acquired: 6/24/2016 14:09:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574076-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00011**	**-.00610**	**.00005**	**.00302**	**.00139**	**.00003**	**1.6849**
Stddev	.00180	.00456	.00220	.00222	.00079	.00007	.0160
%RSD	1577.6	74.679	4707.9	73.380	56.616	247.76	.94725
#1	-.00191	-.00084	.00190	.00055	.00194	-.00002	1.6688
#2	.00156	-.00881	-.00239	.00484	.00049	.00011	1.6853
#3	.00069	-.00865	.00063	.00368	.00173	-.00000	1.7007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**-.00034**	**.00088**	**-.00158**	**-.01440**	**.06844**	**-.00175**
Stddev	.00002	.00023	.00083	.00061	.02220	.06326	.00363
%RSD	17.353	67.549	94.267	38.708	154.12	92.431	206.96
#1	-.00013	-.00058	.00179	-.00208	-.00955	.00265	-.00311
#2	-.00013	-.00034	.00017	-.00175	.00496	.07385	.00236
#3	-.00017	-.00012	.00067	-.00090	-.03863	.12882	-.00450
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50957**	F **-.00383**	**.00039**	**.34445**	**-.00062**	**.00381**	**.00016**
Stddev	.01311	.00095	.00039	.03811	.00071	.00070	.00411
%RSD	2.5722	24.725	100.59	11.064	115.35	18.437	2540.0
#1	.51930	-.00358	.00051	.30657	-.00144	.00305	.00427
#2	.49466	-.00488	-.00005	.34400	-.00029	.00397	.00016
#3	.51474	-.00303	.00071	.38278	-.00013	.00443	-.00394
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		36.000					
Low Limit		-.00300					

Approved: June 25, 2016

Sample Name: L1606096103SDL Acquired: 6/24/2016 14:09:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574076-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00087	-.00357	.15888	-.00031	.00850	-.00426	-.00009
Stddev	.00426	.00083	.00168	.00044	.00026	.00237	.00296
%RSD	491.21	23.304	1.0573	142.12	3.0361	55.651	3369.4
#1	-.00335	-.00426	.16039	-.00013	.00878	-.00423	-.00261
#2	.00077	-.00382	.15707	.00001	.00827	-.00191	-.00083
#3	.00518	-.00265	.15920	-.00080	.00846	-.00665	.00318
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00092	.00058	.00040
Stddev	.00059	.00015	.00004
%RSD	63.347	25.599	9.4015
#1	-.00155	.00045	.00043
#2	-.00084	.00056	.00036
#3	-.00039	.00074	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9633.6	61477.	3283.0
Stddev	23.5	199.	25.8
%RSD	.24437	.32309	.78547
#1	9635.1	61706.	3253.9
#2	9656.4	61364.	3291.9
#3	9609.4	61360.	3303.1

Approved: June 25, 2016

Sample Name: L1606122701 Acquired: 6/24/2016 14:13:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	2.0538	.00424	.05679	.30137	.00008	160.95	.00040
Stddev	.00099	.0179	.00360	.00161	.00191	.00003	.73	.00020
%RSD	625.72	.87190	84.976	2.8342	.63262	40.857	.45089	48.680
#1	.00035	2.0639	.00523	.05846	.30342	.00005	161.69	.00049
#2	.00047	2.0331	.00724	.05525	.30104	.00011	160.24	.00018
#3	-.00129	2.0644	.00025	.05665	.29964	.00010	160.92	.00054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.05022	.00244	.06600	6.7325	.04174	.86990	-.00077
Stddev	.00001	.00071	.00046	.01751	.0793	.00094	.03086	.00154
%RSD	53.643	1.4082	18.989	26.534	1.1771	2.2575	3.5476	200.44
#1	.00001	.04993	.00251	.08607	6.8151	.04258	.83482	-.00255
#2	.00004	.04971	.00286	.05817	6.6571	.04192	.89287	.00018
#3	.00002	.05103	.00194	.05378	6.7254	.04072	.88200	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00363	48.508	-.00031	.00741	.00060	.00514	.00422	24.472
Stddev	.00063	.271	.00042	.00441	.00602	.00302	.00618	.118
%RSD	17.442	.55872	138.52	59.544	1003.1	58.729	146.53	.48061
#1	.00434	48.810	.00008	.00233	-.00322	.00761	.00742	24.541
#2	.00342	48.287	-.00076	.00957	-.00252	.00604	.00813	24.539
#3	.00313	48.427	-.00023	.01033	.00753	.00178	-.00291	24.336
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606122701 Acquired: 6/24/2016 14:13:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	5.2882	-.02037	.00182	.05925	.00281	.00089
Stddev	.00045	.0260	.00947	.00098	.00078	.00019	.00080
%RSD	393.62	.49150	46.471	53.984	1.3207	6.6303	89.786
#1	.00029	5.3179	-.02819	.00291	.05902	.00280	.00160
#2	-.00060	5.2694	-.00985	.00102	.05861	.00264	.00002
#3	-.00003	5.2773	-.02308	.00151	.06012	.00301	.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8732.6	55925.	3130.6
Stddev	32.6	420.	35.3
%RSD	.37294	.75148	1.1265
#1	8752.4	55468.	3120.1
#2	8695.0	56294.	3101.8
#3	8750.3	56014.	3169.9

Approved: June 25, 2016

Sample Name: L1606122703 Acquired: 6/24/2016 14:17:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00125	.01521	-.00287	.00860	.24123	.00006	11.154	.00028
Stddev	.00085	.00707	.00119	.00183	.00246	.00004	.069	.00007
%RSD	68.571	46.481	41.621	21.280	1.0214	57.404	.61514	23.989
#1	-.00147	.01209	-.00178	.00649	.24385	.00010	11.223	.00034
#2	-.00030	.02330	-.00414	.00957	.24090	.00003	11.086	.00021
#3	-.00196	.01024	-.00269	.00975	.23895	.00006	11.152	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00080	.00213	-.00033	6.2073	1.5140	.01688	6.1835	.21929
Stddev	.00038	.00091	.00079	.0143	.0539	.00306	.0220	.00289
%RSD	47.624	42.694	240.58	.23060	3.5610	18.131	.35514	1.3175
#1	-.00036	.00194	-.00091	6.2218	1.4901	.01738	6.2077	.21708
#2	-.00104	.00133	-.00064	6.2069	1.5757	.01967	6.1777	.22256
#3	-.00101	.00312	.00057	6.1932	1.4762	.01361	6.1650	.21823
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	22.350	-.00018	.00938	-.00137	-.00029	-.00050	19.516
Stddev	.00056	.096	.00083	.00138	.00104	.00383	.01117	.085
%RSD	465.42	.43143	468.12	14.678	75.834	1305.1	2216.4	.43604
#1	.00023	22.450	-.00078	.01058	-.00249	.00050	.00759	19.566
#2	-.00049	22.343	.00077	.00788	-.00044	.00308	-.01325	19.564
#3	.00062	22.257	-.00052	.00969	-.00117	-.00445	.00414	19.418
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606122703 Acquired: 6/24/2016 14:17:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.28084	-.00425	-.00304	-.00105	.00790	.00058
Stddev	.00052	.00163	.00869	.00081	.00050	.00008	.00060
%RSD	129.02	.57971	204.61	26.615	47.317	.97873	103.43
#1	.00050	.28163	-.01407	-.00299	-.00104	.00799	-.00005
#2	-.00016	.28192	-.00109	-.00388	-.00056	.00785	.00113
#3	.00088	.27897	.00242	-.00226	-.00155	.00786	.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8914.3	56961.	3130.5
Stddev	14.2	82.	32.4
%RSD	.15879	.14313	1.0351
#1	8914.6	56997.	3101.6
#2	8928.4	57018.	3165.5
#3	8900.0	56867.	3124.5

Approved: June 25, 2016

Sample Name: L1606122705 Acquired: 6/24/2016 14:21:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	.01545	-.00191	.01058	.23750	.00006	11.195	.00012
Stddev	.00118	.00798	.00344	.00158	.00031	.00003	.021	.00013
%RSD	328.15	51.664	180.02	14.936	.13063	48.409	.18618	104.64
#1	-.00055	.02466	-.00569	.01043	.23772	.00010	11.181	.00021
#2	-.00143	.01046	-.00109	.01223	.23762	.00004	11.184	-.00002
#3	.00090	.01124	.00105	.00908	.23714	.00005	11.219	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00044	.00085	.00038	5.7661	1.5123	.01984	5.9756	.21100
Stddev	.00025	.00106	.00080	.0245	.0653	.00200	.0212	.00231
%RSD	56.521	123.64	211.76	.42500	4.3208	10.094	.35441	1.0971
#1	-.00018	.00141	.00088	5.7931	1.5331	.01943	5.9657	.21198
#2	-.00046	-.00036	.00081	5.7454	1.5646	.02202	5.9611	.20836
#3	-.00068	.00152	-.00055	5.7597	1.4390	.01808	5.9999	.21267
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	21.980	.00038	.00585	.00105	.00337	.00431	19.270
Stddev	.00021	.073	.00055	.00335	.00503	.00336	.00279	.078
%RSD	47.614	.33289	144.30	57.337	476.55	99.815	64.659	.40393
#1	.00067	22.029	.00075	.00771	.00214	-.00034	.00547	19.312
#2	.00029	21.896	-.00025	.00198	-.00442	.00622	.00113	19.317
#3	.00034	22.015	.00065	.00787	.00545	.00421	.00633	19.180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606122705 Acquired: 6/24/2016 14:21:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	.27996	-.00062	-.00391	-.00113	.00732	.00022
Stddev	.00053	.00057	.00735	.00180	.00037	.00025	.00038
%RSD	211.26	.20369	1193.3	46.137	32.740	3.4555	174.33
#1	.00056	.27981	-.00799	-.00285	-.00106	.00752	.00033
#2	-.00036	.27948	-.00055	-.00288	-.00079	.00740	.00052
#3	.00056	.28059	.00670	-.00599	-.00152	.00703	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8854.7	56642.	3127.3
Stddev	12.3	243.	13.9
%RSD	.13917	.42956	.44340
#1	8861.1	56590.	3116.3
#2	8840.5	56906.	3122.8
#3	8862.4	56428.	3142.9

Approved: June 25, 2016

Sample Name: L1606122706 Acquired: 6/24/2016 14:25:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	.21684	.00222	.01917	.58049	.00013	F 284.46
Stddev	.00156	.00289	.00054	.00104	.00288	.00003	1.45
%RSD	398.54	1.3347	24.456	5.4065	.49594	21.763	.51127
#1	-.00197	.21619	.00253	.01999	.58052	.00015	284.58
#2	-.00036	.22000	.00160	.01951	.57760	.00015	282.95
#3	.00116	.21433	.00254	.01800	.58336	.00010	285.86
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.01684	.00998	.00007	1.9553	6.3020	.09974
Stddev	.00017	.00034	.00117	.00099	.0143	.1315	.00214
%RSD	224.89	2.0370	11.743	1484.4	.73067	2.0859	2.1442
#1	.00026	.01703	.01112	-.00102	1.9407	6.1530	.09856
#2	-.00001	.01704	.01006	.00031	1.9692	6.3513	.10221
#3	-.00004	.01644	.00877	.00091	1.9560	6.4016	.09846
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	176.37	2.2714	.00006	F 731.74	.01123	.01665	.00357
Stddev	1.24	.0213	.00040	6.78	.00115	.00399	.00138
%RSD	.70410	.93819	724.13	.92699	10.201	23.948	38.657
#1	175.84	2.2688	.00050	724.41	.01123	.01905	.00394
#2	175.48	2.2515	-.00029	737.80	.01238	.01886	.00473
#3	177.79	2.2938	-.00004	733.01	.01008	.01205	.00204
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 25, 2016

Sample Name: L1606122706 Acquired: 6/24/2016 14:25:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00122**	**.00616**	**15.356**	**.00023**	**6.6069**	F **-.03816**	**-.00311**
Stddev	.00529	.00300	.153	.00037	.0311	.00253	.00229
%RSD	434.20	48.780	.99792	161.00	.47035	6.6290	73.823
#1	.00695	.00959	15.424	.00029	6.6061	-.03560	-.00215
#2	.00016	.00487	15.464	.00056	6.5762	-.04066	-.00573
#3	-.00346	.00401	15.181	-.00017	6.6383	-.03822	-.00145
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00168**	**.01200**	**.00044**
Stddev	.00075	.00025	.00035
%RSD	44.955	2.0469	79.672
#1	-.00143	.01227	.00080
#2	-.00252	.01195	.00041
#3	-.00108	.01179	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8072.3**	**51267.**	**2974.1**
Stddev	26.3	41.	21.1
%RSD	.32607	.08087	.70892
#1	8102.7	51312.	2967.6
#2	8056.8	51231.	2997.7
#3	8057.4	51256.	2957.1

Approved: June 25, 2016

Sample Name: L1606122701 Acquired: 6/24/2016 14:29:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	s -.00023	s -.00927	s .00164	s .00296	F -10.167	s .00041
Stddev	.00419	.07786	.00312	.00485	17.626	.00078
%RSD	1785.1	839.67	190.10	164.03	173.37	190.38
#1	k .00417	k -.06650	s .00369	k .00589	-30.520	k -.00012
#2	-.00072	-.04071	-.00195	-.00264	.0178	.00004
#3	s -.00416	s .07939	s .00318	s .00563	.0011	s .00131
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit					45.000	
Low Limit					-.00500	

Elem	Ca4226	Cd2288	Co2286	Cr2677	Cu2247	Fe2611
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	40.030	sF -.00051	s -.00092	s .00395	sF -.01544	k 24.560
Stddev	69.051	.00101	.00091	.00756	.02567	42.585
%RSD	172.50	198.69	98.282	191.07	166.28	173.39
#1	119.76	s -.00168	s -.00047	k -.00260	s -.04508	73.733
#2	.3162	.00002	-.00033	.00225	-.00024	-.06625
#3	.0107	s .00013	s -.00197	s .01222	s -.00100	k .01283
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit		4.5000			180.00	
Low Limit		-.00050			-.00500	

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	372.11	8.6195	k 47.738	k .33032	s .00028	133.30
Stddev	645.21	14.952	82.949	.57767	.00009	230.76
%RSD	173.39	173.47	173.76	174.88	32.225	173.11
#1	1117.1	25.884	k 143.52	k .99736	s .00023	399.76
#2	-.711	-.02432	-.3221	-.00440	.00022	-.0382
#3	-.088	-.00165	k .0166	k -.00198	s .00038	.1779
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Approved: June 25, 2016

Sample Name: L1606122701 Acquired: 6/24/2016 14:29:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	s **-.00045**	s **-.03655**	s **.00172**	s **-.00108**	s **.00075**	s **.01008**
Stddev	.00179	.02808	.00469	.00283	.00609	.01972
%RSD	400.97	76.830	273.03	261.89	809.17	195.59
#1	s -.00054	s -.06589	s .00446	s -.00311	s .00551	s -.00694
#2	.00139	-.00993	.00440	.00215	.00286	.00550
#3	s -.00220	s -.03383	s -.00370	s -.00228	s -.00611	s .03169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	s **-.00057**	F **-1.1360**	k **20.365**	s **.00055**	s **-.00167**	s **.00003**
Stddev	.00097	1.9693	35.298	.00527	.00210	.00029
%RSD	171.04	173.35	173.32	963.15	126.00	986.03
#1	s -.00081	-3.4099	k 61.124	s .00555	k -.00082	s -.00019
#2	-.00139	.00126	-.03016	.00104	-.00012	-.00009
#3	s .00050	.00067	k .00214	s -.00495	s -.00406	s .00036
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		9.0000				
Low Limit		-.01000				

Elem	Zr3391
Units	ppm
Avg	k **4.7431**
Stddev	8.2177
%RSD	173.26
#1	14.232
#2	-.00307
#3	k .00025
Check ?	Chk Pass
High Limit	
Low Limit	

Approved: June 25, 2016

Sample Name: L1606122701 Acquired: 6/24/2016 14:29:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	^ *****	^ *****	**1491.6**
Stddev	-----	-----	1744.8
%RSD	-----	-----	116.98
#1	^ -----	96744.	-.833
#2	11739.	67740.	1065.6
#3	^ -----	^ -----	3409.9

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 14:33:26 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41166	10.425	.41797	.51029	1.0577	.05047	10.520	.05316
Stddev	.00099	.032	.00238	.00238	.0098	.00020	.066	.00029
%RSD	.24027	.31060	.57018	.46712	.92494	.40032	.62805	.55014
#1	.41078	10.417	.41616	.50822	1.0524	.05037	10.498	.05343
#2	.41273	10.461	.42067	.50975	1.0690	.05033	10.595	.05285
#3	.41147	10.398	.41708	.51289	1.0516	.05070	10.468	.05319
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21206	.51386	.53059	4.1899	53.263	1.0467	10.468	.52856
Stddev	.00073	.00321	.00100	.0374	.462	.0063	.076	.00530
%RSD	.34314	.62500	.18884	.89375	.86682	.60297	.72564	1.0030
#1	.21259	.51287	.52997	4.1684	53.043	1.0454	10.485	.52611
#2	.21236	.51126	.53175	4.2331	53.794	1.0536	10.535	.53465
#3	.21123	.51745	.53006	4.1681	52.952	1.0412	10.385	.52494
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0576	52.995	.52777	10.435	.52686	1.2496	.41651	5.4396
Stddev	.0040	.485	.00212	.015	.00639	.0066	.00244	.0073
%RSD	.37921	.91430	.40168	.14821	1.2125	.52987	.58470	.13514
#1	1.0613	52.838	.52972	10.450	.53351	1.2484	.41859	5.4468
#2	1.0581	53.538	.52809	10.437	.52631	1.2567	.41712	5.4400
#3	1.0533	52.608	.52552	10.419	.52077	1.2437	.41383	5.4321
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 14:33:26 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0505**	**1.0599**	**1.0626**	**.52487**	**1.0199**	**1.0599**	**1.0481**
Stddev	.0030	.0080	.0069	.00177	.0063	.0016	.0076
%RSD	.28497	.75748	.64716	.33685	.61433	.14858	.72179
#1	1.0520	1.0581	1.0658	.52283	1.0139	1.0617	1.0532
#2	1.0524	1.0687	1.0673	.52604	1.0264	1.0591	1.0518
#3	1.0471	1.0529	1.0547	.52572	1.0194	1.0589	1.0394
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8638.4**	**54702.**	**2962.1**
Stddev	25.7	232.	26.1
%RSD	.29729	.42351	.88130
#1	8638.5	54949.	2963.0
#2	8664.0	54489.	2935.5
#3	8612.6	54670.	2987.7

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 14:37:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00059**	**.00701**	**.00029**	**.00414**	**.00107**	**.00004**	**.00238**	**-.00012**
Stddev	.00084	.00406	.00078	.00126	.00076	.00005	.01029	.00020
%RSD	141.95	57.911	270.00	30.394	71.506	123.23	431.54	160.84
#1	-.00109	.01100	-.00061	.00436	.00031	-.00001	.01410	-.00018
#2	.00038	.00714	.00070	.00527	.00106	.00009	-.00516	-.00029
#3	-.00106	.00289	.00078	.00278	.00183	.00005	-.00179	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**.00101**	**-.00109**	**-.00812**	**.09168**	**-.00067**	**.00355**	**-.00145**
Stddev	.00012	.00041	.00020	.01093	.16535	.00286	.05597	.00191
%RSD	587.69	41.101	17.982	134.63	180.37	426.73	1575.4	131.49
#1	-.00012	.00144	-.00126	-.01947	.12855	-.00390	-.02086	.00074
#2	.00007	.00098	-.00088	.00235	.23548	.00155	.06758	-.00233
#3	.00010	.00061	-.00113	-.00724	-.08900	.00034	-.03606	-.00276
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00376**	**.06309**	**-.00078**	**-.00146**	**-.00295**	**.00728**	**.00080**	**.00640**
Stddev	.00004	.00813	.00031	.00130	.00447	.00341	.00273	.00142
%RSD	1.1880	12.887	39.066	89.596	151.30	46.848	341.20	22.217
#1	.00379	.05447	-.00081	-.00002	-.00292	.00343	-.00228	.00491
#2	.00377	.07062	-.00047	-.00257	.00150	.00849	.00178	.00774
#3	.00371	.06419	-.00108	-.00177	-.00745	.00993	.00291	.00656
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 14:37:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**-.00030**	**-.00170**	**-.00383**	**-.00049**	**.00017**	**.00063**
Stddev	.00071	.00015	.00190	.00217	.00068	.00011	.00064
%RSD	416.03	50.304	111.76	56.611	138.47	65.323	100.79
#1	-.00090	-.00046	-.00195	-.00355	.00013	.00005	.00048
#2	.00053	-.00016	.00031	-.00613	-.00121	.00020	.00009
#3	-.00015	-.00029	-.00347	-.00182	-.00039	.00026	.00134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8962.4**	**57043.**	**3076.8**
Stddev	9.4	202.	30.1
%RSD	.10495	.35434	.97741
#1	8959.6	57191.	3062.7
#2	8973.0	57124.	3056.5
#3	8954.8	56812.	3111.4

Approved: June 25, 2016

Sample Name: LLCCV Acquired: 6/24/2016 14:41:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00718	.16778	.00705	.07965	.00910	.00164	.41639	.00077
Stddev	.00111	.00850	.00155	.00224	.00038	.00008	.03685	.00016
%RSD	15.437	5.0649	22.016	2.8126	4.2151	4.9707	8.8498	21.171
#1	.00835	.16257	.00591	.07934	.00933	.00163	.41364	.00096
#2	.00706	.17759	.00643	.08204	.00930	.00156	.38099	.00069
#3	.00615	.16318	.00882	.07759	.00865	.00172	.45453	.00067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00372	.00553	.00388	.09928	.97152	.08315	.41379	.00739
Stddev	.00019	.00133	.00032	.02549	.05199	.00523	.08500	.00248
%RSD	5.0726	23.979	8.3772	25.673	5.3513	6.2898	20.543	33.559
#1	.00382	.00499	.00359	.11432	.99435	.08891	.42868	.00950
#2	.00350	.00456	.00423	.06985	1.0082	.08183	.49036	.00801
#3	.00383	.00704	.00382	.11368	.91202	.07870	.32232	.00466
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00887	.47333	.01623	.81221	.00542	.09064	.01323	.80543
Stddev	.00034	.01785	.00027	.00285	.00284	.00218	.00846	.00484
%RSD	3.8186	3.7704	1.6489	.35135	52.439	2.4043	63.964	.60120
#1	.00857	.45283	.01639	.81336	.00707	.09020	.00353	.80991
#2	.00924	.48541	.01638	.81431	.00704	.08871	.01911	.80609
#3	.00882	.48176	.01592	.80897	.00214	.09300	.01705	.80029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LLCCV Acquired: 6/24/2016 14:41:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40870**	**.04207**	**.01931**	**.15366**	**.00710**	**.01712**	**.04603**
Stddev	.00512	.00019	.00171	.00094	.00077	.00047	.00074
%RSD	1.2534	.44963	8.8459	.61383	10.891	2.7601	1.5991
#1	.41191	.04225	.01832	.15474	.00771	.01740	.04532
#2	.41140	.04187	.02128	.15326	.00736	.01737	.04598
#3	.40280	.04210	.01832	.15299	.00623	.01657	.04679
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8982.1**	**57067.**	**3060.2**
Stddev	26.2	300.	11.7
%RSD	.29148	.52636	.38103
#1	8991.8	56753.	3059.1
#2	8952.5	57352.	3072.4
#3	9002.1	57094.	3049.1

Approved: June 25, 2016

Sample Name: LLCCV Acquired: 6/24/2016 14:45:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01869	.41297	.02026	.19746	.02185	.00383	1.0200	.00188
Stddev	.00035	.00586	.00154	.00067	.00147	.00014	.0338	.00015
%RSD	1.8526	1.4186	7.6007	.34025	6.7142	3.6282	3.3179	7.8964
#1	.01874	.40831	.01848	.19818	.02288	.00367	1.0151	.00196
#2	.01900	.41106	.02109	.19686	.02017	.00390	1.0560	.00198
#3	.01832	.41955	.02120	.19732	.02249	.00393	.98885	.00171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00984	.01123	.00919	.18681	2.1247	.20721	.93148	.01619
Stddev	.00014	.00068	.00093	.01106	.0926	.00369	.07781	.00078
%RSD	1.4606	6.0688	10.105	5.9217	4.3598	1.7823	8.3530	4.8206
#1	.01001	.01162	.00904	.19951	2.2112	.20690	.86422	.01547
#2	.00973	.01162	.00834	.18161	2.0269	.21106	.91352	.01702
#3	.00979	.01044	.01018	.17930	2.1360	.20369	1.0167	.01609
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02014	1.0870	.04071	1.9977	.02135	.21673	.03821	1.9741
Stddev	.00016	.0210	.00055	.0167	.00069	.00325	.00268	.0082
%RSD	.80007	1.9300	1.3616	.83571	3.2506	1.4993	7.0016	.41651
#1	.02032	1.0994	.04122	2.0148	.02110	.22042	.03544	1.9835
#2	.02003	1.0989	.04080	1.9969	.02082	.21547	.04077	1.9682
#3	.02006	1.0628	.04012	1.9814	.02214	.21430	.03841	1.9708
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LLCCV Acquired: 6/24/2016 14:45:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0107**	**.10392**	**.05575**	**.37550**	**.01879**	**.04191**	**.10568**
Stddev	.0090	.00047	.00558	.00228	.00032	.00016	.00084
%RSD	.89117	.44849	9.9995	.60763	1.6789	.38616	.79660
#1	1.0189	.10438	.05893	.37732	.01895	.04186	.10565
#2	1.0122	.10392	.05901	.37624	.01842	.04209	.10485
#3	1.0011	.10345	.04932	.37294	.01899	.04177	.10653
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9009.7**	**57472.**	**3066.3**
Stddev	19.1	37.	13.0
%RSD	.21156	.06500	.42365
#1	9017.9	57429.	3056.0
#2	9023.2	57498.	3080.9
#3	8987.9	57490.	3062.1

Approved: June 25, 2016

Sample Name: L1606122707 Acquired: 6/24/2016 14:48:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00038	.02228	-.00310	.03187	.86009	.00012	39.489	.00003
Stddev	.00018	.00656	.00152	.00057	.00717	.00003	.379	.00032
%RSD	46.468	29.432	49.079	1.8038	.83341	26.472	.96018	1147.1
#1	-.00055	.02985	-.00161	.03125	.86719	.00008	39.879	-.00019
#2	-.00020	.01820	-.00302	.03199	.86023	.00013	39.466	-.00011
#3	-.00040	.01880	-.00465	.03238	.85285	.00015	39.122	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00072	-.00028	.00013	59.587	2.9995	.04414	25.073	1.2878
Stddev	.00057	.00083	.00110	.643	.1016	.00412	.231	.0116
%RSD	79.076	299.88	865.71	1.0796	3.3860	9.3424	.92024	.90415
#1	-.00051	.00068	-.00113	60.213	3.0838	.04323	25.311	1.3011
#2	-.00137	-.00084	.00089	59.621	2.8867	.04865	25.057	1.2792
#3	-.00029	-.00068	.00062	58.928	3.0279	.04055	24.851	1.2831
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	115.27	.04203	.01368	.00281	-.00143	.00296	14.747
Stddev	.00037	1.33	.00072	.00307	.00173	.00239	.00365	.039
%RSD	499.83	1.1534	1.7107	22.425	61.439	167.46	123.56	.26370
#1	.00026	116.59	.04143	.01139	.00244	-.00272	.00713	14.784
#2	-.00048	115.27	.04283	.01716	.00130	.00133	.00141	14.750
#3	-.00000	113.93	.04183	.01248	.00470	-.00289	.00033	14.707
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606122707 Acquired: 6/24/2016 14:48:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.95862**	**.00605**	**-.00068**	**-.00091**	**.00548**	**.00149**
Stddev	.00073	.01229	.00320	.00267	.00068	.00026	.00022
%RSD	553.72	1.2819	52.980	390.15	74.575	4.7467	14.628
#1	-.00098	.96985	.00245	.00197	-.00106	.00564	.00171
#2	.00022	.96050	.00860	-.00066	-.00151	.00563	.00127
#3	.00036	.94549	.00708	-.00336	-.00017	.00518	.00148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8796.8**	**55980.**	**3081.4**
Stddev	13.6	173.	49.3
%RSD	.15430	.30941	1.6006
#1	8782.9	56135.	3034.1
#2	8810.1	56011.	3077.6
#3	8797.3	55793.	3132.6

Approved: June 25, 2016

Sample Name: L1606128901 Acquired: 6/24/2016 14:52:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00029**	**.04962**	**.00112**	**.00988**	**5.2736**	**-.00000**	**172.96**
Stddev	.00150	.00386	.00106	.00285	.0237	.00005	.90
%RSD	521.82	7.7690	94.694	28.895	.44889	7806.7	.52141
#1	.00036	.05342	.00225	.00730	5.2908	-.00004	173.59
#2	.00175	.04571	.00014	.00938	5.2466	.00005	171.93
#3	-.00125	.04974	.00097	.01295	5.2835	-.00001	173.36
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00136**	**.04532**	**.13640**	**.02803**	**.82377**	**2.0910**	**.06524**
Stddev	.00008	.00075	.00127	.00169	.01843	.0634	.00121
%RSD	6.1045	1.6593	.93452	6.0401	2.2378	3.0301	1.8477
#1	.00135	.04615	.13543	.02951	.80742	2.1500	.06406
#2	.00144	.04511	.13594	.02618	.82014	2.0990	.06519
#3	.00128	.04469	.13784	.02838	.84375	2.0241	.06647
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**132.57**	**1.5484**	**.00399**	F **475.43**	**.60664**	**-.00181**	**.00112**
Stddev	1.22	.0105	.00019	6.67	.00940	.00176	.00123
%RSD	.92353	.67771	4.8057	1.4023	1.5491	97.473	109.90
#1	133.54	1.5549	.00379	480.67	.61634	-.00043	.00090
#2	131.19	1.5363	.00417	477.68	.60602	-.00120	.00245
#3	132.97	1.5541	.00401	467.92	.59758	-.00379	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 25, 2016

Sample Name: L1606128901 Acquired: 6/24/2016 14:52:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00043**	**.00044**	**20.411**	**-.00001**	**3.3220**	**-.02680**	**-.00165**
Stddev	.00177	.00688	.223	.00059	.0144	.00356	.00200
%RSD	411.04	1578.1	1.0946	9208.5	.43324	13.269	121.77
#1	-.00012	.00683	20.657	.00066	3.3359	-.02623	-.00015
#2	-.00234	.00133	20.356	-.00024	3.3072	-.03061	-.00392
#3	.00117	-.00685	20.220	-.00044	3.3229	-.02356	-.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00230**	**.01606**	**-.00030**
Stddev	.00111	.00038	.00039
%RSD	48.336	2.3357	128.61
#1	-.00215	.01640	.00003
#2	-.00348	.01614	-.00073
#3	-.00127	.01566	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8386.8**	**53296.**	**3021.6**
Stddev	37.8	223.	29.3
%RSD	.45026	.41852	.97129
#1	8352.5	53490.	2991.9
#2	8427.3	53347.	3050.6
#3	8380.7	53052.	3022.3

Approved: June 25, 2016

Sample Name: L1606128904 Acquired: 6/24/2016 14:56:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00078**	**.89254**	**-.00069**	**.01964**	**.04255**	**.00011**	**5.6683**	**.00028**
Stddev	.00076	.01581	.00109	.00257	.00109	.00004	.0152	.00014
%RSD	98.022	1.7713	158.41	13.060	2.5725	41.643	.26758	50.825
#1	-.00164	.87537	-.00125	.01833	.04129	.00015	5.6815	.00024
#2	-.00048	.89576	.00057	.01800	.04324	.00007	5.6517	.00016
#3	-.00021	.90650	-.00137	.02260	.04312	.00010	5.6716	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**.00425**	**.00494**	**1.2848**	**1.7945**	**.00004**	**1.0750**	**.06944**
Stddev	.00027	.00147	.00133	.0357	.1112	.00319	.1047	.00259
%RSD	122.02	34.538	27.001	2.7795	6.1951	7919.7	9.7411	3.7251
#1	-.00019	.00333	.00648	1.3254	1.8687	-.00206	1.1443	.06646
#2	-.00051	.00594	.00405	1.2582	1.8481	.00371	1.1263	.07089
#3	.00003	.00347	.00430	1.2709	1.6666	-.00153	.95457	.07099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00253**	**11.300**	**.00403**	**.05743**	**-.00017**	**-.00179**	**.00195**	**3.8550**
Stddev	.00020	.072	.00110	.00105	.00329	.00658	.00226	.1069
%RSD	7.7182	.63637	27.173	1.8233	1906.1	368.28	115.87	2.7717
#1	.00264	11.368	.00517	.05829	.00210	-.00819	-.00037	3.9182
#2	.00264	11.309	.00299	.05627	-.00395	.00496	.00208	3.9152
#3	.00230	11.225	.00394	.05774	.00133	-.00213	.00413	3.7317
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606128904 Acquired: 6/24/2016 14:56:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.05757**	**.02633**	**-.00071**	**.00137**	**.00722**	**.00200**
Stddev	.00035	.00023	.00560	.00355	.00071	.00007	.00033
%RSD	91.722	.39740	21.269	498.75	51.627	.91462	16.350
#1	-.00073	.05778	.02000	-.00383	.00175	.00716	.00162
#2	-.00038	.05732	.02834	-.00145	.00181	.00729	.00222
#3	-.00003	.05760	.03065	.00315	.00055	.00719	.00216
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8865.6**	**56649.**	**3059.6**
Stddev	13.5	96.	21.0
%RSD	.15270	.17031	.68631
#1	8866.0	56591.	3042.3
#2	8878.9	56761.	3053.7
#3	8851.9	56596.	3083.0

Approved: June 25, 2016

Sample Name: L1606129003 Acquired: 6/24/2016 15:00:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00079**	**.23085**	**.01034**	**.01559**	**.36719**	**.00005**	**21.705**	**.00048**
Stddev	.00066	.01132	.00405	.00112	.00034	.00003	.125	.00008
%RSD	83.316	4.9053	39.209	7.1670	.09361	52.637	.57576	16.613
#1	-.00053	.21806	.00670	.01651	.36734	.00007	21.802	.00057
#2	-.00154	.23489	.01470	.01592	.36743	.00007	21.749	.00042
#3	-.00030	.23961	.00961	.01435	.36680	.00002	21.564	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00832**	**.00224**	**.00061**	**33.420**	**3.2767**	**.01261**	**13.855**	**.58209**
Stddev	.00025	.00111	.00133	.070	.0433	.00234	.192	.00232
%RSD	3.0553	49.670	217.79	.20879	1.3202	18.546	1.3850	.39779
#1	.00834	.00100	.00061	33.467	3.2844	.00992	14.064	.58474
#2	.00805	.00316	.00195	33.452	3.3155	.01415	13.814	.58108
#3	.00856	.00256	-.00072	33.340	3.2300	.01376	13.686	.58045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**119.40**	**.01660**	**.07210**	**.00341**	**.00143**	**.00513**	**10.118**
Stddev	.00033	.47	.00077	.00340	.00220	.00378	.00738	.080
%RSD	1430.2	.39268	4.6557	4.7101	64.624	264.86	143.85	.79057
#1	.00020	119.78	.01610	.06894	.00133	.00564	-.00235	10.112
#2	-.00035	119.55	.01749	.07569	.00317	-.00168	.00533	10.200
#3	.00022	118.87	.01621	.07166	.00572	.00033	.01240	10.041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606129003 Acquired: 6/24/2016 15:00:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00825	.48338	.01285	-.00007	-.00099	.02470	.00130
Stddev	.00046	.00133	.00609	.00020	.00008	.00029	.00043
%RSD	5.5459	.27526	47.375	267.50	8.5468	1.1648	33.241
#1	.00847	.48381	.01168	-.00026	-.00091	.02465	.00080
#2	.00855	.48444	.00743	-.00009	-.00108	.02501	.00160
#3	.00772	.48189	.01943	.00013	-.00099	.02444	.00149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8589.3	54682.	3050.6
Stddev	24.0	271.	24.0
%RSD	.27972	.49573	.78517
#1	8590.4	54964.	3023.0
#2	8564.7	54423.	3063.9
#3	8612.7	54659.	3065.0

Approved: June 25, 2016

Sample Name: L1606129005 Acquired: 6/24/2016 15:04:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00093**	**2.8940**	**.00006**	**.01007**	**.07684**	**.00018**	**1.8409**	**.00000**
Stddev	.00144	.0184	.00220	.00073	.00162	.00006	.0138	.00046
%RSD	154.30	.63640	3601.3	7.2287	2.1026	31.323	.75067	9347.2
#1	-.00260	2.9086	-.00247	.00925	.07870	.00012	1.8257	.00046
#2	-.00011	2.9000	.00139	.01032	.07576	.00019	1.8444	.00000
#3	-.00010	2.8733	.00126	.01063	.07607	.00023	1.8526	-.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00091**	**.00434**	**-.00038**	**3.1829**	**.55321**	**.00872**	**1.5188**	**.02267**
Stddev	.00018	.00090	.00079	.0133	.03931	.00184	.0455	.00119
%RSD	20.184	20.776	205.81	.41668	7.1064	21.146	2.9981	5.2528
#1	.00112	.00469	-.00125	3.1779	.59786	.01068	1.4921	.02373
#2	.00082	.00502	.00029	3.1979	.52378	.00846	1.5714	.02138
#3	.00078	.00332	-.00019	3.1728	.53798	.00702	1.4930	.02289
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00043**	**27.020**	**.00272**	**.08458**	**.00016**	**.00433**	**.00430**	**18.456**
Stddev	.00073	.100	.00065	.00188	.00203	.00206	.00371	.304
%RSD	171.02	.37092	23.861	2.2211	1248.4	47.523	86.151	1.6472
#1	-.00010	27.134	.00249	.08421	.00247	.00531	.00264	18.631
#2	.00012	26.983	.00222	.08662	-.00061	.00572	.00172	18.633
#3	.00126	26.944	.00345	.08292	-.00137	.00197	.00855	18.105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606129005 Acquired: 6/24/2016 15:04:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00100	.03803	.06036	-.00240	.00545	.00944	.00214
Stddev	.00054	.00054	.00300	.00069	.00057	.00004	.00035
%RSD	54.381	1.4172	4.9720	28.734	10.423	.45223	16.538
#1	.00056	.03865	.06382	-.00184	.00519	.00939	.00180
#2	.00160	.03778	.05850	-.00219	.00610	.00947	.00213
#3	.00083	.03766	.05876	-.00318	.00505	.00946	.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8715.6	55373.	3004.3
Stddev	28.8	88.	20.9
%RSD	.33098	.15973	.69504
#1	8735.4	55391.	2980.2
#2	8728.9	55276.	3014.4
#3	8682.5	55450.	3018.2

Approved: June 25, 2016

Sample Name: L1606112901 Acquired: 6/24/2016 15:08:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00153	.04742	-.00095	.03453	.02713	.00001	86.360	.00034
Stddev	.00217	.00415	.00049	.00360	.00063	.00009	.224	.00044
%RSD	141.80	8.7609	51.957	10.417	2.3220	657.60	.25919	128.64
#1	-.00346	.04486	-.00039	.03082	.02758	-.00008	86.344	.00072
#2	-.00196	.04519	-.00115	.03800	.02641	.00009	86.145	-.00014
#3	.00082	.05221	-.00131	.03476	.02740	.00002	86.592	.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.00312	.00177	.94597	3.2694	-.00206	18.533	.11547
Stddev	.00014	.00126	.00037	.01236	.0834	.00303	.037	.00006
%RSD	78.771	40.351	21.042	1.3061	2.5502	147.38	.19767	.05424
#1	-.00029	.00408	.00217	.94560	3.3573	-.00518	18.524	.11541
#2	-.00002	.00169	.00170	.93380	3.1914	.00088	18.501	.11554
#3	-.00020	.00357	.00144	.95851	3.2594	-.00189	18.573	.11545
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	63.757	.00088	-.00345	-.00001	.00390	.00201	4.3369
Stddev	.00012	.098	.00080	.00790	.00073	.00356	.00350	.0154
%RSD	20.681	.15440	91.170	229.23	11400.	91.387	174.14	.35496
#1	.00052	63.708	.00165	-.00774	-.00051	.00796	-.00076	4.3485
#2	.00048	63.692	.00005	.00567	-.00034	.00129	.00594	4.3428
#3	.00070	63.870	.00094	-.00827	.00083	.00245	.00085	4.3194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606112901 Acquired: 6/24/2016 15:08:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00155	.26173	-.00856	-.00313	-.00118	.00293	.00052
Stddev	.00080	.00134	.00446	.00054	.00143	.00016	.00098
%RSD	51.891	.51077	52.060	17.221	121.68	5.3885	189.16
#1	.00076	.26032	-.01247	-.00264	-.00215	.00304	.00128
#2	.00236	.26190	-.00951	-.00371	.00047	.00300	.00086
#3	.00153	.26298	-.00371	-.00305	-.00185	.00275	-.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8540.9	54113.	2989.8
Stddev	45.6	156.	19.9
%RSD	.53331	.28793	.66720
#1	8508.8	54182.	2978.9
#2	8520.8	53935.	2977.6
#3	8593.0	54223.	3012.8

Approved: June 25, 2016

Sample Name: L1606112902 Acquired: 6/24/2016 15:12:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	.29983	.00210	.00463	.01662	.00001	61.912	.00008
Stddev	.00140	.00599	.00218	.00166	.00062	.00006	.415	.00006
%RSD	851.26	1.9983	103.64	35.749	3.7122	644.92	.67074	85.148
#1	.00063	.30673	.00242	.00653	.01642	-.00001	62.250	.00000
#2	.00065	.29672	.00410	.00344	.01613	.00007	61.449	.00009
#3	-.00178	.29603	-.00022	.00393	.01731	-.00004	62.038	.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.01059	.00129	.94804	2.0675	.00069	20.139	.47034
Stddev	.00027	.00122	.00016	.02696	.0775	.00357	.320	.00402
%RSD	2948.5	11.527	12.380	2.8436	3.7492	519.77	1.5901	.85492
#1	-.00008	.00944	.00121	.97580	2.0012	.00465	20.332	.47062
#2	-.00020	.01048	.00148	.92196	2.0486	-.00226	19.770	.46619
#3	.00031	.01187	.00119	.94637	2.1528	-.00033	20.317	.47422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00109	30.320	.00364	.05395	.00396	.00836	-.00176	4.3013
Stddev	.00027	.212	.00081	.00668	.00208	.00440	.00252	.0395
%RSD	24.472	.70024	22.172	12.380	52.449	52.578	143.06	.91824
#1	.00086	30.527	.00437	.06160	.00615	.01344	-.00322	4.3162
#2	.00138	30.102	.00277	.04930	.00201	.00571	.00115	4.3312
#3	.00102	30.330	.00377	.05095	.00373	.00594	-.00320	4.2566
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606112902 Acquired: 6/24/2016 15:12:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.22725**	**.00528**	**-.00256**	**-.00043**	**.00529**	**.00068**
Stddev	.00083	.00096	.00459	.00338	.00037	.00010	.00058
%RSD	564.50	.42062	86.815	132.11	87.049	1.8289	84.780
#1	-.00087	.22693	.00443	-.00640	-.00011	.00518	.00078
#2	.00076	.22649	.00118	-.00002	-.00084	.00537	.00006
#3	-.00033	.22832	.01024	-.00126	-.00035	.00532	.00120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8571.6**	**54279.**	**2969.2**
Stddev	16.1	210.	28.2
%RSD	.18756	.38604	.95029
#1	8572.3	54497.	2938.5
#2	8555.3	54260.	2975.3
#3	8587.4	54079.	2993.9

Approved: June 25, 2016

Sample Name: L1606112903 Acquired: 6/24/2016 15:16:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00206**	**.02810**	**.00131**	**.04316**	**.02401**	**.00003**	**88.103**	**-.00001**
Stddev	.00163	.00424	.00349	.00036	.00097	.00004	.414	.00006
%RSD	79.332	15.095	266.64	.84369	4.0298	138.71	.47027	1013.7
#1	-.00372	.03153	.00085	.04353	.02406	.00000	88.569	-.00003
#2	-.00046	.02336	-.00193	.04281	.02302	.00007	87.962	-.00006
#3	-.00199	.02942	.00501	.04314	.02496	.00001	87.777	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00060**	**.00253**	**.00131**	**.96589**	**1.3495**	**.00123**	**21.585**	**.10128**
Stddev	.00042	.00035	.00067	.03405	.0842	.00325	.244	.00173
%RSD	70.727	13.720	51.685	3.5257	6.2420	263.39	1.1308	1.7072
#1	-.00095	.00223	.00070	.96112	1.2530	.00259	21.821	.10325
#2	-.00013	.00291	.00203	1.0021	1.4081	.00359	21.599	.10062
#3	-.00070	.00244	.00119	.93447	1.3875	-.00247	21.334	.09998
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00037**	**45.687**	**-.00078**	**-.00721**	**.00004**	**.00503**	**.00046**	**5.7282**
Stddev	.00004	.226	.00053	.00474	.00119	.00065	.00200	.0193
%RSD	10.964	.49543	68.227	65.769	3232.3	13.018	432.45	.33624
#1	.00035	45.948	-.00018	-.00213	-.00052	.00542	.00277	5.7412
#2	.00034	45.538	-.00095	-.00799	.00140	.00427	-.00053	5.7373
#3	.00041	45.576	-.00121	-.01151	-.00077	.00539	-.00085	5.7061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606112903 Acquired: 6/24/2016 15:16:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.26833**	**-.01816**	**-.00283**	**-.00066**	**.00168**	**-.00020**
Stddev	.00078	.00133	.00789	.00034	.00071	.00025	.00040
%RSD	532.76	.49719	43.454	11.860	108.55	14.856	199.35
#1	-.00105	.26982	-.01296	-.00288	-.00092	.00197	-.00067
#2	.00022	.26790	-.02724	-.00248	.00015	.00158	-.00001
#3	.00038	.26726	-.01427	-.00314	-.00120	.00151	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8598.7**	**54568.**	**2985.2**
Stddev	14.7	155.	28.7
%RSD	.17099	.28360	.96063
#1	8589.5	54461.	2952.2
#2	8615.7	54497.	2998.6
#3	8591.0	54745.	3004.7

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 15:20:08 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40824	10.420	.41623	.50512	1.0434	.05077	10.410	.05303
Stddev	.00102	.011	.00166	.00159	.0051	.00011	.048	.00003
%RSD	.24985	.10317	.39821	.31537	.48909	.20971	.45682	.05731
#1	.40928	10.415	.41742	.50640	1.0406	.05065	10.460	.05302
#2	.40724	10.413	.41433	.50561	1.0402	.05085	10.366	.05306
#3	.40821	10.433	.41693	.50333	1.0493	.05082	10.403	.05300
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21118	.51349	.53049	4.1296	52.613	1.0448	10.282	.52373
Stddev	.00035	.00153	.00198	.0197	.215	.0121	.119	.00095
%RSD	.16775	.29847	.37336	.47674	.40803	1.1621	1.1607	.18074
#1	.21141	.51175	.53242	4.1285	52.846	1.0585	10.343	.52404
#2	.21135	.51410	.53058	4.1499	52.423	1.0356	10.145	.52448
#3	.21077	.51463	.52847	4.1106	52.571	1.0402	10.359	.52266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0543	52.234	.52970	10.421	.53044	1.2449	.41601	5.4104
Stddev	.0058	.138	.00167	.015	.00320	.0077	.00786	.0069
%RSD	.55132	.26343	.31583	.14051	.60281	.61774	1.8884	.12671
#1	1.0591	52.228	.53040	10.408	.52788	1.2425	.41688	5.4032
#2	1.0560	52.100	.53092	10.437	.53402	1.2535	.42340	5.4168
#3	1.0478	52.375	.52780	10.419	.52942	1.2386	.40776	5.4113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 15:20:08 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0527**	**1.0427**	**1.0445**	**.52624**	**1.0215**	**1.0629**	**1.0377**
Stddev	.0032	.0041	.0034	.00504	.0054	.0007	.0080
%RSD	.30129	.38916	.32629	.95804	.53233	.06397	.77418
#1	1.0545	1.0426	1.0412	.52173	1.0217	1.0629	1.0451
#2	1.0546	1.0387	1.0480	.53168	1.0159	1.0636	1.0389
#3	1.0491	1.0468	1.0444	.52530	1.0268	1.0623	1.0291
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8453.3**	**53500.**	**2924.6**
Stddev	46.2	193.	16.5
%RSD	.54695	.36073	.56251
#1	8402.3	53503.	2906.8
#2	8492.4	53692.	2927.9
#3	8465.1	53306.	2939.2

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 15:23:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00065	.00992	.00234	.00351	.00116	.00005	.02900	-.00001
Stddev	.00127	.00415	.00228	.00015	.00102	.00007	.00886	.00016
%RSD	194.64	41.872	97.529	4.1352	87.524	137.88	30.568	1159.7
#1	-.00112	.01430	-.00008	.00361	.00056	.00012	.03894	-.00002
#2	-.00162	.00942	.00265	.00358	.00234	-.00001	.02614	.00015
#3	.00078	.00604	.00445	.00334	.00060	.00004	.02192	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00032	.00116	-.00112	-.00648	.12931	-.00349	.00279	-.00148
Stddev	.00033	.00174	.00093	.02647	.07085	.00052	.12182	.00041
%RSD	102.16	151.03	83.446	408.59	54.789	15.028	4365.9	27.406
#1	-.00027	.00292	-.00056	-.01439	.08320	-.00296	.07318	-.00103
#2	-.00002	.00111	-.00220	.02304	.09384	-.00350	-.13788	-.00160
#3	-.00068	-.00057	-.00060	-.02808	.21088	-.00401	.07307	-.00182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00377	.03069	-.00012	-.00362	.00099	.00980	-.00258	.00553
Stddev	.00021	.00731	.00017	.00052	.00072	.00250	.00356	.00133
%RSD	5.5503	23.828	141.85	14.411	72.602	25.470	137.60	24.033
#1	.00400	.03907	-.00021	-.00421	.00089	.01055	-.00604	.00429
#2	.00359	.02561	-.00021	-.00320	.00174	.01183	.00106	.00693
#3	.00372	.02739	.00007	-.00346	.00032	.00701	-.00278	.00538
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 15:23:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00006	.00390	-.00184	-.00019	.00017	.00074
Stddev	.00034	.00047	.00298	.00079	.00043	.00010	.00028
%RSD	126.24	847.27	76.444	42.940	222.76	60.338	37.477
#1	.00001	-.00046	.00433	-.00204	-.00069	.00029	.00091
#2	.00066	.00046	.00665	-.00251	.00004	.00014	.00042
#3	.00015	.00017	.00073	-.00097	.00007	.00009	.00089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9150.0	58046.	3103.6
Stddev	34.2	243.	28.5
%RSD	.37419	.41787	.91849
#1	9166.8	58132.	3091.9
#2	9172.6	58235.	3082.8
#3	9110.6	57773.	3136.1

Approved: June 25, 2016

Sample Name: L1606112904 Acquired: 6/24/2016 15:27:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.30610	.00349	.00484	.01680	-.00005	61.162	.00024
Stddev	.00266	.00425	.00225	.00067	.00024	.00004	.150	.00011
%RSD	1354.1	1.3879	64.385	13.909	1.4087	89.396	.24565	45.340
#1	-.00149	.30821	.00608	.00459	.01688	-.00002	61.102	.00011
#2	-.00119	.30889	.00214	.00560	.01653	-.00010	61.332	.00032
#3	.00327	.30121	.00224	.00432	.01699	-.00002	61.050	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.01616	.00247	1.0511	2.1639	.00265	19.710	.53272
Stddev	.00012	.00059	.00049	.0193	.0834	.00241	.173	.00246
%RSD	129.55	3.6203	19.814	1.8330	3.8560	91.029	.87731	.46259
#1	-.00009	.01640	.00191	1.0288	2.1065	.00152	19.534	.52992
#2	.00002	.01659	.00280	1.0622	2.1255	.00541	19.716	.53455
#3	-.00022	.01550	.00269	1.0622	2.2596	.00101	19.880	.53369
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00224	29.844	.00743	.06304	.00618	.01638	.00390	4.1954
Stddev	.00008	.159	.00126	.00450	.00021	.00264	.00288	.0213
%RSD	3.3560	.53301	16.998	7.1387	3.3773	16.138	73.999	.50670
#1	.00231	29.838	.00709	.06811	.00642	.01793	.00356	4.2121
#2	.00224	30.006	.00883	.05951	.00606	.01788	.00693	4.2026
#3	.00216	29.688	.00638	.06151	.00605	.01333	.00119	4.1715
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606112904 Acquired: 6/24/2016 15:27:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	.22406	.00181	.00036	-.00058	.00615	.00172
Stddev	.00007	.00022	.00734	.00244	.00087	.00015	.00076
%RSD	17.459	.09649	406.25	670.43	150.42	2.4773	44.222
#1	.00049	.22431	-.00276	.00318	.00042	.00630	.00086
#2	.00040	.22393	-.00209	-.00113	-.00100	.00600	.00231
#3	.00035	.22394	.01028	-.00095	-.00117	.00614	.00197
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8744.7	55412.	3026.9
Stddev	38.5	169.	22.6
%RSD	.44021	.30480	.74756
#1	8749.8	55267.	3016.4
#2	8780.4	55372.	3011.4
#3	8703.9	55597.	3052.8

Approved: June 25, 2016

Sample Name: L1606112905 Acquired: 6/24/2016 15:31:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	.01140	.00022	.00122	.00193	.00011	.07553	.00012
Stddev	.00193	.01011	.00272	.00166	.00083	.00003	.00088	.00020
%RSD	340.70	88.707	1246.3	135.40	43.103	31.594	1.1614	171.20
#1	.00179	.01735	.00330	.00313	.00287	.00010	.07465	-.00009
#2	.00157	.01711	-.00076	.00011	.00161	.00008	.07641	.00013
#3	-.00166	-.00028	-.00188	.00044	.00131	.00014	.07552	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	.00179	-.00013	-.00208	.05937	-.00493	.01993	-.00020
Stddev	.00039	.00092	.00162	.01996	.01936	.00171	.04297	.00398
%RSD	69.405	51.134	1287.4	957.73	32.612	34.778	215.57	2030.5
#1	-.00019	.00143	.00175	.00550	.07429	-.00691	-.01080	-.00459
#2	-.00097	.00283	-.00102	-.02473	.03749	-.00396	.06904	.00316
#3	-.00052	.00111	-.00111	.01297	.06632	-.00392	.00157	.00084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	.19673	.00066	-.00598	-.00007	.00185	.00246	.04335
Stddev	.00032	.01934	.00099	.00702	.00356	.00034	.00251	.00410
%RSD	52.254	9.8320	149.70	117.31	5122.7	18.375	102.19	9.4602
#1	.00034	.21710	.00051	-.01339	.00401	.00225	.00393	.03880
#2	.00096	.17861	-.00025	-.00514	-.00170	.00164	-.00044	.04677
#3	.00053	.19448	.00171	.00057	-.00252	.00167	.00389	.04446
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606112905 Acquired: 6/24/2016 15:31:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00101	.00050	.00137	-.00139	-.00093	.00257	-.00038
Stddev	.00056	.00024	.01168	.00187	.00042	.00002	.00017
%RSD	55.495	48.882	850.09	134.64	45.297	.75245	45.272
#1	.00129	.00076	.00019	-.00328	-.00062	.00258	-.00051
#2	.00036	.00028	.01360	.00046	-.00076	.00255	-.00018
#3	.00137	.00046	-.00967	-.00135	-.00142	.00257	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8734.1	55771.	2977.0
Stddev	61.0	169.	16.5
%RSD	.69849	.30321	.55417
#1	8730.3	55638.	2990.1
#2	8797.0	55713.	2958.5
#3	8675.1	55961.	2982.4

Approved: June 25, 2016

Sample Name: L1606127201 Acquired: 6/24/2016 15:35:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.02906	.00201	.10271	.01218	.00003	20.213	.00009
Stddev	.00117	.00902	.00030	.00201	.00114	.00005	.197	.00012
%RSD	4520.9	31.026	14.913	1.9615	9.3835	162.60	.97382	138.86
#1	.00128	.03946	.00223	.10504	.01090	.00001	20.371	.00012
#2	-.00038	.02417	.00215	.10159	.01253	-.00000	19.992	.00020
#3	-.00097	.02355	.00167	.10152	.01310	.00009	20.275	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	.00322	.00018	.00370	.50036	.00507	3.7531	-.00235
Stddev	.00050	.00044	.00072	.02394	.09084	.00627	.0578	.00152
%RSD	321.71	13.795	410.19	646.53	18.154	123.69	1.5413	64.541
#1	.00023	.00369	.00101	-.02389	.60518	.00467	3.7411	-.00063
#2	.00003	.00318	-.00019	.01903	.44485	-.00099	3.8160	-.00291
#3	-.00072	.00280	-.00029	.01596	.45103	.01152	3.7022	-.00351
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00122	138.48	-.00049	.00895	.00151	.00220	.00648	4.7916
Stddev	.00020	.68	.00066	.00484	.00341	.00275	.00555	.0247
%RSD	16.240	.49155	133.40	54.067	226.53	125.05	85.629	.51620
#1	.00108	138.86	-.00055	.01077	-.00143	.00260	.01252	4.8079
#2	.00145	137.70	.00019	.01263	.00069	-.00073	.00536	4.8036
#3	.00114	138.89	-.00113	.00347	.00525	.00472	.00158	4.7631
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606127201 Acquired: 6/24/2016 15:35:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	.06627	-.00304	-.00129	.00718	.00237	.00290
Stddev	.00103	.00053	.00409	.00463	.00068	.00008	.00098
%RSD	265.57	.80562	134.51	357.80	9.5384	3.2543	33.907
#1	.00080	.06650	-.00069	-.00660	.00664	.00231	.00179
#2	-.00096	.06566	-.00067	.00082	.00695	.00246	.00367
#3	-.00101	.06665	-.00777	.00190	.00795	.00235	.00323
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8640.6	54537.	2976.3
Stddev	33.4	414.	2.8
%RSD	.38600	.75997	.09304
#1	8644.3	54100.	2977.4
#2	8672.0	54589.	2978.3
#3	8605.6	54924.	2973.1

Approved: June 25, 2016

Sample Name: L1606127202 Acquired: 6/24/2016 15:39:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00186	.20642	.00481	.36475	.06011	.00013	99.662
Stddev	.00151	.00493	.00284	.00380	.00039	.00009	.247
%RSD	81.194	2.3881	58.969	1.0428	.65090	70.313	.24793
#1	-.00316	.20852	.00188	.36055	.06036	.00024	99.944
#2	-.00221	.20995	.00754	.36574	.06030	.00009	99.557
#3	-.00020	.20079	.00500	.36796	.05966	.00007	99.485
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	-.00019	.00432	.00026	.09326	2.6088	.04279
Stddev	.00015	.00023	.00087	.00198	.00865	.0720	.00422
%RSD	400.35	123.60	20.116	760.87	9.2780	2.7582	9.8647
#1	.00014	-.00025	.00365	-.00200	.10250	2.6023	.04293
#2	-.00013	.00007	.00402	.00170	.09194	2.6838	.03850
#3	.00011	-.00038	.00531	.00108	.08535	2.5403	.04694
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	56.637	.00259	.00352	F 291.42	.00153	.00653	.00125
Stddev	.045	.00205	.00017	.68	.00123	.00611	.00197
%RSD	.08009	79.394	4.9276	.23185	80.436	93.561	157.56
#1	56.602	.00444	.00340	292.14	.00132	.01203	-.00086
#2	56.688	.00294	.00372	291.32	.00042	.00760	.00158
#3	56.620	.00038	.00344	290.80	.00286	-.00004	.00304
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 25, 2016

Sample Name: L1606127202 Acquired: 6/24/2016 15:39:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00336	.01090	9.4240	.00071	1.0342	-.01392	-.00220
Stddev	.00383	.00615	.0240	.00151	.0037	.00663	.00343
%RSD	114.00	56.427	.25425	212.99	.35481	47.596	156.09
#1	.00463	.00381	9.4269	.00142	1.0381	-.00964	-.00233
#2	-.00094	.01477	9.4464	-.00103	1.0335	-.02155	-.00556
#3	.00639	.01413	9.3988	.00174	1.0309	-.01057	.00130
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00964	.00621	.00119
Stddev	.00038	.00006	.00099
%RSD	3.9446	.99408	82.742
#1	.00988	.00626	.00026
#2	.00920	.00614	.00109
#3	.00983	.00622	.00223
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8435.9	53530.	2970.9
Stddev	12.7	193.	17.9
%RSD	.15053	.36100	.60288
#1	8449.6	53485.	2950.4
#2	8433.7	53742.	2979.1
#3	8424.5	53363.	2983.2

Approved: June 25, 2016

Sample Name: L1606127901 Acquired: 6/24/2016 15:43:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00142**	**4.7663**	**.00159**	**.19149**	**.18987**	**.00044**	**117.30**	**.00019**
Stddev	.00097	.0101	.00508	.00228	.00171	.00003	.36	.00019
%RSD	68.564	.21115	319.18	1.1931	.90121	7.9858	.30828	101.16
#1	-.00138	4.7733	-.00262	.19304	.18994	.00044	117.72	.00036
#2	-.00047	4.7548	.00724	.19255	.18812	.00047	117.12	-.00002
#3	-.00241	4.7708	.00015	.18886	.19154	.00040	117.06	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00381**	**.02665**	**.00736**	**7.4592**	**1.7020**	**.01711**	**47.630**	**.93316**
Stddev	.00023	.00138	.00126	.0357	.0635	.00342	.150	.00698
%RSD	6.1636	5.1938	17.091	.47804	3.7303	19.974	.31555	.74834
#1	.00401	.02594	.00596	7.4987	1.7516	.02100	47.481	.93898
#2	.00386	.02577	.00840	7.4496	1.7241	.01458	47.626	.92542
#3	.00355	.02825	.00770	7.4293	1.6305	.01576	47.782	.93509
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00556**	**8.7030**	**.01355**	**.23085**	**.00447**	**-.00025**	**.00322**	**15.121**
Stddev	.00008	.0290	.00146	.00413	.00381	.00657	.00291	.053
%RSD	1.3705	.33347	10.784	1.7907	85.136	2585.4	90.596	.35335
#1	.00557	8.7074	.01369	.22722	.00571	.00305	.00109	15.155
#2	.00548	8.6721	.01493	.23000	.00751	.00401	.00202	15.147
#3	.00563	8.7296	.01202	.23535	.00020	-.00782	.00654	15.059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606127901 Acquired: 6/24/2016 15:43:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00095**	**.60203**	**.04472**	**-.00029**	**.01037**	**.12433**	**.00197**
Stddev	.00031	.00068	.00309	.00162	.00044	.00100	.00042
%RSD	32.369	.11312	6.9034	565.97	4.2747	.80201	21.277
#1	.00130	.60249	.04781	-.00207	.01047	.12469	.00218
#2	.00073	.60125	.04470	.00012	.00988	.12510	.00223
#3	.00082	.60235	.04164	.00109	.01075	.12321	.00149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8541.6**	**54387.**	**2958.0**
Stddev	16.9	129.	6.0
%RSD	.19780	.23665	.20194
#1	8551.3	54242.	2952.3
#2	8522.0	54430.	2964.2
#3	8551.3	54488.	2957.4

Approved: June 25, 2016

Sample Name: L1606127905 Acquired: 6/24/2016 15:47:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	8.8519	.00642	.19520	.18168	.00060	88.855	.00021
Stddev	.00244	.0381	.00178	.00225	.00180	.00002	.745	.00017
%RSD	304.73	.43060	27.774	1.1510	.99112	4.1261	.83808	83.018
#1	-.00092	8.8959	.00767	.19423	.18198	.00060	88.810	.00015
#2	.00359	8.8302	.00438	.19361	.18331	.00058	89.621	.00007
#3	-.00027	8.8295	.00720	.19777	.17975	.00063	88.133	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00371	.01642	.00773	9.7705	2.6089	.02290	51.286	.37067
Stddev	.00016	.00003	.00088	.0365	.0601	.00215	.182	.00572
%RSD	4.3765	.17741	11.436	.37305	2.3051	9.3850	.35555	1.5433
#1	.00374	.01645	.00699	9.7786	2.6549	.02048	51.464	.37725
#2	.00353	.01639	.00870	9.8021	2.5408	.02367	51.099	.36781
#3	.00386	.01643	.00749	9.7306	2.6308	.02456	51.296	.36694
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00429	17.960	.01399	.58938	.00723	.00345	.01660	21.595
Stddev	.00025	.178	.00089	.00540	.00230	.00161	.00485	.031
%RSD	5.7811	.99221	6.3701	.91546	31.747	46.678	29.224	.14556
#1	.00411	17.965	.01309	.59443	.00477	.00160	.01386	21.612
#2	.00457	18.136	.01402	.58370	.00760	.00453	.01374	21.615
#3	.00418	17.779	.01487	.59001	.00932	.00422	.02220	21.559
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606127905 Acquired: 6/24/2016 15:47:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00678	.39124	.08635	-.00072	.01938	.20486	.00337
Stddev	.00081	.00258	.00286	.00091	.00084	.00112	.00043
%RSD	12.000	.65984	3.3097	126.77	4.3495	.54646	12.804
#1	.00772	.39217	.08786	-.00156	.01996	.20592	.00287
#2	.00628	.39323	.08814	.00025	.01978	.20498	.00362
#3	.00633	.38833	.08306	-.00084	.01842	.20369	.00361
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8506.2	53713.	2954.1
Stddev	7.0	248.	24.6
%RSD	.08199	.46129	.83302
#1	8500.8	53999.	2935.6
#2	8503.6	53563.	2944.7
#3	8514.1	53577.	2982.0

Approved: June 25, 2016

Sample Name: L1606072901 Acquired: 6/24/2016 15:51:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	1.8041	.00151	.01140	.10342	.00036	3.3368	.00006
Stddev	.00108	.0244	.00306	.00144	.00016	.00001	.0325	.00013
%RSD	427.84	1.3517	203.06	12.597	.15291	1.6360	.97262	213.80
#1	-.00004	1.8139	.00460	.01195	.10325	.00036	3.3478	.00020
#2	.00071	1.7764	.00145	.01248	.10357	.00035	3.3623	.00000
#3	-.00142	1.8221	-.00153	.00977	.10345	.00036	3.3003	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00601	.00511	.00285	8.2259	3.9554	.00145	2.3354	.17823
Stddev	.00015	.00146	.00144	.0492	.0266	.00103	.0397	.00509
%RSD	2.5410	28.552	50.611	.59798	.67201	71.162	1.7012	2.8559
#1	.00590	.00675	.00119	8.2785	3.9276	.00182	2.3174	.17617
#2	.00596	.00394	.00359	8.2184	3.9579	.00029	2.3079	.18402
#3	.00619	.00465	.00379	8.1810	3.9806	.00225	2.3809	.17449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	8.3779	.00603	.06450	.00384	.00090	.00053	7.1161
Stddev	.00020	.1155	.00102	.00385	.00543	.00485	.00847	.0228
%RSD	31.960	1.3781	16.958	5.9688	141.68	539.69	1590.2	.32114
#1	.00082	8.4900	.00592	.06848	.00179	-.00460	.00777	7.1376
#2	.00068	8.3843	.00710	.06080	-.00028	.00272	-.00879	7.1186
#3	.00042	8.2593	.00507	.06423	.01000	.00457	.00261	7.0921
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606072901 Acquired: 6/24/2016 15:51:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.04015	.03567	-.00369	.00716	.03681	.00098
Stddev	.00043	.00039	.00196	.00299	.00019	.00045	.00038
%RSD	304.20	.97044	5.5017	80.892	2.6476	1.2228	39.254
#1	.00025	.04034	.03670	-.00592	.00694	.03696	.00089
#2	-.00033	.04041	.03689	-.00486	.00725	.03716	.00065
#3	.00052	.03970	.03340	-.00030	.00729	.03630	.00140
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8601.0	55071.	2949.1
Stddev	22.1	435.	50.8
%RSD	.25740	.79039	1.7219
#1	8576.7	54573.	2940.0
#2	8620.1	55377.	2903.5
#3	8606.2	55264.	3003.9

Approved: June 25, 2016

Sample Name: L1606072902 Acquired: 6/24/2016 15:55:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00183	.07171	-.00004	.00877	.08968	.00017	3.1101	.00014
Stddev	.00133	.00367	.00088	.00181	.00076	.00008	.0257	.00041
%RSD	72.550	5.1181	2064.2	20.689	.84741	48.064	.82680	296.40
#1	-.00115	.07091	-.00060	.01060	.09049	.00019	3.1398	.00007
#2	-.00335	.06851	.00097	.00697	.08956	.00008	3.0951	.00058
#3	-.00098	.07572	-.00050	.00874	.08898	.00025	3.0953	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00206	.00242	-.00092	.10471	3.8808	.00116	2.1628	.09158
Stddev	.00017	.00058	.00163	.02662	.0547	.00465	.0847	.00129
%RSD	8.4444	23.790	177.68	25.419	1.4105	401.58	3.9169	1.4137
#1	.00216	.00221	-.00063	.12487	3.9348	.00494	2.1162	.09307
#2	.00216	.00307	-.00267	.07454	3.8824	.00256	2.1116	.09074
#3	.00186	.00198	.00055	.11471	3.8253	-.00403	2.2606	.09093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	8.6660	.00357	-.01372	-.00186	.00337	.00433	5.4192
Stddev	.00050	.0276	.00104	.00287	.00136	.00414	.00201	.0141
%RSD	81.607	.31795	29.178	20.893	72.911	123.08	46.400	.26036
#1	.00102	8.6437	.00292	-.01305	-.00038	.00625	.00365	5.4112
#2	.00005	8.6574	.00477	-.01686	-.00305	-.00138	.00275	5.4355
#3	.00077	8.6968	.00302	-.01125	-.00214	.00523	.00659	5.4109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606072902 Acquired: 6/24/2016 15:55:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.04141	.00013	-.00361	-.00026	.00979	-.00013
Stddev	.00063	.00072	.00249	.00115	.00139	.00018	.00021
%RSD	803.32	1.7354	1938.9	31.844	526.60	1.8652	168.23
#1	.00042	.04184	.00137	-.00388	-.00173	.00988	.00006
#2	.00046	.04058	.00175	-.00235	-.00009	.00991	-.00008
#3	-.00065	.04180	-.00274	-.00460	.00103	.00958	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8610.5	55271.	2985.6
Stddev	26.5	458.	16.5
%RSD	.30752	.82920	.55375
#1	8583.1	55190.	2988.7
#2	8612.5	55764.	2967.7
#3	8635.9	54858.	3000.3

Approved: June 25, 2016

Sample Name: L1606072903 Acquired: 6/24/2016 15:59:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00118	3.0417	.00235	.05187	.04806	.00261	52.177	.00034
Stddev	.00191	.0195	.00046	.00139	.00143	.00010	.964	.00029
%RSD	162.37	.64007	19.486	2.6772	2.9802	3.6445	1.8470	86.323
#1	-.00068	3.0605	.00250	.05336	.04904	.00255	52.373	.00001
#2	.00314	3.0430	.00183	.05062	.04641	.00272	51.130	.00058
#3	.00108	3.0216	.00270	.05162	.04872	.00256	53.027	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05155	.00163	.00615	3.2341	2.3681	.00264	15.355	.83166
Stddev	.00029	.00223	.00059	.0481	.0794	.00380	.178	.01170
%RSD	.56184	136.36	9.6575	1.4861	3.3536	143.97	1.1614	1.4068
#1	.05176	.00341	.00624	3.2584	2.3449	-.00169	15.410	.84099
#2	.05167	.00234	.00669	3.1788	2.4565	.00542	15.156	.81853
#3	.05122	-.00086	.00552	3.2652	2.3028	.00418	15.500	.83544
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	6.0920	.02162	-.00809	.00351	.00212	-.00139	5.6304
Stddev	.00023	.0506	.00096	.00241	.00275	.00391	.00054	.0235
%RSD	26.502	.83131	4.4295	29.822	78.325	184.24	38.556	.41692
#1	.00068	6.1333	.02268	-.00867	.00452	-.00008	-.00126	5.6575
#2	.00079	6.0355	.02082	-.00544	.00040	-.00019	-.00198	5.6160
#3	.00112	6.1071	.02136	-.01016	.00562	.00664	-.00093	5.6178
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606072903 Acquired: 6/24/2016 15:59:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.47657**	**-.00608**	**-.00476**	**-.00070**	**.06207**	**.00194**
Stddev	.00020	.00492	.00552	.00119	.00050	.00066	.00073
%RSD	500.65	1.0315	90.719	25.070	72.152	1.0565	37.457
#1	-.00001	.48049	.00025	-.00490	-.00086	.06272	.00252
#2	-.00026	.47105	-.00862	-.00588	-.00110	.06208	.00113
#3	.00015	.47816	-.00987	-.00350	-.00013	.06141	.00218
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8765.4**	**55697.**	**3007.0**
Stddev	29.6	471.	42.7
%RSD	.33730	.84576	1.4194
#1	8742.0	55550.	2962.9
#2	8755.4	55316.	3048.1
#3	8798.6	56224.	3009.9

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 16:03:03 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41289	10.450	.41348	.51043	1.0555	.05100	10.588	.05276
Stddev	.00257	.033	.00046	.00258	.0038	.00013	.036	.00002
%RSD	.62124	.31280	.11216	.50484	.35613	.25797	.33694	.04519
#1	.41200	10.430	.41401	.50751	1.0515	.05085	10.563	.05275
#2	.41089	10.432	.41328	.51239	1.0590	.05106	10.629	.05274
#3	.41578	10.488	.41315	.51139	1.0561	.05109	10.571	.05278
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21164	.51432	.52788	4.1964	53.258	1.0465	10.545	.52810
Stddev	.00062	.00111	.00081	.0580	.178	.0014	.008	.00391
%RSD	.29347	.21487	.15291	1.3823	.33451	.13725	.07407	.74105
#1	.21169	.51306	.52786	4.1294	53.061	1.0455	10.542	.52435
#2	.21223	.51514	.52709	4.2295	53.408	1.0459	10.540	.52778
#3	.21099	.51475	.52870	4.2303	53.304	1.0481	10.554	.53216
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0563	52.905	.52985	10.441	.52745	1.2469	.41732	5.4599
Stddev	.0050	.293	.00133	.026	.00100	.0023	.00481	.0125
%RSD	.47494	.55369	.25035	.25038	.18928	.18400	1.1515	.22826
#1	1.0597	52.572	.53125	10.452	.52655	1.2494	.41899	5.4724
#2	1.0587	53.123	.52861	10.460	.52727	1.2448	.42108	5.4598
#3	1.0506	53.021	.52970	10.412	.52852	1.2466	.41191	5.4474
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 16:03:03 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0560**	**1.0590**	**1.0626**	**.52607**	**1.0260**	**1.0604**	**1.0440**
Stddev	.0044	.0030	.0208	.00455	.0043	.0021	.0098
%RSD	.42093	.28690	1.9614	.86396	.41541	.20224	.93608
#1	1.0595	1.0556	1.0394	.53131	1.0214	1.0614	1.0527
#2	1.0574	1.0601	1.0799	.52323	1.0298	1.0619	1.0458
#3	1.0510	1.0613	1.0685	.52368	1.0267	1.0580	1.0334
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8488.4**	**53377.**	**2896.8**
Stddev	8.3	364.	12.7
%RSD	.09787	.68148	.43965
#1	8479.0	53754.	2889.4
#2	8491.5	53348.	2889.4
#3	8494.7	53029.	2911.5

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 16:06:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00237	.00904	-.00013	.00126	.00087	.00009	-.03750	-.00001
Stddev	.00028	.00458	.00263	.00213	.00072	.00007	.02259	.00008
%RSD	11.906	50.683	2037.4	169.22	82.542	80.192	60.228	1296.7
#1	-.00241	.00648	.00161	-.00103	.00165	.00017	-.03103	-.00010
#2	-.00207	.01433	.00116	.00161	.00026	.00004	-.06261	.00006
#3	-.00263	.00631	-.00315	.00320	.00069	.00005	-.01886	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	.00163	-.00062	-.00620	.11573	-.00304	.01488	-.00078
Stddev	.00019	.00081	.00029	.01930	.05076	.00240	.08011	.00324
%RSD	50.224	49.496	47.487	311.51	43.862	78.989	538.48	412.93
#1	-.00042	.00249	-.00061	-.01546	.17426	-.00529	-.06290	.00186
#2	-.00056	.00088	-.00092	-.01911	.08368	-.00051	.01039	.00018
#3	-.00018	.00152	-.00033	.01599	.08926	-.00333	.09714	-.00439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00388	.01952	-.00090	.00067	.00140	.00754	.00367	.00739
Stddev	.00023	.03874	.00071	.00300	.00256	.00569	.00313	.00164
%RSD	6.0070	198.45	79.652	449.20	182.69	75.419	85.488	22.213
#1	.00376	.02524	-.00008	-.00038	.00209	.01012	.00682	.00912
#2	.00415	-.02176	-.00124	-.00167	-.00143	.01148	.00055	.00586
#3	.00373	.05509	-.00138	.00405	.00355	.00102	.00364	.00718
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 16:06:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00023	-.00285	.00152	-.00011	.00008	.00116
Stddev	.00056	.00010	.00052	.00103	.00094	.00006	.00015
%RSD	318.85	44.632	18.333	67.447	850.45	74.145	12.905
#1	.00055	.00034	-.00230	.00197	.00080	.00011	.00132
#2	-.00047	.00013	-.00334	.00225	-.00005	.00011	.00114
#3	.00045	.00022	-.00292	.00035	-.00108	.00001	.00103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8999.0	56919.	3062.6
Stddev	9.4	30.	18.0
%RSD	.10413	.05237	.58755
#1	9009.8	56950.	3042.1
#2	8994.5	56918.	3075.7
#3	8992.7	56890.	3070.0

Approved: June 25, 2016

Sample Name: L1606114801 Acquired: 6/24/2016 16:10:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00053	.79294	.00201	.13513	.08691	.00012	28.737	.00030
Stddev	.00214	.00688	.00416	.00148	.00038	.00006	.282	.00020
%RSD	404.68	.86711	206.32	1.0978	.43964	55.958	.98042	65.656
#1	-.00285	.79770	.00316	.13676	.08683	.00010	28.751	.00014
#2	-.00010	.78505	.00548	.13388	.08658	.00006	28.449	.00052
#3	.00136	.79606	-.00260	.13474	.08733	.00019	29.012	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	.00303	.00093	.48318	5.0170	.00697	15.013	.02622
Stddev	.00047	.00140	.00169	.02352	.0508	.00319	.317	.00088
%RSD	624.02	46.131	181.65	4.8676	1.0122	45.790	2.1109	3.3547
#1	-.00062	.00464	.00230	.46183	4.9691	.00964	14.955	.02533
#2	.00023	.00225	.00145	.50839	5.0118	.00344	14.729	.02708
#3	.00016	.00220	-.00096	.47933	5.0702	.00783	15.355	.02625
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00263	68.950	.00101	.04783	-.00130	.00580	.00131	4.7242
Stddev	.00040	.584	.00074	.00541	.00251	.00495	.00256	.0383
%RSD	15.214	.84747	72.757	11.317	193.03	85.336	195.73	.81053
#1	.00232	69.030	.00034	.05397	-.00090	.00563	.00084	4.7496
#2	.00249	68.330	.00180	.04371	-.00398	.00094	.00407	4.7429
#3	.00308	69.490	.00090	.04583	.00099	.01083	-.00099	4.6802
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114801 Acquired: 6/24/2016 16:10:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.27997**	**.00221**	**-.00090**	**.00318**	**.00551**	**.00289**
Stddev	.00064	.00232	.00318	.00103	.00034	.00004	.00087
%RSD	411.94	.83018	144.19	113.71	10.535	.75135	29.945
#1	.00041	.28044	.00583	.00027	.00296	.00549	.00189
#2	-.00003	.27744	-.00015	-.00131	.00357	.00556	.00344
#3	-.00085	.28201	.00094	-.00166	.00301	.00548	.00335
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8599.5**	**54385.**	**2981.3**
Stddev	16.0	89.	24.9
%RSD	.18617	.16380	.83644
#1	8603.2	54438.	2974.6
#2	8613.3	54435.	3008.9
#3	8581.9	54282.	2960.3

Approved: June 25, 2016

Sample Name: L1606114802 Acquired: 6/24/2016 16:14:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00204**	**.04975**	**.00299**	**.13869**	**.15047**	**-.00005**	**55.818**	**.00017**
Stddev	.00109	.01051	.00093	.00193	.00152	.00005	.396	.00020
%RSD	53.121	21.121	30.942	1.3904	1.0132	102.05	.70964	116.40
#1	-.00265	.04009	.00388	.13978	.15223	-.00009	56.185	-.00006
#2	-.00269	.06094	.00203	.13983	.14951	.00001	55.872	.00027
#3	-.00079	.04821	.00306	.13647	.14968	-.00007	55.398	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.00481**	**.00009**	**.04662**	**2.9224**	**.00713**	**49.316**	**.00366**
Stddev	.00044	.00030	.00072	.01678	.0836	.00442	.171	.00293
%RSD	1148.5	6.2977	802.56	35.999	2.8609	61.973	.34731	80.138
#1	-.00051	.00471	-.00074	.03351	2.9561	.00300	49.393	.00341
#2	.00002	.00515	.00053	.04082	2.8272	.00660	49.435	.00671
#3	.00037	.00456	.00048	.06554	2.9839	.01179	49.119	.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00188**	**121.90**	**.00147**	**.02233**	**.00149**	**.00278**	**.01025**	**6.1560**
Stddev	.00035	.74	.00041	.00365	.00184	.00274	.00234	.0472
%RSD	18.786	.61102	27.946	16.368	123.30	98.711	22.816	.76606
#1	.00151	122.69	.00179	.01811	-.00020	.00379	.01254	6.1806
#2	.00191	121.83	.00160	.02439	.00122	-.00033	.01035	6.1857
#3	.00221	121.20	.00101	.02449	.00344	.00487	.00787	6.1016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114802 Acquired: 6/24/2016 16:14:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.39251**	**-.00823**	**-.00167**	**.00748**	**.00735**	**.00172**
Stddev	.00093	.00157	.00304	.00302	.00088	.00035	.00065
%RSD	461.50	.40050	36.982	180.68	11.724	4.7920	38.067
#1	-.00008	.39329	-.00720	-.00346	.00697	.00775	.00121
#2	.00066	.39355	-.00584	-.00336	.00697	.00723	.00149
#3	-.00119	.39070	-.01166	.00181	.00849	.00708	.00246
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8495.3**	**54006.**	**2982.2**
Stddev	21.4	124.	30.9
%RSD	.25175	.22933	1.0346
#1	8477.7	53900.	2949.3
#2	8519.1	54142.	3010.5
#3	8489.1	53977.	2986.7

Approved: June 25, 2016

Sample Name: L1606115001 Acquired: 6/24/2016 16:18:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	1.0029	.00299	.14279	.11041	.00016	35.956	.00009
Stddev	.00251	.0141	.00281	.00105	.00192	.00007	.317	.00003
%RSD	627.75	1.4010	94.062	.73688	1.7392	40.398	.88245	32.058
#1	.00224	1.0135	.00421	.14372	.11062	.00023	36.172	.00007
#2	.00142	.98692	.00498	.14165	.10839	.00010	35.592	.00007
#3	-.00246	1.0082	-.00023	.14300	.11222	.00016	36.105	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.00317	.00169	.71808	2.8256	.00873	22.732	.05335
Stddev	.00027	.00048	.00070	.01344	.0315	.00112	.258	.00149
%RSD	4893.9	15.268	41.765	1.8711	1.1137	12.865	1.1351	2.7844
#1	.00025	.00269	.00090	.73141	2.8424	.00751	22.933	.05174
#2	.00004	.00315	.00188	.70454	2.7893	.00972	22.441	.05367
#3	-.00028	.00366	.00227	.71827	2.8451	.00896	22.823	.05466
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00379	119.94	.00083	.11747	.00336	.00193	-.00362	5.3987
Stddev	.00029	.91	.00054	.00963	.00165	.00170	.00327	.0216
%RSD	7.6691	.75510	65.143	8.1950	48.899	88.260	90.387	.40081
#1	.00400	120.59	.00089	.11089	.00147	.00389	-.00507	5.4237
#2	.00392	118.90	.00135	.11301	.00415	.00109	.00013	5.3854
#3	.00346	120.32	.00027	.12852	.00447	.00081	-.00591	5.3870
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115001 Acquired: 6/24/2016 16:18:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**.24860**	**.00831**	**.00040**	**.00721**	**.00897**	**.00156**
Stddev	.00102	.00079	.00563	.00208	.00033	.00019	.00032
%RSD	900.41	.31800	67.748	518.71	4.6076	2.0684	20.721
#1	-.00127	.24885	.00936	.00280	.00755	.00907	.00137
#2	.00028	.24771	.00223	-.00097	.00689	.00909	.00139
#3	.00065	.24923	.01334	-.00062	.00718	.00876	.00194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8658.5**	**54840.**	**3032.2**
Stddev	11.5	83.	32.1
%RSD	.13234	.15154	1.0598
#1	8653.8	54773.	3000.1
#2	8671.6	54933.	3064.4
#3	8650.2	54814.	3032.3

Approved: June 25, 2016

Sample Name: L1606115002 Acquired: 6/24/2016 16:22:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00114	.54802	.00239	.07237	.04756	.00011	17.868	-.00002
Stddev	.00116	.00304	.00234	.00183	.00074	.00011	.296	.00023
%RSD	101.69	.55434	98.297	2.5331	1.5569	98.769	1.6590	1035.8
#1	-.00186	.54599	.00388	.07434	.04758	.00024	18.086	-.00007
#2	.00020	.55151	.00360	.07071	.04682	.00003	17.530	-.00022
#3	-.00176	.54656	-.00032	.07205	.04830	.00007	17.987	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	.00269	.00128	.42445	5.1441	.00730	5.7440	.01494
Stddev	.00045	.00114	.00159	.02138	.0765	.00321	.0131	.00279
%RSD	2112.8	42.310	124.60	5.0376	1.4863	44.008	.22880	18.670
#1	.00037	.00359	.00010	.43132	5.0900	.01003	5.7588	.01523
#2	.00009	.00307	.00065	.40047	5.1108	.00376	5.7337	.01757
#3	-.00052	.00141	.00309	.44154	5.2316	.00811	5.7395	.01202
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00098	41.148	.00106	.06447	-.00062	.00281	.00337	1.7279
Stddev	.00070	.471	.00049	.00342	.00129	.00199	.00517	.0310
%RSD	71.365	1.1451	45.916	5.3017	208.13	70.714	153.38	1.7951
#1	.00087	41.063	.00159	.06818	.00051	.00505	.00033	1.7430
#2	.00034	40.725	.00095	.06144	-.00034	.00212	.00044	1.7484
#3	.00173	41.656	.00063	.06379	-.00203	.00126	.00935	1.6922
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115002 Acquired: 6/24/2016 16:22:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.10093**	**.00308**	**-.00183**	**.00519**	**.00618**	**.00126**
Stddev	.00067	.00110	.00218	.00277	.00055	.00020	.00057
%RSD	398.57	1.0927	70.842	151.99	10.532	3.3140	45.733
#1	-.00011	.10080	.00275	.00082	.00488	.00640	.00076
#2	-.00086	.09989	.00108	-.00159	.00582	.00617	.00189
#3	.00047	.10209	.00541	-.00471	.00488	.00599	.00112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8768.3**	**55601.**	**3006.8**
Stddev	44.8	353.	32.6
%RSD	.51146	.63549	1.0826
#1	8739.7	56008.	3020.9
#2	8745.2	55379.	3029.9
#3	8820.0	55415.	2969.6

Approved: June 25, 2016

Sample Name: L1606115102 Acquired: 6/24/2016 16:26:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00157	.16673	-.00164	.11324	.07508	.00006	35.965	.00009
Stddev	.00123	.00968	.00381	.00123	.00110	.00006	.070	.00012
%RSD	78.798	5.8070	231.94	1.0834	1.4713	89.197	.19353	140.18
#1	-.00058	.15593	.00273	.11273	.07407	.00011	35.891	.00006
#2	-.00295	.17462	-.00340	.11236	.07626	.00000	35.974	.00023
#3	-.00117	.16964	-.00425	.11464	.07493	.00008	36.029	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00021	.00268	.00078	.22571	2.4607	.00715	20.455	.06028
Stddev	.00017	.00071	.00110	.01627	.0572	.00329	.118	.00255
%RSD	80.425	26.322	141.38	7.2093	2.3240	45.999	.57620	4.2253
#1	-.00019	.00196	.00195	.23780	2.5245	.01081	20.570	.06072
#2	-.00005	.00272	-.00023	.23211	2.4140	.00618	20.461	.06258
#3	-.00038	.00337	.00061	.20721	2.4435	.00445	20.335	.05755
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00276	97.835	-.00067	.04806	-.00242	.00513	.00378	5.3799
Stddev	.00044	.396	.00100	.00252	.00339	.00529	.00744	.2322
%RSD	15.877	.40451	148.20	5.2532	139.98	103.15	196.88	4.3153
#1	.00319	97.412	.00043	.04730	.00016	.00550	.01195	5.2447
#2	.00231	98.197	-.00093	.05087	-.00625	.01022	-.00261	5.2471
#3	.00278	97.896	-.00151	.04600	-.00116	-.00034	.00199	5.6480
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115102 Acquired: 6/24/2016 16:26:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00071**	**.23607**	**-.00930**	**.00015**	**.00351**	**.01289**	**.00068**
Stddev	.00028	.00125	.00346	.00259	.00142	.00062	.00031
%RSD	39.765	.53152	37.213	1786.3	40.411	4.8488	45.284
#1	-.00042	.23498	-.00585	.00230	.00418	.01260	.00081
#2	-.00072	.23744	-.00927	.00087	.00188	.01246	.00090
#3	-.00098	.23579	-.01277	-.00273	.00448	.01361	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8582.8**	**55285.**	**3037.3**
Stddev	259.2	168.	27.1
%RSD	3.0201	.30413	.89376
#1	8731.0	55097.	3068.5
#2	8733.8	55422.	3018.9
#3	8283.5	55335.	3024.5

Approved: June 25, 2016

Sample Name: L1606115105 Acquired: 6/24/2016 16:30:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00162	.10538	.00245	.14951	.09631	.00009	45.968	.00027
Stddev	.00070	.00798	.00198	.00195	.00083	.00004	.579	.00038
%RSD	42.968	7.5757	80.657	1.3067	.86692	43.233	1.2597	142.70
#1	-.00098	.11396	.00050	.14740	.09536	.00011	46.292	.00068
#2	-.00153	.09816	.00240	.15125	.09664	.00005	45.300	-.00007
#3	-.00237	.10403	.00446	.14988	.09693	.00012	46.313	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	.00270	-.00048	.17572	2.0276	.00721	26.821	.07924
Stddev	.00018	.00083	.00087	.01470	.0656	.00380	.415	.00616
%RSD	45.378	30.889	179.73	8.3676	3.2368	52.699	1.5460	7.7799
#1	-.00018	.00343	-.00076	.15875	2.0306	.00292	26.890	.08485
#2	-.00050	.00179	-.00118	.18434	2.0917	.01014	26.377	.07264
#3	-.00048	.00289	.00049	.18408	1.9605	.00857	27.198	.08022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00327	129.55	-.00083	.03925	.00528	.00057	.00250	6.3879
Stddev	.00022	1.74	.00110	.00683	.00391	.00168	.00309	.0293
%RSD	6.5817	1.3407	132.79	17.395	74.018	296.78	123.71	.45807
#1	.00302	130.39	-.00047	.04701	.00428	.00171	.00164	6.4058
#2	.00340	127.55	-.00206	.03419	.00959	-.00136	-.00008	6.4037
#3	.00339	130.71	.00005	.03653	.00197	.00136	.00592	6.3541
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115105 Acquired: 6/24/2016 16:30:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00073**	**.30328**	**-.00537**	**-.00168**	**.00336**	**.00866**	**.00060**
Stddev	.00061	.00418	.00652	.00091	.00046	.00013	.00023
%RSD	83.700	1.3769	121.45	54.113	13.812	1.5061	38.244
#1	-.00141	.30492	-.01282	-.00078	.00283	.00877	.00050
#2	-.00022	.29853	-.00064	-.00260	.00371	.00870	.00044
#3	-.00057	.30639	-.00266	-.00165	.00352	.00851	.00087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8543.0**	**54064.**	**2974.7**
Stddev	21.3	458.	55.5
%RSD	.24931	.84639	1.8656
#1	8566.3	53562.	2939.2
#2	8524.4	54174.	3038.7
#3	8538.3	54457.	2946.3

Approved: June 25, 2016

Sample Name: L1606115401 Acquired: 6/24/2016 16:34:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00112**	**.08710**	**.00114**	**1.7588**	**.02106**	**.00002**	F **475.73**
Stddev	.00180	.00226	.00412	.0043	.00048	.00007	2.70
%RSD	160.71	2.5955	360.37	.24448	2.2952	394.51	.56675
#1	.00049	.08967	-.00088	1.7610	.02071	.00002	477.13
#2	-.00307	.08544	.00589	1.7616	.02085	.00009	472.62
#3	-.00079	.08619	-.00158	1.7539	.02161	-.00005	477.44
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**.00093**	**.00346**	**.00194**	**.05481**	**4.3815**	**.10949**
Stddev	.00005	.00052	.00138	.00145	.01743	.0383	.00511
%RSD	50.448	56.000	39.846	74.561	31.801	.87412	4.6701
#1	.00014	.00075	.00476	.00027	.04818	4.4220	.10952
#2	.00007	.00053	.00201	.00283	.07458	4.3766	.10437
#3	.00006	.00152	.00360	.00271	.04166	4.3458	.11459
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**113.88**	**.27248**	**.02443**	F **962.52**	**-.00144**	**.02893**	**.00007**
Stddev	.66	.00359	.00021	16.50	.00136	.00999	.00237
%RSD	.58361	1.3185	.87734	1.7144	94.283	34.540	3393.1
#1	114.28	.27132	.02429	980.75	-.00065	.03963	-.00254
#2	113.11	.26961	.02467	958.20	-.00301	.02733	.00065
#3	114.24	.27651	.02431	948.60	-.00067	.01983	.00210
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 25, 2016

Sample Name: L1606115401 Acquired: 6/24/2016 16:34:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00227**	**.05452**	**5.3738**	**-.00180**	**8.7578**	F **-.06233**	**-.00181**
Stddev	.00372	.01187	.0403	.00058	.0451	.00486	.00179
%RSD	164.10	21.769	.74949	32.077	.51456	7.7978	98.539
#1	.00553	.05924	5.3959	-.00119	8.7791	-.06137	-.00108
#2	-.00178	.06330	5.3982	-.00185	8.7060	-.06760	-.00385
#3	.00305	.04102	5.3273	-.00234	8.7883	-.05802	-.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.01547**	**.00549**	**.00090**
Stddev	.00027	.00005	.00051
%RSD	1.7389	.84148	56.410
#1	.01521	.00546	.00038
#2	.01575	.00554	.00139
#3	.01545	.00546	.00093
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7824.9**	**49741.**	**2897.8**
Stddev	25.7	56.	41.7
%RSD	.32891	.11264	1.4378
#1	7852.3	49711.	2855.6
#2	7801.3	49805.	2938.9
#3	7821.1	49706.	2898.8

Approved: June 25, 2016

Sample Name: L1606115402S Acquired: 6/24/2016 16:38:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20827**	**5.3848**	**.22077**	**2.7748**	**.54172**	**.02512**	F **481.48**
Stddev	.00188	.0082	.00532	.0041	.00285	.00016	3.09
%RSD	.90285	.15294	2.4089	.14749	.52604	.62525	.64217
#1	.20610	5.3941	.22023	2.7718	.54377	.02494	484.49
#2	.20928	5.3784	.21574	2.7795	.53847	.02524	478.32
#3	.20943	5.3820	.22633	2.7732	.54294	.02519	481.64
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02719**	**.10282**	**.25237**	**.25450**	**2.0775**	**32.155**	**.65463**
Stddev	.00089	.00263	.00138	.00503	.0009	.192	.00487
%RSD	3.2606	2.5533	.54827	1.9758	.04312	.59849	.74370
#1	.02745	.10267	.25157	.25657	2.0772	32.268	.65849
#2	.02620	.10027	.25158	.24877	2.0768	31.933	.64916
#3	.02792	.10551	.25397	.25816	2.0785	32.264	.65623
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**118.98**	**.51147**	**.55840**	F **977.71**	**.24997**	**5.5144**	**.24919**
Stddev	.84	.00370	.01031	13.22	.00452	.1131	.00286
%RSD	.70668	.72420	1.8456	1.3517	1.8092	2.0516	1.1484
#1	119.22	.51132	.56227	988.78	.25125	5.5401	.24784
#2	118.05	.50785	.54671	963.08	.24494	5.3907	.24725
#3	119.67	.51526	.56620	981.27	.25371	5.6125	.25247
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 25, 2016

Sample Name: L1606115402S Acquired: 6/24/2016 16:38:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-07

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.65290	.26530	8.4198	.51035	F 9.1325	.46797	.23861
Stddev	.01747	.00322	.1773	.00998	.0563	.00190	.00481
%RSD	2.6758	1.2148	2.1060	1.9552	.61631	.40567	2.0152
#1	.65559	.26528	8.4639	.51157	9.1879	.46964	.23992
#2	.63423	.26208	8.2246	.49982	9.0754	.46837	.23329
#3	.66886	.26853	8.5709	.51967	9.1341	.46591	.24263
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.52988	.50936	.00371
Stddev	.00272	.00898	.00129
%RSD	.51319	1.7635	34.695
#1	.52752	.51212	.00232
#2	.53285	.49932	.00397
#3	.52929	.51664	.00486
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7884.5	49106.	2856.5
Stddev	105.8	326.	14.3
%RSD	1.3422	.66476	.50060
#1	7820.3	49374.	2840.1
#2	8006.6	48742.	2866.5
#3	7826.4	49201.	2863.0

Approved: June 25, 2016

Sample Name: L1606115403SD Acquired: 6/24/2016 16:41:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21318	5.5219	.22092	2.8411	.55147	.02575	F 492.79
Stddev	.00065	.0112	.00589	.0011	.00218	.00014	1.50
%RSD	.30664	.20191	2.6650	.03940	.39554	.52600	.30476
#1	.21335	5.5119	.22701	2.8414	.55201	.02561	493.55
#2	.21373	5.5198	.21525	2.8420	.55334	.02574	493.76
#3	.21246	5.5339	.22050	2.8398	.54907	.02588	491.06
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02750	.10490	.25795	.25725	2.1243	32.619	.67266
Stddev	.00021	.00070	.00047	.00265	.0074	.077	.00146
%RSD	.77118	.66790	.18314	1.0291	.34930	.23491	.21692
#1	.02742	.10569	.25827	.25739	2.1327	32.707	.67327
#2	.02774	.10437	.25740	.25983	2.1215	32.578	.67371
#3	.02733	.10462	.25816	.25454	2.1186	32.570	.67099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	121.94	.53555	.56884	F 1003.0	.25497	5.6115	.25353
Stddev	1.03	.00255	.00183	18.6	.00121	.0201	.00219
%RSD	.84627	.47696	.32086	1.8553	.47333	.35743	.86324
#1	122.15	.53804	.57050	985.68	.25562	5.6230	.25369
#2	122.86	.53294	.56914	1022.7	.25358	5.6231	.25563
#3	120.83	.53569	.56689	1000.7	.25572	5.5883	.25126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 25, 2016

Sample Name: L1606115403SD Acquired: 6/24/2016 16:41:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-08

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.65696	.26457	8.4131	.52165	F 9.4226	.46735	.23912
Stddev	.00333	.00374	.0316	.00269	.0362	.01011	.00184
%RSD	.50727	1.4118	.37513	.51544	.38375	2.1625	.76932
#1	.65370	.26813	8.4363	.52387	9.4401	.47243	.24121
#2	.65681	.26068	8.4259	.52242	9.4467	.47392	.23839
#3	.66036	.26490	8.3772	.51866	9.3810	.45571	.23775
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.54896	.51795	.00121
Stddev	.00138	.00177	.00029
%RSD	.25147	.34088	23.705
#1	.54994	.51962	.00099
#2	.54738	.51811	.00110
#3	.54956	.51610	.00153
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7860.1	48589.	2847.4
Stddev	50.1	121.	22.3
%RSD	.63713	.24945	.78175
#1	7818.4	48525.	2848.5
#2	7915.7	48729.	2824.6
#3	7846.2	48513.	2869.0

Approved: June 25, 2016

Sample Name: L1606115404 Acquired: 6/24/2016 16:45:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00122**	**.01860**	**-.00030**	**.01638**	**.00225**	**.00005**	**.28683**	**-.00012**
Stddev	.00163	.00994	.00314	.00092	.00043	.00004	.01104	.00018
%RSD	133.72	53.451	1055.5	5.6210	18.855	79.103	3.8486	155.68
#1	-.00307	.02997	-.00390	.01572	.00263	.00002	.29952	-.00004
#2	-.00060	.01154	.00185	.01743	.00234	.00010	.27937	.00001
#3	.00001	.01428	.00116	.01599	.00179	.00004	.28161	-.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**.01568**	**.00001**	**.06012**	**.09546**	**-.00324**	**.00979**	**.00031**
Stddev	.00056	.00036	.00106	.01420	.11597	.00346	.08319	.00089
%RSD	231.82	2.2719	10907.	23.626	121.49	106.87	849.48	288.55
#1	-.00089	.01585	.00111	.07503	.19093	-.00003	.06904	.00129
#2	.00009	.01527	-.00008	.05858	.12903	-.00690	.04565	.00007
#3	.00007	.01593	-.00101	.04675	-.03359	-.00278	-.08531	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00255**	**.66337**	**.00857**	**-.00604**	**-.00185**	**.00349**	**.00131**	**.15854**
Stddev	.00019	.05593	.00126	.00424	.00110	.00087	.00666	.00230
%RSD	7.5264	8.4316	14.741	70.198	59.693	24.819	509.73	1.4538
#1	.00259	.72482	.00746	-.00130	-.00068	.00343	.00738	.16031
#2	.00235	.64984	.00994	-.00737	-.00288	.00439	.00236	.15939
#3	.00273	.61544	.00829	-.00947	-.00198	.00266	-.00582	.15593
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115404 Acquired: 6/24/2016 16:45:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00114	.00192	-.00273	-.00024	-.00105	.00380	-.00006
Stddev	.00043	.00049	.00812	.00123	.00122	.00012	.00020
%RSD	38.035	25.716	297.07	517.69	116.94	3.1680	325.23
#1	.00113	.00170	.00647	.00075	.00015	.00366	.00009
#2	.00071	.00158	-.00889	-.00162	-.00230	.00388	.00001
#3	.00157	.00249	-.00577	.00015	-.00099	.00385	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8580.0	54662.	2910.1
Stddev	27.2	355.	25.0
%RSD	.31663	.64995	.85931
#1	8600.6	54561.	2884.9
#2	8549.2	54369.	2910.5
#3	8590.1	55057.	2934.9

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 16:49:41 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.43680	F 11.176	.43789	.54982	F 1.1171	.05445	F 11.119
Stddev	.00172	.018	.00189	.00440	.0014	.00015	.036
%RSD	.39299	.15765	.43249	.80088	.12620	.27540	.32719
#1	.43691	11.183	.43822	.54528	1.1178	.05443	11.142
#2	.43503	11.190	.43585	.55010	1.1155	.05461	11.077
#3	.43846	11.156	.43959	.55407	1.1181	.05432	11.138
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Fail
Value		10.000			1.0000		10.000
Range		10.000%			10.000%		10.000%

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .05633	F .22617	F .55126	F .56533	F 4.4609	F 55.977	F 1.1059
Stddev	.00017	.00064	.00319	.00048	.0397	.128	.0055
%RSD	.29635	.28432	.57821	.08567	.88958	.22829	.49468
#1	.05616	.22640	.55107	.56585	4.4151	56.054	1.1075
#2	.05649	.22544	.55454	.56490	4.4847	56.049	1.0998
#3	.05636	.22667	.54818	.56522	4.4829	55.830	1.1104
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.05000	.20000	.50000	.50000	4.0000	50.000	1.0000
Range	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 11.384	F .56189	F 1.1214	F 56.250	F .56448	F 11.114	F .56389
Stddev	.114	.00225	.0062	.207	.00324	.010	.00157
%RSD	1.0047	.39966	.55197	.36872	.57382	.08753	.27797
#1	11.258	.56141	1.1267	56.351	.56745	11.125	.56213
#2	11.411	.55993	1.1229	56.011	.56498	11.108	.56513
#3	11.482	.56434	1.1146	56.388	.56103	11.109	.56440
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	10.000	.50000	1.0000	50.000	.50000	10.000	.50000
Range	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 16:49:41 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 1.3274	F .44356	F 5.7903	F 1.1245	F 1.1149	F 1.1307	F .56203
Stddev	.0049	.00768	.0098	.0024	.0021	.0005	.00057
%RSD	.36997	1.7311	.16930	.21252	.19132	.04240	.10129
#1	1.3317	.45066	5.7923	1.1260	1.1167	1.1307	.56147
#2	1.3285	.43541	5.7990	1.1258	1.1126	1.1312	.56261
#3	1.3221	.44459	5.7797	1.1218	1.1155	1.1302	.56203
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	1.2000	.40000	5.0000	1.0000	1.0000	1.0000	.50000
Range	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0960	F 1.1347	F 1.1407
Stddev	.0015	.0007	.0035
%RSD	.13658	.06108	.30311
#1	1.0952	1.1349	1.1440
#2	1.0977	1.1353	1.1410
#3	1.0950	1.1339	1.1371
Check ?	Chk Pass	Chk Fail	Chk Fail
Value		1.0000	1.0000
Range		10.000%	10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8096.2	51142.	2733.9
Stddev	29.8	63.	5.0
%RSD	.36765	.12288	.18140
#1	8130.4	51179.	2732.9
#2	8076.4	51177.	2739.3
#3	8081.7	51069.	2729.5

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 16:53:19 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00033	.01327	.00238	.00643	.00121	.00007	-.00167	-.00005
Stddev	.00141	.01171	.00342	.00125	.00080	.00010	.03044	.00029
%RSD	426.78	88.245	144.15	19.490	66.292	147.81	1819.0	607.59
#1	.00128	.01371	-.00152	.00772	.00190	.00009	.02045	.00023
#2	-.00132	.00135	.00372	.00522	.00033	-.00004	.01093	-.00002
#3	-.00095	.02475	.00492	.00636	.00140	.00016	-.03639	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00040	.00240	-.00122	.00892	.06454	-.00208	.01293	-.00217
Stddev	.00023	.00085	.00133	.03053	.04042	.00235	.09468	.00444
%RSD	57.271	35.494	108.62	342.28	62.627	112.51	732.17	204.98
#1	-.00056	.00224	-.00068	.03546	.02108	.00042	-.02621	-.00033
#2	-.00049	.00164	-.00274	-.02444	.10100	-.00423	-.05591	-.00724
#3	-.00014	.00333	-.00025	.01574	.07154	-.00243	.12091	.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00412	.05925	-.00060	.00128	-.00151	.00790	.00028	.00721
Stddev	.00047	.02488	.00110	.00409	.00218	.00364	.00257	.00069
%RSD	11.345	41.996	183.24	319.65	144.28	46.033	911.72	9.6357
#1	.00409	.04650	-.00151	.00204	-.00359	.00755	.00027	.00786
#2	.00461	.04332	-.00091	.00493	.00076	.00445	-.00228	.00728
#3	.00367	.08792	.00062	-.00314	-.00171	.01170	.00286	.00648
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 16:53:19 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00079**	**.00010**	**-.00054**	**-.00150**	**-.00005**	**-.00017**	**.00104**
Stddev	.00040	.00035	.00043	.00099	.00012	.00015	.00121
%RSD	50.261	334.74	79.697	65.771	246.62	83.311	116.20
#1	-.00103	.00027	-.00013	-.00083	-.00015	-.00024	-.00027
#2	-.00033	-.00030	-.00099	-.00264	-.00008	-.00027	.00129
#3	-.00101	.00034	-.00050	-.00104	.00008	-.00001	.00211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8805.7**	**55774.**	**2937.7**
Stddev	23.4	137.	34.1
%RSD	.26594	.24637	1.1609
#1	8792.6	55618.	2899.6
#2	8791.8	55877.	2948.2
#3	8832.7	55828.	2965.3

Approved: June 25, 2016

Sample Name: L1606115501 Acquired: 6/24/2016 16:57:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00057	.02931	.00224	.28378	.19240	.00016	48.483	.00005
Stddev	.00217	.00495	.00248	.00304	.00180	.00006	.260	.00014
%RSD	383.36	16.898	111.07	1.0699	.93528	36.773	.53700	254.61
#1	-.00028	.02866	.00462	.28285	.19438	.00013	48.783	.00004
#2	-.00287	.03456	.00243	.28717	.19087	.00022	48.333	-.00007
#3	.00145	.02472	-.00034	.28131	.19193	.00012	48.332	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	.00176	-.00033	.06151	1.8575	.00843	30.251	1.7892
Stddev	.00026	.00067	.00098	.00944	.0885	.00304	.179	.0058
%RSD	228.27	38.060	297.98	15.343	4.7667	36.016	.59249	.32588
#1	-.00041	.00253	.00018	.05715	1.7633	.00492	30.428	1.7956
#2	.00007	.00133	-.00146	.05504	1.9389	.01012	30.255	1.7880
#3	-.00000	.00141	.00029	.07234	1.8704	.01024	30.070	1.7841
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00582	81.691	.00244	.01501	-.00223	-.00056	-.00145	7.4745
Stddev	.00028	.416	.00117	.00629	.00029	.00368	.01007	.0211
%RSD	4.7345	.50929	48.012	41.908	13.132	656.69	696.09	.28232
#1	.00551	82.168	.00344	.01672	-.00255	-.00468	.00744	7.4894
#2	.00592	81.495	.00115	.00804	-.00198	.00243	-.01239	7.4839
#3	.00603	81.408	.00271	.02027	-.00215	.00056	.00060	7.4504
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115501 Acquired: 6/24/2016 16:57:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.33344	-.00658	-.00209	.00011	.00570	.00257
Stddev	.00106	.00035	.00428	.00263	.00083	.00010	.00078
%RSD	223.38	.10616	65.090	125.54	754.41	1.8064	30.180
#1	-.00065	.33321	-.01123	-.00333	-.00033	.00562	.00170
#2	.00062	.33384	-.00281	-.00388	.00107	.00566	.00320
#3	.00146	.33325	-.00569	.00092	-.00041	.00581	.00281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8634.4	54473.	2945.1
Stddev	22.0	176.	15.6
%RSD	.25462	.32393	.53091
#1	8609.5	54271.	2929.8
#2	8642.5	54551.	2944.5
#3	8651.2	54598.	2961.1

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 17:03:38 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.42367	10.747	.42629	.52762	1.0843	.05276	10.761
Stddev	.00097	.006	.00332	.00473	.0045	.00023	.022
%RSD	.22915	.05727	.77849	.89635	.41439	.43445	.20363
#1	.42292	10.740	.42268	.53147	1.0830	.05302	10.738
#2	.42477	10.748	.42699	.52904	1.0893	.05268	10.782
#3	.42334	10.752	.42920	.52234	1.0807	.05258	10.765
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05458	.21800	.53531	.54481	4.3293	54.482	1.0763
Stddev	.00018	.00077	.00463	.00133	.0649	.210	.0028
%RSD	.33409	.35513	.86430	.24390	1.5001	.38571	.26065
#1	.05444	.21711	.54060	.54342	4.3823	54.397	1.0795
#2	.05451	.21849	.53336	.54493	4.2568	54.722	1.0741
#3	.05479	.21841	.53198	.54607	4.3486	54.328	1.0754
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.954	.53768	1.0810	54.597	.54494	10.746	.54224
Stddev	.073	.00516	.0021	.145	.00206	.017	.00691
%RSD	.66315	.95904	.19634	.26611	.37752	.15638	1.2744
#1	10.974	.53636	1.0834	54.523	.54602	10.734	.54106
#2	10.873	.54337	1.0793	54.764	.54257	10.738	.53600
#3	11.014	.53331	1.0802	54.503	.54624	10.765	.54966
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 17:03:38 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2878	.42218	F 5.5868	1.0842	1.0823	1.0915	.53968
Stddev	.0066	.00770	.0181	.0027	.0008	.0080	.00486
%RSD	.51604	1.8246	.32415	.25252	.07373	.73397	.90080
#1	1.2824	.41329	5.5712	1.0822	1.0817	1.0897	.54355
#2	1.2952	.42684	5.5826	1.0830	1.0832	1.1002	.53422
#3	1.2859	.42641	5.6067	1.0873	1.0820	1.0845	.54127
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value			5.0000				
Range			10.000%				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0672	1.0954	F 1.1050
Stddev	.0073	.0020	.0196
%RSD	.68319	.18139	1.7744
#1	1.0743	1.0932	1.1148
#2	1.0677	1.0971	1.1179
#3	1.0597	1.0957	1.0825
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8333.6	52219.	2792.6
Stddev	32.6	347.	29.8
%RSD	.39073	.66376	1.0675
#1	8369.0	52505.	2785.6
#2	8326.7	52317.	2766.9
#3	8305.0	51833.	2825.3

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 17:07:15 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00168	.00948	.00107	.00396	.00131	.00016	.00218	.00005
Stddev	.00109	.00336	.00285	.00104	.00055	.00007	.03388	.00013
%RSD	65.124	35.414	267.10	26.281	42.238	42.512	1551.9	288.80
#1	-.00279	.00607	.00431	.00399	.00120	.00015	.00227	-.00009
#2	-.00060	.01278	-.00104	.00499	.00081	.00009	.03602	.00018
#3	-.00165	.00957	-.00007	.00291	.00190	.00023	-.03174	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00068	.00204	-.00144	.00580	.12922	-.00361	-.07098	-.00320
Stddev	.00007	.00108	.00019	.02952	.06584	.00293	.01475	.00096
%RSD	10.271	52.987	13.402	509.07	50.955	81.051	20.781	29.927
#1	-.00071	.00324	-.00131	.01437	.20522	-.00696	-.05840	-.00311
#2	-.00072	.00112	-.00134	.03009	.09285	-.00151	-.06732	-.00419
#3	-.00060	.00177	-.00166	-.02706	.08958	-.00237	-.08722	-.00228
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00408	.05994	-.00013	-.00144	-.00210	.00616	.00859	.00767
Stddev	.00025	.02279	.00056	.00665	.00161	.00436	.00553	.00095
%RSD	6.1054	38.019	429.27	461.82	76.927	70.723	64.392	12.387
#1	.00379	.03723	-.00071	-.00577	-.00238	.01090	.01202	.00667
#2	.00424	.05979	.00040	.00621	-.00355	.00232	.00221	.00777
#3	.00421	.08281	-.00008	-.00476	-.00036	.00527	.01155	.00857
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 17:07:15 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00018**	**.00001**	**-.00517**	**-.00304**	**-.00045**	**.00003**	**.00076**
Stddev	.00048	.00019	.00338	.00065	.00042	.00018	.00062
%RSD	261.79	1449.3	65.434	21.349	94.527	672.09	81.583
#1	-.00007	-.00010	-.00269	-.00319	-.00035	-.00018	.00059
#2	-.00071	.00023	-.00379	-.00360	-.00091	.00016	.00024
#3	.00023	-.00009	-.00902	-.00233	-.00008	.00010	.00144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8894.8**	**56498.**	**2997.3**
Stddev	31.9	155.	19.4
%RSD	.35842	.27403	.64771
#1	8872.9	56642.	2988.9
#2	8931.4	56516.	2983.4
#3	8880.1	56335.	3019.5

Approved: June 25, 2016

Sample Name: LLCCV Acquired: 6/24/2016 17:11:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00729	.17062	.00725	.08257	.00939	.00166	.43404	.00082
Stddev	.00150	.00550	.00171	.00143	.00067	.00000	.00453	.00026
%RSD	20.543	3.2221	23.640	1.7280	7.1418	.27584	1.0437	32.305
#1	.00698	.16434	.00552	.08412	.00866	.00166	.43775	.00111
#2	.00892	.17298	.00895	.08230	.00999	.00167	.42899	.00059
#3	.00598	.17455	.00726	.08130	.00952	.00166	.43538	.00075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00316	.00622	.00237	.08729	.82404	.07713	.38089	.00688
Stddev	.00032	.00044	.00096	.00991	.11097	.00284	.04555	.00202
%RSD	10.108	7.0265	40.647	11.357	13.466	3.6833	11.960	29.313
#1	.00327	.00595	.00209	.09021	.69916	.08037	.42142	.00748
#2	.00280	.00598	.00158	.07624	.86164	.07506	.38965	.00853
#3	.00341	.00672	.00344	.09542	.91132	.07596	.33159	.00463
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00923	.49030	.01578	.78636	.00525	.08658	.01834	.78477
Stddev	.00007	.03975	.00067	.00747	.00099	.00290	.00535	.00340
%RSD	.74996	8.1063	4.2563	.94991	18.916	3.3503	29.197	.43361
#1	.00926	.45824	.01504	.78721	.00446	.08899	.01320	.78668
#2	.00928	.47789	.01596	.79336	.00636	.08336	.01794	.78678
#3	.00915	.53477	.01635	.77850	.00492	.08740	.02388	.78084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LLCCV Acquired: 6/24/2016 17:11:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40023**	**.04088**	**.01998**	**.14896**	**.00689**	**.01796**	**.04648**
Stddev	.00496	.00040	.00962	.00157	.00043	.00056	.00102
%RSD	1.2386	.97028	48.154	1.0558	6.1789	3.1279	2.2003
#1	.40336	.04052	.01081	.14857	.00653	.01791	.04580
#2	.40281	.04082	.02999	.15069	.00680	.01855	.04599
#3	.39451	.04131	.01914	.14762	.00736	.01743	.04766
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8990.7**	**57102.**	**2996.8**
Stddev	6.3	282.	27.6
%RSD	.06972	.49387	.92128
#1	8985.6	56782.	2987.6
#2	8988.8	57212.	2975.0
#3	8997.7	57313.	3027.9

Approved: June 25, 2016

Sample Name: LLCCV Acquired: 6/24/2016 17:15:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01993	.40715	.01910	.19302	.02123	.00379	.98840	.00192
Stddev	.00107	.00875	.00166	.00240	.00062	.00009	.02416	.00014
%RSD	5.3570	2.1496	8.6872	1.2431	2.9288	2.2601	2.4441	7.0566
#1	.01892	.40857	.02077	.19136	.02062	.00370	.96658	.00208
#2	.01983	.41511	.01745	.19577	.02121	.00387	.98425	.00184
#3	.02105	.39778	.01908	.19192	.02186	.00380	1.0144	.00186
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00956	.01134	.01016	.19020	1.9527	.19631	.96503	.01651
Stddev	.00018	.00018	.00095	.01584	.0809	.00356	.08170	.00201
%RSD	1.8827	1.5892	9.3610	8.3286	4.1432	1.8125	8.4664	12.178
#1	.00947	.01153	.01097	.18785	1.9630	.19792	1.0093	.01700
#2	.00944	.01133	.01040	.20708	2.0279	.19878	1.0150	.01822
#3	.00976	.01117	.00911	.17566	1.8671	.19223	.87074	.01429
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01930	1.0243	.04009	1.9435	.01831	.21107	.04027	1.9113
Stddev	.00016	.0191	.00077	.0087	.00305	.00083	.00398	.0011
%RSD	.83239	1.8612	1.9166	.44854	16.636	.39124	9.8865	.05610
#1	.01914	1.0212	.03957	1.9465	.02165	.21172	.03698	1.9101
#2	.01929	1.0447	.04097	1.9503	.01761	.21014	.03912	1.9122
#3	.01946	1.0070	.03972	1.9336	.01568	.21134	.04469	1.9117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LLCCV Acquired: 6/24/2016 17:15:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.98617**	**.09828**	**.05324**	**.36623**	**.01818**	**.04214**	**.10201**
Stddev	.00140	.00119	.00120	.00194	.00049	.00021	.00105
%RSD	.14233	1.2069	2.2499	.53068	2.7064	.48792	1.0280
#1	.98608	.09782	.05188	.36811	.01820	.04207	.10169
#2	.98481	.09963	.05376	.36635	.01768	.04237	.10318
#3	.98762	.09739	.05410	.36423	.01866	.04197	.10116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9036.2**	**57273.**	**3074.0**
Stddev	31.1	288.	33.7
%RSD	.34415	.50309	1.0950
#1	9072.0	57245.	3047.1
#2	9015.3	57573.	3063.1
#3	9021.4	56999.	3111.7

Approved: June 25, 2016

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000236	0.051213	0.000000	1.000000
Al 308.215 {109}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000796	0.008044	0.000000	1.000000
As 189.042 {478}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000007	0.025071	0.000000	1.000000
B 249.678 {135}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000040	0.023963	0.000000	1.000000
Ba 455.403 { 74}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.044484	2.168568	0.000000	1.000000
Be 313.107 {108}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000479	0.930119	0.000000	1.000000
Ca 422.673 { 80}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.002874	0.045862	0.000000	1.000000
Cd 228.802 {447}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000038	0.570455	0.000000	1.000000
Co 228.616 {447}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000129	0.339574	0.000000	1.000000
Cr 267.716 {126}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000254	0.058743	0.000000	1.000000
Cu 224.700 {450}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000063	0.129645	0.000000	1.000000
Fe 261.187 {129}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000714	0.024119	0.000000	1.000000
K 766.490 { 44}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.006604	0.061274	0.000000	1.000000
Li 670.784 { 50}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.009415	1.520559	0.000000	1.000000
Mg 279.079 {121}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000260	0.008000	0.000000	1.000000
Mn 257.610 {131}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000470	0.289814	0.000000	1.000000
Mo 202.030 {467}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000054	0.182736	0.000000	1.000000
Na 589.592 { 57}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.047777	0.184477	0.000000	1.000000
Ni 231.604 {446}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000734	0.138990	0.000000	1.000000
P 214.914 {457}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000172	0.014319	0.000000	1.000000
Pb 220.353 {453}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.001186	0.065283	0.000000	1.000000
Sb 206.833 {463}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000368	0.031084	0.000000	1.000000
Se 196.090 {472}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000508	0.017412	0.000000	1.000000
Si 212.412 {459}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.001467	0.039573	0.000000	1.000000
Sn 189.989 {477}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000022	0.066307	0.000000	1.000000
Sr 407.771 { 83}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.001060	3.591964	0.000000	1.000000
Ti 337.280 {100}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.002630	0.122957	0.000000	1.000000
Tl 190.856 {477}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000329	0.028655	0.000000	1.000000
V 292.402 {115}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000071	0.067328	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000142	0.437417	0.000000	1.000000
Zr 339.198 { 99}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.007106	1.219765	0.000000	1.000000

Approved: June 27, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999680	0.000003	0.002344	0.007814	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999950	0.000005	0.010188	0.033959	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999909	0.000001	0.003189	0.010630	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999961	0.000001	0.002963	0.009878	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999951	0.000136	0.001119	0.003729	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999766	0.000007	0.000105	0.000348	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999890	0.000043	0.043792	0.145974	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999970	0.000002	0.000282	0.000940	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999977	0.000003	0.000454	0.001514	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999978	0.000001	0.001307	0.004355	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999889	0.000006	0.001405	0.004682	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999330	0.000022	0.023003	0.076675	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999988	0.000096	0.104199	0.347330	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999977	0.000100	0.004201	0.014002	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999990	0.000003	0.092396	0.307987	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999236	0.000036	0.002652	0.008839	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999956	0.000011	0.000450	0.001500	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999990	0.000264	0.032289	0.107629	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999932	0.000005	0.001180	0.003935	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999990	0.000004	0.007138	0.023792	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999383	0.000007	0.003667	0.012223	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999854	0.000004	0.004516	0.015054	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999238	0.000003	0.006704	0.022346	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999594	0.000036	0.002443	0.008145	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999980	0.000003	0.000986	0.003287	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999952	0.000224	0.000467	0.001557	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999579	0.000023	0.007453	0.024845	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999831	0.000002	0.003284	0.010945	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999969	0.000003	0.001095	0.003650	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999941	0.000030	0.000202	0.000675	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.596446	0.010414	0.001594	0.005312	OK.	1.000000	0.000000	1	0

Approved: June 27, 2016

Sample Name: S0 Acquired: 6/25/2016 12:21:04 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00024**	**.00080**	**-.00001**	**.00004**	**.04448**	**.00048**	**.00288**
Stddev	.00008	.00004	.00007	.00002	.00170	.00005	.00169
%RSD	35.712	4.5527	977.99	54.959	3.8148	10.198	58.629
#1	-.00024	.00076	-.00006	.00003	.04635	.00042	.00096
#2	-.00015	.00081	.00007	.00006	.04405	.00050	.00353
#3	-.00032	.00083	-.00004	.00003	.04304	.00052	.00414

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00004**	**-.00013**	**.00025**	**-.00006**	**-.00071**	**-.00661**	**-.00941**
Stddev	.00006	.00005	.00003	.00023	.00026	.00355	.00965
%RSD	153.97	36.064	10.924	367.85	35.978	53.724	102.48
#1	-.00002	-.00016	.00028	-.00022	-.00093	-.00948	-.01508
#2	-.00010	-.00015	.00025	.00020	-.00043	-.00769	.00173
#3	.00001	-.00008	.00023	-.00018	-.00078	-.00264	-.01488

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00026**	**.00047**	**.00005**	**-.04778**	**-.00073**	**-.00017**	**-.00119**
Stddev	.00066	.00061	.00004	.00421	.00008	.00002	.00008
%RSD	255.00	128.77	78.942	8.8105	11.011	13.180	6.4052
#1	.00045	-.00015	.00007	-.05263	-.00065	-.00015	-.00110
#2	-.00086	.00049	.00001	-.04509	-.00082	-.00019	-.00123
#3	-.00037	.00107	.00009	-.04563	-.00073	-.00017	-.00123

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00037**	**-.00051**	**.00147**	**.00002**	**.00106**	**-.00263**	**-.00033**
Stddev	.00001	.00007	.00009	.00003	.00137	.00025	.00002
%RSD	3.7153	13.815	6.2921	126.34	130.24	9.4020	7.1687
#1	.00035	-.00043	.00157	.00002	.00203	-.00235	-.00030
#2	.00038	-.00057	.00145	-.00000	.00165	-.00283	-.00033
#3	.00037	-.00052	.00138	.00005	-.00052	-.00270	-.00035

Approved: June 27, 2016

Sample Name: S0 Acquired: 6/25/2016 12:21:04 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**-.00007**	**.00014**	**-.00710**
Stddev	.00004	.00005	.00324
%RSD	58.279	35.146	45.700
#1	-.00004	.00009	-.00457
#2	-.00005	.00016	-.01076
#3	-.00012	.00018	-.00597
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9736.8**	**58329.**	**2962.8**
Stddev	24.6	275.	12.4
%RSD	.25315	.47180	.41783
#1	9719.4	58177.	2949.0
#2	9725.9	58162.	2966.1
#3	9765.0	58646.	2973.1

Approved: June 27, 2016

Sample Name: S1 Acquired: 6/25/2016 12:25:02 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00000**	**.00148**	**.06336**	**.00097**	**.00582**	**.00018**	**.00038**
Stddev	.00004	.00005	.00419	.00009	.00234	.00011	.00006
%RSD	838.91	3.6655	6.6080	8.8478	40.284	60.110	16.615
#1	.00001	.00145	.05987	.00105	.00569	.00026	.00043
#2	-.00004	.00145	.06800	.00097	.00822	.00006	.00031
#3	.00004	.00155	.06221	.00088	.00354	.00023	.00041

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00050**	**.00053**	**.00033**	**.01950**	**.00077**	**.00143**	**.02669**
Stddev	.00003	.00011	.00021	.00355	.00009	.00011	.00332
%RSD	5.5692	20.305	62.737	18.223	11.862	7.4791	12.449
#1	.00049	.00060	.00053	.01550	.00083	.00145	.02356
#2	.00048	.00041	.00012	.02070	.00066	.00152	.03018
#3	.00053	.00058	.00034	.02230	.00081	.00131	.02634

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00018**	**.00100**	**-.00086**	**.00059**	**.00297**	**.00055**	**.03302**
Stddev	.00009	.00012	.00030	.00014	.00005	.00006	.00089
%RSD	52.159	12.366	34.406	23.539	1.7045	10.953	2.6942
#1	-.00010	.00113	-.00102	.00051	.00294	.00050	.03225
#2	-.00028	.00098	-.00052	.00075	.00302	.00062	.03399
#3	-.00016	.00088	-.00105	.00050	.00293	.00055	.03280

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00218**	**.00050**	**.00363**	**-.00591**
Stddev	.00071	.00003	.00003	.00134
%RSD	32.781	5.1557	.77751	22.659
#1	-.00139	.00050	.00365	-.00576
#2	-.00277	.00048	.00360	-.00465
#3	-.00237	.00053	.00364	-.00732

Approved: June 27, 2016

Sample Name: S1 Acquired: 6/25/2016 12:25:02 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9839.2**	**59021.**	**2974.6**
Stddev	35.8	140.	1.9
%RSD	.36397	.23691	.06440
#1	9811.4	58880.	2976.5
#2	9826.5	59023.	2972.7
#3	9879.6	59160.	2974.8

Approved: June 27, 2016

Sample Name: S2 Acquired: 6/25/2016 12:29:00 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00011**	**.00220**	**.00018**	**.00025**	**.08112**	**.00139**	**.00931**
Stddev	.00003	.00006	.00005	.00002	.00125	.00003	.00047
%RSD	29.658	2.5782	25.201	8.0082	1.5417	1.8740	5.0396
#1	.00012	.00221	.00013	.00026	.08191	.00140	.00905
#2	.00012	.00214	.00022	.00027	.08177	.00136	.00985
#3	.00007	.00225	.00019	.00023	.07968	.00140	.00903

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00041**	**.00102**	**.00072**	**.00104**	**.00148**	**.04190**	**.01415**
Stddev	.00007	.00003	.00001	.00014	.00030	.00236	.00012
%RSD	16.350	3.0292	1.5873	13.319	20.240	5.6312	.86545
#1	.00045	.00101	.00072	.00109	.00137	.04369	.01405
#2	.00033	.00099	.00073	.00088	.00125	.03923	.01429
#3	.00045	.00105	.00071	.00115	.00182	.04279	.01411

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00109**	**.00274**	**.00298**	**.10797**	**.00048**	**.00211**	**-.00045**
Stddev	.00041	.00057	.00005	.00406	.00013	.00008	.00017
%RSD	37.607	20.931	1.7509	3.7561	26.749	3.7519	39.075
#1	.00144	.00213	.00304	.11260	.00057	.00211	-.00064
#2	.00064	.00283	.00295	.10501	.00033	.00203	-.00031
#3	.00120	.00327	.00295	.10631	.00054	.00219	-.00039

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00105**	**-.00034**	**.00448**	**.00108**	**.06082**	**-.00047**	**-.00014**
Stddev	.00006	.00004	.00009	.00004	.00131	.00089	.00005
%RSD	6.0784	12.562	2.0565	3.6593	2.1502	187.41	36.276
#1	.00109	-.00029	.00447	.00110	.05950	-.00104	-.00016
#2	.00107	-.00037	.00458	.00110	.06212	-.00093	-.00008
#3	.00097	-.00035	.00440	.00103	.06083	.00055	-.00017

Approved: June 27, 2016

Sample Name: S2 Acquired: 6/25/2016 12:29:00 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00105	.00728	-.00437
Stddev	.00006	.00006	.00132
%RSD	5.7588	.85058	30.251
#1	.00102	.00735	-.00588
#2	.00112	.00727	-.00376
#3	.00101	.00722	-.00345
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9827.0	59373.	3004.6
Stddev	11.4	114.	4.0
%RSD	.11574	.19273	.13472
#1	9814.0	59255.	3000.6
#2	9832.7	59484.	3008.7
#3	9834.5	59381.	3004.6

Approved: June 27, 2016

Sample Name: S3 Acquired: 6/25/2016 12:32:56 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.02035	.08278	.00992	.01198	2.2359	.04820	.46599	.03126
Stddev	.00007	.00029	.00007	.00002	.0069	.00016	.00236	.00006
%RSD	.36344	.34990	.73624	.13878	.30693	.33862	.50730	.19965
#1	.02029	.08301	.00987	.01198	2.2433	.04825	.46861	.03126
#2	.02044	.08286	.01000	.01199	2.2346	.04833	.46401	.03132
#3	.02033	.08245	.00988	.01196	2.2297	.04802	.46536	.03119

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.06810	.02991	.06581	.09648	3.0722	1.5250	.07962	.14725
Stddev	.00012	.00021	.00002	.00063	.0027	.0048	.00098	.00051
%RSD	.17879	.70022	.03611	.65013	.08880	.31624	1.2353	.34909
#1	.06804	.03009	.06584	.09719	3.0745	1.5268	.07965	.14783
#2	.06801	.02997	.06579	.09600	3.0692	1.5288	.07861	.14685
#3	.06824	.02968	.06581	.09626	3.0730	1.5196	.08058	.14706

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.18510	9.1987	.06966	.14157	.03222	.03693	.00649	.20808
Stddev	.00068	.0276	.00008	.00029	.00023	.00011	.00003	.00004
%RSD	.36712	.29975	.11504	.20555	.70478	.30304	.43769	.01830
#1	.18567	9.2297	.06963	.14170	.03236	.03694	.00648	.20811
#2	.18529	9.1894	.06975	.14177	.03196	.03703	.00652	.20808
#3	.18435	9.1769	.06959	.14123	.03234	.03681	.00647	.20804

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.06680	3.6291	.12115	.01313	.06767	.44396	3.5474
Stddev	.00012	.0161	.00039	.00012	.00004	.00054	.0233
%RSD	.17282	.44347	.32200	.91385	.05243	.12075	.65596
#1	.06677	3.6476	.12157	.01325	.06770	.44451	3.5656
#2	.06671	3.6220	.12107	.01301	.06768	.44393	3.5554
#3	.06693	3.6179	.12080	.01311	.06763	.44344	3.5212

Approved: June 27, 2016

Sample Name: S3 Acquired: 6/25/2016 12:32:56 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9929.1	59890.	3083.9
Stddev	18.0	90.	16.7
%RSD	.18173	.14986	.54188
#1	9944.3	59787.	3069.2
#2	9933.7	59947.	3080.5
#3	9909.1	59936.	3102.1

Approved: June 27, 2016

Sample Name: S4 Acquired: 6/25/2016 12:36:34 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.04037	.16212	.01994	.02391	4.3553	.09476	.91725	.06225
Stddev	.00010	.00009	.00010	.00008	.0282	.00010	.00714	.00008
%RSD	.26004	.05310	.51424	.32854	.64632	.10278	.77855	.12431
#1	.04040	.16220	.02005	.02399	4.3445	.09472	.91430	.06220
#2	.04046	.16203	.01991	.02383	4.3342	.09469	.91205	.06220
#3	.04026	.16211	.01985	.02390	4.3873	.09487	.92539	.06233

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13502	.05877	.12834	.19056	6.1046	3.0186	.15914	.28946
Stddev	.00023	.00007	.00015	.00161	.0456	.0309	.00223	.00202
%RSD	.17276	.12518	.11394	.84544	.74756	1.0253	1.3995	.69732
#1	.13475	.05870	.12846	.19050	6.0869	3.0140	.15736	.28818
#2	.13515	.05878	.12838	.18897	6.0705	2.9902	.15842	.28841
#3	.13517	.05884	.12818	.19219	6.1564	3.0516	.16164	.29179

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.36324	18.368	.13725	.28094	.06365	.07367	.01336	.39092
Stddev	.00176	.146	.00020	.00054	.00019	.00012	.00006	.00048
%RSD	.48547	.79728	.14492	.19364	.30628	.15884	.42128	.12331
#1	.36486	18.303	.13728	.28153	.06355	.07380	.01339	.39147
#2	.36349	18.266	.13744	.28083	.06388	.07365	.01329	.39059
#3	.36136	18.536	.13705	.28046	.06354	.07357	.01339	.39071

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13179	7.1439	.24230	.02560	.13357	.86773	.12255
Stddev	.00029	.0568	.00280	.00005	.00025	.00172	.00222
%RSD	.21785	.79476	1.1551	.20145	.18401	.19856	1.8114
#1	.13210	7.1181	.24103	.02555	.13357	.86947	.12020
#2	.13172	7.1045	.24036	.02563	.13332	.86769	.12285
#3	.13154	7.2090	.24551	.02564	.13382	.86603	.12461

Approved: June 27, 2016

Sample Name: S4 Acquired: 6/25/2016 12:36:34 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9795.6	59125.	3064.9
Stddev	6.6	26.	19.7
%RSD	.06757	.04412	.64222
#1	9799.1	59120.	3071.1
#2	9799.7	59153.	3080.8
#3	9787.9	59102.	3042.9

Approved: June 27, 2016

Sample Name: ICV Acquired: 6/25/2016 12:40:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40482	10.096	.40189	.50535	1.0085	.05038	10.096
Stddev	.00169	.009	.00320	.00259	.0096	.00007	.103
%RSD	.41792	.09100	.79651	.51179	.95284	.13225	1.0175
#1	.40318	10.095	.40558	.50259	.99972	.05037	10.065
#2	.40656	10.106	.40020	.50771	1.0070	.05032	10.013
#3	.40473	10.088	.39988	.50575	1.0188	.05045	10.211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05022	.20172	.50610	.50772	4.0459	50.287	1.0069
Stddev	.00031	.00057	.00078	.00110	.0398	.526	.0059
%RSD	.61395	.28458	.15454	.21701	.98466	1.0464	.58082
#1	.05048	.20224	.50644	.50864	4.0020	49.775	1.0012
#2	.05030	.20181	.50521	.50650	4.0559	50.260	1.0067
#3	.04988	.20110	.50666	.50803	4.0798	50.827	1.0128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.117	.50795	1.0200	50.068	.50832	10.053	.50460
Stddev	.152	.00312	.0050	.377	.00054	.029	.00016
%RSD	1.5029	.61369	.49437	.75311	.10596	.28628	.03077
#1	9.9425	.50440	1.0241	49.665	.50829	10.073	.50452
#2	10.219	.50922	1.0214	50.126	.50888	10.066	.50449
#3	10.191	.51024	1.0144	50.412	.50780	10.020	.50477
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: ICV Acquired: 6/25/2016 12:40:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2132**	**.39981**	**5.2115**	**1.0100**	**1.0094**	**1.0076**	**.50967**
Stddev	.0090	.00367	.0220	.0047	.0093	.0117	.00340
%RSD	.74499	.91900	.42193	.46646	.92212	1.1612	.66719
#1	1.2228	.39652	5.1880	1.0139	.99976	.99418	.50608
#2	1.2117	.40378	5.2316	1.0112	1.0100	1.0128	.51284
#3	1.2049	.39915	5.2149	1.0048	1.0183	1.0157	.51010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0117**	**1.0154**	F **2.9010**
Stddev	.0015	.0015	.0057
%RSD	.14666	.14385	.19619
#1	1.0111	1.0164	2.9026
#2	1.0134	1.0160	2.8946
#3	1.0106	1.0137	2.9057
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			5.0000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9887.2**	**59604.**	**3090.1**
Stddev	2.6	87.	8.3
%RSD	.02633	.14631	.26858
#1	9888.5	59705.	3098.3
#2	9884.2	59557.	3090.3
#3	9888.9	59551.	3081.7

Approved: June 27, 2016

Sample Name: ICB Acquired: 6/25/2016 12:43:48 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00131**	**-.00019**	**.00035**	**.00523**	**.00097**	**.00005**	**-.00769**	**-.00024**
Stddev	.00204	.00299	.00150	.00175	.00089	.00006	.00734	.00011
%RSD	155.46	1561.3	426.44	33.377	91.849	115.36	95.505	46.996
#1	.00317	-.00362	.00181	.00349	.00060	.00012	-.01556	-.00036
#2	-.00088	.00114	-.00118	.00522	.00198	.00002	-.00104	-.00017
#3	.00165	.00191	.00042	.00699	.00032	.00001	-.00646	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00000**	**.00019**	**.00069**	**.02190**	**.04427**	**.00252**	**.00787**	**.00050**
Stddev	.00033	.00096	.00130	.00895	.02254	.00192	.08048	.00146
%RSD	40694.	494.95	189.51	40.889	50.920	76.061	1022.8	292.29
#1	-.00026	-.00067	-.00034	.02348	.04464	.00424	-.08504	-.00108
#2	-.00012	.00002	.00215	.01226	.06662	.00045	.05249	.00079
#3	.00038	.00123	.00025	.02996	.02154	.00288	.05615	.00179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00437**	**.07087**	**.00070**	**.00285**	**.00118**	**.00678**	**.00870**	**.00121**
Stddev	.00041	.01151	.00054	.00868	.00197	.00381	.00450	.00189
%RSD	9.2912	16.248	77.044	304.78	167.53	56.206	51.723	156.22
#1	.00395	.08310	.00020	-.00283	.00108	.00337	.00854	.00310
#2	.00476	.06927	.00064	-.00147	.00320	.00608	.00428	.00120
#3	.00442	.06023	.00127	.01284	-.00074	.01090	.01328	-.00068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: ICB Acquired: 6/25/2016 12:43:48 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00063**	**.00059**	**.00116**	**.00143**	**.00111**	**.00117**	**.00345**
Stddev	.00049	.00006	.00559	.00387	.00033	.00016	.00039
%RSD	77.601	9.5579	481.47	269.75	29.521	13.916	11.209
#1	.00050	.00059	.00521	.00260	.00135	.00105	.00361
#2	.00117	.00064	.00349	-.00288	.00074	.00111	.00300
#3	.00022	.00053	-.00522	.00459	.00124	.00135	.00372
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9709.0**	**58834.**	**2997.3**
Stddev	13.6	105.	11.0
%RSD	.13963	.17854	.36570
#1	9693.7	58895.	2985.3
#2	9713.8	58895.	3006.9
#3	9719.5	58713.	2999.6

Approved: June 27, 2016

Sample Name: LLICV Acquired: 6/25/2016 12:47:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00947	.16517	.00750	.08209	.00794	.00166	.41368	.00078
Stddev	.00234	.00914	.00427	.00134	.00096	.00002	.01542	.00015
%RSD	24.742	5.5361	56.913	1.6344	12.112	1.4530	3.7271	18.963
#1	.01038	.17315	.00639	.08214	.00810	.00169	.40911	.00061
#2	.01123	.15519	.01222	.08341	.00690	.00166	.40107	.00083
#3	.00681	.16717	.00390	.08073	.00880	.00164	.43087	.00089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00435	.00476	.00462	.09393	.88733	.08419	.44121	.00701
Stddev	.00017	.00091	.00136	.00523	.14622	.00363	.12107	.00237
%RSD	3.8803	19.165	29.360	5.5689	16.479	4.3143	27.441	33.765
#1	.00455	.00411	.00608	.08852	.75945	.08105	.39471	.00889
#2	.00425	.00438	.00436	.09433	.85580	.08335	.57864	.00779
#3	.00425	.00581	.00341	.09896	1.0467	.08816	.35028	.00435
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00866	.44156	.01715	.79893	.00705	.08442	.02038	.79310
Stddev	.00052	.01049	.00062	.00929	.00266	.00215	.00191	.00106
%RSD	5.9984	2.3750	3.6174	1.1626	37.766	2.5524	9.3696	.13338
#1	.00809	.45038	.01661	.80194	.00796	.08678	.01818	.79326
#2	.00879	.42997	.01783	.80634	.00405	.08394	.02136	.79407
#3	.00910	.44434	.01701	.78851	.00913	.08255	.02160	.79197
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LLICV Acquired: 6/25/2016 12:47:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41130**	**.04174**	**.02562**	**.15269**	**.00881**	**.01717**	**.13277**
Stddev	.00223	.00064	.00303	.00060	.00064	.00024	.00310
%RSD	.54293	1.5249	11.843	.39147	7.2679	1.3907	2.3338
#1	.41347	.04173	.02710	.15201	.00926	.01741	.13005
#2	.41142	.04111	.02213	.15292	.00808	.01715	.13211
#3	.40901	.04238	.02764	.15314	.00909	.01694	.13614
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9760.6**	**59445.**	**3032.4**
Stddev	2.7	49.	16.0
%RSD	.02790	.08308	.52659
#1	9758.1	59502.	3050.3
#2	9763.5	59418.	3027.2
#3	9760.2	59415.	3019.7

Approved: June 27, 2016

Sample Name: LLICV Acquired: 6/25/2016 12:51:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02232**	**.40482**	**.02105**	**.19795**	**.01981**	**.00414**	**.94713**	**.00209**
Stddev	.00322	.01572	.00276	.00137	.00013	.00016	.01328	.00025
%RSD	14.431	3.8838	13.088	.69255	.67950	3.8114	1.4024	12.129
#1	.02018	.38785	.01788	.19912	.01996	.00396	.94307	.00218
#2	.02076	.40770	.02252	.19644	.01971	.00427	.93634	.00229
#3	.02603	.41890	.02277	.19828	.01975	.00419	.96196	.00181
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00992**	**.00950**	**.01082**	**.20111**	**1.9275**	**.20201**	**.97307**	**.01841**
Stddev	.00043	.00028	.00021	.02025	.1498	.00564	.04542	.00186
%RSD	4.3042	2.9103	1.9731	10.069	7.7699	2.7925	4.6682	10.079
#1	.01005	.00935	.01089	.20826	1.8000	.20412	1.0187	.02052
#2	.00945	.00934	.01100	.21682	1.8900	.19562	.97274	.01702
#3	.01028	.00982	.01059	.17825	2.0924	.20630	.92781	.01771
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01972**	**1.0340**	**.04153**	**1.9482**	**.02271**	**.20123**	**.04411**	**1.9392**
Stddev	.00048	.0096	.00031	.0042	.00204	.00295	.00361	.0022
%RSD	2.4591	.93077	.75288	.21380	8.9612	1.4657	8.1900	.11326
#1	.01969	1.0240	.04132	1.9520	.02496	.20436	.04094	1.9404
#2	.01925	1.0432	.04139	1.9437	.02217	.20085	.04804	1.9406
#3	.02022	1.0348	.04189	1.9488	.02100	.19850	.04333	1.9367
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LLICV Acquired: 6/25/2016 12:51:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0099**	**.10045**	**.06134**	**.37714**	**.02003**	**.04134**	**.29456**
Stddev	.0057	.00069	.00459	.00090	.00046	.00030	.00329
%RSD	.56948	.68667	7.4856	.23976	2.2900	.72946	1.1169
#1	1.0145	.09991	.06229	.37809	.02052	.04128	.29317
#2	1.0117	.10021	.05634	.37629	.01997	.04166	.29219
#3	1.0035	.10123	.06538	.37705	.01961	.04107	.29832
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9725.0**	**59145.**	**3053.0**
Stddev	6.0	91.	15.9
%RSD	.06216	.15348	.52133
#1	9731.9	59116.	3042.4
#2	9721.3	59247.	3071.3
#3	9721.7	59072.	3045.2

Approved: June 27, 2016

Sample Name: ICSA Acquired: 6/25/2016 12:55:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00027**	**265.97**	**.00161**	**-.00823**	**.00056**	**.00011**	**243.96**	**-.00018**
Stddev	.00121	.27	.00172	.00296	.00012	.00009	1.89	.00042
%RSD	450.36	.10204	106.61	35.970	21.237	81.140	.77435	230.52
#1	-.00046	265.69	.00220	-.01033	.00047	.00017	241.81	-.00048
#2	.00103	265.97	-.00032	-.00484	.00069	.00014	245.35	.00030
#3	-.00137	266.24	.00295	-.00951	.00051	.00001	244.72	-.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00099**	**-.00100**	**-.00098**	**96.848**	**.05329**	**.01035**	**248.71**	**-.00176**
Stddev	.00039	.00071	.00330	.692	.06120	.00255	1.99	.00096
%RSD	39.651	70.751	335.23	.71414	114.86	24.670	.80129	54.809
#1	-.00142	-.00119	.00263	96.056	.12150	.01230	246.41	-.00274
#2	-.00085	-.00160	-.00175	97.332	.03517	.00746	249.90	-.00082
#3	-.00068	-.00022	-.00383	97.155	.00318	.01129	249.83	-.00171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00066**	**.04038**	**-.00089**	**.02257**	**.00214**	**-.00550**	**-.00224**	**.00879**
Stddev	.00023	.00410	.00050	.00580	.00444	.00318	.00753	.00258
%RSD	34.448	10.162	56.288	25.707	206.94	57.856	337.10	29.379
#1	-.00088	.04493	-.00121	.01613	.00721	-.00186	.00631	.00581
#2	-.00043	.03696	-.00115	.02418	.00024	-.00776	-.00511	.01037
#3	-.00066	.03925	-.00031	.02740	-.00103	-.00688	-.00791	.01019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: ICSA Acquired: 6/25/2016 12:55:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00053**	**.00100**	**-.00403**	**-.00373**	**-.00305**	**-.00596**	**-.01388**
Stddev	.00149	.00018	.00805	.00252	.00022	.00010	.00081
%RSD	284.28	18.415	199.81	67.478	7.0947	1.6059	5.8325
#1	.00144	.00117	.00514	-.00549	-.00300	-.00603	-.01379
#2	.00134	.00081	-.00728	-.00085	-.00329	-.00601	-.01311
#3	-.00120	.00101	-.00995	-.00485	-.00287	-.00585	-.01473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9184.9**	**55126.**	**2960.9**
Stddev	19.5	129.	17.9
%RSD	.21199	.23455	.60311
#1	9165.3	55274.	2981.6
#2	9185.3	55069.	2950.7
#3	9204.2	55035.	2950.6

Approved: June 27, 2016

Sample Name: ICSAB Acquired: 6/25/2016 12:59:21 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51819**	**267.93**	**.25992**	**-.00749**	**.25012**	**.24499**	**247.43**	**.48653**
Stddev	.00274	.82	.00577	.00323	.00127	.00111	.96	.00069
%RSD	.52949	.30727	2.2185	43.201	.50926	.45301	.38893	.14255
#1	.51744	268.20	.26633	-.00904	.25065	.24547	247.63	.48716
#2	.52123	268.59	.25826	-.00965	.24866	.24578	246.38	.48579
#3	.51590	267.01	.25516	-.00377	.25104	.24372	248.28	.48665
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.24114**	**.25272**	**.25219**	**96.482**	**5.1931**	**.01181**	**249.25**	**.24440**
Stddev	.00029	.00219	.00111	.527	.0571	.00427	1.99	.00318
%RSD	.11831	.86807	.44033	.54597	1.0995	36.192	.80021	1.3017
#1	.24081	.25379	.25307	96.524	5.1297	.01134	249.32	.24432
#2	.24135	.25418	.25256	95.936	5.2405	.00779	247.22	.24763
#3	.24125	.25020	.25095	96.987	5.2091	.01630	251.20	.24127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00056**	**5.3241**	**.48364**	**.08508**	**.49426**	**.50665**	**.24857**	**.00554**
Stddev	.00038	.0216	.00155	.00195	.00579	.00649	.00790	.00251
%RSD	68.178	.40548	.32037	2.2888	1.1716	1.2807	3.1773	45.410
#1	-.00097	5.3151	.48290	.08463	.49996	.50736	.25719	.00434
#2	-.00022	5.3084	.48260	.08721	.48838	.49984	.24167	.00842
#3	-.00048	5.3487	.48542	.08340	.49443	.51276	.24687	.00384
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: ICSAB Acquired: 6/25/2016 12:59:21 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00018**	**.00065**	**-.00404**	**.46188**	**.25332**	**.48100**	**-.01374**
Stddev	.00129	.00010	.00503	.00318	.00107	.00194	.00218
%RSD	732.71	15.906	124.53	.68769	.42266	.40303	15.888
#1	.00146	.00072	-.00979	.45913	.25376	.48104	-.01122
#2	-.00112	.00053	-.00192	.46116	.25410	.48293	-.01498
#3	.00019	.00071	-.00042	.46536	.25210	.47905	-.01502
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9278.3**	**55833.**	**2985.5**
Stddev	15.8	186.	18.9
%RSD	.17001	.33320	.63177
#1	9263.8	55869.	2984.2
#2	9295.1	55632.	3004.9
#3	9275.9	55999.	2967.3

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 13:03:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39792	10.019	.39868	.49351	.99429	.04982	9.9377
Stddev	.00072	.017	.00144	.00412	.00753	.00017	.0996
%RSD	.18044	.17228	.36151	.83518	.75700	.33966	1.0022
#1	.39861	10.034	.39833	.49827	.98705	.04987	9.8876
#2	.39796	10.022	.40027	.49123	1.0021	.04997	10.052
#3	.39718	10.000	.39745	.49104	.99375	.04964	9.8731
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04945	.20002	.50114	.50617	3.9950	49.191	.99914
Stddev	.00013	.00034	.00115	.00138	.0385	.327	.00262
%RSD	.25449	.17079	.22943	.27257	.96478	.66521	.26204
#1	.04957	.20034	.49991	.50465	3.9625	48.889	.99615
#2	.04946	.20007	.50219	.50735	4.0376	49.538	1.0010
#3	.04932	.19966	.50132	.50650	3.9848	49.146	1.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.9162	.49766	1.0071	49.316	.50460	9.9534	.50217
Stddev	.1345	.00161	.0027	.281	.00141	.0056	.00090
%RSD	1.3564	.32258	.27182	.56936	.27993	.05661	.17861
#1	9.8004	.49634	1.0102	49.069	.50585	9.9507	.50282
#2	10.064	.49945	1.0061	49.622	.50307	9.9496	.50115
#3	9.8846	.49718	1.0051	49.257	.50488	9.9599	.50255
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 13:03:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1997**	**.40476**	**5.1642**	**1.0026**	**.99432**	**.99050**	**.50900**
Stddev	.0011	.00080	.0031	.0008	.00541	.00261	.00166
%RSD	.09538	.19644	.06047	.08057	.54374	.26324	.32573
#1	1.2008	.40408	5.1631	1.0035	.99081	.99348	.51044
#2	1.1985	.40563	5.1678	1.0020	1.0005	.98942	.50718
#3	1.1997	.40457	5.1618	1.0022	.99161	.98862	.50937
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0019**	**1.0053**	F **2.8691**
Stddev	.0036	.0009	.0111
%RSD	.35558	.09150	.38634
#1	.99784	1.0055	2.8628
#2	1.0045	1.0043	2.8819
#3	1.0033	1.0060	2.8625
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9877.8**	**59691.**	**3097.9**
Stddev	6.1	104.	11.8
%RSD	.06196	.17495	.38081
#1	9880.1	59766.	3105.5
#2	9870.8	59572.	3084.3
#3	9882.4	59736.	3103.8

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 13:06:41 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00082**	**.00013**	**.00057**	**.00151**	**.00063**	**.00002**	**-.01871**	**-.00022**
Stddev	.00151	.00746	.00362	.00174	.00068	.00003	.02739	.00016
%RSD	185.23	5748.5	636.07	114.92	108.39	116.80	146.42	72.359
#1	.00201	.00304	-.00315	-.00049	.00141	.00001	-.04795	-.00036
#2	-.00088	-.00835	.00078	.00262	.00031	.00006	.00637	-.00027
#3	.00132	.00570	.00408	.00241	.00017	.00001	-.01455	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.00054**	**.00076**	**.03608**	**.09214**	**-.00181**	**-.01859**	**-.00071**
Stddev	.00025	.00025	.00080	.01975	.18930	.00302	.07756	.00052
%RSD	1039.3	46.422	105.73	54.731	205.46	166.60	417.27	72.248
#1	.00013	.00063	.00047	.01630	-.12492	-.00468	-.09449	-.00012
#2	.00011	.00026	.00167	.05580	.17827	.00135	-.02180	-.00101
#3	-.00032	.00073	.00014	.03615	.22306	-.00212	.06053	-.00101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00274**	**.04401**	**-.00040**	**.00332**	**.00144**	**-.00005**	**.00482**	**-.00649**
Stddev	.00039	.03341	.00024	.00918	.00111	.00350	.00394	.00014
%RSD	14.320	75.897	59.933	276.22	77.091	6590.6	81.757	2.1187
#1	.00273	.08068	-.00054	-.00157	.00018	-.00177	.00919	-.00633
#2	.00236	.03606	-.00012	.01392	.00189	-.00236	.00153	-.00657
#3	.00314	.01530	-.00055	-.00237	.00225	.00397	.00375	-.00656
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 13:06:41 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.00039	.00186	-.00089	-.00002	.00003	.00447
Stddev	.00029	.00029	.00050	.00195	.00109	.00004	.00129
%RSD	58.864	74.770	26.876	218.22	5660.3	163.33	28.933
#1	.00018	.00056	.00153	-.00246	.00118	.00003	.00395
#2	.00076	.00054	.00162	-.00151	-.00095	.00007	.00352
#3	.00054	.00005	.00244	.00129	-.00029	-.00002	.00594
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9714.8	59220.	3006.6
Stddev	20.8	167.	18.8
%RSD	.21426	.28151	.62581
#1	9691.7	59319.	2985.4
#2	9732.2	59028.	3021.3
#3	9720.4	59314.	3013.1

Approved: June 27, 2016

Sample Name: PBW MC Acquired: 6/25/2016 13:18:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.00511**	**.00086**	**-.00212**	**.00115**	**.00002**	**-.06747**	**.00005**
Stddev	.00209	.01093	.00117	.00067	.00097	.00011	.03960	.00035
%RSD	552.93	213.69	135.59	31.434	84.150	461.31	58.695	692.60
#1	-.00263	-.00536	-.00048	-.00211	.00011	.00001	-.09775	.00040
#2	.00149	.00426	.00140	-.00146	.00202	-.00008	-.02265	-.00029
#3	.00000	.01644	.00166	-.00279	.00133	.00014	-.08201	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**-.00006**	**.00212**	**.02866**	**-.06431**	**.00509**	**.02259**	**-.00086**
Stddev	.00040	.00091	.00173	.01678	.07316	.00381	.05174	.00149
%RSD	400.23	1393.8	81.515	58.547	113.75	74.903	229.03	173.59
#1	.00052	-.00104	.00296	.02246	-.13473	.00394	-.01043	-.00102
#2	.00004	.00075	.00325	.01586	-.06951	.00199	-.00402	.00071
#3	-.00026	.00010	.00013	.04766	.01130	.00934	.08222	-.00227
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00087**	**-.00687**	**.00001**	**-.00017**	**.00005**	**-.00551**	**.00627**	**.00390**
Stddev	.00030	.03350	.00031	.00833	.00114	.00506	.00234	.00374
%RSD	34.257	487.68	3374.4	4899.3	2181.8	91.834	37.291	95.869
#1	.00091	.01218	.00037	.00506	.00058	-.00133	.00544	.00713
#2	.00056	-.04555	-.00014	-.00978	.00083	-.01113	.00446	-.00020
#3	.00115	.01276	-.00019	.00420	-.00126	-.00406	.00891	.00477
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: PBW MC Acquired: 6/25/2016 13:18:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00012**	**-.00022**	**-.00094**	**-.00120**	**.00059**	**.00019**	**.00136**
Stddev	.00090	.00014	.01001	.00401	.00016	.00009	.00212
%RSD	728.27	61.668	1066.1	333.15	27.157	48.058	155.52
#1	-.00022	-.00007	.00771	-.00405	.00041	.00016	-.00108
#2	.00115	-.00034	-.01190	.00338	.00070	.00012	.00241
#3	-.00056	-.00026	.00137	-.00294	.00066	.00029	.00275
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9802.9**	**59937.**	**3028.8**
Stddev	9.7	136.	16.1
%RSD	.09849	.22735	.53011
#1	9794.7	59785.	3046.3
#2	9813.5	59979.	3014.8
#3	9800.5	60047.	3025.3

Approved: June 27, 2016

Sample Name: LCSW MC Acquired: 6/25/2016 13:22:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19140**	**4.8040**	**.19266**	**.92897**	**.49049**	**.02396**	**4.9270**	**.02412**
Stddev	.00110	.0096	.00124	.00283	.00119	.00006	.0588	.00019
%RSD	.57611	.19942	.64179	.30493	.24273	.25817	1.1941	.78757
#1	.19253	4.7978	.19184	.92575	.49050	.02398	4.9121	.02430
#2	.19133	4.7992	.19408	.93105	.49168	.02402	4.8771	.02392
#3	.19033	4.8151	.19206	.93012	.48929	.02390	4.9919	.02415
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09725**	**.24390**	**.24732**	**1.9838**	**23.909**	**.49943**	**4.9211**	**.24209**
Stddev	.00025	.00056	.00120	.0346	.055	.00048	.0513	.00093
%RSD	.26181	.22973	.48504	1.7424	.23189	.09613	1.0429	.38463
#1	.09749	.24389	.24597	1.9470	23.904	.49915	4.9459	.24237
#2	.09699	.24447	.24774	1.9888	23.968	.49916	4.8621	.24284
#3	.09727	.24335	.24825	2.0156	23.857	.49999	4.9553	.24105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49737**	**24.381**	**.24620**	**4.6982**	**.24508**	**.58185**	**.18662**	**2.4109**
Stddev	.00101	.058	.00194	.0026	.00506	.00206	.00438	.0033
%RSD	.20378	.23960	.78649	.05522	2.0646	.35379	2.3449	.13777
#1	.49803	24.349	.24767	4.6983	.25078	.58403	.18417	2.4135
#2	.49787	24.449	.24692	4.7007	.24112	.57994	.18402	2.4071
#3	.49620	24.346	.24401	4.6956	.24334	.58158	.19167	2.4120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LCSW MC Acquired: 6/25/2016 13:22:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48537**	**.49494**	**.49102**	**.24360**	**.48594**	**.48236**	**.01763**
Stddev	.00248	.00157	.00916	.00175	.00116	.00127	.00304
%RSD	.51037	.31733	1.8663	.71814	.23927	.26228	17.214
#1	.48605	.49357	.49562	.24211	.48702	.48137	.01600
#2	.48744	.49666	.49698	.24315	.48610	.48194	.01576
#3	.48263	.49460	.48047	.24553	.48471	.48379	.02113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9802.2**	**59979.**	**3063.3**
Stddev	16.1	75.	6.7
%RSD	.16429	.12520	.21884
#1	9786.8	59978.	3070.3
#2	9800.7	59904.	3056.9
#3	9818.9	60054.	3062.8

Approved: June 27, 2016

Sample Name: L1606080801 Acquired: 6/25/2016 13:25:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00120	-.00080	-.00163	.02599	.00717	.00000	50.564	.00016
Stddev	.00152	.00397	.00290	.00206	.00115	.00005	.112	.00037
%RSD	125.91	493.45	178.32	7.9153	16.060	1214.4	.22137	235.03
#1	.00226	.00203	-.00429	.02577	.00588	.00002	50.480	.00003
#2	-.00053	.00090	.00147	.02405	.00757	.00004	50.521	-.00014
#3	.00188	-.00534	-.00207	.02815	.00807	-.00005	50.691	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.00083	.00107	.26409	1.2826	.00250	14.201	.11783
Stddev	.00018	.00044	.00061	.01139	.1290	.00132	.067	.00387
%RSD	127.01	53.307	57.172	4.3115	10.056	52.928	.47527	3.2872
#1	.00035	.00131	.00089	.27352	1.4315	.00167	14.162	.12070
#2	.00008	.00073	.00057	.25144	1.2130	.00180	14.162	.11343
#3	.00000	.00044	.00175	.26731	1.2035	.00402	14.279	.11937
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	15.281	.00045	.01127	-.00029	-.00250	-.00036	4.8502
Stddev	.00031	.048	.00109	.00496	.00257	.00086	.00870	.0263
%RSD	48.719	.31261	245.14	44.009	886.73	34.260	2404.6	.54311
#1	.00028	15.230	.00169	.00618	-.00269	-.00223	.00526	4.8717
#2	.00080	15.325	-.00034	.01609	.00243	-.00181	.00404	4.8581
#3	.00082	15.288	-.00001	.01154	-.00061	-.00346	-.01039	4.8208
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606080801 Acquired: 6/25/2016 13:25:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.16531	-.00520	-.00297	.00071	.00304	.00248
Stddev	.00021	.00042	.00147	.00169	.00080	.00019	.00016
%RSD	26.039	.25638	28.334	56.894	114.04	6.1375	6.5372
#1	.00100	.16514	-.00627	-.00112	.00132	.00299	.00242
#2	.00058	.16499	-.00352	-.00336	-.00020	.00288	.00235
#3	.00084	.16579	-.00581	-.00443	.00100	.00324	.00266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9767.4	60311.	3068.7
Stddev	25.3	182.	4.5
%RSD	.25865	.30239	.14809
#1	9787.8	60238.	3069.0
#2	9775.3	60177.	3064.1
#3	9739.2	60519.	3073.1

Approved: June 27, 2016

Sample Name: L1606080803S Acquired: 6/25/2016 13:29:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19425**	**4.8313**	**.19559**	**.97188**	**.49949**	**.02391**	**55.138**	**.02433**
Stddev	.00175	.0086	.00291	.00386	.00064	.00006	.286	.00001
%RSD	.89899	.17760	1.4870	.39759	.12859	.26078	.51899	.03982
#1	.19471	4.8260	.19892	.97122	.49908	.02384	54.823	.02434
#2	.19571	4.8412	.19357	.96839	.49916	.02394	55.383	.02434
#3	.19231	4.8266	.19428	.97603	.50023	.02395	55.206	.02432
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09623**	**.24025**	**.24291**	**2.2142**	**25.706**	**.49995**	**18.850**	**.36055**
Stddev	.00052	.00032	.00081	.0203	.056	.00310	.060	.00310
%RSD	.54129	.13263	.33315	.91450	.21668	.61973	.31584	.86069
#1	.09635	.23989	.24328	2.2335	25.718	.49651	18.866	.35746
#2	.09668	.24035	.24198	2.2161	25.755	.50082	18.784	.36367
#3	.09566	.24050	.24346	2.1931	25.645	.50252	18.899	.36052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50273**	**39.946**	**.24148**	**4.8211**	**.24377**	**.58841**	**.19283**	**7.2475**
Stddev	.00069	.089	.00226	.0078	.00185	.00329	.00168	.0253
%RSD	.13674	.22372	.93733	.16218	.76094	.55837	.87085	.34834
#1	.50346	39.846	.24394	4.8298	.24591	.59218	.19095	7.2767
#2	.50266	40.018	.24099	4.8187	.24276	.58614	.19336	7.2326
#3	.50209	39.974	.23950	4.8148	.24264	.58690	.19419	7.2333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606080803S Acquired: 6/25/2016 13:29:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48600	.66572	.49120	.24058	.48625	.48121	.00549
Stddev	.00062	.00113	.00488	.00183	.00111	.00310	.00062
%RSD	.12721	.16988	.99375	.75886	.22783	.64511	11.331
#1	.48664	.66443	.49684	.23968	.48515	.48355	.00538
#2	.48596	.66654	.48839	.24268	.48622	.48240	.00493
#3	.48540	.66619	.48838	.23938	.48737	.47769	.00616
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9640.1	59155.	3051.9
Stddev	28.9	91.	4.4
%RSD	.29949	.15374	.14285
#1	9607.9	59063.	3056.9
#2	9648.6	59158.	3049.0
#3	9663.8	59244.	3049.8

Approved: June 27, 2016

Sample Name: L1606080804SD Acquired: 6/25/2016 13:33:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19367**	**4.8696**	**.19395**	**.97468**	**.50079**	**.02428**	**55.592**	**.02458**
Stddev	.00103	.0189	.00351	.00126	.00119	.00004	.087	.00002
%RSD	.53221	.38806	1.8082	.12977	.23838	.15828	.15705	.06402
#1	.19313	4.8871	.19259	.97422	.49995	.02427	55.687	.02459
#2	.19486	4.8723	.19133	.97371	.50216	.02425	55.574	.02456
#3	.19302	4.8496	.19794	.97611	.50027	.02433	55.515	.02458
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09687**	**.24382**	**.24330**	**2.1942**	**25.602**	**.50391**	**18.927**	**.35670**
Stddev	.00034	.00139	.00044	.0216	.187	.00317	.145	.00440
%RSD	.35450	.56820	.18086	.98630	.73073	.62836	.76565	1.2346
#1	.09649	.24542	.24364	2.2182	25.415	.50090	18.778	.36166
#2	.09698	.24295	.24347	2.1881	25.600	.50721	19.067	.35519
#3	.09715	.24309	.24280	2.1762	25.789	.50361	18.935	.35325
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50687**	**40.011**	**.24239**	**4.8324**	**.24609**	**.59184**	**.19199**	**7.3269**
Stddev	.00174	.019	.00180	.0039	.00113	.00410	.00494	.0108
%RSD	.34421	.04769	.74422	.07995	.45954	.69206	2.5730	.14791
#1	.50863	40.009	.24329	4.8354	.24728	.59240	.18629	7.3276
#2	.50684	40.031	.24358	4.8338	.24503	.59563	.19457	7.3373
#3	.50514	39.993	.24032	4.8281	.24594	.58749	.19509	7.3157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606080804SD Acquired: 6/25/2016 13:33:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48884	.66564	.48806	.24641	.49385	.48167	.00481
Stddev	.00243	.00060	.00210	.00100	.00262	.00319	.00105
%RSD	.49731	.09007	.43005	.40687	.53028	.66320	21.781
#1	.48902	.66631	.48604	.24752	.49576	.48059	.00363
#2	.49118	.66515	.49023	.24612	.49493	.48526	.00518
#3	.48633	.66545	.48792	.24558	.49086	.47916	.00563
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9643.8	58961.	3032.4
Stddev	19.6	179.	14.4
%RSD	.20367	.30279	.47352
#1	9664.0	58941.	3022.3
#2	9624.8	58793.	3026.2
#3	9642.5	59149.	3048.8

Approved: June 27, 2016

Sample Name: L1606082203 Acquired: 6/25/2016 13:37:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	.03250	.00108	.03413	.76881	.00001	31.323	.00009
Stddev	.00326	.00113	.00298	.00231	.00291	.00007	.069	.00003
%RSD	461.08	3.4738	274.98	6.7818	.37861	986.76	.21967	35.456
#1	-.00056	.03174	-.00033	.03677	.76753	-.00000	31.323	.00006
#2	.00440	.03379	-.00093	.03317	.76676	.00008	31.255	.00011
#3	-.00173	.03195	.00451	.03246	.77215	-.00006	31.393	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00298	.00799	.00175	5.1531	49.440	.10315	14.307	.17132
Stddev	.00036	.00030	.00156	.0220	.158	.00201	.082	.00563
%RSD	12.200	3.7657	89.202	.42624	.31871	1.9519	.57045	3.2873
#1	.00316	.00823	.00355	5.1330	49.302	.10173	14.214	.17528
#2	.00323	.00810	.00078	5.1498	49.405	.10227	14.338	.17381
#3	.00256	.00765	.00092	5.1766	49.612	.10546	14.368	.16487
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	90.168	.00369	.00788	-.00122	.00230	.00147	11.287
Stddev	.00023	.210	.00039	.00442	.00289	.00119	.00467	.027
%RSD	50.114	.23246	10.480	56.105	237.50	51.496	317.01	.23968
#1	.00031	90.009	.00403	.01267	.00108	.00337	.00397	11.318
#2	.00033	90.090	.00327	.00394	-.00447	.00102	-.00391	11.275
#3	.00071	90.405	.00377	.00704	-.00027	.00252	.00436	11.268
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606082203 Acquired: 6/25/2016 13:37:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.79119**	**.00045**	**-.00075**	**.00043**	**.00534**	**-.00006**
Stddev	.00030	.00071	.00315	.00229	.00033	.00006	.00108
%RSD	437.99	.09029	691.72	303.10	75.619	1.1956	1667.5
#1	-.00035	.79036	-.00147	.00135	.00018	.00529	-.00108
#2	-.00009	.79165	-.00125	-.00319	.00032	.00542	.00108
#3	.00024	.79155	.00408	-.00042	.00080	.00532	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9649.6**	**58766.**	**3005.5**
Stddev	29.5	106.	1.2
%RSD	.30621	.18076	.04053
#1	9617.1	58644.	3006.7
#2	9657.0	58831.	3005.5
#3	9674.8	58825.	3004.3

Approved: June 27, 2016

Sample Name: L1606082202 Acquired: 6/25/2016 13:40:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573973-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00163**	**.00700**	**-.00255**	**.09063**	**.14584**	**.00010**	**6.2202**	**-.00011**
Stddev	.00068	.00493	.00215	.00172	.00146	.00002	.0817	.00004
%RSD	41.927	70.458	84.324	1.8967	.99792	21.043	1.3126	39.110
#1	.00225	.01016	-.00441	.09032	.14618	.00008	6.1515	-.00007
#2	.00090	.00132	-.00302	.08908	.14425	.00013	6.1986	-.00016
#3	.00175	.00952	-.00020	.09248	.14710	.00010	6.3104	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.00096**	**.00077**	**2.0756**	**1.5049**	**.02492**	**4.3992**	**.07622**
Stddev	.00041	.00002	.00085	.0056	.1629	.00329	.1257	.00201
%RSD	1133.0	2.0322	110.52	.26897	10.822	13.197	2.8567	2.6344
#1	-.00024	.00097	.00165	2.0692	1.6925	.02131	4.4123	.07724
#2	.00043	.00097	.00070	2.0781	1.3995	.02572	4.2675	.07752
#3	-.00030	.00094	-.00004	2.0795	1.4227	.02774	4.5178	.07391
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**83.246**	**.00061**	**.10079**	**.00421**	**-.00520**	**.00452**	**12.135**
Stddev	.00009	.263	.00086	.00636	.00131	.00271	.00174	.029
%RSD	36.387	.31568	140.09	6.3065	31.208	52.125	38.464	.24257
#1	-.00033	83.275	.00060	.10060	.00298	-.00301	.00254	12.154
#2	-.00015	82.970	.00147	.10724	.00559	-.00823	.00579	12.151
#3	-.00025	83.493	-.00024	.09454	.00404	-.00437	.00523	12.101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606082202 Acquired: 6/25/2016 13:40:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573973-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	.21054	.00087	-.00133	-.00012	.00182	.00052
Stddev	.00041	.00091	.00263	.00076	.00048	.00007	.00152
%RSD	145.47	.43126	300.38	57.105	397.63	3.7016	294.24
#1	.00007	.21002	.00237	-.00045	.00028	.00184	-.00094
#2	.00003	.21002	.00241	-.00174	.00001	.00175	.00210
#3	.00076	.21159	-.00216	-.00179	-.00065	.00188	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9729.1	59376.	3030.4
Stddev	8.6	260.	19.9
%RSD	.08835	.43738	.65516
#1	9720.3	59079.	3018.5
#2	9729.3	59490.	3053.3
#3	9737.5	59559.	3019.5

Approved: June 27, 2016

Sample Name: L1606082202PS Acquired: 6/25/2016 13:44:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573973-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19375**	**4.8752**	**.19613**	**1.0291**	**.62833**	**.02428**	**10.648**	**.02477**
Stddev	.00051	.0099	.00160	.0019	.00588	.00006	.170	.00011
%RSD	.26273	.20232	.81334	.18131	.93614	.24036	1.5959	.45206
#1	.19417	4.8642	.19702	1.0298	.63084	.02431	10.660	.02468
#2	.19391	4.8782	.19429	1.0305	.63254	.02431	10.812	.02489
#3	.19319	4.8832	.19709	1.0270	.62161	.02421	10.473	.02473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09829**	**.24324**	**.24855**	**3.8486**	**25.821**	**.52335**	**8.7582**	**.31225**
Stddev	.00082	.00053	.00056	.0314	.285	.00671	.0434	.00355
%RSD	.83225	.21842	.22566	.81716	1.1038	1.2812	.49530	1.1380
#1	.09742	.24374	.24849	3.8714	25.861	.52361	8.7634	.31338
#2	.09905	.24330	.24914	3.8618	26.083	.52993	8.7125	.31510
#3	.09841	.24268	.24802	3.8128	25.517	.51653	8.7988	.30827
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50486**	**99.997**	**.24562**	**4.8721**	**.24648**	**.59017**	**.19243**	**13.471**
Stddev	.00060	.660	.00153	.0054	.00424	.00393	.00054	.013
%RSD	.11858	.66045	.62190	.11137	1.7208	.66559	.28037	.09301
#1	.50422	100.35	.24553	4.8783	.24168	.58648	.19181	13.458
#2	.50541	100.41	.24414	4.8682	.24971	.59430	.19267	13.471
#3	.50494	99.235	.24719	4.8698	.24807	.58975	.19281	13.483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606082202PS Acquired: 6/25/2016 13:44:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573973-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48807**	**.68216**	**.50019**	**.24323**	**.49372**	**.48957**	**.00258**
Stddev	.00205	.00533	.01089	.00117	.00097	.00018	.00106
%RSD	.41999	.78112	2.1777	.48173	.19621	.03662	41.003
#1	.49029	.68537	.51266	.24188	.49454	.48951	.00281
#2	.48770	.68509	.49539	.24396	.49265	.48978	.00349
#3	.48624	.67601	.49252	.24385	.49397	.48943	.00142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9652.9**	**58738.**	**3022.5**
Stddev	16.4	44.	32.4
%RSD	.17031	.07498	1.0716
#1	9668.7	58757.	3005.1
#2	9654.1	58688.	3002.5
#3	9635.9	58769.	3059.8

Approved: June 27, 2016

Sample Name: L1606082202SDL Acquired: 6/25/2016 13:48:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573973-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00041	-.00874	.00232	.01966	.02846	.00012	1.1981	-.00020
Stddev	.00102	.00520	.00129	.00166	.00164	.00003	.0364	.00029
%RSD	249.96	59.552	55.713	8.4558	5.7787	28.080	3.0406	145.60
#1	-.00049	-.00387	.00244	.02114	.03034	.00013	1.2234	-.00054
#2	.00065	-.00812	.00098	.01996	.02778	.00008	1.1564	-.00008
#3	-.00139	-.01423	.00356	.01786	.02727	.00014	1.2146	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	.00097	.00049	.42314	.31666	.00414	.84994	.01478
Stddev	.00036	.00092	.00031	.02269	.03395	.00078	.10125	.00159
%RSD	202.36	94.832	64.039	5.3615	10.720	18.849	11.912	10.770
#1	-.00059	-.00007	.00031	.40193	.27970	.00483	.89447	.01388
#2	-.00002	.00128	.00031	.42043	.32384	.00429	.92129	.01385
#3	.00008	.00169	.00086	.44706	.34645	.00330	.73406	.01662
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	16.797	-.00010	.02573	.00379	-.00654	-.00062	2.4606
Stddev	.00016	.116	.00075	.00347	.00211	.00206	.00121	.0014
%RSD	105.18	.68795	766.63	13.470	55.760	31.494	195.90	.05654
#1	-.00025	16.870	-.00048	.02714	.00159	-.00786	-.00167	2.4590
#2	-.00024	16.856	-.00058	.02827	.00580	-.00417	-.00090	2.4616
#3	.00003	16.663	.00077	.02178	.00399	-.00761	.00071	2.4611
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606082202SDL Acquired: 6/25/2016 13:48:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573973-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00034**	**.04233**	**.00225**	**-.00298**	**.00005**	**.00069**	**.00014**
Stddev	.00035	.00076	.00380	.00312	.00068	.00008	.00023
%RSD	102.54	1.7878	169.10	104.78	1298.3	11.967	160.88
#1	-.00033	.04309	.00306	.00056	-.00034	.00074	-.00011
#2	.00000	.04232	.00558	-.00534	-.00035	.00059	.00032
#3	-.00071	.04157	-.00189	-.00415	.00084	.00073	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10112.**	**61959.**	**3102.5**
Stddev	25.	335.	21.2
%RSD	.24804	.54051	.68302
#1	10140.	62322.	3081.9
#2	10091.	61890.	3101.4
#3	10107.	61663.	3124.2

Approved: June 27, 2016

Sample Name: L1606082202SDL Acquired: 6/25/2016 13:52:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573973-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**-.00201**	**.00162**	**.00506**	**.00674**	**.00009**	**.22194**	**.00006**
Stddev	.00098	.00612	.00099	.00223	.00036	.00007	.03121	.00010
%RSD	701.06	303.84	61.332	44.136	5.3564	71.933	14.062	159.17
#1	-.00091	-.00825	.00149	.00575	.00715	.00008	.25227	.00003
#2	-.00048	-.00177	.00268	.00256	.00663	.00004	.22363	-.00001
#3	.00097	.00398	.00070	.00686	.00645	.00017	.18992	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.00003**	**.00093**	**.10294**	**.07211**	**-.00053**	**.11677**	**.00303**
Stddev	.00044	.00176	.00026	.00844	.06933	.00190	.04489	.00266
%RSD	660.12	5191.6	27.598	8.2017	96.144	360.65	38.441	87.562
#1	-.00052	.00076	.00092	.11264	.12436	-.00025	.12873	.00344
#2	.00037	-.00197	.00068	.09726	-.00654	-.00255	.06712	.00020
#3	-.00005	.00131	.00120	.09891	.09851	.00122	.15447	.00546
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00046**	**3.4626**	**-.00095**	**.01102**	**.00309**	**-.00448**	**.00254**	**.52285**
Stddev	.00009	.0579	.00053	.00740	.00233	.00663	.00646	.00911
%RSD	18.881	1.6714	55.686	67.190	75.440	147.88	254.92	1.7427
#1	-.00041	3.4180	-.00056	.01783	.00042	-.00172	-.00323	.51493
#2	-.00042	3.4418	-.00074	.01207	.00473	-.01205	.00952	.52082
#3	-.00056	3.5280	-.00155	.00314	.00412	.00032	.00131	.53281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606082202SDL Acquired: 6/25/2016 13:52:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573973-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00039**	**.00876**	**-.00160**	**-.00170**	**.00064**	**.00048**	**.00025**
Stddev	.00024	.00020	.00243	.00072	.00151	.00001	.00052
%RSD	61.212	2.3382	151.62	42.632	234.58	1.6034	205.72
#1	-.00036	.00876	-.00015	-.00219	-.00097	.00048	.00032
#2	-.00064	.00897	-.00025	-.00087	.00088	.00049	-.00030
#3	-.00017	.00856	-.00441	-.00204	.00202	.00048	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10010.**	**61091.**	**3050.7**
Stddev	14.	94.	16.7
%RSD	.14368	.15455	.54708
#1	9999.9	61099.	3067.0
#2	10027.	60993.	3033.7
#3	10004.	61182.	3051.5

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 13:56:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39703	9.8823	.39208	.48360	.99649	.04877	9.9442
Stddev	.00097	.0185	.00108	.00155	.00485	.00012	.0391
%RSD	.24464	.18766	.27635	.32015	.48698	.23806	.39293
#1	.39651	9.9033	.39094	.48432	.99107	.04885	9.8991
#2	.39815	9.8682	.39222	.48182	1.0004	.04883	9.9670
#3	.39642	9.8754	.39309	.48466	.99796	.04864	9.9665
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04952	.19590	.48861	.49872	3.9553	49.086	.99832
Stddev	.00026	.00028	.00039	.00131	.0110	.181	.00236
%RSD	.52554	.14170	.07934	.26171	.27922	.36920	.23624
#1	.04970	.19602	.48888	.50017	3.9554	48.878	.99571
#2	.04922	.19610	.48816	.49764	3.9662	49.210	1.0003
#3	.04964	.19559	.48877	.49836	3.9441	49.170	.99895
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.6989	.49966	.99513	49.378	.49577	9.7713	.49937
Stddev	.0286	.00128	.00487	.189	.00112	.0077	.00125
%RSD	.29470	.25687	.48908	.38358	.22653	.07875	.25024
#1	9.6936	.49933	.99926	49.226	.49626	9.7672	.49899
#2	9.6733	.50107	.99636	49.590	.49656	9.7802	.50076
#3	9.7297	.49857	.98976	49.317	.49448	9.7665	.49835
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 13:56:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1744**	**.39516**	**5.0749**	**.97934**	**.99997**	**.99747**	**.49995**
Stddev	.0050	.00337	.0045	.00061	.00261	.00842	.00315
%RSD	.42778	.85272	.08873	.06267	.26098	.84451	.63052
#1	1.1693	.39868	5.0732	.98005	.99777	.99280	.50104
#2	1.1793	.39197	5.0800	.97900	1.0028	1.0072	.49639
#3	1.1748	.39484	5.0715	.97897	.99928	.99242	.50240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.98727**	**.98962**	F **2.8790**
Stddev	.00224	.00122	.0125
%RSD	.22699	.12332	.43408
#1	.98696	.98924	2.8649
#2	.98519	.99098	2.8888
#3	.98965	.98864	2.8834
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9881.8**	**60025.**	**3051.6**
Stddev	7.5	117.	13.0
%RSD	.07613	.19437	.42745
#1	9874.3	60038.	3066.6
#2	9889.3	60134.	3043.0
#3	9881.9	59902.	3045.3

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 14:00:01 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00037	.00384	.00171	.00288	.00164	.00016	-.02160	-.00002
Stddev	.00056	.00607	.00179	.00157	.00101	.00008	.03268	.00008
%RSD	153.00	158.06	104.81	54.496	61.686	49.488	151.32	357.31
#1	-.00082	.00133	.00363	.00341	.00099	.00008	-.05876	.00002
#2	-.00054	.01077	.00142	.00412	.00280	.00016	-.00868	-.00011
#3	.00026	-.00057	.00008	.00112	.00111	.00023	.00265	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.00089	.00145	.02539	.05830	-.00178	-.00516	-.00289
Stddev	.00025	.00059	.00085	.02878	.16368	.00331	.04118	.00267
%RSD	184.36	65.782	58.421	113.33	280.73	185.62	797.74	92.366
#1	-.00007	.00150	.00078	.04856	-.06991	-.00470	-.03370	-.00034
#2	.00042	.00086	.00240	.03444	.24267	-.00246	.04205	-.00265
#3	.00006	.00033	.00117	-.00682	.00216	.00181	-.02383	-.00566
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00312	.01750	-.00036	.00463	.00110	.00408	.00171	-.00349
Stddev	.00035	.01788	.00074	.00054	.00119	.00430	.00409	.00216
%RSD	11.208	102.15	207.33	11.581	107.78	105.36	238.51	61.802
#1	.00276	.00856	.00044	.00497	-.00027	-.00057	.00622	-.00129
#2	.00346	.03809	-.00047	.00401	.00175	.00791	-.00177	-.00560
#3	.00314	.00586	-.00104	.00491	.00181	.00489	.00070	-.00357
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 14:00:01 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.00055	-.00034	-.00341	.00088	.00013	.00321
Stddev	.00088	.00013	.00661	.00148	.00029	.00021	.00123
%RSD	577.33	24.369	1964.7	43.438	32.521	159.30	38.279
#1	-.00076	.00044	.00453	-.00437	.00106	-.00009	.00194
#2	.00100	.00070	.00232	-.00416	.00055	.00032	.00329
#3	.00022	.00052	-.00786	-.00171	.00104	.00016	.00439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9674.1	59179.	2989.6
Stddev	10.8	80.	18.0
%RSD	.11204	.13474	.60268
#1	9680.4	59116.	2972.7
#2	9661.6	59269.	3008.6
#3	9680.2	59153.	2987.4

Approved: June 27, 2016

Sample Name: L1606082302 Acquired: 6/25/2016 14:03:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.01235**	**.00398**	**.02065**	**7.6114**	**.00014**	**242.99**
Stddev	.00016	.00738	.00092	.00248	.0086	.00009	.50
%RSD	156.01	59.723	23.024	12.009	.11234	64.318	.20416
#1	-.00023	.01740	.00411	.01789	7.6202	.00016	242.85
#2	-.00014	.01576	.00483	.02137	7.6109	.00023	243.54
#3	.00007	.00389	.00301	.02270	7.6032	.00004	242.58
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00045**	**.05380**	**.00122**	**.00261**	**4.4999**	**3.4068**	**.13022**
Stddev	.00043	.00087	.00035	.00011	.0119	.0234	.00431
%RSD	95.240	1.6084	28.402	4.2649	.26410	.68699	3.3105
#1	-.00003	.05465	.00142	.00253	4.4869	3.3837	.13493
#2	.00060	.05384	.00143	.00274	4.5026	3.4062	.12925
#3	.00078	.05292	.00082	.00256	4.5101	3.4305	.12648
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**186.55**	**.80417**	**.00043**	F **676.67**	**.01798**	**.04840**	**.00356**
Stddev	.43	.00344	.00029	5.78	.00081	.00767	.00232
%RSD	.22901	.42830	67.402	.85481	4.4962	15.839	65.024
#1	186.94	.80321	.00050	676.18	.01876	.05723	.00107
#2	186.09	.80800	.00067	682.68	.01714	.04349	.00566
#3	186.63	.80131	.00011	671.15	.01803	.04447	.00396
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 27, 2016

Sample Name: L1606082302 Acquired: 6/25/2016 14:03:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00329	-.00499	17.541	.00002	5.8024	F -.03279	-.00373
Stddev	.00417	.00266	.115	.00016	.0077	.00249	.00217
%RSD	126.77	53.331	.65409	771.83	.13255	7.6037	58.233
#1	-.00765	-.00207	17.622	-.00016	5.8086	-.03219	-.00297
#2	-.00289	-.00563	17.591	.00008	5.8048	-.03065	-.00619
#3	.00066	-.00727	17.409	.00014	5.7938	-.03553	-.00205
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00105	.00822	.00588
Stddev	.00081	.00012	.00100
%RSD	77.437	1.5051	16.931
#1	-.00020	.00826	.00695
#2	-.00112	.00832	.00498
#3	-.00182	.00808	.00571
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9001.2	54623.	2943.0
Stddev	12.7	293.	11.3
%RSD	.14121	.53595	.38250
#1	8986.8	54359.	2937.9
#2	9010.8	54574.	2935.3
#3	9006.1	54938.	2955.9

Approved: June 27, 2016

Sample Name: L1606082303 Acquired: 6/25/2016 14:07:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00097**	**.07689**	**.00082**	**.01317**	**4.0611**	**.00008**	**194.35**
Stddev	.00087	.00794	.00214	.00140	.0013	.00002	.19
%RSD	89.857	10.324	259.83	10.655	.03277	29.564	.09947
#1	.00177	.08422	.00140	.01160	4.0625	.00007	194.28
#2	.00005	.07798	.00261	.01363	4.0599	.00006	194.19
#3	.00109	.06846	-.00155	.01429	4.0610	.00010	194.56
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**.00720**	**.00128**	**.00172**	**.48254**	**1.5553**	**.05921**
Stddev	.00016	.00037	.00008	.00037	.03011	.0518	.00214
%RSD	37.982	5.1555	6.4501	21.255	6.2390	3.3303	3.6194
#1	.00025	.00709	.00125	.00159	.48289	1.5549	.05878
#2	.00056	.00690	.00137	.00144	.45226	1.5037	.05732
#3	.00044	.00762	.00121	.00214	.51247	1.6073	.06154
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**110.52**	**2.3053**	**-.00008**	F **614.40**	**.00312**	**.00621**	**.00333**
Stddev	.38	.0070	.00038	4.80	.00050	.00738	.00101
%RSD	.34277	.30352	457.85	.78181	15.943	118.75	30.264
#1	110.96	2.3090	-.00052	609.47	.00307	-.00184	.00218
#2	110.30	2.2972	.00010	614.65	.00363	.01264	.00406
#3	110.30	2.3096	.00018	619.07	.00264	.00783	.00375
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 27, 2016

Sample Name: L1606082303 Acquired: 6/25/2016 14:07:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00131	-.00398	12.572	-.00061	3.7282	-.02186	-.00195
Stddev	.00101	.00138	.069	.00058	.0049	.00737	.00114
%RSD	77.475	34.690	.54565	95.484	.12996	33.713	58.500
#1	-.00178	-.00242	12.599	.00005	3.7247	-.01374	-.00282
#2	-.00014	-.00503	12.623	-.00084	3.7262	-.02372	-.00066
#3	-.00200	-.00451	12.494	-.00105	3.7337	-.02812	-.00237
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00017	.00519	.00587
Stddev	.00034	.00017	.00146
%RSD	196.61	3.3392	24.813
#1	.00020	.00538	.00454
#2	-.00026	.00515	.00565
#3	-.00046	.00504	.00743
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9113.2	55170.	2962.5
Stddev	17.2	284.	10.8
%RSD	.18895	.51491	.36572
#1	9120.9	54953.	2952.0
#2	9093.5	55065.	2973.6
#3	9125.3	55492.	2961.9

Approved: June 27, 2016

Sample Name: L1606082304 Acquired: 6/25/2016 14:12:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00108**	**.00282**	**.00375**	**.01195**	**1.2873**	**.00004**	**44.812**	**-.00032**
Stddev	.00081	.00175	.00233	.00191	.0068	.00003	.140	.00033
%RSD	75.442	62.066	62.147	15.958	.52861	68.482	.31190	102.13
#1	-.00032	.00374	.00333	.01352	1.2889	.00004	44.884	-.00060
#2	-.00194	.00392	.00166	.00983	1.2799	.00001	44.651	.00004
#3	-.00098	.00080	.00626	.01250	1.2932	.00007	44.900	-.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00062**	**-.00235**	**.00403**	**80.696**	**3.0351**	**.04425**	**27.190**	**1.4212**
Stddev	.00024	.00090	.00186	.288	.0674	.00194	.251	.0124
%RSD	38.213	38.227	46.192	.35704	2.2197	4.3802	.92249	.86964
#1	.00059	-.00132	.00534	80.883	2.9579	.04406	26.967	1.4224
#2	.00088	-.00276	.00485	80.364	3.0650	.04628	27.141	1.4083
#3	.00040	-.00297	.00190	80.840	3.0823	.04242	27.462	1.4329
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00083**	**136.40**	**.00117**	**.05473**	**.00702**	**-.00148**	**-.00406**	**16.093**
Stddev	.00029	.62	.00056	.00919	.00288	.00326	.00473	.052
%RSD	35.125	.45656	47.701	16.792	41.072	220.80	116.61	.32014
#1	-.00064	136.42	.00054	.06475	.00887	-.00465	-.00925	16.145
#2	-.00116	135.77	.00135	.05277	.00848	.00187	.00003	16.091
#3	-.00068	137.01	.00161	.04668	.00370	-.00165	-.00296	16.042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606082304 Acquired: 6/25/2016 14:12:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00141**	**1.0265**	**.02088**	**-.00129**	**-.00025**	**.01157**	**-.01042**
Stddev	.00052	.0054	.00601	.00283	.00173	.00020	.00036
%RSD	36.987	.52659	28.762	219.55	704.92	1.7611	3.4676
#1	.00201	1.0281	.02616	-.00374	-.00225	.01176	-.01080
#2	.00117	1.0205	.01435	.00181	.00074	.01159	-.01039
#3	.00105	1.0309	.02213	-.00193	.00077	.01136	-.01008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9584.5**	**58328.**	**2992.4**
Stddev	11.8	87.	5.0
%RSD	.12317	.14881	.16820
#1	9573.1	58228.	2986.6
#2	9583.6	58387.	2995.2
#3	9596.7	58368.	2995.4

Approved: June 27, 2016

Sample Name: L1606114801 Acquired: 6/25/2016 14:15:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00263	.73135	.00385	.12210	.08262	.00020	27.646	.00018
Stddev	.00073	.00428	.00128	.00118	.00156	.00004	.096	.00015
%RSD	27.764	.58467	33.324	.96789	1.8866	19.880	.34678	80.450
#1	.00220	.73627	.00263	.12346	.08403	.00016	27.689	.00009
#2	.00223	.72927	.00372	.12147	.08287	.00024	27.713	.00035
#3	.00348	.72851	.00519	.12136	.08095	.00020	27.536	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	.00138	.00319	.50952	4.5430	.00820	13.834	.02681
Stddev	.00058	.00089	.00080	.00314	.0592	.00406	.158	.00190
%RSD	107.78	64.361	25.113	.61565	1.3042	49.473	1.1398	7.0691
#1	-.00010	.00066	.00412	.50590	4.4785	.00685	13.879	.02807
#2	.00067	.00110	.00265	.51133	4.5951	.01276	13.964	.02463
#3	.00103	.00237	.00282	.51133	4.5554	.00499	13.658	.02774
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00124	65.018	.00157	.05465	.00287	-.00148	.00632	4.3760
Stddev	.00020	.232	.00022	.00221	.00233	.00288	.00218	.0207
%RSD	16.215	.35629	13.957	4.0445	81.267	194.34	34.507	.47244
#1	.00141	65.009	.00133	.05367	.00373	-.00288	.00878	4.3946
#2	.00130	65.254	.00176	.05719	.00465	-.00339	.00555	4.3795
#3	.00102	64.791	.00160	.05310	.00023	.00183	.00463	4.3537
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606114801 Acquired: 6/25/2016 14:15:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00055**	**.26681**	**.01202**	**-.00269**	**.00480**	**.00516**	**.00567**
Stddev	.00125	.00125	.00081	.00070	.00038	.00011	.00071
%RSD	227.21	.46986	6.7372	25.927	7.9446	2.0641	12.451
#1	-.00072	.26656	.01275	-.00259	.00452	.00521	.00488
#2	.00178	.26818	.01115	-.00205	.00524	.00504	.00622
#3	.00058	.26571	.01216	-.00344	.00465	.00524	.00592
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9685.5**	**59237.**	**3013.9**
Stddev	15.3	70.	21.8
%RSD	.15804	.11840	.72168
#1	9667.9	59212.	3004.6
#2	9692.8	59182.	2998.3
#3	9695.8	59316.	3038.7

Approved: June 27, 2016

Sample Name: L1606114802 Acquired: 6/25/2016 14:19:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00086	.02576	.00392	.13054	.14235	.00004	53.032	.00013
Stddev	.00161	.00264	.00128	.00304	.00093	.00006	.088	.00011
%RSD	186.85	10.249	32.777	2.3320	.65273	165.85	.16643	81.772
#1	-.00048	.02479	.00505	.13055	.14272	-.00002	52.942	.00017
#2	.00053	.02374	.00418	.13357	.14130	.00011	53.037	.00022
#3	-.00263	.02875	.00252	.12748	.14305	.00003	53.119	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.00416	.00255	.05069	2.7172	.00979	45.232	.00619
Stddev	.00057	.00090	.00135	.00895	.0969	.00331	.213	.00128
%RSD	70.201	21.666	53.148	17.648	3.5679	33.803	.47142	20.757
#1	.00109	.00488	.00157	.05068	2.6091	.01132	44.992	.00715
#2	.00016	.00315	.00198	.05964	2.7964	.01206	45.307	.00668
#3	.00119	.00444	.00409	.04175	2.7463	.00599	45.398	.00473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	113.30	.00198	.03363	.00397	-.00032	.00108	5.7426
Stddev	.00005	.15	.00097	.00220	.00496	.00242	.00246	.0270
%RSD	9.2544	.13423	48.767	6.5321	124.89	765.53	227.39	.46957
#1	.00062	113.13	.00098	.03204	.00115	-.00095	-.00128	5.7131
#2	.00062	113.39	.00206	.03614	.00107	.00236	.00363	5.7660
#3	.00052	113.39	.00290	.03272	.00971	-.00236	.00090	5.7486
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606114802 Acquired: 6/25/2016 14:19:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**.36906**	**-.00370**	**-.00072**	**.00779**	**.00692**	**.00331**
Stddev	.00028	.00064	.00411	.00265	.00075	.00021	.00138
%RSD	191.03	.17400	110.98	366.07	9.6620	3.0569	41.716
#1	-.00017	.36882	.00101	-.00049	.00853	.00671	.00489
#2	.00034	.36857	-.00557	.00180	.00703	.00713	.00270
#3	.00027	.36978	-.00654	-.00348	.00781	.00694	.00235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9627.8**	**58951.**	**3062.4**
Stddev	26.1	26.	1.9
%RSD	.27151	.04447	.06237
#1	9657.6	58927.	3060.7
#2	9617.0	58947.	3062.0
#3	9608.7	58979.	3064.5

Approved: June 27, 2016

Sample Name: L1606115001 Acquired: 6/25/2016 14:23:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00134	.94860	.00623	.13672	.10593	.00014	35.066	.00002
Stddev	.00163	.01243	.00298	.00233	.00120	.00009	.208	.00013
%RSD	122.05	1.3105	47.819	1.7071	1.1370	65.235	.59262	741.62
#1	-.00020	.96246	.00332	.13853	.10456	.00018	34.826	.00011
#2	.00116	.93843	.00928	.13754	.10682	.00004	35.168	-.00013
#3	.00306	.94490	.00609	.13408	.10640	.00021	35.202	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00095	.00115	.00402	.75423	2.6231	.00517	21.361	.05361
Stddev	.00038	.00077	.00076	.00983	.0329	.00134	.091	.00159
%RSD	39.586	67.102	19.015	1.3028	1.2541	25.927	.42723	2.9705
#1	.00055	.00114	.00333	.74497	2.6490	.00636	21.310	.05382
#2	.00102	.00192	.00389	.75319	2.6342	.00372	21.307	.05192
#3	.00129	.00038	.00484	.76454	2.5861	.00543	21.467	.05508
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00320	114.16	.00202	.11444	.00566	-.00032	.00352	5.0408
Stddev	.00062	.45	.00043	.00615	.00453	.00176	.00035	.0084
%RSD	19.542	.39163	21.028	5.3725	80.076	549.83	10.037	.16741
#1	.00290	113.69	.00211	.12072	.00935	.00043	.00314	5.0497
#2	.00278	114.20	.00240	.11417	.00060	.00094	.00356	5.0330
#3	.00392	114.58	.00156	.10843	.00702	-.00233	.00385	5.0397
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115001 Acquired: 6/25/2016 14:23:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**.24066**	**.01417**	**-.00245**	**.00766**	**.00892**	**.00404**
Stddev	.00021	.00154	.00348	.00225	.00065	.00011	.00127
%RSD	805.05	.63820	24.568	91.853	8.5297	1.1926	31.485
#1	.00024	.23889	.01059	-.00116	.00840	.00901	.00275
#2	.00001	.24171	.01754	-.00114	.00737	.00895	.00530
#3	-.00018	.24137	.01438	-.00504	.00719	.00880	.00407
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9688.5**	**58932.**	**3057.0**
Stddev	25.8	93.	13.7
%RSD	.26652	.15746	.44955
#1	9698.0	58835.	3047.2
#2	9708.3	59020.	3072.7
#3	9659.3	58940.	3051.0

Approved: June 27, 2016

Sample Name: L1606115002 Acquired: 6/25/2016 14:27:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00203	.48878	.00167	.06520	.04585	.00006	17.152	.00001
Stddev	.00268	.01554	.00141	.00090	.00204	.00009	.173	.00009
%RSD	131.70	3.1791	84.852	1.3869	4.4598	167.56	1.0064	934.85
#1	.00187	.50660	.00286	.06544	.04801	.00015	17.256	-.00009
#2	-.00056	.47801	.00204	.06596	.04394	-.00004	16.953	.00007
#3	.00479	.48175	.00010	.06420	.04559	.00005	17.247	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00168	.00243	.39846	4.7446	.00319	5.4375	.01729
Stddev	.00031	.00066	.00184	.00667	.1185	.00289	.0385	.00153
%RSD	100.89	39.152	75.822	1.6749	2.4966	90.823	.70870	8.8325
#1	.00065	.00096	.00122	.39954	4.7392	.00001	5.4553	.01884
#2	.00006	.00183	.00151	.39131	4.6289	.00567	5.3932	.01727
#3	.00020	.00224	.00454	.40452	4.8657	.00387	5.4638	.01578
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	38.880	.00010	.07228	.00433	-.00020	.00027	1.5503
Stddev	.00033	.402	.00056	.00820	.00375	.00324	.00590	.0251
%RSD	119.49	1.0347	568.40	11.341	86.648	1601.4	2189.5	1.6195
#1	-.00010	39.210	-.00001	.06867	.00198	.00127	.00262	1.5658
#2	.00053	38.432	.00070	.06650	.00235	-.00392	-.00644	1.5637
#3	.00040	38.999	-.00040	.08166	.00865	.00205	.00464	1.5213
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115002 Acquired: 6/25/2016 14:27:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00004**	**.09712**	**.00701**	**-.00122**	**.00599**	**.00508**	**.00239**
Stddev	.00062	.00057	.00249	.00352	.00080	.00018	.00169
%RSD	1544.5	.58817	35.547	288.53	13.353	3.5369	70.760
#1	.00058	.09776	.00445	-.00524	.00624	.00503	.00322
#2	-.00064	.09666	.00715	.00026	.00510	.00528	.00044
#3	.00018	.09693	.00942	.00132	.00664	.00493	.00349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9845.3**	**59884.**	**3057.5**
Stddev	61.7	141.	28.2
%RSD	.62651	.23463	.92251
#1	9792.5	59732.	3034.3
#2	9830.2	60008.	3088.9
#3	9913.1	59914.	3049.2

Approved: June 27, 2016

Sample Name: L1606115102 Acquired: 6/25/2016 14:31:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00159	.14924	.00211	.10945	.07344	.00012	35.265	.00011
Stddev	.00084	.00304	.00150	.00214	.00141	.00005	.199	.00019
%RSD	53.011	2.0340	71.147	1.9507	1.9218	40.963	.56552	183.34
#1	.00069	.14626	.00205	.10856	.07211	.00007	35.174	.00027
#2	.00171	.15233	.00364	.10790	.07329	.00017	35.493	-.00011
#3	.00236	.14912	.00064	.11188	.07492	.00013	35.127	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.00053	.00363	.24070	2.2004	.00754	18.847	.05800
Stddev	.00037	.00064	.00076	.00439	.0134	.00192	.227	.00368
%RSD	71.691	119.20	20.837	1.8247	.61086	25.451	1.2033	6.3535
#1	.00009	-.00001	.00323	.23564	2.1949	.00870	18.615	.05962
#2	.00071	.00038	.00450	.24286	2.2158	.00532	19.068	.05378
#3	.00075	.00124	.00316	.24359	2.1907	.00860	18.858	.06059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00267	93.416	.00066	.05411	.00356	-.00299	.00235	4.9794
Stddev	.00025	.232	.00043	.00846	.00271	.00266	.00452	.0235
%RSD	9.2843	.24821	65.257	15.640	76.210	88.939	192.50	.47215
#1	.00239	93.189	.00082	.06384	.00043	-.00008	-.00245	4.9968
#2	.00274	93.652	.00099	.04849	.00522	-.00529	.00653	4.9888
#3	.00288	93.408	.00017	.05000	.00501	-.00360	.00296	4.9527
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115102 Acquired: 6/25/2016 14:31:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.22720	-.00049	-.00434	.00477	.01199	.00282
Stddev	.00094	.00191	.00341	.00316	.00052	.00018	.00083
%RSD	624.90	.83946	689.70	72.807	10.840	1.4772	29.345
#1	.00091	.22526	.00103	-.00351	.00496	.01201	.00271
#2	-.00090	.22907	-.00440	-.00783	.00516	.01216	.00370
#3	.00043	.22727	.00189	-.00168	.00418	.01181	.00206
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9596.9	58682.	3041.4
Stddev	35.1	192.	10.5
%RSD	.36599	.32727	.34598
#1	9558.5	58834.	3032.3
#2	9605.0	58747.	3039.1
#3	9627.4	58466.	3052.9

Approved: June 27, 2016

Sample Name: L1606115105 Acquired: 6/25/2016 14:35:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	.08611	.00385	.13923	.09101	.00009	44.089	.00002
Stddev	.00149	.00500	.00146	.00310	.00028	.00009	.047	.00004
%RSD	320.61	5.8036	37.928	2.2254	.30236	102.05	.10587	146.93
#1	-.00016	.08678	.00262	.14146	.09069	.00015	44.139	.00006
#2	-.00061	.09074	.00347	.13569	.09114	.00014	44.082	.00002
#3	.00216	.08081	.00547	.14055	.09119	-.00002	44.046	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.00077	.00300	.22257	1.9197	.00784	24.665	.07651
Stddev	.00017	.00044	.00144	.01624	.0794	.00414	.178	.00017
%RSD	34.605	57.594	48.079	7.2986	4.1341	52.815	.72144	.22200
#1	.00066	.00116	.00292	.22095	1.8333	.01224	24.592	.07669
#2	.00046	.00029	.00448	.23956	1.9894	.00402	24.534	.07635
#3	.00033	.00086	.00160	.20719	1.9365	.00726	24.867	.07649
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00251	121.52	.00039	.04724	.00176	-.00202	.00114	5.9103
Stddev	.00040	.42	.00024	.00471	.00159	.00145	.00478	.0521
%RSD	16.119	.34732	62.165	9.9710	90.693	71.551	420.31	.88218
#1	.00228	121.85	.00064	.05267	.00005	-.00053	.00361	5.8778
#2	.00297	121.67	.00016	.04481	.00202	-.00342	.00418	5.9704
#3	.00227	121.04	.00037	.04425	.00320	-.00211	-.00437	5.8826
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115105 Acquired: 6/25/2016 14:35:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00058	.28912	-.00001	-.00113	.00539	.00821	.00159
Stddev	.00104	.00030	.00390	.00110	.00033	.00010	.00078
%RSD	180.18	.10436	27479.	97.280	6.0662	1.2671	48.813
#1	.00169	.28878	.00322	.00014	.00577	.00817	.00171
#2	.00041	.28919	.00108	-.00182	.00517	.00833	.00230
#3	-.00037	.28937	-.00434	-.00172	.00524	.00813	.00076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9591.1	58078.	3001.7
Stddev	50.0	111.	7.0
%RSD	.52084	.19101	.23475
#1	9648.1	57963.	2993.9
#2	9554.9	58185.	3007.6
#3	9570.3	58085.	3003.7

Approved: June 27, 2016

Sample Name: L1606115401 Acquired: 6/25/2016 14:39:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**.06369**	**.00211**	**1.6713**	**.01926**	**.00010**	F **452.03**
Stddev	.00322	.00656	.00351	.0005	.00118	.00010	.89
%RSD	1157.9	10.295	166.24	.02810	6.1016	104.76	.19751
#1	.00114	.06870	-.00193	1.6717	.01795	.00008	451.94
#2	.00198	.05626	.00441	1.6715	.02023	.00000	452.97
#3	-.00396	.06610	.00386	1.6708	.01959	.00021	451.19
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**.00175**	**.00336**	**.00358**	**.08657**	**4.0470**	**.10636**
Stddev	.00024	.00006	.00098	.00171	.01546	.0608	.00217
%RSD	56.333	3.4162	29.186	47.723	17.854	1.5017	2.0382
#1	.00015	.00180	.00230	.00410	.09591	4.0001	.10764
#2	.00053	.00168	.00424	.00167	.09508	4.1156	.10386
#3	.00059	.00177	.00354	.00498	.06873	4.0251	.10759
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**104.45**	**.25861**	**.02316**	F **889.97**	**.00046**	**.03619**	**.00320**
Stddev	.32	.00175	.00063	8.94	.00094	.00407	.00206
%RSD	.30573	.67823	2.7369	1.0045	203.65	11.246	64.428
#1	104.40	.26014	.02389	897.40	-.00019	.03795	.00082
#2	104.79	.25898	.02276	892.47	.00155	.03153	.00442
#3	104.16	.25670	.02283	880.05	.00003	.03907	.00435
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 27, 2016

Sample Name: L1606115401 Acquired: 6/25/2016 14:39:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.04556**	**5.0652**	**-.00092**	**8.3910**	F **-.05563**	**-.00220**
Stddev	.00340	.00461	.0400	.00030	.0291	.00259	.00257
%RSD	2618.0	10.119	.78890	32.506	.34723	4.6498	116.61
#1	-.00398	.04208	5.1054	-.00114	8.4061	-.05807	-.00507
#2	.00246	.05079	5.0645	-.00058	8.4095	-.05590	-.00010
#3	.00113	.04380	5.0255	-.00104	8.3574	-.05292	-.00145
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.01649**	**.00488**	**.00303**
Stddev	.00056	.00014	.00088
%RSD	3.4018	2.9544	29.046
#1	.01604	.00505	.00374
#2	.01712	.00480	.00205
#3	.01632	.00480	.00329
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8680.3**	**53198.**	**2985.6**
Stddev	180.6	1315.	22.8
%RSD	2.0805	2.4712	.76305
#1	8472.3	54211.	3004.6
#2	8770.9	53671.	2960.4
#3	8797.6	51712.	2991.9

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 14:43:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41555	10.459	.41251	.50877	1.0374	.05191	10.456
Stddev	.00198	.038	.00049	.00412	.0216	.00011	.214
%RSD	.47730	.36575	.11809	.80911	2.0778	.21811	2.0454
#1	.41688	10.435	.41304	.50472	1.0594	.05178	10.677
#2	.41327	10.438	.41238	.51295	1.0163	.05199	10.250
#3	.41650	10.503	.41210	.50863	1.0364	.05195	10.439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05257	.20726	.51590	.53004	4.1313	50.651	1.0395
Stddev	.00009	.00077	.00185	.00200	.0874	1.016	.0162
%RSD	.16567	.37212	.35803	.37798	2.1147	2.0061	1.5578
#1	.05256	.20724	.51397	.52980	4.1823	51.735	1.0578
#2	.05249	.20650	.51606	.52817	4.0304	49.720	1.0270
#3	.05266	.20804	.51766	.53216	4.1811	50.499	1.0337
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.150	.52278	1.0570	51.369	.52494	10.305	.52104
Stddev	.208	.00621	.0043	.990	.00089	.023	.00138
%RSD	2.0459	1.1888	.41022	1.9281	.16882	.22613	.26480
#1	10.382	.52905	1.0620	52.419	.52481	10.311	.51949
#2	10.083	.51662	1.0546	50.452	.52412	10.279	.52151
#3	9.9835	.52267	1.0544	51.234	.52588	10.325	.52213
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 14:43:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2435**	**.41340**	**5.3297**	**1.0365**	**1.0404**	**1.0490**	**.52867**
Stddev	.0031	.00239	.0078	.0027	.0194	.0184	.00366
%RSD	.25127	.57838	.14640	.26182	1.8676	1.7498	.69286
#1	1.2461	.41607	5.3340	1.0379	1.0597	1.0678	.52786
#2	1.2400	.41146	5.3207	1.0334	1.0208	1.0311	.53267
#3	1.2443	.41266	5.3345	1.0383	1.0408	1.0483	.52548
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0507**	**1.0444**	F **3.0477**
Stddev	.0007	.0005	.0535
%RSD	.06848	.05207	1.7552
#1	1.0503	1.0446	3.1080
#2	1.0502	1.0438	3.0059
#3	1.0515	1.0449	3.0292
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9539.3**	**57751.**	**2940.1**
Stddev	31.6	140.	48.7
%RSD	.33120	.24295	1.6549
#1	9524.0	57816.	2886.9
#2	9575.6	57847.	2982.3
#3	9518.3	57590.	2951.2

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 14:46:39 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00165	.00284	.00176	.00388	.00113	.00012	-.05362	.00014
Stddev	.00125	.01178	.00236	.00154	.00084	.00005	.04538	.00017
%RSD	75.692	415.29	134.23	39.663	74.227	41.354	84.617	118.22
#1	.00309	-.01077	.00340	.00450	.00053	.00007	-.00140	.00006
#2	.00089	.00942	.00281	.00212	.00078	.00011	-.07612	.00034
#3	.00097	.00986	-.00094	.00500	.00209	.00017	-.08336	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.00081	-.00057	.03333	.05011	.00030	.06903	-.00046
Stddev	.00028	.00137	.00241	.00857	.04565	.00118	.08939	.00080
%RSD	113.95	168.04	420.16	25.719	91.103	392.02	129.50	172.20
#1	.00053	-.00076	.00045	.02973	.09790	.00058	.12386	.00033
#2	.00023	.00164	-.00333	.02715	.04546	-.00100	-.03412	-.00045
#3	-.00003	.00157	.00116	.04312	.00696	.00132	.11734	-.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00329	.09636	-.00015	.00820	-.00027	.00540	.00512	-.00542
Stddev	.00036	.02670	.00052	.00425	.00262	.00178	.00316	.00074
%RSD	10.874	27.706	348.06	51.818	968.89	32.864	61.650	13.619
#1	.00316	.11195	.00032	.01302	.00232	.00377	.00634	-.00562
#2	.00301	.11159	-.00071	.00662	-.00021	.00729	.00749	-.00604
#3	.00369	.06553	-.00007	.00498	-.00292	.00514	.00154	-.00460
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 14:46:39 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.00084	-.00314	-.00152	.00124	-.00002	.00422
Stddev	.00043	.00035	.00315	.00163	.00162	.00008	.00071
%RSD	142.14	41.948	100.51	107.27	131.28	387.02	16.743
#1	.00054	.00124	-.00369	-.00248	.00007	.00002	.00481
#2	.00057	.00059	.00026	.00036	.00055	-.00012	.00343
#3	-.00019	.00069	-.00597	-.00244	.00309	.00004	.00441
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9509.0	57769.	2936.8
Stddev	19.9	100.	17.6
%RSD	.20940	.17266	.59912
#1	9496.2	57883.	2947.5
#2	9532.0	57728.	2946.4
#3	9498.9	57697.	2916.5

Approved: June 27, 2016

Sample Name: L1606115402S Acquired: 6/25/2016 14:50:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20060**	**4.9650**	**.19517**	**2.5768**	**.50183**	**.02406**	F **444.38**
Stddev	.00064	.0130	.00068	.0061	.00191	.00013	.71
%RSD	.32075	.26173	.35003	.23805	.38088	.54060	.15891
#1	.20131	4.9565	.19473	2.5781	.50380	.02409	444.63
#2	.20005	4.9586	.19596	2.5701	.50170	.02392	443.58
#3	.20045	4.9800	.19484	2.5821	.49998	.02418	444.92
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02442**	**.09295**	**.23551**	**.23263**	**1.9191**	**28.985**	**.61166**
Stddev	.00012	.00006	.00093	.00115	.0123	.093	.00400
%RSD	.49172	.06109	.39479	.49604	.64319	.32038	.65326
#1	.02431	.09291	.23631	.23296	1.9231	29.086	.60738
#2	.02455	.09302	.23573	.23359	1.9290	28.966	.61529
#3	.02440	.09293	.23449	.23135	1.9053	28.904	.61230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**105.95**	**.47454**	**.51043**	F **884.75**	**.22811**	**4.9353**	**.22750**
Stddev	.25	.00567	.00309	9.80	.00122	.0272	.00524
%RSD	.23467	1.1953	.60519	1.1073	.53281	.55168	2.3044
#1	105.68	.47627	.51271	882.43	.22677	4.9309	.23221
#2	106.17	.47914	.51168	876.32	.22915	4.9645	.22843
#3	105.99	.46820	.50692	895.49	.22841	4.9105	.22185
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 27, 2016

Sample Name: L1606115402S Acquired: 6/25/2016 14:50:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-07

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.58292**	**.23516**	**7.5230**	**.45764**	**8.4638**	**.43138**	**.22024**
Stddev	.00661	.00590	.0386	.00329	.0240	.00658	.00196
%RSD	1.1347	2.5090	.51250	.71986	.28403	1.5254	.88967
#1	.58964	.23313	7.5444	.46024	8.4871	.43835	.22044
#2	.58270	.23054	7.5461	.45874	8.4651	.43053	.22209
#3	.57642	.24181	7.4785	.45394	8.4391	.42527	.21819
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.50974**	**.45745**	**.02017**
Stddev	.00182	.00152	.00279
%RSD	.35750	.33182	13.807
#1	.50798	.45815	.01724
#2	.50964	.45849	.02049
#3	.51162	.45571	.02279
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8784.0**	**53813.**	**2939.5**
Stddev	58.9	564.	26.0
%RSD	.67031	1.0483	.88591
#1	8819.5	54202.	2951.8
#2	8816.5	54070.	2957.2
#3	8716.1	53166.	2909.6

Approved: June 27, 2016

Sample Name: L1606115403SD Acquired: 6/25/2016 14:54:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19884**	**5.0097**	**.20311**	**2.5960**	**.50146**	**.02443**	F **447.43**
Stddev	.00024	.0049	.00234	.0007	.00093	.00023	1.15
%RSD	.12160	.09827	1.1515	.02603	.18621	.94697	.25628
#1	.19893	5.0097	.20547	2.5958	.50254	.02464	447.39
#2	.19857	5.0047	.20308	2.5967	.50101	.02419	446.31
#3	.19903	5.0146	.20079	2.5954	.50084	.02448	448.60
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02483**	**.09451**	**.23821**	**.23915**	**1.9535**	**28.902**	**.60873**
Stddev	.00032	.00036	.00123	.00189	.0137	.108	.00282
%RSD	1.3026	.38369	.51502	.78901	.69899	.37351	.46252
#1	.02509	.09492	.23941	.23914	1.9479	29.020	.60854
#2	.02447	.09421	.23696	.23726	1.9691	28.808	.61163
#3	.02493	.09441	.23826	.24103	1.9435	28.877	.60601
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**106.60**	**.48110**	**.52231**	F **881.76**	**.23168**	**5.0586**	**.22685**
Stddev	.66	.00483	.00325	3.70	.00136	.0426	.00410
%RSD	.61507	1.0048	.62269	.41950	.58652	.84170	1.8079
#1	107.35	.47570	.52433	877.70	.23164	5.0964	.23130
#2	106.14	.48502	.51856	884.94	.23034	5.0125	.22604
#3	106.32	.48257	.52404	882.64	.23305	5.0670	.22322
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 27, 2016

Sample Name: L1606115403SD Acquired: 6/25/2016 14:54:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-08

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.59871**	**.24615**	**7.5687**	**.46699**	**8.5686**	**.42893**	**.22250**
Stddev	.00609	.00268	.0516	.00318	.0150	.00524	.00079
%RSD	1.0180	1.0870	.68153	.68125	.17550	1.2224	.35602
#1	.60575	.24920	7.6059	.46994	8.5810	.42717	.22334
#2	.59510	.24505	7.5098	.46362	8.5519	.42478	.22177
#3	.59529	.24419	7.5903	.46740	8.5730	.43482	.22237
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.51554**	**.46791**	**.00590**
Stddev	.00333	.00294	.00185
%RSD	.64552	.62860	31.408
#1	.51938	.47002	.00382
#2	.51356	.46455	.00651
#3	.51367	.46915	.00737
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8900.3**	**52138.**	**2849.7**
Stddev	61.9	226.	11.1
%RSD	.69538	.43440	.38823
#1	8858.0	51879.	2838.3
#2	8971.3	52295.	2860.4
#3	8871.6	52242.	2850.4

Approved: June 27, 2016

Sample Name: L1606115404 Acquired: 6/25/2016 14:58:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.00639	-.00036	.01270	.00241	.00013	.28017	.00009
Stddev	.00146	.00656	.00244	.00114	.00043	.00008	.03044	.00010
%RSD	248.07	102.69	686.61	9.0101	18.005	61.828	10.864	104.11
#1	.00089	-.00046	-.00313	.01156	.00227	.00022	.24651	.00012
#2	.00188	.01261	.00061	.01385	.00206	.00012	.28824	-.00001
#3	-.00100	.00700	.00146	.01270	.00289	.00005	.30576	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.01305	.00240	.07792	.04064	-.00228	.12469	.00253
Stddev	.00039	.00070	.00120	.00694	.09353	.00295	.18212	.00145
%RSD	747.32	5.3526	50.113	8.9064	230.14	129.38	146.06	57.512
#1	.00045	.01376	.00301	.08066	.00523	-.00157	.14106	.00090
#2	-.00033	.01305	.00317	.08306	.14671	-.00552	.29807	.00300
#3	.00004	.01236	.00101	.07002	-.03002	.00025	-.06507	.00369
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00228	.75291	.00807	.00690	.00300	-.00255	.00146	.13135
Stddev	.00024	.01638	.00065	.00315	.00148	.00424	.00328	.00151
%RSD	10.641	2.1753	8.1061	45.563	49.471	166.69	225.01	1.1485
#1	.00245	.73694	.00868	.00525	.00160	-.00242	-.00127	.13296
#2	.00238	.75210	.00738	.01053	.00455	-.00685	.00055	.13112
#3	.00200	.76967	.00814	.00493	.00285	.00163	.00509	.12997
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115404 Acquired: 6/25/2016 14:58:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00160	.00282	.00431	-.00324	.00105	.00371	.00033
Stddev	.00036	.00041	.00156	.00193	.00089	.00012	.00066
%RSD	22.302	14.434	36.136	59.618	84.281	3.3596	201.18
#1	.00136	.00295	.00420	-.00210	.00202	.00385	-.00028
#2	.00201	.00236	.00592	-.00547	.00085	.00361	.00023
#3	.00143	.00314	.00281	-.00214	.00028	.00369	.00104
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9713.7	59908.	3002.7
Stddev	32.6	164.	34.0
%RSD	.33561	.27353	1.1337
#1	9740.1	60011.	2965.4
#2	9677.2	59995.	3032.2
#3	9723.7	59719.	3010.3

Approved: June 27, 2016

Sample Name: L1606115501 Acquired: 6/25/2016 15:02:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00226	.00780	.00401	.26646	.17918	.00000	45.474	-.00004
Stddev	.00287	.00301	.00103	.00133	.00076	.00004	.222	.00008
%RSD	126.68	38.602	25.778	.50014	.42327	919.30	.48843	228.57
#1	.00509	.01128	.00462	.26750	.17974	.00002	45.718	.00006
#2	.00233	.00600	.00459	.26694	.17949	-.00004	45.422	-.00008
#3	-.00064	.00613	.00281	.26496	.17832	.00004	45.283	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.00088	.00134	.05774	1.5654	.00884	27.038	1.6699
Stddev	.00027	.00028	.00194	.01943	.1007	.00205	.083	.0027
%RSD	44.880	31.682	144.85	33.650	6.4312	23.214	.30796	.16065
#1	.00083	.00056	-.00088	.03531	1.4495	.00687	26.967	1.6730
#2	.00063	.00109	.00219	.06938	1.6158	.01096	27.130	1.6684
#3	.00031	.00099	.00272	.06852	1.6309	.00869	27.018	1.6684
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00414	74.521	.00232	.02280	.00145	-.00333	.00418	6.9589
Stddev	.00012	.362	.00063	.00622	.00648	.00099	.00335	.0172
%RSD	2.8693	.48589	27.089	27.292	447.38	29.598	80.140	.24675
#1	.00419	74.939	.00163	.02521	-.00229	-.00322	.00046	6.9755
#2	.00400	74.314	.00245	.02746	-.00229	-.00437	.00510	6.9601
#3	.00421	74.311	.00286	.01573	.00893	-.00240	.00696	6.9412
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115501 Acquired: 6/25/2016 15:02:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.31080**	**-.00408**	**-.00246**	**.00074**	**.00517**	**.00097**
Stddev	.00101	.00127	.01220	.00176	.00032	.00009	.00026
%RSD	589.50	.40720	299.39	71.557	43.195	1.7947	26.599
#1	.00067	.31223	.00838	-.00158	.00040	.00528	.00122
#2	-.00129	.30982	-.01601	-.00449	.00079	.00510	.00071
#3	.00011	.31036	-.00459	-.00131	.00103	.00514	.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9554.2**	**58064.**	**2987.7**
Stddev	24.6	152.	17.9
%RSD	.25722	.26211	.59940
#1	9527.5	57892.	2971.4
#2	9576.0	58182.	2984.9
#3	9559.0	58118.	3006.9

Approved: June 27, 2016

Sample Name: L1606115502 Acquired: 6/25/2016 15:05:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00077	.00104	.00250	.19417	.33327	.00001	49.969	.00011
Stddev	.00225	.00260	.00021	.00180	.00208	.00007	.144	.00004
%RSD	293.51	250.20	8.2634	.92950	.62356	535.11	.28842	36.458
#1	.00053	-.00100	.00271	.19484	.33088	.00006	50.109	.00015
#2	-.00336	.00396	.00251	.19555	.33470	.00004	49.821	.00012
#3	.00053	.00015	.00229	.19213	.33422	-.00007	49.978	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	.00039	.00161	4.4932	.30074	.00699	33.094	.46968
Stddev	.00024	.00046	.00055	.0210	.07361	.00374	.139	.00201
%RSD	82.593	118.92	34.456	.46819	24.475	53.562	.42105	.42764
#1	.00002	-.00012	.00218	4.4716	.35097	.00318	33.254	.46985
#2	.00046	.00051	.00108	4.5136	.21625	.00712	33.021	.47160
#3	.00039	.00078	.00156	4.4944	.33501	.01067	33.006	.46759
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00134	56.528	.00048	.02851	.00540	-.00461	.00421	7.9465
Stddev	.00013	.068	.00114	.00462	.00195	.00412	.00583	.0128
%RSD	9.8009	.11946	234.80	16.220	36.120	89.402	138.37	.16106
#1	.00123	56.559	.00179	.03249	.00375	-.00852	-.00246	7.9518
#2	.00130	56.451	-.00006	.02962	.00489	-.00500	.00681	7.9559
#3	.00149	56.575	-.00027	.02344	.00755	-.00031	.00829	7.9320
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115502 Acquired: 6/25/2016 15:05:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.41936**	**-.00337**	**-.00247**	**.00035**	**.00337**	**.00091**
Stddev	.00022	.00050	.00295	.00045	.00041	.00006	.00160
%RSD	168.21	.11997	87.675	18.352	119.11	1.8649	175.07
#1	.00016	.41971	-.00131	-.00286	-.00012	.00341	-.00093
#2	.00033	.41958	-.00675	-.00259	.00050	.00330	.00173
#3	-.00010	.41878	-.00204	-.00197	.00066	.00341	.00194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9627.3**	**58565.**	**2988.6**
Stddev	17.2	39.	5.1
%RSD	.17881	.06667	.17070
#1	9625.0	58521.	2993.1
#2	9645.6	58579.	2989.5
#3	9611.4	58596.	2983.0

Approved: June 27, 2016

Sample Name: L1606115503 Acquired: 6/25/2016 15:09:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00133	.01981	.00070	.15980	.12508	.00001	47.416	.00012
Stddev	.00149	.00690	.00351	.00313	.00043	.00010	.201	.00026
%RSD	112.43	34.815	504.28	1.9589	.34619	838.85	.42403	214.19
#1	.00108	.02777	-.00104	.15681	.12534	.00005	47.373	.00032
#2	-.00003	.01583	-.00161	.16306	.12532	.00009	47.635	.00022
#3	.00292	.01581	.00474	.15953	.12458	-.00010	47.240	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	.00032	.00351	1.3413	.87483	.00900	17.381	.47700
Stddev	.00046	.00045	.00082	.0140	.08308	.00172	.089	.00081
%RSD	429.81	139.46	23.247	1.0398	9.4971	19.124	.51021	.16934
#1	.00045	.00052	.00286	1.3297	.89461	.00799	17.319	.47725
#2	-.00041	.00065	.00443	1.3568	.78364	.01099	17.483	.47609
#3	.00028	-.00019	.00325	1.3373	.94624	.00803	17.342	.47764
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	48.369	.00082	.10919	.00167	-.00062	.00179	5.8799
Stddev	.00025	.203	.00140	.00660	.00170	.00395	.00827	.0280
%RSD	97.415	.41932	171.45	6.0459	101.94	641.48	462.74	.47549
#1	-.00003	48.343	.00233	.10833	.00101	-.00514	.00952	5.8933
#2	-.00053	48.584	.00055	.10306	.00039	.00119	.00277	5.8478
#3	-.00022	48.181	-.00043	.11618	.00360	.00211	-.00693	5.8986
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115503 Acquired: 6/25/2016 15:09:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.26600	-.00537	-.00338	.00017	.00914	.00020
Stddev	.00067	.00095	.00241	.00310	.00116	.00022	.00114
%RSD	345.33	.35889	44.987	91.459	671.24	2.4286	566.35
#1	-.00057	.26556	-.00315	-.00551	-.00106	.00889	.00099
#2	.00050	.26710	-.00794	.00017	.00033	.00931	-.00111
#3	.00065	.26535	-.00501	-.00481	.00125	.00922	.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9587.2	58263.	2972.1
Stddev	19.6	279.	4.9
%RSD	.20409	.47925	.16604
#1	9598.2	58004.	2969.9
#2	9598.7	58226.	2968.6
#3	9564.6	58559.	2977.8

Approved: June 27, 2016

Sample Name: L1606117801 Acquired: 6/25/2016 15:13:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00123	.01562	.00788	.04060	.02600	.00012	2.4592	.00007
Stddev	.00244	.00616	.00118	.00330	.00129	.00005	.0606	.00006
%RSD	197.99	39.461	15.044	8.1358	4.9545	44.901	2.4620	79.703
#1	.00387	.02096	.00725	.04075	.02646	.00010	2.5149	.00002
#2	-.00097	.00887	.00713	.04382	.02700	.00008	2.4680	.00013
#3	.00081	.01703	.00924	.03722	.02455	.00018	2.3948	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.00074	.00609	.02685	.43656	.00432	.57708	-.00111
Stddev	.00033	.00144	.00018	.01358	.05030	.00166	.05180	.00137
%RSD	1012.2	194.14	2.9070	50.575	11.522	38.411	8.9754	123.48
#1	-.00025	.00070	.00629	.04250	.40355	.00528	.52291	-.00216
#2	.00039	.00219	.00602	.01809	.49445	.00241	.62611	-.00159
#3	-.00004	-.00068	.00595	.01997	.41167	.00528	.58223	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00299	95.163	-.00070	.01050	.00222	-.00635	.00641	3.4783
Stddev	.00029	.186	.00058	.00517	.00074	.00345	.00307	.0048
%RSD	9.6245	.19542	82.717	49.206	33.276	54.334	47.947	.13892
#1	.00325	95.230	-.00082	.01297	.00142	-.01032	.00356	3.4792
#2	.00268	95.306	-.00121	.00456	.00236	-.00408	.00600	3.4827
#3	.00303	94.953	-.00007	.01396	.00287	-.00464	.00966	3.4731
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606117801 Acquired: 6/25/2016 15:13:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.11699	.00044	-.00188	.00105	.00210	.00054
Stddev	.00103	.00010	.00531	.00109	.00009	.00007	.00166
%RSD	275.08	.08958	1212.8	57.943	8.6567	3.2366	310.87
#1	.00154	.11703	-.00019	-.00063	.00114	.00212	-.00081
#2	-.00042	.11707	-.00453	-.00235	.00105	.00215	.00002
#3	-.00000	.11687	.00604	-.00264	.00096	.00202	.00240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9648.4	58829.	2994.3
Stddev	5.2	37.	6.7
%RSD	.05359	.06360	.22320
#1	9653.7	58809.	2992.7
#2	9643.3	58806.	2988.6
#3	9648.3	58873.	3001.7

Approved: June 27, 2016

Sample Name: L1606122701 Acquired: 6/25/2016 15:17:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00116	.09783	-.00055	.00242	.01519	.00006	7.7326	-.00002
Stddev	.00092	.00377	.00239	.00147	.00198	.00002	.1171	.00010
%RSD	79.355	3.8537	437.80	60.740	13.003	38.615	1.5138	459.39
#1	-.00047	.10163	-.00294	.00351	.01401	.00007	7.7569	.00006
#2	-.00220	.09409	.00184	.00075	.01747	.00007	7.8356	-.00013
#3	-.00081	.09776	-.00054	.00300	.01410	.00003	7.6053	.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00227	.00167	.03463	.33602	-.00038	-.01109	-.00127
Stddev	.00016	.00059	.00051	.00142	.06178	.00154	.10836	.00134
%RSD	58.524	25.933	30.520	4.0976	18.384	404.83	977.09	105.32
#1	.00014	.00159	.00133	.03617	.30512	-.00005	-.09610	-.00256
#2	.00023	.00261	.00225	.03337	.29580	-.00206	.11092	-.00136
#3	.00045	.00260	.00142	.03436	.40715	.00097	-.04809	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	2.3350	.00044	.00731	.00430	-.00426	.00383	1.1328
Stddev	.00020	.0307	.00076	.00233	.00100	.00159	.00576	.0032
%RSD	132.69	1.3153	170.74	31.908	23.273	37.398	150.44	.27905
#1	.00005	2.3000	.00116	.00516	.00531	-.00538	.00306	1.1309
#2	-.00036	2.3574	.00052	.00700	.00430	-.00496	-.00151	1.1310
#3	-.00016	2.3476	-.00035	.00979	.00330	-.00244	.00992	1.1364
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606122701 Acquired: 6/25/2016 15:17:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.25125	.00414	.00180	.00364	.00056	.00136
Stddev	.00018	.00103	.01324	.00145	.00074	.00007	.00130
%RSD	364.81	.41002	320.05	80.159	20.271	13.218	96.223
#1	.00011	.25131	-.01092	.00207	.00450	.00061	.00115
#2	.00019	.25224	.00936	.00024	.00328	.00047	.00016
#3	-.00016	.25018	.01397	.00310	.00316	.00058	.00275
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9969.0	60494.	3048.9
Stddev	15.1	129.	13.3
%RSD	.15159	.21283	.43564
#1	9969.3	60641.	3055.8
#2	9983.9	60438.	3033.6
#3	9953.7	60402.	3057.3

Approved: June 27, 2016

Sample Name: L1606122706 Acquired: 6/25/2016 15:21:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	.00567	.00083	.00123	.02806	.00015	13.472	-.00038
Stddev	.00250	.00554	.00101	.00202	.00007	.00007	.038	.00019
%RSD	395.00	97.673	121.57	163.43	.25882	47.682	.28032	49.732
#1	.00247	-.00071	.00042	-.00047	.02810	.00007	13.487	-.00023
#2	.00165	.00924	.00199	.00346	.02810	.00021	13.429	-.00032
#3	-.00222	.00849	.00010	.00072	.02797	.00018	13.501	-.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00101	.00061	.00157	.10367	.20316	.00472	8.1185	.10636
Stddev	.00008	.00062	.00064	.01594	.00836	.00156	.1274	.00158
%RSD	8.0012	102.28	40.873	15.374	4.1155	32.981	1.5689	1.4897
#1	.00092	-.00009	.00190	.11049	.21157	.00610	7.9808	.10550
#2	.00107	.00111	.00198	.11507	.19485	.00503	8.2322	.10539
#3	.00104	.00079	.00083	.08546	.20306	.00303	8.1425	.10819
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00044	33.974	.00004	.00429	-.00079	-.00333	.00187	.74797
Stddev	.00043	.239	.00011	.00671	.00165	.00196	.00470	.01610
%RSD	97.916	.70374	251.40	156.52	208.37	58.883	251.58	2.1527
#1	-.00064	33.727	-.00007	.01191	-.00018	-.00196	-.00208	.73053
#2	-.00073	33.993	.00015	-.00074	.00047	-.00558	.00061	.75112
#3	.00005	34.204	.00006	.00169	-.00266	-.00246	.00707	.76226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606122706 Acquired: 6/25/2016 15:21:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.30857**	**.00233**	**-.00259**	**.00019**	**.00158**	**.00089**
Stddev	.00012	.00270	.00311	.00390	.00060	.00013	.00062
%RSD	87.894	.87470	133.51	150.50	319.58	8.2216	69.559
#1	-.00001	.30602	.00364	-.00319	-.00046	.00143	.00122
#2	-.00015	.30828	-.00122	.00157	.00073	.00163	.00127
#3	-.00026	.31139	.00457	-.00615	.00030	.00167	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9924.8**	**59991.**	**2995.5**
Stddev	18.6	172.	10.6
%RSD	.18782	.28732	.35313
#1	9924.0	59808.	2993.5
#2	9943.8	60150.	3007.0
#3	9906.6	60016.	2986.1

Approved: June 27, 2016

Sample Name: L1606127902 Acquired: 6/25/2016 15:25:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573994-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00298**	**.77289**	**.00033**	**.00803**	**.01053**	**.00016**	**9.3649**	**-.00023**
Stddev	.00188	.01227	.00104	.00267	.00091	.00007	.0910	.00007
%RSD	63.015	1.5872	311.80	33.213	8.6722	42.111	.97197	32.230
#1	.00105	.75975	.00114	.01109	.01057	.00009	9.3786	-.00026
#2	.00309	.78404	.00069	.00619	.01142	.00023	9.4483	-.00028
#3	.00480	.77489	-.00084	.00682	.00960	.00016	9.2678	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00067**	**.00209**	**.00225**	**1.1046**	**.20587**	**.00183**	**3.8329**	**.12468**
Stddev	.00025	.00124	.00151	.0075	.05413	.00323	.0374	.00185
%RSD	36.537	59.143	66.907	.67811	26.294	176.78	.97568	1.4875
#1	.00057	.00084	.00284	1.1048	.18555	.00515	3.8178	.12286
#2	.00096	.00331	.00337	1.1121	.26722	.00166	3.8755	.12657
#3	.00050	.00212	.00054	1.0971	.16483	-.00131	3.8054	.12461
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**.91553**	**.00104**	**.04284**	**.00087**	**-.00434**	**.00416**	**1.4218**
Stddev	.00049	.02558	.00097	.00374	.00128	.00145	.00383	.0304
%RSD	448.71	2.7944	92.896	8.7405	147.22	33.355	92.023	2.1368
#1	.00043	.88763	.00204	.04714	.00040	-.00289	.00799	1.3901
#2	-.00054	.92105	.00011	.04033	-.00011	-.00435	.00416	1.4246
#3	-.00022	.93790	.00097	.04105	.00232	-.00579	.00033	1.4507
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127902 Acquired: 6/25/2016 15:25:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573994-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**.04596**	**.00940**	**.00124**	**.00257**	**.00907**	**.00122**
Stddev	.00038	.00038	.00559	.00152	.00046	.00027	.00089
%RSD	147.88	.81748	59.487	122.54	17.946	3.0009	73.195
#1	.00017	.04588	.00305	-.00019	.00219	.00893	.00224
#2	-.00038	.04637	.01155	.00284	.00243	.00890	.00056
#3	-.00056	.04564	.01360	.00108	.00308	.00938	.00087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10039.**	**61079.**	**3063.3**
Stddev	16.	87.	16.8
%RSD	.15707	.14311	.54820
#1	10022.	60979.	3046.2
#2	10041.	61122.	3064.0
#3	10054.	61137.	3079.8

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 15:29:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41474	10.480	.41122	.51129	1.0445	.05223	10.384
Stddev	.00157	.008	.00187	.00319	.0019	.00016	.024
%RSD	.37799	.07401	.45408	.62455	.18188	.31144	.22798
#1	.41325	10.484	.41182	.51035	1.0465	.05219	10.387
#2	.41461	10.484	.41272	.50866	1.0441	.05241	10.359
#3	.41637	10.471	.40913	.51484	1.0428	.05209	10.407
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05244	.20643	.51777	.52807	4.1528	50.626	1.0452
Stddev	.00019	.00026	.00163	.00025	.0357	.257	.0080
%RSD	.36313	.12673	.31564	.04665	.85968	.50669	.76446
#1	.05244	.20669	.51592	.52825	4.1190	50.704	1.0431
#2	.05226	.20644	.51838	.52817	4.1901	50.835	1.0540
#3	.05264	.20617	.51902	.52779	4.1492	50.340	1.0385
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.9629	.52245	1.0531	51.247	.52506	10.312	.52216
Stddev	.0274	.00433	.0047	.134	.00127	.013	.00461
%RSD	.27495	.82847	.44799	.26095	.24264	.12919	.88203
#1	9.9944	.51946	1.0578	51.179	.52653	10.320	.51773
#2	9.9492	.52742	1.0532	51.401	.52432	10.296	.52692
#3	9.9451	.52049	1.0484	51.161	.52433	10.319	.52182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 15:29:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2356**	**.41239**	**5.3381**	**1.0346**	**1.0460**	**1.0497**	**.53160**
Stddev	.0017	.00642	.0057	.0013	.0038	.0052	.00142
%RSD	.13528	1.5556	.10675	.12483	.36598	.49394	.26637
#1	1.2362	.41861	5.3408	1.0357	1.0443	1.0445	.53322
#2	1.2337	.40580	5.3420	1.0349	1.0504	1.0497	.53096
#3	1.2369	.41277	5.3316	1.0332	1.0433	1.0549	.53062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0558**	**1.0420**	F **3.0350**
Stddev	.0013	.0007	.0090
%RSD	.12612	.06683	.29605
#1	1.0548	1.0423	3.0277
#2	1.0553	1.0412	3.0451
#3	1.0573	1.0426	3.0323
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9586.8**	**58077.**	**2975.5**
Stddev	6.0	176.	6.3
%RSD	.06238	.30386	.21060
#1	9587.3	57874.	2969.1
#2	9592.5	58193.	2975.6
#3	9580.6	58165.	2981.7

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 15:32:48 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00000**	**.00002**	**-.00010**	**.00491**	**.00210**	**.00011**	**.00565**	**-.00003**
Stddev	.00087	.00719	.00078	.00229	.00030	.00005	.00049	.00029
%RSD	26249.	33697.	808.92	46.626	14.233	46.346	8.5911	909.94
#1	.00025	.00801	-.00086	.00753	.00176	.00017	.00542	-.00000
#2	.00073	-.00593	.00069	.00390	.00223	.00007	.00533	-.00034
#3	-.00097	-.00201	-.00012	.00330	.00231	.00010	.00621	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00020**	**.00011**	**.00064**	**.03500**	**.03424**	**-.00179**	**.02594**	**-.00052**
Stddev	.00009	.00046	.00051	.01471	.03973	.00240	.07741	.00156
%RSD	43.655	413.87	80.028	42.019	116.03	134.20	298.41	302.41
#1	.00012	-.00018	.00036	.01804	-.01111	-.00218	.05944	-.00155
#2	.00020	.00064	.00123	.04417	.05092	-.00397	.08095	.00128
#3	.00029	-.00013	.00033	.04280	.06290	.00078	-.06257	-.00128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00316**	**.04507**	**.00037**	**.00106**	**.00080**	**.00374**	**.00412**	**.00990**
Stddev	.00041	.02068	.00057	.00881	.00149	.00197	.00171	.00085
%RSD	13.022	45.885	154.95	828.64	185.93	52.502	41.416	8.5529
#1	.00281	.06772	-.00005	.00994	-.00040	.00294	.00217	.01067
#2	.00361	.02718	.00102	.00092	.00033	.00230	.00488	.01002
#3	.00306	.04031	.00014	-.00767	.00246	.00598	.00532	.00899
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 15:32:48 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00048**	**.00057**	**.00333**	**-.00225**	**.00169**	**-.00006**	**.00439**
Stddev	.00073	.00051	.00753	.00264	.00040	.00020	.00135
%RSD	152.10	89.662	226.48	117.22	23.766	306.69	30.851
#1	.00129	.00079	-.00329	-.00367	.00165	-.00017	.00283
#2	-.00014	-.00001	.01153	-.00387	.00130	-.00018	.00508
#3	.00029	.00092	.00174	.00079	.00210	.00016	.00526
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9759.3**	**59359.**	**3013.9**
Stddev	2.3	121.	1.6
%RSD	.02366	.20394	.05186
#1	9761.6	59292.	3015.4
#2	9759.3	59287.	3013.9
#3	9756.9	59499.	3012.3

Approved: June 27, 2016

Sample Name: L1606127903S Acquired: 6/25/2016 15:36:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573994-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01197	1.1036	.01087	.05712	.03304	.00134	9.9729	.00124
Stddev	.00119	.0059	.00187	.00108	.00116	.00008	.0996	.00005
%RSD	9.9297	.53710	17.218	1.8903	3.5218	6.1377	.99838	3.7414
#1	.01115	1.1017	.01246	.05619	.03414	.00126	10.019	.00125
#2	.01142	1.1103	.00881	.05688	.03182	.00135	9.8587	.00119
#3	.01333	1.0989	.01134	.05830	.03317	.00142	10.041	.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00560	.01397	.01462	1.0767	1.4208	.02780	4.2261	.14457
Stddev	.00014	.00108	.00214	.0241	.1192	.00407	.0440	.00290
%RSD	2.4102	7.7598	14.602	2.2369	8.3867	14.648	1.0401	2.0070
#1	.00574	.01498	.01254	1.0620	1.3125	.02932	4.2372	.14280
#2	.00559	.01283	.01680	1.0635	1.4014	.02319	4.1777	.14299
#3	.00547	.01411	.01453	1.1045	1.5484	.03090	4.2635	.14792
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02152	2.1329	.01322	.29583	.01584	.02588	.00942	1.7458
Stddev	.00098	.0418	.00158	.00727	.00355	.00244	.00136	.0125
%RSD	4.5315	1.9579	11.965	2.4574	22.390	9.4200	14.478	.71438
#1	.02231	2.1343	.01139	.30417	.01767	.02397	.01094	1.7523
#2	.02182	2.0905	.01413	.29245	.01809	.02862	.00829	1.7537
#3	.02043	2.1740	.01413	.29086	.01175	.02503	.00905	1.7314
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127903S Acquired: 6/25/2016 15:36:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573994-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02137**	**.07160**	**.03468**	**.01383**	**.02654**	**.02985**	**.00242**
Stddev	.00036	.00081	.00438	.00291	.00046	.00010	.00158
%RSD	1.6937	1.1317	12.615	21.070	1.7354	.32151	65.388
#1	.02178	.07099	.02963	.01549	.02613	.02986	.00141
#2	.02110	.07130	.03735	.01047	.02704	.02975	.00424
#3	.02123	.07252	.03706	.01554	.02644	.02994	.00160
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9975.1**	**60274.**	**3041.7**
Stddev	49.0	118.	22.7
%RSD	.49139	.19506	.74582
#1	9940.1	60350.	3061.9
#2	9954.2	60332.	3046.1
#3	10031.	60138.	3017.2

Approved: June 27, 2016

Sample Name: L1606127904SD Acquired: 6/25/2016 15:40:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573994-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01103**	**1.1028**	**.01203**	**.05464**	**.03364**	**.00143**	**9.8642**	**.00121**
Stddev	.00186	.0090	.00180	.00231	.00086	.00004	.1305	.00006
%RSD	16.883	.81742	14.963	4.2286	2.5577	2.6326	1.3231	5.3301
#1	.00912	1.0960	.01267	.05217	.03303	.00146	9.7151	.00122
#2	.01113	1.1130	.00999	.05675	.03463	.00143	9.9198	.00114
#3	.01284	1.0994	.01342	.05499	.03327	.00139	9.9577	.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00590**	**.01420**	**.01484**	**1.0576**	**1.4598**	**.02493**	**4.2188**	**.14616**
Stddev	.00020	.00048	.00068	.0082	.1286	.00072	.1177	.00241
%RSD	3.3297	3.4140	4.5711	.77893	8.8104	2.9051	2.7895	1.6455
#1	.00602	.01364	.01562	1.0663	1.6059	.02466	4.0843	.14411
#2	.00567	.01444	.01454	1.0499	1.4099	.02439	4.2697	.14557
#3	.00601	.01451	.01437	1.0566	1.3636	.02576	4.3025	.14881
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02217**	**2.1040**	**.01418**	**.30006**	**.01556**	**.02408**	**.01453**	**1.7577**
Stddev	.00072	.0376	.00057	.00408	.00448	.00503	.00712	.0151
%RSD	3.2386	1.7891	4.0074	1.3597	28.796	20.896	49.023	.85907
#1	.02294	2.0606	.01353	.29698	.01280	.02854	.02252	1.7414
#2	.02203	2.1275	.01453	.30469	.02073	.02509	.00885	1.7604
#3	.02153	2.1239	.01449	.29851	.01315	.01862	.01221	1.7712
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127904SD Acquired: 6/25/2016 15:40:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573994-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02276**	**.07116**	**.03577**	**.01268**	**.02759**	**.03003**	**.00230**
Stddev	.00014	.00090	.00737	.00234	.00032	.00029	.00174
%RSD	.61715	1.2587	20.620	18.483	1.1623	.96154	75.576
#1	.02272	.07054	.03703	.01291	.02794	.02969	.00432
#2	.02292	.07076	.02784	.01490	.02752	.03021	.00132
#3	.02264	.07219	.04242	.01023	.02731	.03018	.00128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10006.**	**60810.**	**3063.3**
Stddev	5.	192.	18.4
%RSD	.04992	.31626	.60150
#1	10009.	61010.	3082.6
#2	10009.	60627.	3061.4
#3	10000.	60793.	3045.9

Approved: June 27, 2016

Sample Name: L1606128901 Acquired: 6/25/2016 15:44:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00215	.00687	.00324	.00036	.25940	.00003	8.5369	.00005
Stddev	.00051	.01020	.00141	.00225	.00475	.00006	.1296	.00011
%RSD	23.677	148.57	43.630	628.60	1.8323	170.08	1.5176	227.30
#1	.00216	.01614	.00358	-.00039	.25471	.00001	8.3890	.00017
#2	.00265	.00852	.00169	.00289	.26421	.00010	8.6303	-.00003
#3	.00163	-.00406	.00445	-.00143	.25928	-.00000	8.5913	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00259	.00588	.00175	.08631	.04218	.00151	6.5072	.07542
Stddev	.00040	.00134	.00073	.02244	.04887	.00193	.2142	.00074
%RSD	15.316	22.711	41.571	26.002	115.87	127.81	3.2912	.97595
#1	.00214	.00436	.00096	.06469	.09555	-.00070	6.2873	.07459
#2	.00279	.00683	.00239	.10949	-.00039	.00286	6.5191	.07570
#3	.00285	.00647	.00190	.08474	.03137	.00237	6.7151	.07598
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	23.216	.03092	.00614	.00300	-.00111	.00640	.97050
Stddev	.00039	.461	.00078	.00363	.00087	.00404	.00265	.00247
%RSD	280.63	1.9852	2.5231	59.153	29.021	362.80	41.403	.25451
#1	-.00028	22.689	.03110	.00526	.00208	-.00358	.00616	.97332
#2	.00048	23.539	.03160	.01013	.00311	-.00330	.00916	.96949
#3	.00022	23.422	.03007	.00303	.00381	.00355	.00387	.96870
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606128901 Acquired: 6/25/2016 15:44:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.16522	-.00360	-.00090	.00125	.00115	.00088
Stddev	.00057	.00251	.00574	.00300	.00085	.00009	.00100
%RSD	111.15	1.5196	159.60	334.58	68.243	8.1341	114.01
#1	-.00005	.16233	-.01006	-.00433	.00031	.00125	.00060
#2	.00108	.16651	.00089	.00117	.00197	.00107	.00199
#3	.00050	.16682	-.00162	.00047	.00148	.00112	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9940.0	60088.	3038.6
Stddev	4.2	150.	44.1
%RSD	.04218	.24912	1.4500
#1	9935.3	60256.	3084.8
#2	9941.7	60040.	2997.0
#3	9943.1	59969.	3034.2

Approved: June 27, 2016

Sample Name: L1606112901 Acquired: 6/25/2016 15:48:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00126	-.00046	-.00005	-.00065	.00318	.00006	4.1415	-.00016
Stddev	.00197	.00573	.00201	.00160	.00151	.00005	.0124	.00023
%RSD	156.91	1238.2	4274.9	245.00	47.612	81.871	.30015	142.20
#1	.00341	-.00015	-.00215	-.00141	.00362	.00006	4.1534	-.00032
#2	-.00045	.00511	.00185	.00118	.00150	.00012	4.1425	.00010
#3	.00081	-.00635	.00016	-.00173	.00443	.00001	4.1286	-.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.00058	.00066	.05376	.10451	-.00223	.92501	.00486
Stddev	.00022	.00057	.00151	.01103	.06065	.00348	.08081	.00144
%RSD	3258.5	98.481	227.65	20.514	58.030	156.17	8.7365	29.653
#1	-.00025	.00121	.00094	.05934	.12513	.00172	.91232	.00510
#2	.00010	.00039	-.00097	.04105	.03624	-.00357	1.0114	.00331
#3	.00016	.00012	.00201	.06088	.15216	-.00484	.85130	.00616
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	3.0376	-.00008	.00578	.00044	-.00230	.00144	.21434
Stddev	.00025	.0744	.00053	.00529	.00227	.00178	.00420	.00577
%RSD	93.741	2.4506	639.89	91.432	509.94	77.275	291.44	2.6916
#1	-.00011	2.9794	.00051	.00238	.00289	-.00166	.00573	.20865
#2	-.00014	3.0119	-.00050	.00310	-.00159	-.00431	-.00267	.21418
#3	-.00056	3.1215	-.00026	.01187	.00003	-.00093	.00126	.22019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606112901 Acquired: 6/25/2016 15:48:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.01265**	**.00270**	**.00064**	**.00099**	**.00067**	**.00092**
Stddev	.00055	.00035	.00371	.00238	.00052	.00018	.00051
%RSD	272.21	2.7272	137.50	373.62	52.293	26.328	55.163
#1	-.00083	.01259	.00376	-.00183	.00159	.00059	.00050
#2	.00008	.01234	-.00143	.00082	.00070	.00087	.00077
#3	.00015	.01303	.00576	.00292	.00069	.00054	.00148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9969.3**	**60775.**	**3044.6**
Stddev	21.9	129.	15.2
%RSD	.22015	.21273	.49841
#1	9984.3	60920.	3056.8
#2	9944.1	60732.	3049.4
#3	9979.5	60672.	3027.6

Approved: June 27, 2016

Sample Name: L1606112902 Acquired: 6/25/2016 15:52:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	.00804	.00035	-.00128	.00288	.00010	2.9594	-.00006
Stddev	.00058	.00641	.00226	.00137	.00187	.00003	.0055	.00010
%RSD	221.07	79.747	653.27	107.46	64.882	33.893	.18419	164.92
#1	.00004	.00818	.00185	.00031	.00398	.00007	2.9654	.00000
#2	.00011	.00156	.00144	-.00200	.00072	.00009	2.9582	-.00001
#3	-.00094	.01439	-.00226	-.00213	.00394	.00014	2.9547	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.00045	.00076	.08667	.10793	.00221	.95476	.02200
Stddev	.00021	.00074	.00096	.00189	.05164	.00058	.08086	.00168
%RSD	3252.3	165.35	125.16	2.1842	47.845	26.260	8.4687	7.6363
#1	.00009	.00055	.00166	.08573	.06794	.00282	.86999	.02017
#2	-.00024	-.00034	.00088	.08885	.16623	.00215	.96327	.02346
#3	.00016	.00114	-.00024	.08543	.08961	.00166	1.0310	.02238
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	1.4239	.00014	.00542	.00025	-.00059	.00178	.20161
Stddev	.00013	.0489	.00086	.00331	.00120	.00643	.00247	.00182
%RSD	52.086	3.4352	596.95	60.989	470.84	1086.5	138.88	.90303
#1	-.00010	1.4077	-.00013	.00438	-.00113	.00173	.00080	.20089
#2	-.00031	1.4789	-.00055	.00913	.00091	-.00786	-.00005	.20368
#3	-.00033	1.3852	.00110	.00276	.00098	.00435	.00459	.20026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606112902 Acquired: 6/25/2016 15:52:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00083	.01066	.00349	-.00281	.00049	.00074	-.00046
Stddev	.00025	.00027	.00348	.00166	.00046	.00011	.00023
%RSD	30.685	2.4916	99.744	59.148	94.747	14.382	50.877
#1	.00087	.01070	.00643	-.00461	.00075	.00069	-.00046
#2	.00056	.01090	.00439	-.00132	-.00005	.00087	-.00023
#3	.00106	.01038	-.00035	-.00252	.00076	.00067	-.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9989.3	60825.	3066.0
Stddev	18.4	89.	4.0
%RSD	.18402	.14693	.13203
#1	10008.	60870.	3065.9
#2	9971.8	60722.	3062.0
#3	9987.6	60883.	3070.1

Approved: June 27, 2016

Sample Name: L1606112903 Acquired: 6/25/2016 15:56:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00034**	**-.00746**	**.00009**	**.00007**	**.00214**	**.00016**	**4.2282**	**-.00031**
Stddev	.00178	.00543	.00185	.00098	.00088	.00001	.1021	.00011
%RSD	518.14	72.757	1962.2	1427.6	41.098	3.6332	2.4147	36.326
#1	-.00212	-.00132	-.00121	.00003	.00116	.00017	4.2310	-.00019
#2	.00143	-.00942	.00221	-.00089	.00287	.00016	4.3288	-.00035
#3	-.00034	-.01164	-.00072	.00107	.00238	.00015	4.1247	-.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00027**	**-.00057**	**-.00029**	**.07902**	**-.03881**	**.00121**	**1.0358**	**.00397**
Stddev	.00063	.00094	.00019	.01076	.01948	.00237	.1206	.00030
%RSD	236.86	166.12	66.025	13.622	50.186	195.96	11.648	7.4974
#1	-.00020	-.00113	-.00052	.06755	-.06059	-.00026	.93657	.00379
#2	.00099	.00052	-.00021	.08890	-.02305	-.00005	1.1701	.00431
#3	.00002	-.00109	-.00016	.08063	-.03281	.00395	1.0007	.00380
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00055**	**2.1503**	**-.00065**	**.00144**	**.00315**	**-.00171**	**-.00059**	**.27406**
Stddev	.00026	.0349	.00083	.00721	.00266	.00193	.00290	.00085
%RSD	47.062	1.6229	127.58	500.84	84.421	112.70	495.02	.31027
#1	-.00082	2.1700	-.00132	-.00288	.00271	.00020	-.00182	.27322
#2	-.00053	2.1710	.00028	-.00257	.00074	-.00366	.00273	.27492
#3	-.00030	2.1101	-.00091	.00976	.00599	-.00168	-.00267	.27403
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606112903 Acquired: 6/25/2016 15:56:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.01267	.00761	-.00035	.00044	.00047	.00034
Stddev	.00036	.00010	.00488	.00192	.00076	.00017	.00099
%RSD	75.051	.78508	64.089	556.65	172.53	36.380	290.00
#1	.00045	.01256	.01172	-.00046	-.00009	.00039	-.00046
#2	.00086	.01267	.00891	.00163	.00010	.00066	.00145
#3	.00013	.01276	.00222	-.00221	.00131	.00034	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9986.0	60665.	3026.9
Stddev	20.7	145.	17.8
%RSD	.20708	.23844	.58822
#1	10007.	60770.	3014.6
#2	9984.8	60726.	3018.9
#3	9966.0	60500.	3047.3

Approved: June 27, 2016

Sample Name: L1606112904 Acquired: 6/25/2016 16:00:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00143	.00782	.00014	-.00105	.00318	.00018	2.9065	-.00009
Stddev	.00049	.00478	.00214	.00233	.00102	.00003	.0438	.00019
%RSD	34.335	61.153	1520.7	221.14	32.071	15.659	1.5085	207.21
#1	.00199	.01026	-.00194	.00103	.00202	.00019	2.8571	-.00015
#2	.00122	.00231	.00002	-.00063	.00358	.00019	2.9407	.00012
#3	.00108	.01088	.00233	-.00357	.00394	.00014	2.9218	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	.00045	.00112	.05226	.04902	.00077	.91311	.02436
Stddev	.00068	.00160	.00112	.00414	.07439	.00531	.01971	.00311
%RSD	135.32	357.44	99.972	7.9272	151.77	691.64	2.1590	12.769
#1	.00007	.00219	.00019	.05089	.09310	-.00511	.93142	.02095
#2	.00129	.00012	.00080	.04898	.09083	.00221	.91566	.02510
#3	.00015	-.00096	.00236	.05692	-.03687	.00521	.89224	.02704
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	1.3676	-.00081	.00778	.00502	-.00289	.00478	.20680
Stddev	.00041	.0202	.00063	.00381	.00153	.00221	.00206	.00531
%RSD	176.12	1.4731	77.366	49.002	30.478	76.529	43.075	2.5661
#1	-.00056	1.3492	-.00140	.01136	.00503	-.00266	.00633	.20082
#2	-.00037	1.3644	-.00015	.00819	.00655	-.00520	.00556	.20859
#3	.00023	1.3891	-.00088	.00377	.00348	-.00080	.00244	.21097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606112904 Acquired: 6/25/2016 16:00:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.01047	.00111	-.00019	.00078	.00080	-.00006
Stddev	.00022	.00018	.00665	.00270	.00041	.00022	.00073
%RSD	116.67	1.7478	597.28	1390.3	52.913	27.125	1123.9
#1	.00044	.01026	.00785	.00028	.00121	.00056	.00012
#2	.00008	.01056	.00093	.00224	.00075	.00085	.00055
#3	.00005	.01059	-.00544	-.00310	.00038	.00099	-.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9957.7	60557.	3030.1
Stddev	15.8	177.	8.6
%RSD	.15901	.29213	.28426
#1	9975.9	60586.	3020.4
#2	9949.3	60718.	3033.0
#3	9947.7	60368.	3036.9

Approved: June 27, 2016

Sample Name: L1606127201 Acquired: 6/25/2016 16:04:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	-.00887	-.00183	.00197	.00056	.00010	.95406	-.00003
Stddev	.00091	.01117	.00052	.00188	.00043	.00011	.05017	.00010
%RSD	325.46	125.87	28.528	95.488	77.565	107.58	5.2586	289.02
#1	.00022	-.02176	-.00218	.00027	.00085	.00010	.90480	.00002
#2	.00122	-.00213	-.00123	.00398	.00076	-.00001	.95228	.00003
#3	-.00060	-.00272	-.00207	.00165	.00006	.00021	1.0051	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	-.00128	.00046	.02799	-.07233	.00197	.21481	.00019
Stddev	.00061	.00045	.00022	.01180	.06961	.00022	.12156	.00200
%RSD	1838.2	35.569	48.564	42.171	96.239	11.394	56.590	1042.3
#1	-.00013	-.00080	.00028	.03989	-.13804	.00212	.34118	.00130
#2	-.00048	-.00170	.00071	.01628	.00061	.00171	.09871	-.00212
#3	.00071	-.00133	.00040	.02780	-.07955	.00208	.20454	.00139
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00067	6.5927	-.00041	.00599	.00226	-.00187	.00139	.23314
Stddev	.00039	.0563	.00074	.00538	.00192	.00575	.00169	.00199
%RSD	58.032	.85407	180.55	89.733	84.902	308.02	122.23	.85400
#1	-.00069	6.5318	-.00010	.00974	.00276	.00008	.00216	.23308
#2	-.00105	6.6428	-.00125	-.00017	.00014	-.00834	-.00056	.23517
#3	-.00027	6.6034	.00012	.00842	.00389	.00266	.00255	.23118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127201 Acquired: 6/25/2016 16:04:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**.00331**	**.00248**	**.00096**	**.00107**	**.00085**	**.00133**
Stddev	.00044	.00056	.00254	.00297	.00078	.00012	.00063
%RSD	192.52	16.945	102.26	309.29	73.373	14.693	47.329
#1	.00017	.00395	.00360	.00246	.00196	.00094	.00062
#2	-.00070	.00291	.00428	.00288	.00074	.00089	.00180
#3	-.00016	.00306	-.00042	-.00246	.00050	.00071	.00159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9972.6**	**60217.**	**3037.7**
Stddev	14.0	83.	14.1
%RSD	.14049	.13799	.46569
#1	9988.5	60309.	3026.4
#2	9967.3	60146.	3033.1
#3	9962.1	60196.	3053.5

Approved: June 27, 2016

Sample Name: L1606127202 Acquired: 6/25/2016 16:08:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**.01060**	**.00084**	**.01591**	**.00482**	**.00013**	**4.8874**	**.00012**
Stddev	.00147	.00116	.00295	.00196	.00045	.00002	.0512	.00031
%RSD	570.05	10.898	350.53	12.303	9.3008	12.581	1.0477	272.03
#1	-.00187	.01061	.00261	.01812	.00447	.00014	4.8299	.00013
#2	.00100	.00945	-.00256	.01523	.00533	.00015	4.9279	.00042
#3	.00009	.01176	.00248	.01439	.00467	.00011	4.9046	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**-.00046**	**.00025**	**.03059**	**.03395**	**.00208**	**2.7028**	**-.00061**
Stddev	.00015	.00087	.00083	.01638	.06594	.00230	.1335	.00149
%RSD	81.112	189.49	337.36	53.558	194.25	110.69	4.9393	243.32
#1	.00003	-.00146	.00109	.04846	-.00968	-.00038	2.8372	-.00173
#2	.00034	.00002	-.00057	.01628	.00172	.00418	2.5702	.00108
#3	.00021	.00006	.00022	.02703	.10981	.00243	2.7010	-.00120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**13.742**	**-.00085**	**.00227**	**.00279**	**-.00269**	**-.00193**	**.47645**
Stddev	.00056	.155	.00030	.00745	.00217	.00177	.00170	.00665
%RSD	217.74	1.1297	35.156	328.49	77.588	65.958	88.159	1.3954
#1	-.00002	13.587	-.00065	-.00435	.00526	-.00088	-.00382	.46927
#2	-.00089	13.898	-.00120	.00082	.00118	-.00276	-.00050	.47768
#3	.00014	13.742	-.00071	.01033	.00194	-.00443	-.00148	.48240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127202 Acquired: 6/25/2016 16:08:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00018**	**.05092**	**.00177**	**.00024**	**.00137**	**.00071**	**.00162**
Stddev	.00083	.00100	.00998	.00193	.00052	.00009	.00084
%RSD	474.40	1.9658	565.04	789.52	37.663	12.612	51.686
#1	-.00049	.05003	.00781	-.00019	.00196	.00074	.00252
#2	-.00081	.05200	-.00975	.00235	.00120	.00078	.00148
#3	.00077	.05072	.00724	-.00143	.00097	.00061	.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9920.3**	**59957.**	**3053.1**
Stddev	9.3	97.	28.1
%RSD	.09367	.16197	.92019
#1	9910.9	59874.	3056.5
#2	9929.5	60064.	3023.5
#3	9920.6	59932.	3079.4

Approved: June 27, 2016

Sample Name: L1606127901 Acquired: 6/25/2016 16:12:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00079	.23343	-.00035	.00697	.01048	.00010	5.5956	-.00004
Stddev	.00151	.00808	.00093	.00046	.00038	.00003	.0897	.00007
%RSD	191.07	3.4604	268.33	6.6127	3.6255	27.106	1.6038	155.88
#1	-.00012	.24183	.00073	.00738	.01041	.00014	5.5127	-.00007
#2	.00027	.23274	-.00087	.00647	.01090	.00009	5.5834	-.00010
#3	-.00251	.22572	-.00090	.00704	.01015	.00009	5.6909	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.00040	.00104	.37949	.02999	.00120	2.2214	.04375
Stddev	.00022	.00063	.00117	.02000	.03448	.00297	.1047	.00042
%RSD	72.888	155.32	112.12	5.2704	114.98	248.44	4.7142	.95613
#1	.00020	.00102	-.00030	.35646	.01685	.00172	2.1668	.04335
#2	.00015	-.00023	.00181	.39248	.06911	.00387	2.1552	.04372
#3	.00056	.00042	.00162	.38953	.00401	-.00200	2.3421	.04419
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	.40372	.00002	.01800	.00182	-.00229	.00534	.76285
Stddev	.00016	.02832	.00029	.00724	.00294	.00133	.00501	.02556
%RSD	124.97	7.0152	1295.9	40.230	161.43	58.036	93.812	3.3508
#1	-.00031	.38955	.00035	.01067	.00373	-.00090	.01054	.73582
#2	-.00001	.38528	-.00008	.01820	-.00157	-.00355	.00492	.76609
#3	-.00007	.43633	-.00020	.02515	.00330	-.00243	.00055	.78664
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127901 Acquired: 6/25/2016 16:12:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00000**	**.02802**	**.00639**	**-.00424**	**.00104**	**.00686**	**-.00053**
Stddev	.00059	.00084	.00088	.00033	.00039	.00027	.00162
%RSD	12664.	3.0023	13.821	7.8780	37.381	4.0081	307.76
#1	.00044	.02706	.00703	-.00390	.00138	.00661	.00100
#2	.00022	.02835	.00538	-.00425	.00062	.00681	-.00222
#3	-.00068	.02864	.00675	-.00456	.00114	.00715	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9995.1**	**60569.**	**3072.5**
Stddev	18.8	83.	17.9
%RSD	.18798	.13702	.58354
#1	10017.	60498.	3093.1
#2	9983.0	60660.	3060.2
#3	9985.6	60548.	3064.2

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 16:16:03 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41279**	**10.433**	**.40298**	**.50323**	**1.0184**	**.05236**	**10.146**
Stddev	.00062	.023	.00491	.00242	.0037	.00006	.030
%RSD	.14995	.22399	1.2186	.48043	.36729	.12018	.29415
#1	.41231	10.415	.40384	.50055	1.0220	.05229	10.131
#2	.41349	10.459	.39769	.50390	1.0146	.05241	10.126
#3	.41257	10.425	.40740	.50524	1.0186	.05238	10.180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05206**	**.20294**	**.51645**	**.52099**	**4.0952**	**49.051**	**1.0295**
Stddev	.00043	.00065	.00457	.00121	.0025	.142	.0088
%RSD	.83054	.31937	.88415	.23159	.06120	.28862	.85476
#1	.05248	.20360	.51186	.52157	4.0943	49.074	1.0305
#2	.05210	.20291	.52099	.52180	4.0933	48.900	1.0203
#3	.05161	.20230	.51649	.51960	4.0980	49.180	1.0378
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.7277**	**.51414**	**1.0402**	**49.935**	**.51586**	**10.134**	**.51189**
Stddev	.0462	.00321	.0047	.095	.00165	.031	.00166
%RSD	.47447	.62359	.45388	.19063	.31918	.30495	.32486
#1	9.7465	.51782	1.0451	50.021	.51766	10.168	.51381
#2	9.6751	.51192	1.0398	49.833	.51549	10.123	.51086
#3	9.7615	.51270	1.0357	49.951	.51442	10.109	.51101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 16:16:03 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2153**	**.40661**	**5.2188**	**1.0211**	**1.0187**	**1.0271**	**.52415**
Stddev	.0058	.00386	.0120	.0013	.0031	.0069	.00046
%RSD	.47598	.95000	.22957	.12690	.30817	.67428	.08834
#1	1.2162	.40345	5.2255	1.0218	1.0207	1.0286	.52363
#2	1.2206	.41091	5.2258	1.0219	1.0150	1.0195	.52433
#3	1.2091	.40546	5.2049	1.0196	1.0203	1.0331	.52450
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0611**	**1.0269**	F **2.9985**
Stddev	.0021	.0010	.0124
%RSD	.19830	.09638	.41405
#1	1.0631	1.0270	3.0047
#2	1.0614	1.0279	2.9842
#3	1.0589	1.0259	3.0065
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9559.6**	**57599.**	**2986.8**
Stddev	4.9	130.	10.5
%RSD	.05148	.22635	.35191
#1	9564.0	57612.	2977.9
#2	9560.6	57462.	2998.4
#3	9554.3	57722.	2984.0

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 16:19:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00185	.00626	-.00023	.00044	.00278	.00005	-.04464	.00001
Stddev	.00025	.00998	.00075	.00197	.00045	.00006	.01589	.00008
%RSD	13.751	159.28	328.05	451.88	16.156	122.09	35.589	834.92
#1	.00158	.01229	-.00019	.00230	.00236	.00010	-.04122	-.00004
#2	.00190	-.00525	.00050	.00063	.00326	-.00002	-.03074	-.00004
#3	.00208	.01176	-.00099	-.00162	.00274	.00006	-.06195	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	.00030	.00108	.01891	-.08883	.00028	.04170	-.00007
Stddev	.00014	.00149	.00123	.02463	.04133	.00158	.04172	.00069
%RSD	37.231	490.44	114.38	130.22	46.533	569.52	100.03	937.33
#1	-.00023	.00135	.00225	.04102	-.10527	-.00061	.02819	.00053
#2	-.00043	.00096	-.00021	.02335	-.11941	.00210	.00842	.00008
#3	-.00050	-.00140	.00119	-.00763	-.04180	-.00066	.08850	-.00082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00343	.00251	-.00012	.00363	.00401	.00489	.00879	-.00487
Stddev	.00038	.01645	.00050	.00608	.00167	.00193	.00298	.00028
%RSD	11.063	654.49	431.61	167.28	41.713	39.486	33.953	5.7618
#1	.00299	.00408	-.00004	.00277	.00588	.00378	.00970	-.00459
#2	.00370	-.01467	-.00065	-.00196	.00352	.00712	.01122	-.00515
#3	.00359	.01813	.00034	.01010	.00264	.00378	.00546	-.00487
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 16:19:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**.00057**	**.00214**	**-.00157**	**.00060**	**-.00006**	**.00421**
Stddev	.00055	.00026	.00424	.00416	.00034	.00004	.00038
%RSD	193.42	45.468	198.11	264.68	55.851	78.634	9.1291
#1	-.00056	.00032	.00612	.00235	.00061	-.00008	.00456
#2	-.00063	.00083	-.00232	-.00593	.00093	-.00001	.00426
#3	.00035	.00056	.00262	-.00114	.00026	-.00008	.00380
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9751.1**	**59011.**	**2998.0**
Stddev	16.0	92.	16.9
%RSD	.16409	.15669	.56327
#1	9735.8	59057.	2997.7
#2	9767.8	59072.	2981.2
#3	9749.7	58905.	3015.0

Approved: June 27, 2016

Sample Name: L1606127905 Acquired: 6/25/2016 16:23:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00112	.42892	.00254	.00885	.00931	.00014	4.1101	-.00014
Stddev	.00085	.00960	.00110	.00026	.00054	.00008	.0226	.00009
%RSD	76.091	2.2373	43.205	2.9736	5.7541	61.416	.54879	60.631
#1	.00187	.41894	.00336	.00888	.00991	.00015	4.0848	-.00017
#2	.00019	.43809	.00129	.00858	.00890	.00022	4.1178	-.00005
#3	.00131	.42973	.00298	.00910	.00911	.00005	4.1279	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	.00072	.00093	.46806	-.04215	.00375	2.3175	.01534
Stddev	.00025	.00122	.00082	.01630	.03381	.00237	.0180	.00171
%RSD	38.393	169.05	88.133	3.4825	80.210	63.236	.77530	11.156
#1	.00092	.00051	.00011	.45372	-.08111	.00533	2.3322	.01684
#2	.00057	-.00038	.00092	.46467	-.02046	.00102	2.2974	.01572
#3	.00044	.00203	.00175	.48579	-.02489	.00491	2.3228	.01348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	.79830	.00036	.03423	.00164	-.00327	.00568	1.0453
Stddev	.00055	.00874	.00054	.00334	.00066	.00436	.00399	.0205
%RSD	130.46	1.0949	148.73	9.7489	39.962	133.66	70.190	1.9601
#1	-.00012	.80324	-.00001	.03061	.00234	-.00815	.00802	1.0252
#2	.00040	.78821	.00099	.03719	.00155	-.00191	.00794	1.0445
#3	.00099	.80344	.00012	.03489	.00104	.00026	.00108	1.0662
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127905 Acquired: 6/25/2016 16:23:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.01799	.00482	-.00230	.00189	.01109	.00007
Stddev	.00065	.00037	.00226	.00232	.00074	.00029	.00211
%RSD	715.49	2.0334	47.005	100.92	39.126	2.6113	3180.6
#1	-.00003	.01830	.00310	.00003	.00148	.01082	.00082
#2	.00080	.01809	.00396	-.00232	.00274	.01107	-.00231
#3	-.00049	.01759	.00738	-.00462	.00144	.01140	.00169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9972.5	60381.	3064.6
Stddev	33.3	69.	2.8
%RSD	.33435	.11363	.09242
#1	10010.	60351.	3061.5
#2	9961.5	60333.	3067.1
#3	9946.1	60460.	3065.2

Approved: June 27, 2016

Sample Name: L1606114801 Acquired: 6/25/2016 16:27:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.03462	.00065	.00821	.00587	.00014	1.4096	-.00013
Stddev	.00034	.00628	.00229	.00098	.00178	.00003	.0346	.00033
%RSD	57.407	18.141	351.58	11.960	30.235	19.203	2.4561	248.47
#1	.00054	.03990	-.00071	.00924	.00790	.00011	1.3926	.00011
#2	.00095	.02767	-.00063	.00729	.00463	.00014	1.4495	-.00000
#3	.00028	.03630	.00329	.00809	.00508	.00016	1.3868	-.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00001	.00030	.04215	.21418	.00024	.69121	.00161
Stddev	.00012	.00038	.00134	.02269	.07335	.00510	.07378	.00189
%RSD	127.75	2953.4	439.05	53.849	34.250	2116.0	10.674	117.34
#1	.00006	.00044	.00117	.03668	.16871	.00256	.67687	-.00053
#2	-.00001	-.00026	.00097	.06707	.29880	.00377	.77111	.00305
#3	.00022	-.00014	-.00123	.02268	.17502	-.00561	.62565	.00230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00000	3.4091	-.00039	.01019	-.00019	-.00195	.00226	.25600
Stddev	.00027	.0299	.00017	.00142	.00263	.00116	.00241	.00788
%RSD	8569.8	.87827	42.602	13.923	1405.5	59.228	106.91	3.0774
#1	.00029	3.3757	-.00048	.01168	-.00018	-.00094	.00166	.24819
#2	-.00005	3.4183	-.00020	.01005	.00244	-.00171	.00492	.25587
#3	-.00025	3.4335	-.00049	.00885	-.00282	-.00321	.00020	.26394
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606114801 Acquired: 6/25/2016 16:27:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00043**	**.01395**	**.00070**	**-.00087**	**.00132**	**.00137**	**.00142**
Stddev	.00051	.00044	.00486	.00154	.00026	.00005	.00170
%RSD	118.61	3.1779	695.33	177.20	19.933	3.3203	119.70
#1	-.00063	.01431	.00581	-.00155	.00155	.00135	.00002
#2	.00015	.01345	.00013	-.00194	.00103	.00135	.00093
#3	-.00082	.01408	-.00385	.00089	.00136	.00143	.00331
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9913.2**	**60132.**	**3023.4**
Stddev	14.6	83.	23.3
%RSD	.14679	.13818	.77035
#1	9929.6	60151.	3030.8
#2	9901.6	60041.	2997.3
#3	9908.5	60204.	3042.1

Approved: June 27, 2016

Sample Name: L1606114802 Acquired: 6/25/2016 16:31:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00158	-.00408	.00026	.00633	.00904	.00015	2.7703	-.00011
Stddev	.00108	.00521	.00166	.00204	.00121	.00009	.0227	.00014
%RSD	68.438	127.59	628.67	32.297	13.379	59.313	.82092	123.10
#1	.00072	-.00923	-.00155	.00429	.00969	.00008	2.7476	-.00002
#2	.00123	.00119	.00169	.00631	.00978	.00025	2.7930	-.00027
#3	.00279	-.00421	.00065	.00838	.00764	.00012	2.7703	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.00002	.00060	.02383	.06717	.00040	2.3757	.00083
Stddev	.00028	.00081	.00057	.01240	.09428	.00275	.0633	.00197
%RSD	81.635	5221.9	93.832	52.028	140.36	693.38	2.6650	237.49
#1	.00044	-.00078	.00046	.02298	.16159	-.00259	2.3743	.00224
#2	.00003	-.00000	.00012	.01188	-.02697	.00095	2.4397	.00167
#3	.00055	.00084	.00122	.03663	.06688	.00283	2.3131	-.00142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	6.0259	-.00040	.00438	.00227	-.00140	.00185	.32995
Stddev	.00024	.0927	.00045	.00883	.00074	.00370	.00550	.00769
%RSD	208.31	1.5391	111.52	201.54	32.728	264.56	298.09	2.3316
#1	.00039	5.9438	-.00070	.01456	.00143	-.00567	.00483	.32126
#2	-.00003	6.1265	.00011	-.00011	.00282	.00058	.00521	.33270
#3	-.00002	6.0074	-.00061	-.00130	.00258	.00089	-.00450	.33589
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606114802 Acquired: 6/25/2016 16:31:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.01996	.00356	-.00001	.00116	.00095	-.00024
Stddev	.00040	.00029	.00718	.00102	.00055	.00026	.00029
%RSD	136.64	1.4402	201.93	7537.5	47.304	27.165	121.82
#1	-.00006	.02008	.00861	-.00117	.00177	.00075	-.00049
#2	.00022	.02016	-.00466	.00037	.00099	.00086	-.00028
#3	.00074	.01963	.00672	.00076	.00071	.00124	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9925.6	60099.	3031.8
Stddev	7.7	64.	18.1
%RSD	.07799	.10696	.59652
#1	9922.2	60109.	3022.9
#2	9920.2	60157.	3019.9
#3	9934.5	60030.	3052.6

Approved: June 27, 2016

Sample Name: L1606115001 Acquired: 6/25/2016 16:35:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00166	.05641	.00050	.00663	.00676	.00016	1.7818	.00015
Stddev	.00049	.00787	.00304	.00311	.00055	.00011	.0479	.00031
%RSD	29.631	13.947	601.42	46.927	8.1582	71.613	2.6886	203.48
#1	.00200	.06510	-.00294	.00991	.00739	.00005	1.7526	.00038
#2	.00109	.05435	.00166	.00372	.00635	.00014	1.8371	-.00020
#3	.00188	.04978	.00279	.00626	.00655	.00027	1.7557	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.00048	.00100	.04970	.00137	.00112	1.1341	.00143
Stddev	.00049	.00051	.00115	.01548	.09645	.00218	.0897	.00096
%RSD	745.24	106.17	114.47	31.142	7038.5	195.00	7.9106	67.253
#1	-.00002	.00105	.00223	.06756	-.03266	.00315	1.0361	.00043
#2	-.00057	.00034	.00081	.04145	.11022	-.00118	1.2123	.00235
#3	.00040	.00005	-.00004	.04010	-.07346	.00137	1.1537	.00152
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	5.9717	-.00015	.00950	-.00176	-.00302	.00622	.28058
Stddev	.00014	.0718	.00043	.00093	.00081	.00221	.00277	.00537
%RSD	53.804	1.2031	276.46	9.7789	45.909	73.167	44.558	1.9140
#1	-.00010	5.9074	-.00014	.01003	-.00249	-.00320	.00355	.27441
#2	-.00036	6.0493	-.00058	.01005	-.00089	-.00072	.00603	.28316
#3	-.00034	5.9584	.00027	.00843	-.00189	-.00513	.00908	.28418
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115001 Acquired: 6/25/2016 16:35:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.01287	.00136	-.00194	.00110	.00114	.00062
Stddev	.00058	.00017	.00295	.00426	.00072	.00013	.00087
%RSD	762.02	1.3177	217.51	219.83	65.867	11.722	140.33
#1	.00015	.01301	.00162	-.00450	.00182	.00119	.00034
#2	-.00054	.01292	.00417	-.00429	.00110	.00099	-.00008
#3	.00061	.01268	-.00172	.00298	.00038	.00124	.00159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9919.3	60059.	3016.8
Stddev	34.5	56.	13.7
%RSD	.34767	.09285	.45386
#1	9942.2	60062.	3013.8
#2	9936.0	60114.	3004.8
#3	9879.6	60002.	3031.7

Approved: June 27, 2016

Sample Name: L1606115102 Acquired: 6/25/2016 16:39:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00105	.00214	.00018	.00362	.00526	.00013	1.7820	.00006
Stddev	.00166	.00346	.00084	.00176	.00021	.00005	.0144	.00011
%RSD	158.53	161.68	476.67	48.690	4.0116	41.814	.80931	182.53
#1	.00213	.00451	-.00003	.00223	.00549	.00009	1.7780	.00003
#2	-.00086	-.00183	-.00054	.00560	.00521	.00010	1.7700	-.00003
#3	.00188	.00375	.00110	.00302	.00507	.00019	1.7980	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.00030	.00081	.02568	-.04054	.00233	1.0068	.00278
Stddev	.00009	.00056	.00053	.02210	.04687	.00374	.0618	.00296
%RSD	39.196	184.13	65.165	86.089	115.61	160.62	6.1428	106.56
#1	.00032	.00005	.00046	.05079	-.00224	.00526	1.0696	.00587
#2	.00013	-.00008	.00055	.00916	-.02657	.00361	.94591	-.00003
#3	.00026	.00094	.00141	.01708	-.09281	-.00188	1.0048	.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00000	4.8272	.00042	.00764	.00031	-.00602	.00252	.26699
Stddev	.00027	.0498	.00058	.00427	.00107	.00140	.00418	.00420
%RSD	7088.8	1.0326	136.65	55.913	346.71	23.202	166.24	1.5735
#1	-.00018	4.7713	.00031	.01044	.00076	-.00742	-.00226	.26233
#2	-.00015	4.8672	-.00009	.00272	.00108	-.00462	.00551	.26815
#3	.00031	4.8430	.00105	.00974	-.00091	-.00602	.00431	.27049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115102 Acquired: 6/25/2016 16:39:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	.01171	-.00105	-.00167	.00048	.00111	-.00010
Stddev	.00036	.00032	.00211	.00218	.00034	.00004	.00053
%RSD	98.761	2.7498	200.92	130.51	71.305	3.3481	503.34
#1	-.00064	.01138	-.00295	-.00411	.00028	.00107	-.00046
#2	-.00048	.01174	.00122	-.00099	.00029	.00113	.00050
#3	.00004	.01202	-.00143	.00009	.00088	.00113	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9924.7	60209.	3035.9
Stddev	21.0	164.	13.4
%RSD	.21110	.27319	.44278
#1	9945.2	60212.	3050.8
#2	9925.5	60043.	3024.7
#3	9903.3	60372.	3032.1

Approved: June 27, 2016

Sample Name: L1606115105 Acquired: 6/25/2016 16:43:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00211	.00219	.00055	.00586	.00711	.00018	2.2105	.00001
Stddev	.00101	.00795	.00092	.00071	.00025	.00010	.0174	.00025
%RSD	47.839	363.29	167.06	12.119	3.4464	53.942	.78551	4197.7
#1	.00096	-.00697	.00162	.00634	.00685	.00013	2.1935	-.00020
#2	.00251	.00621	-.00001	.00619	.00715	.00012	2.2282	.00029
#3	.00286	.00732	.00005	.00504	.00733	.00030	2.2098	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	-.00001	.00002	.02737	.01189	.00109	1.3118	.00125
Stddev	.00029	.00051	.00146	.02301	.05921	.00366	.0639	.00239
%RSD	827.06	7244.7	6104.0	84.080	497.84	335.35	4.8727	191.19
#1	.00035	.00040	.00134	.00788	.02968	-.00236	1.3142	.00227
#2	-.00003	.00015	.00027	.02147	.06017	.00070	1.3745	.00297
#3	-.00022	-.00058	-.00154	.05276	-.05417	.00493	1.2467	-.00148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	6.1621	.00034	.00603	.00215	-.00121	.00114	.31741
Stddev	.00059	.0852	.00146	.00590	.00148	.00098	.00444	.00674
%RSD	252.32	1.3824	433.95	97.933	68.608	80.696	390.40	2.1227
#1	-.00086	6.0786	-.00133	.00455	.00384	-.00161	.00564	.31056
#2	-.00015	6.2489	.00098	.00101	.00153	-.00010	.00100	.31765
#3	.00031	6.1588	.00136	.01253	.00108	-.00192	-.00323	.32403
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115105 Acquired: 6/25/2016 16:43:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.01487**	**-.00053**	**-.00166**	**.00081**	**.00090**	**.00078**
Stddev	.00083	.00056	.00515	.00250	.00073	.00004	.00134
%RSD	533.32	3.7472	973.66	150.50	89.693	4.1812	172.14
#1	-.00110	.01433	.00470	-.00448	.00103	.00087	.00219
#2	.00015	.01545	-.00069	-.00074	.00000	.00094	.00064
#3	.00048	.01482	-.00560	.00025	.00141	.00089	-.00049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9886.5**	**59788.**	**3007.6**
Stddev	13.0	185.	33.5
%RSD	.13157	.30931	1.1137
#1	9901.4	60001.	3037.0
#2	9880.8	59677.	2971.1
#3	9877.4	59685.	3014.8

Approved: June 27, 2016

Sample Name: L1606115401 Acquired: 6/25/2016 16:47:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573707-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	.00056	-.00040	.08474	.00202	.00013	25.077	-.00002
Stddev	.00048	.01146	.00100	.00137	.00093	.00006	.183	.00004
%RSD	125.93	2038.5	249.32	1.6179	46.237	47.434	.73077	179.25
#1	-.00014	.00766	-.00156	.08632	.00308	.00006	25.288	-.00005
#2	.00079	.00669	.00017	.08409	.00131	.00017	24.966	-.00003
#3	.00048	-.01266	.00019	.08382	.00167	.00016	24.976	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	-.00049	.00090	.03824	.13932	.00586	5.7156	.01284
Stddev	.00012	.00049	.00033	.01141	.04539	.00340	.0899	.00260
%RSD	49.754	99.993	36.739	29.841	32.583	57.965	1.5726	20.218
#1	.00011	-.00085	.00123	.04902	.09367	.00206	5.7030	.01056
#2	.00028	-.00069	.00089	.02629	.18446	.00861	5.6327	.01230
#3	.00036	.00007	.00057	.03940	.13984	.00691	5.8112	.01567
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	48.626	-.00075	.01117	.00114	-.00491	.00349	.27480
Stddev	.00026	.111	.00066	.00745	.00133	.00248	.00272	.00312
%RSD	52.573	.22800	87.964	66.704	116.26	50.491	77.811	1.1358
#1	.00024	48.499	-.00062	.01513	.00176	-.00250	.00652	.27222
#2	.00075	48.707	-.00147	.01582	.00206	-.00745	.00269	.27392
#3	.00048	48.670	-.00016	.00258	-.00038	-.00478	.00127	.27827
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115401 Acquired: 6/25/2016 16:47:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573707-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.45176	-.00366	.00143	.00149	.00078	.00089
Stddev	.00028	.00268	.00362	.00047	.00058	.00004	.00106
%RSD	304.19	.59263	98.732	33.094	39.124	5.2122	119.26
#1	.00040	.44867	-.00000	.00088	.00209	.00083	-.00013
#2	-.00012	.45326	-.00375	.00168	.00093	.00076	.00081
#3	-.00001	.45335	-.00723	.00172	.00145	.00075	.00200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9797.1	59243.	3012.9
Stddev	17.5	107.	17.7
%RSD	.17826	.18036	.58631
#1	9776.9	59361.	2997.1
#2	9806.9	59214.	3009.7
#3	9807.4	59153.	3032.0

Approved: June 27, 2016

Sample Name: L1606115402S Acquired: 6/25/2016 16:51:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: ~~WG573994-~~04 WG573707-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01309**	**.25824**	**.01110**	**.13590**	**.02825**	**.00141**	**24.615**	**.00126**
Stddev	.00068	.00760	.00152	.00169	.00035	.00008	.204	.00013
%RSD	5.1924	2.9441	13.682	1.2425	1.2428	5.6800	.82995	10.655
#1	.01329	.24951	.01277	.13422	.02816	.00148	24.549	.00132
#2	.01365	.26341	.01072	.13589	.02864	.00133	24.844	.00111
#3	.01234	.26179	.00981	.13760	.02795	.00143	24.452	.00136
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00516**	**.01347**	**.01556**	**.12663**	**1.3534**	**.03179**	**5.7750**	**.02544**
Stddev	.00029	.00054	.00043	.02761	.0228	.00410	.0699	.00285
%RSD	5.6307	4.0382	2.7758	21.808	1.6862	12.889	1.2101	11.189
#1	.00539	.01407	.01514	.12414	1.3303	.03536	5.8428	.02774
#2	.00525	.01301	.01552	.15541	1.3541	.02732	5.7789	.02226
#3	.00483	.01334	.01600	.10034	1.3759	.03267	5.7032	.02633
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02479**	**48.072**	**.01332**	**.27819**	**.01575**	**.03066**	**.01661**	**.41681**
Stddev	.00011	.553	.00070	.01153	.00513	.00307	.00921	.00803
%RSD	.43243	1.1513	5.2238	4.1456	32.553	10.027	55.466	1.9271
#1	.02491	47.545	.01404	.27355	.01630	.02789	.02173	.40846
#2	.02475	48.649	.01266	.26969	.02058	.03397	.02212	.41747
#3	.02470	48.023	.01326	.29132	.01037	.03013	.00597	.42449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115402S Acquired: 6/25/2016 16:51:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: ~~WG573994-04~~ WG573707-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02366**	**.45706**	**.02085**	**.01353**	**.02750**	**.02826**	**.00274**
Stddev	.00062	.00423	.00301	.00109	.00044	.00035	.00077
%RSD	2.6070	.92537	14.446	8.0746	1.5967	1.2498	28.151
#1	.02338	.45248	.01904	.01478	.02755	.02786	.00198
#2	.02436	.46082	.01917	.01306	.02704	.02846	.00352
#3	.02323	.45789	.02432	.01275	.02792	.02848	.00271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9814.2**	**59172.**	**3008.6**
Stddev	14.0	133.	22.5
%RSD	.14277	.22528	.74717
#1	9829.8	59323.	3030.6
#2	9810.3	59073.	2985.6
#3	9802.6	59119.	3009.6

Approved: June 27, 2016

Sample Name: L1606115403SD Acquired: 6/25/2016 16:54:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: ~~WG573994-05~~ WG573707-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01239	.28748	.01145	.14150	.02764	.00148	24.958	.00130
Stddev	.00114	.00888	.00065	.00093	.00147	.00009	.077	.00038
%RSD	9.2124	3.0872	5.6507	.65421	5.3298	6.1781	.30772	29.306
#1	.01125	.28330	.01179	.14053	.02888	.00144	25.006	.00087
#2	.01353	.28146	.01070	.14159	.02802	.00141	24.999	.00161
#3	.01238	.29767	.01185	.14238	.02601	.00158	24.870	.00142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00611	.01431	.01527	.13086	1.3857	.03280	5.7817	.02287
Stddev	.00054	.00136	.00145	.01260	.0370	.00239	.0561	.00299
%RSD	8.8509	9.4861	9.4751	9.6283	2.6697	7.2716	.97114	13.075
#1	.00671	.01585	.01436	.14435	1.3780	.03556	5.7473	.02433
#2	.00566	.01329	.01452	.11939	1.4259	.03138	5.8465	.01943
#3	.00597	.01379	.01694	.12885	1.3532	.03147	5.7513	.02484
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02737	48.881	.01504	.29126	.01658	.02795	.01955	.43672
Stddev	.00021	.600	.00152	.00741	.00249	.00243	.00943	.00693
%RSD	.75532	1.2279	10.076	2.5426	15.013	8.6768	48.242	1.5861
#1	.02720	48.195	.01331	.29382	.01763	.03060	.01049	.42891
#2	.02732	49.311	.01567	.29705	.01373	.02742	.02931	.43914
#3	.02760	49.136	.01613	.28292	.01836	.02584	.01885	.44211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115403SD Acquired: 6/25/2016 16:54:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: ~~WG573994-05~~ WG573707-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02590**	**.47018**	**.02569**	**.01379**	**.02893**	**.02996**	**.00113**
Stddev	.00080	.00475	.00439	.00029	.00110	.00076	.00027
%RSD	3.0868	1.0106	17.097	2.0910	3.8168	2.5433	23.745
#1	.02499	.46471	.02819	.01349	.02776	.02918	.00138
#2	.02647	.47252	.02061	.01406	.02908	.03000	.00115
#3	.02625	.47331	.02825	.01382	.02996	.03071	.00085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9727.4**	**58906.**	**3022.7**
Stddev	40.6	23.	25.7
%RSD	.41767	.03969	.84864
#1	9765.9	58911.	3039.9
#2	9731.2	58926.	2993.2
#3	9685.0	58880.	3035.0

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 16:58:48 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41361	10.445	.40516	.50612	1.0259	.05224	10.203
Stddev	.00260	.021	.00144	.00287	.0033	.00020	.046
%RSD	.62922	.20256	.35469	.56757	.31739	.38953	.44884
#1	.41655	10.462	.40524	.50908	1.0271	.05242	10.224
#2	.41159	10.421	.40656	.50592	1.0284	.05202	10.235
#3	.41269	10.451	.40369	.50335	1.0222	.05229	10.150
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05215	.20471	.51698	.52477	4.0648	49.423	1.0320
Stddev	.00013	.00021	.00148	.00103	.0369	.189	.0006
%RSD	.23994	.10391	.28587	.19687	.90838	.38306	.06170
#1	.05201	.20470	.51640	.52461	4.1007	49.428	1.0316
#2	.05218	.20450	.51865	.52588	4.0269	49.610	1.0327
#3	.05226	.20492	.51587	.52383	4.0668	49.231	1.0316
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.8590	.51551	1.0404	50.331	.51945	10.229	.51430
Stddev	.0965	.00144	.0039	.173	.00106	.010	.00570
%RSD	.97927	.27876	.37864	.34422	.20472	.09385	1.1081
#1	9.9705	.51433	1.0396	50.428	.51822	10.232	.51032
#2	9.8060	.51711	1.0369	50.435	.52013	10.218	.51175
#3	9.8006	.51508	1.0447	50.131	.51999	10.236	.52083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 16:58:48 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2288**	**.41352**	**5.2624**	**1.0315**	**1.0269**	**1.0279**	**.53017**
Stddev	.0104	.00168	.0015	.0026	.0016	.0023	.00514
%RSD	.84208	.40618	.02811	.25583	.15527	.22255	.96993
#1	1.2288	.41198	5.2628	1.0285	1.0283	1.0298	.53564
#2	1.2391	.41326	5.2608	1.0336	1.0273	1.0286	.52543
#3	1.2184	.41531	5.2637	1.0323	1.0252	1.0254	.52943
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0564**	**1.0308**	F **3.0180**
Stddev	.0015	.0001	.0119
%RSD	.14240	.01349	.39369
#1	1.0580	1.0307	3.0121
#2	1.0561	1.0310	3.0317
#3	1.0550	1.0308	3.0102
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9528.1**	**57486.**	**2960.8**
Stddev	9.3	201.	17.3
%RSD	.09776	.34979	.58425
#1	9517.6	57273.	2962.9
#2	9535.3	57514.	2942.6
#3	9531.5	57672.	2977.0

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 17:02:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00045**	**.00226**	**.00067**	**.00055**	**.00185**	**.00013**	**-.07167**	**-.00014**
Stddev	.00085	.00279	.00119	.00264	.00042	.00005	.02175	.00033
%RSD	189.88	123.24	177.00	483.17	22.573	35.869	30.346	234.73
#1	.00019	-.00053	.00152	-.00019	.00233	.00018	-.09322	-.00050
#2	-.00141	.00505	-.00069	-.00165	.00153	.00012	-.04973	.00014
#3	-.00012	.00226	.00119	.00348	.00171	.00009	-.07206	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.00057**	**.00076**	**.03056**	**-.09613**	**.00228**	**-.13259**	**.00051**
Stddev	.00039	.00056	.00130	.01338	.02053	.00471	.02062	.00136
%RSD	1720.9	98.019	170.60	43.800	21.361	206.77	15.553	268.18
#1	.00020	.00017	-.00074	.01806	-.09726	-.00131	-.14855	-.00092
#2	.00020	.00121	.00148	.02892	-.07505	.00054	-.10931	.00179
#3	-.00047	.00034	.00155	.04468	-.11607	.00761	-.13993	.00066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00325**	**.04047**	**-.00081**	**.00150**	**.00148**	**.00530**	**.00256**	**-.00673**
Stddev	.00022	.01175	.00096	.00183	.00289	.00260	.00237	.00167
%RSD	6.7467	29.033	119.00	121.89	195.62	48.929	92.639	24.783
#1	.00325	.05342	-.00016	.00278	.00470	.00570	.00309	-.00596
#2	.00303	.03049	-.00036	.00231	.00063	.00768	-.00003	-.00558
#3	.00347	.03751	-.00192	-.00059	-.00090	.00253	.00461	-.00864
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 17:02:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**.00044**	**.00426**	**-.00209**	**.00094**	**.00001**	**.00353**
Stddev	.00052	.00045	.00463	.00321	.00096	.00021	.00070
%RSD	128.76	102.93	108.80	153.83	102.68	1611.6	19.702
#1	.00048	.00069	.00959	-.00418	.00024	-.00012	.00320
#2	.00089	.00071	.00120	.00161	.00204	-.00009	.00306
#3	-.00015	-.00008	.00198	-.00369	.00053	.00025	.00433
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9729.2**	**58924.**	**2982.2**
Stddev	14.1	124.	20.8
%RSD	.14444	.21107	.69802
#1	9725.0	58912.	2962.2
#2	9744.9	58806.	3003.8
#3	9717.8	59054.	2980.7

Approved: June 27, 2016

Sample Name: L1606115501 Acquired: 6/25/2016 17:06:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00033**	**.00180**	**.00125**	**.01161**	**.01032**	**.00011**	**2.3136**	**-.00007**
Stddev	.00230	.00043	.00160	.00137	.00099	.00007	.0269	.00019
%RSD	694.54	23.757	128.16	11.776	9.5715	61.393	1.1630	281.96
#1	.00225	.00218	.00194	.01272	.00925	.00003	2.3397	.00009
#2	-.00214	.00134	.00239	.01008	.01120	.00016	2.2860	-.00001
#3	-.00111	.00188	-.00058	.01203	.01051	.00015	2.3151	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.00014**	**-.00018**	**.02935**	**.09569**	**-.00047**	**1.4383**	**.08572**
Stddev	.00040	.00048	.00052	.00252	.08702	.00314	.0635	.00277
%RSD	831.42	341.03	289.17	8.5796	90.931	664.03	4.4136	3.2299
#1	.00005	.00069	-.00054	.02667	.18563	.00276	1.4626	.08626
#2	.00029	-.00017	.00042	.03166	.01192	-.00066	1.4861	.08273
#3	-.00048	-.00010	-.00042	.02972	.08953	-.00352	1.3663	.08818
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00023**	**3.8750**	**.00064**	**.00454**	**.00264**	**-.00168**	**.00429**	**.37174**
Stddev	.00028	.0249	.00026	.00324	.00293	.00204	.00272	.00091
%RSD	124.52	.64140	39.830	71.430	111.04	121.37	63.452	.24386
#1	-.00008	3.8959	.00063	.00081	.00037	-.00400	.00736	.37278
#2	.00028	3.8475	.00040	.00665	.00594	-.00087	.00338	.37129
#3	.00048	3.8816	.00091	.00616	.00160	-.00017	.00214	.37115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115501 Acquired: 6/25/2016 17:06:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.01613**	**.00436**	**.00049**	**-.00004**	**.00087**	**.00142**
Stddev	.00092	.00051	.00120	.00199	.00066	.00012	.00191
%RSD	2230.2	3.1791	27.456	410.68	1766.6	13.339	134.89
#1	.00087	.01607	.00571	.00178	-.00027	.00083	.00247
#2	-.00002	.01565	.00341	-.00181	.00071	.00100	-.00079
#3	-.00097	.01667	.00397	.00149	-.00055	.00078	.00257
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9938.9**	**60110.**	**3041.6**
Stddev	14.3	99.	8.4
%RSD	.14384	.16440	.27454
#1	9922.4	60057.	3050.1
#2	9946.9	60224.	3033.5
#3	9947.4	60049.	3041.2

Approved: June 27, 2016

Sample Name: L1606115502 Acquired: 6/25/2016 17:10:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	-.00453	-.00033	.00989	.01794	.00013	2.4889	.00011
Stddev	.00144	.01600	.00099	.00264	.00078	.00009	.0280	.00014
%RSD	216.56	353.18	295.78	26.673	4.3403	71.235	1.1261	129.84
#1	.00231	.00655	-.00001	.00702	.01871	.00024	2.4937	.00027
#2	.00001	-.02287	-.00144	.01220	.01715	.00010	2.5143	-.00000
#3	-.00033	.00273	.00045	.01047	.01798	.00006	2.4588	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	-.00044	.00104	.24605	-.07520	-.00217	1.6643	.02363
Stddev	.00022	.00012	.00019	.01179	.12175	.00286	.0624	.00224
%RSD	272.66	27.286	18.718	4.7938	161.89	131.42	3.7522	9.4751
#1	.00027	-.00041	.00090	.23638	.00559	-.00035	1.5996	.02553
#2	.00015	-.00033	.00126	.24256	-.01597	-.00070	1.6689	.02116
#3	-.00017	-.00057	.00095	.25919	-.21524	-.00546	1.7243	.02420
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00021	2.8989	.00016	.00365	.00260	-.00217	.00870	.42450
Stddev	.00065	.0101	.00120	.00396	.00147	.00150	.00507	.00601
%RSD	314.77	.35003	759.93	108.45	56.477	68.876	58.304	1.4160
#1	-.00082	2.8946	-.00099	.00772	.00422	-.00382	.01102	.41775
#2	-.00027	2.9105	.00140	-.00019	.00221	-.00091	.01219	.42650
#3	.00047	2.8917	.00006	.00342	.00137	-.00178	.00288	.42926
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115502 Acquired: 6/25/2016 17:10:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	.02139	.00454	-.00050	.00021	.00050	.00118
Stddev	.00016	.00022	.00843	.00114	.00027	.00017	.00137
%RSD	41.986	1.0329	185.67	229.51	129.67	34.277	116.06
#1	.00030	.02116	.00016	.00076	.00041	.00055	-.00040
#2	.00027	.02139	.01426	-.00146	.00031	.00031	.00208
#3	.00056	.02161	-.00080	-.00078	-.00010	.00064	.00187
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9945.8	60248.	3055.3
Stddev	9.2	94.	11.4
%RSD	.09217	.15541	.37444
#1	9945.9	60314.	3061.2
#2	9954.9	60289.	3042.1
#3	9936.5	60141.	3062.6

Approved: June 27, 2016

Sample Name: L1606115503 Acquired: 6/25/2016 17:14:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00200	-.00135	-.00104	.00757	.00737	.00014	2.3997	-.00010
Stddev	.00192	.00661	.00046	.00116	.00061	.00003	.0309	.00022
%RSD	96.141	489.89	44.488	15.290	8.2167	21.217	1.2897	218.06
#1	.00406	-.00575	-.00051	.00624	.00716	.00012	2.3659	-.00020
#2	.00025	-.00456	-.00131	.00835	.00689	.00017	2.4268	-.00025
#3	.00170	.00625	-.00131	.00813	.00805	.00012	2.4063	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	-.00044	-.00019	.10432	-.04481	.00004	.91519	.02191
Stddev	.00035	.00082	.00101	.01415	.09851	.00279	.09371	.00121
%RSD	3296.1	188.98	541.26	13.565	219.83	6329.0	10.240	5.5295
#1	-.00033	.00027	.00027	.10406	-.13456	.00163	.99135	.02326
#2	-.00007	-.00023	-.00134	.09030	-.06048	.00168	.94369	.02093
#3	.00037	-.00134	.00052	.11860	.06059	-.00317	.81054	.02153
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	2.4900	.00017	.00956	.00115	-.00111	.00305	.32330
Stddev	.00005	.0408	.00057	.00296	.00162	.00041	.00349	.00479
%RSD	56.574	1.6398	345.24	30.912	140.85	37.279	114.64	1.4819
#1	-.00011	2.4429	.00078	.00752	.00187	-.00066	-.00055	.31801
#2	-.00013	2.5161	.00008	.00822	-.00070	-.00119	.00642	.32454
#3	-.00003	2.5109	-.00036	.01295	.00229	-.00148	.00327	.32735
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115503 Acquired: 6/25/2016 17:14:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**.01387**	**.00305**	**-.00065**	**.00052**	**.00084**	**.00071**
Stddev	.00081	.00016	.00789	.00174	.00073	.00004	.00140
%RSD	953.07	1.1448	258.94	265.86	139.13	5.0666	198.28
#1	-.00013	.01403	.00198	-.00023	.00032	.00082	.00133
#2	-.00088	.01386	-.00426	.00083	-.00008	.00082	.00169
#3	.00075	.01371	.01142	-.00257	.00133	.00089	-.00090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9910.7**	**60184.**	**3019.4**
Stddev	10.3	175.	9.0
%RSD	.10381	.29035	.29953
#1	9910.7	60334.	3026.1
#2	9921.0	60225.	3023.1
#3	9900.4	59992.	3009.1

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 17:18:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41531**	**10.447**	**.40916**	**.50533**	**1.0238**	**.05217**	**10.225**
Stddev	.00091	.032	.00132	.00054	.0034	.00011	.030
%RSD	.21998	.31066	.32348	.10618	.32870	.20293	.29201
#1	.41613	10.474	.41061	.50566	1.0229	.05229	10.191
#2	.41432	10.411	.40886	.50561	1.0276	.05213	10.247
#3	.41546	10.455	.40801	.50471	1.0211	.05209	10.235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05225**	**.20370**	**.51712**	**.52549**	**4.0444**	**49.392**	**1.0301**
Stddev	.00031	.00034	.00175	.00197	.0184	.117	.0048
%RSD	.59442	.16603	.33927	.37570	.45604	.23752	.46659
#1	.05229	.20396	.51906	.52418	4.0394	49.465	1.0330
#2	.05254	.20382	.51666	.52776	4.0648	49.455	1.0327
#3	.05192	.20332	.51564	.52452	4.0290	49.257	1.0245
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.7951**	**.51327**	**1.0423**	**50.236**	**.51912**	**10.208**	**.51997**
Stddev	.0472	.00504	.0084	.169	.00170	.017	.00372
%RSD	.48165	.98200	.80990	.33677	.32826	.16636	.71476
#1	9.7523	.51223	1.0511	50.262	.52046	10.219	.52035
#2	9.7875	.51875	1.0343	50.391	.51968	10.189	.51607
#3	9.8457	.50883	1.0415	50.056	.51720	10.217	.52348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 17:18:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2238**	**.40709**	**5.2468**	**1.0260**	**1.0230**	**1.0304**	**.52875**
Stddev	.0084	.00511	.0098	.0012	.0023	.0127	.00327
%RSD	.68659	1.2545	.18586	.11540	.22459	1.2311	.61859
#1	1.2260	.40344	5.2580	1.0271	1.0231	1.0165	.53252
#2	1.2308	.40491	5.2428	1.0262	1.0252	1.0415	.52673
#3	1.2145	.41292	5.2398	1.0248	1.0206	1.0331	.52699
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0570**	**1.0310**	F **3.0075**
Stddev	.0056	.0001	.0207
%RSD	.53103	.00939	.68856
#1	1.0633	1.0311	3.0004
#2	1.0553	1.0309	3.0308
#3	1.0525	1.0310	2.9913
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9557.2**	**57623.**	**2979.5**
Stddev	9.7	193.	16.3
%RSD	.10109	.33465	.54600
#1	9546.7	57405.	2979.8
#2	9565.7	57771.	2963.0
#3	9559.4	57693.	2995.6

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 17:21:42 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**-.00563**	**.00200**	**-.00100**	**.00189**	**.00009**	**-.01127**	**-.00004**
Stddev	.00104	.00334	.00233	.00184	.00120	.00004	.03123	.00010
%RSD	1246.5	59.297	116.54	184.11	63.245	40.940	277.20	226.69
#1	-.00074	-.00335	.00466	-.00138	.00302	.00011	-.03377	.00004
#2	-.00027	-.00407	.00108	-.00263	.00202	.00005	.02439	-.00015
#3	.00126	-.00946	.00027	.00100	.00064	.00010	-.02442	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**.00048**	**.00089**	**.00955**	**-.03243**	**.00071**	**-.01124**	**-.00013**
Stddev	.00017	.00075	.00043	.01226	.03763	.00268	.07316	.00129
%RSD	103.61	157.05	48.720	128.38	116.03	378.57	650.98	975.30
#1	.00002	.00095	.00059	-.00410	-.06003	-.00175	-.02665	-.00039
#2	.00035	.00087	.00069	.01962	.01043	.00031	-.07547	-.00128
#3	.00012	-.00039	.00138	.01314	-.04771	.00356	.06840	.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00323**	**.02898**	**-.00046**	**.00432**	**.00328**	**.00454**	**.00410**	**-.00425**
Stddev	.00029	.02008	.00095	.00359	.00221	.00123	.00133	.00064
%RSD	9.1168	69.292	208.78	82.910	67.490	26.995	32.528	15.135
#1	.00298	.02490	-.00038	.00845	.00352	.00323	.00275	-.00470
#2	.00356	.01126	-.00144	.00261	.00095	.00566	.00541	-.00351
#3	.00316	.05079	.00046	.00192	.00536	.00474	.00413	-.00454
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 17:21:42 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	.00021	.00375	-.00110	.00108	-.00009	.00393
Stddev	.00059	.00011	.00446	.00333	.00027	.00003	.00087
%RSD	86.694	51.296	119.05	302.86	25.045	36.058	22.188
#1	.00135	.00012	.00567	.00135	.00136	-.00006	.00491
#2	.00024	.00018	-.00135	.00024	.00107	-.00012	.00363
#3	.00044	.00033	.00692	-.00489	.00082	-.00008	.00324
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9706.7	59138.	3007.6
Stddev	9.6	122.	14.5
%RSD	.09901	.20648	.48341
#1	9697.1	58997.	2992.2
#2	9716.3	59217.	3009.4
#3	9706.6	59200.	3021.1

Approved: June 27, 2016

Sample Name: LLCCV Acquired: 6/25/2016 17:25:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00682	.16326	.00787	.08110	.01015	.00172	.37504	.00080
Stddev	.00230	.01176	.00393	.00058	.00060	.00002	.03274	.00014
%RSD	33.789	7.2031	49.909	.72089	5.8834	1.2548	8.7301	17.457
#1	.00456	.16635	.01239	.08173	.01084	.00173	.33805	.00070
#2	.00916	.17317	.00587	.08058	.00985	.00173	.40031	.00075
#3	.00674	.15026	.00534	.08099	.00976	.00169	.38675	.00096
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00446	.00390	.00484	.09497	.71355	.08241	.33888	.00741
Stddev	.00036	.00087	.00066	.01610	.00812	.00379	.00870	.00176
%RSD	8.1660	22.291	13.622	16.951	1.1379	4.5949	2.5673	23.707
#1	.00488	.00490	.00494	.08463	.70937	.08497	.33660	.00920
#2	.00426	.00332	.00413	.08675	.70838	.08419	.34850	.00734
#3	.00424	.00348	.00544	.11352	.72291	.07806	.33155	.00569
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00855	.40833	.01678	.78916	.01199	.08269	.02089	.77549
Stddev	.00007	.02661	.00076	.00972	.00016	.00111	.00270	.00482
%RSD	.82014	6.5175	4.5074	1.2317	1.3733	1.3390	12.938	.62171
#1	.00856	.42291	.01686	.80033	.01215	.08397	.01985	.78057
#2	.00847	.42447	.01749	.78261	.01182	.08216	.01886	.77494
#3	.00861	.37762	.01598	.78454	.01200	.08195	.02396	.77097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LLCCV Acquired: 6/25/2016 17:25:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40481**	**.04214**	**.02257**	**.15413**	**.00994**	**.01699**	**.13476**
Stddev	.00262	.00003	.00404	.00144	.00108	.00007	.00396
%RSD	.64734	.07891	17.895	.93373	10.832	.40613	2.9378
#1	.40763	.04217	.02259	.15502	.01117	.01705	.13268
#2	.40435	.04210	.02661	.15491	.00942	.01692	.13226
#3	.40245	.04214	.01853	.15247	.00922	.01700	.13932
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9757.6**	**59331.**	**3007.6**
Stddev	3.7	156.	34.2
%RSD	.03744	.26375	1.1357
#1	9754.3	59400.	3008.1
#2	9757.0	59152.	3041.5
#3	9761.5	59441.	2973.2

Approved: June 27, 2016

Sample Name: PBW Y5 Acquired: 6/25/2016 17:29:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00185**	**.00116**	**-.00112**	**-.00084**	**.00120**	**.00011**	**-.01961**	**-.00006**
Stddev	.00045	.01041	.00198	.00240	.00080	.00010	.05200	.00016
%RSD	24.231	897.41	176.31	284.10	67.234	89.198	265.17	288.76
#1	.00153	-.00604	-.00020	.00070	.00046	.00020	.01383	-.00024
#2	.00236	-.00358	.00023	-.00360	.00107	.00014	-.07952	.00007
#3	.00166	.01310	-.00339	.00037	.00206	.00000	.00686	.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**-.00018**	**.00105**	**.03412**	**-.07407**	**.00236**	**.02694**	**.00162**
Stddev	.00024	.00064	.00070	.02542	.08098	.00211	.02742	.00224
%RSD	248.33	362.92	67.168	74.514	109.32	89.477	101.81	137.94
#1	.00030	-.00083	.00024	.00498	-.16192	.00417	.01237	.00092
#2	.00016	-.00014	.00146	.05181	-.05788	.00285	.00987	.00413
#3	-.00017	.00044	.00145	.04557	-.00242	.00004	.05857	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.01025**	**-.00077**	**.00507**	**.00386**	**-.00192**	**-.00109**	**.00437**
Stddev	.00004	.01479	.00185	.00580	.00053	.00084	.00245	.00068
%RSD	28.058	144.27	239.74	114.27	13.817	43.798	224.68	15.497
#1	-.00010	.02026	-.00256	.00797	.00348	-.00273	.00112	.00408
#2	-.00015	-.00674	.00113	.00885	.00447	-.00198	-.00067	.00389
#3	-.00017	.01724	-.00088	-.00160	.00363	-.00105	-.00372	.00515
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: PBW Y5 Acquired: 6/25/2016 17:29:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	.00044	.00538	-.00184	.00071	.00062	.00198
Stddev	.00057	.00040	.00350	.00250	.00039	.00016	.00115
%RSD	73.146	89.773	65.128	135.94	54.397	26.345	58.223
#1	.00143	.00035	.00942	-.00427	.00062	.00079	.00279
#2	.00040	.00088	.00331	.00073	.00114	.00048	.00066
#3	.00049	.00010	.00340	-.00198	.00038	.00058	.00249
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9880.3	60109.	3027.1
Stddev	31.5	73.	6.6
%RSD	.31885	.12179	.21761
#1	9847.3	60149.	3030.6
#2	9910.1	60154.	3019.5
#3	9883.5	60025.	3031.2

Approved: June 27, 2016

Sample Name: LCSW Y5 Acquired: 6/25/2016 17:33:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18967**	**4.7620**	**.18828**	**.90013**	**.47555**	**.02395**	**4.7950**	**.02373**
Stddev	.00250	.0081	.00104	.00471	.00273	.00006	.0213	.00018
%RSD	1.3192	.17078	.55148	.52284	.57347	.24848	.44480	.74408
#1	.18907	4.7578	.18718	.89893	.47827	.02388	4.7819	.02392
#2	.19242	4.7714	.18841	.90532	.47282	.02399	4.8196	.02370
#3	.18753	4.7569	.18924	.89614	.47557	.02397	4.7835	.02357
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09489**	**.23803**	**.24292**	**1.9123**	**22.817**	**.48875**	**4.5669**	**.24181**
Stddev	.00039	.00120	.00156	.0298	.036	.00284	.0465	.00007
%RSD	.41346	.50457	.64104	1.5597	.15629	.58110	1.0173	.02751
#1	.09520	.23794	.24291	1.9317	22.780	.48603	4.5750	.24188
#2	.09501	.23927	.24447	1.8779	22.852	.49170	4.5170	.24174
#3	.09445	.23687	.24136	1.9272	22.818	.48851	4.6088	.24180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49027**	**23.490**	**.24091**	**4.5553**	**.24063**	**.56646**	**.18382**	**2.3525**
Stddev	.00145	.113	.00040	.0084	.00352	.00190	.00239	.0014
%RSD	.29550	.48187	.16805	.18553	1.4632	.33509	1.2995	.06062
#1	.48963	23.608	.24065	4.5528	.24014	.56531	.18109	2.3541
#2	.49193	23.382	.24137	4.5647	.24437	.56542	.18555	2.3519
#3	.48925	23.480	.24069	4.5484	.23738	.56865	.18482	2.3515
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LCSW Y5 Acquired: 6/25/2016 17:33:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47085**	**.48454**	**.47923**	**.24546**	**.48968**	**.47202**	**.01198**
Stddev	.00082	.00070	.00116	.00117	.00078	.00042	.00247
%RSD	.17390	.14504	.24256	.47677	.15993	.08855	20.639
#1	.47170	.48509	.47789	.24652	.48877	.47178	.00945
#2	.47079	.48375	.47984	.24421	.49011	.47251	.01208
#3	.47006	.48479	.47995	.24566	.49015	.47178	.01439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9888.6**	**60001.**	**3090.1**
Stddev	19.1	149.	26.5
%RSD	.19299	.24892	.85667
#1	9894.9	60052.	3063.1
#2	9867.1	59834.	3091.3
#3	9903.7	60119.	3116.0

Approved: June 27, 2016

Sample Name: F BLANK Acquired: 6/25/2016 17:37:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00166	-.00148	.00090	.00227	.00163	.00011	-.00468	.00008
Stddev	.00130	.00490	.00188	.00068	.00037	.00003	.02546	.00022
%RSD	78.305	330.55	208.29	29.974	22.968	25.204	544.18	269.24
#1	.00033	-.00239	.00275	.00286	.00197	.00009	-.03398	.00015
#2	.00173	.00381	-.00100	.00243	.00123	.00014	.01206	.00026
#3	.00293	-.00586	.00096	.00153	.00167	.00010	.00788	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.00058	.00129	.04476	.01060	-.00161	-.05710	.00063
Stddev	.00029	.00122	.00029	.02153	.02075	.00622	.06303	.00318
%RSD	276.09	211.55	22.793	48.099	195.81	387.03	110.39	502.59
#1	-.00039	.00184	.00121	.03412	-.00619	.00062	-.09553	.00029
#2	.00018	-.00059	.00161	.06953	.03381	.00319	-.09140	.00397
#3	-.00010	.00048	.00104	.03061	.00418	-.00863	.01564	-.00236
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.05677	-.00011	.00316	.00576	-.00381	.00560	-.00010
Stddev	.00040	.03222	.00050	.00162	.00079	.00329	.00231	.00141
%RSD	72.047	56.761	453.37	51.247	13.705	86.399	41.256	1388.8
#1	.00085	.07680	-.00069	.00292	.00611	-.00013	.00434	-.00092
#2	.00073	.01960	.00014	.00168	.00631	-.00483	.00420	-.00091
#3	.00010	.07391	.00021	.00489	.00485	-.00647	.00827	.00153
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: F BLANK Acquired: 6/25/2016 17:37:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.00021	-.00396	-.00081	.00112	.00164	.00166
Stddev	.00084	.00011	.00377	.00288	.00053	.00013	.00011
%RSD	1212.1	52.839	95.183	357.63	47.087	8.1028	6.9152
#1	-.00082	.00025	-.00813	-.00413	.00144	.00151	.00159
#2	.00085	.00029	-.00300	.00065	.00141	.00165	.00179
#3	.00018	.00008	-.00077	.00106	.00051	.00177	.00159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10015.	61314.	3090.8
Stddev	16.	177.	23.0
%RSD	.15522	.28891	.74279
#1	10012.	61143.	3064.6
#2	10032.	61303.	3107.1
#3	10001.	61497.	3100.8

Approved: June 27, 2016

Sample Name: L1606098602 Acquired: 6/25/2016 17:41:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	-.00042	-.00040	.09099	.02315	.00010	31.081	-.00006
Stddev	.00141	.00402	.00168	.00026	.00060	.00002	.292	.00002
%RSD	160.55	951.46	416.45	.28845	2.5949	20.817	.93935	37.551
#1	.00197	.00339	-.00222	.09093	.02306	.00008	31.173	-.00006
#2	-.00072	-.00463	.00109	.09127	.02259	.00012	30.754	-.00004
#3	.00139	-.00003	-.00008	.09076	.02379	.00010	31.315	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.00059	.00094	.04555	.98402	.01199	5.7014	.03480
Stddev	.00048	.00016	.00041	.01573	.08850	.00357	.0718	.00212
%RSD	197.55	26.299	43.232	34.544	8.9935	29.756	1.2595	6.0810
#1	.00072	.00042	.00054	.02747	.88485	.01459	5.6202	.03718
#2	-.00024	.00064	.00135	.05303	1.0122	.01345	5.7566	.03314
#3	.00026	.00072	.00092	.05614	1.0550	.00792	5.7274	.03406
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00142	119.95	.00080	.00488	.00205	-.00278	-.00166	3.2347
Stddev	.00007	.78	.00132	.00386	.00179	.00227	.00673	.0109
%RSD	4.5853	.65032	165.26	79.044	87.096	81.844	406.14	.33815
#1	.00137	120.20	.00201	.00062	.00137	-.00037	-.00009	3.2461
#2	.00149	119.07	.00100	.00813	.00409	-.00489	.00415	3.2336
#3	.00140	120.57	-.00061	.00590	.00071	-.00307	-.00903	3.2243
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098602 Acquired: 6/25/2016 17:41:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00169	.54147	-.00161	-.00445	.00062	.00187	.00166
Stddev	.00060	.00457	.00418	.00188	.00027	.00011	.00091
%RSD	35.360	.84355	259.35	42.200	43.191	5.8148	54.635
#1	.00106	.54395	-.00040	-.00269	.00035	.00198	.00205
#2	.00225	.53620	.00182	-.00642	.00063	.00186	.00062
#3	.00175	.54425	-.00626	-.00422	.00089	.00176	.00230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9793.0	59457.	3063.6
Stddev	12.2	310.	25.9
%RSD	.12488	.52191	.84399
#1	9783.4	59142.	3057.4
#2	9788.8	59467.	3092.0
#3	9806.7	59762.	3041.4

Approved: June 27, 2016

Sample Name: L1606098604 Acquired: 6/25/2016 17:45:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00188**	**.00192**	**.00240**	**.01933**	**.01606**	**.00017**	**258.27**
Stddev	.00168	.00663	.00025	.00142	.00064	.00002	.74
%RSD	89.608	344.23	10.527	7.3208	4.0034	12.550	.28551
#1	.00265	-.00052	.00267	.01828	.01569	.00019	258.08
#2	.00303	-.00313	.00217	.01877	.01568	.00016	257.65
#3	-.00005	.00943	.00237	.02094	.01680	.00015	259.09
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00045**	**.00038**	**.00085**	**.01097**	**.02808**	**1.7243**	**.01739**
Stddev	.00023	.00042	.00027	.00107	.01426	.0758	.00077
%RSD	50.915	110.30	31.401	9.7605	50.795	4.3949	4.4280
#1	.00057	.00083	.00065	.01199	.02723	1.7078	.01656
#2	.00019	.00033	.00115	.00986	.01426	1.6581	.01808
#3	.00061	-.00001	.00075	.01107	.04275	1.8069	.01753
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**67.436**	**1.3917**	**.00099**	**14.380**	**.00387**	**.00116**	**.00177**
Stddev	.211	.0043	.00004	.031	.00051	.00485	.00143
%RSD	.31235	.30797	4.3492	.21337	13.178	419.65	80.619
#1	67.195	1.3899	.00099	14.411	.00414	.00253	.00287
#2	67.533	1.3886	.00103	14.350	.00328	-.00423	.00229
#3	67.581	1.3966	.00095	14.377	.00419	.00517	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 27, 2016

Sample Name: L1606098604 Acquired: 6/25/2016 17:45:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00130**	**.00146**	**3.7576**	**.00044**	**1.2471**	F **-.03982**	**-.00203**
Stddev	.00495	.00434	.0110	.00062	.0034	.00406	.00082
%RSD	381.66	297.39	.29276	142.20	.26857	10.186	40.503
#1	-.00325	.00313	3.7635	.00113	1.2483	-.04298	-.00122
#2	.00433	.00472	3.7644	.00025	1.2433	-.03524	-.00200
#3	-.00498	-.00347	3.7449	-.00007	1.2496	-.04122	-.00286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00050**	**.03051**	**.00151**
Stddev	.00029	.00016	.00074
%RSD	57.554	.53953	48.929
#1	-.00084	.03044	.00164
#2	-.00033	.03070	.00216
#3	-.00034	.03040	.00071
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9610.5**	**58897.**	**3044.6**
Stddev	3.8	97.	5.6
%RSD	.03917	.16551	.18408
#1	9614.6	58944.	3043.4
#2	9607.2	58961.	3050.7
#3	9609.7	58785.	3039.7

Approved: June 27, 2016

Sample Name: L1606098606 Acquired: 6/25/2016 17:48:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00223	.00972	-.00038	.01373	.06613	.00026	77.440	.00018
Stddev	.00105	.00309	.00132	.00205	.00021	.00009	.075	.00021
%RSD	47.129	31.833	346.72	14.955	.32162	33.087	.09643	116.74
#1	.00235	.00691	-.00086	.01602	.06623	.00027	77.417	.00042
#2	.00112	.00920	-.00139	.01205	.06589	.00034	77.379	.00001
#3	.00321	.01303	.00111	.01311	.06628	.00017	77.523	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00039	.00108	.01311	.03469	1.0666	.00528	22.814	.00226
Stddev	.00015	.00032	.00053	.01962	.0266	.00092	.288	.00095
%RSD	37.987	29.419	4.0055	56.546	2.4929	17.478	1.2638	41.753
#1	.00056	.00082	.01330	.03776	1.0701	.00541	22.650	.00309
#2	.00027	.00143	.01252	.05259	1.0384	.00430	22.645	.00123
#3	.00036	.00097	.01352	.01372	1.0912	.00613	23.147	.00247
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	16.230	.00086	.01073	.00099	-.00405	.00160	2.3863
Stddev	.00023	.056	.00046	.00069	.00181	.00317	.00143	.0169
%RSD	59.834	.34372	53.276	6.4188	182.38	78.406	89.367	.70593
#1	.00032	16.197	.00073	.01029	.00246	-.00129	-.00004	2.4028
#2	.00063	16.198	.00137	.01153	-.00103	-.00752	.00258	2.3871
#3	.00019	16.294	.00048	.01038	.00155	-.00333	.00227	2.3691
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098606 Acquired: 6/25/2016 17:48:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00004**	**.39726**	**-.00928**	**-.00135**	**-.00044**	**.03812**	**.00202**
Stddev	.00081	.00077	.00327	.00251	.00044	.00033	.00118
%RSD	1967.6	.19375	35.277	185.96	101.24	.85896	58.324
#1	.00088	.39645	-.00551	-.00111	-.00048	.03844	.00108
#2	-.00002	.39799	-.01103	.00103	.00002	.03814	.00334
#3	-.00074	.39735	-.01131	-.00397	-.00086	.03779	.00164
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9875.4**	**60112.**	**3085.9**
Stddev	17.7	60.	4.4
%RSD	.17969	.09972	.14239
#1	9863.6	60084.	3084.9
#2	9866.7	60181.	3090.7
#3	9895.8	60072.	3082.1

Approved: June 27, 2016

Sample Name: L1606098608 Acquired: 6/25/2016 17:52:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.00115	.00027	.01585	.03262	.00011	84.217	.00013
Stddev	.00235	.00513	.00111	.00136	.00141	.00004	.314	.00017
%RSD	2475.5	446.86	409.02	8.5842	4.3250	37.715	.37277	125.68
#1	-.00262	.00404	-.00099	.01740	.03376	.00010	84.484	.00019
#2	.00142	-.00477	.00110	.01531	.03104	.00016	84.297	.00026
#3	.00149	.00417	.00071	.01485	.03305	.00008	83.871	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	.00177	.00567	.03434	1.2401	.01415	23.228	.02727
Stddev	.00046	.00068	.00058	.01787	.0425	.00095	.227	.00106
%RSD	299.90	38.444	10.195	52.028	3.4256	6.6956	.97712	3.8827
#1	-.00049	.00241	.00506	.05413	1.2665	.01352	23.122	.02850
#2	.00037	.00184	.00573	.01939	1.1911	.01369	23.489	.02663
#3	-.00034	.00105	.00621	.02950	1.2628	.01524	23.073	.02669
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	12.660	.00033	.00413	.00179	-.00334	-.00002	3.4869
Stddev	.00017	.055	.00044	.00392	.00093	.00378	.00639	.0225
%RSD	23.632	.43231	134.67	94.801	51.837	113.14	36088.	.64396
#1	.00093	12.716	.00084	.00852	.00134	-.00400	-.00400	3.4968
#2	.00069	12.657	.00002	.00099	.00117	-.00675	-.00341	3.5027
#3	.00059	12.607	.00013	.00288	.00285	.00073	.00736	3.4612
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098608 Acquired: 6/25/2016 17:52:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	**.83876**	**-.00998**	**-.00331**	**.00001**	**.01681**	**.00058**
Stddev	.00022	.00442	.00442	.00242	.00077	.00018	.00259
%RSD	112.09	.52651	44.282	73.168	6824.2	1.0650	446.63
#1	-.00039	.84240	-.01091	-.00183	-.00011	.01673	-.00103
#2	-.00022	.84004	-.00517	-.00610	-.00069	.01701	.00357
#3	.00004	.83385	-.01387	-.00199	.00083	.01668	-.00080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9863.7**	**59966.**	**3069.4**
Stddev	33.8	107.	16.4
%RSD	.34299	.17793	.53396
#1	9879.3	59844.	3052.8
#2	9824.9	60042.	3069.7
#3	9886.9	60012.	3085.6

Approved: June 27, 2016

Sample Name: L1606098608PS Acquired: 6/25/2016 17:56:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574216-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19012**	**4.7962**	**.18985**	**.92761**	**.50579**	**.02416**	**80.589**	**.02376**
Stddev	.00115	.0181	.00324	.00188	.00153	.00010	.509	.00031
%RSD	.60416	.37710	1.7085	.20237	.30247	.42369	.63122	1.3080
#1	.18881	4.7997	.18690	.92863	.50534	.02415	80.494	.02389
#2	.19096	4.8123	.19332	.92876	.50750	.02427	81.138	.02341
#3	.19058	4.7766	.18933	.92544	.50454	.02406	80.134	.02399
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09205**	**.23624**	**.24131**	**1.9065**	**24.291**	**.50517**	**25.434**	**.26103**
Stddev	.00018	.00146	.00130	.0143	.039	.00496	.150	.00626
%RSD	.19260	.61641	.53797	.74911	.16017	.98165	.59175	2.3977
#1	.09210	.23659	.24071	1.9177	24.287	.49968	25.563	.26590
#2	.09186	.23464	.24280	1.9113	24.254	.50647	25.268	.26320
#3	.09221	.23749	.24041	1.8904	24.332	.50934	25.470	.25397
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49345**	**34.822**	**.23345**	**4.6884**	**.23609**	**.56850**	**.18268**	**5.5114**
Stddev	.00019	.169	.00142	.0142	.00258	.00539	.00604	.0369
%RSD	.03860	.48533	.60979	.30359	1.0940	.94754	3.3047	.66920
#1	.49323	34.790	.23475	4.6782	.23789	.57472	.18356	5.4689
#2	.49357	35.005	.23367	4.6823	.23725	.56528	.18824	5.5341
#3	.49354	34.671	.23193	4.7047	.23313	.56551	.17626	5.5313
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098608PS Acquired: 6/25/2016 17:56:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574216-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47094**	**1.2232**	**.47334**	**.23988**	**.49331**	**.47631**	**.00522**
Stddev	.00189	.0075	.00962	.00117	.00125	.00347	.00156
%RSD	.40190	.61543	2.0323	.48785	.25347	.72879	29.825
#1	.47068	1.2227	.46319	.24082	.49476	.47230	.00351
#2	.47295	1.2310	.48233	.23857	.49254	.47818	.00558
#3	.46920	1.2160	.47451	.24025	.49265	.47845	.00657
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9831.9**	**59526.**	**3075.8**
Stddev	15.2	194.	19.0
%RSD	.15421	.32611	.61679
#1	9829.8	59604.	3066.0
#2	9817.9	59305.	3063.8
#3	9848.0	59669.	3097.7

Approved: June 27, 2016

Sample Name: L1606098608SDL Acquired: 6/25/2016 18:00:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574216-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00260	-.00514	.00187	.00508	.00868	.00012	17.605	-.00015
Stddev	.00156	.01146	.00424	.00200	.00063	.00008	.142	.00010
%RSD	60.035	222.87	226.36	39.430	7.2120	66.284	.80739	66.159
#1	.00437	.00780	.00118	.00739	.00923	.00013	17.451	-.00025
#2	.00143	-.00924	.00642	.00396	.00881	.00020	17.731	-.00007
#3	.00199	-.01399	-.00198	.00389	.00800	.00004	17.633	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	.00006	.00193	.02399	.21059	-.00038	4.9921	.00509
Stddev	.00017	.00044	.00078	.00583	.02318	.00216	.0797	.00111
%RSD	97.856	772.57	40.443	24.318	11.008	572.98	1.5970	21.792
#1	-.00004	-.00041	.00282	.01859	.23319	.00193	5.0036	.00623
#2	-.00037	.00046	.00138	.03017	.18686	-.00072	4.9072	.00402
#3	-.00011	.00012	.00158	.02319	.21171	-.00234	5.0654	.00500
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	2.6677	-.00071	.00513	.00009	-.00286	-.00058	.72991
Stddev	.00017	.0114	.00035	.00552	.00151	.00279	.00302	.00273
%RSD	51.097	.42653	49.400	107.62	1685.9	97.489	522.92	.37384
#1	.00017	2.6710	-.00044	.00122	.00180	.00001	.00149	.72939
#2	.00033	2.6550	-.00058	.01144	-.00102	-.00304	-.00405	.73285
#3	.00051	2.6770	-.00110	.00273	-.00051	-.00555	.00083	.72747
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098608SDL Acquired: 6/25/2016 18:00:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574216-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.17684**	**.00226**	**.00019**	**.00052**	**.00413**	**.00011**
Stddev	.00027	.00102	.00232	.00368	.00057	.00014	.00068
%RSD	464.39	.57572	102.44	1951.0	110.67	3.3962	623.50
#1	-.00013	.17748	.00403	.00128	.00008	.00397	.00059
#2	.00024	.17567	-.00036	.00320	.00031	.00420	.00041
#3	-.00028	.17737	.00312	-.00392	.00117	.00423	-.00067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9896.0**	**60261.**	**3042.3**
Stddev	25.0	81.	28.3
%RSD	.25242	.13391	.92921
#1	9907.7	60289.	3040.8
#2	9913.0	60324.	3071.3
#3	9867.3	60170.	3014.9

Approved: June 27, 2016

Sample Name: L1606098608SDL Acquired: 6/25/2016 18:04:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574216-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00175	-.00807	-.00063	-.00078	.00182	.00014	3.3399	-.00019
Stddev	.00147	.00382	.00127	.00273	.00016	.00003	.0946	.00023
%RSD	83.969	47.279	200.74	348.35	8.5330	23.588	2.8330	121.57
#1	.00097	-.00874	.00010	.00038	.00196	.00018	3.2721	-.00045
#2	.00084	-.00396	.00010	.00117	.00166	.00011	3.4480	-.00012
#3	.00344	-.01151	-.00210	-.00390	.00185	.00014	3.2995	-.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	-.00037	.00107	.01769	-.08284	.00119	.94569	.00052
Stddev	.00047	.00133	.00130	.01702	.09737	.00358	.05932	.00055
%RSD	1445.4	360.33	120.72	96.212	117.53	302.26	6.2728	105.20
#1	.00035	-.00086	.00167	-.00174	-.18470	.00532	.88043	.00057
#2	-.00050	-.00138	-.00041	.02995	-.07314	-.00085	.96028	.00105
#3	.00025	.00113	.00196	.02486	.00931	-.00092	.99635	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00012	.49987	-.00021	.00755	.00303	-.00541	.00850	.13812
Stddev	.00032	.04592	.00020	.00386	.00188	.00314	.00116	.00966
%RSD	265.16	9.1856	96.762	51.054	62.049	58.070	13.660	6.9939
#1	.00001	.44687	-.00020	.01173	.00086	-.00531	.00838	.12921
#2	-.00049	.52761	-.00041	.00680	.00410	-.00232	.00740	.13676
#3	.00011	.52513	-.00001	.00413	.00413	-.00859	.00972	.14839
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098608SDL Acquired: 6/25/2016 18:04:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574216-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00039	.03350	.00349	.00073	.00046	.00106	.00161
Stddev	.00032	.00105	.00672	.00069	.00093	.00001	.00112
%RSD	80.289	3.1425	192.33	93.894	202.19	.93440	69.701
#1	.00063	.03282	.00553	-.00006	-.00031	.00105	.00058
#2	.00051	.03471	.00896	.00114	.00020	.00107	.00146
#3	.00004	.03296	-.00401	.00113	.00149	.00107	.00281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10400.	61068.	3085.8
Stddev	302.	416.	38.3
%RSD	2.9005	.68044	1.2414
#1	10744.	61402.	3085.7
#2	10277.	61200.	3047.5
#3	10180.	60603.	3124.1

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 18:08:15 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40600**	**10.196**	**.39897**	**.49353**	**1.0097**	**.05111**	**10.072**
Stddev	.00134	.005	.00384	.00145	.0055	.00016	.108
%RSD	.32964	.04609	.96241	.29468	.54041	.30777	1.0683
#1	.40454	10.197	.40224	.49289	1.0058	.05115	10.014
#2	.40717	10.200	.39474	.49519	1.0073	.05125	10.006
#3	.40630	10.191	.39992	.49250	1.0159	.05094	10.196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05085**	**.19930**	**.50343**	**.51248**	**4.0210**	**48.769**	**1.0170**
Stddev	.00016	.00069	.00173	.00042	.0444	.141	.0095
%RSD	.31221	.34558	.34304	.08145	1.1049	.29004	.93218
#1	.05072	.20005	.50491	.51259	3.9923	48.842	1.0084
#2	.05079	.19915	.50386	.51282	3.9985	48.605	1.0154
#3	.05103	.19869	.50153	.51201	4.0722	48.858	1.0271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.6470**	**.50568**	**1.0217**	**49.589**	**.50657**	**9.9463**	**.50897**
Stddev	.0505	.00379	.0050	.266	.00174	.0145	.00224
%RSD	.52402	.74931	.49273	.53683	.34444	.14541	.44016
#1	9.7040	.50521	1.0275	49.574	.50855	9.9602	.50639
#2	9.6294	.50215	1.0196	49.330	.50589	9.9313	.51042
#3	9.6076	.50969	1.0181	49.862	.50527	9.9474	.51010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 18:08:15 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1949**	**.39405**	**5.1402**	**1.0022**	**1.0107**	**.99866**	**.51518**
Stddev	.0031	.00179	.0100	.0005	.0053	.01659	.00058
%RSD	.25554	.45308	.19427	.05270	.52786	1.6608	.11222
#1	1.1981	.39492	5.1482	1.0028	1.0100	1.0024	.51475
#2	1.1944	.39525	5.1290	1.0020	1.0058	.98052	.51584
#3	1.1920	.39200	5.1434	1.0018	1.0164	1.0131	.51497
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0309**	**1.0070**	F **2.9451**
Stddev	.0008	.0014	.0223
%RSD	.08066	.13880	.75803
#1	1.0316	1.0084	2.9555
#2	1.0300	1.0069	2.9195
#3	1.0311	1.0056	2.9603
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9649.2**	**58096.**	**2982.6**
Stddev	5.7	114.	17.5
%RSD	.05915	.19560	.58802
#1	9648.4	58223.	2978.9
#2	9644.0	58003.	3001.7
#3	9655.3	58062.	2967.2

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 18:11:52 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00062**	**.00113**	**.00060**	**-.00134**	**.00269**	**.00016**	**-.00509**	**-.00011**
Stddev	.00447	.01287	.00139	.00141	.00058	.00006	.00999	.00008
%RSD	723.56	1142.0	234.30	105.23	21.456	39.000	196.19	75.399
#1	-.00262	.00580	.00212	.00028	.00233	.00022	-.01646	-.00020
#2	.00450	-.01343	-.00061	-.00230	.00238	.00017	.00228	-.00009
#3	-.00373	.01101	.00028	-.00199	.00335	.00009	-.00109	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.00031**	**.00131**	**.01880**	**-.14052**	**-.00173**	**.03086**	**-.00243**
Stddev	.00043	.00144	.00103	.01556	.08453	.00290	.07623	.00189
%RSD	438.61	470.86	78.889	82.745	60.152	168.14	247.00	77.536
#1	.00038	.00014	.00051	.03667	-.04368	.00153	-.05463	-.00186
#2	-.00045	-.00104	.00248	.01148	-.17839	-.00266	.09175	-.00090
#3	-.00022	.00182	.00094	.00826	-.19949	-.00404	.05546	-.00454
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00375**	**-.00702**	**.00000**	**.00544**	**-.00002**	**.00180**	**.00158**	**.03715**
Stddev	.00019	.01848	.00030	.00537	.00129	.00320	.00255	.00232
%RSD	5.0585	263.40	8008.1	98.759	6600.5	177.29	161.59	6.2433
#1	.00382	-.02711	-.00030	.01149	.00142	.00145	-.00134	.03895
#2	.00354	-.00319	.00002	.00357	-.00108	.00516	.00266	.03453
#3	.00390	.00925	.00029	.00125	-.00040	-.00120	.00341	.03795
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 18:11:52 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00026**	**.00036**	**-.00017**	**-.00186**	**.00075**	**.00012**	**.00425**
Stddev	.00040	.00044	.01020	.00315	.00028	.00007	.00095
%RSD	153.60	122.95	5879.7	169.59	36.989	59.021	22.345
#1	.00000	.00086	.00219	-.00527	.00044	.00006	.00508
#2	.00073	.00017	.00864	-.00126	.00081	.00010	.00321
#3	.00006	.00004	-.01135	.00095	.00098	.00019	.00446
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9372.1**	**56632.**	**2874.9**
Stddev	24.8	50.	14.1
%RSD	.26420	.08878	.48885
#1	9350.8	56589.	2886.0
#2	9366.2	56619.	2859.1
#3	9399.3	56687.	2879.7

Approved: June 27, 2016

Sample Name: L1606098610 Acquired: 6/25/2016 18:15:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00168	.00613	.00026	.00622	.01341	.00005	115.37	.00029
Stddev	.00132	.00327	.00219	.00120	.00108	.00003	.56	.00010
%RSD	78.702	53.342	840.89	19.355	8.0675	55.551	.48696	35.866
#1	.00017	.00551	-.00222	.00662	.01310	.00009	115.81	.00019
#2	.00222	.00322	.00107	.00487	.01252	.00003	114.73	.00040
#3	.00265	.00967	.00193	.00717	.01462	.00004	115.55	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	.00098	.00166	.06083	.38326	.00831	27.726	.01242
Stddev	.00045	.00011	.00061	.01132	.08932	.00154	.200	.00158
%RSD	1035.7	11.515	36.634	18.614	23.306	18.467	.72137	12.708
#1	-.00034	.00088	.00210	.06356	.35599	.00912	27.699	.01068
#2	-.00027	.00110	.00191	.04839	.48304	.00927	27.542	.01377
#3	.00048	.00096	.00096	.07054	.31076	.00654	27.939	.01280
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	14.397	.00169	.00670	.00176	-.00418	.00480	3.9389
Stddev	.00003	.096	.00045	.00675	.00408	.00345	.00343	.0208
%RSD	3.3704	.66673	26.485	100.67	231.83	82.446	71.530	.52736
#1	.00075	14.373	.00205	.00909	-.00024	-.00395	.00094	3.9592
#2	.00074	14.315	.00119	.01193	.00646	-.00774	.00595	3.9398
#3	.00079	14.503	.00185	-.00091	-.00093	-.00086	.00752	3.9176
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098610 Acquired: 6/25/2016 18:15:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00034**	**.52737**	**-.01662**	**-.00476**	**.00053**	**.01128**	**.00653**
Stddev	.00061	.00238	.00515	.00157	.00069	.00008	.00193
%RSD	181.06	.45087	31.015	32.913	130.43	.73884	29.481
#1	-.00078	.52702	-.01240	-.00297	.00012	.01121	.00451
#2	.00036	.52519	-.01509	-.00547	.00132	.01137	.00674
#3	-.00059	.52991	-.02236	-.00585	.00014	.01126	.00835
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9795.7**	**59337.**	**3075.9**
Stddev	21.1	178.	25.1
%RSD	.21493	.29915	.81568
#1	9771.4	59262.	3048.2
#2	9807.4	59210.	3082.7
#3	9808.3	59540.	3097.0

Approved: June 27, 2016

Sample Name: L1606098612 Acquired: 6/25/2016 18:19:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00237	.00267	-.00060	.08716	.06662	.00041	142.66	.00007
Stddev	.00073	.00275	.00337	.00141	.00149	.00002	1.19	.00021
%RSD	30.688	102.87	562.71	1.6192	2.2393	3.9782	.83233	319.26
#1	.00315	.00518	-.00334	.08576	.06575	.00041	141.33	.00027
#2	.00225	-.00027	-.00161	.08858	.06577	.00039	143.01	.00007
#3	.00171	.00310	.00316	.08713	.06835	.00042	143.63	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.00135	.04528	.02649	1.6602	.01963	40.720	.03253
Stddev	.00034	.00053	.00134	.03733	.1018	.00353	.262	.00324
%RSD	339.50	39.036	2.9680	140.93	6.1325	17.994	.64244	9.9559
#1	.00034	.00170	.04668	.04343	1.6128	.02218	40.440	.02879
#2	-.00029	.00162	.04400	-.01631	1.5907	.02112	40.763	.03448
#3	.00024	.00075	.04516	.05234	1.7770	.01560	40.958	.03432
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00115	26.540	.00106	.02312	.00172	-.00084	.00204	2.4275
Stddev	.00029	.172	.00094	.00593	.00284	.00147	.00269	.0046
%RSD	25.080	.64693	88.979	25.661	164.80	174.96	131.78	.18880
#1	.00089	26.345	.00153	.02349	.00164	-.00125	.00490	2.4289
#2	.00110	26.607	.00167	.01701	.00461	-.00205	-.00043	2.4311
#3	.00146	26.668	-.00003	.02886	-.00107	.00079	.00165	2.4223
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098612 Acquired: 6/25/2016 18:19:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**1.7410**	**-.01626**	**-.00241**	**.00038**	**.05602**	**.00415**
Stddev	.00061	.0138	.00313	.00137	.00051	.00009	.00053
%RSD	273.86	.79166	19.237	56.738	134.14	.16489	12.835
#1	-.00019	1.7255	-.01265	-.00306	.00050	.05591	.00443
#2	.00092	1.7457	-.01795	-.00084	.00081	.05608	.00354
#3	-.00006	1.7519	-.01818	-.00334	-.00018	.05607	.00449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9747.5**	**58989.**	**3047.5**
Stddev	4.1	78.	13.8
%RSD	.04198	.13200	.45213
#1	9749.1	58936.	3063.4
#2	9750.6	59079.	3039.1
#3	9742.9	58952.	3040.0

Approved: June 27, 2016

Sample Name: L1606098614 Acquired: 6/25/2016 18:23:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00279	.01008	-.00066	.03390	.03124	.00010	196.20	.00021
Stddev	.00112	.00383	.00147	.00206	.00013	.00007	.85	.00008
%RSD	40.043	38.038	221.13	6.0906	.42986	73.782	.43251	39.178
#1	.00183	.00766	.00090	.03506	.03108	.00016	195.71	.00030
#2	.00402	.00807	-.00201	.03513	.03132	.00002	195.70	.00014
#3	.00253	.01449	-.00089	.03152	.03131	.00013	197.18	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.00088	.00840	.02428	2.9211	.02334	75.647	.04008
Stddev	.00023	.00045	.00064	.00605	.0291	.00193	.677	.00318
%RSD	446.71	50.770	7.6701	24.929	.99693	8.2676	.89445	7.9254
#1	-.00007	.00063	.00780	.03006	2.8958	.02251	74.950	.04023
#2	.00031	.00062	.00908	.02477	2.9529	.02197	75.691	.03683
#3	-.00009	.00140	.00832	.01799	2.9145	.02555	76.301	.04318
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	22.556	.00040	.01184	.00385	-.00016	.00418	3.4833
Stddev	.00033	.097	.00156	.00464	.00193	.00051	.00681	.0215
%RSD	46.348	.43032	390.32	39.236	50.052	315.18	162.82	.61768
#1	.00068	22.526	-.00110	.00655	.00167	-.00006	.01171	3.5066
#2	.00040	22.478	.00029	.01372	.00533	-.00072	-.00154	3.4792
#3	.00106	22.665	.00201	.01524	.00455	.00029	.00237	3.4641
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098614 Acquired: 6/25/2016 18:23:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**2.3670**	**-.02425**	**-.00232**	**-.00024**	**.02160**	**.00232**
Stddev	.00092	.0076	.00398	.00117	.00100	.00003	.00161
%RSD	715.81	.32195	16.401	50.456	415.47	.12320	69.325
#1	.00091	2.3659	-.02580	-.00236	.00091	.02157	.00413
#2	-.00082	2.3599	-.02722	-.00113	-.00075	.02159	.00107
#3	-.00048	2.3751	-.01973	-.00348	-.00089	.02163	.00175
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9640.5**	**58425.**	**3058.6**
Stddev	20.6	100.	4.7
%RSD	.21337	.17110	.15390
#1	9631.4	58473.	3059.7
#2	9664.1	58492.	3062.6
#3	9626.1	58310.	3053.4

Approved: June 27, 2016

Sample Name: L1606098616 Acquired: 6/25/2016 18:27:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00115	.03265	.00256	.11861	.01251	.00029	229.75	.00020
Stddev	.00195	.00899	.00533	.00161	.00061	.00014	.36	.00016
%RSD	169.27	27.532	208.27	1.3580	4.8819	47.504	.15530	78.536
#1	.00069	.04218	-.00197	.11885	.01280	.00014	229.65	.00038
#2	-.00053	.02433	.00844	.12008	.01292	.00030	229.45	.00006
#3	.00329	.03143	.00122	.11689	.01181	.00042	230.15	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00062	.00178	.06744	.03108	3.2126	.03682	84.360	.29574
Stddev	.00023	.00069	.00047	.01537	.1307	.00386	.426	.00133
%RSD	37.410	38.666	.69994	49.454	4.0677	10.480	.50488	.44809
#1	.00042	.00192	.06781	.02007	3.0741	.03526	83.896	.29633
#2	.00087	.00239	.06691	.04863	3.2299	.03400	84.450	.29422
#3	.00056	.00104	.06760	.02452	3.3338	.04122	84.734	.29667
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00072	71.143	.00123	.03078	.00375	-.00200	.00018	5.1619
Stddev	.00027	.049	.00055	.00199	.00114	.00238	.00481	.0107
%RSD	37.642	.06818	44.575	6.4658	30.424	119.08	2715.0	.20775
#1	.00061	71.192	.00158	.03108	.00244	-.00009	.00517	5.1511
#2	.00102	71.095	.00060	.02865	.00425	-.00467	-.00442	5.1621
#3	.00051	71.141	.00151	.03260	.00456	-.00125	-.00023	5.1725
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098616 Acquired: 6/25/2016 18:27:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	6.5212	-.02963	-.00177	-.00109	.08946	.00332
Stddev	.00060	.0079	.00654	.00230	.00079	.00019	.00190
%RSD	161.30	.12151	22.085	130.49	72.258	.21177	57.202
#1	.00105	6.5204	-.02657	.00051	-.00123	.08936	.00540
#2	.00018	6.5138	-.02518	-.00171	-.00179	.08968	.00287
#3	-.00011	6.5296	-.03715	-.00409	-.00024	.08933	.00168
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9566.8	58078.	3050.1
Stddev	16.9	52.	19.7
%RSD	.17631	.08955	.64584
#1	9563.8	58018.	3068.4
#2	9585.0	58111.	3029.2
#3	9551.7	58106.	3052.7

Approved: June 27, 2016

Sample Name: L1606098618 Acquired: 6/25/2016 18:31:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00155	-.00096	.00289	.04251	.02915	.00005	62.293	-.00011
Stddev	.00038	.00238	.00029	.00109	.00082	.00008	.092	.00019
%RSD	24.410	246.77	9.9664	2.5737	2.7985	149.80	.14819	166.73
#1	.00113	.00168	.00257	.04189	.03009	-.00003	62.335	-.00017
#2	.00185	-.00164	.00314	.04186	.02874	.00005	62.357	.00010
#3	.00168	-.00294	.00296	.04377	.02862	.00013	62.187	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00031	.00347	.01624	1.9071	.02198	20.259	.01093
Stddev	.00021	.00046	.00016	.00938	.1214	.00171	.067	.00376
%RSD	243.30	146.24	4.6588	57.772	6.3644	7.7782	.33311	34.347
#1	.00028	.00083	.00329	.00573	1.8306	.02394	20.336	.01303
#2	.00011	.00015	.00350	.01922	2.0470	.02118	20.230	.00660
#3	-.00013	-.00004	.00361	.02377	1.8435	.02082	20.211	.01318
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00102	25.999	-.00042	.00444	.00244	-.00359	.00392	3.1846
Stddev	.00023	.100	.00069	.00545	.00095	.00188	.00301	.0187
%RSD	22.864	.38558	161.73	122.87	39.121	52.433	76.809	.58628
#1	.00106	26.085	-.00101	-.00067	.00273	-.00311	.00526	3.2018
#2	.00123	26.024	.00033	.00381	.00321	-.00199	.00047	3.1874
#3	.00077	25.889	-.00059	.01018	.00137	-.00566	.00602	3.1647
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098618 Acquired: 6/25/2016 18:31:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	1.4545	-.00154	-.00233	.00037	.00832	.00208
Stddev	.00132	.0032	.00357	.00066	.00141	.00007	.00021
%RSD	228.95	.22347	232.21	28.221	386.86	.88012	10.206
#1	.00206	1.4546	-.00325	-.00241	-.00025	.00825	.00199
#2	-.00043	1.4577	-.00393	-.00294	-.00063	.00831	.00233
#3	.00009	1.4512	.00257	-.00163	.00198	.00839	.00193
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9841.2	59299.	3061.4
Stddev	105.5	272.	4.9
%RSD	1.0718	.45797	.16152
#1	9746.5	58986.	3061.4
#2	9822.2	59458.	3056.4
#3	9954.9	59454.	3066.3

Approved: June 27, 2016

Sample Name: L1606098620 Acquired: 6/25/2016 18:35:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.03312	.00066	.07608	.03474	.00017	4.5650	.00010
Stddev	.00141	.00304	.00168	.00356	.00133	.00010	.0156	.00016
%RSD	3777.7	9.1736	255.45	4.6823	3.8419	59.446	.34129	166.50
#1	-.00004	.03663	-.00075	.08018	.03521	.00029	4.5712	.00011
#2	.00149	.03142	.00252	.07372	.03577	.00014	4.5766	.00025
#3	-.00133	.03132	.00020	.07433	.03323	.00009	4.5473	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00112	.00060	.00299	.05475	.56414	.00988	1.7714	.01450
Stddev	.00021	.00082	.00143	.01752	.07965	.00243	.0462	.00322
%RSD	18.384	137.46	47.864	31.992	14.119	24.596	2.6071	22.223
#1	.00132	.00110	.00244	.06300	.59505	.00894	1.8247	.01687
#2	.00115	.00105	.00462	.03463	.62370	.00806	1.7436	.01579
#3	.00091	-.00035	.00192	.06662	.47367	.01264	1.7459	.01083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00137	251.01	-.00057	.03777	.00214	-.00589	.00108	2.0603
Stddev	.00029	.75	.00178	.00427	.00057	.00380	.00694	.0083
%RSD	21.156	.29997	313.28	11.296	26.364	64.542	640.75	.40056
#1	.00125	251.39	-.00025	.04217	.00279	-.00381	-.00651	2.0621
#2	.00170	251.50	-.00248	.03365	.00178	-.01028	.00710	2.0676
#3	.00115	250.15	.00103	.03749	.00186	-.00358	.00266	2.0514
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098620 Acquired: 6/25/2016 18:35:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00101**	**.14703**	**.00470**	**-.00231**	**.00100**	**.00923**	**.00423**
Stddev	.00046	.00057	.00299	.00179	.00041	.00019	.00094
%RSD	44.993	.38637	63.686	77.674	41.001	2.0938	22.219
#1	.00049	.14737	.00735	-.00044	.00130	.00917	.00391
#2	.00129	.14734	.00531	-.00246	.00116	.00906	.00349
#3	.00126	.14637	.00145	-.00402	.00053	.00944	.00529
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9725.3**	**58367.**	**3028.8**
Stddev	17.5	120.	15.3
%RSD	.18040	.20576	.50451
#1	9742.7	58420.	3020.7
#2	9707.6	58451.	3019.2
#3	9725.6	58230.	3046.4

Approved: June 27, 2016

Sample Name: L1606098622 Acquired: 6/25/2016 18:39:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	-.00596	.00037	.05747	.02764	.00023	127.72	.00011
Stddev	.00093	.00925	.00122	.00204	.00088	.00005	1.04	.00012
%RSD	79.226	155.22	327.64	3.5486	3.1759	23.660	.81279	108.09
#1	.00125	-.01464	.00026	.05716	.02813	.00022	127.35	.00021
#2	.00205	-.00701	-.00078	.05560	.02662	.00018	126.92	.00013
#3	.00020	.00377	.00164	.05965	.02815	.00028	128.89	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00090	.01009	.02031	2.5853	.01995	32.558	.04793
Stddev	.00056	.00109	.00042	.00894	.0945	.00518	.278	.00190
%RSD	208.67	121.92	4.1494	44.026	3.6562	25.950	.85453	3.9665
#1	.00085	.00146	.01042	.02811	2.6682	.02326	32.522	.05007
#2	.00021	-.00036	.01022	.02229	2.4824	.01399	32.299	.04730
#3	-.00026	.00160	.00962	.01055	2.6053	.02261	32.852	.04643
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	46.975	.00038	.00992	.00378	-.00381	.00198	3.5382
Stddev	.00001	.389	.00033	.00514	.00270	.00385	.00283	.0119
%RSD	1.5146	.82774	87.053	51.791	71.542	100.88	142.89	.33659
#1	.00038	46.842	.00000	.00464	.00569	-.00293	.00001	3.5245
#2	.00039	46.670	.00061	.01491	.00068	-.00048	.00522	3.5450
#3	.00039	47.413	.00052	.01022	.00497	-.00802	.00070	3.5451
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098622 Acquired: 6/25/2016 18:39:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	1.7827	-.01653	-.00317	-.00057	.00858	.00262
Stddev	.00056	.0144	.00634	.00502	.00088	.00017	.00024
%RSD	326.45	.80805	38.350	158.35	154.19	1.9458	9.0067
#1	-.00048	1.7747	-.02093	-.00538	-.00155	.00859	.00236
#2	.00051	1.7740	-.00927	.00258	.00014	.00841	.00281
#3	.00049	1.7993	-.01940	-.00671	-.00029	.00875	.00270
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9602.2	57749.	2959.9
Stddev	40.4	252.	26.3
%RSD	.42032	.43708	.88902
#1	9555.9	57561.	2977.4
#2	9630.3	57650.	2972.6
#3	9620.3	58036.	2929.6

Approved: June 27, 2016

Sample Name: L1606098624 Acquired: 6/25/2016 18:42:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00037**	**.00561**	**.00154**	**.40348**	**.02348**	**.00039**	**237.24**
Stddev	.00142	.00394	.00506	.00070	.00039	.00006	.43
%RSD	386.92	70.246	327.66	.17357	1.6661	16.452	.18001
#1	.00014	.00128	.00004	.40369	.02381	.00037	237.56
#2	-.00093	.00658	-.00259	.40270	.02305	.00046	237.41
#3	.00189	.00898	.00718	.40405	.02358	.00034	236.75
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**-.00007**	**.00152**	**.02649**	**.02448**	**5.9223**	**.01174**
Stddev	.00017	.00052	.00056	.00200	.00699	.0587	.00396
%RSD	362.68	725.31	36.507	7.5377	28.540	.99123	33.722
#1	-.00014	.00052	.00185	.02553	.03123	5.8563	.01398
#2	-.00015	-.00040	.00183	.02879	.02493	5.9416	.00717
#3	.00015	-.00034	.00088	.02516	.01728	5.9689	.01408
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**66.698**	**.32515**	**.00019**	**63.762**	**.00021**	**.01502**	**.00144**
Stddev	.426	.00095	.00039	.087	.00030	.00323	.00065
%RSD	.63897	.29073	207.41	.13653	145.82	21.500	44.732
#1	66.222	.32513	-.00023	63.794	-.00012	.01765	.00108
#2	67.045	.32421	.00055	63.829	.00049	.01601	.00219
#3	66.826	.32610	.00024	63.663	.00025	.01142	.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 27, 2016

Sample Name: L1606098624 Acquired: 6/25/2016 18:42:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00149**	**.00522**	**3.3709**	**-.00072**	**1.6690**	F **-.03355**	**-.00155**
Stddev	.00099	.00177	.0249	.00122	.0015	.00264	.00229
%RSD	66.177	33.876	.73770	169.83	.08806	7.8818	147.53
#1	-.00080	.00419	3.3514	-.00109	1.6686	-.03207	.00107
#2	-.00262	.00726	3.3989	-.00171	1.6706	-.03199	-.00316
#3	-.00106	.00421	3.3624	.00064	1.6678	-.03661	-.00256
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00040**	**.00877**	**.00210**
Stddev	.00049	.00015	.00054
%RSD	123.14	1.7509	25.986
#1	-.00082	.00894	.00208
#2	.00014	.00865	.00156
#3	-.00050	.00870	.00265
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9491.7**	**57630.**	**3009.2**
Stddev	78.4	156.	15.6
%RSD	.82592	.27138	.51996
#1	9550.0	57451.	2991.3
#2	9402.6	57694.	3015.7
#3	9522.6	57743.	3020.5

Approved: June 27, 2016

Sample Name: L1606098626 Acquired: 6/25/2016 18:46:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00327	.00679	.00038	.03972	.02631	.00014	117.32	.00023
Stddev	.00072	.00538	.00107	.00258	.00068	.00005	.34	.00019
%RSD	22.022	79.326	284.61	6.5079	2.6006	35.377	.28683	83.944
#1	.00409	.00166	-.00067	.03695	.02674	.00014	117.70	.00003
#2	.00295	.01240	.00033	.04014	.02552	.00019	117.19	.00023
#3	.00276	.00630	.00147	.04206	.02666	.00009	117.07	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.00126	.00604	.03025	1.5600	.01598	35.418	-.00162
Stddev	.00014	.00104	.00157	.00896	.0430	.00117	.155	.00177
%RSD	71.567	82.474	25.938	29.612	2.7589	7.3145	.43775	108.92
#1	.00004	.00238	.00775	.03493	1.5696	.01501	35.426	-.00126
#2	.00029	.00033	.00573	.01992	1.5974	.01567	35.569	-.00006
#3	.00026	.00107	.00466	.03588	1.5130	.01728	35.259	-.00354
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	17.994	-.00024	.00950	.00273	-.00253	.00429	2.8578
Stddev	.00029	.066	.00113	.00146	.00267	.00313	.00183	.0046
%RSD	65.363	.36928	461.23	15.318	98.010	123.57	42.598	.16060
#1	.00011	18.060	.00031	.00854	.00072	.00062	.00280	2.8530
#2	.00057	17.927	.00050	.00879	.00170	-.00564	.00374	2.8621
#3	.00066	17.996	-.00154	.01118	.00576	-.00258	.00633	2.8583
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098626 Acquired: 6/25/2016 18:46:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.95352	-.01676	-.00181	.00025	.00656	.00282
Stddev	.00004	.00361	.00400	.00055	.00086	.00005	.00124
%RSD	36.480	.37812	23.874	30.252	341.08	.79230	44.156
#1	.00017	.95765	-.01632	-.00120	.00116	.00654	.00348
#2	.00013	.95102	-.02097	-.00198	-.00055	.00661	.00138
#3	.00008	.95189	-.01300	-.00225	.00014	.00651	.00358
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9709.6	59301.	3058.5
Stddev	45.7	137.	18.4
%RSD	.47038	.23115	.60138
#1	9758.2	59149.	3039.9
#2	9703.1	59336.	3058.7
#3	9667.6	59417.	3076.7

Approved: June 27, 2016

Sample Name: L1606098628 Acquired: 6/25/2016 18:50:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00127**	**.00062**	**.00226**	**.03408**	**.02631**	**.00011**	**202.60**
Stddev	.00142	.00505	.00320	.00146	.00145	.00006	1.09
%RSD	111.97	810.26	141.74	4.2925	5.4989	52.470	.53642
#1	.00192	-.00172	.00570	.03364	.02795	.00015	202.20
#2	.00225	-.00283	-.00063	.03289	.02521	.00012	201.76
#3	-.00036	.00642	.00171	.03571	.02576	.00005	203.83
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**-.00018**	**.00230**	**.00706**	**.02884**	**3.1108**	**.02231**
Stddev	.00015	.00008	.00109	.00066	.02764	.1253	.00468
%RSD	173.92	43.590	47.288	9.3696	95.862	4.0286	20.962
#1	.00015	-.00019	.00355	.00741	.06027	3.2199	.01700
#2	-.00008	-.00010	.00186	.00630	.00830	2.9739	.02412
#3	.00019	-.00026	.00151	.00747	.01794	3.1385	.02581
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**77.982**	**.03186**	**.00054**	**22.893**	**.00124**	**.00646**	**.00417**
Stddev	.421	.00093	.00029	.135	.00089	.00201	.00077
%RSD	.53979	2.9039	53.423	.59091	71.804	31.048	18.563
#1	77.763	.03137	.00064	22.869	.00109	.00439	.00500
#2	77.715	.03128	.00078	22.771	.00220	.00660	.00405
#3	78.467	.03292	.00022	23.039	.00044	.00839	.00347
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 27, 2016

Sample Name: L1606098628 Acquired: 6/25/2016 18:50:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00202**	**.00107**	**3.6233**	**.00060**	**2.4441**	F **-.03051**	**-.00323**
Stddev	.00386	.00287	.0015	.00175	.0120	.00406	.00089
%RSD	190.96	268.98	.04080	291.82	.49257	13.319	27.545
#1	.00200	.00365	3.6232	-.00046	2.4407	-.03513	-.00322
#2	-.00236	-.00203	3.6248	-.00036	2.4341	-.02890	-.00413
#3	-.00571	.00158	3.6218	.00262	2.4575	-.02750	-.00235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00057**	**.01373**	**.00279**
Stddev	.00055	.00005	.00121
%RSD	96.088	.39414	43.503
#1	-.00086	.01376	.00139
#2	-.00092	.01376	.00355
#3	.00006	.01367	.00343
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9549.4**	**58061.**	**2994.7**
Stddev	10.8	342.	16.3
%RSD	.11322	.58988	.54589
#1	9556.3	57786.	2984.2
#2	9554.9	57953.	3013.5
#3	9536.9	58445.	2986.3

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 18:54:37 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.36142	9.0966	F .35164	F .43504	F .88841	.04556	F 8.8985
Stddev	.00063	.0241	.00214	.00359	.00668	.00015	.0636
%RSD	.17458	.26527	.60772	.82605	.75211	.32062	.71530
#1	.36081	9.1069	.35253	.43880	.88074	.04567	8.8250
#2	.36138	9.0691	.35318	.43467	.89150	.04539	8.9365
#3	.36207	9.1139	.34920	.43164	.89299	.04562	8.9341
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Fail
Value			.40000	.50000	1.0000		10.000
Range			-10.000%	-10.000%	-10.000%		-10.000%

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04504	F .17683	F .44843	.45584	F 3.5682	F 43.223	.90012
Stddev	.00036	.00059	.00210	.00028	.0180	.402	.00642
%RSD	.79578	.33417	.46848	.06078	.50416	.93081	.71346
#1	.04493	.17615	.45006	.45571	3.5475	42.758	.89283
#2	.04475	.17711	.44916	.45565	3.5796	43.446	.90262
#3	.04544	.17723	.44606	.45616	3.5775	43.464	.90492
Check ?	Chk Pass	Chk Fail	Chk Fail	Chk Pass	Chk Fail	Chk Fail	Chk Pass
Value		.20000	.50000		4.0000	50.000	
Range		-10.000%	-10.000%		-10.000%	-10.000%	

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 8.4568	F .44683	.90610	F 43.837	.45006	F 8.8106	F .44997
Stddev	.1941	.00153	.00307	.290	.00031	.0184	.00285
%RSD	2.2957	.34349	.33891	.66256	.06941	.20845	.63417
#1	8.2816	.44509	.90942	43.504	.44975	8.7897	.44790
#2	8.6655	.44738	.90552	43.973	.45037	8.8181	.44879
#3	8.4231	.44801	.90336	44.035	.45007	8.8241	.45322
Check ?	Chk Fail	Chk Fail	Chk Pass	Chk Fail	Chk Pass	Chk Fail	Chk Fail
Value	10.000	.50000		50.000		10.000	.50000
Range	-10.000%	-10.000%		-10.000%		-10.000%	-10.000%

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 18:54:37 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 1.0511	F .35868	4.5430	F .88663	F .88982	F .89732	.46317
Stddev	.0038	.00393	.0064	.00114	.00700	.00126	.00115
%RSD	.35733	1.0963	.14052	.12909	.78679	.14039	.24883
#1	1.0514	.35522	4.5358	.88537	.88186	.89705	.46442
#2	1.0547	.35787	4.5453	.88691	.89256	.89622	.46295
#3	1.0472	.36295	4.5480	.88760	.89503	.89870	.46215
Check ?	Chk Fail	Chk Fail	Chk Pass	Chk Fail	Chk Fail	Chk Fail	Chk Pass
Value	1.2000	.40000		1.0000	1.0000	1.0000	
Range	-10.000%	-10.000%		-10.000%	-10.000%	-10.000%	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.92451	F .89326	F 2.6142
Stddev	.00239	.00079	.0303
%RSD	.25806	.08826	1.1591
#1	.92697	.89416	2.5794
#2	.92435	.89291	2.6285
#3	.92221	.89270	2.6347
Check ?	Chk Pass	Chk Fail	Chk Fail
Value		1.0000	1.0000
Range		-10.000%	10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10436.	62603.	3229.6
Stddev	7.	58.	39.3
%RSD	.06851	.09259	1.2179
#1	10435.	62597.	3274.8
#2	10443.	62548.	3203.4
#3	10429.	62663.	3210.5

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 18:58:15 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00102**	**-.00634**	**.00315**	**-.00143**	**.00123**	**.00009**	**-.03120**	**-.00001**
Stddev	.00036	.00615	.00146	.00223	.00014	.00007	.03757	.00022
%RSD	35.623	96.910	46.271	156.16	11.328	79.889	120.40	3000.5
#1	.00142	-.00623	.00470	-.00112	.00129	.00016	.01024	.00017
#2	.00091	-.01255	.00293	-.00379	.00133	.00004	-.06303	-.00025
#3	.00072	-.00026	.00181	.00063	.00107	.00005	-.04081	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**-.00012**	**.00040**	**.00652**	**.00729**	**-.00094**	**.01960**	**-.00009**
Stddev	.00003	.00070	.00057	.00448	.10732	.00258	.12813	.00039
%RSD	340.66	581.54	142.03	68.614	1471.3	275.05	653.72	408.22
#1	-.00000	.00019	-.00025	.00247	.06763	-.00204	-.01079	.00011
#2	.00004	-.00093	.00068	.01133	.07087	.00201	.16019	-.00054
#3	-.00001	.00037	.00077	.00577	-.11662	-.00279	-.09060	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00312**	**.01765**	**-.00021**	**.00497**	**.00440**	**.00279**	**.00542**	**.03094**
Stddev	.00023	.01443	.00123	.00520	.00590	.00458	.00181	.00198
%RSD	7.4573	81.775	586.87	104.64	134.12	164.15	33.357	6.4039
#1	.00298	.03423	-.00101	.00374	.00273	.00293	.00481	.03016
#2	.00339	.00793	-.00083	.01067	.01095	-.00186	.00399	.03319
#3	.00300	.01078	.00121	.00049	-.00049	.00730	.00745	.02947
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 18:58:15 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00029**	**.00057**	**.00328**	**-.00363**	**.00052**	**.00010**	**.00222**
Stddev	.00020	.00050	.00575	.00205	.00106	.00011	.00064
%RSD	66.832	88.088	175.09	56.396	206.25	116.18	28.891
#1	.00017	.00114	-.00137	-.00544	-.00047	.00019	.00164
#2	.00052	.00028	.00971	-.00141	.00038	-.00003	.00291
#3	.00019	.00027	.00151	-.00405	.00164	.00012	.00210
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10029.**	**60890.**	**3064.8**
Stddev	14.	97.	13.9
%RSD	.13680	.15850	.45397
#1	10045.	60780.	3055.3
#2	10022.	60930.	3080.8
#3	10020.	60960.	3058.3

Approved: June 27, 2016

Sample Name: L1606098630 Acquired: 6/25/2016 19:02:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00160**	**.04734**	**-.00156**	**.13569**	**.01871**	**.00015**	**238.04**
Stddev	.00181	.00348	.00404	.00135	.00123	.00008	.85
%RSD	113.48	7.3553	258.52	.99665	6.5967	52.824	.35679
#1	.00017	.04905	-.00155	.13421	.01822	.00022	239.01
#2	.00364	.04964	.00247	.13685	.01779	.00007	237.71
#3	.00098	.04333	-.00561	.13603	.02011	.00014	237.41
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00026**	**.00032**	**.00251**	**.01182**	**.03060**	**3.4183**	**.04090**
Stddev	.00010	.00018	.00081	.00072	.01332	.0462	.00200
%RSD	39.577	56.009	32.204	6.0677	43.540	1.3506	4.8796
#1	.00014	.00047	.00287	.01260	.01963	3.3856	.03874
#2	.00034	.00036	.00308	.01119	.04543	3.4711	.04128
#3	.00028	.00012	.00159	.01167	.02674	3.3981	.04268
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**90.439**	**.21655**	**.00156**	**78.879**	**.00140**	**.01756**	**.00033**
Stddev	.173	.00121	.00013	.416	.00068	.00677	.00046
%RSD	.19086	.55720	8.0204	.52709	48.349	38.536	138.30
#1	90.626	.21726	.00143	79.353	.00191	.01647	.00076
#2	90.405	.21515	.00168	78.710	.00063	.02480	-.00016
#3	90.286	.21722	.00157	78.574	.00166	.01140	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 27, 2016

Sample Name: L1606098630 Acquired: 6/25/2016 19:02:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00294**	**-.00177**	**5.6111**	**-.00017**	**7.0275**	F **-.03316**	**-.00254**
Stddev	.00229	.00087	.0076	.00038	.0379	.00293	.00099
%RSD	77.743	49.294	.13521	227.38	.53946	8.8247	38.798
#1	-.00354	-.00250	5.6121	-.00026	7.0707	-.03043	-.00171
#2	-.00042	-.00199	5.6030	-.00050	7.0124	-.03625	-.00363
#3	-.00488	-.00081	5.6181	.00025	6.9995	-.03280	-.00229
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00065**	**.02003**	**.00667**
Stddev	.00064	.00007	.00116
%RSD	98.374	.34297	17.407
#1	-.00116	.01996	.00557
#2	-.00088	.02003	.00654
#3	.00007	.02010	.00788
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9361.9**	**56594.**	**2990.6**
Stddev	23.4	147.	20.1
%RSD	.24995	.25968	.67365
#1	9379.7	56762.	2967.6
#2	9370.7	56528.	3005.2
#3	9335.4	56491.	2998.9

Approved: June 27, 2016

Sample Name: L1606098632S Acquired: 6/25/2016 19:06:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.18902	4.8212	.19116	.97374	.50077	.02402	134.52	.02388
Stddev	.00088	.0081	.00239	.00462	.00118	.00003	.34	.00017
%RSD	.46488	.16867	1.2481	.47438	.23617	.14314	.25228	.70472
#1	.18980	4.8271	.19377	.97198	.50123	.02406	134.68	.02373
#2	.18919	4.8246	.18910	.97898	.49943	.02400	134.13	.02406
#3	.18807	4.8119	.19060	.97026	.50165	.02400	134.75	.02386
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09189	.23665	.24218	1.8859	25.617	.51395	37.596	.28166
Stddev	.00021	.00120	.00028	.0089	.037	.00043	.192	.00203
%RSD	.23170	.50673	.11712	.47202	.14467	.08375	.50984	.71945
#1	.09190	.23534	.24190	1.8828	25.580	.51444	37.585	.28070
#2	.09167	.23691	.24247	1.8960	25.619	.51376	37.792	.28399
#3	.09210	.23769	.24219	1.8790	25.654	.51365	37.409	.28029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49448	71.230	.23175	4.7310	.23416	.56777	.18400	6.1097
Stddev	.00088	.164	.00128	.0060	.00191	.00602	.00319	.0038
%RSD	.17884	.22978	.55101	.12688	.81554	1.0604	1.7354	.06148
#1	.49529	71.252	.23067	4.7327	.23616	.57278	.18033	6.1129
#2	.49354	71.056	.23316	4.7244	.23394	.56944	.18613	6.1108
#3	.49461	71.382	.23142	4.7360	.23236	.56109	.18555	6.1056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098632S Acquired: 6/25/2016 19:06:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.46869	2.2839	.45630	.23531	.49366	.46774	.01477
Stddev	.00224	.0055	.00571	.00163	.00079	.00046	.00310
%RSD	.47718	.23955	1.2515	.69229	.16011	.09871	21.022
#1	.47047	2.2847	.45118	.23550	.49390	.46819	.01151
#2	.46942	2.2781	.45528	.23360	.49431	.46777	.01510
#3	.46618	2.2889	.46246	.23684	.49278	.46726	.01769
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9505.1	57443.	2995.1
Stddev	12.6	181.	7.9
%RSD	.13263	.31567	.26290
#1	9490.9	57238.	2989.7
#2	9509.8	57583.	3004.2
#3	9514.8	57507.	2991.6

Approved: June 27, 2016

Sample Name: L1606098634S Acquired: 6/25/2016 19:09:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19165**	**4.8639**	**.19259**	**.98224**	**.50433**	**.02434**	**136.41**	**.02397**
Stddev	.00283	.0058	.00215	.00673	.00181	.00002	.41	.00039
%RSD	1.4742	.11932	1.1143	.68564	.35885	.08391	.29851	1.6453
#1	.19474	4.8576	.19410	.97512	.50399	.02434	136.06	.02438
#2	.19099	4.8690	.19014	.98851	.50272	.02431	136.30	.02394
#3	.18921	4.8651	.19354	.98310	.50629	.02435	136.86	.02359
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09370**	**.23944**	**.24457**	**1.9014**	**25.851**	**.51838**	**38.336**	**.27292**
Stddev	.00027	.00087	.00143	.0128	.044	.00156	.167	.00356
%RSD	.28910	.36336	.58497	.67456	.17178	.30011	.43499	1.3028
#1	.09395	.23880	.24603	1.9045	25.902	.51991	38.172	.27676
#2	.09341	.23909	.24449	1.9124	25.822	.51842	38.330	.27226
#3	.09373	.24043	.24318	1.8873	25.829	.51680	38.505	.26974
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49947**	**74.848**	**.23412**	**4.7760**	**.23373**	**.57493**	**.18272**	**6.1711**
Stddev	.00101	.224	.00114	.0149	.00097	.00427	.00635	.0140
%RSD	.20163	.29965	.48754	.31111	.41349	.74220	3.4752	.22725
#1	.50053	74.661	.23450	4.7820	.23289	.57819	.18571	6.1610
#2	.49852	74.786	.23283	4.7591	.23352	.57010	.18702	6.1652
#3	.49936	75.096	.23502	4.7869	.23478	.57650	.17542	6.1871
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098634S Acquired: 6/25/2016 19:09:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47482**	**2.3307**	**.45927**	**.23900**	**.49848**	**.47191**	**.00533**
Stddev	.00086	.0091	.01368	.00122	.00164	.00108	.00076
%RSD	.18068	.39132	2.9792	.51192	.32871	.22881	14.237
#1	.47581	2.3242	.47279	.23871	.49842	.47284	.00492
#2	.47440	2.3268	.44543	.23794	.50015	.47073	.00620
#3	.47425	2.3411	.45961	.24034	.49687	.47217	.00485
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9464.2**	**57182.**	**2975.2**
Stddev	11.1	55.	14.2
%RSD	.11755	.09672	.47580
#1	9463.1	57128.	2991.6
#2	9475.9	57180.	2967.1
#3	9453.7	57239.	2967.1

Approved: June 27, 2016

Sample Name: L1606098636SD Acquired: 6/25/2016 19:13:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19162	4.8756	.19532	1.3252	.50705	.02431	243.19	.02436
Stddev	.00178	.0135	.00259	.0039	.00540	.00016	2.22	.00014
%RSD	.92905	.27765	1.3247	.29569	1.0646	.65896	.91281	.56637
#1	.19240	4.8805	.19500	1.3207	.51326	.02435	245.71	.02449
#2	.18958	4.8859	.19805	1.3282	.50441	.02444	242.33	.02421
#3	.19287	4.8603	.19291	1.3265	.50349	.02413	241.52	.02439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09290	.23671	.29685	1.9145	29.596	.51587	71.839	.60737
Stddev	.00022	.00172	.00059	.0369	.191	.00194	.252	.00417
%RSD	.23161	.72762	.19867	1.9280	.64372	.37694	.35080	.68663
#1	.09280	.23499	.29694	1.9564	29.779	.51781	72.039	.61218
#2	.09315	.23843	.29739	1.9005	29.610	.51588	71.921	.60495
#3	.09276	.23672	.29622	1.8867	29.399	.51393	71.556	.60497
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49958	89.482	.23320	4.8335	.23655	.57885	.18210	6.3388
Stddev	.00153	.784	.00050	.0076	.00169	.00511	.00473	.0094
%RSD	.30585	.87569	.21296	.15803	.71424	.88252	2.5997	.14817
#1	.49951	90.366	.23335	4.8331	.23580	.57825	.18575	6.3355
#2	.50114	89.209	.23361	4.8414	.23849	.57407	.18379	6.3494
#3	.49809	88.872	.23265	4.8261	.23537	.58424	.17675	6.3314
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098636SD Acquired: 6/25/2016 19:13:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47318**	**2.1504**	**.45196**	**.23380**	**.49243**	**.47726**	**.00396**
Stddev	.00235	.0203	.01296	.00229	.00254	.00239	.00140
%RSD	.49768	.94209	2.8683	.97909	.51630	.50171	35.414
#1	.47220	2.1736	.45301	.23117	.49302	.48002	.00408
#2	.47587	2.1417	.46436	.23534	.49462	.47583	.00530
#3	.47148	2.1359	.43850	.23489	.48964	.47592	.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9466.5**	**57687.**	**3000.7**
Stddev	28.5	42.	21.4
%RSD	.30105	.07212	.71153
#1	9499.3	57706.	2976.5
#2	9448.1	57639.	3017.0
#3	9452.0	57716.	3008.4

Approved: June 27, 2016

Sample Name: L1606098638SD Acquired: 6/25/2016 19:16:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-09

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19635**	**5.0111**	**.19662**	**1.3658**	**.50590**	**.02455**	**238.74**	**.02470**
Stddev	.00189	.0495	.00202	.0129	.00507	.00013	2.44	.00046
%RSD	.96164	.98714	1.0288	.94297	1.0027	.51871	1.0237	1.8632
#1	.19421	4.9540	.19875	1.3513	.50004	.02440	236.05	.02465
#2	.19777	5.0396	.19638	1.3761	.50894	.02464	240.82	.02518
#3	.19706	5.0398	.19472	1.3699	.50872	.02461	239.35	.02426
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09456**	**.24315**	**.24888**	**1.9280**	**29.506**	**.51676**	**69.466**	**.60260**
Stddev	.00054	.00286	.00145	.0328	.362	.00473	.757	.00806
%RSD	.56749	1.1744	.58163	1.6990	1.2271	.91552	1.0898	1.3377
#1	.09518	.24020	.24797	1.8914	29.119	.51186	68.628	.59529
#2	.09432	.24590	.25055	1.9547	29.837	.52131	70.101	.61124
#3	.09419	.24336	.24812	1.9378	29.562	.51712	69.668	.60126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50828**	**86.839**	**.23731**	**4.9079**	**.23796**	**.58722**	**.18727**	**6.3571**
Stddev	.00153	.812	.00040	.0105	.00122	.00763	.00717	.0147
%RSD	.30188	.93521	.16702	.21476	.51147	1.2987	3.8265	.23138
#1	.50998	85.938	.23758	4.9185	.23889	.59365	.18466	6.3682
#2	.50784	87.516	.23685	4.9076	.23841	.58922	.19537	6.3627
#3	.50701	87.061	.23748	4.8975	.23659	.57879	.18177	6.3405
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098638SD Acquired: 6/25/2016 19:16:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-09

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48230**	**2.1413**	**.45206**	**.24148**	**.50819**	**.47197**	**.00465**
Stddev	.00016	.0221	.00841	.00203	.00480	.00162	.00175
%RSD	.03337	1.0323	1.8614	.84256	.94539	.34380	37.692
#1	.48228	2.1164	.44367	.23931	.50264	.47335	.00633
#2	.48215	2.1586	.45201	.24177	.51108	.47237	.00283
#3	.48247	2.1488	.46050	.24334	.51084	.47018	.00481
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9367.1**	**56617.**	**3005.4**
Stddev	24.2	279.	8.9
%RSD	.25886	.49353	.29743
#1	9345.0	56900.	3015.6
#2	9363.2	56609.	2998.7
#3	9393.0	56341.	3002.0

Approved: June 27, 2016

Sample Name: L1606098640 Acquired: 6/25/2016 19:20:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00070	.00014	.00047	.01204	.00394	.00013	2.2418	.00009
Stddev	.00052	.00246	.00354	.00206	.00041	.00015	.0448	.00026
%RSD	75.327	1722.8	753.06	17.114	10.437	111.96	1.9977	298.05
#1	-.00120	.00298	.00434	.01328	.00360	.00001	2.2906	-.00017
#2	-.00073	-.00107	-.00032	.00966	.00384	.00009	2.2025	.00008
#3	-.00016	-.00148	-.00261	.01318	.00440	.00029	2.2324	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	-.00023	.00162	.03197	.19488	-.00199	.70657	-.00157
Stddev	.00020	.00043	.00063	.03003	.05117	.00159	.10487	.00034
%RSD	172.28	188.43	38.822	93.912	26.255	79.698	14.843	21.723
#1	-.00014	.00024	.00129	.06510	.20250	-.00219	.77648	-.00118
#2	.00010	-.00061	.00122	.00654	.14033	-.00346	.58598	-.00170
#3	-.00030	-.00032	.00234	.02429	.24180	-.00031	.75725	-.00182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	1.3245	-.00000	-.00132	.00155	-.00034	.00103	1.8661
Stddev	.00043	.0047	.00128	.00539	.00283	.00334	.00522	.0030
%RSD	69.622	.35334	42382.	408.47	183.18	979.63	508.03	.16155
#1	.00110	1.3264	-.00135	.00378	-.00057	-.00417	-.00062	1.8696
#2	.00029	1.3279	.00121	-.00695	.00477	.00193	.00687	1.8648
#3	.00045	1.3192	.00013	-.00078	.00045	.00122	-.00317	1.8641
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098640 Acquired: 6/25/2016 19:20:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	.02890	-.00018	-.00245	.00125	.00316	.00092
Stddev	.00104	.00022	.00313	.00122	.00036	.00008	.00187
%RSD	172.87	.75581	1755.3	49.848	28.928	2.5446	202.44
#1	-.00053	.02865	.00335	-.00105	.00165	.00322	-.00102
#2	.00152	.02900	-.00128	-.00328	.00095	.00320	.00271
#3	.00082	.02905	-.00260	-.00302	.00115	.00307	.00108
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9902.6	60698.	3047.4
Stddev	11.3	88.	21.1
%RSD	.11376	.14441	.69149
#1	9915.6	60659.	3066.8
#2	9895.9	60798.	3025.0
#3	9896.3	60636.	3050.3

Approved: June 27, 2016

Sample Name: L1606098642 Acquired: 6/25/2016 19:24:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00084	-.00125	.00012	.00714	.00291	.00014	2.2957	-.00008
Stddev	.00151	.00416	.00315	.00149	.00136	.00010	.0287	.00011
%RSD	179.62	331.72	2535.0	20.853	46.790	76.580	1.2503	140.66
#1	.00086	.00295	-.00350	.00543	.00443	.00023	2.2645	-.00020
#2	-.00134	-.00134	.00221	.00806	.00180	.00015	2.3210	.00001
#3	-.00204	-.00537	.00167	.00794	.00250	.00002	2.3016	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00054	.00126	.01879	.13459	.00101	.70251	-.00031
Stddev	.00021	.00073	.00033	.01779	.06299	.00139	.04015	.00188
%RSD	76.216	135.58	26.342	94.669	46.805	137.70	5.7150	613.21
#1	.00043	.00109	.00162	.03687	.13442	.00244	.65916	.00151
#2	.00035	-.00029	.00096	.01820	.19766	.00092	.73842	-.00224
#3	.00004	.00081	.00121	.00130	.07167	-.00034	.70994	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	1.3914	-.00012	.00599	-.00050	-.00197	.00192	1.9147
Stddev	.00031	.0274	.00128	.00446	.00248	.00478	.00405	.0013
%RSD	265.01	1.9704	1039.6	74.477	491.66	243.04	211.10	.06740
#1	-.00017	1.4067	.00078	.00869	.00158	.00334	.00542	1.9141
#2	.00008	1.4078	.00044	.00843	.00015	-.00331	-.00251	1.9137
#3	.00044	1.3598	-.00159	.00084	-.00325	-.00593	.00284	1.9161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098642 Acquired: 6/25/2016 19:24:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.02978**	**.00659**	**-.00224**	**.00021**	**.00288**	**.00046**
Stddev	.00041	.00031	.00898	.00218	.00024	.00011	.00203
%RSD	319.77	1.0309	136.22	97.103	115.48	3.6974	442.65
#1	.00034	.02969	.01094	-.00308	.00030	.00286	-.00018
#2	-.00043	.03012	.01258	.00023	.00040	.00300	.00273
#3	-.00030	.02953	-.00373	-.00388	-.00006	.00279	-.00117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9910.0**	**60405.**	**3027.1**
Stddev	8.6	109.	25.1
%RSD	.08719	.18086	.83024
#1	9909.0	60400.	3001.0
#2	9919.1	60298.	3029.3
#3	9901.9	60516.	3051.1

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 19:28:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38218**	**9.6308**	**.37557**	**.46431**	**.95962**	**.04828**	**9.5695**
Stddev	.00218	.0178	.00127	.00116	.00217	.00012	.0717
%RSD	.57165	.18471	.33835	.24921	.22635	.23895	.74942
#1	.37992	9.6388	.37606	.46299	.96032	.04841	9.5557
#2	.38232	9.6104	.37652	.46516	.96137	.04820	9.6471
#3	.38429	9.6432	.37413	.46479	.95719	.04823	9.5057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04801**	**.18801**	**.47395**	**.48473**	**3.7689**	**46.355**	**.97311**
Stddev	.00014	.00020	.00045	.00153	.0264	.220	.00378
%RSD	.29427	.10445	.09483	.31643	.70136	.47512	.38849
#1	.04785	.18823	.47438	.48634	3.7952	46.500	.97746
#2	.04812	.18785	.47399	.48328	3.7693	46.464	.97068
#3	.04806	.18795	.47348	.48458	3.7423	46.102	.97118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.0717**	**.47590**	**.96524**	**47.107**	**.47852**	**9.3733**	**.47882**
Stddev	.0608	.00396	.00399	.173	.00072	.0111	.00296
%RSD	.67059	.83199	.41378	.36832	.15104	.11884	.61810
#1	9.0038	.47335	.96959	47.188	.47773	9.3765	.47551
#2	9.1213	.48046	.96440	47.226	.47916	9.3609	.48123
#3	9.0900	.47388	.96173	46.908	.47866	9.3825	.47971
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 19:28:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1223**	**.37795**	**4.8400**	**.94463**	**.95969**	**.96684**	**.48966**
Stddev	.0016	.00541	.0100	.00151	.00470	.01176	.00307
%RSD	.14404	1.4313	.20631	.15941	.49016	1.2167	.62598
#1	1.1238	.37410	4.8492	.94636	.96229	.96908	.48613
#2	1.1206	.37562	4.8414	.94360	.96253	.97732	.49169
#3	1.1224	.38414	4.8294	.94394	.95426	.95412	.49116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.97958**	**.95235**	F **2.8246**
Stddev	.00154	.00042	.0035
%RSD	.15724	.04377	.12384
#1	.97882	.95263	2.8278
#2	.97857	.95254	2.8252
#3	.98136	.95187	2.8208
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10132.**	**61264.**	**3100.4**
Stddev	.	134.	6.9
%RSD	.00202	.21941	.22117
#1	10132.	61202.	3092.6
#2	10132.	61418.	3103.3
#3	10132.	61171.	3105.3

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 19:32:05 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00027**	**-.00034**	**.00165**	**-.00065**	**.00143**	**.00014**	**-.04509**	**-.00015**
Stddev	.00053	.00835	.00116	.00135	.00075	.00012	.04632	.00018
%RSD	198.69	2437.1	70.395	208.11	52.425	84.191	102.74	120.05
#1	.00081	.00499	.00229	-.00108	.00058	.00001	-.09453	-.00022
#2	.00023	-.00997	.00235	-.00174	.00173	.00020	-.03804	.00005
#3	-.00025	.00395	.00031	.00087	.00199	.00023	-.00270	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**-.00017**	**.00065**	**.02423**	**-.06433**	**-.00295**	**-.01903**	**-.00066**
Stddev	.00013	.00077	.00059	.01555	.07126	.00237	.08401	.00260
%RSD	162.10	456.13	90.441	64.178	110.77	80.373	441.41	395.33
#1	-.00022	-.00087	-.00002	.03897	.01654	-.00026	-.10302	.00036
#2	-.00006	.00066	.00091	.02575	-.09166	-.00387	.06499	-.00361
#3	.00004	-.00030	.00106	.00798	-.11789	-.00472	-.01907	.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00313**	**.02145**	**.00120**	**.00197**	**.00164**	**.00212**	**.00101**	**.04112**
Stddev	.00013	.00743	.00050	.00366	.00312	.00166	.00069	.00272
%RSD	4.1237	34.660	41.579	185.66	190.04	78.472	68.223	6.6255
#1	.00318	.03002	.00170	.00620	.00310	.00128	.00172	.03946
#2	.00323	.01754	.00070	-.00004	.00377	.00104	.00035	.04426
#3	.00298	.01678	.00121	-.00024	-.00194	.00404	.00097	.03964
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 19:32:05 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00072**	**.00051**	**-.00006**	**-.00149**	**-.00026**	**.00006**	**.00316**
Stddev	.00004	.00041	.00466	.00123	.00016	.00032	.00144
%RSD	4.9365	80.523	8195.1	82.501	61.089	521.42	45.405
#1	.00073	.00010	.00498	-.00182	-.00044	-.00016	.00318
#2	.00068	.00091	-.00094	-.00252	-.00020	.00042	.00172
#3	.00075	.00050	-.00421	-.00013	-.00014	-.00008	.00459
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9625.9**	**58446.**	**2947.7**
Stddev	17.4	102.	8.2
%RSD	.18036	.17465	.27941
#1	9605.9	58491.	2954.6
#2	9635.9	58518.	2950.0
#3	9636.0	58329.	2938.6

Approved: June 27, 2016

Sample Name: PBW LH Acquired: 6/25/2016 19:36:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	-.00480	.00297	-.00088	.00071	.00016	-.03609	-.00030
Stddev	.00096	.00538	.00061	.00047	.00081	.00006	.00576	.00022
%RSD	436.54	112.05	20.402	53.250	112.94	41.040	15.975	74.291
#1	-.00063	-.00271	.00258	-.00071	.00057	.00010	-.04014	-.00038
#2	.00002	-.00078	.00267	-.00141	-.00001	.00022	-.03863	-.00005
#3	.00126	-.01092	.00367	-.00052	.00158	.00014	-.02949	-.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.00027	.00021	.03551	.02057	.00058	-.03422	.00199
Stddev	.00019	.00046	.00040	.00062	.11033	.00127	.05831	.00213
%RSD	211.66	173.58	192.44	1.7348	536.36	218.26	170.39	107.33
#1	.00009	.00043	-.00014	.03559	.14793	.00205	.01703	.00051
#2	-.00029	.00063	.00065	.03485	-.04548	-.00019	-.09766	.00101
#3	-.00007	-.00025	.00012	.03607	-.04075	-.00011	-.02203	.00443
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	.01920	-.00013	.00015	.00308	-.00169	.00218	.00530
Stddev	.00020	.01381	.00043	.00436	.00410	.00157	.00344	.00135
%RSD	72.649	71.919	323.98	2952.6	133.25	92.573	157.59	25.417
#1	-.00050	.00540	-.00047	-.00185	.00268	-.00008	.00514	.00605
#2	-.00014	.01919	.00035	-.00286	.00737	-.00321	.00301	.00374
#3	-.00017	.03301	-.00027	.00515	-.00081	-.00179	-.00160	.00610
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: PBW LH Acquired: 6/25/2016 19:36:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.00001**	**.00007**	**-.00205**	**.00056**	**-.00012**	**.00138**
Stddev	.00105	.00006	.00526	.00274	.00041	.00008	.00122
%RSD	278.35	503.89	7708.4	133.89	73.183	68.172	88.458
#1	.00057	-.00005	.00045	-.00401	.00011	-.00018	.00093
#2	-.00020	.00002	-.00537	-.00321	.00065	-.00003	.00045
#3	-.00151	.00007	.00513	.00108	.00091	-.00016	.00276
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10355.**	**62690.**	**3143.1**
Stddev	14.	21.	40.1
%RSD	.13810	.03356	1.2743
#1	10371.	62711.	3176.8
#2	10343.	62669.	3098.8
#3	10351.	62689.	3153.6

Approved: June 27, 2016

Sample Name: LCSW LH Acquired: 6/25/2016 19:39:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19366**	**4.9137**	**.19220**	**.93203**	**.49068**	**.02467**	**4.9632**	**.02443**
Stddev	.00070	.0138	.00341	.00396	.00423	.00007	.0538	.00016
%RSD	.36335	.28142	1.7740	.42472	.86189	.28277	1.0835	.64799
#1	.19288	4.8983	.19002	.92766	.48616	.02461	4.9413	.02459
#2	.19385	4.9180	.19044	.93305	.49453	.02465	5.0244	.02441
#3	.19425	4.9249	.19613	.93537	.49136	.02474	4.9238	.02428
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09715**	**.24544**	**.24999**	**1.9443**	**23.472**	**.50293**	**4.6813**	**.24132**
Stddev	.00066	.00263	.00041	.0106	.182	.00291	.0938	.00318
%RSD	.68088	1.0726	.16565	.54556	.77586	.57762	2.0038	1.3188
#1	.09680	.24301	.25039	1.9373	23.301	.50365	4.6704	.23802
#2	.09792	.24824	.24956	1.9391	23.664	.50540	4.7800	.24157
#3	.09674	.24506	.25002	1.9565	23.450	.49973	4.5934	.24437
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50304**	**24.148**	**.24571**	**4.6828**	**.24554**	**.57884**	**.18202**	**2.4064**
Stddev	.00049	.122	.00061	.0125	.00123	.00461	.00367	.0046
%RSD	.09743	.50324	.24625	.26789	.50266	.79649	2.0171	.19316
#1	.50339	24.028	.24640	4.6758	.24587	.57352	.17868	2.4078
#2	.50325	24.271	.24545	4.6973	.24658	.58167	.18595	2.4102
#3	.50248	24.145	.24528	4.6753	.24418	.58132	.18143	2.4012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LCSW LH Acquired: 6/25/2016 19:39:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48493**	**.49684**	**.48674**	**.24907**	**.50464**	**.48284**	**.01676**
Stddev	.00108	.00397	.00310	.00041	.00236	.00325	.00211
%RSD	.22287	.79928	.63744	.16637	.46686	.67256	12.564
#1	.48462	.49378	.48665	.24947	.50200	.48055	.01435
#2	.48613	.50133	.48369	.24909	.50538	.48656	.01775
#3	.48404	.49542	.48989	.24864	.50653	.48141	.01820
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9761.3**	**59171.**	**3026.9**
Stddev	5.3	58.	23.7
%RSD	.05400	.09751	.78195
#1	9766.4	59236.	3050.7
#2	9755.9	59148.	3003.3
#3	9761.7	59127.	3026.7

Approved: June 27, 2016

Sample Name: L1606090723 Acquired: 6/25/2016 19:43:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	.01800	.14333	.20159	.04322	.00011	82.135	.00062
Stddev	.00074	.00440	.00262	.00108	.00176	.00009	.153	.00002
%RSD	81.113	24.457	1.8284	.53531	4.0750	85.790	.18660	3.6806
#1	.00039	.02274	.14560	.20094	.04396	.00020	82.043	.00061
#2	.00058	.01723	.14046	.20283	.04121	.00011	82.051	.00064
#3	.00176	.01403	.14393	.20099	.04450	.00001	82.312	.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00085	.00186	.00181	3.0759	4.3146	.03826	51.383	.03252
Stddev	.00009	.00076	.00070	.0448	.0921	.00398	.083	.00353
%RSD	10.346	41.113	38.683	1.4576	2.1337	10.401	.16137	10.870
#1	.00081	.00098	.00242	3.0253	4.2316	.04144	51.475	.03488
#2	.00094	.00223	.00197	3.0916	4.4136	.03380	51.362	.02845
#3	.00078	.00237	.00105	3.1108	4.2984	.03956	51.313	.03422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00258	133.73	-.00015	.01191	.00179	-.00228	.00665	8.0891
Stddev	.00008	.12	.00113	.00694	.00129	.00283	.00532	.0280
%RSD	3.2153	.09189	747.26	58.268	71.933	124.12	79.994	.34670
#1	.00264	133.81	-.00126	.01916	.00318	-.00553	.01195	8.1130
#2	.00249	133.59	.00099	.00533	.00159	-.00033	.00671	8.0582
#3	.00262	133.80	-.00018	.01123	.00062	-.00099	.00131	8.0960
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606090723 Acquired: 6/25/2016 19:43:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**2.6416**	**-.00732**	**-.00182**	**-.00046**	**.00542**	**.00128**
Stddev	.00038	.0023	.00771	.00082	.00062	.00021	.00019
%RSD	7616.2	.08543	105.44	45.025	136.48	3.8805	14.578
#1	.00020	2.6400	-.01112	-.00260	-.00073	.00544	.00120
#2	.00025	2.6406	.00156	-.00189	.00026	.00563	.00115
#3	-.00044	2.6441	-.01239	-.00097	-.00089	.00521	.00149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9566.3**	**57706.**	**3016.3**
Stddev	21.2	40.	8.6
%RSD	.22170	.06981	.28561
#1	9583.7	57737.	3006.9
#2	9572.5	57660.	3023.9
#3	9542.7	57721.	3018.2

Approved: June 27, 2016

Sample Name: L1606098601 Acquired: 6/25/2016 19:47:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	.63226	.00101	.09520	.04126	.00012	31.325	.00014
Stddev	.00183	.00734	.00119	.00196	.00050	.00007	.135	.00021
%RSD	298.65	1.1612	118.08	2.0630	1.2197	57.984	.43030	153.25
#1	.00185	.62395	-.00028	.09744	.04176	.00005	31.451	-.00001
#2	-.00149	.63786	.00207	.09436	.04076	.00018	31.183	.00005
#3	.00148	.63498	.00124	.09379	.04125	.00013	31.342	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	.00251	.00378	1.4621	1.2075	.01677	5.9028	.04892
Stddev	.00024	.00020	.00199	.0362	.0294	.00358	.0605	.00066
%RSD	20.175	7.8011	52.767	2.4785	2.4351	21.330	1.0243	1.3538
#1	.00129	.00246	.00338	1.4981	1.1821	.01735	5.9016	.04861
#2	.00090	.00272	.00594	1.4256	1.2008	.02003	5.8430	.04848
#3	.00133	.00234	.00201	1.4624	1.2397	.01294	5.9639	.04969
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00119	122.45	.00122	.03952	.00058	-.00189	.00677	4.0503
Stddev	.00024	.35	.00124	.00581	.00157	.00112	.00463	.0371
%RSD	19.925	.28250	101.52	14.694	270.52	59.209	68.294	.91471
#1	.00135	122.68	.00181	.04077	.00200	-.00256	.00933	4.0789
#2	.00131	122.05	-.00020	.04460	-.00110	-.00252	.00956	4.0634
#3	.00092	122.62	.00206	.03319	.00084	-.00060	.00143	4.0084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098601 Acquired: 6/25/2016 19:47:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.54428**	**.01566**	**-.00252**	**.00147**	**.03503**	**.00138**
Stddev	.00052	.00100	.00262	.00158	.00115	.00040	.00180
%RSD	330.58	.18426	16.757	62.766	78.497	1.1335	130.15
#1	-.00032	.54517	.01814	-.00107	.00112	.03533	.00331
#2	-.00057	.54319	.01592	-.00228	.00275	.03517	-.00024
#3	.00042	.54448	.01291	-.00422	.00053	.03458	.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9674.1**	**58435.**	**3018.4**
Stddev	45.2	129.	18.2
%RSD	.46720	.22152	.60258
#1	9673.0	58340.	2997.4
#2	9719.9	58382.	3028.7
#3	9629.5	58582.	3029.1

Approved: June 27, 2016

Sample Name: L1606098603 Acquired: 6/25/2016 19:51:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00113**	**.08091**	**.00257**	**.02612**	**.02343**	**.00026**	**258.72**
Stddev	.00364	.00403	.00338	.00065	.00023	.00010	.22
%RSD	322.73	4.9793	131.60	2.5002	.99712	37.911	.08495
#1	-.00201	.07953	.00151	.02617	.02317	.00019	258.95
#2	.00512	.08545	-.00015	.02675	.02363	.00037	258.52
#3	.00028	.07776	.00635	.02545	.02348	.00021	258.68
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00056**	**.00486**	**.00101**	**.01760**	**1.6277**	**1.7887**	**.01926**
Stddev	.00018	.00049	.00101	.00048	.0214	.0748	.00269
%RSD	32.935	10.099	100.65	2.7241	1.3157	4.1799	13.963
#1	.00053	.00446	.00070	.01814	1.6519	1.7719	.02232
#2	.00040	.00472	.00018	.01725	1.6198	1.8705	.01729
#3	.00076	.00541	.00214	.01740	1.6113	1.7238	.01816
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**67.571**	**3.7591**	**.00091**	**16.176**	**.00450**	**.03792**	**.00200**
Stddev	.265	.0091	.00013	.042	.00050	.00459	.00102
%RSD	.39176	.24313	14.640	.25963	11.081	12.099	51.049
#1	67.875	3.7689	.00083	16.148	.00428	.03292	.00317
#2	67.391	3.7508	.00083	16.224	.00415	.03891	.00158
#3	67.448	3.7575	.00106	16.157	.00507	.04193	.00126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 27, 2016

Sample Name: L1606098603 Acquired: 6/25/2016 19:51:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00201**	**-.00717**	**3.9929**	**.00071**	**1.4034**	F **-.03512**	**-.00302**
Stddev	.00033	.00269	.0187	.00006	.0013	.00376	.00159
%RSD	16.650	37.521	.46951	8.6416	.08919	10.706	52.853
#1	-.00201	-.00583	3.9724	.00069	1.4035	-.03701	-.00329
#2	-.00234	-.01026	3.9969	.00078	1.4046	-.03756	-.00130
#3	-.00167	-.00541	4.0093	.00066	1.4021	-.03079	-.00446
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00011**	**.03959**	**.00096**
Stddev	.00028	.00012	.00361
%RSD	248.38	.29182	376.14
#1	.00034	.03947	.00158
#2	-.00020	.03969	.00421
#3	.00020	.03962	-.00292
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9451.5**	**57637.**	**3009.6**
Stddev	22.8	186.	22.0
%RSD	.24088	.32311	.72999
#1	9477.8	57852.	2986.4
#2	9439.3	57520.	3012.4
#3	9437.5	57540.	3030.0

Approved: June 27, 2016

Sample Name: L1606098605 Acquired: 6/25/2016 19:55:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00137	.11904	-.00057	.01716	.07339	.00069	79.533	.00007
Stddev	.00111	.00237	.00183	.00141	.00107	.00010	.468	.00014
%RSD	81.063	1.9908	322.69	8.2448	1.4582	14.460	.58849	215.58
#1	-.00160	.12158	.00130	.01581	.07215	.00080	78.994	-.00002
#2	-.00016	.11865	-.00237	.01703	.07401	.00066	79.770	-.00001
#3	-.00235	.11689	-.00063	.01863	.07401	.00061	79.836	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00197	.03453	.22031	1.0996	.00600	23.636	.02412
Stddev	.00010	.00062	.00164	.01719	.0321	.00378	.124	.00114
%RSD	58.539	31.534	4.7611	7.8016	2.9198	62.984	.52590	4.7055
#1	.00028	.00148	.03642	.22738	1.1284	.00174	23.677	.02484
#2	.00008	.00176	.03343	.23283	1.0650	.00731	23.734	.02281
#3	.00016	.00266	.03374	.20072	1.1054	.00895	23.496	.02471
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	16.543	.00139	.02145	.00230	-.00291	.00287	2.5906
Stddev	.00010	.077	.00029	.00514	.00167	.00113	.00378	.0043
%RSD	11.067	.46265	20.622	23.950	72.689	38.933	132.03	.16499
#1	.00094	16.521	.00147	.02583	.00422	-.00367	.00465	2.5950
#2	.00093	16.628	.00163	.02271	.00152	-.00161	-.00148	2.5865
#3	.00076	16.480	.00107	.01580	.00116	-.00345	.00543	2.5902
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098605 Acquired: 6/25/2016 19:55:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.41216	-.00457	-.00401	.00095	.08292	.00137
Stddev	.00045	.00253	.00113	.00092	.00095	.00025	.00112
%RSD	198.91	.61368	24.692	22.922	99.932	.30169	82.337
#1	.00020	.40988	-.00328	-.00486	-.00009	.08312	.00008
#2	.00068	.41488	-.00504	-.00303	.00116	.08301	.00218
#3	-.00021	.41173	-.00539	-.00414	.00177	.08264	.00183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9691.4	59019.	3013.1
Stddev	15.7	113.	12.9
%RSD	.16185	.19156	.42939
#1	9673.9	58889.	3028.0
#2	9704.2	59073.	3004.1
#3	9696.2	59095.	3007.4

Approved: June 27, 2016

Sample Name: L1606098607 Acquired: 6/25/2016 19:59:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00078	.03854	.00139	.01595	.03639	.00021	86.351	.00013
Stddev	.00196	.00438	.00171	.00299	.00069	.00005	.183	.00018
%RSD	252.38	11.356	122.54	18.743	1.8946	25.559	.21179	130.52
#1	-.00064	.04027	.00252	.01429	.03564	.00026	86.561	.00033
#2	-.00004	.03356	-.00057	.01941	.03654	.00022	86.226	.00007
#3	.00302	.04179	.00223	.01417	.03700	.00015	86.267	-.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	.00096	.00901	.09595	1.3588	.01896	23.947	.13765
Stddev	.00012	.00155	.00054	.00336	.0905	.00285	.152	.00156
%RSD	14.271	161.05	6.0176	3.5057	6.6619	15.032	.63449	1.1314
#1	.00074	.00257	.00840	.09606	1.2544	.01772	23.782	.13585
#2	.00084	-.00052	.00942	.09926	1.4148	.02223	24.081	.13859
#3	.00099	.00083	.00922	.09254	1.4072	.01695	23.978	.13851
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	12.868	.00006	.00776	.00294	-.00141	.00160	3.6487
Stddev	.00036	.033	.00069	.00647	.00245	.00292	.00413	.0140
%RSD	74.294	.25857	1239.7	83.320	83.569	207.44	258.10	.38292
#1	.00008	12.905	-.00031	.01172	.00013	.00158	.00626	3.6621
#2	.00078	12.859	.00085	.01126	.00466	-.00154	-.00162	3.6496
#3	.00059	12.840	-.00038	.00030	.00403	-.00426	.00017	3.6342
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098607 Acquired: 6/25/2016 19:59:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.85925**	**-.01297**	**-.00261**	**.00027**	**.01872**	**-.00023**
Stddev	.00058	.00368	.00482	.00118	.00049	.00005	.00100
%RSD	1135.5	.42821	37.150	45.319	182.28	.27976	440.95
#1	.00028	.86236	-.00802	-.00398	-.00019	.01878	.00007
#2	-.00072	.86019	-.01323	-.00183	.00021	.01871	.00059
#3	.00028	.85519	-.01765	-.00203	.00079	.01868	-.00134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9667.2**	**58651.**	**3007.8**
Stddev	38.0	90.	17.4
%RSD	.39269	.15372	.57760
#1	9636.2	58610.	2989.6
#2	9655.8	58589.	3009.4
#3	9709.5	58755.	3024.3

Approved: June 27, 2016

Sample Name: L1606098607PS Acquired: 6/25/2016 20:03:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574215-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19549**	**4.9683**	**.19699**	**.95431**	**.52192**	**.02489**	**83.384**	**.02448**
Stddev	.00145	.0012	.00037	.00069	.00335	.00004	.351	.00015
%RSD	.74419	.02324	.18968	.07193	.64144	.17436	.42141	.59448
#1	.19431	4.9671	.19669	.95367	.51889	.02485	83.062	.02455
#2	.19712	4.9693	.19740	.95504	.52551	.02494	83.759	.02458
#3	.19505	4.9687	.19686	.95422	.52137	.02490	83.330	.02431
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09612**	**.24445**	**.24901**	**2.0095**	**25.021**	**.52274**	**26.551**	**.36466**
Stddev	.00060	.00204	.00132	.0079	.209	.00262	.211	.00375
%RSD	.62715	.83504	.52860	.39401	.83514	.50106	.79467	1.0287
#1	.09620	.24322	.24870	2.0100	24.845	.52124	26.458	.36188
#2	.09668	.24681	.25046	2.0172	25.252	.52577	26.792	.36317
#3	.09548	.24332	.24788	2.0014	24.965	.52123	26.403	.36893
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50539**	**35.868**	**.24056**	**4.8300**	**.24330**	**.58213**	**.19141**	**5.6770**
Stddev	.00256	.121	.00174	.0165	.00225	.00117	.00102	.0113
%RSD	.50685	.33731	.72421	.34266	.92572	.20086	.53487	.19978
#1	.50625	35.730	.24173	4.8368	.24292	.58281	.19254	5.6837
#2	.50742	35.956	.24138	4.8421	.24572	.58078	.19056	5.6833
#3	.50251	35.919	.23856	4.8112	.24127	.58280	.19112	5.6639
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098607PS Acquired: 6/25/2016 20:03:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574215-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48483**	**1.2623**	**.48068**	**.24615**	**.50488**	**.48944**	**.00427**
Stddev	.00147	.0060	.00508	.00275	.00238	.00115	.00064
%RSD	.30392	.47569	1.0573	1.1154	.47121	.23489	15.068
#1	.48451	1.2555	.47807	.24920	.50216	.48999	.00389
#2	.48644	1.2668	.48654	.24388	.50587	.49021	.00501
#3	.48354	1.2646	.47744	.24537	.50660	.48812	.00390
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9610.5**	**58019.**	**3004.1**
Stddev	20.4	180.	8.2
%RSD	.21278	.31055	.27313
#1	9607.7	58202.	3005.9
#2	9591.6	58012.	2995.2
#3	9632.2	57842.	3011.3

Approved: June 27, 2016

Sample Name: L1606098607SDL Acquired: 6/25/2016 20:06:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574215-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	.00334	.00170	.00445	.00847	.00009	17.139	.00008
Stddev	.00049	.00730	.00411	.00207	.00008	.00007	.249	.00023
%RSD	88.649	218.69	241.70	46.624	.94243	75.660	1.4519	290.72
#1	.00089	.00593	.00612	.00219	.00843	.00006	17.426	.00034
#2	-.00001	.00899	-.00200	.00488	.00843	.00004	17.001	-.00003
#3	.00078	-.00490	.00098	.00627	.00857	.00017	16.989	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.00037	.00191	.01894	.32539	.00400	4.9234	.02615
Stddev	.00005	.00023	.00083	.00475	.10069	.00194	.1236	.00303
%RSD	9.1063	60.795	43.755	25.087	30.943	48.604	2.5107	11.568
#1	.00062	.00059	.00284	.02402	.21108	.00176	4.9976	.02622
#2	.00053	.00038	.00165	.01821	.40094	.00496	4.9918	.02914
#3	.00053	.00014	.00123	.01460	.36416	.00527	4.7807	.02309
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	2.5977	.00028	.00852	.00297	.00160	.00156	.72149
Stddev	.00021	.0380	.00123	.00414	.00293	.00068	.00366	.00246
%RSD	66.333	1.4636	438.92	48.637	98.645	42.261	235.25	.34147
#1	.00008	2.6376	-.00081	.01268	-.00028	.00113	-.00104	.72244
#2	.00048	2.5938	.00004	.00439	.00377	.00130	.00574	.71869
#3	.00037	2.5619	.00161	.00849	.00542	.00238	-.00003	.72333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098607SDL Acquired: 6/25/2016 20:06:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574215-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.17255**	**.00033**	**-.00095**	**.00100**	**.00419**	**.00060**
Stddev	.00072	.00063	.00618	.00123	.00055	.00013	.00060
%RSD	1344.6	.36773	1857.8	129.31	55.083	2.9985	99.890
#1	-.00060	.17322	-.00395	-.00224	.00116	.00417	-.00009
#2	.00076	.17246	-.00247	-.00083	.00039	.00432	.00094
#3	-.00032	.17196	.00742	.00021	.00145	.00407	.00094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10100.**	**61152.**	**3087.7**
Stddev	17.	221.	3.3
%RSD	.16887	.36180	.10673
#1	10112.	61407.	3088.4
#2	10080.	61005.	3090.6
#3	10107.	61046.	3084.1

Approved: June 27, 2016

Sample Name: L1606098607SDL Acquired: 6/25/2016 20:10:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574215-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	-.00220	-.00032	-.00063	.00197	.00015	3.3784	-.00009
Stddev	.00281	.00599	.00141	.00122	.00070	.00004	.0403	.00029
%RSD	1738.4	271.64	438.98	193.96	35.714	23.124	1.1918	310.09
#1	.00289	-.00340	.00101	-.00187	.00220	.00018	3.3321	-.00013
#2	-.00273	.00429	-.00181	-.00058	.00253	.00017	3.3977	-.00037
#3	.00033	-.00751	-.00017	.00056	.00118	.00011	3.4054	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	-.00057	.00039	.03496	.02799	.00189	.96584	.00502
Stddev	.00041	.00109	.00122	.02559	.02173	.00316	.06365	.00248
%RSD	5673.0	191.57	314.78	73.189	77.636	167.39	6.5899	49.517
#1	.00017	-.00161	.00178	.00957	.03029	.00425	1.0133	.00340
#2	.00028	-.00067	-.00011	.06074	.04847	.00313	.99069	.00377
#3	-.00047	.00057	-.00050	.03458	.00520	-.00171	.89352	.00788
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00037	.48659	-.00001	.00389	.00194	-.00589	.00123	.14706
Stddev	.00019	.02107	.00027	.00257	.00032	.00198	.00158	.00411
%RSD	50.403	4.3293	3257.2	66.021	16.675	33.653	128.28	2.7928
#1	-.00035	.50181	-.00003	.00472	.00177	-.00726	-.00048	.14268
#2	-.00056	.46255	.00027	.00101	.00173	-.00680	.00263	.15082
#3	-.00019	.49542	-.00027	.00595	.00231	-.00362	.00154	.14770
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098607SDL Acquired: 6/25/2016 20:10:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574215-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**.03404**	**-.00096**	**.00109**	**.00053**	**.00095**	**-.00050**
Stddev	.00021	.00026	.00497	.00270	.00028	.00007	.00147
%RSD	93.819	.76060	519.10	248.53	53.226	6.9237	292.99
#1	-.00042	.03414	.00415	-.00145	.00059	.00088	.00090
#2	-.00001	.03374	-.00578	.00079	.00078	.00097	-.00204
#3	-.00022	.03423	-.00124	.00392	.00022	.00101	-.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10132.**	**61150.**	**3069.8**
Stddev	20.	142.	13.8
%RSD	.19324	.23287	.44985
#1	10144.	61269.	3085.6
#2	10109.	61188.	3063.7
#3	10143.	60992.	3060.0

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 20:14:26 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39742**	**10.037**	**.39212**	**.48448**	**.99926**	**.05007**	**9.9665**
Stddev	.00078	.015	.00234	.00170	.00686	.00012	.0639
%RSD	.19741	.14886	.59686	.35046	.68696	.24571	.64080
#1	.39794	10.020	.39189	.48304	1.0007	.05009	10.032
#2	.39780	10.040	.39457	.48635	.99181	.05018	9.9043
#3	.39651	10.049	.38991	.48406	1.0053	.04994	9.9633
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04995**	**.19662**	**.49719**	**.50408**	**3.9345**	**48.425**	**1.0056**
Stddev	.00017	.00028	.00293	.00085	.0512	.336	.0066
%RSD	.33202	.14096	.58868	.16772	1.3013	.69474	.65876
#1	.05012	.19642	.49505	.50367	3.9195	48.601	1.0066
#2	.04993	.19694	.50053	.50505	3.8924	48.037	.99858
#3	.04979	.19651	.49600	.50351	3.9915	48.637	1.0117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.6539**	**.49874**	**1.0057**	**49.161**	**.50061**	**9.8144**	**.49889**
Stddev	.1152	.00402	.0014	.263	.00048	.0158	.00214
%RSD	1.1928	.80691	.13850	.53437	.09607	.16108	.42961
#1	9.7007	.49641	1.0053	49.311	.50117	9.7964	.49662
#2	9.5228	.49643	1.0072	48.858	.50038	9.8207	.49919
#3	9.7383	.50339	1.0045	49.316	.50029	9.8261	.50087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 20:14:26 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1787**	**.38972**	**5.0552**	**.98705**	**.99934**	**.99527**	**.50770**
Stddev	.0014	.00525	.0102	.00133	.00573	.00628	.00313
%RSD	.12146	1.3477	.20130	.13498	.57306	.63102	.61635
#1	1.1790	.38370	5.0434	.98688	1.0013	.99951	.50582
#2	1.1772	.39212	5.0610	.98581	.99288	.98805	.50598
#3	1.1800	.39334	5.0611	.98846	1.0038	.99824	.51132
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0147**	**.99253**	F **2.9496**
Stddev	.0017	.00087	.0127
%RSD	.16286	.08813	.43029
#1	1.0131	.99259	2.9390
#2	1.0147	.99336	2.9462
#3	1.0164	.99162	2.9637
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9868.5**	**58806.**	**2964.6**
Stddev	19.7	151.	1.8
%RSD	.19965	.25680	.06126
#1	9885.2	58672.	2966.0
#2	9873.5	58776.	2965.4
#3	9846.8	58969.	2962.6

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 20:18:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00132**	**-.00340**	**-.00049**	**.00031**	**.00192**	**.00008**	**-.02002**	**-.00008**
Stddev	.00216	.00700	.00114	.00069	.00099	.00015	.01568	.00025
%RSD	163.88	205.77	232.07	221.43	51.768	179.89	78.343	317.94
#1	.00112	.00138	-.00179	.00077	.00240	-.00004	-.03265	.00011
#2	.00357	-.00014	-.00002	.00066	.00258	.00004	-.00247	-.00036
#3	-.00074	-.01144	.00034	-.00049	.00078	.00025	-.02493	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00074**	**.00038**	**.00063**	**.02332**	**-.07555**	**-.00123**	**.02786**	**-.00147**
Stddev	.00036	.00095	.00188	.02448	.09270	.00682	.09570	.00329
%RSD	47.976	247.76	298.28	104.94	122.70	553.52	343.47	223.66
#1	.00080	.00146	-.00061	.04476	-.06611	.00634	-.06528	.00195
#2	.00036	.00002	.00279	-.00335	-.17262	-.00687	.02294	-.00462
#3	.00107	-.00033	-.00029	.02856	.01207	-.00317	.12594	-.00174
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00377**	**.03770**	**.00015**	**.00241**	**-.00006**	**.00325**	**.00675**	**.03903**
Stddev	.00019	.01915	.00084	.00431	.00100	.00269	.00806	.00132
%RSD	5.0202	50.799	576.30	178.78	1573.6	82.788	119.45	3.3700
#1	.00388	.01718	.00046	.00371	.00063	.00040	.01512	.04015
#2	.00389	.04082	.00078	-.00240	-.00121	.00574	.00608	.03936
#3	.00355	.05510	-.00080	.00592	.00039	.00360	-.00096	.03758
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 20:18:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.00027**	**.00088**	**-.00106**	**.00004**	**-.00003**	**.00449**
Stddev	.00046	.00064	.00516	.00225	.00089	.00028	.00124
%RSD	6827.2	239.61	583.41	212.27	2439.5	892.40	27.555
#1	.00053	-.00043	-.00417	-.00308	-.00098	.00021	.00367
#2	-.00031	.00040	.00068	.00137	.00041	.00004	.00389
#3	-.00023	.00082	.00615	-.00147	.00068	-.00034	.00592
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9631.9**	**58363.**	**2969.7**
Stddev	4.5	93.	16.5
%RSD	.04685	.16010	.55454
#1	9627.4	58461.	2965.8
#2	9636.4	58275.	2987.8
#3	9631.8	58353.	2955.6

Approved: June 27, 2016

Sample Name: L1606098609 Acquired: 6/25/2016 20:22:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.68625	.00096	.00637	.02063	.00019	116.68	.00011
Stddev	.00130	.00243	.00203	.00124	.00115	.00006	.34	.00020
%RSD	161.33	.35410	210.74	19.489	5.5807	30.863	.28955	179.93
#1	.00013	.68352	.00323	.00768	.02147	.00021	116.54	.00014
#2	.00231	.68708	-.00070	.00521	.01932	.00023	116.43	-.00010
#3	-.00002	.68816	.00037	.00620	.02109	.00012	117.06	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.00251	.00589	.80058	.71511	.00736	28.613	.02306
Stddev	.00014	.00088	.00100	.02799	.18771	.00368	.079	.00071
%RSD	23.262	34.910	17.057	3.4966	26.250	49.956	.27754	3.0949
#1	.00051	.00150	.00680	.80914	.91494	.01159	28.526	.02382
#2	.00075	.00293	.00481	.76931	.68792	.00556	28.632	.02293
#3	.00052	.00310	.00605	.82330	.54247	.00492	28.681	.02241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	14.713	.00303	.03333	.00106	-.00272	.00365	4.8889
Stddev	.00024	.075	.00054	.00378	.00114	.00271	.00111	.0101
%RSD	32.746	.50774	17.920	11.335	108.20	99.808	30.510	.20564
#1	.00047	14.684	.00299	.03128	.00107	-.00577	.00444	4.8999
#2	.00095	14.656	.00359	.03769	-.00009	-.00056	.00238	4.8868
#3	.00081	14.797	.00251	.03102	.00220	-.00183	.00413	4.8801
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098609 Acquired: 6/25/2016 20:22:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**.51888**	**.00260**	**-.00246**	**.00196**	**.03426**	**.00729**
Stddev	.00032	.00275	.00453	.00099	.00037	.00011	.00028
%RSD	1222.6	.53076	174.15	40.180	18.856	.31556	3.8509
#1	.00009	.51844	-.00256	-.00245	.00220	.03417	.00723
#2	-.00032	.51637	.00591	-.00346	.00153	.03438	.00705
#3	.00031	.52183	.00446	-.00148	.00215	.03423	.00760
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9797.7**	**59515.**	**3093.6**
Stddev	11.0	17.	11.2
%RSD	.11267	.02773	.36079
#1	9791.0	59496.	3083.8
#2	9810.4	59520.	3105.7
#3	9791.6	59528.	3091.1

Approved: June 27, 2016

Sample Name: L1606098611 Acquired: 6/25/2016 20:25:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	.67808	-.00318	.08715	.06918	.00114	148.14	.00017
Stddev	.00037	.00569	.00382	.00198	.00070	.00012	.69	.00021
%RSD	151.84	.83972	120.10	2.2728	1.0151	10.946	.46623	125.05
#1	-.00014	.67215	-.00172	.08491	.06933	.00099	148.49	.00006
#2	.00061	.68350	-.00031	.08867	.06980	.00119	147.34	.00003
#3	.00027	.67861	-.00751	.08788	.06842	.00123	148.59	.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00363	.00334	.07531	1.1555	1.9378	.02263	43.443	.16489
Stddev	.00025	.00064	.00057	.0192	.0114	.00045	.331	.00288
%RSD	6.9167	19.099	.75123	1.6613	.58882	1.9873	.76282	1.7487
#1	.00388	.00297	.07511	1.1584	1.9507	.02262	43.610	.16408
#2	.00338	.00297	.07595	1.1731	1.9292	.02219	43.061	.16250
#3	.00362	.00407	.07487	1.1351	1.9335	.02309	43.657	.16809
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00248	25.675	.00454	.04285	.00455	-.00035	-.00286	3.7826
Stddev	.00024	.125	.00067	.00695	.00113	.00106	.00555	.0053
%RSD	9.7863	.48812	14.843	16.217	24.766	306.62	194.07	.13999
#1	.00260	25.775	.00423	.04366	.00585	.00053	-.00927	3.7791
#2	.00220	25.535	.00409	.03554	.00387	-.00004	.00020	3.7887
#3	.00264	25.716	.00532	.04936	.00394	-.00153	.00049	3.7799
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098611 Acquired: 6/25/2016 20:25:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	2.0876	-.00638	-.00280	.00142	.06566	.00394
Stddev	.00055	.0096	.00925	.00066	.00022	.00017	.00141
%RSD	713.59	.45905	144.86	23.607	15.199	.25178	35.771
#1	-.00017	2.0923	-.00754	-.00222	.00163	.06585	.00254
#2	-.00031	2.0765	-.01500	-.00266	.00143	.06556	.00536
#3	.00071	2.0939	.00339	-.00351	.00120	.06556	.00393
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9695.5	58902.	3054.3
Stddev	10.1	156.	10.7
%RSD	.10398	.26470	.35100
#1	9691.1	59006.	3048.2
#2	9688.3	58978.	3066.6
#3	9707.0	58723.	3048.0

Approved: June 27, 2016

Sample Name: L1606098613 Acquired: 6/25/2016 20:29:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00174	5.5730	.00432	.03801	.11035	.00130	203.09	-.00001
Stddev	.00149	.0359	.00264	.00141	.00031	.00003	.17	.00016
%RSD	85.559	.64338	61.135	3.7127	.27868	2.0129	.08522	1090.1
#1	.00010	5.6007	.00735	.03819	.11034	.00128	203.27	.00012
#2	.00211	5.5858	.00310	.03932	.11006	.00133	203.05	.00003
#3	.00302	5.5325	.00251	.03651	.11067	.00131	202.93	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00373	.00967	.08024	7.4517	4.1196	.03087	79.593	.34313
Stddev	.00008	.00046	.00072	.0194	.0319	.00148	.239	.00219
%RSD	2.0959	4.7129	.90070	.26051	.77317	4.7986	.30050	.63957
#1	.00364	.00917	.07941	7.4293	4.0890	.03222	79.370	.34059
#2	.00377	.01007	.08072	7.4635	4.1171	.03112	79.565	.34436
#3	.00379	.00978	.08059	7.4624	4.1526	.02929	79.846	.34443
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00182	24.658	.00975	.17618	.00825	.00008	.00248	10.141
Stddev	.00040	.019	.00024	.00598	.00295	.00311	.00271	.073
%RSD	21.744	.07518	2.5015	3.3961	35.754	3886.1	109.35	.72041
#1	.00146	24.670	.00990	.17816	.00502	.00353	.00373	10.058
#2	.00175	24.669	.00947	.16946	.00891	-.00250	.00433	10.169
#3	.00224	24.637	.00989	.18093	.01080	-.00079	-.00063	10.196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098613 Acquired: 6/25/2016 20:29:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	2.4743	.05397	-.00080	.01073	.41856	.00624
Stddev	.00027	.0052	.00665	.00236	.00131	.00229	.00115
%RSD	39.960	.21077	12.313	294.11	12.169	.54671	18.419
#1	.00089	2.4751	.05254	-.00353	.01217	.41596	.00756
#2	.00073	2.4791	.04816	.00063	.00962	.42027	.00548
#3	.00037	2.4687	.06122	.00049	.01040	.41945	.00567
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9619.4	58503.	3058.9
Stddev	38.3	135.	15.7
%RSD	.39844	.23102	.51315
#1	9576.0	58658.	3041.4
#2	9633.7	58414.	3071.7
#3	9648.5	58435.	3063.7

Approved: June 27, 2016

Sample Name: L1606098615 Acquired: 6/25/2016 20:33:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00201	.53689	.00109	.12769	.02932	.00091	261.33	.00014
Stddev	.00048	.01300	.00276	.00142	.00104	.00011	1.37	.00008
%RSD	23.740	2.4215	252.93	1.1120	3.5600	12.063	.52322	55.108
#1	.00148	.54532	.00299	.12707	.02978	.00081	261.04	.00021
#2	.00215	.54344	.00237	.12931	.03005	.00088	262.83	.00006
#3	.00240	.52192	-.00208	.12669	.02812	.00103	260.14	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	.00167	.04808	1.7755	3.9837	.04482	96.121	.35461
Stddev	.00009	.00172	.00105	.0329	.0639	.00305	.330	.00305
%RSD	12.352	103.13	2.1885	1.8532	1.6044	6.8091	.34352	.86008
#1	.00068	.00125	.04714	1.8121	3.9806	.04242	96.172	.35269
#2	.00071	.00356	.04922	1.7483	4.0491	.04379	96.422	.35813
#3	.00085	.00020	.04788	1.7662	3.9214	.04825	95.768	.35302
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	71.586	.00152	.06528	.00543	-.00023	-.00042	6.3830
Stddev	.00049	.359	.00083	.00282	.00224	.00292	.00309	.0073
%RSD	60.493	.50193	55.060	4.3183	41.272	1275.7	729.65	.11354
#1	.00036	71.588	.00097	.06827	.00795	-.00316	.00167	6.3913
#2	.00132	71.945	.00248	.06488	.00468	-.00019	.00103	6.3782
#3	.00072	71.227	.00110	.06267	.00366	.00267	-.00398	6.3795
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098615 Acquired: 6/25/2016 20:33:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00066**	**6.9477**	**-.01868**	**-.00208**	**-.00036**	**.07416**	**.00363**
Stddev	.00094	.0407	.00365	.00070	.00044	.00028	.00062
%RSD	142.12	.58617	19.553	33.577	122.09	.37861	17.066
#1	.00171	6.9428	-.02024	-.00215	-.00034	.07441	.00412
#2	.00039	6.9907	-.01451	-.00134	-.00081	.07386	.00293
#3	-.00011	6.9097	-.02130	-.00273	.00007	.07420	.00382
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9482.1**	**57521.**	**3041.1**
Stddev	15.4	119.	13.0
%RSD	.16231	.20772	.42869
#1	9472.3	57649.	3053.5
#2	9499.8	57500.	3027.5
#3	9474.1	57412.	3042.2

Approved: June 27, 2016

Sample Name: L1606098617 Acquired: 6/25/2016 20:37:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00154	.20547	.00214	.04863	.05628	.00015	62.798	.00005
Stddev	.00260	.00707	.00399	.00222	.00076	.00003	.506	.00026
%RSD	168.84	3.4433	186.39	4.5608	1.3548	21.842	.80652	579.39
#1	.00162	.19836	-.00117	.04752	.05710	.00015	63.380	-.00016
#2	.00410	.20553	.00657	.05118	.05613	.00018	62.459	.00034
#3	-.00110	.21251	.00102	.04718	.05560	.00012	62.555	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.00139	.00754	.49751	2.0420	.02056	20.601	.01571
Stddev	.00024	.00096	.00096	.02565	.1117	.00244	.034	.00089
%RSD	70.093	68.878	12.744	5.1552	5.4689	11.879	.16418	5.6341
#1	.00059	.00246	.00739	.47113	2.0254	.02185	20.628	.01672
#2	.00012	.00112	.00857	.52236	1.9395	.01774	20.613	.01507
#3	.00031	.00060	.00666	.49904	2.1610	.02209	20.563	.01535
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00090	26.598	.00080	.00703	.00246	-.00325	.00131	3.4906
Stddev	.00064	.178	.00058	.00500	.00246	.00605	.00554	.0173
%RSD	70.655	.66988	72.589	71.163	99.983	186.20	421.53	.49585
#1	.00155	26.804	.00039	.00280	.00327	-.00237	-.00267	3.5042
#2	.00088	26.495	.00146	.00574	-.00030	-.00969	.00764	3.4966
#3	.00027	26.495	.00054	.01256	.00441	.00231	-.00103	3.4711
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098617 Acquired: 6/25/2016 20:37:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	1.5150	-.00311	-.00236	-.00015	.01447	.00341
Stddev	.00072	.0088	.00641	.00068	.00005	.00011	.00060
%RSD	226.25	.58268	206.23	28.717	34.447	.73139	17.615
#1	.00066	1.5251	-.00263	-.00291	-.00009	.01435	.00287
#2	.00080	1.5088	.00305	-.00160	-.00015	.01454	.00406
#3	-.00051	1.5111	-.00975	-.00256	-.00020	.01452	.00331
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9830.7	59822.	3082.9
Stddev	15.5	147.	23.6
%RSD	.15717	.24641	.76693
#1	9813.6	59963.	3057.5
#2	9843.5	59835.	3104.4
#3	9835.1	59669.	3086.7

Approved: June 27, 2016

Sample Name: L1606098619 Acquired: 6/25/2016 20:41:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00113	.27749	.00069	.06930	.05323	.00039	10.214	.00034
Stddev	.00263	.00318	.00178	.00081	.00134	.00007	.065	.00038
%RSD	232.09	1.1459	258.13	1.1649	2.5186	17.965	.63738	111.28
#1	.00355	.27762	.00105	.06852	.05477	.00042	10.240	.00066
#2	-.00167	.28061	.00227	.06924	.05251	.00044	10.140	.00044
#3	.00153	.27425	-.00125	.07014	.05240	.00031	10.262	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00108	.00071	.02585	.24748	1.2811	.01465	4.6162	.00999
Stddev	.00051	.00114	.00067	.00474	.0573	.00378	.0318	.00359
%RSD	46.988	159.40	2.5887	1.9167	4.4759	25.817	.68816	35.904
#1	.00062	.00202	.02645	.25048	1.2371	.01153	4.5886	.01278
#2	.00162	-.00003	.02513	.24201	1.3460	.01356	4.6509	.01123
#3	.00099	.00015	.02599	.24994	1.2604	.01885	4.6090	.00594
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00123	228.52	.00044	.07963	.00371	-.00207	.00619	2.5103
Stddev	.00028	1.82	.00063	.00808	.00266	.00077	.00393	.0173
%RSD	22.669	.79720	141.35	10.151	71.562	37.379	63.490	.68709
#1	.00153	229.52	.00003	.07034	.00201	-.00126	.00175	2.5018
#2	.00118	226.42	.00013	.08504	.00235	-.00280	.00758	2.4989
#3	.00097	229.62	.00117	.08351	.00677	-.00216	.00924	2.5301
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098619 Acquired: 6/25/2016 20:41:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.22967	.00683	-.00264	.00219	.02256	.00408
Stddev	.00091	.00074	.00628	.00047	.00030	.00021	.00266
%RSD	1371.8	.32350	91.943	17.727	13.766	.92425	65.101
#1	-.00024	.23041	.00516	-.00255	.00222	.02259	.00112
#2	-.00065	.22892	.00155	-.00314	.00188	.02235	.00625
#3	.00109	.22967	.01377	-.00222	.00248	.02276	.00487
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9702.8	58480.	3067.3
Stddev	45.7	28.	15.6
%RSD	.47062	.04775	.50880
#1	9725.9	58510.	3053.5
#2	9732.4	58474.	3084.2
#3	9650.3	58455.	3064.3

Approved: June 27, 2016

Sample Name: L1606098621 Acquired: 6/25/2016 20:45:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	.00121	.00179	.05746	.02986	.00029	128.59	-.00000
Stddev	.00056	.00275	.00384	.00358	.00132	.00008	.53	.00025
%RSD	97.573	226.34	214.60	6.2318	4.4201	27.216	.41011	6271.6
#1	.00040	-.00100	.00602	.06157	.03100	.00034	129.12	-.00029
#2	.00120	.00036	-.00148	.05576	.03017	.00020	128.07	.00019
#3	.00012	.00429	.00083	.05504	.02841	.00032	128.57	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.00173	.01434	.05981	2.5098	.02550	33.269	.15420
Stddev	.00017	.00097	.00185	.00891	.0950	.00146	.060	.00170
%RSD	92.832	55.806	12.905	14.892	3.7837	5.7272	.18077	1.1012
#1	.00010	.00269	.01260	.05052	2.5555	.02390	33.334	.15465
#2	.00007	.00177	.01629	.06064	2.4007	.02586	33.216	.15563
#3	.00038	.00075	.01412	.06828	2.5733	.02675	33.257	.15232
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	47.893	-.00000	.01004	.00162	-.00276	-.00417	3.5790
Stddev	.00060	.257	.00189	.00801	.00056	.00235	.00172	.0047
%RSD	106.13	.53712	269880.	79.763	34.469	85.173	41.117	.13102
#1	.00071	48.149	.00182	.00080	.00218	-.00406	-.00514	3.5827
#2	-.00009	47.634	.00013	.01426	.00163	-.00417	-.00519	3.5737
#3	.00107	47.897	-.00195	.01505	.00106	-.00005	-.00219	3.5806
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098621 Acquired: 6/25/2016 20:45:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**1.8050**	**-.02231**	**-.00291**	**.00001**	**.01004**	**.00207**
Stddev	.00095	.0120	.00564	.00294	.00125	.00002	.00101
%RSD	393.73	.66689	25.288	100.88	21161.	.16952	48.549
#1	.00057	1.8173	-.02371	-.00622	-.00119	.01005	.00218
#2	-.00128	1.7932	-.02711	-.00189	.00130	.01004	.00102
#3	-.00001	1.8046	-.01610	-.00062	-.00009	.01002	.00302
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9662.5**	**58180.**	**3042.4**
Stddev	14.0	47.	7.3
%RSD	.14521	.08141	.24078
#1	9658.0	58146.	3035.1
#2	9678.2	58161.	3042.4
#3	9651.2	58234.	3049.8

Approved: June 27, 2016

Sample Name: L1606098623 Acquired: 6/25/2016 20:49:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00139	.10705	.00198	.41392	.02623	.00027	243.17	.00017
Stddev	.00218	.00541	.00096	.00428	.00052	.00003	1.41	.00011
%RSD	157.63	5.0515	48.506	1.0332	1.9773	12.148	.58072	65.505
#1	.00177	.11044	.00295	.41225	.02682	.00026	243.56	.00005
#2	.00336	.10081	.00102	.41878	.02603	.00030	244.34	.00020
#3	-.00096	.10989	.00198	.41074	.02584	.00024	241.60	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.00125	.02256	.13395	6.1008	.01177	68.965	.45308
Stddev	.00021	.00090	.00053	.00942	.0335	.00473	.254	.00553
%RSD	267.67	72.031	2.3661	7.0298	.54942	40.196	.36871	1.2196
#1	-.00012	.00056	.02318	.12309	6.1028	.01598	68.820	.44996
#2	.00031	.00093	.02221	.13890	6.0663	.00665	69.259	.45946
#3	.00005	.00227	.02231	.13986	6.1333	.01267	68.816	.44983
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00044	66.667	.00075	.01360	.00015	-.00234	.00238	3.6345
Stddev	.00039	.343	.00118	.00476	.00283	.00395	.00376	.0082
%RSD	88.357	.51401	157.96	35.012	1938.3	168.93	158.02	.22548
#1	.00001	66.765	.00108	.01427	-.00296	-.00415	.00669	3.6345
#2	.00056	66.950	-.00056	.00853	.00082	.00219	.00057	3.6426
#3	.00076	66.286	.00172	.01798	.00259	-.00506	-.00014	3.6263
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098623 Acquired: 6/25/2016 20:49:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	1.6999	-.02956	-.00156	.00030	.00857	.00329
Stddev	.00028	.0081	.00507	.00230	.00048	.00011	.00135
%RSD	598.12	.47536	17.163	147.79	160.42	1.3327	41.067
#1	.00005	1.7017	-.03255	.00072	-.00015	.00844	.00173
#2	.00033	1.7069	-.02370	-.00388	.00023	.00859	.00400
#3	-.00023	1.6911	-.03242	-.00151	.00081	.00866	.00415
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9416.4	57429.	3035.8
Stddev	48.0	130.	25.1
%RSD	.51009	.22575	.82551
#1	9467.2	57482.	3016.2
#2	9410.3	57282.	3027.1
#3	9371.8	57525.	3064.1

Approved: June 27, 2016

Sample Name: L1606098625 Acquired: 6/25/2016 20:52:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00225	2.3612	.00034	.04147	.11975	.00023	121.59	.00037
Stddev	.00036	.0069	.00441	.00209	.00117	.00012	.33	.00010
%RSD	15.843	.29306	1297.6	5.0487	.97876	50.808	.26806	27.630
#1	.00211	2.3674	.00539	.03961	.11950	.00036	121.76	.00028
#2	.00199	2.3537	-.00273	.04106	.11872	.00014	121.21	.00033
#3	.00266	2.3625	-.00164	.04374	.12102	.00019	121.79	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00161	.00414	.00666	2.3953	2.5999	.01491	37.526	1.0679
Stddev	.00025	.00072	.00102	.0202	.0477	.00333	.332	.0124
%RSD	15.696	17.478	15.382	.84513	1.8346	22.308	.88561	1.1598
#1	.00188	.00385	.00549	2.3789	2.6109	.01808	37.493	1.0637
#2	.00138	.00496	.00714	2.4179	2.5476	.01145	37.212	1.0581
#3	.00156	.00361	.00736	2.3890	2.6411	.01519	37.874	1.0818
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	18.226	.00269	.05391	.00651	-.00190	.00505	5.9129
Stddev	.00020	.052	.00077	.00146	.00208	.00291	.00127	.0400
%RSD	30.881	.28797	28.786	2.7065	31.918	152.94	25.077	.67624
#1	.00067	18.245	.00228	.05412	.00658	-.00209	.00366	5.9121
#2	.00082	18.167	.00221	.05526	.00440	.00110	.00533	5.9533
#3	.00043	18.267	.00358	.05236	.00855	-.00472	.00614	5.8733
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098625 Acquired: 6/25/2016 20:52:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00035**	**.99462**	**.03044**	**-.00185**	**.00457**	**.15726**	**.00437**
Stddev	.00053	.00442	.00913	.00019	.00047	.00042	.00072
%RSD	150.91	.44485	29.990	10.187	10.282	.27017	16.565
#1	.00010	.99601	.03923	-.00207	.00503	.15763	.00393
#2	-.00093	.98967	.02100	-.00171	.00410	.15735	.00520
#3	-.00022	.99819	.03111	-.00178	.00457	.15680	.00397
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9574.3**	**58285.**	**3022.7**
Stddev	18.0	80.	21.3
%RSD	.18820	.13801	.70548
#1	9553.8	58363.	3008.3
#2	9581.8	58202.	3047.2
#3	9587.4	58291.	3012.6

Approved: June 27, 2016

Sample Name: L1606098627 Acquired: 6/25/2016 20:56:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00254	4.6384	.00407	.03588	.08487	.00132	200.73	.00005
Stddev	.00192	.0173	.00097	.00149	.00032	.00011	.32	.00023
%RSD	75.499	.37394	23.741	4.1641	.37451	8.4866	.15998	422.09
#1	.00186	4.6215	.00464	.03631	.08521	.00120	200.37	.00006
#2	.00106	4.6377	.00461	.03711	.08483	.00141	200.85	-.00018
#3	.00471	4.6561	.00295	.03422	.08457	.00136	200.98	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00295	.00847	.07661	6.3761	4.0467	.02688	78.393	.28594
Stddev	.00029	.00096	.00098	.0153	.0946	.00177	.290	.00214
%RSD	9.9470	11.337	1.2842	.24023	2.3374	6.5906	.37011	.74836
#1	.00263	.00958	.07761	6.3586	3.9534	.02860	78.140	.28832
#2	.00299	.00791	.07658	6.3825	4.0443	.02506	78.709	.28419
#3	.00322	.00791	.07564	6.3872	4.1425	.02698	78.329	.28530
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00106	25.068	.00713	.15173	.00678	-.00194	.00054	8.9965
Stddev	.00058	.104	.00038	.00131	.00344	.00137	.00531	.0286
%RSD	55.068	.41293	5.2660	.86550	50.818	70.752	976.81	.31838
#1	.00130	24.949	.00680	.15078	.01021	-.00340	-.00348	9.0111
#2	.00040	25.140	.00754	.15323	.00679	-.00068	-.00144	9.0150
#3	.00149	25.114	.00704	.15117	.00333	-.00174	.00656	8.9635
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098627 Acquired: 6/25/2016 20:56:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	2.4772	.04490	-.00127	.00901	.16031	.00422
Stddev	.00154	.0067	.00796	.00182	.00061	.00117	.00055
%RSD	173.10	.26965	17.717	142.95	6.7328	.72957	12.944
#1	.00142	2.4695	.04447	-.00241	.00911	.16067	.00359
#2	.00210	2.4809	.03717	.00082	.00836	.16126	.00459
#3	-.00085	2.4812	.05306	-.00223	.00956	.15900	.00448
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9465.6	57841.	2995.1
Stddev	68.7	160.	17.6
%RSD	.72586	.27642	.58883
#1	9445.1	57701.	3013.7
#2	9409.5	58015.	2978.6
#3	9542.2	57807.	2993.1

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 21:00:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40235**	**10.185**	**.39842**	**.49195**	**1.0203**	**.05034**	**10.153**
Stddev	.00325	.028	.00193	.00194	.0055	.00031	.030
%RSD	.80675	.27855	.48505	.39452	.53912	.62290	.29151
#1	.39985	10.214	.39899	.49235	1.0140	.05068	10.126
#2	.40602	10.183	.40000	.49365	1.0227	.05026	10.185
#3	.40118	10.157	.39627	.48984	1.0242	.05007	10.150
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05123**	**.19988**	**.50288**	**.51330**	**4.0070**	**49.596**	**1.0284**
Stddev	.00026	.00047	.00335	.00193	.0033	.230	.0041
%RSD	.51360	.23712	.66679	.37527	.08271	.46359	.40302
#1	.05102	.20030	.50672	.51551	4.0072	49.649	1.0258
#2	.05153	.19997	.50051	.51234	4.0102	49.344	1.0261
#3	.05115	.19937	.50141	.51204	4.0036	49.795	1.0332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.5669**	**.50781**	**1.0249**	**50.362**	**.50842**	**9.9814**	**.50557**
Stddev	.0485	.00742	.0065	.234	.00100	.0181	.00207
%RSD	.50657	1.4609	.62973	.46520	.19680	.18135	.40980
#1	9.6226	.50131	1.0311	50.266	.50877	9.9736	.50596
#2	9.5340	.50622	1.0255	50.191	.50920	10.002	.50742
#3	9.5442	.51589	1.0183	50.629	.50729	9.9685	.50333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 21:00:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2045**	**.39202**	**5.1444**	**1.0010**	**1.0190**	**1.0190**	**.51206**
Stddev	.0033	.00153	.0072	.0031	.0045	.0084	.00251
%RSD	.27464	.38961	.14055	.30711	.44063	.82168	.49020
#1	1.2010	.39059	5.1361	1.0039	1.0167	1.0152	.51490
#2	1.2047	.39363	5.1492	1.0015	1.0162	1.0132	.51015
#3	1.2076	.39184	5.1479	.99778	1.0242	1.0286	.51112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0223**	**1.0141**	F **2.9929**
Stddev	.0031	.0001	.0241
%RSD	.30006	.01208	.80650
#1	1.0229	1.0141	3.0133
#2	1.0190	1.0142	2.9663
#3	1.0251	1.0139	2.9992
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9649.2**	**58649.**	**2955.6**
Stddev	2.7	54.	16.9
%RSD	.02842	.09258	.57071
#1	9646.1	58667.	2944.4
#2	9650.3	58588.	2975.0
#3	9651.2	58692.	2947.5

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 21:04:14 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00098**	**-.00081**	**.00091**	**.00315**	**.00292**	**.00009**	**-.03474**	**.00002**
Stddev	.00124	.00864	.00092	.00201	.00133	.00005	.02919	.00008
%RSD	125.96	1064.0	100.48	64.019	45.548	52.705	84.022	417.72
#1	.00043	-.00670	.00067	.00330	.00336	.00005	-.02620	.00002
#2	-.00151	.00910	.00014	.00508	.00142	.00009	-.01077	-.00006
#3	-.00188	-.00483	.00193	.00106	.00397	.00014	-.06724	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.00125**	**.00083**	**.02088**	**-.14334**	**.00212**	**-.02955**	**.00114**
Stddev	.00066	.00051	.00122	.01391	.04593	.00105	.09306	.00075
%RSD	1530.9	41.168	147.43	66.595	32.046	49.608	314.87	66.235
#1	.00067	.00069	.00144	.03293	-.09030	.00098	-.05631	.00047
#2	-.00016	.00170	-.00058	.02406	-.17011	.00232	-.10630	.00196
#3	-.00064	.00135	.00162	.00566	-.16960	.00305	.07395	.00100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00323**	**.05080**	**-.00020**	**.00483**	**.00058**	**.00191**	**.00111**	**.03921**
Stddev	.00021	.02575	.00089	.00353	.00235	.00387	.00242	.00153
%RSD	6.4882	50.676	441.28	73.104	406.34	202.21	216.78	3.9059
#1	.00300	.07783	.00045	.00259	-.00201	.00626	-.00135	.03746
#2	.00339	.02657	-.00122	.00300	.00257	.00062	.00121	.03991
#3	.00331	.04802	.00016	.00889	.00117	-.00114	.00348	.04027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 21:04:14 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00049**	**.00029**	**-.00007**	**-.00513**	**.00041**	**-.00001**	**.00470**
Stddev	.00027	.00000	.00626	.00369	.00015	.00012	.00055
%RSD	55.343	1.4693	8856.4	71.949	37.134	916.05	11.589
#1	.00081	.00028	.00338	-.00666	.00031	.00010	.00427
#2	.00033	.00029	-.00730	-.00092	.00059	.00000	.00453
#3	.00034	.00028	.00370	-.00780	.00035	-.00014	.00531
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9506.6**	**58497.**	**2929.7**
Stddev	22.3	113.	12.0
%RSD	.23433	.19372	.40841
#1	9532.3	58628.	2919.5
#2	9494.8	58435.	2926.6
#3	9492.6	58429.	2942.8

Approved: June 27, 2016

Sample Name: L1606098629 Acquired: 6/25/2016 21:08:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00070	1.3154	-.00179	.12516	.05800	.00081	247.18	.00018
Stddev	.00097	.0064	.00105	.00195	.00108	.00003	.31	.00008
%RSD	137.44	.48564	58.530	1.5550	1.8687	3.6829	.12350	43.911
#1	.00160	1.3100	-.00292	.12302	.05810	.00083	246.92	.00018
#2	.00082	1.3224	-.00085	.12682	.05904	.00078	247.52	.00010
#3	-.00032	1.3138	-.00160	.12563	.05687	.00083	247.09	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00119	.00401	.04528	2.4364	3.9714	.04409	89.669	.34274
Stddev	.00048	.00063	.00072	.0178	.1152	.00255	.458	.00095
%RSD	40.012	15.569	1.5917	.73079	2.9014	5.7752	.51098	.27642
#1	.00152	.00449	.04490	2.4275	3.9851	.04702	90.007	.34368
#2	.00141	.00424	.04612	2.4569	4.0792	.04281	89.852	.34276
#3	.00065	.00331	.04484	2.4248	3.8500	.04243	89.147	.34178
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00084	72.159	.00306	.12842	.00472	-.00245	-.00232	7.1068
Stddev	.00019	.103	.00116	.00307	.00202	.00283	.00582	.0122
%RSD	22.591	.14315	38.091	2.3898	42.715	115.64	250.20	.17182
#1	.00062	72.124	.00297	.12975	.00386	-.00541	-.00257	7.1178
#2	.00090	72.275	.00194	.13059	.00327	-.00216	-.00801	7.1089
#3	.00099	72.077	.00426	.12491	.00702	.00023	.00361	7.0937
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098629 Acquired: 6/25/2016 21:08:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00063**	**6.8039**	**.00261**	**-.00311**	**.00203**	**.14656**	**.00713**
Stddev	.00109	.0140	.00201	.00153	.00039	.00030	.00139
%RSD	174.70	.20570	77.238	49.135	18.962	.20399	19.505
#1	.00026	6.7979	.00196	-.00298	.00228	.14634	.00715
#2	-.00024	6.8199	.00487	-.00165	.00159	.14690	.00573
#3	.00185	6.7939	.00100	-.00469	.00223	.14643	.00851
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9470.9**	**57988.**	**3007.5**
Stddev	19.0	71.	5.1
%RSD	.20079	.12320	.16890
#1	9472.3	57910.	3001.8
#2	9451.2	58005.	3011.5
#3	9489.2	58049.	3009.1

Approved: June 27, 2016

Sample Name: L1606098631S Acquired: 6/25/2016 21:12:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18827**	**4.8059**	**.19457**	**.97775**	**.51082**	**.02368**	**136.28**	**.02401**
Stddev	.00146	.0060	.00214	.00486	.00158	.00008	.55	.00011
%RSD	.77669	.12402	1.0980	.49690	.30853	.31910	.40245	.44044
#1	.18949	4.8104	.19700	.98276	.50954	.02372	135.66	.02402
#2	.18665	4.7991	.19298	.97305	.51258	.02359	136.67	.02389
#3	.18867	4.8083	.19374	.97744	.51033	.02373	136.53	.02410
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09298**	**.23341**	**.25035**	**1.9823**	**26.282**	**.52091**	**38.371**	**.48555**
Stddev	.00063	.00083	.00168	.0210	.198	.00132	.105	.00060
%RSD	.67753	.35580	.67127	1.0601	.75241	.25420	.27268	.12393
#1	.09358	.23411	.25193	1.9586	26.065	.52066	38.253	.48489
#2	.09232	.23249	.25054	1.9895	26.453	.52234	38.408	.48570
#3	.09303	.23364	.24858	1.9987	26.329	.51972	38.452	.48607
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49539**	**77.049**	**.23394**	**4.7766**	**.23491**	**.57914**	**.18644**	**6.1257**
Stddev	.00233	.345	.00087	.0076	.00312	.00333	.00623	.0072
%RSD	.47123	.44745	.37273	.15954	1.3288	.57493	3.3395	.11822
#1	.49753	76.664	.23461	4.7848	.23800	.57665	.18760	6.1339
#2	.49574	77.327	.23426	4.7754	.23176	.57786	.17971	6.1201
#3	.49290	77.158	.23296	4.7697	.23495	.58292	.19200	6.1230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098631S Acquired: 6/25/2016 21:12:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47308**	**2.3488**	**.46537**	**.23713**	**.48550**	**.47406**	**.01603**
Stddev	.00180	.0057	.00826	.00130	.00209	.00072	.00324
%RSD	.38025	.24432	1.7741	.54866	.42967	.15151	20.234
#1	.47478	2.3426	.46034	.23744	.48500	.47482	.01233
#2	.47325	2.3539	.46086	.23825	.48371	.47397	.01737
#3	.47120	2.3498	.47490	.23571	.48779	.47340	.01839
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9509.0**	**58216.**	**3011.6**
Stddev	7.0	203.	15.7
%RSD	.07407	.34863	.52135
#1	9501.0	58067.	3028.6
#2	9511.6	58447.	2997.6
#3	9514.3	58134.	3008.7

Approved: June 27, 2016

Sample Name: L1606098633SD Acquired: 6/25/2016 21:15:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19322	4.9340	.19821	1.0094	.52302	.02438	139.13	.02459
Stddev	.00378	.0145	.00351	.0014	.00226	.00009	.67	.00034
%RSD	1.9571	.29336	1.7708	.13572	.43296	.36107	.48341	1.3705
#1	.18918	4.9313	.20201	1.0102	.52283	.02442	139.33	.02427
#2	.19667	4.9211	.19752	1.0078	.52537	.02443	139.68	.02494
#3	.19382	4.9497	.19509	1.0102	.52086	.02428	138.38	.02455
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09514	.23910	.25336	2.0284	26.984	.53592	39.198	.43704
Stddev	.00042	.00077	.00150	.0114	.096	.00060	.184	.00451
%RSD	.44105	.32091	.59054	.56072	.35526	.11184	.46916	1.0308
#1	.09541	.23859	.25475	2.0343	27.015	.53581	38.996	.43232
#2	.09535	.23873	.25356	2.0357	27.059	.53539	39.242	.44129
#3	.09465	.23999	.25178	2.0153	26.876	.53657	39.356	.43751
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50931	78.441	.23759	4.8949	.24046	.58794	.19015	6.2655
Stddev	.00186	.336	.00142	.0178	.00324	.00596	.00110	.0092
%RSD	.36520	.42898	.59954	.36432	1.3470	1.0133	.57938	.14668
#1	.51115	78.549	.23885	4.9125	.24157	.58732	.19136	6.2719
#2	.50933	78.710	.23604	4.8953	.23682	.59419	.18990	6.2695
#3	.50743	78.063	.23787	4.8768	.24301	.58232	.18920	6.2549
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098633SD Acquired: 6/25/2016 21:15:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48269	2.3976	.47749	.23961	.50144	.48370	.00655
Stddev	.00278	.0083	.00742	.00256	.00242	.00154	.00139
%RSD	.57608	.34786	1.5549	1.0679	.48318	.31822	21.270
#1	.48505	2.3997	.47422	.24207	.50191	.48531	.00572
#2	.48340	2.4047	.47226	.23981	.49882	.48355	.00816
#3	.47963	2.3884	.48599	.23696	.50360	.48224	.00577
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9541.3	57975.	3017.9
Stddev	6.7	58.	25.7
%RSD	.06977	.09979	.85022
#1	9537.4	57946.	3002.1
#2	9549.0	58042.	3004.1
#3	9537.6	57938.	3047.5

Approved: June 27, 2016

Sample Name: L1606098635S Acquired: 6/25/2016 21:19:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19277	4.9885	.19579	1.3512	.50932	.02402	246.59	.02462
Stddev	.00213	.0073	.00137	.0073	.00284	.00001	1.33	.00040
%RSD	1.1047	.14711	.70076	.54069	.55753	.03190	.53842	1.6295
#1	.19260	4.9802	.19687	1.3428	.50650	.02402	245.12	.02488
#2	.19498	4.9915	.19425	1.3565	.50929	.02401	246.97	.02416
#3	.19074	4.9939	.19626	1.3542	.51218	.02403	247.69	.02483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09311	.23510	.26651	1.9710	30.025	.51865	72.396	.67936
Stddev	.00111	.00066	.00283	.0124	.152	.00282	.624	.00361
%RSD	1.1973	.28134	1.0623	.63080	.50639	.54413	.86161	.53080
#1	.09375	.23474	.26754	1.9611	29.892	.51908	71.843	.67568
#2	.09182	.23470	.26331	1.9669	29.993	.51564	72.272	.67951
#3	.09375	.23586	.26869	1.9849	30.191	.52123	73.072	.68289
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49951	91.017	.23206	4.8553	.23760	.58301	.18517	6.5213
Stddev	.00475	.491	.00241	.0437	.00246	.00711	.00329	.0728
%RSD	.95179	.53976	1.0367	.89938	1.0354	1.2190	1.7758	1.1160
#1	.50253	90.509	.23402	4.8765	.23815	.58650	.18639	6.5577
#2	.49403	91.051	.22938	4.8051	.23491	.57483	.18144	6.4375
#3	.50197	91.490	.23278	4.8843	.23974	.58769	.18767	6.5687
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098635S Acquired: 6/25/2016 21:19:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47340**	**2.1822**	**.45682**	**.23569**	**.48957**	**.47212**	**.00440**
Stddev	.00586	.0116	.00441	.00472	.00317	.00386	.00078
%RSD	1.2388	.53009	.96525	2.0030	.64754	.81664	17.679
#1	.47626	2.1692	.45177	.23827	.48595	.47646	.00457
#2	.46666	2.1856	.45986	.23024	.49090	.46909	.00508
#3	.47729	2.1916	.45885	.23856	.49186	.47080	.00355
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9474.0**	**57681.**	**2990.6**
Stddev	86.2	193.	10.0
%RSD	.90991	.33483	.33371
#1	9421.7	57902.	3000.6
#2	9573.5	57545.	2990.5
#3	9426.8	57595.	2980.6

Approved: June 27, 2016

Sample Name: L1606098637SD Acquired: 6/25/2016 21:22:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18854**	**4.9112**	**.19745**	**1.3462**	**.50578**	**.02318**	**246.84**	**.02457**
Stddev	.00237	.0122	.00114	.0020	.00229	.00008	1.01	.00037
%RSD	1.2581	.24857	.57516	.14562	.45291	.33396	.40736	1.5133
#1	.18824	4.9085	.19618	1.3456	.50836	.02311	247.86	.02498
#2	.18633	4.9245	.19780	1.3447	.50496	.02326	245.85	.02445
#3	.19105	4.9006	.19837	1.3484	.50401	.02315	246.80	.02427
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09368**	**.23124**	**.24645**	**1.9652**	**29.866**	**.51243**	**71.961**	**.67062**
Stddev	.00032	.00174	.00162	.0103	.162	.00260	.245	.00120
%RSD	.34157	.75435	.65887	.52496	.54204	.50740	.33982	.17871
#1	.09405	.23044	.24793	1.9540	30.010	.51110	72.114	.67080
#2	.09349	.23325	.24471	1.9744	29.691	.51543	71.679	.66935
#3	.09350	.23005	.24671	1.9671	29.897	.51077	72.089	.67172
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50362**	**90.574**	**.23429**	**4.8998**	**.23803**	**.58838**	**.19013**	**6.6122**
Stddev	.00184	.311	.00137	.0310	.00392	.00166	.00571	.0196
%RSD	.36548	.34377	.58644	.63360	1.6481	.28131	3.0018	.29638
#1	.50535	90.891	.23522	4.9314	.24008	.58995	.18521	6.6237
#2	.50169	90.269	.23272	4.8693	.24051	.58666	.19639	6.5896
#3	.50382	90.562	.23494	4.8987	.23351	.58854	.18878	6.6233
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098637SD Acquired: 6/25/2016 21:22:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47518**	**2.1930**	**.45556**	**.23535**	**.47970**	**.47047**	**.00421**
Stddev	.00224	.0050	.00619	.00164	.00083	.00231	.00126
%RSD	.47229	.22774	1.3595	.69822	.17220	.49043	29.868
#1	.47661	2.1987	.46015	.23423	.48048	.47206	.00301
#2	.47259	2.1891	.45801	.23458	.47883	.46782	.00552
#3	.47634	2.1914	.44851	.23723	.47980	.47152	.00409
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9517.7**	**58425.**	**3034.0**
Stddev	30.6	371.	4.3
%RSD	.32191	.63434	.14141
#1	9523.8	58332.	3029.9
#2	9544.8	58110.	3038.5
#3	9484.5	58834.	3033.6

Approved: June 27, 2016

Sample Name: L1606098639 Acquired: 6/25/2016 21:26:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.00422**	**.00040**	**.00975**	**.00108**	**.00009**	**.14419**	**-.00005**
Stddev	.00042	.00758	.00073	.00126	.00087	.00008	.01744	.00009
%RSD	1118.0	179.89	181.74	12.897	80.476	90.859	12.096	178.96
#1	.00028	.01060	-.00028	.01106	.00209	.00013	.16280	-.00014
#2	.00012	-.00417	.00116	.00964	.00057	-.00000	.14155	-.00004
#3	-.00051	.00622	.00032	.00856	.00059	.00013	.12822	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00044**	**.00035**	**.00305**	**.04079**	**-.00706**	**.00203**	**-.02733**	**-.00024**
Stddev	.00042	.00030	.00090	.02484	.04162	.00092	.03833	.00264
%RSD	93.882	85.053	29.494	60.907	589.18	45.533	140.24	1117.6
#1	.00013	.00037	.00205	.05000	-.05467	.00295	-.00835	-.00277
#2	.00091	.00004	.00332	.05971	.01106	.00204	-.00220	-.00044
#3	.00028	.00063	.00378	.01266	.02242	.00110	-.07145	.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00046**	**.23384**	**.00002**	**.00301**	**.00223**	**-.00336**	**.00424**	**.10834**
Stddev	.00025	.02078	.00057	.00488	.00185	.00118	.00213	.00216
%RSD	54.203	8.8874	3135.0	161.94	83.035	35.176	50.129	1.9925
#1	.00023	.25768	.00001	-.00120	.00258	-.00441	.00208	.11078
#2	.00073	.22428	.00059	.00188	.00389	-.00208	.00633	.10755
#3	.00043	.21955	-.00055	.00835	.00023	-.00360	.00432	.10668
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098639 Acquired: 6/25/2016 21:26:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.00188	.00201	-.00117	.00072	.00941	.00130
Stddev	.00073	.00051	.00315	.00081	.00019	.00001	.00060
%RSD	203.49	27.359	156.60	69.426	26.854	.12705	46.035
#1	.00061	.00146	.00564	-.00068	.00081	.00940	.00116
#2	.00093	.00173	.00038	-.00211	.00085	.00941	.00078
#3	-.00047	.00245	.00001	-.00072	.00050	.00942	.00196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9979.7	61621.	3102.9
Stddev	10.2	118.	6.8
%RSD	.10173	.19116	.21926
#1	9983.1	61738.	3101.0
#2	9987.7	61621.	3110.5
#3	9968.3	61503.	3097.3

Approved: June 27, 2016

Sample Name: L1606098641 Acquired: 6/25/2016 21:30:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00155	.00228	-.00074	.00681	.00240	.00007	2.3285	.00015
Stddev	.00195	.00437	.00132	.00259	.00010	.00002	.0225	.00014
%RSD	125.93	191.41	178.17	38.016	4.0011	29.007	.96410	94.650
#1	.00016	.00624	-.00146	.00963	.00251	.00005	2.3542	.00003
#2	.00071	.00302	-.00156	.00453	.00235	.00009	2.3184	.00011
#3	.00378	-.00241	.00078	.00628	.00234	.00008	2.3128	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00014	.00163	.03413	.24665	.00092	.81266	-.00079
Stddev	.00068	.00062	.00075	.01156	.02854	.00423	.01745	.00318
%RSD	1106.1	456.64	45.829	33.860	11.573	458.16	2.1475	404.35
#1	-.00033	.00085	.00092	.03095	.24915	.00580	.81529	.00231
#2	.00085	-.00023	.00241	.02450	.27386	-.00166	.79404	-.00404
#3	-.00034	-.00022	.00156	.04694	.21693	-.00138	.82864	-.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	1.5234	-.00034	.00759	.00193	-.00110	-.00056	1.9225
Stddev	.00028	.0181	.00053	.00504	.00328	.00190	.00524	.0055
%RSD	316.47	1.1895	155.07	66.429	170.02	173.25	938.70	.28386
#1	-.00021	1.5412	-.00096	.00263	.00004	-.00329	-.00638	1.9218
#2	.00035	1.5240	.00002	.00743	.00571	-.00014	.00092	1.9283
#3	.00013	1.5050	-.00009	.01271	.00003	.00014	.00379	1.9175
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098641 Acquired: 6/25/2016 21:30:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.02979**	**.00925**	**-.00425**	**.00079**	**.00575**	**.00161**
Stddev	.00070	.00033	.00260	.00161	.00118	.00006	.00128
%RSD	2613.1	1.1094	28.082	37.920	148.25	1.0430	79.495
#1	-.00014	.02957	.00917	-.00541	.00147	.00579	.00219
#2	.00072	.03017	.01188	-.00492	.00148	.00578	.00014
#3	-.00067	.02963	.00669	-.00241	-.00057	.00568	.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9984.0**	**61505.**	**3103.5**
Stddev	25.4	97.	8.6
%RSD	.25425	.15693	.27670
#1	10013.	61422.	3093.7
#2	9966.4	61611.	3106.9
#3	9972.6	61483.	3109.8

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 21:34:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40382**	**10.228**	**.39903**	**.49252**	**1.0184**	**.05057**	**10.132**
Stddev	.00317	.045	.00339	.00303	.0029	.00010	.084
%RSD	.78510	.44126	.84879	.61522	.28786	.20129	.82686
#1	.40329	10.193	.40176	.48985	1.0165	.05045	10.103
#2	.40723	10.279	.39524	.49189	1.0170	.05064	10.066
#3	.40095	10.211	.40009	.49581	1.0218	.05061	10.226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05109**	**.20032**	**.50425**	**.51389**	**3.9993**	**49.456**	**1.0271**
Stddev	.00034	.00030	.00243	.00134	.0288	.230	.0087
%RSD	.66912	.15054	.48104	.26170	.72080	.46581	.84751
#1	.05096	.20027	.50150	.51248	3.9697	49.237	1.0193
#2	.05148	.20064	.50519	.51515	4.0273	49.435	1.0365
#3	.05084	.20004	.50607	.51404	4.0011	49.697	1.0255
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.5965**	**.50354**	**1.0171**	**50.205**	**.50852**	**9.9839**	**.50630**
Stddev	.0605	.00125	.0104	.188	.00105	.0190	.00443
%RSD	.63000	.24843	1.0188	.37433	.20655	.18977	.87552
#1	9.5498	.50228	1.0149	50.026	.50872	9.9714	.50177
#2	9.5748	.50478	1.0283	50.189	.50945	10.006	.51063
#3	9.6648	.50354	1.0080	50.400	.50738	9.9747	.50650
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 21:34:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2057**	**.39535**	**5.1622**	**1.0068**	**1.0152**	**1.0163**	**.51868**
Stddev	.0009	.00724	.0066	.0035	.0056	.0047	.00189
%RSD	.07645	1.8317	.12822	.34938	.55282	.46463	.36343
#1	1.2067	.40045	5.1563	1.0056	1.0088	1.0109	.51803
#2	1.2055	.39854	5.1610	1.0107	1.0174	1.0194	.51721
#3	1.2048	.38706	5.1694	1.0040	1.0193	1.0187	.52081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0297**	**1.0108**	F **2.9654**
Stddev	.0010	.0013	.0124
%RSD	.09618	.12981	.41944
#1	1.0297	1.0109	2.9530
#2	1.0307	1.0120	2.9654
#3	1.0287	1.0094	2.9779
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9765.3**	**59222.**	**3028.4**
Stddev	12.6	103.	19.9
%RSD	.12950	.17379	.65564
#1	9777.2	59331.	3048.9
#2	9752.0	59127.	3027.1
#3	9766.5	59207.	3009.2

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 21:38:07 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00048**	**-.00056**	**.00159**	**.00238**	**.00173**	**.00014**	**-.05704**	**-.00011**
Stddev	.00089	.00372	.00374	.00230	.00036	.00002	.05178	.00017
%RSD	185.89	660.56	234.30	96.559	20.708	14.400	90.783	156.11
#1	-.00133	.00080	.00118	.00024	.00195	.00012	-.11682	-.00027
#2	-.00055	-.00477	-.00192	.00481	.00132	.00016	-.02846	-.00014
#3	.00045	.00228	.00552	.00209	.00192	.00015	-.02584	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00017**	**.00048**	**.00001**	**.01554**	**-.08094**	**.00031**	**-.00960**	**.00059**
Stddev	.00009	.00037	.00173	.01679	.11260	.00565	.05873	.00171
%RSD	56.610	77.335	20230.	108.07	139.11	1853.2	611.58	288.38
#1	.00024	.00066	.00194	-.00104	.01136	.00158	-.02063	.00007
#2	.00020	.00072	-.00054	.03254	-.20639	-.00588	.05386	.00251
#3	.00006	.00005	-.00138	.01511	-.04780	.00521	-.06203	-.00080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00336**	**.02885**	**-.00050**	**.00712**	**.00213**	**.00602**	**-.00054**	**.04214**
Stddev	.00024	.02974	.00074	.00312	.00180	.00158	.00069	.00013
%RSD	7.0582	103.10	148.29	43.907	84.214	26.247	127.12	.29697
#1	.00323	-.00548	.00008	.00759	.00359	.00782	.00008	.04201
#2	.00321	.04496	-.00024	.00998	.00013	.00485	-.00042	.04226
#3	.00363	.04705	-.00133	.00378	.00268	.00540	-.00129	.04215
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 21:38:07 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	.00065	-.00177	-.00021	.00113	.00005	.00375
Stddev	.00100	.00044	.00221	.00418	.00029	.00020	.00087
%RSD	212.41	68.047	125.42	1958.4	25.944	435.57	23.135
#1	.00160	.00080	.00075	-.00080	.00139	-.00005	.00437
#2	-.00031	.00015	-.00341	-.00407	.00081	.00028	.00276
#3	.00012	.00100	-.00264	.00422	.00119	-.00009	.00413
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9540.4	58573.	2934.4
Stddev	6.2	75.	17.1
%RSD	.06498	.12729	.58178
#1	9533.2	58646.	2919.8
#2	9543.3	58575.	2953.2
#3	9544.6	58497.	2930.3

Approved: June 27, 2016

Sample Name: PBW 9A Acquired: 6/25/2016 21:42:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.00614**	**.00175**	**.00056**	**.00231**	**.00012**	**-.04646**	**-.00007**
Stddev	.00171	.00204	.00393	.00252	.00071	.00020	.04124	.00026
%RSD	1283.4	33.141	224.26	449.74	30.683	160.24	88.765	365.50
#1	.00182	.00611	.00626	-.00197	.00237	.00018	-.00258	-.00036
#2	-.00137	.00820	-.00088	.00057	.00157	.00029	-.08442	.00014
#3	-.00085	.00413	-.00013	.00307	.00298	-.00010	-.05240	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**.00010**	**.00080**	**.02407**	**-.12665**	**.00141**	**-.00997**	**-.00231**
Stddev	.00033	.00034	.00081	.01192	.12266	.00378	.02213	.00072
%RSD	90.436	329.64	101.91	49.545	96.850	267.21	222.01	31.042
#1	-.00000	-.00017	-.00014	.03113	-.25310	.00322	.01487	-.00193
#2	-.00045	.00048	.00118	.03078	-.11869	.00395	-.02759	-.00185
#3	-.00065	-.00000	.00135	.01030	-.00816	-.00293	-.01718	-.00313
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00037**	**.03613**	**.00006**	**.00672**	**.00326**	**-.00431**	**-.00184**	**.00566**
Stddev	.00007	.03275	.00077	.00152	.00253	.00485	.00591	.00059
%RSD	18.235	90.627	1212.2	22.673	77.664	112.59	322.28	10.478
#1	.00035	.07347	.00060	.00612	.00546	-.00044	-.00125	.00618
#2	.00032	.02263	-.00082	.00846	.00049	-.00975	.00376	.00501
#3	.00045	.01230	.00041	.00559	.00385	-.00274	-.00802	.00578
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: PBW 9A Acquired: 6/25/2016 21:42:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	.00033	-.00143	-.00317	.00125	.00161	.00218
Stddev	.00053	.00015	.00130	.00329	.00039	.00011	.00081
%RSD	84.270	46.594	90.758	103.97	30.982	7.0758	37.192
#1	.00094	.00050	-.00075	-.00532	.00080	.00148	.00195
#2	.00002	.00020	-.00062	-.00481	.00145	.00171	.00150
#3	.00092	.00028	-.00293	.00062	.00150	.00162	.00308
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9585.8	59115.	2963.7
Stddev	26.3	98.	6.0
%RSD	.27487	.16506	.20388
#1	9574.9	59148.	2962.9
#2	9615.8	59005.	2958.2
#3	9566.6	59192.	2970.2

Approved: June 27, 2016

Sample Name: LCSW 9A Acquired: 6/25/2016 21:45:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19278**	**4.8645**	**.19357**	**.92620**	**.49567**	**.02388**	**4.9744**	**.02438**
Stddev	.00059	.0150	.00172	.00296	.00123	.00001	.0131	.00027
%RSD	.30529	.30879	.88618	.31973	.24905	.05168	.26315	1.0959
#1	.19266	4.8773	.19194	.92961	.49521	.02387	4.9745	.02469
#2	.19342	4.8480	.19536	.92439	.49707	.02389	4.9613	.02424
#3	.19226	4.8682	.19339	.92458	.49473	.02389	4.9875	.02421
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09756**	**.24011**	**.24908**	**1.9287**	**23.845**	**.50347**	**4.7458**	**.24452**
Stddev	.00018	.00063	.00057	.0379	.076	.00304	.1100	.00304
%RSD	.18802	.26044	.22811	1.9678	.32025	.60437	2.3184	1.2446
#1	.09771	.24070	.24970	1.9204	23.902	.50653	4.7834	.24200
#2	.09761	.23946	.24858	1.9701	23.875	.50343	4.6218	.24790
#3	.09735	.24018	.24895	1.8956	23.758	.50044	4.8320	.24367
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50361**	**24.550**	**.24652**	**4.6792**	**.24585**	**.57643**	**.18945**	**2.4007**
Stddev	.00079	.045	.00091	.0152	.00374	.00321	.00289	.0038
%RSD	.15600	.18503	.37091	.32489	1.5220	.55613	1.5253	.15739
#1	.50355	24.561	.24748	4.6824	.24789	.57981	.19277	2.4049
#2	.50442	24.588	.24565	4.6926	.24153	.57604	.18748	2.3993
#3	.50285	24.500	.24642	4.6627	.24812	.57343	.18811	2.3978
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LCSW 9A Acquired: 6/25/2016 21:45:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48346**	**.50078**	**.49876**	**.24644**	**.49280**	**.48316**	**.01652**
Stddev	.00157	.00182	.00430	.00290	.00093	.00040	.00416
%RSD	.32431	.36335	.86149	1.1750	.18883	.08190	25.157
#1	.48465	.50112	.49719	.24479	.49339	.48270	.01275
#2	.48404	.50241	.49547	.24978	.49173	.48334	.01583
#3	.48168	.49882	.50362	.24474	.49328	.48342	.02097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9876.1**	**60275.**	**3070.8**
Stddev	6.3	180.	12.0
%RSD	.06355	.29822	.39033
#1	9874.5	60221.	3071.7
#2	9883.0	60476.	3058.4
#3	9870.8	60129.	3082.3

Approved: June 27, 2016

Sample Name: F BLANK Acquired: 6/25/2016 21:49:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	-.00126	-.00015	.00486	.00128	.00012	-.00459	.00000
Stddev	.00056	.00100	.00110	.00023	.00095	.00001	.02969	.00020
%RSD	100.53	79.131	736.67	4.6731	74.371	6.7718	646.26	7554.0
#1	.00064	-.00237	-.00130	.00509	.00028	.00012	.02032	.00019
#2	.00106	-.00043	-.00004	.00484	.00217	.00011	-.03745	-.00020
#3	-.00004	-.00099	.00090	.00463	.00139	.00012	.00335	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.00026	.00088	.03134	-.11502	-.00026	.03535	-.00044
Stddev	.00018	.00121	.00068	.00659	.05233	.00265	.10514	.00096
%RSD	49.613	468.36	76.871	21.019	45.492	1017.6	297.45	218.87
#1	.00058	.00075	.00159	.02374	-.13830	.00130	-.07629	.00060
#2	.00024	.00114	.00082	.03485	-.15168	.00124	.13249	-.00129
#3	.00028	-.00112	.00024	.03543	-.05510	-.00331	.04985	-.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.07370	.00132	.00313	.00117	-.00091	.00077	-.00309
Stddev	.00026	.00588	.00035	.00217	.00118	.00090	.00482	.00173
%RSD	45.817	7.9801	26.636	69.209	100.20	98.397	629.48	56.034
#1	.00085	.06695	.00170	.00515	.00095	-.00029	-.00041	-.00378
#2	.00042	.07645	.00125	.00084	.00245	-.00194	-.00336	-.00438
#3	.00040	.07770	.00101	.00340	.00013	-.00050	.00606	-.00112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: F BLANK Acquired: 6/25/2016 21:49:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.00302	-.00048	-.00333	.00002	.00245	.00132
Stddev	.00077	.00023	.00928	.00236	.00016	.00009	.00057
%RSD	230.12	7.5634	1914.7	70.982	654.43	3.7966	42.974
#1	.00023	.00325	-.01051	-.00146	-.00016	.00251	.00071
#2	.00115	.00279	.00127	-.00253	.00008	.00234	.00183
#3	-.00038	.00303	.00779	-.00598	.00016	.00250	.00143
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9948.0	61128.	3082.2
Stddev	8.3	35.	19.2
%RSD	.08376	.05747	.62310
#1	9943.7	61136.	3060.8
#2	9942.7	61089.	3097.9
#3	9957.6	61158.	3087.8

Approved: June 27, 2016

Sample Name: L1606078709 Acquired: 6/25/2016 21:53:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00106	.32067	.00199	.03822	.08666	.00012	52.298	.00025
Stddev	.00033	.00225	.00178	.00083	.00065	.00013	.384	.00005
%RSD	31.425	.70249	89.821	2.1841	.74667	104.78	.73398	21.021
#1	.00100	.32316	.00023	.03790	.08700	-.00002	52.414	.00024
#2	.00077	.32010	.00380	.03760	.08707	.00018	51.870	.00021
#3	.00143	.31876	.00193	.03917	.08592	.00021	52.611	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.00232	.00233	.31407	.84091	.00625	16.422	.01281
Stddev	.00025	.00123	.00162	.01381	.09733	.00295	.087	.00086
%RSD	177.99	52.851	69.798	4.3981	11.574	47.203	.53048	6.7172
#1	-.00001	.00331	.00164	.32378	.73706	.00531	16.422	.01228
#2	.00000	.00271	.00116	.32018	.93004	.00389	16.510	.01236
#3	.00043	.00095	.00418	.29826	.85562	.00956	16.336	.01381
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	3.5331	.00030	.18004	.00409	-.00180	.00164	8.5479
Stddev	.00032	.0286	.00045	.00328	.00158	.00258	.00446	.0078
%RSD	137.02	.80985	147.61	1.8192	38.579	143.43	271.62	.09172
#1	-.00011	3.5554	-.00012	.17874	.00498	-.00359	.00673	8.5558
#2	.00052	3.5008	.00077	.17762	.00503	-.00297	-.00020	8.5477
#3	.00028	3.5432	.00026	.18377	.00227	.00116	-.00161	8.5401
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078709 Acquired: 6/25/2016 21:53:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.13816	-.00281	-.00107	.00371	.00875	.00154
Stddev	.00042	.00078	.00681	.00141	.00081	.00007	.00044
%RSD	132.89	.56285	242.62	131.61	21.926	.80395	28.630
#1	-.00012	.13842	.00500	-.00130	.00416	.00881	.00162
#2	.00035	.13728	-.00586	-.00235	.00277	.00878	.00193
#3	.00072	.13877	-.00757	.00044	.00421	.00867	.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9876.5	60888.	3069.7
Stddev	11.3	192.	3.6
%RSD	.11437	.31559	.11816
#1	9889.0	60702.	3066.7
#2	9866.9	60874.	3073.8
#3	9873.6	61086.	3068.7

Approved: June 27, 2016

Sample Name: L1606078711S Acquired: 6/25/2016 21:57:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19226**	**5.2769**	**.19700**	**.97637**	**.57407**	**.02377**	**55.412**	**.02464**
Stddev	.00232	.0172	.00210	.00695	.00123	.00006	.275	.00018
%RSD	1.2075	.32678	1.0663	.71175	.21357	.23547	.49636	.71677
#1	.19492	5.2928	.19484	.98432	.57271	.02383	55.376	.02446
#2	.19066	5.2586	.19711	.97142	.57439	.02373	55.156	.02465
#3	.19119	5.2792	.19903	.97337	.57510	.02375	55.703	.02481
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09590**	**.23900**	**.24525**	**2.2503**	**24.873**	**.51320**	**20.375**	**.25171**
Stddev	.00047	.00136	.00161	.0156	.173	.01009	.023	.00267
%RSD	.48644	.56990	.65491	.69491	.69517	1.9665	.11329	1.0594
#1	.09633	.24013	.24639	2.2591	25.016	.52369	20.389	.25241
#2	.09595	.23749	.24595	2.2322	24.681	.50356	20.349	.25396
#3	.09541	.23938	.24342	2.2595	24.921	.51234	20.388	.24877
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50427**	**27.841**	**.24087**	**4.9542**	**.24449**	**.58622**	**.18341**	**11.076**
Stddev	.00227	.102	.00131	.0062	.00416	.00262	.00666	.019
%RSD	.45102	.36806	.54487	.12407	1.6996	.44696	3.6299	.17466
#1	.50494	27.874	.24041	4.9608	.24621	.58442	.18291	11.063
#2	.50614	27.726	.24235	4.9486	.23975	.58502	.19031	11.099
#3	.50174	27.923	.23985	4.9531	.24750	.58923	.17702	11.068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078711S Acquired: 6/25/2016 21:57:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48537**	**.63044**	**.49547**	**.24660**	**.49048**	**.48728**	**.00709**
Stddev	.00041	.00808	.00649	.00259	.00192	.00292	.00024
%RSD	.08494	1.2823	1.3100	1.0500	.39154	.59943	3.4352
#1	.48528	.63362	.48907	.24492	.49247	.49009	.00732
#2	.48501	.63645	.50205	.24958	.48864	.48426	.00711
#3	.48582	.62125	.49531	.24529	.49034	.48750	.00684
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9767.2**	**59939.**	**3081.9**
Stddev	8.4	151.	2.2
%RSD	.08617	.25130	.07156
#1	9776.8	59826.	3083.9
#2	9761.1	60110.	3082.2
#3	9763.8	59880.	3079.5

Approved: June 27, 2016

Sample Name: L1606078712SD Acquired: 6/25/2016 22:01:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19422**	**6.5547**	**.19616**	**.97909**	**.58447**	**.02412**	**57.272**	**.02449**
Stddev	.00043	.0174	.00206	.00320	.00356	.00008	.255	.00025
%RSD	.22056	.26500	1.0502	.32643	.60985	.31860	.44461	1.0216
#1	.19468	6.5722	.19401	.98024	.58211	.02413	57.018	.02471
#2	.19383	6.5546	.19811	.97548	.58857	.02404	57.527	.02422
#3	.19415	6.5375	.19636	.98156	.58273	.02419	57.272	.02454
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09680**	**.24221**	**.24688**	**3.2519**	**25.085**	**.51256**	**21.272**	**.29044**
Stddev	.00024	.00084	.00160	.0305	.123	.00182	.123	.00255
%RSD	.25204	.34673	.64632	.93681	.48984	.35468	.57596	.87927
#1	.09682	.24178	.24538	3.2175	24.965	.51125	21.131	.28769
#2	.09704	.24318	.24856	3.2756	25.081	.51179	21.342	.29274
#3	.09655	.24168	.24672	3.2624	25.210	.51464	21.344	.29089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50646**	**28.018**	**.24386**	**4.9818**	**.24358**	**.58240**	**.18769**	**13.764**
Stddev	.00076	.167	.00147	.0053	.00228	.00382	.00425	.008
%RSD	.15029	.59670	.60238	.10534	.93711	.65545	2.2629	.06131
#1	.50691	27.825	.24251	4.9763	.24111	.57903	.18298	13.756
#2	.50690	28.112	.24543	4.9823	.24561	.58163	.18886	13.772
#3	.50558	28.117	.24364	4.9868	.24402	.58655	.19123	13.765
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078712SD Acquired: 6/25/2016 22:01:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48752**	**.63979**	**.50344**	**.24632**	**.49636**	**.48329**	**.00682**
Stddev	.00123	.00383	.00416	.00077	.00180	.00044	.00097
%RSD	.25232	.59818	.82653	.31336	.36344	.09176	14.263
#1	.48785	.63646	.50591	.24591	.49538	.48373	.00713
#2	.48616	.64397	.49864	.24584	.49525	.48329	.00761
#3	.48856	.63895	.50578	.24721	.49844	.48284	.00573
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9745.6**	**59867.**	**3081.8**
Stddev	9.9	91.	26.0
%RSD	.10194	.15198	.84468
#1	9734.5	59851.	3110.8
#2	9753.6	59965.	3060.5
#3	9748.6	59785.	3074.0

Approved: June 27, 2016

Sample Name: L1606078701 Acquired: 6/25/2016 22:04:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00206	-.00089	-.00017	.00563	.00151	.00011	.08615	.00015
Stddev	.00234	.00167	.00131	.00160	.00060	.00001	.02054	.00021
%RSD	113.42	187.14	751.31	28.470	39.897	9.3705	23.846	140.35
#1	.00316	-.00269	.00118	.00529	.00196	.00012	.07852	-.00008
#2	-.00062	-.00061	-.00144	.00737	.00083	.00010	.07052	.00033
#3	.00364	.00062	-.00027	.00422	.00173	.00012	.10942	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.00093	.00322	.06115	.01246	.00241	.02800	.00003
Stddev	.00003	.00076	.00095	.00519	.08806	.00216	.01589	.00083
%RSD	20.822	82.163	29.586	8.4819	706.92	89.891	56.731	2625.4
#1	.00011	.00029	.00408	.06573	-.03307	.00026	.04634	-.00085
#2	.00017	.00177	.00219	.05552	.11396	.00458	.01831	.00015
#3	.00013	.00071	.00338	.06220	-.04352	.00238	.01936	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	.44862	.00009	.00157	.00319	-.00012	.00644	.10535
Stddev	.00015	.01169	.00041	.00200	.00252	.00436	.00247	.00160
%RSD	36.378	2.6064	429.23	127.80	78.785	3632.8	38.299	1.5199
#1	.00041	.45408	.00056	-.00069	.00238	-.00321	.00918	.10450
#2	.00025	.45659	-.00021	.00226	.00118	.00487	.00438	.10720
#3	.00054	.43520	-.00006	.00313	.00602	-.00202	.00577	.10436
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078701 Acquired: 6/25/2016 22:04:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00114	.00134	.00464	-.00236	.00126	.00852	.00204
Stddev	.00023	.00031	.01117	.00170	.00022	.00013	.00133
%RSD	19.939	23.344	240.52	72.025	17.171	1.4749	64.993
#1	.00100	.00168	-.00728	-.00407	.00147	.00841	.00183
#2	.00140	.00106	.01487	-.00232	.00127	.00866	.00083
#3	.00102	.00128	.00634	-.00068	.00104	.00851	.00346
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9978.6	61725.	3108.7
Stddev	25.8	52.	12.8
%RSD	.25894	.08436	.41157
#1	9949.5	61751.	3109.2
#2	9998.7	61759.	3121.3
#3	9987.8	61665.	3095.7

Approved: June 27, 2016

Sample Name: L1606078701PS Acquired: 6/25/2016 22:08:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573561-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19562**	**4.8670**	**.19417**	**.93274**	**.49617**	**.02396**	**5.0466**	**.02449**
Stddev	.00101	.0014	.00206	.00077	.00126	.00015	.0443	.00024
%RSD	.51610	.02767	1.0615	.08264	.25431	.60837	.87718	.96002
#1	.19561	4.8655	.19531	.93216	.49577	.02379	5.0119	.02471
#2	.19461	4.8672	.19179	.93245	.49515	.02407	5.0964	.02451
#3	.19663	4.8682	.19541	.93362	.49758	.02401	5.0313	.02424
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09815**	**.24178**	**.25186**	**1.9475**	**23.902**	**.50912**	**4.6690**	**.24615**
Stddev	.00038	.00032	.00085	.0476	.079	.00280	.1745	.00176
%RSD	.38848	.13325	.33570	2.4417	.33116	.54926	3.7379	.71493
#1	.09847	.24215	.25095	2.0020	23.984	.51180	4.5199	.24606
#2	.09825	.24158	.25263	1.9144	23.825	.50622	4.6262	.24443
#3	.09773	.24160	.25200	1.9261	23.897	.50934	4.8609	.24795
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50547**	**24.979**	**.24871**	**4.7191**	**.25003**	**.58513**	**.18331**	**2.5397**
Stddev	.00148	.047	.00145	.0045	.00153	.00133	.00963	.0085
%RSD	.29370	.18695	.58415	.09482	.61173	.22744	5.2541	.33396
#1	.50679	24.962	.24995	4.7237	.24937	.58423	.17385	2.5470
#2	.50576	24.943	.24906	4.7186	.24895	.58665	.18298	2.5417
#3	.50387	25.032	.24711	4.7148	.25178	.58449	.19310	2.5304
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078701PS Acquired: 6/25/2016 22:08:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573561-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48806**	**.50437**	**.49939**	**.24983**	**.48939**	**.48880**	**.00250**
Stddev	.00273	.00349	.00591	.00248	.00296	.00032	.00045
%RSD	.55970	.69122	1.1836	.99157	.60527	.06447	18.096
#1	.48918	.50154	.50066	.25202	.49256	.48872	.00242
#2	.49005	.50331	.49295	.25032	.48893	.48914	.00298
#3	.48494	.50827	.50457	.24714	.48669	.48853	.00209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9876.1**	**60662.**	**3087.6**
Stddev	12.0	38.	4.3
%RSD	.12163	.06253	.13975
#1	9869.1	60619.	3083.6
#2	9869.3	60677.	3092.2
#3	9890.0	60690.	3087.1

Approved: June 27, 2016

Sample Name: L1606078701SDL Acquired: 6/25/2016 22:12:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573561-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00226**	**-.00962**	**.00257**	**.00372**	**.00008**	**.00010**	**-.05467**	**-.00005**
Stddev	.00390	.01062	.00091	.00131	.00131	.00006	.03854	.00004
%RSD	172.35	110.37	35.549	35.155	1747.1	57.750	70.491	84.699
#1	.00675	-.01272	.00350	.00225	-.00089	.00014	-.04307	-.00000
#2	.00027	-.01835	.00254	.00475	.00157	.00012	-.09767	-.00007
#3	-.00023	.00220	.00167	.00417	-.00046	.00003	-.02326	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.00076**	**.00146**	**.02792**	**-.10756**	**-.00176**	**-.01577**	**.00085**
Stddev	.00022	.00111	.00071	.01781	.06853	.00352	.01010	.00145
%RSD	144.06	146.16	48.411	63.806	63.714	199.76	64.076	169.31
#1	.00010	.00182	.00216	.04804	-.06727	-.00153	-.01532	-.00005
#2	-.00026	-.00038	.00146	.01416	-.18668	.00163	-.02609	.00009
#3	-.00029	.00083	.00075	.02156	-.06871	-.00539	-.00589	.00252
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00035**	**.12025**	**-.00037**	**.00742**	**.00388**	**-.00036**	**.00693**	**.02501**
Stddev	.00028	.02622	.00009	.00699	.00334	.00491	.00079	.00132
%RSD	80.313	21.803	23.237	94.157	86.143	1346.9	11.341	5.2920
#1	.00057	.14797	-.00041	.00450	.00651	.00107	.00746	.02626
#2	.00045	.09585	-.00027	.01539	.00501	-.00584	.00603	.02362
#3	.00003	.11693	-.00042	.00237	.00012	.00367	.00731	.02515
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078701SDL Acquired: 6/25/2016 22:12:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573561-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.00027	.00391	-.00239	.00091	.00198	.00117
Stddev	.00062	.00058	.00259	.00083	.00057	.00021	.00105
%RSD	170.80	217.03	66.210	34.804	62.977	10.839	89.133
#1	.00032	-.00015	.00203	-.00335	.00041	.00217	.00108
#2	-.00024	.00003	.00686	-.00188	.00153	.00175	.00018
#3	.00100	.00093	.00284	-.00194	.00079	.00202	.00227
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10481.	64804.	3221.0
Stddev	25.	98.	4.2
%RSD	.23393	.15113	.13029
#1	10501.	64916.	3225.8
#2	10489.	64737.	3219.2
#3	10454.	64758.	3217.9

Approved: June 27, 2016

Sample Name: L1606078701SDL Acquired: 6/25/2016 22:16:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573561-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00050**	**-.01671**	**.00066**	**.00174**	**.00117**	**.00007**	**-.03873**	**-.00006**
Stddev	.00055	.00595	.00077	.00373	.00047	.00003	.02526	.00023
%RSD	110.50	35.627	115.52	214.66	39.929	36.665	65.224	418.10
#1	.00087	-.01063	-.00016	.00037	.00065	.00010	-.06018	.00018
#2	-.00014	-.02253	.00136	-.00111	.00156	.00005	-.01089	-.00029
#3	.00077	-.01699	.00080	.00596	.00129	.00006	-.04513	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00020**	**-.00027**	**.00015**	**.01537**	**-.08473**	**-.00313**	**-.04452**	**.00037**
Stddev	.00041	.00031	.00072	.00667	.12317	.00148	.02793	.00217
%RSD	208.97	115.52	489.41	43.427	145.37	47.326	62.733	580.66
#1	.00051	-.00025	-.00010	.01465	-.11440	-.00155	-.01300	-.00212
#2	-.00027	-.00059	-.00042	.02238	.05057	-.00335	-.06618	.00176
#3	.00035	.00003	.00096	.00908	-.19035	-.00448	-.05440	.00148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00052**	**.04068**	**-.00002**	**.00630**	**.00223**	**-.00439**	**.00789**	**.00775**
Stddev	.00014	.01560	.00098	.00605	.00105	.00119	.00333	.00034
%RSD	26.596	38.347	4828.5	96.010	47.199	27.128	42.126	4.3419
#1	-.00068	.05533	-.00110	-.00065	.00121	-.00319	.01093	.00736
#2	-.00042	.02428	.00080	.00920	.00218	-.00557	.00434	.00794
#3	-.00046	.04243	.00023	.01036	.00331	-.00443	.00841	.00794
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078701SDL Acquired: 6/25/2016 22:16:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573561-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00078**	**.00049**	**.00611**	**-.00169**	**-.00019**	**.00076**	**.00104**
Stddev	.00047	.00028	.00364	.00121	.00086	.00008	.00084
%RSD	59.598	55.989	59.553	71.357	443.84	10.636	80.846
#1	-.00025	.00020	.00285	-.00078	-.00105	.00067	.00138
#2	-.00100	.00075	.00545	-.00306	-.00021	.00078	.00165
#3	-.00110	.00052	.01004	-.00123	.00067	.00082	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10473.**	**64343.**	**3185.8**
Stddev	11.	88.	33.4
%RSD	.10369	.13736	1.0486
#1	10479.	64432.	3210.0
#2	10479.	64255.	3199.9
#3	10461.	64342.	3147.7

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 22:20:12 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39676**	**10.011**	**.39200**	**.48774**	**1.0072**	**.04931**	**9.9627**
Stddev	.00166	.042	.00060	.00247	.0020	.00016	.0336
%RSD	.41961	.41526	.15324	.50705	.19487	.32345	.33737
#1	.39852	10.036	.39268	.48499	1.0052	.04934	9.9285
#2	.39656	10.035	.39180	.48843	1.0074	.04945	9.9639
#3	.39521	9.9633	.39153	.48979	1.0091	.04914	9.9956
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05046**	**.19748**	**.49159**	**.50549**	**3.9250**	**48.860**	**1.0117**
Stddev	.00033	.00063	.00167	.00263	.0491	.051	.0023
%RSD	.66275	.32062	.34000	.52017	1.2522	.10387	.22425
#1	.05068	.19812	.49231	.50540	3.8948	48.907	1.0140
#2	.05064	.19745	.49279	.50817	3.9817	48.806	1.0118
#3	.05008	.19686	.48968	.50291	3.8986	48.867	1.0095
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.4449**	**.49486**	**1.0080**	**49.891**	**.50156**	**9.8436**	**.50078**
Stddev	.0163	.00095	.0079	.070	.00172	.0350	.00128
%RSD	.17297	.19183	.78730	.13958	.34250	.35531	.25500
#1	9.4275	.49541	1.0170	49.848	.50286	9.8791	.50070
#2	9.4600	.49376	1.0019	49.971	.50221	9.8426	.49954
#3	9.4471	.49540	1.0052	49.853	.49961	9.8092	.50209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 22:20:12 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.1892	.38968	5.0794	.99180	1.0052	1.0145	.50829
Stddev	.0070	.00637	.0139	.00335	.0009	.0065	.00390
%RSD	.58775	1.6349	.27365	.33789	.09319	.64413	.76634
#1	1.1970	.39094	5.0928	.99452	1.0044	1.0072	.50887
#2	1.1869	.38277	5.0804	.99283	1.0062	1.0197	.51187
#3	1.1836	.39532	5.0651	.98805	1.0048	1.0166	.50414
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0022	.99700	F 2.9158
Stddev	.0042	.00301	.0038
%RSD	.42153	.30191	.13010
#1	1.0066	.99806	2.9128
#2	1.0017	.99934	2.9201
#3	.99824	.99361	2.9145
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9930.6	60612.	3086.3
Stddev	10.1	73.	9.8
%RSD	.10207	.12111	.31687
#1	9941.9	60647.	3097.4
#2	9922.1	60528.	3082.4
#3	9927.9	60661.	3079.1

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 22:23:49 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00100**	**-.00695**	**.00023**	**.00246**	**.00203**	**.00014**	**-.01220**	**.00014**
Stddev	.00181	.00287	.00117	.00195	.00133	.00002	.03027	.00029
%RSD	181.13	41.303	500.29	79.096	65.555	16.180	248.16	212.80
#1	-.00109	-.00504	-.00098	.00360	.00305	.00017	-.03745	.00025
#2	.00205	-.00555	.00136	.00021	.00053	.00014	.02136	-.00019
#3	.00203	-.01025	.00032	.00357	.00251	.00013	-.02050	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**-.00000**	**.00097**	**.02954**	**-.02965**	**-.00129**	**.00088**	**.00163**
Stddev	.00011	.00082	.00136	.00883	.01713	.00234	.03199	.00271
%RSD	74.595	562770.	140.78	29.900	57.784	181.57	3634.1	165.69
#1	.00008	.00083	.00213	.03726	-.04191	-.00397	.03754	.00233
#2	.00008	-.00001	.00130	.01991	-.03697	-.00018	-.01355	.00393
#3	.00027	-.00081	-.00053	.03145	-.01007	.00029	-.02135	-.00135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00354**	**.01474**	**-.00023**	**.00359**	**.00237**	**.00219**	**.00418**	**.03627**
Stddev	.00058	.04847	.00031	.00245	.00060	.00526	.00484	.00058
%RSD	16.314	328.86	136.11	68.357	25.126	240.59	115.86	1.6055
#1	.00288	-.00030	-.00040	.00322	.00284	.00365	.00822	.03616
#2	.00384	.06894	.00013	.00134	.00170	.00656	.00551	.03575
#3	.00391	-.02443	-.00042	.00620	.00257	-.00365	-.00119	.03690
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 22:23:49 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**.00039**	**.00181**	**-.00370**	**.00020**	**.00004**	**.00435**
Stddev	.00110	.00025	.00867	.00085	.00051	.00012	.00191
%RSD	689.85	64.301	479.78	22.978	253.56	271.57	43.946
#1	-.00106	.00012	.00915	-.00439	-.00031	.00014	.00375
#2	.00108	.00042	.00404	-.00397	.00020	.00008	.00281
#3	.00046	.00061	-.00776	-.00275	.00071	-.00009	.00649
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9799.0**	**60424.**	**3020.0**
Stddev	11.5	135.	11.0
%RSD	.11760	.22419	.36496
#1	9789.9	60445.	3025.5
#2	9795.1	60547.	3027.2
#3	9812.0	60279.	3007.3

Approved: June 27, 2016

Sample Name: L1606078710 Acquired: 6/25/2016 22:27:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.22720	.00214	.03806	.08552	.00012	52.208	.00022
Stddev	.00078	.00436	.00063	.00014	.00079	.00005	.232	.00016
%RSD	450.39	1.9170	29.562	.37345	.92041	43.173	.44436	71.173
#1	.00025	.22486	.00206	.03796	.08534	.00008	52.380	.00034
#2	.00030	.22452	.00280	.03822	.08638	.00018	52.301	.00028
#3	-.00108	.23223	.00155	.03799	.08484	.00010	51.944	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.00186	.00266	.23670	.85794	.00848	16.196	.00759
Stddev	.00014	.00018	.00107	.03451	.05555	.00209	.053	.00200
%RSD	849.17	9.9559	40.055	14.580	6.4743	24.705	.32764	26.366
#1	-.00011	.00187	.00273	.22408	.80379	.01054	16.251	.00990
#2	.00017	.00167	.00156	.27574	.91479	.00636	16.192	.00643
#3	-.00001	.00204	.00369	.21027	.85526	.00853	16.145	.00644
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00109	3.4758	.00069	.17816	.00790	-.00197	-.00080	8.3609
Stddev	.00043	.0348	.00145	.00114	.00265	.00100	.00335	.0283
%RSD	39.553	1.0002	208.84	.63768	33.519	50.807	416.39	.33868
#1	.00115	3.5101	.00211	.17685	.00777	-.00150	.00187	8.3874
#2	.00149	3.4766	.00076	.17877	.00531	-.00312	.00028	8.3643
#3	.00063	3.4406	-.00079	.17886	.01060	-.00129	-.00456	8.3311
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078710 Acquired: 6/25/2016 22:27:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00106	.13692	-.00198	-.00343	.00351	.00457	.00538
Stddev	.00037	.00076	.00399	.00152	.00135	.00005	.00158
%RSD	34.945	.55142	201.79	44.378	38.390	1.0573	29.298
#1	.00117	.13773	-.00276	-.00427	.00288	.00452	.00538
#2	.00136	.13624	.00235	-.00167	.00505	.00462	.00381
#3	.00065	.13680	-.00552	-.00433	.00259	.00458	.00696
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9837.0	60854.	3075.5
Stddev	21.0	87.	13.2
%RSD	.21328	.14286	.42972
#1	9813.4	60881.	3070.1
#2	9853.7	60757.	3065.8
#3	9843.8	60924.	3090.5

Approved: June 27, 2016

Sample Name: L1606078718 Acquired: 6/25/2016 22:31:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	1.2702	.00086	.07193	.15344	.00016	53.535	.00010
Stddev	.00088	.0133	.00129	.00289	.00068	.00006	.315	.00014
%RSD	504.87	1.0437	151.37	4.0242	.44552	39.145	.58814	143.56
#1	.00078	1.2717	-.00017	.07191	.15299	.00023	53.705	-.00002
#2	-.00096	1.2563	.00043	.07484	.15310	.00014	53.172	.00025
#3	-.00034	1.2827	.00231	.06905	.15423	.00011	53.729	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00093	.00320	.00404	1.3343	1.2661	.00990	20.655	.10718
Stddev	.00038	.00017	.00073	.0192	.0597	.00249	.173	.00269
%RSD	40.455	5.3029	17.991	1.4379	4.7192	25.172	.83716	2.5057
#1	.00050	.00331	.00423	1.3126	1.1986	.01278	20.828	.10559
#2	.00122	.00328	.00465	1.3416	1.2875	.00842	20.482	.11029
#3	.00107	.00300	.00324	1.3489	1.3123	.00851	20.655	.10568
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00197	9.5571	.00271	.15727	.00713	-.00001	-.00213	9.2004
Stddev	.00025	.0745	.00060	.00312	.00099	.00396	.00180	.0136
%RSD	12.754	.77965	22.028	1.9854	13.840	44119.	84.428	.14793
#1	.00222	9.6099	.00232	.16018	.00745	-.00238	-.00366	9.2098
#2	.00198	9.4719	.00242	.15397	.00602	-.00222	-.00015	9.2066
#3	.00172	9.5895	.00340	.15765	.00792	.00457	-.00260	9.1848
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078718 Acquired: 6/25/2016 22:31:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.21832**	**.00935**	**-.00138**	**.00550**	**.00807**	**.00587**
Stddev	.00077	.00070	.00368	.00189	.00037	.00008	.00139
%RSD	1050.3	.31961	39.319	137.43	6.8010	.96236	23.773
#1	.00067	.21839	.00655	-.00216	.00508	.00811	.00494
#2	-.00003	.21758	.00798	.00078	.00561	.00812	.00519
#3	-.00086	.21897	.01351	-.00275	.00580	.00798	.00747
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9846.3**	**60728.**	**3091.9**
Stddev	3.6	208.	32.5
%RSD	.03671	.34247	1.0518
#1	9850.4	60702.	3069.6
#2	9844.9	60535.	3129.2
#3	9843.6	60948.	3076.8

Approved: June 27, 2016

Sample Name: L1606078719 Acquired: 6/25/2016 22:35:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**-.00125**	**.00081**	**-.00052**	**.00163**	**.00015**	**.05700**	**.00032**
Stddev	.00275	.01314	.00222	.00254	.00035	.00003	.05177	.00012
%RSD	1222.4	1048.7	273.08	489.15	21.203	21.890	90.827	38.965
#1	-.00200	-.00415	-.00134	.00209	.00158	.00017	.05365	.00040
#2	.00294	.01310	.00068	-.00066	.00200	.00012	.00698	.00018
#3	-.00162	-.01271	.00310	-.00298	.00131	.00018	.11035	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00006**	**.00052**	**.00450**	**.02391**	**-.05991**	**-.00020**	**.04697**	**-.00036**
Stddev	.00016	.00162	.00035	.01615	.07304	.00309	.12538	.00213
%RSD	276.80	313.97	7.6965	67.537	121.91	1526.0	266.94	591.72
#1	.00015	.00207	.00475	.04225	-.11673	.00336	-.03849	-.00282
#2	-.00012	.00065	.00464	.01187	-.08546	-.00225	-.01151	.00086
#3	.00015	-.00117	.00410	.01759	.02247	-.00171	.19090	.00088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00030**	**.25593**	**-.00012**	**.00090**	**.00315**	**-.00362**	**.00327**	**.05573**
Stddev	.00023	.02584	.00048	.00460	.00186	.00138	.00112	.00365
%RSD	74.483	10.098	393.31	510.33	59.051	38.233	34.210	6.5471
#1	.00052	.27908	.00017	.00590	.00100	-.00516	.00452	.05848
#2	.00007	.22805	.00014	-.00005	.00421	-.00248	.00234	.05711
#3	.00032	.26066	-.00068	-.00315	.00425	-.00323	.00296	.05159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078719 Acquired: 6/25/2016 22:35:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00098**	**.00207**	**-.00026**	**-.00547**	**.00052**	**.00525**	**.00241**
Stddev	.00027	.00008	.00293	.00052	.00032	.00008	.00097
%RSD	27.115	4.0421	1136.5	9.5358	61.869	1.5786	40.264
#1	.00096	.00217	-.00025	-.00546	.00057	.00519	.00232
#2	.00073	.00203	-.00319	-.00495	.00081	.00521	.00342
#3	.00126	.00203	.00267	-.00599	.00017	.00534	.00149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9914.0**	**61492.**	**3065.3**
Stddev	9.7	119.	10.3
%RSD	.09735	.19352	.33672
#1	9905.1	61523.	3061.5
#2	9924.3	61360.	3057.3
#3	9912.7	61592.	3076.9

Approved: June 27, 2016

Sample Name: L1606078709 Acquired: 6/25/2016 22:39:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573102-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	.01725	.00020	.00148	.00412	.00007	2.5193	.00009
Stddev	.00160	.00300	.00146	.00122	.00055	.00007	.0273	.00025
%RSD	256.33	17.406	733.70	82.744	13.249	105.70	1.0828	269.34
#1	-.00115	.01430	.00189	.00205	.00368	.00003	2.5430	-.00015
#2	.00106	.02030	-.00065	.00007	.00396	.00002	2.4895	.00008
#3	.00197	.01716	-.00064	.00231	.00474	.00015	2.5253	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.00087	.00073	.04349	.03288	.00266	.76988	-.00075
Stddev	.00037	.00063	.00114	.01165	.16835	.00415	.07900	.00106
%RSD	107.35	72.316	156.53	26.779	512.03	155.84	10.261	141.15
#1	.00070	.00029	.00142	.03927	-.06801	.00606	.83027	.00043
#2	-.00004	.00153	.00135	.03454	-.06058	.00390	.79891	-.00163
#3	.00039	.00078	-.00059	.05665	.22723	-.00196	.68048	-.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	.20336	.00039	.01881	.00195	-.00218	-.00099	.41497
Stddev	.00052	.02965	.00044	.00286	.00086	.00256	.00440	.00248
%RSD	323.08	14.579	115.44	15.203	44.305	117.44	445.87	.59653
#1	-.00058	.19785	-.00012	.01994	.00207	-.00390	.00409	.41320
#2	.00043	.23538	.00054	.02093	.00103	-.00339	-.00379	.41391
#3	-.00033	.17686	.00073	.01556	.00275	.00076	-.00326	.41779
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078709 Acquired: 6/25/2016 22:39:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573102-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**.00684**	**.01005**	**.00002**	**.00088**	**.00094**	**.00070**
Stddev	.00032	.00012	.00959	.00200	.00079	.00012	.00147
%RSD	375.67	1.7762	95.434	11093.	88.946	12.687	210.40
#1	.00028	.00687	.01212	-.00222	.00129	.00101	.00212
#2	.00025	.00693	-.00041	.00064	.00138	.00101	.00079
#3	-.00028	.00670	.01844	.00163	-.00002	.00080	-.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10438.**	**64428.**	**3210.2**
Stddev	16.	116.	22.5
%RSD	.15594	.18047	.70191
#1	10456.	64522.	3184.5
#2	10433.	64464.	3226.3
#3	10424.	64298.	3219.8

Approved: June 27, 2016

Sample Name: L1606078711S Acquired: 6/25/2016 22:43:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573102-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00901	.25091	.00908	.04716	.02857	.00129	2.7206	.00112
Stddev	.00226	.00893	.00272	.00090	.00098	.00003	.0190	.00018
%RSD	25.135	3.5576	29.953	1.9149	3.4212	2.0076	.69811	15.952
#1	.00654	.24156	.01090	.04731	.02948	.00128	2.7394	.00096
#2	.00949	.25183	.00595	.04798	.02754	.00132	2.7210	.00131
#3	.01099	.25934	.01039	.04620	.02870	.00128	2.7014	.00109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00484	.01138	.01241	.12881	1.1056	.02562	.95895	.01155
Stddev	.00047	.00095	.00054	.02178	.0733	.00325	.08330	.00186
%RSD	9.6843	8.3365	4.3248	16.912	6.6280	12.671	8.6861	16.074
#1	.00430	.01246	.01288	.12748	1.1086	.02193	.86824	.01328
#2	.00510	.01069	.01253	.10772	1.1774	.02802	1.0320	.00959
#3	.00513	.01099	.01183	.15123	1.0309	.02692	.97661	.01179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02077	1.4247	.01204	.24038	.01720	.02493	.01091	.53474
Stddev	.00067	.0371	.00126	.00484	.00256	.00194	.00301	.00121
%RSD	3.2317	2.6069	10.481	2.0127	14.893	7.7710	27.534	.22565
#1	.02144	1.3934	.01127	.24412	.01465	.02673	.00768	.53472
#2	.02075	1.4149	.01350	.23492	.01719	.02518	.01362	.53595
#3	.02010	1.4657	.01136	.24211	.01977	.02288	.01143	.53354
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078711S Acquired: 6/25/2016 22:43:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573102-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02007**	**.03079**	**.02489**	**.01057**	**.02372**	**.02477**	**.00180**
Stddev	.00062	.00022	.00917	.00037	.00088	.00015	.00112
%RSD	3.0692	.70951	36.838	3.4629	3.6971	.59147	62.402
#1	.02076	.03087	.02809	.01029	.02425	.02492	.00062
#2	.01959	.03097	.01455	.01045	.02271	.02462	.00193
#3	.01984	.03055	.03204	.01098	.02420	.02478	.00285
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10426.**	**64070.**	**3185.9**
Stddev	11.	72.	10.0
%RSD	.10672	.11272	.31382
#1	10417.	64076.	3184.7
#2	10423.	64138.	3176.5
#3	10439.	63994.	3196.4

Approved: June 27, 2016

Sample Name: L1606078712SD Acquired: 6/25/2016 22:47:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573102-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00985	.31033	.01141	.04692	.02793	.00122	2.7514	.00123
Stddev	.00217	.01120	.00035	.00183	.00030	.00009	.0322	.00017
%RSD	21.999	3.6078	3.0998	3.8902	1.0783	7.5455	1.1711	13.538
#1	.00744	.30133	.01139	.04489	.02771	.00131	2.7147	.00104
#2	.01165	.32286	.01106	.04746	.02780	.00124	2.7644	.00130
#3	.01046	.30678	.01177	.04842	.02827	.00112	2.7751	.00135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00442	.01187	.01326	.16770	1.1233	.02635	1.0271	.01377
Stddev	.00036	.00059	.00082	.01226	.1089	.00034	.0701	.00235
%RSD	8.1823	4.9929	6.1530	7.3088	9.6965	1.2889	6.8269	17.054
#1	.00413	.01121	.01277	.16233	1.0153	.02615	1.0429	.01385
#2	.00482	.01235	.01421	.15905	1.2332	.02617	1.0881	.01607
#3	.00430	.01207	.01281	.18173	1.1215	.02675	.95049	.01138
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02146	1.3700	.01235	.24640	.01637	.02615	.01276	.67342
Stddev	.00028	.0367	.00082	.00464	.00030	.00374	.00186	.00470
%RSD	1.2904	2.6782	6.6457	1.8816	1.8039	14.304	14.555	.69838
#1	.02172	1.3476	.01220	.24696	.01603	.02416	.01223	.67004
#2	.02148	1.3500	.01162	.25073	.01656	.02383	.01483	.67143
#3	.02117	1.4123	.01324	.24151	.01651	.03046	.01123	.67879
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078712SD Acquired: 6/25/2016 22:47:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573102-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02141**	**.03084**	**.02074**	**.01089**	**.02357**	**.02510**	**.00112**
Stddev	.00030	.00031	.00329	.00303	.00061	.00018	.00144
%RSD	1.3990	1.0105	15.854	27.843	2.5684	.72342	128.59
#1	.02165	.03055	.02352	.00739	.02416	.02497	-.00034
#2	.02107	.03117	.01711	.01260	.02359	.02501	.00117
#3	.02151	.03078	.02157	.01268	.02295	.02530	.00254
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10421.**	**63887.**	**3174.5**
Stddev	13.	153.	11.8
%RSD	.12017	.23969	.37110
#1	10421.	64063.	3186.8
#2	10434.	63786.	3163.4
#3	10409.	63811.	3173.3

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 22:51:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39829**	**10.014**	**.39328**	**.48763**	**1.0098**	**.04913**	**9.9981**
Stddev	.00170	.014	.00352	.00156	.0114	.00024	.0222
%RSD	.42599	.13477	.89524	.31896	1.1283	.49183	.22224
#1	.39634	10.025	.39615	.48872	1.0228	.04926	10.024
#2	.39905	9.9992	.38935	.48585	1.0049	.04885	9.9823
#3	.39946	10.019	.39433	.48833	1.0016	.04927	9.9886
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05040**	**.19854**	**.49076**	**.50671**	**3.9457**	**49.325**	**1.0128**
Stddev	.00023	.00052	.00245	.00059	.0608	.368	.0109
%RSD	.45580	.25959	.49941	.11597	1.5404	.74655	1.0755
#1	.05026	.19800	.48916	.50736	4.0058	49.743	1.0249
#2	.05027	.19858	.48954	.50622	3.9470	49.185	1.0101
#3	.05066	.19903	.49358	.50654	3.8842	49.047	1.0036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.4894**	**.49712**	**1.0151**	**50.056**	**.50217**	**9.8694**	**.50095**
Stddev	.2168	.00232	.0035	.479	.00145	.0113	.00387
%RSD	2.2847	.46695	.34803	.95643	.28811	.11418	.77216
#1	9.7395	.49968	1.0186	50.588	.50383	9.8565	.50471
#2	9.3739	.49655	1.0152	49.919	.50140	9.8745	.49698
#3	9.3548	.49515	1.0115	49.660	.50126	9.8772	.50116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 22:51:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1957**	**.39554**	**5.0959**	**.99417**	**1.0077**	**1.0177**	**.50994**
Stddev	.0055	.00372	.0051	.00169	.0107	.0101	.00264
%RSD	.46066	.94108	.09932	.17029	1.0641	.98980	.51770
#1	1.1919	.39655	5.0908	.99223	1.0196	1.0259	.51299
#2	1.2020	.39866	5.0958	.99500	1.0048	1.0064	.50861
#3	1.1932	.39142	5.1010	.99530	.99871	1.0207	.50824
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.99906**	**1.0000**	F **2.9202**
Stddev	.00128	.0004	.0305
%RSD	.12818	.03891	1.0450
#1	1.0005	1.0005	2.9552
#2	.99795	.99972	2.9065
#3	.99877	.99993	2.8990
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9918.3**	**60256.**	**3072.6**
Stddev	6.2	156.	34.9
%RSD	.06223	.25822	1.1374
#1	9919.7	60085.	3032.6
#2	9923.7	60388.	3088.2
#3	9911.6	60295.	3097.1

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 22:54:51 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.00017**	**.00165**	**.00199**	**.00201**	**.00011**	**-.05290**	**-.00006**
Stddev	.00211	.00653	.00321	.00079	.00009	.00008	.03288	.00016
%RSD	1282.1	3936.0	193.87	39.670	4.4194	70.107	62.164	240.48
#1	-.00117	.00347	.00046	.00135	.00191	.00015	-.05612	-.00004
#2	.00226	-.00735	.00528	.00288	.00202	.00015	-.08405	.00008
#3	-.00158	.00438	-.00078	.00176	.00209	.00002	-.01852	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.00100**	**.00120**	**.03069**	**-.03948**	**.00003**	**-.00536**	**.00015**
Stddev	.00013	.00044	.00061	.00550	.07927	.00292	.09167	.00308
%RSD	995.60	43.627	50.884	17.919	200.80	8764.3	1709.0	2010.9
#1	-.00014	.00145	.00060	.03538	.05200	-.00061	-.10767	.00091
#2	.00000	.00096	.00116	.03205	-.08238	-.00251	.06932	.00278
#3	.00011	.00058	.00182	.02464	-.08805	.00322	.02226	-.00324
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00351**	**.02455**	**-.00057**	**.00388**	**.00014**	**.00562**	**.00087**	**.03540**
Stddev	.00076	.01905	.00055	.00530	.00438	.00343	.00632	.00172
%RSD	21.717	77.584	95.045	136.67	3025.0	61.032	726.47	4.8534
#1	.00266	.03539	-.00120	-.00182	.00487	.00872	.00338	.03589
#2	.00374	.03571	-.00017	.00867	-.00067	.00193	.00554	.03683
#3	.00413	.00256	-.00036	.00480	-.00377	.00622	-.00632	.03349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 22:54:51 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00099**	**.00045**	**.00606**	**-.00120**	**.00030**	**-.00008**	**.00363**
Stddev	.00065	.00027	.00156	.00179	.00040	.00006	.00038
%RSD	65.956	60.056	25.746	148.69	132.31	80.432	10.554
#1	.00115	.00019	.00786	-.00316	.00076	-.00006	.00364
#2	.00155	.00073	.00529	-.00079	.00014	-.00015	.00325
#3	.00027	.00044	.00504	.00034	.00001	-.00003	.00401
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9678.8**	**59649.**	**2985.7**
Stddev	6.9	105.	9.5
%RSD	.07084	.17603	.31957
#1	9671.2	59575.	2994.0
#2	9681.0	59769.	2975.3
#3	9684.3	59604.	2987.7

Approved: June 27, 2016

Sample Name: PBW LJ Acquired: 6/25/2016 22:58:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00058**	**-.00592**	**.00193**	**-.00086**	**.00070**	**.00018**	**-.07344**	**-.00023**
Stddev	.00178	.00410	.00330	.00167	.00093	.00007	.04096	.00010
%RSD	307.62	69.294	170.45	194.42	133.02	36.643	55.774	43.143
#1	-.00092	-.00625	.00300	-.00003	-.00002	.00015	-.02635	-.00025
#2	-.00217	-.00166	.00456	.00023	.00174	.00026	-.10082	-.00033
#3	.00135	-.00985	-.00176	-.00279	.00036	.00013	-.09313	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.00069**	**.00074**	**.03692**	**-.07694**	**.00146**	**.06376**	**.00092**
Stddev	.00002	.00038	.00020	.01230	.06836	.00025	.04368	.00067
%RSD	10.723	54.599	26.935	33.312	88.851	16.877	68.506	72.982
#1	-.00017	.00098	.00051	.02894	-.09438	.00132	.11194	.00086
#2	-.00017	.00026	.00082	.03073	-.13489	.00174	.05264	.00161
#3	-.00014	.00084	.00088	.05108	-.00155	.00131	.02672	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**.03492**	**.00034**	**.00729**	**.00159**	**-.00194**	**.00113**	**.00052**
Stddev	.00031	.01196	.00046	.00336	.00147	.00263	.00402	.00268
%RSD	159.07	34.258	134.06	46.125	92.547	135.75	357.58	520.37
#1	.00038	.02883	.00039	.00624	.00208	.00024	-.00125	.00071
#2	.00036	.04870	-.00014	.00458	.00275	-.00120	-.00114	.00309
#3	-.00016	.02722	.00078	.01105	-.00006	-.00487	.00577	-.00226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: PBW LJ Acquired: 6/25/2016 22:58:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**-.00008**	**.00508**	**-.00273**	**.00114**	**.00044**	**.00066**
Stddev	.00164	.00051	.01008	.00394	.00109	.00015	.00112
%RSD	14590.	648.58	198.46	144.23	96.326	34.462	168.97
#1	.00174	.00051	.01609	.00176	.00157	.00053	.00180
#2	-.00150	-.00033	-.00371	-.00561	-.00011	.00026	-.00044
#3	-.00028	-.00041	.00287	-.00433	.00195	.00052	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10135.**	**62589.**	**3095.8**
Stddev	24.	186.	5.7
%RSD	.23247	.29671	.18319
#1	10143.	62746.	3101.4
#2	10152.	62637.	3095.9
#3	10108.	62384.	3090.1

Approved: June 27, 2016

Sample Name: LCSW LJ Acquired: 6/25/2016 23:02:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19432**	**4.8961**	**.19607**	**.95390**	**.50477**	**.02378**	**5.0869**	**.02467**
Stddev	.00176	.0169	.00036	.00515	.00157	.00015	.0469	.00006
%RSD	.90778	.34589	.18422	.54033	.31152	.61673	.92299	.23915
#1	.19242	4.8827	.19640	.95171	.50641	.02365	5.1361	.02462
#2	.19591	4.9152	.19569	.95978	.50463	.02394	5.0425	.02466
#3	.19461	4.8905	.19612	.95020	.50328	.02375	5.0822	.02474
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09889**	**.24063**	**.25385**	**1.9878**	**24.436**	**.51652**	**4.7044**	**.24710**
Stddev	.00023	.00063	.00116	.0095	.067	.00203	.0278	.00275
%RSD	.23212	.26116	.45751	.47691	.27355	.39333	.59179	1.1124
#1	.09867	.24099	.25369	1.9863	24.386	.51588	4.7289	.24429
#2	.09913	.24100	.25509	1.9791	24.512	.51880	4.6741	.24978
#3	.09888	.23991	.25278	1.9979	24.411	.51489	4.7100	.24724
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51030**	**25.148**	**.24989**	**4.7689**	**.24945**	**.59139**	**.18766**	**2.4779**
Stddev	.00067	.056	.00070	.0091	.00347	.00400	.01211	.0014
%RSD	.13092	.22440	.27941	.19073	1.3920	.67662	6.4536	.05441
#1	.50970	25.212	.24981	4.7624	.25341	.58680	.17389	2.4770
#2	.51102	25.108	.25063	4.7793	.24803	.59411	.19668	2.4795
#3	.51019	25.124	.24924	4.7649	.24691	.59326	.19239	2.4773
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LCSW LJ Acquired: 6/25/2016 23:02:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49047**	**.51082**	**.50961**	**.24925**	**.49196**	**.48864**	**.01928**
Stddev	.00103	.00205	.00391	.00102	.00174	.00019	.00329
%RSD	.20978	.40119	.76774	.40835	.35306	.03834	17.088
#1	.49156	.51042	.51051	.24964	.49257	.48859	.01592
#2	.49032	.50900	.50533	.25000	.49331	.48848	.01940
#3	.48952	.51304	.51300	.24809	.49000	.48885	.02251
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9771.5**	**60209.**	**3050.2**
Stddev	3.0	103.	25.9
%RSD	.03108	.17103	.84982
#1	9769.0	60280.	3044.5
#2	9774.9	60091.	3027.6
#3	9770.6	60258.	3078.5

Approved: June 27, 2016

Sample Name: L1606076404 Acquired: 6/25/2016 23:06:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00050**	**.02745**	**.00034**	**.00861**	**.00996**	**.00009**	**36.605**	**.00012**
Stddev	.00060	.00628	.00209	.00113	.00041	.00005	.105	.00023
%RSD	119.14	22.865	609.72	13.086	4.1637	53.570	.28645	187.24
#1	.00015	.03394	.00014	.00762	.01044	.00014	36.606	.00007
#2	.00016	.02699	-.00164	.00984	.00971	.00010	36.500	.00038
#3	.00120	.02142	.00253	.00837	.00974	.00004	36.710	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**.01147**	**.00175**	**.46715**	**4.7234**	**.00625**	**13.388**	**.09951**
Stddev	.00015	.00054	.00191	.01948	.0341	.00248	.058	.00203
%RSD	171.91	4.6728	109.26	4.1703	.72246	39.751	.43505	2.0444
#1	.00001	.01158	-.00043	.45694	4.6849	.00912	13.373	.10058
#2	-.00027	.01194	.00254	.48961	4.7498	.00477	13.339	.09716
#3	-.00001	.01088	.00314	.45489	4.7356	.00486	13.453	.10078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00119**	**34.643**	**.00396**	**.03562**	**.00752**	**.00339**	**.00429**	**4.0453**
Stddev	.00028	.078	.00076	.00870	.00150	.00394	.00341	.0166
%RSD	23.933	.22458	19.114	24.436	19.891	116.11	79.423	.40956
#1	.00087	34.732	.00311	.02910	.00894	.00791	.00692	4.0642
#2	.00131	34.587	.00454	.03225	.00766	.00162	.00551	4.0386
#3	.00140	34.610	.00424	.04550	.00596	.00065	.00044	4.0331
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606076404 Acquired: 6/25/2016 23:06:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	.19364	.00117	-.00333	.00101	.00286	.00160
Stddev	.00025	.00044	.00456	.00363	.00019	.00020	.00097
%RSD	28.325	.22814	391.45	108.96	18.806	7.1675	60.613
#1	.00083	.19387	-.00007	-.00660	.00107	.00306	.00048
#2	.00116	.19313	.00622	-.00396	.00116	.00265	.00224
#3	.00066	.19392	-.00265	.00057	.00080	.00286	.00207
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9727.8	59976.	3053.1
Stddev	23.9	148.	4.4
%RSD	.24547	.24636	.14325
#1	9700.3	60146.	3049.4
#2	9741.5	59877.	3057.9
#3	9741.8	59905.	3052.0

Approved: June 27, 2016

Sample Name: L1606076405S Acquired: 6/25/2016 23:10:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19582**	**4.9527**	**.19879**	**.95673**	**.51438**	**.02432**	**42.805**	**.02505**
Stddev	.00335	.0137	.00128	.00425	.00065	.00003	.112	.00030
%RSD	1.7110	.27715	.64557	.44412	.12542	.14170	.26049	1.1988
#1	.19856	4.9529	.19764	.95186	.51480	.02435	42.707	.02530
#2	.19683	4.9664	.19856	.95967	.51471	.02433	42.926	.02513
#3	.19208	4.9389	.20017	.95866	.51364	.02429	42.781	.02472
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09757**	**.25598**	**.24917**	**2.4354**	**29.536**	**.52338**	**18.805**	**.34995**
Stddev	.00078	.00042	.00127	.0181	.040	.00393	.025	.00506
%RSD	.79936	.16278	.51136	.74393	.13605	.74997	.13071	1.4469
#1	.09813	.25630	.25060	2.4222	29.582	.51885	18.805	.34467
#2	.09790	.25551	.24817	2.4278	29.516	.52547	18.830	.35476
#3	.09668	.25612	.24874	2.4560	29.509	.52582	18.780	.35044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51541**	**61.224**	**.25128**	**4.8968**	**.24942**	**.59855**	**.19087**	**6.6449**
Stddev	.00129	.228	.00073	.0088	.00234	.00299	.00293	.0075
%RSD	.25084	.37164	.28907	.17909	.93699	.50010	1.5365	.11257
#1	.51663	61.311	.25055	4.9006	.24863	.59583	.18976	6.6461
#2	.51554	61.394	.25129	4.9031	.24758	.60176	.19420	6.6517
#3	.51406	60.965	.25200	4.8868	.25205	.59805	.18866	6.6369
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606076405S Acquired: 6/25/2016 23:10:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49233	.70070	.50542	.24860	.50000	.48511	.00505
Stddev	.00086	.00402	.00572	.00107	.00163	.00066	.00072
%RSD	.17371	.57387	1.1319	.43103	.32683	.13619	14.263
#1	.49184	.70101	.51171	.24742	.49924	.48572	.00441
#2	.49332	.70456	.50403	.24884	.49889	.48521	.00491
#3	.49184	.69653	.50053	.24953	.50188	.48441	.00583
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9652.6	59187.	3022.5
Stddev	17.6	118.	14.2
%RSD	.18215	.19875	.46825
#1	9645.4	59224.	3018.6
#2	9639.7	59281.	3010.7
#3	9672.6	59055.	3038.2

Approved: June 27, 2016

Sample Name: L1606076406SD Acquired: 6/25/2016 23:13:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19161**	**4.9186**	**.19913**	**.95429**	**.51211**	**.02396**	**42.977**	**.02467**
Stddev	.00161	.0125	.00343	.00448	.00436	.00009	.276	.00017
%RSD	.83957	.25322	1.7203	.46971	.85098	.36242	.64279	.68812
#1	.19148	4.9258	.19753	.95898	.51664	.02396	43.237	.02475
#2	.19328	4.9042	.19680	.95004	.51174	.02387	43.008	.02479
#3	.19007	4.9258	.20306	.95385	.50794	.02404	42.687	.02448
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09706**	**.25178**	**.24789**	**2.4233**	**29.585**	**.51807**	**18.712**	**.35011**
Stddev	.00057	.00068	.00034	.0356	.112	.00327	.182	.00396
%RSD	.58951	.26961	.13796	1.4688	.37990	.63166	.97051	1.1325
#1	.09772	.25103	.24806	2.4608	29.711	.51534	18.898	.35283
#2	.09684	.25235	.24811	2.4189	29.497	.52170	18.704	.34556
#3	.09664	.25196	.24749	2.3900	29.545	.51719	18.535	.35193
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51262**	**61.425**	**.24874**	**4.8787**	**.24757**	**.59558**	**.18865**	**6.6917**
Stddev	.00159	.310	.00133	.0141	.00184	.00348	.00465	.0131
%RSD	.30991	.50524	.53301	.28958	.74220	.58390	2.4654	.19574
#1	.51304	61.773	.24994	4.8746	.24617	.59720	.19309	6.6816
#2	.51396	61.322	.24897	4.8944	.24965	.59795	.18905	6.7065
#3	.51087	61.178	.24732	4.8670	.24689	.59159	.18381	6.6870
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606076406SD Acquired: 6/25/2016 23:13:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48585	.69992	.50428	.08491	.49039	.49499	.00464
Stddev	.00076	.00443	.00835	.00108	.00225	.00372	.00157
%RSD	.15628	.63319	1.6562	1.2751	.45854	.75207	33.818
#1	.48649	.70500	.51389	.08368	.49168	.49197	.00317
#2	.48606	.69789	.49873	.08571	.48779	.49386	.00446
#3	.48501	.69687	.50023	.08535	.49169	.49915	.00630
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9674.4	59675.	3057.4
Stddev	5.6	128.	11.6
%RSD	.05826	.21445	.38044
#1	9670.2	59575.	3048.3
#2	9680.8	59819.	3053.4
#3	9672.1	59630.	3070.5

Approved: June 27, 2016

Sample Name: L1606099102 Acquired: 6/25/2016 23:17:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00035	.08527	.00559	.04109	.01538	.00019	.57467	.00159
Stddev	.00233	.00869	.00189	.00114	.00133	.00004	.01094	.00013
%RSD	663.84	10.192	33.720	2.7694	8.6207	22.830	1.9043	7.9131
#1	.00210	.09496	.00628	.04240	.01605	.00016	.56261	.00167
#2	-.00061	.08272	.00346	.04040	.01386	.00017	.57746	.00145
#3	-.00255	.07815	.00704	.04046	.01624	.00024	.58395	.00167
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00096	.05412	.00582	.38755	1.2527	.00289	.47003	.00071
Stddev	.00015	.00024	.00026	.01093	.0635	.00116	.03189	.00162
%RSD	15.476	.43524	4.4250	2.8204	5.0656	40.155	6.7852	226.02
#1	.00113	.05437	.00590	.40001	1.1922	.00164	.49884	-.00098
#2	.00091	.05406	.00602	.38303	1.3188	.00308	.43576	.00089
#3	.00085	.05391	.00553	.37960	1.2473	.00394	.47550	.00224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00360	218.01	.00389	.36041	.01046	-.00372	.00482	1.3728
Stddev	.00017	.12	.00068	.00488	.00162	.00083	.00193	.0038
%RSD	4.7149	.05666	17.447	1.3551	15.457	22.416	40.114	.27490
#1	.00375	218.03	.00311	.35572	.01225	-.00460	.00284	1.3685
#2	.00365	218.13	.00423	.36547	.01003	-.00293	.00492	1.3754
#3	.00341	217.88	.00434	.36004	.00911	-.00364	.00670	1.3745
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606099102 Acquired: 6/25/2016 23:17:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00632**	**.09765**	**.07700**	**-.00067**	**.01524**	**.07845**	**.01879**
Stddev	.00056	.00044	.00219	.00203	.00068	.00014	.00089
%RSD	8.9139	.45291	2.8381	300.30	4.4598	.18118	4.7496
#1	.00609	.09718	.07562	.00166	.01602	.07833	.01918
#2	.00590	.09770	.07952	-.00172	.01485	.07841	.01777
#3	.00696	.09806	.07586	-.00197	.01484	.07861	.01943
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10241.**	**62264.**	**3185.5**
Stddev	15.	196.	4.7
%RSD	.14516	.31405	.14616
#1	10253.	62395.	3189.9
#2	10245.	62357.	3185.8
#3	10224.	62039.	3180.6

Approved: June 27, 2016

Sample Name: L1606099102PS Acquired: 6/25/2016 23:21:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG573952-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20426**	**5.2585**	**.21569**	**1.0545**	**.53374**	**.02552**	**5.8510**	**.02789**
Stddev	.00128	.0258	.00476	.0057	.01070	.00022	.0799	.00005
%RSD	.62816	.49053	2.2048	.54061	2.0041	.85107	1.3656	.17945
#1	.20288	5.2399	.21984	1.0489	.54587	.02533	5.9343	.02786
#2	.20446	5.2478	.21673	1.0543	.52973	.02547	5.7750	.02786
#3	.20543	5.2880	.21050	1.0603	.52563	.02576	5.8438	.02795
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10258**	**.30280**	**.26705**	**2.4069**	**27.035**	**.52853**	**5.3059**	**.25725**
Stddev	.00041	.00101	.00181	.0614	.546	.00889	.1709	.00709
%RSD	.40425	.33448	.67841	2.5526	2.0183	1.6821	3.2205	2.7577
#1	.10253	.30184	.26742	2.4708	27.658	.53822	5.4655	.26479
#2	.10301	.30272	.26864	2.4018	26.642	.52076	5.1256	.25071
#3	.10219	.30386	.26508	2.3482	26.805	.52661	5.3266	.25626
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52291**	**252.79**	**.26034**	**5.5827**	**.26863**	**.62508**	**.20920**	**4.0596**
Stddev	.00363	5.13	.00069	.0240	.00232	.00165	.00657	.0117
%RSD	.69330	2.0298	.26564	.43012	.86233	.26363	3.1385	.28905
#1	.52662	258.69	.26066	5.6009	.26650	.62318	.21182	4.0655
#2	.52272	250.27	.26082	5.5917	.26829	.62599	.21406	4.0673
#3	.51938	249.40	.25955	5.5555	.27109	.62608	.20173	4.0461
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606099102PS Acquired: 6/25/2016 23:21:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG573952-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51599**	**.62613**	**.61043**	**.25381**	**.52664**	**.60277**	**.02286**
Stddev	.00198	.01306	.01573	.00527	.00286	.00158	.00057
%RSD	.38295	2.0851	2.5770	2.0756	.54391	.26285	2.4777
#1	.51752	.64119	.62824	.25887	.52456	.60412	.02234
#2	.51668	.61903	.59844	.25420	.52545	.60318	.02277
#3	.51376	.61815	.60462	.24835	.52991	.60103	.02347
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9624.7**	**58159.**	**2980.0**
Stddev	48.4	89.	45.7
%RSD	.50312	.15320	1.5350
#1	9582.5	58170.	2928.1
#2	9614.0	58242.	2997.3
#3	9677.6	58064.	3014.5

Approved: June 27, 2016

Sample Name: L1606099102SDL Acquired: 6/25/2016 23:25:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 50 Custom ID2: Custom ID3:
Comment: WG573952-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	.01283	.00236	.01119	.00550	.00018	.08026	.00026
Stddev	.00047	.00301	.00204	.00193	.00071	.00008	.03574	.00006
%RSD	40.405	23.474	86.372	17.221	12.910	46.045	44.534	24.105
#1	.00083	.01247	.00021	.01333	.00520	.00027	.04235	.00026
#2	.00098	.01601	.00261	.01064	.00630	.00011	.11335	.00020
#3	.00172	.01002	.00427	.00960	.00498	.00015	.08510	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.01258	.00098	.10105	.18990	-.00151	.06238	.00028
Stddev	.00006	.00091	.00048	.00767	.08103	.00626	.02555	.00271
%RSD	25.732	7.2135	49.236	7.5891	42.670	413.92	40.953	970.07
#1	.00026	.01275	.00118	.09700	.21903	.00544	.04558	.00279
#2	.00015	.01339	.00043	.10990	.09833	-.00328	.04979	.00064
#3	.00024	.01160	.00132	.09626	.25235	-.00669	.09179	-.00259
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00205	47.703	.00017	.08239	.00525	-.00365	.00219	.31315
Stddev	.00019	.192	.00051	.00485	.00385	.00400	.00870	.00335
%RSD	9.3003	.40144	294.11	5.8889	73.348	109.43	397.40	1.0688
#1	.00183	47.834	.00076	.07694	.00083	-.00754	.00399	.31041
#2	.00217	47.483	-.00009	.08400	.00786	-.00387	-.00727	.31216
#3	.00215	47.792	-.00015	.08624	.00708	.00045	.00985	.31688
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606099102SDL Acquired: 6/25/2016 23:25:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 50 Custom ID2: Custom ID3:
Comment: WG573952-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00128**	**.02176**	**.02063**	**.00132**	**.00408**	**.01800**	**.00415**
Stddev	.00053	.00039	.00638	.00109	.00052	.00037	.00045
%RSD	41.627	1.7773	30.936	82.221	12.786	2.0724	10.786
#1	.00158	.02176	.02171	.00142	.00446	.01762	.00425
#2	.00067	.02138	.02640	.00236	.00348	.01802	.00454
#3	.00160	.02215	.01377	.00019	.00429	.01836	.00366
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9804.5**	**59680.**	**2983.6**
Stddev	22.5	103.	15.3
%RSD	.22901	.17203	.51306
#1	9824.1	59682.	2991.0
#2	9809.6	59782.	2993.9
#3	9780.0	59577.	2966.0

Approved: June 27, 2016

Sample Name: L1606099501 Acquired: 6/25/2016 23:29:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	.00231	.00190	.02254	.12371	.00015	15.528	-.00008
Stddev	.00014	.00712	.00142	.00137	.00163	.00003	.200	.00022
%RSD	16.093	308.09	74.696	6.0976	1.3212	21.126	1.2862	282.14
#1	.00100	.01032	.00271	.02232	.12196	.00014	15.307	.00002
#2	.00072	-.00013	.00272	.02129	.12520	.00012	15.695	.00008
#3	.00085	-.00326	.00026	.02401	.12396	.00018	15.583	-.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00027	.00136	.08102	.36083	.08036	1.7207	.01281
Stddev	.00017	.00026	.00081	.01723	.08162	.00488	.0426	.00381
%RSD	55.449	94.239	59.356	21.269	22.620	6.0696	2.4776	29.711
#1	.00018	.00004	.00043	.07010	.45158	.07724	1.7124	.01021
#2	.00026	.00024	.00186	.07209	.29342	.07785	1.6828	.01718
#3	.00051	.00055	.00179	.10089	.33750	.08598	1.7669	.01103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	40.169	.00020	.00739	.00147	-.00261	.00048	.01475
Stddev	.00007	.358	.00037	.00186	.00129	.00197	.00359	.00082
%RSD	116.52	.89035	187.93	25.143	87.719	75.441	741.63	5.5637
#1	.00010	39.803	.00022	.00902	.00206	-.00263	-.00044	.01382
#2	.00008	40.518	.00056	.00537	.00236	-.00063	-.00256	.01539
#3	-.00002	40.186	-.00019	.00779	-.00001	-.00456	.00445	.01503
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606099501 Acquired: 6/25/2016 23:29:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	2.0444	.00152	-.00059	-.00017	.00315	.00110
Stddev	.00034	.0207	.00598	.00278	.00059	.00019	.00107
%RSD	58.480	1.0109	393.49	469.74	343.26	6.1207	97.322
#1	.00020	2.0228	.00742	-.00167	.00024	.00305	.00162
#2	.00070	2.0639	.00167	-.00267	-.00085	.00303	-.00013
#3	.00086	2.0465	-.00453	.00256	.00009	.00337	.00180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9773.4	59741.	3000.7
Stddev	10.5	113.	31.9
%RSD	.10719	.18996	1.0628
#1	9785.4	59856.	3037.0
#2	9766.5	59737.	2977.2
#3	9768.1	59629.	2987.9

Approved: June 27, 2016

Sample Name: L1606099502 Acquired: 6/25/2016 23:32:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	-.00479	-.00049	.02240	.12357	.00014	15.278	-.00007
Stddev	.00142	.00423	.00253	.00505	.00148	.00006	.144	.00014
%RSD	22192.	88.307	518.91	22.533	1.1984	44.965	.94397	206.25
#1	.00014	-.00965	-.00218	.02478	.12272	.00011	15.115	-.00014
#2	.00133	-.00281	-.00170	.02581	.12271	.00021	15.329	.00010
#3	-.00149	-.00191	.00242	.01660	.12528	.00010	15.390	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.00065	.00042	.06837	.37746	.07803	1.6184	.01419
Stddev	.00041	.00112	.00027	.00656	.03147	.00401	.0513	.00310
%RSD	83.614	171.25	62.991	9.6001	8.3371	5.1380	3.1674	21.849
#1	.00050	-.00064	.00063	.07323	.35510	.08210	1.6690	.01383
#2	.00090	.00123	.00012	.06091	.36384	.07791	1.6197	.01745
#3	.00007	.00137	.00052	.07098	.41345	.07408	1.5665	.01128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	39.920	-.00037	.00510	.00199	-.00064	.00335	.01167
Stddev	.00036	.366	.00054	.01025	.00130	.00317	.00244	.00126
%RSD	102.18	.91613	144.37	200.85	65.670	494.36	72.931	10.832
#1	-.00077	39.520	-.00039	.00961	.00071	-.00417	.00384	.01302
#2	-.00018	40.239	-.00090	.01233	.00193	.00029	.00550	.01150
#3	-.00011	40.000	.00017	-.00663	.00331	.00196	.00070	.01051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606099502 Acquired: 6/25/2016 23:32:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00055**	**2.0217**	**-.00337**	**-.00055**	**.00074**	**.00315**	**.00087**
Stddev	.00116	.0191	.00559	.00170	.00084	.00020	.00103
%RSD	210.74	.94683	165.64	307.06	114.28	6.4714	118.16
#1	-.00142	2.0010	.00194	-.00241	.00129	.00330	.00185
#2	.00077	2.0388	-.00920	-.00018	-.00023	.00292	.00097
#3	-.00100	2.0253	-.00287	.00093	.00117	.00324	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9730.5**	**59619.**	**2989.3**
Stddev	18.2	229.	29.6
%RSD	.18733	.38360	.99126
#1	9750.6	59882.	3021.9
#2	9715.1	59468.	2964.1
#3	9725.8	59506.	2981.9

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 23:36:47 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40930**	**10.238**	**.40819**	**.50228**	**1.0459**	**.04973**	**10.404**
Stddev	.00043	.021	.00043	.00341	.0044	.00005	.020
%RSD	.10460	.20815	.10461	.67892	.41689	.09834	.19571
#1	.40883	10.251	.40851	.50622	1.0496	.04974	10.381
#2	.40944	10.250	.40771	.50027	1.0411	.04968	10.418
#3	.40965	10.214	.40835	.50036	1.0470	.04978	10.414
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05210**	**.20379**	**.49816**	**.52303**	**4.0622**	**51.067**	**1.0469**
Stddev	.00019	.00042	.00279	.00142	.0372	.160	.0078
%RSD	.35747	.20724	.56062	.27079	.91500	.31299	.74725
#1	.05231	.20342	.50024	.52229	4.1047	51.143	1.0555
#2	.05194	.20371	.49926	.52467	4.0462	50.883	1.0402
#3	.05207	.20425	.49499	.52215	4.0357	51.175	1.0449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.7214**	**.51746**	**1.0407**	**52.052**	**.51652**	**10.202**	**.51928**
Stddev	.0660	.00152	.0096	.278	.00085	.015	.00145
%RSD	.67863	.29343	.92144	.53407	.16386	.14443	.27838
#1	9.7320	.51900	1.0479	52.343	.51582	10.200	.51894
#2	9.7814	.51597	1.0444	51.789	.51627	10.218	.52086
#3	9.6508	.51742	1.0298	52.022	.51746	10.189	.51803
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 23:36:47 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2277**	**.40544**	**5.2555**	**1.0220**	**1.0464**	**1.0514**	**.52265**
Stddev	.0051	.00303	.0032	.0024	.0054	.0078	.00372
%RSD	.41461	.74796	.06070	.23053	.51974	.73901	.71099
#1	1.2332	.40616	5.2590	1.0221	1.0521	1.0443	.52536
#2	1.2232	.40805	5.2526	1.0196	1.0413	1.0597	.52418
#3	1.2265	.40211	5.2550	1.0243	1.0458	1.0502	.51841
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0117**	**1.0320**	F **2.9933**
Stddev	.0025	.0009	.0109
%RSD	.24458	.08681	.36389
#1	1.0144	1.0330	3.0053
#2	1.0111	1.0312	2.9841
#3	1.0096	1.0318	2.9905
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9691.0**	**59432.**	**3012.0**
Stddev	5.1	44.	12.8
%RSD	.05245	.07397	.42554
#1	9696.2	59404.	2998.2
#2	9686.1	59410.	3023.6
#3	9690.7	59483.	3014.1

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 23:40:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00145**	**-.00660**	**-.00143**	**.00292**	**.00177**	**.00016**	**-.01784**	**.00008**
Stddev	.00180	.00657	.00282	.00130	.00082	.00003	.03649	.00007
%RSD	124.44	99.487	197.72	44.383	46.493	20.281	204.59	79.919
#1	.00061	-.01208	-.00468	.00217	.00185	.00015	-.05680	.00016
#2	-.00276	-.00840	.00028	.00442	.00255	.00019	-.01224	.00005
#3	-.00219	.00068	.00012	.00218	.00091	.00013	.01553	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.00038**	**.00052**	**.02154**	**-.09198**	**-.00110**	**-.01322**	**.00018**
Stddev	.00024	.00088	.00138	.01483	.10535	.00141	.06861	.00246
%RSD	523.34	234.01	265.29	68.833	114.54	127.62	519.13	1371.8
#1	-.00015	.00090	-.00012	.01936	.02327	-.00076	.06137	-.00117
#2	-.00022	-.00064	-.00042	.03733	-.18333	-.00265	-.02738	.00302
#3	.00023	.00086	.00210	.00792	-.11589	.00010	-.07365	-.00132
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00348**	**.04821**	**.00016**	**.00585**	**.00443**	**.00314**	**.00156**	**.03553**
Stddev	.00065	.02773	.00095	.00367	.00371	.00275	.00114	.00188
%RSD	18.560	57.517	582.95	62.725	83.852	87.739	73.200	5.2906
#1	.00289	.07448	.00125	.00268	.00440	.00563	.00189	.03713
#2	.00338	.05093	-.00027	.00499	.00073	.00018	.00029	.03346
#3	.00417	.01922	-.00050	.00987	.00816	.00360	.00249	.03599
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 23:40:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00025**	**.00051**	**.00604**	**-.00528**	**.00062**	**.00012**	**.00482**
Stddev	.00070	.00006	.00458	.00163	.00029	.00008	.00094
%RSD	280.85	11.978	75.793	30.927	46.562	68.537	19.510
#1	.00047	.00050	.00150	-.00357	.00036	.00006	.00376
#2	.00081	.00057	.01066	-.00682	.00057	.00008	.00556
#3	-.00053	.00045	.00597	-.00546	.00093	.00021	.00513
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9759.5**	**60265.**	**3013.5**
Stddev	10.8	85.	17.4
%RSD	.11040	.14047	.57599
#1	9754.6	60307.	3032.0
#2	9771.9	60320.	2997.5
#3	9752.1	60167.	3011.1

Approved: June 27, 2016

Sample Name: ICSA Acquired: 6/25/2016 23:44:20 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -.00562	263.10	.00178	-.00976	.00140	.00014	248.10
Stddev	.00117	.16	.00383	.00309	.00113	.00004	.61
%RSD	20.823	.06041	215.50	31.614	80.449	26.067	.24782
#1	-.00542	263.25	-.00154	-.01064	.00266	.00012	248.67
#2	-.00456	262.94	.00597	-.00633	.00047	.00013	247.45
#3	-.00688	263.13	.00090	-.01231	.00109	.00019	248.17
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.00400						
Low Limit	-.00400						

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	-.00060	-.00056	F .01039	95.630	-.04599	.01242
Stddev	.00016	.00022	.00039	.00101	.248	.03226	.00307
%RSD	92.869	36.608	70.420	9.7281	.25928	70.136	24.681
#1	-.00031	-.00080	-.00098	.00928	95.904	-.06101	.01295
#2	-.00020	-.00063	-.00021	.01127	95.420	-.06800	.01519
#3	.00000	-.00037	-.00048	.01062	95.566	-.00896	.00913
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				.00400			
Low Limit				-.00400			

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	236.10	.00050	-.00055	.08182	-.00122	.03425	.00395
Stddev	.41	.00175	.00028	.01035	.00129	.00383	.00558
%RSD	.17524	347.68	51.671	12.652	105.94	11.172	141.13
#1	236.13	.00226	-.00079	.09323	-.00097	.03151	-.00194
#2	235.67	.00051	-.00062	.07920	-.00262	.03262	.00465
#3	236.50	-.00125	-.00024	.07303	-.00007	.03862	.00916
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 27, 2016

Sample Name: ICSA Acquired: 6/25/2016 23:44:20 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00072	-.00782	.00827	.00013	.00094	-.00929	-.00404
Stddev	.00319	.00204	.00198	.00005	.00018	.00784	.00342
%RSD	442.40	26.134	23.931	35.338	18.766	84.463	84.650
#1	.00212	-.01015	.01018	.00009	.00088	-.00188	-.00347
#2	-.00417	-.00696	.00842	.00012	.00080	-.01750	-.00771
#3	-.00012	-.00634	.00622	.00018	.00114	-.00848	-.00094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00163	-.00560	-.01351
Stddev	.00058	.00018	.00078
%RSD	35.475	3.3032	5.7782
#1	-.00221	-.00565	-.01421
#2	-.00162	-.00574	-.01366
#3	-.00105	-.00539	-.01267
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9256.6	56705.	2976.7
Stddev	13.6	91.	12.8
%RSD	.14727	.16098	.43054
#1	9241.1	56650.	2963.0
#2	9266.9	56811.	2988.4
#3	9261.8	56655.	2978.7

Approved: June 27, 2016

Sample Name: ICSAB Acquired: 6/25/2016 23:48:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52011	271.09	.26014	-.01193	.26131	.24391	254.06	.49893
Stddev	.00309	.31	.00108	.00072	.00207	.00022	1.57	.00035
%RSD	.59470	.11617	.41599	6.0451	.79127	.08930	.61634	.06930
#1	.51910	271.29	.26138	-.01172	.26259	.24374	255.54	.49856
#2	.51765	270.73	.25938	-.01274	.26241	.24383	254.23	.49898
#3	.52358	271.26	.25965	-.01134	.25892	.24415	252.42	.49925
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.24094	.25041	.26416	96.077	5.2095	.01124	238.55	.24627
Stddev	.00056	.00142	.00058	.420	.1352	.00179	1.07	.00329
%RSD	.23299	.56520	.21819	.43687	2.5957	15.928	.44935	1.3378
#1	.24046	.25065	.26387	96.381	5.3478	.01132	239.59	.24346
#2	.24081	.24889	.26378	96.252	5.2032	.00941	238.63	.24545
#3	.24156	.25169	.26482	95.598	5.0776	.01299	237.45	.24990
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00041	5.4959	.48742	.09841	.49766	.51195	.23776	.00256
Stddev	.00052	.0364	.00161	.00635	.00144	.00162	.00501	.00193
%RSD	128.92	.66237	.33105	6.4479	.28893	.31661	2.1076	75.415
#1	-.00068	5.5313	.48557	.09364	.49656	.51344	.24335	.00339
#2	-.00073	5.4979	.48847	.09597	.49929	.51023	.23366	.00393
#3	.00020	5.4586	.48823	.10561	.49712	.51219	.23626	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: ICSAB Acquired: 6/25/2016 23:48:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00140**	**.00103**	**-.00323**	**.47273**	**.25455**	**.48271**	**-.01305**
Stddev	.00059	.00027	.00250	.00229	.00097	.00045	.00046
%RSD	41.750	26.302	77.431	.48347	.38190	.09250	3.5206
#1	.00144	.00120	-.00356	.47420	.25352	.48220	-.01343
#2	.00197	.00072	-.00058	.47010	.25467	.48293	-.01317
#3	.00080	.00116	-.00555	.47390	.25546	.48302	-.01254
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9240.5**	**56174.**	**2955.7**
Stddev	9.6	118.	17.7
%RSD	.10383	.20921	.59797
#1	9251.6	56039.	2946.0
#2	9234.1	56253.	2944.9
#3	9235.9	56229.	2976.1

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 23:51:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41108**	**10.316**	**.40843**	**.50327**	**1.0436**	**.05024**	**10.459**
Stddev	.00161	.013	.00298	.00077	.0011	.00011	.030
%RSD	.39215	.12124	.73007	.15382	.10203	.22382	.28694
#1	.41119	10.324	.40804	.50264	1.0446	.05015	10.464
#2	.41263	10.302	.40566	.50304	1.0438	.05037	10.487
#3	.40941	10.323	.41158	.50413	1.0425	.05022	10.428
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05234**	**.20485**	**.50201**	**.52446**	**4.0759**	**51.088**	**1.0484**
Stddev	.00020	.00025	.00165	.00123	.0669	.060	.0059
%RSD	.38699	.12298	.32889	.23505	1.6409	.11683	.55819
#1	.05251	.20498	.50023	.52357	4.1126	51.031	1.0491
#2	.05240	.20456	.50349	.52586	3.9987	51.083	1.0423
#3	.05212	.20501	.50230	.52393	4.1164	51.150	1.0539
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.8126**	**.50786**	**1.0468**	**51.847**	**.51713**	**10.210**	**.51778**
Stddev	.0274	.00264	.0020	.030	.00045	.013	.00098
%RSD	.27960	.52030	.19073	.05848	.08757	.13121	.18906
#1	9.8005	.51090	1.0485	51.876	.51722	10.201	.51858
#2	9.7933	.50648	1.0474	51.816	.51663	10.204	.51807
#3	9.8440	.50619	1.0446	51.848	.51752	10.226	.51669
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 23:51:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2406**	**.41201**	**5.2627**	**1.0255**	**1.0428**	**1.0401**	**.52263**
Stddev	.0022	.00564	.0065	.0018	.0016	.0094	.00276
%RSD	.17501	1.3693	.12412	.17227	.15774	.90409	.52737
#1	1.2431	.41191	5.2553	1.0271	1.0421	1.0459	.52461
#2	1.2392	.40642	5.2651	1.0236	1.0417	1.0292	.52380
#3	1.2396	.41770	5.2677	1.0258	1.0447	1.0451	.51948
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0216**	**1.0330**	F **3.0271**
Stddev	.0027	.0013	.0163
%RSD	.26838	.12831	.53748
#1	1.0227	1.0315	3.0446
#2	1.0236	1.0335	3.0125
#3	1.0185	1.0340	3.0242
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9680.4**	**59250.**	**3000.1**
Stddev	28.5	27.	16.9
%RSD	.29390	.04497	.56388
#1	9711.9	59280.	2982.6
#2	9672.8	59242.	3016.3
#3	9656.6	59229.	3001.5

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 23:55:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00125	.00182	.00085	.00036	.00255	.00017	-.02838	-.00012
Stddev	.00082	.00761	.00304	.00225	.00150	.00005	.02296	.00019
%RSD	65.454	418.99	358.52	623.67	58.837	28.075	80.890	157.58
#1	.00189	-.00688	.00358	-.00006	.00362	.00012	-.00325	-.00021
#2	.00153	.00513	.00139	-.00165	.00321	.00020	-.04827	-.00024
#3	.00033	.00720	-.00242	.00279	.00083	.00021	-.03363	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00075	.00113	.02762	-.02056	.00086	-.01380	-.00101
Stddev	.00025	.00070	.00060	.00527	.01321	.00185	.01535	.00114
%RSD	279.31	93.710	52.614	19.071	64.270	216.68	111.21	112.81
#1	-.00016	.00013	.00054	.02156	-.02746	-.00001	-.01846	.00029
#2	.00010	.00151	.00112	.03019	-.02889	-.00040	-.02627	-.00181
#3	.00033	.00061	.00173	.03110	-.00532	.00298	.00334	-.00151
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00326	.05197	-.00006	.00537	-.00040	.00432	.00298	.03440
Stddev	.00030	.03661	.00066	.00611	.00131	.00120	.00482	.00043
%RSD	9.1019	70.433	1169.2	113.80	328.70	27.704	161.98	1.2407
#1	.00299	.03235	.00066	.00591	.00062	.00425	-.00005	.03422
#2	.00322	.09421	-.00018	.01119	-.00187	.00556	.00044	.03489
#3	.00358	.02936	-.00065	-.00099	.00005	.00317	.00854	.03409
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 23:55:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**.00044**	**.00562**	**-.00278**	**.00100**	**.00010**	**.00427**
Stddev	.00044	.00041	.00677	.00064	.00081	.00020	.00057
%RSD	558.27	93.814	120.49	22.928	80.799	205.25	13.474
#1	.00052	-.00002	.00467	-.00264	.00112	.00024	.00360
#2	.00007	.00078	.01282	-.00348	.00014	-.00013	.00461
#3	-.00036	.00055	-.00063	-.00223	.00174	.00017	.00459
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9746.4**	**60216.**	**3006.7**
Stddev	3.8	76.	7.9
%RSD	.03876	.12554	.26429
#1	9742.9	60301.	3002.9
#2	9746.0	60157.	3001.3
#3	9750.4	60189.	3015.8

Approved: June 27, 2016

Sample Name: LLCCV Acquired: 6/25/2016 23:59:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00916	.16469	.00814	.08024	.01010	.00165	.38196	.00067
Stddev	.00085	.00884	.00209	.00058	.00103	.00003	.03578	.00008
%RSD	9.3027	5.3671	25.632	.71975	10.222	1.6058	9.3673	12.378
#1	.00982	.16059	.01037	.08090	.01024	.00166	.39925	.00061
#2	.00944	.15864	.00624	.07981	.01105	.00162	.40581	.00076
#3	.00820	.17483	.00780	.08002	.00900	.00168	.34082	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00411	.00454	.00520	.10552	.68660	.08825	.42307	.00800
Stddev	.00033	.00070	.00174	.01827	.09614	.00099	.09575	.00252
%RSD	7.9024	15.364	33.422	17.313	14.002	1.1218	22.633	31.490
#1	.00383	.00377	.00720	.10444	.59286	.08799	.31358	.00534
#2	.00447	.00514	.00437	.12431	.68197	.08934	.49110	.01035
#3	.00404	.00471	.00403	.08782	.78497	.08741	.46454	.00831
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00870	.45736	.01598	.79373	.00972	.08303	.01581	.78238
Stddev	.00060	.01151	.00062	.00779	.00188	.00162	.00507	.00288
%RSD	6.8723	2.5158	3.9084	.98133	19.382	1.9461	32.090	.36823
#1	.00805	.45897	.01600	.80272	.00902	.08401	.02162	.78192
#2	.00924	.44514	.01534	.78909	.01186	.08117	.01226	.78546
#3	.00881	.46798	.01659	.78938	.00829	.08392	.01355	.77975
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LLCCV Acquired: 6/25/2016 23:59:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40813**	**.04261**	**.02883**	**.15405**	**.00896**	**.01738**	**.13453**
Stddev	.00156	.00009	.00723	.00166	.00036	.00005	.00136
%RSD	.38342	.20072	25.085	1.0771	4.0551	.28767	1.0139
#1	.40866	.04260	.02755	.15254	.00855	.01741	.13450
#2	.40935	.04253	.02233	.15583	.00907	.01742	.13318
#3	.40636	.04270	.03662	.15377	.00925	.01733	.13591
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9793.5**	**60446.**	**3011.5**
Stddev	14.7	195.	8.9
%RSD	.15029	.32191	.29401
#1	9810.3	60377.	3006.1
#2	9783.4	60295.	3006.7
#3	9786.6	60666.	3021.7

Approved: June 27, 2016

2.3.2 Metals ICP-MS Data

2.3.2.1 Summary Data

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW21-062216	**Prep Method:**	3015	**Prep Date:**	06/28/2016 07:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574808	**Analyst:**	JYH	**Run Date:**	07/01/2016 12:32
Collect Date:	06/22/2016 09:45	**Dilution:**	1	**File ID:**	NI.070116.123211
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00812		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.00132		0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.195		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.0569		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.0261		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00262		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0230	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW21-062216	**Prep Method:**	3015	**Prep Date:**	06/28/2016 07:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574808	**Analyst:**	JYH	**Run Date:**	07/01/2016 16:05
Collect Date:	06/22/2016 09:45	**Dilution:**	50	**File ID:**	NI.070116.160530
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	5.91		0.300	0.150	0.0750
Manganese, Total	7439-96-5	1.81		0.200	0.100	0.0500
Nickel, Total	7440-02-0	0.760		0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW02F-062216	**Prep Method:**	3015	**Prep Date:**	06/28/2016 07:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574808	**Analyst:**	JYH	**Run Date:**	07/01/2016 12:35
Collect Date:	06/22/2016 13:40	**Dilution:**	1	**File ID:**	NI.070116.123523
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.000926	J	0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.0479		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00315	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00100	U	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00608		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00127	J	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.0851		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00419	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00226		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer NexION 300X

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	100
Vi = Initial volume	40
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/L)	0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	200
Vi = Initial volume	0.5
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/kg)	40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	40
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	50

50 ug/kg = 0.050 mg/kg

Perkin Elmer NexION ICP/MS

STANDARDS KEY

QC Std 1 - ICV
QC Std 2 - ICB
QC Std 3 - LLICV
QC Std 4 - ICSA
QC Std 5 - ICSAB
QC Std 6 - CCV
QC Std 7 - CCB
QC Std 8 - LLCCV

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.00005	0.05	0.1
Sb	10	0	0.00005	0.05	0.1
As	10	0	0.00005	0.05	0.1
Ba	10	0	0.00005	0.05	0.1
Be	10	0	0.00005	0.05	0.1
Ca	1000	0	0.005	5	10
Cd	10	0	0.0005	0.05	0.1
Cr	10	0	0.0005	0.05	0.1
Co	10	0	0.0005	0.05	0.1
Cu	10	0	0.0005	0.05	0.1
Fe	1000	0	0.005	5	10
Pb	10	0	0.00005	0.05	0.1
Mg	1000	0	0.005	5	10
Mn	10	0	0.00005	0.05	0.1
Ni	10	0	0.00005	0.05	0.1
K	1000	0	0.005	5	10
Se	10	0	0.00005	0.05	0.1
Ag	10	0	0.00005	0.05	0.1
Na	1000	0	0.005	5	10
Tl	10	0	0.00005	0.05	0.1
V	10	0	0.00005	0.05	0.1
U	1000	0	0.00005	0.05	0.1
Zn	10	0	0.00005	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG574416
Analyst: VC
Spike Analyst: VC
Run Date: 06/28/2016 07:30
Method: 3015
Balance: BAL016
Instrument: MW-3
Instrument Start: 06/28/2016 07:36

SOP: ME407 Revison 19
Spike Solution: STD75998
Spike Witness: ERP
40 & 50 ML. DIGESTION TU COA18987
HNO3 Lot #: COA18905
MS Filters- fisher-Lot#R RGT35621

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG574416-04	BLANK	1	20 mL	50 mL	180.382 g	180.312 g		
2	WG574416-05	LCS	1	20 mL	50 mL	183.694 g	183.682 g	.25 mL	
3	L16061289-01	SAMP	1	20 mL	50 mL	182.848 g	182.84 g		07/05/16
4	L16061289-04	SAMP	1	20 mL	50 mL	182.912 g	182.885 g		07/05/16
5	L16061290-03	SAMP	1	20 mL	50 mL	184.003 g	183.986 g		07/05/16
6	L16061290-05	SAMP	1	20 mL	50 mL	181.663 g	181.642 g		07/05/16
7	L16061417-01	SAMP	1	20 mL	50 mL	179.943 g	179.922 g		07/01/16
8	L16061417-02	SAMP	1	20 mL	50 mL	179.851 g	179.837 g		07/01/16
9	L16061417-03	SAMP	1	20 mL	50 mL	182.296 g	182.285 g		07/01/16
10	L16061417-04	SAMP	1	20 mL	50 mL	184.788 g	184.773 g		07/01/16
11	WG574416-01	REF	1	20 mL	50 mL	183.479 g	183.463 g		
12	L16061417-05	RS01	1	20 mL	50 mL	183.479 g	183.463 g		07/01/16
13	WG574416-06	MS	1	20 mL	50 mL	181.151 g	181.132 g	.25 mL	
14	L16061417-06	MS01	1	20 mL	50 mL	181.151 g	181.132 g	.25 mL	07/01/16
15	WG574416-07	MSD	1	20 mL	50 mL	182.336 g	182.32 g	.25 mL	
16	L16061417-07	SD01	1	20 mL	50 mL	182.336 g	182.32 g	.25 mL	07/01/16
17	L16061417-08	SAMP	1	20 mL	50 mL	182.44 g	182.422 g		07/01/16
18	L16061417-09	SAMP	1	20 mL	50 mL	182.182 g	182.167 g		07/01/16
19	L16061441-01	SAMP	1	20 mL	50 mL	181.307 g	181.285 g		06/30/16
20	L16061441-02	SAMP	1	20 mL	50 mL	182.852 g	182.839 g		06/30/16
21	WG574416-02	REF	1	20 mL	50 mL	183.787 g	183.766 g		
22	L16061442-01	RS01	1	20 mL	50 mL	183.787 g	183.766 g		06/30/16
23	L16061442-02	SAMP	1	20 mL	50 mL	182.815 g	182.785 g		06/30/16
24	WG574416-08	MS	1	20 mL	50 mL	181.69 g	181.68 g	.25 mL	
25	L16061442-03	MS01	1	20 mL	50 mL	181.69 g	181.68 g	.25 mL	06/30/16
26	WG574416-09	MSD	1	20 mL	50 mL	183.48 g	183.462 g	.25 mL	
27	L16061442-04	SD01	1	20 mL	50 mL	183.48 g	183.462 g	.25 mL	06/30/16
28	L16061446-01	SAMP	2	20 mL	50 mL	182.938 g	182.914 g		06/30/16
29	WG574416-03	REF	2	20 mL	50 mL	183.343 g	183.326 g		
30	L16061447-01	SAMP	2	20 mL	50 mL	183.343 g	183.326 g		06/30/16
31	WG574416-10	DUP	1	20 mL	50 mL	182.848 g	182.825 g		

L16061442-03	FILTERED DIGESTATE
L16061442-04	FILTERED DIGESTATE
L16061441-01	FILTERED DIGESTATE
L16061441-02	FILTERED DIGESTATE
L16061442-01	FILTERED DIGESTATE
WG574416-02	FILTERED DIGESTATE

MW_DIG - Modified 09/30/2009
PDF ID: 4828148
Report generated: 06/28/2016 09:42

Microbac Laboratories Inc.
Microwave Digestion Log

L16061442-02	FILTERED DIGESTATE	SOP:
WG574416-08	FILTERED DIGESTATE	Spike Solution:
WG574416-09	FILTERED DIGESTATE	Spike Witness:

Method:
Balance:
Analyst: Becki Collins
Instrument:
Instrument Start:

Reviewer: Erin Potter

MW_DIG - Modified 09/30/2009
PDF ID: 4828148
Report generated: 06/28/2016 09:42

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070116A.REP

Analyst1: JYH Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705

ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607

CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345

Stannous : Hydroxylamine :

Workgroups: 574808,574849,574824,574804,575057

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.070116.102728	Blank	Blank		1		07/01/16 10:27
2	NI.070116.103040	WG575028-01	Calibration Point		1		07/01/16 10:30
3	NI.070116.103351	WG575028-02	Calibration Point		1		07/01/16 10:33
4	NI.070116.103702	WG575028-03	Calibration Point		1		07/01/16 10:37
5	NI.070116.104014	WG575028-04	Calibration Point		1		07/01/16 10:40
6	NI.070116.104327	WG575028-05	Initial Calibration Verification		1		07/01/16 10:43
7	NI.070116.104640	WG575028-06	Initial Calib Blank		1		07/01/16 10:46
8	NI.070116.104953	WG575028-07	Low Level Initial Calibration V		1		07/01/16 10:49
9	NI.070116.105304	WG575028-08	Interference Check		1		07/01/16 10:53
10	NI.070116.105616	WG575028-09	Interference Check		1		07/01/16 10:56
11	NI.070116.105929	WG575028-10	CCV		1		07/01/16 10:59
12	NI.070116.110241	WG575028-11	CCB		1		07/01/16 11:02
13	NI.070116.110553	WG574416-04	Method/Prep Blank	20/50	1		07/01/16 11:05
14	NI.070116.110904	WG574416-05	Laboratory Control S	20/50	1		07/01/16 11:09
15	NI.070116.111216	WG574416-01	Reference Sample		1	L16061417-05	07/01/16 11:12
16	NI.070116.111527	WG574416-06	Matrix Spike	20/50	1	L16061417-05	07/01/16 11:15
17	NI.070116.111839	WG574416-07	Matrix Spike Duplica	20/50	1	L16061417-05	07/01/16 11:18
18	NI.070116.112150	L16061417-01	SS007MW0B04-007	20/50	1		07/01/16 11:21
19	NI.070116.112502	L16061417-02	SS007MW0B06-007	20/50	1		07/01/16 11:25
20	NI.070116.112813	WG574808-01	Post Digestion Spike		1	L16061417-02	07/01/16 11:28
21	NI.070116.113125	WG574808-02	Serial Dilution		5	L16061417-02	07/01/16 11:31
22	NI.070116.113436	WG574808-02	Serial Dilution		25	L16061417-02	07/01/16 11:34
23	NI.070116.113750	WG575028-12	CCV		1		07/01/16 11:37
24	NI.070116.114101	WG575028-13	CCB		1		07/01/16 11:41
25	NI.070116.114414	L16061417-03	SS007MW0B06-007DUP	20/50	1		07/01/16 11:44
26	NI.070116.114726	L16061417-04	SS007MW0B13-007	20/50	1		07/01/16 11:47
27	NI.070116.115037	L16061417-08	SS007MWN748-007	20/50	1		07/01/16 11:50
28	NI.070116.115349	L16061417-09	FQC-RB06221601-CC	20/50	1		07/01/16 11:53
29	NI.070116.115701	L16061441-01	TS935TW002A	20/50	1		07/01/16 11:57
30	NI.070116.120012	L16061441-02	TS935TW005A	20/50	1		07/01/16 12:00
31	NI.070116.120324	WG574416-02	Reference Sample		1	L16061442-01	07/01/16 12:03
32	NI.070116.120635	L16061442-02	TS935TW010C	20/50	1		07/01/16 12:06
33	NI.070116.120947	WG574416-08	Matrix Spike	20/50	1	L16061442-01	07/01/16 12:09
34	NI.070116.121258	WG574416-09	Matrix Spike Duplica	20/50	1	L16061442-01	07/01/16 12:12

Page: 1 Approved: July 05, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070116A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 574808,574849,574824,574804,575057

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.070116.121611	WG575028-14	CCV		1		07/01/16 12:16
36	NI.070116.121923	WG575028-15	CCB		1		07/01/16 12:19
37	NI.070116.122236	L16061446-01	GH9-HSPRING	20/50	1		07/01/16 12:22
38	NI.070116.122548	WG574416-03	Reference Sample		1	L16061447-01	07/01/16 12:25
39	NI.070116.122859	WG574416-10	Duplicate	20/50	1	L16061447-01	07/01/16 12:28
40	NI.070116.123211	L16061289-01	MW21-062216	20/50	1		07/01/16 12:32
41	NI.070116.123523	L16061289-04	18WW02F-062216	20/50	1		07/01/16 12:35
42	NI.070116.123834	L16061290-03	MW16F-062116	20/50	1		07/01/16 12:38
43	NI.070116.124145	L16061290-05	109-062216	20/50	1		07/01/16 12:41
44	NI.070116.124458	WG575028-16	CCV		1		07/01/16 12:44
45	NI.070116.124810	WG575028-17	CCB		1		07/01/16 12:48
46	NI.070116.125836	WG574419-03	Method/Prep Blank	20/50	1		07/01/16 12:58
47	NI.070116.130334	WG574419-04	Laboratory Control S	20/50	1		07/01/16 13:03
48	NI.070116.130646	WG574419-01	Reference Sample		1	L16061400-06	07/01/16 13:06
49	NI.070116.130957	WG574419-05	Matrix Spike	20/50	1	L16061400-06	07/01/16 13:09
50	NI.070116.131309	WG574419-06	Matrix Spike Duplica	20/50	1	L16061400-06	07/01/16 13:13
51	NI.070116.131620	WG574419-02	Reference Sample		1	L16061427-01	07/01/16 13:16
52	NI.070116.131932	WG574419-07	Duplicate	20/50	1	L16061427-01	07/01/16 13:19
53	NI.070116.132243	L16061468-01	H6F0605-01	20/50	1		07/01/16 13:22
54	NI.070116.132555	WG574824-01	Post Digestion Spike		1	L16061468-01	07/01/16 13:25
55	NI.070116.132906	WG574824-02	Serial Dilution		5	L16061468-01	07/01/16 13:29
56	NI.070116.133218	WG575028-18	CCV		1		07/01/16 13:32
57	NI.070116.133530	WG575028-19	CCB		1		07/01/16 13:35
58	NI.070116.133842	L16061470-01	S6F0639-01	20/50	1		07/01/16 13:38
59	NI.070116.134154	L16061471-01	S6F0244-01	20/50	1		07/01/16 13:41
60	NI.070116.134505	WG574593-01	Reference Sample		2	L16061536-01	07/01/16 13:45
61	NI.070116.134817	WG574593-04	Duplicate	20/50	2	L16061536-01	07/01/16 13:48
62	NI.070116.135128	WG574593-05	Matrix Spike	20/50	2	L16061536-01	07/01/16 13:51
63	NI.070116.135440	WG574593-06	Matrix Spike Duplica	20/50	2	L16061536-01	07/01/16 13:54
64	NI.070116.135751	L16061068-04	C01-061716	20/50	50		07/01/16 13:57
65	NI.070116.140103	L16061068-05	C01FD-061716	20/50	50		07/01/16 14:01
66	NI.070116.140414	L16061068-11	MW19F-061716	20/50	10		07/01/16 14:04
67	NI.070116.140725	WG574840-01	Post Digestion Spike		10	L16061622-02	07/01/16 14:07
68	NI.070116.141039	WG575028-20	CCV		1		07/01/16 14:10

Page: 2 Approved: July 05, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070116A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 574808,574849,574824,574804,575057

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.070116.141350	WG575028-21	CCB		1		07/01/16 14:13
70	NI.070116.141703	WG574840-04	L1606106815S WG574840-0	20/50	10		07/01/16 14:17
71	NI.070116.142015	WG574840-05	L1606106817SD WG574840	20/50	10		07/01/16 14:20
72	NI.070116.142326	L16061065-02	MW-23-006	20/50	50		07/01/16 14:23
73	NI.070116.142637	L16061065-03	MW-23-008	20/50	50		07/01/16 14:26
74	NI.070116.142949	L16061065-04	MW-23-009	20/50	50		07/01/16 14:29
75	NI.070116.143302	WG575028-22	CCV		1		07/01/16 14:33
76	NI.070116.143613	WG575028-23	CCB		1		07/01/16 14:36
77	NI.070116.143926	WG575028-24	Low Level Continuing Calibra		1		07/01/16 14:39
78	NI.070116.151112	L16061360-01	NP0116-LM1	20/50	1		07/01/16 15:11
79	NI.070116.151423	L16061360-02	EB-062416	20/50	1		07/01/16 15:14
80	NI.070116.151735	L16061400-01	MW-22-008	20/50	1		07/01/16 15:17
81	NI.070116.152046	L16061400-02	MW-22-016	20/50	1		07/01/16 15:20
82	NI.070116.152358	L16061400-03	MW-22-006	20/50	1		07/01/16 15:23
83	NI.070116.152709	L16061400-04	MW-22-005	20/50	1		07/01/16 15:27
84	NI.070116.153021	L16061400-05	MW-22-001	20/50	1		07/01/16 15:30
85	NI.070116.153332	L16061400-09	MW-22-003	20/50	1		07/01/16 15:33
86	NI.070116.153643	L16061400-10	MW-22-004	20/50	1		07/01/16 15:36
87	NI.070116.153955	L16061444-11	EB03	20/50	1		07/01/16 15:39
88	NI.070116.154308	WG575028-25	CCV		1		07/01/16 15:43
89	NI.070116.154619	WG575028-26	CCB		1		07/01/16 15:46
90	NI.070116.154932	L16061452-01	18CPTMW12SW-062416	20/50	1		07/01/16 15:49
91	NI.070116.155244	L16061453-01	MW2-062416	20/50	1		07/01/16 15:52
92	NI.070116.155555	L16061453-03	18CPTMW01SW-062416	20/50	1		07/01/16 15:55
93	NI.070116.155907	WG574419-02	Reference Sample		5	L16061427-01	07/01/16 15:59
94	NI.070116.160218	WG574419-07	Duplicate	20/50	5	L16061427-01	07/01/16 16:02
95	NI.070116.160530	L16061289-01	MW21-062216	20/50	50		07/01/16 16:05
96	NI.070116.160841	L16061290-03	MW16F-062116	20/50	10		07/01/16 16:08
97	NI.070116.161155	WG575028-27	CCV		1		07/01/16 16:11
98	NI.070116.161506	WG575028-28	CCB		1		07/01/16 16:15
99	NI.070116.163708	WG574521-03	Method/Prep Blank	.25/100	1		07/01/16 16:37
100	NI.070116.164019	WG574521-04	Laboratory Control S	.25/100	1		07/01/16 16:40
101	NI.070116.164331	WG574521-01	Reference Sample		1	L16061445-04	07/01/16 16:43
102	NI.070116.164642	WG574521-05	Matrix Spike	.254/100	1	L16061445-04	07/01/16 16:46

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070116A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 574808,574849,574824,574804,575057

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.070116.164954	WG574521-06	Matrix Spike Duplica	.25/100	1	L16061445-04	07/01/16 16:49
104	NI.070116.165305	L16061451-01	GS165SS062016S-ES	.251/100	1		07/01/16 16:53
105	NI.070116.165617	L16061451-02	GS159SS062116G-ES	.25/100	1		07/01/16 16:56
106	NI.070116.165928	WG575057-01	Post Digestion Spike		1	L16061451-02	07/01/16 16:59
107	NI.070116.170240	WG575057-02	Serial Dilution		5	L16061451-02	07/01/16 17:02
108	NI.070116.170552	WG575057-02	Serial Dilution		25	L16061451-02	07/01/16 17:05
109	NI.070116.170905	WG575028-29	CCV		1		07/01/16 17:09
110	NI.070116.171217	WG575028-30	CCB		1		07/01/16 17:12
111	NI.070116.171825	L16061451-03	GS164SS062116S-ES	.251/100	1		07/01/16 17:18
112	NI.070116.172204	L16061451-04	GS164SS062116P-ES	.253/100	1		07/01/16 17:22
113	NI.070116.172516	L16061451-05	GS154SS062316X-ES	.253/100	1		07/01/16 17:25
114	NI.070116.172827	WG574521-02	Reference Sample		1	L16061451-06	07/01/16 17:28
115	NI.070116.173139	L16061451-07	GS153SS0622316X-ES	.253/100	1		07/01/16 17:31
116	NI.070116.173450	L16061451-08	GS153SS062316X-ESD	.256/100	1		07/01/16 17:34
117	NI.070116.173802	WG574521-07	Matrix Spike	.258/100	1	L16061451-06	07/01/16 17:38
118	NI.070116.174113	WG574521-08	Matrix Spike Duplica	.256/100	1	L16061451-06	07/01/16 17:41
119	NI.070116.174425	L16061445-01	TS935DS00700A	.258/100	1		07/01/16 17:44
120	NI.070116.174736	L16061445-02	TS935DS00705A	.256/100	1		07/01/16 17:47
121	NI.070116.175049	WG575028-31	CCV		1		07/01/16 17:50
122	NI.070116.175401	WG575028-32	CCB		1		07/01/16 17:54
123	NI.070116.175714	L16061445-03	TS935DS00800A		1		07/01/16 17:57
124	NI.070116.180025	L16061445-07	TS935DS00900A		1		07/01/16 18:00
125	NI.070116.180337	L16061445-08	TS935DS00905A		1		07/01/16 18:03
126	NI.070116.180648	L16061445-09	TS935DS00905C		1		07/01/16 18:06
127	NI.070116.181000	L16061445-10	TS935DS01000A		1		07/01/16 18:10
128	NI.070116.181311	L16061445-11	TS935DS01005A		1		07/01/16 18:13
129	NI.070116.181623	L16061445-12	TS935DS01205A		1		07/01/16 18:16
130	NI.070116.181934	L16061451-01	GS165SS062016S-ES		10		07/01/16 18:19
131	NI.070116.182246	L16061451-02	GS159SS062116G-ES		10		07/01/16 18:22
132	NI.070116.182557	WG575057-01	Post Digestion Spike		10	L16061451-02	07/01/16 18:25
133	NI.070116.182910	WG575028-33	CCV		1		07/01/16 18:29
134	NI.070116.183222	WG575028-34	CCB		1		07/01/16 18:32
135	NI.070116.183535	WG575057-02	Serial Dilution		50	L16061451-02	07/01/16 18:35
136	NI.070116.183846	L16061451-03	GS164SS062116S-ES		10		07/01/16 18:38

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070116A.REP

Analyst1: JYH Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705

ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607

CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345

Stannous : Hydroxylamine :

Workgroups: 574808,574849,574824,574804,575057

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	NI.070116.184158	L16061451-04	GS164SS062116P-ES		10		07/01/16 18:41
138	NI.070116.184509	L16061451-05	GS154SS062316X-ES		10		07/01/16 18:45
139	NI.070116.184821	WG574521-02	Reference Sample		10	L16061451-06	07/01/16 18:48
140	NI.070116.185132	L16061451-07	GS153SS0622316X-ES		10		07/01/16 18:51
141	NI.070116.185444	L16061451-08	GS153SS062316X-ESD		10		07/01/16 18:54
142	NI.070116.185755	WG574521-07	Matrix Spike		10	L16061451-06	07/01/16 18:57
143	NI.070116.190107	WG574521-08	Matrix Spike Duplica		10	L16061451-06	07/01/16 19:01
144	NI.070116.190419	WG575028-35	CCV		1		07/01/16 19:04
145	NI.070116.190731	WG575028-36	CCB		1		07/01/16 19:07
146	NI.070116.191044	WG575028-37	Low Level Continuing Calibra		1		07/01/16 19:10

Comments

Seq.	Rerun	Dil.	Reason	Analytes
67				
Seq. 67, 70-71: wrong WG numbers. JYH				

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Microbac Laboratories Inc.

Data Checklist

Date: 01-JUL-2016
Analyst: JYH
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 575028
Runlog ID: 76079
Analytical Workgroups: 574808,574849,574824,574804,575057

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1441,1442,1360,1400,1444,1445
Level 4	1289,12901417,1452,1453,1068
	1065,1451
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	BKT
Comments	

Primary Reviewer:

Secondary Reviewer:
05-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-05-2016 15:57:13

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG574808

Login Number: L16061289

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW21-062216	01	06/22/16					06/28/2016	5.9	180		07/01/16	9.3	180	
MW21-062216	01	06/22/16					06/28/2016	5.9	180		07/01/16	9.1	180	
18WW02F-062216	04	06/22/16					06/28/2016	5.7	180		07/01/16	9	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4837087
Report generated 07/02/2016 13:13

METHOD BLANK SUMMARY

Login Number: L16061289
Blank File ID: NI.070116.110553
Prep Date: 06/28/16 07:30
Analyzed Date: 07/01/16 11:05
Analyst: JYH

Work Group: WG574808
Blank Sample ID: WG574416-04
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG574416-05	NI.070116.110904	07/01/16 11:09	01
DUP	WG574416-10	NI.070116.122859	07/01/16 12:28	01
MW21-062216	L16061289-01	NI.070116.123211	07/01/16 12:32	01
18WW02F-062216	L16061289-04	NI.070116.123523	07/01/16 12:35	01
MW21-062216	L16061289-01	NI.070116.160530	07/01/16 16:05	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4837088
Report generated 07/02/2016 13:13

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061289 Prep Date: 06/28/16 07:30 Sample ID: WG574416-04
Instrument ID: ICP-MS2 Run Date: 07/01/16 11:05 Prep Method: 3015
File ID: NI.070116.110553 Analyst: JYH Method: 6020A
Workgroup (AAB#): WG574808 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-01-JUL-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Antimony, Total	0.000500	0.00200	0.000500	1	U
Arsenic, Total	0.000500	0.00200	0.000500	1	U
Barium, Total	0.00150	0.00600	0.00150	1	U
Cadmium, Total	0.000300	0.00120	0.000300	1	U
Chromium, Total	0.00100	0.00400	0.00100	1	U
Cobalt, Total	0.000500	0.00200	0.000500	1	U
Copper, Total	0.00100	0.00400	0.00100	1	U
Lead, Total	0.000500	0.00200	0.000500	1	U
Manganese, Total	0.00100	0.00400	0.00100	1	U
Nickel, Total	0.00200	0.00800	0.00200	1	U
Silver, Total	0.000500	0.00200	0.000500	1	U
Thallium, Total	0.000100	0.000400	0.000150	1	J
Vanadium, Total	0.000500	0.00200	0.000500	1	U
Zinc, Total	0.0125	0.0500	0.0125	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4837089
02-JUL-2016 13:13

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061289 Run Date: 07/01/2016 Sample ID: WG574416-05
Instrument ID: ICP-MS2 Run Time: 11:09 Prep Method: 3015
File ID: NI.070116.110904 Analyst: JYH Method: 6020A
Workgroup (AAB#): WG574808 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD75998 Cal ID: ICP-MS-01-JUL-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Antimony, Total	0.125	0.120	95.7	80 - 120	
Arsenic, Total	0.125	0.127	102	80 - 120	
Barium, Total	0.125	0.125	99.9	80 - 120	
Cadmium, Total	0.125	0.127	101	80 - 120	
Chromium, Total	0.125	0.126	101	80 - 120	
Cobalt, Total	0.125	0.126	101	80 - 120	
Copper, Total	0.125	0.129	103	80 - 120	
Lead, Total	0.125	0.127	101	80 - 120	
Manganese, Total	0.125	0.128	103	80 - 120	
Nickel, Total	0.125	0.126	101	80 - 120	
Silver, Total	0.125	0.128	103	80 - 120	
Thallium, Total	0.125	0.126	101	80 - 120	
Vanadium, Total	0.125	0.126	101	80 - 120	
Zinc, Total	0.125	0.129	103	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4837090
Report generated: 07/02/2016 13:13

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061289 Cal ID: ICP-MS2- Worknum: WG574808
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG574416-01 File ID: NI.070116.111216 Dil: 1 Matrix: WATER
Sample ID: WG574416-06 MS File ID: NI.070116.111527 Dil: 1 Units: mg/L
Sample ID: WG574416-07 MSD File ID: NI.070116.111839 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Antimony	0.00144	0.125	0.131	104	0.125	0.131	104	0.181	80 - 120	20	
Arsenic	0.00444	0.125	0.136	105	0.125	0.137	106	1.09	80 - 120	20	
Barium	0.0818	0.125	0.203	96.9	0.125	0.203	96.8	0.0521	80 - 120	20	
Cadmium	ND	0.125	0.124	98.9	0.125	0.125	100	1.35	80 - 120	20	
Chromium	0.00255	0.125	0.127	99.6	0.125	0.128	100	0.615	80 - 120	20	
Cobalt	ND	0.125	0.125	100	0.125	0.126	101	0.860	80 - 120	20	
Copper	0.00221	0.125	0.124	97.3	0.125	0.124	97.5	0.251	80 - 120	20	
Lead	ND	0.125	0.126	101	0.125	0.127	102	1.02	80 - 120	20	
Manganese	0.00484	0.125	0.128	98.6	0.125	0.127	97.8	0.814	80 - 120	20	
Nickel	0.00380	0.125	0.124	96.6	0.125	0.127	98.5	1.92	80 - 120	20	
Silver	ND	0.125	0.0941	75.3	0.125	0.0975	78.0	3.59	80 - 120	20	*
Thallium	0.000110	0.125	0.126	101	0.125	0.126	101	0.436	80 - 120	20	
Vanadium	0.0113	0.125	0.140	103	0.125	0.140	103	0.406	80 - 120	20	
Zinc	ND	0.125	0.135	108	0.125	0.133	106	1.61	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4837091
Report generated 07/02/2016 13:13

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061289 Cal ID: ICP-MS2- Worknum: WG574808
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG574416-02 File ID: NI.070116.120324 Dil: 1 Matrix: WATER
Sample ID: WG574416-08 MS File ID: NI.070116.120947 Dil: 1 Units: mg/L
Sample ID: WG574416-09 MSD File ID: NI.070116.121258 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Antimony	ND	0.125	0.0862	69.0	0.125	0.0829	66.3	3.92	80 - 120	20	*
Arsenic	0.00389	0.125	0.129	100	0.125	0.130	101	0.631	80 - 120	20	
Barium	0.210	0.125	0.338	103	0.125	0.342	106	1.10	80 - 120	20	
Cadmium	ND	0.125	0.122	98.0	0.125	0.123	98.5	0.508	80 - 120	20	
Chromium	0.00565	0.125	0.129	99.0	0.125	0.130	99.8	0.778	80 - 120	20	
Cobalt	0.00360	0.125	0.129	101	0.125	0.130	101	0.830	80 - 120	20	
Copper	0.00453	0.125	0.125	96.4	0.125	0.124	95.9	0.486	80 - 120	20	
Lead	0.00377	0.125	0.128	99.0	0.125	0.129	100	1.39	80 - 120	20	
Manganese	0.159	0.125	0.320	129	0.125	0.319	128	0.176	80 - 120	20	*
Nickel	0.00998	0.125	0.132	97.5	0.125	0.130	96.4	1.09	80 - 120	20	
Silver	ND	0.125	0.117	93.4	0.125	0.119	95.0	1.65	80 - 120	20	
Thallium	ND	0.125	0.123	98.3	0.125	0.125	100	1.70	80 - 120	20	
Vanadium	0.0141	0.125	0.143	103	0.125	0.142	102	0.636	80 - 120	20	
Zinc	0.0428	0.125	0.171	102	0.125	0.159	92.7	7.41	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4837091
Report generated 07/12/2016 10:43

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16061289 **Worknum:** WG574808
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG574808-02 **File ID:** NI.070116.113125 **Dil:** 5 **Units:** ug/L
Sample: L16061417-02 **File ID:** NI.070116.112502 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	ND	U	1.64	F	2480.00	
Arsenic	1.32	X	1.35	F	2.60	
Barium	8.30	X	8.28	F	0.33	
Cadmium	ND	U	ND	U		
Chromium	1.74	X	ND	U		
Cobalt	ND	U	ND	U		
Copper	0.623	F	ND	U		
Lead	ND	U	ND	U		
Manganese	0.853	F	ND	U		
Nickel	1.38	F	ND	U		
Silver	ND	U	ND	U		
Thallium	ND	U	ND	U		
Vanadium	3.65	X	3.68	F	0.78	
Zinc	ND	U	ND	U		

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4837085
07/02/2016 13:13

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061289 **Worknum:** WG574808
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG574808-01 **File ID:** NI.070116.112813 **Dil:** 1 **Units:** ug/L
Sample ID: L16061417-02 **File ID:** NI.070116.112502 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	50.8		0	U	50	101.7	75 - 125	
ARSENIC	55.6		1.32		50	108.7	75 - 125	
BARIUM	59.2		8.30		50	101.9	75 - 125	
CADMIUM	51.5		0	U	50	103.0	75 - 125	
CHROMIUM	53.7		1.74		50	103.9	75 - 125	
COBALT	52.2		0	U	50	104.4	75 - 125	
COPPER	51.5		0.623	F	50	101.7	75 - 125	
LEAD	52.8		0	U	50	105.6	75 - 125	
MANGANESE	52.6		0.853	F	50	103.6	75 - 125	
NICKEL	51.7		1.38	F	50	100.6	75 - 125	
SILVER	49.5		0	U	50	98.9	75 - 125	
THALLIUM	52.3		0	U	50	104.7	75 - 125	
VANADIUM	57.2		3.65		50	107.1	75 - 125	
ZINC	54.8		0	U	50	109.7	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4837086
Report generated: 07/02/2016 13:13

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061289	Workgroup (AAB#):	WG574808
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG575028	Initial Calibration Date:	01-JUL-2016 10:40

	WG575028-01		WG575028-02		WG575028-03		WG575028-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	259	.4	428	50	250000	100	508000	.999935	
ARSENIC	0	-59.9	.4	5.90	50	61400	100	123000	.999997	
BARIUM	0	20.7	.4	146	50	107000	100	210000	.99998	
CADMIUM	0	2.60	.4	119	50	113000	100	223000	.999998	
CHROMIUM	0	7690	.4	8190	50	412000	100	812000	1	
COBALT	0	201	.4	604	50	385000	100	759000	.999986	
COPPER	0	167	.4	251	50	103000	100	201000	.999949	
LEAD	0	930	.4	2060	50	1040000	100	2040000	.999999	
MANGANESE	0	715	.4	1140	50	380000	100	751000	.999989	
NICKEL	0	335	.4	418	50	105000	100	205000	.999979	
SILVER	0	83.3	.4	447	50	352000	100	698000	1	
THALLIUM	0	7.70	.4	454	50	444000	100	872000	.999994	
VANADIUM	0	1560	.4	2030	50	413000	100	818000	.999998	
ZINC	0	240	.4	280	50	61600	100	122000	.999992	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4837095
Report generated: 02-JUL-2016 13:13

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061289
Instrument ID: ICP-MS2
File ID: NI.070116.104640
Workgroup (AAB#): WG574808
Matrix: WATER

Run Date: 07/01/2016
Run Time: 10:46
Analyst: JYH
Cal ID: ICP-MS2 - 01-JUL-16

Sample ID: WG575028-06
Method: 6020A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
COPPER	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.2	U
THALLIUM	.04	.16	.04	U
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4837097
Report generated 07/02/2016 13:13

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575028-11
Instrument ID: ICP-MS2
Run Time: 11:02
Method: 6020A
File ID: NI.070116.110241
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.276	F
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837100
Report generated 07/02/2016 13:13

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575028-13
Instrument ID: ICP-MS2
Run Time: 11:41
Method: 6020A
File ID: NI.070116.114101
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837100
Report generated 07/02/2016 13:13

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575028-15
Instrument ID: ICP-MS2
Run Time: 12:19
Method: 6020A
File ID: NI.070116.121923
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837100
Report generated 07/02/2016 13:13

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575028-17
Instrument ID: ICP-MS2
Run Time: 12:48
Method: 6020A
File ID: NI.070116.124810
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837100
Report generated 07/02/2016 13:13

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575028-26
Instrument ID: ICP-MS2
Run Time: 15:46
Method: 6020A
File ID: NI.070116.154619
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837100
Report generated 07/02/2016 13:13

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575028-28
Instrument ID: ICP-MS2
Run Time: 16:15
Method: 6020A
File ID: NI.070116.161506
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837100
Report generated 07/02/2016 13:13

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061289 Run Date: 07/01/2016 Sample ID: WG575028-05
Instrument ID: ICP-MS2 Run Time: 10:43 Method: 6020A
File ID: NI.070116.104327 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG574808 Cal ID: ICP-MS - 01-JUL-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	49.5	98.9	90 - 110	
Arsenic		50	50.5	101	90 - 110	
Barium		50	49.1	98.3	90 - 110	
Cadmium		50	49.7	99.4	90 - 110	
Chromium		50	50.3	101	90 - 110	
Cobalt		50	50.9	102	90 - 110	
Copper		50	50.6	101	90 - 110	
Lead		50	50.4	101	90 - 110	
Manganese		50	51.2	102	90 - 110	
Nickel		50	50.3	101	90 - 110	
Silver		50	49.2	98.3	90 - 110	
Thallium		50	49.7	99.3	90 - 110	
Vanadium		50	50.3	101	90 - 110	
Zinc		50	51.2	102	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4837096
Report generated 07/02/2016 13:13

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575028-10
Instrument ID: ICP-MS2
Run Time: 10:59
Method: 6020A
File ID: NI.070116.105929
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0511	mg/L	102	90 - 110		
Arsenic		0.0500	0.0505	mg/L	101	90 - 110		
Barium		0.0500	0.0496	mg/L	99.2	90 - 110		
Cadmium		0.0500	0.0500	mg/L	100	90 - 110		
Chromium		0.0500	0.0504	mg/L	101	90 - 110		
Cobalt		0.0500	0.0509	mg/L	102	90 - 110		
Copper		0.0500	0.0506	mg/L	101	90 - 110		
Lead		0.0500	0.0507	mg/L	101	90 - 110		
Manganese		0.0500	0.0505	mg/L	101	90 - 110		
Nickel		0.0500	0.0502	mg/L	100	90 - 110		
Silver		0.0500	0.0502	mg/L	100	90 - 110		
Thallium		0.0500	0.0505	mg/L	101	90 - 110		
Vanadium		0.0500	0.0509	mg/L	102	90 - 110		
Zinc		0.0500	0.0502	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837099
Report generated 07/02/2016 13:13

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289 | Run Date: 07/01/2016 | Sample ID: WG575028-12
Instrument ID: ICP-MS2 | Run Time: 11:37 | Method: 6020A
File ID: NI.070116.113750 | Analyst: JYH | QC Key: DOD4
Workgroup (AAB#): WG574808 | Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0494	mg/L	98.9	90 - 110		
Arsenic		0.0500	0.0503	mg/L	101	90 - 110		
Barium		0.0500	0.0493	mg/L	98.6	90 - 110		
Cadmium		0.0500	0.0498	mg/L	99.6	90 - 110		
Chromium		0.0500	0.0499	mg/L	99.8	90 - 110		
Cobalt		0.0500	0.0512	mg/L	102	90 - 110		
Copper		0.0500	0.0505	mg/L	101	90 - 110		
Lead		0.0500	0.0507	mg/L	101	90 - 110		
Manganese		0.0500	0.0500	mg/L	100	90 - 110		
Nickel		0.0500	0.0502	mg/L	100	90 - 110		
Silver		0.0500	0.0497	mg/L	99.4	90 - 110		
Thallium		0.0500	0.0497	mg/L	99.5	90 - 110		
Vanadium		0.0500	0.0506	mg/L	101	90 - 110		
Zinc		0.0500	0.0500	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837099
Report generated 07/02/2016 13:13

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575028-14
Instrument ID: ICP-MS2
Run Time: 12:16
Method: 6020A
File ID: NI.070116.121611
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0495	mg/L	98.9	90 - 110		
Arsenic		0.0500	0.0500	mg/L	99.9	90 - 110		
Barium		0.0500	0.0486	mg/L	97.3	90 - 110		
Cadmium		0.0500	0.0496	mg/L	99.2	90 - 110		
Chromium		0.0500	0.0495	mg/L	99.1	90 - 110		
Cobalt		0.0500	0.0518	mg/L	104	90 - 110		
Copper		0.0500	0.0496	mg/L	99.1	90 - 110		
Lead		0.0500	0.0504	mg/L	101	90 - 110		
Manganese		0.0500	0.0499	mg/L	99.9	90 - 110		
Nickel		0.0500	0.0494	mg/L	98.9	90 - 110		
Silver		0.0500	0.0496	mg/L	99.3	90 - 110		
Thallium		0.0500	0.0500	mg/L	100	90 - 110		
Vanadium		0.0500	0.0506	mg/L	101	90 - 110		
Zinc		0.0500	0.0493	mg/L	98.6	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837099
Report generated 07/02/2016 13:13

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289 Run Date: 07/01/2016 Sample ID: WG575028-16
Instrument ID: ICP-MS2 Run Time: 12:44 Method: 6020A
File ID: NI.070116.124458 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG574808 Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0495	mg/L	99.0	90 - 110		
Arsenic		0.0500	0.0496	mg/L	99.1	90 - 110		
Barium		0.0500	0.0491	mg/L	98.3	90 - 110		
Cadmium		0.0500	0.0500	mg/L	100	90 - 110		
Chromium		0.0500	0.0504	mg/L	101	90 - 110		
Cobalt		0.0500	0.0509	mg/L	102	90 - 110		
Copper		0.0500	0.0506	mg/L	101	90 - 110		
Lead		0.0500	0.0509	mg/L	102	90 - 110		
Manganese		0.0500	0.0503	mg/L	101	90 - 110		
Nickel		0.0500	0.0502	mg/L	100	90 - 110		
Silver		0.0500	0.0498	mg/L	99.5	90 - 110		
Thallium		0.0500	0.0507	mg/L	101	90 - 110		
Vanadium		0.0500	0.0502	mg/L	100	90 - 110		
Zinc		0.0500	0.0498	mg/L	99.7	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837099
Report generated 07/02/2016 13:13

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575028-25
Instrument ID: ICP-MS2
Run Time: 15:43
Method: 6020A
File ID: NI.070116.154308
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0499	mg/L	99.9	90 - 110		
Arsenic		0.0500	0.0504	mg/L	101	90 - 110		
Barium		0.0500	0.0490	mg/L	97.9	90 - 110		
Cadmium		0.0500	0.0497	mg/L	99.4	90 - 110		
Chromium		0.0500	0.0499	mg/L	99.8	90 - 110		
Cobalt		0.0500	0.0515	mg/L	103	90 - 110		
Copper		0.0500	0.0508	mg/L	102	90 - 110		
Lead		0.0500	0.0513	mg/L	103	90 - 110		
Manganese		0.0500	0.0505	mg/L	101	90 - 110		
Nickel		0.0500	0.0502	mg/L	100	90 - 110		
Silver		0.0500	0.0499	mg/L	99.7	90 - 110		
Thallium		0.0500	0.0502	mg/L	100	90 - 110		
Vanadium		0.0500	0.0509	mg/L	102	90 - 110		
Zinc		0.0500	0.0507	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837099
Report generated 07/02/2016 13:13

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575028-27
Instrument ID: ICP-MS2
Run Time: 16:11
Method: 6020A
File ID: NI.070116.161155
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0489	mg/L	97.7	90 - 110		
Arsenic		0.0500	0.0500	mg/L	100	90 - 110		
Barium		0.0500	0.0487	mg/L	97.3	90 - 110		
Cadmium		0.0500	0.0502	mg/L	100	90 - 110		
Chromium		0.0500	0.0502	mg/L	100	90 - 110		
Cobalt		0.0500	0.0512	mg/L	102	90 - 110		
Copper		0.0500	0.0503	mg/L	101	90 - 110		
Lead		0.0500	0.0522	mg/L	104	90 - 110		
Manganese		0.0500	0.0497	mg/L	99.4	90 - 110		
Nickel		0.0500	0.0503	mg/L	101	90 - 110		
Silver		0.0500	0.0498	mg/L	99.7	90 - 110		
Thallium		0.0500	0.0505	mg/L	101	90 - 110		
Vanadium		0.0500	0.0500	mg/L	100	90 - 110		
Zinc		0.0500	0.0500	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Report generated 07/02/2016 13:13

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

00686243

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575028-07
Instrument ID: ICP-MS2
Run Time: 10:49
Method: 6020A
File ID: NI.070116.104953
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.364	ug/L	91.0	70 - 130		
Arsenic		0.400	0.390	ug/L	97.6	70 - 130		
Barium		0.750	0.697	ug/L	92.9	70 - 130		
Cadmium		0.240	0.238	ug/L	99.3	70 - 130		
Chromium		0.800	0.709	ug/L	88.6	70 - 130		
Cobalt		0.400	0.371	ug/L	92.7	70 - 130		
Copper		0.800	0.775	ug/L	96.9	70 - 130		
Lead		0.200	0.193	ug/L	96.3	70 - 130		
Manganese		0.500	0.457	ug/L	91.3	70 - 130		
Nickel		1.60	1.52	ug/L	95.0	70 - 130		
Silver		0.400	0.392	ug/L	98.0	70 - 130		
Thallium		0.0800	0.0815	ug/L	102	70 - 130		
Vanadium		0.400	0.339	ug/L	84.7	70 - 130		
Zinc		6.25	6.40	ug/L	102	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4837101
Report generated 07/02/2016 13:13

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575028-24
Instrument ID: ICP-MS2
Run Time: 14:39
Method: 6020A
File ID: NI.070116.143926
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.364	ug/L	90.9	70 - 130		
Arsenic		0.400	0.415	ug/L	104	70 - 130		
Barium		0.750	0.660	ug/L	88.0	70 - 130		
Cadmium		0.240	0.234	ug/L	97.3	70 - 130		
Chromium		0.800	0.671	ug/L	83.8	70 - 130		
Cobalt		0.400	0.393	ug/L	98.3	70 - 130		
Copper		0.800	0.781	ug/L	97.7	70 - 130		
Lead		0.200	0.199	ug/L	99.6	70 - 130		
Manganese		0.500	0.428	ug/L	85.7	70 - 130		
Nickel		1.60	1.54	ug/L	96.4	70 - 130		
Silver		0.400	0.385	ug/L	96.2	70 - 130		
Thallium		0.0800	0.0813	ug/L	102	70 - 130		
Vanadium		0.400	0.360	ug/L	90.0	70 - 130		
Zinc		6.25	7.08	ug/L	113	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4837101
Report generated 07/02/2016 13:13

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575028-37
Instrument ID: ICP-MS2
Run Time: 19:10
Method: 6020A
File ID: NI.070116.191044
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.327	ug/L	81.8	70 - 130		
Arsenic		0.400	0.408	ug/L	102	70 - 130		
Barium		0.750	0.693	ug/L	92.4	70 - 130		
Cadmium		0.240	0.228	ug/L	94.8	70 - 130		
Chromium		0.800	0.796	ug/L	99.5	70 - 130		
Cobalt		0.400	0.378	ug/L	94.5	70 - 130		
Copper		0.800	0.768	ug/L	96.0	70 - 130		
Lead		0.200	0.198	ug/L	98.9	70 - 130		
Manganese		0.500	0.461	ug/L	92.1	70 - 130		
Nickel		1.60	1.51	ug/L	94.1	70 - 130		
Silver		0.400	0.387	ug/L	96.6	70 - 130		
Thallium		0.0800	0.0773	ug/L	96.6	70 - 130		
Vanadium		0.400	0.364	ug/L	91.0	70 - 130		
Zinc		6.25	7.03	ug/L	113	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4837101
Report generated 07/02/2016 13:13

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061289
Instrument ID: ICP-MS2
Sol. A : WG575028-08 **File ID:** NI.070116.105304
Sol. AB : WG575028-09 **File ID:** NI.070116.105616

Workgroup (AAB#): WG574808
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.118	NS	100	96.8	96.8	
Arsenic	NS	0	NS	100	100	100	
Barium	NS	0.406	NS	100	98.7	98.7	
Cadmium	NS	-0.0920	NS	100	99.5	99.5	
Chromium	NS	0.0974	NS	100	97.8	97.8	
Cobalt	NS	0.0353	NS	100	98.4	98.4	
Copper	NS	0.287	NS	100	98.5	98.5	
Lead	NS	0.0642	NS	100	98.7	98.7	
Manganese	NS	0.0949	NS	100	99.2	99.2	
Nickel	NS	0.398	NS	100	97.1	97.1	
Silver	NS	0.0605	NS	100	87.4	87.4	
Thallium	NS	0.0383	NS	100	98.2	98.2	
Vanadium	NS	0.0180	NS	100	99.7	99.7	
Zinc	NS	1.24	NS	100	103	103	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4837098
Report generated 07/02/2016 13:13

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16061289 **Analytical Method:** 6020
Analytical Workgroup: WG574808 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** JYH
ICAL Date: 01-JUL-2016 10:30

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16061289-01	SAMP	01-JUL-2016 12:32	93.774	103.778	97.748
L16061289-01	SAMP	01-JUL-2016 16:05	97.742	99.04	97.192
L16061289-04	SAMP	01-JUL-2016 12:35	105.526	111.607	108.393
L16061417-02	SAMP	01-JUL-2016 11:25	91.126	95.137	93.308
WG574416-04	BLANK	01-JUL-2016 11:05	100.583	100.822	100.484
WG574416-05	LCS	01-JUL-2016 11:09	100.945	101.711	100.689
WG574808-01	PSPK	01-JUL-2016 11:28	92.143	96.479	93.904
WG574808-02	SERIAL	01-JUL-2016 11:31	92.982	94.302	91.966
WG575028-05	ICV	01-JUL-2016 10:43	99.388	100.45	101.227
WG575028-06	ICB	01-JUL-2016 10:46	99.921	101.195	100.88
WG575028-07	LLICV	01-JUL-2016 10:49	97.843	98.579	96.464
WG575028-08	ICS	01-JUL-2016 10:53	97.097	100.956	98.373
WG575028-09	ICS	01-JUL-2016 10:56	99.537	101.553	98.936
WG575028-10	CCV	01-JUL-2016 10:59	98.413	100.239	99.347
WG575028-11	CCB	01-JUL-2016 11:02	101.078	100.828	100.108
WG575028-12	CCV	01-JUL-2016 11:37	99.995	101.052	100.573
WG575028-13	CCB	01-JUL-2016 11:41	101.368	101.564	100.677
WG575028-14	CCV	01-JUL-2016 12:16	105.497	108.146	107.23
WG575028-15	CCB	01-JUL-2016 12:19	107.619	108.395	108.168
WG575028-16	CCV	01-JUL-2016 12:44	103.303	109.496	107.231
WG575028-17	CCB	01-JUL-2016 12:48	105.044	109.74	107.547
WG575028-24	LLCCV	01-JUL-2016 14:39	100.804	98.706	100.09
WG575028-25	CCV	01-JUL-2016 15:43	100.989	103.315	102.712
WG575028-26	CCB	01-JUL-2016 15:46	101.711	104.453	104.379
WG575028-27	CCV	01-JUL-2016 16:11	100.912	105.898	104.016
WG575028-28	CCB	01-JUL-2016 16:15	103.124	105.323	105.946
WG575028-37	LLCCV	01-JUL-2016 19:10	93.446	100.247	96.576

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4837094
Report generated: 07/02/2016 13:13

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16061289 **Date:** 04/19/2016
Insturment ID: ICP-MS2 **Method:** 6020A

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Uranium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4837092
Report generated: 07/02/2016 13:13

2.3.2.3 Raw Data

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Friday, July 01, 2016 10:13:04

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1329	2024	0.709	
Mg	23.985	23.975	4503	2020	0.696	
Co	58.933	58.925	11692	2022	0.691	
In	114.904	114.875	22859	2028	0.686	
U	238.050	238.025	47457	2043	0.687	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	3.598
5.575	4.718
5.625	3.789
5.675	2.527
5.725	1.318
5.775	1.142
5.825	2.913
5.875	3.428
5.925	4.580
5.975	3.116
6.025	1.509
6.075	2.372
6.125	1.519
6.175	1.841
6.225	5.064
6.275	40.937
6.325	69.722
6.375	49.793
6.425	63.949
6.475	46.187
6.525	18.017
6.575	4.888
6.625	1.946
6.675	3.206
6.725	1.995
6.775	2.218
6.825	1.690

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6.875	1.781
6.925	1.186
6.975	1.328
7.025	1.344
7.075	1.081
7.125	0.453
7.175	2.067
7.225	2.391
7.275	2.950
7.325	17.639
7.375	57.735
7.425	72.436
7.475	223.607
7.525	61.237
7.575	61.237
7.625	74.689
7.675	43.853
7.725	81.441
7.775	70.711
7.825	49.793
7.875	81.441
7.925	71.261
7.975	63.888
8.025	108.327
8.075	69.722
8.125	100.000
8.175	69.722
8.225	63.191
8.275	46.481
8.325	59.265
8.375	94.786
8.425	43.853
8.475	35.355
22.525	100.000
22.575	24.845
22.625	11.877
22.675	14.821
22.725	27.507
22.775	16.675
22.825	18.109
22.875	27.152
22.925	12.748
22.975	17.626
23.025	12.284
23.075	17.138
23.125	22.852
23.175	24.755

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23.225	27.794
23.275	13.465
23.325	28.287
23.375	27.216
23.425	29.613
23.475	25.156
23.525	5.738
23.575	3.240
23.625	2.912
23.675	3.295
23.725	2.834
23.775	3.434
23.825	2.694
23.875	2.849
23.925	2.371
23.975	2.335
24.025	3.002
24.075	2.407
24.125	2.590
24.175	2.561
24.225	3.038
24.275	3.732
24.325	13.243
24.375	46.291
24.425	31.044
24.475	3.900
24.525	3.690
24.575	1.518
24.625	2.041
24.675	1.011
24.725	0.948
24.775	1.552
24.825	1.240
24.875	0.999
24.925	2.206
24.975	1.206
25.025	1.519
25.075	1.903
25.125	0.579
25.175	1.714
25.225	2.460
25.275	18.990
25.325	26.352
25.375	57.810
25.425	13.305
25.475	13.731
57.525	8.299

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57.575	3.825
57.625	2.379
57.675	1.810
57.725	1.941
57.775	3.194
57.825	3.753
57.875	1.813
57.925	1.247
57.975	2.156
58.025	1.826
58.075	1.503
58.125	1.715
58.175	3.179
58.225	2.838
58.275	20.250
58.325	47.507
58.375	33.055
58.425	7.046
58.475	7.950
58.525	1.298
58.575	2.456
58.625	0.689
58.675	2.468
58.725	2.353
58.775	0.839
58.825	1.215
58.875	1.050
58.925	1.190
58.975	1.362
59.025	1.477
59.075	1.339
59.125	2.122
59.175	2.562
59.225	3.714
59.275	10.687
59.325	73.193
59.375	43.301
59.425	29.315
59.475	15.449
59.525	9.592
59.575	4.491
59.625	3.077
59.675	2.739
59.725	2.974
59.775	4.607
59.825	3.985
59.875	2.185

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59.925	2.525
59.975	1.104
60.025	3.006
60.075	3.085
60.125	2.240
60.175	5.388
60.225	7.934
60.275	43.006
60.325	15.215
60.375	46.351
60.425	85.267
60.475	44.721
113.525	8.024
113.575	2.930
113.625	3.520
113.675	3.350
113.725	2.512
113.775	1.897
113.825	2.146
113.875	1.417
113.925	2.337
113.975	2.849
114.025	1.596
114.075	1.757
114.125	1.986
114.175	3.937
114.225	7.420
114.275	16.156
114.325	23.697
114.375	19.422
114.425	6.964
114.475	6.194
114.525	3.847
114.575	1.824
114.625	1.449
114.675	1.397
114.725	1.117
114.775	1.853
114.825	0.668
114.875	1.048
114.925	1.062
114.975	0.807
115.025	1.604
115.075	0.617
115.125	0.990
115.175	1.502
115.225	4.478

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115.275	6.474
115.325	39.891
115.375	63.816
115.425	37.630
115.475	30.031
115.525	14.465
115.575	9.978
115.625	2.212
115.675	2.597
115.725	4.004
115.775	4.700
115.825	2.647
115.875	1.521
115.925	0.934
115.975	2.944
116.025	2.211
116.075	6.400
116.125	6.342
116.175	7.120
116.225	10.108
116.275	16.197
116.325	46.481
116.375	69.722
116.425	51.349
116.475	37.029
236.525	
236.575	29.186
236.625	24.495
236.675	29.186
236.725	31.126
236.775	17.430
236.825	21.320
236.875	35.016
236.925	29.487
236.975	22.480
237.025	20.328
237.075	5.167
237.125	26.770
237.175	39.033
237.225	35.209
237.275	32.070
237.325	18.731
237.375	19.628
237.425	26.854
237.475	32.050
237.525	17.891
237.575	10.999

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237.625	4.356
237.675	1.280
237.725	1.988
237.775	1.816
237.825	1.251
237.875	1.667
237.925	1.057
237.975	0.998
238.025	0.960
238.075	1.070
238.125	0.734
238.175	2.008
238.225	0.722
238.275	1.413
238.325	1.849
238.375	2.376
238.425	2.444
238.475	2.524
238.525	19.935
238.575	20.360
238.625	13.507
238.675	21.195
238.725	21.155
238.775	6.804
238.825	10.080
238.875	12.811
238.925	23.344
238.975	11.513
239.025	14.758
239.075	30.366
239.125	18.763
239.175	14.417
239.225	4.027
239.275	13.280
239.325	20.761
239.375	27.288
239.425	21.246
239.475	21.217

Approved: July 02, 2016

SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 7/1/2016 10:17:38 AM
End Time: 7/1/2016 10:19:50 AM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 6753.37
        Obtained Intensity (Mg 23.985): 350422.63
        Obtained Intensity (In 114.904): 74054.21
        Obtained Intensity (U 238.05): 161864.28
        Obtained Intensity (Bkgd 220): 0.13
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.020 (=4067.61 / 207928.14)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.011 (=2367.92 / 207928.14)
```

Report Date/Time: Friday, July 01, 2016 10:19:50
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SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 7/1/2016 10:17:38 AM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 6753.37
                Obtained Intensity (Mg 23.985): 350422.63
                Obtained Intensity (In 114.904): 74054.21
                Obtained Intensity (U 238.05): 161864.28
                Obtained Intensity (Bkgd 220): 0.13
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.020 (=4067.61 / 207928.14)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.011 (=2367.92 / 207928.14)
[Passed]  Optimum value(s): N/A

End Time: 7/1/2016 10:19:50 AM
```


Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Friday, July 01, 2016 10:27:28
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	76455.8	1.4				ug/L		Standard
	Be	9	20.0	50.0				ug/L		Standard
	Al	27	1306.7	8.4				ug/L		Standard
	Sc	45	41174.2	1.3				ug/L		Standard
	Ti	47	27.3	20.1				ug/L		Standard
	V	51	1434.3	4.1				ug/L		Standard
	Cr	52	7733.0	1.4				ug/L		Standard
	Cr	53	441.7	6.2				ug/L		Standard
	Mn	55	722.7	2.8				ug/L		Standard
	Co	59	217.3	3.4				ug/L		Standard
	Ni	60	304.3	3.8				ug/L		Standard
	Cu	65	181.0	9.6				ug/L		Standard
	Zn	66	214.7	7.4				ug/L		Standard
>	Ge	72	520809.4	1.3				ug/L		Standard
	As	75	-51.8	28.3				ug/L		Standard
	Se	82	16.9	16.8				ug/L		Standard
	Se-1	77	56.0	13.9				ug/L		Standard
>	Ga	71	25.0	34.6				mg/L		Standard
	Rb	85	28.3	71.3				ug/L		Standard
	Y	89	447394.9	1.2				ug/L		Standard
>	Rh	103	15.0	0.0				ug/L		Standard
	Mo	98	112.7	27.3				ug/L		Standard
	Ag	107	108.0	3.2				ug/L		Standard
	Cd	111	3.1	49.9				mg/L		Standard
	Cd	114	19.8	49.9				ug/L		Standard
>	In	115	625727.9	1.1				ug/L		Standard
	Sn	118	568.3	11.1				ug/L		Standard
	Sb	123	611.9	31.5				ug/L		Standard
	Ba	135	21.0	20.8				ug/L		Standard
	Ce	140	245.0	41.7				ug/L		Standard
>	Tb	159	950397.3	0.8				ug/L		Standard
	Ho	165	6.7	114.6				ug/L		Standard
	Tl	203	15.0	17.6				ug/L		Standard
	Tl	205	13.3	57.3				ug/L		Standard
	Pb	206	263.7	1.3				ug/L		Standard
	Pb	207	221.7	2.3				ug/L		Standard
	Pb	208	958.7	0.3				ug/L		Standard
	U	238	9.3	30.9				ug/L		Standard
>	Bi	209	552820.8	0.2				ug/L		Standard

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Na	23	1.7	173.2	mg/L	Standard
Mg	24	55.0	15.7	mg/L	Standard
K	39	28.3	27.0	mg/L	Standard
Ca	43	26.7	47.2	mg/L	Standard
Fe	54	147.3	8.3	mg/L	Standard
Fe	57	268.3	12.1	mg/L	Standard
> **Sc-1**	45	41174.2	1.3	mg/L	Standard
Cl	35	69550.0	1.7	ug/L	Standard
Kr	83	0.7	86.6	ug/L	Standard
Br	81	1950.1	7.9	ug/L	Standard
P	31	21156.4	1.5	ug/L	Standard
S	34	3418.7	4.4	ug/L	Standard
Sr	88	71.7	49.5	ug/L	Standard
C	12	163.3	19.7	mg/L	Standard
N	14	0.0		mg/L	Standard
Hg	202	16.7	69.3	mg/L	Standard
Dy	164	16.3	91.8	mg/L	Standard
Ho-1	165	6.7	114.6	mg/L	Standard
Er	166	6.7	86.6	mg/L	Standard
I	127	19499.2	0.9	mg/L	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Blank
Report Date/Time: Friday, July 01, 2016 10:29:45
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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Friday, July 01, 2016 10:30:40
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	76115.8	2.8				ug/L	76456	Standard
	Be	9	13.3	21.7				ug/L	20	Standard
	Al	27	1265.1	6.9				ug/L	1307	Standard
	Sc	45	40428.9	1.7				ug/L	41174	Standard
	Ti	47	21.7	32.4				ug/L	27	Standard
	V	51	1555.0	2.9				ug/L	1434	Standard
	Cr	52	7686.3	1.0				ug/L	7733	Standard
	Cr	53	466.7	11.8				ug/L	442	Standard
	Mn	55	715.0	5.0				ug/L	723	Standard
	Co	59	200.7	6.9				ug/L	217	Standard
	Ni	60	335.0	2.6				ug/L	304	Standard
	Cu	65	166.7	3.3				ug/L	181	Standard
	Zn	66	240.0	2.6				ug/L	215	Standard
>	Ge	72	524095.0	0.6				ug/L	520809	Standard
	As	75	-59.9	59.9				ug/L	-52	Standard
	Se	82	13.2	52.5				ug/L	17	Standard
	Se-1	77	54.7	18.5				ug/L	56	Standard
>	Ga	71	33.3	45.8				mg/L	25	Standard
	Rb	85	11.7	89.2				ug/L	28	Standard
	Y	89	451430.1	1.0				ug/L	447395	Standard
>	Rh	103	13.3	142.0				ug/L	15	Standard
	Mo	98	59.2	36.8				ug/L	113	Standard
	Ag	107	83.3	15.2				ug/L	108	Standard
	Cd	111	2.6	60.3				mg/L	3	Standard
	Cd	114	6.8	257.6				ug/L	20	Standard
>	In	115	626754.1	0.5				ug/L	625728	Standard
	Sn	118	553.3	6.0				ug/L	568	Standard
	Sb	123	259.4	31.5				ug/L	612	Standard
	Ba	135	20.7	14.8				ug/L	21	Standard
	Ce	140	71.7	8.1				ug/L	245	Standard
>	Tb	159	970231.2	1.1				ug/L	950397	Standard
	Ho	165	3.3	173.2				ug/L	7	Standard
	Tl	203	7.7	32.8				ug/L	15	Standard
	Tl	205	6.7	43.3				ug/L	13	Standard
	Pb	206	273.7	9.4				ug/L	264	Standard
	Pb	207	216.3	5.9				ug/L	222	Standard
	Pb	208	930.0	2.3				ug/L	959	Standard
	U	238	2.3	24.7				ug/L	9	Standard
>	Bi	209	552479.9	0.9				ug/L	552821	Standard

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	Na	23	0.0		mg/L	2	Standard
	Mg	24	65.0	20.4	mg/L	55	Standard
	K	39	38.3	19.9	mg/L	28	Standard
	Ca	43	28.3	53.9	mg/L	27	Standard
	Fe	54	142.9	16.5	mg/L	147	Standard
	Fe	57	211.7	5.9	mg/L	268	Standard
>	**Sc-1**	45	40428.9	1.7	mg/L	41174	Standard
	Cl	35	69484.3	2.2	ug/L	69550	Standard
	Kr	83	1.0	0.0	ug/L	1	Standard
	Br	81	2066.8	4.1	ug/L	1950	Standard
	P	31	21174.8	5.7	ug/L	21156	Standard
	S	34	3378.7	3.5	ug/L	3419	Standard
	Sr	88	91.7	20.7	ug/L	72	Standard
	C	12	160.0	28.6	mg/L	163	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	16.7	91.7	mg/L	17	Standard
	Dy	164	6.3	93.2	mg/L	16	Standard
	Ho-1	165	3.3	173.2	mg/L	7	Standard
	Er	166	6.7	86.6	mg/L	7	Standard
	I	127	19828.0	1.1	mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 1
Report Date/Time: Friday, July 01, 2016 10:32:57
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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Friday, July 01, 2016 10:33:51
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74986.8	1.6				ug/L	76456	Standard
	Be	9	76.7	43.4				ug/L	20	Standard
	Al	27	10110.0	3.2				ug/L	1307	Standard
	Sc	45	40704.6	1.5				ug/L	41174	Standard
	Ti	47	59.7	6.8				ug/L	27	Standard
	V	51	2028.1	3.7				ug/L	1434	Standard
	Cr	52	8189.5	1.1				ug/L	7733	Standard
	Cr	53	468.3	4.9				ug/L	442	Standard
	Mn	55	1137.0	2.8				ug/L	723	Standard
	Co	59	604.0	2.0				ug/L	217	Standard
	Ni	60	418.3	1.4				ug/L	304	Standard
	Cu	65	251.3	1.9				ug/L	181	Standard
	Zn	66	280.0	1.2				ug/L	215	Standard
>	**Ge**	72	516908.5	0.1				ug/L	520809	Standard
	As	75	5.9	557.4				ug/L	-52	Standard
	Se	82	22.1	63.4				ug/L	17	Standard
	Se-1	77	62.3	6.5				ug/L	56	Standard
>	**Ga**	71	28.3	62.0				mg/L	25	Standard
	Rb	85	13.3	142.0				ug/L	28	Standard
	Y	89	452397.3	1.6				ug/L	447395	Standard
>	**Rh**	103	8.3	91.7				ug/L	15	Standard
	Mo	98	371.2	3.3				ug/L	113	Standard
	Ag	107	447.0	1.8				ug/L	108	Standard
	Cd	111	119.4	7.1				mg/L	3	Standard
	Cd	114	282.1	4.3				ug/L	20	Standard
>	**In**	115	619630.9	0.5				ug/L	625728	Standard
	Sn	118	855.0	13.6				ug/L	568	Standard
	Sb	123	428.3	12.3				ug/L	612	Standard
	Ba	135	146.3	3.9				ug/L	21	Standard
	Ce	140	45.0	50.9				ug/L	245	Standard
>	**Tb**	159	965634.3	1.4				ug/L	950397	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	454.3	3.7				ug/L	15	Standard
	Tl	205	475.0	1.1				ug/L	13	Standard
	Pb	206	529.3	1.0				ug/L	264	Standard
	Pb	207	492.7	3.7				ug/L	222	Standard
	Pb	208	2058.4	0.9				ug/L	959	Standard
	U	238	404.0	3.6				ug/L	9	Standard
>	**Bi**	209	551272.3	0.2				ug/L	552821	Standard

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Na	23	0.0		mg/L	2	Standard
Mg	24	55.0	39.6	mg/L	55	Standard
K	39	35.0	51.5	mg/L	28	Standard
Ca	43	26.7	28.6	mg/L	27	Standard
Fe	54	131.1	29.5	mg/L	147	Standard
Fe	57	260.0	13.9	mg/L	268	Standard
> **Sc-1**	45	40704.6	1.5	mg/L	41174	Standard
Cl	35	69075.1	1.1	ug/L	69550	Standard
Kr	83	2.0	50.0	ug/L	1	Standard
Br	81	2083.5	5.5	ug/L	1950	Standard
P	31	20977.8	1.6	ug/L	21156	Standard
S	34	3237.0	8.2	ug/L	3419	Standard
Sr	88	66.7	30.3	ug/L	72	Standard
C	12	120.0	16.7	mg/L	163	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	16.7	34.6	mg/L	17	Standard
Dy	164	19.5	0.0	mg/L	16	Standard
Ho-1	165	8.3	69.3	mg/L	7	Standard
Er	166	10.0		mg/L	7	Standard
I	127	19168.8	3.3	mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 2
Report Date/Time: Friday, July 01, 2016 10:36:08
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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Friday, July 01, 2016 10:37:02
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74971.7	1.7				ug/L	76456	Standard
	Be	9	54860.9	3.6	**50.0000**	1.210	2.4	ug/L	20	Standard
	Al	27	8440082.6	0.7	**50.0000**	0.980	2.0	ug/L	1307	Standard
	Sc	45	40865.0	1.5				ug/L	41174	Standard
	Ti	47	32329.8	0.6	**100.0000**	0.832	0.8	ug/L	27	Standard
	V	51	412896.9	0.3	**50.0000**	0.270	0.5	ug/L	1434	Standard
	Cr	52	411678.8	0.9	**50.0000**	0.611	1.2	ug/L	7733	Standard
	Cr	53	51159.6	0.9	**50.0000**	0.580	1.2	ug/L	442	Standard
	Mn	55	380443.4	1.4	**50.0000**	0.789	1.6	ug/L	723	Standard
	Co	59	384667.7	0.9	**50.0000**	0.374	0.7	ug/L	217	Standard
	Ni	60	104566.9	0.5	**50.0000**	0.292	0.6	ug/L	304	Standard
	Cu	65	103056.3	0.1	**50.0000**	0.150	0.3	ug/L	181	Standard
	Zn	66	61622.7	0.7	**50.0000**	0.151	0.3	ug/L	215	Standard
>	**Ge**	72	520018.0	0.4				ug/L	520809	Standard
	As	75	61417.5	0.3	**50.0000**	0.279	0.6	ug/L	-52	Standard
	Se	82	6337.3	1.0	**50.0000**	0.692	1.4	ug/L	17	Standard
	Se-1	77	4335.3	1.3	**50.0000**	0.572	1.1	ug/L	56	Standard
>	**Ga**	71	61.7	40.0				mg/L	25	Standard
	Rb	85	878.4	2.6				ug/L	28	Standard
	Y	89	444837.1	3.4				ug/L	447395	Standard
>	**Rh**	103	30.0	44.1				ug/L	15	Standard
	Mo	98	294287.0	0.6	**100.0000**	0.409	0.4	ug/L	113	Standard
	Ag	107	351901.5	1.0	**50.0000**	0.404	0.8	ug/L	108	Standard
	Cd	111	112966.0	0.5	**50.0000**	0.196	0.4	mg/L	3	Standard
	Cd	114	280940.2	0.5	**50.0000**	0.110	0.2	ug/L	20	Standard
>	**In**	115	612769.1	0.4				ug/L	625728	Standard
	Sn	118	314258.0	2.0	**50.0000**	1.163	2.3	ug/L	568	Standard
	Sb	123	250330.0	0.3	**50.0000**	0.094	0.2	ug/L	612	Standard
	Ba	135	107237.2	0.5	**50.0000**	0.330	0.7	ug/L	21	Standard
	Ce	140	96.7	19.6				ug/L	245	Standard
>	**Tb**	159	945727.5	1.1				ug/L	950397	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	443860.6	0.2	**50.0000**	0.306	0.6	ug/L	15	Standard
	Tl	205	392135.3	1.5	**50.0000**	0.676	1.4	ug/L	13	Standard
	Pb	206	280519.3	0.4	**50.0000**	0.226	0.5	ug/L	264	Standard
	Pb	207	254589.8	0.6	**50.0000**	0.448	0.9	ug/L	222	Standard
	Pb	208	1037250.6	0.5	**50.0000**	0.611	1.2	ug/L	959	Standard
	U	238	392629.2	0.3	**50.0000**	0.515	1.0	ug/L	9	Standard
>	**Bi**	209	544795.2	0.7				ug/L	552821	Standard

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Na	23	3.3	86.6	**5.0000**	4.327	86.5	mg/L	2	Standard
Mg	24	4290.6	8.9	**5.0000**	0.514	10.3	mg/L	55	Standard
K	39	1336.7	14.8	**5.0000**	0.680	13.6	mg/L	28	Standard
Ca	43	78.3	9.8	**5.0000**	0.715	14.3	mg/L	27	Standard
Fe	54	6652.7	2.6	**5.0000**	0.189	3.8	mg/L	147	Standard
Fe	57	1848.4	3.7	**5.0000**	0.193	3.9	mg/L	268	Standard
Sc-1	45	40865.0	1.5				mg/L	41174	Standard
Cl	35	67370.1	1.9				ug/L	69550	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	1980.1	7.8				ug/L	1950	Standard
P	31	22366.5	1.7				ug/L	21156	Standard
S	34	3632.1	4.0				ug/L	3419	Standard
Sr	88	68.3	33.8				ug/L	72	Standard
C	12	116.7	13.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	120.2				mg/L	17	Standard
Dy	164	5.7	108.5				mg/L	16	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	24309.5	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Friday, July 01, 2016 10:40:14
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74573.1	2.4				ug/L	76456	Standard
	Be	9	109282.8	1.9	100.0980	2.509	2.5	ug/L	20	Standard
	Al	27	16601431.1	0.9	99.4425	1.710	1.7	ug/L	1307	Standard
	Sc	45	41180.9	0.8				ug/L	41174	Standard
	Ti	47	65332.6	0.8	201.3970	0.318	0.2	ug/L	27	Standard
	V	51	817909.9	1.4	99.7804	1.578	1.6	ug/L	1434	Standard
	Cr	52	812246.8	1.3	99.9568	0.856	0.9	ug/L	7733	Standard
	Cr	53	100426.9	3.2	99.4382	3.780	3.8	ug/L	442	Standard
	Mn	55	750652.7	0.8	99.5323	0.364	0.4	ug/L	723	Standard
	Co	59	758624.4	0.2	99.4757	0.655	0.7	ug/L	217	Standard
	Ni	60	205495.5	0.6	99.3580	0.343	0.3	ug/L	304	Standard
	Cu	65	201186.2	0.4	98.9880	0.686	0.7	ug/L	181	Standard
	Zn	66	121678.0	0.3	99.6126	1.153	1.2	ug/L	215	Standard
>	Ge	72	518357.9	0.9				ug/L	520809	Standard
	As	75	123132.9	0.9	100.2583	0.732	0.7	ug/L	-52	Standard
	Se	82	12560.6	0.3	99.7710	0.579	0.6	ug/L	17	Standard
	Se-1	77	8548.4	1.2	99.7880	1.005	1.0	ug/L	56	Standard
>	Ga	71	40.0	45.1				mg/L	25	Standard
	Rb	85	1701.8	13.2				ug/L	28	Standard
	Y	89	451914.9	2.5				ug/L	447395	Standard
>	Rh	103	40.0	25.0				ug/L	15	Standard
	Mo	98	592109.5	0.9	201.3215	2.481	1.2	ug/L	113	Standard
	Ag	107	698129.6	0.3	99.9561	0.390	0.4	ug/L	108	Standard
	Cd	111	223398.5	0.3	99.7914	0.348	0.3	mg/L	3	Standard
	Cd	114	550589.1	2.0	99.3411	2.205	2.2	ug/L	20	Standard
>	In	115	608447.5	0.3				ug/L	625728	Standard
	Sn	118	629099.1	1.2	100.4410	1.420	1.4	ug/L	568	Standard
	Sb	123	508420.5	1.6	101.1418	1.887	1.9	ug/L	612	Standard
	Ba	135	210242.6	0.2	99.3661	0.116	0.1	ug/L	21	Standard
	Ce	140	141.7	20.7				ug/L	245	Standard
>	Tb	159	939885.9	0.8				ug/L	950397	Standard
	Ho	165	13.3	21.7				ug/L	7	Standard
	Tl	203	872285.6	0.1	99.6647	0.211	0.2	ug/L	15	Standard
	Tl	205	778762.6	2.1	100.1937	1.912	1.9	ug/L	13	Standard
	Pb	206	549521.0	0.7	99.5257	0.453	0.5	ug/L	264	Standard
	Pb	207	499379.9	0.5	99.5919	0.286	0.3	ug/L	222	Standard
	Pb	208	2044680.9	0.3	99.8400	0.419	0.4	ug/L	959	Standard
	U	238	794936.5	0.3	101.1523	0.190	0.2	ug/L	9	Standard
>	Bi	209	538915.4	0.3				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	8624.1	2.7	**10.0117**	0.211	2.1	mg/L	55	Standard
K	39	2628.6	4.6	**9.9475**	0.505	5.1	mg/L	28	Standard
Ca	43	143.3	11.2	**10.5644**	1.388	13.1	mg/L	27	Standard
Fe	54	12475.4	2.0	**9.6818**	0.117	1.2	mg/L	147	Standard
Fe	57	3570.4	3.6	**10.1632**	0.334	3.3	mg/L	268	Standard
Sc-1	45	41180.9	0.8				mg/L	41174	Standard
Cl	35	66505.0	1.1				ug/L	69550	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	1963.5	9.6				ug/L	1950	Standard
P	31	23055.9	3.6				ug/L	21156	Standard
S	34	3625.4	3.4				ug/L	3419	Standard
Sr	88	81.7	21.5				ug/L	72	Standard
C	12	133.3	30.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	17	Standard
Dy	164	12.1	43.5				mg/L	16	Standard
Ho-1	165	13.3	21.7				mg/L	7	Standard
Er	166	26.7	57.3				mg/L	7	Standard
I	127	3062.0	8.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Friday, July 01, 2016 10:43:27
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73226.6	2.1				ug/L	76456	Standard
	Be	9	55138.5	1.1	**51.4232**	1.173	2.3	ug/L	20	Standard
	Al	27	8364287.3	0.8	**51.0145**	0.701	1.4	ug/L	1307	Standard
	Sc	45	42051.6	1.4				ug/L	41174	Standard
	Ti	47	32632.1	1.2	**99.6299**	0.273	0.3	ug/L	27	Standard
	V	51	416986.8	1.2	**50.3040**	0.153	0.3	ug/L	1434	Standard
	Cr	52	416377.2	0.8	**50.2986**	0.675	1.3	ug/L	7733	Standard
	Cr	53	51450.5	1.0	**50.2662**	0.513	1.0	ug/L	442	Standard
	Mn	55	390114.9	0.6	**51.2101**	0.808	1.6	ug/L	723	Standard
	Co	59	391917.0	0.9	**50.9056**	0.274	0.5	ug/L	217	Standard
	Ni	60	105069.4	0.7	**50.2680**	0.977	1.9	ug/L	304	Standard
	Cu	65	103770.8	0.9	**50.5551**	0.555	1.1	ug/L	181	Standard
	Zn	66	63280.5	0.6	**51.2430**	0.408	0.8	ug/L	215	Standard
>	Ge	72	523154.7	1.4				ug/L	520809	Standard
	As	75	62592.0	0.8	**50.5289**	1.093	2.2	ug/L	-52	Standard
	Se	82	6421.3	0.7	**50.4779**	0.451	0.9	ug/L	17	Standard
	Se-1	77	4421.6	3.1	**50.8264**	2.224	4.4	ug/L	56	Standard
>	Ga	71	38.3	30.1				mg/L	25	Standard
	Rb	85	941.7	14.7				ug/L	28	Standard
	Y	89	448213.9	1.5				ug/L	447395	Standard
>	Rh	103	35.0	49.5				ug/L	15	Standard
	Mo	98	294940.7	1.4	**96.3152**	0.728	0.8	ug/L	113	Standard
	Ag	107	357502.4	1.0	**49.1663**	0.717	1.5	ug/L	108	Standard
	Cd	111	115768.3	0.2	**49.6787**	0.607	1.2	mg/L	3	Standard
	Cd	114	281209.7	0.6	**48.7423**	0.787	1.6	ug/L	20	Standard
>	In	115	633404.9	1.1				ug/L	625728	Standard
	Sn	118	321628.0	0.8	**49.2868**	0.611	1.2	ug/L	568	Standard
	Sb	123	258956.5	0.4	**49.4694**	0.480	1.0	ug/L	612	Standard
	Ba	135	108217.8	0.6	**49.1275**	0.780	1.6	ug/L	21	Standard
	Ce	140	141.7	45.4				ug/L	245	Standard
>	Tb	159	959365.6	0.2				ug/L	950397	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	443048.1	0.6	**49.6569**	0.744	1.5	ug/L	15	Standard
	Tl	205	398039.0	0.4	**50.2306**	0.560	1.1	ug/L	13	Standard
	Pb	206	281925.4	0.1	**50.0662**	0.613	1.2	ug/L	264	Standard
	Pb	207	256662.1	1.0	**50.1891**	0.845	1.7	ug/L	222	Standard
	Pb	208	1053544.2	0.4	**50.4385**	0.548	1.1	ug/L	959	Standard
	U	238	395989.8	1.3	**49.4226**	0.077	0.2	ug/L	9	Standard
>	Bi	209	549436.2	1.2				ug/L	552821	Standard

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Na	23	1.7	173.2	**4.9322**	8.534	173.0	mg/L	2	Standard
Mg	24	4375.6	3.8	**4.9437**	0.134	2.7	mg/L	55	Standard
K	39	1525.1	4.3	**5.5930**	0.165	3.0	mg/L	28	Standard
Ca	43	100.0	13.2	**6.4519**	1.261	19.5	mg/L	27	Standard
Fe	54	6527.6	4.7	**4.9145**	0.265	5.4	mg/L	147	Standard
Fe	57	1855.1	8.5	**4.7782**	0.491	10.3	mg/L	268	Standard
Sc-1	45	42051.6	1.4				mg/L	41174	Standard
Cl	35	67170.6	2.2				ug/L	69550	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	1903.5	10.0				ug/L	1950	Standard
P	31	22763.8	0.6				ug/L	21156	Standard
S	34	3593.8	4.0				ug/L	3419	Standard
Sr	88	85.0	40.8				ug/L	72	Standard
C	12	133.3	15.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	132.3				mg/L	17	Standard
Dy	164	16.5	70.8				mg/L	16	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	23309.6	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.846		
Al	27	102.029		
Sc	45			
Ti	47	99.630		
V	51	100.608		
Cr	52	100.597		
Cr	53			
Mn	55	102.420		
Co	59	101.811		
Ni	60	100.536		
Cu	65	101.110		
Zn	66	102.486		
Ge	72		100.450	
As	75	101.058		
Se	82	100.956		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	96.315		
Ag	107	98.333		
Cd	111	99.357		
Cd	114			
> In	115		101.227	
Sn	118	98.574		
Sb	123	98.939		
Ba	135	98.255		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.314		
Tl	205			
Pb	206	100.132		
Pb	207	100.378		
Pb	208	100.877		
U	238	98.845		
> Bi	209		99.388	
Na	23	98.644		
Mg	24	98.874		
K	39	111.859		
Ca	43	129.039		
Fe	54	98.290		
Fe	57	95.564		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	K	39	
QC Std 1	Ca	43	

Sample ID: QC Std 1
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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Friday, July 01, 2016 10:46:40
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73082.5	1.7				ug/L	76456	Standard
	Be	9	35.0	65.5	**0.0129**	0.022	168.2	ug/L	20	Standard
	Al	27	2900.3	16.4	**0.0075**	0.003	39.6	ug/L	1307	Standard
	Sc	45	41413.2	2.8				ug/L	41174	Standard
	Ti	47	35.3	18.8	**0.0225**	0.019	85.6	ug/L	27	Standard
	V	51	1420.2	5.2	**-0.0279**	0.008	27.9	ug/L	1434	Standard
	Cr	52	6961.6	2.3	**-0.1197**	0.018	14.9	ug/L	7733	Standard
	Cr	53	446.7	2.3	**0.0198**	0.006	30.4	ug/L	442	Standard
	Mn	55	849.7	3.5	**0.0096**	0.004	44.1	ug/L	723	Standard
	Co	59	304.7	6.6	**0.0099**	0.003	30.2	ug/L	217	Standard
	Ni	60	329.3	2.5	**0.0037**	0.005	136.9	ug/L	304	Standard
	Cu	65	206.0	9.7	**0.0257**	0.010	38.8	ug/L	181	Standard
	Zn	66	265.3	8.1	**0.0337**	0.016	46.4	ug/L	215	Standard
>	**Ge**	72	527031.7	1.0				ug/L	520809	Standard
	As	75	-62.3	20.0	**-0.0048**	0.010	219.6	ug/L	-52	Standard
	Se	82	14.1	36.1	**-0.0165**	0.039	235.1	ug/L	17	Standard
	Se-1	77	48.7	10.1	**-0.1219**	0.059	48.3	ug/L	56	Standard
>	**Ga**	71	25.0	20.0				mg/L	25	Standard
	Rb	85	26.7	84.5				ug/L	28	Standard
	Y	89	456491.7	1.0				ug/L	447395	Standard
>	**Rh**	103	26.7	57.3				ug/L	15	Standard
	Mo	98	335.9	6.6	**0.0861**	0.007	7.7	ug/L	113	Standard
	Ag	107	180.3	7.4	**0.0120**	0.002	16.2	ug/L	108	Standard
	Cd	111	27.1	26.6	**0.0093**	0.003	33.3	mg/L	3	Standard
	Cd	114	66.3	29.5	**0.0115**	0.003	29.4	ug/L	20	Standard
>	**In**	115	631231.9	0.6				ug/L	625728	Standard
	Sn	118	1070.0	25.4	**0.0807**	0.043	52.8	ug/L	568	Standard
	Sb	123	986.7	28.6	**0.1557**	0.055	35.3	ug/L	612	Standard
	Ba	135	49.3	8.4	**0.0046**	0.002	42.1	ug/L	21	Standard
	Ce	140	21.7	58.1				ug/L	245	Standard
>	**Tb**	159	958993.9	0.7				ug/L	950397	Standard
	Ho	165	1.7	173.2				ug/L	7	Standard
	Tl	203	132.3	25.5	**0.0140**	0.004	27.2	ug/L	15	Standard
	Tl	205	123.3	29.3	**0.0057**	0.005	80.1	ug/L	13	Standard
	Pb	206	354.7	6.4	**0.0189**	0.004	22.4	ug/L	264	Standard
	Pb	207	298.7	4.5	**0.0120**	0.003	23.0	ug/L	222	Standard
	Pb	208	1215.7	2.5	**0.0096**	0.002	16.0	ug/L	959	Standard
	U	238	110.7	12.5	**0.0135**	0.002	13.1	ug/L	9	Standard
>	**Bi**	209	552384.0	0.3				ug/L	552821	Standard

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Na	23	1.7	173.2	**5.1172**	8.855	173.0	mg/L	2	Standard
Mg	24	61.7	49.5	**0.0114**	0.035	305.2	mg/L	55	Standard
K	39	43.3	29.0	**0.0349**	0.052	149.9	mg/L	28	Standard
Ca	43	15.0	66.7	**-1.1126**	0.876	78.7	mg/L	27	Standard
Fe	54	155.9	11.0	**0.0227**	0.013	57.8	mg/L	147	Standard
Fe	57	246.7	5.1	**-0.0507**	0.023	46.3	mg/L	268	Standard
> **Sc-1**	45	41413.2	2.8				mg/L	41174	Standard
Cl	35	67081.5	1.7				ug/L	69550	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	1926.8	4.5				ug/L	1950	Standard
P	31	22241.3	1.7				ug/L	21156	Standard
S	34	3415.4	3.5				ug/L	3419	Standard
Sr	88	56.7	39.8				ug/L	72	Standard
C	12	120.0	30.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	17	Standard
Dy	164	12.7	43.5				mg/L	16	Standard
Ho-1	165	1.7	173.2				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	18017.4	0.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.195	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.880	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.921	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Na	23	
QC Std 2	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Friday, July 01, 2016 10:49:53
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71014.5	3.1				ug/L	76456	Standard
	Be	9	276.7	13.7	**0.2467**	0.041	16.7	ug/L	20	Standard
	Al	27	1433.4	19.2	**-0.0012**	0.001	117.3	ug/L	1307	Standard
	Sc	45	40355.3	1.3				ug/L	41174	Standard
	Ti	47	21.0	29.7	**-0.0191**	0.020	103.3	ug/L	27	Standard
	V	51	4354.1	2.4	**0.3388**	0.016	4.6	ug/L	1434	Standard
	Cr	52	13385.9	0.6	**0.7089**	0.010	1.4	ug/L	7733	Standard
	Cr	53	1290.1	5.1	**0.8778**	0.062	7.0	ug/L	442	Standard
	Mn	55	4164.2	0.5	**0.4567**	0.004	0.8	ug/L	723	Standard
	Co	59	3022.0	3.5	**0.3708**	0.015	4.0	ug/L	217	Standard
	Ni	60	3422.7	3.0	**1.5204**	0.058	3.8	ug/L	304	Standard
	Cu	65	1708.4	1.3	**0.7752**	0.014	1.9	ug/L	181	Standard
	Zn	66	7949.4	1.3	**6.4016**	0.063	1.0	ug/L	215	Standard
>	**Ge**	72	513410.3	0.5				ug/L	520809	Standard
	As	75	420.2	2.0	**0.3904**	0.006	1.5	ug/L	-52	Standard
	Se	82	57.4	15.1	**0.3348**	0.072	21.4	ug/L	17	Standard
	Se-1	77	86.3	6.6	**0.3399**	0.069	20.2	ug/L	56	Standard
>	**Ga**	71	38.3	7.5				mg/L	25	Standard
	Rb	85	15.0	115.5				ug/L	28	Standard
	Y	89	441603.6	1.2				ug/L	447395	Standard
>	**Rh**	103	16.7	17.3				ug/L	15	Standard
	Mo	98	125.5	7.4	**0.0191**	0.003	17.3	ug/L	113	Standard
	Ag	107	2803.6	3.0	**0.3918**	0.011	2.9	ug/L	108	Standard
	Cd	111	534.5	1.7	**0.2383**	0.004	1.8	mg/L	3	Standard
	Cd	114	1340.9	4.1	**0.2439**	0.009	3.8	ug/L	20	Standard
>	**In**	115	603601.4	0.4				ug/L	625728	Standard
	Sn	118	588.3	20.4	**0.0106**	0.020	185.6	ug/L	568	Standard
	Sb	123	1982.0	3.1	**0.3639**	0.013	3.7	ug/L	612	Standard
	Ba	135	1500.1	4.2	**0.6970**	0.033	4.7	ug/L	21	Standard
	Ce	140	13.3	57.3				ug/L	245	Standard
>	**Tb**	159	923552.7	1.3				ug/L	950397	Standard
	Ho	165	18.3	41.7				ug/L	7	Standard
	Tl	203	722.4	6.5	**0.0815**	0.005	6.2	ug/L	15	Standard
	Tl	205	658.3	9.8	**0.0746**	0.008	10.9	ug/L	13	Standard
	Pb	206	1350.7	0.3	**0.2001**	0.002	0.8	ug/L	264	Standard
	Pb	207	1167.0	2.9	**0.1859**	0.007	3.6	ug/L	222	Standard
	Pb	208	4949.3	2.3	**0.1926**	0.005	2.7	ug/L	959	Standard
	U	238	3051.6	1.8	**0.3866**	0.007	1.9	ug/L	9	Standard
>	**Bi**	209	540899.0	0.4				ug/L	552821	Standard

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Na	23	3.3	86.6	**10.1911**	8.823	86.6	mg/L	2	Standard
Mg	24	73.3	17.2	**0.0273**	0.016	58.3	mg/L	55	Standard
K	39	43.3	17.6	**0.0384**	0.030	78.8	mg/L	28	Standard
Ca	43	21.7	13.3	**-0.4451**	0.256	57.4	mg/L	27	Standard
Fe	54	112.1	10.4	**-0.0092**	0.008	90.3	mg/L	147	Standard
Fe	57	220.0	10.4	**-0.1144**	0.071	61.7	mg/L	268	Standard
Sc-1	45	40355.3	1.3				mg/L	41174	Standard
Cl	35	64985.1	1.0				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	1890.1	8.2				ug/L	1950	Standard
P	31	15399.5	2.8				ug/L	21156	Standard
S	34	3492.1	3.5				ug/L	3419	Standard
Sr	88	78.3	3.7				ug/L	72	Standard
C	12	140.0	14.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	17	Standard
Dy	164	12.9	182.9				mg/L	16	Standard
Ho-1	165	18.3	41.7				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	2308.5	15.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	123.368		
Al	27	-0.122		
Sc	45			
Ti	47			
V	51	84.694		
Cr	52	88.608		
Cr	53			
Mn	55	91.340		
Co	59	92.690		
Ni	60	95.026		
Cu	65	96.904		
Zn	66	102.426		
Ge	72		98.579	
As	75	97.610		
Se	82	83.691		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	97.953		
Cd	111	99.297		
Cd	114			
> In	115			96.464
Sn	118			
Sb	123	90.972		
Ba	135	92.929		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.839		
Tl	205			
Pb	206			
Pb	207			
Pb	208	96.295		
U	238	96.660		
> Bi	209			97.843
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Friday, July 01, 2016 10:53:04
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72812.9	1.2				ug/L	76456	Standard
	Be	9	36.7	20.8	**0.0145**	0.007	47.6	ug/L	20	Standard
	Al	27	8248243.5	1.3	**50.5822**	0.139	0.3	ug/L	1307	Standard
	Sc	45	42120.1	1.9				ug/L	41174	Standard
	Ti	47	35838.7	1.4	**108.8763**	0.923	0.8	ug/L	27	Standard
	V	51	1796.6	6.7	**0.0180**	0.017	92.8	ug/L	1434	Standard
	Cr	52	8717.2	1.4	**0.0974**	0.005	5.1	ug/L	7733	Standard
	Cr	53	5294.3	3.4	**4.7714**	0.146	3.1	ug/L	442	Standard
	Mn	55	1499.1	2.5	**0.0949**	0.007	6.9	ug/L	723	Standard
	Co	59	500.3	4.2	**0.0353**	0.003	8.8	ug/L	217	Standard
	Ni	60	1153.7	2.9	**0.3978**	0.021	5.4	ug/L	304	Standard
	Cu	65	743.0	1.9	**0.2866**	0.009	3.1	ug/L	181	Standard
	Zn	66	1750.4	2.4	**1.2353**	0.049	3.9	ug/L	215	Standard
>	Ge	72	525789.4	1.1				ug/L	520809	Standard
	As	75	-56.5	78.0	**0.0000**	0.035	94213.4	ug/L	-52	Standard
	Se	82	21.9	13.2	**0.0450**	0.024	52.9	ug/L	17	Standard
	Se-1	77	369.0	3.8	**3.5902**	0.118	3.3	ug/L	56	Standard
>	Ga	71	190.0	4.6				mg/L	25	Standard
	Rb	85	1346.7	12.1				ug/L	28	Standard
	Y	89	446130.3	1.4				ug/L	447395	Standard
>	Rh	103	20.0	66.1				ug/L	15	Standard
	Mo	98	294809.8	0.7	**99.0666**	0.826	0.8	ug/L	113	Standard
	Ag	107	518.7	43.1	**0.0605**	0.032	52.1	ug/L	108	Standard
	Cd	111	-203.1	6.2	**-0.0920**	0.006	6.1	mg/L	3	Standard
	Cd	114	646.5	2.5	**0.1153**	0.003	2.6	ug/L	20	Standard
>	In	115	615550.0	0.1				ug/L	625728	Standard
	Sn	118	1126.7	15.8	**0.0937**	0.028	29.8	ug/L	568	Standard
	Sb	123	769.4	36.4	**0.1176**	0.055	46.8	ug/L	612	Standard
	Ba	135	907.7	4.8	**0.4062**	0.020	4.9	ug/L	21	Standard
	Ce	140	310.0	5.6				ug/L	245	Standard
>	Tb	159	945278.1	1.3				ug/L	950397	Standard
	Ho	165	18.3	41.7				ug/L	7	Standard
	Tl	203	340.3	40.4	**0.0383**	0.016	41.1	ug/L	15	Standard
	Tl	205	238.3	11.6	**0.0211**	0.004	17.6	ug/L	13	Standard
	Pb	206	679.7	9.3	**0.0799**	0.011	14.4	ug/L	264	Standard
	Pb	207	580.3	10.0	**0.0701**	0.011	16.1	ug/L	222	Standard
	Pb	208	2295.1	2.9	**0.0642**	0.002	3.2	ug/L	959	Standard
	U	238	77.3	37.1	**0.0096**	0.004	37.6	ug/L	9	Standard
>	Bi	209	536774.2	1.2				ug/L	552821	Standard

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Na	23	3.3	173.2	**9.7734**	16.919	173.1	mg/L	2	Standard
Mg	24	10777.2	2.6	**12.2531**	0.537	4.4	mg/L	55	Standard
K	39	1383.4	9.9	**5.0519**	0.468	9.3	mg/L	28	Standard
Ca	43	138.3	7.5	**9.8265**	0.682	6.9	mg/L	27	Standard
Fe	54	16161.2	1.3	**12.2930**	0.303	2.5	mg/L	147	Standard
Fe	57	4369.0	2.7	**12.3260**	0.594	4.8	mg/L	268	Standard
> **Sc-1**	45	42120.1	1.9				mg/L	41174	Standard
Cl	35	65421.7	2.5				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	1906.8	13.4				ug/L	1950	Standard
P	31	21114.7	2.7				ug/L	21156	Standard
S	34	3085.3	2.7				ug/L	3419	Standard
Sr	88	60.0	33.3				ug/L	72	Standard
C	12	210.0	31.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	106.7	54.9				mg/L	17	Standard
Dy	164	19.7	50.8				mg/L	16	Standard
Ho-1	165	18.3	41.7				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	3048.6	5.5				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27	1.012		
	Sc	45			
	Ti	47	108.876		
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.956	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	99.067		
Ag	107			
Cd	111			
Cd	114			
> In	115			98.373
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209			97.097
Na	23	78.187		
Mg	24	245.062		
K	39	101.039		
Ca	43	65.510		
Fe	54	98.344		
Fe	57	98.608		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Ba	135	
QC Std 4	Na	23	

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QC Std 4	Mg	24
QC Std 4	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Friday, July 01, 2016 10:56:16
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75903.0	2.2				ug/L	76456	Standard
	Be	9	113931.8	1.0	**102.5442**	3.204	3.1	ug/L	20	Standard
	Al	27	7231990.8	1.8	**42.5454**	0.182	0.4	ug/L	1307	Standard
	Sc	45	42432.7	2.4				ug/L	41174	Standard
	Ti	47	30737.8	1.0	**92.8199**	0.734	0.8	ug/L	27	Standard
	V	51	833696.6	0.9	**99.6740**	0.237	0.2	ug/L	1434	Standard
	Cr	52	810709.3	1.6	**97.7572**	1.161	1.2	ug/L	7733	Standard
	Cr	53	105220.8	1.3	**102.1011**	1.018	1.0	ug/L	442	Standard
	Mn	55	763205.2	1.1	**99.1800**	1.093	1.1	ug/L	723	Standard
	Co	59	765446.7	1.5	**98.3652**	1.221	1.2	ug/L	217	Standard
	Ni	60	204863.4	0.8	**97.0735**	0.398	0.4	ug/L	304	Standard
	Cu	65	204176.2	1.0	**98.4523**	0.417	0.4	ug/L	181	Standard
	Zn	66	128188.4	1.6	**102.8491**	1.339	1.3	ug/L	215	Standard
>	Ge	72	528896.0	0.7				ug/L	520809	Standard
	As	75	125724.6	1.1	**100.3319**	1.466	1.5	ug/L	-52	Standard
	Se	82	12709.7	1.6	**98.9446**	1.879	1.9	ug/L	17	Standard
	Se-1	77	8838.2	1.3	**101.1222**	0.967	1.0	ug/L	56	Standard
>	Ga	71	141.7	2.0				mg/L	25	Standard
	Rb	85	858.4	8.2				ug/L	28	Standard
	Y	89	450945.0	1.6				ug/L	447395	Standard
>	Rh	103	58.3	17.8				ug/L	15	Standard
	Mo	98	252063.2	0.9	**84.2200**	0.957	1.1	ug/L	113	Standard
	Ag	107	620939.1	2.7	**87.3716**	1.954	2.2	ug/L	108	Standard
	Cd	111	226578.4	0.5	**99.4783**	0.760	0.8	mg/L	3	Standard
	Cd	114	558953.6	2.4	**99.1106**	1.789	1.8	ug/L	20	Standard
>	In	115	619069.3	0.8				ug/L	625728	Standard
	Sn	118	1101.7	13.0	**0.0889**	0.024	26.9	ug/L	568	Standard
	Sb	123	495062.3	2.0	**96.7840**	1.258	1.3	ug/L	612	Standard
	Ba	135	212436.2	0.4	**98.6825**	0.524	0.5	ug/L	21	Standard
	Ce	140	106.7	5.4				ug/L	245	Standard
>	Tb	159	965012.6	0.9				ug/L	950397	Standard
	Ho	165	11.7	89.2				ug/L	7	Standard
	Tl	203	877864.5	0.6	**98.2340**	0.597	0.6	ug/L	15	Standard
	Tl	205	786061.6	0.2	**99.0500**	0.141	0.1	ug/L	13	Standard
	Pb	206	570990.7	1.2	**101.2826**	1.116	1.1	ug/L	264	Standard
	Pb	207	499235.8	0.8	**97.5091**	0.551	0.6	ug/L	222	Standard
	Pb	208	2063776.1	0.5	**98.6933**	0.341	0.3	ug/L	959	Standard
	U	238	778595.3	0.8	**97.0297**	0.672	0.7	ug/L	9	Standard
>	Bi	209	550260.8	0.2				ug/L	552821	Standard

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Na	23	5.0	100.0	**14.6626**	14.607	99.6	mg/L	2	Standard
Mg	24	9379.6	3.3	**10.5777**	0.497	4.7	mg/L	55	Standard
K	39	1123.4	14.5	**4.0598**	0.702	17.3	mg/L	28	Standard
Ca	43	151.7	14.9	**10.9556**	2.287	20.9	mg/L	27	Standard
Fe	54	13756.2	0.9	**10.3738**	0.327	3.2	mg/L	147	Standard
Fe	57	3798.8	1.3	**10.5253**	0.250	2.4	mg/L	268	Standard
> **Sc-1**	45	42432.7	2.4				mg/L	41174	Standard
Cl	35	63162.8	2.2				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	2016.8	12.5				ug/L	1950	Standard
P	31	19924.8	3.7				ug/L	21156	Standard
S	34	3145.3	1.7				ug/L	3419	Standard
Sr	88	73.3	10.4				ug/L	72	Standard
C	12	216.7	17.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	17	Standard
Dy	164	29.4	59.5				mg/L	16	Standard
Ho-1	165	11.7	89.2				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	7	Standard
I	127	3137.0	10.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	102.544		
Al	27	0.851		
Sc	45			
Ti	47	92.820		
V	51	99.674		
Cr	52	97.757		
Cr	53			
Mn	55	99.180		
Co	59	98.365		
Ni	60	97.073		
Cu	65	98.452		
Zn	66	102.849		
> Ge	72		101.553	
As	75	100.332		
Se	82	98.945		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	84.220		
Ag	107	87.372		
Cd	111	99.478		
Cd	114			
> In	115		98.936	
Sn	118			
Sb	123	96.784		
Ba	135	98.683		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.234		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.693		
U	238	97.030		
> Bi	209		99.537	
Na	23	117.301		
Mg	24	211.554		
K	39	81.196		
Ca	43	73.037		
Fe	54	82.990		
Fe	57	84.202		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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QC Std 5	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 10:59:29
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	76397.1	0.4				ug/L	76456	Standard
	Be	9	56429.9	0.6	**50.4288**	0.323	0.6	ug/L	20	Standard
	Al	27	8608329.7	1.2	**50.3148**	0.658	1.3	ug/L	1307	Standard
	Sc	45	41418.2	1.5				ug/L	41174	Standard
	Ti	47	32560.9	0.4	**99.6282**	1.278	1.3	ug/L	27	Standard
	V	51	420616.9	0.3	**50.8527**	0.410	0.8	ug/L	1434	Standard
	Cr	52	416237.8	1.3	**50.3856**	0.640	1.3	ug/L	7733	Standard
	Cr	53	51529.2	2.3	**50.4433**	0.671	1.3	ug/L	442	Standard
	Mn	55	384144.6	2.2	**50.5271**	1.192	2.4	ug/L	723	Standard
	Co	59	391365.2	2.6	**50.9408**	1.337	2.6	ug/L	217	Standard
	Ni	60	104660.9	0.3	**50.1718**	0.419	0.8	ug/L	304	Standard
	Cu	65	103744.3	0.5	**50.6474**	0.422	0.8	ug/L	181	Standard
	Zn	66	61920.9	0.7	**50.2420**	0.301	0.6	ug/L	215	Standard
>	Ge	72	522053.0	1.0				ug/L	520809	Standard
	As	75	62496.7	0.9	**50.5498**	0.506	1.0	ug/L	-52	Standard
	Se	82	6394.4	1.6	**50.3673**	0.526	1.0	ug/L	17	Standard
	Se-1	77	4303.6	0.6	**49.5434**	0.744	1.5	ug/L	56	Standard
>	Ga	71	55.0	9.1				mg/L	25	Standard
	Rb	85	888.4	10.1				ug/L	28	Standard
	Y	89	456826.7	1.0				ug/L	447395	Standard
>	Rh	103	20.0	66.1				ug/L	15	Standard
	Mo	98	297194.2	1.6	**98.9144**	2.943	3.0	ug/L	113	Standard
	Ag	107	358131.2	0.8	**50.1903**	1.051	2.1	ug/L	108	Standard
	Cd	111	114353.1	0.3	**50.0023**	0.782	1.6	mg/L	3	Standard
	Cd	114	281397.0	1.0	**49.6948**	0.508	1.0	ug/L	20	Standard
>	In	115	621643.5	1.3				ug/L	625728	Standard
	Sn	118	312305.8	0.1	**48.7658**	0.722	1.5	ug/L	568	Standard
	Sb	123	262685.9	0.2	**51.1341**	0.568	1.1	ug/L	612	Standard
	Ba	135	107196.2	0.5	**49.5868**	0.878	1.8	ug/L	21	Standard
	Ce	140	91.7	19.2				ug/L	245	Standard
>	Tb	159	949369.3	0.9				ug/L	950397	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	446446.9	0.3	**50.5283**	0.234	0.5	ug/L	15	Standard
	Tl	205	397524.5	2.6	**50.6566**	1.177	2.3	ug/L	13	Standard
	Pb	206	283032.1	0.6	**50.7560**	0.110	0.2	ug/L	264	Standard
	Pb	207	256737.6	0.4	**50.6961**	0.167	0.3	ug/L	222	Standard
	Pb	208	1049117.6	0.6	**50.7200**	0.161	0.3	ug/L	959	Standard
	U	238	395685.5	0.4	**49.8743**	0.152	0.3	ug/L	9	Standard
>	Bi	209	544048.8	0.4				ug/L	552821	Standard

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Na	23	3.3	173.2	**9.9687**	17.258	173.1	mg/L	2	Standard
Mg	24	4517.3	2.2	**5.1854**	0.050	1.0	mg/L	55	Standard
K	39	1296.7	2.0	**4.8131**	0.164	3.4	mg/L	28	Standard
Ca	43	80.0	16.5	**4.7867**	1.292	27.0	mg/L	27	Standard
Fe	54	6442.2	3.1	**4.9235**	0.148	3.0	mg/L	147	Standard
Fe	57	1841.8	2.1	**4.8233**	0.186	3.8	mg/L	268	Standard
Sc-1	45	41418.2	1.5				mg/L	41174	Standard
Cl	35	65714.2	0.5				ug/L	69550	Standard
Kr	83	3.0	33.3				ug/L	1	Standard
Br	81	1946.8	7.2				ug/L	1950	Standard
P	31	21396.8	2.5				ug/L	21156	Standard
S	34	3327.0	3.8				ug/L	3419	Standard
Sr	88	70.0	18.9				ug/L	72	Standard
C	12	130.0	20.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	17	Standard
Dy	164	9.5	107.6				mg/L	16	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	23620.1	0.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	100.858		
Al	27	100.630		
Sc	45			
Ti	47	99.628		
V	51	101.705		
Cr	52	100.771		
Cr	53			
Mn	55	101.054		
Co	59	101.882		
Ni	60	100.344		
Cu	65	101.295		
Zn	66	100.484		
Ge	72		100.239	
As	75	101.100		
Se	82	100.735		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	98.914		
Ag	107	100.381		
Cd	111	100.005		
Cd	114			
In	115			99.347
Sn	118	97.532		
Sb	123	102.268		
Ba	135	99.174		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.057		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.440		
U	238	99.749		
Bi	209			98.413
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 11:02:41
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76638.3	0.9				ug/L	76456	Standard
	Be	9	45.0	69.4	**0.0201**	0.027	136.2	ug/L	20	Standard
	Al	27	2771.9	19.2	**0.0059**	0.003	49.8	ug/L	1307	Standard
	Sc	45	41874.5	1.3				ug/L	41174	Standard
	Ti	47	34.3	22.6	**0.0199**	0.023	116.0	ug/L	27	Standard
	V	51	1314.7	3.0	**-0.0400**	0.005	13.2	ug/L	1434	Standard
	Cr	52	7063.3	2.5	**-0.1041**	0.024	23.4	ug/L	7733	Standard
	Cr	53	583.3	6.1	**0.1556**	0.035	22.3	ug/L	442	Standard
	Mn	55	795.7	2.1	**0.0029**	0.003	97.4	ug/L	723	Standard
	Co	59	301.0	14.0	**0.0095**	0.006	58.4	ug/L	217	Standard
	Ni	60	322.3	4.2	**0.0009**	0.006	613.3	ug/L	304	Standard
	Cu	65	188.3	9.4	**0.0175**	0.009	51.5	ug/L	181	Standard
	Zn	66	246.3	14.0	**0.0191**	0.028	144.2	ug/L	215	Standard
>	**Ge**	72	525121.4	0.6				ug/L	520809	Standard
	As	75	-40.2	86.9	**0.0130**	0.028	214.4	ug/L	-52	Standard
	Se	82	15.7	75.3	**-0.0027**	0.093	3488.1	ug/L	17	Standard
	Se-1	77	53.7	18.4	**-0.0615**	0.118	192.4	ug/L	56	Standard
>	**Ga**	71	31.7	18.2				mg/L	25	Standard
	Rb	85	18.3	15.7				ug/L	28	Standard
	Y	89	447115.8	1.8				ug/L	447395	Standard
>	**Rh**	103	16.7	17.3				ug/L	15	Standard
	Mo	98	330.0	12.1	**0.0850**	0.013	15.3	ug/L	113	Standard
	Ag	107	352.0	8.7	**0.0361**	0.004	11.5	ug/L	108	Standard
	Cd	111	29.4	26.4	**0.0104**	0.003	32.2	mg/L	3	Standard
	Cd	114	71.8	39.3	**0.0126**	0.005	39.2	ug/L	20	Standard
>	**In**	115	626402.7	0.2				ug/L	625728	Standard
	Sn	118	865.0	27.7	**0.0501**	0.037	74.4	ug/L	568	Standard
	Sb	123	1603.3	32.0	**0.2763**	0.100	36.1	ug/L	612	Standard
	Ba	135	44.0	23.9	**0.0023**	0.005	210.3	ug/L	21	Standard
	Ce	140	16.7	34.6				ug/L	245	Standard
>	**Tb**	159	964218.0	1.0				ug/L	950397	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	134.0	19.6	**0.0140**	0.003	21.2	ug/L	15	Standard
	Tl	205	110.0	16.4	**0.0039**	0.002	58.2	ug/L	13	Standard
	Pb	206	338.3	8.4	**0.0154**	0.006	35.8	ug/L	264	Standard
	Pb	207	297.0	6.8	**0.0111**	0.004	39.6	ug/L	222	Standard
	Pb	208	1217.7	7.2	**0.0091**	0.005	50.4	ug/L	959	Standard
	U	238	104.0	26.4	**0.0125**	0.003	27.7	ug/L	9	Standard
>	**Bi**	209	558778.4	1.0				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	40.0	45.1	**-0.0142**	0.021	147.6	mg/L	55	Standard
K	39	25.0	72.1	**-0.0375**	0.066	177.3	mg/L	28	Standard
Ca	43	30.0	33.3	**0.2279**	0.902	395.6	mg/L	27	Standard
Fe	54	134.1	12.9	**0.0047**	0.015	308.3	mg/L	147	Standard
Fe	57	221.7	27.3	**-0.1357**	0.173	127.8	mg/L	268	Standard
> **Sc-1**	45	41874.5	1.3				mg/L	41174	Standard
Cl	35	67946.0	1.7				ug/L	69550	Standard
Kr	83	1.0	173.2				ug/L	1	Standard
Br	81	1943.5	9.7				ug/L	1950	Standard
P	31	20762.6	2.5				ug/L	21156	Standard
S	34	3392.0	1.6				ug/L	3419	Standard
Sr	88	48.3	36.3				ug/L	72	Standard
C	12	116.7	42.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	89.2				mg/L	17	Standard
Dy	164	15.9	71.9				mg/L	16	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	7	Standard
I	127	17685.3	1.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.828	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.108
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.078
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW 78 WG574416-04
Sample Date/Time: Friday, July 01, 2016 11:05:53
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76067.2	2.6				ug/L	76456	Standard
	Be	9	91.7	22.0	**0.0624**	0.018	28.1	ug/L	20	Standard
	Al	27	9900.0	18.4	**0.0479**	0.010	21.7	ug/L	1307	Standard
	Sc	45	42185.3	1.2				ug/L	41174	Standard
	Ti	47	37.3	6.7	**0.0291**	0.007	24.8	ug/L	27	Standard
	V	51	1740.2	8.5	**0.0114**	0.018	156.7	ug/L	1434	Standard
	Cr	52	8205.6	2.3	**0.0360**	0.018	50.7	ug/L	7733	Standard
	Cr	53	613.3	22.1	**0.1846**	0.130	70.5	ug/L	442	Standard
	Mn	55	2289.5	4.2	**0.1986**	0.011	5.7	ug/L	723	Standard
	Co	59	620.0	11.0	**0.0508**	0.009	16.8	ug/L	217	Standard
	Ni	60	519.3	1.9	**0.0951**	0.005	5.1	ug/L	304	Standard
	Cu	65	329.0	6.1	**0.0858**	0.009	10.4	ug/L	181	Standard
	Zn	66	3237.3	0.8	**2.4406**	0.012	0.5	ug/L	215	Standard
>	**Ge**	72	525088.2	0.5				ug/L	520809	Standard
	As	75	30.8	108.7	**0.0699**	0.027	38.5	ug/L	-52	Standard
	Se	82	25.8	16.5	**0.0760**	0.033	43.0	ug/L	17	Standard
	Se-1	77	68.3	8.1	**0.1083**	0.066	60.6	ug/L	56	Standard
>	**Ga**	71	20.0	66.1				mg/L	25	Standard
	Rb	85	38.3	7.5				ug/L	28	Standard
	Y	89	448293.9	2.2				ug/L	447395	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	197.6	7.0	**0.0411**	0.005	11.2	ug/L	113	Standard
	Ag	107	356.3	27.8	**0.0365**	0.014	37.3	ug/L	108	Standard
	Cd	111	135.0	20.3	**0.0560**	0.012	21.0	mg/L	3	Standard
	Cd	114	292.8	13.1	**0.0511**	0.007	12.9	ug/L	20	Standard
>	**In**	115	628756.6	0.3				ug/L	625728	Standard
	Sn	118	890.0	6.8	**0.0534**	0.009	17.4	ug/L	568	Standard
	Sb	123	903.8	20.1	**0.1404**	0.035	25.1	ug/L	612	Standard
	Ba	135	176.0	12.6	**0.0626**	0.010	15.9	ug/L	21	Standard
	Ce	140	53.3	61.0				ug/L	245	Standard
>	**Tb**	159	955139.7	2.0				ug/L	950397	Standard
	Ho	165	11.7	49.5				ug/L	7	Standard
	Tl	203	548.0	21.5	**0.0598**	0.012	20.5	ug/L	15	Standard
	Tl	205	510.0	24.7	**0.0537**	0.015	27.8	ug/L	13	Standard
	Pb	206	677.0	11.7	**0.0750**	0.013	16.8	ug/L	264	Standard
	Pb	207	544.7	11.6	**0.0591**	0.011	18.5	ug/L	222	Standard
	Pb	208	2290.4	8.0	**0.0601**	0.007	12.3	ug/L	959	Standard
	U	238	102.7	66.1	**0.0123**	0.008	66.3	ug/L	9	Standard
>	**Bi**	209	556043.1	1.2				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	61.7	46.1	**0.0100**	0.032	319.9	mg/L	55	Standard
K	39	35.0	57.1	**0.0003**	0.076	23783.0	mg/L	28	Standard
Ca	43	23.3	32.7	**-0.3783**	0.697	184.3	mg/L	27	Standard
Fe	54	175.9	11.5	**0.0357**	0.014	38.5	mg/L	147	Standard
Fe	57	216.7	10.7	**-0.1545**	0.066	42.5	mg/L	268	Standard
Sc-1	45	42185.3	1.2				mg/L	41174	Standard
Cl	35	67744.4	0.4				ug/L	69550	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	2090.1	1.7				ug/L	1950	Standard
P	31	21226.5	2.4				ug/L	21156	Standard
S	34	3468.7	3.7				ug/L	3419	Standard
Sr	88	66.7	18.9				ug/L	72	Standard
C	12	106.7	51.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	17	Standard
Dy	164	6.2	100.1				mg/L	16	Standard
Ho-1	165	11.7	49.5				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	2538.5	15.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.492	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.822	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.484
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.583
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: LCSW 78 WG574416-05
Sample Date/Time: Friday, July 01, 2016 11:09:04
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	76480.9	1.3				ug/L	76456	Standard
	Be	9	57299.8	1.8	**51.1515**	0.782	1.5	ug/L	20	Standard
	Al	27	13893.0	5.9	**0.0710**	0.006	8.3	ug/L	1307	Standard
	Sc	45	41525.2	3.0				ug/L	41174	Standard
	Ti	47	50.0	14.4	**0.0663**	0.021	31.6	ug/L	27	Standard
	V	51	423867.5	0.4	**50.5009**	0.287	0.6	ug/L	1434	Standard
	Cr	52	423554.6	0.4	**50.5309**	0.121	0.2	ug/L	7733	Standard
	Cr	53	51463.9	0.2	**49.6485**	0.215	0.4	ug/L	442	Standard
	Mn	55	395604.7	0.2	**51.2819**	0.431	0.8	ug/L	723	Standard
	Co	59	393078.4	0.7	**50.4221**	0.467	0.9	ug/L	217	Standard
	Ni	60	106911.2	0.9	**50.5097**	0.714	1.4	ug/L	304	Standard
	Cu	65	106870.6	0.8	**51.4201**	0.725	1.4	ug/L	181	Standard
	Zn	66	64695.2	1.1	**51.7405**	0.880	1.7	ug/L	215	Standard
>	Ge	72	529720.7	0.6				ug/L	520809	Standard
	As	75	63865.6	0.7	**50.9077**	0.332	0.7	ug/L	-52	Standard
	Se	82	6442.1	1.2	**50.0074**	0.423	0.8	ug/L	17	Standard
	Se-1	77	4460.3	1.4	**50.6149**	0.735	1.5	ug/L	56	Standard
>	Ga	71	33.3	48.2				mg/L	25	Standard
	Rb	85	51.7	53.3				ug/L	28	Standard
	Y	89	451210.1	0.7				ug/L	447395	Standard
>	Rh	103	28.3	10.2				ug/L	15	Standard
	Mo	98	211.5	58.2	**0.0455**	0.040	88.5	ug/L	113	Standard
	Ag	107	371127.1	0.8	**51.3096**	0.429	0.8	ug/L	108	Standard
	Cd	111	117429.0	0.6	**50.6559**	0.197	0.4	mg/L	3	Standard
	Cd	114	286369.4	2.1	**49.8969**	1.108	2.2	ug/L	20	Standard
>	In	115	630039.4	0.2				ug/L	625728	Standard
	Sn	118	975.0	11.8	**0.0662**	0.017	26.4	ug/L	568	Standard
	Sb	123	249155.3	2.4	**47.8470**	1.151	2.4	ug/L	612	Standard
	Ba	135	109490.5	0.6	**49.9659**	0.356	0.7	ug/L	21	Standard
	Ce	140	110.0	22.7				ug/L	245	Standard
>	Tb	159	961658.5	1.2				ug/L	950397	Standard
	Ho	165	8.3	124.9				ug/L	7	Standard
	Tl	203	456267.9	0.6	**50.3461**	0.267	0.5	ug/L	15	Standard
	Tl	205	402501.7	1.2	**50.0083**	0.617	1.2	ug/L	13	Standard
	Pb	206	293954.8	0.6	**51.3969**	0.546	1.1	ug/L	264	Standard
	Pb	207	256579.6	0.1	**49.3966**	0.497	1.0	ug/L	222	Standard
	Pb	208	1074330.1	0.6	**50.6396**	0.527	1.0	ug/L	959	Standard
	U	238	394562.7	0.9	**48.4869**	0.395	0.8	ug/L	9	Standard
>	Bi	209	558043.6	1.1				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	61.7	20.4	**0.0111**	0.013	120.9	mg/L	55	Standard
K	39	35.0	37.8	**0.0010**	0.048	4646.6	mg/L	28	Standard
Ca	43	28.3	36.7	**0.0919**	0.886	964.6	mg/L	27	Standard
Fe	54	169.1	21.5	**0.0325**	0.027	81.8	mg/L	147	Standard
Fe	57	220.0	8.2	**-0.1334**	0.058	43.3	mg/L	268	Standard
Sc-1	45	41525.2	3.0				mg/L	41174	Standard
Cl	35	67082.2	2.2				ug/L	69550	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	2023.5	3.3				ug/L	1950	Standard
P	31	22251.3	1.9				ug/L	21156	Standard
S	34	3218.7	6.1				ug/L	3419	Standard
Sr	88	76.7	10.0				ug/L	72	Standard
C	12	130.0	27.7				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	17	Standard
Dy	164	12.2	119.1				mg/L	16	Standard
Ho-1	165	8.3	124.9				mg/L	7	Standard
Er	166	23.3	65.5				mg/L	7	Standard
I	127	1945.1	18.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		100.033	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.711	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.689
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.945
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606141705 WG574416-01
Sample Date/Time: Friday, July 01, 2016 11:12:16
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	78995.4	1.2				ug/L	76456	Standard
	Be	9	58.3	4.9	**0.0306**	0.003	9.8	ug/L	20	Standard
	Al	27	21381126.3	0.9	**120.8920**	2.463	2.0	ug/L	1307	Standard
	Sc	45	41005.4	0.8				ug/L	41174	Standard
	Ti	47	385.7	14.4	**1.1313**	0.162	14.4	ug/L	27	Standard
	V	51	37880.1	0.4	**4.5394**	0.067	1.5	ug/L	1434	Standard
	Cr	52	15651.7	0.4	**1.0197**	0.032	3.2	ug/L	7733	Standard
	Cr	53	6074.6	20.3	**5.7629**	1.265	22.0	ug/L	442	Standard
	Mn	55	15005.4	0.7	**1.9367**	0.029	1.5	ug/L	723	Standard
	Co	59	1426.7	2.3	**0.1620**	0.002	1.4	ug/L	217	Standard
	Ni	60	3377.0	1.1	**1.5203**	0.032	2.1	ug/L	304	Standard
	Cu	65	1905.1	1.9	**0.8856**	0.009	1.0	ug/L	181	Standard
	Zn	66	4588.7	1.0	**3.6704**	0.063	1.7	ug/L	215	Standard
>	Ge	72	506618.0	1.2				ug/L	520809	Standard
	As	75	2080.8	8.4	**1.7774**	0.135	7.6	ug/L	-52	Standard
	Se	82	818.2	2.3	**6.5307**	0.077	1.2	ug/L	17	Standard
	Se-1	77	895.7	3.3	**10.0889**	0.428	4.2	ug/L	56	Standard
>	Ga	71	153.3	31.3				mg/L	25	Standard
	Rb	85	3665.4	2.3				ug/L	28	Standard
	Y	89	429409.0	1.3				ug/L	447395	Standard
>	Rh	103	178.3	12.6				ug/L	15	Standard
	Mo	98	683.2	5.3	**0.2157**	0.014	6.4	ug/L	113	Standard
	Ag	107	300.3	34.9	**0.0315**	0.016	49.6	ug/L	108	Standard
	Cd	111	82.5	7.8	**0.0356**	0.003	8.6	mg/L	3	Standard
	Cd	114	158.8	23.9	**0.0295**	0.007	23.3	ug/L	20	Standard
>	In	115	590046.0	0.5				ug/L	625728	Standard
	Sn	118	975.0	8.9	**0.0764**	0.014	18.3	ug/L	568	Standard
	Sb	123	2972.1	30.5	**0.5762**	0.187	32.4	ug/L	612	Standard
	Ba	135	67195.3	0.7	**32.7370**	0.271	0.8	ug/L	21	Standard
	Ce	140	5165.9	1.6				ug/L	245	Standard
>	Tb	159	918152.8	1.4				ug/L	950397	Standard
	Ho	165	105.0	29.7				ug/L	7	Standard
	Tl	203	363.0	14.1	**0.0439**	0.007	15.0	ug/L	15	Standard
	Tl	205	258.3	37.0	**0.0260**	0.013	51.2	ug/L	13	Standard
	Pb	206	917.4	3.4	**0.1351**	0.007	5.1	ug/L	264	Standard
	Pb	207	764.4	2.1	**0.1180**	0.005	4.0	ug/L	222	Standard
	Pb	208	3197.8	4.0	**0.1198**	0.007	5.7	ug/L	959	Standard
	U	238	29042.1	0.6	**3.9760**	0.053	1.3	ug/L	9	Standard
>	Bi	209	500900.4	0.8				ug/L	552821	Standard

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Na	23	6.7	43.3	**19.9855**	8.657	43.3	mg/L	2	Standard
Mg	24	126521.1	1.0	**148.3441**	0.501	0.3	mg/L	55	Standard
K	39	181.7	30.9	**0.5679**	0.214	37.7	mg/L	28	Standard
Ca	43	465.0	16.3	**40.0054**	7.184	18.0	mg/L	27	Standard
Fe	54	240.2	12.6	**0.0904**	0.025	28.1	mg/L	147	Standard
Fe	57	603.3	4.8	**1.0579**	0.102	9.7	mg/L	268	Standard
> **Sc-1**	45	41005.4	0.8				mg/L	41174	Standard
Cl	35	90433.8	0.8				ug/L	69550	Standard
Kr	83	2.7	43.3				ug/L	1	Standard
Br	81	57739.9	3.1				ug/L	1950	Standard
P	31	24640.0	1.7				ug/L	21156	Standard
S	34	3010.3	1.4				ug/L	3419	Standard
Sr	88	401.7	14.4				ug/L	72	Standard
C	12	506.7	3.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	132.3				mg/L	17	Standard
Dy	164	121.7	25.2				mg/L	16	Standard
Ho-1	165	105.0	29.7				mg/L	7	Standard
Er	166	103.3	29.6				mg/L	7	Standard
I	127	25413.0	5.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.322	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.275	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.298
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.608
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606141705 WG574416-01
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Method 6020 - Summary Report

Sample ID: L1606141706S WG574416-06
Sample Date/Time: Friday, July 01, 2016 11:15:27
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	82487.3	1.1				ug/L	76456	Standard
	Be	9	59434.7	2.0	49.1890	0.474	1.0	ug/L	20	Standard
	Al	27	21126866.6	0.7	114.3857	1.245	1.1	ug/L	1307	Standard
	Sc	45	42071.7	1.5				ug/L	41174	Standard
	Ti	47	445.7	9.0	1.3272	0.106	8.0	ug/L	27	Standard
	V	51	448794.0	1.2	56.1906	0.338	0.6	ug/L	1434	Standard
	Cr	52	405302.2	0.8	50.8030	0.762	1.5	ug/L	7733	Standard
	Cr	53	55872.8	0.8	56.6886	1.157	2.0	ug/L	442	Standard
	Mn	55	376409.4	1.7	51.2605	1.187	2.3	ug/L	723	Standard
	Co	59	371466.0	0.9	50.0608	1.026	2.0	ug/L	217	Standard
	Ni	60	100340.5	1.4	49.7984	1.011	2.0	ug/L	304	Standard
	Cu	65	97977.1	1.5	49.5201	1.028	2.1	ug/L	181	Standard
	Zn	66	64249.3	1.5	53.9822	0.650	1.2	ug/L	215	Standard
>	Ge	72	504287.9	1.5				ug/L	520809	Standard
	As	75	64736.7	1.2	54.2084	0.977	1.8	ug/L	-52	Standard
	Se	82	7105.9	2.4	57.9770	1.906	3.3	ug/L	17	Standard
	Se-1	77	5081.5	1.0	60.7211	1.522	2.5	ug/L	56	Standard
>	Ga	71	93.3	21.7				mg/L	25	Standard
	Rb	85	3385.4	7.7				ug/L	28	Standard
	Y	89	437587.9	1.2				ug/L	447395	Standard
>	Rh	103	133.3	19.2				ug/L	15	Standard
	Mo	98	712.0	6.4	0.2258	0.015	6.5	ug/L	113	Standard
	Ag	107	254706.8	0.6	37.6267	0.420	1.1	ug/L	108	Standard
	Cd	111	107324.5	0.5	49.4721	0.054	0.1	mg/L	3	Standard
	Cd	114	266264.7	1.6	49.5778	1.034	2.1	ug/L	20	Standard
>	In	115	589608.9	0.6				ug/L	625728	Standard
	Sn	118	1198.4	5.9	0.1134	0.011	9.9	ug/L	568	Standard
	Sb	123	255276.2	0.1	52.3884	0.301	0.6	ug/L	612	Standard
	Ba	135	166458.1	0.3	81.1840	0.412	0.5	ug/L	21	Standard
	Ce	140	2188.5	3.6				ug/L	245	Standard
>	Tb	159	935892.6	1.8				ug/L	950397	Standard
	Ho	165	80.0	12.5				ug/L	7	Standard
	Tl	203	416301.7	0.5	50.3128	0.740	1.5	ug/L	15	Standard
	Tl	205	372797.3	0.4	50.7287	0.513	1.0	ug/L	13	Standard
	Pb	206	269916.3	0.3	51.6884	0.658	1.3	ug/L	264	Standard
	Pb	207	235694.4	0.5	49.6950	0.399	0.8	ug/L	222	Standard
	Pb	208	976732.6	0.6	50.4213	0.371	0.7	ug/L	959	Standard
	U	238	405996.3	0.5	54.6443	0.642	1.2	ug/L	9	Standard
>	Bi	209	509531.8	1.0				ug/L	552821	Standard

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Na	23	6.7	86.6	**19.6383**	17.003	86.6	mg/L	2	Standard
Mg	24	124588.6	1.9	**142.3700**	0.938	0.7	mg/L	55	Standard
K	39	133.3	31.9	**0.3687**	0.159	43.1	mg/L	28	Standard
Ca	43	506.7	5.0	**42.5935**	1.641	3.9	mg/L	27	Standard
Fe	54	191.0	18.5	**0.0477**	0.027	55.6	mg/L	147	Standard
Fe	57	573.3	0.5	**0.9203**	0.025	2.7	mg/L	268	Standard
> **Sc-1**	45	42071.7	1.5				mg/L	41174	Standard
Cl	35	93134.7	1.1				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	57294.9	3.7				ug/L	1950	Standard
P	31	24481.4	0.9				ug/L	21156	Standard
S	34	3050.3	2.6				ug/L	3419	Standard
Sr	88	351.7	17.1				ug/L	72	Standard
C	12	470.0	15.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	17	Standard
Dy	164	66.5	44.7				mg/L	16	Standard
Ho-1	165	80.0	12.5				mg/L	7	Standard
Er	166	73.3	92.8				mg/L	7	Standard
I	127	27035.8	3.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.889	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.828	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.228
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.169
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606141706S WG574416-06
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Method 6020 - Summary Report

Sample ID: L1606141707SD WG574416-07
Sample Date/Time: Friday, July 01, 2016 11:18:39
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83771.0	2.5				ug/L	76456	Standard
	Be	9	60537.4	1.9	**49.3442**	0.599	1.2	ug/L	20	Standard
	Al	27	20909187.8	2.0	**111.4909**	2.320	2.1	ug/L	1307	Standard
	Sc	45	42178.7	2.5				ug/L	41174	Standard
	Ti	47	385.0	17.2	**1.1368**	0.214	18.9	ug/L	27	Standard
	V	51	446877.6	0.6	**55.9631**	0.571	1.0	ug/L	1434	Standard
	Cr	52	407703.5	1.0	**51.1164**	0.567	1.1	ug/L	7733	Standard
	Cr	53	57269.7	0.1	**58.1199**	0.209	0.4	ug/L	442	Standard
	Mn	55	373320.3	1.2	**50.8451**	0.769	1.5	ug/L	723	Standard
	Co	59	374639.0	0.7	**50.4931**	0.593	1.2	ug/L	217	Standard
	Ni	60	102269.7	0.8	**50.7649**	0.500	1.0	ug/L	304	Standard
	Cu	65	98211.9	0.3	**49.6447**	0.334	0.7	ug/L	181	Standard
	Zn	66	63211.9	0.4	**53.1189**	0.394	0.7	ug/L	215	Standard
>	Ge	72	504167.3	0.4				ug/L	520809	Standard
	As	75	65436.1	0.6	**54.8009**	0.553	1.0	ug/L	-52	Standard
	Se	82	7107.1	0.1	**57.9877**	0.247	0.4	ug/L	17	Standard
	Se-1	77	5193.9	0.7	**62.0795**	0.521	0.8	ug/L	56	Standard
>	Ga	71	93.3	56.3				mg/L	25	Standard
	Rb	85	2987.0	1.6				ug/L	28	Standard
	Y	89	428781.1	0.8				ug/L	447395	Standard
>	Rh	103	146.7	3.9				ug/L	15	Standard
	Mo	98	634.9	1.7	**0.2009**	0.001	0.6	ug/L	113	Standard
	Ag	107	261558.3	0.6	**39.0020**	0.323	0.8	ug/L	108	Standard
	Cd	111	107761.1	1.2	**50.1421**	0.734	1.5	mg/L	3	Standard
	Cd	114	265170.0	1.2	**49.8331**	0.062	0.1	ug/L	20	Standard
>	In	115	584141.3	1.3				ug/L	625728	Standard
	Sn	118	778.4	10.9	**0.0453**	0.014	30.6	ug/L	568	Standard
	Sb	123	253357.3	0.7	**52.4833**	0.432	0.8	ug/L	612	Standard
	Ba	135	164823.3	0.7	**81.1417**	0.473	0.6	ug/L	21	Standard
	Ce	140	1715.1	1.1				ug/L	245	Standard
>	Tb	159	919374.0	0.5				ug/L	950397	Standard
	Ho	165	48.3	26.0				ug/L	7	Standard
	Tl	203	415993.7	1.0	**50.5326**	0.446	0.9	ug/L	15	Standard
	Tl	205	377462.4	0.7	**51.6305**	0.656	1.3	ug/L	13	Standard
	Pb	206	269578.4	0.3	**51.8894**	0.298	0.6	ug/L	264	Standard
	Pb	207	236101.7	0.1	**50.0395**	0.358	0.7	ug/L	222	Standard
	Pb	208	981599.1	1.3	**50.9367**	0.779	1.5	ug/L	959	Standard
	U	238	408604.0	0.1	**55.2799**	0.488	0.9	ug/L	9	Standard
>	Bi	209	506896.7	0.8				ug/L	552821	Standard

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Na	23	6.7	86.6	**19.7141**	17.069	86.6	mg/L	2	Standard
Mg	24	123424.1	1.3	**140.7631**	4.816	3.4	mg/L	55	Standard
K	39	126.7	21.7	**0.3448**	0.114	32.9	mg/L	28	Standard
Ca	43	478.3	6.3	**39.9606**	1.868	4.7	mg/L	27	Standard
Fe	54	159.8	26.4	**0.0241**	0.035	144.2	mg/L	147	Standard
Fe	57	558.3	4.0	**0.8725**	0.108	12.4	mg/L	268	Standard
> **Sc-1**	45	42178.7	2.5				mg/L	41174	Standard
Cl	35	93263.5	1.5				ug/L	69550	Standard
Kr	83	3.0	33.3				ug/L	1	Standard
Br	81	55210.4	0.6				ug/L	1950	Standard
P	31	24391.3	2.2				ug/L	21156	Standard
S	34	2932.0	3.7				ug/L	3419	Standard
Sr	88	386.7	9.1				ug/L	72	Standard
C	12	800.0	2.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	17	Standard
Dy	164	64.1	17.0				mg/L	16	Standard
Ho-1	165	48.3	26.0				mg/L	7	Standard
Er	166	53.3	39.0				mg/L	7	Standard
I	127	27236.1	1.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.568	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.805	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.354
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.693
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606141707SD WG574416-07
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Method 6020 - Summary Report

Sample ID: L1606141701
Sample Date/Time: Friday, July 01, 2016 11:21:50
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83420.7	1.6				ug/L	76456	Standard
	Be	9	53.3	21.7	**0.0237**	0.009	37.8	ug/L	20	Standard
	Al	27	31084082.3	1.3	**166.4192**	1.988	1.2	ug/L	1307	Standard
	Sc	45	42130.2	2.0				ug/L	41174	Standard
	Ti	47	170.3	8.2	**0.4375**	0.044	10.0	ug/L	27	Standard
	V	51	22939.6	1.3	**2.5877**	0.032	1.2	ug/L	1434	Standard
	Cr	52	13097.0	1.3	**0.6468**	0.025	3.9	ug/L	7733	Standard
	Cr	53	1960.1	6.9	**1.5196**	0.135	8.9	ug/L	442	Standard
	Mn	55	3766.5	0.8	**0.3954**	0.005	1.2	ug/L	723	Standard
	Co	59	709.0	6.9	**0.0630**	0.006	10.1	ug/L	217	Standard
	Ni	60	2223.2	1.0	**0.9167**	0.012	1.3	ug/L	304	Standard
	Cu	65	739.0	2.4	**0.2875**	0.008	2.9	ug/L	181	Standard
	Zn	66	2322.5	1.8	**1.7125**	0.036	2.1	ug/L	215	Standard
>	**Ge**	72	521624.8	0.2				ug/L	520809	Standard
	As	75	515.4	8.1	**0.4620**	0.033	7.2	ug/L	-52	Standard
	Se	82	150.1	4.3	**1.0601**	0.051	4.8	ug/L	17	Standard
	Se-1	77	163.7	3.7	**1.2270**	0.071	5.8	ug/L	56	Standard
>	**Ga**	71	35.0	42.9				mg/L	25	Standard
	Rb	85	1295.1	7.1				ug/L	28	Standard
	Y	89	450422.8	1.4				ug/L	447395	Standard
>	**Rh**	103	130.0	23.4				ug/L	15	Standard
	Mo	98	654.1	6.4	**0.1969**	0.014	7.3	ug/L	113	Standard
	Ag	107	196.0	12.7	**0.0150**	0.004	24.0	ug/L	108	Standard
	Cd	111	38.8	25.3	**0.0149**	0.004	28.8	mg/L	3	Standard
	Cd	114	102.9	24.1	**0.0184**	0.004	23.7	ug/L	20	Standard
>	**In**	115	612771.9	0.4				ug/L	625728	Standard
	Sn	118	700.0	1.2	**0.0268**	0.002	5.6	ug/L	568	Standard
	Sb	123	677.6	31.8	**0.1003**	0.043	43.0	ug/L	612	Standard
	Ba	135	79352.9	0.7	**37.2291**	0.386	1.0	ug/L	21	Standard
	Ce	140	398.3	12.2				ug/L	245	Standard
>	**Tb**	159	943156.7	0.8				ug/L	950397	Standard
	Ho	165	36.7	20.8				ug/L	7	Standard
	Tl	203	227.0	14.0	**0.0253**	0.004	14.6	ug/L	15	Standard
	Tl	205	246.7	13.8	**0.0221**	0.004	19.4	ug/L	13	Standard
	Pb	206	454.7	7.7	**0.0390**	0.006	16.7	ug/L	264	Standard
	Pb	207	363.0	3.8	**0.0266**	0.003	11.0	ug/L	222	Standard
	Pb	208	1563.4	3.8	**0.0284**	0.003	10.4	ug/L	959	Standard
	U	238	20328.0	1.2	**2.5974**	0.039	1.5	ug/L	9	Standard
>	**Bi**	209	536649.8	0.3				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	14153.3	4.2	**16.0944**	0.416	2.6	mg/L	55	Standard
K	39	73.3	50.3	**0.1418**	0.131	92.5	mg/L	28	Standard
Ca	43	301.7	14.5	**24.2946**	3.319	13.7	mg/L	27	Standard
Fe	54	192.1	16.5	**0.0481**	0.021	43.9	mg/L	147	Standard
Fe	57	448.3	3.9	**0.5433**	0.078	14.4	mg/L	268	Standard
> **Sc-1**	45	42130.2	2.0				mg/L	41174	Standard
Cl	35	78637.6	2.5				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	17710.4	7.6				ug/L	1950	Standard
P	31	24940.5	2.0				ug/L	21156	Standard
S	34	3180.3	5.3				ug/L	3419	Standard
Sr	88	363.3	6.9				ug/L	72	Standard
C	12	386.7	16.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	17	Standard
Dy	164	45.1	46.6				mg/L	16	Standard
Ho-1	165	36.7	20.8				mg/L	7	Standard
Er	166	33.3	17.3				mg/L	7	Standard
I	127	17748.8	7.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.110	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.157	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.929
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.075
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606141702
Sample Date/Time: Friday, July 01, 2016 11:25:02
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	84178.2	0.8				ug/L	76456	Standard
	Be	9	68.3	33.0	**0.0357**	0.019	52.5	ug/L	20	Standard
	Al	27	21395590.4	1.7	**113.5091**	1.891	1.7	ug/L	1307	Standard
	Sc	45	40557.5	1.2				ug/L	41174	Standard
	Ti	47	235.3	3.5	**0.6749**	0.030	4.5	ug/L	27	Standard
	V	51	30102.8	0.4	**3.6510**	0.042	1.2	ug/L	1434	Standard
	Cr	52	20877.7	0.2	**1.7436**	0.023	1.3	ug/L	7733	Standard
	Cr	53	13953.1	1.5	**14.0948**	0.198	1.4	ug/L	442	Standard
	Mn	55	6869.6	2.0	**0.8525**	0.013	1.6	ug/L	723	Standard
	Co	59	1049.0	2.3	**0.1145**	0.004	3.2	ug/L	217	Standard
	Ni	60	3023.6	1.9	**1.3787**	0.032	2.3	ug/L	304	Standard
	Cu	65	1353.7	2.9	**0.6232**	0.017	2.7	ug/L	181	Standard
	Zn	66	2790.6	0.7	**2.2139**	0.010	0.4	ug/L	215	Standard
>	Ge	72	495483.9	0.7				ug/L	520809	Standard
	As	75	1494.2	7.1	**1.3177**	0.098	7.4	ug/L	-52	Standard
	Se	82	1155.8	1.9	**9.4896**	0.142	1.5	ug/L	17	Standard
	Se-1	77	1366.7	2.9	**16.1232**	0.600	3.7	ug/L	56	Standard
>	Ga	71	65.0	46.8				mg/L	25	Standard
	Rb	85	1118.4	6.5				ug/L	28	Standard
	Y	89	431041.5	1.8				ug/L	447395	Standard
>	Rh	103	106.7	2.7				ug/L	15	Standard
	Mo	98	636.9	5.4	**0.2018**	0.013	6.3	ug/L	113	Standard
	Ag	107	175.7	31.4	**0.0134**	0.008	62.4	ug/L	108	Standard
	Cd	111	69.9	26.7	**0.0302**	0.009	28.8	mg/L	3	Standard
	Cd	114	141.9	41.1	**0.0267**	0.011	41.2	ug/L	20	Standard
>	In	115	583855.1	0.8				ug/L	625728	Standard
	Sn	118	985.0	7.5	**0.0798**	0.012	15.3	ug/L	568	Standard
	Sb	123	469.0	23.7	**0.0635**	0.023	35.9	ug/L	612	Standard
	Ba	135	16891.1	0.4	**8.3035**	0.096	1.2	ug/L	21	Standard
	Ce	140	950.0	9.1				ug/L	245	Standard
>	Tb	159	915987.8	1.1				ug/L	950397	Standard
	Ho	165	58.3	13.1				ug/L	7	Standard
	Tl	203	239.0	33.8	**0.0285**	0.010	35.2	ug/L	15	Standard
	Tl	205	226.7	28.0	**0.0215**	0.009	41.6	ug/L	13	Standard
	Pb	206	491.0	11.7	**0.0515**	0.012	22.7	ug/L	264	Standard
	Pb	207	417.3	7.3	**0.0430**	0.007	16.1	ug/L	222	Standard
	Pb	208	1796.4	4.5	**0.0456**	0.005	10.2	ug/L	959	Standard
	U	238	24911.1	0.1	**3.3908**	0.016	0.5	ug/L	9	Standard
>	Bi	209	503762.9	0.6				ug/L	552821	Standard

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Na	23	3.3	86.6	**10.0444**	8.695	86.6	mg/L	2	Standard
Mg	24	132735.6	1.2	**157.3747**	3.155	2.0	mg/L	55	Standard
K	39	131.7	11.6	**0.3818**	0.065	17.1	mg/L	28	Standard
Ca	43	436.7	8.3	**37.8132**	2.966	7.8	mg/L	27	Standard
Fe	54	188.4	13.0	**0.0512**	0.020	39.7	mg/L	147	Standard
Fe	57	626.7	13.5	**1.1530**	0.288	25.0	mg/L	268	Standard
> **Sc-1**	45	40557.5	1.2				mg/L	41174	Standard
Cl	35	95111.1	2.9				ug/L	69550	Standard
Kr	83	2.0	132.3				ug/L	1	Standard
Br	81	69814.0	4.5				ug/L	1950	Standard
P	31	24122.5	3.6				ug/L	21156	Standard
S	34	3262.0	2.8				ug/L	3419	Standard
Sr	88	431.7	9.9				ug/L	72	Standard
C	12	460.0	22.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	17	Standard
Dy	164	50.5	77.6				mg/L	16	Standard
Ho-1	165	58.3	13.1				mg/L	7	Standard
Er	166	60.0	44.1				mg/L	7	Standard
I	127	37230.7	1.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.101	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.137	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.308
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.126
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606141702PS WG574808-01
Sample Date/Time: Friday, July 01, 2016 11:28:13
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	84706.2	1.4				ug/L	76456	Standard
	Be	9	61248.6	0.7	**49.3719**	0.771	1.6	ug/L	20	Standard
	Al	27	21521134.5	1.9	**113.4962**	3.763	3.3	ug/L	1307	Standard
	Sc	45	40794.9	2.7				ug/L	41174	Standard
	Ti	47	240.0	10.1	**0.6796**	0.085	12.5	ug/L	27	Standard
	V	51	455261.1	1.0	**57.2107**	0.562	1.0	ug/L	1434	Standard
	Cr	52	426443.6	1.0	**53.6956**	0.415	0.8	ug/L	7733	Standard
	Cr	53	63767.3	2.8	**64.9856**	1.904	2.9	ug/L	442	Standard
	Mn	55	385209.5	0.8	**52.6493**	0.868	1.6	ug/L	723	Standard
	Co	59	385929.7	0.6	**52.1919**	0.293	0.6	ug/L	217	Standard
	Ni	60	103771.2	0.7	**51.6879**	0.282	0.5	ug/L	304	Standard
	Cu	65	101476.7	1.4	**51.4688**	0.149	0.3	ug/L	181	Standard
	Zn	66	65028.6	0.8	**54.8362**	0.235	0.4	ug/L	215	Standard
>	Ge	72	502470.5	1.2				ug/L	520809	Standard
	As	75	66227.4	1.6	**55.6481**	0.524	0.9	ug/L	-52	Standard
	Se	82	7664.8	0.5	**62.7619**	0.423	0.7	ug/L	17	Standard
	Se-1	77	5635.0	2.2	**67.6351**	0.810	1.2	ug/L	56	Standard
>	Ga	71	56.7	41.7				mg/L	25	Standard
	Rb	85	1151.7	5.5				ug/L	28	Standard
	Y	89	435252.0	2.3				ug/L	447395	Standard
>	Rh	103	131.7	9.6				ug/L	15	Standard
	Mo	98	659.3	4.3	**0.2083**	0.012	5.6	ug/L	113	Standard
	Ag	107	333584.9	1.2	**49.4501**	0.303	0.6	ug/L	108	Standard
	Cd	111	111317.0	0.6	**51.4929**	0.677	1.3	mg/L	3	Standard
	Cd	114	272508.8	2.4	**50.9184**	1.531	3.0	ug/L	20	Standard
>	In	115	587582.2	0.8				ug/L	625728	Standard
	Sn	118	1173.4	7.2	**0.1100**	0.015	13.8	ug/L	568	Standard
	Sb	123	246884.2	2.4	**50.8360**	0.942	1.9	ug/L	612	Standard
	Ba	135	121048.6	0.4	**59.2388**	0.725	1.2	ug/L	21	Standard
	Ce	140	995.0	2.7				ug/L	245	Standard
>	Tb	159	924930.3	1.0				ug/L	950397	Standard
	Ho	165	51.7	39.1				ug/L	7	Standard
	Tl	203	432904.6	0.1	**52.3301**	0.247	0.5	ug/L	15	Standard
	Tl	205	391263.3	1.6	**53.2578**	1.128	2.1	ug/L	13	Standard
	Pb	206	282728.2	0.5	**54.1561**	0.449	0.8	ug/L	264	Standard
	Pb	207	246312.6	0.2	**51.9491**	0.256	0.5	ug/L	222	Standard
	Pb	208	1022028.0	0.9	**52.7764**	0.638	1.2	ug/L	959	Standard
	U	238	421958.1	0.7	**56.8072**	0.698	1.2	ug/L	9	Standard
>	Bi	209	509385.6	0.5				ug/L	552821	Standard

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Na	23	10.0	50.0	**29.8847**	14.237	47.6	mg/L	2	Standard
Mg	24	133593.1	0.8	**157.5206**	4.134	2.6	mg/L	55	Standard
K	39	128.3	35.1	**0.3678**	0.182	49.5	mg/L	28	Standard
Ca	43	420.0	20.7	**36.0275**	7.706	21.4	mg/L	27	Standard
Fe	54	180.1	10.8	**0.0439**	0.018	40.9	mg/L	147	Standard
Fe	57	538.3	4.2	**0.8651**	0.032	3.7	mg/L	268	Standard
> **Sc-1**	45	40794.9	2.7				mg/L	41174	Standard
Cl	35	96279.6	0.7				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	71609.1	5.3				ug/L	1950	Standard
P	31	24898.8	2.0				ug/L	21156	Standard
S	34	3225.3	2.1				ug/L	3419	Standard
Sr	88	406.7	4.3				ug/L	72	Standard
C	12	440.0	36.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	17	Standard
Dy	164	27.8	36.1				mg/L	16	Standard
Ho-1	165	51.7	39.1				mg/L	7	Standard
Er	166	46.7	24.7				mg/L	7	Standard
I	127	36331.8	0.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.791	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.479	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.904
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.143
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606141702SDL WG574808-02
Sample Date/Time: Friday, July 01, 2016 11:31:25
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79270.2	1.4				ug/L	76456	Standard
	Be	9	48.3	15.8	**0.0218**	0.006	29.8	ug/L	20	Standard
	Al	27	4222516.4	1.3	**23.7801**	0.015	0.1	ug/L	1307	Standard
	Sc	45	38916.6	1.8				ug/L	41174	Standard
	Ti	47	59.3	17.5	**0.1088**	0.035	32.6	ug/L	27	Standard
	V	51	7243.4	2.3	**0.7359**	0.026	3.5	ug/L	1434	Standard
	Cr	52	10348.9	1.0	**0.3868**	0.014	3.5	ug/L	7733	Standard
	Cr	53	3842.2	2.6	**3.6141**	0.077	2.1	ug/L	442	Standard
	Mn	55	1712.4	2.4	**0.1385**	0.004	3.2	ug/L	723	Standard
	Co	59	414.7	3.6	**0.0280**	0.003	9.0	ug/L	217	Standard
	Ni	60	921.4	5.7	**0.3179**	0.030	9.6	ug/L	304	Standard
	Cu	65	476.3	6.6	**0.1735**	0.018	10.2	ug/L	181	Standard
	Zn	66	1250.7	2.0	**0.9024**	0.030	3.3	ug/L	215	Standard
>	**Ge**	72	491133.0	0.8				ug/L	520809	Standard
	As	75	262.0	15.9	**0.2704**	0.037	13.9	ug/L	-52	Standard
	Se	82	270.1	2.3	**2.1408**	0.063	2.9	ug/L	17	Standard
	Se-1	77	339.3	3.5	**3.5247**	0.142	4.0	ug/L	56	Standard
>	**Ga**	71	25.0	20.0				mg/L	25	Standard
	Rb	85	250.0	13.1				ug/L	28	Standard
	Y	89	411909.2	0.7				ug/L	447395	Standard
>	**Rh**	103	60.0	30.0				ug/L	15	Standard
	Mo	98	158.0	15.1	**0.0328**	0.008	25.5	ug/L	113	Standard
	Ag	107	268.7	10.2	**0.0278**	0.004	15.6	ug/L	108	Standard
	Cd	111	28.7	19.4	**0.0112**	0.003	23.8	mg/L	3	Standard
	Cd	114	92.0	14.0	**0.0176**	0.002	14.2	ug/L	20	Standard
>	**In**	115	575454.3	0.4				ug/L	625728	Standard
	Sn	118	298.3	6.8	**-0.0338**	0.003	9.9	ug/L	568	Standard
	Sb	123	1720.4	31.0	**0.3280**	0.111	33.8	ug/L	612	Standard
	Ba	135	3347.4	3.0	**1.6553**	0.056	3.4	ug/L	21	Standard
	Ce	140	181.7	6.9				ug/L	245	Standard
>	**Tb**	159	890346.9	0.6				ug/L	950397	Standard
	Ho	165	23.3	32.7				ug/L	7	Standard
	Tl	203	214.3	9.6	**0.0249**	0.002	9.4	ug/L	15	Standard
	Tl	205	275.0	41.2	**0.0273**	0.015	55.9	ug/L	13	Standard
	Pb	206	399.7	2.6	**0.0322**	0.002	4.9	ug/L	264	Standard
	Pb	207	322.7	4.0	**0.0214**	0.002	11.0	ug/L	222	Standard
	Pb	208	1435.0	2.3	**0.0252**	0.002	7.2	ug/L	959	Standard
	U	238	5076.5	3.7	**0.6771**	0.028	4.1	ug/L	9	Standard
>	**Bi**	209	514021.2	0.5				ug/L	552821	Standard

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Na	23	6.7	114.6	**21.2259**	24.589	115.8	mg/L	2	Standard
Mg	24	26095.8	2.9	**32.1961**	0.941	2.9	mg/L	55	Standard
K	39	48.3	21.5	**0.0648**	0.042	64.9	mg/L	28	Standard
Ca	43	73.3	25.8	**4.5982**	1.826	39.7	mg/L	27	Standard
Fe	54	79.1	19.4	**-0.0333**	0.012	34.7	mg/L	147	Standard
Fe	57	293.3	4.3	**0.1499**	0.049	32.9	mg/L	268	Standard
Sc-1	45	38916.6	1.8				mg/L	41174	Standard
Cl	35	81436.9	1.0				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	16265.4	2.3				ug/L	1950	Standard
P	31	10428.6	1.9				ug/L	21156	Standard
S	34	3263.7	1.5				ug/L	3419	Standard
Sr	88	118.3	30.0				ug/L	72	Standard
C	12	173.3	3.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	17	Standard
Dy	164	22.2	71.3				mg/L	16	Standard
Ho-1	165	23.3	32.7				mg/L	7	Standard
Er	166	23.3	107.9				mg/L	7	Standard
I	127	34272.1	2.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		103.681	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		94.302	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.966
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.982
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606141702SDL WG574808-02
Sample Date/Time: Friday, July 01, 2016 11:34:36
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75492.7	3.2				ug/L	76456	Standard
	Be	9	23.3	12.4	**0.0012**	0.002	197.6	ug/L	20	Standard
	Al	27	829607.4	2.3	**4.8996**	0.125	2.6	ug/L	1307	Standard
	Sc	45	37073.7	3.1				ug/L	41174	Standard
	Ti	47	28.0	12.9	**0.0070**	0.012	174.3	ug/L	27	Standard
	V	51	3170.1	5.9	**0.2118**	0.020	9.4	ug/L	1434	Standard
	Cr	52	8461.0	1.1	**0.1435**	0.006	4.5	ug/L	7733	Standard
	Cr	53	1218.4	12.8	**0.8668**	0.167	19.3	ug/L	442	Standard
	Mn	55	694.0	1.2	**-0.0037**	0.001	25.0	ug/L	723	Standard
	Co	59	224.0	8.2	**0.0017**	0.003	168.9	ug/L	217	Standard
	Ni	60	457.0	4.9	**0.0814**	0.014	16.9	ug/L	304	Standard
	Cu	65	221.3	9.3	**0.0415**	0.012	28.9	ug/L	181	Standard
	Zn	66	1093.0	3.6	**0.7694**	0.029	3.8	ug/L	215	Standard
>	**Ge**	72	489217.1	1.1				ug/L	520809	Standard
	As	75	21.5	96.2	**0.0638**	0.018	28.2	ug/L	-52	Standard
	Se	82	69.4	5.3	**0.4582**	0.034	7.4	ug/L	17	Standard
	Se-1	77	109.3	5.9	**0.6765**	0.067	9.8	ug/L	56	Standard
>	**Ga**	71	15.0	33.3				mg/L	25	Standard
	Rb	85	76.7	16.4				ug/L	28	Standard
	Y	89	405198.5	2.3				ug/L	447395	Standard
>	**Rh**	103	26.7	60.3				ug/L	15	Standard
	Mo	98	142.2	38.6	**0.0281**	0.020	72.6	ug/L	113	Standard
	Ag	107	112.7	10.2	**0.0045**	0.002	36.8	ug/L	108	Standard
	Cd	111	8.1	48.9	**0.0015**	0.002	126.2	mg/L	3	Standard
	Cd	114	16.9	33.2	**0.0033**	0.001	33.5	ug/L	20	Standard
>	**In**	115	566627.7	0.7				ug/L	625728	Standard
	Sn	118	178.3	10.6	**-0.0536**	0.003	6.2	ug/L	568	Standard
	Sb	123	679.8	12.9	**0.1116**	0.020	17.6	ug/L	612	Standard
	Ba	135	676.7	1.6	**0.3256**	0.006	1.8	ug/L	21	Standard
	Ce	140	45.0	61.9				ug/L	245	Standard
>	**Tb**	159	881967.0	0.2				ug/L	950397	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	116.0	4.3	**0.0131**	0.001	4.5	ug/L	15	Standard
	Tl	205	140.0	3.6	**0.0090**	0.001	6.9	ug/L	13	Standard
	Pb	206	294.0	3.6	**0.0118**	0.002	17.2	ug/L	264	Standard
	Pb	207	254.0	8.5	**0.0068**	0.004	64.3	ug/L	222	Standard
	Pb	208	1072.0	4.7	**0.0063**	0.003	41.6	ug/L	959	Standard
	U	238	957.7	4.8	**0.1269**	0.006	4.8	ug/L	9	Standard
>	**Bi**	209	516500.7	0.3				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4970.8	4.5	**6.3914**	0.307	4.8	mg/L	55	Standard
K	39	25.0	0.0	**-0.0247**	0.003	13.3	mg/L	28	Standard
Ca	43	50.0	34.6	**2.6288**	1.919	73.0	mg/L	27	Standard
Fe	54	54.5	0.1	**-0.0513**	0.002	3.0	mg/L	147	Standard
Fe	57	253.3	6.3	**0.0613**	0.067	109.5	mg/L	268	Standard
> **Sc-1**	45	37073.7	3.1				mg/L	41174	Standard
Cl	35	80495.3	1.6				ug/L	69550	Standard
Kr	83	3.3	75.5				ug/L	1	Standard
Br	81	5040.8	9.7				ug/L	1950	Standard
P	31	7305.1	3.6				ug/L	21156	Standard
S	34	3295.4	6.8				ug/L	3419	Standard
Sr	88	108.3	11.6				ug/L	72	Standard
C	12	146.7	3.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	43.3	35.3				mg/L	17	Standard
Dy	164	-1.1	89.2				mg/L	16	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	23.3	89.2				mg/L	7	Standard
I	127	33724.2	0.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.740	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.934	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.555
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.430
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 11:37:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79886.8	2.4				ug/L	76456	Standard
	Be	9	60216.2	2.8	**51.4590**	0.417	0.8	ug/L	20	Standard
	Al	27	8658161.3	1.0	**48.4053**	0.695	1.4	ug/L	1307	Standard
	Sc	45	41946.3	1.7				ug/L	41174	Standard
	Ti	47	32783.8	1.1	**99.4934**	0.341	0.3	ug/L	27	Standard
	V	51	421947.6	0.5	**50.6006**	0.209	0.4	ug/L	1434	Standard
	Cr	52	415783.8	0.5	**49.9191**	0.677	1.4	ug/L	7733	Standard
	Cr	53	52323.5	0.7	**50.8163**	0.079	0.2	ug/L	442	Standard
	Mn	55	383488.2	0.5	**50.0327**	0.303	0.6	ug/L	723	Standard
	Co	59	396921.5	0.3	**51.2480**	0.300	0.6	ug/L	217	Standard
	Ni	60	105550.0	0.7	**50.1916**	0.654	1.3	ug/L	304	Standard
	Cu	65	104187.0	0.3	**50.4533**	0.298	0.6	ug/L	181	Standard
	Zn	66	62119.1	0.9	**49.9953**	0.242	0.5	ug/L	215	Standard
>	Ge	72	526287.7	0.8				ug/L	520809	Standard
	As	75	62653.6	0.5	**50.2687**	0.288	0.6	ug/L	-52	Standard
	Se	82	6502.0	0.1	**50.8075**	0.476	0.9	ug/L	17	Standard
	Se-1	77	4394.6	2.3	**50.1962**	1.546	3.1	ug/L	56	Standard
>	Ga	71	41.7	34.6				mg/L	25	Standard
	Rb	85	811.7	7.3				ug/L	28	Standard
	Y	89	449443.8	0.8				ug/L	447395	Standard
>	Rh	103	28.3	20.4				ug/L	15	Standard
	Mo	98	299240.3	0.5	**98.3551**	0.449	0.5	ug/L	113	Standard
	Ag	107	359054.0	0.7	**49.6967**	0.335	0.7	ug/L	108	Standard
	Cd	111	115287.0	0.4	**49.7893**	0.202	0.4	mg/L	3	Standard
	Cd	114	284203.9	0.6	**49.5756**	0.249	0.5	ug/L	20	Standard
>	In	115	629316.2	0.1				ug/L	625728	Standard
	Sn	118	316403.3	1.4	**48.7968**	0.695	1.4	ug/L	568	Standard
	Sb	123	257145.7	0.4	**49.4396**	0.256	0.5	ug/L	612	Standard
	Ba	135	107880.7	0.2	**49.2873**	0.099	0.2	ug/L	21	Standard
	Ce	140	80.0	12.5				ug/L	245	Standard
>	Tb	159	959375.1	0.6				ug/L	950397	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	446456.6	0.5	**49.7300**	0.195	0.4	ug/L	15	Standard
	Tl	205	404447.0	0.4	**50.7263**	0.364	0.7	ug/L	13	Standard
	Pb	206	281579.7	0.3	**49.6971**	0.317	0.6	ug/L	264	Standard
	Pb	207	257039.7	0.6	**49.9528**	0.358	0.7	ug/L	222	Standard
	Pb	208	1065428.7	1.4	**50.6922**	0.446	0.9	ug/L	959	Standard
	U	238	401590.9	0.5	**49.8178**	0.056	0.1	ug/L	9	Standard
>	Bi	209	552793.0	0.6				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4465.7	1.7	**5.0623**	0.170	3.4	mg/L	55	Standard
K	39	1175.0	4.1	**4.2914**	0.166	3.9	mg/L	28	Standard
Ca	43	80.0	12.5	**4.6810**	0.869	18.6	mg/L	27	Standard
Fe	54	6475.2	2.0	**4.8865**	0.136	2.8	mg/L	147	Standard
Fe	57	1960.1	2.3	**5.1091**	0.183	3.6	mg/L	268	Standard
> **Sc-1**	45	41946.3	1.7				mg/L	41174	Standard
Cl	35	79383.6	3.3				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	2656.9	5.2				ug/L	1950	Standard
P	31	23768.6	2.4				ug/L	21156	Standard
S	34	4000.5	6.6				ug/L	3419	Standard
Sr	88	80.0	43.3				ug/L	72	Standard
C	12	120.0	25.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	69.3				mg/L	17	Standard
Dy	164	12.4	100.1				mg/L	16	Standard
Ho-1	165	8.3	69.3				mg/L	7	Standard
Er	166	20.0	100.0				mg/L	7	Standard
I	127	22111.1	1.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	102.918		
Al	27	96.811		
Sc	45			
Ti	47	99.493		
V	51	101.201		
Cr	52	99.838		
Cr	53			
Mn	55	100.065		
Co	59	102.496		
Ni	60	100.383		
Cu	65	100.907		
Zn	66	99.991		
> Ge	72		101.052	
As	75	100.537		
Se	82	101.615		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.355		
Ag	107	99.393		
Cd	111	99.579		
Cd	114			
> In	115			100.573
Sn	118	97.594		
Sb	123	98.879		
Ba	135	98.575		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.460		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.384		
U	238	99.636		
> Bi	209			99.995
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 11:41:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79854.9	1.2				ug/L	76456	Standard
	Be	9	28.3	44.4	**0.0043**	0.011	247.6	ug/L	20	Standard
	Al	27	4860.8	30.8	**0.0170**	0.009	51.0	ug/L	1307	Standard
	Sc	45	40828.3	2.4				ug/L	41174	Standard
	Ti	47	33.7	26.8	**0.0170**	0.026	153.3	ug/L	27	Standard
	V	51	1448.8	4.8	**-0.0250**	0.010	39.6	ug/L	1434	Standard
	Cr	52	7320.1	2.9	**-0.0792**	0.016	19.8	ug/L	7733	Standard
	Cr	53	573.3	8.4	**0.1415**	0.043	30.2	ug/L	442	Standard
	Mn	55	774.7	1.8	**-0.0006**	0.001	182.2	ug/L	723	Standard
	Co	59	305.0	4.6	**0.0098**	0.001	15.1	ug/L	217	Standard
	Ni	60	339.0	2.3	**0.0078**	0.005	67.4	ug/L	304	Standard
	Cu	65	197.7	11.1	**0.0212**	0.010	48.2	ug/L	181	Standard
	Zn	66	269.3	7.5	**0.0362**	0.017	46.8	ug/L	215	Standard
>	**Ge**	72	528956.5	1.1				ug/L	520809	Standard
	As	75	-45.6	52.3	**0.0087**	0.019	224.1	ug/L	-52	Standard
	Se	82	23.2	12.4	**0.0547**	0.023	42.1	ug/L	17	Standard
	Se-1	77	56.7	21.6	**-0.0309**	0.148	479.3	ug/L	56	Standard
>	**Ga**	71	35.0	62.3				mg/L	25	Standard
	Rb	85	25.0	34.6				ug/L	28	Standard
	Y	89	451349.1	0.6				ug/L	447395	Standard
>	**Rh**	103	21.7	48.0				ug/L	15	Standard
	Mo	98	237.5	8.6	**0.0541**	0.007	13.2	ug/L	113	Standard
	Ag	107	234.7	5.8	**0.0196**	0.002	10.5	ug/L	108	Standard
	Cd	111	27.2	17.4	**0.0094**	0.002	21.1	mg/L	3	Standard
	Cd	114	66.4	34.3	**0.0116**	0.004	34.4	ug/L	20	Standard
>	**In**	115	629965.8	0.8				ug/L	625728	Standard
	Sn	118	940.0	21.0	**0.0607**	0.029	48.4	ug/L	568	Standard
	Sb	123	1092.2	32.6	**0.1759**	0.067	38.2	ug/L	612	Standard
	Ba	135	59.0	17.7	**0.0090**	0.005	54.2	ug/L	21	Standard
	Ce	140	21.7	70.5				ug/L	245	Standard
>	**Tb**	159	955018.0	0.8				ug/L	950397	Standard
	Ho	165	13.3	43.3				ug/L	7	Standard
	Tl	203	126.3	20.6	**0.0132**	0.003	22.7	ug/L	15	Standard
	Tl	205	113.3	18.4	**0.0043**	0.003	62.2	ug/L	13	Standard
	Pb	206	346.7	4.9	**0.0167**	0.003	20.4	ug/L	264	Standard
	Pb	207	322.3	7.2	**0.0158**	0.005	30.9	ug/L	222	Standard
	Pb	208	1248.7	4.5	**0.0104**	0.003	28.9	ug/L	959	Standard
	U	238	111.7	26.1	**0.0134**	0.004	27.1	ug/L	9	Standard
>	**Bi**	209	560384.3	0.8				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	55.0	59.6	**0.0047**	0.039	831.6	mg/L	55	Standard
K	39	35.0	37.8	**0.0039**	0.051	1305.2	mg/L	28	Standard
Ca	43	11.7	24.7	**-1.3816**	0.279	20.2	mg/L	27	Standard
Fe	54	175.9	8.8	**0.0403**	0.012	30.1	mg/L	147	Standard
Fe	57	250.0	2.0	**-0.0293**	0.009	29.6	mg/L	268	Standard
Sc-1	45	40828.3	2.4				mg/L	41174	Standard
Cl	35	77022.6	1.0				ug/L	69550	Standard
Kr	83	3.3	34.6				ug/L	1	Standard
Br	81	2493.5	3.8				ug/L	1950	Standard
P	31	23044.2	2.3				ug/L	21156	Standard
S	34	3880.5	1.7				ug/L	3419	Standard
Sr	88	65.0	33.5				ug/L	72	Standard
C	12	130.0	40.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	17	Standard
Dy	164	9.0	113.3				mg/L	16	Standard
Ho-1	165	13.3	43.3				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	16675.8	0.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.564	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.677
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.368
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 11:43:18
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Method 6020 - Summary Report

Sample ID: L1606141703
Sample Date/Time: Friday, July 01, 2016 11:44:14
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81889.0	0.6				ug/L	76456	Standard
	Be	9	25.0	91.7	**0.0010**	0.019	1981.7	ug/L	20	Standard
	Al	27	20848394.4	0.7	**113.6982**	1.012	0.9	ug/L	1307	Standard
	Sc	45	42434.3	1.1				ug/L	41174	Standard
	Ti	47	234.7	10.2	**0.6592**	0.078	11.8	ug/L	27	Standard
	V	51	28681.8	1.4	**3.4038**	0.038	1.1	ug/L	1434	Standard
	Cr	52	19756.9	2.1	**1.5522**	0.054	3.5	ug/L	7733	Standard
	Cr	53	14119.9	6.2	**14.0078**	0.905	6.5	ug/L	442	Standard
	Mn	55	3334.7	3.0	**0.3535**	0.012	3.4	ug/L	723	Standard
	Co	59	938.4	1.3	**0.0970**	0.001	0.7	ug/L	217	Standard
	Ni	60	2864.9	3.9	**1.2722**	0.046	3.6	ug/L	304	Standard
	Cu	65	1854.4	2.7	**0.8643**	0.032	3.7	ug/L	181	Standard
	Zn	66	2610.6	1.0	**2.0198**	0.039	1.9	ug/L	215	Standard
>	**Ge**	72	504450.0	0.8				ug/L	520809	Standard
	As	75	1324.6	1.2	**1.1530**	0.022	1.9	ug/L	-52	Standard
	Se	82	1104.4	0.5	**8.8990**	0.094	1.1	ug/L	17	Standard
	Se-1	77	1261.1	5.7	**14.5449**	0.840	5.8	ug/L	56	Standard
>	**Ga**	71	50.0	43.6				mg/L	25	Standard
	Rb	85	1121.7	4.1				ug/L	28	Standard
	Y	89	436048.7	1.9				ug/L	447395	Standard
>	**Rh**	103	121.7	29.7				ug/L	15	Standard
	Mo	98	645.7	3.5	**0.2020**	0.005	2.6	ug/L	113	Standard
	Ag	107	223.7	26.2	**0.0200**	0.008	40.7	ug/L	108	Standard
	Cd	111	51.2	16.5	**0.0212**	0.004	16.8	mg/L	3	Standard
	Cd	114	113.2	6.3	**0.0210**	0.002	7.4	ug/L	20	Standard
>	**In**	115	591186.7	1.3				ug/L	625728	Standard
	Sn	118	875.0	14.2	**0.0597**	0.021	34.7	ug/L	568	Standard
	Sb	123	602.8	25.4	**0.0895**	0.030	33.5	ug/L	612	Standard
	Ba	135	16459.3	1.1	**7.9899**	0.039	0.5	ug/L	21	Standard
	Ce	140	880.0	5.0				ug/L	245	Standard
>	**Tb**	159	920155.8	2.2				ug/L	950397	Standard
	Ho	165	50.0	34.6				ug/L	7	Standard
	Tl	203	157.7	7.1	**0.0182**	0.001	6.2	ug/L	15	Standard
	Tl	205	155.0	27.9	**0.0113**	0.006	51.8	ug/L	13	Standard
	Pb	206	453.0	2.5	**0.0428**	0.002	4.5	ug/L	264	Standard
	Pb	207	378.7	4.5	**0.0335**	0.003	9.5	ug/L	222	Standard
	Pb	208	1616.4	3.0	**0.0349**	0.002	5.2	ug/L	959	Standard
	U	238	24675.7	1.0	**3.3100**	0.026	0.8	ug/L	9	Standard
>	**Bi**	209	511192.5	1.2				ug/L	552821	Standard

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Na	23	5.0	100.0	**14.4476**	14.513	100.4	mg/L	2	Standard
Mg	24	129302.7	0.5	**146.5117**	1.623	1.1	mg/L	55	Standard
K	39	120.0	31.5	**0.3147**	0.137	43.6	mg/L	28	Standard
Ca	43	443.3	15.8	**36.6451**	6.259	17.1	mg/L	27	Standard
Fe	54	170.0	14.6	**0.0304**	0.017	57.5	mg/L	147	Standard
Fe	57	581.7	5.3	**0.9302**	0.090	9.7	mg/L	268	Standard
> **Sc-1**	45	42434.3	1.1				mg/L	41174	Standard
Cl	35	97340.4	1.2				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	68893.1	4.4				ug/L	1950	Standard
P	31	25483.1	3.6				ug/L	21156	Standard
S	34	3482.1	6.0				ug/L	3419	Standard
Sr	88	398.3	9.6				ug/L	72	Standard
C	12	456.7	3.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	17	Standard
Dy	164	44.0	27.1				mg/L	16	Standard
Ho-1	165	50.0	34.6				mg/L	7	Standard
Er	166	56.7	53.9				mg/L	7	Standard
I	127	49472.4	4.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.106	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.859	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.480
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	92.470
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606141704
Sample Date/Time: Friday, July 01, 2016 11:47:26
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	84196.6	0.3				ug/L	76456	Standard
	Be	9	33.3	22.9	**0.0072**	0.006	86.7	ug/L	20	Standard
	Al	27	15514677.9	3.0	**82.2819**	2.194	2.7	ug/L	1307	Standard
	Sc	45	43039.4	2.0				ug/L	41174	Standard
	Ti	47	214.3	5.1	**0.5706**	0.026	4.6	ug/L	27	Standard
	V	51	104787.8	1.3	**12.4991**	0.095	0.8	ug/L	1434	Standard
	Cr	52	15259.3	0.7	**0.9095**	0.033	3.7	ug/L	7733	Standard
	Cr	53	5951.2	3.9	**5.4474**	0.187	3.4	ug/L	442	Standard
	Mn	55	4057.5	2.5	**0.4326**	0.014	3.2	ug/L	723	Standard
	Co	59	713.7	6.2	**0.0633**	0.005	7.8	ug/L	217	Standard
	Ni	60	1861.4	2.8	**0.7406**	0.029	3.9	ug/L	304	Standard
	Cu	65	1343.1	2.6	**0.5817**	0.025	4.2	ug/L	181	Standard
	Zn	66	2743.6	1.9	**2.0501**	0.019	0.9	ug/L	215	Standard
>	Ge	72	522881.1	1.2				ug/L	520809	Standard
	As	75	2151.6	2.6	**1.7810**	0.033	1.9	ug/L	-52	Standard
	Se	82	460.2	1.1	**3.5021**	0.008	0.2	ug/L	17	Standard
	Se-1	77	457.3	2.7	**4.6435**	0.083	1.8	ug/L	56	Standard
>	Ga	71	48.3	41.8				mg/L	25	Standard
	Rb	85	1016.7	4.8				ug/L	28	Standard
	Y	89	448180.4	0.4				ug/L	447395	Standard
>	Rh	103	61.7	28.5				ug/L	15	Standard
	Mo	98	2950.5	2.8	**0.9697**	0.025	2.6	ug/L	113	Standard
	Ag	107	125.3	5.6	**0.0049**	0.001	22.3	ug/L	108	Standard
	Cd	111	47.4	9.4	**0.0186**	0.002	10.0	mg/L	3	Standard
	Cd	114	120.7	5.3	**0.0216**	0.001	5.2	ug/L	20	Standard
>	In	115	614296.5	0.6				ug/L	625728	Standard
	Sn	118	906.7	10.1	**0.0592**	0.014	23.4	ug/L	568	Standard
	Sb	123	614.0	19.1	**0.0872**	0.022	25.7	ug/L	612	Standard
	Ba	135	28748.9	0.6	**13.4426**	0.042	0.3	ug/L	21	Standard
	Ce	140	528.3	5.7				ug/L	245	Standard
>	Tb	159	947954.0	1.2				ug/L	950397	Standard
	Ho	165	23.3	12.4				ug/L	7	Standard
	Tl	203	129.3	12.8	**0.0142**	0.002	13.1	ug/L	15	Standard
	Tl	205	116.7	9.9	**0.0055**	0.002	28.8	ug/L	13	Standard
	Pb	206	445.0	3.2	**0.0379**	0.002	6.0	ug/L	264	Standard
	Pb	207	341.0	4.4	**0.0228**	0.003	12.0	ug/L	222	Standard
	Pb	208	1493.7	0.5	**0.0256**	0.000	1.6	ug/L	959	Standard
	U	238	70565.6	0.2	**9.0963**	0.034	0.4	ug/L	9	Standard
>	Bi	209	531969.0	0.4				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	88574.8	1.4	**98.9343**	0.707	0.7	mg/L	55	Standard
K	39	85.0	11.8	**0.1808**	0.038	21.2	mg/L	28	Standard
Ca	43	236.7	3.2	**18.1358**	1.082	6.0	mg/L	27	Standard
Fe	54	139.8	11.5	**0.0060**	0.011	187.7	mg/L	147	Standard
Fe	57	440.0	15.9	**0.4880**	0.189	38.8	mg/L	268	Standard
> **Sc-1**	45	43039.4	2.0				mg/L	41174	Standard
Cl	35	92305.0	1.1				ug/L	69550	Standard
Kr	83	2.7	57.3				ug/L	1	Standard
Br	81	47838.7	1.5				ug/L	1950	Standard
P	31	25832.0	1.0				ug/L	21156	Standard
S	34	3398.7	3.3				ug/L	3419	Standard
Sr	88	276.7	16.4				ug/L	72	Standard
C	12	396.7	10.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	17	Standard
Dy	164	28.9	100.6				mg/L	16	Standard
Ho-1	165	23.3	12.4				mg/L	7	Standard
Er	166	23.3	89.2				mg/L	7	Standard
I	127	50935.5	2.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.125	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.398	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.173
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.228
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606141708
Sample Date/Time: Friday, July 01, 2016 11:50:37
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	89411.4	1.5				ug/L	76456	Standard
	Be	9	40.0	65.0	**0.0106**	0.020	184.8	ug/L	20	Standard
	Al	27	22078727.0	1.3	**110.2973**	2.573	2.3	ug/L	1307	Standard
	Sc	45	45105.4	2.6				ug/L	41174	Standard
	Ti	47	320.0	7.2	**0.8822**	0.060	6.8	ug/L	27	Standard
	V	51	99984.6	2.1	**11.7774**	0.066	0.6	ug/L	1434	Standard
	Cr	52	21104.0	1.8	**1.5998**	0.060	3.7	ug/L	7733	Standard
	Cr	53	17553.5	0.8	**16.6868**	0.266	1.6	ug/L	442	Standard
	Mn	55	6430.0	0.9	**0.7351**	0.014	1.9	ug/L	723	Standard
	Co	59	852.7	2.7	**0.0802**	0.004	4.4	ug/L	217	Standard
	Ni	60	2949.0	1.3	**1.2465**	0.031	2.4	ug/L	304	Standard
	Cu	65	1272.1	1.7	**0.5397**	0.010	1.8	ug/L	181	Standard
	Zn	66	3425.7	3.7	**2.5723**	0.060	2.3	ug/L	215	Standard
>	Ge	72	528948.8	1.6				ug/L	520809	Standard
	As	75	3475.1	1.0	**2.8171**	0.043	1.5	ug/L	-52	Standard
	Se	82	859.6	2.0	**6.5725**	0.024	0.4	ug/L	17	Standard
	Se-1	77	1345.7	4.1	**14.8113**	0.393	2.7	ug/L	56	Standard
>	Ga	71	66.7	11.5				mg/L	25	Standard
	Rb	85	4762.4	2.0				ug/L	28	Standard
	Y	89	458548.0	1.5				ug/L	447395	Standard
>	Rh	103	130.0	17.6				ug/L	15	Standard
	Mo	98	5253.1	0.6	**1.7250**	0.023	1.4	ug/L	113	Standard
	Ag	107	143.3	4.2	**0.0072**	0.001	7.4	ug/L	108	Standard
	Cd	111	26.0	42.6	**0.0090**	0.005	53.4	mg/L	3	Standard
	Cd	114	74.8	31.1	**0.0133**	0.004	31.5	ug/L	20	Standard
>	In	115	621514.7	1.7				ug/L	625728	Standard
	Sn	118	2120.1	10.2	**0.2472**	0.030	12.0	ug/L	568	Standard
	Sb	123	722.8	13.7	**0.1069**	0.018	16.5	ug/L	612	Standard
	Ba	135	16530.7	1.8	**7.6319**	0.034	0.4	ug/L	21	Standard
	Ce	140	651.7	0.4				ug/L	245	Standard
>	Tb	159	970516.7	2.5				ug/L	950397	Standard
	Ho	165	30.0	28.9				ug/L	7	Standard
	Tl	203	115.3	7.9	**0.0125**	0.001	8.0	ug/L	15	Standard
	Tl	205	93.3	21.7	**0.0024**	0.003	115.8	ug/L	13	Standard
	Pb	206	443.0	3.9	**0.0372**	0.003	8.7	ug/L	264	Standard
	Pb	207	377.3	5.1	**0.0298**	0.003	10.5	ug/L	222	Standard
	Pb	208	1645.4	1.3	**0.0327**	0.002	5.5	ug/L	959	Standard
	U	238	38430.4	2.4	**4.9290**	0.066	1.3	ug/L	9	Standard
>	Bi	209	534585.3	1.1				ug/L	552821	Standard

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Na	23	3.3	173.2	**9.3062**	16.110	173.1	mg/L	2	Standard
Mg	24	132828.1	1.2	**141.6540**	4.533	3.2	mg/L	55	Standard
K	39	191.7	1.5	**0.5400**	0.021	3.8	mg/L	28	Standard
Ca	43	260.0	27.1	**19.0243**	5.272	27.7	mg/L	27	Standard
Fe	54	173.3	10.7	**0.0254**	0.016	61.2	mg/L	147	Standard
Fe	57	418.3	15.9	**0.3725**	0.215	57.6	mg/L	268	Standard
> **Sc-1**	45	45105.4	2.6				mg/L	41174	Standard
Cl	35	100939.1	0.9				ug/L	69550	Standard
Kr	83	1.0	0.0				ug/L	1	Standard
Br	81	47925.8	4.8				ug/L	1950	Standard
P	31	29869.4	2.0				ug/L	21156	Standard
S	34	3397.0	1.1				ug/L	3419	Standard
Sr	88	423.3	25.1				ug/L	72	Standard
C	12	363.3	14.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	17	Standard
Dy	164	21.9	26.4				mg/L	16	Standard
Ho-1	165	30.0	28.9				mg/L	7	Standard
Er	166	30.0	0.0				mg/L	7	Standard
I	127	41419.9	2.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.945	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.563	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.327
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.701
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606141709
Sample Date/Time: Friday, July 01, 2016 11:53:49
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89000.7	1.7				ug/L	76456	Standard
	Be	9	21.7	53.3	**-0.0032**	0.009	283.0	ug/L	20	Standard
	Al	27	81398.6	19.6	**0.3975**	0.073	18.3	ug/L	1307	Standard
	Sc	45	44555.4	0.6				ug/L	41174	Standard
	Ti	47	68.3	11.1	**0.1083**	0.021	19.5	ug/L	27	Standard
	V	51	3436.2	9.0	**0.1857**	0.034	18.2	ug/L	1434	Standard
	Cr	52	29812.6	1.5	**2.4193**	0.055	2.3	ug/L	7733	Standard
	Cr	53	3683.8	3.4	**2.9342**	0.118	4.0	ug/L	442	Standard
	Mn	55	6681.5	2.0	**0.7101**	0.015	2.0	ug/L	723	Standard
	Co	59	555.0	20.9	**0.0372**	0.014	37.4	ug/L	217	Standard
	Ni	60	3463.7	2.0	**1.3816**	0.031	2.2	ug/L	304	Standard
	Cu	65	1056.0	4.0	**0.4017**	0.019	4.6	ug/L	181	Standard
	Zn	66	4593.4	1.7	**3.2666**	0.053	1.6	ug/L	215	Standard
>	**Ge**	72	566488.4	0.2				ug/L	520809	Standard
	As	75	-5.4	928.8	**0.0411**	0.038	91.4	ug/L	-52	Standard
	Se	82	29.8	40.3	**0.0905**	0.087	96.5	ug/L	17	Standard
	Se-1	77	89.0	15.9	**0.2724**	0.151	55.6	ug/L	56	Standard
>	**Ga**	71	38.3	15.1				mg/L	25	Standard
	Rb	85	258.3	31.9				ug/L	28	Standard
	Y	89	491649.6	0.6				ug/L	447395	Standard
>	**Rh**	103	20.0	0.0				ug/L	15	Standard
	Mo	98	1080.6	3.0	**0.3054**	0.011	3.5	ug/L	113	Standard
	Ag	107	233.3	81.3	**0.0171**	0.024	142.6	ug/L	108	Standard
	Cd	111	62.5	42.8	**0.0227**	0.011	47.4	mg/L	3	Standard
	Cd	114	173.3	77.7	**0.0281**	0.022	77.8	ug/L	20	Standard
>	**In**	115	678768.0	0.3				ug/L	625728	Standard
	Sn	118	3542.1	5.1	**0.4232**	0.027	6.3	ug/L	568	Standard
	Sb	123	458.8	15.3	**0.0481**	0.013	26.4	ug/L	612	Standard
	Ba	135	1179.0	5.3	**0.4817**	0.027	5.6	ug/L	21	Standard
	Ce	140	250.0	8.7				ug/L	245	Standard
>	**Tb**	159	1017740.7	0.9				ug/L	950397	Standard
	Ho	165	16.7	62.4				ug/L	7	Standard
	Tl	203	186.0	120.6	**0.0185**	0.023	124.9	ug/L	15	Standard
	Tl	205	108.3	94.3	**0.0029**	0.012	410.9	ug/L	13	Standard
	Pb	206	582.3	26.2	**0.0521**	0.024	46.8	ug/L	264	Standard
	Pb	207	512.3	24.2	**0.0467**	0.022	46.6	ug/L	222	Standard
	Pb	208	1988.1	15.4	**0.0399**	0.013	32.1	ug/L	959	Standard
	U	238	126.0	91.3	**0.0142**	0.013	92.3	ug/L	9	Standard
>	**Bi**	209	592807.4	1.2				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	260.0	26.4	**0.2207**	0.075	34.1	mg/L	55	Standard
K	39	20.0	25.0	**-0.0603**	0.018	29.6	mg/L	28	Standard
Ca	43	25.0	40.0	**-0.3533**	0.844	239.0	mg/L	27	Standard
Fe	54	209.5	1.2	**0.0530**	0.003	4.8	mg/L	147	Standard
Fe	57	231.7	15.2	**-0.1465**	0.097	65.9	mg/L	268	Standard
Sc-1	45	44555.4	0.6				mg/L	41174	Standard
Cl	35	92666.6	2.2				ug/L	69550	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	3473.7	14.7				ug/L	1950	Standard
P	31	23892.2	1.7				ug/L	21156	Standard
S	34	3687.1	4.5				ug/L	3419	Standard
Sr	88	46.7	37.6				ug/L	72	Standard
C	12	203.3	12.4				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	17	Standard
Dy	164	32.1	49.0				mg/L	16	Standard
Ho-1	165	16.7	62.4				mg/L	7	Standard
Er	166	26.7	43.3				mg/L	7	Standard
I	127	2500.2	19.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.408	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.771	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.477
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.233
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606144101
Sample Date/Time: Friday, July 01, 2016 11:57:01
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	90118.9	1.7				ug/L	76456	Standard
	Be	9	590.0	6.6	**0.4275**	0.033	7.7	ug/L	20	Standard
	Al	27	41637732.7	0.8	**206.3623**	2.003	1.0	ug/L	1307	Standard
	Sc	45	52748.3	1.3				ug/L	41174	Standard
	Ti	47	25849.4	0.9	**75.9425**	0.582	0.8	ug/L	27	Standard
	V	51	119191.4	0.7	**13.6962**	0.128	0.9	ug/L	1434	Standard
	Cr	52	206171.6	0.2	**23.4624**	0.147	0.6	ug/L	7733	Standard
	Cr	53	26030.7	3.1	**24.2644**	0.827	3.4	ug/L	442	Standard
	Mn	55	3362426.1	1.3	**425.5410**	6.574	1.5	ug/L	723	Standard
	Co	59	45394.2	0.9	**5.6490**	0.060	1.1	ug/L	217	Standard
	Ni	60	38170.7	0.8	**17.4748**	0.075	0.4	ug/L	304	Standard
	Cu	65	32375.9	0.9	**15.1289**	0.102	0.7	ug/L	181	Standard
	Zn	66	132720.1	0.4	**103.6234**	0.326	0.3	ug/L	215	Standard
>	Ge	72	543517.2	0.4				ug/L	520809	Standard
	As	75	40511.0	0.4	**31.4895**	0.240	0.8	ug/L	-52	Standard
	Se	82	271.3	7.7	**1.9305**	0.150	7.7	ug/L	17	Standard
	Se-1	77	159.7	0.7	**1.1051**	0.008	0.7	ug/L	56	Standard
>	Ga	71	10717.1	0.7				mg/L	25	Standard
	Rb	85	127736.4	2.6				ug/L	28	Standard
	Y	89	566400.0	1.2				ug/L	447395	Standard
>	Rh	103	230.0	10.0				ug/L	15	Standard
	Mo	98	19958.9	0.3	**6.3798**	0.036	0.6	ug/L	113	Standard
	Ag	107	307.3	4.7	**0.0287**	0.002	7.3	ug/L	108	Standard
	Cd	111	352.1	11.3	**0.1461**	0.017	11.5	mg/L	3	Standard
	Cd	114	941.3	14.8	**0.1602**	0.023	14.2	ug/L	20	Standard
>	In	115	644859.8	0.7				ug/L	625728	Standard
	Sn	118	2065.1	2.2	**0.2271**	0.006	2.7	ug/L	568	Standard
	Sb	123	1536.5	9.5	**0.2547**	0.026	10.2	ug/L	612	Standard
	Ba	135	755795.9	0.3	**337.0929**	2.903	0.9	ug/L	21	Standard
	Ce	140	578983.3	0.3				ug/L	245	Standard
>	Tb	159	997623.6	0.4				ug/L	950397	Standard
	Ho	165	8542.4	1.8				ug/L	7	Standard
	Tl	203	679.7	2.4	**0.0742**	0.002	2.6	ug/L	15	Standard
	Tl	205	551.7	3.8	**0.0587**	0.002	3.1	ug/L	13	Standard
	Pb	206	82465.5	0.5	**14.3726**	0.198	1.4	ug/L	264	Standard
	Pb	207	67377.8	0.6	**12.9242**	0.183	1.4	ug/L	222	Standard
	Pb	208	291536.5	0.2	**13.6926**	0.174	1.3	ug/L	959	Standard
	U	238	4078.5	1.0	**0.5004**	0.006	1.2	ug/L	9	Standard
>	Bi	209	558632.4	1.1				ug/L	552821	Standard

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Na	23	6.7	43.3	**15.4842**	6.494	41.9	mg/L	2	Standard
Mg	24	15246.0	1.4	**13.8434**	0.267	1.9	mg/L	55	Standard
K	39	708.3	3.5	**1.9891**	0.079	4.0	mg/L	28	Standard
Ca	43	650.0	13.5	**43.6069**	5.619	12.9	mg/L	27	Standard
Fe	54	24640.5	1.6	**14.9863**	0.360	2.4	mg/L	147	Standard
Fe	57	6984.9	0.7	**15.9501**	0.213	1.3	mg/L	268	Standard
Sc-1	45	52748.3	1.3				mg/L	41174	Standard
Cl	35	77949.4	2.2				ug/L	69550	Standard
Kr	83	4.0	50.0				ug/L	1	Standard
Br	81	47491.0	0.5				ug/L	1950	Standard
P	31	44155.9	1.6				ug/L	21156	Standard
S	34	4003.9	3.1				ug/L	3419	Standard
Sr	88	953.4	8.4				ug/L	72	Standard
C	12	680.0	10.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	56.8				mg/L	17	Standard
Dy	164	14685.5	3.1				mg/L	16	Standard
Ho-1	165	8542.4	1.8				mg/L	7	Standard
Er	166	7695.3	3.1				mg/L	7	Standard
I	127	857640.2	8.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.871	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.360	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.058
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.051
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606144102
Sample Date/Time: Friday, July 01, 2016 12:00:12
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	98658.5	1.5				ug/L	76456	Standard
	Be	9	2670.2	2.5	**1.8290**	0.053	2.9	ug/L	20	Standard
	Al	27	100018655.9	1.5	**452.7643**	1.271	0.3	ug/L	1307	Standard
	Sc	45	67269.1	3.4				ug/L	41174	Standard
	Ti	47	65558.9	1.5	**191.1007**	3.376	1.8	ug/L	27	Standard
	V	51	394103.6	0.8	**45.3542**	0.603	1.3	ug/L	1434	Standard
	Cr	52	244910.5	0.4	**27.8063**	0.223	0.8	ug/L	7733	Standard
	Cr	53	30011.4	1.8	**27.7958**	0.566	2.0	ug/L	442	Standard
	Mn	55	9446087.0	0.8	**1185.4895**	15.339	1.3	ug/L	723	Standard
	Co	59	127992.0	0.5	**15.8451**	0.159	1.0	ug/L	217	Standard
	Ni	60	80262.0	0.9	**36.5997**	0.485	1.3	ug/L	304	Standard
	Cu	65	41760.1	1.2	**19.3697**	0.328	1.7	ug/L	181	Standard
	Zn	66	117095.1	0.6	**90.6239**	0.738	0.8	ug/L	215	Standard
>	Ge	72	548186.8	0.5				ug/L	520809	Standard
	As	75	12213.4	1.0	**9.4446**	0.140	1.5	ug/L	-52	Standard
	Se	82	168.5	1.4	**1.1404**	0.019	1.7	ug/L	17	Standard
	Se-1	77	183.7	6.1	**1.3567**	0.128	9.4	ug/L	56	Standard
>	Ga	71	38156.3	0.9				mg/L	25	Standard
	Rb	85	401776.2	1.3				ug/L	28	Standard
	Y	89	977933.0	0.9				ug/L	447395	Standard
>	Rh	103	285.0	6.1				ug/L	15	Standard
	Mo	98	2398.4	0.8	**0.7441**	0.003	0.4	ug/L	113	Standard
	Ag	107	404.7	5.9	**0.0417**	0.003	8.1	ug/L	108	Standard
	Cd	111	528.3	1.5	**0.2199**	0.003	1.2	mg/L	3	Standard
	Cd	114	1302.9	4.8	**0.2213**	0.008	3.8	ug/L	20	Standard
>	In	115	646109.7	1.1				ug/L	625728	Standard
	Sn	118	1073.4	7.7	**0.0773**	0.012	15.1	ug/L	568	Standard
	Sb	123	1069.4	22.8	**0.1664**	0.044	26.2	ug/L	612	Standard
	Ba	135	1753079.8	0.5	**780.4145**	5.897	0.8	ug/L	21	Standard
	Ce	140	2444826.3	0.9				ug/L	245	Standard
>	Tb	159	1048030.7	0.8				ug/L	950397	Standard
	Ho	165	43214.9	0.3				ug/L	7	Standard
	Tl	203	1815.1	1.2	**0.2022**	0.002	1.2	ug/L	15	Standard
	Tl	205	1641.8	6.8	**0.1969**	0.014	6.9	ug/L	13	Standard
	Pb	206	125036.8	0.6	**22.1250**	0.076	0.3	ug/L	264	Standard
	Pb	207	102892.9	0.5	**20.0422**	0.120	0.6	ug/L	222	Standard
	Pb	208	445404.9	0.2	**21.2431**	0.093	0.4	ug/L	959	Standard
	U	238	8589.4	1.3	**1.0692**	0.015	1.4	ug/L	9	Standard
>	Bi	209	550757.7	0.3				ug/L	552821	Standard

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Na	23	15.0	33.3	**27.3614**	8.722	31.9	mg/L	2	Standard
Mg	24	11512.7	3.2	**8.1734**	0.184	2.3	mg/L	55	Standard
K	39	1368.4	5.6	**3.0793**	0.098	3.2	mg/L	28	Standard
Ca	43	1295.1	4.3	**69.6682**	4.720	6.8	mg/L	27	Standard
Fe	54	38707.5	2.1	**18.4898**	0.545	2.9	mg/L	147	Standard
Fe	57	11109.1	1.4	**20.0998**	0.536	2.7	mg/L	268	Standard
> **Sc-1**	45	67269.1	3.4				mg/L	41174	Standard
Cl	35	76892.0	1.5				ug/L	69550	Standard
Kr	83	0.0					ug/L	1	Standard
Br	81	13365.9	1.5				ug/L	1950	Standard
P	31	63609.9	1.5				ug/L	21156	Standard
S	34	3752.1	6.7				ug/L	3419	Standard
Sr	88	1298.4	6.6				ug/L	72	Standard
C	12	780.0	10.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	20.4				mg/L	17	Standard
Dy	164	72319.7	1.0				mg/L	16	Standard
Ho-1	165	43214.9	0.3				mg/L	7	Standard
Er	166	38789.6	1.4				mg/L	7	Standard
I	127	200464.2	1.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.040	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.257	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.257	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.627	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ti 47 Upper, S, EEE	Ti	47	

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Mn 55 Upper, S, EEE	Mn	55
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606144201 WG574416-02
Sample Date/Time: Friday, July 01, 2016 12:03:24
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	91136.7	2.7				ug/L	76456	Standard
	Be	9	201.7	10.3	**0.1314**	0.018	13.5	ug/L	20	Standard
	Al	27	21905405.8	1.2	**107.3706**	1.869	1.7	ug/L	1307	Standard
	Sc	45	50086.0	0.8				ug/L	41174	Standard
	Ti	47	9316.5	1.4	**26.0675**	0.608	2.3	ug/L	27	Standard
	V	51	52523.0	0.3	**5.6447**	0.076	1.3	ug/L	1434	Standard
	Cr	52	28573.6	1.1	**2.2609**	0.041	1.8	ug/L	7733	Standard
	Cr	53	3023.6	5.3	**2.3192**	0.157	6.8	ug/L	442	Standard
	Mn	55	526886.3	1.1	**63.5454**	0.695	1.1	ug/L	723	Standard
	Co	59	12298.0	1.4	**1.4386**	0.020	1.4	ug/L	217	Standard
	Ni	60	9400.9	1.0	**3.9901**	0.052	1.3	ug/L	304	Standard
	Cu	65	4207.6	2.8	**1.8116**	0.065	3.6	ug/L	181	Standard
	Zn	66	23172.4	0.3	**17.1155**	0.171	1.0	ug/L	215	Standard
>	Ge	72	569574.4	1.1				ug/L	520809	Standard
	As	75	2039.6	1.1	**1.5560**	0.025	1.6	ug/L	-52	Standard
	Se	82	85.8	3.3	**0.4942**	0.015	3.0	ug/L	17	Standard
	Se-1	77	88.7	8.5	**0.2643**	0.088	33.1	ug/L	56	Standard
>	Ga	71	3267.0	3.2				mg/L	25	Standard
	Rb	85	51683.0	1.3				ug/L	28	Standard
	Y	89	529527.6	0.3				ug/L	447395	Standard
>	Rh	103	150.0	5.8				ug/L	15	Standard
	Mo	98	1541.7	1.1	**0.4475**	0.001	0.3	ug/L	113	Standard
	Ag	107	153.0	7.4	**0.0069**	0.002	23.0	ug/L	108	Standard
	Cd	111	40.7	6.3	**0.0140**	0.001	8.1	mg/L	3	Standard
	Cd	114	102.3	14.8	**0.0166**	0.003	15.4	ug/L	20	Standard
>	In	115	676532.0	0.8				ug/L	625728	Standard
	Sn	118	971.7	4.9	**0.0555**	0.008	14.3	ug/L	568	Standard
	Sb	123	639.0	14.8	**0.0807**	0.018	21.8	ug/L	612	Standard
	Ba	135	197467.2	0.8	**83.9345**	0.680	0.8	ug/L	21	Standard
	Ce	140	158462.8	1.7				ug/L	245	Standard
>	Tb	159	1025960.2	1.0				ug/L	950397	Standard
	Ho	165	2715.2	3.4				ug/L	7	Standard
	Tl	203	280.3	9.2	**0.0292**	0.003	9.9	ug/L	15	Standard
	Tl	205	271.7	10.1	**0.0229**	0.003	13.4	ug/L	13	Standard
	Pb	206	9533.7	0.7	**1.5691**	0.011	0.7	ug/L	264	Standard
	Pb	207	7883.1	1.1	**1.4223**	0.009	0.6	ug/L	222	Standard
	Pb	208	34084.4	0.9	**1.5063**	0.007	0.5	ug/L	959	Standard
	U	238	20271.2	0.7	**2.4081**	0.030	1.3	ug/L	9	Standard
>	Bi	209	577230.0	0.8				ug/L	552821	Standard

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Na	23	10.0	86.6	**24.6403**	21.507	87.3	mg/L	2	Standard
Mg	24	4422.3	4.5	**4.1870**	0.202	4.8	mg/L	55	Standard
K	39	186.7	8.6	**0.4573**	0.052	11.3	mg/L	28	Standard
Ca	43	566.7	10.9	**39.8634**	4.346	10.9	mg/L	27	Standard
Fe	54	2666.0	2.2	**1.6199**	0.041	2.5	mg/L	147	Standard
Fe	57	1331.7	5.5	**2.5595**	0.178	6.9	mg/L	268	Standard
> **Sc-1**	45	50086.0	0.8				mg/L	41174	Standard
Cl	35	83929.2	1.1				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	13155.7	1.8				ug/L	1950	Standard
P	31	31337.4	1.4				ug/L	21156	Standard
S	34	3528.7	1.1				ug/L	3419	Standard
Sr	88	476.7	5.8				ug/L	72	Standard
C	12	400.0	7.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	17	Standard
Dy	164	4673.5	1.6				mg/L	16	Standard
Ho-1	165	2715.2	3.4				mg/L	7	Standard
Er	166	2656.9	8.5				mg/L	7	Standard
I	127	16687.6	14.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.202	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.363	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.119
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.415
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606144202
Sample Date/Time: Friday, July 01, 2016 12:06:35
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90507.9	1.9				ug/L	76456	Standard
	Be	9	248.3	5.8	**0.1675**	0.008	4.9	ug/L	20	Standard
	Al	27	22277088.2	0.8	**109.9375**	1.745	1.6	ug/L	1307	Standard
	Sc	45	50101.1	3.7				ug/L	41174	Standard
	Ti	47	12264.6	1.2	**34.7196**	0.584	1.7	ug/L	27	Standard
	V	51	62744.3	1.8	**6.8585**	0.146	2.1	ug/L	1434	Standard
	Cr	52	32463.4	1.9	**2.7415**	0.091	3.3	ug/L	7733	Standard
	Cr	53	3775.5	3.5	**3.0371**	0.138	4.6	ug/L	442	Standard
	Mn	55	731304.2	2.1	**89.2163**	2.199	2.5	ug/L	723	Standard
	Co	59	14984.4	2.2	**1.7791**	0.048	2.7	ug/L	217	Standard
	Ni	60	11028.3	1.8	**4.7605**	0.068	1.4	ug/L	304	Standard
	Cu	65	5131.2	1.5	**2.2507**	0.042	1.9	ug/L	181	Standard
	Zn	66	19672.8	1.3	**14.6652**	0.250	1.7	ug/L	215	Standard
>	**Ge**	72	563354.5	0.6				ug/L	520809	Standard
	As	75	2285.7	4.9	**1.7571**	0.090	5.1	ug/L	-52	Standard
	Se	82	78.7	24.0	**0.4498**	0.141	31.2	ug/L	17	Standard
	Se-1	77	96.3	4.2	**0.3571**	0.042	11.8	ug/L	56	Standard
>	**Ga**	71	4088.9	0.8				mg/L	25	Standard
	Rb	85	66167.5	0.6				ug/L	28	Standard
	Y	89	527047.3	1.0				ug/L	447395	Standard
>	**Rh**	103	133.3	20.7				ug/L	15	Standard
	Mo	98	1560.3	2.2	**0.4569**	0.008	1.8	ug/L	113	Standard
	Ag	107	236.0	37.0	**0.0178**	0.011	63.3	ug/L	108	Standard
	Cd	111	70.9	65.6	**0.0263**	0.019	71.1	mg/L	3	Standard
	Cd	114	182.9	70.7	**0.0299**	0.021	70.2	ug/L	20	Standard
>	**In**	115	671365.1	1.0				ug/L	625728	Standard
	Sn	118	1011.7	2.2	**0.0623**	0.004	5.8	ug/L	568	Standard
	Sb	123	671.0	17.2	**0.0874**	0.022	24.8	ug/L	612	Standard
	Ba	135	208248.7	0.6	**89.2003**	0.372	0.4	ug/L	21	Standard
	Ce	140	195369.9	1.1				ug/L	245	Standard
>	**Tb**	159	1017569.8	0.3				ug/L	950397	Standard
	Ho	165	3448.7	3.2				ug/L	7	Standard
	Tl	203	464.3	26.6	**0.0488**	0.013	26.2	ug/L	15	Standard
	Tl	205	373.3	2.0	**0.0351**	0.001	2.1	ug/L	13	Standard
	Pb	206	11404.0	0.3	**1.8871**	0.014	0.7	ug/L	264	Standard
	Pb	207	9244.8	0.8	**1.6776**	0.026	1.6	ug/L	222	Standard
	Pb	208	39660.1	0.9	**1.7621**	0.018	1.0	ug/L	959	Standard
	U	238	20504.2	1.2	**2.4376**	0.012	0.5	ug/L	9	Standard
>	**Bi**	209	576748.8	0.8				ug/L	552821	Standard

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Na	23	8.3	34.6	**20.5955**	7.569	36.8	mg/L	2	Standard
Mg	24	4662.4	4.9	**4.4148**	0.085	1.9	mg/L	55	Standard
K	39	218.3	22.9	**0.5540**	0.135	24.3	mg/L	28	Standard
Ca	43	601.7	7.9	**42.4925**	3.322	7.8	mg/L	27	Standard
Fe	54	3310.4	1.9	**2.0364**	0.082	4.1	mg/L	147	Standard
Fe	57	1525.1	5.8	**3.0549**	0.352	11.5	mg/L	268	Standard
Sc-1	45	50101.1	3.7				mg/L	41174	Standard
Cl	35	83923.1	0.7				ug/L	69550	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	11030.7	1.9				ug/L	1950	Standard
P	31	32000.4	1.7				ug/L	21156	Standard
S	34	3522.1	3.8				ug/L	3419	Standard
Sr	88	531.7	5.7				ug/L	72	Standard
C	12	333.3	12.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	17	Standard
Dy	164	5934.4	7.8				mg/L	16	Standard
Ho-1	165	3448.7	3.2				mg/L	7	Standard
Er	166	3343.7	6.8				mg/L	7	Standard
I	127	14929.0	2.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.379	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.169	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.293
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.328
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606144203S WG574416-08
Sample Date/Time: Friday, July 01, 2016 12:09:47
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	90030.2	2.8				ug/L	76456	Standard
	Be	9	67451.5	0.8	**51.1736**	1.267	2.5	ug/L	20	Standard
	Al	27	22083553.0	1.2	**109.5762**	1.952	1.8	ug/L	1307	Standard
	Sc	45	48706.5	1.6				ug/L	41174	Standard
	Ti	47	11744.6	3.0	**33.6397**	0.840	2.5	ug/L	27	Standard
	V	51	504596.4	0.3	**57.2364**	0.479	0.8	ug/L	1434	Standard
	Cr	52	455560.7	0.5	**51.7411**	0.108	0.2	ug/L	7733	Standard
	Cr	53	56769.5	0.3	**52.1372**	0.385	0.7	ug/L	442	Standard
	Mn	55	1036346.8	0.7	**127.9850**	0.471	0.4	ug/L	723	Standard
	Co	59	423691.1	0.7	**51.7179**	0.252	0.5	ug/L	217	Standard
	Ni	60	117301.3	0.2	**52.7412**	0.343	0.7	ug/L	304	Standard
	Cu	65	109232.0	1.3	**50.0075**	0.589	1.2	ug/L	181	Standard
	Zn	66	89717.5	1.0	**68.3316**	0.407	0.6	ug/L	215	Standard
>	Ge	72	556663.9	0.5				ug/L	520809	Standard
	As	75	68119.8	0.9	**51.6696**	0.438	0.8	ug/L	-52	Standard
	Se	82	6698.0	0.6	**49.4767**	0.038	0.1	ug/L	17	Standard
	Se-1	77	4484.0	0.7	**48.3919**	0.526	1.1	ug/L	56	Standard
>	Ga	71	4812.4	3.6				mg/L	25	Standard
	Rb	85	61444.3	0.8				ug/L	28	Standard
	Y	89	517239.3	0.8				ug/L	447395	Standard
>	Rh	103	106.7	32.9				ug/L	15	Standard
	Mo	98	1731.4	0.3	**0.5186**	0.008	1.5	ug/L	113	Standard
	Ag	107	354175.3	0.9	**46.7205**	0.584	1.2	ug/L	108	Standard
	Cd	111	119010.3	1.4	**48.9848**	0.748	1.5	mg/L	3	Standard
	Cd	114	293416.8	0.7	**48.7814**	0.554	1.1	ug/L	20	Standard
>	In	115	660339.6	1.1				ug/L	625728	Standard
	Sn	118	1475.1	6.5	**0.1329**	0.012	9.2	ug/L	568	Standard
	Sb	123	188284.4	1.5	**34.4893**	0.374	1.1	ug/L	612	Standard
	Ba	135	310505.8	0.4	**135.2331**	0.887	0.7	ug/L	21	Standard
	Ce	140	169550.1	0.7				ug/L	245	Standard
>	Tb	159	1009819.6	1.8				ug/L	950397	Standard
	Ho	165	3057.0	3.5				ug/L	7	Standard
	Tl	203	459336.1	0.3	**49.1469**	0.484	1.0	ug/L	15	Standard
	Tl	205	419582.5	1.2	**50.5538**	1.161	2.3	ug/L	13	Standard
	Pb	206	306250.8	0.1	**51.9221**	0.623	1.2	ug/L	264	Standard
	Pb	207	267507.5	0.3	**49.9387**	0.751	1.5	ug/L	222	Standard
	Pb	208	1116297.0	0.4	**51.0219**	0.722	1.4	ug/L	959	Standard
	U	238	433722.1	0.8	**51.6863**	1.022	2.0	ug/L	9	Standard
>	Bi	209	575528.3	1.2				ug/L	552821	Standard

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Na	23	16.7	75.5	**41.7692**	31.215	74.7	mg/L	2	Standard
Mg	24	4830.8	1.7	**4.7112**	0.123	2.6	mg/L	55	Standard
K	39	223.3	5.2	**0.5924**	0.027	4.5	mg/L	28	Standard
Ca	43	666.7	3.0	**48.7692**	1.740	3.6	mg/L	27	Standard
Fe	54	3420.8	4.4	**2.1691**	0.101	4.6	mg/L	147	Standard
Fe	57	1528.4	2.8	**3.1654**	0.056	1.8	mg/L	268	Standard
Sc-1	45	48706.5	1.6				mg/L	41174	Standard
Cl	35	82992.7	2.0				ug/L	69550	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	7521.9	4.9				ug/L	1950	Standard
P	31	32994.2	3.4				ug/L	21156	Standard
S	34	3745.5	4.1				ug/L	3419	Standard
Sr	88	541.7	13.3				ug/L	72	Standard
C	12	350.0	24.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	62.5				mg/L	17	Standard
Dy	164	4986.9	2.7				mg/L	16	Standard
Ho-1	165	3057.0	3.5				mg/L	7	Standard
Er	166	2656.9	3.8				mg/L	7	Standard
I	127	14203.3	3.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.755	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.884	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.531
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.108
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144204SD WG574416-09
Sample Date/Time: Friday, July 01, 2016 12:12:58
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	90070.3	0.3				ug/L	76456	Standard
	Be	9	67068.2	2.3	**50.8355**	1.023	2.0	ug/L	20	Standard
	Al	27	22820326.8	1.6	**113.1467**	1.840	1.6	ug/L	1307	Standard
	Sc	45	48614.5	1.1				ug/L	41174	Standard
	Ti	47	12429.8	0.9	**35.6977**	0.390	1.1	ug/L	27	Standard
	V	51	500213.8	0.9	**56.8738**	0.256	0.4	ug/L	1434	Standard
	Cr	52	457920.4	0.8	**52.1452**	0.679	1.3	ug/L	7733	Standard
	Cr	53	55433.0	3.5	**51.0119**	1.142	2.2	ug/L	442	Standard
	Mn	55	1032001.7	0.7	**127.7596**	0.851	0.7	ug/L	723	Standard
	Co	59	426181.5	0.6	**52.1492**	0.363	0.7	ug/L	217	Standard
	Ni	60	115745.8	0.4	**52.1679**	0.569	1.1	ug/L	304	Standard
	Cu	65	108435.6	0.5	**49.7650**	0.481	1.0	ug/L	181	Standard
	Zn	66	83122.4	0.9	**63.4509**	0.540	0.9	ug/L	215	Standard
>	Ge	72	555340.6	1.3				ug/L	520809	Standard
	As	75	68386.4	1.0	**51.9966**	0.210	0.4	ug/L	-52	Standard
	Se	82	6617.0	1.4	**48.9951**	0.511	1.0	ug/L	17	Standard
	Se-1	77	4553.0	1.4	**49.2655**	0.470	1.0	ug/L	56	Standard
>	Ga	71	4989.2	4.2				mg/L	25	Standard
	Rb	85	63782.3	0.6				ug/L	28	Standard
	Y	89	508585.3	3.2				ug/L	447395	Standard
>	Rh	103	155.0	16.8				ug/L	15	Standard
	Mo	98	1690.9	2.2	**0.5065**	0.021	4.1	ug/L	113	Standard
	Ag	107	359804.6	1.4	**47.4968**	0.270	0.6	ug/L	108	Standard
	Cd	111	119520.8	0.7	**49.2344**	0.563	1.1	mg/L	3	Standard
	Cd	114	293080.3	1.6	**48.7653**	1.035	2.1	ug/L	20	Standard
>	In	115	659870.1	1.8				ug/L	625728	Standard
	Sn	118	1175.0	5.3	**0.0889**	0.010	10.9	ug/L	568	Standard
	Sb	123	180927.8	2.0	**33.1631**	0.062	0.2	ug/L	612	Standard
	Ba	135	313663.8	0.6	**136.7260**	2.307	1.7	ug/L	21	Standard
	Ce	140	181386.0	0.5				ug/L	245	Standard
>	Tb	159	1008393.6	0.8				ug/L	950397	Standard
	Ho	165	2945.3	1.9				ug/L	7	Standard
	Tl	203	461671.8	0.2	**49.9891**	0.298	0.6	ug/L	15	Standard
	Tl	205	421242.1	0.2	**51.3576**	0.369	0.7	ug/L	13	Standard
	Pb	206	307820.1	0.5	**52.8142**	0.466	0.9	ug/L	264	Standard
	Pb	207	267725.9	1.2	**50.5746**	0.254	0.5	ug/L	222	Standard
	Pb	208	1118569.9	0.5	**51.7383**	0.472	0.9	ug/L	959	Standard
	U	238	435363.6	0.2	**52.5003**	0.385	0.7	ug/L	9	Standard
>	Bi	209	568683.1	0.8				ug/L	552821	Standard

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Na	23	10.0	50.0	**25.2590**	12.492	49.5	mg/L	2	Standard
Mg	24	4682.4	0.4	**4.5730**	0.070	1.5	mg/L	55	Standard
K	39	196.7	12.8	**0.5079**	0.086	17.0	mg/L	28	Standard
Ca	43	620.0	2.8	**45.2717**	1.537	3.4	mg/L	27	Standard
Fe	54	3578.4	8.9	**2.2770**	0.195	8.6	mg/L	147	Standard
Fe	57	1561.7	1.9	**3.2607**	0.102	3.1	mg/L	268	Standard
Sc-1	45	48614.5	1.1				mg/L	41174	Standard
Cl	35	83140.8	0.7				ug/L	69550	Standard
Kr	83	1.3	86.6				ug/L	1	Standard
Br	81	7508.5	3.6				ug/L	1950	Standard
P	31	33216.4	1.3				ug/L	21156	Standard
S	34	3633.8	2.2				ug/L	3419	Standard
Sr	88	566.7	11.0				ug/L	72	Standard
C	12	476.7	6.7				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	62.5				mg/L	17	Standard
Dy	164	4984.3	2.5				mg/L	16	Standard
Ho-1	165	2945.3	1.9				mg/L	7	Standard
Er	166	2850.3	2.1				mg/L	7	Standard
I	127	15054.2	4.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.807	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.630	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144204SD WG574416-09
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.456
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.869
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144204SD WG574416-09
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 12:16:11
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	87445.1	3.4				ug/L	76456	Standard
	Be	9	64070.2	0.9	**50.0545**	1.445	2.9	ug/L	20	Standard
	Al	27	9240352.4	0.8	**47.2275**	1.909	4.0	ug/L	1307	Standard
	Sc	45	44832.9	2.4				ug/L	41174	Standard
	Ti	47	34259.7	1.0	**97.1606**	1.714	1.8	ug/L	27	Standard
	V	51	451230.5	0.6	**50.5628**	0.294	0.6	ug/L	1434	Standard
	Cr	52	441549.7	0.7	**49.5261**	0.488	1.0	ug/L	7733	Standard
	Cr	53	54047.9	0.8	**49.0333**	0.166	0.3	ug/L	442	Standard
	Mn	55	409600.5	0.8	**49.9366**	0.757	1.5	ug/L	723	Standard
	Co	59	429332.5	1.0	**51.7968**	0.540	1.0	ug/L	217	Standard
	Ni	60	111250.6	0.3	**49.4298**	0.556	1.1	ug/L	304	Standard
	Cu	65	109537.2	0.3	**49.5637**	0.351	0.7	ug/L	181	Standard
	Zn	66	65566.2	0.7	**49.3061**	0.180	0.4	ug/L	215	Standard
>	**Ge**	72	563235.2	0.9				ug/L	520809	Standard
	As	75	66627.6	0.4	**49.9511**	0.273	0.5	ug/L	-52	Standard
	Se	82	6922.5	0.6	**50.5422**	0.157	0.3	ug/L	17	Standard
	Se-1	77	4596.0	1.5	**49.0283**	0.390	0.8	ug/L	56	Standard
>	**Ga**	71	40.0	21.7				mg/L	25	Standard
	Rb	85	993.4	8.3				ug/L	28	Standard
	Y	89	482225.9	1.1				ug/L	447395	Standard
>	**Rh**	103	20.0	66.1				ug/L	15	Standard
	Mo	98	318941.8	1.3	**98.3261**	1.568	1.6	ug/L	113	Standard
	Ag	107	382282.6	0.5	**49.6279**	0.362	0.7	ug/L	108	Standard
	Cd	111	122482.8	0.3	**49.6133**	0.042	0.1	mg/L	3	Standard
	Cd	114	296548.6	0.8	**48.5180**	0.351	0.7	ug/L	20	Standard
>	**In**	115	670966.5	0.3				ug/L	625728	Standard
	Sn	118	338852.8	1.5	**49.0149**	0.673	1.4	ug/L	568	Standard
	Sb	123	274306.5	0.2	**49.4654**	0.232	0.5	ug/L	612	Standard
	Ba	135	113482.1	0.5	**48.6277**	0.189	0.4	ug/L	21	Standard
	Ce	140	308.3	9.8				ug/L	245	Standard
>	**Tb**	159	1016008.3	2.4				ug/L	950397	Standard
	Ho	165	16.7	45.8				ug/L	7	Standard
	Tl	203	473547.1	1.1	**49.9959**	0.041	0.1	ug/L	15	Standard
	Tl	205	428096.0	1.4	**50.8923**	0.684	1.3	ug/L	13	Standard
	Pb	206	298789.4	0.8	**49.9841**	0.126	0.3	ug/L	264	Standard
	Pb	207	271570.2	0.6	**50.0267**	0.582	1.2	ug/L	222	Standard
	Pb	208	1117926.1	0.2	**50.4203**	0.478	0.9	ug/L	959	Standard
	U	238	428309.5	0.4	**50.3630**	0.285	0.6	ug/L	9	Standard
>	**Bi**	209	583209.8	1.0				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4910.8	1.7	**5.2115**	0.207	4.0	mg/L	55	Standard
K	39	1366.7	7.2	**4.6780**	0.226	4.8	mg/L	28	Standard
Ca	43	96.7	13.0	**5.6017**	0.863	15.4	mg/L	27	Standard
Fe	54	7079.3	0.6	**5.0021**	0.155	3.1	mg/L	147	Standard
Fe	57	2068.5	8.1	**5.0303**	0.399	7.9	mg/L	268	Standard
> **Sc-1**	45	44832.9	2.4				mg/L	41174	Standard
Cl	35	82615.3	1.2				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	2370.2	6.2				ug/L	1950	Standard
P	31	24917.1	2.0				ug/L	21156	Standard
S	34	4207.3	4.1				ug/L	3419	Standard
Sr	88	65.0	33.5				ug/L	72	Standard
C	12	150.0	30.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	69.3				mg/L	17	Standard
Dy	164	25.7	41.7				mg/L	16	Standard
Ho-1	165	16.7	45.8				mg/L	7	Standard
Er	166	20.0	100.0				mg/L	7	Standard
I	127	20977.9	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	100.109		
Al	27	94.455		
Sc	45			
Ti	47	97.161		
V	51	101.126		
Cr	52	99.052		
Cr	53			
Mn	55	99.873		
Co	59	103.594		
Ni	60	98.860		
Cu	65	99.127		
Zn	66	98.612		
> Ge	72		108.146	
As	75	99.902		
Se	82	101.084		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	98.326		
Ag	107	99.256		
Cd	111	99.227		
Cd	114			
In	115			107.230
Sn	118	98.030		
Sb	123	98.931		
Ba	135	97.255		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.992		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.841		
U	238	100.726		
Bi	209			105.497
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 12:19:23
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86888.4	1.2				ug/L	76456	Standard
	Be	9	43.3	6.7	**0.0142**	0.002	14.4	ug/L	20	Standard
	Al	27	10504.4	54.9	**0.0440**	0.030	68.3	ug/L	1307	Standard
	Sc	45	44657.4	2.0				ug/L	41174	Standard
	Ti	47	39.3	11.5	**0.0270**	0.014	53.3	ug/L	27	Standard
	V	51	1529.0	2.6	**-0.0269**	0.007	25.9	ug/L	1434	Standard
	Cr	52	7711.0	1.1	**-0.0906**	0.015	16.9	ug/L	7733	Standard
	Cr	53	511.7	5.7	**0.0505**	0.033	65.1	ug/L	442	Standard
	Mn	55	1157.7	24.7	**0.0401**	0.037	91.8	ug/L	723	Standard
	Co	59	342.7	7.9	**0.0119**	0.004	32.6	ug/L	217	Standard
	Ni	60	345.0	7.1	**0.0004**	0.013	3536.3	ug/L	304	Standard
	Cu	65	196.7	14.8	**0.0150**	0.014	96.7	ug/L	181	Standard
	Zn	66	265.3	6.8	**0.0197**	0.016	82.6	ug/L	215	Standard
>	**Ge**	72	564532.3	1.4				ug/L	520809	Standard
	As	75	-63.0	4.9	**-0.0020**	0.003	148.8	ug/L	-52	Standard
	Se	82	13.5	49.1	**-0.0274**	0.049	178.6	ug/L	17	Standard
	Se-1	77	66.7	9.6	**0.0356**	0.080	224.7	ug/L	56	Standard
>	**Ga**	71	36.7	34.3				mg/L	25	Standard
	Rb	85	50.0	17.3				ug/L	28	Standard
	Y	89	485264.3	1.4				ug/L	447395	Standard
>	**Rh**	103	23.3	65.5				ug/L	15	Standard
	Mo	98	248.2	9.5	**0.0519**	0.007	13.4	ug/L	113	Standard
	Ag	107	217.7	28.5	**0.0151**	0.008	51.7	ug/L	108	Standard
	Cd	111	38.2	50.7	**0.0130**	0.008	59.2	mg/L	3	Standard
	Cd	114	103.6	56.8	**0.0168**	0.009	56.1	ug/L	20	Standard
>	**In**	115	676839.2	0.6				ug/L	625728	Standard
	Sn	118	985.0	18.1	**0.0572**	0.025	43.7	ug/L	568	Standard
	Sb	123	1289.0	34.6	**0.1967**	0.079	40.2	ug/L	612	Standard
	Ba	135	163.7	48.0	**0.0515**	0.033	64.0	ug/L	21	Standard
	Ce	140	190.0	43.5				ug/L	245	Standard
>	**Tb**	159	1027800.2	0.9				ug/L	950397	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	185.7	43.6	**0.0185**	0.008	45.3	ug/L	15	Standard
	Tl	205	140.0	34.4	**0.0066**	0.006	85.8	ug/L	13	Standard
	Pb	206	391.7	5.7	**0.0205**	0.004	17.4	ug/L	264	Standard
	Pb	207	348.0	8.5	**0.0168**	0.005	31.6	ug/L	222	Standard
	Pb	208	1428.4	8.6	**0.0149**	0.005	36.0	ug/L	959	Standard
	U	238	152.0	24.6	**0.0173**	0.004	24.9	ug/L	9	Standard
>	**Bi**	209	594942.4	0.2				ug/L	552821	Standard

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Na	23	1.7	173.2	**4.6930**	8.120	173.0	mg/L	2	Standard
Mg	24	61.7	4.7	**0.0063**	0.004	70.3	mg/L	55	Standard
K	39	21.7	58.1	**-0.0541**	0.046	85.2	mg/L	28	Standard
Ca	43	16.7	45.8	**-1.0495**	0.670	63.8	mg/L	27	Standard
Fe	54	185.9	12.3	**0.0354**	0.014	39.9	mg/L	147	Standard
Fe	57	231.7	7.6	**-0.1482**	0.038	25.4	mg/L	268	Standard
> **Sc-1**	45	44657.4	2.0				mg/L	41174	Standard
Cl	35	83476.7	1.5				ug/L	69550	Standard
Kr	83	1.0	173.2				ug/L	1	Standard
Br	81	2133.5	9.1				ug/L	1950	Standard
P	31	25304.5	3.5				ug/L	21156	Standard
S	34	4207.3	4.6				ug/L	3419	Standard
Sr	88	80.0	16.5				ug/L	72	Standard
C	12	116.7	44.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	17	Standard
Dy	164	15.7	39.4				mg/L	16	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	16377.2	4.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.395	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.168
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.619
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606144601
Sample Date/Time: Friday, July 01, 2016 12:22:36
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	85066.5	1.2				ug/L	76456	Standard
	Be	9	16.7	45.8	**-0.0065**	0.006	94.4	ug/L	20	Standard
	Al	27	9710029.6	1.9	**50.9822**	1.574	3.1	ug/L	1307	Standard
	Sc	45	45336.1	0.8				ug/L	41174	Standard
	Ti	47	130.7	11.5	**0.2865**	0.040	13.8	ug/L	27	Standard
	V	51	2965.5	17.4	**0.1358**	0.062	45.7	ug/L	1434	Standard
	Cr	52	10925.6	1.4	**0.2804**	0.032	11.4	ug/L	7733	Standard
	Cr	53	6674.8	19.2	**5.7008**	1.204	21.1	ug/L	442	Standard
	Mn	55	17608.9	0.7	**2.0519**	0.031	1.5	ug/L	723	Standard
	Co	59	843.4	6.2	**0.0725**	0.007	9.6	ug/L	217	Standard
	Ni	60	3752.8	1.2	**1.5211**	0.029	1.9	ug/L	304	Standard
	Cu	65	735.7	3.5	**0.2597**	0.015	5.9	ug/L	181	Standard
	Zn	66	4713.1	0.8	**3.3806**	0.039	1.2	ug/L	215	Standard
>	Ge	72	562685.3	1.1				ug/L	520809	Standard
	As	75	331.7	14.1	**0.2942**	0.038	12.9	ug/L	-52	Standard
	Se	82	169.7	3.4	**1.1168**	0.055	5.0	ug/L	17	Standard
	Se-1	77	298.3	16.2	**2.5437**	0.506	19.9	ug/L	56	Standard
>	Ga	71	43.3	17.6				mg/L	25	Standard
	Rb	85	1375.1	8.1				ug/L	28	Standard
	Y	89	479863.0	1.4				ug/L	447395	Standard
>	Rh	103	75.0	23.1				ug/L	15	Standard
	Mo	98	184.0	20.7	**0.0331**	0.012	35.3	ug/L	113	Standard
	Ag	107	187.7	22.7	**0.0116**	0.006	47.6	ug/L	108	Standard
	Cd	111	61.4	13.6	**0.0226**	0.003	14.9	mg/L	3	Standard
	Cd	114	163.1	19.9	**0.0268**	0.005	19.9	ug/L	20	Standard
>	In	115	667538.0	0.2				ug/L	625728	Standard
	Sn	118	1128.4	13.7	**0.0801**	0.022	27.7	ug/L	568	Standard
	Sb	123	642.2	32.3	**0.0827**	0.037	45.2	ug/L	612	Standard
	Ba	135	124733.7	0.4	**53.7257**	0.253	0.5	ug/L	21	Standard
	Ce	140	376.7	16.7				ug/L	245	Standard
>	Tb	159	1007994.8	2.0				ug/L	950397	Standard
	Ho	165	16.7	45.8				ug/L	7	Standard
	Tl	203	197.3	10.9	**0.0203**	0.002	12.2	ug/L	15	Standard
	Tl	205	216.7	21.8	**0.0163**	0.006	35.8	ug/L	13	Standard
	Pb	206	891.0	6.5	**0.1071**	0.008	7.9	ug/L	264	Standard
	Pb	207	795.4	2.4	**0.1022**	0.003	2.6	ug/L	222	Standard
	Pb	208	3278.5	4.0	**0.1014**	0.007	7.1	ug/L	959	Standard
	U	238	85.3	43.4	**0.0099**	0.004	45.2	ug/L	9	Standard
>	Bi	209	576617.3	0.8				ug/L	552821	Standard

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Na	23	5.0	0.0	**13.5582**	0.108	0.8	mg/L	2	Standard
Mg	24	5319.3	4.2	**5.5837**	0.252	4.5	mg/L	55	Standard
K	39	98.3	41.1	**0.2120**	0.143	67.6	mg/L	28	Standard
Ca	43	363.3	7.8	**27.5274**	2.210	8.0	mg/L	27	Standard
Fe	54	179.0	5.5	**0.0286**	0.006	20.9	mg/L	147	Standard
Fe	57	463.3	13.0	**0.4888**	0.165	33.8	mg/L	268	Standard
> **Sc-1**	45	45336.1	0.8				mg/L	41174	Standard
Cl	35	89142.8	0.6				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	30834.8	6.1				ug/L	1950	Standard
P	31	26140.9	1.9				ug/L	21156	Standard
S	34	4027.2	2.4				ug/L	3419	Standard
Sr	88	260.0	15.3				ug/L	72	Standard
C	12	170.0	10.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	17	Standard
Dy	164	38.6	3.3				mg/L	16	Standard
Ho-1	165	16.7	45.8				mg/L	7	Standard
Er	166	30.0	88.2				mg/L	7	Standard
I	127	3538.7	10.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.262	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.041	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144601
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.682
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.305
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144701 WG574416-03
Sample Date/Time: Friday, July 01, 2016 12:25:48
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	88482.7	2.3				ug/L	76456	Standard
	Be	9	38.3	39.8	**0.0099**	0.012	125.1	ug/L	20	Standard
	Al	27	11359959.6	1.4	**57.3517**	1.667	2.9	ug/L	1307	Standard
	Sc	45	45563.4	2.6				ug/L	41174	Standard
	Ti	47	479.3	13.4	**1.2787**	0.172	13.4	ug/L	27	Standard
	V	51	3530.4	7.8	**0.1998**	0.034	17.3	ug/L	1434	Standard
	Cr	52	12134.2	0.3	**0.4209**	0.011	2.6	ug/L	7733	Standard
	Cr	53	7648.6	5.0	**6.6019**	0.407	6.2	ug/L	442	Standard
	Mn	55	16091.5	2.0	**1.8699**	0.055	2.9	ug/L	723	Standard
	Co	59	1173.0	4.1	**0.1126**	0.006	5.8	ug/L	217	Standard
	Ni	60	3889.5	2.3	**1.5848**	0.031	1.9	ug/L	304	Standard
	Cu	65	1317.7	0.5	**0.5246**	0.003	0.5	ug/L	181	Standard
	Zn	66	3687.1	0.9	**2.6100**	0.006	0.2	ug/L	215	Standard
>	Ge	72	561722.8	0.8				ug/L	520809	Standard
	As	75	1392.1	5.5	**1.0905**	0.054	4.9	ug/L	-52	Standard
	Se	82	606.7	3.3	**4.3252**	0.116	2.7	ug/L	17	Standard
	Se-1	77	418.0	2.5	**3.8492**	0.119	3.1	ug/L	56	Standard
>	Ga	71	115.0	8.7				mg/L	25	Standard
	Rb	85	5234.2	9.4				ug/L	28	Standard
	Y	89	487944.7	1.1				ug/L	447395	Standard
>	Rh	103	568.3	20.1				ug/L	15	Standard
	Mo	98	1044.2	2.3	**0.3054**	0.008	2.6	ug/L	113	Standard
	Ag	107	187.3	42.9	**0.0121**	0.011	91.2	ug/L	108	Standard
	Cd	111	55.0	27.2	**0.0204**	0.006	30.3	mg/L	3	Standard
	Cd	114	135.5	6.2	**0.0227**	0.001	5.1	ug/L	20	Standard
>	In	115	656101.2	1.3				ug/L	625728	Standard
	Sn	118	1038.4	15.8	**0.0699**	0.026	37.7	ug/L	568	Standard
	Sb	123	573.4	30.4	**0.0724**	0.034	46.6	ug/L	612	Standard
	Ba	135	501979.0	0.4	**220.0552**	2.127	1.0	ug/L	21	Standard
	Ce	140	2408.5	3.7				ug/L	245	Standard
>	Tb	159	999721.2	1.2				ug/L	950397	Standard
	Ho	165	475.0	13.8				ug/L	7	Standard
	Tl	203	180.7	18.9	**0.0191**	0.004	19.9	ug/L	15	Standard
	Tl	205	181.7	18.3	**0.0127**	0.004	33.1	ug/L	13	Standard
	Pb	206	1433.1	5.5	**0.2055**	0.013	6.5	ug/L	264	Standard
	Pb	207	1269.4	7.4	**0.1971**	0.019	9.6	ug/L	222	Standard
	Pb	208	5249.0	0.8	**0.1978**	0.003	1.5	ug/L	959	Standard
	U	238	833.4	3.5	**0.1015**	0.003	3.3	ug/L	9	Standard
>	Bi	209	561437.9	0.5				ug/L	552821	Standard

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Na	23	3.3	86.6	**9.1266**	7.900	86.6	mg/L	2	Standard
Mg	24	22316.4	4.6	**23.4898**	0.474	2.0	mg/L	55	Standard
K	39	291.7	17.2	**0.8820**	0.191	21.6	mg/L	28	Standard
Ca	43	361.7	17.8	**27.2179**	4.974	18.3	mg/L	27	Standard
Fe	54	219.1	19.9	**0.0560**	0.027	47.8	mg/L	147	Standard
Fe	57	508.3	13.1	**0.6052**	0.153	25.3	mg/L	268	Standard
> Sc-1	45	45563.4	2.6				mg/L	41174	Standard
Cl	35	95139.1	0.6				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	117746.0	3.1				ug/L	1950	Standard
P	31	26077.4	3.3				ug/L	21156	Standard
S	34	3920.5	3.9				ug/L	3419	Standard
Sr	88	1768.4	4.8				ug/L	72	Standard
C	12	193.3	38.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	89.2				mg/L	17	Standard
Dy	164	700.0	19.1				mg/L	16	Standard
Ho-1	165	475.0	13.8				mg/L	7	Standard
Er	166	486.7	19.4				mg/L	7	Standard
I	127	22775.4	2.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.731	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.856	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.854
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.559
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

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Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144701DP WG574416-10
Sample Date/Time: Friday, July 01, 2016 12:28:59
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	88142.4	1.7				ug/L	76456	Standard
	Be	9	40.0	37.5	**0.0111**	0.011	101.8	ug/L	20	Standard
	Al	27	11494838.5	2.0	**58.2408**	1.266	2.2	ug/L	1307	Standard
	Sc	45	46242.2	2.8				ug/L	41174	Standard
	Ti	47	491.0	28.0	**1.3133**	0.392	29.8	ug/L	27	Standard
	V	51	4065.2	7.6	**0.2601**	0.033	12.8	ug/L	1434	Standard
	Cr	52	12264.0	1.3	**0.4365**	0.008	1.9	ug/L	7733	Standard
	Cr	53	8637.5	5.6	**7.5132**	0.490	6.5	ug/L	442	Standard
	Mn	55	16026.8	1.0	**1.8627**	0.011	0.6	ug/L	723	Standard
	Co	59	1127.4	3.0	**0.1071**	0.004	3.8	ug/L	217	Standard
	Ni	60	3889.8	1.2	**1.5861**	0.030	1.9	ug/L	304	Standard
	Cu	65	1351.4	4.3	**0.5403**	0.027	5.0	ug/L	181	Standard
	Zn	66	3072.3	1.9	**2.1459**	0.033	1.5	ug/L	215	Standard
>	Ge	72	561430.2	0.7				ug/L	520809	Standard
	As	75	1450.6	6.2	**1.1355**	0.075	6.6	ug/L	-52	Standard
	Se	82	626.4	4.3	**4.4737**	0.217	4.8	ug/L	17	Standard
	Se-1	77	446.7	4.4	**4.1629**	0.222	5.3	ug/L	56	Standard
>	Ga	71	118.3	21.3				mg/L	25	Standard
	Rb	85	5335.9	4.4				ug/L	28	Standard
	Y	89	485232.7	0.7				ug/L	447395	Standard
>	Rh	103	503.3	5.6				ug/L	15	Standard
	Mo	98	890.3	4.1	**0.2555**	0.010	3.8	ug/L	113	Standard
	Ag	107	130.0	4.8	**0.0043**	0.001	19.6	ug/L	108	Standard
	Cd	111	38.1	10.0	**0.0134**	0.002	12.3	mg/L	3	Standard
	Cd	114	93.0	28.3	**0.0155**	0.004	28.0	ug/L	20	Standard
>	In	115	659077.6	0.9				ug/L	625728	Standard
	Sn	118	881.7	14.6	**0.0459**	0.019	42.5	ug/L	568	Standard
	Sb	123	507.6	19.6	**0.0596**	0.019	31.6	ug/L	612	Standard
	Ba	135	515199.9	0.5	**224.8243**	2.217	1.0	ug/L	21	Standard
	Ce	140	2820.3	8.4				ug/L	245	Standard
>	Tb	159	1000855.8	0.8				ug/L	950397	Standard
	Ho	165	511.7	6.7				ug/L	7	Standard
	Tl	203	145.0	5.2	**0.0151**	0.001	5.3	ug/L	15	Standard
	Tl	205	140.0	29.2	**0.0075**	0.005	66.5	ug/L	13	Standard
	Pb	206	896.0	1.8	**0.1117**	0.003	2.6	ug/L	264	Standard
	Pb	207	768.4	3.7	**0.1007**	0.005	5.0	ug/L	222	Standard
	Pb	208	3189.1	0.1	**0.1009**	0.001	0.5	ug/L	959	Standard
	U	238	824.4	5.0	**0.1002**	0.005	5.0	ug/L	9	Standard
>	Bi	209	562695.6	0.4				ug/L	552821	Standard

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Na	23	8.3	34.6	**22.1713**	7.744	34.9	mg/L	2	Standard
Mg	24	23199.4	1.6	**24.0879**	0.996	4.1	mg/L	55	Standard
K	39	276.7	2.8	**0.8134**	0.006	0.8	mg/L	28	Standard
Ca	43	471.7	6.8	**35.7746**	3.568	10.0	mg/L	27	Standard
Fe	54	212.8	23.2	**0.0499**	0.035	69.4	mg/L	147	Standard
Fe	57	470.0	11.3	**0.4850**	0.177	36.5	mg/L	268	Standard
> **Sc-1**	45	46242.2	2.8				mg/L	41174	Standard
Cl	35	96975.4	1.3				ug/L	69550	Standard
Kr	83	2.3	137.8				ug/L	1	Standard
Br	81	120957.8	2.8				ug/L	1950	Standard
P	31	25446.4	2.8				ug/L	21156	Standard
S	34	3975.5	1.0				ug/L	3419	Standard
Sr	88	1878.4	2.6				ug/L	72	Standard
C	12	223.3	38.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	17	Standard
Dy	164	658.1	9.2				mg/L	16	Standard
Ho-1	165	511.7	6.7				mg/L	7	Standard
Er	166	526.7	11.0				mg/L	7	Standard
I	127	23127.6	2.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.285	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.800	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.330
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.786
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144701DP WG574416-10
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Method 6020 - Summary Report

Sample ID: L1606128901
Sample Date/Time: Friday, July 01, 2016 12:32:11
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	100202.1	2.7				ug/L	76456	Standard
	Be	9	85.0	61.4	**0.0383**	0.036	94.9	ug/L	20	Standard
	Al	27	121494771.0	1.8	**541.6309**	8.514	1.6	ug/L	1307	Standard
	Sc	45	48803.5	2.8				ug/L	41174	Standard
	Ti	47	545.3	5.0	**1.5278**	0.038	2.5	ug/L	27	Standard
	V	51	10661.2	18.0	**1.0481**	0.197	18.8	ug/L	1434	Standard
	Cr	52	662482.0	2.6	**77.9794**	0.550	0.7	ug/L	7733	Standard
	Cr	53	138513.8	2.3	**131.6729**	2.729	2.1	ug/L	442	Standard
	Mn	55	5966787.8	1.9	**759.5704**	10.887	1.4	ug/L	723	Standard
	Co	59	181210.6	0.8	**22.7724**	0.421	1.8	ug/L	217	Standard
	Ni	60	645750.8	2.4	**299.7645**	3.348	1.1	ug/L	304	Standard
	Cu	65	22297.4	3.7	**10.4538**	0.196	1.9	ug/L	181	Standard
	Zn	66	11919.4	2.6	**9.1948**	0.114	1.2	ug/L	215	Standard
>	**Ge**	72	540486.8	2.6				ug/L	520809	Standard
	As	75	4102.0	1.8	**3.2473**	0.027	0.8	ug/L	-52	Standard
	Se	82	1886.5	4.1	**14.2618**	0.413	2.9	ug/L	17	Standard
	Se-1	77	4801.8	0.7	**53.4605**	1.123	2.1	ug/L	56	Standard
>	**Ga**	71	275.0	24.6				mg/L	25	Standard
	Rb	85	16008.5	1.9				ug/L	28	Standard
	Y	89	482574.6	0.5				ug/L	447395	Standard
>	**Rh**	103	891.7	13.1				ug/L	15	Standard
	Mo	98	6427.1	1.7	**2.1501**	0.036	1.7	ug/L	113	Standard
	Ag	107	215.3	42.5	**0.0178**	0.013	73.5	ug/L	108	Standard
	Cd	111	1192.8	4.2	**0.5277**	0.023	4.3	mg/L	3	Standard
	Cd	114	2955.5	4.3	**0.5305**	0.024	4.6	ug/L	20	Standard
>	**In**	115	611635.6	0.3				ug/L	625728	Standard
	Sn	118	1171.7	1.6	**0.1020**	0.003	2.8	ug/L	568	Standard
	Sb	123	952.5	13.3	**0.1549**	0.025	16.4	ug/L	612	Standard
	Ba	135	5659971.5	1.5	**2661.5360**	36.316	1.4	ug/L	21	Standard
	Ce	140	34602.8	2.7				ug/L	245	Standard
>	**Tb**	159	987729.2	0.4				ug/L	950397	Standard
	Ho	165	555.0	3.6				ug/L	7	Standard
	Tl	203	271.3	38.8	**0.0315**	0.013	40.1	ug/L	15	Standard
	Tl	205	228.3	29.2	**0.0208**	0.009	43.4	ug/L	13	Standard
	Pb	206	682.3	7.9	**0.0848**	0.010	12.2	ug/L	264	Standard
	Pb	207	562.7	4.7	**0.0706**	0.006	7.9	ug/L	222	Standard
	Pb	208	2400.7	5.1	**0.0736**	0.007	9.1	ug/L	959	Standard
	U	238	485.7	17.4	**0.0640**	0.011	17.8	ug/L	9	Standard
>	**Bi**	209	518402.7	0.8				ug/L	552821	Standard

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Na	23	6.7	43.3	**16.7312**	6.981	41.7	mg/L	2	Standard
Mg	24	234951.0	0.3	**231.6239**	7.038	3.0	mg/L	55	Standard
K	39	286.7	15.7	**0.7989**	0.169	21.2	mg/L	28	Standard
Ca	43	935.0	7.2	**69.1820**	3.528	5.1	mg/L	27	Standard
Fe	54	758.4	8.2	**0.4032**	0.043	10.6	mg/L	147	Standard
Fe	57	1138.4	6.9	**2.1447**	0.127	5.9	mg/L	268	Standard
> **Sc-1**	45	48803.5	2.8				mg/L	41174	Standard
Cl	35	88877.9	0.3				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	391239.0	2.6				ug/L	1950	Standard
P	31	37070.3	1.2				ug/L	21156	Standard
S	34	4178.9	3.9				ug/L	3419	Standard
Sr	88	2831.9	1.5				ug/L	72	Standard
C	12	466.7	21.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	17.3				mg/L	17	Standard
Dy	164	667.5	12.4				mg/L	16	Standard
Ho-1	165	555.0	3.6				mg/L	7	Standard
Er	166	540.0	8.5				mg/L	7	Standard
I	127	188266.3	8.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		131.059	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.778	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	97.748	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	93.774	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Cr 53 Upper, S, EEE	Cr	53	

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Mn 55 Upper, S, EEE	Mn	55
Ni 60 Upper, S, EEE	Ni	60
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606128904
Sample Date/Time: Friday, July 01, 2016 12:35:23
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80174.9	0.5				ug/L	76456	Standard
	Be	9	53.3	27.1	**0.0255**	0.012	47.2	ug/L	20	Standard
	Al	27	1032791.8	1.6	**5.7430**	0.086	1.5	ug/L	1307	Standard
	Sc	45	47549.6	3.6				ug/L	41174	Standard
	Ti	47	1435.7	2.3	**3.8643**	0.058	1.5	ug/L	27	Standard
	V	51	10110.4	0.9	**0.9038**	0.025	2.8	ug/L	1434	Standard
	Cr	52	20122.7	4.1	**1.2588**	0.042	3.3	ug/L	7733	Standard
	Cr	53	3665.5	16.0	**2.8260**	0.446	15.8	ug/L	442	Standard
	Mn	55	288289.9	2.5	**34.0207**	0.139	0.4	ug/L	723	Standard
	Co	59	1477.7	1.3	**0.1434**	0.004	2.6	ug/L	217	Standard
	Ni	60	4239.3	2.2	**1.6775**	0.005	0.3	ug/L	304	Standard
	Cu	65	5707.4	2.9	**2.4318**	0.022	0.9	ug/L	181	Standard
	Zn	66	6174.6	2.5	**4.3354**	0.036	0.8	ug/L	215	Standard
>	Ge	72	581260.9	2.3				ug/L	520809	Standard
	As	75	447.8	4.7	**0.3704**	0.019	5.1	ug/L	-52	Standard
	Se	82	65.6	5.7	**0.3388**	0.024	6.9	ug/L	17	Standard
	Se-1	77	141.0	9.5	**0.7917**	0.108	13.6	ug/L	56	Standard
>	Ga	71	390.0	12.2				mg/L	25	Standard
	Rb	85	14513.6	3.3				ug/L	28	Standard
	Y	89	508182.1	0.9				ug/L	447395	Standard
>	Rh	103	35.0	14.3				ug/L	15	Standard
	Mo	98	3302.1	0.9	**0.9834**	0.006	0.6	ug/L	113	Standard
	Ag	107	192.0	6.8	**0.0118**	0.002	15.7	ug/L	108	Standard
	Cd	111	79.5	7.9	**0.0295**	0.002	7.8	mg/L	3	Standard
	Cd	114	220.0	7.1	**0.0356**	0.003	7.0	ug/L	20	Standard
>	In	115	678248.4	0.8				ug/L	625728	Standard
	Sn	118	933.4	10.8	**0.0496**	0.015	30.5	ug/L	568	Standard
	Sb	123	584.6	1.8	**0.0706**	0.002	3.0	ug/L	612	Standard
	Ba	135	45177.6	1.6	**19.1408**	0.317	1.7	ug/L	21	Standard
	Ce	140	30016.4	0.4				ug/L	245	Standard
>	Tb	159	1007751.2	0.8				ug/L	950397	Standard
	Ho	165	761.7	12.8				ug/L	7	Standard
	Tl	203	113.3	7.1	**0.0112**	0.001	7.0	ug/L	15	Standard
	Tl	205	111.7	14.4	**0.0035**	0.002	52.8	ug/L	13	Standard
	Pb	206	3404.0	3.3	**0.5260**	0.017	3.3	ug/L	264	Standard
	Pb	207	2818.6	2.1	**0.4734**	0.010	2.1	ug/L	222	Standard
	Pb	208	12328.3	2.3	**0.5080**	0.010	2.0	ug/L	959	Standard
	U	238	374.0	2.0	**0.0437**	0.001	1.8	ug/L	9	Standard
>	Bi	209	583367.9	0.5				ug/L	552821	Standard

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Na	23	1.7	173.2	**4.1425**	7.166	173.0	mg/L	2	Standard
Mg	24	5377.6	1.9	**5.3817**	0.098	1.8	mg/L	55	Standard
K	39	255.0	12.2	**0.7172**	0.121	16.8	mg/L	28	Standard
Ca	43	56.7	51.7	**1.9556**	2.109	107.9	mg/L	27	Standard
Fe	54	965.3	12.0	**0.5554**	0.055	10.0	mg/L	147	Standard
Fe	57	456.7	2.8	**0.4120**	0.054	13.1	mg/L	268	Standard
> **Sc-1**	45	47549.6	3.6				mg/L	41174	Standard
Cl	35	89186.5	3.0				ug/L	69550	Standard
Kr	83	2.3	89.2				ug/L	1	Standard
Br	81	9616.5	21.7				ug/L	1950	Standard
P	31	24750.2	1.9				ug/L	21156	Standard
S	34	3972.2	3.0				ug/L	3419	Standard
Sr	88	126.7	22.8				ug/L	72	Standard
C	12	306.7	35.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	89.2				mg/L	17	Standard
Dy	164	1037.0	4.9				mg/L	16	Standard
Ho-1	165	761.7	12.8				mg/L	7	Standard
Er	166	690.0	14.7				mg/L	7	Standard
I	127	33632.4	5.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.864	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.607	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.393
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.526
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129003
Sample Date/Time: Friday, July 01, 2016 12:38:34
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	84017.4	2.6				ug/L	76456	Standard
	Be	9	56.7	41.7	**0.0265**	0.020	76.1	ug/L	20	Standard
	Al	27	11410287.5	2.4	**60.6815**	2.547	4.2	ug/L	1307	Standard
	Sc	45	47460.9	2.7				ug/L	41174	Standard
	Ti	47	632.0	2.0	**1.7083**	0.053	3.1	ug/L	27	Standard
	V	51	4979.6	9.0	**0.3608**	0.043	11.9	ug/L	1434	Standard
	Cr	52	16733.9	1.7	**0.9422**	0.057	6.1	ug/L	7733	Standard
	Cr	53	16242.1	5.6	**14.4384**	0.968	6.7	ug/L	442	Standard
	Mn	55	2106790.2	0.3	**257.0785**	2.759	1.1	ug/L	723	Standard
	Co	59	32596.4	0.7	**3.9025**	0.026	0.7	ug/L	217	Standard
	Ni	60	16570.4	1.9	**7.2264**	0.135	1.9	ug/L	304	Standard
	Cu	65	821.7	5.9	**0.2979**	0.020	6.6	ug/L	181	Standard
	Zn	66	15799.9	1.0	**11.7367**	0.172	1.5	ug/L	215	Standard
>	Ge	72	563660.3	1.3				ug/L	520809	Standard
	As	75	8280.0	0.5	**6.2429**	0.078	1.2	ug/L	-52	Standard
	Se	82	523.6	3.6	**3.7022**	0.090	2.4	ug/L	17	Standard
	Se-1	77	661.3	8.7	**6.4700**	0.719	11.1	ug/L	56	Standard
>	Ga	71	153.3	26.4				mg/L	25	Standard
	Rb	85	22955.7	2.8				ug/L	28	Standard
	Y	89	481907.4	0.8				ug/L	447395	Standard
>	Rh	103	116.7	21.1				ug/L	15	Standard
	Mo	98	609.0	1.0	**0.1691**	0.001	0.8	ug/L	113	Standard
	Ag	107	122.3	6.1	**0.0035**	0.001	30.0	ug/L	108	Standard
	Cd	111	546.6	6.3	**0.2253**	0.014	6.3	mg/L	3	Standard
	Cd	114	1227.9	3.1	**0.2066**	0.006	2.8	ug/L	20	Standard
>	In	115	652572.6	0.4				ug/L	625728	Standard
	Sn	118	2255.2	0.8	**0.2518**	0.004	1.5	ug/L	568	Standard
	Sb	123	396.5	22.6	**0.0398**	0.016	41.0	ug/L	612	Standard
	Ba	135	362353.4	0.4	**159.6881**	0.037	0.0	ug/L	21	Standard
	Ce	140	11014.0	2.2				ug/L	245	Standard
>	Tb	159	996583.7	1.1				ug/L	950397	Standard
	Ho	165	233.3	12.4				ug/L	7	Standard
	Tl	203	149.3	13.7	**0.0157**	0.002	13.7	ug/L	15	Standard
	Tl	205	146.7	18.8	**0.0085**	0.003	39.2	ug/L	13	Standard
	Pb	206	578.7	5.4	**0.0575**	0.005	8.6	ug/L	264	Standard
	Pb	207	484.0	0.4	**0.0472**	0.000	0.8	ug/L	222	Standard
	Pb	208	2033.4	0.6	**0.0477**	0.001	2.3	ug/L	959	Standard
	U	238	110.3	15.4	**0.0133**	0.002	15.3	ug/L	9	Standard
>	Bi	209	557686.0	0.7				ug/L	552821	Standard

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Na	23	1.7	173.2	**4.4332**	7.670	173.0	mg/L	2	Standard
Mg	24	51897.1	1.5	**52.5721**	2.174	4.1	mg/L	55	Standard
K	39	418.3	15.8	**1.2584**	0.193	15.3	mg/L	28	Standard
Ca	43	125.0	28.0	**7.4017**	2.760	37.3	mg/L	27	Standard
Fe	54	21570.7	2.6	**14.5894**	0.772	5.3	mg/L	147	Standard
Fe	57	5684.4	0.4	**14.3563**	0.459	3.2	mg/L	268	Standard
Sc-1	45	47460.9	2.7				mg/L	41174	Standard
Cl	35	86591.4	1.7				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	106345.6	3.6				ug/L	1950	Standard
P	31	31901.9	1.3				ug/L	21156	Standard
S	34	4255.6	0.8				ug/L	3419	Standard
Sr	88	460.0	1.1				ug/L	72	Standard
C	12	313.3	22.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	17	Standard
Dy	164	343.4	18.1				mg/L	16	Standard
Ho-1	165	233.3	12.4				mg/L	7	Standard
Er	166	276.7	12.7				mg/L	7	Standard
I	127	558531.1	6.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		109.890	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		108.228	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.290
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.880
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129003
Report Date/Time: Friday, July 01, 2016 12:40:51
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Method 6020 - Summary Report

Sample ID: L1606129005
Sample Date/Time: Friday, July 01, 2016 12:41:45
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	85192.2	0.8				ug/L	76456	Standard
	Be	9	115.0	19.0	**0.0724**	0.018	24.9	ug/L	20	Standard
	Al	27	1289763.0	0.8	**6.7519**	0.110	1.6	ug/L	1307	Standard
	Sc	45	49773.3	2.8				ug/L	41174	Standard
	Ti	47	6020.5	2.3	**16.8263**	0.429	2.6	ug/L	27	Standard
	V	51	26156.2	0.5	**2.7133**	0.015	0.6	ug/L	1434	Standard
	Cr	52	22253.3	0.9	**1.5480**	0.025	1.6	ug/L	7733	Standard
	Cr	53	3922.2	9.7	**3.1342**	0.341	10.9	ug/L	442	Standard
	Mn	55	93436.0	2.3	**11.1943**	0.294	2.6	ug/L	723	Standard
	Co	59	5246.2	1.4	**0.5973**	0.011	1.8	ug/L	217	Standard
	Ni	60	3873.2	3.3	**1.5552**	0.062	4.0	ug/L	304	Standard
	Cu	65	2052.1	1.1	**0.8462**	0.011	1.3	ug/L	181	Standard
	Zn	66	6978.9	2.8	**5.0326**	0.156	3.1	ug/L	215	Standard
>	Ge	72	569140.4	0.4				ug/L	520809	Standard
	As	75	675.9	4.5	**0.5462**	0.024	4.5	ug/L	-52	Standard
	Se	82	122.4	11.2	**0.7599**	0.101	13.3	ug/L	17	Standard
	Se-1	77	130.3	23.7	**0.7102**	0.329	46.3	ug/L	56	Standard
>	Ga	71	1996.8	2.2				mg/L	25	Standard
	Rb	85	22308.1	1.4				ug/L	28	Standard
	Y	89	509803.9	1.2				ug/L	447395	Standard
>	Rh	103	36.7	31.5				ug/L	15	Standard
	Mo	98	326.9	4.2	**0.0762**	0.004	5.1	ug/L	113	Standard
	Ag	107	126.0	4.2	**0.0034**	0.001	17.4	ug/L	108	Standard
	Cd	111	98.1	1.5	**0.0371**	0.001	1.9	mg/L	3	Standard
	Cd	114	296.0	9.7	**0.0481**	0.005	9.6	ug/L	20	Standard
>	In	115	675122.4	0.6				ug/L	625728	Standard
	Sn	118	1330.1	3.9	**0.1073**	0.007	6.6	ug/L	568	Standard
	Sb	123	517.6	11.1	**0.0591**	0.010	16.6	ug/L	612	Standard
	Ba	135	76309.4	0.8	**32.4918**	0.196	0.6	ug/L	21	Standard
	Ce	140	95146.2	1.3				ug/L	245	Standard
>	Tb	159	1016001.4	1.3				ug/L	950397	Standard
	Ho	165	1441.7	4.0				ug/L	7	Standard
	Tl	203	251.7	11.3	**0.0262**	0.003	11.5	ug/L	15	Standard
	Tl	205	263.3	19.1	**0.0220**	0.006	26.3	ug/L	13	Standard
	Pb	206	4604.0	0.8	**0.7379**	0.007	1.0	ug/L	264	Standard
	Pb	207	3793.5	2.8	**0.6632**	0.027	4.1	ug/L	222	Standard
	Pb	208	16401.2	0.5	**0.7024**	0.005	0.7	ug/L	959	Standard
	U	238	755.4	2.7	**0.0898**	0.002	2.3	ug/L	9	Standard
>	Bi	209	575207.2	1.1				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	11827.9	2.0	**11.3730**	0.250	2.2	mg/L	55	Standard
K	39	63.3	12.1	**0.0696**	0.022	31.4	mg/L	28	Standard
Ca	43	26.7	39.0	**-0.4604**	0.739	160.5	mg/L	27	Standard
Fe	54	2263.3	3.3	**1.3710**	0.089	6.5	mg/L	147	Standard
Fe	57	798.4	7.3	**1.2235**	0.092	7.5	mg/L	268	Standard
> **Sc-1**	45	49773.3	2.8				mg/L	41174	Standard
Cl	35	80793.5	1.2				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	20093.3	2.4				ug/L	1950	Standard
P	31	35491.5	0.9				ug/L	21156	Standard
S	34	3435.4	2.3				ug/L	3419	Standard
Sr	88	86.7	16.7				ug/L	72	Standard
C	12	120.0	16.7				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	56.8				mg/L	17	Standard
Dy	164	2283.5	2.5				mg/L	16	Standard
Ho-1	165	1441.7	4.0				mg/L	7	Standard
Er	166	1253.4	17.9				mg/L	7	Standard
I	127	29910.2	19.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.427	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.280	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129005
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.894
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.049
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 12:44:58
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83031.9	1.8				ug/L	76456	Standard
	Be	9	62607.4	1.8	**51.4790**	0.092	0.2	ug/L	20	Standard
	Al	27	9205440.0	1.0	**49.5101**	0.482	1.0	ug/L	1307	Standard
	Sc	45	45279.2	0.9				ug/L	41174	Standard
	Ti	47	35616.8	0.8	**99.7569**	0.384	0.4	ug/L	27	Standard
	V	51	453381.0	1.3	**50.1773**	0.834	1.7	ug/L	1434	Standard
	Cr	52	454717.9	0.4	**50.3900**	0.329	0.7	ug/L	7733	Standard
	Cr	53	56792.9	2.0	**50.9006**	0.670	1.3	ug/L	442	Standard
	Mn	55	417865.9	1.4	**50.3140**	0.768	1.5	ug/L	723	Standard
	Co	59	427490.0	0.8	**50.9392**	0.677	1.3	ug/L	217	Standard
	Ni	60	114502.7	0.7	**50.2468**	0.055	0.1	ug/L	304	Standard
	Cu	65	113283.0	1.3	**50.6253**	0.452	0.9	ug/L	181	Standard
	Zn	66	67088.2	1.2	**49.8311**	0.666	1.3	ug/L	215	Standard
>	**Ge**	72	570265.5	0.7				ug/L	520809	Standard
	As	75	66940.7	0.7	**49.5659**	0.028	0.1	ug/L	-52	Standard
	Se	82	6904.8	0.9	**49.7902**	0.542	1.1	ug/L	17	Standard
	Se-1	77	4848.4	1.0	**51.1131**	0.306	0.6	ug/L	56	Standard
>	**Ga**	71	33.3	34.6				mg/L	25	Standard
	Rb	85	945.0	6.5				ug/L	28	Standard
	Y	89	486567.9	0.8				ug/L	447395	Standard
>	**Rh**	103	36.7	43.8				ug/L	15	Standard
	Mo	98	321546.8	0.2	**99.1357**	1.367	1.4	ug/L	113	Standard
	Ag	107	383263.2	0.3	**49.7591**	0.678	1.4	ug/L	108	Standard
	Cd	111	123447.9	0.3	**50.0091**	0.713	1.4	mg/L	3	Standard
	Cd	114	300381.5	2.0	**49.1538**	1.432	2.9	ug/L	20	Standard
>	**In**	115	670977.0	1.2				ug/L	625728	Standard
	Sn	118	339655.3	1.3	**49.1307**	0.150	0.3	ug/L	568	Standard
	Sb	123	274538.6	0.7	**49.5136**	0.951	1.9	ug/L	612	Standard
	Ba	135	114656.9	0.7	**49.1372**	0.870	1.8	ug/L	21	Standard
	Ce	140	131.7	33.2				ug/L	245	Standard
>	**Tb**	159	1007430.4	0.6				ug/L	950397	Standard
	Ho	165	15.0	88.2				ug/L	7	Standard
	Tl	203	470169.7	1.1	**50.6935**	0.361	0.7	ug/L	15	Standard
	Tl	205	427547.4	1.3	**51.9072**	0.778	1.5	ug/L	13	Standard
	Pb	206	295170.9	0.9	**50.4289**	0.577	1.1	ug/L	264	Standard
	Pb	207	268434.7	0.6	**50.4969**	0.171	0.3	ug/L	222	Standard
	Pb	208	1104478.8	0.4	**50.8716**	0.540	1.1	ug/L	959	Standard
	U	238	418715.2	0.4	**50.2797**	0.305	0.6	ug/L	9	Standard
>	**Bi**	209	571081.7	0.7				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4769.1	1.8	**5.0062**	0.108	2.1	mg/L	55	Standard
K	39	1336.7	4.6	**4.5306**	0.241	5.3	mg/L	28	Standard
Ca	43	75.0	17.6	**3.7457**	1.100	29.4	mg/L	27	Standard
Fe	54	7200.7	4.3	**5.0367**	0.239	4.8	mg/L	147	Standard
Fe	57	2128.5	4.4	**5.1427**	0.247	4.8	mg/L	268	Standard
> **Sc-1**	45	45279.2	0.9				mg/L	41174	Standard
Cl	35	81839.8	0.8				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	3040.3	8.6				ug/L	1950	Standard
P	31	24877.1	2.1				ug/L	21156	Standard
S	34	3887.2	7.0				ug/L	3419	Standard
Sr	88	81.7	7.1				ug/L	72	Standard
C	12	123.3	12.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	100.0				mg/L	17	Standard
Dy	164	9.4	3.0				mg/L	16	Standard
Ho-1	165	15.0	88.2				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	7	Standard
I	127	21875.8	2.3				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	102.958		
	Al	27	99.020		
	Sc	45			
	Ti	47	99.757		
	V	51	100.355		
	Cr	52	100.780		
	Cr	53			
	Mn	55	100.628		
	Co	59	101.878		
	Ni	60	100.494		
	Cu	65	101.251		
	Zn	66	99.662		
>	Ge	72		109.496	
	As	75	99.132		
	Se	82	99.580		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	99.136		
Ag	107	99.518		
Cd	111	100.018		
Cd	114			
> In	115			107.231
Sn	118	98.261		
Sb	123	99.027		
Ba	135	98.274		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.387		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.743		
U	238	100.559		
> Bi	209			103.303
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 12:48:10
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79667.3	2.3				ug/L	76456	Standard
	Be	9	48.3	39.2	**0.0215**	0.016	74.4	ug/L	20	Standard
	Al	27	13667.3	103.9	**0.0663**	0.079	119.0	ug/L	1307	Standard
	Sc	45	44725.9	0.8				ug/L	41174	Standard
	Ti	47	40.3	36.1	**0.0282**	0.040	143.2	ug/L	27	Standard
	V	51	1800.6	20.7	**0.0010**	0.041	3971.4	ug/L	1434	Standard
	Cr	52	8069.5	1.6	**-0.0611**	0.005	7.9	ug/L	7733	Standard
	Cr	53	805.0	12.6	**0.3085**	0.086	27.9	ug/L	442	Standard
	Mn	55	1891.2	86.3	**0.1261**	0.196	155.3	ug/L	723	Standard
	Co	59	402.0	57.1	**0.0183**	0.027	148.1	ug/L	217	Standard
	Ni	60	380.0	16.0	**0.0137**	0.026	190.1	ug/L	304	Standard
	Cu	65	200.3	16.4	**0.0153**	0.014	94.0	ug/L	181	Standard
	Zn	66	277.3	5.9	**0.0260**	0.012	46.5	ug/L	215	Standard
>	**Ge**	72	571534.4	1.1				ug/L	520809	Standard
	As	75	-32.7	47.9	**0.0211**	0.011	53.6	ug/L	-52	Standard
	Se	82	21.0	34.3	**0.0252**	0.052	206.6	ug/L	17	Standard
	Se-1	77	64.3	8.6	**0.0008**	0.051	6596.2	ug/L	56	Standard
>	**Ga**	71	30.0	16.7				mg/L	25	Standard
	Rb	85	26.7	75.8				ug/L	28	Standard
	Y	89	488434.0	1.5				ug/L	447395	Standard
>	**Rh**	103	18.3	56.8				ug/L	15	Standard
	Mo	98	360.1	51.7	**0.0867**	0.057	65.8	ug/L	113	Standard
	Ag	107	301.7	75.6	**0.0262**	0.029	112.6	ug/L	108	Standard
	Cd	111	35.8	64.4	**0.0121**	0.009	76.9	mg/L	3	Standard
	Cd	114	93.7	41.3	**0.0153**	0.006	41.1	ug/L	20	Standard
>	**In**	115	672952.0	0.6				ug/L	625728	Standard
	Sn	118	2098.5	22.4	**0.2192**	0.070	31.8	ug/L	568	Standard
	Sb	123	1021.0	31.2	**0.1501**	0.058	38.5	ug/L	612	Standard
	Ba	135	296.3	92.5	**0.1088**	0.117	107.6	ug/L	21	Standard
	Ce	140	101.7	62.5				ug/L	245	Standard
>	**Tb**	159	1018483.3	2.2				ug/L	950397	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	228.7	95.2	**0.0235**	0.023	98.1	ug/L	15	Standard
	Tl	205	170.0	71.4	**0.0105**	0.014	137.1	ug/L	13	Standard
	Pb	206	473.7	49.2	**0.0358**	0.039	109.0	ug/L	264	Standard
	Pb	207	396.7	45.3	**0.0273**	0.033	121.3	ug/L	222	Standard
	Pb	208	1490.7	28.8	**0.0193**	0.019	100.6	ug/L	959	Standard
	U	238	168.7	71.3	**0.0196**	0.014	72.1	ug/L	9	Standard
>	**Bi**	209	580702.6	1.0				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	85.0	38.6	**0.0310**	0.035	111.2	mg/L	55	Standard
K	39	35.0	37.8	**-0.0077**	0.046	604.4	mg/L	28	Standard
Ca	43	16.7	105.4	**-1.0542**	1.482	140.5	mg/L	27	Standard
Fe	54	153.9	28.2	**0.0123**	0.031	255.3	mg/L	147	Standard
Fe	57	300.0	3.3	**0.0447**	0.032	71.4	mg/L	268	Standard
Sc-1	45	44725.9	0.8				mg/L	41174	Standard
Cl	35	82881.4	0.4				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	2540.2	1.8				ug/L	1950	Standard
P	31	24578.3	4.0				ug/L	21156	Standard
S	34	4135.6	7.4				ug/L	3419	Standard
Sr	88	55.0	27.3				ug/L	72	Standard
C	12	116.7	21.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	17	Standard
Dy	164	16.5	36.7				mg/L	16	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	16210.3	1.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		109.740	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	107.547	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	105.044	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW 07 WG574419-03
Sample Date/Time: Friday, July 01, 2016 12:58:36
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81259.0	1.7				ug/L	76456	Standard
	Be	9	25.0	52.9	**0.0011**	0.011	980.8	ug/L	20	Standard
	Al	27	43520.8	2.0	**0.2290**	0.003	1.2	ug/L	1307	Standard
	Sc	45	45160.6	1.8				ug/L	41174	Standard
	Ti	47	37.3	12.7	**0.0196**	0.013	67.8	ug/L	27	Standard
	V	51	1890.1	0.3	**0.0103**	0.002	20.9	ug/L	1434	Standard
	Cr	52	10254.5	1.2	**0.1819**	0.016	8.6	ug/L	7733	Standard
	Cr	53	800.0	8.4	**0.3021**	0.055	18.2	ug/L	442	Standard
	Mn	55	1844.4	0.9	**0.1201**	0.001	0.9	ug/L	723	Standard
	Co	59	227.3	7.0	**-0.0025**	0.002	69.8	ug/L	217	Standard
	Ni	60	435.3	6.3	**0.0376**	0.014	36.1	ug/L	304	Standard
	Cu	65	169.0	18.5	**0.0011**	0.014	1207.4	ug/L	181	Standard
	Zn	66	2605.6	4.5	**1.7518**	0.074	4.2	ug/L	215	Standard
>	**Ge**	72	573164.6	0.8				ug/L	520809	Standard
	As	75	-74.5	34.0	**-0.0097**	0.019	192.2	ug/L	-52	Standard
	Se	82	11.5	10.8	**-0.0437**	0.008	19.0	ug/L	17	Standard
	Se-1	77	70.7	5.9	**0.0666**	0.045	68.1	ug/L	56	Standard
>	**Ga**	71	35.0	65.5				mg/L	25	Standard
	Rb	85	83.3	9.2				ug/L	28	Standard
	Y	89	497110.0	0.3				ug/L	447395	Standard
>	**Rh**	103	13.3	43.3				ug/L	15	Standard
	Mo	98	63.4	20.9	**-0.0047**	0.004	88.1	ug/L	113	Standard
	Ag	107	104.7	2.9	**0.0005**	0.001	97.2	ug/L	108	Standard
	Cd	111	8.9	29.5	**0.0012**	0.001	90.2	mg/L	3	Standard
	Cd	114	20.2	129.3	**0.0033**	0.004	129.2	ug/L	20	Standard
>	**In**	115	681820.3	1.0				ug/L	625728	Standard
	Sn	118	1671.8	12.8	**0.1542**	0.031	19.9	ug/L	568	Standard
	Sb	123	510.3	25.3	**0.0569**	0.023	40.1	ug/L	612	Standard
	Ba	135	135.7	5.5	**0.0393**	0.003	7.0	ug/L	21	Standard
	Ce	140	68.3	33.0				ug/L	245	Standard
>	**Tb**	159	1025294.3	0.6				ug/L	950397	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	44.0	21.7	**0.0039**	0.001	25.6	ug/L	15	Standard
	Tl	205	40.0	25.0	**-0.0050**	0.001	25.0	ug/L	13	Standard
	Pb	206	314.3	3.7	**0.0090**	0.002	26.0	ug/L	264	Standard
	Pb	207	276.7	9.5	**0.0051**	0.005	106.7	ug/L	222	Standard
	Pb	208	1132.0	1.7	**0.0030**	0.001	48.7	ug/L	959	Standard
	U	238	26.0	17.6	**0.0028**	0.001	20.4	ug/L	9	Standard
>	**Bi**	209	581506.6	1.1				ug/L	552821	Standard

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Na	23	1.7	173.2	**4.6090**	7.974	173.0	mg/L	2	Standard
Mg	24	81.7	9.4	**0.0269**	0.009	33.7	mg/L	55	Standard
K	39	40.0	21.7	**0.0086**	0.030	348.4	mg/L	28	Standard
Ca	43	30.0	33.3	**0.0262**	0.793	3031.4	mg/L	27	Standard
Fe	54	180.2	26.2	**0.0304**	0.036	118.2	mg/L	147	Standard
Fe	57	258.3	6.2	**-0.0804**	0.042	52.2	mg/L	268	Standard
> **Sc-1**	45	45160.6	1.8				mg/L	41174	Standard
Cl	35	85551.6	2.1				ug/L	69550	Standard
Kr	83	1.0	173.2				ug/L	1	Standard
Br	81	2493.5	7.2				ug/L	1950	Standard
P	31	25546.6	9.0				ug/L	21156	Standard
S	34	4053.9	0.5				ug/L	3419	Standard
Sr	88	75.0	13.3				ug/L	72	Standard
C	12	136.7	53.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	69.3				mg/L	17	Standard
Dy	164	19.4	51.7				mg/L	16	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	10762.2	1.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.282	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.053	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.964
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.189
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: LCSW 07 WG574419-04
Sample Date/Time: Friday, July 01, 2016 13:03:34
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80883.7	2.2				ug/L	76456	Standard
	Be	9	63273.5	1.3	**53.4233**	1.134	2.1	ug/L	20	Standard
	Al	27	15556.3	4.2	**0.0758**	0.006	7.3	ug/L	1307	Standard
	Sc	45	46230.4	2.2				ug/L	41174	Standard
	Ti	47	48.3	18.7	**0.0475**	0.025	52.8	ug/L	27	Standard
	V	51	465592.0	1.2	**50.1984**	0.441	0.9	ug/L	1434	Standard
	Cr	52	471783.2	1.2	**50.9433**	0.486	1.0	ug/L	7733	Standard
	Cr	53	57119.2	2.3	**49.8721**	1.291	2.6	ug/L	442	Standard
	Mn	55	436781.1	0.8	**51.2372**	0.113	0.2	ug/L	723	Standard
	Co	59	434567.5	1.2	**50.4450**	0.373	0.7	ug/L	217	Standard
	Ni	60	118551.0	1.3	**50.6835**	0.443	0.9	ug/L	304	Standard
	Cu	65	119119.1	1.3	**51.8651**	0.602	1.2	ug/L	181	Standard
	Zn	66	71172.1	1.7	**51.5055**	0.595	1.2	ug/L	215	Standard
>	**Ge**	72	585340.9	0.6				ug/L	520809	Standard
	As	75	69945.5	1.2	**50.4563**	0.545	1.1	ug/L	-52	Standard
	Se	82	7094.3	1.4	**49.8362**	0.433	0.9	ug/L	17	Standard
	Se-1	77	4867.8	0.7	**49.9806**	0.170	0.3	ug/L	56	Standard
>	**Ga**	71	31.7	24.1				mg/L	25	Standard
	Rb	85	36.7	41.7				ug/L	28	Standard
	Y	89	498458.5	0.8				ug/L	447395	Standard
>	**Rh**	103	18.3	41.7				ug/L	15	Standard
	Mo	98	78.0	18.4	**-0.0003**	0.004	1563.8	ug/L	113	Standard
	Ag	107	402127.6	1.2	**51.3787**	0.778	1.5	ug/L	108	Standard
	Cd	111	126507.9	1.2	**50.4309**	0.392	0.8	mg/L	3	Standard
	Cd	114	308784.3	0.8	**49.7196**	0.327	0.7	ug/L	20	Standard
>	**In**	115	681801.9	1.3				ug/L	625728	Standard
	Sn	118	1796.8	16.1	**0.1722**	0.043	25.0	ug/L	568	Standard
	Sb	123	288724.4	0.5	**51.2448**	0.727	1.4	ug/L	612	Standard
	Ba	135	116686.9	0.7	**49.2097**	0.376	0.8	ug/L	21	Standard
	Ce	140	85.0	38.6				ug/L	245	Standard
>	**Tb**	159	1014866.4	0.7				ug/L	950397	Standard
	Ho	165	16.7	45.8				ug/L	7	Standard
	Tl	203	482185.7	0.8	**50.5384**	0.275	0.5	ug/L	15	Standard
	Tl	205	444917.2	1.5	**52.5153**	1.373	2.6	ug/L	13	Standard
	Pb	206	312986.7	0.5	**51.9814**	0.469	0.9	ug/L	264	Standard
	Pb	207	271686.9	0.6	**49.6820**	0.381	0.8	ug/L	222	Standard
	Pb	208	1142411.3	0.4	**51.1494**	0.415	0.8	ug/L	959	Standard
	U	238	421119.4	1.0	**49.1551**	0.103	0.2	ug/L	9	Standard
>	**Bi**	209	587494.5	1.1				ug/L	552821	Standard

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Na	23	3.3	86.6	**8.7572**	7.580	86.6	mg/L	2	Standard
Mg	24	76.7	21.0	**0.0195**	0.016	83.2	mg/L	55	Standard
K	39	21.7	26.6	**-0.0575**	0.018	32.0	mg/L	28	Standard
Ca	43	18.3	83.3	**-0.9528**	1.279	134.3	mg/L	27	Standard
Fe	54	147.9	28.9	**0.0041**	0.028	686.0	mg/L	147	Standard
Fe	57	245.0	10.8	**-0.1326**	0.084	63.2	mg/L	268	Standard
> **Sc-1**	45	46230.4	2.2				mg/L	41174	Standard
Cl	35	86090.6	2.1				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	2420.2	0.7				ug/L	1950	Standard
P	31	25546.5	4.4				ug/L	21156	Standard
S	34	3980.5	6.3				ug/L	3419	Standard
Sr	88	56.7	20.4				ug/L	72	Standard
C	12	156.7	16.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	88.2				mg/L	17	Standard
Dy	164	19.7	89.4				mg/L	16	Standard
Ho-1	165	16.7	45.8				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	4735.7	3.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.792	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		112.391	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.961
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.272
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606140006 WG574419-01
Sample Date/Time: Friday, July 01, 2016 13:06:46
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80758.0	0.8				ug/L	76456	Standard
	Be	9	41.7	6.9	**0.0154**	0.002	16.2	ug/L	20	Standard
	Al	27	11868534.0	1.1	**65.6266**	0.514	0.8	ug/L	1307	Standard
	Sc	45	45759.0	1.2				ug/L	41174	Standard
	Ti	47	2320.2	10.4	**6.5166**	0.703	10.8	ug/L	27	Standard
	V	51	6253.1	3.7	**0.5063**	0.022	4.3	ug/L	1434	Standard
	Cr	52	20690.1	0.7	**1.4009**	0.007	0.5	ug/L	7733	Standard
	Cr	53	7241.7	4.8	**6.2224**	0.278	4.5	ug/L	442	Standard
	Mn	55	361893.7	0.6	**44.2063**	0.556	1.3	ug/L	723	Standard
	Co	59	1899.1	4.5	**0.2003**	0.011	5.6	ug/L	217	Standard
	Ni	60	3188.7	2.0	**1.2710**	0.022	1.8	ug/L	304	Standard
	Cu	65	3204.0	1.0	**1.3811**	0.024	1.8	ug/L	181	Standard
	Zn	66	3650.1	1.8	**2.5809**	0.057	2.2	ug/L	215	Standard
>	**Ge**	72	561976.5	0.7				ug/L	520809	Standard
	As	75	349.0	10.2	**0.3073**	0.028	9.1	ug/L	-52	Standard
	Se	82	95.4	7.6	**0.5731**	0.052	9.1	ug/L	17	Standard
	Se-1	77	310.3	6.8	**2.6788**	0.206	7.7	ug/L	56	Standard
>	**Ga**	71	306.7	3.4				mg/L	25	Standard
	Rb	85	9304.5	4.6				ug/L	28	Standard
	Y	89	479158.2	2.5				ug/L	447395	Standard
>	**Rh**	103	63.3	19.9				ug/L	15	Standard
	Mo	98	462.6	2.2	**0.1212**	0.004	3.1	ug/L	113	Standard
	Ag	107	229.3	10.2	**0.0174**	0.003	18.1	ug/L	108	Standard
	Cd	111	314.9	4.8	**0.1274**	0.007	5.3	mg/L	3	Standard
	Cd	114	778.8	0.7	**0.1296**	0.002	1.2	ug/L	20	Standard
>	**In**	115	659596.7	0.4				ug/L	625728	Standard
	Sn	118	3462.1	8.7	**0.4262**	0.046	10.8	ug/L	568	Standard
	Sb	123	25160.0	1.7	**4.5846**	0.068	1.5	ug/L	612	Standard
	Ba	135	24755.2	1.0	**10.7771**	0.149	1.4	ug/L	21	Standard
	Ce	140	10733.8	0.6				ug/L	245	Standard
>	**Tb**	159	997525.3	0.9				ug/L	950397	Standard
	Ho	165	248.3	11.4				ug/L	7	Standard
	Tl	203	323.7	9.0	**0.0349**	0.003	8.9	ug/L	15	Standard
	Tl	205	295.0	13.5	**0.0268**	0.005	17.8	ug/L	13	Standard
	Pb	206	13733.6	1.1	**2.3523**	0.014	0.6	ug/L	264	Standard
	Pb	207	11541.7	1.2	**2.1713**	0.021	1.0	ug/L	222	Standard
	Pb	208	49582.7	0.8	**2.2840**	0.012	0.5	ug/L	959	Standard
	U	238	794.4	5.3	**0.0971**	0.005	5.3	ug/L	9	Standard
>	**Bi**	209	559684.2	0.5				ug/L	552821	Standard

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Na	23	5.0	100.0	**13.3851**	13.441	100.4	mg/L	2	Standard
Mg	24	23146.0	2.0	**24.2692**	0.405	1.7	mg/L	55	Standard
K	39	161.7	7.1	**0.4263**	0.034	7.9	mg/L	28	Standard
Ca	43	226.7	16.0	**16.1036**	3.136	19.5	mg/L	27	Standard
Fe	54	423.4	7.8	**0.1999**	0.022	10.8	mg/L	147	Standard
Fe	57	503.3	8.4	**0.5885**	0.131	22.2	mg/L	268	Standard
> **Sc-1**	45	45759.0	1.2				mg/L	41174	Standard
Cl	35	89790.6	1.3				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	17466.7	4.8				ug/L	1950	Standard
P	31	27324.6	2.0				ug/L	21156	Standard
S	34	4078.9	2.0				ug/L	3419	Standard
Sr	88	211.7	20.1				ug/L	72	Standard
C	12	163.3	9.4				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	17	Standard
Dy	164	363.3	15.2				mg/L	16	Standard
Ho-1	165	248.3	11.4				mg/L	7	Standard
Er	166	280.0	3.6				mg/L	7	Standard
I	127	49912.2	3.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.627	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.904	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.413
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.242
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140007S WG574419-05
Sample Date/Time: Friday, July 01, 2016 13:09:57
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80711.1	0.9				ug/L	76456	Standard
	Be	9	64078.6	1.3	**54.2065**	0.745	1.4	ug/L	20	Standard
	Al	27	12211012.4	1.5	**67.5580**	0.517	0.8	ug/L	1307	Standard
	Sc	45	44934.9	0.8				ug/L	41174	Standard
	Ti	47	2064.8	6.8	**5.8866**	0.415	7.1	ug/L	27	Standard
	V	51	459064.1	0.1	**52.4156**	0.397	0.8	ug/L	1434	Standard
	Cr	52	459452.2	0.5	**52.5615**	0.550	1.0	ug/L	7733	Standard
	Cr	53	62920.4	1.2	**58.2380**	1.104	1.9	ug/L	442	Standard
	Mn	55	774817.1	0.6	**96.3273**	0.870	0.9	ug/L	723	Standard
	Co	59	418465.0	0.9	**51.4354**	0.672	1.3	ug/L	217	Standard
	Ni	60	114181.6	0.7	**51.6930**	0.726	1.4	ug/L	304	Standard
	Cu	65	110934.3	0.7	**51.1428**	0.660	1.3	ug/L	181	Standard
	Zn	66	70146.7	0.6	**53.7582**	0.090	0.2	ug/L	215	Standard
>	Ge	72	552840.2	0.7				ug/L	520809	Standard
	As	75	68517.6	0.7	**52.3310**	0.386	0.7	ug/L	-52	Standard
	Se	82	6918.4	0.6	**51.4649**	0.420	0.8	ug/L	17	Standard
	Se-1	77	5005.2	0.2	**54.4756**	0.506	0.9	ug/L	56	Standard
>	Ga	71	246.7	21.7				mg/L	25	Standard
	Rb	85	8369.0	3.4				ug/L	28	Standard
	Y	89	475828.1	0.8				ug/L	447395	Standard
>	Rh	103	60.0	8.3				ug/L	15	Standard
	Mo	98	444.1	3.8	**0.1178**	0.005	4.5	ug/L	113	Standard
	Ag	107	373105.8	0.7	**50.1488**	0.527	1.1	ug/L	108	Standard
	Cd	111	121300.2	0.5	**50.8704**	0.210	0.4	mg/L	3	Standard
	Cd	114	296777.5	0.3	**50.2713**	0.199	0.4	ug/L	20	Standard
>	In	115	648070.4	0.4				ug/L	625728	Standard
	Sn	118	3198.7	11.7	**0.3955**	0.054	13.6	ug/L	568	Standard
	Sb	123	305348.9	0.8	**57.0152**	0.685	1.2	ug/L	612	Standard
	Ba	135	127151.7	1.1	**56.4152**	0.853	1.5	ug/L	21	Standard
	Ce	140	10170.1	11.9				ug/L	245	Standard
>	Tb	159	984910.5	1.3				ug/L	950397	Standard
	Ho	165	243.3	11.3				ug/L	7	Standard
	Tl	203	460227.9	0.5	**50.9164**	0.584	1.1	ug/L	15	Standard
	Tl	205	419164.2	0.8	**52.2197**	1.079	2.1	ug/L	13	Standard
	Pb	206	308797.4	0.7	**54.1380**	1.001	1.8	ug/L	264	Standard
	Pb	207	269438.3	0.3	**52.0122**	0.916	1.8	ug/L	222	Standard
	Pb	208	1139591.7	0.5	**53.8600**	0.817	1.5	ug/L	959	Standard
	U	238	412122.6	0.9	**50.7770**	0.583	1.1	ug/L	9	Standard
>	Bi	209	556623.0	1.5				ug/L	552821	Standard

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Na	23	5.0	0.0	**13.6792**	0.103	0.8	mg/L	2	Standard
Mg	24	24264.4	1.3	**25.9117**	0.145	0.6	mg/L	55	Standard
K	39	138.3	27.1	**0.3549**	0.133	37.4	mg/L	28	Standard
Ca	43	288.3	17.1	**21.5709**	4.241	19.7	mg/L	27	Standard
Fe	54	394.0	6.5	**0.1843**	0.018	9.9	mg/L	147	Standard
Fe	57	461.7	10.0	**0.4961**	0.134	27.1	mg/L	268	Standard
> **Sc-1**	45	44934.9	0.8				mg/L	41174	Standard
Cl	35	90855.7	2.0				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	11284.2	7.1				ug/L	1950	Standard
P	31	27506.6	4.3				ug/L	21156	Standard
S	34	4052.2	3.2				ug/L	3419	Standard
Sr	88	215.0	8.1				ug/L	72	Standard
C	12	163.3	9.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	17.3				mg/L	17	Standard
Dy	164	319.9	13.5				mg/L	16	Standard
Ho-1	165	243.3	11.3				mg/L	7	Standard
Er	166	280.0	25.8				mg/L	7	Standard
I	127	66618.3	7.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.566	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.150	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.571
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.688
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140008SD WG574419-06
Sample Date/Time: Friday, July 01, 2016 13:13:09
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79700.7	0.7				ug/L	76456	Standard
	Be	9	61700.4	1.6	**52.8560**	0.961	1.8	ug/L	20	Standard
	Al	27	12099353.2	1.1	**67.7900**	0.341	0.5	ug/L	1307	Standard
	Sc	45	46046.6	2.1				ug/L	41174	Standard
	Ti	47	1942.8	6.7	**5.5490**	0.345	6.2	ug/L	27	Standard
	V	51	439192.0	0.4	**50.2950**	0.725	1.4	ug/L	1434	Standard
	Cr	52	444362.9	0.8	**50.9606**	0.244	0.5	ug/L	7733	Standard
	Cr	53	61436.0	0.3	**57.0274**	0.463	0.8	ug/L	442	Standard
	Mn	55	751669.2	0.7	**93.7402**	1.592	1.7	ug/L	723	Standard
	Co	59	399707.3	0.9	**49.2832**	0.963	2.0	ug/L	217	Standard
	Ni	60	109770.2	0.4	**49.8430**	0.612	1.2	ug/L	304	Standard
	Cu	65	108323.5	0.5	**50.0917**	0.642	1.3	ug/L	181	Standard
	Zn	66	68554.1	0.3	**52.6985**	0.620	1.2	ug/L	215	Standard
>	Ge	72	551156.5	1.1				ug/L	520809	Standard
	As	75	66401.2	0.7	**50.8743**	0.706	1.4	ug/L	-52	Standard
	Se	82	6730.1	0.5	**50.2159**	0.522	1.0	ug/L	17	Standard
	Se-1	77	4856.1	2.0	**53.0004**	1.342	2.5	ug/L	56	Standard
>	Ga	71	258.3	16.5				mg/L	25	Standard
	Rb	85	8118.8	3.8				ug/L	28	Standard
	Y	89	478755.4	1.4				ug/L	447395	Standard
>	Rh	103	76.7	3.8				ug/L	15	Standard
	Mo	98	512.6	9.1	**0.1403**	0.015	10.9	ug/L	113	Standard
	Ag	107	359474.2	1.7	**48.4964**	0.550	1.1	ug/L	108	Standard
	Cd	111	117797.3	1.3	**49.5872**	0.214	0.4	mg/L	3	Standard
	Cd	114	286908.0	1.1	**48.7832**	0.247	0.5	ug/L	20	Standard
>	In	115	645632.6	1.1				ug/L	625728	Standard
	Sn	118	3095.3	10.7	**0.3822**	0.054	14.0	ug/L	568	Standard
	Sb	123	295379.5	0.9	**55.3607**	0.341	0.6	ug/L	612	Standard
	Ba	135	123159.2	0.4	**54.8524**	0.674	1.2	ug/L	21	Standard
	Ce	140	9327.9	2.1				ug/L	245	Standard
>	Tb	159	983378.7	0.8				ug/L	950397	Standard
	Ho	165	230.0	2.2				ug/L	7	Standard
	Tl	203	446759.8	0.8	**49.4389**	0.212	0.4	ug/L	15	Standard
	Tl	205	408461.1	0.9	**50.8970**	0.668	1.3	ug/L	13	Standard
	Pb	206	301254.5	0.8	**52.8246**	0.290	0.5	ug/L	264	Standard
	Pb	207	261947.7	0.8	**50.5743**	0.209	0.4	ug/L	222	Standard
	Pb	208	1104059.4	0.6	**52.1919**	0.419	0.8	ug/L	959	Standard
	U	238	402584.9	0.8	**49.6175**	0.619	1.2	ug/L	9	Standard
>	Bi	209	556417.0	0.4				ug/L	552821	Standard

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Na	23	5.0	100.0	**13.3094**	13.444	101.0	mg/L	2	Standard
Mg	24	23635.1	1.3	**24.6326**	0.412	1.7	mg/L	55	Standard
K	39	136.7	2.1	**0.3374**	0.002	0.7	mg/L	28	Standard
Ca	43	218.3	2.6	**15.2980**	0.780	5.1	mg/L	27	Standard
Fe	54	402.8	5.8	**0.1835**	0.012	6.4	mg/L	147	Standard
Fe	57	453.3	11.2	**0.4438**	0.163	36.7	mg/L	268	Standard
> **Sc-1**	45	46046.6	2.1				mg/L	41174	Standard
Cl	35	91583.3	0.2				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	12164.9	6.2				ug/L	1950	Standard
P	31	27852.3	5.0				ug/L	21156	Standard
S	34	4047.2	6.0				ug/L	3419	Standard
Sr	88	165.0	13.2				ug/L	72	Standard
C	12	173.3	28.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	17	Standard
Dy	164	272.5	13.7				mg/L	16	Standard
Ho-1	165	230.0	2.2				mg/L	7	Standard
Er	166	296.7	5.1				mg/L	7	Standard
I	127	59372.8	2.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.244	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.827	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.181
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.651
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606142701 WG574419-02
Sample Date/Time: Friday, July 01, 2016 13:16:20
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	94406.8	3.4				ug/L	76456	Standard
	Be	9	85.0	35.3	**0.0412**	0.020	47.7	ug/L	20	Standard
	Al	27	56617238.2	4.0	**267.8022**	1.372	0.5	ug/L	1307	Standard
	Sc	45	46416.0	2.3				ug/L	41174	Standard
	Ti	47	884.0	4.8	**2.5428**	0.066	2.6	ug/L	27	Standard
	V	51	553940.5	2.9	**65.0728**	0.307	0.5	ug/L	1434	Standard
	Cr	52	299233.7	2.3	**34.8806**	0.725	2.1	ug/L	7733	Standard
	Cr	53	52044.3	2.2	**49.4662**	0.542	1.1	ug/L	442	Standard
	Mn	55	240351.0	1.7	**30.6595**	0.508	1.7	ug/L	723	Standard
	Co	59	198012.4	2.6	**25.0083**	0.182	0.7	ug/L	217	Standard
	Ni	60	153480.0	2.1	**71.5090**	1.345	1.9	ug/L	304	Standard
	Cu	65	58814.7	2.8	**27.8441**	0.424	1.5	ug/L	181	Standard
	Zn	66	154855.3	2.4	**122.2558**	1.271	1.0	ug/L	215	Standard
>	Ge	72	537771.5	3.3				ug/L	520809	Standard
	As	75	14927.7	4.1	**11.7537**	0.103	0.9	ug/L	-52	Standard
	Se	82	5918.7	4.3	**45.2355**	0.439	1.0	ug/L	17	Standard
	Se-1	77	1154.4	4.7	**12.3907**	0.295	2.4	ug/L	56	Standard
>	Ga	71	381.7	7.4				mg/L	25	Standard
	Rb	85	99551.2	2.9				ug/L	28	Standard
	Y	89	473605.3	2.9				ug/L	447395	Standard
>	Rh	103	343.3	14.9				ug/L	15	Standard
	Mo	98	2403599.9	3.3	**789.6820**	1.502	0.2	ug/L	113	Standard
	Ag	107	348.7	11.5	**0.0353**	0.004	11.4	ug/L	108	Standard
	Cd	111	-1248.7	2.3	**-0.5414**	0.006	1.1	mg/L	3	Standard
	Cd	114	4967.3	3.8	**0.8659**	0.009	1.0	ug/L	20	Standard
>	In	115	629706.1	3.1				ug/L	625728	Standard
	Sn	118	2805.3	14.7	**0.3479**	0.050	14.4	ug/L	568	Standard
	Sb	123	2974.2	8.0	**0.5376**	0.028	5.2	ug/L	612	Standard
	Ba	135	206845.8	2.1	**94.4794**	0.976	1.0	ug/L	21	Standard
	Ce	140	2191.8	6.3				ug/L	245	Standard
>	Tb	159	977368.8	3.8				ug/L	950397	Standard
	Ho	165	160.0	22.5				ug/L	7	Standard
	Tl	203	430.0	2.3	**0.0496**	0.002	4.9	ug/L	15	Standard
	Tl	205	390.0	8.0	**0.0417**	0.005	11.7	ug/L	13	Standard
	Pb	206	8083.8	1.9	**1.4566**	0.015	1.0	ug/L	264	Standard
	Pb	207	6744.5	3.2	**1.3320**	0.010	0.7	ug/L	222	Standard
	Pb	208	28675.7	2.4	**1.3865**	0.012	0.8	ug/L	959	Standard
	U	238	878.7	4.2	**0.1143**	0.007	5.7	ug/L	9	Standard
>	Bi	209	526224.9	2.9				ug/L	552821	Standard

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Na	23	10.0	100.0	**26.3285**	25.935	98.5	mg/L	2	Standard
Mg	24	138231.5	3.2	**143.1647**	1.819	1.3	mg/L	55	Standard
K	39	2051.8	3.6	**6.8480**	0.212	3.1	mg/L	28	Standard
Ca	43	1005.0	4.6	**78.6144**	4.822	6.1	mg/L	27	Standard
Fe	54	1298.8	6.4	**0.8054**	0.072	8.9	mg/L	147	Standard
Fe	57	1345.1	6.6	**2.8597**	0.164	5.7	mg/L	268	Standard
> **Sc-1**	45	46416.0	2.3				mg/L	41174	Standard
Cl	35	167690.5	2.1				ug/L	69550	Standard
Kr	83	3.0	66.7				ug/L	1	Standard
Br	81	1167966.9	3.9				ug/L	1950	Standard
P	31	32757.0	0.7				ug/L	21156	Standard
S	34	3867.2	4.1				ug/L	3419	Standard
Sr	88	1343.4	2.4				ug/L	72	Standard
C	12	240.0	12.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1276.7	2.5				mg/L	17	Standard
Dy	164	1123.0	11.7				mg/L	16	Standard
Ho-1	165	160.0	22.5				mg/L	7	Standard
Er	166	146.7	14.2				mg/L	7	Standard
I	127	116304.4	6.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.479	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.257	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.636	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	95.189	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Zn 66 Upper, S, EEE	Zn	66	

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Mo 98 Upper, S, EEE	Mo	98
Cd 111 Lower	Cd	111

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Method 6020 - Summary Report

Sample ID: L1606142701DP WG574419-07
Sample Date/Time: Friday, July 01, 2016 13:19:32
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	104046.1	2.0				ug/L	76456	Standard
	Be	9	46.7	34.4	**0.0108**	0.011	98.8	ug/L	20	Standard
	Al	27	58682132.6	0.8	**251.9338**	4.223	1.7	ug/L	1307	Standard
	Sc	45	49029.2	0.9				ug/L	41174	Standard
	Ti	47	887.4	3.2	**2.4062**	0.089	3.7	ug/L	27	Standard
	V	51	572508.3	0.6	**63.4877**	0.191	0.3	ug/L	1434	Standard
	Cr	52	308728.3	0.4	**33.9428**	0.266	0.8	ug/L	7733	Standard
	Cr	53	52407.2	1.8	**46.9988**	0.886	1.9	ug/L	442	Standard
	Mn	55	248854.2	1.2	**29.9599**	0.484	1.6	ug/L	723	Standard
	Co	59	205279.2	0.1	**24.4744**	0.076	0.3	ug/L	217	Standard
	Ni	60	157071.7	0.8	**69.0682**	0.457	0.7	ug/L	304	Standard
	Cu	65	60395.8	1.4	**26.9893**	0.358	1.3	ug/L	181	Standard
	Zn	66	157884.7	1.0	**117.6566**	1.110	0.9	ug/L	215	Standard
>	Ge	72	569569.1	0.4				ug/L	520809	Standard
	As	75	17073.6	1.5	**12.6909**	0.145	1.1	ug/L	-52	Standard
	Se	82	6774.5	1.0	**48.9062**	0.303	0.6	ug/L	17	Standard
	Se-1	77	1068.4	1.0	**10.7433**	0.123	1.1	ug/L	56	Standard
>	Ga	71	446.7	9.5				mg/L	25	Standard
	Rb	85	100812.6	1.2				ug/L	28	Standard
	Y	89	506159.4	0.9				ug/L	447395	Standard
>	Rh	103	378.3	6.5				ug/L	15	Standard
	Mo	98	2476607.9	0.6	**769.3094**	6.421	0.8	ug/L	113	Standard
	Ag	107	277.0	7.6	**0.0234**	0.003	11.5	ug/L	108	Standard
	Cd	111	-1309.7	3.6	**-0.5367**	0.015	2.9	mg/L	3	Standard
	Cd	114	4986.9	3.4	**0.8220**	0.028	3.4	ug/L	20	Standard
>	In	115	666048.1	0.7				ug/L	625728	Standard
	Sn	118	2695.2	8.4	**0.3091**	0.031	9.9	ug/L	568	Standard
	Sb	123	2859.3	3.8	**0.4860**	0.016	3.4	ug/L	612	Standard
	Ba	135	211685.9	0.6	**91.3948**	0.192	0.2	ug/L	21	Standard
	Ce	140	2868.6	2.4				ug/L	245	Standard
>	Tb	159	1029121.0	0.5				ug/L	950397	Standard
	Ho	165	185.0	14.3				ug/L	7	Standard
	Tl	203	334.0	8.3	**0.0363**	0.003	8.5	ug/L	15	Standard
	Tl	205	321.7	4.7	**0.0304**	0.002	6.7	ug/L	13	Standard
	Pb	206	8239.2	0.3	**1.4051**	0.008	0.6	ug/L	264	Standard
	Pb	207	6707.8	0.3	**1.2527**	0.005	0.4	ug/L	222	Standard
	Pb	208	28813.8	0.3	**1.3177**	0.005	0.4	ug/L	959	Standard
	U	238	815.7	5.7	**0.1005**	0.006	5.9	ug/L	9	Standard
>	Bi	209	555326.9	0.6				ug/L	552821	Standard

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Na	23	11.7	89.2	**29.1295**	26.033	89.4	mg/L	2	Standard
Mg	24	145830.2	1.6	**142.9963**	1.122	0.8	mg/L	55	Standard
K	39	1910.1	4.3	**6.0209**	0.304	5.1	mg/L	28	Standard
Ca	43	1011.7	3.6	**74.7713**	3.380	4.5	mg/L	27	Standard
Fe	54	1358.4	2.2	**0.7959**	0.027	3.4	mg/L	147	Standard
Fe	57	1346.7	4.5	**2.6702**	0.125	4.7	mg/L	268	Standard
> **Sc-1**	45	49029.2	0.9				mg/L	41174	Standard
Cl	35	174677.8	0.8				ug/L	69550	Standard
Kr	83	3.3	45.8				ug/L	1	Standard
Br	81	1284910.2	3.2				ug/L	1950	Standard
P	31	34656.3	1.1				ug/L	21156	Standard
S	34	3823.8	7.2				ug/L	3419	Standard
Sr	88	1511.7	7.3				ug/L	72	Standard
C	12	326.7	14.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1320.1	5.5				mg/L	17	Standard
Dy	164	1289.7	16.2				mg/L	16	Standard
Ho-1	165	185.0	14.3				mg/L	7	Standard
Er	166	146.7	50.3				mg/L	7	Standard
I	127	128302.1	5.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		136.087	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.362	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.444
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.453
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Zn 66 Upper, S, EEE	Zn	66	

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Mo 98 Upper, S, EEE	Mo	98
Cd 111 Lower	Cd	111

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Method 6020 - Summary Report

Sample ID: L1606146801
Sample Date/Time: Friday, July 01, 2016 13:22:43
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	95246.8	1.7				ug/L	76456	Standard
	Be	9	60.0	36.3	**0.0230**	0.015	65.8	ug/L	20	Standard
	Al	27	35472226.0	0.8	**166.3429**	2.244	1.3	ug/L	1307	Standard
	Sc	45	46670.1	1.2				ug/L	41174	Standard
	Ti	47	140.0	21.5	**0.3094**	0.088	28.6	ug/L	27	Standard
	V	51	4190.3	5.3	**0.2681**	0.025	9.2	ug/L	1434	Standard
	Cr	52	13346.9	2.4	**0.5405**	0.016	3.1	ug/L	7733	Standard
	Cr	53	6873.2	1.9	**5.8101**	0.177	3.1	ug/L	442	Standard
	Mn	55	19772.6	3.3	**2.2894**	0.049	2.1	ug/L	723	Standard
	Co	59	1288.4	10.2	**0.1244**	0.014	11.2	ug/L	217	Standard
	Ni	60	3544.7	6.0	**1.4102**	0.074	5.2	ug/L	304	Standard
	Cu	65	6205.3	5.0	**2.7088**	0.103	3.8	ug/L	181	Standard
	Zn	66	22108.8	2.9	**16.3375**	0.265	1.6	ug/L	215	Standard
>	Ge	72	568906.9	1.3				ug/L	520809	Standard
	As	75	543.4	5.2	**0.4480**	0.017	3.7	ug/L	-52	Standard
	Se	82	262.1	5.1	**1.7720**	0.073	4.1	ug/L	17	Standard
	Se-1	77	440.0	5.3	**4.0275**	0.247	6.1	ug/L	56	Standard
>	Ga	71	158.3	3.6				mg/L	25	Standard
	Rb	85	31255.6	3.8				ug/L	28	Standard
	Y	89	486688.8	1.2				ug/L	447395	Standard
>	Rh	103	48.3	15.8				ug/L	15	Standard
	Mo	98	2311.5	33.1	**0.6846**	0.225	32.9	ug/L	113	Standard
	Ag	107	184.3	31.5	**0.0110**	0.007	66.0	ug/L	108	Standard
	Cd	111	67.6	38.4	**0.0249**	0.010	40.7	mg/L	3	Standard
	Cd	114	137.0	32.2	**0.0223**	0.007	31.3	ug/L	20	Standard
>	In	115	673094.9	1.4				ug/L	625728	Standard
	Sn	118	1788.4	15.0	**0.1745**	0.042	24.3	ug/L	568	Standard
	Sb	123	351.8	14.1	**0.0296**	0.010	32.6	ug/L	612	Standard
	Ba	135	56024.1	0.9	**23.9231**	0.201	0.8	ug/L	21	Standard
	Ce	140	3798.8	2.1				ug/L	245	Standard
>	Tb	159	1033945.4	1.1				ug/L	950397	Standard
	Ho	165	101.7	7.5				ug/L	7	Standard
	Tl	203	1144.4	9.6	**0.1229**	0.010	8.3	ug/L	15	Standard
	Tl	205	953.4	4.2	**0.1063**	0.005	4.8	ug/L	13	Standard
	Pb	206	1672.1	2.6	**0.2429**	0.007	2.7	ug/L	264	Standard
	Pb	207	1423.7	2.4	**0.2227**	0.003	1.2	ug/L	222	Standard
	Pb	208	6035.8	3.4	**0.2307**	0.005	2.3	ug/L	959	Standard
	U	238	4452.3	3.5	**0.5357**	0.011	2.0	ug/L	9	Standard
>	Bi	209	569516.4	1.6				ug/L	552821	Standard

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Na	23	8.3	34.6	**21.9971**	7.770	35.3	mg/L	2	Standard
Mg	24	21678.8	1.3	**22.2848**	0.435	2.0	mg/L	55	Standard
K	39	2645.2	6.0	**8.8196**	0.578	6.6	mg/L	28	Standard
Ca	43	443.3	15.1	**33.0787**	5.254	15.9	mg/L	27	Standard
Fe	54	243.9	19.5	**0.0697**	0.031	44.8	mg/L	147	Standard
Fe	57	548.3	7.8	**0.6829**	0.122	17.9	mg/L	268	Standard
Sc-1	45	46670.1	1.2				mg/L	41174	Standard
Cl	35	103993.1	1.8				ug/L	69550	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	45849.6	8.7				ug/L	1950	Standard
P	31	27049.2	4.2				ug/L	21156	Standard
S	34	3738.8	3.2				ug/L	3419	Standard
Sr	88	155.0	11.6				ug/L	72	Standard
C	12	323.3	23.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	32.7				mg/L	17	Standard
Dy	164	114.1	9.2				mg/L	16	Standard
Ho-1	165	101.7	7.5				mg/L	7	Standard
Er	166	123.3	9.4				mg/L	7	Standard
I	127	41777.5	0.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		124.578	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		109.235	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.570
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.020
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606146801PS WG574824-01
Sample Date/Time: Friday, July 01, 2016 13:25:55
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	90108.8	0.5				ug/L	76456	Standard
	Be	9	70249.2	1.7	**53.2245**	0.671	1.3	ug/L	20	Standard
	Al	27	34044331.9	1.0	**168.7325**	2.084	1.2	ug/L	1307	Standard
	Sc	45	45399.6	0.8				ug/L	41174	Standard
	Ti	47	138.7	17.3	**0.3148**	0.070	22.1	ug/L	27	Standard
	V	51	476317.0	1.0	**54.1491**	0.294	0.5	ug/L	1434	Standard
	Cr	52	466031.0	0.5	**53.0857**	0.077	0.1	ug/L	7733	Standard
	Cr	53	63049.2	0.3	**58.0938**	0.175	0.3	ug/L	442	Standard
	Mn	55	440401.5	1.9	**54.4612**	0.687	1.3	ug/L	723	Standard
	Co	59	434977.5	1.9	**53.2245**	0.684	1.3	ug/L	217	Standard
	Ni	60	116940.2	0.8	**52.7068**	0.130	0.2	ug/L	304	Standard
	Cu	65	117328.2	0.6	**53.8548**	0.631	1.2	ug/L	181	Standard
	Zn	66	90120.9	0.2	**68.8123**	0.512	0.7	ug/L	215	Standard
>	Ge	72	555295.5	0.6				ug/L	520809	Standard
	As	75	70805.4	0.6	**53.8379**	0.372	0.7	ug/L	-52	Standard
	Se	82	7397.3	0.8	**54.7911**	0.368	0.7	ug/L	17	Standard
	Se-1	77	5164.9	2.2	**55.9837**	1.347	2.4	ug/L	56	Standard
>	Ga	71	125.0	14.4				mg/L	25	Standard
	Rb	85	30505.7	1.7				ug/L	28	Standard
	Y	89	478605.6	2.2				ug/L	447395	Standard
>	Rh	103	46.7	43.3				ug/L	15	Standard
	Mo	98	839.0	9.3	**0.2402**	0.025	10.4	ug/L	113	Standard
	Ag	107	377133.6	0.1	**49.9818**	0.291	0.6	ug/L	108	Standard
	Cd	111	125097.0	1.5	**51.7283**	0.533	1.0	mg/L	3	Standard
	Cd	114	305450.5	0.6	**51.0188**	0.497	1.0	ug/L	20	Standard
>	In	115	657251.3	0.6				ug/L	625728	Standard
	Sn	118	2133.5	27.9	**0.2313**	0.087	37.7	ug/L	568	Standard
	Sb	123	274150.2	2.6	**50.4698**	1.311	2.6	ug/L	612	Standard
	Ba	135	169708.2	1.1	**74.2483**	0.737	1.0	ug/L	21	Standard
	Ce	140	3655.4	2.8				ug/L	245	Standard
>	Tb	159	997893.3	1.3				ug/L	950397	Standard
	Ho	165	96.7	3.0				ug/L	7	Standard
	Tl	203	479768.6	1.3	**52.5300**	0.668	1.3	ug/L	15	Standard
	Tl	205	441867.2	0.2	**54.4752**	0.081	0.1	ug/L	13	Standard
	Pb	206	307910.6	0.5	**53.4209**	0.305	0.6	ug/L	264	Standard
	Pb	207	270893.2	0.6	**51.7493**	0.347	0.7	ug/L	222	Standard
	Pb	208	1132008.2	0.1	**52.9464**	0.115	0.2	ug/L	959	Standard
	U	238	437881.5	0.7	**53.3944**	0.388	0.7	ug/L	9	Standard
>	Bi	209	562372.5	0.1				ug/L	552821	Standard

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Na	23	3.3	173.2	**9.0238**	15.621	173.1	mg/L	2	Standard
Mg	24	21021.2	2.0	**22.2136**	0.609	2.7	mg/L	55	Standard
K	39	2403.5	9.2	**8.2292**	0.795	9.7	mg/L	28	Standard
Ca	43	463.3	6.3	**35.7330**	2.393	6.7	mg/L	27	Standard
Fe	54	243.1	16.8	**0.0741**	0.029	39.0	mg/L	147	Standard
Fe	57	501.7	6.6	**0.5936**	0.084	14.1	mg/L	268	Standard
> **Sc-1**	45	45399.6	0.8				mg/L	41174	Standard
Cl	35	103755.4	0.3				ug/L	69550	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	34723.1	4.1				ug/L	1950	Standard
P	31	26186.0	3.6				ug/L	21156	Standard
S	34	3878.8	0.5				ug/L	3419	Standard
Sr	88	156.7	22.4				ug/L	72	Standard
C	12	250.0	6.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	24.7				mg/L	17	Standard
Dy	164	122.0	12.6				mg/L	16	Standard
Ho-1	165	96.7	3.0				mg/L	7	Standard
Er	166	96.7	21.5				mg/L	7	Standard
I	127	39521.5	2.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.857	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.622	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.038
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.728
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606146801PS WG574824-01
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Method 6020 - Summary Report

Sample ID: L1606146801SDL WG574824-02
Sample Date/Time: Friday, July 01, 2016 13:29:06
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81934.4	2.4				ug/L	76456	Standard
	Be	9	23.3	12.4	**-0.0004**	0.002	528.6	ug/L	20	Standard
	Al	27	6372058.3	0.6	**34.7368**	0.867	2.5	ug/L	1307	Standard
	Sc	45	41202.6	2.0				ug/L	41174	Standard
	Ti	47	41.3	2.8	**0.0406**	0.003	7.7	ug/L	27	Standard
	V	51	2837.9	5.4	**0.1420**	0.017	12.0	ug/L	1434	Standard
	Cr	52	10022.3	0.9	**0.2524**	0.016	6.4	ug/L	7733	Standard
	Cr	53	2263.5	3.6	**1.7926**	0.079	4.4	ug/L	442	Standard
	Mn	55	3961.5	5.6	**0.4150**	0.030	7.3	ug/L	723	Standard
	Co	59	455.7	11.3	**0.0293**	0.007	23.1	ug/L	217	Standard
	Ni	60	945.7	5.5	**0.2966**	0.026	8.9	ug/L	304	Standard
	Cu	65	1313.7	2.7	**0.5610**	0.018	3.2	ug/L	181	Standard
	Zn	66	5244.2	0.6	**4.0427**	0.043	1.1	ug/L	215	Standard
>	**Ge**	72	527921.1	0.4				ug/L	520809	Standard
	As	75	85.0	19.3	**0.1131**	0.013	11.5	ug/L	-52	Standard
	Se	82	67.2	5.5	**0.3985**	0.027	6.7	ug/L	17	Standard
	Se-1	77	133.3	10.0	**0.8545**	0.159	18.6	ug/L	56	Standard
>	**Ga**	71	51.7	34.0				mg/L	25	Standard
	Rb	85	5692.7	3.6				ug/L	28	Standard
	Y	89	450949.6	1.2				ug/L	447395	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	345.8	14.9	**0.0912**	0.015	16.7	ug/L	113	Standard
	Ag	107	237.3	15.4	**0.0205**	0.005	24.9	ug/L	108	Standard
	Cd	111	35.8	40.8	**0.0133**	0.006	46.9	mg/L	3	Standard
	Cd	114	93.4	10.0	**0.0165**	0.001	8.4	ug/L	20	Standard
>	**In**	115	620231.7	1.6				ug/L	625728	Standard
	Sn	118	866.7	12.4	**0.0518**	0.019	35.8	ug/L	568	Standard
	Sb	123	1735.5	30.3	**0.3061**	0.107	34.9	ug/L	612	Standard
	Ba	135	10779.2	0.9	**4.9812**	0.056	1.1	ug/L	21	Standard
	Ce	140	791.7	4.9				ug/L	245	Standard
>	**Tb**	159	942729.5	1.8				ug/L	950397	Standard
	Ho	165	28.3	36.7				ug/L	7	Standard
	Tl	203	339.3	13.7	**0.0372**	0.005	12.3	ug/L	15	Standard
	Tl	205	293.3	14.5	**0.0272**	0.005	18.3	ug/L	13	Standard
	Pb	206	612.0	8.4	**0.0647**	0.008	11.7	ug/L	264	Standard
	Pb	207	519.7	9.7	**0.0553**	0.008	14.9	ug/L	222	Standard
	Pb	208	2221.7	7.6	**0.0579**	0.007	11.9	ug/L	959	Standard
	U	238	900.0	3.6	**0.1118**	0.003	3.1	ug/L	9	Standard
>	**Bi**	209	550585.9	1.6				ug/L	552821	Standard

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Na	23	1.7	173.2	**5.0521**	8.742	173.0	mg/L	2	Standard
Mg	24	4062.2	4.3	**4.6808**	0.132	2.8	mg/L	55	Standard
K	39	498.3	11.6	**1.7809**	0.252	14.1	mg/L	28	Standard
Ca	43	101.7	7.5	**6.7726**	0.507	7.5	mg/L	27	Standard
Fe	54	107.3	30.2	**-0.0145**	0.026	180.3	mg/L	147	Standard
Fe	57	291.7	13.3	**0.0919**	0.123	133.6	mg/L	268	Standard
> **Sc-1**	45	41202.6	2.0				mg/L	41174	Standard
Cl	35	96829.8	0.1				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	10183.4	2.4				ug/L	1950	Standard
P	31	11094.1	2.9				ug/L	21156	Standard
S	34	3683.8	0.7				ug/L	3419	Standard
Sr	88	95.0	24.1				ug/L	72	Standard
C	12	163.3	7.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	17	Standard
Dy	164	29.5	32.3				mg/L	16	Standard
Ho-1	165	28.3	36.7				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	35264.3	1.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.166	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.366	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.122
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.596
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 13:32:18
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83467.6	1.4				ug/L	76456	Standard
	Be	9	63718.7	0.7	**52.1231**	0.475	0.9	ug/L	20	Standard
	Al	27	9062605.1	0.9	**48.4842**	0.275	0.6	ug/L	1307	Standard
	Sc	45	44059.0	1.3				ug/L	41174	Standard
	Ti	47	34404.0	1.1	**99.0094**	0.671	0.7	ug/L	27	Standard
	V	51	443244.1	0.4	**50.4051**	0.454	0.9	ug/L	1434	Standard
	Cr	52	434951.0	1.6	**49.5050**	0.344	0.7	ug/L	7733	Standard
	Cr	53	55258.9	0.5	**50.8922**	0.303	0.6	ug/L	442	Standard
	Mn	55	403371.8	0.9	**49.9032**	0.315	0.6	ug/L	723	Standard
	Co	59	418724.4	1.0	**51.2643**	0.239	0.5	ug/L	217	Standard
	Ni	60	110119.8	2.0	**49.6473**	0.559	1.1	ug/L	304	Standard
	Cu	65	108317.9	1.6	**49.7353**	0.387	0.8	ug/L	181	Standard
	Zn	66	65643.9	0.2	**50.1012**	0.420	0.8	ug/L	215	Standard
>	Ge	72	555003.0	0.9				ug/L	520809	Standard
	As	75	65592.7	0.9	**49.9040**	0.350	0.7	ug/L	-52	Standard
	Se	82	6752.9	1.3	**50.0327**	0.319	0.6	ug/L	17	Standard
	Se-1	77	4634.4	1.8	**50.1857**	0.510	1.0	ug/L	56	Standard
>	Ga	71	43.3	43.7				mg/L	25	Standard
	Rb	85	895.0	1.7				ug/L	28	Standard
	Y	89	470300.0	1.3				ug/L	447395	Standard
>	Rh	103	21.7	53.3				ug/L	15	Standard
	Mo	98	316268.1	0.4	**99.0881**	0.889	0.9	ug/L	113	Standard
	Ag	107	376354.5	0.2	**49.6535**	0.293	0.6	ug/L	108	Standard
	Cd	111	120441.8	1.1	**49.5792**	0.292	0.6	mg/L	3	Standard
	Cd	114	295637.4	1.1	**49.1550**	0.340	0.7	ug/L	20	Standard
>	In	115	660227.7	0.5				ug/L	625728	Standard
	Sn	118	331178.7	0.6	**48.6841**	0.135	0.3	ug/L	568	Standard
	Sb	123	273404.4	0.5	**50.1048**	0.039	0.1	ug/L	612	Standard
	Ba	135	110185.5	0.7	**47.9831**	0.253	0.5	ug/L	21	Standard
	Ce	140	71.7	8.1				ug/L	245	Standard
>	Tb	159	984792.3	0.6				ug/L	950397	Standard
	Ho	165	13.3	78.1				ug/L	7	Standard
	Tl	203	462531.1	0.4	**50.2621**	0.297	0.6	ug/L	15	Standard
	Tl	205	421818.4	1.3	**51.6134**	0.810	1.6	ug/L	13	Standard
	Pb	206	290494.8	0.7	**50.0181**	0.451	0.9	ug/L	264	Standard
	Pb	207	263168.3	0.9	**49.8939**	0.483	1.0	ug/L	222	Standard
	Pb	208	1101207.6	0.2	**51.1172**	0.228	0.4	ug/L	959	Standard
	U	238	418119.7	0.4	**50.6018**	0.328	0.6	ug/L	9	Standard
>	Bi	209	566634.4	0.3				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4939.1	6.4	**5.3310**	0.320	6.0	mg/L	55	Standard
K	39	1245.1	5.8	**4.3288**	0.211	4.9	mg/L	28	Standard
Ca	43	85.0	25.6	**4.7651**	1.854	38.9	mg/L	27	Standard
Fe	54	6867.9	1.6	**4.9353**	0.136	2.8	mg/L	147	Standard
Fe	57	2071.8	2.6	**5.1454**	0.157	3.1	mg/L	268	Standard
> **Sc-1**	45	44059.0	1.3				mg/L	41174	Standard
Cl	35	90383.1	4.1				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	4354.0	6.6				ug/L	1950	Standard
P	31	26625.0	1.6				ug/L	21156	Standard
S	34	4595.7	0.9				ug/L	3419	Standard
Sr	88	73.3	21.9				ug/L	72	Standard
C	12	80.0	25.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	17	Standard
Dy	164	9.7	105.8				mg/L	16	Standard
Ho-1	165	13.3	78.1				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	17566.9	5.7				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	104.246		
	Al	27	96.968		
	Sc	45			
	Ti	47	99.009		
	V	51	100.810		
	Cr	52	99.010		
	Cr	53			
	Mn	55	99.806		
	Co	59	102.529		
	Ni	60	99.295		
	Cu	65	99.471		
	Zn	66	100.202		
>	Ge	72		106.565	
	As	75	99.808		
	Se	82	100.065		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	99.088		
Ag	107	99.307		
Cd	111	99.158		
Cd	114			
In	115			105.514
Sn	118	97.368		
Sb	123	100.210		
Ba	135	95.966		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.524		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.234		
U	238	101.204		
Bi	209			102.499
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 13:35:30
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81907.5	2.0				ug/L	76456	Standard
	Be	9	33.3	37.7	**0.0081**	0.011	136.7	ug/L	20	Standard
	Al	27	3658.8	6.2	**0.0097**	0.001	9.1	ug/L	1307	Standard
	Sc	45	43395.4	0.6				ug/L	41174	Standard
	Ti	47	24.0	4.2	**-0.0151**	0.003	16.8	ug/L	27	Standard
	V	51	1486.9	6.2	**-0.0280**	0.012	41.3	ug/L	1434	Standard
	Cr	52	7626.6	0.2	**-0.0811**	0.008	9.6	ug/L	7733	Standard
	Cr	53	623.3	4.9	**0.1647**	0.029	17.3	ug/L	442	Standard
	Mn	55	758.4	6.6	**-0.0069**	0.006	85.9	ug/L	723	Standard
	Co	59	258.3	7.6	**0.0024**	0.003	111.1	ug/L	217	Standard
	Ni	60	313.7	6.6	**-0.0106**	0.010	91.1	ug/L	304	Standard
	Cu	65	185.7	9.2	**0.0117**	0.008	71.7	ug/L	181	Standard
	Zn	66	252.7	5.5	**0.0142**	0.012	81.1	ug/L	215	Standard
>	**Ge**	72	552319.3	0.7				ug/L	520809	Standard
	As	75	-27.0	147.4	**0.0246**	0.030	123.9	ug/L	-52	Standard
	Se	82	28.2	27.0	**0.0839**	0.058	69.1	ug/L	17	Standard
	Se-1	77	72.0	11.0	**0.1099**	0.092	83.3	ug/L	56	Standard
>	**Ga**	71	16.7	62.4				mg/L	25	Standard
	Rb	85	41.7	61.6				ug/L	28	Standard
	Y	89	471686.6	0.8				ug/L	447395	Standard
>	**Rh**	103	6.7	114.6				ug/L	15	Standard
	Mo	98	354.1	7.5	**0.0877**	0.008	9.3	ug/L	113	Standard
	Ag	107	160.0	3.9	**0.0084**	0.001	9.7	ug/L	108	Standard
	Cd	111	21.1	31.9	**0.0064**	0.003	43.8	mg/L	3	Standard
	Cd	114	42.3	49.2	**0.0071**	0.003	48.8	ug/L	20	Standard
>	**In**	115	656112.9	0.3				ug/L	625728	Standard
	Sn	118	1841.8	22.7	**0.1887**	0.062	32.7	ug/L	568	Standard
	Sb	123	1164.1	37.2	**0.1810**	0.080	44.0	ug/L	612	Standard
	Ba	135	49.7	23.3	**0.0039**	0.005	131.8	ug/L	21	Standard
	Ce	140	23.3	81.1				ug/L	245	Standard
>	**Tb**	159	980631.2	1.7				ug/L	950397	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	97.0	22.3	**0.0098**	0.002	24.1	ug/L	15	Standard
	Tl	205	98.3	10.6	**0.0022**	0.001	58.4	ug/L	13	Standard
	Pb	206	329.0	7.5	**0.0127**	0.004	31.8	ug/L	264	Standard
	Pb	207	298.7	13.9	**0.0104**	0.008	73.2	ug/L	222	Standard
	Pb	208	1210.7	3.3	**0.0078**	0.002	20.2	ug/L	959	Standard
	U	238	84.3	9.6	**0.0099**	0.001	9.3	ug/L	9	Standard
>	**Bi**	209	568472.1	0.5				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	38.3	32.8	**-0.0177**	0.014	79.8	mg/L	55	Standard
K	39	20.0	43.3	**-0.0585**	0.031	53.1	mg/L	28	Standard
Ca	43	10.0	50.0	**-1.5919**	0.429	27.0	mg/L	27	Standard
Fe	54	159.5	25.8	**0.0198**	0.030	153.3	mg/L	147	Standard
Fe	57	218.3	15.2	**-0.1678**	0.094	56.0	mg/L	268	Standard
> **Sc-1**	45	43395.4	0.6				mg/L	41174	Standard
Cl	35	88102.1	0.5				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	3323.7	4.5				ug/L	1950	Standard
P	31	24955.5	2.9				ug/L	21156	Standard
S	34	4405.6	3.7				ug/L	3419	Standard
Sr	88	81.7	3.5				ug/L	72	Standard
C	12	120.0	8.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	17	Standard
Dy	164	-1.1	49.5				mg/L	16	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	23.3	49.5				mg/L	7	Standard
I	127	13129.0	1.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.050	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.856
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.831
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606147001
Sample Date/Time: Friday, July 01, 2016 13:38:42
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81631.0	0.4				ug/L	76456	Standard
	Be	9	53.3	51.6	**0.0248**	0.023	93.4	ug/L	20	Standard
	Al	27	1267924.9	0.3	**6.9269**	0.012	0.2	ug/L	1307	Standard
	Sc	45	44398.3	2.2				ug/L	41174	Standard
	Ti	47	2584.6	3.5	**7.4850**	0.306	4.1	ug/L	27	Standard
	V	51	6589.9	3.8	**0.5661**	0.025	4.4	ug/L	1434	Standard
	Cr	52	17924.3	2.1	**1.1443**	0.040	3.5	ug/L	7733	Standard
	Cr	53	3320.4	0.9	**2.7174**	0.024	0.9	ug/L	442	Standard
	Mn	55	64462.5	1.4	**8.0226**	0.071	0.9	ug/L	723	Standard
	Co	59	2066.5	2.4	**0.2279**	0.005	2.1	ug/L	217	Standard
	Ni	60	3389.4	1.0	**1.4053**	0.013	0.9	ug/L	304	Standard
	Cu	65	36919.6	0.8	**17.1868**	0.112	0.7	ug/L	181	Standard
	Zn	66	100190.5	0.7	**77.8387**	0.507	0.7	ug/L	215	Standard
>	Ge	72	545904.9	0.6				ug/L	520809	Standard
	As	75	297.3	18.2	**0.2747**	0.041	14.8	ug/L	-52	Standard
	Se	82	57.3	13.9	**0.3062**	0.059	19.1	ug/L	17	Standard
	Se-1	77	123.0	8.6	**0.6885**	0.126	18.3	ug/L	56	Standard
>	Ga	71	431.7	8.5				mg/L	25	Standard
	Rb	85	29366.8	1.1				ug/L	28	Standard
	Y	89	475138.4	0.5				ug/L	447395	Standard
>	Rh	103	50.0	45.8				ug/L	15	Standard
	Mo	98	2283.8	2.0	**0.7046**	0.016	2.2	ug/L	113	Standard
	Ag	107	471.3	8.2	**0.0505**	0.006	10.9	ug/L	108	Standard
	Cd	111	442.4	4.4	**0.1831**	0.009	4.8	mg/L	3	Standard
	Cd	114	1113.8	8.0	**0.1885**	0.014	7.5	ug/L	20	Standard
>	In	115	648548.7	0.6				ug/L	625728	Standard
	Sn	118	6074.6	8.1	**0.8267**	0.078	9.5	ug/L	568	Standard
	Sb	123	3585.4	3.4	**0.6357**	0.026	4.1	ug/L	612	Standard
	Ba	135	28482.1	1.1	**12.6131**	0.063	0.5	ug/L	21	Standard
	Ce	140	9227.8	4.3				ug/L	245	Standard
>	Tb	159	980514.4	0.6				ug/L	950397	Standard
	Ho	165	175.0	22.7				ug/L	7	Standard
	Tl	203	154.0	7.9	**0.0159**	0.001	7.9	ug/L	15	Standard
	Tl	205	146.7	61.1	**0.0082**	0.011	135.5	ug/L	13	Standard
	Pb	206	300241.0	0.6	**51.5086**	0.588	1.1	ug/L	264	Standard
	Pb	207	251797.0	0.4	**47.5618**	0.476	1.0	ug/L	222	Standard
	Pb	208	1082895.4	0.4	**50.0819**	0.392	0.8	ug/L	959	Standard
	U	238	477.3	8.6	**0.0573**	0.005	9.4	ug/L	9	Standard
>	Bi	209	568731.4	0.7				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4449.0	1.5	**4.7618**	0.165	3.5	mg/L	55	Standard
K	39	216.7	12.7	**0.6389**	0.091	14.3	mg/L	28	Standard
Ca	43	100.0	13.2	**5.9773**	1.125	18.8	mg/L	27	Standard
Fe	54	785.4	6.3	**0.4720**	0.024	5.1	mg/L	147	Standard
Fe	57	430.0	12.3	**0.4211**	0.144	34.2	mg/L	268	Standard
> **Sc-1**	45	44398.3	2.2				mg/L	41174	Standard
Cl	35	84373.7	2.1				ug/L	69550	Standard
Kr	83	2.0	132.3				ug/L	1	Standard
Br	81	8569.1	5.7				ug/L	1950	Standard
P	31	27454.9	2.2				ug/L	21156	Standard
S	34	3758.8	6.0				ug/L	3419	Standard
Sr	88	151.7	5.0				ug/L	72	Standard
C	12	163.3	44.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	436.7	46.5				mg/L	17	Standard
Dy	164	239.6	2.7				mg/L	16	Standard
Ho-1	165	175.0	22.7				mg/L	7	Standard
Er	166	146.7	15.7				mg/L	7	Standard
I	127	165778.6	7.4				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		106.769	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		104.819	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.647
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.878
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606147101
Sample Date/Time: Friday, July 01, 2016 13:41:54
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82165.6	1.5				ug/L	76456	Standard
	Be	9	25.0	60.0	**0.0010**	0.013	1235.0	ug/L	20	Standard
	Al	27	7420176.1	1.8	**40.3263**	0.745	1.8	ug/L	1307	Standard
	Sc	45	43403.8	1.8				ug/L	41174	Standard
	Ti	47	118.3	2.1	**0.2622**	0.007	2.8	ug/L	27	Standard
	V	51	2485.8	8.9	**0.0901**	0.026	28.6	ug/L	1434	Standard
	Cr	52	11852.6	4.6	**0.4290**	0.067	15.6	ug/L	7733	Standard
	Cr	53	3065.3	10.5	**2.4783**	0.300	12.1	ug/L	442	Standard
	Mn	55	13532.4	4.2	**1.6054**	0.074	4.6	ug/L	723	Standard
	Co	59	973.4	27.9	**0.0919**	0.034	37.1	ug/L	217	Standard
	Ni	60	2788.9	4.3	**1.1302**	0.057	5.1	ug/L	304	Standard
	Cu	65	167698.1	1.5	**78.3834**	1.378	1.8	ug/L	181	Standard
	Zn	66	18490.9	1.1	**14.2285**	0.192	1.3	ug/L	215	Standard
>	**Ge**	72	545541.7	0.2				ug/L	520809	Standard
	As	75	56.9	102.5	**0.0892**	0.045	50.6	ug/L	-52	Standard
	Se	82	46.0	7.1	**0.2215**	0.025	11.4	ug/L	17	Standard
	Se-1	77	165.0	10.0	**1.1579**	0.182	15.8	ug/L	56	Standard
>	**Ga**	71	40.0	45.1				mg/L	25	Standard
	Rb	85	1635.1	4.7				ug/L	28	Standard
	Y	89	467449.1	1.6				ug/L	447395	Standard
>	**Rh**	103	46.7	27.0				ug/L	15	Standard
	Mo	98	638.2	33.3	**0.1798**	0.068	38.0	ug/L	113	Standard
	Ag	107	803.4	8.9	**0.0950**	0.010	10.3	ug/L	108	Standard
	Cd	111	142.8	28.8	**0.0575**	0.017	29.9	mg/L	3	Standard
	Cd	114	382.8	34.4	**0.0647**	0.022	33.9	ug/L	20	Standard
>	**In**	115	648871.9	1.3				ug/L	625728	Standard
	Sn	118	1820.1	16.8	**0.1889**	0.050	26.3	ug/L	568	Standard
	Sb	123	517.0	31.6	**0.0630**	0.032	50.1	ug/L	612	Standard
	Ba	135	105021.4	1.0	**46.5367**	0.469	1.0	ug/L	21	Standard
	Ce	140	176.7	12.8				ug/L	245	Standard
>	**Tb**	159	974106.7	1.7				ug/L	950397	Standard
	Ho	165	20.0	43.3				ug/L	7	Standard
	Tl	203	182.7	61.2	**0.0196**	0.013	64.0	ug/L	15	Standard
	Tl	205	260.0	110.0	**0.0228**	0.036	157.4	ug/L	13	Standard
	Pb	206	1477.4	2.4	**0.2162**	0.008	3.6	ug/L	264	Standard
	Pb	207	1248.7	8.1	**0.1959**	0.021	10.5	ug/L	222	Standard
	Pb	208	5698.4	18.4	**0.2221**	0.051	22.9	ug/L	959	Standard
	U	238	669.4	46.7	**0.0825**	0.039	47.3	ug/L	9	Standard
>	**Bi**	209	555056.3	0.6				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	8267.3	1.5	**9.1027**	0.178	2.0	mg/L	55	Standard
K	39	178.3	20.3	**0.5189**	0.142	27.4	mg/L	28	Standard
Ca	43	265.0	15.0	**20.3615**	3.046	15.0	mg/L	27	Standard
Fe	54	255.7	20.5	**0.0914**	0.039	42.6	mg/L	147	Standard
Fe	57	411.7	6.1	**0.3970**	0.095	23.9	mg/L	268	Standard
> **Sc-1**	45	43403.8	1.8				mg/L	41174	Standard
Cl	35	91879.7	0.6				ug/L	69550	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	5647.7	9.0				ug/L	1950	Standard
P	31	26070.8	4.0				ug/L	21156	Standard
S	34	4028.9	4.5				ug/L	3419	Standard
Sr	88	183.3	6.3				ug/L	72	Standard
C	12	180.0	24.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	53.3	57.3				mg/L	17	Standard
Dy	164	38.6	26.6				mg/L	16	Standard
Ho-1	165	20.0	43.3				mg/L	7	Standard
Er	166	30.0	33.3				mg/L	7	Standard
I	127	15740.0	17.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.468	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.749	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.699
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.404
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606153601 WG574593-01
Sample Date/Time: Friday, July 01, 2016 13:45:05
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	105632.1	2.8				ug/L	76456	Standard
	Be	9	31.7	39.7	**0.0005**	0.008	1597.2	ug/L	20	Standard
	Al	27	9212844.4	2.9	**38.9423**	0.330	0.8	ug/L	1307	Standard
	Sc	45	37845.6	1.8				ug/L	41174	Standard
	Ti	47	303.7	8.6	**0.9123**	0.111	12.1	ug/L	27	Standard
	V	51	24245.6	11.6	**2.9541**	0.410	13.9	ug/L	1434	Standard
	Cr	52	16917.1	2.1	**1.2643**	0.091	7.2	ug/L	7733	Standard
	Cr	53	9354.6	13.4	**9.4775**	1.472	15.5	ug/L	442	Standard
	Mn	55	60166.6	2.3	**8.3838**	0.064	0.8	ug/L	723	Standard
	Co	59	59968.5	3.2	**8.3264**	0.059	0.7	ug/L	217	Standard
	Ni	60	11329.9	3.4	**5.6751**	0.056	1.0	ug/L	304	Standard
	Cu	65	10538.7	5.5	**5.4379**	0.239	4.4	ug/L	181	Standard
	Zn	66	77341.6	1.9	**67.2161**	0.503	0.7	ug/L	215	Standard
>	Ge	72	487884.6	2.6				ug/L	520809	Standard
	As	75	3262.4	6.3	**2.8666**	0.175	6.1	ug/L	-52	Standard
	Se	82	371.0	19.1	**3.0068**	0.587	19.5	ug/L	17	Standard
	Se-1	77	623.3	8.4	**7.1096**	0.803	11.3	ug/L	56	Standard
>	Ga	71	1885.1	4.1				mg/L	25	Standard
	Rb	85	131658.3	3.5				ug/L	28	Standard
	Y	89	431897.9	2.3				ug/L	447395	Standard
>	Rh	103	143.3	38.9				ug/L	15	Standard
	Mo	98	627591.1	3.5	**227.1784**	5.050	2.2	ug/L	113	Standard
	Ag	107	276.3	2.5	**0.0293**	0.001	4.0	ug/L	108	Standard
	Cd	111	-404.3	7.2	**-0.1947**	0.015	7.6	mg/L	3	Standard
	Cd	114	1007.4	4.4	**0.1935**	0.003	1.7	ug/L	20	Standard
>	In	115	571506.3	2.8				ug/L	625728	Standard
	Sn	118	2893.6	2.8	**0.4084**	0.024	5.8	ug/L	568	Standard
	Sb	123	6941.9	4.4	**1.4365**	0.025	1.7	ug/L	612	Standard
	Ba	135	39683.6	1.8	**19.9579**	0.305	1.5	ug/L	21	Standard
	Ce	140	421.7	17.2				ug/L	245	Standard
>	Tb	159	912620.2	2.1				ug/L	950397	Standard
	Ho	165	31.7	24.1				ug/L	7	Standard
	Tl	203	8399.3	2.5	**1.0755**	0.030	2.8	ug/L	15	Standard
	Tl	205	7106.7	3.1	**1.0155**	0.022	2.2	ug/L	13	Standard
	Pb	206	2580.9	3.9	**0.4804**	0.009	1.9	ug/L	264	Standard
	Pb	207	2297.2	1.5	**0.4679**	0.011	2.3	ug/L	222	Standard
	Pb	208	9454.2	3.4	**0.4694**	0.008	1.7	ug/L	959	Standard
	U	238	1115.7	2.4	**0.1590**	0.005	3.3	ug/L	9	Standard
>	Bi	209	480711.3	2.7				ug/L	552821	Standard

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Na	23	8.3	34.6	**27.1734**	9.738	35.8	mg/L	2	Standard
Mg	24	507921.7	2.6	**645.4329**	9.385	1.5	mg/L	55	Standard
K	39	415.0	4.8	**1.6014**	0.114	7.1	mg/L	28	Standard
Ca	43	481.7	12.6	**45.2243**	6.627	14.7	mg/L	27	Standard
Fe	54	127.9	17.8	**0.0101**	0.018	174.2	mg/L	147	Standard
Fe	57	770.0	11.3	**1.7671**	0.242	13.7	mg/L	268	Standard
Sc-1	45	37845.6	1.8				mg/L	41174	Standard
Cl	35	383189.3	2.3				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	30317.0	3.7				ug/L	1950	Standard
P	31	15528.0	3.6				ug/L	21156	Standard
S	34	3745.5	2.5				ug/L	3419	Standard
Sr	88	250.0	23.1				ug/L	72	Standard
C	12	176.7	14.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26862.7	37.9				mg/L	17	Standard
Dy	164	21.9	26.7				mg/L	16	Standard
Ho-1	165	31.7	24.1				mg/L	7	Standard
Er	166	30.0	66.7				mg/L	7	Standard
I	127	123380.9	8.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		138.161	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.678	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.335
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		86.956
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

Sample ID: L1606153601 WG574593-01
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Method 6020 - Summary Report

Sample ID: L1606153601DP WG574593-04
Sample Date/Time: Friday, July 01, 2016 13:48:17
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	113476.7	0.3				ug/L	76456	Standard
	Be	9	31.7	39.7	**-0.0008**	0.008	933.9	ug/L	20	Standard
	Al	27	9155815.3	1.0	**36.0246**	0.289	0.8	ug/L	1307	Standard
	Sc	45	38106.2	3.0				ug/L	41174	Standard
	Ti	47	317.7	11.6	**0.9598**	0.126	13.2	ug/L	27	Standard
	V	51	23799.7	13.5	**2.9030**	0.438	15.1	ug/L	1434	Standard
	Cr	52	15774.9	0.6	**1.1182**	0.010	0.9	ug/L	7733	Standard
	Cr	53	7253.4	7.9	**7.2700**	0.659	9.1	ug/L	442	Standard
	Mn	55	54277.4	0.5	**7.5755**	0.086	1.1	ug/L	723	Standard
	Co	59	56802.6	1.1	**7.9092**	0.067	0.8	ug/L	217	Standard
	Ni	60	10522.3	1.7	**5.2767**	0.120	2.3	ug/L	304	Standard
	Cu	65	10358.5	2.3	**5.3602**	0.097	1.8	ug/L	181	Standard
	Zn	66	63839.2	1.1	**55.6043**	0.258	0.5	ug/L	215	Standard
>	Ge	72	486471.3	0.9				ug/L	520809	Standard
	As	75	3361.1	6.7	**2.9591**	0.174	5.9	ug/L	-52	Standard
	Se	82	440.0	19.1	**3.5994**	0.683	19.0	ug/L	17	Standard
	Se-1	77	548.0	6.3	**6.1810**	0.486	7.9	ug/L	56	Standard
>	Ga	71	1580.1	9.0				mg/L	25	Standard
	Rb	85	128497.6	0.7				ug/L	28	Standard
	Y	89	437852.1	1.2				ug/L	447395	Standard
>	Rh	103	195.0	13.3				ug/L	15	Standard
	Mo	98	610817.8	0.2	**219.3028**	1.490	0.7	ug/L	113	Standard
	Ag	107	270.0	5.4	**0.0280**	0.002	7.9	ug/L	108	Standard
	Cd	111	-435.5	5.5	**-0.2078**	0.012	5.8	mg/L	3	Standard
	Cd	114	1008.9	7.4	**0.1923**	0.015	7.6	ug/L	20	Standard
>	In	115	576209.6	0.5				ug/L	625728	Standard
	Sn	118	2962.0	1.1	**0.4156**	0.007	1.7	ug/L	568	Standard
	Sb	123	5993.6	0.1	**1.2257**	0.006	0.5	ug/L	612	Standard
	Ba	135	37997.3	1.1	**18.9491**	0.250	1.3	ug/L	21	Standard
	Ce	140	438.3	13.3				ug/L	245	Standard
>	Tb	159	912922.8	0.6				ug/L	950397	Standard
	Ho	165	23.3	44.6				ug/L	7	Standard
	Tl	203	7035.6	2.0	**0.8846**	0.019	2.1	ug/L	15	Standard
	Tl	205	6231.3	4.9	**0.8732**	0.041	4.7	ug/L	13	Standard
	Pb	206	2197.2	4.0	**0.3947**	0.019	4.9	ug/L	264	Standard
	Pb	207	1945.1	0.8	**0.3813**	0.005	1.2	ug/L	222	Standard
	Pb	208	7974.8	0.5	**0.3808**	0.004	1.1	ug/L	959	Standard
	U	238	1110.0	6.5	**0.1553**	0.010	6.5	ug/L	9	Standard
>	Bi	209	489368.4	0.9				ug/L	552821	Standard

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Na	23	1.7	173.2	**5.3506**	9.259	173.0	mg/L	2	Standard
Mg	24	497934.2	1.5	**628.6633**	12.777	2.0	mg/L	55	Standard
K	39	386.7	13.3	**1.4712**	0.210	14.3	mg/L	28	Standard
Ca	43	468.3	8.9	**43.5651**	4.343	10.0	mg/L	27	Standard
Fe	54	108.4	32.3	**-0.0071**	0.029	411.5	mg/L	147	Standard
Fe	57	688.3	12.0	**1.4795**	0.238	16.1	mg/L	268	Standard
> **Sc-1**	45	38106.2	3.0				mg/L	41174	Standard
Cl	35	369584.8	0.9				ug/L	69550	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	29598.9	3.8				ug/L	1950	Standard
P	31	15125.9	2.3				ug/L	21156	Standard
S	34	3780.5	5.9				ug/L	3419	Standard
Sr	88	230.0	13.6				ug/L	72	Standard
C	12	213.3	38.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30656.1	29.8				mg/L	17	Standard
Dy	164	16.0	70.4				mg/L	16	Standard
Ho-1	165	23.3	44.6				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	76869.6	2.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		148.421	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.407	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		92.086
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		88.522
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

Sample ID: L1606153601DP WG574593-04
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Method 6020 - Summary Report

Sample ID: L1606153601S WG574593-05
Sample Date/Time: Friday, July 01, 2016 13:51:28
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	114783.5	3.4				ug/L	76456	Standard
	Be	9	31472.7	2.0	**18.7219**	0.754	4.0	ug/L	20	Standard
	Al	27	8967809.3	2.2	**34.8925**	0.413	1.2	ug/L	1307	Standard
	Sc	45	36838.1	2.1				ug/L	41174	Standard
	Ti	47	293.0	5.4	**0.9041**	0.043	4.8	ug/L	27	Standard
	V	51	144707.0	17.5	**19.1390**	3.192	16.7	ug/L	1434	Standard
	Cr	52	181657.1	2.0	**23.7324**	0.270	1.1	ug/L	7733	Standard
	Cr	53	26979.0	1.6	**28.9363**	0.245	0.8	ug/L	442	Standard
	Mn	55	196630.4	2.3	**28.4601**	0.390	1.4	ug/L	723	Standard
	Co	59	229358.7	1.0	**32.8948**	0.071	0.2	ug/L	217	Standard
	Ni	60	50822.4	1.0	**26.7818**	0.048	0.2	ug/L	304	Standard
	Cu	65	50564.2	0.8	**27.1746**	0.164	0.6	ug/L	181	Standard
	Zn	66	34538.3	0.8	**30.8215**	0.391	1.3	ug/L	215	Standard
>	Ge	72	473620.3	1.0				ug/L	520809	Standard
	As	75	32972.2	0.9	**29.4152**	0.246	0.8	ug/L	-52	Standard
	Se	82	3843.3	1.0	**33.3303**	0.606	1.8	ug/L	17	Standard
	Se-1	77	2661.6	3.4	**33.5483**	0.893	2.7	ug/L	56	Standard
>	Ga	71	381.7	15.1				mg/L	25	Standard
	Rb	85	125348.3	2.7				ug/L	28	Standard
	Y	89	429677.9	2.4				ug/L	447395	Standard
>	Rh	103	226.7	13.3				ug/L	15	Standard
	Mo	98	605966.7	1.3	**219.9601**	1.216	0.6	ug/L	113	Standard
	Ag	107	143805.9	1.0	**21.9725**	0.186	0.8	ug/L	108	Standard
	Cd	111	47375.9	2.4	**22.5887**	0.138	0.6	mg/L	3	Standard
	Cd	114	117916.6	2.4	**22.7105**	0.229	1.0	ug/L	20	Standard
>	In	115	569946.5	1.8				ug/L	625728	Standard
	Sn	118	2151.8	16.9	**0.2836**	0.068	23.8	ug/L	568	Standard
	Sb	123	117947.9	1.3	**25.0246**	0.247	1.0	ug/L	612	Standard
	Ba	135	80315.6	0.5	**40.5194**	0.565	1.4	ug/L	21	Standard
	Ce	140	525.0	16.6				ug/L	245	Standard
>	Tb	159	909446.5	2.1				ug/L	950397	Standard
	Ho	165	18.3	56.8				ug/L	7	Standard
	Tl	203	188663.7	0.8	**24.0492**	0.050	0.2	ug/L	15	Standard
	Tl	205	172066.6	1.3	**24.6917**	0.238	1.0	ug/L	13	Standard
	Pb	206	123402.9	1.1	**24.9025**	0.136	0.5	ug/L	264	Standard
	Pb	207	107579.3	1.1	**23.9013**	0.073	0.3	ug/L	222	Standard
	Pb	208	446533.6	1.0	**24.2893**	0.091	0.4	ug/L	959	Standard
	U	238	179675.3	1.7	**25.5069**	0.325	1.3	ug/L	9	Standard
>	Bi	209	483038.3	0.9				ug/L	552821	Standard

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Na	23	13.3	21.7	**44.4001**	9.083	20.5	mg/L	2	Standard
Mg	24	482486.9	1.9	**629.9240**	1.410	0.2	mg/L	55	Standard
K	39	456.7	2.3	**1.8260**	0.024	1.3	mg/L	28	Standard
Ca	43	443.3	6.2	**42.6201**	3.595	8.4	mg/L	27	Standard
Fe	54	107.2	30.6	**-0.0052**	0.027	515.1	mg/L	147	Standard
Fe	57	646.7	6.6	**1.4187**	0.179	12.6	mg/L	268	Standard
> **Sc-1**	45	36838.1	2.1				mg/L	41174	Standard
Cl	35	363789.4	1.4				ug/L	69550	Standard
Kr	83	0.3	173.2				ug/L	1	Standard
Br	81	29438.6	3.1				ug/L	1950	Standard
P	31	15032.5	1.4				ug/L	21156	Standard
S	34	3710.5	3.9				ug/L	3419	Standard
Sr	88	215.0	4.7				ug/L	72	Standard
C	12	186.7	18.8				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	44900.2	29.0				mg/L	17	Standard
Dy	164	12.5	117.7				mg/L	16	Standard
Ho-1	165	18.3	56.8				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	7	Standard
I	127	80914.0	3.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		150.131	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.939	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.085
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.377
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	

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Method 6020 - Summary Report

Sample ID: L1606153601SD WG574593-06
Sample Date/Time: Friday, July 01, 2016 13:54:40
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	112397.1	1.9				ug/L	76456	Standard
	Be	9	31070.2	1.4	**18.8667**	0.550	2.9	ug/L	20	Standard
	Al	27	8839135.1	2.6	**35.1153**	0.794	2.3	ug/L	1307	Standard
	Sc	45	36505.6	0.6				ug/L	41174	Standard
	Ti	47	313.3	8.2	**0.9879**	0.083	8.4	ug/L	27	Standard
	V	51	166809.7	7.9	**22.4386**	1.861	8.3	ug/L	1434	Standard
	Cr	52	176635.7	0.7	**23.3939**	0.040	0.2	ug/L	7733	Standard
	Cr	53	26448.1	1.1	**28.7705**	0.310	1.1	ug/L	442	Standard
	Mn	55	190612.1	1.7	**27.9819**	0.319	1.1	ug/L	723	Standard
	Co	59	229904.6	2.0	**33.4420**	0.439	1.3	ug/L	217	Standard
	Ni	60	50248.2	1.0	**26.8570**	0.085	0.3	ug/L	304	Standard
	Cu	65	50373.6	1.7	**27.4578**	0.363	1.3	ug/L	181	Standard
	Zn	66	32810.8	2.5	**29.6880**	0.646	2.2	ug/L	215	Standard
>	Ge	72	466958.0	0.7				ug/L	520809	Standard
	As	75	31818.9	1.7	**28.7902**	0.285	1.0	ug/L	-52	Standard
	Se	82	3739.0	3.2	**32.8806**	0.943	2.9	ug/L	17	Standard
	Se-1	77	2572.6	1.3	**32.8825**	0.665	2.0	ug/L	56	Standard
>	Ga	71	335.0	0.0				mg/L	25	Standard
	Rb	85	123842.4	1.0				ug/L	28	Standard
	Y	89	424204.0	1.6				ug/L	447395	Standard
>	Rh	103	250.0	19.1				ug/L	15	Standard
	Mo	98	596887.3	1.2	**220.8114**	1.891	0.9	ug/L	113	Standard
	Ag	107	140477.5	2.4	**21.8716**	0.278	1.3	ug/L	108	Standard
	Cd	111	46478.5	0.9	**22.5882**	0.134	0.6	mg/L	3	Standard
	Cd	114	114740.4	2.4	**22.5229**	0.416	1.8	ug/L	20	Standard
>	In	115	559219.9	1.1				ug/L	625728	Standard
	Sn	118	2036.8	20.6	**0.2701**	0.075	27.8	ug/L	568	Standard
	Sb	123	115612.8	1.8	**24.9963**	0.192	0.8	ug/L	612	Standard
	Ba	135	78486.8	0.7	**40.3510**	0.202	0.5	ug/L	21	Standard
	Ce	140	446.7	6.2				ug/L	245	Standard
>	Tb	159	894070.3	0.6				ug/L	950397	Standard
	Ho	165	23.3	24.7				ug/L	7	Standard
	Tl	203	185499.3	0.6	**23.8373**	0.171	0.7	ug/L	15	Standard
	Tl	205	169836.9	2.3	**24.5659**	0.283	1.2	ug/L	13	Standard
	Pb	206	121903.1	0.8	**24.7990**	0.171	0.7	ug/L	264	Standard
	Pb	207	105852.8	0.4	**23.7090**	0.262	1.1	ug/L	222	Standard
	Pb	208	438929.8	1.6	**24.0671**	0.200	0.8	ug/L	959	Standard
	U	238	177358.8	1.6	**25.3810**	0.202	0.8	ug/L	9	Standard
>	Bi	209	479179.3	1.2				ug/L	552821	Standard

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Na	23	6.7	86.6	**22.4621**	19.450	86.6	mg/L	2	Standard
Mg	24	471196.6	0.7	**620.7791**	4.974	0.8	mg/L	55	Standard
K	39	408.3	16.7	**1.6356**	0.302	18.5	mg/L	28	Standard
Ca	43	436.7	18.5	**42.2777**	8.047	19.0	mg/L	27	Standard
Fe	54	118.9	19.0	**0.0063**	0.019	307.7	mg/L	147	Standard
Fe	57	681.7	4.2	**1.5588**	0.115	7.4	mg/L	268	Standard
> **Sc-1**	45	36505.6	0.6				mg/L	41174	Standard
Cl	35	356982.4	1.5				ug/L	69550	Standard
Kr	83	1.3	86.6				ug/L	1	Standard
Br	81	28717.2	3.6				ug/L	1950	Standard
P	31	15301.1	0.8				ug/L	21156	Standard
S	34	3565.4	1.6				ug/L	3419	Standard
Sr	88	228.3	25.6				ug/L	72	Standard
C	12	156.7	38.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50532.6	17.8				mg/L	17	Standard
Dy	164	15.4	96.7				mg/L	16	Standard
Ho-1	165	23.3	24.7				mg/L	7	Standard
Er	166	26.7	78.1				mg/L	7	Standard
I	127	86335.9	6.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		147.009	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		89.660	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	89.371	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	86.679	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	

Sample ID: L1606153601SD WG574593-06
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Method 6020 - Summary Report

Sample ID: L1606106804
Sample Date/Time: Friday, July 01, 2016 13:57:51
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92136.1	2.7				ug/L	76456	Standard
	Be	9	31.7	32.9	**0.0036**	0.008	216.5	ug/L	20	Standard
	Al	27	859023.9	1.9	**4.1545**	0.040	1.0	ug/L	1307	Standard
	Sc	45	36834.7	2.5				ug/L	41174	Standard
	Ti	47	40.0	19.5	**0.0448**	0.025	54.9	ug/L	27	Standard
	V	51	5203.8	19.0	**0.4694**	0.132	28.1	ug/L	1434	Standard
	Cr	52	6735.2	1.8	**-0.0924**	0.015	16.5	ug/L	7733	Standard
	Cr	53	918.4	10.2	**0.5415**	0.104	19.3	ug/L	442	Standard
	Mn	55	2241.8	1.6	**0.2108**	0.003	1.6	ug/L	723	Standard
	Co	59	300.7	9.6	**0.0119**	0.004	33.8	ug/L	217	Standard
	Ni	60	672.3	1.0	**0.1885**	0.006	3.2	ug/L	304	Standard
	Cu	65	1685.8	29.1	**0.7955**	0.246	31.0	ug/L	181	Standard
	Zn	66	3230.4	18.8	**2.5967**	0.499	19.2	ug/L	215	Standard
>	**Ge**	72	494044.1	0.8				ug/L	520809	Standard
	As	75	465.2	37.5	**0.4417**	0.146	33.1	ug/L	-52	Standard
	Se	82	234.7	30.5	**1.8293**	0.582	31.8	ug/L	17	Standard
	Se-1	77	90.3	10.8	**0.4300**	0.128	29.8	ug/L	56	Standard
>	**Ga**	71	38.3	39.8				mg/L	25	Standard
	Rb	85	223.3	18.1				ug/L	28	Standard
	Y	89	421894.0	1.5				ug/L	447395	Standard
>	**Rh**	103	131.7	22.3				ug/L	15	Standard
	Mo	98	5006.3	9.4	**1.7140**	0.193	11.2	ug/L	113	Standard
	Ag	107	126.3	16.6	**0.0056**	0.003	50.1	ug/L	108	Standard
	Cd	111	16.1	25.5	**0.0049**	0.002	35.5	mg/L	3	Standard
	Cd	114	61.4	11.1	**0.0113**	0.001	10.9	ug/L	20	Standard
>	**In**	115	596688.0	1.6				ug/L	625728	Standard
	Sn	118	568.3	15.2	**0.0085**	0.015	181.1	ug/L	568	Standard
	Sb	123	246.2	18.9	**0.0163**	0.010	61.8	ug/L	612	Standard
	Ba	135	7350.5	3.5	**3.5247**	0.082	2.3	ug/L	21	Standard
	Ce	140	23.3	32.7				ug/L	245	Standard
>	**Tb**	159	916453.6	1.2				ug/L	950397	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	304.7	24.9	**0.0334**	0.008	23.6	ug/L	15	Standard
	Tl	205	111.7	6.8	**0.0044**	0.001	16.4	ug/L	13	Standard
	Pb	206	327.7	8.6	**0.0145**	0.004	27.3	ug/L	264	Standard
	Pb	207	301.0	9.8	**0.0128**	0.005	36.7	ug/L	222	Standard
	Pb	208	1200.4	8.2	**0.0093**	0.004	42.0	ug/L	959	Standard
	U	238	75.7	24.1	**0.0092**	0.002	23.9	ug/L	9	Standard
>	**Bi**	209	548664.2	1.8				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	2398.5	7.1	**3.0753**	0.279	9.1	mg/L	55	Standard
K	39	18.3	56.8	**-0.0529**	0.044	83.5	mg/L	28	Standard
Ca	43	20.0	43.3	**-0.4071**	0.939	230.7	mg/L	27	Standard
Fe	54	72.6	4.6	**-0.0352**	0.002	4.7	mg/L	147	Standard
Fe	57	226.7	6.4	**-0.0245**	0.066	267.2	mg/L	268	Standard
Sc-1	45	36834.7	2.5				mg/L	41174	Standard
Cl	35	83689.9	2.1				ug/L	69550	Standard
Kr	83	3.3	17.3				ug/L	1	Standard
Br	81	5874.5	1.4				ug/L	1950	Standard
P	31	8095.5	4.0				ug/L	21156	Standard
S	34	3318.7	0.5				ug/L	3419	Standard
Sr	88	98.3	10.6				ug/L	72	Standard
C	12	110.0	9.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	12785.7	29.7				mg/L	17	Standard
Dy	164	19.7	89.4				mg/L	16	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	43990.5	2.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		120.509	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		94.861	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.359
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.248
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606106805
Sample Date/Time: Friday, July 01, 2016 14:01:03
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	88670.5	2.3				ug/L	76456	Standard
	Be	9	28.3	53.9	**0.0021**	0.012	582.5	ug/L	20	Standard
	Al	27	846462.5	1.2	**4.2550**	0.126	3.0	ug/L	1307	Standard
	Sc	45	36754.5	1.7				ug/L	41174	Standard
	Ti	47	37.0	14.0	**0.0369**	0.018	47.7	ug/L	27	Standard
	V	51	2755.7	12.5	**0.1599**	0.048	29.8	ug/L	1434	Standard
	Cr	52	6950.6	2.2	**-0.0520**	0.020	37.7	ug/L	7733	Standard
	Cr	53	901.7	5.0	**0.5360**	0.035	6.6	ug/L	442	Standard
	Mn	55	2061.5	1.0	**0.1896**	0.005	2.5	ug/L	723	Standard
	Co	59	262.3	1.3	**0.0071**	0.000	6.4	ug/L	217	Standard
	Ni	60	603.3	3.0	**0.1577**	0.014	9.0	ug/L	304	Standard
	Cu	65	649.0	15.6	**0.2657**	0.052	19.6	ug/L	181	Standard
	Zn	66	1686.8	6.3	**1.2909**	0.094	7.3	ug/L	215	Standard
>	Ge	72	487470.5	1.6				ug/L	520809	Standard
	As	75	91.9	24.0	**0.1249**	0.020	16.4	ug/L	-52	Standard
	Se	82	68.6	9.5	**0.4538**	0.061	13.4	ug/L	17	Standard
	Se-1	77	88.7	15.6	**0.4255**	0.192	45.1	ug/L	56	Standard
>	Ga	71	20.0	25.0				mg/L	25	Standard
	Rb	85	151.7	6.9				ug/L	28	Standard
	Y	89	408691.1	1.5				ug/L	447395	Standard
>	Rh	103	55.0	47.2				ug/L	15	Standard
	Mo	98	2038.3	34.8	**0.7007**	0.261	37.3	ug/L	113	Standard
	Ag	107	89.7	17.4	**0.0005**	0.003	460.6	ug/L	108	Standard
	Cd	111	8.9	44.4	**0.0018**	0.002	101.9	mg/L	3	Standard
	Cd	114	22.8	93.4	**0.0043**	0.004	93.2	ug/L	20	Standard
>	In	115	583988.4	1.5				ug/L	625728	Standard
	Sn	118	641.7	21.4	**0.0228**	0.025	107.3	ug/L	568	Standard
	Sb	123	149.4	23.6	**-0.0027**	0.008	291.8	ug/L	612	Standard
	Ba	135	7693.6	5.0	**3.7701**	0.138	3.7	ug/L	21	Standard
	Ce	140	23.3	32.7				ug/L	245	Standard
>	Tb	159	893255.5	0.4				ug/L	950397	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	160.7	5.8	**0.0177**	0.001	6.5	ug/L	15	Standard
	Tl	205	106.7	47.9	**0.0040**	0.007	165.6	ug/L	13	Standard
	Pb	206	280.3	10.7	**0.0072**	0.005	74.5	ug/L	264	Standard
	Pb	207	240.3	4.9	**0.0020**	0.003	130.9	ug/L	222	Standard
	Pb	208	1064.0	7.7	**0.0038**	0.004	108.8	ug/L	959	Standard
	U	238	55.7	89.2	**0.0069**	0.006	93.0	ug/L	9	Standard
>	Bi	209	537449.2	0.6				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	2241.8	5.9	**2.8723**	0.129	4.5	mg/L	55	Standard
K	39	31.7	48.2	**0.0047**	0.065	1378.1	mg/L	28	Standard
Ca	43	28.3	53.9	**0.4489**	1.610	358.7	mg/L	27	Standard
Fe	54	77.8	24.1	**-0.0306**	0.015	50.4	mg/L	147	Standard
Fe	57	243.3	20.8	**0.0319**	0.163	509.9	mg/L	268	Standard
> **Sc-1**	45	36754.5	1.7				mg/L	41174	Standard
Cl	35	86917.3	0.6				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	5100.9	3.4				ug/L	1950	Standard
P	31	8162.2	1.3				ug/L	21156	Standard
S	34	3385.4	1.8				ug/L	3419	Standard
Sr	88	96.7	14.9				ug/L	72	Standard
C	12	130.0	13.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	4313.9	5.0				mg/L	17	Standard
Dy	164	12.7	43.5				mg/L	16	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	41831.0	1.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.976	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.599	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.329
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.219
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606106811
Sample Date/Time: Friday, July 01, 2016 14:04:14
Number of Replicates: 3
Autosampler Position: 346
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	87384.7	2.1				ug/L	76456	Standard
	Be	9	386.7	6.4	**0.2826**	0.024	8.6	ug/L	20	Standard
	Al	27	801461.1	1.1	**4.0865**	0.037	0.9	ug/L	1307	Standard
	Sc	45	38134.6	2.7				ug/L	41174	Standard
	Ti	47	4667.1	1.1	**15.1502**	0.207	1.4	ug/L	27	Standard
	V	51	48516.8	1.5	**6.0786**	0.102	1.7	ug/L	1434	Standard
	Cr	52	40220.3	0.9	**4.3195**	0.059	1.4	ug/L	7733	Standard
	Cr	53	4720.7	0.9	**4.5507**	0.057	1.3	ug/L	442	Standard
	Mn	55	311842.6	1.0	**43.7090**	0.370	0.8	ug/L	723	Standard
	Co	59	8423.7	2.0	**1.1400**	0.022	1.9	ug/L	217	Standard
	Ni	60	8146.2	0.4	**4.0222**	0.012	0.3	ug/L	304	Standard
	Cu	65	10805.5	1.3	**5.5573**	0.061	1.1	ug/L	181	Standard
	Zn	66	50531.5	0.7	**43.6829**	0.260	0.6	ug/L	215	Standard
>	Ge	72	489720.8	0.2				ug/L	520809	Standard
	As	75	655.4	1.6	**0.6098**	0.008	1.3	ug/L	-52	Standard
	Se	82	60.2	5.5	**0.3806**	0.029	7.6	ug/L	17	Standard
	Se-1	77	67.3	4.5	**0.1530**	0.036	23.8	ug/L	56	Standard
>	Ga	71	4829.1	0.8				mg/L	25	Standard
	Rb	85	40306.9	0.9				ug/L	28	Standard
	Y	89	441421.4	0.7				ug/L	447395	Standard
>	Rh	103	40.0	54.5				ug/L	15	Standard
	Mo	98	794.4	11.9	**0.2560**	0.030	11.9	ug/L	113	Standard
	Ag	107	205.0	13.7	**0.0176**	0.004	24.9	ug/L	108	Standard
	Cd	111	469.4	3.6	**0.2151**	0.008	3.7	mg/L	3	Standard
	Cd	114	1178.5	4.6	**0.2206**	0.012	5.5	ug/L	20	Standard
>	In	115	586618.1	1.1				ug/L	625728	Standard
	Sn	118	1050.0	35.8	**0.0894**	0.061	68.0	ug/L	568	Standard
	Sb	123	166.1	12.7	**0.0005**	0.004	734.3	ug/L	612	Standard
	Ba	135	56741.7	0.9	**27.8031**	0.108	0.4	ug/L	21	Standard
	Ce	140	116496.1	0.3				ug/L	245	Standard
>	Tb	159	902035.2	0.5				ug/L	950397	Standard
	Ho	165	2190.2	5.6				ug/L	7	Standard
	Tl	203	356.0	5.6	**0.0396**	0.002	5.7	ug/L	15	Standard
	Tl	205	270.0	10.3	**0.0247**	0.004	14.6	ug/L	13	Standard
	Pb	206	16366.5	1.5	**2.8988**	0.049	1.7	ug/L	264	Standard
	Pb	207	13229.8	1.5	**2.5731**	0.042	1.6	ug/L	222	Standard
	Pb	208	57216.2	0.2	**2.7252**	0.006	0.2	ug/L	959	Standard
	U	238	2067.8	1.8	**0.2608**	0.005	1.9	ug/L	9	Standard
>	Bi	209	543128.9	0.1				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	836.7	5.2	**0.9955**	0.059	5.9	mg/L	55	Standard
K	39	96.7	23.3	**0.2695**	0.095	35.1	mg/L	28	Standard
Ca	43	25.0	52.9	**-0.0121**	1.244	10273.4	mg/L	27	Standard
Fe	54	3385.4	5.7	**2.7677**	0.147	5.3	mg/L	147	Standard
Fe	57	1086.7	6.1	**2.8007**	0.187	6.7	mg/L	268	Standard
> **Sc-1**	45	38134.6	2.7				mg/L	41174	Standard
Cl	35	72343.0	2.0				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	2266.8	11.8				ug/L	1950	Standard
P	31	15112.5	3.0				ug/L	21156	Standard
S	34	3132.0	3.9				ug/L	3419	Standard
Sr	88	90.0	11.1				ug/L	72	Standard
C	12	160.0	39.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1193.4	7.9				mg/L	17	Standard
Dy	164	3446.2	2.4				mg/L	16	Standard
Ho-1	165	2190.2	5.6				mg/L	7	Standard
Er	166	2036.8	6.1				mg/L	7	Standard
I	127	34445.8	1.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.294	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.031	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.750
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.247
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606106813 ~~WG574840-01~~ WG573840-01
Sample Date/Time: Friday, July 01, 2016 14:07:25
Number of Replicates: 3
Autosampler Position: 347
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	85735.2	1.3				ug/L	76456	Standard
	Be	9	26.7	28.6	**0.0014**	0.006	443.3	ug/L	20	Standard
	Al	27	449795.7	0.8	**2.3331**	0.023	1.0	ug/L	1307	Standard
	Sc	45	35930.9	1.1				ug/L	41174	Standard
	Ti	47	472.3	1.7	**1.4707**	0.057	3.8	ug/L	27	Standard
	V	51	4534.5	3.6	**0.3927**	0.010	2.6	ug/L	1434	Standard
	Cr	52	9314.9	0.9	**0.2650**	0.027	10.0	ug/L	7733	Standard
	Cr	53	2433.5	4.4	**2.1645**	0.092	4.2	ug/L	442	Standard
	Mn	55	102294.5	0.4	**14.3920**	0.341	2.4	ug/L	723	Standard
	Co	59	3018.3	3.5	**0.3929**	0.007	1.8	ug/L	217	Standard
	Ni	60	5415.6	1.7	**2.6457**	0.041	1.6	ug/L	304	Standard
	Cu	65	743.0	9.7	**0.3169**	0.044	14.0	ug/L	181	Standard
	Zn	66	3480.1	1.7	**2.8660**	0.076	2.6	ug/L	215	Standard
>	Ge	72	485745.7	2.0				ug/L	520809	Standard
	As	75	242.8	9.7	**0.2563**	0.025	9.6	ug/L	-52	Standard
	Se	82	97.2	2.1	**0.6986**	0.030	4.2	ug/L	17	Standard
	Se-1	77	117.0	14.6	**0.7818**	0.201	25.7	ug/L	56	Standard
>	Ga	71	268.3	10.3				mg/L	25	Standard
	Rb	85	4108.9	5.5				ug/L	28	Standard
	Y	89	416309.3	1.5				ug/L	447395	Standard
>	Rh	103	45.0	50.9				ug/L	15	Standard
	Mo	98	680.6	19.4	**0.2163**	0.043	19.7	ug/L	113	Standard
	Ag	107	83.7	9.0	**-0.0004**	0.001	316.0	ug/L	108	Standard
	Cd	111	203.5	6.4	**0.0922**	0.005	5.5	mg/L	3	Standard
	Cd	114	545.9	14.8	**0.1025**	0.015	14.8	ug/L	20	Standard
>	In	115	585054.4	1.7				ug/L	625728	Standard
	Sn	118	836.7	33.0	**0.0543**	0.043	80.0	ug/L	568	Standard
	Sb	123	125.9	11.8	**-0.0077**	0.003	35.5	ug/L	612	Standard
	Ba	135	12781.1	0.9	**6.2667**	0.128	2.0	ug/L	21	Standard
	Ce	140	5152.5	0.8				ug/L	245	Standard
>	Tb	159	900548.7	1.5				ug/L	950397	Standard
	Ho	165	100.0	10.0				ug/L	7	Standard
	Tl	203	107.7	11.0	**0.0117**	0.001	10.8	ug/L	15	Standard
	Tl	205	76.7	10.0	**0.0002**	0.001	348.4	ug/L	13	Standard
	Pb	206	778.4	4.5	**0.0993**	0.008	7.9	ug/L	264	Standard
	Pb	207	661.0	3.8	**0.0876**	0.005	5.2	ug/L	222	Standard
	Pb	208	2799.8	2.1	**0.0904**	0.002	2.4	ug/L	959	Standard
	U	238	156.0	3.6	**0.0199**	0.000	2.4	ug/L	9	Standard
>	Bi	209	531551.0	1.5				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	8015.5	3.4	**10.6709**	0.401	3.8	mg/L	55	Standard
K	39	28.3	50.9	**-0.0070**	0.062	882.4	mg/L	28	Standard
Ca	43	31.7	36.5	**0.8382**	1.170	139.6	mg/L	27	Standard
Fe	54	628.6	3.1	**0.4660**	0.014	3.0	mg/L	147	Standard
Fe	57	371.7	8.1	**0.5046**	0.104	20.5	mg/L	268	Standard
> **Sc-1**	45	35930.9	1.1				mg/L	41174	Standard
Cl	35	72947.2	1.3				ug/L	69550	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	16705.9	1.9				ug/L	1950	Standard
P	31	9869.9	4.0				ug/L	21156	Standard
S	34	3002.0	2.0				ug/L	3419	Standard
Sr	88	73.3	38.8				ug/L	72	Standard
C	12	123.3	24.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	670.0	12.2				mg/L	17	Standard
Dy	164	162.7	37.8				mg/L	16	Standard
Ho-1	165	100.0	10.0				mg/L	7	Standard
Er	166	83.3	25.0				mg/L	7	Standard
I	127	64636.1	5.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.137	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.267	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.500
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.152
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
WG573840-01			

Sample ID: L1606106813 ~~WG574840-01~~
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 14:10:39
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	88849.8	2.1				ug/L	76456	Standard
	Be	9	66753.5	2.5	**51.2959**	0.926	1.8	ug/L	20	Standard
	Al	27	8854426.6	1.6	**44.5025**	0.510	1.1	ug/L	1307	Standard
	Sc	45	39063.7	3.7				ug/L	41174	Standard
	Ti	47	30764.2	0.5	**94.6692**	0.333	0.4	ug/L	27	Standard
	V	51	413476.1	0.1	**50.2774**	0.192	0.4	ug/L	1434	Standard
	Cr	52	400969.6	0.9	**48.7893**	0.334	0.7	ug/L	7733	Standard
	Cr	53	49330.2	1.0	**48.5611**	0.384	0.8	ug/L	442	Standard
	Mn	55	368164.8	0.7	**48.7020**	0.201	0.4	ug/L	723	Standard
	Co	59	403506.1	0.3	**52.8271**	0.036	0.1	ug/L	217	Standard
	Ni	60	101394.2	1.2	**48.8833**	0.523	1.1	ug/L	304	Standard
	Cu	65	100114.0	0.9	**49.1563**	0.410	0.8	ug/L	181	Standard
	Zn	66	60654.2	0.4	**49.4979**	0.106	0.2	ug/L	215	Standard
>	Ge	72	519017.5	0.3				ug/L	520809	Standard
	As	75	61466.0	0.5	**50.0055**	0.153	0.3	ug/L	-52	Standard
	Se	82	6464.5	2.4	**51.2180**	1.098	2.1	ug/L	17	Standard
	Se-1	77	4373.3	1.3	**50.6496**	0.533	1.1	ug/L	56	Standard
>	Ga	71	66.7	18.9				mg/L	25	Standard
	Rb	85	861.7	5.9				ug/L	28	Standard
	Y	89	449328.6	2.0				ug/L	447395	Standard
>	Rh	103	36.7	31.5				ug/L	15	Standard
	Mo	98	305460.5	0.7	**100.5610**	1.227	1.2	ug/L	113	Standard
	Ag	107	357889.2	0.5	**49.6167**	0.755	1.5	ug/L	108	Standard
	Cd	111	115251.7	0.3	**49.8541**	0.558	1.1	mg/L	3	Standard
	Cd	114	285891.9	1.9	**49.9459**	0.709	1.4	ug/L	20	Standard
>	In	115	628352.9	1.0				ug/L	625728	Standard
	Sn	118	322603.7	1.4	**49.8300**	0.182	0.4	ug/L	568	Standard
	Sb	123	256839.4	0.5	**49.4582**	0.316	0.6	ug/L	612	Standard
	Ba	135	105057.6	0.5	**48.0726**	0.299	0.6	ug/L	21	Standard
	Ce	140	361.7	34.4				ug/L	245	Standard
>	Tb	159	960077.3	1.9				ug/L	950397	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	452676.3	0.7	**49.9830**	0.213	0.4	ug/L	15	Standard
	Tl	205	410938.2	0.4	**51.0915**	0.351	0.7	ug/L	13	Standard
	Pb	206	286259.6	0.4	**50.0826**	0.130	0.3	ug/L	264	Standard
	Pb	207	259240.1	0.9	**49.9407**	0.356	0.7	ug/L	222	Standard
	Pb	208	1080903.3	0.1	**50.9831**	0.221	0.4	ug/L	959	Standard
	U	238	414937.8	0.7	**51.0249**	0.218	0.4	ug/L	9	Standard
>	Bi	209	557647.7	0.3				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4484.0	1.2	**5.4671**	0.257	4.7	mg/L	55	Standard
K	39	1023.4	3.3	**4.0066**	0.130	3.2	mg/L	28	Standard
Ca	43	43.3	53.3	**1.7517**	2.400	137.0	mg/L	27	Standard
Fe	54	6523.2	1.6	**5.2995**	0.275	5.2	mg/L	147	Standard
Fe	57	1890.1	7.4	**5.3143**	0.301	5.7	mg/L	268	Standard
> **Sc-1**	45	39063.7	3.7				mg/L	41174	Standard
Cl	35	79213.9	1.2				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	2563.6	1.5				ug/L	1950	Standard
P	31	24057.4	1.2				ug/L	21156	Standard
S	34	3523.7	3.2				ug/L	3419	Standard
Sr	88	65.0	7.7				ug/L	72	Standard
C	12	140.0	57.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	940.0	34.1				mg/L	17	Standard
Dy	164	25.2	57.6				mg/L	16	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	30.0	88.2				mg/L	7	Standard
I	127	15756.5	3.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	102.592		
Al	27	89.005		
Sc	45			
Ti	47	94.669		
V	51	100.555		
Cr	52	97.579		
Cr	53			
Mn	55	97.404		
Co	59	105.654		
Ni	60	97.767		
Cu	65	98.313		
Zn	66	98.996		
> Ge	72		99.656	
As	75	100.011		
Se	82	102.436		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	100.561		
Ag	107	99.233		
Cd	111	99.708		
Cd	114			
In	115			100.420
Sn	118	99.660		
Sb	123	98.916		
Ba	135	96.145		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.966		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.966		
U	238	102.050		
Bi	209			100.873
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 14:13:50
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	88888.4	2.2				ug/L	76456	Standard
	Be	9	38.3	52.7	**0.0094**	0.015	161.5	ug/L	20	Standard
	Al	27	2825.3	17.3	**0.0040**	0.002	53.4	ug/L	1307	Standard
	Sc	45	39005.1	1.5				ug/L	41174	Standard
	Ti	47	28.0	19.9	**0.0028**	0.016	582.3	ug/L	27	Standard
	V	51	2415.4	18.1	**0.1010**	0.058	57.8	ug/L	1434	Standard
	Cr	52	6917.2	0.7	**-0.0998**	0.014	13.7	ug/L	7733	Standard
	Cr	53	555.0	5.9	**0.1417**	0.025	17.3	ug/L	442	Standard
	Mn	55	752.7	2.2	**-0.0001**	0.003	2090.7	ug/L	723	Standard
	Co	59	252.7	11.5	**0.0041**	0.003	85.1	ug/L	217	Standard
	Ni	60	429.7	6.2	**0.0575**	0.011	18.3	ug/L	304	Standard
	Cu	65	263.0	14.8	**0.0569**	0.017	30.5	ug/L	181	Standard
	Zn	66	279.3	0.5	**0.0518**	0.003	5.0	ug/L	215	Standard
>	Ge	72	511815.0	1.6				ug/L	520809	Standard
	As	75	-18.1	92.8	**0.0301**	0.014	46.4	ug/L	-52	Standard
	Se	82	24.7	15.0	**0.0723**	0.029	39.9	ug/L	17	Standard
	Se-1	77	58.0	10.8	**0.0062**	0.079	1288.4	ug/L	56	Standard
>	Ga	71	13.3	78.1				mg/L	25	Standard
	Rb	85	38.3	7.5				ug/L	28	Standard
	Y	89	444682.5	1.8				ug/L	447395	Standard
>	Rh	103	18.3	15.7				ug/L	15	Standard
	Mo	98	598.8	12.4	**0.1734**	0.026	14.8	ug/L	113	Standard
	Ag	107	140.0	4.0	**0.0066**	0.001	12.4	ug/L	108	Standard
	Cd	111	12.3	61.1	**0.0030**	0.003	109.1	mg/L	3	Standard
	Cd	114	49.0	43.7	**0.0086**	0.004	42.9	ug/L	20	Standard
>	In	115	628245.6	0.7				ug/L	625728	Standard
	Sn	118	1961.8	30.2	**0.2198**	0.093	42.5	ug/L	568	Standard
	Sb	123	904.2	34.2	**0.1408**	0.061	43.0	ug/L	612	Standard
	Ba	135	57.3	10.7	**0.0083**	0.003	31.6	ug/L	21	Standard
	Ce	140	128.3	30.3				ug/L	245	Standard
>	Tb	159	944365.6	0.9				ug/L	950397	Standard
	Ho	165	13.3	94.4				ug/L	7	Standard
	Tl	203	108.0	13.0	**0.0111**	0.001	13.5	ug/L	15	Standard
	Tl	205	96.7	15.8	**0.0022**	0.002	85.6	ug/L	13	Standard
	Pb	206	339.7	1.4	**0.0152**	0.001	5.3	ug/L	264	Standard
	Pb	207	305.3	7.3	**0.0122**	0.004	33.7	ug/L	222	Standard
	Pb	208	1308.0	3.7	**0.0129**	0.002	16.1	ug/L	959	Standard
	U	238	87.3	40.5	**0.0104**	0.004	41.2	ug/L	9	Standard
>	Bi	209	562720.5	0.3				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	75.0	23.1	**0.0324**	0.022	69.0	mg/L	55	Standard
K	39	33.3	45.8	**0.0031**	0.060	1894.0	mg/L	28	Standard
Ca	43	15.0	33.3	**-1.0175**	0.462	45.4	mg/L	27	Standard
Fe	54	165.7	9.2	**0.0385**	0.014	37.1	mg/L	147	Standard
Fe	57	250.0	12.0	**0.0061**	0.086	1418.1	mg/L	268	Standard
> **Sc-1**	45	39005.1	1.5				mg/L	41174	Standard
Cl	35	79585.8	1.1				ug/L	69550	Standard
Kr	83	3.0	33.3				ug/L	1	Standard
Br	81	2136.8	1.9				ug/L	1950	Standard
P	31	23918.9	4.5				ug/L	21156	Standard
S	34	3433.7	5.0				ug/L	3419	Standard
Sr	88	81.7	12.7				ug/L	72	Standard
C	12	130.0	20.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	723.4	38.9				mg/L	17	Standard
Dy	164	12.1	100.4				mg/L	16	Standard
Ho-1	165	13.3	94.4				mg/L	7	Standard
Er	166	26.7	57.3				mg/L	7	Standard
I	127	11843.0	2.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.273	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.402
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.791
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

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Sample ID: L1606106815S ~~WG574840-04~~
Sample Date/Time: Friday, July 01, 2016 14:17:03
Number of Replicates: 3
Autosampler Position: 348
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83265.1	4.4				ug/L	76456	Standard
	Be	9	6339.7	3.7	5.1828	0.150	2.9	ug/L	20	Standard
	Al	27	349898.6	2.2	1.8682	0.063	3.4	ug/L	1307	Standard
	Sc	45	36113.0	0.7				ug/L	41174	Standard
	Ti	47	374.0	5.7	1.1636	0.064	5.5	ug/L	27	Standard
	V	51	40708.6	1.1	5.1868	0.031	0.6	ug/L	1434	Standard
	Cr	52	46718.3	0.7	5.3127	0.067	1.3	ug/L	7733	Standard
	Cr	53	6618.1	2.8	6.7048	0.239	3.6	ug/L	442	Standard
	Mn	55	114395.6	0.5	16.3321	0.067	0.4	ug/L	723	Standard
	Co	59	38195.1	1.8	5.3924	0.078	1.4	ug/L	217	Standard
	Ni	60	13663.5	1.3	7.0078	0.080	1.1	ug/L	304	Standard
	Cu	65	9944.3	1.7	5.2251	0.077	1.5	ug/L	181	Standard
	Zn	66	9492.0	1.6	8.2445	0.108	1.3	ug/L	215	Standard
>	Ge	72	478934.2	0.5				ug/L	520809	Standard
	As	75	6298.1	2.1	5.5931	0.137	2.4	ug/L	-52	Standard
	Se	82	745.3	1.6	6.2890	0.131	2.1	ug/L	17	Standard
	Se-1	77	565.0	3.4	6.5031	0.256	3.9	ug/L	56	Standard
>	Ga	71	210.0	14.9				mg/L	25	Standard
	Rb	85	3015.3	2.7				ug/L	28	Standard
	Y	89	406713.6	1.2				ug/L	447395	Standard
>	Rh	103	30.0	44.1				ug/L	15	Standard
	Mo	98	643.2	26.9	0.2086	0.062	29.9	ug/L	113	Standard
	Ag	107	33003.9	0.1	5.0128	0.031	0.6	ug/L	108	Standard
	Cd	111	11239.0	0.3	5.3366	0.046	0.9	mg/L	3	Standard
	Cd	114	27301.6	1.5	5.2380	0.071	1.4	ug/L	20	Standard
>	In	115	572178.3	0.7				ug/L	625728	Standard
	Sn	118	856.7	28.9	0.0614	0.042	68.6	ug/L	568	Standard
	Sb	123	23676.7	0.6	4.9767	0.063	1.3	ug/L	612	Standard
	Ba	135	19520.2	0.7	9.7948	0.108	1.1	ug/L	21	Standard
	Ce	140	4247.3	5.7				ug/L	245	Standard
>	Tb	159	879458.6	1.4				ug/L	950397	Standard
	Ho	165	76.7	30.1				ug/L	7	Standard
	Tl	203	41384.8	1.8	4.8673	0.052	1.1	ug/L	15	Standard
	Tl	205	37817.2	2.3	4.9998	0.080	1.6	ug/L	13	Standard
	Pb	206	27923.4	1.8	5.1651	0.060	1.2	ug/L	264	Standard
	Pb	207	24211.0	1.2	4.9273	0.030	0.6	ug/L	222	Standard
	Pb	208	101923.3	0.8	5.0783	0.055	1.1	ug/L	959	Standard
	U	238	37622.7	0.8	4.9287	0.050	1.0	ug/L	9	Standard
>	Bi	209	523442.8	0.7				ug/L	552821	Standard

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Na	23	1.7	173.2	**5.6795**	9.828	173.1	mg/L	2	Standard
Mg	24	6323.0	5.1	**8.3634**	0.482	5.8	mg/L	55	Standard
K	39	55.0	24.1	**0.1095**	0.059	54.3	mg/L	28	Standard
Ca	43	28.3	83.4	**0.4924**	2.471	501.8	mg/L	27	Standard
Fe	54	574.3	6.7	**0.4148**	0.038	9.1	mg/L	147	Standard
Fe	57	356.7	11.3	**0.4458**	0.147	32.9	mg/L	268	Standard
> **Sc-1**	45	36113.0	0.7				mg/L	41174	Standard
Cl	35	72434.1	0.7				ug/L	69550	Standard
Kr	83	2.0	0.0				ug/L	1	Standard
Br	81	13466.0	3.1				ug/L	1950	Standard
P	31	9684.8	1.1				ug/L	21156	Standard
S	34	3162.0	7.4				ug/L	3419	Standard
Sr	88	88.3	6.5				ug/L	72	Standard
C	12	126.7	19.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	493.3	11.2				mg/L	17	Standard
Dy	164	135.8	20.6				mg/L	16	Standard
Ho-1	165	76.7	30.1				mg/L	7	Standard
Er	166	86.7	40.5				mg/L	7	Standard
I	127	53586.4	4.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.906	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		91.960	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.442
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.686
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Sample ID: L1606106815S ~~**WG574840-04**~~
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Method 6020 - Summary Report

WG573840-05

Sample ID: L1606106817SD ~~WG574840-05~~
Sample Date/Time: Friday, July 01, 2016 14:20:15
Number of Replicates: 3
Autosampler Position: 349
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81106.5	1.7				ug/L	76456	Standard
	Be	9	6459.7	2.4	**5.4224**	0.225	4.2	ug/L	20	Standard
	Al	27	501960.4	2.3	**2.7550**	0.103	3.7	ug/L	1307	Standard
	Sc	45	36201.5	0.9				ug/L	41174	Standard
	Ti	47	1052.0	1.1	**3.4327**	0.017	0.5	ug/L	27	Standard
	V	51	46082.9	1.9	**5.9078**	0.087	1.5	ug/L	1434	Standard
	Cr	52	58550.9	1.6	**6.9166**	0.078	1.1	ug/L	7733	Standard
	Cr	53	8594.1	3.3	**8.8449**	0.268	3.0	ug/L	442	Standard
	Mn	55	145669.8	2.3	**20.8582**	0.361	1.7	ug/L	723	Standard
	Co	59	40340.0	2.3	**5.7063**	0.097	1.7	ug/L	217	Standard
	Ni	60	15750.9	2.0	**8.1157**	0.154	1.9	ug/L	304	Standard
	Cu	65	10601.7	1.3	**5.5848**	0.040	0.7	ug/L	181	Standard
	Zn	66	10298.5	1.1	**8.9757**	0.069	0.8	ug/L	215	Standard
>	Ge	72	478135.2	0.6				ug/L	520809	Standard
	As	75	6490.3	1.3	**5.7717**	0.072	1.2	ug/L	-52	Standard
	Se	82	783.8	3.6	**6.6313**	0.232	3.5	ug/L	17	Standard
	Se-1	77	575.7	8.4	**6.6484**	0.573	8.6	ug/L	56	Standard
>	Ga	71	653.3	4.4				mg/L	25	Standard
	Rb	85	7186.7	2.7				ug/L	28	Standard
	Y	89	409741.2	2.1				ug/L	447395	Standard
>	Rh	103	31.7	18.2				ug/L	15	Standard
	Mo	98	998.2	56.5	**0.3366**	0.205	60.9	ug/L	113	Standard
	Ag	107	33931.3	1.3	**5.1521**	0.034	0.7	ug/L	108	Standard
	Cd	111	11629.2	3.5	**5.5186**	0.109	2.0	mg/L	3	Standard
	Cd	114	28711.5	1.0	**5.5071**	0.084	1.5	ug/L	20	Standard
>	In	115	572419.1	1.9				ug/L	625728	Standard
	Sn	118	771.7	35.0	**0.0463**	0.043	93.9	ug/L	568	Standard
	Sb	123	22618.6	1.5	**4.7509**	0.051	1.1	ug/L	612	Standard
	Ba	135	24808.3	0.6	**12.4494**	0.172	1.4	ug/L	21	Standard
	Ce	140	9864.9	1.2				ug/L	245	Standard
>	Tb	159	882133.3	1.2				ug/L	950397	Standard
	Ho	165	175.0	13.1				ug/L	7	Standard
	Tl	203	43094.9	1.3	**5.0490**	0.012	0.2	ug/L	15	Standard
	Tl	205	38782.9	1.4	**5.1088**	0.109	2.1	ug/L	13	Standard
	Pb	206	28842.8	0.9	**5.3164**	0.076	1.4	ug/L	264	Standard
	Pb	207	24928.5	1.0	**5.0552**	0.065	1.3	ug/L	222	Standard
	Pb	208	104803.4	1.3	**5.2025**	0.040	0.8	ug/L	959	Standard
	U	238	38305.0	0.8	**4.9987**	0.028	0.6	ug/L	9	Standard
>	Bi	209	525482.1	1.1				ug/L	552821	Standard

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Na	23	3.3	173.2	**11.2046**	19.398	173.1	mg/L	2	Standard
Mg	24	8434.0	5.4	**11.1454**	0.594	5.3	mg/L	55	Standard
K	39	58.3	13.1	**0.1234**	0.036	28.8	mg/L	28	Standard
Ca	43	20.0	75.0	**-0.3837**	1.563	407.4	mg/L	27	Standard
Fe	54	968.4	3.8	**0.7651**	0.040	5.3	mg/L	147	Standard
Fe	57	503.3	13.7	**0.9549**	0.241	25.2	mg/L	268	Standard
> **Sc-1**	45	36201.5	0.9				mg/L	41174	Standard
Cl	35	71982.6	1.3				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	18638.1	5.1				ug/L	1950	Standard
P	31	10710.5	1.0				ug/L	21156	Standard
S	34	3345.4	0.8				ug/L	3419	Standard
Sr	88	73.3	27.6				ug/L	72	Standard
C	12	120.0	57.7				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	436.7	13.4				mg/L	17	Standard
Dy	164	280.4	13.3				mg/L	16	Standard
Ho-1	165	175.0	13.1				mg/L	7	Standard
Er	166	200.0	13.2				mg/L	7	Standard
I	127	66018.7	4.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.083	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		91.806	
As	75			
Se	82			
Se-1	77			
> Ga	71	WG573840-05		

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.481
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.055
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

WG573840-05

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Method 6020 - Summary Report

Sample ID: L1606106502
Sample Date/Time: Friday, July 01, 2016 14:23:26
Number of Replicates: 3
Autosampler Position: 350
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80066.0	1.1				ug/L	76456	Standard
	Be	9	30.0	115.5	**0.0056**	0.029	520.4	ug/L	20	Standard
	Al	27	180778.3	4.1	**0.9982**	0.041	4.1	ug/L	1307	Standard
	Sc	45	36360.3	2.0				ug/L	41174	Standard
	Ti	47	27.3	18.4	**0.0052**	0.016	312.3	ug/L	27	Standard
	V	51	1588.1	11.5	**0.0081**	0.023	286.5	ug/L	1434	Standard
	Cr	52	81053.1	3.8	**9.7557**	0.368	3.8	ug/L	7733	Standard
	Cr	53	9971.6	2.0	**10.1419**	0.234	2.3	ug/L	442	Standard
	Mn	55	13954.4	0.7	**1.8714**	0.017	0.9	ug/L	723	Standard
	Co	59	649.0	8.3	**0.0612**	0.008	12.7	ug/L	217	Standard
	Ni	60	1447.4	0.9	**0.5934**	0.004	0.6	ug/L	304	Standard
	Cu	65	486.7	11.5	**0.1810**	0.028	15.4	ug/L	181	Standard
	Zn	66	1353.4	2.5	**1.0020**	0.034	3.4	ug/L	215	Standard
>	Ge	72	486676.1	0.5				ug/L	520809	Standard
	As	75	-22.0	245.7	**0.0260**	0.047	179.9	ug/L	-52	Standard
	Se	82	18.1	72.4	**0.0263**	0.110	418.7	ug/L	17	Standard
	Se-1	77	60.7	2.5	**0.0749**	0.022	28.9	ug/L	56	Standard
>	Ga	71	25.0	20.0				mg/L	25	Standard
	Rb	85	138.3	26.6				ug/L	28	Standard
	Y	89	406376.2	1.0				ug/L	447395	Standard
>	Rh	103	16.7	69.3				ug/L	15	Standard
	Mo	98	1770.7	17.5	**0.6016**	0.111	18.5	ug/L	113	Standard
	Ag	107	129.0	37.0	**0.0063**	0.007	112.2	ug/L	108	Standard
	Cd	111	16.9	116.6	**0.0055**	0.009	166.8	mg/L	3	Standard
	Cd	114	59.1	100.8	**0.0111**	0.011	100.7	ug/L	20	Standard
>	In	115	585828.3	0.2				ug/L	625728	Standard
	Sn	118	591.7	24.5	**0.0140**	0.024	173.1	ug/L	568	Standard
	Sb	123	173.5	26.1	**0.0021**	0.009	438.7	ug/L	612	Standard
	Ba	135	254.0	14.4	**0.1068**	0.018	16.8	ug/L	21	Standard
	Ce	140	36.7	55.1				ug/L	245	Standard
>	Tb	159	883738.0	0.6				ug/L	950397	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	137.0	50.5	**0.0151**	0.008	51.9	ug/L	15	Standard
	Tl	205	130.0	90.1	**0.0071**	0.015	211.0	ug/L	13	Standard
	Pb	206	304.3	19.3	**0.0122**	0.010	84.1	ug/L	264	Standard
	Pb	207	261.0	10.0	**0.0068**	0.005	70.4	ug/L	222	Standard
	Pb	208	1149.7	15.1	**0.0087**	0.008	92.0	ug/L	959	Standard
	U	238	112.0	113.8	**0.0141**	0.016	115.0	ug/L	9	Standard
>	Bi	209	530616.0	1.0				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	1146.7	22.2	**1.4533**	0.307	21.1	mg/L	55	Standard
K	39	28.3	44.4	**-0.0074**	0.057	769.4	mg/L	28	Standard
Ca	43	26.7	54.1	**0.3104**	1.522	490.2	mg/L	27	Standard
Fe	54	101.6	8.0	**-0.0086**	0.008	94.5	mg/L	147	Standard
Fe	57	255.0	17.0	**0.0854**	0.166	194.4	mg/L	268	Standard
> **Sc-1**	45	36360.3	2.0				mg/L	41174	Standard
Cl	35	73712.2	1.2				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	2090.1	10.3				ug/L	1950	Standard
P	31	7825.4	0.6				ug/L	21156	Standard
S	34	3022.0	4.6				ug/L	3419	Standard
Sr	88	71.7	8.1				ug/L	72	Standard
C	12	96.7	23.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1313.4	4.6				mg/L	17	Standard
Dy	164	22.1	25.6				mg/L	16	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	26.7	21.7				mg/L	7	Standard
I	127	28513.5	2.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.722	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.446	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.623
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.983
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606106503
Sample Date/Time: Friday, July 01, 2016 14:26:37
Number of Replicates: 3
Autosampler Position: 351
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79132.8	1.3				ug/L	76456	Standard
	Be	9	20.0	90.1	**-0.0027**	0.015	566.6	ug/L	20	Standard
	Al	27	183681.8	1.0	**1.0266**	0.021	2.0	ug/L	1307	Standard
	Sc	45	35984.4	2.9				ug/L	41174	Standard
	Ti	47	20.7	12.2	**-0.0167**	0.009	53.6	ug/L	27	Standard
	V	51	1554.3	4.0	**0.0034**	0.007	204.4	ug/L	1434	Standard
	Cr	52	22825.5	4.8	**2.0452**	0.152	7.4	ug/L	7733	Standard
	Cr	53	2823.6	3.2	**2.5679**	0.111	4.3	ug/L	442	Standard
	Mn	55	25588.9	0.9	**3.5097**	0.037	1.1	ug/L	723	Standard
	Co	59	286.3	4.8	**0.0105**	0.002	16.3	ug/L	217	Standard
	Ni	60	1267.4	3.9	**0.4993**	0.024	4.9	ug/L	304	Standard
	Cu	65	240.7	4.8	**0.0519**	0.005	9.1	ug/L	181	Standard
	Zn	66	1398.4	2.4	**1.0389**	0.016	1.6	ug/L	215	Standard
>	Ge	72	487565.1	1.1				ug/L	520809	Standard
	As	75	-30.6	81.1	**0.0187**	0.022	115.7	ug/L	-52	Standard
	Se	82	20.5	30.4	**0.0466**	0.051	110.3	ug/L	17	Standard
	Se-1	77	71.3	18.1	**0.2061**	0.156	75.5	ug/L	56	Standard
>	Ga	71	30.0	33.3				mg/L	25	Standard
	Rb	85	90.0	53.6				ug/L	28	Standard
	Y	89	411794.3	0.5				ug/L	447395	Standard
>	Rh	103	21.7	13.3				ug/L	15	Standard
	Mo	98	702.5	37.7	**0.2235**	0.093	41.6	ug/L	113	Standard
	Ag	107	100.7	6.4	**0.0021**	0.001	44.2	ug/L	108	Standard
	Cd	111	3.1	64.7	**-0.0009**	0.001	98.3	mg/L	3	Standard
	Cd	114	10.2	126.7	**0.0019**	0.002	125.3	ug/L	20	Standard
>	In	115	587395.6	0.4				ug/L	625728	Standard
	Sn	118	551.7	28.8	**0.0071**	0.026	370.3	ug/L	568	Standard
	Sb	123	119.5	11.5	**-0.0091**	0.003	31.3	ug/L	612	Standard
	Ba	135	603.3	5.0	**0.2775**	0.015	5.3	ug/L	21	Standard
	Ce	140	43.3	40.5				ug/L	245	Standard
>	Tb	159	891615.0	1.6				ug/L	950397	Standard
	Ho	165	15.0	66.7				ug/L	7	Standard
	Tl	203	80.7	10.3	**0.0085**	0.001	11.1	ug/L	15	Standard
	Tl	205	53.3	57.3	**-0.0028**	0.004	140.3	ug/L	13	Standard
	Pb	206	274.3	3.4	**0.0064**	0.002	26.4	ug/L	264	Standard
	Pb	207	227.0	9.3	**-0.0004**	0.004	980.7	ug/L	222	Standard
	Pb	208	977.7	5.7	**-0.0001**	0.003	2332.0	ug/L	959	Standard
	U	238	23.7	16.0	**0.0028**	0.000	17.0	ug/L	9	Standard
>	Bi	209	534397.5	0.8				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	1421.7	2.1	**1.8418**	0.090	4.9	mg/L	55	Standard
K	39	28.3	40.8	**-0.0067**	0.051	756.8	mg/L	28	Standard
Ca	43	21.7	35.3	**-0.2051**	0.778	379.2	mg/L	27	Standard
Fe	54	96.5	16.4	**-0.0124**	0.012	96.4	mg/L	147	Standard
Fe	57	246.7	7.7	**0.0625**	0.044	71.0	mg/L	268	Standard
> **Sc-1**	45	35984.4	2.9				mg/L	41174	Standard
Cl	35	75787.1	1.4				ug/L	69550	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	1940.1	11.4				ug/L	1950	Standard
P	31	7708.6	3.3				ug/L	21156	Standard
S	34	3283.7	7.0				ug/L	3419	Standard
Sr	88	81.7	3.5				ug/L	72	Standard
C	12	93.3	6.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	810.0	7.7				mg/L	17	Standard
Dy	164	19.4	51.7				mg/L	16	Standard
Ho-1	165	15.0	66.7				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	28069.3	3.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.501	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.617	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.874
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.667
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606106504
Sample Date/Time: Friday, July 01, 2016 14:29:49
Number of Replicates: 3
Autosampler Position: 352
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79397.5	1.7				ug/L	76456	Standard
	Be	9	16.7	45.8	**-0.0055**	0.007	119.4	ug/L	20	Standard
	Al	27	291025.7	1.9	**1.6271**	0.036	2.2	ug/L	1307	Standard
	Sc	45	36009.4	0.8				ug/L	41174	Standard
	Ti	47	26.7	15.2	**0.0019**	0.013	690.9	ug/L	27	Standard
	V	51	1704.2	12.5	**0.0204**	0.028	139.1	ug/L	1434	Standard
	Cr	52	30766.6	4.8	**3.0469**	0.189	6.2	ug/L	7733	Standard
	Cr	53	3653.8	5.4	**3.4005**	0.215	6.3	ug/L	442	Standard
	Mn	55	17036.6	2.3	**2.2748**	0.050	2.2	ug/L	723	Standard
	Co	59	958.7	6.2	**0.1027**	0.008	8.2	ug/L	217	Standard
	Ni	60	2008.1	1.5	**0.8687**	0.014	1.6	ug/L	304	Standard
	Cu	65	251.7	3.4	**0.0561**	0.005	9.3	ug/L	181	Standard
	Zn	66	1482.7	0.2	**1.0976**	0.010	0.9	ug/L	215	Standard
>	Ge	72	493269.0	0.6				ug/L	520809	Standard
	As	75	-44.8	49.5	**0.0068**	0.019	282.1	ug/L	-52	Standard
	Se	82	18.7	10.9	**0.0294**	0.017	58.4	ug/L	17	Standard
	Se-1	77	64.3	6.3	**0.1099**	0.049	45.0	ug/L	56	Standard
>	Ga	71	26.7	43.3				mg/L	25	Standard
	Rb	85	2356.8	1.6				ug/L	28	Standard
	Y	89	413880.0	0.1				ug/L	447395	Standard
>	Rh	103	25.0	0.0				ug/L	15	Standard
	Mo	98	624.4	36.8	**0.1955**	0.081	41.4	ug/L	113	Standard
	Ag	107	92.7	17.9	**0.0009**	0.003	292.7	ug/L	108	Standard
	Cd	111	11.5	37.2	**0.0030**	0.002	67.8	mg/L	3	Standard
	Cd	114	45.1	23.2	**0.0084**	0.002	22.0	ug/L	20	Standard
>	In	115	588539.3	1.1				ug/L	625728	Standard
	Sn	118	616.7	20.1	**0.0176**	0.020	114.5	ug/L	568	Standard
	Sb	123	351.6	3.8	**0.0386**	0.003	9.0	ug/L	612	Standard
	Ba	135	231.7	10.0	**0.0953**	0.011	11.7	ug/L	21	Standard
	Ce	140	43.3	88.1				ug/L	245	Standard
>	Tb	159	885756.3	0.8				ug/L	950397	Standard
	Ho	165	16.7	34.6				ug/L	7	Standard
	Tl	203	73.3	2.8	**0.0077**	0.000	3.3	ug/L	15	Standard
	Tl	205	65.0	13.3	**-0.0013**	0.001	87.3	ug/L	13	Standard
	Pb	206	322.7	5.3	**0.0151**	0.003	19.7	ug/L	264	Standard
	Pb	207	256.3	3.1	**0.0054**	0.001	26.7	ug/L	222	Standard
	Pb	208	1164.0	5.3	**0.0090**	0.003	33.0	ug/L	959	Standard
	U	238	19.0	34.5	**0.0022**	0.001	38.3	ug/L	9	Standard
>	Bi	209	534942.7	0.4				ug/L	552821	Standard

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Na	23	3.3	86.6	**11.3879**	9.859	86.6	mg/L	2	Standard
Mg	24	1060.0	6.8	**1.3559**	0.099	7.3	mg/L	55	Standard
K	39	55.0	32.8	**0.1095**	0.077	70.3	mg/L	28	Standard
Ca	43	21.7	48.0	**-0.2024**	1.077	531.9	mg/L	27	Standard
Fe	54	98.8	37.3	**-0.0103**	0.032	312.2	mg/L	147	Standard
Fe	57	268.3	7.1	**0.1387**	0.065	46.8	mg/L	268	Standard
> **Sc-1**	45	36009.4	0.8				mg/L	41174	Standard
Cl	35	77523.2	0.3				ug/L	69550	Standard
Kr	83	2.7	114.6				ug/L	1	Standard
Br	81	2113.5	9.3				ug/L	1950	Standard
P	31	7710.3	3.6				ug/L	21156	Standard
S	34	3393.7	3.0				ug/L	3419	Standard
Sr	88	65.0	23.1				ug/L	72	Standard
C	12	106.7	28.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	623.3	9.8				mg/L	17	Standard
Dy	164	15.7	70.9				mg/L	16	Standard
Ho-1	165	16.7	34.6				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	28194.6	4.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.848	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.712	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.057
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.766
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 14:33:02
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	84479.9	0.6				ug/L	76456	Standard
	Be	9	65431.0	1.7	**52.8839**	1.234	2.3	ug/L	20	Standard
	Al	27	9107293.6	1.3	**48.1391**	0.761	1.6	ug/L	1307	Standard
	Sc	45	41221.0	1.1				ug/L	41174	Standard
	Ti	47	32532.9	2.1	**96.4064**	2.590	2.7	ug/L	27	Standard
	V	51	430170.6	0.9	**50.3648**	0.150	0.3	ug/L	1434	Standard
	Cr	52	419842.9	0.7	**49.1999**	0.629	1.3	ug/L	7733	Standard
	Cr	53	51666.3	1.8	**48.9792**	1.063	2.2	ug/L	442	Standard
	Mn	55	386049.1	1.6	**49.1731**	0.734	1.5	ug/L	723	Standard
	Co	59	420011.6	1.0	**52.9472**	0.520	1.0	ug/L	217	Standard
	Ni	60	107142.5	0.5	**49.7412**	0.431	0.9	ug/L	304	Standard
	Cu	65	106376.5	0.2	**50.2954**	0.371	0.7	ug/L	181	Standard
	Zn	66	63768.9	0.5	**50.1114**	0.441	0.9	ug/L	215	Standard
>	Ge	72	539029.9	0.6				ug/L	520809	Standard
	As	75	63720.4	0.2	**49.9158**	0.187	0.4	ug/L	-52	Standard
	Se	82	6616.1	1.4	**50.4720**	0.409	0.8	ug/L	17	Standard
	Se-1	77	4538.7	1.1	**50.6161**	0.744	1.5	ug/L	56	Standard
>	Ga	71	41.7	36.7				mg/L	25	Standard
	Rb	85	886.7	6.2				ug/L	28	Standard
	Y	89	466133.9	1.1				ug/L	447395	Standard
>	Rh	103	45.0	48.4				ug/L	15	Standard
	Mo	98	316079.0	1.2	**100.9623**	1.590	1.6	ug/L	113	Standard
	Ag	107	372581.7	1.1	**50.1169**	0.847	1.7	ug/L	108	Standard
	Cd	111	118352.7	0.1	**49.6717**	0.324	0.7	mg/L	3	Standard
	Cd	114	294028.3	2.4	**49.8404**	1.066	2.1	ug/L	20	Standard
>	In	115	647595.9	0.6				ug/L	625728	Standard
	Sn	118	333519.2	0.4	**49.9888**	0.512	1.0	ug/L	568	Standard
	Sb	123	262566.9	2.8	**49.0609**	1.554	3.2	ug/L	612	Standard
	Ba	135	108230.2	0.7	**48.0518**	0.424	0.9	ug/L	21	Standard
	Ce	140	185.0	15.0				ug/L	245	Standard
>	Tb	159	963986.1	0.6				ug/L	950397	Standard
	Ho	165	15.0	115.5				ug/L	7	Standard
	Tl	203	457975.8	1.0	**50.2126**	0.379	0.8	ug/L	15	Standard
	Tl	205	420042.8	0.3	**51.8564**	0.350	0.7	ug/L	13	Standard
	Pb	206	291174.6	0.8	**50.5849**	0.394	0.8	ug/L	264	Standard
	Pb	207	263877.7	0.4	**50.4775**	0.161	0.3	ug/L	222	Standard
	Pb	208	1113044.3	0.4	**52.1318**	0.466	0.9	ug/L	959	Standard
	U	238	419550.2	0.5	**51.2295**	0.115	0.2	ug/L	9	Standard
>	Bi	209	561599.8	0.5				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4695.7	3.2	**5.4185**	0.141	2.6	mg/L	55	Standard
K	39	1080.0	1.9	**4.0059**	0.102	2.5	mg/L	28	Standard
Ca	43	58.3	9.9	**2.8430**	0.540	19.0	mg/L	27	Standard
Fe	54	6681.6	1.6	**5.1353**	0.107	2.1	mg/L	147	Standard
Fe	57	1935.1	3.8	**5.1339**	0.159	3.1	mg/L	268	Standard
> **Sc-1**	45	41221.0	1.1				mg/L	41174	Standard
Cl	35	86136.9	2.1				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	2180.2	1.6				ug/L	1950	Standard
P	31	25733.5	2.6				ug/L	21156	Standard
S	34	4153.9	3.6				ug/L	3419	Standard
Sr	88	75.0	13.3				ug/L	72	Standard
C	12	106.7	28.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	720.0	29.7				mg/L	17	Standard
Dy	164	22.7	24.3				mg/L	16	Standard
Ho-1	165	15.0	115.5				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	15117.5	1.0				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	105.768		
	Al	27	96.278		
	Sc	45			
	Ti	47	96.406		
	V	51	100.730		
	Cr	52	98.400		
	Cr	53			
	Mn	55	98.346		
	Co	59	105.894		
	Ni	60	99.482		
	Cu	65	100.591		
	Zn	66	100.223		
>	Ge	72		103.499	
	As	75	99.832		
	Se	82	100.944		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	100.962		
Ag	107	100.234		
Cd	111	99.343		
Cd	114			
In	115			103.495
Sn	118	99.978		
Sb	123	98.122		
Ba	135	96.104		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.425		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.264		
U	238	102.459		
Bi	209			101.588
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 14:36:13
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84748.1	2.2				ug/L	76456	Standard
	Be	9	28.3	27.0	**0.0029**	0.006	204.3	ug/L	20	Standard
	Al	27	2800.3	34.3	**0.0045**	0.005	111.4	ug/L	1307	Standard
	Sc	45	41077.3	1.7				ug/L	41174	Standard
	Ti	47	26.0	26.6	**-0.0072**	0.021	288.8	ug/L	27	Standard
	V	51	1826.7	11.6	**0.0166**	0.026	154.1	ug/L	1434	Standard
	Cr	52	7089.7	2.6	**-0.1215**	0.019	15.7	ug/L	7733	Standard
	Cr	53	518.3	19.4	**0.0795**	0.095	119.0	ug/L	442	Standard
	Mn	55	744.0	2.7	**-0.0062**	0.002	40.3	ug/L	723	Standard
	Co	59	250.7	12.3	**0.0022**	0.004	175.9	ug/L	217	Standard
	Ni	60	366.0	4.1	**0.0177**	0.007	39.1	ug/L	304	Standard
	Cu	65	215.0	5.8	**0.0279**	0.006	21.4	ug/L	181	Standard
	Zn	66	258.3	5.8	**0.0239**	0.012	50.5	ug/L	215	Standard
>	**Ge**	72	537853.0	0.3				ug/L	520809	Standard
	As	75	-50.7	30.0	**0.0054**	0.012	222.4	ug/L	-52	Standard
	Se	82	23.4	28.3	**0.0526**	0.050	95.5	ug/L	17	Standard
	Se-1	77	56.3	13.3	**-0.0464**	0.086	185.9	ug/L	56	Standard
>	**Ga**	71	38.3	66.9				mg/L	25	Standard
	Rb	85	33.3	67.6				ug/L	28	Standard
	Y	89	471394.3	0.7				ug/L	447395	Standard
>	**Rh**	103	18.3	63.0				ug/L	15	Standard
	Mo	98	398.2	17.4	**0.1019**	0.023	22.4	ug/L	113	Standard
	Ag	107	141.3	16.6	**0.0060**	0.003	53.5	ug/L	108	Standard
	Cd	111	18.0	20.7	**0.0051**	0.002	31.3	mg/L	3	Standard
	Cd	114	51.0	12.7	**0.0086**	0.001	12.0	ug/L	20	Standard
>	**In**	115	655049.2	0.7				ug/L	625728	Standard
	Sn	118	1826.8	33.6	**0.1873**	0.093	49.6	ug/L	568	Standard
	Sb	123	1005.7	35.1	**0.1525**	0.066	43.6	ug/L	612	Standard
	Ba	135	50.7	11.6	**0.0043**	0.003	59.6	ug/L	21	Standard
	Ce	140	55.0	18.2				ug/L	245	Standard
>	**Tb**	159	963692.0	2.2				ug/L	950397	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	91.3	32.5	**0.0091**	0.003	36.2	ug/L	15	Standard
	Tl	205	100.0	20.0	**0.0024**	0.003	107.2	ug/L	13	Standard
	Pb	206	358.7	4.9	**0.0174**	0.003	18.6	ug/L	264	Standard
	Pb	207	299.3	9.7	**0.0101**	0.006	57.2	ug/L	222	Standard
	Pb	208	1241.0	6.1	**0.0088**	0.004	42.7	ug/L	959	Standard
	U	238	67.3	26.7	**0.0078**	0.002	28.5	ug/L	9	Standard
>	**Bi**	209	572676.0	1.1				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	58.3	27.6	**0.0080**	0.018	227.2	mg/L	55	Standard
K	39	31.7	24.1	**-0.0097**	0.028	287.6	mg/L	28	Standard
Ca	43	30.0	60.1	**0.2757**	1.623	588.8	mg/L	27	Standard
Fe	54	132.3	15.7	**0.0051**	0.015	299.1	mg/L	147	Standard
Fe	57	226.7	3.4	**-0.1060**	0.019	17.5	mg/L	268	Standard
> **Sc-1**	45	41077.3	1.7				mg/L	41174	Standard
Cl	35	85337.0	1.5				ug/L	69550	Standard
Kr	83	3.3	17.3				ug/L	1	Standard
Br	81	2146.8	7.1				ug/L	1950	Standard
P	31	24845.4	3.5				ug/L	21156	Standard
S	34	4015.5	0.7				ug/L	3419	Standard
Sr	88	58.3	27.6				ug/L	72	Standard
C	12	116.7	9.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	523.3	24.3				mg/L	17	Standard
Dy	164	6.0	187.1				mg/L	16	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	11185.8	0.6				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		103.273	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.686
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.592
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Friday, July 01, 2016 14:39:26
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	82750.5	2.9				ug/L	76456	Standard
	Be	9	285.0	17.8	**0.2151**	0.039	18.0	ug/L	20	Standard
	Al	27	1818.4	16.8	**-0.0004**	0.002	418.1	ug/L	1307	Standard
	Sc	45	39031.9	2.5				ug/L	41174	Standard
	Ti	47	23.0	28.5	**-0.0130**	0.020	154.9	ug/L	27	Standard
	V	51	4531.3	0.6	**0.3599**	0.004	1.1	ug/L	1434	Standard
	Cr	52	13097.3	0.4	**0.6705**	0.008	1.2	ug/L	7733	Standard
	Cr	53	1321.7	4.4	**0.9081**	0.059	6.5	ug/L	442	Standard
	Mn	55	3958.5	1.2	**0.4284**	0.005	1.2	ug/L	723	Standard
	Co	59	3194.7	3.0	**0.3931**	0.014	3.5	ug/L	217	Standard
	Ni	60	3472.1	3.0	**1.5421**	0.046	3.0	ug/L	304	Standard
	Cu	65	1723.1	3.0	**0.7813**	0.023	3.0	ug/L	181	Standard
	Zn	66	8776.2	0.9	**7.0769**	0.052	0.7	ug/L	215	Standard
>	Ge	72	514072.5	0.3				ug/L	520809	Standard
	As	75	450.1	8.8	**0.4145**	0.032	7.7	ug/L	-52	Standard
	Se	82	70.4	7.3	**0.4383**	0.043	9.7	ug/L	17	Standard
	Se-1	77	94.3	4.8	**0.4334**	0.056	12.9	ug/L	56	Standard
>	Ga	71	21.7	35.3				mg/L	25	Standard
	Rb	85	21.7	53.3				ug/L	28	Standard
	Y	89	438183.2	1.3				ug/L	447395	Standard
>	Rh	103	16.7	105.4				ug/L	15	Standard
	Mo	98	167.4	18.5	**0.0314**	0.011	34.8	ug/L	113	Standard
	Ag	107	2856.9	3.2	**0.3846**	0.011	2.9	ug/L	108	Standard
	Cd	111	543.4	2.2	**0.2335**	0.007	3.2	mg/L	3	Standard
	Cd	114	1301.0	2.4	**0.2280**	0.003	1.3	ug/L	20	Standard
>	In	115	626288.8	1.2				ug/L	625728	Standard
	Sn	118	1146.7	25.4	**0.0941**	0.047	50.1	ug/L	568	Standard
	Sb	123	2055.0	1.9	**0.3637**	0.012	3.3	ug/L	612	Standard
	Ba	135	1475.7	2.5	**0.6597**	0.010	1.5	ug/L	21	Standard
	Ce	140	10.0	50.0				ug/L	245	Standard
>	Tb	159	937003.8	0.8				ug/L	950397	Standard
	Ho	165	13.3	94.4				ug/L	7	Standard
	Tl	203	742.4	3.9	**0.0813**	0.003	3.9	ug/L	15	Standard
	Tl	205	635.0	7.6	**0.0693**	0.006	9.0	ug/L	13	Standard
	Pb	206	1423.4	1.3	**0.2057**	0.004	1.8	ug/L	264	Standard
	Pb	207	1222.7	2.7	**0.1898**	0.007	3.5	ug/L	222	Standard
	Pb	208	5238.4	1.7	**0.1992**	0.005	2.7	ug/L	959	Standard
	U	238	3209.7	2.1	**0.3947**	0.010	2.6	ug/L	9	Standard
>	Bi	209	557268.2	0.5				ug/L	552821	Standard

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Na	23	1.7	173.2	**5.3145**	9.196	173.0	mg/L	2	Standard
Mg	24	45.0	11.1	**-0.0048**	0.005	106.0	mg/L	55	Standard
K	39	16.7	45.8	**-0.0643**	0.029	45.1	mg/L	28	Standard
Ca	43	28.3	40.8	**0.2822**	1.159	410.5	mg/L	27	Standard
Fe	54	125.5	27.9	**0.0049**	0.029	586.2	mg/L	147	Standard
Fe	57	236.7	18.2	**-0.0367**	0.142	386.3	mg/L	268	Standard
> **Sc-1**	45	39031.9	2.5				mg/L	41174	Standard
Cl	35	80966.5	1.6				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	2093.5	4.3				ug/L	1950	Standard
P	31	17104.7	1.6				ug/L	21156	Standard
S	34	3810.5	3.5				ug/L	3419	Standard
Sr	88	53.3	51.6				ug/L	72	Standard
C	12	146.7	52.1				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	223.3	40.6				mg/L	17	Standard
Dy	164	5.7	102.5				mg/L	16	Standard
Ho-1	165	13.3	94.4				mg/L	7	Standard
Er	166	20.0	100.0				mg/L	7	Standard
I	127	1610.1	16.8				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	107.542		
	Al	27			
	Sc	45			
	Ti	47			
	V	51	89.972		
	Cr	52	83.818		
	Cr	53			
	Mn	55	85.687		
	Co	59	98.272		
	Ni	60	96.381		
	Cu	65	97.667		
	Zn	66	113.230		
>	Ge	72		98.706	
	As	75	103.620		
	Se	82	109.583		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	96.144		
Cd	111	97.300		
Cd	114			
> In	115			100.090
Sn	118			
Sb	123	90.914		
Ba	135	87.967		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.600		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.596		
U	238	98.687		
> Bi	209			100.804
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606136001
Sample Date/Time: Friday, July 01, 2016 15:11:12
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	102032.6	2.7				ug/L	76456	Standard
	Be	9	25.0	34.6	-0.0031	0.006	188.0	ug/L	20	Standard
	Al	27	55269386.4	1.6	242.0065	6.248	2.6	ug/L	1307	Standard
	Sc	45	42982.6	3.7				ug/L	41174	Standard
	Ti	47	671.0	5.7	1.9148	0.128	6.7	ug/L	27	Standard
	V	51	4267.5	6.4	0.3052	0.033	10.8	ug/L	1434	Standard
	Cr	52	10596.7	1.5	0.3014	0.025	8.3	ug/L	7733	Standard
	Cr	53	1925.1	6.6	1.4310	0.107	7.5	ug/L	442	Standard
	Mn	55	5430678.9	1.0	696.1378	12.327	1.8	ug/L	723	Standard
	Co	59	2218.2	2.4	0.2516	0.009	3.5	ug/L	217	Standard
	Ni	60	4312.3	3.2	1.8641	0.080	4.3	ug/L	304	Standard
	Cu	65	798.0	4.6	0.3054	0.016	5.3	ug/L	181	Standard
	Zn	66	2494.5	0.6	1.7957	0.026	1.4	ug/L	215	Standard
>	Ge	72	536693.6	0.8				ug/L	520809	Standard
	As	75	4266.7	1.8	3.3992	0.072	2.1	ug/L	-52	Standard
	Se	82	495.3	5.2	3.6793	0.225	6.1	ug/L	17	Standard
	Se-1	77	148.7	2.7	1.0032	0.054	5.4	ug/L	56	Standard
>	Ga	71	150.0	23.3				mg/L	25	Standard
	Rb	85	52107.8	0.6				ug/L	28	Standard
	Y	89	450964.8	1.0				ug/L	447395	Standard
>	Rh	103	411.7	6.2				ug/L	15	Standard
	Mo	98	1387.0	5.2	0.4385	0.030	6.9	ug/L	113	Standard
	Ag	107	200.3	32.4	0.0153	0.009	61.2	ug/L	108	Standard
	Cd	111	14.4	26.9	0.0039	0.002	40.7	mg/L	3	Standard
	Cd	114	17.5	189.3	0.0031	0.006	189.4	ug/L	20	Standard
>	In	115	620931.3	1.4				ug/L	625728	Standard
	Sn	118	1585.1	13.6	0.1643	0.037	22.3	ug/L	568	Standard
	Sb	123	1484.9	28.1	0.2566	0.085	33.0	ug/L	612	Standard
	Ba	135	185434.9	0.7	85.8822	0.643	0.7	ug/L	21	Standard
	Ce	140	220.0	14.2				ug/L	245	Standard
>	Tb	159	948217.7	1.1				ug/L	950397	Standard
	Ho	165	31.7	9.1				ug/L	7	Standard
	Tl	203	125.3	17.6	0.0138	0.003	19.7	ug/L	15	Standard
	Tl	205	88.3	14.2	0.0018	0.002	100.1	ug/L	13	Standard
	Pb	206	400.7	10.7	0.0298	0.009	29.3	ug/L	264	Standard
	Pb	207	353.0	2.8	0.0252	0.002	8.1	ug/L	222	Standard
	Pb	208	1381.0	1.8	0.0200	0.002	10.5	ug/L	959	Standard
	U	238	1004.0	3.9	0.1291	0.007	5.4	ug/L	9	Standard
>	Bi	209	532629.6	1.5				ug/L	552821	Standard

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Na	23	15.0	33.3	**42.5757**	12.711	29.9	mg/L	2	Standard
Mg	24	49159.6	0.3	**55.0024**	2.117	3.8	mg/L	55	Standard
K	39	1461.7	10.0	**5.2295**	0.334	6.4	mg/L	28	Standard
Ca	43	601.7	4.7	**50.0156**	4.072	8.1	mg/L	27	Standard
Fe	54	4574.4	1.8	**3.3398**	0.110	3.3	mg/L	147	Standard
Fe	57	1803.4	3.2	**4.5113**	0.320	7.1	mg/L	268	Standard
Sc-1	45	42982.6	3.7				mg/L	41174	Standard
Cl	35	94962.0	0.7				ug/L	69550	Standard
Kr	83	2.0	0.0				ug/L	1	Standard
Br	81	95694.6	1.2				ug/L	1950	Standard
P	31	33902.9	0.5				ug/L	21156	Standard
S	34	4128.9	1.2				ug/L	3419	Standard
Sr	88	1591.8	1.7				ug/L	72	Standard
C	12	436.7	25.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	510.0	42.5				mg/L	17	Standard
Dy	164	37.8	54.9				mg/L	16	Standard
Ho-1	165	31.7	9.1				mg/L	7	Standard
Er	166	46.7	32.7				mg/L	7	Standard
I	127	121671837.9	2.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		133.453	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.050	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.233	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.348	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606136002
Sample Date/Time: Friday, July 01, 2016 15:14:23
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85581.0	1.5				ug/L	76456	Standard
	Be	9	25.0	60.0	**0.0002**	0.012	7141.4	ug/L	20	Standard
	Al	27	55900.2	24.1	**0.2811**	0.067	23.9	ug/L	1307	Standard
	Sc	45	42536.3	1.1				ug/L	41174	Standard
	Ti	47	133.7	20.6	**0.3028**	0.078	25.8	ug/L	27	Standard
	V	51	2309.2	3.2	**0.0668**	0.010	14.4	ug/L	1434	Standard
	Cr	52	10748.5	0.6	**0.2852**	0.003	0.9	ug/L	7733	Standard
	Cr	53	1006.7	5.2	**0.5242**	0.053	10.1	ug/L	442	Standard
	Mn	55	5954.9	24.0	**0.6413**	0.175	27.3	ug/L	723	Standard
	Co	59	262.0	8.2	**0.0029**	0.003	90.0	ug/L	217	Standard
	Ni	60	497.3	9.2	**0.0733**	0.022	29.6	ug/L	304	Standard
	Cu	65	2911.9	5.2	**1.2738**	0.065	5.1	ug/L	181	Standard
	Zn	66	1381.4	5.9	**0.8847**	0.058	6.6	ug/L	215	Standard
>	**Ge**	72	551341.1	0.5				ug/L	520809	Standard
	As	75	-21.8	42.5	**0.0285**	0.007	24.8	ug/L	-52	Standard
	Se	82	22.1	22.3	**0.0391**	0.037	95.8	ug/L	17	Standard
	Se-1	77	66.7	24.4	**0.0515**	0.176	341.9	ug/L	56	Standard
>	**Ga**	71	61.7	33.8				mg/L	25	Standard
	Rb	85	408.3	7.2				ug/L	28	Standard
	Y	89	470361.2	0.7				ug/L	447395	Standard
>	**Rh**	103	16.7	45.8				ug/L	15	Standard
	Mo	98	156.0	25.9	**0.0252**	0.013	53.1	ug/L	113	Standard
	Ag	107	109.0	5.1	**0.0016**	0.001	52.8	ug/L	108	Standard
	Cd	111	14.4	21.7	**0.0036**	0.001	37.8	mg/L	3	Standard
	Cd	114	35.6	84.3	**0.0060**	0.005	83.9	ug/L	20	Standard
>	**In**	115	658802.4	1.3				ug/L	625728	Standard
	Sn	118	3085.3	1.9	**0.3711**	0.008	2.1	ug/L	568	Standard
	Sb	123	348.5	35.2	**0.0306**	0.023	76.5	ug/L	612	Standard
	Ba	135	1852.8	5.0	**0.7908**	0.032	4.1	ug/L	21	Standard
	Ce	140	210.0	16.5				ug/L	245	Standard
>	**Tb**	159	984012.0	1.0				ug/L	950397	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	41.3	6.1	**0.0037**	0.000	7.2	ug/L	15	Standard
	Tl	205	46.7	68.9	**-0.0041**	0.004	94.4	ug/L	13	Standard
	Pb	206	460.7	0.7	**0.0345**	0.001	2.0	ug/L	264	Standard
	Pb	207	404.0	4.8	**0.0295**	0.003	11.6	ug/L	222	Standard
	Pb	208	1690.4	3.1	**0.0292**	0.002	7.9	ug/L	959	Standard
	U	238	26.3	7.9	**0.0029**	0.000	8.7	ug/L	9	Standard
>	**Bi**	209	574438.2	0.4				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	250.0	12.5	**0.2227**	0.038	16.8	mg/L	55	Standard
K	39	21.7	48.0	**-0.0507**	0.039	76.8	mg/L	28	Standard
Ca	43	33.3	45.8	**0.4827**	1.350	279.7	mg/L	27	Standard
Fe	54	174.0	19.0	**0.0332**	0.024	72.4	mg/L	147	Standard
Fe	57	240.0	20.1	**-0.0912**	0.137	149.9	mg/L	268	Standard
> **Sc-1**	45	42536.3	1.1				mg/L	41174	Standard
Cl	35	95107.6	2.0				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	2680.2	5.4				ug/L	1950	Standard
P	31	27181.0	2.6				ug/L	21156	Standard
S	34	4080.5	2.6				ug/L	3419	Standard
Sr	88	60.0	8.3				ug/L	72	Standard
C	12	186.7	8.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	346.7	61.6				mg/L	17	Standard
Dy	164	25.7	79.6				mg/L	16	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	835274.3	37.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.935	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.862	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.286
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.910
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606140001
Sample Date/Time: Friday, July 01, 2016 15:17:35
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83445.8	0.6				ug/L	76456	Standard
	Be	9	45.0	29.4	**0.0170**	0.011	63.9	ug/L	20	Standard
	Al	27	7040110.3	1.1	**37.6724**	0.642	1.7	ug/L	1307	Standard
	Sc	45	41625.4	2.0				ug/L	41174	Standard
	Ti	47	4285.9	4.9	**12.7764**	0.570	4.5	ug/L	27	Standard
	V	51	7078.2	1.9	**0.6435**	0.022	3.4	ug/L	1434	Standard
	Cr	52	21057.0	0.1	**1.5759**	0.026	1.6	ug/L	7733	Standard
	Cr	53	3443.7	1.2	**2.9149**	0.056	1.9	ug/L	442	Standard
	Mn	55	883702.1	0.7	**114.0510**	1.835	1.6	ug/L	723	Standard
	Co	59	2499.5	0.8	**0.2896**	0.004	1.4	ug/L	217	Standard
	Ni	60	4161.2	2.0	**1.8082**	0.061	3.4	ug/L	304	Standard
	Cu	65	3327.7	0.9	**1.5204**	0.005	0.4	ug/L	181	Standard
	Zn	66	4188.9	1.5	**3.1626**	0.022	0.7	ug/L	215	Standard
>	Ge	72	532673.4	1.1				ug/L	520809	Standard
	As	75	1321.1	0.2	**1.0915**	0.014	1.3	ug/L	-52	Standard
	Se	82	41.1	15.2	**0.1918**	0.049	25.5	ug/L	17	Standard
	Se-1	77	114.0	7.6	**0.6197**	0.107	17.2	ug/L	56	Standard
>	Ga	71	1218.4	5.9				mg/L	25	Standard
	Rb	85	38403.6	2.5				ug/L	28	Standard
	Y	89	469727.3	1.0				ug/L	447395	Standard
>	Rh	103	41.7	25.0				ug/L	15	Standard
	Mo	98	855.3	9.6	**0.2517**	0.030	12.0	ug/L	113	Standard
	Ag	107	118.0	3.1	**0.0031**	0.000	8.0	ug/L	108	Standard
	Cd	111	168.9	5.8	**0.0690**	0.003	4.5	mg/L	3	Standard
	Cd	114	422.3	16.9	**0.0721**	0.011	15.8	ug/L	20	Standard
>	In	115	642729.5	1.7				ug/L	625728	Standard
	Sn	118	2336.8	13.7	**0.2695**	0.050	18.6	ug/L	568	Standard
	Sb	123	10092.5	4.2	**1.8672**	0.060	3.2	ug/L	612	Standard
	Ba	135	14880.6	0.5	**6.6421**	0.083	1.2	ug/L	21	Standard
	Ce	140	38117.9	1.2				ug/L	245	Standard
>	Tb	159	971949.7	2.4				ug/L	950397	Standard
	Ho	165	766.7	0.8				ug/L	7	Standard
	Tl	203	84.7	11.9	**0.0086**	0.001	13.1	ug/L	15	Standard
	Tl	205	65.0	26.6	**-0.0017**	0.002	121.5	ug/L	13	Standard
	Pb	206	5500.7	2.1	**0.9180**	0.006	0.6	ug/L	264	Standard
	Pb	207	4505.0	2.1	**0.8213**	0.015	1.9	ug/L	222	Standard
	Pb	208	19667.7	0.6	**0.8791**	0.020	2.3	ug/L	959	Standard
	U	238	150.0	6.0	**0.0182**	0.001	7.7	ug/L	9	Standard
>	Bi	209	558473.2	1.6				ug/L	552821	Standard

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Na	23	1.7	173.2	**4.9489**	8.563	173.0	mg/L	2	Standard
Mg	24	2895.3	5.1	**3.2866**	0.193	5.9	mg/L	55	Standard
K	39	586.7	6.5	**2.0948**	0.159	7.6	mg/L	28	Standard
Ca	43	126.7	13.9	**8.9443**	1.703	19.0	mg/L	27	Standard
Fe	54	1267.9	7.9	**0.8860**	0.097	10.9	mg/L	147	Standard
Fe	57	600.0	6.3	**1.0204**	0.129	12.6	mg/L	268	Standard
Sc-1	45	41625.4	2.0				mg/L	41174	Standard
Cl	35	87177.5	2.1				ug/L	69550	Standard
Kr	83	2.0	173.2				ug/L	1	Standard
Br	81	7248.4	5.5				ug/L	1950	Standard
P	31	28932.6	1.2				ug/L	21156	Standard
S	34	4053.9	3.3				ug/L	3419	Standard
Sr	88	248.3	11.1				ug/L	72	Standard
C	12	190.0	13.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	326.7	32.7				mg/L	17	Standard
Dy	164	1103.7	6.9				mg/L	16	Standard
Ho-1	165	766.7	0.8				mg/L	7	Standard
Er	166	690.0	9.5				mg/L	7	Standard
I	127	358932.7	7.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.143	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.278	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.717
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.022
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140002
Sample Date/Time: Friday, July 01, 2016 15:20:46
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83243.1	1.8				ug/L	76456	Standard
	Be	9	40.0	66.1	**0.0127**	0.021	164.7	ug/L	20	Standard
	Al	27	20806325.7	1.5	**111.6281**	1.089	1.0	ug/L	1307	Standard
	Sc	45	42705.1	1.7				ug/L	41174	Standard
	Ti	47	521.0	4.2	**1.4841**	0.067	4.5	ug/L	27	Standard
	V	51	3344.5	4.3	**0.2005**	0.017	8.4	ug/L	1434	Standard
	Cr	52	11575.8	0.5	**0.4337**	0.008	1.8	ug/L	7733	Standard
	Cr	53	3380.4	6.9	**2.8639**	0.226	7.9	ug/L	442	Standard
	Mn	55	948881.0	1.2	**122.8502**	1.452	1.2	ug/L	723	Standard
	Co	59	2088.1	1.4	**0.2379**	0.004	1.7	ug/L	217	Standard
	Ni	60	3829.2	1.0	**1.6570**	0.016	1.0	ug/L	304	Standard
	Cu	65	1020.7	3.6	**0.4165**	0.018	4.3	ug/L	181	Standard
	Zn	66	1711.1	3.0	**1.1897**	0.044	3.7	ug/L	215	Standard
>	Ge	72	530967.7	0.1				ug/L	520809	Standard
	As	75	120.6	26.2	**0.1410**	0.025	17.8	ug/L	-52	Standard
	Se	82	48.6	18.0	**0.2506**	0.068	27.3	ug/L	17	Standard
	Se-1	77	180.0	11.7	**1.3805**	0.238	17.3	ug/L	56	Standard
>	Ga	71	128.3	39.0				mg/L	25	Standard
	Rb	85	2536.9	2.3				ug/L	28	Standard
	Y	89	459396.3	1.3				ug/L	447395	Standard
>	Rh	103	68.3	16.9				ug/L	15	Standard
	Mo	98	164.7	11.0	**0.0301**	0.006	21.2	ug/L	113	Standard
	Ag	107	87.7	14.4	**-0.0008**	0.002	218.3	ug/L	108	Standard
	Cd	111	68.1	9.8	**0.0269**	0.003	10.0	mg/L	3	Standard
	Cd	114	155.0	26.9	**0.0270**	0.007	27.3	ug/L	20	Standard
>	In	115	631529.9	1.1				ug/L	625728	Standard
	Sn	118	1490.1	25.7	**0.1455**	0.061	42.2	ug/L	568	Standard
	Sb	123	888.6	10.6	**0.1367**	0.019	13.9	ug/L	612	Standard
	Ba	135	26458.7	0.5	**12.0331**	0.137	1.1	ug/L	21	Standard
	Ce	140	9911.6	1.3				ug/L	245	Standard
>	Tb	159	958775.7	0.7				ug/L	950397	Standard
	Ho	165	208.3	2.8				ug/L	7	Standard
	Tl	203	123.7	9.6	**0.0132**	0.001	9.6	ug/L	15	Standard
	Tl	205	103.3	42.3	**0.0034**	0.005	161.1	ug/L	13	Standard
	Pb	206	646.3	4.8	**0.0721**	0.004	5.3	ug/L	264	Standard
	Pb	207	521.7	7.3	**0.0568**	0.007	11.5	ug/L	222	Standard
	Pb	208	2324.1	2.2	**0.0641**	0.003	5.2	ug/L	959	Standard
	U	238	1352.7	2.4	**0.1701**	0.003	1.9	ug/L	9	Standard
>	Bi	209	544667.8	1.5				ug/L	552821	Standard

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Na	23	3.3	173.2	**9.5374**	16.511	173.1	mg/L	2	Standard
Mg	24	12897.2	1.9	**14.4668**	0.241	1.7	mg/L	55	Standard
K	39	143.3	40.4	**0.3966**	0.206	52.0	mg/L	28	Standard
Ca	43	550.0	11.0	**45.7421**	5.294	11.6	mg/L	27	Standard
Fe	54	409.1	1.1	**0.2106**	0.008	3.9	mg/L	147	Standard
Fe	57	643.3	9.1	**1.1039**	0.202	18.3	mg/L	268	Standard
> **Sc-1**	45	42705.1	1.7				mg/L	41174	Standard
Cl	35	94915.1	1.1				ug/L	69550	Standard
Kr	83	2.0	0.0				ug/L	1	Standard
Br	81	7108.3	0.6				ug/L	1950	Standard
P	31	28478.4	1.9				ug/L	21156	Standard
S	34	4015.5	4.7				ug/L	3419	Standard
Sr	88	310.0	10.1				ug/L	72	Standard
C	12	300.0	17.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	246.7	10.2				mg/L	17	Standard
Dy	164	399.0	15.6				mg/L	16	Standard
Ho-1	165	208.3	2.8				mg/L	7	Standard
Er	166	230.0	11.5				mg/L	7	Standard
I	127	149991.1	7.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.877	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.950	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.927	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.525	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140003
Sample Date/Time: Friday, July 01, 2016 15:23:58
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82504.1	1.6				ug/L	76456	Standard
	Be	9	21.7	48.0	**-0.0018**	0.009	480.2	ug/L	20	Standard
	Al	27	13452706.7	0.5	**72.8294**	1.526	2.1	ug/L	1307	Standard
	Sc	45	41709.0	1.4				ug/L	41174	Standard
	Ti	47	2378.5	5.3	**7.0809**	0.376	5.3	ug/L	27	Standard
	V	51	7214.8	5.3	**0.6629**	0.045	6.8	ug/L	1434	Standard
	Cr	52	13978.1	0.6	**0.7263**	0.017	2.4	ug/L	7733	Standard
	Cr	53	7091.7	6.1	**6.4687**	0.376	5.8	ug/L	442	Standard
	Mn	55	62406.3	0.1	**7.9906**	0.075	0.9	ug/L	723	Standard
	Co	59	1446.4	2.2	**0.1559**	0.006	3.6	ug/L	217	Standard
	Ni	60	2083.8	4.2	**0.8328**	0.047	5.6	ug/L	304	Standard
	Cu	65	965.4	1.3	**0.3903**	0.010	2.5	ug/L	181	Standard
	Zn	66	2028.5	1.9	**1.4450**	0.043	3.0	ug/L	215	Standard
>	**Ge**	72	530627.2	0.9				ug/L	520809	Standard
	As	75	140.1	24.4	**0.1567**	0.028	17.9	ug/L	-52	Standard
	Se	82	39.3	18.1	**0.1786**	0.052	29.4	ug/L	17	Standard
	Se-1	77	316.3	5.9	**2.9476**	0.217	7.4	ug/L	56	Standard
>	**Ga**	71	366.7	8.0				mg/L	25	Standard
	Rb	85	8984.3	2.4				ug/L	28	Standard
	Y	89	458813.5	0.8				ug/L	447395	Standard
>	**Rh**	103	51.7	39.1				ug/L	15	Standard
	Mo	98	313.7	15.4	**0.0798**	0.016	20.1	ug/L	113	Standard
	Ag	107	93.7	11.2	**0.0002**	0.001	781.2	ug/L	108	Standard
	Cd	111	28.1	20.3	**0.0099**	0.002	24.9	mg/L	3	Standard
	Cd	114	65.8	57.7	**0.0116**	0.007	57.4	ug/L	20	Standard
>	**In**	115	625934.2	0.5				ug/L	625728	Standard
	Sn	118	1398.4	16.4	**0.1329**	0.035	26.4	ug/L	568	Standard
	Sb	123	422.7	21.1	**0.0480**	0.017	35.9	ug/L	612	Standard
	Ba	135	6793.5	0.6	**3.1038**	0.028	0.9	ug/L	21	Standard
	Ce	140	15908.3	1.9				ug/L	245	Standard
>	**Tb**	159	944178.7	1.1				ug/L	950397	Standard
	Ho	165	355.0	16.2				ug/L	7	Standard
	Tl	203	120.3	15.9	**0.0130**	0.002	16.8	ug/L	15	Standard
	Tl	205	111.7	23.0	**0.0046**	0.003	71.8	ug/L	13	Standard
	Pb	206	1028.4	3.3	**0.1425**	0.006	4.1	ug/L	264	Standard
	Pb	207	909.0	1.6	**0.1352**	0.003	2.4	ug/L	222	Standard
	Pb	208	3805.2	1.1	**0.1376**	0.002	1.8	ug/L	959	Standard
	U	238	790.4	10.0	**0.1003**	0.010	10.2	ug/L	9	Standard
>	**Bi**	209	538993.4	0.2				ug/L	552821	Standard

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Na	23	3.3	86.6	**9.8709**	8.546	86.6	mg/L	2	Standard
Mg	24	22061.0	0.3	**25.3844**	0.436	1.7	mg/L	55	Standard
K	39	113.3	9.2	**0.2976**	0.036	12.0	mg/L	28	Standard
Ca	43	235.0	16.1	**18.6613**	3.690	19.8	mg/L	27	Standard
Fe	54	444.8	12.4	**0.2457**	0.044	17.8	mg/L	147	Standard
Fe	57	475.0	1.1	**0.6368**	0.010	1.6	mg/L	268	Standard
Sc-1	45	41709.0	1.4				mg/L	41174	Standard
Cl	35	94012.8	1.3				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	5417.6	1.0				ug/L	1950	Standard
P	31	27702.0	0.2				ug/L	21156	Standard
S	34	3952.2	4.7				ug/L	3419	Standard
Sr	88	203.3	6.2				ug/L	72	Standard
C	12	180.0	5.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	206.7	46.0				mg/L	17	Standard
Dy	164	524.4	5.0				mg/L	16	Standard
Ho-1	165	355.0	16.2				mg/L	7	Standard
Er	166	326.7	23.8				mg/L	7	Standard
I	127	92501.9	4.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.911	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.885	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.033
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.499
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140004
Sample Date/Time: Friday, July 01, 2016 15:27:09
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81751.7	2.2				ug/L	76456	Standard
	Be	9	135.0	7.4	**0.0930**	0.010	10.5	ug/L	20	Standard
	Al	27	16409591.9	0.7	**89.6714**	2.399	2.7	ug/L	1307	Standard
	Sc	45	43657.8	2.3				ug/L	41174	Standard
	Ti	47	15858.0	1.7	**48.2292**	0.843	1.7	ug/L	27	Standard
	V	51	24903.7	1.5	**2.8088**	0.058	2.1	ug/L	1434	Standard
	Cr	52	24554.9	2.0	**2.0436**	0.044	2.1	ug/L	7733	Standard
	Cr	53	8734.2	4.6	**8.1598**	0.352	4.3	ug/L	442	Standard
	Mn	55	321581.9	1.2	**42.0644**	0.335	0.8	ug/L	723	Standard
	Co	59	9091.1	1.5	**1.1485**	0.011	1.0	ug/L	217	Standard
	Ni	60	4968.8	2.8	**2.2237**	0.057	2.6	ug/L	304	Standard
	Cu	65	4956.5	2.1	**2.3370**	0.063	2.7	ug/L	181	Standard
	Zn	66	24116.8	0.6	**19.3591**	0.218	1.1	ug/L	215	Standard
>	Ge	72	524703.9	0.5				ug/L	520809	Standard
	As	75	614.6	10.2	**0.5395**	0.053	9.9	ug/L	-52	Standard
	Se	82	60.0	7.2	**0.3447**	0.037	10.6	ug/L	17	Standard
	Se-1	77	320.0	6.3	**3.0305**	0.221	7.3	ug/L	56	Standard
>	Ga	71	2358.5	3.8				mg/L	25	Standard
	Rb	85	29106.3	0.5				ug/L	28	Standard
	Y	89	488820.8	1.3				ug/L	447395	Standard
>	Rh	103	41.7	36.7				ug/L	15	Standard
	Mo	98	207.5	20.0	**0.0449**	0.014	31.5	ug/L	113	Standard
	Ag	107	157.7	11.6	**0.0091**	0.002	27.1	ug/L	108	Standard
	Cd	111	394.0	4.6	**0.1692**	0.008	4.7	mg/L	3	Standard
	Cd	114	994.3	3.1	**0.1748**	0.005	2.7	ug/L	20	Standard
>	In	115	624414.0	0.6				ug/L	625728	Standard
	Sn	118	1828.4	12.1	**0.2006**	0.036	17.9	ug/L	568	Standard
	Sb	123	719.7	13.7	**0.1059**	0.020	18.8	ug/L	612	Standard
	Ba	135	28855.8	0.8	**13.2740**	0.137	1.0	ug/L	21	Standard
	Ce	140	181035.3	1.7				ug/L	245	Standard
>	Tb	159	950705.2	0.6				ug/L	950397	Standard
	Ho	165	3198.7	2.4				ug/L	7	Standard
	Tl	203	267.3	11.5	**0.0298**	0.004	11.9	ug/L	15	Standard
	Tl	205	255.0	10.9	**0.0230**	0.004	15.5	ug/L	13	Standard
	Pb	206	5712.7	1.8	**0.9909**	0.019	1.9	ug/L	264	Standard
	Pb	207	4766.7	1.5	**0.9045**	0.014	1.5	ug/L	222	Standard
	Pb	208	20771.3	1.3	**0.9660**	0.013	1.3	ug/L	959	Standard
	U	238	597.3	5.0	**0.0757**	0.004	5.0	ug/L	9	Standard
>	Bi	209	539160.5	0.0				ug/L	552821	Standard

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Na	23	3.3	86.6	**9.3434**	8.093	86.6	mg/L	2	Standard
Mg	24	23045.8	1.2	**25.3403**	0.746	2.9	mg/L	55	Standard
K	39	200.0	16.4	**0.5941**	0.134	22.5	mg/L	28	Standard
Ca	43	263.3	19.5	**20.1662**	4.729	23.5	mg/L	27	Standard
Fe	54	2633.0	5.5	**1.8499**	0.135	7.3	mg/L	147	Standard
Fe	57	1085.0	6.4	**2.3396**	0.175	7.5	mg/L	268	Standard
Sc-1	45	43657.8	2.3				mg/L	41174	Standard
Cl	35	89531.9	3.2				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	8986.0	7.5				ug/L	1950	Standard
P	31	30121.6	2.2				ug/L	21156	Standard
S	34	4117.2	5.6				ug/L	3419	Standard
Sr	88	208.3	27.6				ug/L	72	Standard
C	12	203.3	12.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	336.7	30.9				mg/L	17	Standard
Dy	164	4587.9	2.0				mg/L	16	Standard
Ho-1	165	3198.7	2.4				mg/L	7	Standard
Er	166	3260.4	5.8				mg/L	7	Standard
I	127	86340.3	0.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.927	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.748	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.790
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.529
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140005
Sample Date/Time: Friday, July 01, 2016 15:30:21
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81575.7	1.3				ug/L	76456	Standard
	Be	9	31.7	45.6	**0.0067**	0.012	182.8	ug/L	20	Standard
	Al	27	11361131.6	0.7	**62.2005**	1.160	1.9	ug/L	1307	Standard
	Sc	45	41289.5	1.9				ug/L	41174	Standard
	Ti	47	446.7	4.2	**1.2710**	0.064	5.1	ug/L	27	Standard
	V	51	6339.2	1.7	**0.5637**	0.005	0.9	ug/L	1434	Standard
	Cr	52	14053.8	0.9	**0.7478**	0.031	4.1	ug/L	7733	Standard
	Cr	53	3397.0	0.8	**2.9061**	0.060	2.1	ug/L	442	Standard
	Mn	55	91180.2	0.3	**11.8062**	0.126	1.1	ug/L	723	Standard
	Co	59	1636.1	3.3	**0.1817**	0.006	3.3	ug/L	217	Standard
	Ni	60	2420.2	3.0	**0.9998**	0.030	3.0	ug/L	304	Standard
	Cu	65	1115.7	0.8	**0.4664**	0.010	2.1	ug/L	181	Standard
	Zn	66	4102.9	4.8	**3.1313**	0.189	6.0	ug/L	215	Standard
>	**Ge**	72	526864.0	1.0				ug/L	520809	Standard
	As	75	209.1	23.9	**0.2126**	0.040	18.9	ug/L	-52	Standard
	Se	82	44.2	19.7	**0.2192**	0.067	30.8	ug/L	17	Standard
	Se-1	77	143.0	9.9	**0.9701**	0.178	18.4	ug/L	56	Standard
>	**Ga**	71	123.3	14.2				mg/L	25	Standard
	Rb	85	2268.5	7.3				ug/L	28	Standard
	Y	89	460843.6	0.6				ug/L	447395	Standard
>	**Rh**	103	38.3	7.5				ug/L	15	Standard
	Mo	98	138.6	17.2	**0.0223**	0.008	37.4	ug/L	113	Standard
	Ag	107	89.7	12.2	**-0.0003**	0.002	618.7	ug/L	108	Standard
	Cd	111	119.1	4.0	**0.0498**	0.002	3.9	mg/L	3	Standard
	Cd	114	332.6	23.3	**0.0590**	0.014	24.0	ug/L	20	Standard
>	**In**	115	620430.9	1.0				ug/L	625728	Standard
	Sn	118	1270.1	10.3	**0.1149**	0.022	19.3	ug/L	568	Standard
	Sb	123	506.5	10.9	**0.0652**	0.012	17.9	ug/L	612	Standard
	Ba	135	12723.7	1.4	**5.8806**	0.073	1.2	ug/L	21	Standard
	Ce	140	16098.5	0.3				ug/L	245	Standard
>	**Tb**	159	949690.5	1.0				ug/L	950397	Standard
	Ho	165	733.4	8.1				ug/L	7	Standard
	Tl	203	89.0	5.8	**0.0094**	0.001	6.1	ug/L	15	Standard
	Tl	205	71.7	4.0	**-0.0005**	0.000	65.6	ug/L	13	Standard
	Pb	206	791.4	4.4	**0.0994**	0.006	5.9	ug/L	264	Standard
	Pb	207	690.7	3.6	**0.0915**	0.005	5.0	ug/L	222	Standard
	Pb	208	2860.4	1.4	**0.0912**	0.002	1.7	ug/L	959	Standard
	U	238	438.0	6.5	**0.0554**	0.003	6.2	ug/L	9	Standard
>	**Bi**	209	539820.6	0.5				ug/L	552821	Standard

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Na	23	3.3	173.2	**9.8050**	16.974	173.1	mg/L	2	Standard
Mg	24	7792.0	1.0	**9.0186**	0.177	2.0	mg/L	55	Standard
K	39	263.3	14.7	**0.8766**	0.155	17.6	mg/L	28	Standard
Ca	43	330.0	19.8	**27.4186**	5.627	20.5	mg/L	27	Standard
Fe	54	735.5	15.2	**0.4767**	0.090	18.9	mg/L	147	Standard
Fe	57	581.7	10.7	**0.9796**	0.205	21.0	mg/L	268	Standard
> **Sc-1**	45	41289.5	1.9				mg/L	41174	Standard
Cl	35	92233.2	0.5				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	7218.4	8.8				ug/L	1950	Standard
P	31	25119.1	2.5				ug/L	21156	Standard
S	34	4015.5	4.2				ug/L	3419	Standard
Sr	88	198.3	12.9				ug/L	72	Standard
C	12	296.7	7.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	153.3	29.4				mg/L	17	Standard
Dy	164	946.6	5.7				mg/L	16	Standard
Ho-1	165	733.4	8.1				mg/L	7	Standard
Er	166	766.7	15.2				mg/L	7	Standard
I	127	70972.5	1.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.697	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.163	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.153
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.648
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606140009
Sample Date/Time: Friday, July 01, 2016 15:33:32
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81176.9	1.8				ug/L	76456	Standard
	Be	9	121.7	33.5	**0.0827**	0.035	42.4	ug/L	20	Standard
	Al	27	9588194.5	0.1	**52.7539**	0.999	1.9	ug/L	1307	Standard
	Sc	45	43500.7	0.9				ug/L	41174	Standard
	Ti	47	16231.4	1.0	**49.4700**	1.142	2.3	ug/L	27	Standard
	V	51	27177.8	1.2	**3.0895**	0.018	0.6	ug/L	1434	Standard
	Cr	52	30590.2	0.3	**2.7921**	0.043	1.5	ug/L	7733	Standard
	Cr	53	15214.3	3.9	**14.5584**	0.723	5.0	ug/L	442	Standard
	Mn	55	419736.2	0.6	**55.0489**	1.027	1.9	ug/L	723	Standard
	Co	59	9146.8	1.6	**1.1580**	0.019	1.6	ug/L	217	Standard
	Ni	60	5875.8	2.7	**2.6630**	0.065	2.4	ug/L	304	Standard
	Cu	65	6513.4	1.0	**3.1007**	0.066	2.1	ug/L	181	Standard
	Zn	66	26692.5	0.5	**21.4893**	0.375	1.7	ug/L	215	Standard
>	**Ge**	72	523713.8	1.4				ug/L	520809	Standard
	As	75	573.5	19.4	**0.5079**	0.095	18.7	ug/L	-52	Standard
	Se	82	88.9	5.9	**0.5739**	0.045	7.8	ug/L	17	Standard
	Se-1	77	673.7	3.9	**7.1522**	0.285	4.0	ug/L	56	Standard
>	**Ga**	71	2611.9	4.8				mg/L	25	Standard
	Rb	85	28024.2	1.3				ug/L	28	Standard
	Y	89	508019.1	1.4				ug/L	447395	Standard
>	**Rh**	103	75.0	11.5				ug/L	15	Standard
	Mo	98	440.1	11.3	**0.1259**	0.017	13.3	ug/L	113	Standard
	Ag	107	293.3	3.4	**0.0292**	0.001	4.2	ug/L	108	Standard
	Cd	111	123.6	12.9	**0.0529**	0.007	13.0	mg/L	3	Standard
	Cd	114	259.6	1.9	**0.0469**	0.001	2.3	ug/L	20	Standard
>	**In**	115	607695.5	0.5				ug/L	625728	Standard
	Sn	118	1815.1	15.8	**0.2060**	0.044	21.6	ug/L	568	Standard
	Sb	123	1181.5	5.3	**0.2017**	0.012	6.1	ug/L	612	Standard
	Ba	135	44851.3	1.2	**21.2102**	0.264	1.2	ug/L	21	Standard
	Ce	140	233746.2	1.6				ug/L	245	Standard
>	**Tb**	159	940005.0	0.9				ug/L	950397	Standard
	Ho	165	4862.4	3.3				ug/L	7	Standard
	Tl	203	294.3	3.6	**0.0336**	0.001	3.3	ug/L	15	Standard
	Tl	205	293.3	8.4	**0.0288**	0.003	10.7	ug/L	13	Standard
	Pb	206	14978.4	0.2	**2.7295**	0.019	0.7	ug/L	264	Standard
	Pb	207	12667.6	1.3	**2.5366**	0.044	1.7	ug/L	222	Standard
	Pb	208	54283.9	0.6	**2.6615**	0.029	1.1	ug/L	959	Standard
	U	238	853.7	3.9	**0.1108**	0.005	4.3	ug/L	9	Standard
>	**Bi**	209	527415.0	0.5				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	58944.5	2.4	**65.1233**	1.989	3.1	mg/L	55	Standard
K	39	308.3	15.9	**0.9880**	0.180	18.2	mg/L	28	Standard
Ca	43	298.3	31.7	**23.1691**	7.979	34.4	mg/L	27	Standard
Fe	54	3472.7	3.0	**2.4787**	0.071	2.9	mg/L	147	Standard
Fe	57	1280.1	3.7	**2.9195**	0.164	5.6	mg/L	268	Standard
> **Sc-1**	45	43500.7	0.9				mg/L	41174	Standard
Cl	35	88358.4	3.5				ug/L	69550	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	13829.7	7.0				ug/L	1950	Standard
P	31	28925.9	0.9				ug/L	21156	Standard
S	34	3962.2	5.0				ug/L	3419	Standard
Sr	88	261.7	17.1				ug/L	72	Standard
C	12	160.0	39.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	233.3	49.3				mg/L	17	Standard
Dy	164	7255.6	1.4				mg/L	16	Standard
Ho-1	165	4862.4	3.3				mg/L	7	Standard
Er	166	4654.0	5.4				mg/L	7	Standard
I	127	97026.7	3.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.175	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.558	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.118
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.404
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606140010
Sample Date/Time: Friday, July 01, 2016 15:36:43
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81063.0	2.2				ug/L	76456	Standard
	Be	9	45.0	40.1	**0.0179**	0.015	82.9	ug/L	20	Standard
	Al	27	11177331.1	2.6	**61.5680**	0.262	0.4	ug/L	1307	Standard
	Sc	45	42046.6	2.8				ug/L	41174	Standard
	Ti	47	3513.4	4.8	**10.6195**	0.508	4.8	ug/L	27	Standard
	V	51	6549.3	3.1	**0.5923**	0.026	4.4	ug/L	1434	Standard
	Cr	52	28159.1	0.6	**2.4863**	0.028	1.1	ug/L	7733	Standard
	Cr	53	13474.3	4.4	**12.8172**	0.601	4.7	ug/L	442	Standard
	Mn	55	64803.6	1.2	**8.3962**	0.117	1.4	ug/L	723	Standard
	Co	59	2906.3	2.0	**0.3471**	0.007	2.1	ug/L	217	Standard
	Ni	60	4725.7	1.8	**2.1076**	0.036	1.7	ug/L	304	Standard
	Cu	65	5144.9	0.4	**2.4285**	0.010	0.4	ug/L	181	Standard
	Zn	66	4108.2	1.9	**3.1482**	0.066	2.1	ug/L	215	Standard
>	Ge	72	524692.7	0.2				ug/L	520809	Standard
	As	75	145.9	6.5	**0.1625**	0.008	4.8	ug/L	-52	Standard
	Se	82	112.8	12.6	**0.7595**	0.112	14.8	ug/L	17	Standard
	Se-1	77	626.7	4.9	**6.5924**	0.373	5.7	ug/L	56	Standard
>	Ga	71	708.3	9.6				mg/L	25	Standard
	Rb	85	114385.2	1.8				ug/L	28	Standard
	Y	89	451161.9	0.3				ug/L	447395	Standard
>	Rh	103	126.7	19.5				ug/L	15	Standard
	Mo	98	337.8	3.9	**0.0889**	0.005	5.8	ug/L	113	Standard
	Ag	107	99.0	14.6	**0.0011**	0.002	190.6	ug/L	108	Standard
	Cd	111	210.4	3.4	**0.0899**	0.004	4.2	mg/L	3	Standard
	Cd	114	526.0	13.1	**0.0932**	0.013	13.7	ug/L	20	Standard
>	In	115	619724.1	0.7				ug/L	625728	Standard
	Sn	118	3008.6	5.9	**0.3878**	0.029	7.5	ug/L	568	Standard
	Sb	123	32833.7	1.0	**6.3811**	0.045	0.7	ug/L	612	Standard
	Ba	135	22694.3	1.2	**10.5145**	0.070	0.7	ug/L	21	Standard
	Ce	140	24100.8	3.3				ug/L	245	Standard
>	Tb	159	942819.0	1.4				ug/L	950397	Standard
	Ho	165	435.0	17.4				ug/L	7	Standard
	Tl	203	173.7	3.3	**0.0194**	0.001	3.9	ug/L	15	Standard
	Tl	205	150.0	13.3	**0.0098**	0.003	26.2	ug/L	13	Standard
	Pb	206	11753.6	0.5	**2.1162**	0.005	0.2	ug/L	264	Standard
	Pb	207	9878.9	1.2	**1.9529**	0.015	0.8	ug/L	222	Standard
	Pb	208	42950.0	0.3	**2.0797**	0.006	0.3	ug/L	959	Standard
	U	238	632.3	2.5	**0.0814**	0.002	2.7	ug/L	9	Standard
>	Bi	209	531366.5	0.5				ug/L	552821	Standard

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Na	23	3.3	173.2	**10.0447**	17.389	173.1	mg/L	2	Standard
Mg	24	54402.5	1.7	**62.2231**	2.757	4.4	mg/L	55	Standard
K	39	598.3	6.5	**2.1139**	0.085	4.0	mg/L	28	Standard
Ca	43	330.0	10.9	**26.8723**	2.438	9.1	mg/L	27	Standard
Fe	54	560.8	9.0	**0.3316**	0.032	9.6	mg/L	147	Standard
Fe	57	588.3	6.5	**0.9662**	0.103	10.6	mg/L	268	Standard
> **Sc-1**	45	42046.6	2.8				mg/L	41174	Standard
Cl	35	90806.6	0.2				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	18608.1	1.3				ug/L	1950	Standard
P	31	26292.8	1.7				ug/L	21156	Standard
S	34	4085.6	2.8				ug/L	3419	Standard
Sr	88	385.0	14.8				ug/L	72	Standard
C	12	186.7	30.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	136.7	27.7				mg/L	17	Standard
Dy	164	734.0	6.8				mg/L	16	Standard
Ho-1	165	435.0	17.4				mg/L	7	Standard
Er	166	403.3	10.0				mg/L	7	Standard
I	127	125158.4	2.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.026	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.746	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.041
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.119
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144411
Sample Date/Time: Friday, July 01, 2016 15:39:55
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81448.4	1.6				ug/L	76456	Standard
	Be	9	11.7	65.5	**-0.0101**	0.006	63.9	ug/L	20	Standard
	Al	27	21525.3	7.9	**0.1077**	0.007	6.9	ug/L	1307	Standard
	Sc	45	43096.2	1.6				ug/L	41174	Standard
	Ti	47	91.7	3.5	**0.1831**	0.008	4.3	ug/L	27	Standard
	V	51	5715.4	7.0	**0.4625**	0.039	8.5	ug/L	1434	Standard
	Cr	52	72666.9	1.2	**7.5774**	0.036	0.5	ug/L	7733	Standard
	Cr	53	9179.5	6.4	**8.2203**	0.500	6.1	ug/L	442	Standard
	Mn	55	17987.3	2.4	**2.1587**	0.042	2.0	ug/L	723	Standard
	Co	59	1272.7	1.0	**0.1286**	0.001	0.4	ug/L	217	Standard
	Ni	60	1771.4	2.8	**0.6589**	0.022	3.3	ug/L	304	Standard
	Cu	65	890.7	4.0	**0.3410**	0.015	4.4	ug/L	181	Standard
	Zn	66	2169.2	1.7	**1.5037**	0.020	1.3	ug/L	215	Standard
>	**Ge**	72	547560.2	1.1				ug/L	520809	Standard
	As	75	-25.7	84.9	**0.0255**	0.017	64.8	ug/L	-52	Standard
	Se	82	30.2	19.3	**0.1012**	0.046	45.5	ug/L	17	Standard
	Se-1	77	82.7	3.0	**0.2352**	0.029	12.5	ug/L	56	Standard
>	**Ga**	71	61.7	16.9				mg/L	25	Standard
	Rb	85	225.0	18.2				ug/L	28	Standard
	Y	89	463078.5	0.6				ug/L	447395	Standard
>	**Rh**	103	16.7	34.6				ug/L	15	Standard
	Mo	98	9345.0	1.0	**2.9323**	0.025	0.9	ug/L	113	Standard
	Ag	107	88.3	4.7	**-0.0011**	0.001	50.3	ug/L	108	Standard
	Cd	111	4.7	106.3	**-0.0004**	0.002	489.8	mg/L	3	Standard
	Cd	114	53.3	48.8	**0.0090**	0.004	49.5	ug/L	20	Standard
>	**In**	115	654026.5	1.0				ug/L	625728	Standard
	Sn	118	6959.9	4.7	**0.9503**	0.045	4.8	ug/L	568	Standard
	Sb	123	309.2	21.8	**0.0236**	0.013	55.3	ug/L	612	Standard
	Ba	135	560.7	1.9	**0.2287**	0.006	2.5	ug/L	21	Standard
	Ce	140	275.0	28.4				ug/L	245	Standard
>	**Tb**	159	972057.0	0.8				ug/L	950397	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	71.3	7.7	**0.0070**	0.001	9.6	ug/L	15	Standard
	Tl	205	56.7	27.0	**-0.0028**	0.002	64.9	ug/L	13	Standard
	Pb	206	408.7	2.4	**0.0268**	0.002	8.8	ug/L	264	Standard
	Pb	207	323.7	7.4	**0.0155**	0.005	32.9	ug/L	222	Standard
	Pb	208	1481.0	2.8	**0.0207**	0.002	11.3	ug/L	959	Standard
	U	238	26.3	21.6	**0.0029**	0.001	22.8	ug/L	9	Standard
>	**Bi**	209	565291.9	1.0				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	118.3	31.7	**0.0714**	0.040	55.7	mg/L	55	Standard
K	39	33.3	8.7	**-0.0090**	0.012	135.9	mg/L	28	Standard
Ca	43	25.0	20.0	**-0.2843**	0.417	146.5	mg/L	27	Standard
Fe	54	653.3	3.0	**0.3905**	0.007	1.8	mg/L	147	Standard
Fe	57	318.3	7.9	**0.1302**	0.066	51.0	mg/L	268	Standard
> **Sc-1**	45	43096.2	1.6				mg/L	41174	Standard
Cl	35	93637.8	1.2				ug/L	69550	Standard
Kr	83	2.7	57.3				ug/L	1	Standard
Br	81	4000.5	7.9				ug/L	1950	Standard
P	31	25331.2	1.4				ug/L	21156	Standard
S	34	4190.6	5.7				ug/L	3419	Standard
Sr	88	63.3	25.4				ug/L	72	Standard
C	12	126.7	19.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	170.0	56.1				mg/L	17	Standard
Dy	164	16.0	67.7				mg/L	16	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	7	Standard
I	127	17883.9	8.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.530	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.136	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.523
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.256
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 15:43:08
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79848.2	1.4				ug/L	76456	Standard
	Be	9	61340.6	1.3	**52.4607**	1.344	2.6	ug/L	20	Standard
	Al	27	8840196.9	1.7	**49.4449**	1.243	2.5	ug/L	1307	Standard
	Sc	45	42292.3	2.5				ug/L	41174	Standard
	Ti	47	33237.8	0.4	**98.6642**	0.509	0.5	ug/L	27	Standard
	V	51	434298.1	1.3	**50.9427**	0.727	1.4	ug/L	1434	Standard
	Cr	52	424946.0	0.9	**49.8972**	0.200	0.4	ug/L	7733	Standard
	Cr	53	51918.8	0.3	**49.3069**	0.192	0.4	ug/L	442	Standard
	Mn	55	396032.4	2.3	**50.5349**	0.943	1.9	ug/L	723	Standard
	Co	59	408091.6	1.9	**51.5332**	0.754	1.5	ug/L	217	Standard
	Ni	60	107986.8	0.7	**50.2226**	0.157	0.3	ug/L	304	Standard
	Cu	65	107294.9	0.3	**50.8210**	0.440	0.9	ug/L	181	Standard
	Zn	66	64441.1	1.0	**50.7299**	0.295	0.6	ug/L	215	Standard
>	Ge	72	538072.4	0.6				ug/L	520809	Standard
	As	75	64224.3	0.8	**50.3990**	0.228	0.5	ug/L	-52	Standard
	Se	82	6653.0	0.9	**50.8468**	0.498	1.0	ug/L	17	Standard
	Se-1	77	4539.7	1.5	**50.7170**	0.744	1.5	ug/L	56	Standard
>	Ga	71	38.3	19.9				mg/L	25	Standard
	Rb	85	878.4	4.8				ug/L	28	Standard
	Y	89	464875.9	0.9				ug/L	447395	Standard
>	Rh	103	28.3	56.7				ug/L	15	Standard
	Mo	98	306641.4	1.5	**98.6937**	1.489	1.5	ug/L	113	Standard
	Ag	107	367901.9	1.4	**49.8620**	0.492	1.0	ug/L	108	Standard
	Cd	111	117489.0	1.1	**49.6867**	0.641	1.3	mg/L	3	Standard
	Cd	114	291631.0	1.7	**49.8103**	0.297	0.6	ug/L	20	Standard
>	In	115	642695.4	1.1				ug/L	625728	Standard
	Sn	118	325840.7	2.1	**49.2102**	1.100	2.2	ug/L	568	Standard
	Sb	123	265299.9	1.4	**49.9473**	0.644	1.3	ug/L	612	Standard
	Ba	135	109451.6	0.3	**48.9670**	0.439	0.9	ug/L	21	Standard
	Ce	140	91.7	17.5				ug/L	245	Standard
>	Tb	159	960139.4	0.5				ug/L	950397	Standard
	Ho	165	13.3	43.3				ug/L	7	Standard
	Tl	203	455308.6	0.4	**50.2176**	0.333	0.7	ug/L	15	Standard
	Tl	205	418174.0	0.6	**51.9308**	0.055	0.1	ug/L	13	Standard
	Pb	206	287949.4	0.0	**50.3217**	0.263	0.5	ug/L	264	Standard
	Pb	207	261570.9	0.7	**50.3350**	0.638	1.3	ug/L	222	Standard
	Pb	208	1088813.8	0.8	**51.2998**	0.701	1.4	ug/L	959	Standard
	U	238	413789.6	1.0	**50.8288**	0.805	1.6	ug/L	9	Standard
>	Bi	209	558286.7	0.5				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4697.4	5.9	**5.2790**	0.180	3.4	mg/L	55	Standard
K	39	1176.7	4.0	**4.2662**	0.289	6.8	mg/L	28	Standard
Ca	43	75.0	40.6	**4.2243**	2.811	66.5	mg/L	27	Standard
Fe	54	6836.4	1.2	**5.1227**	0.153	3.0	mg/L	147	Standard
Fe	57	1986.8	1.5	**5.1413**	0.153	3.0	mg/L	268	Standard
Sc-1	45	42292.3	2.5				mg/L	41174	Standard
Cl	35	87844.6	1.1				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	2156.8	5.6				ug/L	1950	Standard
P	31	26853.8	2.9				ug/L	21156	Standard
S	34	4549.0	3.6				ug/L	3419	Standard
Sr	88	63.3	24.1				ug/L	72	Standard
C	12	106.7	10.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	173.3	43.3				mg/L	17	Standard
Dy	164	9.0	191.8				mg/L	16	Standard
Ho-1	165	13.3	43.3				mg/L	7	Standard
Er	166	20.0	100.0				mg/L	7	Standard
I	127	21254.9	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	104.921		
Al	27	98.890		
Sc	45			
Ti	47	98.664		
V	51	101.885		
Cr	52	99.794		
Cr	53			
Mn	55	101.070		
Co	59	103.066		
Ni	60	100.445		
Cu	65	101.642		
Zn	66	101.460		
Ge	72		103.315	
As	75	100.798		
Se	82	101.694		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.694		
Ag	107	99.724		
Cd	111	99.373		
Cd	114			
> In	115			102.712
Sn	118	98.420		
Sb	123	99.895		
Ba	135	97.934		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.435		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.600		
U	238	101.658		
> Bi	209			100.989
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 15:46:19
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79389.1	1.5				ug/L	76456	Standard
	Be	9	21.7	58.1	**-0.0012**	0.011	924.7	ug/L	20	Standard
	Al	27	2653.6	26.5	**0.0047**	0.004	80.6	ug/L	1307	Standard
	Sc	45	42380.9	4.0				ug/L	41174	Standard
	Ti	47	29.7	33.8	**0.0025**	0.028	1148.4	ug/L	27	Standard
	V	51	1542.6	6.8	**-0.0189**	0.014	72.9	ug/L	1434	Standard
	Cr	52	7249.7	1.4	**-0.1121**	0.006	5.1	ug/L	7733	Standard
	Cr	53	556.7	17.0	**0.1098**	0.084	76.1	ug/L	442	Standard
	Mn	55	781.0	5.8	**-0.0026**	0.005	178.6	ug/L	723	Standard
	Co	59	230.7	5.2	**-0.0006**	0.001	192.9	ug/L	217	Standard
	Ni	60	287.0	3.3	**-0.0207**	0.003	16.9	ug/L	304	Standard
	Cu	65	178.0	9.4	**0.0094**	0.008	88.1	ug/L	181	Standard
	Zn	66	241.3	7.8	**0.0083**	0.014	168.4	ug/L	215	Standard
>	**Ge**	72	544000.0	1.1				ug/L	520809	Standard
	As	75	-38.4	128.5	**0.0152**	0.039	254.8	ug/L	-52	Standard
	Se	82	20.0	53.3	**0.0245**	0.079	323.1	ug/L	17	Standard
	Se-1	77	71.7	19.7	**0.1170**	0.150	127.9	ug/L	56	Standard
>	**Ga**	71	30.0	16.7				mg/L	25	Standard
	Rb	85	31.7	9.1				ug/L	28	Standard
	Y	89	461634.5	1.4				ug/L	447395	Standard
>	**Rh**	103	13.3	21.7				ug/L	15	Standard
	Mo	98	249.2	9.7	**0.0550**	0.007	12.4	ug/L	113	Standard
	Ag	107	132.3	12.7	**0.0048**	0.002	45.5	ug/L	108	Standard
	Cd	111	16.9	42.6	**0.0047**	0.003	63.4	mg/L	3	Standard
	Cd	114	56.7	84.7	**0.0095**	0.008	83.3	ug/L	20	Standard
>	**In**	115	653131.6	1.3				ug/L	625728	Standard
	Sn	118	1488.4	26.0	**0.1378**	0.060	43.6	ug/L	568	Standard
	Sb	123	795.3	31.1	**0.1141**	0.047	41.5	ug/L	612	Standard
	Ba	135	49.7	33.1	**0.0039**	0.007	180.6	ug/L	21	Standard
	Ce	140	41.7	13.9				ug/L	245	Standard
>	**Tb**	159	951623.8	1.5				ug/L	950397	Standard
	Ho	165	3.3	173.2				ug/L	7	Standard
	Tl	203	77.3	16.4	**0.0077**	0.001	17.6	ug/L	15	Standard
	Tl	205	83.3	27.7	**0.0005**	0.003	538.8	ug/L	13	Standard
	Pb	206	329.3	15.7	**0.0134**	0.008	63.3	ug/L	264	Standard
	Pb	207	295.3	8.1	**0.0104**	0.004	40.0	ug/L	222	Standard
	Pb	208	1227.0	6.3	**0.0091**	0.003	35.4	ug/L	959	Standard
	U	238	66.0	40.1	**0.0078**	0.003	40.9	ug/L	9	Standard
>	**Bi**	209	562277.6	0.8				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	61.7	16.9	**0.0099**	0.013	128.3	mg/L	55	Standard
K	39	20.0	25.0	**-0.0563**	0.020	35.8	mg/L	28	Standard
Ca	43	20.0	25.0	**-0.6925**	0.397	57.4	mg/L	27	Standard
Fe	54	164.3	3.0	**0.0265**	0.005	17.4	mg/L	147	Standard
Fe	57	226.7	11.3	**-0.1282**	0.057	44.8	mg/L	268	Standard
> **Sc-1**	45	42380.9	4.0				mg/L	41174	Standard
Cl	35	88109.5	1.2				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	2156.8	5.0				ug/L	1950	Standard
P	31	25852.0	1.3				ug/L	21156	Standard
S	34	4487.3	2.3				ug/L	3419	Standard
Sr	88	56.7	5.1				ug/L	72	Standard
C	12	96.7	39.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	113.3	10.2				mg/L	17	Standard
Dy	164	6.2	100.1				mg/L	16	Standard
Ho-1	165	3.3	173.2				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	15996.8	2.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.453	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.379
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.711
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606145201
Sample Date/Time: Friday, July 01, 2016 15:49:32
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	94816.0	3.6				ug/L	76456	Standard
	Be	9	25.0	40.0	**-0.0020**	0.007	332.6	ug/L	20	Standard
	Al	27	21072085.0	1.8	**99.2963**	2.302	2.3	ug/L	1307	Standard
	Sc	45	43716.3	1.4				ug/L	41174	Standard
	Ti	47	397.0	3.2	**1.1396**	0.053	4.7	ug/L	27	Standard
	V	51	4169.6	18.7	**0.3116**	0.101	32.4	ug/L	1434	Standard
	Cr	52	31233.8	0.8	**2.9091**	0.081	2.8	ug/L	7733	Standard
	Cr	53	20687.6	10.5	**20.1582**	2.403	11.9	ug/L	442	Standard
	Mn	55	2658788.2	0.4	**352.6307**	4.074	1.2	ug/L	723	Standard
	Co	59	29637.6	0.8	**3.8558**	0.023	0.6	ug/L	217	Standard
	Ni	60	6462.7	2.0	**2.9745**	0.037	1.3	ug/L	304	Standard
	Cu	65	861.0	3.9	**0.3497**	0.019	5.5	ug/L	181	Standard
	Zn	66	6645.5	1.6	**5.2668**	0.080	1.5	ug/L	215	Standard
>	Ge	72	518645.6	1.3				ug/L	520809	Standard
	As	75	3126.8	4.4	**2.5897**	0.143	5.5	ug/L	-52	Standard
	Se	82	664.6	4.5	**5.1588**	0.301	5.8	ug/L	17	Standard
	Se-1	77	930.7	11.1	**10.2587**	1.337	13.0	ug/L	56	Standard
>	Ga	71	203.3	20.9				mg/L	25	Standard
	Rb	85	1041748.9	1.1				ug/L	28	Standard
	Y	89	448254.4	0.8				ug/L	447395	Standard
>	Rh	103	201.7	17.6				ug/L	15	Standard
	Mo	98	637.0	2.3	**0.1927**	0.005	2.4	ug/L	113	Standard
	Ag	107	163.3	33.8	**0.0105**	0.008	72.2	ug/L	108	Standard
	Cd	111	106.6	9.0	**0.0453**	0.005	10.1	mg/L	3	Standard
	Cd	114	259.2	18.0	**0.0469**	0.009	19.3	ug/L	20	Standard
>	In	115	608292.3	1.4				ug/L	625728	Standard
	Sn	118	1770.1	23.1	**0.1984**	0.063	31.6	ug/L	568	Standard
	Sb	123	609.0	15.5	**0.0875**	0.018	20.6	ug/L	612	Standard
	Ba	135	570406.1	1.3	**269.6937**	1.874	0.7	ug/L	21	Standard
	Ce	140	4143.9	0.7				ug/L	245	Standard
>	Tb	159	943834.4	0.3				ug/L	950397	Standard
	Ho	165	73.3	37.6				ug/L	7	Standard
	Tl	203	318.3	4.1	**0.0368**	0.002	4.3	ug/L	15	Standard
	Tl	205	295.0	13.5	**0.0294**	0.005	17.1	ug/L	13	Standard
	Pb	206	463.0	0.4	**0.0429**	0.001	1.6	ug/L	264	Standard
	Pb	207	397.7	5.2	**0.0359**	0.005	12.9	ug/L	222	Standard
	Pb	208	1684.0	4.4	**0.0367**	0.004	11.5	ug/L	959	Standard
	U	238	1098.4	2.7	**0.1441**	0.005	3.4	ug/L	9	Standard
>	Bi	209	521779.5	0.6				ug/L	552821	Standard

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Na	23	1.7	173.2	**4.7590**	8.234	173.0	mg/L	2	Standard
Mg	24	80860.2	1.3	**88.9060**	0.128	0.1	mg/L	55	Standard
K	39	8253.9	2.9	**29.6886**	1.293	4.4	mg/L	28	Standard
Ca	43	198.3	3.9	**14.5226**	0.636	4.4	mg/L	27	Standard
Fe	54	1838.9	5.0	**1.2589**	0.053	4.2	mg/L	147	Standard
Fe	57	841.7	4.0	**1.6326**	0.120	7.3	mg/L	268	Standard
> **Sc-1**	45	43716.3	1.4				mg/L	41174	Standard
Cl	35	88622.4	0.4				ug/L	69550	Standard
Kr	83	1.0	0.0				ug/L	1	Standard
Br	81	138083.1	1.2				ug/L	1950	Standard
P	31	31377.5	0.7				ug/L	21156	Standard
S	34	4085.6	4.2				ug/L	3419	Standard
Sr	88	866.7	4.6				ug/L	72	Standard
C	12	386.7	12.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	150.0	63.6				mg/L	17	Standard
Dy	164	120.3	12.9				mg/L	16	Standard
Ho-1	165	73.3	37.6				mg/L	7	Standard
Er	166	63.3	9.1				mg/L	7	Standard
I	127	189740.0	7.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.014	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.585	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.214
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.385
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606145301
Sample Date/Time: Friday, July 01, 2016 15:52:44
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	89907.9	3.9				ug/L	76456	Standard
	Be	9	211.7	15.2	**0.1412**	0.026	18.7	ug/L	20	Standard
	Al	27	42254036.6	2.1	**209.9919**	4.107	2.0	ug/L	1307	Standard
	Sc	45	48114.6	1.7				ug/L	41174	Standard
	Ti	47	742.0	6.1	**2.0824**	0.104	5.0	ug/L	27	Standard
	V	51	8101.4	4.4	**0.7396**	0.044	5.9	ug/L	1434	Standard
	Cr	52	57499.6	0.2	**5.7989**	0.111	1.9	ug/L	7733	Standard
	Cr	53	37860.6	3.1	**35.2327**	0.609	1.7	ug/L	442	Standard
	Mn	55	6394718.4	1.0	**803.9667**	4.505	0.6	ug/L	723	Standard
	Co	59	184000.3	2.5	**22.8310**	0.339	1.5	ug/L	217	Standard
	Ni	60	37990.6	1.7	**17.2738**	0.133	0.8	ug/L	304	Standard
	Cu	65	1519.1	2.8	**0.6345**	0.018	2.9	ug/L	181	Standard
	Zn	66	65750.7	0.3	**50.9054**	0.635	1.2	ug/L	215	Standard
>	Ge	72	547197.2	1.5				ug/L	520809	Standard
	As	75	6205.1	1.8	**4.8294**	0.085	1.7	ug/L	-52	Standard
	Se	82	411.3	4.6	**2.9717**	0.112	3.8	ug/L	17	Standard
	Se-1	77	1750.8	0.4	**18.8117**	0.357	1.9	ug/L	56	Standard
>	Ga	71	151.7	19.9				mg/L	25	Standard
	Rb	85	17248.1	1.6				ug/L	28	Standard
	Y	89	479799.4	2.3				ug/L	447395	Standard
>	Rh	103	326.7	3.2				ug/L	15	Standard
	Mo	98	555.5	3.1	**0.1551**	0.002	1.1	ug/L	113	Standard
	Ag	107	126.3	11.0	**0.0043**	0.002	53.3	ug/L	108	Standard
	Cd	111	138.7	16.3	**0.0566**	0.011	19.3	mg/L	3	Standard
	Cd	114	356.3	13.9	**0.0611**	0.010	15.7	ug/L	20	Standard
>	In	115	641727.3	2.7				ug/L	625728	Standard
	Sn	118	1815.1	14.3	**0.1914**	0.045	23.5	ug/L	568	Standard
	Sb	123	789.7	10.3	**0.1155**	0.018	15.5	ug/L	612	Standard
	Ba	135	2472744.3	1.1	**1108.6111**	20.421	1.8	ug/L	21	Standard
	Ce	140	34706.4	3.0				ug/L	245	Standard
>	Tb	159	985263.1	3.4				ug/L	950397	Standard
	Ho	165	401.7	6.3				ug/L	7	Standard
	Tl	203	117.7	8.7	**0.0126**	0.001	10.2	ug/L	15	Standard
	Tl	205	90.0	11.1	**0.0018**	0.001	56.0	ug/L	13	Standard
	Pb	206	577.0	6.7	**0.0602**	0.005	9.1	ug/L	264	Standard
	Pb	207	486.3	6.2	**0.0505**	0.006	11.6	ug/L	222	Standard
	Pb	208	2130.1	2.6	**0.0553**	0.003	5.9	ug/L	959	Standard
	U	238	158.7	10.2	**0.0198**	0.002	9.7	ug/L	9	Standard
>	Bi	209	541702.7	2.6				ug/L	552821	Standard

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Na	23	6.7	114.6	**17.2516**	19.854	115.1	mg/L	2	Standard
Mg	24	87429.9	0.9	**87.3596**	1.878	2.1	mg/L	55	Standard
K	39	405.0	18.3	**1.2003**	0.260	21.7	mg/L	28	Standard
Ca	43	375.0	6.7	**26.7244**	2.231	8.3	mg/L	27	Standard
Fe	54	4204.7	3.3	**2.7242**	0.135	5.0	mg/L	147	Standard
Fe	57	1598.4	2.6	**3.4000**	0.148	4.3	mg/L	268	Standard
> **Sc-1**	45	48114.6	1.7				mg/L	41174	Standard
Cl	35	91040.7	1.1				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	68651.9	2.9				ug/L	1950	Standard
P	31	44045.6	3.3				ug/L	21156	Standard
S	34	4263.9	3.9				ug/L	3419	Standard
Sr	88	1216.7	5.1				ug/L	72	Standard
C	12	740.0	12.4				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	150.0	40.6				mg/L	17	Standard
Dy	164	420.2	5.3				mg/L	16	Standard
Ho-1	165	401.7	6.3				mg/L	7	Standard
Er	166	413.3	49.7				mg/L	7	Standard
I	127	1073738.4	7.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.595	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.067	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.557	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.989	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606145303
Sample Date/Time: Friday, July 01, 2016 15:55:55
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	86373.8	1.1				ug/L	76456	Standard
	Be	9	46.7	12.4	**0.0170**	0.005	27.0	ug/L	20	Standard
	Al	27	14145040.2	0.8	**73.1395**	1.317	1.8	ug/L	1307	Standard
	Sc	45	47950.8	2.8				ug/L	41174	Standard
	Ti	47	645.7	4.6	**1.7427**	0.078	4.5	ug/L	27	Standard
	V	51	5119.6	16.2	**0.3758**	0.094	25.1	ug/L	1434	Standard
	Cr	52	15660.8	1.2	**0.8154**	0.028	3.4	ug/L	7733	Standard
	Cr	53	17461.7	5.9	**15.5162**	0.994	6.4	ug/L	442	Standard
	Mn	55	1851750.9	0.7	**225.4523**	0.893	0.4	ug/L	723	Standard
	Co	59	6079.9	0.1	**0.7024**	0.002	0.3	ug/L	217	Standard
	Ni	60	3414.1	2.2	**1.3640**	0.029	2.1	ug/L	304	Standard
	Cu	65	716.4	2.9	**0.2496**	0.010	3.9	ug/L	181	Standard
	Zn	66	5607.0	0.9	**4.0396**	0.027	0.7	ug/L	215	Standard
>	Ge	72	564834.0	0.3				ug/L	520809	Standard
	As	75	9187.6	1.4	**6.9075**	0.115	1.7	ug/L	-52	Standard
	Se	82	374.5	2.3	**2.6072**	0.072	2.8	ug/L	17	Standard
	Se-1	77	677.0	5.1	**6.6170**	0.347	5.3	ug/L	56	Standard
>	Ga	71	156.7	12.9				mg/L	25	Standard
	Rb	85	67336.0	0.8				ug/L	28	Standard
	Y	89	479624.4	2.5				ug/L	447395	Standard
>	Rh	103	165.0	24.1				ug/L	15	Standard
	Mo	98	376.6	7.3	**0.0951**	0.009	9.5	ug/L	113	Standard
	Ag	107	95.7	7.7	**-0.0001**	0.001	907.0	ug/L	108	Standard
	Cd	111	85.6	10.8	**0.0332**	0.004	11.6	mg/L	3	Standard
	Cd	114	251.0	20.4	**0.0421**	0.008	19.8	ug/L	20	Standard
>	In	115	654613.0	0.6				ug/L	625728	Standard
	Sn	118	2261.8	11.1	**0.2519**	0.039	15.5	ug/L	568	Standard
	Sb	123	469.5	25.9	**0.0532**	0.023	43.1	ug/L	612	Standard
	Ba	135	790046.7	0.9	**347.1125**	3.141	0.9	ug/L	21	Standard
	Ce	140	7066.6	1.9				ug/L	245	Standard
>	Tb	159	995476.8	2.0				ug/L	950397	Standard
	Ho	165	136.7	9.2				ug/L	7	Standard
	Tl	203	120.3	3.1	**0.0125**	0.000	3.4	ug/L	15	Standard
	Tl	205	115.0	19.9	**0.0045**	0.003	61.6	ug/L	13	Standard
	Pb	206	675.0	1.7	**0.0742**	0.002	2.8	ug/L	264	Standard
	Pb	207	573.0	0.8	**0.0642**	0.001	1.0	ug/L	222	Standard
	Pb	208	2423.1	1.0	**0.0659**	0.001	2.1	ug/L	959	Standard
	U	238	289.7	4.3	**0.0353**	0.002	5.0	ug/L	9	Standard
>	Bi	209	558695.9	0.8				ug/L	552821	Standard

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Na	23	5.0	100.0	**12.9192**	12.771	98.9	mg/L	2	Standard
Mg	24	36766.2	0.7	**36.8431**	1.290	3.5	mg/L	55	Standard
K	39	516.7	3.4	**1.5703**	0.055	3.5	mg/L	28	Standard
Ca	43	131.7	25.3	**7.7852**	2.329	29.9	mg/L	27	Standard
Fe	54	27742.4	0.7	**18.5905**	0.497	2.7	mg/L	147	Standard
Fe	57	7620.3	4.0	**19.3167**	1.147	5.9	mg/L	268	Standard
Sc-1	45	47950.8	2.8				mg/L	41174	Standard
Cl	35	87125.8	1.5				ug/L	69550	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	74331.9	2.0				ug/L	1950	Standard
P	31	38512.2	1.7				ug/L	21156	Standard
S	34	4447.3	3.4				ug/L	3419	Standard
Sr	88	553.3	7.8				ug/L	72	Standard
C	12	426.7	14.3				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	150.0	48.1				mg/L	17	Standard
Dy	164	179.8	21.5				mg/L	16	Standard
Ho-1	165	136.7	9.2				mg/L	7	Standard
Er	166	143.3	22.4				mg/L	7	Standard
I	127	215985.2	0.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		112.972	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		108.453	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.616
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.063
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606142701 WG574419-02
Sample Date/Time: Friday, July 01, 2016 15:59:07
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79441.0	0.3				ug/L	76456	Standard
	Be	9	21.7	96.1	**-0.0013**	0.018	1415.0	ug/L	20	Standard
	Al	27	10303389.4	2.0	**57.9147**	1.116	1.9	ug/L	1307	Standard
	Sc	45	40113.1	2.6				ug/L	41174	Standard
	Ti	47	184.0	9.4	**0.4748**	0.053	11.1	ug/L	27	Standard
	V	51	103393.4	0.6	**12.2581**	0.142	1.2	ug/L	1434	Standard
	Cr	52	60643.8	2.1	**6.4579**	0.232	3.6	ug/L	7733	Standard
	Cr	53	11869.6	1.2	**11.2148**	0.255	2.3	ug/L	442	Standard
	Mn	55	46538.0	1.1	**5.9867**	0.050	0.8	ug/L	723	Standard
	Co	59	37235.0	0.6	**4.7844**	0.072	1.5	ug/L	217	Standard
	Ni	60	30036.7	0.7	**14.1841**	0.259	1.8	ug/L	304	Standard
	Cu	65	12213.6	1.3	**5.8539**	0.146	2.5	ug/L	181	Standard
	Zn	66	33617.6	0.9	**26.9954**	0.533	2.0	ug/L	215	Standard
>	Ge	72	525941.0	1.1				ug/L	520809	Standard
	As	75	2649.6	1.8	**2.1706**	0.042	1.9	ug/L	-52	Standard
	Se	82	1059.1	1.9	**8.1767**	0.235	2.9	ug/L	17	Standard
	Se-1	77	280.3	4.4	**2.5625**	0.130	5.1	ug/L	56	Standard
>	Ga	71	101.7	18.6				mg/L	25	Standard
	Rb	85	18985.2	1.5				ug/L	28	Standard
	Y	89	446075.2	1.3				ug/L	447395	Standard
>	Rh	103	71.7	26.4				ug/L	15	Standard
	Mo	98	435588.8	0.8	**147.3741**	1.220	0.8	ug/L	113	Standard
	Ag	107	124.3	1.7	**0.0049**	0.000	10.0	ug/L	108	Standard
	Cd	111	-216.2	12.9	**-0.0985**	0.013	12.8	mg/L	3	Standard
	Cd	114	902.1	8.1	**0.1619**	0.011	7.0	ug/L	20	Standard
>	In	115	611441.0	1.1				ug/L	625728	Standard
	Sn	118	915.0	18.3	**0.0613**	0.027	44.2	ug/L	568	Standard
	Sb	123	652.5	5.8	**0.0955**	0.006	6.7	ug/L	612	Standard
	Ba	135	39982.7	1.2	**18.7899**	0.104	0.6	ug/L	21	Standard
	Ce	140	376.7	4.3				ug/L	245	Standard
>	Tb	159	929616.4	0.5				ug/L	950397	Standard
	Ho	165	33.3	48.2				ug/L	7	Standard
	Tl	203	136.7	9.3	**0.0150**	0.001	9.9	ug/L	15	Standard
	Tl	205	106.7	11.8	**0.0041**	0.002	39.6	ug/L	13	Standard
	Pb	206	1749.8	1.5	**0.2761**	0.005	1.9	ug/L	264	Standard
	Pb	207	1478.4	2.6	**0.2515**	0.008	3.1	ug/L	222	Standard
	Pb	208	6375.9	0.9	**0.2660**	0.002	0.9	ug/L	959	Standard
	U	238	161.7	12.3	**0.0205**	0.003	12.5	ug/L	9	Standard
>	Bi	209	534118.6	0.2				ug/L	552821	Standard

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Na	23	3.3	86.6	**10.0941**	8.741	86.6	mg/L	2	Standard
Mg	24	25695.1	1.2	**30.7602**	0.665	2.2	mg/L	55	Standard
K	39	365.0	11.7	**1.3075**	0.193	14.8	mg/L	28	Standard
Ca	43	230.0	14.3	**18.9742**	2.668	14.1	mg/L	27	Standard
Fe	54	302.2	7.9	**0.1442**	0.013	8.8	mg/L	147	Standard
Fe	57	455.0	18.2	**0.6271**	0.222	35.4	mg/L	268	Standard
> **Sc-1**	45	40113.1	2.6				mg/L	41174	Standard
Cl	35	98380.0	3.9				ug/L	69550	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	216720.0	3.3				ug/L	1950	Standard
P	31	13189.1	3.4				ug/L	21156	Standard
S	34	3895.5	7.2				ug/L	3419	Standard
Sr	88	283.3	22.8				ug/L	72	Standard
C	12	173.3	27.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	316.7	12.8				mg/L	17	Standard
Dy	164	233.8	13.8				mg/L	16	Standard
Ho-1	165	33.3	48.2				mg/L	7	Standard
Er	166	60.0	33.3				mg/L	7	Standard
I	127	62818.3	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.905	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.985	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	97.717	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.617	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mo 98 Upper, S, EEE	Mo	98	

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Method 6020 - Summary Report

Sample ID: L1606142701DP WG574419-07
Sample Date/Time: Friday, July 01, 2016 16:02:18
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77749.0	1.6				ug/L	76456	Standard
	Be	9	6.7	43.3	**-0.0140**	0.002	17.3	ug/L	20	Standard
	Al	27	9817097.2	1.8	**56.3855**	0.837	1.5	ug/L	1307	Standard
	Sc	45	39810.6	1.5				ug/L	41174	Standard
	Ti	47	174.0	5.5	**0.4563**	0.027	5.9	ug/L	27	Standard
	V	51	99457.7	1.9	**12.0558**	0.214	1.8	ug/L	1434	Standard
	Cr	52	58802.6	0.7	**6.3951**	0.090	1.4	ug/L	7733	Standard
	Cr	53	11255.8	2.7	**10.8641**	0.366	3.4	ug/L	442	Standard
	Mn	55	43355.3	1.9	**5.6990**	0.079	1.4	ug/L	723	Standard
	Co	59	35792.9	1.2	**4.7027**	0.031	0.7	ug/L	217	Standard
	Ni	60	28593.6	0.6	**13.8042**	0.061	0.4	ug/L	304	Standard
	Cu	65	11425.0	1.5	**5.5962**	0.062	1.1	ug/L	181	Standard
	Zn	66	32386.6	1.1	**26.5937**	0.385	1.4	ug/L	215	Standard
>	Ge	72	514230.5	0.6				ug/L	520809	Standard
	As	75	2594.3	1.9	**2.1736**	0.050	2.3	ug/L	-52	Standard
	Se	82	1064.6	1.8	**8.4087**	0.182	2.2	ug/L	17	Standard
	Se-1	77	269.0	6.0	**2.5031**	0.207	8.3	ug/L	56	Standard
>	Ga	71	116.7	27.9				mg/L	25	Standard
	Rb	85	18095.8	1.8				ug/L	28	Standard
	Y	89	436440.0	0.3				ug/L	447395	Standard
>	Rh	103	98.3	34.6				ug/L	15	Standard
	Mo	98	417319.1	1.0	**143.2353**	2.296	1.6	ug/L	113	Standard
	Ag	107	105.3	7.0	**0.0024**	0.001	42.1	ug/L	108	Standard
	Cd	111	-221.7	8.5	**-0.1024**	0.009	8.7	mg/L	3	Standard
	Cd	114	915.2	5.7	**0.1667**	0.008	5.0	ug/L	20	Standard
>	In	115	602737.8	0.7				ug/L	625728	Standard
	Sn	118	925.0	27.3	**0.0648**	0.040	61.0	ug/L	568	Standard
	Sb	123	629.8	5.8	**0.0928**	0.007	7.1	ug/L	612	Standard
	Ba	135	37742.0	0.9	**17.9925**	0.177	1.0	ug/L	21	Standard
	Ce	140	530.0	15.0				ug/L	245	Standard
>	Tb	159	918022.5	0.6				ug/L	950397	Standard
	Ho	165	26.7	47.2				ug/L	7	Standard
	Tl	203	122.7	8.6	**0.0136**	0.001	8.7	ug/L	15	Standard
	Tl	205	120.0	23.2	**0.0061**	0.004	61.9	ug/L	13	Standard
	Pb	206	1673.8	3.7	**0.2676**	0.008	2.9	ug/L	264	Standard
	Pb	207	1385.7	3.3	**0.2377**	0.006	2.4	ug/L	222	Standard
	Pb	208	6038.1	1.4	**0.2546**	0.001	0.3	ug/L	959	Standard
	U	238	134.0	4.7	**0.0173**	0.001	3.8	ug/L	9	Standard
>	Bi	209	524841.4	1.3				ug/L	552821	Standard

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Na	23	3.3	86.6	**10.3333**	8.947	86.6	mg/L	2	Standard
Mg	24	24359.6	1.9	**29.3745**	0.694	2.4	mg/L	55	Standard
K	39	391.7	23.4	**1.4257**	0.389	27.3	mg/L	28	Standard
Ca	43	220.0	19.4	**18.2274**	4.000	21.9	mg/L	27	Standard
Fe	54	293.3	15.9	**0.1391**	0.037	26.9	mg/L	147	Standard
Fe	57	398.3	15.7	**0.4602**	0.182	39.6	mg/L	268	Standard
> **Sc-1**	45	39810.6	1.5				mg/L	41174	Standard
Cl	35	101579.4	0.9				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	218312.6	3.3				ug/L	1950	Standard
P	31	12735.4	2.4				ug/L	21156	Standard
S	34	3657.1	4.9				ug/L	3419	Standard
Sr	88	253.3	24.1				ug/L	72	Standard
C	12	143.3	20.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	270.0	11.1				mg/L	17	Standard
Dy	164	258.1	16.7				mg/L	16	Standard
Ho-1	165	26.7	47.2				mg/L	7	Standard
Er	166	40.0	25.0				mg/L	7	Standard
I	127	57368.4	1.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.691	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.737	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606142701DP WG574419-07
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.326
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.939
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mo 98 Upper, S, EEE	Mo	98	

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Method 6020 - Summary Report

Sample ID: L1606128901
Sample Date/Time: Friday, July 01, 2016 16:05:30
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76109.2	3.3				ug/L	76456	Standard
	Be	9	26.7	10.8	**0.0041**	0.003	75.2	ug/L	20	Standard
	Al	27	2157263.5	1.2	**12.6549**	0.272	2.1	ug/L	1307	Standard
	Sc	45	39362.7	1.0				ug/L	41174	Standard
	Ti	47	31.0	25.6	**0.0115**	0.025	213.1	ug/L	27	Standard
	V	51	2160.8	9.2	**0.0669**	0.026	39.1	ug/L	1434	Standard
	Cr	52	18224.3	3.5	**1.3053**	0.079	6.0	ug/L	7733	Standard
	Cr	53	3937.2	3.2	**3.5166**	0.125	3.6	ug/L	442	Standard
	Mn	55	109531.5	1.1	**14.5084**	0.090	0.6	ug/L	723	Standard
	Co	59	3522.7	2.0	**0.4349**	0.006	1.3	ug/L	217	Standard
	Ni	60	12809.7	0.5	**6.0810**	0.080	1.3	ug/L	304	Standard
	Cu	65	624.3	3.1	**0.2348**	0.009	4.0	ug/L	181	Standard
	Zn	66	2829.3	0.5	**2.1516**	0.027	1.3	ug/L	215	Standard
>	**Ge**	72	515809.2	1.0				ug/L	520809	Standard
	As	75	48.3	6.2	**0.0847**	0.002	2.4	ug/L	-52	Standard
	Se	82	67.8	11.0	**0.4157**	0.062	15.0	ug/L	17	Standard
	Se-1	77	139.0	6.9	**0.9565**	0.097	10.1	ug/L	56	Standard
>	**Ga**	71	33.3	31.2				mg/L	25	Standard
	Rb	85	320.0	16.9				ug/L	28	Standard
	Y	89	425911.6	0.3				ug/L	447395	Standard
>	**Rh**	103	23.3	61.9				ug/L	15	Standard
	Mo	98	1200.8	19.7	**0.3848**	0.082	21.3	ug/L	113	Standard
	Ag	107	75.3	7.8	**-0.0021**	0.001	36.3	ug/L	108	Standard
	Cd	111	25.6	20.9	**0.0091**	0.002	26.3	mg/L	3	Standard
	Cd	114	59.2	25.8	**0.0107**	0.003	26.4	ug/L	20	Standard
>	**In**	115	608157.1	1.0				ug/L	625728	Standard
	Sn	118	525.0	20.9	**-0.0004**	0.017	4881.3	ug/L	568	Standard
	Sb	123	165.4	19.3	**-0.0007**	0.007	874.9	ug/L	612	Standard
	Ba	135	100056.7	1.7	**47.3091**	1.176	2.5	ug/L	21	Standard
	Ce	140	223.3	64.9				ug/L	245	Standard
>	**Tb**	159	910863.8	0.3				ug/L	950397	Standard
	Ho	165	15.0	57.7				ug/L	7	Standard
	Tl	203	83.0	10.7	**0.0087**	0.001	10.8	ug/L	15	Standard
	Tl	205	80.0	31.3	**0.0005**	0.003	626.9	ug/L	13	Standard
	Pb	206	270.7	3.7	**0.0052**	0.002	42.5	ug/L	264	Standard
	Pb	207	242.0	6.8	**0.0021**	0.003	162.6	ug/L	222	Standard
	Pb	208	1024.7	1.6	**0.0016**	0.001	40.9	ug/L	959	Standard
	U	238	10.0	43.6	**0.0010**	0.001	55.3	ug/L	9	Standard
>	**Bi**	209	540336.1	0.9				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4055.5	6.4	**4.8960**	0.330	6.7	mg/L	55	Standard
K	39	15.0	66.7	**-0.0710**	0.040	57.0	mg/L	28	Standard
Ca	43	48.3	26.0	**2.1421**	1.207	56.4	mg/L	27	Standard
Fe	54	63.5	15.9	**-0.0467**	0.009	18.5	mg/L	147	Standard
Fe	57	253.3	5.0	**0.0103**	0.042	410.2	mg/L	268	Standard
Sc-1	45	39362.7	1.0				mg/L	41174	Standard
Cl	35	90744.3	1.5				ug/L	69550	Standard
Kr	83	2.0	0.0				ug/L	1	Standard
Br	81	11220.8	7.7				ug/L	1950	Standard
P	31	8672.5	2.6				ug/L	21156	Standard
S	34	4007.2	6.6				ug/L	3419	Standard
Sr	88	146.7	20.0				ug/L	72	Standard
C	12	96.7	36.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	436.7	13.4				mg/L	17	Standard
Dy	164	6.5	179.6				mg/L	16	Standard
Ho-1	165	15.0	57.7				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	40273.5	3.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.547	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.040	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.192
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.742
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129003
Sample Date/Time: Friday, July 01, 2016 16:08:41
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74300.1	2.3				ug/L	76456	Standard
	Be	9	33.3	70.9	**0.0108**	0.022	200.3	ug/L	20	Standard
	Al	27	1109788.9	1.6	**6.6634**	0.204	3.1	ug/L	1307	Standard
	Sc	45	38913.3	2.4				ug/L	41174	Standard
	Ti	47	72.3	13.4	**0.1384**	0.027	19.6	ug/L	27	Standard
	V	51	1833.5	12.2	**0.0257**	0.030	115.0	ug/L	1434	Standard
	Cr	52	6791.5	6.8	**-0.1263**	0.061	48.5	ug/L	7733	Standard
	Cr	53	2288.5	7.5	**1.8597**	0.192	10.3	ug/L	442	Standard
	Mn	55	199243.2	0.7	**26.3506**	0.434	1.6	ug/L	723	Standard
	Co	59	3319.7	2.1	**0.4061**	0.014	3.4	ug/L	217	Standard
	Ni	60	1865.1	2.1	**0.7502**	0.017	2.3	ug/L	304	Standard
	Cu	65	304.7	2.9	**0.0760**	0.006	7.4	ug/L	181	Standard
	Zn	66	5878.8	1.2	**4.6424**	0.117	2.5	ug/L	215	Standard
>	Ge	72	518291.1	1.3				ug/L	520809	Standard
	As	75	792.5	2.6	**0.6902**	0.010	1.5	ug/L	-52	Standard
	Se	82	76.5	13.2	**0.4817**	0.073	15.2	ug/L	17	Standard
	Se-1	77	129.3	15.3	**0.8357**	0.233	27.9	ug/L	56	Standard
>	Ga	71	50.0	26.5				mg/L	25	Standard
	Rb	85	2285.2	6.7				ug/L	28	Standard
	Y	89	427107.4	1.7				ug/L	447395	Standard
>	Rh	103	36.7	56.8				ug/L	15	Standard
	Mo	98	394.1	11.3	**0.1099**	0.015	13.4	ug/L	113	Standard
	Ag	107	108.3	28.6	**0.0026**	0.004	163.3	ug/L	108	Standard
	Cd	111	66.5	18.4	**0.0273**	0.005	18.9	mg/L	3	Standard
	Cd	114	176.4	7.1	**0.0318**	0.002	6.8	ug/L	20	Standard
>	In	115	609166.7	1.0				ug/L	625728	Standard
	Sn	118	880.0	21.8	**0.0564**	0.032	56.6	ug/L	568	Standard
	Sb	123	119.8	10.9	**-0.0099**	0.003	28.1	ug/L	612	Standard
	Ba	135	34816.0	1.5	**16.4201**	0.118	0.7	ug/L	21	Standard
	Ce	140	1188.4	1.5				ug/L	245	Standard
>	Tb	159	905742.5	1.6				ug/L	950397	Standard
	Ho	165	23.3	32.7				ug/L	7	Standard
	Tl	203	105.7	16.3	**0.0112**	0.002	15.9	ug/L	15	Standard
	Tl	205	100.0	22.9	**0.0030**	0.003	94.5	ug/L	13	Standard
	Pb	206	323.0	3.6	**0.0143**	0.002	17.0	ug/L	264	Standard
	Pb	207	282.3	3.6	**0.0098**	0.001	12.1	ug/L	222	Standard
	Pb	208	1225.0	3.7	**0.0111**	0.002	20.3	ug/L	959	Standard
	U	238	27.3	27.5	**0.0032**	0.001	29.6	ug/L	9	Standard
>	Bi	209	543356.0	1.6				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4887.5	0.8	**5.9826**	0.111	1.8	mg/L	55	Standard
K	39	70.0	31.1	**0.1543**	0.094	61.0	mg/L	28	Standard
Ca	43	26.7	78.1	**0.1318**	2.068	1569.3	mg/L	27	Standard
Fe	54	2091.2	5.6	**1.6384**	0.138	8.4	mg/L	147	Standard
Fe	57	790.0	3.5	**1.7657**	0.122	6.9	mg/L	268	Standard
Sc-1	45	38913.3	2.4				mg/L	41174	Standard
Cl	35	85357.9	2.8				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	12818.8	1.9				ug/L	1950	Standard
P	31	10578.7	2.6				ug/L	21156	Standard
S	34	4063.9	1.6				ug/L	3419	Standard
Sr	88	108.3	11.6				ug/L	72	Standard
C	12	110.0	32.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	27.0				mg/L	17	Standard
Dy	164	55.7	26.3				mg/L	16	Standard
Ho-1	165	23.3	32.7				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	7	Standard
I	127	94261.3	5.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.181	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.516	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.353
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.288
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 16:11:55
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78995.5	2.2				ug/L	76456	Standard
	Be	9	60502.3	2.1	**52.2922**	0.491	0.9	ug/L	20	Standard
	Al	27	8989002.2	0.8	**50.8245**	0.985	1.9	ug/L	1307	Standard
	Sc	45	42305.6	0.7				ug/L	41174	Standard
	Ti	47	34061.9	1.0	**98.6488**	1.546	1.6	ug/L	27	Standard
	V	51	436960.5	1.1	**50.0001**	0.513	1.0	ug/L	1434	Standard
	Cr	52	437865.8	0.9	**50.1688**	0.753	1.5	ug/L	7733	Standard
	Cr	53	53937.5	1.4	**49.9817**	0.858	1.7	ug/L	442	Standard
	Mn	55	399271.1	0.3	**49.7080**	0.463	0.9	ug/L	723	Standard
	Co	59	415402.7	0.9	**51.1776**	0.121	0.2	ug/L	217	Standard
	Ni	60	110781.9	0.5	**50.2680**	0.560	1.1	ug/L	304	Standard
	Cu	65	108848.6	0.7	**50.2966**	0.042	0.1	ug/L	181	Standard
	Zn	66	65152.1	0.8	**50.0366**	0.239	0.5	ug/L	215	Standard
>	**Ge**	72	551526.5	0.7				ug/L	520809	Standard
	As	75	65288.4	0.5	**49.9868**	0.536	1.1	ug/L	-52	Standard
	Se	82	6767.7	1.1	**50.4635**	0.866	1.7	ug/L	17	Standard
	Se-1	77	4643.0	1.4	**50.6038**	0.550	1.1	ug/L	56	Standard
>	**Ga**	71	51.7	27.9				mg/L	25	Standard
	Rb	85	896.7	7.7				ug/L	28	Standard
	Y	89	469245.9	0.9				ug/L	447395	Standard
>	**Rh**	103	30.0	50.0				ug/L	15	Standard
	Mo	98	315176.0	0.7	**100.1655**	0.835	0.8	ug/L	113	Standard
	Ag	107	372454.9	1.5	**49.8448**	0.674	1.4	ug/L	108	Standard
	Cd	111	120309.5	0.5	**50.2390**	0.275	0.5	mg/L	3	Standard
	Cd	114	296771.3	0.4	**50.0551**	0.319	0.6	ug/L	20	Standard
>	**In**	115	650857.3	0.3				ug/L	625728	Standard
	Sn	118	332008.2	0.6	**49.5103**	0.318	0.6	ug/L	568	Standard
	Sb	123	262896.6	1.7	**48.8713**	0.775	1.6	ug/L	612	Standard
	Ba	135	110171.1	0.5	**48.6680**	0.323	0.7	ug/L	21	Standard
	Ce	140	123.3	16.9				ug/L	245	Standard
>	**Tb**	159	962981.5	0.4				ug/L	950397	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	457474.5	0.7	**50.4943**	0.334	0.7	ug/L	15	Standard
	Tl	205	418439.6	0.8	**52.0062**	0.714	1.4	ug/L	13	Standard
	Pb	206	289168.5	1.0	**50.5726**	0.399	0.8	ug/L	264	Standard
	Pb	207	263060.3	0.2	**50.6591**	0.254	0.5	ug/L	222	Standard
	Pb	208	1106275.9	0.6	**52.1627**	0.606	1.2	ug/L	959	Standard
	U	238	414349.5	1.0	**50.9359**	0.727	1.4	ug/L	9	Standard
>	**Bi**	209	557861.1	0.5				ug/L	552821	Standard

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Na	23	1.7	173.2	**4.8874**	8.457	173.0	mg/L	2	Standard
Mg	24	4582.4	2.1	**5.1503**	0.148	2.9	mg/L	55	Standard
K	39	1161.7	7.3	**4.2028**	0.289	6.9	mg/L	28	Standard
Ca	43	63.3	9.1	**3.1474**	0.494	15.7	mg/L	27	Standard
Fe	54	6769.4	2.9	**5.0672**	0.121	2.4	mg/L	147	Standard
Fe	57	2078.5	6.0	**5.4119**	0.382	7.1	mg/L	268	Standard
> **Sc-1**	45	42305.6	0.7				mg/L	41174	Standard
Cl	35	87401.4	1.9				ug/L	69550	Standard
Kr	83	0.3	173.2				ug/L	1	Standard
Br	81	3040.3	9.5				ug/L	1950	Standard
P	31	27000.7	1.2				ug/L	21156	Standard
S	34	4354.0	2.5				ug/L	3419	Standard
Sr	88	48.3	31.6				ug/L	72	Standard
C	12	120.0	22.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	296.7	25.3				mg/L	17	Standard
Dy	164	9.4	107.0				mg/L	16	Standard
Ho-1	165	8.3	69.3				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	16158.6	6.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	104.584		
Al	27	101.649		
Sc	45			
Ti	47	98.649		
V	51	100.000		
Cr	52	100.338		
Cr	53			
Mn	55	99.416		
Co	59	102.355		
Ni	60	100.536		
Cu	65	100.593		
Zn	66	100.073		
> Ge	72		105.898	
As	75	99.974		
Se	82	100.927		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	100.165		
Ag	107	99.690		
Cd	111	100.478		
Cd	114			
> In	115			104.016
Sn	118	99.021		
Sb	123	97.743		
Ba	135	97.336		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.989		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.325		
U	238	101.872		
> Bi	209			100.912
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 16:15:06
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79089.3	2.9				ug/L	76456	Standard
	Be	9	15.0	57.7	**-0.0068**	0.008	113.4	ug/L	20	Standard
	Al	27	2235.2	13.9	**0.0024**	0.001	57.8	ug/L	1307	Standard
	Sc	45	43469.0	3.3				ug/L	41174	Standard
	Ti	47	28.3	17.4	**-0.0019**	0.015	796.4	ug/L	27	Standard
	V	51	1493.4	3.9	**-0.0261**	0.008	30.6	ug/L	1434	Standard
	Cr	52	7368.5	3.1	**-0.1054**	0.021	19.8	ug/L	7733	Standard
	Cr	53	613.3	6.6	**0.1595**	0.042	26.4	ug/L	442	Standard
	Mn	55	787.0	3.1	**-0.0026**	0.002	90.1	ug/L	723	Standard
	Co	59	245.7	12.9	**0.0010**	0.004	377.8	ug/L	217	Standard
	Ni	60	277.3	6.7	**-0.0262**	0.009	35.5	ug/L	304	Standard
	Cu	65	184.0	15.4	**0.0115**	0.013	111.3	ug/L	181	Standard
	Zn	66	259.7	4.8	**0.0209**	0.009	40.6	ug/L	215	Standard
>	**Ge**	72	548531.1	0.8				ug/L	520809	Standard
	As	75	-66.9	12.4	**-0.0063**	0.007	105.6	ug/L	-52	Standard
	Se	82	22.1	15.5	**0.0395**	0.025	62.6	ug/L	17	Standard
	Se-1	77	54.7	22.1	**-0.0780**	0.131	167.8	ug/L	56	Standard
>	**Ga**	71	23.3	75.3				mg/L	25	Standard
	Rb	85	18.3	56.8				ug/L	28	Standard
	Y	89	474502.6	0.9				ug/L	447395	Standard
>	**Rh**	103	10.0					ug/L	15	Standard
	Mo	98	353.6	10.5	**0.0864**	0.011	12.8	ug/L	113	Standard
	Ag	107	117.0	12.6	**0.0025**	0.002	78.3	ug/L	108	Standard
	Cd	111	11.4	37.7	**0.0023**	0.002	74.6	mg/L	3	Standard
	Cd	114	48.0	51.5	**0.0079**	0.004	50.7	ug/L	20	Standard
>	**In**	115	662932.4	0.6				ug/L	625728	Standard
	Sn	118	1505.1	27.3	**0.1367**	0.061	44.7	ug/L	568	Standard
	Sb	123	848.9	30.9	**0.1215**	0.049	40.0	ug/L	612	Standard
	Ba	135	79.0	17.7	**0.0163**	0.006	35.9	ug/L	21	Standard
	Ce	140	31.7	24.1				ug/L	245	Standard
>	**Tb**	159	977903.3	1.9				ug/L	950397	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	71.7	6.3	**0.0070**	0.000	7.1	ug/L	15	Standard
	Tl	205	66.7	28.4	**-0.0016**	0.002	147.5	ug/L	13	Standard
	Pb	206	325.0	5.7	**0.0119**	0.003	21.2	ug/L	264	Standard
	Pb	207	293.0	9.6	**0.0091**	0.005	50.3	ug/L	222	Standard
	Pb	208	1180.4	1.4	**0.0062**	0.001	14.3	ug/L	959	Standard
	U	238	63.3	11.6	**0.0074**	0.001	11.2	ug/L	9	Standard
>	**Bi**	209	570093.4	1.3				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	13.3	**-0.0123**	0.005	38.9	mg/L	55	Standard
K	39	35.0	14.3	**-0.0036**	0.022	615.4	mg/L	28	Standard
Ca	43	20.0	25.0	**-0.7333**	0.424	57.9	mg/L	27	Standard
Fe	54	187.6	24.1	**0.0414**	0.038	91.6	mg/L	147	Standard
Fe	57	236.7	10.0	**-0.1153**	0.063	54.7	mg/L	268	Standard
> **Sc-1**	45	43469.0	3.3				mg/L	41174	Standard
Cl	35	86433.8	0.2				ug/L	69550	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	2503.5	3.8				ug/L	1950	Standard
P	31	25746.9	1.4				ug/L	21156	Standard
S	34	4332.3	3.9				ug/L	3419	Standard
Sr	88	76.7	27.2				ug/L	72	Standard
C	12	100.0	65.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	203.3	49.3				mg/L	17	Standard
Dy	164	6.3	86.6				mg/L	16	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	12004.8	4.7				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		105.323	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.946
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.124
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 16:17:23
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Method 6020 - Summary Report

Sample ID: PBS H2 WG574521-03
Sample Date/Time: Friday, July 01, 2016 16:37:08
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79271.8	0.3				ug/L	76456	Standard
	Be	9	20.0	66.1	**-0.0027**	0.011	426.9	ug/L	20	Standard
	Al	27	18129.4	51.1	**0.0920**	0.053	57.1	ug/L	1307	Standard
	Sc	45	43671.2	1.7				ug/L	41174	Standard
	Ti	47	42.0	27.0	**0.0356**	0.031	88.1	ug/L	27	Standard
	V	51	1815.5	7.2	**0.0075**	0.013	168.1	ug/L	1434	Standard
	Cr	52	9893.9	1.4	**0.1721**	0.017	10.1	ug/L	7733	Standard
	Cr	53	775.0	10.2	**0.2997**	0.080	26.8	ug/L	442	Standard
	Mn	55	2337.2	54.3	**0.1861**	0.154	82.5	ug/L	723	Standard
	Co	59	338.7	60.7	**0.0117**	0.025	210.3	ug/L	217	Standard
	Ni	60	460.3	4.6	**0.0540**	0.007	13.4	ug/L	304	Standard
	Cu	65	246.0	5.3	**0.0385**	0.005	13.8	ug/L	181	Standard
	Zn	66	1190.0	1.7	**0.7267**	0.005	0.6	ug/L	215	Standard
>	**Ge**	72	557757.5	1.2				ug/L	520809	Standard
	As	75	-45.2	46.1	**0.0109**	0.016	146.4	ug/L	-52	Standard
	Se	82	21.5	16.2	**0.0326**	0.024	74.5	ug/L	17	Standard
	Se-1	77	60.7	14.0	**-0.0215**	0.097	452.0	ug/L	56	Standard
>	**Ga**	71	30.0	33.3				mg/L	25	Standard
	Rb	85	78.3	35.2				ug/L	28	Standard
	Y	89	482555.7	1.9				ug/L	447395	Standard
>	**Rh**	103	8.3	91.7				ug/L	15	Standard
	Mo	98	332.0	91.4	**0.0799**	0.095	118.5	ug/L	113	Standard
	Ag	107	123.7	31.0	**0.0035**	0.005	145.5	ug/L	108	Standard
	Cd	111	20.3	82.0	**0.0060**	0.007	114.1	mg/L	3	Standard
	Cd	114	52.4	144.8	**0.0087**	0.013	144.6	ug/L	20	Standard
>	**In**	115	660410.5	0.4				ug/L	625728	Standard
	Sn	118	1340.1	28.5	**0.1130**	0.056	49.2	ug/L	568	Standard
	Sb	123	501.3	30.5	**0.0581**	0.028	47.8	ug/L	612	Standard
	Ba	135	141.0	74.3	**0.0434**	0.045	104.7	ug/L	21	Standard
	Ce	140	65.0	13.3				ug/L	245	Standard
>	**Tb**	159	984326.5	0.5				ug/L	950397	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	36.3	87.4	**0.0032**	0.003	108.0	ug/L	15	Standard
	Tl	205	81.7	141.4	**0.0002**	0.014	6303.1	ug/L	13	Standard
	Pb	206	357.0	4.6	**0.0175**	0.003	15.4	ug/L	264	Standard
	Pb	207	301.0	13.7	**0.0108**	0.008	73.3	ug/L	222	Standard
	Pb	208	1410.0	25.6	**0.0170**	0.017	98.8	ug/L	959	Standard
	U	238	79.0	155.7	**0.0093**	0.015	160.0	ug/L	9	Standard
>	**Bi**	209	568547.7	0.3				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	83.3	70.3	**0.0311**	0.063	203.4	mg/L	55	Standard
K	39	26.7	47.2	**-0.0352**	0.044	125.3	mg/L	28	Standard
Ca	43	13.3	43.3	**-1.3140**	0.480	36.5	mg/L	27	Standard
Fe	54	179.3	22.8	**0.0338**	0.030	89.2	mg/L	147	Standard
Fe	57	248.3	6.5	**-0.0850**	0.036	42.0	mg/L	268	Standard
> **Sc-1**	45	43671.2	1.7				mg/L	41174	Standard
Cl	35	94694.4	1.8				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	2446.9	5.5				ug/L	1950	Standard
P	31	26514.9	2.3				ug/L	21156	Standard
S	34	4310.6	3.2				ug/L	3419	Standard
Sr	88	95.0	13.9				ug/L	72	Standard
C	12	123.3	28.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	223.3	40.1				mg/L	17	Standard
Dy	164	6.2	193.4				mg/L	16	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	20320.3	3.3				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		103.683	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		107.094	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.543
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.845
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSS H2 WG574521-04
Sample Date/Time: Friday, July 01, 2016 16:40:19
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78206.3	1.2				ug/L	76456	Standard
	Be	9	30357.1	1.3	**26.4935**	0.412	1.6	ug/L	20	Standard
	Al	27	14527.0	3.3	**0.0727**	0.002	2.4	ug/L	1307	Standard
	Sc	45	43500.7	0.4				ug/L	41174	Standard
	Ti	47	50.0	23.1	**0.0598**	0.033	54.4	ug/L	27	Standard
	V	51	219978.8	0.3	**24.9959**	0.252	1.0	ug/L	1434	Standard
	Cr	52	227773.4	1.1	**25.5491**	0.376	1.5	ug/L	7733	Standard
	Cr	53	27710.3	2.0	**25.3978**	0.708	2.8	ug/L	442	Standard
	Mn	55	209603.4	1.5	**25.9644**	0.258	1.0	ug/L	723	Standard
	Co	59	210851.5	1.3	**25.8831**	0.352	1.4	ug/L	217	Standard
	Ni	60	56751.8	1.2	**25.5968**	0.369	1.4	ug/L	304	Standard
	Cu	65	56217.4	1.4	**25.8605**	0.261	1.0	ug/L	181	Standard
	Zn	66	34071.3	0.3	**26.0003**	0.170	0.7	ug/L	215	Standard
>	**Ge**	72	553234.9	0.8				ug/L	520809	Standard
	As	75	33169.4	0.5	**25.3389**	0.170	0.7	ug/L	-52	Standard
	Se	82	3351.8	0.3	**24.8507**	0.232	0.9	ug/L	17	Standard
	Se-1	77	2368.9	3.2	**25.4071**	1.040	4.1	ug/L	56	Standard
>	**Ga**	71	33.3	31.2				mg/L	25	Standard
	Rb	85	63.3	32.9				ug/L	28	Standard
	Y	89	471256.9	0.9				ug/L	447395	Standard
>	**Rh**	103	23.3	75.3				ug/L	15	Standard
	Mo	98	151.2	23.7	**0.0237**	0.012	48.5	ug/L	113	Standard
	Ag	107	190870.7	0.3	**25.3271**	0.087	0.3	ug/L	108	Standard
	Cd	111	60282.1	0.5	**24.9635**	0.019	0.1	mg/L	3	Standard
	Cd	114	147909.0	1.0	**24.7417**	0.334	1.4	ug/L	20	Standard
>	**In**	115	656276.3	0.4				ug/L	625728	Standard
	Sn	118	1236.7	17.5	**0.0991**	0.033	33.0	ug/L	568	Standard
	Sb	123	139998.4	0.5	**25.7951**	0.218	0.8	ug/L	612	Standard
	Ba	135	55761.4	0.2	**24.4204**	0.141	0.6	ug/L	21	Standard
	Ce	140	101.7	7.5				ug/L	245	Standard
>	**Tb**	159	982894.1	0.9				ug/L	950397	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	233767.2	0.4	**25.3362**	0.353	1.4	ug/L	15	Standard
	Tl	205	211866.2	1.4	**25.8487**	0.316	1.2	ug/L	13	Standard
	Pb	206	151902.3	0.4	**26.0680**	0.572	2.2	ug/L	264	Standard
	Pb	207	132458.5	0.8	**25.0234**	0.298	1.2	ug/L	222	Standard
	Pb	208	562733.9	0.2	**26.0307**	0.442	1.7	ug/L	959	Standard
	U	238	206496.7	1.0	**24.9238**	0.246	1.0	ug/L	9	Standard
>	**Bi**	209	568206.0	1.8				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	58.3	26.2	**0.0044**	0.017	394.1	mg/L	55	Standard
K	39	25.0	20.0	**-0.0405**	0.018	44.5	mg/L	28	Standard
Ca	43	28.3	10.2	**-0.0167**	0.239	1431.0	mg/L	27	Standard
Fe	54	163.4	6.9	**0.0225**	0.008	36.3	mg/L	147	Standard
Fe	57	255.0	14.8	**-0.0621**	0.113	181.2	mg/L	268	Standard
Sc-1	45	43500.7	0.4				mg/L	41174	Standard
Cl	35	91778.5	1.5				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	5150.9	3.9				ug/L	1950	Standard
P	31	26144.2	2.1				ug/L	21156	Standard
S	34	4105.6	2.0				ug/L	3419	Standard
Sr	88	88.3	25.5				ug/L	72	Standard
C	12	90.0	19.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	216.7	38.7				mg/L	17	Standard
Dy	164	12.1	119.9				mg/L	16	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	26.7	86.6				mg/L	7	Standard
I	127	5989.5	2.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		102.290	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.226	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.882
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.783
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606144504 WG574521-01
Sample Date/Time: Friday, July 01, 2016 16:43:31
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82711.9	1.7				ug/L	76456	Standard
	Be	9	1393.4	1.7	**1.1308**	0.019	1.7	ug/L	20	Standard
	Al	27	12446064.6	0.4	**67.2063**	1.063	1.6	ug/L	1307	Standard
	Sc	45	49798.4	0.9				ug/L	41174	Standard
	Ti	47	3275.7	2.4	**9.3815**	0.258	2.8	ug/L	27	Standard
	V	51	187113.3	0.3	**21.2321**	0.189	0.9	ug/L	1434	Standard
	Cr	52	137212.2	0.9	**15.0050**	0.153	1.0	ug/L	7733	Standard
	Cr	53	16570.7	1.1	**15.0184**	0.113	0.8	ug/L	442	Standard
	Mn	55	3185070.4	0.3	**396.0143**	1.958	0.5	ug/L	723	Standard
	Co	59	91536.7	1.1	**11.2200**	0.101	0.9	ug/L	217	Standard
	Ni	60	45707.8	1.2	**20.5854**	0.156	0.8	ug/L	304	Standard
	Cu	65	23258.8	1.9	**10.6559**	0.153	1.4	ug/L	181	Standard
	Zn	66	46036.5	0.5	**35.1961**	0.406	1.2	ug/L	215	Standard
>	**Ge**	72	553218.9	0.6				ug/L	520809	Standard
	As	75	5739.6	2.8	**4.4216**	0.100	2.3	ug/L	-52	Standard
	Se	82	54.0	18.0	**0.2758**	0.072	26.2	ug/L	17	Standard
	Se-1	77	126.7	3.9	**0.7105**	0.061	8.6	ug/L	56	Standard
>	**Ga**	71	21134.7	1.1				mg/L	25	Standard
	Rb	85	212914.0	1.2				ug/L	28	Standard
	Y	89	733052.8	0.4				ug/L	447395	Standard
>	**Rh**	103	31.7	50.8				ug/L	15	Standard
	Mo	98	356.5	15.7	**0.0888**	0.017	19.2	ug/L	113	Standard
	Ag	107	670.0	12.8	**0.0764**	0.011	14.4	ug/L	108	Standard
	Cd	111	132.6	4.8	**0.0528**	0.002	4.3	mg/L	3	Standard
	Cd	114	355.4	28.0	**0.0597**	0.017	27.7	ug/L	20	Standard
>	**In**	115	653864.1	0.7				ug/L	625728	Standard
	Sn	118	1290.1	26.4	**0.1075**	0.050	46.3	ug/L	568	Standard
	Sb	123	594.8	48.0	**0.0762**	0.052	68.5	ug/L	612	Standard
	Ba	135	574692.3	0.9	**252.7729**	0.765	0.3	ug/L	21	Standard
	Ce	140	1393840.8	0.9				ug/L	245	Standard
>	**Tb**	159	1000230.3	1.3				ug/L	950397	Standard
	Ho	165	21410.1	1.0				ug/L	7	Standard
	Tl	203	1416.4	11.1	**0.1555**	0.018	11.5	ug/L	15	Standard
	Tl	205	1253.4	9.7	**0.1459**	0.016	10.8	ug/L	13	Standard
	Pb	206	71530.8	0.4	**12.4648**	0.067	0.5	ug/L	264	Standard
	Pb	207	58749.0	0.7	**11.2666**	0.094	0.8	ug/L	222	Standard
	Pb	208	258108.7	0.1	**12.1209**	0.070	0.6	ug/L	959	Standard
	U	238	3402.4	1.9	**0.4176**	0.009	2.1	ug/L	9	Standard
>	**Bi**	209	558413.2	0.5				ug/L	552821	Standard

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Na	23	1.7	173.2	**4.0919**	7.079	173.0	mg/L	2	Standard
Mg	24	115.0	19.0	**0.0509**	0.021	40.8	mg/L	55	Standard
K	39	340.0	8.9	**0.9470**	0.101	10.7	mg/L	28	Standard
Ca	43	83.3	24.2	**3.8084**	1.512	39.7	mg/L	27	Standard
Fe	54	19898.8	3.5	**12.8021**	0.403	3.1	mg/L	147	Standard
Fe	57	5240.9	4.1	**12.5122**	0.602	4.8	mg/L	268	Standard
> **Sc-1**	45	49798.4	0.9				mg/L	41174	Standard
Cl	35	83679.2	2.8				ug/L	69550	Standard
Kr	83	2.0	132.3				ug/L	1	Standard
Br	81	3150.3	10.3				ug/L	1950	Standard
P	31	25890.4	3.1				ug/L	21156	Standard
S	34	4145.6	3.5				ug/L	3419	Standard
Sr	88	115.0	15.1				ug/L	72	Standard
C	12	180.0	25.5				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	210.0	42.3				mg/L	17	Standard
Dy	164	35643.1	1.6				mg/L	16	Standard
Ho-1	165	21410.1	1.0				mg/L	7	Standard
Er	166	18878.4	2.2				mg/L	7	Standard
I	127	27002.4	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.183	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.223	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.497
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.012
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144504 WG574521-01
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Method 6020 - Summary Report

Sample ID: L1606144505S WG574521-05
Sample Date/Time: Friday, July 01, 2016 16:46:42
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81052.9	2.1				ug/L	76456	Standard
	Be	9	30676.0	2.4	**25.8290**	0.259	1.0	ug/L	20	Standard
	Al	27	13294166.7	2.5	**73.2465**	1.294	1.8	ug/L	1307	Standard
	Sc	45	48179.8	2.6				ug/L	41174	Standard
	Ti	47	6953.9	1.9	**20.0934**	0.295	1.5	ug/L	27	Standard
	V	51	398485.1	1.1	**45.6308**	0.280	0.6	ug/L	1434	Standard
	Cr	52	346453.3	0.7	**39.5366**	0.280	0.7	ug/L	7733	Standard
	Cr	53	41902.9	1.3	**38.7788**	0.379	1.0	ug/L	442	Standard
	Mn	55	3061942.5	1.0	**382.3072**	4.386	1.1	ug/L	723	Standard
	Co	59	255934.9	0.7	**31.5572**	0.332	1.1	ug/L	217	Standard
	Ni	60	90655.7	0.5	**41.1541**	0.349	0.8	ug/L	304	Standard
	Cu	65	74619.0	0.4	**34.4964**	0.137	0.4	ug/L	181	Standard
	Zn	66	75694.3	0.6	**58.2286**	0.173	0.3	ug/L	215	Standard
>	Ge	72	550897.8	0.5				ug/L	520809	Standard
	As	75	34828.9	0.1	**26.7169**	0.137	0.5	ug/L	-52	Standard
	Se	82	2635.3	1.9	**19.5943**	0.381	1.9	ug/L	17	Standard
	Se-1	77	1869.4	1.0	**19.9893**	0.095	0.5	ug/L	56	Standard
>	Ga	71	20570.6	1.4				mg/L	25	Standard
	Rb	85	177643.7	0.9				ug/L	28	Standard
	Y	89	691746.1	1.0				ug/L	447395	Standard
>	Rh	103	35.0	37.8				ug/L	15	Standard
	Mo	98	1110.7	3.0	**0.3333**	0.010	3.0	ug/L	113	Standard
	Ag	107	178239.6	0.1	**24.1330**	0.242	1.0	ug/L	108	Standard
	Cd	111	58613.6	0.8	**24.7671**	0.188	0.8	mg/L	3	Standard
	Cd	114	143184.7	2.0	**24.4376**	0.381	1.6	ug/L	20	Standard
>	In	115	643190.5	1.0				ug/L	625728	Standard
	Sn	118	1398.4	22.6	**0.1275**	0.050	39.0	ug/L	568	Standard
	Sb	123	4282.3	1.0	**0.7725**	0.016	2.0	ug/L	612	Standard
	Ba	135	345608.0	0.5	**154.5433**	2.126	1.4	ug/L	21	Standard
	Ce	140	1299122.5	1.1				ug/L	245	Standard
>	Tb	159	990488.4	0.8				ug/L	950397	Standard
	Ho	165	18067.4	1.7				ug/L	7	Standard
	Tl	203	217125.4	0.9	**24.1291**	0.277	1.1	ug/L	15	Standard
	Tl	205	198577.9	0.6	**24.8432**	0.213	0.9	ug/L	13	Standard
	Pb	206	259935.7	1.5	**45.7680**	0.825	1.8	ug/L	264	Standard
	Pb	207	221787.2	1.0	**42.9961**	0.567	1.3	ug/L	222	Standard
	Pb	208	955436.3	0.5	**45.3507**	0.360	0.8	ug/L	959	Standard
	U	238	203540.4	0.9	**25.1914**	0.306	1.2	ug/L	9	Standard
>	Bi	209	554076.2	0.3				ug/L	552821	Standard

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Na	23	3.3	173.2	**8.7132**	15.083	173.1	mg/L	2	Standard
Mg	24	123.3	10.2	**0.0629**	0.011	18.2	mg/L	55	Standard
K	39	401.7	6.9	**1.1840**	0.057	4.8	mg/L	28	Standard
Ca	43	85.0	17.6	**4.1392**	1.063	25.7	mg/L	27	Standard
Fe	54	19135.8	0.4	**12.7297**	0.274	2.2	mg/L	147	Standard
Fe	57	5282.6	2.0	**13.0758**	0.572	4.4	mg/L	268	Standard
Sc-1	45	48179.8	2.6				mg/L	41174	Standard
Cl	35	81193.7	1.4				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	3463.7	11.3				ug/L	1950	Standard
P	31	25893.8	3.3				ug/L	21156	Standard
S	34	3793.8	6.6				ug/L	3419	Standard
Sr	88	98.3	7.8				ug/L	72	Standard
C	12	150.0	24.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	203.3	31.6				mg/L	17	Standard
Dy	164	30043.9	1.0				mg/L	16	Standard
Ho-1	165	18067.4	1.7				mg/L	7	Standard
Er	166	16368.8	2.5				mg/L	7	Standard
I	127	31820.1	1.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		106.013	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		105.777	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.791
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.227
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144506SD WG574521-06
Sample Date/Time: Friday, July 01, 2016 16:49:54
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80097.9	2.8				ug/L	76456	Standard
	Be	9	30038.1	2.5	25.6081	1.007	3.9	ug/L	20	Standard
	Al	27	25838350.2	1.3	144.1079	2.593	1.8	ug/L	1307	Standard
	Sc	45	47559.6	2.9				ug/L	41174	Standard
	Ti	47	6556.4	1.8	19.3875	0.685	3.5	ug/L	27	Standard
	V	51	371950.4	0.9	43.5770	0.897	2.1	ug/L	1434	Standard
	Cr	52	331664.7	2.0	38.7230	1.629	4.2	ug/L	7733	Standard
	Cr	53	41130.8	1.7	38.9560	1.095	2.8	ug/L	442	Standard
	Mn	55	3596932.1	1.0	459.6785	15.165	3.3	ug/L	723	Standard
	Co	59	263231.1	1.3	33.2200	1.092	3.3	ug/L	217	Standard
	Ni	60	95938.5	1.6	44.5917	1.721	3.9	ug/L	304	Standard
	Cu	65	74284.7	1.9	35.1502	1.281	3.6	ug/L	181	Standard
	Zn	66	76677.6	1.5	60.3810	2.186	3.6	ug/L	215	Standard
>	Ge	72	538522.8	2.5				ug/L	520809	Standard
	As	75	31096.8	1.3	24.4196	0.873	3.6	ug/L	-52	Standard
	Se	82	2411.7	1.1	18.3435	0.519	2.8	ug/L	17	Standard
	Se-1	77	1751.1	3.2	19.1315	0.710	3.7	ug/L	56	Standard
>	Ga	71	19424.1	1.9				mg/L	25	Standard
	Rb	85	183661.6	1.6				ug/L	28	Standard
	Y	89	704841.2	2.1				ug/L	447395	Standard
>	Rh	103	36.7	20.8				ug/L	15	Standard
	Mo	98	611.4	5.3	0.1763	0.010	5.6	ug/L	113	Standard
	Ag	107	174143.9	1.6	24.0046	0.280	1.2	ug/L	108	Standard
	Cd	111	57620.6	0.9	24.7920	0.490	2.0	mg/L	3	Standard
	Cd	114	139765.7	1.6	24.2901	0.536	2.2	ug/L	20	Standard
>	In	115	631733.1	1.1				ug/L	625728	Standard
	Sn	118	1106.7	20.2	0.0862	0.035	40.7	ug/L	568	Standard
	Sb	123	5971.0	2.3	1.1106	0.013	1.2	ug/L	612	Standard
	Ba	135	389506.4	0.2	177.3323	1.766	1.0	ug/L	21	Standard
	Ce	140	1279386.9	0.6				ug/L	245	Standard
>	Tb	159	976334.8	1.3				ug/L	950397	Standard
	Ho	165	21239.9	2.3				ug/L	7	Standard
	Tl	203	212476.8	0.4	24.3917	0.306	1.3	ug/L	15	Standard
	Tl	205	190802.6	2.3	24.6603	0.758	3.1	ug/L	13	Standard
	Pb	206	194049.7	0.6	35.2833	0.374	1.1	ug/L	264	Standard
	Pb	207	165998.7	0.6	33.2303	0.156	0.5	ug/L	222	Standard
	Pb	208	711047.9	1.1	34.8555	0.746	2.1	ug/L	959	Standard
	U	238	196776.4	1.6	25.1602	0.659	2.6	ug/L	9	Standard
>	Bi	209	536411.2	1.1				ug/L	552821	Standard

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Na	23	5.0	0.0	**12.9314**	0.378	2.9	mg/L	2	Standard
Mg	24	121.7	21.1	**0.0630**	0.027	42.3	mg/L	55	Standard
K	39	396.7	12.8	**1.1837**	0.137	11.6	mg/L	28	Standard
Ca	43	198.3	9.5	**13.1529**	1.459	11.1	mg/L	27	Standard
Fe	54	17265.4	3.0	**11.6302**	0.519	4.5	mg/L	147	Standard
Fe	57	5002.5	1.8	**12.5110**	0.483	3.9	mg/L	268	Standard
Sc-1	45	47559.6	2.9				mg/L	41174	Standard
Cl	35	82047.6	0.3				ug/L	69550	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	2713.6	16.2				ug/L	1950	Standard
P	31	26575.0	0.8				ug/L	21156	Standard
S	34	4360.6	2.1				ug/L	3419	Standard
Sr	88	131.7	17.9				ug/L	72	Standard
C	12	140.0	31.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	120.0	25.0				mg/L	17	Standard
Dy	164	35523.7	1.8				mg/L	16	Standard
Ho-1	165	21239.9	2.3				mg/L	7	Standard
Er	166	19068.7	0.7				mg/L	7	Standard
I	127	21363.4	3.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.764	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.401	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.960	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.032	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606145101
Sample Date/Time: Friday, July 01, 2016 16:53:05
Number of Replicates: 3
Autosampler Position: 227
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77083.9	1.4				ug/L	76456	Standard
	Be	9	475.0	1.1	**0.4010**	0.005	1.3	ug/L	20	Standard
	Al	27	2237415.9	0.9	**12.9552**	0.241	1.9	ug/L	1307	Standard
	Sc	45	46143.5	0.6				ug/L	41174	Standard
	Ti	47	14229.3	1.3	**40.3569**	0.503	1.2	ug/L	27	Standard
	V	51	81926.5	1.2	**9.0305**	0.138	1.5	ug/L	1434	Standard
	Cr	52	71884.8	0.5	**7.2617**	0.092	1.3	ug/L	7733	Standard
	Cr	53	8222.2	3.8	**7.1184**	0.362	5.1	ug/L	442	Standard
	Mn	55	1326114.2	0.7	**162.1111**	1.014	0.6	ug/L	723	Standard
	Co	59	18265.0	0.3	**2.1786**	0.035	1.6	ug/L	217	Standard
	Ni	60	14421.9	1.4	**6.2826**	0.026	0.4	ug/L	304	Standard
	Cu	65	20275.6	1.0	**9.1261**	0.043	0.5	ug/L	181	Standard
	Zn	66	84084.7	0.5	**63.3707**	0.506	0.8	ug/L	215	Standard
>	Ge	72	562486.4	1.3				ug/L	520809	Standard
	As	75	12273.7	0.0	**9.2515**	0.118	1.3	ug/L	-52	Standard
	Se	82	80.8	6.1	**0.4662**	0.041	8.7	ug/L	17	Standard
	Se-1	77	117.0	7.4	**0.5834**	0.109	18.6	ug/L	56	Standard
>	Ga	71	7775.3	1.7				mg/L	25	Standard
	Rb	85	53367.2	1.6				ug/L	28	Standard
	Y	89	546880.1	0.9				ug/L	447395	Standard
>	Rh	103	25.0	34.6				ug/L	15	Standard
	Mo	98	1997.9	3.1	**0.5987**	0.021	3.5	ug/L	113	Standard
	Ag	107	409.7	7.2	**0.0409**	0.004	9.7	ug/L	108	Standard
	Cd	111	850.8	2.0	**0.3460**	0.009	2.5	mg/L	3	Standard
	Cd	114	2106.8	7.8	**0.3483**	0.025	7.1	ug/L	20	Standard
>	In	115	663939.9	0.6				ug/L	625728	Standard
	Sn	118	2050.1	14.8	**0.2160**	0.045	20.8	ug/L	568	Standard
	Sb	123	671.1	9.1	**0.0887**	0.011	12.6	ug/L	612	Standard
	Ba	135	107917.7	1.0	**46.7326**	0.441	0.9	ug/L	21	Standard
	Ce	140	627825.8	0.9				ug/L	245	Standard
>	Tb	159	987128.9	0.6				ug/L	950397	Standard
	Ho	165	5104.2	2.7				ug/L	7	Standard
	Tl	203	689.0	1.9	**0.0742**	0.001	1.8	ug/L	15	Standard
	Tl	205	618.3	5.7	**0.0660**	0.005	7.0	ug/L	13	Standard
	Pb	206	276291.1	0.7	**47.6167**	0.411	0.9	ug/L	264	Standard
	Pb	207	230628.0	0.7	**43.7624**	0.472	1.1	ug/L	222	Standard
	Pb	208	1006911.8	0.1	**46.7816**	0.251	0.5	ug/L	959	Standard
	U	238	4725.7	2.3	**0.5722**	0.012	2.1	ug/L	9	Standard
>	Bi	209	566085.1	0.4				ug/L	552821	Standard

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Na	23	8.3	124.9	**22.1583**	27.707	125.0	mg/L	2	Standard
Mg	24	85.0	11.8	**0.0284**	0.010	35.7	mg/L	55	Standard
K	39	100.0	15.0	**0.2109**	0.050	23.9	mg/L	28	Standard
Ca	43	75.0	6.7	**3.6275**	0.385	10.6	mg/L	27	Standard
Fe	54	8171.7	3.6	**5.6200**	0.239	4.3	mg/L	147	Standard
Fe	57	2388.5	3.0	**5.7441**	0.167	2.9	mg/L	268	Standard
> **Sc-1**	45	46143.5	0.6				mg/L	41174	Standard
Cl	35	81155.5	2.1				ug/L	69550	Standard
Kr	83	0.3	173.2				ug/L	1	Standard
Br	81	3463.7	7.7				ug/L	1950	Standard
P	31	25539.9	4.4				ug/L	21156	Standard
S	34	3917.2	3.0				ug/L	3419	Standard
Sr	88	76.7	18.8				ug/L	72	Standard
C	12	486.7	15.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	256.7	4.5				mg/L	17	Standard
Dy	164	8760.5	4.1				mg/L	16	Standard
Ho-1	165	5104.2	2.7				mg/L	7	Standard
Er	166	4777.4	5.8				mg/L	7	Standard
I	127	36602.6	6.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.822	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.002	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.107
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.399
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606145102
Sample Date/Time: Friday, July 01, 2016 16:56:17
Number of Replicates: 3
Autosampler Position: 228
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	78477.8	2.4				ug/L	76456	Standard
	Be	9	601.7	8.2	**0.5033**	0.031	6.2	ug/L	20	Standard
	Al	27	4781763.5	1.4	**27.2109**	0.622	2.3	ug/L	1307	Standard
	Sc	45	48186.5	2.1				ug/L	41174	Standard
	Ti	47	26915.6	1.4	**75.8086**	1.495	2.0	ug/L	27	Standard
	V	51	170171.2	0.3	**18.8187**	0.180	1.0	ug/L	1434	Standard
	Cr	52	138418.5	1.4	**14.7553**	0.301	2.0	ug/L	7733	Standard
	Cr	53	16907.8	0.5	**14.9504**	0.076	0.5	ug/L	442	Standard
	Mn	55	4385050.3	0.1	**532.0225**	4.124	0.8	ug/L	723	Standard
	Co	59	55284.7	0.4	**6.6001**	0.055	0.8	ug/L	217	Standard
	Ni	60	30764.2	0.1	**13.4670**	0.097	0.7	ug/L	304	Standard
	Cu	65	65698.5	1.0	**29.5008**	0.365	1.2	ug/L	181	Standard
	Zn	66	217089.2	0.9	**162.5825**	0.761	0.5	ug/L	215	Standard
>	Ge	72	566980.9	0.7				ug/L	520809	Standard
	As	75	11103.7	0.8	**8.3069**	0.047	0.6	ug/L	-52	Standard
	Se	82	132.6	4.8	**0.8380**	0.046	5.5	ug/L	17	Standard
	Se-1	77	150.3	12.7	**0.9313**	0.212	22.8	ug/L	56	Standard
>	Ga	71	15192.6	2.9				mg/L	25	Standard
	Rb	85	155948.5	0.6				ug/L	28	Standard
	Y	89	601495.0	1.4				ug/L	447395	Standard
>	Rh	103	23.3	32.7				ug/L	15	Standard
	Mo	98	5496.7	0.9	**1.6857**	0.006	0.4	ug/L	113	Standard
	Ag	107	775.4	2.6	**0.0887**	0.002	2.3	ug/L	108	Standard
	Cd	111	1034.2	3.3	**0.4202**	0.011	2.7	mg/L	3	Standard
	Cd	114	2656.7	6.0	**0.4384**	0.024	5.5	ug/L	20	Standard
>	In	115	665198.2	0.6				ug/L	625728	Standard
	Sn	118	1311.7	13.8	**0.1076**	0.028	25.7	ug/L	568	Standard
	Sb	123	507.6	23.3	**0.0588**	0.022	37.4	ug/L	612	Standard
	Ba	135	246404.5	0.4	**106.5243**	0.535	0.5	ug/L	21	Standard
	Ce	140	708985.8	1.9				ug/L	245	Standard
>	Tb	159	1000873.3	0.7				ug/L	950397	Standard
	Ho	165	8867.6	1.0				ug/L	7	Standard
	Tl	203	1805.8	2.5	**0.1960**	0.004	2.0	ug/L	15	Standard
	Tl	205	1731.8	4.2	**0.2027**	0.009	4.2	ug/L	13	Standard
	Pb	206	179680.5	0.2	**31.0013**	0.201	0.6	ug/L	264	Standard
	Pb	207	147967.3	0.2	**28.1058**	0.174	0.6	ug/L	222	Standard
	Pb	208	649286.1	0.4	**30.1982**	0.309	1.0	ug/L	959	Standard
	U	238	11590.8	1.2	**1.4062**	0.023	1.6	ug/L	9	Standard
>	Bi	209	565178.3	0.6				ug/L	552821	Standard

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Na	23	3.3	173.2	**8.3775**	14.502	173.1	mg/L	2	Standard
Mg	24	161.7	21.7	**0.1008**	0.032	31.7	mg/L	55	Standard
K	39	290.0	13.0	**0.8193**	0.124	15.2	mg/L	28	Standard
Ca	43	116.7	13.8	**6.5999**	1.152	17.5	mg/L	27	Standard
Fe	54	19162.0	2.8	**12.7406**	0.220	1.7	mg/L	147	Standard
Fe	57	5199.2	1.1	**12.8525**	0.447	3.5	mg/L	268	Standard
Sc-1	45	48186.5	2.1				mg/L	41174	Standard
Cl	35	81627.3	0.9				ug/L	69550	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	4627.4	6.5				ug/L	1950	Standard
P	31	26000.6	1.2				ug/L	21156	Standard
S	34	3977.2	4.8				ug/L	3419	Standard
Sr	88	111.7	18.6				ug/L	72	Standard
C	12	856.7	2.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	230.0	17.4				mg/L	17	Standard
Dy	164	14613.4	2.0				mg/L	16	Standard
Ho-1	165	8867.6	1.0				mg/L	7	Standard
Er	166	8085.5	6.9				mg/L	7	Standard
I	127	50293.4	2.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.645	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.865	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.308
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.235
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606145102PS WG575057-01
Sample Date/Time: Friday, July 01, 2016 16:59:28
Number of Replicates: 3
Autosampler Position: 229
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79385.8	1.3				ug/L	76456	Standard
	Be	9	66132.4	2.2	**56.8900**	1.804	3.2	ug/L	20	Standard
	Al	27	4677646.6	0.6	**26.3080**	0.258	1.0	ug/L	1307	Standard
	Sc	45	48036.1	2.2				ug/L	41174	Standard
	Ti	47	26404.3	1.4	**75.0881**	1.235	1.6	ug/L	27	Standard
	V	51	638356.3	0.3	**71.8329**	0.463	0.6	ug/L	1434	Standard
	Cr	52	595924.0	0.5	**67.3875**	0.498	0.7	ug/L	7733	Standard
	Cr	53	74037.1	1.4	**67.5313**	1.159	1.7	ug/L	442	Standard
	Mn	55	4772659.1	0.6	**584.6747**	1.033	0.2	ug/L	723	Standard
	Co	59	500476.8	0.3	**60.5691**	0.409	0.7	ug/L	217	Standard
	Ni	60	148905.8	0.4	**66.4112**	0.102	0.2	ug/L	304	Standard
	Cu	65	183049.8	0.4	**83.1281**	0.455	0.5	ug/L	181	Standard
	Zn	66	287669.1	1.1	**217.6035**	2.596	1.2	ug/L	215	Standard
>	Ge	72	561514.3	0.4				ug/L	520809	Standard
	As	75	82895.8	0.4	**62.3258**	0.436	0.7	ug/L	-52	Standard
	Se	82	7441.1	0.8	**54.5039**	0.359	0.7	ug/L	17	Standard
	Se-1	77	5169.2	1.0	**55.4015**	0.590	1.1	ug/L	56	Standard
>	Ga	71	15267.7	1.1				mg/L	25	Standard
	Rb	85	154189.3	2.6				ug/L	28	Standard
	Y	89	603447.9	0.9				ug/L	447395	Standard
>	Rh	103	43.3	24.0				ug/L	15	Standard
	Mo	98	5476.6	2.0	**1.7012**	0.041	2.4	ug/L	113	Standard
	Ag	107	391731.6	0.9	**51.9492**	0.634	1.2	ug/L	108	Standard
	Cd	111	129263.1	1.2	**53.4846**	0.463	0.9	mg/L	3	Standard
	Cd	114	313124.4	0.6	**52.3315**	0.333	0.6	ug/L	20	Standard
>	In	115	656847.0	0.4				ug/L	625728	Standard
	Sn	118	1576.8	23.5	**0.1493**	0.056	37.2	ug/L	568	Standard
	Sb	123	282627.6	1.8	**52.0619**	0.839	1.6	ug/L	612	Standard
	Ba	135	360531.0	1.0	**157.8560**	2.191	1.4	ug/L	21	Standard
	Ce	140	708239.5	1.1				ug/L	245	Standard
>	Tb	159	993751.4	0.6				ug/L	950397	Standard
	Ho	165	9054.4	1.6				ug/L	7	Standard
	Tl	203	489986.8	0.9	**53.0644**	0.590	1.1	ug/L	15	Standard
	Tl	205	443077.3	1.1	**54.0276**	0.463	0.9	ug/L	13	Standard
	Pb	206	490668.3	0.8	**84.2254**	0.742	0.9	ug/L	264	Standard
	Pb	207	417558.3	0.6	**78.9219**	0.638	0.8	ug/L	222	Standard
	Pb	208	1796810.4	0.6	**83.1513**	0.452	0.5	ug/L	959	Standard
	U	238	437485.4	0.2	**52.7644**	0.211	0.4	ug/L	9	Standard
>	Bi	209	568575.4	0.3				ug/L	552821	Standard

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Na	23	1.7	173.2	**4.3123**	7.460	173.0	mg/L	2	Standard
Mg	24	195.0	13.6	**0.1353**	0.029	21.4	mg/L	55	Standard
K	39	278.3	18.2	**0.7825**	0.157	20.1	mg/L	28	Standard
Ca	43	116.7	21.1	**6.6089**	1.697	25.7	mg/L	27	Standard
Fe	54	18988.9	2.1	**12.6650**	0.048	0.4	mg/L	147	Standard
Fe	57	5222.6	2.2	**12.9542**	0.402	3.1	mg/L	268	Standard
Sc-1	45	48036.1	2.2				mg/L	41174	Standard
Cl	35	79157.6	0.9				ug/L	69550	Standard
Kr	83	3.0	88.2				ug/L	1	Standard
Br	81	4567.4	7.8				ug/L	1950	Standard
P	31	25140.8	1.9				ug/L	21156	Standard
S	34	3993.9	5.1				ug/L	3419	Standard
Sr	88	141.7	14.7				ug/L	72	Standard
C	12	916.7	5.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	220.0	20.8				mg/L	17	Standard
Dy	164	14636.5	2.9				mg/L	16	Standard
Ho-1	165	9054.4	1.6				mg/L	7	Standard
Er	166	8719.2	6.2				mg/L	7	Standard
I	127	60985.9	3.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.832	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.816	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.973
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.850
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606145102SDL WG575057-02
Sample Date/Time: Friday, July 01, 2016 17:02:40
Number of Replicates: 3
Autosampler Position: 230
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72896.8	3.6				ug/L	76456	Standard
	Be	9	151.7	28.0	**0.1215**	0.035	28.7	ug/L	20	Standard
	Al	27	886084.1	1.1	**5.4244**	0.245	4.5	ug/L	1307	Standard
	Sc	45	40265.1	1.1				ug/L	41174	Standard
	Ti	47	4872.5	1.7	**14.8447**	0.431	2.9	ug/L	27	Standard
	V	51	31678.7	1.1	**3.6484**	0.093	2.5	ug/L	1434	Standard
	Cr	52	29443.9	1.3	**2.6645**	0.094	3.5	ug/L	7733	Standard
	Cr	53	3295.4	2.1	**2.8380**	0.099	3.5	ug/L	442	Standard
	Mn	55	811630.5	1.3	**106.9281**	2.799	2.6	ug/L	723	Standard
	Co	59	10016.3	0.5	**1.2757**	0.020	1.5	ug/L	217	Standard
	Ni	60	6049.9	1.8	**2.7576**	0.087	3.1	ug/L	304	Standard
	Cu	65	12638.9	1.7	**6.1089**	0.185	3.0	ug/L	181	Standard
	Zn	66	44343.1	2.3	**35.9528**	1.298	3.6	ug/L	215	Standard
>	Ge	72	521851.4	1.3				ug/L	520809	Standard
	As	75	2135.0	1.6	**1.7715**	0.050	2.8	ug/L	-52	Standard
	Se	82	32.7	15.9	**0.1321**	0.044	33.6	ug/L	17	Standard
	Se-1	77	80.0	15.4	**0.2505**	0.153	61.0	ug/L	56	Standard
>	Ga	71	2831.9	8.0				mg/L	25	Standard
	Rb	85	29441.9	2.0				ug/L	28	Standard
	Y	89	460347.3	0.7				ug/L	447395	Standard
>	Rh	103	23.3	44.6				ug/L	15	Standard
	Mo	98	1036.0	4.3	**0.3306**	0.018	5.5	ug/L	113	Standard
	Ag	107	240.3	7.9	**0.0218**	0.002	11.3	ug/L	108	Standard
	Cd	111	192.5	10.6	**0.0842**	0.009	10.8	mg/L	3	Standard
	Cd	114	501.8	24.8	**0.0913**	0.024	25.9	ug/L	20	Standard
>	In	115	604796.3	1.1				ug/L	625728	Standard
	Sn	118	678.3	14.5	**0.0250**	0.017	67.9	ug/L	568	Standard
	Sb	123	1577.0	34.7	**0.2828**	0.113	39.9	ug/L	612	Standard
	Ba	135	46358.8	0.3	**22.0307**	0.285	1.3	ug/L	21	Standard
	Ce	140	135977.5	1.1				ug/L	245	Standard
>	Tb	159	909731.4	0.9				ug/L	950397	Standard
	Ho	165	1651.8	7.4				ug/L	7	Standard
	Tl	203	404.7	3.9	**0.0462**	0.002	3.6	ug/L	15	Standard
	Tl	205	413.3	12.1	**0.0442**	0.006	14.3	ug/L	13	Standard
	Pb	206	34246.7	0.6	**6.2517**	0.027	0.4	ug/L	264	Standard
	Pb	207	28334.8	0.4	**5.6896**	0.033	0.6	ug/L	222	Standard
	Pb	208	122940.1	1.3	**6.0452**	0.111	1.8	ug/L	959	Standard
	U	238	2224.5	2.8	**0.2869**	0.007	2.3	ug/L	9	Standard
>	Bi	209	531198.7	0.5				ug/L	552821	Standard

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Na	23	1.7	173.2	**5.1506**	8.913	173.0	mg/L	2	Standard
Mg	24	81.7	18.7	**0.0373**	0.018	48.0	mg/L	55	Standard
K	39	76.7	26.4	**0.1697**	0.081	47.8	mg/L	28	Standard
Ca	43	40.0	25.0	**1.2573**	0.889	70.7	mg/L	27	Standard
Fe	54	3471.8	1.5	**2.6857**	0.073	2.7	mg/L	147	Standard
Fe	57	1143.4	4.3	**2.7898**	0.194	6.9	mg/L	268	Standard
> **Sc-1**	45	40265.1	1.1				mg/L	41174	Standard
Cl	35	70995.3	1.2				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	2253.5	3.8				ug/L	1950	Standard
P	31	10969.0	0.7				ug/L	21156	Standard
S	34	3750.5	0.4				ug/L	3419	Standard
Sr	88	80.0	12.5				ug/L	72	Standard
C	12	226.7	9.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	41.7				mg/L	17	Standard
Dy	164	2685.5	6.0				mg/L	16	Standard
Ho-1	165	1651.8	7.4				mg/L	7	Standard
Er	166	1560.1	5.1				mg/L	7	Standard
I	127	40504.1	2.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.345	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.200	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.655
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.089
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606145102SDL WG575057-02
Sample Date/Time: Friday, July 01, 2016 17:05:52
Number of Replicates: 3
Autosampler Position: 231
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70195.6	2.2				ug/L	76456	Standard
	Be	9	78.3	41.0	**0.0567**	0.033	57.8	ug/L	20	Standard
	Al	27	176403.2	5.8	**1.1130**	0.082	7.4	ug/L	1307	Standard
	Sc	45	38834.7	0.9				ug/L	41174	Standard
	Ti	47	931.7	5.0	**2.8080**	0.157	5.6	ug/L	27	Standard
	V	51	7219.8	2.6	**0.6896**	0.020	2.9	ug/L	1434	Standard
	Cr	52	9795.8	4.3	**0.2546**	0.049	19.3	ug/L	7733	Standard
	Cr	53	816.7	8.0	**0.4003**	0.064	16.0	ug/L	442	Standard
	Mn	55	156110.5	2.6	**20.7536**	0.477	2.3	ug/L	723	Standard
	Co	59	2209.5	13.5	**0.2622**	0.038	14.6	ug/L	217	Standard
	Ni	60	1399.1	2.2	**0.5287**	0.012	2.4	ug/L	304	Standard
	Cu	65	2640.2	2.1	**1.2343**	0.024	2.0	ug/L	181	Standard
	Zn	66	9656.7	1.3	**7.7908**	0.073	0.9	ug/L	215	Standard
>	**Ge**	72	514985.8	0.4				ug/L	520809	Standard
	As	75	413.0	1.8	**0.3835**	0.006	1.4	ug/L	-52	Standard
	Se	82	23.7	20.7	**0.0632**	0.039	61.2	ug/L	17	Standard
	Se-1	77	57.0	6.1	**-0.0104**	0.039	372.4	ug/L	56	Standard
>	**Ga**	71	518.3	3.7				mg/L	25	Standard
	Rb	85	5472.7	4.6				ug/L	28	Standard
	Y	89	432045.4	1.1				ug/L	447395	Standard
>	**Rh**	103	21.7	13.3				ug/L	15	Standard
	Mo	98	406.8	30.7	**0.1173**	0.043	37.1	ug/L	113	Standard
	Ag	107	155.3	56.4	**0.0098**	0.013	129.9	ug/L	108	Standard
	Cd	111	62.6	64.4	**0.0262**	0.018	70.2	mg/L	3	Standard
	Cd	114	167.6	61.4	**0.0309**	0.019	61.4	ug/L	20	Standard
>	**In**	115	596116.9	0.1				ug/L	625728	Standard
	Sn	118	588.3	26.0	**0.0117**	0.025	212.4	ug/L	568	Standard
	Sb	123	388.4	28.3	**0.0452**	0.022	49.6	ug/L	612	Standard
	Ba	135	8995.0	2.1	**4.3221**	0.097	2.2	ug/L	21	Standard
	Ce	140	24040.7	2.3				ug/L	245	Standard
>	**Tb**	159	895791.4	0.8				ug/L	950397	Standard
	Ho	165	243.3	11.3				ug/L	7	Standard
	Tl	203	146.7	64.0	**0.0163**	0.011	66.9	ug/L	15	Standard
	Tl	205	206.7	97.8	**0.0173**	0.026	152.8	ug/L	13	Standard
	Pb	206	6377.7	1.6	**1.1327**	0.021	1.9	ug/L	264	Standard
	Pb	207	5284.9	1.3	**1.0274**	0.015	1.5	ug/L	222	Standard
	Pb	208	23160.0	2.5	**1.1036**	0.032	2.9	ug/L	959	Standard
	U	238	525.7	30.5	**0.0678**	0.021	30.5	ug/L	9	Standard
>	**Bi**	209	529365.9	0.5				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	68.3	23.5	**0.0243**	0.019	79.3	mg/L	55	Standard
K	39	26.7	78.1	**-0.0227**	0.085	373.8	mg/L	28	Standard
Ca	43	28.3	36.7	**0.2726**	0.981	359.8	mg/L	27	Standard
Fe	54	762.6	6.6	**0.5352**	0.041	7.7	mg/L	147	Standard
Fe	57	421.7	1.8	**0.5696**	0.019	3.3	mg/L	268	Standard
> **Sc-1**	45	38834.7	0.9				mg/L	41174	Standard
Cl	35	69123.3	0.3				ug/L	69550	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	1883.5	2.0				ug/L	1950	Standard
P	31	7872.0	1.6				ug/L	21156	Standard
S	34	3360.4	5.9				ug/L	3419	Standard
Sr	88	80.0	32.5				ug/L	72	Standard
C	12	90.0	22.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	153.3	38.2				mg/L	17	Standard
Dy	164	420.7	27.3				mg/L	16	Standard
Ho-1	165	243.3	11.3				mg/L	7	Standard
Er	166	263.3	34.5				mg/L	7	Standard
I	127	37972.5	2.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.812	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.882	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.268
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.757
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 17:09:05
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74588.1	0.3				ug/L	76456	Standard
	Be	9	57897.1	2.0	**52.9977**	1.204	2.3	ug/L	20	Standard
	Al	27	8733198.2	1.7	**52.2835**	0.984	1.9	ug/L	1307	Standard
	Sc	45	42748.6	2.7				ug/L	41174	Standard
	Ti	47	34213.3	0.6	**98.3209**	0.421	0.4	ug/L	27	Standard
	V	51	442681.7	1.0	**50.2684**	0.638	1.3	ug/L	1434	Standard
	Cr	52	439186.0	0.4	**49.9273**	0.312	0.6	ug/L	7733	Standard
	Cr	53	53859.0	4.5	**49.5163**	2.076	4.2	ug/L	442	Standard
	Mn	55	408283.6	1.1	**50.4406**	0.633	1.3	ug/L	723	Standard
	Co	59	418347.3	1.1	**51.1465**	0.625	1.2	ug/L	217	Standard
	Ni	60	111527.3	0.5	**50.2172**	0.479	1.0	ug/L	304	Standard
	Cu	65	110380.0	1.0	**50.6153**	0.665	1.3	ug/L	181	Standard
	Zn	66	65800.9	0.7	**50.1493**	0.538	1.1	ug/L	215	Standard
>	Ge	72	555788.6	0.5				ug/L	520809	Standard
	As	75	65659.0	0.5	**49.8836**	0.337	0.7	ug/L	-52	Standard
	Se	82	6718.9	0.9	**49.7097**	0.395	0.8	ug/L	17	Standard
	Se-1	77	4636.4	0.7	**50.1376**	0.106	0.2	ug/L	56	Standard
>	Ga	71	43.3	35.3				mg/L	25	Standard
	Rb	85	1065.0	6.1				ug/L	28	Standard
	Y	89	468359.1	2.1				ug/L	447395	Standard
>	Rh	103	20.0	25.0				ug/L	15	Standard
	Mo	98	314455.9	1.0	**100.8766**	0.307	0.3	ug/L	113	Standard
	Ag	107	371694.7	0.4	**50.2132**	0.146	0.3	ug/L	108	Standard
	Cd	111	119048.0	0.9	**50.1804**	0.274	0.5	mg/L	3	Standard
	Cd	114	295369.7	1.4	**50.2861**	0.415	0.8	ug/L	20	Standard
>	In	115	644781.5	0.7				ug/L	625728	Standard
	Sn	118	326587.3	0.5	**49.1617**	0.446	0.9	ug/L	568	Standard
	Sb	123	269765.0	0.9	**50.6219**	0.112	0.2	ug/L	612	Standard
	Ba	135	109973.0	0.0	**49.0395**	0.330	0.7	ug/L	21	Standard
	Ce	140	1043.4	21.6				ug/L	245	Standard
>	Tb	159	966885.6	0.6				ug/L	950397	Standard
	Ho	165	16.7	45.8				ug/L	7	Standard
	Tl	203	449950.1	0.5	**50.5682**	0.198	0.4	ug/L	15	Standard
	Tl	205	409109.7	0.2	**51.7709**	0.214	0.4	ug/L	13	Standard
	Pb	206	284448.3	0.6	**50.6536**	0.284	0.6	ug/L	264	Standard
	Pb	207	258444.3	0.7	**50.6761**	0.292	0.6	ug/L	222	Standard
	Pb	208	1085344.7	0.3	**52.1064**	0.244	0.5	ug/L	959	Standard
	U	238	403930.8	0.4	**50.5574**	0.115	0.2	ug/L	9	Standard
>	Bi	209	547878.4	0.3				ug/L	552821	Standard

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Na	23	3.3	86.6	**9.4428**	8.174	86.6	mg/L	2	Standard
Mg	24	4510.7	2.8	**5.0184**	0.235	4.7	mg/L	55	Standard
K	39	1208.4	6.0	**4.3343**	0.305	7.0	mg/L	28	Standard
Ca	43	88.3	31.2	**5.2894**	2.418	45.7	mg/L	27	Standard
Fe	54	6821.5	2.8	**5.0554**	0.184	3.6	mg/L	147	Standard
Fe	57	2156.8	8.4	**5.5723**	0.370	6.6	mg/L	268	Standard
Sc-1	45	42748.6	2.7				mg/L	41174	Standard
Cl	35	80981.2	1.3				ug/L	69550	Standard
Kr	83	1.3	86.6				ug/L	1	Standard
Br	81	2280.2	6.1				ug/L	1950	Standard
P	31	25067.4	1.4				ug/L	21156	Standard
S	34	4143.9	4.2				ug/L	3419	Standard
Sr	88	66.7	51.1				ug/L	72	Standard
C	12	116.7	24.7				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	173.3	61.7				mg/L	17	Standard
Dy	164	15.5	97.9				mg/L	16	Standard
Ho-1	165	16.7	45.8				mg/L	7	Standard
Er	166	23.3	24.7				mg/L	7	Standard
I	127	10653.7	0.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	105.995		
Al	27	104.567		
Sc	45			
Ti	47	98.321		
V	51	100.537		
Cr	52	99.855		
Cr	53			
Mn	55	100.881		
Co	59	102.293		
Ni	60	100.434		
Cu	65	101.231		
Zn	66	100.299		
Ge	72		106.716	
As	75	99.767		
Se	82	99.419		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	100.877		
Ag	107	100.426		
Cd	111	100.361		
Cd	114			
In	115			103.045
Sn	118	98.323		
Sb	123	101.244		
Ba	135	98.079		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.136		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.213		
U	238	101.115		
Bi	209			99.106
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 17:12:17
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73740.8	2.8				ug/L	76456	Standard
	Be	9	30.0	16.7	**0.0079**	0.005	57.8	ug/L	20	Standard
	Al	27	2383.5	29.7	**0.0042**	0.004	92.9	ug/L	1307	Standard
	Sc	45	42364.1	1.1				ug/L	41174	Standard
	Ti	47	28.3	8.2	**-0.0020**	0.008	409.9	ug/L	27	Standard
	V	51	1463.8	6.3	**-0.0298**	0.010	33.6	ug/L	1434	Standard
	Cr	52	7082.7	1.2	**-0.1402**	0.009	6.6	ug/L	7733	Standard
	Cr	53	485.0	17.5	**0.0388**	0.087	223.5	ug/L	442	Standard
	Mn	55	856.7	6.3	**0.0059**	0.006	103.8	ug/L	723	Standard
	Co	59	239.7	17.2	**0.0002**	0.005	2435.9	ug/L	217	Standard
	Ni	60	264.7	3.4	**-0.0322**	0.006	18.2	ug/L	304	Standard
	Cu	65	171.0	2.0	**0.0054**	0.002	46.6	ug/L	181	Standard
	Zn	66	243.3	6.7	**0.0079**	0.011	133.5	ug/L	215	Standard
>	**Ge**	72	549483.2	1.7				ug/L	520809	Standard
	As	75	-74.2	16.4	**-0.0117**	0.009	74.0	ug/L	-52	Standard
	Se	82	18.9	27.4	**0.0161**	0.041	258.0	ug/L	17	Standard
	Se-1	77	51.3	15.1	**-0.1160**	0.081	69.5	ug/L	56	Standard
>	**Ga**	71	21.7	53.3				mg/L	25	Standard
	Rb	85	48.3	33.3				ug/L	28	Standard
	Y	89	469146.0	2.8				ug/L	447395	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	269.5	12.3	**0.0621**	0.010	15.8	ug/L	113	Standard
	Ag	107	131.3	8.8	**0.0048**	0.002	32.6	ug/L	108	Standard
	Cd	111	13.9	69.3	**0.0035**	0.004	115.1	mg/L	3	Standard
	Cd	114	67.3	28.0	**0.0114**	0.003	28.7	ug/L	20	Standard
>	**In**	115	647674.1	1.6				ug/L	625728	Standard
	Sn	118	1591.8	26.5	**0.1547**	0.062	40.2	ug/L	568	Standard
	Sb	123	1048.5	31.2	**0.1625**	0.061	37.8	ug/L	612	Standard
	Ba	135	62.3	27.9	**0.0097**	0.008	77.5	ug/L	21	Standard
	Ce	140	363.3	30.0				ug/L	245	Standard
>	**Tb**	159	949797.9	2.5				ug/L	950397	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	92.0	24.5	**0.0095**	0.002	24.5	ug/L	15	Standard
	Tl	205	60.0	22.0	**-0.0022**	0.002	85.3	ug/L	13	Standard
	Pb	206	340.0	6.2	**0.0166**	0.004	25.1	ug/L	264	Standard
	Pb	207	288.7	4.1	**0.0103**	0.002	15.3	ug/L	222	Standard
	Pb	208	1226.7	6.9	**0.0104**	0.004	37.3	ug/L	959	Standard
	U	238	77.0	45.5	**0.0093**	0.004	45.3	ug/L	9	Standard
>	**Bi**	209	550276.1	2.1				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	46.7	24.7	**-0.0073**	0.013	171.5	mg/L	55	Standard
K	39	21.7	48.0	**-0.0502**	0.039	78.2	mg/L	28	Standard
Ca	43	33.3	17.3	**0.4877**	0.477	97.9	mg/L	27	Standard
Fe	54	195.9	17.0	**0.0503**	0.024	47.6	mg/L	147	Standard
Fe	57	191.7	26.4	**-0.2314**	0.152	65.8	mg/L	268	Standard
> **Sc-1**	45	42364.1	1.1				mg/L	41174	Standard
Cl	35	80980.6	1.9				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	2003.5	11.5				ug/L	1950	Standard
P	31	23999.0	2.6				ug/L	21156	Standard
S	34	4252.3	5.6				ug/L	3419	Standard
Sr	88	71.7	21.3				ug/L	72	Standard
C	12	100.0	34.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	110.0	36.4				mg/L	17	Standard
Dy	164	16.5	70.8				mg/L	16	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	7548.5	1.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.506	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.507
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.540
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606145103
Sample Date/Time: Friday, July 01, 2016 17:18:25
Number of Replicates: 3
Autosampler Position: 232
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77464.3	3.3				ug/L	76456	Standard
	Be	9	561.7	8.9	**0.4749**	0.032	6.7	ug/L	20	Standard
	Al	27	1784965.6	1.0	**10.2905**	0.435	4.2	ug/L	1307	Standard
	Sc	45	46648.4	2.7				ug/L	41174	Standard
	Ti	47	18184.2	0.6	**50.8412**	0.521	1.0	ug/L	27	Standard
	V	51	103032.2	1.3	**11.2383**	0.206	1.8	ug/L	1434	Standard
	Cr	52	92595.8	0.6	**9.4776**	0.042	0.4	ug/L	7733	Standard
	Cr	53	11107.4	3.1	**9.6118**	0.373	3.9	ug/L	442	Standard
	Mn	55	2019437.5	1.0	**243.2931**	1.293	0.5	ug/L	723	Standard
	Co	59	22651.9	1.2	**2.6686**	0.043	1.6	ug/L	217	Standard
	Ni	60	16329.8	0.7	**7.0275**	0.020	0.3	ug/L	304	Standard
	Cu	65	24727.8	0.3	**10.9821**	0.036	0.3	ug/L	181	Standard
	Zn	66	127705.3	0.5	**94.9239**	0.754	0.8	ug/L	215	Standard
>	Ge	72	570830.0	0.6				ug/L	520809	Standard
	As	75	6011.6	0.9	**4.4881**	0.053	1.2	ug/L	-52	Standard
	Se	82	95.5	2.7	**0.5629**	0.016	2.8	ug/L	17	Standard
	Se-1	77	101.0	4.3	**0.3932**	0.042	10.6	ug/L	56	Standard
>	Ga	71	9259.5	1.6				mg/L	25	Standard
	Rb	85	72246.9	1.1				ug/L	28	Standard
	Y	89	547009.7	0.9				ug/L	447395	Standard
>	Rh	103	31.7	24.1				ug/L	15	Standard
	Mo	98	3914.2	0.5	**1.1794**	0.014	1.2	ug/L	113	Standard
	Ag	107	483.7	3.9	**0.0498**	0.002	4.8	ug/L	108	Standard
	Cd	111	987.4	2.0	**0.3964**	0.008	2.0	mg/L	3	Standard
	Cd	114	2496.5	1.3	**0.4073**	0.007	1.6	ug/L	20	Standard
>	In	115	673007.1	0.7				ug/L	625728	Standard
	Sn	118	1876.8	14.9	**0.1869**	0.040	21.4	ug/L	568	Standard
	Sb	123	1273.6	19.1	**0.1953**	0.043	22.1	ug/L	612	Standard
	Ba	135	110926.6	0.4	**47.3888**	0.135	0.3	ug/L	21	Standard
	Ce	140	529177.4	0.3				ug/L	245	Standard
>	Tb	159	1007132.0	0.8				ug/L	950397	Standard
	Ho	165	4118.9	3.9				ug/L	7	Standard
	Tl	203	1019.0	7.4	**0.1098**	0.008	7.6	ug/L	15	Standard
	Tl	205	931.7	3.7	**0.1041**	0.004	4.2	ug/L	13	Standard
	Pb	206	349755.5	0.5	**60.1201**	0.233	0.4	ug/L	264	Standard
	Pb	207	290008.2	0.8	**54.8870**	0.434	0.8	ug/L	222	Standard
	Pb	208	1256548.1	0.6	**58.2295**	0.582	1.0	ug/L	959	Standard
	U	238	5395.3	1.0	**0.6515**	0.003	0.5	ug/L	9	Standard
>	Bi	209	567672.3	0.6				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	71.7	26.4	**0.0141**	0.021	150.8	mg/L	55	Standard
K	39	116.7	6.5	**0.2640**	0.032	12.1	mg/L	28	Standard
Ca	43	40.0	33.1	**0.7666**	1.123	146.5	mg/L	27	Standard
Fe	54	10538.1	0.8	**7.1995**	0.244	3.4	mg/L	147	Standard
Fe	57	2908.6	5.3	**7.0806**	0.202	2.9	mg/L	268	Standard
Sc-1	45	46648.4	2.7				mg/L	41174	Standard
Cl	35	80143.5	2.5				ug/L	69550	Standard
Kr	83	2.7	78.1				ug/L	1	Standard
Br	81	3830.5	4.5				ug/L	1950	Standard
P	31	23700.2	1.3				ug/L	21156	Standard
S	34	3720.5	5.4				ug/L	3419	Standard
Sr	88	83.3	28.4				ug/L	72	Standard
C	12	560.0	12.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	286.7	34.2				mg/L	17	Standard
Dy	164	6970.4	6.6				mg/L	16	Standard
Ho-1	165	4118.9	3.9				mg/L	7	Standard
Er	166	3853.8	3.6				mg/L	7	Standard
I	127	33669.0	1.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		101.319	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		109.604	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.556
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.686
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606145104
Sample Date/Time: Friday, July 01, 2016 17:22:04
Number of Replicates: 3
Autosampler Position: 233
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75591.5	2.3				ug/L	76456	Standard
	Be	9	436.7	14.5	0.3755	0.064	17.2	ug/L	20	Standard
	Al	27	7695752.7	1.5	45.4726	1.098	2.4	ug/L	1307	Standard
	Sc	45	44985.0	2.4				ug/L	41174	Standard
	Ti	47	18604.1	2.8	52.8354	1.232	2.3	ug/L	27	Standard
	V	51	86248.0	1.1	9.5259	0.091	1.0	ug/L	1434	Standard
	Cr	52	84116.5	1.2	8.6708	0.090	1.0	ug/L	7733	Standard
	Cr	53	9486.3	1.6	8.2820	0.108	1.3	ug/L	442	Standard
	Mn	55	1964825.3	2.7	240.4380	5.305	2.2	ug/L	723	Standard
	Co	59	30224.8	2.1	3.6271	0.056	1.5	ug/L	217	Standard
	Ni	60	18384.5	0.8	8.0589	0.068	0.8	ug/L	304	Standard
	Cu	65	28824.7	1.7	13.0170	0.152	1.2	ug/L	181	Standard
	Zn	66	125736.6	1.1	94.9340	0.526	0.6	ug/L	215	Standard
>	Ge	72	561947.7	0.6				ug/L	520809	Standard
	As	75	5595.8	2.2	4.2465	0.119	2.8	ug/L	-52	Standard
	Se	82	88.4	10.6	0.5221	0.073	13.9	ug/L	17	Standard
	Se-1	77	109.0	11.9	0.4966	0.134	27.0	ug/L	56	Standard
>	Ga	71	7550.2	3.3				mg/L	25	Standard
	Rb	85	65005.8	0.9				ug/L	28	Standard
	Y	89	541545.4	1.1				ug/L	447395	Standard
>	Rh	103	25.0	34.6				ug/L	15	Standard
	Mo	98	5215.9	1.9	1.6229	0.033	2.0	ug/L	113	Standard
	Ag	107	406.7	7.0	0.0412	0.004	9.1	ug/L	108	Standard
	Cd	111	829.8	3.4	0.3418	0.009	2.5	mg/L	3	Standard
	Cd	114	1989.6	6.7	0.3333	0.022	6.7	ug/L	20	Standard
>	In	115	655315.6	1.0				ug/L	625728	Standard
	Sn	118	1885.1	5.0	0.1955	0.016	8.1	ug/L	568	Standard
	Sb	123	963.7	16.2	0.1445	0.030	21.0	ug/L	612	Standard
	Ba	135	109632.3	1.8	48.0987	0.601	1.2	ug/L	21	Standard
	Ce	140	540393.1	1.7				ug/L	245	Standard
>	Tb	159	980324.3	0.6				ug/L	950397	Standard
	Ho	165	4750.7	4.0				ug/L	7	Standard
	Tl	203	1323.7	5.2	0.1446	0.008	5.6	ug/L	15	Standard
	Tl	205	1150.0	7.8	0.1324	0.010	7.6	ug/L	13	Standard
	Pb	206	276145.9	0.9	48.0493	0.456	0.9	ug/L	264	Standard
	Pb	207	230196.6	0.9	44.1005	0.476	1.1	ug/L	222	Standard
	Pb	208	1005008.2	0.4	47.1436	0.504	1.1	ug/L	959	Standard
	U	238	6299.6	1.7	0.7703	0.019	2.4	ug/L	9	Standard
>	Bi	209	560704.1	0.8				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	86.7	31.8	**0.0328**	0.031	93.1	mg/L	55	Standard
K	39	151.7	23.2	**0.4031**	0.135	33.6	mg/L	28	Standard
Ca	43	201.7	16.5	**14.3695**	3.198	22.3	mg/L	27	Standard
Fe	54	9525.1	4.7	**6.7386**	0.306	4.5	mg/L	147	Standard
Fe	57	2743.6	3.6	**6.9108**	0.154	2.2	mg/L	268	Standard
Sc-1	45	44985.0	2.4				mg/L	41174	Standard
Cl	35	83879.0	2.3				ug/L	69550	Standard
Kr	83	3.7	68.6				ug/L	1	Standard
Br	81	3460.4	7.8				ug/L	1950	Standard
P	31	24561.6	1.4				ug/L	21156	Standard
S	34	4369.0	1.4				ug/L	3419	Standard
Sr	88	116.7	25.8				ug/L	72	Standard
C	12	810.0	9.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	280.0	22.3				mg/L	17	Standard
Dy	164	8460.7	2.9				mg/L	16	Standard
Ho-1	165	4750.7	4.0				mg/L	7	Standard
Er	166	4977.5	6.3				mg/L	7	Standard
I	127	28665.4	1.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.870	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.899	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.729
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.426
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606145105
Sample Date/Time: Friday, July 01, 2016 17:25:16
Number of Replicates: 3
Autosampler Position: 234
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	76445.7	1.5				ug/L	76456	Standard
	Be	9	1478.4	3.1	**1.3014**	0.055	4.2	ug/L	20	Standard
	Al	27	1064223.2	1.9	**6.2082**	0.151	2.4	ug/L	1307	Standard
	Sc	45	47139.9	1.1				ug/L	41174	Standard
	Ti	47	53065.8	1.2	**150.6405**	1.848	1.2	ug/L	27	Standard
	V	51	112245.2	0.3	**12.4388**	0.221	1.8	ug/L	1434	Standard
	Cr	52	137183.3	1.2	**14.7291**	0.173	1.2	ug/L	7733	Standard
	Cr	53	16672.5	1.8	**14.8516**	0.459	3.1	ug/L	442	Standard
	Mn	55	332066.2	0.6	**40.4939**	0.573	1.4	ug/L	723	Standard
	Co	59	15191.9	1.6	**1.8061**	0.055	3.0	ug/L	217	Standard
	Ni	60	16308.4	0.5	**7.1212**	0.143	2.0	ug/L	304	Standard
	Cu	65	21255.2	1.0	**9.5654**	0.170	1.8	ug/L	181	Standard
	Zn	66	82188.0	0.4	**61.9044**	1.216	2.0	ug/L	215	Standard
>	Ge	72	562856.9	1.5				ug/L	520809	Standard
	As	75	14736.1	1.0	**11.0928**	0.282	2.5	ug/L	-52	Standard
	Se	82	116.4	6.1	**0.7268**	0.063	8.7	ug/L	17	Standard
	Se-1	77	132.3	7.3	**0.7485**	0.116	15.5	ug/L	56	Standard
>	Ga	71	12084.8	1.2				mg/L	25	Standard
	Rb	85	57895.4	0.4				ug/L	28	Standard
	Y	89	579341.1	3.7				ug/L	447395	Standard
>	Rh	103	25.0	52.9				ug/L	15	Standard
	Mo	98	3018.2	2.6	**0.9183**	0.011	1.2	ug/L	113	Standard
	Ag	107	450.3	2.5	**0.0464**	0.001	1.9	ug/L	108	Standard
	Cd	111	1161.6	1.5	**0.4742**	0.011	2.3	mg/L	3	Standard
	Cd	114	2894.3	3.4	**0.4797**	0.022	4.7	ug/L	20	Standard
>	In	115	662690.4	1.5				ug/L	625728	Standard
	Sn	118	2460.2	11.3	**0.2766**	0.040	14.4	ug/L	568	Standard
	Sb	123	1480.8	9.6	**0.2369**	0.027	11.6	ug/L	612	Standard
	Ba	135	103973.2	0.1	**45.1144**	0.613	1.4	ug/L	21	Standard
	Ce	140	278912.2	1.0				ug/L	245	Standard
>	Tb	159	988921.6	2.1				ug/L	950397	Standard
	Ho	165	6249.6	2.1				ug/L	7	Standard
	Tl	203	4793.4	0.3	**0.5229**	0.004	0.8	ug/L	15	Standard
	Tl	205	4507.3	1.9	**0.5447**	0.012	2.1	ug/L	13	Standard
	Pb	206	156846.0	1.0	**27.1285**	0.554	2.0	ug/L	264	Standard
	Pb	207	129940.5	0.3	**24.7412**	0.348	1.4	ug/L	222	Standard
	Pb	208	563558.5	1.1	**26.2711**	0.203	0.8	ug/L	959	Standard
	U	238	4562.4	2.7	**0.5547**	0.010	1.7	ug/L	9	Standard
>	Bi	209	563740.5	1.2				ug/L	552821	Standard

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Na	23	5.0	0.0	**13.0402**	0.148	1.1	mg/L	2	Standard
Mg	24	245.0	9.4	**0.1897**	0.021	11.0	mg/L	55	Standard
K	39	223.3	12.3	**0.6174**	0.098	15.9	mg/L	28	Standard
Ca	43	61.7	26.1	**2.4323**	1.213	49.9	mg/L	27	Standard
Fe	54	13777.8	1.0	**9.3394**	0.181	1.9	mg/L	147	Standard
Fe	57	3655.4	2.7	**9.0074**	0.309	3.4	mg/L	268	Standard
Sc-1	45	47139.9	1.1				mg/L	41174	Standard
Cl	35	79351.4	2.7				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	3307.0	6.7				ug/L	1950	Standard
P	31	25337.8	0.8				ug/L	21156	Standard
S	34	3845.5	8.8				ug/L	3419	Standard
Sr	88	98.3	15.5				ug/L	72	Standard
C	12	523.3	19.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	236.7	19.1				mg/L	17	Standard
Dy	164	9446.5	2.6				mg/L	16	Standard
Ho-1	165	6249.6	2.1				mg/L	7	Standard
Er	166	6261.3	4.0				mg/L	7	Standard
I	127	33405.2	4.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		99.987	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		108.073	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.907
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.975
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	

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Method 6020 - Summary Report

Sample ID: L1606145106 WG574521-02
Sample Date/Time: Friday, July 01, 2016 17:28:27
Number of Replicates: 3
Autosampler Position: 235
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77424.0	1.4				ug/L	76456	Standard
	Be	9	1420.1	5.3	1.2334	0.078	6.4	ug/L	20	Standard
	Al	27	3898597.3	2.1	22.4779	0.265	1.2	ug/L	1307	Standard
	Sc	45	51348.6	3.6				ug/L	41174	Standard
	Ti	47	30144.6	2.1	85.8695	0.856	1.0	ug/L	27	Standard
	V	51	531061.4	1.0	59.8240	0.037	0.1	ug/L	1434	Standard
	Cr	52	163422.1	1.8	17.8054	0.173	1.0	ug/L	7733	Standard
	Cr	53	19674.4	1.7	17.6680	0.130	0.7	ug/L	442	Standard
	Mn	55	2218244.0	2.3	272.1177	3.374	1.2	ug/L	723	Standard
	Co	59	32222.6	2.7	3.8780	0.063	1.6	ug/L	217	Standard
	Ni	60	47836.8	2.1	21.2646	0.223	1.0	ug/L	304	Standard
	Cu	65	112081.4	1.4	50.9532	0.215	0.4	ug/L	181	Standard
	Zn	66	110645.9	1.3	83.7216	0.252	0.3	ug/L	215	Standard
>	Ge	72	560589.7	1.1				ug/L	520809	Standard
	As	75	18364.3	1.7	13.8646	0.106	0.8	ug/L	-52	Standard
	Se	82	562.0	1.7	4.0067	0.091	2.3	ug/L	17	Standard
	Se-1	77	479.0	3.5	4.5225	0.226	5.0	ug/L	56	Standard
>	Ga	71	14325.1	2.5				mg/L	25	Standard
	Rb	85	53934.2	0.6				ug/L	28	Standard
	Y	89	962525.9	0.6				ug/L	447395	Standard
>	Rh	103	61.7	4.7				ug/L	15	Standard
	Mo	98	10152.0	1.8	3.1844	0.030	1.0	ug/L	113	Standard
	Ag	107	989.4	6.5	0.1188	0.009	7.5	ug/L	108	Standard
	Cd	111	5112.5	1.5	2.1203	0.021	1.0	mg/L	3	Standard
	Cd	114	12820.7	1.5	2.1502	0.050	2.3	ug/L	20	Standard
>	In	115	654652.2	1.1				ug/L	625728	Standard
	Sn	118	1108.4	23.7	0.0806	0.040	50.1	ug/L	568	Standard
	Sb	123	662.0	36.0	0.0890	0.045	50.9	ug/L	612	Standard
	Ba	135	290178.7	0.4	127.4785	1.030	0.8	ug/L	21	Standard
	Ce	140	1471841.9	0.9				ug/L	245	Standard
>	Tb	159	1014801.8	1.4				ug/L	950397	Standard
	Ho	165	35576.7	1.0				ug/L	7	Standard
	Tl	203	2282.2	3.2	0.2479	0.009	3.5	ug/L	15	Standard
	Tl	205	2125.1	5.8	0.2510	0.016	6.2	ug/L	13	Standard
	Pb	206	184986.8	1.0	31.9104	0.323	1.0	ug/L	264	Standard
	Pb	207	153794.0	1.0	29.2069	0.234	0.8	ug/L	222	Standard
	Pb	208	672139.8	1.3	31.2540	0.308	1.0	ug/L	959	Standard
	U	238	23718.9	1.7	2.8769	0.043	1.5	ug/L	9	Standard
>	Bi	209	565303.0	0.3				ug/L	552821	Standard

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Na	23	5.0	100.0	**12.1905**	12.475	102.3	mg/L	2	Standard
Mg	24	515.0	7.3	**0.4218**	0.020	4.8	mg/L	55	Standard
K	39	145.0	15.8	**0.3133**	0.055	17.6	mg/L	28	Standard
Ca	43	251.7	14.6	**15.9361**	3.051	19.1	mg/L	27	Standard
Fe	54	21541.2	1.4	**13.4547**	0.377	2.8	mg/L	147	Standard
Fe	57	6066.2	2.9	**14.1508**	0.552	3.9	mg/L	268	Standard
Sc-1	45	51348.6	3.6				mg/L	41174	Standard
Cl	35	83904.4	2.5				ug/L	69550	Standard
Kr	83	3.3	17.3				ug/L	1	Standard
Br	81	7455.2	1.0				ug/L	1950	Standard
P	31	24167.7	6.9				ug/L	21156	Standard
S	34	4078.9	4.5				ug/L	3419	Standard
Sr	88	178.3	24.5				ug/L	72	Standard
C	12	1733.4	9.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	446.7	14.4				mg/L	17	Standard
Dy	164	52369.2	4.0				mg/L	16	Standard
Ho-1	165	35576.7	1.0				mg/L	7	Standard
Er	166	35010.4	0.8				mg/L	7	Standard
I	127	69199.4	2.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.266	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.638	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.623
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.258
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606145107
Sample Date/Time: Friday, July 01, 2016 17:31:39
Number of Replicates: 3
Autosampler Position: 236
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77976.9	3.0				ug/L	76456	Standard
	Be	9	4238.9	1.2	**3.6947**	0.093	2.5	ug/L	20	Standard
	Al	27	6498898.5	1.0	**37.2377**	1.289	3.5	ug/L	1307	Standard
	Sc	45	49464.0	2.1				ug/L	41174	Standard
	Ti	47	128073.0	0.5	**363.1539**	6.490	1.8	ug/L	27	Standard
	V	51	349457.1	2.0	**39.0869**	1.161	3.0	ug/L	1434	Standard
	Cr	52	339178.2	1.4	**37.7839**	0.334	0.9	ug/L	7733	Standard
	Cr	53	41896.2	0.9	**37.8898**	0.902	2.4	ug/L	442	Standard
	Mn	55	1606512.7	1.3	**195.9725**	1.717	0.9	ug/L	723	Standard
	Co	59	54787.2	1.9	**6.5778**	0.027	0.4	ug/L	217	Standard
	Ni	60	49280.4	1.6	**21.7906**	0.290	1.3	ug/L	304	Standard
	Cu	65	58505.7	1.0	**26.4179**	0.486	1.8	ug/L	181	Standard
	Zn	66	199363.7	0.4	**150.1818**	2.763	1.8	ug/L	215	Standard
>	Ge	72	563783.0	2.2				ug/L	520809	Standard
	As	75	72841.2	1.2	**54.5595**	0.676	1.2	ug/L	-52	Standard
	Se	82	260.0	4.3	**1.7742**	0.048	2.7	ug/L	17	Standard
	Se-1	77	240.0	3.1	**1.9101**	0.113	5.9	ug/L	56	Standard
>	Ga	71	27433.2	2.3				mg/L	25	Standard
	Rb	85	214873.2	1.9				ug/L	28	Standard
	Y	89	688224.7	2.2				ug/L	447395	Standard
>	Rh	103	50.0	34.6				ug/L	15	Standard
	Mo	98	15750.9	1.3	**5.0545**	0.122	2.4	ug/L	113	Standard
	Ag	107	1137.7	4.6	**0.1417**	0.010	7.3	ug/L	108	Standard
	Cd	111	4595.8	1.9	**1.9447**	0.072	3.7	mg/L	3	Standard
	Cd	114	11753.0	1.4	**2.0112**	0.076	3.8	ug/L	20	Standard
>	In	115	641892.6	2.4				ug/L	625728	Standard
	Sn	118	2545.2	5.6	**0.3012**	0.016	5.3	ug/L	568	Standard
	Sb	123	1737.1	5.6	**0.2941**	0.021	7.1	ug/L	612	Standard
	Ba	135	236984.3	0.4	**106.2043**	2.197	2.1	ug/L	21	Standard
	Ce	140	773385.4	0.4				ug/L	245	Standard
>	Tb	159	984938.0	3.6				ug/L	950397	Standard
	Ho	165	16265.4	1.5				ug/L	7	Standard
	Tl	203	22667.3	0.8	**2.5566**	0.057	2.2	ug/L	15	Standard
	Tl	205	20584.0	2.7	**2.6047**	0.030	1.2	ug/L	13	Standard
	Pb	206	321586.0	1.4	**57.4914**	1.247	2.2	ug/L	264	Standard
	Pb	207	267373.6	0.8	**52.6407**	1.680	3.2	ug/L	222	Standard
	Pb	208	1175990.0	0.9	**56.6808**	1.299	2.3	ug/L	959	Standard
	U	238	16091.9	1.2	**2.0215**	0.038	1.9	ug/L	9	Standard
>	Bi	209	546013.7	3.1				ug/L	552821	Standard

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Na	23	3.3	173.2	**8.3896**	14.523	173.1	mg/L	2	Standard
Mg	24	313.3	12.2	**0.2450**	0.042	17.2	mg/L	55	Standard
K	39	578.3	4.1	**1.7142**	0.039	2.3	mg/L	28	Standard
Ca	43	190.0	22.5	**11.8882**	2.994	25.2	mg/L	27	Standard
Fe	54	47361.4	0.7	**30.8245**	0.629	2.0	mg/L	147	Standard
Fe	57	12388.4	2.6	**30.8824**	0.658	2.1	mg/L	268	Standard
Sc-1	45	49464.0	2.1				mg/L	41174	Standard
Cl	35	79796.9	1.5				ug/L	69550	Standard
Kr	83	1.0	173.2				ug/L	1	Standard
Br	81	3437.1	6.8				ug/L	1950	Standard
P	31	26398.0	3.4				ug/L	21156	Standard
S	34	4072.2	2.6				ug/L	3419	Standard
Sr	88	165.0	6.1				ug/L	72	Standard
C	12	630.0	4.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	340.0	26.1				mg/L	17	Standard
Dy	164	25210.3	0.7				mg/L	16	Standard
Ho-1	165	16265.4	1.5				mg/L	7	Standard
Er	166	15487.9	0.9				mg/L	7	Standard
I	127	25923.8	3.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.990	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.251	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	102.583
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.769
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606145108
Sample Date/Time: Friday, July 01, 2016 17:34:50
Number of Replicates: 3
Autosampler Position: 237
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	78296.8	0.6				ug/L	76456	Standard
	Be	9	5035.8	1.1	**4.3730**	0.045	1.0	ug/L	20	Standard
	Al	27	8296103.3	2.9	**47.3081**	1.104	2.3	ug/L	1307	Standard
	Sc	45	51448.9	3.1				ug/L	41174	Standard
	Ti	47	143723.1	0.7	**413.9468**	6.279	1.5	ug/L	27	Standard
	V	51	366509.9	0.1	**41.6481**	0.419	1.0	ug/L	1434	Standard
	Cr	52	544163.4	1.5	**62.1923**	1.314	2.1	ug/L	7733	Standard
	Cr	53	66433.7	1.1	**61.2720**	0.593	1.0	ug/L	442	Standard
	Mn	55	1841665.0	0.6	**228.2274**	2.393	1.0	ug/L	723	Standard
	Co	59	60732.8	1.2	**7.4113**	0.113	1.5	ug/L	217	Standard
	Ni	60	55300.1	1.5	**24.8624**	0.580	2.3	ug/L	304	Standard
	Cu	65	53837.8	1.0	**24.6886**	0.479	1.9	ug/L	181	Standard
	Zn	66	206840.0	0.6	**158.2701**	2.252	1.4	ug/L	215	Standard
>	Ge	72	554963.2	0.9				ug/L	520809	Standard
	As	75	66893.4	0.9	**50.8958**	0.201	0.4	ug/L	-52	Standard
	Se	82	248.2	6.5	**1.7168**	0.104	6.0	ug/L	17	Standard
	Se-1	77	241.0	3.2	**1.9609**	0.071	3.6	ug/L	56	Standard
>	Ga	71	28399.9	2.1				mg/L	25	Standard
	Rb	85	238607.6	1.1				ug/L	28	Standard
	Y	89	727081.9	1.3				ug/L	447395	Standard
>	Rh	103	48.3	48.9				ug/L	15	Standard
	Mo	98	16138.3	0.6	**5.1475**	0.088	1.7	ug/L	113	Standard
	Ag	107	1178.0	3.1	**0.1461**	0.006	4.0	ug/L	108	Standard
	Cd	111	4690.3	1.4	**1.9722**	0.048	2.4	mg/L	3	Standard
	Cd	114	11637.8	1.7	**1.9789**	0.055	2.8	ug/L	20	Standard
>	In	115	645732.9	1.1				ug/L	625728	Standard
	Sn	118	2240.2	14.5	**0.2530**	0.048	19.0	ug/L	568	Standard
	Sb	123	1441.2	4.7	**0.2365**	0.011	4.5	ug/L	612	Standard
	Ba	135	274841.1	0.7	**122.4109**	1.640	1.3	ug/L	21	Standard
	Ce	140	887134.9	0.7				ug/L	245	Standard
>	Tb	159	985869.5	0.8				ug/L	950397	Standard
	Ho	165	18397.8	1.0				ug/L	7	Standard
	Tl	203	22726.7	1.1	**2.5470**	0.017	0.7	ug/L	15	Standard
	Tl	205	20669.1	0.8	**2.5996**	0.009	0.3	ug/L	13	Standard
	Pb	206	304509.2	0.5	**54.0918**	0.193	0.4	ug/L	264	Standard
	Pb	207	255448.0	0.1	**49.9624**	0.361	0.7	ug/L	222	Standard
	Pb	208	1107233.4	0.4	**53.0246**	0.467	0.9	ug/L	959	Standard
	U	238	17326.6	1.5	**2.1631**	0.047	2.2	ug/L	9	Standard
>	Bi	209	549274.6	0.7				ug/L	552821	Standard

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Na	23	3.3	173.2	**8.1301**	14.073	173.1	mg/L	2	Standard
Mg	24	360.0	2.4	**0.2767**	0.016	5.7	mg/L	55	Standard
K	39	590.0	10.2	**1.6839**	0.234	13.9	mg/L	28	Standard
Ca	43	221.7	16.9	**13.7026**	2.998	21.9	mg/L	27	Standard
Fe	54	51880.7	2.5	**32.4850**	1.445	4.4	mg/L	147	Standard
Fe	57	13546.1	1.6	**32.5153**	0.491	1.5	mg/L	268	Standard
Sc-1	45	51448.9	3.1				mg/L	41174	Standard
Cl	35	79311.7	1.5				ug/L	69550	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	2893.6	2.1				ug/L	1950	Standard
P	31	26569.9	1.7				ug/L	21156	Standard
S	34	4178.9	3.2				ug/L	3419	Standard
Sr	88	200.0	24.6				ug/L	72	Standard
C	12	570.0	12.7				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	283.3	10.2				mg/L	17	Standard
Dy	164	28615.4	0.7				mg/L	16	Standard
Ho-1	165	18397.8	1.0				mg/L	7	Standard
Er	166	17950.6	1.5				mg/L	7	Standard
I	127	24543.2	0.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		102.408	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.558	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.197	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.359	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606145109S WG574521-07
Sample Date/Time: Friday, July 01, 2016 17:38:02
Number of Replicates: 3
Autosampler Position: 238
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77300.2	4.1				ug/L	76456	Standard
	Be	9	31013.4	0.9	**27.4058**	0.869	3.2	ug/L	20	Standard
	Al	27	4089154.1	3.2	**23.6238**	0.470	2.0	ug/L	1307	Standard
	Sc	45	51686.4	2.6				ug/L	41174	Standard
	Ti	47	34757.2	1.7	**100.2574**	1.039	1.0	ug/L	27	Standard
	V	51	798652.3	3.3	**91.1648**	1.278	1.4	ug/L	1434	Standard
	Cr	52	383358.6	3.0	**43.6124**	0.316	0.7	ug/L	7733	Standard
	Cr	53	46656.8	2.4	**42.9982**	0.311	0.7	ug/L	442	Standard
	Mn	55	2313030.1	2.9	**287.2366**	2.286	0.8	ug/L	723	Standard
	Co	59	229099.5	3.1	**28.0933**	0.227	0.8	ug/L	217	Standard
	Ni	60	103411.0	3.4	**46.7113**	0.544	1.2	ug/L	304	Standard
	Cu	65	167787.3	3.4	**77.2413**	0.870	1.1	ug/L	181	Standard
	Zn	66	148653.6	2.3	**113.9303**	0.817	0.7	ug/L	215	Standard
>	Ge	72	553789.9	2.3				ug/L	520809	Standard
	As	75	50674.7	3.7	**38.6402**	0.614	1.6	ug/L	-52	Standard
	Se	82	4006.1	3.7	**29.6916**	0.620	2.1	ug/L	17	Standard
	Se-1	77	2822.3	6.3	**30.3505**	1.406	4.6	ug/L	56	Standard
>	Ga	71	15926.7	1.8				mg/L	25	Standard
	Rb	85	61213.5	2.5				ug/L	28	Standard
	Y	89	995780.9	3.8				ug/L	447395	Standard
>	Rh	103	80.0	39.0				ug/L	15	Standard
	Mo	98	11202.2	1.3	**3.5351**	0.100	2.8	ug/L	113	Standard
	Ag	107	172476.6	3.4	**23.0491**	0.075	0.3	ug/L	108	Standard
	Cd	111	62525.5	2.9	**26.0819**	0.217	0.8	mg/L	3	Standard
	Cd	114	155090.1	3.1	**26.1298**	0.108	0.4	ug/L	20	Standard
>	In	115	651612.6	3.5				ug/L	625728	Standard
	Sn	118	1198.4	14.3	**0.0953**	0.032	33.2	ug/L	568	Standard
	Sb	123	13746.3	2.5	**2.5212**	0.035	1.4	ug/L	612	Standard
	Ba	135	355128.0	2.7	**156.7604**	1.139	0.7	ug/L	21	Standard
	Ce	140	1618154.9	2.5				ug/L	245	Standard
>	Tb	159	1001149.2	2.4				ug/L	950397	Standard
	Ho	165	38079.5	2.2				ug/L	7	Standard
	Tl	203	217506.4	3.1	**24.1924**	0.167	0.7	ug/L	15	Standard
	Tl	205	199413.9	1.5	**24.9766**	0.301	1.2	ug/L	13	Standard
	Pb	206	340199.5	1.6	**59.9805**	0.583	1.0	ug/L	264	Standard
	Pb	207	287102.8	2.6	**55.7262**	0.520	0.9	ug/L	222	Standard
	Pb	208	1239148.8	1.7	**58.8977**	0.622	1.1	ug/L	959	Standard
	U	238	215333.8	2.0	**26.6800**	0.294	1.1	ug/L	9	Standard
>	Bi	209	553529.4	2.5				ug/L	552821	Standard

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Na	23	3.3	86.6	**8.0461**	6.964	86.6	mg/L	2	Standard
Mg	24	420.0	23.2	**0.3305**	0.090	27.3	mg/L	55	Standard
K	39	140.0	12.9	**0.2971**	0.061	20.5	mg/L	28	Standard
Ca	43	243.3	22.2	**15.1089**	3.441	22.8	mg/L	27	Standard
Fe	54	22645.6	2.0	**14.0499**	0.221	1.6	mg/L	147	Standard
Fe	57	6007.9	4.3	**13.9009**	0.509	3.7	mg/L	268	Standard
Sc-1	45	51686.4	2.6				mg/L	41174	Standard
Cl	35	80429.2	4.3				ug/L	69550	Standard
Kr	83	2.7	86.6				ug/L	1	Standard
Br	81	13772.9	3.0				ug/L	1950	Standard
P	31	24882.1	4.1				ug/L	21156	Standard
S	34	3928.8	5.2				ug/L	3419	Standard
Sr	88	231.7	13.2				ug/L	72	Standard
C	12	2016.8	5.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	526.7	13.7				mg/L	17	Standard
Dy	164	57272.5	3.0				mg/L	16	Standard
Ho-1	165	38079.5	2.2				mg/L	7	Standard
Er	166	36791.3	0.3				mg/L	7	Standard
I	127	68461.0	1.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.105	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.333	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.137
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.128
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606145110SD WG574521-08
Sample Date/Time: Friday, July 01, 2016 17:41:13
Number of Replicates: 3
Autosampler Position: 239
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75000.2	2.3				ug/L	76456	Standard
	Be	9	30976.6	1.7	**28.1959**	0.613	2.2	ug/L	20	Standard
	Al	27	3439220.2	1.5	**20.4763**	0.514	2.5	ug/L	1307	Standard
	Sc	45	50167.9	0.3				ug/L	41174	Standard
	Ti	47	20331.3	1.6	**60.1182**	0.386	0.6	ug/L	27	Standard
	V	51	735011.2	1.2	**86.0697**	0.811	0.9	ug/L	1434	Standard
	Cr	52	348065.1	1.5	**40.5590**	0.525	1.3	ug/L	7733	Standard
	Cr	53	41963.1	3.7	**39.6270**	0.656	1.7	ug/L	442	Standard
	Mn	55	2126490.8	1.0	**270.9327**	3.985	1.5	ug/L	723	Standard
	Co	59	224148.6	1.1	**28.2013**	0.328	1.2	ug/L	217	Standard
	Ni	60	97510.5	1.6	**45.1854**	0.391	0.9	ug/L	304	Standard
	Cu	65	159657.8	0.8	**75.4140**	0.961	1.3	ug/L	181	Standard
	Zn	66	122702.2	1.2	**96.4430**	0.853	0.9	ug/L	215	Standard
>	Ge	72	539893.8	2.0				ug/L	520809	Standard
	As	75	43731.6	1.5	**34.2188**	0.207	0.6	ug/L	-52	Standard
	Se	82	3851.1	1.9	**29.2807**	0.182	0.6	ug/L	17	Standard
	Se-1	77	2693.2	3.6	**29.7006**	0.473	1.6	ug/L	56	Standard
>	Ga	71	10877.2	4.3				mg/L	25	Standard
	Rb	85	26646.7	1.9				ug/L	28	Standard
	Y	89	984741.5	1.3				ug/L	447395	Standard
>	Rh	103	75.0	23.1				ug/L	15	Standard
	Mo	98	12396.0	1.1	**4.0096**	0.009	0.2	ug/L	113	Standard
	Ag	107	167394.8	1.6	**22.9251**	0.326	1.4	ug/L	108	Standard
	Cd	111	61689.6	0.9	**26.3685**	0.182	0.7	mg/L	3	Standard
	Cd	114	150249.5	3.1	**25.9377**	0.589	2.3	ug/L	20	Standard
>	In	115	635843.6	1.2				ug/L	625728	Standard
	Sn	118	1905.1	12.7	**0.2074**	0.041	19.5	ug/L	568	Standard
	Sb	123	35922.0	1.1	**6.8066**	0.045	0.7	ug/L	612	Standard
	Ba	135	328480.5	1.3	**148.5677**	0.342	0.2	ug/L	21	Standard
	Ce	140	1483643.4	1.0				ug/L	245	Standard
>	Tb	159	980223.1	1.4				ug/L	950397	Standard
	Ho	165	36555.7	1.5				ug/L	7	Standard
	Tl	203	214476.5	1.2	**24.1754**	0.120	0.5	ug/L	15	Standard
	Tl	205	195033.9	0.4	**24.7497**	0.108	0.4	ug/L	13	Standard
	Pb	206	331178.4	0.7	**59.1601**	0.433	0.7	ug/L	264	Standard
	Pb	207	281134.0	0.6	**55.2947**	0.155	0.3	ug/L	222	Standard
	Pb	208	1213063.3	0.7	**58.4179**	0.082	0.1	ug/L	959	Standard
	U	238	215012.5	0.4	**26.9929**	0.177	0.7	ug/L	9	Standard
>	Bi	209	546245.7	0.8				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	401.7	8.7	**0.3249**	0.034	10.5	mg/L	55	Standard
K	39	65.0	53.8	**0.0732**	0.110	149.7	mg/L	28	Standard
Ca	43	258.3	8.9	**16.8169**	1.773	10.5	mg/L	27	Standard
Fe	54	18860.0	1.9	**12.0398**	0.263	2.2	mg/L	147	Standard
Fe	57	5239.2	5.1	**12.4090**	0.703	5.7	mg/L	268	Standard
Sc-1	45	50167.9	0.3				mg/L	41174	Standard
Cl	35	77473.7	3.0				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	7528.5	1.9				ug/L	1950	Standard
P	31	23025.8	3.4				ug/L	21156	Standard
S	34	3772.1	4.4				ug/L	3419	Standard
Sr	88	236.7	6.8				ug/L	72	Standard
C	12	2743.6	3.7				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	510.0	3.4				mg/L	17	Standard
Dy	164	54236.1	2.2				mg/L	16	Standard
Ho-1	165	36555.7	1.5				mg/L	7	Standard
Er	166	36333.5	1.9				mg/L	7	Standard
I	127	50945.5	2.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		98.096	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.664	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.617	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.811	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606145110SD WG574521-08
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Method 6020 - Summary Report

Sample ID: L1606144501
Sample Date/Time: Friday, July 01, 2016 17:44:25
Number of Replicates: 3
Autosampler Position: 240
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75614.9	1.3				ug/L	76456	Standard
	Be	9	616.7	9.4	**0.5370**	0.050	9.3	ug/L	20	Standard
	Al	27	13167988.3	1.5	**77.7749**	1.539	2.0	ug/L	1307	Standard
	Sc	45	44936.5	0.9				ug/L	41174	Standard
	Ti	47	2539.2	1.9	**7.5419**	0.159	2.1	ug/L	27	Standard
	V	51	86547.1	1.5	**10.1041**	0.180	1.8	ug/L	1434	Standard
	Cr	52	60907.8	0.8	**6.4000**	0.028	0.4	ug/L	7733	Standard
	Cr	53	7250.1	1.9	**6.6027**	0.158	2.4	ug/L	442	Standard
	Mn	55	1905061.9	1.8	**246.1332**	2.751	1.1	ug/L	723	Standard
	Co	59	36801.3	0.6	**4.6715**	0.060	1.3	ug/L	217	Standard
	Ni	60	21869.8	1.0	**10.1605**	0.108	1.1	ug/L	304	Standard
	Cu	65	17811.5	0.6	**8.4670**	0.104	1.2	ug/L	181	Standard
	Zn	66	27607.8	0.3	**21.8690**	0.071	0.3	ug/L	215	Standard
>	Ge	72	532269.5	0.7				ug/L	520809	Standard
	As	75	3673.7	1.1	**2.9570**	0.036	1.2	ug/L	-52	Standard
	Se	82	41.1	14.0	**0.1921**	0.043	22.6	ug/L	17	Standard
	Se-1	77	92.7	12.4	**0.3761**	0.133	35.3	ug/L	56	Standard
>	Ga	71	8445.7	4.3				mg/L	25	Standard
	Rb	85	79397.5	0.6				ug/L	28	Standard
	Y	89	617711.9	0.3				ug/L	447395	Standard
>	Rh	103	20.0	50.0				ug/L	15	Standard
	Mo	98	513.2	4.5	**0.1463**	0.008	5.2	ug/L	113	Standard
	Ag	107	411.0	5.4	**0.0445**	0.003	7.0	ug/L	108	Standard
	Cd	111	224.8	17.0	**0.0956**	0.017	17.3	mg/L	3	Standard
	Cd	114	528.5	15.3	**0.0930**	0.014	15.2	ug/L	20	Standard
>	In	115	623854.0	0.2				ug/L	625728	Standard
	Sn	118	1113.4	15.3	**0.0893**	0.027	30.1	ug/L	568	Standard
	Sb	123	402.5	19.7	**0.0444**	0.016	34.9	ug/L	612	Standard
	Ba	135	200643.8	0.9	**92.4876**	1.043	1.1	ug/L	21	Standard
	Ce	140	742147.0	0.8				ug/L	245	Standard
>	Tb	159	959744.7	0.8				ug/L	950397	Standard
	Ho	165	13928.1	1.6				ug/L	7	Standard
	Tl	203	447.0	8.8	**0.0505**	0.005	9.0	ug/L	15	Standard
	Tl	205	406.7	11.9	**0.0427**	0.006	14.6	ug/L	13	Standard
	Pb	206	40310.6	0.6	**7.2786**	0.040	0.5	ug/L	264	Standard
	Pb	207	33326.3	0.4	**6.6200**	0.027	0.4	ug/L	222	Standard
	Pb	208	145576.7	0.6	**7.0813**	0.040	0.6	ug/L	959	Standard
	U	238	2828.3	0.6	**0.3605**	0.002	0.6	ug/L	9	Standard
>	Bi	209	537569.5	0.1				ug/L	552821	Standard

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Na	23	3.3	86.6	**9.1104**	7.886	86.6	mg/L	2	Standard
Mg	24	76.7	7.5	**0.0219**	0.006	26.1	mg/L	55	Standard
K	39	218.3	9.5	**0.6363**	0.080	12.5	mg/L	28	Standard
Ca	43	151.7	22.0	**10.1772**	2.793	27.4	mg/L	27	Standard
Fe	54	7340.4	3.8	**5.1756**	0.204	3.9	mg/L	147	Standard
Fe	57	2196.8	7.0	**5.3817**	0.451	8.4	mg/L	268	Standard
Sc-1	45	44936.5	0.9				mg/L	41174	Standard
Cl	35	75625.0	1.8				ug/L	69550	Standard
Kr	83	2.3	89.2				ug/L	1	Standard
Br	81	2456.9	6.6				ug/L	1950	Standard
P	31	22234.7	4.3				ug/L	21156	Standard
S	34	3950.5	4.3				ug/L	3419	Standard
Sr	88	111.7	18.1				ug/L	72	Standard
C	12	203.3	42.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	103.3	36.6				mg/L	17	Standard
Dy	164	23311.5	2.8				mg/L	16	Standard
Ho-1	165	13928.1	1.6				mg/L	7	Standard
Er	166	12401.8	5.5				mg/L	7	Standard
I	127	16120.2	3.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		98.900	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.200	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.701
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.241
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606144502
Sample Date/Time: Friday, July 01, 2016 17:47:36
Number of Replicates: 3
Autosampler Position: 241
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80582.1	0.6				ug/L	76456	Standard
	Be	9	1050.0	6.5	**0.8699**	0.053	6.1	ug/L	20	Standard
	Al	27	10543226.3	2.9	**58.4275**	1.839	3.1	ug/L	1307	Standard
	Sc	45	50111.1	1.7				ug/L	41174	Standard
	Ti	47	7592.6	3.2	**21.5864**	0.745	3.5	ug/L	27	Standard
	V	51	232882.8	0.5	**26.1453**	0.088	0.3	ug/L	1434	Standard
	Cr	52	180590.6	0.7	**19.7971**	0.199	1.0	ug/L	7733	Standard
	Cr	53	21970.9	2.4	**19.7976**	0.515	2.6	ug/L	442	Standard
	Mn	55	4529682.0	0.5	**556.3104**	4.224	0.8	ug/L	723	Standard
	Co	59	72279.7	0.5	**8.7442**	0.060	0.7	ug/L	217	Standard
	Ni	60	42964.2	0.1	**19.1012**	0.022	0.1	ug/L	304	Standard
	Cu	65	47497.7	0.8	**21.5696**	0.226	1.0	ug/L	181	Standard
	Zn	66	105865.9	1.3	**80.1698**	1.221	1.5	ug/L	215	Standard
>	Ge	72	560104.1	0.3				ug/L	520809	Standard
	As	75	7808.3	0.8	**5.9264**	0.056	0.9	ug/L	-52	Standard
	Se	82	138.7	8.9	**0.8941**	0.089	9.9	ug/L	17	Standard
	Se-1	77	161.0	3.3	**1.0667**	0.061	5.7	ug/L	56	Standard
>	Ga	71	24149.2	0.8				mg/L	25	Standard
	Rb	85	233795.1	1.1				ug/L	28	Standard
	Y	89	725001.6	1.1				ug/L	447395	Standard
>	Rh	103	41.7	18.3				ug/L	15	Standard
	Mo	98	1317.7	5.6	**0.3993**	0.019	4.9	ug/L	113	Standard
	Ag	107	864.0	1.1	**0.1041**	0.002	2.4	ug/L	108	Standard
	Cd	111	1117.0	0.9	**0.4692**	0.009	1.8	mg/L	3	Standard
	Cd	114	2788.0	2.8	**0.4754**	0.015	3.1	ug/L	20	Standard
>	In	115	643922.1	1.0				ug/L	625728	Standard
	Sn	118	2010.1	12.1	**0.2191**	0.034	15.5	ug/L	568	Standard
	Sb	123	437.2	13.5	**0.0484**	0.010	21.4	ug/L	612	Standard
	Ba	135	1679042.7	0.5	**749.9950**	6.832	0.9	ug/L	21	Standard
	Ce	140	1471540.7	0.8				ug/L	245	Standard
>	Tb	159	984687.8	0.7				ug/L	950397	Standard
	Ho	165	20360.3	1.4				ug/L	7	Standard
	Tl	203	1212.7	2.5	**0.1370**	0.004	2.6	ug/L	15	Standard
	Tl	205	1158.4	9.0	**0.1384**	0.013	9.2	ug/L	13	Standard
	Pb	206	419173.3	0.5	**75.4515**	0.814	1.1	ug/L	264	Standard
	Pb	207	344138.4	0.6	**68.2056**	0.866	1.3	ug/L	222	Standard
	Pb	208	1506247.3	0.9	**73.0918**	0.807	1.1	ug/L	959	Standard
	U	238	5748.4	0.4	**0.7268**	0.007	1.0	ug/L	9	Standard
>	Bi	209	542199.4	0.6				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	146.7	3.9	**0.0806**	0.004	4.7	mg/L	55	Standard
K	39	706.7	5.1	**2.0968**	0.148	7.0	mg/L	28	Standard
Ca	43	91.7	22.0	**4.4031**	1.569	35.6	mg/L	27	Standard
Fe	54	24940.6	4.4	**15.9770**	0.842	5.3	mg/L	147	Standard
Fe	57	6641.5	3.9	**15.9699**	0.826	5.2	mg/L	268	Standard
> **Sc-1**	45	50111.1	1.7				mg/L	41174	Standard
Cl	35	76057.1	1.3				ug/L	69550	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	3847.2	5.3				ug/L	1950	Standard
P	31	23633.4	0.7				ug/L	21156	Standard
S	34	3662.1	4.5				ug/L	3419	Standard
Sr	88	171.7	11.8				ug/L	72	Standard
C	12	470.0	20.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	233.3	19.3				mg/L	17	Standard
Dy	164	34433.8	0.7				mg/L	16	Standard
Ho-1	165	20360.3	1.4				mg/L	7	Standard
Er	166	19082.0	1.0				mg/L	7	Standard
I	127	32727.0	1.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.397	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.545	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.908	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.079	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 17:50:49
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75660.1	1.1				ug/L	76456	Standard
	Be	9	60406.9	2.0	**54.5087**	0.731	1.3	ug/L	20	Standard
	Al	27	8901183.3	0.4	**52.5361**	0.439	0.8	ug/L	1307	Standard
	Sc	45	43571.0	4.5				ug/L	41174	Standard
	Ti	47	34622.5	2.0	**98.8044**	2.139	2.2	ug/L	27	Standard
	V	51	445398.2	1.1	**50.2213**	0.481	1.0	ug/L	1434	Standard
	Cr	52	446008.3	0.3	**50.3583**	0.638	1.3	ug/L	7733	Standard
	Cr	53	54342.3	1.8	**49.6105**	0.179	0.4	ug/L	442	Standard
	Mn	55	412872.1	1.4	**50.6530**	0.943	1.9	ug/L	723	Standard
	Co	59	423920.9	1.9	**51.4674**	1.144	2.2	ug/L	217	Standard
	Ni	60	112641.5	1.2	**50.3629**	0.567	1.1	ug/L	304	Standard
	Cu	65	112208.4	1.7	**51.0893**	0.402	0.8	ug/L	181	Standard
	Zn	66	66744.0	0.4	**50.5145**	0.608	1.2	ug/L	215	Standard
>	**Ge**	72	559742.9	1.5				ug/L	520809	Standard
	As	75	66794.1	0.6	**50.3914**	0.530	1.1	ug/L	-52	Standard
	Se	82	6873.9	1.4	**50.5047**	0.860	1.7	ug/L	17	Standard
	Se-1	77	4690.7	2.0	**50.3684**	0.411	0.8	ug/L	56	Standard
>	**Ga**	71	70.0	37.1				mg/L	25	Standard
	Rb	85	931.7	8.4				ug/L	28	Standard
	Y	89	472026.6	0.3				ug/L	447395	Standard
>	**Rh**	103	31.7	32.9				ug/L	15	Standard
	Mo	98	318819.4	0.9	**100.5497**	0.545	0.5	ug/L	113	Standard
	Ag	107	375898.4	1.4	**49.9218**	0.531	1.1	ug/L	108	Standard
	Cd	111	121191.8	0.6	**50.2220**	0.334	0.7	mg/L	3	Standard
	Cd	114	302196.5	1.8	**50.5816**	0.945	1.9	ug/L	20	Standard
>	**In**	115	655853.7	0.4				ug/L	625728	Standard
	Sn	118	335213.1	1.5	**49.6075**	0.708	1.4	ug/L	568	Standard
	Sb	123	270386.5	1.1	**49.8811**	0.362	0.7	ug/L	612	Standard
	Ba	135	111336.6	0.9	**48.8080**	0.417	0.9	ug/L	21	Standard
	Ce	140	1411.7	25.7				ug/L	245	Standard
>	**Tb**	159	970990.0	1.2				ug/L	950397	Standard
	Ho	165	26.7	71.0				ug/L	7	Standard
	Tl	203	450496.8	1.2	**50.6789**	0.648	1.3	ug/L	15	Standard
	Tl	205	413746.4	0.4	**52.4089**	0.448	0.9	ug/L	13	Standard
	Pb	206	283628.8	0.6	**50.5558**	0.102	0.2	ug/L	264	Standard
	Pb	207	257451.9	0.7	**50.5301**	0.341	0.7	ug/L	222	Standard
	Pb	208	1074344.6	0.3	**51.6273**	0.180	0.3	ug/L	959	Standard
	U	238	402853.9	0.7	**50.4710**	0.276	0.5	ug/L	9	Standard
>	**Bi**	209	547356.6	0.6				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4665.7	4.0	**5.1012**	0.401	7.9	mg/L	55	Standard
K	39	1318.4	2.8	**4.6563**	0.350	7.5	mg/L	28	Standard
Ca	43	68.3	16.9	**3.4315**	1.098	32.0	mg/L	27	Standard
Fe	54	7100.4	2.7	**5.1707**	0.292	5.6	mg/L	147	Standard
Fe	57	2145.2	7.2	**5.4299**	0.465	8.6	mg/L	268	Standard
Sc-1	45	43571.0	4.5				mg/L	41174	Standard
Cl	35	80089.1	0.5				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	2080.1	5.8				ug/L	1950	Standard
P	31	24411.3	2.1				ug/L	21156	Standard
S	34	4227.3	2.4				ug/L	3419	Standard
Sr	88	76.7	45.8				ug/L	72	Standard
C	12	110.0	45.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	56.7				mg/L	17	Standard
Dy	164	54.4	29.0				mg/L	16	Standard
Ho-1	165	26.7	71.0				mg/L	7	Standard
Er	166	46.7	24.7				mg/L	7	Standard
I	127	7775.3	3.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	109.017		
Al	27	105.072		
Sc	45			
Ti	47	98.804		
V	51	100.443		
Cr	52	100.717		
Cr	53			
Mn	55	101.306		
Co	59	102.935		
Ni	60	100.726		
Cu	65	102.179		
Zn	66	101.029		
Ge	72		107.476	
As	75	100.783		
Se	82	101.009		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	100.550		
Ag	107	99.844		
Cd	111	100.444		
Cd	114			
> In	115			104.815
Sn	118	99.215		
Sb	123	99.762		
Ba	135	97.616		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.358		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.255		
U	238	100.942		
> Bi	209			99.012
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 17:54:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76125.8	1.7				ug/L	76456	Standard
	Be	9	28.3	40.8	**0.0054**	0.010	184.7	ug/L	20	Standard
	Al	27	3772.2	25.1	**0.0119**	0.005	45.3	ug/L	1307	Standard
	Sc	45	44115.8	1.5				ug/L	41174	Standard
	Ti	47	36.0	36.4	**0.0190**	0.038	200.0	ug/L	27	Standard
	V	51	1432.6	3.3	**-0.0355**	0.004	12.4	ug/L	1434	Standard
	Cr	52	7275.4	1.9	**-0.1286**	0.011	8.9	ug/L	7733	Standard
	Cr	53	543.3	3.8	**0.0861**	0.017	20.2	ug/L	442	Standard
	Mn	55	1260.1	9.4	**0.0544**	0.014	25.4	ug/L	723	Standard
	Co	59	264.3	9.7	**0.0028**	0.003	106.4	ug/L	217	Standard
	Ni	60	263.3	2.3	**-0.0344**	0.002	7.2	ug/L	304	Standard
	Cu	65	186.3	1.1	**0.0113**	0.000	4.4	ug/L	181	Standard
	Zn	66	283.0	3.7	**0.0359**	0.009	24.2	ug/L	215	Standard
>	**Ge**	72	556594.5	0.6				ug/L	520809	Standard
	As	75	-80.7	20.9	**-0.0160**	0.013	82.1	ug/L	-52	Standard
	Se	82	15.4	35.3	**-0.0124**	0.040	323.4	ug/L	17	Standard
	Se-1	77	60.3	15.0	**-0.0241**	0.101	419.2	ug/L	56	Standard
>	**Ga**	71	31.7	63.8				mg/L	25	Standard
	Rb	85	60.0					ug/L	28	Standard
	Y	89	477190.1	1.0				ug/L	447395	Standard
>	**Rh**	103	8.3	124.9				ug/L	15	Standard
	Mo	98	226.0	18.3	**0.0476**	0.013	27.7	ug/L	113	Standard
	Ag	107	150.7	15.9	**0.0072**	0.003	44.5	ug/L	108	Standard
	Cd	111	16.6	57.3	**0.0046**	0.004	86.9	mg/L	3	Standard
	Cd	114	59.8	49.5	**0.0101**	0.005	49.3	ug/L	20	Standard
>	**In**	115	653461.3	0.4				ug/L	625728	Standard
	Sn	118	1496.7	19.9	**0.1384**	0.044	31.8	ug/L	568	Standard
	Sb	123	746.4	28.2	**0.1046**	0.039	37.1	ug/L	612	Standard
	Ba	135	171.7	17.2	**0.0577**	0.013	22.8	ug/L	21	Standard
	Ce	140	668.3	13.8				ug/L	245	Standard
>	**Tb**	159	971042.5	0.5				ug/L	950397	Standard
	Ho	165	16.7	62.4				ug/L	7	Standard
	Tl	203	88.3	25.2	**0.0090**	0.002	27.2	ug/L	15	Standard
	Tl	205	80.0	16.5	**0.0002**	0.002	912.8	ug/L	13	Standard
	Pb	206	378.0	7.1	**0.0223**	0.005	20.2	ug/L	264	Standard
	Pb	207	334.0	19.5	**0.0182**	0.012	68.6	ug/L	222	Standard
	Pb	208	1457.7	7.9	**0.0204**	0.005	25.7	ug/L	959	Standard
	U	238	80.3	16.8	**0.0096**	0.002	17.0	ug/L	9	Standard
>	**Bi**	209	558602.1	0.7				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	60.0	25.0	**0.0053**	0.017	313.2	mg/L	55	Standard
K	39	28.3	44.4	**-0.0302**	0.044	144.5	mg/L	28	Standard
Ca	43	16.7	75.5	**-1.0452**	1.061	101.5	mg/L	27	Standard
Fe	54	162.7	23.0	**0.0200**	0.026	130.3	mg/L	147	Standard
Fe	57	228.3	8.3	**-0.1492**	0.054	36.5	mg/L	268	Standard
Sc-1	45	44115.8	1.5				mg/L	41174	Standard
Cl	35	79992.6	1.1				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	2276.8	13.7				ug/L	1950	Standard
P	31	23509.9	2.2				ug/L	21156	Standard
S	34	4122.2	2.6				ug/L	3419	Standard
Sr	88	61.7	24.8				ug/L	72	Standard
C	12	93.3	16.4				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	60.0	16.7				mg/L	17	Standard
Dy	164	41.6	40.0				mg/L	16	Standard
Ho-1	165	16.7	62.4				mg/L	7	Standard
Er	166	36.7	83.3				mg/L	7	Standard
I	127	5142.5	3.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.871	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.432
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.046
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606144503
Sample Date/Time: Friday, July 01, 2016 17:57:14
Number of Replicates: 3
Autosampler Position: 242
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81064.6	1.5				ug/L	76456	Standard
	Be	9	923.4	4.6	0.7579	0.026	3.5	ug/L	20	Standard
	Al	27	9265006.3	1.5	51.0345	0.228	0.4	ug/L	1307	Standard
	Sc	45	49278.4	2.1				ug/L	41174	Standard
	Ti	47	6532.7	0.9	18.1480	0.376	2.1	ug/L	27	Standard
	V	51	196838.4	1.2	21.5756	0.486	2.3	ug/L	1434	Standard
	Cr	52	144221.5	0.4	15.2461	0.132	0.9	ug/L	7733	Standard
	Cr	53	17702.0	4.1	15.5134	0.839	5.4	ug/L	442	Standard
	Mn	55	4322666.6	0.8	519.0669	3.003	0.6	ug/L	723	Standard
	Co	59	73004.8	0.8	8.6351	0.046	0.5	ug/L	217	Standard
	Ni	60	37595.6	1.2	16.3200	0.066	0.4	ug/L	304	Standard
	Cu	65	29226.2	0.6	12.9475	0.087	0.7	ug/L	181	Standard
	Zn	66	73620.1	0.4	54.4550	0.675	1.2	ug/L	215	Standard
>	Ge	72	572863.4	1.2				ug/L	520809	Standard
	As	75	5889.9	1.0	4.3827	0.015	0.3	ug/L	-52	Standard
	Se	82	131.9	5.2	0.8223	0.038	4.7	ug/L	17	Standard
	Se-1	77	184.3	3.7	1.2757	0.064	5.0	ug/L	56	Standard
>	Ga	71	19340.7	1.8				mg/L	25	Standard
	Rb	85	221404.3	0.5				ug/L	28	Standard
	Y	89	706877.6	0.9				ug/L	447395	Standard
>	Rh	103	30.0	72.6				ug/L	15	Standard
	Mo	98	2018.2	3.9	0.6082	0.025	4.1	ug/L	113	Standard
	Ag	107	770.7	2.0	0.0888	0.002	2.2	ug/L	108	Standard
	Cd	111	2871.4	1.3	1.1792	0.015	1.3	mg/L	3	Standard
	Cd	114	6981.1	2.4	1.1603	0.029	2.5	ug/L	20	Standard
>	In	115	660500.6	0.1				ug/L	625728	Standard
	Sn	118	1633.4	19.7	0.1562	0.047	30.4	ug/L	568	Standard
	Sb	123	766.2	17.6	0.1067	0.025	23.2	ug/L	612	Standard
	Ba	135	509530.1	0.7	221.8605	1.691	0.8	ug/L	21	Standard
	Ce	140	1234713.5	0.5				ug/L	245	Standard
>	Tb	159	1007837.3	0.4				ug/L	950397	Standard
	Ho	165	17965.6	2.4				ug/L	7	Standard
	Tl	203	1067.0	3.3	0.1181	0.003	2.2	ug/L	15	Standard
	Tl	205	1001.7	2.4	0.1159	0.004	3.7	ug/L	13	Standard
	Pb	206	195840.9	0.6	34.5471	0.280	0.8	ug/L	264	Standard
	Pb	207	161774.1	0.6	31.4180	0.202	0.6	ug/L	222	Standard
	Pb	208	705256.5	0.4	33.5368	0.236	0.7	ug/L	959	Standard
	U	238	5486.7	0.6	0.6803	0.004	0.5	ug/L	9	Standard
>	Bi	209	552878.3	1.1				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	775.0	0.6	**0.6965**	0.018	2.6	mg/L	55	Standard
K	39	456.7	20.3	**1.3315**	0.288	21.7	mg/L	28	Standard
Ca	43	66.7	11.5	**2.6050**	0.520	20.0	mg/L	27	Standard
Fe	54	19066.0	1.2	**12.3984**	0.367	3.0	mg/L	147	Standard
Fe	57	5245.9	1.7	**12.6645**	0.072	0.6	mg/L	268	Standard
> **Sc-1**	45	49278.4	2.1				mg/L	41174	Standard
Cl	35	75533.8	1.8				ug/L	69550	Standard
Kr	83	1.7	124.9				ug/L	1	Standard
Br	81	12581.9	2.8				ug/L	1950	Standard
P	31	23234.5	1.4				ug/L	21156	Standard
S	34	3415.4	8.9				ug/L	3419	Standard
Sr	88	155.0	8.5				ug/L	72	Standard
C	12	606.7	24.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	183.3	45.4				mg/L	17	Standard
Dy	164	30531.0	0.8				mg/L	16	Standard
Ho-1	165	17965.6	2.4				mg/L	7	Standard
Er	166	16101.9	2.4				mg/L	7	Standard
I	127	47399.3	7.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.028	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.995	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.557
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.010
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144507
Sample Date/Time: Friday, July 01, 2016 18:00:25
Number of Replicates: 3
Autosampler Position: 243
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81719.8	0.5				ug/L	76456	Standard
	Be	9	1150.0	3.4	**0.9414**	0.038	4.0	ug/L	20	Standard
	Al	27	19122972.5	1.5	**104.5075**	1.996	1.9	ug/L	1307	Standard
	Sc	45	50161.3	3.1				ug/L	41174	Standard
	Ti	47	4290.6	1.9	**12.0513**	0.158	1.3	ug/L	27	Standard
	V	51	176002.8	1.5	**19.5347**	0.381	2.0	ug/L	1434	Standard
	Cr	52	202519.5	0.7	**22.1111**	0.164	0.7	ug/L	7733	Standard
	Cr	53	24688.4	0.5	**22.0962**	0.312	1.4	ug/L	442	Standard
	Mn	55	3882576.5	0.7	**472.5626**	1.691	0.4	ug/L	723	Standard
	Co	59	74015.0	0.7	**8.8755**	0.153	1.7	ug/L	217	Standard
	Ni	60	49898.7	0.5	**22.0097**	0.116	0.5	ug/L	304	Standard
	Cu	65	49732.2	0.6	**22.3872**	0.351	1.6	ug/L	181	Standard
	Zn	66	114291.8	0.2	**85.7937**	1.009	1.2	ug/L	215	Standard
>	Ge	72	565157.3	1.0				ug/L	520809	Standard
	As	75	14435.4	1.1	**10.8205**	0.032	0.3	ug/L	-52	Standard
	Se	82	92.4	6.7	**0.5475**	0.040	7.3	ug/L	17	Standard
	Se-1	77	153.7	16.6	**0.9738**	0.293	30.1	ug/L	56	Standard
>	Ga	71	20582.3	3.6				mg/L	25	Standard
	Rb	85	203311.7	0.8				ug/L	28	Standard
	Y	89	751032.3	1.4				ug/L	447395	Standard
>	Rh	103	46.7	44.6				ug/L	15	Standard
	Mo	98	590.9	4.0	**0.1610**	0.008	5.2	ug/L	113	Standard
	Ag	107	615.7	5.5	**0.0683**	0.004	5.9	ug/L	108	Standard
	Cd	111	2075.5	3.1	**0.8510**	0.024	2.8	mg/L	3	Standard
	Cd	114	5077.8	10.1	**0.8428**	0.077	9.1	ug/L	20	Standard
>	In	115	661094.1	1.5				ug/L	625728	Standard
	Sn	118	1358.4	19.5	**0.1160**	0.042	36.3	ug/L	568	Standard
	Sb	123	1552.9	6.2	**0.2509**	0.021	8.4	ug/L	612	Standard
	Ba	135	403285.7	0.6	**175.4541**	1.609	0.9	ug/L	21	Standard
	Ce	140	1308604.3	1.2				ug/L	245	Standard
>	Tb	159	1004791.8	1.1				ug/L	950397	Standard
	Ho	165	21420.1	0.2				ug/L	7	Standard
	Tl	203	1393.7	1.3	**0.1546**	0.002	1.2	ug/L	15	Standard
	Tl	205	1293.4	6.5	**0.1525**	0.010	6.7	ug/L	13	Standard
	Pb	206	576456.5	0.6	**101.8203**	0.799	0.8	ug/L	264	Standard
	Pb	207	487118.2	0.8	**94.7368**	0.502	0.5	ug/L	222	Standard
	Pb	208	2107804.8	0.1	**100.3728**	0.432	0.4	ug/L	959	Standard
	U	238	4448.0	2.0	**0.5517**	0.009	1.6	ug/L	9	Standard
>	Bi	209	552606.6	0.3				ug/L	552821	Standard

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Na	23	1.7	173.2	**3.9605**	6.851	173.0	mg/L	2	Standard
Mg	24	146.7	22.7	**0.0801**	0.030	37.5	mg/L	55	Standard
K	39	540.0	0.9	**1.5696**	0.061	3.9	mg/L	28	Standard
Ca	43	96.7	3.0	**4.7655**	0.419	8.8	mg/L	27	Standard
Fe	54	17314.9	1.0	**11.0515**	0.258	2.3	mg/L	147	Standard
Fe	57	4700.7	3.1	**11.0529**	0.214	1.9	mg/L	268	Standard
> **Sc-1**	45	50161.3	3.1				mg/L	41174	Standard
Cl	35	76662.1	1.5				ug/L	69550	Standard
Kr	83	3.0	57.7				ug/L	1	Standard
Br	81	3767.1	7.9				ug/L	1950	Standard
P	31	23611.7	2.9				ug/L	21156	Standard
S	34	3682.1	3.0				ug/L	3419	Standard
Sr	88	63.3	31.9				ug/L	72	Standard
C	12	343.3	8.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	210.0	26.5				mg/L	17	Standard
Dy	164	35453.0	4.2				mg/L	16	Standard
Ho-1	165	21420.1	0.2				mg/L	7	Standard
Er	166	19218.8	0.6				mg/L	7	Standard
I	127	28176.2	1.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.885	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.515	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	105.652	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.961	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Pb 206 Upper, S, EEE	Pb	206
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1606144508
Sample Date/Time: Friday, July 01, 2016 18:03:37
Number of Replicates: 3
Autosampler Position: 244
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80067.7	0.8				ug/L	76456	Standard
	Be	9	1216.7	3.5	**1.0182**	0.042	4.1	ug/L	20	Standard
	Al	27	26828418.5	2.0	**149.6306**	1.983	1.3	ug/L	1307	Standard
	Sc	45	50947.2	1.6				ug/L	41174	Standard
	Ti	47	5410.0	2.3	**15.2604**	0.406	2.7	ug/L	27	Standard
	V	51	186134.5	1.5	**20.7252**	0.259	1.2	ug/L	1434	Standard
	Cr	52	142957.3	0.4	**15.3665**	0.097	0.6	ug/L	7733	Standard
	Cr	53	17178.1	1.5	**15.2891**	0.249	1.6	ug/L	442	Standard
	Mn	55	4606939.6	1.4	**562.2720**	9.197	1.6	ug/L	723	Standard
	Co	59	80106.5	0.8	**9.6337**	0.111	1.2	ug/L	217	Standard
	Ni	60	49331.5	0.8	**21.8172**	0.266	1.2	ug/L	304	Standard
	Cu	65	27262.5	1.2	**12.2715**	0.190	1.6	ug/L	181	Standard
	Zn	66	50487.3	0.6	**37.8990**	0.363	1.0	ug/L	215	Standard
>	Ge	72	563626.3	0.4				ug/L	520809	Standard
	As	75	5127.9	0.4	**3.8833**	0.025	0.7	ug/L	-52	Standard
	Se	82	63.4	13.7	**0.3372**	0.065	19.3	ug/L	17	Standard
	Se-1	77	127.0	8.8	**0.6885**	0.125	18.2	ug/L	56	Standard
>	Ga	71	20874.4	1.1				mg/L	25	Standard
	Rb	85	200244.6	0.8				ug/L	28	Standard
	Y	89	753887.4	1.4				ug/L	447395	Standard
>	Rh	103	23.3	24.7				ug/L	15	Standard
	Mo	98	546.6	7.3	**0.1509**	0.014	9.6	ug/L	113	Standard
	Ag	107	629.3	8.8	**0.0718**	0.007	9.6	ug/L	108	Standard
	Cd	111	214.4	9.4	**0.0877**	0.009	10.1	mg/L	3	Standard
	Cd	114	474.4	3.2	**0.0805**	0.003	3.5	ug/L	20	Standard
>	In	115	647228.9	1.0				ug/L	625728	Standard
	Sn	118	1141.7	25.6	**0.0873**	0.044	50.2	ug/L	568	Standard
	Sb	123	347.3	21.7	**0.0313**	0.014	45.5	ug/L	612	Standard
	Ba	135	428959.8	0.0	**190.6168**	1.771	0.9	ug/L	21	Standard
	Ce	140	1454827.7	0.7				ug/L	245	Standard
>	Tb	159	993072.0	0.4				ug/L	950397	Standard
	Ho	165	23219.4	1.9				ug/L	7	Standard
	Tl	203	1106.7	1.7	**0.1248**	0.002	1.9	ug/L	15	Standard
	Tl	205	985.0	10.2	**0.1162**	0.014	11.7	ug/L	13	Standard
	Pb	206	63645.1	1.2	**11.4085**	0.083	0.7	ug/L	264	Standard
	Pb	207	52266.7	0.7	**10.3105**	0.095	0.9	ug/L	222	Standard
	Pb	208	232091.9	0.7	**11.2123**	0.155	1.4	ug/L	959	Standard
	U	238	4568.7	1.3	**0.5771**	0.011	1.9	ug/L	9	Standard
>	Bi	209	542669.3	0.8				ug/L	552821	Standard

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Na	23	1.7	173.2	**4.0478**	7.002	173.0	mg/L	2	Standard
Mg	24	115.0	7.5	**0.0484**	0.008	16.3	mg/L	55	Standard
K	39	411.7	8.1	**1.1441**	0.093	8.1	mg/L	28	Standard
Ca	43	256.7	13.7	**16.4263**	2.858	17.4	mg/L	27	Standard
Fe	54	19822.2	2.5	**12.4655**	0.367	2.9	mg/L	147	Standard
Fe	57	5277.6	3.2	**12.3025**	0.438	3.6	mg/L	268	Standard
Sc-1	45	50947.2	1.6				mg/L	41174	Standard
Cl	35	80549.5	0.6				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	2766.9	10.3				ug/L	1950	Standard
P	31	24564.9	2.5				ug/L	21156	Standard
S	34	4093.9	1.0				ug/L	3419	Standard
Sr	88	131.7	11.6				ug/L	72	Standard
C	12	213.3	21.7				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	70.0	37.8				mg/L	17	Standard
Dy	164	39354.5	1.1				mg/L	16	Standard
Ho-1	165	23219.4	1.9				mg/L	7	Standard
Er	166	20997.9	3.9				mg/L	7	Standard
I	127	17520.1	0.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		104.724	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		108.221	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.436	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.164	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144508
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Method 6020 - Summary Report

Sample ID: L1606144509
Sample Date/Time: Friday, July 01, 2016 18:06:48
Number of Replicates: 3
Autosampler Position: 245
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79442.8	2.3				ug/L	76456	Standard
	Be	9	943.4	17.8	**0.7923**	0.154	19.4	ug/L	20	Standard
	Al	27	24668673.1	1.9	**138.6963**	2.466	1.8	ug/L	1307	Standard
	Sc	45	50062.6	1.9				ug/L	41174	Standard
	Ti	47	4807.4	4.3	**13.5672**	0.456	3.4	ug/L	27	Standard
	V	51	136414.7	0.2	**15.1594**	0.132	0.9	ug/L	1434	Standard
	Cr	52	121344.3	1.1	**12.9168**	0.132	1.0	ug/L	7733	Standard
	Cr	53	14567.0	3.2	**12.9202**	0.381	2.9	ug/L	442	Standard
	Mn	55	3584400.6	1.7	**438.0976**	8.663	2.0	ug/L	723	Standard
	Co	59	62786.5	0.8	**7.5554**	0.042	0.6	ug/L	217	Standard
	Ni	60	42141.2	1.3	**18.6419**	0.218	1.2	ug/L	304	Standard
	Cu	65	21722.6	0.6	**9.7770**	0.072	0.7	ug/L	181	Standard
	Zn	66	42178.0	0.8	**31.6788**	0.359	1.1	ug/L	215	Standard
>	Ge	72	562814.6	1.1				ug/L	520809	Standard
	As	75	3148.0	1.0	**2.4049**	0.028	1.2	ug/L	-52	Standard
	Se	82	55.8	21.4	**0.2824**	0.087	30.8	ug/L	17	Standard
	Se-1	77	111.3	15.0	**0.5195**	0.168	32.3	ug/L	56	Standard
>	Ga	71	17067.9	0.7				mg/L	25	Standard
	Rb	85	155458.5	0.3				ug/L	28	Standard
	Y	89	728811.9	0.2				ug/L	447395	Standard
>	Rh	103	40.0	21.7				ug/L	15	Standard
	Mo	98	532.8	6.7	**0.1442**	0.009	6.6	ug/L	113	Standard
	Ag	107	508.0	7.7	**0.0547**	0.005	9.0	ug/L	108	Standard
	Cd	111	168.7	12.8	**0.0676**	0.009	13.2	mg/L	3	Standard
	Cd	114	363.5	9.1	**0.0610**	0.006	10.1	ug/L	20	Standard
>	In	115	655174.8	1.1				ug/L	625728	Standard
	Sn	118	1111.7	18.9	**0.0808**	0.031	38.4	ug/L	568	Standard
	Sb	123	305.1	22.1	**0.0226**	0.012	54.1	ug/L	612	Standard
	Ba	135	334401.7	0.7	**146.7912**	1.362	0.9	ug/L	21	Standard
	Ce	140	1157016.3	1.7				ug/L	245	Standard
>	Tb	159	995793.1	2.4				ug/L	950397	Standard
	Ho	165	19706.1	2.6				ug/L	7	Standard
	Tl	203	788.7	4.8	**0.0883**	0.005	5.9	ug/L	15	Standard
	Tl	205	705.0	5.8	**0.0799**	0.004	5.3	ug/L	13	Standard
	Pb	206	52940.3	0.9	**9.4349**	0.070	0.7	ug/L	264	Standard
	Pb	207	43455.2	0.3	**8.5217**	0.073	0.9	ug/L	222	Standard
	Pb	208	192505.6	0.3	**9.2450**	0.110	1.2	ug/L	959	Standard
	U	238	3706.1	1.6	**0.4657**	0.006	1.4	ug/L	9	Standard
>	Bi	209	545400.8	1.1				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	125.0	18.3	**0.0601**	0.024	39.7	mg/L	55	Standard
K	39	280.0	4.7	**0.7524**	0.056	7.4	mg/L	28	Standard
Ca	43	271.7	13.1	**17.8657**	2.769	15.5	mg/L	27	Standard
Fe	54	13853.2	3.1	**8.8410**	0.431	4.9	mg/L	147	Standard
Fe	57	3842.2	1.2	**8.9061**	0.079	0.9	mg/L	268	Standard
> **Sc-1**	45	50062.6	1.9				mg/L	41174	Standard
Cl	35	80728.5	0.4				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	3187.0	4.9				ug/L	1950	Standard
P	31	24401.3	1.1				ug/L	21156	Standard
S	34	4165.6	2.7				ug/L	3419	Standard
Sr	88	115.0	7.5				ug/L	72	Standard
C	12	200.0	13.2				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	93.3	32.7				mg/L	17	Standard
Dy	164	33342.9	1.0				mg/L	16	Standard
Ho-1	165	19706.1	2.6				mg/L	7	Standard
Er	166	17443.4	2.1				mg/L	7	Standard
I	127	18624.8	0.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.907	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.065	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	104.706	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.658	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144509
Report Date/Time: Friday, July 01, 2016 18:09:05
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Method 6020 - Summary Report

Sample ID: L1606144510
Sample Date/Time: Friday, July 01, 2016 18:10:00
Number of Replicates: 3
Autosampler Position: 246
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79271.9	1.9				ug/L	76456	Standard
	Be	9	960.0	8.0	**0.8081**	0.079	9.8	ug/L	20	Standard
	Al	27	12161180.8	1.6	**68.5142**	1.144	1.7	ug/L	1307	Standard
	Sc	45	48484.1	1.3				ug/L	41174	Standard
	Ti	47	2552.9	3.2	**7.1191**	0.297	4.2	ug/L	27	Standard
	V	51	134266.7	0.5	**14.8155**	0.217	1.5	ug/L	1434	Standard
	Cr	52	132714.7	0.2	**14.1160**	0.211	1.5	ug/L	7733	Standard
	Cr	53	15915.0	2.5	**14.0541**	0.174	1.2	ug/L	442	Standard
	Mn	55	2692161.6	0.9	**326.7761**	3.297	1.0	ug/L	723	Standard
	Co	59	60946.7	0.7	**7.2843**	0.165	2.3	ug/L	217	Standard
	Ni	60	37036.2	0.7	**16.2553**	0.354	2.2	ug/L	304	Standard
	Cu	65	25813.0	0.6	**11.5528**	0.129	1.1	ug/L	181	Standard
	Zn	66	59196.1	0.9	**44.2314**	0.719	1.6	ug/L	215	Standard
>	Ge	72	566689.9	1.6				ug/L	520809	Standard
	As	75	6333.8	0.9	**4.7613**	0.105	2.2	ug/L	-52	Standard
	Se	82	64.1	11.3	**0.3404**	0.060	17.7	ug/L	17	Standard
	Se-1	77	129.7	6.6	**0.7103**	0.107	15.1	ug/L	56	Standard
>	Ga	71	16113.6	0.3				mg/L	25	Standard
	Rb	85	159279.6	1.1				ug/L	28	Standard
	Y	89	713422.0	1.5				ug/L	447395	Standard
>	Rh	103	25.0	60.0				ug/L	15	Standard
	Mo	98	950.0	4.7	**0.2755**	0.014	5.2	ug/L	113	Standard
	Ag	107	562.7	10.8	**0.0618**	0.008	12.5	ug/L	108	Standard
	Cd	111	481.0	9.3	**0.1967**	0.017	8.8	mg/L	3	Standard
	Cd	114	1249.3	10.0	**0.2089**	0.020	9.7	ug/L	20	Standard
>	In	115	656399.0	0.7				ug/L	625728	Standard
	Sn	118	1210.0	13.0	**0.0951**	0.024	25.2	ug/L	568	Standard
	Sb	123	969.1	5.8	**0.1450**	0.010	7.1	ug/L	612	Standard
	Ba	135	317720.7	1.4	**139.1962**	1.098	0.8	ug/L	21	Standard
	Ce	140	1155794.9	1.0				ug/L	245	Standard
>	Tb	159	984841.2	0.9				ug/L	950397	Standard
	Ho	165	19197.2	4.8				ug/L	7	Standard
	Tl	203	845.0	15.2	**0.0944**	0.014	15.2	ug/L	15	Standard
	Tl	205	828.4	29.5	**0.0953**	0.031	32.1	ug/L	13	Standard
	Pb	206	243494.3	0.6	**43.4500**	0.261	0.6	ug/L	264	Standard
	Pb	207	203498.1	0.4	**39.9806**	0.200	0.5	ug/L	222	Standard
	Pb	208	891072.1	0.5	**42.8651**	0.261	0.6	ug/L	959	Standard
	U	238	4045.9	6.6	**0.5073**	0.034	6.6	ug/L	9	Standard
>	Bi	209	546682.6	0.7				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	171.7	38.0	**0.1098**	0.063	57.3	mg/L	55	Standard
K	39	336.7	16.4	**0.9661**	0.187	19.4	mg/L	28	Standard
Ca	43	73.3	23.9	**3.2010**	1.330	41.6	mg/L	27	Standard
Fe	54	13407.2	1.8	**8.8316**	0.255	2.9	mg/L	147	Standard
Fe	57	3832.2	1.2	**9.1972**	0.235	2.6	mg/L	268	Standard
Sc-1	45	48484.1	1.3				mg/L	41174	Standard
Cl	35	75838.8	2.7				ug/L	69550	Standard
Kr	83	1.3	86.6				ug/L	1	Standard
Br	81	3700.5	4.5				ug/L	1950	Standard
P	31	23035.9	5.5				ug/L	21156	Standard
S	34	3642.1	4.8				ug/L	3419	Standard
Sr	88	118.3	23.3				ug/L	72	Standard
C	12	246.7	10.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	110.0	39.6				mg/L	17	Standard
Dy	164	31661.9	4.0				mg/L	16	Standard
Ho-1	165	19197.2	4.8				mg/L	7	Standard
Er	166	17109.7	2.4				mg/L	7	Standard
I	127	24686.8	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.683	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.809	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	104.902	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.890	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144511
Sample Date/Time: Friday, July 01, 2016 18:13:11
Number of Replicates: 3
Autosampler Position: 247
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81056.3	1.5				ug/L	76456	Standard
	Be	9	1300.1	7.1	**1.0750**	0.063	5.9	ug/L	20	Standard
	Al	27	14087735.3	1.0	**77.6176**	0.555	0.7	ug/L	1307	Standard
	Sc	45	51079.3	2.3				ug/L	41174	Standard
	Ti	47	4050.2	1.8	**11.4166**	0.113	1.0	ug/L	27	Standard
	V	51	160903.7	0.9	**17.9135**	0.308	1.7	ug/L	1434	Standard
	Cr	52	157358.9	0.5	**17.0353**	0.148	0.9	ug/L	7733	Standard
	Cr	53	18739.9	2.5	**16.7418**	0.591	3.5	ug/L	442	Standard
	Mn	55	3983343.0	1.3	**486.7711**	7.837	1.6	ug/L	723	Standard
	Co	59	83282.3	0.9	**10.0291**	0.055	0.6	ug/L	217	Standard
	Ni	60	47596.6	1.1	**21.0730**	0.432	2.1	ug/L	304	Standard
	Cu	65	29877.1	1.6	**13.4740**	0.341	2.5	ug/L	181	Standard
	Zn	66	86877.7	1.2	**65.4276**	0.744	1.1	ug/L	215	Standard
>	**Ge**	72	562928.2	1.0				ug/L	520809	Standard
	As	75	5744.5	1.7	**4.3502**	0.061	1.4	ug/L	-52	Standard
	Se	82	56.4	20.2	**0.2867**	0.086	29.8	ug/L	17	Standard
	Se-1	77	130.3	3.1	**0.7263**	0.056	7.7	ug/L	56	Standard
>	**Ga**	71	21874.1	2.3				mg/L	25	Standard
	Rb	85	221462.0	1.4				ug/L	28	Standard
	Y	89	734796.1	0.6				ug/L	447395	Standard
>	**Rh**	103	31.7	24.1				ug/L	15	Standard
	Mo	98	474.5	3.0	**0.1270**	0.006	4.5	ug/L	113	Standard
	Ag	107	695.0	1.5	**0.0803**	0.002	2.7	ug/L	108	Standard
	Cd	111	1334.9	2.9	**0.5556**	0.015	2.7	mg/L	3	Standard
	Cd	114	3103.4	3.0	**0.5239**	0.011	2.1	ug/L	20	Standard
>	**In**	115	650267.1	1.0				ug/L	625728	Standard
	Sn	118	1253.4	12.9	**0.1031**	0.024	22.9	ug/L	568	Standard
	Sb	123	352.0	10.4	**0.0318**	0.006	20.1	ug/L	612	Standard
	Ba	135	635709.1	1.1	**281.1732**	3.369	1.2	ug/L	21	Standard
	Ce	140	1385894.9	1.0				ug/L	245	Standard
>	**Tb**	159	992786.2	1.1				ug/L	950397	Standard
	Ho	165	21371.7	1.6				ug/L	7	Standard
	Tl	203	1170.7	2.5	**0.1317**	0.002	1.8	ug/L	15	Standard
	Tl	205	1111.7	6.4	**0.1319**	0.009	7.1	ug/L	13	Standard
	Pb	206	547145.1	0.5	**98.1007**	0.480	0.5	ug/L	264	Standard
	Pb	207	460226.0	0.7	**90.8567**	0.149	0.2	ug/L	222	Standard
	Pb	208	1990544.8	1.0	**96.2154**	0.264	0.3	ug/L	959	Standard
	U	238	4825.8	2.0	**0.6077**	0.015	2.5	ug/L	9	Standard
>	**Bi**	209	544394.6	0.9				ug/L	552821	Standard

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Na	23	5.0	100.0	**11.9370**	12.019	100.7	mg/L	2	Standard
Mg	24	136.7	11.2	**0.0686**	0.016	23.2	mg/L	55	Standard
K	39	338.3	18.4	**0.9175**	0.216	23.5	mg/L	28	Standard
Ca	43	100.0	10.0	**4.8632**	0.562	11.6	mg/L	27	Standard
Fe	54	19768.1	3.7	**12.3944**	0.190	1.5	mg/L	147	Standard
Fe	57	5529.3	1.5	**12.8981**	0.490	3.8	mg/L	268	Standard
Sc-1	45	51079.3	2.3				mg/L	41174	Standard
Cl	35	74695.0	1.8				ug/L	69550	Standard
Kr	83	2.3	49.5				ug/L	1	Standard
Br	81	3833.8	5.0				ug/L	1950	Standard
P	31	23369.7	3.5				ug/L	21156	Standard
S	34	3573.8	8.7				ug/L	3419	Standard
Sr	88	135.0	7.4				ug/L	72	Standard
C	12	190.0	24.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	156.7	38.5				mg/L	17	Standard
Dy	164	36620.1	2.1				mg/L	16	Standard
Ho-1	165	21371.7	1.6				mg/L	7	Standard
Er	166	19966.5	1.7				mg/L	7	Standard
I	127	25928.9	6.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		106.017	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		108.087	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.922	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.476	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144512
Sample Date/Time: Friday, July 01, 2016 18:16:23
Number of Replicates: 3
Autosampler Position: 248
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80562.0	2.1				ug/L	76456	Standard
	Be	9	1056.7	6.8	**0.8755**	0.044	5.0	ug/L	20	Standard
	Al	27	20325479.9	1.3	**112.6812**	0.924	0.8	ug/L	1307	Standard
	Sc	45	51024.2	3.8				ug/L	41174	Standard
	Ti	47	4124.6	2.4	**11.6241**	0.214	1.8	ug/L	27	Standard
	V	51	179971.8	1.0	**20.0519**	0.111	0.6	ug/L	1434	Standard
	Cr	52	122094.3	0.7	**12.9955**	0.054	0.4	ug/L	7733	Standard
	Cr	53	14728.8	1.7	**13.0624**	0.219	1.7	ug/L	442	Standard
	Mn	55	2566086.0	1.4	**313.4230**	2.590	0.8	ug/L	723	Standard
	Co	59	71959.5	1.0	**8.6588**	0.038	0.4	ug/L	217	Standard
	Ni	60	44539.0	0.4	**19.7019**	0.201	1.0	ug/L	304	Standard
	Cu	65	25837.7	1.3	**11.6371**	0.150	1.3	ug/L	181	Standard
	Zn	66	46860.0	0.7	**35.1959**	0.095	0.3	ug/L	215	Standard
>	Ge	72	563090.4	0.6				ug/L	520809	Standard
	As	75	4748.6	0.5	**3.6029**	0.030	0.8	ug/L	-52	Standard
	Se	82	50.2	5.5	**0.2414**	0.021	8.8	ug/L	17	Standard
	Se-1	77	123.7	5.2	**0.6532**	0.062	9.5	ug/L	56	Standard
>	Ga	71	18362.8	1.6				mg/L	25	Standard
	Rb	85	168707.6	2.0				ug/L	28	Standard
	Y	89	736703.2	2.4				ug/L	447395	Standard
>	Rh	103	25.0	52.9				ug/L	15	Standard
	Mo	98	488.2	3.8	**0.1323**	0.005	4.0	ug/L	113	Standard
	Ag	107	511.0	3.1	**0.0560**	0.002	3.4	ug/L	108	Standard
	Cd	111	253.2	7.3	**0.1041**	0.008	7.3	mg/L	3	Standard
	Cd	114	604.4	7.2	**0.1026**	0.007	6.9	ug/L	20	Standard
>	In	115	646543.9	0.3				ug/L	625728	Standard
	Sn	118	893.4	21.7	**0.0501**	0.029	58.0	ug/L	568	Standard
	Sb	123	312.5	6.0	**0.0248**	0.004	14.8	ug/L	612	Standard
	Ba	135	248072.4	0.5	**110.3400**	0.769	0.7	ug/L	21	Standard
	Ce	140	1301357.0	1.2				ug/L	245	Standard
>	Tb	159	989062.4	0.6				ug/L	950397	Standard
	Ho	165	20744.2	1.0				ug/L	7	Standard
	Tl	203	836.4	5.3	**0.0943**	0.005	5.4	ug/L	15	Standard
	Tl	205	765.0	4.3	**0.0882**	0.004	4.8	ug/L	13	Standard
	Pb	206	112087.8	1.3	**20.1669**	0.259	1.3	ug/L	264	Standard
	Pb	207	94165.7	0.9	**18.6506**	0.174	0.9	ug/L	222	Standard
	Pb	208	412221.0	0.6	**19.9915**	0.120	0.6	ug/L	959	Standard
	U	238	4509.7	0.8	**0.5708**	0.005	0.8	ug/L	9	Standard
>	Bi	209	541556.4	0.0				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	148.3	8.5	**0.0799**	0.015	18.6	mg/L	55	Standard
K	39	408.3	5.1	**1.1318**	0.019	1.7	mg/L	28	Standard
Ca	43	105.0	12.6	**5.2550**	1.011	19.2	mg/L	27	Standard
Fe	54	15896.3	3.5	**9.9615**	0.123	1.2	mg/L	147	Standard
Fe	57	4270.6	7.1	**9.8107**	1.132	11.5	mg/L	268	Standard
> **Sc-1**	45	51024.2	3.8				mg/L	41174	Standard
Cl	35	77017.9	0.8				ug/L	69550	Standard
Kr	83	1.7	124.9				ug/L	1	Standard
Br	81	2873.6	4.9				ug/L	1950	Standard
P	31	23741.9	3.7				ug/L	21156	Standard
S	34	3792.1	2.1				ug/L	3419	Standard
Sr	88	118.3	26.8				ug/L	72	Standard
C	12	150.0	24.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	66.7	31.2				mg/L	17	Standard
Dy	164	35215.7	0.8				mg/L	16	Standard
Ho-1	165	20744.2	1.0				mg/L	7	Standard
Er	166	18591.4	0.2				mg/L	7	Standard
I	127	15219.3	3.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.371	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.118	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.327
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.962
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144512
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Method 6020 - Summary Report

Sample ID: L1606145101
Sample Date/Time: Friday, July 01, 2016 18:19:34
Number of Replicates: 3
Autosampler Position: 249
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70388.2	2.1				ug/L	76456	Standard
	Be	9	61.7	23.4	**0.0400**	0.014	34.9	ug/L	20	Standard
	Al	27	209415.6	0.4	**1.3190**	0.033	2.5	ug/L	1307	Standard
	Sc	45	39780.5	3.1				ug/L	41174	Standard
	Ti	47	1335.7	4.5	**4.0093**	0.186	4.6	ug/L	27	Standard
	V	51	9011.5	1.4	**0.8961**	0.016	1.8	ug/L	1434	Standard
	Cr	52	11942.0	0.5	**0.5043**	0.017	3.5	ug/L	7733	Standard
	Cr	53	965.0	9.9	**0.5365**	0.094	17.4	ug/L	442	Standard
	Mn	55	122738.2	0.8	**16.0893**	0.228	1.4	ug/L	723	Standard
	Co	59	1833.1	0.9	**0.2095**	0.004	1.9	ug/L	217	Standard
	Ni	60	1543.4	2.6	**0.5897**	0.025	4.3	ug/L	304	Standard
	Cu	65	2084.5	3.4	**0.9460**	0.041	4.4	ug/L	181	Standard
	Zn	66	9962.3	1.5	**7.9386**	0.062	0.8	ug/L	215	Standard
>	**Ge**	72	521595.8	0.8				ug/L	520809	Standard
	As	75	1195.1	0.9	**1.0118**	0.011	1.1	ug/L	-52	Standard
	Se	82	24.1	17.0	**0.0642**	0.032	49.3	ug/L	17	Standard
	Se-1	77	62.0	12.6	**0.0393**	0.087	222.5	ug/L	56	Standard
>	**Ga**	71	756.7	9.6				mg/L	25	Standard
	Rb	85	4860.8	2.7				ug/L	28	Standard
	Y	89	439023.6	1.3				ug/L	447395	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	289.5	25.4	**0.0755**	0.025	33.7	ug/L	113	Standard
	Ag	107	108.0	4.2	**0.0028**	0.001	24.8	ug/L	108	Standard
	Cd	111	86.5	15.6	**0.0367**	0.006	16.4	mg/L	3	Standard
	Cd	114	262.8	23.2	**0.0479**	0.011	23.5	ug/L	20	Standard
>	**In**	115	602493.1	0.2				ug/L	625728	Standard
	Sn	118	640.0	28.2	**0.0191**	0.029	153.5	ug/L	568	Standard
	Sb	123	159.0	14.4	**-0.0017**	0.005	267.5	ug/L	612	Standard
	Ba	135	10231.8	1.1	**4.8666**	0.057	1.2	ug/L	21	Standard
	Ce	140	59325.9	0.4				ug/L	245	Standard
>	**Tb**	159	901387.3	1.6				ug/L	950397	Standard
	Ho	165	468.3	19.0				ug/L	7	Standard
	Tl	203	67.3	15.2	**0.0072**	0.001	16.6	ug/L	15	Standard
	Tl	205	53.3	56.5	**-0.0027**	0.004	151.9	ug/L	13	Standard
	Pb	206	25545.5	0.9	**4.7304**	0.064	1.3	ug/L	264	Standard
	Pb	207	21325.3	0.3	**4.3424**	0.022	0.5	ug/L	222	Standard
	Pb	208	92265.3	0.3	**4.6006**	0.019	0.4	ug/L	959	Standard
	U	238	418.3	2.9	**0.0547**	0.002	3.4	ug/L	9	Standard
>	**Bi**	209	522518.3	0.5				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	45.0	0.0	**-0.0057**	0.002	29.9	mg/L	55	Standard
K	39	30.0	28.9	**-0.0116**	0.036	313.3	mg/L	28	Standard
Ca	43	28.3	50.9	**0.2419**	1.466	606.3	mg/L	27	Standard
Fe	54	830.6	5.4	**0.5751**	0.021	3.7	mg/L	147	Standard
Fe	57	475.0	3.8	**0.7085**	0.100	14.1	mg/L	268	Standard
> **Sc-1**	45	39780.5	3.1				mg/L	41174	Standard
Cl	35	69290.7	0.6				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	2023.5	4.8				ug/L	1950	Standard
P	31	8517.4	4.8				ug/L	21156	Standard
S	34	3302.0	4.3				ug/L	3419	Standard
Sr	88	81.7	7.1				ug/L	72	Standard
C	12	106.7	19.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	43.3				mg/L	17	Standard
Dy	164	723.4	6.0				mg/L	16	Standard
Ho-1	165	468.3	19.0				mg/L	7	Standard
Er	166	416.7	9.7				mg/L	7	Standard
I	127	33121.2	4.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.064	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.151	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.287
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.519
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606145102
Sample Date/Time: Friday, July 01, 2016 18:22:46
Number of Replicates: 3
Autosampler Position: 250
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	69181.0	2.1				ug/L	76456	Standard
	Be	9	58.3	32.5	**0.0378**	0.019	50.7	ug/L	20	Standard
	Al	27	441238.9	1.7	**2.8389**	0.059	2.1	ug/L	1307	Standard
	Sc	45	40783.2	1.8				ug/L	41174	Standard
	Ti	47	2459.5	1.5	**7.4205**	0.178	2.4	ug/L	27	Standard
	V	51	16925.1	1.2	**1.8483**	0.038	2.1	ug/L	1434	Standard
	Cr	52	18122.2	1.5	**1.2572**	0.011	0.8	ug/L	7733	Standard
	Cr	53	1788.4	11.0	**1.3411**	0.181	13.5	ug/L	442	Standard
	Mn	55	409161.8	0.6	**53.6291**	0.654	1.2	ug/L	723	Standard
	Co	59	5121.9	2.3	**0.6351**	0.012	1.9	ug/L	217	Standard
	Ni	60	3165.0	1.3	**1.3633**	0.033	2.4	ug/L	304	Standard
	Cu	65	6880.2	2.6	**3.2772**	0.073	2.2	ug/L	181	Standard
	Zn	66	23732.9	1.1	**19.0745**	0.015	0.1	ug/L	215	Standard
>	Ge	72	523960.3	1.1				ug/L	520809	Standard
	As	75	1016.3	2.7	**0.8637**	0.031	3.5	ug/L	-52	Standard
	Se	82	21.9	9.7	**0.0461**	0.018	39.0	ug/L	17	Standard
	Se-1	77	60.7	6.2	**0.0211**	0.052	244.3	ug/L	56	Standard
>	Ga	71	1423.4	6.3				mg/L	25	Standard
	Rb	85	14632.1	2.4				ug/L	28	Standard
	Y	89	450617.7	0.3				ug/L	447395	Standard
>	Rh	103	8.3	69.3				ug/L	15	Standard
	Mo	98	554.2	6.5	**0.1661**	0.012	7.3	ug/L	113	Standard
	Ag	107	138.0	6.6	**0.0071**	0.001	19.2	ug/L	108	Standard
	Cd	111	114.3	13.8	**0.0491**	0.007	14.2	mg/L	3	Standard
	Cd	114	241.5	19.5	**0.0440**	0.009	19.7	ug/L	20	Standard
>	In	115	603273.3	0.3				ug/L	625728	Standard
	Sn	118	566.7	21.3	**0.0071**	0.019	272.0	ug/L	568	Standard
	Sb	123	143.4	25.7	**-0.0049**	0.007	148.6	ug/L	612	Standard
	Ba	135	23042.5	1.3	**10.9682**	0.165	1.5	ug/L	21	Standard
	Ce	140	67983.9	1.1				ug/L	245	Standard
>	Tb	159	906786.3	1.4				ug/L	950397	Standard
	Ho	165	761.7	6.0				ug/L	7	Standard
	Tl	203	182.7	10.3	**0.0207**	0.002	11.4	ug/L	15	Standard
	Tl	205	140.0	10.7	**0.0088**	0.002	22.7	ug/L	13	Standard
	Pb	206	16671.2	1.2	**3.0640**	0.050	1.6	ug/L	264	Standard
	Pb	207	13875.7	1.0	**2.8020**	0.007	0.2	ug/L	222	Standard
	Pb	208	60739.5	0.7	**3.0044**	0.029	1.0	ug/L	959	Standard
	U	238	1048.7	0.5	**0.1370**	0.000	0.3	ug/L	9	Standard
>	Bi	209	523858.2	0.8				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	55.0		**0.0047**	0.001	24.2	mg/L	55	Standard
K	39	31.7	48.2	**-0.0079**	0.061	772.0	mg/L	28	Standard
Ca	43	26.7	92.5	**0.0138**	2.317	16826.1	mg/L	27	Standard
Fe	54	1768.8	1.5	**1.3016**	0.007	0.5	mg/L	147	Standard
Fe	57	735.0	6.2	**1.4753**	0.115	7.8	mg/L	268	Standard
> **Sc-1**	45	40783.2	1.8				mg/L	41174	Standard
Cl	35	69789.0	1.4				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	1950.1	1.4				ug/L	1950	Standard
P	31	8389.0	2.9				ug/L	21156	Standard
S	34	3198.7	3.3				ug/L	3419	Standard
Sr	88	73.3	17.2				ug/L	72	Standard
C	12	130.0	27.7				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	20.8				mg/L	17	Standard
Dy	164	1484.1	12.1				mg/L	16	Standard
Ho-1	165	761.7	6.0				mg/L	7	Standard
Er	166	820.0	8.5				mg/L	7	Standard
I	127	32808.8	1.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.485	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.605	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.411
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.761
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606145102PS WG575057-01
Sample Date/Time: Friday, July 01, 2016 18:25:57
Number of Replicates: 3
Autosampler Position: 251
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68702.1	2.1				ug/L	76456	Standard
	Be	9	54558.1	0.5	**54.2325**	1.076	2.0	ug/L	20	Standard
	Al	27	435359.5	0.4	**2.8209**	0.068	2.4	ug/L	1307	Standard
	Sc	45	39865.7	0.5				ug/L	41174	Standard
	Ti	47	2435.2	3.0	**7.3862**	0.145	2.0	ug/L	27	Standard
	V	51	420388.1	0.9	**50.9256**	0.275	0.5	ug/L	1434	Standard
	Cr	52	419034.6	1.2	**50.8325**	0.081	0.2	ug/L	7733	Standard
	Cr	53	51908.8	1.8	**50.9245**	0.712	1.4	ug/L	442	Standard
	Mn	55	776755.3	1.1	**102.4737**	0.893	0.9	ug/L	723	Standard
	Co	59	378685.6	0.4	**49.3890**	0.417	0.8	ug/L	217	Standard
	Ni	60	108298.4	0.9	**52.0251**	0.585	1.1	ug/L	304	Standard
	Cu	65	113206.4	0.7	**55.3835**	0.277	0.5	ug/L	181	Standard
	Zn	66	96400.4	0.9	**78.4751**	0.327	0.4	ug/L	215	Standard
>	Ge	72	521011.3	1.1				ug/L	520809	Standard
	As	75	67285.7	0.6	**54.5295**	0.414	0.8	ug/L	-52	Standard
	Se	82	7236.2	0.6	**57.1362**	0.906	1.6	ug/L	17	Standard
	Se-1	77	4996.5	1.7	**57.7421**	0.807	1.4	ug/L	56	Standard
>	Ga	71	1458.4	7.9				mg/L	25	Standard
	Rb	85	14268.4	1.9				ug/L	28	Standard
	Y	89	451572.6	1.0				ug/L	447395	Standard
>	Rh	103	11.7	65.5				ug/L	15	Standard
	Mo	98	552.6	6.3	**0.1658**	0.011	6.4	ug/L	113	Standard
	Ag	107	351874.8	0.5	**50.8757**	0.454	0.9	ug/L	108	Standard
	Cd	111	117424.6	1.2	**52.9718**	0.394	0.7	mg/L	3	Standard
	Cd	114	288020.9	0.5	**52.4815**	0.298	0.6	ug/L	20	Standard
>	In	115	602467.1	0.7				ug/L	625728	Standard
	Sn	118	795.0	18.9	**0.0440**	0.023	53.3	ug/L	568	Standard
	Sb	123	215335.2	6.0	**43.2556**	2.906	6.7	ug/L	612	Standard
	Ba	135	125031.8	0.4	**59.6735**	0.233	0.4	ug/L	21	Standard
	Ce	140	66756.7	0.9				ug/L	245	Standard
>	Tb	159	900882.6	0.1				ug/L	950397	Standard
	Ho	165	808.4	8.4				ug/L	7	Standard
	Tl	203	420669.9	0.3	**49.6255**	0.118	0.2	ug/L	15	Standard
	Tl	205	380791.1	1.2	**50.5823**	0.852	1.7	ug/L	13	Standard
	Pb	206	285006.3	0.5	**53.2753**	0.097	0.2	ug/L	264	Standard
	Pb	207	249618.4	0.3	**51.3775**	0.277	0.5	ug/L	222	Standard
	Pb	208	1065809.7	0.5	**53.7118**	0.481	0.9	ug/L	959	Standard
	U	238	362717.7	0.5	**47.6544**	0.373	0.8	ug/L	9	Standard
>	Bi	209	521960.5	0.5				ug/L	552821	Standard

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Na	23	3.3	173.2	**10.3171**	17.861	173.1	mg/L	2	Standard
Mg	24	45.0	11.1	**-0.0059**	0.006	106.3	mg/L	55	Standard
K	39	41.7	36.7	**0.0338**	0.061	179.3	mg/L	28	Standard
Ca	43	31.7	39.7	**0.5190**	1.184	228.2	mg/L	27	Standard
Fe	54	1881.8	1.4	**1.4253**	0.028	2.0	mg/L	147	Standard
Fe	57	691.7	14.6	**1.3919**	0.331	23.7	mg/L	268	Standard
> **Sc-1**	45	39865.7	0.5				mg/L	41174	Standard
Cl	35	69700.6	0.3				ug/L	69550	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	2040.1	6.7				ug/L	1950	Standard
P	31	8364.0	2.5				ug/L	21156	Standard
S	34	3095.3	6.1				ug/L	3419	Standard
Sr	88	78.3	13.3				ug/L	72	Standard
C	12	143.3	45.4				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	76.7	27.2				mg/L	17	Standard
Dy	164	1201.3	2.6				mg/L	16	Standard
Ho-1	165	808.4	8.4				mg/L	7	Standard
Er	166	740.0	7.2				mg/L	7	Standard
I	127	33642.3	3.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.859	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.039	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145102PS WG575057-01
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.283
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.418
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606145102PS WG575057-01
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 18:29:10
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	58021.1	45.4				ug/L	76456	Standard
	Be	9	6020.3	96.8	**8.3334**	6.673	80.1	ug/L	20	Standard
	Al	27	1011614.4	93.0	**9.3377**	7.369	78.9	ug/L	1307	Standard
	Sc	45	36951.3	31.6				ug/L	41174	Standard
	Ti	47	4070.2	92.8	**14.0397**	11.313	80.6	ug/L	27	Standard
	V	51	57472.3	77.9	**8.2250**	6.608	80.3	ug/L	1434	Standard
	Cr	52	54950.0	85.4	**6.7134**	5.707	85.0	ug/L	7733	Standard
	Cr	53	6442.1	89.3	**6.7802**	5.559	82.0	ug/L	442	Standard
	Mn	55	56604.6	81.4	**8.6926**	6.701	77.1	ug/L	723	Standard
	Co	59	53000.8	82.9	**8.1234**	6.317	77.8	ug/L	217	Standard
	Ni	60	12997.1	88.3	**6.9634**	5.472	78.6	ug/L	304	Standard
	Cu	65	12947.1	88.8	**7.1426**	5.586	78.2	ug/L	181	Standard
	Zn	66	7783.4	89.0	**6.9746**	5.495	78.8	ug/L	215	Standard
>	Ge	72	483616.6	27.5				ug/L	520809	Standard
	As	75	8453.5	94.9	**7.7122**	6.230	80.8	ug/L	-52	Standard
	Se	82	939.4	85.8	**8.3049**	6.310	76.0	ug/L	17	Standard
	Se-1	77	622.0	88.3	**7.4670**	6.184	82.8	ug/L	56	Standard
>	Ga	71	31.7	18.2				mg/L	25	Standard
	Rb	85	225.0	67.8				ug/L	28	Standard
	Y	89	466261.8	17.1				ug/L	447395	Standard
>	Rh	103	20.0	25.0				ug/L	15	Standard
	Mo	98	38601.8	81.6	**16.0710**	14.394	89.6	ug/L	113	Standard
	Ag	107	46584.8	78.1	**8.1335**	7.118	87.5	ug/L	108	Standard
	Cd	111	17137.6	87.9	**9.4386**	9.351	99.1	mg/L	3	Standard
	Cd	114	41205.7	85.8	**9.1450**	8.904	97.4	ug/L	20	Standard
>	In	115	568605.0	21.6				ug/L	625728	Standard
	Sn	118	45202.2	81.7	**8.7560**	8.318	95.0	ug/L	568	Standard
	Sb	123	37304.6	74.8	**8.9935**	7.626	84.8	ug/L	612	Standard
	Ba	135	15451.6	84.3	**8.9549**	8.599	96.0	ug/L	21	Standard
	Ce	140	933.4	35.7				ug/L	245	Standard
>	Tb	159	834241.1	25.5				ug/L	950397	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	59816.1	84.3	**8.9067**	8.400	94.3	ug/L	15	Standard
	Tl	205	54932.9	85.7	**9.2244**	8.777	95.1	ug/L	13	Standard
	Pb	206	36885.4	75.9	**8.5933**	7.372	85.8	ug/L	264	Standard
	Pb	207	34161.2	77.5	**8.7804**	7.649	87.1	ug/L	222	Standard
	Pb	208	153924.2	83.6	**9.7508**	9.146	93.8	ug/L	959	Standard
	U	238	54480.0	85.8	**9.0581**	8.618	95.1	ug/L	9	Standard
>	Bi	209	483651.3	25.0				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	588.3	82.1	**0.7880**	0.634	80.5	mg/L	55	Standard
K	39	178.3	67.8	**0.7306**	0.604	82.7	mg/L	28	Standard
Ca	43	45.0	40.1	**2.8887**	3.750	129.8	mg/L	27	Standard
Fe	54	989.8	78.7	**0.8883**	0.763	85.9	mg/L	147	Standard
Fe	57	551.7	36.3	**1.2806**	1.046	81.6	mg/L	268	Standard
> **Sc-1**	45	36951.3	31.6				mg/L	41174	Standard
Cl	35	32002.2	14.3				ug/L	69550	Standard
Kr	83	3.3	75.5				ug/L	1	Standard
Br	81	793.4	7.2				ug/L	1950	Standard
P	31	12486.0	48.7				ug/L	21156	Standard
S	34	1356.7	20.0				ug/L	3419	Standard
Sr	88	81.7	21.5				ug/L	72	Standard
C	12	106.7	35.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	246.7	83.3				mg/L	17	Standard
Dy	164	12.1	44.0				mg/L	16	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	26.7	86.6				mg/L	7	Standard
I	127	4540.7	35.1				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	16.667		
	Al	27	18.675		
	Sc	45			
	Ti	47	14.040		
	V	51	16.450		
	Cr	52	13.427		
	Cr	53			
	Mn	55	17.385		
	Co	59	16.247		
	Ni	60	13.927		
	Cu	65	14.285		
	Zn	66	13.949		
>	Ge	72		92.859	
	As	75	15.424		
	Se	82	16.610		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	16.071		
Ag	107	16.267		
Cd	111	18.877		
Cd	114			
In	115			90.871
Sn	118	17.512		
Sb	123	17.987		
Ba	135	17.910		
Ce	140			
Tb	159			
Ho	165			
Tl	203	17.813		
Tl	205			
Pb	206			
Pb	207			
Pb	208	19.502		
U	238	18.116		
Bi	209			87.488
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	
QC Std 6	Ti	47	

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QC Std 6	V	51
QC Std 6	Cr	52
QC Std 6	Mn	55
QC Std 6	Co	59
QC Std 6	Ni	60
QC Std 6	Cu	65
QC Std 6	Zn	66
QC Std 6	As	75
QC Std 6	Se	82
QC Std 6	Mo	98
QC Std 6	Ag	107
QC Std 6	Cd	111
QC Std 6	Sb	123
QC Std 6	Ba	135
QC Std 6	Tl	203
QC Std 6	Pb	208
QC Std 6	U	238

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 18:32:22
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73071.2	5.8				ug/L	76456	Standard
	Be	9	8.3	34.6	**-0.0120**	0.003	24.3	ug/L	20	Standard
	Al	27	2066.8	22.2	**0.0025**	0.003	126.6	ug/L	1307	Standard
	Sc	45	38902.0	12.0				ug/L	41174	Standard
	Ti	47	28.7	14.1	**0.0029**	0.006	212.7	ug/L	27	Standard
	V	51	892.2	10.9	**-0.0904**	0.007	8.2	ug/L	1434	Standard
	Cr	52	3594.8	10.0	**-0.5264**	0.046	8.8	ug/L	7733	Standard
	Cr	53	233.3	24.1	**-0.1899**	0.023	11.9	ug/L	442	Standard
	Mn	55	789.0	24.3	**0.0021**	0.023	1087.1	ug/L	723	Standard
	Co	59	303.0	15.4	**0.0101**	0.007	68.9	ug/L	217	Standard
	Ni	60	205.0	9.3	**-0.0541**	0.015	27.0	ug/L	304	Standard
	Cu	65	106.0	5.3	**-0.0215**	0.011	50.6	ug/L	181	Standard
	Zn	66	184.7	6.5	**-0.0287**	0.024	81.9	ug/L	215	Standard
>	**Ge**	72	527063.8	18.3				ug/L	520809	Standard
	As	75	45.7	91.0	**0.0818**	0.037	44.8	ug/L	-52	Standard
	Se	82	44.8	44.7	**0.2236**	0.160	71.7	ug/L	17	Standard
	Se-1	77	43.0	11.6	**-0.1831**	0.048	26.1	ug/L	56	Standard
>	**Ga**	71	36.7	7.9				mg/L	25	Standard
	Rb	85	58.3	40.5				ug/L	28	Standard
	Y	89	504597.8	24.2				ug/L	447395	Standard
>	**Rh**	103	18.3	83.3				ug/L	15	Standard
	Mo	98	262.6	10.7	**0.0552**	0.011	19.4	ug/L	113	Standard
	Ag	107	185.3	19.2	**0.0107**	0.005	48.4	ug/L	108	Standard
	Cd	111	28.5	36.7	**0.0089**	0.004	43.7	mg/L	3	Standard
	Cd	114	81.6	56.2	**0.0129**	0.006	47.4	ug/L	20	Standard
>	**In**	115	700695.8	22.4				ug/L	625728	Standard
	Sn	118	6341.5	38.7	**0.7820**	0.237	30.3	ug/L	568	Standard
	Sb	123	763.9	43.6	**0.0944**	0.040	42.0	ug/L	612	Standard
	Ba	135	62.7	16.0	**0.0082**	0.003	42.5	ug/L	21	Standard
	Ce	140	145.0	79.5				ug/L	245	Standard
>	**Tb**	159	1042763.2	15.4				ug/L	950397	Standard
	Ho	165	1.7	173.2				ug/L	7	Standard
	Tl	203	182.0	22.0	**0.0180**	0.002	11.1	ug/L	15	Standard
	Tl	205	148.3	9.7	**0.0076**	0.002	25.0	ug/L	13	Standard
	Pb	206	414.0	16.3	**0.0241**	0.004	18.3	ug/L	264	Standard
	Pb	207	348.0	9.0	**0.0172**	0.006	37.6	ug/L	222	Standard
	Pb	208	1430.4	10.4	**0.0153**	0.006	41.0	ug/L	959	Standard
	U	238	124.7	10.8	**0.0142**	0.002	12.8	ug/L	9	Standard
>	**Bi**	209	596038.7	14.4				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	26.7	65.8	**-0.0280**	0.021	73.8	mg/L	55	Standard
K	39	30.0	60.1	**-0.0132**	0.067	507.4	mg/L	28	Standard
Ca	43	28.3	10.2	**0.2774**	0.122	44.0	mg/L	27	Standard
Fe	54	104.6	43.7	**-0.0136**	0.033	242.5	mg/L	147	Standard
Fe	57	286.7	7.0	**0.1321**	0.048	36.6	mg/L	268	Standard
Sc-1	45	38902.0	12.0				mg/L	41174	Standard
Cl	35	29524.2	6.8				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	630.0	34.9				ug/L	1950	Standard
P	31	11456.4	38.3				ug/L	21156	Standard
S	34	1375.1	3.3				ug/L	3419	Standard
Sr	88	53.3	37.9				ug/L	72	Standard
C	12	66.7	48.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	77.5				mg/L	17	Standard
Dy	164	13.0	179.6				mg/L	16	Standard
Ho-1	165	1.7	173.2				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	7	Standard
I	127	2638.6	27.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.201	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	111.981	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	107.818	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Se	82	
QC Std 7	Sn	118	

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Method 6020 - Summary Report

Sample ID: L1606145102SDL WG575057-02
Sample Date/Time: Friday, July 01, 2016 18:35:35
Number of Replicates: 3
Autosampler Position: 252
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62174.0	2.2				ug/L	76456	Standard
	Be	9	20.0	25.0	**0.0022**	0.006	269.5	ug/L	20	Standard
	Al	27	84546.9	0.4	**0.5973**	0.011	1.9	ug/L	1307	Standard
	Sc	45	38149.7	3.1				ug/L	41174	Standard
	Ti	47	483.3	4.9	**1.4725**	0.081	5.5	ug/L	27	Standard
	V	51	4248.5	1.3	**0.3438**	0.006	1.8	ug/L	1434	Standard
	Cr	52	8109.2	1.0	**0.0820**	0.013	16.2	ug/L	7733	Standard
	Cr	53	496.7	23.7	**0.0992**	0.125	126.0	ug/L	442	Standard
	Mn	55	78567.9	0.9	**10.7900**	0.016	0.2	ug/L	723	Standard
	Co	59	1117.0	0.8	**0.1236**	0.000	0.1	ug/L	217	Standard
	Ni	60	775.4	3.9	**0.2391**	0.018	7.4	ug/L	304	Standard
	Cu	65	1369.4	4.4	**0.6302**	0.035	5.5	ug/L	181	Standard
	Zn	66	5157.9	1.7	**4.2377**	0.083	2.0	ug/L	215	Standard
>	**Ge**	72	496310.3	0.7				ug/L	520809	Standard
	As	75	145.9	13.8	**0.1691**	0.016	9.6	ug/L	-52	Standard
	Se	82	21.4	35.8	**0.0511**	0.064	125.1	ug/L	17	Standard
	Se-1	77	46.7	8.7	**-0.1116**	0.053	47.6	ug/L	56	Standard
>	**Ga**	71	255.0	16.8				mg/L	25	Standard
	Rb	85	2703.6	4.1				ug/L	28	Standard
	Y	89	417509.6	1.1				ug/L	447395	Standard
>	**Rh**	103	16.7	69.3				ug/L	15	Standard
	Mo	98	345.0	36.3	**0.1002**	0.045	45.1	ug/L	113	Standard
	Ag	107	125.3	22.2	**0.0061**	0.004	68.7	ug/L	108	Standard
	Cd	111	34.3	46.4	**0.0139**	0.008	54.2	mg/L	3	Standard
	Cd	114	42.7	17.1	**0.0082**	0.001	17.1	ug/L	20	Standard
>	**In**	115	575196.5	0.1				ug/L	625728	Standard
	Sn	118	706.7	42.9	**0.0352**	0.051	145.6	ug/L	568	Standard
	Sb	123	527.1	13.9	**0.0772**	0.015	20.0	ug/L	612	Standard
	Ba	135	4163.9	5.4	**2.0642**	0.113	5.5	ug/L	21	Standard
	Ce	140	7787.1	30.7				ug/L	245	Standard
>	**Tb**	159	864381.3	0.7				ug/L	950397	Standard
	Ho	165	85.0	63.6				ug/L	7	Standard
	Tl	203	83.3	41.3	**0.0096**	0.004	45.0	ug/L	15	Standard
	Tl	205	73.3	55.1	**0.0005**	0.006	1188.2	ug/L	13	Standard
	Pb	206	2545.5	9.1	**0.4551**	0.047	10.4	ug/L	264	Standard
	Pb	207	2088.8	9.3	**0.4046**	0.043	10.7	ug/L	222	Standard
	Pb	208	9232.8	9.4	**0.4395**	0.047	10.7	ug/L	959	Standard
	U	238	222.7	20.7	**0.0304**	0.006	21.2	ug/L	9	Standard
>	**Bi**	209	498353.7	0.7				ug/L	552821	Standard

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Na	23	1.7	173.2	**5.2196**	9.032	173.0	mg/L	2	Standard
Mg	24	50.0	30.0	**0.0033**	0.021	637.4	mg/L	55	Standard
K	39	31.7	32.9	**-0.0007**	0.041	5467.5	mg/L	28	Standard
Ca	43	28.3	50.9	**0.3254**	1.410	433.3	mg/L	27	Standard
Fe	54	321.0	6.6	**0.1731**	0.021	12.0	mg/L	147	Standard
Fe	57	343.3	20.8	**0.3318**	0.218	65.6	mg/L	268	Standard
> **Sc-1**	45	38149.7	3.1				mg/L	41174	Standard
Cl	35	66614.8	2.2				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	1683.4	14.0				ug/L	1950	Standard
P	31	6868.2	3.4				ug/L	21156	Standard
S	34	2993.6	2.7				ug/L	3419	Standard
Sr	88	78.3	16.1				ug/L	72	Standard
C	12	60.0					mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	190.0	34.5				mg/L	17	Standard
Dy	164	136.6	41.3				mg/L	16	Standard
Ho-1	165	85.0	63.6				mg/L	7	Standard
Er	166	140.0	70.3				mg/L	7	Standard
I	127	27162.7	3.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		81.320	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.296	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145102SDL WG575057-02
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.924
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.147
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145103
Sample Date/Time: Friday, July 01, 2016 18:38:46
Number of Replicates: 3
Autosampler Position: 253
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63245.1	2.3				ug/L	76456	Standard
	Be	9	45.0	29.4	**0.0289**	0.015	52.5	ug/L	20	Standard
	Al	27	154217.6	1.4	**1.0792**	0.028	2.6	ug/L	1307	Standard
	Sc	45	38011.0	1.7				ug/L	41174	Standard
	Ti	47	1647.1	2.7	**5.2249**	0.166	3.2	ug/L	27	Standard
	V	51	10217.6	1.1	**1.1067**	0.009	0.8	ug/L	1434	Standard
	Cr	52	13566.7	1.7	**0.7914**	0.021	2.7	ug/L	7733	Standard
	Cr	53	1203.4	4.0	**0.8334**	0.047	5.6	ug/L	442	Standard
	Mn	55	179485.2	0.5	**24.7976**	0.092	0.4	ug/L	723	Standard
	Co	59	2042.5	2.9	**0.2506**	0.009	3.7	ug/L	217	Standard
	Ni	60	1701.1	1.2	**0.7078**	0.006	0.9	ug/L	304	Standard
	Cu	65	2602.9	0.6	**1.2654**	0.012	0.9	ug/L	181	Standard
	Zn	66	13566.1	2.3	**11.4481**	0.299	2.6	ug/L	215	Standard
>	Ge	72	495954.1	0.5				ug/L	520809	Standard
	As	75	526.1	8.4	**0.4926**	0.036	7.4	ug/L	-52	Standard
	Se	82	19.2	20.2	**0.0327**	0.031	96.0	ug/L	17	Standard
	Se-1	77	60.7	19.3	**0.0602**	0.141	233.6	ug/L	56	Standard
>	Ga	71	858.4	5.0				mg/L	25	Standard
	Rb	85	6271.3	6.6				ug/L	28	Standard
	Y	89	419752.0	1.1				ug/L	447395	Standard
>	Rh	103	16.7	45.8				ug/L	15	Standard
	Mo	98	384.6	7.0	**0.1144**	0.010	8.4	ug/L	113	Standard
	Ag	107	109.3	5.4	**0.0037**	0.001	23.4	ug/L	108	Standard
	Cd	111	94.6	7.9	**0.0424**	0.003	8.2	mg/L	3	Standard
	Cd	114	251.8	5.8	**0.0481**	0.003	5.6	ug/L	20	Standard
>	In	115	575203.1	0.2				ug/L	625728	Standard
	Sn	118	680.0	22.3	**0.0307**	0.025	82.8	ug/L	568	Standard
	Sb	123	333.6	22.9	**0.0365**	0.016	43.9	ug/L	612	Standard
	Ba	135	10023.6	1.9	**4.9942**	0.091	1.8	ug/L	21	Standard
	Ce	140	48280.1	1.0				ug/L	245	Standard
>	Tb	159	860542.4	0.9				ug/L	950397	Standard
	Ho	165	373.3	17.4				ug/L	7	Standard
	Tl	203	98.7	6.5	**0.0114**	0.001	7.5	ug/L	15	Standard
	Tl	205	111.7	22.1	**0.0057**	0.003	56.6	ug/L	13	Standard
	Pb	206	31345.7	1.0	**6.0875**	0.078	1.3	ug/L	264	Standard
	Pb	207	25979.9	0.2	**5.5497**	0.058	1.0	ug/L	222	Standard
	Pb	208	113055.9	0.8	**5.9143**	0.107	1.8	ug/L	959	Standard
	U	238	480.3	2.8	**0.0657**	0.001	2.2	ug/L	9	Standard
>	Bi	209	499251.2	1.0				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	46.7	6.2	**-0.0011**	0.005	417.9	mg/L	55	Standard
K	39	40.0	50.0	**0.0355**	0.084	236.7	mg/L	28	Standard
Ca	43	20.0	43.3	**-0.4832**	0.857	177.3	mg/L	27	Standard
Fe	54	979.0	3.0	**0.7328**	0.021	2.8	mg/L	147	Standard
Fe	57	456.7	4.4	**0.7168**	0.091	12.6	mg/L	268	Standard
Sc-1	45	38011.0	1.7				mg/L	41174	Standard
Cl	35	67610.5	0.8				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	1716.8	12.9				ug/L	1950	Standard
P	31	8008.8	5.2				ug/L	21156	Standard
S	34	2928.6	6.6				ug/L	3419	Standard
Sr	88	71.7	26.4				ug/L	72	Standard
C	12	106.7	54.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	68.6				mg/L	17	Standard
Dy	164	644.2	14.1				mg/L	16	Standard
Ho-1	165	373.3	17.4				mg/L	7	Standard
Er	166	400.0	22.2				mg/L	7	Standard
I	127	30482.3	1.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		82.721	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.228	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.925
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.310
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145104
Sample Date/Time: Friday, July 01, 2016 18:41:58
Number of Replicates: 3
Autosampler Position: 254
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63385.7	2.2				ug/L	76456	Standard
	Be	9	50.0	26.5	**0.0338**	0.013	38.3	ug/L	20	Standard
	Al	27	725235.3	1.5	**5.1021**	0.166	3.3	ug/L	1307	Standard
	Sc	45	39148.9	2.8				ug/L	41174	Standard
	Ti	47	1767.4	1.7	**5.5568**	0.163	2.9	ug/L	27	Standard
	V	51	9435.8	2.3	**0.9951**	0.038	3.8	ug/L	1434	Standard
	Cr	52	13141.4	0.9	**0.7193**	0.019	2.6	ug/L	7733	Standard
	Cr	53	1133.4	1.8	**0.7491**	0.025	3.3	ug/L	442	Standard
	Mn	55	184948.0	0.3	**25.3023**	0.378	1.5	ug/L	723	Standard
	Co	59	2891.6	3.9	**0.3629**	0.009	2.4	ug/L	217	Standard
	Ni	60	1981.8	1.1	**0.8399**	0.007	0.8	ug/L	304	Standard
	Cu	65	2972.3	0.4	**1.4404**	0.025	1.7	ug/L	181	Standard
	Zn	66	14124.9	1.1	**11.8061**	0.091	0.8	ug/L	215	Standard
>	**Ge**	72	500981.4	1.8				ug/L	520809	Standard
	As	75	525.3	4.0	**0.4878**	0.024	5.0	ug/L	-52	Standard
	Se	82	27.2	11.1	**0.0974**	0.029	29.5	ug/L	17	Standard
	Se-1	77	60.0	10.4	**0.0461**	0.088	191.5	ug/L	56	Standard
>	**Ga**	71	815.0	2.8				mg/L	25	Standard
	Rb	85	6224.6	2.3				ug/L	28	Standard
	Y	89	425374.4	1.5				ug/L	447395	Standard
>	**Rh**	103	25.0	40.0				ug/L	15	Standard
	Mo	98	520.6	8.2	**0.1605**	0.013	8.3	ug/L	113	Standard
	Ag	107	111.7	7.6	**0.0038**	0.001	37.5	ug/L	108	Standard
	Cd	111	92.7	8.2	**0.0408**	0.003	7.6	mg/L	3	Standard
	Cd	114	200.3	11.6	**0.0377**	0.005	12.6	ug/L	20	Standard
>	**In**	115	583569.6	1.1				ug/L	625728	Standard
	Sn	118	673.3	18.0	**0.0279**	0.019	69.1	ug/L	568	Standard
	Sb	123	316.8	22.4	**0.0319**	0.014	44.3	ug/L	612	Standard
	Ba	135	10430.3	1.6	**5.1226**	0.027	0.5	ug/L	21	Standard
	Ce	140	51980.7	2.3				ug/L	245	Standard
>	**Tb**	159	866344.8	1.0				ug/L	950397	Standard
	Ho	165	438.3	11.9				ug/L	7	Standard
	Tl	203	128.0	6.4	**0.0149**	0.001	5.7	ug/L	15	Standard
	Tl	205	108.3	13.3	**0.0051**	0.002	35.3	ug/L	13	Standard
	Pb	206	26433.4	1.2	**5.0710**	0.132	2.6	ug/L	264	Standard
	Pb	207	22121.5	0.6	**4.6673**	0.113	2.4	ug/L	222	Standard
	Pb	208	95760.1	0.8	**4.9468**	0.074	1.5	ug/L	959	Standard
	U	238	579.3	5.3	**0.0785**	0.005	6.6	ug/L	9	Standard
>	**Bi**	209	504799.5	1.9				ug/L	552821	Standard

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Na	23	1.7	173.2	**5.2809**	9.138	173.0	mg/L	2	Standard
Mg	24	46.7	27.0	**-0.0030**	0.014	461.6	mg/L	55	Standard
K	39	46.7	6.2	**0.0571**	0.014	24.3	mg/L	28	Standard
Ca	43	46.7	16.4	**2.0216**	0.845	41.8	mg/L	27	Standard
Fe	54	948.7	5.1	**0.6833**	0.021	3.0	mg/L	147	Standard
Fe	57	496.7	2.9	**0.8012**	0.035	4.4	mg/L	268	Standard
> **Sc-1**	45	39148.9	2.8				mg/L	41174	Standard
Cl	35	69866.8	2.4				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	1733.4	3.8				ug/L	1950	Standard
P	31	8088.8	1.5				ug/L	21156	Standard
S	34	3277.0	4.5				ug/L	3419	Standard
Sr	88	95.0	27.9				ug/L	72	Standard
C	12	93.3	49.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	17	Standard
Dy	164	709.7	12.9				mg/L	16	Standard
Ho-1	165	438.3	11.9				mg/L	7	Standard
Er	166	493.3	16.5				mg/L	7	Standard
I	127	31300.6	1.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		82.905	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.193	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.263
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.313
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145105
Sample Date/Time: Friday, July 01, 2016 18:45:09
Number of Replicates: 3
Autosampler Position: 255
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64614.2	2.4				ug/L	76456	Standard
	Be	9	185.0	11.8	**0.1761**	0.027	15.5	ug/L	20	Standard
	Al	27	102955.3	1.3	**0.7016**	0.016	2.3	ug/L	1307	Standard
	Sc	45	38894.9	1.6				ug/L	41174	Standard
	Ti	47	5095.2	2.9	**16.0563**	0.595	3.7	ug/L	27	Standard
	V	51	12093.5	2.4	**1.3198**	0.050	3.8	ug/L	1434	Standard
	Cr	52	18515.6	1.7	**1.3928**	0.062	4.4	ug/L	7733	Standard
	Cr	53	1865.1	14.6	**1.4862**	0.264	17.8	ug/L	442	Standard
	Mn	55	32921.4	0.8	**4.3867**	0.071	1.6	ug/L	723	Standard
	Co	59	1608.8	2.8	**0.1873**	0.008	4.3	ug/L	217	Standard
	Ni	60	1860.4	4.4	**0.7722**	0.043	5.6	ug/L	304	Standard
	Cu	65	2193.8	2.2	**1.0354**	0.028	2.7	ug/L	181	Standard
	Zn	66	9716.8	1.5	**8.0047**	0.192	2.4	ug/L	215	Standard
>	Ge	72	504722.0	1.0				ug/L	520809	Standard
	As	75	1470.5	3.8	**1.2746**	0.057	4.4	ug/L	-52	Standard
	Se	82	28.8	14.7	**0.1088**	0.036	32.9	ug/L	17	Standard
	Se-1	77	55.7	13.5	**-0.0132**	0.085	641.5	ug/L	56	Standard
>	Ga	71	1173.4	4.0				mg/L	25	Standard
	Rb	85	5657.7	5.6				ug/L	28	Standard
	Y	89	430091.6	2.7				ug/L	447395	Standard
>	Rh	103	10.0	100.0				ug/L	15	Standard
	Mo	98	330.9	6.7	**0.0921**	0.006	6.8	ug/L	113	Standard
	Ag	107	127.3	16.8	**0.0060**	0.003	57.0	ug/L	108	Standard
	Cd	111	132.1	1.6	**0.0585**	0.002	2.8	mg/L	3	Standard
	Cd	114	337.6	10.3	**0.0629**	0.007	11.3	ug/L	20	Standard
>	In	115	589920.6	1.4				ug/L	625728	Standard
	Sn	118	773.4	25.8	**0.0430**	0.031	72.7	ug/L	568	Standard
	Sb	123	374.2	12.0	**0.0430**	0.008	19.0	ug/L	612	Standard
	Ba	135	10208.8	2.5	**4.9590**	0.061	1.2	ug/L	21	Standard
	Ce	140	28101.1	3.0				ug/L	245	Standard
>	Tb	159	866375.5	1.2				ug/L	950397	Standard
	Ho	165	575.0	13.6				ug/L	7	Standard
	Tl	203	486.0	6.3	**0.0582**	0.003	5.7	ug/L	15	Standard
	Tl	205	386.7	8.6	**0.0431**	0.004	8.7	ug/L	13	Standard
	Pb	206	15320.4	2.2	**2.9057**	0.025	0.9	ug/L	264	Standard
	Pb	207	12702.3	2.1	**2.6467**	0.028	1.1	ug/L	222	Standard
	Pb	208	55482.0	1.8	**2.8316**	0.013	0.4	ug/L	959	Standard
	U	238	430.7	1.5	**0.0580**	0.000	0.2	ug/L	9	Standard
>	Bi	209	507193.8	1.5				ug/L	552821	Standard

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Na	23	1.7	173.2	**5.2063**	9.009	173.0	mg/L	2	Standard
Mg	24	56.7	27.0	**0.0097**	0.018	185.7	mg/L	55	Standard
K	39	65.0	33.5	**0.1320**	0.085	64.4	mg/L	28	Standard
Ca	43	21.7	13.3	**-0.3705**	0.255	68.8	mg/L	27	Standard
Fe	54	1363.7	6.4	**1.0335**	0.073	7.1	mg/L	147	Standard
Fe	57	556.7	6.9	**1.0056**	0.095	9.5	mg/L	268	Standard
Sc-1	45	38894.9	1.6				mg/L	41174	Standard
Cl	35	69609.5	0.8				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	1780.1	1.7				ug/L	1950	Standard
P	31	8205.6	2.3				ug/L	21156	Standard
S	34	3335.4	2.7				ug/L	3419	Standard
Sr	88	61.7	20.4				ug/L	72	Standard
C	12	93.3	6.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	50.0				mg/L	17	Standard
Dy	164	880.2	8.3				mg/L	16	Standard
Ho-1	165	575.0	13.6				mg/L	7	Standard
Er	166	553.3	3.8				mg/L	7	Standard
I	127	31464.3	3.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		84.512	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.911	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.277
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.747
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145106 WG574521-02
Sample Date/Time: Friday, July 01, 2016 18:48:21
Number of Replicates: 3
Autosampler Position: 256
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64025.1	3.2				ug/L	76456	Standard
	Be	9	150.0	10.0	**0.1401**	0.015	10.9	ug/L	20	Standard
	Al	27	373954.4	3.8	**2.6005**	0.138	5.3	ug/L	1307	Standard
	Sc	45	39992.7	0.8				ug/L	41174	Standard
	Ti	47	2911.6	0.9	**9.0743**	0.125	1.4	ug/L	27	Standard
	V	51	51458.1	1.3	**6.2169**	0.098	1.6	ug/L	1434	Standard
	Cr	52	21030.6	1.9	**1.6951**	0.060	3.5	ug/L	7733	Standard
	Cr	53	2078.5	6.6	**1.6910**	0.147	8.7	ug/L	442	Standard
	Mn	55	214722.6	3.4	**28.9695**	1.071	3.7	ug/L	723	Standard
	Co	59	3170.7	6.3	**0.3948**	0.028	7.2	ug/L	217	Standard
	Ni	60	4965.8	2.8	**2.2998**	0.080	3.5	ug/L	304	Standard
	Cu	65	11632.1	2.0	**5.7677**	0.126	2.2	ug/L	181	Standard
	Zn	66	12643.6	1.6	**10.3959**	0.197	1.9	ug/L	215	Standard
>	**Ge**	72	508214.5	0.5				ug/L	520809	Standard
	As	75	1760.7	0.9	**1.5067**	0.007	0.5	ug/L	-52	Standard
	Se	82	70.2	4.5	**0.4430**	0.026	5.8	ug/L	17	Standard
	Se-1	77	108.3	3.0	**0.6142**	0.044	7.2	ug/L	56	Standard
>	**Ga**	71	1403.4	6.8				mg/L	25	Standard
	Rb	85	5152.5	5.6				ug/L	28	Standard
	Y	89	465204.1	0.9				ug/L	447395	Standard
>	**Rh**	103	8.3	34.6				ug/L	15	Standard
	Mo	98	986.2	8.1	**0.3241**	0.024	7.4	ug/L	113	Standard
	Ag	107	197.7	29.4	**0.0165**	0.008	50.2	ug/L	108	Standard
	Cd	111	516.3	5.7	**0.2371**	0.011	4.7	mg/L	3	Standard
	Cd	114	1344.3	1.8	**0.2519**	0.006	2.5	ug/L	20	Standard
>	**In**	115	585874.6	1.3				ug/L	625728	Standard
	Sn	118	588.3	39.7	**0.0131**	0.038	286.1	ug/L	568	Standard
	Sb	123	350.0	28.7	**0.0385**	0.020	51.5	ug/L	612	Standard
	Ba	135	28617.3	1.6	**14.0306**	0.052	0.4	ug/L	21	Standard
	Ce	140	147578.6	1.0				ug/L	245	Standard
>	**Tb**	159	879044.3	0.3				ug/L	950397	Standard
	Ho	165	3460.4	5.6				ug/L	7	Standard
	Tl	203	284.7	28.0	**0.0338**	0.010	29.0	ug/L	15	Standard
	Tl	205	251.7	41.0	**0.0246**	0.014	57.8	ug/L	13	Standard
	Pb	206	17853.2	2.3	**3.3893**	0.091	2.7	ug/L	264	Standard
	Pb	207	14882.6	2.2	**3.1053**	0.081	2.6	ug/L	222	Standard
	Pb	208	65337.9	2.2	**3.3392**	0.088	2.6	ug/L	959	Standard
	U	238	2254.5	5.6	**0.3042**	0.018	6.0	ug/L	9	Standard
>	**Bi**	209	507833.7	0.4				ug/L	552821	Standard

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Na	23	1.7	173.2	**5.0936**	8.814	173.0	mg/L	2	Standard
Mg	24	113.3	21.8	**0.0760**	0.029	37.9	mg/L	55	Standard
K	39	38.3	27.2	**0.0199**	0.040	200.6	mg/L	28	Standard
Ca	43	53.3	27.1	**2.5349**	1.339	52.8	mg/L	27	Standard
Fe	54	2059.6	7.3	**1.5638**	0.117	7.5	mg/L	147	Standard
Fe	57	870.0	4.0	**1.9479**	0.099	5.1	mg/L	268	Standard
> **Sc-1**	45	39992.7	0.8				mg/L	41174	Standard
Cl	35	70901.6	2.0				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	2260.2	4.2				ug/L	1950	Standard
P	31	8212.2	3.0				ug/L	21156	Standard
S	34	3600.4	1.9				ug/L	3419	Standard
Sr	88	90.0	9.6				ug/L	72	Standard
C	12	176.7	19.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	40.0				mg/L	17	Standard
Dy	164	5100.9	5.6				mg/L	16	Standard
Ho-1	165	3460.4	5.6				mg/L	7	Standard
Er	166	3200.3	6.8				mg/L	7	Standard
I	127	34541.0	3.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		83.741	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.582	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.631
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.862
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606145107
Sample Date/Time: Friday, July 01, 2016 18:51:32
Number of Replicates: 3
Autosampler Position: 257
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64661.0	1.8				ug/L	76456	Standard
	Be	9	435.0	25.2	**0.4383**	0.108	24.7	ug/L	20	Standard
	Al	27	688124.2	2.3	**4.7442**	0.162	3.4	ug/L	1307	Standard
	Sc	45	39658.5	2.4				ug/L	41174	Standard
	Ti	47	13864.7	2.7	**43.2019**	1.047	2.4	ug/L	27	Standard
	V	51	37809.2	1.4	**4.4801**	0.052	1.2	ug/L	1434	Standard
	Cr	52	41323.6	2.8	**4.2278**	0.133	3.1	ug/L	7733	Standard
	Cr	53	4789.1	2.3	**4.4030**	0.102	2.3	ug/L	442	Standard
	Mn	55	173827.6	1.4	**23.2563**	0.280	1.2	ug/L	723	Standard
	Co	59	5908.8	1.9	**0.7552**	0.015	2.0	ug/L	217	Standard
	Ni	60	5550.3	1.2	**2.5679**	0.031	1.2	ug/L	304	Standard
	Cu	65	7217.7	3.4	**3.5237**	0.120	3.4	ug/L	181	Standard
	Zn	66	24798.3	1.6	**20.4085**	0.308	1.5	ug/L	215	Standard
>	Ge	72	512004.2	0.3				ug/L	520809	Standard
	As	75	8113.7	1.3	**6.7304**	0.082	1.2	ug/L	-52	Standard
	Se	82	47.8	17.9	**0.2581**	0.069	26.7	ug/L	17	Standard
	Se-1	77	78.3	7.5	**0.2474**	0.068	27.6	ug/L	56	Standard
>	Ga	71	2850.3	1.2				mg/L	25	Standard
	Rb	85	22646.9	3.8				ug/L	28	Standard
	Y	89	456860.0	1.6				ug/L	447395	Standard
>	Rh	103	15.0	57.7				ug/L	15	Standard
	Mo	98	1709.2	2.3	**0.5713**	0.010	1.8	ug/L	113	Standard
	Ag	107	176.7	8.5	**0.0131**	0.002	17.8	ug/L	108	Standard
	Cd	111	527.4	1.5	**0.2390**	0.005	2.0	mg/L	3	Standard
	Cd	114	1273.9	8.3	**0.2354**	0.018	7.7	ug/L	20	Standard
>	In	115	594063.6	0.5				ug/L	625728	Standard
	Sn	118	725.0	18.7	**0.0344**	0.022	63.4	ug/L	568	Standard
	Sb	123	399.2	21.2	**0.0476**	0.017	35.7	ug/L	612	Standard
	Ba	135	25921.5	1.4	**12.5319**	0.140	1.1	ug/L	21	Standard
	Ce	140	84609.0	2.8				ug/L	245	Standard
>	Tb	159	884122.7	1.5				ug/L	950397	Standard
	Ho	165	1811.8	3.2				ug/L	7	Standard
	Tl	203	2382.2	2.0	**0.2851**	0.004	1.5	ug/L	15	Standard
	Tl	205	2155.2	0.8	**0.2815**	0.002	0.8	ug/L	13	Standard
	Pb	206	34780.5	0.5	**6.5761**	0.037	0.6	ug/L	264	Standard
	Pb	207	29105.6	0.4	**6.0542**	0.048	0.8	ug/L	222	Standard
	Pb	208	126449.0	1.6	**6.4404**	0.086	1.3	ug/L	959	Standard
	U	238	1711.1	3.8	**0.2285**	0.010	4.3	ug/L	9	Standard
>	Bi	209	513045.7	0.5				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	66.7	21.7	**0.0208**	0.018	87.5	mg/L	55	Standard
K	39	66.7	33.8	**0.1333**	0.086	64.5	mg/L	28	Standard
Ca	43	33.3	8.7	**0.6944**	0.305	44.0	mg/L	27	Standard
Fe	54	5014.4	0.7	**3.9857**	0.129	3.2	mg/L	147	Standard
Fe	57	1586.7	5.6	**4.2576**	0.247	5.8	mg/L	268	Standard
> **Sc-1**	45	39658.5	2.4				mg/L	41174	Standard
Cl	35	72080.4	1.0				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	1970.1	9.5				ug/L	1950	Standard
P	31	8810.9	5.8				ug/L	21156	Standard
S	34	3717.1	6.6				ug/L	3419	Standard
Sr	88	71.7	22.4				ug/L	72	Standard
C	12	120.0	16.7				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	43.3	13.3				mg/L	17	Standard
Dy	164	2375.7	6.5				mg/L	16	Standard
Ho-1	165	1811.8	3.2				mg/L	7	Standard
Er	166	1693.4	3.3				mg/L	7	Standard
I	127	32022.1	0.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		84.573	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.309	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.940
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.805
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145108
Sample Date/Time: Friday, July 01, 2016 18:54:44
Number of Replicates: 3
Autosampler Position: 258
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65516.4	2.1				ug/L	76456	Standard
	Be	9	508.3	16.0	**0.5110**	0.092	17.9	ug/L	20	Standard
	Al	27	800380.4	1.8	**5.4489**	0.215	3.9	ug/L	1307	Standard
	Sc	45	41087.3	0.8				ug/L	41174	Standard
	Ti	47	14067.5	1.7	**43.1737**	0.244	0.6	ug/L	27	Standard
	V	51	35953.7	1.5	**4.1835**	0.016	0.4	ug/L	1434	Standard
	Cr	52	58594.1	1.0	**6.2897**	0.017	0.3	ug/L	7733	Standard
	Cr	53	6973.3	2.0	**6.4961**	0.144	2.2	ug/L	442	Standard
	Mn	55	180922.6	1.7	**23.8431**	0.175	0.7	ug/L	723	Standard
	Co	59	6047.5	0.4	**0.7616**	0.011	1.5	ug/L	217	Standard
	Ni	60	5785.8	2.5	**2.6404**	0.042	1.6	ug/L	304	Standard
	Cu	65	5630.4	0.4	**2.6905**	0.031	1.2	ug/L	181	Standard
	Zn	66	23391.7	1.5	**18.9480**	0.094	0.5	ug/L	215	Standard
>	Ge	72	519833.8	1.1				ug/L	520809	Standard
	As	75	6871.0	0.9	**5.6213**	0.013	0.2	ug/L	-52	Standard
	Se	82	36.9	12.8	**0.1662**	0.040	24.4	ug/L	17	Standard
	Se-1	77	75.7	12.8	**0.2017**	0.109	53.9	ug/L	56	Standard
>	Ga	71	2690.2	10.4				mg/L	25	Standard
	Rb	85	22987.4	0.8				ug/L	28	Standard
	Y	89	454979.6	1.6				ug/L	447395	Standard
>	Rh	103	13.3	78.1				ug/L	15	Standard
	Mo	98	1493.9	2.8	**0.4956**	0.012	2.5	ug/L	113	Standard
	Ag	107	175.0	7.7	**0.0128**	0.002	15.5	ug/L	108	Standard
	Cd	111	498.3	4.3	**0.2253**	0.011	4.8	mg/L	3	Standard
	Cd	114	1246.2	5.5	**0.2300**	0.012	5.2	ug/L	20	Standard
>	In	115	594885.0	1.0				ug/L	625728	Standard
	Sn	118	763.4	27.5	**0.0404**	0.033	82.5	ug/L	568	Standard
	Sb	123	358.6	20.7	**0.0392**	0.014	36.9	ug/L	612	Standard
	Ba	135	27274.9	0.9	**13.1693**	0.072	0.5	ug/L	21	Standard
	Ce	140	89319.2	2.1				ug/L	245	Standard
>	Tb	159	880456.6	1.2				ug/L	950397	Standard
	Ho	165	2008.5	5.9				ug/L	7	Standard
	Tl	203	2224.8	1.1	**0.2667**	0.002	0.9	ug/L	15	Standard
	Tl	205	2000.1	8.4	**0.2612**	0.026	9.8	ug/L	13	Standard
	Pb	206	30072.5	0.9	**5.6895**	0.126	2.2	ug/L	264	Standard
	Pb	207	25200.3	0.2	**5.2438**	0.069	1.3	ug/L	222	Standard
	Pb	208	108593.2	0.7	**5.5329**	0.068	1.2	ug/L	959	Standard
	U	238	1657.1	2.7	**0.2215**	0.003	1.4	ug/L	9	Standard
>	Bi	209	512295.4	1.3				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	71.7	51.4	**0.0236**	0.043	182.4	mg/L	55	Standard
K	39	88.3	14.2	**0.2082**	0.048	23.2	mg/L	28	Standard
Ca	43	35.0	42.9	**0.7276**	1.340	184.1	mg/L	27	Standard
Fe	54	5032.2	2.8	**3.8559**	0.118	3.1	mg/L	147	Standard
Fe	57	1495.1	12.3	**3.7984**	0.557	14.7	mg/L	268	Standard
> **Sc-1**	45	41087.3	0.8				mg/L	41174	Standard
Cl	35	70479.6	1.8				ug/L	69550	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	1836.8	12.0				ug/L	1950	Standard
P	31	8665.8	3.6				ug/L	21156	Standard
S	34	3460.4	4.7				ug/L	3419	Standard
Sr	88	80.0	18.8				ug/L	72	Standard
C	12	90.0	22.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	20.0				mg/L	17	Standard
Dy	164	2628.5	8.2				mg/L	16	Standard
Ho-1	165	2008.5	5.9				mg/L	7	Standard
Er	166	1706.8	7.3				mg/L	7	Standard
I	127	30609.2	2.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		85.692	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.813	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.071
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.669
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145109S WG574521-07
Sample Date/Time: Friday, July 01, 2016 18:57:55
Number of Replicates: 3
Autosampler Position: 259
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66169.2	2.4				ug/L	76456	Standard
	Be	9	2845.3	1.4	**2.9179**	0.070	2.4	ug/L	20	Standard
	Al	27	402052.1	1.7	**2.7039**	0.037	1.4	ug/L	1307	Standard
	Sc	45	40838.3	0.3				ug/L	41174	Standard
	Ti	47	3598.8	1.2	**10.9719**	0.146	1.3	ug/L	27	Standard
	V	51	79956.8	0.6	**9.5376**	0.034	0.4	ug/L	1434	Standard
	Cr	52	43849.7	0.5	**4.4576**	0.028	0.6	ug/L	7733	Standard
	Cr	53	4982.5	0.8	**4.5178**	0.059	1.3	ug/L	442	Standard
	Mn	55	232874.6	0.3	**30.6911**	0.183	0.6	ug/L	723	Standard
	Co	59	22573.1	0.9	**2.9200**	0.017	0.6	ug/L	217	Standard
	Ni	60	11202.5	1.2	**5.2509**	0.054	1.0	ug/L	304	Standard
	Cu	65	17763.4	0.2	**8.6391**	0.027	0.3	ug/L	181	Standard
	Zn	66	17798.8	0.5	**14.3610**	0.032	0.2	ug/L	215	Standard
>	**Ge**	72	520328.1	0.5				ug/L	520809	Standard
	As	75	5212.0	2.2	**4.2712**	0.111	2.6	ug/L	-52	Standard
	Se	82	460.7	3.7	**3.5240**	0.138	3.9	ug/L	17	Standard
	Se-1	77	349.3	2.1	**3.4060**	0.106	3.1	ug/L	56	Standard
>	**Ga**	71	1643.4	2.5				mg/L	25	Standard
	Rb	85	6298.0	3.7				ug/L	28	Standard
	Y	89	489232.3	1.4				ug/L	447395	Standard
>	**Rh**	103	18.3	15.7				ug/L	15	Standard
	Mo	98	1075.7	0.6	**0.3442**	0.006	1.8	ug/L	113	Standard
	Ag	107	17796.8	1.4	**2.5517**	0.014	0.5	ug/L	108	Standard
	Cd	111	6560.4	0.7	**2.9469**	0.016	0.6	mg/L	3	Standard
	Cd	114	16108.1	2.8	**2.9255**	0.113	3.9	ug/L	20	Standard
>	**In**	115	604614.2	1.1				ug/L	625728	Standard
	Sn	118	576.7	20.9	**0.0084**	0.019	221.8	ug/L	568	Standard
	Sb	123	1529.4	1.9	**0.2726**	0.009	3.4	ug/L	612	Standard
	Ba	135	36016.4	1.8	**17.1151**	0.222	1.3	ug/L	21	Standard
	Ce	140	166971.8	1.4				ug/L	245	Standard
>	**Tb**	159	893545.7	0.7				ug/L	950397	Standard
	Ho	165	3838.8	4.6				ug/L	7	Standard
	Tl	203	21813.4	0.5	**2.5793**	0.005	0.2	ug/L	15	Standard
	Tl	205	20096.7	2.1	**2.6671**	0.046	1.7	ug/L	13	Standard
	Pb	206	33592.2	0.8	**6.2573**	0.064	1.0	ug/L	264	Standard
	Pb	207	28855.8	0.9	**5.9141**	0.073	1.2	ug/L	222	Standard
	Pb	208	125010.5	0.5	**6.2737**	0.013	0.2	ug/L	959	Standard
	U	238	20841.0	0.6	**2.7450**	0.006	0.2	ug/L	9	Standard
>	**Bi**	209	520594.3	0.4				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	78.3	32.1	**0.0321**	0.030	93.3	mg/L	55	Standard
K	39	38.3	30.1	**0.0170**	0.045	263.0	mg/L	28	Standard
Ca	43	36.7	7.9	**0.9069**	0.276	30.5	mg/L	27	Standard
Fe	54	2344.4	2.1	**1.7548**	0.045	2.6	mg/L	147	Standard
Fe	57	823.4	10.1	**1.7471**	0.264	15.1	mg/L	268	Standard
> **Sc-1**	45	40838.3	0.3				mg/L	41174	Standard
Cl	35	72934.5	2.0				ug/L	69550	Standard
Kr	83	1.0	0.0				ug/L	1	Standard
Br	81	2890.3	3.7				ug/L	1950	Standard
P	31	8855.9	3.2				ug/L	21156	Standard
S	34	3612.1	4.5				ug/L	3419	Standard
Sr	88	103.3	32.9				ug/L	72	Standard
C	12	236.7	17.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	20.8				mg/L	17	Standard
Dy	164	5672.6	5.0				mg/L	16	Standard
Ho-1	165	3838.8	4.6				mg/L	7	Standard
Er	166	3727.1	2.9				mg/L	7	Standard
I	127	35476.5	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		86.546	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.908	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.626
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.171
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145110SD WG574521-08
Sample Date/Time: Friday, July 01, 2016 19:01:07
Number of Replicates: 3
Autosampler Position: 260
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67019.7	4.1				ug/L	76456	Standard
	Be	9	2773.6	7.8	**2.8076**	0.211	7.5	ug/L	20	Standard
	Al	27	343053.6	0.5	**2.2782**	0.082	3.6	ug/L	1307	Standard
	Sc	45	40390.5	2.4				ug/L	41174	Standard
	Ti	47	2125.1	3.6	**6.3589**	0.289	4.5	ug/L	27	Standard
	V	51	73913.9	1.7	**8.6823**	0.187	2.2	ug/L	1434	Standard
	Cr	52	39647.8	1.1	**3.8723**	0.091	2.4	ug/L	7733	Standard
	Cr	53	4390.6	6.6	**3.8749**	0.313	8.1	ug/L	442	Standard
	Mn	55	211704.6	1.1	**27.5205**	0.540	2.0	ug/L	723	Standard
	Co	59	22138.2	1.1	**2.8248**	0.052	1.9	ug/L	217	Standard
	Ni	60	10229.1	2.4	**4.7164**	0.156	3.3	ug/L	304	Standard
	Cu	65	16797.3	0.8	**8.0558**	0.132	1.6	ug/L	181	Standard
	Zn	66	14601.7	0.9	**11.5899**	0.103	0.9	ug/L	215	Standard
>	**Ge**	72	527370.0	0.8				ug/L	520809	Standard
	As	75	4454.0	0.3	**3.6083**	0.041	1.1	ug/L	-52	Standard
	Se	82	433.6	3.6	**3.2627**	0.107	3.3	ug/L	17	Standard
	Se-1	77	342.3	4.4	**3.2706**	0.183	5.6	ug/L	56	Standard
>	**Ga**	71	1086.7	7.6				mg/L	25	Standard
	Rb	85	2715.2	5.0				ug/L	28	Standard
	Y	89	495479.9	0.9				ug/L	447395	Standard
>	**Rh**	103	16.7	45.8				ug/L	15	Standard
	Mo	98	1199.6	3.2	**0.3822**	0.017	4.5	ug/L	113	Standard
	Ag	107	16994.5	0.8	**2.4097**	0.040	1.7	ug/L	108	Standard
	Cd	111	6581.3	0.3	**2.9241**	0.026	0.9	mg/L	3	Standard
	Cd	114	16115.1	1.4	**2.8941**	0.037	1.3	ug/L	20	Standard
>	**In**	115	611286.5	1.2				ug/L	625728	Standard
	Sn	118	688.3	30.3	**0.0255**	0.034	134.7	ug/L	568	Standard
	Sb	123	3492.9	2.6	**0.6580**	0.010	1.5	ug/L	612	Standard
	Ba	135	33066.0	1.8	**15.5404**	0.233	1.5	ug/L	21	Standard
	Ce	140	153693.9	0.5				ug/L	245	Standard
>	**Tb**	159	899836.2	0.9				ug/L	950397	Standard
	Ho	165	3548.7	3.5				ug/L	7	Standard
	Tl	203	21026.9	1.7	**2.4700**	0.040	1.6	ug/L	15	Standard
	Tl	205	19092.0	1.1	**2.5170**	0.051	2.0	ug/L	13	Standard
	Pb	206	32793.8	0.3	**6.0676**	0.075	1.2	ug/L	264	Standard
	Pb	207	27703.0	0.3	**5.6387**	0.064	1.1	ug/L	222	Standard
	Pb	208	120754.5	1.4	**6.0193**	0.142	2.4	ug/L	959	Standard
	U	238	20391.4	0.6	**2.6683**	0.017	0.6	ug/L	9	Standard
>	**Bi**	209	524030.2	1.0				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	73.3	17.2	**0.0271**	0.015	54.1	mg/L	55	Standard
K	39	33.3	22.9	**-0.0010**	0.029	2803.3	mg/L	28	Standard
Ca	43	38.3	52.7	**1.0972**	1.891	172.3	mg/L	27	Standard
Fe	54	1833.3	6.8	**1.3677**	0.115	8.4	mg/L	147	Standard
Fe	57	725.0	5.5	**1.4696**	0.176	12.0	mg/L	268	Standard
Sc-1	45	40390.5	2.4				mg/L	41174	Standard
Cl	35	74325.2	0.8				ug/L	69550	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	2540.2	14.3				ug/L	1950	Standard
P	31	8757.5	2.9				ug/L	21156	Standard
S	34	3718.8	1.1				ug/L	3419	Standard
Sr	88	85.0					ug/L	72	Standard
C	12	270.0	14.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	63.3	32.9				mg/L	17	Standard
Dy	164	5206.1	3.7				mg/L	16	Standard
Ho-1	165	3548.7	3.5				mg/L	7	Standard
Er	166	3510.4	5.0				mg/L	7	Standard
I	127	34255.4	2.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		87.658	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.260	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.692
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.792
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606145110SD WG574521-08
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 19:04:19
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73296.1	8.8				ug/L	76456	Standard
	Be	9	3.3	86.6	**-0.0168**	0.003	15.9	ug/L	20	Standard
	Al	27	943.4	25.1	**-0.0045**	0.001	28.6	ug/L	1307	Standard
	Sc	45	42173.6	2.9				ug/L	41174	Standard
	Ti	47	21.7	46.5	**-0.0224**	0.026	115.7	ug/L	27	Standard
	V	51	784.0	11.8	**-0.1085**	0.008	7.8	ug/L	1434	Standard
	Cr	52	3455.1	8.0	**-0.5654**	0.042	7.4	ug/L	7733	Standard
	Cr	53	226.7	14.2	**-0.2044**	0.032	15.6	ug/L	442	Standard
	Mn	55	689.7	25.5	**-0.0155**	0.019	124.5	ug/L	723	Standard
	Co	59	203.0	2.5	**-0.0043**	0.002	53.5	ug/L	217	Standard
	Ni	60	207.7	13.9	**-0.0589**	0.005	8.9	ug/L	304	Standard
	Cu	65	99.0	11.2	**-0.0283**	0.002	6.7	ug/L	181	Standard
	Zn	66	182.3	13.6	**-0.0400**	0.008	19.1	ug/L	215	Standard
>	**Ge**	72	551871.4	10.1				ug/L	520809	Standard
	As	75	90.2	75.8	**0.1123**	0.046	40.9	ug/L	-52	Standard
	Se	82	68.2	54.7	**0.3731**	0.233	62.5	ug/L	17	Standard
	Se-1	77	38.3	14.4	**-0.2548**	0.102	40.0	ug/L	56	Standard
>	**Ga**	71	36.7	7.9				mg/L	25	Standard
	Rb	85	36.7	39.4				ug/L	28	Standard
	Y	89	441182.6	6.0				ug/L	447395	Standard
>	**Rh**	103	10.0	50.0				ug/L	15	Standard
	Mo	98	46.2	9.0	**-0.0083**	0.001	14.8	ug/L	113	Standard
	Ag	107	129.7	15.8	**0.0056**	0.002	35.3	ug/L	108	Standard
	Cd	111	10.6	19.3	**0.0023**	0.001	28.9	mg/L	3	Standard
	Cd	114	32.4	13.3	**0.0058**	0.001	9.2	ug/L	20	Standard
>	**In**	115	611252.6	5.3				ug/L	625728	Standard
	Sn	118	5131.0	39.9	**0.7226**	0.283	39.2	ug/L	568	Standard
	Sb	123	96.0	32.5	**-0.0149**	0.005	34.0	ug/L	612	Standard
	Ba	135	116.3	18.2	**0.0366**	0.007	20.0	ug/L	21	Standard
	Ce	140	506.7	18.4				ug/L	245	Standard
>	**Tb**	159	937034.7	2.8				ug/L	950397	Standard
	Ho	165	13.3	78.1				ug/L	7	Standard
	Tl	203	55.7	37.9	**0.0055**	0.002	44.3	ug/L	15	Standard
	Tl	205	48.3	15.8	**-0.0037**	0.001	24.8	ug/L	13	Standard
	Pb	206	388.7	9.1	**0.0251**	0.008	30.5	ug/L	264	Standard
	Pb	207	329.7	11.1	**0.0183**	0.008	44.7	ug/L	222	Standard
	Pb	208	1314.7	9.8	**0.0144**	0.005	32.0	ug/L	959	Standard
	U	238	44.3	33.9	**0.0053**	0.002	35.7	ug/L	9	Standard
>	**Bi**	209	551718.3	2.9				ug/L	552821	Standard

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Na	23	1.7	173.2	**4.9772**	8.612	173.0	mg/L	2	Standard
Mg	24	23.3	12.4	**-0.0336**	0.003	9.5	mg/L	55	Standard
K	39	23.3	12.4	**-0.0439**	0.009	21.3	mg/L	28	Standard
Ca	43	31.7	24.1	**0.3653**	0.722	197.6	mg/L	27	Standard
Fe	54	110.7	37.7	**-0.0145**	0.030	207.1	mg/L	147	Standard
Fe	57	338.3	3.4	**0.2110**	0.026	12.2	mg/L	268	Standard
Sc-1	45	42173.6	2.9				mg/L	41174	Standard
Cl	35	30776.6	3.7				ug/L	69550	Standard
Kr	83	3.3	45.8				ug/L	1	Standard
Br	81	663.3	12.3				ug/L	1950	Standard
P	31	11284.4	27.3				ug/L	21156	Standard
S	34	1555.1	2.6				ug/L	3419	Standard
Sr	88	83.3	25.0				ug/L	72	Standard
C	12	73.3	15.7				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	44.4				mg/L	17	Standard
Dy	164	28.9	93.2				mg/L	16	Standard
Ho-1	165	13.3	78.1				mg/L	7	Standard
Er	166	23.3	65.5				mg/L	7	Standard
I	127	2166.8	15.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	-0.034		
Al	27	-0.009		
Sc	45			
Ti	47	-0.022		
V	51	-0.217		
Cr	52	-1.131		
Cr	53			
Mn	55	-0.031		
Co	59	-0.009		
Ni	60	-0.118		
Cu	65	-0.057		
Zn	66	-0.080		
Ge	72		105.964	
As	75	0.225		
Se	82	0.746		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	-0.008		
Ag	107	0.011		
Cd	111	0.005		
Cd	114			
> In	115		97.687	
Sn	118	1.445		
Sb	123	-0.030		
Ba	135	0.073		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	0.011		
Tl	205			
Pb	206			
Pb	207			
Pb	208	0.029		
U	238	0.011		
> Bi	209		99.801	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	
QC Std 6	Ti	47	

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QC Std 6	V	51
QC Std 6	Cr	52
QC Std 6	Mn	55
QC Std 6	Co	59
QC Std 6	Ni	60
QC Std 6	Cu	65
QC Std 6	Zn	66
QC Std 6	As	75
QC Std 6	Se	82
QC Std 6	Mo	98
QC Std 6	Ag	107
QC Std 6	Cd	111
QC Std 6	Sb	123
QC Std 6	Ba	135
QC Std 6	Tl	203
QC Std 6	Pb	208
QC Std 6	U	238

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 19:07:31
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63162.0	21.4				ug/L	76456	Standard
	Be	9	3.3	86.6	-0.0166	0.003	17.1	ug/L	20	Standard
	Al	27	735.0	20.4	-0.0048	0.002	36.2	ug/L	1307	Standard
	Sc	45	35650.7	12.8				ug/L	41174	Standard
	Ti	47	25.7	17.6	-0.0049	0.017	351.0	ug/L	27	Standard
	V	51	759.8	6.3	-0.1049	0.017	16.4	ug/L	1434	Standard
	Cr	52	3500.7	6.1	-0.5352	0.034	6.4	ug/L	7733	Standard
	Cr	53	196.7	21.6	-0.2204	0.047	21.1	ug/L	442	Standard
	Mn	55	654.0	15.9	-0.0132	0.024	180.8	ug/L	723	Standard
	Co	59	209.0	9.3	-0.0019	0.004	213.5	ug/L	217	Standard
	Ni	60	214.3	6.6	-0.0494	0.006	12.6	ug/L	304	Standard
	Cu	65	67.0	1.5	-0.0410	0.004	9.4	ug/L	181	Standard
	Zn	66	162.0	9.0	-0.0461	0.027	57.9	ug/L	215	Standard
>	Ge	72	520650.3	11.0				ug/L	520809	Standard
	As	75	34.9	127.0	0.0765	0.042	54.6	ug/L	-52	Standard
	Se	82	46.9	39.0	0.2593	0.198	76.5	ug/L	17	Standard
	Se-1	77	47.0	7.4	-0.1317	0.051	38.8	ug/L	56	Standard
>	Ga	71	33.3	37.7				mg/L	25	Standard
	Rb	85	20.0	0.0				ug/L	28	Standard
	Y	89	481329.7	5.0				ug/L	447395	Standard
>	Rh	103	10.0	50.0				ug/L	15	Standard
	Mo	98	40.1	16.4	-0.0110	0.002	22.0	ug/L	113	Standard
	Ag	107	85.7	14.5	-0.0013	0.001	114.3	ug/L	108	Standard
	Cd	111	7.3	15.9	0.0008	0.001	101.5	mg/L	3	Standard
	Cd	114	33.4	55.5	0.0060	0.004	67.7	ug/L	20	Standard
>	In	115	646206.1	11.6				ug/L	625728	Standard
	Sn	118	4905.8	30.1	0.6479	0.164	25.3	ug/L	568	Standard
	Sb	123	55.7	59.6	-0.0232	0.006	25.1	ug/L	612	Standard
	Ba	135	35.0	22.9	-0.0022	0.004	171.6	ug/L	21	Standard
	Ce	140	271.7	45.9				ug/L	245	Standard
>	Tb	159	974497.4	20.4				ug/L	950397	Standard
	Ho	165	18.3	41.7				ug/L	7	Standard
	Tl	203	26.0	40.2	0.0024	0.002	88.7	ug/L	15	Standard
	Tl	205	23.3	32.7	-0.0066	0.002	26.3	ug/L	13	Standard
	Pb	206	286.0	20.6	0.0054	0.003	50.2	ug/L	264	Standard
	Pb	207	250.0	14.9	0.0018	0.006	349.2	ug/L	222	Standard
	Pb	208	1018.7	14.9	-0.0005	0.007	1419.7	ug/L	959	Standard
	U	238	28.0	71.2	0.0037	0.004	102.7	ug/L	9	Standard
>	Bi	209	573676.7	25.6				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	33.3	31.2	**-0.0144**	0.017	121.3	mg/L	55	Standard
K	39	30.0	44.1	**-0.0003**	0.051	19938.3	mg/L	28	Standard
Ca	43	26.7	47.2	**0.2749**	0.978	355.7	mg/L	27	Standard
Fe	54	97.7	28.6	**-0.0085**	0.033	388.9	mg/L	147	Standard
Fe	57	278.3	18.1	**0.2066**	0.281	136.1	mg/L	268	Standard
Sc-1	45	35650.7	12.8				mg/L	41174	Standard
Cl	35	30318.5	8.6				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	573.3	9.6				ug/L	1950	Standard
P	31	10907.3	13.1				ug/L	21156	Standard
S	34	1410.1	10.3				ug/L	3419	Standard
Sr	88	83.3	36.7				ug/L	72	Standard
C	12	66.7	60.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	90.0	38.5				mg/L	17	Standard
Dy	164	2.1	274.3				mg/L	16	Standard
Ho-1	165	18.3	41.7				mg/L	7	Standard
Er	166	26.7	21.7				mg/L	7	Standard
I	127	2056.8	3.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.969	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.273
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.773
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Se	82	
QC Std 7	Sn	118	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Friday, July 01, 2016 19:10:44
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61946.4	1.9				ug/L	76456	Standard
	Be	9	210.0	10.4	**0.2115**	0.020	9.6	ug/L	20	Standard
	Al	27	790.0	4.9	**-0.0045**	0.000	4.1	ug/L	1307	Standard
	Sc	45	40494.0	1.1				ug/L	41174	Standard
	Ti	47	28.3	17.8	**0.0022**	0.015	682.7	ug/L	27	Standard
	V	51	4636.0	0.9	**0.3641**	0.011	3.1	ug/L	1434	Standard
	Cr	52	14316.1	1.4	**0.7957**	0.001	0.1	ug/L	7733	Standard
	Cr	53	1240.1	3.8	**0.8075**	0.059	7.3	ug/L	442	Standard
	Mn	55	4264.3	2.5	**0.4605**	0.007	1.5	ug/L	723	Standard
	Co	59	3130.7	5.2	**0.3781**	0.017	4.5	ug/L	217	Standard
	Ni	60	3450.1	1.6	**1.5055**	0.006	0.4	ug/L	304	Standard
	Cu	65	1721.8	1.7	**0.7678**	0.026	3.4	ug/L	181	Standard
	Zn	66	8860.9	0.9	**7.0348**	0.045	0.6	ug/L	215	Standard
>	**Ge**	72	522095.7	1.4				ug/L	520809	Standard
	As	75	448.5	11.8	**0.4078**	0.044	10.9	ug/L	-52	Standard
	Se	82	67.9	14.5	**0.4100**	0.082	20.0	ug/L	17	Standard
	Se-1	77	86.0	19.1	**0.3190**	0.193	60.5	ug/L	56	Standard
>	**Ga**	71	40.0	37.5				mg/L	25	Standard
	Rb	85	30.0	28.9				ug/L	28	Standard
	Y	89	446341.0	1.0				ug/L	447395	Standard
>	**Rh**	103	11.7	65.5				ug/L	15	Standard
	Mo	98	31.0	24.0	**-0.0133**	0.003	19.1	ug/L	113	Standard
	Ag	107	2769.6	1.6	**0.3865**	0.006	1.6	ug/L	108	Standard
	Cd	111	511.0	7.5	**0.2275**	0.017	7.5	mg/L	3	Standard
	Cd	114	1362.0	6.3	**0.2474**	0.016	6.3	ug/L	20	Standard
>	**In**	115	604305.4	0.0				ug/L	625728	Standard
	Sn	118	1045.0	27.9	**0.0839**	0.047	56.0	ug/L	568	Standard
	Sb	123	1800.2	6.2	**0.3270**	0.022	6.8	ug/L	612	Standard
	Ba	135	1494.4	2.1	**0.6933**	0.015	2.2	ug/L	21	Standard
	Ce	140	240.0	28.9				ug/L	245	Standard
>	**Tb**	159	892072.4	1.2				ug/L	950397	Standard
	Ho	165	18.3	41.7				ug/L	7	Standard
	Tl	203	655.0	0.9	**0.0773**	0.001	1.2	ug/L	15	Standard
	Tl	205	608.3	6.1	**0.0719**	0.005	7.4	ug/L	13	Standard
	Pb	206	1282.4	3.9	**0.1986**	0.006	3.2	ug/L	264	Standard
	Pb	207	1103.0	2.6	**0.1835**	0.003	1.7	ug/L	222	Standard
	Pb	208	4828.3	0.4	**0.1978**	0.004	2.3	ug/L	959	Standard
	U	238	2919.9	3.2	**0.3875**	0.018	4.7	ug/L	9	Standard
>	**Bi**	209	516591.6	1.5				ug/L	552821	Standard

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Na	23	1.7	173.2	**5.0546**	8.746	173.0	mg/L	2	Standard
Mg	24	45.0	50.9	**-0.0067**	0.027	406.4	mg/L	55	Standard
K	39	28.3	71.3	**-0.0210**	0.078	373.7	mg/L	28	Standard
Ca	43	15.0	33.3	**-1.0703**	0.448	41.8	mg/L	27	Standard
Fe	54	120.9	25.4	**-0.0025**	0.024	952.7	mg/L	147	Standard
Fe	57	251.7	19.1	**-0.0185**	0.145	784.6	mg/L	268	Standard
Sc-1	45	40494.0	1.1				mg/L	41174	Standard
Cl	35	72851.4	0.8				ug/L	69550	Standard
Kr	83	2.3	99.0				ug/L	1	Standard
Br	81	1900.1	5.1				ug/L	1950	Standard
P	31	14266.7	2.8				ug/L	21156	Standard
S	34	3213.7	2.6				ug/L	3419	Standard
Sr	88	90.0	16.7				ug/L	72	Standard
C	12	96.7	57.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	50.0				mg/L	17	Standard
Dy	164	16.2	35.8				mg/L	16	Standard
Ho-1	165	18.3	41.7				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	1820.1	14.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	105.733		
Al	27			
Sc	45			
Ti	47			
V	51	91.026		
Cr	52	99.459		
Cr	53			
Mn	55	92.107		
Co	59	94.532		
Ni	60	94.095		
Cu	65	95.977		
Zn	66	112.556		
Ge	72		100.247	
As	75	101.941		
Se	82	102.498		
Se-1	77			
Ga	71			

Sample ID: QC Std 8
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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	96.613		
Cd	111	94.773		
Cd	114			
> In	115			96.576
Sn	118			
Sb	123	81.741		
Ba	135	92.447		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	96.671		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.904		
U	238	96.884		
> Bi	209			93.446
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
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Approved: July 02, 2016

2.3.3 Metals CVAA Data (Mercury)

2.3.3.1 Summary Data

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-01	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW21-062216	**Prep Method:**	7470A	**Prep Date:**	06/25/2016 11:30
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	07/01/2016 10:18
Workgroup #:	WG574691	**Analyst:**	AMA	**Run Date:**	07/01/2016 11:34
Collect Date:	06/22/2016 09:45	**Dilution:**	1	**File ID:**	M7.070116.113445
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061289-04	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18WW02F-062216	**Prep Method:**	7470A	**Prep Date:**	06/25/2016 11:30
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	07/01/2016 10:18
Workgroup #:	WG574691	**Analyst:**	AMA	**Run Date:**	07/01/2016 11:37
Collect Date:	06/22/2016 13:40	**Dilution:**	1	**File ID:**	M7.070116.113718
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061289
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.3.2 QC Summary

Example Cold Vapor Mercury Calculations
Hydra AA Mercury Analyzer / CETAC M-7600 Quick Trace Mercury Analyzer

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and five standards.

2.0 Calculating the concentration (C) of an element in water using data from run log and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to Volume (mL)	40
Vi = Aliquot Volume (mL)	40
D = Manual dilution factor, if required (10X = 10)	1
Cx = Concentration of element in ppb (ug/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Ws} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to volume (mL)	40
Ws = Aliquot weight (g)	0.6
D = Manual dilution factor	1
Cx = Concentration of element in ug/kg	6.67

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

1 Cx = Concentration calculated as received (wet basis)	6.67
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	8.33

8.33 ug/kg = 0.00833 mg/kg

Microbac Laboratories Inc.
Metals Digest Log

Workgroup: WG574194
Analyst: ERP
Spike Analyst: ERP
Method: 7470A
Run Date: 06/25/2016 11:30
Hotblock Start Temp: 95.2 @ 06:35
Hotblock End Temp: 95.7 @ 08:35
Instrument: HB6

SOP: ME404 Revison 17
Spike Solution: STD76824
Spike Witness: VC
HNO3 Lot #: COA18905
40 & 50 ML. DIGESTION TU COA18987
KMnO4 1:1 Lot #: RGT37128
H2SO4 Lot #: COA18359
K2S2O8 1:1 Lot #: RGT37142
Mercury Water ICV Lot #: STD76826
HG H2O STDS 10PPM Lot #: STD76832

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Spike Amount	Due Date
1	WG574194-02	BLANK	1	40 mL	40 mL		
2	WG574194-03	LCS	1	40 mL	40 mL	4 mL	
3	L16061130-01	SAMP	1	40 mL	40 mL		07/05/16
4	L16061130-02	SAMP	1	40 mL	40 mL		07/05/16
5	L16061130-03	SAMP	1	40 mL	40 mL		07/05/16
6	L16061130-04	SAMP	1	40 mL	40 mL		07/05/16
7	L16061130-05	SAMP	1	40 mL	40 mL		07/05/16
8	L16061244-01	SAMP	17	4 mL	40 mL		06/29/16
9	L16061244-02	SAMP	17	4 mL	40 mL		06/29/16
10	WG574194-01	REF	1	40 mL	40 mL		
11	L16061265-01	RS01	1	40 mL	40 mL		06/30/16
12	WG574194-04	MS	1	36 mL	40 mL	4 mL	
13	L16061265-02	MS01	1	36 mL	40 mL	4 mL	06/30/16
14	WG574194-05	MSD	1	36 mL	40 mL	4 mL	
15	L16061265-03	SD01	1	36 mL	40 mL	4 mL	06/30/16
16	L16061265-04	SAMP	1	40 mL	40 mL		06/30/16
17	L16061265-05	SAMP	1	40 mL	40 mL		06/30/16
18	L16061265-06	SAMP	1	40 mL	40 mL		06/30/16
19	L16061266-01	SAMP	1	40 mL	40 mL		06/30/16
20	L16061269-01	SAMP	1	40 mL	40 mL		06/30/16
21	L16061272-01	SAMP	1	40 mL	40 mL		06/30/16
22	L16061272-02	SAMP	1	40 mL	40 mL		06/30/16
23	L16061289-01	SAMP	1	40 mL	40 mL		07/05/16
24	L16061289-04	SAMP	1	40 mL	40 mL		07/05/16
25	L16061290-03	SAMP	1	40 mL	40 mL		07/05/16
26	L16061290-05	SAMP	1	40 mL	40 mL		07/05/16
27	L16061402-01	SAMP	1	40 mL	40 mL		07/01/16

Analyst: Erin Potter

Reviewer: Vicki Collins

* All calibration and check standards are prepared and digested with sample batch following the procedures in section 7.0 of SOP ME404/ME405.

HB_DIG - Modified 07/26/2012
PDF ID: 4824617
Report generated: 06/25/2016 11:30

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 070116A.CSV

Analyst1: AMA Analyst2: N/A

Method: 7470A/245.1 SOP: ME404 Rev: 17

Maintenance Log ID:

Calibration Std: STD76832 ICV Std: STD76826 Post Spike: STD76832

ICSA: N/A ICSAB: N/A Int. Std:

CCV: LLCCV: Tuning Sol :

Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 574691

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	M7.070116.100604	WG575044-01	Calibration Point		1		07/01/16 10:06
2	M7.070116.100835	WG575044-02	Calibration Point		1		07/01/16 10:08
3	M7.070116.101107	WG575044-03	Calibration Point		1		07/01/16 10:11
4	M7.070116.101340	WG575044-04	Calibration Point		1		07/01/16 10:13
5	M7.070116.101613	WG575044-05	Calibration Point		1		07/01/16 10:16
6	M7.070116.101846	WG575044-06	Calibration Point		1		07/01/16 10:18
7	M7.070116.102121	WG575044-07	Initial Calibration Verification		1		07/01/16 10:21
8	M7.070116.102351	WG575044-08	Initial Calib Blank		1		07/01/16 10:23
9	M7.070116.102624	WG575044-09	CCV		1		07/01/16 10:26
10	M7.070116.102855	WG575044-10	CCB		1		07/01/16 10:28
11	M7.070116.103126	WG574194-02	Method/Prep Blank	40/40	1		07/01/16 10:31
12	M7.070116.103357	WG574194-03	Laboratory Control S	40/40	1		07/01/16 10:33
13	M7.070116.103628	L16061130-01	MW-23-012	40/40	1		07/01/16 10:36
14	M7.070116.103900	WG574691-01	Post Digestion Spike		1	L16061130-01	07/01/16 10:39
15	M7.070116.104132	L16061130-02	MW-23-003	40/40	1		07/01/16 10:41
16	M7.070116.104404	L16061130-03	MW-23-013	40/40	1		07/01/16 10:44
17	M7.070116.104636	L16061130-04	MW-23-001	40/40	1		07/01/16 10:46
18	M7.070116.104909	L16061130-05	EB (1) WATER A	40/40	1		07/01/16 10:49
19	M7.070116.105142	L16061244-01	K6F0679-01	4/40	1		07/01/16 10:51
20	M7.070116.105416	WG574691-02	Post Digestion Spike		1	L16061244-01	07/01/16 10:54
21	M7.070116.105648	WG575044-11	CCV		1		07/01/16 10:56
22	M7.070116.105919	WG575044-12	CCB		1		07/01/16 10:59
23	M7.070116.110152	L16061244-02	K6F0679-02	4/40	1		07/01/16 11:01
24	M7.070116.110426	WG574194-01	Reference Sample	40/40	1	L16061265-01	07/01/16 11:04
25	M7.070116.110657	L16061265-02	SS007MWN750-007 MS	36/40	1	WG574194-04	07/01/16 11:06
26	M7.070116.110927	L16061265-03	SS007MWN750-007 MSD	36/40	1	WG574194-05	07/01/16 11:09
27	M7.070116.111158	L16061265-04	SS007MWOB16-007	40/40	1		07/01/16 11:11
28	M7.070116.111429	L16061265-05	SS007MWOB21-007	40/40	1		07/01/16 11:14
29	M7.070116.111701	L16061265-06	FQC-RB06211601-CC	40/40	1		07/01/16 11:17
30	M7.070116.111932	L16061266-01	ST008MW0805-007	40/40	1		07/01/16 11:19
31	M7.070116.112204	L16061269-01	FT002MW0204-007	40/40	1		07/01/16 11:22
32	M7.070116.112437	L16061272-01	SS007MW0B18-007	40/40	1		07/01/16 11:24
33	M7.070116.112709	WG575044-13	CCV		1		07/01/16 11:27
34	M7.070116.112940	WG575044-14	CCB		1		07/01/16 11:29

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 070116A.CSV

Analyst1: AMA Analyst2: N/A

Method: 7470A/245.1 SOP: ME404 Rev: 17

Maintenance Log ID:

Calibration Std: STD76832 ICV Std: STD76826 Post Spike: STD76832

ICSA: N/A ICSAB: N/A Int. Std:

CCV: LLCCV: Tuning Sol :

Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 574691

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	M7.070116.113212	L16061272-02	SS007MWN752-007	40/40	1		07/01/16 11:32
36	M7.070116.113445	L16061289-01	MW21-062216	40/40	1		07/01/16 11:34
37	M7.070116.113718	L16061289-04	18WW02F-062216	40/40	1		07/01/16 11:37
38	M7.070116.113952	L16061290-03	MW16F-062116	40/40	1		07/01/16 11:39
39	M7.070116.114222	L16061290-05	109-062216	40/40	1		07/01/16 11:42
40	M7.070116.114453	L16061402-01	SS007MW0715-007	40/40	1		07/01/16 11:44
41	M7.070116.114725	WG575044-15	CCV		1		07/01/16 11:47
42	M7.070116.114956	WG575044-16	CCB		1		07/01/16 11:49

Page: 2 Approved: July 05, 2016

Microbac Laboratories Inc.

Data Checklist

Date: 01-JUL-2016
Analyst: AMA
Analyst: NA
Method: 7470A/245.1
Instrument: CVAA1
Curve Workgroup: 575044
Runlog ID: 76085
Analytical Workgroups: 574691

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	1130,1265,1266,1269,
Case Narrative	1272,1289,1290,1402
Client Forms	X
Level X	
Level 3	1130
Level 4	1265,1266,1269,1272
Level 4	1289,1290,1402
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	AMA
Secondary Reviewer	BKT
Comments	

Primary Reviewer:
01-JUL-2016
Alexandra M. Alfred

Secondary Reviewer:
05-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-05-2016 12:35:40

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 7470A

AAB#: WG574691

Login Number: L16061289

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW21-062216	01	06/22/16					06/25/2016	3.1	28		07/01/16	9.1	28	
18WW02F-062216	04	06/22/16					06/25/2016	2.9	28		07/01/16	8.9	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4834831
Report generated 07/01/2016 15:49

METHOD BLANK SUMMARY

Login Number: L16061289
Blank File ID: M7.070116.103126
Prep Date: 06/25/16 11:30
Analyzed Date: 07/01/16 10:31
Analyst: AMA

Work Group: WG574691
Blank Sample ID: WG574194-02
Instrument ID: CVAA1
Method: 7470A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG574194-03	M7.070116.103357	07/01/16 10:33	01
MW21-062216	L16061289-01	M7.070116.113445	07/01/16 11:34	01
18WW02F-062216	L16061289-04	M7.070116.113718	07/01/16 11:37	01

Report Name: BLANK_SUMMARY
PDF File ID: 4834832
Report generated 07/01/2016 15:49

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061289 Prep Date: 06/25/16 11:30 Sample ID: WG574194-02
Instrument ID: CVAA1 Run Date: 07/01/16 10:31 Prep Method: 7470A
File ID: M7.070116.103126 Analyst: AMA Method: 7470A
Workgroup (AAB#): WG574691 Matrix: Water Units: mg/L
Contract #: Cal ID: CVAA1-01-JUL-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Mercury	0.000100	0.000400	0.000100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4834833
01-JUL-2016 15:49

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061289 Run Date: 07/01/2016 Sample ID: WG574194-03
Instrument ID: CVAA1 Run Time: 10:33 Prep Method: 7470A
File ID: M7.070116.103357 Analyst: AMA Method: 7470A
Workgroup (AAB#): WG574691 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76824 Cal ID: CVAA1-01-JUL-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Mercury	0.00400	0.00401	100	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4834834
Report generated: 07/01/2016 15:49

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061289 Cal ID: CVAA1 - Worknum: WG574691
Instrument ID: CVAA1 Contract #: Method: 7470A
Parent ID: WG574194-01 File ID: M7.070116.110426 Dil: 1 Matrix: WATER
Sample ID: WG574194-04 MS File ID: M7.070116.110657 Dil: 1 Units: mg/L
Sample ID: WG574194-05 MSD File ID: M7.070116.110927 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Mercury	ND	0.00444	0.00450	101	0.00444	0.00445	100	1.07	80 - 120	20	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4834835
Report generated 07/01/2016 15:49

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061289 **Worknum:** WG574691
Instrument ID: CVAA1 **Method:** 7470A
Post Spike ID: WG574691-01 **File ID:** M7.070116.103900 **Dil:** 1 **Units:** ug/L
Sample ID: L16061130-01 **File ID:** M7.070116.103628 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MERCURY	1.00		0	U	1	100.0	85 - 115	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4834830
Report generated: 07/01/2016 15:49

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061289
Analytical Method: 7470A
ICAL Worknum: WG575044

Workgroup (AAB#): WG574691
Instrument ID: CVAA1
Initial Calibration Date: 07/01/2016 10:18

Analyte	WG575044-01		WG575044-02		WG575044-03		WG575044-04		WG575044-05		WG575044-06	
	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT
Mercury	0	32.06	0.200	2295	1.00	10710	2.00	21560	5.00	53500	10.0	104800

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4834836
Report generated 07/01/2016 15:49

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061289
Analytical Method: 7470A
ICAL Worknum: WG575044

Workgroup (AAB#): WG574691
Instrument ID: CVAA1
Initial Calibration Date: 07/01/2016 10:18

Analyte	R	Q
Mercury	1.000	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4834836
Report generated 07/01/2016 15:49

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061289
Instrument ID: CVAA1
File ID: M7.070116.102351
Workgroup (AAB#): WG574691
Matrix: WATER

Run Date: 07/01/2016
Run Time: 10:23
Analyst: AMA
Cal ID: CVAA1 - 01-JUL-16

Sample ID: WG575044-08
Method: 7470A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
MERCURY	.1	.4	.1	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4834838
Report generated 07/01/2016 15:49

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575044-10
Instrument ID: CVAA1
Run Time: 10:28
Method: 7470A
File ID: M7.070116.102855
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG574691
Cal ID: CVAA1 - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4834840
Report generated 07/01/2016 15:49

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575044-12
Instrument ID: CVAA1
Run Time: 10:59
Method: 7470A
File ID: M7.070116.105919
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG574691
Cal ID: CVAA1 - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4834840
Report generated 07/01/2016 15:49

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575044-14
Instrument ID: CVAA1
Run Time: 11:29
Method: 7470A
File ID: M7.070116.112940
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG574691
Cal ID: CVAA1 - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4834840
Report generated 07/01/2016 15:49

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575044-16
Instrument ID: CVAA1
Run Time: 11:49
Method: 7470A
File ID: M7.070116.114956
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG574691
Cal ID: CVAA1 - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4834840
Report generated 07/01/2016 15:49

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061289 Run Date: 07/01/2016 Sample ID: WG575044-07
Instrument ID: CVAA1 Run Time: 10:21 Method: 7470A
File ID: M7.070116.102121 Analyst: AMA Units: ug/L
Workgroup (AAB#): WG574691 Cal ID: CVAA1 - 01-JUL-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Mercury		2	2.10	105	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4834837
Report generated 07/01/2016 15:49

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575044-09
Instrument ID: CVAA1
Run Time: 10:26
Method: 7470A
File ID: M7.070116.102624
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG574691
Cal ID: CVAA1 - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00207	mg/L	103	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4834839
Report generated 07/01/2016 15:49

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575044-11
Instrument ID: CVAA1
Run Time: 10:56
Method: 7470A
File ID: M7.070116.105648
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG574691
Cal ID: CVAA1 - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00216	mg/L	108	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4834839
Report generated 07/01/2016 15:49

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575044-13
Instrument ID: CVAA1
Run Time: 11:27
Method: 7470A
File ID: M7.070116.112709
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG574691
Cal ID: CVAA1 - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00220	mg/L	110	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4834839
Report generated 07/01/2016 15:49

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061289
Run Date: 07/01/2016
Sample ID: WG575044-15
Instrument ID: CVAA1
Run Time: 11:47
Method: 7470A
File ID: M7.070116.114725
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG574691
Cal ID: CVAA1 - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00224	mg/L	112	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4834839
Report generated 07/01/2016 15:49

2.3.3.3 Raw Data

PDM CVAA1 245.1/7470/7471

Report Generated By CETAC QuickTrace
Analyst: VOA
Worksheet file: C:\Program Files (x86)\QuickTrace\Worksheets\070116A.wsz
Date Started: 7/1/2016 9:38:14 AM
Comment:

Results

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
Standard #0					STD	07/01/16 10:06:04 am	0.0000	32	51.53		1.00
Replicates	33.9	9.2	48.5	36.7							
Standard #1 (0.2 ug/L)					STD	07/01/16 10:08:35 am	0.2000	2295	0.39		1.00
Replicates	2283.8	2292.8	2302.1	2302.8							
Standard #2 (1.0 ug/L)					STD	07/01/16 10:11:07 am	1.0000	10713	0.20		1.00
Replicates	10683.7	10720.4	10713.1	10735.4							
Standard #3 (2.0 ug/L)					STD	07/01/16 10:13:40 am	2.0000	21562	0.38		1.00
Replicates	21463.6	21528.1	21609.0	21649.1							
Standard #4 (5.0 ug/L)					STD	07/01/16 10:16:13 am	5.0000	53499	0.23		1.00
Replicates	53337.3	53478.0	53550.0	53628.8							
Standard #5 (10.0 ug/L)					STD	07/01/16 10:18:46 am	10.0000	104841	0.45		1.00
Replicates	104298.3	104651.5	105011.5	105402.7							

Calibration

Equation: A = 339.906 + 10489.180C
R2: 0.99990
SEE: 460.6227
Flags:

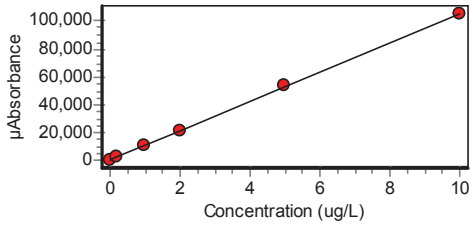

ICV					ICV	07/01/16 10:21:21 am	2.0960	22321	0.23		1.00
Replicates	22263.7	22304.4	22327.0	22388.5							
% Recovery	104.78										

Approved: July 01, 2016
Alexandra M. Alpred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
ICB					ICB	07/01/16 10:23:51 am	-0.0320	5	241.36		1.00
Replicates	21.4	0.6	-0.6	-2.8							
CCV					CCV	07/01/16 10:26:24 am	2.0690	22040	0.78		1.00
Replicates	21832.9	21978.2	22121.4	22228.2							
% Recovery	103.44										
CCB					CCB	07/01/16 10:28:55 am	-0.0304	21	102.47		1.00
Replicates	31.7	46.9	5.0	1.4							
WG574194-02					MB	07/01/16 10:31:26 am	-0.0310	15	206.72		1.00
Replicates	11.9	54.7	15.1	-21.4							
WG574194-03					LCS	07/01/16 10:33:57 am	4.0120	42423	0.07		1.00
Replicates	42391.4	42417.5	42418.6	42464.5							
% Recovery	100.30										
L1606113001					UNK	07/01/16 10:36:28 am	-0.0328	-4	248.94		1.00
Replicates	-5.3	-15.2	-6.7	10.2							
WG574691-01					SPK	07/01/16 10:39:00 am	1.0000	10832	0.07		1.00
Replicates	10831.4	10821.7	10839.2	10836.2							
% Recovery	103.31										
L1606113002					UNK	07/01/16 10:41:32 am	-0.0290	35	27.30		1.00
Replicates	21.8	43.2	41.1	35.2							
L1606113003					UNK	07/01/16 10:44:04 am	-0.0301	24	48.09		1.00
Replicates	39.8	14.8	15.9	25.9							
L1606113004					UNK	07/01/16 10:46:36 am	-0.0259	69	17.22		1.00
Replicates	69.2	78.1	51.8	75.3							
L1606113005					UNK	07/01/16 10:49:09 am	-0.0288	38	73.36		1.00
Replicates	2.3	62.5	29.7	58.0							
L1606124401					UNK	07/01/16 10:51:42 am	-0.0319	5	147.97		1.00
Replicates	16.8	-2.4	2.9	4.6							

Approved: July 01, 2016

Alexandra M. Alpred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
WG574691-02					SPK	07/01/16 10:54:16 am	0.9821	10641	0.47		1.00
Replicates	10703.5	10646.3	10632.5	10582.2							
% Recovery	101.40										
CCV					CCV	07/01/16 10:56:48 am	2.1580	22970	0.40		1.00
Replicates	22846.6	22954.2	23027.7	23053.0							
% Recovery	107.88										
CCB					CCB	07/01/16 10:59:19 am	-0.0323	1	266.19		1.00
Replicates	13.4	-2.1	-22.0	16.2							
L1606124402					UNK	07/01/16 11:01:52 am	-0.0296	29	53.06		1.00
Replicates	28.3	10.8	29.3	48.8							
L1606126501					UNK	07/01/16 11:04:26 am	-0.0300	25	44.66		1.00
Replicates	39.4	11.6	25.9	24.9							
WG574194-04					UNK	07/01/16 11:06:57 am	4.0520	42840	0.26		1.00
Replicates	42715.4	42805.0	42864.0	42976.5							
WG574194-05					UNK	07/01/16 11:09:27 am	4.0090	42388	0.05		1.00
Replicates	42388.5	42402.2	42406.7	42355.4							
L1606126504					UNK	07/01/16 11:11:58 am	-0.0336	-12	175.35		1.00
Replicates	-17.4	-39.9	-0.4	8.8							
L1606126505					UNK	07/01/16 11:14:29 am	-0.0296	29	54.43		1.00
Replicates	29.8	49.7	11.6	25.1							
L1606126506					UNK	07/01/16 11:17:01 am	-0.0334	-11	155.89		1.00
Replicates	-19.7	-0.3	6.5	-28.8							
L1606126601					UNK	07/01/16 11:19:32 am	-0.0029	310	3.21		1.00
Replicates	312.8	299.6	322.1	304.1							
L1606126901					UNK	07/01/16 11:22:04 am	-0.0296	30	92.97		1.00
Replicates	-11.7	44.4	42.9	43.0							

Approved: July 01, 2016
Alexandra M. Alpred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1606127201					UNK	07/01/16 11:24:37 am	-0.0307	18	64.86		1.00
Replicates	9.0	12.6	34.5	14.5							
CCV					CCV	07/01/16 11:27:09 am	2.1950	23367	0.59		1.00
Replicates	23176.4	23356.5	23444.0	23490.0							
% Recovery	109.76										
CCB					CCB	07/01/16 11:29:40 am	-0.0286	40	27.79		1.00
Replicates	38.5	31.4	56.3	34.3							
L1606127202					UNK	07/01/16 11:32:12 am	-0.0315	10	178.11		1.00
Replicates	23.2	25.6	-7.1	-3.2							
L1606128901					UNK	07/01/16 11:34:45 am	-0.0302	23	90.38		1.00
Replicates	52.6	15.7	6.4	15.7							
L1606128904					UNK	07/01/16 11:37:18 am	-0.0247	81	20.61		1.00
Replicates	93.7	94.1	75.4	59.4							
L1606129003					UNK	07/01/16 11:39:52 am	-0.0269	58	24.23		1.00
Replicates	77.1	56.4	53.5	43.9							
L1606129005					UNK	07/01/16 11:42:22 am	-0.0181	150	5.19		1.00
Replicates	152.2	159.2	141.7	145.2							
L1606140201					UNK	07/01/16 11:44:53 am	-0.0291	35	65.85		1.00
Replicates	2.6	54.3	34.9	48.3							
CCV					CCV	07/01/16 11:47:25 am	2.2370	23803	0.28		1.00
Replicates	23718.6	23781.3	23841.0	23871.3							
% Recovery	111.84										
CCB					CCB	07/01/16 11:49:56 am	-0.0306	19	30.24		1.00
Replicates	12.2	24.2	22.5	15.7							

Approved: July 01, 2016
Alexandra M. Alpred

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
July 14, 2016

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001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BNB - Brandi N. Bentley
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJQ - Cameron J. Quick
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
CV - Carl Volkman
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
EMW - ERIC M. WILKEN
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
HDC - Hanah D. Coe
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LJH - Lacey J. Hendershot
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
NPH - Natalie P. Hart
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RNP - RICK N. PETTY
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
July 14, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
July 14, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Debra Richmann
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD		
Project Name/Location:	Longhorn		
Project Number:	60274185.0013BH 1824 MR10		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

pH:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Total Metals	1,4 - DIOXANE					SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 18/24	MW21-062216			6/22/16	0945		✓	W	7	✓	✓	✓	✓									
	MW9-062216			6/22/16	1105		✓	W	6	✓	✓		✓									
	18WW02-062216			6/22/16	1340		✓	W	6	✓	✓		✓									
	18WW02F-062216			6/22/16	1340		✓	W	1			✓										
	18CPTMW10SW-062216			6/22/16	1455		✓	W	6	✓	✓		✓									
	TRIP BLANK			6/22/16			✓	W	2	✓												

Comments: **STANDARD TAT**

Relinquished by (Signature) Scott Beesinger	Date 6/22/16	Time 1545	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Rece (Sign			Time	Remarks:

Microbac OVD
Received: 06/23/2016 09:54
By: BRENDA GREGORY
221000087581
Brenda Gregory

*Homogenize all composite samples prior to analysis

ager, Pink QA/QC Manager

00686748

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061289
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 05-JUL-2016

Samplenum	Container ID	Products
L16061289-01	765235	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:41	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:41	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:41	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

Samplenum	Container ID	Products
L16061289-01	765236	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:41	CLS		
2	PREP	W1	EXT	27-JUN-2016 16:13	CPD	CLS	
3	DISP	EXT	DISP	28-JUN-2016 15:00	BJO	BJO	
4	ANALYZ*	EXT	SEMI	30-JUN-2016 09:48	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:41	CLS		
2	STORE	W1	A1	24-JUN-2016 10:20	BRG	BRG	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061289
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 05-JUL-2016

Samplenum	Container ID	Products
L16061289-01	765237	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:41	CLS		
2	ANALYZ	W1	SEM	01-JUL-2016 10:23	JWR	CLS	
3	STORE	SEM	A1	05-JUL-2016 13:46	BRG	JWR	

Samplenum	Container ID	Products
L16061289-01	765238	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:41	CLS		
2	PREP	W1	DIG	23-JUN-2016 15:10	ERP	BRG	
3	ANALYZ*	DIG	METALS	24-JUN-2016 11:51	JYH	ERP	
4	STORE	DIG	A1	28-JUN-2016 13:55	CLS	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061289-02	765239	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:41	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	ORG4	23-JUN-2016 13:41	CLS		
2	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:41	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:44	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061289
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 05-JUL-2016

Samplenum	Container ID	Products
L16061289-02	765240	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:41	CLS		
2	PREP	W1	EXT	27-JUN-2016 16:13	CPD	CLS	
3	DISP	EXT	DISP	28-JUN-2016 15:00	BJO	BJO	
4	ANALYZ*	EXT	SEMI	30-JUN-2016 09:48	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:41	CLS		
2	STORE	W1	A1	24-JUN-2016 10:20	BRG	BRG	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061289-02	765241	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:41	CLS		
2	ANALYZ	W1	SEM	01-JUL-2016 10:23	JWR	CLS	
3	STORE	SEM	A1	05-JUL-2016 13:46	BRG	JWR	

Samplenum	Container ID	Products
L16061289-03	765242	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:41	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:41	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	ORG4	23-JUN-2016 13:41	CLS		
2	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061289
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 05-JUL-2016

Samplenum	Container ID	Products
L16061289-03	765243	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:41	CLS		
2	PREP	W1	EXT	27-JUN-2016 16:13	CPD	CLS	
3	DISP	EXT	DISP	28-JUN-2016 15:00	BJO	BJO	
4	ANALYZ*	EXT	SEMI	30-JUN-2016 09:48	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:41	CLS		
2	STORE	W1	A1	24-JUN-2016 10:20	BRG	BRG	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061289-03	765244	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:41	CLS		
2	ANALYZ	W1	SEM	01-JUL-2016 10:23	JWR	CLS	
3	STORE	SEM	A1	05-JUL-2016 13:46	BRG	JWR	

Samplenum	Container ID	Products
L16061289-04	765245	HG K MG MN-MS NA NI-MS PB-MS SB-MS SE-AX TL-MS

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:41	CLS		
2	PREP	W1	DIG	23-JUN-2016 15:10	ERP	BRG	
3	ANALYZ*	DIG	METALS	24-JUN-2016 11:51	JYH	ERP	
4	STORE	DIG	A1	28-JUN-2016 13:56	CLS	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061289
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 05-JUL-2016

Samplenum	Container ID	Products
L16061289-05	765246	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:41	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:41	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:41	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

Samplenum	Container ID	Products
L16061289-05	765247	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:41	CLS		
2	PREP	W1	EXT	27-JUN-2016 16:13	CPD	CLS	
3	DISP	EXT	DISP	28-JUN-2016 15:00	BJO	BJO	
4	ANALYZ*	EXT	SEMI	30-JUN-2016 09:48	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:41	CLS		
2	STORE	W1	A1	24-JUN-2016 10:00	BRG	BRG	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061289
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 05-JUL-2016

Samplenum	Container ID	Products
L16061289-05	765248	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:41	CLS		
2	ANALYZ	W1	SEM	01-JUL-2016 10:23	JWR	CLS	
3	STORE	SEM	A1	05-JUL-2016 13:46	BRG	JWR	

Samplenum	Container ID	Products
L16061289-06	765249	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:41	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:41	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16061290

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Michelle Taylor – Client Services Specialist
(740) 373-4071
Michelle.Taylor@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on July 18 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00113589	I	4.0		J2317164886	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18CPTMW16-062116	L16061290-01	06/21/2016 13:20	06/23/2016 09:57
MW16-062116	L16061290-02	06/21/2016 14:40	06/23/2016 09:57
MW16F-062116	L16061290-03	06/21/2016 14:40	06/23/2016 09:57
125-062216	L16061290-04	06/22/2016 06:55	06/23/2016 09:57
109-062216	L16061290-05	06/22/2016 07:20	06/23/2016 09:57
18CPTMW07-062216	L16061290-06	06/22/2016 08:30	06/23/2016 09:57
TRIP BLANK	L16061290-07	06/22/2016 00:01	06/23/2016 09:57

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16061290
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG575086, WG575199, WG575092	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-13 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Wade DeLong	Wade DeLong	Chemist I	2016-07-13 12:36:35

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG575086, WG575199, WG575092	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-13 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG575086, WG575199, WG575092	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-13 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		X			2
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG575086, WG575199, WG575092	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-13 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG575086, WG575199, WG575092	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-13 00:00:00		

Method detection limit (MDL) studies					
Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG575086, WG575199, WG575092	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-13 00:00:00		

data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. Acetone, 2-Butanone, 1,2-Dichloroethane and 2-Hexanone were below the lower control limit in the CCV WG575085-02 analyzed 07/02/2016 on HPMS11. Acetone and 2-Butanone were below the lower control limit in the CCV WG575198-02 analyzed 07/05/2016 on HPMS11. Chloromethane was below the lower control limit in the Alternate Source standard WG574723-12 analyzed 06/30/2016 on HPMS11.

2. 1,1-Dichloroethene, Chloromethane, Dichlorodifluoromethane were below the lower control limit in the LCS WG575199-02 and the LCSD WG575199-03 analyzed 07/05/2016 on HPMS11. Vinyl chloride was below the lower control limit in the LCSD WG575199-03 analyzed 07/05/2016 on HPMS11. 2,2-Dichloropropane was below the lower control limit in the LCS WG575086-02 and the LCSD WG575086-03 analyzed 07/03/2016 on HPMS11.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG574286	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-12 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-07-12 12:33:07

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG574286	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-12 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG574286	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-12 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG574286	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-12 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG574286	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-12 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG574286	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-12 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575005, WG575171	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Wade DeLong	Wade DeLong	Chemist I	2016-07-06 18:23:21

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575005, WG575171	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575005, WG575171	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575005, WG575171	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575005, WG575171	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575005, WG575171	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573994	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Maren Beery	Maren Beery	Metals Supervisor	2016-07-12 15:09:26

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573994	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				ER#1
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573994	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573994	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573994	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573994	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - Client sample 03 required dilution analysis in order to obtain results for calcium, iron and sodium within the calibration range.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG574416	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Maren Beery	Maren Beery	Metals Supervisor	2016-07-12 15:05:14

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG574416	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				ER#1
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG574416	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG574416	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG574416	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG574416	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - Client sample 03 required dilution analysis in order to obtain results for barium and manganese within the calibration range.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG574194	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Maren Beery	Maren Beery	Metals Supervisor	2016-07-12 15:04:05

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG574194	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG574194	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG574194	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG574194	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
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3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

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Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061290
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG574194	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-12 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW16-062116	**Prep Method:**	3520C	**Prep Date:**	06/27/2016 14:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574772	**Analyst:**	MES	**Run Date:**	07/01/2016 01:14
Collect Date:	06/21/2016 13:20	**Dilution:**	1	**File ID:**	15M18702
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	54.6	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW16-062116	**Prep Method:**	6850	**Prep Date:**	07/01/2016 13:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575005	**Analyst:**	JWR	**Run Date:**	07/01/2016 21:17
Collect Date:	06/21/2016 13:20	**Dilution:**	1	**File ID:**	1LM.LM35585
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	MW16-062116	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG575086	**Analyst:**	TMB	**Run Date:**	07/02/2016 23:41
Collect Date:	06/21/2016 14:40	**Dilution:**	2.5	**File ID:**	11M13060
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	Q	25.0	12.5	6.25
Benzene	71-43-2	0.352	J	2.50	0.626	0.313
Bromobenzene	108-86-1	0.626	U	2.50	0.626	0.313
Bromochloromethane	74-97-5	1.00	U	2.50	1.00	0.500
Bromodichloromethane	75-27-4	1.25	U	2.50	1.25	0.625
Bromoform	75-25-2	2.50	U	5.00	2.50	1.25
Bromomethane	74-83-9	2.50	U	5.00	2.50	1.25
2-Butanone	78-93-3	12.5	Q	25.0	12.5	6.25
n-Butylbenzene	104-51-8	1.25	U	2.50	1.25	0.625
sec-Butylbenzene	135-98-8	1.25	U	2.50	1.25	0.625
tert-Butylbenzene	98-06-6	1.25	U	2.50	1.25	0.625
Carbon disulfide	75-15-0	2.50	U	5.00	2.50	1.25
Carbon tetrachloride	56-23-5	1.25	U	2.50	1.25	0.625
Chlorobenzene	108-90-7	0.626	U	2.50	0.626	0.313
Chlorodibromomethane	124-48-1	1.25	U	2.50	1.25	0.625
Chloroethane	75-00-3	2.50	U	5.00	2.50	1.25
Chloroform	67-66-3	0.626	U	2.50	0.626	0.313
Chloromethane	74-87-3	2.50	U	5.00	2.50	1.25
2-Chlorotoluene	95-49-8	0.626	U	2.50	0.626	0.313
4-Chlorotoluene	106-43-4	1.25	U	2.50	1.25	0.625
1,2-Dibromo-3-chloropropane	96-12-8	5.00	Q	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	2.50	1.25	0.625
Dibromomethane	74-95-3	1.25	U	2.50	1.25	0.625
1,2-Dichlorobenzene	95-50-1	0.626	U	2.50	0.626	0.313
1,3-Dichlorobenzene	541-73-1	1.25	U	2.50	1.25	0.625
1,4-Dichlorobenzene	106-46-7	0.626	U	2.50	0.626	0.313
Dichlorodifluoromethane	75-71-8	1.25	U	2.50	1.25	0.625
1,1-Dichloroethane	75-34-3	1.73	J	2.50	0.626	0.313
1,2-Dichloroethane	107-06-2	58.0	Q	2.50	1.25	0.625
1,1-Dichloroethene	75-35-4	9.00		5.00	2.50	1.25
cis-1,2-Dichloroethene	156-59-2	31.2		2.50	1.25	0.625

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.747	J	2.50	1.25	0.625
1,2-Dichloropropane	78-87-5	1.00	U	2.50	1.00	0.500
1,3-Dichloropropane	142-28-9	1.00	U	2.50	1.00	0.500
2,2-Dichloropropane	594-20-7	1.25	U	2.50	1.25	0.625
cis-1,3-Dichloropropene	10061-01-5	1.25	U	2.50	1.25	0.625
trans-1,3-Dichloropropene	10061-02-6	2.50	U	5.00	2.50	1.25
1,1-Dichloropropene	563-58-6	1.25	U	2.50	1.25	0.625
Ethylbenzene	100-41-4	1.25	U	2.50	1.25	0.625
2-Hexanone	591-78-6	12.5	Q	25.0	12.5	6.25
Hexachlorobutadiene	87-68-3	1.25	U	2.50	1.25	0.625
Isopropylbenzene	98-82-8	1.25	U	2.50	1.25	0.625
p-Isopropyltoluene	99-87-6	1.25	U	2.50	1.25	0.625
4-Methyl-2-pentanone	108-10-1	12.5	U	25.0	12.5	6.25
Methylene chloride	75-09-2	1.25	U	2.50	1.25	0.625
Naphthalene	91-20-3	1.00	U	2.50	1.00	0.500
n-Propylbenzene	103-65-1	0.626	U	2.50	0.626	0.313
Styrene	100-42-5	0.626	U	2.50	0.626	0.313
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	2.50	1.25	0.625
1,1,2,2-Tetrachloroethane	79-34-5	1.00	U	2.50	1.00	0.500
Tetrachloroethene	127-18-4	0.786	J	2.50	1.25	0.625
Toluene	108-88-3	1.25	U	2.50	1.25	0.625
1,2,3-Trichlorobenzene	87-61-6	0.750	U	2.50	0.750	0.375
1,2,4-Trichlorobenzene	120-82-1	1.00	U	2.50	1.00	0.500
1,1,1-Trichloroethane	71-55-6	1.25	U	2.50	1.25	0.625
1,1,2-Trichloroethane	79-00-5	1.25	U	2.50	1.25	0.625
Trichlorofluoromethane	75-69-4	1.25	U	2.50	1.25	0.625
1,2,3-Trichloropropane	96-18-4	2.50	U	5.00	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	2.50	1.25	0.625
1,3,5-Trimethylbenzene	108-67-8	1.25	U	2.50	1.25	0.625
Vinyl chloride	75-01-4	0.299	U	2.50	1.25	0.625
o-Xylene	95-47-6	1.25	U	2.50	1.25	0.625
m-,p-Xylene	179601-23-1	2.50	U	5.00	2.50	1.25

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	88.6	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	93.5	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	MW16-062116	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG575092	**Analyst:**	TMB	**Run Date:**	07/03/2016 12:37
Collect Date:	06/21/2016 14:40	**Dilution:**	20	**File ID:**	6M140393
Sample Tag:	DL02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Trichloroethene	79-01-6	922		20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	99.0	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	MW16-062116	**Prep Method:**	3520C	**Prep Date:**	06/27/2016 14:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574772	**Analyst:**	MES	**Run Date:**	07/05/2016 17:29
Collect Date:	06/21/2016 14:40	**Dilution:**	5	**File ID:**	15M18724
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	18.0		10.0	5.00	2.50

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	73.0	20	129	

Certificate of Analysis

Sample #:	L16061290-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW16-062116	**Prep Method:**	6850	**Prep Date:**	07/01/2016 13:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575005	**Analyst:**	JWR	**Run Date:**	07/01/2016 21:36
Collect Date:	06/21/2016 14:40	**Dilution:**	1	**File ID:**	1LM.LM35586
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.615		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16061290-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW16F-062116	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/24/2016 10:17
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/24/2016 15:00
Collect Date:	06/21/2016 14:40	**Dilution:**	1	**File ID:**	T3.062416.150030
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.289		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Magnesium, Total	7439-95-4	17.3		1.00	0.500	0.250
Potassium, Total	7440-09-7	4.10		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.00641	J	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW16F-062116	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 10:26
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/27/2016 13:19
Collect Date:	06/21/2016 14:40	**Dilution:**	20	**File ID:**	T3.062716.131923
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	23.7		10.0	5.00	2.50
Iron, Total	7439-89-6	38.8		4.00	2.00	1.00
Sodium, Total	7440-23-5	142		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW16F-062116	**Prep Method:**	3015	**Prep Date:**	06/28/2016 07:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574808	**Analyst:**	JYH	**Run Date:**	07/01/2016 12:38
Collect Date:	06/21/2016 14:40	**Dilution:**	1	**File ID:**	NI.070116.123834
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.0156		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000563	J	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00236	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00976		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00200	U	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0181		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.000902	J	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0293	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW16F-062116	**Prep Method:**	3015	**Prep Date:**	06/28/2016 07:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574808	**Analyst:**	JYH	**Run Date:**	07/01/2016 16:08
Collect Date:	06/21/2016 14:40	**Dilution:**	10	**File ID:**	NI.070116.160841
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.411		0.0600	0.0300	0.0150
Manganese, Total	7439-96-5	0.659		0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-03	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW16F-062116	**Prep Method:**	7470A	**Prep Date:**	06/25/2016 11:30
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	07/01/2016 10:18
Workgroup #:	WG574691	**Analyst:**	AMA	**Run Date:**	07/01/2016 11:39
Collect Date:	06/21/2016 14:40	**Dilution:**	1	**File ID:**	M7.070116.113952
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	125-062216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG575199	**Analyst:**	JDS	**Run Date:**	07/06/2016 00:34
Collect Date:	06/22/2016 06:55	**Dilution:**	1	**File ID:**	11M13090
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

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Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.844	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	89.4	70	120	
Toluene-d8	98.4	85	120	
4-Bromofluorobenzene	92.4	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

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Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	125-062216	**Prep Method:**	6850	**Prep Date:**	07/01/2016 13:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575005	**Analyst:**	JWR	**Run Date:**	07/01/2016 21:55
Collect Date:	06/22/2016 06:55	**Dilution:**	500	**File ID:**	1LM.LM35587
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	935		200	100	50.0

Certificate of Analysis

Sample #:	L16061290-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	109-062216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG575086	**Analyst:**	TMB	**Run Date:**	07/02/2016 23:09
Collect Date:	06/22/2016 07:20	**Dilution:**	5	**File ID:**	11M13059
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	25.0	Q	50.0	25.0	12.5
Benzene	71-43-2	1.25	U	5.00	1.25	0.625
Bromobenzene	108-86-1	1.25	U	5.00	1.25	0.625
Bromochloromethane	74-97-5	2.00	U	5.00	2.00	1.00
Bromodichloromethane	75-27-4	2.50	U	5.00	2.50	1.25
Bromoform	75-25-2	5.00	U	10.0	5.00	2.50
Bromomethane	74-83-9	5.00	U	10.0	5.00	2.50
2-Butanone	78-93-3	25.0	Q	50.0	25.0	12.5
n-Butylbenzene	104-51-8	2.50	U	5.00	2.50	1.25
sec-Butylbenzene	135-98-8	2.50	U	5.00	2.50	1.25
tert-Butylbenzene	98-06-6	2.50	U	5.00	2.50	1.25
Carbon disulfide	75-15-0	5.00	U	10.0	5.00	2.50
Carbon tetrachloride	56-23-5	2.50	U	5.00	2.50	1.25
Chlorobenzene	108-90-7	1.25	U	5.00	1.25	0.625
Chlorodibromomethane	124-48-1	2.50	U	5.00	2.50	1.25
Chloroethane	75-00-3	5.00	U	10.0	5.00	2.50
Chloroform	67-66-3	1.61	J	5.00	1.25	0.625
Chloromethane	74-87-3	5.00	U	10.0	5.00	2.50
2-Chlorotoluene	95-49-8	1.25	U	5.00	1.25	0.625
4-Chlorotoluene	106-43-4	2.50	U	5.00	2.50	1.25

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Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	10.0	Q	25.0	10.0	5.00
1,2-Dibromoethane	106-93-4	2.50	U	5.00	2.50	1.25
Dibromomethane	74-95-3	2.50	U	5.00	2.50	1.25
1,2-Dichlorobenzene	95-50-1	1.25	U	5.00	1.25	0.625
1,3-Dichlorobenzene	541-73-1	2.50	U	5.00	2.50	1.25
1,4-Dichlorobenzene	106-46-7	1.25	U	5.00	1.25	0.625
Dichlorodifluoromethane	75-71-8	2.50	U	5.00	2.50	1.25
1,1-Dichloroethane	75-34-3	0.884	J	5.00	1.25	0.625
1,2-Dichloroethane	107-06-2	2.50	Q	5.00	2.50	1.25
1,1-Dichloroethene	75-35-4	5.00	U	10.0	5.00	2.50
cis-1,2-Dichloroethene	156-59-2	149		5.00	2.50	1.25
trans-1,2-Dichloroethene	156-60-5	1.69	J	5.00	2.50	1.25
1,2-Dichloropropane	78-87-5	2.00	U	5.00	2.00	1.00
1,3-Dichloropropane	142-28-9	2.00	U	5.00	2.00	1.00
2,2-Dichloropropane	594-20-7	2.50	U	5.00	2.50	1.25
cis-1,3-Dichloropropene	10061-01-5	2.50	U	5.00	2.50	1.25
trans-1,3-Dichloropropene	10061-02-6	5.00	U	10.0	5.00	2.50
1,1-Dichloropropene	563-58-6	2.50	U	5.00	2.50	1.25
Ethylbenzene	100-41-4	2.50	U	5.00	2.50	1.25
2-Hexanone	591-78-6	25.0	Q	50.0	25.0	12.5
Hexachlorobutadiene	87-68-3	2.50	U	5.00	2.50	1.25
Isopropylbenzene	98-82-8	2.50	U	5.00	2.50	1.25
p-Isopropyltoluene	99-87-6	2.50	U	5.00	2.50	1.25
4-Methyl-2-pentanone	108-10-1	25.0	U	50.0	25.0	12.5
Methylene chloride	75-09-2	2.50	U	5.00	2.50	1.25
Naphthalene	91-20-3	2.00	U	5.00	2.00	1.00
n-Propylbenzene	103-65-1	1.25	U	5.00	1.25	0.625
Styrene	100-42-5	1.25	U	5.00	1.25	0.625
1,1,1,2-Tetrachloroethane	630-20-6	2.50	U	5.00	2.50	1.25
1,1,2,2-Tetrachloroethane	79-34-5	2.00	U	5.00	2.00	1.00
Tetrachloroethene	127-18-4	2.50	U	5.00	2.50	1.25
Toluene	108-88-3	2.50	U	5.00	2.50	1.25
1,2,3-Trichlorobenzene	87-61-6	1.50	U	5.00	1.50	0.750
1,2,4-Trichlorobenzene	120-82-1	2.00	U	5.00	2.00	1.00
1,1,1-Trichloroethane	71-55-6	2.50	U	5.00	2.50	1.25
1,1,2-Trichloroethane	79-00-5	2.50	U	5.00	2.50	1.25
Trichloroethene	79-01-6	670		5.00	2.50	1.25
Trichlorofluoromethane	75-69-4	2.50	U	5.00	2.50	1.25
1,2,3-Trichloropropane	96-18-4	5.00	U	10.0	5.00	2.50

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	2.50	U	5.00	2.50	1.25
1,3,5-Trimethylbenzene	108-67-8	2.50	U	5.00	2.50	1.25
Vinyl chloride	75-01-4	2.50	U	5.00	2.50	1.25
o-Xylene	95-47-6	2.50	U	5.00	2.50	1.25
m-,p-Xylene	179601-23-1	5.00	U	10.0	5.00	2.50

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.1	85	115	
1,2-Dichloroethane-d4	86.4	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	94.0	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	109-062216	**Prep Method:**	3520C	**Prep Date:**	06/27/2016 14:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574772	**Analyst:**	MES	**Run Date:**	07/01/2016 01:59
Collect Date:	06/22/2016 07:20	**Dilution:**	1	**File ID:**	15M18704
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	85.5	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	109-062216	**Prep Method:**	6850	**Prep Date:**	07/05/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575171	**Analyst:**	JWR	**Run Date:**	07/05/2016 17:06
Collect Date:	06/22/2016 07:20	**Dilution:**	1000	**File ID:**	1LM.LM35610
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1810		400	200	100

Certificate of Analysis

Sample #:	L16061290-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	109-062216	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/24/2016 10:17
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/24/2016 15:04
Collect Date:	06/22/2016 07:20	**Dilution:**	1	**File ID:**	T3.062416.150424
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	3.62		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	2.30		0.500	0.250	0.125
Iron, Total	7439-89-6	3.98		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	1.90		1.00	0.500	0.250
Potassium, Total	7440-09-7	0.692	J	2.00	1.00	0.500
Selenium, Total	7782-49-2	0.00538	J	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	33.8		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	109-062216	**Prep Method:**	3015	**Prep Date:**	06/28/2016 07:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574808	**Analyst:**	JYH	**Run Date:**	07/01/2016 12:41
Collect Date:	06/22/2016 07:20	**Dilution:**	1	**File ID:**	NI.070116.124145
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00137	J	0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.0812		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00387	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00149	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00212	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00176	J	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.0280		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00389	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00678		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0126	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-05	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	109-062216	**Prep Method:**	7470A	**Prep Date:**	06/25/2016 11:30
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	07/01/2016 10:18
Workgroup #:	WG574691	**Analyst:**	AMA	**Run Date:**	07/01/2016 11:42
Collect Date:	06/22/2016 07:20	**Dilution:**	1	**File ID:**	M7.070116.114222
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	18CPTMW07-062216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG575086	**Analyst:**	TMB	**Run Date:**	07/02/2016 18:22
Collect Date:	06/22/2016 08:30	**Dilution:**	1	**File ID:**	11M13050
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.340	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	85	115	
1,2-Dichloroethane-d4	85.9	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	91.7	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW07-062216	**Prep Method:**	3520C	**Prep Date:**	06/27/2016 14:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574772	**Analyst:**	MES	**Run Date:**	07/05/2016 18:37
Collect Date:	06/22/2016 08:30	**Dilution:**	1	**File ID:**	15M18727
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	49.9	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW07-062216	**Prep Method:**	6850	**Prep Date:**	07/01/2016 13:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575005	**Analyst:**	JWR	**Run Date:**	07/01/2016 22:33
Collect Date:	06/22/2016 08:30	**Dilution:**	1	**File ID:**	1LM.LM35589
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.634		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16061290-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG575086	**Analyst:**	TMB	**Run Date:**	07/02/2016 16:15
Collect Date:	06/22/2016 00:01	**Dilution:**	1	**File ID:**	11M13046
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.7	85	115	
1,2-Dichloroethane-d4	80.0	70	120	
Toluene-d8	99.6	85	120	
4-Bromofluorobenzene	93.1	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	MW16-062116	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG575086	**Analyst:**	TMB	**Run Date:**	07/02/2016 23:41
Collect Date:	06/21/2016 14:40	**Dilution:**	2.5	**File ID:**	11M13060
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	Q	25.0	12.5	6.25
Benzene	71-43-2	0.352	J	2.50	0.626	0.313
Bromobenzene	108-86-1	0.626	U	2.50	0.626	0.313
Bromochloromethane	74-97-5	1.00	U	2.50	1.00	0.500
Bromodichloromethane	75-27-4	1.25	U	2.50	1.25	0.625
Bromoform	75-25-2	2.50	U	5.00	2.50	1.25
Bromomethane	74-83-9	2.50	U	5.00	2.50	1.25
2-Butanone	78-93-3	12.5	Q	25.0	12.5	6.25
n-Butylbenzene	104-51-8	1.25	U	2.50	1.25	0.625
sec-Butylbenzene	135-98-8	1.25	U	2.50	1.25	0.625
tert-Butylbenzene	98-06-6	1.25	U	2.50	1.25	0.625
Carbon disulfide	75-15-0	2.50	U	5.00	2.50	1.25
Carbon tetrachloride	56-23-5	1.25	U	2.50	1.25	0.625
Chlorobenzene	108-90-7	0.626	U	2.50	0.626	0.313
Chlorodibromomethane	124-48-1	1.25	U	2.50	1.25	0.625
Chloroethane	75-00-3	2.50	U	5.00	2.50	1.25
Chloroform	67-66-3	0.626	U	2.50	0.626	0.313
Chloromethane	74-87-3	2.50	U	5.00	2.50	1.25
2-Chlorotoluene	95-49-8	0.626	U	2.50	0.626	0.313
4-Chlorotoluene	106-43-4	1.25	U	2.50	1.25	0.625
1,2-Dibromo-3-chloropropane	96-12-8	5.00	Q	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	2.50	1.25	0.625
Dibromomethane	74-95-3	1.25	U	2.50	1.25	0.625
1,2-Dichlorobenzene	95-50-1	0.626	U	2.50	0.626	0.313
1,3-Dichlorobenzene	541-73-1	1.25	U	2.50	1.25	0.625
1,4-Dichlorobenzene	106-46-7	0.626	U	2.50	0.626	0.313
Dichlorodifluoromethane	75-71-8	1.25	U	2.50	1.25	0.625
1,1-Dichloroethane	75-34-3	1.73	J	2.50	0.626	0.313
1,2-Dichloroethane	107-06-2	58.0	Q	2.50	1.25	0.625
1,1-Dichloroethene	75-35-4	9.00		5.00	2.50	1.25
cis-1,2-Dichloroethene	156-59-2	31.2		2.50	1.25	0.625
trans-1,2-Dichloroethene	156-60-5	0.747	J	2.50	1.25	0.625

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.00	U	2.50	1.00	0.500
1,3-Dichloropropane	142-28-9	1.00	U	2.50	1.00	0.500
2,2-Dichloropropane	594-20-7	1.25	U	2.50	1.25	0.625
cis-1,3-Dichloropropene	10061-01-5	1.25	U	2.50	1.25	0.625
trans-1,3-Dichloropropene	10061-02-6	2.50	U	5.00	2.50	1.25
1,1-Dichloropropene	563-58-6	1.25	U	2.50	1.25	0.625
Ethylbenzene	100-41-4	1.25	U	2.50	1.25	0.625
2-Hexanone	591-78-6	12.5	Q	25.0	12.5	6.25
Hexachlorobutadiene	87-68-3	1.25	U	2.50	1.25	0.625
Isopropylbenzene	98-82-8	1.25	U	2.50	1.25	0.625
p-Isopropyltoluene	99-87-6	1.25	U	2.50	1.25	0.625
4-Methyl-2-pentanone	108-10-1	12.5	U	25.0	12.5	6.25
Methylene chloride	75-09-2	1.25	U	2.50	1.25	0.625
Naphthalene	91-20-3	1.00	U	2.50	1.00	0.500
n-Propylbenzene	103-65-1	0.626	U	2.50	0.626	0.313
Styrene	100-42-5	0.626	U	2.50	0.626	0.313
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	2.50	1.25	0.625
1,1,2,2-Tetrachloroethane	79-34-5	1.00	U	2.50	1.00	0.500
Tetrachloroethene	127-18-4	0.786	J	2.50	1.25	0.625
Toluene	108-88-3	1.25	U	2.50	1.25	0.625
1,2,3-Trichlorobenzene	87-61-6	0.750	U	2.50	0.750	0.375
1,2,4-Trichlorobenzene	120-82-1	1.00	U	2.50	1.00	0.500
1,1,1-Trichloroethane	71-55-6	1.25	U	2.50	1.25	0.625
1,1,2-Trichloroethane	79-00-5	1.25	U	2.50	1.25	0.625
Trichlorofluoromethane	75-69-4	1.25	U	2.50	1.25	0.625
1,2,3-Trichloropropane	96-18-4	2.50	U	5.00	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	2.50	1.25	0.625
1,3,5-Trimethylbenzene	108-67-8	1.25	U	2.50	1.25	0.625
Vinyl chloride	75-01-4	0.299	U	2.50	1.25	0.625
o-Xylene	95-47-6	1.25	U	2.50	1.25	0.625
m-,p-Xylene	179601-23-1	2.50	U	5.00	2.50	1.25

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	88.6	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	93.5	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	MW16-062116	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG575092	**Analyst:**	TMB	**Run Date:**	07/03/2016 12:37
Collect Date:	06/21/2016 14:40	**Dilution:**	20	**File ID:**	6M140393
Sample Tag:	DL02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Trichloroethene	79-01-6	922		20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	99.0	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	125-062216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG575199	**Analyst:**	JDS	**Run Date:**	07/06/2016 00:34
Collect Date:	06/22/2016 06:55	**Dilution:**	1	**File ID:**	11M13090
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

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Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.844	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	89.4	70	120	
Toluene-d8	98.4	85	120	
4-Bromofluorobenzene	92.4	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	109-062216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG575086	**Analyst:**	TMB	**Run Date:**	07/02/2016 23:09
Collect Date:	06/22/2016 07:20	**Dilution:**	5	**File ID:**	11M13059
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	25.0	Q	50.0	25.0	12.5
Benzene	71-43-2	1.25	U	5.00	1.25	0.625
Bromobenzene	108-86-1	1.25	U	5.00	1.25	0.625
Bromochloromethane	74-97-5	2.00	U	5.00	2.00	1.00
Bromodichloromethane	75-27-4	2.50	U	5.00	2.50	1.25
Bromoform	75-25-2	5.00	U	10.0	5.00	2.50
Bromomethane	74-83-9	5.00	U	10.0	5.00	2.50
2-Butanone	78-93-3	25.0	Q	50.0	25.0	12.5
n-Butylbenzene	104-51-8	2.50	U	5.00	2.50	1.25
sec-Butylbenzene	135-98-8	2.50	U	5.00	2.50	1.25
tert-Butylbenzene	98-06-6	2.50	U	5.00	2.50	1.25
Carbon disulfide	75-15-0	5.00	U	10.0	5.00	2.50
Carbon tetrachloride	56-23-5	2.50	U	5.00	2.50	1.25
Chlorobenzene	108-90-7	1.25	U	5.00	1.25	0.625
Chlorodibromomethane	124-48-1	2.50	U	5.00	2.50	1.25
Chloroethane	75-00-3	5.00	U	10.0	5.00	2.50
Chloroform	67-66-3	1.61	J	5.00	1.25	0.625
Chloromethane	74-87-3	5.00	U	10.0	5.00	2.50
2-Chlorotoluene	95-49-8	1.25	U	5.00	1.25	0.625
4-Chlorotoluene	106-43-4	2.50	U	5.00	2.50	1.25
1,2-Dibromo-3-chloropropane	96-12-8	10.0	Q	25.0	10.0	5.00
1,2-Dibromoethane	106-93-4	2.50	U	5.00	2.50	1.25
Dibromomethane	74-95-3	2.50	U	5.00	2.50	1.25
1,2-Dichlorobenzene	95-50-1	1.25	U	5.00	1.25	0.625
1,3-Dichlorobenzene	541-73-1	2.50	U	5.00	2.50	1.25
1,4-Dichlorobenzene	106-46-7	1.25	U	5.00	1.25	0.625
Dichlorodifluoromethane	75-71-8	2.50	U	5.00	2.50	1.25
1,1-Dichloroethane	75-34-3	0.884	J	5.00	1.25	0.625
1,2-Dichloroethane	107-06-2	2.50	Q	5.00	2.50	1.25
1,1-Dichloroethene	75-35-4	5.00	U	10.0	5.00	2.50
cis-1,2-Dichloroethene	156-59-2	149		5.00	2.50	1.25

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.69	J	5.00	2.50	1.25
1,2-Dichloropropane	78-87-5	2.00	U	5.00	2.00	1.00
1,3-Dichloropropane	142-28-9	2.00	U	5.00	2.00	1.00
2,2-Dichloropropane	594-20-7	2.50	U	5.00	2.50	1.25
cis-1,3-Dichloropropene	10061-01-5	2.50	U	5.00	2.50	1.25
trans-1,3-Dichloropropene	10061-02-6	5.00	U	10.0	5.00	2.50
1,1-Dichloropropene	563-58-6	2.50	U	5.00	2.50	1.25
Ethylbenzene	100-41-4	2.50	U	5.00	2.50	1.25
2-Hexanone	591-78-6	25.0	Q	50.0	25.0	12.5
Hexachlorobutadiene	87-68-3	2.50	U	5.00	2.50	1.25
Isopropylbenzene	98-82-8	2.50	U	5.00	2.50	1.25
p-Isopropyltoluene	99-87-6	2.50	U	5.00	2.50	1.25
4-Methyl-2-pentanone	108-10-1	25.0	U	50.0	25.0	12.5
Methylene chloride	75-09-2	2.50	U	5.00	2.50	1.25
Naphthalene	91-20-3	2.00	U	5.00	2.00	1.00
n-Propylbenzene	103-65-1	1.25	U	5.00	1.25	0.625
Styrene	100-42-5	1.25	U	5.00	1.25	0.625
1,1,1,2-Tetrachloroethane	630-20-6	2.50	U	5.00	2.50	1.25
1,1,2,2-Tetrachloroethane	79-34-5	2.00	U	5.00	2.00	1.00
Tetrachloroethene	127-18-4	2.50	U	5.00	2.50	1.25
Toluene	108-88-3	2.50	U	5.00	2.50	1.25
1,2,3-Trichlorobenzene	87-61-6	1.50	U	5.00	1.50	0.750
1,2,4-Trichlorobenzene	120-82-1	2.00	U	5.00	2.00	1.00
1,1,1-Trichloroethane	71-55-6	2.50	U	5.00	2.50	1.25
1,1,2-Trichloroethane	79-00-5	2.50	U	5.00	2.50	1.25
Trichloroethene	79-01-6	670		5.00	2.50	1.25
Trichlorofluoromethane	75-69-4	2.50	U	5.00	2.50	1.25
1,2,3-Trichloropropane	96-18-4	5.00	U	10.0	5.00	2.50
1,2,4-Trimethylbenzene	95-63-6	2.50	U	5.00	2.50	1.25
1,3,5-Trimethylbenzene	108-67-8	2.50	U	5.00	2.50	1.25
Vinyl chloride	75-01-4	2.50	U	5.00	2.50	1.25
o-Xylene	95-47-6	2.50	U	5.00	2.50	1.25
m-,p-Xylene	179601-23-1	5.00	U	10.0	5.00	2.50

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.1	85	115	
1,2-Dichloroethane-d4	86.4	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	94.0	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	18CPTMW07-062216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG575086	**Analyst:**	TMB	**Run Date:**	07/02/2016 18:22
Collect Date:	06/22/2016 08:30	**Dilution:**	1	**File ID:**	11M13050
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.340	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	85	115	
1,2-Dichloroethane-d4	85.9	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	91.7	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG575086	**Analyst:**	TMB	**Run Date:**	07/02/2016 16:15
Collect Date:	06/22/2016 00:01	**Dilution:**	1	**File ID:**	11M13046
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.7	85	115	
1,2-Dichloroethane-d4	80.0	70	120	
Toluene-d8	99.6	85	120	
4-Bromofluorobenzene	93.1	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 042416
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75498 Surrogate Standard: STD75498
CCV: STD75791 LCS: STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG566155

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M138749	RINSE	NA	1	1		04/24/16 16:05
6M138750	WG566155-01 50ng BFB 826-A9	NA	1	1	STD75485	04/24/16 16:33
6M138751	WG566155-02 5ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 16:59
6M138752	WG566155-03 20ug/L STD 826-A	NA	1	1	STD75791	04/24/16 17:31
6M138753	WG566155-04 50ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 18:03
6M138754	WG566155-05 100ug/L STD 826-A	NA	1	1	STD75791	04/24/16 18:36
6M138755	WG566155-06 200ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 19:08
6M138756	WG566155-07 300ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 19:40
6M138757	WG566155-08 400ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 20:12
6M138758	WG566155-09 500ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 20:44
6M138759	RINSE	NA	1	1		04/24/16 21:16
6M138760	RINSE	NA	1	1		04/24/16 21:49
6M138761	WG566155-10 100ug/L ALT SRC	NA	1	1	STD75801	04/24/16 22:21
6M138762	RINSE	NA	1	1		04/24/16 22:53
6M138763	RINSE	NA	1	1		04/24/16 23:25

Approved: April 29, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 051316

Analyst1: JDS Analyst2: NA

Method: 8260B SOP: MSV01 / OVAP MSV01 Rev: 23 / 0

Method: 5030B/5030C/5035A SOP: PAT01 / OVAP PAT01 Rev: 18 / 0

Method: 624 SOP: MSV10 Rev: 14

Maintenance Log ID:

Internal Standard: STD76110 Surrogate Standard: STD75929

CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG568769

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M11835	RINSE	NA	1	1		05/13/16 11:59
11M11836	WG568769-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 14:15
11M11837	WG568769-02 0.3ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 14:40
11M11838	WG568769-03 0.4ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 15:12
11M11839	WG568769-04 1.0ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 15:43
11M11840	WG568769-05 2.0ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 16:15
11M11841	WG568769-06 5.0ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 16:47
11M11842	WG568769-07 20ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 17:19
11M11843	WG568769-08 50ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 17:51
11M11844	WG568769-09 100ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 18:22
11M11845	WG568769-10 200ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 18:54
11M11846	WG568769-11 300ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 19:26
11M11847	RINSE	NA	1	1		05/13/16 19:58
11M11848	WG568769-12 50ug/L ALT SRC STD 8260	NA	1	1	STD76109	05/13/16 20:30
11M11849	RINSE	NA	1	1		05/13/16 21:02
11M11850	RINSE	NA	1	1		05/13/16 21:34

Approved: May 23, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 063016
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53798

Internal Standard: STD76854 Surrogate Standard: STD76854
CCV: STD76892 LCS: STD76744 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG574723

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M140313	WG574723-01 50ng BFB STD 8260	NA	1	1	STD76496	06/30/16 11:36
6M140314	WG574723-02 0.3ug/L STD 8260	NA	1	1	STD76892	06/30/16 12:03
6M140315	WG574723-03 0.4ug/L STD 8260	NA	1	1	STD76892	06/30/16 12:35
6M140316	WG574723-04 1ug/L STD 8260	NA	1	1	STD76892	06/30/16 13:08
6M140317	WG574723-05 2ug/L STD 8260	NA	1	1	STD76892	06/30/16 13:40
6M140318	WG574723-06 5ug/L STD 8260	NA	1	1	STD76892	06/30/16 14:12
6M140319	WG574723-07 20ug/L STD 8260	NA	1	1	STD76892	06/30/16 14:44
6M140320	WG574723-08 50ug/L STD 8260	NA	1	1	STD76892	06/30/16 15:16
6M140321	WG574723-09 100ug/L STD 8260	NA	1	1	STD76892	06/30/16 15:48
6M140322	WG574723-10 200ug/L STD 8260	NA	1	1	STD76892	06/30/16 16:21
6M140323	WG574723-11 300ug/L STD 8260	NA	1	1	STD76892	06/30/16 16:53
6M140324	RINSE	NA	1	1		06/30/16 17:27
6M140325	RINSE	NA	1	1		06/30/16 17:59
6M140326	WG574723-12 50ug/L ALT SRC STD 8260	NA	1	1	STD76744	06/30/16 18:31
6M140327	RINSE	NA	1	1		06/30/16 19:04

Approved: July 07, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 070216
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 24
Method: 624 SOP: MSV10 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD76881 Surrogate Standard: STD76782
CCV: STD76892 LCS: STD76972 MS/MSD: STD76972

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG757086

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M13038	RINSE	NA	1	1		07/02/16 11:36
11M13039	WG575085-01 50ng BFB STD 8260	NA	1	1	STD76496	07/02/16 13:02
11M13040	WG575085-01 50ng BFB STD 8260	NA	1	1	STD76496	07/02/16 13:14
11M13041	WG575085-01 50ng BFB STD 8260	NA	1	1	STD76496	07/02/16 13:39
11M13042	WG575085-02 50ug/L CCV STD 8260	NA	1	1	STD76892	07/02/16 14:04
11M13043	WG575085-02 50ug/L CCV STD 8260	NA	1	1	STD76892	07/02/16 14:39
11M13044	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76432	07/02/16 15:11
11M13045	WG575086-01 VBLK0702 BLANK STD 826	NA	1	1		07/02/16 15:43
11M13046	L16061290-07 A TB 826-LOW	<2	1	1		07/02/16 16:15
11M13047	L16061416-03 A TB 826-SPE	<2	1	1		07/02/16 16:47
11M13048	L16061418-02 A TB 826-SPE	<2	1	1		07/02/16 17:18
11M13049	L16061406-05 A TB 826-SPE	<2	1	1		07/02/16 17:50
11M13050	L16061290-06 A 826-LOW	<2	1	1		07/02/16 18:22
11M13051	L16061416-01 A 826-SPE	<2	1	1		07/02/16 18:54
11M13052	L16061418-01 A 826-SPE	<2	1	1		07/02/16 19:26
11M13053	L16061418-03 A 826-SPE	<2	1	1		07/02/16 19:58
11M13054	L16061406-01 A 826-SPE	<2	1	1		07/02/16 20:30
11M13055	L16061406-03 A 826-SPE	<2	1	1		07/02/16 21:01
11M13056	L16061416-02 A 826-SPE	<2	1	1		07/02/16 21:33
11M13057	L16061406-02 A 826-SPE	<2	1	1		07/02/16 22:05
11M13058	L16061406-04 A 5X 826-SPE	<2	1	5		07/02/16 22:37
11M13059	L16061290-05 A 5X 826-LOW	<2	1	5		07/02/16 23:09
11M13060	L16061290-02 A 2.5X 826-LOW	<2	1	2.5		07/02/16 23:41
11M13061	L16061290-04 A 826-LOW	<2	1	1		07/03/16 00:13
11M13062	WG575086-02 20ug/L LCS STD 8260	NA	1	1	STD76870	07/03/16 00:45
11M13063	WG575086-03 20ug/L LCS2 STD 8260	NA	1	1	STD76870	07/03/16 01:16
11M13064	RINSE	NA	1	1		07/03/16 01:48
11M13065	WG575086-04 VBLK0702 BLANK STD 624	NA	2	1		07/03/16 02:20
11M13066	L16070054-02 A 624-SPE	<2	2	1		07/03/16 02:52
11M13067	CCV	NA	1	1		07/03/16 03:24
11M13068	RINSE	NA	1	1		07/03/16 03:56
11M13069	RINSE	NA	1	1		07/03/16 04:27

Approved: July 11, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 070216

Analyst1: ADC Analyst2: NA

Method: 8260B SOP: MSV01 Rev: 24

Method: 624 SOP: MSV10 Rev: 15

Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD76881 Surrogate Standard: STD76782

CCV: STD76892 LCS: STD76972 MS/MSD: STD76972

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG757086

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
20	X	25	Over Calibration Range	TCE
File ID: 11M13057				
	L16061406-02			
21	X	2.5	Analyzed too dilute	
File ID: 11M13058				
	L16061406-04 DNR			
23	X	20	Over Calibration Range	
File ID: 11M13060				
	L16061290-02			

Approved: July 11, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 070316
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD76854 Surrogate Standard: STD76854
CCV: STD76892 LCS: STD76744 MS/MSD: STD76744

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG575092

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M140388	WG575091-01 50ng BFB STD 8260	NA	1	1	STD76496	07/03/16 10:03
6M140389	WG575091-02 50ug/L CCV STD 8260	NA	1	1	STD76892	07/03/16 10:28
6M140390	WG575091-02 50ug/L CCV STD 8260	NA	1	1	STD76892	07/03/16 11:01
6M140391	WG575092-01 VBLK0703 BLANK STD 826	NA	1	1		07/03/16 11:33
6M140392	WG575092-02 20ug/L LCS STD 8260	NA	1	1	STD76744	07/03/16 12:05
6M140393	L16061290-02 B 20X 826-LOW D1	<2	1	20		07/03/16 12:37
6M140394	L16061406-02 B 25X 826-SPE D1	<2	1	25		07/03/16 13:08
6M140395	L16061284-13 TB A 826-SPE	<2	1	1		07/03/16 13:41
6M140396	L16061345-08 EB A 826-SPE	<2	1	1		07/03/16 14:13
6M140397	L16061284-02 A 826-SPE	<2	1	1		07/03/16 14:45
6M140398	L16061284-03 A 826-SPE	<2	1	1		07/03/16 15:17
6M140399	L16061284-12 A 826-SPE	<2	1	1		07/03/16 15:49
6M140400	L16061284-08 A 826-SPE	<2	1	1		07/03/16 16:21
6M140401	L16061284-09 A 826-SPE	<2	1	1		07/03/16 16:53
6M140402	L16061284-10 A 826-SPE	<2	1	1		07/03/16 17:26
6M140403	L16061284-11 A 826-SPE	<2	1	1		07/03/16 17:57
6M140404	L16061284-01 A 2.5X 826-SPE	<2	1	2.5		07/03/16 18:29
6M140405	L16061284-04 A 2.5X 826-SPE	<2	1	2.5		07/03/16 19:02
6M140406	L16061284-05 A 5X 826-SPE	7	1	5		07/03/16 19:34
6M140407	L16061284-06 A 5X 826-SPE	7	1	5		07/03/16 20:06
6M140408	L16061345-04 B 2X 826-SPE	7	1	2		07/03/16 20:38
6M140409	L16061345-05 A\&B 2X 826-SPE	7	1	2	STD76744	07/03/16 21:10
6M140410	L16061345-06 A\&B 2X 826-SPE	7	1	2	STD76744	07/03/16 21:42
6M140411	CCV	NA	1	1		07/03/16 22:14
6M140412	RINSE	NA	1	1		07/03/16 22:46
6M140413	ANTIFOAM BLANK	NA	1	1		07/03/16 23:18
6M140414	RINSE	NA	1	1		07/03/16 23:50

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 6M140389				
VA was low, DNR.				

Approved: July 11, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 070316
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD76854 Surrogate Standard: STD76854
CCV: STD76892 LCS: STD76744 MS/MSD: STD76744

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG575092

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17	X	1	Analyzed too dilute	
File ID: 6M140404				
19	X	2.5	Analyzed too dilute	
File ID: 6M140406				
20				
File ID: 6M140407				
	L16061284-06		Analyzed out of hold time due to preservation.	
28				
File ID: 6M140408				
	L16061345-04		Analyzed out of hold time due to preservation.	
29				
File ID: 6M140409				
	L16061345-05		Analyzed out of hold time due to preservation.	
30				
File ID: 6M140410				
	L16061345-06		Analyzed out of hold time due to preservation.	

Approved: July 11, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 070516
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 24
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD76881 Surrogate Standard: STD76782
CCV: STD76892 LCS: STD76870 MS/MSD: NA

Column 1 ID: Column 2 ID: NA
Workgroups: WG575199

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M13072	WG575198-01 50ng BFB STD 8260	NA	1	1	STD76496	07/05/16 14:37
11M13073	WG575198-02 50ug/L CCV STD 8260	NA	1	1	STD76892	07/05/16 15:03
11M13074	WG575198-02 50ug/L CCV STD 8260	NA	1	1	STD76892	07/05/16 15:40
11M13076	WG575198-01 50ng BFB STD 8260	NA	1	1	STD76496	07/05/16 17:13
11M13077	WG575198-02 50ug/L CCV STD 8260	NA	1	1	STD76892	07/05/16 17:37
11M13078	WG575198-02 50ug/L CCV STD 8260	NA	1	1	STD76892	07/05/16 18:11
11M13079	WGXXXXXX-01 50ug/L A9-CCV STD 8260	NA	1	1	STDXXXXX	07/05/16 18:43
11M13080	WG575199-01 BLANK STD 8260	NA	1	1		07/05/16 19:15
11M13081	WG575199-02 20ug/L LCS STD 8260	NA	1	1	STD76870	07/05/16 19:47
11M13082	WG575199-03 20ug/L LCS2 STD 8260	NA	1	1	STD76870	07/05/16 20:19
11M13083	L16061509-02 B D1 100X 826-BETX	<2	1	100		07/05/16 20:51
11M13084	L16061509-03 B D1 100X 826-BETX	<2	1	100		07/05/16 21:23
11M13085	L16061509-06 B D1 10X 826-BETX	<2	1	10		07/05/16 21:54
11M13086	L16061509-10 B D1 5X 826-BETX	<2	1	5		07/05/16 22:26
11M13087	L16061507-01 B D1 100X 826-SPE2	<2	1	100		07/05/16 22:59
11M13088	L16061507-02 B D1 5X 826-SPE2	<2	1	5		07/05/16 23:30
11M13089	L16061406-04 B 00 2.5X 826-SPE	<2	1	2.5		07/06/16 00:02
11M13090	L16061290-04 B A1 826-SPE	<2	1	1		07/06/16 00:34
11M13091	L16061452-04 A TB 826-LOW	<2	1	1		07/06/16 01:06
11M13092	L16061453-04 A TB 826-LOW	<2	1	1		07/06/16 01:38
11M13093	L16061452-01 A 826-LOW	<2	1	1		07/06/16 02:10
11M13094	L16061453-02 A 826-LOW	<2	1	1		07/06/16 02:42
11M13095	L16061561-01 10X AF 826-TC	<2	17	10		07/06/16 03:14
11M13096	L16061452-03 10X A 826-LOW	<2	1	10		07/06/16 03:46
11M13097	L16061453-01 500X A 826-LOW	<2	1	500		07/06/16 04:18
11M13098	L16061453-03 25X A 826-LOW	<2	1	25		07/06/16 04:50
11M13099	L16061410-01 5X A 826-LOW	<2	1	5		07/06/16 05:21
11M13100	CCV	NA	1	1		07/06/16 05:53
11M13101	RINSE	NA	1	1		07/06/16 06:25
11M13102	RINSE	NA	1	1		07/06/16 06:57

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Approved: July 13, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 070516
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 24
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD76881 Surrogate Standard: STD76782
CCV: STD76892 LCS: STD76870 MS/MSD: NA

Column 1 ID: Column 2 ID: NA
Workgroups: WG575199

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
3	X			
File ID: 11M13074				
	WG575198-02 CCV aborted due to analyst error			
6			Check Standard Failure	
File ID: 11M13078				
	failed low for ace., meth. ace., 2-but.			
25	X	250	Analyzed too dilute	
File ID: 11M13097				
	L16061453-01			
26	X	10	Analyzed too dilute	
File ID: 11M13098				
	L16061453-03			
27	X	1	Analyzed too dilute	
File ID: 11M13099				
	L16061410-01			

Approved: July 13, 2016

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Microbac Laboratories Inc.

Data Checklist

Date: 24-APR-2016
Analyst: JDS
Analyst: NA
Method: 8260B/624
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 74754
Analytical Workgroups: WG566155

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
27-APR-2016
Tiffany Bailey

Secondary Reviewer:
29-APR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: APR-29-2016 12:29:57

Microbac Laboratories Inc.

Data Checklist

Date: 13-MAY-2016
Analyst: JDS
Analyst: NA
Method: 8260B
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 75133
Analytical Workgroups: WG568769

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	X
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
23-MAY-2016

Secondary Reviewer:
23-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-23-2016 15:39:32

Microbac Laboratories Inc.

Data Checklist

Date: 30-JUN-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 76082
Analytical Workgroups: WG574723

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
01-JUL-2016
Tiffany Bailey

Secondary Reviewer:
07-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-07-2016 13:59:59

Microbac Laboratories Inc.

Data Checklist

Date: 02-JUL-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 76202
Analytical Workgroups: WG575086

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer: 09-JUL-2016

Secondary Reviewer: 11-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-11-2016 12:07:02

Microbac Laboratories Inc.

Data Checklist

Date: 05-JUL-2016
Analyst: JDS
Analyst: NA
Method: 8260B
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 76231
Analytical Workgroups: WG575199

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	JDS
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
11-JUL-2016

Secondary Reviewer:
13-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-13-2016 08:01:44

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG575086

Login Number: L16061290

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW16-062116	02	06/21/16					07/02/2016	11.4	14		07/02/16	11.4	14	
109-062216	05	06/22/16					07/02/2016	10.7	14		07/02/16	10.7	14	
18CPTMW07-062216	06	06/22/16					07/02/2016	10.4	14		07/02/16	10.4	14	
TRIP BLANK	07	06/22/16					07/02/2016	10.7	14		07/02/16	10.7	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4845927
Report generated 07/13/2016 08:35

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG575092

Login Number: L16061290

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW16-062116	02	06/21/16					07/03/2016	11.9	14		07/03/16	11.9	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4845927
Report generated 07/13/2016 08:35

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG575199

Login Number: L16061290

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
125-062216	04	06/22/16					07/06/2016	13.7	14		07/06/16	13.7	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4845927
Report generated 07/13/2016 08:35

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061290
Instrument Id: HPMS11
Workgroup (AAB#): WG575086

Method: 8260
CAL ID: HPMS11-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16061290-02	2.50	DL01	88.6	102	93.5	102
L16061290-05	5.00	DL01	86.4	99.1	94.0	101
L16061290-06	1.00	01	85.9	100	91.7	100
L16061290-07	1.00	01	80.0	96.7	93.1	99.6
WG575086-01	1.00	01	80.6	97.1	95.4	101
WG575086-02	1.00	01	88.6	101	90.7	99.5
WG575086-03	1.00	01	86.9	99.4	91.6	101
WG575086-04	1.00	01	88.3	99.8	92.6	100

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4845935
Report generated: 07/13/2016 08:36

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061290
Instrument Id: HPMS11
Workgroup (AAB#): WG575199

Method: 8260
CAL ID: HPMS11-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16061290-04	1.00	01	89.4	101	92.4	98.4
WG575199-01	1.00	01	87.7	99.4	91.6	98.6
WG575199-02	1.00	01	86.3	100	91.2	99.2
WG575199-03	1.00	01	85.3	98.0	89.1	97.4

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4845935
Report generated: 07/13/2016 08:36

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061290
Instrument Id: HPMS6
Workgroup (AAB#): WG575092

Method: 8260
CAL ID: HPMS6-30-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16061290-02	20.0	DL02	103	102	99.0	100
WG575092-01	1.00	01	102	102	100	99.0
WG575092-02	1.00	01	103	103	96.4	100

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4845935
Report generated: 07/13/2016 08:36

METHOD BLANK SUMMARY

Login Number: L16061290
Blank File ID: 11M13045
Prep Date: 07/02/16 15:43
Analyzed Date: 07/02/16 15:43
Analyst: TMB

Work Group: WG575086
Blank Sample ID: WG575086-01
Instrument ID: HPMS11
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
TRIP BLANK	L16061290-07	11M13046	07/02/16 16:15	01
18CPTMW07-062216	L16061290-06	11M13050	07/02/16 18:22	01
109-062216	L16061290-05	11M13059	07/02/16 23:09	DL01
MW16-062116	L16061290-02	11M13060	07/02/16 23:41	DL01
LCS	WG575086-02	11M13062	07/03/16 00:45	01
LCS2	WG575086-03	11M13063	07/03/16 01:16	01

Report Name: BLANK_SUMMARY
PDF File ID: 4845928
Report generated 07/13/2016 08:35

METHOD BLANK SUMMARY

Login Number: L16061290
Blank File ID: 11M13080
Prep Date: 07/05/16 19:15
Analyzed Date: 07/05/16 19:15
Analyst: JDS

Work Group: WG575199
Blank Sample ID: WG575199-01
Instrument ID: HPMS11
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG575199-02	11M13081	07/05/16 19:47	01
LCS2	WG575199-03	11M13082	07/05/16 20:19	01
125-062216	L16061290-04	11M13090	07/06/16 00:34	01

Report Name: BLANK_SUMMARY
PDF File ID: 4845928
Report generated 07/13/2016 08:35

METHOD BLANK SUMMARY

Login Number: L16061290
Blank File ID: 6M140391
Prep Date: 07/03/16 11:33
Analyzed Date: 07/03/16 11:33
Analyst: TMB

Work Group: WG575092
Blank Sample ID: WG575092-01
Instrument ID: HPMS6
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG575092-02	6M140392	07/03/16 12:05	01
MW16-062116	L16061290-02	6M140393	07/03/16 12:37	DL02

Report Name: BLANK_SUMMARY
PDF File ID: 4845928
Report generated 07/13/2016 08:35

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061290 Prep Date: 07/02/16 15:43 Sample ID: WG575086-01
Instrument ID: HPMS11 Run Date: 07/02/16 15:43 Prep Method: 5030B/5030C/503
File ID: 11M13045 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG575086 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 4845929
13-JUL-2016 08:35

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061290 Prep Date: 07/02/16 15:43 Sample ID: WG575086-01
Instrument ID: HPMS11 Run Date: 07/02/16 15:43 Prep Method: 5030B/5030C/503
File ID: 11M13045 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG575086 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	97.1	85 - 115	PASS
1,2-Dichloroethane-d4	80.6	70 - 120	PASS
Toluene-d8	101	85 - 120	PASS
4-Bromofluorobenzene	95.4	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4845929
13-JUL-2016 08:35

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16061290 Prep Date: 07/05/16 19:15 Sample ID: WG575199-01
Instrument ID: HPMS11 Run Date: 07/05/16 19:15 Prep Method: 5030B/5030C/503
File ID: 11M13080 Analyst: JDS Method: 8260B
Workgroup (AAB#): WG575199 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 4845929
13-JUL-2016 08:35

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061290 Prep Date: 07/05/16 19:15 Sample ID: WG575199-01
Instrument ID: HPMS11 Run Date: 07/05/16 19:15 Prep Method: 5030B/5030C/503
File ID: 11M13080 Analyst: JDS Method: 8260B
Workgroup (AAB#): WG575199 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	99.4	85 - 115	PASS
1,2-Dichloroethane-d4	87.7	70 - 120	PASS
Toluene-d8	98.6	85 - 120	PASS
4-Bromofluorobenzene	91.6	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4845929
13-JUL-2016 08:35

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061290 Prep Date: 07/03/16 11:33 Sample ID: WG575092-01
Instrument ID: HPMS6 Run Date: 07/03/16 11:33 Prep Method: 5030B/5030C/503
File ID: 6M140391 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG575092 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS6-30-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Trichloroethene	0.250	1.00	0.250	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	102	85 - 115	PASS
1,2-Dichloroethane-d4	102	70 - 120	PASS
Toluene-d8	99.0	85 - 120	PASS
4-Bromofluorobenzene	100	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4845929
13-JUL-2016 08:35

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061290 Run Date: 07/03/2016 Sample ID: WG575092-02
Instrument ID: HPMS6 Run Time: 12:05 Prep Method: 5030B/5030C/503
File ID: 6M140392 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG575092 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD76744 Cal ID: HPMS6-30-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Trichloroethene	20.0	20.5	103	70 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	103	85 - 115	PASS
1,2-Dichloroethane-d4	103	70 - 120	PASS
Toluene-d8	100	85 - 120	PASS
4-Bromofluorobenzene	96.4	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4846257
Report generated: 07/13/2016 08:36

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061290 Analyst: JDS Prep Method: 5030B/5030C/503
Instrument ID: HPMS11 Matrix: Water Method: 8260B
Workgroup (AAB#): WG575199 Units: ug/L
QC Key: DOD4 Lot #: STD76870

Sample ID: WG575199-02 LCS File ID: 11M13081 Run Date: 07/05/2016 19:47
Sample ID: WG575199-03 LCS2 File ID: 11M13082 Run Date: 07/05/2016 20:19

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	21.4	107	20.0	20.9	104	2.29	80 - 130	30	
1,1,1-Trichloroethane	20.0	17.1	85.4	20.0	16.9	84.4	1.27	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	19.1	95.3	20.0	17.9	89.5	6.36	65 - 130	30	
1,1,2-Trichloroethane	20.0	20.5	102	20.0	19.7	98.7	3.61	75 - 125	30	
1,1-Dichloroethane	20.0	15.9	79.5	20.0	15.8	78.9	0.648	70 - 135	30	
1,1-Dichloroethene	20.0	11.0	54.9	20.0	10.9	54.7	0.448	70 - 130	30	*
1,1-Dichloropropene	20.0	16.7	83.4	20.0	16.4	81.8	1.87	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	19.9	99.6	20.0	19.9	99.5	0.0479	55 - 140	30	
1,2,3-Trichloropropane	20.0	20.4	102	20.0	19.3	96.4	5.43	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	20.4	102	20.0	20.3	101	0.902	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	20.8	104	20.0	20.6	103	0.852	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	17.9	89.5	20.0	16.5	82.7	7.89	50 - 130	30	
1,2-Dibromoethane	20.0	20.4	102	20.0	19.0	95.2	6.71	80 - 120	30	
1,2-Dichlorobenzene	20.0	21.4	107	20.0	21.2	106	1.22	70 - 120	30	
1,2-Dichloroethane	20.0	17.7	88.4	20.0	17.3	86.6	2.12	70 - 130	30	
1,2-Dichloropropane	20.0	19.0	94.9	20.0	18.3	91.4	3.80	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	20.7	104	20.0	20.6	103	0.666	75 - 130	30	
1,3-Dichlorobenzene	20.0	21.2	106	20.0	20.9	105	1.55	75 - 125	30	
1,3-Dichloropropane	20.0	20.6	103	20.0	20.5	103	0.100	75 - 125	30	
1,4-Dichlorobenzene	20.0	21.3	107	20.0	21.1	106	1.05	75 - 125	30	
2,2-Dichloropropane	20.0	16.7	83.7	20.0	16.0	80.0	4.60	70 - 135	30	
2-Butanone	20.0	17.3	86.6	20.0	16.1	80.4	7.46	30 - 150	30	
2-Chlorotoluene	20.0	20.8	104	20.0	20.5	102	1.87	75 - 125	30	
2-Hexanone	20.0	16.2	80.8	20.0	15.0	74.8	7.69	55 - 130	30	
4-Chlorotoluene	20.0	20.5	103	20.0	20.2	101	1.53	75 - 130	30	
4-Methyl-2-pentanone	20.0	18.2	91.2	20.0	17.2	85.8	6.08	60 - 135	30	
Acetone	20.0	16.3	81.7	20.0	15.8	79.0	3.31	40 - 140	30	
Benzene	20.0	17.5	87.7	20.0	17.2	85.9	2.07	80 - 120	30	
Bromobenzene	20.0	20.9	105	20.0	20.5	103	1.96	75 - 125	30	
Bromochloromethane	20.0	20.0	100	20.0	19.6	97.8	2.31	65 - 130	30	
Bromodichloromethane	20.0	19.5	97.5	20.0	19.0	94.8	2.85	75 - 120	30	
Bromoform	20.0	20.4	102	20.0	19.4	97.0	5.15	70 - 130	30	
Bromomethane	20.0	14.4	71.9	20.0	13.3	66.5	7.77	30 - 145	30	
Carbon disulfide	20.0	12.5	62.6	20.0	12.2	61.1	2.44	35 - 160	30	
Carbon tetrachloride	20.0	17.4	86.8	20.0	16.9	84.5	2.67	65 - 140	30	
Chlorobenzene	20.0	21.1	106	20.0	20.6	103	2.39	80 - 120	30	
Chloroethane	20.0	14.7	73.5	20.0	14.5	72.4	1.54	60 - 135	30	
Chloroform	20.0	17.8	89.0	20.0	17.4	87.2	2.00	65 - 135	30	
Chloromethane	20.0	6.21	31.1	20.0	6.18	30.9	0.505	40 - 125	30	*
cis-1,2-Dichloroethene	20.0	18.9	94.5	20.0	17.9	89.5	5.43	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4845930
Report generated: 07/13/2016 08:36

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061290 Analyst: JDS Prep Method: 5030B/5030C/503
Instrument ID: HPMS11 Matrix: Water Method: 8260B
Workgroup (AAB#): WG575199 Units: ug/L
QC Key: DOD4 Lot #: STD76870

Sample ID: WG575199-02 LCS File ID: 11M13081 Run Date: 07/05/2016 19:47
Sample ID: WG575199-03 LCS2 File ID: 11M13082 Run Date: 07/05/2016 20:19

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	21.1	105	20.0	20.6	103	2.50	70 - 130	30	
Chlorodibromomethane	20.0	21.3	107	20.0	20.4	102	4.47	60 - 135	30	
Dibromomethane	20.0	18.0	90.0	20.0	17.9	89.3	0.808	75 - 125	30	
Dichlorodifluoromethane	20.0	2.14	10.7	20.0	2.10	10.5	2.02	30 - 155	30	*
Ethylbenzene	20.0	19.9	99.6	20.0	20.1	100	0.735	75 - 125	30	
Hexachlorobutadiene	20.0	18.7	93.5	20.0	19.3	96.4	3.14	50 - 140	30	
Isopropylbenzene	20.0	21.1	106	20.0	20.7	103	2.03	75 - 125	30	
m-,p-Xylene	40.0	41.3	103	40.0	40.4	101	2.27	75 - 130	30	
Methylene chloride	20.0	16.2	80.9	20.0	15.9	79.7	1.45	55 - 140	30	
n-Butylbenzene	20.0	19.7	98.5	20.0	19.3	96.3	2.26	70 - 135	30	
n-Propylbenzene	20.0	21.0	105	20.0	20.7	104	1.18	70 - 130	30	
Naphthalene	20.0	18.1	90.6	20.0	17.7	88.6	2.24	55 - 140	30	
o-Xylene	20.0	21.1	106	20.0	20.7	103	2.20	80 - 120	30	
p-Isopropyltoluene	20.0	21.0	105	20.0	20.7	103	1.41	75 - 130	30	
sec-Butylbenzene	20.0	21.1	105	20.0	20.6	103	2.25	70 - 125	30	
Styrene	20.0	21.5	108	20.0	20.9	105	2.76	65 - 135	30	
tert-Butylbenzene	20.0	22.8	114	20.0	21.4	107	6.21	70 - 130	30	
Tetrachloroethene	20.0	19.6	98.2	20.0	19.5	97.5	0.741	45 - 150	30	
Toluene	20.0	19.6	97.8	20.0	19.0	95.1	2.82	75 - 120	30	
trans-1,2-Dichloroethene	20.0	15.6	78.2	20.0	15.4	77.0	1.50	60 - 140	30	
trans-1,3-Dichloropropene	20.0	19.1	95.7	20.0	18.4	92.0	3.94	55 - 140	30	
Trichloroethene	20.0	20.6	103	20.0	20.7	104	0.456	70 - 125	30	
Trichlorofluoromethane	20.0	14.3	71.6	20.0	13.8	68.9	3.84	60 - 145	30	
Vinyl chloride	20.0	10.4	51.9	20.0	9.79	49.0	5.91	50 - 145	30	*

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	86.3	85.3	70 - 120	PASS
Dibromofluoromethane	100	98.0	85 - 115	PASS
4-Bromofluorobenzene	91.2	89.1	75 - 120	PASS
Toluene-d8	99.2	97.4	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4845930
Report generated: 07/13/2016 08:36

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061290 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS11 Matrix: Water Method: 8260B
Workgroup (AAB#): WG575086 Units: ug/L
QC Key: DOD4 Lot #: STD76870

Sample ID: WG575086-02 LCS File ID: 11M13062 Run Date: 07/03/2016 00:45
Sample ID: WG575086-03 LCS2 File ID: 11M13063 Run Date: 07/03/2016 01:16

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	20.9	104	20.0	21.4	107	2.42	80 - 130	30	
1,1,1-Trichloroethane	20.0	18.5	92.7	20.0	18.7	93.3	0.590	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	16.5	82.4	20.0	17.5	87.6	6.09	65 - 130	30	
1,1,2-Trichloroethane	20.0	20.2	101	20.0	20.3	102	0.558	75 - 125	30	
1,1-Dichloroethane	20.0	16.9	84.5	20.0	17.2	86.1	1.91	70 - 135	30	
1,1-Dichloroethene	20.0	14.7	73.7	20.0	15.1	75.5	2.48	70 - 130	30	
1,1-Dichloropropene	20.0	17.7	88.5	20.0	17.7	88.6	0.147	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	19.3	96.3	20.0	20.2	101	4.71	55 - 140	30	
1,2,3-Trichloropropane	20.0	19.7	98.6	20.0	20.6	103	4.17	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	19.6	98.1	20.0	20.0	100	1.92	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	20.9	105	20.0	21.1	105	0.781	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	16.9	84.3	20.0	17.9	89.7	6.24	50 - 130	30	
1,2-Dibromoethane	20.0	20.2	101	20.0	21.0	105	3.45	80 - 120	30	
1,2-Dichlorobenzene	20.0	21.4	107	20.0	21.9	110	2.15	70 - 120	30	
1,2-Dichloroethane	20.0	18.1	90.5	20.0	18.2	91.0	0.529	70 - 130	30	
1,2-Dichloropropane	20.0	19.2	95.9	20.0	19.1	95.4	0.567	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	20.6	103	20.0	21.1	106	2.86	75 - 130	30	
1,3-Dichlorobenzene	20.0	21.1	106	20.0	21.5	108	1.81	75 - 125	30	
1,3-Dichloropropane	20.0	20.6	103	20.0	21.1	106	2.34	75 - 125	30	
1,4-Dichlorobenzene	20.0	21.0	105	20.0	21.4	107	2.09	75 - 125	30	
2,2-Dichloropropane	20.0	13.4	67.2	20.0	13.8	68.8	2.32	70 - 135	30	*
2-Butanone	20.0	16.7	83.3	20.0	16.6	82.8	0.606	30 - 150	30	
2-Chlorotoluene	20.0	21.7	108	20.0	21.9	110	1.13	75 - 125	30	
2-Hexanone	20.0	15.3	76.6	20.0	15.8	79.1	3.20	55 - 130	30	
4-Chlorotoluene	20.0	19.3	96.3	20.0	19.7	98.5	2.29	75 - 130	30	
4-Methyl-2-pentanone	20.0	17.3	86.3	20.0	17.5	87.5	1.40	60 - 135	30	
Acetone	20.0	17.2	86.0	20.0	18.0	90.1	4.67	40 - 140	30	
Benzene	20.0	18.6	93.1	20.0	18.6	92.9	0.128	80 - 120	30	
Bromobenzene	20.0	20.5	103	20.0	21.0	105	2.40	75 - 125	30	
Bromochloromethane	20.0	20.8	104	20.0	21.1	106	1.55	65 - 130	30	
Bromodichloromethane	20.0	19.4	97.2	20.0	19.6	97.9	0.802	75 - 120	30	
Bromoform	20.0	19.9	99.4	20.0	20.4	102	2.58	70 - 130	30	
Bromomethane	20.0	13.3	66.5	20.0	13.9	69.7	4.67	30 - 145	30	
Carbon disulfide	20.0	15.7	78.4	20.0	15.6	78.1	0.465	35 - 160	30	
Carbon tetrachloride	20.0	18.8	94.0	20.0	18.7	93.6	0.417	65 - 140	30	
Chlorobenzene	20.0	21.1	105	20.0	21.6	108	2.43	80 - 120	30	
Chloroethane	20.0	18.4	92.0	20.0	19.0	95.1	3.29	60 - 135	30	
Chloroform	20.0	18.3	91.3	20.0	18.4	92.2	0.999	65 - 135	30	
Chloromethane	20.0	12.0	60.1	20.0	12.6	63.0	4.69	40 - 125	30	
cis-1,2-Dichloroethene	20.0	19.3	96.5	20.0	19.4	97.2	0.806	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4845930
Report generated: 07/13/2016 08:36

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061290 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS11 Matrix: Water Method: 8260B
Workgroup (AAB#): WG575086 Units: ug/L
QC Key: DOD4 Lot #: STD76870

Sample ID: WG575086-02 LCS File ID: 11M13062 Run Date: 07/03/2016 00:45
Sample ID: WG575086-03 LCS2 File ID: 11M13063 Run Date: 07/03/2016 01:16

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	20.3	101	20.0	20.6	103	1.79	70 - 130	30	
Chlorodibromomethane	20.0	20.9	105	20.0	21.3	107	1.96	60 - 135	30	
Dibromomethane	20.0	19.0	95.1	20.0	18.5	92.4	2.87	75 - 125	30	
Dichlorodifluoromethane	20.0	10.2	51.2	20.0	10.3	51.5	0.607	30 - 155	30	
Ethylbenzene	20.0	20.0	100	20.0	20.9	104	4.09	75 - 125	30	
Hexachlorobutadiene	20.0	17.5	87.4	20.0	18.3	91.5	4.67	50 - 140	30	
Isopropylbenzene	20.0	20.9	104	20.0	21.3	107	2.25	75 - 125	30	
m-,p-Xylene	40.0	41.0	102	40.0	42.3	106	3.07	75 - 130	30	
Methylene chloride	20.0	18.3	91.4	20.0	18.4	92.1	0.771	55 - 140	30	
n-Butylbenzene	20.0	18.8	94.1	20.0	19.2	96.0	2.00	70 - 135	30	
n-Propylbenzene	20.0	21.0	105	20.0	21.4	107	1.94	70 - 130	30	
Naphthalene	20.0	17.5	87.7	20.0	18.2	91.1	3.78	55 - 140	30	
o-Xylene	20.0	20.6	103	20.0	21.4	107	3.56	80 - 120	30	
p-Isopropyltoluene	20.0	20.6	103	20.0	21.2	106	2.93	75 - 130	30	
sec-Butylbenzene	20.0	20.7	104	20.0	21.1	105	1.66	70 - 125	30	
Styrene	20.0	21.3	107	20.0	21.8	109	1.90	65 - 135	30	
tert-Butylbenzene	20.0	21.8	109	20.0	22.1	110	1.03	70 - 130	30	
Tetrachloroethene	20.0	19.7	98.5	20.0	20.7	104	5.00	45 - 150	30	
Toluene	20.0	19.9	99.3	20.0	20.4	102	2.64	75 - 120	30	
trans-1,2-Dichloroethene	20.0	17.7	88.3	20.0	18.0	90.0	1.89	60 - 140	30	
trans-1,3-Dichloropropene	20.0	18.3	91.3	20.0	18.6	93.1	1.94	55 - 140	30	
Trichloroethene	20.0	23.3	117	20.0	23.2	116	0.555	70 - 125	30	
Trichlorofluoromethane	20.0	17.5	87.4	20.0	16.8	83.8	4.30	60 - 145	30	
Vinyl chloride	20.0	17.1	85.4	20.0	17.0	84.9	0.534	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	88.6	86.9	70 - 120	PASS
Dibromofluoromethane	101	99.4	85 - 115	PASS
4-Bromofluorobenzene	90.7	91.6	75 - 120	PASS
Toluene-d8	99.5	101	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4845930
Report generated: 07/13/2016 08:36

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061290
Instrument: HPMS11
Analyst: JDS
Workgroup: WG568769

Tune ID: WG568769-01
Run Date: 05/13/2016
Run Time: 14:15
File ID: 11M11836
Cal ID: HPMS11 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	24.2	11638	PASS
75.0	95.0	30.0	60.0	50.2	24088	PASS
95.0	95.0	100	100	100	48016	PASS
96.0	95.0	5.00	9.00	6.26	3008	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	86.2	41402	PASS
175	174	5.00	9.00	8.26	3421	PASS
176	174	95.0	101	97.3	40288	PASS
177	176	5.00	9.00	6.92	2789	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG568769-02	STD	01	05/13/2016 14:40	
WG568769-03	STD	01	05/13/2016 15:12	
WG568769-04	STD	01	05/13/2016 15:43	
WG568769-05	STD	01	05/13/2016 16:15	
WG568769-06	STD	01	05/13/2016 16:47	
WG568769-07	STD	01	05/13/2016 17:19	
WG568769-08	STD-CCV	01	05/13/2016 17:51	
WG568769-09	STD	01	05/13/2016 18:22	
WG568769-10	STD	01	05/13/2016 18:54	
WG568769-11	STD	01	05/13/2016 19:26	
WG568769-12	SSCV	01	05/13/2016 20:30	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4845932
Report generated 07/13/2016 08:36

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061290
Instrument: HPMS11
Analyst: TMB
Workgroup: WG575085

Tune ID: WG575085-01
Run Date: 07/02/2016
Run Time: 13:39
File ID: 11M13041
Cal ID: HPMS11 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.2	6217	PASS
75.0	95.0	30.0	60.0	45.6	14733	PASS
95.0	95.0	100	100	100	32333	PASS
96.0	95.0	5.00	9.00	6.77	2189	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	92.7	29965	PASS
175	174	5.00	9.00	7.79	2333	PASS
176	174	95.0	101	97.7	29286	PASS
177	176	5.00	9.00	5.93	1736	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG575085-02	CCV	01	07/02/2016 14:39	
WG575086-01	BLANK	01	07/02/2016 15:43	
L16061290-07	TRIP BLANK	01	07/02/2016 16:15	
L16061290-06	18CPTMW07-062216	01	07/02/2016 18:22	
L16061290-05	109-062216	DL01	07/02/2016 23:09	
L16061290-02	MW16-062116	DL01	07/02/2016 23:41	
WG575086-02	LCS	01	07/03/2016 00:45	
WG575086-03	LCS2	01	07/03/2016 01:16	
WG575086-04	BLANK2	01	07/03/2016 02:20	*

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4845932
Report generated 07/13/2016 08:36

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061290
Instrument: HPMS11
Analyst: JDS
Workgroup: WG575198

Tune ID: WG575198-01
Run Date: 07/05/2016
Run Time: 17:13
File ID: 11M13076
Cal ID: HPMS11 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.4	8258	PASS
75.0	95.0	30.0	60.0	46.8	19945	PASS
95.0	95.0	100	100	100	42653	PASS
96.0	95.0	5.00	9.00	6.71	2862	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	94.0	40085	PASS
175	174	5.00	9.00	7.72	3095	PASS
176	174	95.0	101	96.5	38688	PASS
177	176	5.00	9.00	7.06	2730	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG575198-02	CCV	01	07/05/2016 18:11	
WG575199-01	BLANK	01	07/05/2016 19:15	
WG575199-02	LCS	01	07/05/2016 19:47	
WG575199-03	LCS2	01	07/05/2016 20:19	
L16061290-04	125-062216	01	07/06/2016 00:34	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4845932
Report generated 07/13/2016 08:36

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061290
Instrument: HPMS6
Analyst: JDS
Workgroup: WG566155

Tune ID: WG566155-01
Run Date: 04/24/2016
Run Time: 16:33
File ID: 6M138750
Cal ID: HPMS6 - 24-APR-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.5	10010	PASS
75.0	95.0	30.0	60.0	52.0	23152	PASS
95.0	95.0	100	100	100	44552	PASS
96.0	95.0	5.00	9.00	6.92	3085	PASS
173	174	0	2.00	0.346	113	PASS
174	95.0	50.0	100	73.2	32632	PASS
175	174	5.00	9.00	7.16	2336	PASS
176	174	95.0	101	99.2	32384	PASS
177	176	5.00	9.00	6.95	2251	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG566155-02	STD	01	04/24/2016 16:59	
WG566155-03	STD	01	04/24/2016 17:31	
WG566155-04	STD	01	04/24/2016 18:03	
WG566155-05	STD-CCV	01	04/24/2016 18:36	
WG566155-06	STD	01	04/24/2016 19:08	
WG566155-07	STD	01	04/24/2016 19:40	
WG566155-08	STD	01	04/24/2016 20:12	
WG566155-09	STD	01	04/24/2016 20:44	
WG566155-10	SSCV	01	04/24/2016 22:21	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4845932
Report generated 07/13/2016 08:36

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061290
Instrument: HPMS6
Analyst: TMB
Workgroup: WG574723

Tune ID: WG574723-01
Run Date: 06/30/2016
Run Time: 11:36
File ID: 6M140313
Cal ID: HPMS6 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.0	8707	PASS
75.0	95.0	30.0	60.0	49.7	19699	PASS
95.0	95.0	100	100	100	39664	PASS
96.0	95.0	5.00	9.00	6.69	2652	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	73.8	29282	PASS
175	174	5.00	9.00	7.28	2131	PASS
176	174	95.0	101	99.6	29157	PASS
177	176	5.00	9.00	6.75	1969	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG574723-02	STD	01	06/30/2016 12:03	
WG574723-03	STD	01	06/30/2016 12:35	
WG574723-04	STD	01	06/30/2016 13:08	
WG574723-05	STD	01	06/30/2016 13:40	
WG574723-06	STD	01	06/30/2016 14:12	
WG574723-07	STD	01	06/30/2016 14:44	
WG574723-08	STD-CCV	01	06/30/2016 15:16	
WG574723-09	STD	01	06/30/2016 15:48	
WG574723-10	STD	01	06/30/2016 16:21	
WG574723-11	STD	01	06/30/2016 16:53	
WG574723-12	SSCV	01	06/30/2016 18:31	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4845932
Report generated 07/13/2016 08:36

Calibration Table Report
Method: 8260WT.M
Title: 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Calibration: Sat May 14 18:45:57 2016
Curve: WG568769
Calibration Files

	Compound	0.3	0.4	1	2	5	20	50	100	200	300	Avg	%RSD	Linear	Quadratic
		11M11837.D	11M11838.D	11M11839.D	11M11840.D	11M11841.D	11M11842.D	11M11843.D	11M11844.D	11M11845.D	11M11846.D				
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.345	0.368	0.326	0.431	0.400	0.424	0.417	0.424	0.392	10.308		
P	Chloromethane			0.348	0.363	0.289	0.310	0.276	0.296	0.305	0.324	0.314	9.474		
C	Vinyl Chloride		0.275	0.241	0.249	0.244	0.268	0.250	0.271	0.271	0.276	0.261	5.458		
T	1,3-Butadiene					0.242	0.284	0.269	0.264	0.256	0.240	0.259	6.530		
T	Bromomethane			0.167	0.174	0.164	0.180	0.165	0.182	0.194	0.206	0.179	8.292		
T	Chloroethane			0.164	0.165	0.151	0.174	0.161	0.171	0.173	0.181	0.167	5.524		
T	Trichlorofluoromethane		0.514	0.523	0.537	0.496	0.552	0.498	0.524	0.514	0.514	0.519	3.376		
T	Diethyl ether			0.189	0.191	0.195	0.196	0.188	0.193		0.192	0.192	1.552		
T	Isoprene					0.299	0.331	0.317	0.323	0.325	0.325	0.320	3.522		
T	Acrolein			0.013	0.022	0.024	0.024	0.024	0.025		0.027	0.023	19.436	0.999	
T	1,1,2-Trichloro-1,2,2-Trifluor			0.261	0.245	0.234	0.268	0.245	0.252	0.254	0.257	0.252	4.225		
T	Acetone					0.063	0.067	0.058	0.057	0.057	0.054	0.059	7.931		
C	1,1-Dichloroethene		0.459	0.452	0.460	0.429	0.492	0.441	0.464	0.461	0.461	0.458	3.810		
T	Tert-Butyl Alcohol			0.014	0.015	0.017	0.018	0.017	0.017		0.017	0.016	9.673		
T	Dimethyl Sulfide					0.169	0.185	0.186	0.185	0.188	0.184	0.183	3.765		
T	Iodomethane				0.043	0.072	0.164	0.206	0.217	0.219	0.208	0.162	45.603		0.999
T	Methyl acetate				0.182	0.317	0.215	0.178	0.176	0.169	0.168	0.201	26.745		1.000
T	Methylene Chloride			0.239	0.256	0.230	0.243	0.224	0.232	0.234	0.238	0.237	4.076		
T	Carbon Disulfide			0.737	0.762	0.714	0.798	0.783	0.783	0.782	0.770	0.766	3.624		
T	Acrylonitrile			0.072	0.069	0.075	0.085	0.081	0.085		0.090	0.080	9.576		
T	Methyl Tert Butyl Ether			0.568	0.546	0.564	0.650	0.585	0.606	0.612	0.595	0.591	5.543		
T	trans-1,2-Dichloroethene		0.288	0.230	0.264	0.229	0.263	0.242	0.251	0.254	0.260	0.253	7.263		
T	n-Hexane				0.424	0.377	0.450	0.431	0.426	0.424	0.422	0.422	5.186		
T	Diisopropyl ether			1.034	1.075	1.083	1.055	1.046	1.062		1.015	1.053	2.218		
T	Vinyl Acetate					0.235	0.391	0.393	0.395	0.430	0.431	0.379	19.260	0.999	
P	1,1-Dichloroethane		0.463	0.517	0.527	0.505	0.535	0.495	0.513	0.511	0.508	0.508	4.023		
T	Ethyl-Tert-Butyl ether			0.815	0.854	0.881	0.876	0.855	0.873		0.844	0.857	2.667		
T	2-Butanone					0.079	0.097	0.087	0.092	0.092	0.091	0.090	6.720		
T	Propionitrile			0.023	0.025	0.026	0.029	0.027	0.027		0.027	0.026	7.381		
T	2,2-Dichloropropane		0.325	0.372	0.435	0.395	0.406	0.386	0.422	0.418	0.419	0.398	8.479		
T	cis-1,2-Dichloroethene		0.276	0.266	0.289	0.269	0.294	0.271	0.280	0.284	0.285	0.279	3.456		
C	Chloroform	0.587	0.483	0.491	0.514	0.480	0.509	0.470	0.486	0.489	0.482	0.499	6.767		
T	1-Bromopropane			0.014	0.041	0.045	0.047	0.048	0.049	0.050	0.050	0.043	28.190	1.000	
T	Bromochloromethane		0.115	0.140	0.169	0.167	0.188	0.172	0.179	0.180	0.181	0.166	14.065		
T	Tetrahydrofuran			0.074	0.061	0.058	0.067	0.061	0.062		0.059	0.063	8.769		
S	Dibromofluoromethane				0.251	0.266	0.284	0.268	0.284	0.285	0.278	0.274	4.605		
T	1,1,1-Trichloroethane		0.475	0.478	0.508	0.471	0.515	0.477	0.502	0.499	0.495	0.491	3.293		
T	Cyclohexane		0.477	0.485	0.547	0.509	0.574	0.551	0.560	0.558	0.556	0.535	6.606		
T	1,1-Dichloropropene		0.342	0.350	0.346	0.332	0.370	0.339	0.358	0.359	0.362	0.351	3.562		
T	Carbon Tetrachloride		0.409	0.457	0.522	0.465	0.518	0.473	0.496	0.492	0.486	0.480	7.177		
T	Tert-Amyl-Methyl ether			0.565	0.596	0.603	0.611	0.588	0.605		0.6	0.59537	2.5818		
S	1,2-Dichloroethane-d4			0.315	0.304	0.32	0.326	0.303	0.319	0.31	0.298	0.31197	3.15125		
T	1,2-Dichloroethane		0.388	0.391	0.419	0.395	0.441	0.402	0.413	0.409	0.391	0.40536	4.2274		
T	Benzene		1.058	0.952	1.016	0.923	0.996	0.908	0.943	0.931	0.914	0.96002	5.38884		
T	Trichloroethene		0.308	0.317	0.329	0.306	0.322	0.294	0.313	0.309	0.311	0.31204	3.21019		
T	Methylcyclohexane		0.332	0.37	0.389	0.35	0.411	0.401	0.4	0.405	0.407	0.3851	7.28708		
C	1,2-Dichloropropane		0.259	0.262	0.273	0.254	0.276	0.257	0.268	0.27	0.273	0.26575	2.95636		
T	1,4-Dioxane				0.001	0.001	0.002	0.001	0.002		0.002	0.0014	19.4617	0.999	
T	Bromodichloromethane		0.346	0.346	0.373	0.362	0.4	0.369	0.387	0.389	0.385	0.37307	5.09783		
T	Dibromomethane		0.118	0.136	0.135	0.137	0.149	0.137	0.146	0.145	0.144	0.13848	6.69192		
T	2-Chloroethyl Vinyl Ether					0.112	0.138	0.128	0.136	0.138	0.135	0.13098	7.7176		
T	4-Methyl-2-Pentanone					0.06	0.08	0.073	0.076	0.077	0.077	0.07387	9.67651		
T	cis-1,3-Dichloropropene		0.326	0.338	0.358	0.357	0.406	0.379	0.395	0.401	0.399	0.37315	7.91395		
T	Dimethyl Disulfide					0.185	0.229	0.227	0.233	0.238	0.235	0.22454	8.74309		

I	Chlorobenzene-d5	ISTD												
S	Toluene-d8				1.101	1.093	1.115	1.056	1.103	1.092	1.044	1.08625	2.42896	
C	Toluene		1.309	1.253	1.287	1.269	1.347	1.249	1.287	1.241	1.149	1.2656	4.33323	
T	Ethyl Methacrylate			0.234	0.233	0.25	0.299	0.285	0.289	0.291	0.281	0.27024	9.93745	
T	trans-1,3-Dichloropropene			0.335	0.388	0.387	0.448	0.418	0.432	0.43	0.412	0.40623	8.82781	
T	1,1,2-Trichloroethane		0.222	0.201	0.243	0.21	0.246	0.221	0.228	0.227	0.221	0.22442	6.30977	
T	2-Hexanone					0.137	0.179	0.165	0.172	0.172	0.165	0.16482	8.91224	
T	1,3-Dichloropropane		0.337	0.338	0.351	0.355	0.396	0.361	0.374	0.373	0.358	0.36039	5.16222	
T	Tetrachloroethene		0.274	0.287	0.317	0.286	0.306	0.286	0.3	0.299	0.294	0.29431	4.41886	
T	Dibromochloromethane		0.283	0.297	0.336	0.33	0.378	0.354	0.372	0.372	0.359	0.3423	9.88235	
T	1,2-Dibromoethane		0.232	0.182	0.228	0.214	0.243	0.224	0.233	0.235	0.232	0.22485	7.92714	
T	1-Chlorohexane		0.37	0.399	0.414	0.391	0.442	0.429	0.44	0.438	0.432	0.41726	6.09034	
P	Chlorobenzene		0.927	0.917	0.998	0.932	0.976	0.909	0.93	0.902	0.853	0.92715	4.48215	
T	1,1,1,2-Tetrachloroethane		0.341	0.361	0.405	0.366	0.388	0.371	0.384	0.385	0.376	0.37515	4.87731	
C	Ethylbenzene		0.453	0.457	0.512	0.463	0.495	0.466	0.482	0.479	0.472	0.47542	3.94078	
T	m-,p-Xylene		0.619	0.583	0.605	0.564	0.604	0.568	0.579	0.559	0.522	0.57798	5.08853	
T	o-Xylene		0.539	0.549	0.574	0.539	0.6	0.561	0.574	0.57	0.557	0.56249	3.43829	
T	Styrene		0.865	0.848	0.897	0.918	1.018	0.955	0.985	0.959	0.917	0.92933	5.96246	
P	Bromoform			0.172	0.189	0.185	0.226	0.21	0.225	0.226	0.228	0.20747	10.9157	
T	Isopropylbenzene		1.515	1.456	1.567	1.46	1.592	1.493	1.534	1.449	1.323	1.48754	5.34769	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.288	0.357	0.369	0.371	0.441	0.396	0.412	0.428	0.442	0.38931	12.6902	
S	p-Bromofluorobenzene				0.772	0.784	0.794	0.716	0.767	0.789	0.773	0.77065	3.38935	
T	1,2,3-Trichloropropane			0.087	0.129	0.138	0.151	0.137	0.142	0.148	0.148	0.13515	15.3522	0.999
T	trans-1,4-Dichloro-2-Butene			0.105	0.117	0.124	0.177	0.178	0.184	0.192	0.193	0.15883	23.0996	0.999
T	n-Propylbenzene		2.87	2.8	3.077	2.949	3.134	2.886	2.979	2.836	2.526	2.89527	6.10377	
T	Bromobenzene	0.663	0.778	0.81	0.798	0.765	0.784	0.718	0.752	0.769	0.76	0.75973	5.57443	
T	1,3,5-Trimethylbenzene		2.338	2.056	2.263	2.172	2.357	2.166	2.252	2.223	2.059	2.20939	4.86261	
T	2-Chlorotoluene		2.158	2.096	2.122	2.033	2.128	1.936	2.002	1.954	1.82	2.0279	5.4704	
T	4-Chlorotoluene		1.782	1.755	1.937	1.808	1.916	1.763	1.832	1.838	1.717	1.8165	4.03452	
T	a-Methylstyrene			1	1.066	1.101	1.241	1.231	1.235	1.242	1.208	1.16555	8.18507	
T	tert-Butylbenzene		0.378	0.44	0.48	0.489	0.498	0.458	0.483	0.49	0.497	0.46809	8.31778	
T	1,2,4-Trimethylbenzene		2.159	2.195	2.274	2.295	2.472	2.234	2.309	2.244	2.067	2.24981	4.97706	
T	sec-Butylbenzene			2.593	2.734	2.647	2.87	2.634	2.723	2.617	2.404	2.65291	5.05975	
T	p-Isopropyltoluene			2.247	2.592	2.45	2.641	2.43	2.506	2.404	2.226	2.43674	6.05243	
T	1,3-Dichlorobenzene		1.487	1.488	1.538	1.46	1.53	1.398	1.451	1.446	1.406	1.46732	3.33475	
T	1,4-Dichlorobenzene	1.482	1.601	1.511	1.569	1.484	1.538	1.404	1.456	1.434	1.395	1.4873	4.59741	
T	n-Butylbenzene		2.048	2.099	2.295	2.049	2.32	2.134	2.224	2.136	2.021	2.14721	5.09289	
T	1,2-Dichlorobenzene	1.33	1.26	1.333	1.432	1.33	1.406	1.296	1.343	1.326	1.31	1.33665	3.71841	
T	1,2-Dibromo-3-Chloropropane				0.057	0.079	0.096	0.081	0.086	0.087	0.091	0.08248	15.3444	0.999
T	1,2,4-Trichlorobenzene		0.927	0.903	0.957	0.956	1.042	0.972	0.998	1.002	1.047	0.97808	4.96993	
T	Hexachlorobutadiene		0.393	0.381	0.451	0.418	0.447	0.415	0.441	0.442	0.49	0.43089	7.64497	
T	Naphthalene		1.885	1.633	1.765	1.712	2.026	1.824	1.878	1.821	1.794	1.81543	6.15168	
T	1,2,3-Trichlorobenzene	0.854	0.957	0.865	0.918	0.834	0.946	0.86	0.889	0.912	0.943	0.89764	4.8559	

Tue May 17 13:57:02 2016

Calibration Table Report
Method: A9FOOWT.M
Title: A9-FOO Water - IC: 042416 - HPMS6
Last Calibration: Wed Apr 27 16:03:33 2016
Curve: WG566155
Calibration Files

	Compound	5 6M138751.D	20 6M138752.D	50 6M138753.D	100 6M138754.D	200 6M138755.D	300 6M138756.D	400 6M138757.D	500 6M138758.D	Avg	%RSD
I	Fluorobenzene	ISTD									
T	Acetonitrile	0.036	0.037	0.039	0.038	0.038	0.038	0.038	0.036	0.037	2.606
T	3-Chloro-1-propene	0.567	0.621	0.656	0.672	0.635	0.622	0.617	0.603	0.624	5.157
T	2-Chloro-1,3-butadiene	0.415	0.507	0.558	0.590	0.558	0.553	0.556	0.548	0.535	10.001
T	Ethyl Acetate	0.229	0.259	0.279	0.281	0.277	0.272	0.279	0.268	0.268	6.419
T	Methacrylonitrile	0.071	0.089	0.099	0.099	0.097	0.095	0.096	0.093	0.092	9.852
T	Isobutyl Alcohol		0.008	0.008	0.007	0.007	0.008	0.010	0.010	0.009	13.654
T	1-Butanol									0.000	0.000
T	Methyl methacrylate	0.159	0.200	0.231	0.244	0.244	0.241	0.246	0.236	0.225	13.591
T	2-Nitropropane			0.079	0.082	0.085	0.085	0.088	0.084	0.084	3.643
I	Chlorobenzene-d5	ISTD									
I	1,4-Dichlorobenzene-d4	ISTD									
T	Cyclohexanone			0.026	0.027	0.032	0.034	0.035	0.033	0.031	12.127

Wed Apr 27 16:05:59 2016

Calibration Table Report
Method: 8260WTR.M
Title: 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Calibration: Fri Jul 01 09:28:30 2016
Curve: WG574723
Calibration Files

	Compound	0.3 6M140314.D	0.4 6M140315.D	1 6M140316.D	2 6M140317.D	5 6M140318.D	20 6M140319.D	50 6M140320.D	100 6M140321.D	200 6M140322.D	300 6M140323.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.401	0.398	0.362	0.449	0.438	0.462	0.444	0.391	0.418	8.327		
P	Chloromethane			0.564	0.519	0.446	0.512	0.463	0.436	0.411	0.381	0.467	13.089		
C	Vinyl Chloride		0.237	0.280	0.277	0.251	0.252	0.260	0.267	0.257	0.225	0.256	6.911		
T	1,3-Butadiene					0.175	0.204	0.154	0.154	0.147	0.132	0.161	15.792	0.991	
T	Bromomethane			0.179	0.184	0.166	0.178	0.161	0.164	0.170	0.160	0.170	5.344		
T	Chloroethane			0.158	0.158	0.155	0.170	0.162	0.163	0.168	0.162	0.162	3.146		
T	Trichlorofluoromethane		0.448	0.383	0.389	0.372	0.394	0.373	0.402	0.383	0.374	0.391	6.074		
T	Diethyl ether			0.240	0.244	0.238	0.231	0.237	0.234		0.190	0.231	7.911		
T	Isoprene					0.332	0.374	0.357	0.358	0.361	0.310	0.349	6.639		
T	Acrolein				0.039	0.038	0.038	0.038	0.039		0.039	0.038	1.589		
T	1,1,2-Trichloro-1,2,2-Trifluoroet			0.245	0.246	0.231	0.246	0.239	0.249	0.248	0.242	0.243	2.486		
T	Acetone					0.086	0.083	0.080	0.078	0.078	0.075	0.080	4.861		
C	1,1-Dichloroethene		0.475	0.488	0.483	0.447	0.475	0.469	0.477	0.473	0.459	0.472	2.614		
T	Tert-Butyl Alcohol			0.023	0.024	0.024	0.024	0.024	0.026		0.028	0.024	7.165		
T	Dimethyl Sulfide					0.197	0.217	0.208	0.206	0.206	0.201	0.206	3.230		
T	Iodomethane			0.076	0.076	0.099	0.149	0.180	0.188	0.180	0.164	0.139	34.268	0.996	
T	Methyl acetate					0.218	0.224	0.214	0.217	0.211	0.216	0.217	2.077		
T	Methylene Chloride			0.310	0.299	0.265	0.271	0.261	0.263	0.254	0.240	0.271	8.561		
T	Carbon Disulfide			0.926	0.900	0.839	0.925	0.868	0.856	0.834	0.768	0.864	6.148		
T	Acrylonitrile			0.090	0.096	0.098	0.098	0.102	0.104		0.108	0.099	5.795		
T	Methyl Tert Butyl Ether			0.716	0.725	0.704	0.737	0.716	0.729	0.714	0.694	0.717	1.916		
T	trans-1,2-Dichloroethene		0.263	0.254	0.262	0.245	0.253	0.250	0.255	0.251	0.241	0.253	2.748		
T	n-Hexane					0.432	0.456	0.424	0.426	0.424	0.412	0.429	3.449		
T	Diisopropyl ether			1.208	1.209	1.172	1.157	1.153	1.123		1.058	1.154	4.538		
T	Vinyl Acetate					0.458	0.448	0.486	0.493	0.523	0.482	0.482	5.502		
P	1,1-Dichloroethane		0.561	0.556	0.569	0.531	0.553	0.540	0.544	0.533	0.509	0.544	3.330		
T	Ethyl-Tert-Butyl ether			0.953	0.955	0.939	0.931	0.928	0.916		0.878	0.929	2.832		
T	2-Butanone					0.118	0.124	0.125	0.127	0.123	0.118	0.123	3.167		
T	Propionitrile			0.032	0.033	0.033	0.033	0.034	0.035		0.032	0.033	3.279		
T	2,2-Dichloropropane		0.396	0.421	0.439	0.414	0.411	0.401	0.411	0.407	0.393	0.410	3.381		
T	cis-1,2-Dichloroethene		0.295	0.285	0.269	0.267	0.280	0.277	0.280	0.274	0.262	0.277	3.558		
C	Chloroform	0.615	0.457	0.478	0.484	0.466	0.487	0.476	0.482	0.474	0.454	0.487	9.510		
T	1-Bromopropane			0.024	0.033	0.038	0.044	0.045	0.044	0.045	0.043	0.039	19.340	1.000	
T	Bromochloromethane		0.141	0.141	0.148	0.149	0.155	0.153	0.155	0.152	0.145	0.149	3.658		
T	Tetrahydrofuran			0.104	0.087	0.084	0.081	0.081	0.083		0.078	0.086	9.999		
S	Dibromofluoromethane				0.254	0.258	0.262	0.257	0.250	0.249	0.245	0.254	2.416		
T	1,1,1-Trichloroethane		0.395	0.436	0.430	0.412	0.430	0.430	0.438	0.432	0.414	0.424	3.334		
T	Cyclohexane			0.589	0.567	0.521	0.577	0.543	0.550	0.543	0.524	0.552	4.390		
T	1,1-Dichloropropene			0.377	0.376	0.356	0.370	0.367	0.375	0.373	0.362	0.370	2.060		
T	Tert-Amyl-Methyl ether			0.710	0.726	0.713	0.703	0.708	0.705		0.671	0.705	2.388		
T	Carbon Tetrachloride		0.271	0.305	0.33	0.33	0.37	0.377	0.39	0.391	0.371	0.3484	11.955		
S	1,2-Dichloroethane-d4				0.33	0.331	0.333	0.318	0.316	0.31	0.304	0.3202	3.5321		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.391	0.394	0.406	0.375	0.399	0.393	0.397	0.39	0.373	0.3907	2.7505		
T	Benzene		1.155	1.094	1.109	1.038	1.052	1.035	1.03	0.983	0.89	1.043	7.3599		
T	Trichloroethene		0.277	0.267	0.265	0.253	0.263	0.256	0.255	0.246	0.234	0.2574	4.9066		
T	Methylcyclohexane					0.396	0.428	0.4	0.409	0.404	0.387	0.404	3.4238		
C	1,2-Dichloropropane		0.311	0.293	0.305	0.293	0.306	0.302	0.305	0.3	0.288	0.3004	2.5217		
T	1,4-Dioxane					0.002	0.002	0.002	0.002		0.002	0.002	6.9968		
T	Bromodichloromethane		0.323	0.353	0.365	0.351	0.371	0.375	0.386	0.378	0.359	0.3624	5.1801		
T	Dibromomethane		0.125	0.137	0.148	0.143	0.153	0.151	0.156	0.151	0.145	0.1453	6.6336		
T	2-Chloroethyl Vinyl Ether				0.138	0.135	0.158	0.161	0.16	0.155	0.146	0.1506	7.0765		
T	4-Methyl-2-Pentanone					0.085	0.094	0.095	0.098	0.096	0.089	0.0927	5.3799		
T	cis-1,3-Dichloropropene		0.415	0.394	0.426	0.409	0.431	0.433	0.443	0.433	0.404	0.4208	3.888		
T	Dimethyl Disulfide					0.199	0.239	0.242	0.246	0.245	0.233	0.2342	7.589		
I	Chlorobenzene-d5	ISTD													
S	Toluene-d8				1.304	1.297	1.272	1.226	1.166	1.162	1.19	1.2311	4.9151		
C	Toluene		1.699	1.583	1.601	1.454	1.503	1.467	1.44	1.369	1.294	1.49	8.2924		
T	Ethyl Methacrylate			0.37	0.406	0.396	0.455	0.443	0.443	0.439	0.44	0.4239	6.9571		
T	Paraldehyde											0	0		
T	trans-1,3-Dichloropropene			0.49	0.514	0.506	0.547	0.548	0.551	0.543	0.539	0.5298	4.3368		
T	1,1,2-Trichloroethane		0.262	0.278	0.282	0.27	0.285	0.28	0.281	0.274	0.269	0.2757	2.687		
T	2-Hexanone					0.237	0.266	0.269	0.271	0.267	0.261	0.2618	4.9035		
T	1,3-Dichloropropane		0.55	0.526	0.539	0.51	0.52	0.519	0.517	0.503	0.493	0.5197	3.397		
T	Tetrachloroethene		0.362	0.364	0.373	0.351	0.354	0.353	0.352	0.344	0.343	0.3551	2.7537		
T	Dibromochloromethane		0.278	0.3	0.318	0.322	0.353	0.36	0.37	0.36	0.352	0.3348	9.4942		
T	1,2-Dibromoethane		0.238	0.259	0.265	0.259	0.277	0.274	0.281	0.274	0.268	0.2662	4.8464		
T	1-Chlorohexane		0.507	0.497	0.506	0.475	0.52	0.501	0.495	0.488	0.474	0.4959	3.0436		
P	Chlorobenzene		1.087	1.01	1.026	0.933	0.963	0.947	0.932	0.878	0.824	0.9556	8.2302		
T	1,1,1,2-Tetrachloroethane		0.327	0.335	0.343	0.328	0.352	0.354	0.356	0.342	0.323	0.34	3.6316		
C	Ethylbenzene		0.509	0.503	0.522	0.5	0.517	0.508	0.509	0.481	0.452	0.5002	4.2933		
T	m-,p-Xylene		0.651	0.636	0.652	0.606	0.626	0.612	0.603	0.553	0.501	0.6045	8.1404		
T	o-Xylene			0.61	0.633	0.59	0.625	0.619	0.618	0.585	0.544	0.6029	4.778		
T	Styrene		0.992	0.978	1.025	0.988	1.072	1.065	1.072	1.013	0.924	1.0143	4.9363		
P	Bromoform			0.172	0.184	0.183	0.215	0.22	0.234	0.231	0.222	0.2076	11.743		
T	Isopropylbenzene		1.684	1.642	1.648	1.582	1.619	1.599	1.602	1.477	1.304	1.5731	7.3897		
I	1,4-Dichlorobenzene-d4	ISTD													
P	1,1,2,2-Tetrachloroethane		0.542	0.561	0.589	0.589	0.619	0.616	0.651	0.654	0.639	0.6067	6.4625		
S	p-Bromofluorobenzene				1.007	1.02	1.012	0.972	0.933	0.96	0.949	0.9791	3.484		

T	1,2,3-Trichloropropane		0.131	0.176	0.189	0.19	0.187	0.19	0.191	0.185	0.1799	11.385
T	trans-1,4-Dichloro-2-Butene		0.158	0.209	0.218	0.244	0.244	0.253	0.256	0.254	0.2294	14.64
T	n-Propylbenzene	4.147	3.945	3.827	3.612	3.693	3.558	3.522	3.223	2.802	3.5921	11.066
T	Bromobenzene	0.822	0.753	0.776	0.753	0.761	0.736	0.737	0.723	0.695	0.7506	4.7215
T	1,3,5-Trimethylbenzene	2.687	2.633	2.638	2.51	2.587	2.52	2.523	2.394	2.166	2.5177	6.2882
T	2-Chlorotoluene	2.919	2.675	2.482	2.32	2.324	2.405	2.382	2.249	2.107	2.4293	9.9295
T	4-Chlorotoluene	2.561	2.355	2.535	2.399	2.452	2.211	2.223	2.179	1.93	2.316	8.6649
T	a-Methylstyrene				1.171	1.369	1.303	1.3	1.265	1.19	1.2663	5.9075
T	tert-Butylbenzene		0.522	0.53	0.496	0.527	0.502	0.507	0.492	0.47	0.5058	3.9858
T	1,2,4-Trimethylbenzene		2.731	2.759	2.607	2.688	2.607	2.616	2.454	2.207	2.5836	6.9171
T	sec-Butylbenzene		3.3	3.29	3.02	3.128	3.02	3.014	2.818	2.521	3.0139	8.4375
T	p-Isopropyltoluene		2.762	2.734	2.57	2.677	2.59	2.601	2.425	2.188	2.5685	7.2625
T	1,3-Dichlorobenzene	1.666	1.555	1.538	1.459	1.494	1.448	1.455	1.387	1.293	1.4773	7.1422
T	1,4-Dichlorobenzene	1.73	1.6	1.574	1.462	1.495	1.451	1.46	1.383	1.287	1.4936	8.6114
T	n-Butylbenzene		2.725	2.645	2.516	2.61	2.545	2.566	2.387	2.156	2.5188	7.0194
T	1,2-Dichlorobenzene	1.544	1.461	1.436	1.375	1.404	1.371	1.382	1.297	1.212	1.387	6.8449
T	1,2-Dibromo-3-Chloropropane			0.093	0.097	0.122	0.122	0.134	0.134	0.13	0.1188	14.398
T	1,2,4-Trichlorobenzene	1.156	0.963	0.98	0.936	0.999	0.975	0.988	0.944	0.882	0.9804	7.5963
T	Hexachlorobutadiene	0.47	0.405	0.413	0.39	0.407	0.402	0.408	0.395	0.377	0.4076	6.3393
T	Naphthalene	1.978	1.873	1.94	1.955	2.174	2.126	2.159	2.015	1.813	2.0036	6.3217
T	1,2,3-Trichlorobenzene	0.987	0.959	0.905	0.88	0.936	0.904	0.915	0.87	0.813	0.9078	5.6179

Fri Jul 01 14:48:52 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061290 Run Date: 05/13/2016 Sample ID: WG568769-12
Instrument ID: HPMS11 Run Time: 20:30 Method: 8260B
File ID: 11M11848 Analyst: JDS QC Key: DOD4
ICal Workgroup: WG568769 Cal ID: HPMS11 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.6	ug/L	0.475	4.80	20	
1,1-Dichloroethene	CCC	50.0	47.5	ug/L	0.435	4.90	20	
1,2-Dichloropropane	CCC	50.0	52.8	ug/L	0.281	5.60	20	
Ethylbenzene	CCC	50.0	52.4	ug/L	0.498	4.80	20	
Toluene	CCC	50.0	53.8	ug/L	1.36	7.50	20	
Vinyl Chloride	CCC	50.0	56.1	ug/L	0.292	12.2	20	
Bromoform	SPCC	50.0	49.8	ug/L	0.207	0.300	20	
Chlorobenzene	SPCC	50.0	53.3	ug/L	0.988	6.60	20	
Chloromethane	SPCC	50.0	55.1	ug/L	0.346	10.2	20	
1,1-Dichloroethane	SPCC	50.0	48.5	ug/L	0.493	3.00	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	54.9	ug/L	0.428	9.90	20	
Acetone		50.0	49.7	ug/L	0.0590	0.700	20	
Benzene		50.0	51.2	ug/L	0.983	2.40	20	
Bromobenzene		50.0	51.6	ug/L	0.785	3.30	20	
Bromochloromethane		50.0	53.9	ug/L	0.179	7.80	20	
Bromodichloromethane		50.0	49.5	ug/L	0.370	0.900	20	
Bromomethane		50.0	50.5	ug/L	0.181	1.00	20	
2-Butanone		50.0	50.3	ug/L	0.0904	0.700	20	
n-Butylbenzene		50.0	53.9	ug/L	2.31	7.80	20	
sec-Butylbenzene		50.0	55.9	ug/L	2.97	11.8	20	
tert-Butylbenzene		50.0	56.5	ug/L	0.529	13.1	20	
Carbon Disulfide		50.0	44.7	ug/L	0.685	10.6	20	
Carbon Tetrachloride		50.0	47.3	ug/L	0.454	5.30	20	
Dibromochloromethane		50.0	52.5	ug/L	0.360	5.10	20	
Chloroethane		50.0	58.9	ug/L	0.197	17.7	20	
2-Chlorotoluene		50.0	52.8	ug/L	2.14	5.50	20	
4-Chlorotoluene		50.0	55.4	ug/L	2.01	10.8	20	
1,2-Dibromo-3-Chloropropane		50.0	48.1	ug/L	0.0844	3.80	20	
1,2-Dibromoethane		50.0	52.6	ug/L	0.237	5.30	20	
Dibromomethane		50.0	48.0	ug/L	0.133	3.90	20	
1,2-Dichlorobenzene		50.0	53.6	ug/L	1.43	7.20	20	
1,3-Dichlorobenzene		50.0	52.7	ug/L	1.55	5.40	20	
1,4-Dichlorobenzene		50.0	53.0	ug/L	1.58	6.10	20	
Dichlorodifluoromethane		50.0	56.6	ug/L	0.443	13.2	20	
1,2-Dichloroethane		50.0	47.9	ug/L	0.388	4.20	20	
cis-1,2-Dichloroethene		50.0	53.2	ug/L	0.297	6.30	20	
trans-1,2-Dichloroethene		50.0	52.1	ug/L	0.264	4.30	20	
1,3-Dichloropropane		50.0	56.3	ug/L	0.406	12.6	20	
2,2-Dichloropropane		50.0	45.6	ug/L	0.362	8.90	20	
cis-1,3-Dichloropropene		50.0	57.6	ug/L	0.430	15.2	20	
trans-1,3-Dichloropropene		50.0	52.1	ug/L	0.423	4.20	20	
1,1-Dichloropropene		50.0	50.1	ug/L	0.352	0.200	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4845931
Report generated 07/13/2016 08:36

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061290 Run Date: 05/13/2016 Sample ID: WG568769-12
Instrument ID: HPMS11 Run Time: 20:30 Method: 8260B
File ID: 11M11848 Analyst: JDS QC Key: DOD4
ICal Workgroup: WG568769 Cal ID: HPMS11 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	52.2	ug/L	0.172	4.40	20	
Hexachlorobutadiene		50.0	55.9	ug/L	0.482	11.8	20	
Isopropylbenzene		50.0	54.2	ug/L	1.61	8.50	20	
p-Isopropyltoluene		50.0	54.7	ug/L	2.67	9.40	20	
4-Methyl-2-Pentanone		50.0	52.6	ug/L	0.0777	5.10	20	
Methylene Chloride		50.0	52.0	ug/L	0.246	4.00	20	
Naphthalene		50.0	51.1	ug/L	1.86	2.30	20	
n-Propylbenzene		50.0	56.6	ug/L	3.28	13.2	20	
Styrene		50.0	55.0	ug/L	1.02	9.90	20	
1,1,1,2-Tetrachloroethane		50.0	51.0	ug/L	0.383	2.10	20	
Tetrachloroethene		50.0	52.2	ug/L	0.307	4.40	20	
1,2,3-Trichlorobenzene		50.0	54.1	ug/L	0.971	8.10	20	
1,2,4-Trichlorobenzene		50.0	55.4	ug/L	1.08	10.9	20	
1,1,1-Trichloroethane		50.0	48.1	ug/L	0.472	3.90	20	
1,1,2-Trichloroethane		50.0	52.8	ug/L	0.237	5.50	20	
Trichloroethene		50.0	52.3	ug/L	0.327	4.60	20	
Trichlorofluoromethane		50.0	47.5	ug/L	0.494	4.90	20	
1,2,3-Trichloropropane		50.0	50.1	ug/L	0.147	0.300	20	
1,2,4-Trimethylbenzene		50.0	53.8	ug/L	2.42	7.70	20	
1,3,5-Trimethylbenzene		50.0	55.1	ug/L	2.44	10.3	20	
o-Xylene		50.0	54.7	ug/L	0.615	9.40	20	
m-,p-Xylene		100	107	ug/L	0.620	7.20	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4845931
Report generated 07/13/2016 08:36

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061290 Run Date: 06/30/2016 Sample ID: WG574723-12
Instrument ID: HPMS6 Run Time: 18:31 Method: 8260B
File ID: 6M140326 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG574723 Cal ID: HPMS6 - 30-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.9	ug/L	0.467	4.30	20	
1,1-Dichloroethene	CCC	50.0	44.2	ug/L	0.417	11.7	20	
1,2-Dichloropropane	CCC	50.0	52.0	ug/L	0.313	4.10	20	
Ethylbenzene	CCC	50.0	51.7	ug/L	0.517	3.40	20	
Toluene	CCC	50.0	50.2	ug/L	1.50	0.400	20	
Vinyl Chloride	CCC	50.0	46.1	ug/L	0.237	7.70	20	
Bromoform	SPCC	50.0	49.4	ug/L	0.205	1.20	20	
Chlorobenzene	SPCC	50.0	51.0	ug/L	0.974	1.90	20	
Chloromethane	SPCC	50.0	39.1	ug/L	0.365	21.7	20	*
1,1-Dichloroethane	SPCC	50.0	46.5	ug/L	0.506	7.10	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	55.5	ug/L	0.673	11.0	20	
Acetone		50.0	46.9	ug/L	0.0752	6.10	20	
Benzene		50.0	48.8	ug/L	1.02	2.40	20	
Bromobenzene		50.0	50.7	ug/L	0.761	1.40	20	
Bromochloromethane		50.0	48.9	ug/L	0.145	2.20	20	
Bromodichloromethane		50.0	51.3	ug/L	0.372	2.60	20	
Bromomethane		50.0	48.4	ug/L	0.165	3.20	20	
2-Butanone		50.0	50.7	ug/L	0.124	1.50	20	
n-Butylbenzene		50.0	51.3	ug/L	2.59	2.70	20	
sec-Butylbenzene		50.0	52.6	ug/L	3.17	5.10	20	
tert-Butylbenzene		50.0	53.2	ug/L	0.538	6.40	20	
Carbon Disulfide		50.0	43.6	ug/L	0.755	12.7	20	
Carbon Tetrachloride		50.0	51.4	ug/L	0.358	2.90	20	
Dibromochloromethane		50.0	53.8	ug/L	0.360	7.60	20	
Chloroethane		50.0	51.7	ug/L	0.168	3.50	20	
2-Chlorotoluene		50.0	52.8	ug/L	2.57	5.70	20	
4-Chlorotoluene		50.0	50.9	ug/L	2.36	1.80	20	
1,2-Dibromo-3-Chloropropane		50.0	55.7	ug/L	0.132	11.3	20	
1,2-Dibromoethane		50.0	52.4	ug/L	0.279	4.90	20	
Dibromomethane		50.0	49.0	ug/L	0.142	2.00	20	
1,2-Dichlorobenzene		50.0	52.5	ug/L	1.46	4.90	20	
1,3-Dichlorobenzene		50.0	51.3	ug/L	1.52	2.60	20	
1,4-Dichlorobenzene		50.0	51.8	ug/L	1.55	3.60	20	
Dichlorodifluoromethane		50.0	40.7	ug/L	0.340	18.6	20	
1,2-Dichloroethane		50.0	49.4	ug/L	0.386	1.20	20	
cis-1,2-Dichloroethene		50.0	49.8	ug/L	0.275	0.500	20	
trans-1,2-Dichloroethene		50.0	47.1	ug/L	0.238	5.90	20	
1,3-Dichloropropane		50.0	53.2	ug/L	0.553	6.30	20	
2,2-Dichloropropane		50.0	50.7	ug/L	0.416	1.40	20	
cis-1,3-Dichloropropene		50.0	56.3	ug/L	0.474	12.6	20	
trans-1,3-Dichloropropene		50.0	53.4	ug/L	0.565	6.70	20	
1,1-Dichloropropene		50.0	48.1	ug/L	0.356	3.80	20	

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Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061290 Run Date: 06/30/2016 Sample ID: WG574723-12
Instrument ID: HPMS6 Run Time: 18:31 Method: 8260B
File ID: 6M140326 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG574723 Cal ID: HPMS6 - 30-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	49.7	ug/L	0.260	0.600	20	
Hexachlorobutadiene		50.0	52.6	ug/L	0.429	5.20	20	
Isopropylbenzene		50.0	51.7	ug/L	1.63	3.30	20	
p-Isopropyltoluene		50.0	51.7	ug/L	2.65	3.40	20	
4-Methyl-2-Pentanone		50.0	50.7	ug/L	0.0939	1.40	20	
Methylene Chloride		50.0	46.6	ug/L	0.252	6.80	20	
Naphthalene		50.0	49.3	ug/L	1.98	1.40	20	
n-Propylbenzene		50.0	53.7	ug/L	3.86	7.40	20	
Styrene		50.0	52.9	ug/L	1.07	5.90	20	
1,1,1,2-Tetrachloroethane		50.0	52.6	ug/L	0.358	5.20	20	
Tetrachloroethene		50.0	48.7	ug/L	0.346	2.50	20	
1,2,3-Trichlorobenzene		50.0	51.1	ug/L	0.928	2.20	20	
1,2,4-Trichlorobenzene		50.0	51.4	ug/L	1.01	2.90	20	
1,1,1-Trichloroethane		50.0	49.4	ug/L	0.419	1.20	20	
1,1,2-Trichloroethane		50.0	52.1	ug/L	0.287	4.10	20	
Trichloroethene		50.0	49.0	ug/L	0.252	2.10	20	
Trichlorofluoromethane		50.0	47.1	ug/L	0.368	5.70	20	
1,2,3-Trichloropropane		50.0	54.9	ug/L	0.197	9.80	20	
1,2,4-Trimethylbenzene		50.0	51.6	ug/L	2.66	3.10	20	
1,3,5-Trimethylbenzene		50.0	52.6	ug/L	2.65	5.10	20	
o-Xylene		50.0	53.4	ug/L	0.644	6.80	20	
m-,p-Xylene		100	104	ug/L	0.627	3.70	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290 Run Date: 07/02/2016 Sample ID: WG575085-02
Instrument ID: HPMS11 Run Time: 14:39 Method: 8260B
File ID: 11M13043 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG575086 Cal ID: HPMS11 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	44.4	ug/L	0.444	11.1	20	
1,1-Dichloroethene	CCC	50.0	43.1	ug/L	0.394	13.8	20	
1,2-Dichloropropane	CCC	50.0	45.0	ug/L	0.239	10.0	20	
Ethylbenzene	CCC	50.0	50.7	ug/L	0.482	1.38	20	
Toluene	CCC	50.0	50.9	ug/L	1.29	1.73	20	
Vinyl Chloride	CCC	50.0	47.5	ug/L	0.247	5.03	20	
Bromoform	SPCC	50.0	49.0	ug/L	0.203	2.04	20	
Chlorobenzene	SPCC	50.0	50.6	ug/L	0.938	1.16	20	
Chloromethane	SPCC	50.0	43.8	ug/L	0.275	12.5	20	
1,1-Dichloroethane	SPCC	50.0	45.0	ug/L	0.458	9.92	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	46.6	ug/L	0.363	6.77	20	
Xylenes		150	151	ug/L	0.574	0.796	20	
Acetone		50.0	33.3	ug/L	0.0395	33.5	20	*
Benzene		50.0	47.7	ug/L	0.916	4.60	20	
Bromobenzene		50.0	50.3	ug/L	0.765	0.700	20	
Bromochloromethane		50.0	52.8	ug/L	0.175	5.52	20	
Bromodichloromethane		50.0	45.0	ug/L	0.336	9.90	20	
Bromomethane		50.0	45.0	ug/L	0.161	10.0	20	
2-Butanone		50.0	35.7	ug/L	0.0640	28.7	20	*
n-Butylbenzene		50.0	48.2	ug/L	2.07	3.64	20	
sec-Butylbenzene		50.0	50.4	ug/L	2.68	0.839	20	
tert-Butylbenzene		50.0	52.6	ug/L	0.493	5.28	20	
Carbon Disulfide		50.0	50.0	ug/L	0.767	0.0370	20	
Carbon Tetrachloride		50.0	45.4	ug/L	0.435	9.24	20	
Dibromochloromethane		50.0	49.0	ug/L	0.335	2.06	20	
Chloroethane		50.0	48.9	ug/L	0.164	2.29	20	
2-Chlorotoluene		50.0	50.0	ug/L	2.03	0.0172	20	
4-Chlorotoluene		50.0	47.0	ug/L	1.71	6.02	20	
1,2-Dibromo-3-Chloropropane		50.0	37.3	ug/L	0.0651	25.5	20	*
1,2-Dibromoethane		50.0	47.4	ug/L	0.213	5.23	20	
Dibromomethane		50.0	45.8	ug/L	0.127	8.39	20	
1,2-Dichlorobenzene		50.0	49.5	ug/L	1.32	0.913	20	
1,3-Dichlorobenzene		50.0	50.3	ug/L	1.48	0.558	20	
1,4-Dichlorobenzene		50.0	49.4	ug/L	1.47	1.15	20	
Dichlorodifluoromethane		50.0	48.7	ug/L	0.381	2.69	20	
1,2-Dichloroethane		50.0	39.4	ug/L	0.319	21.2	20	*
cis-1,2-Dichloroethene		50.0	48.9	ug/L	0.273	2.14	20	
trans-1,2-Dichloroethene		50.0	49.0	ug/L	0.248	2.05	20	
1,3-Dichloropropane		50.0	46.4	ug/L	0.335	7.18	20	
2,2-Dichloropropane		50.0	48.3	ug/L	0.384	3.38	20	
cis-1,3-Dichloropropene		50.0	47.6	ug/L	0.355	4.75	20	
trans-1,3-Dichloropropene		50.0	46.6	ug/L	0.379	6.76	20	

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290 Run Date: 07/02/2016 Sample ID: WG575085-02
Instrument ID: HPMS11 Run Time: 14:39 Method: 8260B
File ID: 11M13043 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG575086 Cal ID: HPMS11 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	46.8	ug/L	0.328	6.48	20	
2-Hexanone		50.0	35.9	ug/L	0.118	28.3	20	*
Hexachlorobutadiene		50.0	45.0	ug/L	0.388	10.0	20	
Isopropylbenzene		50.0	50.3	ug/L	1.50	0.665	20	
p-Isopropyltoluene		50.0	50.8	ug/L	2.48	1.62	20	
4-Methyl-2-Pentanone		50.0	41.1	ug/L	0.0607	17.8	20	
Methylene Chloride		50.0	47.5	ug/L	0.225	5.09	20	
Naphthalene		50.0	46.2	ug/L	1.68	7.51	20	
n-Propylbenzene		50.0	50.4	ug/L	2.92	0.740	20	
Styrene		50.0	52.1	ug/L	0.969	4.23	20	
1,1,1,2-Tetrachloroethane		50.0	49.1	ug/L	0.368	1.80	20	
Tetrachloroethene		50.0	52.7	ug/L	0.310	5.34	20	
1,2,3-Trichlorobenzene		50.0	47.3	ug/L	0.850	5.34	20	
1,2,4-Trichlorobenzene		50.0	49.1	ug/L	0.960	1.86	20	
1,1,1-Trichloroethane		50.0	44.5	ug/L	0.437	11.1	20	
1,1,2-Trichloroethane		50.0	47.4	ug/L	0.213	5.14	20	
Trichloroethene		50.0	49.4	ug/L	0.308	1.16	20	
Trichlorofluoromethane		50.0	44.3	ug/L	0.460	11.5	20	
1,2,3-Trichloropropane		50.0	43.2	ug/L	0.126	13.7	20	
1,2,4-Trimethylbenzene		50.0	50.5	ug/L	2.27	0.982	20	
1,3,5-Trimethylbenzene		50.0	50.0	ug/L	2.21	0.0442	20	
o-Xylene		50.0	50.0	ug/L	0.562	0.0132	20	
m-,p-Xylene		100	101	ug/L	0.585	1.20	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290
Run Date: 07/03/2016
Sample ID: WG575091-02
Instrument ID: HPMS6
Run Time: 11:01
Method: 8260B
File ID: 6M140390
Analyst: TMB
QC Key: DOD4
Workgroup (AAB#): WG575092
Cal ID: HPMS6 - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	51.8	ug/L	0.505	3.61	20	
1,1-Dichloroethene	CCC	50.0	52.9	ug/L	0.499	5.75	20	
1,2-Dichloropropane	CCC	50.0	50.6	ug/L	0.304	1.24	20	
Ethylbenzene	CCC	50.0	52.2	ug/L	0.522	4.31	20	
Toluene	CCC	50.0	50.4	ug/L	1.50	0.798	20	
Vinyl Chloride	CCC	50.0	56.7	ug/L	0.291	13.5	20	
Bromoform	SPCC	50.0	54.4	ug/L	0.226	8.82	20	
Chlorobenzene	SPCC	50.0	50.6	ug/L	0.968	1.24	20	
Chloromethane	SPCC	50.0	45.8	ug/L	0.427	8.40	20	
1,1-Dichloroethane	SPCC	50.0	51.3	ug/L	0.559	2.69	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	52.9	ug/L	0.642	5.82	20	
Trichloroethene		50.0	50.0	ug/L	0.257	0.0854	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

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Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290 Run Date: 07/05/2016 Sample ID: WG575198-02
Instrument ID: HPMS11 Run Time: 18:11 Method: 8260B
File ID: 11M13078 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG575199 Cal ID: HPMS11 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	48.7	ug/L	0.487	2.51	20	
1,1-Dichloroethene	CCC	50.0	48.6	ug/L	0.445	2.78	20	
1,2-Dichloropropane	CCC	50.0	49.1	ug/L	0.261	1.71	20	
Ethylbenzene	CCC	50.0	52.2	ug/L	0.497	4.47	20	
Toluene	CCC	50.0	52.3	ug/L	1.32	4.62	20	
Vinyl Chloride	CCC	50.0	53.3	ug/L	0.278	6.68	20	
Bromoform	SPCC	50.0	54.5	ug/L	0.226	9.02	20	
Chlorobenzene	SPCC	50.0	52.8	ug/L	0.979	5.54	20	
Chloromethane	SPCC	50.0	50.3	ug/L	0.316	0.684	20	
1,1-Dichloroethane	SPCC	50.0	49.8	ug/L	0.507	0.335	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.3	ug/L	0.384	1.32	20	
Xylenes		150	158	ug/L	0.598	5.12	20	
Acetone		50.0	39.4	ug/L	0.0468	21.2	20	*
Benzene		50.0	50.4	ug/L	0.969	0.895	20	
Bromobenzene		50.0	51.4	ug/L	0.781	2.78	20	
Bromochloromethane		50.0	57.2	ug/L	0.190	14.4	20	
Bromodichloromethane		50.0	50.7	ug/L	0.379	1.45	20	
Bromomethane		50.0	52.8	ug/L	0.189	5.69	20	
2-Butanone		50.0	39.7	ug/L	0.0712	20.6	20	*
n-Butylbenzene		50.0	49.5	ug/L	2.12	1.05	20	
sec-Butylbenzene		50.0	51.3	ug/L	2.72	2.51	20	
tert-Butylbenzene		50.0	53.4	ug/L	0.500	6.73	20	
Carbon Disulfide		50.0	49.7	ug/L	0.762	0.603	20	
Carbon Tetrachloride		50.0	52.3	ug/L	0.502	4.58	20	
Dibromochloromethane		50.0	53.9	ug/L	0.369	7.74	20	
Chloroethane		50.0	51.0	ug/L	0.171	1.95	20	
2-Chlorotoluene		50.0	49.1	ug/L	1.99	1.90	20	
4-Chlorotoluene		50.0	49.5	ug/L	1.80	1.10	20	
1,2-Dibromo-3-Chloropropane		50.0	42.8	ug/L	0.0749	14.4	20	
1,2-Dibromoethane		50.0	51.2	ug/L	0.230	2.36	20	
Dibromomethane		50.0	51.4	ug/L	0.143	2.89	20	
1,2-Dichlorobenzene		50.0	50.7	ug/L	1.36	1.46	20	
1,3-Dichlorobenzene		50.0	51.0	ug/L	1.50	2.00	20	
1,4-Dichlorobenzene		50.0	50.2	ug/L	1.49	0.313	20	
Dichlorodifluoromethane		50.0	55.7	ug/L	0.437	11.4	20	
1,2-Dichloroethane		50.0	46.6	ug/L	0.378	6.72	20	
cis-1,2-Dichloroethene		50.0	52.2	ug/L	0.292	4.46	20	
trans-1,2-Dichloroethene		50.0	52.5	ug/L	0.266	5.09	20	
1,3-Dichloropropane		50.0	50.0	ug/L	0.360	0.00380	20	
2,2-Dichloropropane		50.0	55.4	ug/L	0.441	10.8	20	
cis-1,3-Dichloropropene		50.0	52.5	ug/L	0.392	5.02	20	
trans-1,3-Dichloropropene		50.0	50.9	ug/L	0.414	1.89	20	

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290 Run Date: 07/05/2016 Sample ID: WG575198-02
Instrument ID: HPMS11 Run Time: 18:11 Method: 8260B
File ID: 11M13078 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG575199 Cal ID: HPMS11 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	51.4	ug/L	0.361	2.85	20	
2-Hexanone		50.0	40.1	ug/L	0.132	19.7	20	
Hexachlorobutadiene		50.0	47.1	ug/L	0.406	5.83	20	
Isopropylbenzene		50.0	52.9	ug/L	1.57	5.74	20	
p-Isopropyltoluene		50.0	52.0	ug/L	2.53	4.01	20	
4-Methyl-2-Pentanone		50.0	45.5	ug/L	0.0673	8.96	20	
Methylene Chloride		50.0	50.4	ug/L	0.239	0.865	20	
Naphthalene		50.0	47.8	ug/L	1.74	4.41	20	
n-Propylbenzene		50.0	51.5	ug/L	2.98	3.05	20	
Styrene		50.0	54.3	ug/L	1.01	8.66	20	
1,1,1,2-Tetrachloroethane		50.0	52.8	ug/L	0.396	5.62	20	
Tetrachloroethene		50.0	54.7	ug/L	0.322	9.38	20	
1,2,3-Trichlorobenzene		50.0	48.2	ug/L	0.866	3.55	20	
1,2,4-Trichlorobenzene		50.0	49.7	ug/L	0.972	0.637	20	
1,1,1-Trichloroethane		50.0	50.7	ug/L	0.498	1.45	20	
1,1,2-Trichloroethane		50.0	50.3	ug/L	0.226	0.659	20	
Trichloroethene		50.0	53.3	ug/L	0.333	6.67	20	
Trichlorofluoromethane		50.0	50.7	ug/L	0.527	1.50	20	
1,2,3-Trichloropropane		50.0	46.7	ug/L	0.137	6.53	20	
1,2,4-Trimethylbenzene		50.0	51.5	ug/L	2.32	3.04	20	
1,3,5-Trimethylbenzene		50.0	50.8	ug/L	2.25	1.69	20	
o-Xylene		50.0	52.2	ug/L	0.587	4.30	20	
m-,p-Xylene		100	106	ug/L	0.610	5.52	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4845933
Report generated 07/13/2016 08:36

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061290
Instrument ID: HPMS11
Workgroup (AAB#): WG575086

ICAL CCV Number: WG568769-08
CAL ID: HPMS11-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568769-08	NA	NA	263885	438582	521583
Upper Limit	NA	NA	527770	877164	1043166
Lower Limit	NA	NA	131943	219291	260792
L16061290-02	2.50	DL01	223419	390737	466879
L16061290-05	5.00	DL01	222415	391246	467670
L16061290-06	1.00	01	253832	436961	517116
L16061290-07	1.00	01	253845	451077	536895
WG575086-01	1.00	01	247728	437666	526215
WG575086-02	1.00	01	250295	423028	489868
WG575086-03	1.00	01	246042	412869	486638

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4845934
Report generated 07/13/2016 08:36

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061290
Instrument ID: HPMS6
Workgroup (AAB#): WG575092

ICAL CCV Number: WG574723-08
CAL ID: HPMS6-30-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG574723-08	NA	NA	264882	476977	665194
Upper Limit	NA	NA	529764	953954	1330388
Lower Limit	NA	NA	132441	238489	332597
L16061290-02	20.0	DL02	210487	407559	572284
WG575092-01	1.00	01	214148	419172	592251
WG575092-02	1.00	01	233201	407645	566229

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4845934
Report generated 07/13/2016 08:36

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061290
Instrument ID: HPMS11
Workgroup (AAB#): WG575199

ICAL CCV Number: WG568769-08
CAL ID: HPMS11-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568769-08	NA	NA	263885	438582	521583
Upper Limit	NA	NA	527770	877164	1043166
Lower Limit	NA	NA	131943	219291	260792
L16061290-04	1.00	01	232685	406573	468953
WG575199-01	1.00	01	236090	408648	472304
WG575199-02	1.00	01	250949	420960	485527
WG575199-03	1.00	01	257746	435197	499574

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4845934
Report generated 07/13/2016 08:36

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061290
Instrument ID: HPMS11
Workgroup (AAB#): WG575086

ICAL CCV Number: WG568769-08
CAL ID: HPMS11-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568769-08	NA	NA	17.06	14.25	10.61
Upper Limit	NA	NA	17.56	14.75	11.11
Lower Limit	NA	NA	16.56	13.75	10.11
L16061290-02	2.50	DL01	17.06	14.25	10.61
L16061290-05	5.00	DL01	17.06	14.25	10.61
L16061290-06	1.00	01	17.06	14.25	10.61
L16061290-07	1.00	01	17.06	14.25	10.61
WG575086-01	1.00	01	17.06	14.25	10.61
WG575086-02	1.00	01	17.06	14.25	10.61
WG575086-03	1.00	01	17.06	14.24	10.61

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4845936
Report generated: 07/13/2016 08:36

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061290
Instrument ID: HPMS11
Workgroup (AAB#): WG575199

ICAL CCV Number: WG568769-08
CAL ID: HPMS11-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568769-08	NA	NA	17.06	14.25	10.61
Upper Limit	NA	NA	17.56	14.75	11.11
Lower Limit	NA	NA	16.56	13.75	10.11
L16061290-04	1.00	01	17.06	14.25	10.61
WG575199-01	1.00	01	17.06	14.25	10.61
WG575199-02	1.00	01	17.06	14.25	10.61
WG575199-03	1.00	01	17.06	14.25	10.61

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4845936
Report generated: 07/13/2016 08:36

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061290
Instrument ID: HPMS6
Workgroup (AAB#): WG575092

ICAL CCV Number: WG574723-08
CAL ID: HPMS6 - 30-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG574723-08	NA	NA	18.81	15.25	10.77
Upper Limit	NA	NA	19.31	15.75	11.27
Lower Limit	NA	NA	18.31	14.75	10.27
L16061290-02	20.0	DL02	18.8	15.25	10.77
WG575092-01	1.00	01	18.8	15.25	10.76
WG575092-02	1.00	01	18.81	15.25	10.76

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4845936
Report generated: 07/13/2016 08:36

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070216\11M13060.D Vial: 20
Acq On : 2 Jul 2016 23:41 Operator: TMB
Sample : L16061290-02 A 2.5X 826-LOW Inst : hpms11
Misc : 1,2.5 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 07 12:05:37 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	466879	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	390737	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	223419	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	130833	25.6053 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.44%		
43) 1,2-Dichloroethane-d4	10.23	65	129106	22.1600 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 88.64%		
57) Toluene-d8	12.47	98	433091	25.5097 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.04%		
78) p-Bromofluorobenzene	15.64	95	160919	23.3652 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.48%		

Target Compounds

					Qvalue
4) Vinyl Chloride	3.96	62	1453	0.2986 ug/L #	44
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	27314	5.8047 ug/L	99
13) Acetone	6.34	43	649	0.5854 ug/L #	49
14) 1,1-Dichloroethene	6.56	61	30770	3.6001 ug/L	96
16) Dimethyl Sulfide	6.81	62	464	0.1359 ug/L #	1
23) trans-1,2-Dichloroethene	7.75	96	1414	0.2989 ug/L	92
27) 1,1-Dichloroethane	8.34	63	6550	0.6901 ug/L #	87
32) cis-1,2-Dichloroethene	9.15	96	65167	12.4945 ug/L	75
36) Tetrahydrofuran	9.60	42	200	0.1690 ug/L #	47
44) 1,2-Dichloroethane	10.34	62	175623	23.1991 ug/L	91
45) Benzene	10.38	78	2523	0.1407 ug/L #	70
46) Trichloroethene	11.08	130	2170360	372.4373 ug/L	98
47) Methylcyclohexane	11.08	83	22390	3.1133 ug/L #	1
64) Tetrachloroethene	13.34	164	1447	0.3146 ug/L	86

(#) = qualifier out of range (m) = manual integration
11M13060.D 8260WT.M Thu Jul 07 12:05:38 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070216\11M13060.D Vial: 20
Acq On : 2 Jul 2016 23:41 Operator: TMB
Sample : L16061290-02 A 2.5X 826-LOW Inst : hpms11
Misc : 1,2.5 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 7 12:05 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

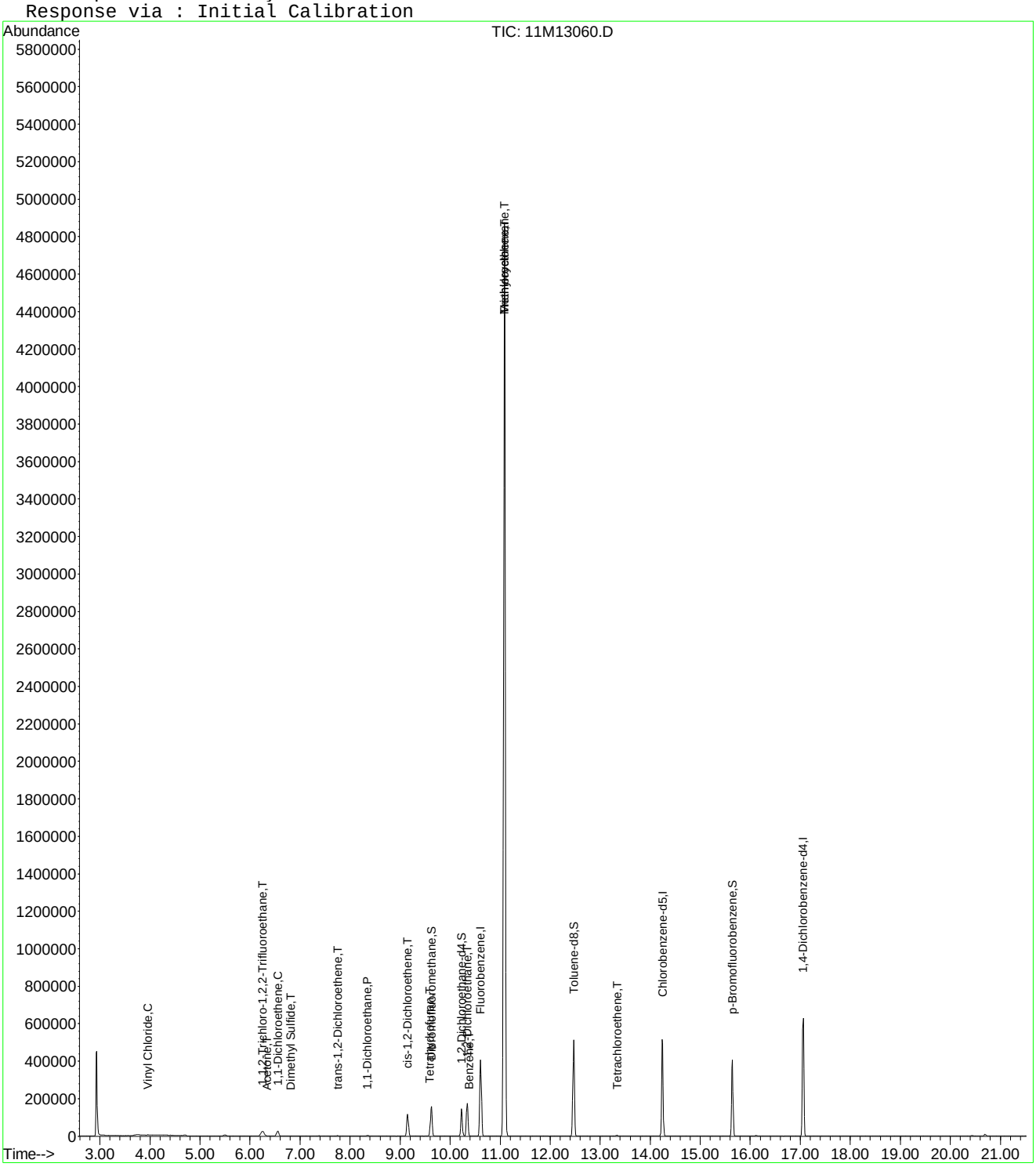

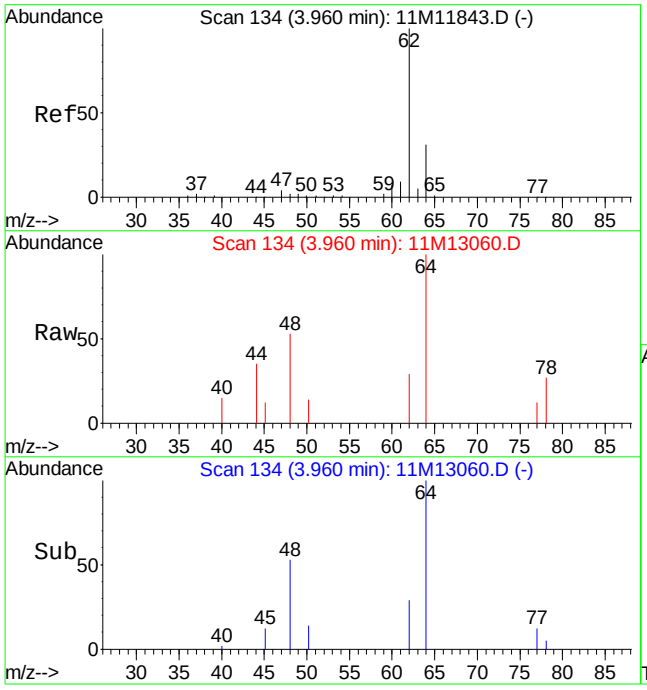

#4
Vinyl Chloride
Concen: 0.30 ug/L
RT: 3.96 min Scan# 134
Delta R.T. 0.00 min
Lab File: 11M13060.D
Acq: 2 Jul 2016 23:41

Tgt Ion: 62 Resp: 1453

Ion	Ratio	Lower	Upper
62	100		
64	0.0	18.4	43.0#

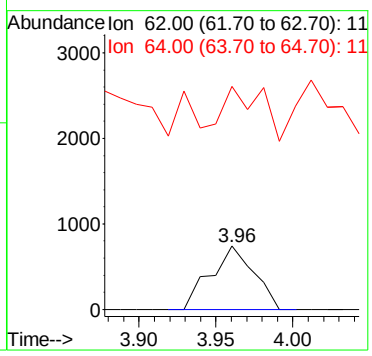

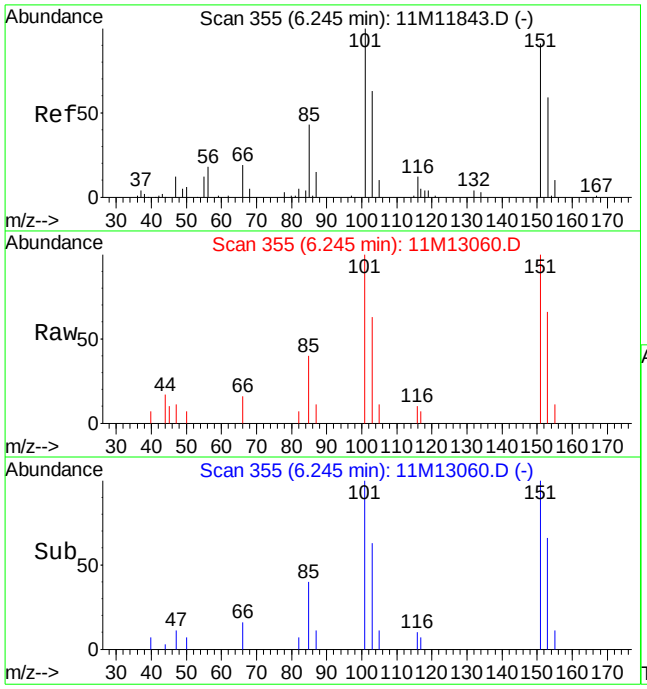

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 5.80 ug/L
RT: 6.25 min Scan# 355
Delta R.T. 0.00 min
Lab File: 11M13060.D
Acq: 2 Jul 2016 23:41

Tgt Ion:101 Resp: 27314

Ion	Ratio	Lower	Upper
101	100		
151	90.0	50.7	130.7

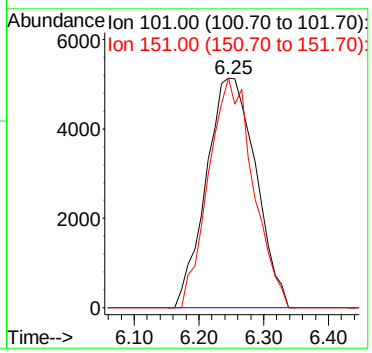

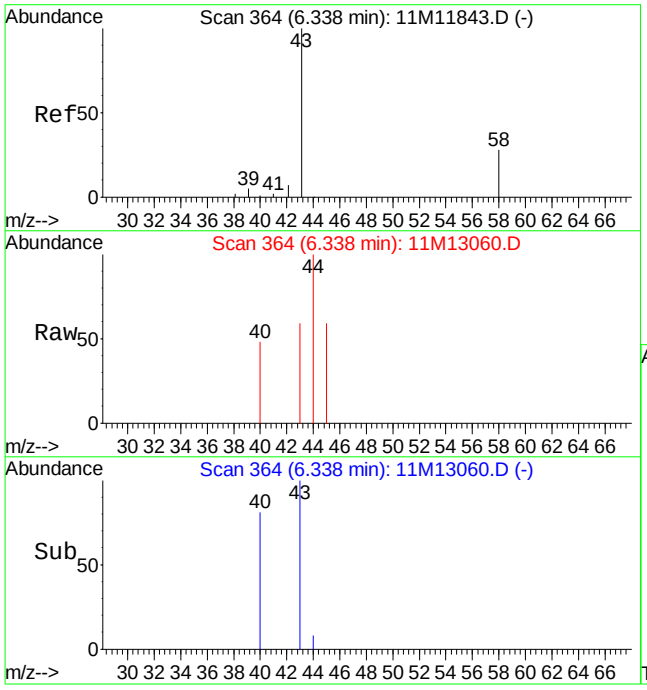

#13
Acetone
Concen: 0.59 ug/L
RT: 6.34 min Scan# 364
Delta R.T. 0.00 min
Lab File: 11M13060.D
Acq: 2 Jul 2016 23:41

Tgt Ion: 43 Resp: 649

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

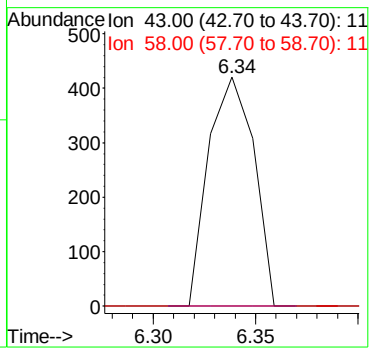

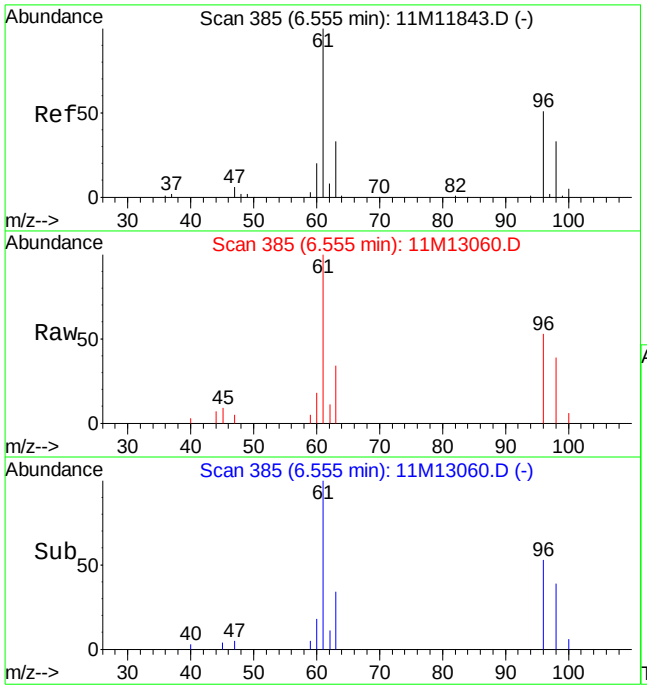

#14
1,1-Dichloroethene
Concen: 3.60 ug/L
RT: 6.56 min Scan# 385
Delta R.T. 0.00 min
Lab File: 11M13060.D
Acq: 2 Jul 2016 23:41

Tgt Ion: 61 Resp: 30770

Ion	Ratio	Lower	Upper
61	100		
96	52.8	30.1	70.3

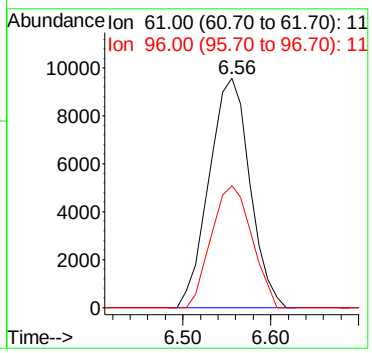

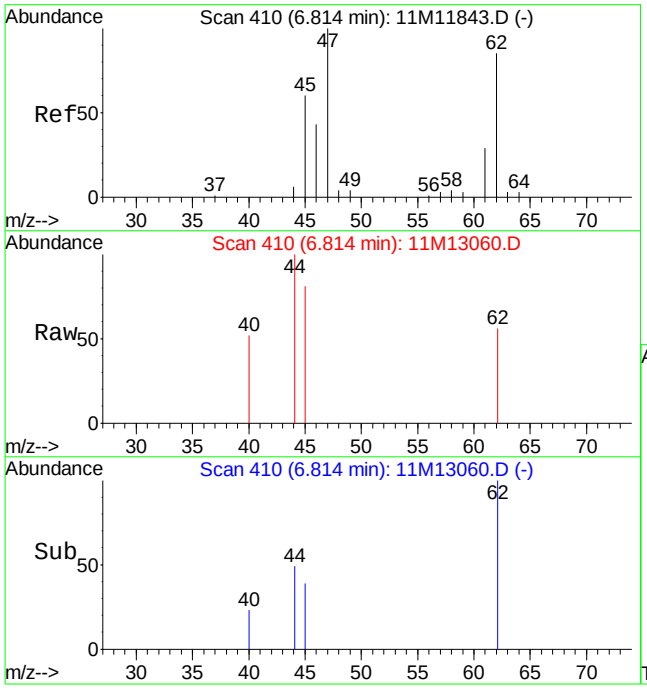

#16
Dimethyl Sulfide
Concen: 0.14 ug/L
RT: 6.81 min Scan# 410
Delta R.T. 0.00 min
Lab File: 11M13060.D
Acq: 2 Jul 2016 23:41

Tgt Ion: 62 Resp: 464

Ion	Ratio	Lower	Upper
62	100		
47	0.0	73.4	171.2#

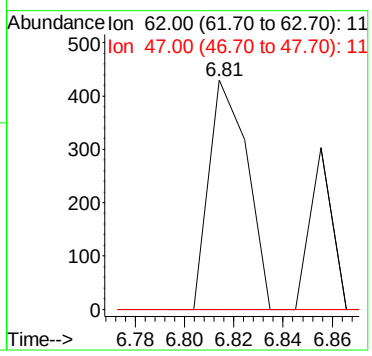

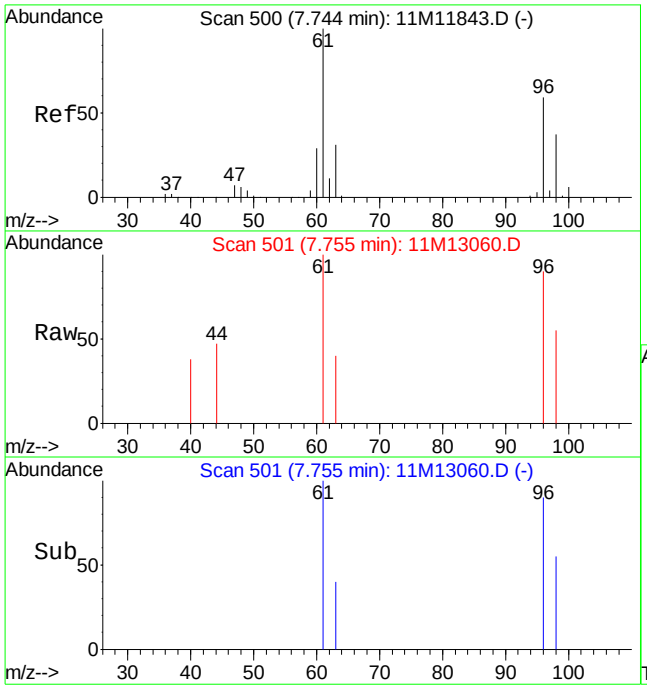

#23
trans-1,2-Dichloroethene
Concen: 0.30 ug/L
RT: 7.75 min Scan# 501
Delta R.T. 0.01 min
Lab File: 11M13060.D
Acq: 2 Jul 2016 23:41

Tgt Ion: 96 Resp: 1414

Ion	Ratio	Lower	Upper
96	100		
61	178.3	100.6	234.6

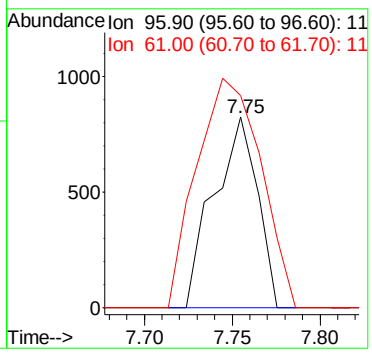

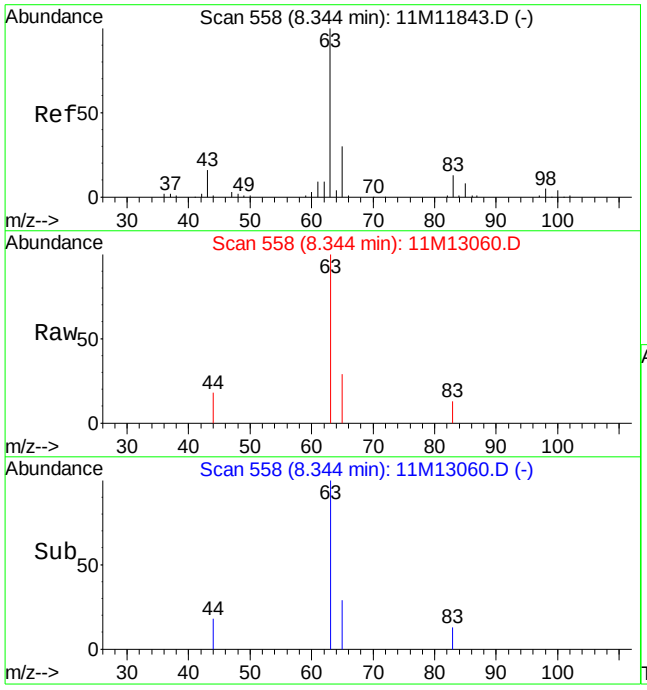

#27
1,1-Dichloroethane
Concen: 0.69 ug/L
RT: 8.34 min Scan# 558
Delta R.T. 0.00 min
Lab File: 11M13060.D
Acq: 2 Jul 2016 23:41

Tgt Ion: 63 Resp: 6550

Ion	Ratio	Lower	Upper
63	100		
65	24.9	17.8	41.6
83	2.9	7.4	17.4#

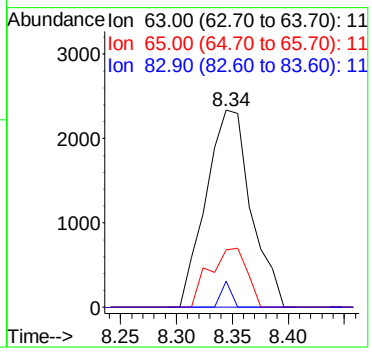

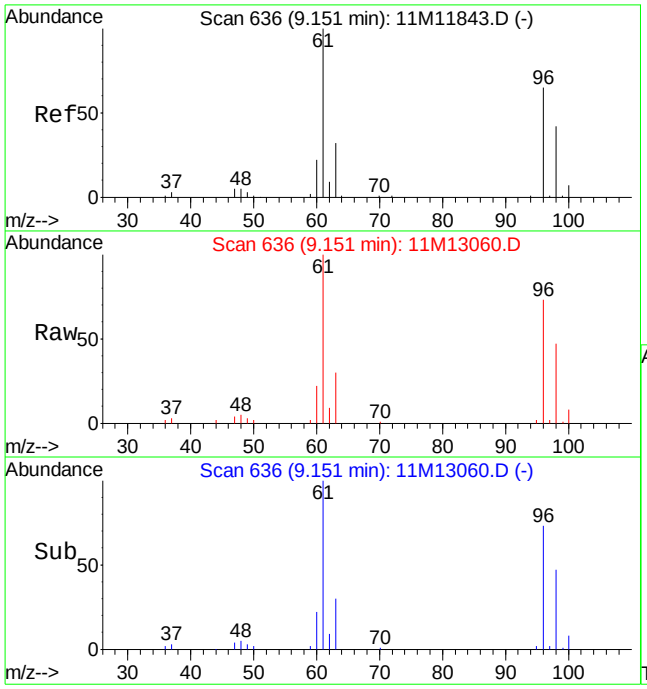

#32
cis-1,2-Dichloroethene
Concen: 12.49 ug/L
RT: 9.15 min Scan# 636
Delta R.T. 0.00 min
Lab File: 11M13060.D
Acq: 2 Jul 2016 23:41

Tgt Ion: 96 Resp: 65167

Ion	Ratio	Lower	Upper
96	100		
61	140.1	105.2	245.6

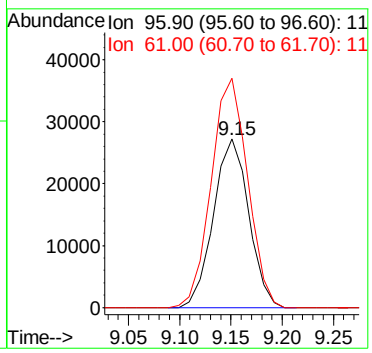

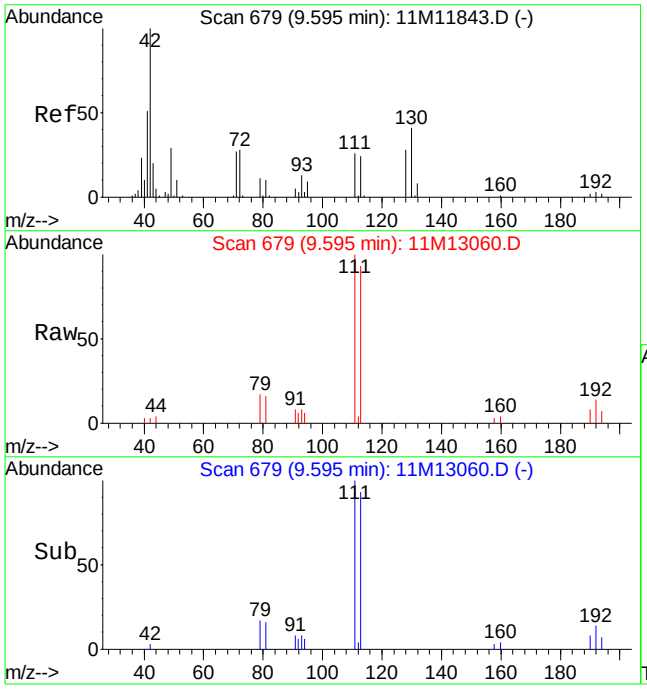

#36
Tetrahydrofuran
Concen: 0.17 ug/L
RT: 9.60 min Scan# 679
Delta R.T. 0.00 min
Lab File: 11M13060.D
Acq: 2 Jul 2016 23:41

Tgt Ion: 42 Resp: 200

Ion	Ratio	Lower	Upper
42	100		
71	0.0	16.4	38.2#
72	0.0	16.6	38.8#

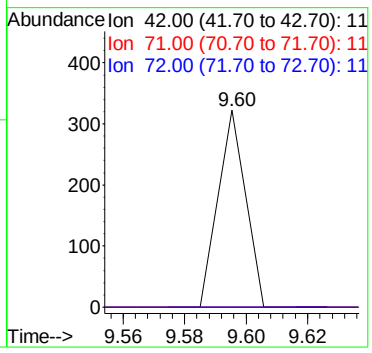

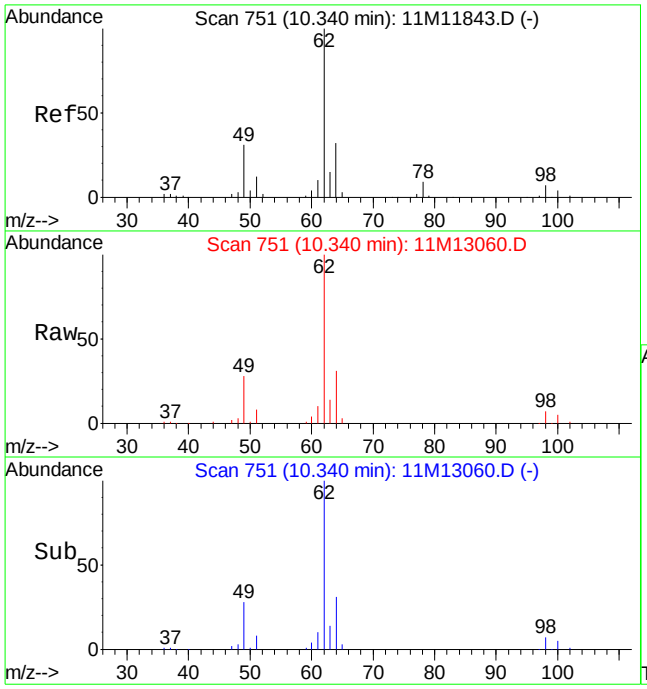

#44
1,2-Dichloroethane
Concen: 23.20 ug/L
RT: 10.34 min Scan# 751
Delta R.T. 0.00 min
Lab File: 11M13060.D
Acq: 2 Jul 2016 23:41

Tgt Ion: 62 Resp: 175623

Ion	Ratio	Lower	Upper
62	100		
64	31.6	18.7	43.7
49	27.8	22.3	52.1

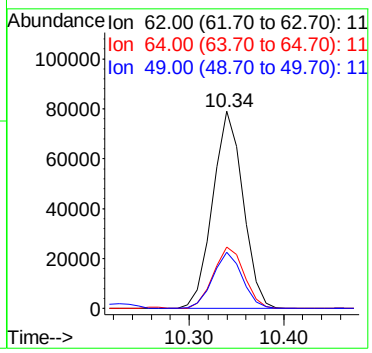

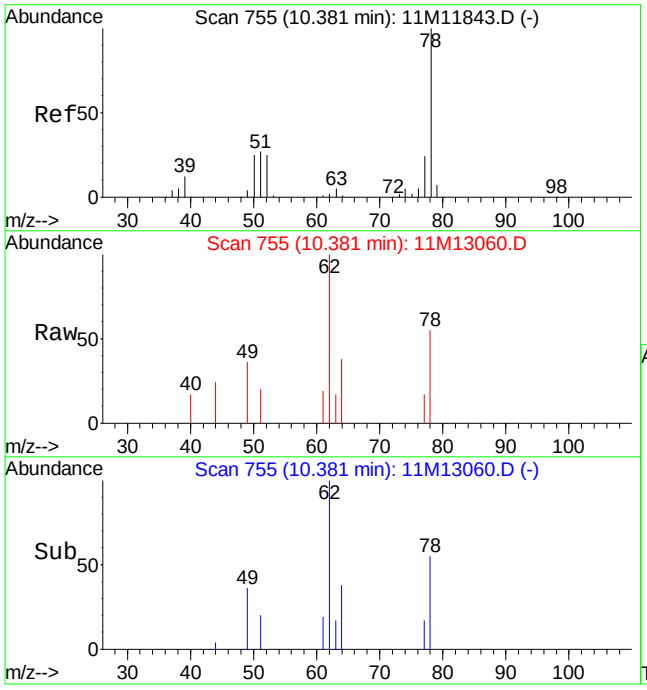

#45
Benzene
Concen: 0.14 ug/L
RT: 10.38 min Scan# 755
Delta R.T. 0.00 min
Lab File: 11M13060.D
Acq: 2 Jul 2016 23:41

Tgt Ion: 78 Resp: 2523

Ion	Ratio	Lower	Upper
78	100		
77	9.0	14.3	33.5#

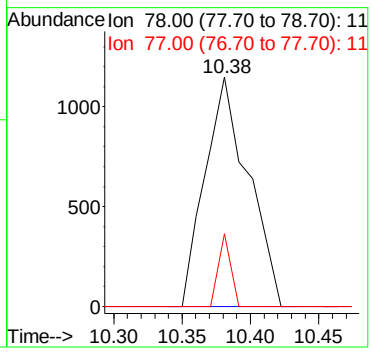

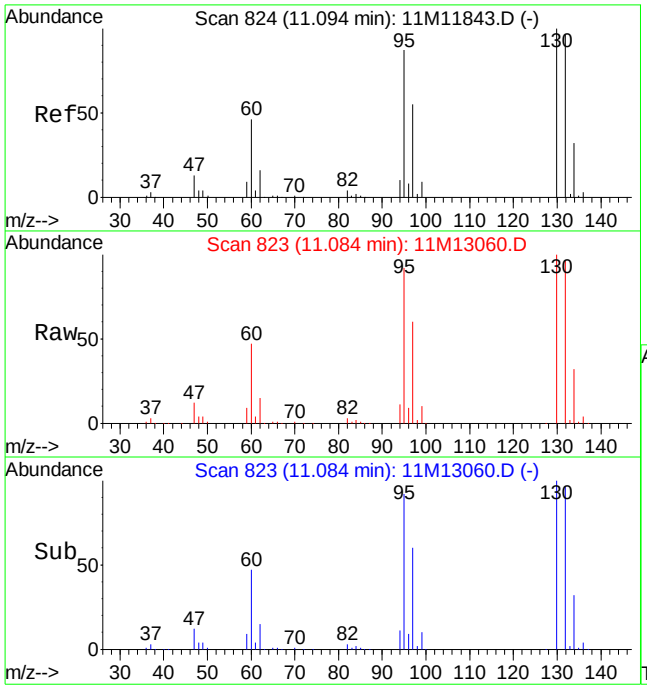

#46
Trichloroethene
Concen: 372.44 ug/L
RT: 11.08 min Scan# 823
Delta R.T. -0.01 min
Lab File: 11M13060.D
Acq: 2 Jul 2016 23:41

Tgt Ion:130 Resp: 2170360

Ion	Ratio	Lower	Upper
130	100		
132	97.0	58.3	136.1
95	89.5	55.6	129.8

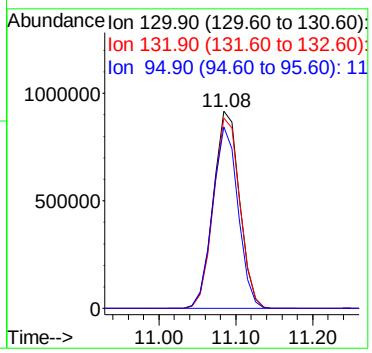

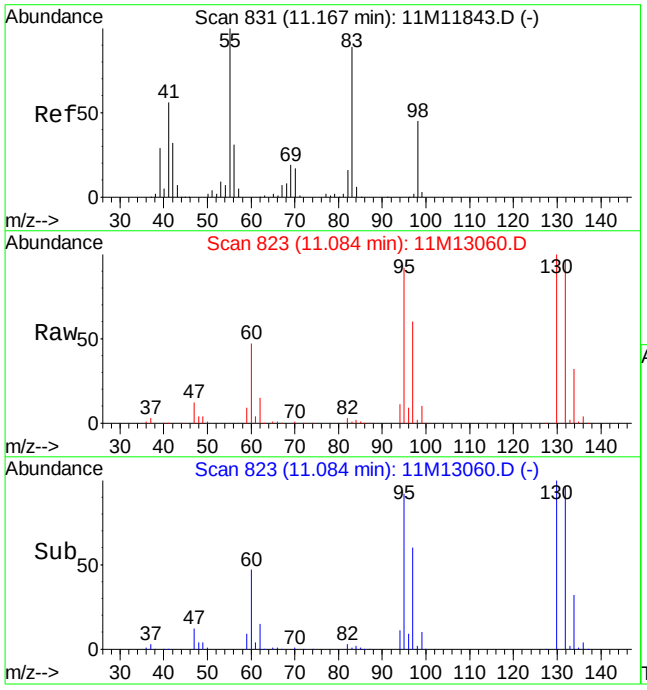

#47
Methylcyclohexane
Concen: 3.11 ug/L
RT: 11.08 min Scan# 823
Delta R.T. -0.08 min
Lab File: 11M13060.D
Acq: 2 Jul 2016 23:41

Tgt Ion: 83 Resp: 22390

Ion	Ratio	Lower	Upper
83	100		
55	0.0	66.5	155.1#
98	235.4	29.9	69.7#

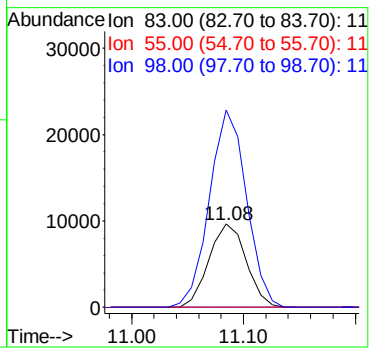

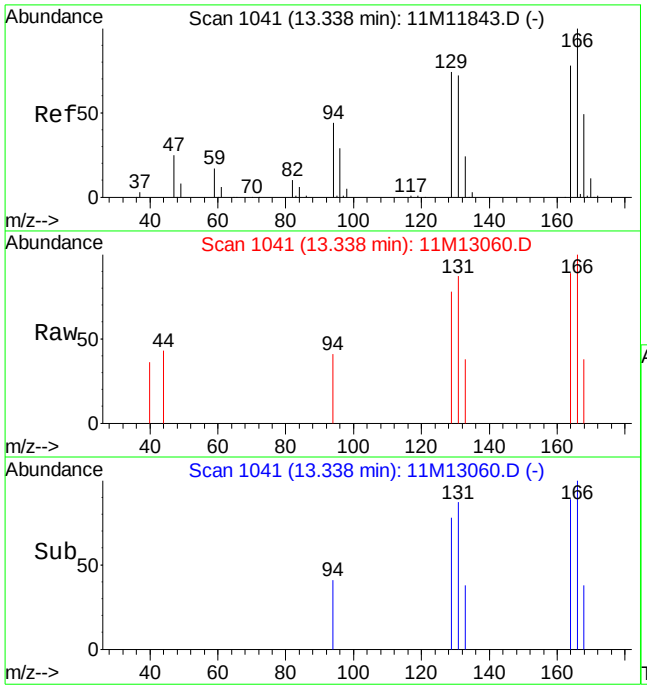

#64
Tetrachloroethene
Concen: 0.31 ug/L
RT: 13.34 min Scan# 1041
Delta R.T. 0.00 min
Lab File: 11M13060.D
Acq: 2 Jul 2016 23:41

Tgt Ion:164 Resp: 1447

Ion	Ratio	Lower	Upper
164	100		
129	83.2	57.9	135.1

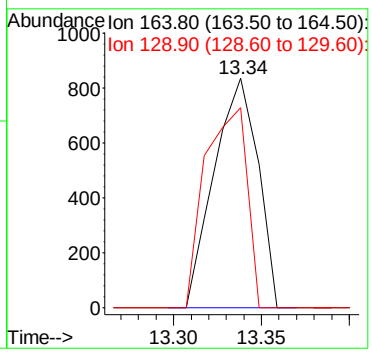

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070316\6M140393.D Vial: 6
Acq On : 3 Jul 2016 12:37 Operator: TMB
Sample : L16061290-02 B 20X 826-LOW D1 Inst : HPMS6
Misc : 1,20 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 05 08:34:25 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	572284	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	407559	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	210487	25.00 ug/L	-0.01
System Monitoring Compounds					
37) Dibromofluoromethane	9.58	111	148463	25.5701 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.28%		
43) 1,2-Dichloroethane-d4	10.32	65	188858	25.7666 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.08%		
58) Toluene-d8	13.04	98	503364	25.0812 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.32%		
80) p-Bromofluorobenzene	17.02	95	204033	24.7509 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.00%		

Target Compounds					Qvalue
12) 1,1,2-Trichloro-1,2,2-Trif	5.78	101	4104	0.7374 ug/L	91
13) Acetone	5.91	43	1457	0.7947 ug/L #	48
14) 1,1-Dichloroethene	6.10	61	6332	0.5863 ug/L	82
15) Tert-Butyl Alcohol	6.25	59	13318	23.7543 ug/L #	95
30) Propionitrile	8.86	54	1077	1.4140 ug/L #	56
32) cis-1,2-Dichloroethene	9.03	96	10347	1.6343 ug/L	83
36) Tetrahydrofuran	9.56	42	3628	1.8532 ug/L #	58
45) 1,2-Dichloroethane	10.45	62	32223	3.6026 ug/L	87
47) Trichloroethene	11.34	130	271648	46.1088 ug/L	86
48) Methylcyclohexane	11.34	83	3689	0.3988 ug/L #	1
50) 1,4-Dioxane	11.94	88	2931	62.9722 ug/L	88
100) Naphthalene	22.39	128	2100	0.1245 ug/L #	67
101) 1,2,3-Trichlorobenzene	22.75	180	1026	0.1342 ug/L #	73

(#) = qualifier out of range (m) = manual integration
6M140393.D 8260WTR.M Tue Jul 05 08:34:28 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070316\6M140393.D Vial: 6
Acq On : 3 Jul 2016 12:37 Operator: TMB
Sample : L16061290-02 B 20X 826-LOW D1 Inst : HPMS6
Misc : 1,20 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 5 8:34 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

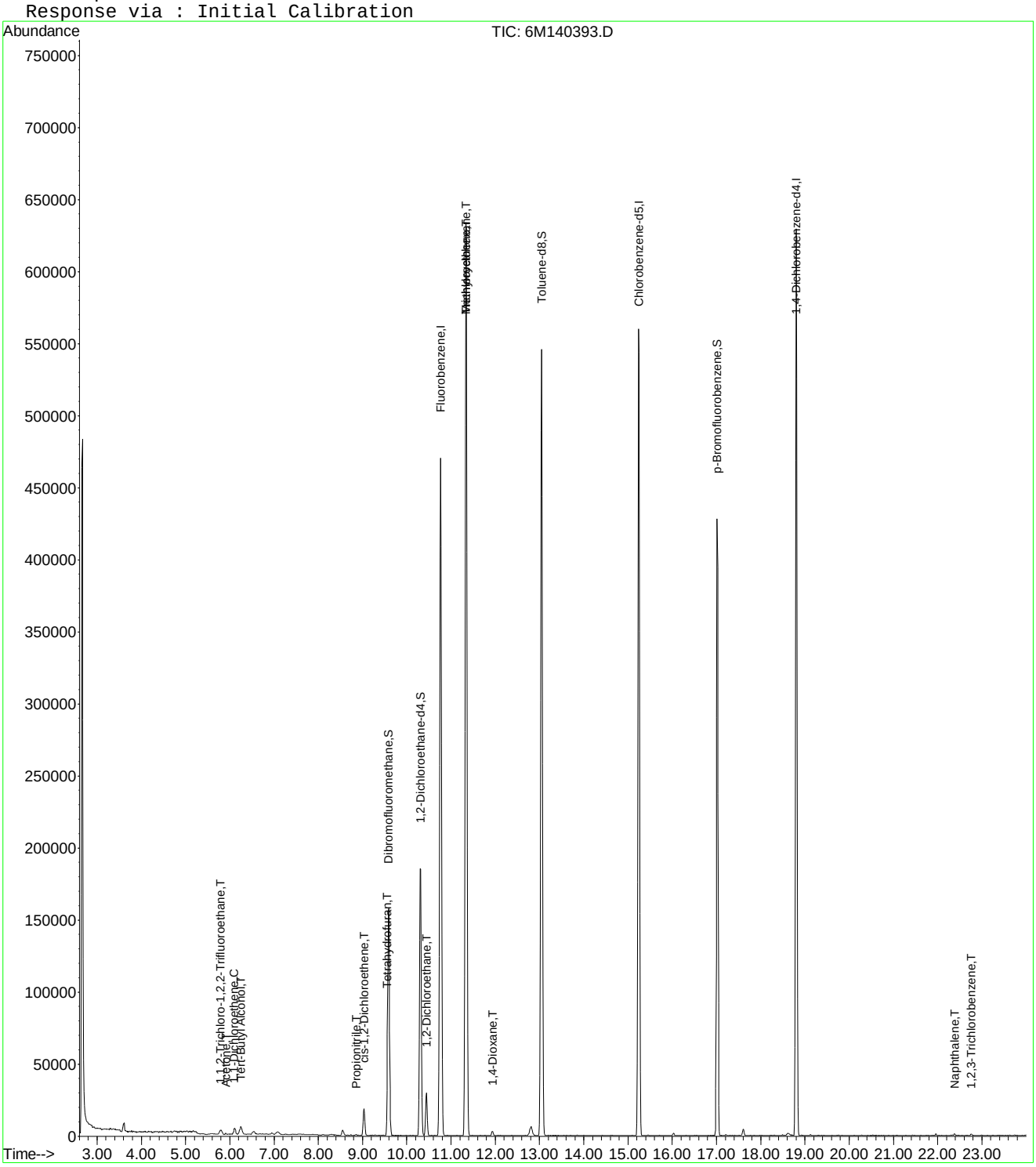

6M140393.D 8260WTR.M Tue Jul 05 08:34:28 2016 Page 2

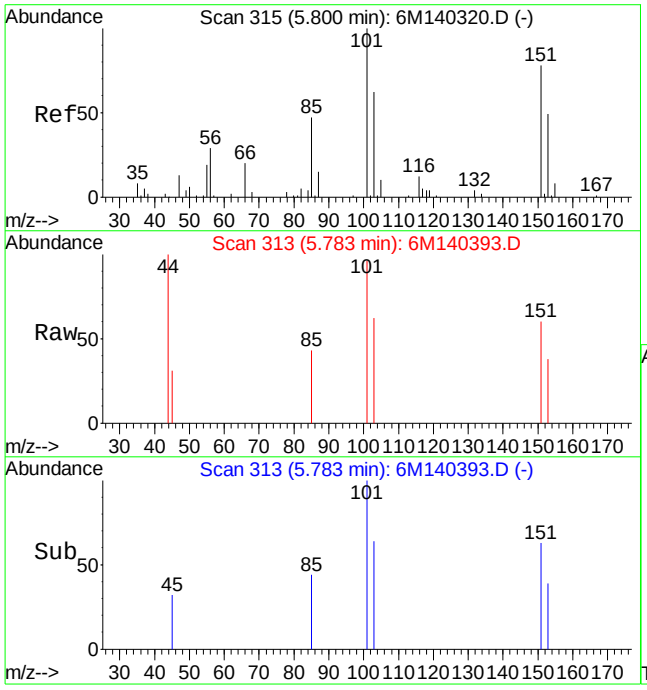

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 0.74 ug/L
RT: 5.78 min Scan# 313
Delta R.T. 0.00 min
Lab File: 6M140393.D
Acq: 3 Jul 2016 12:37

Tgt Ion:101 Resp: 4104

Ion	Ratio	Lower	Upper
101	100		
151	70.2	49.4	115.2
103	61.5	38.8	90.4

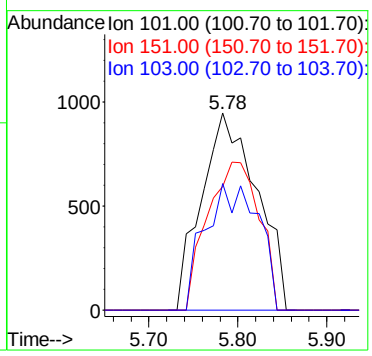

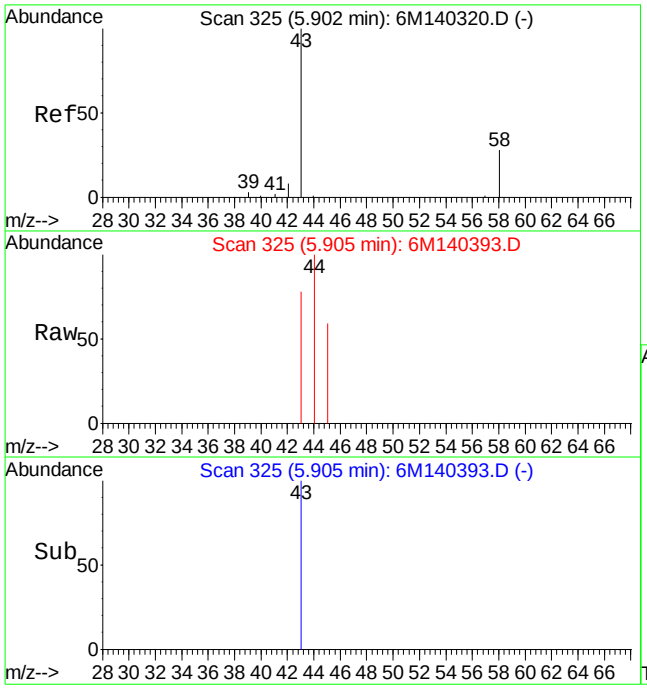

#13
Acetone
Concen: 0.79 ug/L
RT: 5.91 min Scan# 325
Delta R.T. 0.00 min
Lab File: 6M140393.D
Acq: 3 Jul 2016 12:37

Tgt Ion: 43 Resp: 1457

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

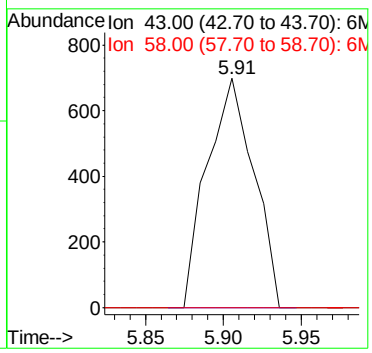

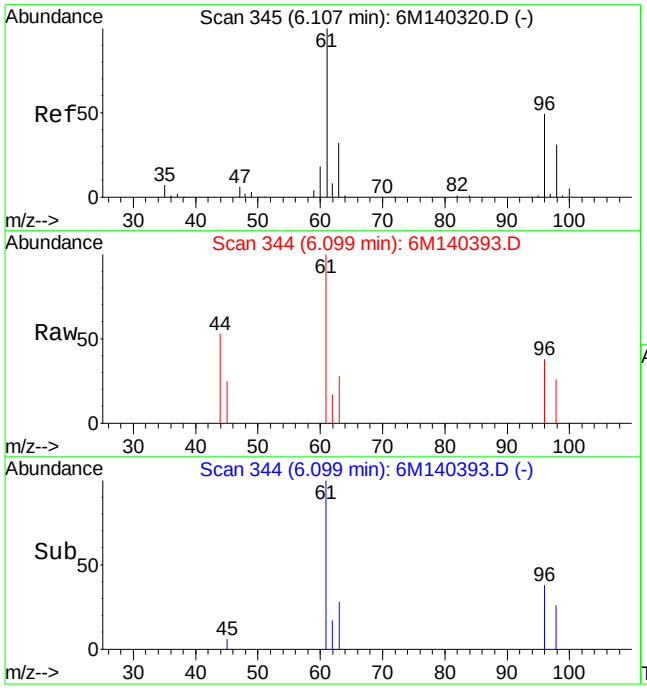

#14
1,1-Dichloroethene
Concen: 0.59 ug/L
RT: 6.10 min Scan# 344
Delta R.T. 0.00 min
Lab File: 6M140393.D
Acq: 3 Jul 2016 12:37

Tgt Ion: 61 Resp: 6332

Ion	Ratio	Lower	Upper
61	100		
96	40.7	32.0	74.6

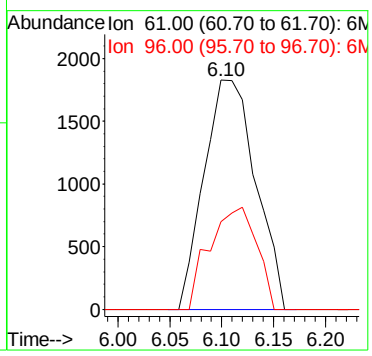

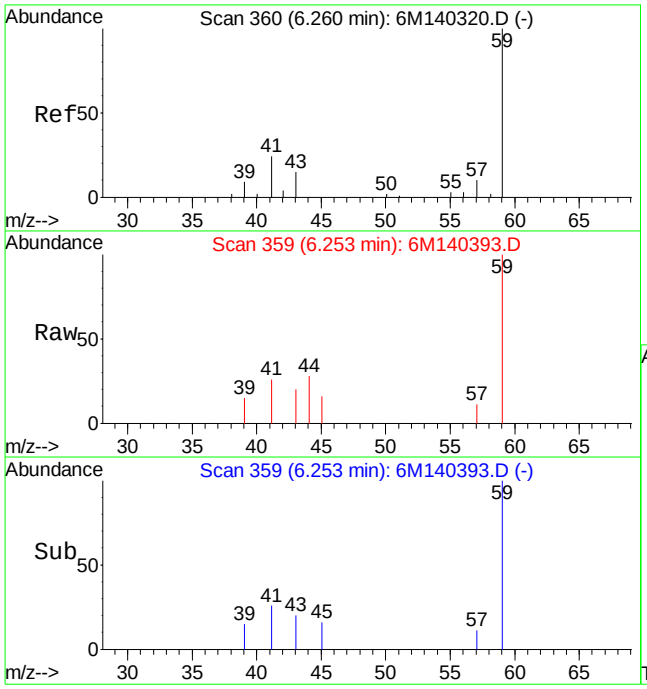

#15
Tert-Butyl Alcohol
Concen: 23.75 ug/L
RT: 6.25 min Scan# 359
Delta R.T. -0.04 min
Lab File: 6M140393.D
Acq: 3 Jul 2016 12:37

Tgt Ion: 59 Resp: 13318

Ion	Ratio	Lower	Upper
59	100		
41	23.8	14.6	34.0
57	5.3	6.4	14.8#

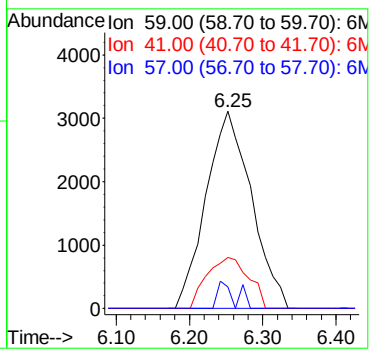

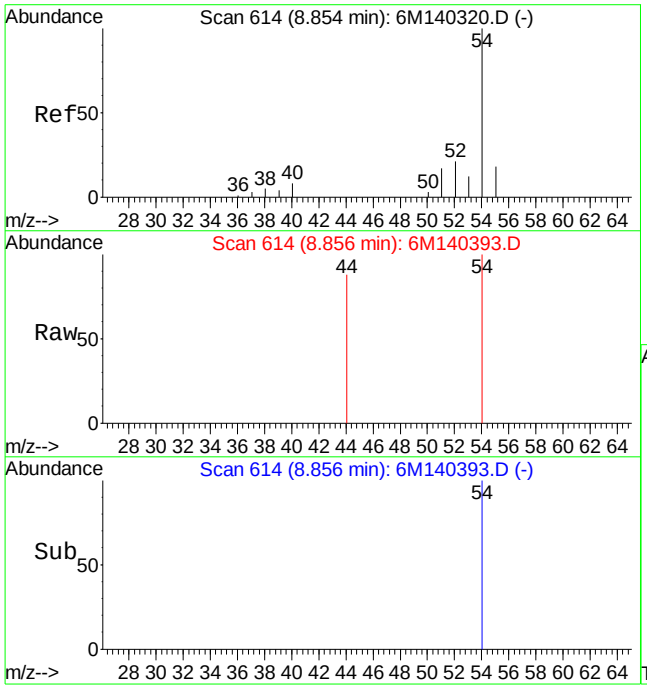

#30
Propionitrile
Concen: 1.41 ug/L
RT: 8.86 min Scan# 614
Delta R.T. 0.00 min
Lab File: 6M140393.D
Acq: 3 Jul 2016 12:37

Tgt Ion: 54 Resp: 1077

Ion	Ratio	Lower	Upper
54	100		
52	0.0	12.0	28.0#

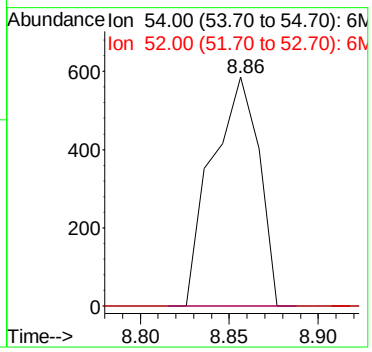

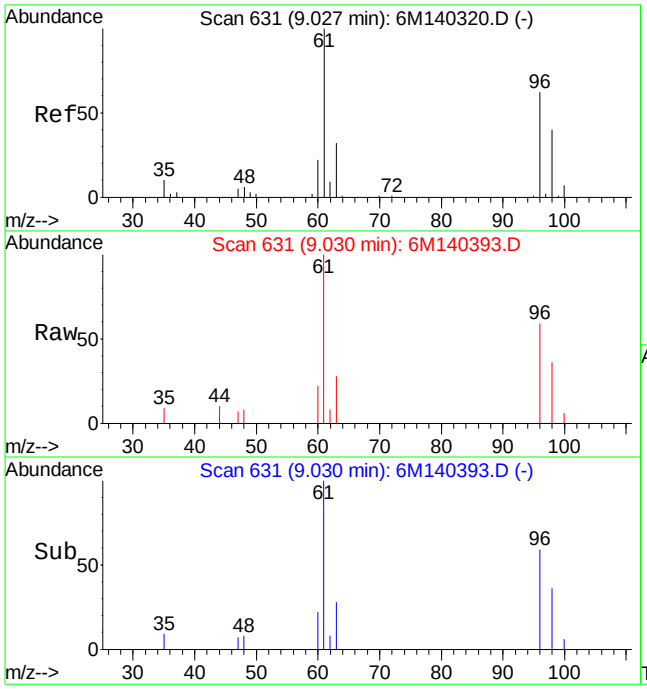

#32
cis-1,2-Dichloroethene
Concen: 1.63 ug/L
RT: 9.03 min Scan# 631
Delta R.T. 0.00 min
Lab File: 6M140393.D
Acq: 3 Jul 2016 12:37

Tgt Ion: 96 Resp: 10347

Ion	Ratio	Lower	Upper
96	100		
61	170.8	89.2	208.2

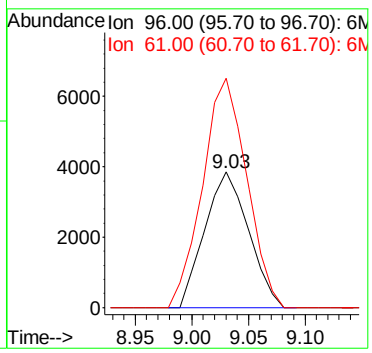

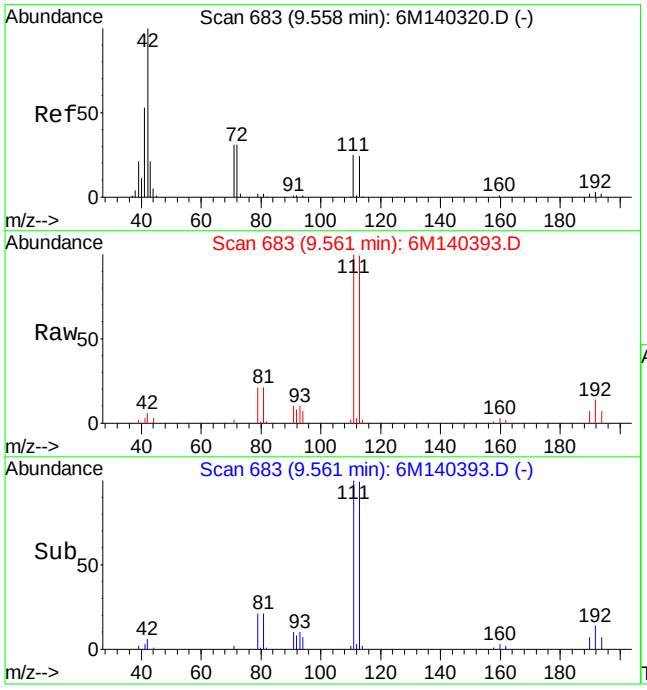

#36
Tetrahydrofuran
Concen: 1.85 ug/L
RT: 9.56 min Scan# 683
Delta R.T. 0.00 min
Lab File: 6M140393.D
Acq: 3 Jul 2016 12:37

Tgt Ion: 42 Resp: 3628

Ion	Ratio	Lower	Upper
42	100		
72	13.1	20.8	48.4#
71	6.4	19.9	46.5#

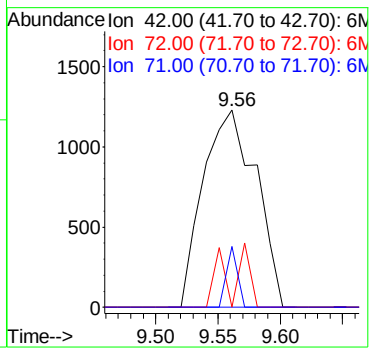

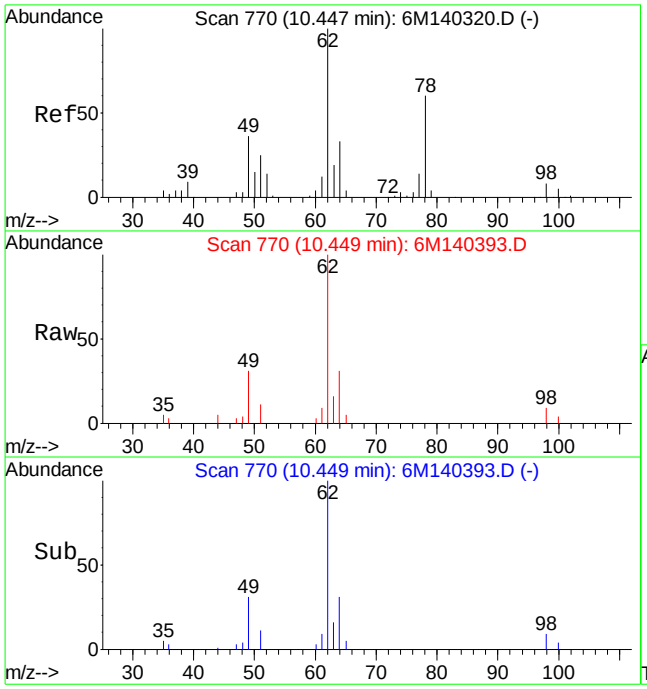

#45
1,2-Dichloroethane
Concen: 3.60 ug/L
RT: 10.45 min Scan# 770
Delta R.T. 0.00 min
Lab File: 6M140393.D
Acq: 3 Jul 2016 12:37

Tgt Ion: 62 Resp: 32223

Ion	Ratio	Lower	Upper
62	100		
49	32.5	25.1	58.5
98	6.5	5.2	12.0

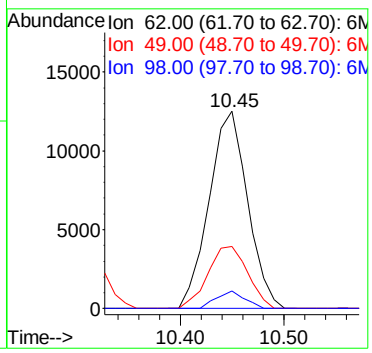

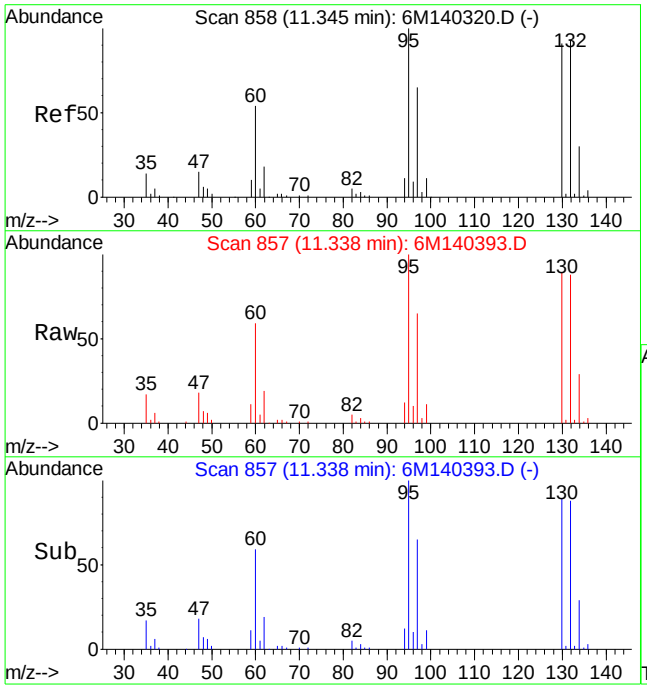

#47
Trichloroethene
Concen: 46.11 ug/L
RT: 11.34 min Scan# 857
Delta R.T. 0.00 min
Lab File: 6M140393.D
Acq: 3 Jul 2016 12:37

Tgt Ion:130 Resp: 271648

Ion	Ratio	Lower	Upper
130	100		
60	63.5	32.0	74.6

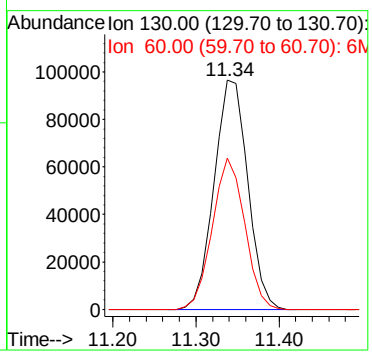

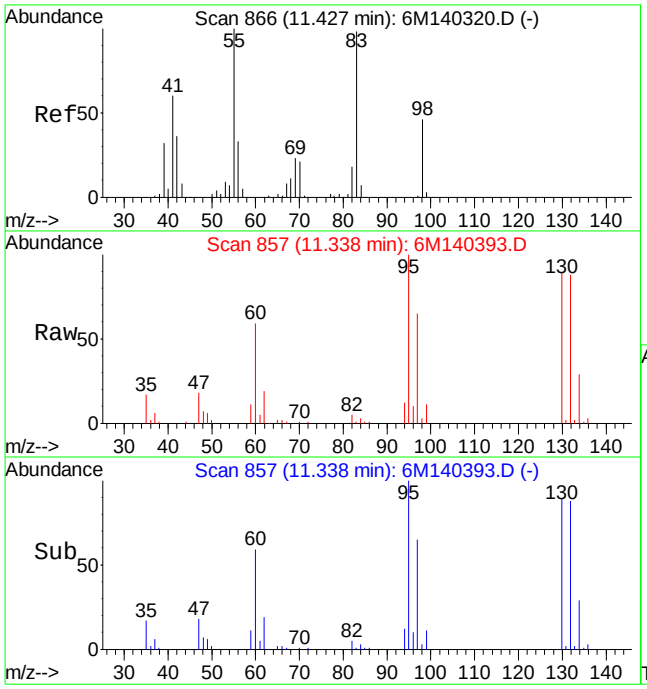

#48
Methylcyclohexane
Concen: 0.40 ug/L
RT: 11.34 min Scan# 857
Delta R.T. -0.09 min
Lab File: 6M140393.D
Acq: 3 Jul 2016 12:37

Tgt Ion: 83 Resp: 3689

Ion	Ratio	Lower	Upper
83	100		
55	0.0	56.3	131.3#
98	207.3	28.4	66.4#

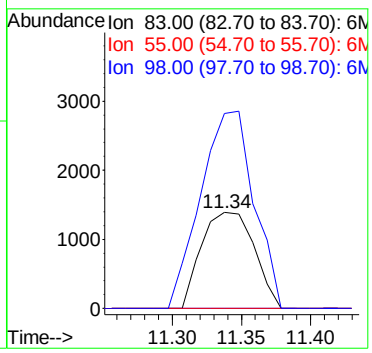

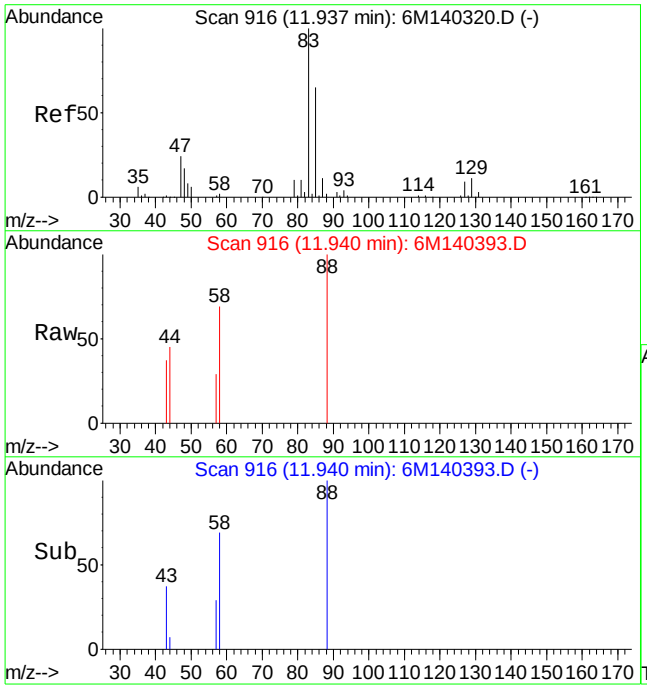

#50
1,4-Dioxane
Concen: 62.97 ug/L
RT: 11.94 min Scan# 916
Delta R.T. 0.00 min
Lab File: 6M140393.D
Acq: 3 Jul 2016 12:37

Tgt Ion: 88 Resp: 2931

Ion	Ratio	Lower	Upper
88	100		
58	80.8	42.6	99.4

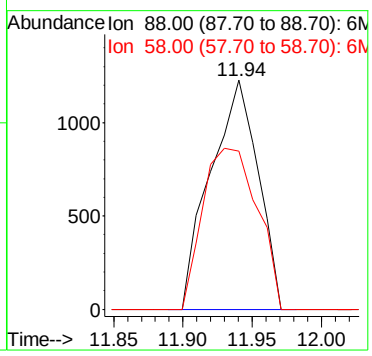

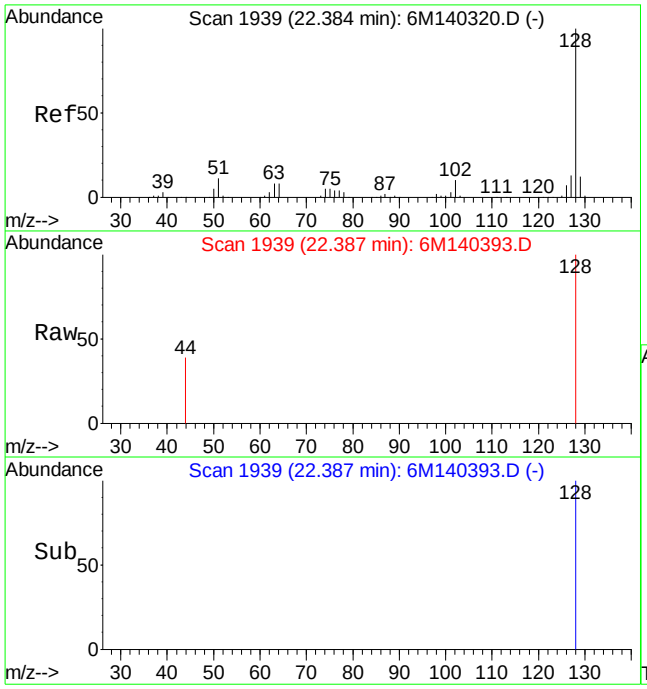

#100
Naphthalene
Concen: 0.12 ug/L
RT: 22.39 min Scan# 1939
Delta R.T. 0.00 min
Lab File: 6M140393.D
Acq: 3 Jul 2016 12:37

Tgt Ion:128 Resp: 2100

Ion	Ratio	Lower	Upper
128	100		
127	0.0	7.8	18.2#

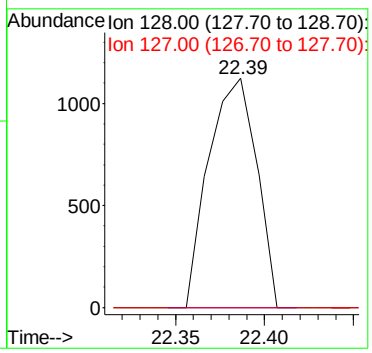

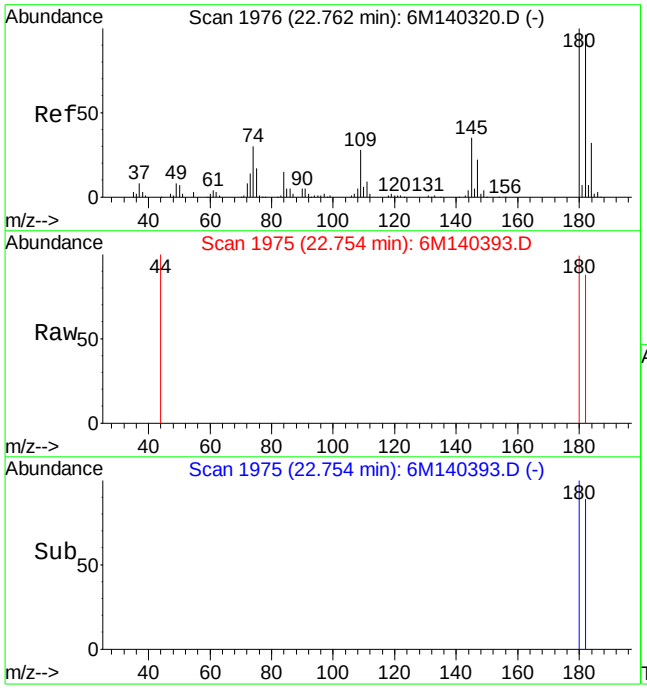

#101
1,2,3-Trichlorobenzene
Concen: 0.13 ug/L
RT: 22.75 min Scan# 1975
Delta R.T. -0.01 min
Lab File: 6M140393.D
Acq: 3 Jul 2016 12:37

Tgt Ion:180 Resp: 1026

Ion	Ratio	Lower	Upper
180	100		
182	81.1	57.8	135.0
145	0.0	20.5	47.7#

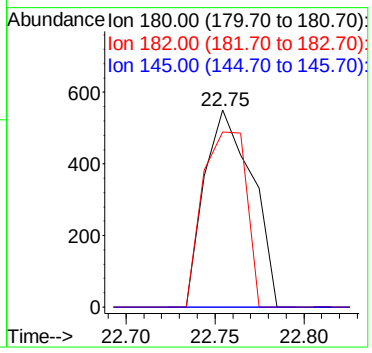

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070516\11M13090.D Vial: 15
Acq On : 6 Jul 2016 00:34 Operator: JDS
Sample : L16061290-04 B A1 826-SPE Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 06 09:19:43 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	468953	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	406573	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	232685	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	129915	25.3132 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.24%		
43) 1,2-Dichloroethane-d4	10.24	65	130814	22.3538 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 89.40%		
57) Toluene-d8	12.47	98	434426	24.5916 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.36%		
78) p-Bromofluorobenzene	15.64	95	165610	23.0888 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.36%		

Target Compounds

					Qvalue
11) Acrolein	6.23	56	221	1.9592 ug/L #	13
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	14910945	3154.8135 ug/L	96
13) Acetone	6.25	43	163495	146.8228 ug/L	93
32) cis-1,2-Dichloroethene	9.15	96	1175	0.2243 ug/L	95
46) Trichloroethene	11.08	130	4938	0.8436 ug/L	96

(#) = qualifier out of range (m) = manual integration
11M13090.D 8260WT.M Wed Jul 06 09:19:44 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070516\11M13090.D Vial: 15
Acq On : 6 Jul 2016 00:34 Operator: JDS
Sample : L16061290-04 B A1 826-SPE Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 6 9:19 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

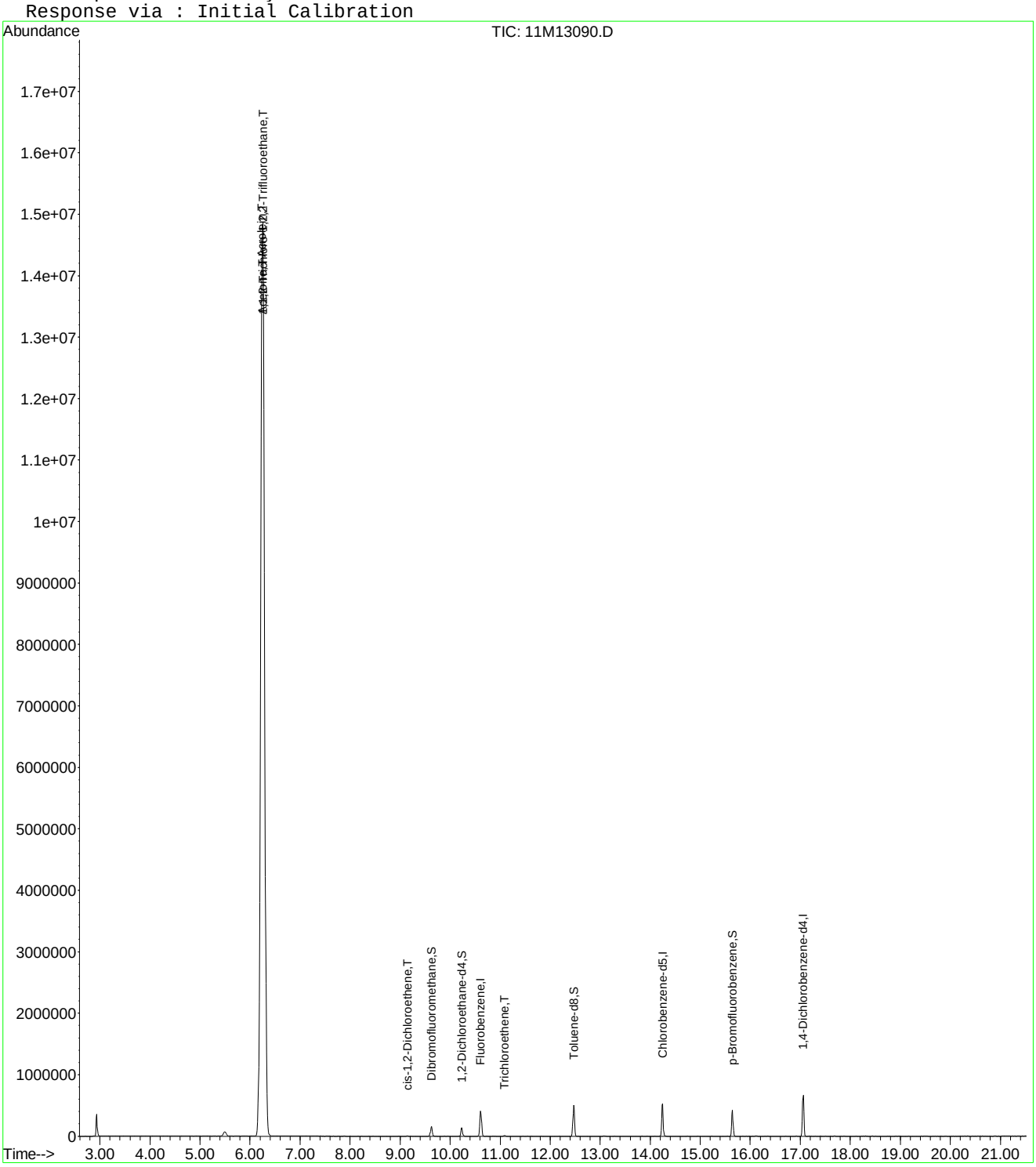

11M13090.D 8260WT.M Wed Jul 06 09:19:44 2016 Page 2

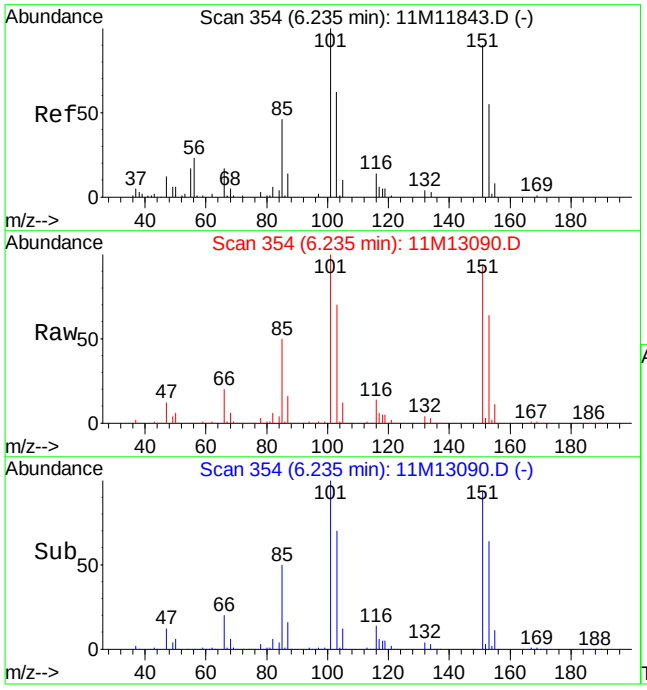

#11
Acrolein
Concen: 1.96 ug/L
RT: 6.23 min Scan# 354
Delta R.T. 0.00 min
Lab File: 11M13090.D
Acq: 6 Jul 2016 00:34

Tgt Ion: 56 Resp: 221

Ion	Ratio	Lower	Upper
56	100		
55	0.0	43.8	102.2#

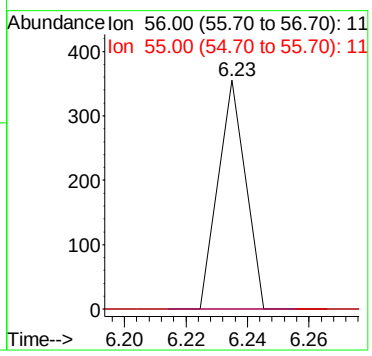

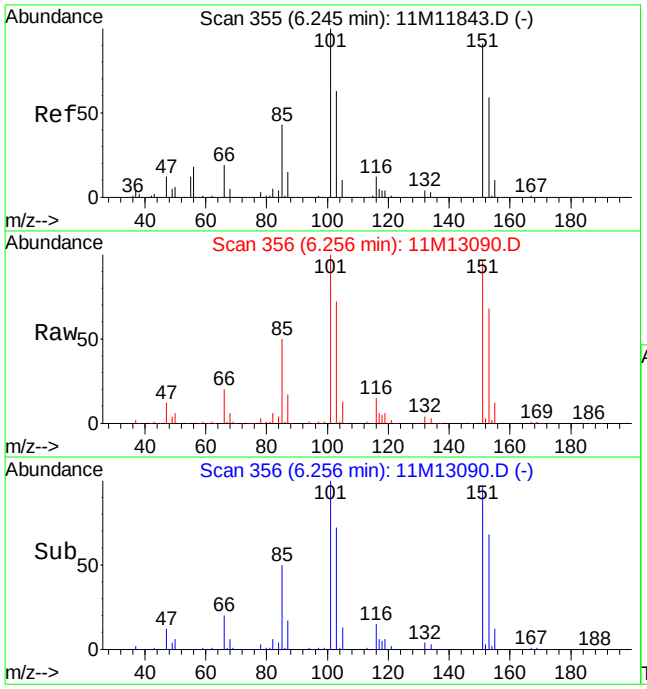

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 3154.81 ug/L
RT: 6.26 min Scan# 356
Delta R.T. 0.01 min
Lab File: 11M13090.D
Acq: 6 Jul 2016 00:34

Tgt Ion:101 Resp:14910945

Ion	Ratio	Lower	Upper
101	100		
151	94.8	50.7	130.7

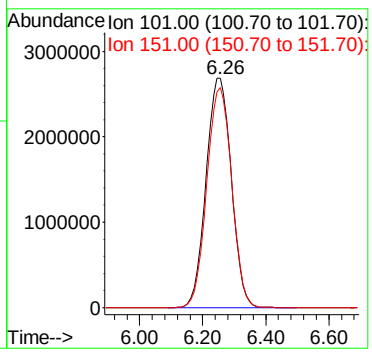

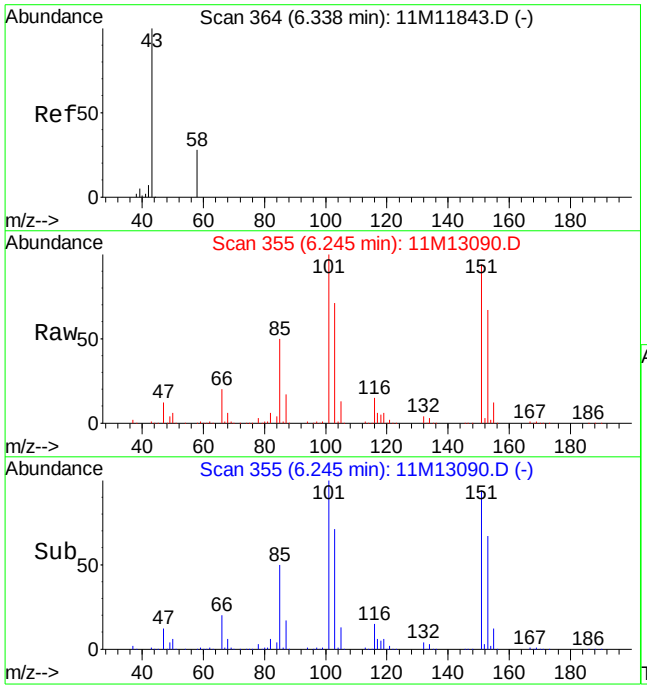

#13
Acetone
Concen: 146.82 ug/L
RT: 6.25 min Scan# 355
Delta R.T. -0.09 min
Lab File: 11M13090.D
Acq: 6 Jul 2016 00:34

Tgt Ion: 43 Resp: 163495

Ion	Ratio	Lower	Upper
43	100		
58	22.6	15.8	36.8

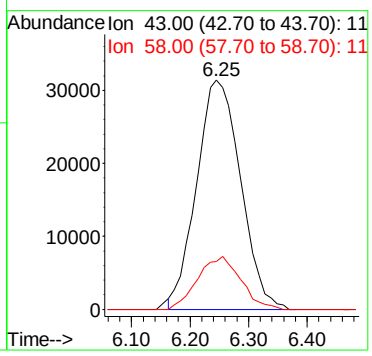

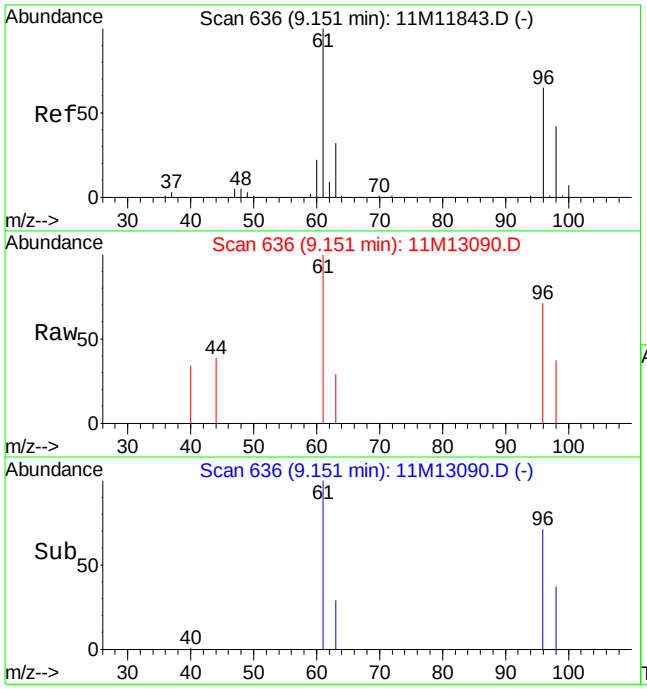

#32
cis-1,2-Dichloroethene
Concen: 0.22 ug/L
RT: 9.15 min Scan# 636
Delta R.T. -0.00 min
Lab File: 11M13090.D
Acq: 6 Jul 2016 00:34

Tgt Ion: 96 Resp: 1175

Ion	Ratio	Lower	Upper
96	100		
61	182.1	105.2	245.6

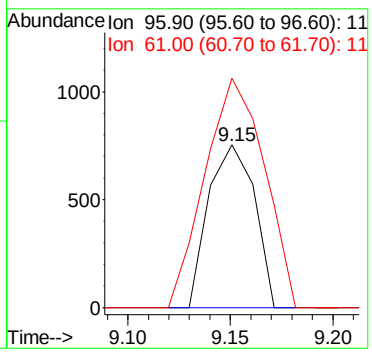

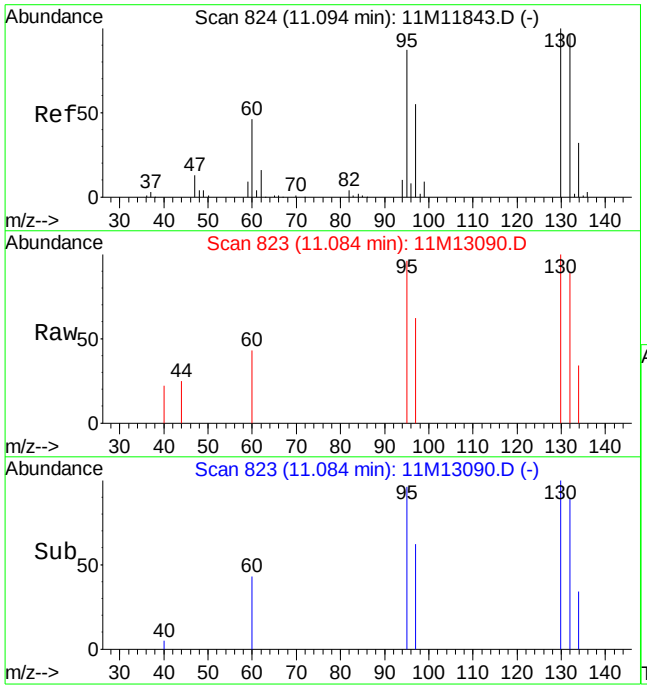

#46
Trichloroethene
Concen: 0.84 ug/L
RT: 11.08 min Scan# 823
Delta R.T. -0.01 min
Lab File: 11M13090.D
Acq: 6 Jul 2016 00:34

Tgt Ion:130 Resp: 4938

Ion	Ratio	Lower	Upper
130	100		
132	90.8	58.3	136.1
95	90.8	55.6	129.8

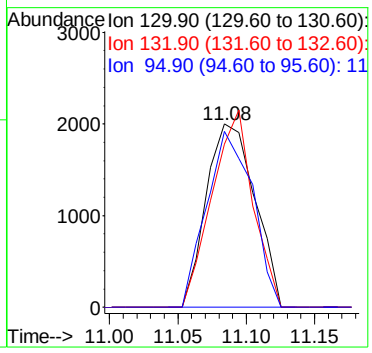

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070216\11M13059.D Vial: 19
Acq On : 2 Jul 2016 23:09 Operator: TMB
Sample : L16061290-05 A 5X 826-LOW Inst : hpms11
Misc : 1,5 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 07 12:05:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	467670	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	391246	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	222415	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	126795	24.7731 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.08%		
43) 1,2-Dichloroethane-d4	10.23	65	126062	21.6009 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 86.40%		
57) Toluene-d8	12.47	98	429210	25.2482 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.00%		
78) p-Bromofluorobenzene	15.64	95	161143	23.5034 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.00%		

Target Compounds

					Qvalue
4) Vinyl Chloride	3.95	62	810	0.1662 ug/L #	44
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	70324	14.9198 ug/L	94
14) 1,1-Dichloroethene	6.56	61	3933	0.4594 ug/L	87
16) Dimethyl Sulfide	6.88	62	413	0.1208 ug/L #	1
23) trans-1,2-Dichloroethene	7.74	96	1604	0.3385 ug/L	90
26) Vinyl Acetate	8.31	43	759	2.5271 ug/L #	79
27) 1,1-Dichloroethane	8.33	63	1681	0.1768 ug/L #	67
32) cis-1,2-Dichloroethene	9.15	96	155835	29.8277 ug/L	76
33) Chloroform	9.35	83	3011	0.3225 ug/L	94
36) Tetrahydrofuran	9.60	42	678	0.5719 ug/L #	47
46) Trichloroethene	11.08	130	781650	133.9055 ug/L	97
47) Methylcyclohexane	11.08	83	7477	1.0379 ug/L #	1

(#) = qualifier out of range (m) = manual integration
11M13059.D 8260WT.M Thu Jul 07 12:05:34 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070216\11M13059.D Vial: 19
Acq On : 2 Jul 2016 23:09 Operator: TMB
Sample : L16061290-05 A 5X 826-LOW Inst : hpms11
Misc : 1,5 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 7 12:05 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

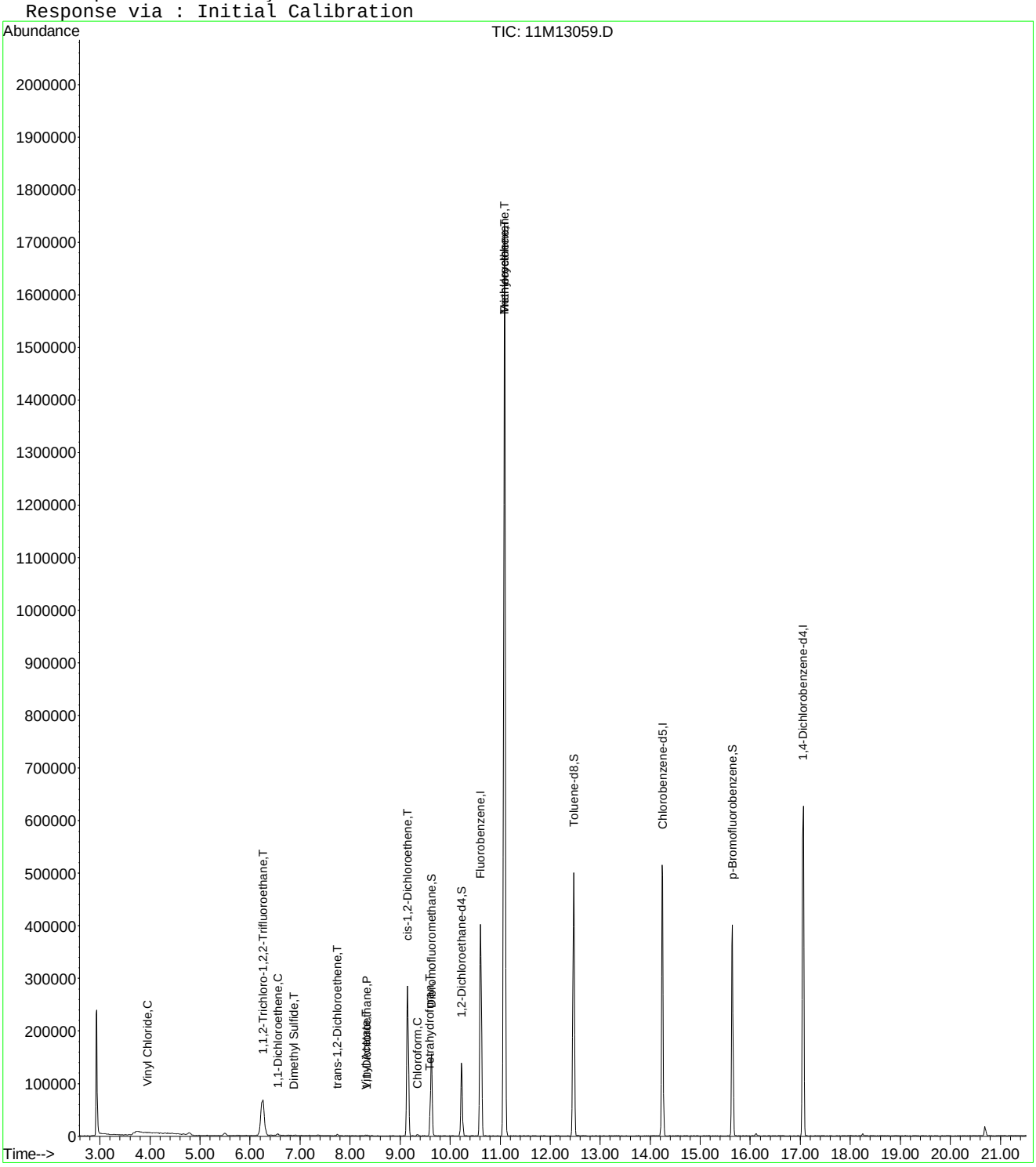

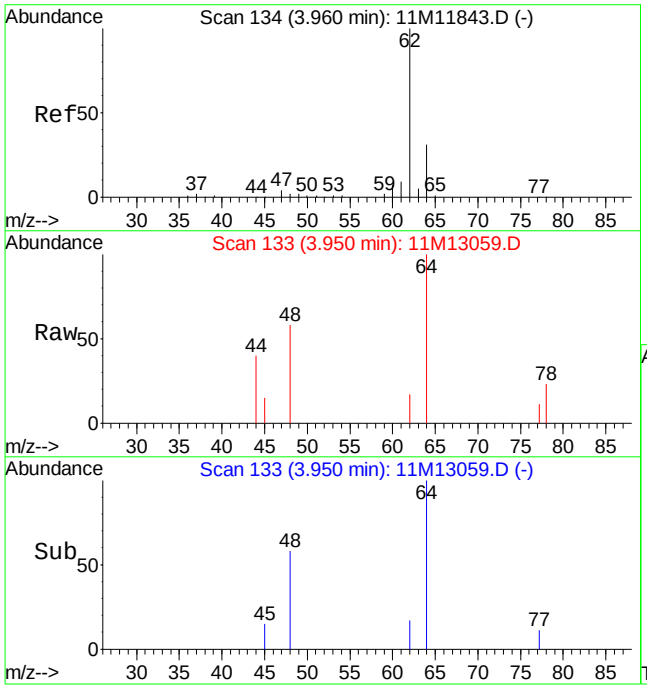

#4
Vinyl Chloride
Concen: 0.17 ug/L
RT: 3.95 min Scan# 133
Delta R.T. -0.01 min
Lab File: 11M13059.D
Acq: 2 Jul 2016 23:09

Tgt Ion: 62 Resp: 810

Ion	Ratio	Lower	Upper
62	100		
64	0.0	18.4	43.0#

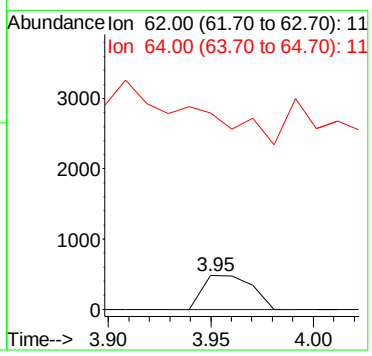

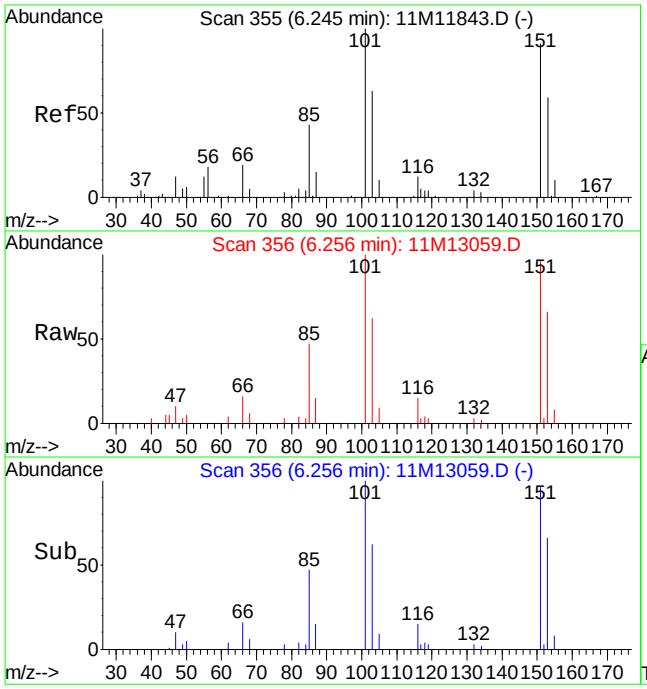

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 14.92 ug/L
RT: 6.26 min Scan# 356
Delta R.T. 0.01 min
Lab File: 11M13059.D
Acq: 2 Jul 2016 23:09

Tgt Ion:101 Resp: 70324

Ion	Ratio	Lower	Upper
101	100		
151	96.2	50.7	130.7

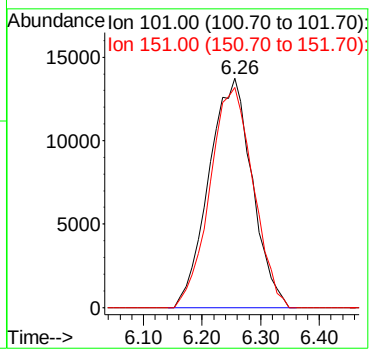

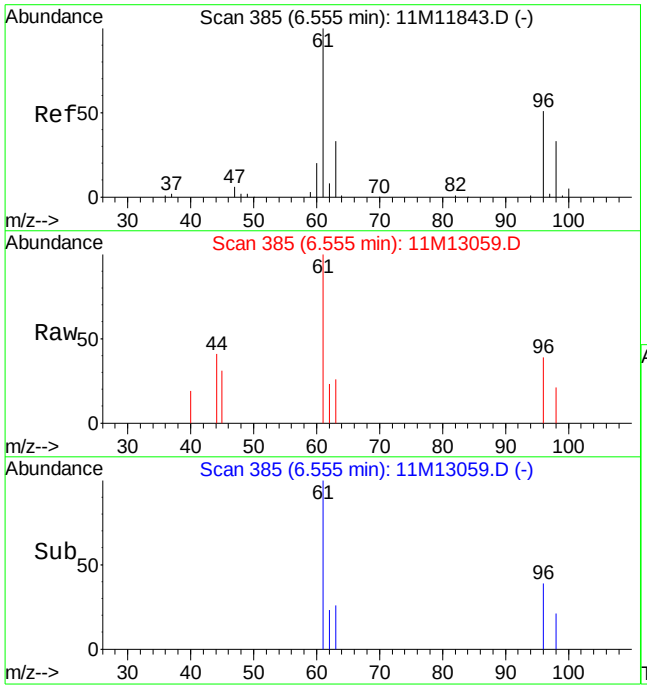

#14
1,1-Dichloroethene
Concen: 0.46 ug/L
RT: 6.56 min Scan# 385
Delta R.T. 0.00 min
Lab File: 11M13059.D
Acq: 2 Jul 2016 23:09

Tgt Ion: 61 Resp: 3933

Ion	Ratio	Lower	Upper
61	100		
96	40.9	30.1	70.3

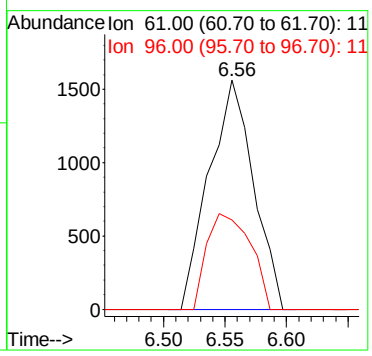

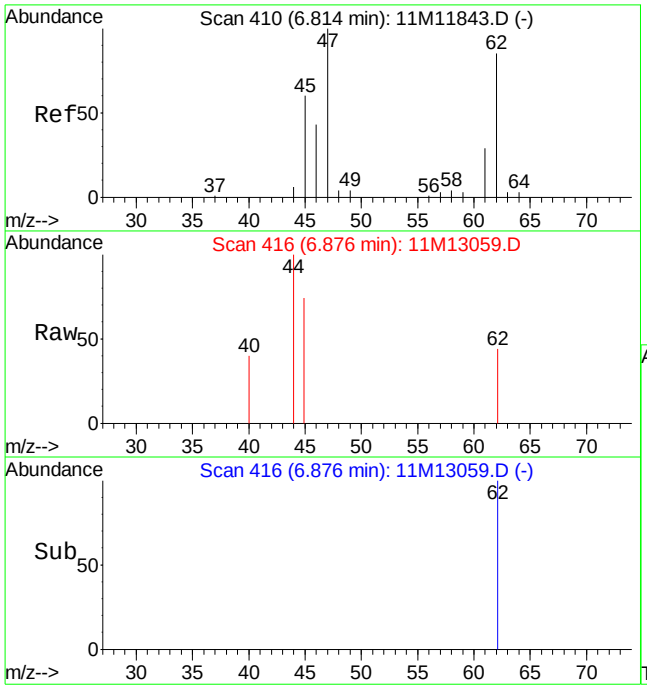

#16
Dimethyl Sulfide
Concen: 0.12 ug/L
RT: 6.88 min Scan# 416
Delta R.T. 0.06 min
Lab File: 11M13059.D
Acq: 2 Jul 2016 23:09

Tgt Ion: 62 Resp: 413

Ion	Ratio	Lower	Upper
62	100		
47	0.0	73.4	171.2#

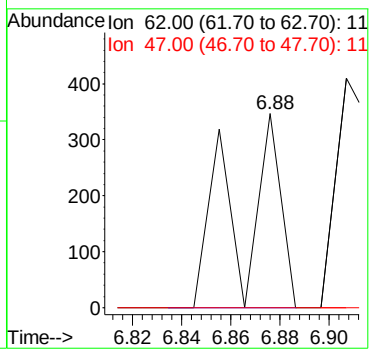

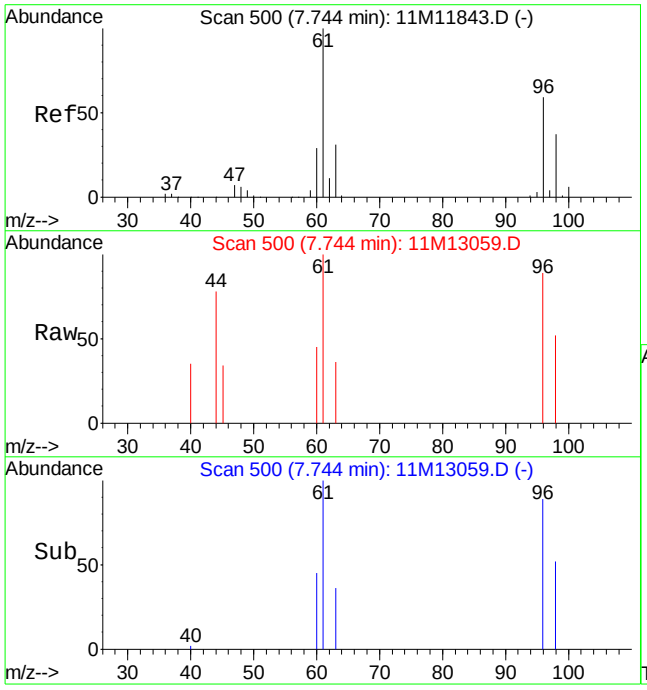

#23
trans-1,2-Dichloroethene
Concen: 0.34 ug/L
RT: 7.74 min Scan# 500
Delta R.T. 0.00 min
Lab File: 11M13059.D
Acq: 2 Jul 2016 23:09

Tgt Ion: 96 Resp: 1604

Ion	Ratio	Lower	Upper
96	100		
61	154.2	100.6	234.6

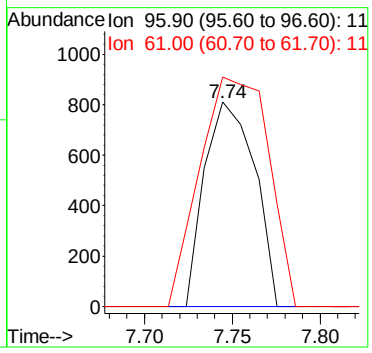

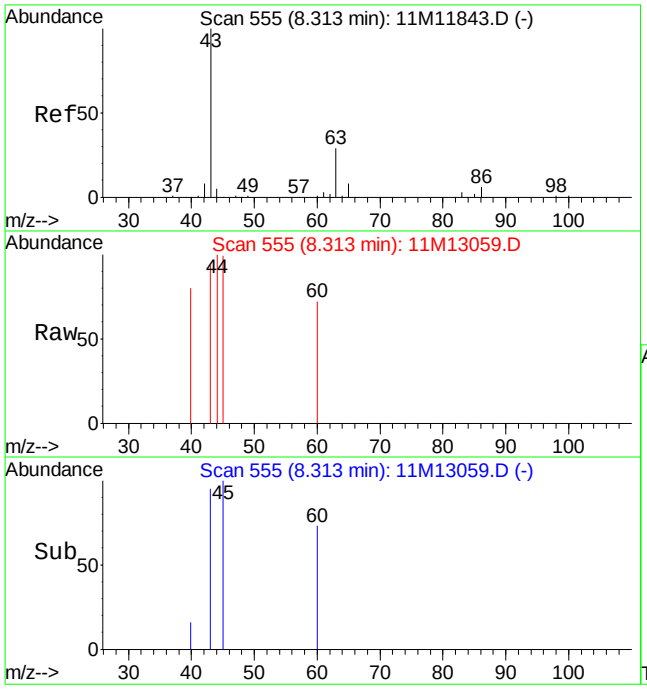

#26
Vinyl Acetate
Concen: 2.53 ug/L
RT: 8.31 min Scan# 555
Delta R.T. 0.00 min
Lab File: 11M13059.D
Acq: 2 Jul 2016 23:09

Tgt Ion: 43 Resp: 759

Ion	Ratio	Lower	Upper
43	100		
42	0.0	5.0	11.6#
86	0.0	3.8	9.0#

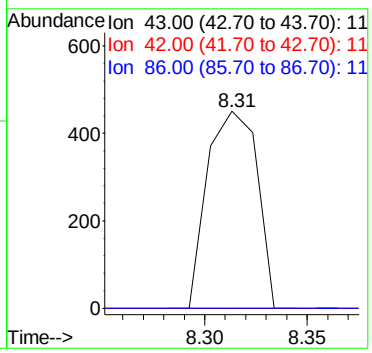

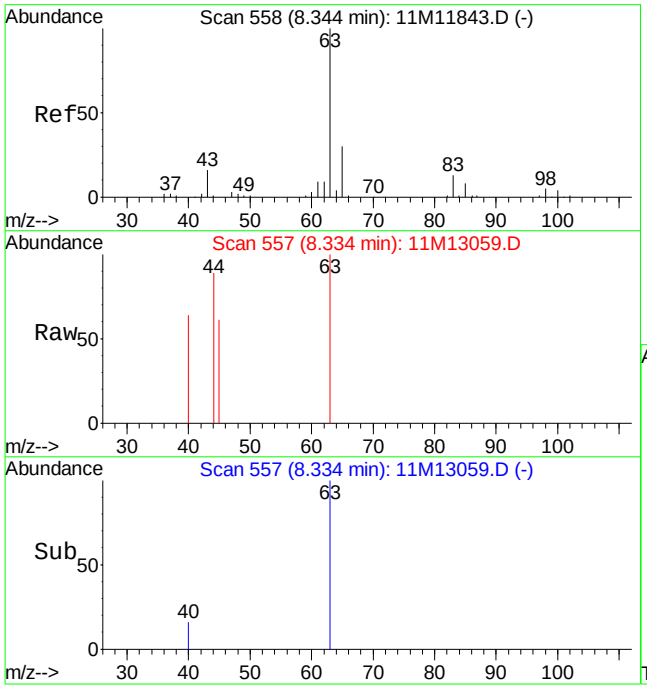

#27
1,1-Dichloroethane
Concen: 0.18 ug/L
RT: 8.33 min Scan# 557
Delta R.T. -0.01 min
Lab File: 11M13059.D
Acq: 2 Jul 2016 23:09

Tgt Ion: 63 Resp: 1681

Ion	Ratio	Lower	Upper
63	100		
65	11.4	17.8	41.6#
83	0.0	7.4	17.4#

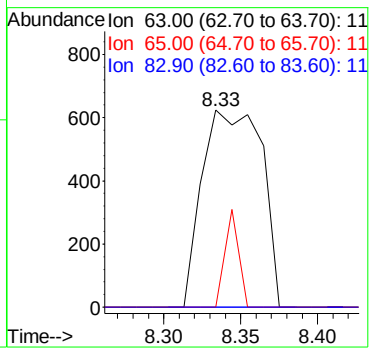

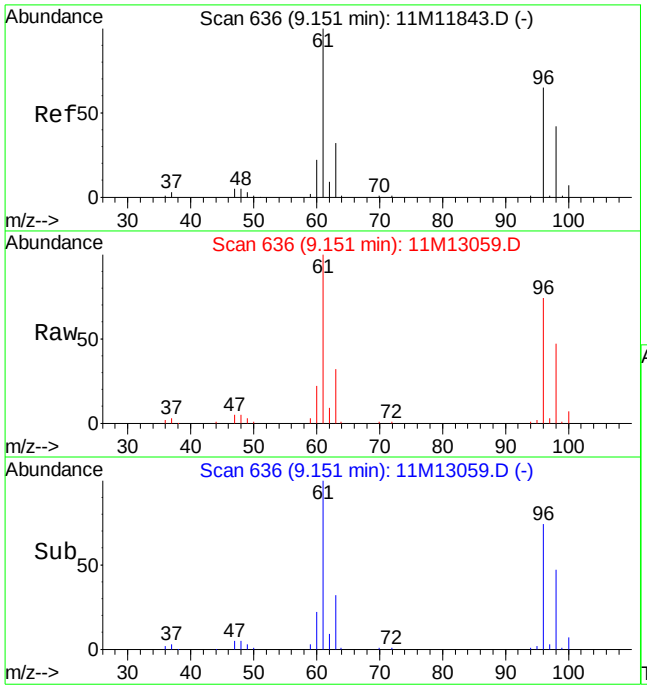

#32
cis-1,2-Dichloroethene
Concen: 29.83 ug/L
RT: 9.15 min Scan# 636
Delta R.T. 0.00 min
Lab File: 11M13059.D
Acq: 2 Jul 2016 23:09

Tgt Ion: 96 Resp: 155835

Ion	Ratio	Lower	Upper
96	100		
61	141.8	105.2	245.6

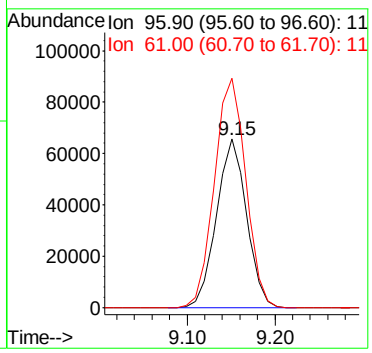

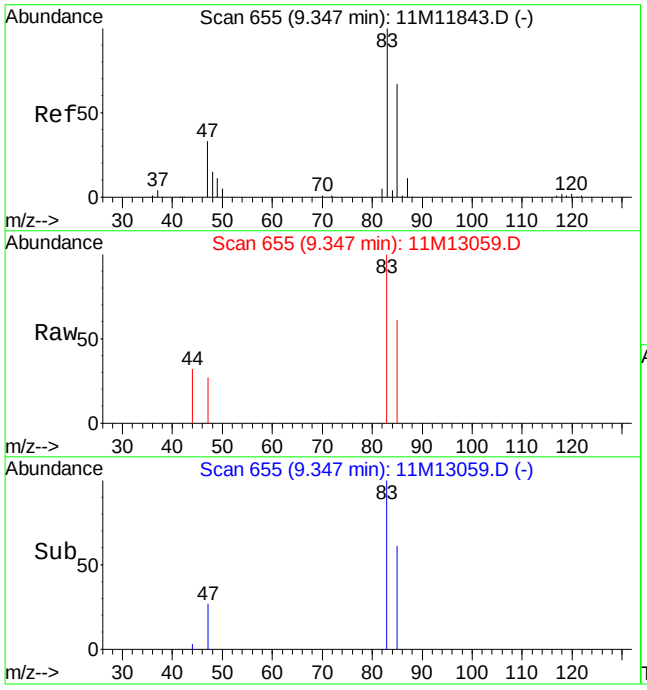

#33
Chloroform
Concen: 0.32 ug/L
RT: 9.35 min Scan# 655
Delta R.T. 0.00 min
Lab File: 11M13059.D
Acq: 2 Jul 2016 23:09

Tgt Ion: 83 Resp: 3011

Ion	Ratio	Lower	Upper
83	100		
85	70.1	39.2	91.4

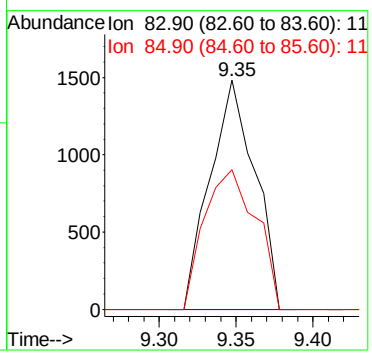

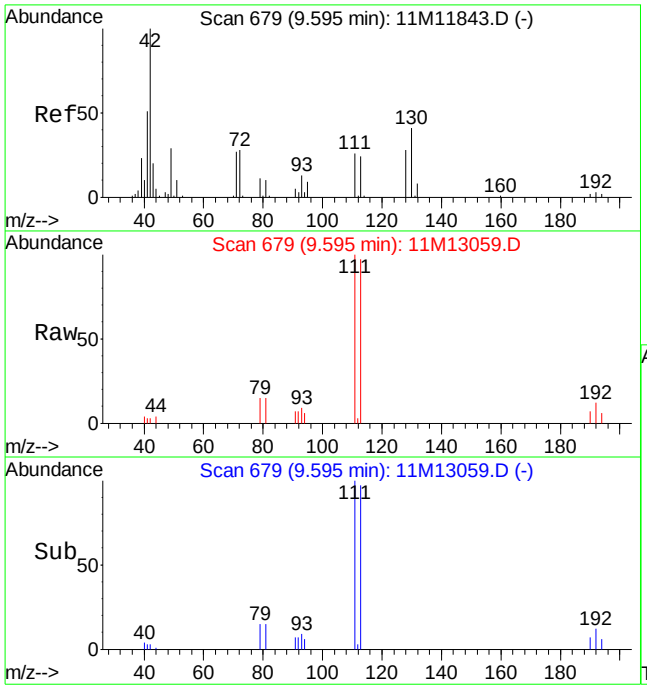

#36
Tetrahydrofuran
Concen: 0.57 ug/L
RT: 9.60 min Scan# 679
Delta R.T. 0.00 min
Lab File: 11M13059.D
Acq: 2 Jul 2016 23:09

Tgt Ion: 42 Resp: 678

Ion	Ratio	Lower	Upper
42	100		
71	0.0	16.4	38.2#
72	0.0	16.6	38.8#

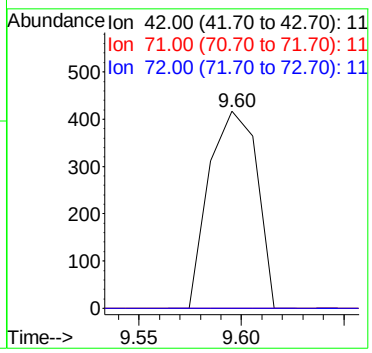

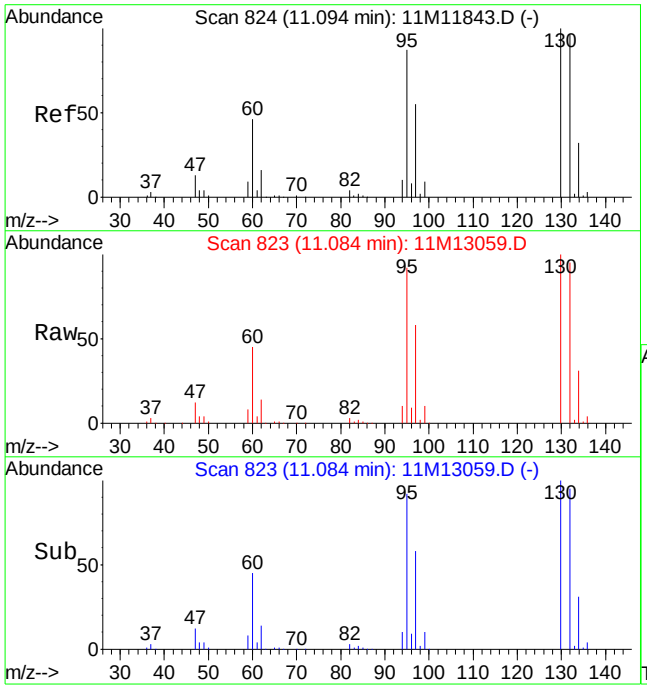

#46
Trichloroethene
Concen: 133.91 ug/L
RT: 11.08 min Scan# 823
Delta R.T. -0.01 min
Lab File: 11M13059.D
Acq: 2 Jul 2016 23:09

Tgt Ion:130 Resp: 781650

Ion	Ratio	Lower	Upper
130	100		
132	96.3	58.3	136.1
95	88.5	55.6	129.8

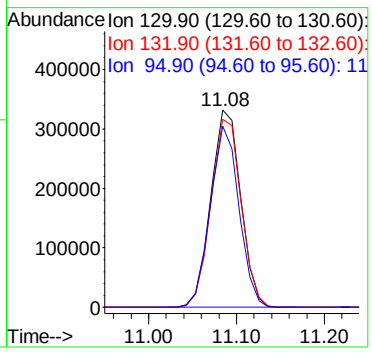

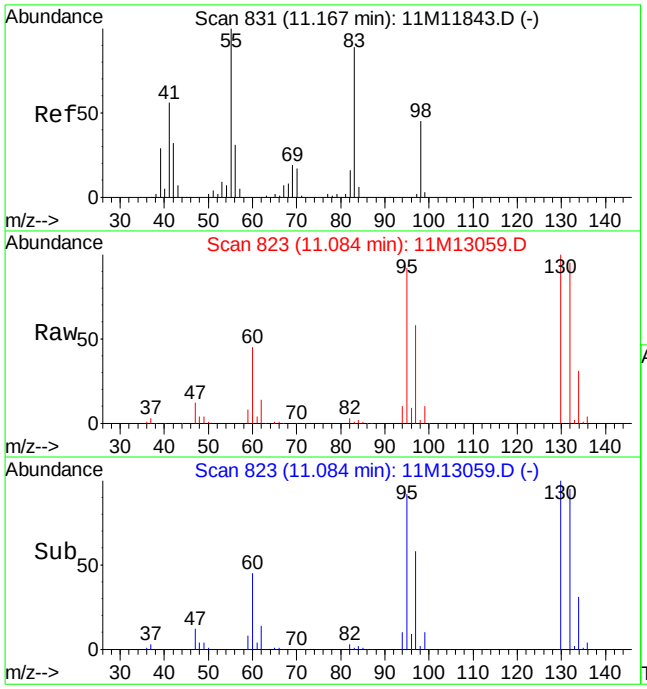

#47
Methylcyclohexane
Concen: 1.04 ug/L
RT: 11.08 min Scan# 823
Delta R.T. -0.08 min
Lab File: 11M13059.D
Acq: 2 Jul 2016 23:09

Tgt Ion: 83 Resp: 7477

Ion	Ratio	Lower	Upper
83	100		
55	0.0	66.5	155.1#
98	243.3	29.9	69.7#

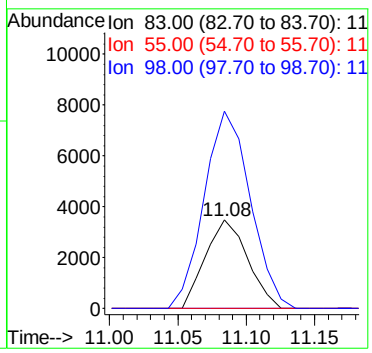

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070216\11M13050.D Vial: 10
Acq On : 2 Jul 2016 18:22 Operator: TMB
Sample : L16061290-06 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 07 12:05:08 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	517116	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	436961	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	253832	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	142164	25.1200 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.48%		
43) 1,2-Dichloroethane-d4	10.23	65	138635	21.4839 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 85.92%		
57) Toluene-d8	12.47	98	475013	25.0192 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.08%		
78) p-Bromofluorobenzene	15.64	95	179369	22.9236 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 91.68%		

Target Compounds					Qvalue
13) Acetone	6.34	43	1166	0.9496 ug/L #	49
16) Dimethyl Sulfide	6.77	62	575	0.1521 ug/L #	1
46) Trichloroethene	11.08	130	2194	0.3399 ug/L	88

(#) = qualifier out of range (m) = manual integration
11M13050.D 8260WT.M Thu Jul 07 12:05:09 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070216\11M13050.D Vial: 10
Acq On : 2 Jul 2016 18:22 Operator: TMB
Sample : L16061290-06 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 7 12:05 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

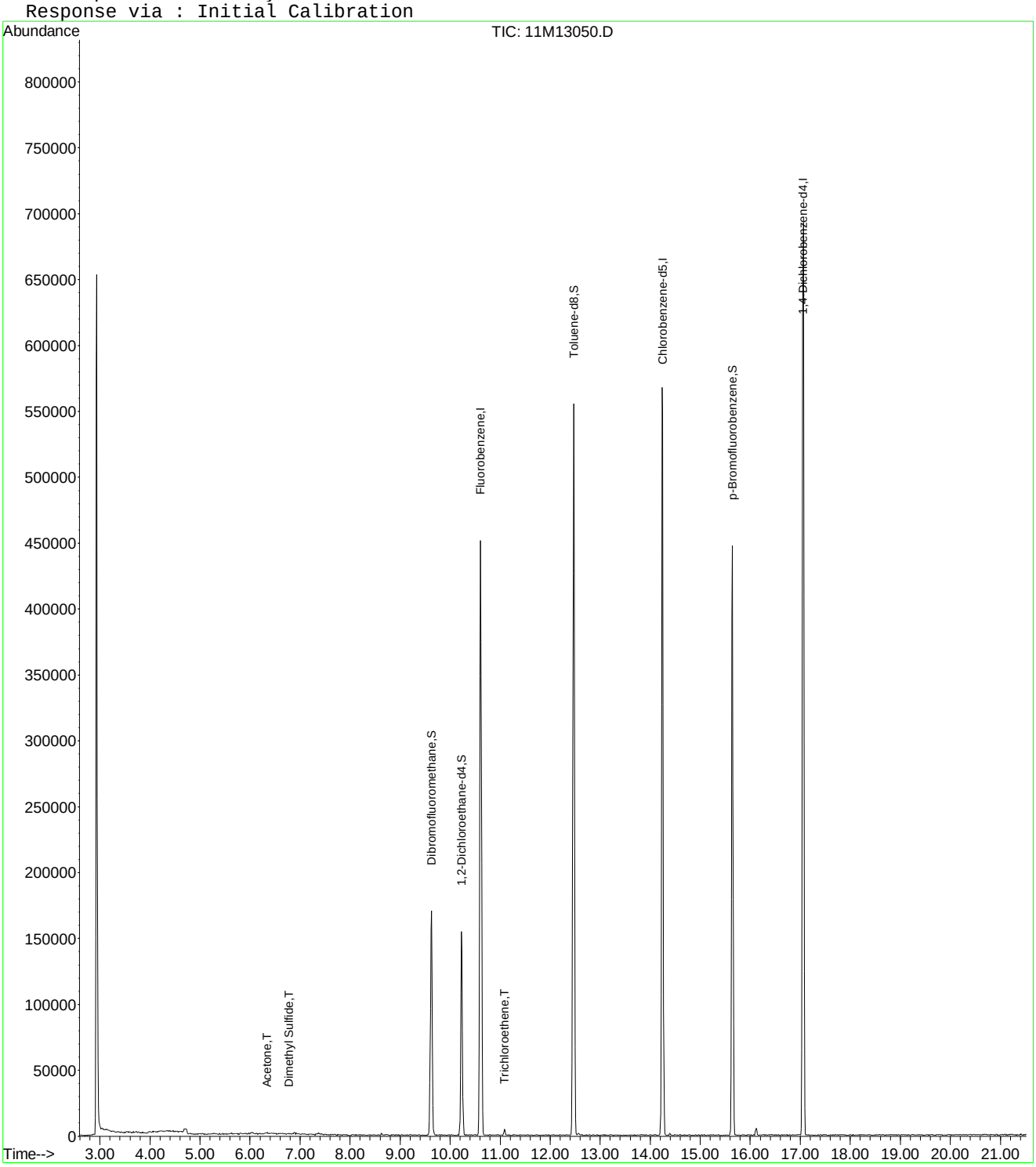

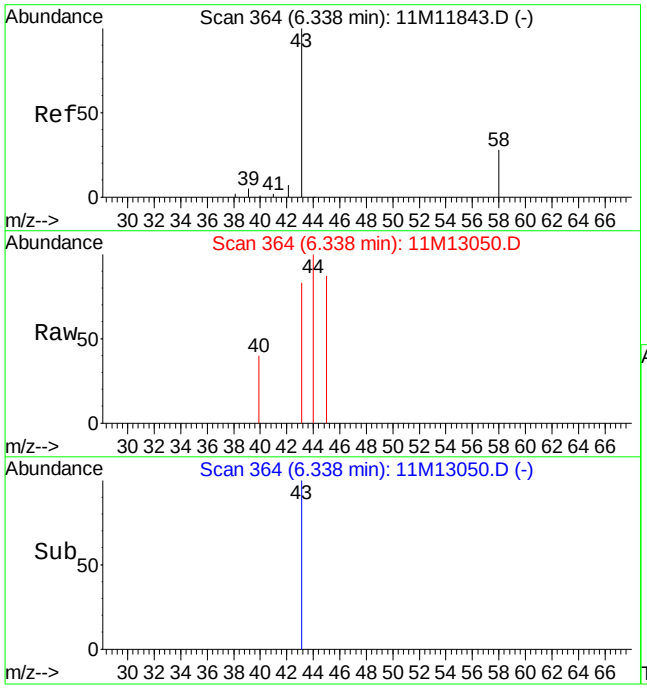

#13
Acetone
Concen: 0.95 ug/L
RT: 6.34 min Scan# 364
Delta R.T. 0.00 min
Lab File: 11M13050.D
Acq: 2 Jul 2016 18:22

Tgt Ion: 43 Resp: 1166

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

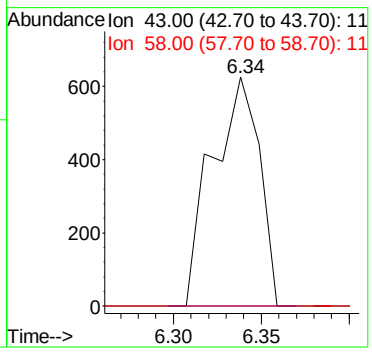

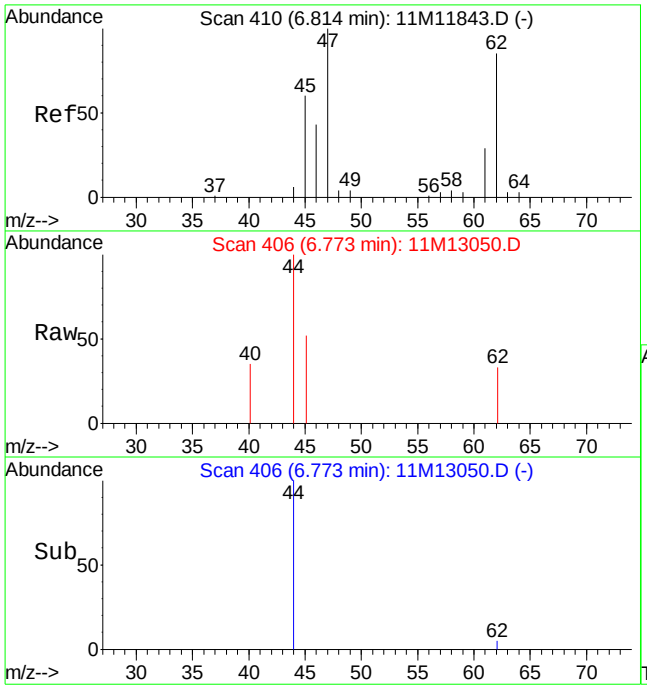

#16
Dimethyl Sulfide
Concen: 0.15 ug/L
RT: 6.77 min Scan# 406
Delta R.T. -0.04 min
Lab File: 11M13050.D
Acq: 2 Jul 2016 18:22

Tgt Ion: 62 Resp: 575

Ion	Ratio	Lower	Upper
62	100		
47	0.0	73.4	171.2#

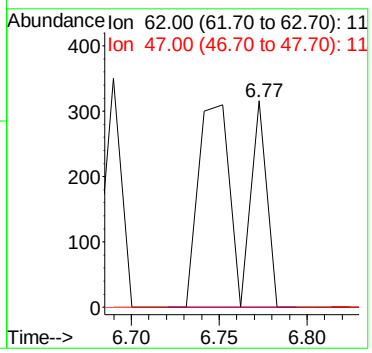

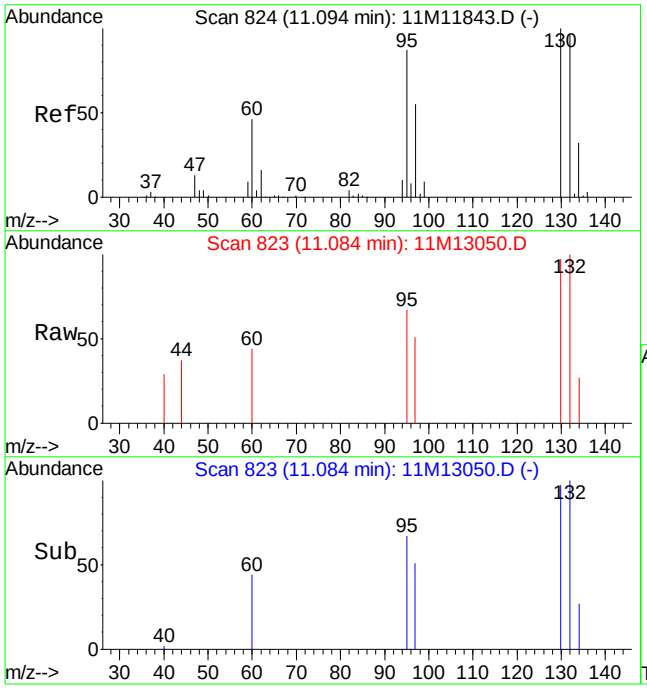

#46
Trichloroethene
Concen: 0.34 ug/L
RT: 11.08 min Scan# 823
Delta R.T. -0.01 min
Lab File: 11M13050.D
Acq: 2 Jul 2016 18:22

Tgt Ion:130 Resp: 2194

Ion	Ratio	Lower	Upper
130	100		
132	101.0	58.3	136.1
95	72.2	55.6	129.8

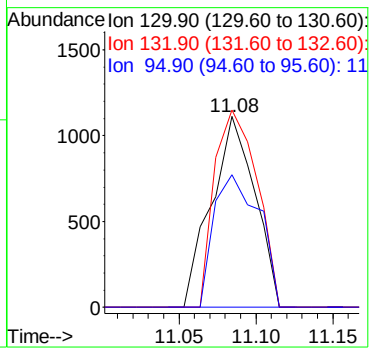

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070216\11M13046.D Vial: 6
Acq On : 2 Jul 2016 16:15 Operator: TMB
Sample : L16061290-07 A TB 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 07 12:05:00 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	536895	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	451077	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	253845	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	142067	24.1780 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.72%		
43) 1,2-Dichloroethane-d4	10.23	65	134040	20.0066 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 80.04%		
57) Toluene-d8	12.47	98	488247	24.9115 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.64%		
78) p-Bromofluorobenzene	15.64	95	182157	23.2788 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.12%		

Target Compounds					Qvalue
13) Acetone	6.35	43	436	0.3420 ug/L #	49
36) Tetrahydrofuran	9.58	42	1080	0.7935 ug/L #	47

(#) = qualifier out of range (m) = manual integration
11M13046.D 8260WT.M Thu Jul 07 12:05:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070216\11M13046.D Vial: 6
Acq On : 2 Jul 2016 16:15 Operator: TMB
Sample : L16061290-07 A TB 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 7 12:05 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

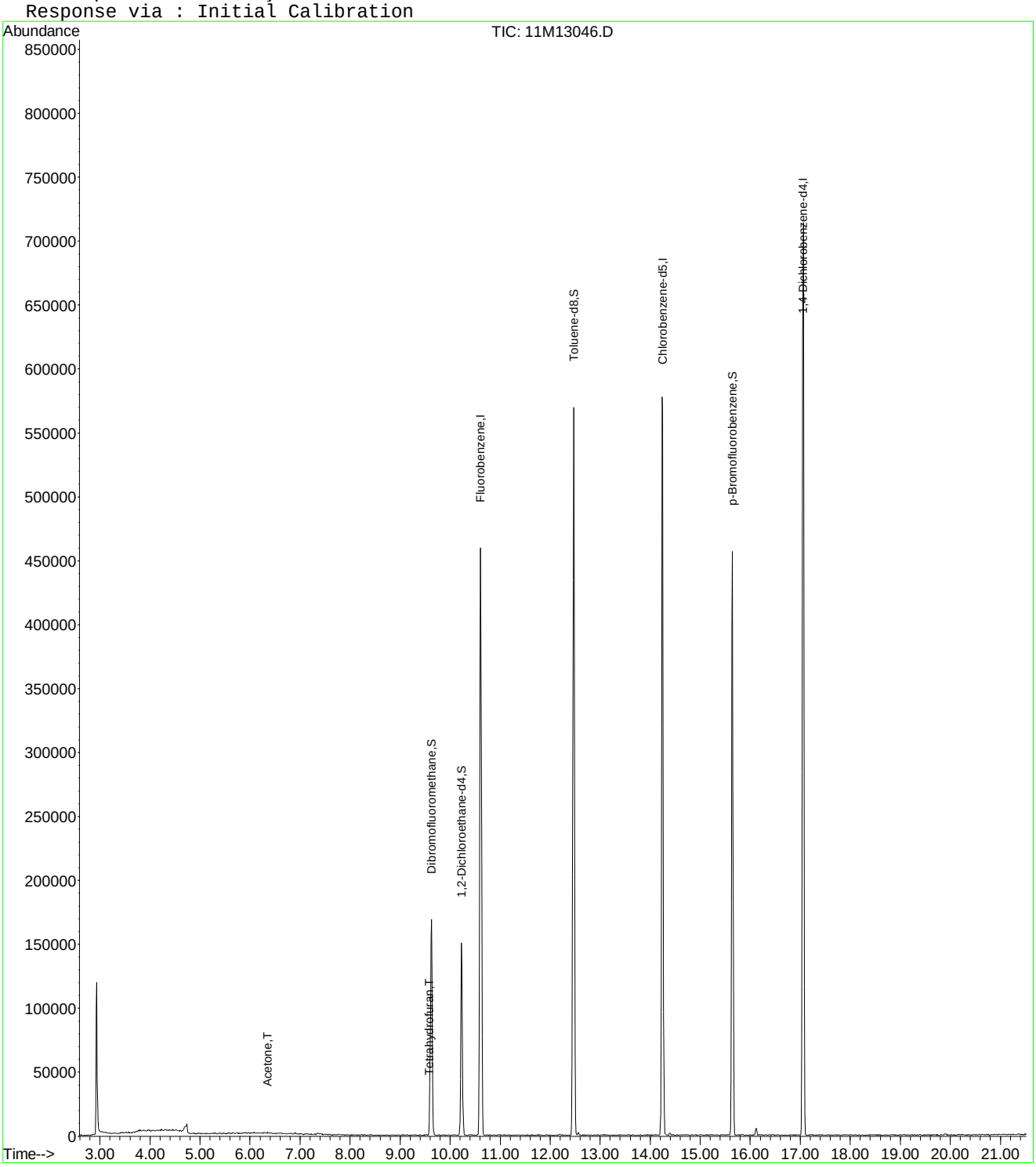

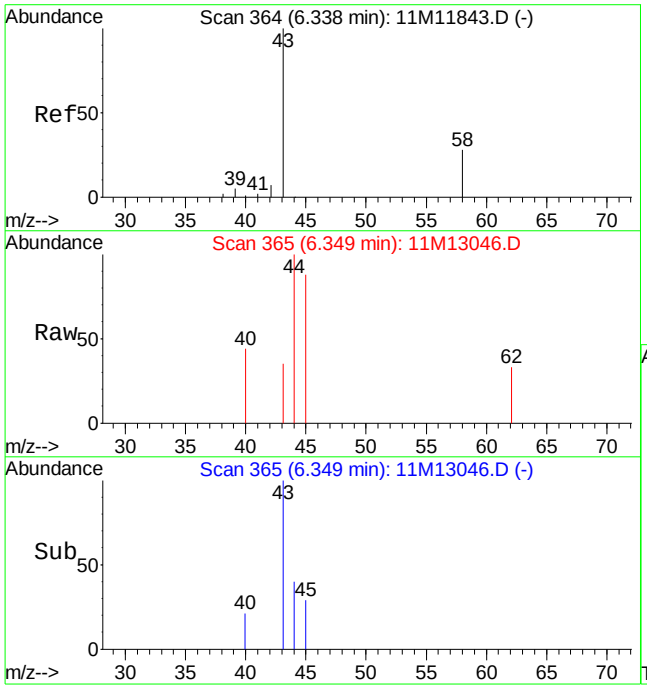

#13
Acetone
Concen: 0.34 ug/L
RT: 6.35 min Scan# 365
Delta R.T. 0.01 min
Lab File: 11M13046.D
Acq: 2 Jul 2016 16:15

Tgt Ion: 43 Resp: 436

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

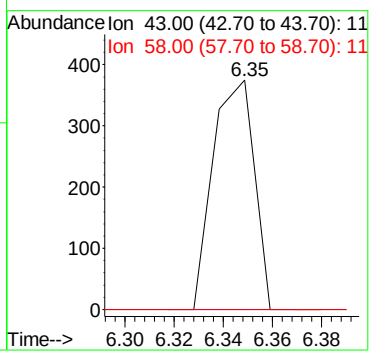

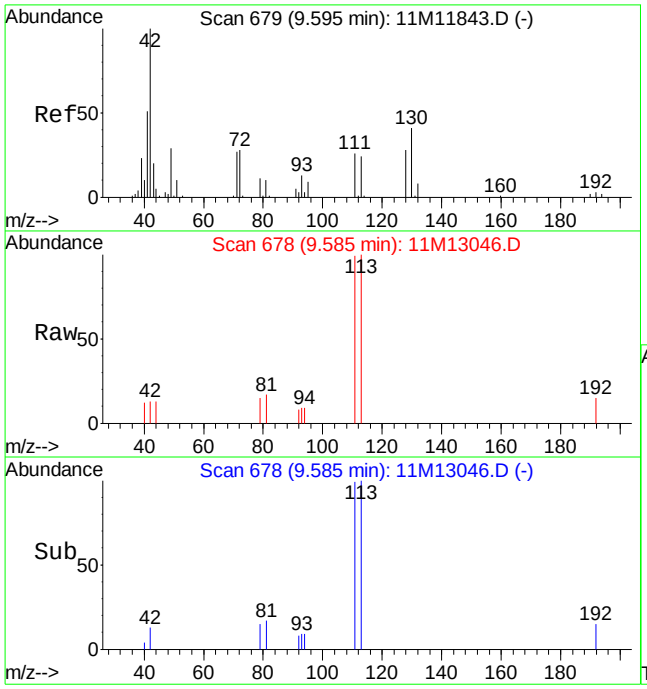

#36
Tetrahydrofuran
Concen: 0.79 ug/L
RT: 9.58 min Scan# 678
Delta R.T. -0.01 min
Lab File: 11M13046.D
Acq: 2 Jul 2016 16:15

Tgt Ion: 42 Resp: 1080

Ion	Ratio	Lower	Upper
42	100		
71	0.0	16.4	38.2#
72	0.0	16.6	38.8#

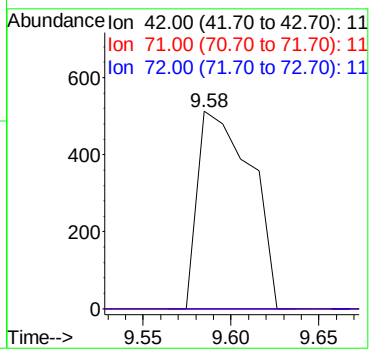

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:20 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	538041	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	450050	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	251600	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
57) Toluene-d8	12.47	98	210	0.0099 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.04%#	
78) p-Bromofluorobenzene	15.64	95	566	0.0689 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	2475	0.3135 ug/L #	66
3) Chloromethane	3.72	50	4639	0.6471 ug/L	91
4) Vinyl Chloride	3.96	62	1882	0.3288 ug/L #	44
5) 1,3-Butadiene	4.01	54	1564	0.2900 ug/L #	19
6) Bromomethane	4.84	94	1717	0.4723 ug/L	83
7) Chloroethane	5.00	64	616	0.1589 ug/L #	45
8) Trichlorofluoromethane	5.49	101	3531	0.3330 ug/L	97
10) Isoprene	6.04	67	1746	0.2381 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	1344	0.2515 ug/L	96
13) Acetone	6.34	43	2389	1.4850 ug/L #	45
14) 1,1-Dichloroethene	6.56	61	3780	0.3817 ug/L	78
16) Dimethyl Sulfide	6.80	62	762	0.1697 ug/L	78
18) Methyl acetate	7.02	43	24685	4.4975 ug/L #	70
19) Methylene Chloride	7.31	84	1766	0.3184 ug/L	74
20) Carbon Disulfide	7.36	76	5848	0.3373 ug/L	92
22) Methyl Tert Butyl Ether	7.54	73	3068	0.2131 ug/L #	48
23) trans-1,2-Dichloroethene	7.75	96	1449	0.2556 ug/L	91
24) n-Hexane	7.82	57	3745	0.4031 ug/L #	73
26) Vinyl Acetate	8.30	43	2410	0.6995 ug/L #	78
27) 1,1-Dichloroethane	8.35	63	3312	0.2969 ug/L #	76
31) 2,2-Dichloropropane	9.10	77	2449	0.3040 ug/L #	42
32) cis-1,2-Dichloroethene	9.15	96	1729	0.2748 ug/L	96
33) Chloroform	9.35	83	3792	0.3639 ug/L	92
35) Bromochloromethane	9.56	130	948	0.2355 ug/L #	68
38) 1,1,1-Trichloroethane	9.85	97	3449	0.3423 ug/L #	79
39) Cyclohexane	9.88	56	3639	0.2986 ug/L #	84
40) 1,1-Dichloropropene	10.04	75	2365	0.3106 ug/L #	53
41) Carbon Tetrachloride	10.17	117	2613	0.2748 ug/L	87
44) 1,2-Dichloroethane	10.35	62	2493	0.2788 ug/L #	73
45) Benzene	10.38	78	7133	0.3275 ug/L	99
46) Trichloroethene	11.09	130	1973	0.2780 ug/L	93
47) Methylcyclohexane	11.17	83	2570	0.2986 ug/L	84
48) 1,2-Dichloropropane	11.29	63	1665	0.2692 ug/L	87
50) Bromodichloromethane	11.57	83	2418	0.2950 ug/L #	82
51) Dibromomethane	11.65	93	756	0.2331 ug/L	88
54) cis-1,3-Dichloropropene	12.17	75	1869	0.2166 ug/L #	82
55) Dimethyl Disulfide	12.42	79	1028	0.1910 ug/L	95
58) Toluene	12.57	91	7355	0.3156 ug/L	91
59) Ethyl Methacrylate	12.64	69	1041	0.1887 ug/L	88
60) trans-1,3-Dichloropropene	12.72	75	1951	0.2556 ug/L #	51

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:20 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
61) 1,1,2-Trichloroethane	12.92	97	1087	0.2492 ug/L	87
62) 2-Hexanone	12.86	43	687	0.1910 ug/L #	29
63) 1,3-Dichloropropane	13.21	76	1673	0.2309 ug/L	94
64) Tetrachloroethene	13.34	164	1703	0.3238 ug/L	94
65) Dibromochloromethane	13.59	129	1515	0.2406 ug/L	92
66) 1,2-Dibromoethane	13.82	107	966	0.2181 ug/L	98
67) 1-Chlorohexane	13.89	91	2128	0.2784 ug/L	97
68) Chlorobenzene	14.29	112	5248	0.3062 ug/L	99
69) 1,1,1,2-Tetrachloroethane	14.32	131	2025	0.3082 ug/L	98
70) Ethylbenzene	14.31	106	2602	0.2992 ug/L	88
71) m-,p-Xylene	14.40	106	6296	0.6083 ug/L	82
72) o-Xylene	14.92	106	3032	0.2937 ug/L	95
73) Styrene	14.95	104	4953	0.2828 ug/L	95
75) Isopropylbenzene	15.31	105	7848	0.3006 ug/L	93
77) 1,1,2,2-Tetrachloroethane	15.52	83	1145	0.2759 ug/L	68
81) n-Propylbenzene	15.79	91	9421	0.3332 ug/L	94
82) Bromobenzene	15.92	156	2002	0.2551 ug/L	66
83) 1,3,5-Trimethylbenzene	15.95	105	6742	0.3138 ug/L	91
84) 2-Chlorotoluene	16.05	91	6735	0.3228 ug/L	96
85) 4-Chlorotoluene	16.09	91	6023	0.3518 ug/L	99
86) a-Methylstyrene	16.34	118	2850	0.2387 ug/L	95
87) tert-Butylbenzene	16.39	134	1197	0.2539 ug/L	64
88) 1,2,4-Trimethylbenzene	16.44	105	6992	0.3180 ug/L	88
89) sec-Butylbenzene	16.65	105	8335	0.3278 ug/L	97
90) p-Isopropyltoluene	16.79	119	7094	0.3065 ug/L	96
91) 1,3-Dichlorobenzene	16.98	146	4505	0.3090 ug/L	96
92) 1,4-Dichlorobenzene	17.10	146	4475	0.3006 ug/L #	1
93) n-Butylbenzene	17.28	91	7076	0.3396 ug/L #	93
94) 1,2-Dichlorobenzene	17.56	146	4016	0.2922 ug/L	100
96) 1,2,4-Trichlorobenzene	19.55	180	2964	0.2902 ug/L	99
97) Hexachlorobutadiene	19.69	225	1160	0.2796 ug/L #	71
98) Naphthalene	19.90	128	4679	0.2394 ug/L #	93
99) 1,2,3-Trichlorobenzene	20.19	180	2578	0.2696 ug/L	87

(#) = qualifier out of range (m) = manual integration
11M11837.D 8260WT.M Fri May 13 17:04:21 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration

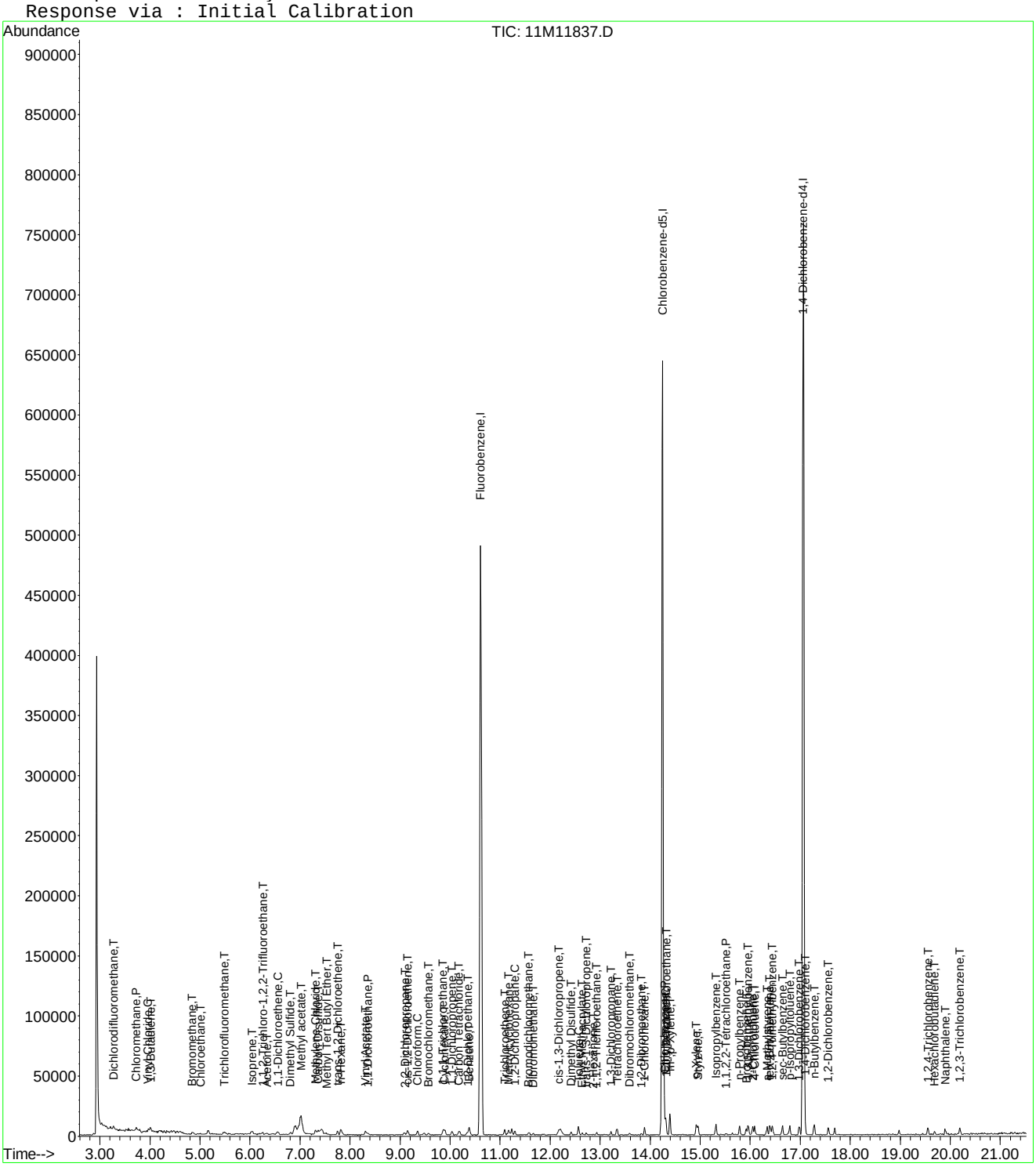

11M11837.D 8260WT.M Fri May 13 17:04:22 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:40:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2936	0.0	0	0.00
3	P	Chloromethane	-1.0000	0.6871	0.0	0	0.00
4	C	Vinyl Chloride	-1.0000	0.3357	0.0	0	0.00
5	T	1,3-Butadiene	-1.0000	0.2805	0.0	0	0.01
6	T	Bromomethane	-1.0000	0.4454	0.0	0	-0.01
7	T	Chloroethane	-1.0000	0.1710	0.0	0	0.00
8	T	Trichlorofluoromethane	-1.0000	0.3160	0.0	0	0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.01#
10	T	Isoprene	-1.0000	0.2535	0.0	0	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.23#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2478	0.0	0	0.01
13	T	Acetone	-1.0000	1.8699	0.0	0	0.00
14	C	1,1-Dichloroethene	-1.0000	0.3838	0.0	0	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.66#
16	T	Dimethyl Sulfide	-1.0000	0.1937	0.0	0	-0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.06#
18	T	Methyl acetate	-1.0000	5.1442	0.0	0	-0.04
19	T	Methylene Chloride	-1.0000	0.3464	0.0	0	0.00
20	T	Carbon Disulfide	-1.0000	0.3546	0.0	0	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.49#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2413	0.0	0	0.02
23	T	trans-1,2-Dichloroethene	-1.0000	0.2658	0.0	0	0.01
24	T	n-Hexane	-1.0000	0.4125	0.0	0	0.00
25	T	Diisopropyl ether	-1.0000	0.0083	0.0	0	0.08
26	T	Vinyl Acetate	-1.0000	2.6933	0.0	0	-0.01
27	P	1,1-Dichloroethane	-1.0000	0.3028	0.0	0	0.01
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.70#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.87#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.97#
31	T	2,2-Dichloropropane	-1.0000	0.2862	0.0	0	0.01
32	T	cis-1,2-Dichloroethene	-1.0000	0.2877	0.0	0	0.00
33	C	Chloroform	0.3000	0.3530	-17.7	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.48#
35	T	Bromochloromethane	-1.0000	0.2656	0.0	0	-0.01
36	T	Tetrahydrofuran	-1.0000	0.0000	0.0	0	-9.60#
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.63#
38	T	1,1,1-Trichloroethane	-1.0000	0.3263	0.0	0	0.00
39	T	Cyclohexane	-1.0000	0.3159	0.0	0	0.00
40	T	1,1-Dichloropropene	-1.0000	0.3134	0.0	0	0.00
41	T	Carbon Tetrachloride	-1.0000	0.2532	0.0	0	-0.01
42	T	Tert-Amyl-Methyl ether	-1.0000	0.0152	0.0	0	-0.09
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.23#
44	T	1,2-Dichloroethane	-1.0000	0.2858	0.0	0	0.01
45	T	Benzene	-1.0000	0.3452	0.0	0	0.00
46	T	Trichloroethene	-1.0000	0.2938	0.0	0	0.00
47	T	Methylcyclohexane	-1.0000	0.3101	0.0	0	0.00
48	C	1,2-Dichloropropane	-1.0000	0.2911	0.0	0	0.00
49	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.55#
50	T	Bromodichloromethane	-1.0000	0.3012	0.0	0	0.00
51	T	Dibromomethane	-1.0000	0.2537	0.0	0	0.00
52	T	2-Chloroethyl Vinyl Ether	-1.0000	0.0000	0.0	0	-11.84#
53	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-11.87#
54	T	cis-1,3-Dichloropropene	-1.0000	0.2327	0.0	0	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:40:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	-1.0000	0.2127	0.0	0	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	-1.0000	0.0107	0.0	0	0.00
58	C	Toluene	-1.0000	0.3228	0.0	0	0.01
59	T	Ethyl Methacrylate	-1.0000	0.2140	0.0	0	-0.01
60	T	trans-1,3-Dichloropropene	-1.0000	0.2668	0.0	0	-0.01
61	T	1,1,2-Trichloroethane	-1.0000	0.2691	0.0	0	-0.01
62	T	2-Hexanone	-1.0000	0.2315	0.0	0	0.00
63	T	1,3-Dichloropropane	-1.0000	0.2579	0.0	0	0.00
64	T	Tetrachloroethene	-1.0000	0.3214	0.0	0	0.00
65	T	Dibromochloromethane	-1.0000	0.2459	0.0	0	0.00
66	T	1,2-Dibromoethane	-1.0000	0.2387	0.0	0	0.00
67	T	1-Chlorohexane	-1.0000	0.2833	0.0	0	0.00
68	P	Chlorobenzene	-1.0000	0.3144	0.0	0	0.00
69	T	1,1,1,2-Tetrachloroethane	-1.0000	0.2998	0.0	0	0.00
70	C	Ethylbenzene	-1.0000	0.3040	0.0	0	0.00
71	T	m-,p-Xylene	-1.0000	0.6051	0.0	0	0.01
72	T	o-Xylene	-1.0000	0.2994	0.0	0	0.00
73	T	Styrene	-1.0000	0.2961	0.0	0	0.00
74	P	Bromoform	-1.0000	0.0798	0.0	0	-0.01
75	T	Isopropylbenzene	-1.0000	0.2931	0.0	0	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2922	0.0	0	0.00
78	S	p-Bromofluorobenzene	-1.0000	0.0730	0.0	0	0.00
79	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-15.70#
80	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-15.74#
81	T	n-Propylbenzene	-1.0000	0.3233	0.0	0	0.00
82	T	Bromobenzene	0.3000	0.2618	12.7	100	0.00
83	T	1,3,5-Trimethylbenzene	-1.0000	0.3032	0.0	0	-0.01
84	T	2-Chlorotoluene	-1.0000	0.3300	0.0	0	0.00
85	T	4-Chlorotoluene	-1.0000	0.3295	0.0	0	0.00
86	T	a-Methylstyrene	-1.0000	0.2430	0.0	0	0.00
87	T	tert-Butylbenzene	-1.0000	0.2541	0.0	0	-0.01
88	T	1,2,4-Trimethylbenzene	-1.0000	0.3088	0.0	0	0.00
89	T	sec-Butylbenzene	-1.0000	0.3122	0.0	0	0.00
90	T	p-Isopropyltoluene	-1.0000	0.2893	0.0	0	0.00
91	T	1,3-Dichlorobenzene	-1.0000	0.3051	0.0	0	0.00
92	T	1,4-Dichlorobenzene	0.3000	0.2990	0.3	100	0.00
93	T	n-Butylbenzene	-1.0000	0.3274	0.0	0	0.00
94	T	1,2-Dichlorobenzene	0.3000	0.2985	0.5	100	-0.01
95	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-18.49#
96	T	1,2,4-Trichlorobenzene	-1.0000	0.3011	0.0	0	0.00
97	T	Hexachlorobutadiene	-1.0000	0.2675	0.0	0	0.00
98	T	Naphthalene	-1.0000	0.2561	0.0	0	0.00
99	T	1,2,3-Trichlorobenzene	0.3000	0.2854	4.9	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11837.D 8260WT.M Sat May 14 18:41:07 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11838.D Vial: 4
Acq On : 13 May 2016 15:12 Operator: JDS
Sample : WG568769-03 0.4ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:23 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	515473	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	435266	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	244818	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
57) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
78) p-Bromofluorobenzene	15.64	95	236	0.0295 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	2765	0.3656 ug/L #	66
3) Chloromethane	3.72	50	4021	0.5854 ug/L #	77
4) Vinyl Chloride	3.96	62	2267	0.4134 ug/L #	64
5) 1,3-Butadiene	4.01	54	2044	0.3956 ug/L #	18
6) Bromomethane	4.85	94	1571	0.4511 ug/L	89
7) Chloroethane	5.01	64	1496	0.4029 ug/L #	45
8) Trichlorofluoromethane	5.49	101	4241	0.4175 ug/L	96
10) Isoprene	6.03	67	2394	0.3408 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	1439	0.2811 ug/L #	23
13) Acetone	6.33	43	1125	0.7299 ug/L #	45
14) 1,1-Dichloroethene	6.56	61	3786	0.3990 ug/L	77
16) Dimethyl Sulfide	6.80	62	1622	0.3769 ug/L	59
18) Methyl acetate	7.01	43	21364	4.0629 ug/L #	70
19) Methylene Chloride	7.32	84	2266	0.4265 ug/L	97
20) Carbon Disulfide	7.35	76	6628	0.3991 ug/L #	82
22) Methyl Tert Butyl Ether	7.52	73	4808	0.3486 ug/L #	74
23) trans-1,2-Dichloroethene	7.74	96	2372	0.4368 ug/L	93
24) n-Hexane	7.83	57	4212	0.4732 ug/L #	73
26) Vinyl Acetate	8.34	43	434	0.1315 ug/L #	78
27) 1,1-Dichloroethane	8.34	63	3822	0.3576 ug/L #	89
29) 2-Butanone	8.88	43	484	0.2099 ug/L #	60
31) 2,2-Dichloropropane	9.09	77	2680	0.3472 ug/L #	55
32) cis-1,2-Dichloroethene	9.15	96	2277	0.3777 ug/L	91
33) Chloroform	9.35	83	3981	0.3988 ug/L	89
35) Bromochloromethane	9.57	130	952	0.2468 ug/L	57
36) Tetrahydrofuran	9.59	42	212	0.1340 ug/L #	46
38) 1,1,1-Trichloroethane	9.85	97	3917	0.4058 ug/L #	84
39) Cyclohexane	9.88	56	3935	0.3371 ug/L #	80
40) 1,1-Dichloropropene	10.04	75	2817	0.3862 ug/L	82
41) Carbon Tetrachloride	10.18	117	3373	0.3702 ug/L #	88
44) 1,2-Dichloroethane	10.35	62	3201	0.3737 ug/L #	78
45) Benzene	10.39	78	8729	0.4184 ug/L	90
46) Trichloroethene	11.08	130	2537	0.3731 ug/L	93
47) Methylcyclohexane	11.17	83	2742	0.3325 ug/L	90
48) 1,2-Dichloropropane	11.29	63	2133	0.3600 ug/L	84
50) Bromodichloromethane	11.58	83	2857	0.3638 ug/L #	84
51) Dibromomethane	11.65	93	972	0.3128 ug/L	81
52) 2-Chloroethyl Vinyl Ether	11.85	63	791	0.2560 ug/L #	50
54) cis-1,3-Dichloropropene	12.17	75	2689	0.3253 ug/L	99
55) Dimethyl Disulfide	12.42	79	1113	0.2158 ug/L	74

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11838.D Vial: 4
Acq On : 13 May 2016 15:12 Operator: JDS
Sample : WG568769-03 0.4ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:23 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
58)	Toluene	12.56	91	9113	0.4043 ug/L		99
59)	Ethyl Methacrylate	12.65	69	1556	0.2916 ug/L		96
60)	trans-1,3-Dichloropropene	12.73	75	2303	0.3119 ug/L		86
61)	1,1,2-Trichloroethane	12.94	97	1549	0.3672 ug/L		85
62)	2-Hexanone	12.86	43	840	0.2415 ug/L	#	11
63)	1,3-Dichloropropane	13.21	76	2345	0.3346 ug/L		82
64)	Tetrachloroethene	13.34	164	1905	0.3745 ug/L		88
65)	Dibromochloromethane	13.59	129	1972	0.3238 ug/L		89
66)	1,2-Dibromoethane	13.82	107	1617	0.3776 ug/L		69
67)	1-Chlorohexane	13.89	91	2578	0.3487 ug/L		77
68)	Chlorobenzene	14.29	112	6458	0.3896 ug/L		93
69)	1,1,1,2-Tetrachloroethane	14.31	131	2374	0.3736 ug/L		98
70)	Ethylbenzene	14.31	106	3158	0.3754 ug/L		79
71)	m-,p-Xylene	14.39	106	8621	0.8613 ug/L		93
72)	o-Xylene	14.93	106	3752	0.3758 ug/L		96
73)	Styrene	14.95	104	6027	0.3558 ug/L		90
74)	Bromoform	15.44	173	931	0.2454 ug/L		87
75)	Isopropylbenzene	15.31	105	10551	0.4179 ug/L		95
77)	1,1,2,2-Tetrachloroethane	15.52	83	1129	0.2796 ug/L		84
79)	1,2,3-Trichloropropane	15.71	110	200	0.1341 ug/L	#	28
81)	n-Propylbenzene	15.79	91	11244	0.4087 ug/L		98
82)	Bromobenzene	15.91	156	3048	0.3991 ug/L		95
83)	1,3,5-Trimethylbenzene	15.96	105	9158	0.4381 ug/L		92
84)	2-Chlorotoluene	16.05	91	8455	0.4164 ug/L		96
85)	4-Chlorotoluene	16.09	91	6979	0.4189 ug/L		92
86)	a-Methylstyrene	16.34	118	4052	0.3488 ug/L		74
87)	tert-Butylbenzene	16.40	134	1479	0.3224 ug/L		63
88)	1,2,4-Trimethylbenzene	16.45	105	8457	0.3953 ug/L		95
89)	sec-Butylbenzene	16.65	105	10479	0.4236 ug/L		93
90)	p-Isopropyltoluene	16.79	119	9613	0.4269 ug/L		93
91)	1,3-Dichlorobenzene	16.98	146	5826	0.4107 ug/L		93
92)	1,4-Dichlorobenzene	17.10	146	6273	0.4331 ug/L	#	74
93)	n-Butylbenzene	17.28	91	8021	0.3956 ug/L	#	91
94)	1,2-Dichlorobenzene	17.57	146	4937	0.3691 ug/L		97
96)	1,2,4-Trichlorobenzene	19.55	180	3632	0.3655 ug/L		95
97)	Hexachlorobutadiene	19.69	225	1539	0.3812 ug/L		96
98)	Naphthalene	19.90	128	7383	0.3882 ug/L		97
99)	1,2,3-Trichlorobenzene	20.19	180	3748	0.4028 ug/L		84

(#) = qualifier out of range (m) = manual integration
11M11838.D 8260WT.M Fri May 13 17:04:24 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11838.D Vial: 4
Acq On : 13 May 2016 15:12 Operator: JDS
Sample : WG568769-03 0.4ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration

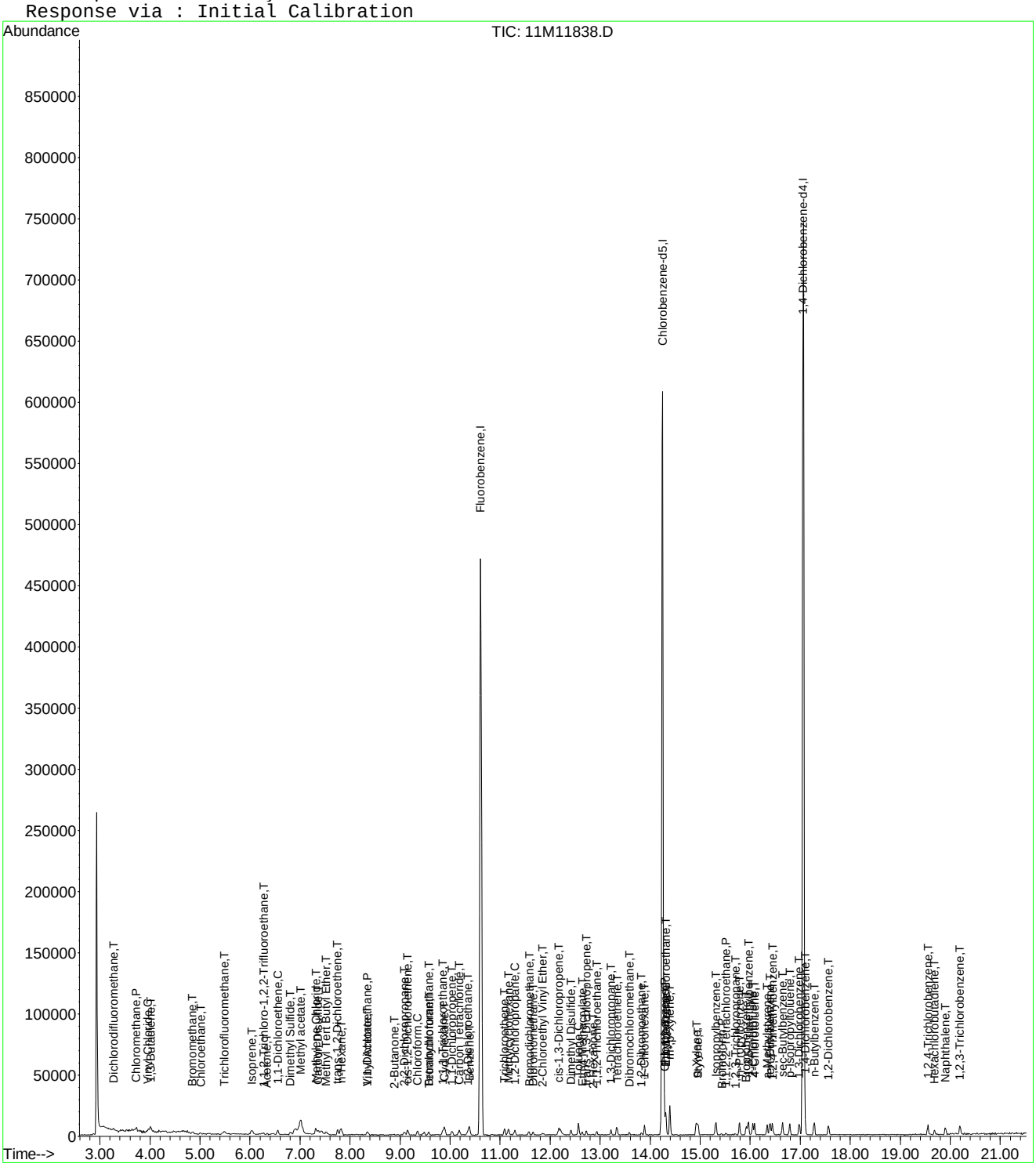

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:25 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	523425	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	440574	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	249989	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	1729	0.2910 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.16%#	
43) 1,2-Dichloroethane-d4	10.23	65	3301	0.4585 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	1.84%#	
57) Toluene-d8	12.47	98	9307	0.4494 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	1.80%#	
78) p-Bromofluorobenzene	15.64	95	4047	0.4956 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	7215	0.9394 ug/L	98
3) Chloromethane	3.72	50	7292	1.0455 ug/L	80
4) Vinyl Chloride	3.96	62	5040	0.9051 ug/L	92
5) 1,3-Butadiene	4.02	54	5876	1.1198 ug/L #	76
6) Bromomethane	4.85	94	3488	0.9862 ug/L	94
7) Chloroethane	4.99	64	3425	0.9083 ug/L #	57
8) Trichlorofluoromethane	5.49	101	10960	1.0625 ug/L	95
9) Diethyl ether	6.01	59	19830	4.2253 ug/L	90
10) Isoprene	6.04	67	6121	0.8582 ug/L	94
11) Acrolein	6.25	56	697	1.2730 ug/L	65
12) 1,1,2-Trichloro-1,2,2-Trif	6.27	101	5456	1.0497 ug/L	90
13) Acetone	6.34	43	1782	1.1386 ug/L #	45
14) 1,1-Dichloroethene	6.55	61	9456	0.9814 ug/L	91
15) Tert-Butyl Alcohol	6.67	59	2848	6.8484 ug/L #	67
16) Dimethyl Sulfide	6.80	62	3631	0.8310 ug/L	93
18) Methyl acetate	7.01	43	20953	3.9242 ug/L #	70
19) Methylene Chloride	7.31	84	5001	0.9270 ug/L	97
20) Carbon Disulfide	7.36	76	15438	0.9154 ug/L	99
21) Acrylonitrile	7.50	53	3780	1.8795 ug/L	89
22) Methyl Tert Butyl Ether	7.53	73	11891	0.8490 ug/L	90
23) trans-1,2-Dichloroethene	7.75	96	4815	0.8732 ug/L	95
24) n-Hexane	7.82	57	9213	1.0194 ug/L #	81
25) Diisopropyl ether	8.15	45	108233	4.5267 ug/L	99
26) Vinyl Acetate	8.31	43	1723	0.5141 ug/L #	78
27) 1,1-Dichloroethane	8.34	63	10818	0.9968 ug/L	95
28) Ethyl-Tert-Butyl ether	8.70	59	85288	4.3548 ug/L	99
29) 2-Butanone	8.88	43	1368	0.5844 ug/L #	60
30) Propionitrile	8.99	54	2406	3.5185 ug/L #	60
31) 2,2-Dichloropropane	9.09	77	7787	0.9935 ug/L	90
32) cis-1,2-Dichloroethene	9.15	96	5567	0.9095 ug/L	94
33) Chloroform	9.35	83	10278	1.0139 ug/L	96
34) 1-Bromopropane	9.48	122	295	0.2934 ug/L	49
35) Bromochloromethane	9.57	130	2941	0.7509 ug/L	88
36) Tetrahydrofuran	9.60	42	7790	4.8493 ug/L	92
38) 1,1,1-Trichloroethane	9.85	97	10000	1.0202 ug/L #	90
39) Cyclohexane	9.88	56	10164	0.8574 ug/L	98
40) 1,1-Dichloropropene	10.04	75	7321	0.9884 ug/L	92
41) Carbon Tetrachloride	10.18	117	9558	1.0331 ug/L	98
42) Tert-Amyl-Methyl ether	10.13	73	59107	4.2417 ug/L	97
44) 1,2-Dichloroethane	10.34	62	8181	0.9406 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:25 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	Benzene	10.38	78	19924	0.9404 ug/L		95
46)	Trichloroethene	11.08	130	6636	0.9611 ug/L		92
47)	Methylcyclohexane	11.18	83	7740	0.9243 ug/L		94
48)	1,2-Dichloropropane	11.29	63	5477	0.9103 ug/L		99
49)	1,4-Dioxane	11.55	88	187	5.1264 ug/L	#	10
50)	Bromodichloromethane	11.57	83	7238	0.9076 ug/L		94
51)	Dibromomethane	11.65	93	2839	0.8997 ug/L		97
52)	2-Chloroethyl Vinyl Ether	11.84	63	1934	0.6164 ug/L	#	72
53)	4-Methyl-2-Pentanone	11.87	58	1016	0.5282 ug/L	#	42
54)	cis-1,3-Dichloropropene	12.17	75	7078	0.8432 ug/L		99
55)	Dimethyl Disulfide	12.42	79	3514	0.6710 ug/L		93
58)	Toluene	12.56	91	22074	0.9676 ug/L		96
59)	Ethyl Methacrylate	12.64	69	4130	0.7646 ug/L		88
60)	trans-1,3-Dichloropropene	12.73	75	5897	0.7891 ug/L		90
61)	1,1,2-Trichloroethane	12.94	97	3547	0.8307 ug/L		96
62)	2-Hexanone	12.87	43	2461	0.6990 ug/L	#	63
63)	1,3-Dichloropropane	13.21	76	5965	0.8410 ug/L		87
64)	Tetrachloroethene	13.34	164	5050	0.9809 ug/L		94
65)	Dibromochloromethane	13.59	129	5237	0.8497 ug/L		90
66)	1,2-Dibromoethane	13.82	107	3214	0.7414 ug/L		91
67)	1-Chlorohexane	13.89	91	7025	0.9387 ug/L		91
68)	Chlorobenzene	14.29	112	16160	0.9630 ug/L		95
69)	1,1,1,2-Tetrachloroethane	14.32	131	6361	0.9889 ug/L		97
70)	Ethylbenzene	14.31	106	8050	0.9455 ug/L		93
71)	m-,p-Xylene	14.39	106	20545	2.0278 ug/L		95
72)	o-Xylene	14.92	106	9683	0.9581 ug/L		96
73)	Styrene	14.96	104	14946	0.8716 ug/L		98
74)	Bromoform	15.43	173	3024	0.7876 ug/L		97
75)	Isopropylbenzene	15.31	105	25656	1.0039 ug/L		92
77)	1,1,2,2-Tetrachloroethane	15.52	83	3569	0.8655 ug/L		89
79)	1,2,3-Trichloropropane	15.71	110	872	0.5724 ug/L		84
80)	trans-1,4-Dichloro-2-Buten	15.74	53	1048	0.6163 ug/L	#	44
81)	n-Propylbenzene	15.79	91	27998	0.9967 ug/L		98
82)	Bromobenzene	15.92	156	8101	1.0388 ug/L		89
83)	1,3,5-Trimethylbenzene	15.96	105	20563	0.9633 ug/L		98
84)	2-Chlorotoluene	16.05	91	20962	1.0111 ug/L		96
85)	4-Chlorotoluene	16.09	91	17553	1.0318 ug/L		100
86)	a-Methylstyrene	16.34	118	10002	0.8431 ug/L		97
87)	tert-Butylbenzene	16.40	134	4396	0.9384 ug/L		84
88)	1,2,4-Trimethylbenzene	16.44	105	21945	1.0045 ug/L		96
89)	sec-Butylbenzene	16.65	105	25927	1.0263 ug/L		100
90)	p-Isopropyltoluene	16.79	119	22467	0.9771 ug/L		96
91)	1,3-Dichlorobenzene	16.98	146	14883	1.0274 ug/L		96
92)	1,4-Dichlorobenzene	17.10	146	15106	1.0213 ug/L	#	67
93)	n-Butylbenzene	17.28	91	20991	1.0139 ug/L		98
94)	1,2-Dichlorobenzene	17.57	146	13331	0.9762 ug/L		99
95)	1,2-Dibromo-3-Chloropropan	18.49	75	493	0.5750 ug/L		75
96)	1,2,4-Trichlorobenzene	19.55	180	9030	0.8899 ug/L		96
97)	Hexachlorobutadiene	19.69	225	3810	0.9242 ug/L		95
98)	Naphthalene	19.90	128	16333	0.8410 ug/L		99
99)	1,2,3-Trichlorobenzene	20.19	180	8645	0.9098 ug/L		88

(#) = qualifier out of range (m) = manual integration
11M11839.D 8260WT.M Fri May 13 17:04:25 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration

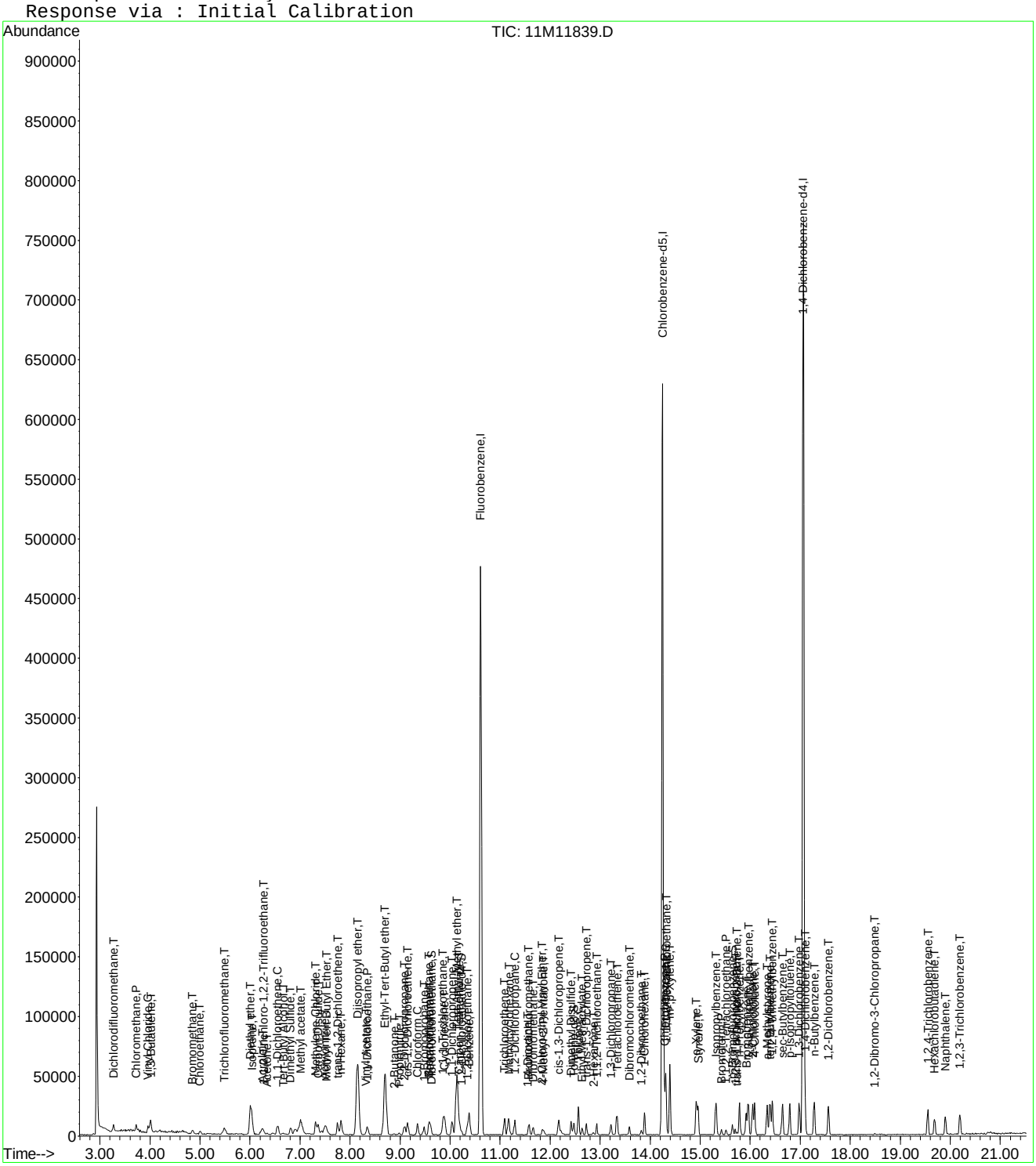

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:40:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.8798	12.0	100	0.00
3	P	Chloromethane	1.0000	1.1102	-11.0	100	0.00
4	C	Vinyl Chloride	1.0000	0.9240	7.6	100	0.00
5	T	1,3-Butadiene	-1.0000	1.0834	0.0	100	0.02
6	T	Bromomethane	1.0000	0.9301	7.0	100	0.00
7	T	Chloroethane	1.0000	0.9773	2.3	100	-0.01
8	T	Trichlorofluoromethane	1.0000	1.0081	-0.8	100	0.01
9	T	Diethyl ether	5.0000	4.9318	1.4	100	0.00
10	T	Isoprene	-1.0000	0.9134	0.0	100	0.00
11	T	Acrolein	2.5000	2.7854	-11.4	100	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0342	-3.4	100	0.02
13	T	Acetone	-1.0000	1.4337	0.0	0	0.00
14	C	1,1-Dichloroethene	1.0000	0.9868	1.3	100	-0.01
15	T	Tert-Butyl Alcohol	10.0000	8.2841	17.2	100	0.01
16	T	Dimethyl Sulfide	-1.0000	0.9488	0.0	100	-0.01
17	T	Iodomethane	-1.0000	2.2962	0.0	0	0.01
18	T	Methyl acetate	-1.0000	4.2835	0.0	0	-0.05
19	T	Methylene Chloride	1.0000	1.0084	-0.8	100	0.00
20	T	Carbon Disulfide	1.0000	0.9624	3.8	100	0.00
21	T	Acrylonitrile	2.5000	2.2683	9.3	100	0.01
22	T	Methyl Tert Butyl Ether	1.0000	0.9614	3.9	100	0.01
23	T	trans-1,2-Dichloroethene	1.0000	0.9079	9.2	100	0.01
24	T	n-Hexane	-1.0000	1.0430	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	4.9106	1.8	100	0.00
26	T	Vinyl Acetate	-1.0000	2.6242	0.0	0	0.00
27	P	1,1-Dichloroethane	1.0000	1.0166	-1.7	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.7543	4.9	100	0.00
29	T	2-Butanone	-1.0000	0.7280	0.0	0	0.01
30	T	Propionitrile	5.0000	4.3718	12.6	100	0.01
31	T	2,2-Dichloropropane	1.0000	0.9353	6.5	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	0.9520	4.8	100	0.00
33	C	Chloroform	1.0000	0.9836	1.6	100	0.00
34	T	1-Bromopropane	1.0000	0.9106	8.9	100	0.00
35	T	Bromochloromethane	1.0000	0.8469	15.3	100	0.00
36	T	Tetrahydrofuran	5.0000	5.8710	-17.4	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.3018	0.0	100	0.00
38	T	1,1,1-Trichloroethane	1.0000	0.9725	2.8	100	0.00
39	T	Cyclohexane	1.0000	0.9069	9.3	100	0.00
40	T	1,1-Dichloropropene	1.0000	0.9971	0.3	100	0.00
41	T	Carbon Tetrachloride	1.0000	0.9518	4.8	100	0.00
42	T	Tert-Amyl-Methyl ether	5.0000	4.7417	5.2	100	0.00
43	S	1,2-Dichloroethane-d4	0.5000	0.5054	-1.1	100	0.00
44	T	1,2-Dichloroethane	1.0000	0.9639	3.6	100	0.00
45	T	Benzene	1.0000	0.9912	0.9	100	0.00
46	T	Trichloroethene	1.0000	1.0157	-1.6	100	-0.01
47	T	Methylcyclohexane	1.0000	0.9600	4.0	100	0.01
48	C	1,2-Dichloropropane	1.0000	0.9844	1.6	100	0.00
49	T	1,4-Dioxane	-1.0000	28.5532	0.0	0	0.00
50	T	Bromodichloromethane	1.0000	0.9266	7.3	100	0.00
51	T	Dibromomethane	1.0000	0.9792	2.1	100	0.00
52	T	2-Chloroethyl Vinyl Ether	-1.0000	0.7053	0.0	100	0.00
53	T	4-Methyl-2-Pentanone	-1.0000	0.6569	0.0	0	0.00
54	T	cis-1,3-Dichloropropene	1.0000	0.9060	9.4	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:40:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	-1.0000	0.7475	0.0	100	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	-1.0000	0.4862	0.0	100	0.00
58	C	Toluene	1.0000	0.9897	1.0	100	0.00
59	T	Ethyl Methacrylate	1.0000	0.8672	13.3	100	-0.01
60	T	trans-1,3-Dichloropropene	1.0000	0.8237	17.6	100	0.00
61	T	1,1,2-Trichloroethane	1.0000	0.8969	10.3	100	0.00
62	T	2-Hexanone	-1.0000	0.8473	0.0	100	0.01
63	T	1,3-Dichloropropane	1.0000	0.9392	6.1	100	0.00
64	T	Tetrachloroethene	1.0000	0.9737	2.6	100	0.00
65	T	Dibromochloromethane	1.0000	0.8681	13.2	100	0.00
66	T	1,2-Dibromoethane	1.0000	0.8111	18.9	100	0.00
67	T	1-Chlorohexane	1.0000	0.9554	4.5	100	0.00
68	P	Chlorobenzene	1.0000	0.9890	1.1	100	0.00
69	T	1,1,1,2-Tetrachloroethane	1.0000	0.9621	3.8	100	0.00
70	C	Ethylbenzene	1.0000	0.9608	3.9	100	0.00
71	T	m-,p-Xylene	2.0000	2.0170	-0.9	100	0.00
72	T	o-Xylene	1.0000	0.9768	2.3	100	0.00
73	T	Styrene	1.0000	0.9126	8.7	100	0.01
74	P	Bromoform	1.0000	0.8271	17.3	100	0.00
75	T	Isopropylbenzene	1.0000	0.9787	2.1	100	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	1.0000	0.9168	8.3	100	0.00
78	S	p-Bromofluorobenzene	-1.0000	0.5252	0.0	100	0.00
79	T	1,2,3-Trichloropropane	1.0000	0.9573	4.3	100	0.01
80	T	trans-1,4-Dichloro-2-Butene	1.0000	1.2934	-29.3#	100	0.00
81	T	n-Propylbenzene	1.0000	0.9671	3.3	100	0.00
82	T	Bromobenzene	1.0000	1.0663	-6.6	100	0.00
83	T	1,3,5-Trimethylbenzene	1.0000	0.9307	6.9	100	0.00
84	T	2-Chlorotoluene	1.0000	1.0337	-3.4	100	0.00
85	T	4-Chlorotoluene	1.0000	0.9664	3.4	100	0.00
86	T	a-Methylstyrene	1.0000	0.8582	14.2	100	0.00
87	T	tert-Butylbenzene	1.0000	0.9392	6.1	100	0.00
88	T	1,2,4-Trimethylbenzene	1.0000	0.9755	2.5	100	0.00
89	T	sec-Butylbenzene	1.0000	0.9774	2.3	100	0.00
90	T	p-Isopropyltoluene	1.0000	0.9221	7.8	100	0.00
91	T	1,3-Dichlorobenzene	1.0000	1.0144	-1.4	100	0.00
92	T	1,4-Dichlorobenzene	1.0000	1.0157	-1.6	100	0.00
93	T	n-Butylbenzene	1.0000	0.9776	2.2	100	0.00
94	T	1,2-Dichlorobenzene	1.0000	0.9974	0.3	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.1961	0.0	100	0.00
96	T	1,2,4-Trichlorobenzene	1.0000	0.9233	7.7	100	0.00
97	T	Hexachlorobutadiene	1.0000	0.8843	11.6	100	0.00
98	T	Naphthalene	1.0000	0.8997	10.0	100	0.00
99	T	1,2,3-Trichlorobenzene	1.0000	0.9631	3.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11839.D 8260WT.M Sat May 14 18:41:49 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:26 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	504626	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	418265	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	241104	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	5067	0.8846 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.52%#	
43) 1,2-Dichloroethane-d4	10.23	65	6143	0.8851 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.56%#	
57) Toluene-d8	12.47	98	18425	0.9371 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	3.76%#	
78) p-Bromofluorobenzene	15.64	95	7442	0.9449 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	3.76%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	14866	2.0077 ug/L	98
3) Chloromethane	3.72	50	14641	2.1775 ug/L	94
4) Vinyl Chloride	3.96	62	10045	1.8711 ug/L	99
5) 1,3-Butadiene	4.01	54	10590	2.0934 ug/L	82
6) Bromomethane	4.85	94	7024	2.0600 ug/L	94
7) Chloroethane	4.99	64	6661	1.8324 ug/L	97
8) Trichlorofluoromethane	5.49	101	21690	2.1811 ug/L	99
9) Diethyl ether	6.01	59	96350	21.2945 ug/L	97
10) Isoprene	6.04	67	12682	1.8443 ug/L	94
11) Acrolein	6.23	56	5531	10.4784 ug/L	91
12) 1,1,2-Trichloro-1,2,2-Trif	6.23	101	9909	1.9774 ug/L	96
13) Acetone	6.35	43	3346	2.2176 ug/L #	68
14) 1,1-Dichloroethene	6.56	61	18584	2.0007 ug/L	98
15) Tert-Butyl Alcohol	6.66	59	15203	37.9194 ug/L #	93
16) Dimethyl Sulfide	6.81	62	7308	1.7348 ug/L	98
17) Iodomethane	7.06	142	1747	0.4335 ug/L #	49
18) Methyl acetate	7.01	43	17794	3.4567 ug/L #	75
19) Methylene Chloride	7.31	84	10330	1.9861 ug/L	99
20) Carbon Disulfide	7.36	76	30745	1.8910 ug/L	99
21) Acrylonitrile	7.49	53	17499	9.0252 ug/L	91
22) Methyl Tert Butyl Ether	7.52	73	22031	1.6315 ug/L	97
23) trans-1,2-Dichloroethene	7.74	96	10660	2.0051 ug/L	95
24) n-Hexane	7.82	57	17125	1.9654 ug/L #	94
25) Diisopropyl ether	8.15	45	542272	23.5246 ug/L	99
26) Vinyl Acetate	8.31	43	6813	2.1084 ug/L #	84
27) 1,1-Dichloroethane	8.34	63	21278	2.0336 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	431080	22.8311 ug/L	100
29) 2-Butanone	8.87	43	3175	1.4068 ug/L #	60
30) Propionitrile	8.99	54	12529	19.0049 ug/L	98
31) 2,2-Dichloropropane	9.09	77	17576	2.3259 ug/L	94
32) cis-1,2-Dichloroethene	9.15	96	11652	1.9746 ug/L	96
33) Chloroform	9.35	83	20769	2.1252 ug/L	96
34) 1-Bromopropane	9.48	122	1648	1.7003 ug/L	70
35) Bromochloromethane	9.57	130	6812	1.8040 ug/L	100
36) Tetrahydrofuran	9.60	42	30834	19.9093 ug/L	96
38) 1,1,1-Trichloroethane	9.84	97	20518	2.1713 ug/L #	94
39) Cyclohexane	9.88	56	22087	1.9325 ug/L	98
40) 1,1-Dichloropropene	10.04	75	13954	1.9542 ug/L	98
41) Carbon Tetrachloride	10.18	117	21054	2.3604 ug/L	98
42) Tert-Amyl-Methyl ether	10.13	73	300593	22.3753 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M11840.D 8260WT.M Fri May 13 17:04:27 2016 Page 1

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:26 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
44)	1,2-Dichloroethane	10.34	62	16928	2.0188 ug/L		98
45)	Benzene	10.38	78	41004	2.0075 ug/L		97
46)	Trichloroethene	11.08	130	13283	1.9954 ug/L		96
47)	Methylcyclohexane	11.17	83	15711	1.9461 ug/L		95
48)	1,2-Dichloropropane	11.29	63	11010	1.8980 ug/L		91
49)	1,4-Dioxane	11.55	88	898	25.5347 ug/L		88
50)	Bromodichloromethane	11.57	83	15058	1.9584 ug/L		100
51)	Dibromomethane	11.66	93	5461	1.7952 ug/L		97
52)	2-Chloroethyl Vinyl Ether	11.84	63	4894	1.6180 ug/L		83
53)	4-Methyl-2-Pentanone	11.87	58	2173	1.1717 ug/L	#	65
54)	cis-1,3-Dichloropropene	12.17	75	14440	1.7842 ug/L		91
55)	Dimethyl Disulfide	12.42	79	7378	1.4613 ug/L		97
58)	Toluene	12.56	91	43051	1.9877 ug/L		98
59)	Ethyl Methacrylate	12.64	69	7792	1.5195 ug/L		95
60)	trans-1,3-Dichloropropene	12.73	75	12991	1.8310 ug/L		98
61)	1,1,2-Trichloroethane	12.93	97	8138	2.0075 ug/L		91
62)	2-Hexanone	12.86	43	4715	1.4106 ug/L	#	61
63)	1,3-Dichloropropane	13.21	76	11740	1.7434 ug/L		95
64)	Tetrachloroethene	13.34	164	10610	2.1708 ug/L		90
65)	Dibromochloromethane	13.59	129	11236	1.9202 ug/L		96
66)	1,2-Dibromoethane	13.82	107	7613	1.8499 ug/L		99
67)	1-Chlorohexane	13.89	91	13853	1.9499 ug/L		96
68)	Chlorobenzene	14.29	112	33381	2.0954 ug/L		99
69)	1,1,1,2-Tetrachloroethane	14.32	131	13541	2.2175 ug/L		97
70)	Ethylbenzene	14.31	106	17116	2.1175 ug/L		98
71)	m-,p-Xylene	14.39	106	40469	4.2073 ug/L		95
72)	o-Xylene	14.92	106	19196	2.0006 ug/L		99
73)	Styrene	14.96	104	30019	1.8440 ug/L		92
74)	Bromoform	15.43	173	6309	1.7308 ug/L		96
75)	Isopropylbenzene	15.31	105	52419	2.1605 ug/L		98
77)	1,1,2,2-Tetrachloroethane	15.51	83	7118	1.7898 ug/L		100
79)	1,2,3-Trichloropropane	15.70	110	2487	1.6927 ug/L		98
80)	trans-1,4-Dichloro-2-Buten	15.74	53	2265	1.3810 ug/L		68
81)	n-Propylbenzene	15.79	91	59353	2.1908 ug/L		100
82)	Bromobenzene	15.91	156	15393	2.0465 ug/L		97
83)	1,3,5-Trimethylbenzene	15.95	105	43641	2.1197 ug/L		98
84)	2-Chlorotoluene	16.05	91	40923	2.0467 ug/L		96
85)	4-Chlorotoluene	16.09	91	37360	2.2771 ug/L		97
86)	a-Methylstyrene	16.34	118	20567	1.7976 ug/L		92
87)	tert-Butylbenzene	16.40	134	9253	2.0481 ug/L		89
88)	1,2,4-Trimethylbenzene	16.44	105	43857	2.0815 ug/L		99
89)	sec-Butylbenzene	16.65	105	52733	2.1643 ug/L		99
90)	p-Isopropyltoluene	16.79	119	49990	2.2541 ug/L		98
91)	1,3-Dichlorobenzene	16.98	146	29674	2.1240 ug/L		99
92)	1,4-Dichlorobenzene	17.10	146	30258	2.1211 ug/L		87
93)	n-Butylbenzene	17.28	91	44260	2.2167 ug/L		98
94)	1,2-Dichlorobenzene	17.57	146	27619	2.0969 ug/L		95
95)	1,2-Dibromo-3-Chloropropan	18.49	75	1094	1.3229 ug/L		60
96)	1,2,4-Trichlorobenzene	19.55	180	18455	1.8857 ug/L		98
97)	Hexachlorobutadiene	19.69	225	8691	2.1858 ug/L		89
98)	Naphthalene	19.90	128	34041	1.8174 ug/L	#	95
99)	1,2,3-Trichlorobenzene	20.19	180	17703	1.9318 ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration

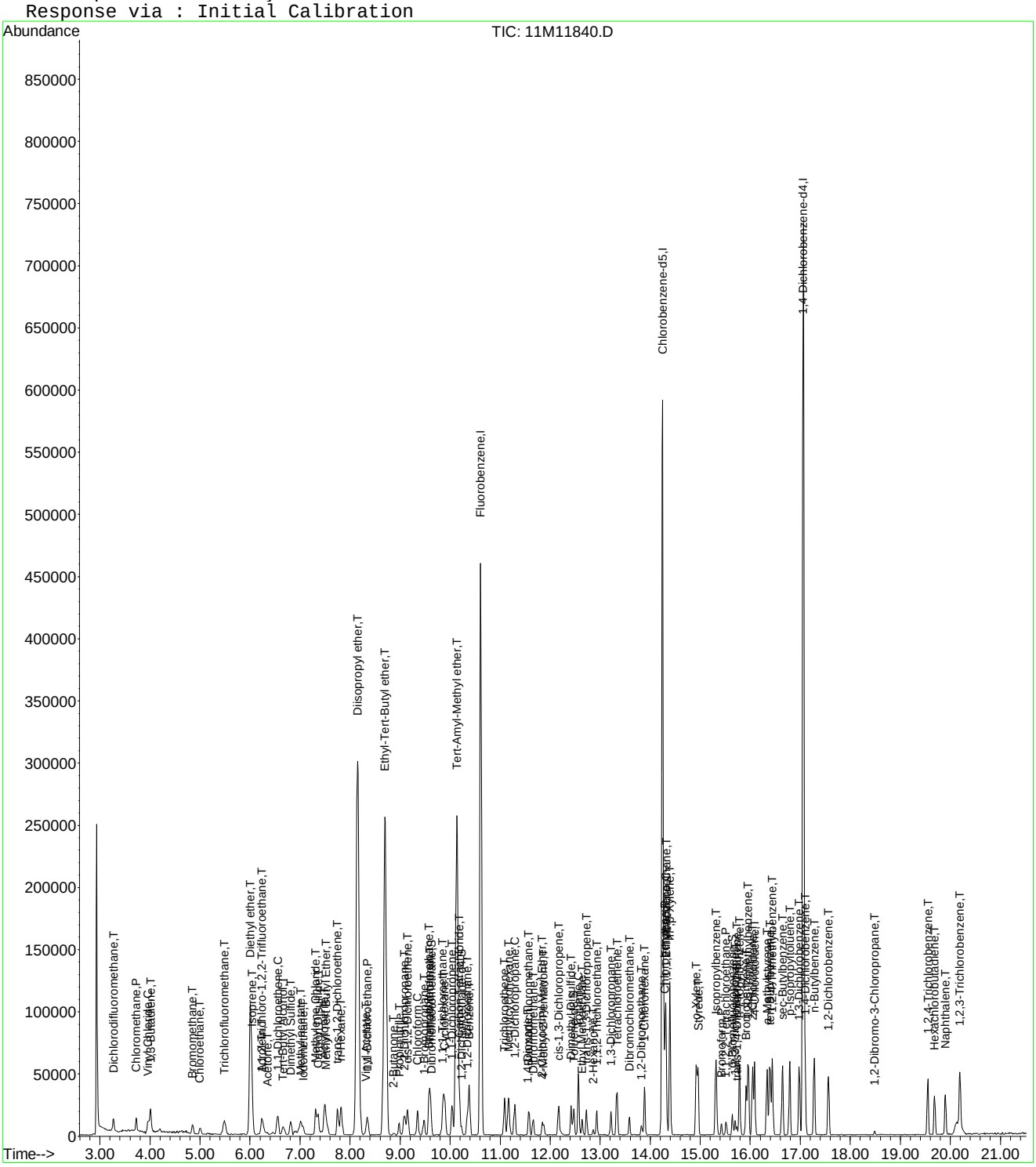

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.8802	6.0	100	0.00
3	P	Chloromethane	2.0000	2.3121	-15.6	100	0.00
4	C	Vinyl Chloride	2.0000	1.9102	4.5	100	0.00
5	T	1,3-Butadiene	-1.0000	2.0253	0.0	100	0.01
6	T	Bromomethane	2.0000	1.9427	2.9	100	0.00
7	T	Chloroethane	2.0000	1.9714	1.4	100	-0.01
8	T	Trichlorofluoromethane	2.0000	2.0694	-3.5	100	0.01
9	T	Diethyl ether	25.0000	24.8555	0.6	100	0.00
10	T	Isoprene	-1.0000	1.9630	0.0	100	0.00
11	T	Acrolein	12.5000	12.0322	3.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.9483	2.6	100	-0.01
13	T	Acetone	-1.0000	2.7924	0.0	100	0.01
14	C	1,1-Dichloroethene	2.0000	2.0117	-0.6	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	45.8688	8.3	100	0.00
16	T	Dimethyl Sulfide	-1.0000	1.9809	0.0	100	0.00
17	T	Iodomethane	2.0000	2.6580	-32.9#	100	0.00
18	T	Methyl acetate	2.0000	0.8555	57.2#	100	0.00
19	T	Methylene Chloride	2.0000	2.1606	-8.0	100	0.00
20	T	Carbon Disulfide	2.0000	1.9879	0.6	100	0.00
21	T	Acrylonitrile	12.5000	10.8919	12.9	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.8475	7.6	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	2.0850	-4.2	100	0.00
24	T	n-Hexane	2.0000	2.0110	-0.6	100	0.00
25	T	Diisopropyl ether	25.0000	25.5200	-2.1	100	0.00
26	T	Vinyl Acetate	-1.0000	3.2184	0.0	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.0741	-3.7	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	24.9254	0.3	100	0.00
29	T	2-Butanone	-1.0000	1.7527	0.0	0	0.00
30	T	Propionitrile	25.0000	23.6140	5.5	100	0.01
31	T	2,2-Dichloropropane	2.0000	2.1897	-9.5	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0669	-3.3	100	0.00
33	C	Chloroform	2.0000	2.0616	-3.1	100	0.00
34	T	1-Bromopropane	2.0000	2.2551	-12.8	100	0.00
35	T	Bromochloromethane	2.0000	2.0347	-1.7	100	0.00
36	T	Tetrahydrofuran	25.0000	24.1040	3.6	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9175	8.3	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	2.0696	-3.5	100	-0.01
39	T	Cyclohexane	2.0000	2.0442	-2.2	100	0.00
40	T	1,1-Dichloropropene	2.0000	1.9713	1.4	100	0.00
41	T	Carbon Tetrachloride	2.0000	2.1748	-8.7	100	0.00
42	T	Tert-Amyl-Methyl ether	25.0000	25.0128	-0.1	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	0.9755	2.4	100	0.00
44	T	1,2-Dichloroethane	2.0000	2.0689	-3.4	100	0.00
45	T	Benzene	2.0000	2.1160	-5.8	100	0.00
46	T	Trichloroethene	2.0000	2.1089	-5.4	100	-0.01
47	T	Methylcyclohexane	2.0000	2.0212	-1.1	100	0.00
48	C	1,2-Dichloropropane	2.0000	2.0525	-2.6	100	0.00
49	T	1,4-Dioxane	50.0000	49.5313	0.9	100	0.00
50	T	Bromodichloromethane	2.0000	1.9996	0.0	100	0.00
51	T	Dibromomethane	2.0000	1.9537	2.3	100	0.01
52	T	2-Chloroethyl Vinyl Ether	-1.0000	1.8512	0.0	100	0.00
53	T	4-Methyl-2-Pentanone	-1.0000	1.4573	0.0	100	0.00
54	T	cis-1,3-Dichloropropene	2.0000	1.9172	4.1	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	-1.0000	1.6278	0.0	100	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	1.0000	1.0138	-1.4	100	0.00
58	C	Toluene	2.0000	2.0332	-1.7	100	0.00
59	T	Ethyl Methacrylate	2.0000	1.7234	13.8	100	-0.01
60	T	trans-1,3-Dichloropropene	2.0000	1.9114	4.4	100	0.00
61	T	1,1,2-Trichloroethane	2.0000	2.1674	-8.4	100	0.00
62	T	2-Hexanone	-1.0000	1.7098	0.0	100	0.00
63	T	1,3-Dichloropropane	2.0000	1.9471	2.6	100	0.00
64	T	Tetrachloroethene	2.0000	2.1547	-7.7	100	0.00
65	T	Dibromochloromethane	2.0000	1.9620	1.9	100	0.00
66	T	1,2-Dibromoethane	2.0000	2.0238	-1.2	100	0.00
67	T	1-Chlorohexane	2.0000	1.9844	0.8	100	0.00
68	P	Chlorobenzene	2.0000	2.1520	-7.6	100	0.00
69	T	1,1,1,2-Tetrachloroethane	2.0000	2.1574	-7.9	100	0.00
70	C	Ethylbenzene	2.0000	2.1518	-7.6	100	0.00
71	T	m-,p-Xylene	4.0000	4.1851	-4.6	100	0.00
72	T	o-Xylene	2.0000	2.0398	-2.0	100	0.00
73	T	Styrene	2.0000	1.9307	3.5	100	0.01
74	P	Bromoform	2.0000	1.8176	9.1	100	0.00
75	T	Isopropylbenzene	2.0000	2.1063	-5.3	100	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	2.0000	1.8958	5.2	100	-0.01
78	S	p-Bromofluorobenzene	1.0000	1.0013	-0.1	100	0.00
79	T	1,2,3-Trichloropropane	2.0000	2.1172	-5.9	100	0.00
80	T	trans-1,4-Dichloro-2-Butene	2.0000	1.9762	1.2	100	0.00
81	T	n-Propylbenzene	2.0000	2.1256	-6.3	100	0.00
82	T	Bromobenzene	2.0000	2.1009	-5.0	100	-0.01
83	T	1,3,5-Trimethylbenzene	2.0000	2.0481	-2.4	100	-0.01
84	T	2-Chlorotoluene	2.0000	2.0925	-4.6	100	0.00
85	T	4-Chlorotoluene	2.0000	2.1326	-6.6	100	0.00
86	T	a-Methylstyrene	2.0000	1.8297	8.5	100	0.00
87	T	tert-Butylbenzene	2.0000	2.0497	-2.5	100	0.00
88	T	1,2,4-Trimethylbenzene	2.0000	2.0213	-1.1	100	0.00
89	T	sec-Butylbenzene	2.0000	2.0611	-3.1	100	0.00
90	T	p-Isopropyltoluene	2.0000	2.1272	-6.4	100	0.00
91	T	1,3-Dichlorobenzene	2.0000	2.0970	-4.8	100	0.00
92	T	1,4-Dichlorobenzene	2.0000	2.1095	-5.5	100	0.00
93	T	n-Butylbenzene	2.0000	2.1373	-6.9	100	0.00
94	T	1,2-Dichlorobenzene	2.0000	2.1425	-7.1	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	2.0000	1.9175	4.1	100	0.00
96	T	1,2,4-Trichlorobenzene	2.0000	1.9565	2.2	100	0.00
97	T	Hexachlorobutadiene	2.0000	2.0914	-4.6	100	0.00
98	T	Naphthalene	2.0000	1.9443	2.8	100	0.00
99	T	1,2,3-Trichlorobenzene	2.0000	2.0449	-2.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11840.D 8260WT.M Sat May 14 18:46:53 2016 Page 2

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:46 2016 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Single Level Calibration

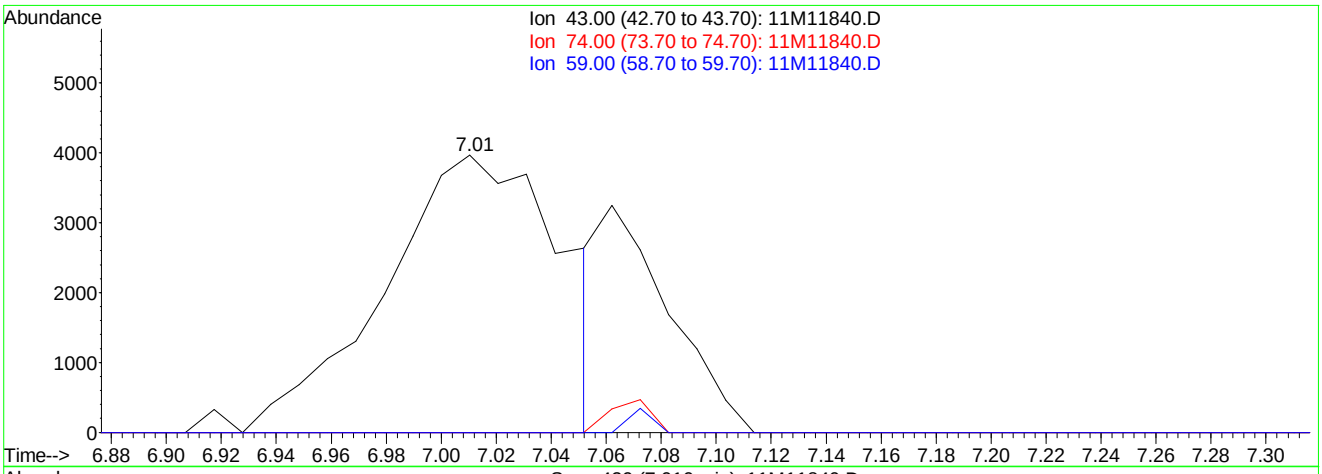

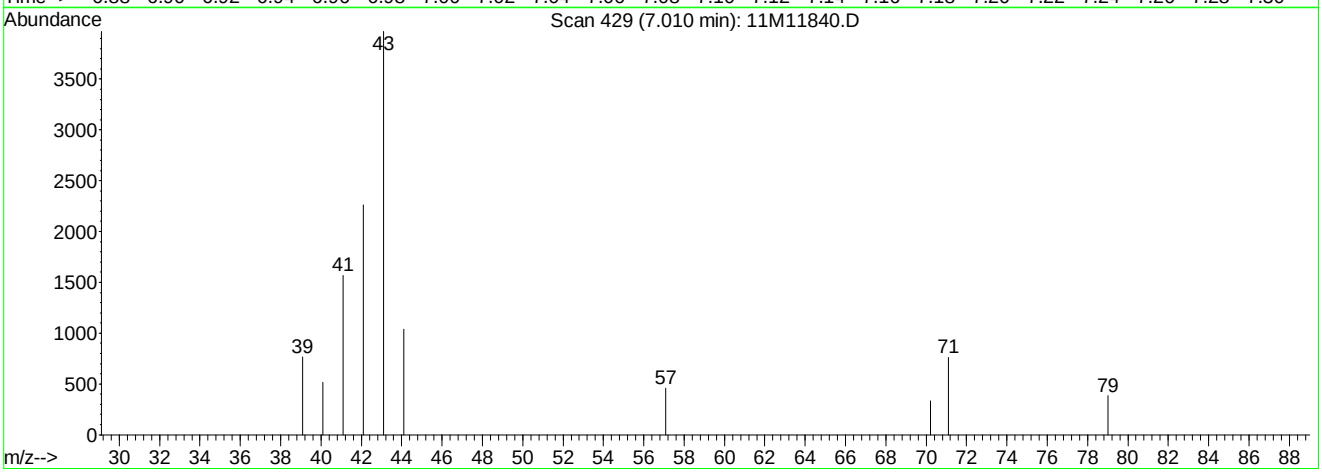

TIC: 11M11840.D

(18) Methyl acetate (T)

7.01min 3.69ug/L

response 17794

Ion	Exp%	Act%
43.00	100	100
74.00	13.60	2.82#
59.00	6.50	1.21#
0.00	0.00	0.00

11M11840.D 8260WT.M Sat May 14 18:46:34 2016

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:46 2016 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Single Level Calibration

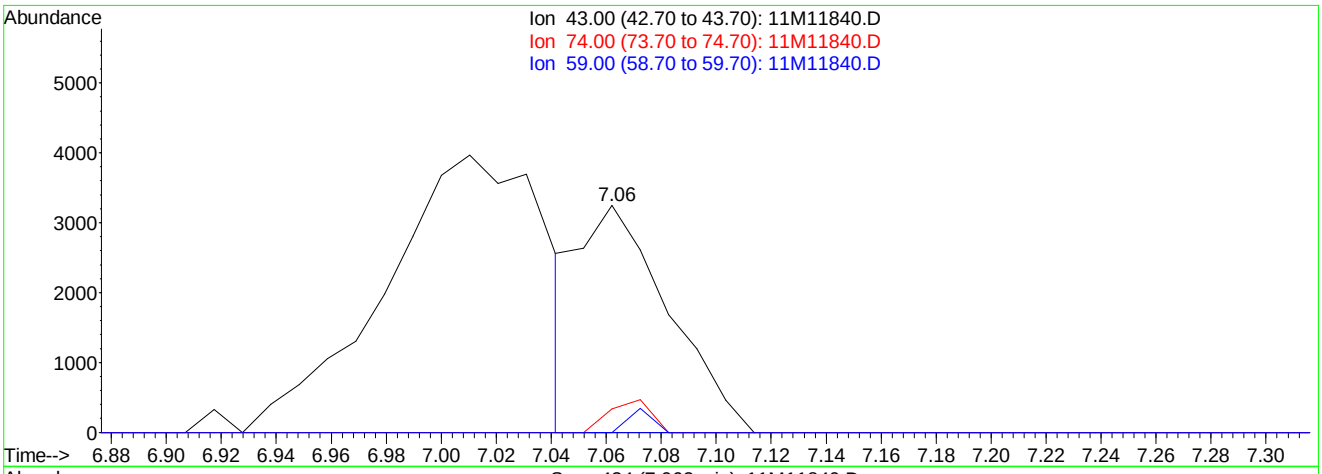

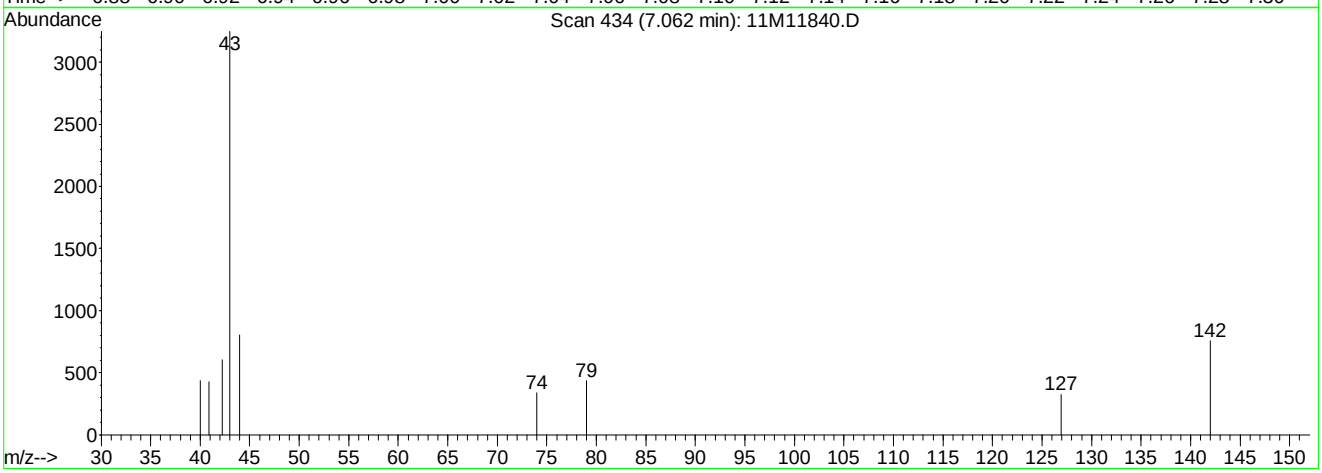

TIC: 11M11840.D

(18) Methyl acetate (T)

7.06min 0.86ug/L mint

response 7344

Ion	Exp%	Act%
43.00	100	100
74.00	13.60	6.84#
59.00	6.50	2.93#
0.00	0.00	0.00

11M11840.D 8260WT.M Sat May 14 18:46:39 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:12:58 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 17:07:56 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	510485	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	424113	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	244127	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	13577	2.3093 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	9.24%#	
43) 1,2-Dichloroethane-d4	10.23	65	16340	2.3640 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	9.44%#	
57) Toluene-d8	12.47	98	46369	2.3570 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	9.44%#	
78) p-Bromofluorobenzene	15.64	95	19139	2.4218 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	9.68%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	33260	4.2909 ug/L	97
3) Chloromethane	3.72	50	29484	4.2588 ug/L	100
4) Vinyl Chloride	3.96	62	24947	4.6446 ug/L	98
5) 1,3-Butadiene	4.00	54	24704	4.8274 ug/L	87
6) Bromomethane	4.85	94	16794	4.7876 ug/L	96
7) Chloroethane	5.00	64	15417	4.1982 ug/L	96
8) Trichlorofluoromethane	5.48	101	50663	4.8750 ug/L	98
9) Diethyl ether	6.01	59	199353	45.0064 ug/L	100
10) Isoprene	6.04	67	30513	4.3864 ug/L	99
11) Acrolein	6.25	56	12345	23.3877 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	23865	4.5585 ug/L	97
13) Acetone	6.35	43	6439	4.2186 ug/L	86
14) 1,1-Dichloroethene	6.56	61	43769	4.6158 ug/L	96
15) Tert-Butyl Alcohol	6.66	59	34212	87.4805 ug/L	100
16) Dimethyl Sulfide	6.81	62	17251	4.0482 ug/L	99
17) Iodomethane	7.06	142	7385	2.0684 ug/L	94
18) Methyl acetate	7.06	43	32363	5.4250 ug/L #	83
19) Methylene Chloride	7.31	84	23476	4.4707 ug/L	98
20) Carbon Disulfide	7.36	76	72931	4.4715 ug/L	98
21) Acrylonitrile	7.49	53	38039	20.0847 ug/L	96
22) Methyl Tert Butyl Ether	7.52	73	57597	4.3071 ug/L	98
23) trans-1,2-Dichloroethene	7.74	96	23369	4.3390 ug/L	99
24) n-Hexane	7.82	57	38507	4.3615 ug/L	99
25) Diisopropyl ether	8.15	45	1105208	48.2180 ug/L	99
26) Vinyl Acetate	8.31	43	24007	7.3442 ug/L	97
27) 1,1-Dichloroethane	8.34	63	51535	4.8316 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	899266	48.1312 ug/L	99
29) 2-Butanone	8.88	43	8098	3.5469 ug/L	98
30) Propionitrile	8.98	54	26204	41.2561 ug/L	97
31) 2,2-Dichloropropane	9.09	77	40285	5.2526 ug/L	97
32) cis-1,2-Dichloroethene	9.15	96	27456	4.6081 ug/L	91
33) Chloroform	9.35	83	48958	4.7306 ug/L	97
34) 1-Bromopropane	9.47	122	4632	4.9482 ug/L	88
35) Bromochloromethane	9.57	130	17073	4.6807 ug/L	99
36) Tetrahydrofuran	9.60	42	59638	39.6839 ug/L	99
38) 1,1,1-Trichloroethane	9.85	97	48123	4.8983 ug/L	100
39) Cyclohexane	9.88	56	51945	4.5931 ug/L	98
40) 1,1-Dichloropropene	10.04	75	33867	4.6344 ug/L	99
41) Carbon Tetrachloride	10.17	117	47434	5.0851 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	615710	46.3601 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:12:58 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 17:07:56 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	40281	4.6727 ug/L	99
45)	Benzene	10.38	78	94223	4.6151 ug/L	99
46)	Trichloroethene	11.08	130	31195	4.7740 ug/L	96
47)	Methylcyclohexane	11.17	83	35731	4.4100 ug/L	96
48)	1,2-Dichloropropane	11.29	63	25973	4.4921 ug/L	93
49)	1,4-Dioxane	11.56	88	2747	80.2363 ug/L	93
50)	Bromodichloromethane	11.57	83	36997	4.7467 ug/L	99
51)	Dibromomethane	11.65	93	13963	4.5774 ug/L	97
52)	2-Chloroethyl Vinyl Ether	11.84	63	11417	3.7313 ug/L	95
53)	4-Methyl-2-Pentanone	11.87	58	6133	3.2690 ug/L	90
54)	cis-1,3-Dichloropropene	12.17	75	36461	4.5343 ug/L	100
55)	Dimethyl Disulfide	12.42	79	18914	3.7032 ug/L	99
58)	Toluene	12.56	91	107617	4.9467 ug/L	100
59)	Ethyl Methacrylate	12.65	69	21187	4.1021 ug/L	99
60)	trans-1,3-Dichloropropene	12.73	75	32824	4.5778 ug/L	99
61)	1,1,2-Trichloroethane	12.94	97	17791	4.3060 ug/L	98
62)	2-Hexanone	12.86	43	11606	3.4244 ug/L	99
63)	1,3-Dichloropropane	13.21	76	30121	4.5460 ug/L	97
64)	Tetrachloroethene	13.33	164	24241	4.8819 ug/L	95
65)	Dibromochloromethane	13.59	129	27989	4.7024 ug/L	95
66)	1,2-Dibromoethane	13.82	107	18147	4.4382 ug/L	96
67)	1-Chlorohexane	13.89	91	33195	4.6591 ug/L	97
68)	Chlorobenzene	14.29	112	79059	4.9583 ug/L	98
69)	1,1,1,2-Tetrachloroethane	14.32	131	31047	4.8956 ug/L	97
70)	Ethylbenzene	14.31	106	39304	4.8168 ug/L	95
71)	m-,p-Xylene	14.39	106	95751	9.7273 ug/L	95
72)	o-Xylene	14.92	106	45759	4.7228 ug/L	96
73)	Styrene	14.95	104	77900	4.8227 ug/L	98
74)	Bromoform	15.43	173	15663	4.1856 ug/L	97
75)	Isopropylbenzene	15.31	105	123883	4.9827 ug/L	99
77)	1,1,2,2-Tetrachloroethane	15.51	83	18105	4.4049 ug/L	100
79)	1,2,3-Trichloropropane	15.70	110	6717	4.7266 ug/L	85
80)	trans-1,4-Dichloro-2-Buten	15.74	53	6067	3.6507 ug/L	69
81)	n-Propylbenzene	15.79	91	143972	5.2435 ug/L	99
82)	Bromobenzene	15.92	156	37345	4.9800 ug/L	93
83)	1,3,5-Trimethylbenzene	15.95	105	106030	5.0309 ug/L	100
84)	2-Chlorotoluene	16.05	91	99279	4.9734 ug/L	100
85)	4-Chlorotoluene	16.09	91	88275	5.1992 ug/L	98
86)	a-Methylstyrene	16.34	118	53766	4.7153 ug/L	98
87)	tert-Butylbenzene	16.39	134	23868	5.2956 ug/L	97
88)	1,2,4-Trimethylbenzene	16.44	105	112072	5.2401 ug/L	99
89)	sec-Butylbenzene	16.65	105	129249	5.1810 ug/L	99
90)	p-Isopropyltoluene	16.79	119	119605	5.2524 ug/L	98
91)	1,3-Dichlorobenzene	16.98	146	71265	5.0271 ug/L	99
92)	1,4-Dichlorobenzene	17.10	146	72437	5.0122 ug/L	96
93)	n-Butylbenzene	17.28	91	100062	4.9277 ug/L	99
94)	1,2-Dichlorobenzene	17.57	146	64925	4.9520 ug/L	98
95)	1,2-Dibromo-3-Chloropropan	18.49	75	3875	4.6567 ug/L	87
96)	1,2,4-Trichlorobenzene	19.55	180	46664	4.8629 ug/L	97
97)	Hexachlorobutadiene	19.69	225	20419	5.1319 ug/L	96
98)	Naphthalene	19.90	128	83612	4.4869 ug/L	99
99)	1,2,3-Trichlorobenzene	20.19	180	40714	4.5323 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M11841.D 8260WT.M Fri May 13 17:12:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:12 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 17:07:56 2016
Response via : Initial Calibration

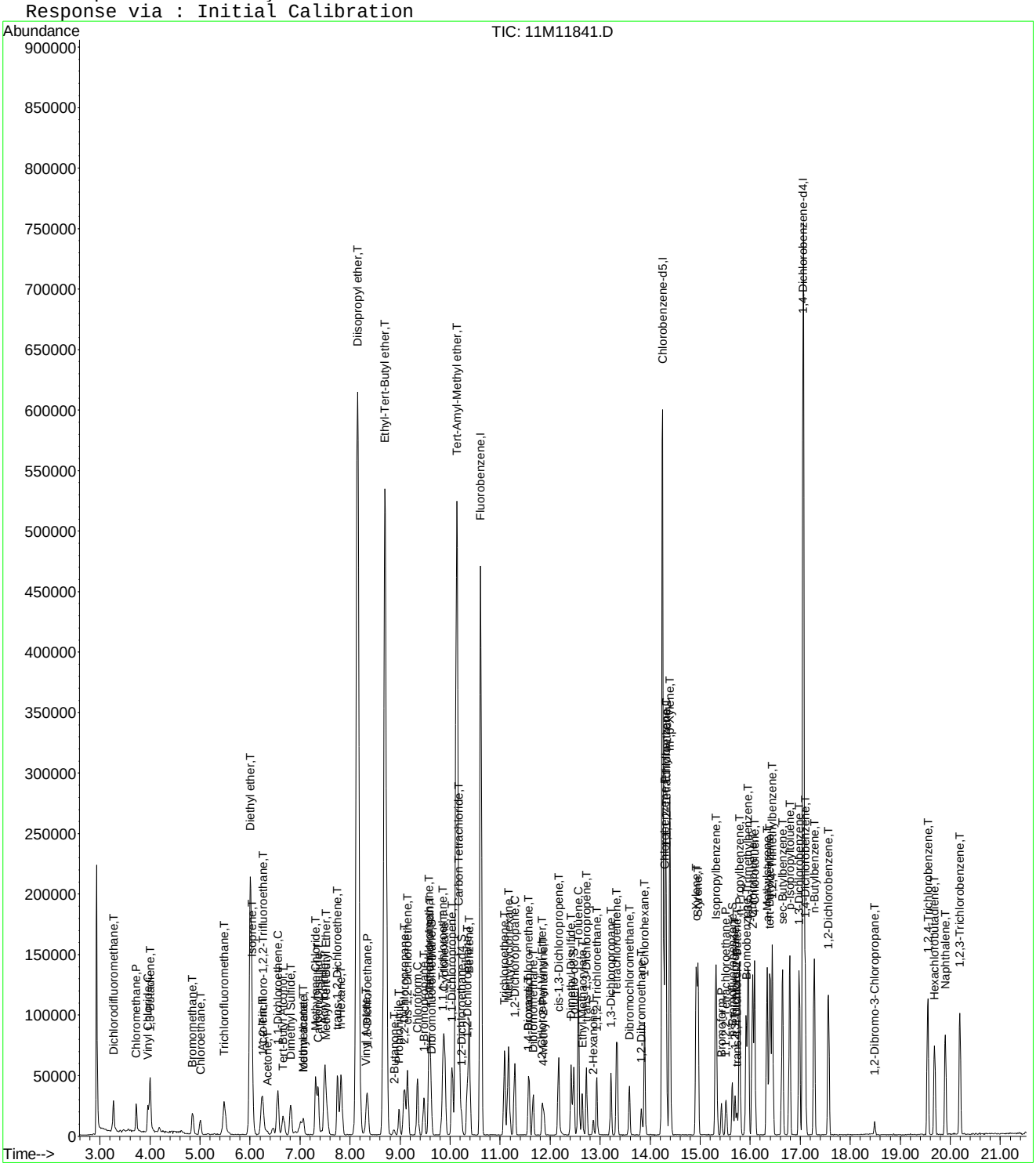

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.1584	16.8	100	0.00
3	P	Chloromethane	5.0000	4.6027	7.9	100	0.00
4	C	Vinyl Chloride	5.0000	4.6895	6.2	100	0.00
5	T	1,3-Butadiene	5.0000	4.6702	6.6	100	0.00
6	T	Bromomethane	5.0000	4.5915	8.2	100	0.00
7	T	Chloroethane	5.0000	4.5105	9.8	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.7781	4.4	100	0.00
9	T	Diethyl ether	50.0000	50.8371	-1.7	100	0.00
10	T	Isoprene	5.0000	4.6688	6.6	100	0.00
11	T	Acrolein	25.0000	24.7297	1.1	100	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.6385	7.2	100	0.01
13	T	Acetone	5.0000	5.3120	-6.2	100	0.01
14	C	1,1-Dichloroethene	5.0000	4.6835	6.3	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	102.0360	-2.0	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.6223	7.6	100	0.00
17	T	Iodomethane	5.0000	3.9124	21.8	100	0.00
18	T	Methyl acetate	5.0000	7.5474	-50.9#	100	0.00
19	T	Methylene Chloride	5.0000	4.8539	2.9	100	0.00
20	T	Carbon Disulfide	5.0000	4.6615	6.8	100	0.00
21	T	Acrylonitrile	25.0000	23.4049	6.4	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.7747	4.5	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.5182	9.6	100	0.00
24	T	n-Hexane	5.0000	4.4700	10.6	100	0.00
25	T	Diisopropyl ether	50.0000	51.4154	-2.8	100	0.00
26	T	Vinyl Acetate	5.0000	5.1698	-3.4	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.9658	0.7	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	51.3996	-2.8	100	0.00
29	T	2-Butanone	5.0000	4.4190	11.6	100	0.01
30	T	Propionitrile	50.0000	48.8210	2.4	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.9614	0.8	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.8145	3.7	100	0.00
33	C	Chloroform	5.0000	4.8039	3.9	100	0.00
34	T	1-Bromopropane	5.0000	5.1449	-2.9	100	0.00
35	T	Bromochloromethane	5.0000	5.0410	-0.8	100	0.00
36	T	Tetrahydrofuran	50.0000	46.0861	7.8	100	0.00
37	S	Dibromofluoromethane	2.5000	2.4302	2.8	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.7984	4.0	100	0.00
39	T	Cyclohexane	5.0000	4.7526	4.9	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.7295	5.4	100	0.00
41	T	Carbon Tetrachloride	5.0000	4.8435	3.1	100	-0.01
42	T	Tert-Amyl-Methyl ether	50.0000	50.6462	-1.3	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.5650	-2.6	100	0.00
44	T	1,2-Dichloroethane	5.0000	4.8665	2.7	100	0.00
45	T	Benzene	5.0000	4.8065	3.9	100	0.00
46	T	Trichloroethene	5.0000	4.8959	2.1	100	-0.01
47	T	Methylcyclohexane	5.0000	4.5439	9.1	100	0.00
48	C	1,2-Dichloropropane	5.0000	4.7864	4.3	100	0.00
49	T	1,4-Dioxane	100.0000	102.6541	-2.7	100	0.01
50	T	Bromodichloromethane	5.0000	4.8566	2.9	100	0.00
51	T	Dibromomethane	5.0000	4.9379	1.2	100	0.00
52	T	2-Chloroethyl Vinyl Ether	5.0000	4.2689	14.6	100	0.00
53	T	4-Methyl-2-Pentanone	5.0000	4.0658	18.7	100	0.00
54	T	cis-1,3-Dichloropropene	5.0000	4.7853	4.3	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	5.0000	4.1252	17.5	100	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	2.5000	2.5163	-0.7	100	0.00
58	C	Toluene	5.0000	5.0124	-0.2	100	0.00
59	T	Ethyl Methacrylate	5.0000	4.6214	7.6	100	0.00
60	T	trans-1,3-Dichloropropene	5.0000	4.7629	4.7	100	0.00
61	T	1,1,2-Trichloroethane	5.0000	4.6730	6.5	100	0.00
62	T	2-Hexanone	5.0000	4.1507	17.0	100	0.00
63	T	1,3-Dichloropropane	5.0000	4.9267	1.5	100	0.00
64	T	Tetrachloroethene	5.0000	4.8551	2.9	100	-0.01
65	T	Dibromochloromethane	5.0000	4.8199	3.6	100	0.00
66	T	1,2-Dibromoethane	5.0000	4.7575	4.8	100	0.00
67	T	1-Chlorohexane	5.0000	4.6895	6.2	100	0.00
68	P	Chlorobenzene	5.0000	5.0264	-0.5	100	0.00
69	T	1,1,1,2-Tetrachloroethane	5.0000	4.8783	2.4	100	0.00
70	C	Ethylbenzene	5.0000	4.8732	2.5	100	0.00
71	T	m-,p-Xylene	10.0000	9.7654	2.3	100	0.00
72	T	o-Xylene	5.0000	4.7954	4.1	100	0.00
73	T	Styrene	5.0000	4.9411	1.2	100	0.00
74	P	Bromoform	5.0000	4.4503	11.0	100	0.00
75	T	Isopropylbenzene	5.0000	4.9091	1.8	100	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	5.0000	4.7624	4.8	100	-0.01
78	S	p-Bromofluorobenzene	2.5000	2.5432	-1.7	100	0.00
79	T	1,2,3-Trichloropropane	5.0000	5.0393	-0.8	100	0.00
80	T	trans-1,4-Dichloro-2-Butene	5.0000	4.0050	19.9	100	0.00
81	T	n-Propylbenzene	5.0000	5.0923	-1.8	100	0.00
82	T	Bromobenzene	5.0000	5.0338	-0.7	100	0.00
83	T	1,3,5-Trimethylbenzene	5.0000	4.9145	1.7	100	-0.01
84	T	2-Chlorotoluene	5.0000	5.0134	-0.3	100	0.00
85	T	4-Chlorotoluene	5.0000	4.9765	0.5	100	0.00
86	T	a-Methylstyrene	5.0000	4.7239	5.5	100	0.00
87	T	tert-Butylbenzene	5.0000	5.2217	-4.4	100	-0.01
88	T	1,2,4-Trimethylbenzene	5.0000	5.1012	-2.0	100	0.00
89	T	sec-Butylbenzene	5.0000	4.9892	0.2	100	0.00
90	T	p-Isopropyltoluene	5.0000	5.0265	-0.5	100	0.00
91	T	1,3-Dichlorobenzene	5.0000	4.9737	0.5	100	0.00
92	T	1,4-Dichlorobenzene	5.0000	4.9875	0.2	100	0.00
93	T	n-Butylbenzene	5.0000	4.7722	4.6	100	0.00
94	T	1,2-Dichlorobenzene	5.0000	4.9741	0.5	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	5.0000	5.1051	-2.1	100	0.00
96	T	1,2,4-Trichlorobenzene	5.0000	4.8858	2.3	100	0.00
97	T	Hexachlorobutadiene	5.0000	4.8528	2.9	100	0.00
98	T	Naphthalene	5.0000	4.7164	5.7	100	0.00
99	T	1,2,3-Trichlorobenzene	5.0000	4.6448	7.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11841.D 8260WT.M Sat May 14 18:48:20 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11842.D Vial: 7
Acq On : 13 May 2016 17:19 Operator: JDS
Sample : WG568769-07 20ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:53 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	512017	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	433937	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	255524	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	58089	10.3664 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 41.48%#		
43) 1,2-Dichloroethane-d4	10.23	65	66804	10.4555 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 41.84%#		
57) Toluene-d8	12.47	98	193532	10.2645 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 41.04%#		
78) p-Bromofluorobenzene	15.64	95	81186	10.3070 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 41.24%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	176636	22.0179 ug/L	99
3) Chloromethane	3.72	50	126901	19.7510 ug/L	98
4) Vinyl Chloride	3.96	62	109592	20.5394 ug/L	98
5) 1,3-Butadiene	4.00	54	116317	21.9237 ug/L	96
6) Bromomethane	4.85	94	73878	20.1380 ug/L	93
7) Chloroethane	5.00	64	71103	20.7401 ug/L	100
8) Trichlorofluoromethane	5.49	101	225913	21.2425 ug/L	99
9) Diethyl ether	6.01	59	321203	81.6650 ug/L	99
10) Isoprene	6.04	67	135641	20.6925 ug/L	98
11) Acrolein	6.24	56	19366	37.8284 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	109792	21.2757 ug/L	99
13) Acetone	6.34	43	27399	22.5356 ug/L	96
14) 1,1-Dichloroethene	6.56	61	201658	21.5139 ug/L	98
15) Tert-Butyl Alcohol	6.67	59	60081	178.6532 ug/L	99
16) Dimethyl Sulfide	6.81	62	75759	20.2383 ug/L	97
17) Iodomethane	7.06	142	67280	17.2594 ug/L	97
18) Methyl acetate	7.07	43	87945	22.4983 ug/L	96
19) Methylene Chloride	7.31	84	99453	20.5013 ug/L	100
20) Carbon Disulfide	7.36	76	327043	20.8410 ug/L	100
21) Acrylonitrile	7.49	53	69618	42.7070 ug/L	95
22) Methyl Tert Butyl Ether	7.52	73	266288	22.0086 ug/L	99
23) trans-1,2-Dichloroethene	7.75	96	107858	20.7912 ug/L	99
24) n-Hexane	7.82	57	184135	21.3111 ug/L	99
25) Diisopropyl ether	8.15	45	1729257	80.2062 ug/L	99
26) Vinyl Acetate	8.31	43	160029	20.6235 ug/L	99
27) 1,1-Dichloroethane	8.34	63	218994	21.0387 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1435318	81.7933 ug/L	100
29) 2-Butanone	8.87	43	39878	21.6958 ug/L	99
30) Propionitrile	8.97	54	47221	87.7149 ug/L	99
31) 2,2-Dichloropropane	9.09	77	166427	20.4352 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	120620	21.0877 ug/L	99
33) Chloroform	9.35	83	208615	20.4085 ug/L	99
34) 1-Bromopropane	9.48	122	19153	19.2424 ug/L	96
35) Bromochloromethane	9.57	130	77189	22.7226 ug/L	99
36) Tetrahydrofuran	9.60	42	109362	84.2581 ug/L	100
38) 1,1,1-Trichloroethane	9.85	97	210871	20.9631 ug/L	98
39) Cyclohexane	9.88	56	235071	21.4428 ug/L	99
40) 1,1-Dichloropropene	10.04	75	151682	21.1188 ug/L	99
41) Carbon Tetrachloride	10.17	117	212111	21.5941 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	1001790	82.1572 ug/L	100

(#) = qualifier out of range (m) = manual integration
11M11842.D 8260WT.M Sat May 14 18:50:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11842.D Vial: 7
Acq On : 13 May 2016 17:19 Operator: JDS
Sample : WG568769-07 20ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:53 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.34	62	180438	21.7339 ug/L	99
45) Benzene	10.38	78	407777	20.7394 ug/L	100
46) Trichloroethene	11.08	130	132094	20.6692 ug/L	99
47) Methylcyclohexane	11.17	83	168355	21.3455 ug/L	98
48) 1,2-Dichloropropane	11.29	63	112875	20.7388 ug/L	99
49) 1,4-Dioxane	11.56	88	4948	165.8209 ug/L	99
50) Bromodichloromethane	11.57	83	163762	21.4329 ug/L	98
51) Dibromomethane	11.65	93	61028	21.5174 ug/L	98
52) 2-Chloroethyl Vinyl Ether	11.84	63	56664	21.1238 ug/L	99
53) 4-Methyl-2-Pentanone	11.87	58	32621	21.5609 ug/L	99
54) cis-1,3-Dichloropropene	12.17	75	166399	21.7735 ug/L	100
55) Dimethyl Disulfide	12.42	79	93808	20.3984 ug/L	99
58) Toluene	12.56	91	467769	21.2936 ug/L	99
59) Ethyl Methacrylate	12.64	69	103892	22.1484 ug/L	98
60) trans-1,3-Dichloropropene	12.73	75	155661	22.0759 ug/L	100
61) 1,1,2-Trichloroethane	12.94	97	85297	21.8971 ug/L	100
62) 2-Hexanone	12.86	43	62113	21.7109 ug/L	99
63) 1,3-Dichloropropane	13.21	76	137448	21.9726 ug/L	98
64) Tetrachloroethene	13.34	164	106368	20.8217 ug/L	99
65) Dibromochloromethane	13.59	129	131143	22.0723 ug/L	99
66) 1,2-Dibromoethane	13.82	107	84381	21.6209 ug/L	99
67) 1-Chlorohexane	13.89	91	153420	21.1830 ug/L	100
68) Chlorobenzene	14.29	112	338669	21.0446 ug/L	99
69) 1,1,1,2-Tetrachloroethane	14.32	131	134571	20.6660 ug/L	98
70) Ethylbenzene	14.31	106	171752	20.8130 ug/L	97
71) m-,p-Xylene	14.39	106	419228	41.7882 ug/L	99
72) o-Xylene	14.92	106	208125	21.3170 ug/L	99
73) Styrene	14.95	104	353452	21.9116 ug/L	98
74) Bromoform	15.43	173	78592	21.8247 ug/L	100
75) Isopropylbenzene	15.31	105	552747	21.4078 ug/L	99
77) 1,1,2,2-Tetrachloroethane	15.52	83	90122	22.6486 ug/L	98
79) 1,2,3-Trichloropropane	15.70	110	30969	20.9562 ug/L	97
80) trans-1,4-Dichloro-2-Buten	15.74	53	36190	19.3325 ug/L	86
81) n-Propylbenzene	15.79	91	640711	21.6512 ug/L	100
82) Bromobenzene	15.92	156	160227	20.6340 ug/L	100
83) 1,3,5-Trimethylbenzene	15.95	105	481759	21.3337 ug/L	100
84) 2-Chlorotoluene	16.05	91	435100	20.9919 ug/L	99
85) 4-Chlorotoluene	16.09	91	391759	21.1004 ug/L	100
86) a-Methylstyrene	16.34	118	253642	21.2911 ug/L	99
87) tert-Butylbenzene	16.39	134	101859	21.2903 ug/L	99
88) 1,2,4-Trimethylbenzene	16.44	105	505239	21.9714 ug/L	98
89) sec-Butylbenzene	16.65	105	586770	21.6398 ug/L	100
90) p-Isopropyltoluene	16.79	119	539795	21.6735 ug/L	100
91) 1,3-Dichlorobenzene	16.98	146	312832	20.8591 ug/L	99
92) 1,4-Dichlorobenzene	17.10	146	314339	20.6779 ug/L	99
93) n-Butylbenzene	17.28	91	474312	21.6121 ug/L	99
94) 1,2-Dichlorobenzene	17.57	146	287316	21.0305 ug/L	100
95) 1,2-Dibromo-3-Chloropropan	18.49	75	19607	22.2193 ug/L	89
96) 1,2,4-Trichlorobenzene	19.55	180	212916	21.2982 ug/L	100
97) Hexachlorobutadiene	19.69	225	91388	20.7507 ug/L	99
98) Naphthalene	19.90	128	414073	22.3154 ug/L	99
99) 1,2,3-Trichlorobenzene	20.19	180	193437	21.0836 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M11842.D 8260WT.M Sat May 14 18:50:54 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11842.D Vial: 7
Acq On : 13 May 2016 17:19 Operator: JDS
Sample : WG568769-07 20ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

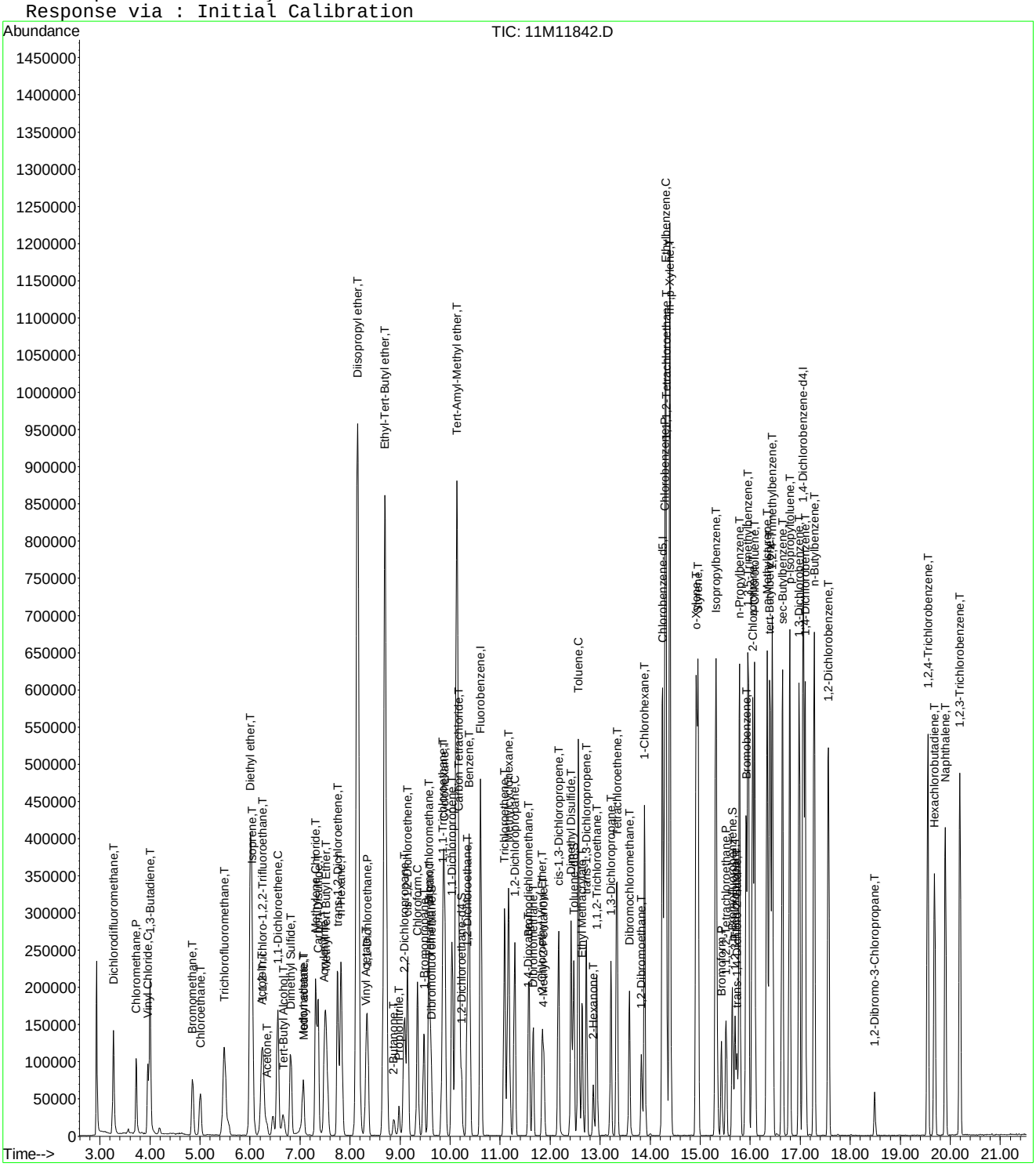

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11843.D Vial: 8
Acq On : 13 May 2016 17:51 Operator: JDS
Sample : WG568769-08 50ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:56 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	521583	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	438582	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	263885	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	139784	24.4879 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.96%		
43) 1,2-Dichloroethane-d4	10.23	65	158200	24.3058 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.24%		
57) Toluene-d8	12.47	98	462969	24.2947 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.16%		
78) p-Bromofluorobenzene	15.64	95	188875	23.2189 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.88%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	416971	51.0228 ug/L	100
3) Chloromethane	3.72	50	287508	43.9273 ug/L	100
4) Vinyl Chloride	3.96	62	261024	48.0232 ug/L	100
5) 1,3-Butadiene	4.00	54	280913	51.9760 ug/L	100
6) Bromomethane	4.85	94	172294	46.1032 ug/L	100
7) Chloroethane	5.00	64	167978	48.0991 ug/L	100
8) Trichlorofluoromethane	5.48	101	519806	47.9806 ug/L	100
9) Diethyl ether	6.01	59	391891	97.8098 ug/L	100
10) Isoprene	6.04	67	331169	49.5943 ug/L	100
11) Acrolein	6.23	56	25228	47.9550 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	255341	48.5730 ug/L	100
13) Acetone	6.34	43	57896	46.7459 ug/L	98
14) 1,1-Dichloroethene	6.56	61	459793	48.1534 ug/L	100
15) Tert-Butyl Alcohol	6.66	59	69395	202.5643 ug/L	100
16) Dimethyl Sulfide	6.81	62	193959	50.8640 ug/L	100
17) Iodomethane	7.06	142	214554	49.3519 ug/L	100
18) Methyl acetate	7.06	43	185465	48.1983 ug/L	100
19) Methylene Chloride	7.31	84	233601	47.2715 ug/L	100
20) Carbon Disulfide	7.36	76	816514	51.0786 ug/L	100
21) Acrylonitrile	7.49	53	84821	51.0789 ug/L	100
22) Methyl Tert Butyl Ether	7.52	73	610666	49.5457 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	252405	47.7624 ug/L	100
24) n-Hexane	7.82	57	449694	51.0913 ug/L	100
25) Diisopropyl ether	8.15	45	2181723	99.3365 ug/L	100
26) Vinyl Acetate	8.31	43	410275	48.2141 ug/L	100
27) 1,1-Dichloroethane	8.34	63	516691	48.7281 ug/L	100
28) Ethyl-Tert-Butyl ether	8.70	59	1783350	99.7625 ug/L	100
29) 2-Butanone	8.87	43	91238	48.7281 ug/L	100
30) Propionitrile	8.97	54	56538	103.0954 ug/L	100
31) 2,2-Dichloropropane	9.09	77	402511	48.5170 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	282222	48.4353 ug/L	100
33) Chloroform	9.35	83	489993	47.0562 ug/L	100
34) 1-Bromopropane	9.48	122	50180	48.4991 ug/L	100
35) Bromochloromethane	9.57	130	179921	51.9932 ug/L	100
36) Tetrahydrofuran	9.60	42	127999	96.8083 ug/L	100
38) 1,1,1-Trichloroethane	9.85	97	497667	48.5667 ug/L	100
39) Cyclohexane	9.88	56	575045	51.4928 ug/L	100
40) 1,1-Dichloropropene	10.04	75	353148	48.2674 ug/L	100
41) Carbon Tetrachloride	10.18	117	493225	49.2921 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	1227500	98.8215 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11843.D Vial: 8
Acq On : 13 May 2016 17:51 Operator: JDS
Sample : WG568769-08 50ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:56 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.34	62	419000	49.5434 ug/L	100
45) Benzene	10.38	78	947514	47.3064 ug/L	100
46) Trichloroethene	11.09	130	307211	47.1888 ug/L	100
47) Methylcyclohexane	11.17	83	418631	52.1043 ug/L	100
48) 1,2-Dichloropropane	11.29	63	268423	48.4136 ug/L	100
49) 1,4-Dioxane	11.55	88	5866	189.1665 ug/L	100
50) Bromodichloromethane	11.57	83	385292	49.5015 ug/L	100
51) Dibromomethane	11.65	93	142910	49.4635 ug/L	100
52) 2-Chloroethyl Vinyl Ether	11.84	63	133225	48.7541 ug/L	100
53) 4-Methyl-2-Pentanone	11.87	58	75720	49.1295 ug/L	100
54) cis-1,3-Dichloropropene	12.17	75	394857	50.7199 ug/L	100
55) Dimethyl Disulfide	12.42	79	236984	50.5867 ug/L	100
58) Toluene	12.56	91	1095397	49.3360 ug/L	100
59) Ethyl Methacrylate	12.65	69	249821	52.6944 ug/L	100
60) trans-1,3-Dichloropropene	12.73	75	366443	51.4187 ug/L	100
61) 1,1,2-Trichloroethane	12.93	97	194150	49.3135 ug/L	100
62) 2-Hexanone	12.86	43	144364	49.9264 ug/L	100
63) 1,3-Dichloropropane	13.21	76	316783	50.1049 ug/L	100
64) Tetrachloroethene	13.34	164	251037	48.6205 ug/L	100
65) Dibromochloromethane	13.59	129	310662	51.7330 ug/L	100
66) 1,2-Dibromoethane	13.82	107	196704	49.8676 ug/L	100
67) 1-Chlorohexane	13.89	91	376690	51.4596 ug/L	100
68) Chlorobenzene	14.29	112	797442	49.0276 ug/L	100
69) 1,1,1,2-Tetrachloroethane	14.32	131	325801	49.5033 ug/L	100
70) Ethylbenzene	14.31	106	408749	49.0078 ug/L	100
71) m-,p-Xylene	14.39	106	996141	98.2427 ug/L	100
72) o-Xylene	14.92	106	492043	49.8632 ug/L	100
73) Styrene	14.95	104	838125	51.4077 ug/L	100
74) Bromoform	15.43	173	184100	50.5823 ug/L	100
75) Isopropylbenzene	15.31	105	1309383	50.1751 ug/L	100
77) 1,1,2,2-Tetrachloroethane	15.52	83	208930	50.8426 ug/L	100
79) 1,2,3-Trichloropropane	15.70	110	72411	46.9859 ug/L	100
80) trans-1,4-Dichloro-2-Buten	15.74	53	94075	47.5347 ug/L	100
81) n-Propylbenzene	15.79	91	1522917	49.8325 ug/L	100
82) Bromobenzene	15.92	156	379178	47.2834 ug/L	100
83) 1,3,5-Trimethylbenzene	15.96	105	1143246	49.0221 ug/L	100
84) 2-Chlorotoluene	16.05	91	1021921	47.7415 ug/L	100
85) 4-Chlorotoluene	16.09	91	930690	48.5394 ug/L	100
86) a-Methylstyrene	16.34	118	649847	52.8208 ug/L	100
87) tert-Butylbenzene	16.40	134	241955	48.9705 ug/L	100
88) 1,2,4-Trimethylbenzene	16.44	105	1178963	49.6454 ug/L	100
89) sec-Butylbenzene	16.65	105	1390388	49.6522 ug/L	100
90) p-Isopropyltoluene	16.79	119	1282252	49.8529 ug/L	100
91) 1,3-Dichlorobenzene	16.98	146	737967	47.6473 ug/L	100
92) 1,4-Dichlorobenzene	17.10	146	740977	47.1987 ug/L	100
93) n-Butylbenzene	17.28	91	1126170	49.6883 ug/L	100
94) 1,2-Dichlorobenzene	17.57	146	684016	48.4812 ug/L	100
95) 1,2-Dibromo-3-Chloropropan	18.49	75	42848	46.3023 ug/L	100
96) 1,2,4-Trichlorobenzene	19.55	180	512927	49.6830 ug/L	100
97) Hexachlorobutadiene	19.69	225	219129	48.1793 ug/L	100
98) Naphthalene	19.90	128	962852	50.2463 ug/L	100
99) 1,2,3-Trichlorobenzene	20.19	180	453828	47.8975 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11843.D Vial: 8
Acq On : 13 May 2016 17:51 Operator: JDS
Sample : WG568769-08 50ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

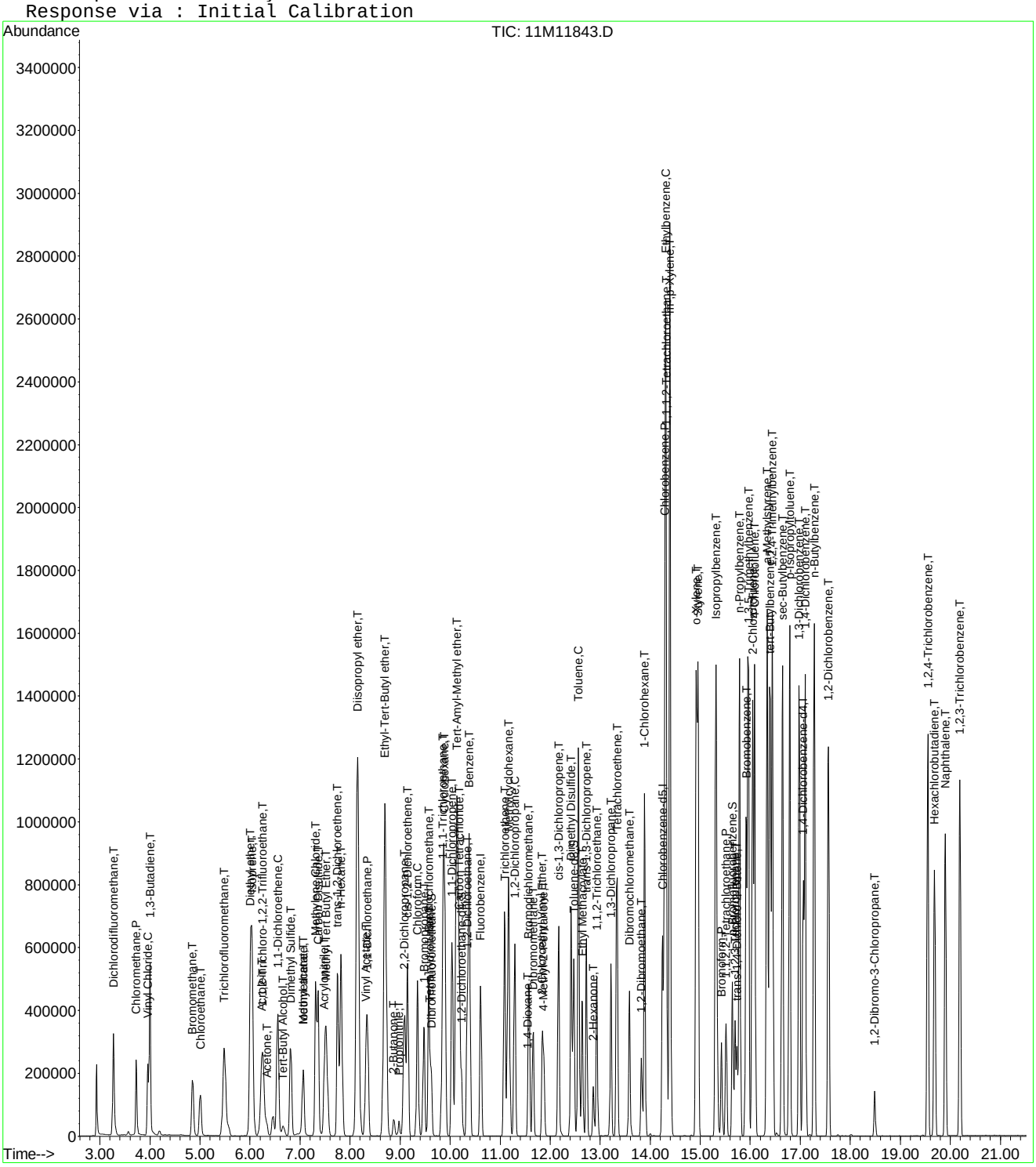

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11844.D Vial: 9
Acq On : 13 May 2016 18:22 Operator: JDS
Sample : WG568769-09 100ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:57 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	541540	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	458522	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	275719	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	307700	51.9175 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 207.68%#		
43) 1,2-Dichloroethane-d4	10.23	65	345779	51.1676 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 204.68%#		
57) Toluene-d8	12.47	98	1011334	50.7627 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 203.04%#		
78) p-Bromofluorobenzene	15.64	95	423157	49.7872 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 199.16%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	918088	108.2020 ug/L	100
3) Chloromethane	3.72	50	641242	94.3625 ug/L	99
4) Vinyl Chloride	3.95	62	586615	103.9481 ug/L	100
5) 1,3-Butadiene	3.99	54	571156	101.7838 ug/L	99
6) Bromomethane	4.85	94	394826	101.7560 ug/L	99
7) Chloroethane	5.00	64	370541	102.1913 ug/L	99
8) Trichlorofluoromethane	5.48	101	1135647	100.9627 ug/L	98
9) Diethyl ether	6.01	59	836495	201.0821 ug/L	99
10) Isoprene	6.04	67	699724	100.9257 ug/L	100
11) Acrolein	6.24	56	55228	99.4421 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	545013	99.8560 ug/L	100
13) Acetone	6.34	43	123799	96.2731 ug/L	95
14) 1,1-Dichloroethene	6.56	61	1004294	101.3022 ug/L	100
15) Tert-Butyl Alcohol	6.66	59	148134	416.4687 ug/L	98
16) Dimethyl Sulfide	6.81	62	401237	101.3432 ug/L	100
17) Iodomethane	7.06	142	471112	102.3553 ug/L	100
18) Methyl acetate	7.07	43	381031	98.0957 ug/L	99
19) Methylene Chloride	7.31	84	501609	97.7649 ug/L	99
20) Carbon Disulfide	7.36	76	1695322	102.1458 ug/L	100
21) Acrylonitrile	7.49	53	184461	106.9881 ug/L	99
22) Methyl Tert Butyl Ether	7.52	73	1312901	102.5951 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	542907	98.9478 ug/L	98
24) n-Hexane	7.82	57	921942	100.8849 ug/L	99
25) Diisopropyl ether	8.15	45	4599625	201.7086 ug/L	99
26) Vinyl Acetate	8.31	43	855488	94.3763 ug/L	99
27) 1,1-Dichloroethane	8.34	63	1111115	100.9254 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	3780769	203.7060 ug/L	100
29) 2-Butanone	8.87	43	198511	102.1130 ug/L	100
30) Propionitrile	8.98	54	118699	208.4678 ug/L	97
31) 2,2-Dichloropropane	9.09	77	914695	106.1904 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	606774	100.2977 ug/L	99
33) Chloroform	9.35	83	1053766	97.4685 ug/L	100
34) 1-Bromopropane	9.48	122	106914	98.8615 ug/L	100
35) Bromochloromethane	9.57	130	387239	107.7795 ug/L	100
36) Tetrahydrofuran	9.60	42	270148	196.7890 ug/L	99
38) 1,1,1-Trichloroethane	9.85	97	1088263	102.2884 ug/L	99
39) Cyclohexane	9.88	56	1213186	104.6320 ug/L	100
40) 1,1-Dichloropropene	10.04	75	775674	102.1101 ug/L	98
41) Carbon Tetrachloride	10.18	117	1074698	103.4456 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	2619501	203.1147 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11844.D Vial: 9
Acq On : 13 May 2016 18:22 Operator: JDS
Sample : WG568769-09 100ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:57 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	895394	101.9714	ug/L	100
45)	Benzene	10.38	78	2041856	98.1867	ug/L	100
46)	Trichloroethene	11.08	130	677193	100.1861	ug/L	99
47)	Methylcyclohexane	11.17	83	867487	103.9915	ug/L	100
48)	1,2-Dichloropropane	11.29	63	580562	100.8530	ug/L	98
49)	1,4-Dioxane	11.56	88	13651	395.0901	ug/L	100
50)	Bromodichloromethane	11.57	83	837797	103.6717	ug/L	99
51)	Dibromomethane	11.65	93	315786	105.2707	ug/L	99
52)	2-Chloroethyl Vinyl Ether	11.84	63	293822	103.5626	ug/L	100
53)	4-Methyl-2-Pentanone	11.87	58	164890	103.0430	ug/L	98
54)	cis-1,3-Dichloropropene	12.17	75	854611	105.7305	ug/L	99
55)	Dimethyl Disulfide	12.42	79	505463	103.9202	ug/L	99
58)	Toluene	12.56	91	2361378	101.7300	ug/L	100
59)	Ethyl Methacrylate	12.65	69	529740	106.8782	ug/L	98
60)	trans-1,3-Dichloropropene	12.73	75	793063	106.4420	ug/L	99
61)	1,1,2-Trichloroethane	12.94	97	418327	101.6330	ug/L	99
62)	2-Hexanone	12.86	43	314588	104.0648	ug/L	99
63)	1,3-Dichloropropane	13.21	76	685844	103.7610	ug/L	100
64)	Tetrachloroethene	13.34	164	550335	101.9528	ug/L	99
65)	Dibromochloromethane	13.59	129	681591	108.5659	ug/L	100
66)	1,2-Dibromoethane	13.82	107	427945	103.7729	ug/L	99
67)	1-Chlorohexane	13.89	91	807177	105.4730	ug/L	98
68)	Chlorobenzene	14.29	112	1705646	100.3046	ug/L	99
69)	1,1,1,2-Tetrachloroethane	14.32	131	704959	102.4557	ug/L	100
70)	Ethylbenzene	14.31	106	883839	101.3614	ug/L	99
71)	m-,p-Xylene	14.39	106	2123651	200.3333	ug/L	98
72)	o-Xylene	14.92	106	1053682	102.1356	ug/L	100
73)	Styrene	14.95	104	1807222	106.0282	ug/L	99
74)	Bromoform	15.43	173	412378	108.3755	ug/L	100
75)	Isopropylbenzene	15.31	105	2813193	103.1127	ug/L	99
77)	1,1,2,2-Tetrachloroethane	15.52	83	454052	105.7501	ug/L	99
79)	1,2,3-Trichloropropane	15.70	110	156532	96.8210	ug/L	100
80)	trans-1,4-Dichloro-2-Buten	15.74	53	203327	97.5343	ug/L	96
81)	n-Propylbenzene	15.79	91	3285915	102.9061	ug/L	99
82)	Bromobenzene	15.92	156	828973	98.9359	ug/L	99
83)	1,3,5-Trimethylbenzene	15.96	105	2483230	101.9102	ug/L	100
84)	2-Chlorotoluene	16.05	91	2208423	98.7437	ug/L	100
85)	4-Chlorotoluene	16.09	91	2020827	100.8710	ug/L	100
86)	a-Methylstyrene	16.34	118	1361545	105.9190	ug/L	99
87)	tert-Butylbenzene	16.40	134	532522	103.1540	ug/L	98
88)	1,2,4-Trimethylbenzene	16.44	105	2546912	102.6457	ug/L	100
89)	sec-Butylbenzene	16.65	105	3003570	102.6569	ug/L	99
90)	p-Isopropyltoluene	16.79	119	2763313	102.8241	ug/L	99
91)	1,3-Dichlorobenzene	16.98	146	1600684	98.9134	ug/L	100
92)	1,4-Dichlorobenzene	17.10	146	1605475	97.8762	ug/L	100
93)	n-Butylbenzene	17.28	91	2452438	103.5609	ug/L	100
94)	1,2-Dichlorobenzene	17.57	146	1481276	100.4827	ug/L	100
95)	1,2-Dibromo-3-Chloropropan	18.49	75	95062	97.5959	ug/L	99
96)	1,2,4-Trichlorobenzene	19.55	180	1100416	102.0133	ug/L	100
97)	Hexachlorobutadiene	19.69	225	486893	102.4572	ug/L	100
98)	Naphthalene	19.90	128	2071229	103.4477	ug/L	100
99)	1,2,3-Trichlorobenzene	20.19	180	980181	99.0092	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11844.D Vial: 9
Acq On : 13 May 2016 18:22 Operator: JDS
Sample : WG568769-09 100ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

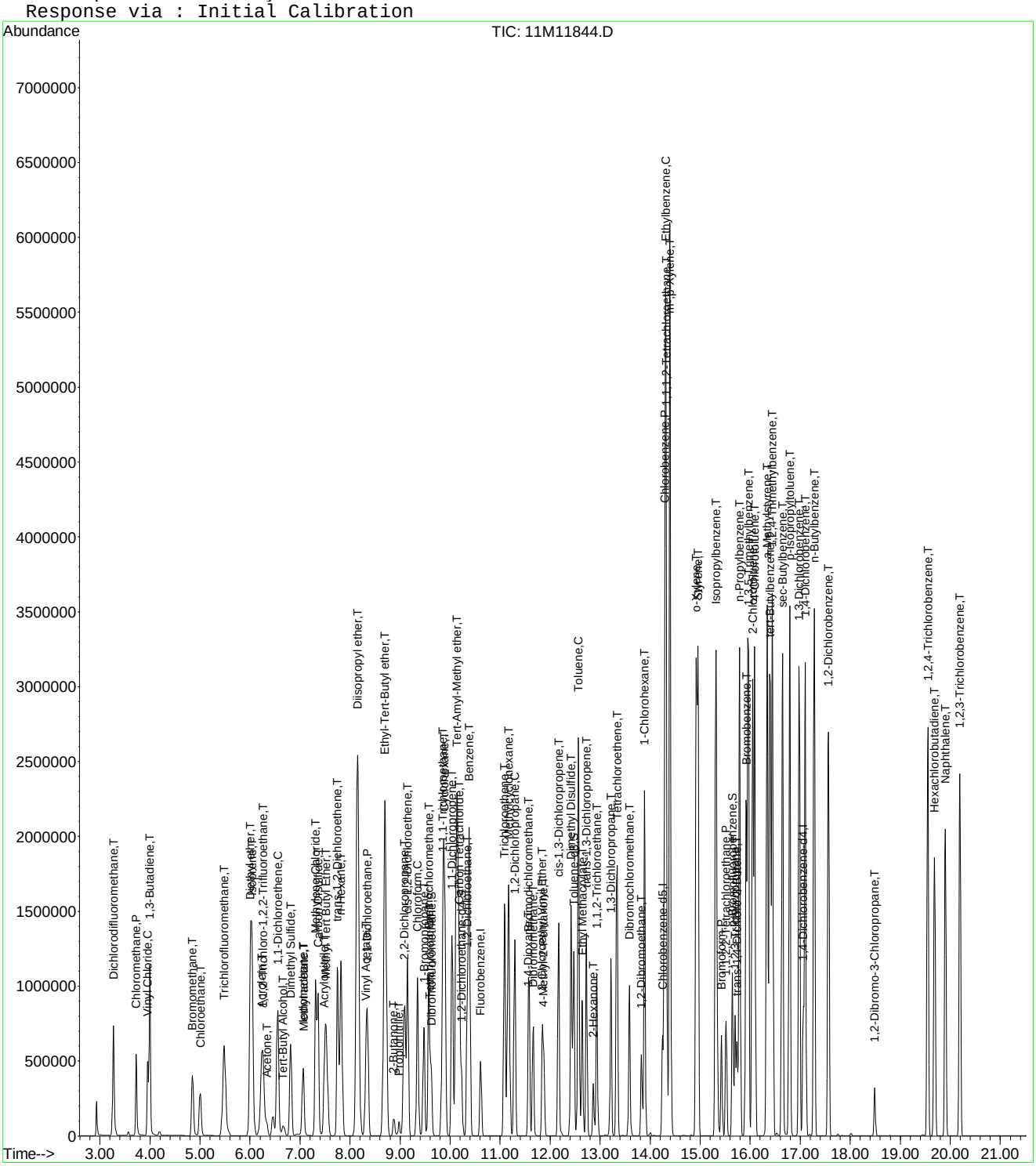

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11845.D Vial: 10
Acq On : 13 May 2016 18:54 Operator: JDS
Sample : WG568769-10 200ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:59 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	552905	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	473364	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	274188	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	629894	104.0960 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 416.40%#		
43) 1,2-Dichloroethane-d4	10.23	65	684792	99.2511 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 397.00%#		
57) Toluene-d8	12.47	98	2068111	100.5516 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 402.20%#		
78) p-Bromofluorobenzene	15.64	95	864999	102.3411 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 409.36%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	1843265	212.7741 ug/L	99
3) Chloromethane	3.72	50	1346993	194.1434 ug/L	100
4) Vinyl Chloride	3.95	62	1199147	208.1209 ug/L	100
5) 1,3-Butadiene	3.99	54	1131910	197.5677 ug/L	97
6) Bromomethane	4.85	94	859963	217.0771 ug/L	100
7) Chloroethane	5.00	64	764060	206.3883 ug/L	100
8) Trichlorofluoromethane	5.48	101	2275404	198.1327 ug/L	100
9) Diethyl ether	6.03	59	2592	0.6103 ug/L #	21
10) Isoprene	6.04	67	1435794	202.8369 ug/L	97
11) Acrolein	6.25	56	3061	6.8231 ug/L	88
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	1123889	201.6837 ug/L	99
13) Acetone	6.34	43	254053	193.5049 ug/L	96
14) 1,1-Dichloroethene	6.56	61	2040432	201.5858 ug/L	99
15) Tert-Butyl Alcohol	6.67	59	7729	21.2829 ug/L #	82
16) Dimethyl Sulfide	6.81	62	830179	205.3739 ug/L	99
17) Iodomethane	7.06	142	969857	206.1133 ug/L	99
18) Methyl acetate	7.07	43	749575	196.5068 ug/L	97
19) Methylene Chloride	7.31	84	1035656	197.7029 ug/L	97
20) Carbon Disulfide	7.36	76	3459748	204.1704 ug/L	99
21) Acrylonitrile	7.52	53	35662	20.2589 ug/L #	39
22) Methyl Tert Butyl Ether	7.52	73	2706665	207.1616 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	1121963	200.2808 ug/L	99
24) n-Hexane	7.82	57	1873652	200.8128 ug/L	99
25) Diisopropyl ether	8.16	45	16567	0.7116 ug/L #	87
26) Vinyl Acetate	8.31	43	1904053	202.8645 ug/L	100
27) 1,1-Dichloroethane	8.34	63	2261904	201.2314 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	9063	0.4783 ug/L	90
29) 2-Butanone	8.87	43	407543	205.3288 ug/L	99
30) Propionitrile	8.97	54	4182	7.1938 ug/L #	60
31) 2,2-Dichloropropane	9.09	77	1850091	210.3692 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	1257477	203.5843 ug/L	100
33) Chloroform	9.35	83	2160999	195.7739 ug/L	100
34) 1-Bromopropane	9.48	122	222798	201.1267 ug/L	98
35) Bromochloromethane	9.57	130	798076	217.5612 ug/L	99
36) Tetrahydrofuran	9.60	42	9110	6.4998 ug/L	97
38) 1,1,1-Trichloroethane	9.85	97	2208198	203.2875 ug/L	99
39) Cyclohexane	9.88	56	2467804	208.4625 ug/L	100
40) 1,1-Dichloropropene	10.04	75	1587009	204.6205 ug/L	99
41) Carbon Tetrachloride	10.18	117	2174730	205.0269 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	6538	0.4965 ug/L #	83

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11845.D Vial: 10
Acq On : 13 May 2016 18:54 Operator: JDS
Sample : WG568769-10 200ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:59 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
44)	1,2-Dichloroethane	10.34	62	1808450	201.7209 ug/L		99
45)	Benzene	10.38	78	4119227	194.0096 ug/L		99
46)	Trichloroethene	11.09	130	1367103	198.0963 ug/L		100
47)	Methylcyclohexane	11.17	83	1789256	210.0812 ug/L		99
48)	1,2-Dichloropropane	11.29	63	1196100	203.5109 ug/L		99
49)	1,4-Dioxane	11.57	88	2656	94.1370 ug/L	#	31
50)	Bromodichloromethane	11.58	83	1721733	208.6734 ug/L		99
51)	Dibromomethane	11.66	93	641583	209.4825 ug/L		100
52)	2-Chloroethyl Vinyl Ether	11.84	63	608231	209.9748 ug/L		99
53)	4-Methyl-2-Pentanone	11.87	58	342251	209.4831 ug/L		99
54)	cis-1,3-Dichloropropene	12.17	75	1772737	214.8108 ug/L		100
55)	Dimethyl Disulfide	12.42	79	1052498	211.9395 ug/L		98
58)	Toluene	12.56	91	4699240	196.0993 ug/L		98
59)	Ethyl Methacrylate	12.65	69	1101451	215.2567 ug/L		97
60)	trans-1,3-Dichloropropene	12.73	75	1627488	211.5866 ug/L		99
61)	1,1,2-Trichloroethane	12.93	97	860113	202.4133 ug/L		99
62)	2-Hexanone	12.86	43	651287	208.6888 ug/L		99
63)	1,3-Dichloropropane	13.21	76	1412360	206.9756 ug/L		99
64)	Tetrachloroethene	13.34	164	1133410	203.3874 ug/L		99
65)	Dibromochloromethane	13.59	129	1409248	217.4313 ug/L		99
66)	1,2-Dibromoethane	13.82	107	889951	209.0389 ug/L		99
67)	1-Chlorohexane	13.89	91	1659272	210.0173 ug/L		97
68)	Chlorobenzene	14.29	112	3416597	194.6214 ug/L		98
69)	1,1,1,2-Tetrachloroethane	14.32	131	1457008	205.1158 ug/L		100
70)	Ethylbenzene	14.31	106	1814385	201.5551 ug/L		91
71)	m-,p-Xylene	14.39	106	4230307	386.5510 ug/L		85
72)	o-Xylene	14.92	106	2156790	202.5071 ug/L		96
73)	Styrene	14.96	104	3630570	206.3240 ug/L		98
74)	Bromoform	15.43	173	854308	217.4778 ug/L		100
75)	Isopropylbenzene	15.31	105	5485636	194.7621 ug/L		97
77)	1,1,2,2-Tetrachloroethane	15.52	83	939708	220.0830 ug/L		98
79)	1,2,3-Trichloropropane	15.70	110	325518	202.0716 ug/L		99
80)	trans-1,4-Dichloro-2-Buten	15.74	53	421012	202.2796 ug/L		97
81)	n-Propylbenzene	15.79	91	6220435	195.8952 ug/L		95
82)	Bromobenzene	15.92	156	1685980	202.3412 ug/L		99
83)	1,3,5-Trimethylbenzene	15.96	105	4875063	201.1866 ug/L		97
84)	2-Chlorotoluene	16.05	91	4287026	192.7532 ug/L		98
85)	4-Chlorotoluene	16.09	91	4030756	202.3214 ug/L		98
86)	a-Methylstyrene	16.34	118	2724122	213.1015 ug/L		98
87)	tert-Butylbenzene	16.40	134	1075661	209.5280 ug/L		96
88)	1,2,4-Trimethylbenzene	16.44	105	4921395	199.4496 ug/L		97
89)	sec-Butylbenzene	16.65	105	5740919	197.3104 ug/L		97
90)	p-Isopropyltoluene	16.79	119	5274037	197.3451 ug/L		95
91)	1,3-Dichlorobenzene	16.98	146	3171808	197.0945 ug/L		99
92)	1,4-Dichlorobenzene	17.10	146	3145357	192.8244 ug/L		99
93)	n-Butylbenzene	17.28	91	4684496	198.9203 ug/L		97
94)	1,2-Dichlorobenzene	17.57	146	2909224	198.4498 ug/L		99
95)	1,2-Dibromo-3-Chloropropan	18.49	75	191088	196.6217 ug/L		99
96)	1,2,4-Trichlorobenzene	19.55	180	2198003	204.9021 ug/L		99
97)	Hexachlorobutadiene	19.69	225	969160	205.0797 ug/L		99
98)	Naphthalene	19.90	128	3994903	200.6399 ug/L		98
99)	1,2,3-Trichlorobenzene	20.19	180	1999949	203.1452 ug/L		99

(#) = qualifier out of range (m) = manual integration
11M11845.D 8260WT.M Sat May 14 18:51:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11845.D Vial: 10
Acq On : 13 May 2016 18:54 Operator: JDS
Sample : WG568769-10 200ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

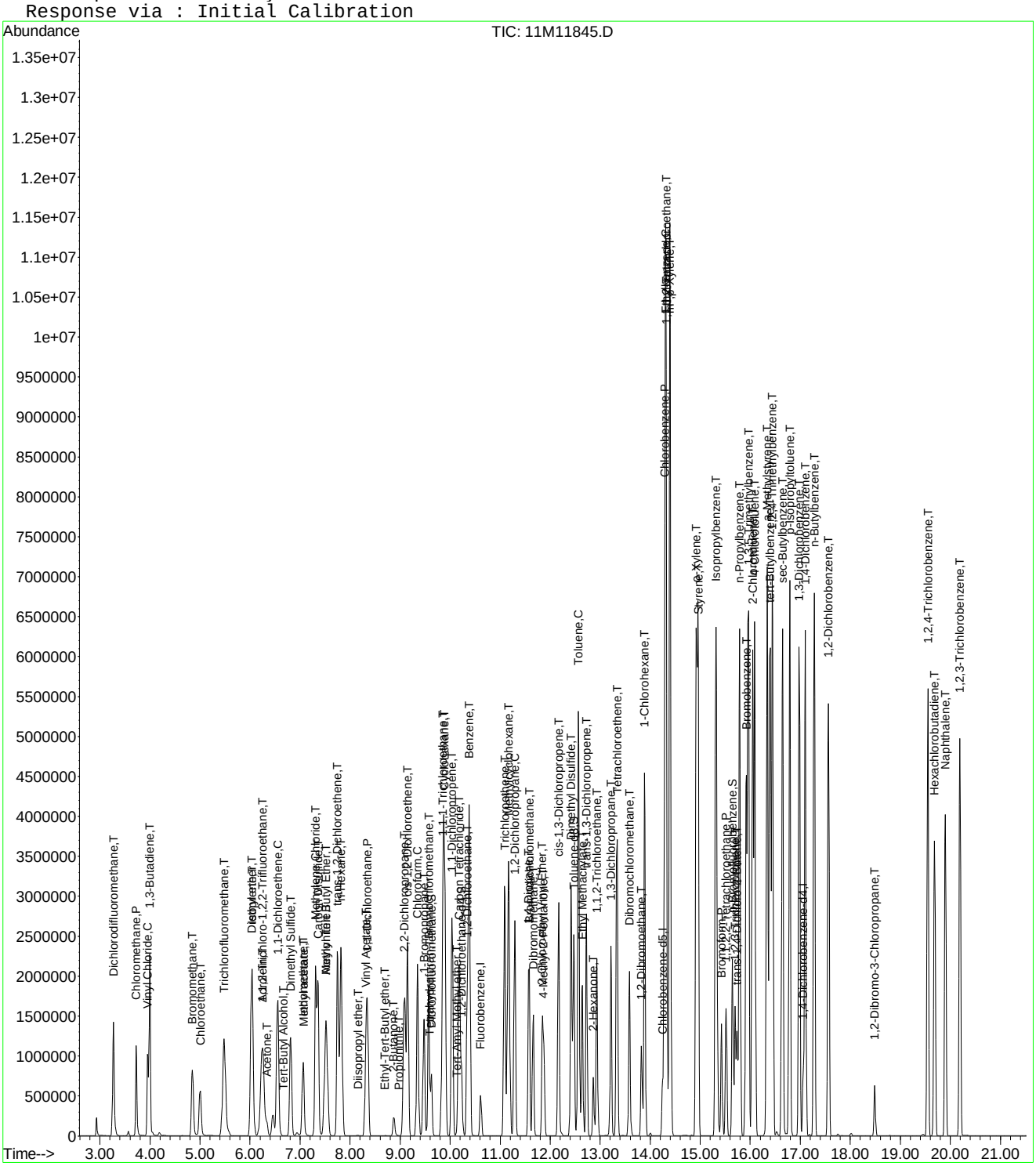

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11846.D Vial: 11
Acq On : 13 May 2016 19:26 Operator: JDS
Sample : WG568769-11 300ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:51:01 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	543599	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	479542	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	277309	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	905755	152.2472 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 609.00%#		
43) 1,2-Dichloroethane-d4	10.23	65	970758	143.1066 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 572.44%#		
57) Toluene-d8	12.47	98	3002456	144.0987 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 576.40%#		
78) p-Bromofluorobenzene	15.64	95	1285822	150.4179 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 601.68%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	2762707	324.3678 ug/L	99
3) Chloromethane	3.72	50	2113477	309.8323 ug/L	100
4) Vinyl Chloride	3.95	62	1802126	318.1269 ug/L	100
5) 1,3-Butadiene	3.99	54	1562377	277.3715 ug/L	98
6) Bromomethane	4.85	94	1341865	344.5204 ug/L	100
7) Chloroethane	5.00	64	1181546	324.6236 ug/L	100
8) Trichlorofluoromethane	5.48	101	3351045	296.7904 ug/L	99
9) Diethyl ether	6.01	59	1250668	299.5049 ug/L	97
10) Isoprene	6.04	67	2121830	304.8859 ug/L	97
11) Acrolein	6.23	56	87016	155.2272 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	1679276	306.5076 ug/L	99
13) Acetone	6.34	43	352141	272.8074 ug/L	95
14) 1,1-Dichloroethene	6.56	61	3009080	302.3733 ug/L	98
15) Tert-Butyl Alcohol	6.67	59	227782	637.9680 ug/L	97
16) Dimethyl Sulfide	6.81	62	1199487	301.8151 ug/L	96
17) Iodomethane	7.06	142	1359092	295.3515 ug/L	96
18) Methyl acetate	7.07	43	1093862	303.3719 ug/L	97
19) Methylene Chloride	7.31	84	1550974	301.1438 ug/L	91
20) Carbon Disulfide	7.36	76	5025219	301.6304 ug/L	99
21) Acrylonitrile	7.49	53	292311	168.8994 ug/L	94
22) Methyl Tert Butyl Ether	7.52	73	3880019	302.0512 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	1693308	307.4459 ug/L	98
24) n-Hexane	7.82	57	2752540	300.0599 ug/L	99
25) Diisopropyl ether	8.15	45	6621718	289.2841 ug/L	99
26) Vinyl Acetate	8.31	43	2814279	303.7518 ug/L	99
27) 1,1-Dichloroethane	8.34	63	3313473	299.8312 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	5508427	295.6672 ug/L	99
29) 2-Butanone	8.87	43	590742	302.7235 ug/L	97
30) Propionitrile	8.99	54	177454	310.4771 ug/L	98
31) 2,2-Dichloropropane	9.09	77	2735421	316.3626 ug/L	99
32) cis-1,2-Dichloroethene	9.15	96	1856543	305.7181 ug/L	98
33) Chloroform	9.35	83	3144758	289.7739 ug/L	100
34) 1-Bromopropane	9.48	122	329211	301.9597 ug/L	98
35) Bromochloromethane	9.57	130	1179409	327.0194 ug/L	97
36) Tetrahydrofuran	9.60	42	386389	280.3985 ug/L	96
38) 1,1,1-Trichloroethane	9.85	97	3227247	302.1877 ug/L	99
39) Cyclohexane	9.88	56	3625895	311.5332 ug/L	99
40) 1,1-Dichloropropene	10.04	75	2360605	309.5743 ug/L	100
41) Carbon Tetrachloride	10.18	117	3172921	304.2542 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	3912691	302.2388 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11846.D Vial: 11
Acq On : 13 May 2016 19:26 Operator: JDS
Sample : WG568769-11 300ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:51:01 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
44)	1,2-Dichloroethane	10.34	62	2551762	289.5052 ug/L		98
45)	Benzene	10.38	78	5961793	285.5987 ug/L		97
46)	Trichloroethene	11.09	130	2025948	298.5901 ug/L		99
47)	Methylcyclohexane	11.17	83	2657028	317.3092 ug/L		98
48)	1,2-Dichloropropane	11.29	63	1781372	308.2809 ug/L		96
49)	1,4-Dioxane	11.56	88	21540	607.7372 ug/L		100
50)	Bromodichloromethane	11.57	83	2511276	309.5762 ug/L		100
51)	Dibromomethane	11.65	93	939605	312.0413 ug/L		99
52)	2-Chloroethyl Vinyl Ether	11.84	63	879534	308.8327 ug/L		100
53)	4-Methyl-2-Pentanone	11.87	58	505191	314.5081 ug/L		99
54)	cis-1,3-Dichloropropene	12.17	75	2604960	321.0589 ug/L		99
55)	Dimethyl Disulfide	12.42	79	1529785	313.3234 ug/L		99
58)	Toluene	12.56	91	6613670	272.4329 ug/L		95
59)	Ethyl Methacrylate	12.65	69	1618015	312.1351 ug/L		94
60)	trans-1,3-Dichloropropene	12.73	75	2369133	304.0383 ug/L		98
61)	1,1,2-Trichloroethane	12.93	97	1271039	295.2644 ug/L		98
62)	2-Hexanone	12.86	43	950079	300.5074 ug/L		97
63)	1,3-Dichloropropane	13.21	76	2062188	298.3119 ug/L		97
64)	Tetrachloroethene	13.34	164	1691190	299.5697 ug/L		98
65)	Dibromochloromethane	13.59	129	2065480	314.5750 ug/L		100
66)	1,2-Dibromoethane	13.82	107	1334668	309.4588 ug/L		99
67)	1-Chlorohexane	13.89	91	2483371	310.2757 ug/L		95
68)	Chlorobenzene	14.29	112	4911463	276.1698 ug/L		96
69)	1,1,1,2-Tetrachloroethane	14.32	131	2161701	300.4009 ug/L		100
70)	Ethylbenzene	14.31	106	2715675	297.7904 ug/L		79
71)	m-,p-Xylene	14.39	106	6004062	541.5626 ug/L		73
72)	o-Xylene	14.92	106	3202500	296.8179 ug/L		90
73)	Styrene	14.96	104	5278134	296.0902 ug/L		96
74)	Bromoform	15.43	173	1313245	330.0007 ug/L		100
75)	Isopropylbenzene	15.31	105	7610374	266.7178 ug/L		92
77)	1,1,2,2-Tetrachloroethane	15.52	83	1470787	340.5868 ug/L		97
79)	1,2,3-Trichloropropane	15.70	110	494041	303.0514 ug/L		98
80)	trans-1,4-Dichloro-2-Buten	15.74	53	640812	304.0444 ug/L		94
81)	n-Propylbenzene	15.79	91	8405785	261.7374 ug/L		88
82)	Bromobenzene	15.92	156	2530711	300.3025 ug/L		98
83)	1,3,5-Trimethylbenzene	15.96	105	6851753	279.5793 ug/L		93
84)	2-Chlorotoluene	16.05	91	6055423	269.1996 ug/L		95
85)	4-Chlorotoluene	16.09	91	5712933	283.5299 ug/L		94
86)	a-Methylstyrene	16.34	118	4020347	310.9625 ug/L		96
87)	tert-Butylbenzene	16.40	134	1654009	318.5583 ug/L		89
88)	1,2,4-Trimethylbenzene	16.44	105	6879061	275.6504 ug/L		91
89)	sec-Butylbenzene	16.65	105	7999374	271.8373 ug/L		92
90)	p-Isopropyltoluene	16.79	119	7406083	274.0036 ug/L		90
91)	1,3-Dichlorobenzene	16.98	146	4679194	287.4903 ug/L		97
92)	1,4-Dichlorobenzene	17.10	146	4642399	281.3967 ug/L		96
93)	n-Butylbenzene	17.28	91	6723928	282.3084 ug/L		93
94)	1,2-Dichlorobenzene	17.57	146	4360022	294.0672 ug/L		96
95)	1,2-Dibromo-3-Chloropropan	18.49	75	302346	307.2381 ug/L		100
96)	1,2,4-Trichlorobenzene	19.55	180	3482946	321.0328 ug/L		97
97)	Hexachlorobutadiene	19.69	225	1629665	340.9652 ug/L		98
98)	Naphthalene	19.90	128	5970381	296.4815 ug/L	#	96
99)	1,2,3-Trichlorobenzene	20.19	180	3137470	315.1025 ug/L		98

(#) = qualifier out of range (m) = manual integration
11M11846.D 8260WT.M Sat May 14 18:51:02 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11846.D Vial: 11
Acq On : 13 May 2016 19:26 Operator: JDS
Sample : WG568769-11 300ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:51 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

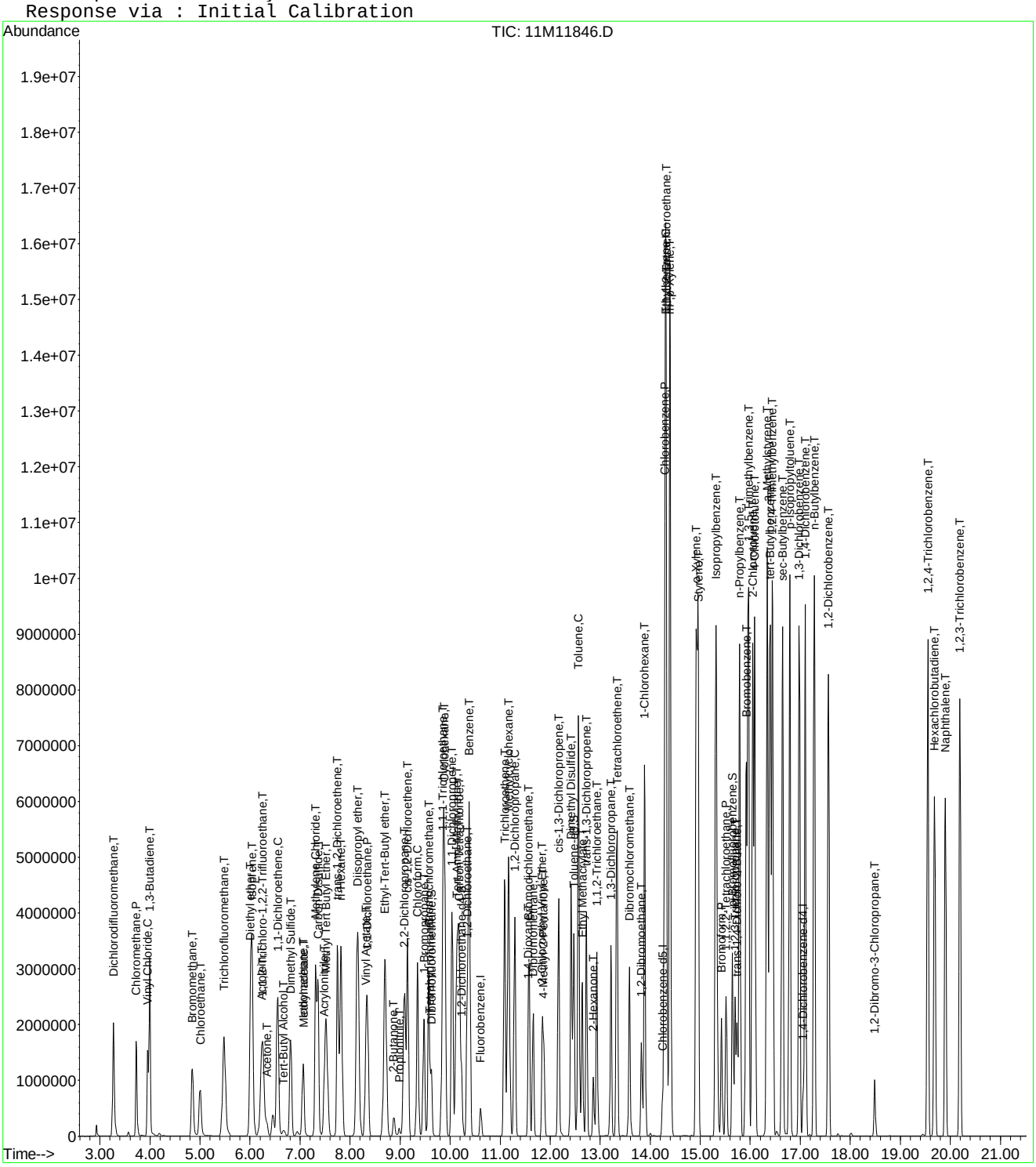

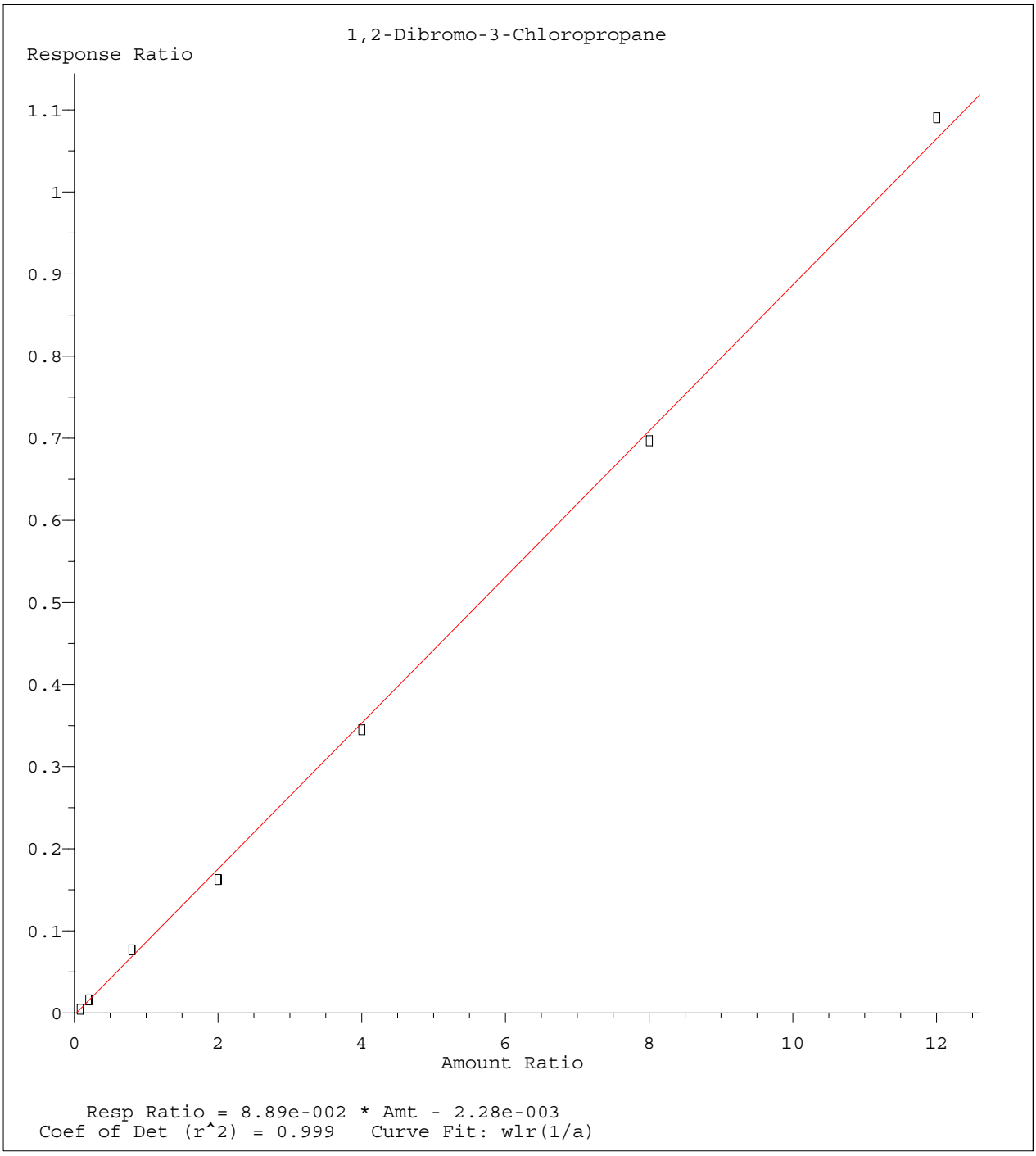

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

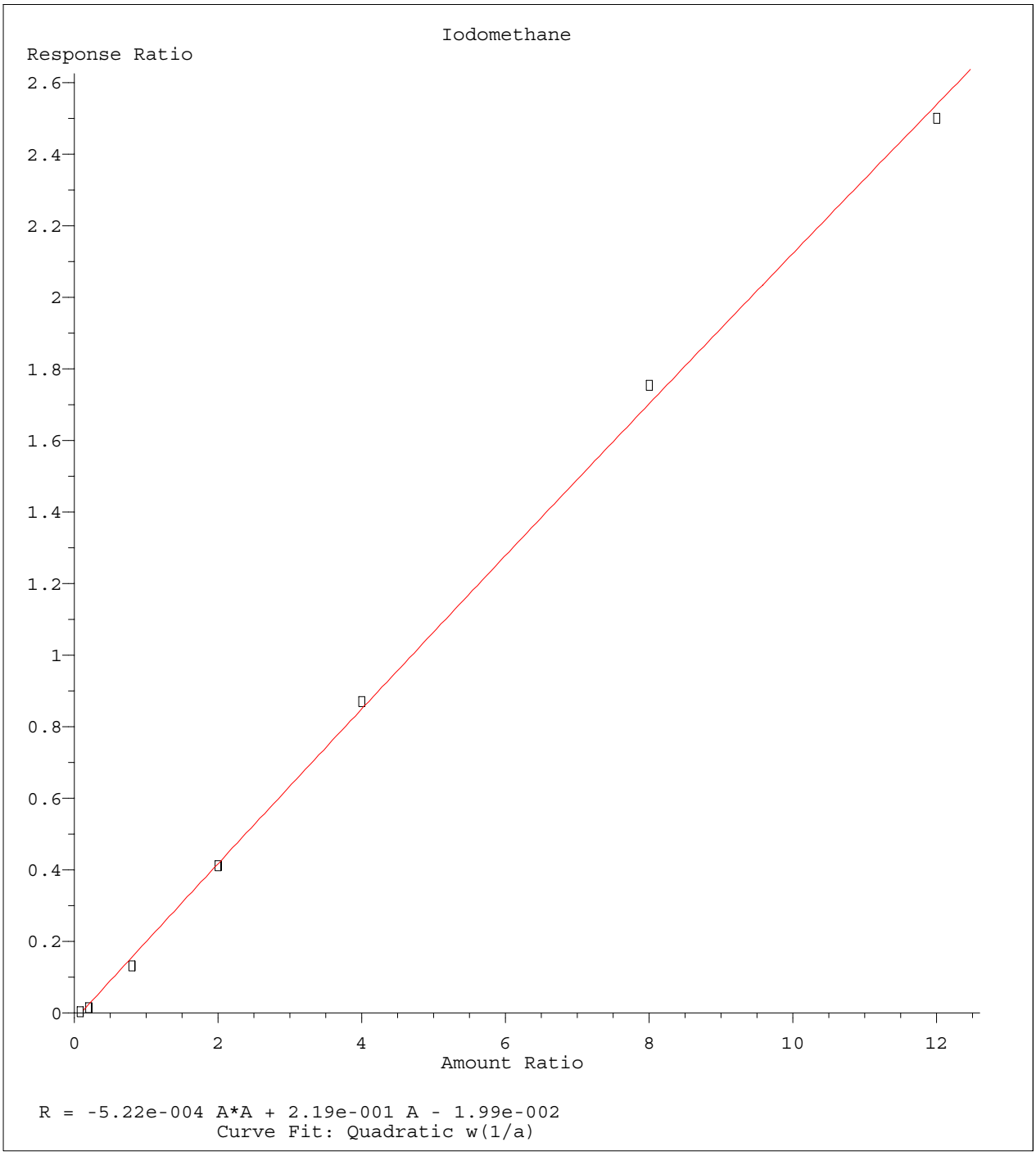

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

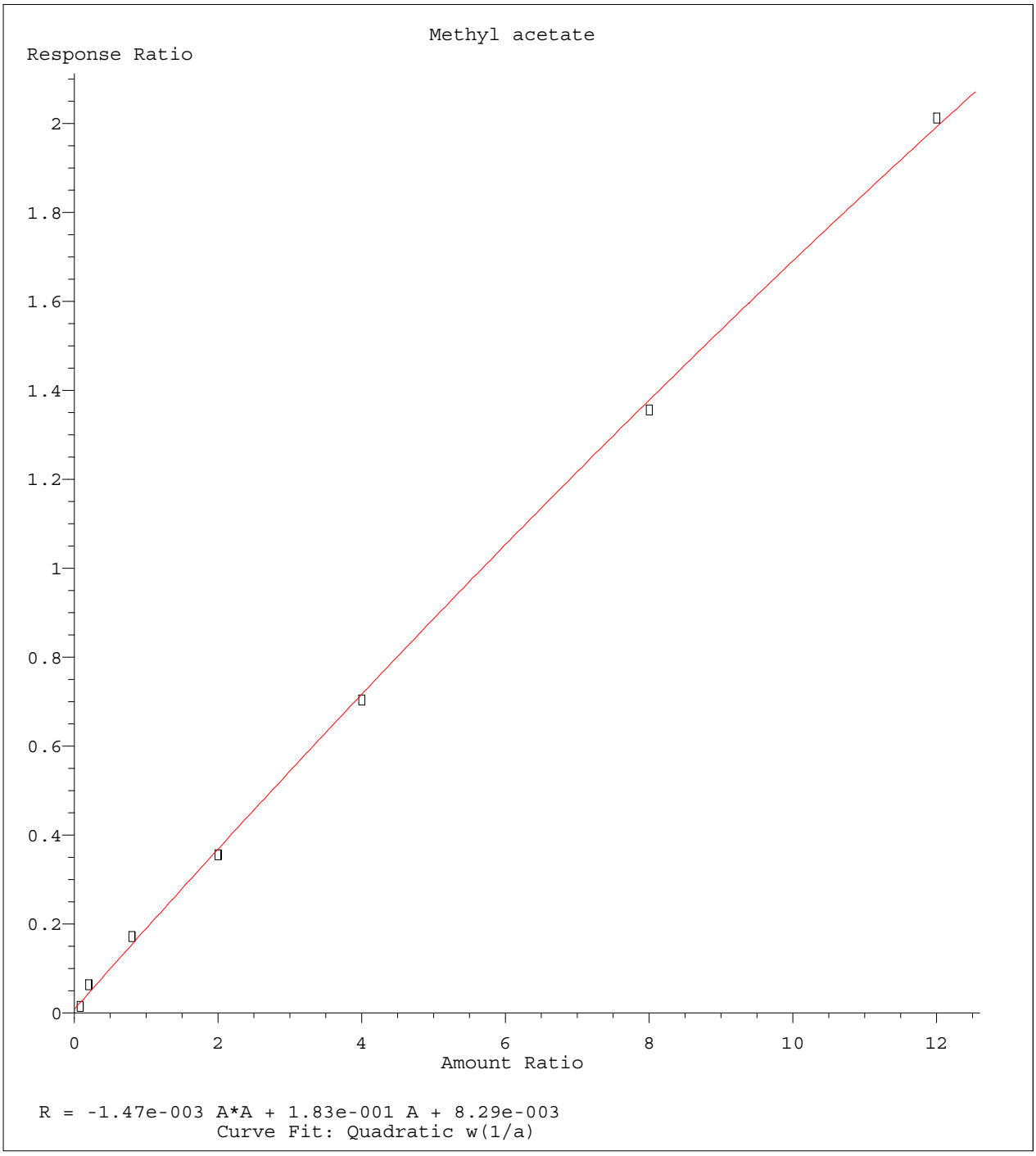

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

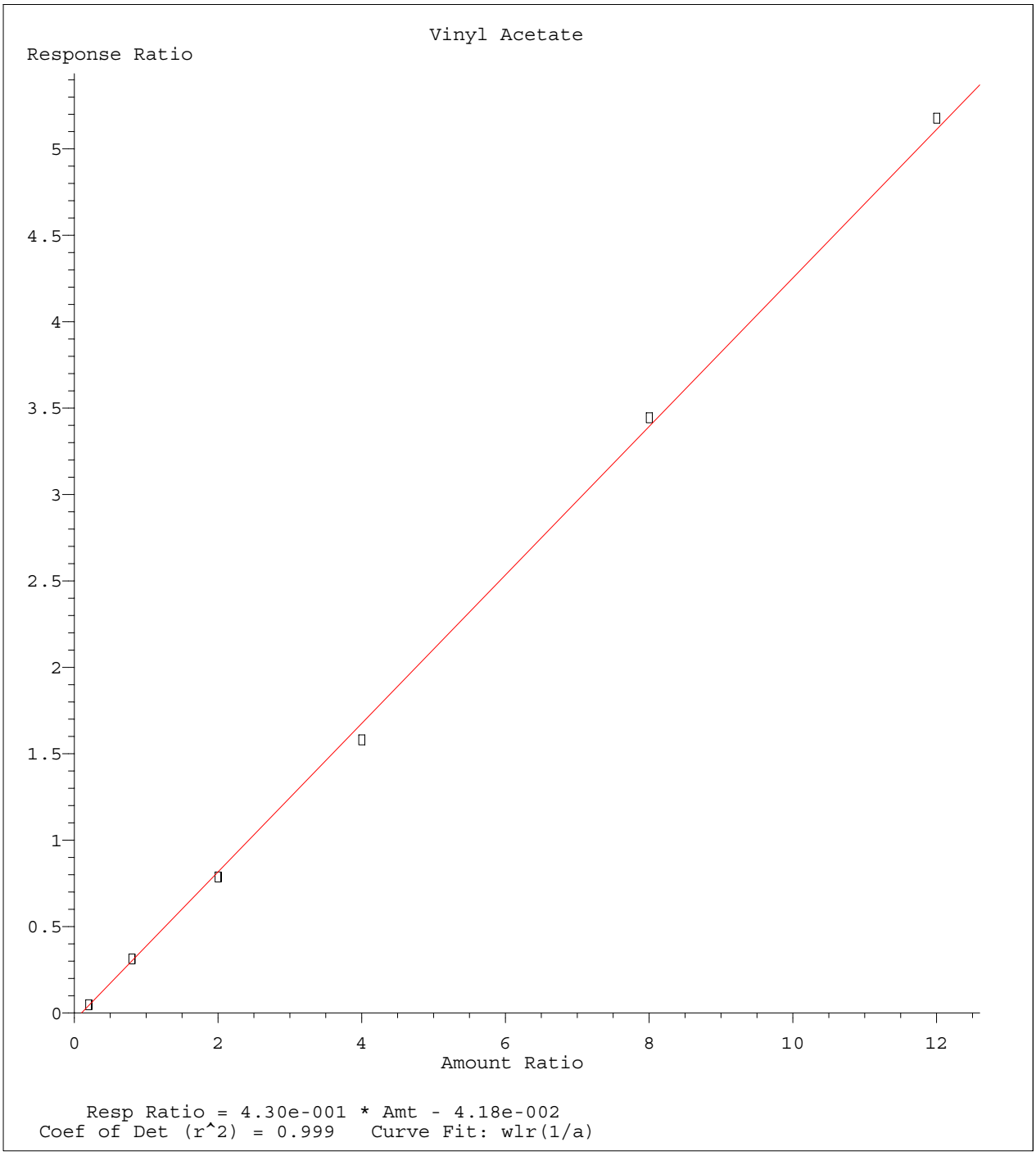

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

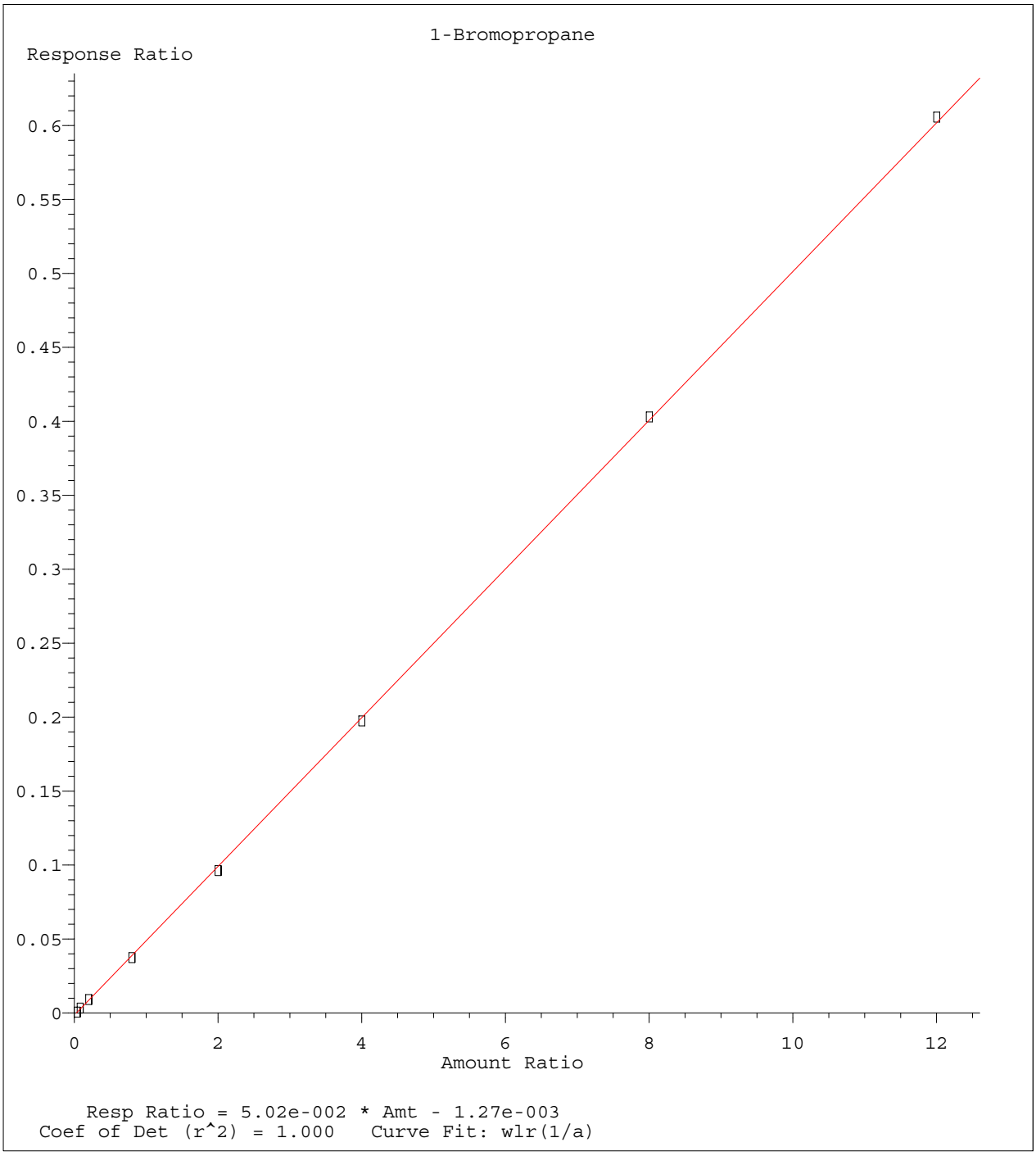

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

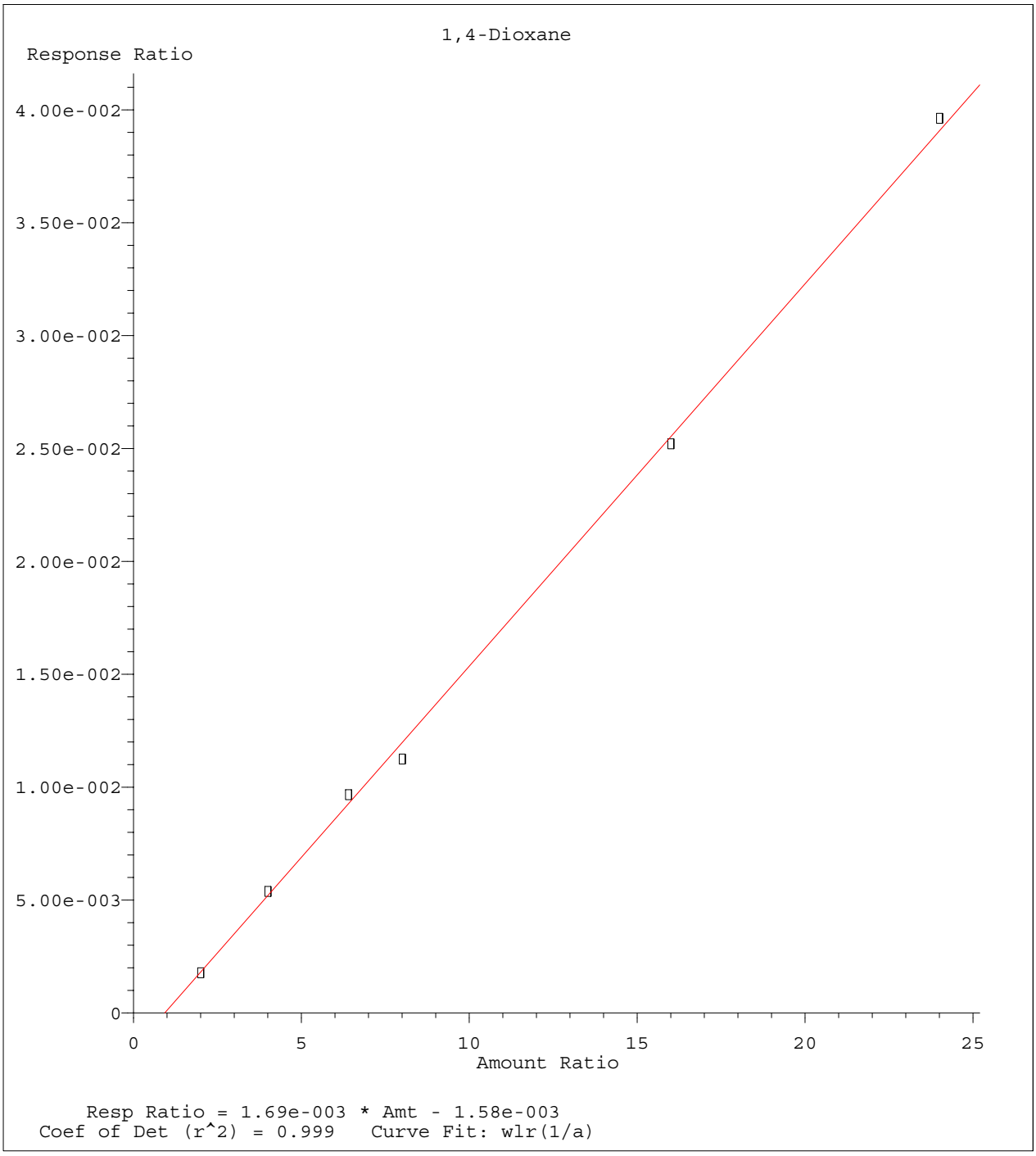

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

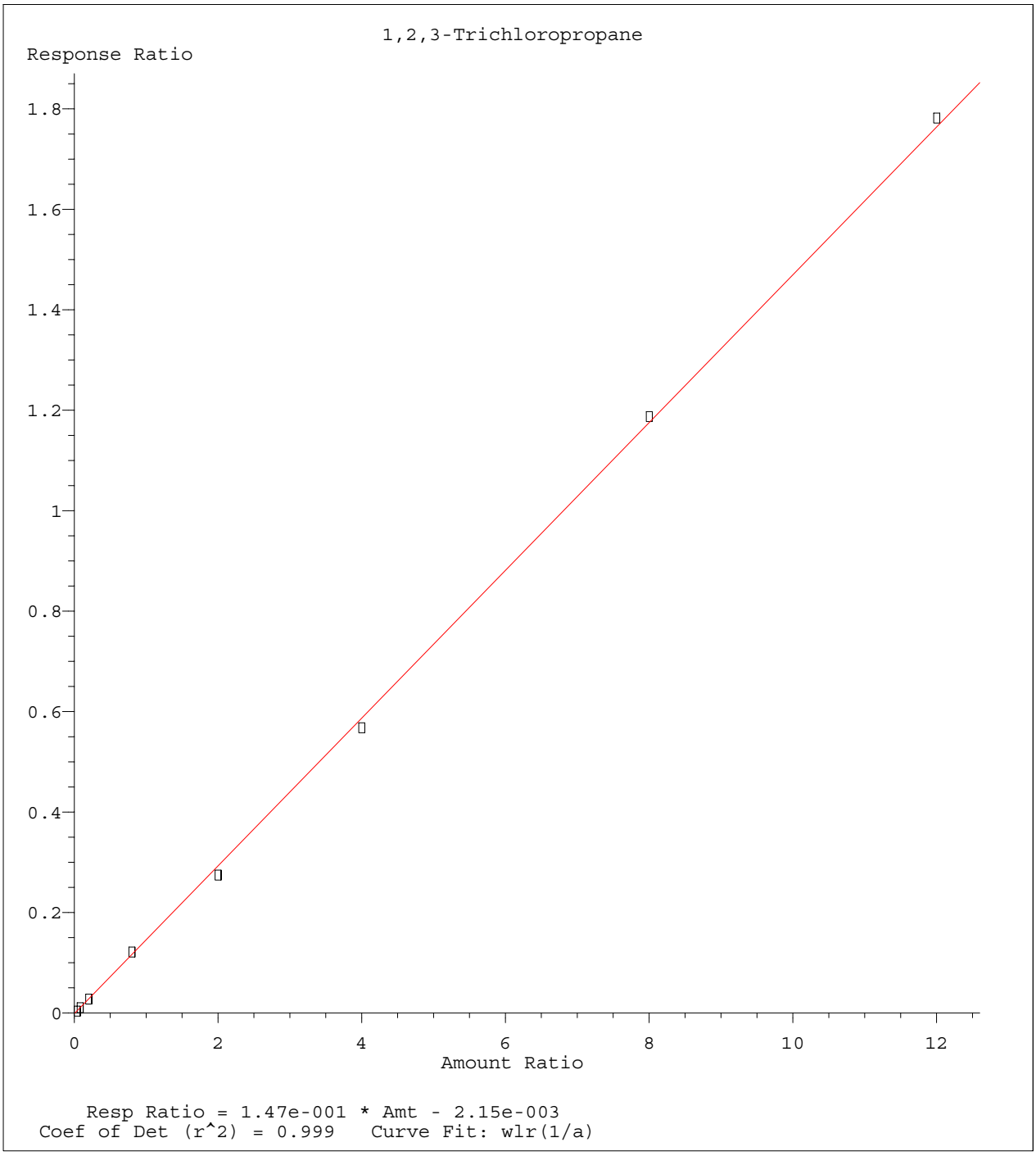

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

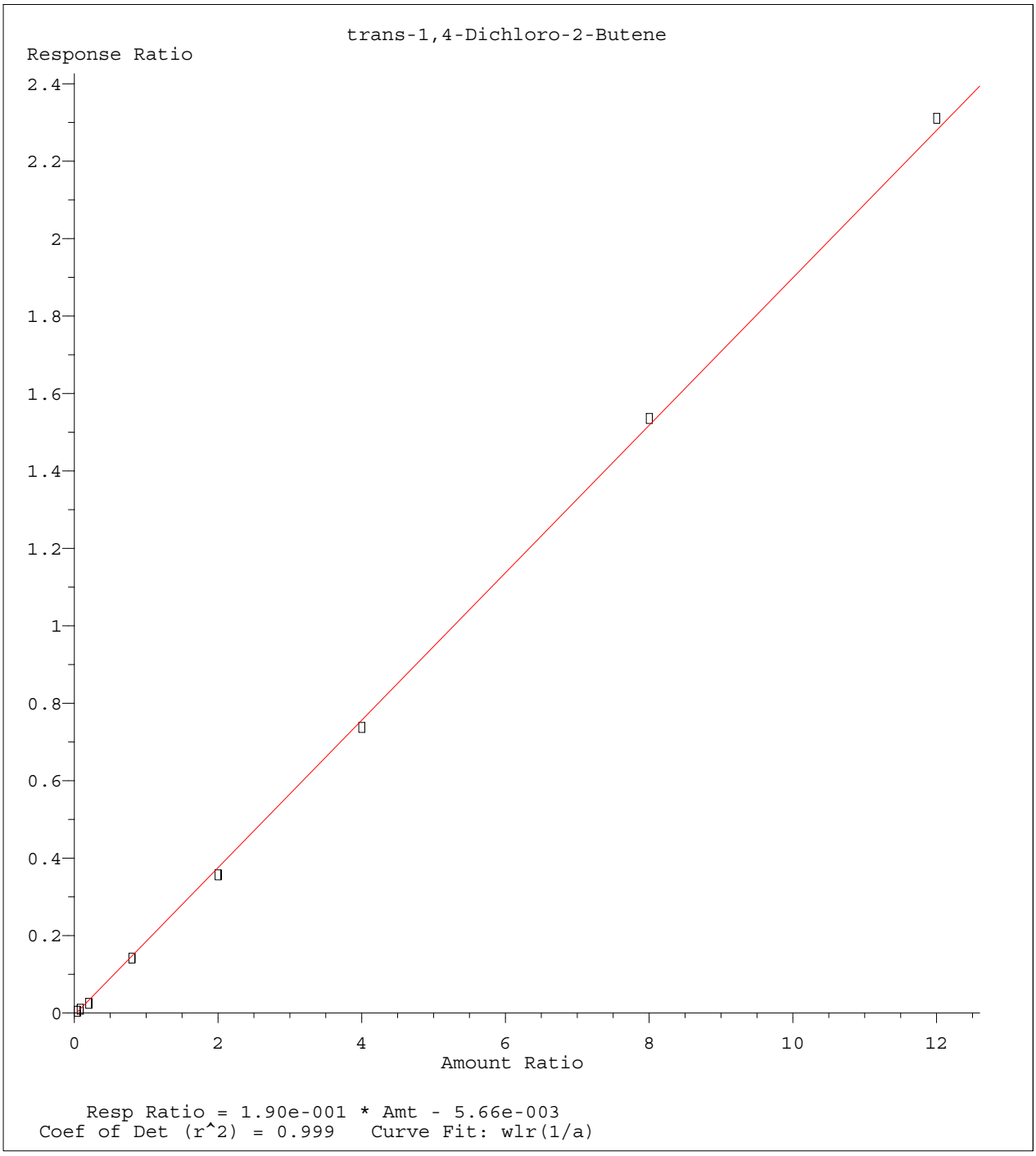

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

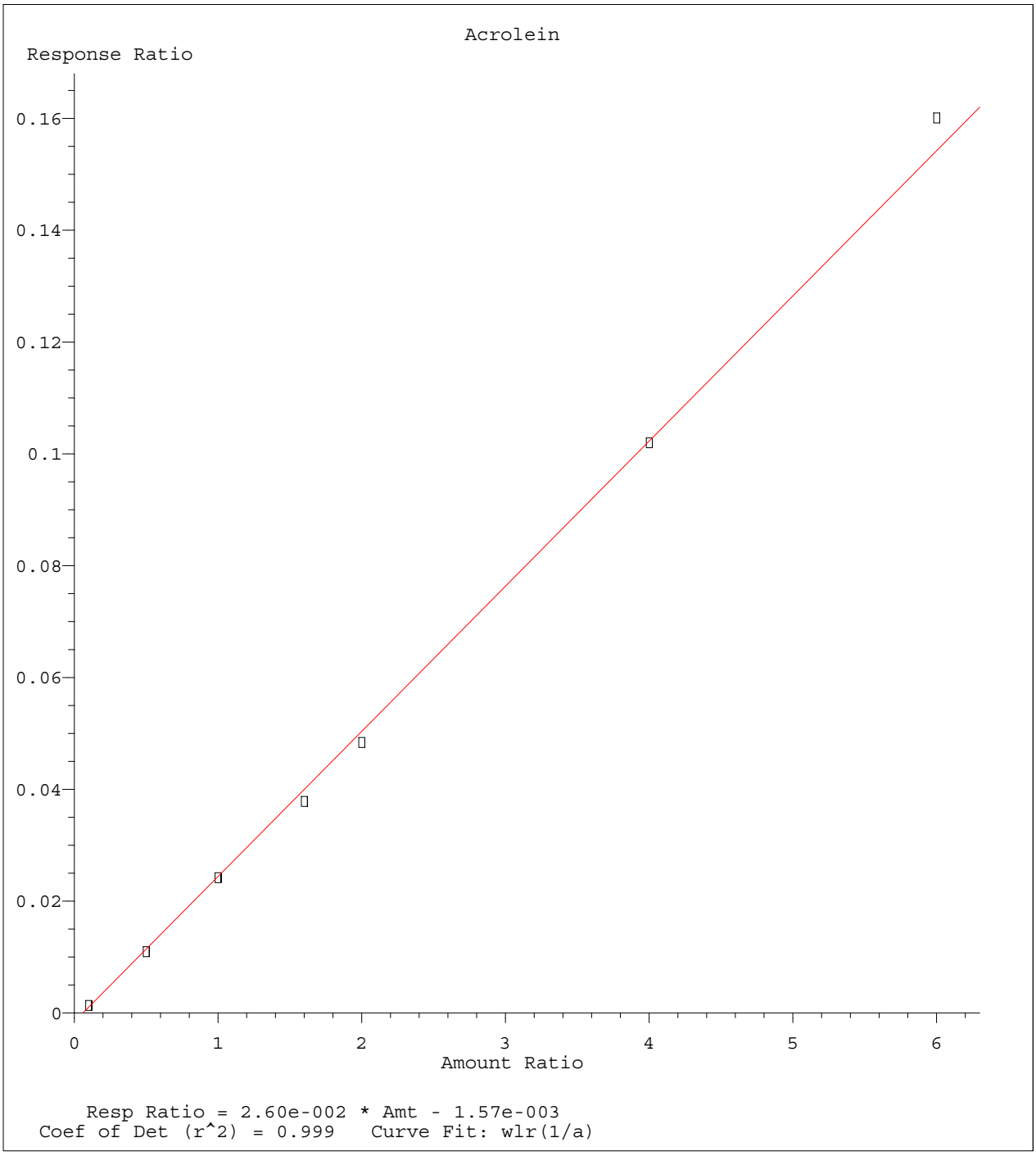

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:47:09 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	559172	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	461765	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	267551	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	155853	25.4675 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.88%		
43) 1,2-Dichloroethane-d4	10.23	65	160000	22.9299 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 91.72%		
57) Toluene-d8	12.47	98	531547	26.4930 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.96%		
78) p-Bromofluorobenzene	15.64	95	203747	24.7040 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.80%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	495777	56.5878 ug/L	98
3) Chloromethane	3.72	50	386673	55.1069 ug/L	100
4) Vinyl Chloride	3.95	62	326996	56.1165 ug/L	100
5) 1,3-Butadiene	3.99	54	212443	36.6650 ug/L	98
6) Bromomethane	4.84	94	202280	50.4885 ug/L	99
7) Chloroethane	5.00	64	220373	58.8601 ug/L	99
8) Trichlorofluoromethane	5.48	101	552017	47.5286 ug/L	99
9) Diethyl ether	6.01	59	453011	105.4639 ug/L	97
10) Isoprene	6.04	67	388108	54.2141 ug/L	93
11) Acrolein	6.23	56	56029	97.7296 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	292836	51.9609 ug/L	99
13) Acetone	6.35	43	65954	49.6723 ug/L	97
14) 1,1-Dichloroethene	6.55	61	486567	47.5319 ug/L	96
15) Tert-Butyl Alcohol	6.67	59	79387	216.1534 ug/L	96
16) Dimethyl Sulfide	6.81	62	290204	70.9875 ug/L	94
17) Iodomethane	7.06	142	176766	38.4128 ug/L	92
18) Methyl acetate	7.07	43	200985	48.7416 ug/L	98
19) Methylene Chloride	7.31	84	275442	51.9916 ug/L	91
20) Carbon Disulfide	7.35	76	765803	44.6859 ug/L	99
21) Acrylonitrile	7.49	53	93674	52.6181 ug/L	100
22) Methyl Tert Butyl Ether	7.52	73	687029	51.9942 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	295337	52.1295 ug/L	97
24) n-Hexane	7.82	57	420811	44.5959 ug/L	99
25) Diisopropyl ether	8.15	45	2449232	104.0201 ug/L	98
26) Vinyl Acetate	8.31	43	395913	43.6417 ug/L	99
27) 1,1-Dichloroethane	8.34	63	551372	48.5033 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1884917	98.3560 ug/L	99
29) 2-Butanone	8.87	43	101045	50.3380 ug/L	98
30) Propionitrile	8.99	54	62190	105.7785 ug/L	98
31) 2,2-Dichloropropane	9.09	77	405332	45.5727 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	332086	53.1618 ug/L	94
33) Chloroform	9.35	83	531122	47.5773 ug/L	100
34) 1-Bromopropane	9.48	122	76460	68.6656 ug/L	96
35) Bromochloromethane	9.57	130	199933	53.8923 ug/L	96
36) Tetrahydrofuran	9.60	42	131835	93.0068 ug/L	96
38) 1,1,1-Trichloroethane	9.85	97	527857	48.0501 ug/L	99
39) Cyclohexane	9.88	56	601180	50.2142 ug/L	99
40) 1,1-Dichloropropene	10.04	75	393057	50.1107 ug/L	100
41) Carbon Tetrachloride	10.18	117	507914	47.3479 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	1406419	105.6143 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:47:09 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	434117	47.8802	ug/L	99
45)	Benzene	10.38	78	1098993	51.1808	ug/L	100
46)	Trichloroethene	11.08	130	365193	52.3242	ug/L	99
47)	Methylcyclohexane	11.17	83	450581	52.3110	ug/L	97
48)	1,2-Dichloropropane	11.29	63	313901	52.8102	ug/L	94
49)	1,4-Dioxane	11.56	88	6366	191.2043	ug/L	95
50)	Bromodichloromethane	11.57	83	413329	49.5339	ug/L	99
51)	Dibromomethane	11.65	93	148822	48.0471	ug/L	97
52)	2-Chloroethyl Vinyl Ether	11.84	63	152083	51.9140	ug/L	99
53)	4-Methyl-2-Pentanone	11.87	58	86849	52.5623	ug/L	99
54)	cis-1,3-Dichloropropene	12.17	75	480729	57.5993	ug/L	99
55)	Dimethyl Disulfide	12.42	79	261188	52.0055	ug/L	96
58)	Toluene	12.56	91	1256481	53.7500	ug/L	100
59)	Ethyl Methacrylate	12.65	69	284944	57.0854	ug/L	90
60)	trans-1,3-Dichloropropene	12.73	75	391013	52.1118	ug/L	97
61)	1,1,2-Trichloroethane	12.93	97	218717	52.7643	ug/L	99
62)	2-Hexanone	12.86	43	158873	52.1857	ug/L	98
63)	1,3-Dichloropropane	13.21	76	374611	56.2767	ug/L	95
64)	Tetrachloroethene	13.34	164	283714	52.1906	ug/L	97
65)	Dibromochloromethane	13.59	129	332092	52.5252	ug/L	99
66)	1,2-Dibromoethane	13.82	107	218604	52.6373	ug/L	99
67)	1-Chlorohexane	13.89	91	420217	54.5237	ug/L	92
68)	Chlorobenzene	14.29	112	912650	53.2936	ug/L	100
69)	1,1,1,2-Tetrachloroethane	14.32	131	353663	51.0389	ug/L	98
70)	Ethylbenzene	14.31	106	460093	52.3943	ug/L	99
71)	m-,p-Xylene	14.39	106	1144896	107.2445	ug/L	98
72)	o-Xylene	14.92	106	568307	54.7003	ug/L	100
73)	Styrene	14.95	104	943635	54.9735	ug/L	98
74)	Bromoform	15.43	173	190959	49.8328	ug/L	99
75)	Isopropylbenzene	15.31	105	1490416	54.2449	ug/L	100
77)	1,1,2,2-Tetrachloroethane	15.52	83	228913	54.9422	ug/L	100
79)	1,2,3-Trichloropropane	15.70	110	78385	50.1407	ug/L	92
80)	trans-1,4-Dichloro-2-Buten	15.74	53	73730	36.9129	ug/L	62
81)	n-Propylbenzene	15.79	91	1753049	56.5769	ug/L	99
82)	Bromobenzene	15.92	156	419932	51.6479	ug/L	99
83)	1,3,5-Trimethylbenzene	15.95	105	1303495	55.1277	ug/L	99
84)	2-Chlorotoluene	16.05	91	1145029	52.7599	ug/L	99
85)	4-Chlorotoluene	16.09	91	1077116	55.4064	ug/L	99
86)	a-Methylstyrene	16.34	118	741671	59.4584	ug/L	99
87)	tert-Butylbenzene	16.40	134	283244	56.5417	ug/L	95
88)	1,2,4-Trimethylbenzene	16.44	105	1296091	53.8297	ug/L	99
89)	sec-Butylbenzene	16.65	105	1586978	55.8961	ug/L	100
90)	p-Isopropyltoluene	16.79	119	1426648	54.7069	ug/L	99
91)	1,3-Dichlorobenzene	16.98	146	827515	52.6969	ug/L	98
92)	1,4-Dichlorobenzene	17.10	146	844174	53.0354	ug/L	98
93)	n-Butylbenzene	17.28	91	1238500	53.8957	ug/L	99
94)	1,2-Dichlorobenzene	17.57	146	766416	53.5772	ug/L	98
95)	1,2-Dibromo-3-Chloropropan	18.49	75	45158	48.1046	ug/L	97
96)	1,2,4-Trichlorobenzene	19.55	180	580278	55.4365	ug/L	99
97)	Hexachlorobutadiene	19.69	225	257859	55.9180	ug/L	98
98)	Naphthalene	19.90	128	993390	51.1296	ug/L	100
99)	1,2,3-Trichlorobenzene	20.19	180	519374	54.0642	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:47 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

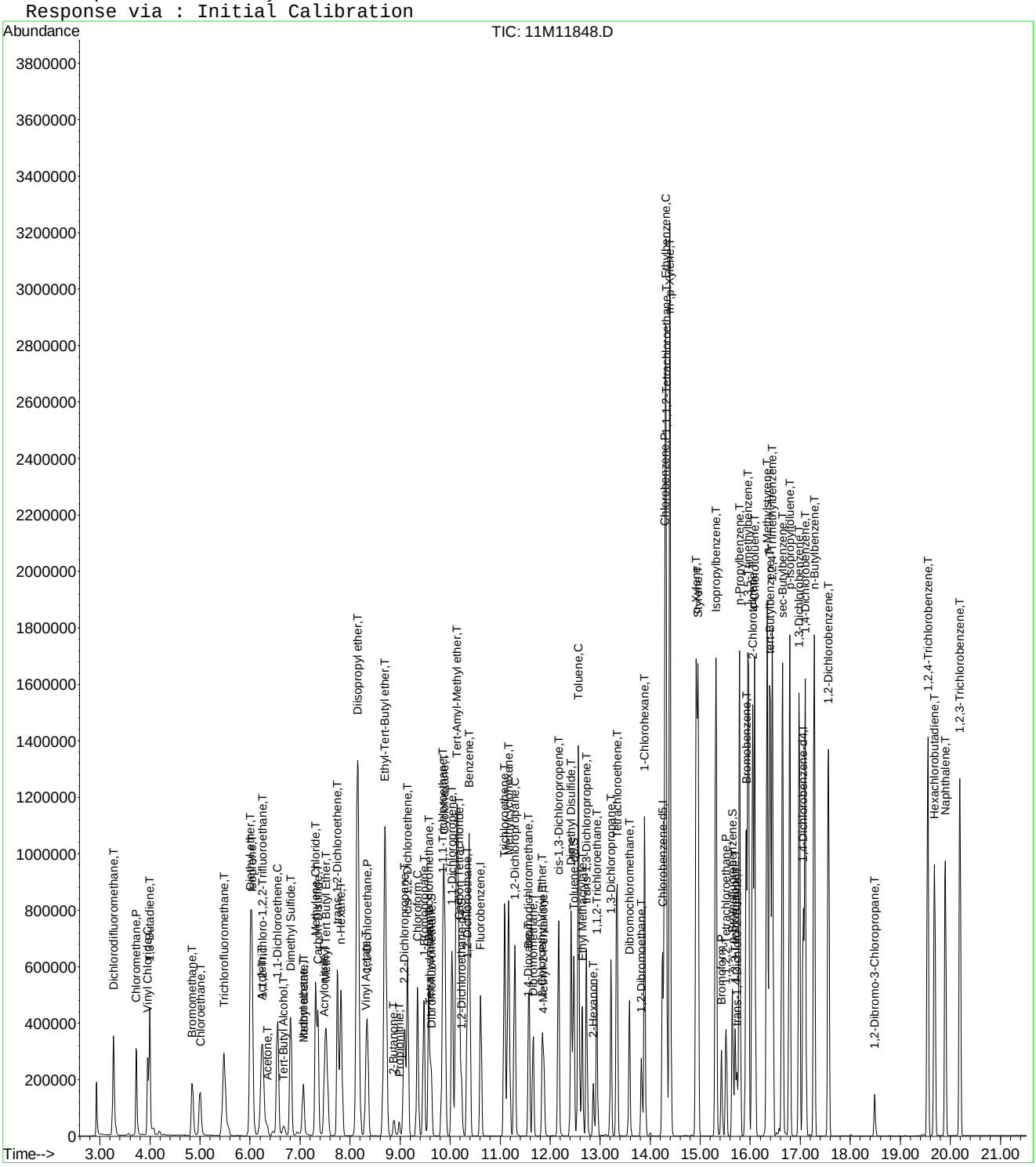

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	107	0.00
2	T	Dichlorodifluoromethane	50.0000	56.5878	-13.2	119	0.00
3	P	Chloromethane	50.0000	55.1069	-10.2	134	0.00
4	C	Vinyl Chloride	50.0000	56.1165	-12.2	125	-0.01
5	T	1,3-Butadiene	50.0000	36.6650	26.7#	76	-0.01
6	T	Bromomethane	50.0000	50.4885	-1.0	117	-0.01
7	T	Chloroethane	50.0000	58.8601	-17.7	131	0.00
8	T	Trichlorofluoromethane	50.0000	47.5286	4.9	106	0.00
9	T	Diethyl ether	100.0000	105.4639	-5.5	116	0.00
10	T	Isoprene	50.0000	54.2141	-8.4	117	0.00
11	T	Acrolein	50.0000	97.7296	-95.5#	222	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	51.9609	-3.9	115	0.00
13	T	Acetone	50.0000	49.6723	0.7	110	0.01
14	C	1,1-Dichloroethene	50.0000	47.5320	4.9	106	-0.01
15	T	Tert-Butyl Alcohol	200.0000	216.1534	-8.1	114	0.01
16	T	Dimethyl Sulfide	50.0000	70.9875	-42.0#	150	0.00
17	T	Iodomethane	50.0000	38.4128	23.2	82	0.00
18	T	Methyl acetate	50.0000	48.7416	2.5	108	0.01
19	T	Methylene Chloride	50.0000	51.9916	-4.0	118	0.00
20	T	Carbon Disulfide	50.0000	44.6859	10.6	94	-0.01
21	T	Acrylonitrile	50.0000	52.6181	-5.2	110	0.00
22	T	Methyl Tert Butyl Ether	50.0000	51.9942	-4.0	113	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.1295	-4.3	117	0.00
24	T	n-Hexane	50.0000	44.5959	10.8	94	0.00
25	T	Diisopropyl ether	100.0000	104.0201	-4.0	112	0.00
26	T	Vinyl Acetate	50.0000	43.6417	12.7	96	0.00
27	P	1,1-Dichloroethane	50.0000	48.5033	3.0	107	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.3560	1.6	106	0.00
29	T	2-Butanone	50.0000	50.3381	-0.7	111	0.00
30	T	Propionitrile	100.0000	105.7786	-5.8	110	0.01
31	T	2,2-Dichloropropane	50.0000	45.5727	8.9	101	0.00
32	T	cis-1,2-Dichloroethene	50.0000	53.1618	-6.3	118	0.00
33	C	Chloroform	50.0000	47.5773	4.8	108	0.00
34	T	1-Bromopropane	50.0000	68.6656	-37.3#	152	0.00
35	T	Bromochloromethane	50.0000	53.8923	-7.8	111	0.00
36	T	Tetrahydrofuran	100.0000	93.0068	7.0	103	0.00
37	S	Dibromofluoromethane	25.0000	25.4675	-1.9	111	0.00
38	T	1,1,1-Trichloroethane	50.0000	48.0501	3.9	106	0.00
39	T	Cyclohexane	50.0000	50.2142	-0.4	105	0.00
40	T	1,1-Dichloropropene	50.0000	50.1107	-0.2	111	0.00
41	T	Carbon Tetrachloride	50.0000	47.3479	5.3	103	0.00
42	T	Tert-Amyl-Methyl ether	100.0000	105.6143	-5.6	115	0.00
43	S	1,2-Dichloroethane-d4	25.0000	22.9299	8.3	101	0.00
44	T	1,2-Dichloroethane	50.0000	47.8802	4.2	104	0.00
45	T	Benzene	50.0000	51.1809	-2.4	116	0.00
46	T	Trichloroethene	50.0000	52.3242	-4.6	119	-0.01
47	T	Methylcyclohexane	50.0000	52.3110	-4.6	108	0.00
48	C	1,2-Dichloropropane	50.0000	52.8102	-5.6	117	0.00
49	T	1,4-Dioxane	200.0000	191.2043	4.4	109	0.01
50	T	Bromodichloromethane	50.0000	49.5339	0.9	107	0.00
51	T	Dibromomethane	50.0000	48.0471	3.9	104	0.00
52	T	2-Chloroethyl Vinyl Ether	50.0000	51.9140	-3.8	114	0.00
53	T	4-Methyl-2-Pentanone	50.0000	52.5623	-5.1	115	0.00
54	T	cis-1,3-Dichloropropene	50.0000	57.5993	-15.2	122	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	50.0000	52.0055	-4.0	110	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	105	0.00
57	S	Toluene-d8	25.0000	26.4930	-6.0	115	0.00
58	C	Toluene	50.0000	53.7500	-7.5	115	0.00
59	T	Ethyl Methacrylate	50.0000	57.0854	-14.2	114	0.00
60	T	trans-1,3-Dichloropropene	50.0000	52.1118	-4.2	107	0.00
61	T	1,1,2-Trichloroethane	50.0000	52.7643	-5.5	113	0.00
62	T	2-Hexanone	50.0000	52.1857	-4.4	110	0.00
63	T	1,3-Dichloropropane	50.0000	56.2767	-12.6	118	0.00
64	T	Tetrachloroethene	50.0000	52.1906	-4.4	113	0.00
65	T	Dibromochloromethane	50.0000	52.5251	-5.1	107	0.00
66	T	1,2-Dibromoethane	50.0000	52.6373	-5.3	111	0.00
67	T	1-Chlorohexane	50.0000	54.5237	-9.0	112	0.00
68	P	Chlorobenzene	50.0000	53.2936	-6.6	114	0.00
69	T	1,1,1,2-Tetrachloroethane	50.0000	51.0388	-2.1	109	0.00
70	C	Ethylbenzene	50.0000	52.3943	-4.8	113	0.00
71	T	m-,p-Xylene	100.0000	107.2445	-7.2	115	0.00
72	T	o-Xylene	50.0000	54.7003	-9.4	115	0.00
73	T	Styrene	50.0000	54.9735	-9.9	113	0.00
74	P	Bromoform	50.0000	49.8327	0.3	104	0.00
75	T	Isopropylbenzene	50.0000	54.2449	-8.5	114	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	101	0.00
77	P	1,1,2,2-Tetrachloroethane	50.0000	54.9422	-9.9	110	0.00
78	S	p-Bromofluorobenzene	25.0000	24.7040	1.2	108	0.00
79	T	1,2,3-Trichloropropane	50.0000	50.1407	-0.3	108	0.00
80	T	trans-1,4-Dichloro-2-Butene	50.0000	36.9129	26.2#	78	0.00
81	T	n-Propylbenzene	50.0000	56.5769	-13.2	115	0.00
82	T	Bromobenzene	50.0000	51.6479	-3.3	111	0.00
83	T	1,3,5-Trimethylbenzene	50.0000	55.1277	-10.3	114	-0.01
84	T	2-Chlorotoluene	50.0000	52.7599	-5.5	112	0.00
85	T	4-Chlorotoluene	50.0000	55.4064	-10.8	116	0.00
86	T	a-Methylstyrene	50.0000	59.4584	-18.9	114	0.00
87	T	tert-Butylbenzene	50.0000	56.5417	-13.1	117	0.00
88	T	1,2,4-Trimethylbenzene	50.0000	53.8297	-7.7	110	0.00
89	T	sec-Butylbenzene	50.0000	55.8961	-11.8	114	0.00
90	T	p-Isopropyltoluene	50.0000	54.7069	-9.4	111	0.00
91	T	1,3-Dichlorobenzene	50.0000	52.6969	-5.4	112	0.00
92	T	1,4-Dichlorobenzene	50.0000	53.0354	-6.1	114	0.00
93	T	n-Butylbenzene	50.0000	53.8957	-7.8	110	0.00
94	T	1,2-Dichlorobenzene	50.0000	53.5772	-7.2	112	0.00
95	T	1,2-Dibromo-3-Chloropropane	50.0000	48.1046	3.8	105	0.00
96	T	1,2,4-Trichlorobenzene	50.0000	55.4365	-10.9	113	0.00
97	T	Hexachlorobutadiene	50.0000	55.9180	-11.8	118	0.00
98	T	Naphthalene	50.0000	51.1296	-2.3	103	0.00
99	T	1,2,3-Trichlorobenzene	50.0000	54.0642	-8.1	114	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11848.D 8260WT.M Sat May 14 18:47:20 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:46 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	611118	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	473080	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	253718	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.40	111	173671	27.7488 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.00%		
43) 1,2-Dichloroethane-d4	11.12	65	203570	26.8000 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.20%		
58) Toluene-d8	13.86	98	554047	26.0139 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.04%		
80) p-Bromofluorobenzene	17.85	95	229998	27.1525 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 108.60%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	1325	0.6992 ug/L #	46
20) Carbon Disulfide	7.54	76	18747	0.9622 ug/L #	39
29) 2-Butanone	9.31	43	1188	0.4247 ug/L #	1
36) Tetrahydrofuran	10.36	42	2769	1.5196 ug/L #	58
60) Ethyl Methacrylate	13.87	69	899	0.1270 ug/L #	1

(#) = qualifier out of range (m) = manual integration
6M138751.D 8260WTR.M Mon Apr 25 09:22:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

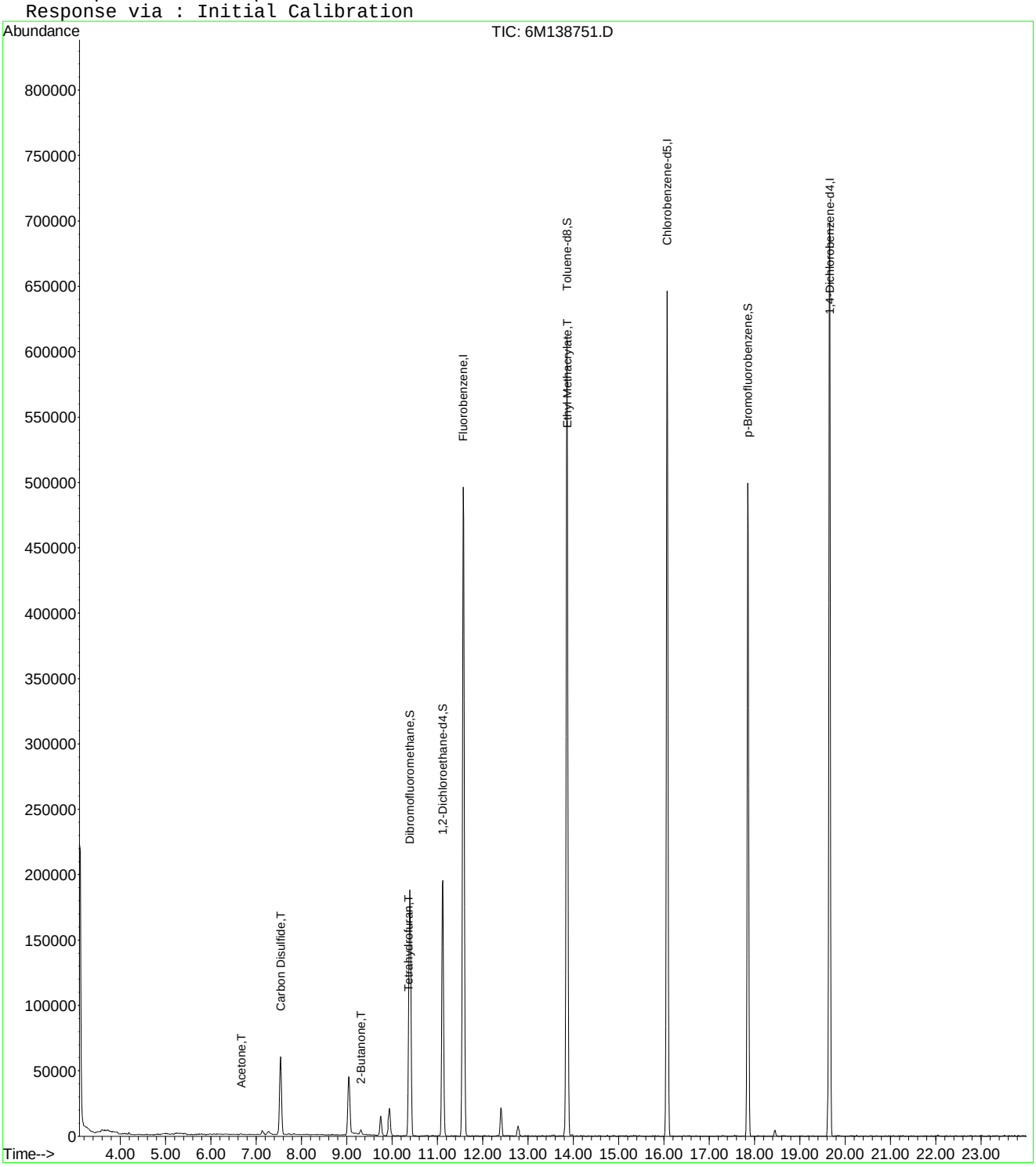

6M138751.D 8260WTR.M Mon Apr 25 09:22:46 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:52 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	611118	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	473080	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	253718	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.13	41	4366	3.7209 ug/L	76
3) 3-Chloro-1-propene	7.54	41	69268	4.2301 ug/L	92
4) 2-Chloro-1,3-butadiene	9.04	53	50753	3.6002 ug/L	85
5) Ethyl Acetate	9.75	43	28042	4.3499 ug/L #	90
6) Methacrylonitrile	9.94	67	8721	3.5173 ug/L #	55
7) Isobutyl Alcohol	9.94	43	1233	3.4767 ug/L #	85
9) Methyl methacrylate	12.40	41	19474	3.0338 ug/L	79
10) 2-Nitropropane	12.78	43	7076	3.7392 ug/L	93
13) Cyclohexanone	17.57	55	447	0.5159 ug/L #	25

(#) = qualifier out of range (m) = manual integration
6M138751.D A9FOOWT.M Mon Apr 25 15:45:52 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

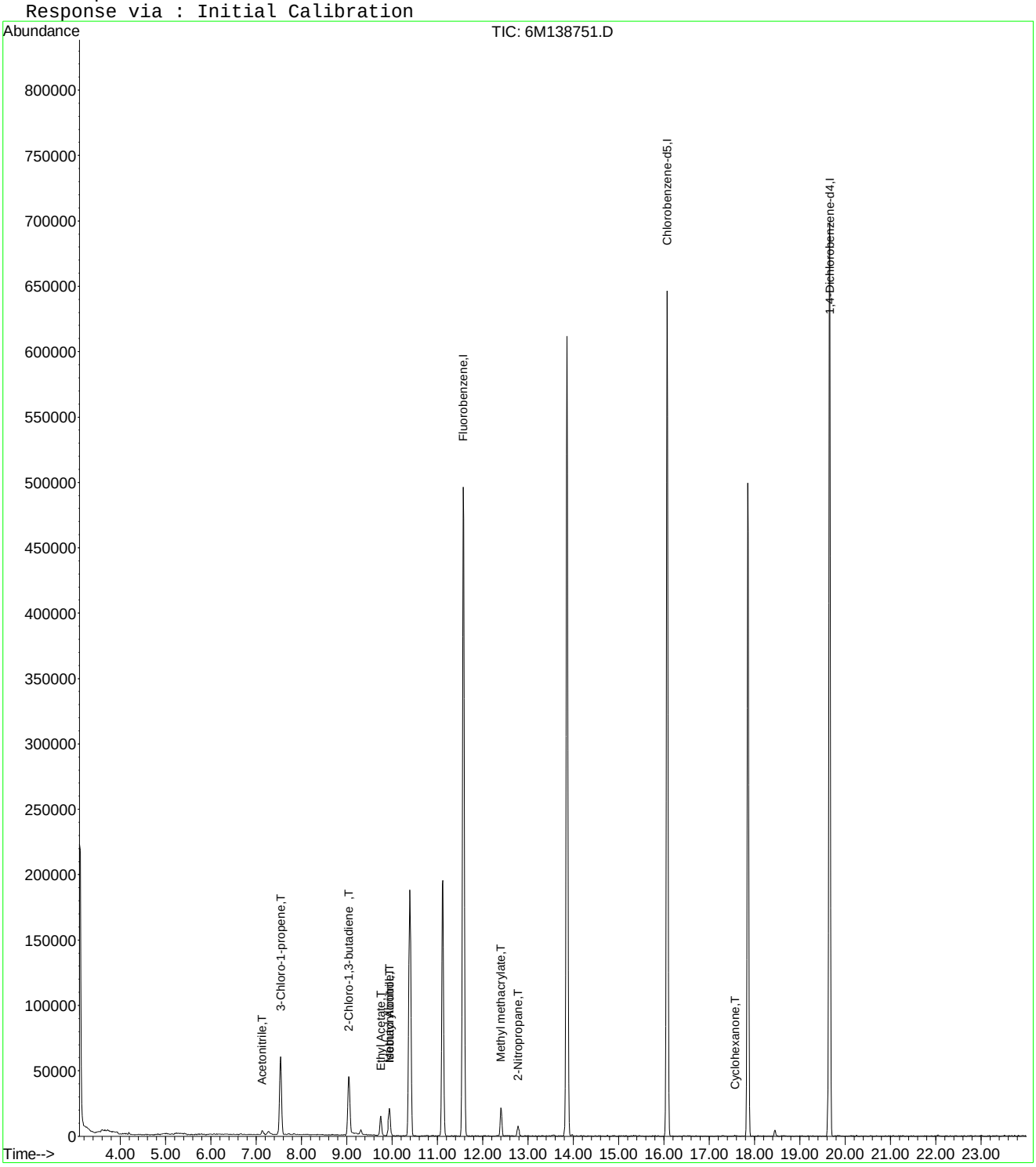

6M138751.D A9FOOWT.M Mon Apr 25 15:45:53 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:56 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	611118	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	473080	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	253718	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.13	41	4366	4.7698 ug/L	76
3) 3-Chloro-1-propene	7.54	41	69268	4.5408 ug/L	92
4) 2-Chloro-1,3-butadiene	9.04	53	50753	3.8775 ug/L	85
5) Ethyl Acetate	9.75	43	28042	4.2792 ug/L #	90
6) Methacrylonitrile	9.94	67	8721	3.8601 ug/L #	55
7) Isobutyl Alcohol	9.94	43	1233	5.9076 ug/L #	85
9) Methyl methacrylate	12.40	41	19474	3.5356 ug/L	79
10) 2-Nitropropane	12.78	43	7076	3.4543 ug/L	93
13) Cyclohexanone	17.57	55	447	1.4133 ug/L #	25

(#) = qualifier out of range (m) = manual integration
6M138751.D A9FOOWT.M Wed Apr 27 16:04:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

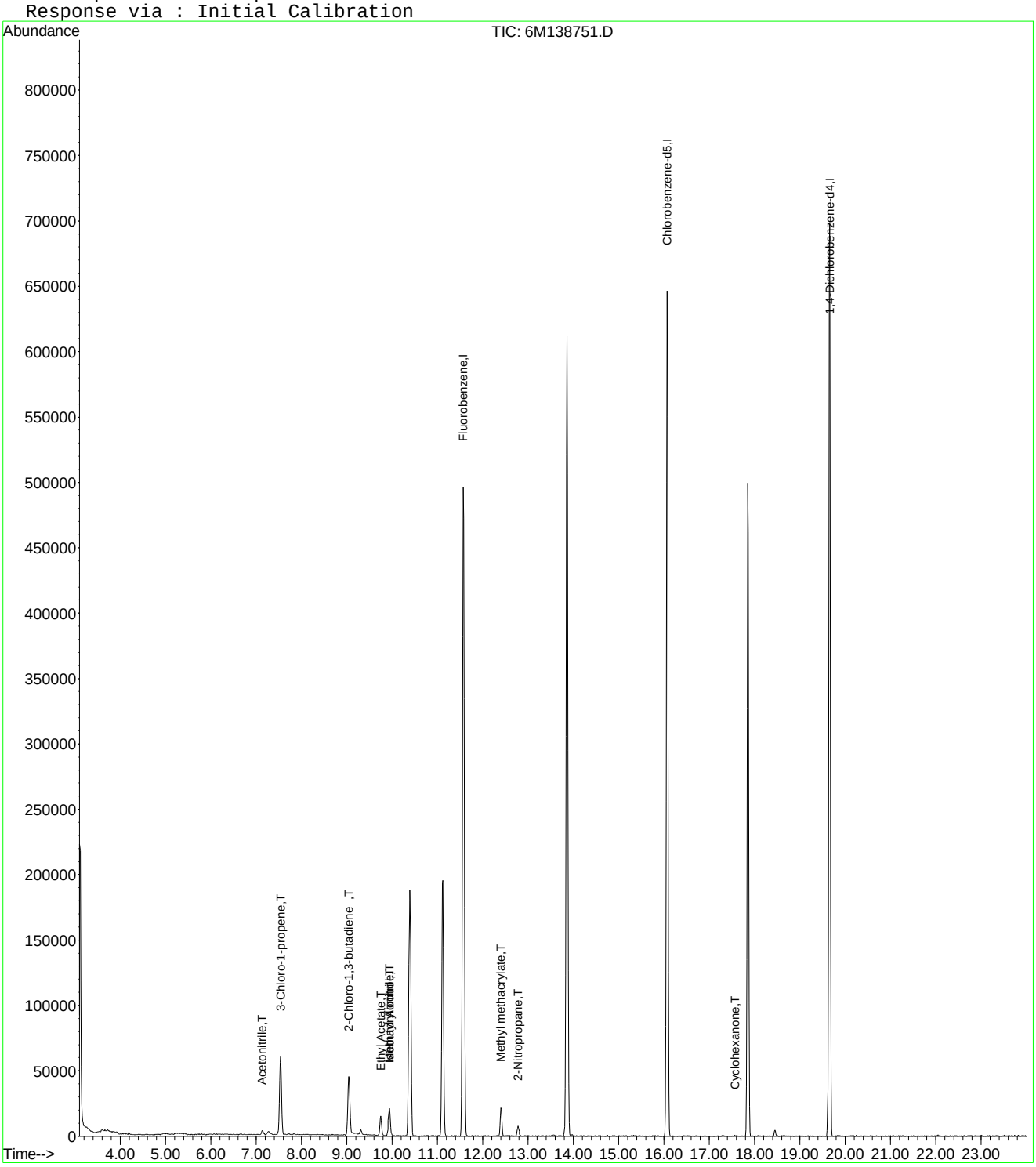

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	5.0000	4.7698	4.6	100	0.00
3	T	3-Chloro-1-propene	5.0000	4.5408	9.2	100	0.00
4	T	2-Chloro-1,3-butadiene	5.0000	3.8775	22.5	100	0.00
5	T	Ethyl Acetate	5.0000	4.2792	14.4	100	0.00
6	T	Methacrylonitrile	5.0000	3.8601	22.8	100	0.00
7	T	Isobutyl Alcohol	-1.0000	5.9076	0.0	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.99#
9	T	Methyl methacrylate	5.0000	3.5356	29.3	100	0.00
10	T	2-Nitropropane	-1.0000	3.4543	0.0	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	1.4133	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138751.D A9FOOWT.M Wed Apr 27 16:04:12 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:48 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	599043	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	463005	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	248475	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	171577	27.9669 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.88%		
43) 1,2-Dichloroethane-d4	11.12	65	207390	27.8532 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.40%		
58) Toluene-d8	13.86	98	547786	26.2796 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.12%		
80) p-Bromofluorobenzene	17.85	95	228171	27.5052 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 110.04%		

Target Compounds					Qvalue
13) Acetone	6.67	43	2739	1.4745 ug/L #	59
20) Carbon Disulfide	7.54	76	81493	4.2668 ug/L #	36
27) 1,1-Dichloroethane	9.05	63	3411	0.2688 ug/L #	42
29) 2-Butanone	9.31	43	3879	1.4148 ug/L #	1
36) Tetrahydrofuran	10.37	42	3350	1.8754 ug/L #	62
60) Ethyl Methacrylate	13.86	69	1183	0.1708 ug/L #	27

(#) = qualifier out of range (m) = manual integration
6M138752.D 8260WTR.M Mon Apr 25 09:22:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

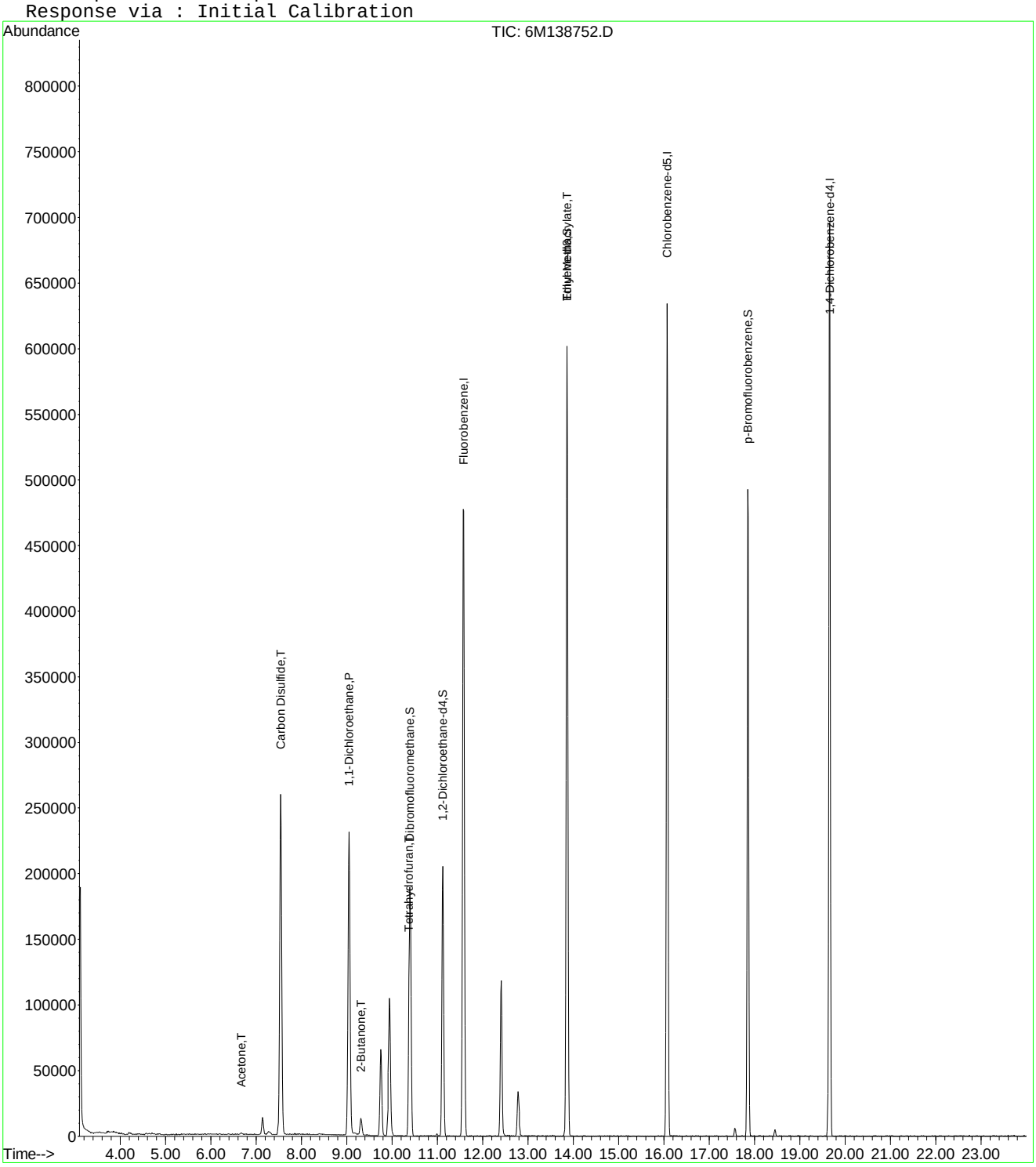

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:54 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	599043	25.00 ug/L	-0.02
11) Chlorobenzene-d5	16.07	117	463005	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	248475	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	17741	15.4242 ug/L	95
3) 3-Chloro-1-propene	7.54	41	297686	18.5457 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	242962	17.5823 ug/L	84
5) Ethyl Acetate	9.75	43	124111	19.6403 ug/L	93
6) Methacrylonitrile	9.93	67	42708	17.5719 ug/L #	59
7) Isobutyl Alcohol	9.95	43	7968	22.9203 ug/L #	85
8) 1-Butanol	10.98	41	982	6.5662 ug/L #	52
9) Methyl methacrylate	12.41	41	95824	15.2291 ug/L	81
10) 2-Nitropropane	12.78	43	34207	18.4403 ug/L	92
13) Cyclohexanone	17.57	55	4053	4.7763 ug/L	81

(#) = qualifier out of range (m) = manual integration
6M138752.D A9FOOWT.M Mon Apr 25 15:45:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

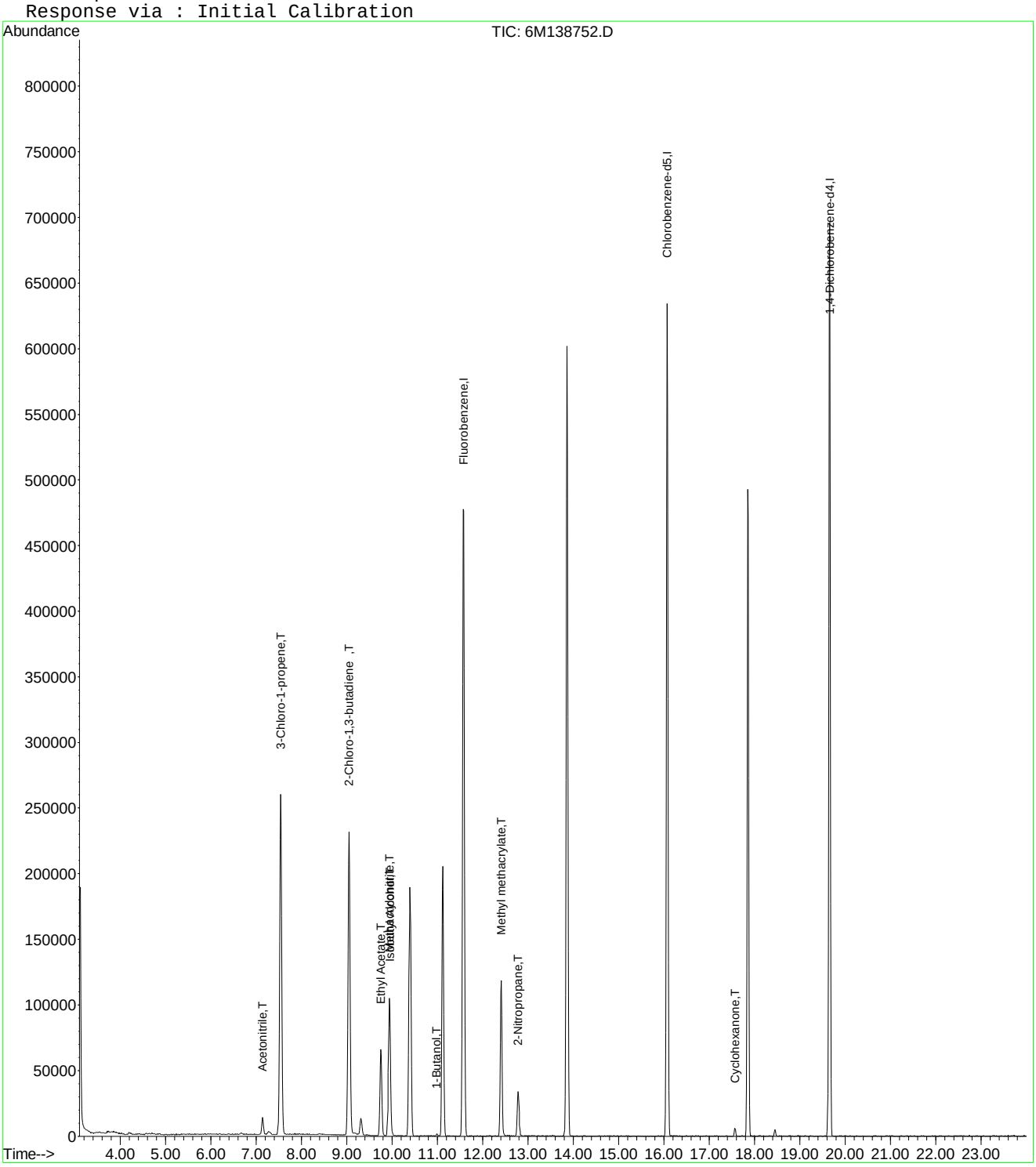

6M138752.D A9FOOWT.M Mon Apr 25 15:45:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:58 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	599043	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	463005	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	248475	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	17741	19.7725 ug/L	95
3) 3-Chloro-1-propene	7.54	41	297686	19.9080 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	242962	18.9362 ug/L	84
5) Ethyl Acetate	9.75	43	124111	19.3209 ug/L	93
6) Methacrylonitrile	9.93	67	42708	19.2846 ug/L #	59
7) Isobutyl Alcohol	9.95	43	7968	38.9462 ug/L #	85
9) Methyl methacrylate	12.41	41	95824	17.7480 ug/L	81
10) 2-Nitropropane	12.78	43	34207	17.0355 ug/L	92
13) Cyclohexanone	17.57	55	4053	13.0852 ug/L	81

(#) = qualifier out of range (m) = manual integration
6M138752.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

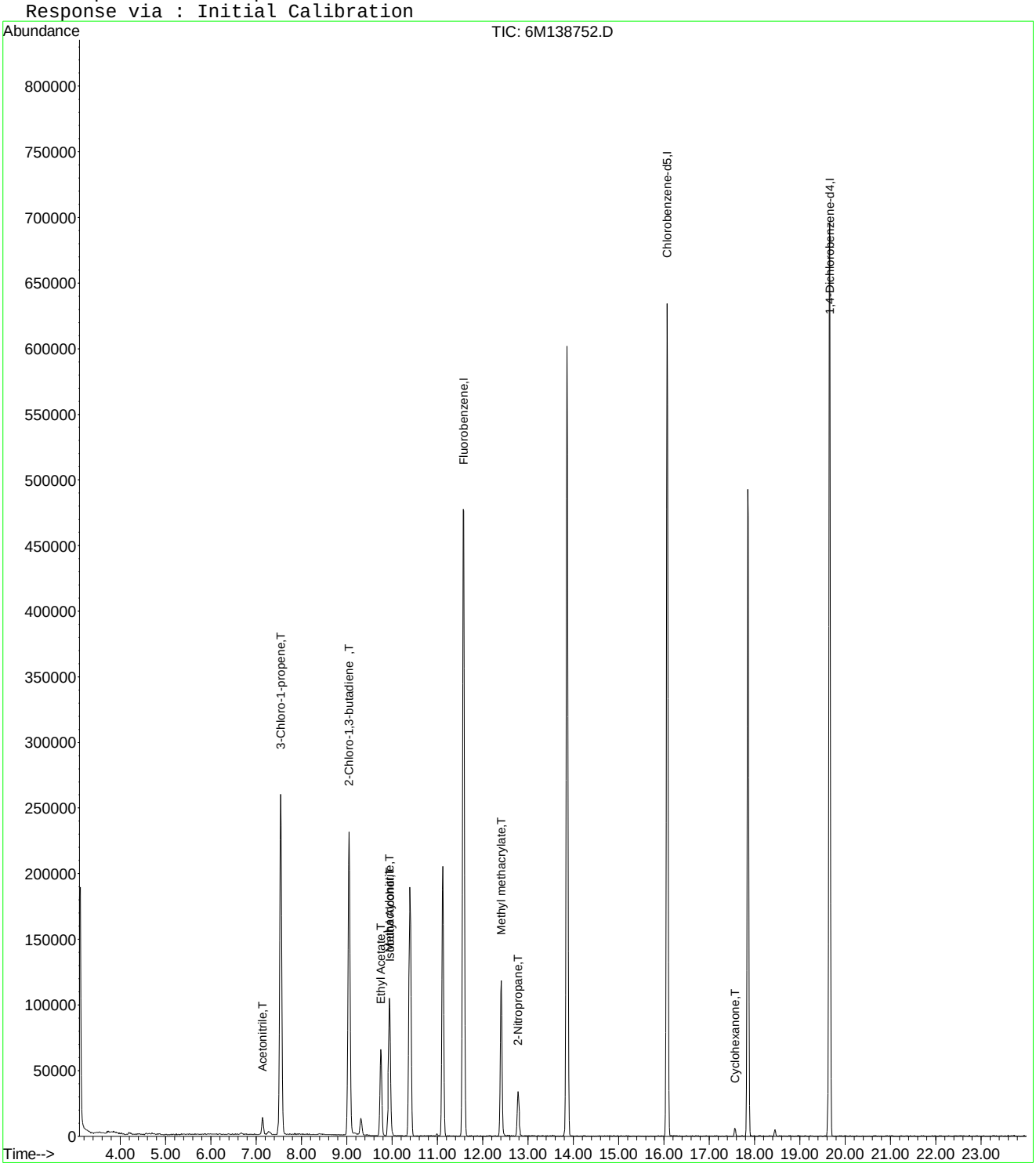

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	19.7724	1.1	100	0.00
3	T	3-Chloro-1-propene	20.0000	19.9080	0.5	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	18.9362	5.3	100	0.00
5	T	Ethyl Acetate	20.0000	19.3209	3.4	100	0.00
6	T	Methacrylonitrile	20.0000	19.2846	3.6	100	0.00
7	T	Isobutyl Alcohol	40.0000	38.9462	2.6	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	20.0000	17.7480	11.3	100	0.00
10	T	2-Nitropropane	-1.0000	17.0355	0.0	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	13.0852	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138752.D A9FOOWT.M Wed Apr 27 16:04:26 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:48 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	604736	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	468574	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	254472	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.40	111	172256	27.8132 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.24%		
43) 1,2-Dichloroethane-d4	11.12	65	208744	27.7711 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.08%		
58) Toluene-d8	13.86	98	553191	26.2235 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.88%		
80) p-Bromofluorobenzene	17.85	95	239542	28.1954 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 112.80%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	3732	1.9901 ug/L #	57
20) Carbon Disulfide	7.54	76	220780	11.4508 ug/L #	36
26) Vinyl Acetate	9.04	43	2704	0.2791 ug/L #	8
27) 1,1-Dichloroethane	9.05	63	9803	0.7652 ug/L #	42
28) Ethyl-Tert-Butyl ether	9.31	59	152978	7.3579 ug/L #	39
29) 2-Butanone	9.53	43	660	0.2385 ug/L #	52
36) Tetrahydrofuran	10.37	42	3746	2.0774 ug/L #	62
60) Ethyl Methacrylate	13.86	69	1423	0.2030 ug/L #	9

(#) = qualifier out of range (m) = manual integration
6M138753.D 8260WTR.M Mon Apr 25 09:22:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

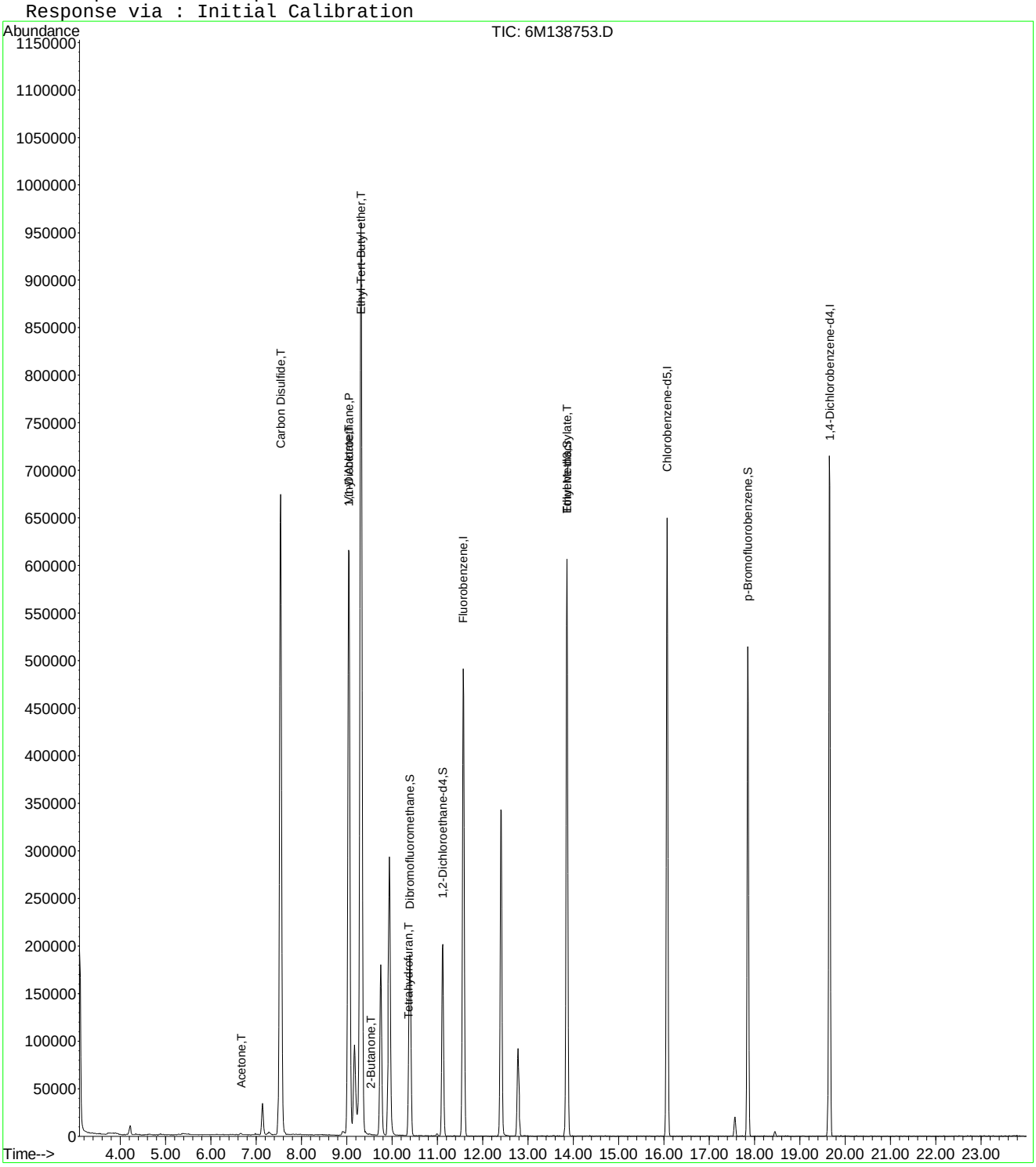

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:55 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	604736	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	468574	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	254472	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	46802	40.3072 ug/L	94
3) 3-Chloro-1-propene	7.54	41	793114	48.9454 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	674471	48.3496 ug/L	83
5) Ethyl Acetate	9.75	43	336975	52.8234 ug/L	93
6) Methacrylonitrile	9.94	67	119267	48.6097 ug/L #	62
7) Isobutyl Alcohol	9.95	43	20135	57.3741 ug/L #	99
8) 1-Butanol	10.98	41	1474	9.7632 ug/L	77
9) Methyl methacrylate	12.40	41	279157	43.9482 ug/L	81
10) 2-Nitropropane	12.79	43	95327	50.9052 ug/L	94
13) Cyclohexanone	17.56	55	13241	15.2363 ug/L	91

(#) = qualifier out of range (m) = manual integration
6M138753.D A9FOOWT.M Mon Apr 25 15:45:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

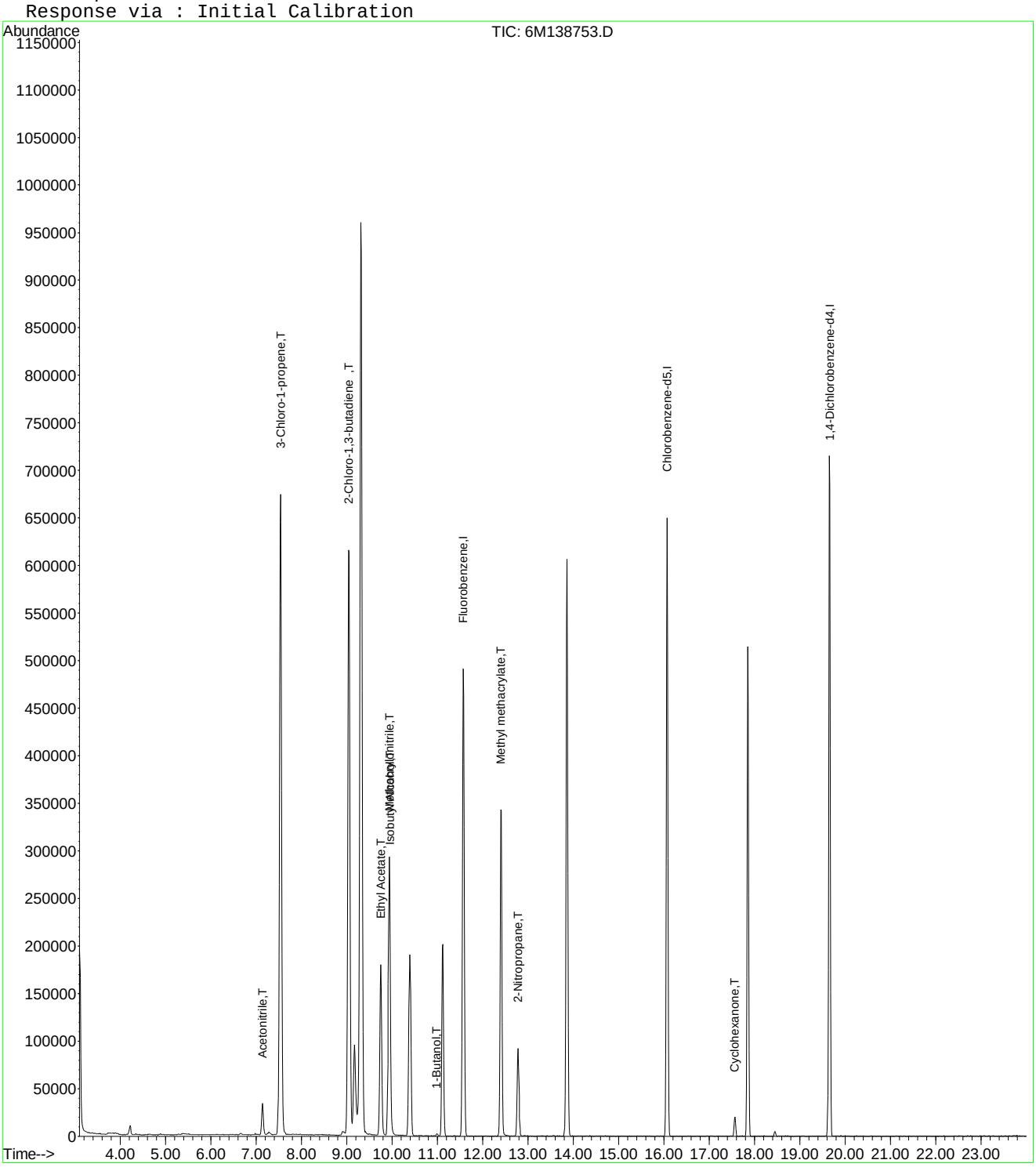

6M138753.D A9FOOWT.M Mon Apr 25 15:45:57 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:59 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	604736	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	468574	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	254472	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	46802	51.6701 ug/L	94
3) 3-Chloro-1-propene	7.54	41	793114	52.5409 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	674471	52.0726 ug/L	83
5) Ethyl Acetate	9.75	43	336975	51.9646 ug/L	93
6) Methacrylonitrile	9.94	67	119267	53.3476 ug/L #	62
7) Isobutyl Alcohol	9.95	43	20135	97.4900 ug/L #	99
9) Methyl methacrylate	12.40	41	279157	51.2171 ug/L	81
10) 2-Nitropropane	12.79	43	95327	47.0270 ug/L	94
13) Cyclohexanone	17.56	55	13241	41.7415 ug/L	91

(#) = qualifier out of range (m) = manual integration
6M138753.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

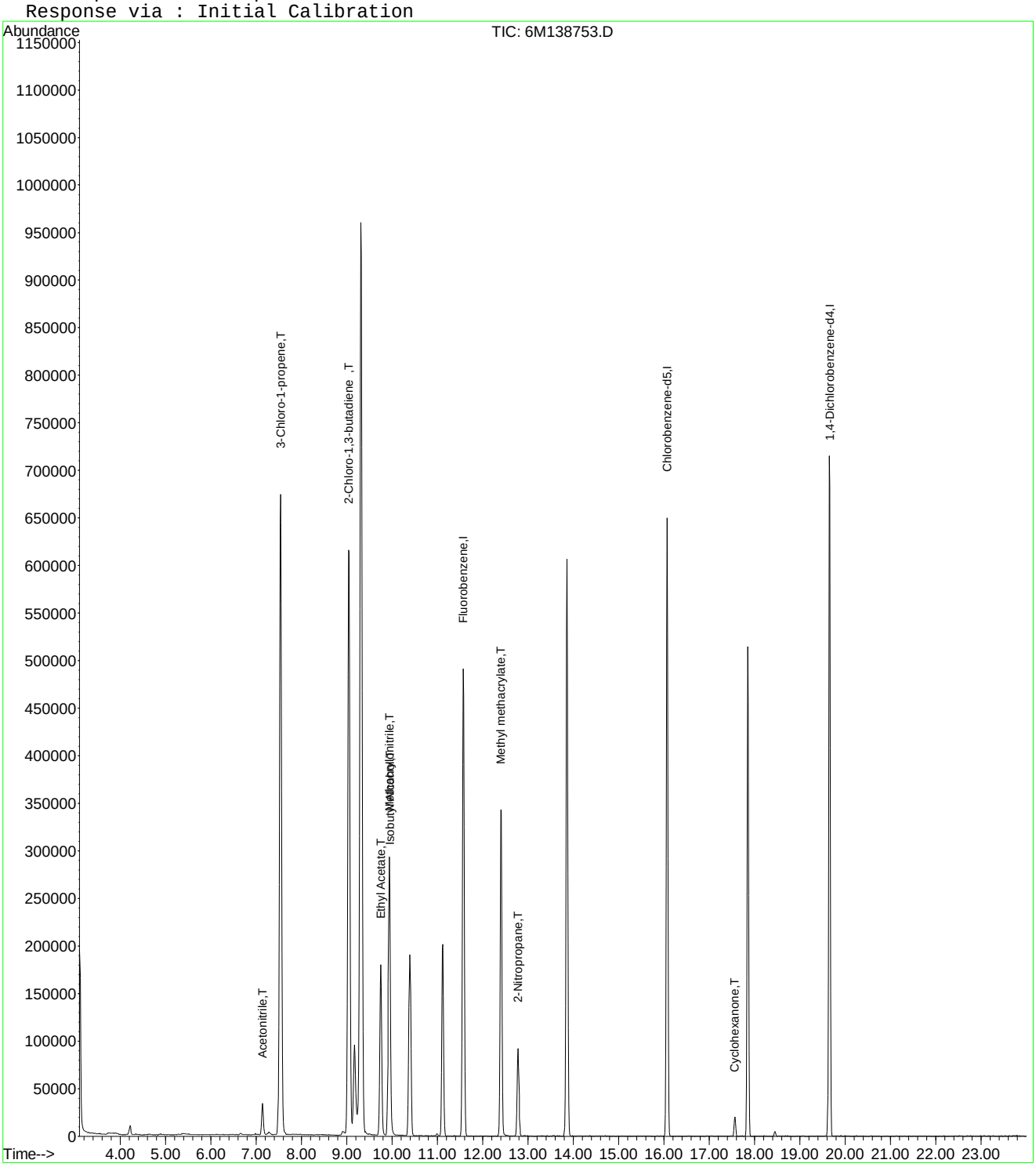

6M138753.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	51.6701	-3.3	100	0.00
3	T	3-Chloro-1-propene	50.0000	52.5409	-5.1	100	0.00
4	T	2-Chloro-1,3-butadiene	50.0000	52.0726	-4.1	100	0.00
5	T	Ethyl Acetate	50.0000	51.9646	-3.9	100	0.00
6	T	Methacrylonitrile	50.0000	53.3476	-6.7	100	0.00
7	T	Isobutyl Alcohol	100.0000	97.4900	2.5	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	50.0000	51.2171	-2.4	100	0.00
10	T	2-Nitropropane	50.0000	47.0270	5.9	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	50.0000	41.7415	16.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138753.D A9FOOWT.M Wed Apr 27 16:04:38 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:49 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	599121	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	467316	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	255798	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	169577	27.6373 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.56%		
43) 1,2-Dichloroethane-d4	11.12	65	210119	28.2161 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.88%		
58) Toluene-d8	13.86	98	550953	26.1877 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.76%		
80) p-Bromofluorobenzene	17.85	95	239480	28.0420 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 112.16%		

Target Compounds					Qvalue
13) Acetone	6.66	43	6960	3.7463 ug/L	82
16) Dimethyl Sulfide	7.15	62	732	0.1448 ug/L #	1
18) Methyl acetate	7.53	43	1419	0.2750 ug/L #	1
22) Methyl Tert Butyl Ether	7.96	73	2141	0.1320 ug/L #	72
27) 1,1-Dichloroethane	9.05	63	20725	1.6328 ug/L #	42
28) Ethyl-Tert-Butyl ether	9.31	59	76666	3.7220 ug/L #	39
29) 2-Butanone	9.53	43	1176	0.4289 ug/L #	52
34) 1-Bromopropane	10.00	122	702	0.6817 ug/L #	1
36) Tetrahydrofuran	10.35	42	4425	2.4769 ug/L #	60
48) Methylcyclohexane	12.41	83	1461	0.1681 ug/L #	1
60) Ethyl Methacrylate	13.87	69	1083	0.1549 ug/L #	1
79) 1,1,2,2-Tetrachloroethane	17.57	83	1910	0.3066 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138754.D 8260WTR.M Mon Apr 25 09:22:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

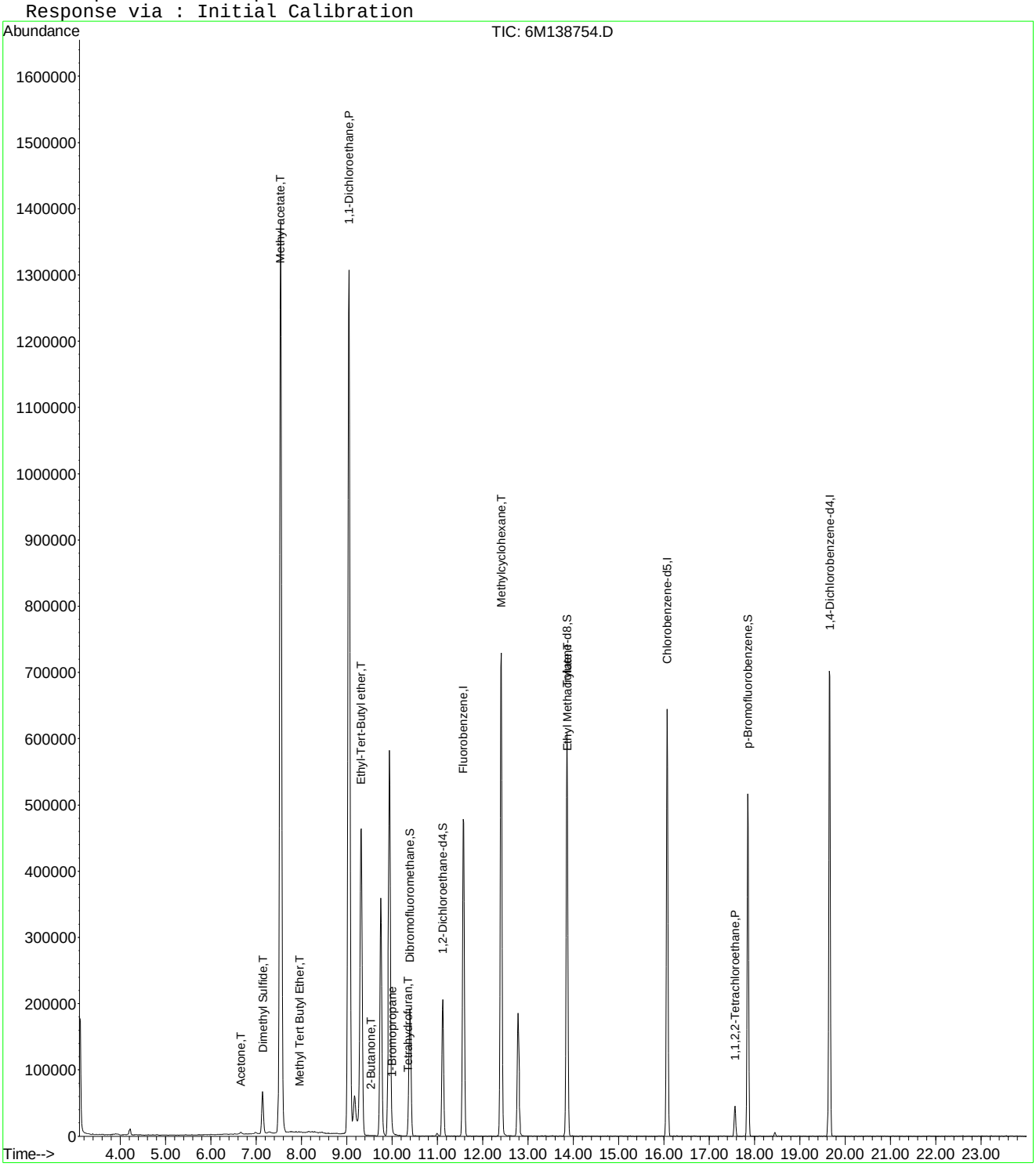

6M138754.D 8260WTR.M Mon Apr 25 09:22:50 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:57 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	599121	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	467316	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	255798	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	90880	79.0019 ug/L	95
3) 3-Chloro-1-propene	7.54	41	1610716	100.3335 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	1413663	102.2884 ug/L	83
5) Ethyl Acetate	9.75	43	673221	106.5217 ug/L	93
6) Methacrylonitrile	9.94	67	237219	97.5895 ug/L #	62
7) Isobutyl Alcohol	9.95	43	33897	97.4937 ug/L #	85
8) 1-Butanol	11.00	41	2978	19.9099 ug/L #	64
9) Methyl methacrylate	12.41	41	585839	93.0942 ug/L	80
10) 2-Nitropropane	12.78	43	197598	106.5074 ug/L	97
13) Cyclohexanone	17.57	55	27547	31.5338 ug/L	88

(#) = qualifier out of range (m) = manual integration
6M138754.D A9FOOWT.M Mon Apr 25 15:45:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

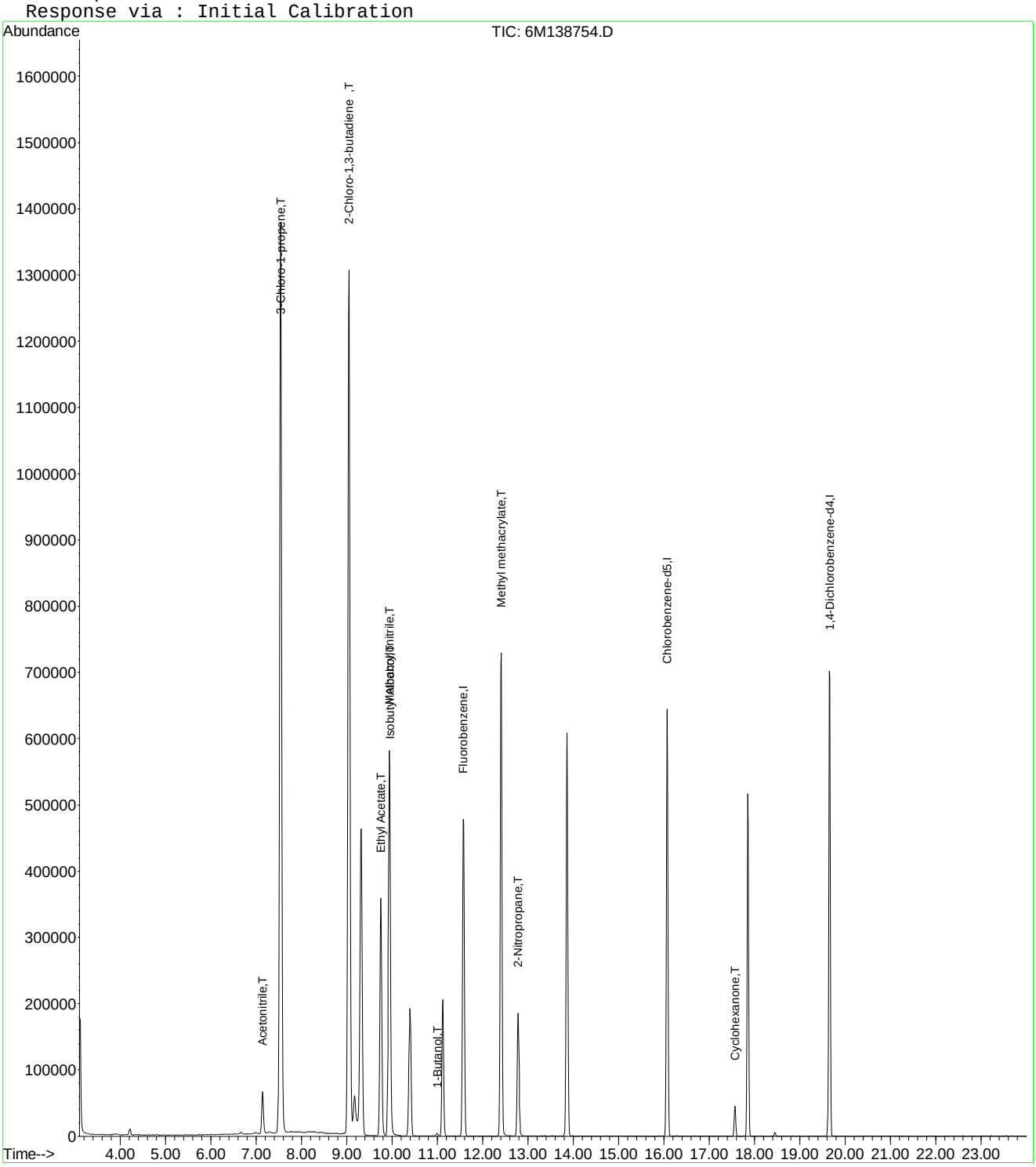

6M138754.D A9FOOWT.M Mon Apr 25 15:45:58 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:59 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	599121	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	467316	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	255798	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	90880	101.2731 ug/L	95
3) 3-Chloro-1-propene	7.54	41	1610716	107.7041 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	1413663	110.1648 ug/L	83
5) Ethyl Acetate	9.75	43	673221	104.7898 ug/L	93
6) Methacrylonitrile	9.94	67	237219	107.1014 ug/L #	62
7) Isobutyl Alcohol	9.95	43	33897	165.6613 ug/L #	85
9) Methyl methacrylate	12.41	41	585839	108.4917 ug/L	80
10) 2-Nitropropane	12.78	43	197598	98.3932 ug/L	97
13) Cyclohexanone	17.57	55	27547	86.3902 ug/L	88

(#) = qualifier out of range (m) = manual integration
6M138754.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

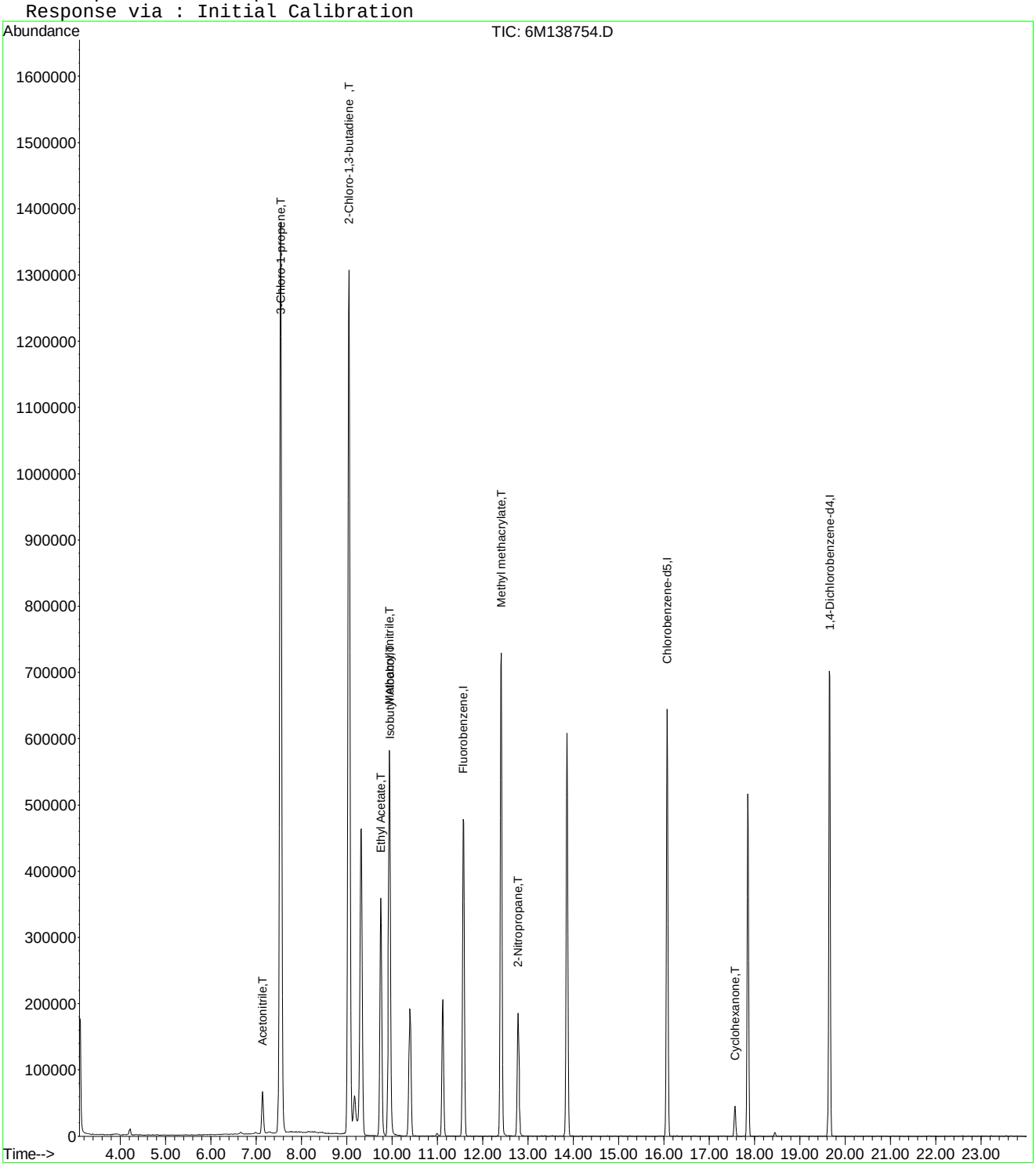

6M138754.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:50 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	607157	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	473187	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	259046	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.40	111	172341	27.7160 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.88%		
43) 1,2-Dichloroethane-d4	11.12	65	211249	27.9923 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.96%		
58) Toluene-d8	13.86	98	552831	25.9510 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.80%		
80) p-Bromofluorobenzene	17.85	95	247709	28.6419 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 114.56%		

Target Compounds

					Qvalue
9) Diethyl ether	6.31	59	653	0.1225 ug/L #	12
13) Acetone	6.66	43	9406	4.9959 ug/L #	64
15) Tert-Butyl Alcohol	6.98	59	449	0.8301 ug/L #	1
16) Dimethyl Sulfide	7.16	62	680	0.1328 ug/L #	1
22) Methyl Tert Butyl Ether	7.96	73	3926	0.2388 ug/L	83
24) n-Hexane	8.30	57	1777	0.2040 ug/L	87
27) 1,1-Dichloroethane	9.05	63	41640	3.2372 ug/L #	47
28) Ethyl-Tert-Butyl ether	9.31	59	272648	13.0615 ug/L #	38
29) 2-Butanone	9.51	43	2992	1.0767 ug/L #	67
30) Propionitrile	9.93	54	258	0.3232 ug/L #	57
34) 1-Bromopropane	9.99	122	1417	1.3579 ug/L #	1
36) Tetrahydrofuran	10.37	42	4839	2.6728 ug/L #	62
48) Methylcyclohexane	12.40	83	2976	0.3378 ug/L #	1
60) Ethyl Methacrylate	13.87	69	1202	0.1698 ug/L #	1
79) 1,1,2,2-Tetrachloroethane	17.57	83	5192	0.8231 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138755.D 8260WTR.M Mon Apr 25 09:22:50 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

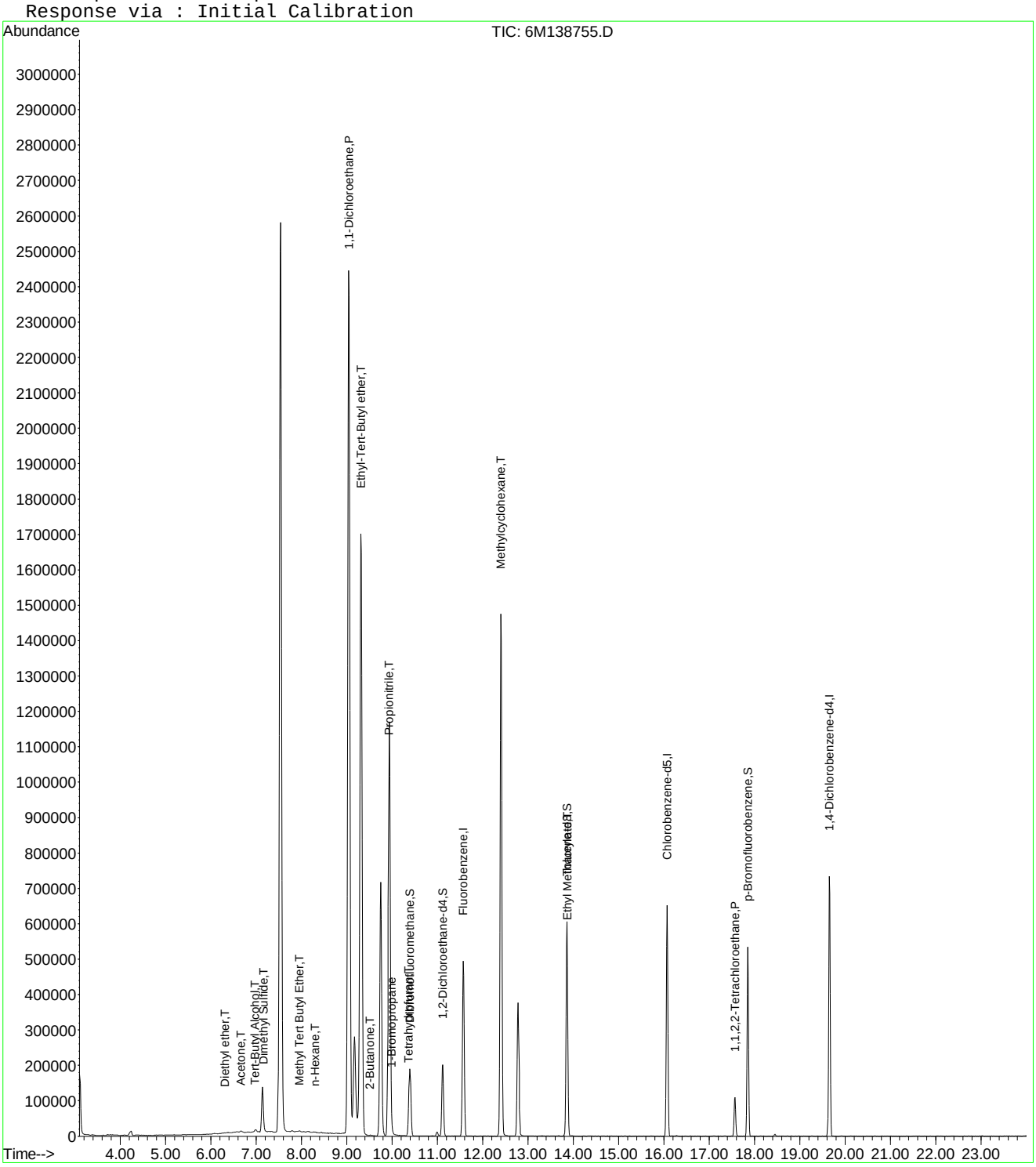

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:58 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	607157	25.00	ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	473187	25.00	ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.65	152	259046	25.00	ug/L	-0.03

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	183628	157.5150	ug/L	93
3) 3-Chloro-1-propene	7.54	41	3085939	189.6828	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	2709180	193.4336	ug/L	83
5) Ethyl Acetate	9.75	43	1346541	210.2391	ug/L	94
6) Methacrylonitrile	9.94	67	471538	191.4186	ug/L #	64
7) Isobutyl Alcohol	9.95	43	72755	206.4864	ug/L #	92
8) 1-Butanol	10.99	41	8815	58.1542	ug/L #	64
9) Methyl methacrylate	12.40	41	1186381	186.0295	ug/L	80
10) 2-Nitropropane	12.79	43	410702	218.4428	ug/L	99
13) Cyclohexanone	17.57	55	67080	75.8254	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138755.D A9FOOWT.M Mon Apr 25 15:45:58 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

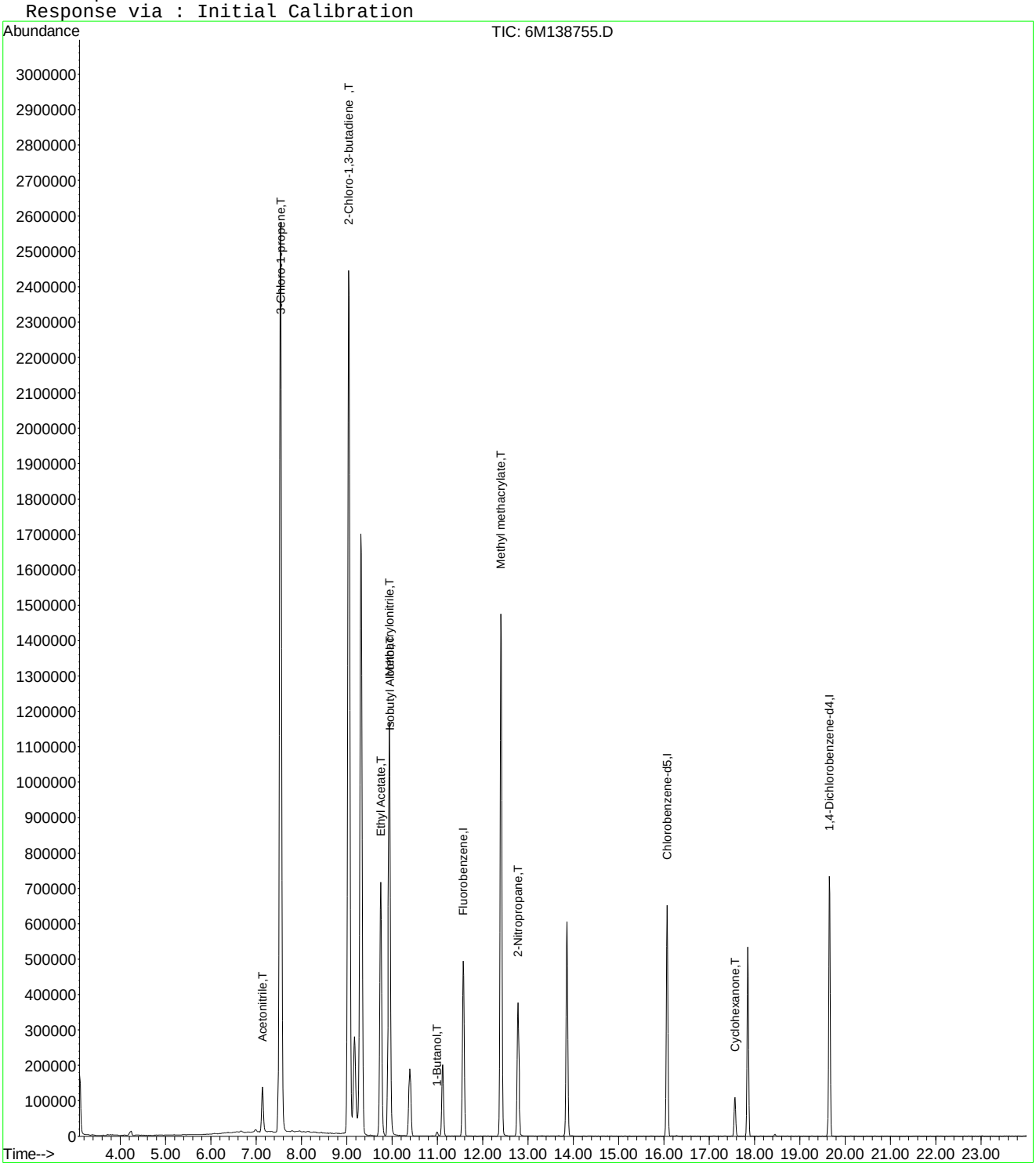

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	607157	25.00	ug/L	0.00
11) Chlorobenzene-d5	16.07	117	473187	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.65	152	259046	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	183628	201.9195	ug/L	93
3) 3-Chloro-1-propene	7.54	41	3085939	203.6170	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	2709180	208.3284	ug/L	83
5) Ethyl Acetate	9.75	43	1346541	206.8209	ug/L	94
6) Methacrylonitrile	9.94	67	471538	210.0757	ug/L #	64
7) Isobutyl Alcohol	9.95	43	72755	350.8618	ug/L #	92
9) Methyl methacrylate	12.40	41	1186381	216.7982	ug/L	80
10) 2-Nitropropane	12.79	43	410702	201.8008	ug/L	99
13) Cyclohexanone	17.57	55	67080	207.7320	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138755.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

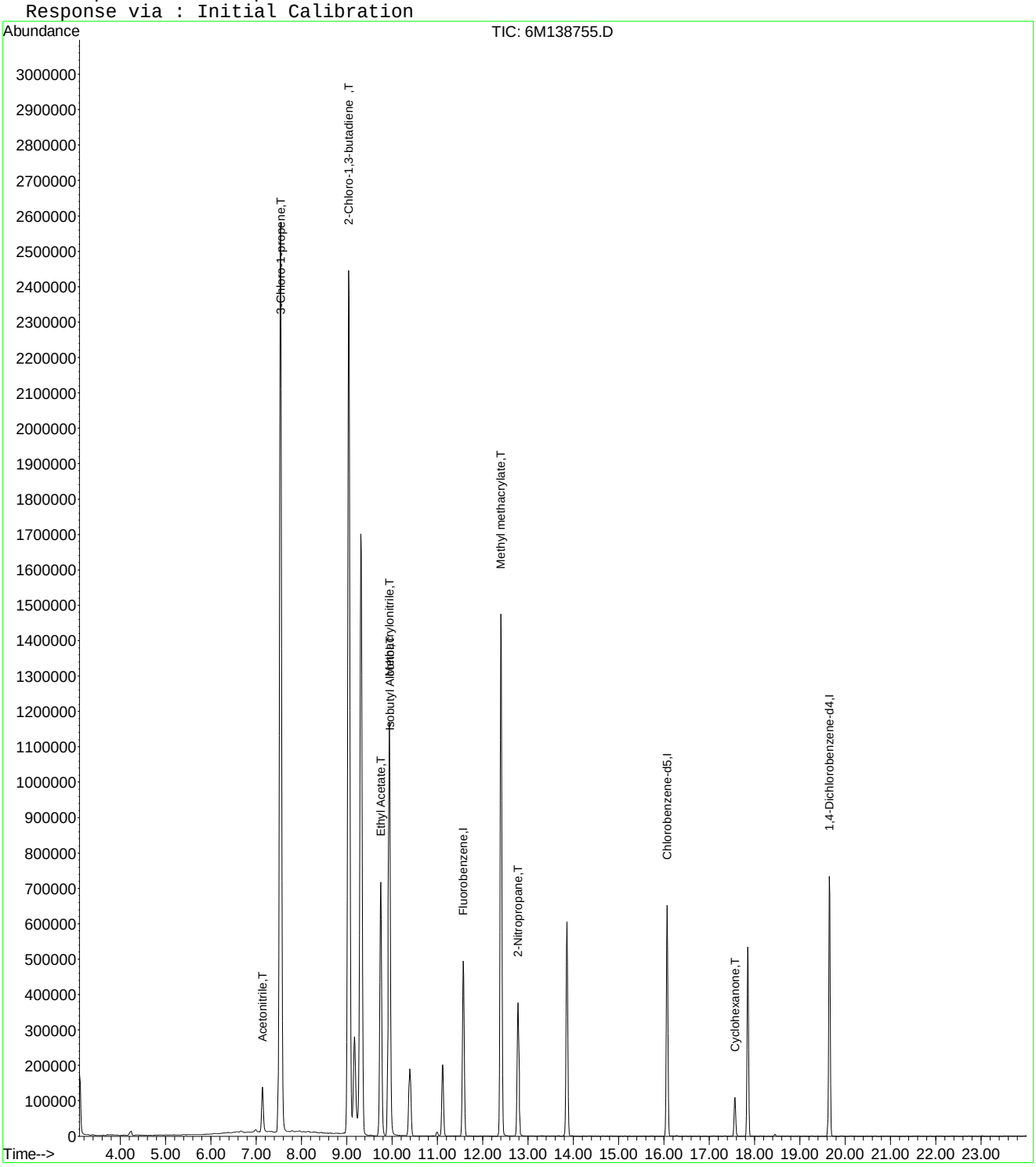

6M138755.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:50 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	602356	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	472685	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	264650	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	169983	27.5546 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.20%		
43) 1,2-Dichloroethane-d4	11.12	65	207199	27.6745 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 110.68%		
58) Toluene-d8	13.86	98	553023	25.9875 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.96%		
80) p-Bromofluorobenzene	17.85	95	247939	28.0615 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 112.24%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	13666	7.3164 ug/L #	77
15) Tert-Butyl Alcohol	7.06	59	467	0.8703 ug/L #	59
16) Dimethyl Sulfide	7.14	62	668	0.1315 ug/L #	1
18) Methyl acetate	7.54	43	3262	0.6289 ug/L #	1
22) Methyl Tert Butyl Ether	7.97	73	10591	0.6492 ug/L #	53
24) n-Hexane	8.28	57	3576	0.4138 ug/L #	56
27) 1,1-Dichloroethane	9.04	63	60743	4.7600 ug/L #	48
28) Ethyl-Tert-Butyl ether	9.31	59	155796	7.5231 ug/L #	39
29) 2-Butanone	9.52	43	4002	1.4516 ug/L	97
30) Propionitrile	9.95	54	1113	1.4052 ug/L #	1
34) 1-Bromopropane	9.99	122	1450	1.4006 ug/L #	1
36) Tetrahydrofuran	10.36	42	4902	2.7292 ug/L #	61
48) Methylcyclohexane	12.41	83	4626	0.5293 ug/L #	1
60) Ethyl Methacrylate	13.88	69	1599	0.2261 ug/L #	1
72) Ethylbenzene	16.28	106	1349	0.1427 ug/L	56
73) m-,p-Xylene	16.28	106	1349	0.1203 ug/L	81
79) 1,1,2,2-Tetrachloroethane	17.57	83	8744	1.3569 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138756.D 8260WTR.M Mon Apr 25 09:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

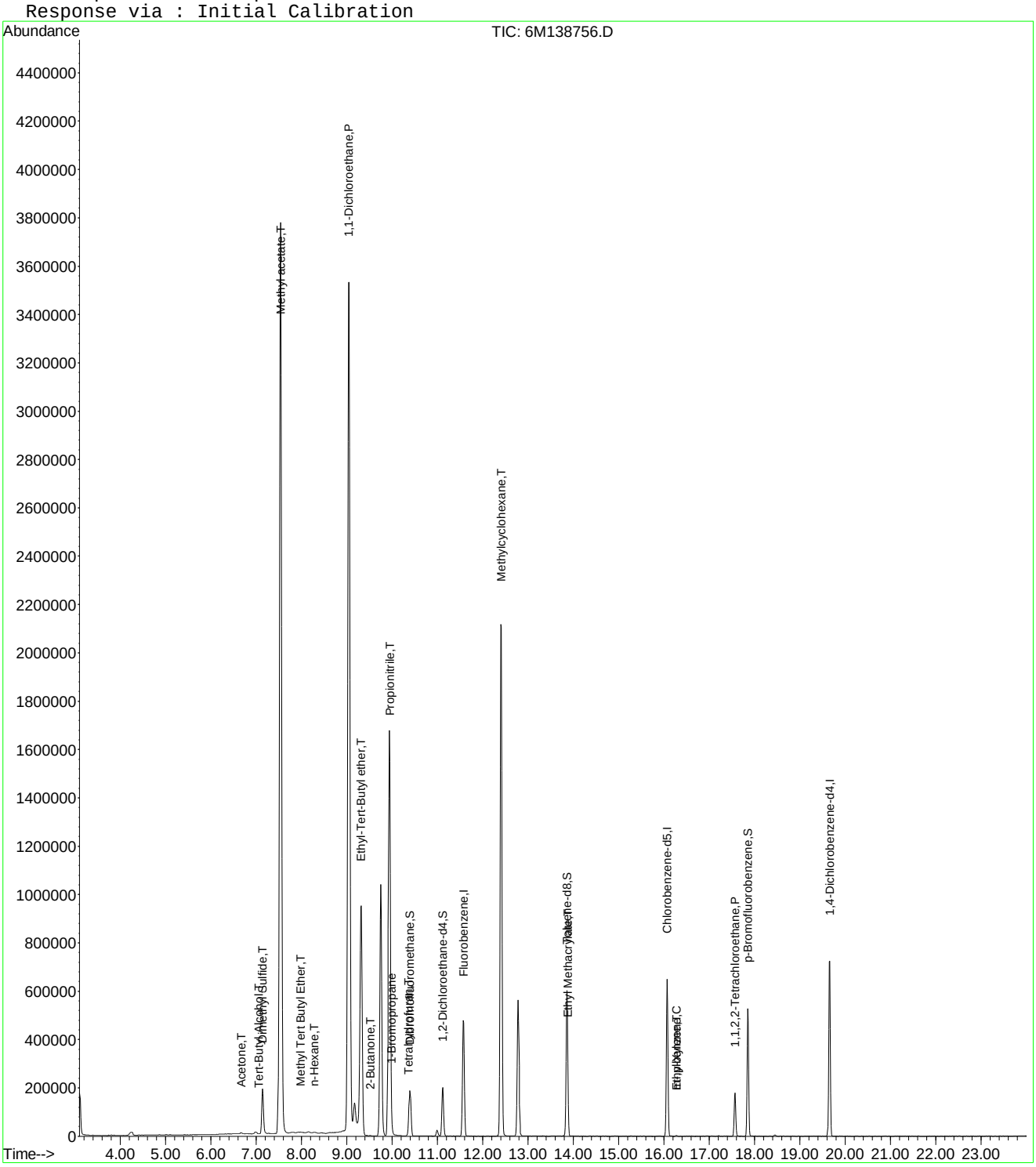

6M138756.D 8260WTR.M Mon Apr 25 09:22:51 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:59 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	602356	25.00 ug/L	-0.02
11) Chlorobenzene-d5	16.07	117	472685	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	264650	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	273003	236.0468 ug/L	93
3) 3-Chloro-1-propene	7.54	41	4493022	278.3729 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	3994938	287.5093 ug/L	83
5) Ethyl Acetate	9.75	43	1967613	309.6573 ug/L	94
6) Methacrylonitrile	9.94	67	686612	280.9484 ug/L #	63
7) Isobutyl Alcohol	9.95	43	121480	347.5212 ug/L #	90
8) 1-Butanol	10.99	41	18116	120.4672 ug/L	69
9) Methyl methacrylate	12.40	41	1742413	275.3954 ug/L	81
10) 2-Nitropropane	12.78	43	613081	328.6824 ug/L	99
13) Cyclohexanone	17.57	55	106618	117.9661 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138756.D A9FOOWT.M Mon Apr 25 15:45:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

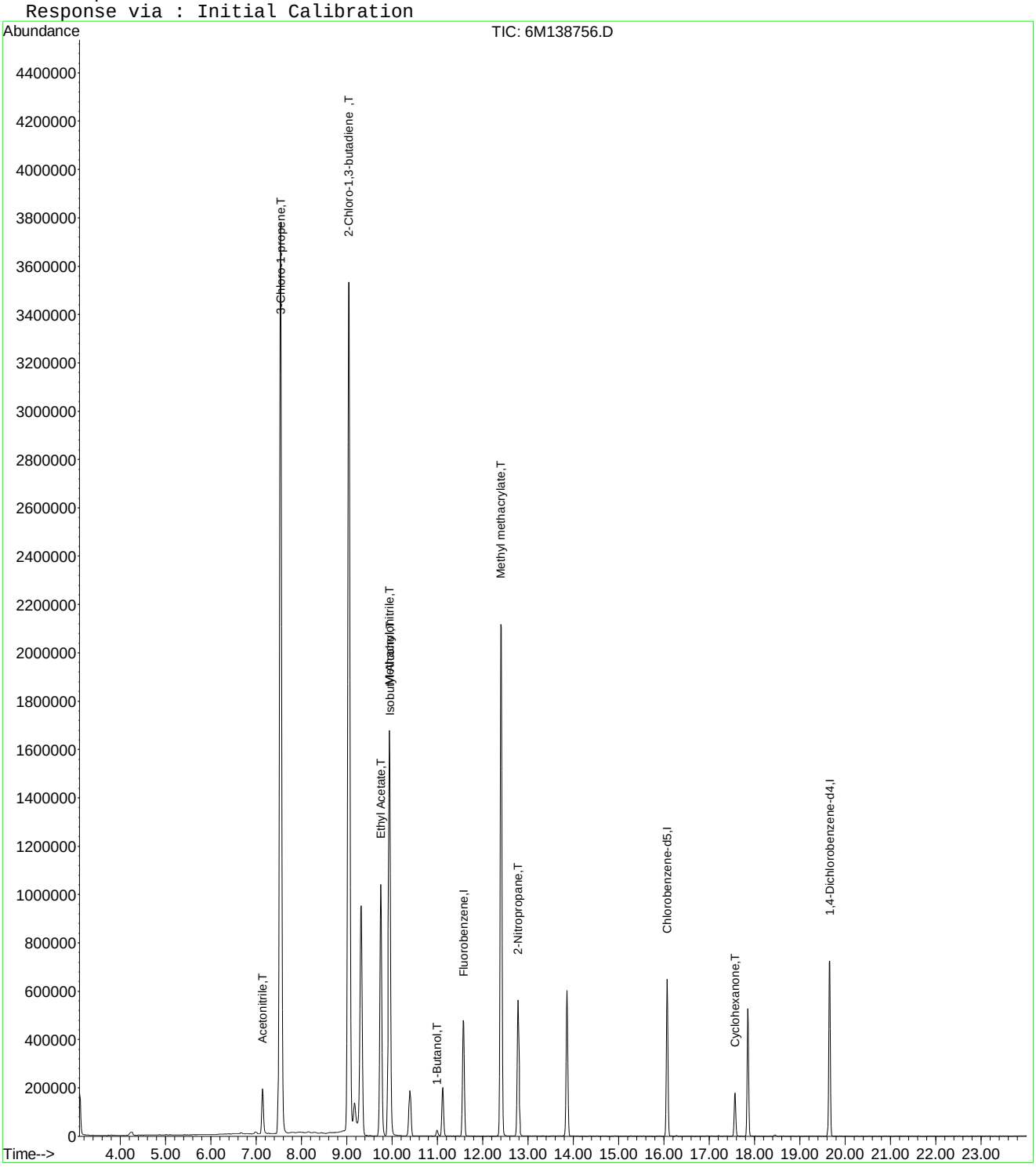

6M138756.D A9FOOWT.M Mon Apr 25 15:45:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.58	96	602356	25.00	ug/L	0.01
11) Chlorobenzene-d5	16.07	117	472685	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	264650	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	273003	302.5900	ug/L	93
3) 3-Chloro-1-propene	7.54	41	4493022	298.8224	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	3994938	309.6481	ug/L	83
5) Ethyl Acetate	9.75	43	1967613	304.6228	ug/L	94
6) Methacrylonitrile	9.94	67	686612	308.3318	ug/L #	63
7) Isobutyl Alcohol	9.95	43	121480	590.5081	ug/L #	90
9) Methyl methacrylate	12.40	41	1742413	320.9449	ug/L	81
10) 2-Nitropropane	12.78	43	613081	303.6419	ug/L	99
13) Cyclohexanone	17.57	55	106618	323.1811	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138756.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

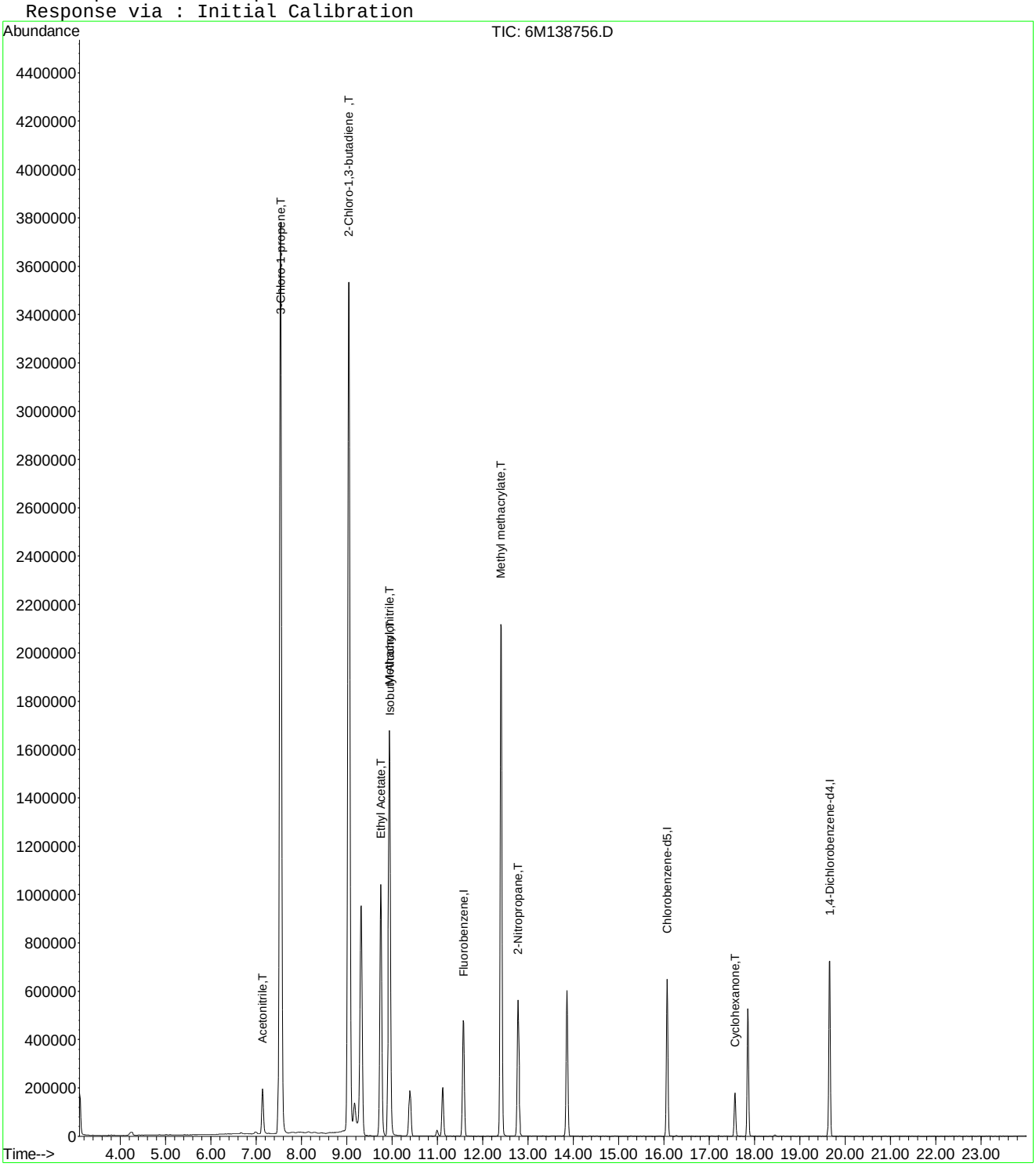

6M138756.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:51 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602625	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.08	117	475117	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	264739	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	170708	27.6598 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.64%		
43) 1,2-Dichloroethane-d4	11.11	65	208757	27.8702 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.48%		
58) Toluene-d8	13.86	98	554316	25.9150 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.64%		
80) p-Bromofluorobenzene	17.85	95	246698	27.9116 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 111.64%		

Target Compounds

					Qvalue
13) Acetone	6.66	43	14063	7.5256 ug/L	99
15) Tert-Butyl Alcohol	7.05	59	807	1.5033 ug/L #	59
16) Dimethyl Sulfide	7.16	62	1034	0.2034 ug/L #	1
18) Methyl acetate	7.48	43	1103	0.2125 ug/L #	60
19) Methylene Chloride	7.73	84	1123	0.1699 ug/L #	40
22) Methyl Tert Butyl Ether	7.97	73	18318	1.1224 ug/L #	53
24) n-Hexane	8.28	57	5609	0.6488 ug/L	75
27) 1,1-Dichloroethane	9.04	63	82912	6.4943 ug/L #	48
28) Ethyl-Tert-Butyl ether	9.32	59	139043	6.7111 ug/L #	38
29) 2-Butanone	9.53	43	4129	1.4970 ug/L	86
30) Propionitrile	9.72	54	202	0.2549 ug/L #	1
34) 1-Bromopropane	9.99	122	1978	1.9098 ug/L #	1
36) Tetrahydrofuran	10.37	42	5444	3.0296 ug/L #	63
48) Methylcyclohexane	12.40	83	6593	0.7540 ug/L #	1
60) Ethyl Methacrylate	13.85	69	1165	0.1639 ug/L #	1
73) m-,p-Xylene	16.28	106	1795	0.1593 ug/L	72
79) 1,1,2,2-Tetrachloroethane	17.57	83	12875	1.9973 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138757.D 8260WTR.M Mon Apr 25 09:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

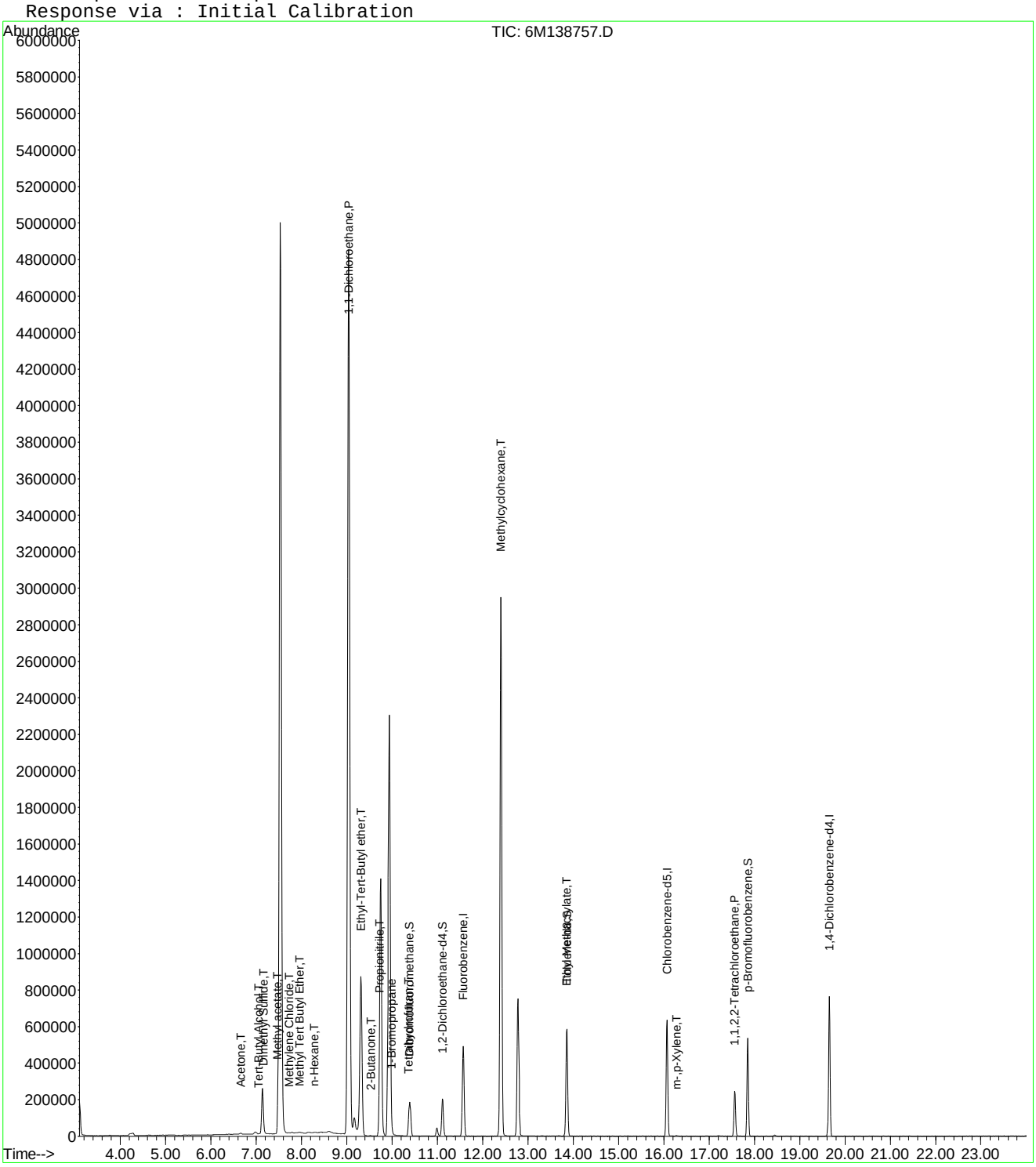

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	602625	25.00	ug/L	-0.03
11) Chlorobenzene-d5	16.08	117	475117	25.00	ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.65	152	264739	25.00	ug/L	-0.03

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	368012	318.0524	ug/L	93
3) 3-Chloro-1-propene	7.53	41	5948883	368.4088	ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	5359203	385.5211	ug/L	83
5) Ethyl Acetate	9.76	43	2690267	423.1975	ug/L	94
6) Methacrylonitrile	9.94	67	929265	380.0675	ug/L #	62
7) Isobutyl Alcohol	9.95	43	192560	550.6158	ug/L #	89
8) 1-Butanol	10.99	41	29815	198.1744	ug/L	75
9) Methyl methacrylate	12.40	41	2375132	375.2316	ug/L	81
10) 2-Nitropropane	12.79	43	849210	455.0717	ug/L	98
13) Cyclohexanone	17.57	55	149420	165.2683	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138757.D A9FOOWT.M Mon Apr 25 15:46:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

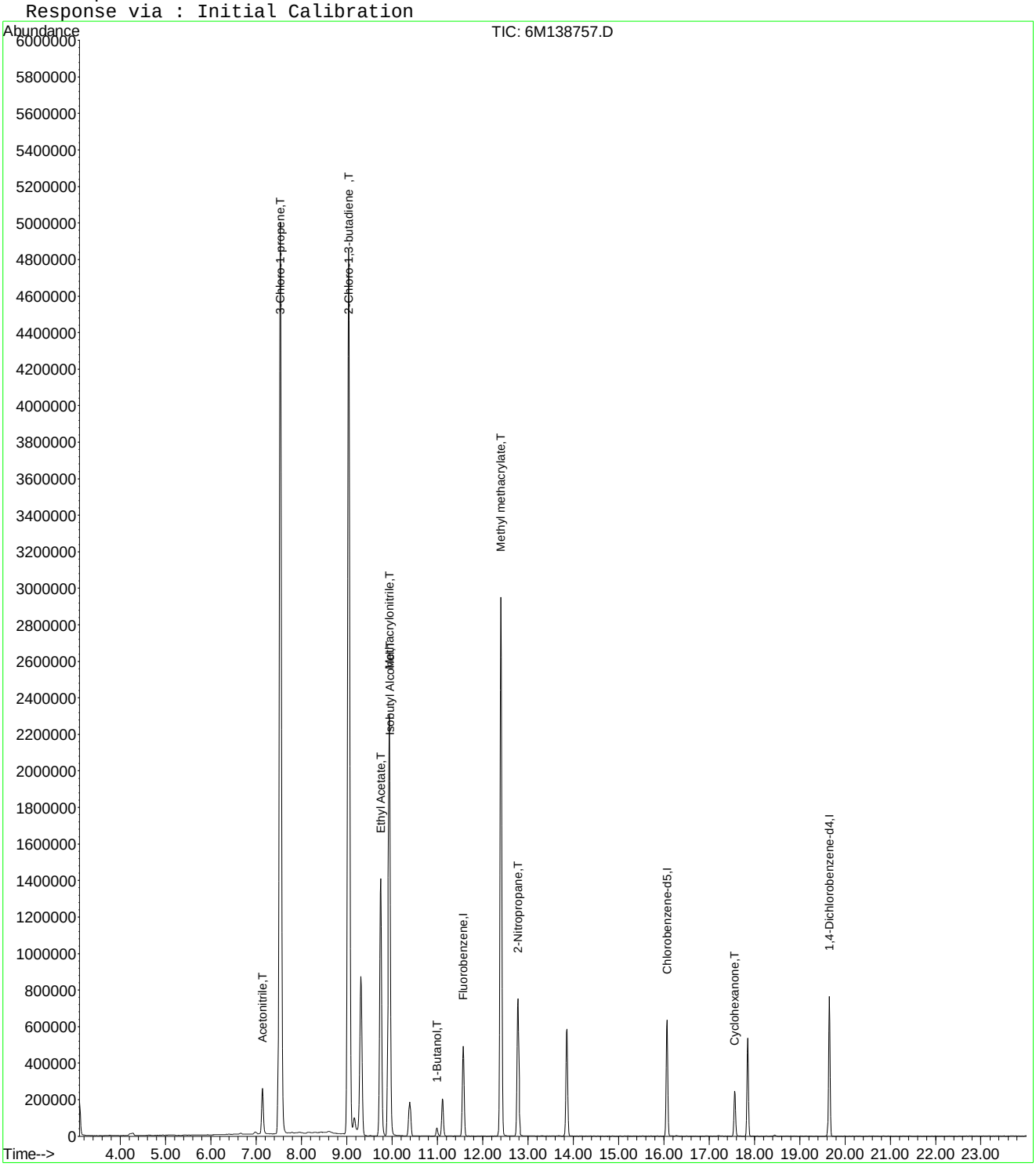

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:01 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602625	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.08	117	475117	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.65	152	264739	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	368012	407.7137 ug/L	93
3) 3-Chloro-1-propene	7.53	41	5948883	395.4723 ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	5359203	415.2070 ug/L	83
5) Ethyl Acetate	9.76	43	2690267	416.3170 ug/L	94
6) Methacrylonitrile	9.94	67	929265	417.1119 ug/L #	62
7) Isobutyl Alcohol	9.95	43	192560	935.6065 ug/L #	89
9) Methyl methacrylate	12.40	41	2375132	437.2937 ug/L	81
10) 2-Nitropropane	12.79	43	849210	420.4022 ug/L	98
13) Cyclohexanone	17.57	55	149420	452.7705 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138757.D A9FOOWT.M Wed Apr 27 16:05:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

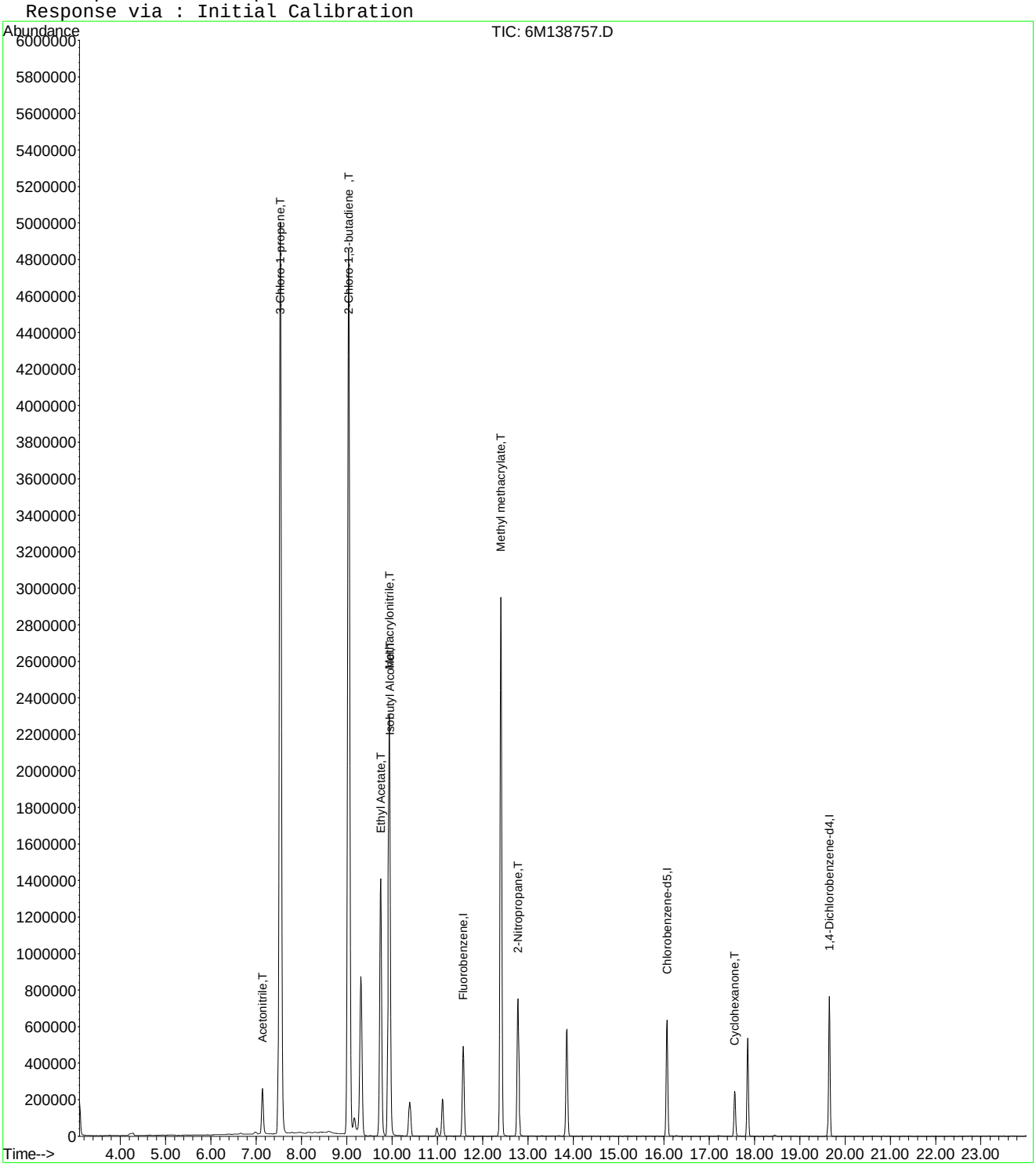

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:52 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	616486	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	485048	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	268890	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	175239	27.7556 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.04%		
43) 1,2-Dichloroethane-d4	11.12	65	210644	27.4898 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 109.96%		
58) Toluene-d8	13.86	98	563297	25.7957 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.20%		
80) p-Bromofluorobenzene	17.85	95	249406	27.7824 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 111.12%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	15233	7.9684 ug/L	89
15) Tert-Butyl Alcohol	7.06	59	370	0.6737 ug/L #	59
18) Methyl acetate	7.46	43	1079	0.2032 ug/L #	34
19) Methylene Chloride	7.73	84	1471	0.2176 ug/L	66
20) Carbon Disulfide	7.78	76	2765	0.1407 ug/L #	74
22) Methyl Tert Butyl Ether	7.96	73	25284	1.5144 ug/L #	53
24) n-Hexane	8.28	57	5266	0.5954 ug/L	97
27) 1,1-Dichloroethane	9.05	63	105121	8.0488 ug/L #	48
28) Ethyl-Tert-Butyl ether	9.31	59	124099	5.8551 ug/L #	39
29) 2-Butanone	9.52	43	4475	1.5860 ug/L #	72
30) Propionitrile	9.71	54	473	0.5835 ug/L #	1
34) 1-Bromopropane	10.00	122	2117	1.9980 ug/L #	1
36) Tetrahydrofuran	10.36	42	5652	3.0747 ug/L #	54
48) Methylcyclohexane	12.40	83	8011	0.8956 ug/L #	1
59) Toluene	13.98	91	3373	0.1249 ug/L	84
60) Ethyl Methacrylate	13.87	69	1585	0.2184 ug/L #	1
73) m-,p-Xylene	16.28	106	2521	0.2191 ug/L	79
79) 1,1,2,2-Tetrachloroethane	17.57	83	14350	2.1917 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138758.D 8260WTR.M Mon Apr 25 09:22:52 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

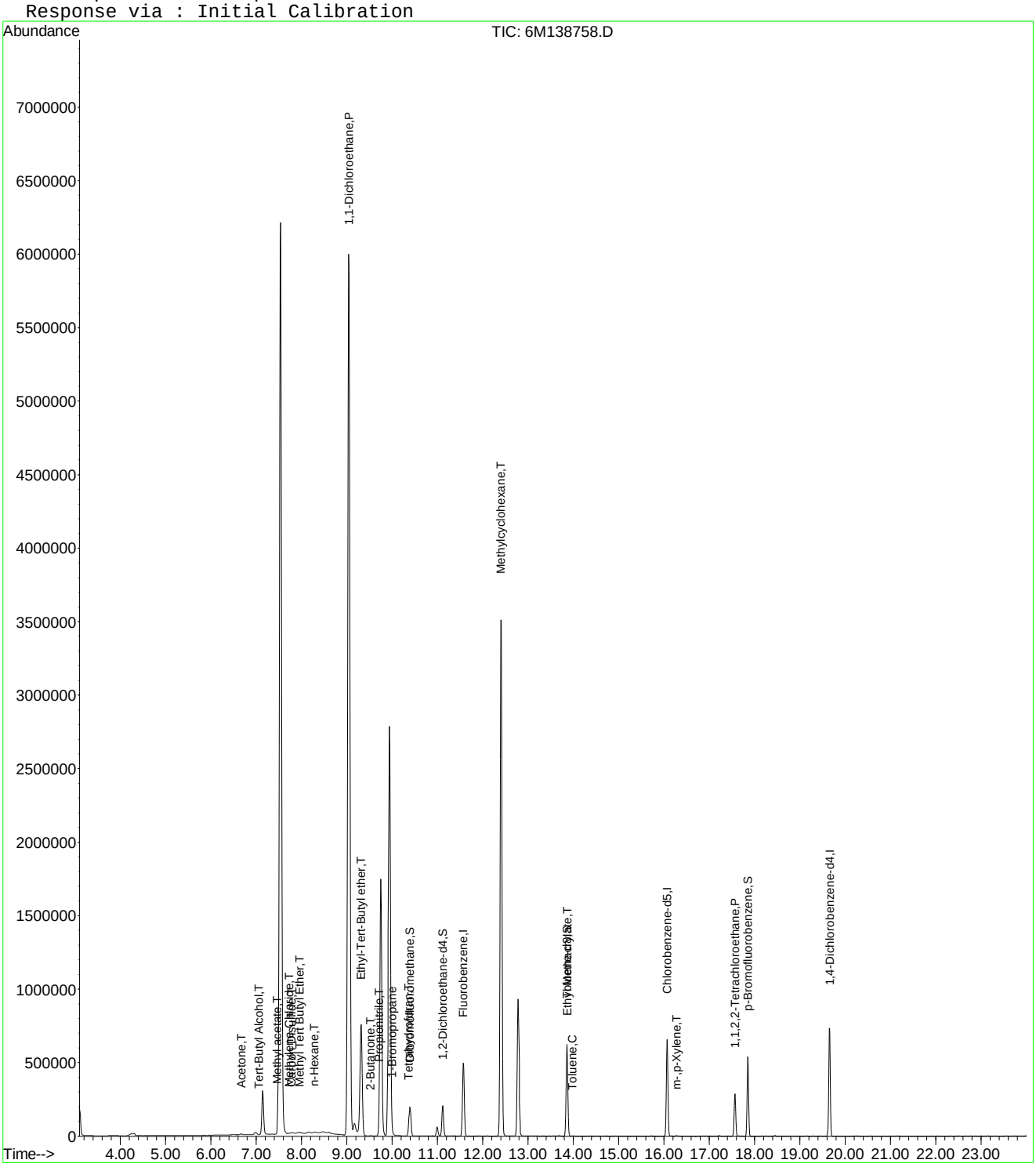

6M138758.D 8260WTR.M Mon Apr 25 09:22:52 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	616486	25.00	ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	485048	25.00	ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	268890	25.00	ug/L	-0.02

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	449583	379.8136	ug/L	92
3) 3-Chloro-1-propene	7.54	41	7430577	449.8223	ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	6752476	474.8265	ug/L	84
5) Ethyl Acetate	9.75	43	3307403	508.5794	ug/L	94
6) Methacrylonitrile	9.94	67	1145073	457.8027	ug/L #	63
7) Isobutyl Alcohol	9.95	43	251034	701.6799	ug/L #	90
8) 1-Butanol	10.99	41	42236	274.4224	ug/L	75
9) Methyl methacrylate	12.40	41	2914815	450.1389	ug/L	81
10) 2-Nitropropane	12.78	43	1036720	543.0629	ug/L	99
13) Cyclohexanone	17.57	55	176545	192.2558	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138758.D A9FOOWT.M Mon Apr 25 15:46:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

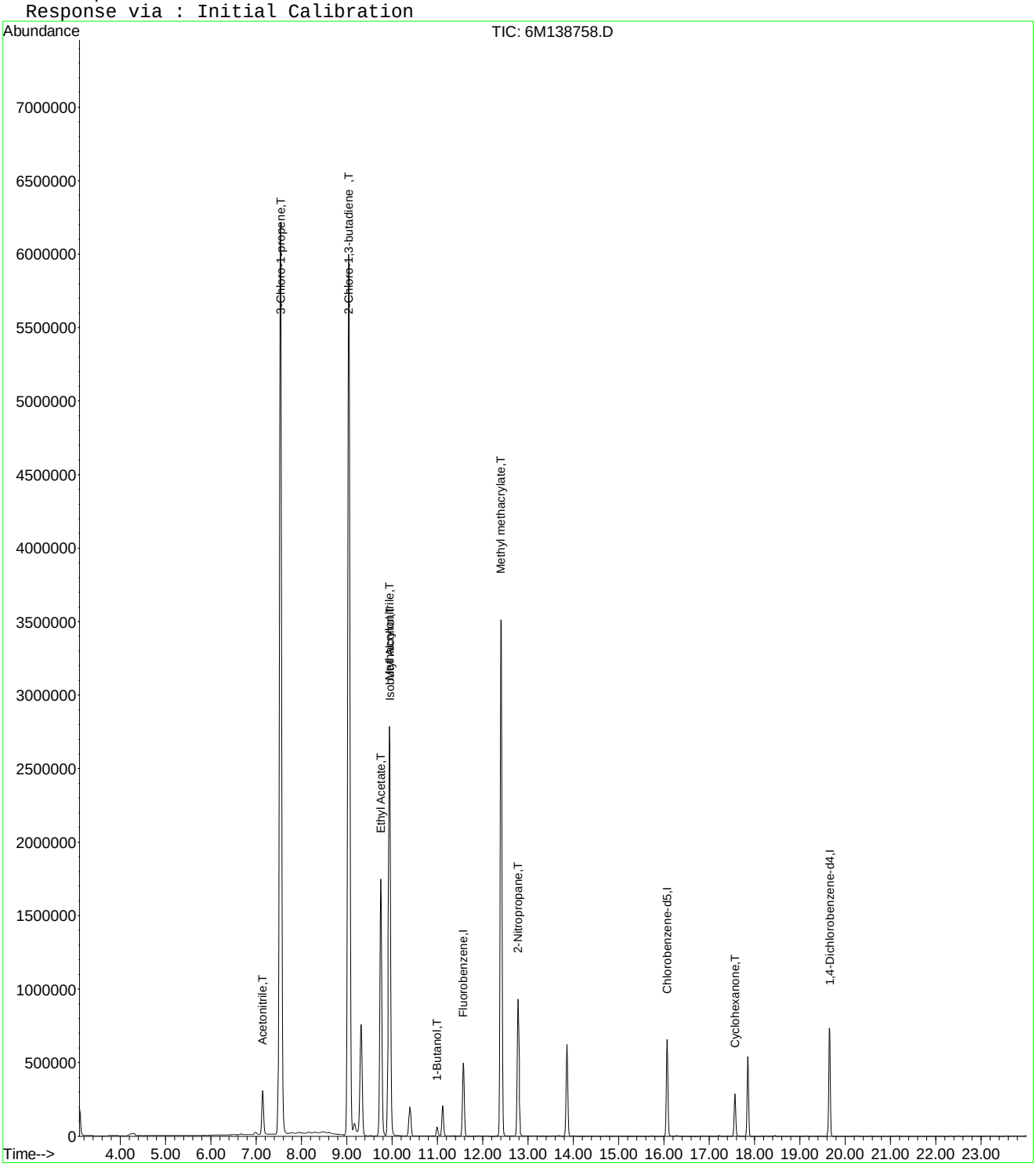

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:01 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	616486	25.00	ug/L	0.00
11) Chlorobenzene-d5	16.07	117	485048	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	268890	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	449583	486.8858	ug/L	92
3) 3-Chloro-1-propene	7.54	41	7430577	482.8665	ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	6752476	511.3891	ug/L	84
5) Ethyl Acetate	9.75	43	3307403	500.3107	ug/L	94
6) Methacrylonitrile	9.94	67	1145073	502.4237	ug/L #	63
7) Isobutyl Alcohol	9.95	43	251034	1192.2947	ug/L #	90
9) Methyl methacrylate	12.40	41	2914815	524.5904	ug/L	81
10) 2-Nitropropane	12.78	43	1036720	501.6898	ug/L	99
13) Cyclohexanone	17.57	55	176545	526.7057	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138758.D A9FOOWT.M Wed Apr 27 16:05:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

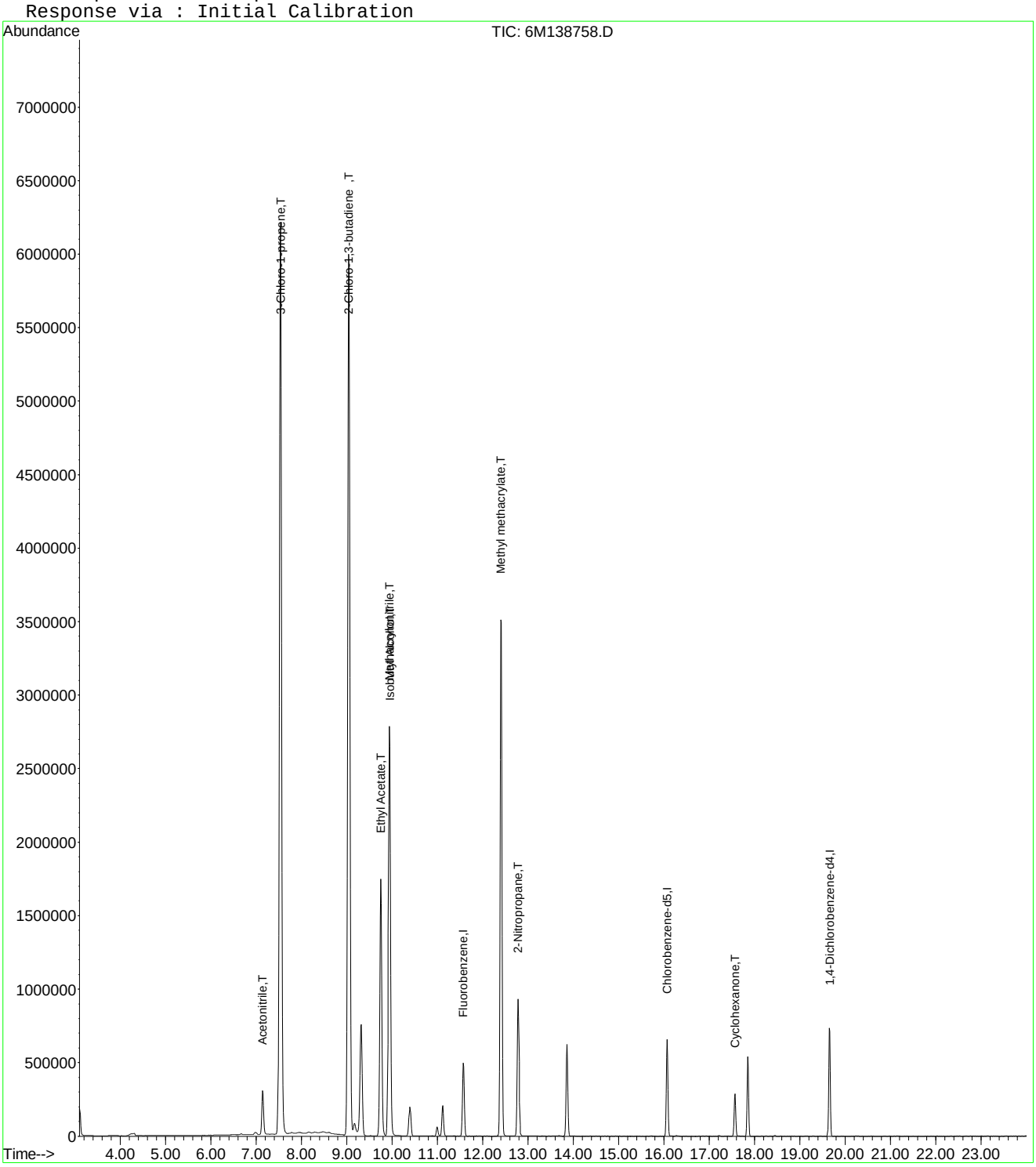

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:54 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602884	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	471639	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	256885	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.40	111	171708	27.8099 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.24%		
43) 1,2-Dichloroethane-d4	11.12	65	210067	28.0330 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.12%		
58) Toluene-d8	13.86	98	553825	26.0829 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.32%		
80) p-Bromofluorobenzene	17.85	95	243088	28.3441 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 113.36%		

Target Compounds					Qvalue
5) 1,3-Butadiene	4.21	54	367749	92.2302 ug/L	88
9) Diethyl ether	6.30	59	700386	132.3612 ug/L	92
13) Acetone	6.67	43	6570	3.5143 ug/L	81
16) Dimethyl Sulfide	7.14	62	2726	0.5361 ug/L #	1
20) Carbon Disulfide	7.54	76	432674	22.5096 ug/L #	36
22) Methyl Tert Butyl Ether	7.97	73	2916	0.1786 ug/L #	53
26) Vinyl Acetate	9.05	43	5230	0.5414 ug/L #	1
27) 1,1-Dichloroethane	9.04	63	22472	1.7594 ug/L #	42
28) Ethyl-Tert-Butyl ether	9.32	59	4063	0.1960 ug/L #	35
29) 2-Butanone	9.52	43	6076	2.2019 ug/L #	66
30) Propionitrile	9.64	54	91341	115.2239 ug/L	96
36) Tetrahydrofuran	10.36	42	4030	2.2418 ug/L #	52
39) Cyclohexane	10.69	56	2387	0.2138 ug/L	79
48) Methylcyclohexane	12.40	83	1353	0.1547 ug/L #	1
50) 1,4-Dioxane	12.73	88	9231	177.0935 ug/L	71
60) Ethyl Methacrylate	13.86	69	1222	0.1732 ug/L #	1
79) 1,1,2,2-Tetrachloroethane	17.57	83	1146	0.1832 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138761.D 8260WTR.M Mon Apr 25 09:22:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

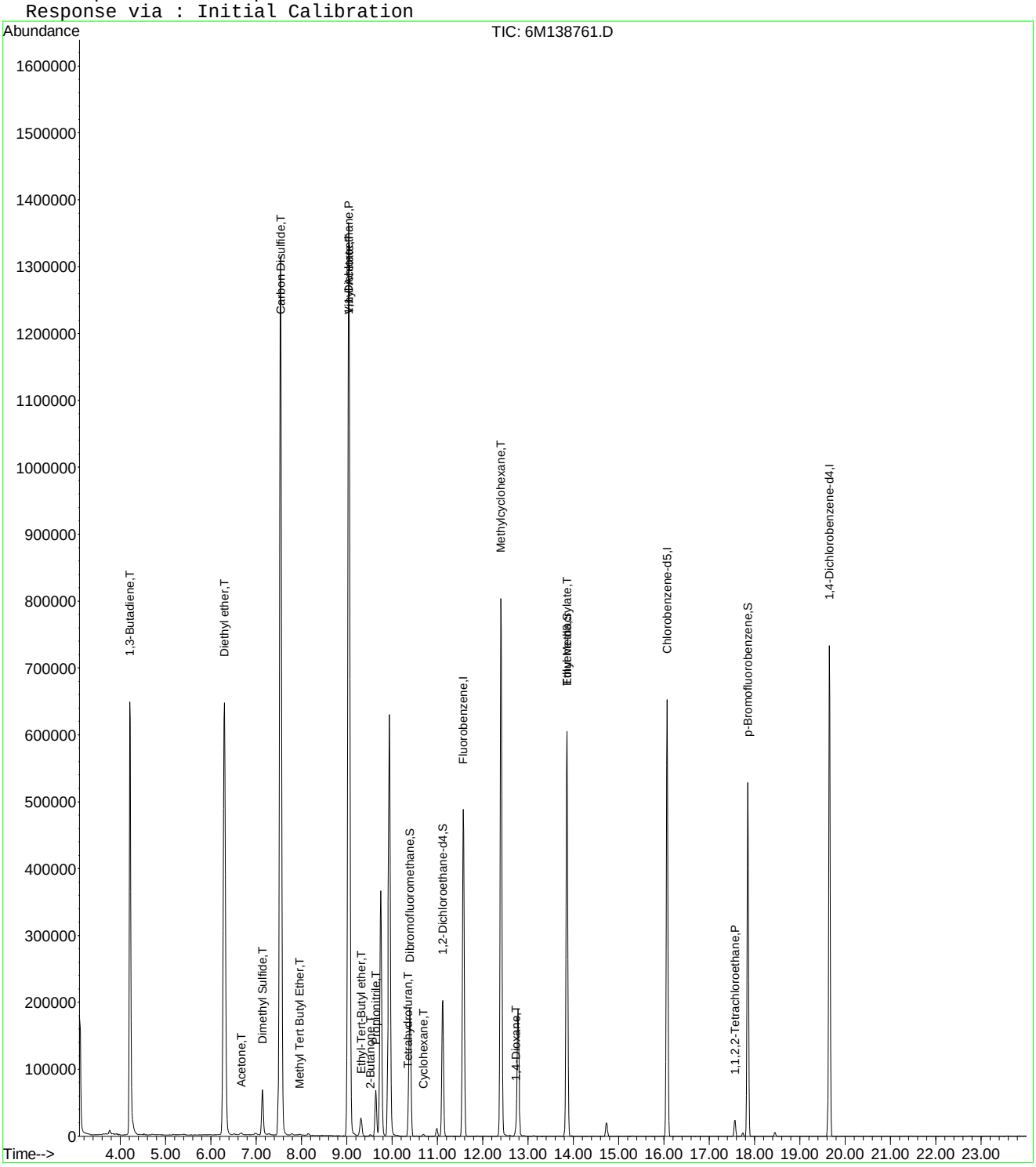

6M138761.D 8260WTR.M Mon Apr 25 09:22:54 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46:01 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602884	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	471639	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.65	152	256885	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	96564	83.4191 ug/L	96
3) 3-Chloro-1-propene	7.54	41	1552115	96.0797 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	1512761	108.7756 ug/L	83
5) Ethyl Acetate	9.75	43	691566	108.7414 ug/L	93
6) Methacrylonitrile	9.94	67	252030	103.0355 ug/L #	63
7) Isobutyl Alcohol	9.95	43	51165	146.2409 ug/L #	93
8) 1-Butanol	10.99	41	7584	50.3877 ug/L	72
9) Methyl methacrylate	12.40	41	635574	100.3670 ug/L	81
10) 2-Nitropropane	12.79	43	211020	113.0321 ug/L	98
13) Cyclohexanone	17.57	55	15491	17.6579 ug/L	85

(#) = qualifier out of range (m) = manual integration
6M138761.D A9FOOWT.M Mon Apr 25 15:46:02 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

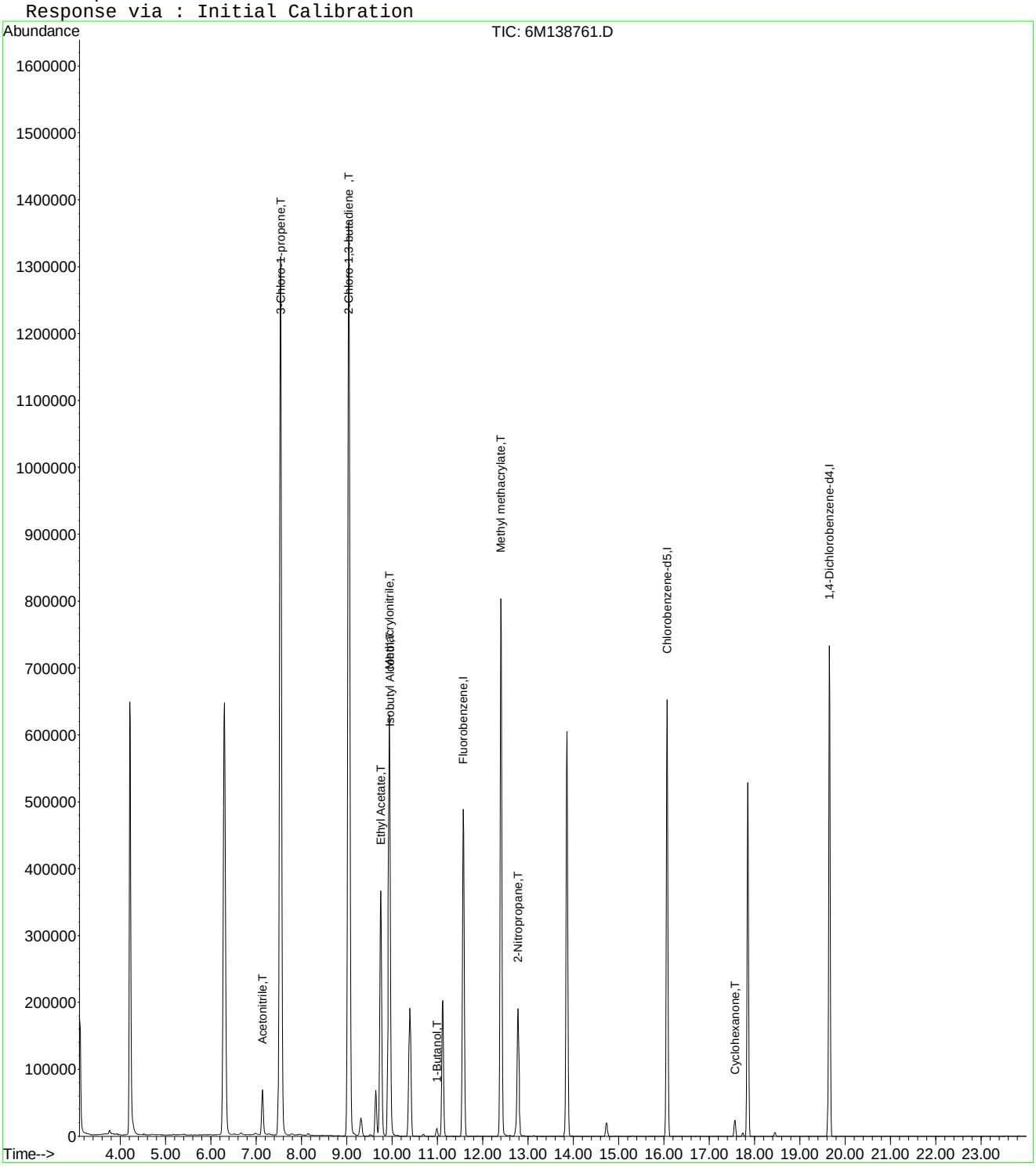

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:02 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	602884	25.00	ug/L	0.00
11) Chlorobenzene-d5	16.07	117	471639	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.65	152	256885	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	96564	106.9355	ug/L	96
3) 3-Chloro-1-propene	7.54	41	1552115	103.1378	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	1512761	117.1516	ug/L	83
5) Ethyl Acetate	9.75	43	691566	106.9734	ug/L	93
6) Methacrylonitrile	9.94	67	252030	113.0781	ug/L #	63
7) Isobutyl Alcohol	9.95	43	51165	248.4926	ug/L #	93
9) Methyl methacrylate	12.40	41	635574	116.9674	ug/L	81
10) 2-Nitropropane	12.79	43	211020	104.4208	ug/L	98
13) Cyclohexanone	17.57	55	15491	48.3758	ug/L	85

(#) = qualifier out of range (m) = manual integration
6M138761.D A9FOOWT.M Wed Apr 27 16:05:02 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

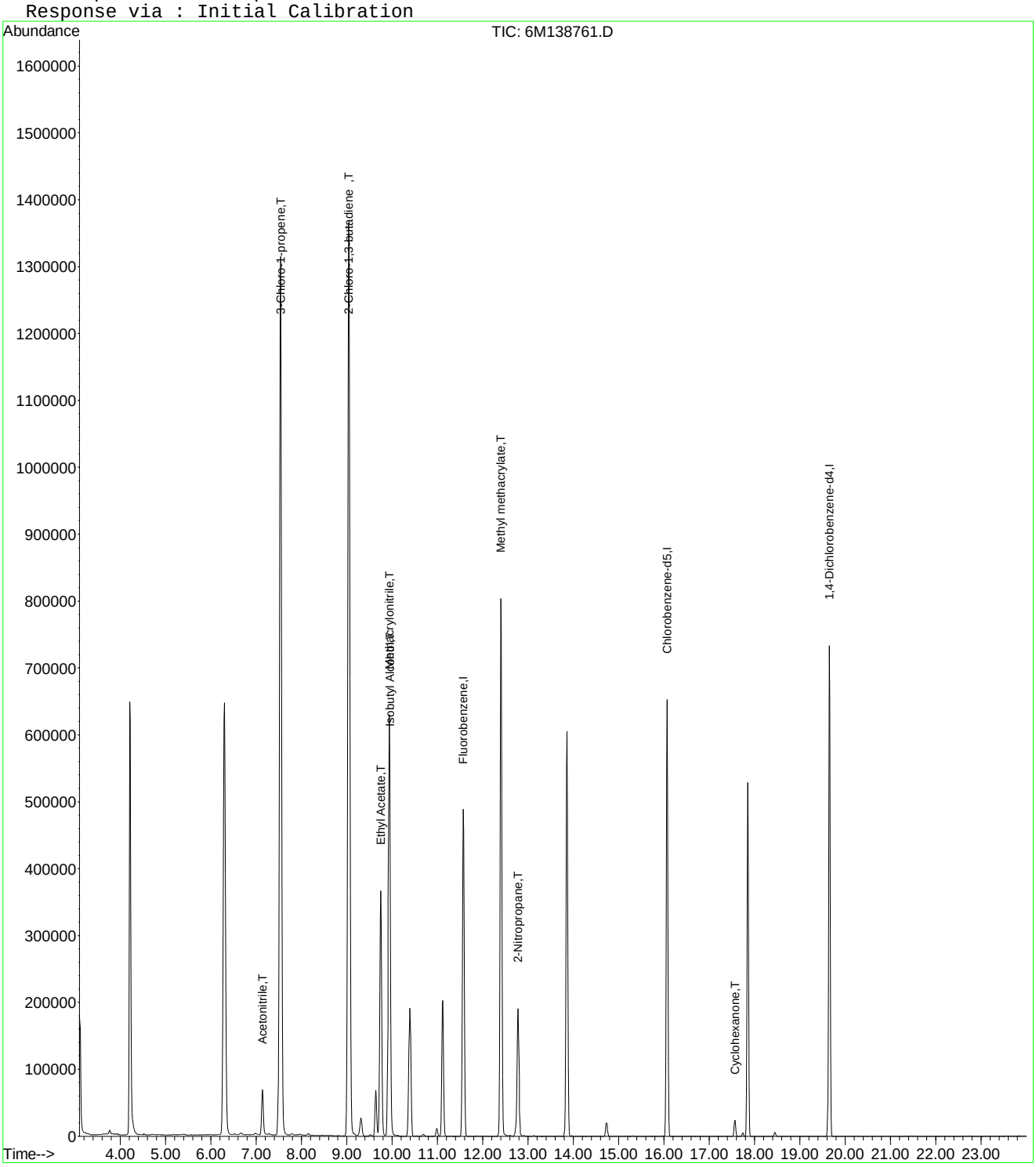

6M138761.D A9FOOWT.M Wed Apr 27 16:05:02 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	101	0.00
2	T	Acetonitrile	100.0000	106.9355	-6.9	106	0.00
3	T	3-Chloro-1-propene	100.0000	103.1378	-3.1	96	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	117.1516	-17.2	107	0.00
5	T	Ethyl Acetate	100.0000	106.9734	-7.0	103	0.00
6	T	Methacrylonitrile	100.0000	113.0781	-13.1	106	0.00
7	T	Isobutyl Alcohol	200.0000	248.4926	-24.2	151	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	100.0000	116.9674	-17.0	108	0.00
10	T	2-Nitropropane	100.0000	104.4208	-4.4	107	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	101	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	100.0000	48.3758	51.6	56	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138761.D A9FOOWT.M Wed Apr 27 16:05:40 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140314.D Vial: 2
Acq On : 30 Jun 2016 12:03 Operator: TMB
Sample : WG574723-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:20:28 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	782166	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	545154	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	278489	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	4426	0.5577 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	2.24%#	
43) 1,2-Dichloroethane-d4	10.31	65	6633	0.6621 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	2.64%#	
58) Toluene-d8	13.04	98	14915	0.5556 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.24%#	
80) p-Bromofluorobenzene	17.02	95	6529	0.5986 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.40%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	7859	0.6011 ug/L #	80
3) Chloromethane	3.36	50	10543	0.7222 ug/L	88
4) Vinyl Chloride	3.57	62	6524	0.8138 ug/L	85
5) 1,3-Butadiene	3.62	54	5236	Below Cal #	53
6) Bromomethane	4.39	94	2681	0.5033 ug/L	75
7) Chloroethane	4.55	64	2218	0.4379 ug/L #	74
8) Trichlorofluoromethane	5.01	101	7455	0.6097 ug/L #	89
10) Isoprene	5.58	67	5099	0.4673 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.81	101	3458	0.4546 ug/L	87
13) Acetone	5.90	43	5483	2.1880 ug/L	88
14) 1,1-Dichloroethene	6.11	61	8367	0.5669 ug/L	89
16) Dimethyl Sulfide	6.39	62	2618	0.4067 ug/L	92
17) Iodomethane	6.65	142	580	1.0028 ug/L #	32
18) Methyl acetate	6.68	43	2212	0.3262 ug/L #	66
19) Methylene Chloride	6.95	84	4491	0.5306 ug/L	87
20) Carbon Disulfide	6.97	76	28617	1.0581 ug/L	97
22) Methyl Tert Butyl Ether	7.17	73	6219	0.2772 ug/L #	56
23) trans-1,2-Dichloroethene	7.42	96	5255	0.6648 ug/L	83
24) n-Hexane	7.50	57	14948	1.1142 ug/L	95
26) Vinyl Acetate	8.09	43	2544	0.1688 ug/L #	78
27) 1,1-Dichloroethane	8.10	63	6467	0.3800 ug/L	91
29) 2-Butanone	8.74	43	738	0.1924 ug/L #	57
31) 2,2-Dichloropropane	8.96	77	4273	0.3328 ug/L	92
32) cis-1,2-Dichloroethene	9.04	96	4541	0.5248 ug/L	70
33) Chloroform	9.26	83	5775	0.3788 ug/L	94
35) Bromochloromethane	9.52	130	2012	0.4327 ug/L	92
36) Tetrahydrofuran	9.55	42	2953	1.1037 ug/L #	55
38) 1,1,1-Trichloroethane	9.86	97	4483	0.3377 ug/L	92
39) Cyclohexane	9.87	56	8253	0.4779 ug/L	90
40) 1,1-Dichloropropene	10.08	75	6696	0.5791 ug/L	91
42) Carbon Tetrachloride	10.23	117	3257	0.2988 ug/L #	92
45) 1,2-Dichloroethane	10.45	62	5310	0.4344 ug/L #	89
46) Benzene	10.48	78	15173	0.4650 ug/L	96
47) Trichloroethene	11.35	130	5387	0.6690 ug/L	99
48) Methylcyclohexane	11.43	83	7364	0.5825 ug/L	88
49) 1,2-Dichloropropane	11.58	63	3158	0.3361 ug/L	79
51) Bromodichloromethane	11.94	83	4017	0.3543 ug/L	95
52) Dibromomethane	12.03	93	2564	0.5639 ug/L	85
53) 2-Chloroethyl Vinyl Ether	12.31	63	1255	0.2664 ug/L #	41
55) cis-1,3-Dichloropropene	12.69	75	6354	0.4827 ug/L	93

(#) = qualifier out of range (m) = manual integration
6M140314.D 8260WTR.M Fri Jul 01 14:20:31 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140314.D Vial: 2
Acq On : 30 Jun 2016 12:03 Operator: TMB
Sample : WG574723-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:20:28 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
56)	Dimethyl Disulfide	12.96	79	2244	0.3062 ug/L #	47
59)	Toluene	13.16	91	16171	0.4977 ug/L	100
60)	Ethyl Methacrylate	13.33	69	2168	0.2345 ug/L	77
62)	trans-1,3-Dichloropropene	13.39	75	6685	0.5786 ug/L	82
63)	1,1,2-Trichloroethane	13.62	97	2098	0.3489 ug/L	91
64)	2-Hexanone	13.58	43	1202	0.2105 ug/L #	54
65)	1,3-Dichloropropane	13.99	76	4378	0.3863 ug/L	85
66)	Tetrachloroethene	14.10	166	4661	0.6020 ug/L	99
67)	Dibromochloromethane	14.41	129	2599	0.3560 ug/L	98
68)	1,2-Dibromoethane	14.71	107	3093	0.5329 ug/L	98
69)	1-Chlorohexane	14.85	91	5951	0.5504 ug/L	88
70)	Chlorobenzene	15.30	112	13354	0.6409 ug/L	99
71)	1,1,1,2-Tetrachloroethane	15.35	131	2310	0.3116 ug/L	94
72)	Ethylbenzene	15.35	106	5305	0.4864 ug/L	85
73)	m-,p-Xylene	15.45	106	13647	1.0353 ug/L	91
74)	o-Xylene	16.11	106	5438	0.4136 ug/L	85
75)	Styrene	16.16	104	10471	0.4734 ug/L	91
76)	Bromoform	16.71	173	1433	0.3165 ug/L #	50
77)	Isopropylbenzene	16.63	105	15560	0.4536 ug/L	92
79)	1,1,2,2-Tetrachloroethane	16.88	83	1987	0.2940 ug/L	77
81)	1,2,3-Trichloropropane	17.10	110	241	0.1203 ug/L #	1
82)	trans-1,4-Dichloro-2-Buten	17.19	53	903	0.3534 ug/L	88
83)	n-Propylbenzene	17.22	91	21456	0.5362 ug/L #	94
84)	Bromobenzene	17.34	156	5484	0.6559 ug/L	92
85)	1,3,5-Trimethylbenzene	17.44	105	12453	0.4440 ug/L	96
86)	2-Chlorotoluene	17.52	91	13840	0.5114 ug/L	95
87)	4-Chlorotoluene	17.59	91	17422	0.6753 ug/L	95
88)	a-Methylstyrene	17.92	118	6165	0.4370 ug/L	93
89)	tert-Butylbenzene	17.98	134	2101	0.3729 ug/L #	24
90)	1,2,4-Trimethylbenzene	18.05	105	13753	0.4779 ug/L	100
91)	sec-Butylbenzene	18.30	105	18042	0.5374 ug/L	92
92)	p-Isopropyltoluene	18.51	119	14633	0.5114 ug/L	94
93)	1,3-Dichlorobenzene	18.70	146	11689	0.7103 ug/L	99
94)	1,4-Dichlorobenzene	18.85	146	12500	0.7513 ug/L	97
95)	n-Butylbenzene	19.12	91	17799	0.6344 ug/L	93
96)	1,2-Dichlorobenzene	19.43	146	9545	0.6178 ug/L	96
97)	1,2-Dibromo-3-Chloropropan	20.62	75	229	0.1730 ug/L #	1
98)	1,2,4-Trichlorobenzene	21.96	180	8749	0.8011 ug/L	91
99)	Hexachlorobutadiene	22.15	225	2944	0.6484 ug/L	95
100)	Naphthalene	22.39	128	14249	0.6384 ug/L	95
101)	1,2,3-Trichlorobenzene	22.76	180	7092	0.7013 ug/L	96

(#) = qualifier out of range (m) = manual integration
6M140314.D 8260WTR.M Fri Jul 01 14:20:32 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140314.D Vial: 2
Acq On : 30 Jun 2016 12:03 Operator: TMB
Sample : WG574723-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:20 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

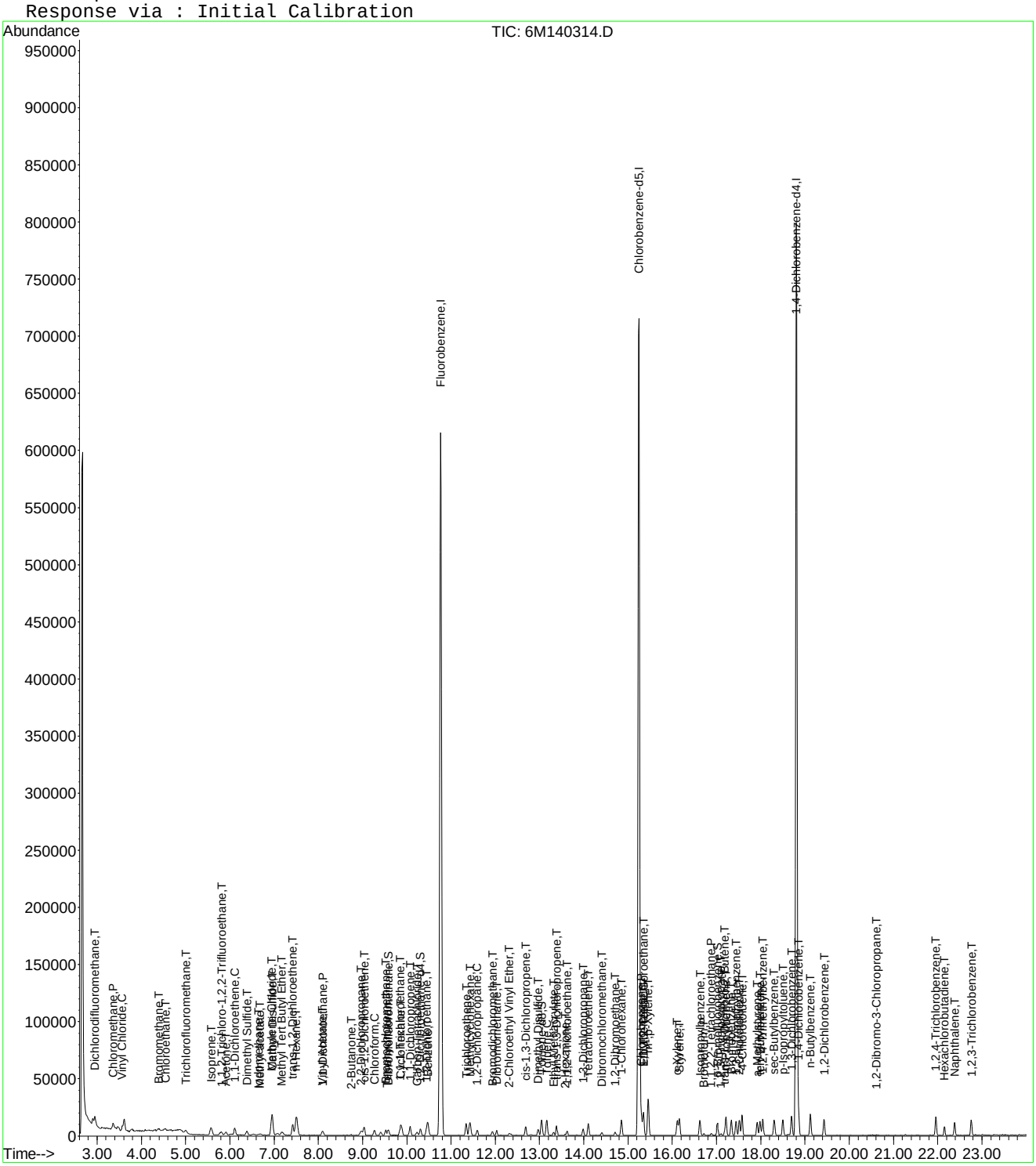

6M140314.D 8260WTR.M Fri Jul 01 14:20:34 2016 Page 3

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140314.D Vial: 2
Acq On : 30 Jun 2016 12:03 Operator: TMB
Sample : WG574723-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.6011	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.7222	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.8138	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	-1.9896	0.0	0	0.03
6	T	Bromomethane	-1.0000	0.5033	0.0	100	0.02
7	T	Chloroethane	-1.0000	0.4379	0.0	100	0.02
8	T	Trichlorofluoromethane	-1.0000	0.6097	0.0	100	0.00
9	T	Diethyl ether	-1.0000	0.0280	0.0	100	0.00
10	T	Isoprene	-1.0000	0.4673	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-5.79#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.4546	0.0	100	0.03
13	T	Acetone	-1.0000	2.1880	0.0	100	0.00
14	C	1,1-Dichloroethene	-1.0000	0.5669	0.0	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.29#
16	T	Dimethyl Sulfide	-1.0000	0.4067	0.0	100	0.00
17	T	Iodomethane	-1.0000	1.0028	0.0	0	0.01
18	T	Methyl acetate	-1.0000	0.3262	0.0	100	-0.01
19	T	Methylene Chloride	-1.0000	0.5306	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	1.0581	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.15#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2772	0.0	100	-0.01
23	T	trans-1,2-Dichloroethene	-1.0000	0.6648	0.0	100	0.00
24	T	n-Hexane	-1.0000	1.1142	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-7.90#
26	T	Vinyl Acetate	-1.0000	0.1688	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.3800	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.53#
29	T	2-Butanone	-1.0000	0.1924	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.86#
31	T	2,2-Dichloropropane	-1.0000	0.3328	0.0	100	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.5248	0.0	100	0.00
33	C	Chloroform	0.3000	0.3788	-26.3#	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.41#
35	T	Bromochloromethane	-1.0000	0.4327	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	1.1037	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.5577	0.0	100	0.00
38	T	1,1,1-Trichloroethane	-1.0000	0.3377	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.4779	0.0	100	-0.01
40	T	1,1-Dichloropropene	-1.0000	0.5791	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0293	0.0	100	-0.13
42	T	Carbon Tetrachloride	-1.0000	0.2988	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.6621	0.0	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-10.21#
45	T	1,2-Dichloroethane	-1.0000	0.4344	0.0	100	0.00
46	T	Benzene	-1.0000	0.4650	0.0	100	0.00
47	T	Trichloroethene	-1.0000	0.6690	0.0	100	0.00
48	T	Methylcyclohexane	-1.0000	0.5825	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.3361	0.0	100	-0.01
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.94#
51	T	Bromodichloromethane	-1.0000	0.3543	0.0	100	0.00
52	T	Dibromomethane	-1.0000	0.5639	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2664	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0645	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140314.D Vial: 2
Acq On : 30 Jun 2016 12:03 Operator: TMB
Sample : WG574723-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.4827	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.3062	0.0	100	-0.01
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.5556	0.0	100	0.00
59	C	Toluene	-1.0000	0.4977	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2345	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	-1.0000	0.5786	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.3489	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.2105	0.0	100	0.00
65	T	1,3-Dichloropropane	-1.0000	0.3863	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.6020	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.3560	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.5329	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.5504	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.6409	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.3116	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.4864	0.0	100	0.00
73	T	m-,p-Xylene	-1.0000	1.0353	0.0	100	-0.01
74	T	o-Xylene	-1.0000	0.4136	0.0	100	-0.01
75	T	Styrene	-1.0000	0.4734	0.0	100	0.00
76	P	Bromoform	-1.0000	0.3165	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.4536	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	-0.01
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2940	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5986	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.1203	0.0	100	-0.01
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.3534	0.0	100	0.00
83	T	n-Propylbenzene	-1.0000	0.5362	0.0	100	0.00
84	T	Bromobenzene	-1.0000	0.6559	0.0	0	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.4440	0.0	100	-0.01
86	T	2-Chlorotoluene	-1.0000	0.5114	0.0	79	-0.01
87	T	4-Chlorotoluene	-1.0000	0.6753	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.4370	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3729	0.0	100	-0.01
90	T	1,2,4-Trimethylbenzene	-1.0000	0.4779	0.0	100	-0.01
91	T	sec-Butylbenzene	-1.0000	0.5374	0.0	100	-0.01
92	T	p-Isopropyltoluene	-1.0000	0.5114	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.7103	0.0	100	0.00
94	T	1,4-Dichlorobenzene	-1.0000	0.7513	0.0	0	0.00
95	T	n-Butylbenzene	-1.0000	0.6344	0.0	100	0.00
96	T	1,2-Dichlorobenzene	-1.0000	0.6178	0.0	0	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.1730	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	-1.0000	0.8011	0.0	100	-0.01
99	T	Hexachlorobutadiene	-1.0000	0.6484	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.6384	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	-1.0000	0.7013	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1
6M140314.D 8260WTR.M Fri Jul 01 14:34:29 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140315.D Vial: 3
Acq On : 30 Jun 2016 12:35 Operator: TMB
Sample : WG574723-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:20:36 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	711040	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	496934	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	254758	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	13.04	98	1118	0.0457 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.20%#	
80) p-Bromofluorobenzene	17.01	95	723	0.0725 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	4029	0.3390 ug/L #	64
3) Chloromethane	3.37	50	7908	0.5959 ug/L	82
4) Vinyl Chloride	3.56	62	2700	0.3705 ug/L	78
5) 1,3-Butadiene	3.62	54	3035	Below Cal #	51
6) Bromomethane	4.39	94	1885	0.3892 ug/L	95
7) Chloroethane	4.55	64	1384	0.3006 ug/L #	43
8) Trichlorofluoromethane	5.00	101	5096	0.4585 ug/L #	91
10) Isoprene	5.57	67	4197	0.4231 ug/L	86
12) 1,1,2-Trichloro-1,2,2-Trif	5.82	101	2196	0.3176 ug/L	83
13) Acetone	5.90	43	1650	0.7243 ug/L #	48
14) 1,1-Dichloroethene	6.11	61	5407	0.4030 ug/L	90
16) Dimethyl Sulfide	6.38	62	2288	0.3910 ug/L	87
18) Methyl acetate	6.69	43	1819	0.2951 ug/L #	66
19) Methylene Chloride	6.93	84	3320	0.4315 ug/L	82
20) Carbon Disulfide	6.97	76	11427	0.4648 ug/L	99
22) Methyl Tert Butyl Ether	7.18	73	8255	0.4048 ug/L #	75
23) trans-1,2-Dichloroethene	7.42	96	2988	0.4158 ug/L	82
24) n-Hexane	7.51	57	5670	0.4649 ug/L	92
26) Vinyl Acetate	8.09	43	2906	0.2121 ug/L #	78
27) 1,1-Dichloroethane	8.10	63	6380	0.4124 ug/L	89
29) 2-Butanone	8.74	43	1046	0.3000 ug/L #	57
31) 2,2-Dichloropropane	8.95	77	4509	0.3863 ug/L	96
32) cis-1,2-Dichloroethene	9.03	96	3353	0.4263 ug/L	94
33) Chloroform	9.27	83	5194	0.3747 ug/L	99
35) Bromochloromethane	9.53	130	1601	0.3788 ug/L	83
36) Tetrahydrofuran	9.56	42	3379	1.3892 ug/L #	67
38) 1,1,1-Trichloroethane	9.87	97	4496	0.3726 ug/L	93
39) Cyclohexane	9.89	56	6498	0.4139 ug/L	94
40) 1,1-Dichloropropene	10.08	75	4389	0.4176 ug/L	94
42) Carbon Tetrachloride	10.24	117	3081	0.3110 ug/L #	88
45) 1,2-Dichloroethane	10.45	62	4443	0.3998 ug/L #	81
46) Benzene	10.48	78	13145	0.4431 ug/L	97
47) Trichloroethene	11.34	130	3154	0.4309 ug/L	93
48) Methylcyclohexane	11.42	83	4969	0.4324 ug/L	87
49) 1,2-Dichloropropane	11.59	63	3543	0.4147 ug/L	87
51) Bromodichloromethane	11.93	83	3676	0.3566 ug/L	92
52) Dibromomethane	12.03	93	1420	0.3436 ug/L	100
53) 2-Chloroethyl Vinyl Ether	12.31	63	1186	0.2769 ug/L #	41
54) 4-Methyl-2-Pentanone	12.35	58	422	0.1601 ug/L #	38
55) cis-1,3-Dichloropropene	12.67	75	4716	0.3941 ug/L	96

(#) = qualifier out of range (m) = manual integration
6M140315.D 8260WTR.M Fri Jul 01 14:20:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140315.D Vial: 3
Acq On : 30 Jun 2016 12:35 Operator: TMB
Sample : WG574723-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:20:36 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
56)	Dimethyl Disulfide	12.97	79	1919	0.2881 ug/L #	68
59)	Toluene	13.16	91	13506	0.4560 ug/L	97
60)	Ethyl Methacrylate	13.32	69	2728	0.3238 ug/L	91
62)	trans-1,3-Dichloropropene	13.39	75	3780	0.3589 ug/L	86
63)	1,1,2-Trichloroethane	13.63	97	2086	0.3806 ug/L	93
64)	2-Hexanone	13.58	43	1538	0.2955 ug/L	72
65)	1,3-Dichloropropane	13.98	76	4376	0.4236 ug/L	95
66)	Tetrachloroethene	14.10	166	2876	0.4075 ug/L	95
67)	Dibromochloromethane	14.41	129	2210	0.3321 ug/L	93
68)	1,2-Dibromoethane	14.72	107	1896	0.3584 ug/L	87
69)	1-Chlorohexane	14.86	91	4030	0.4089 ug/L	91
70)	Chlorobenzene	15.30	112	8640	0.4549 ug/L	96
71)	1,1,1,2-Tetrachloroethane	15.35	131	2601	0.3848 ug/L	92
72)	Ethylbenzene	15.35	106	4049	0.4073 ug/L	76
73)	m-,p-Xylene	15.45	106	10358	0.8620 ug/L	87
74)	o-Xylene	16.10	106	5184	0.4326 ug/L	96
75)	Styrene	16.16	104	7888	0.3912 ug/L	83
76)	Bromoform	16.72	173	1146	0.2777 ug/L #	68
77)	Isopropylbenzene	16.62	105	13388	0.4282 ug/L	97
79)	1,1,2,2-Tetrachloroethane	16.88	83	2211	0.3576 ug/L	95
81)	1,2,3-Trichloropropane	17.11	110	427	0.2329 ug/L #	1
83)	n-Propylbenzene	17.22	91	16903	0.4618 ug/L #	94
84)	Bromobenzene	17.34	156	3349	0.4379 ug/L	93
85)	1,3,5-Trimethylbenzene	17.44	105	10954	0.4269 ug/L	99
86)	2-Chlorotoluene	17.51	91	11900	0.4807 ug/L	93
87)	4-Chlorotoluene	17.57	91	10437	0.4422 ug/L	94
88)	a-Methylstyrene	17.92	118	4645	0.3600 ug/L	98
89)	tert-Butylbenzene	17.98	134	2361	0.4580 ug/L	87
90)	1,2,4-Trimethylbenzene	18.04	105	11026	0.4188 ug/L	95
91)	sec-Butylbenzene	18.31	105	13954	0.4543 ug/L	95
92)	p-Isopropyltoluene	18.50	119	11850	0.4527 ug/L	94
93)	1,3-Dichlorobenzene	18.70	146	6789	0.4510 ug/L	100
94)	1,4-Dichlorobenzene	18.85	146	7052	0.4633 ug/L	99
95)	n-Butylbenzene	19.12	91	11908	0.4639 ug/L	90
96)	1,2-Dichlorobenzene	19.42	146	6295	0.4454 ug/L	99
97)	1,2-Dibromo-3-Chloropropan	20.62	75	204	0.1685 ug/L #	1
98)	1,2,4-Trichlorobenzene	21.96	180	4710	0.4715 ug/L	93
99)	Hexachlorobutadiene	22.15	225	1916	0.4613 ug/L	98
100)	Naphthalene	22.38	128	8061	0.3948 ug/L	90
101)	1,2,3-Trichlorobenzene	22.75	180	4023	0.4349 ug/L	96

(#) = qualifier out of range (m) = manual integration
6M140315.D 8260WTR.M Fri Jul 01 14:20:54 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140315.D Vial: 3
Acq On : 30 Jun 2016 12:35 Operator: TMB
Sample : WG574723-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:20 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

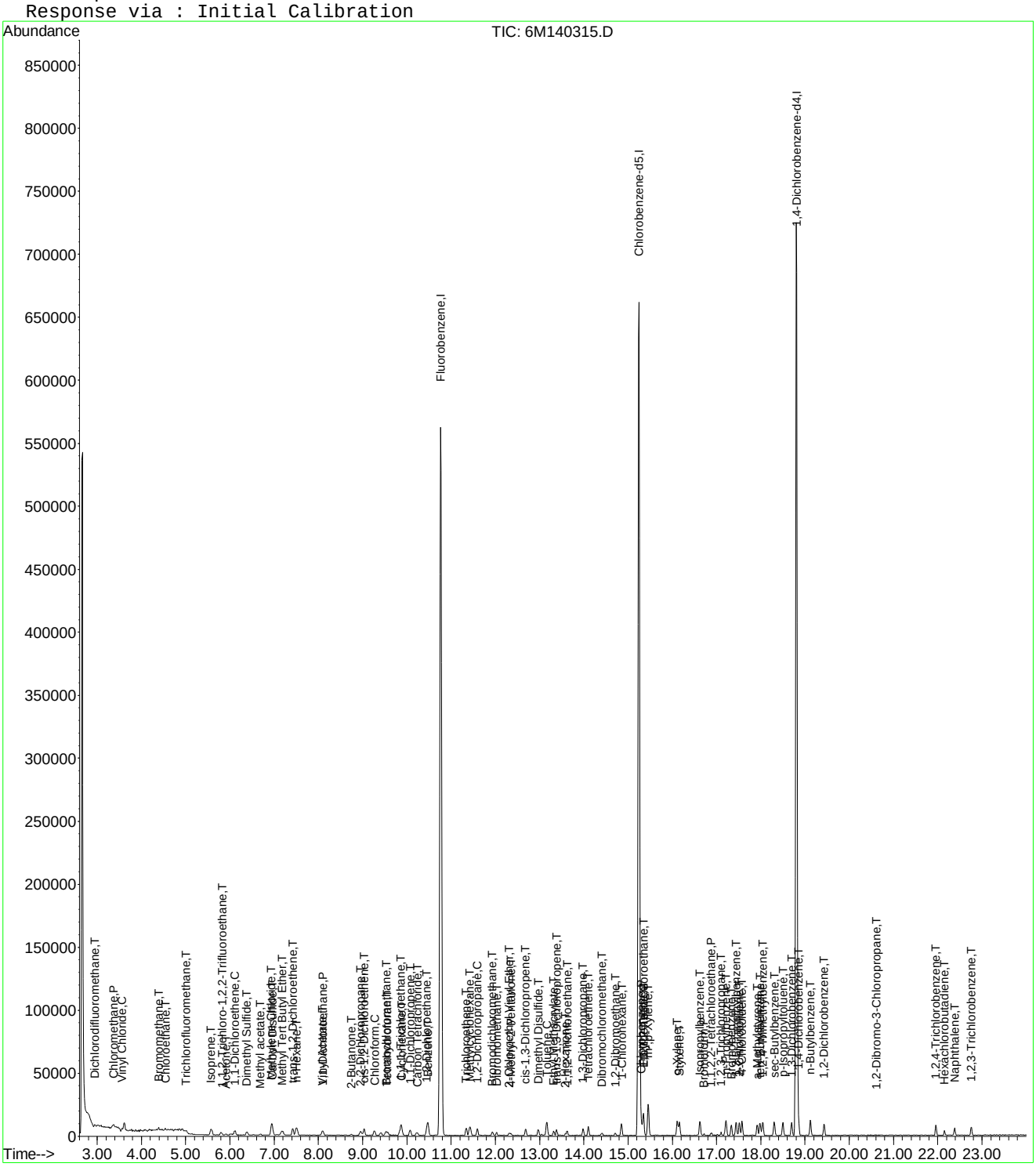

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140315.D Vial: 3
Acq On : 30 Jun 2016 12:35 Operator: TMB
Sample : WG574723-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.3390	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.5959	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.3705	7.4	100	0.00
5	T	1,3-Butadiene	-1.0000	-2.4246	0.0	0	0.03
6	T	Bromomethane	-1.0000	0.3892	0.0	100	0.02
7	T	Chloroethane	-1.0000	0.3006	0.0	100	0.02
8	T	Trichlorofluoromethane	0.4000	0.4585	-14.6	100	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.55#
10	T	Isoprene	-1.0000	0.4231	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-5.79#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3176	0.0	100	0.04
13	T	Acetone	-1.0000	0.7243	0.0	100	0.00
14	C	1,1-Dichloroethene	0.4000	0.4030	-0.7	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.29#
16	T	Dimethyl Sulfide	-1.0000	0.3910	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.64#
18	T	Methyl acetate	-1.0000	0.2951	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4315	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4648	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.15#
22	T	Methyl Tert Butyl Ether	-1.0000	0.4048	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.4158	-4.0	100	0.00
24	T	n-Hexane	-1.0000	0.4649	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-7.90#
26	T	Vinyl Acetate	-1.0000	0.2121	0.0	100	0.00
27	P	1,1-Dichloroethane	0.4000	0.4124	-3.1	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.53#
29	T	2-Butanone	-1.0000	0.3000	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.86#
31	T	2,2-Dichloropropane	0.4000	0.3863	3.4	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.4263	-6.6	100	0.00
33	C	Chloroform	0.4000	0.3747	6.3	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.41#
35	T	Bromochloromethane	0.4000	0.3787	5.3	100	0.00
36	T	Tetrahydrofuran	-1.0000	1.3892	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.59#
38	T	1,1,1-Trichloroethane	0.4000	0.3726	6.9	100	0.02
39	T	Cyclohexane	-1.0000	0.4139	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4176	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	0.4000	0.3110	22.3#	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-10.21#
45	T	1,2-Dichloroethane	0.4000	0.3998	0.1	100	0.00
46	T	Benzene	0.4000	0.4431	-10.8	100	0.00
47	T	Trichloroethene	0.4000	0.4309	-7.7	100	0.00
48	T	Methylcyclohexane	-1.0000	0.4324	0.0	100	-0.01
49	C	1,2-Dichloropropane	0.4000	0.4147	-3.7	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.94#
51	T	Bromodichloromethane	0.4000	0.3566	10.8	100	0.00
52	T	Dibromomethane	0.4000	0.3436	14.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2769	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.1601	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140315.D Vial: 3
Acq On : 30 Jun 2016 12:35 Operator: TMB
Sample : WG574723-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3941	1.5	100	-0.01
56	T	Dimethyl Disulfide	-1.0000	0.2881	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0457	0.0	100	0.00
59	C	Toluene	0.4000	0.4560	-14.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3238	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.16#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3589	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.3806	4.9	100	0.00
64	T	2-Hexanone	-1.0000	0.2955	0.0	100	0.00
65	T	1,3-Dichloropropane	0.4000	0.4236	-5.9	100	-0.01
66	T	Tetrachloroethene	0.4000	0.4075	-1.9	100	0.00
67	T	Dibromochloromethane	0.4000	0.3321	17.0	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.3584	10.4	100	0.00
69	T	1-Chlorohexane	0.4000	0.4089	-2.2	100	0.00
70	P	Chlorobenzene	0.4000	0.4549	-13.7	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3848	3.8	100	0.00
72	C	Ethylbenzene	0.4000	0.4073	-1.8	100	0.00
73	T	m-,p-Xylene	0.8000	0.8620	-7.8	100	-0.01
74	T	o-Xylene	-1.0000	0.4326	0.0	100	-0.01
75	T	Styrene	0.4000	0.3912	2.2	100	0.00
76	P	Bromoform	-1.0000	0.2777	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.4282	-7.0	100	-0.01
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.3576	10.6	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0725	0.0	100	-0.01
81	T	1,2,3-Trichloropropane	-1.0000	0.2329	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.1005	0.0	100	0.00
83	T	n-Propylbenzene	0.4000	0.4618	-15.4	100	0.00
84	T	Bromobenzene	0.4000	0.4379	-9.5	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.4270	-6.7	100	-0.01
86	T	2-Chlorotoluene	0.4000	0.4807	-20.2#	100	-0.01
87	T	4-Chlorotoluene	0.4000	0.4422	-10.6	100	-0.01
88	T	a-Methylstyrene	-1.0000	0.3600	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.4580	0.0	100	-0.01
90	T	1,2,4-Trimethylbenzene	-1.0000	0.4188	0.0	100	-0.01
91	T	sec-Butylbenzene	-1.0000	0.4543	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4527	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.4510	-12.7	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.4633	-15.8	100	0.00
95	T	n-Butylbenzene	-1.0000	0.4639	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.4454	-11.4	100	-0.01
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.1685	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	0.4000	0.4714	-17.9	100	-0.01
99	T	Hexachlorobutadiene	0.4000	0.4613	-15.3	100	0.00
100	T	Naphthalene	0.4000	0.3948	1.3	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.4349	-8.7	100	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140315.D 8260WTR.M Fri Jul 01 14:35:02 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140316.D Vial: 4
Acq On : 30 Jun 2016 13:08 Operator: TMB
Sample : WG574723-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:20:58 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	687429	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	485381	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	251587	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	3444	0.4938 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.96%#	
43) 1,2-Dichloroethane-d4	10.31	65	4418	0.5018 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	2.00%#	
58) Toluene-d8	13.04	98	12734	0.5328 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.12%#	
80) p-Bromofluorobenzene	17.01	95	5390	0.5470 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.20%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	11016	0.9586 ug/L #	84
3) Chloromethane	3.37	50	15509	1.2088 ug/L	95
4) Vinyl Chloride	3.56	62	7694	1.0920 ug/L	94
5) 1,3-Butadiene	3.62	54	7756	Below Cal #	68
6) Bromomethane	4.39	94	4929	1.0528 ug/L	86
7) Chloroethane	4.53	64	4342	0.9753 ug/L	93
8) Trichlorofluoromethane	5.01	101	10531	0.9800 ug/L	96
9) Diethyl ether	5.55	59	32999	5.2047 ug/L	95
10) Isoprene	5.57	67	9716	1.0131 ug/L	99
11) Acrolein	5.79	56	2538	2.4066 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	6731	1.0068 ug/L	91
13) Acetone	5.90	43	3178	1.4430 ug/L #	76
14) 1,1-Dichloroethene	6.12	61	13411	1.0339 ug/L	87
15) Tert-Butyl Alcohol	6.25	59	6206	9.2151 ug/L #	84
16) Dimethyl Sulfide	6.38	62	5231	0.9246 ug/L	96
17) Iodomethane	6.65	142	2100	1.3352 ug/L	82
18) Methyl acetate	6.69	43	5561	0.9331 ug/L #	66
19) Methylene Chloride	6.94	84	8529	1.1466 ug/L	84
20) Carbon Disulfide	6.97	76	25467	1.0714 ug/L	99
21) Acrylonitrile	7.16	53	6206	2.2695 ug/L	94
22) Methyl Tert Butyl Ether	7.18	73	19700	0.9991 ug/L	95
23) trans-1,2-Dichloroethene	7.42	96	6984	1.0053 ug/L	82
24) n-Hexane	7.51	57	13051	1.1069 ug/L	96
25) Diisopropyl ether	7.90	45	166032	5.2317 ug/L	96
26) Vinyl Acetate	8.09	43	9104	0.6872 ug/L #	78
27) 1,1-Dichloroethane	8.10	63	15277	1.0213 ug/L	96
28) Ethyl-Tert-Butyl ether	8.53	59	131034	5.1323 ug/L	97
29) 2-Butanone	8.73	43	3268	0.9693 ug/L #	57
30) Propionitrile	8.85	54	4333	4.7359 ug/L	96
31) 2,2-Dichloropropane	8.95	77	11579	1.0261 ug/L	100
32) cis-1,2-Dichloroethene	9.03	96	7838	1.0307 ug/L	88
33) Chloroform	9.26	83	13154	0.9816 ug/L	99
34) 1-Bromopropane	9.41	122	659	1.0190 ug/L	80
35) Bromochloromethane	9.52	130	3868	0.9465 ug/L	100
36) Tetrahydrofuran	9.55	42	14306	6.0837 ug/L	89
38) 1,1,1-Trichloroethane	9.84	97	11995	1.0282 ug/L	99
39) Cyclohexane	9.89	56	16203	1.0675 ug/L	92
40) 1,1-Dichloropropene	10.08	75	10372	1.0207 ug/L	98
41) Tert-Amyl-Methyl ether	10.22	73	97548	5.0317 ug/L	97
42) Carbon Tetrachloride	10.22	117	8394	0.8763 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M140316.D 8260WTR.M Fri Jul 01 14:21:13 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140316.D Vial: 4
Acq On : 30 Jun 2016 13:08 Operator: TMB
Sample : WG574723-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:20:58 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	10834	1.0084 ug/L #	94
46)	Benzene	10.48	78	30089	1.0492 ug/L	98
47)	Trichloroethene	11.35	130	7344	1.0378 ug/L	95
48)	Methylcyclohexane	11.43	83	11566	1.0410 ug/L	92
49)	1,2-Dichloropropane	11.59	63	8057	0.9755 ug/L	94
51)	Bromodichloromethane	11.93	83	9704	0.9738 ug/L	95
52)	Dibromomethane	12.02	93	3754	0.9395 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.31	63	3750	0.9056 ug/L	89
54)	4-Methyl-2-Pentanone	12.35	58	1943	0.7624 ug/L #	38
55)	cis-1,3-Dichloropropene	12.68	75	10823	0.9354 ug/L	99
56)	Dimethyl Disulfide	12.97	79	5005	0.7771 ug/L	92
59)	Toluene	13.16	91	30726	1.0622 ug/L	99
60)	Ethyl Methacrylate	13.32	69	7189	0.8735 ug/L	94
62)	trans-1,3-Dichloropropene	13.39	75	9521	0.9256 ug/L	92
63)	1,1,2-Trichloroethane	13.63	97	5389	1.0066 ug/L	99
64)	2-Hexanone	13.58	43	4641	0.9130 ug/L	84
65)	1,3-Dichloropropane	13.99	76	10212	1.0121 ug/L	95
66)	Tetrachloroethene	14.10	166	7069	1.0254 ug/L	90
67)	Dibromochloromethane	14.41	129	5818	0.8951 ug/L	98
68)	1,2-Dibromoethane	14.71	107	5034	0.9742 ug/L	100
69)	1-Chlorohexane	14.85	91	9657	1.0031 ug/L	86
70)	Chlorobenzene	15.30	112	19612	1.0571 ug/L	95
71)	1,1,1,2-Tetrachloroethane	15.35	131	6511	0.9863 ug/L	95
72)	Ethylbenzene	15.35	106	9761	1.0051 ug/L	83
73)	m-,p-Xylene	15.45	106	24695	2.1041 ug/L	92
74)	o-Xylene	16.11	106	11834	1.0110 ug/L	92
75)	Styrene	16.16	104	18993	0.9644 ug/L	88
76)	Bromoform	16.72	173	3330	0.8262 ug/L #	88
77)	Isopropylbenzene	16.61	105	31878	1.0438 ug/L	96
79)	1,1,2,2-Tetrachloroethane	16.88	83	5647	0.9248 ug/L	93
81)	1,2,3-Trichloropropane	17.11	110	1314	0.7259 ug/L #	16
82)	trans-1,4-Dichloro-2-Buten	17.18	53	1593	0.6900 ug/L	82
83)	n-Propylbenzene	17.22	91	39699	1.0982 ug/L	95
84)	Bromobenzene	17.34	156	7581	1.0037 ug/L	87
85)	1,3,5-Trimethylbenzene	17.44	105	26502	1.0460 ug/L	94
86)	2-Chlorotoluene	17.51	91	26919	1.1011 ug/L	97
87)	4-Chlorotoluene	17.58	91	23704	1.0170 ug/L	96
88)	a-Methylstyrene	17.92	118	11597	0.9100 ug/L	97
89)	tert-Butylbenzene	17.98	134	5253	1.0319 ug/L	63
90)	1,2,4-Trimethylbenzene	18.04	105	27482	1.0570 ug/L	95
91)	sec-Butylbenzene	18.30	105	33207	1.0949 ug/L	94
92)	p-Isopropyltoluene	18.50	119	27800	1.0755 ug/L	94
93)	1,3-Dichlorobenzene	18.70	146	15649	1.0526 ug/L	95
94)	1,4-Dichlorobenzene	18.85	146	16097	1.0710 ug/L #	64
95)	n-Butylbenzene	19.12	91	27428	1.0821 ug/L	93
96)	1,2-Dichlorobenzene	19.43	146	14706	1.0536 ug/L	98
97)	1,2-Dibromo-3-Chloropropan	20.62	75	1058	0.8847 ug/L	65
98)	1,2,4-Trichlorobenzene	21.97	180	9695	0.9827 ug/L	98
99)	Hexachlorobutadiene	22.15	225	4079	0.9944 ug/L	93
100)	Naphthalene	22.38	128	18851	0.9349 ug/L	92
101)	1,2,3-Trichlorobenzene	22.75	180	9647	1.0560 ug/L	93

(#) = qualifier out of range (m) = manual integration
6M140316.D 8260WTR.M Fri Jul 01 14:21:14 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140316.D Vial: 4
Acq On : 30 Jun 2016 13:08 Operator: TMB
Sample : WG574723-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:21 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

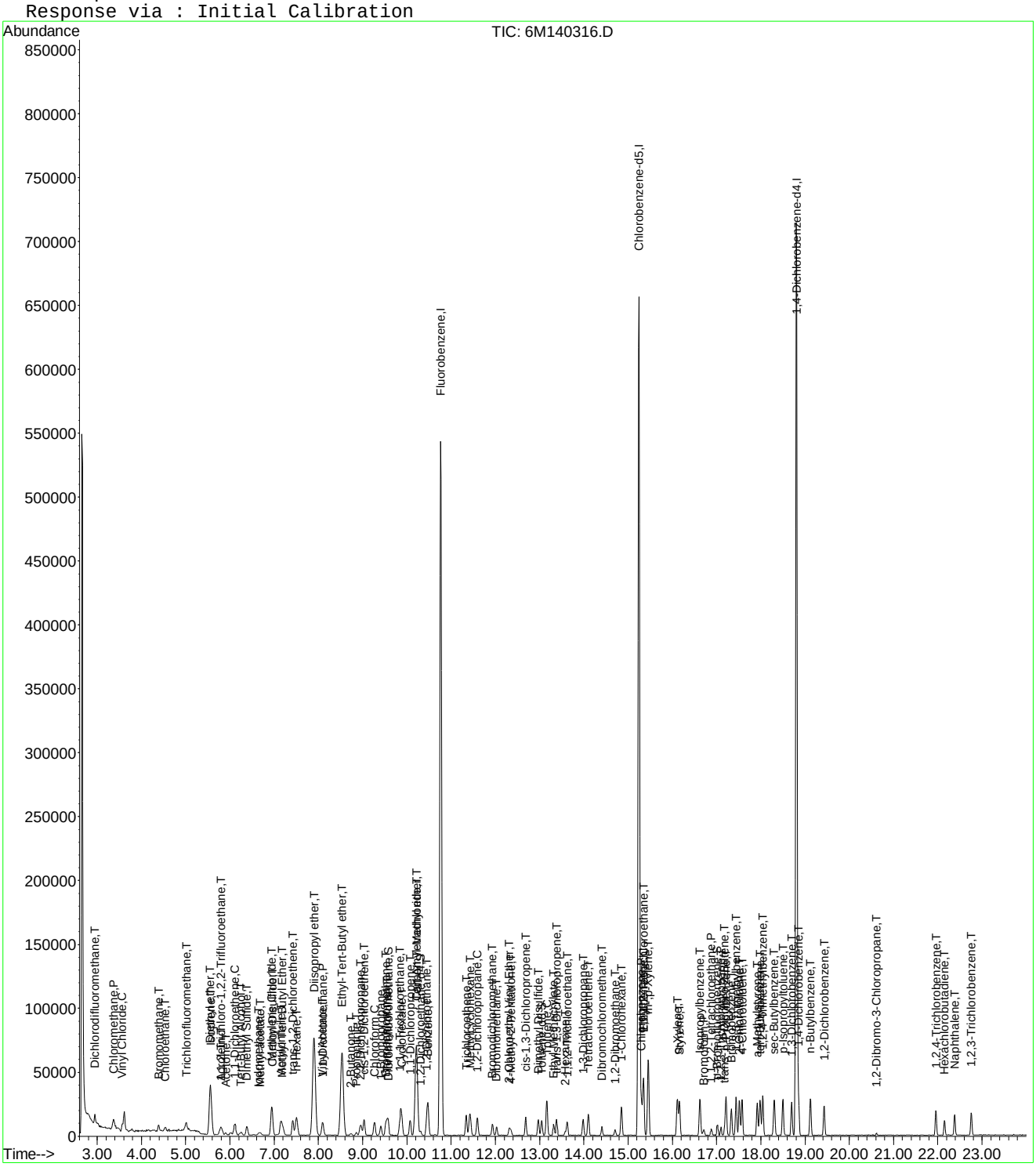

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140316.D Vial: 4
Acq On : 30 Jun 2016 13:08 Operator: TMB
Sample : WG574723-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9586	4.1	100	0.00
3	P	Chloromethane	1.0000	1.2088	-20.9#	100	0.00
4	C	Vinyl Chloride	1.0000	1.0920	-9.2	100	0.00
5	T	1,3-Butadiene	-1.0000	-1.1669	0.0	0	0.03
6	T	Bromomethane	1.0000	1.0528	-5.3	100	0.02
7	T	Chloroethane	1.0000	0.9753	2.5	100	0.00
8	T	Trichlorofluoromethane	1.0000	0.9800	2.0	100	0.02
9	T	Diethyl ether	5.0000	5.2047	-4.1	100	0.00
10	T	Isoprene	-1.0000	1.0131	0.0	100	0.00
11	T	Acrolein	-1.0000	2.4066	0.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0068	-0.7	100	0.00
13	T	Acetone	-1.0000	1.4430	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	1.0338	-3.4	100	0.02
15	T	Tert-Butyl Alcohol	10.0000	9.2151	7.8	100	-0.04
16	T	Dimethyl Sulfide	-1.0000	0.9246	0.0	100	0.00
17	T	Iodomethane	1.0000	1.3352	-33.5#	100	0.00
18	T	Methyl acetate	-1.0000	0.9331	0.0	100	0.00
19	T	Methylene Chloride	1.0000	1.1466	-14.7	100	0.00
20	T	Carbon Disulfide	1.0000	1.0714	-7.1	100	0.00
21	T	Acrylonitrile	2.5000	2.2695	9.2	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9991	0.1	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	1.0053	-0.5	100	0.00
24	T	n-Hexane	-1.0000	1.1069	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	5.2317	-4.6	100	0.00
26	T	Vinyl Acetate	-1.0000	0.6872	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0213	-2.1	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	5.1323	-2.6	100	0.00
29	T	2-Butanone	-1.0000	0.9693	0.0	100	0.00
30	T	Propionitrile	5.0000	4.7359	5.3	100	0.00
31	T	2,2-Dichloropropane	1.0000	1.0261	-2.6	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	1.0307	-3.1	100	0.00
33	C	Chloroform	1.0000	0.9816	1.8	100	0.00
34		1-Bromopropane	1.0000	1.0190	-1.9	100	0.00
35	T	Bromochloromethane	1.0000	0.9465	5.3	100	0.00
36	T	Tetrahydrofuran	5.0000	6.0837	-21.7#	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.4938	0.0	100	0.00
38	T	1,1,1-Trichloroethane	1.0000	1.0282	-2.8	100	0.00
39	T	Cyclohexane	1.0000	1.0675	-6.8	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0207	-2.1	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	5.0317	-0.6	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.8763	12.4	100	-0.01
43	S	1,2-Dichloroethane-d4	-1.0000	0.5018	0.0	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	-0.01
45	T	1,2-Dichloroethane	1.0000	1.0084	-0.8	100	0.00
46	T	Benzene	1.0000	1.0492	-4.9	100	0.00
47	T	Trichloroethene	1.0000	1.0378	-3.8	100	0.00
48	T	Methylcyclohexane	-1.0000	1.0410	0.0	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.9756	2.4	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.94#
51	T	Bromodichloromethane	1.0000	0.9738	2.6	100	0.00
52	T	Dibromomethane	1.0000	0.9395	6.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.9056	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.7624	0.0	100	0.00

(#) = Out of Range

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140316.D Vial: 4
Acq On : 30 Jun 2016 13:08 Operator: TMB
Sample : WG574723-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9355	6.5	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.7771	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.5328	0.0	100	0.00
59	C	Toluene	1.0000	1.0621	-6.2	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.8735	12.7	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	1.0000	0.9256	7.4	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	1.0066	-0.7	100	0.00
64	T	2-Hexanone	-1.0000	0.9130	0.0	100	0.00
65	T	1,3-Dichloropropane	1.0000	1.0121	-1.2	100	0.00
66	T	Tetrachloroethene	1.0000	1.0254	-2.5	100	0.00
67	T	Dibromochloromethane	1.0000	0.8951	10.5	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.9742	2.6	100	0.00
69	T	1-Chlorohexane	1.0000	1.0031	-0.3	100	0.00
70	P	Chlorobenzene	1.0000	1.0571	-5.7	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.9863	1.4	100	0.00
72	C	Ethylbenzene	1.0000	1.0051	-0.5	100	0.00
73	T	m-,p-Xylene	2.0000	2.1041	-5.2	100	-0.01
74	T	o-Xylene	1.0000	1.0110	-1.1	100	0.00
75	T	Styrene	1.0000	0.9645	3.6	100	0.00
76	P	Bromoform	1.0000	0.8262	17.4	100	0.00
77	T	Isopropylbenzene	1.0000	1.0438	-4.4	100	-0.01
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	0.9248	7.5	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5470	0.0	100	-0.01
81	T	1,2,3-Trichloropropane	1.0000	0.7259	27.4#	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	1.0000	0.6900	31.0#	100	0.00
83	T	n-Propylbenzene	1.0000	1.0982	-9.8	100	0.00
84	T	Bromobenzene	1.0000	1.0037	-0.4	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	1.0460	-4.6	100	-0.01
86	T	2-Chlorotoluene	1.0000	1.1011	-10.1	100	-0.01
87	T	4-Chlorotoluene	1.0000	1.0171	-1.7	100	0.00
88	T	a-Methylstyrene	-1.0000	0.9100	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	1.0319	-3.2	100	-0.01
90	T	1,2,4-Trimethylbenzene	1.0000	1.0570	-5.7	100	-0.01
91	T	sec-Butylbenzene	1.0000	1.0949	-9.5	100	-0.01
92	T	p-Isopropyltoluene	1.0000	1.0755	-7.6	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0526	-5.3	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	1.0710	-7.1	100	0.00
95	T	n-Butylbenzene	1.0000	1.0821	-8.2	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0536	-5.4	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.8847	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	1.0000	0.9827	1.7	100	0.00
99	T	Hexachlorobutadiene	1.0000	0.9944	0.6	100	0.00
100	T	Naphthalene	1.0000	0.9349	6.5	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	1.0560	-5.6	100	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140316.D 8260WTR.M Fri Jul 01 14:35:27 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140317.D Vial: 5
Acq On : 30 Jun 2016 13:40 Operator: TMB
Sample : WG574723-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:18 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	681288	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	479716	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	253621	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	6933	1.0030 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	4.00%#	
43) 1,2-Dichloroethane-d4	10.32	65	9000	1.0314 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	4.12%#	
58) Toluene-d8	13.04	98	25015	1.0589 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.24%#	
80) p-Bromofluorobenzene	17.02	95	10214	1.0283 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	21693	1.9048 ug/L	92
3) Chloromethane	3.37	50	28294	2.2252 ug/L	99
4) Vinyl Chloride	3.57	62	15095	2.1618 ug/L	90
5) 1,3-Butadiene	3.61	54	14228	0.5548 ug/L	81
6) Bromomethane	4.39	94	10021	2.1597 ug/L	92
7) Chloroethane	4.54	64	8637	1.9576 ug/L	99
8) Trichlorofluoromethane	5.01	101	21198	1.9905 ug/L	99
9) Diethyl ether	5.55	59	166163	26.4440 ug/L	96
10) Isoprene	5.58	67	20113	2.1161 ug/L	98
11) Acrolein	5.79	56	13232	12.6601 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.80	101	13403	2.0228 ug/L	98
13) Acetone	5.90	43	5431	2.4882 ug/L	86
14) 1,1-Dichloroethene	6.11	61	26310	2.0465 ug/L	95
15) Tert-Butyl Alcohol	6.25	59	32448	48.6151 ug/L	96
16) Dimethyl Sulfide	6.39	62	10884	1.9412 ug/L	92
17) Iodomethane	6.64	142	4160	1.7736 ug/L	99
18) Methyl acetate	6.68	43	11835	2.0038 ug/L #	83
19) Methylene Chloride	6.94	84	16307	2.2119 ug/L	88
20) Carbon Disulfide	6.96	76	49030	2.0813 ug/L	98
21) Acrylonitrile	7.14	53	32708	12.0688 ug/L	93
22) Methyl Tert Butyl Ether	7.17	73	39510	2.0219 ug/L	98
23) trans-1,2-Dichloroethene	7.43	96	14262	2.0714 ug/L	91
24) n-Hexane	7.51	57	25227	2.1588 ug/L	95
25) Diisopropyl ether	7.90	45	823711	26.1894 ug/L	97
26) Vinyl Acetate	8.09	43	22167	1.6883 ug/L	93
27) 1,1-Dichloroethane	8.10	63	31011	2.0919 ug/L	96
28) Ethyl-Tert-Butyl ether	8.53	59	650758	25.7185 ug/L	98
29) 2-Butanone	8.72	43	6560	1.9633 ug/L #	79
30) Propionitrile	8.86	54	22752	25.0916 ug/L	98
31) 2,2-Dichloropropane	8.95	77	23903	2.1372 ug/L	100
32) cis-1,2-Dichloroethene	9.03	96	14680	1.9478 ug/L	78
33) Chloroform	9.27	83	26391	1.9872 ug/L	98
34) 1-Bromopropane	9.42	122	1777	1.9534 ug/L	97
35) Bromochloromethane	9.52	130	8058	1.9896 ug/L	93
36) Tetrahydrofuran	9.55	42	58983	25.3089 ug/L	92
38) 1,1,1-Trichloroethane	9.86	97	23448	2.0280 ug/L	99
39) Cyclohexane	9.88	56	30890	2.0535 ug/L	95
40) 1,1-Dichloropropene	10.08	75	20511	2.0367 ug/L	98
41) Tert-Amyl-Methyl ether	10.22	73	494429	25.7332 ug/L	97
42) Carbon Tetrachloride	10.23	117	18006	1.8966 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140317.D 8260WTR.M Fri Jul 01 14:21:21 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140317.D Vial: 5
Acq On : 30 Jun 2016 13:40 Operator: TMB
Sample : WG574723-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:18 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	22120	2.0774 ug/L	98
46)	Benzene	10.48	78	60457	2.1271 ug/L	100
47)	Trichloroethene	11.35	130	14433	2.0579 ug/L	92
48)	Methylcyclohexane	11.43	83	23167	2.1040 ug/L	93
49)	1,2-Dichloropropane	11.59	63	16607	2.0289 ug/L	96
50)	1,4-Dioxane	11.94	88	2503	45.1726 ug/L	97
51)	Bromodichloromethane	11.93	83	19917	2.0166 ug/L	98
52)	Dibromomethane	12.02	93	8051	2.0330 ug/L	95
53)	2-Chloroethyl Vinyl Ether	12.31	63	7544	1.8383 ug/L	94
54)	4-Methyl-2-Pentanone	12.35	58	4674	1.8506 ug/L	83
55)	cis-1,3-Dichloropropene	12.69	75	23212	2.0243 ug/L	98
56)	Dimethyl Disulfide	12.97	79	10618	1.6635 ug/L	98
59)	Toluene	13.16	91	61452	2.1494 ug/L	98
60)	Ethyl Methacrylate	13.32	69	15594	1.9171 ug/L	93
62)	trans-1,3-Dichloropropene	13.38	75	19722	1.9399 ug/L	94
63)	1,1,2-Trichloroethane	13.63	97	10814	2.0438 ug/L	96
64)	2-Hexanone	13.59	43	9516	1.8942 ug/L	94
65)	1,3-Dichloropropane	13.98	76	20700	2.0758 ug/L	97
66)	Tetrachloroethene	14.11	166	14321	2.1019 ug/L	97
67)	Dibromochloromethane	14.41	129	12204	1.8998 ug/L	99
68)	1,2-Dibromoethane	14.71	107	10178	1.9929 ug/L	98
69)	1-Chlorohexane	14.85	91	19403	2.0392 ug/L	87
70)	Chlorobenzene	15.30	112	39367	2.1469 ug/L	81
71)	1,1,1,2-Tetrachloroethane	15.35	131	13145	2.0147 ug/L	96
72)	Ethylbenzene	15.35	106	20014	2.0853 ug/L	88
73)	m-,p-Xylene	15.45	106	50059	4.3155 ug/L	94
74)	o-Xylene	16.11	106	24284	2.0991 ug/L	92
75)	Styrene	16.16	104	39349	2.0217 ug/L	93
76)	Bromoform	16.71	173	7051	1.7700 ug/L	91
77)	Isopropylbenzene	16.62	105	63245	2.0952 ug/L	97
79)	1,1,2,2-Tetrachloroethane	16.87	83	11943	1.9403 ug/L	99
81)	1,2,3-Trichloropropane	17.11	110	3577	1.9601 ug/L	70
82)	trans-1,4-Dichloro-2-Buten	17.18	53	4235	1.8198 ug/L	92
83)	n-Propylbenzene	17.22	91	77640	2.1306 ug/L	97
84)	Bromobenzene	17.34	156	15737	2.0668 ug/L	90
85)	1,3,5-Trimethylbenzene	17.45	105	53524	2.0955 ug/L	96
86)	2-Chlorotoluene	17.52	91	50361	2.0435 ug/L	96
87)	4-Chlorotoluene	17.58	91	51425	2.1888 ug/L	96
88)	a-Methylstyrene	17.91	118	23705	1.8452 ug/L	90
89)	tert-Butylbenzene	17.99	134	10746	2.0941 ug/L	69
90)	1,2,4-Trimethylbenzene	18.05	105	55973	2.1356 ug/L	97
91)	sec-Butylbenzene	18.30	105	66761	2.1835 ug/L	94
92)	p-Isopropyltoluene	18.50	119	55466	2.1287 ug/L	97
93)	1,3-Dichlorobenzene	18.70	146	31212	2.0827 ug/L	98
94)	1,4-Dichlorobenzene	18.85	146	31934	2.1076 ug/L	79
95)	n-Butylbenzene	19.12	91	53671	2.1004 ug/L	95
96)	1,2-Dichlorobenzene	19.44	146	29144	2.0713 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	20.61	75	1880	1.5595 ug/L	96
98)	1,2,4-Trichlorobenzene	21.96	180	19883	1.9991 ug/L	99
99)	Hexachlorobutadiene	22.15	225	8377	2.0258 ug/L	98
100)	Naphthalene	22.38	128	39370	1.9369 ug/L	98
101)	1,2,3-Trichlorobenzene	22.75	180	18357	1.9933 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140317.D 8260WTR.M Fri Jul 01 14:21:22 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140317.D Vial: 5
Acq On : 30 Jun 2016 13:40 Operator: TMB
Sample : WG574723-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:21 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

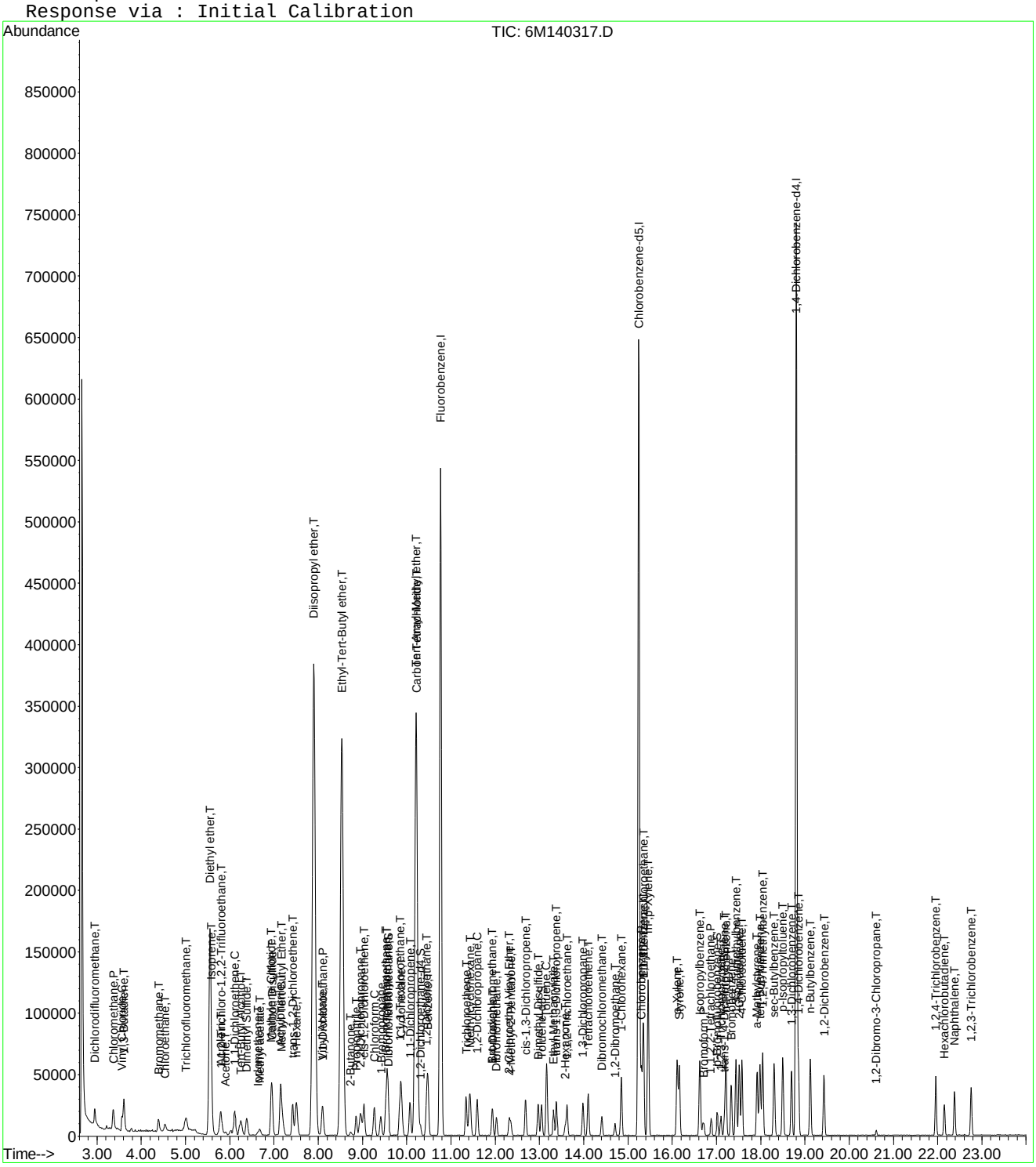

6M140317.D 8260WTR.M Fri Jul 01 14:21:24 2016 Page 3

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140317.D Vial: 5
Acq On : 30 Jun 2016 13:40 Operator: TMB
Sample : WG574723-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.9048	4.8	100	0.01
3	P	Chloromethane	2.0000	2.2252	-11.3	100	0.01
4	C	Vinyl Chloride	2.0000	2.1618	-8.1	100	0.01
5	T	1,3-Butadiene	-1.0000	0.5548	0.0	0	0.02
6	T	Bromomethane	2.0000	2.1597	-8.0	100	0.02
7	T	Chloroethane	2.0000	1.9576	2.1	100	0.01
8	T	Trichlorofluoromethane	2.0000	1.9905	0.5	100	0.01
9	T	Diethyl ether	25.0000	26.4441	-5.8	100	0.00
10	T	Isoprene	-1.0000	2.1161	0.0	100	0.01
11	T	Acrolein	12.5000	12.6601	-1.3	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	2.0228	-1.1	100	0.02
13	T	Acetone	-1.0000	2.4882	0.0	100	0.00
14	C	1,1-Dichloroethene	2.0000	2.0465	-2.3	100	0.01
15	T	Tert-Butyl Alcohol	50.0000	48.6152	2.8	100	-0.04
16	T	Dimethyl Sulfide	-1.0000	1.9412	0.0	100	0.00
17	T	Iodomethane	2.0000	1.7736	11.3	100	0.00
18	T	Methyl acetate	-1.0000	2.0038	0.0	100	0.00
19	T	Methylene Chloride	2.0000	2.2119	-10.6	100	0.00
20	T	Carbon Disulfide	2.0000	2.0813	-4.1	100	0.00
21	T	Acrylonitrile	12.5000	12.0688	3.4	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	2.0219	-1.1	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	2.0714	-3.6	100	0.01
24	T	n-Hexane	-1.0000	2.1588	0.0	100	0.01
25	T	Diisopropyl ether	25.0000	26.1894	-4.8	100	0.00
26	T	Vinyl Acetate	-1.0000	1.6883	0.0	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.0919	-4.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	25.7185	-2.9	100	0.00
29	T	2-Butanone	-1.0000	1.9633	0.0	100	0.00
30	T	Propionitrile	25.0000	25.0916	-0.4	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1372	-6.9	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	1.9478	2.6	100	0.00
33	C	Chloroform	2.0000	1.9872	0.6	100	0.00
34		1-Bromopropane	2.0000	1.9534	2.3	100	0.01
35	T	Bromochloromethane	2.0000	1.9896	0.5	100	0.00
36	T	Tetrahydrofuran	25.0000	25.3089	-1.2	100	0.00
37	S	Dibromofluoromethane	1.0000	1.0030	-0.3	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	2.0280	-1.4	100	0.01
39	T	Cyclohexane	2.0000	2.0535	-2.7	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0367	-1.8	100	0.01
41	T	Tert-Amyl-Methyl ether	25.0000	25.7333	-2.9	100	0.00
42	T	Carbon Tetrachloride	2.0000	1.8966	5.2	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0314	-3.1	100	0.01
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	T	1,2-Dichloroethane	2.0000	2.0774	-3.9	100	0.00
46	T	Benzene	2.0000	2.1271	-6.4	100	0.00
47	T	Trichloroethene	2.0000	2.0579	-2.9	100	0.01
48	T	Methylcyclohexane	-1.0000	2.1040	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0289	-1.4	100	0.00
50	T	1,4-Dioxane	-1.0000	45.1726	0.0	100	0.00
51	T	Bromodichloromethane	2.0000	2.0166	-0.8	100	0.00
52	T	Dibromomethane	2.0000	2.0330	-1.6	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	1.8383	8.1	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.8506	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140317.D Vial: 5
Acq On : 30 Jun 2016 13:40 Operator: TMB
Sample : WG574723-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	2.0243	-1.2	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.6635	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	1.0589	-5.9	100	0.00
59	C	Toluene	2.0000	2.1494	-7.5	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.9171	4.1	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	2.0000	1.9399	3.0	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	2.0438	-2.2	100	0.00
64	T	2-Hexanone	-1.0000	1.8942	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.0758	-3.8	100	0.00
66	T	Tetrachloroethene	2.0000	2.1019	-5.1	100	0.00
67	T	Dibromochloromethane	2.0000	1.8998	5.0	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.9929	0.4	100	0.00
69	T	1-Chlorohexane	2.0000	2.0392	-2.0	100	0.00
70	P	Chlorobenzene	2.0000	2.1469	-7.3	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	2.0147	-0.7	100	0.00
72	C	Ethylbenzene	2.0000	2.0853	-4.3	100	0.00
73	T	m-,p-Xylene	4.0000	4.3156	-7.9	100	0.00
74	T	o-Xylene	2.0000	2.0991	-5.0	100	0.00
75	T	Styrene	2.0000	2.0217	-1.1	100	0.00
76	P	Bromoform	2.0000	1.7700	11.5	100	0.00
77	T	Isopropylbenzene	2.0000	2.0952	-4.8	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	1.9403	3.0	100	0.00
80	S	p-Bromofluorobenzene	1.0000	1.0283	-2.8	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	1.9601	2.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	1.8198	9.0	100	0.00
83	T	n-Propylbenzene	2.0000	2.1306	-6.5	100	0.00
84	T	Bromobenzene	2.0000	2.0668	-3.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.0955	-4.8	100	0.00
86	T	2-Chlorotoluene	2.0000	2.0435	-2.2	100	0.00
87	T	4-Chlorotoluene	2.0000	2.1888	-9.4	100	0.00
88	T	a-Methylstyrene	-1.0000	1.8452	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	2.0941	-4.7	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.1356	-6.8	100	0.00
91	T	sec-Butylbenzene	2.0000	2.1835	-9.2	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.1287	-6.4	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.0827	-4.1	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.1076	-5.4	100	0.00
95	T	n-Butylbenzene	2.0000	2.1004	-5.0	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0713	-3.6	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.5595	22.0#	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	1.9991	0.0	100	0.00
99	T	Hexachlorobutadiene	2.0000	2.0258	-1.3	100	0.00
100	T	Naphthalene	2.0000	1.9369	3.2	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9933	0.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140317.D 8260WTR.M Fri Jul 01 14:35:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140318.D Vial: 6
Acq On : 30 Jun 2016 14:12 Operator: TMB
Sample : WG574723-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:25 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	665911	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	475530	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	251113	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	17208	2.5471 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 10.20%#		
43) 1,2-Dichloroethane-d4	10.32	65	22015	2.5813 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 10.32%#		
58) Toluene-d8	13.04	98	61675	2.6338 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 10.52%#		
80) p-Bromofluorobenzene	17.01	95	25621	2.6052 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 10.44%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	48247	4.3342 ug/L	98
3) Chloromethane	3.37	50	59455	4.7839 ug/L	98
4) Vinyl Chloride	3.57	62	33485	4.9063 ug/L	98
5) 1,3-Butadiene	3.60	54	23338	3.0943 ug/L	87
6) Bromomethane	4.39	94	22163	4.8867 ug/L	97
7) Chloroethane	4.54	64	20579	4.7720 ug/L	97
8) Trichlorofluoromethane	5.02	101	49493	4.7547 ug/L	100
9) Diethyl ether	5.55	59	316870	51.5928 ug/L	96
10) Isoprene	5.58	67	44245	4.7626 ug/L	95
11) Acrolein	5.79	56	25354	24.8183 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	5.80	101	30711	4.7419 ug/L	96
13) Acetone	5.90	43	11460	5.3716 ug/L	98
14) 1,1-Dichloroethene	6.11	61	59549	4.7390 ug/L	93
15) Tert-Butyl Alcohol	6.26	59	62697	96.1048 ug/L	99
16) Dimethyl Sulfide	6.39	62	26287	4.7966 ug/L	98
17) Iodomethane	6.65	142	13226	3.7502 ug/L	97
18) Methyl acetate	6.69	43	29044	5.0309 ug/L	94
19) Methylene Chloride	6.95	84	35243	4.8909 ug/L	87
20) Carbon Disulfide	6.97	76	111679	4.8502 ug/L	99
21) Acrylonitrile	7.15	53	65252	24.6331 ug/L	96
22) Methyl Tert Butyl Ether	7.18	73	93809	4.9114 ug/L	100
23) trans-1,2-Dichloroethene	7.43	96	32653	4.8519 ug/L	90
24) n-Hexane	7.51	57	57537	5.0375 ug/L	99
25) Diisopropyl ether	7.91	45	1560840	50.7720 ug/L	98
26) Vinyl Acetate	8.09	43	61001	4.7533 ug/L	96
27) 1,1-Dichloroethane	8.10	63	70715	4.8804 ug/L	99
28) Ethyl-Tert-Butyl ether	8.53	59	1249973	50.5407 ug/L	98
29) 2-Butanone	8.73	43	15743	4.8205 ug/L	90
30) Propionitrile	8.86	54	44610	50.3332 ug/L	100
31) 2,2-Dichloropropane	8.96	77	55177	5.0475 ug/L	100
32) cis-1,2-Dichloroethene	9.03	96	35623	4.8356 ug/L	87
33) Chloroform	9.26	83	62050	4.7802 ug/L	99
34) 1-Bromopropane	9.42	122	5012	4.7391 ug/L	100
35) Bromochloromethane	9.52	130	19897	5.0261 ug/L	99
36) Tetrahydrofuran	9.56	42	111306	48.8630 ug/L	94
38) 1,1,1-Trichloroethane	9.86	97	54902	4.8581 ug/L	98
39) Cyclohexane	9.88	56	69439	4.7228 ug/L	96
40) 1,1-Dichloropropene	10.08	75	47385	4.8139 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	949512	50.5598 ug/L	97
42) Carbon Tetrachloride	10.23	117	43932	4.7343 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140318.D 8260WTR.M Fri Jul 01 14:21:29 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140318.D Vial: 6
Acq On : 30 Jun 2016 14:12 Operator: TMB
Sample : WG574723-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:25 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	49969	4.8012 ug/L	99
46)	Benzene	10.48	78	138207	4.9748 ug/L	98
47)	Trichloroethene	11.35	130	33708	4.9171 ug/L	90
48)	Methylcyclohexane	11.43	83	52733	4.8997 ug/L	94
49)	1,2-Dichloropropane	11.59	63	39044	4.8802 ug/L	100
50)	1,4-Dioxane	11.94	88	4972	91.8036 ug/L	77
51)	Bromodichloromethane	11.93	83	46783	4.8462 ug/L	100
52)	Dibromomethane	12.02	93	19034	4.9173 ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.31	63	18004	4.4884 ug/L	97
54)	4-Methyl-2-Pentanone	12.35	58	11300	4.5774 ug/L	94
55)	cis-1,3-Dichloropropene	12.69	75	54408	4.8545 ug/L	99
56)	Dimethyl Disulfide	12.97	79	26532	4.2526 ug/L	100
59)	Toluene	13.15	91	138309	4.8802 ug/L	99
60)	Ethyl Methacrylate	13.32	69	37662	4.6708 ug/L	95
62)	trans-1,3-Dichloropropene	13.39	75	48146	4.7775 ug/L	95
63)	1,1,2-Trichloroethane	13.62	97	25707	4.9014 ug/L	99
64)	2-Hexanone	13.58	43	22497	4.5176 ug/L	99
65)	1,3-Dichloropropane	13.99	76	48531	4.9096 ug/L	95
66)	Tetrachloroethene	14.10	166	33388	4.9436 ug/L	96
67)	Dibromochloromethane	14.41	129	30609	4.8067 ug/L	100
68)	1,2-Dibromoethane	14.71	107	24604	4.8600 ug/L	99
69)	1-Chlorohexane	14.85	91	45159	4.7879 ug/L	91
70)	Chlorobenzene	15.30	112	88763	4.8834 ug/L	87
71)	1,1,1,2-Tetrachloroethane	15.35	131	31237	4.8298 ug/L	97
72)	Ethylbenzene	15.35	106	47581	5.0011 ug/L	93
73)	m-,p-Xylene	15.45	106	115328	10.0299 ug/L	93
74)	o-Xylene	16.11	106	56158	4.8969 ug/L	90
75)	Styrene	16.16	104	93922	4.8681 ug/L	93
76)	Bromoform	16.71	173	17414	4.4099 ug/L	98
77)	Isopropylbenzene	16.62	105	150490	5.0295 ug/L	96
79)	1,1,2,2-Tetrachloroethane	16.88	83	29598	4.8565 ug/L	100
81)	1,2,3-Trichloropropane	17.11	110	9483	5.2483 ug/L	91
82)	trans-1,4-Dichloro-2-Buten	17.18	53	10928	4.7426 ug/L	99
83)	n-Propylbenzene	17.22	91	181410	5.0279 ug/L	97
84)	Bromobenzene	17.34	156	37810	5.0153 ug/L	91
85)	1,3,5-Trimethylbenzene	17.44	105	126034	4.9837 ug/L	97
86)	2-Chlorotoluene	17.52	91	116508	4.7747 ug/L	100
87)	4-Chlorotoluene	17.58	91	120486	5.1793 ug/L	93
88)	a-Methylstyrene	17.92	118	58815	4.6239 ug/L	99
89)	tert-Butylbenzene	17.98	134	24935	4.9076 ug/L	64
90)	1,2,4-Trimethylbenzene	18.05	105	130919	5.0449 ug/L	98
91)	sec-Butylbenzene	18.30	105	151691	5.0108 ug/L	98
92)	p-Isopropyltoluene	18.50	119	129076	5.0032 ug/L	96
93)	1,3-Dichlorobenzene	18.70	146	73279	4.9385 ug/L	97
94)	1,4-Dichlorobenzene	18.85	146	73402	4.8928 ug/L	89
95)	n-Butylbenzene	19.12	91	126335	4.9935 ug/L	96
96)	1,2-Dichlorobenzene	19.43	146	69034	4.9553 ug/L	95
97)	1,2-Dibromo-3-Chloropropan	20.61	75	4890	4.0969 ug/L	84
98)	1,2,4-Trichlorobenzene	21.96	180	46999	4.7727 ug/L	99
99)	Hexachlorobutadiene	22.15	225	19578	4.7818 ug/L	97
100)	Naphthalene	22.39	128	98169	4.8780 ug/L	99
101)	1,2,3-Trichlorobenzene	22.75	180	44211	4.8487 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140318.D Vial: 6
Acq On : 30 Jun 2016 14:12 Operator: TMB
Sample : WG574723-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:21 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

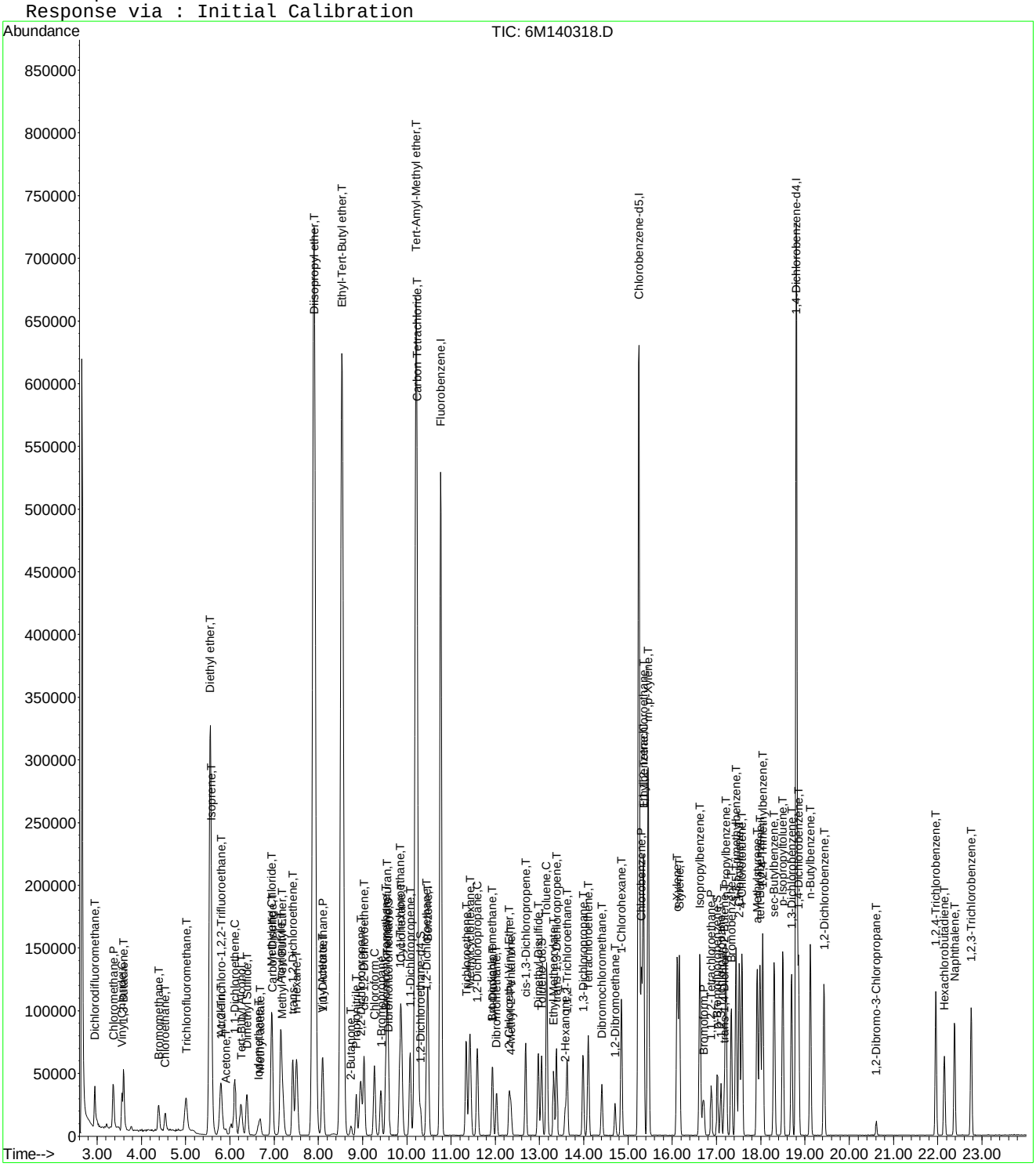

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140318.D Vial: 6
Acq On : 30 Jun 2016 14:12 Operator: TMB
Sample : WG574723-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.3342	13.3	100	0.00
3	P	Chloromethane	5.0000	4.7839	4.3	100	0.00
4	C	Vinyl Chloride	5.0000	4.9063	1.9	100	0.00
5	T	1,3-Butadiene	5.0000	3.0943	38.1#	100	0.00
6	T	Bromomethane	5.0000	4.8868	2.3	100	0.02
7	T	Chloroethane	5.0000	4.7720	4.6	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.7547	4.9	100	0.02
9	T	Diethyl ether	50.0000	51.5928	-3.2	100	0.00
10	T	Isoprene	5.0000	4.7626	4.7	100	0.00
11	T	Acrolein	25.0000	24.8183	0.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.7420	5.2	100	0.02
13	T	Acetone	5.0000	5.3716	-7.4	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.7390	5.2	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	96.1048	3.9	100	-0.03
16	T	Dimethyl Sulfide	5.0000	4.7966	4.1	100	0.00
17	T	Iodomethane	5.0000	3.7502	25.0#	100	0.01
18	T	Methyl acetate	5.0000	5.0309	-0.6	100	0.00
19	T	Methylene Chloride	5.0000	4.8909	2.2	100	0.00
20	T	Carbon Disulfide	5.0000	4.8502	3.0	100	0.00
21	T	Acrylonitrile	25.0000	24.6331	1.5	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.9113	1.8	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.8519	3.0	100	0.00
24	T	n-Hexane	5.0000	5.0375	-0.7	100	0.00
25	T	Diisopropyl ether	50.0000	50.7719	-1.5	100	0.00
26	T	Vinyl Acetate	5.0000	4.7533	4.9	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.8804	2.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	50.5407	-1.1	100	0.00
29	T	2-Butanone	5.0000	4.8205	3.6	100	0.00
30	T	Propionitrile	50.0000	50.3332	-0.7	100	0.00
31	T	2,2-Dichloropropane	5.0000	5.0475	-0.9	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.8356	3.3	100	0.00
33	C	Chloroform	5.0000	4.7802	4.4	100	0.00
34		1-Bromopropane	5.0000	4.7391	5.2	100	0.01
35	T	Bromochloromethane	5.0000	5.0261	-0.5	100	0.00
36	T	Tetrahydrofuran	50.0000	48.8630	2.3	100	0.00
37	S	Dibromofluoromethane	2.5000	2.5471	-1.9	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.8581	2.8	100	0.00
39	T	Cyclohexane	5.0000	4.7228	5.5	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.8139	3.7	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	50.5598	-1.1	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.7344	5.3	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.5813	-3.3	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	T	1,2-Dichloroethane	5.0000	4.8012	4.0	100	0.00
46	T	Benzene	5.0000	4.9748	0.5	100	0.00
47	T	Trichloroethene	5.0000	4.9171	1.7	100	0.00
48	T	Methylcyclohexane	5.0000	4.8997	2.0	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.8802	2.4	100	0.00
50	T	1,4-Dioxane	100.0000	91.8036	8.2	100	0.00
51	T	Bromodichloromethane	5.0000	4.8463	3.1	100	0.00
52	T	Dibromomethane	5.0000	4.9173	1.7	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.4884	10.2	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.5774	8.5	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140318.D Vial: 6
Acq On : 30 Jun 2016 14:12 Operator: TMB
Sample : WG574723-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.8545	2.9	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.2526	14.9	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.6338	-5.4	100	0.00
59	C	Toluene	5.0000	4.8802	2.4	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.6708	6.6	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	5.0000	4.7775	4.4	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.9014	2.0	100	0.00
64	T	2-Hexanone	5.0000	4.5176	9.6	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.9096	1.8	100	0.00
66	T	Tetrachloroethene	5.0000	4.9436	1.1	100	0.00
67	T	Dibromochloromethane	5.0000	4.8067	3.9	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.8600	2.8	100	0.00
69	T	1-Chlorohexane	5.0000	4.7880	4.2	100	0.00
70	P	Chlorobenzene	5.0000	4.8834	2.3	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.8298	3.4	100	0.00
72	C	Ethylbenzene	5.0000	5.0011	-0.0	100	0.00
73	T	m-,p-Xylene	10.0000	10.0299	-0.3	100	-0.01
74	T	o-Xylene	5.0000	4.8970	2.1	100	-0.01
75	T	Styrene	5.0000	4.8681	2.6	100	0.00
76	P	Bromoform	5.0000	4.4099	11.8	100	0.00
77	T	Isopropylbenzene	5.0000	5.0295	-0.6	100	-0.01
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	-0.01
79	P	1,1,2,2-Tetrachloroethane	5.0000	4.8565	2.9	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.6052	-4.2	100	-0.01
81	T	1,2,3-Trichloropropane	5.0000	5.2483	-5.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.7426	5.1	100	0.00
83	T	n-Propylbenzene	5.0000	5.0279	-0.6	100	0.00
84	T	Bromobenzene	5.0000	5.0153	-0.3	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	4.9837	0.3	100	-0.01
86	T	2-Chlorotoluene	5.0000	4.7747	4.5	100	-0.01
87	T	4-Chlorotoluene	5.0000	5.1794	-3.6	100	-0.01
88	T	a-Methylstyrene	5.0000	4.6239	7.5	100	0.00
89	T	tert-Butylbenzene	5.0000	4.9076	1.8	100	-0.01
90	T	1,2,4-Trimethylbenzene	5.0000	5.0449	-0.9	100	-0.01
91	T	sec-Butylbenzene	5.0000	5.0108	-0.2	100	-0.01
92	T	p-Isopropyltoluene	5.0000	5.0032	-0.1	100	-0.01
93	T	1,3-Dichlorobenzene	5.0000	4.9385	1.2	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	4.8928	2.1	100	0.00
95	T	n-Butylbenzene	5.0000	4.9935	0.1	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	4.9553	0.9	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	4.0969	18.1	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.7727	4.5	100	-0.01
99	T	Hexachlorobutadiene	5.0000	4.7818	4.4	100	0.00
100	T	Naphthalene	5.0000	4.8780	2.4	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.8487	3.0	100	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140318.D 8260WTR.M Fri Jul 01 14:36:23 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140319.D Vial: 7
Acq On : 30 Jun 2016 14:44 Operator: TMB
Sample : WG574723-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:33 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	668919	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	478690	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	258443	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	70098	10.3290 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 41.32%#		
43) 1,2-Dichloroethane-d4	10.31	65	89020	10.3908 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 41.56%#		
58) Toluene-d8	13.04	98	243575	10.3332 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 41.32%#		
80) p-Bromofluorobenzene	17.01	95	104612	10.3355 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 41.36%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	240030	21.4659 ug/L	100
3) Chloromethane	3.37	50	274164	21.9607 ug/L	99
4) Vinyl Chloride	3.56	62	134656	19.6412 ug/L	99
5) 1,3-Butadiene	3.60	54	109113	26.0590 ug/L	94
6) Bromomethane	4.39	94	95323	20.9234 ug/L	99
7) Chloroethane	4.54	64	90881	20.9793 ug/L	97
8) Trichlorofluoromethane	5.00	101	210753	20.1557 ug/L	99
9) Diethyl ether	5.55	59	494080	80.0844 ug/L	96
10) Isoprene	5.58	67	199958	21.4269 ug/L	96
11) Acrolein	5.79	56	40308	39.2789 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	131653	20.2365 ug/L	96
13) Acetone	5.89	43	44542	20.7841 ug/L	99
14) 1,1-Dichloroethene	6.11	61	254255	20.1429 ug/L	95
15) Tert-Butyl Alcohol	6.25	59	101804	155.3480 ug/L	98
16) Dimethyl Sulfide	6.39	62	115970	21.0658 ug/L	96
17) Iodomethane	6.65	142	79774	18.0326 ug/L	94
18) Methyl acetate	6.69	43	119945	20.6831 ug/L	98
19) Methylene Chloride	6.93	84	145226	20.0632 ug/L	90
20) Carbon Disulfide	6.97	76	495098	21.4053 ug/L	100
21) Acrylonitrile	7.15	53	104807	39.3874 ug/L	95
22) Methyl Tert Butyl Ether	7.18	73	394607	20.5667 ug/L	100
23) trans-1,2-Dichloroethene	7.42	96	135387	20.0268 ug/L	87
24) n-Hexane	7.51	57	243963	21.2635 ug/L	99
25) Diisopropyl ether	7.89	45	2475744	80.1704 ug/L	98
26) Vinyl Acetate	8.09	43	239974	18.6153 ug/L	97
27) 1,1-Dichloroethane	8.10	63	295851	20.3263 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	1992124	80.1862 ug/L	98
29) 2-Butanone	8.73	43	66102	20.1493 ug/L	96
30) Propionitrile	8.85	54	71515	80.3272 ug/L	99
31) 2,2-Dichloropropane	8.96	77	220142	20.0476 ug/L	98
32) cis-1,2-Dichloroethene	9.03	96	149673	20.2260 ug/L	73
33) Chloroform	9.26	83	260745	19.9968 ug/L	99
34) 1-Bromopropane	9.42	122	23773	20.6056 ug/L	99
35) Bromochloromethane	9.52	130	82689	20.7938 ug/L	100
36) Tetrahydrofuran	9.56	42	173501	75.8239 ug/L	94
38) 1,1,1-Trichloroethane	9.86	97	230314	20.2881 ug/L	98
39) Cyclohexane	9.88	56	309021	20.9230 ug/L	96
40) 1,1-Dichloropropene	10.08	75	198240	20.0489 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	1504867	79.7712 ug/L	98
42) Carbon Tetrachloride	10.23	117	197807	21.2209 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140319.D 8260WTR.M Fri Jul 01 14:21:37 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140319.D Vial: 7
Acq On : 30 Jun 2016 14:44 Operator: TMB
Sample : WG574723-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:33 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	213475	20.4192 ug/L	98
46)	Benzene	10.48	78	563224	20.1824 ug/L	97
47)	Trichloroethene	11.35	130	140565	20.4123 ug/L	91
48)	Methylcyclohexane	11.43	83	229029	21.1847 ug/L	95
49)	1,2-Dichloropropane	11.59	63	163803	20.3822 ug/L	99
50)	1,4-Dioxane	11.94	88	8245	151.5521 ug/L	87
51)	Bromodichloromethane	11.94	83	198529	20.4731 ug/L	99
52)	Dibromomethane	12.02	93	81976	21.0826 ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.31	63	84440	20.9563 ug/L	100
54)	4-Methyl-2-Pentanone	12.35	58	50113	20.2084 ug/L	98
55)	cis-1,3-Dichloropropene	12.68	75	230873	20.5069 ug/L	99
56)	Dimethyl Disulfide	12.97	79	127875	20.4039 ug/L	99
59)	Toluene	13.15	91	575595	20.1756 ug/L	100
60)	Ethyl Methacrylate	13.32	69	174096	21.4487 ug/L	95
62)	trans-1,3-Dichloropropene	13.39	75	209635	20.6648 ug/L	96
63)	1,1,2-Trichloroethane	13.62	97	109279	20.6980 ug/L	99
64)	2-Hexanone	13.58	43	101714	20.2903 ug/L	96
65)	1,3-Dichloropropane	13.99	76	199227	20.0217 ug/L	94
66)	Tetrachloroethene	14.10	166	135754	19.9678 ug/L	93
67)	Dibromochloromethane	14.41	129	135289	21.1051 ug/L	100
68)	1,2-Dibromoethane	14.71	107	105892	20.7786 ug/L	100
69)	1-Chlorohexane	14.85	91	199253	20.9862 ug/L	90
70)	Chlorobenzene	15.30	112	368915	20.1622 ug/L	92
71)	1,1,1,2-Tetrachloroethane	15.35	131	134691	20.6882 ug/L	97
72)	Ethylbenzene	15.35	106	198149	20.6895 ug/L	94
73)	m-,p-Xylene	15.45	106	479614	41.4358 ug/L	94
74)	o-Xylene	16.10	106	239170	20.7178 ug/L	94
75)	Styrene	16.16	104	410666	21.1448 ug/L	94
76)	Bromoform	16.71	173	82284	20.7000 ug/L	97
77)	Isopropylbenzene	16.62	105	620142	20.5887 ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.88	83	128022	20.4105 ug/L	99
81)	1,2,3-Trichloropropane	17.11	110	39329	21.1491 ug/L	80
82)	trans-1,4-Dichloro-2-Buten	17.18	53	50449	21.2733 ug/L	99
83)	n-Propylbenzene	17.22	91	763535	20.5616 ug/L	97
84)	Bromobenzene	17.34	156	157241	20.2655 ug/L	90
85)	1,3,5-Trimethylbenzene	17.44	105	534922	20.5522 ug/L	97
86)	2-Chlorotoluene	17.52	91	480540	19.1348 ug/L	100
87)	4-Chlorotoluene	17.58	91	506904	21.1723 ug/L	93
88)	a-Methylstyrene	17.92	118	283013	21.6190 ug/L	99
89)	tert-Butylbenzene	17.98	134	108977	20.8400 ug/L	73
90)	1,2,4-Trimethylbenzene	18.04	105	555658	20.8047 ug/L	98
91)	sec-Butylbenzene	18.30	105	646673	20.7557 ug/L	97
92)	p-Isopropyltoluene	18.50	119	553560	20.8482 ug/L	98
93)	1,3-Dichlorobenzene	18.70	146	308829	20.2225 ug/L	96
94)	1,4-Dichlorobenzene	18.85	146	309174	20.0243 ug/L	95
95)	n-Butylbenzene	19.12	91	539602	20.7232 ug/L	96
96)	1,2-Dichlorobenzene	19.43	146	290193	20.2396 ug/L	95
97)	1,2-Dibromo-3-Chloropropan	20.61	75	25172	20.4911 ug/L	84
98)	1,2,4-Trichlorobenzene	21.96	180	206634	20.3883 ug/L	99
99)	Hexachlorobutadiene	22.15	225	84200	19.9820 ug/L	100
100)	Naphthalene	22.38	128	449397	21.6970 ug/L	99
101)	1,2,3-Trichlorobenzene	22.75	180	193555	20.6254 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140319.D 8260WTR.M Fri Jul 01 14:21:38 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140319.D Vial: 7
Acq On : 30 Jun 2016 14:44 Operator: TMB
Sample : WG574723-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:21 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

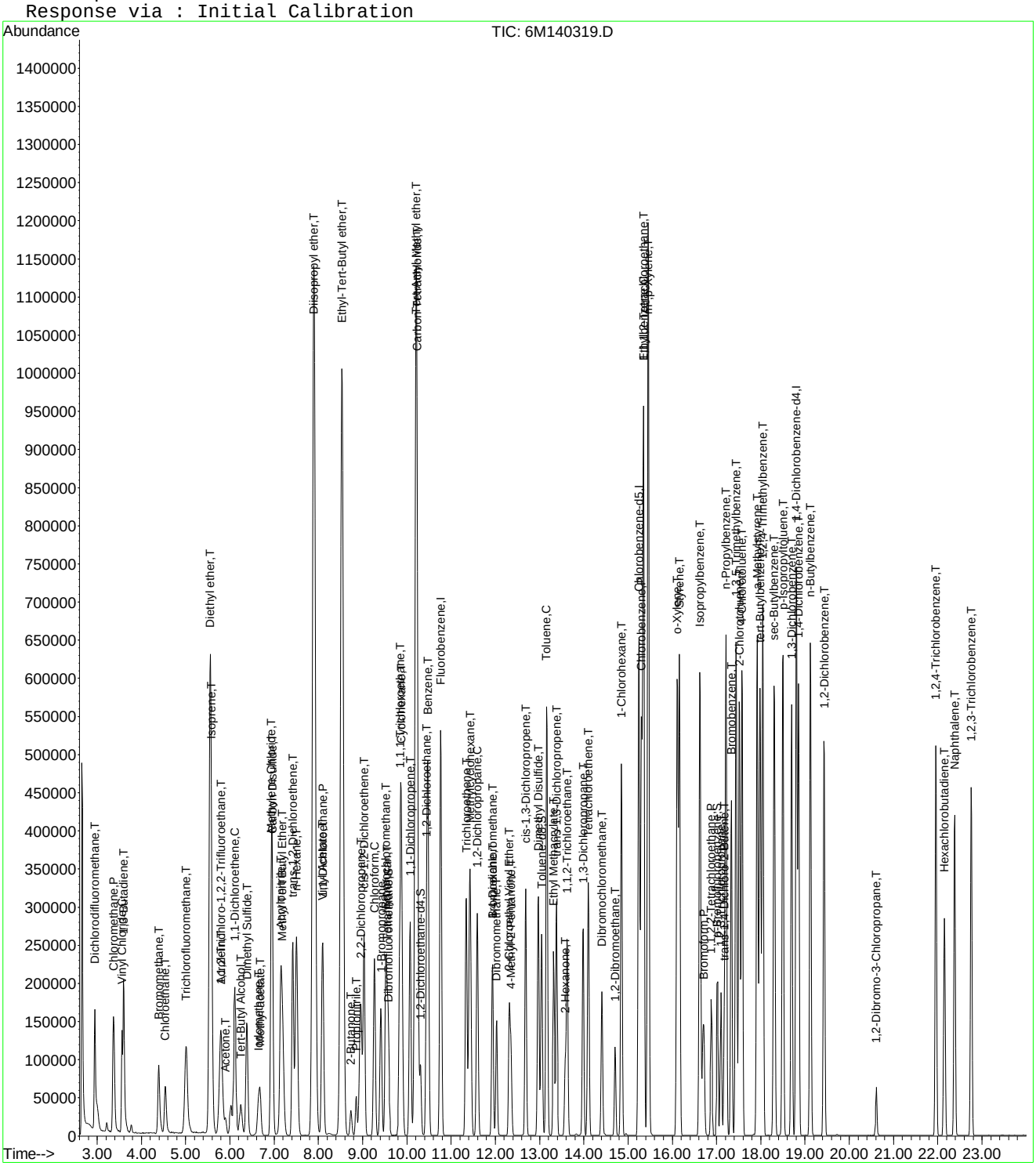

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140320.D Vial: 8
Acq On : 30 Jun 2016 15:16 Operator: TMB
Sample : WG574723-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:42 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	665194	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	476977	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	264882	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	171183	25.3652 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.48%		
43) 1,2-Dichloroethane-d4	10.31	65	211795	24.8600 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.44%		
58) Toluene-d8	13.04	98	584965	24.9051 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.64%		
80) p-Bromofluorobenzene	17.02	95	257496	24.8219 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.28%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	582153	52.3535 ug/L	99
3) Chloromethane	3.37	50	615809	49.6030 ug/L	100
4) Vinyl Chloride	3.56	62	346419	50.8123 ug/L	99
5) 1,3-Butadiene	3.59	54	204917	52.0480 ug/L	96
6) Bromomethane	4.39	94	214126	47.2638 ug/L	99
7) Chloroethane	4.53	64	215766	50.0871 ug/L	96
8) Trichlorofluoromethane	5.00	101	495602	47.6630 ug/L	100
9) Diethyl ether	5.56	59	630517	102.7715 ug/L	96
10) Isoprene	5.58	67	475494	51.2378 ug/L	96
11) Acrolein	5.79	56	50160	49.1531 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.80	101	318041	49.1602 ug/L	97
13) Acetone	5.90	43	105863	49.6741 ug/L	100
14) 1,1-Dichloroethene	6.11	61	623813	49.6972 ug/L	94
15) Tert-Butyl Alcohol	6.26	59	129177	198.2217 ug/L	99
16) Dimethyl Sulfide	6.39	62	276319	50.4741 ug/L	95
17) Iodomethane	6.65	142	239373	52.6044 ug/L	93
18) Methyl acetate	6.69	43	285035	49.4262 ug/L	98
19) Methylene Chloride	6.94	84	347634	48.2950 ug/L	88
20) Carbon Disulfide	6.96	76	1155252	50.2265 ug/L	100
21) Acrylonitrile	7.15	53	135608	51.2481 ug/L	98
22) Methyl Tert Butyl Ether	7.18	73	953213	49.9591 ug/L	100
23) trans-1,2-Dichloroethene	7.42	96	333111	49.5507 ug/L	89
24) n-Hexane	7.51	57	564061	49.4381 ug/L	98
25) Diisopropyl ether	7.90	45	3068443	99.9198 ug/L	98
26) Vinyl Acetate	8.09	43	646413	50.4243 ug/L	98
27) 1,1-Dichloroethane	8.10	63	718876	49.6666 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	2470202	99.9864 ug/L	98
29) 2-Butanone	8.73	43	166904	51.1609 ug/L	95
30) Propionitrile	8.85	54	90037	101.6978 ug/L	100
31) 2,2-Dichloropropane	8.96	77	533000	48.8104 ug/L	100
32) cis-1,2-Dichloroethene	9.03	96	368400	50.0623 ug/L	73
33) Chloroform	9.26	83	633467	48.8534 ug/L	99
34) 1-Bromopropane	9.42	122	59330	50.9944 ug/L	99
35) Bromochloromethane	9.52	130	203288	51.4071 ug/L	99
36) Tetrahydrofuran	9.56	42	216772	95.2648 ug/L	94
38) 1,1,1-Trichloroethane	9.85	97	572724	50.7331 ug/L	99
39) Cyclohexane	9.87	56	723056	49.2305 ug/L	96
40) 1,1-Dichloropropene	10.08	75	488493	49.6802 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	1883625	100.4078 ug/L	98
42) Carbon Tetrachloride	10.23	117	502186	54.1766 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140320.D 8260WTR.M Fri Jul 01 14:21:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140320.D Vial: 8
Acq On : 30 Jun 2016 15:16 Operator: TMB
Sample : WG574723-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:42 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	522936	50.2998 ug/L	99
46)	Benzene	10.48	78	1376892	49.6154 ug/L	97
47)	Trichloroethene	11.35	130	341168	49.8206 ug/L	91
48)	Methylcyclohexane	11.43	83	532584	49.5388 ug/L	95
49)	1,2-Dichloropropane	11.59	63	402187	50.3249 ug/L	99
50)	1,4-Dioxane	11.94	88	11316	209.1652 ug/L	91
51)	Bromodichloromethane	11.94	83	499306	51.7788 ug/L	99
52)	Dibromomethane	12.03	93	200679	51.8998 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.32	63	214371	53.5004 ug/L	99
54)	4-Methyl-2-Pentanone	12.35	58	126993	51.4974 ug/L	97
55)	cis-1,3-Dichloropropene	12.68	75	576590	51.5014 ug/L	99
56)	Dimethyl Disulfide	12.97	79	322099	51.6823 ug/L	98
59)	Toluene	13.15	91	1399906	49.2452 ug/L	99
60)	Ethyl Methacrylate	13.32	69	422208	52.2030 ug/L	95
62)	trans-1,3-Dichloropropene	13.39	75	522454	51.6858 ug/L	96
63)	1,1,2-Trichloroethane	13.63	97	267159	50.7830 ug/L	98
64)	2-Hexanone	13.58	43	256820	51.4155 ug/L	96
65)	1,3-Dichloropropane	13.99	76	494920	49.9167 ug/L	94
66)	Tetrachloroethene	14.10	166	336402	49.6585 ug/L	94
67)	Dibromochloromethane	14.41	129	343402	53.7632 ug/L	100
68)	1,2-Dibromoethane	14.70	107	261585	51.5137 ug/L	100
69)	1-Chlorohexane	14.85	91	477655	50.4894 ug/L	92
70)	Chlorobenzene	15.30	112	903124	49.5353 ug/L	93
71)	1,1,1,2-Tetrachloroethane	15.35	131	337691	52.0547 ug/L	98
72)	Ethylbenzene	15.35	106	484831	50.8048 ug/L	94
73)	m-,p-Xylene	15.46	106	1167250	101.2056 ug/L	95
74)	o-Xylene	16.11	106	590057	51.2966 ug/L	94
75)	Styrene	16.15	104	1015963	52.4987 ug/L	92
76)	Bromoform	16.72	173	210299	53.0943 ug/L	98
77)	Isopropylbenzene	16.62	105	1525364	50.8239 ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.88	83	326482	50.7855 ug/L	100
81)	1,2,3-Trichloropropane	17.10	110	98816	51.8463 ug/L	83
82)	trans-1,4-Dichloro-2-Buten	17.18	53	129320	53.2061 ug/L	97
83)	n-Propylbenzene	17.22	91	1885010	49.5285 ug/L	98
84)	Bromobenzene	17.34	156	390005	49.0426 ug/L	89
85)	1,3,5-Trimethylbenzene	17.44	105	1335066	50.0475 ug/L	97
86)	2-Chlorotoluene	17.52	91	1274044	49.4983 ug/L	96
87)	4-Chlorotoluene	17.58	91	1171374	47.7365 ug/L	96
88)	a-Methylstyrene	17.92	118	690404	51.4571 ug/L	95
89)	tert-Butylbenzene	17.98	134	265842	49.6018 ug/L	70
90)	1,2,4-Trimethylbenzene	18.04	105	1381292	50.4604 ug/L	98
91)	sec-Butylbenzene	18.31	105	1599719	50.0966 ug/L	98
92)	p-Isopropyltoluene	18.50	119	1372031	50.4173 ug/L	98
93)	1,3-Dichlorobenzene	18.70	146	767298	49.0222 ug/L	95
94)	1,4-Dichlorobenzene	18.85	146	768779	48.5813 ug/L	95
95)	n-Butylbenzene	19.12	91	1348420	50.5266 ug/L	97
96)	1,2-Dichlorobenzene	19.43	146	726470	49.4362 ug/L	95
97)	1,2-Dibromo-3-Chloropropan	20.62	75	64455	51.1937 ug/L	86
98)	1,2,4-Trichlorobenzene	21.97	180	516677	49.7405 ug/L	99
99)	Hexachlorobutadiene	22.16	225	213166	49.3581 ug/L	100
100)	Naphthalene	22.38	128	1126213	53.0520 ug/L	100
101)	1,2,3-Trichlorobenzene	22.76	180	479054	49.8076 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140320.D 8260WTR.M Fri Jul 01 14:21:46 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140320.D Vial: 8
Acq On : 30 Jun 2016 15:16 Operator: TMB
Sample : WG574723-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:21 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

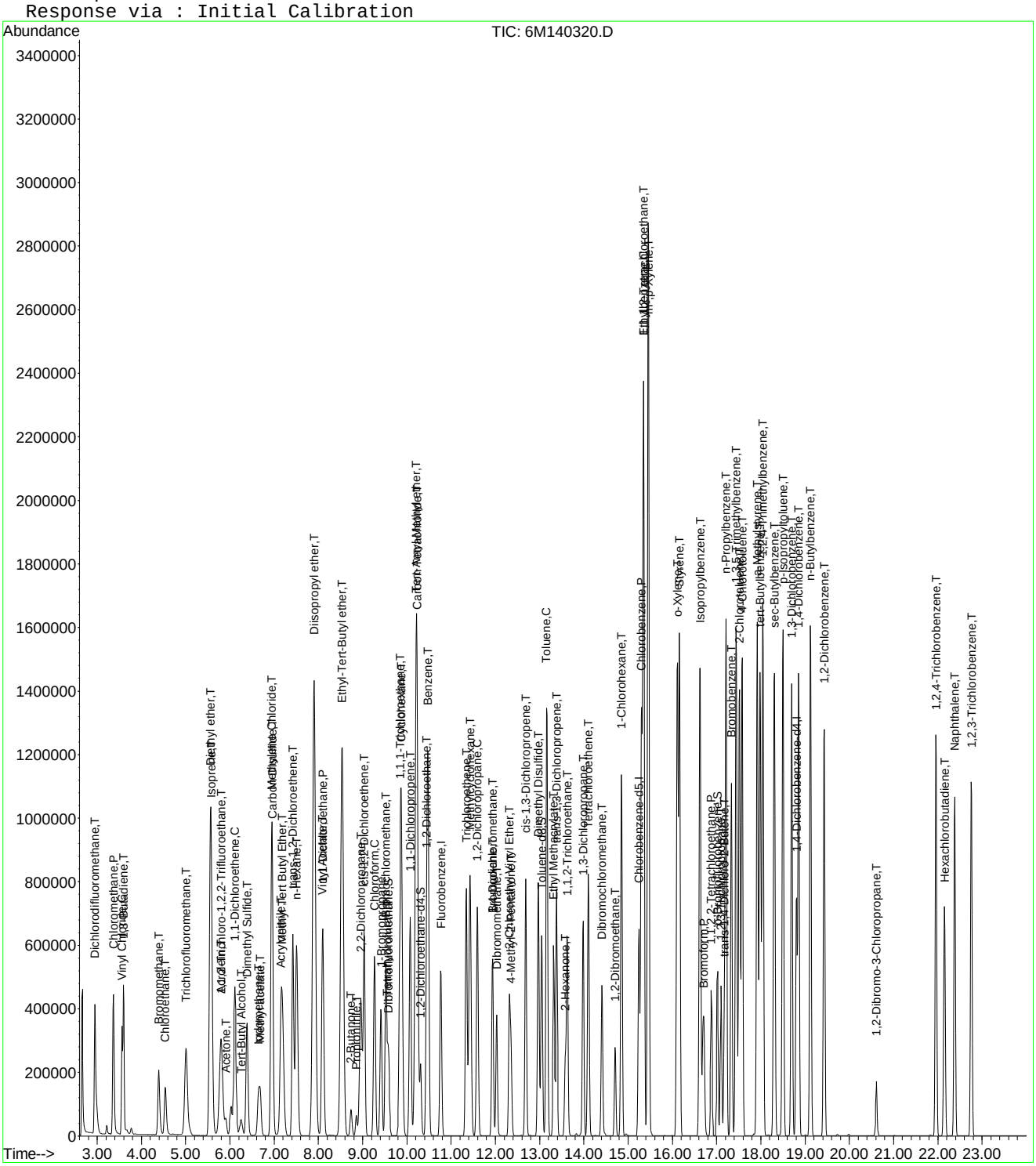

6M140320.D 8260WTR.M Fri Jul 01 14:21:49 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140321.D Vial: 9
Acq On : 30 Jun 2016 15:48 Operator: TMB
Sample : WG574723-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:51 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	646485	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	471613	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	268377	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	322733	49.2052 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 196.84%#		
43) 1,2-Dichloroethane-d4	10.31	65	408267	49.3082 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 197.24%#		
58) Toluene-d8	13.04	98	1099687	47.3521 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 189.40%#		
80) p-Bromofluorobenzene	17.02	95	500608	47.6287 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 190.52%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	1195098	110.5865 ug/L	100
3) Chloromethane	3.37	50	1126306	93.3487 ug/L	100
4) Vinyl Chloride	3.56	62	690730	104.2475 ug/L	100
5) 1,3-Butadiene	3.59	54	397047	106.9364 ug/L	97
6) Bromomethane	4.38	94	423232	96.1231 ug/L	100
7) Chloroethane	4.53	64	421078	100.5763 ug/L	96
8) Trichlorofluoromethane	5.00	101	1039911	102.9045 ug/L	99
9) Diethyl ether	5.56	59	1210825	203.0707 ug/L	96
10) Isoprene	5.57	67	926995	102.7810 ug/L	96
11) Acrolein	5.79	56	100610	101.4435 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	644973	102.5798 ug/L	97
13) Acetone	5.90	43	202374	97.7080 ug/L	98
14) 1,1-Dichloroethene	6.11	61	1233915	101.1469 ug/L	94
15) Tert-Butyl Alcohol	6.26	59	264298	417.3014 ug/L	98
16) Dimethyl Sulfide	6.39	62	533770	100.3234 ug/L	95
17) Iodomethane	6.65	142	485581	108.8245 ug/L	92
18) Methyl acetate	6.69	43	562111	100.2930 ug/L	98
19) Methylene Chloride	6.94	84	680086	97.2151 ug/L	90
20) Carbon Disulfide	6.96	76	2214357	99.0589 ug/L	100
21) Acrylonitrile	7.15	53	269273	104.7069 ug/L	97
22) Methyl Tert Butyl Ether	7.18	73	1885141	101.6619 ug/L	99
23) trans-1,2-Dichloroethene	7.42	96	659412	100.9269 ug/L	89
24) n-Hexane	7.51	57	1100352	99.2333 ug/L	97
25) Diisopropyl ether	7.90	45	5806079	194.5388 ug/L	99
26) Vinyl Acetate	8.09	43	1275603	102.3848 ug/L	98
27) 1,1-Dichloroethane	8.10	63	1407131	100.0311 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	4736533	197.2691 ug/L	99
29) 2-Butanone	8.73	43	329619	103.9617 ug/L	96
30) Propionitrile	8.85	54	180672	209.9768 ug/L	99
31) 2,2-Dichloropropane	8.96	77	1063724	100.2315 ug/L	99
32) cis-1,2-Dichloroethene	9.03	96	723748	101.1973 ug/L	73
33) Chloroform	9.26	83	1245839	98.8604 ug/L	99
34) 1-Bromopropane	9.42	122	114449	100.7473 ug/L	100
35) Bromochloromethane	9.52	130	399705	104.0018 ug/L	100
36) Tetrahydrofuran	9.56	42	431461	195.1016 ug/L	95
38) 1,1,1-Trichloroethane	9.85	97	1132312	103.2053 ug/L	98
39) Cyclohexane	9.87	56	1422141	99.6310 ug/L	96
40) 1,1-Dichloropropene	10.08	75	970489	101.5559 ug/L	98
41) Tert-Amyl-Methyl ether	10.22	73	3648605	200.1197 ug/L	98
42) Carbon Tetrachloride	10.23	117	1008047	111.8968 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140321.D 8260WTR.M Fri Jul 01 14:21:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140321.D Vial: 9
Acq On : 30 Jun 2016 15:48 Operator: TMB
Sample : WG574723-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:51 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	1026377	101.5814 ug/L	99
46)	Benzene	10.48	78	2663898	98.7698 ug/L	96
47)	Trichloroethene	11.35	130	659415	99.0807 ug/L	89
48)	Methylcyclohexane	11.43	83	1057163	101.1788 ug/L	95
49)	1,2-Dichloropropane	11.59	63	787420	101.3798 ug/L	97
50)	1,4-Dioxane	11.94	88	22910	435.7239 ug/L	83
51)	Bromodichloromethane	11.94	83	998026	106.4921 ug/L	100
52)	Dibromomethane	12.03	93	402229	107.0352 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.32	63	414426	106.4211 ug/L	99
54)	4-Methyl-2-Pentanone	12.35	58	253505	105.7748 ug/L	99
55)	cis-1,3-Dichloropropene	12.68	75	1145435	105.2719 ug/L	99
56)	Dimethyl Disulfide	12.97	79	637376	105.2297 ug/L	98
59)	Toluene	13.16	91	2716275	96.6387 ug/L	99
60)	Ethyl Methacrylate	13.32	69	835175	104.4378 ug/L	95
62)	trans-1,3-Dichloropropene	13.39	75	1039244	103.9807 ug/L	96
63)	1,1,2-Trichloroethane	13.63	97	530894	102.0629 ug/L	98
64)	2-Hexanone	13.58	43	511940	103.6564 ug/L	98
65)	1,3-Dichloropropane	13.99	76	975019	99.4570 ug/L	94
66)	Tetrachloroethene	14.10	166	663843	99.1087 ug/L	93
67)	Dibromochloromethane	14.41	129	698275	110.5657 ug/L	100
68)	1,2-Dibromoethane	14.70	107	530245	105.6082 ug/L	100
69)	1-Chlorohexane	14.86	91	934249	99.8757 ug/L	91
70)	Chlorobenzene	15.30	112	1757753	97.5073 ug/L	90
71)	1,1,1,2-Tetrachloroethane	15.35	131	672232	104.8024 ug/L	97
72)	Ethylbenzene	15.35	106	960737	101.8195 ug/L	96
73)	m-,p-Xylene	15.46	106	2273350	199.3511 ug/L	96
74)	o-Xylene	16.11	106	1166695	102.5802 ug/L	94
75)	Styrene	16.15	104	2021937	105.6696 ug/L	91
76)	Bromoform	16.72	173	442224	112.9184 ug/L	98
77)	Isopropylbenzene	16.62	105	3022582	101.8554 ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.88	83	699051	107.3240 ug/L	100
81)	1,2,3-Trichloropropane	17.10	110	204344	105.8180 ug/L	81
82)	trans-1,4-Dichloro-2-Buten	17.18	53	271253	110.1481 ug/L	96
83)	n-Propylbenzene	17.22	91	3780776	98.0459 ug/L	98
84)	Bromobenzene	17.34	156	791175	98.1936 ug/L	89
85)	1,3,5-Trimethylbenzene	17.44	105	2708977	100.2286 ug/L	97
86)	2-Chlorotoluene	17.52	91	2557008	98.0494 ug/L	97
87)	4-Chlorotoluene	17.58	91	2386130	95.9746 ug/L	97
88)	a-Methylstyrene	17.92	118	1396050	102.6951 ug/L	95
89)	tert-Butylbenzene	17.99	134	544776	100.3227 ug/L	72
90)	1,2,4-Trimethylbenzene	18.04	105	2808112	101.2481 ug/L	99
91)	sec-Butylbenzene	18.31	105	3235910	100.0157 ug/L	98
92)	p-Isopropyltoluene	18.50	119	2792332	101.2720 ug/L	98
93)	1,3-Dichlorobenzene	18.70	146	1561532	98.4661 ug/L	94
94)	1,4-Dichlorobenzene	18.86	146	1567098	97.7396 ug/L	94
95)	n-Butylbenzene	19.12	91	2754111	101.8553 ug/L	97
96)	1,2-Dichlorobenzene	19.43	146	1483394	99.6302 ug/L	93
97)	1,2-Dibromo-3-Chloropropan	20.62	75	143837	112.7555 ug/L	86
98)	1,2,4-Trichlorobenzene	21.97	180	1060844	100.7975 ug/L	98
99)	Hexachlorobutadiene	22.15	225	438054	100.1094 ug/L	100
100)	Naphthalene	22.38	128	2317282	107.7376 ug/L	99
101)	1,2,3-Trichlorobenzene	22.76	180	982434	100.8141 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M140321.D 8260WTR.M Fri Jul 01 14:21:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140321.D Vial: 9
Acq On : 30 Jun 2016 15:48 Operator: TMB
Sample : WG574723-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:21 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

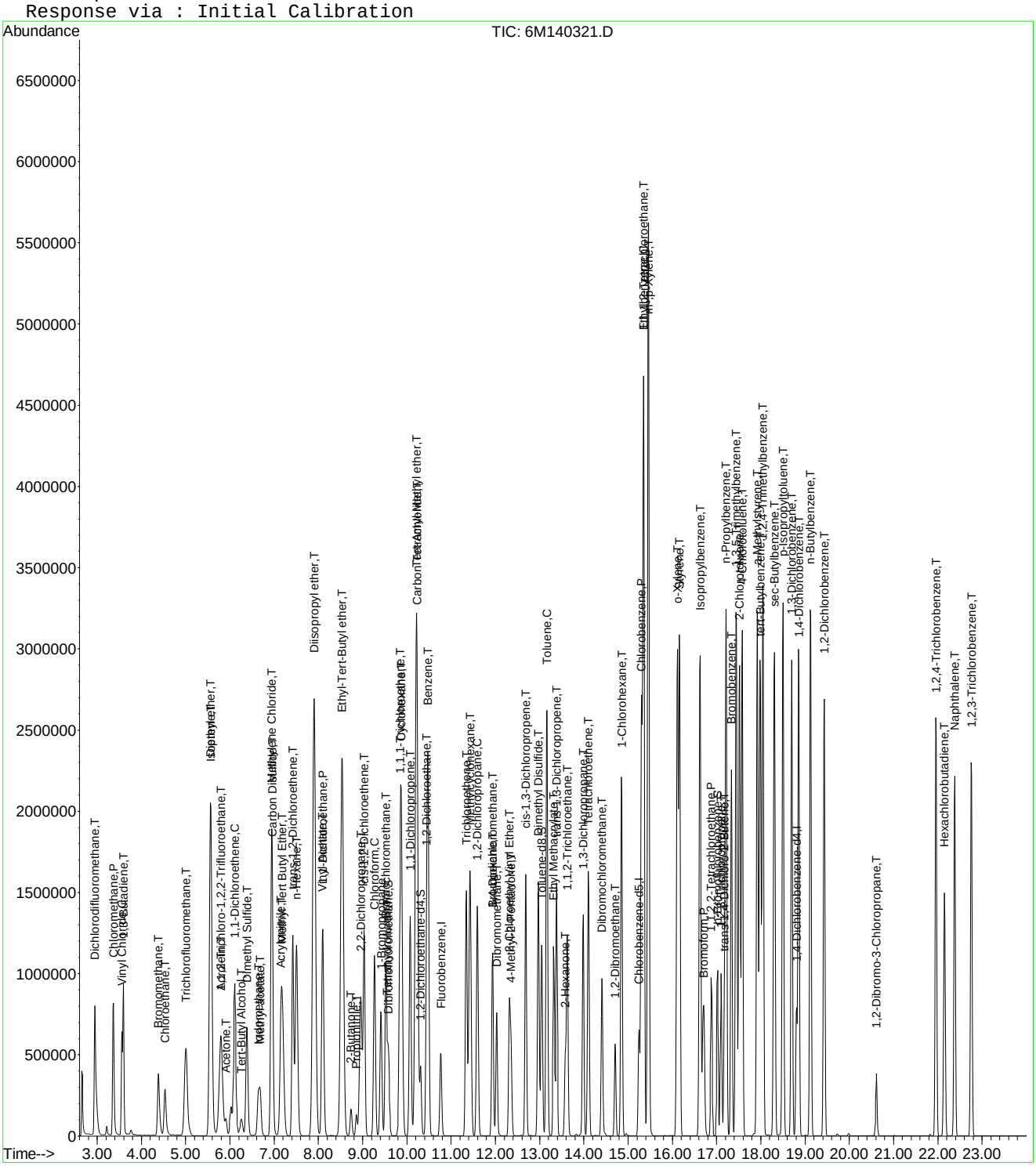

6M140321.D 8260WTR.M Fri Jul 01 14:21:57 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140322.D Vial: 10
Acq On : 30 Jun 2016 16:21 Operator: TMB
Sample : WG574723-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:59 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	674210	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	486785	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	271900	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	671839	98.2191 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 392.88%#		
43) 1,2-Dichloroethane-d4	10.31	65	835948	96.8094 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 387.24%#		
58) Toluene-d8	13.04	98	2262915	94.4033 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 377.60%#		
80) p-Bromofluorobenzene	17.02	95	1044558	98.0934 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 392.36%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	2392226	212.2580 ug/L	100
3) Chloromethane	3.37	50	2218722	176.3266 ug/L	100
4) Vinyl Chloride	3.56	62	1383750	200.2527 ug/L	99
5) 1,3-Butadiene	3.59	54	790286	206.9928 ug/L	97
6) Bromomethane	4.38	94	916596	199.6138 ug/L	100
7) Chloroethane	4.53	64	905382	207.3615 ug/L	96
8) Trichlorofluoromethane	5.00	101	2065931	196.0277 ug/L	99
10) Isoprene	5.57	67	1944884	206.7723 ug/L	96
11) Acrolein	5.78	56	1541	1.4899 ug/L	69
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	1336247	203.7841 ug/L	97
13) Acetone	5.90	43	421648	195.2041 ug/L	99
14) 1,1-Dichloroethene	6.11	61	2551648	200.5632 ug/L	94
15) Tert-Butyl Alcohol	6.28	59	3198	4.8417 ug/L #	57
16) Dimethyl Sulfide	6.38	62	1109294	199.9208 ug/L	95
17) Iodomethane	6.65	142	972879	208.2422 ug/L	92
18) Methyl acetate	6.69	43	1135963	194.3462 ug/L	99
19) Methylene Chloride	6.94	84	1372201	188.0837 ug/L	89
20) Carbon Disulfide	6.96	76	4495945	192.8546 ug/L	99
21) Acrylonitrile	7.18	53	44700	16.6668 ug/L #	33
22) Methyl Tert Butyl Ether	7.18	73	3851369	199.1557 ug/L	99
23) trans-1,2-Dichloroethene	7.42	96	1353415	198.6299 ug/L	88
24) n-Hexane	7.51	57	2284673	197.5664 ug/L	97
26) Vinyl Acetate	8.09	43	2820141	217.0472 ug/L	98
27) 1,1-Dichloroethane	8.10	63	2873257	195.8566 ug/L	99
28) Ethyl-Tert-Butyl ether	8.56	59	6764	0.2701 ug/L #	47
29) 2-Butanone	8.73	43	664492	200.9620 ug/L	97
30) Propionitrile	8.74	54	1576	1.7563 ug/L #	81
31) 2,2-Dichloropropane	8.96	77	2196313	198.4415 ug/L	98
32) cis-1,2-Dichloroethene	9.03	96	1477699	198.1211 ug/L	88
33) Chloroform	9.26	83	2557143	194.5712 ug/L	99
34) 1-Bromopropane	9.41	122	241562	203.4107 ug/L	99
35) Bromochloromethane	9.52	130	819022	204.3432 ug/L	99
36) Tetrahydrofuran	9.56	42	4224	1.8315 ug/L #	75
38) 1,1,1-Trichloroethane	9.85	97	2330454	203.6760 ug/L	98
39) Cyclohexane	9.87	56	2930205	196.8399 ug/L	96
40) 1,1-Dichloropropene	10.08	75	2009314	201.6162 ug/L	98
42) Carbon Tetrachloride	10.23	117	2106944	224.2607 ug/L	99
45) 1,2-Dichloroethane	10.45	62	2101049	199.3915 ug/L	99
46) Benzene	10.48	78	5301493	188.4813 ug/L	94
47) Trichloroethene	11.34	130	1327069	191.1997 ug/L	87

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140322.D Vial: 10
Acq On : 30 Jun 2016 16:21 Operator: TMB
Sample : WG574723-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:59 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
48)	Methylcyclohexane	11.43	83	2178870	199.9595 ug/L	95
49)	1,2-Dichloropropane	11.59	63	1619228	199.9016 ug/L	98
50)	1,4-Dioxane	11.93	88	2818	51.3914 ug/L #	14
51)	Bromodichloromethane	11.94	83	2039115	208.6317 ug/L	99
52)	Dibromomethane	12.03	93	816650	208.3783 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.31	63	836577	205.9918 ug/L	100
54)	4-Methyl-2-Pentanone	12.35	58	515506	206.2494 ug/L	98
55)	cis-1,3-Dichloropropene	12.68	75	2333363	205.6305 ug/L	99
56)	Dimethyl Disulfide	12.97	79	1322167	209.3111 ug/L	97
59)	Toluene	13.16	91	5329560	183.7033 ug/L	98
60)	Ethyl Methacrylate	13.32	69	1710374	207.2144 ug/L	96
62)	trans-1,3-Dichloropropene	13.39	75	2115027	205.0216 ug/L	96
63)	1,1,2-Trichloroethane	13.63	97	1065320	198.4215 ug/L	98
64)	2-Hexanone	13.58	43	1038924	203.8025 ug/L	98
65)	1,3-Dichloropropane	13.99	76	1956962	193.3985 ug/L	94
66)	Tetrachloroethene	14.11	166	1338320	193.5775 ug/L	92
67)	Dibromochloromethane	14.41	129	1402954	215.2216 ug/L	99
68)	1,2-Dibromoethane	14.70	107	1067268	205.9412 ug/L	100
69)	1-Chlorohexane	14.86	91	1899241	196.7097 ug/L	91
70)	Chlorobenzene	15.31	112	3420251	183.8172 ug/L	87
71)	1,1,1,2-Tetrachloroethane	15.35	131	1330581	200.9750 ug/L	97
72)	Ethylbenzene	15.35	106	1873240	192.3394 ug/L	99
73)	m-,p-Xylene	15.46	106	4310843	366.2377 ug/L	95
74)	o-Xylene	16.11	106	2276447	193.9154 ug/L	96
75)	Styrene	16.16	104	3942983	199.6439 ug/L	88
76)	Bromoform	16.72	173	900340	222.7294 ug/L	97
77)	Isopropylbenzene	16.62	105	5752842	187.8178 ug/L	100
79)	1,1,2,2-Tetrachloroethane	16.88	83	1421698	215.4425 ug/L	100
81)	1,2,3-Trichloropropane	17.10	110	415115	212.1790 ug/L	84
82)	trans-1,4-Dichloro-2-Buten	17.19	53	555836	222.7847 ug/L	92
83)	n-Propylbenzene	17.22	91	7011461	179.4705 ug/L	99
84)	Bromobenzene	17.34	156	1573131	192.7133 ug/L	88
85)	1,3,5-Trimethylbenzene	17.45	105	5208297	190.2034 ug/L	98
86)	2-Chlorotoluene	17.52	91	4893039	185.1943 ug/L	96
87)	4-Chlorotoluene	17.58	91	4739568	188.1643 ug/L	97
88)	a-Methylstyrene	17.92	118	2750894	199.7372 ug/L	94
89)	tert-Butylbenzene	17.99	134	1070344	194.5543 ug/L	74
90)	1,2,4-Trimethylbenzene	18.05	105	5338361	189.9838 ug/L	98
91)	sec-Butylbenzene	18.31	105	6128752	186.9735 ug/L	99
92)	p-Isopropyltoluene	18.50	119	5274399	188.8129 ug/L	100
93)	1,3-Dichlorobenzene	18.70	146	3017581	187.8153 ug/L	92
94)	1,4-Dichlorobenzene	18.86	146	3009321	185.2589 ug/L	92
95)	n-Butylbenzene	19.13	91	5193206	189.5718 ug/L	98
96)	1,2-Dichlorobenzene	19.43	146	2821487	187.0461 ug/L	91
97)	1,2-Dibromo-3-Chloropropan	20.62	75	291664	225.6764 ug/L	84
98)	1,2,4-Trichlorobenzene	21.96	180	2052522	192.4961 ug/L	98
99)	Hexachlorobutadiene	22.16	225	860118	194.0178 ug/L	100
100)	Naphthalene	22.38	128	4383238	201.1498 ug/L	99
101)	1,2,3-Trichlorobenzene	22.76	180	1893203	191.7570 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M140322.D 8260WTR.M Fri Jul 01 14:22:03 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140322.D Vial: 10
Acq On : 30 Jun 2016 16:21 Operator: TMB
Sample : WG574723-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:22 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

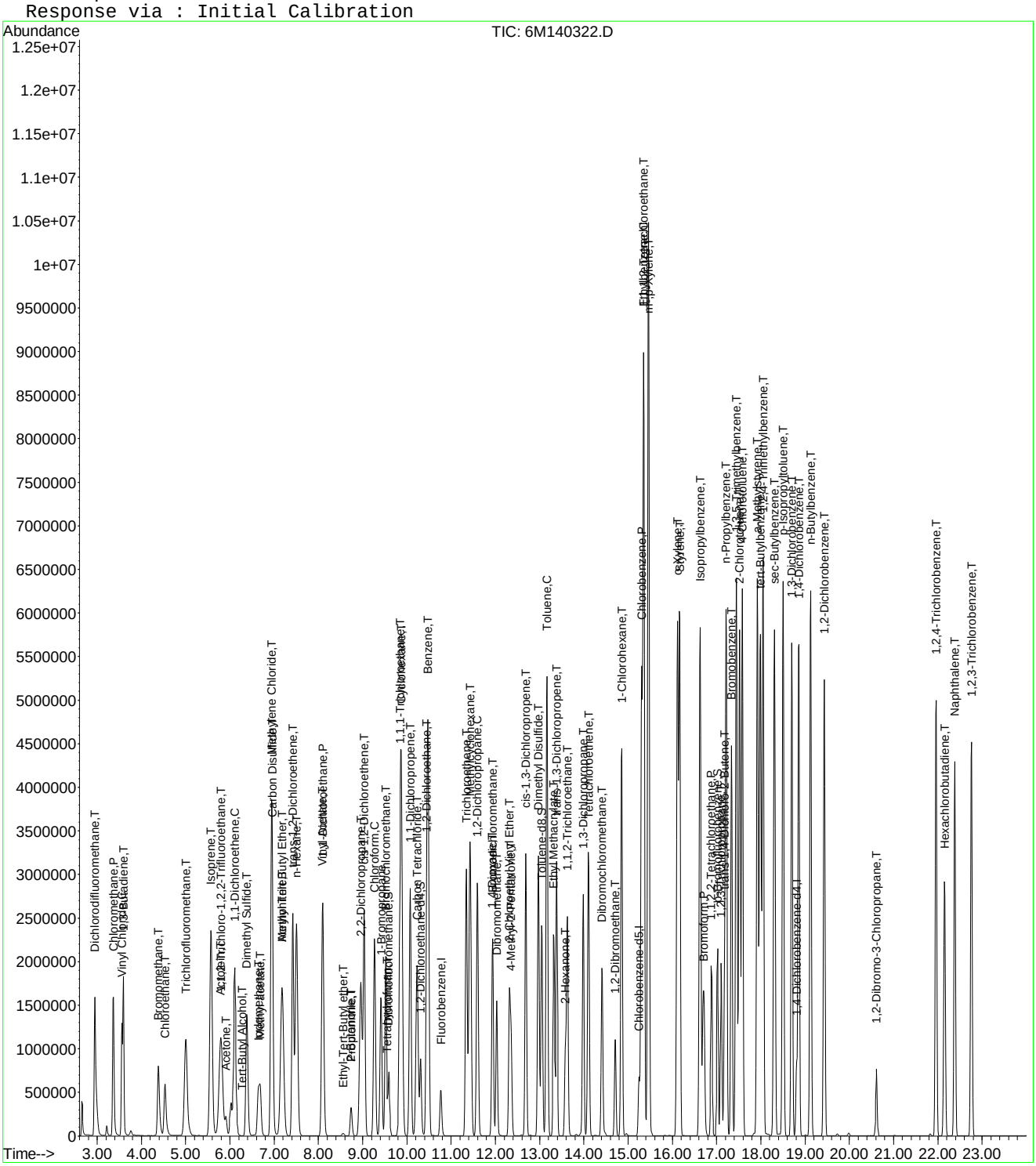

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140323.D Vial: 11
Acq On : 30 Jun 2016 16:53 Operator: TMB
Sample : WG574723-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:22:07 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	768752	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	513418	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	277427	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	1128188	144.6508 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 578.60%#		
43) 1,2-Dichloroethane-d4	10.31	65	1400537	142.2465 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 569.00%#		
58) Toluene-d8	13.04	98	3666921	145.0395 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 580.16%#		
80) p-Bromofluorobenzene	17.03	95	1580313	145.4490 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 581.80%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.94	85	3603130	280.3824 ug/L	99
3) Chloromethane	3.36	50	3514669	244.9674 ug/L	99
4) Vinyl Chloride	3.56	62	2074164	263.2526 ug/L	98
5) 1,3-Butadiene	3.59	54	1213545	279.8694 ug/L	97
6) Bromomethane	4.37	94	1474577	281.6365 ug/L	100
7) Chloroethane	4.53	64	1490836	299.4574 ug/L	96
8) Trichlorofluoromethane	5.00	101	3451196	287.1972 ug/L	99
9) Diethyl ether	5.55	59	1755505	247.5940 ug/L	97
10) Isoprene	5.57	67	2862617	266.9137 ug/L	94
11) Acrolein	5.79	56	179556	152.2492 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	5.78	101	2228863	298.1095 ug/L	97
13) Acetone	5.91	43	694471	281.9693 ug/L	98
14) 1,1-Dichloroethene	6.10	61	4231203	291.6778 ug/L	94
15) Tert-Butyl Alcohol	6.29	59	515078	683.9134 ug/L	92
16) Dimethyl Sulfide	6.39	62	1850710	292.5220 ug/L	96
17) Iodomethane	6.64	142	1511597	283.4374 ug/L	92
18) Methyl acetate	6.69	43	1992359	298.9430 ug/L	99
19) Methylene Chloride	6.94	84	2215285	266.3004 ug/L	89
20) Carbon Disulfide	6.96	76	7083320	266.4739 ug/L	98
21) Acrylonitrile	7.15	53	497546	162.7001 ug/L	96
22) Methyl Tert Butyl Ether	7.18	73	6401984	290.3361 ug/L	98
23) trans-1,2-Dichloroethene	7.42	96	2224367	286.3050 ug/L	87
24) n-Hexane	7.50	57	3799046	288.1194 ug/L	96
25) Diisopropyl ether	7.90	45	9759184	274.9849 ug/L	99
26) Vinyl Acetate	8.09	43	4448993	300.2991 ug/L	99
27) 1,1-Dichloroethane	8.10	63	4699381	280.9398 ug/L	99
28) Ethyl-Tert-Butyl ether	8.53	59	8098177	283.6338 ug/L	99
29) 2-Butanone	8.73	43	1086721	288.2380 ug/L	98
30) Propionitrile	8.86	54	298217	291.4641 ug/L	98
31) 2,2-Dichloropropane	8.95	77	3622985	287.0872 ug/L	98
32) cis-1,2-Dichloroethene	9.03	96	2417494	284.2622 ug/L	71
33) Chloroform	9.26	83	4185224	279.2874 ug/L	99
34) 1-Bromopropane	9.41	122	399109	294.5307 ug/L	100
35) Bromochloromethane	9.52	130	1339573	293.1163 ug/L	99
36) Tetrahydrofuran	9.56	42	723977	275.3063 ug/L	96
38) 1,1,1-Trichloroethane	9.85	97	3817009	292.5710 ug/L	97
39) Cyclohexane	9.88	56	4836948	284.9676 ug/L	96
40) 1,1-Dichloropropene	10.07	75	3335607	293.5361 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	6187488	285.3971 ug/L	98
42) Carbon Tetrachloride	10.23	117	3426898	319.8971 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140323.D 8260WTR.M Fri Jul 01 14:22:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140323.D Vial: 11
Acq On : 30 Jun 2016 16:53 Operator: TMB
Sample : WG574723-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:22:07 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	3436626	286.0301 ug/L	99
46)	Benzene	10.48	78	8206846	255.8911 ug/L	92
47)	Trichloroethene	11.34	130	2157856	272.6623 ug/L	85
48)	Methylcyclohexane	11.43	83	3572510	287.5366 ug/L	94
49)	1,2-Dichloropropane	11.59	63	2654885	287.4504 ug/L	98
50)	1,4-Dioxane	11.94	88	37500	599.7769 ug/L	90
51)	Bromodichloromethane	11.93	83	3309122	296.9343 ug/L	99
52)	Dibromomethane	12.02	93	1336996	299.1959 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.31	63	1349189	291.3572 ug/L	100
54)	4-Methyl-2-Pentanone	12.35	58	816641	286.5491 ug/L	98
55)	cis-1,3-Dichloropropene	12.69	75	3726475	288.0131 ug/L	98
56)	Dimethyl Disulfide	12.97	79	2153813	299.0355 ug/L	97
59)	Toluene	13.16	91	7972275	260.5398 ug/L	94
60)	Ethyl Methacrylate	13.32	69	2708040	311.0642 ug/L	96
62)	trans-1,3-Dichloropropene	13.39	75	3319850	305.1184 ug/L	96
63)	1,1,2-Trichloroethane	13.62	97	1658699	292.9155 ug/L	98
64)	2-Hexanone	13.58	43	1609874	299.4219 ug/L	99
65)	1,3-Dichloropropane	13.99	76	3035134	284.3902 ug/L	93
66)	Tetrachloroethene	14.10	166	2112313	289.6805 ug/L	90
67)	Dibromochloromethane	14.41	129	2168054	315.3397 ug/L	99
68)	1,2-Dibromoethane	14.71	107	1650327	301.9297 ug/L	99
69)	1-Chlorohexane	14.85	91	2920904	286.8330 ug/L	90
70)	Chlorobenzene	15.30	112	5078928	258.8012 ug/L	85
71)	1,1,1,2-Tetrachloroethane	15.35	131	1989897	284.9688 ug/L	97
72)	Ethylbenzene	15.35	106	2784005	271.0260 ug/L	89
73)	m-,p-Xylene	15.46	106	6169523	496.9567 ug/L	82
74)	o-Xylene	16.12	106	3353804	270.8685 ug/L	99
75)	Styrene	16.16	104	5692194	273.2606 ug/L	85
76)	Bromoform	16.71	173	1364903	320.1393 ug/L	96
77)	Isopropylbenzene	16.63	105	8032217	248.6314 ug/L	97
79)	1,1,2,2-Tetrachloroethane	16.88	83	2127089	315.9149 ug/L	100
81)	1,2,3-Trichloropropane	17.11	110	617415	309.2940 ug/L	88
82)	trans-1,4-Dichloro-2-Buten	17.18	53	846450	332.5067 ug/L	93
83)	n-Propylbenzene	17.22	91	9328034	234.0103 ug/L	95
84)	Bromobenzene	17.34	156	2312758	277.6754 ug/L	88
85)	1,3,5-Trimethylbenzene	17.45	105	7210752	258.0855 ug/L	99
86)	2-Chlorotoluene	17.53	91	7014220	260.1890 ug/L	97
87)	4-Chlorotoluene	17.59	91	6424073	249.9594 ug/L	98
88)	a-Methylstyrene	17.92	118	3960625	281.8443 ug/L	93
89)	tert-Butylbenzene	18.00	134	1565290	278.8513 ug/L	79
90)	1,2,4-Trimethylbenzene	18.06	105	7348747	256.3200 ug/L	97
91)	sec-Butylbenzene	18.31	105	8392860	250.9449 ug/L	98
92)	p-Isopropyltoluene	18.51	119	7284847	255.5874 ug/L	97
93)	1,3-Dichlorobenzene	18.70	146	4306096	262.6735 ug/L	90
94)	1,4-Dichlorobenzene	18.85	146	4284929	258.5323 ug/L	90
95)	n-Butylbenzene	19.12	91	7177388	256.7823 ug/L	99
96)	1,2-Dichlorobenzene	19.44	146	4035185	262.1770 ug/L	90
97)	1,2-Dibromo-3-Chloropropan	20.61	75	433780	328.9526 ug/L	84
98)	1,2,4-Trichlorobenzene	21.97	180	2937231	269.9807 ug/L	97
99)	Hexachlorobutadiene	22.15	225	1256182	277.7132 ug/L	99
100)	Naphthalene	22.39	128	6036194	271.4865 ug/L	97
101)	1,2,3-Trichlorobenzene	22.76	180	2707781	268.7993 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M140323.D 8260WTR.M Fri Jul 01 14:22:11 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140323.D Vial: 11
Acq On : 30 Jun 2016 16:53 Operator: TMB
Sample : WG574723-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:22 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

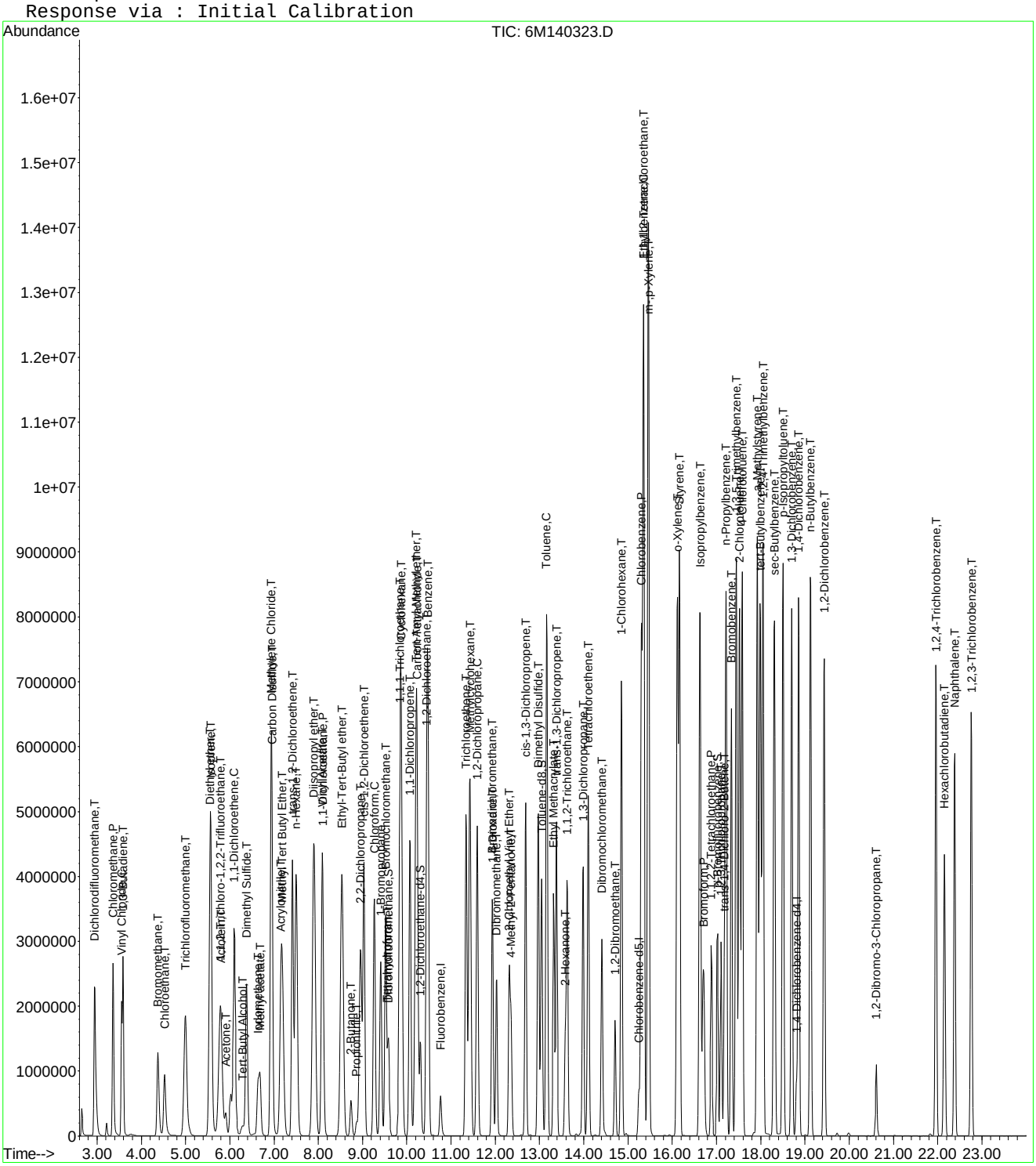

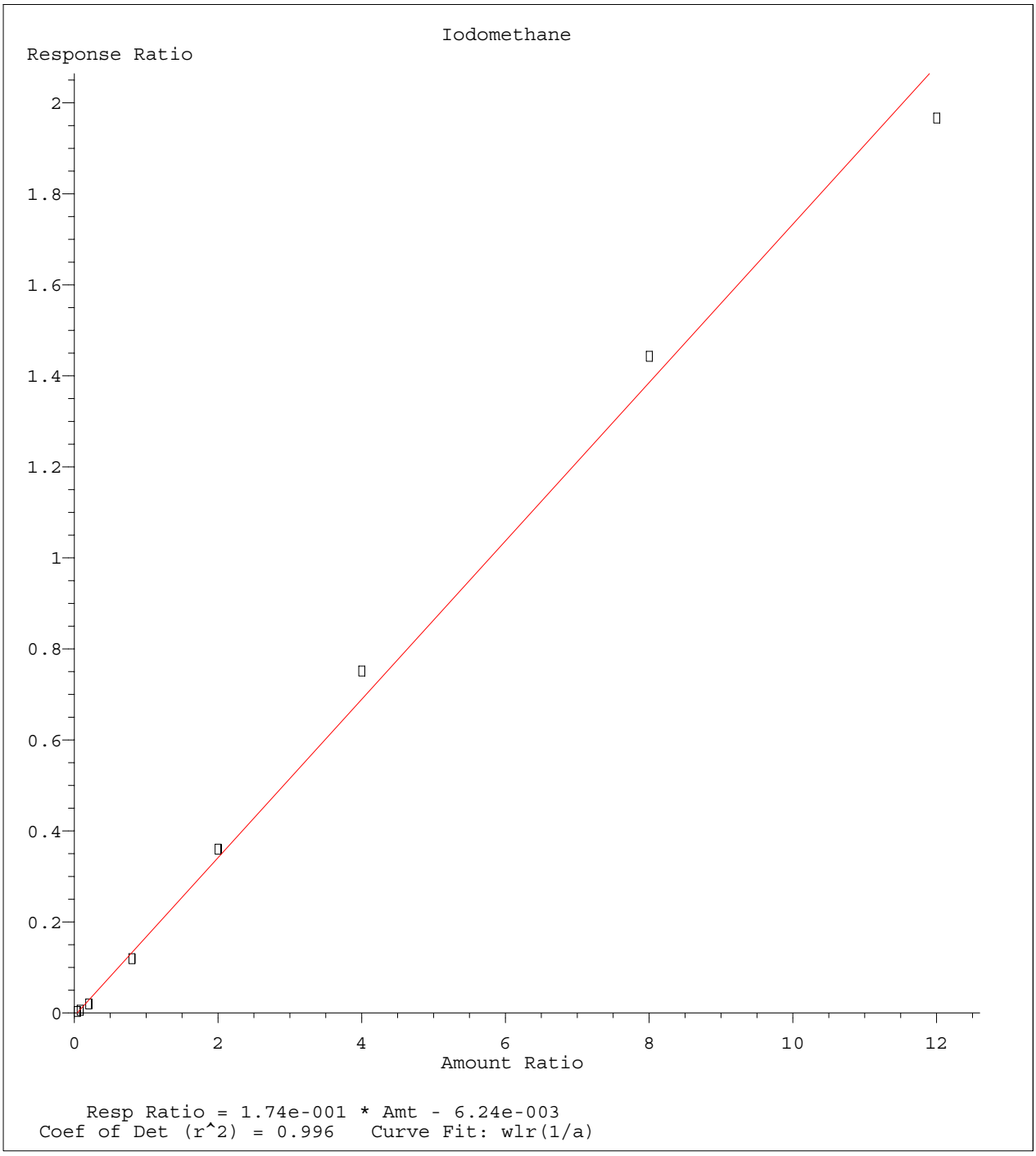

Method Name: K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M
Calibration Table Last Updated: Fri Jul 01 09:28:30 2016

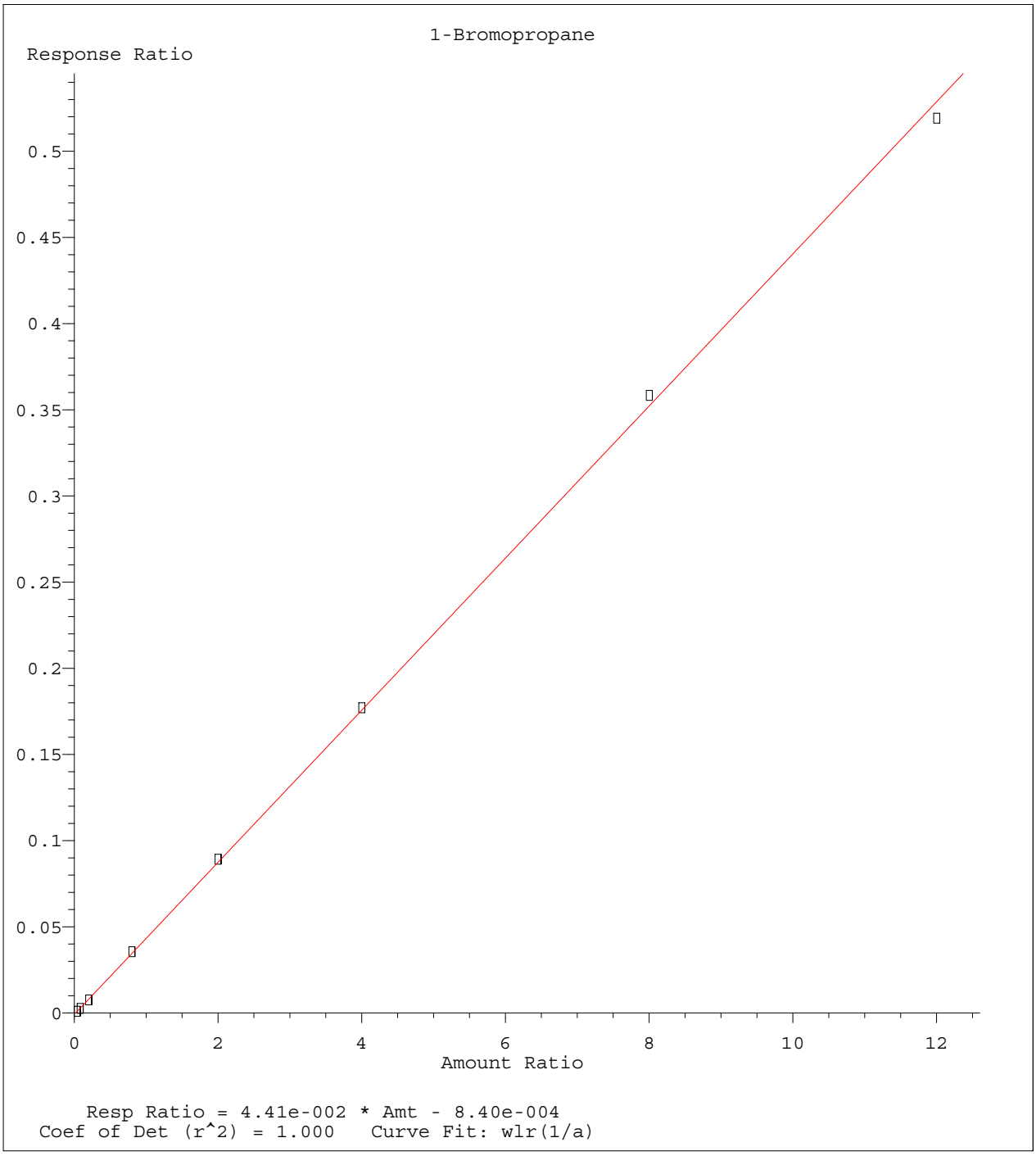

Method Name: K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M
Calibration Table Last Updated: Fri Jul 01 09:28:30 2016

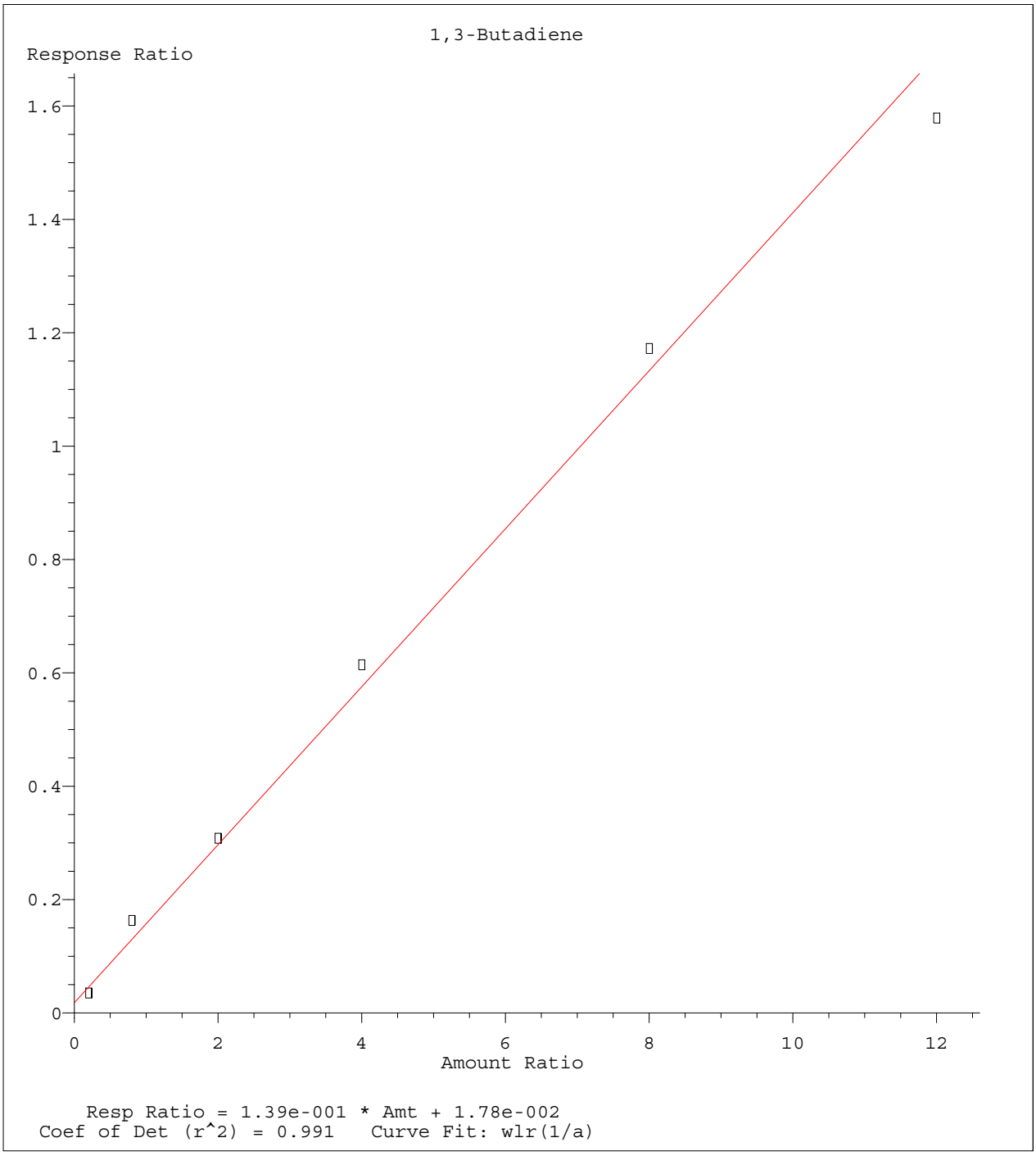

Method Name: K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M
Calibration Table Last Updated: Fri Jul 01 09:28:30 2016

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140326.D Vial: 14
Acq On : 30 Jun 2016 18:31 Operator: TMB
Sample : WG574723-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:22:31 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	713701	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	500221	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	261664	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	181470	25.0619 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.24%		
43) 1,2-Dichloroethane-d4	10.31	65	220889	24.1652 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.68%		
58) Toluene-d8	13.04	98	608395	24.6990 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.80%		
80) p-Bromofluorobenzene	17.02	95	256905	25.0695 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.28%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	485701	40.7108 ug/L	100
3) Chloromethane	3.37	50	521316	39.1377 ug/L	100
4) Vinyl Chloride	3.55	62	337528	46.1434 ug/L	100
5) 1,3-Butadiene	3.60	54	155736	35.9374 ug/L	97
6) Bromomethane	4.37	94	235295	48.4066 ug/L	100
7) Chloroethane	4.52	64	239156	51.7436 ug/L	97
8) Trichlorofluoromethane	4.99	101	525851	47.1350 ug/L	100
9) Diethyl ether	5.56	59	680169	103.3296 ug/L	97
10) Isoprene	5.57	67	555397	55.7803 ug/L	96
11) Acrolein	5.79	56	131596	120.1899 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	5.78	101	356202	51.3167 ug/L	97
13) Acetone	5.91	43	107340	46.9439 ug/L	98
14) 1,1-Dichloroethene	6.11	61	594692	44.1572 ug/L	95
15) Tert-Butyl Alcohol	6.28	59	140341	200.7163 ug/L	98
16) Dimethyl Sulfide	6.38	62	515949	87.8409 ug/L	96
17) Iodomethane	6.64	142	294876	60.2646 ug/L	92
18) Methyl acetate	6.69	43	338698	54.7398 ug/L	99
19) Methylene Chloride	6.93	84	359823	46.5909 ug/L	90
20) Carbon Disulfide	6.95	76	1077126	43.6470 ug/L	100
21) Acrylonitrile	7.15	53	146978	51.7699 ug/L	100
22) Methyl Tert Butyl Ether	7.18	73	1049922	51.2877 ug/L	100
23) trans-1,2-Dichloroethene	7.41	96	339388	47.0532 ug/L	88
24) n-Hexane	7.51	57	547762	44.7466 ug/L	97
25) Diisopropyl ether	7.90	45	3459050	104.9838 ug/L	98
26) Vinyl Acetate	8.09	43	697771	50.7312 ug/L	98
27) 1,1-Dichloroethane	8.10	63	721539	46.4625 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	2578321	97.2697 ug/L	98
29) 2-Butanone	8.73	43	177594	50.7378 ug/L	96
30) Propionitrile	8.85	54	95623	100.6665 ug/L	96
31) 2,2-Dichloropropane	8.96	77	593953	50.6955 ug/L	99
32) cis-1,2-Dichloroethene	9.03	96	392808	49.7512 ug/L	72
33) Chloroform	9.26	83	665890	47.8636 ug/L	100
34) 1-Bromopropane	9.41	122	83509	66.7495 ug/L	100
35) Bromochloromethane	9.52	130	207412	48.8852 ug/L	100
36) Tetrahydrofuran	9.56	42	224799	92.0780 ug/L	95
38) 1,1,1-Trichloroethane	9.85	97	598191	49.3876 ug/L	99
39) Cyclohexane	9.88	56	748359	47.4902 ug/L	96
40) 1,1-Dichloropropene	10.08	75	507584	48.1132 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	2097011	104.1851 ug/L	98
42) Carbon Tetrachloride	10.23	117	511641	51.4451 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140326.D 8260WTR.M Fri Jul 01 14:22:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140326.D Vial: 14
Acq On : 30 Jun 2016 18:31 Operator: TMB
Sample : WG574723-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:22:31 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	551012	49.3981 ug/L	98
46)	Benzene	10.48	78	1452601	48.7860 ug/L	97
47)	Trichloroethene	11.35	130	359806	48.9712 ug/L	90
48)	Methylcyclohexane	11.43	83	563704	48.8698 ug/L	95
49)	1,2-Dichloropropane	11.59	63	446228	52.0408 ug/L	99
50)	1,4-Dioxane	11.94	88	11529	198.6187 ug/L	84
51)	Bromodichloromethane	11.94	83	530754	51.2992 ug/L	100
52)	Dibromomethane	12.03	93	203238	48.9892 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.32	63	227435	52.9030 ug/L	100
54)	4-Methyl-2-Pentanone	12.35	58	134103	50.6846 ug/L	98
55)	cis-1,3-Dichloropropene	12.68	75	676117	56.2867 ug/L	100
56)	Dimethyl Disulfide	12.97	79	359470	53.7585 ug/L	98
59)	Toluene	13.15	91	1496307	50.1905 ug/L	99
60)	Ethyl Methacrylate	13.32	69	454272	53.5575 ug/L	96
62)	trans-1,3-Dichloropropene	13.39	75	565632	53.3572 ug/L	96
63)	1,1,2-Trichloroethane	13.63	97	287265	52.0675 ug/L	98
64)	2-Hexanone	13.58	43	260461	49.7214 ug/L	97
65)	1,3-Dichloropropane	13.99	76	552828	53.1662 ug/L	94
66)	Tetrachloroethene	14.10	166	346278	48.7411 ug/L	93
67)	Dibromochloromethane	14.41	129	360309	53.7889 ug/L	99
68)	1,2-Dibromoethane	14.71	107	279233	52.4339 ug/L	100
69)	1-Chlorohexane	14.85	91	508330	51.2350 ug/L	92
70)	Chlorobenzene	15.30	112	974362	50.9593 ug/L	92
71)	1,1,1,2-Tetrachloroethane	15.35	131	357715	52.5791 ug/L	98
72)	Ethylbenzene	15.35	106	517345	51.6928 ug/L	93
73)	m-,p-Xylene	15.46	106	1254856	103.7457 ug/L	95
74)	o-Xylene	16.11	106	643998	53.3844 ug/L	94
75)	Styrene	16.16	104	1074202	52.9288 ug/L	92
76)	Bromoform	16.72	173	205149	49.3874 ug/L	98
77)	Isopropylbenzene	16.62	105	1626117	51.6632 ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.88	83	352344	55.4825 ug/L	100
81)	1,2,3-Trichloropropane	17.10	110	103329	54.8809 ug/L	79
82)	trans-1,4-Dichloro-2-Buten	17.18	53	121642	50.6626 ug/L	96
83)	n-Propylbenzene	17.22	91	2019179	53.7062 ug/L	98
84)	Bromobenzene	17.34	156	398353	50.7084 ug/L	89
85)	1,3,5-Trimethylbenzene	17.44	105	1384872	52.5530 ug/L	97
86)	2-Chlorotoluene	17.52	91	1343673	52.8455 ug/L	96
87)	4-Chlorotoluene	17.58	91	1234147	50.9132 ug/L	97
88)	a-Methylstyrene	17.92	118	769488	58.0567 ug/L	95
89)	tert-Butylbenzene	17.98	134	281622	53.1924 ug/L	73
90)	1,2,4-Trimethylbenzene	18.04	105	1394233	51.5596 ug/L	98
91)	sec-Butylbenzene	18.30	105	1658086	52.5630 ug/L	97
92)	p-Isopropyltoluene	18.50	119	1389218	51.6766 ug/L	98
93)	1,3-Dichlorobenzene	18.70	146	793356	51.3104 ug/L	95
94)	1,4-Dichlorobenzene	18.85	146	809665	51.7942 ug/L	94
95)	n-Butylbenzene	19.12	91	1353617	51.3451 ug/L	96
96)	1,2-Dichlorobenzene	19.43	146	761556	52.4611 ug/L	94
97)	1,2-Dibromo-3-Chloropropan	20.62	75	69221	55.6553 ug/L	83
98)	1,2,4-Trichlorobenzene	21.97	180	527905	51.4464 ug/L	99
99)	Hexachlorobutadiene	22.15	225	224309	52.5770 ug/L	99
100)	Naphthalene	22.38	128	1033625	49.2893 ug/L	100
101)	1,2,3-Trichlorobenzene	22.76	180	485666	51.1160 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140326.D Vial: 14
Acq On : 30 Jun 2016 18:31 Operator: TMB
Sample : WG574723-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:22 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

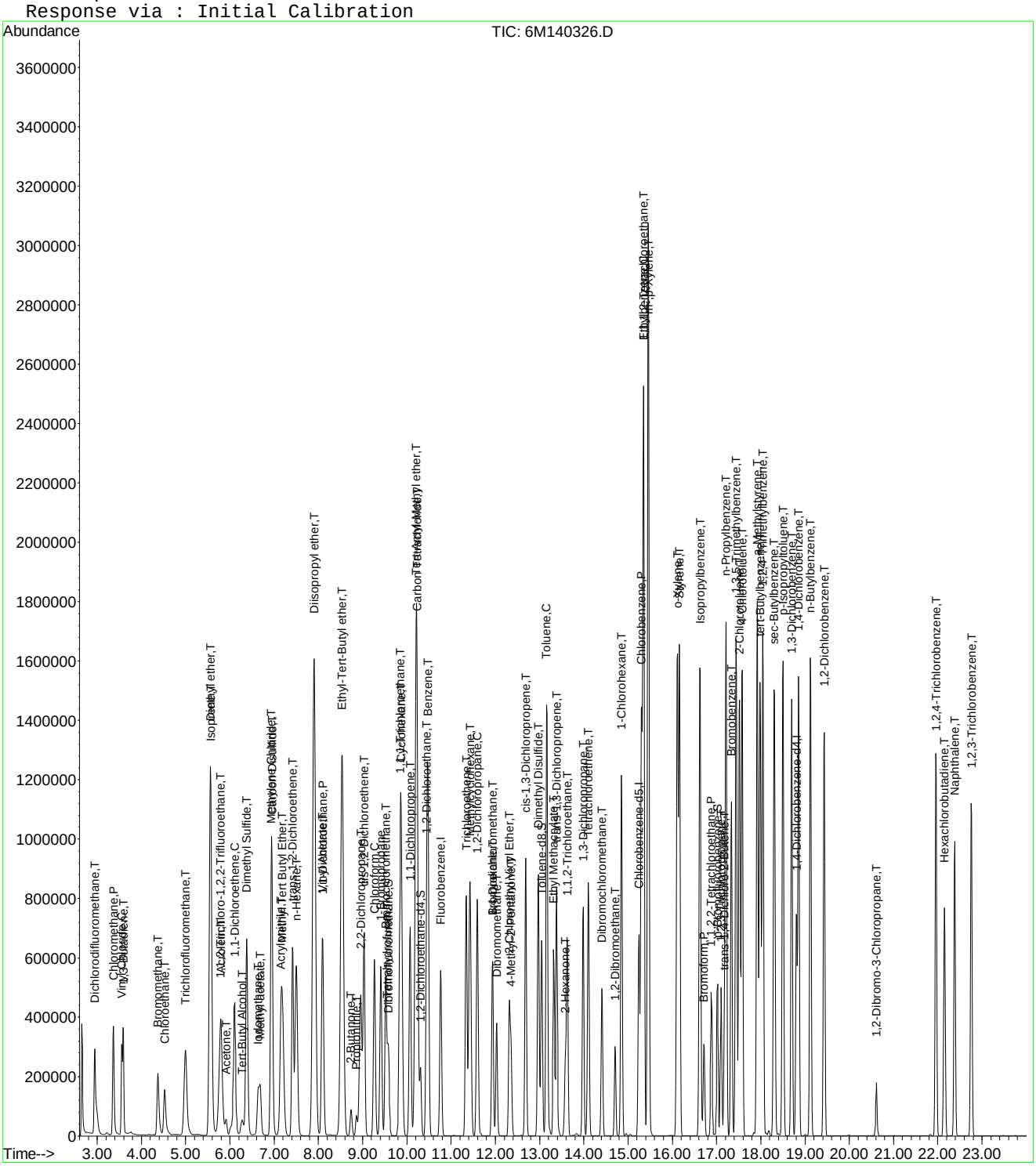

6M140326.D 8260WTR.M Fri Jul 01 14:22:38 2016 Page 3

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140326.D Vial: 14
Acq On : 30 Jun 2016 18:31 Operator: TMB
Sample : WG574723-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	107	0.00
2	T	Dichlorodifluoromethane	50.0000	40.7108	18.6	83	0.00
3	P	Chloromethane	50.0000	39.1377	21.7#	85	0.00
4	C	Vinyl Chloride	50.0000	46.1434	7.7	97	0.00
5	T	1,3-Butadiene	50.0000	35.9374	28.1#	76	0.00
6	T	Bromomethane	50.0000	48.4066	3.2	110	0.00
7	T	Chloroethane	50.0000	51.7436	-3.5	111	0.00
8	T	Trichlorofluoromethane	50.0000	47.1350	5.7	106	0.00
9	T	Diethyl ether	100.0000	103.3296	-3.3	108	0.00
10	T	Isoprene	50.0000	55.7803	-11.6	117	0.00
11	T	Acrolein	50.0000	120.1899	-140.4#	262	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	51.3167	-2.6	112	0.00
13	T	Acetone	50.0000	46.9439	6.1	101	0.00
14	C	1,1-Dichloroethene	50.0000	44.1572	11.7	95	0.00
15	T	Tert-Butyl Alcohol	200.0000	200.7163	-0.4	109	-0.01
16	T	Dimethyl Sulfide	50.0000	87.8409	-75.7#	187	0.00
17	T	Iodomethane	50.0000	60.2646	-20.5#	123	0.00
18	T	Methyl acetate	50.0000	54.7398	-9.5	119	0.00
19	T	Methylene Chloride	50.0000	46.5909	6.8	104	0.00
20	T	Carbon Disulfide	50.0000	43.6470	12.7	93	0.00
21	T	Acrylonitrile	50.0000	51.7698	-3.5	108	0.00
22	T	Methyl Tert Butyl Ether	50.0000	51.2877	-2.6	110	0.00
23	T	trans-1,2-Dichloroethene	50.0000	47.0532	5.9	102	0.00
24	T	n-Hexane	50.0000	44.7466	10.5	97	0.00
25	T	Diisopropyl ether	100.0000	104.9838	-5.0	113	0.00
26	T	Vinyl Acetate	50.0000	50.7312	-1.5	108	0.00
27	P	1,1-Dichloroethane	50.0000	46.4625	7.1	100	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	97.2697	2.7	104	0.00
29	T	2-Butanone	50.0000	50.7378	-1.5	106	0.00
30	T	Propionitrile	100.0000	100.6665	-0.7	106	0.00
31	T	2,2-Dichloropropane	50.0000	50.6955	-1.4	111	0.00
32	T	cis-1,2-Dichloroethene	50.0000	49.7512	0.5	107	0.00
33	C	Chloroform	50.0000	47.8636	4.3	105	0.00
34		1-Bromopropane	50.0000	66.7495	-33.5#	141	0.00
35	T	Bromochloromethane	50.0000	48.8852	2.2	102	0.00
36	T	Tetrahydrofuran	100.0000	92.0780	7.9	104	0.00
37	S	Dibromofluoromethane	25.0000	25.0619	-0.2	106	0.00
38	T	1,1,1-Trichloroethane	50.0000	49.3876	1.2	104	0.00
39	T	Cyclohexane	50.0000	47.4902	5.0	103	0.00
40	T	1,1-Dichloropropene	50.0000	48.1132	3.8	104	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	104.1851	-4.2	111	0.00
42	T	Carbon Tetrachloride	50.0000	51.4451	-2.9	102	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.1652	3.3	104	0.00
44		Heptane	-1.0000	0.0000	0.0	111	0.00
45	T	1,2-Dichloroethane	50.0000	49.3981	1.2	105	0.00
46	T	Benzene	50.0000	48.7860	2.4	105	0.00
47	T	Trichloroethene	50.0000	48.9712	2.1	105	0.00
48	T	Methylcyclohexane	50.0000	48.8698	2.3	106	0.00
49	C	1,2-Dichloropropane	50.0000	52.0408	-4.1	111	0.00
50	T	1,4-Dioxane	200.0000	198.6187	0.7	102	0.00
51	T	Bromodichloromethane	50.0000	51.2992	-2.6	106	0.00
52	T	Dibromomethane	50.0000	48.9892	2.0	101	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	52.9030	-5.8	106	0.00
54	T	4-Methyl-2-Pentanone	50.0000	50.6846	-1.4	106	0.00

(#) = Out of Range

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140326.D Vial: 14
Acq On : 30 Jun 2016 18:31 Operator: TMB
Sample : WG574723-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	56.2867	-12.6	117	0.00
56	T	Dimethyl Disulfide	50.0000	53.7585	-7.5	112	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	105	0.00
58	S	Toluene-d8	25.0000	24.6990	1.2	104	0.00
59	C	Toluene	50.0000	50.1905	-0.4	107	0.00
60	T	Ethyl Methacrylate	50.0000	53.5575	-7.1	108	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	107	0.00
62	T	trans-1,3-Dichloropropene	50.0000	53.3572	-6.7	108	0.00
63	T	1,1,2-Trichloroethane	50.0000	52.0675	-4.1	108	0.00
64	T	2-Hexanone	50.0000	49.7214	0.6	101	0.00
65	T	1,3-Dichloropropane	50.0000	53.1662	-6.3	112	0.00
66	T	Tetrachloroethene	50.0000	48.7411	2.5	103	0.00
67	T	Dibromochloromethane	50.0000	53.7889	-7.6	105	0.00
68	T	1,2-Dibromoethane	50.0000	52.4339	-4.9	107	0.00
69	T	1-Chlorohexane	50.0000	51.2350	-2.5	106	0.00
70	P	Chlorobenzene	50.0000	50.9593	-1.9	108	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	52.5791	-5.2	106	0.00
72	C	Ethylbenzene	50.0000	51.6928	-3.4	107	0.00
73	T	m-,p-Xylene	100.0000	103.7457	-3.7	108	0.00
74	T	o-Xylene	50.0000	53.3844	-6.8	109	0.00
75	T	Styrene	50.0000	52.9288	-5.9	106	0.00
76	P	Bromoform	50.0000	49.3873	1.2	98	0.00
77	T	Isopropylbenzene	50.0000	51.6632	-3.3	107	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	99	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	55.4825	-11.0	108	0.00
80	S	p-Bromofluorobenzene	25.0000	25.0695	-0.3	100	0.00
81	T	1,2,3-Trichloropropane	50.0000	54.8809	-9.8	105	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	50.6626	-1.3	94	0.00
83	T	n-Propylbenzene	50.0000	53.7062	-7.4	107	0.00
84	T	Bromobenzene	50.0000	50.7084	-1.4	102	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	52.5530	-5.1	104	-0.01
86	T	2-Chlorotoluene	50.0000	52.8455	-5.7	105	0.00
87	T	4-Chlorotoluene	50.0000	50.9132	-1.8	105	0.00
88	T	a-Methylstyrene	50.0000	58.0567	-16.1	111	0.00
89	T	tert-Butylbenzene	50.0000	53.1924	-6.4	106	-0.01
90	T	1,2,4-Trimethylbenzene	50.0000	51.5596	-3.1	101	-0.01
91	T	sec-Butylbenzene	50.0000	52.5630	-5.1	104	-0.01
92	T	p-Isopropyltoluene	50.0000	51.6766	-3.4	101	0.00
93	T	1,3-Dichlorobenzene	50.0000	51.3104	-2.6	103	0.00
94	T	1,4-Dichlorobenzene	50.0000	51.7942	-3.6	105	0.00
95	T	n-Butylbenzene	50.0000	51.3451	-2.7	100	0.00
96	T	1,2-Dichlorobenzene	50.0000	52.4611	-4.9	105	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	55.6553	-11.3	107	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	51.4464	-2.9	102	0.00
99	T	Hexachlorobutadiene	50.0000	52.5770	-5.2	105	0.00
100	T	Naphthalene	50.0000	49.2893	1.4	92	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	51.1160	-2.2	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070216\11M13043.D Vial: 3
Acq On : 2 Jul 2016 14:39 Operator: TMB
Sample : WG575085-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 02 15:00:48 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	574186	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	476712	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	275891	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	153795	24.4741 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.88%		
43) 1,2-Dichloroethane-d4	10.23	65	139713	19.4990 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 78.00%#		
57) Toluene-d8	12.47	98	527542	25.4690 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.88%		
78) p-Bromofluorobenzene	15.64	95	199584	23.4677 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.88%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	437738	48.6568 ug/L	93
3) Chloromethane	3.72	50	315334	43.7649 ug/L	99
4) Vinyl Chloride	3.96	62	284133	47.4857 ug/L	89
5) 1,3-Butadiene	4.00	54	257917	43.3493 ug/L	97
6) Bromomethane	4.85	94	185050	44.9802 ug/L	98
7) Chloroethane	5.00	64	187828	48.8558 ug/L	100
8) Trichlorofluoromethane	5.48	101	527773	44.2530 ug/L	99
9) Diethyl ether	6.01	59	381433	86.4781 ug/L	88
10) Isoprene	6.04	67	340735	46.3521 ug/L	84
11) Acrolein	6.23	56	27028	46.7102 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	282521	48.8198 ug/L	94
13) Acetone	6.34	43	45358	33.2675 ug/L	86
14) 1,1-Dichloroethene	6.56	61	452871	43.0834 ug/L	90
15) Tert-Butyl Alcohol	6.66	59	56627	150.1513 ug/L	94
16) Dimethyl Sulfide	6.81	62	179876	42.8494 ug/L	79
17) Iodomethane	7.06	142	199978	42.1044 ug/L	91
18) Methyl acetate	7.06	43	131599	30.4813 ug/L	90
19) Methylene Chloride	7.31	84	258150	47.4534 ug/L	70
20) Carbon Disulfide	7.36	76	880206	50.0185 ug/L	100
21) Acrylonitrile	7.49	53	74190	40.5840 ug/L	97
22) Methyl Tert Butyl Ether	7.52	73	590377	43.5113 ug/L	95
23) trans-1,2-Dichloroethene	7.74	96	284929	48.9774 ug/L	87
24) n-Hexane	7.82	57	446003	46.0297 ug/L	95
25) Diisopropyl ether	8.15	45	1852871	76.6346 ug/L	96
26) Vinyl Acetate	8.31	43	367770	39.7114 ug/L	97
27) 1,1-Dichloroethane	8.34	63	525744	45.0395 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	1660292	84.3696 ug/L	97
29) 2-Butanone	8.87	43	73496	35.6564 ug/L	89
30) Propionitrile	8.97	54	47053	77.9394 ug/L	96
31) 2,2-Dichloropropane	9.09	77	441209	48.3094 ug/L	99
32) cis-1,2-Dichloroethene	9.15	96	313852	48.9291 ug/L	86
33) Chloroform	9.35	83	509344	44.4334 ug/L	100
34) 1-Bromopropane	9.48	122	59106	51.8485 ug/L	97
35) Bromochloromethane	9.57	130	200982	52.7585 ug/L	80
36) Tetrahydrofuran	9.60	42	94800	65.1306 ug/L	83
38) 1,1,1-Trichloroethane	9.85	97	501648	44.4703 ug/L	95
39) Cyclohexane	9.88	56	551982	44.8994 ug/L	91
40) 1,1-Dichloropropene	10.04	75	376609	46.7583 ug/L	97
41) Carbon Tetrachloride	10.18	117	499882	45.3807 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	1216941	88.9960 ug/L	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070216\11M13043.D Vial: 3
Acq On : 2 Jul 2016 14:39 Operator: TMB
Sample : WG575085-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 02 15:00:48 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	366651	39.3818 ug/L	98
45)	Benzene	10.38	78	1051709	47.6981 ug/L	100
46)	Trichloroethene	11.08	130	354182	49.4196 ug/L	98
47)	Methylcyclohexane	11.17	83	451137	51.0060 ug/L	90
48)	1,2-Dichloropropane	11.29	63	274623	44.9940 ug/L	95
49)	1,4-Dioxane	11.55	88	5442	163.0778 ug/L	97
50)	Bromodichloromethane	11.57	83	385990	45.0480 ug/L	99
51)	Dibromomethane	11.65	93	145682	45.8035 ug/L	94
52)	2-Chloroethyl Vinyl Ether	11.84	63	124432	41.3646 ug/L	95
53)	4-Methyl-2-Pentanone	11.87	58	69739	41.1034 ug/L	91
54)	cis-1,3-Dichloropropene	12.17	75	408162	47.6258 ug/L	99
55)	Dimethyl Disulfide	12.42	79	227739	44.1597 ug/L	94
58)	Toluene	12.56	91	1227520	50.8647 ug/L	99
59)	Ethyl Methacrylate	12.64	69	242340	47.0279 ug/L	77
60)	trans-1,3-Dichloropropene	12.73	75	361112	46.6178 ug/L	95
61)	1,1,2-Trichloroethane	12.93	97	202960	47.4278 ug/L	99
62)	2-Hexanone	12.86	43	112696	35.8570 ug/L	89
63)	1,3-Dichloropropane	13.21	76	318949	46.4124 ug/L	79
64)	Tetrachloroethene	13.34	164	295580	52.6685 ug/L	95
65)	Dibromochloromethane	13.59	129	319627	48.9686 ug/L	99
66)	1,2-Dibromoethane	13.82	107	203166	47.3861 ug/L	100
67)	1-Chlorohexane	13.89	91	413192	51.9312 ug/L	83
68)	Chlorobenzene	14.29	112	894247	50.5817 ug/L	100
69)	1,1,1,2-Tetrachloroethane	14.32	131	351254	49.1018 ug/L	100
70)	Ethylbenzene	14.31	106	459513	50.6875 ug/L	96
71)	m-,p-Xylene	14.39	106	1115343	101.2005 ug/L	95
72)	o-Xylene	14.92	106	536218	49.9934 ug/L	96
73)	Styrene	14.95	104	923508	52.1140 ug/L	93
74)	Bromoform	15.43	173	193767	48.9801 ug/L	100
75)	Isopropylbenzene	15.31	105	1427684	50.3325 ug/L	99
77)	1,1,2,2-Tetrachloroethane	15.51	83	200276	46.6158 ug/L	98
79)	1,2,3-Trichloropropane	15.70	110	69484	43.1546 ug/L	98
80)	trans-1,4-Dichloro-2-Buten	15.74	53	65217	31.7695 ug/L	56
81)	n-Propylbenzene	15.79	91	1609371	50.3698 ug/L	97
82)	Bromobenzene	15.91	156	422139	50.3499 ug/L	88
83)	1,3,5-Trimethylbenzene	15.95	105	1219642	50.0221 ug/L	97
84)	2-Chlorotoluene	16.05	91	1119151	50.0086 ug/L	96
85)	4-Chlorotoluene	16.09	91	942020	46.9923 ug/L	97
86)	a-Methylstyrene	16.34	118	662994	51.5443 ug/L	95
87)	tert-Butylbenzene	16.39	134	271907	52.6378 ug/L	87
88)	1,2,4-Trimethylbenzene	16.44	105	1253603	50.4912 ug/L	98
89)	sec-Butylbenzene	16.65	105	1476110	50.4195 ug/L	98
90)	p-Isopropyltoluene	16.79	119	1366380	50.8119 ug/L	98
91)	1,3-Dichlorobenzene	16.98	146	814156	50.2790 ug/L	96
92)	1,4-Dichlorobenzene	17.10	146	811235	49.4253 ug/L	97
93)	n-Butylbenzene	17.28	91	1141618	48.1779 ug/L	97
94)	1,2-Dichlorobenzene	17.56	146	730809	49.5437 ug/L	96
95)	1,2-Dibromo-3-Chloropropan	18.49	75	35940	37.2741 ug/L	84
96)	1,2,4-Trichlorobenzene	19.54	180	529643	49.0696 ug/L	99
97)	Hexachlorobutadiene	19.69	225	213905	44.9841 ug/L	96
98)	Naphthalene	19.89	128	926446	46.2426 ug/L	99
99)	1,2,3-Trichlorobenzene	20.18	180	468864	47.3310 ug/L	97

(#) = qualifier out of range (m) = manual integration
11M13043.D 8260WT.M Sat Jul 02 15:00:51 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070216\11M13043.D Vial: 3
Acq On : 2 Jul 2016 14:39 Operator: TMB
Sample : WG575085-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 2 15:00 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

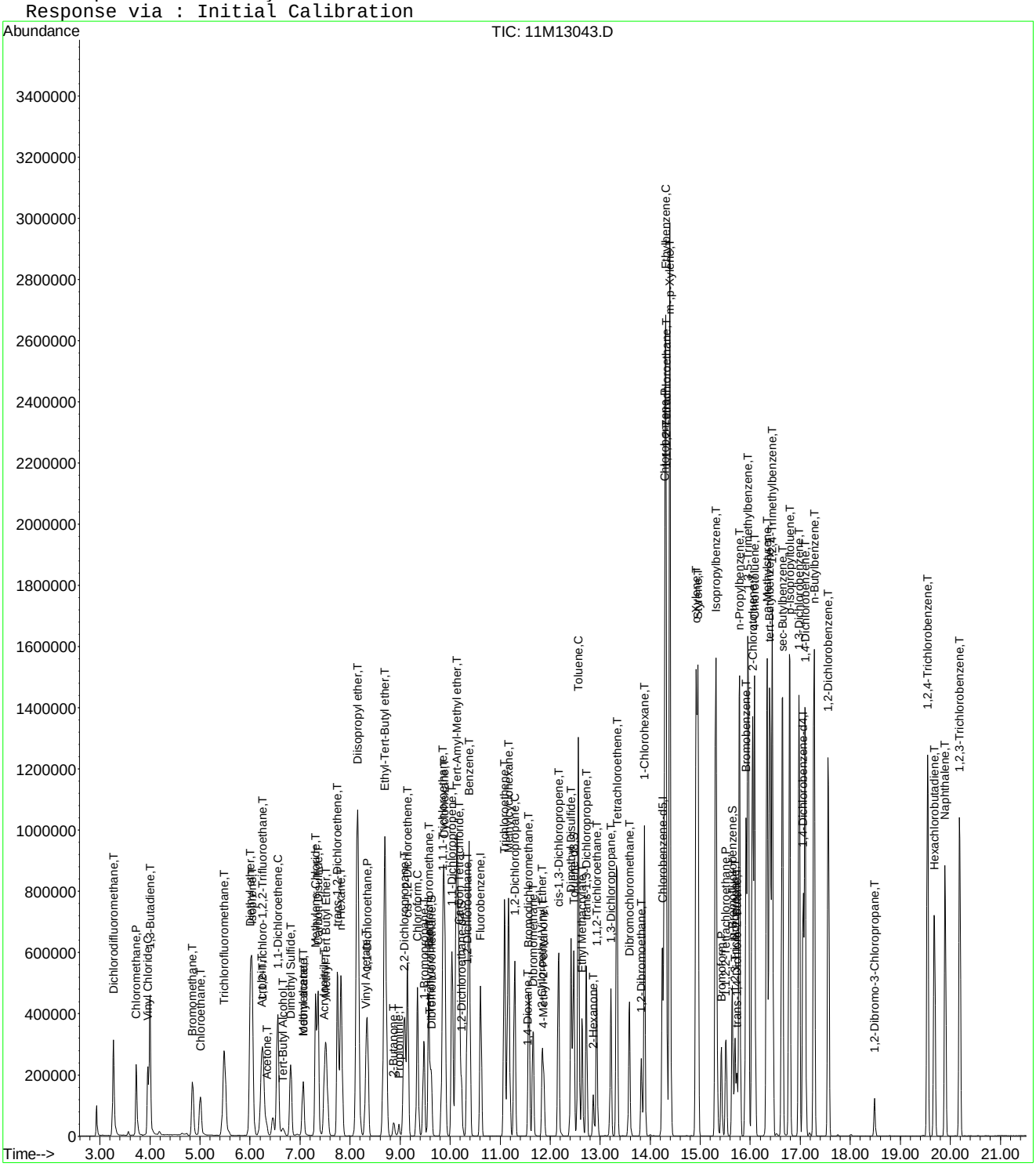

Continuing Calibration Area and RT check

Instrument: hpms11
Initial cal date: 13 May 2016 17:51
CCV date: 2 Jul 2016 14:39
CCV Filename: 11M13043.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	521583	10.61	438582	14.25	263885	17.06
CCV	574186	10.61	476712	14.25	275891	17.06

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\070216\11M13043.D Vial: 3
Acq On : 2 Jul 2016 14:39 Operator: TMB
Sample : WG575085-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	110	0.00
2	T	Dichlorodifluoromethane	0.3917	0.3812	2.7	105	0.00
3	P	Chloromethane	0.3137	0.2746	12.5	110	0.00
4	C	Vinyl Chloride	0.2605	0.2474	5.0	109	0.00
5	T	1,3-Butadiene	0.2591	0.2246	13.3	92	0.00
6	T	Bromomethane	0.1791	0.1611	10.0	107	0.00
7	T	Chloroethane	0.1674	0.1636	2.3	112	0.00
8	T	Trichlorofluoromethane	0.5193	0.4596	11.5	102	0.00
9	T	Diethyl ether	0.1920	0.1661	13.5	97	0.00
10	T	Isoprene	0.3201	0.2967	7.3	103	0.00
11	T	Acrolein	0.0228	0.0235	-3.4	107	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2520	0.2460	2.4	111	0.00
13	T	Acetone	0.0594	0.0395	33.5#	75	0.00
14	C	1,1-Dichloroethene	0.4577	0.3944	13.8	98	0.00
15	T	Tert-Butyl Alcohol	0.0164	0.0123	24.9	82	0.00
16	T	Dimethyl Sulfide	0.1828	0.1566	14.3	93	0.00
17	T	Iodomethane	0.1615	0.1741	-7.8	93	0.00
18	T	Methyl acetate	0.2006	0.1146	42.9#	71	0.00
19	T	Methylene Chloride	0.2369	0.2248	5.1	111	0.00
20	T	Carbon Disulfide	0.7662	0.7665	-0.0	108	0.00
21	T	Acrylonitrile	0.0796	0.0646	18.8	87	0.00
22	T	Methyl Tert Butyl Ether	0.5908	0.5141	13.0	97	0.00
23	T	trans-1,2-Dichloroethene	0.2533	0.2481	2.0	113	0.00
24	T	n-Hexane	0.4219	0.3884	7.9	99	0.00
25	T	Diisopropyl ether	1.0527	0.8067	23.4	85	0.00
26	T	Vinyl Acetate	0.3793	0.3202	15.6	90	0.00
27	P	1,1-Dichloroethane	0.5082	0.4578	9.9	102	0.00
28	T	Ethyl-Tert-Butyl ether	0.8568	0.7229	15.6	93	0.00
29	T	2-Butanone	0.0897	0.0640	28.7#	81	0.00
30	T	Propionitrile	0.0263	0.0205	22.1	83	0.00
31	T	2,2-Dichloropropane	0.3977	0.3842	3.4	110	0.00
32	T	cis-1,2-Dichloroethene	0.2793	0.2733	2.1	111	0.00
33	C	Chloroform	0.4991	0.4435	11.1	104	0.00
34	T	1-Bromopropane	0.0432	0.0515	-19.2	118	0.00
35	T	Bromochloromethane	0.1659	0.1750	-5.5	112	0.00
36	T	Tetrahydrofuran	0.0634	0.0413	34.9#	74	0.00
37	S	Dibromofluoromethane	0.2736	0.2678	2.1	110	0.00
38	T	1,1,1-Trichloroethane	0.4911	0.4368	11.1	101	0.00
39	T	Cyclohexane	0.5353	0.4807	10.2	96	0.00
40	T	1,1-Dichloropropene	0.3507	0.3280	6.5	107	0.00
41	T	Carbon Tetrachloride	0.4796	0.4353	9.2	101	0.00
42	T	Tert-Amyl-Methyl ether	0.5954	0.5299	11.0	99	0.00
43	S	1,2-Dichloroethane-d4	0.3120	0.2433	22.0	88	0.00
44	T	1,2-Dichloroethane	0.4054	0.3193	21.2	88	0.00
45	T	Benzene	0.9600	0.9158	4.6	111	0.00
46	T	Trichloroethene	0.3120	0.3084	1.2	115	-0.01
47	T	Methylcyclohexane	0.3851	0.3928	-2.0	108	0.00
48	C	1,2-Dichloropropane	0.2657	0.2391	10.0	102	0.00
49	T	1,4-Dioxane	0.0014	0.0012	15.7	93	0.00
50	T	Bromodichloromethane	0.3731	0.3361	9.9	100	0.00
51	T	Dibromomethane	0.1385	0.1269	8.4	102	0.00
52	T	2-Chloroethyl Vinyl Ether	0.1310	0.1084	17.3	93	0.00
53	T	4-Methyl-2-Pentanone	0.0739	0.0607	17.8	92	0.00
54	T	cis-1,3-Dichloropropene	0.3731	0.3554	4.7	103	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\070216\11M13043.D Vial: 3
Acq On : 2 Jul 2016 14:39 Operator: TMB
Sample : WG575085-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	0.2245	0.1983	11.7	96	0.00
56	I	Chlorobenzene-d5	1.0000	1.0000	0.0	109	0.00
57	S	Toluene-d8	1.0862	1.1066	-1.9	114	0.00
58	C	Toluene	1.2656	1.2875	-1.7	112	0.00
59	T	Ethyl Methacrylate	0.2702	0.2542	5.9	97	-0.01
60	T	trans-1,3-Dichloropropene	0.4062	0.3787	6.8	99	0.00
61	T	1,1,2-Trichloroethane	0.2244	0.2129	5.1	105	0.00
62	T	2-Hexanone	0.1648	0.1182	28.3#	78	0.00
63	T	1,3-Dichloropropane	0.3604	0.3345	7.2	101	0.00
64	T	Tetrachloroethene	0.2943	0.3100	-5.3	118	0.00
65	T	Dibromochloromethane	0.3423	0.3352	2.1	103	0.00
66	T	1,2-Dibromoethane	0.2248	0.2131	5.2	103	0.00
67	T	1-Chlorohexane	0.4173	0.4334	-3.9	110	0.00
68	P	Chlorobenzene	0.9272	0.9379	-1.2	112	0.00
69	T	1,1,1,2-Tetrachloroethane	0.3751	0.3684	1.8	108	0.00
70	C	Ethylbenzene	0.4754	0.4820	-1.4	112	0.00
71	T	m-,p-Xylene	0.5780	0.5849	-1.2	112	0.00
72	T	o-Xylene	0.5625	0.5624	0.0	109	0.00
73	T	Styrene	0.9293	0.9686	-4.2	110	0.00
74	P	Bromoform	0.2075	0.2032	2.0	105	0.00
75	T	Isopropylbenzene	1.4875	1.4974	-0.7	109	0.00
76	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	105	0.00
77	P	1,1,2,2-Tetrachloroethane	0.3893	0.3630	6.8	96	-0.01
78	S	p-Bromofluorobenzene	0.7706	0.7234	6.1	106	0.00
79	T	1,2,3-Trichloropropane	0.1351	0.1259	6.8	96	0.00
80	T	trans-1,4-Dichloro-2-Butene	0.1588	0.1182	25.6#	69	0.00
81	T	n-Propylbenzene	2.8953	2.9167	-0.7	106	0.00
82	T	Bromobenzene	0.7597	0.7651	-0.7	111	-0.01
83	T	1,3,5-Trimethylbenzene	2.2094	2.2104	-0.0	107	-0.01
84	T	2-Chlorotoluene	2.0279	2.0282	-0.0	110	0.00
85	T	4-Chlorotoluene	1.8165	1.7072	6.0	101	0.00
86	T	a-Methylstyrene	1.1656	1.2015	-3.1	102	0.00
87	T	tert-Butylbenzene	0.4681	0.4928	-5.3	112	-0.01
88	T	1,2,4-Trimethylbenzene	2.2498	2.2719	-1.0	106	0.00
89	T	sec-Butylbenzene	2.6529	2.6752	-0.8	106	0.00
90	T	p-Isopropyltoluene	2.4367	2.4763	-1.6	107	0.00
91	T	1,3-Dichlorobenzene	1.4673	1.4755	-0.6	110	0.00
92	T	1,4-Dichlorobenzene	1.4873	1.4702	1.1	109	0.00
93	T	n-Butylbenzene	2.1472	2.0690	3.6	101	0.00
94	T	1,2-Dichlorobenzene	1.3366	1.3244	0.9	107	-0.01
95	T	1,2-Dibromo-3-Chloropropane	0.0825	0.0651	21.0	84	0.00
96	T	1,2,4-Trichlorobenzene	0.9781	0.9599	1.9	103	-0.01
97	T	Hexachlorobutadiene	0.4309	0.3877	10.0	98	0.00
98	T	Naphthalene	1.8154	1.6790	7.5	96	-0.01
99	T	1,2,3-Trichlorobenzene	0.8976	0.8497	5.3	103	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M13043.D 8260WT.M Sun Jul 03 09:38:05 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\070216\11M13043.D Vial: 3
Acq On : 2 Jul 2016 14:39 Operator: TMB
Sample : WG575085-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	110	0.00
2	T	Dichlorodifluoromethane	50.0000	48.6568	2.7	105	0.00
3	P	Chloromethane	50.0000	43.7649	12.5	110	0.00
4	C	Vinyl Chloride	50.0000	47.4857	5.0	109	0.00
5	T	1,3-Butadiene	50.0000	43.3493	13.3	92	0.00
6	T	Bromomethane	50.0000	44.9802	10.0	107	0.00
7	T	Chloroethane	50.0000	48.8558	2.3	112	0.00
8	T	Trichlorofluoromethane	50.0000	44.2530	11.5	102	0.00
9	T	Diethyl ether	100.0000	86.4781	13.5	97	0.00
10	T	Isoprene	50.0000	46.3521	7.3	103	0.00
11	T	Acrolein	50.0000	46.7102	6.6	107	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	48.8198	2.4	111	0.00
13	T	Acetone	50.0000	33.2674	33.5#	75	0.00
14	C	1,1-Dichloroethene	50.0000	43.0834	13.8	98	0.00
15	T	Tert-Butyl Alcohol	200.0000	150.1513	24.9	82	0.00
16	T	Dimethyl Sulfide	50.0000	42.8494	14.3	93	0.00
17	T	Iodomethane	50.0000	42.1044	15.8	93	0.00
18	T	Methyl acetate	50.0000	30.4813	39.0#	71	0.00
19	T	Methylene Chloride	50.0000	47.4534	5.1	111	0.00
20	T	Carbon Disulfide	50.0000	50.0185	-0.0	108	0.00
21	T	Acrylonitrile	50.0000	40.5840	18.8	87	0.00
22	T	Methyl Tert Butyl Ether	50.0000	43.5113	13.0	97	0.00
23	T	trans-1,2-Dichloroethene	50.0000	48.9774	2.0	113	0.00
24	T	n-Hexane	50.0000	46.0297	7.9	99	0.00
25	T	Diisopropyl ether	100.0000	76.6346	23.4	85	0.00
26	T	Vinyl Acetate	50.0000	39.7114	20.6	90	0.00
27	P	1,1-Dichloroethane	50.0000	45.0395	9.9	102	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	84.3696	15.6	93	0.00
29	T	2-Butanone	50.0000	35.6565	28.7#	81	0.00
30	T	Propionitrile	100.0000	77.9394	22.1	83	0.00
31	T	2,2-Dichloropropane	50.0000	48.3094	3.4	110	0.00
32	T	cis-1,2-Dichloroethene	50.0000	48.9291	2.1	111	0.00
33	C	Chloroform	50.0000	44.4334	11.1	104	0.00
34	T	1-Bromopropane	50.0000	51.8485	-3.7	118	0.00
35	T	Bromochloromethane	50.0000	52.7585	-5.5	112	0.00
36	T	Tetrahydrofuran	100.0000	65.1306	34.9#	74	0.00
37	S	Dibromofluoromethane	25.0000	24.4741	2.1	110	0.00
38	T	1,1,1-Trichloroethane	50.0000	44.4703	11.1	101	0.00
39	T	Cyclohexane	50.0000	44.8993	10.2	96	0.00
40	T	1,1-Dichloropropene	50.0000	46.7582	6.5	107	0.00
41	T	Carbon Tetrachloride	50.0000	45.3807	9.2	101	0.00
42	T	Tert-Amyl-Methyl ether	100.0000	88.9959	11.0	99	0.00
43	S	1,2-Dichloroethane-d4	25.0000	19.4990	22.0	88	0.00
44	T	1,2-Dichloroethane	50.0000	39.3818	21.2	88	0.00
45	T	Benzene	50.0000	47.6981	4.6	111	0.00
46	T	Trichloroethene	50.0000	49.4196	1.2	115	-0.01
47	T	Methylcyclohexane	50.0000	51.0060	-2.0	108	0.00
48	C	1,2-Dichloropropane	50.0000	44.9940	10.0	102	0.00
49	T	1,4-Dioxane	200.0000	163.0778	18.5	93	0.00
50	T	Bromodichloromethane	50.0000	45.0480	9.9	100	0.00
51	T	Dibromomethane	50.0000	45.8035	8.4	102	0.00
52	T	2-Chloroethyl Vinyl Ether	50.0000	41.3646	17.3	93	0.00
53	T	4-Methyl-2-Pentanone	50.0000	41.1034	17.8	92	0.00
54	T	cis-1,3-Dichloropropene	50.0000	47.6258	4.7	103	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\070216\11M13043.D Vial: 3
Acq On : 2 Jul 2016 14:39 Operator: TMB
Sample : WG575085-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	50.0000	44.1597	11.7	96	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	109	0.00
57	S	Toluene-d8	25.0000	25.4690	-1.9	114	0.00
58	C	Toluene	50.0000	50.8646	-1.7	112	0.00
59	T	Ethyl Methacrylate	50.0000	47.0279	5.9	97	-0.01
60	T	trans-1,3-Dichloropropene	50.0000	46.6178	6.8	99	0.00
61	T	1,1,2-Trichloroethane	50.0000	47.4278	5.1	105	0.00
62	T	2-Hexanone	50.0000	35.8570	28.3#	78	0.00
63	T	1,3-Dichloropropane	50.0000	46.4124	7.2	101	0.00
64	T	Tetrachloroethene	50.0000	52.6685	-5.3	118	0.00
65	T	Dibromochloromethane	50.0000	48.9686	2.1	103	0.00
66	T	1,2-Dibromoethane	50.0000	47.3861	5.2	103	0.00
67	T	1-Chlorohexane	50.0000	51.9312	-3.9	110	0.00
68	P	Chlorobenzene	50.0000	50.5817	-1.2	112	0.00
69	T	1,1,1,2-Tetrachloroethane	50.0000	49.1018	1.8	108	0.00
70	C	Ethylbenzene	50.0000	50.6876	-1.4	112	0.00
71	T	m-,p-Xylene	100.0000	101.2005	-1.2	112	0.00
72	T	o-Xylene	50.0000	49.9934	0.0	109	0.00
73	T	Styrene	50.0000	52.1140	-4.2	110	0.00
74	P	Bromoform	50.0000	48.9801	2.0	105	0.00
75	T	Isopropylbenzene	50.0000	50.3325	-0.7	109	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	105	0.00
77	P	1,1,2,2-Tetrachloroethane	50.0000	46.6158	6.8	96	-0.01
78	S	p-Bromofluorobenzene	25.0000	23.4677	6.1	106	0.00
79	T	1,2,3-Trichloropropane	50.0000	43.1546	13.7	96	0.00
80	T	trans-1,4-Dichloro-2-Butene	50.0000	31.7695	36.5#	69	0.00
81	T	n-Propylbenzene	50.0000	50.3698	-0.7	106	0.00
82	T	Bromobenzene	50.0000	50.3499	-0.7	111	-0.01
83	T	1,3,5-Trimethylbenzene	50.0000	50.0221	-0.0	107	-0.01
84	T	2-Chlorotoluene	50.0000	50.0086	-0.0	110	0.00
85	T	4-Chlorotoluene	50.0000	46.9923	6.0	101	0.00
86	T	a-Methylstyrene	50.0000	51.5443	-3.1	102	0.00
87	T	tert-Butylbenzene	50.0000	52.6378	-5.3	112	-0.01
88	T	1,2,4-Trimethylbenzene	50.0000	50.4912	-1.0	106	0.00
89	T	sec-Butylbenzene	50.0000	50.4195	-0.8	106	0.00
90	T	p-Isopropyltoluene	50.0000	50.8119	-1.6	107	0.00
91	T	1,3-Dichlorobenzene	50.0000	50.2790	-0.6	110	0.00
92	T	1,4-Dichlorobenzene	50.0000	49.4253	1.1	109	0.00
93	T	n-Butylbenzene	50.0000	48.1779	3.6	101	0.00
94	T	1,2-Dichlorobenzene	50.0000	49.5437	0.9	107	-0.01
95	T	1,2-Dibromo-3-Chloropropane	50.0000	37.2741	25.5#	84	0.00
96	T	1,2,4-Trichlorobenzene	50.0000	49.0696	1.9	103	-0.01
97	T	Hexachlorobutadiene	50.0000	44.9841	10.0	98	0.00
98	T	Naphthalene	50.0000	46.2426	7.5	96	-0.01
99	T	1,2,3-Trichlorobenzene	50.0000	47.3310	5.3	103	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M13043.D 8260WT.M Sun Jul 03 09:38:09 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070516\11M13078.D Vial: 3
Acq On : 5 Jul 2016 18:11 Operator: JDS
Sample : WG575198-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 05 18:32:42 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	519117	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	445640	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	268117	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	142795	25.1342 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.52%		
43) 1,2-Dichloroethane-d4	10.24	65	140499	21.6888 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 86.76%		
57) Toluene-d8	12.47	98	479312	24.7539 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.00%		
78) p-Bromofluorobenzene	15.64	95	190243	23.0180 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.08%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	453155	55.7138 ug/L	95
3) Chloromethane	3.72	50	327935	50.3420 ug/L	99
4) Vinyl Chloride	3.96	62	288555	53.3405 ug/L	100
5) 1,3-Butadiene	4.00	54	251573	46.7685 ug/L	98
6) Bromomethane	4.85	94	196547	52.8428 ug/L	99
7) Chloroethane	5.00	64	177181	50.9753 ug/L	99
8) Trichlorofluoromethane	5.48	101	547200	50.7492 ug/L	100
9) Diethyl ether	6.01	59	360421	90.3827 ug/L	92
10) Isoprene	6.04	67	300874	45.2715 ug/L	89
11) Acrolein	6.23	56	26861	51.1966 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	280747	53.6596 ug/L	96
13) Acetone	6.34	43	48590	39.4185 ug/L	92
14) 1,1-Dichloroethene	6.56	61	461972	48.6115 ug/L	93
15) Tert-Butyl Alcohol	6.66	59	52416	153.7293 ug/L	96
16) Dimethyl Sulfide	6.81	62	167274	44.0745 ug/L	86
17) Iodomethane	7.06	142	192346	44.6594 ug/L	94
18) Methyl acetate	7.07	43	135963	35.0481 ug/L	93
19) Methylene Chloride	7.31	84	248044	50.4326 ug/L	79
20) Carbon Disulfide	7.36	76	790696	49.6985 ug/L	99
21) Acrylonitrile	7.49	53	72060	43.6004 ug/L	99
22) Methyl Tert Butyl Ether	7.52	73	603474	49.1947 ug/L	97
23) trans-1,2-Dichloroethene	7.75	96	276353	52.5425 ug/L	90
24) n-Hexane	7.82	57	406376	46.3891 ug/L	97
25) Diisopropyl ether	8.15	45	1802503	82.4600 ug/L	97
26) Vinyl Acetate	8.31	43	363953	43.2381 ug/L	98
27) 1,1-Dichloroethane	8.34	63	525902	49.8324 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	1605084	90.2167 ug/L	97
29) 2-Butanone	8.87	43	73968	39.6922 ug/L	90
30) Propionitrile	8.97	54	45453	83.2760 ug/L	99
31) 2,2-Dichloropropane	9.09	77	457421	55.3975 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	302897	52.2305 ug/L	91
33) Chloroform	9.35	83	505159	48.7431 ug/L	100
34) 1-Bromopropane	9.48	122	54957	53.3051 ug/L	95
35) Bromochloromethane	9.57	130	197042	57.2112 ug/L	84
36) Tetrahydrofuran	9.60	42	98177	74.6061 ug/L	90
38) 1,1,1-Trichloroethane	9.85	97	517330	50.7254 ug/L	96
39) Cyclohexane	9.88	56	509177	45.8112 ug/L	94
40) 1,1-Dichloropropene	10.04	75	374472	51.4250 ug/L	98
41) Carbon Tetrachloride	10.18	117	520748	52.2900 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	1170914	94.7138 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M13078.D 8260WT.M Tue Jul 05 18:32:45 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070516\11M13078.D Vial: 3
Acq On : 5 Jul 2016 18:11 Operator: JDS
Sample : WG575198-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 05 18:32:42 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.34	62	392578	46.6397 ug/L	97
45) Benzene	10.38	78	1005654	50.4477 ug/L	99
46) Trichloroethene	11.09	130	345580	53.3346 ug/L	97
47) Methylcyclohexane	11.17	83	401328	50.1879 ug/L	92
48) 1,2-Dichloropropane	11.29	63	271197	49.1462 ug/L	98
49) 1,4-Dioxane	11.56	88	3852	132.7307 ug/L	95
50) Bromodichloromethane	11.57	83	392958	50.7262 ug/L	99
51) Dibromomethane	11.65	93	147932	51.4449 ug/L	96
52) 2-Chloroethyl Vinyl Ether	11.84	63	120595	44.3418 ug/L	96
53) 4-Methyl-2-Pentanone	11.87	58	69824	45.5192 ug/L	95
54) cis-1,3-Dichloropropene	12.17	75	406877	52.5122 ug/L	100
55) Dimethyl Disulfide	12.42	79	222479	47.7161 ug/L	97
58) Toluene	12.56	91	1180139	52.3109 ug/L	99
59) Ethyl Methacrylate	12.64	69	238449	49.4992 ug/L	83
60) trans-1,3-Dichloropropene	12.73	75	368912	50.9453 ug/L	97
61) 1,1,2-Trichloroethane	12.94	97	201340	50.3297 ug/L	99
62) 2-Hexanone	12.86	43	117905	40.1301 ug/L	93
63) 1,3-Dichloropropane	13.21	76	321195	49.9981 ug/L	84
64) Tetrachloroethene	13.34	164	286918	54.6897 ug/L	97
65) Dibromochloromethane	13.59	129	328698	53.8695 ug/L	100
66) 1,2-Dibromoethane	13.82	107	205135	51.1814 ug/L	99
67) 1-Chlorohexane	13.89	91	371751	49.9805 ug/L	88
68) Chlorobenzene	14.29	112	872095	52.7681 ug/L	100
69) 1,1,1,2-Tetrachloroethane	14.32	131	353143	52.8079 ug/L	100
70) Ethylbenzene	14.31	106	442668	52.2340 ug/L	98
71) m-,p-Xylene	14.39	106	1087185	105.5236 ug/L	95
72) o-Xylene	14.92	106	522904	52.1513 ug/L	97
73) Styrene	14.95	104	900060	54.3322 ug/L	95
74) Bromoform	15.43	173	201589	54.5103 ug/L	98
75) Isopropylbenzene	15.31	105	1401962	52.8719 ug/L	99
77) 1,1,2,2-Tetrachloroethane	15.52	83	206004	49.3393 ug/L	97
79) 1,2,3-Trichloropropane	15.70	110	73178	46.7361 ug/L	93
80) trans-1,4-Dichloro-2-Buten	15.74	53	69553	34.7917 ug/L	65
81) n-Propylbenzene	15.79	91	1599961	51.5272 ug/L	98
82) Bromobenzene	15.92	156	418724	51.3906 ug/L	89
83) 1,3,5-Trimethylbenzene	15.95	105	1204780	50.8453 ug/L	98
84) 2-Chlorotoluene	16.05	91	1066813	49.0521 ug/L	96
85) 4-Chlorotoluene	16.09	91	963367	49.4506 ug/L	97
86) a-Methylstyrene	16.34	118	621072	49.6851 ug/L	98
87) tert-Butylbenzene	16.39	134	267904	53.3666 ug/L	89
88) 1,2,4-Trimethylbenzene	16.44	105	1243081	51.5191 ug/L	99
89) sec-Butylbenzene	16.65	105	1458282	51.2548 ug/L	99
90) p-Isopropyltoluene	16.79	119	1359102	52.0067 ug/L	98
91) 1,3-Dichlorobenzene	16.98	146	802523	50.9975 ug/L	96
92) 1,4-Dichlorobenzene	17.10	146	800036	50.1563 ug/L	97
93) n-Butylbenzene	17.28	91	1139305	49.4744 ug/L	98
94) 1,2-Dichlorobenzene	17.57	146	727247	50.7317 ug/L	97
95) 1,2-Dibromo-3-Chloropropan	18.49	75	40180	42.7833 ug/L	94
96) 1,2,4-Trichlorobenzene	19.55	180	521138	49.6815 ug/L	99
97) Hexachlorobutadiene	19.69	225	217588	47.0854 ug/L	96
98) Naphthalene	19.90	128	930586	47.7960 ug/L	100
99) 1,2,3-Trichlorobenzene	20.19	180	464270	48.2261 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070516\11M13078.D Vial: 3
Acq On : 5 Jul 2016 18:11 Operator: JDS
Sample : WG575198-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 5 18:32 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

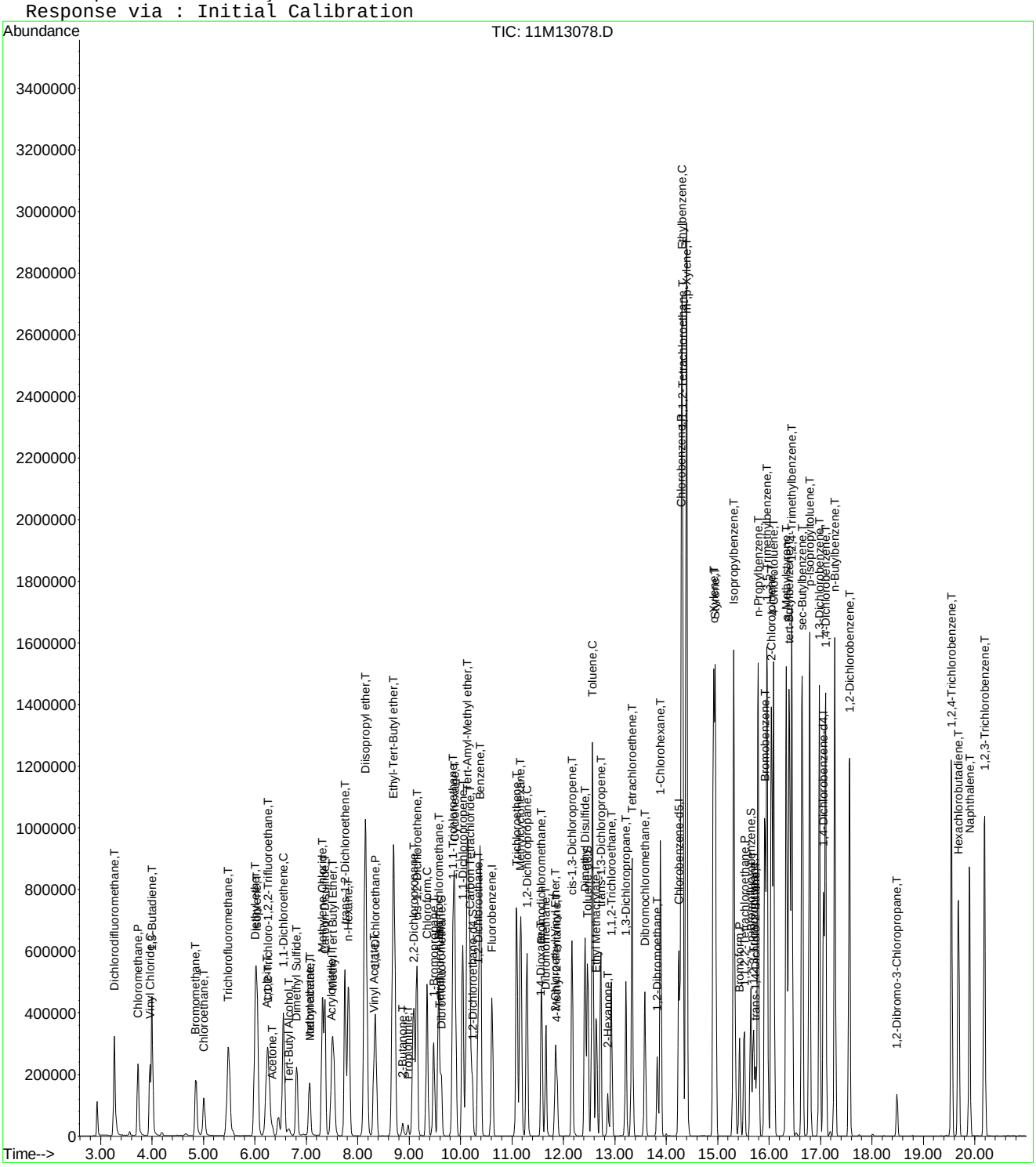

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\070516\11M13078.D Vial: 3
Acq On : 5 Jul 2016 18:11 Operator: JDS
Sample : WG575198-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	0.3917	0.4365	-11.4	109	0.00
3	P	Chloromethane	0.3137	0.3159	-0.7	114	0.00
4	C	Vinyl Chloride	0.2605	0.2779	-6.7	111	0.00
5	T	1,3-Butadiene	0.2591	0.2423	6.5	90	0.00
6	T	Bromomethane	0.1791	0.1893	-5.7	114	0.00
7	T	Chloroethane	0.1674	0.1707	-2.0	105	0.00
8	T	Trichlorofluoromethane	0.5193	0.5271	-1.5	105	0.00
9	T	Diethyl ether	0.1920	0.1736	9.6	92	0.00
10	T	Isoprene	0.3201	0.2898	9.5	91	0.00
11	T	Acrolein	0.0228	0.0259	-13.6	106	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2520	0.2704	-7.3	110	0.01
13	T	Acetone	0.0594	0.0468	21.2	81	0.00
14	C	1,1-Dichloroethene	0.4577	0.4450	2.8	100	0.00
15	T	Tert-Butyl Alcohol	0.0164	0.0126	23.1	76	0.00
16	T	Dimethyl Sulfide	0.1828	0.1611	11.9	86	0.00
17	T	Iodomethane	0.1615	0.1853	-14.7	90	0.00
18	T	Methyl acetate	0.2006	0.1310	34.7#	73	0.01
19	T	Methylene Chloride	0.2369	0.2389	-0.9	106	0.00
20	T	Carbon Disulfide	0.7662	0.7616	0.6	97	0.00
21	T	Acrylonitrile	0.0796	0.0694	12.8	85	0.00
22	T	Methyl Tert Butyl Ether	0.5908	0.5813	1.6	99	0.00
23	T	trans-1,2-Dichloroethene	0.2533	0.2662	-5.1	109	0.01
24	T	n-Hexane	0.4219	0.3914	7.2	90	0.00
25	T	Diisopropyl ether	1.0527	0.8681	17.5	83	0.00
26	T	Vinyl Acetate	0.3793	0.3505	7.6	89	0.00
27	P	1,1-Dichloroethane	0.5082	0.5065	0.3	102	0.00
28	T	Ethyl-Tert-Butyl ether	0.8568	0.7730	9.8	90	0.00
29	T	2-Butanone	0.0897	0.0712	20.6	81	0.00
30	T	Propionitrile	0.0263	0.0219	16.7	80	0.00
31	T	2,2-Dichloropropane	0.3977	0.4406	-10.8	114	0.00
32	T	cis-1,2-Dichloroethene	0.2793	0.2917	-4.5	107	0.00
33	C	Chloroform	0.4991	0.4866	2.5	103	0.00
34	T	1-Bromopropane	0.0432	0.0529	-22.6	110	0.00
35	T	Bromochloromethane	0.1659	0.1898	-14.4	110	0.00
36	T	Tetrahydrofuran	0.0634	0.0473	25.4#	77	0.00
37	S	Dibromofluoromethane	0.2736	0.2751	-0.5	102	0.00
38	T	1,1,1-Trichloroethane	0.4911	0.4983	-1.5	104	0.00
39	T	Cyclohexane	0.5353	0.4904	8.4	89	0.00
40	T	1,1-Dichloropropene	0.3507	0.3607	-2.8	106	0.00
41	T	Carbon Tetrachloride	0.4796	0.5016	-4.6	106	0.00
42	T	Tert-Amyl-Methyl ether	0.5954	0.5639	5.3	95	0.00
43	S	1,2-Dichloroethane-d4	0.3120	0.2707	13.2	89	0.01
44	T	1,2-Dichloroethane	0.4054	0.3781	6.7	94	0.00
45	T	Benzene	0.9600	0.9686	-0.9	106	0.00
46	T	Trichloroethene	0.3120	0.3328	-6.7	112	0.00
47	T	Methylcyclohexane	0.3851	0.3866	-0.4	96	0.00
48	C	1,2-Dichloropropane	0.2657	0.2612	1.7	101	0.00
49	T	1,4-Dioxane	0.0014	0.0009	33.6#	66	0.01
50	T	Bromodichloromethane	0.3731	0.3785	-1.5	102	0.00
51	T	Dibromomethane	0.1385	0.1425	-2.9	104	0.00
52	T	2-Chloroethyl Vinyl Ether	0.1310	0.1162	11.3	91	0.00
53	T	4-Methyl-2-Pentanone	0.0739	0.0673	9.0	92	0.00
54	T	cis-1,3-Dichloropropene	0.3731	0.3919	-5.0	103	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\070516\11M13078.D Vial: 3
Acq On : 5 Jul 2016 18:11 Operator: JDS
Sample : WG575198-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	0.2245	0.2143	4.6	94	0.00
56	I	Chlorobenzene-d5	1.0000	1.0000	0.0	102	0.00
57	S	Toluene-d8	1.0862	1.0756	1.0	104	0.00
58	C	Toluene	1.2656	1.3241	-4.6	108	0.00
59	T	Ethyl Methacrylate	0.2702	0.2675	1.0	95	-0.01
60	T	trans-1,3-Dichloropropene	0.4062	0.4139	-1.9	101	0.00
61	T	1,1,2-Trichloroethane	0.2244	0.2259	-0.7	104	0.00
62	T	2-Hexanone	0.1648	0.1323	19.7	82	0.00
63	T	1,3-Dichloropropane	0.3604	0.3604	0.0	101	0.00
64	T	Tetrachloroethene	0.2943	0.3219	-9.4	114	0.00
65	T	Dibromochloromethane	0.3423	0.3688	-7.7	106	0.00
66	T	1,2-Dibromoethane	0.2248	0.2302	-2.4	104	0.00
67	T	1-Chlorohexane	0.4173	0.4171	0.0	99	0.00
68	P	Chlorobenzene	0.9272	0.9785	-5.5	109	0.00
69	T	1,1,1,2-Tetrachloroethane	0.3751	0.3962	-5.6	108	0.00
70	C	Ethylbenzene	0.4754	0.4967	-4.5	108	0.00
71	T	m-,p-Xylene	0.5780	0.6099	-5.5	109	0.00
72	T	o-Xylene	0.5625	0.5867	-4.3	106	0.00
73	T	Styrene	0.9293	1.0098	-8.7	107	0.00
74	P	Bromoform	0.2075	0.2262	-9.0	109	0.00
75	T	Isopropylbenzene	1.4875	1.5730	-5.7	107	0.00
76	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	102	0.00
77	P	1,1,2,2-Tetrachloroethane	0.3893	0.3842	1.3	99	0.00
78	S	p-Bromofluorobenzene	0.7706	0.7096	7.9	101	0.00
79	T	1,2,3-Trichloropropane	0.1351	0.1365	-1.0	101	0.00
80	T	trans-1,4-Dichloro-2-Butene	0.1588	0.1297	18.3	74	0.00
81	T	n-Propylbenzene	2.8953	2.9837	-3.1	105	0.00
82	T	Bromobenzene	0.7597	0.7809	-2.8	110	0.00
83	T	1,3,5-Trimethylbenzene	2.2094	2.2467	-1.7	105	-0.01
84	T	2-Chlorotoluene	2.0279	1.9894	1.9	104	0.00
85	T	4-Chlorotoluene	1.8165	1.7965	1.1	104	0.00
86	T	a-Methylstyrene	1.1656	1.1582	0.6	96	0.00
87	T	tert-Butylbenzene	0.4681	0.4996	-6.7	111	-0.01
88	T	1,2,4-Trimethylbenzene	2.2498	2.3182	-3.0	105	0.00
89	T	sec-Butylbenzene	2.6529	2.7195	-2.5	105	0.00
90	T	p-Isopropyltoluene	2.4367	2.5345	-4.0	106	0.00
91	T	1,3-Dichlorobenzene	1.4673	1.4966	-2.0	109	0.00
92	T	1,4-Dichlorobenzene	1.4873	1.4920	-0.3	108	0.00
93	T	n-Butylbenzene	2.1472	2.1246	1.1	101	0.00
94	T	1,2-Dichlorobenzene	1.3366	1.3562	-1.5	106	0.00
95	T	1,2-Dibromo-3-Chloropropane	0.0825	0.0749	9.2	94	0.00
96	T	1,2,4-Trichlorobenzene	0.9781	0.9718	0.6	102	0.00
97	T	Hexachlorobutadiene	0.4309	0.4058	5.8	99	0.00
98	T	Naphthalene	1.8154	1.7354	4.4	97	0.00
99	T	1,2,3-Trichlorobenzene	0.8976	0.8658	3.5	102	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M13078.D 8260WT.M Tue Jul 05 18:32:59 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\070516\11M13078.D Vial: 3
Acq On : 5 Jul 2016 18:11 Operator: JDS
Sample : WG575198-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	50.0000	55.7138	-11.4	109	0.00
3	P	Chloromethane	50.0000	50.3420	-0.7	114	0.00
4	C	Vinyl Chloride	50.0000	53.3405	-6.7	111	0.00
5	T	1,3-Butadiene	50.0000	46.7685	6.5	90	0.00
6	T	Bromomethane	50.0000	52.8428	-5.7	114	0.00
7	T	Chloroethane	50.0000	50.9753	-2.0	105	0.00
8	T	Trichlorofluoromethane	50.0000	50.7492	-1.5	105	0.00
9	T	Diethyl ether	100.0000	90.3827	9.6	92	0.00
10	T	Isoprene	50.0000	45.2715	9.5	91	0.00
11	T	Acrolein	50.0000	51.1966	-2.4	106	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	53.6596	-7.3	110	0.01
13	T	Acetone	50.0000	39.4185	21.2	81	0.00
14	C	1,1-Dichloroethene	50.0000	48.6115	2.8	100	0.00
15	T	Tert-Butyl Alcohol	200.0000	153.7293	23.1	76	0.00
16	T	Dimethyl Sulfide	50.0000	44.0745	11.9	86	0.00
17	T	Iodomethane	50.0000	44.6594	10.7	90	0.00
18	T	Methyl acetate	50.0000	35.0481	29.9#	73	0.01
19	T	Methylene Chloride	50.0000	50.4326	-0.9	106	0.00
20	T	Carbon Disulfide	50.0000	49.6985	0.6	97	0.00
21	T	Acrylonitrile	50.0000	43.6004	12.8	85	0.00
22	T	Methyl Tert Butyl Ether	50.0000	49.1947	1.6	99	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.5425	-5.1	109	0.01
24	T	n-Hexane	50.0000	46.3891	7.2	90	0.00
25	T	Diisopropyl ether	100.0000	82.4600	17.5	83	0.00
26	T	Vinyl Acetate	50.0000	43.2381	13.5	89	0.00
27	P	1,1-Dichloroethane	50.0000	49.8324	0.3	102	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	90.2167	9.8	90	0.00
29	T	2-Butanone	50.0000	39.6922	20.6	81	0.00
30	T	Propionitrile	100.0000	83.2760	16.7	80	0.00
31	T	2,2-Dichloropropane	50.0000	55.3976	-10.8	114	0.00
32	T	cis-1,2-Dichloroethene	50.0000	52.2305	-4.5	107	0.00
33	C	Chloroform	50.0000	48.7431	2.5	103	0.00
34	T	1-Bromopropane	50.0000	53.3051	-6.6	110	0.00
35	T	Bromochloromethane	50.0000	57.2112	-14.4	110	0.00
36	T	Tetrahydrofuran	100.0000	74.6060	25.4#	77	0.00
37	S	Dibromofluoromethane	25.0000	25.1342	-0.5	102	0.00
38	T	1,1,1-Trichloroethane	50.0000	50.7254	-1.5	104	0.00
39	T	Cyclohexane	50.0000	45.8112	8.4	89	0.00
40	T	1,1-Dichloropropene	50.0000	51.4250	-2.8	106	0.00
41	T	Carbon Tetrachloride	50.0000	52.2900	-4.6	106	0.00
42	T	Tert-Amyl-Methyl ether	100.0000	94.7138	5.3	95	0.00
43	S	1,2-Dichloroethane-d4	25.0000	21.6888	13.2	89	0.01
44	T	1,2-Dichloroethane	50.0000	46.6397	6.7	94	0.00
45	T	Benzene	50.0000	50.4477	-0.9	106	0.00
46	T	Trichloroethene	50.0000	53.3346	-6.7	112	0.00
47	T	Methylcyclohexane	50.0000	50.1879	-0.4	96	0.00
48	C	1,2-Dichloropropane	50.0000	49.1462	1.7	101	0.00
49	T	1,4-Dioxane	200.0000	132.7307	33.6#	66	0.01
50	T	Bromodichloromethane	50.0000	50.7262	-1.5	102	0.00
51	T	Dibromomethane	50.0000	51.4449	-2.9	104	0.00
52	T	2-Chloroethyl Vinyl Ether	50.0000	44.3418	11.3	91	0.00
53	T	4-Methyl-2-Pentanone	50.0000	45.5192	9.0	92	0.00
54	T	cis-1,3-Dichloropropene	50.0000	52.5122	-5.0	103	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\070516\11M13078.D Vial: 3
Acq On : 5 Jul 2016 18:11 Operator: JDS
Sample : WG575198-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	50.0000	47.7161	4.6	94	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	102	0.00
57	S	Toluene-d8	25.0000	24.7539	1.0	104	0.00
58	C	Toluene	50.0000	52.3109	-4.6	108	0.00
59	T	Ethyl Methacrylate	50.0000	49.4992	1.0	95	-0.01
60	T	trans-1,3-Dichloropropene	50.0000	50.9453	-1.9	101	0.00
61	T	1,1,2-Trichloroethane	50.0000	50.3297	-0.7	104	0.00
62	T	2-Hexanone	50.0000	40.1301	19.7	82	0.00
63	T	1,3-Dichloropropane	50.0000	49.9981	0.0	101	0.00
64	T	Tetrachloroethene	50.0000	54.6897	-9.4	114	0.00
65	T	Dibromochloromethane	50.0000	53.8695	-7.7	106	0.00
66	T	1,2-Dibromoethane	50.0000	51.1814	-2.4	104	0.00
67	T	1-Chlorohexane	50.0000	49.9805	0.0	99	0.00
68	P	Chlorobenzene	50.0000	52.7681	-5.5	109	0.00
69	T	1,1,1,2-Tetrachloroethane	50.0000	52.8079	-5.6	108	0.00
70	C	Ethylbenzene	50.0000	52.2340	-4.5	108	0.00
71	T	m-,p-Xylene	100.0000	105.5236	-5.5	109	0.00
72	T	o-Xylene	50.0000	52.1513	-4.3	106	0.00
73	T	Styrene	50.0000	54.3322	-8.7	107	0.00
74	P	Bromoform	50.0000	54.5103	-9.0	109	0.00
75	T	Isopropylbenzene	50.0000	52.8719	-5.7	107	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	102	0.00
77	P	1,1,2,2-Tetrachloroethane	50.0000	49.3393	1.3	99	0.00
78	S	p-Bromofluorobenzene	25.0000	23.0180	7.9	101	0.00
79	T	1,2,3-Trichloropropane	50.0000	46.7361	6.5	101	0.00
80	T	trans-1,4-Dichloro-2-Butene	50.0000	34.7917	30.4#	74	0.00
81	T	n-Propylbenzene	50.0000	51.5272	-3.1	105	0.00
82	T	Bromobenzene	50.0000	51.3906	-2.8	110	0.00
83	T	1,3,5-Trimethylbenzene	50.0000	50.8453	-1.7	105	-0.01
84	T	2-Chlorotoluene	50.0000	49.0521	1.9	104	0.00
85	T	4-Chlorotoluene	50.0000	49.4506	1.1	104	0.00
86	T	a-Methylstyrene	50.0000	49.6851	0.6	96	0.00
87	T	tert-Butylbenzene	50.0000	53.3666	-6.7	111	-0.01
88	T	1,2,4-Trimethylbenzene	50.0000	51.5191	-3.0	105	0.00
89	T	sec-Butylbenzene	50.0000	51.2548	-2.5	105	0.00
90	T	p-Isopropyltoluene	50.0000	52.0067	-4.0	106	0.00
91	T	1,3-Dichlorobenzene	50.0000	50.9975	-2.0	109	0.00
92	T	1,4-Dichlorobenzene	50.0000	50.1563	-0.3	108	0.00
93	T	n-Butylbenzene	50.0000	49.4744	1.1	101	0.00
94	T	1,2-Dichlorobenzene	50.0000	50.7317	-1.5	106	0.00
95	T	1,2-Dibromo-3-Chloropropane	50.0000	42.7833	14.4	94	0.00
96	T	1,2,4-Trichlorobenzene	50.0000	49.6815	0.6	102	0.00
97	T	Hexachlorobutadiene	50.0000	47.0854	5.8	99	0.00
98	T	Naphthalene	50.0000	47.7960	4.4	97	0.00
99	T	1,2,3-Trichlorobenzene	50.0000	48.2261	3.5	102	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M13078.D 8260WT.M Tue Jul 05 18:33:02 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070316\6M140390.D Vial: 3
Acq On : 3 Jul 2016 11:01 Operator: TMB
Sample : WG575091-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 03 11:27:24 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	610792	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	440916	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	243629	25.00 ug/L	-0.01
System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	158386	25.5593 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.24%		
43) 1,2-Dichloroethane-d4	10.31	65	196920	25.1727 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.68%		
58) Toluene-d8	13.04	98	541250	24.9286 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.72%		
80) p-Bromofluorobenzene	17.02	95	234648	24.5926 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.36%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	598266	58.5947 ug/L	100
3) Chloromethane	3.36	50	522098	45.8004 ug/L	99
4) Vinyl Chloride	3.56	62	355205	56.7416 ug/L	100
5) 1,3-Butadiene	3.60	54	235267	65.8778 ug/L	92
6) Bromomethane	4.38	94	190964	45.9056 ug/L	100
7) Chloroethane	4.53	64	205919	52.0588 ug/L	93
8) Trichlorofluoromethane	5.00	101	626469	65.6150 ug/L	100
9) Diethyl ether	5.55	59	569601	101.1118 ug/L	95
10) Isoprene	5.57	67	453481	53.2181 ug/L	94
11) Acrolein	5.79	56	47740	50.9484 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	321257	54.0802 ug/L	97
13) Acetone	5.90	43	95362	48.7322 ug/L	98
14) 1,1-Dichloroethene	6.11	61	609434	52.8761 ug/L	94
15) Tert-Butyl Alcohol	6.25	59	109302	182.6624 ug/L	100
16) Dimethyl Sulfide	6.38	62	249437	49.6220 ug/L	92
17) Iodomethane	6.65	142	222054	53.1355 ug/L	89
18) Methyl acetate	6.69	43	269275	50.8522 ug/L	97
19) Methylene Chloride	6.93	84	329564	49.8626 ug/L	88
20) Carbon Disulfide	6.97	76	1101267	52.1439 ug/L	100
21) Acrylonitrile	7.15	53	122697	50.4989 ug/L	98
22) Methyl Tert Butyl Ether	7.18	73	882848	50.3924 ug/L	100
23) trans-1,2-Dichloroethene	7.42	96	319372	51.7383 ug/L	88
24) n-Hexane	7.51	57	576878	55.0649 ug/L	97
25) Diisopropyl ether	7.89	45	2849066	101.0394 ug/L	98
26) Vinyl Acetate	8.09	43	739586	62.8310 ug/L	97
27) 1,1-Dichloroethane	8.10	63	682401	51.3458 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	2255051	99.4077 ug/L	98
29) 2-Butanone	8.73	43	148875	49.6990 ug/L	96
30) Propionitrile	8.85	54	80041	98.4596 ug/L	98
31) 2,2-Dichloropropane	8.96	77	561148	55.9651 ug/L	99
32) cis-1,2-Dichloroethene	9.03	96	349159	51.6737 ug/L	88
33) Chloroform	9.26	83	616814	51.8060 ug/L	99
34) 1-Bromopropane	9.41	122	55995	52.4013 ug/L	100
35) Bromochloromethane	9.52	130	194503	53.5664 ug/L	100
36) Tetrahydrofuran	9.56	42	188840	90.3812 ug/L	94
38) 1,1,1-Trichloroethane	9.85	97	566562	54.6573 ug/L	98
39) Cyclohexane	9.88	56	695349	51.5608 ug/L	95
40) 1,1-Dichloropropene	10.08	75	468718	51.9148 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1706431	99.0642 ug/L	97
42) Carbon Tetrachloride	10.23	117	508934	59.7948 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140390.D 8260WTR.M Sun Jul 03 11:27:27 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070316\6M140390.D Vial: 3
Acq On : 3 Jul 2016 11:01 Operator: TMB
Sample : WG575091-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 03 11:27:24 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	507654	53.1790 ug/L	98
46)	Benzene	10.48	78	1299096	50.9816 ug/L	96
47)	Trichloroethene	11.35	130	314126	49.9573 ug/L	88
48)	Methylcyclohexane	11.43	83	515633	52.2340 ug/L	94
49)	1,2-Dichloropropane	11.59	63	371455	50.6193 ug/L	95
50)	1,4-Dioxane	11.94	88	9171	184.6155 ug/L	93
51)	Bromodichloromethane	11.93	83	481923	54.4275 ug/L	99
52)	Dibromomethane	12.03	93	190013	53.5182 ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.32	63	178209	48.4368 ug/L	99
54)	4-Methyl-2-Pentanone	12.35	58	114989	50.7829 ug/L	98
55)	cis-1,3-Dichloropropene	12.68	75	546953	53.2056 ug/L	99
56)	Dimethyl Disulfide	12.97	79	297353	51.9613 ug/L	99
59)	Toluene	13.15	91	1324388	50.3990 ug/L	100
60)	Ethyl Methacrylate	13.32	69	383812	51.3368 ug/L	93
62)	trans-1,3-Dichloropropene	13.39	75	497889	53.2841 ug/L	95
63)	1,1,2-Trichloroethane	13.62	97	249929	51.3933 ug/L	99
64)	2-Hexanone	13.58	43	230833	49.9925 ug/L	96
65)	1,3-Dichloropropane	13.99	76	457061	49.8685 ug/L	93
66)	Tetrachloroethene	14.10	166	323265	51.6220 ug/L	92
67)	Dibromochloromethane	14.41	129	327604	55.4847 ug/L	99
68)	1,2-Dibromoethane	14.71	107	243708	51.9183 ug/L	99
69)	1-Chlorohexane	14.85	91	454321	51.9505 ug/L	89
70)	Chlorobenzene	15.30	112	853146	50.6212 ug/L	91
71)	1,1,1,2-Tetrachloroethane	15.35	131	325894	54.3448 ug/L	97
72)	Ethylbenzene	15.35	106	460105	52.1571 ug/L	92
73)	m-,p-Xylene	15.45	106	1108930	104.0127 ug/L	93
74)	o-Xylene	16.10	106	555031	52.1979 ug/L	92
75)	Styrene	16.16	104	950218	53.1173 ug/L	92
76)	Bromoform	16.71	173	199222	54.4114 ug/L	98
77)	Isopropylbenzene	16.61	105	1445737	52.1105 ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.88	83	312845	52.9095 ug/L	100
81)	1,2,3-Trichloropropane	17.11	110	88575	50.5272 ug/L	80
82)	trans-1,4-Dichloro-2-Buten	17.18	53	122874	54.9641 ug/L	99
83)	n-Propylbenzene	17.22	91	1804158	51.5394 ug/L	98
84)	Bromobenzene	17.34	156	371494	50.7901 ug/L	90
85)	1,3,5-Trimethylbenzene	17.44	105	1269771	51.7521 ug/L	97
86)	2-Chlorotoluene	17.51	91	1127394	47.6217 ug/L	99
87)	4-Chlorotoluene	17.57	91	1202180	53.2658 ug/L	93
88)	a-Methylstyrene	17.92	118	651345	52.7808 ug/L	95
89)	tert-Butylbenzene	17.98	134	252542	51.2308 ug/L	70
90)	1,2,4-Trimethylbenzene	18.04	105	1328864	52.7800 ug/L	97
91)	sec-Butylbenzene	18.30	105	1518021	51.6852 ug/L	98
92)	p-Isopropyltoluene	18.50	119	1306113	52.1819 ug/L	98
93)	1,3-Dichlorobenzene	18.70	146	733780	50.9704 ug/L	95
94)	1,4-Dichlorobenzene	18.85	146	730801	50.2100 ug/L	94
95)	n-Butylbenzene	19.12	91	1290014	52.5548 ug/L	96
96)	1,2-Dichlorobenzene	19.43	146	682425	50.4901 ug/L	94
97)	1,2-Dibromo-3-Chloropropan	20.62	75	63230	54.6018 ug/L	80
98)	1,2,4-Trichlorobenzene	21.96	180	478570	50.0910 ug/L	99
99)	Hexachlorobutadiene	22.15	225	199578	50.2431 ug/L	99
100)	Naphthalene	22.38	128	978689	50.1244 ug/L	100
101)	1,2,3-Trichlorobenzene	22.75	180	431388	48.7643 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140390.D 8260WTR.M Sun Jul 03 11:27:28 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070316\6M140390.D Vial: 3
Acq On : 3 Jul 2016 11:01 Operator: TMB
Sample : WG575091-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 3 11:27 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

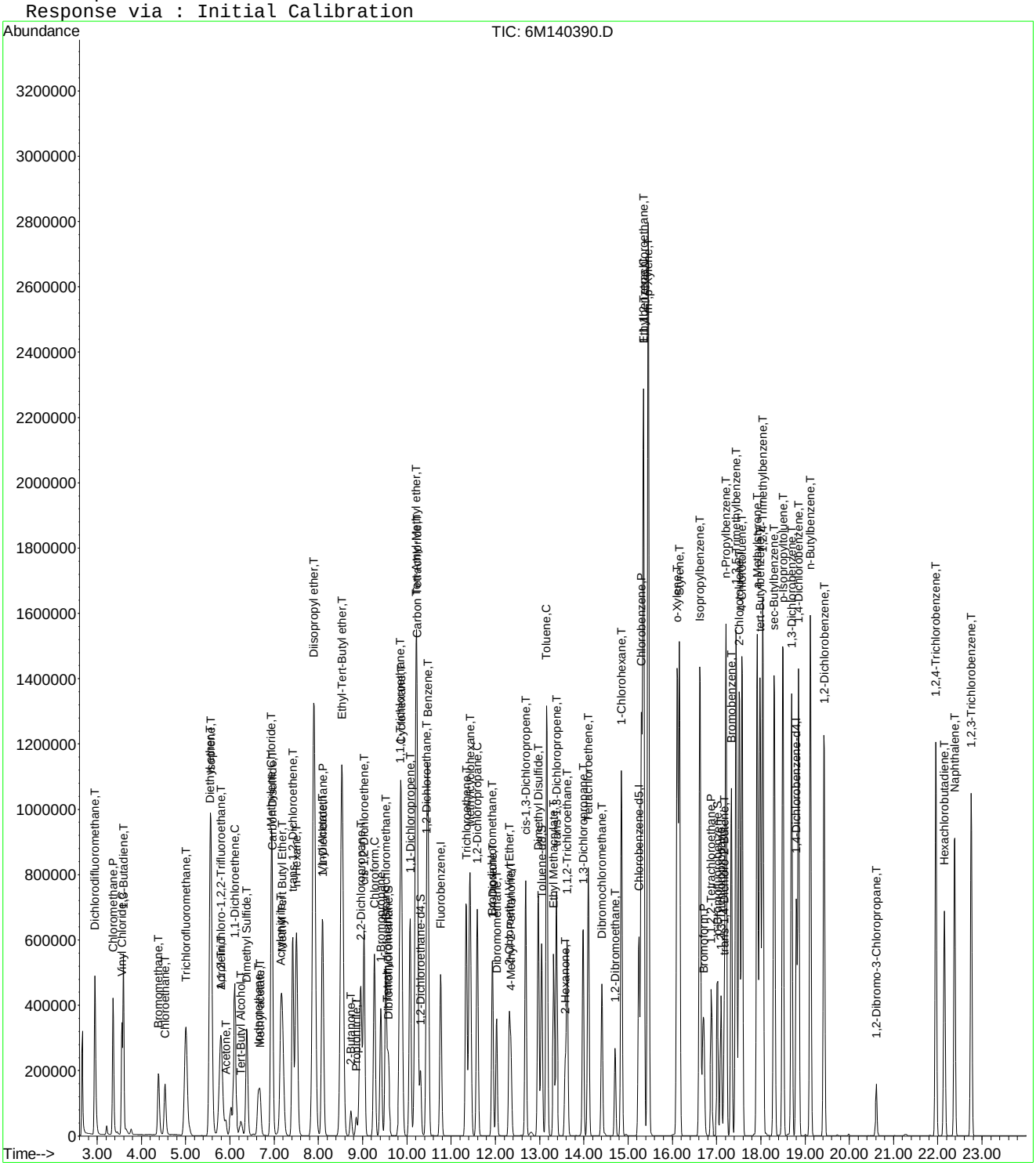

6M140390.D 8260WTR.M Sun Jul 03 11:27:30 2016 Page 3

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070316\6M140390.D Vial: 3
Acq On : 3 Jul 2016 11:01 Operator: TMB
Sample : WG575091-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	92	0.00
2	T	Dichlorodifluoromethane	0.4179	0.4898	-17.2	103	0.00
3	P	Chloromethane	0.4666	0.4274	8.4	85	0.00
4	C	Vinyl Chloride	0.2562	0.2908	-13.5	103	0.00
5	T	1,3-Butadiene	0.1608	0.1926	-19.8	115	0.00
6	T	Bromomethane	0.1703	0.1563	8.2	89	0.00
7	T	Chloroethane	0.1619	0.1686	-4.1	95	0.00
8	T	Trichlorofluoromethane	0.3908	0.5128	-31.2#	126	0.00
9	T	Diethyl ether	0.2306	0.2331	-1.1	90	0.00
10	T	Isoprene	0.3488	0.3712	-6.4	95	0.00
11	T	Acrolein	0.0384	0.0391	-1.9	95	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2431	0.2630	-8.2	101	0.00
13	T	Acetone	0.0801	0.0781	2.5	90	0.00
14	C	1,1-Dichloroethene	0.4718	0.4989	-5.8	98	0.00
15	T	Tert-Butyl Alcohol	0.0245	0.0224	8.7	85	-0.04
16	T	Dimethyl Sulfide	0.2057	0.2042	0.8	90	0.00
17	T	Iodomethane	0.1391	0.1818	-30.7#	93	0.00
18	T	Methyl acetate	0.2167	0.2204	-1.7	94	0.00
19	T	Methylene Chloride	0.2705	0.2698	0.3	95	0.00
20	T	Carbon Disulfide	0.8644	0.9015	-4.3	95	0.00
21	T	Acrylonitrile	0.0994	0.1004	-1.0	90	0.00
22	T	Methyl Tert Butyl Ether	0.7171	0.7227	-0.8	93	0.00
23	T	trans-1,2-Dichloroethene	0.2527	0.2614	-3.5	96	0.00
24	T	n-Hexane	0.4288	0.4722	-10.1	102	0.00
25	T	Diisopropyl ether	1.1541	1.1661	-1.0	93	0.00
26	T	Vinyl Acetate	0.4818	0.6054	-25.7#	114	0.00
27	P	1,1-Dichloroethane	0.5440	0.5586	-2.7	95	0.00
28	T	Ethyl-Tert-Butyl ether	0.9285	0.9230	0.6	91	0.00
29	T	2-Butanone	0.1226	0.1219	0.6	89	0.00
30	T	Propionitrile	0.0333	0.0328	1.5	89	0.00
31	T	2,2-Dichloropropane	0.4104	0.4594	-11.9	105	0.00
32	T	cis-1,2-Dichloroethene	0.2766	0.2858	-3.3	95	0.00
33	C	Chloroform	0.4873	0.5049	-3.6	97	0.00
34		1-Bromopropane	0.0394	0.0458	-16.2	94	0.00
35	T	Bromochloromethane	0.1486	0.1592	-7.1	96	0.00
36	T	Tetrahydrofuran	0.0855	0.0773	9.6	87	0.00
37	S	Dibromofluoromethane	0.2536	0.2593	-2.2	93	0.00
38	T	1,1,1-Trichloroethane	0.4243	0.4638	-9.3	99	0.00
39	T	Cyclohexane	0.5520	0.5692	-3.1	96	0.00
40	T	1,1-Dichloropropene	0.3695	0.3837	-3.8	96	0.00
41	T	Tert-Amyl-Methyl ether	0.7050	0.6985	0.9	91	0.00
42	T	Carbon Tetrachloride	0.3484	0.4166	-19.6	101	0.00
43	S	1,2-Dichloroethane-d4	0.3202	0.3224	-0.7	93	0.00
44		Heptane	0.0000	0.0000	0.0	91	0.00
45	T	1,2-Dichloroethane	0.3907	0.4156	-6.4	97	0.00
46	T	Benzene	1.0430	1.0635	-2.0	94	0.00
47	T	Trichloroethene	0.2574	0.2571	0.1	92	0.00
48	T	Methylcyclohexane	0.4041	0.4221	-4.5	97	0.00
49	C	1,2-Dichloropropane	0.3004	0.3041	-1.2	92	0.00
50	T	1,4-Dioxane	0.0020	0.0019	7.4	81	0.00
51	T	Bromodichloromethane	0.3624	0.3945	-8.9	97	0.00
52	T	Dibromomethane	0.1453	0.1555	-7.0	95	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1506	0.1459	3.1	83	0.00
54	T	4-Methyl-2-Pentanone	0.0927	0.0941	-1.6	91	0.00

(#) = Out of Range

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070316\6M140390.D Vial: 3
Acq On : 3 Jul 2016 11:01 Operator: TMB
Sample : WG575091-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4208	0.4477	-6.4	95	0.00
56	T	Dimethyl Disulfide	0.2342	0.2434	-3.9	92	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	92	0.00
58	S	Toluene-d8	1.2311	1.2276	0.3	93	0.00
59	C	Toluene	1.4900	1.5019	-0.8	95	0.00
60	T	Ethyl Methacrylate	0.4239	0.4352	-2.7	91	0.00
61		Paraldehyde	0.0000	0.0000	0.0	93	0.00
62	T	trans-1,3-Dichloropropene	0.5298	0.5646	-6.6	95	0.00
63	T	1,1,2-Trichloroethane	0.2757	0.2834	-2.8	94	0.00
64	T	2-Hexanone	0.2618	0.2618	0.0	90	0.00
65	T	1,3-Dichloropropane	0.5197	0.5183	0.3	92	0.00
66	T	Tetrachloroethene	0.3551	0.3666	-3.2	96	0.00
67	T	Dibromochloromethane	0.3348	0.3715	-11.0	95	0.00
68	T	1,2-Dibromoethane	0.2662	0.2764	-3.8	93	0.00
69	T	1-Chlorohexane	0.4959	0.5152	-3.9	95	0.00
70	P	Chlorobenzene	0.9556	0.9675	-1.2	94	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3400	0.3696	-8.7	97	0.00
72	C	Ethylbenzene	0.5002	0.5218	-4.3	95	0.00
73	T	m-,p-Xylene	0.6045	0.6288	-4.0	95	-0.01
74	T	o-Xylene	0.6029	0.6294	-4.4	94	-0.01
75	T	Styrene	1.0143	1.0776	-6.2	94	0.00
76	P	Bromoform	0.2076	0.2259	-8.8	95	0.00
77	T	Isopropylbenzene	1.5731	1.6395	-4.2	95	-0.01
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	92	-0.01
79	P	1,1,2,2-Tetrachloroethane	0.6068	0.6421	-5.8	96	0.00
80	S	p-Bromofluorobenzene	0.9791	0.9631	1.6	91	0.00
81	T	1,2,3-Trichloropropane	0.1799	0.1818	-1.1	90	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.2294	0.2522	-9.9	95	0.00
83	T	n-Propylbenzene	3.5921	3.7027	-3.1	96	0.00
84	T	Bromobenzene	0.7506	0.7624	-1.6	95	0.00
85	T	1,3,5-Trimethylbenzene	2.5177	2.6060	-3.5	95	-0.01
86	T	2-Chlorotoluene	2.4293	2.3138	4.8	88	-0.01
87	T	4-Chlorotoluene	2.3160	2.4672	-6.5	103	-0.01
88	T	a-Methylstyrene	1.2663	1.3368	-5.6	94	0.00
89	T	tert-Butylbenzene	0.5058	0.5183	-2.5	95	-0.01
90	T	1,2,4-Trimethylbenzene	2.5836	2.7272	-5.6	96	-0.01
91	T	sec-Butylbenzene	3.0139	3.1154	-3.4	95	-0.01
92	T	p-Isopropyltoluene	2.5685	2.6805	-4.4	95	0.00
93	T	1,3-Dichlorobenzene	1.4773	1.5059	-1.9	96	0.00
94	T	1,4-Dichlorobenzene	1.4935	1.4998	-0.4	95	0.00
95	T	n-Butylbenzene	2.5188	2.6475	-5.1	96	0.00
96	T	1,2-Dichlorobenzene	1.3869	1.4005	-1.0	94	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1188	0.1298	-9.2	98	0.00
98	T	1,2,4-Trichlorobenzene	0.9804	0.9822	-0.2	93	-0.01
99	T	Hexachlorobutadiene	0.4076	0.4096	-0.5	94	0.00
100	T	Naphthalene	2.0036	2.0086	-0.2	87	0.00
101	T	1,2,3-Trichlorobenzene	0.9078	0.8853	2.5	90	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140390.D 8260WTR.M Sun Jul 03 11:27:37 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070316\6M140390.D Vial: 3
Acq On : 3 Jul 2016 11:01 Operator: TMB
Sample : WG575091-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	92	0.00
2	T	Dichlorodifluoromethane	50.0000	58.5947	-17.2	103	0.00
3	P	Chloromethane	50.0000	45.8004	8.4	85	0.00
4	C	Vinyl Chloride	50.0000	56.7416	-13.5	103	0.00
5	T	1,3-Butadiene	50.0000	65.8778	-31.8#	115	0.00
6	T	Bromomethane	50.0000	45.9056	8.2	89	0.00
7	T	Chloroethane	50.0000	52.0588	-4.1	95	0.00
8	T	Trichlorofluoromethane	50.0000	65.6150	-31.2#	126	0.00
9	T	Diethyl ether	100.0000	101.1118	-1.1	90	0.00
10	T	Isoprene	50.0000	53.2181	-6.4	95	0.00
11	T	Acrolein	50.0000	50.9484	-1.9	95	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	54.0802	-8.2	101	0.00
13	T	Acetone	50.0000	48.7322	2.5	90	0.00
14	C	1,1-Dichloroethene	50.0000	52.8761	-5.8	98	0.00
15	T	Tert-Butyl Alcohol	200.0000	182.6624	8.7	85	-0.04
16	T	Dimethyl Sulfide	50.0000	49.6220	0.8	90	0.00
17	T	Iodomethane	50.0000	53.1355	-6.3	93	0.00
18	T	Methyl acetate	50.0000	50.8522	-1.7	94	0.00
19	T	Methylene Chloride	50.0000	49.8626	0.3	95	0.00
20	T	Carbon Disulfide	50.0000	52.1439	-4.3	95	0.00
21	T	Acrylonitrile	50.0000	50.4988	-1.0	90	0.00
22	T	Methyl Tert Butyl Ether	50.0000	50.3924	-0.8	93	0.00
23	T	trans-1,2-Dichloroethene	50.0000	51.7383	-3.5	96	0.00
24	T	n-Hexane	50.0000	55.0649	-10.1	102	0.00
25	T	Diisopropyl ether	100.0000	101.0394	-1.0	93	0.00
26	T	Vinyl Acetate	50.0000	62.8310	-25.7#	114	0.00
27	P	1,1-Dichloroethane	50.0000	51.3458	-2.7	95	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	99.4077	0.6	91	0.00
29	T	2-Butanone	50.0000	49.6990	0.6	89	0.00
30	T	Propionitrile	100.0000	98.4596	1.5	89	0.00
31	T	2,2-Dichloropropane	50.0000	55.9651	-11.9	105	0.00
32	T	cis-1,2-Dichloroethene	50.0000	51.6737	-3.3	95	0.00
33	C	Chloroform	50.0000	51.8060	-3.6	97	0.00
34		1-Bromopropane	50.0000	52.4013	-4.8	94	0.00
35	T	Bromochloromethane	50.0000	53.5664	-7.1	96	0.00
36	T	Tetrahydrofuran	100.0000	90.3812	9.6	87	0.00
37	S	Dibromofluoromethane	25.0000	25.5593	-2.2	93	0.00
38	T	1,1,1-Trichloroethane	50.0000	54.6573	-9.3	99	0.00
39	T	Cyclohexane	50.0000	51.5608	-3.1	96	0.00
40	T	1,1-Dichloropropene	50.0000	51.9148	-3.8	96	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	99.0642	0.9	91	0.00
42	T	Carbon Tetrachloride	50.0000	59.7948	-19.6	101	0.00
43	S	1,2-Dichloroethane-d4	25.0000	25.1727	-0.7	93	0.00
44		Heptane	-1.0000	0.0000	0.0	91	0.00
45	T	1,2-Dichloroethane	50.0000	53.1790	-6.4	97	0.00
46	T	Benzene	50.0000	50.9816	-2.0	94	0.00
47	T	Trichloroethene	50.0000	49.9573	0.1	92	0.00
48	T	Methylcyclohexane	50.0000	52.2340	-4.5	97	0.00
49	C	1,2-Dichloropropane	50.0000	50.6193	-1.2	92	0.00
50	T	1,4-Dioxane	200.0000	184.6155	7.7	81	0.00
51	T	Bromodichloromethane	50.0000	54.4275	-8.9	97	0.00
52	T	Dibromomethane	50.0000	53.5182	-7.0	95	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	48.4368	3.1	83	0.00
54	T	4-Methyl-2-Pentanone	50.0000	50.7829	-1.6	91	0.00

(#) = Out of Range
6M140390.D 8260WTR.M Sun Jul 03 11:27:40 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070316\6M140390.D Vial: 3
Acq On : 3 Jul 2016 11:01 Operator: TMB
Sample : WG575091-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.2056	-6.4	95	0.00
56	T	Dimethyl Disulfide	50.0000	51.9613	-3.9	92	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	92	0.00
58	S	Toluene-d8	25.0000	24.9286	0.3	93	0.00
59	C	Toluene	50.0000	50.3990	-0.8	95	0.00
60	T	Ethyl Methacrylate	50.0000	51.3368	-2.7	91	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	93	0.00
62	T	trans-1,3-Dichloropropene	50.0000	53.2841	-6.6	95	0.00
63	T	1,1,2-Trichloroethane	50.0000	51.3933	-2.8	94	0.00
64	T	2-Hexanone	50.0000	49.9925	0.0	90	0.00
65	T	1,3-Dichloropropane	50.0000	49.8685	0.3	92	0.00
66	T	Tetrachloroethene	50.0000	51.6220	-3.2	96	0.00
67	T	Dibromochloromethane	50.0000	55.4847	-11.0	95	0.00
68	T	1,2-Dibromoethane	50.0000	51.9183	-3.8	93	0.00
69	T	1-Chlorohexane	50.0000	51.9505	-3.9	95	0.00
70	P	Chlorobenzene	50.0000	50.6212	-1.2	94	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	54.3448	-8.7	97	0.00
72	C	Ethylbenzene	50.0000	52.1571	-4.3	95	0.00
73	T	m-,p-Xylene	100.0000	104.0127	-4.0	95	-0.01
74	T	o-Xylene	50.0000	52.1979	-4.4	94	-0.01
75	T	Styrene	50.0000	53.1173	-6.2	94	0.00
76	P	Bromoform	50.0000	54.4114	-8.8	95	0.00
77	T	Isopropylbenzene	50.0000	52.1105	-4.2	95	-0.01
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	92	-0.01
79	P	1,1,2,2-Tetrachloroethane	50.0000	52.9095	-5.8	96	0.00
80	S	p-Bromofluorobenzene	25.0000	24.5926	1.6	91	0.00
81	T	1,2,3-Trichloropropane	50.0000	50.5272	-1.1	90	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	54.9641	-9.9	95	0.00
83	T	n-Propylbenzene	50.0000	51.5394	-3.1	96	0.00
84	T	Bromobenzene	50.0000	50.7901	-1.6	95	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	51.7521	-3.5	95	-0.01
86	T	2-Chlorotoluene	50.0000	47.6217	4.8	88	-0.01
87	T	4-Chlorotoluene	50.0000	53.2658	-6.5	103	-0.01
88	T	a-Methylstyrene	50.0000	52.7808	-5.6	94	0.00
89	T	tert-Butylbenzene	50.0000	51.2308	-2.5	95	-0.01
90	T	1,2,4-Trimethylbenzene	50.0000	52.7800	-5.6	96	-0.01
91	T	sec-Butylbenzene	50.0000	51.6852	-3.4	95	-0.01
92	T	p-Isopropyltoluene	50.0000	52.1819	-4.4	95	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.9704	-1.9	96	0.00
94	T	1,4-Dichlorobenzene	50.0000	50.2100	-0.4	95	0.00
95	T	n-Butylbenzene	50.0000	52.5549	-5.1	96	0.00
96	T	1,2-Dichlorobenzene	50.0000	50.4900	-1.0	94	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	54.6018	-9.2	98	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	50.0910	-0.2	93	-0.01
99	T	Hexachlorobutadiene	50.0000	50.2431	-0.5	94	0.00
100	T	Naphthalene	50.0000	50.1244	-0.2	87	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	48.7643	2.5	90	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140390.D 8260WTR.M Sun Jul 03 11:27:40 2016 Page 2

2.1.1.5 Raw QC Data

BFB

Data File : C:\MSDCHEM\1\DATA\042416\6M138750.D Vial: 1
Acq On : 24 Apr 2016 16:33 Operator: JDS
Sample : WG566155-01 50ng BFB 826-A9 Inst : HPMS6
Misc : 1,1 STD75485 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title : SOP: OVL MSV01

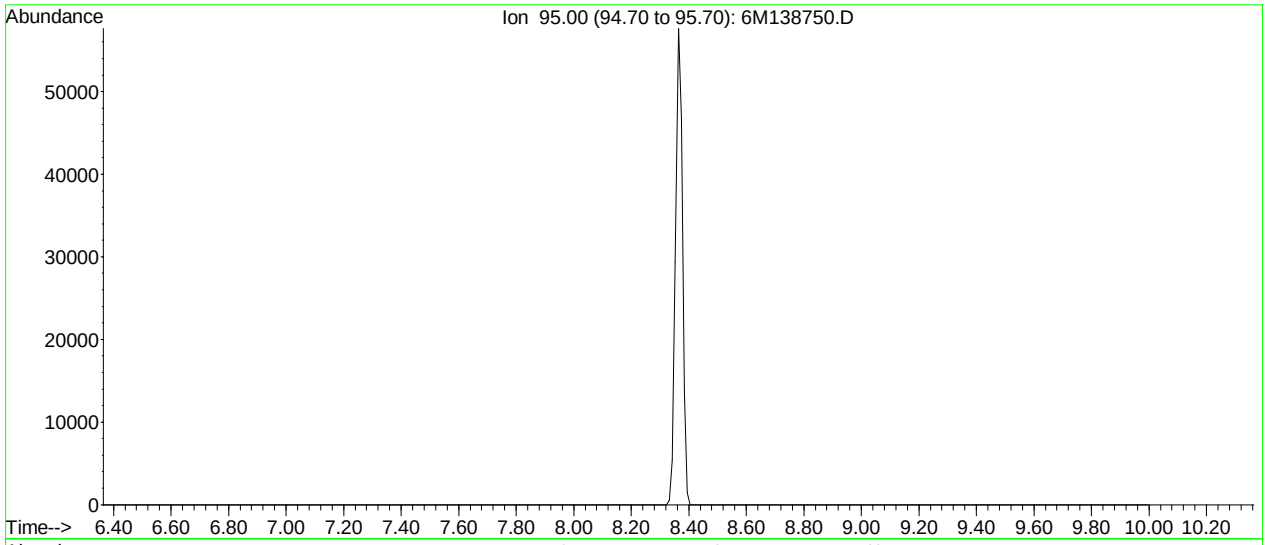

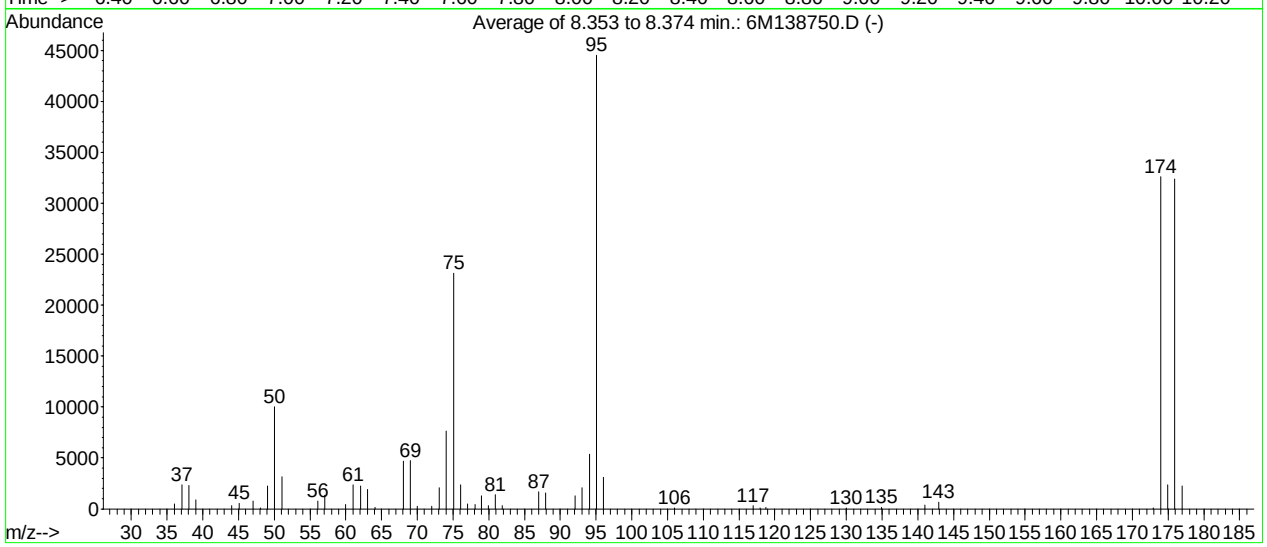

AutoFind: Scans 320, 321, 322; Background Corrected with Scan 315

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.5	10010	PASS
75	95	30	60	52.0	23152	PASS
95	95	100	100	100.0	44552	PASS
96	95	5	9	6.9	3085	PASS
173	174	0.00	2	0.3	113	PASS
174	95	50	100	73.2	32632	PASS
175	174	5	9	7.2	2336	PASS
176	174	95	101	99.2	32384	PASS
177	176	5	9	7.0	2251	PASS

6M138750.D BFB.M Mon Apr 25 09:21:54 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\051316\11M11836.D          Vial: 2
Acq On    : 13 May 2016  14:15                        Operator: JDS
Sample    : WG568769-01 50ng BFB STD 8260             Inst    : hpms11
Misc      : 1,1 STD76034                              Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title     : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
```

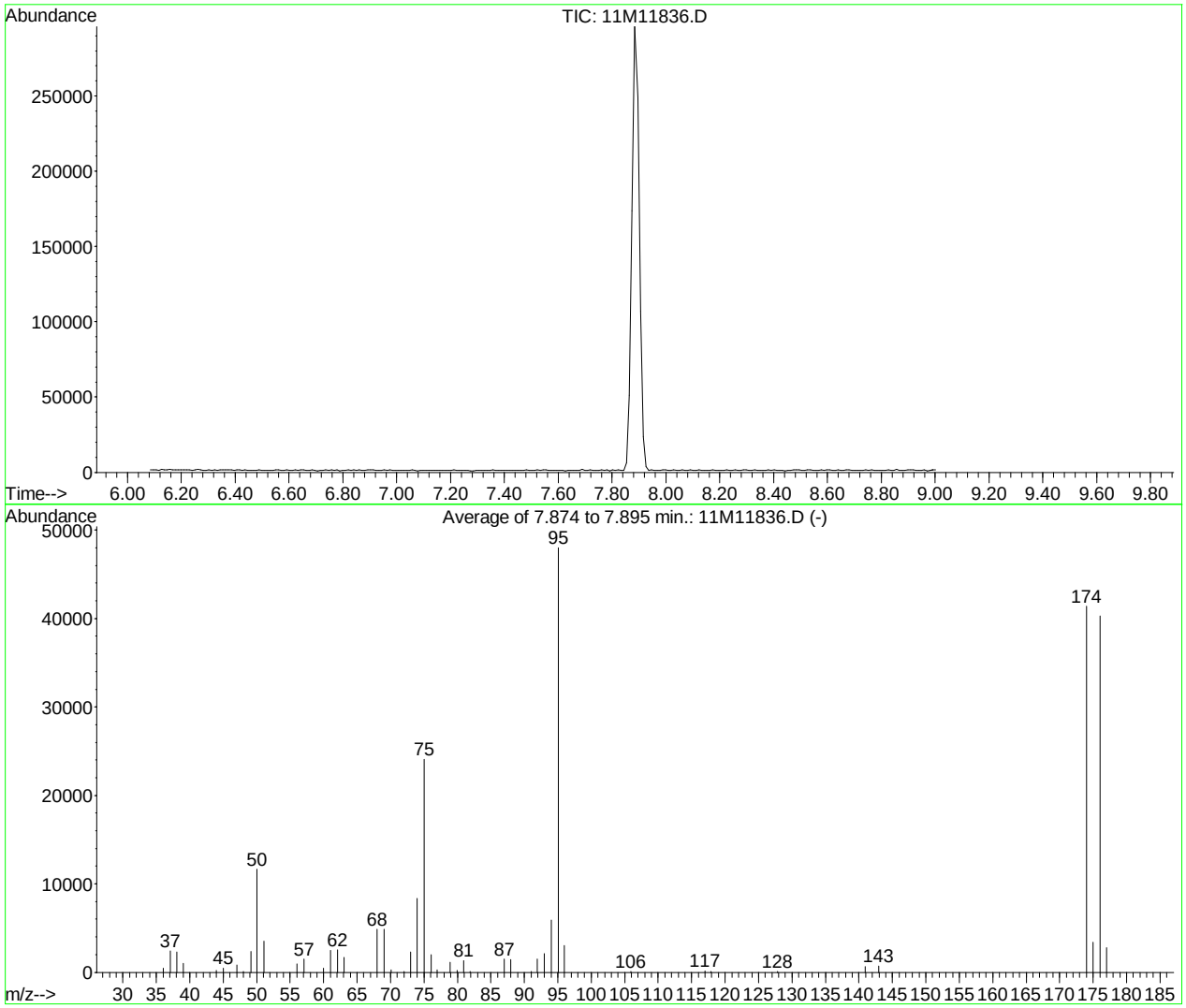

AutoFind: Scans 174, 175, 176; Background Corrected with Scan 169

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	24.2	11638	PASS
75	95	30	60	50.2	24088	PASS
95	95	100	100	100.0	48016	PASS
96	95	5	9	6.3	3008	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	86.2	41402	PASS
175	174	5	9	8.3	3421	PASS
176	174	95	101	97.3	40288	PASS
177	176	5	9	6.9	2789	PASS

11M11836.D 8260WT.M Tue May 17 14:18:03 2016

BFB

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140313.D Vial: 1
Acq On : 30 Jun 2016 11:36 Operator: TMB
Sample : WG574723-01 50ng BFB STD 8260 Inst : HPMS6
Misc : 1,1 STD76496 Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6

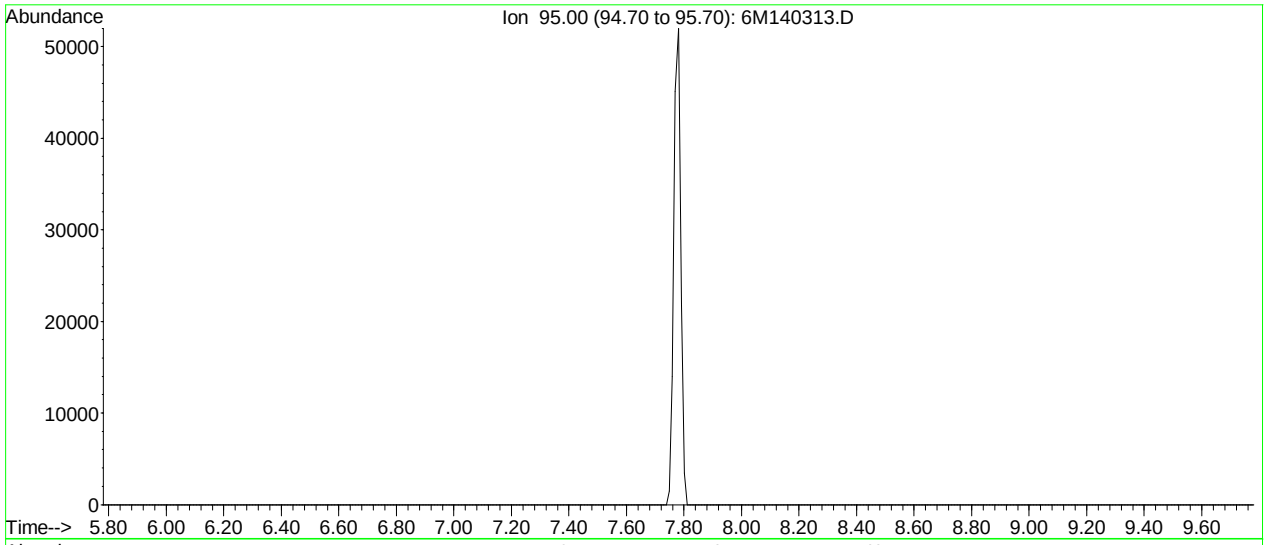

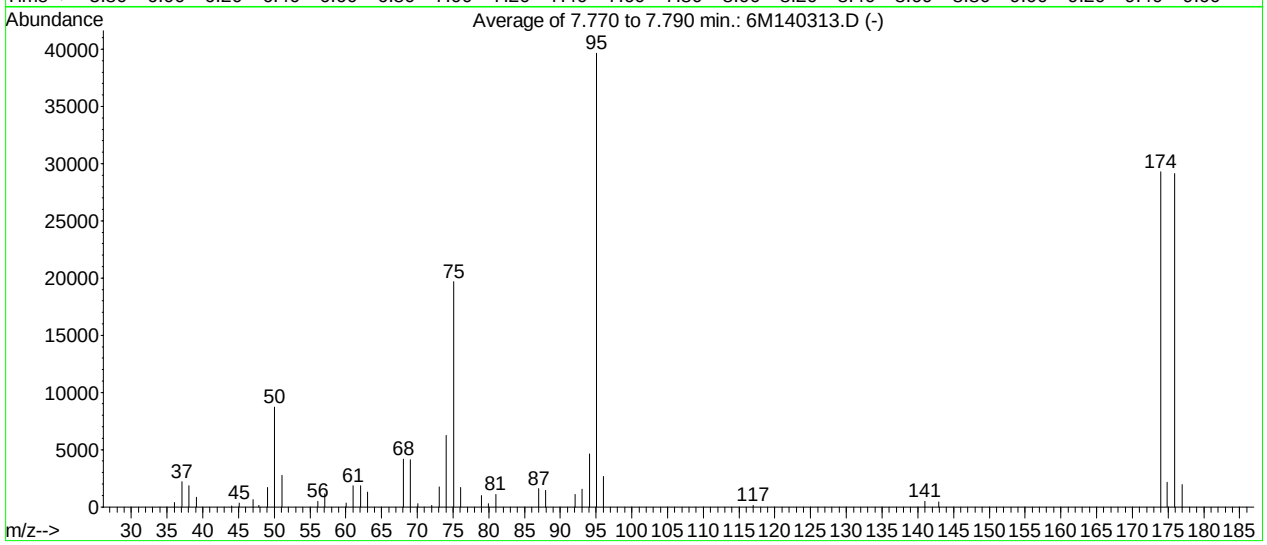

AutoFind: Scans 263, 264, 265; Background Corrected with Scan 258

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.0	8707	PASS
75	95	30	60	49.7	19699	PASS
95	95	100	100	100.0	39664	PASS
96	95	5	9	6.7	2652	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	73.8	29282	PASS
175	174	5	9	7.3	2131	PASS
176	174	95	101	99.6	29157	PASS
177	176	5	9	6.8	1969	PASS

6M140313.D 8260WTR.M Fri Jul 01 14:33:49 2016

BFB

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Data File : C:\MSDCHEM\1\DATA\070216\11M13041.D          Vial: 3
Acq On    :  2 Jul 2016  13:39                       Operator: TMB
Sample    : WG575085-01 50ng BFB STD 8260            Inst    : hpms11
Misc      : 1,1 STD76496                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title     : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
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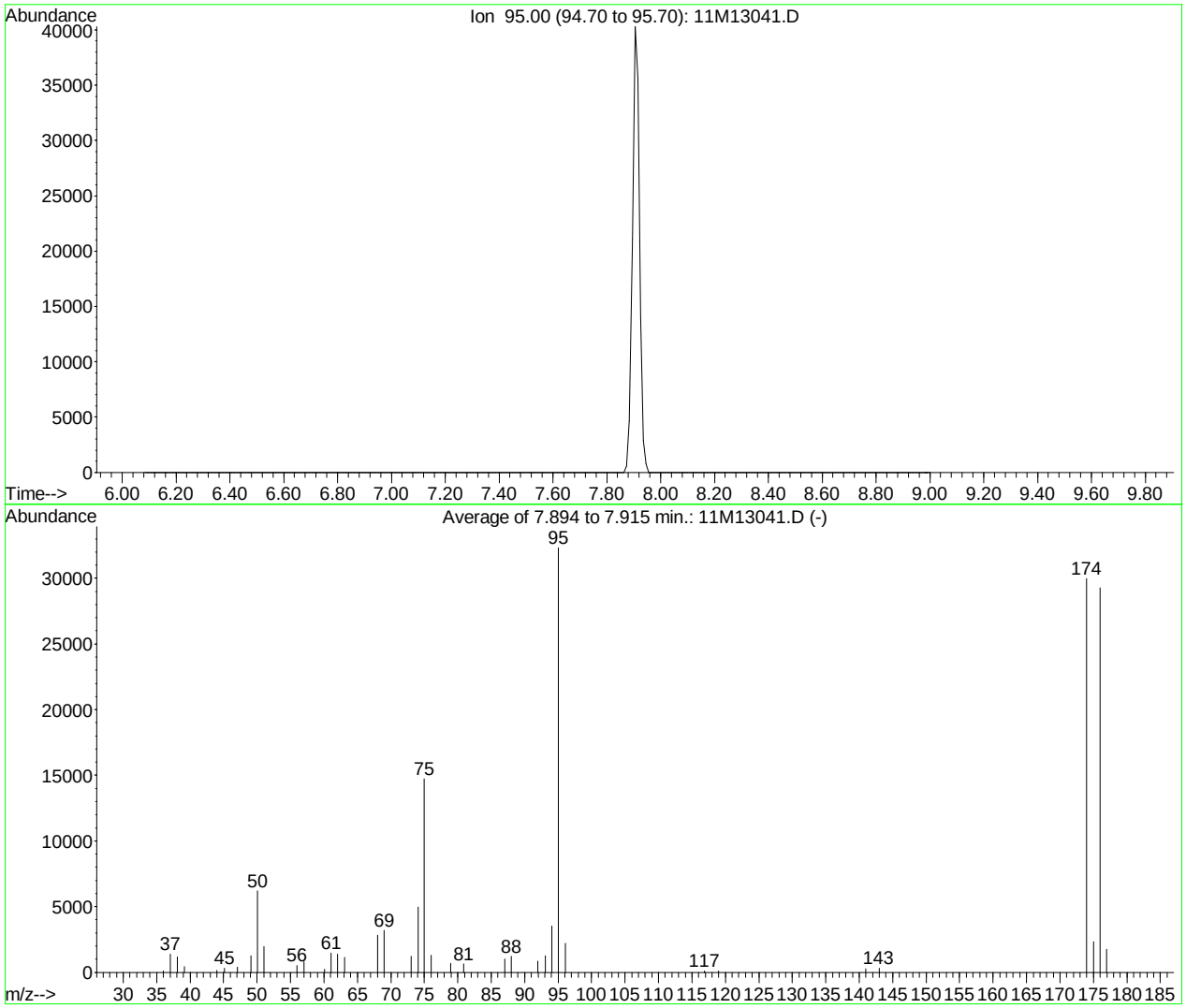

AutoFind: Scans 176, 177, 178; Background Corrected with Scan 171

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.2	6217	PASS
75	95	30	60	45.6	14733	PASS
95	95	100	100	100.0	32333	PASS
96	95	5	9	6.8	2189	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	92.7	29965	PASS
175	174	5	9	7.8	2333	PASS
176	174	95	101	97.7	29286	PASS
177	176	5	9	5.9	1736	PASS

11M13041.D 8260WT.M Sat Jul 02 13:49:18 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\070516\11M13076.D          Vial: 1
Acq On    :  5 Jul 2016  17:13                       Operator: JDS
Sample    : WG575198-01 50ng BFB STD 8260            Inst    : hpms11
Misc      : 1,1 STD76496                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title     : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
```

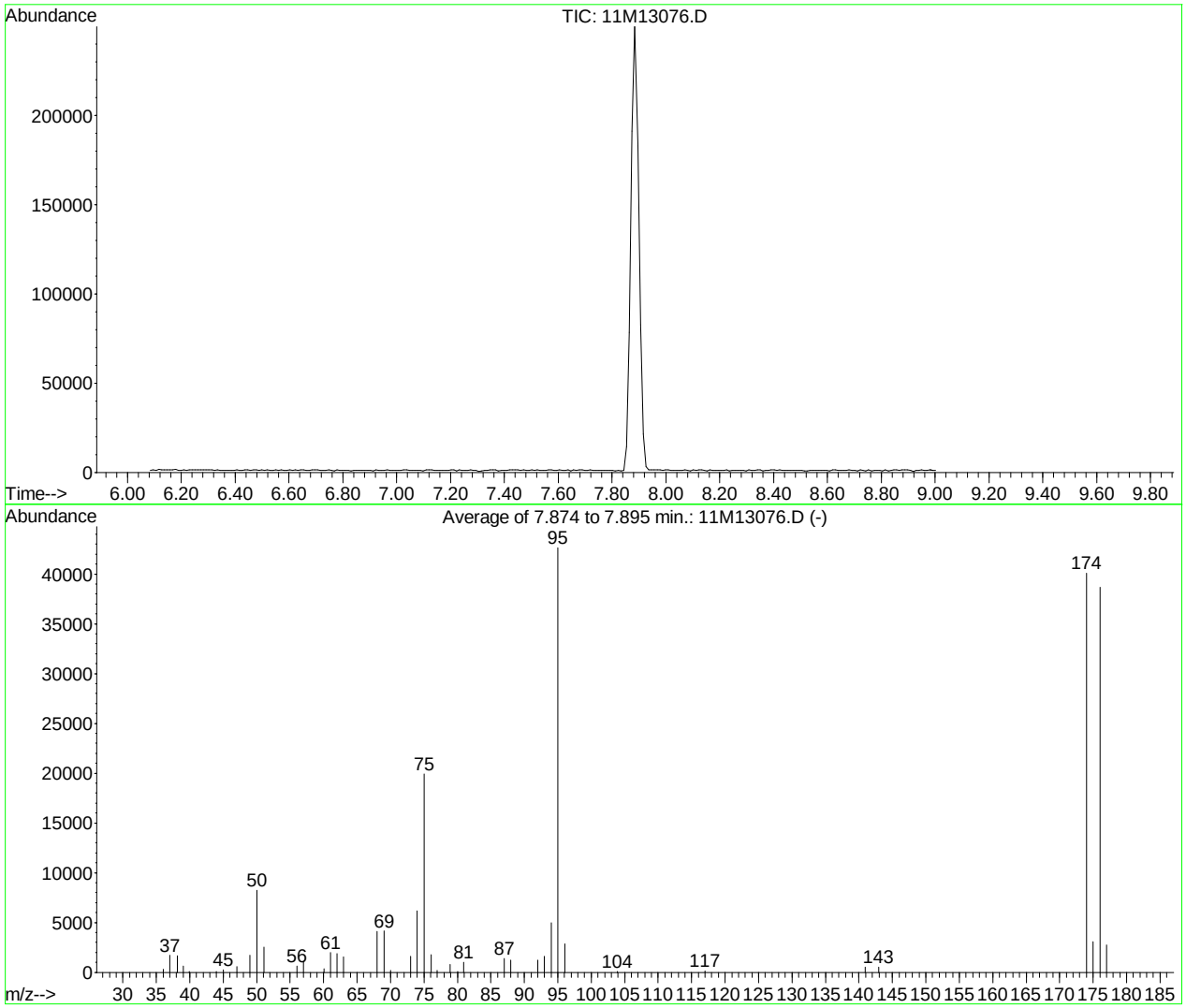

AutoFind: Scans 174, 175, 176; Background Corrected with Scan 169

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.4	8258	PASS
75	95	30	60	46.8	19945	PASS
95	95	100	100	100.0	42653	PASS
96	95	5	9	6.7	2862	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	94.0	40085	PASS
175	174	5	9	7.7	3095	PASS
176	174	95	101	96.5	38688	PASS
177	176	5	9	7.1	2730	PASS

11M13076.D 8260WT.M Wed Jul 06 09:11:17 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070216\11M13045.D Vial: 5
Acq On : 2 Jul 2016 15:43 Operator: TMB
Sample : WG575086-01 VBLK0702 BLANK STD 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 07 12:04:57 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	526215	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	437666	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	247728	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	139753	24.2669 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.08%		
43) 1,2-Dichloroethane-d4	10.23	65	132268	20.1428 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 80.56%		
57) Toluene-d8	12.47	98	482305	25.3623 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.44%		
78) p-Bromofluorobenzene	15.64	95	182044	23.8388 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.36%		

Target Compounds					Qvalue
13) Acetone	6.33	43	186	0.1489 ug/L #	49
36) Tetrahydrofuran	9.60	42	1252	0.9386 ug/L #	47
58) Toluene	12.56	91	2700	0.1219 ug/L	77

(#) = qualifier out of range (m) = manual integration
11M13045.D 8260WT.M Thu Jul 07 12:04:58 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070216\11M13045.D Vial: 5
Acq On : 2 Jul 2016 15:43 Operator: TMB
Sample : WG575086-01 VBLK0702 BLANK STD 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 7 12:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

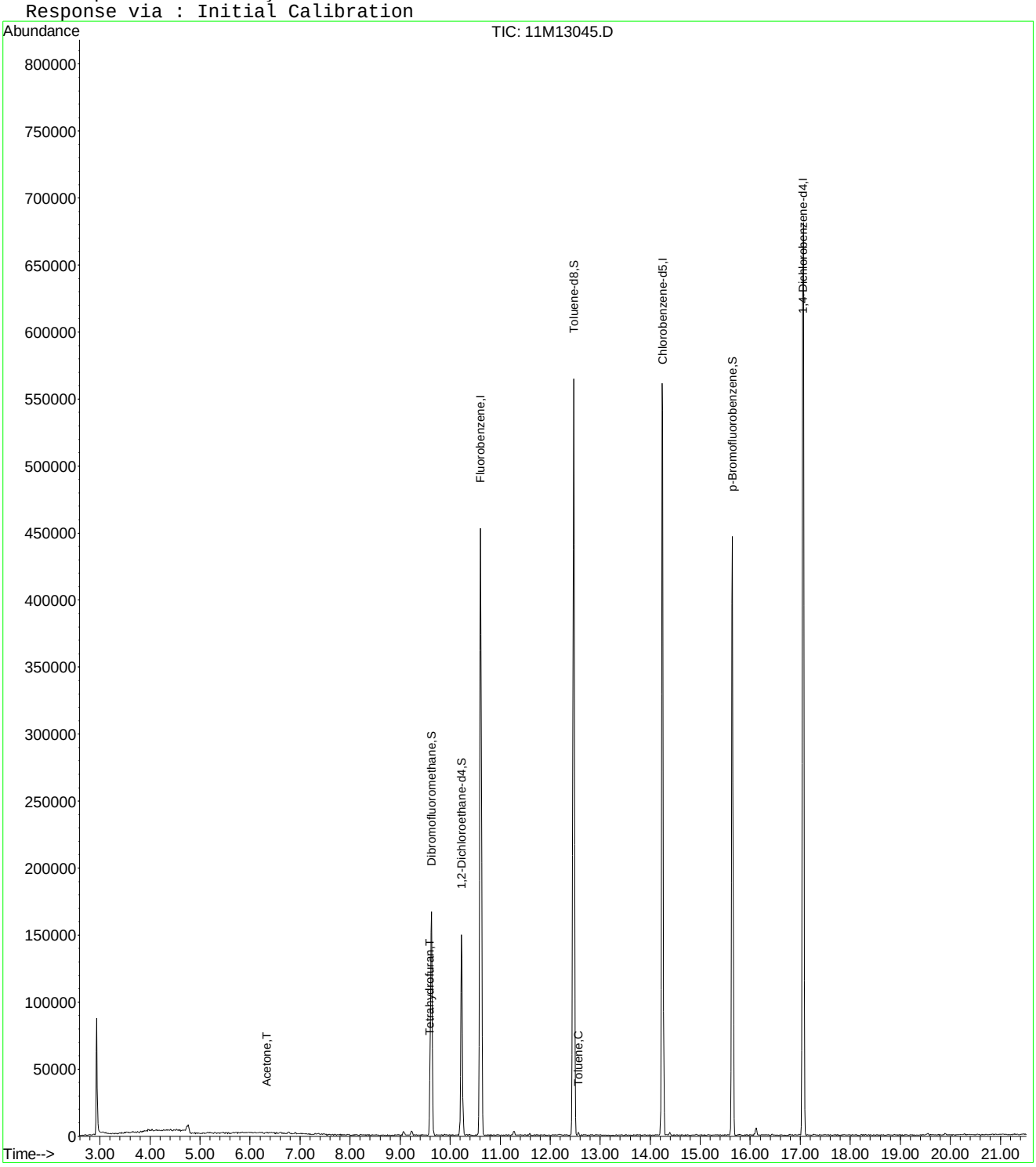

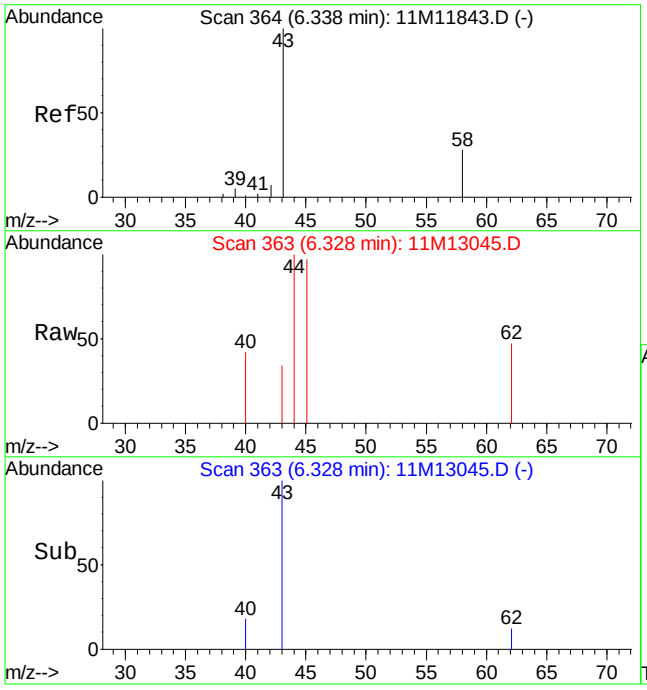

#13
Acetone
Concen: 0.15 ug/L
RT: 6.33 min Scan# 363
Delta R.T. -0.01 min
Lab File: 11M13045.D
Acq: 2 Jul 2016 15:43

Tgt Ion: 43 Resp: 186

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

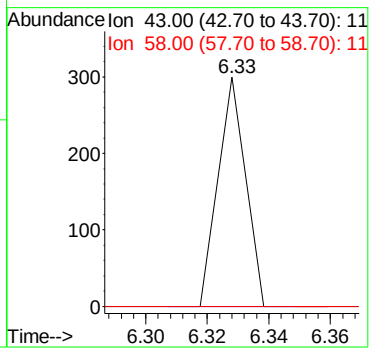

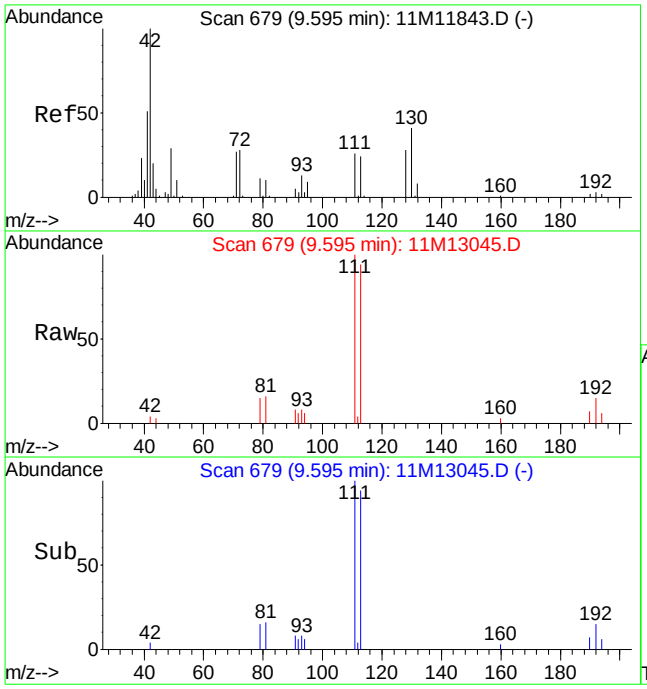

#36
Tetrahydrofuran
Concen: 0.94 ug/L
RT: 9.60 min Scan# 679
Delta R.T. -0.00 min
Lab File: 11M13045.D
Acq: 2 Jul 2016 15:43

Tgt Ion: 42 Resp: 1252

Ion	Ratio	Lower	Upper
42	100		
71	0.0	16.4	38.2#
72	0.0	16.6	38.8#

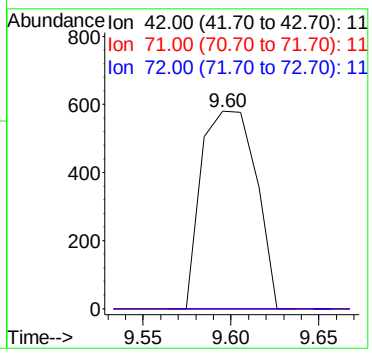

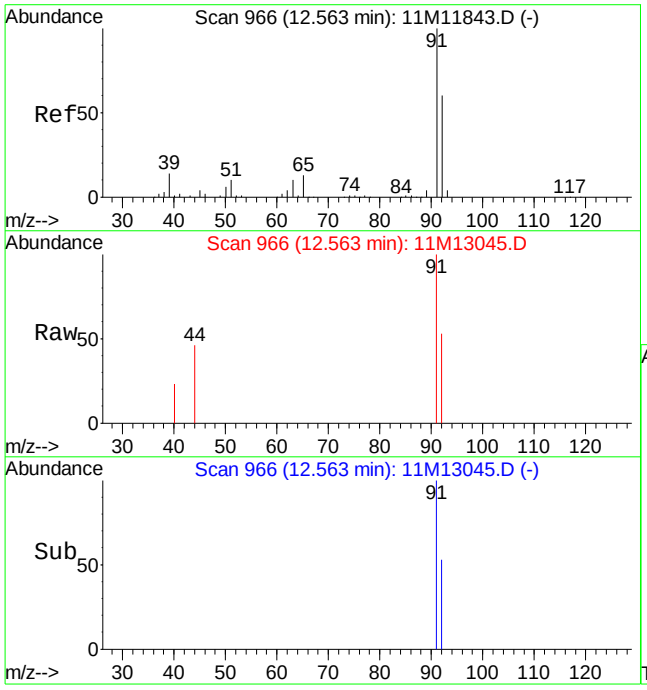

#58
Toluene
Concen: 0.12 ug/L
RT: 12.56 min Scan# 966
Delta R.T. -0.00 min
Lab File: 11M13045.D
Acq: 2 Jul 2016 15:43

Tgt Ion: 91 Resp: 2700

Ion	Ratio	Lower	Upper
91	100		
92	42.0	35.7	83.3

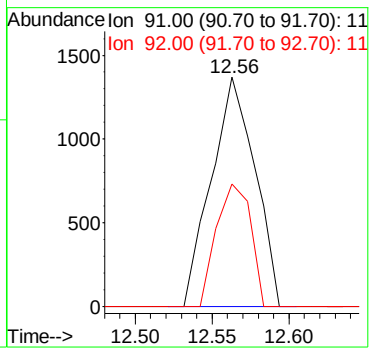

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070516\11M13080.D Vial: 5
Acq On : 5 Jul 2016 19:15 Operator: JDS
Sample : WG575199-01 BLANK STD 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 06 09:19:09 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	472304	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	408648	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	236090	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	128454	24.8510 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.40%		
43) 1,2-Dichloroethane-d4	10.23	65	129250	21.9299 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 87.72%		
57) Toluene-d8	12.47	98	437801	24.6568 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.64%		
78) p-Bromofluorobenzene	15.64	95	166664	22.9006 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 91.60%		

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M13080.D 8260WT.M Wed Jul 06 09:19:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070516\11M13080.D Vial: 5
Acq On : 5 Jul 2016 19:15 Operator: JDS
Sample : WG575199-01 BLANK STD 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 6 9:19 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

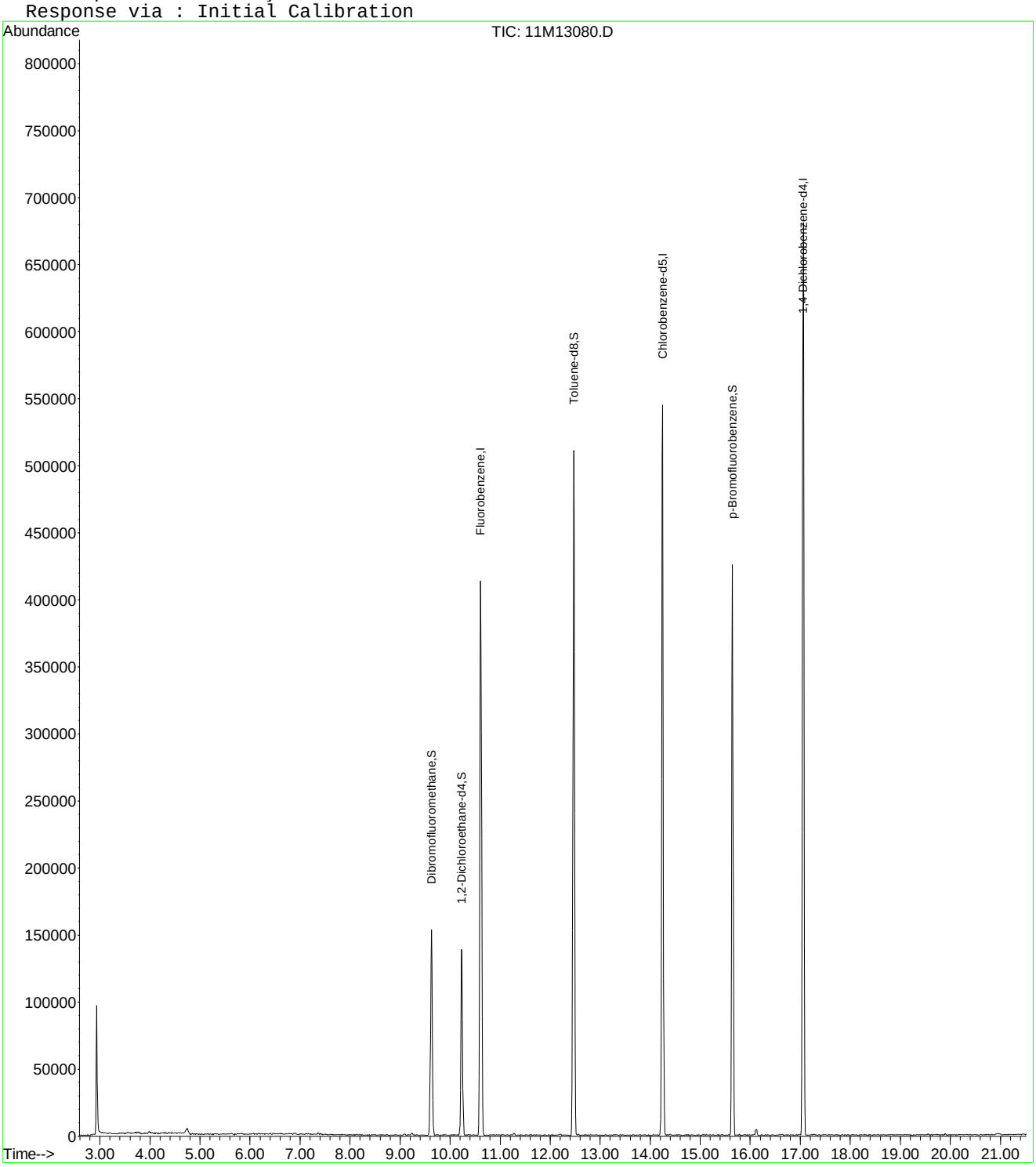

11M13080.D 8260WT.M Wed Jul 06 09:19:10 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070316\6M140391.D Vial: 4
Acq On : 3 Jul 2016 11:33 Operator: TMB
Sample : WG575092-01 VBLK0703 BLANK STD 8260 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 05 08:34:18 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	592251	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	419172	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	214148	25.00 ug/L	-0.01
System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	152783	25.4270 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.72%		
43) 1,2-Dichloroethane-d4	10.32	65	193723	25.5393 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.16%		
58) Toluene-d8	13.04	98	511071	24.7597 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.04%		
80) p-Bromofluorobenzene	17.01	95	210367	25.0830 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.32%		
Target Compounds					Qvalue
13) Acetone	5.90	43	660	0.3478 ug/L #	48
15) Tert-Butyl Alcohol	6.25	59	5381	9.2741 ug/L #	79
36) Tetrahydrofuran	9.57	42	2863	1.4132 ug/L #	47
50) 1,4-Dioxane	11.94	88	1361	28.2551 ug/L	69
98) 1,2,4-Trichlorobenzene	21.97	180	1556	0.1853 ug/L #	82
99) Hexachlorobutadiene	22.15	225	1076	0.3082 ug/L #	30
100) Naphthalene	22.39	128	5409	0.3152 ug/L #	67
101) 1,2,3-Trichlorobenzene	22.75	180	2356	0.3030 ug/L #	80

(#) = qualifier out of range (m) = manual integration
6M140391.D 8260WTR.M Tue Jul 05 08:34:21 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070316\6M140391.D Vial: 4
Acq On : 3 Jul 2016 11:33 Operator: TMB
Sample : WG575092-01 VBLK0703 BLANK STD 8260 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 5 8:34 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

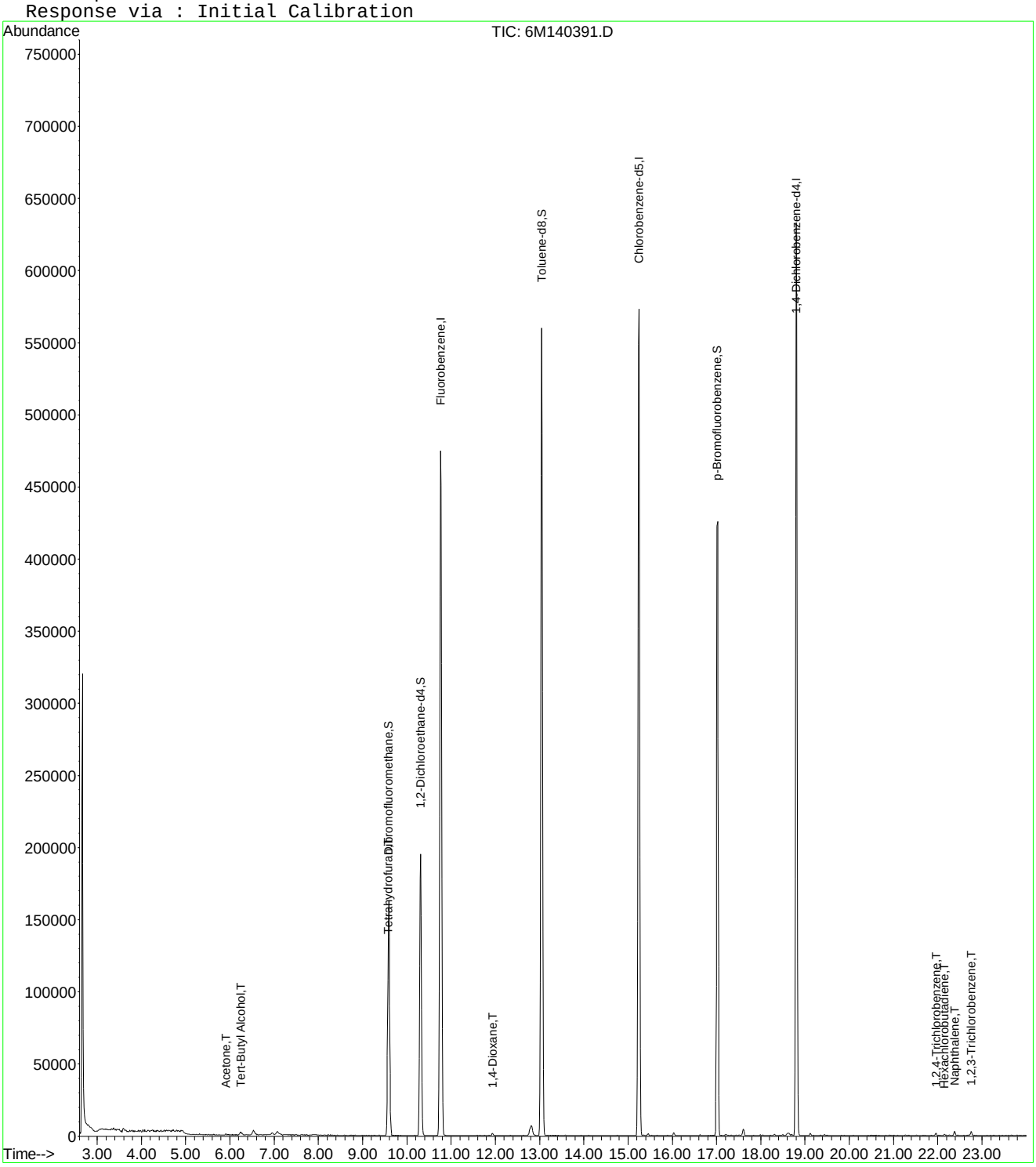

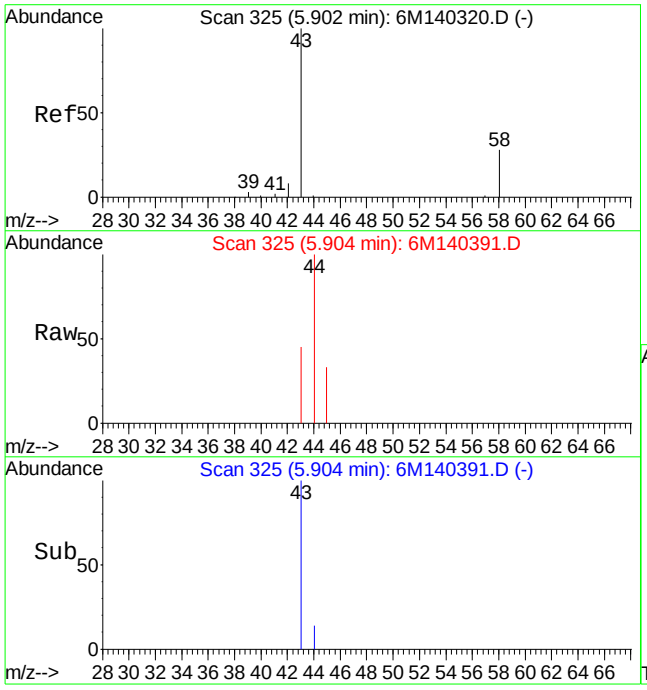

#13
Acetone
Concen: 0.35 ug/L
RT: 5.90 min Scan# 325
Delta R.T. -0.00 min
Lab File: 6M140391.D
Acq: 3 Jul 2016 11:33

Tgt Ion: 43 Resp: 660

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

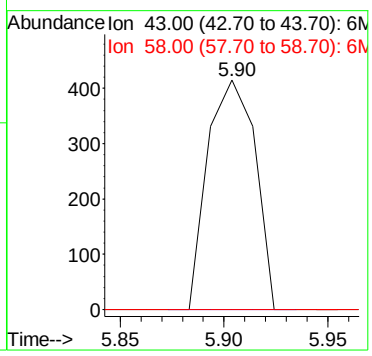

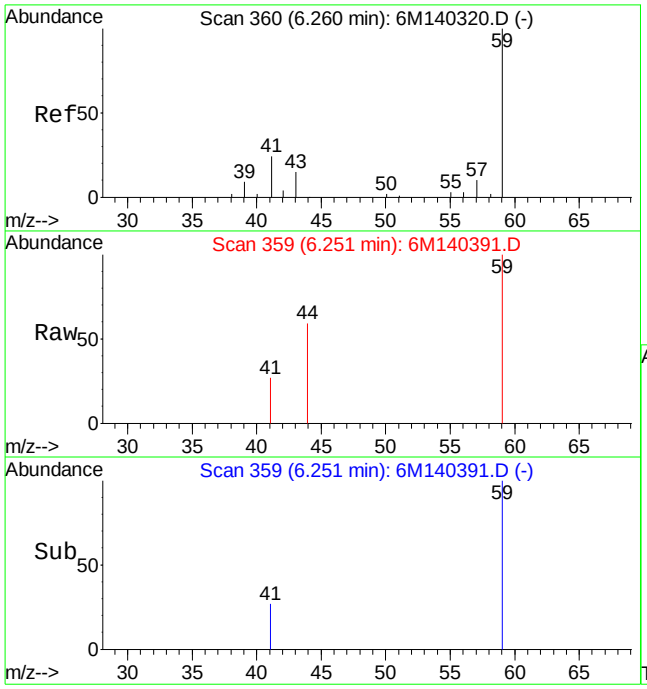

#15
Tert-Butyl Alcohol
Concen: 9.27 ug/L
RT: 6.25 min Scan# 359
Delta R.T. -0.04 min
Lab File: 6M140391.D
Acq: 3 Jul 2016 11:33

Tgt Ion: 59 Resp: 5381

Ion	Ratio	Lower	Upper
59	100		
41	15.2	14.6	34.0
57	0.0	6.4	14.8#

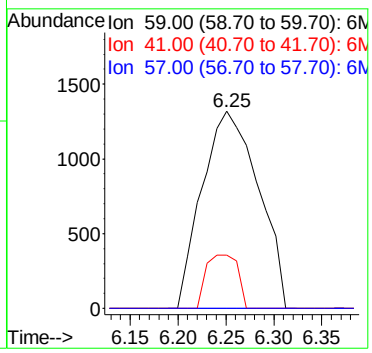

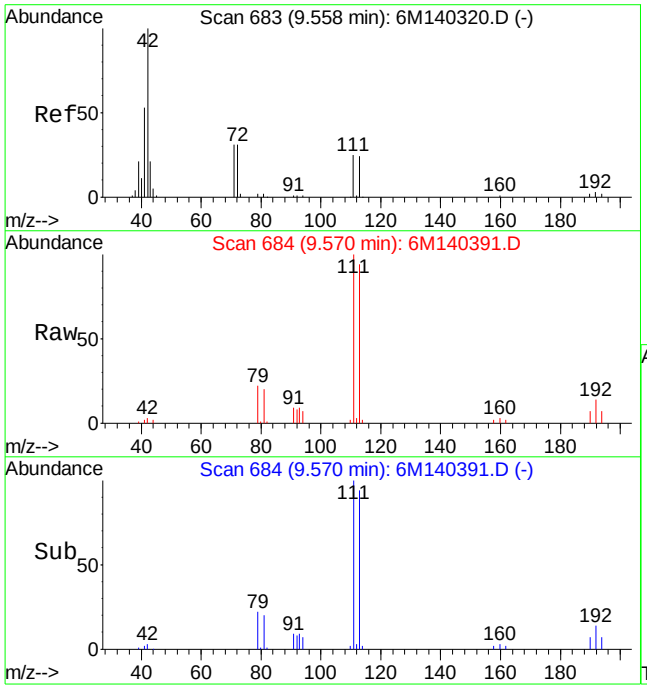

#36
Tetrahydrofuran
Concen: 1.41 ug/L
RT: 9.57 min Scan# 684
Delta R.T. 0.01 min
Lab File: 6M140391.D
Acq: 3 Jul 2016 11:33

Tgt Ion: 42 Resp: 2863

Ion	Ratio	Lower	Upper
42	100		
72	0.0	20.8	48.4#
71	7.3	19.9	46.5#

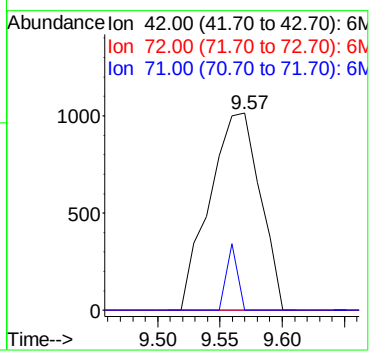

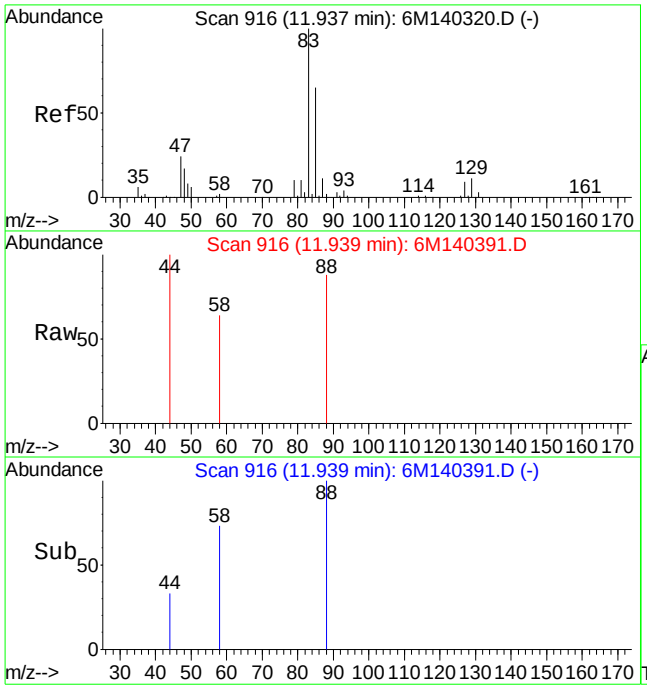

#50
1,4-Dioxane
Concen: 28.26 ug/L
RT: 11.94 min Scan# 916
Delta R.T. -0.00 min
Lab File: 6M140391.D
Acq: 3 Jul 2016 11:33

Tgt Ion: 88 Resp: 1361

Ion	Ratio	Lower	Upper
88	100		
58	96.7	42.6	99.4

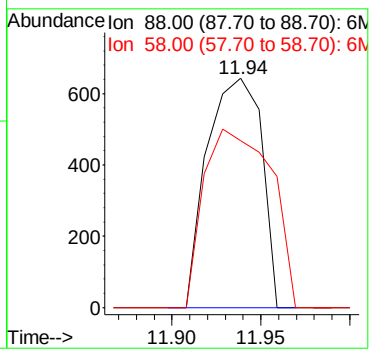

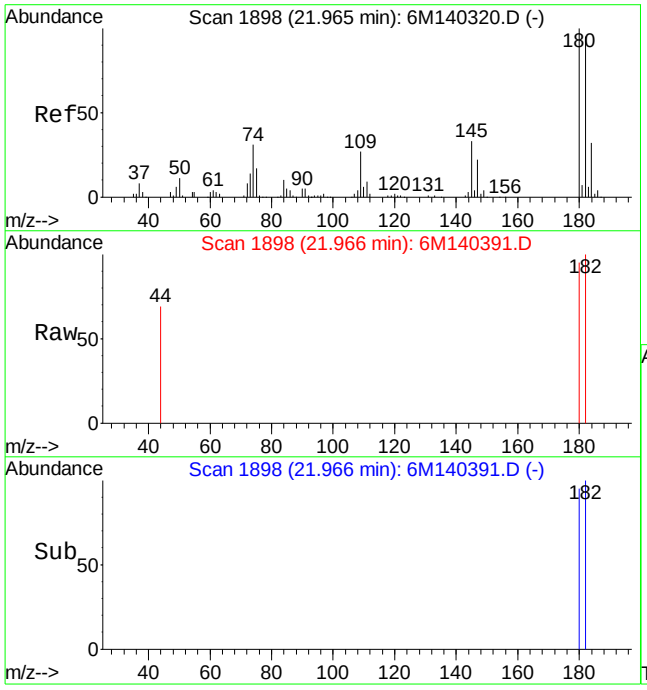

#98
1,2,4-Trichlorobenzene
Concen: 0.19 ug/L
RT: 21.97 min Scan# 1898
Delta R.T. -0.00 min
Lab File: 6M140391.D
Acq: 3 Jul 2016 11:33

Tgt Ion:180 Resp: 1556

Ion	Ratio	Lower	Upper
180	100		
182	90.7	57.7	134.5
145	0.0	19.0	44.4#

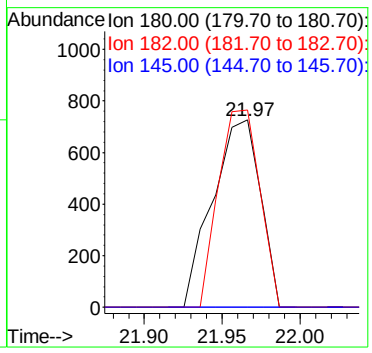

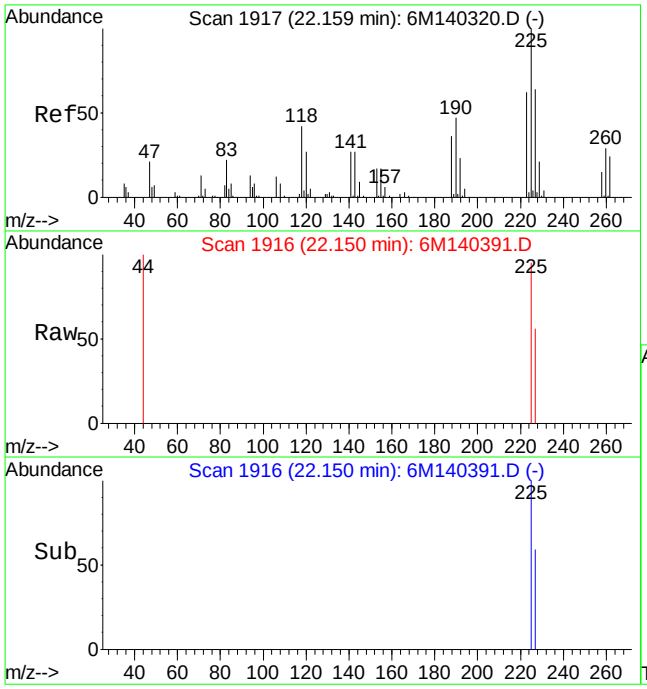

#99
Hexachlorobutadiene
Concen: 0.31 ug/L
RT: 22.15 min Scan# 1916
Delta R.T. -0.00 min
Lab File: 6M140391.D
Acq: 3 Jul 2016 11:33

Tgt Ion:225 Resp: 1076

Ion	Ratio	Lower	Upper
225	100		
223	0.0	37.7	88.1#
227	17.8	38.6	90.0#

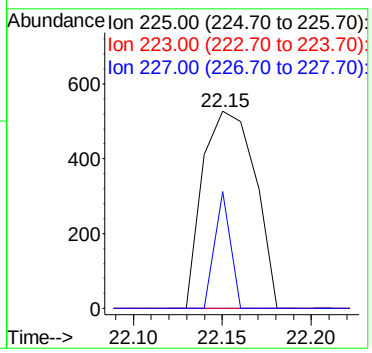

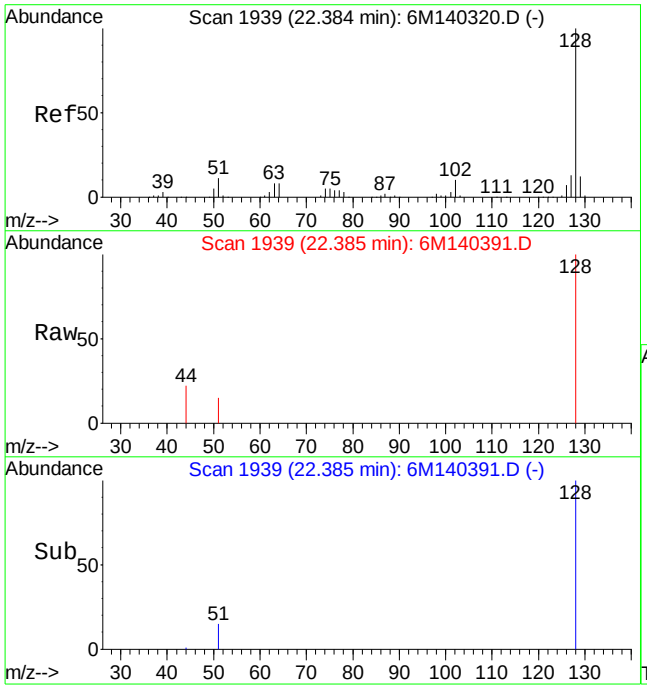

#100
Naphthalene
Concen: 0.32 ug/L
RT: 22.39 min Scan# 1939
Delta R.T. -0.00 min
Lab File: 6M140391.D
Acq: 3 Jul 2016 11:33

Tgt Ion:128 Resp: 5409

Ion	Ratio	Lower	Upper
128	100		
127	0.0	7.8	18.2#

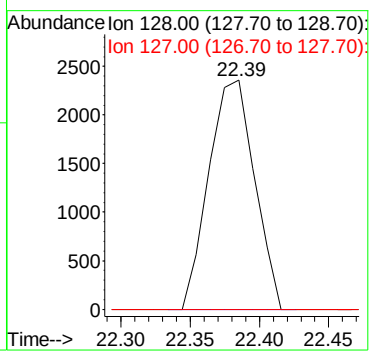

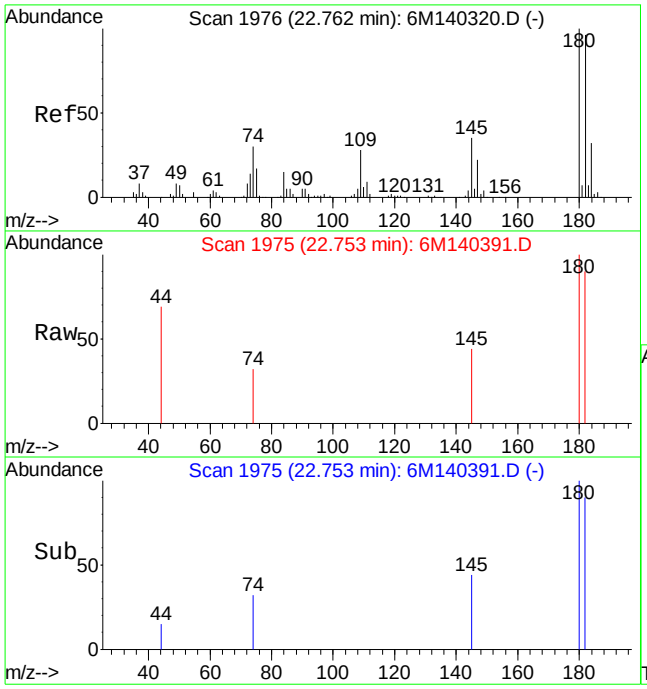

#101
1,2,3-Trichlorobenzene
Concen: 0.30 ug/L
RT: 22.75 min Scan# 1975
Delta R.T. -0.01 min
Lab File: 6M140391.D
Acq: 3 Jul 2016 11:33

Tgt Ion:180 Resp: 2356

Ion	Ratio	Lower	Upper
180	100		
182	83.0	57.8	135.0
145	11.4	20.5	47.7#

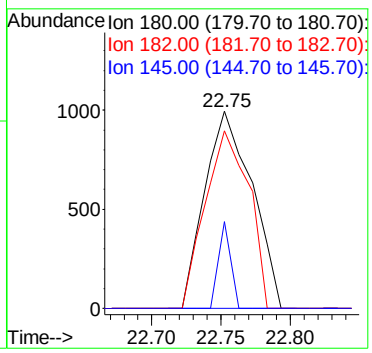

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070216\11M13065.D Vial: 25
Acq On : 3 Jul 2016 2:20 Operator: TMB
Sample : WG575086-04 VBLK0702 BLANK STD 624 Inst : hpms11
Misc : 2,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 07 12:05:43 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	452349	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	384134	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	219842	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	123560	24.9587 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.84%		
43) 1,2-Dichloroethane-d4	10.23	65	124652	22.0827 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 88.32%		
57) Toluene-d8	12.47	98	417646	25.0228 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.08%		
78) p-Bromofluorobenzene	15.64	95	156918	23.1550 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.64%		

Target Compounds					Qvalue
16) Dimethyl Sulfide	6.79	62	679	0.2053 ug/L #	1
36) Tetrahydrofuran	9.58	42	794	0.6924 ug/L #	47

(#) = qualifier out of range (m) = manual integration
11M13065.D 8260WT.M Thu Jul 07 12:05:44 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070216\11M13065.D Vial: 25
Acq On : 3 Jul 2016 2:20 Operator: TMB
Sample : WG575086-04 VBLK0702 BLANK STD 624 Inst : hpms11
Misc : 2,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 7 12:05 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

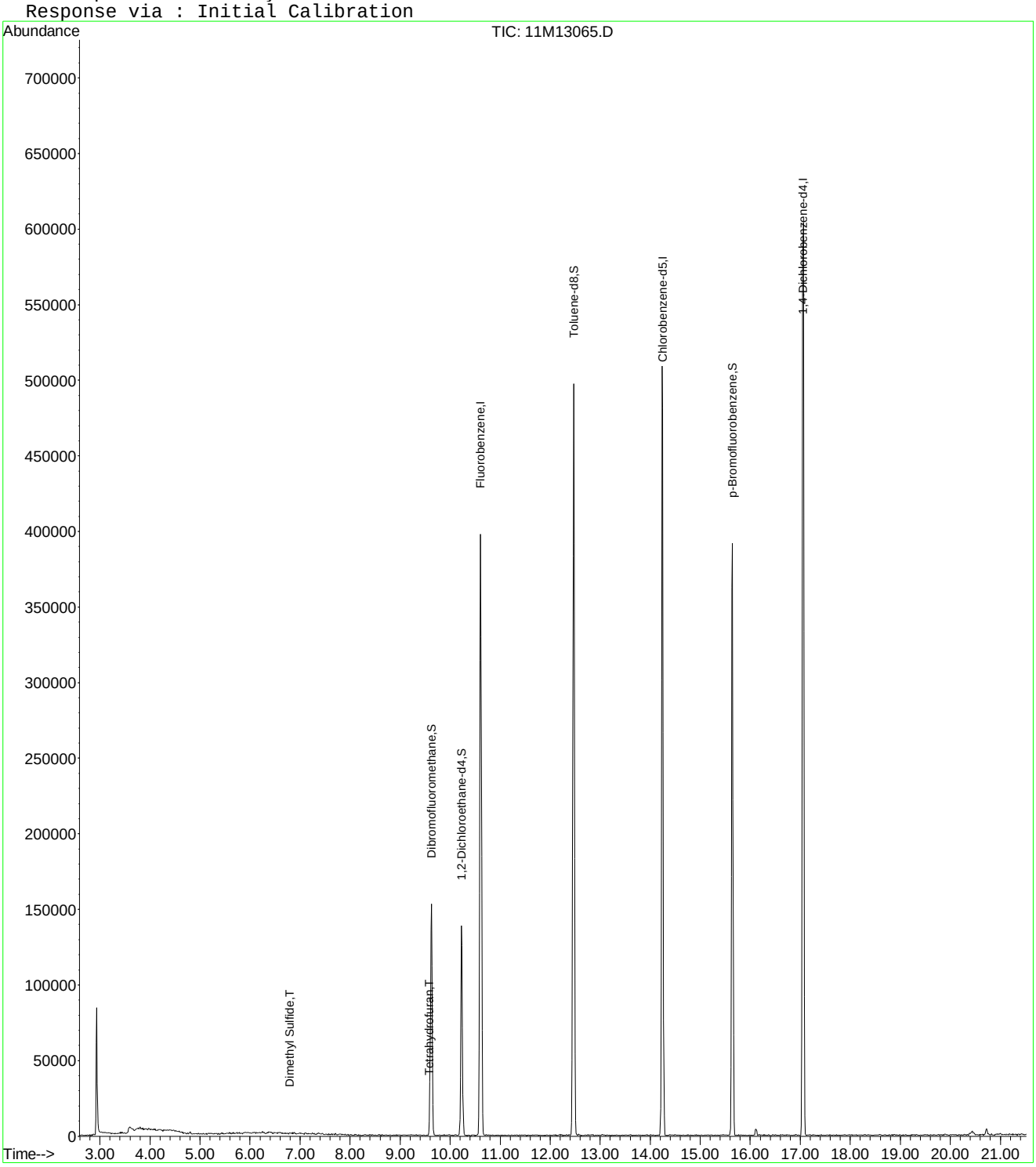

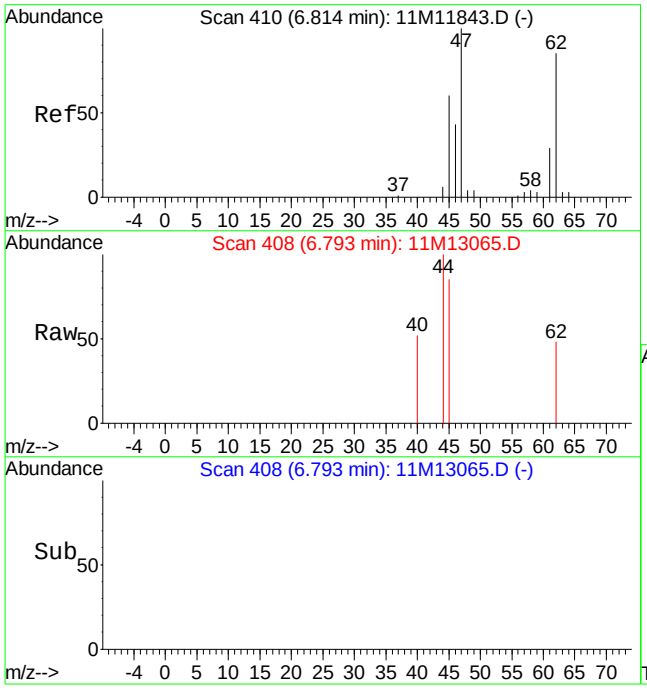

#16
Dimethyl Sulfide
Concen: 0.21 ug/L
RT: 6.79 min Scan# 408
Delta R.T. -0.02 min
Lab File: 11M13065.D
Acq: 3 Jul 2016 2:20

Tgt Ion: 62 Resp: 679

Ion	Ratio	Lower	Upper
62	100		
47	0.0	73.4	171.2#

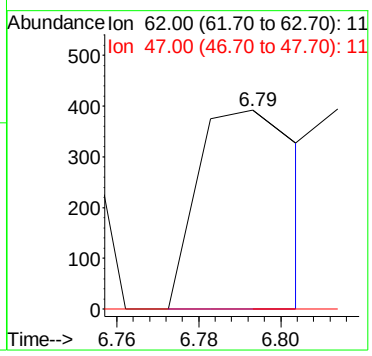

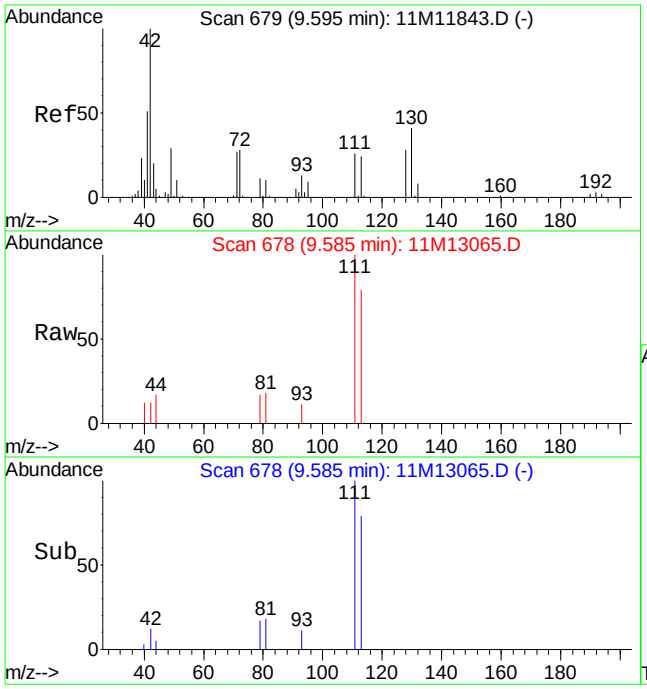

#36
Tetrahydrofuran
Concen: 0.69 ug/L
RT: 9.58 min Scan# 678
Delta R.T. -0.01 min
Lab File: 11M13065.D
Acq: 3 Jul 2016 2:20

Tgt Ion: 42 Resp: 794

Ion	Ratio	Lower	Upper
42	100		
71	0.0	16.4	38.2#
72	0.0	16.6	38.8#

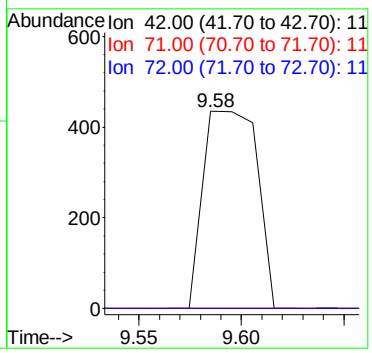

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070216\11M13062.D Vial: 22
Acq On : 3 Jul 2016 00:45 Operator: TMB
Sample : WG575086-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD76870 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 03 01:06:54 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	489868	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	423028	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	250295	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	135697	25.3109 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.24%		
43) 1,2-Dichloroethane-d4	10.23	65	135424	22.1536 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 88.60%		
57) Toluene-d8	12.47	98	457328	24.8811 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.52%		
78) p-Bromofluorobenzene	15.64	95	175003	22.6817 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 90.72%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	78524	10.2307 ug/L	93
3) Chloromethane	3.72	50	73849	12.0136 ug/L	100
4) Vinyl Chloride	3.95	62	87173	17.0764 ug/L #	41
5) 1,3-Butadiene	3.99	54	66797	13.1593 ug/L	97
6) Bromomethane	4.85	94	46694	13.3035 ug/L	99
7) Chloroethane	5.00	64	60367	18.4047 ug/L	99
8) Trichlorofluoromethane	5.48	101	177959	17.4900 ug/L	100
9) Diethyl ether	6.01	59	315802	83.9221 ug/L	91
10) Isoprene	6.04	67	110891	17.6816 ug/L	91
11) Acrolein	6.24	56	44500	88.7419 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	108181	21.9114 ug/L	96
13) Acetone	6.34	43	20004	17.1971 ug/L	97
14) 1,1-Dichloroethene	6.56	61	132114	14.7319 ug/L	95
15) Tert-Butyl Alcohol	6.66	59	47895	148.8570 ug/L	98
16) Dimethyl Sulfide	6.81	62	107571	30.0359 ug/L	85
17) Iodomethane	7.06	142	59787	16.1904 ug/L	92
18) Methyl acetate	7.07	43	55439	14.3967 ug/L #	91
19) Methylene Chloride	7.31	84	84861	18.2843 ug/L	81
20) Carbon Disulfide	7.36	76	235454	15.6829 ug/L	99
21) Acrylonitrile	7.49	53	27091	17.3703 ug/L	100
22) Methyl Tert Butyl Ether	7.52	73	217407	18.7810 ug/L	95
23) trans-1,2-Dichloroethene	7.75	96	87698	17.6694 ug/L	92
24) n-Hexane	7.82	57	106535	12.8874 ug/L	96
25) Diisopropyl ether	8.15	45	1737907	84.2520 ug/L	97
26) Vinyl Acetate	8.31	43	37724	6.9147 ug/L	98
27) 1,1-Dichloroethane	8.34	63	168223	16.8919 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	1424288	84.8346 ug/L	97
29) 2-Butanone	8.87	43	29294	16.6581 ug/L	95
30) Propionitrile	8.98	54	44170	85.7572 ug/L	95
31) 2,2-Dichloropropane	9.09	77	104776	13.4469 ug/L	99
32) cis-1,2-Dichloroethene	9.15	96	105568	19.2907 ug/L	86
33) Chloroform	9.35	83	178584	18.2606 ug/L	99
34) 1-Bromopropane	9.48	122	25888	26.9247 ug/L	99
35) Bromochloromethane	9.57	130	67603	20.8005 ug/L	85
36) Tetrahydrofuran	9.60	42	87996	70.8620 ug/L	89
38) 1,1,1-Trichloroethane	9.85	97	178451	18.5423 ug/L	95
39) Cyclohexane	9.88	56	173792	16.5698 ug/L	94
40) 1,1-Dichloropropene	10.04	75	121647	17.7028 ug/L	99
41) Carbon Tetrachloride	10.17	117	176671	18.7993 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	1120535	96.0505 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070216\11M13062.D Vial: 22
Acq On : 3 Jul 2016 00:45 Operator: TMB
Sample : WG575086-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD76870 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 03 01:06:54 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
44)	1,2-Dichloroethane	10.34	62	143791	18.1029 ug/L		97
45)	Benzene	10.38	78	350094	18.6107 ug/L		98
46)	Trichloroethene	11.08	130	142614	23.3243 ug/L		97
47)	Methylcyclohexane	11.17	83	134336	17.8024 ug/L		93
48)	1,2-Dichloropropane	11.29	63	99892	19.1833 ug/L		99
49)	1,4-Dioxane	11.56	88	3279	122.0128 ug/L		84
50)	Bromodichloromethane	11.57	83	142052	19.4321 ug/L		99
51)	Dibromomethane	11.65	93	51595	19.0140 ug/L		95
52)	2-Chloroethyl Vinyl Ether	11.84	63	42551	16.5798 ug/L		100
53)	4-Methyl-2-Pentanone	11.87	58	24991	17.2647 ug/L		96
54)	cis-1,3-Dichloropropene	12.17	75	148132	20.2597 ug/L		99
55)	Dimethyl Disulfide	12.42	79	78624	17.8697 ug/L		90
58)	Toluene	12.56	91	425472	19.8676 ug/L		100
59)	Ethyl Methacrylate	12.64	69	88900	19.4410 ug/L		82
60)	trans-1,3-Dichloropropene	12.73	75	125524	18.2609 ug/L		96
61)	1,1,2-Trichloroethane	12.92	97	76793	20.2223 ug/L		99
62)	2-Hexanone	12.86	43	42716	15.3159 ug/L	#	93
63)	1,3-Dichloropropane	13.21	76	125750	20.6209 ug/L		88
64)	Tetrachloroethene	13.34	164	98134	19.7053 ug/L		97
65)	Dibromochloromethane	13.59	129	121085	20.9050 ug/L		99
66)	1,2-Dibromoethane	13.82	107	77031	20.2466 ug/L		98
67)	1-Chlorohexane	13.89	91	133776	18.9471 ug/L		88
68)	Chlorobenzene	14.29	112	330773	21.0840 ug/L		100
69)	1,1,1,2-Tetrachloroethane	14.32	131	132555	20.8814 ug/L		98
70)	Ethylbenzene	14.31	106	161047	20.0190 ug/L		100
71)	m-,p-Xylene	14.39	106	400960	40.9979 ug/L		97
72)	o-Xylene	14.92	106	196194	20.6131 ug/L		99
73)	Styrene	14.95	104	335599	21.3413 ug/L		95
74)	Bromoform	15.43	173	69815	19.8873 ug/L		99
75)	Isopropylbenzene	15.31	105	525297	20.8693 ug/L		99
77)	1,1,2,2-Tetrachloroethane	15.51	83	64229	16.4786 ug/L		96
79)	1,2,3-Trichloropropane	15.70	110	28517	19.7220 ug/L		81
80)	trans-1,4-Dichloro-2-Buten	15.73	53	15612	8.9299 ug/L	#	1
81)	n-Propylbenzene	15.78	91	607981	20.9744 ug/L		99
82)	Bromobenzene	15.91	156	156203	20.5361 ug/L		90
83)	1,3,5-Trimethylbenzene	15.95	105	454603	20.5517 ug/L		98
84)	2-Chlorotoluene	16.05	91	440458	21.6943 ug/L		99
85)	4-Chlorotoluene	16.09	91	350126	19.2520 ug/L		97
86)	a-Methylstyrene	16.34	118	250752	21.4882 ug/L		97
87)	tert-Butylbenzene	16.39	134	102368	21.8437 ug/L		91
88)	1,2,4-Trimethylbenzene	16.44	105	470901	20.9060 ug/L		99
89)	sec-Butylbenzene	16.64	105	549917	20.7044 ug/L		99
90)	p-Isopropyltoluene	16.78	119	501818	20.5696 ug/L		99
91)	1,3-Dichlorobenzene	16.98	146	310260	21.1198 ug/L		96
92)	1,4-Dichlorobenzene	17.10	146	312658	20.9970 ug/L		97
93)	n-Butylbenzene	17.28	91	404773	18.8289 ug/L		98
94)	1,2-Dichlorobenzene	17.56	146	286922	21.4404 ug/L		97
95)	1,2-Dibromo-3-Chloropropan	18.49	75	14431	16.8549 ug/L		84
96)	1,2,4-Trichlorobenzene	19.54	180	192154	19.6229 ug/L		99
97)	Hexachlorobutadiene	19.68	225	75379	17.4733 ug/L		96
98)	Naphthalene	19.89	128	318871	17.5437 ug/L		99
99)	1,2,3-Trichlorobenzene	20.18	180	173044	19.2549 ug/L		99

(#) = qualifier out of range (m) = manual integration
11M13062.D 8260WT.M Sun Jul 03 01:06:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070216\11M13062.D Vial: 22
Acq On : 3 Jul 2016 00:45 Operator: TMB
Sample : WG575086-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD76870 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 3 1:06 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

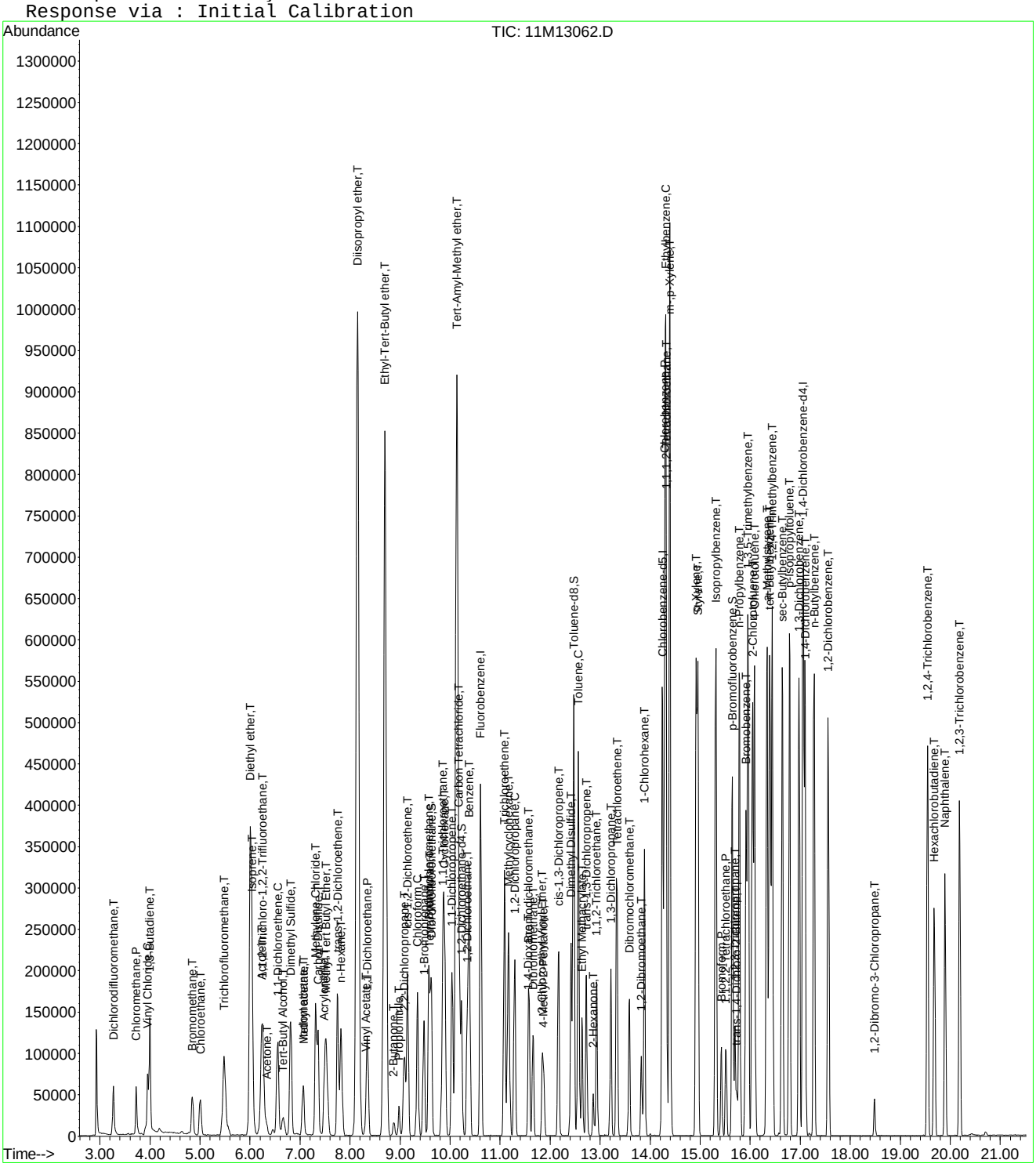

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070516\11M13081.D Vial: 6
Acq On : 5 Jul 2016 19:47 Operator: JDS
Sample : WG575199-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD76870 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 05 20:09:12 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	485527	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	420960	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	250949	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	133281	25.0826 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.32%		
43) 1,2-Dichloroethane-d4	10.23	65	130691	21.5705 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 86.28%		
57) Toluene-d8	12.47	98	453731	24.8066 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.24%		
78) p-Bromofluorobenzene	15.64	95	176443	22.8088 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 91.24%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	16305	2.1433 ug/L	88
3) Chloromethane	3.72	50	37862	6.2144 ug/L	97
4) Vinyl Chloride	3.96	62	52558	10.3877 ug/L	100
5) 1,3-Butadiene	3.99	54	55112	10.9544 ug/L	97
6) Bromomethane	4.85	94	50018	14.3780 ug/L	99
7) Chloroethane	5.00	64	47789	14.7002 ug/L	95
8) Trichlorofluoromethane	5.48	101	144326	14.3113 ug/L	100
9) Diethyl ether	6.01	59	347541	93.1823 ug/L	91
10) Isoprene	6.05	67	92238	14.8389 ug/L	89
11) Acrolein	6.24	56	53640	107.5996 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	84494	17.2667 ug/L	94
13) Acetone	6.34	43	18831	16.3335 ug/L	91
14) 1,1-Dichloroethene	6.56	61	97590	10.9794 ug/L	94
15) Tert-Butyl Alcohol	6.66	59	56281	176.4845 ug/L	96
16) Dimethyl Sulfide	6.81	62	96926	27.3055 ug/L	83
17) Iodomethane	7.06	142	33415	10.1123 ug/L	89
18) Methyl acetate	7.06	43	54804	14.3559 ug/L	91
19) Methylene Chloride	7.31	84	74421	16.1782 ug/L	82
20) Carbon Disulfide	7.36	76	186343	12.5227 ug/L	100
21) Acrylonitrile	7.49	53	26646	17.2377 ug/L	98
22) Methyl Tert Butyl Ether	7.52	73	214315	18.6795 ug/L	96
23) trans-1,2-Dichloroethene	7.75	96	76897	15.6317 ug/L	93
24) n-Hexane	7.82	57	104395	12.7415 ug/L	98
25) Diisopropyl ether	8.15	45	1823373	89.1856 ug/L	97
26) Vinyl Acetate	8.31	43	82525	12.3252 ug/L	98
27) 1,1-Dichloroethane	8.34	63	156858	15.8915 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1486876	89.3543 ug/L	97
29) 2-Butanone	8.87	43	30190	17.3211 ug/L	92
30) Propionitrile	8.98	54	45375	88.8844 ug/L	99
31) 2,2-Dichloropropane	9.09	77	129310	16.7440 ug/L	99
32) cis-1,2-Dichloroethene	9.15	96	102485	18.8948 ug/L	87
33) Chloroform	9.35	83	172538	17.8001 ug/L	99
34) 1-Bromopropane	9.48	122	23188	24.3929 ug/L	96
35) Bromochloromethane	9.57	130	64466	20.0127 ug/L	85
36) Tetrahydrofuran	9.60	42	90443	73.4837 ug/L	90
38) 1,1,1-Trichloroethane	9.85	97	163000	17.0882 ug/L	97
39) Cyclohexane	9.88	56	162076	15.5910 ug/L	95
40) 1,1-Dichloropropene	10.04	75	113575	16.6759 ug/L	99
41) Carbon Tetrachloride	10.18	117	161700	17.3601 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	1157324	100.0910 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M13081.D 8260WT.M Tue Jul 05 20:09:14 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070516\11M13081.D Vial: 6
Acq On : 5 Jul 2016 19:47 Operator: JDS
Sample : WG575199-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD76870 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 05 20:09:12 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.34	62	139210	17.6828 ug/L	97
45) Benzene	10.38	78	327011	17.5391 ug/L	100
46) Trichloroethene	11.09	130	124940	20.6164 ug/L	97
47) Methylcyclohexane	11.17	83	129576	17.3251 ug/L	94
48) 1,2-Dichloropropane	11.29	63	98003	18.9888 ug/L	99
49) 1,4-Dioxane	11.56	88	4293	153.6995 ug/L	93
50) Bromodichloromethane	11.58	83	141356	19.5098 ug/L	99
51) Dibromomethane	11.66	93	48416	18.0020 ug/L	91
52) 2-Chloroethyl Vinyl Ether	11.84	63	43754	17.2010 ug/L	95
53) 4-Methyl-2-Pentanone	11.87	58	26172	18.2422 ug/L	96
54) cis-1,3-Dichloropropene	12.17	75	152721	21.0740 ug/L	99
55) Dimethyl Disulfide	12.42	79	79762	18.2904 ug/L	86
58) Toluene	12.56	91	416905	19.5632 ug/L	99
59) Ethyl Methacrylate	12.65	69	89611	19.6928 ug/L	81
60) trans-1,3-Dichloropropene	12.73	75	130874	19.1328 ug/L	96
61) 1,1,2-Trichloroethane	12.94	97	77302	20.4564 ug/L	98
62) 2-Hexanone	12.86	43	44868	16.1666 ug/L	96
63) 1,3-Dichloropropane	13.21	76	124753	20.5579 ug/L	86
64) Tetrachloroethene	13.34	164	97379	19.6497 ug/L	97
65) Dibromochloromethane	13.59	129	123036	21.3462 ug/L	98
66) 1,2-Dibromoethane	13.82	107	77090	20.3617 ug/L	98
67) 1-Chlorohexane	13.89	91	134106	19.0871 ug/L	88
68) Chlorobenzene	14.29	112	329746	21.1218 ug/L	100
69) 1,1,1,2-Tetrachloroethane	14.32	131	134990	21.3694 ug/L	100
70) Ethylbenzene	14.31	106	159392	19.9106 ug/L	98
71) m-,p-Xylene	14.39	106	402286	41.3356 ug/L	98
72) o-Xylene	14.92	106	200275	21.1453 ug/L	95
73) Styrene	14.95	104	336945	21.5322 ug/L	95
74) Bromoform	15.43	173	71332	20.4192 ug/L	99
75) Isopropylbenzene	15.31	105	528646	21.1056 ug/L	99
77) 1,1,2,2-Tetrachloroethane	15.51	83	74522	19.0696 ug/L	100
79) 1,2,3-Trichloropropane	15.70	110	29529	20.3567 ug/L	81
80) trans-1,4-Dichloro-2-Buten	15.74	53	17694	9.9975 ug/L #	1
81) n-Propylbenzene	15.79	91	609142	20.9597 ug/L	98
82) Bromobenzene	15.92	156	159575	20.9247 ug/L	88
83) 1,3,5-Trimethylbenzene	15.95	105	459994	20.7412 ug/L	98
84) 2-Chlorotoluene	16.05	91	424313	20.8447 ug/L	97
85) 4-Chlorotoluene	16.09	91	374404	20.5333 ug/L	97
86) a-Methylstyrene	16.34	118	255080	21.8022 ug/L	96
87) tert-Butylbenzene	16.39	134	107044	22.7820 ug/L	86
88) 1,2,4-Trimethylbenzene	16.44	105	470116	20.8168 ug/L	98
89) sec-Butylbenzene	16.65	105	560911	21.0633 ug/L	99
90) p-Isopropyltoluene	16.79	119	512984	20.9725 ug/L	98
91) 1,3-Dichlorobenzene	16.98	146	312636	21.2261 ug/L	97
92) 1,4-Dichlorobenzene	17.10	146	318443	21.3298 ug/L	99
93) n-Butylbenzene	17.28	91	424537	19.6968 ug/L	97
94) 1,2-Dichlorobenzene	17.57	146	287798	21.4498 ug/L	98
95) 1,2-Dibromo-3-Chloropropan	18.49	75	15410	17.9096 ug/L	92
96) 1,2,4-Trichlorobenzene	19.55	180	200754	20.4477 ug/L	99
97) Hexachlorobutadiene	19.69	225	80845	18.6915 ug/L	97
98) Naphthalene	19.89	128	330356	18.1283 ug/L	99
99) 1,2,3-Trichlorobenzene	20.19	180	179442	19.9147 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M13081.D 8260WT.M Tue Jul 05 20:09:15 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070516\11M13081.D Vial: 6
Acq On : 5 Jul 2016 19:47 Operator: JDS
Sample : WG575199-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD76870 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 5 20:09 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

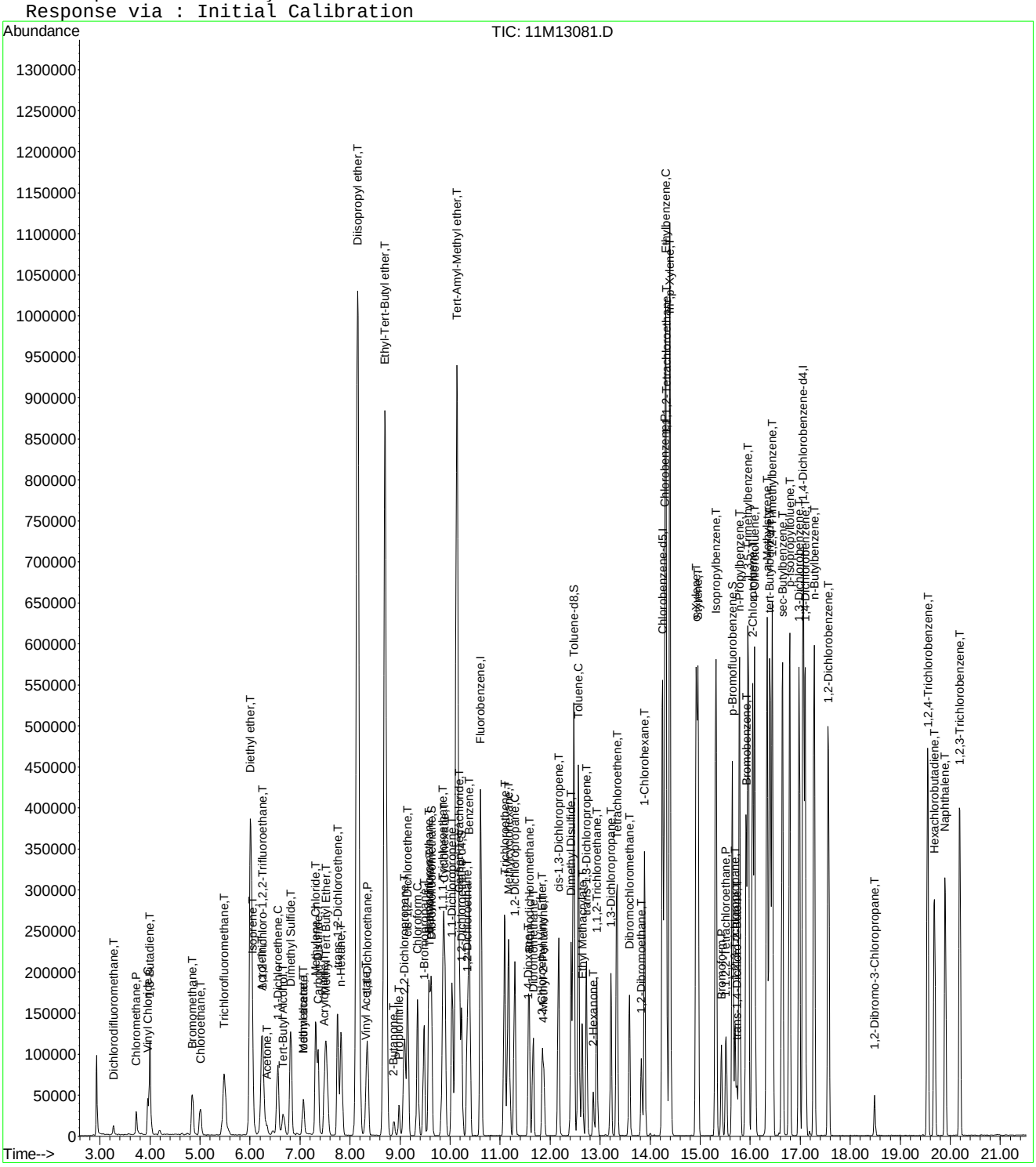

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070316\6M140392.D Vial: 5
Acq On : 3 Jul 2016 12:05 Operator: TMB
Sample : WG575092-02 20ug/L LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 05 08:18:14 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	566229	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	407645	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	233201	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	147416	25.6613 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.64%		
43) 1,2-Dichloroethane-d4	10.31	65	186675	25.7411 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.96%		
58) Toluene-d8	13.04	98	502709	25.0432 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.16%		
80) p-Bromofluorobenzene	17.02	95	220154	24.1053 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 96.44%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	136981	14.4719 ug/L	98
3) Chloromethane	3.37	50	173326	16.4014 ug/L	100
4) Vinyl Chloride	3.56	62	124429	21.4410 ug/L	99
5) 1,3-Butadiene	3.59	54	63408	16.8899 ug/L	95
6) Bromomethane	4.39	94	71120	18.4420 ug/L	99
7) Chloroethane	4.53	64	82007	22.3640 ug/L	93
8) Trichlorofluoromethane	5.00	101	187634	21.1990 ug/L	99
9) Diethyl ether	5.55	59	497120	95.1905 ug/L	95
10) Isoprene	5.58	67	182766	23.1365 ug/L	92
11) Acrolein	5.79	56	96961	111.6211 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	116947	21.2361 ug/L	97
13) Acetone	5.90	43	37946	20.9174 ug/L	96
14) 1,1-Dichloroethene	6.11	61	176556	16.5240 ug/L	92
15) Tert-Butyl Alcohol	6.26	59	96611	174.1602 ug/L	98
16) Dimethyl Sulfide	6.39	62	170483	36.5844 ug/L	92
17) Iodomethane	6.65	142	98172	25.8093 ug/L	87
18) Methyl acetate	6.69	43	110425	22.4948 ug/L	97
19) Methylene Chloride	6.94	84	113454	18.5164 ug/L	86
20) Carbon Disulfide	6.96	76	368568	18.8248 ug/L	100
21) Acrylonitrile	7.15	53	45805	20.3358 ug/L	97
22) Methyl Tert Butyl Ether	7.18	73	340405	20.9593 ug/L	99
23) trans-1,2-Dichloroethene	7.42	96	104347	18.2346 ug/L	84
24) n-Hexane	7.51	57	190666	19.6320 ug/L	96
25) Diisopropyl ether	7.89	45	2716251	103.9105 ug/L	98
26) Vinyl Acetate	8.09	43	215809	19.7768 ug/L	96
27) 1,1-Dichloroethane	8.10	63	231975	18.8282 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	2034301	96.7342 ug/L	98
29) 2-Butanone	8.73	43	58040	20.9004 ug/L	92
30) Propionitrile	8.85	54	74842	99.3098 ug/L	98
31) 2,2-Dichloropropane	8.96	77	187126	20.1315 ug/L	97
32) cis-1,2-Dichloroethene	9.03	96	126761	20.2364 ug/L	70
33) Chloroform	9.26	83	224531	20.3424 ug/L	99
34) 1-Bromopropane	9.42	122	25786	26.2698 ug/L	100
35) Bromochloromethane	9.52	130	67708	20.1144 ug/L	100
36) Tetrahydrofuran	9.56	42	172642	89.1317 ug/L	93
38) 1,1,1-Trichloroethane	9.85	97	202522	21.0753 ug/L	99
39) Cyclohexane	9.87	56	247850	19.8247 ug/L	95
40) 1,1-Dichloropropene	10.08	75	159676	19.0775 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1638898	102.6316 ug/L	97
42) Carbon Tetrachloride	10.23	117	175269	22.2131 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140392.D 8260WTR.M Tue Jul 05 08:18:18 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070316\6M140392.D Vial: 5
Acq On : 3 Jul 2016 12:05 Operator: TMB
Sample : WG575092-02 20ug/L LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 05 08:18:14 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	191988	21.6944 ug/L	96
46)	Benzene	10.48	78	467883	19.8066 ug/L	95
47)	Trichloroethene	11.35	130	119707	20.5360 ug/L	88
48)	Methylcyclohexane	11.43	83	187911	20.5336 ug/L	95
49)	1,2-Dichloropropane	11.59	63	141715	20.8318 ug/L	95
50)	1,4-Dioxane	11.94	88	5737	124.5769 ug/L	92
51)	Bromodichloromethane	11.94	83	179423	21.8585 ug/L	99
52)	Dibromomethane	12.03	93	69034	20.9741 ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.32	63	66100	19.3798 ug/L	97
54)	4-Methyl-2-Pentanone	12.35	58	41666	19.8492 ug/L	97
55)	cis-1,3-Dichloropropene	12.68	75	219975	23.0824 ug/L	98
56)	Dimethyl Disulfide	12.97	79	110093	20.7524 ug/L	100
59)	Toluene	13.15	91	498180	20.5053 ug/L	100
60)	Ethyl Methacrylate	13.32	69	141955	20.5369 ug/L	93
62)	trans-1,3-Dichloropropene	13.39	75	192321	22.2621 ug/L	94
63)	1,1,2-Trichloroethane	13.62	97	99624	22.1579 ug/L	98
64)	2-Hexanone	13.58	43	82470	19.3186 ug/L	95
65)	1,3-Dichloropropane	13.99	76	189369	22.3478 ug/L	91
66)	Tetrachloroethene	14.10	166	119545	20.6482 ug/L	93
67)	Dibromochloromethane	14.41	129	124595	22.8243 ug/L	98
68)	1,2-Dibromoethane	14.70	107	93736	21.5989 ug/L	100
69)	1-Chlorohexane	14.85	91	163813	20.2605 ug/L	88
70)	Chlorobenzene	15.30	112	339686	21.8002 ug/L	92
71)	1,1,1,2-Tetrachloroethane	15.35	131	129188	23.3012 ug/L	96
72)	Ethylbenzene	15.35	106	178776	21.9199 ug/L	92
73)	m-,p-Xylene	15.45	106	440192	44.6579 ug/L	93
74)	o-Xylene	16.11	106	224323	22.8183 ug/L	92
75)	Styrene	16.15	104	378051	22.8579 ug/L	92
76)	Bromoform	16.71	173	73900	21.8308 ug/L	98
77)	Isopropylbenzene	16.62	105	585549	22.8283 ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.88	83	127315	22.4948 ug/L	99
81)	1,2,3-Trichloropropane	17.10	110	38297	22.8232 ug/L	85
82)	trans-1,4-Dichloro-2-Buten	17.18	53	39354	18.3910 ug/L	98
83)	n-Propylbenzene	17.22	91	737016	21.9958 ug/L	98
84)	Bromobenzene	17.34	156	144861	20.6908 ug/L	88
85)	1,3,5-Trimethylbenzene	17.44	105	515299	21.9412 ug/L	96
86)	2-Chlorotoluene	17.52	91	501970	22.1516 ug/L	96
87)	4-Chlorotoluene	17.58	91	459790	21.2832 ug/L	95
88)	a-Methylstyrene	17.92	118	267297	22.6286 ug/L	95
89)	tert-Butylbenzene	17.98	134	106439	22.5578 ug/L	73
90)	1,2,4-Trimethylbenzene	18.04	105	528083	21.9124 ug/L	99
91)	sec-Butylbenzene	18.30	105	628616	22.3600 ug/L	98
92)	p-Isopropyltoluene	18.50	119	534222	22.2977 ug/L	98
93)	1,3-Dichlorobenzene	18.70	146	306228	22.2226 ug/L	95
94)	1,4-Dichlorobenzene	18.85	146	310625	22.2959 ug/L	94
95)	n-Butylbenzene	19.12	91	517162	22.0112 ug/L	96
96)	1,2-Dichlorobenzene	19.43	146	294097	22.7321 ug/L	95
97)	1,2-Dibromo-3-Chloropropan	20.62	75	25333	22.8543 ug/L	84
98)	1,2,4-Trichlorobenzene	21.95	180	197738	21.6224 ug/L	99
99)	Hexachlorobutadiene	22.15	225	86747	22.8148 ug/L	99
100)	Naphthalene	22.38	128	360426	19.2850 ug/L	99
101)	1,2,3-Trichlorobenzene	22.75	180	177748	20.9912 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140392.D 8260WTR.M Tue Jul 05 08:18:18 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070316\6M140392.D Vial: 5
Acq On : 3 Jul 2016 12:05 Operator: TMB
Sample : WG575092-02 20ug/L LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 5 8:18 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

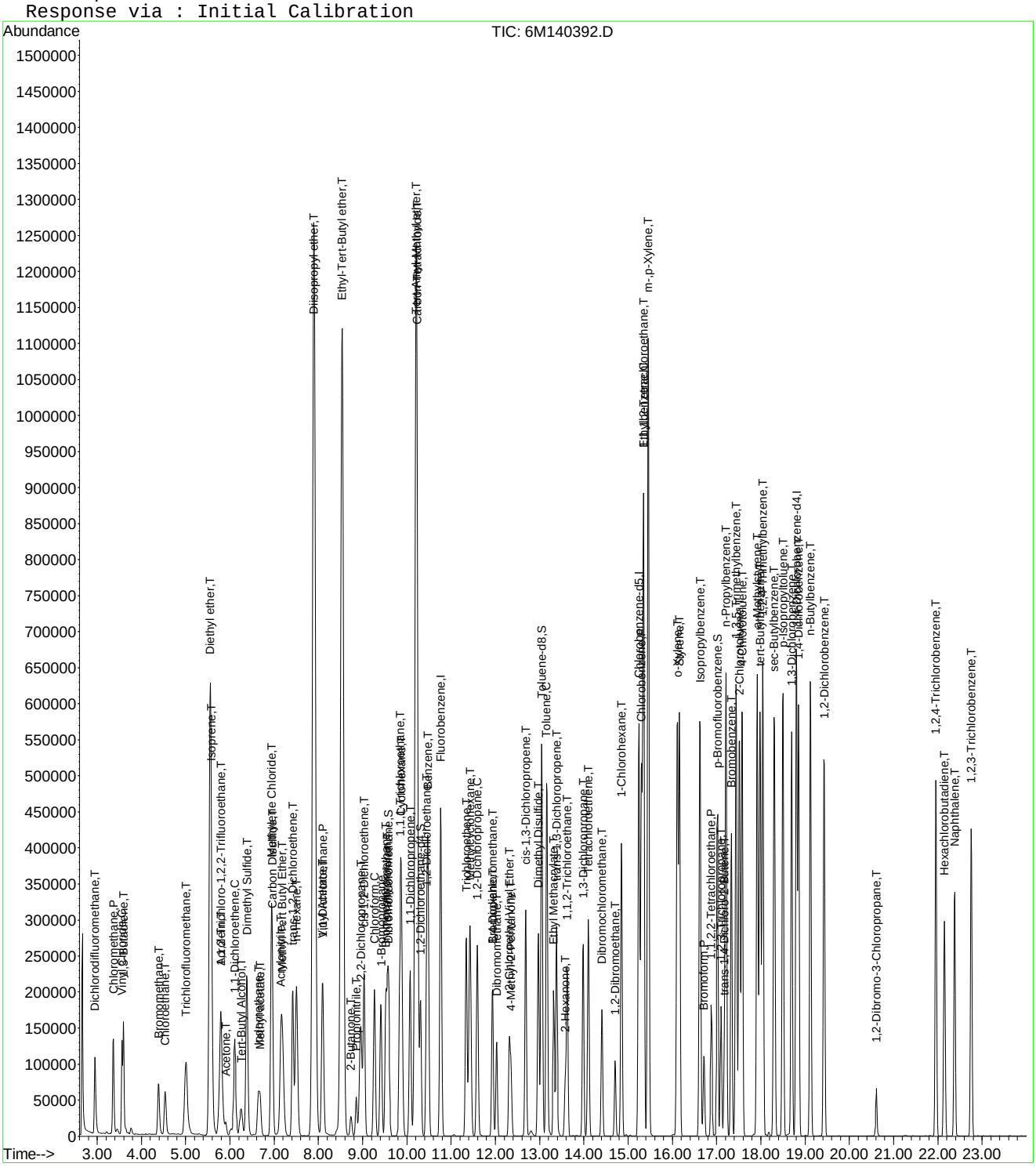

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070216\11M13063.D Vial: 23
Acq On : 3 Jul 2016 1:16 Operator: TMB
Sample : WG575086-03 20ug/L LCS2 STD 8260 Inst : hpms11
Misc : 1,1 STD76870 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 03 01:38:35 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	486638	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.24	117	412869	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	246042	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	132381	24.8563 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.44%		
43) 1,2-Dichloroethane-d4	10.23	65	131981	21.7337 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 86.92%		
57) Toluene-d8	12.47	98	452079	25.2007 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.80%		
78) p-Bromofluorobenzene	15.63	95	173718	22.9044 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 91.60%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	78481	10.2930 ug/L	94
3) Chloromethane	3.72	50	76883	12.5902 ug/L	100
4) Vinyl Chloride	3.96	62	86137	16.9855 ug/L #	13
5) 1,3-Butadiene	3.99	54	63447	12.5823 ug/L	99
6) Bromomethane	4.85	94	48606	13.9402 ug/L	98
7) Chloroethane	5.00	64	61975	19.0204 ug/L	97
8) Trichlorofluoromethane	5.48	101	169352	16.7545 ug/L	99
9) Diethyl ether	6.01	59	314199	84.0503 ug/L	92
10) Isoprene	6.04	67	108128	17.3555 ug/L	91
11) Acrolein	6.24	56	44398	89.1197 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.24	101	93985	19.1624 ug/L	93
13) Acetone	6.34	43	20823	18.0200 ug/L	94
14) 1,1-Dichloroethene	6.56	61	134532	15.1011 ug/L	96
15) Tert-Butyl Alcohol	6.66	59	56467	176.6635 ug/L	95
16) Dimethyl Sulfide	6.81	62	108078	30.3777 ug/L	85
17) Iodomethane	7.06	142	88846	23.1106 ug/L	93
18) Methyl acetate	7.06	43	56169	14.7072 ug/L	93
19) Methylene Chloride	7.31	84	84954	18.4258 ug/L	79
20) Carbon Disulfide	7.36	76	232816	15.6101 ug/L	99
21) Acrylonitrile	7.49	53	28476	18.3795 ug/L	94
22) Methyl Tert Butyl Ether	7.53	73	215908	18.7753 ug/L	95
23) trans-1,2-Dichloroethene	7.74	96	88779	18.0059 ug/L	92
24) n-Hexane	7.82	57	105878	12.8930 ug/L	99
25) Diisopropyl ether	8.15	45	1735484	84.6929 ug/L	98
26) Vinyl Acetate	8.31	43	45127	7.8298 ug/L	99
27) 1,1-Dichloroethane	8.34	63	170341	17.2181 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1423965	85.3783 ug/L	97
29) 2-Butanone	8.87	43	28925	16.5575 ug/L	94
30) Propionitrile	8.98	54	44326	86.6313 ug/L	97
31) 2,2-Dichloropropane	9.09	77	106533	13.7631 ug/L	98
32) cis-1,2-Dichloroethene	9.15	96	105721	19.4469 ug/L	87
33) Chloroform	9.35	83	179187	18.4438 ug/L	99
34) 1-Bromopropane	9.48	122	24635	25.8181 ug/L	98
35) Bromochloromethane	9.57	130	68209	21.1263 ug/L	82
36) Tetrahydrofuran	9.60	42	90341	73.2333 ug/L	90
38) 1,1,1-Trichloroethane	9.85	97	178324	18.6521 ug/L	96
39) Cyclohexane	9.88	56	170596	16.3731 ug/L	93
40) 1,1-Dichloropropene	10.04	75	121023	17.7289 ug/L	98
41) Carbon Tetrachloride	10.17	117	174776	18.7211 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	1119265	96.5784 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070216\11M13063.D Vial: 23
Acq On : 3 Jul 2016 1:16 Operator: TMB
Sample : WG575086-03 20ug/L LCS2 STD 8260 Inst : hpms11
Misc : 1,1 STD76870 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 03 01:38:35 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	143600	18.1988 ug/L	96
45)	Benzene	10.38	78	347339	18.5868 ug/L	99
46)	Trichloroethene	11.08	130	140889	23.1951 ug/L	97
47)	Methylcyclohexane	11.17	83	134251	17.9092 ug/L	93
48)	1,2-Dichloropropane	11.29	63	98672	19.0747 ug/L	98
49)	1,4-Dioxane	11.56	88	4990	174.5274 ug/L	89
50)	Bromodichloromethane	11.57	83	142252	19.5886 ug/L	99
51)	Dibromomethane	11.65	93	49807	18.4769 ug/L	94
52)	2-Chloroethyl Vinyl Ether	11.84	63	42494	16.6675 ug/L	98
53)	4-Methyl-2-Pentanone	11.87	58	25177	17.5087 ug/L	93
54)	cis-1,3-Dichloropropene	12.17	75	149814	20.6257 ug/L	99
55)	Dimethyl Disulfide	12.42	79	78004	17.8465 ug/L	91
58)	Toluene	12.56	91	426358	20.3989 ug/L	100
59)	Ethyl Methacrylate	12.64	69	88933	19.9268 ug/L	81
60)	trans-1,3-Dichloropropene	12.73	75	124905	18.6180 ug/L	97
61)	1,1,2-Trichloroethane	12.92	97	75368	20.3354 ug/L	98
62)	2-Hexanone	12.86	43	43044	15.8133 ug/L	91
63)	1,3-Dichloropropane	13.21	76	125642	21.1102 ug/L	85
64)	Tetrachloroethene	13.33	164	100685	20.7150 ug/L	95
65)	Dibromochloromethane	13.59	129	120513	21.3182 ug/L	99
66)	1,2-Dibromoethane	13.82	107	77821	20.9576 ug/L	98
67)	1-Chlorohexane	13.89	91	131180	19.0365 ug/L	89
68)	Chlorobenzene	14.29	112	330759	21.6019 ug/L	99
69)	1,1,1,2-Tetrachloroethane	14.32	131	132537	21.3923 ug/L	100
70)	Ethylbenzene	14.31	106	163743	20.8550 ug/L	97
71)	m-,p-Xylene	14.39	106	403537	42.2767 ug/L	97
72)	o-Xylene	14.92	106	198416	21.3595 ug/L	99
73)	Styrene	14.95	104	333825	21.7509 ug/L	95
74)	Bromoform	15.43	173	69918	20.4067 ug/L	98
75)	Isopropylbenzene	15.31	105	524327	21.3434 ug/L	99
77)	1,1,2,2-Tetrachloroethane	15.51	83	67103	17.5136 ug/L	100
79)	1,2,3-Trichloropropane	15.70	110	29249	20.5621 ug/L	83
80)	trans-1,4-Dichloro-2-Buten	15.73	53	16069	9.3152 ug/L #	1
81)	n-Propylbenzene	15.78	91	609362	21.3854 ug/L	98
82)	Bromobenzene	15.91	156	157279	21.0350 ug/L	89
83)	1,3,5-Trimethylbenzene	15.95	105	459865	21.1489 ug/L	98
84)	2-Chlorotoluene	16.05	91	437875	21.9399 ug/L	97
85)	4-Chlorotoluene	16.09	91	352145	19.6977 ug/L	96
86)	a-Methylstyrene	16.34	118	252155	21.9820 ug/L	95
87)	tert-Butylbenzene	16.39	134	101670	22.0698 ug/L	92
88)	1,2,4-Trimethylbenzene	16.44	105	466529	21.0699 ug/L	99
89)	sec-Butylbenzene	16.64	105	549628	21.0512 ug/L	99
90)	p-Isopropyltoluene	16.78	119	507959	21.1812 ug/L	98
91)	1,3-Dichlorobenzene	16.98	146	310568	21.5062 ug/L	97
92)	1,4-Dichlorobenzene	17.10	146	313824	21.4396 ug/L	99
93)	n-Butylbenzene	17.28	91	405939	19.2095 ug/L	97
94)	1,2-Dichlorobenzene	17.56	146	288184	21.9070 ug/L	97
95)	1,2-Dibromo-3-Chloropropan	18.49	75	15136	17.9409 ug/L	97
96)	1,2,4-Trichlorobenzene	19.54	180	192557	20.0040 ug/L	99
97)	Hexachlorobutadiene	19.69	225	77645	18.3096 ug/L	96
98)	Naphthalene	19.89	128	325534	18.2199 ug/L	99
99)	1,2,3-Trichlorobenzene	20.18	180	178308	20.1836 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070216\11M13063.D Vial: 23
Acq On : 3 Jul 2016 1:16 Operator: TMB
Sample : WG575086-03 20ug/L LCS2 STD 8260 Inst : hpms11
Misc : 1,1 STD76870 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 3 1:38 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

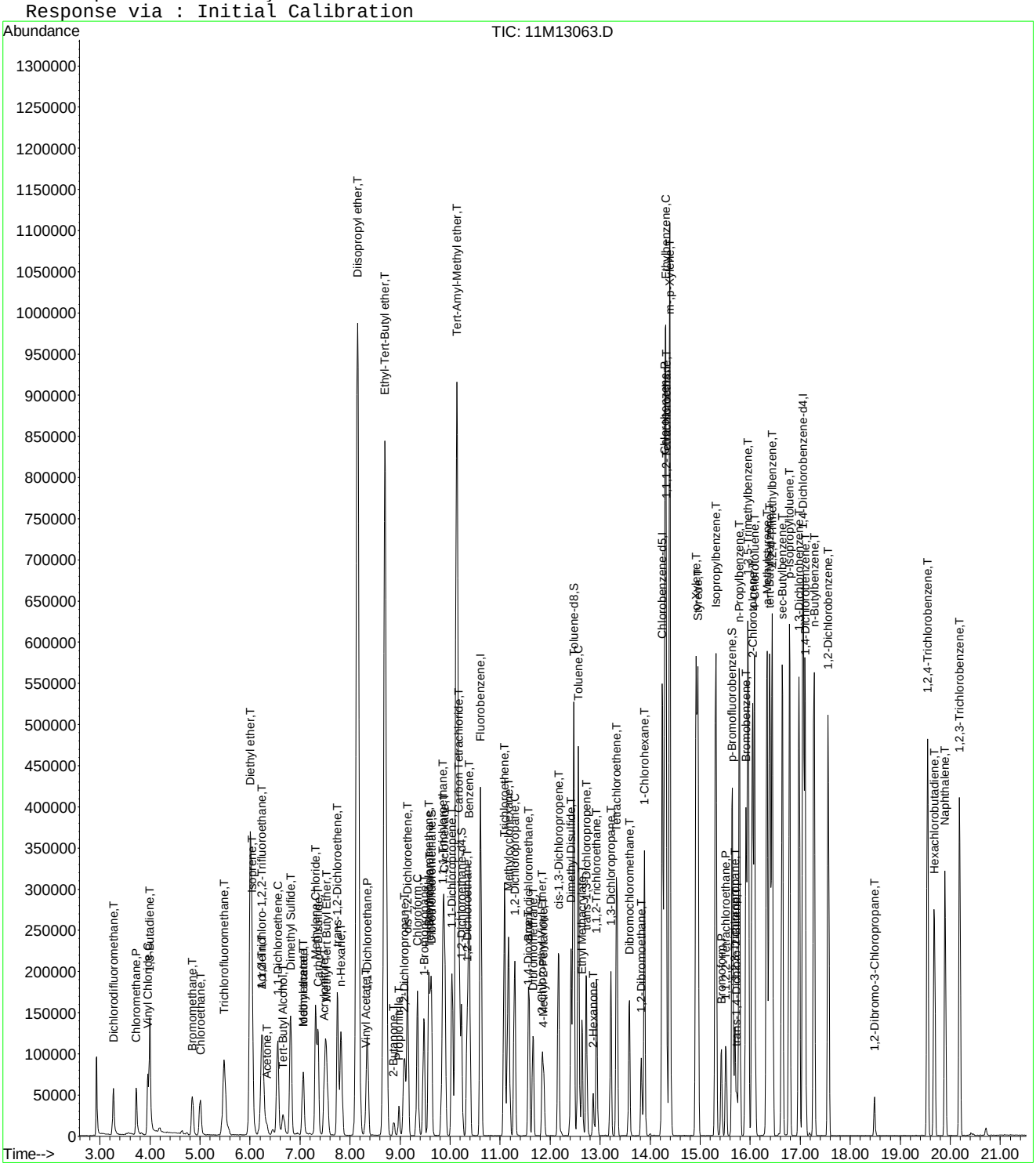

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070516\11M13082.D Vial: 7
Acq On : 5 Jul 2016 20:19 Operator: JDS
Sample : WG575199-03 20ug/L LCS2 STD 8260 Inst : hpms11
Misc : 1,1 STD76870 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 05 20:41:09 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	499574	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	435197	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	257746	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	133896	24.4898 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.96%		
43) 1,2-Dichloroethane-d4	10.24	65	132952	21.3266 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 85.32%		
57) Toluene-d8	12.47	98	460639	24.3604 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.44%		
78) p-Bromofluorobenzene	15.64	95	177047	22.2833 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 89.12%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	16441	2.1004 ug/L	91
3) Chloromethane	3.72	50	38761	6.1831 ug/L	99
4) Vinyl Chloride	3.95	62	50973	9.7912 ug/L	99
5) 1,3-Butadiene	3.99	54	54702	10.5672 ug/L	98
6) Bromomethane	4.85	94	47616	13.3026 ug/L	100
7) Chloroethane	5.00	64	48422	14.4761 ug/L	99
8) Trichlorofluoromethane	5.48	101	142912	13.7726 ug/L	100
9) Diethyl ether	6.01	59	346761	90.3589 ug/L	91
10) Isoprene	6.04	67	91920	14.3719 ug/L	89
11) Acrolein	6.24	56	52005	101.4736 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	84842	16.8503 ug/L	96
13) Acetone	6.34	43	18744	15.8009 ug/L	87
14) 1,1-Dichloroethene	6.56	61	99965	10.9304 ug/L	95
15) Tert-Butyl Alcohol	6.66	59	56349	171.7293 ug/L	95
16) Dimethyl Sulfide	6.81	62	96196	26.3379 ug/L	85
17) Iodomethane	7.06	142	59265	15.8001 ug/L	91
18) Methyl acetate	7.07	43	54456	13.8222 ug/L	95
19) Methylene Chloride	7.31	84	75472	15.9454 ug/L	80
20) Carbon Disulfide	7.36	76	187108	12.2206 ug/L	100
21) Acrylonitrile	7.50	53	26454	16.6323 ug/L	99
22) Methyl Tert Butyl Ether	7.52	73	210169	17.8030 ug/L	95
23) trans-1,2-Dichloroethene	7.75	96	77946	15.3995 ug/L	92
24) n-Hexane	7.82	57	105297	12.4902 ug/L	97
25) Diisopropyl ether	8.15	45	1837066	87.3288 ug/L	98
26) Vinyl Acetate	8.31	43	73482	10.9935 ug/L	98
27) 1,1-Dichloroethane	8.34	63	160354	15.7889 ug/L	100
28) Ethyl-Tert-Butyl ether	8.70	59	1490520	87.0547 ug/L	98
29) 2-Butanone	8.87	43	28830	16.0758 ug/L	93
30) Propionitrile	8.97	54	46405	88.3461 ug/L	99
31) 2,2-Dichloropropane	9.09	77	127067	15.9909 ug/L	99
32) cis-1,2-Dichloroethene	9.15	96	99878	17.8964 ug/L	91
33) Chloroform	9.35	83	174018	17.4480 ug/L	99
34) 1-Bromopropane	9.48	122	23460	23.9956 ug/L	99
35) Bromochloromethane	9.57	130	64818	19.5562 ug/L	85
36) Tetrahydrofuran	9.60	42	91952	72.6091 ug/L	90
38) 1,1,1-Trichloroethane	9.85	97	165597	16.8724 ug/L	97
39) Cyclohexane	9.88	56	161922	15.1382 ug/L	93
40) 1,1-Dichloropropene	10.04	75	114691	16.3663 ug/L	98
41) Carbon Tetrachloride	10.17	117	161998	16.9031 ug/L	98
42) Tert-Amyl-Methyl ether	10.13	73	1149931	96.6552 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M13082.D 8260WT.M Tue Jul 05 20:41:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070516\11M13082.D Vial: 7
Acq On : 5 Jul 2016 20:19 Operator: JDS
Sample : WG575199-03 20ug/L LCS2 STD 8260 Inst : hpms11
Misc : 1,1 STD76870 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 05 20:41:09 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.34	62	140231	17.3117 ug/L	97
45) Benzene	10.38	78	329594	17.1806 ug/L	100
46) Trichloroethene	11.09	130	129142	20.7106 ug/L	96
47) Methylcyclohexane	11.17	83	136280	17.7091 ug/L	92
48) 1,2-Dichloropropane	11.29	63	97074	18.2799 ug/L	98
49) 1,4-Dioxane	11.56	88	5277	179.0847 ug/L	87
50) Bromodichloromethane	11.57	83	141358	18.9615 ug/L	99
51) Dibromomethane	11.66	93	49416	17.8572 ug/L	94
52) 2-Chloroethyl Vinyl Ether	11.84	63	45259	17.2924 ug/L	99
53) 4-Methyl-2-Pentanone	11.87	58	25341	17.1664 ug/L	97
54) cis-1,3-Dichloropropene	12.17	75	153263	20.5542 ug/L	99
55) Dimethyl Disulfide	12.42	79	79868	17.7998 ug/L	87
58) Toluene	12.56	91	419026	19.0195 ug/L	100
59) Ethyl Methacrylate	12.64	69	87618	18.6249 ug/L	83
60) trans-1,3-Dichloropropene	12.73	75	130070	18.3932 ug/L	95
61) 1,1,2-Trichloroethane	12.94	97	77080	19.7303 ug/L	98
62) 2-Hexanone	12.86	43	42951	14.9696 ug/L	90
63) 1,3-Dichloropropane	13.21	76	128843	20.5373 ug/L	83
64) Tetrachloroethene	13.34	164	99929	19.5046 ug/L	96
65) Dibromochloromethane	13.59	129	121633	20.4125 ug/L	99
66) 1,2-Dibromoethane	13.82	107	74524	19.0400 ug/L	100
67) 1-Chlorohexane	13.89	91	134491	18.5157 ug/L	89
68) Chlorobenzene	14.29	112	332854	20.6234 ug/L	99
69) 1,1,1,2-Tetrachloroethane	14.32	131	136389	20.8846 ug/L	99
70) Ethylbenzene	14.31	106	165999	20.0576 ug/L	96
71) m-,p-Xylene	14.39	106	406553	40.4074 ug/L	98
72) o-Xylene	14.92	106	202548	20.6857 ug/L	96
73) Styrene	14.95	104	338874	20.9470 ug/L	95
74) Bromoform	15.43	173	70042	19.3940 ug/L	100
75) Isopropylbenzene	15.31	105	535530	20.6810 ug/L	100
77) 1,1,2,2-Tetrachloroethane	15.52	83	71826	17.8950 ug/L	97
79) 1,2,3-Trichloropropane	15.70	110	28697	19.2811 ug/L	86
80) trans-1,4-Dichloro-2-Buten	15.74	53	17321	9.5635 ug/L #	14
81) n-Propylbenzene	15.79	91	618279	20.7130 ug/L	97
82) Bromobenzene	15.91	156	160721	20.5192 ug/L	88
83) 1,3,5-Trimethylbenzene	15.95	105	469315	20.6034 ug/L	98
84) 2-Chlorotoluene	16.05	91	427722	20.4580 ug/L	97
85) 4-Chlorotoluene	16.09	91	378690	20.2207 ug/L	97
86) a-Methylstyrene	16.34	118	256680	21.3604 ug/L	96
87) tert-Butylbenzene	16.39	134	103322	21.4100 ug/L	94
88) 1,2,4-Trimethylbenzene	16.44	105	478753	20.6402 ug/L	99
89) sec-Butylbenzene	16.65	105	563310	20.5955 ug/L	99
90) p-Isopropyltoluene	16.79	119	519522	20.6797 ug/L	98
91) 1,3-Dichlorobenzene	16.98	146	316178	20.9005 ug/L	97
92) 1,4-Dichlorobenzene	17.10	146	323650	21.1069 ug/L	98
93) n-Butylbenzene	17.28	91	426283	19.2562 ug/L	98
94) 1,2-Dichlorobenzene	17.57	146	292022	21.1907 ug/L	97
95) 1,2-Dibromo-3-Chloropropan	18.49	75	14581	16.5498 ug/L	89
96) 1,2,4-Trichlorobenzene	19.55	180	204340	20.2641 ug/L	97
97) Hexachlorobutadiene	19.69	225	85684	19.2878 ug/L	96
98) Naphthalene	19.90	128	331784	17.7265 ug/L	100
99) 1,2,3-Trichlorobenzene	20.19	180	184214	19.9052 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M13082.D 8260WT.M Tue Jul 05 20:41:11 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070516\11M13082.D Vial: 7
Acq On : 5 Jul 2016 20:19 Operator: JDS
Sample : WG575199-03 20ug/L LCS2 STD 8260 Inst : hpms11
Misc : 1,1 STD76870 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 5 20:41 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

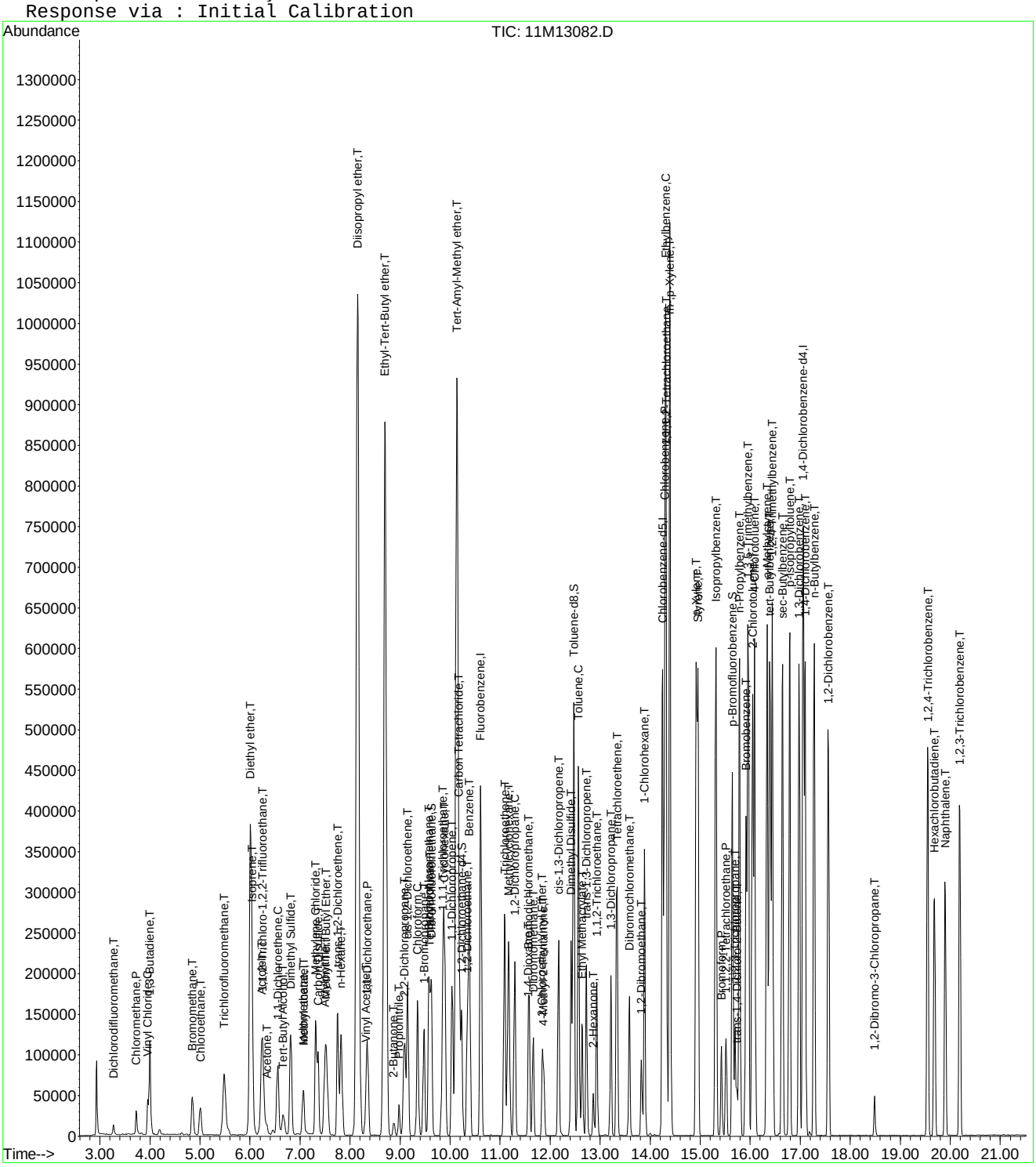

2.2 Semivolatiles Data

2.2.1 Semivolatiles GC/MS Data (Dioxane)

2.2.1.1 Summary Data

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW16-062116	**Prep Method:**	3520C	**Prep Date:**	06/27/2016 14:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574772	**Analyst:**	MES	**Run Date:**	07/01/2016 01:14
Collect Date:	06/21/2016 13:20	**Dilution:**	1	**File ID:**	15M18702
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	54.6	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	MW16-062116	**Prep Method:**	3520C	**Prep Date:**	06/27/2016 14:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574772	**Analyst:**	MES	**Run Date:**	07/05/2016 17:29
Collect Date:	06/21/2016 14:40	**Dilution:**	5	**File ID:**	15M18724
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	18.0		10.0	5.00	2.50

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	73.0	20	129	

Certificate of Analysis

Sample #:	L16061290-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	109-062216	**Prep Method:**	3520C	**Prep Date:**	06/27/2016 14:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574772	**Analyst:**	MES	**Run Date:**	07/01/2016 01:59
Collect Date:	06/22/2016 07:20	**Dilution:**	1	**File ID:**	15M18704
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	85.5	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW07-062216	**Prep Method:**	3520C	**Prep Date:**	06/27/2016 14:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574772	**Analyst:**	MES	**Run Date:**	07/05/2016 18:37
Collect Date:	06/22/2016 08:30	**Dilution:**	1	**File ID:**	15M18727
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	49.9	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.2.1.2 QC Summary Data

Example 8270 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	1261197
Cis = Concentration of the specific internal standard (ug/mL)	40
Ais = Area of the characteristic ion of the specific internal standard	608044
Cx = Concentration of the compound in the standard being measured (ug/mL)	50
RF = Calculated Response Factor	**1.65935**

2.0 Calculating the concentration (C) of a compound in water using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Vi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Vi = Initial volume of sample extracted from prep log (mL)	1021
Cx = Concentration of the compound in the sample being measured (ug/mL)	0.016947
Cx = Concentration of the compound in the sample being measured (ug/L)	**16.947**

3.0 Calculating the concentration (C) of a compound in soil using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Wi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Wi = Initial weight of sample extracted (g) from prep log	30
Cx = Concentration of the compound in the sample being measured (ug/g)	0.576763
Cx = Concentration of the compound in the sample being measured (ug/kg)	**576.7627**

Dry weight correction:

Percent solids (PCT_S)	50
Cd = (Cx) (100)/PCT_S	**1153.525** ug/kg

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve plot

b = intercept from curve plot

Step 2: Calculate y from Quantitation Report

y = 16790/784838 = 0.02139

Step 3: Solve for x

x = (y - b)/m = [(0.02139 -(- 0.0435)]/ 0.0783 = 0.829

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.829) = 20.72 ug/L

Example Spreadsheet Calculation:

Slope from curve, m:	0.0783	
Intercept from curve, b:	-0.0435	
Area of analyte, Ax:	16790	
Area of Internal Standard , Ais:	784484	
Concentration of IS, Cis	25.00	ug/L
Response Ratio (y) :	0.021403	
Amount Ratio:	0.828897	
Concentration (Cx):	20.72241	ug/L

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**0.0259**	
Value of B from plot:	**0.0596**	
Value of C from plot:	**-0.0165**	
Area of analyte from quantitation report:	**203233**	
Area of IS from quantiation report:	**1425653**	
Response ratio, y:	**0.142554**	
C - y:	**-0.15905**	
Root 1 - Computed amount ratio , X1:	**-3.88278**	
Root 2 - Computed amount ratio , X2:	**1.581623**	use this solution
Concentration of IS, Cis:	**40.00**	
Concentration of analyte, Cx:	**63.26**	ug/L

Microbac Laboratories Inc.
Continuous Sample Extract Log

Workgroup: WG574286
Analyst: CPD
Spike Analyst: CPD
Method: 3520C
Run Date: 06/27/2016 14:01
SOP: EXB01 Revison 20
Spike Witness: NPH
Surr Solution: STD76628

TIME ON: 17:30 OFF: 11:35 ON: 16:50 OFF: 10:35

CH2CL2 Lot #: COA18982
Sodium Sulfate Lot #: COA18814
10N NaOH Lot #: RGT37076
1:1 H2SO4 Lot #: RGT36755

	SAMPLE #	Type	Reference	Prod	pH	Init Amnt	Surr Amnt	Spike Amnt	Spike Sol	Final Vol	Color
1	L16061289-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
2	L16061289-02	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
3	L16061289-03	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Colored
4	L16061289-05	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
5	L16061290-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
6	L16061290-02	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
7	L16061290-05	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
8	L16061290-06	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
9	L16061345-04	RS01		827-DIOX	<2>12	810 mL	.05 mL			1 mL	Colored
10	L16061345-05	MS01	L16061345-04	827-DIOX	<2>12	760 mL	.05 mL	.5 mL	STD75268	1 mL	Colored
11	L16061345-06	SD01	L16061345-04	827-DIOX	<2>12	810 mL	.05 mL	.5 mL	STD75268	1 mL	Colored
12	L16061345-08	SAMP		827-DIOX	<2>12	950 mL	.05 mL			1 mL	Transparent
13	L16061413-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Colored
14	L16061450-04	SAMP		827-DIOX	<2>12	840 mL	.05 mL			1 mL	Colored
15	L16061450-05	SAMP		827-DIOX	<2>12	740 mL	.05 mL			1 mL	Transparent
16	L16061452-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
17	L16061452-02	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
18	L16061452-03	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
19	L16061453-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
20	L16061453-02	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
21	L16061453-03	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
22	WG574286-01	BLANK		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
23	WG574286-02	LCS		827-DIOXANE	<2>12	1000 mL	.05 mL	.05 mL	STD75256	1 mL	Transparent
24	WG574286-03	REF	L16061345-04	827-DIOX	<2>12	810 mL	.05 mL			1 mL	Colored
25	WG574286-04	MS	L16061345-04	827-DIOX	<2>12	760 mL	.05 mL	.5 mL	STD75268	1 mL	Colored
26	WG574286-05	MSD	L16061345-04	827-DIOX	<2>12	810 mL	.05 mL	.5 mL	STD75268	1 mL	Colored

Analyst: Chelsea Davis

Reviewer: Chris Hill

EXTRACT - Modified 01/23/2009
PDF ID: 4831965
Report generated: 06/29/2016 18:18

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062116
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573365

Internal STD: STD76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: STD74214 MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18455	BAKEOUT	1	1		06/21/16 08:46
2	15M18456	WG573501-01 5PPM DFTPP STD	1	1	STD75016	06/21/16 09:05
3	15M18457	WG573501-01 5PPM DFTPP STD	1	1	STD75016	06/21/16 09:34
4	15M18458	WG573501-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 09:52
5	15M18459	WG573501-03 10 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 10:27
6	15M18460	WG573501-04 7.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 10:49
7	15M18461	WG573501-05 2.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:12
8	15M18462	WG573501-06 1 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:34
9	15M18463	WG573501-07 0.4 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:57
10	15M18464	WG573501-08 5PPM 1,4-DIOXANE ALT SRC	1	1	STD74214	06/21/16 12:20
11	15M18465	WG572806-01 BLANK 6/15	1	1		06/21/16 12:54
12	15M18466	WG572806-02 LCS 6/15	1	1		06/21/16 13:17
13	15M18467	WG572806-03 LCSDUP 6/15	1	1		06/21/16 13:40
14	15M18468	WG573008-01 BLANK 6/17	7	1	SOIL	06/21/16 14:03
15	15M18469	WG573008-02 LCS 6/17	7	1	SOIL	06/21/16 14:26
16	15M18470	WG573008-03 LCSDUP 6/17	7	1	SOIL	06/21/16 14:48
17	15M18471	L16060730-01	1	1		06/21/16 15:11
18	15M18472	L16060730-02	1	1		06/21/16 15:34
19	15M18473	L16060854-01	1	1		06/21/16 15:57
20	15M18474	L16060730-03	1	1		06/21/16 16:19
21	15M18475	L16060756-04 827-DIOX	1	1		06/21/16 16:46
22	15M18476	L16060822-01	1	1		06/21/16 17:08
23	15M18477	L16060822-03	1	1		06/21/16 17:31
24	15M18478	L16060822-04	1	1		06/21/16 17:54
25	15M18479	L16060822-05	1	1		06/21/16 18:17
26	15M18480	L16060823-01	1	1		06/21/16 18:40
27	15M18481	L16060823-03	1	1		06/21/16 19:02
28	15M18482	L16060823-04	1	1		06/21/16 19:25
29	15M18483	L16060809-03 827-DIOX	1	1		06/21/16 19:48
30	15M18484	L16060854-01 2X	1	2		06/21/16 20:10
31	15M18485	BAKEOUT	1	1		06/21/16 20:33
32	15M18486	BAKEOUT	1	1		06/21/16 20:55
33	15M18487	BAKEOUT	1	1		06/21/16 21:18

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062116

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573365

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD: STD74214

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
	WG573501-01 5PPM DFTPP STD rerun DFTPP, pentachlorophenol tailing >2.			
14				
	WG573008-01 BLANK 6/17 DNR-not needed.			
15				
	WG573008-02 LCS DNR-not needed.			
16				
	WG573008-03 LCSDUP DNR-not needed.			
19	X	2	Over Calibration Range	
	L16060854-01			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 063016
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574772,WG574775

Internal STD: STD76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18666	BAKEOUT	1	1		06/30/16 10:57
2	15M18667	WG574781-01 5PPM DFTPP STD	1	1	STD75016	06/30/16 11:17
3	15M18668	WG574781-01 5PPM DFTPP STD	1	1	STD75016	06/30/16 11:34
4	15M18669	WG574781-01 5PPM DFTPP STD	1	1	STD75016	06/30/16 12:17
5	15M18670	WG574781-01 5PPM DFTPP STD	1	1	STD75016	06/30/16 12:34
6	15M18671	WG574781-01 5PPM DFTPP STD	1	1	STD75016	06/30/16 13:23
7	15M18672	WG574781-01 5PPM DFTPP STD	1	1	STD75016	06/30/16 13:39
8	15M18673	WG574781-01 5PPM DFTPP STD	1	1	STD75016	06/30/16 14:24
9	15M18674	WG574781-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/30/16 14:42
10	15M18675	WG574543-01 BLANK 6/29	7	1	SOIL	06/30/16 15:04
11	15M18676	WG574543-02 LCS 6/29	7	1	SOIL	06/30/16 15:27
12	15M18677	WG574543-03 LCSDUP 6/29	7	1	SOIL	06/30/16 15:49
13	15M18678	WG574286-01 BLANK 6/27	1	1		06/30/16 16:12
14	15M18679	WG574286-02 LCS 6/27	1	1		06/30/16 16:34
15	15M18680	L16060637-02 RE 827-DIOX	7	1	SOIL	06/30/16 16:57
16	15M18681	L16060756-01 RE 827-DIOX	7	1	SOIL	06/30/16 17:19
17	15M18682	L16060756-02 RE 827-DIOX	7	1	SOIL	06/30/16 17:42
18	15M18683	L16060756-03 RE 827-DIOX	7	1	SOIL	06/30/16 18:05
19	15M18684	L16060809-01 RE 827-DIOX	7	1	SOIL	06/30/16 18:28
20	15M18685	L16060809-02 RE 827-DIOX	7	1	SOIL	06/30/16 18:50
21	15M18686	L16060930-01 RE 827-DIOX	7	1	SOIL	06/30/16 19:13
22	15M18687	L16060930-02 RE 827-DIOX	7	1	SOIL	06/30/16 19:35
23	15M18688	L16061413-01 827-DIOX	1	1		06/30/16 19:58
24	15M18689	L16061213-01 RE 827-DIOX	7	1	SOIL	06/30/16 20:21
25	15M18690	L16061213-02 RE 827-DIOX	7	1	SOIL	06/30/16 20:43
26	15M18691	L16061213-03 RE 827-DIOX	7	1	SOIL	06/30/16 21:06
27	15M18692	L16061213-04 RE 827-DIOX	7	1	SOIL	06/30/16 21:28
28	15M18693	L16061213-05 RE 827-DIOX	7	1	SOIL	06/30/16 21:51
29	15M18694	L16061213-06 RE 827-DIOX	7	1	SOIL	06/30/16 22:13
30	15M18695	L16061450-01 827-DIOX	7	1	SOIL	06/30/16 22:36
31	15M18696	L16061450-02 827-DIOX	7	1	SOIL	06/30/16 22:59
32	15M18697	L16061450-03 827-DIOX	7	1	SOIL	06/30/16 23:22
33	15M18698	L16061289-01 827-DIOX	1	1		06/30/16 23:44

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 063016
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574772,WG574775

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	15M18699	L16061289-02 827-DIOX	1	1		07/01/16 00:06
35	15M18700	L16061289-03 827-DIOX	1	1		07/01/16 00:29
36	15M18701	L16061289-05 827-DIOX	1	1		07/01/16 00:51
37	15M18702	L16061290-01 827-DIOX	1	1		07/01/16 01:14
38	15M18703	L16061290-02 827-DIOX	1	1		07/01/16 01:36
39	15M18704	L16061290-05 827-DIOX	1	1		07/01/16 01:59
40	15M18705	BAKEOUT	1	1		07/01/16 02:21
41	15M18706	BAKEOUT	1	1		07/01/16 02:43
42	15M18707	BAKEOUT	1	1		07/01/16 03:06

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
	Rerun DFTPP, ion ratio failed.			
3				
	Rerun DFTPP, ion ratio failed. Performed a quicktune.			
4				
	Rerun DFTPP, ion ratio failed. Changed the liner.			
5				
	Rerun DFTPP, ion ratio failed. PCP tailing >2. Changed gold seal and clipped column.			
6				
	Rerun DFTPP, ion ratio failed. Retuned.			
7				
	Rerun DFTPP, ion ratio failed. Retuned.			
31				
	L16061450-02 827-DIOX surrogate recovery is less than 10%. Needs re-extracted.			
33	X	10	Surrogate standard failure	
	L16061289-01 827-DIOX surrogate is high due to SMI.			
38	X	5	Over Calibration Range	
	L16061290-02 827-DIOX			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 070516
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574772,WG575045,WG575070

Internal STD: STD76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: MS/MSD STD:

Comments: File 15M18715 does not exist.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18708	BAKEOUT	1	1		07/05/16 10:31
2	15M18709	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 10:51
3	15M18710	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 11:11
4	15M18711	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 11:33
5	15M18712	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 12:30
6	15M18713	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 12:47
7	15M18714	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 14:14
8	15M18716	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 14:33
9	15M18717	WG575159-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	07/05/16 14:51
10	15M18718	WG574706-01 BLANK 6/30	1	1		07/05/16 15:14
11	15M18719	WG574706-02 LCS 6/30	1	1		07/05/16 15:38
12	15M18720	WG574706-03 LCSDUP 6/30	1	1		07/05/16 16:01
13	15M18721	WG574873-01 BLANK 7/1	7	1	SOIL	07/05/16 16:23
14	15M18722	WG574873-02 LCS 7/1	7	1	SOIL	07/05/16 16:45
15	15M18723	WG574873-03 LCSDUP 7/1	7	1	SOIL	07/05/16 17:07
16	15M18724	L16061290-02 5X 827-DIOX	1	5		07/05/16 17:29
17	15M18725	L16061289-01 10X 827-DIOX	1	10		07/05/16 17:52
18	15M18726	L16061227-01 RE 827-DIOX	1	10		07/05/16 18:15
19	15M18727	L16061290-06 827-DIOX	1	1		07/05/16 18:37
20	15M18728	L16061345-08 827-DIOX	1	1		07/05/16 19:00
21	15M18729	L16061345-04 REF 827-DIOX	1	1		07/05/16 19:23
22	15M18730	L16061345-05 MS 827-DIOX	1	1		07/05/16 19:45
23	15M18731	L16061345-06 MSD 827-DIOX	1	1		07/05/16 20:08
24	15M18732	L16061345-03 RE 827-DIOX	7	1	SOIL	07/05/16 20:31
25	15M18733	L16061345-01 RE 827-DIOX	7	1	SOIL	07/05/16 20:54
26	15M18734	L16061560-01 827-DIOX	1	1		07/05/16 21:16
27	15M18735	L16061648-01 827-DIOX	1	1		07/05/16 21:39
28	15M18736	L16061452-01 827-DIOX	1	1		07/05/16 22:02
29	15M18737	L16061452-02 827-DIOX	1	1		07/05/16 22:24
30	15M18738	L16061452-03 827-DIOX	1	1		07/05/16 22:46
31	15M18739	L16061453-01 827-DIOX	1	1		07/05/16 23:09
32	15M18740	L16061453-02 827-DIOX	1	1		07/05/16 23:32
33	15M18741	L16061453-03 827-DIOX	1	1		07/05/16 23:54

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 070516
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574772,WG575045,WG575070

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	15M18742	L16061450-04 827-DIOX	1	1		07/06/16 00:17
35	15M18743	L16061450-05 827-DIOX	1	1		07/06/16 00:39
36	15M18744	BAKEOUT	1	1		07/06/16 01:02
37	15M18745	BAKEOUT	1	1		07/06/16 01:25
38	15M18746	BAKEOUT	1	1		07/06/16 01:47
39	15M18747	BAKEOUT	1	1		07/06/16 02:10
40	15M18748	BAKEOUT	1	1		07/06/16 02:32
41	15M18749	BAKEOUT	1	1		07/06/16 02:55
42	15M18750	BAKEOUT	1	1		07/06/16 03:17
43	15M18751	BAKEOUT	1	1		07/06/16 03:40
44	15M18752	BAKEOUT	1	1		07/06/16 04:03

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
	Rerun DFTPP, ion ratio fails.			
3				
	Rerun DFTPP, ion ratio fails. Performed a quicktune.			
4				
	Rerun DFTPP, ion ratio fails. Changed the liner.			
5				
	Rerun DFTPP, ion ratio fails. Retuned.			
6				
	Rerun DFTPP, PCP tailing >2.			
7				
	Rerun DFTPP, PCP tailing >2. Clipping the column.			
13				
	WG574873-01 BLANK 7/1 surrogate is low.			
17				
	L16061289-01 10X 827-DIOX confirms high surrogate recovery; DNR. Surrogate is high due to SMI. Sample is not being re-extracted.			
18				
	L16061227-01 RE 827-DIOX surrogate recovery is good; does not confirm original extraction.			
21	X	20	Over Calibration Range	
	L16061345-04 REF			
22				
	L16061345-05 MS 827-DIOX DNR-sample is spiked for 827-SPE-DIOX			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 070516

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574772,WG575045,WG575070

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
23				
	L16061345-06 MSD 827-DIOX DNR-sample is spiked for 827-SPE-DIOX			
24				
	L16061345-03 RE 827-DIOX confirms low surrogate recovery.			
25				
	L16061345-01 RE 827-DIOX confirms low surrogate recovery.			
26	X	5	Over Calibration Range	
	L16061560-01 827-DIOX			
30	X	2	Over Calibration Range	
	L16061452-03 827-DIOX			
31	X	10	Surrogate standard failure	
	L16061453-01 surrogate high due to SMI. Not re-extracting.			

Page: 3 Approved: 11-JUL-16

Microbac Laboratories Inc.

Data Checklist

Date: 21-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75850
Analytical Workgroups: L16060730, 060756, 060809, 060822, 060823, 060854

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 22-JUN-2016

Secondary Reviewer: 22-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-22-2016 16:00:51

Microbac Laboratories Inc.

Data Checklist

Date: 30-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 76103
Analytical Workgroups: L16060637,0756,0809,0930,1213,1450,1289,1290,1413

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 05-JUL-2016

Secondary Reviewer: 06-JUL-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUL-06-2016 10:46:55

Microbac Laboratories Inc.

Data Checklist

Date: 05-JUL-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 76120
Analytical Workgroups: L16061345, 061227, 1560, 1648, 1290, 1450, 1452, 1453

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 06-JUL-2016

Secondary Reviewer: 11-JUL-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUL-11-2016 11:01:30

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8270D

AAB#: WG574772

Login Number: L16061290

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW16-062116	01	06/21/16					06/27/2016	6	7		07/01/16	3.5	40	
MW16-062116	02	06/21/16					06/27/2016	6	7		07/05/16	8.1	40	
109-062216	05	06/22/16					06/27/2016	5.3	7		07/01/16	3.5	40	
18CPTMW07-062216	06	06/22/16					06/27/2016	5.2	7		07/05/16	8.2	40	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4838931
Report generated 07/06/2016 11:19

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061290
Instrument Id: HPMS15
Workgroup (AAB#): WG574772

Method: 827-DIOXANE
CAL ID: HPMS15-21-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1
L16061290-01	1.00	01	54.6
L16061290-02	5.00	DL01	73.0
L16061290-05	1.00	01	85.5
L16061290-06	1.00	01	49.9
WG574286-01	1.00	01	43.4
WG574286-02	1.00	01	48.9

Surrogates	Surrogate Limits		
1 - 1,4-Dioxane-d8	20	-	129

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4838939
Report generated: 07/06/2016 11:19

METHOD BLANK SUMMARY

Login Number: L16061290
Blank File ID: 15M18678
Prep Date: 06/27/16 14:01
Analyzed Date: 06/30/16 16:12
Analyst: MES

Work Group: WG574772
Blank Sample ID: WG574286-01
Instrument ID: HPMS15
Method: 8270D

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG574286-02	15M18679	06/30/16 16:34	01
18CPTMW16-062116	L16061290-01	15M18702	07/01/16 01:14	01
109-062216	L16061290-05	15M18704	07/01/16 01:59	01
MW16-062116	L16061290-02	15M18724	07/05/16 17:29	DL01
18CPTMW07-062216	L16061290-06	15M18727	07/05/16 18:37	01

Report Name: BLANK_SUMMARY
PDF File ID: 4840254
Report generated 07/06/2016 10:44

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061290 Prep Date: 06/27/16 14:01 Sample ID: WG574286-01
Instrument ID: HPMS15 Run Date: 06/30/16 16:12 Prep Method: 3520C
File ID: 15M18678 Analyst: MES Method: 8270D
Workgroup (AAB#): WG574772 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS15-21-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
1,4-Dioxane	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	43.4	20 - 129	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4838932
06-JUL-2016 11:19

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061290 Run Date: 06/30/2016 Sample ID: WG574286-02
Instrument ID: HPMS15 Run Time: 16:34 Prep Method: 3520C
File ID: 15M18679 Analyst: MES Method: 8270D
Workgroup (AAB#): WG574772 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD75256 Cal ID: HPMS15-21-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
1,4-Dioxane	5.00	2.78	55.6	30 - 104	

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	48.9	20 - 129	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4838933
Report generated: 07/06/2016 11:19

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16061290
Instrument: HPMS15
Analyst: MES
Workgroup: WG573501

Tune ID: WG573501-01
Run Date: 06/21/2016
Run Time: 09:34
File ID: 15M18457
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	38.8	34488	PASS
68.0	69.0	0	2.00	1.36	500	PASS
69.0	198	0	100	41.4	36833	PASS
70.0	69.0	0	2.00	0.467	172	PASS
127	198	40.0	60.0	51.9	46131	PASS
197	198	0	1.00	0	0	PASS
198	198	100	100	100	88880	PASS
199	198	5.00	9.00	6.66	5918	PASS
275	198	10.0	30.0	24.9	22090	PASS
365	198	1.00	100	2.65	2358	PASS
441	443	0.0100	100	75.7	9586	PASS
442	198	40.0	100	73.4	65261	PASS
443	442	17.0	23.0	19.4	12659	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573501-02	STD-CCV	01	06/21/2016 09:52	
WG573501-03	STD	01	06/21/2016 10:27	
WG573501-04	STD	01	06/21/2016 10:49	
WG573501-05	STD	01	06/21/2016 11:12	
WG573501-06	STD	01	06/21/2016 11:34	
WG573501-07	STD	01	06/21/2016 11:57	
WG573501-08	SSCV	01	06/21/2016 12:20	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4838936
Report generated 07/06/2016 11:19

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16061290
Instrument: HPMS15
Analyst: MES
Workgroup: WG574781

Tune ID: WG574781-01
Run Date: 06/30/2016
Run Time: 14:24
File ID: 15M18673
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	44.6	24370	PASS
68.0	69.0	0	2.00	1.41	352	PASS
69.0	198	0	100	45.7	24921	PASS
70.0	69.0	0	2.00	0.959	239	PASS
127	198	40.0	60.0	57.0	31104	PASS
197	198	0	1.00	0.291	159	PASS
198	198	100	100	100	54589	PASS
199	198	5.00	9.00	7.03	3838	PASS
275	198	10.0	30.0	24.8	13523	PASS
365	198	1.00	100	2.78	1520	PASS
441	443	0.0100	100	75.2	5686	PASS
442	198	40.0	100	70.8	38669	PASS
443	442	17.0	23.0	19.5	7559	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG574781-02	CCV	01	06/30/2016 14:42	
WG574286-01	BLANK	01	06/30/2016 16:12	
WG574286-02	LCS	01	06/30/2016 16:34	
L16061290-01	18CPTMW16-062116	01	07/01/2016 01:14	
L16061290-05	109-062216	01	07/01/2016 01:59	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4838936
Report generated 07/06/2016 11:19

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16061290
Instrument: HPMS15
Analyst: MES
Workgroup: WG575159

Tune ID: WG575159-01
Run Date: 07/05/2016
Run Time: 14:33
File ID: 15M18716
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	46.2	37745	PASS
68.0	69.0	0	2.00	1.95	734	PASS
69.0	198	0	100	46.2	37667	PASS
70.0	69.0	0	2.00	0.337	127	PASS
127	198	40.0	60.0	57.5	46941	PASS
197	198	0	1.00	0.380	310	PASS
198	198	100	100	100	81613	PASS
199	198	5.00	9.00	7.55	6162	PASS
275	198	10.0	30.0	24.6	20072	PASS
365	198	1.00	100	2.93	2392	PASS
441	443	0.0100	100	70.8	8479	PASS
442	198	40.0	100	73.3	59805	PASS
443	442	17.0	23.0	20.0	11980	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG575159-02	CCV	01	07/05/2016 14:51	
L16061290-02	MW16-062116	DL01	07/05/2016 17:29	
L16061290-06	18CPTMW07-062216	01	07/05/2016 18:37	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4838936
Report generated 07/06/2016 11:19

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061290
Analytical Method: 8270D
ICAL Workgroup: WG573501

Instrument ID: HPMS15
Initial Calibration Date: 21-JUN-16 11:57
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
1,4-Dioxane		0.3060	2.56		

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4838934
Report generated 07/06/2016 11:19

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061290

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 21-JUN-16 11:57

Column ID: F

Analyte	WG573501-02			WG573501-03			WG573501-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	5.00	60883.0000	0.3073	10.0	138820.000	0.3164	7.50	103182.000	0.3106

INT_CAL - Modified 03/06/2008
PDF File ID: 4838934
Report generated 07/06/2016 11:19

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061290

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 21-JUN-16 11:57

Column ID: F

Analyte	WG573501-05			WG573501-06			WG573501-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	2.50	26333.0000	0.2969	1.00	13250.0000	0.2966	0.400	5650.00000	0.3081

INT_CAL - Modified 03/06/2008
PDF File ID: 4838934
Report generated 07/06/2016 11:19

Calibration Table Report
Method: DIOXANE_D8.M
Title: OVD MSS01 SIM 1,4-dioxane ICAL 062116
Last Calibration: Tue Jun 21 12:51:17 2016
Curve:WG573501
Calibration Files

Compound	10 15M18459.D	7.5 15M18460.D	5 15M18458.D	2.5 15M18461.D	1 15M18462.D	0.4 15M18463.D	Avg	%RSD
1,4-Dichlorobenzene-d4	ISTD							
1,4-Dioxane	0.316	0.311	0.307	0.297	0.297	0.308	0.306	2.558
1,4-Dioxane-d8	0.426	0.418	0.417	0.402	0.395		0.411	3.044
Nitrobenzene-d5	1.202	1.173	1.128	1.002	0.927	0.906	1.056	12.163
2-Fluorobiphenyl	2.735	2.736	2.691	2.621	2.563	2.651	2.666	2.548
p-Terphenyl-d14	2.793	2.774	2.622	2.460	2.367	2.405	2.570	7.266

Wed Jun 22 12:17:33 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061290 Run Date: 06/21/2016 Sample ID: WG573501-08
Instrument ID: HPMS15 Run Time: 12:20 Method: 8270D
File ID: 15M18464 Analyst: MES QC Key: DOD4
ICal Workgroup: WG573501 Cal ID: HPMS15 - 21-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
1,4-Dioxane		5000	5050	ug/L	0.309	0.900	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4838935
Report generated 07/06/2016 11:19

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290
Run Date: 06/30/2016
Sample ID: WG574781-02
Instrument ID: HPMS15
Run Time: 14:42
Method: 8270D
File ID: 15M18674
Analyst: MES
QC Key: DOD4
Workgroup (AAB#): WG574772
Cal ID: HPMS15 - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,4-Dioxane		5000	5210	ug/L	0.319	4.14	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4838937
Report generated 07/06/2016 11:19

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290
Run Date: 07/05/2016
Sample ID: WG575159-02
Instrument ID: HPMS15
Run Time: 14:51
Method: 8270D
File ID: 15M18717
Analyst: MES
QC Key: DOD4
Workgroup (AAB#): WG574772
Cal ID: HPMS15 - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,4-Dioxane		5000	5230	ug/L	0.320	4.63	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4838937
Report generated 07/06/2016 11:19

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061290
Instrument ID: HPMS15
Workgroup (AAB#): WG574772

ICAL CCV Number: WG573501-02
CAL ID: HPMS15-21-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG573501-02	NA	NA	39637
Upper Limit	NA	NA	79274
Lower Limit	NA	NA	19819
L16061290-01	1.00	01	26288
L16061290-02	5.00	DL01	35892
L16061290-05	1.00	01	22255
L16061290-06	1.00	01	34292
WG574286-01	1.00	01	28516
WG574286-02	1.00	01	22815

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4838938
Report generated 07/06/2016 11:19

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061290
Instrument ID: HPMS15
Workgroup (AAB#): WG574772

ICAL CCV Number: WG573501-02
CAL ID: HPMS15-21-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG573501-02	NA	NA	6.93
Upper Limit	NA	NA	7.43
Lower Limit	NA	NA	6.43
L16061290-01	1.00	01	6.87
L16061290-02	5.00	DL01	6.866
L16061290-05	1.00	01	6.87
L16061290-06	1.00	01	6.867
WG574286-01	1.00	01	6.87
WG574286-02	1.00	01	6.87

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4840255
Report generated: 07/06/2016 10:44

2.2.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18702.D
Acq On : 1 Jul 2016 1:14
Operator : MES
Sample : L16061290-01 827-DIOX
Misc : 1,1
ALS Vial : 30 Sample Multiplier: 1

Quant Time: Jul 05 08:20:16 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.870	152	26288	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.770	96	29514	2.7285	ug/L	-0.01
Spiked Amount 5.000			Recovery	=	54.60%	
4) Nitrobenzene-d5	7.377	82	2178	0.0784	ug/L	0.01
Spiked Amount 5.000			Recovery	=	1.60%	
5) 2-Fluorobiphenyl	8.860	172	412	0.0059	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.20%	
6) p-Terphenyl-d14	12.078	244	501	0.0074	ug/L	-0.01
Spiked Amount 5.000			Recovery	=	0.20%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18702.D
Acq On : 1 Jul 2016 1:14
Operator : MES
Sample : L16061290-01 827-DIOX
Misc : 1,1
ALS Vial : 30 Sample Multiplier: 1

Quant Time: Jul 05 08:20:16 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

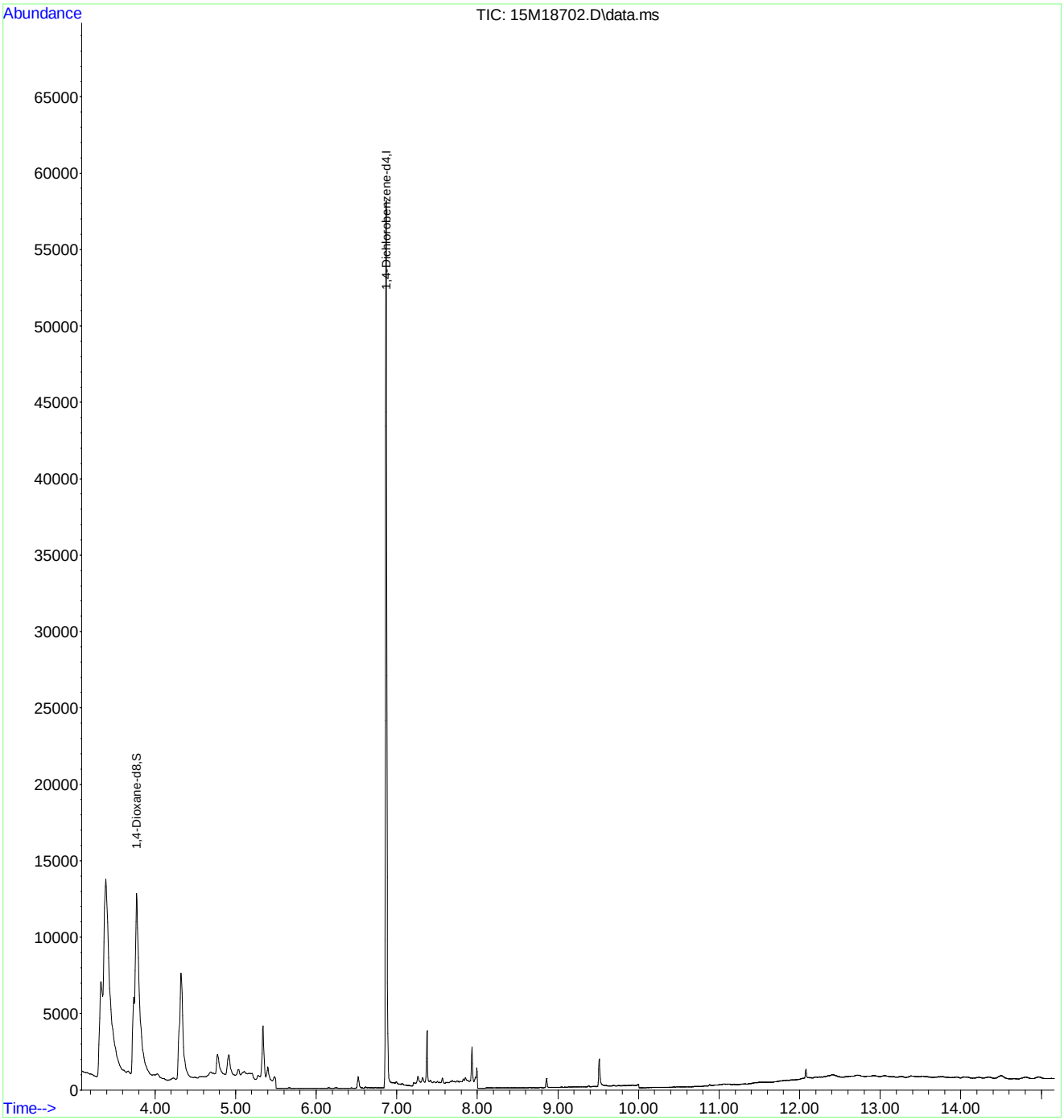

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18724.D
Acq On : 5 Jul 2016 17:29
Operator : MES
Sample : L16061290-02 5X 827-DIOX
Misc : 1,5
ALS Vial : 9 Sample Multiplier: 5

Quant Time: Jul 05 18:16:27 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.866	152	35892	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.686	96	10774	3.6475	ug/L	-0.10
Spiked Amount 5.000			Recovery	=	73.00%	
4) Nitrobenzene-d5	7.372	82	371	0.0489	ug/L	0.00
Spiked Amount 5.000			Recovery	=	1.00%	
5) 2-Fluorobiphenyl	8.852	172	102	0.0053	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.20%	
6) p-Terphenyl-d14	12.066	244	9	0.0005	ug/L	-0.02
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.813	58	39549	3.6013	ug/L	77

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18724.D
Acq On : 5 Jul 2016 17:29
Operator : MES
Sample : L16061290-02 5X 827-DIOX
Misc : 1,5
ALS Vial : 9 Sample Multiplier: 5

Quant Time: Jul 05 18:16:27 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

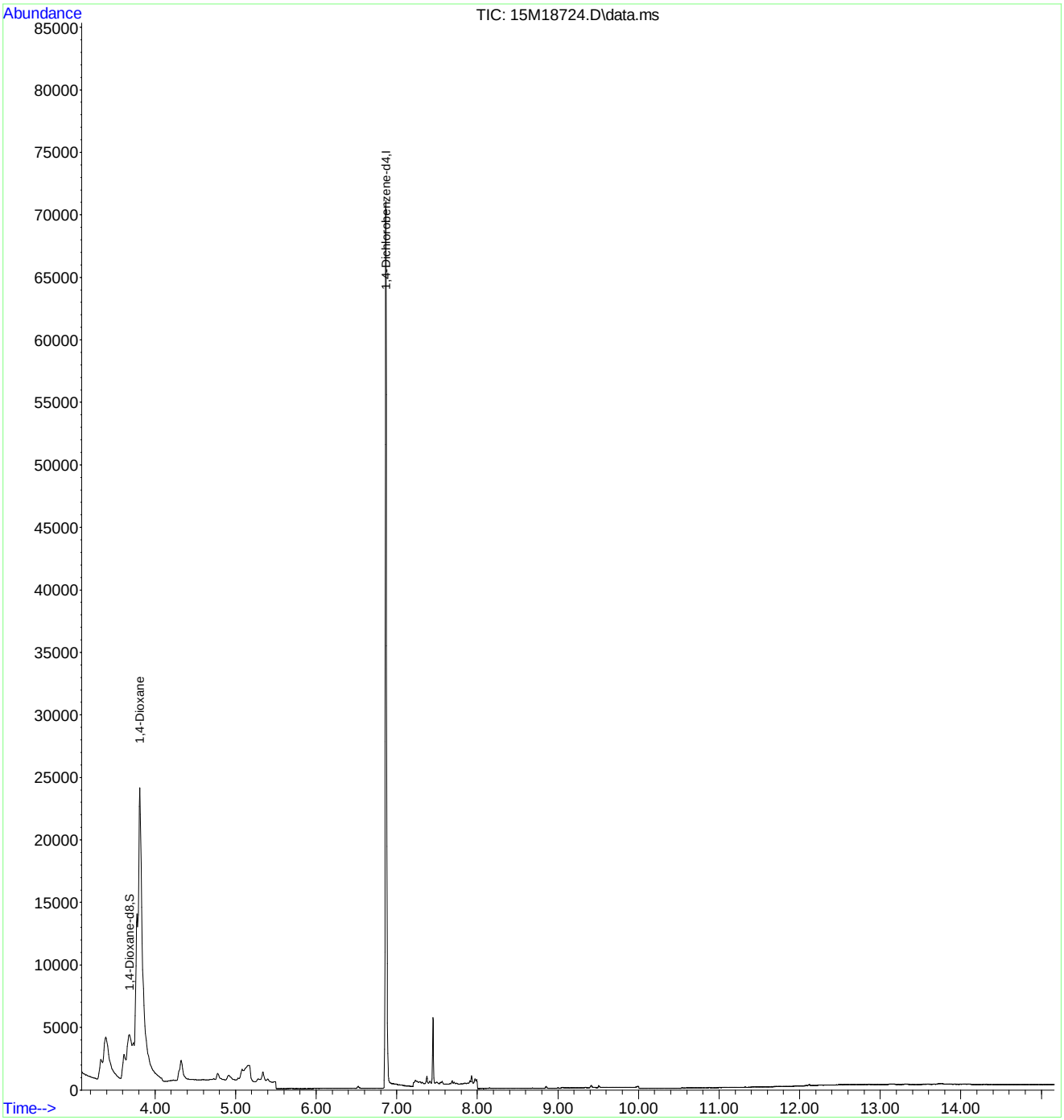

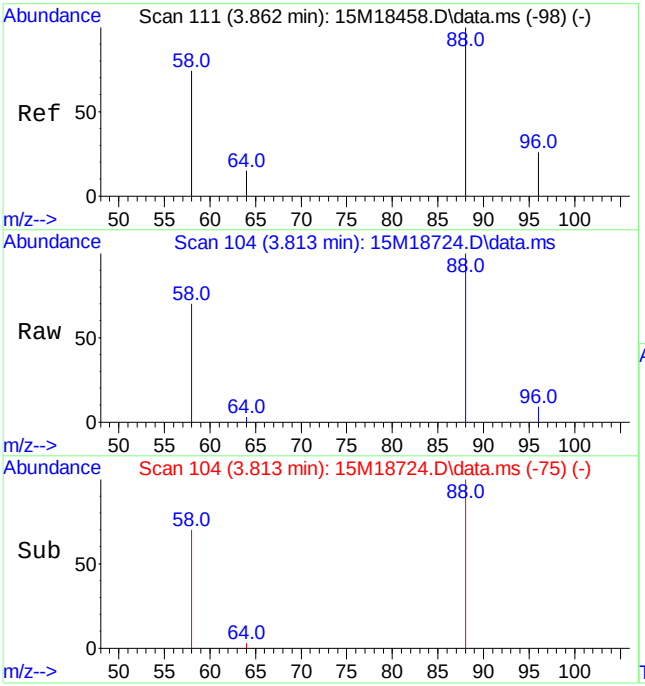

#2
1,4-Dioxane
Concen: 3.60 ug/L
RT: 3.813 min Scan# 104
Delta R.T. -0.007 min
Lab File: 15M18724.D
Acq: 5 Jul 2016 17:29

Tgt Ion: 58 Resp: 39549

Ion	Ratio	Lower	Upper
58	100		
88	140.4	103.1	240.7

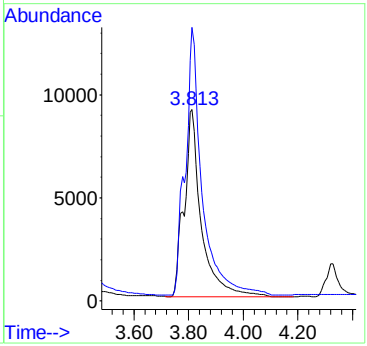

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18704.D
Acq On : 1 Jul 2016 1:59
Operator : MES
Sample : L16061290-05 827-DIOX
Misc : 1,1
ALS Vial : 32 Sample Multiplier: 1

Quant Time: Jul 05 08:20:22 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.870	152	22255	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.764	96	39132	4.2732	ug/L	-0.02
Spiked Amount 5.000			Recovery	=	85.40%	
4) Nitrobenzene-d5	7.377	82	1641	0.0698	ug/L	0.01
Spiked Amount 5.000			Recovery	=	1.40%	
5) 2-Fluorobiphenyl	8.860	172	167	0.0028	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.078	244	312	0.0055	ug/L	-0.01
Spiked Amount 5.000			Recovery	=	0.20%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18704.D
Acq On : 1 Jul 2016 1:59
Operator : MES
Sample : L16061290-05 827-DIOX
Misc : 1,1
ALS Vial : 32 Sample Multiplier: 1

Quant Time: Jul 05 08:20:22 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

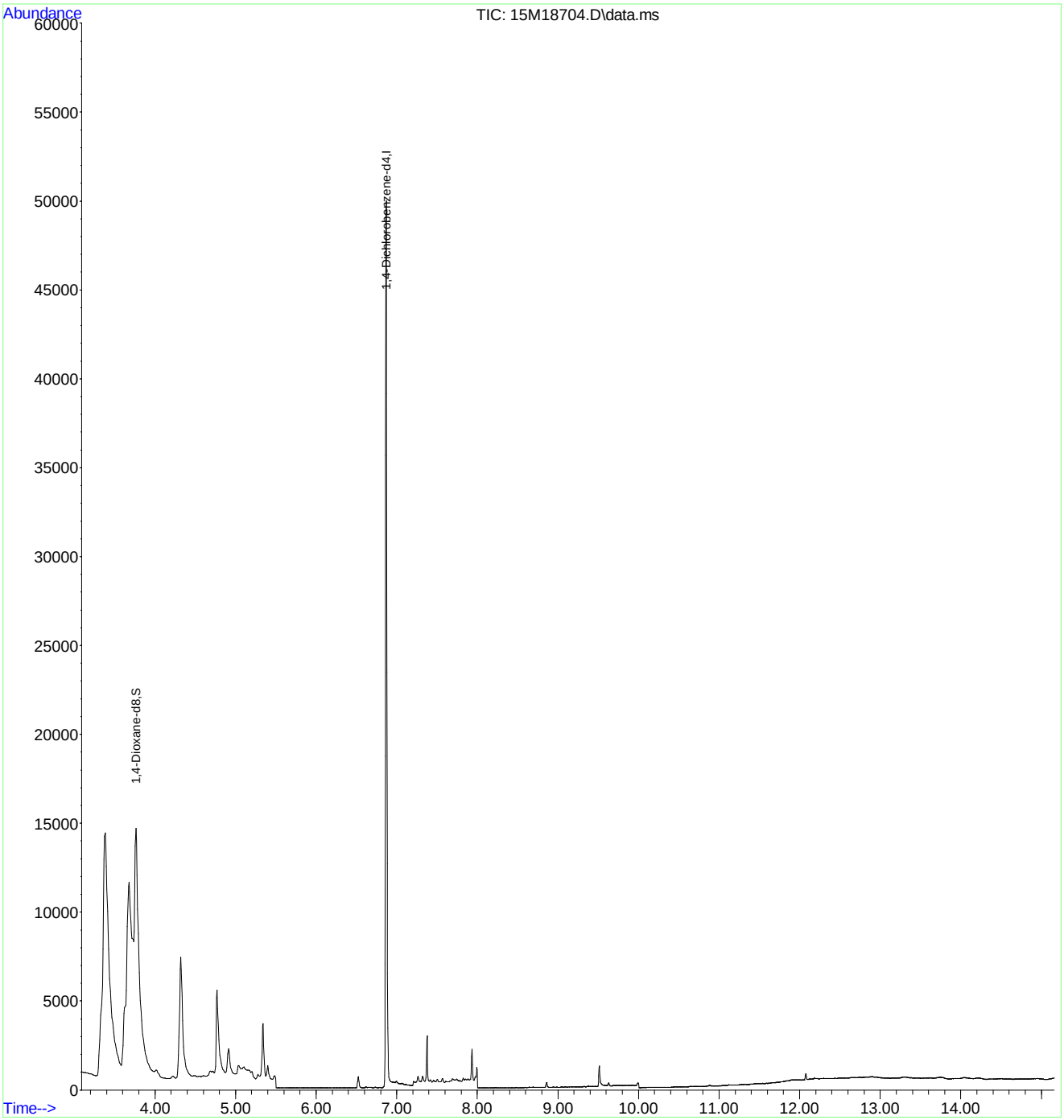

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18727.D
Acq On : 5 Jul 2016 18:37
Operator : MES
Sample : L16061290-06 827-DIOX
Misc : 1,1
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jul 06 08:13:04 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.867	152	34292	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.771	96	35233	2.4969	ug/L	-0.01
Spiked Amount 5.000			Recovery	=	50.00%	
4) Nitrobenzene-d5	7.372	82	2589	0.0715	ug/L	0.00
Spiked Amount 5.000			Recovery	=	1.40%	
5) 2-Fluorobiphenyl	8.853	172	1586	0.0173	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.40%	
6) p-Terphenyl-d14	12.100	244	277	0.0031	ug/L	0.01
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.806	58	4950	0.4718	ug/L	69

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18727.D
Acq On : 5 Jul 2016 18:37
Operator : MES
Sample : L16061290-06 827-DIOX
Misc : 1,1
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jul 06 08:13:04 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

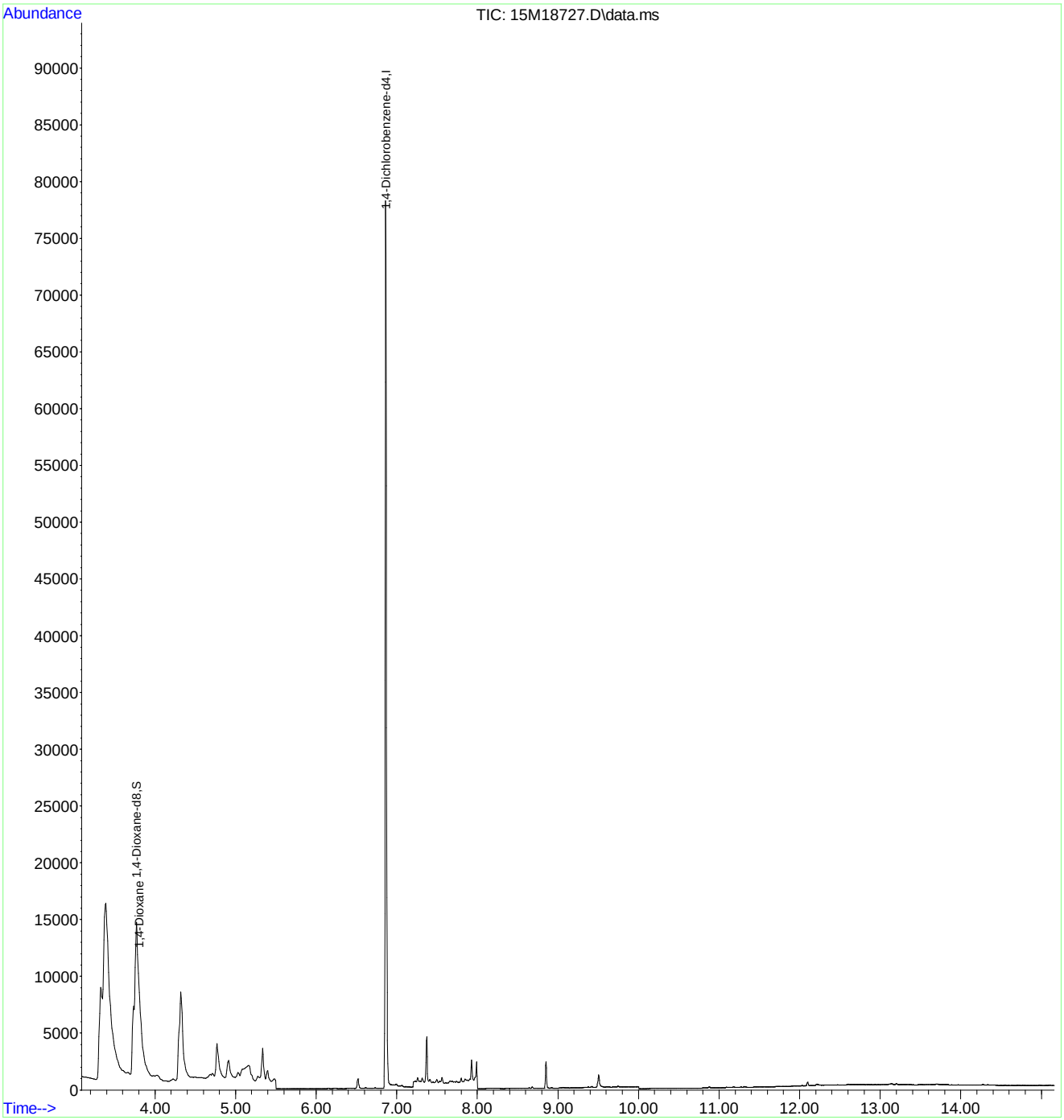

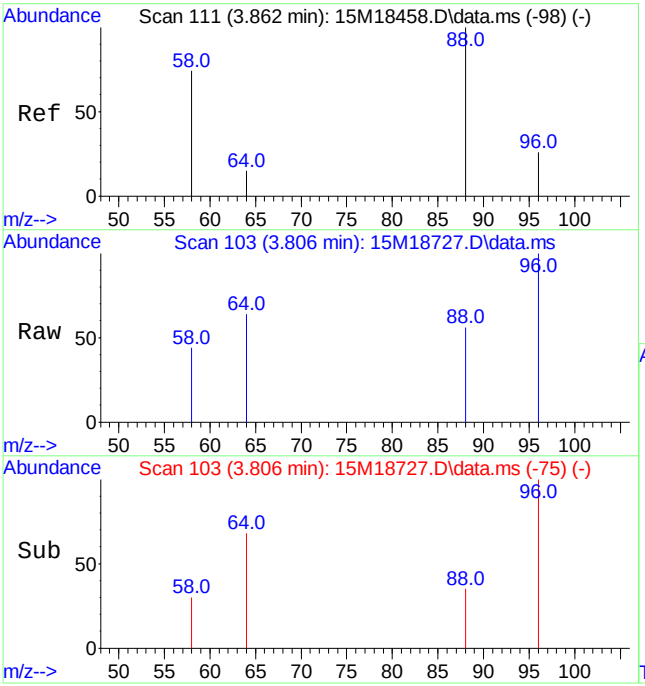

#2
1,4-Dioxane
Concen: 0.47 ug/L
RT: 3.806 min Scan# 103
Delta R.T. -0.014 min
Lab File: 15M18727.D
Acq: 5 Jul 2016 18:37

Tgt Ion: 58 Resp: 4950

Ion	Ratio	Lower	Upper
58	100		
88	128.8	103.1	240.7

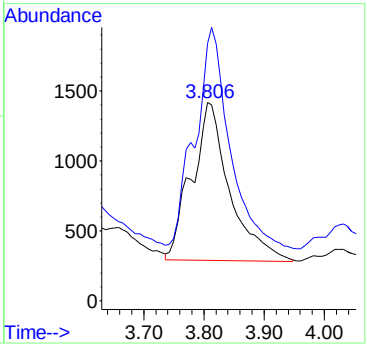

2.2.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 22 08:04:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	39637	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.827	96	82573	5.0627 ug/L	0.00
Spiked Amount 5.000			Recovery	= 101.20%	
4) Nitrobenzene-d5	7.431	82	223381	5.3353 ug/L	0.00
Spiked Amount 5.000			Recovery	= 106.80%	
5) 2-Fluorobiphenyl	8.922	172	533101	5.0444 ug/L	0.00
Spiked Amount 5.000			Recovery	= 100.80%	
6) p-Terphenyl-d14	12.184	244	519544	5.1003 ug/L	0.00
Spiked Amount 5.000			Recovery	= 102.00%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.862	58	60883	5.0202 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 21 10:23:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	60	0.00
2	1,4-Dioxane	0.325	0.307	5.5	57	-0.03
3 S	1,4-Dioxane-d8	0.419	0.417	0.5	60	-0.04
4 S	Nitrobenzene-d5	0.904	1.128	-24.8	69	0.00
5 S	2-Fluorobiphenyl	2.613	2.691	-3.0	63	0.00
6 S	p-Terphenyl-d14	2.562	2.622	-2.3	61	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 21 10:23:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	60	0.00
2	1,4-Dioxane	5.000	4.721	5.6	57	-0.03
3 S	1,4-Dioxane-d8	5.000	4.979	0.4	60	-0.04
4 S	Nitrobenzene-d5	5.000	5.474	-9.5	69	0.00
5 S	2-Fluorobiphenyl	5.000	5.150	-3.0	63	0.00
6 S	p-Terphenyl-d14	5.000	5.115	-2.3	61	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 22 08:04:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

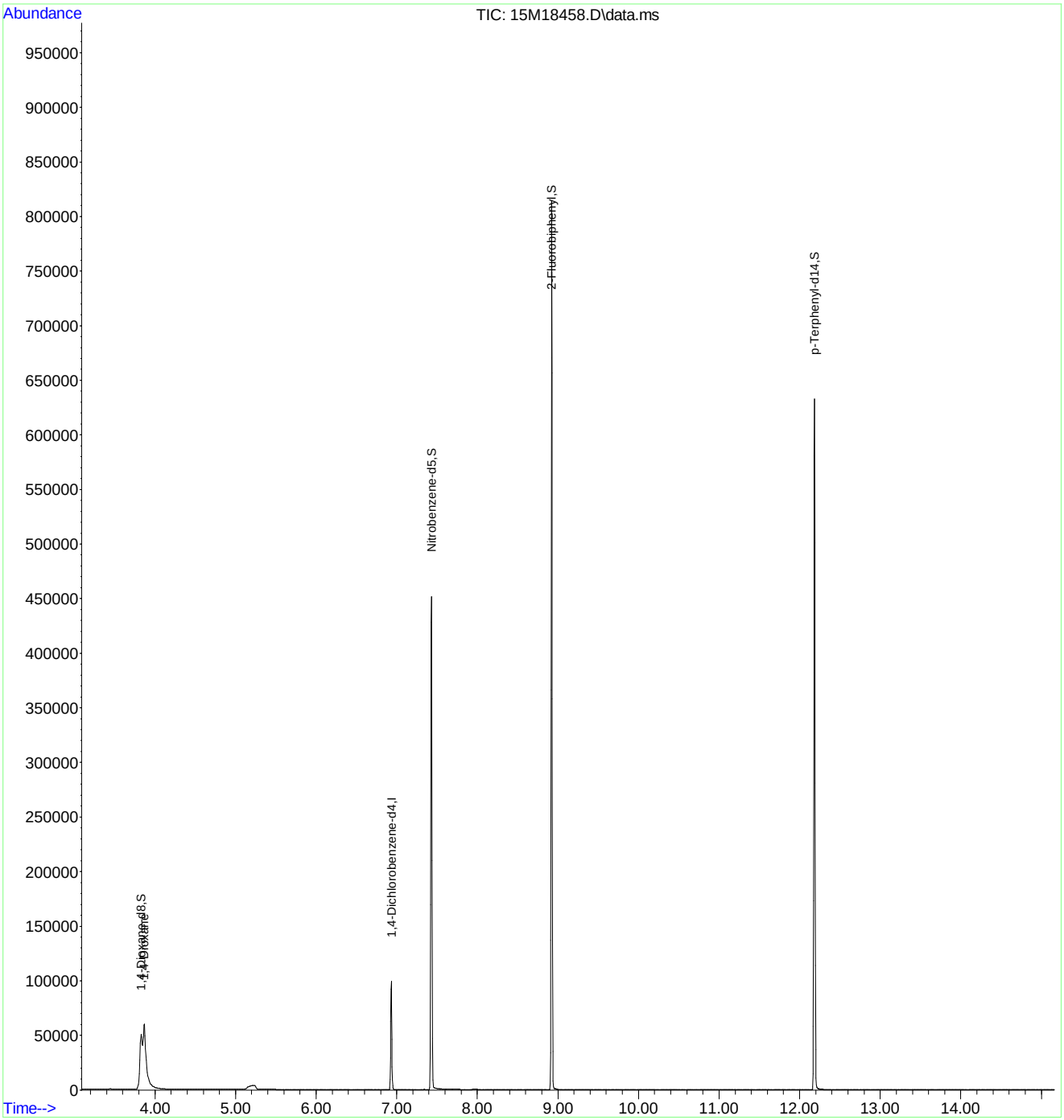

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18459.D
Acq On : 21 Jun 2016 10:27
Operator : MES
Sample : WG573501-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 22 08:04:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	43874	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	186767	10.3452	ug/L	0.00
Spiked Amount 5.000			Recovery = 207.00%			
4) Nitrobenzene-d5	7.431	82	527549	11.3834	ug/L	0.00
Spiked Amount 5.000			Recovery = 227.60%			
5) 2-Fluorobiphenyl	8.926	172	1199799	10.2565	ug/L	0.00
Spiked Amount 5.000			Recovery = 205.20%			
6) p-Terphenyl-d14	12.240	244	1225328	10.8672	ug/L	0.06
Spiked Amount 5.000			Recovery = 217.40%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	138820	10.3412	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18459.D
Acq On : 21 Jun 2016 10:27
Operator : MES
Sample : WG573501-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 22 08:04:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

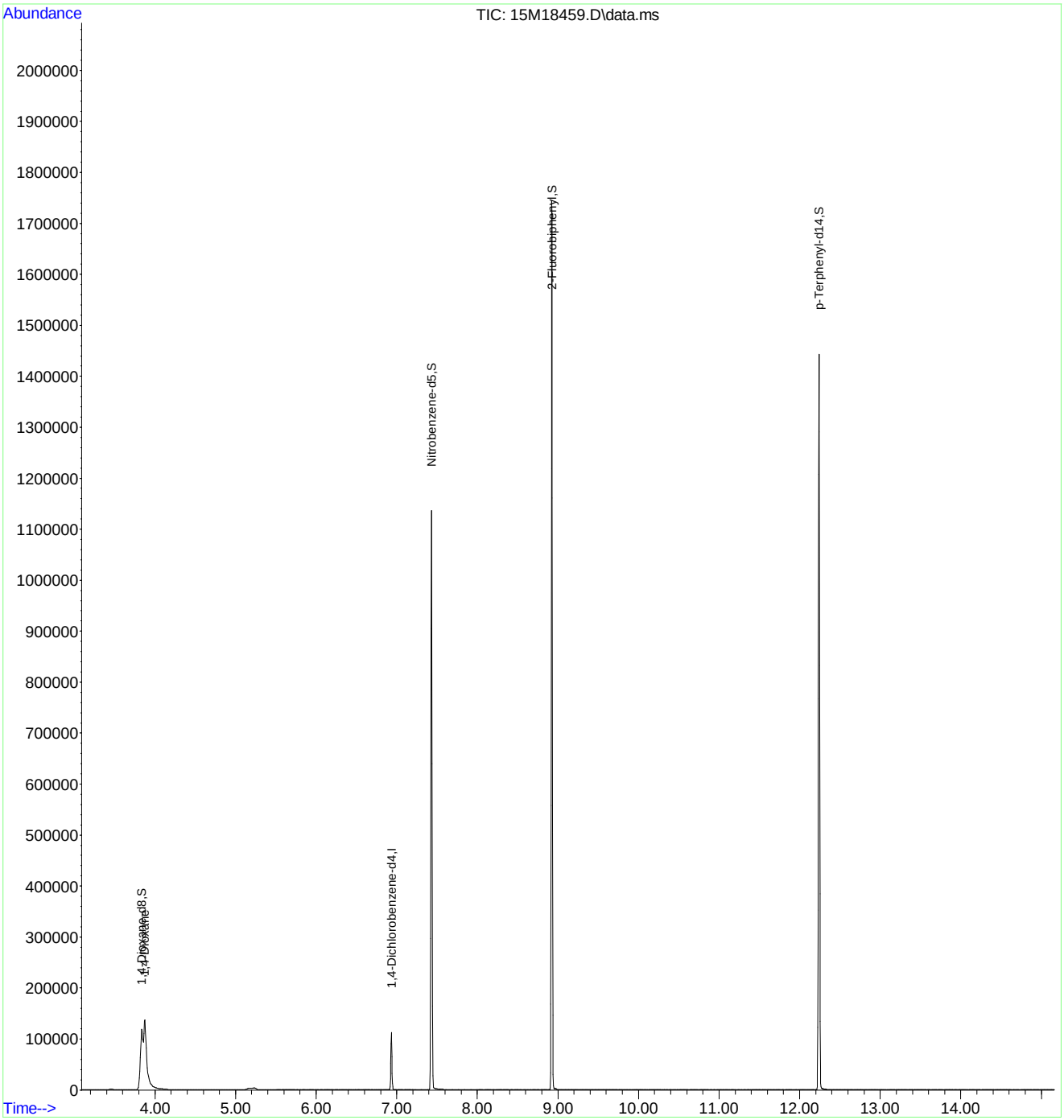

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18460.D
Acq On : 21 Jun 2016 10:49
Operator : MES
Sample : WG573501-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 22 08:04:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	44299	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.834	96	138833	7.6163 ug/L	0.00
Spiked Amount 5.000			Recovery	= 152.40%	
4) Nitrobenzene-d5	7.431	82	389810	8.3306 ug/L	0.00
Spiked Amount 5.000			Recovery	= 166.60%	
5) 2-Fluorobiphenyl	8.923	172	909050	7.6965 ug/L	0.00
Spiked Amount 5.000			Recovery	= 154.00%	
6) p-Terphenyl-d14	12.203	244	921380	8.0931 ug/L	0.02
Spiked Amount 5.000			Recovery	= 161.80%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.876	58	103182	7.6127 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18460.D
Acq On : 21 Jun 2016 10:49
Operator : MES
Sample : WG573501-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 22 08:04:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

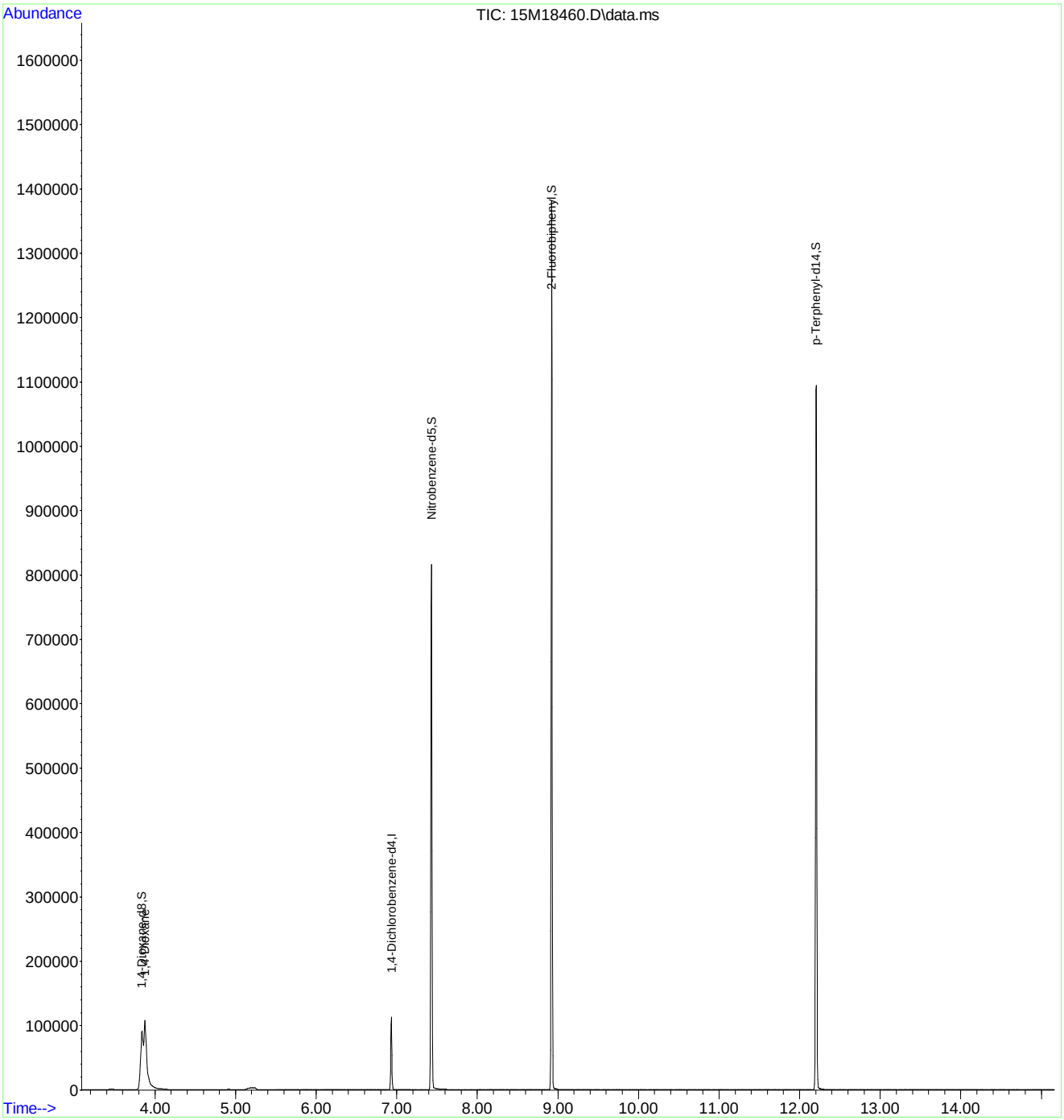

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18461.D
Acq On : 21 Jun 2016 11:12
Operator : MES
Sample : WG573501-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 22 08:04:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	35478	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.827	96	35630	2.4406	ug/L	0.00
Spiked Amount 5.000			Recovery = 48.80%			
4) Nitrobenzene-d5	7.431	82	88869	2.3714	ug/L	0.00
Spiked Amount 5.000			Recovery = 47.40%			
5) 2-Fluorobiphenyl	8.923	172	232500	2.4579	ug/L	0.00
Spiked Amount 5.000			Recovery = 49.20%			
6) p-Terphenyl-d14	12.199	244	218191	2.3930	ug/L	0.02
Spiked Amount 5.000			Recovery = 47.80%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.862	58	26333	2.4259	ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18461.D
Acq On : 21 Jun 2016 11:12
Operator : MES
Sample : WG573501-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 22 08:04:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

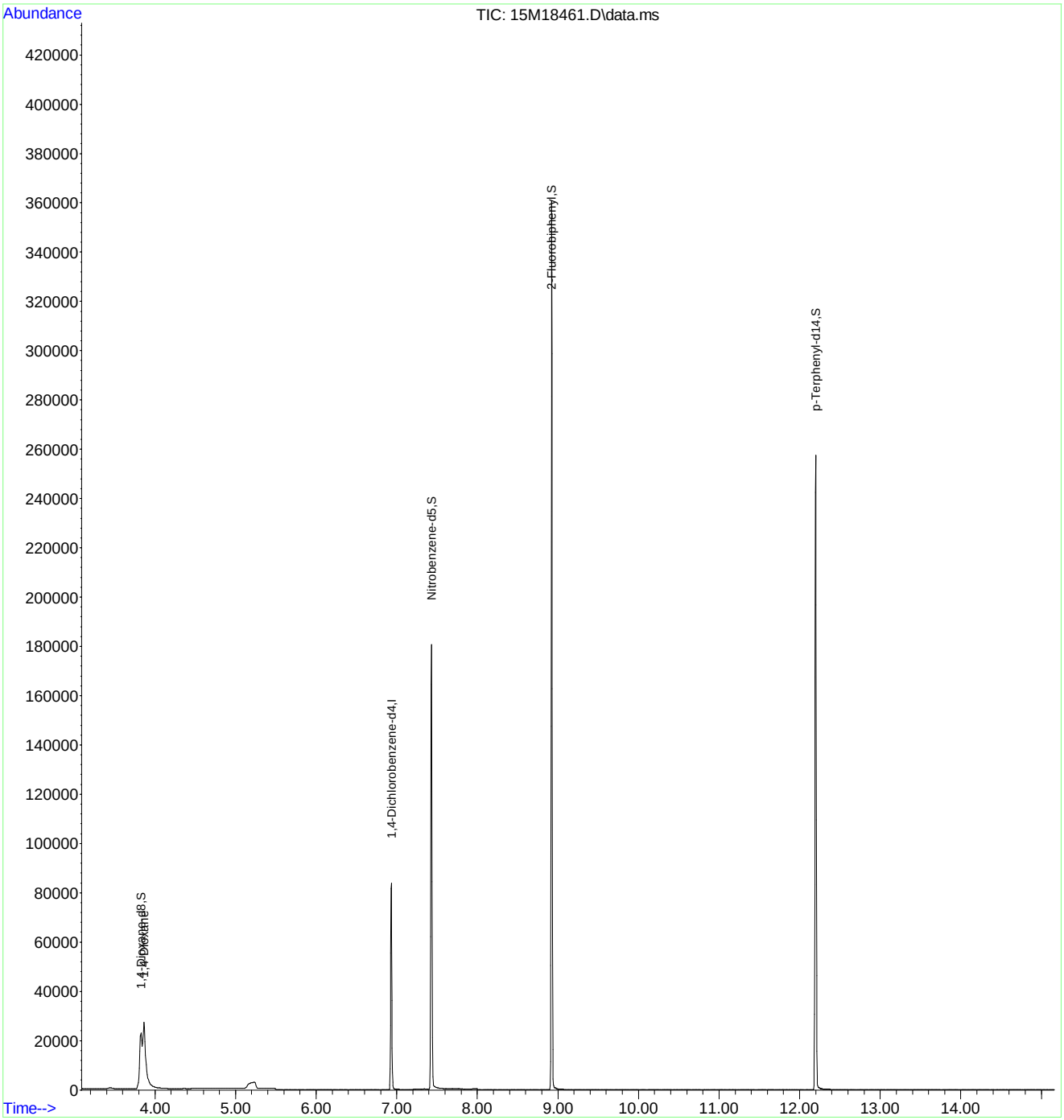

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18462.D
Acq On : 21 Jun 2016 11:34
Operator : MES
Sample : WG573501-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 22 08:04:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	44672	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.841	96	17660	0.9607	ug/L	0.01
Spiked Amount 5.000			Recovery	=	19.20%	
4) Nitrobenzene-d5	7.431	82	41409	0.8776	ug/L	0.00
Spiked Amount 5.000			Recovery	=	17.60%	
5) 2-Fluorobiphenyl	8.922	172	114491	0.9612	ug/L	0.00
Spiked Amount 5.000			Recovery	=	19.20%	
6) p-Terphenyl-d14	12.203	244	105713	0.9208	ug/L	0.02
Spiked Amount 5.000			Recovery	=	18.40%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.876	58	13250	0.9694	ug/L	82

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18462.D
Acq On : 21 Jun 2016 11:34
Operator : MES
Sample : WG573501-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 22 08:04:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

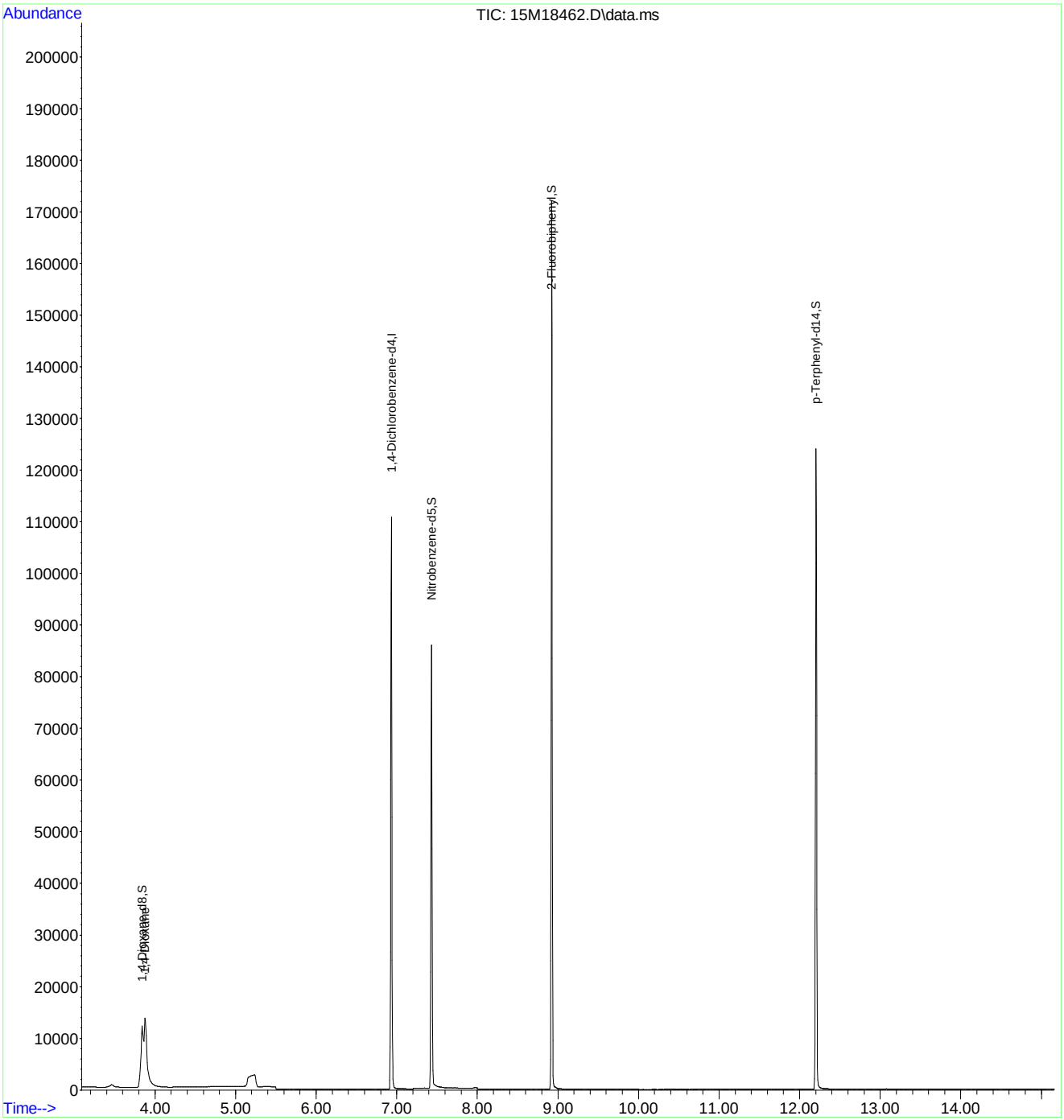

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18463.D
Acq On : 21 Jun 2016 11:57
Operator : MES
Sample : WG573501-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 22 08:04:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	45840	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.841	96	7629	0.4045	ug/L	0.01
Spiked Amount 5.000			Recovery	=	8.00%	
4) Nitrobenzene-d5	7.431	82	16604	0.3429	ug/L	0.00
Spiked Amount 5.000			Recovery	=	6.80%	
5) 2-Fluorobiphenyl	8.923	172	48617	0.3978	ug/L	0.00
Spiked Amount 5.000			Recovery	=	8.00%	
6) p-Terphenyl-d14	12.210	244	44097	0.3743	ug/L	0.03
Spiked Amount 5.000			Recovery	=	7.40%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.876	58	5650	0.4028	ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18463.D
Acq On : 21 Jun 2016 11:57
Operator : MES
Sample : WG573501-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 22 08:04:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

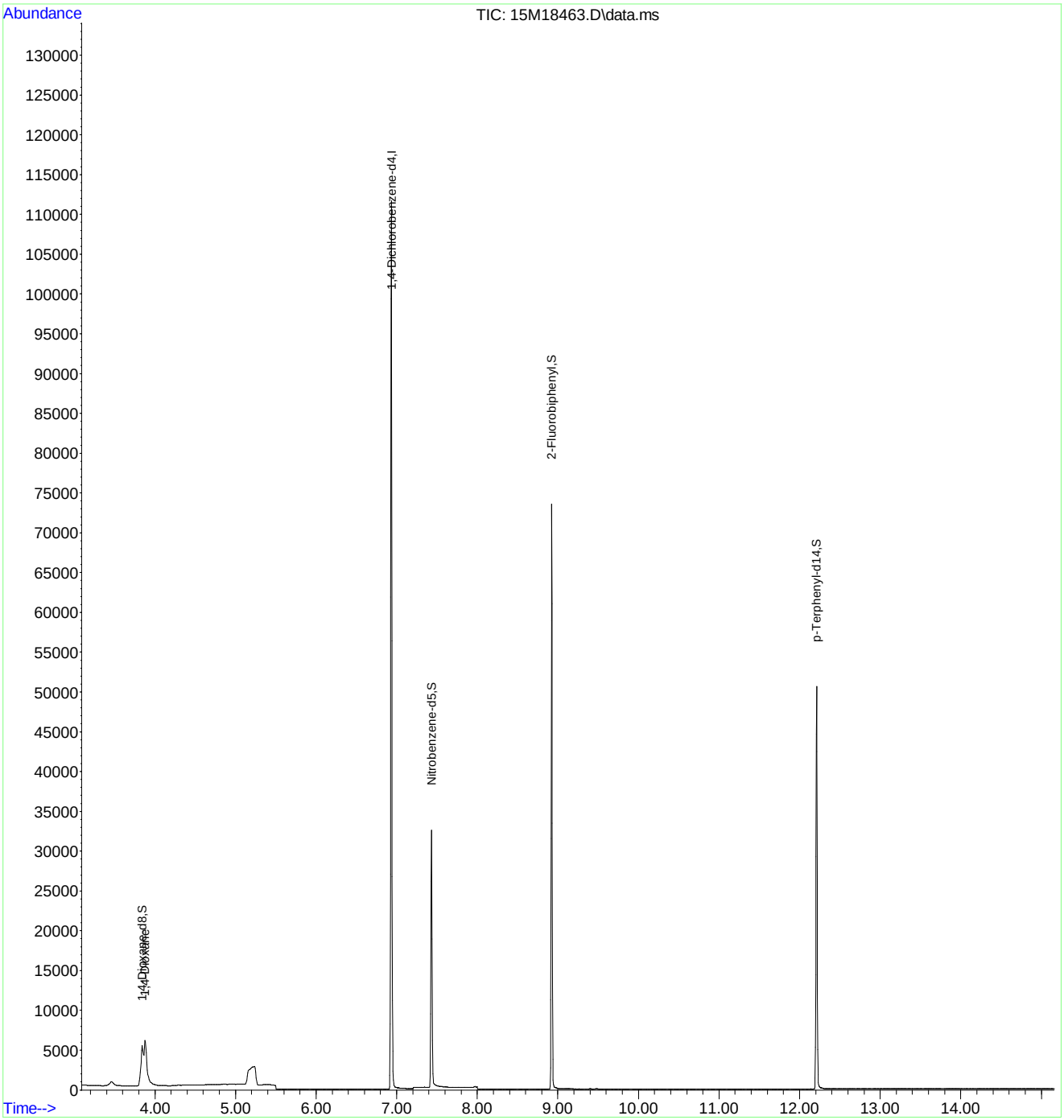

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	41944	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.792	96	22	0.0013	ug/L	-0.04
Spiked Amount 5.000			Recovery	=	0.00%	
4) Nitrobenzene-d5	7.436	82	56	0.0013	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
5) 2-Fluorobiphenyl	8.926	172	23	0.0002	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.214	244	128	0.0012	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	64750	5.0454	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	106	0.00
2		1,4-Dioxane	5.000	5.045	-0.9	106	0.00
3	S	1,4-Dioxane-d8	5.000	0.001	100.0#	0	-0.04
4	S	Nitrobenzene-d5	5.000	0.001	100.0#	0	0.00
5	S	2-Fluorobiphenyl	5.000	0.000	100.0#	0	0.00
6	S	p-Terphenyl-d14	5.000	0.001	100.0#	0	0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

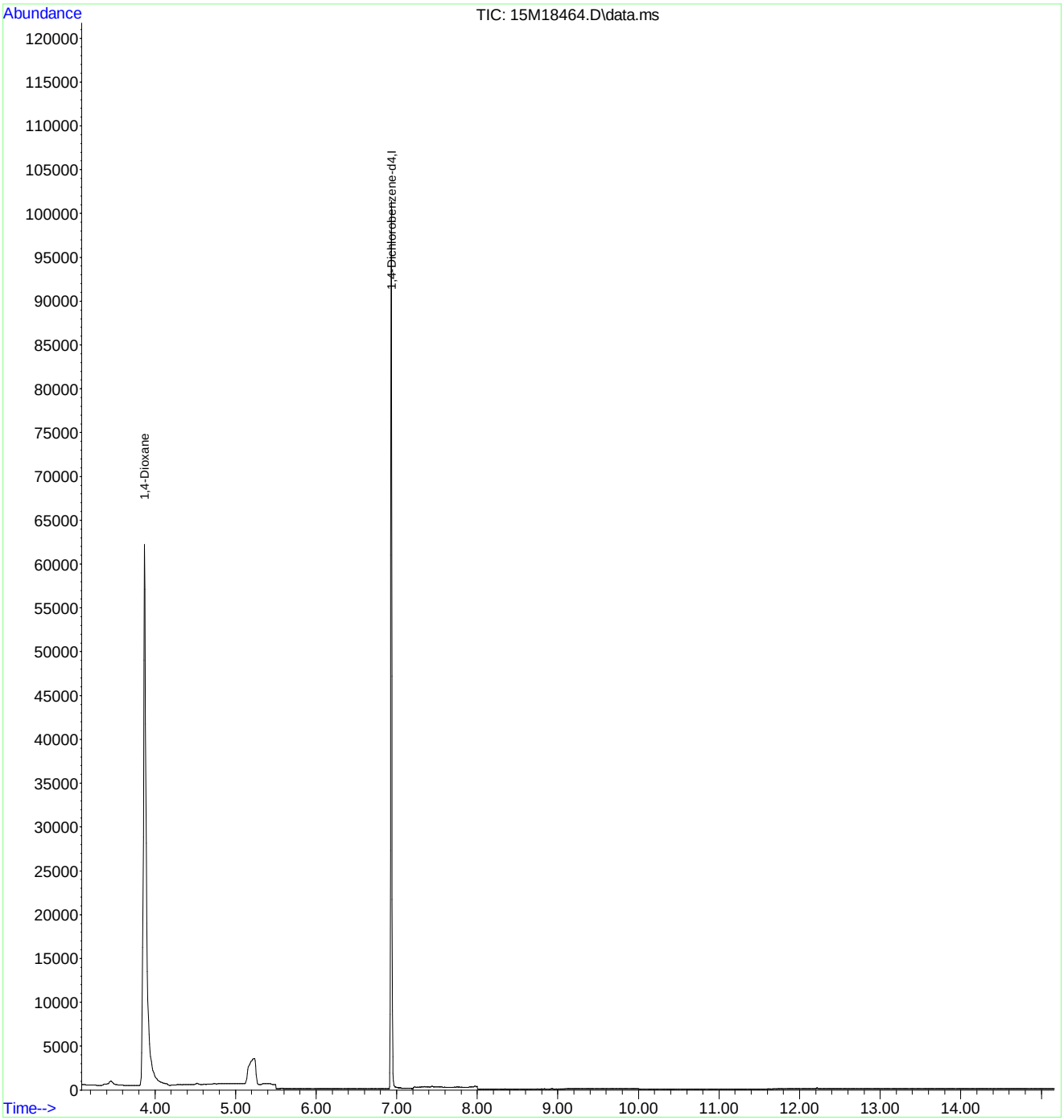

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18674.D
Acq On : 30 Jun 2016 14:42
Operator : MES
Sample : WG574781-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 30 14:58:21 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.870	152	31348	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.777	96	62277	4.8280 ug/L	0.00
Spiked Amount 5.000			Recovery	= 96.60%	
4) Nitrobenzene-d5	7.366	82	199647	6.0293 ug/L	0.00
Spiked Amount 5.000			Recovery	= 120.60%	
5) 2-Fluorobiphenyl	8.856	172	445070	5.3250 ug/L	0.00
Spiked Amount 5.000			Recovery	= 106.40%	
6) p-Terphenyl-d14	12.147	244	423287	5.2541 ug/L	0.06
Spiked Amount 5.000			Recovery	= 105.00%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.813	58	49944	5.2072 ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Continuing Calibration Area and RT check

Instrument: HPMS15
Initial cal date: 06/21/16
CCV date: 06/30/16
CCV Filename: 15M18674

1,4-Dichlorobenzene-d4

	Amount	RT
InitCal	39637	6.93
CCV	31348	6.87

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18674.D
Acq On : 30 Jun 2016 14:42
Operator : MES
Sample : WG574781-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 30 14:58:21 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	79	0.00
2	1,4-Dioxane	5.000	5.207	-4.1	82	0.00
3 S	1,4-Dioxane-d8	5.000	4.828	3.4	75	0.00
4 S	Nitrobenzene-d5	5.000	6.029	-20.6	89	0.00
5 S	2-Fluorobiphenyl	5.000	5.325	-6.5	83	0.00
6 S	p-Terphenyl-d14	5.000	5.254	-5.1	82	0.06

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18674.D
Acq On : 30 Jun 2016 14:42
Operator : MES
Sample : WG574781-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 30 14:58:21 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

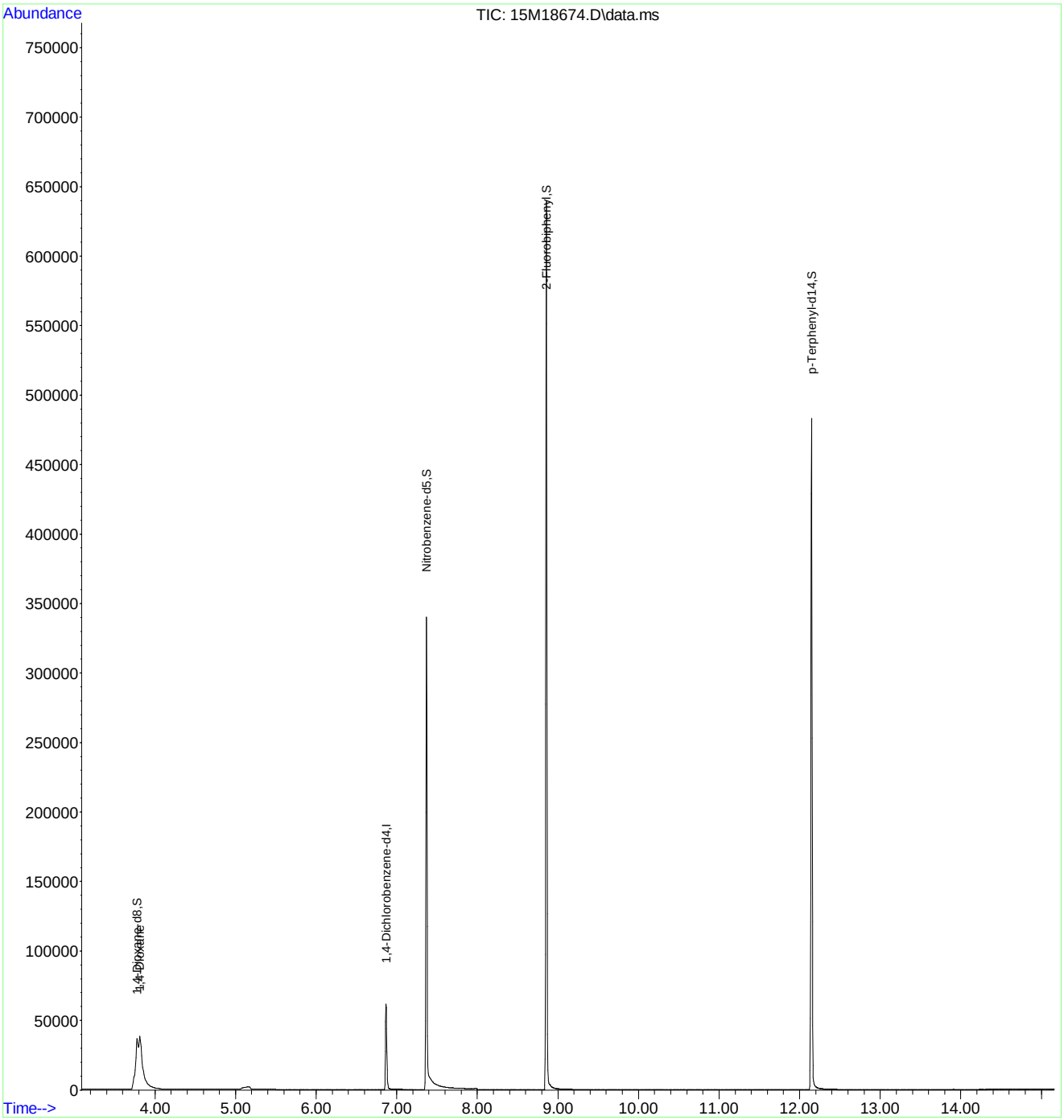

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18717.D
Acq On : 5 Jul 2016 14:51
Operator : MES
Sample : WG575159-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 05 15:07:06 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.867	152	50685	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.778	96	100564	4.8218 ug/L	0.00
Spiked Amount 5.000			Recovery	= 96.40%	
4) Nitrobenzene-d5	7.367	82	310249	5.7949 ug/L	0.00
Spiked Amount 5.000			Recovery	= 115.80%	
5) 2-Fluorobiphenyl	8.853	172	677739	5.0151 ug/L	0.00
Spiked Amount 5.000			Recovery	= 100.40%	
6) p-Terphenyl-d14	12.122	244	688752	5.2876 ug/L	0.03
Spiked Amount 5.000			Recovery	= 105.80%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.813	58	81128	5.2314 ug/L	78

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Continuing Calibration Area and RT check

Instrument: HPMS15
Initial cal date: 06/21/16
CCV date: 07/05/16
CCV Filename: 15M18717

1,4-Dichlorobenzene-d4

	Amount	RT
InitCal	39637	6.93
CCV	50685	6.87

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18717.D
Acq On : 5 Jul 2016 14:51
Operator : MES
Sample : WG575159-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 05 15:07:06 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	128	0.00
2	1,4-Dioxane	5.000	5.231	-4.6	133	0.00
3 S	1,4-Dioxane-d8	5.000	4.822	3.6	122	0.00
4 S	Nitrobenzene-d5	5.000	5.795	-15.9	139	0.00
5 S	2-Fluorobiphenyl	5.000	5.015	-0.3	127	0.00
6 S	p-Terphenyl-d14	5.000	5.288	-5.8	133	0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18717.D
Acq On : 5 Jul 2016 14:51
Operator : MES
Sample : WG575159-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 05 15:07:06 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

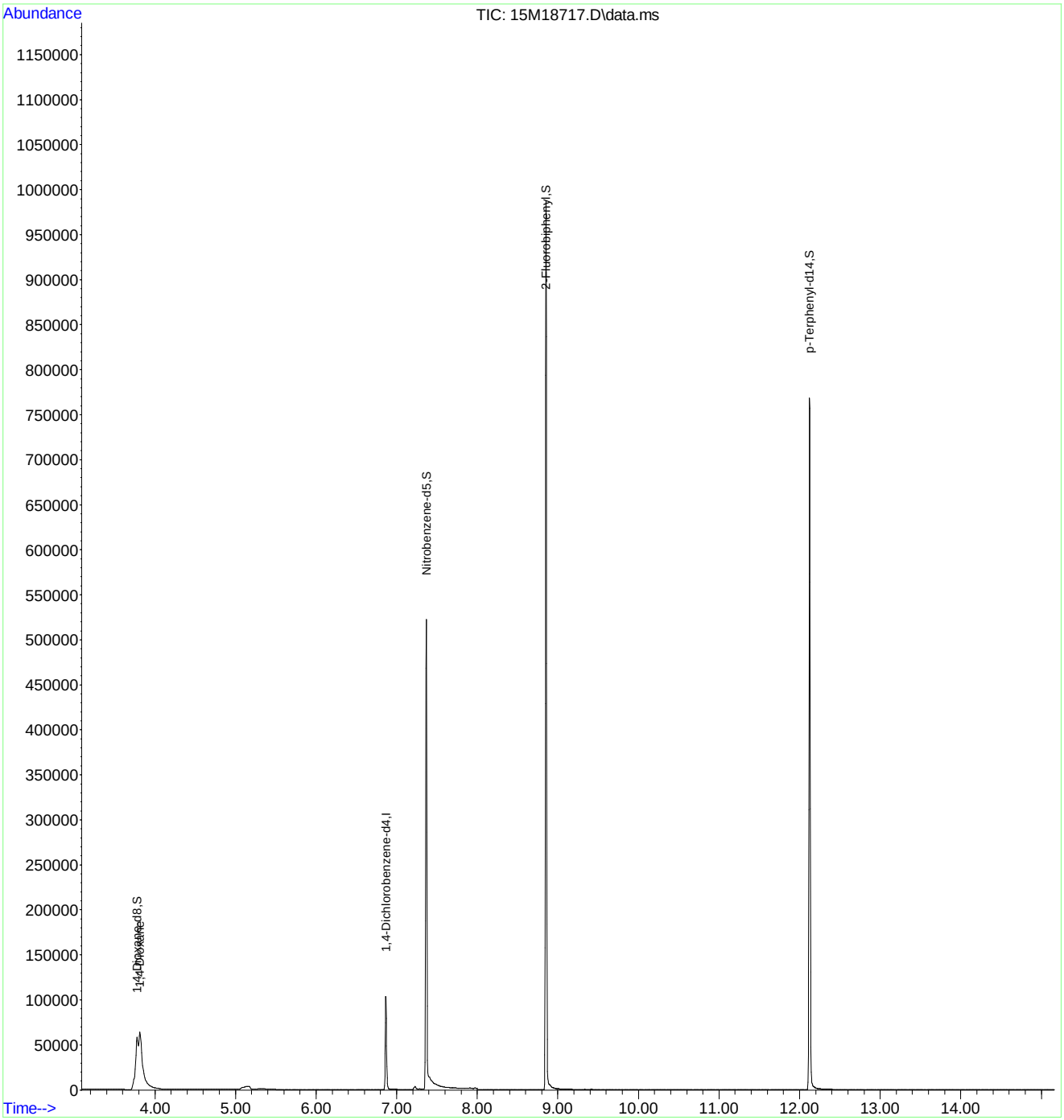

2.2.1.5 Raw QC Data

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

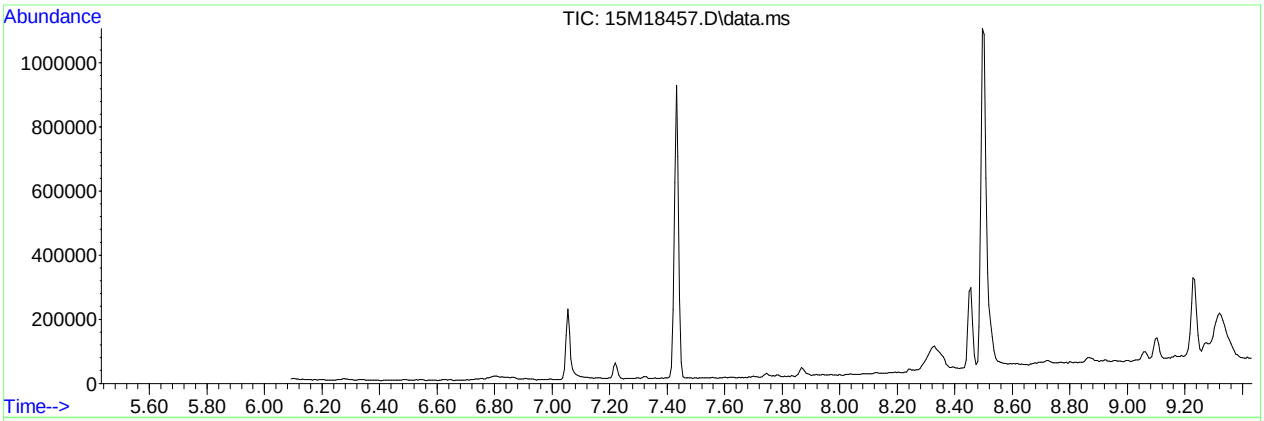

AutoFind: Scans 234, 235, 236; Background Corrected with Scan 228

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	38.8	34488	PASS
68	69	0.00	2	1.4	500	PASS
69	198	0.00	100	41.4	36833	PASS
70	69	0.00	2	0.5	172	PASS
127	198	40	60	51.9	46131	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	88880	PASS
199	198	5	9	6.7	5918	PASS
275	198	10	30	24.9	22090	PASS
365	198	1	100	2.7	2358	PASS
441	443	0.01	100	75.7	9586	PASS
442	198	40	100	73.4	65261	PASS
443	442	17	23	19.4	12659	PASS

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

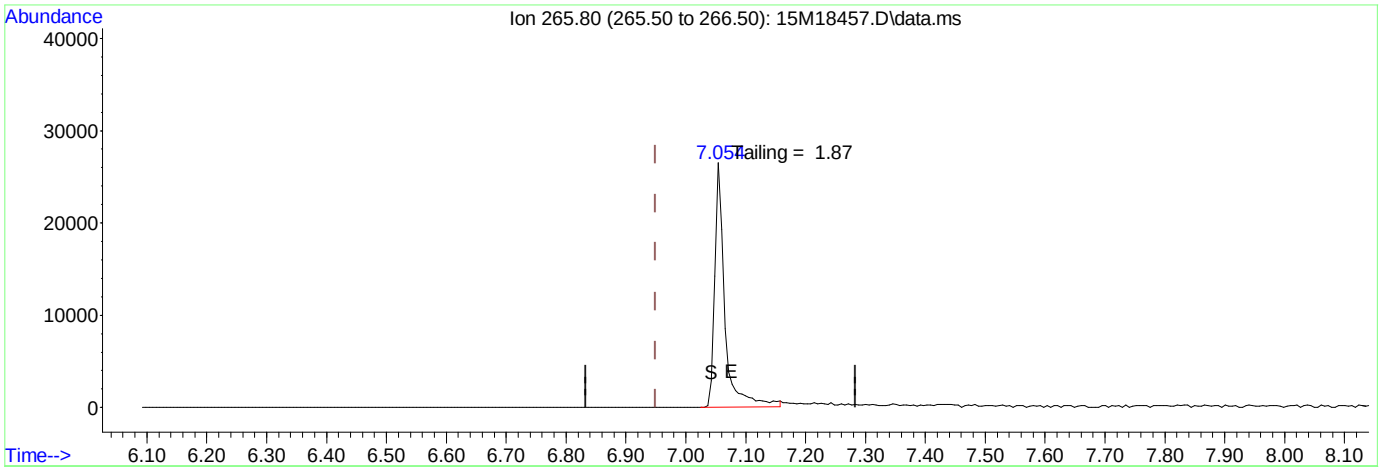

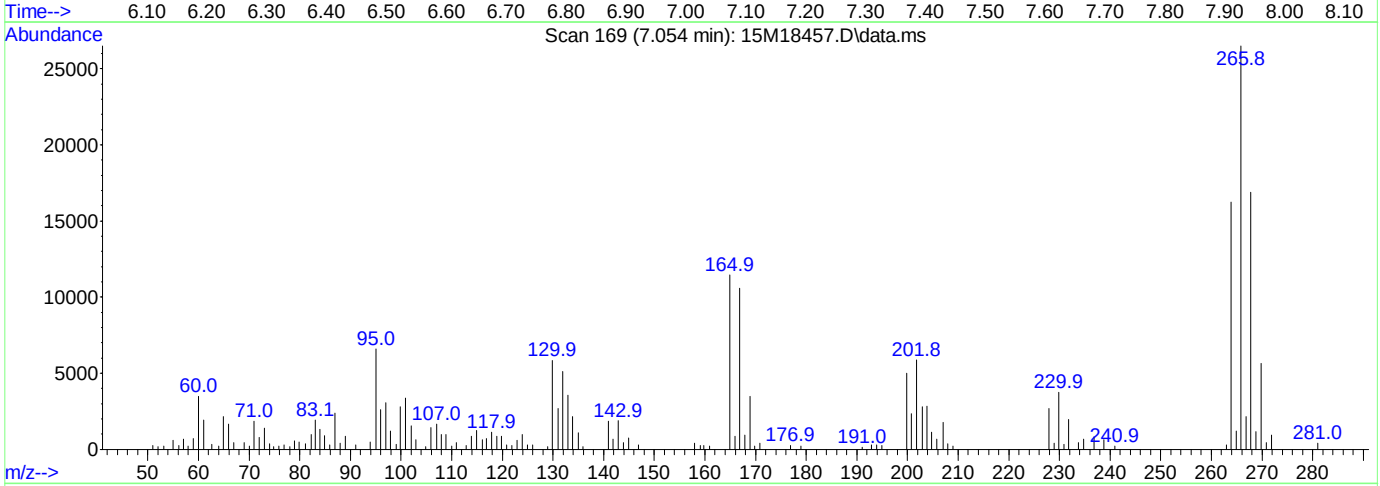

TIC: 15M18457.D\data.ms

(1) Pentachlorophenol

7.054min (+ 0.105) 0.00 ug/ml

response 30738

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

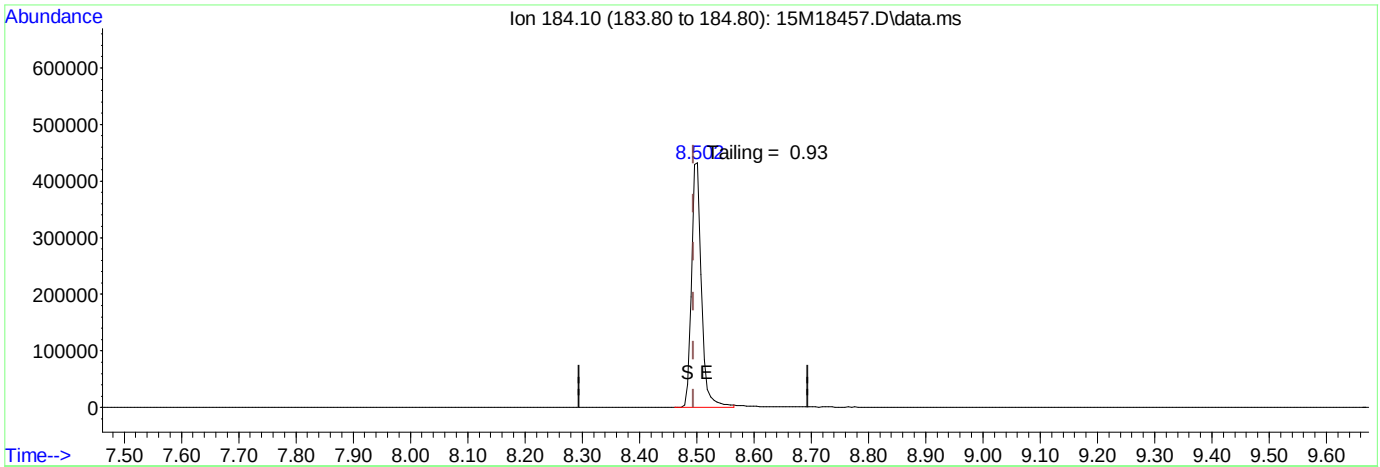

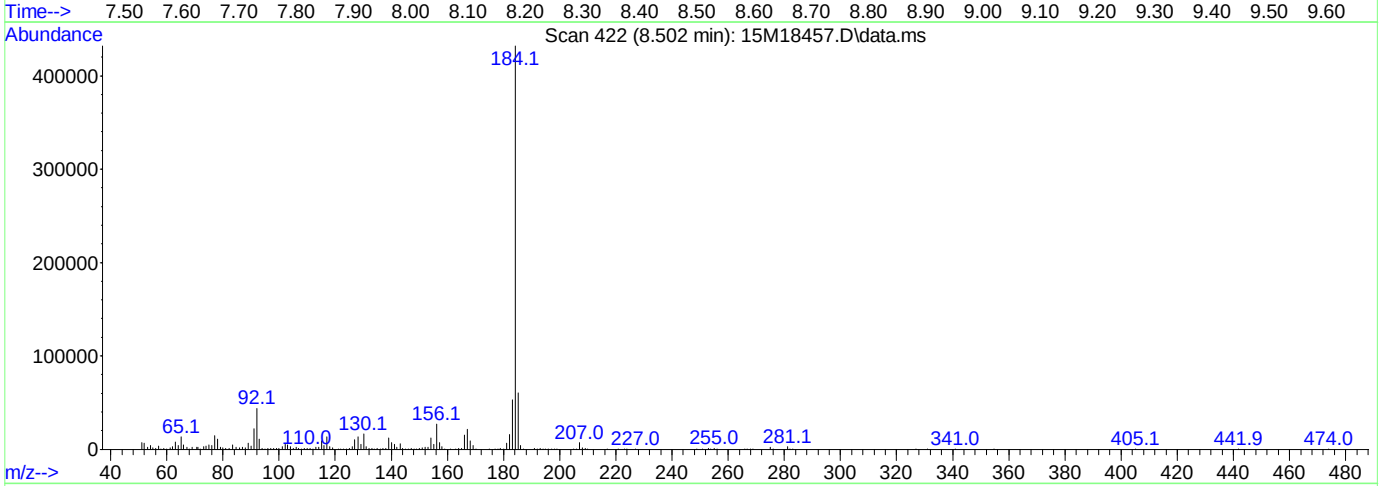

TIC: 15M18457.D\data.ms

(2) Benzidine

8.502min (+ 0.008) 0.00 ug/ml

response 532770

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

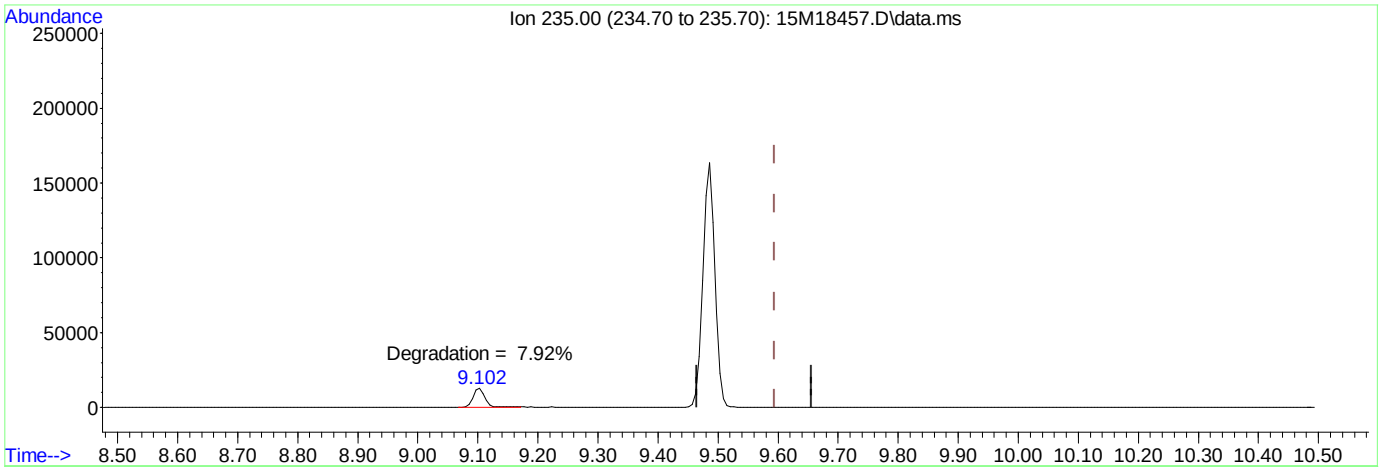

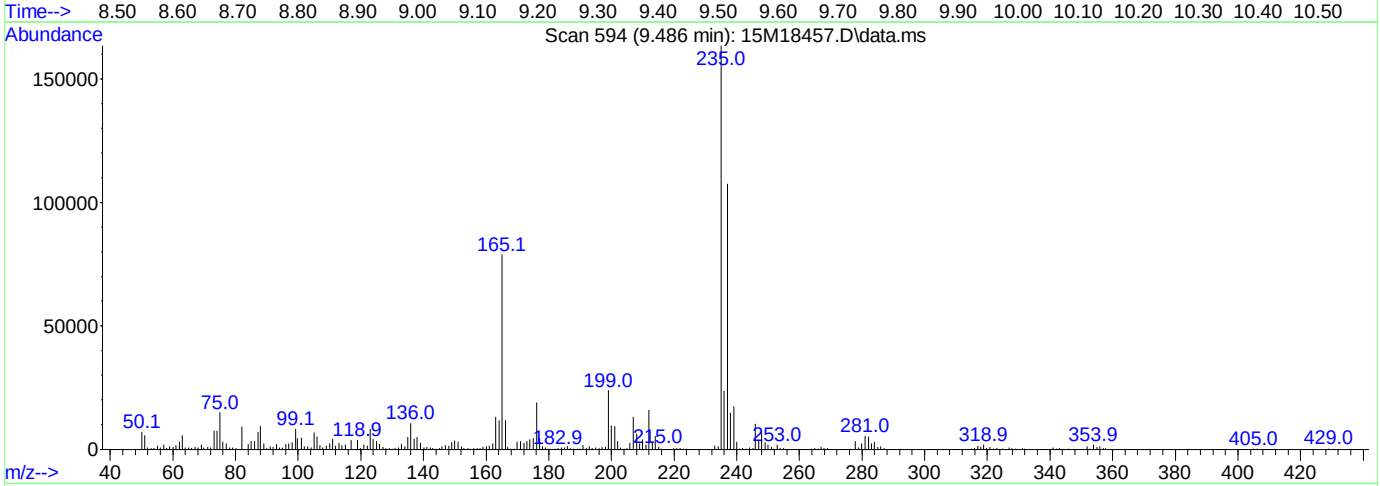

TIC: 15M18457.D\data.ms

(3) DDT

9.486min (-0.108) 0.00 ug/ml

response 180187

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18673.D
Acq On : 30 Jun 2016 14:24
Operator : MES
Sample : WG574781-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

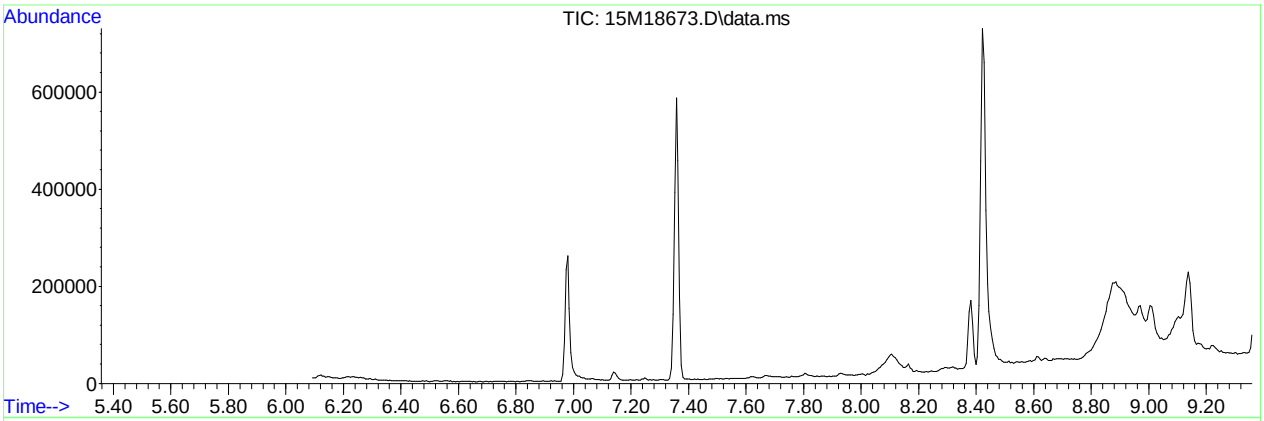

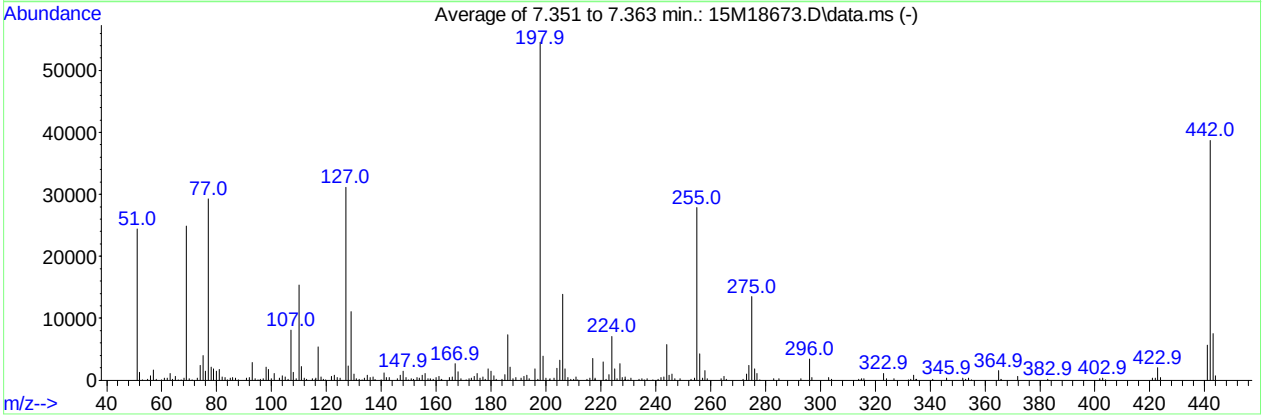

AutoFind: Scans 221, 222, 223; Background Corrected with Scan 215

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	44.6	24370	PASS
68	69	0.00	2	1.4	352	PASS
69	198	0.00	100	45.7	24921	PASS
70	69	0.00	2	1.0	239	PASS
127	198	40	60	57.0	31104	PASS
197	198	0.00	1	0.3	159	PASS
198	198	100	100	100.0	54589	PASS
199	198	5	9	7.0	3838	PASS
275	198	10	30	24.8	13523	PASS
365	198	1	100	2.8	1520	PASS
441	443	0.01	100	75.2	5686	PASS
442	198	40	100	70.8	38669	PASS
443	442	17	23	19.5	7559	PASS

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18673.D
Acq On : 30 Jun 2016 14:24
Operator : MES
Sample : WG574781-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 30 14:35:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

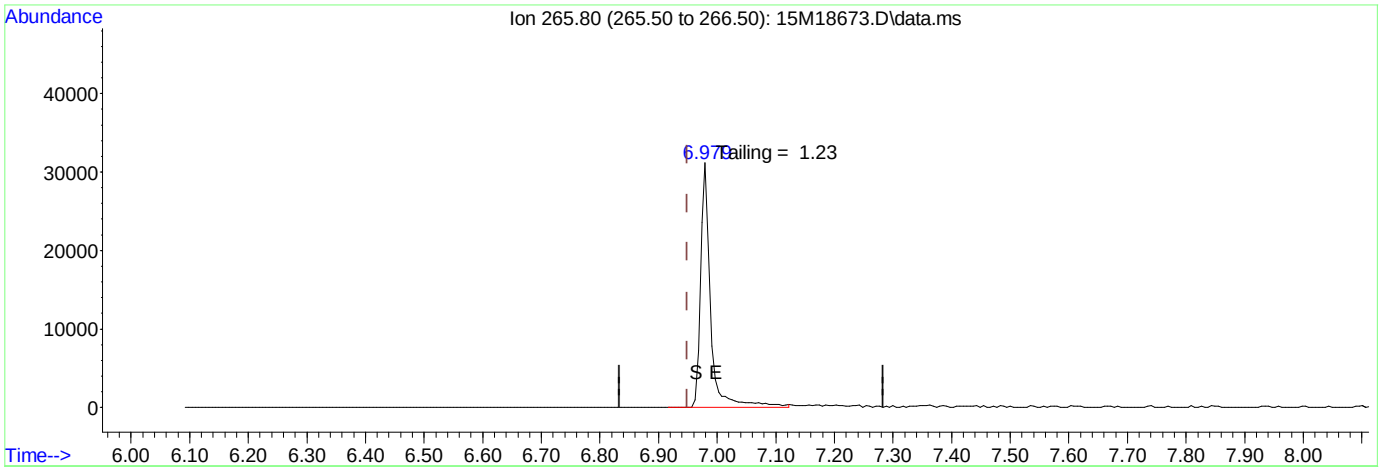

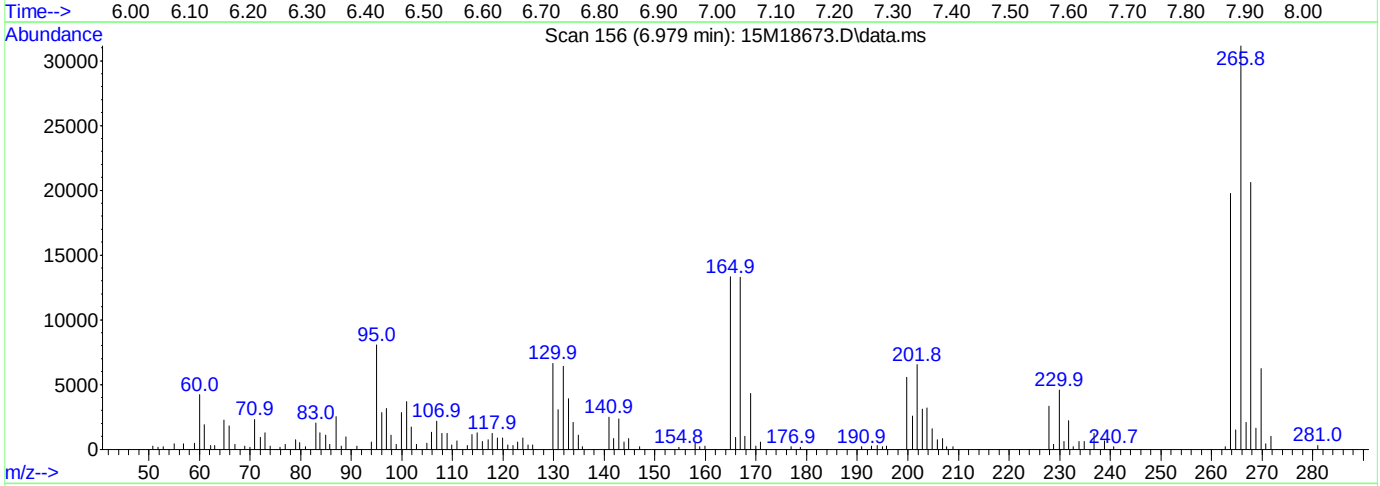

TIC: 15M18673.D\data.ms

(1) Pentachlorophenol

6.979min (+ 0.030) 0.00 ug/ml

response 37511

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18673.D
Acq On : 30 Jun 2016 14:24
Operator : MES
Sample : WG574781-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 30 14:35:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

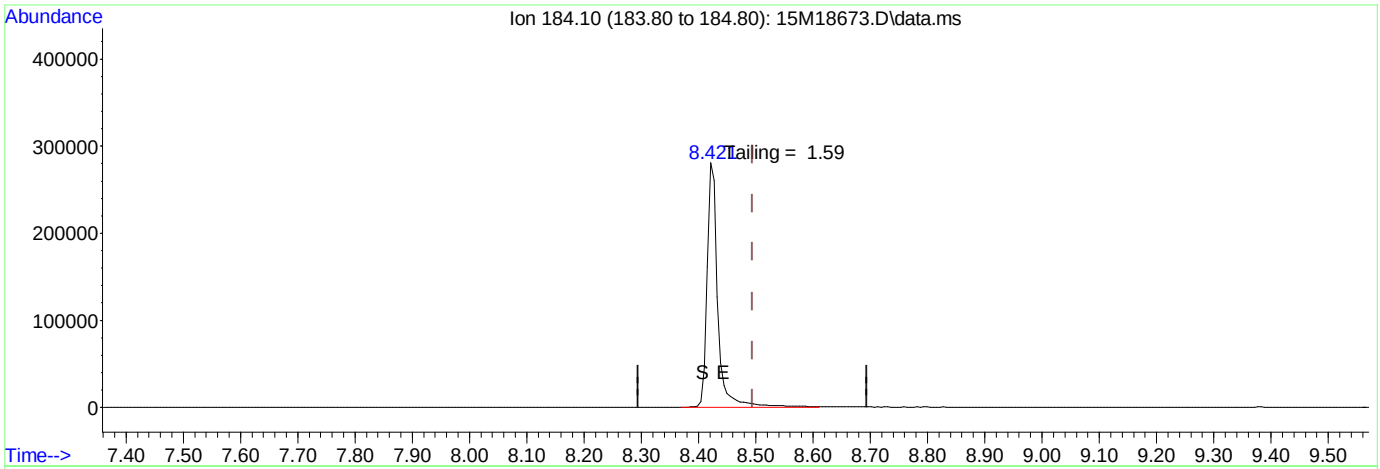

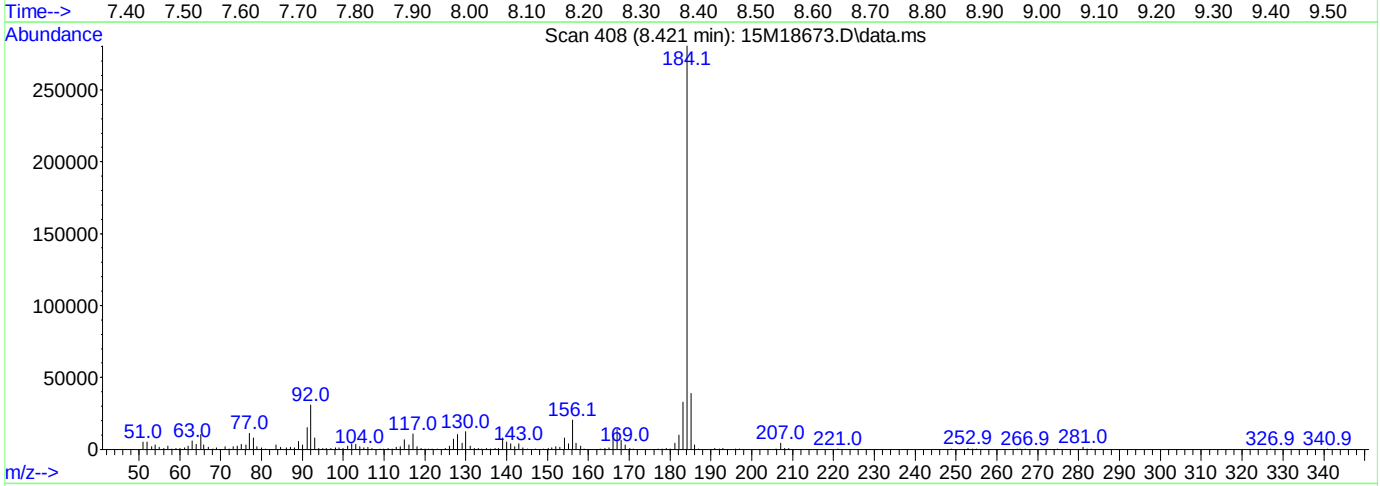

TIC: 15M18673.D\data.ms

(2) Benzidine

8.421min (-0.073) 0.00 ug/ml

response 363129

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18673.D
Acq On : 30 Jun 2016 14:24
Operator : MES
Sample : WG574781-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 30 14:35:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

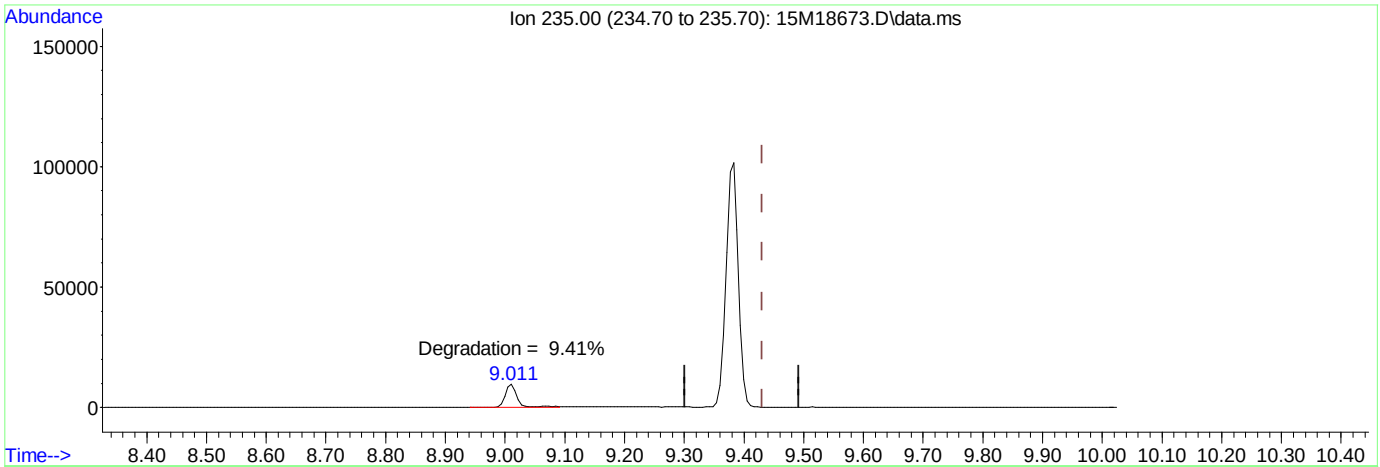

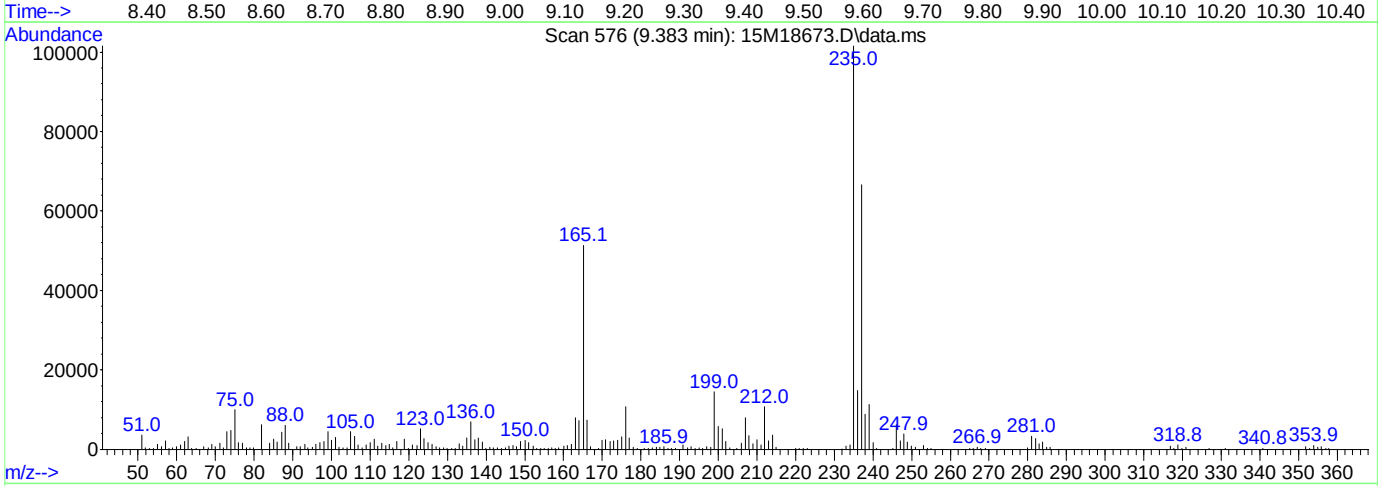

(3) DDT

9.383min (-0.047) 0.00 ug/ml

response 147438

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18716.D
Acq On : 5 Jul 2016 14:33
Operator : MES
Sample : WG575159-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

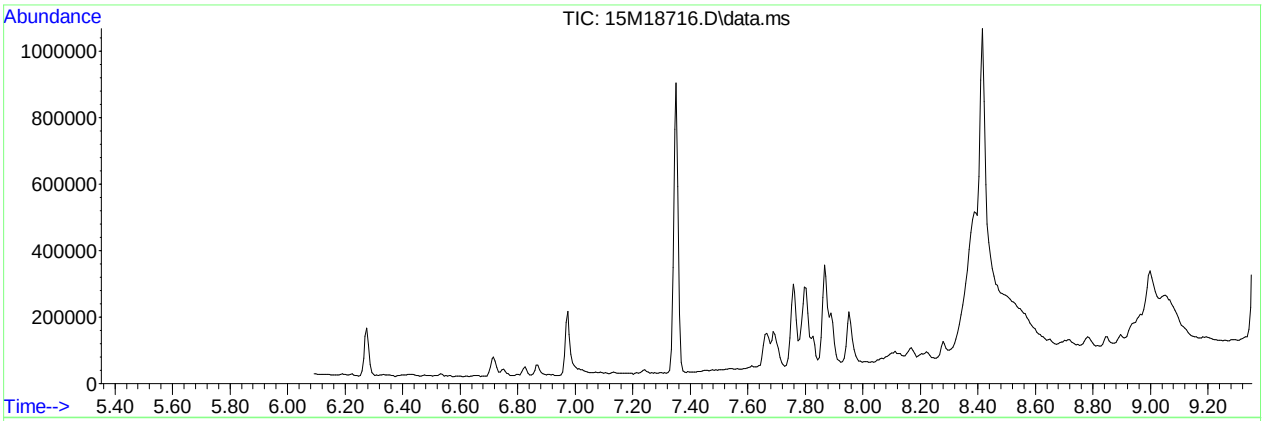

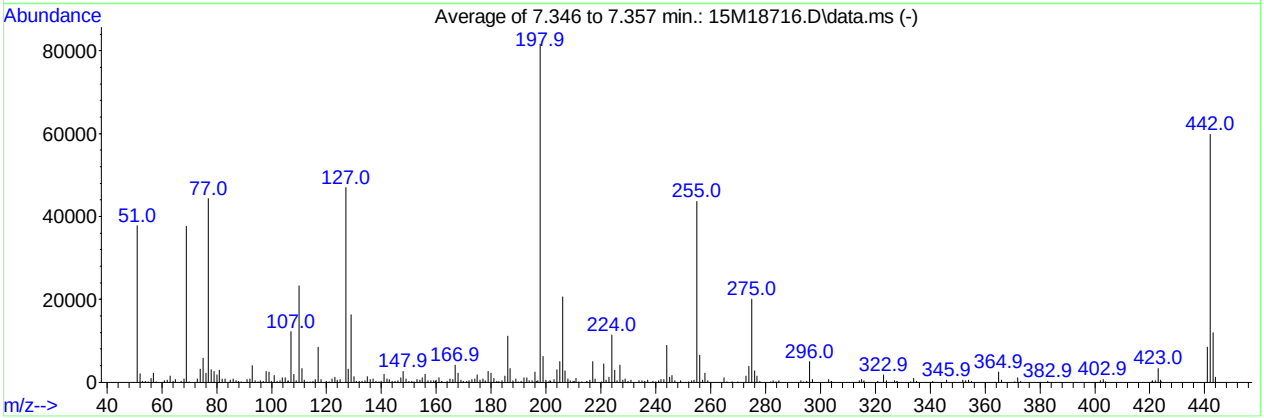

AutoFind: Scans 220, 221, 222; Background Corrected with Scan 214

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	46.2	37745	PASS
68	69	0.00	2	1.9	734	PASS
69	198	0.00	100	46.2	37667	PASS
70	69	0.00	2	0.3	127	PASS
127	198	40	60	57.5	46941	PASS
197	198	0.00	1	0.4	310	PASS
198	198	100	100	100.0	81613	PASS
199	198	5	9	7.6	6162	PASS
275	198	10	30	24.6	20072	PASS
365	198	1	100	2.9	2392	PASS
441	443	0.01	100	70.8	8479	PASS
442	198	40	100	73.3	59805	PASS
443	442	17	23	20.0	11980	PASS

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18716.D
Acq On : 5 Jul 2016 14:33
Operator : MES
Sample : WG575159-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 05 14:45:10 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

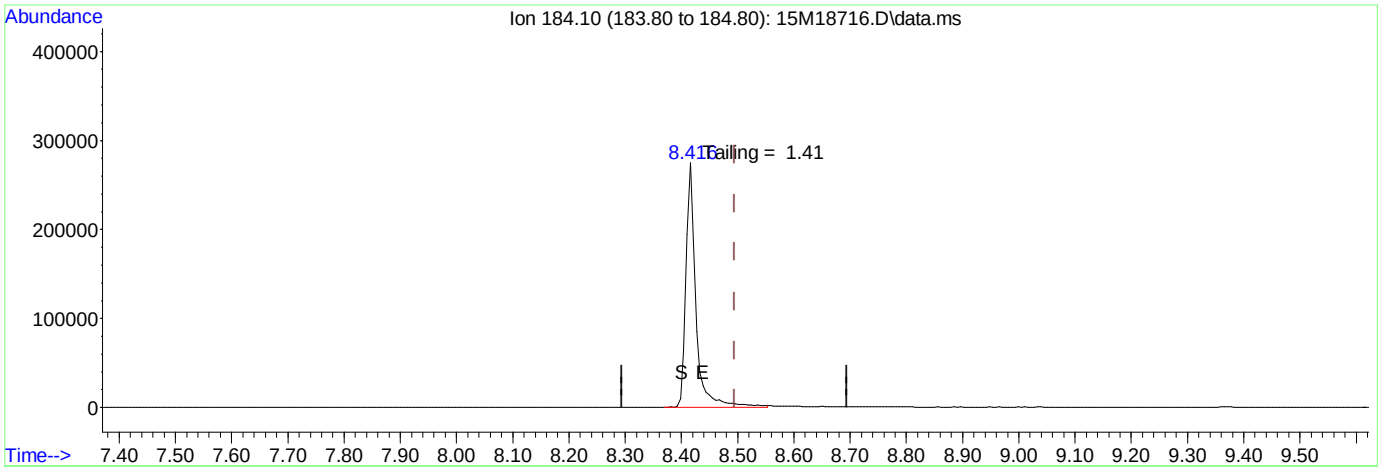

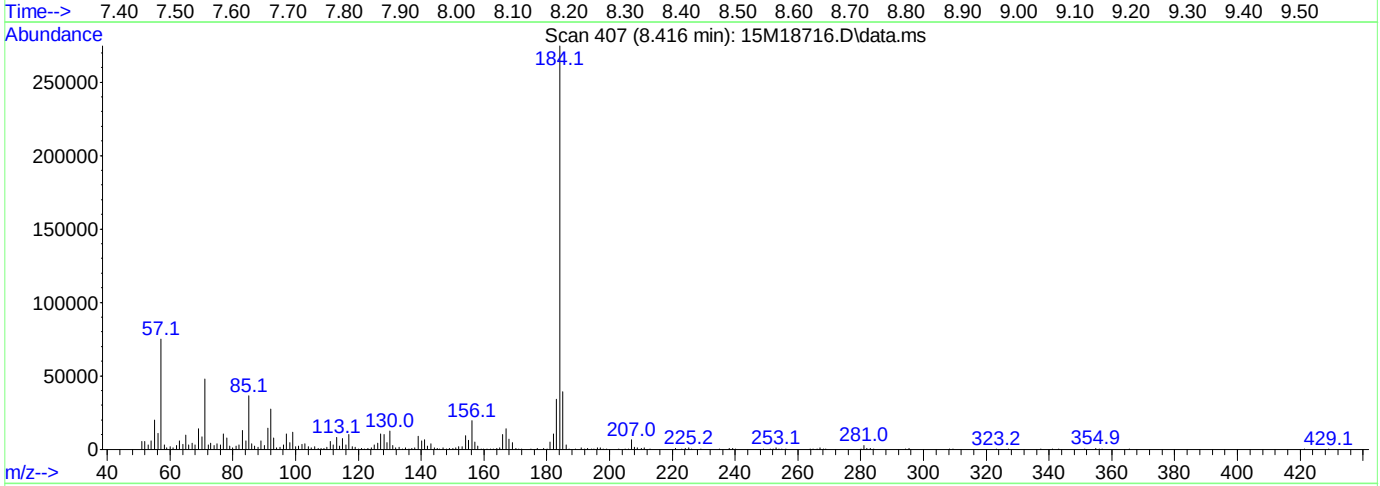

TIC: 15M18716.D\data.ms

(2) Benzidine

8.416min (-0.078) 0.00 ug/ml

response 340801

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18716.D
Acq On : 5 Jul 2016 14:33
Operator : MES
Sample : WG575159-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 05 14:45:10 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

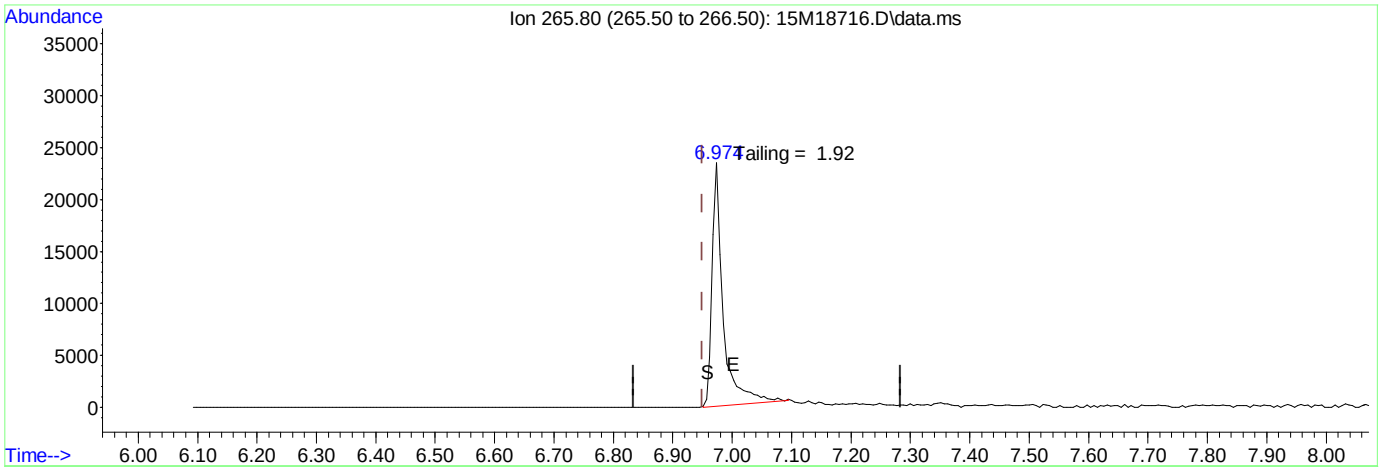

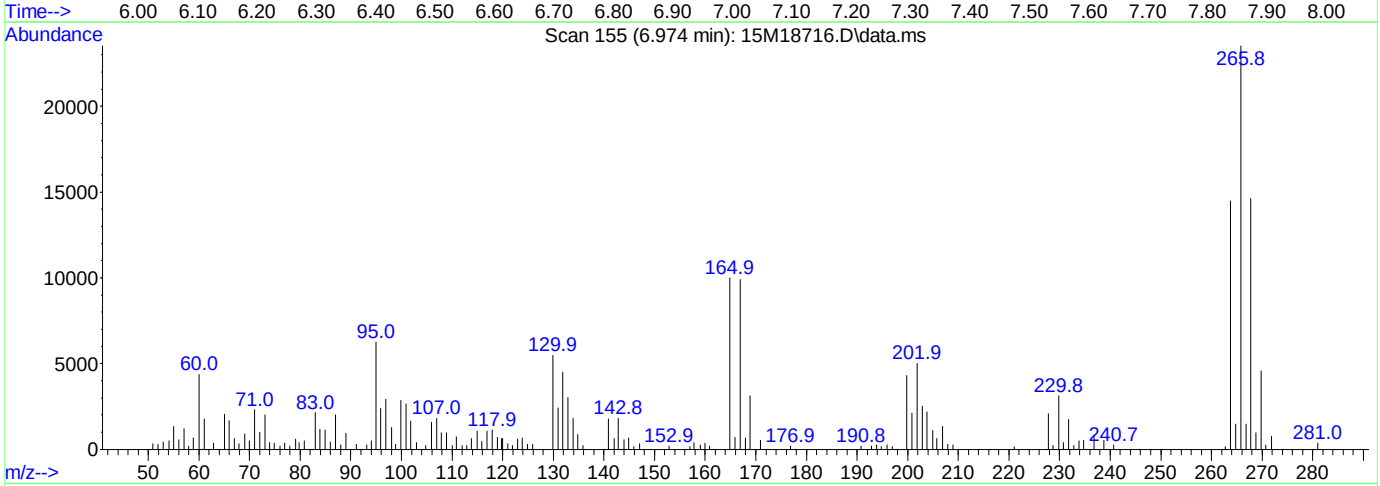

TIC: 15M18716.D\data.ms

(1) Pentachlorophenol

6.974min (+ 0.025) 0.00 ug/ml

response 32364

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18716.D
Acq On : 5 Jul 2016 14:33
Operator : MES
Sample : WG575159-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 05 14:45:10 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

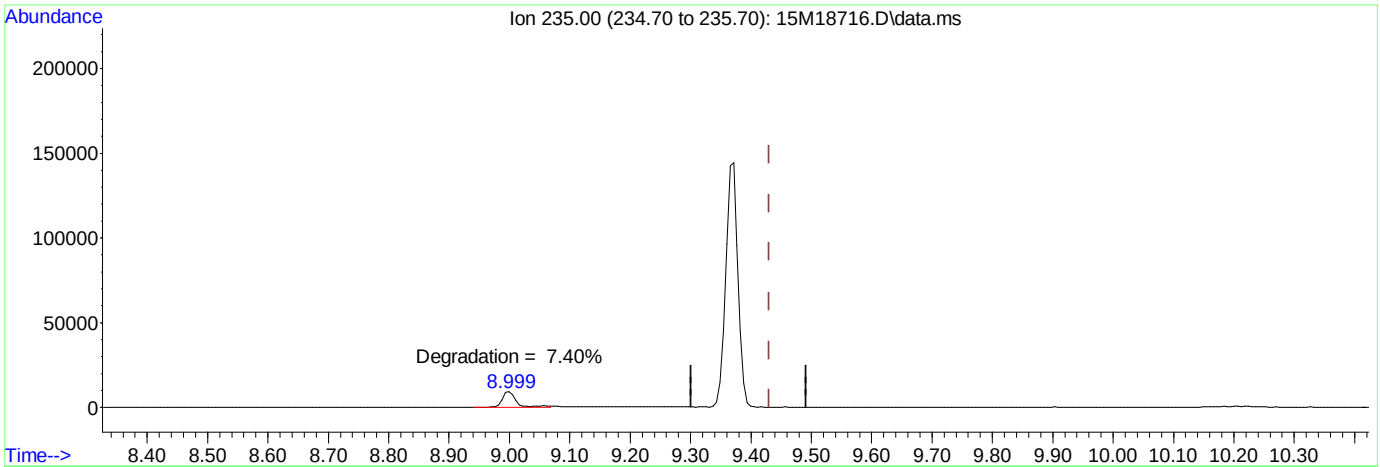

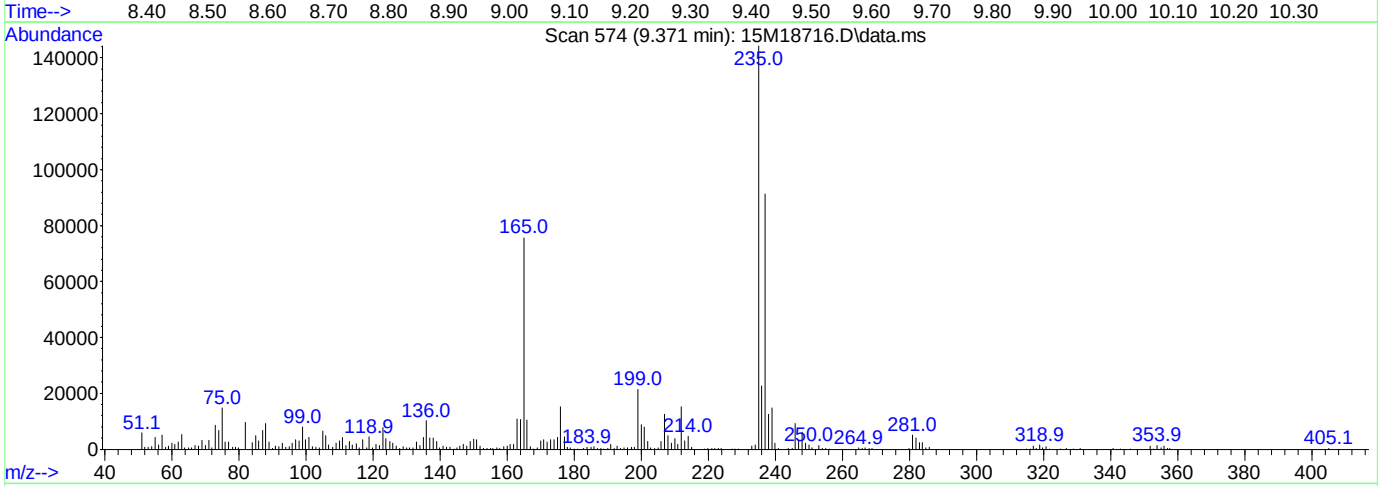

(3) DDT

9.371min (-0.059) 0.00 ug/ml

response 208755

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18678.D
Acq On : 30 Jun 2016 16:12
Operator : MES
Sample : WG574286-01 BLANK 6/27
Misc : 1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 30 16:57:35 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.870	152	28516	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.778	96	25448	2.1688	ug/L	0.00
Spiked Amount 5.000			Recovery = 43.40%			
4) Nitrobenzene-d5	7.367	82	1047426	34.7736	ug/L	0.00
Spiked Amount 5.000			Recovery = 695.40%			
5) 2-Fluorobiphenyl	8.856	172	1915171	25.1894	ug/L	0.00
Spiked Amount 5.000			Recovery = 503.80%			
6) p-Terphenyl-d14	12.137	244	2891842	39.4601	ug/L	0.05
Spiked Amount 5.000			Recovery = 789.20%			

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18678.D
Acq On : 30 Jun 2016 16:12
Operator : MES
Sample : WG574286-01 BLANK 6/27
Misc : 1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 30 16:57:35 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

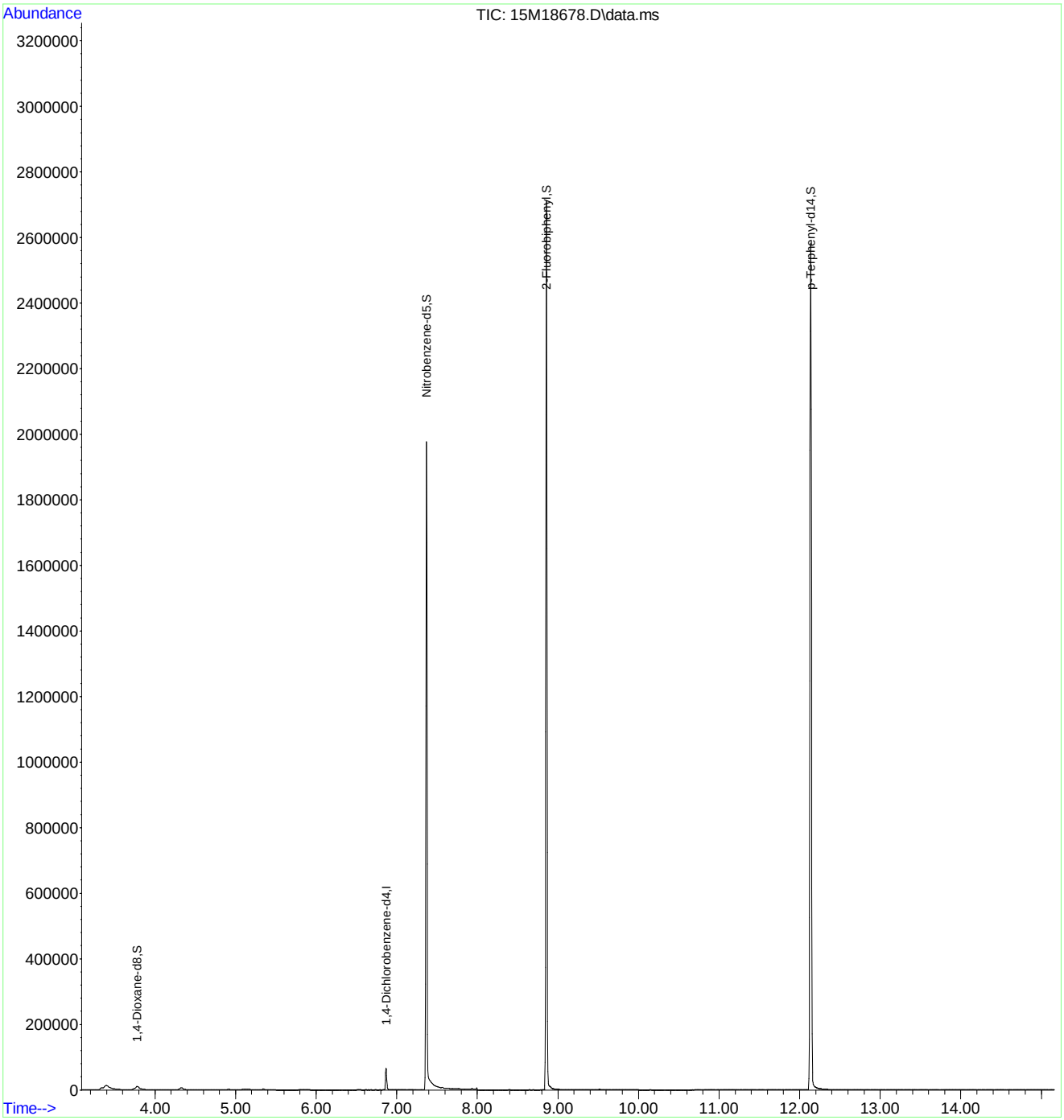

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18679.D
Acq On : 30 Jun 2016 16:34
Operator : MES
Sample : WG574286-02 LCS 6/27
Misc : 1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 30 16:57:20 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.870	152	22815	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.770	96	22955	2.4451	ug/L	-0.01
Spiked Amount 5.000			Recovery	=	49.00%	
4) Nitrobenzene-d5	7.372	82	1584	0.0657	ug/L	0.00
Spiked Amount 5.000			Recovery	=	1.40%	
5) 2-Fluorobiphenyl	8.860	172	964	0.0158	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.40%	
6) p-Terphenyl-d14	12.107	244	620	0.0106	ug/L	0.02
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.806	58	19389	2.7776	ug/L	67

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18679.D
Acq On : 30 Jun 2016 16:34
Operator : MES
Sample : WG574286-02 LCS 6/27
Misc : 1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 30 16:57:20 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

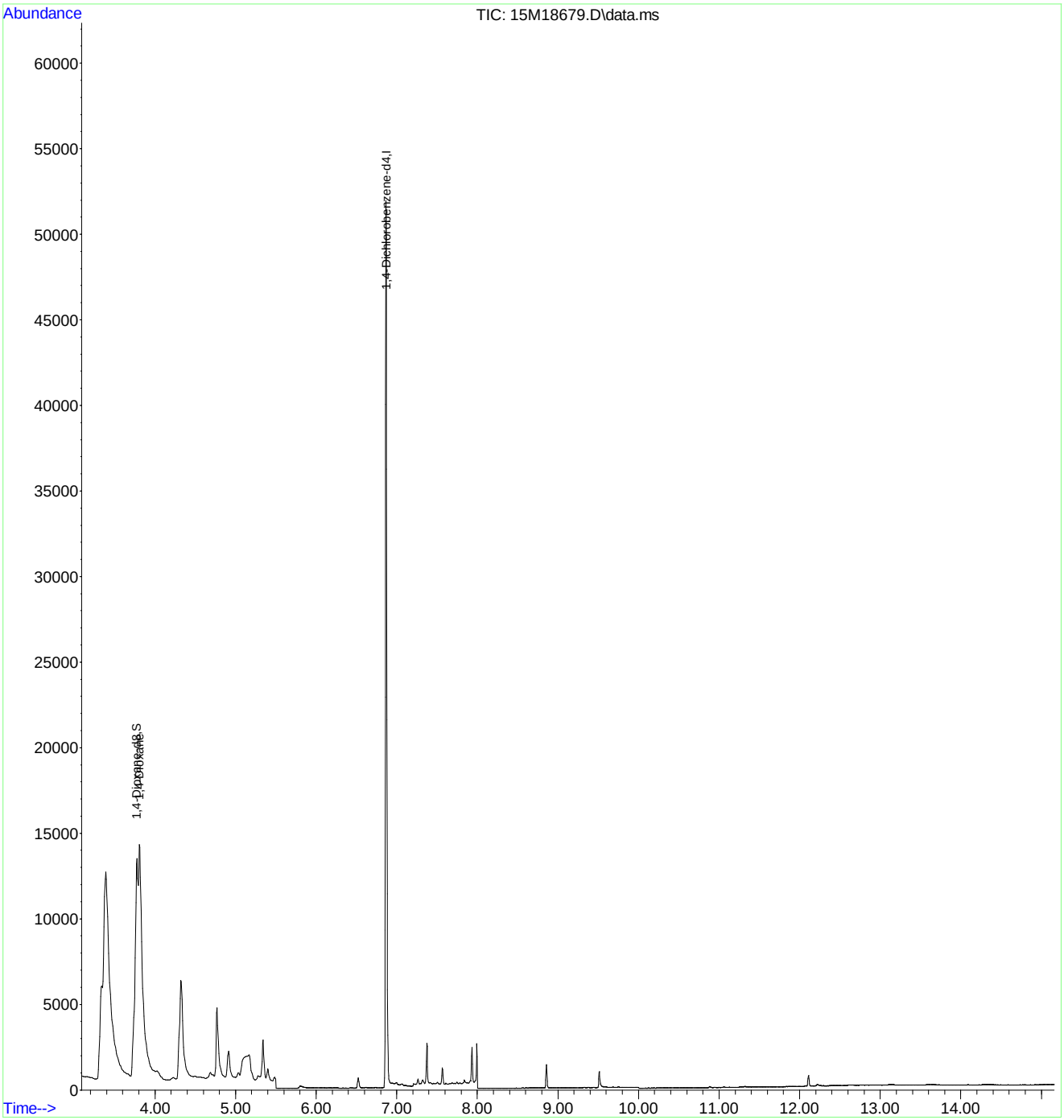

2.2 General Chromatography Data

2.2.2 6850 LC/MS Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW16-062116	**Prep Method:**	6850	**Prep Date:**	07/01/2016 13:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575005	**Analyst:**	JWR	**Run Date:**	07/01/2016 21:17
Collect Date:	06/21/2016 13:20	**Dilution:**	1	**File ID:**	1LM.LM35585
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW16-062116	**Prep Method:**	6850	**Prep Date:**	07/01/2016 13:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575005	**Analyst:**	JWR	**Run Date:**	07/01/2016 21:36
Collect Date:	06/21/2016 14:40	**Dilution:**	1	**File ID:**	1LM.LM35586
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.615		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16061290-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	125-062216	**Prep Method:**	6850	**Prep Date:**	07/01/2016 13:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575005	**Analyst:**	JWR	**Run Date:**	07/01/2016 21:55
Collect Date:	06/22/2016 06:55	**Dilution:**	500	**File ID:**	1LM.LM35587
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	935		200	100	50.0

Certificate of Analysis

Sample #:	L16061290-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	109-062216	**Prep Method:**	6850	**Prep Date:**	07/05/2016 15:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575171	**Analyst:**	JWR	**Run Date:**	07/05/2016 17:06
Collect Date:	06/22/2016 07:20	**Dilution:**	1000	**File ID:**	1LM.LM35610
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1810		400	200	100

Certificate of Analysis

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Sample #:	L16061290-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW07-062216	**Prep Method:**	6850	**Prep Date:**	07/01/2016 13:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575005	**Analyst:**	JWR	**Run Date:**	07/01/2016 22:33
Collect Date:	06/22/2016 08:30	**Dilution:**	1	**File ID:**	1LM.LM35589
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.634		0.400	0.200	0.100

2.2.2.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1415 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG575005-01 MCT	10,020.	
-02 Blank	0.31	
-03 LCS	0.44	
-04 LCS2	0.41	
L16070001-01 LOD	0.38	
L16070003-01 LOQ	0.43	
-09 LOQ	0.45	
L16061289-01	6,210.	
-02	147.9	
-03	105.2	
-05	1,381.	
L16061290-01	594.	
-02	1,157.	
-04	219.	
-05	172.8	
-06	826.	
L16061452-01	1,890.	
-03	1,179.	
L16061453-01	2,610.	
-02	1,188.	
-03	1,101.	
L16061559-01	3,040.	
-02	3,140.	
L16061648-01	669.	

Analyst: John Richards

Date/Time: 07/01/16 19:50

DCN#119454

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1422 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG575171-01 MCT	10,040.	
-02 Blank	0.34	
-03 LCS	0.54 ~~0.054~~ JWR 07/06/16	
L16061290-05	186.1	
L16070033-01	346.	
-02	8,150.	
-03	98.2	
-04	97.4	
-05 RS	185.7	
-06 MS	185.5	
-07 MSD	185.7	
-08	84.2	
-09	6,140.	

Analyst: John Richards

Date/Time: 07/06/16 / 16:50

DCN#119508

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

Page: 1 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

Page: 2 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 070116_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG575005 (waters)

Internal STD: STD18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments: Samples L16061289(-01,-02), L16061290-05 and L16061452-03 were analyzed at dilutions based on their historical results.
Samples L16061290-04 and L16061453-01 had inconsistent historical results. These samples were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35568	WG575015-01 CCB	1	1		07/01/16 15:55
2	1LM.LM35569	WG575015-02 CCV (1.0ug/L)	1	1	STD75510	07/01/16 16:14
3	1LM.LM35570	WG575005-05 MRL (0.2ug/L)	1	1	STD75510	07/01/16 16:33
4	1LM.LM35571	WG575005-01 MCT (0.2ug/L)	1	1	STD75512	07/01/16 16:52
5	1LM.LM35572	WG575005-02 BLANK	1	1		07/01/16 17:11
6	1LM.LM35573	WG575005-03 LCS (0.2ug/L)	1	1	STD75512	07/01/16 17:30
7	1LM.LM35574	WG575005-04 LCS2 (0.2ug/L)	1	1	STD75512	07/01/16 17:49
8	1LM.LM35575	L16070001-01 LOD (0.1ug/L)	1	1	STD75512	07/01/16 18:08
9	1LM.LM35576	L16070003-01 LOQ (0.2ug/L)	1	1	STD75512	07/01/16 18:27
10	1LM.LM35577	L16070003-09 LOQ (0.2ug/L)	1	1	STD75512	07/01/16 18:46
11	1LM.LM35578	L16061289-01 (10,000x)	1	10000		07/01/16 19:05
12	1LM.LM35579	L16061289-02 (100x)	1	100		07/01/16 19:24
13	1LM.LM35580	L16061289-03	1	1		07/01/16 19:43
14	1LM.LM35581	WG575015-03 CCV (1.0ug/L)	1	1	STD75510	07/01/16 20:02
15	1LM.LM35582	WG575005-06 MRL (0.2ug/L)	1	1	STD75510	07/01/16 20:21
16	1LM.LM35583	WG575015-04 CCB	1	1		07/01/16 20:39
17	1LM.LM35584	L16061289-05	1	1		07/01/16 20:58
18	1LM.LM35585	L16061290-01	1	1		07/01/16 21:17
19	1LM.LM35586	L16061290-02	1	1		07/01/16 21:36
20	1LM.LM35587	L16061290-04 (500x)	1	500		07/01/16 21:55
21	1LM.LM35588	L16061290-05 (10,000x) (NR)	1	10000		07/01/16 22:14
22	1LM.LM35589	L16061290-06	1	1		07/01/16 22:33
23	1LM.LM35590	L16061452-01	1	1		07/01/16 22:52
24	1LM.LM35591	L16061452-03 (10,000x)	1	10000		07/01/16 23:11
25	1LM.LM35592	L16061453-01 (10x)	1	10		07/01/16 23:30
26	1LM.LM35593	L16061453-02	1	1		07/01/16 23:49
27	1LM.LM35594	WG575015-05 CCV (1.0ug/L)	1	1	STD75510	07/02/16 00:08
28	1LM.LM35595	WG575005-07 MRL (0.2ug/L)	1	1	STD75510	07/02/16 00:27
29	1LM.LM35596	WG575015-06 CCB	1	1		07/02/16 00:46
30	1LM.LM35597	L16061453-03	1	1		07/02/16 01:05
31	1LM.LM35598	L16061559-01	1	1		07/02/16 01:23
32	1LM.LM35599	L16061559-02	1	1		07/02/16 01:42

Page: 1 Approved: 06-JUL-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 070116_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG575005 (waters)

Internal STD: STD18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 NA

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
33	1LM.LM35600	L16061648-01	1	1		07/02/16 02:01
34	1LM.LM35601	WG575015-07 CCV (1.0ug/L)	1	1	STD75510	07/02/16 02:20
35	1LM.LM35602	WG575005-08 MRL (0.2ug/L)	1	1	STD75510	07/02/16 02:39
36	1LM.LM35603	WG575015-08 CCB	1	1		07/02/16 02:58

Comments

Seq.	Rerun	Dil.	Reason	Analytes
21	X	1000	Analyzed too dilute	
	L16061290-05 (10,000x) (NR) : This sample did not conform to its historical results and was analyzed too dilute at 10,000x dilution. This sample will be ungrouped from this analytical batch and reanalyzed at a 1000x dilution on another day.			

Page: 2 Approved: 06-JUL-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 070516_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG575171 (waters)

Internal STD: STD18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: Sample L16061290-05 was analyzed at a 1000x dilution based on the results from its initial analysis on 07/01/2016.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35604	WG575212-01 CCB	1	1		07/05/16 15:12
2	1LM.LM35605	WG575212-02 CCV (1.0ug/L)	1	1	STD75510	07/05/16 15:31
3	1LM.LM35606	WG575171-07 MRL (0.2ug/L)	1	1	STD75510	07/05/16 15:50
4	1LM.LM35607	WG575171-01 MCT (0.2ug/L)	1	1	STD75512	07/05/16 16:09
5	1LM.LM35608	WG575171-02 BLANK	1	1		07/05/16 16:28
6	1LM.LM35609	WG575171-03 LCS (0.2ug/L)	1	1	STD75512	07/05/16 16:47
7	1LM.LM35610	L16061290-05 (1000x)	1	1000		07/05/16 17:06
8	1LM.LM35611	L16070033-01	1	1		07/05/16 17:25
9	1LM.LM35612	L16070033-02	1	1		07/05/16 17:44
10	1LM.LM35613	L16070033-03	1	1		07/05/16 18:03
11	1LM.LM35614	L16070033-04	1	1		07/05/16 18:22
12	1LM.LM35615	L16070033-08	1	1		07/05/16 18:41
13	1LM.LM35616	L16070033-09	1	1		07/05/16 18:59
14	1LM.LM35617	WG575212-03 CCV (1.0ug/L)	1	1	STD75510	07/05/16 19:18
15	1LM.LM35618	WG575171-08 MRL (0.2ug/L)	1	1	STD75510	07/05/16 19:37
16	1LM.LM35619	WG575212-04 CCB	1	1		07/05/16 19:56
17	1LM.LM35620	L16070033-05 RS	1	1		07/05/16 20:15
18	1LM.LM35621	L16070033-06 MS	1	1	STD75512	07/05/16 20:34
19	1LM.LM35622	L16070033-07 MSD	1	1	STD75512	07/05/16 20:53
20	1LM.LM35623	WG575212-05 CCV (1.0ug/L)	1	1	STD75510	07/05/16 21:12
21	1LM.LM35624	WG575171-09 MRL (0.2ug/L)	1	1	STD75510	07/05/16 21:31
22	1LM.LM35625	WG575212-06 CCB	1	1		07/05/16 21:50

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 06-JUL-16

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 04-MAY-2016 John Richards

Secondary Reviewer: 05-MAY-2016 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 01-JUL-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 76123
Analytical Workgroups: L16061289,1290,1452,1453,1559,1648 L16070001(LOD), 0003(LOQ)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 06-JUL-2016 John Richards

Secondary Reviewer: 06-JUL-2016 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-06-2016 14:48:43

Microbac Laboratories Inc.

Data Checklist

Date: 05-JUL-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 76133
Analytical Workgroups: L16061290-05 L16070033

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
06-JUL-2016
John Richards

Secondary Reviewer:
06-JUL-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-06-2016 15:35:02

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG575005

Login Number: L16061290

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW16-062116	01	06/21/16					07/01/2016	10	28		07/01/16	.3	28	
MW16-062116	02	06/21/16					07/01/2016	10	28		07/01/16	.3	28	
125-062216	04	06/22/16					07/01/2016	9.3	28		07/01/16	.4	28	
18CPTMW07-062216	06	06/22/16					07/01/2016	9.2	28		07/01/16	.4	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4841035
Report generated 07/07/2016 09:01

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG575171

Login Number: L16061290

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
109-062216	05	06/22/16					07/05/2016	13.3	28		07/05/16	.1	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4841035
Report generated 07/07/2016 09:01

METHOD BLANK SUMMARY

Login Number: L16061290
Blank File ID: 1LM.LM35572
Prep Date: 07/01/16 13:30
Analyzed Date: 07/01/16 17:11
Analyst: JWR

Work Group: WG575005
Blank Sample ID: WG575005-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG575005-05	1LM.LM35570	07/01/16 16:33	01
MCT	WG575005-01	1LM.LM35571	07/01/16 16:52	01
LCS	WG575005-03	1LM.LM35573	07/01/16 17:30	01
LCS2	WG575005-04	1LM.LM35574	07/01/16 17:49	01
QCMRL	WG575005-06	1LM.LM35582	07/01/16 20:21	01
18CPTMW16-062116	L16061290-01	1LM.LM35585	07/01/16 21:17	01
MW16-062116	L16061290-02	1LM.LM35586	07/01/16 21:36	01
125-062216	L16061290-04	1LM.LM35587	07/01/16 21:55	DL01
18CPTMW07-062216	L16061290-06	1LM.LM35589	07/01/16 22:33	01
QCMRL	WG575005-07	1LM.LM35595	07/02/16 00:27	01
QCMRL	WG575005-08	1LM.LM35602	07/02/16 02:39	01

Report Name: BLANK_SUMMARY
PDF File ID: 4841036
Report generated 07/07/2016 09:01

METHOD BLANK SUMMARY

Login Number: L16061290
Blank File ID: 1LM.LM35608
Prep Date: 07/05/16 15:00
Analyzed Date: 07/05/16 16:28
Analyst: JWR

Work Group: WG575171
Blank Sample ID: WG575171-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG575171-07	1LM.LM35606	07/05/16 15:50	01
MCT	WG575171-01	1LM.LM35607	07/05/16 16:09	01
LCS	WG575171-03	1LM.LM35609	07/05/16 16:47	01
109-062216	L16061290-05	1LM.LM35610	07/05/16 17:06	DL01
QCMRL	WG575171-08	1LM.LM35618	07/05/16 19:37	01
QCMRL	WG575171-09	1LM.LM35624	07/05/16 21:31	01

Report Name: BLANK_SUMMARY
PDF File ID: 4841036
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061290 Prep Date: 07/01/16 13:30 Sample ID: WG575005-02
Instrument ID: LCMS1 Run Date: 07/01/16 17:11 Prep Method: 6850
File ID: 1LM.LM35572 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575005 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4841037
07-JUL-2016 09:01

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061290 Prep Date: 07/05/16 15:00 Sample ID: WG575171-02
Instrument ID: LCMS1 Run Date: 07/05/16 16:28 Prep Method: 6850
File ID: 1LM.LM35608 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575171 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4841037
07-JUL-2016 09:01

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061290 Run Date: 07/05/2016 Sample ID: WG575171-03
Instrument ID: LCMS1 Run Time: 16:47 Prep Method: 6850
File ID: 1LM.LM35609 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575171 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD75512 Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	0.200	0.198	99.0	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4841510
Report generated: 07/07/2016 09:01

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061290 Analyst: JWR Prep Method: 6850
Instrument ID: LCMS1 Matrix: Water Method: 6850
Workgroup (AAB#): WG575005 Units: ug/L
QC Key: DOD4 Lot #: STD75512

Sample ID: WG575005-03 LCS File ID: 1LM.LM35573 Run Date: 07/01/2016 17:30
Sample ID: WG575005-04 LCS2 File ID: 1LM.LM35574 Run Date: 07/01/2016 17:49

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Perchlorate	0.200	0.201	101	0.200	0.211	106	4.85	80 - 120	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4841038
Report generated: 07/07/2016 09:01

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061290
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4841492
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061290

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4841492
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061290

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4841492
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061290
Analytical Method: 6850

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008
PDF File ID: 4841492
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061290 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4841493
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575015-01
Instrument ID: LCMS1
Run Time: 15:55
Method: 6850
File ID: 1LM.LM35568
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4841041
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575015-04
Instrument ID: LCMS1
Run Time: 20:39
Method: 6850
File ID: 1LM.LM35583
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4841041
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 07/02/2016
Sample ID: WG575015-06
Instrument ID: LCMS1
Run Time: 00:46
Method: 6850
File ID: 1LM.LM35596
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4841041
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 07/02/2016
Sample ID: WG575015-08
Instrument ID: LCMS1
Run Time: 02:58
Method: 6850
File ID: 1LM.LM35603
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4841041
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 07/05/2016
Sample ID: WG575212-01
Instrument ID: LCMS1
Run Time: 15:12
Method: 6850
File ID: 1LM.LM35604
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG575171
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4841041
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 07/05/2016
Sample ID: WG575212-04
Instrument ID: LCMS1
Run Time: 19:56
Method: 6850
File ID: 1LM.LM35619
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG575171
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4841041
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 07/05/2016
Sample ID: WG575212-06
Instrument ID: LCMS1
Run Time: 21:50
Method: 6850
File ID: 1LM.LM35625
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG575171
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4841041
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575015-02
Instrument ID: LCMS1
Run Time: 16:14
Method: 6850
File ID: 1LM.LM35569
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.73	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4841040
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575015-03
Instrument ID: LCMS1
Run Time: 20:02
Method: 6850
File ID: 1LM.LM35581
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.72	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4841040
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290
Run Date: 07/02/2016
Sample ID: WG575015-05
Instrument ID: LCMS1
Run Time: 00:08
Method: 6850
File ID: 1LM.LM35594
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.74	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4841040
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290
Run Date: 07/02/2016
Sample ID: WG575015-07
Instrument ID: LCMS1
Run Time: 02:20
Method: 6850
File ID: 1LM.LM35601
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.71	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4841040
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290
Run Date: 07/05/2016
Sample ID: WG575212-02
Instrument ID: LCMS1
Run Time: 15:31
Method: 6850
File ID: 1LM.LM35605
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG575171
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.981	ug/L	1.66	1.90	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4841040
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290 Run Date: 07/05/2016 Sample ID: WG575212-03
Instrument ID: LCMS1 Run Time: 19:18 Method: 6850
File ID: 1LM.LM35617 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG575171 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.00	ug/L	1.69	0	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4841040
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290
Run Date: 07/05/2016
Sample ID: WG575212-05
Instrument ID: LCMS1
Run Time: 21:12
Method: 6850
File ID: 1LM.LM35623
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG575171
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.996	ug/L	1.68	0.400	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4841040
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061290 Run Date: 07/01/2016 Sample ID: WG575005-05
Instrument ID: LCMS1 Run Time: 16:33 Prep Method: 6850
File ID: 1LM.LM35570 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575005 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.207	104	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4841039
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061290 Run Date: 07/01/2016 Sample ID: WG575005-06
Instrument ID: LCMS1 Run Time: 20:21 Prep Method: 6850
File ID: 1LM.LM35582 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575005 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4841039
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061290 Run Date: 07/02/2016 Sample ID: WG575005-07
Instrument ID: LCMS1 Run Time: 00:27 Prep Method: 6850
File ID: 1LM.LM35595 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575005 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.207	104	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4841039
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061290 Run Date: 07/02/2016 Sample ID: WG575005-08
Instrument ID: LCMS1 Run Time: 02:39 Prep Method: 6850
File ID: 1LM.LM35602 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575005 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.209	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4841039
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061290 Run Date: 07/05/2016 Sample ID: WG575171-07

Instrument ID: LCMS1 Run Time: 15:50 Prep Method: 6850

File ID: 1LM.LM35606 Analyst: JWR Method: 6850

Workgroup (AAB#): WG575171 Matrix: Water Units: ug/L

Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.199	99.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4841039
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061290 Run Date: 07/05/2016 Sample ID: WG575171-08
Instrument ID: LCMS1 Run Time: 19:37 Prep Method: 6850
File ID: 1LM.LM35618 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575171 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.198	99.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4841039
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061290 Run Date: 07/05/2016 Sample ID: WG575171-09

Instrument ID: LCMS1 Run Time: 21:31 Prep Method: 6850

File ID: 1LM.LM35624 Analyst: JWR Method: 6850

Workgroup (AAB#): WG575171 Matrix: Water Units: ug/L

Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.201	101	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4841039
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16061290
Instrument ID: LCMS1
Workgroup (AAB#): WG575005

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16061290-01	1.00	01	390000
L16061290-02	1.00	01	364000
L16061290-04	500	DL01	449000
L16061290-06	1.00	01	368000
WG575005-02	1.00	01	451000
WG575005-03	1.00	01	451000
WG575005-04	1.00	01	450000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4841042
Report generated 07/07/2016 09:01

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16061290
Instrument ID: LCMS1
Workgroup (AAB#): WG575171

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16061290-05	1000	DL01	440000
WG575171-02	1.00	01	436000
WG575171-03	1.00	01	439000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4841042
Report generated 07/07/2016 09:01

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**	6850	**Samplenum:**	L16061290-01
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35585
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 21:17	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**	6850	**Samplenum:**	L16061290-02
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35586
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 21:36	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	75800	26900	2.82	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**	6850	**Samplenum:**	L16061290-04
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35587
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 21:55	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	284000	97100	2.92	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**	6850	**Samplenum:**	L16061290-05
Instrument:	LCMS1	**Prep Date:**	07/05/2016 15:00	**File ID:**	1LM.LM35610
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575171	**Analysis Date:**	07/05/2016 17:06	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	269000	93100	2.89	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**	6850	**Samplenum:**	L16061290-06
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35589
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 22:33	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	79000	26700	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575171	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575171	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575171	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575171	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575171	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575171	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575171	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575171	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**	6850	**Samplenum:**	WG575005-01
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35571
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 16:52	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	30200	9940	3.04	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**	6850	**Samplenum:**	WG575005-02
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35572
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 17:11	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**	6850	**Samplenum:**	WG575005-03
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35573
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 17:30	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	31100	11300	2.75	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**	6850	**Samplenum:**	WG575005-04
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35574
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 17:49	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32500	11800	2.75	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**	6850	**Samplenum:**	WG575005-05
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35570
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 16:33	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	33000	11700	2.82	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**	6850	**Samplenum:**	WG575005-06
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35582
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 20:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32800	11400	2.88	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**	6850	**Samplenum:**	WG575005-07
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35595
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 00:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35700	12900	2.77	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**	6850	**Samplenum:**	WG575005-08
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35602
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 02:39	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36500	12300	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG575015-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35568
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 15:55	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG575015-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35569
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 16:14	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	163000	56900	2.86	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG575015-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35581
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 20:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	167000	58000	2.88	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG575015-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35583
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 20:39	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG575015-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35594
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 00:08	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	175000	57200	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG575015-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35596
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 00:46	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG575015-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35601
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 02:20	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	175000	58500	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG575015-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35603
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 02:58	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**	6850	**Samplenum:**	WG575171-01
Instrument:	LCMS1	**Prep Date:**	07/05/2016 15:00	**File ID:**	1LM.LM35607
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575171	**Analysis Date:**	07/05/2016 16:09	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	26700	9850	2.71	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**	6850	**Samplenum:**	WG575171-02
Instrument:	LCMS1	**Prep Date:**	07/05/2016 15:00	**File ID:**	1LM.LM35608
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575171	**Analysis Date:**	07/05/2016 16:28	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**	6850	**Samplenum:**	WG575171-03
Instrument:	LCMS1	**Prep Date:**	07/05/2016 15:00	**File ID:**	1LM.LM35609
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575171	**Analysis Date:**	07/05/2016 16:47	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	29700	10900	2.72	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**	6850	**Samplenum:**	WG575171-07
Instrument:	LCMS1	**Prep Date:**	07/05/2016 15:00	**File ID:**	1LM.LM35606
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575171	**Analysis Date:**	07/05/2016 15:50	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	29700	10800	2.75	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**	6850	**Samplenum:**	WG575171-08
Instrument:	LCMS1	**Prep Date:**	07/05/2016 15:00	**File ID:**	1LM.LM35618
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575171	**Analysis Date:**	07/05/2016 19:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34500	12500	2.76	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**	6850	**Samplenum:**	WG575171-09
Instrument:	LCMS1	**Prep Date:**	07/05/2016 15:00	**File ID:**	1LM.LM35624
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575171	**Analysis Date:**	07/05/2016 21:31	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35800	12800	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG575212-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35604
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575171	**Analysis Date:**	07/05/2016 15:12	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG575212-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35605
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575171	**Analysis Date:**	07/05/2016 15:31	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	152000	54100	2.81	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG575212-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35617
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575171	**Analysis Date:**	07/05/2016 19:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	157000	54600	2.88	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG575212-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35619
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575171	**Analysis Date:**	07/05/2016 19:56	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	181	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG575212-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35623
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575171	**Analysis Date:**	07/05/2016 21:12	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	165000	55700	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061290	**Prep Method:**		**Samplenum:**	WG575212-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35625
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575171	**Analysis Date:**	07/05/2016 21:50	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

2.2.2.3 Sample Data

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Printed: 7/5/2016 12:31 PM

Data File	LM35585.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 9:17:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061290-01	**Injection Vial**	15.00
Data File	LM35585.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 9:17:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	L16061290-01	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.900e+05	9.46	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.46(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

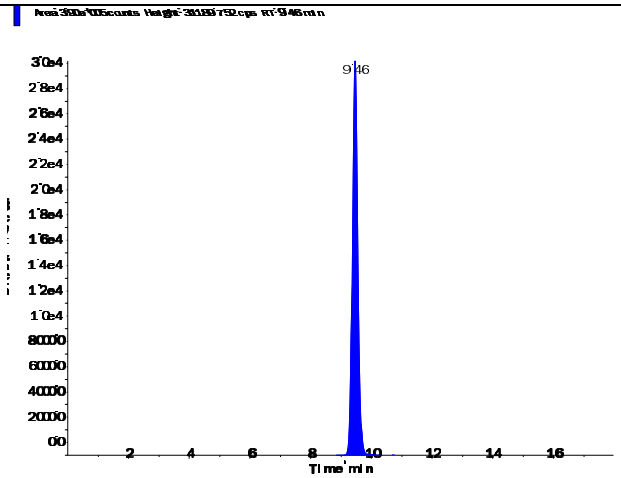

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

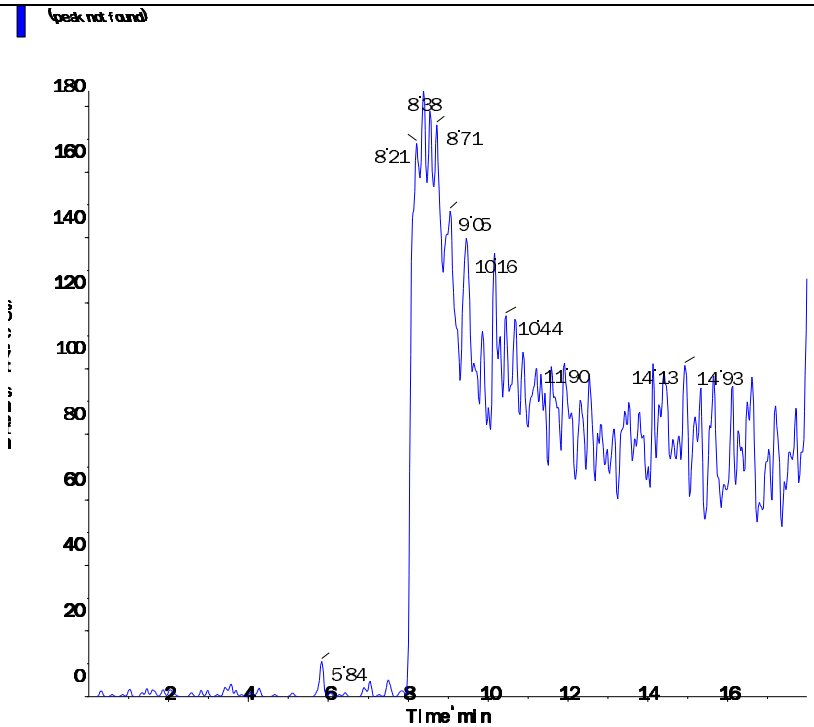

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

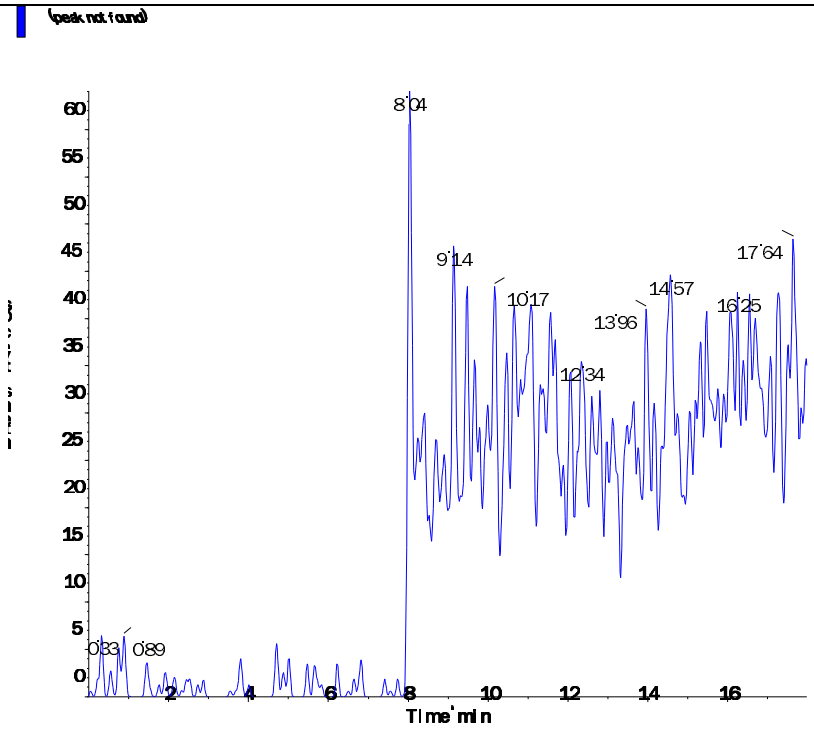

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Printed: 7/5/2016 12:32 PM

Data File	LM35586.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 9:36:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061290-02	**Injection Vial**	16.00
Data File	LM35586.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 9:36:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	L16061290-02	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.640e+05	9.36	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.580e+04	9.37	N/A	0.615
Perchlorate conf	2.690e+04	9.36	N/A	0.641

O18LP (Internal Standard)

RT (Exp. RT): 9.36(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

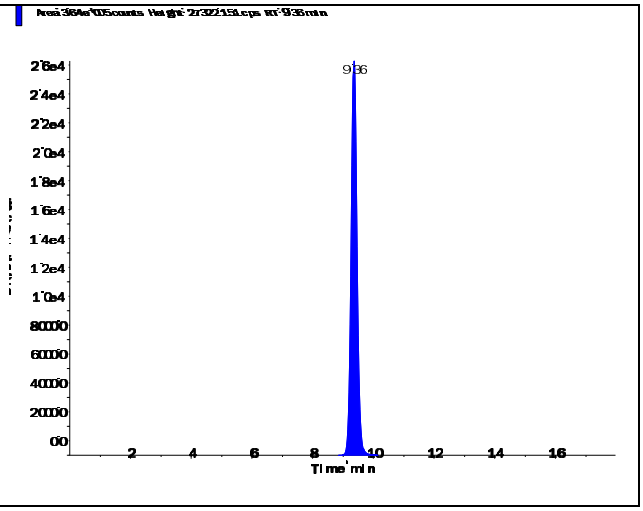

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.37 (9.84) min
Calculated conc:	0.615 ng/ml
Area Ratio:	0.208
Sample Type:	(Unknown)

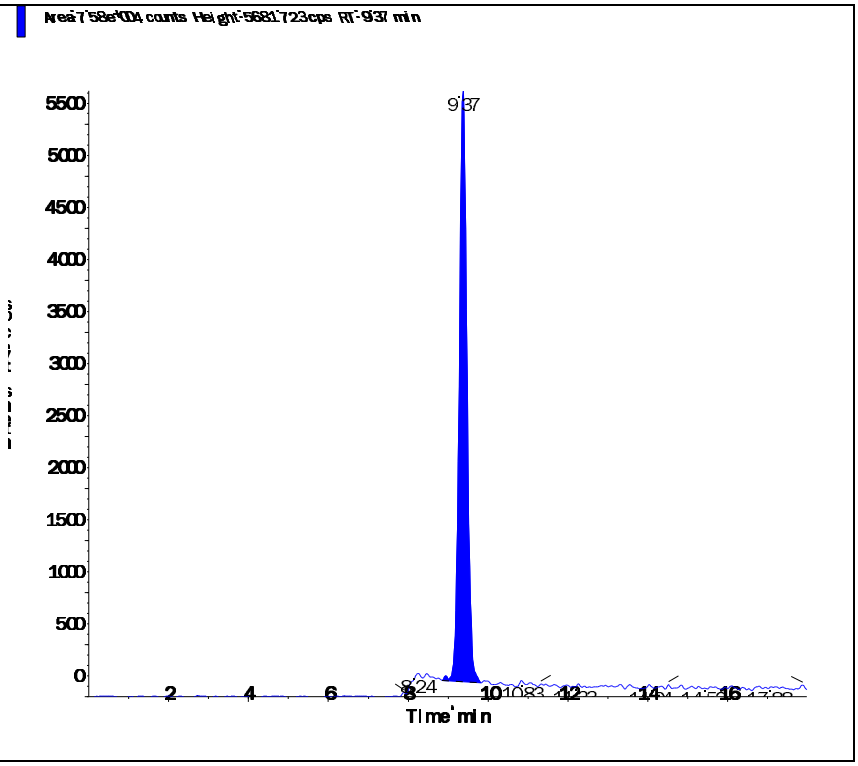

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.36 (9.84) min
Calculated conc:	0.641 ng/ml
Area Ratio:	0.074
Sample Type:	(Unknown)

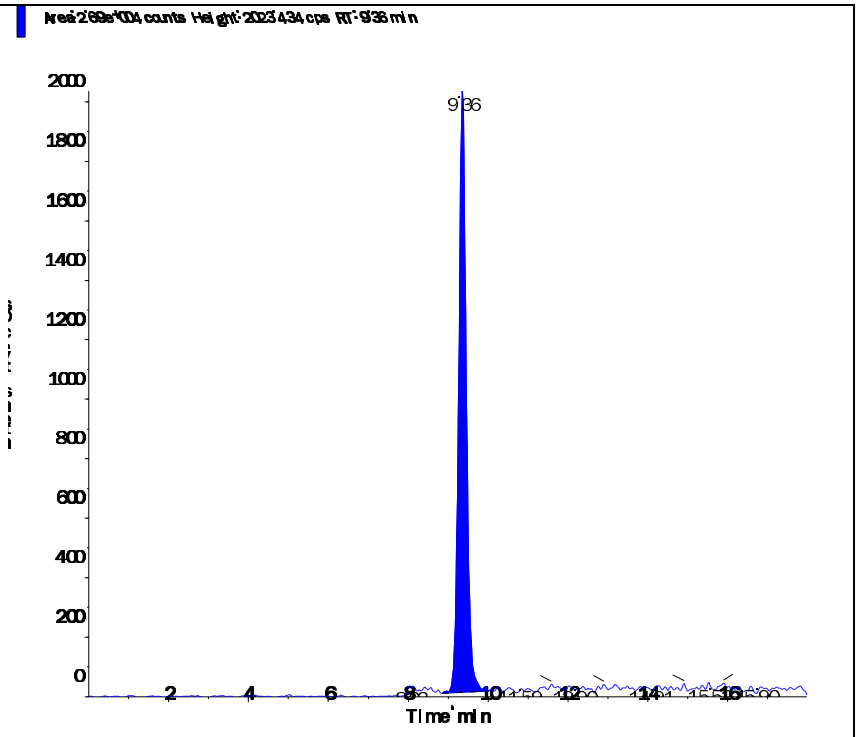

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Printed: 7/5/2016 12:32 PM

Data File	LM35587.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 9:55:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061290-04 (500x)	**Injection Vial**	17.00
Data File	LM35587.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 9:55:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	L16061290-04	**Dilution Factor**	1.00
Sample Comment	1,500 (screened)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.490e+05	9.69	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.840e+05	9.70	N/A	1.87
Perchlorate conf	9.710e+04	9.69	N/A	1.92

O18LP (Internal Standard)

RT (Exp. RT): 9.69(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

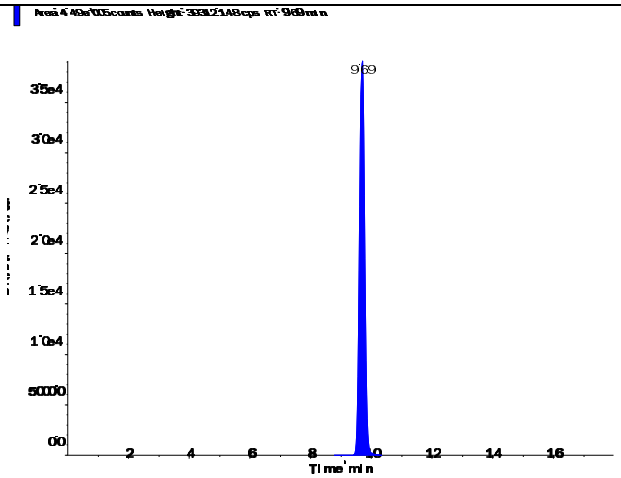

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.70 (9.84) min
Calculated conc:	1.87 ng/ml
Area Ratio:	0.631
Sample Type:	(Unknown)

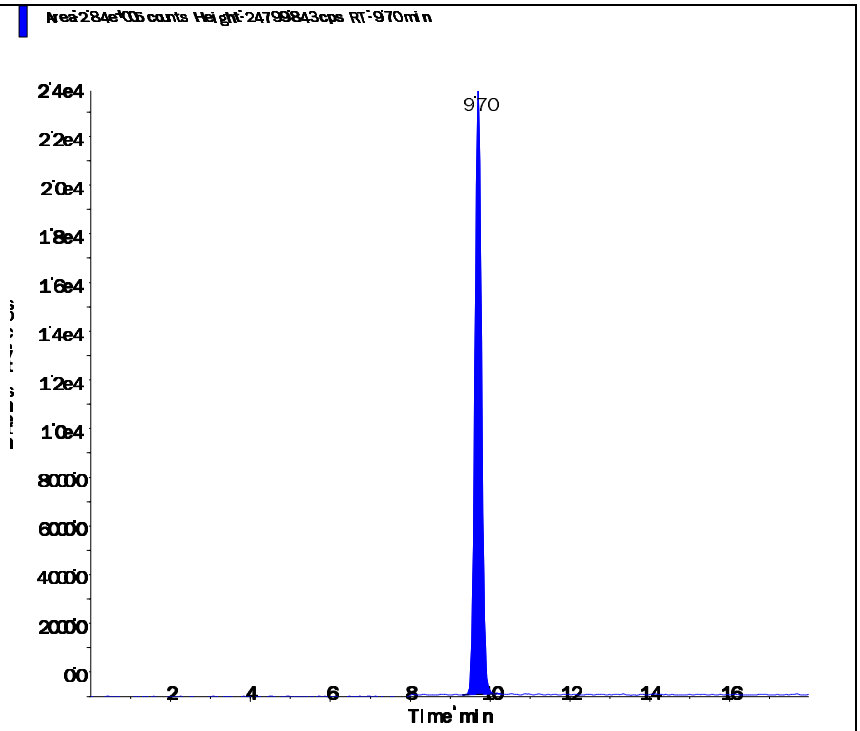

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.69 (9.84) min
Calculated conc:	1.92 ng/ml
Area Ratio:	0.216
Sample Type:	(Unknown)

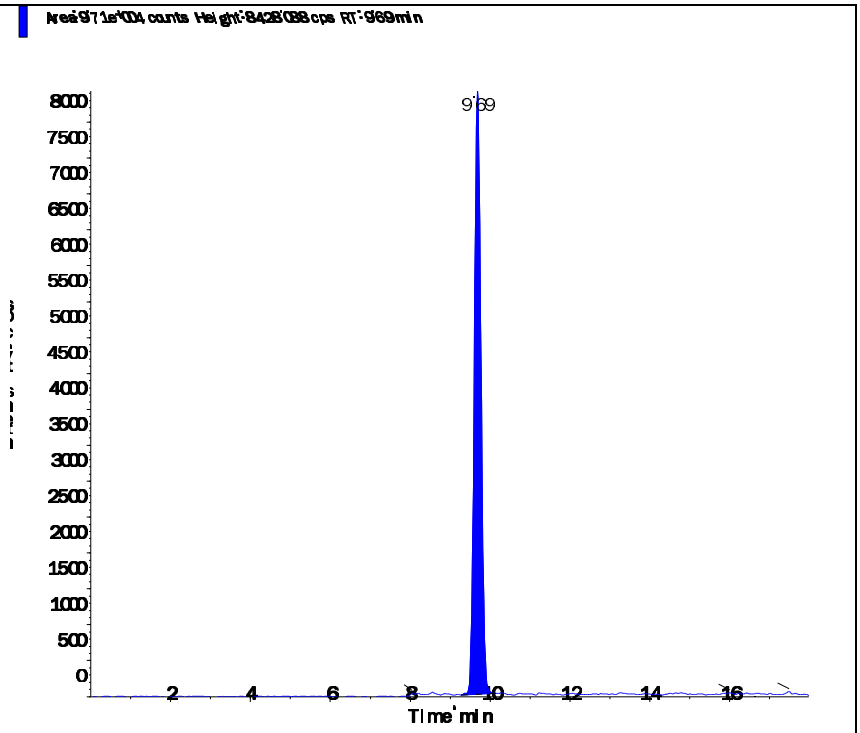

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Data File	LM35610.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	7/5/2016 5:06:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061290-05 (1000x)	**Injection Vial**	7.00
Data File	LM35610.wiff	**Injection Volume**	10.00
Acquisition Date	7/5/2016 5:06:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	L16061290-05	**Dilution Factor**	1.00
Sample Comment	1,1000 (Rerun)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.400e+05	9.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.690e+05	9.72	N/A	1.81
Perchlorate conf	9.310e+04	9.70	N/A	1.87

O18LP (Internal Standard)

RT (Exp. RT): 9.70(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

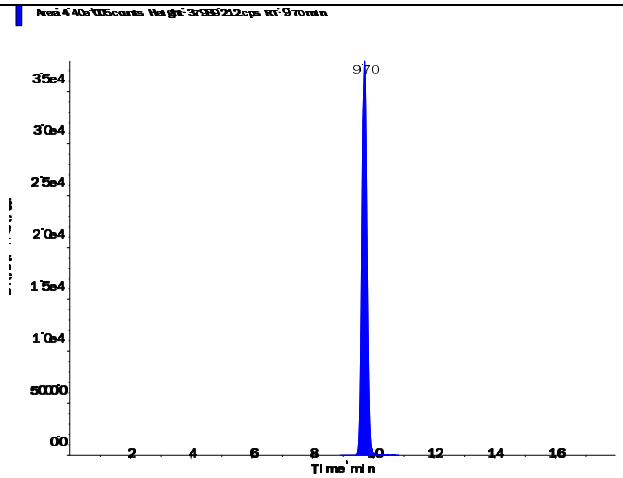

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.72 (9.84) min
Calculated conc:	1.81 ng/ml
Area Ratio:	0.61
Sample Type:	(Unknown)

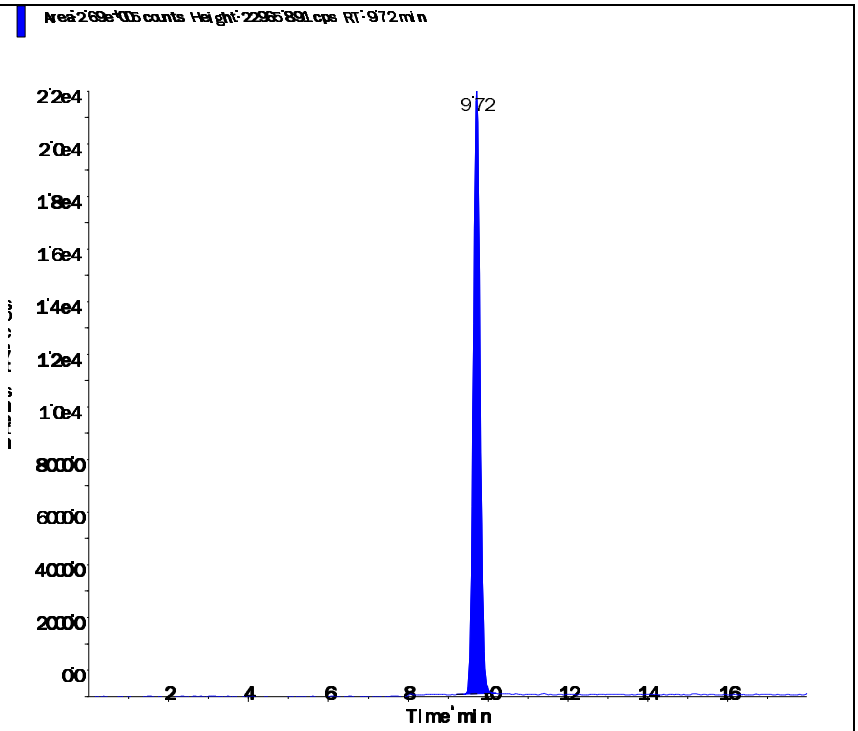

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.70 (9.84) min
Calculated conc:	1.87 ng/ml
Area Ratio:	0.211
Sample Type:	(Unknown)

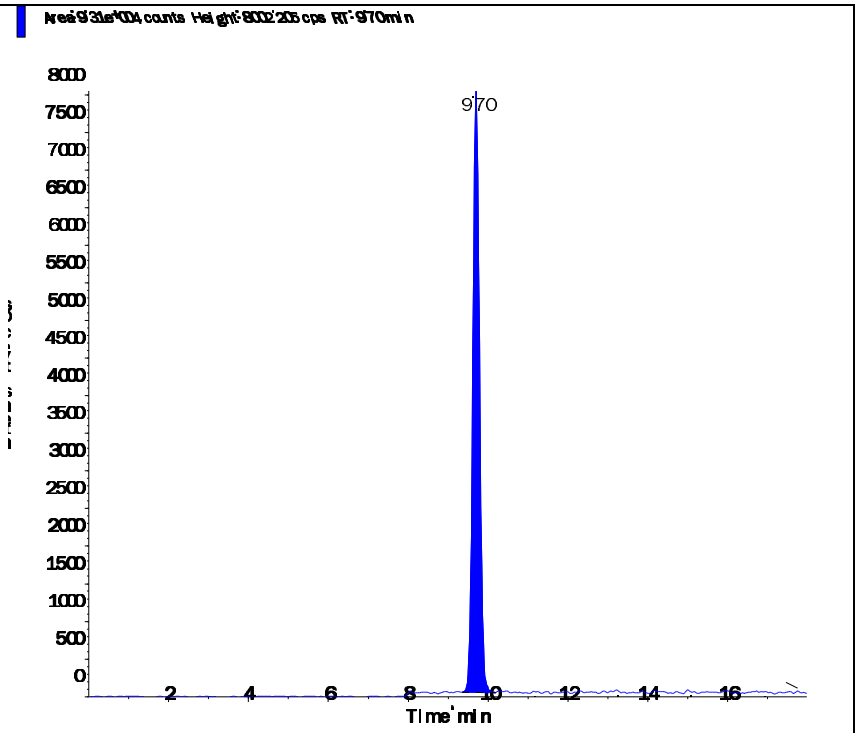

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Data File	LM35589.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 10:33:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061290-06	**Injection Vial**	19.00
Data File	LM35589.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 10:33:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	L16061290-06	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.680e+05	9.36	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.900e+04	9.36	N/A	0.634
Perchlorate conf	2.670e+04	9.35	N/A	0.628

O18LP (Internal Standard)

RT (Exp. RT): 9.36(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

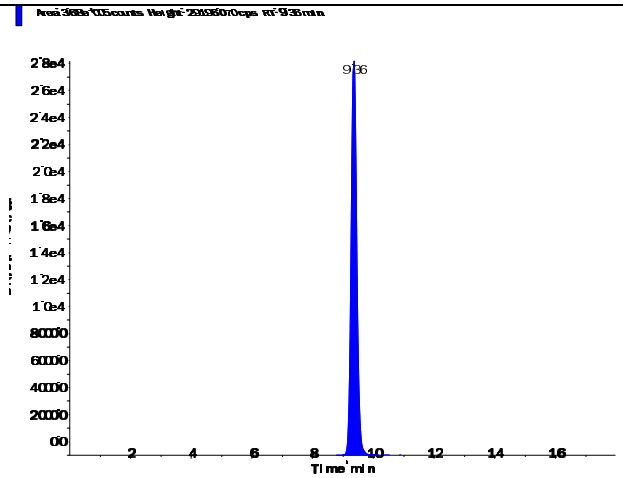

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.36 (9.84) min
Calculated conc:	0.634 ng/ml
Area Ratio:	0.215
Sample Type:	(Unknown)

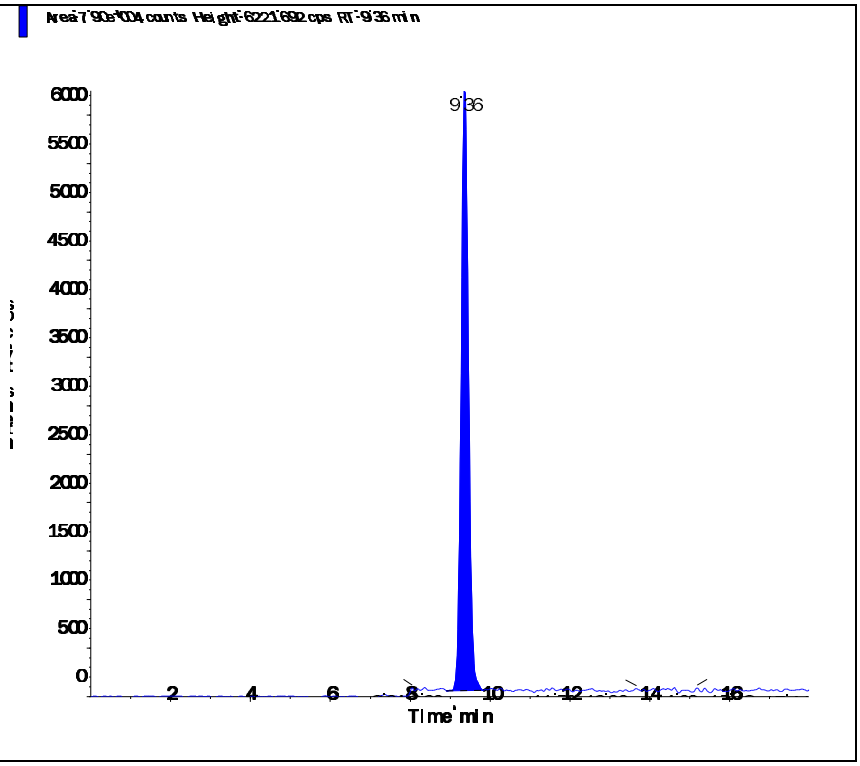

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	0.628 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

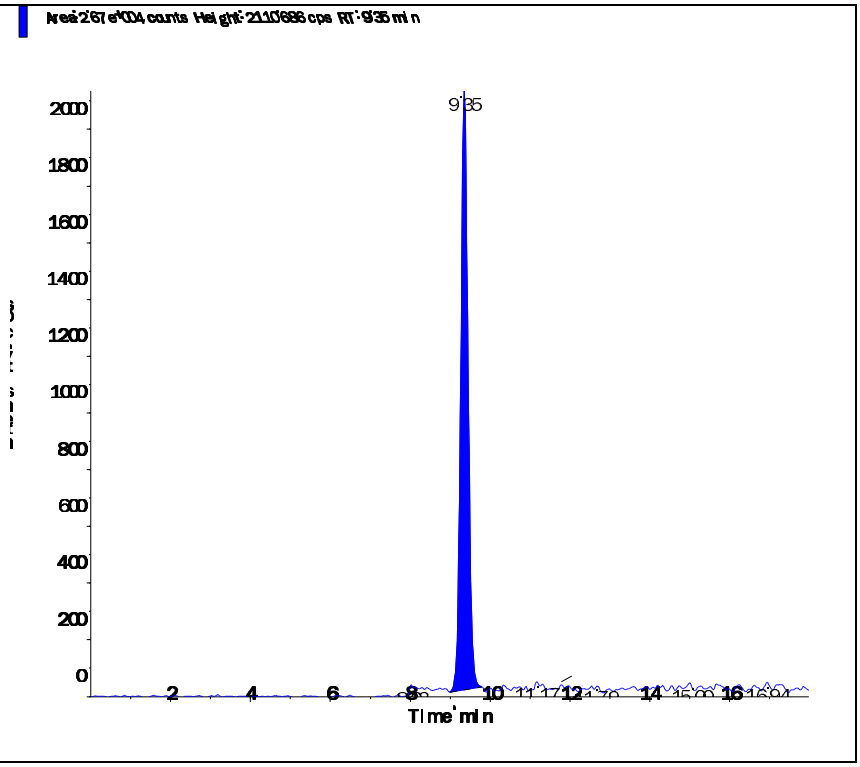

2.2.2.4 Standards Data

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Data File	LM34686.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

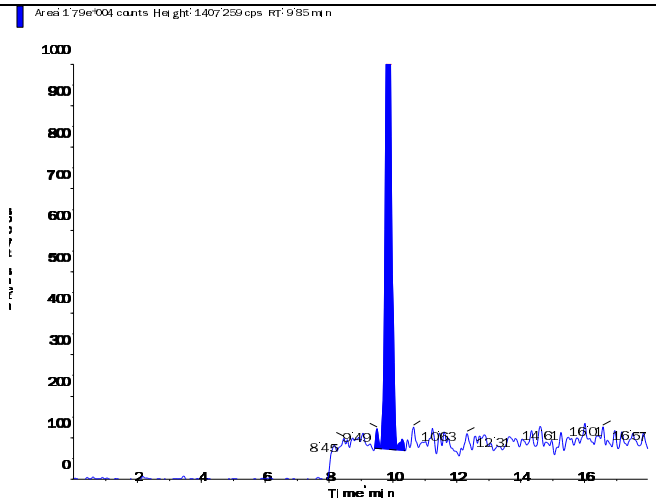

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

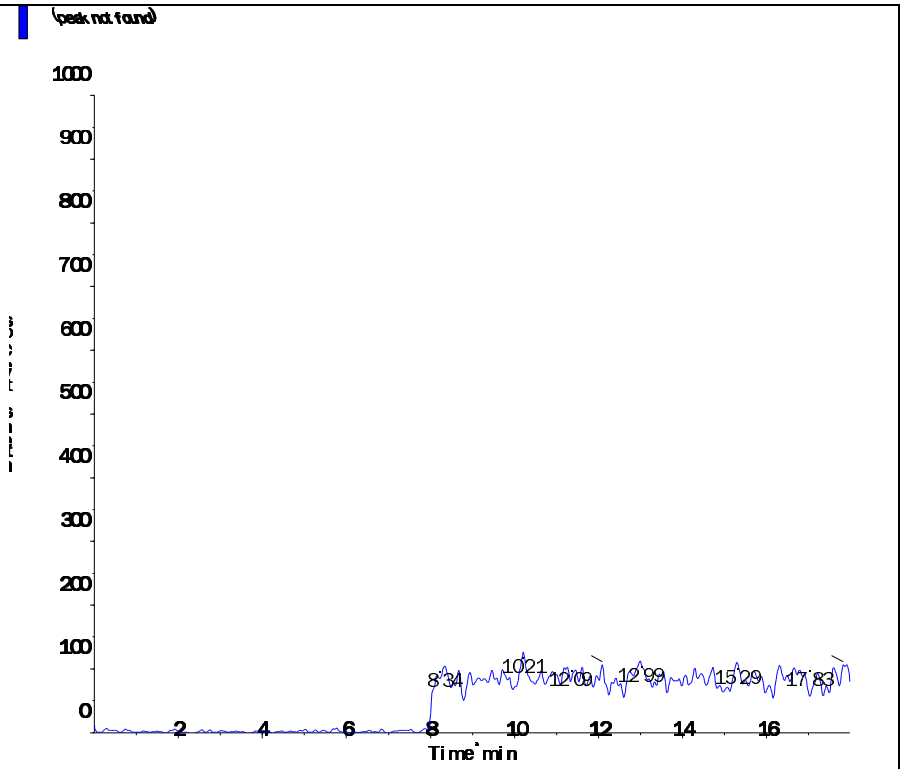

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

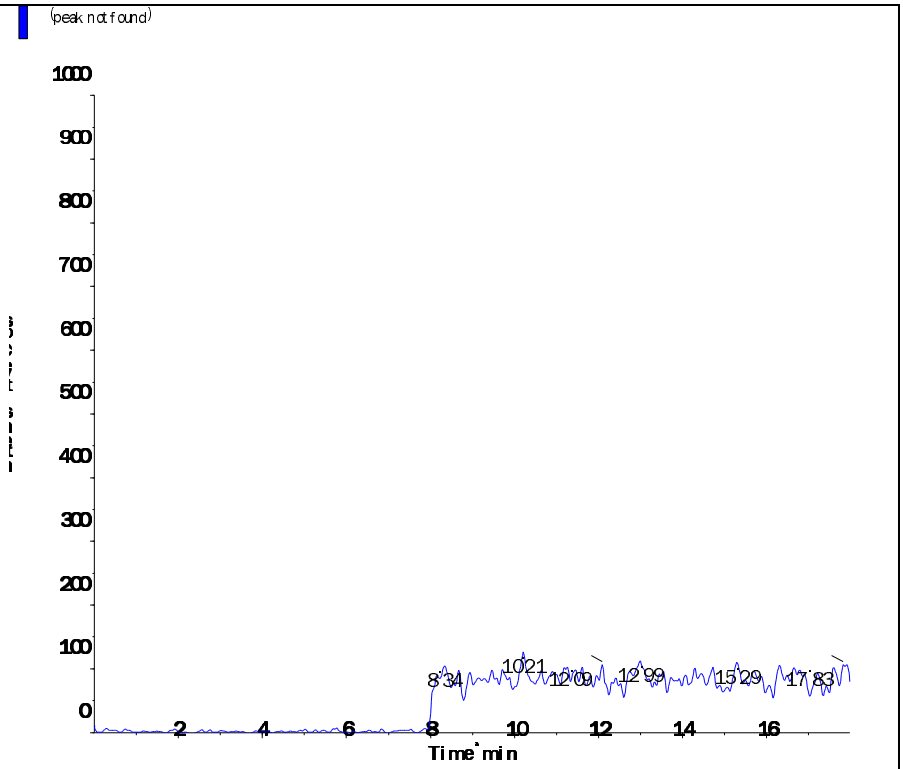

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Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

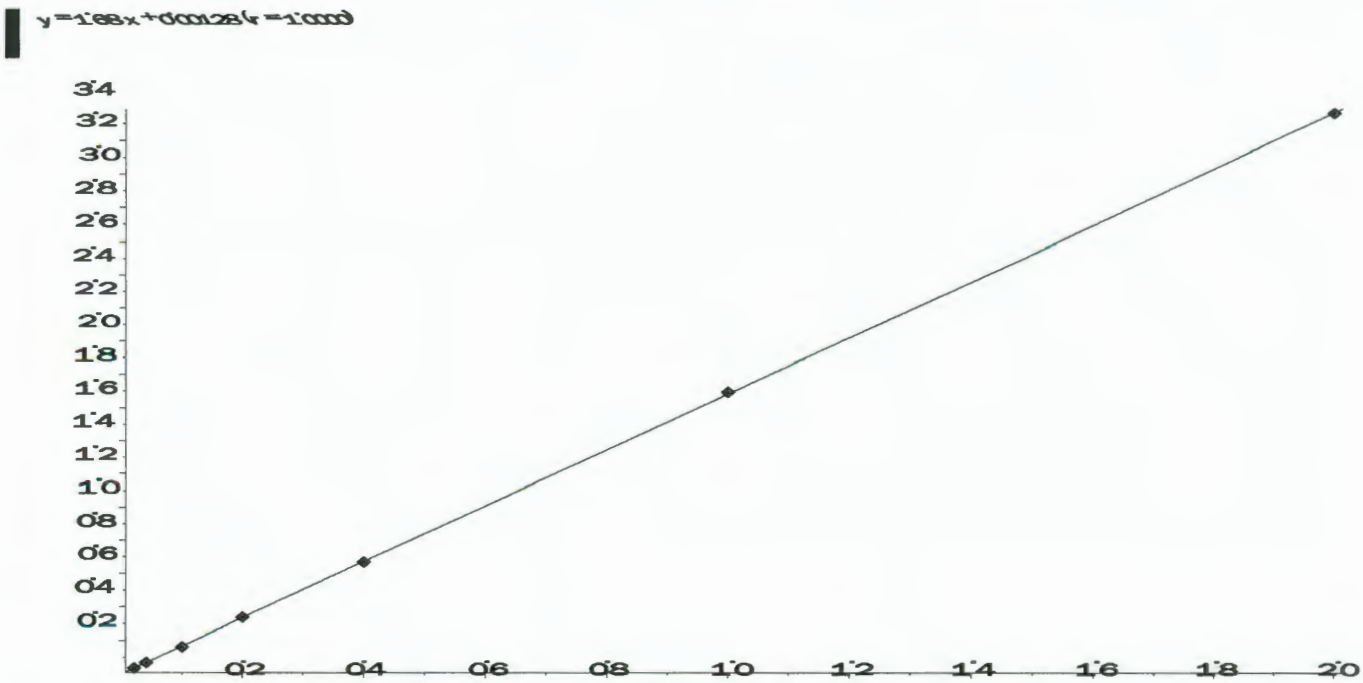

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Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

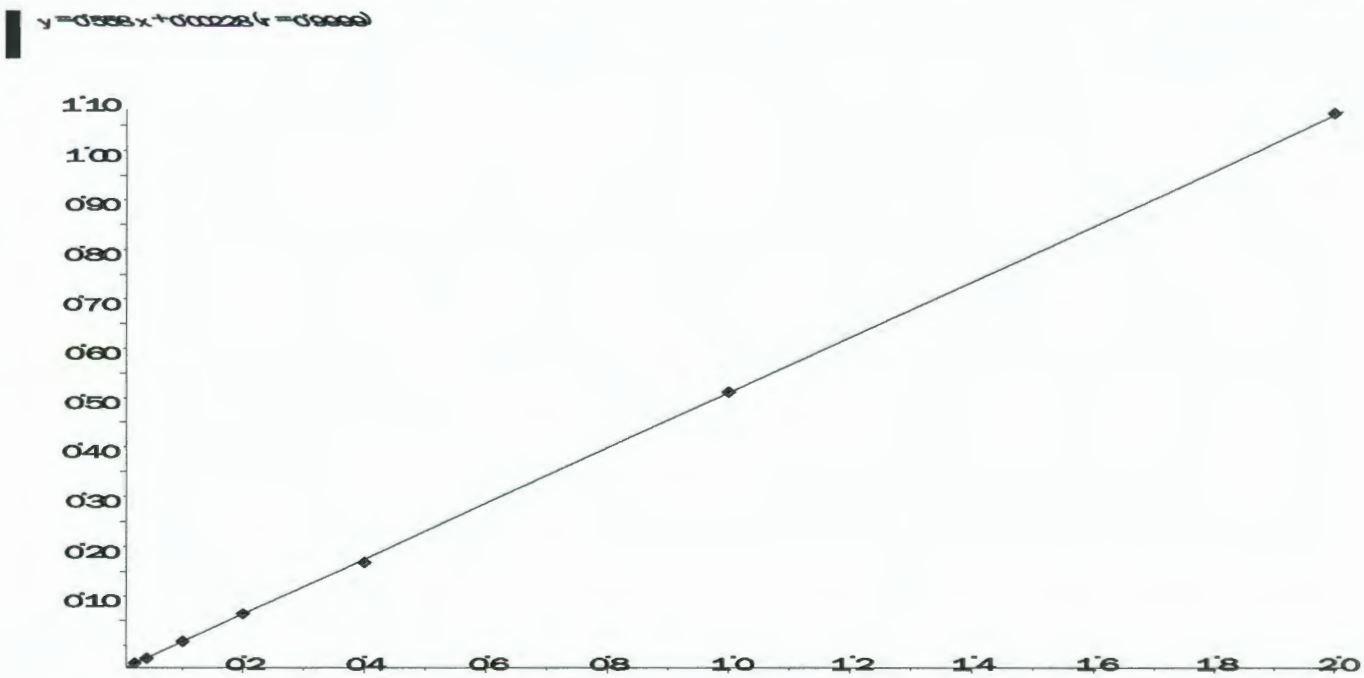

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Data File	LM34687.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

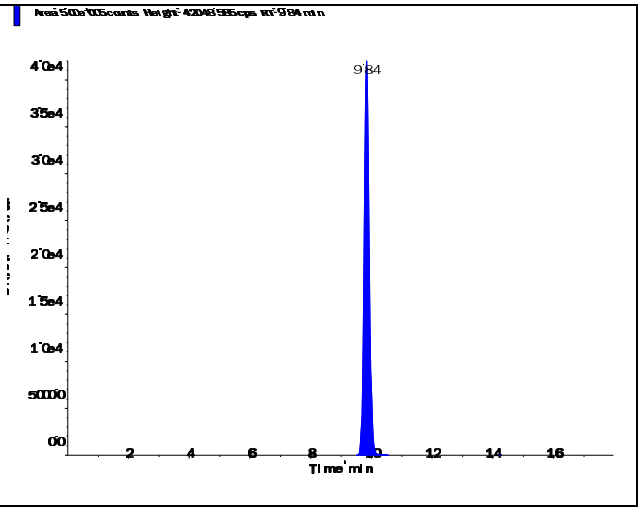

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 0.103 ng/ml Area Ratio: 0.036 Sample Type: (Standard)	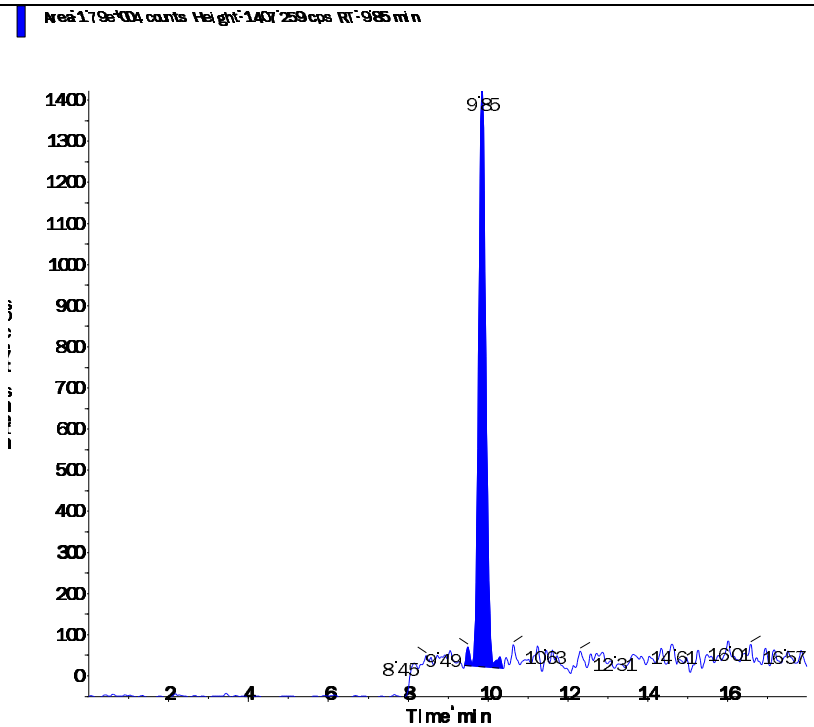
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 0.104 ng/ml Area Ratio: 0.014 Sample Type: (Standard)	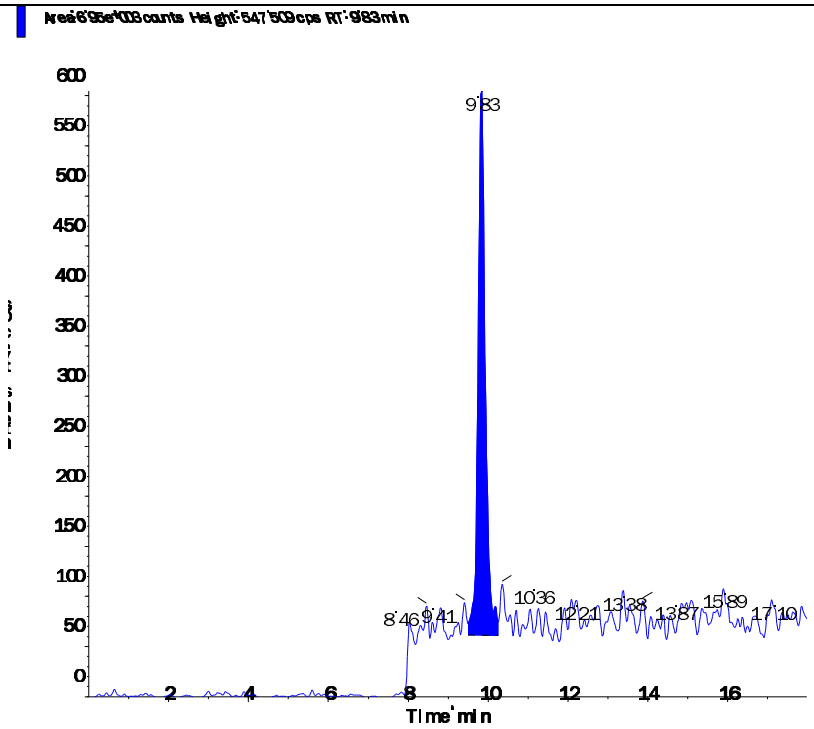

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Data File	LM34688.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

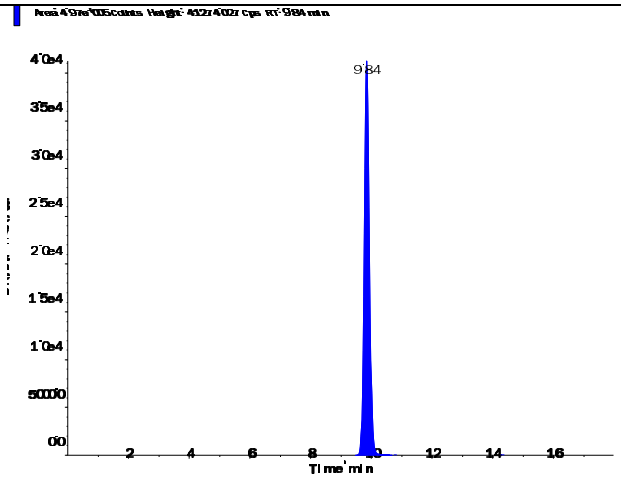

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

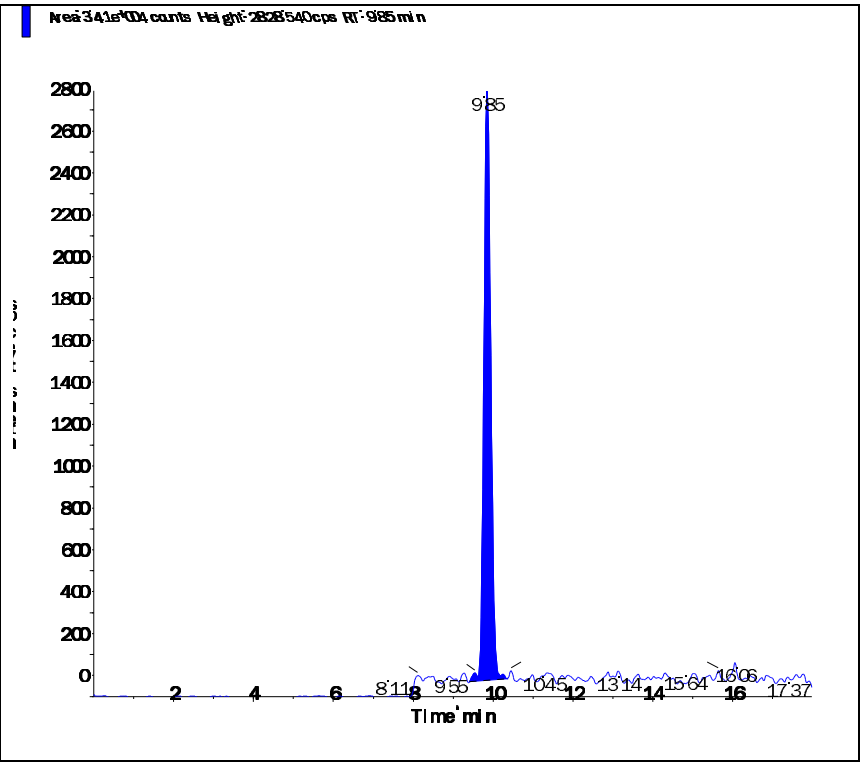

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

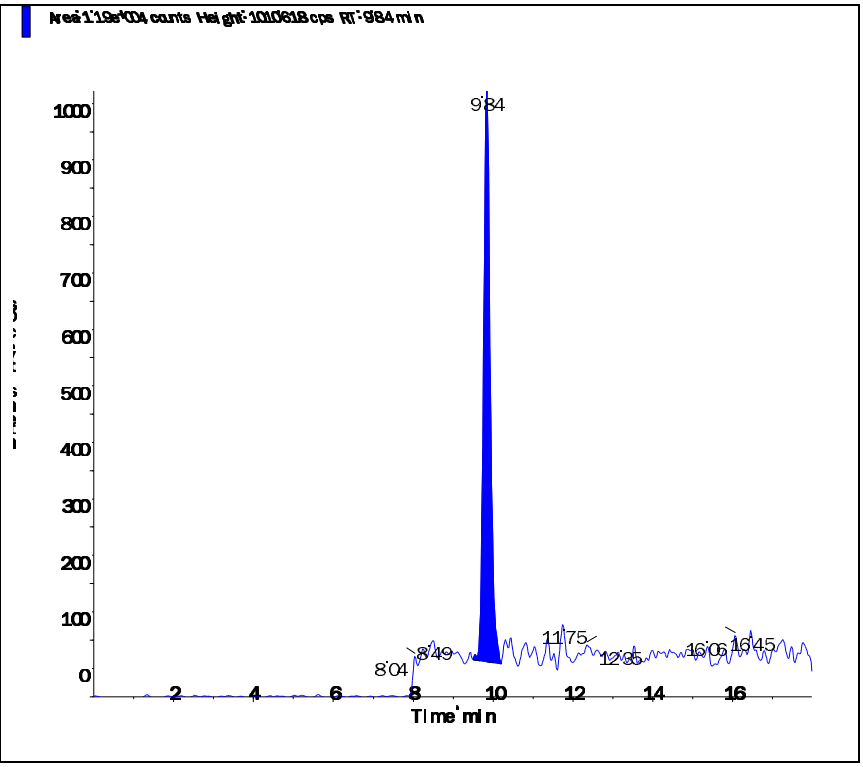

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Data File	LM34689.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

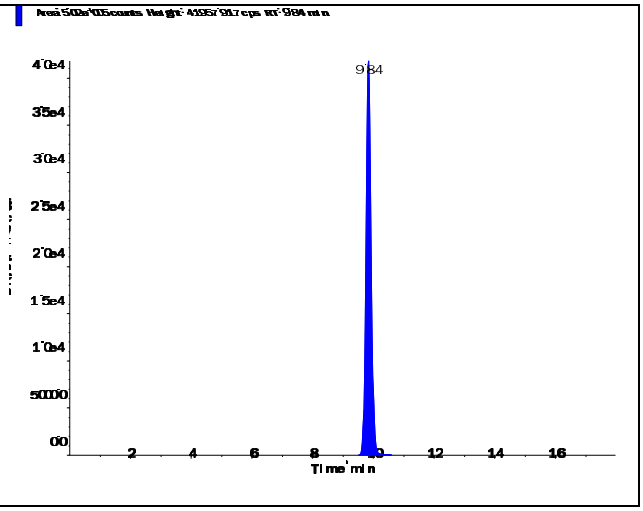

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.483 ng/ml
Area Ratio:	0.164
Sample Type:	(Standard)

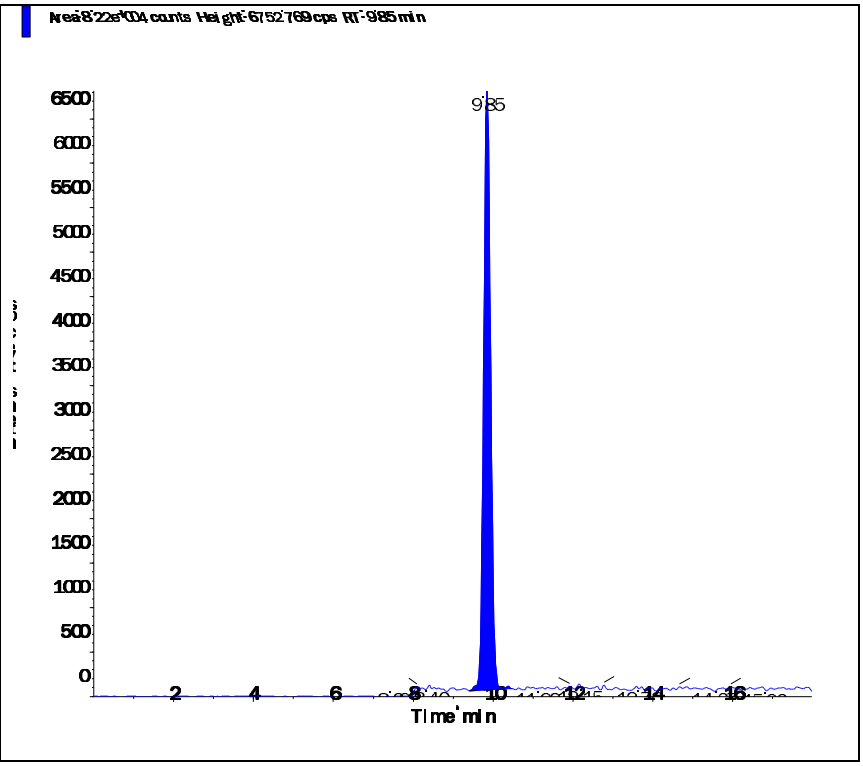

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.503 ng/ml
Area Ratio:	0.058
Sample Type:	(Standard)

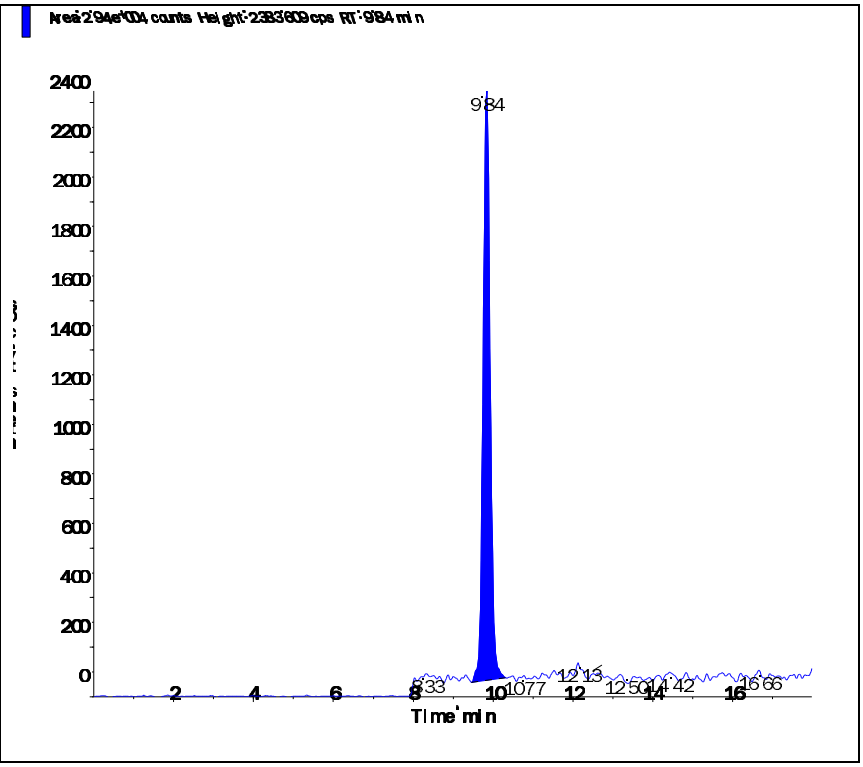

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Data File	LM34690.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

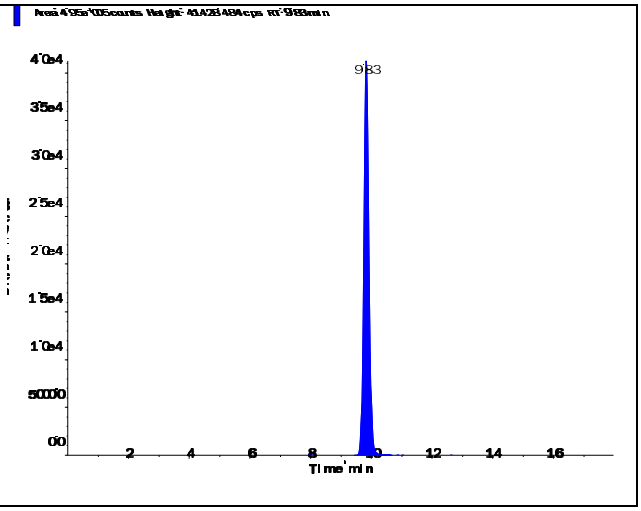

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

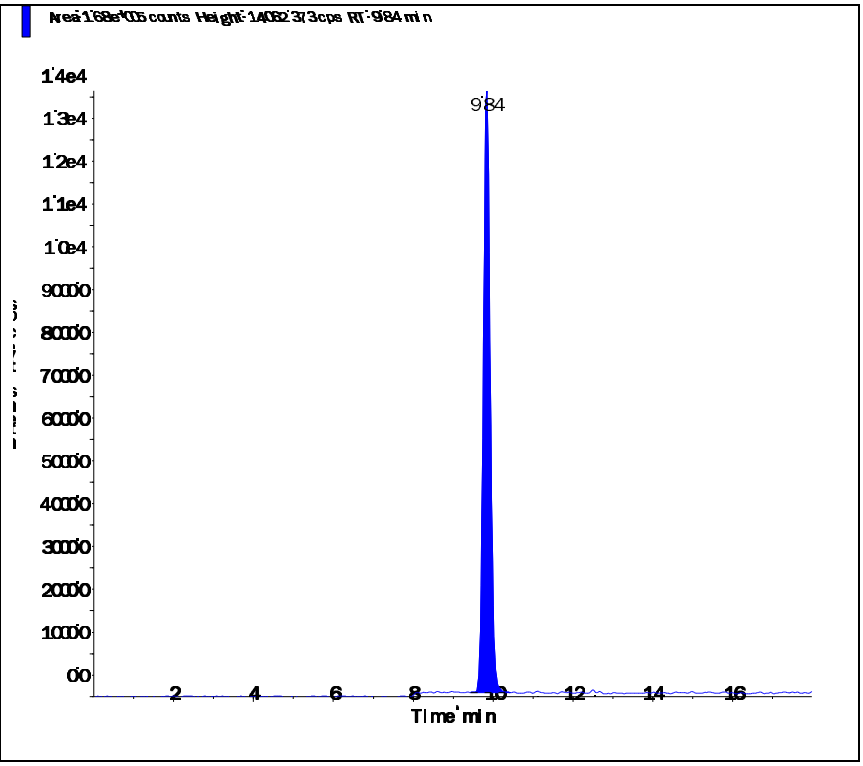

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

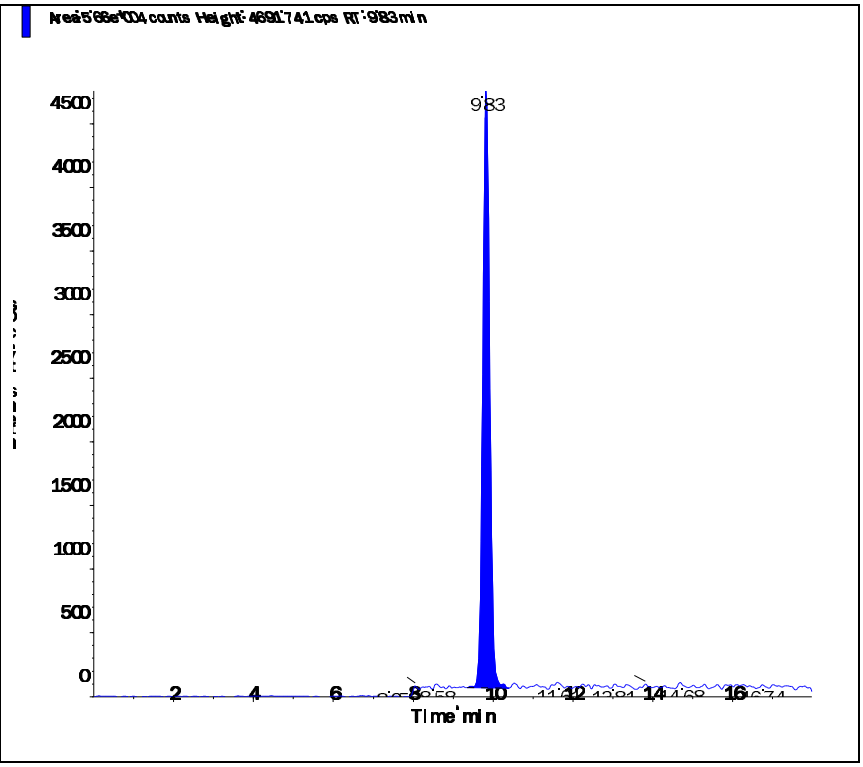

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Data File	LM34691.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

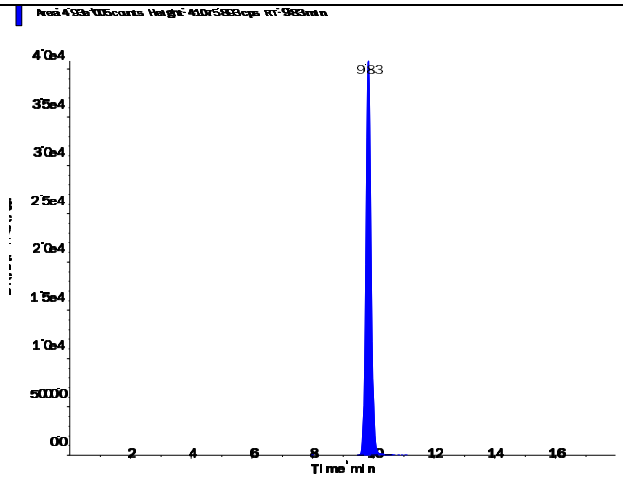

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 1.99 ng/ml Area Ratio: 0.669 Sample Type: (Standard)	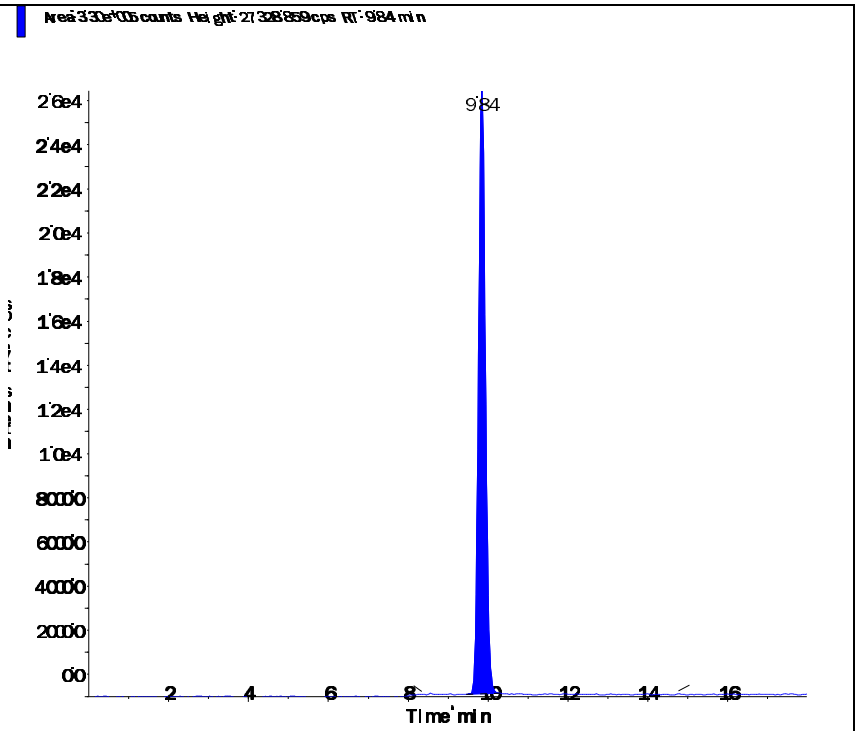
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 1.94 ng/ml Area Ratio: 0.219 Sample Type: (Standard)	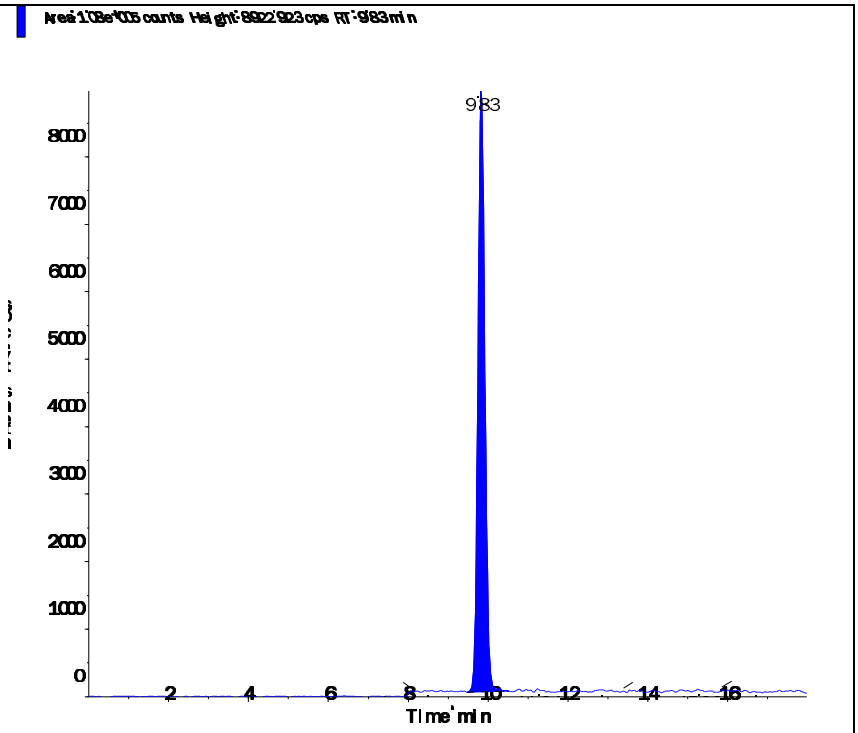

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Data File	LM34692.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

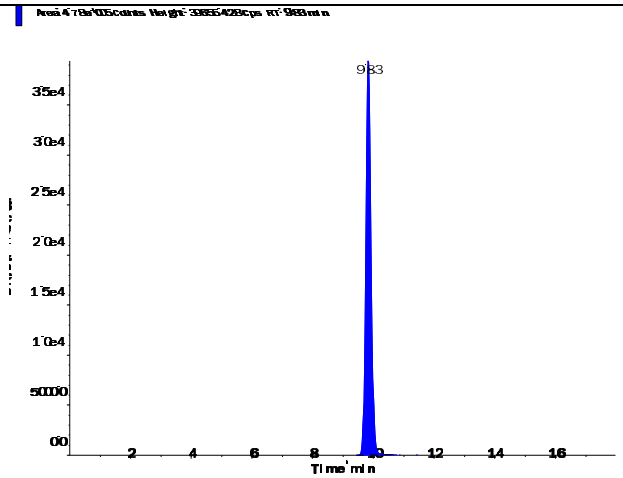

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

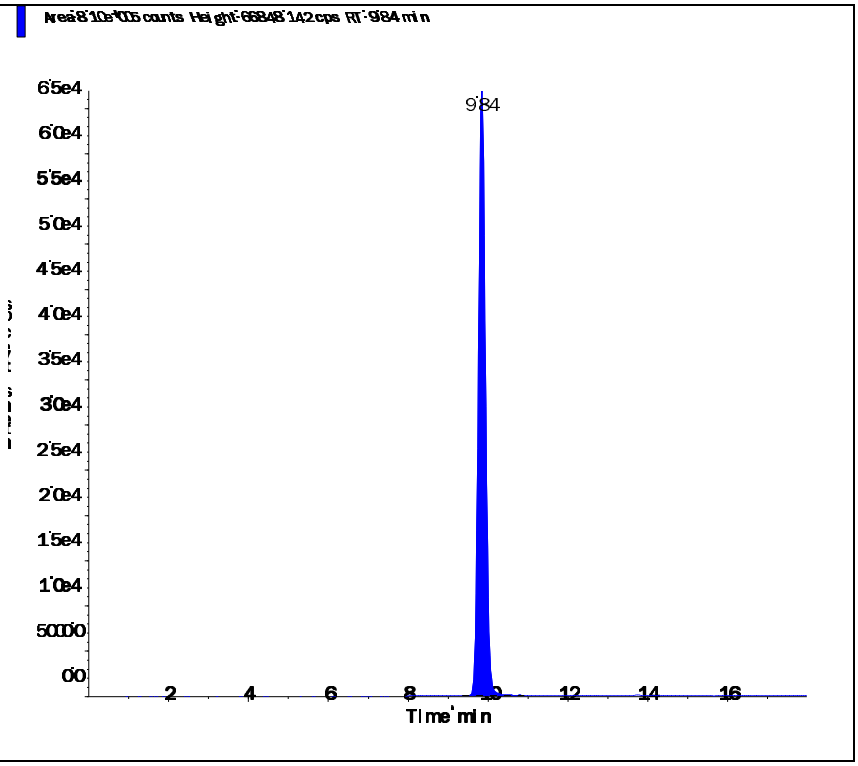

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

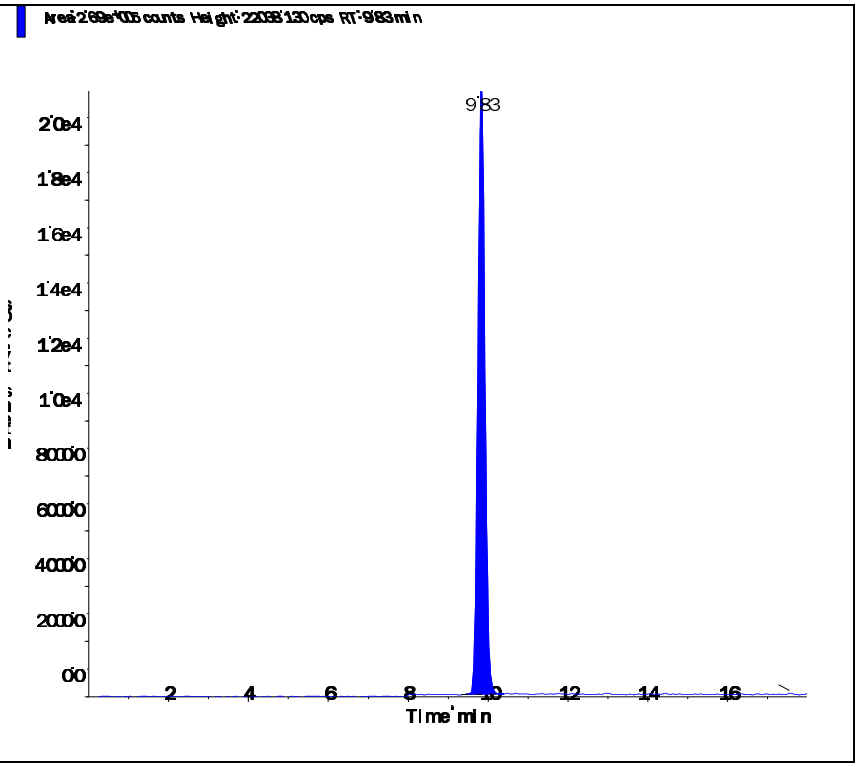

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Data File	LM34693.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

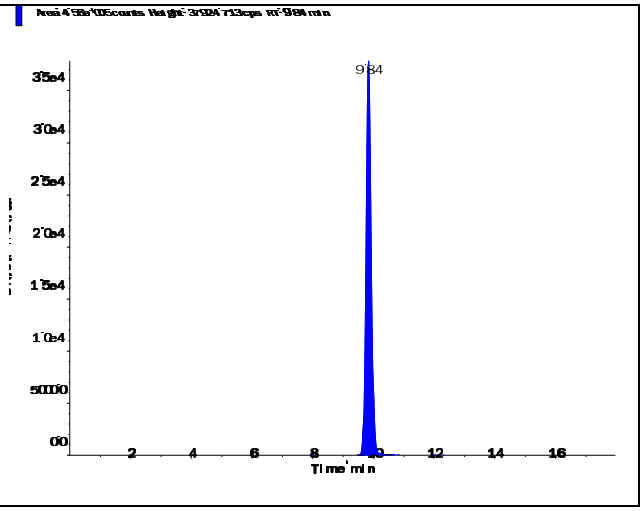

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	9.99 ng/ml
Area Ratio:	3.36
Sample Type:	(Standard)

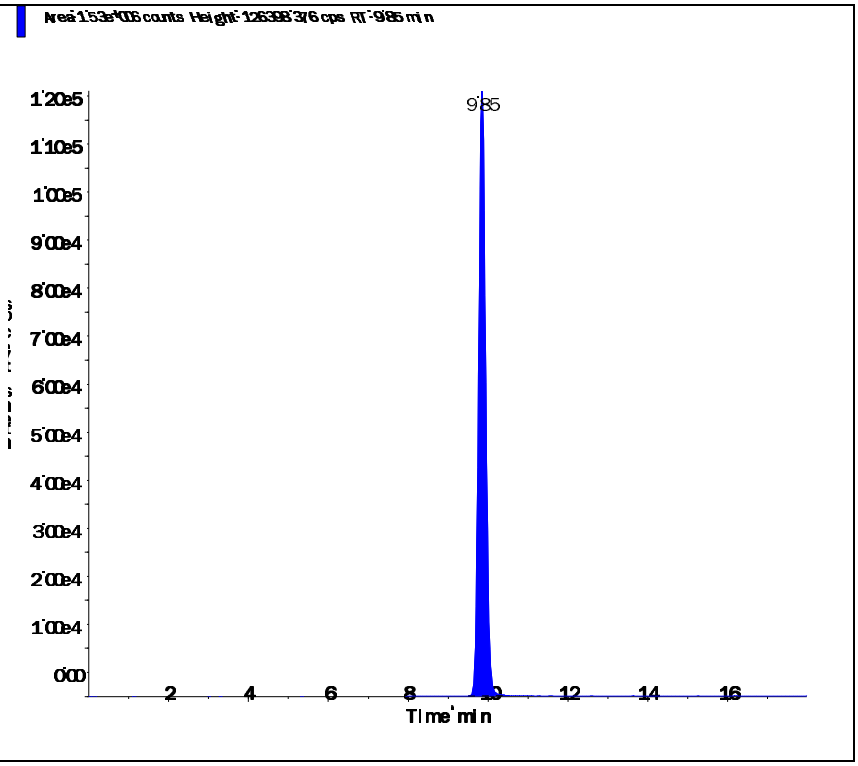

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	10.00 ng/ml
Area Ratio:	1.122
Sample Type:	(Standard)

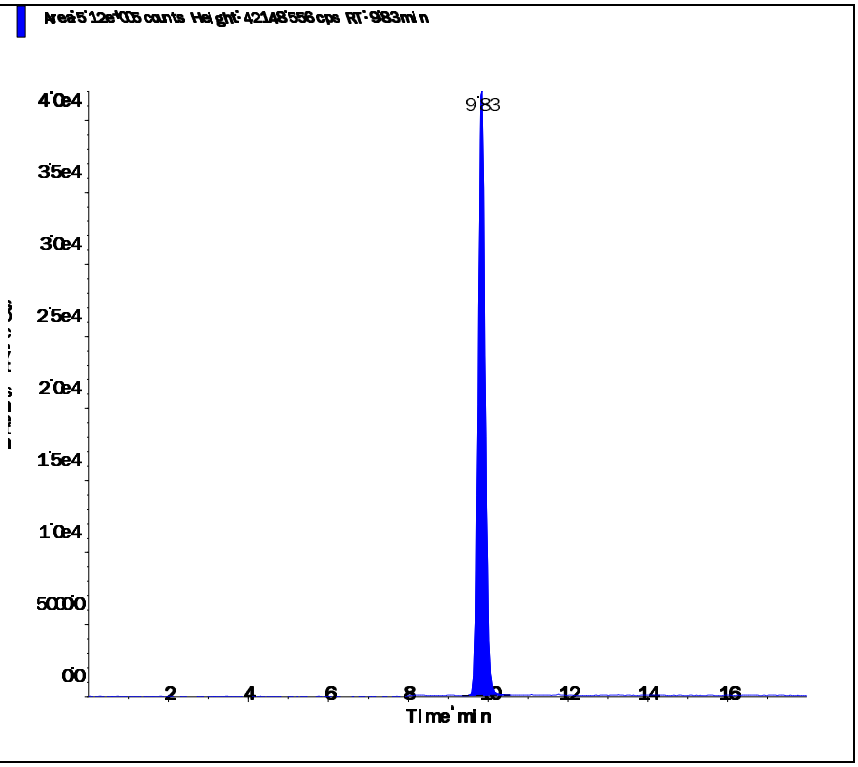

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Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

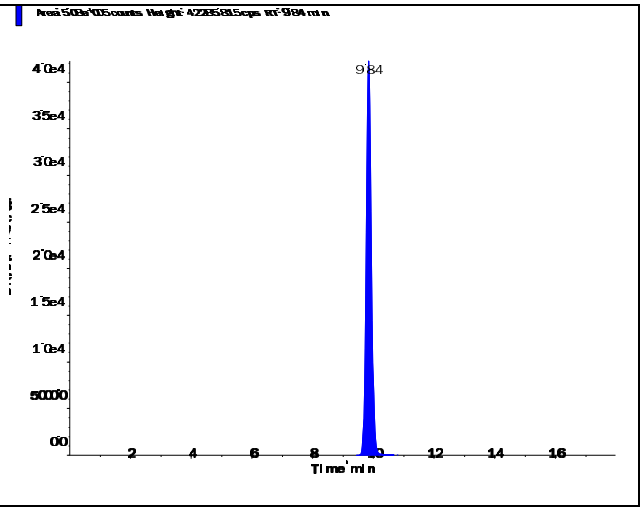

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.332
Sample Type:	(Quality Control)

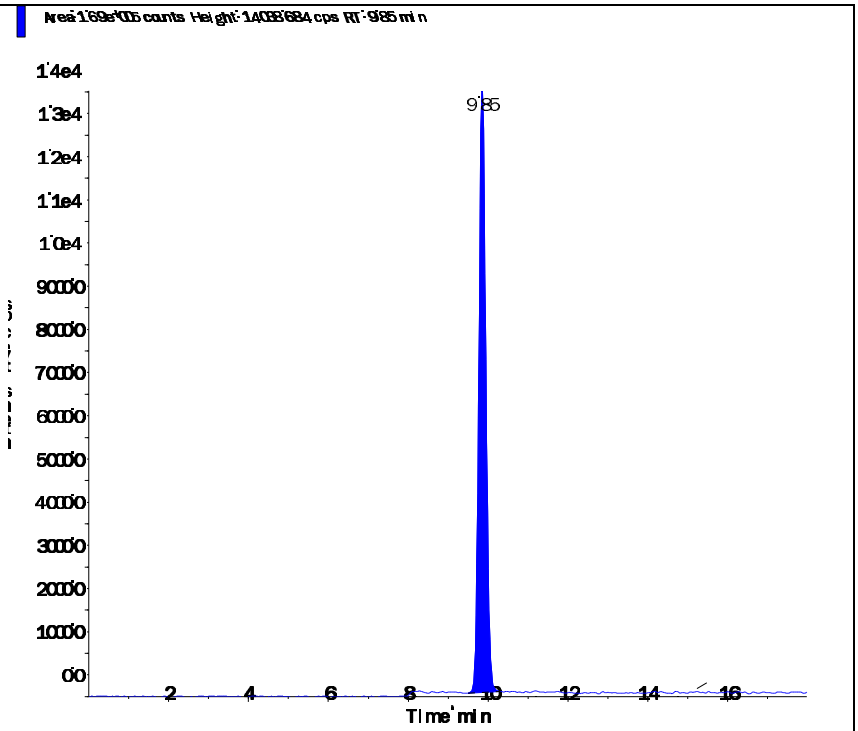

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

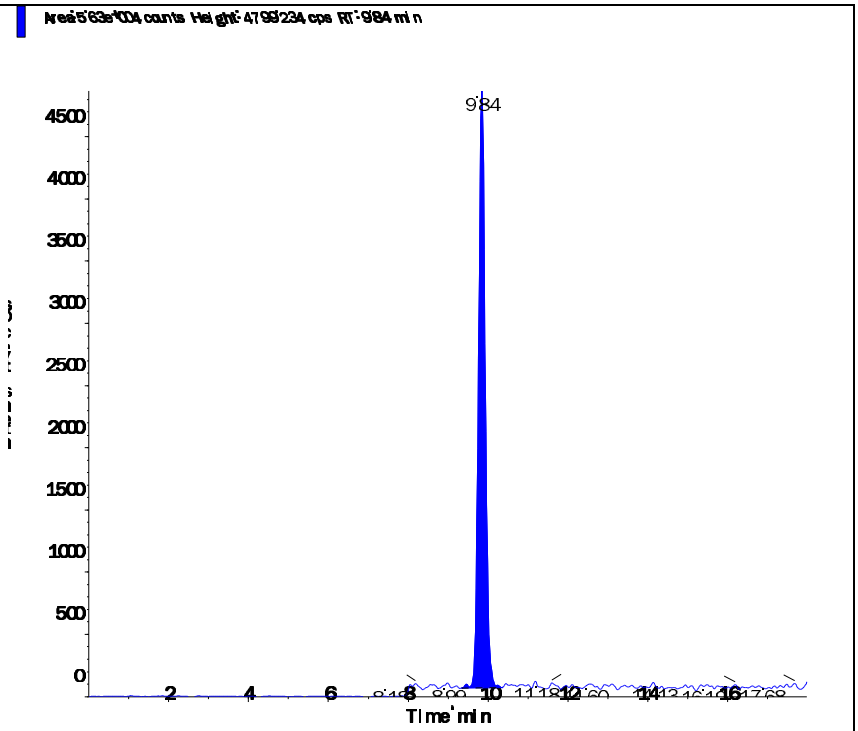

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Printed: 7/5/2016 12:26 PM

Data File	LM35569.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 4:14:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35569.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 4:14:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.720e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.630e+05	9.40	1.00	1.03
Perchlorate conf	5.690e+04	9.38	1.00	1.06

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

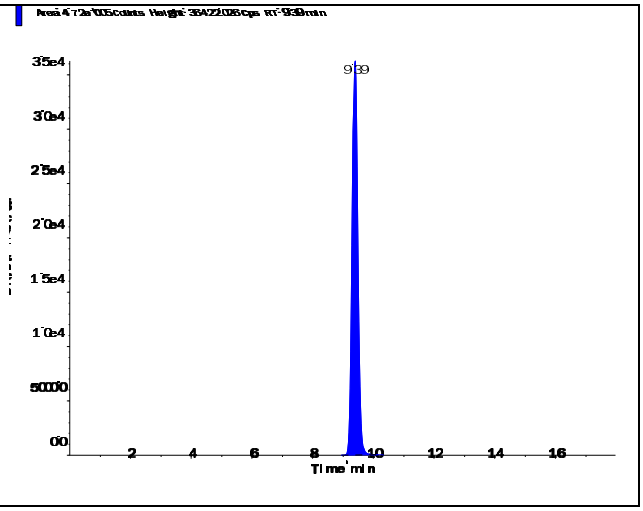

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.346
Sample Type:	(Quality Control)

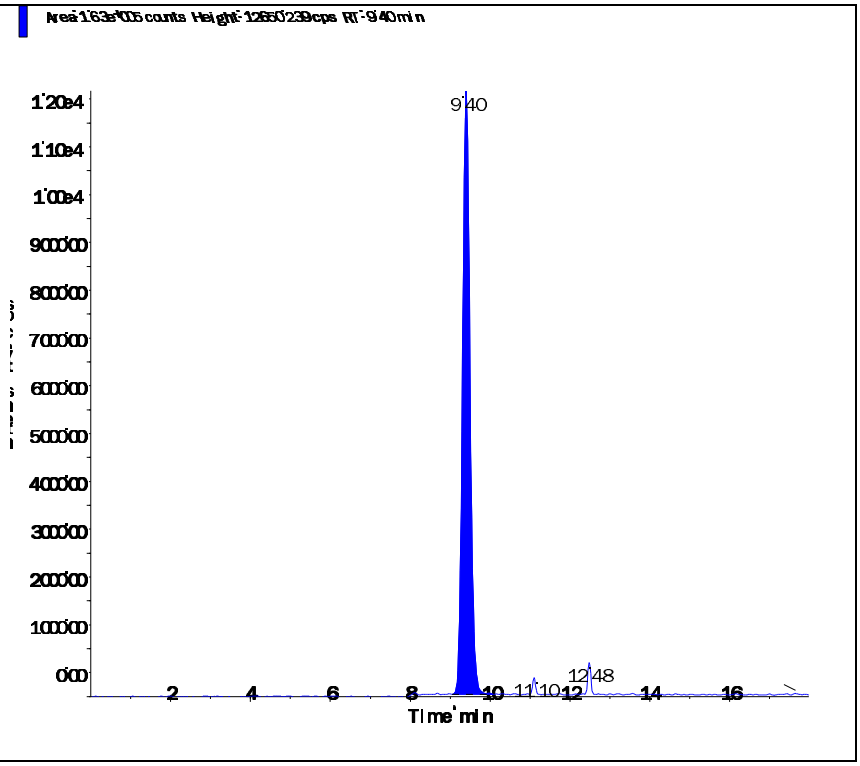

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.12
Sample Type:	(Quality Control)

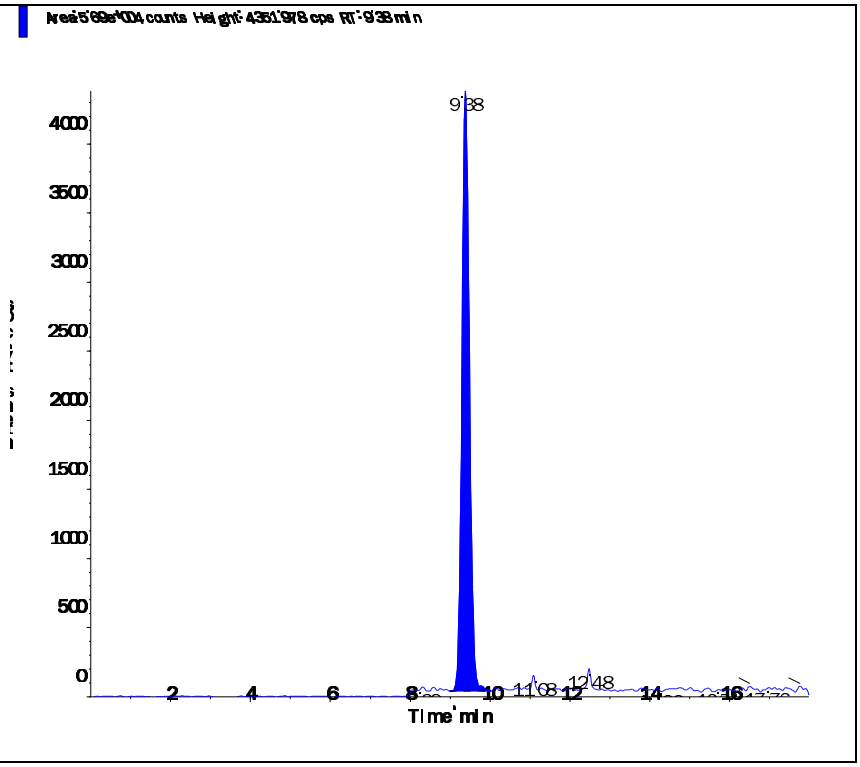

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Data File	LM35581.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 8:02:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35581.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 8:02:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.870e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.670e+05	9.40	1.00	1.02
Perchlorate conf	5.800e+04	9.39	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

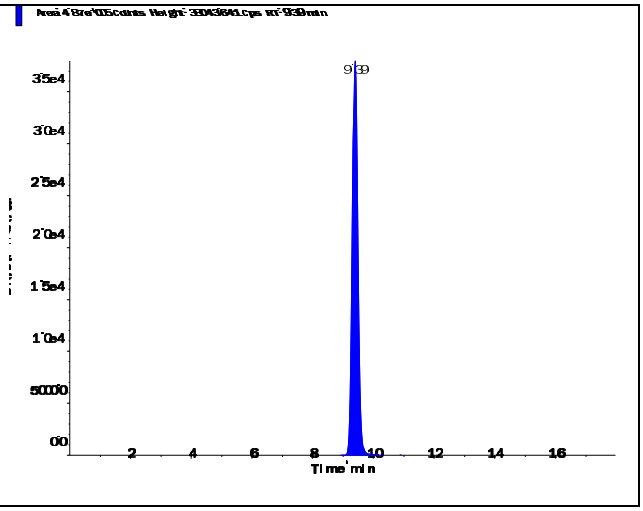

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.343
Sample Type:	(Quality Control)

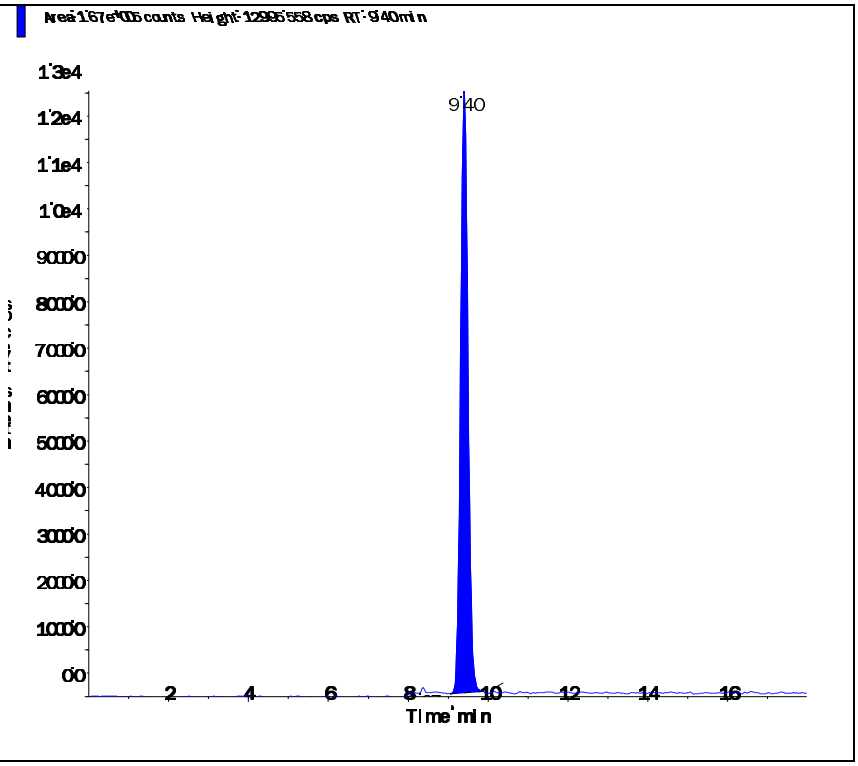

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

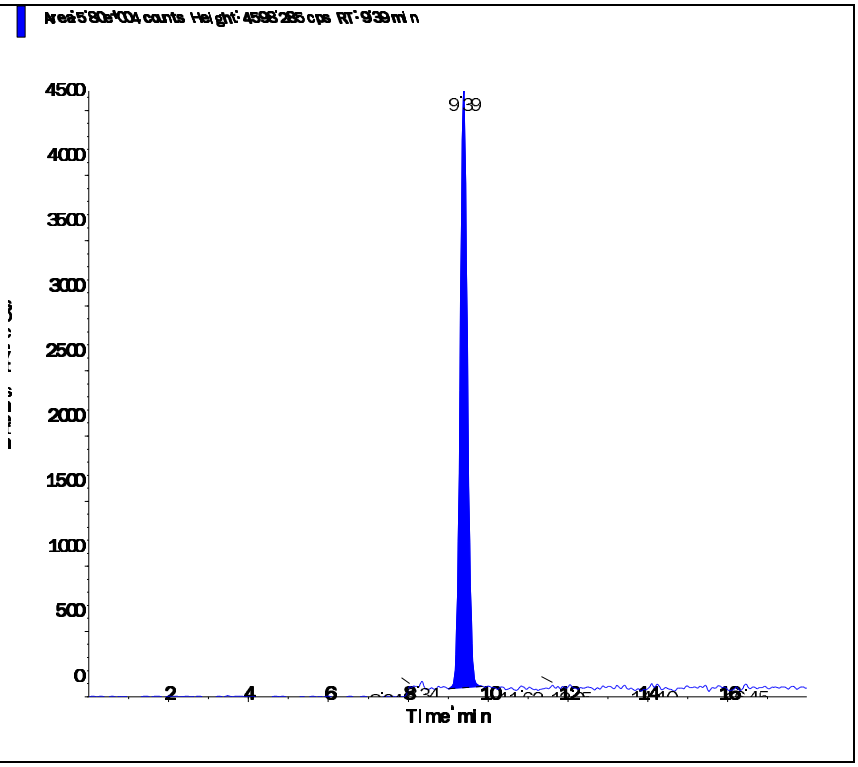

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Data File	LM35594.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 12:08:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35594.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 12:08:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.040e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.750e+05	9.40	1.00	1.03
Perchlorate conf	5.720e+04	9.39	1.00	0.997

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

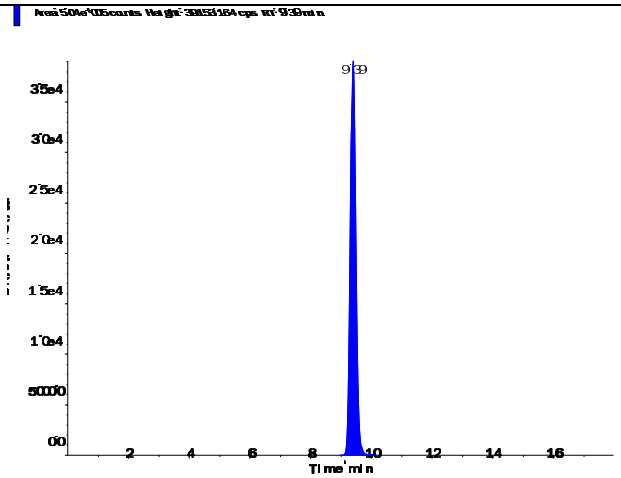

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.348
Sample Type:	(Quality Control)

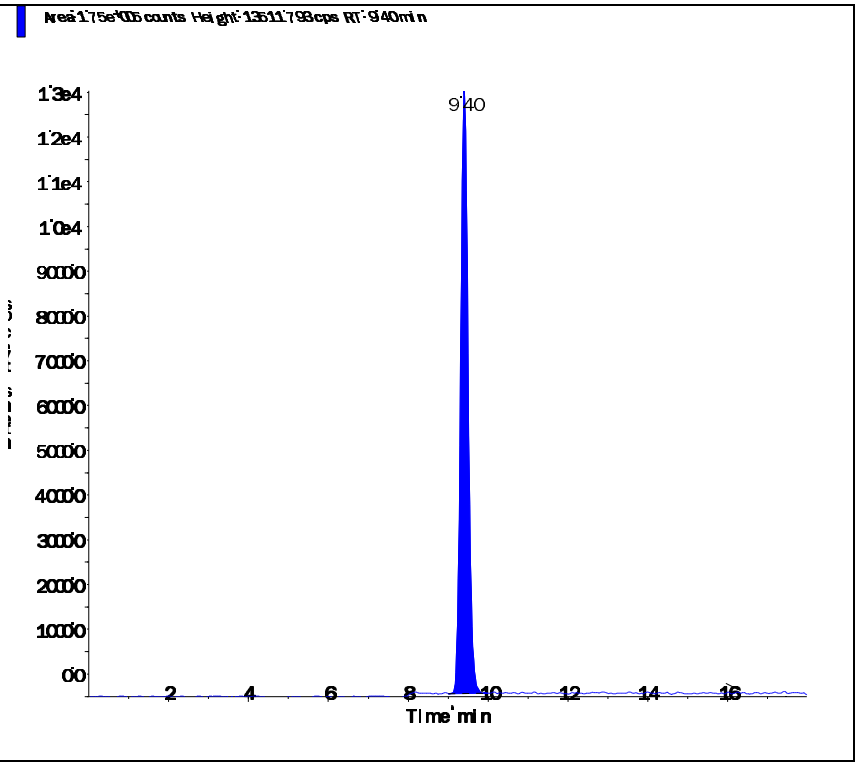

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	0.997 ng/ml
Area Ratio:	0.114
Sample Type:	(Quality Control)

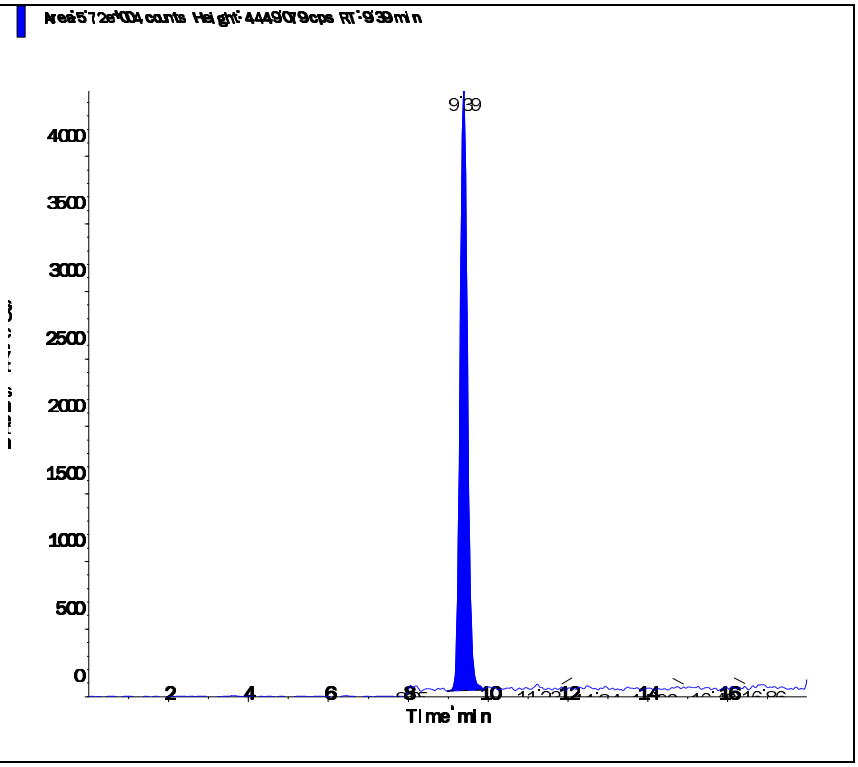

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Data File	LM35601.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 2:20:47 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35601.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 2:20:47 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.120e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.750e+05	9.40	1.00	1.01
Perchlorate conf	5.850e+04	9.38	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

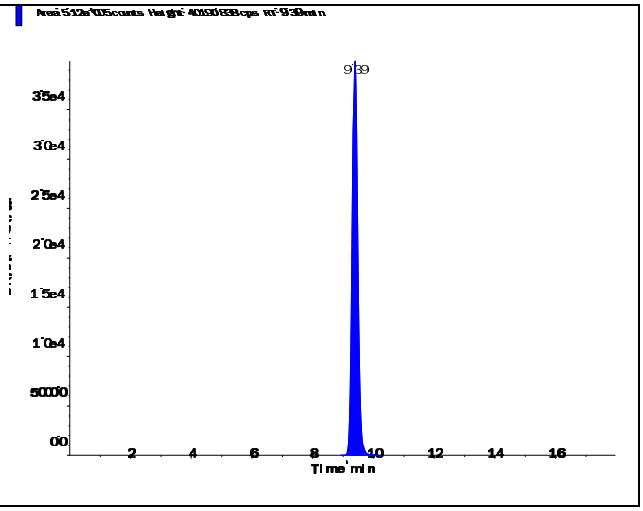

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.341
Sample Type:	(Quality Control)

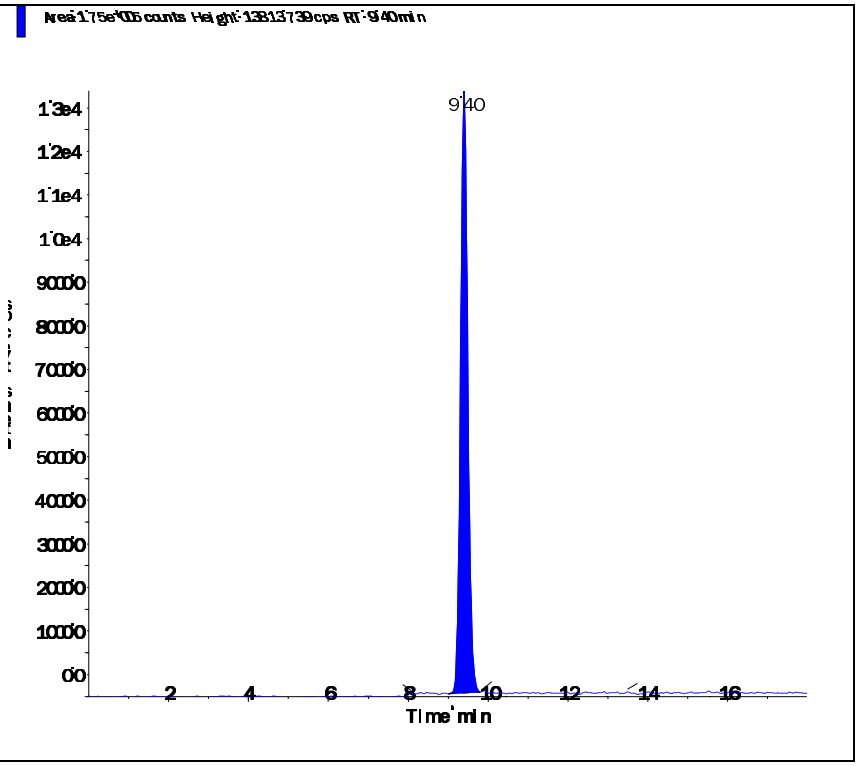

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Quality Control)

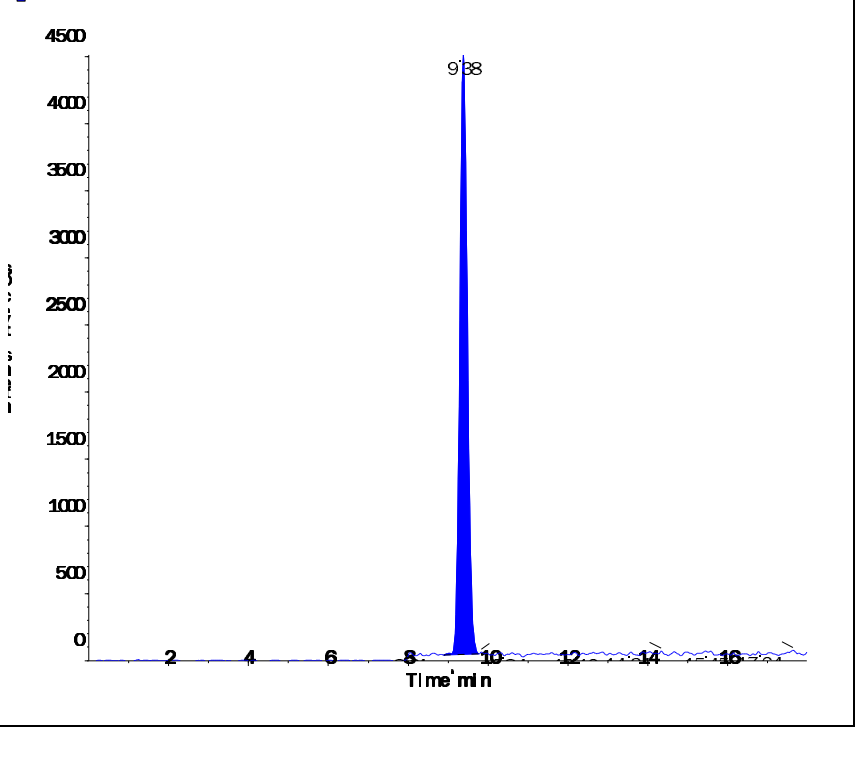

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Data File	LM35605.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	7/5/2016 3:31:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575212-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35605.wiff	**Injection Volume**	10.00
Acquisition Date	7/5/2016 3:31:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG575212-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.590e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.520e+05	9.40	1.00	0.981
Perchlorate conf	5.410e+04	9.39	1.00	1.04

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

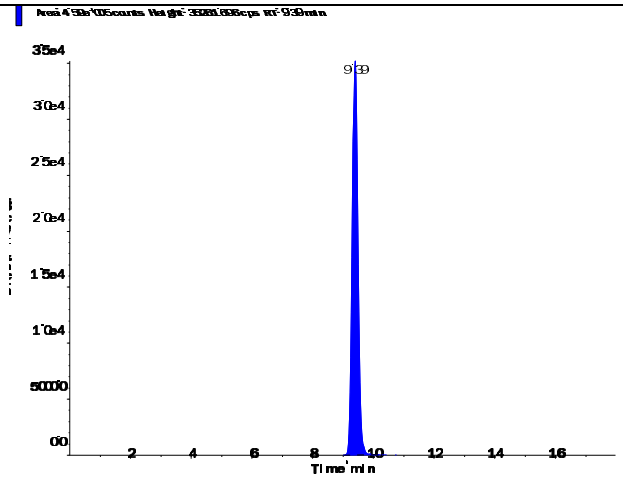

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	0.981 ng/ml
Area Ratio:	0.331
Sample Type:	(Quality Control)

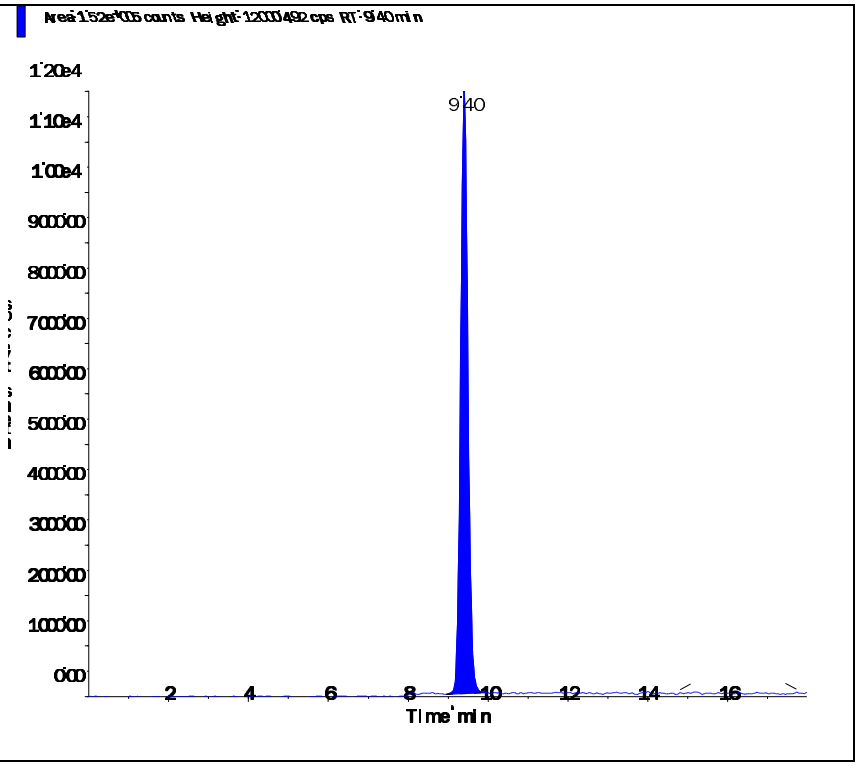

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.118
Sample Type:	(Quality Control)

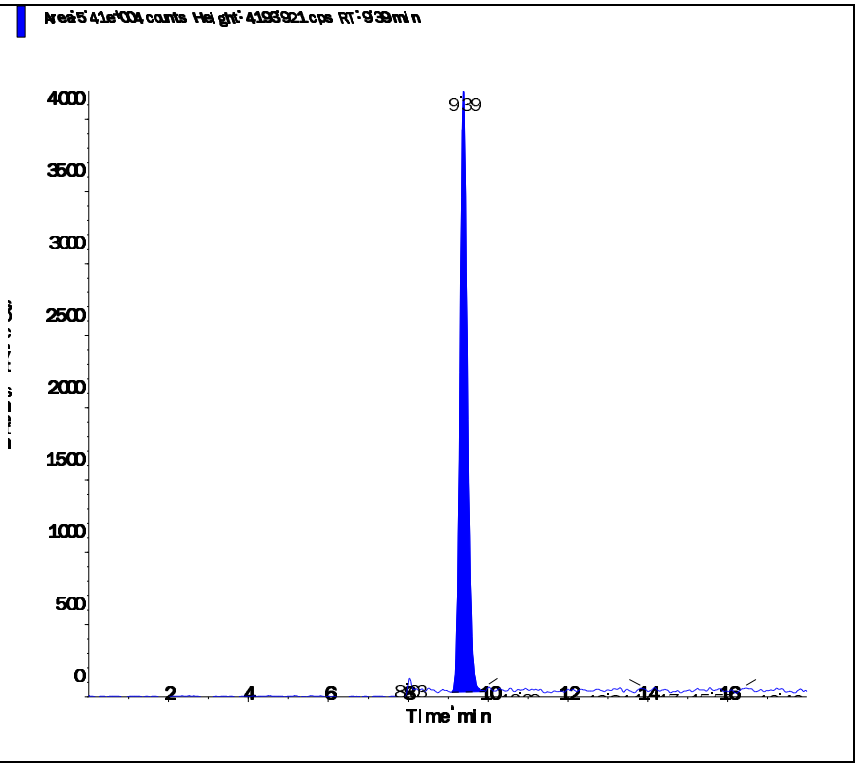

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Data File	LM35617.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	7/5/2016 7:18:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575212-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35617.wiff	**Injection Volume**	10.00
Acquisition Date	7/5/2016 7:18:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG575212-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.650e+05	9.49	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.570e+05	9.50	1.00	1.00
Perchlorate conf	5.460e+04	9.49	1.00	1.03

O18LP (Internal Standard)

RT (Exp. RT): 9.49(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

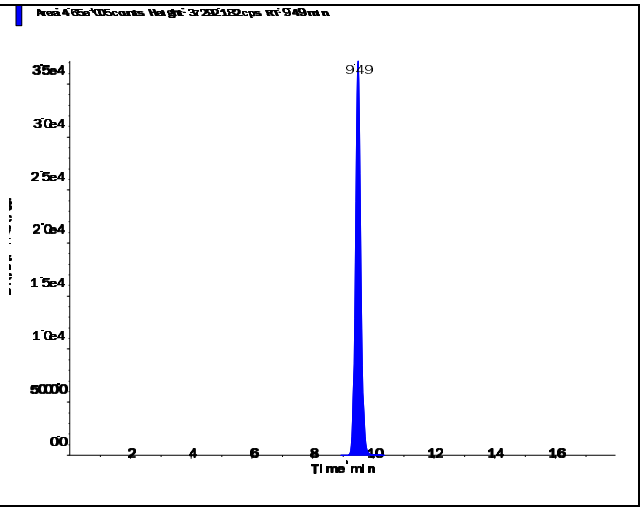

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.50 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.338
Sample Type:	(Quality Control)

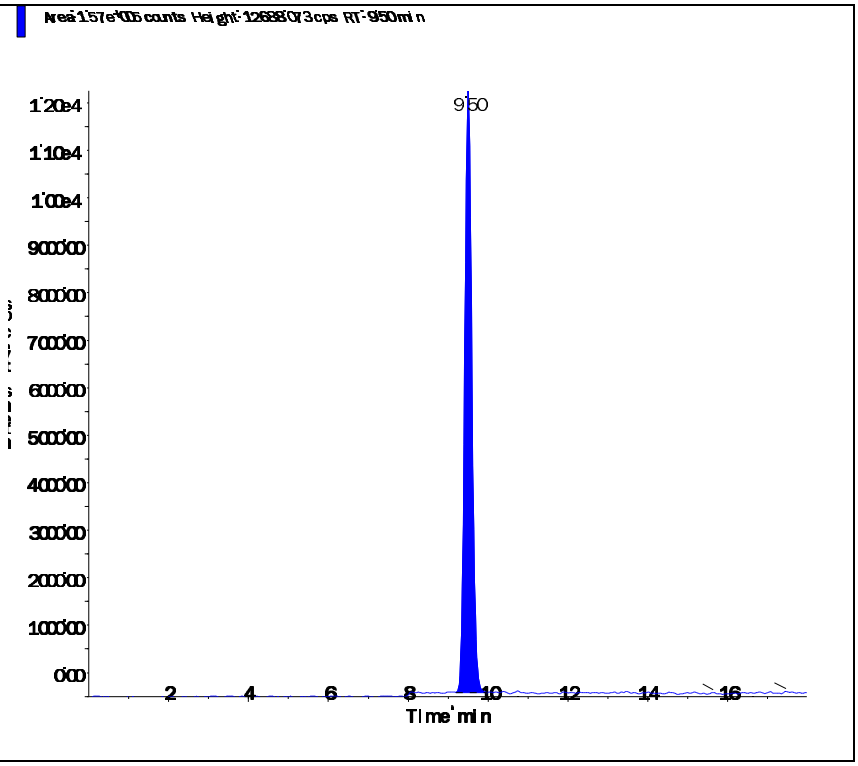

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.49 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.117
Sample Type:	(Quality Control)

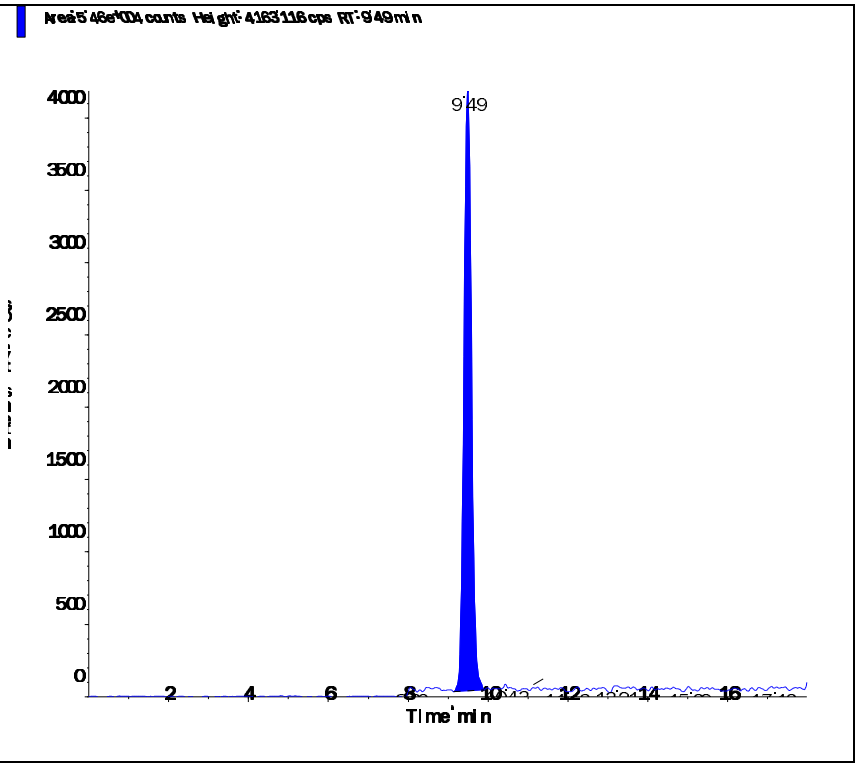

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Data File	LM35623.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	7/5/2016 9:12:27 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575212-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35623.wiff	**Injection Volume**	10.00
Acquisition Date	7/5/2016 9:12:27 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG575212-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.900e+05	9.49	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.650e+05	9.50	1.00	0.996
Perchlorate conf	5.570e+04	9.49	1.00	0.999

O18LP (Internal Standard)

RT (Exp. RT): 9.49(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

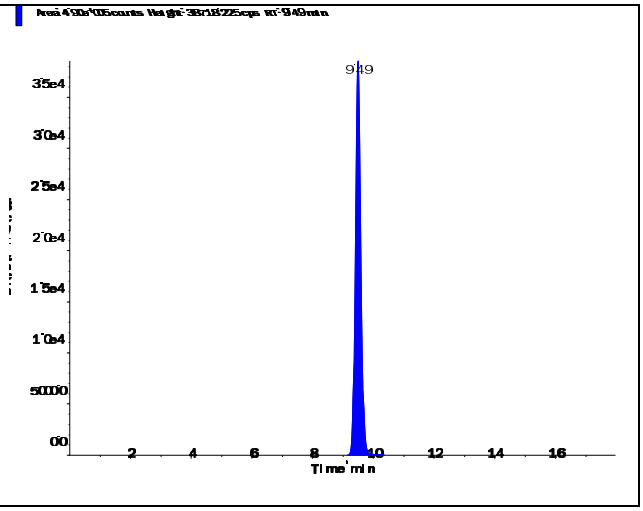

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.50 (9.84) min
Calculated conc:	0.996 ng/ml
Area Ratio:	0.336
Sample Type:	(Quality Control)

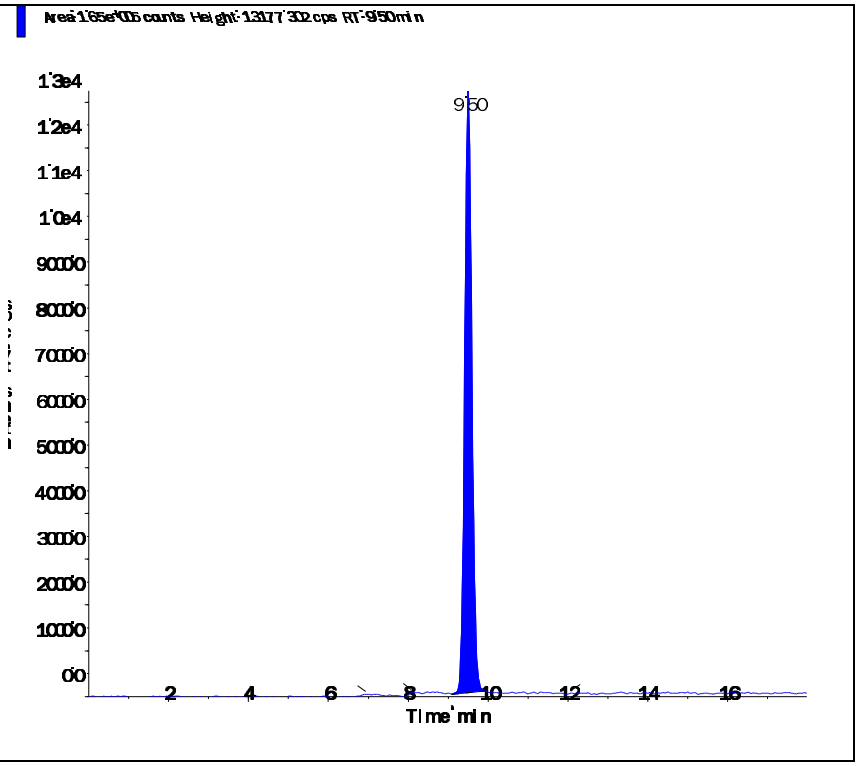

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.49 (9.84) min
Calculated conc:	0.999 ng/ml
Area Ratio:	0.114
Sample Type:	(Quality Control)

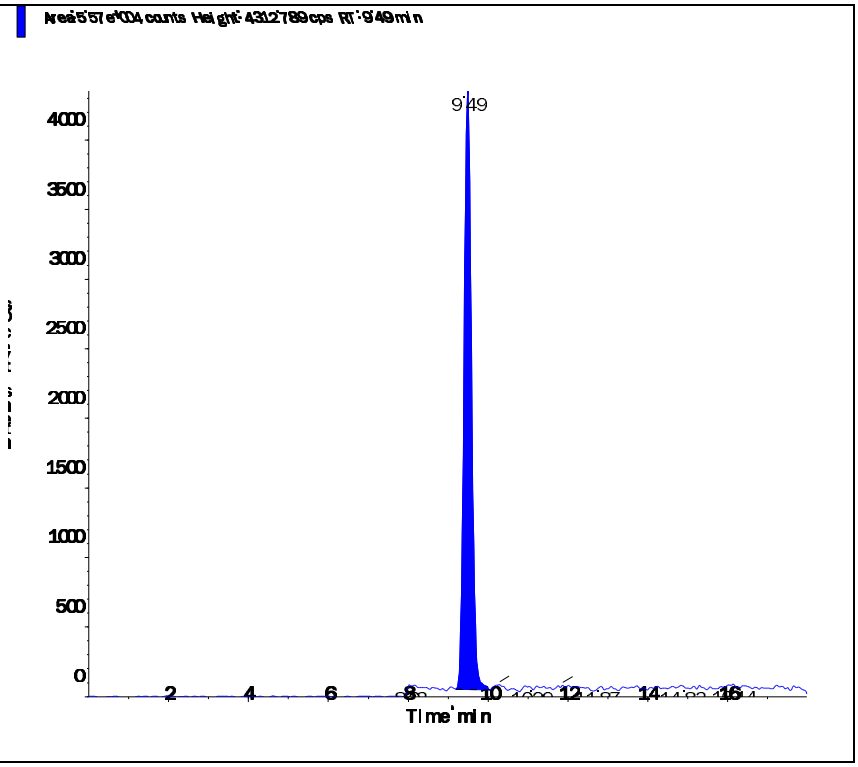

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Data File	LM35570.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 4:33:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-05 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35570.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 4:33:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.660e+05	9.44	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+04	9.44	N/A	0.207
Perchlorate conf	1.170e+04	9.44	N/A	0.204

O18LP (Internal Standard)

RT (Exp. RT): 9.44(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

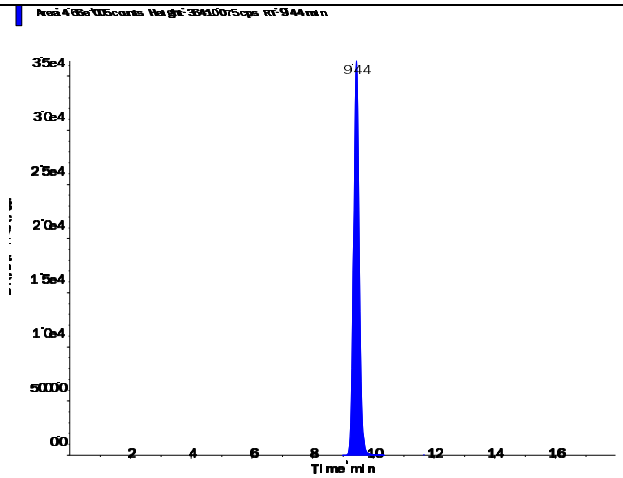

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.44 (9.84) min Calculated conc: 0.207 ng/ml Area Ratio: 0.071 Sample Type: (Unknown)	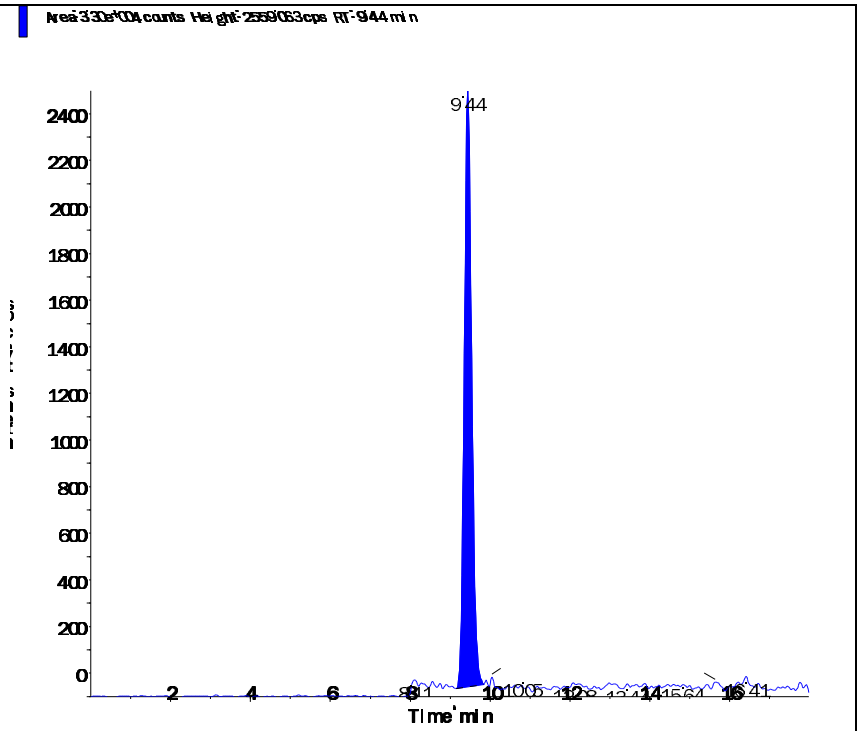
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.44 (9.84) min Calculated conc: 0.204 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	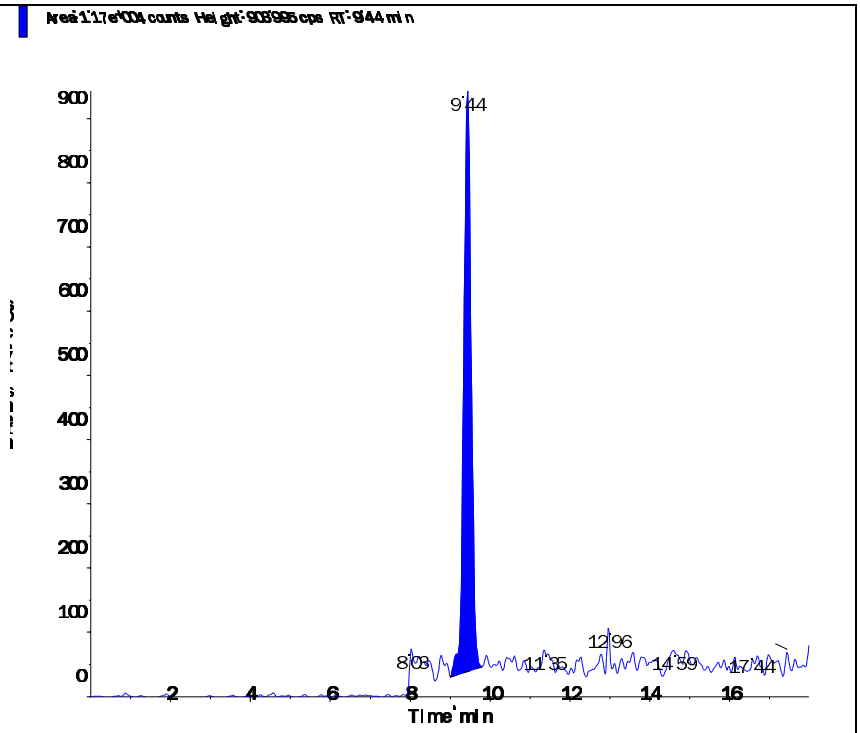

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Data File	LM35582.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 8:21:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-06 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35582.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 8:21:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.650e+05	9.43	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.280e+04	9.44	N/A	0.206
Perchlorate conf	1.140e+04	9.43	N/A	0.20

O18LP (Internal Standard)

RT (Exp. RT): 9.43(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

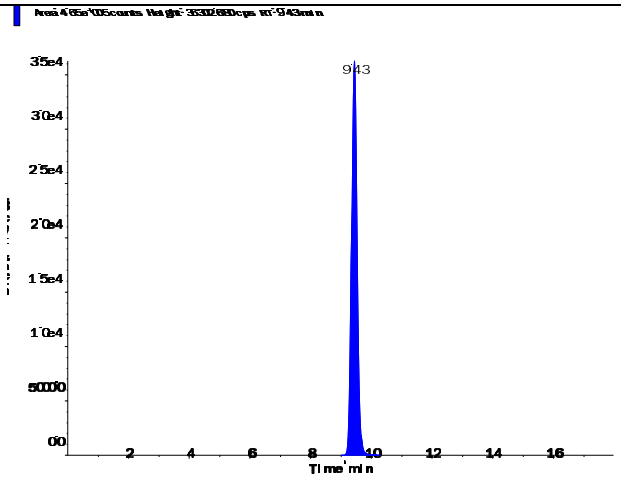

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

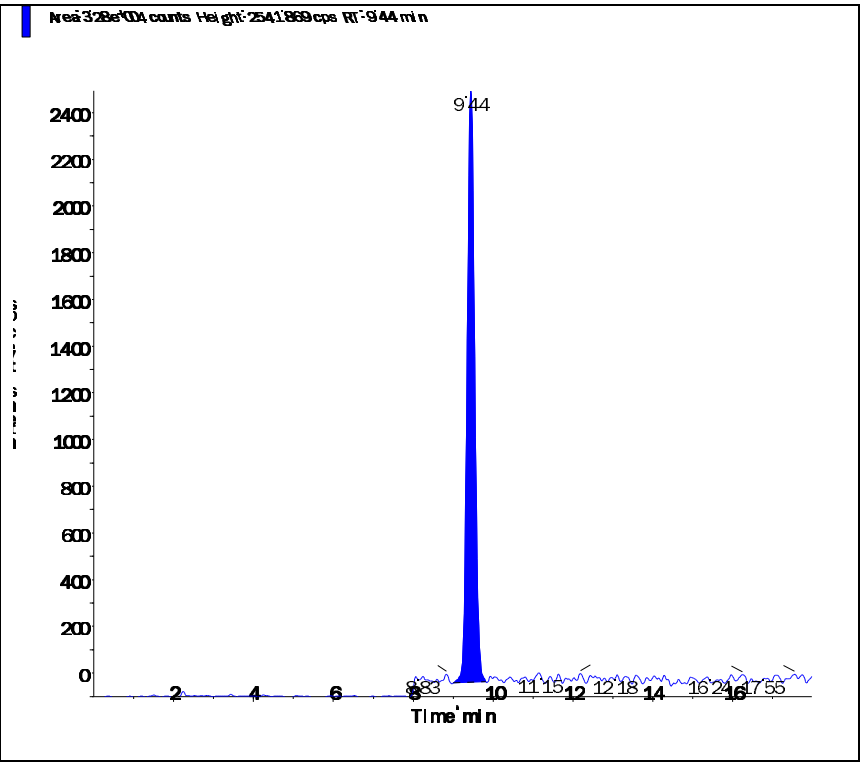

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.43 (9.84) min
Calculated conc:	0.20 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

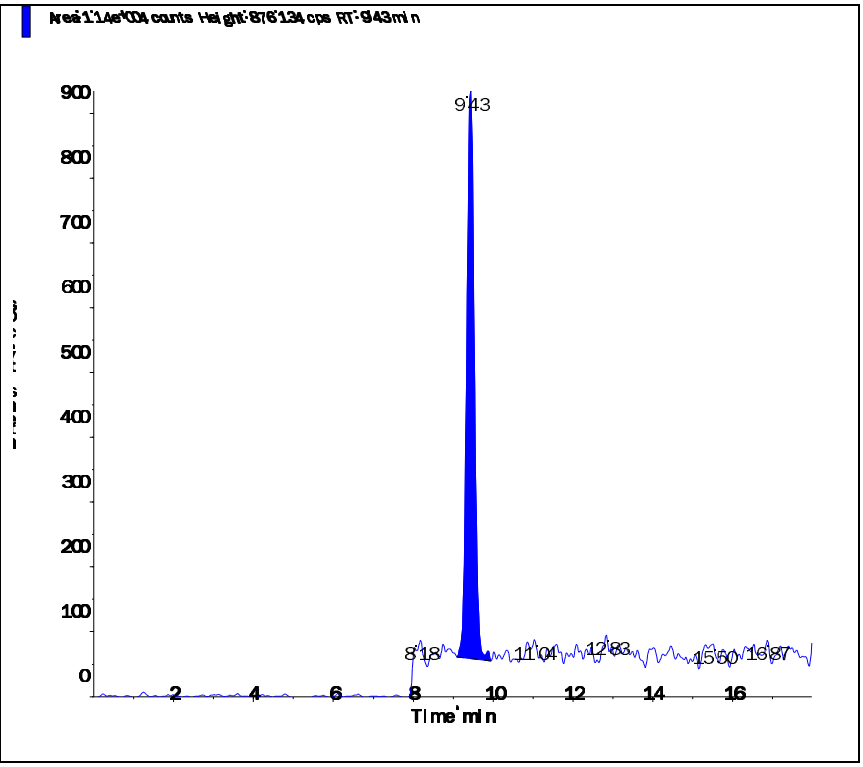

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Created with Analyst Reporter
Printed: 7/5/2016 12:34 PM

Data File	LM35595.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 12:27:11 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35595.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 12:27:11 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.040e+05	9.43	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.570e+04	9.45	N/A	0.207
Perchlorate conf	1.290e+04	9.44	N/A	0.21

O18LP (Internal Standard)

RT (Exp. RT): 9.43(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

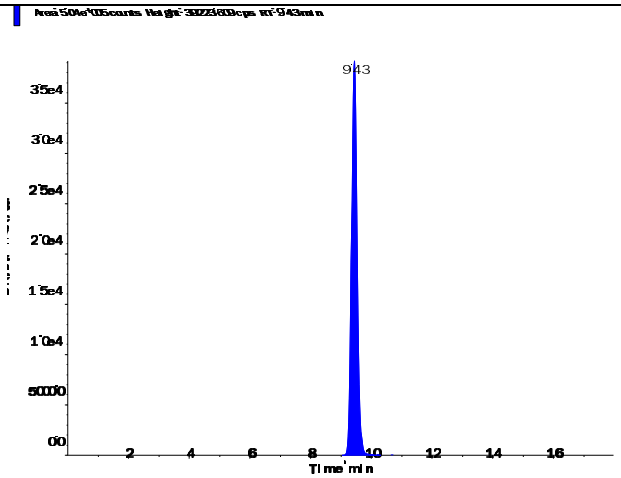

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.45 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

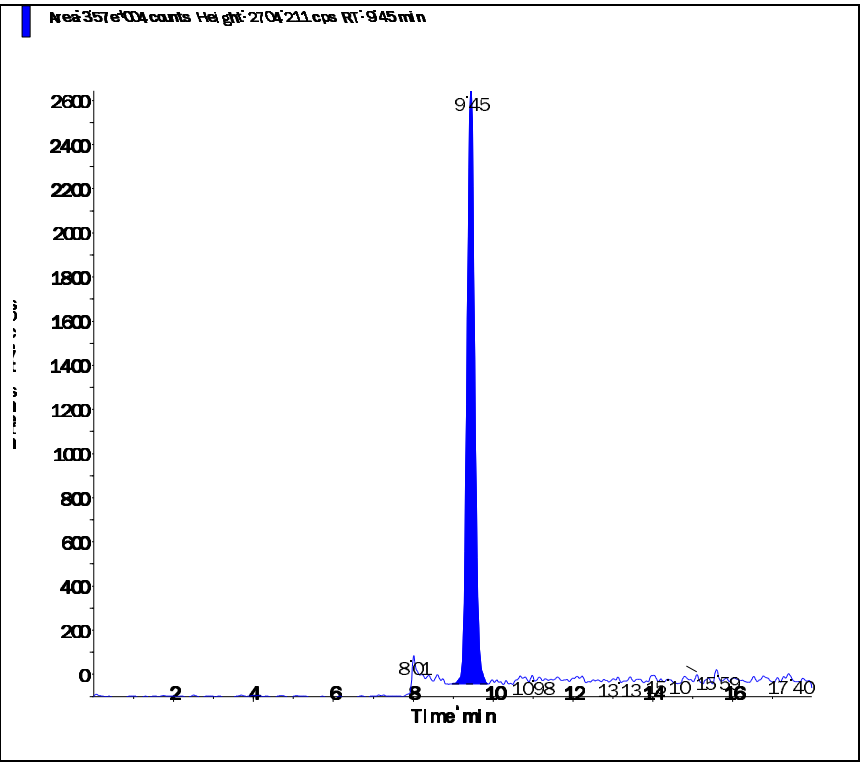

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

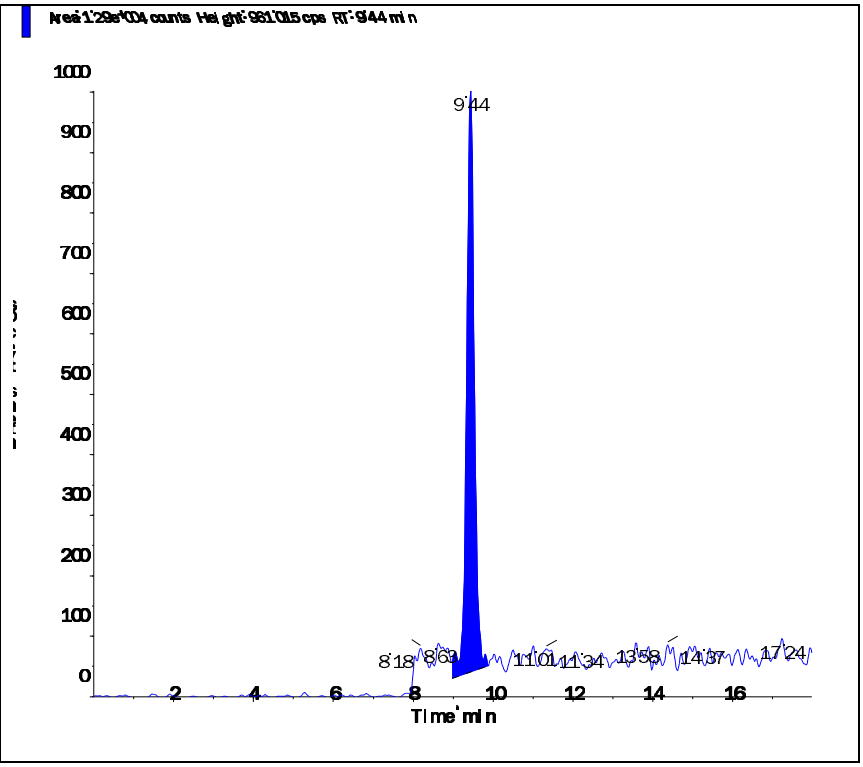

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Data File	LM35602.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 2:39:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-08 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35602.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 2:39:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.43	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.650e+04	9.44	N/A	0.209
Perchlorate conf	1.230e+04	9.42	N/A	0.196

O18LP (Internal Standard)

RT (Exp. RT): 9.43(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

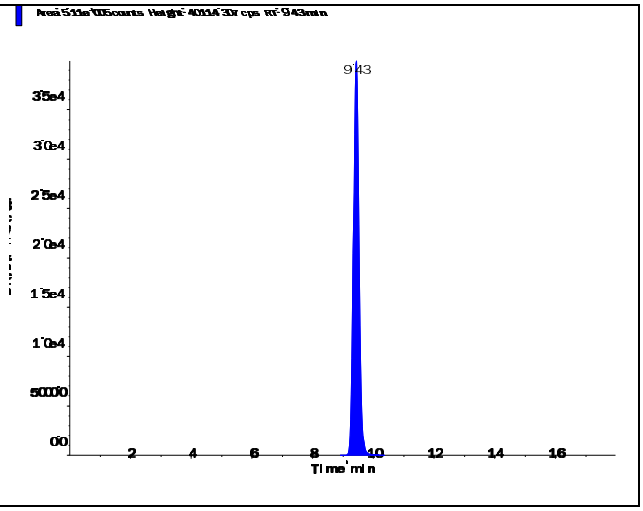

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	0.209 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

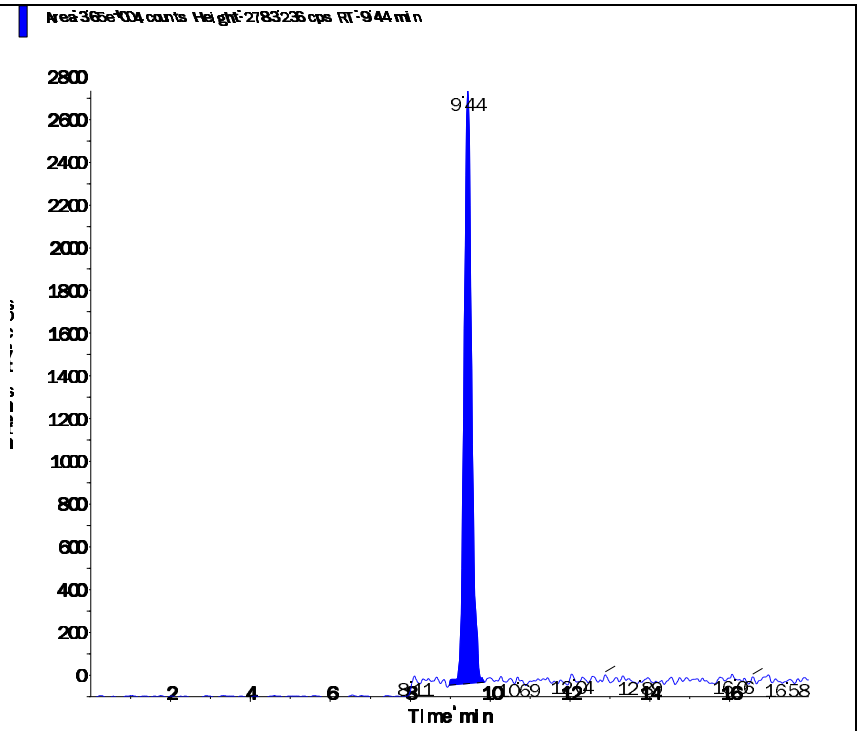

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.42 (9.84) min
Calculated conc:	0.196 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

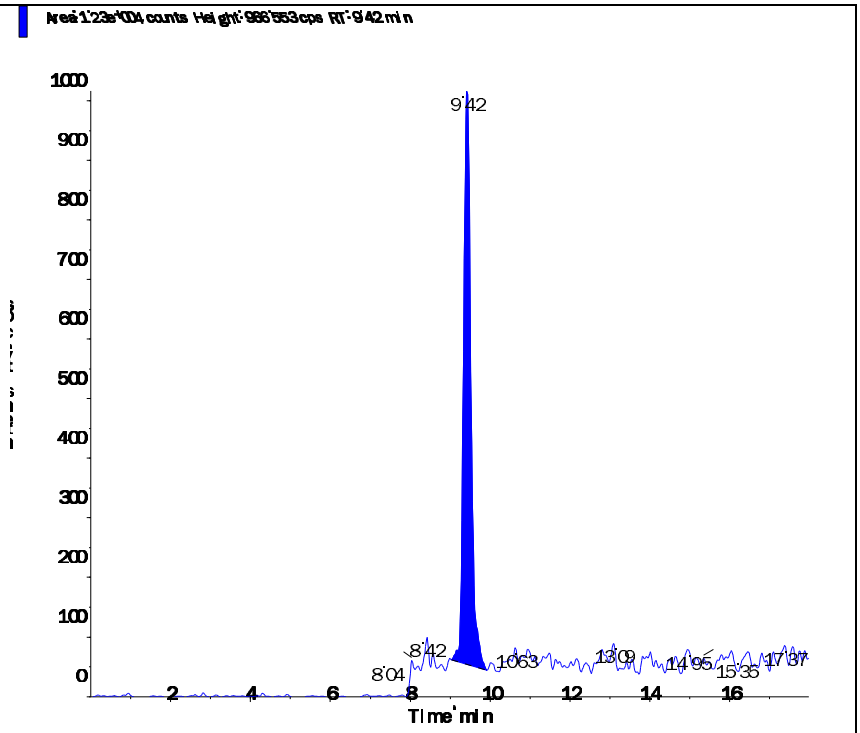

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Data File	LM35606.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	7/5/2016 3:50:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575171-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35606.wiff	**Injection Volume**	10.00
Acquisition Date	7/5/2016 3:50:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG575171-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.350e+05	9.43	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.970e+04	9.45	N/A	0.199
Perchlorate conf	1.080e+04	9.44	N/A	0.202

O18LP (Internal Standard)

RT (Exp. RT): 9.43(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

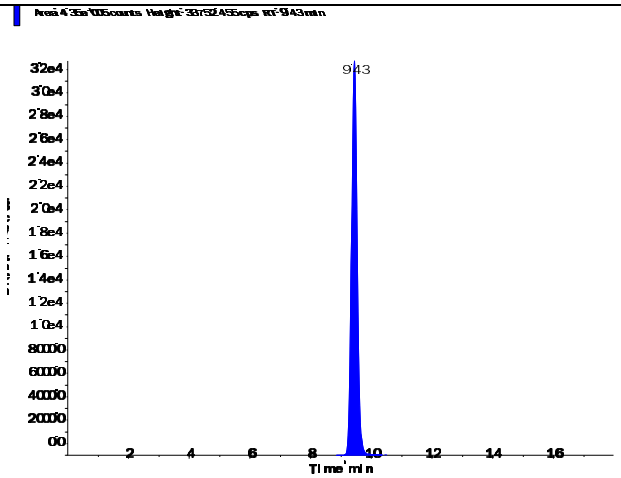

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.45 (9.84) min
Calculated conc:	0.199 ng/ml
Area Ratio:	0.068
Sample Type:	(Unknown)

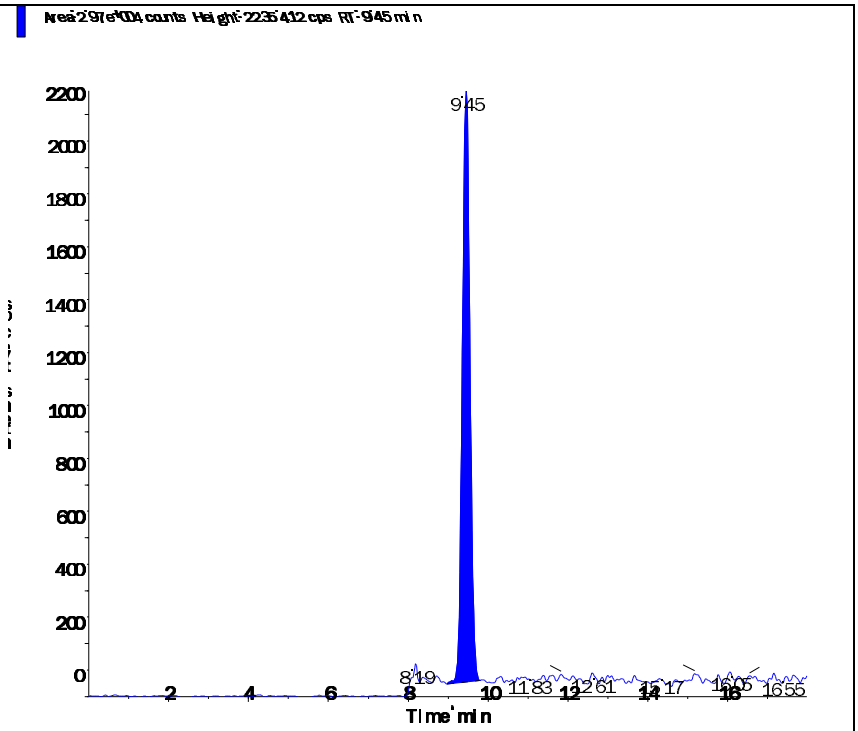

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	0.202 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

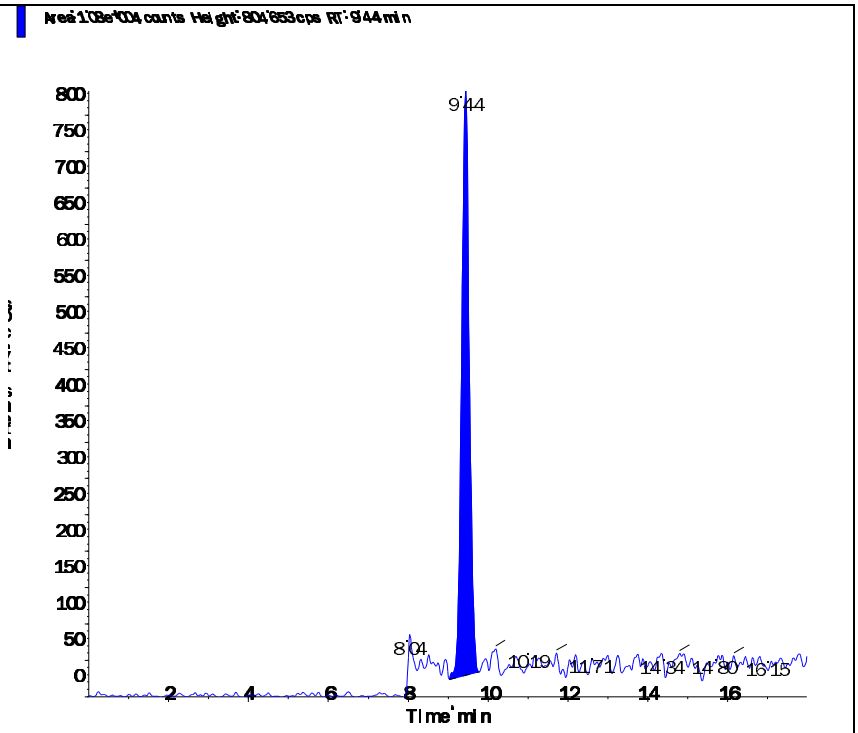

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Data File	LM35618.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	7/5/2016 7:37:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575171-08 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35618.wiff	**Injection Volume**	10.00
Acquisition Date	7/5/2016 7:37:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG575171-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.070e+05	9.52	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.450e+04	9.53	N/A	0.198
Perchlorate conf	1.250e+04	9.51	N/A	0.20

O18LP (Internal Standard)

RT (Exp. RT): 9.52(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

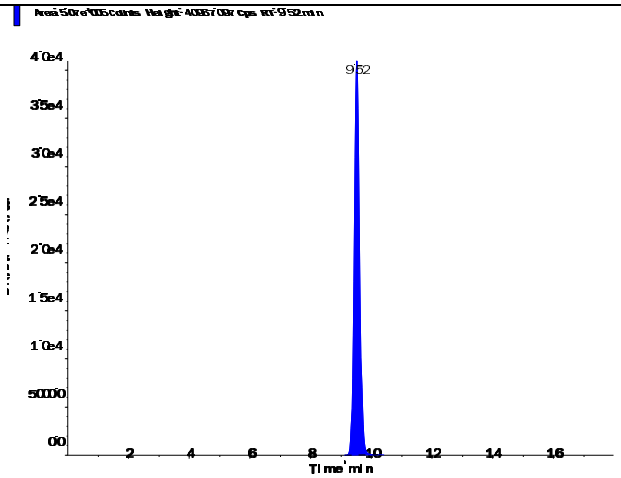

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.53 (9.84) min
Calculated conc:	0.198 ng/ml
Area Ratio:	0.068
Sample Type:	(Unknown)

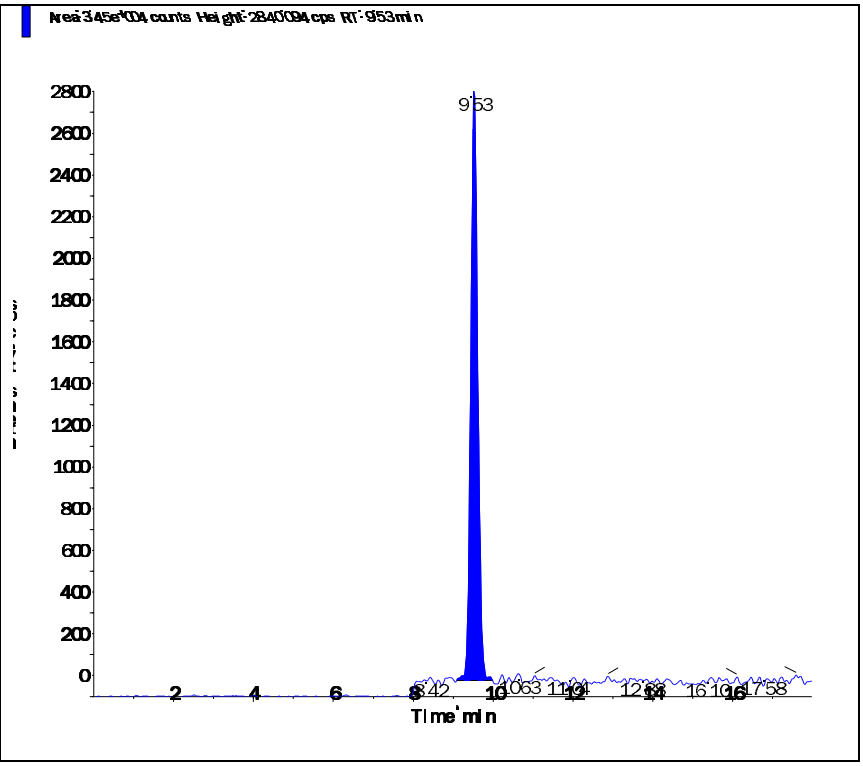

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.51 (9.84) min
Calculated conc:	0.20 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

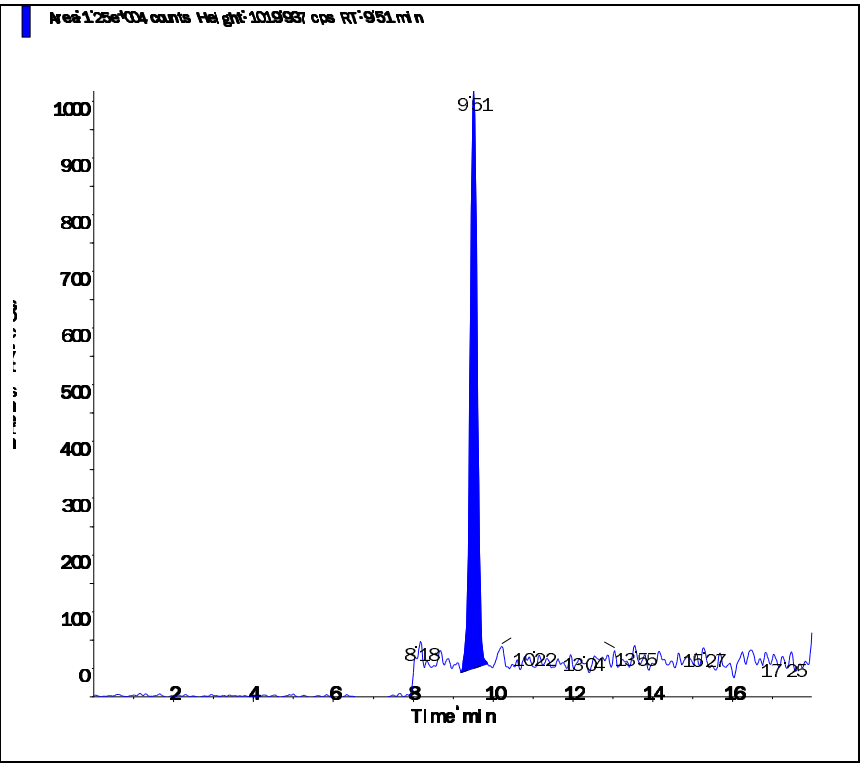

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Data File	LM35624.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	7/5/2016 9:31:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575171-09 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35624.wiff	**Injection Volume**	10.00
Acquisition Date	7/5/2016 9:31:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG575171-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.190e+05	9.52	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.580e+04	9.53	N/A	0.201
Perchlorate conf	1.280e+04	9.51	N/A	0.20

O18LP (Internal Standard)

RT (Exp. RT): 9.52(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

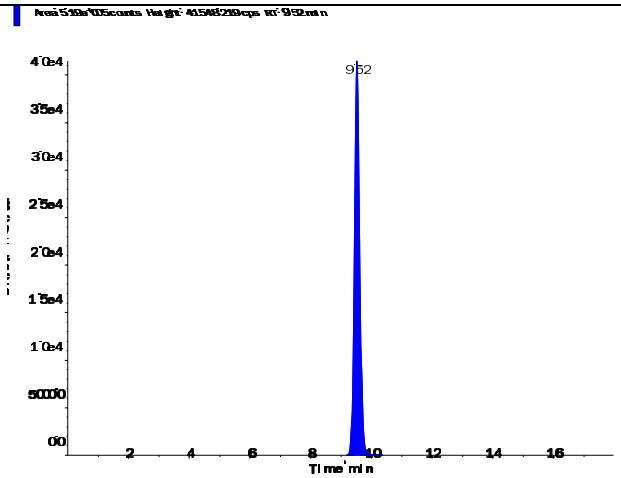

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Printed: 7/6/2016 11:03 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.53 (9.84) min Calculated conc: 0.201 ng/ml Area Ratio: 0.069 Sample Type: (Unknown)	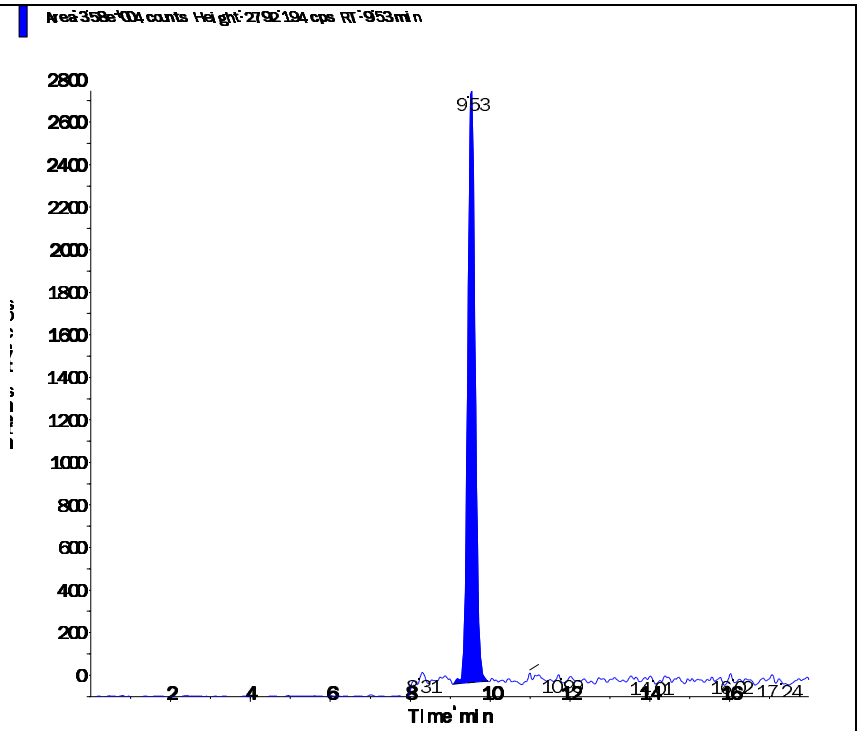
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.51 (9.84) min Calculated conc: 0.20 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	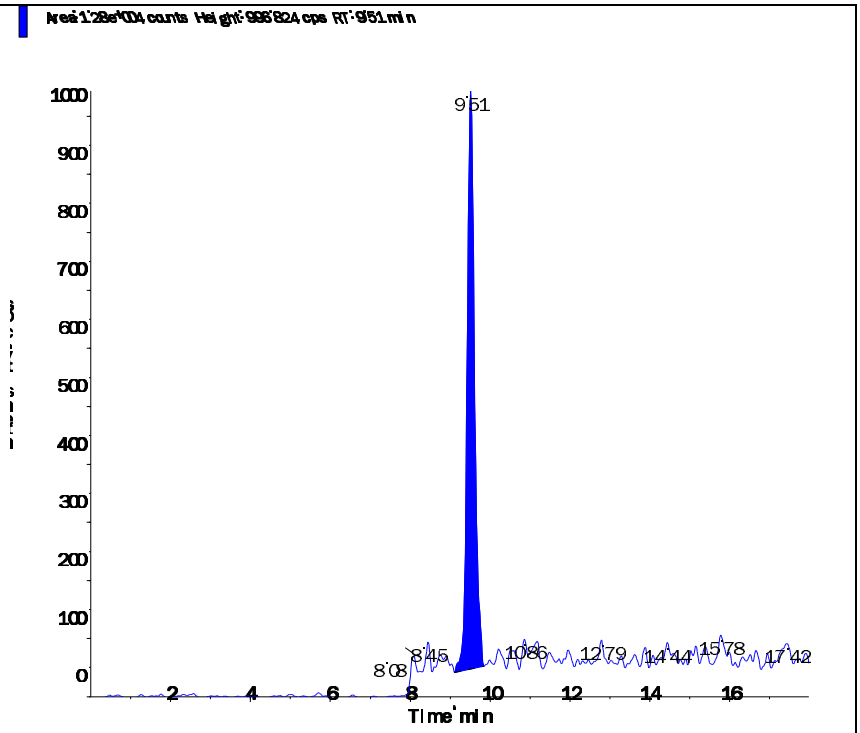

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Data File	LM35568.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 3:55:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-01 CCB	**Injection Vial**	1.00
Data File	LM35568.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 3:55:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.500e+05	9.68	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.68(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

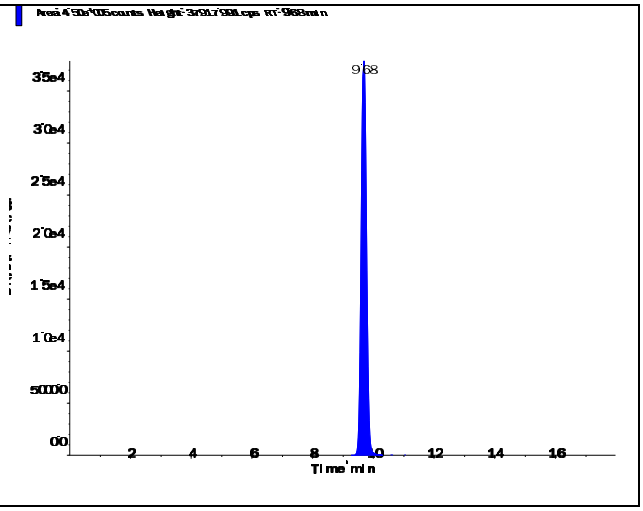

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

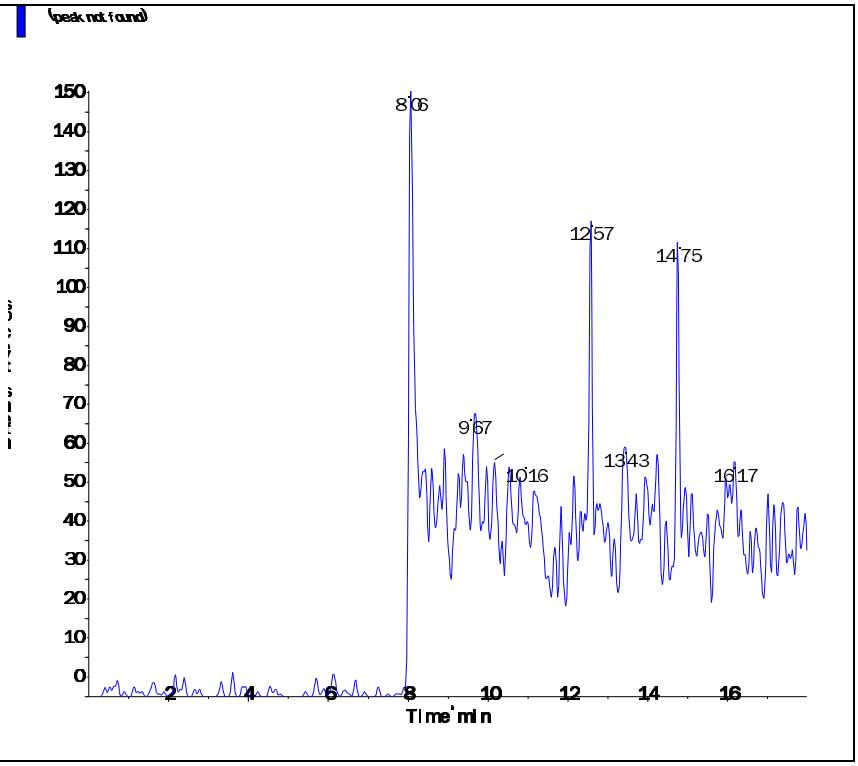

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

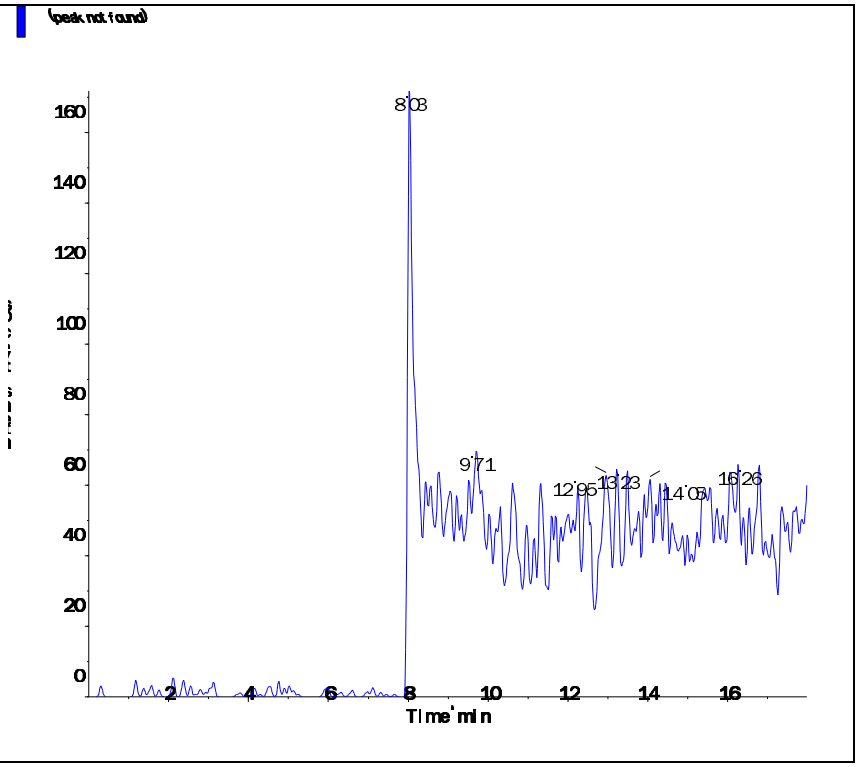

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Printed: 7/5/2016 12:31 PM

Data File	LM35583.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 8:39:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-04 CCB	**Injection Vial**	1.00
Data File	LM35583.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 8:39:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

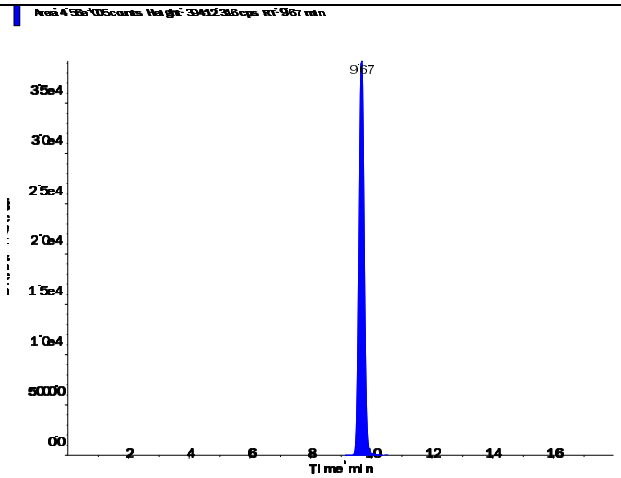

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Applied Biosystems | MDS SCIEX

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

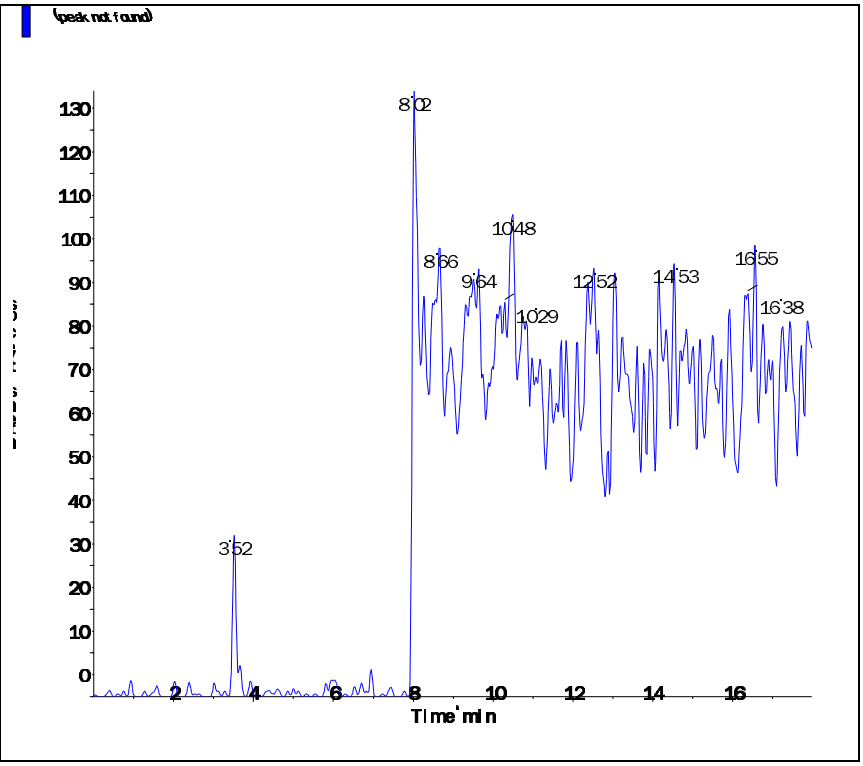

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

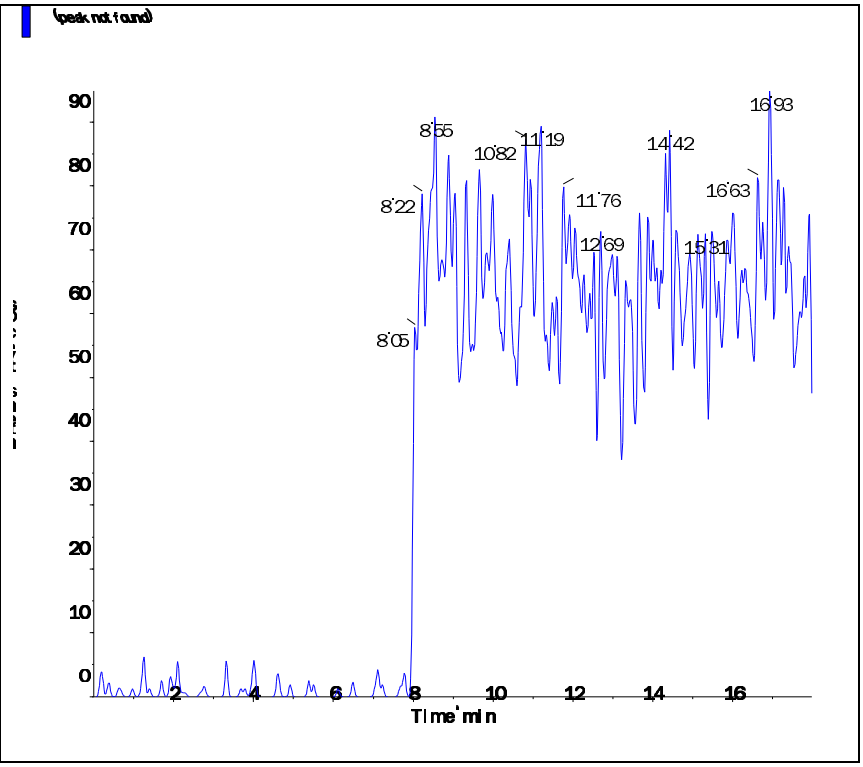

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:35 PM

Data File	LM35596.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 12:46:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-06 CCB	**Injection Vial**	1.00
Data File	LM35596.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 12:46:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.120e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

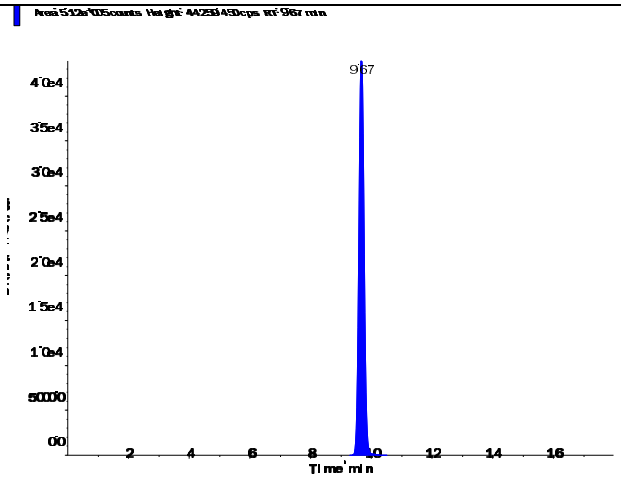

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

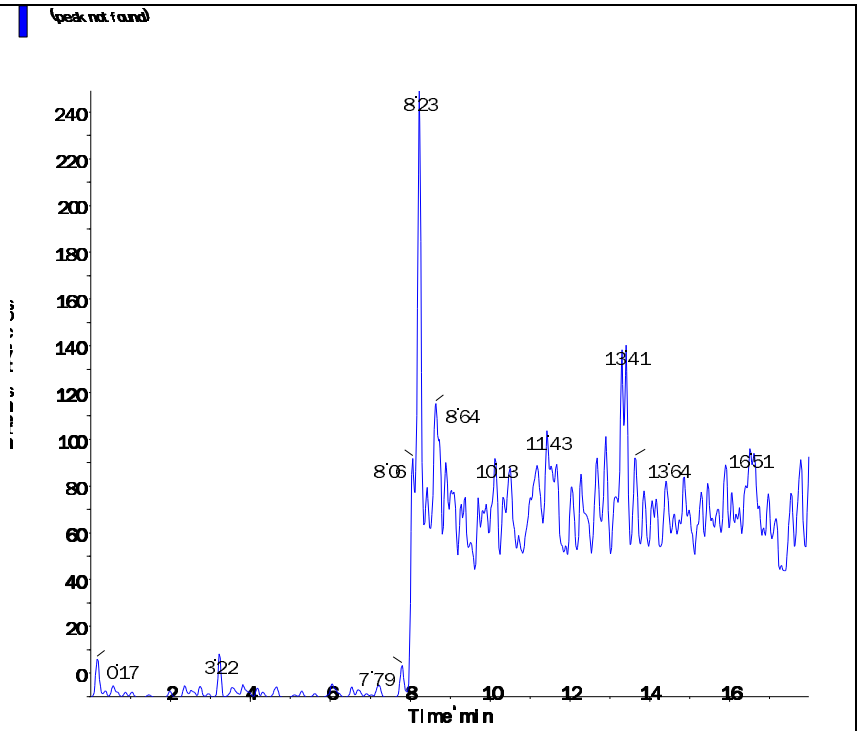

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

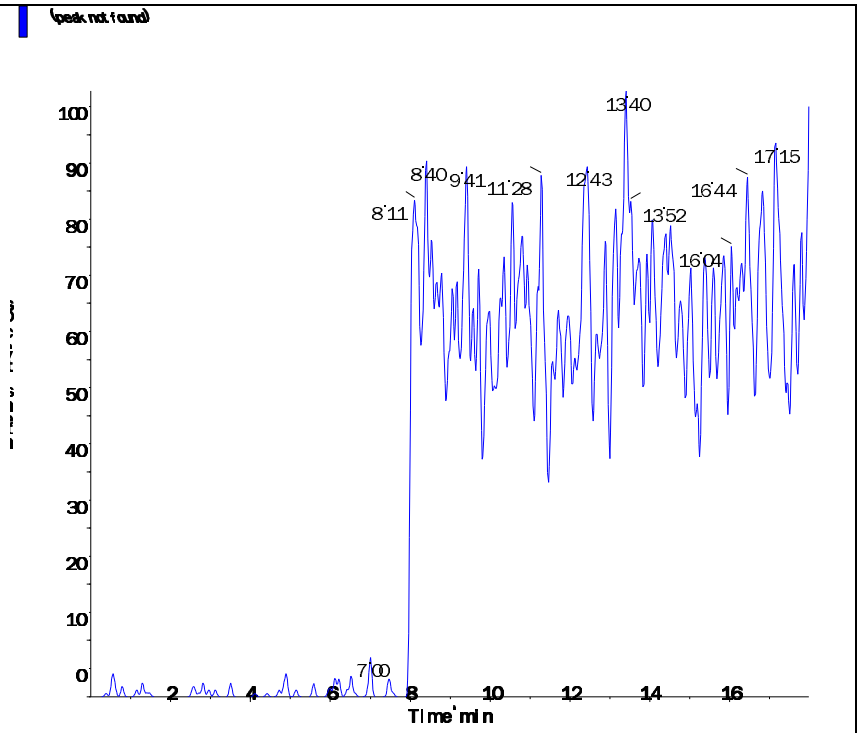

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Printed: 7/5/2016 12:37 PM

Data File	LM35603.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 2:58:39 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-08 CCB	**Injection Vial**	1.00
Data File	LM35603.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 2:58:39 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.250e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

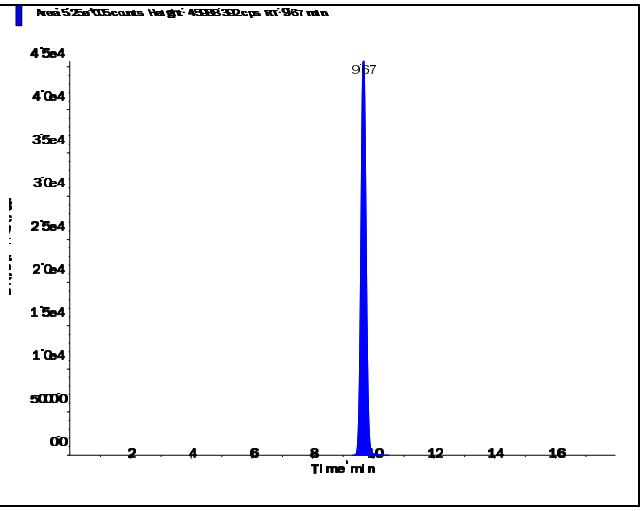

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

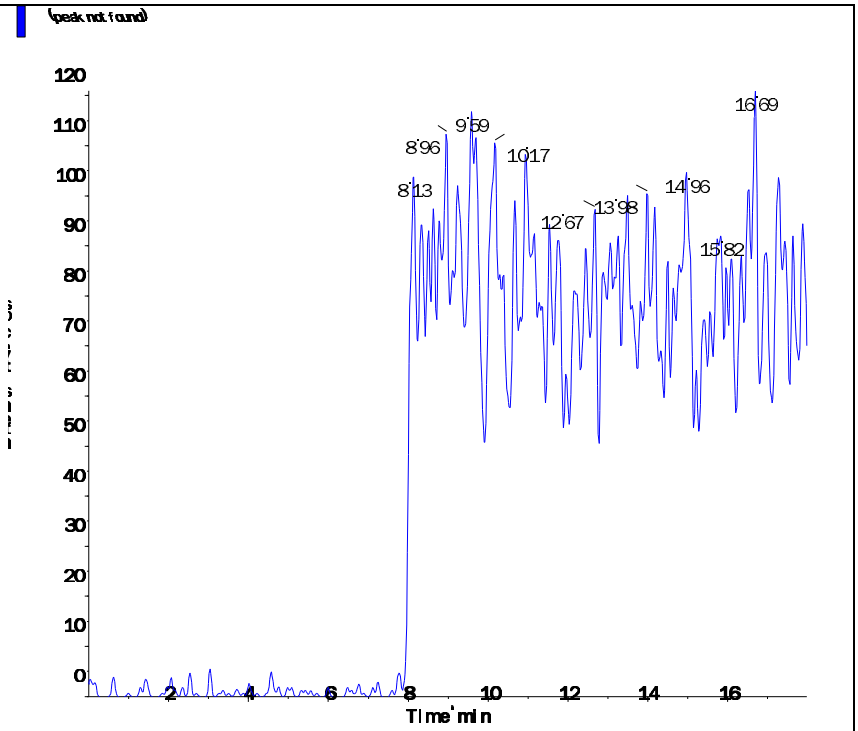

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

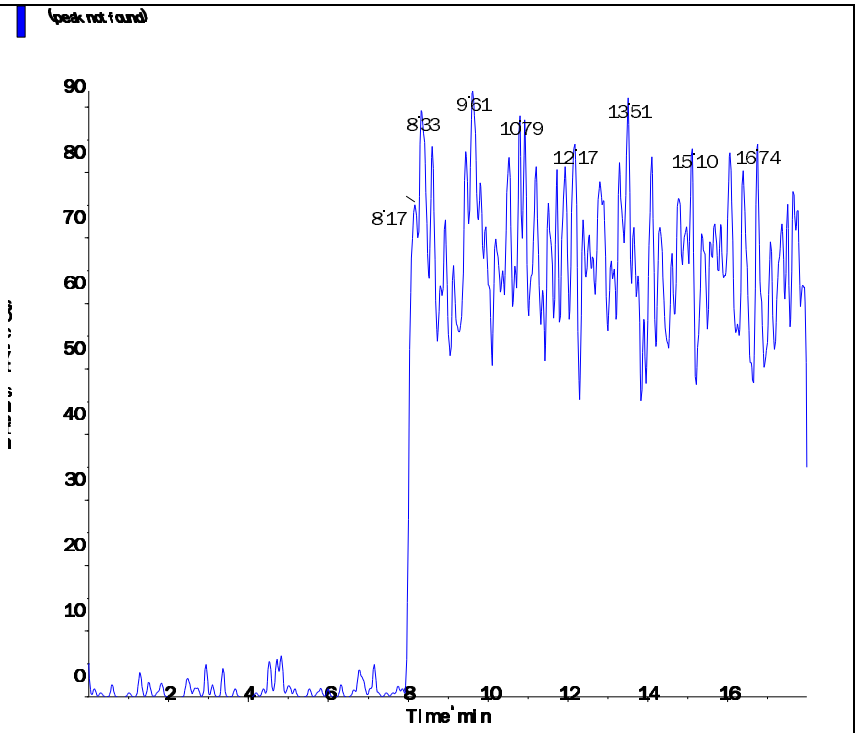

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:56 AM

Data File	LM35604.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	7/5/2016 3:12:44 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575212-01 CCB	**Injection Vial**	1.00
Data File	LM35604.wiff	**Injection Volume**	10.00
Acquisition Date	7/5/2016 3:12:44 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG575212-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.620e+05	9.69	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.69(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

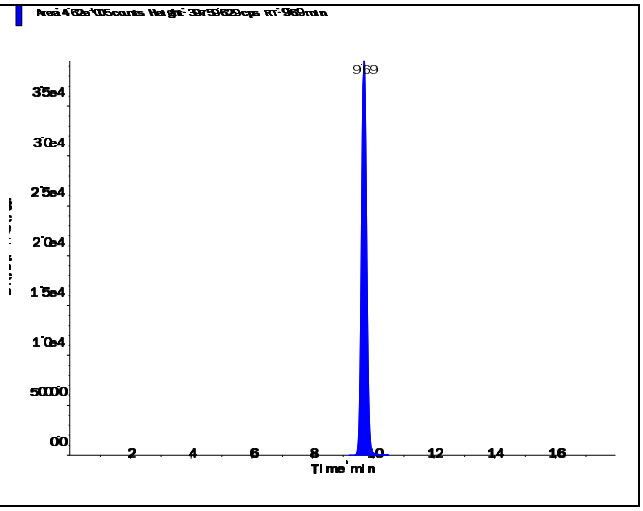

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/6/2016 10:56 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	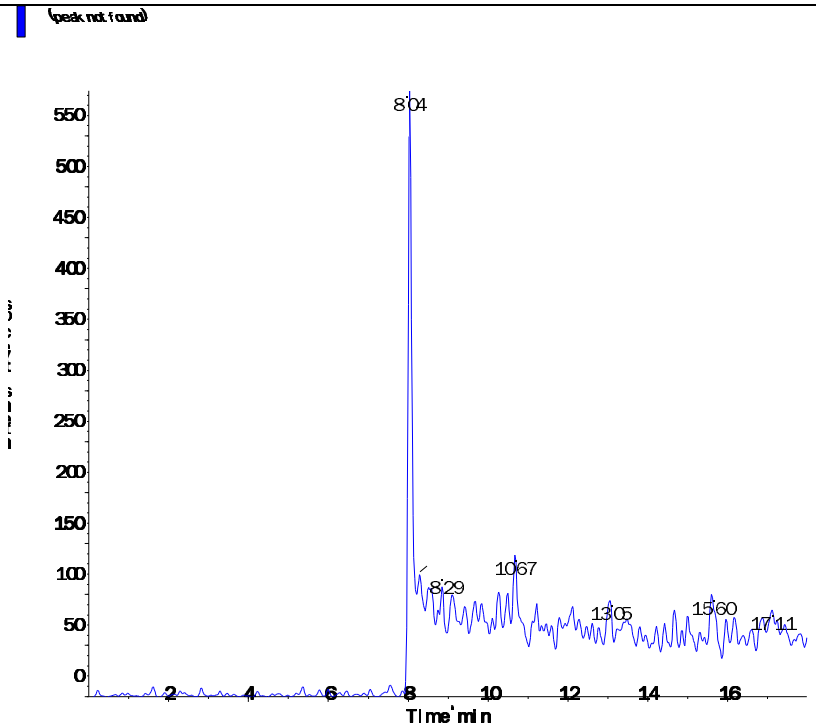
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	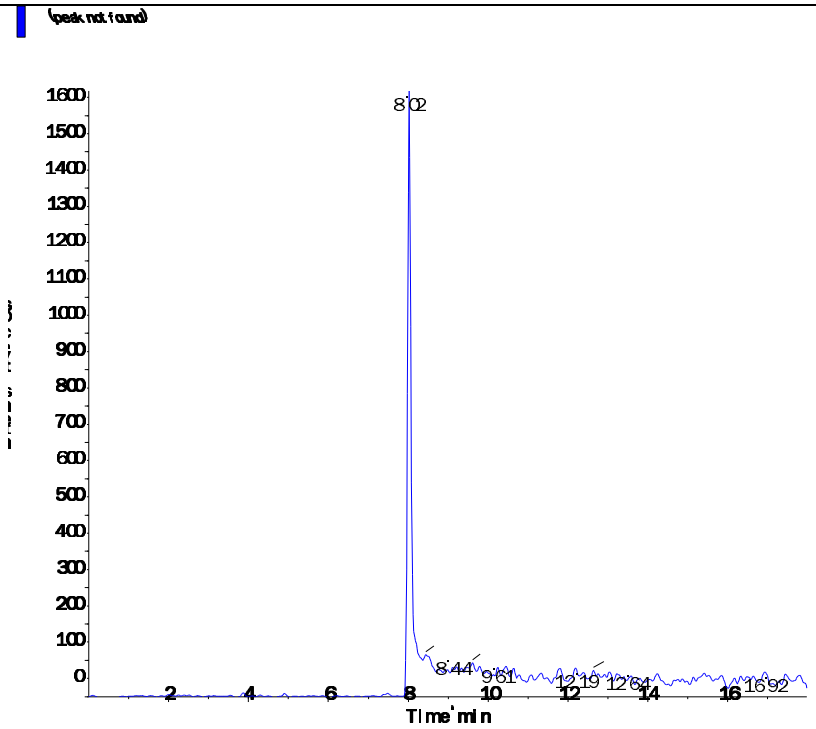

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Created with Analyst Reporter
Printed: 7/6/2016 11:01 AM

Data File	LM35619.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	7/5/2016 7:56:44 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575212-04 CCB	**Injection Vial**	1.00
Data File	LM35619.wiff	**Injection Volume**	10.00
Acquisition Date	7/5/2016 7:56:44 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG575212-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.180e+05	9.69	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	1.810e+02	9.45	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.69(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

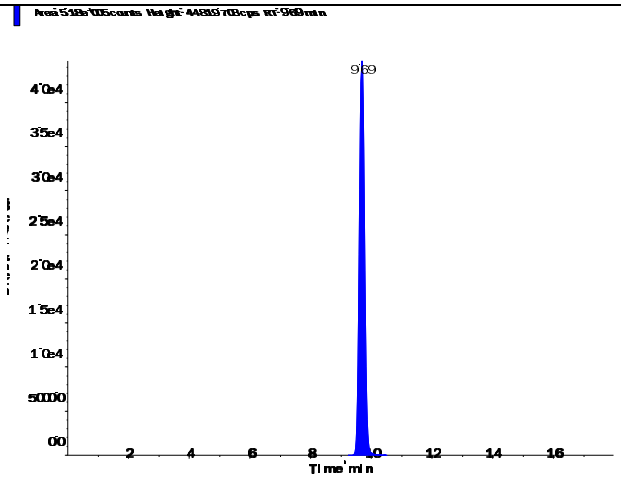

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

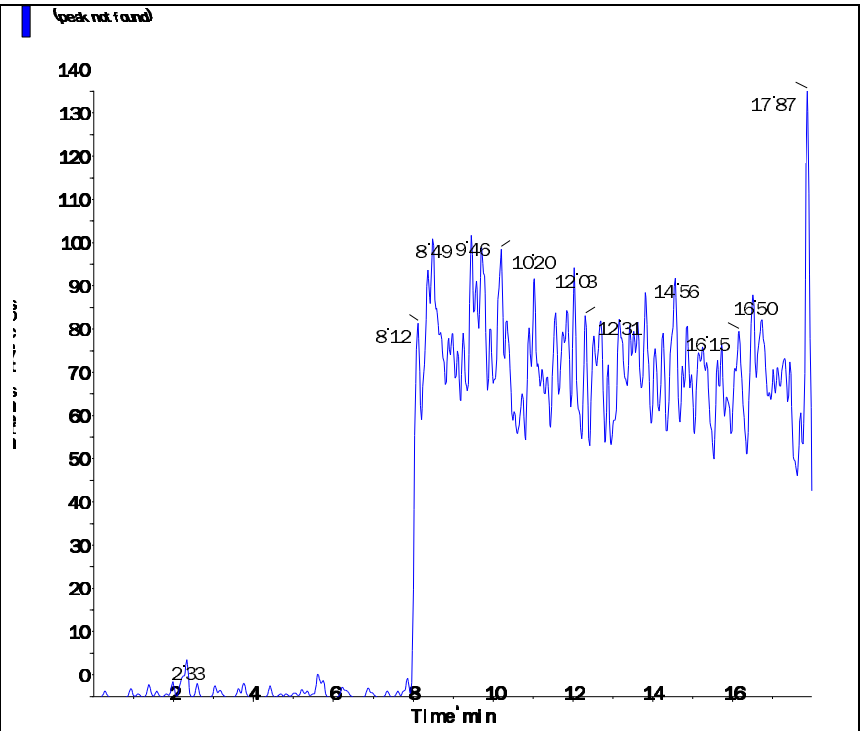

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.45 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

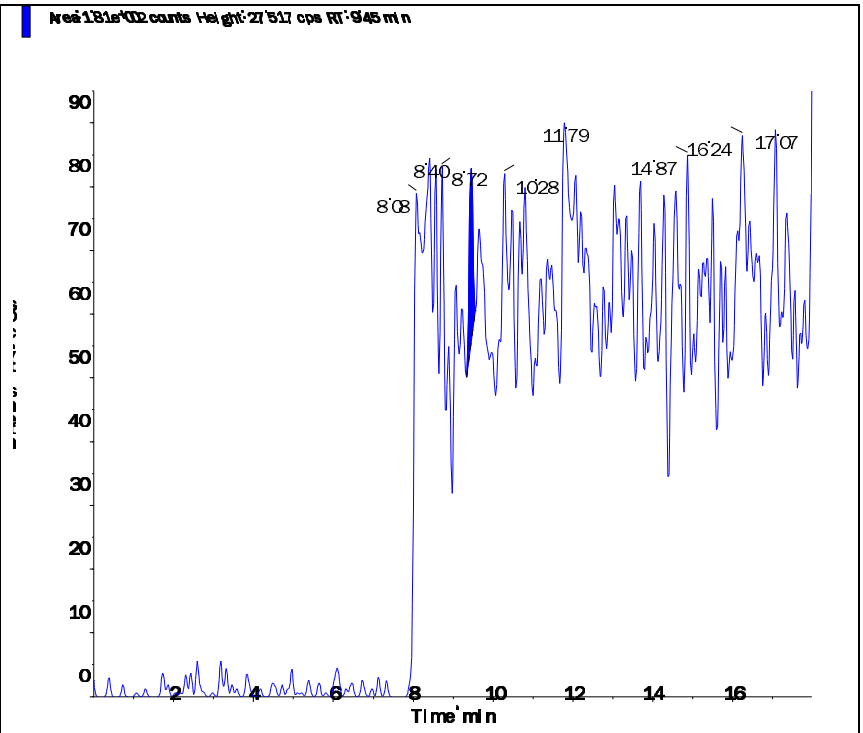

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Printed: 7/6/2016 11:03 AM

Data File	LM35625.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	7/5/2016 9:50:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575212-06 CCB	**Injection Vial**	1.00
Data File	LM35625.wiff	**Injection Volume**	10.00
Acquisition Date	7/5/2016 9:50:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG575212-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.180e+05	9.69	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.69(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

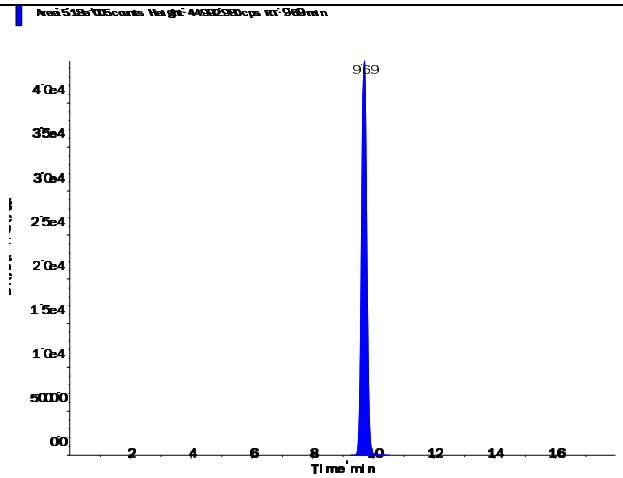

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Printed: 7/6/2016 11:03 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

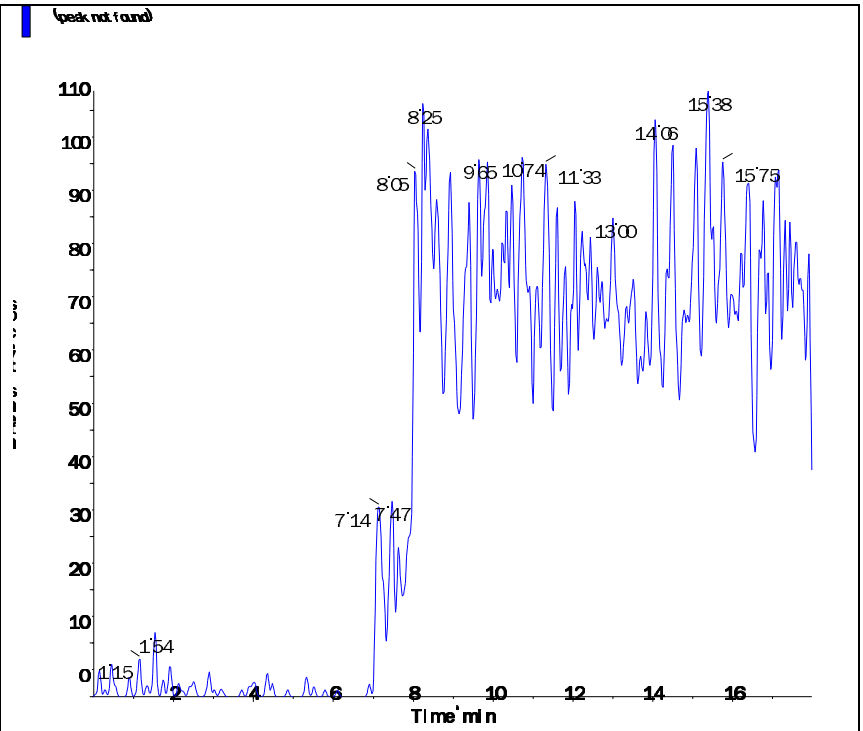

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

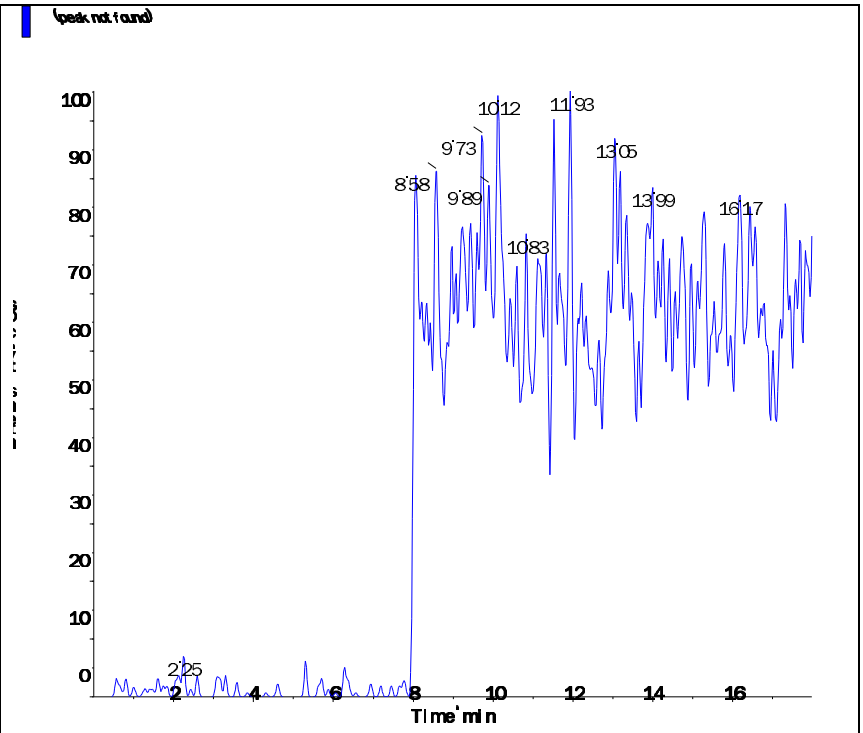

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Created with Analyst Reporter
Printed: 7/5/2016 12:27 PM

Data File	LM35571.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 4:52:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM35571.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 4:52:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.330e+05	9.04	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.020e+04	9.05	N/A	0.204
Perchlorate conf	9.940e+03	9.05	N/A	0.185

O18LP (Internal Standard)

RT (Exp. RT): 9.04(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

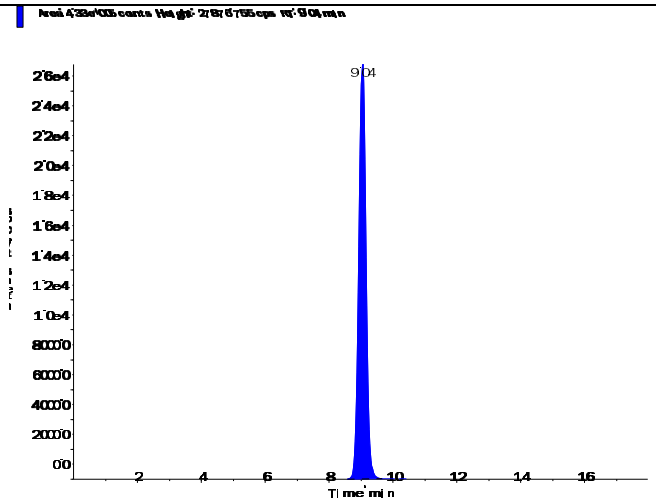

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Created with Analyst Reporter
Printed: 7/5/2016 12:27 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.05 (9.84) min
Calculated conc:	0.204 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

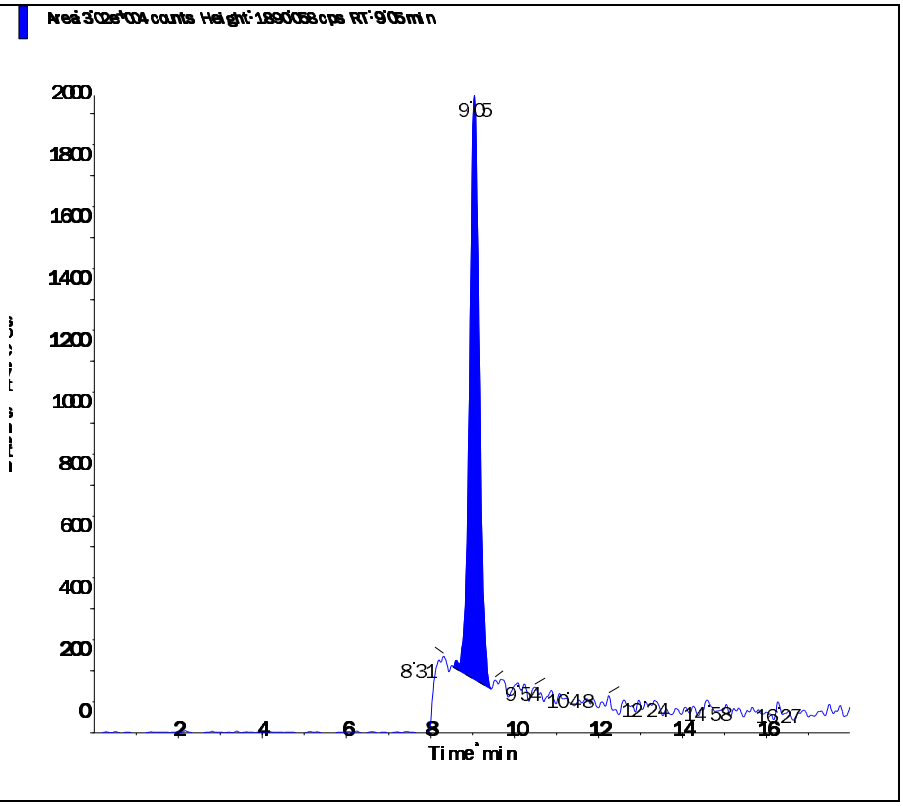

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.05 (9.84) min
Calculated conc:	0.185 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

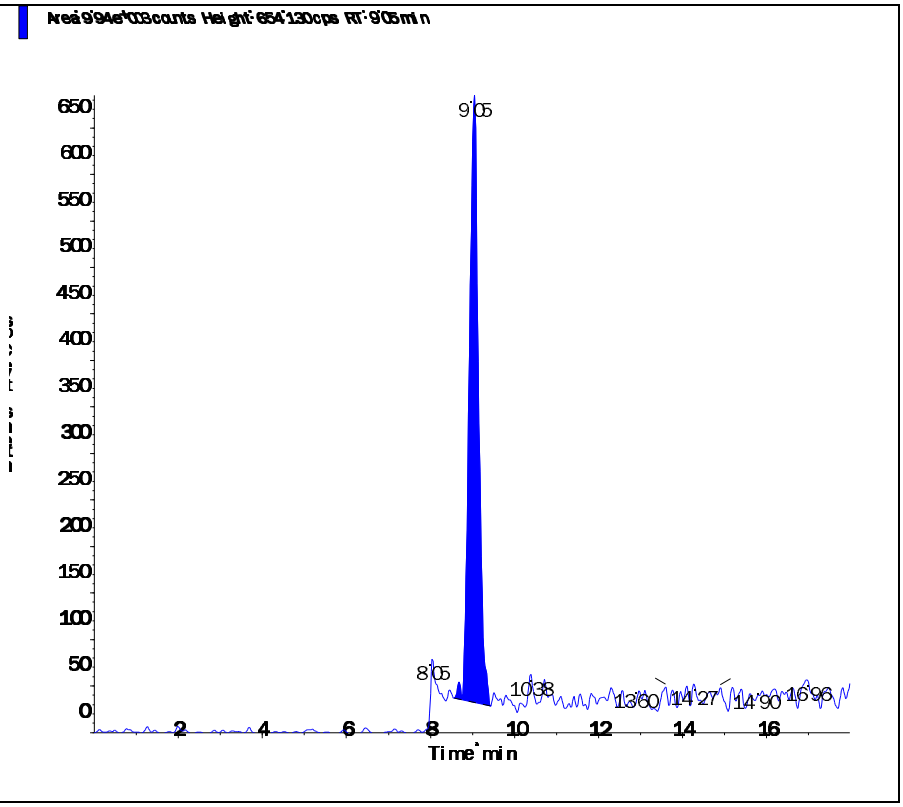

Printing Time: 6:47:51 PM
Printing Date: Friday, July 01, 2016

Sample Name: "WG575005-01 MCT (0.2ug/L)" Sample ID: "WG575005-01" File: "LM35571.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.231 ug/L
Acq. Date:	7/1/2016
Acq. Time:	4:52:43 PM
Modified:	No
Proc. Algorithm:	Analyst Classic
Bunching Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Exp. Width:	0.20
Exp. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Valley
Retention Time:	9.05 min
Area:	3.42e+004 counts
Height:	1959.447 cps
Start Time:	8.566 min
End Time:	9.457 min

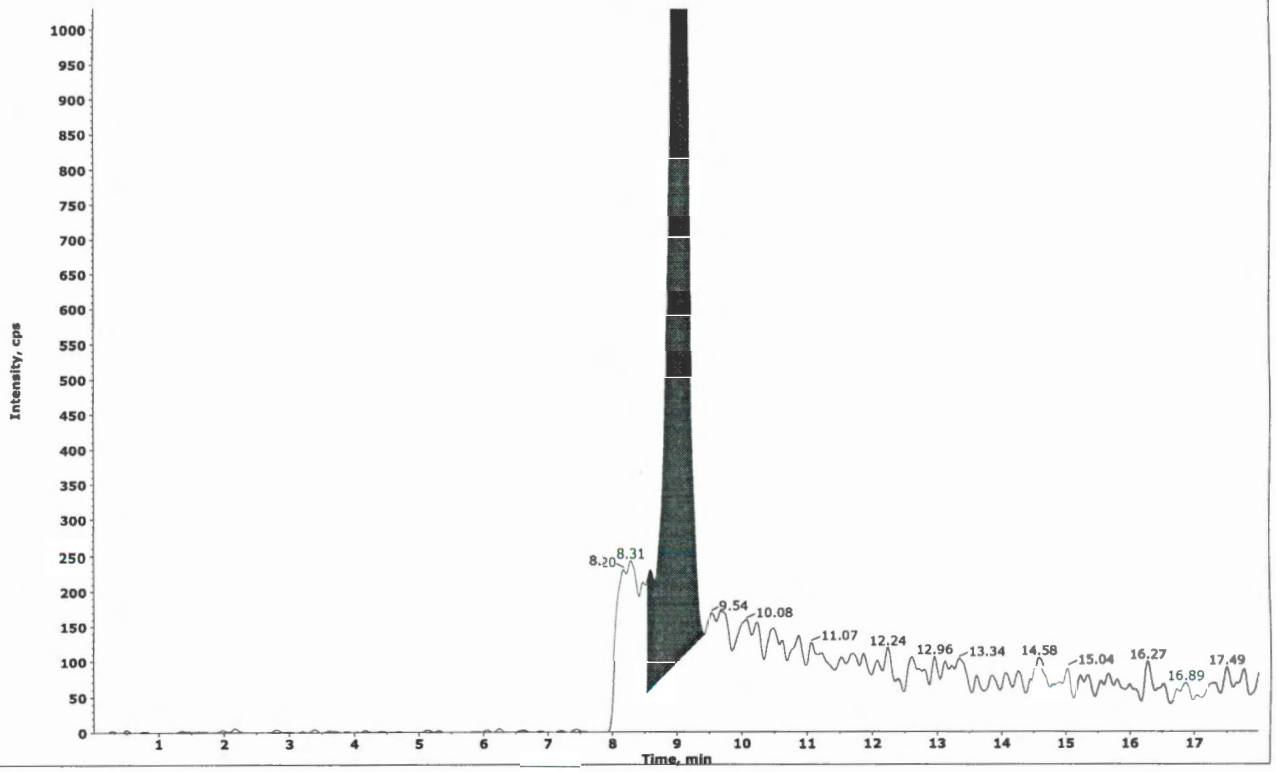

Collected by: N/A
Electronic Signature: no
Operator: lcms1

Printing Time: 6:51:20 PM
Printing Date: Friday, July 01, 2016

Sample Name: "WG575005-01 HCT (0.2ug/L)" Sample ID: "WG575005-01" File: "LM35571.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.204 ug/L
Acq. Date:	7/1/2016
Acq. Time:	4:52:43 PM
Modified:	Yes
Proc. Algorithm:	Analyst Classic
Smoothing Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Exp. Width:	0.20
Exp. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Manual
Retention Time:	9.05 min
Area:	3.02e+004 counts
Height:	1890.058 cps
Start Time:	8.546 min
End Time:	9.437 min

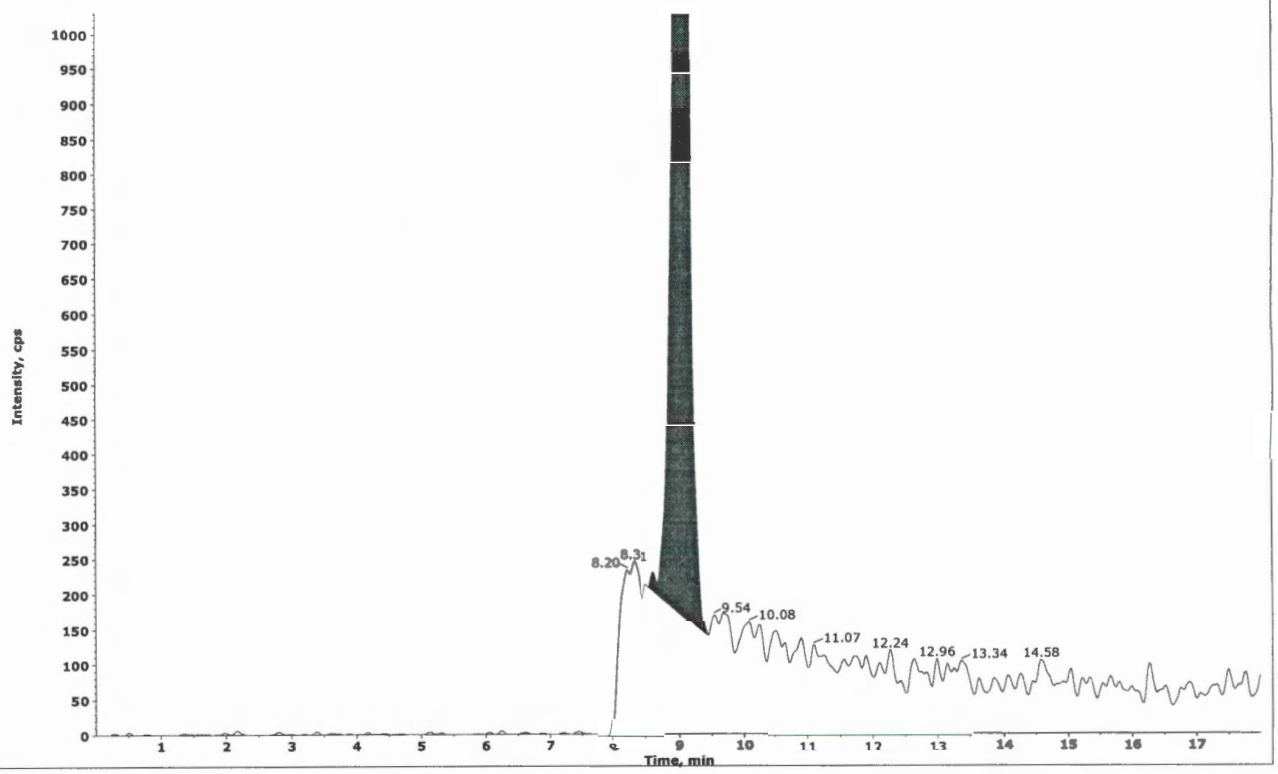

#4
JWR/07/01/16

✓ MED
7-6-16

Collected by: N/A
Electronic Signature: no
Operator: lcms1

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Data File	LM35607.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	7/5/2016 4:09:27 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575171-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM35607.wiff	**Injection Volume**	10.00
Acquisition Date	7/5/2016 4:09:27 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG575171-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.210e+05	9.05	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.670e+04	9.08	N/A	0.184
Perchlorate conf	9.850e+03	9.05	N/A	0.189

O18LP (Internal Standard)

RT (Exp. RT): 9.05(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

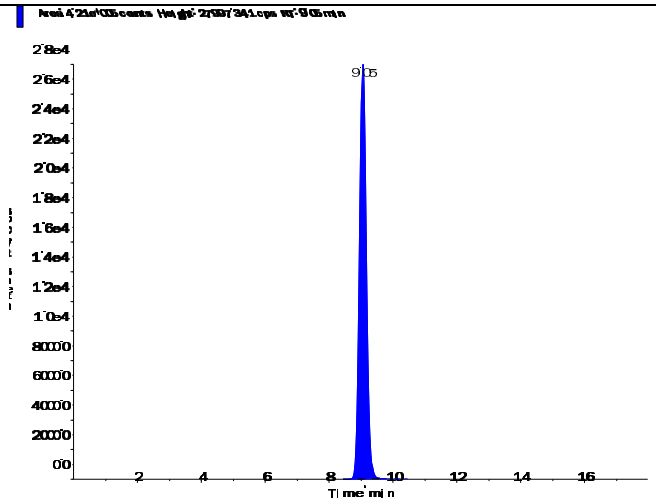

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.08 (9.84) min
Calculated conc:	0.184 ng/ml
Area Ratio:	0.063
Sample Type:	(Unknown)

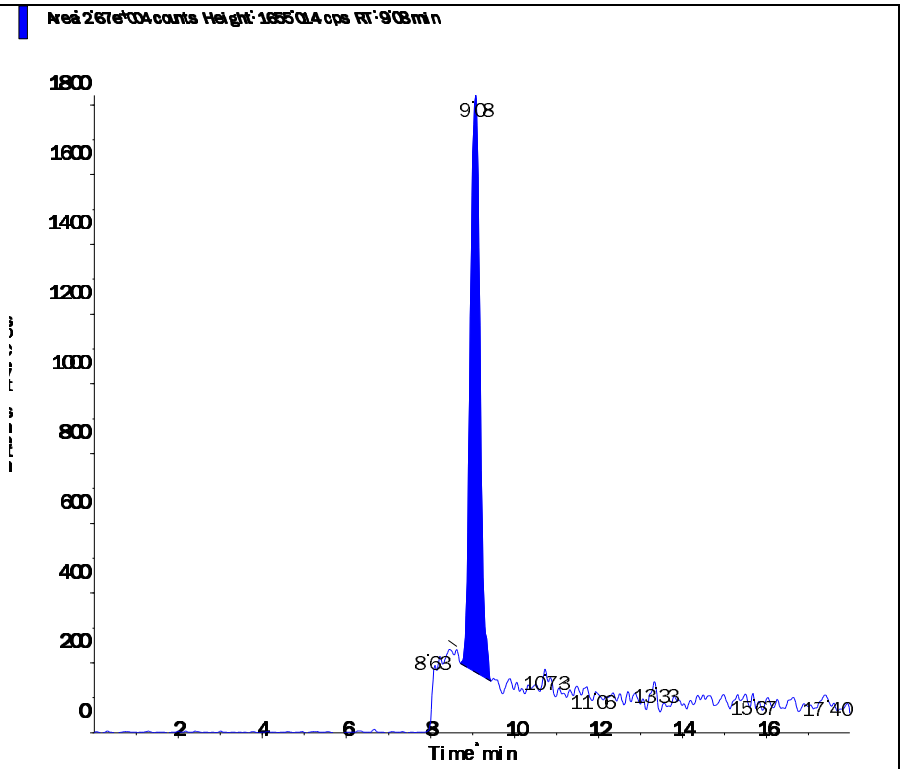

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.05 (9.84) min
Calculated conc:	0.189 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

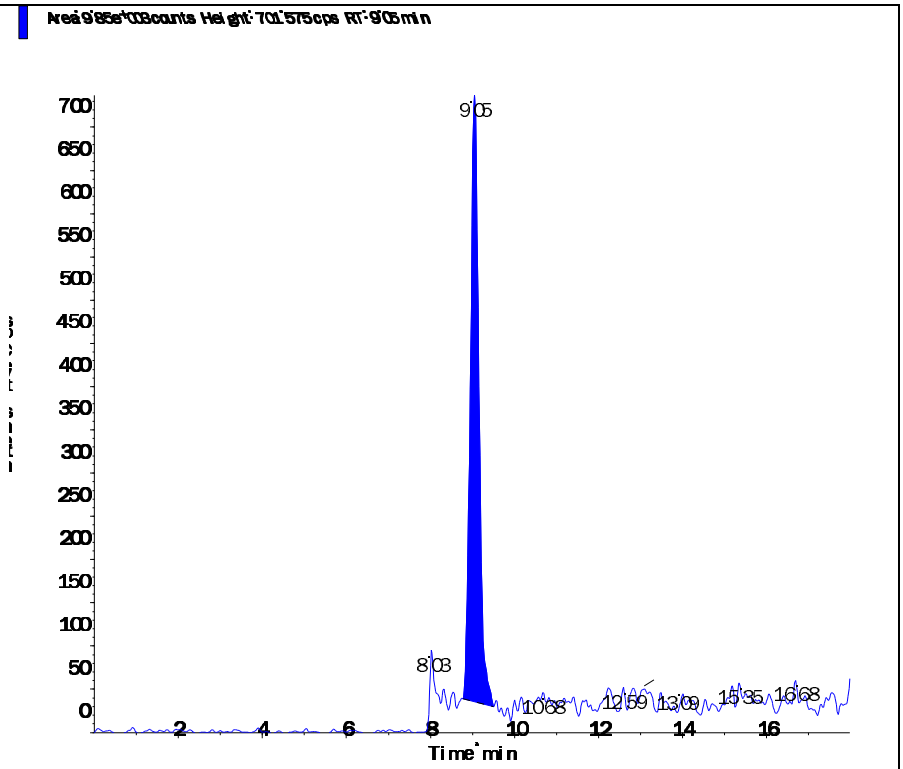

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Printing Time: 10:32:02 AM
Printing Date: Wednesday, July 06, 2016

Sample Name: "WG575171-01 MCT (0.2ug/L)" Sample ID: "WG575171-01" File: "LM35607.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index: 1
Sample Type: Unknown
Concentration: N/A
Calculated Conc: 0.203 ug/L
Acq. Date: 7/5/2016
Acq. Time: 4:09:27 PM

Modified: No
Proc. Algorithm: Analyst Classic
Bunching Factor: 2
Noise Threshold: 18.48 cps
Area Threshold: 92.40 cps
Num. Smooths: 5
Sep. Width: 0.20
Sep. Height: 0.01
Exp. Peak Ratio: 5.00
Exp. Adj. Ratio: 4.00
Exp. Val. Ratio: 3.00
RT Window: 30.000 sec
Expected RT: 9.84 min
Use Relative RT: Yes

Int. Type: Valley
Retention Time: 9.08 min
Area: 2.93e+004 counts
Height: 1714.650 cps
Start Time: 8.708 min
End Time: 9.437 min

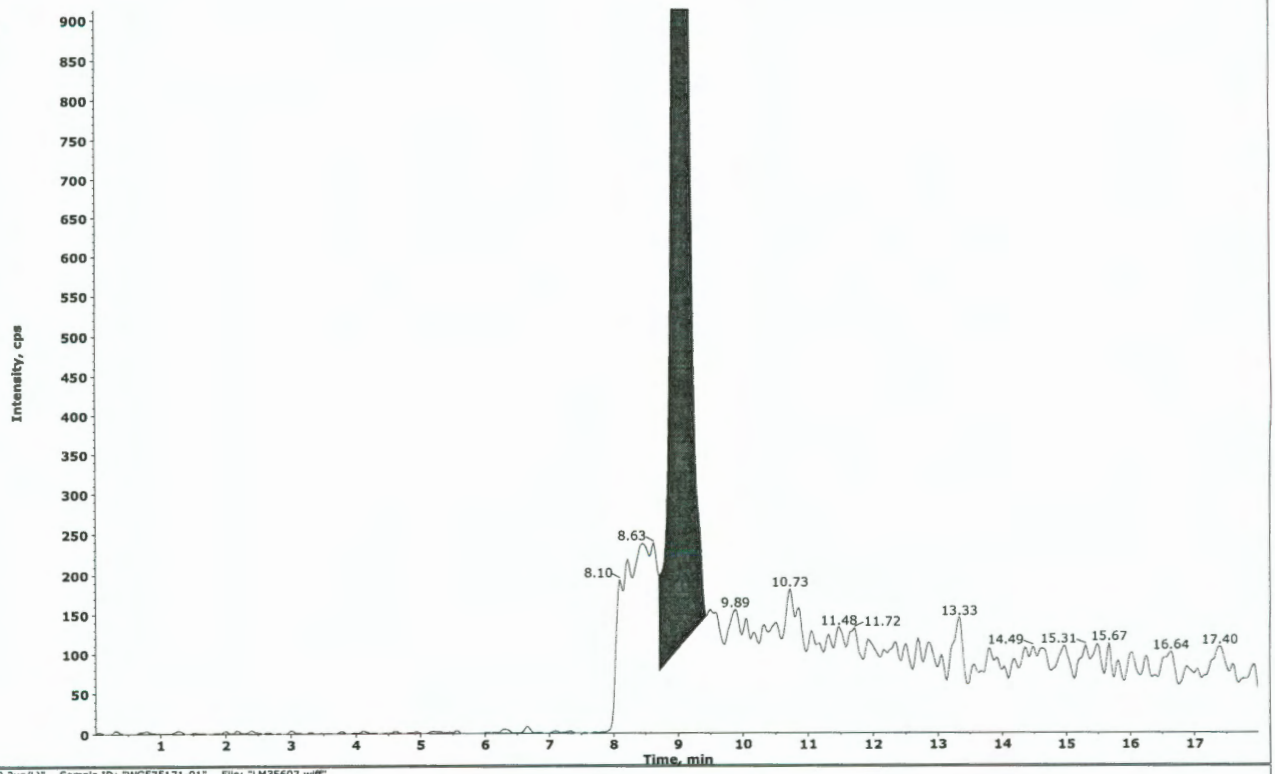

Sample Name: "WG575171-01 MCT (0.2ug/L)" Sample ID: "WG575171-01" File: "LM35607.wiff"
Peak Name: "Perchlorate conf" Mass(es): "100.8/85.2 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index: 1
Sample Type: Unknown
Concentration: N/A
Calculated Conc: 0.203 ug/L
Acq. Date: 7/5/2016
Acq. Time: 4:09:27 PM

Modified: No
Proc. Algorithm: Analyst Classic
Bunching Factor: 2
Noise Threshold: 7.14 cps
Area Threshold: 35.71 cps
Num. Smooths: 5
Sep. Width: 0.20
Sep. Height: 0.01
Exp. Peak Ratio: 5.00
Exp. Adj. Ratio: 4.00
Exp. Val. Ratio: 3.00
RT Window: 30.000 sec
Expected RT: 9.84 min
Use Relative RT: Yes

Int. Type: Base To Base
Retention Time: 9.05 min
Area: 1.05e+004 counts
Height: 712.660 cps
Start Time: 8.627 min
End Time: 9.761 min

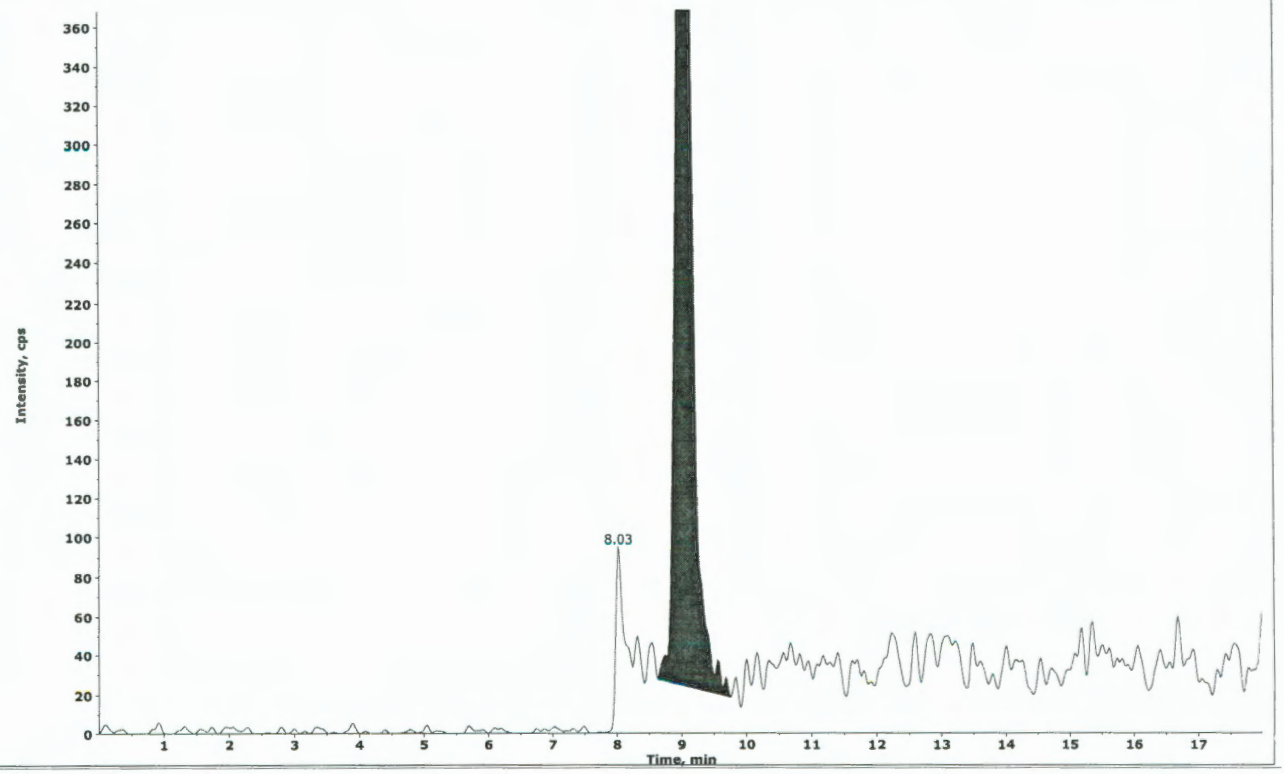

Collected by: N/A
Electronic Signature: no
Operator: lcms1

Printing Time: 10:35:23 AM
Printing Date: Wednesday, July 06, 2016

Sample Name: "WG575171-01 MCT (0.2ug/L)" Sample ID: "WG575171-01" File: "LM35607.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index: 1
Sample Type: Unknown
Concentration: N/A
Calculated Conc: 0.184 ng/L
Acq. Date: 7/5/2016
Acq. Time: 4:09:27 PM

Modified: Yes
Proc. Algorithm: Analyst Classic
Smoothing Factor: 1
Noise Threshold: 18.48 cps
Area Threshold: 92.40 cps
Num. Smooths: 5
Sep. Width: 0.20
Sep. Height: 0.01
Exp. Peak Ratio: 5.00
Exp. Adj. Ratio: 4.00
Exp. Val. Ratio: 3.00
RT Window: 30.000 sec
Expected RT: 9.84 min
Use Relative RT: Yes

Int. Type: Base To Base
Retention Time: 9.08 min
Area: 2.67e+004 counts
Height: 1655.014 cps
Start Time: 8.708 min
End Time: 9.437 min

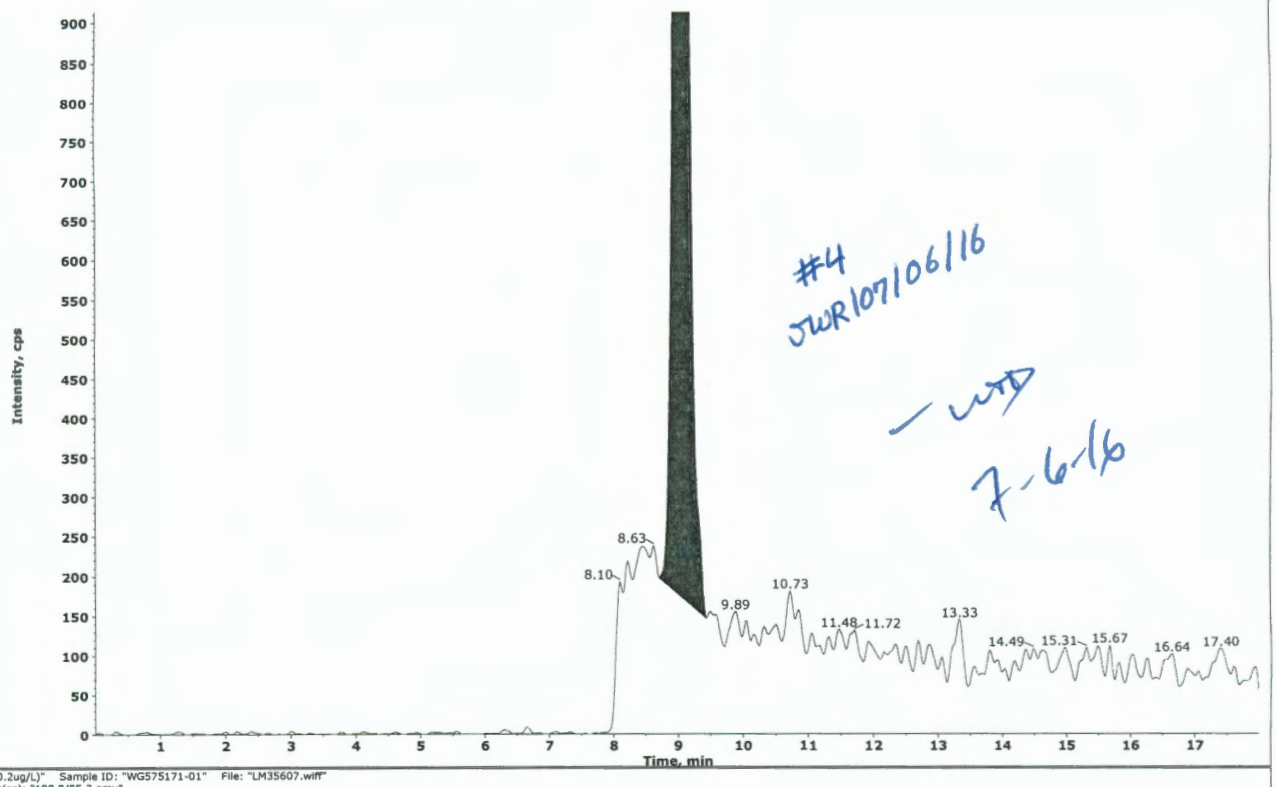

#4
JWR107106116
— WD
7-6-16

Sample Name: "WG575171-01 MCT (0.2ug/L)" Sample ID: "WG575171-01" File: "LM35607.wiff"
Peak Name: "Perchlorate conf" Mass(es): "100.8/85.2 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index: 1
Sample Type: Unknown
Concentration: N/A
Calculated Conc: 0.189 ng/L
Acq. Date: 7/5/2016
Acq. Time: 4:09:27 PM

Modified: Yes
Proc. Algorithm: Analyst Classic
Smoothing Factor: 2
Noise Threshold: 7.14 cps
Area Threshold: 35.71 cps
Num. Smooths: 5
Sep. Width: 0.20
Sep. Height: 0.01
Exp. Peak Ratio: 5.00
Exp. Adj. Ratio: 4.00
Exp. Val. Ratio: 3.00
RT Window: 30.000 sec
Expected RT: 9.84 min
Use Relative RT: Yes

Int. Type: Manual
Retention Time: 9.05 min
Area: 9.85e+003 counts
Height: 701.575 cps
Start Time: 8.769 min
End Time: 9.498 min

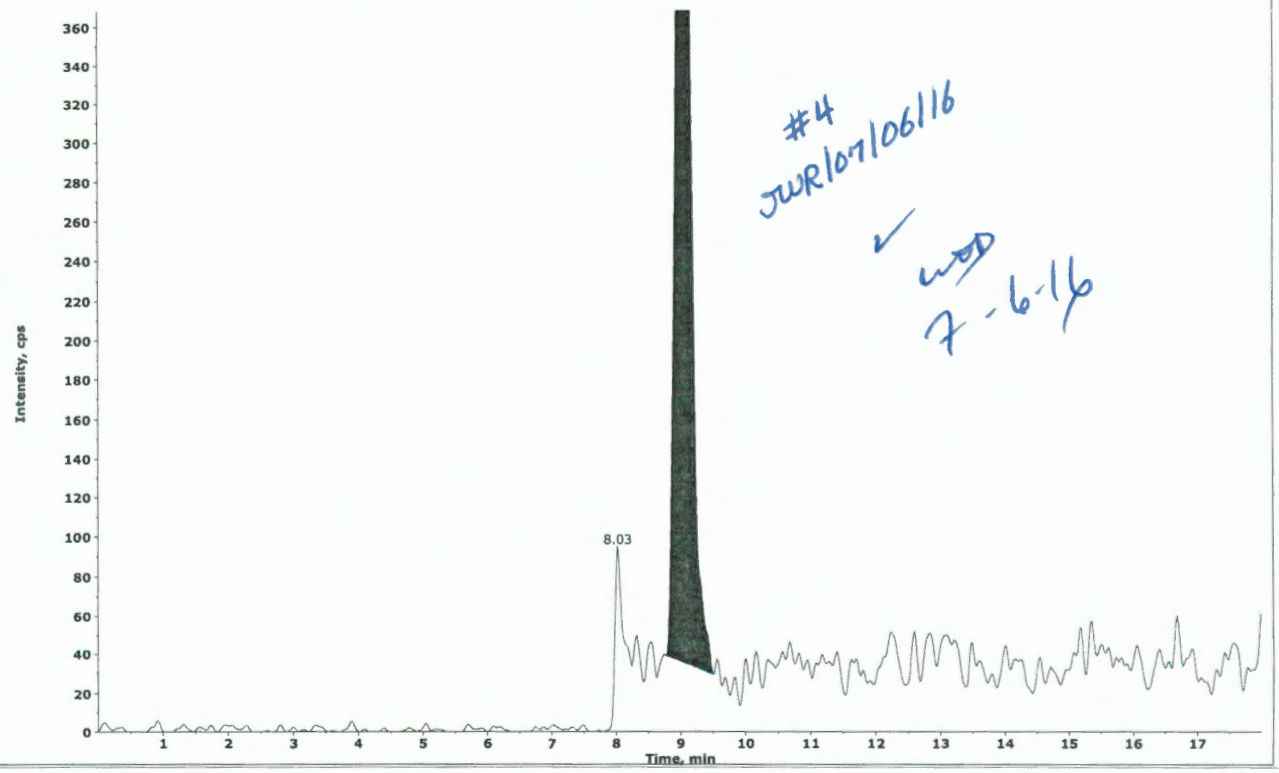

#4
JWR107106116
✓
WD
7-6-16

Collected by: N/A
Electronic Signature: no
Operator: lcmsl

2.2.2.5 Raw QC Data

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Data File	LM35572.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 5:11:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-02 BLANK	**Injection Vial**	5.00
Data File	LM35572.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 5:11:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.510e+05	9.58	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.58(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

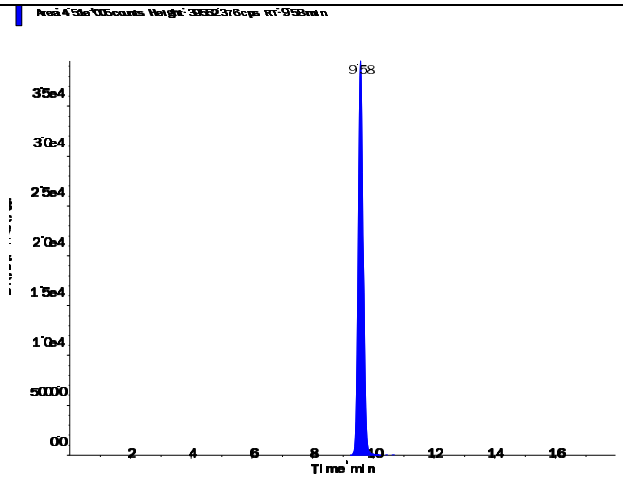

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

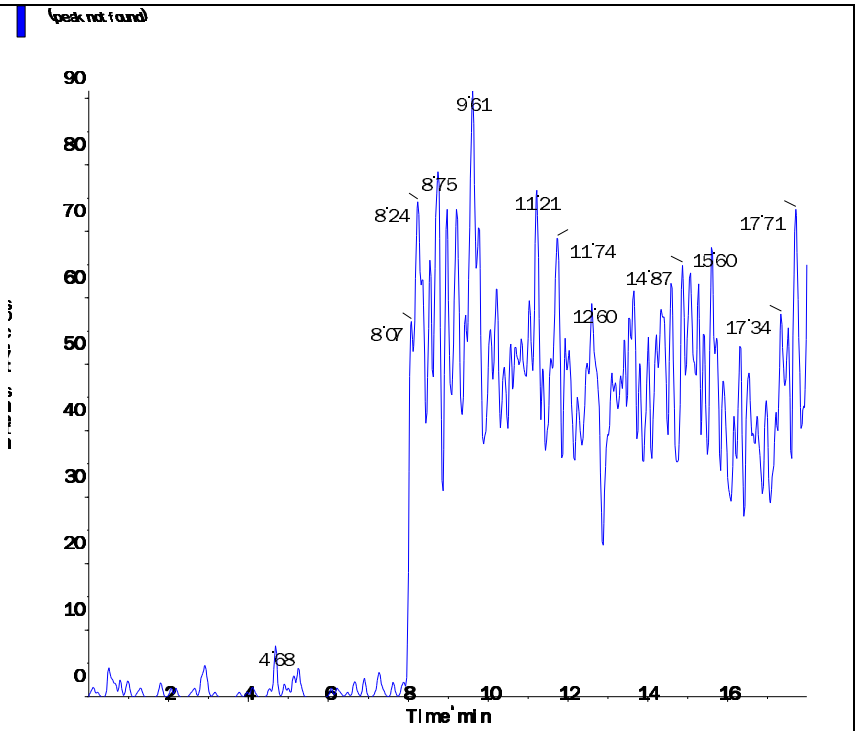

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

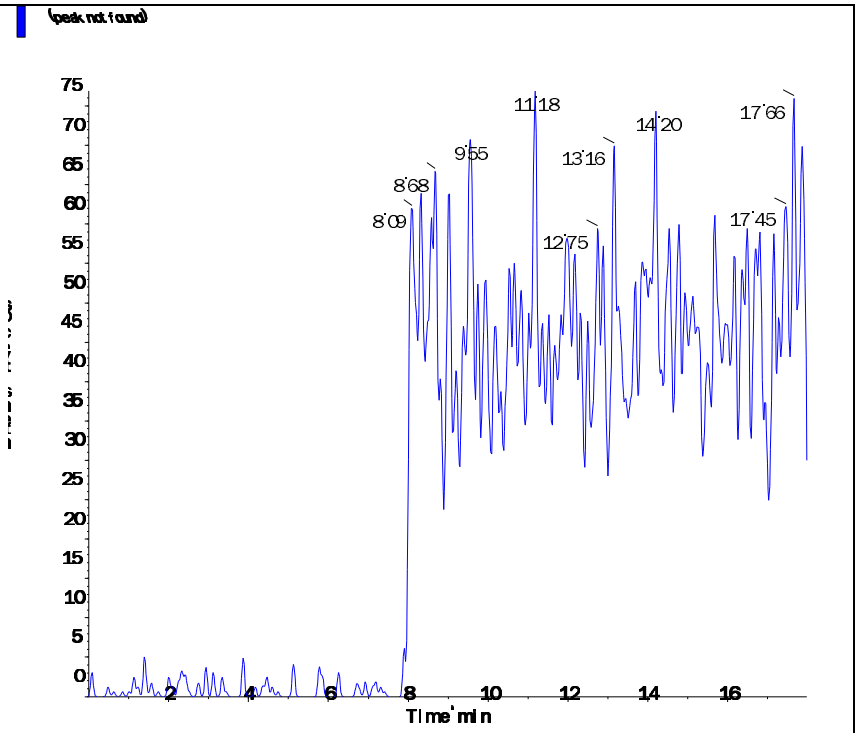

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Data File	LM35608.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	7/5/2016 4:28:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575171-02 BLANK	**Injection Vial**	5.00
Data File	LM35608.wiff	**Injection Volume**	10.00
Acquisition Date	7/5/2016 4:28:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG575171-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.360e+05	9.57	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.57(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

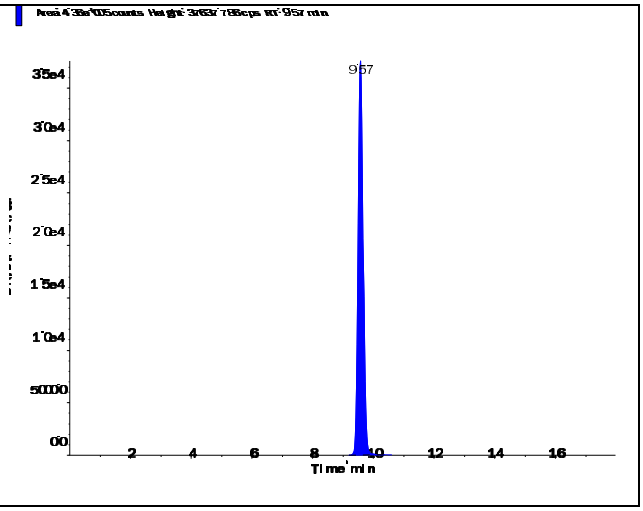

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

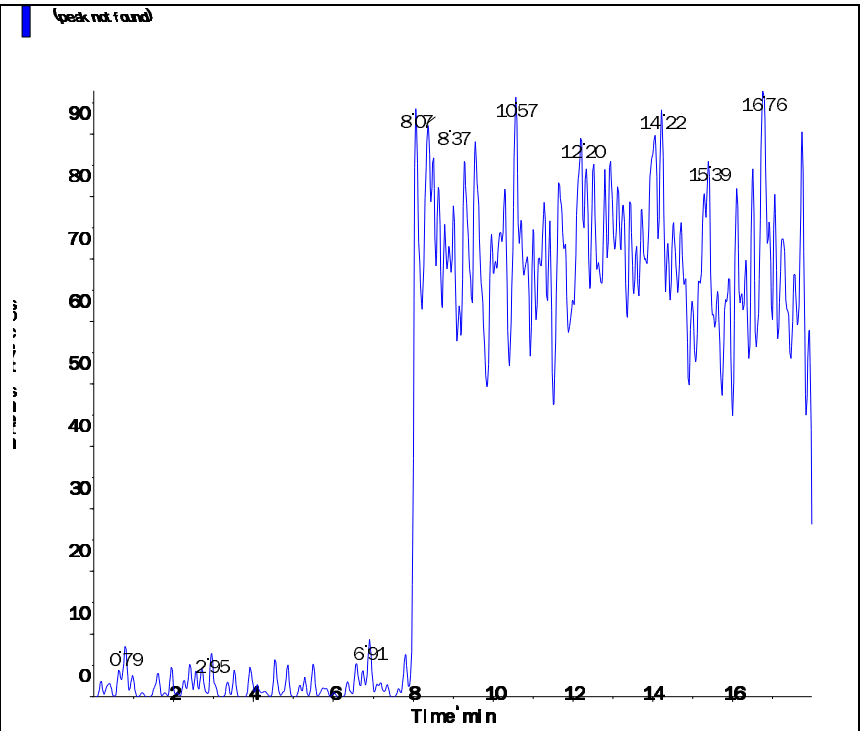

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

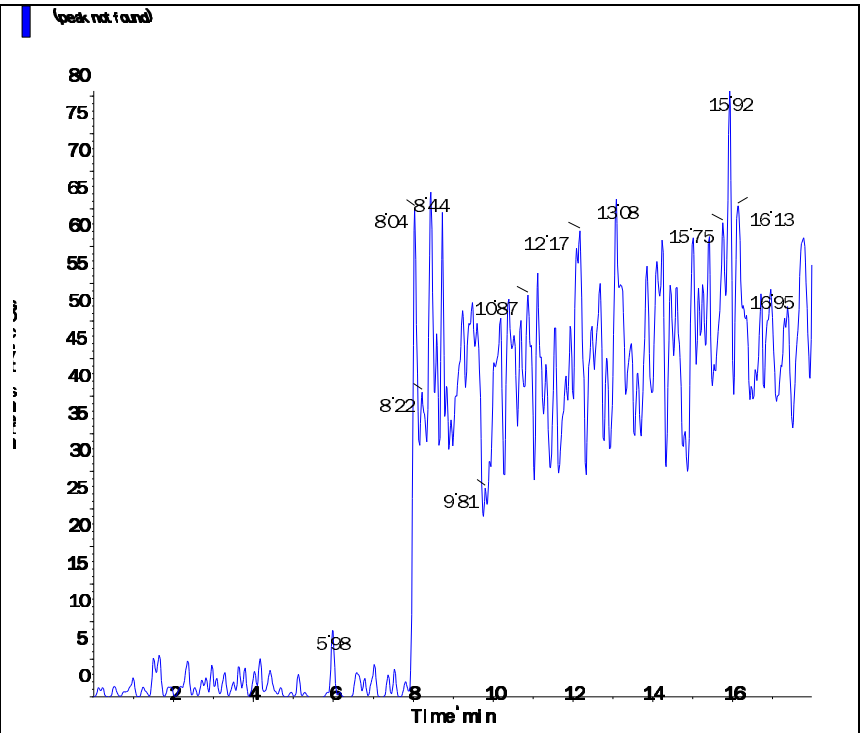

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Data File	LM35573.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 5:30:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM35573.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 5:30:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.510e+05	9.60	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.110e+04	9.61	N/A	0.201
Perchlorate conf	1.130e+04	9.60	N/A	0.204

O18LP (Internal Standard)

RT (Exp. RT): 9.60(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

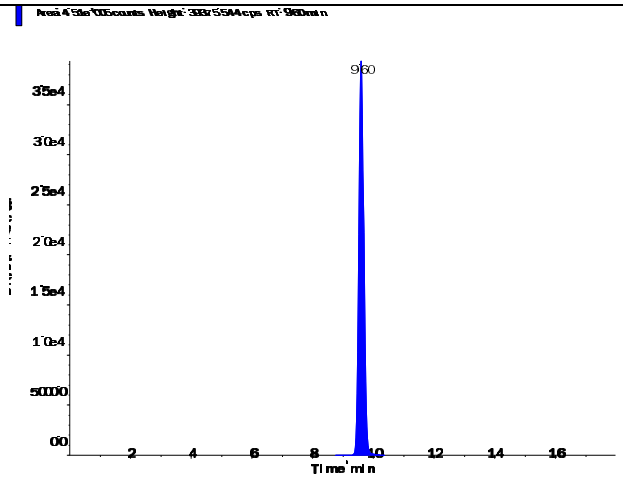

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.61 (9.84) min Calculated conc: 0.201 ng/ml Area Ratio: 0.069 Sample Type: (Unknown)	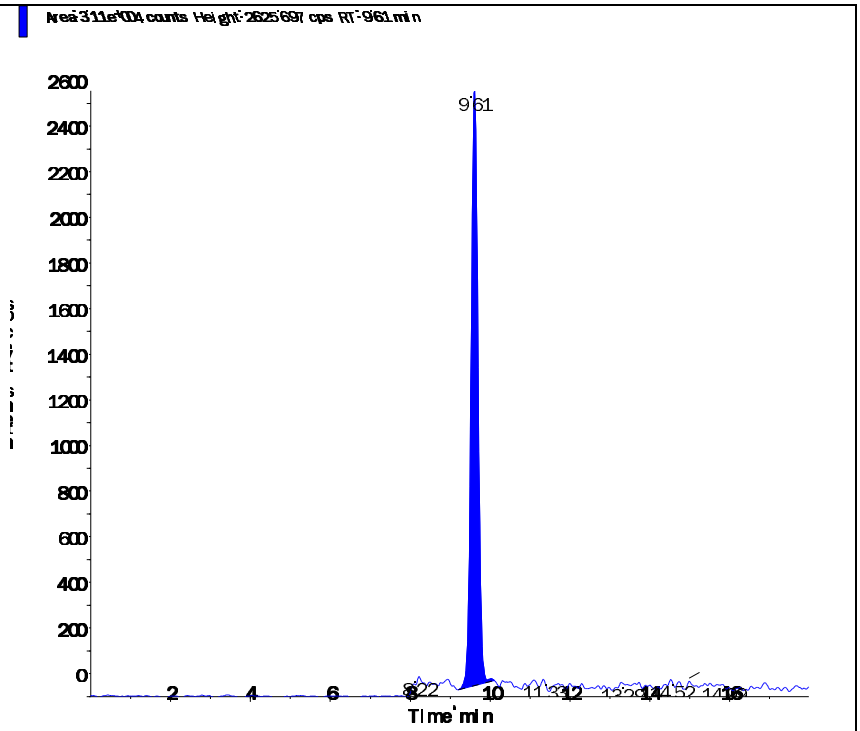
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.60 (9.84) min Calculated conc: 0.204 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	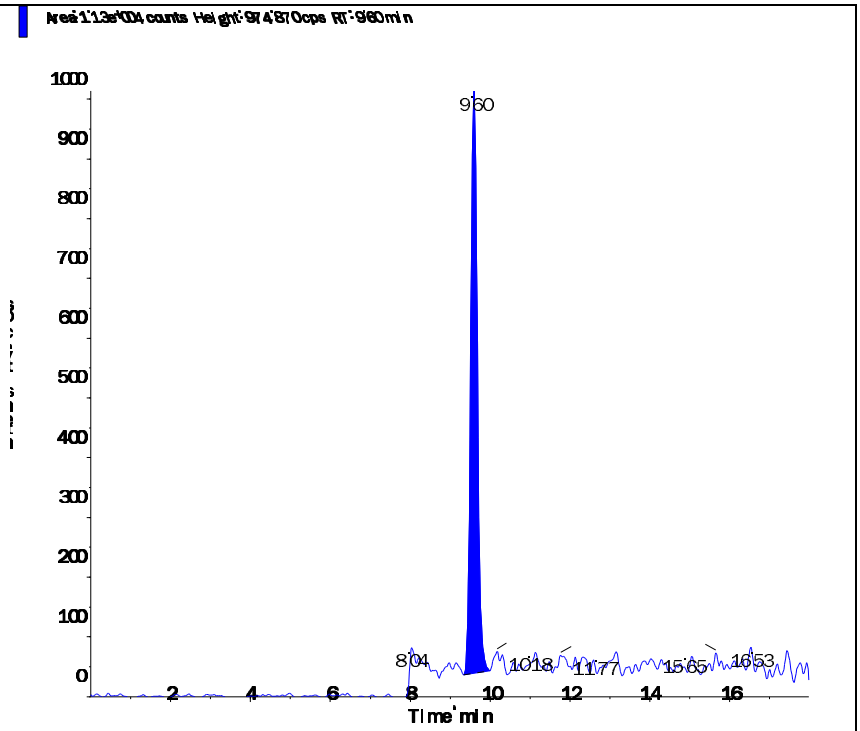

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Data File	LM35609.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	7/5/2016 4:47:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575171-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM35609.wiff	**Injection Volume**	10.00
Acquisition Date	7/5/2016 4:47:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG575171-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.390e+05	9.60	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.970e+04	9.61	N/A	0.198
Perchlorate conf	1.090e+04	9.59	N/A	0.202

O18LP (Internal Standard)

RT (Exp. RT): 9.60(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

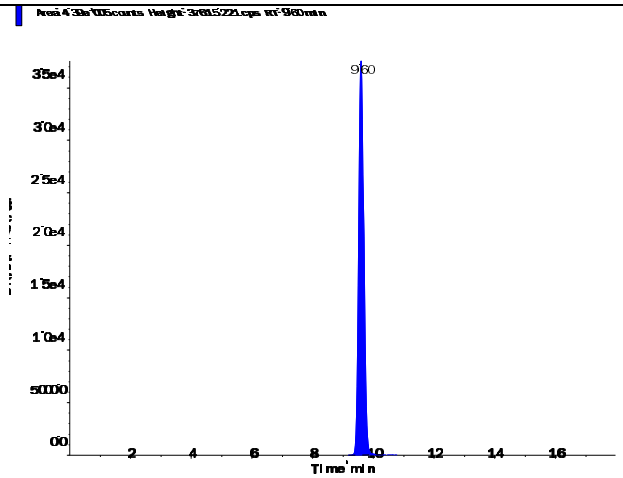

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Printed: 7/6/2016 10:58 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.61 (9.84) min
Calculated conc:	0.198 ng/ml
Area Ratio:	0.068
Sample Type:	(Unknown)

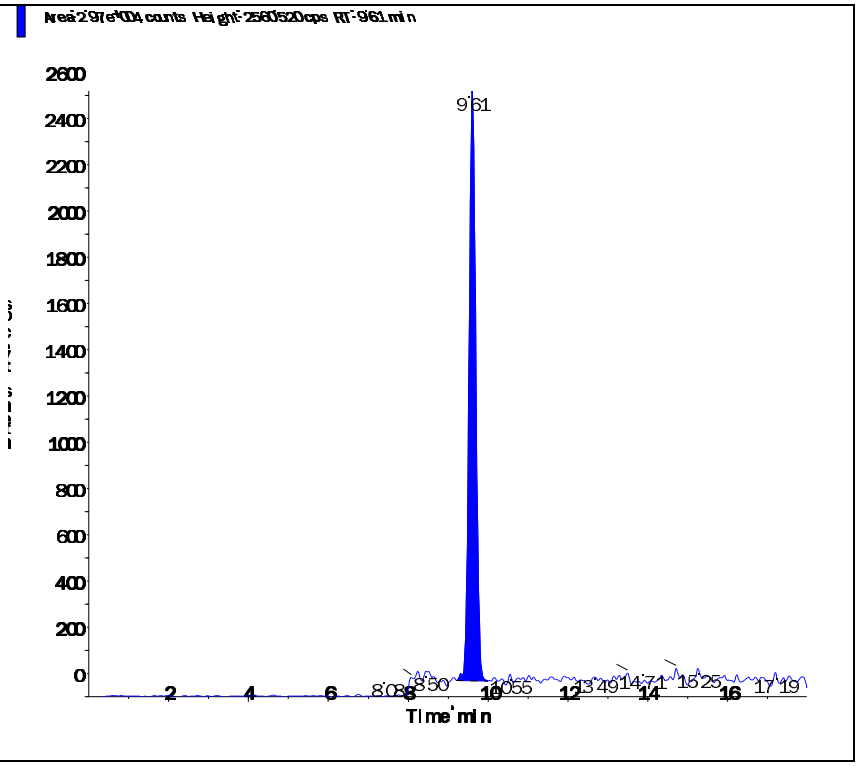

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.59 (9.84) min
Calculated conc:	0.202 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

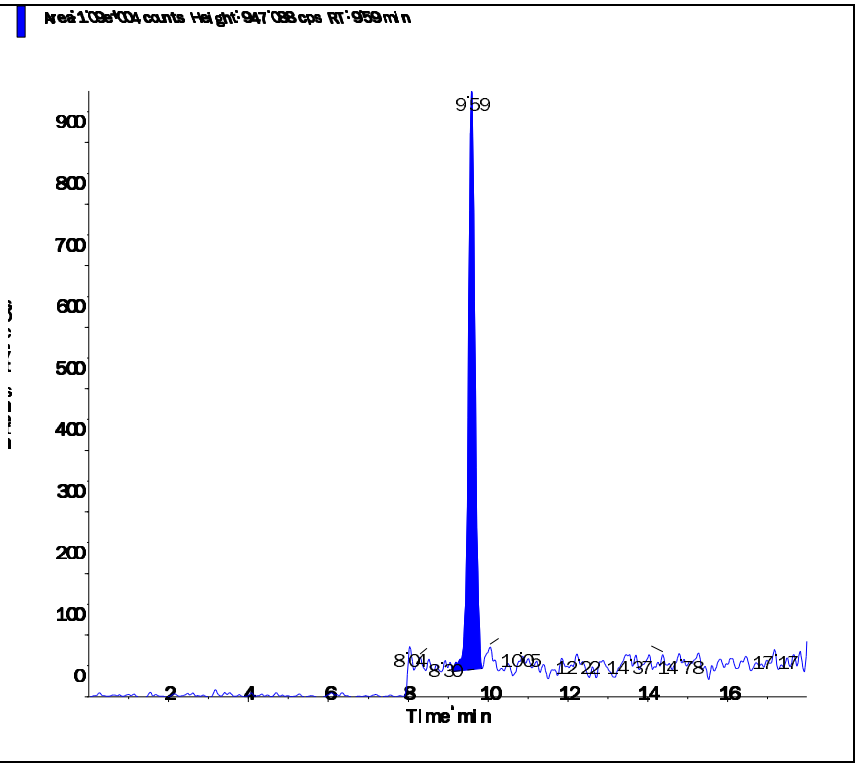

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Data File	LM35574.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 5:49:31 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-04 LCS2 (0.2ug/L)	**Injection Vial**	7.00
Data File	LM35574.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 5:49:31 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.500e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.250e+04	9.66	N/A	0.211
Perchlorate conf	1.180e+04	9.65	N/A	0.214

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

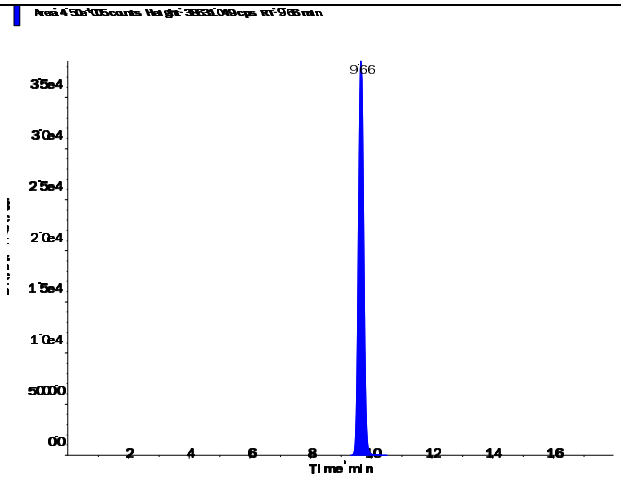

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Created with Analyst Reporter
Printed: 7/5/2016 12:28 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.66 (9.84) min Calculated conc: 0.211 ng/ml Area Ratio: 0.072 Sample Type: (Unknown)	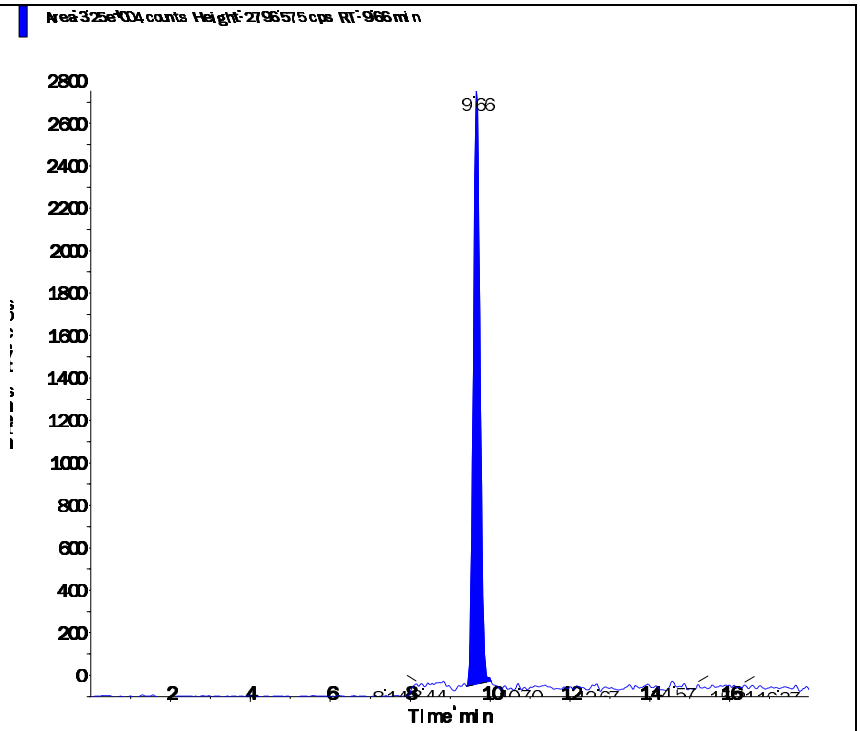
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.65 (9.84) min Calculated conc: 0.214 ng/ml Area Ratio: 0.026 Sample Type: (Unknown)	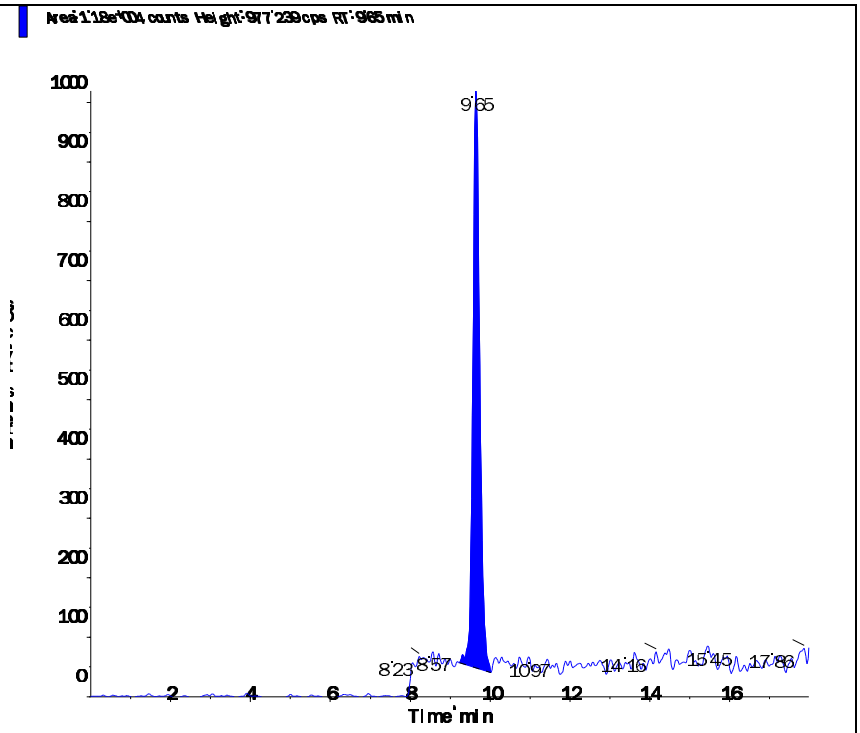

s.dataFile Page 2 of 2

2.3 Metals Data

2.3.1 Metals I C P Data

2.3.1.1 Summary Data

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW16F-062116	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/24/2016 10:17
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/24/2016 15:00
Collect Date:	06/21/2016 14:40	**Dilution:**	1	**File ID:**	T3.062416.150030
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.289		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Magnesium, Total	7439-95-4	17.3		1.00	0.500	0.250
Potassium, Total	7440-09-7	4.10		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.00641	J	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW16F-062116	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 10:26
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/27/2016 13:19
Collect Date:	06/21/2016 14:40	**Dilution:**	20	**File ID:**	T3.062716.131923
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	23.7		10.0	5.00	2.50
Iron, Total	7439-89-6	38.8		4.00	2.00	1.00
Sodium, Total	7440-23-5	142		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	109-062216	**Prep Method:**	3015	**Prep Date:**	06/24/2016 07:18
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/24/2016 10:17
Workgroup #:	WG574076	**Analyst:**	JYH	**Run Date:**	06/24/2016 15:04
Collect Date:	06/22/2016 07:20	**Dilution:**	1	**File ID:**	T3.062416.150424
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	3.62		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	2.30		0.500	0.250	0.125
Iron, Total	7439-89-6	3.98		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	1.90		1.00	0.500	0.250
Potassium, Total	7440-09-7	0.692	J	2.00	1.00	0.500
Selenium, Total	7782-49-2	0.00538	J	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	33.8		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.1.2 QC Summary Data

Example 6010 Calculations
Thermo Scientific iCAP

1.0 Initial Calibration (ICAL) Parameters
For a multi-point calibration, the system performs linear regression from data consisting of a blank and four standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG573994
Analyst: ERP
Spike Analyst: ERP
Run Date: 06/24/2016 07:18
Method: 3015
Balance: BAL019
Instrument: MW-1
Instrument Start: 06/24/2016 07:38

SOP: ME407 Revison 19
Spike Solution: STD76576
Spike Witness: VC
HNO3 Lot #: COA18905
HCL Lot #: COA18769
40 & 50 ML. DIGESTION TU COA18987
ICP Filters- fisher-Lot# RGT35619

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG573994-02	BLANK	1	40 mL	50 mL	205.799 g	205.793 g		
2	WG573994-03	LCS	1	40 mL	50 mL	211.523 g	211.513 g	5 mL	
3	L16060961-03	SAMP	1	40 mL	50 mL	205.052 g	205.037 g		06/24/16
4	L16061129-01	SAMP	1	40 mL	50 mL	206.124 g	206.112 g		07/05/16
5	L16061129-02	SAMP	1	40 mL	50 mL	206.489 g	206.476 g		07/05/16
6	L16061129-03	SAMP	1	40 mL	50 mL	205.825 g	205.808 g		07/05/16
7	L16061129-04	SAMP	1	40 mL	50 mL	205.354 g	205.348 g		07/05/16
8	L16061129-05	SAMP	1	40 mL	50 mL	205.317 g	205.299 g		07/05/16
9	L16061227-01	SAMP	1	40 mL	50 mL	204.465 g	204.443 g		07/01/16
10	L16061227-03	SAMP	1	40 mL	50 mL	204.813 g	204.793 g		07/01/16
11	L16061227-05	SAMP	1	40 mL	50 mL	206.069 g	206.05 g		07/01/16
12	L16061227-06	SAMP	1	40 mL	50 mL	202.826 g	202.812 g		07/01/16
13	L16061227-07	SAMP	1	40 mL	50 mL	205.408 g	205.392 g		07/01/16
14	L16061272-01	SAMP	1	40 mL	50 mL	206.813 g	206.794 g		06/30/16
15	L16061272-02	SAMP	1	40 mL	50 mL	208.22 g	208.202 g		06/30/16
16	L16061279-01	SAMP	1	40 mL	50 mL	206.107 g	206.09 g		06/28/16
17	WG573994-01	REF	1	40 mL	50 mL	204.432 g	204.415 g		
18	L16061279-02	RS01	1	40 mL	50 mL	204.432 g	204.415 g		06/28/16
19	WG573994-04	MS	1	40 mL	50 mL	213.413 g	213.398 g	5 mL	
20	L16061279-03	MS01	1	40 mL	50 mL	213.413 g	213.398 g	5 mL	06/28/16
21	WG573994-05	MSD	1	40 mL	50 mL	211.644 g	211.636 g	5 mL	
22	L16061279-04	SD01	1	40 mL	50 mL	211.644 g	211.636 g	5 mL	06/28/16
23	L16061279-05	SAMP	1	40 mL	50 mL	206.357 g	206.345 g		06/28/16
24	L16061289-01	SAMP	1	40 mL	50 mL	208.182 g	208.164 g		07/04/16
25	L16061289-04	SAMP	1	40 mL	50 mL	204.262 g	204.255 g		07/04/16
26	L16061290-03	SAMP	1	40 mL	50 mL	208.194 g	208.183 g		07/04/16
27	L16061290-05	SAMP	1	40 mL	50 mL	205.844 g	205.821 g		07/04/16

L16061279-03	filtered digestate
L16061279-04	filtered digestate
L16061279-01	filtered digestate
L16061279-02	filtered digestate
WG573994-01	filtered digestate
WG573994-04	filtered digestate
WG573994-05	filtered digestate
L16061279-05	filtered digestate

MW_DIG - Modified 09/30/2009
PDF ID: 4821834
Report generated: 06/24/2016 08:17

Microbac Laboratories Inc.
Microwave Digestion Log

Analyst: Erin Potter

SOP:
Spike Solution:
Reviewer: Jackie Collins
Spike Witness:

Method:
Balance:
Instrument:
Instrument Start:

MW_DIG - Modified 09/30/2009
PDF ID: 4821834
Report generated: 06/24/2016 08:17

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062416T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574050,574055,574076,573560,573149,573561

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.062416.100206	WG574123-01	Calibration Point		1		06/24/16 10:02
2	T3.062416.100606	WG574123-02	Calibration Point		1		06/24/16 10:06
3	T3.062416.101006	WG574123-03	Calibration Point		1		06/24/16 10:10
4	T3.062416.101405	WG574123-04	Calibration Point		1		06/24/16 10:14
5	T3.062416.101742	WG574123-05	Calibration Point		1		06/24/16 10:17
6	T3.062416.102118	WG574123-06	Initial Calibration Verification		1		06/24/16 10:21
7	T3.062416.102444	WG574123-07	Initial Calib Blank		1		06/24/16 10:24
8	T3.062416.102843	WG574123-08	Low Level Initial Calibration V		1		06/24/16 10:28
9	T3.062416.103239	WG574123-09	Low Level Initial Calibration V		1		06/24/16 10:32
10	T3.062416.103634	WG574123-10	Interference Check		1		06/24/16 10:36
11	T3.062416.104027	WG574123-11	Interference Check		1		06/24/16 10:40
12	T3.062416.104409	WG574123-12	CCV		1		06/24/16 10:44
13	T3.062416.104746	WG574123-13	CCB		1		06/24/16 10:47
14	T3.062416.105146	WG573823-01	Method/Prep Blank	1/50	1		06/24/16 10:51
15	T3.062416.105915	WG573823-02	Laboratory Control S	1/50	1		06/24/16 10:59
16	T3.062416.110255	WG573823-03	Laboratory Control S	1/50	1		06/24/16 11:02
17	T3.062416.110635	L16061143-01	500662-WP-002	1/50	1		06/24/16 11:06
18	T3.062416.111030	L16061143-02	500662-WP-003	1/50	1		06/24/16 11:10
19	T3.062416.111424	L16061143-03	500662-WP-004	1/50	1		06/24/16 11:14
20	T3.062416.111816	WG574050-01	Post Digestion Spike		1	L16061143-03	06/24/16 11:18
21	T3.062416.112154	WG574050-02	Serial Dilution		5	L16061143-03	06/24/16 11:21
22	T3.062416.112553	L16060724-01	ABW_06142016	40/50	1000		06/24/16 11:25
23	T3.062416.112949	L16060787-10	U517TW006C	40/50	10		06/24/16 11:29
24	T3.062416.113347	WG574123-14	CCV		1		06/24/16 11:33
25	T3.062416.113725	WG574123-15	CCB		1		06/24/16 11:37
26	T3.062416.114112	L16060787-18	U517TW008A	40/50	10		06/24/16 11:41
27	T3.062416.114510	WG573707-03	Method/Prep Blank	40/50	1		06/24/16 11:45
28	T3.062416.114908	WG573707-04	Laboratory Control S	40/50	1		06/24/16 11:49
29	T3.062416.115249	WG573594-01	Fluid Blank 1		1		06/24/16 11:52
30	T3.062416.115648	WG573594-02	Fluid Blank 2		1		06/24/16 11:56
31	T3.062416.120048	WG573707-01	Reference Sample		1	L16061151-01	06/24/16 12:00
32	T3.062416.120443	WG573707-05	Matrix Spike	40/50	1	L16061151-01	06/24/16 12:04
33	T3.062416.120811	WG573707-06	Matrix Spike Duplica	40/50	1	L16061151-01	06/24/16 12:08
34	T3.062416.121149	L16061140-01	60500-SSP0042-SSP0042	5/50	1		06/24/16 12:11

Page: 1 Approved: June 24, 2016

Kim H. Rhoden

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062416T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574050,574055,574076,573560,573149,573561

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.062416.121541	WG574055-02	Serial Dilution		5	L16061140-01	06/24/16 12:15
36	T3.062416.121926	WG574123-16	CCV		1		06/24/16 12:19
37	T3.062416.122304	WG574123-17	CCB		1		06/24/16 12:23
38	T3.062416.122703	WG574055-01	Post Digestion Spike		1	L16061140-01	06/24/16 12:27
39	T3.062416.123043	L16061140-03	60500-SSP0037-SPLP023	5/50	1		06/24/16 12:30
40	T3.062416.123437	WG572980-02	Method/Prep Blank	40/50	1		06/24/16 12:34
41	T3.062416.123836	WG572980-03	Laboratory Control S	40/50	1		06/24/16 12:38
42	T3.062416.124216	L16060732-01	LH18/24-SP650-6371-GRAB	40/50	1		06/24/16 12:42
43	T3.062416.124614	WG572980-01	Reference Sample		1	L16060796-01	06/24/16 12:46
44	T3.062416.125002	WG572980-04	Matrix Spike	5/50	1	L16060796-01	06/24/16 12:50
45	T3.062416.125340	WG572980-05	Matrix Spike Duplica	5/50	1	L16060796-01	06/24/16 12:53
46	T3.062416.125716	L16060732-02	LH18/24-SP650-6371-COMP	40/50	1		06/24/16 12:57
47	T3.062416.130110	L16060794-01	A08-MW06-Y1S2	40/50	10		06/24/16 13:01
48	T3.062416.130507	WG574123-18	CCV		1		06/24/16 13:05
49	T3.062416.130845	WG574123-19	CCB		1		06/24/16 13:08
50	T3.062416.131244	L16060794-04	A09-MW07-Y1S2	40/50	10		06/24/16 13:12
51	T3.062416.131643	L16060796-04	500662-DS-002	5/50	1		06/24/16 13:16
52	T3.062416.132032	WG573149-01	Post Digestion Spike		1	L16060796-04	06/24/16 13:20
53	T3.062416.132408	WG573149-02	Serial Dilution		5	L16060796-04	06/24/16 13:24
54	T3.062416.132801	WG573149-02	Serial Dilution		25	L16060796-04	06/24/16 13:28
55	T3.062416.133159	WG573994-02	Method/Prep Blank	40/50	1		06/24/16 13:31
56	T3.062416.133557	WG573994-03	Laboratory Control S	40/50	1		06/24/16 13:35
57	T3.062416.133937	WG573994-01	Reference Sample		1	L16061279-02	06/24/16 13:39
58	T3.062416.134328	WG573994-04	Matrix Spike	40/50	1	L16061279-02	06/24/16 13:43
59	T3.062416.134705	WG573994-05	Matrix Spike Duplica	40/50	1	L16061279-02	06/24/16 13:47
60	T3.062416.135042	WG574123-20	CCV		1		06/24/16 13:50
61	T3.062416.135419	WG574123-21	CCB		1		06/24/16 13:54
62	T3.062416.135818	L16060961-03	GH58HS_MELZER_03-03-(	40/50	1		06/24/16 13:58
63	T3.062416.140215	WG574076-01	Post Digestion Spike		1	L16060961-03	06/24/16 14:02
64	T3.062416.140555	WG574076-02	Serial Dilution		5	L16060961-03	06/24/16 14:05
65	T3.062416.140952	WG574076-02	Serial Dilution		25	L16060961-03	06/24/16 14:09
66	T3.062416.141350	L16061227-01	18WW22-062116	40/50	1		06/24/16 14:13
67	T3.062416.141746	L16061227-03	C04F-062116	40/50	1		06/24/16 14:17
68	T3.062416.142142	L16061227-05	C04FFD-062116	40/50	1		06/24/16 14:21

Page: 2 Approved: June 24, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062416T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574050,574055,574076,573560,573149,573561

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.062416.142526	L16061227-06	18CPTMW18-062116	40/50	1		06/24/16 14:25
70	T3.062416.142928	L16061227-01	18WW22-062116		10		06/24/16 14:29
71	T3.062416.143326	WG574123-22	CCV		1		06/24/16 14:33
72	T3.062416.143703	WG574123-23	CCB		1		06/24/16 14:37
73	T3.062416.144104	WG574123-24	Low Level Continuing Calibra		1		06/24/16 14:41
74	T3.062416.144501	WG574123-25	Low Level Continuing Calibra		1		06/24/16 14:45
75	T3.062416.144853	L16061227-07	18WW18-062116	40/50	1		06/24/16 14:48
76	T3.062416.145235	L16061289-01	MW21-062216	40/50	1		06/24/16 14:52
77	T3.062416.145634	L16061289-04	18WW02F-062216	40/50	1		06/24/16 14:56
78	T3.062416.150030	L16061290-03	MW16F-062116	40/50	1		06/24/16 15:00
79	T3.062416.150424	L16061290-05	109-062216	40/50	1		06/24/16 15:04
80	T3.062416.150820	L16061129-01	MW-22-002	40/50	1		06/24/16 15:08
81	T3.062416.151215	L16061129-02	MW-22-010	40/50	1		06/24/16 15:12
82	T3.062416.151609	L16061129-03	MW-22-007	40/50	1		06/24/16 15:16
83	T3.062416.152008	WG574123-26	CCV		1		06/24/16 15:20
84	T3.062416.152346	WG574123-27	CCB		1		06/24/16 15:23
85	T3.062416.152745	L16061129-04	FD061716	40/50	1		06/24/16 15:27
86	T3.062416.153140	L16061129-05	EB-WATER A	40/50	1		06/24/16 15:31
87	T3.062416.153539	L16061272-01	SS007MW0B18-007	40/50	1		06/24/16 15:35
88	T3.062416.153937	L16061272-02	SS007MWN752-007	40/50	1		06/24/16 15:39
89	T3.062416.154332	L16061279-01	XU936TW007A	40/50	1		06/24/16 15:43
90	T3.062416.154725	L16061279-05	XU936TW019A	40/50	1		06/24/16 15:47
91	T3.062416.155118	L16060729-01	A09-MW10-Y1S2	40/50	1		06/24/16 15:51
92	T3.062416.155514	L16060729-02	A09-MW11-Y1S2	40/50	1		06/24/16 15:55
93	T3.062416.155910	L16060729-03	A09-MW12-Y1S2	40/50	1		06/24/16 15:59
94	T3.062416.160303	WG574123-28	CCV		1		06/24/16 16:03
95	T3.062416.160640	WG574123-29	CCB		1		06/24/16 16:06
96	T3.062416.161038	L16061148-01	DP005SW0513-007		1		06/24/16 16:10
97	T3.062416.161432	L16061148-02	DP005SW0514-007		1		06/24/16 16:14
98	T3.062416.161828	L16061150-01	SS007SW0709-007		1		06/24/16 16:18
99	T3.062416.162223	L16061150-02	SS007SW0710-007		1		06/24/16 16:22
100	T3.062416.162617	L16061151-02	LF003SW0311-007 DUP		1		06/24/16 16:26
101	T3.062416.163012	L16061151-05	LF003SW0312-007		1		06/24/16 16:30
102	T3.062416.163406	WG573707-02	Reference Sample		1	L16061154-01	06/24/16 16:34

Page: 3 Approved: June 24, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062416T3.1R.TXT

Analyst1: JYH Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 574050,574055,574076,573560,573149,573561

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T3.062416.163809	WG573707-07	Matrix Spike		1	L16061154-01	06/24/16 16:38
104	T3.062416.164156	WG573707-08	Matrix Spike Duplica		1	L16061154-01	06/24/16 16:41
105	T3.062416.164542	L16061154-04	FQC-RB06201601-CB		1		06/24/16 16:45
106	T3.062416.164941	WG574123-30	CCV		1		06/24/16 16:49
107	T3.062416.165319	WG574123-31	CCB		1		06/24/16 16:53
108	T3.062416.165718	L16061155-01	ST008MW0812-007		1		06/24/16 16:57
109	T3.062416.170338	WG574123-32	CCV		1		06/24/16 17:03
110	T3.062416.170715	WG574123-33	CCB		1		06/24/16 17:07
111	T3.062416.171114	WG574123-34	Low Level Continuing Calibra		1		06/24/16 17:11
112	T3.062416.171510	WG574123-35	Low Level Continuing Calibra		1		06/24/16 17:15

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Kim H. Rhoden

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062716T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574214,574076

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.062716.101109	WG574382-01	Calibration Point		1		06/27/16 10:11
2	T3.062716.101506	WG574382-02	Calibration Point		1		06/27/16 10:15
3	T3.062716.101903	WG574382-03	Calibration Point		1		06/27/16 10:19
4	T3.062716.102300	WG574382-04	Calibration Point		1		06/27/16 10:23
5	T3.062716.102637	WG574382-05	Calibration Point		1		06/27/16 10:26
6	T3.062716.103013	WG574382-06	Initial Calibration Verification		1		06/27/16 10:30
7	T3.062716.103339	WG574382-07	Initial Calib Blank		1		06/27/16 10:33
8	T3.062716.103737	WG574382-08	Low Level Initial Calibration V		1		06/27/16 10:37
9	T3.062716.104131	WG574382-09	Interference Check		1		06/27/16 10:41
10	T3.062716.104522	WG574382-10	Interference Check		1		06/27/16 10:45
11	T3.062716.104904	WG574382-11	CCV		1		06/27/16 10:49
12	T3.062716.105241	WG574382-12	CCB		1		06/27/16 10:52
13	T3.062716.105639	WG573656-02	Method/Prep Blank	40/50	1		06/27/16 10:56
14	T3.062716.110423	WG573656-03	Laboratory Control S	40/50	1		06/27/16 11:04
15	T3.062716.110802	WG573656-01	Reference Sample		1	L16060996-01	06/27/16 11:08
16	T3.062716.111157	WG573656-04	Matrix Spike	40/50	1	L16060996-01	06/27/16 11:11
17	T3.062716.111535	WG573656-05	Matrix Spike Duplica	40/50	1	L16060996-01	06/27/16 11:15
18	T3.062716.111914	L16061179-01	13273-G06-WQ-W0218	40/50	1		06/27/16 11:19
19	T3.062716.112312	WG574214-01	Post Digestion Spike		1	L16061179-01	06/27/16 11:23
20	T3.062716.112651	WG574214-02	Serial Dilution		5	L16061179-01	06/27/16 11:26
21	T3.062716.113048	WG574214-02	Serial Dilution		25	L16061179-01	06/27/16 11:30
22	T3.062716.113445	WG574382-13	CCV		1		06/27/16 11:34
23	T3.062716.113822	WG574382-14	CCB		1		06/27/16 11:38
24	T3.062716.114220	L16061026-02	18WW16F-061616	40/50	1		06/27/16 11:42
25	T3.062716.114614	L16061026-04	129-061616	40/50	1		06/27/16 11:46
26	T3.062716.115009	L16061026-06	120F-061616	40/50	1		06/27/16 11:50
27	T3.062716.115400	L16061026-07	123-061616	40/50	1		06/27/16 11:54
28	T3.062716.115753	L16060840-01	MW-24-004R	40/50	1		06/27/16 11:57
29	T3.062716.120148	L16060840-02	MW-24-003R	40/50	1		06/27/16 12:01
30	T3.062716.120539	L16060840-03	FR-061416-24	40/50	1		06/27/16 12:05
31	T3.062716.120930	L16060840-04	MW-24-002R	40/50	1		06/27/16 12:09
32	T3.062716.121323	L16060840-05	MW-24-005	40/50	1		06/27/16 12:13
33	T3.062716.121733	L16060840-06	EB-LOW FLOW TUBING	40/50	1		06/27/16 12:17
34	T3.062716.122130	WG574382-15	CCV		1		06/27/16 12:21

Page: 1 Approved: June 28, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062716T3.1R.TXT

Analyst1: JYH Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 574214,574076

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.062716.122507	WG574382-16	CCB		1		06/27/16 12:25
36	T3.062716.122905	L16060996-04	MW-21-006	40/50	1		06/27/16 12:29
37	T3.062716.123259	L16060996-05	MW-21-002	40/50	1		06/27/16 12:32
38	T3.062716.123653	L16060996-06	FD-061516-21	40/50	1		06/27/16 12:36
39	T3.062716.124047	L16060996-07	MW-21-009	40/50	1		06/27/16 12:40
40	T3.062716.124440	L16060996-08	MW-21-005	40/50	1		06/27/16 12:44
41	T3.062716.124834	L16060996-09	MW-21-004	40/50	1		06/27/16 12:48
42	T3.062716.125227	L16061116-23	062016-PS-CB027	40/50	1		06/27/16 12:52
43	T3.062716.125618	L16061116-24	062016-PS-CB027	40/50	1		06/27/16 12:56
44	T3.062716.130008	L16061026-02	18WW16F-061616	40/50	20		06/27/16 13:00
45	T3.062716.130358	L16061026-04	129-061616	40/50	20		06/27/16 13:03
46	T3.062716.130753	WG574382-17	CCV		1		06/27/16 13:07
47	T3.062716.131130	WG574382-18	CCB		1		06/27/16 13:11
48	T3.062716.131528	L16061026-06	120F-061616	40/50	20		06/27/16 13:15
49	T3.062716.131923	L16061290-03	MW16F-062116	40/50	20		06/27/16 13:19
50	T3.062716.132320	WG574382-19	CCV		1		06/27/16 13:23
51	T3.062716.132646	WG574382-20	CCB		1		06/27/16 13:26
52	T3.062716.133045	WG574382-21	Low Level Continuing Calibra		1		06/27/16 13:30

Page: 2 Approved: June 28, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 24-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 574123
Runlog ID: 75912
Analytical Workgroups: 574050,574055,574076,573560,573149,573561

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1129
Level 4	1140,1143,1151,1227,1272,1279
	1289,1290,729,732,794,787,724
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer: Secondary Reviewer:
26-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-26-2016 10:34:20

Microbac Laboratories Inc.

Data Checklist

Date: 27-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 574382
Runlog ID: 75950
Analytical Workgroups: 574656,574076

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	840,996
Level 4	1026,1179,1290
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer:

Secondary Reviewer:
28-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-28-2016 10:41:09

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010C

AAB#: WG574076

Login Number: L16061290

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW16F-062116	03	06/21/16					06/24/2016	2.7	180		06/24/16	3	180	
MW16F-062116	03	06/21/16					06/24/2016	2.7	180		06/27/16	5.9	180	
109-062216	05	06/22/16					06/24/2016	2	180		06/24/16	2.3	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4824731
Report generated 06/28/2016 09:30

METHOD BLANK SUMMARY

Login Number: L16061290
Blank File ID: T3.062416.133159
Prep Date: 06/24/16 07:18
Analyzed Date: 06/24/16 13:31
Analyst: JYH

Work Group: WG574076
Blank Sample ID: WG573994-02
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573994-03	T3.062416.133557	06/24/16 13:35	01
MW16F-062116	L16061290-03	T3.062416.150030	06/24/16 15:00	01
109-062216	L16061290-05	T3.062416.150424	06/24/16 15:04	01
MW16F-062116	L16061290-03	T3.062716.131923	06/27/16 13:19	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4824732
Report generated 06/28/2016 09:30

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061290 Prep Date: 06/24/16 07:18 Sample ID: WG573994-02
Instrument ID: ICP-THERMO3 Run Date: 06/24/16 13:31 Prep Method: 3015
File ID: T3.062416.133159 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG574076 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-24-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Aluminum, Total	0.0500	0.200	0.0719	1	J
Beryllium, Total	0.00500	0.0200	0.00500	1	U
Calcium, Total	0.125	0.500	0.182	1	J
Iron, Total	0.0500	0.200	0.0950	1	J
Magnesium, Total	0.250	1.00	0.250	1	U
Potassium, Total	0.500	2.00	0.500	1	U
Selenium, Total	0.00500	0.0200	0.00500	1	U
Sodium, Total	0.250	1.00	0.250	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4824733
28-JUN-2016 09:30

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061290 Run Date: 06/24/2016 Sample ID: WG573994-03
Instrument ID: ICP-THERMO3 Run Time: 13:35 Prep Method: 3015
File ID: T3.062416.133557 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG574076 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76576 Cal ID: ICP-TH-24-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Aluminum, Total	6.25	6.37	102	80 - 120	
Beryllium, Total	0.0313	0.0306	97.8	80 - 120	
Calcium, Total	6.25	6.65	106	80 - 120	
Iron, Total	2.50	2.53	101	80 - 120	
Magnesium, Total	6.25	6.45	103	80 - 120	
Potassium, Total	31.3	32.7	105	80 - 120	
Selenium, Total	0.250	0.251	101	80 - 120	
Sodium, Total	31.3	32.8	105	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4824734
Report generated: 06/28/2016 09:30

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061290 Cal ID: ICP-THERMO3 - Worknum: WG574076
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG573994-01 File ID: T3.062416.133937 Dil: 1 Matrix: WATER
Sample ID: WG573994-04 MS File ID: T3.062416.134328 Dil: 1 Units: mg/L
Sample ID: WG573994-05 MSD File ID: T3.062416.134705 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Aluminum	19.7	6.25	25.8	97.8	6.25	27.1	119	4.89	80 - 120	20	
Beryllium	ND	0.0313	0.0301	96.4	0.0313	0.0309	98.8	2.42	80 - 120	20	
Potassium	7.81	31.3	38.1	96.9	31.3	39.6	102	3.81	80 - 120	20	
Selenium	ND	0.250	0.243	97.1	0.250	0.246	98.5	1.53	80 - 120	20	
Sodium	23.5	31.3	54.5	98.9	31.3	55.6	103	2.15	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4824735
Report generated 06/28/2016 09:30

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061290 Cal ID: ICP-THERMO3- Worknum: WG574076
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG573994-01 File ID: T3.062516.152518 Dil: 20 Matrix: WATER
Sample ID: WG573994-04 MS File ID: T3.062516.153646 Dil: 20 Units: mg/L
Sample ID: WG573994-05 MSD File ID: T3.062516.154039 Dil: 20

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Calcium	234	6.25	249	243	6.25	247	200	1.10	80 - 120	20	*
Iron	27.6	2.50	26.9	-27.9	2.50	26.4	-47.0	1.79	80 - 120	20	*
Magnesium	95.8	6.25	106	157	6.25	105	154	0.173	80 - 120	20	*

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4824735
Report generated 07/12/2016 11:11

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16061290 **Worknum:** WG574076
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG574076-02 **File ID:** T3.062416.140555 **Dil:** 5 **Units:** ug/L
Sample: L16060961-03 **File ID:** T3.062416.135818 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	91.4		87.2		4.65	
Beryllium	ND	U	0.300		3100.00	
Calcium	50100		49300		1.56	
Iron	36.6		77.9		113.00	E
Magnesium	15200		15200		0.54	
Potassium	1350		1740		28.90	E
Selenium	4.57		26.5		480.00	E
Sodium	9650		9940		3.08	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4824729
06/28/2016 09:30

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061290 **Worknum:** WG574076
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG574076-01 **File ID:** T3.062416.140215 **Dil:** 1 **Units:** ug/L
Sample ID: L16060961-03 **File ID:** T3.062416.135818 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	5160		91.4	F	5000	101.5	75 - 125	
BERYLLIUM	24.6		0	U	25	98.3	75 - 125	
CALCIUM	50300		50100		5000	104.5	75 - 125	
IRON	2080		0	U	2000	103.9	75 - 125	
MAGNESIUM	18800		15200		5000	102.3	75 - 125	
POTASSIUM	27400		1350	F	25000	104.7	75 - 125	
SELENIUM	208		4.57	F	200	102.1	75 - 125	
SODIUM	34900		9650		25000	105.0	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4824730
Report generated: 06/28/2016 09:30

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061290	Workgroup (AAB#):	WG574076
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG574123	Initial Calibration Date:	24-JUN-2016 10:17

	WG574123-01		WG574123-02		WG574123-03		WG574123-04		WG574123-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000920	.1	0.00153	.2	0.00215	10	0.0811	20	0.159	.999969	
BERYLLIUM	0	0.000510	.0005	0.000790	.001	0.00116	.05	0.0467	.1	0.0919	.999879	
CALCIUM	0	0.000820	.1	0.00503	.2	0.00837	10	0.457	20	0.881	.999811	
IRON	0	-0.000100	.04	0.000570	.08	0.00116	4	0.0886	8	0.172	.999867	
MAGNESIUM	0	-0.000440	NA	NA	.2	0.000830	10	0.0815	20	0.157	.999846	
POTASSIUM	0	-0.0108	.5	0.0152	1	0.0397	50	3.07	100	5.95	.999864	
SELENIUM	0	-0.000160	NA	NA	.008	-0.000100	.4	0.00655	.8	0.0133	.999466	
SODIUM	0	-0.0319	.5	0.0316	1	0.0972	50	8.45	100	16.4	.999892	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4824738
Report generated: 28-JUN-2016 09:30

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061290	Workgroup (AAB#):	WG574076
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG574382	Initial Calibration Date:	27-JUN-2016 10:26

	WG574382-01		WG574382-02		WG574382-03		WG574382-04		WG574382-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000800	.1	0.00149	.2	0.00217	10	0.0861	20	0.161	.999541	
BERYLLIUM	0	0.000690	.0005	0.00111	.001	0.00148	.05	0.0508	.1	0.0959	.999682	
CALCIUM	0	0.00169	.1	0.00256	.2	0.00981	10	0.474	20	0.899	.998908	
IRON	0	0.0000700	.04	0.000210	.08	0.00147	4	0.0959	8	0.181	.998751	
MAGNESIUM	0	-0.0000400	NA	NA	.2	0.00164	10	0.0916	20	0.172	.999436	
POTASSIUM	0	-0.0166	.5	0.00590	1	0.0309	50	2.79	100	5.30	.999643	
SELENIUM	0	-0.000420	NA	NA	.008	-0.000340	.4	0.00633	.8	0.0123	.999365	
SODIUM	0	-0.0629	.5	0.0187	1	0.0937	50	9.16	100	17.5	.999663	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4824738
Report generated: 28-JUN-2016 09:30

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061290
Run Date: 06/24/2016
Sample ID: WG574123-07
Instrument ID: ICP-THERMO3
Run Time: 10:24
Method: 6010C
File ID: T3.062416.102444
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-THERI - 24-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	.0052	F
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4824740
Report generated 06/28/2016 09:30

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061290
Run Date: 06/27/2016
Sample ID: WG574382-07
Instrument ID: ICP-THERMO3
Run Time: 10:33
Method: 6010C
File ID: T3.062716.103339
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-THERI - 27-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	-.00421	F
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4824740
Report generated 06/28/2016 09:30

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 06/24/2016
Sample ID: WG574123-13
Instrument ID: ICP-THERMO3
Run Time: 10:47
Method: 6010C
File ID: T3.062416.104746
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4824743
Report generated 06/28/2016 09:30

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 06/24/2016
Sample ID: WG574123-19
Instrument ID: ICP-THERMO3
Run Time: 13:08
Method: 6010C
File ID: T3.062416.130845
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4824743
Report generated 06/28/2016 09:30

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 06/24/2016
Sample ID: WG574123-21
Instrument ID: ICP-THERMO3
Run Time: 13:54
Method: 6010C
File ID: T3.062416.135419
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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PDF File ID: 4824743
Report generated 06/28/2016 09:30

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 06/24/2016
Sample ID: WG574123-23
Instrument ID: ICP-THERMO3
Run Time: 14:37
Method: 6010C
File ID: T3.062416.143703
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Report generated 06/28/2016 09:30

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 06/24/2016
Sample ID: WG574123-27
Instrument ID: ICP-THERMO3
Run Time: 15:23
Method: 6010C
File ID: T3.062416.152346
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 06/27/2016
Sample ID: WG574382-12
Instrument ID: ICP-THERMO3
Run Time: 10:52
Method: 6010C
File ID: T3.062716.105241
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	-0.00430	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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PDF File ID: 4824743
Report generated 06/28/2016 09:30

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 06/27/2016
Sample ID: WG574382-18
Instrument ID: ICP-THERMO3
Run Time: 13:11
Method: 6010C
File ID: T3.062716.131130
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Report generated 06/28/2016 09:30

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 06/27/2016
Sample ID: WG574382-20
Instrument ID: ICP-THERMO3
Run Time: 13:26
Method: 6010C
File ID: T3.062716.132646
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4824743
Report generated 06/28/2016 09:30

Microbac Laboratories Inc.
INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061290
Run Date: 06/24/2016
Sample ID: WG574123-06
Instrument ID: ICP-THERMO3
Run Time: 10:21
Method: 6010C
File ID: T3.062416.102118
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	10.1	101	90 - 110	
Beryllium		.05	0.0499	99.9	90 - 110	
Calcium		10	9.97	99.7	90 - 110	
Iron		4	4.01	100	90 - 110	
Magnesium		10	10.1	101	90 - 110	
Potassium		50	50.4	101	90 - 110	
Selenium		.4	0.410	102	90 - 110	
Sodium		50	50.2	100	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4824739
Report generated 06/28/2016 09:30

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061290
Run Date: 06/27/2016
Sample ID: WG574382-06
Instrument ID: ICP-THERMO3
Run Time: 10:30
Method: 6010C
File ID: T3.062716.103013
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 27-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	10.0	100	90 - 110	
Beryllium		.05	0.0495	99.0	90 - 110	
Calcium		10	9.89	98.9	90 - 110	
Iron		4	3.95	98.7	90 - 110	
Magnesium		10	10.0	100	90 - 110	
Potassium		50	49.5	99.0	90 - 110	
Selenium		.4	0.405	101	90 - 110	
Sodium		50	49.6	99.1	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4824739
Report generated 06/28/2016 09:30

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061290
Run Date: 06/25/2016
Sample ID: WG574249-06
Instrument ID: ICP-THERMO3
Run Time: 12:40
Method: 6010C
File ID: T3.062516.124009
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 25-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	10.1	101	90 - 110	
Beryllium		.05	0.0504	101	90 - 110	
Calcium		10	10.1	101	90 - 110	
Iron		4	4.05	101	90 - 110	
Magnesium		10	10.1	101	90 - 110	
Potassium		50	50.3	101	90 - 110	
Selenium		.4	0.400	100	90 - 110	
Sodium		50	50.1	100	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4824739
Report generated 06/28/2016 09:30

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290
Run Date: 06/24/2016
Sample ID: WG574123-12
Instrument ID: ICP-THERMO3
Run Time: 10:44
Method: 6010C
File ID: T3.062416.104409
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.2	mg/L	102	90 - 110		
Beryllium		0.0500	0.0500	mg/L	100	90 - 110		
Calcium		10.0	10.2	mg/L	102	90 - 110		
Iron		4.00	4.08	mg/L	102	90 - 110		
Magnesium		10.0	10.1	mg/L	101	90 - 110		
Potassium		50.0	51.1	mg/L	102	90 - 110		
Selenium		0.400	0.409	mg/L	102	90 - 110		
Sodium		50.0	50.8	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4824742
Report generated 06/28/2016 09:30

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290
Run Date: 06/24/2016
Sample ID: WG574123-18
Instrument ID: ICP-THERMO3
Run Time: 13:05
Method: 6010C
File ID: T3.062416.130507
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.4	mg/L	104	90 - 110		
Beryllium		0.0500	0.0505	mg/L	101	90 - 110		
Calcium		10.0	10.6	mg/L	106	90 - 110		
Iron		4.00	4.16	mg/L	104	90 - 110		
Magnesium		10.0	10.3	mg/L	103	90 - 110		
Potassium		50.0	53.3	mg/L	107	90 - 110		
Selenium		0.400	0.423	mg/L	106	90 - 110		
Sodium		50.0	52.9	mg/L	106	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4824742
Report generated 06/28/2016 09:30

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290
Run Date: 06/24/2016
Sample ID: WG574123-20
Instrument ID: ICP-THERMO3
Run Time: 13:50
Method: 6010C
File ID: T3.062416.135042
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.60	mg/L	96.0	90 - 110		
Beryllium		0.0500	0.0470	mg/L	93.9	90 - 110		
Calcium		10.0	9.67	mg/L	96.7	90 - 110		
Iron		4.00	3.83	mg/L	95.8	90 - 110		
Magnesium		10.0	9.49	mg/L	94.9	90 - 110		
Potassium		50.0	49.1	mg/L	98.2	90 - 110		
Selenium		0.400	0.391	mg/L	97.8	90 - 110		
Sodium		50.0	48.8	mg/L	97.6	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4824742
Report generated 06/28/2016 09:30

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290
Run Date: 06/24/2016
Sample ID: WG574123-22
Instrument ID: ICP-THERMO3
Run Time: 14:33
Method: 6010C
File ID: T3.062416.143326
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.4	mg/L	104	90 - 110		
Beryllium		0.0500	0.0505	mg/L	101	90 - 110		
Calcium		10.0	10.5	mg/L	105	90 - 110		
Iron		4.00	4.19	mg/L	105	90 - 110		
Magnesium		10.0	10.5	mg/L	105	90 - 110		
Potassium		50.0	53.3	mg/L	107	90 - 110		
Selenium		0.400	0.417	mg/L	104	90 - 110		
Sodium		50.0	53.0	mg/L	106	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4824742
Report generated 06/28/2016 09:30

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290
Run Date: 06/24/2016
Sample ID: WG574123-26
Instrument ID: ICP-THERMO3
Run Time: 15:20
Method: 6010C
File ID: T3.062416.152008
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.4	mg/L	104	90 - 110		
Beryllium		0.0500	0.0508	mg/L	102	90 - 110		
Calcium		10.0	10.4	mg/L	104	90 - 110		
Iron		4.00	4.13	mg/L	103	90 - 110		
Magnesium		10.0	10.3	mg/L	103	90 - 110		
Potassium		50.0	52.6	mg/L	105	90 - 110		
Selenium		0.400	0.416	mg/L	104	90 - 110		
Sodium		50.0	52.2	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290
Run Date: 06/27/2016
Sample ID: WG574382-11
Instrument ID: ICP-THERMO3
Run Time: 10:49
Method: 6010C
File ID: T3.062716.104904
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.7	mg/L	107	90 - 110		
Beryllium		0.0500	0.0516	mg/L	103	90 - 110		
Calcium		10.0	10.8	mg/L	108	90 - 110		
Iron		4.00	4.30	mg/L	108	90 - 110		
Magnesium		10.0	10.8	mg/L	108	90 - 110		
Potassium		50.0	51.5	mg/L	103	90 - 110		
Selenium		0.400	0.421	mg/L	105	90 - 110		
Sodium		50.0	51.6	mg/L	103	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290
Run Date: 06/27/2016
Sample ID: WG574382-17
Instrument ID: ICP-THERMO3
Run Time: 13:07
Method: 6010C
File ID: T3.062716.130753
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.98	mg/L	99.8	90 - 110		
Beryllium		0.0500	0.0490	mg/L	97.9	90 - 110		
Calcium		10.0	9.54	mg/L	95.4	90 - 110		
Iron		4.00	3.77	mg/L	94.1	90 - 110		
Magnesium		10.0	9.47	mg/L	94.7	90 - 110		
Potassium		50.0	47.1	mg/L	94.2	90 - 110		
Selenium		0.400	0.421	mg/L	105	90 - 110		
Sodium		50.0	48.1	mg/L	96.2	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290
Run Date: 06/27/2016
Sample ID: WG574382-19
Instrument ID: ICP-THERMO3
Run Time: 13:23
Method: 6010C
File ID: T3.062716.132320
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.90	mg/L	99.0	90 - 110		
Beryllium		0.0500	0.0485	mg/L	97.0	90 - 110		
Calcium		10.0	9.79	mg/L	97.9	90 - 110		
Iron		4.00	3.90	mg/L	97.4	90 - 110		
Magnesium		10.0	9.50	mg/L	95.0	90 - 110		
Potassium		50.0	47.8	mg/L	95.6	90 - 110		
Selenium		0.400	0.409	mg/L	102	90 - 110		
Sodium		50.0	49.3	mg/L	98.7	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061290
Run Date: 06/24/2016
Sample ID: WG574123-08
Instrument ID: ICP-THERMO3
Run Time: 10:28
Method: 6010C
File ID: T3.062416.102843
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.175	mg/L	109	70 - 130		
Beryllium		0.00160	0.00162	mg/L	101	70 - 130		
Calcium		0.400	0.420	mg/L	105	70 - 130		
Iron		0.0800	0.0855	mg/L	107	70 - 130		
Magnesium		0.400	0.437	mg/L	109	70 - 130		
Potassium		0.800	0.954	mg/L	119	70 - 130		
Selenium		0.0160	0.0180	mg/L	112	70 - 130		
Sodium		0.400	0.448	mg/L	112	70 - 130		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061290
Run Date: 06/24/2016
Sample ID: WG574123-24
Instrument ID: ICP-THERMO3
Run Time: 14:41
Method: 6010C
File ID: T3.062416.144104
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.168	mg/L	105	70 - 130		
Beryllium		0.00160	0.00164	mg/L	103	70 - 130		
Calcium		0.400	0.416	mg/L	104	70 - 130		
Iron		0.0800	0.0993	mg/L	124	70 - 130		
Magnesium		0.400	0.414	mg/L	103	70 - 130		
Potassium		0.800	0.972	mg/L	121	70 - 130		
Selenium		0.0160	0.0132	mg/L	82.7	70 - 130		
Sodium		0.400	0.473	mg/L	118	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4824744
Report generated 06/28/2016 09:30

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061290
Run Date: 06/24/2016
Sample ID: WG574123-34
Instrument ID: ICP-THERMO3
Run Time: 17:11
Method: 6010C
File ID: T3.062416.171114
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 24-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.171	mg/L	107	70 - 130		
Beryllium		0.00160	0.00166	mg/L	104	70 - 130		
Calcium		0.400	0.434	mg/L	109	70 - 130		
Iron		0.0800	0.0873	mg/L	109	70 - 130		
Magnesium		0.400	0.381	mg/L	95.2	70 - 130		
Potassium		0.800	0.824	mg/L	103	70 - 130		
Selenium		0.0160	0.0183	mg/L	115	70 - 130		
Sodium		0.400	0.490	mg/L	123	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
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Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061290
Run Date: 06/27/2016
Sample ID: WG574382-08
Instrument ID: ICP-THERMO3
Run Time: 10:37
Method: 6010C
File ID: T3.062716.103737
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.161	mg/L	101	70 - 130		
Beryllium		0.00160	0.00171	mg/L	107	70 - 130		
Calcium		0.400	0.413	mg/L	103	70 - 130		
Iron		0.0800	0.0618	mg/L	77.3	70 - 130		
Magnesium		0.400	0.370	mg/L	92.5	70 - 130		
Potassium		0.800	0.831	mg/L	104	70 - 130		
Selenium		0.0160	0.0156	mg/L	97.2	70 - 130		
Sodium		0.400	0.456	mg/L	114	70 - 130		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061290
Run Date: 06/27/2016
Sample ID: WG574382-21
Instrument ID: ICP-THERMO3
Run Time: 13:30
Method: 6010C
File ID: T3.062716.133045
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574076
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.168	mg/L	105	70 - 130		
Beryllium		0.00160	0.00157	mg/L	98.1	70 - 130		
Calcium		0.400	0.410	mg/L	102	70 - 130		
Iron		0.0800	0.0608	mg/L	76.0	70 - 130		
Magnesium		0.400	0.392	mg/L	98.0	70 - 130		
Potassium		0.800	0.912	mg/L	114	70 - 130		
Selenium		0.0160	0.0148	mg/L	92.2	70 - 130		
Sodium		0.400	0.499	mg/L	125	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4824744
Report generated 06/28/2016 09:30

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061290
Instrument ID: ICP-THERMO3
Sol. A : WG574123-10 **File ID:** T3.062416.103634
Sol. AB : WG574123-11 **File ID:** T3.062416.104027

Workgroup (AAB#): WG574076
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	272	109	250	274	110	
Beryllium	NS	-0.0000400	NS	0.250	0.246	98.4	
Calcium	250	256	102	250	255	102	
Iron	100	102	102	100	99.9	99.9	
Magnesium	250	260	104	250	256	102	
Potassium	NS	0.0930	NS	5.00	5.48	110	
Selenium	NS	0.00445	NS	0.250	0.267	107	
Sodium	NS	0.0388	NS	5.00	5.59	112	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

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Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061290
Instrument ID: ICP-THERMO3
Sol. A : WG574382-09 **File ID:** T3.062716.104131
Sol. AB : WG574382-10 **File ID:** T3.062716.104522

Workgroup (AAB#): WG574076
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	274	110	250	256	102	
Beryllium	NS	-0.0000500	NS	0.250	0.237	94.8	
Calcium	250	255	102	250	239	95.6	
Iron	100	101	101	100	93.5	93.5	
Magnesium	250	258	103	250	239	95.6	
Potassium	NS	-0.0902	NS	5.00	5.12	102	
Selenium	NS	-0.00510	NS	0.250	0.245	98.0	
Sodium	NS	0.0834	NS	5.00	5.19	104	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061290 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	AG	AL	AS	B	BA
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000410	0	0	0
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0.0115	0	-0.0000800
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0.000260	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	-0.000289	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	-0.0000490	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.0000120	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0.0000300	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4824737
Report generated: 06/28/2016 09:30

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061290 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	BE	CA	CD	CO	CR
ALUMINUM	308.20	0	0	0	-0.000820	0
ANTIMONY	206.80	0	0	0	0	0.0200
ARSENIC	189.00	0	0	0	0	-0.00190
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0.00343	0
CADMIUM	228.80	0	0	0	-0.00390	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	-0.000200
COPPER	224.70	0	0	0	0.0000770	-0.00100
IRON	261.10	0	0	0	0	-0.00100
LEAD	220.30	0	0	0	-0.0000130	-0.000132
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.0000500
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	-0.000860	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0.00000500	0	0	0
THALLIUM	190.80	0	0	0	0.00240	0.000276
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	-0.00480
ZINC	206.20	0	0	0	0	-0.00180
ZIRCONIUM	339.10	0	0	0	0	0

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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061290 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	CU	FE	K	LI	MG
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000560	0	0	0
ARSENIC	189.00	0	-0.0000500	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0.000300	0	0	0
CADMIUM	228.80	0	-0.0000190	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000500	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0.00160	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0.000609	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.00000300
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0.0000420	0	0	0
PHOSPHORUS	214.90	-0.323	0.000900	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000270	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000400	0	0	0
VANADIUM	292.40	0	0.00000700	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	-0.0000300	0	0	0

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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061290 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	MN	MO	NA	NI	P
ALUMINUM	308.20	0	0.0163	0	0	0
ANTIMONY	206.80	0	-0.00310	0	-0.00350	0
ARSENIC	189.00	0	0.00120	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	-0.00190	0	0	0
CADMIUM	228.80	0	0.0000320	0	-0.000770	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0.000360	0	0	0	0
COBALT	228.60	0	-0.00200	0	0.000100	0
COPPER	224.70	0	0.00160	0	-0.0123	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	-0.00210	0	0.000110	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	-0.00290	-0.0230	0	0	0
MANGANESE	257.60	0	0.0000300	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0.00710	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0.000600	0.000580	0	0	0
SILICON	212.40	0	0.0187	0	0	0
SILVER	328.00	0	-0.0000430	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0.00100	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000153	0	0	0
VANADIUM	292.40	-0.000200	-0.00830	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061290 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	PB	SB	SE	SI	SN
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0	0	0	-0.0220
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0.00440	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

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Report generated: 06/28/2016 09:30

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061290 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	SR	TI	TL	V	ZN
ALUMINUM	308.20	0	0	0	0.0950	0
ANTIMONY	206.80	0	0.00110	0	-0.00360	0
ARSENIC	189.00	0	0	0	0.000107	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	-0.00000700	0	0.000990	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0.000102	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000550	0	0	0
COBALT	228.60	0	0.00210	0	0.0000200	0
COPPER	224.70	0	0.000269	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	-0.000126	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	-0.00290	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	-0.000110	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	-0.00100	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000720	0	-0.000260	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.000800	0	-0.00490	0
TIN	189.90	0	-0.00190	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0.000820	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4824737
Report generated: 06/28/2016 09:30

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061290 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	ZR
ALUMINUM	308.20	0
ANTIMONY	206.80	0
ARSENIC	189.00	0
BARIUM	455.40	0
BERYLLIUM	313.10	0
BORON	249.60	0
CADMIUM	228.80	0
CALCIUM	422.60	0
CHROMIUM	267.70	0
COBALT	228.60	0
COPPER	224.70	0
IRON	261.10	0
LEAD	220.30	0
LITHIUM	670.70	0
MAGNESIUM	279.00	0
MANGANESE	257.60	0
MOLYBDENUM	202.00	0
NICKEL	231.60	0
PHOSPHORUS	214.90	0
POTASSIUM	766.40	0
SELENIUM	196.00	0
SILICON	212.40	0
SILVER	328.00	0
SODIUM	589.50	0
STRONTIUM	407.70	0
THALLIUM	190.80	0
TIN	189.90	0
TITANIUM	337.20	0
VANADIUM	292.40	0
ZINC	206.20	0
ZIRCONIUM	339.10	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4824737
Report generated: 06/28/2016 09:30

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16061290 **Date:** 04/29/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	900.0
Antimony	20.00	45.0
Arsenic	10.00	45.0
Barium	10.00	45.0
Beryllium	10.00	1.8
Boron	20.00	45.0
Cadmium	20.00	4.5
Calcium	5.00	270.0
Chromium	20.00	36.0
Cobalt	20.00	45.0
Copper	20.00	180.0
Iron	5.00	720.0
Lead	20.00	225.0
Lithium	5.00	36.0
Magnesium	5.00	900.0
Manganese	10.00	36.0
Molybdenum	20.00	27.0
Nickel	20.00	90.0
Phosphorus	20.00	180.0
Potassium	5.00	450.0
Selenium	20.00	90.0
Silicon	20.00	36.0
Silver	10.00	9.0
Sodium	5.00	270.0
Strontium	5.00	9.0
Thallium	20.00	18.0
Tin	20.00	45.0
Titanium	5.00	36.0
Vanadium	20.00	27.0
Zinc	20.00	45.0
Zirconium	10.00	45.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4824736
Report generated: 06/28/2016 09:30

2.3.1.3 Raw Data

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000141	0.050748	0.000000	1.000000
Al 308.215 {109}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000916	0.007866	0.000000	1.000000
As 189.042 {478}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000058	0.023675	0.000000	1.000000
B 249.678 {135}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000060	0.022039	0.000000	1.000000
Ba 455.403 { 74}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.014298	2.093262	0.000000	1.000000
Be 313.107 {108}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000510	0.898055	0.000000	1.000000
Ca 422.673 { 80}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000824	0.044581	0.000000	1.000000
Cd 228.802 {447}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000030	0.563251	0.000000	1.000000
Co 228.616 {447}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000034	0.344510	0.000000	1.000000
Cr 267.716 {126}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000180	0.055863	0.000000	1.000000
Cu 224.700 {450}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000060	0.121643	0.000000	1.000000
Fe 261.187 {129}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000103	0.021701	0.000000	1.000000
K 766.490 { 44}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.010819	0.060325	0.000000	1.000000
Li 670.784 { 50}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.007531	1.496173	0.000000	1.000000
Mg 279.079 {121}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000442	0.008016	0.000000	1.000000
Mn 257.610 {131}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000827	0.279912	0.000000	1.000000
Mo 202.030 {467}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000039	0.179523	0.000000	1.000000
Na 589.592 { 57}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.031897	0.166281	0.000000	1.000000
Ni 231.604 {446}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000651	0.129323	0.000000	1.000000
P 214.914 {457}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000172	0.012827	0.000000	1.000000
Pb 220.353 {453}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000520	0.058788	0.000000	1.000000
Sb 206.833 {463}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000001	0.030127	0.000000	1.000000
Se 196.090 {472}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000164	0.016794	0.000000	1.000000
Si 212.412 {459}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000911	0.038950	0.000000	1.000000
Sn 189.989 {477}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000052	0.066907	0.000000	1.000000
Sr 407.771 { 83}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.002037	3.549642	0.000000	1.000000
Ti 337.280 {100}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.001943	0.119996	0.000000	1.000000
Tl 190.856 {477}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.000361	0.028102	0.000000	1.000000
V 292.402 {115}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000023	0.065920	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	0.000153	0.391840	0.000000	1.000000
Zr 339.198 { 99}	6/24/2016 10:21:13	6/24/2016 10:21:13	Linear	1/Conc	-0.012098	2.809224	0.000000	1.000000

Approved: June 25, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999737	0.000003	0.002049	0.006830	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999969	0.000004	0.009025	0.030084	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999986	0.000000	0.003104	0.010346	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999939	0.000001	0.002779	0.009264	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999858	0.000224	0.000982	0.003272	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999879	0.000005	0.000094	0.000312	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999811	0.000055	0.038318	0.127728	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999763	0.000004	0.000260	0.000866	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999919	0.000006	0.000408	0.001359	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999801	0.000004	0.001181	0.003936	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999857	0.000007	0.001355	0.004518	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999867	0.000009	0.021737	0.072458	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999864	0.000316	0.090153	0.300511	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999907	0.000200	0.003625	0.012085	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999846	0.000014	0.078797	0.262658	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999412	0.000030	0.002338	0.007792	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999986	0.000006	0.000418	0.001395	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999892	0.000776	0.030119	0.100396	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999935	0.000005	0.001154	0.003846	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999988	0.000004	0.007248	0.024159	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999843	0.000003	0.003678	0.012262	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999953	0.000002	0.004278	0.014260	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999466	0.000002	0.006279	0.020930	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999584	0.000036	0.002252	0.007507	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999937	0.000005	0.000895	0.002983	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999850	0.000390	0.000401	0.001336	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999443	0.000025	0.006504	0.021681	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999820	0.000002	0.003079	0.010263	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999965	0.000003	0.000964	0.003213	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999941	0.000027	0.000206	0.000686	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.999713	0.000427	0.000581	0.001936	OK.	1.000000	0.000000	1	0

Approved: June 25, 2016

Sample Name: S0 Acquired: 6/24/2016 10:02:06 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00014**	**.00092**	**-.00006**	**.00006**	**.01430**	**.00051**	**.00082**
Stddev	.00007	.00003	.00003	.00005	.00089	.00003	.00150
%RSD	48.462	3.7804	46.676	91.000	6.2407	5.9747	181.89
#1	-.00007	.00091	-.00009	.00011	.01533	.00048	-.00036
#2	-.00014	.00089	-.00003	.00007	.01383	.00054	.00251
#3	-.00021	.00095	-.00005	.00000	.01373	.00052	.00032

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00003**	**.00003**	**.00018**	**-.00006**	**-.00010**	**-.01082**	**-.00753**
Stddev	.00009	.00005	.00004	.00017	.00045	.00335	.00353
%RSD	281.39	147.40	23.426	287.67	438.41	30.962	46.865
#1	.00005	.00004	.00020	-.00025	.00041	-.00724	-.00439
#2	-.00003	-.00002	.00013	-.00002	-.00044	-.01389	-.00686
#3	-.00012	.00008	.00021	.00009	-.00028	-.01133	-.01135

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00044**	**.00083**	**-.00004**	**-.03189**	**-.00065**	**-.00017**	**-.00052**
Stddev	.00045	.00015	.00006	.00093	.00012	.00009	.00017
%RSD	102.79	17.791	163.60	2.9103	19.006	49.513	32.607
#1	-.00010	.00071	.00001	-.03192	-.00069	-.00027	-.00032
#2	-.00096	.00099	-.00002	-.03095	-.00051	-.00010	-.00062
#3	-.00026	.00079	-.00011	-.03280	-.00075	-.00015	-.00062

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00000**	**-.00016**	**.00091**	**.00005**	**.00204**	**-.00194**	**-.00036**
Stddev	.00012	.00004	.00007	.00002	.00021	.00013	.00002
%RSD	19810.	21.583	7.1930	34.140	10.449	6.4605	4.5673
#1	-.00014	-.00013	.00087	.00005	.00206	-.00182	-.00038
#2	.00005	-.00020	.00088	.00007	.00181	-.00194	-.00035
#3	.00009	-.00016	.00099	.00004	.00224	-.00207	-.00035

Approved: June 25, 2016

Sample Name: S0 Acquired: 6/24/2016 10:02:06 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00002	.00015	-.01209
Stddev	.00007	.00001	.00188
%RSD	312.68	7.9561	15.539
#1	.00011	.00015	-.01411
#2	-.00002	.00014	-.01039
#3	-.00002	.00017	-.01176
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10103.	63387.	3436.7
Stddev	24.	229.	8.8
%RSD	.23353	.36169	.25626
#1	10111.	63214.	3446.2
#2	10121.	63647.	3428.8
#3	10076.	63299.	3435.0

Approved: June 25, 2016

Sample Name: S1 Acquired: 6/24/2016 10:06:06 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00005**	**.00153**	**.03093**	**.00079**	**.00503**	**.00010**	**.00049**
Stddev	.00003	.00005	.00195	.00002	.00170	.00011	.00005
%RSD	59.232	2.9452	6.3135	3.1378	33.768	117.90	11.244
#1	-.00004	.00157	.02902	.00082	.00307	-.00000	.00053
#2	-.00008	.00153	.03085	.00078	.00607	.00007	.00051
#3	-.00003	.00148	.03292	.00077	.00594	.00022	.00042

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00047**	**.00031**	**.00057**	**.01522**	**.00155**	**.00132**	**.03160**
Stddev	.00005	.00001	.00017	.00200	.00074	.00003	.00575
%RSD	11.209	2.0951	30.554	13.113	47.893	2.1780	18.185
#1	.00046	.00031	.00053	.01296	.00101	.00135	.02748
#2	.00052	.00030	.00076	.01674	.00123	.00133	.02916
#3	.00042	.00031	.00042	.01597	.00239	.00129	.03817

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00014**	**.00081**	**-.00022**	**.00030**	**.00226**	**.00054**	**.03050**
Stddev	.00010	.00005	.00018	.00003	.00007	.00002	.00065
%RSD	73.955	5.5812	79.260	8.9775	2.9020	4.3963	2.1231
#1	-.00011	.00077	-.00030	.00033	.00229	.00052	.03078
#2	-.00005	.00086	-.00002	.00028	.00230	.00056	.02976
#3	-.00025	.00081	-.00035	.00030	.00218	.00052	.03096

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00144**	**.00052**	**.00324**	**.00445**
Stddev	.00042	.00004	.00013	.00179
%RSD	29.218	7.4619	4.0938	40.182
#1	-.00191	.00057	.00337	.00539
#2	-.00110	.00049	.00325	.00556
#3	-.00131	.00051	.00311	.00239

Approved: June 25, 2016

Sample Name: S1 Acquired: 6/24/2016 10:06:06 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10065.**	**62767.**	**3441.4**
Stddev	30.	97.	22.9
%RSD	.29930	.15510	.66663
#1	10069.	62771.	3417.8
#2	10093.	62861.	3463.7
#3	10033.	62667.	3442.7

Approved: June 25, 2016

Sample Name: S2 Acquired: 6/24/2016 10:10:06 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00021	.00215	.00010	.00026	.04762	.00116	.00837
Stddev	.00002	.00007	.00007	.00004	.00057	.00005	.00106
%RSD	8.9724	3.4344	65.774	15.619	1.1893	4.2144	12.640
#1	.00023	.00213	.00004	.00025	.04721	.00122	.00897
#2	.00020	.00223	.00018	.00022	.04739	.00114	.00715
#3	.00021	.00209	.00009	.00031	.04827	.00113	.00899

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00040	.00105	.00069	.00083	.00116	.03965	.01598
Stddev	.00005	.00003	.00003	.00008	.00031	.00217	.00181
%RSD	12.890	2.9404	4.0733	9.8734	26.550	5.4632	11.347
#1	.00035	.00103	.00067	.00092	.00083	.03746	.01389
#2	.00040	.00103	.00072	.00079	.00144	.03971	.01716
#3	.00045	.00108	.00068	.00077	.00121	.04179	.01688

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00083	.00238	.00276	.09724	.00041	.00174	-.00009
Stddev	.00012	.00062	.00011	.00164	.00010	.00006	.00030
%RSD	14.311	26.076	3.9026	1.6822	25.278	3.1866	350.41
#1	.00094	.00257	.00281	.09776	.00035	.00177	-.00007
#2	.00070	.00169	.00283	.09541	.00036	.00177	.00021
#3	.00086	.00289	.00264	.09856	.00053	.00168	-.00039

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00052	-.00010	.00385	.00103	.05810	-.00053	-.00015
Stddev	.00006	.00007	.00008	.00003	.00070	.00022	.00003
%RSD	12.430	68.938	2.1687	3.1112	1.2101	41.302	21.567
#1	.00055	-.00017	.00394	.00106	.05859	-.00045	-.00014
#2	.00056	-.00003	.00384	.00103	.05729	-.00036	-.00018
#3	.00045	-.00011	.00378	.00100	.05842	-.00077	-.00012

Approved: June 25, 2016

Sample Name: S2 Acquired: 6/24/2016 10:10:06 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00100	.00632	.02594
Stddev	.00007	.00019	.00102
%RSD	6.6145	2.9709	3.9200
#1	.00097	.00638	.02711
#2	.00108	.00648	.02521
#3	.00096	.00611	.02551
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10036.	62714.	3425.0
Stddev	5.	277.	24.9
%RSD	.04560	.44190	.72564
#1	10035.	62498.	3405.6
#2	10031.	62619.	3453.0
#3	10040.	63027.	3416.3

Approved: June 25, 2016

Sample Name: S3 Acquired: 6/24/2016 10:14:05 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.02012	.08112	.00937	.01100	2.1577	.04667	.45680	.03089
Stddev	.00014	.00067	.00024	.00003	.0127	.00048	.00088	.00088
%RSD	.68506	.82535	2.5122	.26795	.58663	1.0260	.19280	2.8481
#1	.02016	.08148	.00911	.01102	2.1723	.04686	.45715	.02988
#2	.02024	.08154	.00955	.01102	2.1508	.04702	.45579	.03151
#3	.01997	.08035	.00946	.01097	2.1500	.04612	.45745	.03127

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.06952	.02847	.06168	.08857	3.0711	1.5176	.08149	.14484
Stddev	.00185	.00019	.00161	.00089	.0148	.0183	.00050	.00149
%RSD	2.6617	.68366	2.6084	1.0060	.48208	1.2061	.60781	1.0306
#1	.06739	.02860	.05982	.08958	3.0854	1.5375	.08112	.14654
#2	.07070	.02858	.06252	.08789	3.0720	1.5016	.08130	.14374
#3	.07047	.02825	.06269	.08824	3.0558	1.5136	.08205	.14425

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.18057	8.4539	.06503	.12666	.02949	.03516	.00655	.20419
Stddev	.00413	.0477	.00183	.00333	.00086	.00099	.00019	.00532
%RSD	2.2896	.56431	2.8080	2.6258	2.9031	2.8239	2.8275	2.6074
#1	.17586	8.5022	.06294	.12282	.02853	.03401	.00634	.19804
#2	.18358	8.4528	.06629	.12868	.02978	.03578	.00666	.20727
#3	.18229	8.4068	.06587	.12849	.03017	.03568	.00667	.20725

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.06764	3.6392	.12025	.01285	.06639	.39780	2.8658
Stddev	.00187	.0221	.00095	.00032	.00069	.00999	.0226
%RSD	2.7649	.60748	.79359	2.4638	1.0447	2.5111	.78950
#1	.06551	3.6628	.12131	.01249	.06673	.38631	2.8817
#2	.06902	3.6359	.11996	.01298	.06685	.40437	2.8758
#3	.06839	3.6189	.11946	.01308	.06559	.40274	2.8399

Approved: June 25, 2016

Sample Name: S3 Acquired: 6/24/2016 10:14:05 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9803.5	60605.	3302.4
Stddev	185.3	628.	25.0
%RSD	1.8907	1.0370	.75704
#1	10017.	60237.	3292.4
#2	9686.1	60248.	3283.9
#3	9707.3	61331.	3330.8

Approved: June 25, 2016

Sample Name: S4 Acquired: 6/24/2016 10:17:42 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.04037	.15882	.01874	.02204	4.1509	.09188	.88125	.06147
Stddev	.00017	.00011	.00011	.00010	.0087	.00023	.00269	.00039
%RSD	.41570	.06765	.58871	.45251	.20975	.25568	.30549	.62850
#1	.04024	.15875	.01878	.02202	4.1571	.09190	.88218	.06177
#2	.04056	.15877	.01882	.02215	4.1547	.09211	.88335	.06161
#3	.04031	.15895	.01861	.02196	4.1410	.09164	.87821	.06104

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13710	.05562	.12100	.17176	5.9519	2.9563	.15745	.27789
Stddev	.00070	.00009	.00059	.00098	.0096	.0021	.00153	.00068
%RSD	.50874	.16610	.48875	.57160	.16058	.07181	.96992	.24355
#1	.13749	.05558	.12123	.17129	5.9624	2.9588	.15599	.27711
#2	.13751	.05557	.12144	.17289	5.9495	2.9553	.15904	.27832
#3	.13629	.05573	.12033	.17109	5.9438	2.9549	.15733	.27824

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.35800	16.431	.12763	.25198	.05815	.07137	.01334	.38448
Stddev	.00153	.049	.00061	.00022	.00023	.00008	.00003	.00032
%RSD	.42830	.29740	.47754	.08776	.39302	.10858	.22101	.08296
#1	.35959	16.449	.12796	.25213	.05792	.07142	.01337	.38462
#2	.35789	16.469	.12801	.25208	.05838	.07141	.01335	.38412
#3	.35653	16.376	.12693	.25172	.05815	.07128	.01331	.38471

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13295	7.0149	.23633	.02503	.13104	.77753	5.5495
Stddev	.00033	.0145	.00010	.00014	.00013	.00089	.0276
%RSD	.24509	.20672	.04320	.55584	.09686	.11476	.49668
#1	.13312	7.0177	.23635	.02504	.13089	.77820	5.5811
#2	.13314	7.0278	.23621	.02517	.13109	.77787	5.5303
#3	.13257	6.9992	.23641	.02489	.13113	.77652	5.5370

Approved: June 25, 2016

Sample Name: S4 Acquired: 6/24/2016 10:17:42 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9688.2**	**60219.**	**3370.4**
Stddev	7.1	189.	23.3
%RSD	.07324	.31409	.69082
#1	9691.6	60213.	3345.2
#2	9693.0	60033.	3375.0
#3	9680.0	60411.	3391.1

Approved: June 25, 2016

Sample Name: ICV Acquired: 6/24/2016 10:21:18 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39846**	**10.055**	**.40187**	**.50195**	**1.0043**	**.04994**	**9.9690**	**.05093**
Stddev	.00107	.004	.00071	.00352	.0049	.00015	.0985	.00023
%RSD	.26882	.04093	.17558	.70141	.48280	.30027	.98769	.44509
#1	.39801	10.053	.40263	.49813	1.0045	.04992	9.9634	.05069
#2	.39768	10.052	.40124	.50265	1.0091	.04980	10.070	.05113
#3	.39968	10.059	.40172	.50506	.99939	.05010	9.8735	.05098
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20275**	**.50186**	**.50806**	**4.0077**	**50.412**	**.99409**	**10.076**	**.50349**
Stddev	.00040	.00174	.00074	.0287	.156	.00370	.047	.00310
%RSD	.19601	.34705	.14641	.71708	.31025	.37246	.46653	.61637
#1	.20246	.50009	.50763	4.0406	50.449	.99815	10.023	.50004
#2	.20321	.50191	.50892	3.9950	50.546	.99323	10.093	.50606
#3	.20259	.50357	.50763	3.9874	50.240	.99090	10.113	.50436
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0161**	**50.208**	**.50900**	**10.102**	**.50737**	**1.1976**	**.40954**	**5.2491**
Stddev	.0035	.189	.00106	.014	.00059	.0046	.00351	.0132
%RSD	.34222	.37709	.20816	.13865	.11567	.38093	.85796	.25182
#1	1.0181	50.185	.50781	10.089	.50756	1.1956	.40737	5.2341
#2	1.0182	50.408	.50932	10.117	.50784	1.2028	.40767	5.2590
#3	1.0121	50.031	.50986	10.099	.50671	1.1944	.41360	5.2542
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 25, 2016

Sample Name: ICV Acquired: 6/24/2016 10:21:18 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0142**	**1.0055**	**1.0016**	**.51308**	**1.0042**	**1.0176**	**1.0099**
Stddev	.0008	.0052	.0045	.00359	.0054	.0023	.0053
%RSD	.07353	.51381	.45332	.69940	.53899	.22236	.52327
#1	1.0146	1.0049	1.0056	.51163	1.0037	1.0169	1.0108
#2	1.0147	1.0110	.99666	.51043	.99912	1.0202	1.0042
#3	1.0134	1.0007	1.0027	.51716	1.0099	1.0158	1.0147
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9784.6**	**61155.**	**3360.6**
Stddev	16.4	126.	16.3
%RSD	.16756	.20531	.48534
#1	9800.9	61010.	3348.1
#2	9785.0	61229.	3379.0
#3	9768.1	61226.	3354.6

Approved: June 25, 2016

Sample Name: ICB Acquired: 6/24/2016 10:24:44 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**-.00039**	**.00064**	**.00491**	**.00035**	**-.00004**	**.01970**	**-.00008**
Stddev	.00118	.00395	.00185	.00079	.00095	.00004	.02171	.00007
%RSD	1355.8	1016.1	287.94	16.133	270.92	92.692	110.19	83.262
#1	.00054	-.00464	.00266	.00474	.00126	-.00001	.02755	-.00005
#2	-.00125	.00030	-.00097	.00577	-.00064	-.00002	.03640	-.00016
#3	.00097	.00318	.00023	.00421	.00044	-.00008	-.00484	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00032**	**.00131**	**-.00137**	**.02320**	**.06358**	**-.00066**	**.03856**	**-.00312**
Stddev	.00017	.00055	.00043	.00941	.08768	.00266	.00747	.00261
%RSD	51.480	41.866	31.575	40.581	137.91	406.13	19.360	83.590
#1	-.00049	.00166	-.00107	.01306	.06334	-.00147	.03003	-.00355
#2	-.00033	.00160	-.00186	.03167	.15137	-.00281	.04179	-.00549
#3	-.00015	.00068	-.00116	.02486	-.02399	.00232	.04387	-.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00441**	**.05025**	**.00065**	**-.00381**	**-.00087**	**.00778**	**.00520**	**.00608**
Stddev	.00033	.01048	.00078	.00461	.00397	.00208	.00680	.00201
%RSD	7.4861	20.853	119.99	121.10	458.20	26.759	130.76	33.156
#1	.00405	.05291	.00003	-.00874	-.00277	.00736	.00296	.00721
#2	.00448	.03870	.00040	.00039	.00370	.01003	-.00020	.00727
#3	.00470	.05914	.00153	-.00306	-.00353	.00593	.01285	.00375
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: ICB Acquired: 6/24/2016 10:24:44 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**.00012**	**.00094**	**.00181**	**-.00101**	**.00060**	**.00145**
Stddev	.00042	.00009	.00041	.00207	.00005	.00020	.00038
%RSD	513.90	78.925	43.774	114.17	4.9873	33.766	26.340
#1	.00040	.00003	.00072	-.00054	-.00105	.00057	.00107
#2	-.00028	.00022	.00068	.00334	-.00102	.00042	.00183
#3	-.00036	.00011	.00141	.00262	-.00096	.00082	.00145
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9828.6**	**62200.**	**3394.8**
Stddev	28.2	217.	16.2
%RSD	.28655	.34911	.47848
#1	9855.6	62450.	3410.7
#2	9830.8	62058.	3378.2
#3	9799.4	62092.	3395.6

Approved: June 25, 2016

Sample Name: LLICV Acquired: 6/24/2016 10:28:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00861	.17456	.00875	.08415	.00845	.00162	.42018	.00080
Stddev	.00241	.00320	.00584	.00044	.00062	.00010	.04537	.00016
%RSD	28.028	1.8340	66.707	.52598	7.3619	6.0745	10.799	19.768
#1	.00915	.17680	.01356	.08464	.00808	.00156	.43983	.00091
#2	.00598	.17599	.00226	.08403	.00809	.00173	.36829	.00086
#3	.01071	.17089	.01043	.08378	.00916	.00156	.45241	.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00400	.00560	.00345	.08548	.95350	.08105	.43655	.00707
Stddev	.00008	.00034	.00088	.01230	.04581	.00390	.09350	.00382
%RSD	2.0075	6.1076	25.604	14.389	4.8041	4.8127	21.418	54.018
#1	.00403	.00571	.00253	.09530	.99396	.07722	.34739	.00473
#2	.00391	.00522	.00353	.07168	.96278	.08091	.42840	.01148
#3	.00406	.00588	.00429	.08946	.90376	.08502	.53386	.00500
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00937	.44836	.01641	.81013	.00755	.08949	.01796	.80576
Stddev	.00033	.00782	.00043	.01533	.00353	.00603	.00226	.00882
%RSD	3.5349	1.7431	2.6293	1.8922	46.785	6.7340	12.603	1.0947
#1	.00911	.45731	.01596	.82200	.00588	.09248	.01611	.81287
#2	.00974	.44487	.01647	.81558	.01161	.09343	.02049	.80853
#3	.00925	.44289	.01682	.79283	.00517	.08255	.01729	.79589
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LLICV Acquired: 6/24/2016 10:28:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41092**	**.04172**	**.02043**	**.15548**	**.00810**	**.01698**	**.04605**
Stddev	.00936	.00016	.00448	.00254	.00066	.00050	.00187
%RSD	2.2770	.37475	21.916	1.6360	8.1067	2.9288	4.0649
#1	.41622	.04190	.02523	.15718	.00756	.01728	.04465
#2	.41644	.04163	.01969	.15671	.00791	.01725	.04533
#3	.40012	.04164	.01637	.15256	.00883	.01640	.04818
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9545.8**	**59931.**	**3275.5**
Stddev	15.6	83.	34.7
%RSD	.16333	.13820	1.0584
#1	9534.4	59838.	3252.2
#2	9539.4	59961.	3315.3
#3	9563.5	59995.	3258.9

Approved: June 25, 2016

Sample Name: LLICV Acquired: 6/24/2016 10:32:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02155	.40824	.02077	.20167	.02174	.00400	1.0366	.00202
Stddev	.00054	.00443	.00281	.00124	.00028	.00001	.0243	.00009
%RSD	2.5225	1.0863	13.516	.61328	1.2824	.22063	2.3424	4.3173
#1	.02133	.41154	.02394	.20052	.02183	.00399	1.0194	.00205
#2	.02115	.40999	.01859	.20150	.02142	.00401	1.0644	.00192
#3	.02216	.40320	.01978	.20298	.02196	.00400	1.0260	.00209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00994	.01113	.01102	.16765	2.1953	.20551	1.0506	.01921
Stddev	.00018	.00047	.00052	.00874	.0565	.00363	.0388	.00199
%RSD	1.8457	4.1791	4.7625	5.2113	2.5738	1.7653	3.6929	10.372
#1	.01014	.01147	.01043	.15847	2.1428	.20211	1.0170	.02151
#2	.00990	.01060	.01123	.17586	2.2551	.20509	1.0931	.01818
#3	.00978	.01132	.01141	.16862	2.1879	.20933	1.0419	.01794
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02056	1.0699	.04161	2.0283	.02093	.22105	.04598	1.9872
Stddev	.00073	.0134	.00029	.0213	.00141	.00521	.00230	.0146
%RSD	3.5426	1.2493	.69643	1.0505	6.7264	2.3551	5.0056	.73437
#1	.02134	1.0745	.04129	2.0517	.02096	.22638	.04821	1.9992
#2	.02046	1.0548	.04165	2.0232	.01951	.21598	.04361	1.9913
#3	.01989	1.0803	.04187	2.0101	.02232	.22080	.04611	1.9709
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LLICV Acquired: 6/24/2016 10:32:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0190**	**.10349**	**.06088**	**.38102**	**.01945**	**.04193**	**.10461**
Stddev	.0194	.00012	.00319	.00475	.00050	.00058	.00065
%RSD	1.9018	.11797	5.2343	1.2466	2.5499	1.3820	.62471
#1	1.0324	.10361	.06403	.38543	.01945	.04208	.10441
#2	1.0279	.10348	.06095	.38164	.01995	.04242	.10534
#3	.99680	.10337	.05766	.37599	.01896	.04129	.10408
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9527.9**	**60013.**	**3283.4**
Stddev	15.1	148.	21.9
%RSD	.15821	.24736	.66596
#1	9513.0	59863.	3269.8
#2	9527.6	60160.	3271.8
#3	9543.1	60017.	3308.6

Approved: June 25, 2016

Sample Name: ICSA Acquired: 6/24/2016 10:36:34 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00048**	**272.29**	**-.00639**	**.01187**	**.00097**	**-.00004**	**255.70**	**-.00011**
Stddev	.00186	.14	.00204	.00102	.00103	.00005	.88	.00012
%RSD	388.65	.05142	31.923	8.6029	106.35	111.27	.34460	113.29
#1	-.00160	272.44	-.00702	.01157	.00211	-.00001	256.63	-.00021
#2	.00199	272.24	-.00411	.01301	.00068	-.00002	255.62	.00003
#3	.00104	272.17	-.00804	.01104	.00011	-.00009	254.87	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00172**	**.00015**	**-.00116**	**101.53**	**.09300**	**.00567**	**259.96**	**-.00382**
Stddev	.00042	.00130	.00167	.28	.03409	.00366	.64	.00294
%RSD	24.472	881.01	143.42	.27829	36.657	64.638	.24529	76.986
#1	-.00152	-.00007	-.00240	101.84	.05558	.00951	260.50	-.00473
#2	-.00143	-.00103	.00073	101.29	.10113	.00529	260.13	-.00620
#3	-.00220	.00155	-.00182	101.47	.12229	.00221	259.26	-.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.03878**	**-.00045**	**.04376**	**.00245**	**-.00458**	**.00445**	**.01844**
Stddev	.00046	.04600	.00064	.01101	.00539	.00310	.00348	.00549
%RSD	287.16	118.61	140.72	25.160	220.05	67.775	78.148	29.762
#1	.00025	.00054	.00028	.04277	.00150	-.00104	.00050	.01603
#2	-.00065	.08983	-.00075	.03327	.00825	-.00682	.00580	.01457
#3	-.00008	.02597	-.00089	.05522	-.00240	-.00589	.00705	.02472
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: ICSA Acquired: 6/24/2016 10:36:34 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.00019	-.01134	-.00093	-.00397	-.00488	.00384
Stddev	.00032	.00049	.00588	.00258	.00006	.00039	.00038
%RSD	95.122	259.22	51.833	278.90	1.5390	7.9827	9.8011
#1	.00019	.00071	-.01724	.00196	-.00401	-.00532	.00366
#2	.00071	-.00024	-.00549	-.00301	-.00400	-.00461	.00427
#3	.00012	.00009	-.01128	-.00172	-.00390	-.00469	.00359
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8869.1	55471.	3153.2
Stddev	26.5	151.	18.0
%RSD	.29867	.27155	.57209
#1	8897.8	55567.	3139.7
#2	8845.6	55550.	3146.3
#3	8864.0	55298.	3173.7

Approved: June 25, 2016

Sample Name: ICSAB Acquired: 6/24/2016 10:40:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52801	273.86	.25914	.01325	.26102	.24578	255.40	.50739
Stddev	.00250	.16	.00666	.00063	.00070	.00039	.53	.00146
%RSD	.47355	.05748	2.5695	4.7909	.26706	.16053	.20826	.28726
#1	.52830	274.03	.26069	.01398	.26152	.24535	255.50	.50785
#2	.52537	273.71	.26489	.01290	.26131	.24586	254.82	.50857
#3	.53035	273.85	.25184	.01286	.26022	.24613	255.87	.50576
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.24727	.25565	.25562	99.861	5.4779	.00519	256.26	.25260
Stddev	.00097	.00095	.00265	.277	.0348	.00184	.86	.00168
%RSD	.39106	.37321	1.0376	.27690	.63446	35.421	.33443	.66352
#1	.24802	.25466	.25814	99.853	5.4700	.00385	255.90	.25222
#2	.24762	.25656	.25586	99.588	5.5160	.00443	255.64	.25443
#3	.24618	.25572	.25285	100.14	5.4478	.00728	257.24	.25115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	5.5858	.49274	.02117	.50583	.50989	.26678	.01309
Stddev	.00050	.0197	.00095	.01408	.00041	.00290	.00610	.00127
%RSD	250.13	.35306	.19217	66.536	.08120	.56902	2.2850	9.6691
#1	.00037	5.6063	.49240	.00688	.50630	.51290	.26722	.01358
#2	-.00039	5.5669	.49381	.02158	.50553	.50963	.27265	.01404
#3	-.00058	5.5841	.49200	.03503	.50566	.50712	.26048	.01165
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: ICSAB Acquired: 6/24/2016 10:40:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00171	.00067	-.01040	.47266	.25528	.50449	.00315
Stddev	.00100	.00032	.00325	.00524	.00094	.00232	.00022
%RSD	58.680	47.423	31.248	1.1093	.36860	.45903	6.9061
#1	.00125	.00096	-.01186	.47276	.25634	.50607	.00293
#2	.00102	.00072	-.01267	.47786	.25494	.50556	.00318
#3	.00286	.00033	-.00668	.46737	.25455	.50183	.00336
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8976.9	56220.	3187.5
Stddev	14.0	172.	27.3
%RSD	.15560	.30511	.85579
#1	8966.6	56386.	3171.0
#2	8992.8	56232.	3219.0
#3	8971.4	56043.	3172.5

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 10:44:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40510**	**10.227**	**.40997**	**.50470**	**1.0199**	**.05000**	**10.224**	**.05209**
Stddev	.00259	.020	.00313	.00376	.0032	.00018	.050	.00003
%RSD	.63884	.19087	.76260	.74531	.31908	.36523	.48810	.05352
#1	.40303	10.211	.40694	.50216	1.0162	.04979	10.170	.05206
#2	.40800	10.220	.40978	.50293	1.0222	.05008	10.235	.05212
#3	.40426	10.248	.41318	.50902	1.0213	.05013	10.268	.05208
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20659**	**.50266**	**.51958**	**4.0815**	**51.148**	**1.0118**	**10.141**	**.51100**
Stddev	.00025	.00146	.00022	.0426	.163	.0071	.045	.00204
%RSD	.12249	.29059	.04172	1.0445	.31821	.70440	.43990	.39976
#1	.20659	.50117	.51956	4.0379	50.961	1.0054	10.140	.50966
#2	.20684	.50409	.51937	4.1230	51.259	1.0106	10.186	.51335
#3	.20634	.50270	.51980	4.0835	51.225	1.0195	10.097	.50999
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0360**	**50.833**	**.51458**	**10.241**	**.51207**	**1.2224**	**.40899**	**5.3321**
Stddev	.0063	.180	.00026	.014	.00288	.0026	.00371	.0135
%RSD	.60708	.35445	.05040	.13553	.56209	.21445	.90595	.25328
#1	1.0403	50.639	.51460	10.242	.51048	1.2194	.41231	5.3186
#2	1.0389	50.864	.51483	10.254	.51034	1.2245	.40499	5.3456
#3	1.0288	50.996	.51431	10.227	.51539	1.2232	.40965	5.3320
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 10:44:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0297**	**1.0232**	**1.0245**	**.52009**	**1.0074**	**1.0340**	**1.0135**
Stddev	.0029	.0039	.0041	.00364	.0035	.0016	.0058
%RSD	.27812	.38337	.40197	.69967	.34932	.15074	.57645
#1	1.0298	1.0187	1.0198	.51637	1.0034	1.0332	1.0152
#2	1.0325	1.0257	1.0262	.52364	1.0085	1.0358	1.0070
#3	1.0267	1.0252	1.0274	.52025	1.0102	1.0330	1.0183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9522.9**	**60073.**	**3307.5**
Stddev	11.7	184.	13.2
%RSD	.12286	.30629	.39835
#1	9509.8	60132.	3293.3
#2	9526.4	59867.	3319.3
#3	9532.4	60221.	3310.0

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 10:47:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	-.00231	.00174	.00317	.00089	.00008	.01478	-.00009
Stddev	.00098	.00197	.00138	.00099	.00051	.00008	.01897	.00016
%RSD	1615.6	85.585	79.150	31.308	57.430	97.913	128.33	176.75
#1	.00074	-.00458	.00332	.00208	.00145	.00015	-.00627	-.00026
#2	.00050	-.00127	.00081	.00403	.00044	.00008	.02007	-.00007
#3	-.00106	-.00107	.00109	.00339	.00079	.00000	.03055	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00069	.00201	-.00144	.01198	.09764	.00160	-.01376	-.00139
Stddev	.00007	.00062	.00140	.00633	.05541	.00323	.09391	.00206
%RSD	9.5195	30.966	97.276	52.810	56.748	201.98	682.68	147.81
#1	-.00064	.00243	-.00111	.01172	.03926	.00278	.06859	-.00281
#2	-.00066	.00129	-.00023	.00579	.14949	-.00205	-.11603	-.00233
#3	-.00076	.00231	-.00297	.01844	.10416	.00406	.00617	.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00327	.05554	.00020	-.00275	-.00017	.00433	.00267	.00326
Stddev	.00008	.01502	.00042	.00646	.00019	.00156	.00847	.00120
%RSD	2.3629	27.048	205.82	234.70	111.96	35.900	317.53	36.710
#1	.00322	.04802	.00003	.00456	-.00027	.00254	.00057	.00458
#2	.00336	.07283	-.00010	-.00514	.00005	.00529	.01198	.00225
#3	.00323	.04576	.00069	-.00769	-.00029	.00517	-.00456	.00295
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 10:47:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.00050**	**-.00470**	**-.00050**	**-.00052**	**.00020**	**.00116**
Stddev	.00046	.00047	.00508	.00198	.00127	.00011	.00086
%RSD	806.59	93.281	108.17	398.14	242.75	53.066	73.939
#1	.00001	.00104	-.00897	.00149	-.00184	.00011	.00135
#2	.00036	.00017	-.00606	-.00052	-.00043	.00032	.00022
#3	-.00055	.00030	.00092	-.00246	.00070	.00017	.00191
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9455.5**	**60247.**	**3262.6**
Stddev	21.9	389.	18.3
%RSD	.23119	.64505	.56229
#1	9449.8	59825.	3242.4
#2	9479.6	60328.	3267.4
#3	9437.0	60589.	3278.1

Approved: June 25, 2016

Sample Name: PBS DH Acquired: 6/24/2016 10:51:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573823-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.06424	.00963	.02920	.00211	-.00012	.91755	.00095
Stddev	.00146	.00403	.00255	.00180	.00069	.00002	.02625	.00023
%RSD	154.86	6.2780	26.453	6.1638	32.462	16.135	2.8607	24.438
#1	.00027	.06611	.00687	.03111	.00143	-.00014	.93724	.00119
#2	.00262	.05961	.01011	.02753	.00212	-.00010	.92766	.00096
#3	-.00006	.06700	.01190	.02897	.00280	-.00012	.88775	.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00034	.00196	.02606	.05611	.86754	-.00266	2.2157	.00096
Stddev	.00046	.00074	.00067	.01940	.03735	.00126	.0698	.00076
%RSD	132.65	37.622	2.5777	34.579	4.3057	47.393	3.1523	79.295
#1	-.00064	.00148	.02576	.06271	.88691	-.00288	2.1420	.00166
#2	.00018	.00281	.02683	.07136	.89123	-.00379	2.2810	.00015
#3	-.00057	.00159	.02558	.03427	.82448	-.00130	2.2241	.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00347	1.2358	.00309	.40462	.00290	.01813	.08932	.52615
Stddev	.00027	.0193	.00147	.02012	.00064	.00254	.00325	.01166
%RSD	7.8234	1.5654	47.492	4.9731	22.045	14.035	3.6331	2.2168
#1	.00357	1.2508	.00188	.42577	.00296	.01803	.09153	.53855
#2	.00367	1.2140	.00472	.40239	.00223	.02071	.09083	.52450
#3	.00316	1.2428	.00266	.38571	.00351	.01563	.08560	.51539
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: PBS DH Acquired: 6/24/2016 10:51:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v971) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573823-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01154	.00411	.00342	-.03779	-.00138	1.3066	.00905
Stddev	.00028	.00050	.00647	.00170	.00059	.0332	.00154
%RSD	2.4661	12.170	189.43	4.4933	42.724	2.5423	17.055
#1	.01162	.00444	.00927	-.03729	-.00161	1.3427	.00767
#2	.01122	.00436	-.00353	-.03639	-.00071	1.2998	.00877
#3	.01177	.00354	.00451	-.03968	-.00182	1.2773	.01072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9550.6	62753.	3709.8
Stddev	143.7	354.	18.2
%RSD	1.5048	.56355	.49089
#1	9384.7	62418.	3722.3
#2	9637.3	62720.	3688.9
#3	9629.7	63122.	3718.1

Approved: June 25, 2016

Sample Name: LCSS DH Acquired: 6/24/2016 10:59:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573823-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18247**	**4.5986**	**.19429**	**.89801**	**.50201**	**.02364**	**6.0280**	**.02381**
Stddev	.00498	.0862	.00294	.01488	.00719	.00048	.0822	.00026
%RSD	2.7299	1.8745	1.5140	1.6566	1.4323	2.0299	1.3633	1.0767
#1	.18767	4.6908	.19687	.91506	.49496	.02417	5.9363	.02410
#2	.18199	4.5849	.19109	.89128	.50174	.02351	6.0524	.02372
#3	.17774	4.5200	.19490	.88769	.50933	.02323	6.0952	.02362
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09575**	**.24396**	**.26604**	**2.0685**	**25.217**	**.49155**	**7.2727**	**.24507**
Stddev	.00128	.00454	.00424	.0072	.406	.00739	.2108	.00531
%RSD	1.3405	1.8602	1.5932	.34707	1.6111	1.5036	2.8983	2.1657
#1	.09698	.24884	.27087	2.0602	24.814	.48835	7.0584	.24165
#2	.09442	.24317	.26294	2.0726	25.211	.48631	7.2799	.24237
#3	.09586	.23987	.26432	2.0727	25.626	.50001	7.4798	.25118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49901**	**25.673**	**.23896**	**5.1500**	**.23582**	**.55555**	**.23212**	**3.3580**
Stddev	.00666	.317	.00299	.0593	.00138	.00716	.00897	.0420
%RSD	1.3352	1.2341	1.2511	1.1512	.58344	1.2890	3.8646	1.2518
#1	.50607	25.359	.24230	5.2165	.23738	.56336	.24189	3.4044
#2	.49283	25.668	.23655	5.1025	.23531	.54930	.22426	3.3223
#3	.49814	25.992	.23802	5.1310	.23477	.55398	.23021	3.3474
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LCSS DH Acquired: 6/24/2016 10:59:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573823-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47087**	**.50955**	**.50009**	**.22590**	**.48434**	**2.0632**	**.00627**
Stddev	.00683	.00732	.00690	.00326	.01049	.0277	.00044
%RSD	1.4508	1.4356	1.3790	1.4427	2.1662	1.3435	7.0255
#1	.47818	.50245	.49214	.22809	.49569	2.0928	.00585
#2	.46464	.50912	.50437	.22215	.48231	2.0378	.00625
#3	.46981	.51706	.50378	.22746	.47500	2.0590	.00673
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9997.3**	**62835.**	**3576.8**
Stddev	90.8	1056.	48.3
%RSD	.90842	1.6801	1.3504
#1	9896.1	61710.	3631.4
#2	10072.	62993.	3559.4
#3	10024.	63803.	3539.7

Approved: June 25, 2016

Sample Name: LCSS DP Acquired: 6/24/2016 11:02:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573823-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.17820**	**4.3366**	**.22875**	**.90184**	**.50529**	**.02446**	**5.8810**	**.02577**
Stddev	.00193	.0746	.01418	.01394	.01186	.00029	.1832	.00151
%RSD	1.0838	1.7190	6.1991	1.5457	2.3469	1.1886	3.1144	5.8704
#1	.17769	4.3180	.24506	.90296	.49226	.02426	5.6858	.02746
#2	.17657	4.2731	.22184	.88737	.51544	.02431	6.0491	.02530
#3	.18033	4.4187	.21935	.91519	.50818	.02479	5.9081	.02455
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10444**	**.24563**	**.28336**	**1.9956**	**24.666**	**.49175**	**7.0829**	**.24263**
Stddev	.00645	.00190	.01874	.0724	.577	.01385	.2327	.00720
%RSD	6.1730	.77249	6.6147	3.6300	2.3398	2.8160	3.2852	2.9669
#1	.11189	.24455	.30494	1.9215	24.049	.47780	6.8155	.23468
#2	.10090	.24453	.27395	2.0663	25.192	.50549	7.1939	.24871
#3	.10054	.24782	.27118	1.9991	24.758	.49196	7.2394	.24449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.55730**	**25.233**	**.26065**	**5.6927**	**.24891**	**.61155**	**.33091**	**3.1863**
Stddev	.03375	.569	.01436	.3577	.01270	.03374	.01816	.1852
%RSD	6.0554	2.2563	5.5090	6.2841	5.1039	5.5171	5.4865	5.8116
#1	.59622	24.626	.27718	6.1055	.26343	.65012	.35188	3.3998
#2	.53962	25.755	.25355	5.4986	.23984	.59708	.32033	3.0888
#3	.53608	25.317	.25122	5.4739	.24345	.58746	.32053	3.0702
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LCSS DP Acquired: 6/24/2016 11:02:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573823-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51198**	**.51153**	**.50880**	**.21284**	**.49128**	**2.1277**	**.00181**
Stddev	.03023	.01298	.01459	.01301	.00684	.1239	.00013
%RSD	5.9037	2.5381	2.8677	6.1112	1.3917	5.8220	7.2522
#1	.54684	.49772	.49512	.22747	.49101	2.2706	.00196
#2	.49599	.52349	.52416	.20844	.48458	2.0612	.00173
#3	.49310	.51336	.50711	.20260	.49825	2.0512	.00173
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9072.1**	**62124.**	**3651.9**
Stddev	334.9	431.	66.7
%RSD	3.6913	.69305	1.8269
#1	8685.5	62374.	3723.4
#2	9261.7	62371.	3591.3
#3	9269.2	61627.	3640.9

Approved: June 25, 2016

Sample Name: L1606114301 Acquired: 6/24/2016 11:06:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00340	.63384	.00605	.03311	.02504	-.00013	1.8306	.00360
Stddev	.00146	.01591	.00255	.00247	.00039	.00009	.0364	.00013
%RSD	42.981	2.5096	42.114	7.4636	1.5650	72.615	1.9881	3.6185
#1	.00487	.64708	.00405	.03597	.02496	-.00022	1.8648	.00356
#2	.00194	.61620	.00892	.03168	.02547	-.00004	1.8345	.00375
#3	.00340	.63825	.00519	.03170	.02471	-.00013	1.7924	.00350
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00160	.05627	.80386	5.1093	1.0547	.00294	1.5234	.06438
Stddev	.00009	.00071	.01373	.0178	.0718	.00145	.0795	.00165
%RSD	5.5825	1.2566	1.7075	.34819	6.8037	49.424	5.2181	2.5676
#1	.00161	.05677	.81424	5.0951	1.0867	.00418	1.5850	.06354
#2	.00168	.05546	.80905	5.1293	1.1049	.00329	1.5515	.06628
#3	.00150	.05659	.78830	5.1035	.97252	.00134	1.4337	.06332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00632	1.2820	.04272	.30849	.10441	.02066	.07677	.84241
Stddev	.00030	.0102	.00117	.00874	.00199	.00387	.00489	.01140
%RSD	4.8199	.79829	2.7325	2.8327	1.9073	18.733	6.3709	1.3529
#1	.00599	1.2908	.04257	.31674	.10484	.02431	.07533	.85254
#2	.00639	1.2708	.04396	.30939	.10616	.02107	.08222	.84461
#3	.00659	1.2845	.04164	.29933	.10225	.01660	.07276	.83007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114301 Acquired: 6/24/2016 11:06:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01737	.00705	.05358	-.03179	.00265	5.9842	.00421
Stddev	.00159	.00017	.00866	.00194	.00017	.0953	.00010
%RSD	9.1419	2.4404	16.162	6.1073	6.4079	1.5932	2.3093
#1	.01793	.00724	.04586	-.03088	.00248	6.0574	.00413
#2	.01859	.00700	.06294	-.03048	.00266	6.0188	.00432
#3	.01557	.00691	.05193	-.03402	.00282	5.8764	.00418
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9433.8	62273.	3673.3
Stddev	13.8	108.	33.0
%RSD	.14593	.17345	.89868
#1	9423.3	62153.	3665.0
#2	9449.4	62303.	3645.2
#3	9428.7	62363.	3709.6

Approved: June 25, 2016

Sample Name: L1606114302 Acquired: 6/24/2016 11:10:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.70974	.00483	.03211	.03431	-.00008	3.7526	.00880
Stddev	.00086	.00429	.00488	.00269	.00095	.00003	.0801	.00018
%RSD	286.06	.60458	101.04	8.3916	2.7576	37.081	2.1342	2.0709
#1	.00079	.71454	.00872	.03444	.03386	-.00010	3.7049	.00896
#2	.00080	.70628	.00640	.03273	.03367	-.00010	3.7078	.00884
#3	-.00069	.70840	-.00064	.02916	.03539	-.00005	3.8450	.00860
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03006	.01986	.07908	1.9614	1.7476	.00189	1.7739	.07217
Stddev	.00057	.00040	.00176	.0337	.0301	.00072	.0437	.00266
%RSD	1.8855	2.0050	2.2306	1.7184	1.7202	38.094	2.4665	3.6877
#1	.02997	.01958	.08079	1.9631	1.7210	.00189	1.7325	.07238
#2	.03067	.01968	.07918	1.9269	1.7417	.00118	1.8197	.06941
#3	.02955	.02032	.07727	1.9943	1.7802	.00262	1.7695	.07472
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00152	3.1867	.29445	.97828	.08164	.18406	.05191	.60601
Stddev	.00039	.0400	.00282	.02017	.00359	.00750	.00201	.00524
%RSD	25.606	1.2539	.95732	2.0615	4.3941	4.0727	3.8629	.86420
#1	.00122	3.1678	.29637	.99318	.08425	.18826	.05038	.60880
#2	.00138	3.1598	.29576	.98632	.08312	.18852	.05418	.60926
#3	.00195	3.2326	.29122	.95533	.07755	.17541	.05116	.59997
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114302 Acquired: 6/24/2016 11:10:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03851	.01220	.05871	-.02123	.00148	.92404	.00252
Stddev	.00125	.00043	.00052	.00163	.00043	.01192	.00035
%RSD	3.2486	3.5183	.88626	7.6964	29.162	1.2895	13.799
#1	.03869	.01230	.05838	-.02100	.00130	.93196	.00257
#2	.03966	.01173	.05843	-.02297	.00197	.92983	.00284
#3	.03718	.01257	.05931	-.01972	.00117	.91034	.00215
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9579.3	62698.	3582.6
Stddev	23.6	409.	31.5
%RSD	.24595	.65242	.88053
#1	9558.8	62230.	3582.4
#2	9574.2	62875.	3614.3
#3	9605.1	62989.	3551.2

Approved: June 25, 2016

Sample Name: L1606114303 Acquired: 6/24/2016 11:14:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00200	4.8207	.00231	.09925	.06384	-.00014	20.352	.03065
Stddev	.00115	.0169	.00244	.00272	.00062	.00004	.361	.00032
%RSD	57.119	.35023	105.60	2.7419	.97505	30.491	1.7725	1.0317
#1	.00068	4.8310	-.00033	.10036	.06456	-.00017	20.604	.03098
#2	.00273	4.8012	.00278	.09615	.06348	-.00009	19.939	.03063
#3	.00261	4.8299	.00448	.10125	.06347	-.00016	20.514	.03035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00385	.02269	.31038	.72640	3.9876	.00384	1.7996	.03505
Stddev	.00028	.00031	.00455	.03117	.1244	.00103	.0301	.00196
%RSD	7.3418	1.3582	1.4671	4.2904	3.1197	26.784	1.6740	5.6019
#1	.00418	.02300	.31423	.75545	4.1176	.00266	1.8228	.03702
#2	.00370	.02267	.31155	.69348	3.8697	.00453	1.7655	.03503
#3	.00368	.02239	.30535	.73028	3.9755	.00433	1.8103	.03309
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00143	69.304	.01792	.75789	.92900	.21972	.06124	1.0845
Stddev	.00052	1.191	.00091	.01147	.01251	.00309	.00193	.0066
%RSD	36.480	1.7182	5.0997	1.5130	1.3471	1.4069	3.1453	.61193
#1	.00085	70.245	.01893	.76639	.93239	.22277	.05909	1.0852
#2	.00156	67.965	.01715	.76244	.93946	.21982	.06281	1.0908
#3	.00187	69.701	.01768	.74485	.91513	.21659	.06183	1.0776
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114303 Acquired: 6/24/2016 11:14:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.06697	.02914	.17767	-.02618	.00084	1.1510	.00805
Stddev	.00103	.00029	.00367	.00124	.00100	.0176	.00078
%RSD	1.5441	1.0005	2.0643	4.7450	119.01	1.5335	9.6465
#1	.06805	.02923	.17998	-.02601	.00069	1.1598	.00715
#2	.06687	.02881	.17959	-.02504	.00191	1.1626	.00843
#3	.06599	.02937	.17344	-.02750	-.00008	1.1307	.00856
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9381.8	61970.	3689.1
Stddev	33.6	321.	57.3
%RSD	.35761	.51747	1.5540
#1	9391.7	61677.	3628.9
#2	9344.4	62313.	3743.0
#3	9409.2	61920.	3695.5

Approved: June 25, 2016

Sample Name: L1606114303PS Acquired: 6/24/2016 11:18:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574050-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19282**	**9.1030**	**.21930**	**1.0209**	**.57480**	**.02552**	**23.549**	**.05319**
Stddev	.00378	.1224	.00387	.0139	.00847	.00050	.384	.00014
%RSD	1.9610	1.3448	1.7659	1.3603	1.4741	1.9641	1.6292	.25923
#1	.19718	9.2398	.22265	1.0369	.57451	.02610	23.500	.05313
#2	.19085	9.0654	.22018	1.0119	.58342	.02525	23.955	.05335
#3	.19044	9.0038	.21506	1.0138	.56648	.02522	23.192	.05310
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10838**	**.27489**	**.53510**	**2.6325**	**28.426**	**.51916**	**6.4335**	**.28113**
Stddev	.00048	.00487	.00271	.0470	.438	.00652	.0658	.00732
%RSD	.44135	1.7702	.50609	1.7864	1.5402	1.2563	1.0234	2.6026
#1	.10883	.28050	.53765	2.6400	28.393	.51849	6.4132	.27737
#2	.10842	.27183	.53540	2.6753	28.879	.52600	6.5071	.28956
#3	.10788	.27234	.53226	2.5822	28.005	.51300	6.3802	.27645
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.55563**	**88.072**	**.27127**	**5.7330**	**1.0887**	**.80555**	**.28267**	**3.5801**
Stddev	.00233	1.489	.00140	.0340	.0052	.00245	.00476	.0110
%RSD	.41977	1.6902	.51481	.59236	.48130	.30394	1.6852	.30687
#1	.55781	87.868	.27253	5.7647	1.0876	.80600	.27727	3.5781
#2	.55592	89.652	.27153	5.7371	1.0944	.80774	.28448	3.5920
#3	.55317	86.695	.26977	5.6971	1.0841	.80291	.28627	3.5703
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114303PS Acquired: 6/24/2016 11:18:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574050-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.55832**	**.55250**	**.68468**	**.22830**	**.51898**	**1.4956**	**.00754**
Stddev	.00108	.00586	.00982	.00156	.00603	.0050	.00034
%RSD	.19343	1.0607	1.4349	.68445	1.1613	.33628	4.5321
#1	.55934	.55124	.67374	.23005	.52593	1.4982	.00780
#2	.55844	.55889	.69276	.22777	.51583	1.4988	.00765
#3	.55719	.54737	.68753	.22706	.51518	1.4898	.00715
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9369.0**	**61127.**	**3634.8**
Stddev	22.7	764.	54.2
%RSD	.24213	1.2496	1.4904
#1	9362.2	60252.	3618.8
#2	9350.5	61471.	3590.4
#3	9394.3	61659.	3695.1

Approved: June 25, 2016

Sample Name: L1606114303SDL Acquired: 6/24/2016 11:21:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574050-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	1.0261	.00297	.02318	.01266	-.00007	4.1845	.00623
Stddev	.00123	.0061	.00330	.00327	.00031	.00005	.0503	.00014
%RSD	365.72	.59880	111.06	14.127	2.4185	73.446	1.2012	2.2131
#1	-.00107	1.0196	.00542	.02404	.01302	-.00002	4.1771	.00614
#2	.00083	1.0267	-.00078	.01956	.01249	-.00012	4.1383	.00639
#3	.00124	1.0319	.00428	.02594	.01249	-.00008	4.2380	.00617
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.00540	.06226	.15898	.95529	-.00007	.39328	.00447
Stddev	.00025	.00082	.00151	.01807	.04331	.00277	.02612	.00106
%RSD	50.129	15.194	2.4288	11.369	4.5341	3914.2	6.6415	23.792
#1	.00077	.00446	.06382	.13919	.97561	-.00233	.38332	.00500
#2	.00037	.00596	.06216	.17463	.98470	.00302	.42292	.00517
#3	.00033	.00577	.06080	.16312	.90555	-.00090	.37361	.00325
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	14.368	.00341	.14113	.19112	.04241	.01311	.21447
Stddev	.00015	.033	.00044	.00572	.00278	.00110	.00399	.00347
%RSD	22.588	.22958	12.788	4.0544	1.4560	2.5835	30.424	1.6176
#1	.00054	14.331	.00376	.14763	.19272	.04265	.01583	.21733
#2	.00066	14.378	.00292	.13686	.19273	.04121	.00853	.21548
#3	.00085	14.394	.00355	.13890	.18791	.04336	.01496	.21061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114303SDL Acquired: 6/24/2016 11:21:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574050-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01266	.00566	.03785	-.00383	-.00075	.23612	.00185
Stddev	.00065	.00028	.00383	.00311	.00045	.00453	.00029
%RSD	5.1470	5.0211	10.115	81.132	60.764	1.9188	15.554
#1	.01193	.00542	.03347	-.00556	-.00022	.23954	.00216
#2	.01290	.00558	.03952	-.00024	-.00102	.23784	.00159
#3	.01316	.00597	.04057	-.00569	-.00099	.23098	.00180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10057.	64667.	3566.1
Stddev	24.	239.	18.3
%RSD	.24189	.36921	.51318
#1	10061.	64539.	3548.5
#2	10080.	64942.	3585.1
#3	10031.	64519.	3564.7

Approved: June 25, 2016

Sample Name: L1606072401 Acquired: 6/24/2016 11:25:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	-.00315	.00035	.10432	.27002	-.00002	19.485	-.00008
Stddev	.00044	.00317	.00249	.00108	.00200	.00009	.116	.00017
%RSD	1758.5	100.57	717.90	1.0354	.74150	535.21	.59419	213.12
#1	.00051	-.00633	.00240	.10390	.26802	.00008	19.352	-.00022
#2	-.00037	.00001	.00106	.10555	.27202	-.00009	19.546	-.00012
#3	-.00006	-.00313	-.00242	.10352	.27001	-.00003	19.558	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00054	.00046	-.00104	.04832	1.6362	.06448	1.9423	.00728
Stddev	.00032	.00099	.00074	.01250	.0309	.00265	.0169	.00214
%RSD	60.154	216.03	70.782	25.871	1.8896	4.1051	.87020	29.355
#1	-.00026	.00125	-.00020	.06077	1.6689	.06381	1.9502	.00486
#2	-.00046	.00077	-.00159	.04843	1.6074	.06740	1.9228	.00808
#3	-.00090	-.00065	-.00133	.03577	1.6323	.06224	1.9537	.00891
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	45.826	-.00085	.00269	-.00068	-.00086	.00607	.02783
Stddev	.00032	.230	.00099	.00141	.00111	.00064	.00697	.00182
%RSD	148.51	.50191	116.77	52.456	163.34	74.836	114.77	6.5364
#1	.00042	45.682	-.00200	.00191	-.00152	-.00014	.00291	.02894
#2	-.00016	46.091	-.00033	.00185	-.00108	-.00138	.01406	.02882
#3	.00039	45.704	-.00023	.00433	.00057	-.00105	.00124	.02573
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606072401 Acquired: 6/24/2016 11:25:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00043	3.7849	-.00208	.00102	-.00025	.00077	.00029
Stddev	.00032	.0200	.00520	.00060	.00104	.00010	.00043
%RSD	74.660	.52945	249.46	58.995	412.82	12.438	148.48
#1	-.00041	3.7649	.00110	.00076	-.00044	.00066	.00051
#2	-.00012	3.8049	.00073	.00059	.00087	.00082	-.00021
#3	-.00077	3.7849	-.00808	.00171	-.00118	.00083	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9875.5	62339.	3387.9
Stddev	19.3	92.	22.4
%RSD	.19558	.14698	.65977
#1	9880.5	62376.	3412.5
#2	9891.8	62234.	3382.5
#3	9854.1	62405.	3368.8

Approved: June 25, 2016

Sample Name: L1606078710 Acquired: 6/24/2016 11:29:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	.01245	.00093	.00672	.00888	-.00004	5.1268	-.00003
Stddev	.00207	.00513	.00062	.00160	.00032	.00006	.0280	.00009
%RSD	1015.8	41.172	67.473	23.880	3.6189	161.49	.54640	338.65
#1	-.00259	.01156	.00060	.00537	.00890	.00003	5.1020	.00003
#2	.00103	.01797	.00053	.00629	.00918	-.00004	5.1212	-.00013
#3	.00095	.00783	.00164	.00850	.00854	-.00010	5.1572	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	.00129	-.00031	.02121	.09124	.00142	1.6609	.00016
Stddev	.00030	.00103	.00028	.02108	.02779	.00443	.0362	.00043
%RSD	83.898	80.266	88.228	99.367	30.455	310.98	2.1784	267.47
#1	-.00002	.00013	-.00000	.02577	.07595	.00096	1.6192	.00066
#2	-.00047	.00163	-.00042	.03964	.12332	.00607	1.6798	-.00009
#3	-.00058	.00211	-.00052	-.00177	.07447	-.00275	1.6837	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.40629	-.00019	.02344	.00142	.00036	.00428	.86102
Stddev	.00008	.01566	.00070	.00293	.00389	.00131	.00308	.00301
%RSD	282.85	3.8547	375.84	12.494	274.41	367.61	71.795	.35006
#1	-.00005	.39122	-.00061	.02282	-.00202	-.00116	.00142	.85766
#2	.00002	.40516	.00062	.02087	.00564	.00112	.00390	.86349
#3	.00011	.42248	-.00056	.02663	.00064	.00110	.00753	.86190
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606078710 Acquired: 6/24/2016 11:29:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00084	.01418	.00262	.00104	-.00029	.00070	.00018
Stddev	.00037	.00086	.00142	.00185	.00024	.00007	.00067
%RSD	43.228	6.0990	54.198	178.45	83.020	9.6277	377.85
#1	-.00122	.01515	.00146	.00231	-.00032	.00062	-.00035
#2	-.00082	.01393	.00221	.00189	-.00003	.00073	.00093
#3	-.00049	.01347	.00421	-.00108	-.00051	.00074	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9908.1	62790.	3396.7
Stddev	24.3	134.	24.8
%RSD	.24489	.21371	.72925
#1	9883.2	62654.	3377.5
#2	9909.3	62793.	3388.0
#3	9931.7	62922.	3424.7

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 11:33:47 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38810**	**9.7098**	**.39689**	**.47714**	**.99058**	**.04739**	**9.8701**	**.05060**
Stddev	.00283	.0174	.01197	.00133	.00631	.00022	.0513	.00128
%RSD	.72928	.17891	3.0148	.27927	.63726	.46575	.51962	2.5352
#1	.39081	9.7194	.38991	.47646	.98553	.04761	9.8110	.04949
#2	.38516	9.6898	.39005	.47629	.99766	.04716	9.9033	.05031
#3	.38833	9.7203	.41070	.47868	.98855	.04739	9.8959	.05200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20045**	**.47745**	**.50304**	**3.8652**	**49.851**	**.98139**	**9.6090**	**.49428**
Stddev	.00476	.00182	.01308	.0187	.275	.00271	.1197	.00115
%RSD	2.3737	.38128	2.6009	.48458	.55213	.27645	1.2457	.23357
#1	.19707	.47916	.49332	3.8535	49.648	.97918	9.5187	.49428
#2	.19839	.47554	.49789	3.8554	50.165	.98442	9.7448	.49544
#3	.20589	.47766	.51792	3.8868	49.742	.98056	9.5635	.49313
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0051**	**49.395**	**.49829**	**9.9011**	**.49766**	**1.1837**	**.40223**	**5.1765**
Stddev	.0221	.266	.01338	.2380	.01263	.0295	.01301	.1331
%RSD	2.2022	.53859	2.6859	2.4036	2.5373	2.4958	3.2354	2.5717
#1	.99057	49.185	.48864	9.7382	.49052	1.1641	.39764	5.0820
#2	.99416	49.694	.49266	9.7909	.49023	1.1694	.39213	5.1189
#3	1.0306	49.307	.51357	10.174	.51224	1.2177	.41691	5.3288
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 11:33:47 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99780**	**.99494**	**.99460**	**.50316**	**.95384**	**.99778**	**.96366**
Stddev	.02505	.00582	.00941	.01064	.00112	.02481	.00332
%RSD	2.5106	.58510	.94620	2.1156	.11735	2.4862	.34462
#1	.98222	.99006	.98399	.49648	.95510	.98037	.96166
#2	.98449	1.0014	.99788	.49756	.95296	.98679	.96750
#3	1.0267	.99339	1.0019	.51543	.95347	1.0262	.96183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9609.5**	**61484.**	**3367.3**
Stddev	179.1	149.	17.5
%RSD	1.8637	.24184	.51943
#1	9727.0	61424.	3387.4
#2	9698.3	61653.	3355.3
#3	9403.4	61374.	3359.2

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 11:37:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00172**	**-.00134**	**.00309**	**.00209**	**.00125**	**-.00002**	**-.01440**	**-.00007**
Stddev	.00091	.00614	.00420	.00059	.00035	.00008	.00898	.00028
%RSD	52.779	459.15	136.12	28.437	28.440	502.17	62.405	405.50
#1	-.00077	-.00780	.00268	.00192	.00104	-.00008	-.01028	-.00013
#2	-.00183	-.00062	-.00090	.00275	.00104	-.00004	-.00821	-.00031
#3	-.00257	.00441	.00748	.00160	.00165	.00007	-.02470	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00058**	**.00219**	**-.00096**	**.01429**	**.07201**	**-.00051**	**-.01423**	**-.00338**
Stddev	.00025	.00091	.00116	.02391	.02885	.00127	.05533	.00160
%RSD	42.952	41.583	120.36	167.30	40.061	249.18	388.71	47.289
#1	-.00086	.00313	-.00216	.03857	.05729	-.00120	.01249	-.00407
#2	-.00049	.00132	.00015	-.00924	.05349	.00096	-.07785	-.00452
#3	-.00039	.00212	-.00087	.01355	.10524	-.00129	.02266	-.00155
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00397**	**.05772**	**.00049**	**.00166**	**.00060**	**.00709**	**.00415**	**.00501**
Stddev	.00025	.00897	.00091	.00777	.00062	.00346	.00064	.00058
%RSD	6.2010	15.535	183.67	469.35	103.11	48.715	15.417	11.538
#1	.00371	.06438	.00022	.00269	-.00009	.00377	.00431	.00485
#2	.00402	.04752	-.00024	.00886	.00078	.01067	.00470	.00452
#3	.00419	.06126	.00151	-.00658	.00112	.00684	.00345	.00565
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 11:37:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**-.00004**	**-.00290**	**-.00180**	**-.00095**	**.00026**	**.00127**
Stddev	.00126	.00040	.00531	.00104	.00030	.00018	.00033
%RSD	720.33	1037.6	182.93	57.739	31.840	69.543	26.201
#1	-.00138	.00030	.00232	-.00292	-.00094	.00041	.00115
#2	-.00028	-.00048	-.00273	-.00162	-.00066	.00030	.00101
#3	.00113	.00007	-.00830	-.00087	-.00126	.00006	.00164
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9475.4**	**60828.**	**3302.4**
Stddev	15.9	240.	28.2
%RSD	.16749	.39397	.85256
#1	9486.2	60837.	3325.2
#2	9482.7	61063.	3270.9
#3	9457.1	60584.	3311.0

Approved: June 25, 2016

Sample Name: L1606078718 Acquired: 6/24/2016 11:41:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00044**	**.12278**	**-.00107**	**.00913**	**.01523**	**.00001**	**5.3107**	**-.00005**
Stddev	.00135	.00087	.00075	.00238	.00045	.00002	.0439	.00007
%RSD	307.59	.71051	70.678	26.118	2.9624	290.46	.82581	147.98
#1	-.00119	.12179	-.00040	.01179	.01472	.00003	5.2601	-.00013
#2	-.00124	.12310	-.00188	.00842	.01537	.00000	5.3382	.00001
#3	.00112	.12344	-.00091	.00718	.01559	-.00001	5.3338	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.00156**	**.00001**	**.12761**	**.28289**	**-.00057**	**2.0930**	**.00966**
Stddev	.00025	.00095	.00078	.01136	.02940	.00292	.1311	.00143
%RSD	123.91	60.819	13550.	8.9048	10.391	511.67	6.2613	14.807
#1	.00004	.00136	.00041	.11857	.31451	-.00375	2.2066	.00912
#2	-.00046	.00072	.00051	.14037	.25639	.00005	1.9496	.00858
#3	-.00018	.00259	-.00090	.12389	.27778	.00199	2.1228	.01128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00091**	**.96070**	**.00021**	**.01639**	**.00142**	**.00012**	**.00174**	**.95670**
Stddev	.00022	.02144	.00152	.00378	.00110	.00353	.00315	.00064
%RSD	24.211	2.2317	705.53	23.047	77.668	2852.2	180.36	.06663
#1	.00066	.96380	-.00103	.01922	.00239	-.00367	.00218	.95743
#2	.00108	.98042	.00190	.01784	.00022	.00073	-.00160	.95644
#3	.00099	.93788	-.00022	.01210	.00165	.00331	.00465	.95624
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606078718 Acquired: 6/24/2016 11:41:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	.02113	-.00261	.00155	.00015	.00102	.00007
Stddev	.00039	.00013	.00231	.00262	.00009	.00008	.00015
%RSD	3458.6	.60621	88.436	169.06	60.666	7.5915	217.66
#1	-.00027	.02099	-.00355	.00304	.00004	.00110	-.00006
#2	.00044	.02124	.00002	-.00148	.00020	.00094	.00004
#3	-.00021	.02116	-.00429	.00309	.00019	.00102	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9833.8	62560.	3368.7
Stddev	10.6	179.	20.6
%RSD	.10814	.28665	.61199
#1	9837.0	62447.	3366.4
#2	9821.9	62767.	3349.3
#3	9842.4	62467.	3390.3

Approved: June 25, 2016

Sample Name: PBW 76 Acquired: 6/24/2016 11:45:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.00756**	**-.00027**	**.00227**	**.00060**	**.00001**	**.00703**	**.00010**
Stddev	.00134	.00214	.00202	.00255	.00065	.00005	.01557	.00013
%RSD	7726.0	28.331	745.35	112.37	108.24	426.81	221.55	123.75
#1	.00015	.00960	.00041	.00019	.00119	.00007	-.00446	.00001
#2	.00123	.00774	.00132	.00150	-.00010	-.00002	.02475	.00024
#3	-.00144	.00533	-.00255	.00512	.00071	-.00001	.00079	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00074**	**.00189**	**-.00169**	**.00228**	**.02645**	**-.00293**	**.08622**	**-.00171**
Stddev	.00036	.00154	.00145	.01650	.09764	.00154	.04513	.00322
%RSD	48.622	81.673	85.412	724.65	369.14	52.587	52.347	188.75
#1	-.00110	.00346	-.00193	.01977	.12997	-.00130	.13664	-.00066
#2	-.00076	.00182	-.00301	.00009	-.06399	-.00437	.04959	-.00532
#3	-.00037	.00038	-.00014	-.01302	.01337	-.00312	.07244	.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00066**	**.03990**	**-.00047**	**-.00713**	**-.00416**	**-.00155**	**-.00282**	**.01609**
Stddev	.00011	.02208	.00015	.00734	.00167	.00446	.00425	.00127
%RSD	17.385	55.332	31.359	102.96	40.213	287.62	150.70	7.8845
#1	.00065	.03197	-.00031	-.00456	-.00533	.00097	.00195	.01464
#2	.00055	.02288	-.00051	-.01540	-.00224	.00108	-.00421	.01696
#3	.00078	.06484	-.00059	-.00142	-.00490	-.00670	-.00621	.01668
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: PBW 76 Acquired: 6/24/2016 11:45:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00042**	**-.00012**	**-.00291**	**.00062**	**-.00065**	**.00076**	**.00063**
Stddev	.00117	.00017	.00323	.00163	.00060	.00007	.00005
%RSD	281.50	146.61	111.08	263.50	92.819	8.5570	7.9907
#1	.00066	.00000	-.00316	-.00124	-.00007	.00071	.00069
#2	-.00166	-.00004	-.00601	.00179	-.00127	.00074	.00060
#3	-.00025	-.00031	.00044	.00131	-.00060	.00084	.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9158.3**	**58514.**	**3173.6**
Stddev	21.5	54.	54.1
%RSD	.23481	.09167	1.7045
#1	9170.2	58456.	3116.8
#2	9171.2	58527.	3224.6
#3	9133.5	58561.	3179.5

Approved: June 25, 2016

Sample Name: LCSW 76 Acquired: 6/24/2016 11:49:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19957**	**5.0577**	**.20359**	**.97778**	**.51970**	**.02459**	**5.2560**	**.02583**
Stddev	.00111	.0209	.00144	.00585	.00573	.00009	.0253	.00026
%RSD	.55649	.41409	.70902	.59861	1.1018	.38272	.48154	.99696
#1	.19952	5.0735	.20526	.97949	.51449	.02469	5.2312	.02570
#2	.19848	5.0657	.20267	.98260	.51879	.02457	5.2550	.02613
#3	.20070	5.0340	.20285	.97127	.52583	.02451	5.2818	.02566
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10438**	**.25143**	**.25975**	**2.0526**	**25.715**	**.51843**	**5.1244**	**.25887**
Stddev	.00049	.00212	.00051	.0472	.222	.00558	.0767	.00446
%RSD	.46631	.84222	.19672	2.2997	.86399	1.0771	1.4961	1.7214
#1	.10490	.25326	.25929	2.0703	25.495	.51419	5.0400	.25801
#2	.10428	.25193	.25965	1.9991	25.711	.51635	5.1897	.25491
#3	.10394	.24911	.26030	2.0884	25.939	.52476	5.1436	.26370
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53107**	**25.841**	**.25948**	**4.9583**	**.25768**	**.61986**	**.20199**	**2.6208**
Stddev	.00128	.248	.00088	.0110	.00363	.00187	.00566	.0027
%RSD	.24060	.95967	.33951	.22193	1.4073	.30098	2.7997	.10443
#1	.53215	25.579	.25869	4.9612	.25468	.61882	.19650	2.6225
#2	.53139	25.870	.26043	4.9675	.25665	.62201	.20780	2.6222
#3	.52966	26.073	.25932	4.9461	.26171	.61875	.20168	2.6176
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LCSW 76 Acquired: 6/24/2016 11:49:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51623	.53123	.52244	.25565	.49959	.51393	.00579
Stddev	.00132	.00381	.00132	.00319	.00144	.00042	.00111
%RSD	.25652	.71784	.25180	1.2488	.28878	.08123	19.246
#1	.51555	.52808	.52357	.25635	.50112	.51432	.00458
#2	.51775	.53013	.52276	.25844	.49939	.51397	.00604
#3	.51538	.53547	.52100	.25217	.49826	.51349	.00677
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9055.9	57815.	3183.8
Stddev	4.9	347.	20.8
%RSD	.05361	.60036	.65296
#1	9054.8	57514.	3207.6
#2	9061.2	57737.	3174.7
#3	9051.7	58195.	3169.1

Approved: June 25, 2016

Sample Name: F BLANK Acquired: 6/24/2016 11:52:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573594-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.01913	.00045	.00564	.00075	.00006	.03446	.00003
Stddev	.00067	.00249	.00285	.00093	.00023	.00008	.05634	.00010
%RSD	248.40	13.009	640.39	16.412	30.810	153.80	163.51	360.07
#1	-.00005	.01749	.00372	.00458	.00101	.00001	.06139	-.00008
#2	-.00018	.01791	-.00146	.00604	.00070	.00015	-.03030	.00007
#3	.00104	.02200	-.00093	.00630	.00056	.00000	.07228	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	.00253	-.00156	-.00596	.16777	.00070	.01889	-.00191
Stddev	.00044	.00121	.00070	.01626	.08879	.00348	.08939	.00126
%RSD	226.82	47.714	44.960	272.74	52.925	500.27	473.10	66.049
#1	-.00068	.00392	-.00085	-.00089	.18512	.00292	-.08304	-.00336
#2	-.00006	.00176	-.00226	-.02415	.07158	-.00331	.08391	-.00130
#3	.00016	.00191	-.00157	.00716	.24660	.00248	.05581	-.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00127	146.88	-.00010	-.00997	-.00192	-.00060	.00086	.01689
Stddev	.00007	2.32	.00022	.01062	.00306	.00058	.00486	.00219
%RSD	5.9044	1.5789	217.75	106.58	159.22	97.608	562.25	12.982
#1	.00123	147.49	-.00010	-.00418	.00110	-.00085	.00099	.01941
#2	.00122	144.32	-.00032	-.02223	-.00503	-.00101	-.00405	.01582
#3	.00135	148.83	.00012	-.00350	-.00184	.00007	.00565	.01544
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: F BLANK Acquired: 6/24/2016 11:52:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573594-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00019	.00465	-.00056	-.00077	.00385	.00047
Stddev	.00062	.00009	.00622	.00067	.00006	.00008	.00058
%RSD	351.13	48.859	133.64	119.24	7.9259	2.1598	122.28
#1	-.00018	.00019	.00196	-.00117	-.00080	.00376	.00110
#2	.00090	.00028	.00023	-.00067	-.00082	.00387	.00035
#3	-.00018	.00010	.01176	.00016	-.00070	.00392	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9082.3	57649.	3191.0
Stddev	16.5	168.	36.6
%RSD	.18193	.29213	1.1475
#1	9087.4	57544.	3194.2
#2	9063.8	57561.	3225.9
#3	9095.7	57844.	3152.9

Approved: June 25, 2016

Sample Name: F BLANK Acquired: 6/24/2016 11:56:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573594-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00681	-.00106	.00396	-.00038	.00008	.00787
Stddev	.00115	.00552	.00081	.00188	.00038	.00004	.02622
%RSD	428.61	81.084	76.687	47.340	102.50	53.257	333.03
#1	.00038	.01319	-.00187	.00403	-.00074	.00010	-.00305
#2	-.00094	.00367	-.00107	.00205	.00003	.00010	-.01112
#3	.00136	.00358	-.00024	.00580	-.00042	.00003	.03779
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	-.00070	.00137	-.00027	-.00002	.15945	-.00128
Stddev	.00010	.00002	.00054	.00110	.02466	.06888	.00479
%RSD	101.48	2.8007	39.168	401.57	161320.	43.197	373.14
#1	-.00002	-.00067	.00075	-.00109	-.02191	.10599	.00293
#2	.00017	-.00071	.00165	-.00072	-.00485	.13518	-.00650
#3	.00015	-.00071	.00170	.00098	.02671	.23717	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.01684	F -.00418	.00067	.09707	-.00070	-.01284	.00022
Stddev	.07248	.00187	.00051	.02145	.00086	.00271	.00131
%RSD	430.41	44.681	75.988	22.093	121.92	21.113	591.13
#1	-.09127	-.00633	.00026	.09161	-.00137	-.01596	.00169
#2	-.01277	-.00318	.00124	.12072	.00026	-.01112	-.00022
#3	.05352	-.00303	.00051	.07889	-.00100	-.01143	-.00081
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		36.000					
Low Limit		-.00300					

Approved: June 25, 2016

Sample Name: F BLANK Acquired: 6/24/2016 11:56:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573594-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	-.00165	.01154	-.00016	-.00000	.00524	-.00258
Stddev	.00243	.00564	.00134	.00055	.00028	.00100	.00016
%RSD	433.82	342.87	11.581	341.26	38088.	19.138	6.0823
#1	.00049	-.00470	.01307	-.00007	.00005	.00482	-.00263
#2	-.00334	.00486	.01061	.00034	.00025	.00451	-.00270
#3	.00117	-.00510	.01094	-.00075	-.00031	.00638	-.00240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00082	.00321	.00040
Stddev	.00090	.00006	.00064
%RSD	109.84	1.7754	160.28
#1	-.00106	.00319	-.00006
#2	-.00159	.00327	.00013
#3	.00017	.00316	.00114
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9251.2	59193.	3228.6
Stddev	29.0	219.	50.6
%RSD	.31309	.36916	1.5681
#1	9282.5	58943.	3171.4
#2	9245.5	59348.	3246.5
#3	9225.4	59289.	3267.8

Approved: June 25, 2016

Sample Name: L1606115101 Acquired: 6/24/2016 12:00:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	.15830	.00196	.12061	.07888	-.00001	37.815	.00010
Stddev	.00120	.00530	.00056	.00140	.00081	.00003	.248	.00022
%RSD	304.15	3.3498	28.525	1.1602	1.0231	231.96	.65454	212.58
#1	-.00079	.16067	.00184	.12082	.07945	-.00001	38.100	.00001
#2	.00095	.15223	.00257	.12189	.07796	.00002	37.690	-.00006
#3	-.00134	.16201	.00147	.11912	.07925	-.00005	37.655	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00054	.00290	.00097	.21119	2.5400	.00368	20.418	.06424
Stddev	.00015	.00059	.00066	.01074	.0733	.00380	.216	.00165
%RSD	27.920	20.440	67.678	5.0831	2.8878	103.15	1.0559	2.5751
#1	-.00061	.00239	.00022	.21267	2.5710	.00761	20.667	.06262
#2	-.00065	.00277	.00126	.22111	2.4562	.00340	20.289	.06593
#3	-.00037	.00355	.00144	.19979	2.5927	.00003	20.297	.06416
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00311	101.77	.00045	.04117	.00135	.00380	.00157	5.3677
Stddev	.00045	.72	.00047	.00987	.00181	.00230	.00252	.0303
%RSD	14.570	.71009	104.97	23.979	133.91	60.522	159.90	.56381
#1	.00300	102.57	.00075	.03748	.00144	.00202	.00106	5.3896
#2	.00272	101.55	.00069	.05236	.00312	.00299	-.00065	5.3804
#3	.00360	101.18	-.00009	.03367	-.00050	.00640	.00431	5.3332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115101 Acquired: 6/24/2016 12:00:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00053**	**.24842**	**-.00797**	**-.00198**	**.00331**	**.01122**	**.00043**
Stddev	.00079	.00184	.00414	.00305	.00081	.00007	.00023
%RSD	148.48	.74257	51.976	153.47	24.555	.58389	52.792
#1	-.00089	.25043	-.00512	-.00050	.00292	.01123	.00048
#2	.00038	.24800	-.01272	-.00549	.00277	.01128	.00018
#3	-.00108	.24682	-.00607	.00004	.00425	.01115	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9014.8**	**57274.**	**3214.0**
Stddev	3.7	444.	16.2
%RSD	.04144	.77607	.50389
#1	9010.8	56777.	3196.3
#2	9018.1	57410.	3228.0
#3	9015.6	57634.	3217.6

Approved: June 25, 2016

Sample Name: L1606115103S Acquired: 6/24/2016 12:04:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19866**	**5.2333**	**.20489**	**1.0841**	**.58829**	**.02453**	**41.795**	**.02565**
Stddev	.00248	.0391	.00312	.0094	.00934	.00022	.762	.00024
%RSD	1.2478	.74796	1.5219	.86801	1.5872	.88296	1.8223	.94310
#1	.20143	5.2782	.20405	1.0949	.59855	.02478	42.664	.02538
#2	.19665	5.2065	.20834	1.0778	.58603	.02443	41.476	.02586
#3	.19791	5.2153	.20228	1.0795	.58029	.02438	41.245	.02571
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10099**	**.24641**	**.25195**	**2.2589**	**28.126**	**.51539**	**24.622**	**.31292**
Stddev	.00052	.00196	.00102	.0296	.653	.00581	.350	.00628
%RSD	.51212	.79406	.40526	1.3088	2.3212	1.1278	1.4196	2.0063
#1	.10114	.24829	.25234	2.2928	28.857	.52178	24.997	.31972
#2	.10142	.24656	.25272	2.2452	27.918	.51397	24.564	.31172
#3	.10041	.24438	.25079	2.2387	27.601	.51042	24.305	.30733
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52635**	**123.51**	**.24930**	**5.0586**	**.24835**	**.61205**	**.20210**	**7.9483**
Stddev	.00263	2.21	.00102	.0099	.00401	.00458	.01142	.0147
%RSD	.50034	1.7930	.40840	.19611	1.6157	.74825	5.6519	.18492
#1	.52939	126.01	.25035	5.0677	.24616	.61628	.19120	7.9616
#2	.52472	122.75	.24832	5.0480	.25298	.61267	.20111	7.9508
#3	.52495	121.78	.24922	5.0600	.24590	.60719	.21398	7.9325
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115103S Acquired: 6/24/2016 12:04:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50472	.74393	.51319	.24877	.50017	.50921	.00163
Stddev	.00229	.01406	.00107	.00330	.00462	.00094	.00046
%RSD	.45343	1.8895	.20946	1.3249	.92272	.18364	28.196
#1	.50713	.75976	.51270	.24643	.50544	.51012	.00133
#2	.50447	.73914	.51244	.24733	.49686	.50925	.00215
#3	.50257	.73289	.51442	.25254	.49821	.50826	.00140
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8967.8	56968.	3188.4
Stddev	14.4	310.	46.6
%RSD	.16024	.54356	1.4614
#1	8982.4	56611.	3137.2
#2	8953.6	57142.	3228.2
#3	8967.3	57152.	3199.9

Approved: June 25, 2016

Sample Name: L1606115104SD Acquired: 6/24/2016 12:08:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20050**	**5.5362**	**.21145**	**1.1171**	**.60094**	**.02473**	**43.628**	**.02602**
Stddev	.00367	.0392	.00196	.0038	.00661	.00023	.422	.00015
%RSD	1.8310	.70851	.92588	.33636	1.0992	.92800	.96702	.56220
#1	.20453	5.5755	.20937	1.1208	.60449	.02497	43.830	.02607
#2	.19734	5.5360	.21326	1.1133	.60501	.02469	43.911	.02586
#3	.19964	5.4970	.21172	1.1174	.59332	.02452	43.143	.02614
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10332**	**.25201**	**.25751**	**2.4745**	**28.765**	**.52930**	**25.537**	**.32828**
Stddev	.00022	.00113	.00140	.0515	.250	.00229	.203	.00242
%RSD	.20838	.44890	.54386	2.0800	.86748	.43222	.79310	.73866
#1	.10312	.25327	.25864	2.4622	28.794	.52881	25.355	.33071
#2	.10331	.25107	.25594	2.5310	28.999	.53179	25.755	.32826
#3	.10355	.25171	.25796	2.4303	28.503	.52730	25.502	.32586
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53696**	**128.06**	**.25435**	**5.1848**	**.25573**	**.62539**	**.20371**	**8.6826**
Stddev	.00235	1.16	.00112	.0104	.00231	.00094	.00431	.0179
%RSD	.43756	.90349	.43872	.20045	.90135	.15109	2.1170	.20639
#1	.53930	128.62	.25342	5.1916	.25485	.62446	.19905	8.6946
#2	.53698	128.84	.25558	5.1899	.25835	.62536	.20453	8.6911
#3	.53460	126.73	.25403	5.1728	.25400	.62635	.20756	8.6620
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115104SD Acquired: 6/24/2016 12:08:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51403**	**.76306**	**.52079**	**.25353**	**.50800**	**.54740**	**.00120**
Stddev	.00207	.00813	.00728	.00246	.00215	.00115	.00023
%RSD	.40270	1.0651	1.3976	.96966	.42297	.21071	19.008
#1	.51525	.76972	.51741	.25073	.51047	.54816	.00120
#2	.51521	.76547	.52914	.25449	.50702	.54797	.00097
#3	.51164	.75401	.51581	.25536	.50652	.54608	.00143
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8971.1**	**57029.**	**3176.4**
Stddev	7.5	275.	37.9
%RSD	.08397	.48302	1.1936
#1	8971.7	56728.	3149.0
#2	8963.3	57269.	3160.4
#3	8978.3	57089.	3219.6

Approved: June 25, 2016

Sample Name: L1606114001 Acquired: 6/24/2016 12:11:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00112	.02288	.00406	.04082	.07775	.00002	146.18	.00803
Stddev	.00117	.00176	.00168	.00145	.00148	.00006	1.41	.00013
%RSD	105.07	7.7135	41.352	3.5486	1.9065	431.51	.96792	1.6005
#1	-.00015	.02175	.00435	.04246	.07857	-.00005	147.59	.00799
#2	.00217	.02197	.00557	.04032	.07604	.00008	144.76	.00794
#3	.00133	.02491	.00225	.03970	.07864	.00002	146.20	.00818
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.00113	.15059	.00257	2.0589	.00836	2.1895	.15039
Stddev	.00020	.00056	.00328	.04967	.1178	.00105	.0405	.00204
%RSD	197.71	50.139	2.1779	1935.6	5.7222	12.511	1.8515	1.3546
#1	-.00033	.00053	.15163	.05781	2.1539	.00743	2.1519	.15272
#2	.00004	.00166	.15323	-.01173	1.9271	.00816	2.2324	.14950
#3	-.00002	.00119	.14692	-.03838	2.0957	.00949	2.1841	.14894
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00097	4.5457	.00499	.37451	.09772	.00116	.00727	.91983
Stddev	.00011	.0157	.00049	.00549	.00291	.00520	.00545	.00530
%RSD	11.074	.34568	9.8108	1.4647	2.9765	448.88	74.937	.57580
#1	.00106	4.5461	.00536	.38066	.10096	.00620	.00098	.92472
#2	.00085	4.5299	.00444	.37010	.09534	-.00419	.01057	.92057
#3	.00099	4.5613	.00518	.37278	.09685	.00146	.01027	.91421
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114001 Acquired: 6/24/2016 12:11:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00079**	**.43857**	**-.02336**	**-.00142**	**-.00154**	**.50322**	**.00005**
Stddev	.00104	.00448	.00196	.00344	.00065	.00330	.00027
%RSD	131.08	1.0215	8.3791	242.90	42.008	.65521	545.16
#1	.00012	.44211	-.02243	-.00473	-.00200	.50529	-.00008
#2	-.00193	.43353	-.02204	-.00165	-.00182	.50495	.00036
#3	-.00058	.44006	-.02561	.00214	-.00080	.49942	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9099.5**	**58355.**	**3254.5**
Stddev	20.8	103.	52.9
%RSD	.22848	.17565	1.6262
#1	9103.9	58241.	3200.3
#2	9076.9	58438.	3306.0
#3	9117.7	58387.	3257.0

Approved: June 25, 2016

Sample Name: L1606114001SDL Acquired: 6/24/2016 12:15:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574055-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00037	.01331	.00099	.00780	.01560	.00000	29.557	.00158
Stddev	.00087	.00321	.00169	.00203	.00098	.00002	.054	.00027
%RSD	236.49	24.147	171.32	26.026	6.2683	4328.2	.18417	17.124
#1	.00062	.01694	-.00029	.00636	.01450	-.00002	29.529	.00183
#2	-.00104	.01084	.00035	.00692	.01636	.00002	29.620	.00130
#3	-.00069	.01214	.00290	.01013	.01596	.00000	29.522	.00162
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	.00132	.03151	.00499	.41194	.00149	.47888	.02876
Stddev	.00033	.00049	.00083	.01420	.07529	.00168	.04968	.00203
%RSD	299.16	36.877	2.6222	284.58	18.277	112.60	10.373	7.0541
#1	.00017	.00076	.03108	.02107	.49470	.00200	.52478	.03053
#2	-.00047	.00152	.03098	-.00580	.34749	-.00038	.48574	.02654
#3	-.00003	.00167	.03246	-.00031	.39365	.00285	.42614	.02921
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.89244	.00037	.07391	.02034	.00194	-.00119	.19852
Stddev	.00030	.03461	.00035	.00616	.00060	.00167	.00867	.00138
%RSD	58.379	3.8778	96.553	8.3343	2.9674	86.300	729.26	.69508
#1	.00070	.85307	.00064	.08066	.02076	.00316	-.00830	.19746
#2	.00017	.90617	.00049	.07249	.02062	.00003	.00847	.19802
#3	.00070	.91807	-.00003	.06859	.01965	.00263	-.00373	.20008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114001SDL Acquired: 6/24/2016 12:15:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574055-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00039**	**.08546**	**-.00162**	**-.00038**	**-.00143**	**.10505**	**.00026**
Stddev	.00052	.00084	.00796	.00370	.00041	.00083	.00026
%RSD	132.53	.98750	491.04	963.99	29.011	.78998	99.384
#1	-.00083	.08458	.00175	-.00262	-.00159	.10430	-.00004
#2	.00018	.08626	.00410	-.00242	-.00096	.10490	.00043
#3	-.00052	.08553	-.01071	.00389	-.00173	.10594	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9347.7**	**59748.**	**3254.8**
Stddev	37.4	288.	18.3
%RSD	.39956	.48239	.56188
#1	9390.7	59990.	3243.3
#2	9323.6	59429.	3245.1
#3	9328.6	59825.	3275.9

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 12:19:26 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.42650**	**10.713**	**.42746**	**.52823**	**1.0913**	**.05212**	**10.834**
Stddev	.00317	.052	.00096	.00261	.0070	.00012	.031
%RSD	.74327	.48970	.22392	.49473	.63946	.22148	.28418
#1	.43016	10.771	.42726	.53089	1.0867	.05225	10.857
#2	.42452	10.698	.42850	.52814	1.0879	.05204	10.799
#3	.42483	10.670	.42662	.52566	1.0994	.05205	10.846
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05499**	**.21760**	**.52572**	**.54475**	**4.2777**	**54.613**	**1.0769**
Stddev	.00032	.00106	.00228	.00053	.0326	.264	.0102
%RSD	.58459	.48849	.43328	.09756	.76212	.48255	.94636
#1	.05491	.21872	.52812	.54439	4.2464	54.561	1.0684
#2	.05534	.21660	.52545	.54450	4.2752	54.379	1.0742
#3	.05472	.21750	.52359	.54536	4.3115	54.899	1.0882
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.527**	**.54567**	**1.0931**	**54.266**	**.54162**	**10.766**	**.54062**
Stddev	.021	.00325	.0051	.187	.00238	.011	.00023
%RSD	.20378	.59558	.46292	.34370	.43925	.10654	.04330
#1	10.503	.54270	1.0987	54.187	.54208	10.764	.54087
#2	10.533	.54517	1.0919	54.131	.53904	10.778	.54059
#3	10.545	.54914	1.0888	54.479	.54373	10.755	.54040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 12:19:26 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2945**	**.43428**	F **5.6098**	**1.0799**	**1.0949**	F **1.1021**	**.54481**
Stddev	.0041	.00361	.0019	.0026	.0045	.0067	.00469
%RSD	.31714	.83239	.03336	.24374	.40814	.60549	.86133
#1	1.2974	.43838	5.6080	1.0827	1.0928	1.1058	.54545
#2	1.2963	.43289	5.6096	1.0794	1.0919	1.0944	.54914
#3	1.2898	.43156	5.6117	1.0775	1.1000	1.1060	.53983
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Pass
Value			5.0000			1.0000	
Range			10.000%			10.000%	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0454**	**1.0803**	**1.0570**
Stddev	.0034	.0013	.0088
%RSD	.32628	.12126	.82774
#1	1.0490	1.0816	1.0630
#2	1.0452	1.0790	1.0470
#3	1.0422	1.0802	1.0611
Check ?	Chk Pass	Chk Pass	Chk Pass
Value			
Range			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8984.8**	**56710.**	**3113.2**
Stddev	45.5	317.	15.4
%RSD	.50651	.55948	.49324
#1	8944.0	56442.	3100.3
#2	9033.9	56628.	3130.2
#3	8976.6	57060.	3109.1

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 12:23:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00033**	**.00344**	**.00145**	**.00294**	**.00035**	**-.00004**	**.02215**	**-.00021**
Stddev	.00041	.00219	.00240	.00079	.00121	.00010	.03194	.00009
%RSD	124.54	63.593	165.80	26.762	344.83	259.48	144.18	42.051
#1	.00029	.00529	.00096	.00384	-.00003	.00006	.00228	-.00030
#2	-.00006	.00400	.00406	.00262	.00171	-.00003	.00518	-.00013
#3	.00075	.00102	-.00067	.00237	-.00062	-.00014	.05900	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00035**	**.00201**	**-.00150**	**-.01822**	**.10568**	**.00099**	**.05713**	**-.00256**
Stddev	.00021	.00106	.00016	.00191	.02617	.00205	.07243	.00079
%RSD	59.613	52.971	10.403	10.463	24.764	207.53	126.79	30.925
#1	-.00051	.00267	-.00144	-.02010	.13480	-.00038	.04350	-.00234
#2	-.00011	.00078	-.00167	-.01829	.08413	-.00000	.13541	-.00189
#3	-.00044	.00258	-.00137	-.01629	.09812	.00334	-.00752	-.00343
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00363**	**.06866**	**.00015**	**-.00196**	**-.00068**	**.00350**	**-.00029**	**.00611**
Stddev	.00028	.01714	.00016	.00299	.00126	.00201	.00292	.00286
%RSD	7.7510	24.965	113.48	152.53	184.92	57.392	1023.3	46.714
#1	.00336	.04977	.00032	-.00175	-.00073	.00541	.00071	.00898
#2	.00392	.08323	.00011	.00092	.00060	.00371	.00201	.00327
#3	.00361	.07297	-.00000	-.00506	-.00193	.00140	-.00357	.00609
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 12:23:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00057**	**.00010**	**.00153**	**.00025**	**-.00049**	**.00022**	**.00163**
Stddev	.00020	.00030	.00816	.00155	.00055	.00013	.00062
%RSD	35.071	304.81	532.55	618.43	111.20	57.646	37.867
#1	-.00034	-.00011	.00782	-.00052	-.00106	.00017	.00094
#2	-.00065	.00044	.00447	.00204	-.00045	.00013	.00184
#3	-.00071	-.00004	-.00769	-.00077	.00003	.00037	.00211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9479.9**	**60625.**	**3266.1**
Stddev	27.2	250.	24.0
%RSD	.28740	.41169	.73490
#1	9455.0	60338.	3293.8
#2	9475.6	60791.	3252.7
#3	9509.0	60746.	3251.7

Approved: June 25, 2016

Sample Name: L1606114001PS Acquired: 6/24/2016 12:27:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574055-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20275**	**5.1419**	**.21333**	**1.0253**	**.59504**	**.02467**	**139.85**	**.03335**
Stddev	.00382	.0464	.00182	.0020	.00731	.00012	1.53	.00017
%RSD	1.8833	.90229	.85200	.19620	1.2293	.48386	1.0954	.51011
#1	.20665	5.1917	.21522	1.0245	.60106	.02477	141.22	.03328
#2	.20258	5.0999	.21318	1.0237	.58690	.02454	138.19	.03323
#3	.19902	5.1341	.21159	1.0275	.59717	.02471	140.14	.03355
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10344**	**.25015**	**.39465**	**2.0433**	**28.277**	**.53767**	**7.1211**	**.39716**
Stddev	.00038	.00249	.00031	.0120	.363	.00734	.1390	.00381
%RSD	.37083	.99698	.07885	.58514	1.2820	1.3649	1.9524	.95928
#1	.10301	.25285	.39486	2.0474	28.575	.54252	7.2778	.40080
#2	.10376	.24793	.39481	2.0298	27.873	.52923	7.0126	.39320
#3	.10354	.24968	.39430	2.0526	28.383	.54126	7.0729	.39748
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53753**	**30.414**	**.25886**	**5.5881**	**.34388**	**.63595**	**.21104**	**3.5188**
Stddev	.00106	.282	.00133	.0038	.00319	.00220	.00441	.0017
%RSD	.19634	.92682	.51475	.06847	.92887	.34549	2.0903	.04959
#1	.53826	30.705	.25820	5.5918	.34514	.63840	.21585	3.5208
#2	.53800	30.142	.26040	5.5842	.34625	.63530	.21010	3.5182
#3	.53632	30.394	.25800	5.5882	.34025	.63416	.20718	3.5175
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114001PS Acquired: 6/24/2016 12:27:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574055-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51595**	**.91725**	**.50579**	**.25689**	**.50349**	**.95723**	**.00511**
Stddev	.00180	.01150	.00924	.00144	.00222	.00117	.00123
%RSD	.34968	1.2533	1.8261	.55957	.44179	.12188	24.042
#1	.51532	.92818	.50881	.25546	.50563	.95817	.00409
#2	.51798	.90526	.49543	.25686	.50119	.95761	.00476
#3	.51455	.91830	.51315	.25834	.50365	.95593	.00647
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8910.4**	**56997.**	**3158.7**
Stddev	14.9	491.	36.1
%RSD	.16773	.86203	1.1429
#1	8920.8	56440.	3132.1
#2	8917.3	57366.	3199.8
#3	8893.3	57187.	3144.2

Approved: June 25, 2016

Sample Name: L1606114003 Acquired: 6/24/2016 12:30:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	.01986	.00301	.09457	.03965	-.00002	99.687	.00252
Stddev	.00131	.00825	.00228	.00100	.00036	.00012	.899	.00019
%RSD	294.41	41.551	75.602	1.0569	.91914	587.37	.90168	7.4764
#1	.00190	.01049	.00563	.09524	.04006	.00003	99.938	.00273
#2	.00009	.02603	.00186	.09504	.03938	.00007	98.690	.00241
#3	-.00065	.02306	.00154	.09342	.03950	-.00016	100.43	.00241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00021	.00208	.10263	.00520	1.9156	.00501	1.6642	.08675
Stddev	.00011	.00029	.00205	.01228	.0169	.00341	.0459	.00101
%RSD	52.022	14.106	2.0016	236.15	.88223	68.128	2.7554	1.1666
#1	-.00011	.00239	.10453	-.00392	1.9128	.00145	1.6708	.08733
#2	-.00033	.00205	.10292	.01917	1.9003	.00533	1.6155	.08558
#3	-.00020	.00181	.10045	.00036	1.9337	.00825	1.7065	.08735
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00442	143.17	.00079	-.00261	.00210	.00294	.00376	1.6066
Stddev	.00010	1.44	.00082	.00325	.00305	.00131	.00329	.0083
%RSD	2.2634	1.0055	104.33	124.46	145.56	44.519	87.514	.51571
#1	.00431	143.63	.00159	-.00023	.00390	.00415	.00530	1.6124
#2	.00444	141.56	.00083	-.00129	-.00143	.00311	-.00002	1.6103
#3	.00450	144.33	-.00005	-.00631	.00382	.00155	.00599	1.5971
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114003 Acquired: 6/24/2016 12:30:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.24737	-.01388	-.00120	-.00079	.01628	.00040
Stddev	.00066	.00187	.00938	.00377	.00043	.00034	.00030
%RSD	1229.4	.75472	67.590	313.73	54.177	2.1058	74.950
#1	-.00005	.24839	-.01059	-.00290	-.00056	.01656	.00005
#2	-.00054	.24522	-.00658	-.00383	-.00128	.01637	.00055
#3	.00076	.24851	-.02446	.00312	-.00053	.01589	.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8916.0	56782.	3182.3
Stddev	15.2	240.	28.8
%RSD	.17040	.42235	.90629
#1	8911.2	56706.	3188.3
#2	8903.7	56590.	3207.7
#3	8933.0	57051.	3151.0

Approved: June 25, 2016

Sample Name: PBW 61 Acquired: 6/24/2016 12:34:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	.00076	-.00110	.00309	.00002	-.00001	.04326	.00013
Stddev	.00120	.00826	.00369	.00133	.00052	.00010	.01711	.00011
%RSD	135.53	1088.1	334.09	43.079	2914.6	1198.4	39.552	82.637
#1	.00082	.00363	-.00464	.00435	-.00058	.00006	.02365	.00001
#2	.00212	.00720	-.00139	.00170	.00038	-.00013	.05514	.00017
#3	-.00028	-.00856	.00272	.00323	.00025	.00004	.05100	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	.00182	-.00080	-.00810	.10020	-.00237	-.01055	-.00142
Stddev	.00016	.00010	.00134	.00626	.03798	.00342	.06161	.00080
%RSD	28.563	5.2588	167.88	77.374	37.898	144.42	583.87	56.732
#1	-.00040	.00172	-.00029	-.01312	.14090	.00069	-.02862	-.00057
#2	-.00073	.00183	-.00231	-.01009	.09401	-.00173	.05807	-.00217
#3	-.00055	.00191	.00021	-.00108	.06571	-.00606	-.06110	-.00152
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	.11467	.00021	-.00772	.00041	.00316	.00139	.00970
Stddev	.00036	.04360	.00087	.00814	.00175	.00439	.00571	.00153
%RSD	54.368	38.021	410.51	105.39	431.56	139.19	411.25	15.736
#1	.00069	.16070	-.00007	-.00034	.00056	.00189	-.00497	.00794
#2	.00029	.10932	.00118	-.00638	-.00141	-.00047	.00607	.01053
#3	.00101	.07400	-.00048	-.01645	.00207	.00804	.00307	.01063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: PBW 61 Acquired: 6/24/2016 12:34:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	.00027	-.00192	-.00257	-.00043	.00076	.00010
Stddev	.00031	.00059	.00385	.00044	.00062	.00010	.00031
%RSD	110.25	220.35	200.29	17.018	145.00	13.528	301.29
#1	.00056	.00090	-.00630	-.00275	.00014	.00080	.00026
#2	-.00005	.00016	.00092	-.00207	-.00033	.00065	.00030
#3	.00034	-.00026	-.00038	-.00288	-.00109	.00084	-.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9302.1	60410.	3281.7
Stddev	66.0	229.	39.4
%RSD	.71003	.37905	1.2004
#1	9378.1	60509.	3291.2
#2	9269.4	60574.	3315.5
#3	9258.7	60149.	3238.5

Approved: June 25, 2016

Sample Name: LCSW 61 Acquired: 6/24/2016 12:38:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20555**	**5.1784**	**.21096**	**1.0013**	**.53967**	**.02506**	**5.4631**	**.02661**
Stddev	.00138	.0089	.00216	.0010	.00107	.00006	.0285	.00023
%RSD	.67151	.17182	1.0226	.10140	.19803	.23645	.52091	.86362
#1	.20492	5.1749	.20961	1.0025	.54073	.02507	5.4711	.02660
#2	.20459	5.1885	.21345	1.0007	.53859	.02511	5.4315	.02684
#3	.20713	5.1718	.20982	1.0007	.53967	.02500	5.4867	.02638
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10709**	**.25748**	**.26833**	**2.1158**	**26.774**	**.53895**	**5.2920**	**.26712**
Stddev	.00110	.00150	.00102	.0163	.146	.00177	.0899	.00207
%RSD	1.0293	.58418	.37911	.77089	.54628	.32794	1.6996	.77309
#1	.10822	.25770	.26921	2.1123	26.910	.54072	5.3158	.26847
#2	.10704	.25587	.26857	2.1015	26.620	.53718	5.1925	.26474
#3	.10601	.25886	.26722	2.1335	26.793	.53894	5.3676	.26814
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.54645**	**26.922**	**.26606**	**5.0982**	**.26690**	**.63372**	**.20697**	**2.6537**
Stddev	.00284	.049	.00199	.0187	.00116	.00467	.00438	.0104
%RSD	.51896	.18215	.74936	.36751	.43630	.73649	2.1177	.39305
#1	.54806	26.978	.26787	5.1053	.26563	.63639	.20777	2.6597
#2	.54811	26.888	.26639	5.1123	.26792	.63643	.21090	2.6598
#3	.54317	26.899	.26392	5.0769	.26714	.62833	.20224	2.6417
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LCSW 61 Acquired: 6/24/2016 12:38:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52855	.54930	.53444	.26386	.50928	.52661	.00239
Stddev	.00351	.00114	.00402	.00245	.00130	.00227	.00045
%RSD	.66494	.20774	.75201	.92725	.25500	.43047	18.960
#1	.53111	.55029	.53018	.26437	.51078	.52813	.00281
#2	.53000	.54956	.53500	.26601	.50848	.52769	.00191
#3	.52455	.54805	.53816	.26120	.50859	.52400	.00243
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8971.4	57490.	3144.1
Stddev	22.2	244.	32.0
%RSD	.24747	.42367	1.0188
#1	8950.2	57763.	3107.1
#2	8969.5	57293.	3162.4
#3	8994.5	57415.	3162.7

Approved: June 25, 2016

Sample Name: L1606073201 Acquired: 6/24/2016 12:42:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	.02820	.00033	.03332	.25570	.00005	29.348
Stddev	.00081	.00477	.00048	.00258	.00135	.00008	.107
%RSD	1060.6	16.901	146.21	7.7292	.52666	149.81	.36550
#1	-.00060	.02574	.00042	.03159	.25466	.00010	29.343
#2	.00085	.02517	.00076	.03208	.25522	.00010	29.244
#3	-.00048	.03370	-.00019	.03628	.25722	-.00004	29.458
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.00130	.00737	-.00082	.13349	1.5334	.02731
Stddev	.00012	.00035	.00052	.00188	.00764	.0113	.00141
%RSD	74.130	26.900	7.0457	230.52	5.7259	.73635	5.1517
#1	.00029	.00115	.00727	-.00281	.12571	1.5462	.02848
#2	.00008	.00170	.00692	-.00056	.14099	1.5249	.02772
#3	.00010	.00105	.00794	.00093	.13376	1.5292	.02575
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	39.404	.04547	.00090	F 358.79	.00311	1.6349	.00068
Stddev	.236	.00197	.00021	5.43	.00059	.0190	.00121
%RSD	.60011	4.3318	23.625	1.5145	19.047	1.1597	178.50
#1	39.143	.04349	.00067	363.98	.00244	1.6526	-.00059
#2	39.604	.04743	.00109	359.24	.00355	1.6374	.00080
#3	39.464	.04549	.00094	353.14	.00335	1.6149	.00182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 25, 2016

Sample Name: L1606073201 Acquired: 6/24/2016 12:42:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00056**	**-.00067**	**16.076**	**-.00001**	**.55040**	**-.00810**	**-.00164**
Stddev	.00164	.00536	.145	.00052	.00274	.00406	.00137
%RSD	293.19	800.42	.90295	6770.2	.49860	50.069	83.155
#1	.00126	.00045	16.195	.00001	.55128	-.00732	-.00243
#2	-.00103	.00404	16.119	.00051	.54733	-.01249	-.00007
#3	-.00191	-.00650	15.914	-.00054	.55260	-.00449	-.00243
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00202**	**.11146**	**.00024**
Stddev	.00089	.00179	.00037
%RSD	44.331	1.6093	152.52
#1	-.00107	.11286	-.00010
#2	-.00215	.11208	.00019
#3	-.00284	.10944	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8764.9**	**55502.**	**3127.7**
Stddev	30.2	118.	26.0
%RSD	.34400	.21327	.83247
#1	8763.7	55639.	3097.6
#2	8735.4	55438.	3142.4
#3	8795.6	55430.	3143.0

Approved: June 25, 2016

Sample Name: L1606079601 Acquired: 6/24/2016 12:46:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00158	3.2297	-.00034	1.2911	.04906	.00162	186.51	.23531
Stddev	.00208	.0109	.00397	.0030	.00128	.00007	1.50	.00040
%RSD	132.18	.33690	1166.8	.23101	2.6157	4.4542	.80345	.17130
#1	.00186	3.2175	-.00327	1.2892	.05043	.00168	188.24	.23541
#2	-.00064	3.2328	.00418	1.2895	.04885	.00163	185.56	.23565
#3	.00350	3.2386	-.00192	1.2945	.04789	.00154	185.75	.23486
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00732	.00840	.45442	1.2197	3.3021	.04141	30.000	3.1182
Stddev	.00026	.00095	.00241	.0142	.0440	.00123	.108	.0244
%RSD	3.6023	11.313	.53119	1.1615	1.3334	2.9646	.35889	.78321
#1	.00761	.00870	.45446	1.2311	3.3071	.04020	30.001	3.1462
#2	.00710	.00734	.45681	1.2038	3.2557	.04266	30.107	3.1009
#3	.00725	.00917	.45198	1.2241	3.3434	.04138	29.892	3.1075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00312	11.561	.03416	.23588	1.4062	.27976	.00687	32.216
Stddev	.00020	.096	.00128	.00330	.0033	.00623	.00652	.075
%RSD	6.5058	.82760	3.7349	1.4007	.23470	2.2270	94.974	.23255
#1	.00335	11.669	.03517	.23243	1.4095	.28680	.00689	32.264
#2	.00296	11.487	.03459	.23620	1.4062	.27751	.01338	32.254
#3	.00305	11.527	.03273	.23902	1.4029	.27496	.00033	32.130
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606079601 Acquired: 6/24/2016 12:46:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00507**	**.47885**	**.00429**	**-.00276**	**-.00000**	**9.0027**	**.00215**
Stddev	.00101	.00357	.00463	.00394	.00060	.0349	.00057
%RSD	19.835	.74545	107.79	142.73	15473.	.38752	26.596
#1	.00531	.48291	.00292	-.00082	-.00067	9.0287	.00188
#2	.00397	.47741	.00051	-.00017	.00016	9.0163	.00176
#3	.00594	.47623	.00946	-.00729	.00049	8.9631	.00280
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8969.1**	**57515.**	**3201.7**
Stddev	26.5	246.	24.8
%RSD	.29529	.42843	.77548
#1	8939.3	57271.	3173.1
#2	8989.8	57764.	3217.4
#3	8978.3	57511.	3214.7

Approved: June 25, 2016

Sample Name: L1606079602S Acquired: 6/24/2016 12:50:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20637	8.4667	.21215	2.3299	.55765	.02670	211.15
Stddev	.00096	.0253	.00204	.0051	.00324	.00014	1.09
%RSD	.46531	.29867	.96304	.22080	.58025	.52132	.51779
#1	.20600	8.4950	.21018	2.3354	.56090	.02681	212.24
#2	.20746	8.4589	.21426	2.3291	.55443	.02675	210.05
#3	.20566	8.4462	.21202	2.3252	.55761	.02655	211.18
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.22906	.10963	.25719	.36273	3.8155	30.167	.57896
Stddev	.00047	.00050	.00101	.00163	.0076	.190	.00294
%RSD	.20432	.45993	.39435	.45055	.20055	.62859	.50762
#1	.22922	.11004	.25752	.36247	3.8169	30.297	.58056
#2	.22942	.10977	.25800	.36448	3.8224	29.949	.57557
#3	.22853	.10907	.25606	.36125	3.8073	30.255	.58076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	37.556	3.7302	.53671	36.032	.27262	5.4147	1.3723
Stddev	.123	.0178	.00271	.149	.00159	.0196	.0051
%RSD	.32741	.47715	.50439	.41445	.58430	.36193	.37180
#1	37.642	3.7506	.53723	36.198	.27244	5.4232	1.3668
#2	37.610	3.7181	.53911	35.908	.27429	5.4287	1.3769
#3	37.415	3.7219	.53377	35.990	.27112	5.3923	1.3731
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 25, 2016

Sample Name: L1606079602S Acquired: 6/24/2016 12:50:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.83295**	**.19904**	F **39.559**	**.51924**	**1.0206**	**.52855**	**.25056**
Stddev	.00381	.00362	.080	.00060	.0057	.00488	.00264
%RSD	.45758	1.8206	.20246	.11565	.55920	.92319	1.0541
#1	.83134	.19546	39.613	.51864	1.0248	.53056	.24812
#2	.83021	.20271	39.596	.51984	1.0141	.53210	.25336
#3	.83731	.19894	39.467	.51925	1.0230	.52298	.25020
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-1.0000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.50387**	**8.9533**	**.00345**
Stddev	.00127	.0255	.00012
%RSD	.25293	.28527	3.4468
#1	.50516	8.9684	.00349
#2	.50262	8.9677	.00353
#3	.50382	8.9238	.00331
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8874.4**	**56986.**	**3197.8**
Stddev	22.9	183.	31.1
%RSD	.25749	.32104	.97251
#1	8874.8	56794.	3162.9
#2	8851.3	57004.	3208.1
#3	8897.0	57159.	3222.4

Approved: June 25, 2016

Sample Name: L1606079603SD Acquired: 6/24/2016 12:53:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20348	8.3907	.20803	2.3205	.55659	.02675	210.01
Stddev	.00067	.0070	.00227	.0041	.00308	.00007	1.03
%RSD	.32994	.08394	1.0916	.17615	.55344	.27317	.49200
#1	.20367	8.3952	.20541	2.3200	.55995	.02674	211.18
#2	.20273	8.3942	.20930	2.3249	.55593	.02682	209.61
#3	.20403	8.3826	.20938	2.3168	.55390	.02668	209.24
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.22784	.10941	.25693	.36070	3.7620	30.137	.57482
Stddev	.00074	.00005	.00145	.00097	.0431	.085	.00367
%RSD	.32525	.04726	.56542	.26971	1.1460	.28231	.63776
#1	.22787	.10946	.25585	.36143	3.8070	30.228	.57882
#2	.22856	.10941	.25858	.36107	3.7577	30.060	.57405
#3	.22708	.10936	.25635	.35959	3.7211	30.123	.57161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	37.283	3.7093	.53679	35.887	.27192	5.4059	1.3646
Stddev	.065	.0166	.00208	.175	.00166	.0027	.0036
%RSD	.17309	.44772	.38783	.48671	.61140	.04904	.26708
#1	37.346	3.7273	.53879	36.088	.27204	5.4084	1.3687
#2	37.217	3.6945	.53693	35.772	.27352	5.4063	1.3630
#3	37.287	3.7060	.53464	35.802	.27020	5.4031	1.3620
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 25, 2016

Sample Name: L1606079603SD Acquired: 6/24/2016 12:53:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.82814**	**.20815**	F **39.014**	**.51935**	**1.0179**	**.52731**	**.25200**
Stddev	.00575	.00609	.081	.00143	.0071	.00449	.00183
%RSD	.69405	2.9239	.20860	.27470	.69999	.85144	.72692
#1	.83047	.20229	39.103	.52035	1.0259	.52320	.25130
#2	.83236	.21444	38.997	.52000	1.0123	.53210	.25063
#3	.82159	.20773	38.943	.51772	1.0154	.52662	.25408
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-1.0000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.50350**	**8.8879**	**.00305**
Stddev	.00153	.0209	.00040
%RSD	.30487	.23506	13.114
#1	.50377	8.9078	.00308
#2	.50488	8.8897	.00344
#3	.50184	8.8661	.00264
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8883.7**	**57187.**	**3189.9**
Stddev	10.5	142.	22.6
%RSD	.11868	.24879	.70751
#1	8871.6	57137.	3171.1
#2	8889.1	57077.	3183.6
#3	8890.5	57348.	3214.9

Approved: June 25, 2016

Sample Name: L1606073202 Acquired: 6/24/2016 12:57:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00053**	**.02813**	**.00029**	**.04299**	**.22283**	**-.00000**	**25.162**
Stddev	.00134	.00280	.00082	.00132	.00277	.00003	.241
%RSD	252.84	9.9565	284.55	3.0648	1.2409	1017.5	.95893
#1	.00086	.02578	-.00044	.04447	.22588	-.00003	25.435
#2	-.00095	.03123	.00118	.04255	.22048	-.00000	24.976
#3	.00168	.02737	.00013	.04195	.22213	.00002	25.076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00035**	**.00120**	**.00613**	**.00149**	**.12035**	**1.4886**	**.02096**
Stddev	.00024	.00046	.00062	.00013	.01000	.0590	.00309
%RSD	67.894	38.073	10.067	8.8118	8.3106	3.9648	14.734
#1	.00061	.00150	.00611	.00148	.12839	1.5495	.01933
#2	.00031	.00067	.00552	.00163	.10915	1.4316	.01904
#3	.00014	.00141	.00675	.00137	.12352	1.4846	.02453
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**34.325**	**.04040**	**.00125**	F **349.63**	**.00292**	**1.6666**	**-.00030**
Stddev	.171	.00030	.00019	3.15	.00063	.0019	.00596
%RSD	.49775	.74283	15.066	.90066	21.672	.11272	1957.9
#1	34.517	.04074	.00107	353.18	.00219	1.6662	-.00079
#2	34.189	.04026	.00124	347.17	.00327	1.6687	.00588
#3	34.268	.04019	.00144	348.55	.00329	1.6650	-.00601
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 25, 2016

Sample Name: L1606073202 Acquired: 6/24/2016 12:57:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00152	-.00482	14.835	.00019	.47317	-.00604	-.00166
Stddev	.00130	.00284	.080	.00103	.00252	.00346	.00171
%RSD	85.788	58.877	.53712	538.43	.53296	57.319	103.01
#1	.00271	-.00798	14.887	-.00082	.47605	-.00268	-.00297
#2	.00013	-.00397	14.874	.00125	.47138	-.00959	-.00227
#3	.00172	-.00250	14.743	.00015	.47207	-.00585	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00139	.05739	-.00049
Stddev	.00087	.00042	.00019
%RSD	62.489	.72596	39.112
#1	-.00058	.05772	-.00067
#2	-.00129	.05752	-.00029
#3	-.00232	.05692	-.00049
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8802.2	55900.	3156.1
Stddev	11.1	153.	34.7
%RSD	.12621	.27340	1.0995
#1	8812.1	55724.	3124.8
#2	8804.3	55980.	3193.4
#3	8790.1	55996.	3150.2

Approved: June 25, 2016

Sample Name: L1606079401 Acquired: 6/24/2016 13:01:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.02285	.00059	.01157	.02302	.00000	4.1138	-.00026
Stddev	.00123	.00652	.00275	.00121	.00057	.00006	.0762	.00008
%RSD	894.56	28.519	469.79	10.441	2.4922	18199.	1.8516	31.902
#1	.00152	.03028	.00311	.01119	.02254	.00007	4.0311	-.00021
#2	-.00086	.01808	-.00234	.01292	.02366	-.00004	4.1811	-.00035
#3	-.00024	.02020	.00099	.01059	.02287	-.00003	4.1291	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00282	.00194	-.00143	1.2835	.37695	-.00156	.69132	.35802
Stddev	.00007	.00024	.00107	.0207	.07463	.00067	.08990	.00400
%RSD	2.5452	12.396	74.963	1.6127	19.797	43.171	13.004	1.1172
#1	.00277	.00188	-.00074	1.2630	.41442	-.00084	.58775	.35346
#2	.00278	.00173	-.00266	1.2831	.42541	-.00165	.73706	.35965
#3	.00290	.00220	-.00088	1.3044	.29101	-.00218	.74916	.36094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	1.0149	.00037	.00773	.00315	-.00108	-.00499	.64556
Stddev	.00014	.0157	.00052	.00611	.00167	.00193	.00347	.00397
%RSD	56.327	1.5446	141.49	79.119	52.980	178.21	69.644	.61433
#1	.00011	1.0219	.00010	.00835	.00264	.00009	-.00688	.64105
#2	.00039	.99693	.00097	.00133	.00501	-.00331	-.00098	.64715
#3	.00023	1.0258	.00003	.01351	.00179	-.00003	-.00710	.64849
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606079401 Acquired: 6/24/2016 13:01:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00092	.05805	-.00327	-.00056	-.00053	.00096	.00059
Stddev	.00114	.00063	.00604	.00146	.00079	.00036	.00072
%RSD	123.36	1.0876	184.48	261.81	147.56	37.712	123.27
#1	.00038	.05734	-.01006	-.00036	-.00137	.00094	.00093
#2	-.00142	.05854	-.00127	-.00211	-.00042	.00132	.00107
#3	-.00173	.05828	.00151	.00080	.00019	.00060	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9564.9	61114.	3314.5
Stddev	38.3	230.	20.8
%RSD	.40006	.37594	.62656
#1	9609.1	60917.	3337.8
#2	9542.4	61367.	3307.7
#3	9543.2	61059.	3298.0

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 13:05:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41271	10.424	.41660	.51679	1.0602	.05053	10.566	.05362
Stddev	.00072	.006	.00234	.00241	.0072	.00015	.111	.00017
%RSD	.17421	.06111	.56160	.46715	.67846	.30430	1.0504	.32244
#1	.41217	10.431	.41393	.51409	1.0550	.05068	10.515	.05356
#2	.41352	10.425	.41825	.51875	1.0572	.05054	10.490	.05381
#3	.41242	10.418	.41764	.51753	1.0684	.05038	10.693	.05348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21181	.51018	.52957	4.1573	53.268	1.0472	10.263	.52911
Stddev	.00033	.00144	.00298	.0756	.251	.0098	.140	.00211
%RSD	.15714	.28312	.56359	1.8185	.47129	.93371	1.3615	.39822
#1	.21169	.51128	.52701	4.1046	53.131	1.0438	10.102	.52758
#2	.21219	.51070	.53285	4.1234	53.116	1.0395	10.336	.52824
#3	.21155	.50854	.52885	4.2439	53.558	1.0582	10.352	.53151
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0610	52.921	.52624	10.442	.52470	1.2541	.42316	5.4481
Stddev	.0035	.320	.00081	.014	.00136	.0015	.01147	.0021
%RSD	.33117	.60540	.15460	.13298	.25996	.12313	2.7101	.03871
#1	1.0639	52.775	.52615	10.457	.52471	1.2556	.42209	5.4501
#2	1.0620	52.700	.52548	10.441	.52332	1.2541	.43512	5.4484
#3	1.0571	53.289	.52710	10.429	.52605	1.2526	.41226	5.4459
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 13:05:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0484**	**1.0667**	**1.0685**	**.52661**	**1.0185**	**1.0523**	**1.0248**
Stddev	.0029	.0081	.0058	.00076	.0042	.0021	.0004
%RSD	.27896	.76213	.54537	.14465	.41241	.19459	.03894
#1	1.0494	1.0599	1.0694	.52577	1.0227	1.0505	1.0248
#2	1.0508	1.0645	1.0623	.52727	1.0143	1.0545	1.0251
#3	1.0451	1.0757	1.0739	.52677	1.0186	1.0520	1.0243
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8882.5**	**56177.**	**3089.4**
Stddev	29.7	314.	12.2
%RSD	.33414	.55818	.39365
#1	8886.9	55855.	3082.5
#2	8850.9	56481.	3103.4
#3	8909.8	56196.	3082.2

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 13:08:45 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.00717**	**.00127**	**.00627**	**.00069**	**-.00006**	**.00287**	**-.00006**
Stddev	.00063	.00318	.00265	.00132	.00023	.00015	.01707	.00010
%RSD	166.42	44.334	208.86	21.039	33.283	255.17	595.44	163.89
#1	-.00060	.00479	-.00178	.00475	.00046	-.00015	.01040	.00004
#2	-.00086	.00594	.00294	.00693	.00092	.00012	-.01667	-.00008
#3	.00033	.01078	.00264	.00712	.00068	-.00014	.01487	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00066**	**.00118**	**-.00013**	**.00795**	**.06402**	**.00192**	**.03240**	**-.00221**
Stddev	.00031	.00059	.00046	.01622	.02889	.00308	.06616	.00161
%RSD	46.769	49.794	363.48	203.93	45.129	160.88	204.20	72.497
#1	-.00075	.00088	-.00022	-.00484	.09445	.00205	.07082	-.00406
#2	-.00091	.00081	-.00053	.00251	.06064	.00493	.07038	-.00147
#3	-.00031	.00186	.00037	.02619	.03696	-.00123	-.04400	-.00112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00371**	**.05101**	**-.00022**	**.00146**	**-.00202**	**.00697**	**.00163**	**.00460**
Stddev	.00026	.03364	.00082	.00530	.00080	.00025	.00566	.00230
%RSD	6.8808	65.949	378.04	362.25	39.756	3.5609	347.26	49.896
#1	.00342	.02221	.00011	.00725	-.00248	.00705	-.00479	.00356
#2	.00389	.08799	-.00115	-.00314	-.00109	.00717	.00590	.00724
#3	.00383	.04284	.00039	.00027	-.00249	.00669	.00378	.00301
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 13:08:45 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.00033**	**.00076**	**.00152**	**-.00024**	**.00025**	**.00081**
Stddev	.00122	.00031	.00671	.00233	.00128	.00006	.00064
%RSD	703.43	94.176	886.46	153.63	523.84	22.798	78.759
#1	-.00032	.00041	-.00664	.00398	-.00158	.00031	.00152
#2	.00111	-.00001	.00247	-.00065	-.00011	.00025	.00027
#3	-.00131	.00061	.00645	.00122	.00096	.00019	.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9421.6**	**60299.**	**3256.8**
Stddev	40.2	274.	24.0
%RSD	.42621	.45387	.73587
#1	9409.1	60564.	3247.8
#2	9466.5	60316.	3284.0
#3	9389.1	60018.	3238.7

Approved: June 25, 2016

Sample Name: L1606079404 Acquired: 6/24/2016 13:12:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00130**	**.03039**	**.00126**	**.01940**	**.01369**	**-.00002**	**1.1950**	**-.00001**
Stddev	.00260	.00196	.00092	.00094	.00095	.00007	.0239	.00007
%RSD	199.44	6.4564	73.167	4.8262	6.9231	344.58	2.0032	832.28
#1	.00428	.03265	.00020	.01939	.01470	-.00010	1.1970	-.00005
#2	-.00048	.02933	.00188	.02034	.01282	.00002	1.2179	.00007
#3	.00011	.02918	.00170	.01847	.01356	.00002	1.1702	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00476**	**.00102**	**-.00131**	**.16723**	**.50681**	**.00113**	**.89694**	**.29822**
Stddev	.00006	.00143	.00104	.01047	.10066	.00302	.04328	.00708
%RSD	1.2851	139.37	79.584	6.2602	19.860	268.19	4.8253	2.3747
#1	.00479	.00230	-.00080	.16355	.51557	-.00071	.91414	.29874
#2	.00479	.00129	-.00063	.17904	.60281	.00461	.84771	.29089
#3	.00469	-.00052	-.00251	.15910	.40207	-.00053	.92899	.30502
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00074**	**1.7317**	**.00193**	**.00148**	**-.00119**	**.00062**	**-.00351**	**.47199**
Stddev	.00027	.0084	.00075	.00037	.00298	.00284	.00231	.00520
%RSD	36.771	.48737	38.705	24.708	250.89	456.80	65.733	1.1011
#1	.00105	1.7226	.00246	.00187	.00075	-.00174	-.00431	.47009
#2	.00065	1.7392	.00108	.00115	-.00462	-.00018	-.00531	.47787
#3	.00053	1.7334	.00225	.00142	.00031	.00378	-.00091	.46801
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606079404 Acquired: 6/24/2016 13:12:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00037	.01018	-.00222	-.00094	-.00079	.00167	-.00018
Stddev	.00054	.00018	.00543	.00236	.00070	.00023	.00054
%RSD	144.91	1.8060	245.09	251.26	89.393	13.688	304.63
#1	-.00075	.01035	.00066	-.00355	-.00160	.00168	.00043
#2	.00024	.00998	.00118	.00103	-.00040	.00190	-.00060
#3	-.00060	.01019	-.00848	-.00029	-.00036	.00144	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9520.7	60796.	3261.1
Stddev	19.0	197.	21.3
%RSD	.19963	.32380	.65193
#1	9542.3	60651.	3283.6
#2	9506.7	61020.	3258.3
#3	9513.1	60717.	3241.3

Approved: June 25, 2016

Sample Name: L1606079604 Acquired: 6/24/2016 13:16:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.21348	.00260	.19976	.03690	-.00001	52.193	.22780
Stddev	.00107	.00411	.00425	.00172	.00071	.00003	.631	.00068
%RSD	113.51	1.9260	163.38	.86255	1.9207	405.78	1.2096	.29779
#1	.00212	.21057	.00526	.20093	.03689	-.00005	52.321	.22786
#2	.00003	.21818	-.00230	.20058	.03620	.00001	51.507	.22845
#3	.00068	.21169	.00486	.19779	.03761	.00001	52.750	.22710
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05125	.00479	.36483	1.6560	14.660	.00877	5.5763	1.7147
Stddev	.00059	.00039	.00218	.0283	.159	.00350	.1053	.0147
%RSD	1.1535	8.1173	.59715	1.7093	1.0875	39.833	1.8880	.85941
#1	.05172	.00435	.36580	1.6545	14.708	.00650	5.6506	1.7174
#2	.05144	.00493	.36636	1.6284	14.482	.00702	5.4558	1.6988
#3	.05059	.00509	.36234	1.6850	14.789	.01280	5.6224	1.7279
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00313	144.14	.03035	1.0211	.07552	1.1557	.00411	6.5697
Stddev	.00027	1.70	.00122	.0047	.00250	.0045	.00525	.0440
%RSD	8.5563	1.1770	4.0360	.45700	3.3107	.39015	127.81	.67014
#1	.00330	144.93	.02943	1.0218	.07815	1.1592	.00478	6.5572
#2	.00282	142.19	.02987	1.0254	.07523	1.1572	-.00145	6.6186
#3	.00326	145.29	.03174	1.0161	.07318	1.1506	.00899	6.5332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606079604 Acquired: 6/24/2016 13:16:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.18481	-.00844	-.00188	-.00071	5.6059	.00341
Stddev	.00069	.00240	.00426	.00360	.00127	.0265	.00050
%RSD	794.10	1.2974	50.412	191.50	178.39	.47276	14.789
#1	-.00018	.18518	-.01246	-.00564	-.00052	5.6217	.00292
#2	.00087	.18225	-.00889	.00153	-.00206	5.6207	.00337
#3	-.00043	.18700	-.00398	-.00152	.00045	5.5753	.00393
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8988.0	57229.	3212.0
Stddev	23.6	64.	31.1
%RSD	.26299	.11256	.96670
#1	8965.7	57166.	3192.3
#2	9012.7	57227.	3247.8
#3	8985.6	57294.	3196.0

Approved: June 25, 2016

Sample Name: L1606079604PS Acquired: 6/24/2016 13:20:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573149-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20280**	**5.3027**	**.21231**	**1.1801**	**.55540**	**.02495**	**51.809**	**.23407**
Stddev	.00015	.0166	.00321	.0002	.00387	.00010	.375	.00041
%RSD	.07637	.31377	1.5120	.01812	.69757	.40956	.72434	.17452
#1	.20297	5.3201	.20923	1.1802	.55963	.02507	52.222	.23449
#2	.20267	5.2869	.21564	1.1802	.55202	.02492	51.489	.23404
#3	.20275	5.3010	.21207	1.1798	.55456	.02487	51.718	.23367
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.15079**	**.25382**	**.59150**	**3.4910**	**39.388**	**.53018**	**9.9531**	**1.8085**
Stddev	.00020	.00094	.00182	.0662	.329	.00406	.0974	.0116
%RSD	.13400	.36852	.30736	1.8955	.83526	.76532	.97892	.64231
#1	.15097	.25482	.59345	3.5674	39.766	.53137	9.9424	1.8174
#2	.15082	.25365	.58986	3.4523	39.170	.52566	10.055	1.7953
#3	.15057	.25298	.59118	3.4533	39.227	.53351	9.8614	1.8127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53968**	**156.98**	**.28383**	**6.1212**	**.32198**	**1.6775**	**.20819**	**8.6076**
Stddev	.00242	1.04	.00051	.0203	.00460	.0049	.00352	.0069
%RSD	.44873	.66195	.17819	.33148	1.4283	.29355	1.6930	.08070
#1	.54031	158.15	.28435	6.1431	.31988	1.6722	.20467	8.6149
#2	.54173	156.18	.28379	6.1177	.32725	1.6786	.21172	8.6066
#3	.53701	156.60	.28334	6.1030	.31880	1.6818	.20817	8.6011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606079604PS Acquired: 6/24/2016 13:20:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573149-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51592**	**.68475**	**.51913**	**.25074**	**.50296**	**5.5697**	**.00437**
Stddev	.00194	.00530	.00608	.00071	.00238	.0089	.00064
%RSD	.37560	.77350	1.1715	.28316	.47332	.16068	14.638
#1	.51652	.69043	.51759	.25150	.50454	5.5773	.00374
#2	.51749	.67994	.51397	.25009	.50413	5.5720	.00435
#3	.51376	.68387	.52584	.25065	.50022	5.5599	.00502
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8909.6**	**56843.**	**3204.4**
Stddev	1.8	290.	30.2
%RSD	.02032	.50970	.94121
#1	8908.8	56575.	3171.8
#2	8911.6	56804.	3210.2
#3	8908.2	57150.	3231.3

Approved: June 25, 2016

Sample Name: L1606079604SDL Acquired: 6/24/2016 13:24:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573149-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	.04368	.00122	.04349	.00806	.00002	10.277	.04768
Stddev	.00134	.00228	.00094	.00292	.00145	.00002	.058	.00062
%RSD	180.24	5.2256	77.601	6.7258	18.013	78.531	.56466	1.2952
#1	.00171	.04149	.00122	.04259	.00639	.00001	10.219	.04698
#2	-.00079	.04604	.00027	.04676	.00878	.00002	10.275	.04788
#3	.00130	.04352	.00216	.04112	.00901	.00005	10.335	.04817
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01026	.00202	.07565	.33169	2.8985	.00465	1.0790	.33882
Stddev	.00047	.00069	.00245	.00173	.0396	.00433	.0895	.00405
%RSD	4.6085	33.927	3.2368	.52127	1.3666	93.002	8.2910	1.1946
#1	.01002	.00234	.07292	.33127	2.9371	.00369	1.1027	.33415
#2	.00994	.00249	.07637	.33358	2.9004	.00938	1.1541	.34103
#3	.01080	.00123	.07766	.33020	2.8580	.00089	.98002	.34129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00099	28.363	.00700	.21122	.01400	.23816	-.00306	1.3640
Stddev	.00041	.289	.00119	.00332	.00222	.00413	.00166	.0164
%RSD	40.909	1.0206	17.017	1.5709	15.868	1.7347	54.387	1.2062
#1	.00110	28.030	.00564	.20999	.01155	.23760	-.00373	1.3521
#2	.00054	28.554	.00752	.20870	.01588	.24255	-.00116	1.3571
#3	.00133	28.504	.00785	.21498	.01456	.23435	-.00428	1.3828
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606079604SDL Acquired: 6/24/2016 13:24:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573149-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00035**	**.03606**	**-.00264**	**.00053**	**-.00029**	**1.2005**	**.00050**
Stddev	.00043	.00042	.00853	.00500	.00064	.0141	.00037
%RSD	124.76	1.1669	322.65	938.33	219.25	1.1743	73.895
#1	-.00085	.03565	.00325	-.00513	-.00080	1.1865	.00067
#2	-.00013	.03603	.00124	.00430	.00042	1.2003	.00008
#3	-.00007	.03649	-.01242	.00243	-.00049	1.2147	.00076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9105.6**	**58170.**	**3212.7**
Stddev	27.3	280.	23.5
%RSD	.30017	.48123	.73253
#1	9103.8	58409.	3225.9
#2	9133.8	57862.	3185.5
#3	9079.2	58239.	3226.6

Approved: June 25, 2016

Sample Name: L1606079604SDL Acquired: 6/24/2016 13:28:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573149-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00040**	**.00857**	**.00134**	**.01061**	**.00165**	**-.00001**	**1.9132**	**.00874**
Stddev	.00181	.00667	.00234	.00249	.00017	.00001	.0173	.00010
%RSD	455.89	77.825	174.32	23.446	10.373	116.47	.90342	1.1541
#1	-.00243	.00394	-.00136	.01199	.00166	-.00002	1.8935	.00866
#2	.00104	.01621	.00261	.01210	.00181	.00000	1.9199	.00871
#3	.00020	.00555	.00278	.00774	.00147	-.00001	1.9261	.00885
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00120**	**.00140**	**.01276**	**.04419**	**.61000**	**-.00198**	**.19513**	**.06168**
Stddev	.00016	.00155	.00074	.02220	.04844	.00354	.07685	.00239
%RSD	13.116	110.63	5.7727	50.228	7.9412	178.84	39.385	3.8731
#1	.00124	-.00031	.01191	.06977	.66578	-.00239	.22434	.06192
#2	.00103	.00272	.01324	.03282	.57847	.00175	.25310	.06394
#3	.00134	.00179	.01313	.02998	.58575	-.00529	.10796	.05918
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**5.4833**	**.00115**	**.03698**	**.00356**	**.04416**	**-.00362**	**.25512**
Stddev	.00017	.0430	.00058	.00189	.00182	.00432	.00289	.00216
%RSD	41.091	.78460	50.355	5.1167	51.028	9.7754	79.738	.84721
#1	.00022	5.4343	.00122	.03480	.00150	.04644	-.00041	.25572
#2	.00054	5.5006	.00054	.03817	.00427	.04686	-.00445	.25692
#3	.00047	5.5150	.00169	.03798	.00492	.03918	-.00600	.25272
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606079604SDL Acquired: 6/24/2016 13:28:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573149-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00062	.00660	-.00393	.00088	-.00118	.21826	.00069
Stddev	.00041	.00021	.00248	.00276	.00061	.00108	.00021
%RSD	65.439	3.1746	63.297	315.82	51.724	.49261	30.159
#1	-.00015	.00666	-.00674	-.00231	-.00182	.21725	.00045
#2	-.00090	.00637	-.00302	.00267	-.00111	.21814	.00079
#3	-.00081	.00678	-.00202	.00226	-.00060	.21939	.00083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9580.6	61020.	3283.6
Stddev	11.6	138.	12.0
%RSD	.12149	.22602	.36655
#1	9581.4	60926.	3271.0
#2	9591.8	60956.	3294.9
#3	9568.6	61178.	3284.8

Approved: June 25, 2016

Sample Name: PBW 96 Acquired: 6/24/2016 13:31:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00073**	**.05750**	**-.00115**	**.00379**	**.00035**	**.00004**	**.14547**	**-.00001**
Stddev	.00114	.00534	.00113	.00242	.00047	.00004	.01120	.00032
%RSD	155.47	9.2868	98.477	63.976	132.21	109.74	7.6992	4547.8
#1	-.00055	.06232	.00006	.00550	.00089	.00008	.15412	.00029
#2	.00165	.05843	-.00133	.00485	.00009	.00004	.13282	-.00034
#3	.00110	.05176	-.00218	.00102	.00008	-.00000	.14948	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.00132**	**-.00117**	**.07602**	**.06648**	**-.00036**	**.02744**	**.00190**
Stddev	.00018	.00131	.00109	.00738	.09369	.00127	.07199	.00082
%RSD	89.489	99.783	93.607	9.7097	140.92	355.05	262.29	42.953
#1	-.00009	.00101	-.00242	.07287	.07235	-.00017	-.04949	.00102
#2	-.00011	.00276	-.00042	.08445	.15710	.00081	.09317	.00263
#3	-.00041	.00019	-.00066	.07074	-.03000	-.00171	.03866	.00205
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00048**	**.10510**	**.00092**	**-.01236**	**.00247**	**-.00114**	**-.00226**	**.03159**
Stddev	.00026	.02680	.00039	.01242	.00253	.00255	.00507	.00112
%RSD	54.501	25.498	41.922	100.45	102.42	223.14	224.49	3.5471
#1	.00035	.09773	.00136	-.02382	-.00008	-.00396	-.00341	.03261
#2	.00078	.08276	.00067	-.01410	.00250	-.00049	.00329	.03178
#3	.00031	.13482	.00072	.00083	.00497	.00102	-.00665	.03039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: PBW 96 Acquired: 6/24/2016 13:31:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00097**	**.00038**	**-.00465**	**.00081**	**-.00039**	**.00272**	**.00004**
Stddev	.00085	.00027	.00283	.00149	.00021	.00004	.00053
%RSD	87.746	71.935	60.728	183.22	53.537	1.5511	1208.2
#1	-.00022	.00065	-.00629	.00062	-.00015	.00268	-.00031
#2	-.00189	.00011	-.00139	-.00057	-.00048	.00274	.00065
#3	-.00079	.00036	-.00628	.00240	-.00054	.00276	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9001.9**	**57577.**	**3145.6**
Stddev	5.1	289.	25.4
%RSD	.05668	.50260	.80877
#1	9003.5	57315.	3116.7
#2	8996.2	57888.	3155.1
#3	9006.1	57528.	3164.8

Approved: June 25, 2016

Sample Name: LCSW 96 Acquired: 6/24/2016 13:35:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19950**	**5.0939**	**.20372**	**1.0208**	**.52299**	**.02445**	**5.3163**	**.02590**
Stddev	.00336	.0048	.00192	.0030	.00511	.00010	.0742	.00036
%RSD	1.6828	.09397	.94086	.29468	.97686	.41134	1.3965	1.3919
#1	.20287	5.0993	.20151	1.0195	.52801	.02450	5.4020	.02630
#2	.19946	5.0902	.20478	1.0242	.51780	.02452	5.2747	.02561
#3	.19616	5.0921	.20487	1.0186	.52318	.02434	5.2723	.02578
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10423**	**.25027**	**.26092**	**2.0255**	**26.189**	**.52677**	**5.1629**	**.25877**
Stddev	.00040	.00138	.00033	.0200	.298	.00291	.1198	.00454
%RSD	.38380	.55012	.12503	.98782	1.1361	.55208	2.3196	1.7548
#1	.10469	.25146	.26057	2.0378	26.464	.52733	5.0560	.26368
#2	.10408	.24876	.26099	2.0025	25.873	.52362	5.2924	.25792
#3	.10393	.25058	.26122	2.0363	26.231	.52935	5.1404	.25472
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53131**	**26.270**	**.25798**	**4.9905**	**.25688**	**.61782**	**.20100**	**2.6938**
Stddev	.00094	.237	.00094	.0107	.00325	.00214	.00148	.0078
%RSD	.17719	.90374	.36573	.21426	1.2655	.34651	.73738	.28974
#1	.53238	26.488	.25831	5.0026	.26007	.61978	.20078	2.7028
#2	.53091	26.017	.25692	4.9867	.25701	.61816	.20257	2.6890
#3	.53063	26.306	.25872	4.9822	.25357	.61554	.19963	2.6897
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LCSW 96 Acquired: 6/24/2016 13:35:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51498**	**.53518**	**.52231**	**.25730**	**.49620**	**.51662**	**.00156**
Stddev	.00201	.00522	.00398	.00216	.00213	.00142	.00028
%RSD	.38972	.97497	.76237	.83781	.43000	.27422	18.205
#1	.51604	.54037	.52691	.25811	.49794	.51823	.00133
#2	.51624	.52993	.51991	.25486	.49685	.51608	.00147
#3	.51266	.53524	.52012	.25893	.49382	.51556	.00188
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8976.4**	**57450.**	**3148.6**
Stddev	16.7	311.	9.0
%RSD	.18579	.54143	.28702
#1	8994.0	57165.	3138.5
#2	8960.8	57403.	3156.0
#3	8974.5	57782.	3151.2

Approved: June 25, 2016

Sample Name: L1606127902 Acquired: 6/24/2016 13:39:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	15.737	.00504	.17704	.19989	.00100	197.77	.00050
Stddev	.00231	.039	.00324	.00132	.00099	.00006	.59	.00022
%RSD	1507.6	.25058	64.174	.74832	.49635	5.6554	.29748	43.504
#1	.00250	15.783	.00357	.17765	.20103	.00098	198.43	.00025
#2	-.00170	15.713	.00280	.17553	.19919	.00095	197.29	.00066
#3	-.00126	15.717	.00875	.17796	.19946	.00106	197.58	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01128	.04276	.02006	22.872	6.2512	.04284	80.521	2.6589
Stddev	.00030	.00028	.00041	.038	.0825	.00592	.183	.0133
%RSD	2.6928	.64348	2.0282	.16663	1.3204	13.819	.22689	.50023
#1	.01147	.04247	.01996	22.869	6.1704	.04629	80.723	2.6697
#2	.01143	.04279	.02051	22.835	6.3354	.03601	80.469	2.6441
#3	.01093	.04302	.01971	22.911	6.2479	.04623	80.369	2.6630
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00681	18.837	.02941	.79338	.01403	-.00060	.00131	29.051
Stddev	.00038	.047	.00138	.00484	.00107	.00255	.00127	.105
%RSD	5.5050	.25020	4.6749	.61023	7.5974	423.13	97.049	.36059
#1	.00646	18.890	.03067	.78819	.01333	-.00349	.00219	29.106
#2	.00720	18.818	.02794	.79419	.01526	.00035	-.00015	29.116
#3	.00678	18.801	.02963	.79777	.01350	.00133	.00188	28.930
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606127902 Acquired: 6/24/2016 13:39:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	.96724	.15250	.00117	.03346	.15890	.00476
Stddev	.00040	.00326	.00547	.00105	.00024	.00053	.00041
%RSD	34.705	.33744	3.5900	89.594	.72954	.33381	8.5619
#1	.00163	.97101	.14892	.00229	.03370	.15915	.00519
#2	.00097	.96527	.14979	.00101	.03348	.15926	.00472
#3	.00090	.96545	.15881	.00021	.03321	.15829	.00438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8809.1	56197.	3156.2
Stddev	17.1	169.	15.4
%RSD	.19391	.29996	.48903
#1	8823.3	56057.	3138.5
#2	8813.9	56150.	3167.0
#3	8790.1	56384.	3163.0

Approved: June 25, 2016

Sample Name: L1606127903S Acquired: 6/24/2016 13:43:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19326	20.629	.20505	1.1242	.67887	.02411	202.49	.02516
Stddev	.00124	.031	.00568	.0038	.00396	.00002	1.42	.00004
%RSD	.63990	.14876	2.7693	.33476	.58405	.08259	.70154	.15637
#1	.19467	20.662	.20382	1.1250	.68345	.02412	204.10	.02518
#2	.19238	20.624	.21124	1.1275	.67642	.02413	201.40	.02512
#3	.19273	20.601	.20009	1.1201	.67675	.02409	201.97	.02518
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10665	.26645	.25704	21.289	30.486	.53447	84.560	2.9029
Stddev	.00029	.00084	.00157	.139	.180	.01012	.672	.0309
%RSD	.27245	.31377	.61183	.65337	.58896	1.8942	.79485	1.0632
#1	.10698	.26680	.25771	21.445	30.561	.54519	85.295	2.9385
#2	.10646	.26550	.25817	21.245	30.281	.52507	83.976	2.8873
#3	.10650	.26706	.25524	21.177	30.616	.53315	84.410	2.8830
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50244	43.573	.26189	5.8590	.25372	.55116	.19410	32.382
Stddev	.00157	.327	.00132	.0159	.00269	.00988	.00408	.058
%RSD	.31334	.74940	.50585	.27121	1.0586	1.7922	2.1037	.17891
#1	.50275	43.950	.26334	5.8677	.25501	.56055	.18982	32.390
#2	.50384	43.381	.26161	5.8686	.25064	.54086	.19452	32.435
#3	.50074	43.388	.26073	5.8406	.25553	.55206	.19795	32.320
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606127903S Acquired: 6/24/2016 13:43:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48639**	**1.4540**	**.59410**	**.23913**	**.50539**	**.70433**	**.01017**
Stddev	.00047	.0117	.00764	.00139	.00117	.00111	.00008
%RSD	.09761	.80721	1.2860	.58290	.23204	.15818	.79769
#1	.48692	1.4674	.59934	.23991	.50616	.70442	.01015
#2	.48623	1.4457	.58533	.23752	.50597	.70539	.01010
#3	.48602	1.4488	.59762	.23995	.50404	.70317	.01026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8732.4**	**55709.**	**3136.3**
Stddev	12.8	133.	9.5
%RSD	.14604	.23913	.30143
#1	8741.8	55582.	3125.8
#2	8737.4	55848.	3138.8
#3	8717.9	55698.	3144.2

Approved: June 25, 2016

Sample Name: L1606127904SD Acquired: 6/24/2016 13:47:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19840**	**21.664**	**.21549**	**1.1518**	**.68554**	**.02470**	**203.86**
Stddev	.00350	.173	.00239	.0093	.00255	.00012	.48
%RSD	1.7631	.79987	1.1079	.81137	.37163	.47958	.23568
#1	.19923	21.766	.21789	1.1585	.68363	.02482	204.27
#2	.20141	21.762	.21547	1.1557	.68843	.02468	203.97
#3	.19456	21.464	.21311	1.1411	.68456	.02459	203.33
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02560**	**.10985**	**.27087**	**.26369**	**21.250**	**31.671**	**.54653**
Stddev	.00010	.00064	.00286	.00112	.102	.097	.00418
%RSD	.40730	.58209	1.0577	.42589	.48182	.30643	.76563
#1	.02572	.11059	.27368	.26496	21.309	31.764	.54887
#2	.02555	.10947	.27099	.26284	21.310	31.678	.54902
#3	.02554	.10950	.26795	.26328	21.132	31.570	.54170
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**85.131**	**2.9406**	**.52074**	**44.518**	**.26846**	**6.1103**	**.26144**
Stddev	.178	.0135	.00200	.085	.00112	.0182	.00268
%RSD	.20906	.45814	.38482	.19000	.41689	.29863	1.0264
#1	84.960	2.9560	.52294	44.584	.26874	6.1155	.26438
#2	85.315	2.9345	.52024	44.548	.26723	6.0900	.26081
#3	85.119	2.9312	.51903	44.423	.26941	6.1253	.25913
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 25, 2016

Sample Name: L1606127904SD Acquired: 6/24/2016 13:47:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573994-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.57453**	**.19709**	F **36.344**	**.50382**	**1.4735**	**.64850**	**.24413**
Stddev	.00418	.00789	.056	.00257	.0019	.00602	.00132
%RSD	.72824	4.0016	.15274	.50962	.13256	.92766	.53874
#1	.57287	.19772	36.404	.50677	1.4750	.65107	.24435
#2	.57929	.20464	36.334	.50206	1.4742	.65280	.24272
#3	.57143	.18890	36.295	.50263	1.4713	.64162	.24532
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-1.0000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.52196**	**.56684**	**.01080**
Stddev	.00375	.00342	.00015
%RSD	.71940	.60354	1.3985
#1	.52583	.56511	.01079
#2	.52171	.56462	.01095
#3	.51833	.57078	.01065
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8712.5**	**55773.**	**3120.2**
Stddev	3.2	331.	12.8
%RSD	.03729	.59418	.41169
#1	8713.6	55403.	3119.9
#2	8708.8	55873.	3107.5
#3	8715.0	56043.	3133.2

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 13:50:42 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38140**	**9.6036**	**.38549**	**.47990**	**.97583**	**.04697**	**9.6736**	**.04936**
Stddev	.00083	.0155	.00161	.00272	.00700	.00039	.0481	.00043
%RSD	.21651	.16083	.41796	.56755	.71776	.83544	.49724	.87879
#1	.38093	9.6166	.38518	.48096	.97193	.04728	9.6575	.04905
#2	.38235	9.6078	.38723	.48193	.97165	.04709	9.6356	.04986
#3	.38091	9.5866	.38405	.47680	.98392	.04652	9.7277	.04917
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19524**	**.47322**	**.49109**	**3.8323**	**49.097**	**.96492**	**9.4888**	**.48870**
Stddev	.00085	.00448	.00144	.0650	.263	.00666	.0433	.00395
%RSD	.43326	.94684	.29398	1.6953	.53510	.68973	.45628	.80862
#1	.19584	.47670	.49055	3.7748	48.999	.96096	9.4388	.48630
#2	.19562	.47480	.49272	3.8193	48.897	.96120	9.5117	.48654
#3	.19427	.46817	.48999	3.9028	49.395	.97260	9.5158	.49326
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.98079**	**48.817**	**.48770**	**9.6771**	**.48808**	**1.1568**	**.39117**	**5.0500**
Stddev	.00652	.291	.00120	.0180	.00541	.0169	.00115	.0077
%RSD	.66469	.59531	.24539	.18616	1.1087	1.4624	.29359	.15164
#1	.98623	48.688	.48889	9.6790	.49412	1.1640	.39004	5.0445
#2	.98257	48.614	.48771	9.6941	.48368	1.1689	.39234	5.0588
#3	.97357	49.150	.48649	9.6582	.48644	1.1374	.39112	5.0467
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 13:50:42 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.97107	.97794	.98195	.48922	.94029	.97547	.95262
Stddev	.00207	.00590	.00292	.00294	.00290	.00075	.01313
%RSD	.21287	.60287	.29764	.60052	.30843	.07725	1.3786
#1	.97343	.97629	.98320	.49172	.94213	.97546	.93766
#2	.96960	.97304	.97861	.48994	.93695	.97623	.95795
#3	.97018	.98448	.98404	.48598	.94180	.97472	.96224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9252.7	58629.	3212.3
Stddev	24.3	490.	28.7
%RSD	.26211	.83545	.89213
#1	9236.4	58082.	3245.1
#2	9241.1	58779.	3198.9
#3	9280.5	59026.	3192.7

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 13:54:19 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	-.00051	.00183	.00655	.00026	-.00000	.00852	-.00022
Stddev	.00064	.00733	.00105	.00104	.00009	.00005	.04466	.00023
%RSD	179.80	1430.7	57.749	15.843	35.947	4708.9	523.90	106.47
#1	.00048	.00366	.00121	.00743	.00035	-.00005	.04854	-.00006
#2	-.00034	-.00897	.00123	.00681	.00027	-.00001	-.03965	-.00048
#3	.00092	.00378	.00304	.00540	.00016	.00005	.01668	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.00227	-.00072	-.01318	.07124	.00049	.08648	-.00199
Stddev	.00023	.00064	.00050	.02673	.03864	.00139	.01953	.00183
%RSD	260.70	28.077	69.839	202.79	54.246	286.14	22.586	92.121
#1	-.00012	.00157	-.00036	-.03888	.08538	-.00076	.08196	-.00332
#2	-.00029	.00242	-.00130	-.01513	.10082	.00022	.10787	-.00274
#3	.00016	.00282	-.00051	.01447	.02752	.00199	.06960	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00342	.05697	-.00032	.00309	.00127	.00324	.00119	.00515
Stddev	.00032	.02946	.00116	.00580	.00261	.00123	.00629	.00054
%RSD	9.4112	51.713	361.47	187.66	205.38	38.030	528.76	10.506
#1	.00378	.04217	.00100	-.00305	.00285	.00465	.00735	.00465
#2	.00317	.09090	-.00078	.00846	.00271	.00268	.00143	.00572
#3	.00331	.03785	-.00118	.00386	-.00175	.00238	-.00522	.00507
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 13:54:19 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00031**	**.00036**	**.00418**	**-.00158**	**-.00051**	**.00017**	**.00102**
Stddev	.00053	.00033	.01062	.00055	.00051	.00029	.00036
%RSD	171.93	91.019	254.34	34.602	100.39	177.91	35.103
#1	-.00010	.00004	.00137	-.00145	-.00031	.00038	.00135
#2	-.00091	.00035	.01591	-.00218	-.00013	.00029	.00064
#3	.00009	.00069	-.00476	-.00111	-.00109	-.00017	.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9545.2**	**60729.**	**3266.7**
Stddev	24.9	237.	23.8
%RSD	.26058	.39065	.72829
#1	9540.3	60493.	3240.2
#2	9523.2	60727.	3286.2
#3	9572.2	60967.	3273.7

Approved: June 25, 2016

Sample Name: L1606096103 Acquired: 6/24/2016 13:58:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00012	.09140	.00112	.03611	.03358	-.00001	50.084	.00013
Stddev	.00022	.00238	.00188	.00195	.00041	.00008	.422	.00018
%RSD	185.41	2.6039	167.01	5.3975	1.2258	580.55	.84237	141.64
#1	.00013	.08878	-.00078	.03488	.03351	-.00003	50.499	.00032
#2	-.00026	.09197	.00117	.03835	.03321	.00007	49.656	-.00003
#3	-.00023	.09344	.00297	.03508	.03403	-.00009	50.096	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	.00184	-.00114	.03656	1.3467	.00581	15.245	.00051
Stddev	.00014	.00073	.00091	.02407	.0686	.00337	.260	.00254
%RSD	61.138	39.585	79.397	65.853	5.0911	58.003	1.7074	500.61
#1	-.00015	.00167	-.00218	.01202	1.2696	.00901	15.489	.00250
#2	-.00015	.00121	-.00074	.03751	1.4008	.00612	14.971	.00138
#3	-.00040	.00264	-.00050	.06014	1.3699	.00229	15.275	-.00236
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00260	9.6468	.00019	-.00521	-.00233	.00331	.00457	4.0826
Stddev	.00028	.0838	.00028	.00366	.00219	.00207	.00459	.0345
%RSD	10.599	.86900	141.53	70.238	94.267	62.612	100.63	.84571
#1	.00231	9.7410	.00004	-.00109	.00018	.00092	.00224	4.1042
#2	.00263	9.6187	.00051	-.00810	-.00328	.00434	.00160	4.1009
#3	.00286	9.5806	.00003	-.00645	-.00389	.00466	.00986	4.0428
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606096103 Acquired: 6/24/2016 13:58:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00067**	**.25691**	**-.00637**	**-.00259**	**-.00050**	**.00292**	**.00135**
Stddev	.00049	.00223	.00705	.00153	.00034	.00040	.00049
%RSD	72.565	.86751	110.76	58.917	67.376	13.663	36.114
#1	-.00091	.25924	-.00795	-.00331	-.00034	.00317	.00087
#2	-.00099	.25480	.00134	-.00084	-.00090	.00314	.00133
#3	-.00011	.25669	-.01249	-.00363	-.00028	.00246	.00185
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8942.3**	**57388.**	**3165.4**
Stddev	36.0	169.	10.5
%RSD	.40295	.29363	.33091
#1	8915.6	57232.	3155.7
#2	8928.0	57367.	3176.5
#3	8983.2	57567.	3163.9

Approved: June 25, 2016

Sample Name: L1606096103PS Acquired: 6/24/2016 14:02:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574076-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20212**	**5.1577**	**.20995**	**1.0218**	**.55067**	**.02458**	**50.301**	**.02595**
Stddev	.00257	.0134	.00150	.0020	.00278	.00001	.286	.00016
%RSD	1.2694	.25951	.71236	.19511	.50565	.03510	.56934	.61701
#1	.20209	5.1522	.20849	1.0233	.55372	.02459	50.529	.02608
#2	.19957	5.1479	.20988	1.0196	.54826	.02458	49.980	.02599
#3	.20470	5.1729	.21148	1.0227	.55003	.02457	50.394	.02577
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10297**	**.25008**	**.25544**	**2.0785**	**27.389**	**.52844**	**18.834**	**.25830**
Stddev	.00023	.00157	.00241	.0113	.185	.00335	.039	.00347
%RSD	.22302	.62649	.94504	.54163	.67510	.63326	.20820	1.3448
#1	.10320	.25049	.25823	2.0826	27.472	.53144	18.843	.26189
#2	.10274	.25140	.25409	2.0658	27.177	.52483	18.867	.25495
#3	.10299	.24834	.25401	2.0872	27.518	.52905	18.790	.25805
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53490**	**34.932**	**.25626**	**5.1271**	**.25681**	**.62874**	**.20828**	**6.2999**
Stddev	.00204	.144	.00031	.0135	.00377	.00039	.00270	.0306
%RSD	.38190	.41152	.12115	.26248	1.4693	.06250	1.2974	.48507
#1	.53528	35.050	.25602	5.1233	.25437	.62829	.20809	6.2859
#2	.53673	34.772	.25661	5.1420	.26116	.62899	.21107	6.2787
#3	.53270	34.975	.25617	5.1159	.25492	.62895	.20567	6.3349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606096103PS Acquired: 6/24/2016 14:02:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574076-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51595	.74881	.52242	.25818	.49972	.51357	.00455
Stddev	.00103	.00313	.00297	.00309	.00213	.00106	.00114
%RSD	.19954	.41852	.56925	1.1985	.42627	.20581	24.932
#1	.51562	.75083	.52020	.25542	.50129	.51430	.00341
#2	.51710	.74520	.52125	.26152	.49729	.51406	.00457
#3	.51512	.75039	.52580	.25759	.50057	.51236	.00568
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8833.6	56651.	3119.7
Stddev	9.3	223.	21.6
%RSD	.10547	.39347	.69133
#1	8823.9	56539.	3116.6
#2	8834.3	56908.	3142.7
#3	8842.5	56506.	3099.9

Approved: June 25, 2016

Sample Name: L1606096103SDL Acquired: 6/24/2016 14:05:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574076-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.01743	-.00053	.01293	.00637	.00006	9.8603	-.00009
Stddev	.00112	.00543	.00066	.00212	.00093	.00006	.1510	.00026
%RSD	749.50	31.156	123.78	16.425	14.637	106.44	1.5314	273.36
#1	.00120	.01486	-.00015	.01142	.00533	.00013	9.7000	-.00016
#2	-.00103	.01376	-.00130	.01536	.00714	.00001	9.8810	.00019
#3	.00028	.02366	-.00015	.01201	.00663	.00003	9.9999	-.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	.00166	-.00081	.01557	.34726	.00184	3.0327	-.00090
Stddev	.00014	.00107	.00071	.01602	.05466	.00348	.0951	.00076
%RSD	37.681	64.012	87.782	102.86	15.742	189.11	3.1367	84.164
#1	-.00021	.00202	-.00151	.03338	.29666	.00458	2.9721	-.00121
#2	-.00048	.00047	-.00085	.00235	.40524	-.00207	2.9836	-.00147
#3	-.00039	.00251	-.00008	.01099	.33988	.00301	3.1423	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00101	1.9887	-.00002	.00349	-.00035	.00256	.00530	.86568
Stddev	.00011	.0321	.00087	.00714	.00172	.00490	.00381	.00616
%RSD	11.175	1.6161	4064.9	204.77	495.04	191.24	71.852	.71180
#1	.00095	1.9586	.00085	.00447	-.00202	.00804	.00476	.85861
#2	.00114	1.9850	-.00088	.01010	.00141	-.00140	.00179	.86846
#3	.00094	2.0226	-.00004	-.00409	-.00043	.00105	.00936	.86996
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606096103SDL Acquired: 6/24/2016 14:05:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574076-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.05064**	**-.00115**	**-.00120**	**-.00043**	**.00102**	**.00056**
Stddev	.00024	.00069	.00525	.00297	.00106	.00012	.00014
%RSD	123.48	1.3651	458.63	247.68	244.53	11.508	24.672
#1	-.00046	.05019	-.00523	.00208	-.00117	.00096	.00072
#2	.00002	.05028	.00478	-.00371	.00078	.00115	.00045
#3	-.00016	.05143	-.00298	-.00197	-.00092	.00094	.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9336.0**	**59375.**	**3208.5**
Stddev	30.5	401.	15.3
%RSD	.32641	.67506	.47725
#1	9354.3	58920.	3216.8
#2	9352.8	59525.	3217.8
#3	9300.8	59678.	3190.8

Approved: June 25, 2016

Sample Name: L1606096103SDL Acquired: 6/24/2016 14:09:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574076-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00011**	**-.00610**	**.00005**	**.00302**	**.00139**	**.00003**	**1.6849**
Stddev	.00180	.00456	.00220	.00222	.00079	.00007	.0160
%RSD	1577.6	74.679	4707.9	73.380	56.616	247.76	.94725
#1	-.00191	-.00084	.00190	.00055	.00194	-.00002	1.6688
#2	.00156	-.00881	-.00239	.00484	.00049	.00011	1.6853
#3	.00069	-.00865	.00063	.00368	.00173	-.00000	1.7007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**-.00034**	**.00088**	**-.00158**	**-.01440**	**.06844**	**-.00175**
Stddev	.00002	.00023	.00083	.00061	.02220	.06326	.00363
%RSD	17.353	67.549	94.267	38.708	154.12	92.431	206.96
#1	-.00013	-.00058	.00179	-.00208	-.00955	.00265	-.00311
#2	-.00013	-.00034	.00017	-.00175	.00496	.07385	.00236
#3	-.00017	-.00012	.00067	-.00090	-.03863	.12882	-.00450
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50957**	F **-.00383**	**.00039**	**.34445**	**-.00062**	**.00381**	**.00016**
Stddev	.01311	.00095	.00039	.03811	.00071	.00070	.00411
%RSD	2.5722	24.725	100.59	11.064	115.35	18.437	2540.0
#1	.51930	-.00358	.00051	.30657	-.00144	.00305	.00427
#2	.49466	-.00488	-.00005	.34400	-.00029	.00397	.00016
#3	.51474	-.00303	.00071	.38278	-.00013	.00443	-.00394
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		36.000					
Low Limit		-.00300					

Approved: June 25, 2016

Sample Name: L1606096103SDL Acquired: 6/24/2016 14:09:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574076-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00087	-.00357	.15888	-.00031	.00850	-.00426	-.00009
Stddev	.00426	.00083	.00168	.00044	.00026	.00237	.00296
%RSD	491.21	23.304	1.0573	142.12	3.0361	55.651	3369.4
#1	-.00335	-.00426	.16039	-.00013	.00878	-.00423	-.00261
#2	.00077	-.00382	.15707	.00001	.00827	-.00191	-.00083
#3	.00518	-.00265	.15920	-.00080	.00846	-.00665	.00318
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00092	.00058	.00040
Stddev	.00059	.00015	.00004
%RSD	63.347	25.599	9.4015
#1	-.00155	.00045	.00043
#2	-.00084	.00056	.00036
#3	-.00039	.00074	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9633.6	61477.	3283.0
Stddev	23.5	199.	25.8
%RSD	.24437	.32309	.78547
#1	9635.1	61706.	3253.9
#2	9656.4	61364.	3291.9
#3	9609.4	61360.	3303.1

Approved: June 25, 2016

Sample Name: L1606122701 Acquired: 6/24/2016 14:13:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	2.0538	.00424	.05679	.30137	.00008	160.95	.00040
Stddev	.00099	.0179	.00360	.00161	.00191	.00003	.73	.00020
%RSD	625.72	.87190	84.976	2.8342	.63262	40.857	.45089	48.680
#1	.00035	2.0639	.00523	.05846	.30342	.00005	161.69	.00049
#2	.00047	2.0331	.00724	.05525	.30104	.00011	160.24	.00018
#3	-.00129	2.0644	.00025	.05665	.29964	.00010	160.92	.00054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.05022	.00244	.06600	6.7325	.04174	.86990	-.00077
Stddev	.00001	.00071	.00046	.01751	.0793	.00094	.03086	.00154
%RSD	53.643	1.4082	18.989	26.534	1.1771	2.2575	3.5476	200.44
#1	.00001	.04993	.00251	.08607	6.8151	.04258	.83482	-.00255
#2	.00004	.04971	.00286	.05817	6.6571	.04192	.89287	.00018
#3	.00002	.05103	.00194	.05378	6.7254	.04072	.88200	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00363	48.508	-.00031	.00741	.00060	.00514	.00422	24.472
Stddev	.00063	.271	.00042	.00441	.00602	.00302	.00618	.118
%RSD	17.442	.55872	138.52	59.544	1003.1	58.729	146.53	.48061
#1	.00434	48.810	.00008	.00233	-.00322	.00761	.00742	24.541
#2	.00342	48.287	-.00076	.00957	-.00252	.00604	.00813	24.539
#3	.00313	48.427	-.00023	.01033	.00753	.00178	-.00291	24.336
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606122701 Acquired: 6/24/2016 14:13:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	5.2882	-.02037	.00182	.05925	.00281	.00089
Stddev	.00045	.0260	.00947	.00098	.00078	.00019	.00080
%RSD	393.62	.49150	46.471	53.984	1.3207	6.6303	89.786
#1	.00029	5.3179	-.02819	.00291	.05902	.00280	.00160
#2	-.00060	5.2694	-.00985	.00102	.05861	.00264	.00002
#3	-.00003	5.2773	-.02308	.00151	.06012	.00301	.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8732.6	55925.	3130.6
Stddev	32.6	420.	35.3
%RSD	.37294	.75148	1.1265
#1	8752.4	55468.	3120.1
#2	8695.0	56294.	3101.8
#3	8750.3	56014.	3169.9

Approved: June 25, 2016

Sample Name: L1606122703 Acquired: 6/24/2016 14:17:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00125	.01521	-.00287	.00860	.24123	.00006	11.154	.00028
Stddev	.00085	.00707	.00119	.00183	.00246	.00004	.069	.00007
%RSD	68.571	46.481	41.621	21.280	1.0214	57.404	.61514	23.989
#1	-.00147	.01209	-.00178	.00649	.24385	.00010	11.223	.00034
#2	-.00030	.02330	-.00414	.00957	.24090	.00003	11.086	.00021
#3	-.00196	.01024	-.00269	.00975	.23895	.00006	11.152	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00080	.00213	-.00033	6.2073	1.5140	.01688	6.1835	.21929
Stddev	.00038	.00091	.00079	.0143	.0539	.00306	.0220	.00289
%RSD	47.624	42.694	240.58	.23060	3.5610	18.131	.35514	1.3175
#1	-.00036	.00194	-.00091	6.2218	1.4901	.01738	6.2077	.21708
#2	-.00104	.00133	-.00064	6.2069	1.5757	.01967	6.1777	.22256
#3	-.00101	.00312	.00057	6.1932	1.4762	.01361	6.1650	.21823
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	22.350	-.00018	.00938	-.00137	-.00029	-.00050	19.516
Stddev	.00056	.096	.00083	.00138	.00104	.00383	.01117	.085
%RSD	465.42	.43143	468.12	14.678	75.834	1305.1	2216.4	.43604
#1	.00023	22.450	-.00078	.01058	-.00249	.00050	.00759	19.566
#2	-.00049	22.343	.00077	.00788	-.00044	.00308	-.01325	19.564
#3	.00062	22.257	-.00052	.00969	-.00117	-.00445	.00414	19.418
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606122703 Acquired: 6/24/2016 14:17:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.28084	-.00425	-.00304	-.00105	.00790	.00058
Stddev	.00052	.00163	.00869	.00081	.00050	.00008	.00060
%RSD	129.02	.57971	204.61	26.615	47.317	.97873	103.43
#1	.00050	.28163	-.01407	-.00299	-.00104	.00799	-.00005
#2	-.00016	.28192	-.00109	-.00388	-.00056	.00785	.00113
#3	.00088	.27897	.00242	-.00226	-.00155	.00786	.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8914.3	56961.	3130.5
Stddev	14.2	82.	32.4
%RSD	.15879	.14313	1.0351
#1	8914.6	56997.	3101.6
#2	8928.4	57018.	3165.5
#3	8900.0	56867.	3124.5

Approved: June 25, 2016

Sample Name: L1606122705 Acquired: 6/24/2016 14:21:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	.01545	-.00191	.01058	.23750	.00006	11.195	.00012
Stddev	.00118	.00798	.00344	.00158	.00031	.00003	.021	.00013
%RSD	328.15	51.664	180.02	14.936	.13063	48.409	.18618	104.64
#1	-.00055	.02466	-.00569	.01043	.23772	.00010	11.181	.00021
#2	-.00143	.01046	-.00109	.01223	.23762	.00004	11.184	-.00002
#3	.00090	.01124	.00105	.00908	.23714	.00005	11.219	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00044	.00085	.00038	5.7661	1.5123	.01984	5.9756	.21100
Stddev	.00025	.00106	.00080	.0245	.0653	.00200	.0212	.00231
%RSD	56.521	123.64	211.76	.42500	4.3208	10.094	.35441	1.0971
#1	-.00018	.00141	.00088	5.7931	1.5331	.01943	5.9657	.21198
#2	-.00046	-.00036	.00081	5.7454	1.5646	.02202	5.9611	.20836
#3	-.00068	.00152	-.00055	5.7597	1.4390	.01808	5.9999	.21267
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	21.980	.00038	.00585	.00105	.00337	.00431	19.270
Stddev	.00021	.073	.00055	.00335	.00503	.00336	.00279	.078
%RSD	47.614	.33289	144.30	57.337	476.55	99.815	64.659	.40393
#1	.00067	22.029	.00075	.00771	.00214	-.00034	.00547	19.312
#2	.00029	21.896	-.00025	.00198	-.00442	.00622	.00113	19.317
#3	.00034	22.015	.00065	.00787	.00545	.00421	.00633	19.180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606122705 Acquired: 6/24/2016 14:21:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	.27996	-.00062	-.00391	-.00113	.00732	.00022
Stddev	.00053	.00057	.00735	.00180	.00037	.00025	.00038
%RSD	211.26	.20369	1193.3	46.137	32.740	3.4555	174.33
#1	.00056	.27981	-.00799	-.00285	-.00106	.00752	.00033
#2	-.00036	.27948	-.00055	-.00288	-.00079	.00740	.00052
#3	.00056	.28059	.00670	-.00599	-.00152	.00703	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8854.7	56642.	3127.3
Stddev	12.3	243.	13.9
%RSD	.13917	.42956	.44340
#1	8861.1	56590.	3116.3
#2	8840.5	56906.	3122.8
#3	8862.4	56428.	3142.9

Approved: June 25, 2016

Sample Name: L1606122706 Acquired: 6/24/2016 14:25:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	.21684	.00222	.01917	.58049	.00013	F 284.46
Stddev	.00156	.00289	.00054	.00104	.00288	.00003	1.45
%RSD	398.54	1.3347	24.456	5.4065	.49594	21.763	.51127
#1	-.00197	.21619	.00253	.01999	.58052	.00015	284.58
#2	-.00036	.22000	.00160	.01951	.57760	.00015	282.95
#3	.00116	.21433	.00254	.01800	.58336	.00010	285.86
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.01684	.00998	.00007	1.9553	6.3020	.09974
Stddev	.00017	.00034	.00117	.00099	.0143	.1315	.00214
%RSD	224.89	2.0370	11.743	1484.4	.73067	2.0859	2.1442
#1	.00026	.01703	.01112	-.00102	1.9407	6.1530	.09856
#2	-.00001	.01704	.01006	.00031	1.9692	6.3513	.10221
#3	-.00004	.01644	.00877	.00091	1.9560	6.4016	.09846
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	176.37	2.2714	.00006	F 731.74	.01123	.01665	.00357
Stddev	1.24	.0213	.00040	6.78	.00115	.00399	.00138
%RSD	.70410	.93819	724.13	.92699	10.201	23.948	38.657
#1	175.84	2.2688	.00050	724.41	.01123	.01905	.00394
#2	175.48	2.2515	-.00029	737.80	.01238	.01886	.00473
#3	177.79	2.2938	-.00004	733.01	.01008	.01205	.00204
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 25, 2016

Sample Name: L1606122706 Acquired: 6/24/2016 14:25:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00122**	**.00616**	**15.356**	**.00023**	**6.6069**	F **-.03816**	**-.00311**
Stddev	.00529	.00300	.153	.00037	.0311	.00253	.00229
%RSD	434.20	48.780	.99792	161.00	.47035	6.6290	73.823
#1	.00695	.00959	15.424	.00029	6.6061	-.03560	-.00215
#2	.00016	.00487	15.464	.00056	6.5762	-.04066	-.00573
#3	-.00346	.00401	15.181	-.00017	6.6383	-.03822	-.00145
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00168**	**.01200**	**.00044**
Stddev	.00075	.00025	.00035
%RSD	44.955	2.0469	79.672
#1	-.00143	.01227	.00080
#2	-.00252	.01195	.00041
#3	-.00108	.01179	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8072.3**	**51267.**	**2974.1**
Stddev	26.3	41.	21.1
%RSD	.32607	.08087	.70892
#1	8102.7	51312.	2967.6
#2	8056.8	51231.	2997.7
#3	8057.4	51256.	2957.1

Approved: June 25, 2016

Sample Name: L1606122701 Acquired: 6/24/2016 14:29:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	s **-.00023**	s **-.00927**	s **.00164**	s **.00296**	F **-10.167**	s **.00041**
Stddev	.00419	.07786	.00312	.00485	17.626	.00078
%RSD	1785.1	839.67	190.10	164.03	173.37	190.38
#1	k .00417	k -.06650	s .00369	k .00589	-30.520	k -.00012
#2	-.00072	-.04071	-.00195	-.00264	.0178	.00004
#3	s -.00416	s .07939	s .00318	s .00563	.0011	s .00131
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit					45.000	
Low Limit					-.00500	

Elem	Ca4226	Cd2288	Co2286	Cr2677	Cu2247	Fe2611
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**40.030**	sF **-.00051**	s **-.00092**	s **.00395**	sF **-.01544**	k **24.560**
Stddev	69.051	.00101	.00091	.00756	.02567	42.585
%RSD	172.50	198.69	98.282	191.07	166.28	173.39
#1	119.76	s -.00168	s -.00047	k -.00260	s -.04508	73.733
#2	.3162	.00002	-.00033	.00225	-.00024	-.06625
#3	.0107	s .00013	s -.00197	s .01222	s -.00100	k .01283
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit		4.5000			180.00	
Low Limit		-.00050			-.00500	

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**372.11**	**8.6195**	k **47.738**	k **.33032**	s **.00028**	**133.30**
Stddev	645.21	14.952	82.949	.57767	.00009	230.76
%RSD	173.39	173.47	173.76	174.88	32.225	173.11
#1	1117.1	25.884	k 143.52	k .99736	s .00023	399.76
#2	-.711	-.02432	-.3221	-.00440	.00022	-.0382
#3	-.088	-.00165	k .0166	k -.00198	s .00038	.1779
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Approved: June 25, 2016

Sample Name: L1606122701 Acquired: 6/24/2016 14:29:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	s **-.00045**	s **-.03655**	s **.00172**	s **-.00108**	s **.00075**	s **.01008**
Stddev	.00179	.02808	.00469	.00283	.00609	.01972
%RSD	400.97	76.830	273.03	261.89	809.17	195.59
#1	s -.00054	s -.06589	s .00446	s -.00311	s .00551	s -.00694
#2	.00139	-.00993	.00440	.00215	.00286	.00550
#3	s -.00220	s -.03383	s -.00370	s -.00228	s -.00611	s .03169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	s **-.00057**	F **-1.1360**	k **20.365**	s **.00055**	s **-.00167**	s **.00003**
Stddev	.00097	1.9693	35.298	.00527	.00210	.00029
%RSD	171.04	173.35	173.32	963.15	126.00	986.03
#1	s -.00081	-3.4099	k 61.124	s .00555	k -.00082	s -.00019
#2	-.00139	.00126	-.03016	.00104	-.00012	-.00009
#3	s .00050	.00067	k .00214	s -.00495	s -.00406	s .00036
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		9.0000				
Low Limit		-.01000				

Elem	Zr3391
Units	ppm
Avg	k **4.7431**
Stddev	8.2177
%RSD	173.26
#1	14.232
#2	-.00307
#3	k .00025
Check ?	Chk Pass
High Limit	
Low Limit	

Approved: June 25, 2016

Sample Name: L1606122701 Acquired: 6/24/2016 14:29:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	^ *****	^ *****	**1491.6**
Stddev	-----	-----	1744.8
%RSD	-----	-----	116.98
#1	^ -----	96744.	-.833
#2	11739.	67740.	1065.6
#3	^ -----	^ -----	3409.9

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 14:33:26 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41166**	**10.425**	**.41797**	**.51029**	**1.0577**	**.05047**	**10.520**	**.05316**
Stddev	.00099	.032	.00238	.00238	.0098	.00020	.066	.00029
%RSD	.24027	.31060	.57018	.46712	.92494	.40032	.62805	.55014
#1	.41078	10.417	.41616	.50822	1.0524	.05037	10.498	.05343
#2	.41273	10.461	.42067	.50975	1.0690	.05033	10.595	.05285
#3	.41147	10.398	.41708	.51289	1.0516	.05070	10.468	.05319
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21206**	**.51386**	**.53059**	**4.1899**	**53.263**	**1.0467**	**10.468**	**.52856**
Stddev	.00073	.00321	.00100	.0374	.462	.0063	.076	.00530
%RSD	.34314	.62500	.18884	.89375	.86682	.60297	.72564	1.0030
#1	.21259	.51287	.52997	4.1684	53.043	1.0454	10.485	.52611
#2	.21236	.51126	.53175	4.2331	53.794	1.0536	10.535	.53465
#3	.21123	.51745	.53006	4.1681	52.952	1.0412	10.385	.52494
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0576**	**52.995**	**.52777**	**10.435**	**.52686**	**1.2496**	**.41651**	**5.4396**
Stddev	.0040	.485	.00212	.015	.00639	.0066	.00244	.0073
%RSD	.37921	.91430	.40168	.14821	1.2125	.52987	.58470	.13514
#1	1.0613	52.838	.52972	10.450	.53351	1.2484	.41859	5.4468
#2	1.0581	53.538	.52809	10.437	.52631	1.2567	.41712	5.4400
#3	1.0533	52.608	.52552	10.419	.52077	1.2437	.41383	5.4321
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 14:33:26 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0505**	**1.0599**	**1.0626**	**.52487**	**1.0199**	**1.0599**	**1.0481**
Stddev	.0030	.0080	.0069	.00177	.0063	.0016	.0076
%RSD	.28497	.75748	.64716	.33685	.61433	.14858	.72179
#1	1.0520	1.0581	1.0658	.52283	1.0139	1.0617	1.0532
#2	1.0524	1.0687	1.0673	.52604	1.0264	1.0591	1.0518
#3	1.0471	1.0529	1.0547	.52572	1.0194	1.0589	1.0394
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8638.4**	**54702.**	**2962.1**
Stddev	25.7	232.	26.1
%RSD	.29729	.42351	.88130
#1	8638.5	54949.	2963.0
#2	8664.0	54489.	2935.5
#3	8612.6	54670.	2987.7

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 14:37:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00059**	**.00701**	**.00029**	**.00414**	**.00107**	**.00004**	**.00238**	**-.00012**
Stddev	.00084	.00406	.00078	.00126	.00076	.00005	.01029	.00020
%RSD	141.95	57.911	270.00	30.394	71.506	123.23	431.54	160.84
#1	-.00109	.01100	-.00061	.00436	.00031	-.00001	.01410	-.00018
#2	.00038	.00714	.00070	.00527	.00106	.00009	-.00516	-.00029
#3	-.00106	.00289	.00078	.00278	.00183	.00005	-.00179	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**.00101**	**-.00109**	**-.00812**	**.09168**	**-.00067**	**.00355**	**-.00145**
Stddev	.00012	.00041	.00020	.01093	.16535	.00286	.05597	.00191
%RSD	587.69	41.101	17.982	134.63	180.37	426.73	1575.4	131.49
#1	-.00012	.00144	-.00126	-.01947	.12855	-.00390	-.02086	.00074
#2	.00007	.00098	-.00088	.00235	.23548	.00155	.06758	-.00233
#3	.00010	.00061	-.00113	-.00724	-.08900	.00034	-.03606	-.00276
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00376**	**.06309**	**-.00078**	**-.00146**	**-.00295**	**.00728**	**.00080**	**.00640**
Stddev	.00004	.00813	.00031	.00130	.00447	.00341	.00273	.00142
%RSD	1.1880	12.887	39.066	89.596	151.30	46.848	341.20	22.217
#1	.00379	.05447	-.00081	-.00002	-.00292	.00343	-.00228	.00491
#2	.00377	.07062	-.00047	-.00257	.00150	.00849	.00178	.00774
#3	.00371	.06419	-.00108	-.00177	-.00745	.00993	.00291	.00656
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 14:37:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**-.00030**	**-.00170**	**-.00383**	**-.00049**	**.00017**	**.00063**
Stddev	.00071	.00015	.00190	.00217	.00068	.00011	.00064
%RSD	416.03	50.304	111.76	56.611	138.47	65.323	100.79
#1	-.00090	-.00046	-.00195	-.00355	.00013	.00005	.00048
#2	.00053	-.00016	.00031	-.00613	-.00121	.00020	.00009
#3	-.00015	-.00029	-.00347	-.00182	-.00039	.00026	.00134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8962.4**	**57043.**	**3076.8**
Stddev	9.4	202.	30.1
%RSD	.10495	.35434	.97741
#1	8959.6	57191.	3062.7
#2	8973.0	57124.	3056.5
#3	8954.8	56812.	3111.4

Approved: June 25, 2016

Sample Name: LLCCV Acquired: 6/24/2016 14:41:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00718	.16778	.00705	.07965	.00910	.00164	.41639	.00077
Stddev	.00111	.00850	.00155	.00224	.00038	.00008	.03685	.00016
%RSD	15.437	5.0649	22.016	2.8126	4.2151	4.9707	8.8498	21.171
#1	.00835	.16257	.00591	.07934	.00933	.00163	.41364	.00096
#2	.00706	.17759	.00643	.08204	.00930	.00156	.38099	.00069
#3	.00615	.16318	.00882	.07759	.00865	.00172	.45453	.00067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00372	.00553	.00388	.09928	.97152	.08315	.41379	.00739
Stddev	.00019	.00133	.00032	.02549	.05199	.00523	.08500	.00248
%RSD	5.0726	23.979	8.3772	25.673	5.3513	6.2898	20.543	33.559
#1	.00382	.00499	.00359	.11432	.99435	.08891	.42868	.00950
#2	.00350	.00456	.00423	.06985	1.0082	.08183	.49036	.00801
#3	.00383	.00704	.00382	.11368	.91202	.07870	.32232	.00466
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00887	.47333	.01623	.81221	.00542	.09064	.01323	.80543
Stddev	.00034	.01785	.00027	.00285	.00284	.00218	.00846	.00484
%RSD	3.8186	3.7704	1.6489	.35135	52.439	2.4043	63.964	.60120
#1	.00857	.45283	.01639	.81336	.00707	.09020	.00353	.80991
#2	.00924	.48541	.01638	.81431	.00704	.08871	.01911	.80609
#3	.00882	.48176	.01592	.80897	.00214	.09300	.01705	.80029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LLCCV Acquired: 6/24/2016 14:41:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40870**	**.04207**	**.01931**	**.15366**	**.00710**	**.01712**	**.04603**
Stddev	.00512	.00019	.00171	.00094	.00077	.00047	.00074
%RSD	1.2534	.44963	8.8459	.61383	10.891	2.7601	1.5991
#1	.41191	.04225	.01832	.15474	.00771	.01740	.04532
#2	.41140	.04187	.02128	.15326	.00736	.01737	.04598
#3	.40280	.04210	.01832	.15299	.00623	.01657	.04679
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8982.1**	**57067.**	**3060.2**
Stddev	26.2	300.	11.7
%RSD	.29148	.52636	.38103
#1	8991.8	56753.	3059.1
#2	8952.5	57352.	3072.4
#3	9002.1	57094.	3049.1

Approved: June 25, 2016

Sample Name: LLCCV Acquired: 6/24/2016 14:45:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01869	.41297	.02026	.19746	.02185	.00383	1.0200	.00188
Stddev	.00035	.00586	.00154	.00067	.00147	.00014	.0338	.00015
%RSD	1.8526	1.4186	7.6007	.34025	6.7142	3.6282	3.3179	7.8964
#1	.01874	.40831	.01848	.19818	.02288	.00367	1.0151	.00196
#2	.01900	.41106	.02109	.19686	.02017	.00390	1.0560	.00198
#3	.01832	.41955	.02120	.19732	.02249	.00393	.98885	.00171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00984	.01123	.00919	.18681	2.1247	.20721	.93148	.01619
Stddev	.00014	.00068	.00093	.01106	.0926	.00369	.07781	.00078
%RSD	1.4606	6.0688	10.105	5.9217	4.3598	1.7823	8.3530	4.8206
#1	.01001	.01162	.00904	.19951	2.2112	.20690	.86422	.01547
#2	.00973	.01162	.00834	.18161	2.0269	.21106	.91352	.01702
#3	.00979	.01044	.01018	.17930	2.1360	.20369	1.0167	.01609
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02014	1.0870	.04071	1.9977	.02135	.21673	.03821	1.9741
Stddev	.00016	.0210	.00055	.0167	.00069	.00325	.00268	.0082
%RSD	.80007	1.9300	1.3616	.83571	3.2506	1.4993	7.0016	.41651
#1	.02032	1.0994	.04122	2.0148	.02110	.22042	.03544	1.9835
#2	.02003	1.0989	.04080	1.9969	.02082	.21547	.04077	1.9682
#3	.02006	1.0628	.04012	1.9814	.02214	.21430	.03841	1.9708
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LLCCV Acquired: 6/24/2016 14:45:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0107**	**.10392**	**.05575**	**.37550**	**.01879**	**.04191**	**.10568**
Stddev	.0090	.00047	.00558	.00228	.00032	.00016	.00084
%RSD	.89117	.44849	9.9995	.60763	1.6789	.38616	.79660
#1	1.0189	.10438	.05893	.37732	.01895	.04186	.10565
#2	1.0122	.10392	.05901	.37624	.01842	.04209	.10485
#3	1.0011	.10345	.04932	.37294	.01899	.04177	.10653
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9009.7**	**57472.**	**3066.3**
Stddev	19.1	37.	13.0
%RSD	.21156	.06500	.42365
#1	9017.9	57429.	3056.0
#2	9023.2	57498.	3080.9
#3	8987.9	57490.	3062.1

Approved: June 25, 2016

Sample Name: L1606122707 Acquired: 6/24/2016 14:48:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00038	.02228	-.00310	.03187	.86009	.00012	39.489	.00003
Stddev	.00018	.00656	.00152	.00057	.00717	.00003	.379	.00032
%RSD	46.468	29.432	49.079	1.8038	.83341	26.472	.96018	1147.1
#1	-.00055	.02985	-.00161	.03125	.86719	.00008	39.879	-.00019
#2	-.00020	.01820	-.00302	.03199	.86023	.00013	39.466	-.00011
#3	-.00040	.01880	-.00465	.03238	.85285	.00015	39.122	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00072	-.00028	.00013	59.587	2.9995	.04414	25.073	1.2878
Stddev	.00057	.00083	.00110	.643	.1016	.00412	.231	.0116
%RSD	79.076	299.88	865.71	1.0796	3.3860	9.3424	.92024	.90415
#1	-.00051	.00068	-.00113	60.213	3.0838	.04323	25.311	1.3011
#2	-.00137	-.00084	.00089	59.621	2.8867	.04865	25.057	1.2792
#3	-.00029	-.00068	.00062	58.928	3.0279	.04055	24.851	1.2831
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	115.27	.04203	.01368	.00281	-.00143	.00296	14.747
Stddev	.00037	1.33	.00072	.00307	.00173	.00239	.00365	.039
%RSD	499.83	1.1534	1.7107	22.425	61.439	167.46	123.56	.26370
#1	.00026	116.59	.04143	.01139	.00244	-.00272	.00713	14.784
#2	-.00048	115.27	.04283	.01716	.00130	.00133	.00141	14.750
#3	-.00000	113.93	.04183	.01248	.00470	-.00289	.00033	14.707
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606122707 Acquired: 6/24/2016 14:48:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.95862**	**.00605**	**-.00068**	**-.00091**	**.00548**	**.00149**
Stddev	.00073	.01229	.00320	.00267	.00068	.00026	.00022
%RSD	553.72	1.2819	52.980	390.15	74.575	4.7467	14.628
#1	-.00098	.96985	.00245	.00197	-.00106	.00564	.00171
#2	.00022	.96050	.00860	-.00066	-.00151	.00563	.00127
#3	.00036	.94549	.00708	-.00336	-.00017	.00518	.00148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8796.8**	**55980.**	**3081.4**
Stddev	13.6	173.	49.3
%RSD	.15430	.30941	1.6006
#1	8782.9	56135.	3034.1
#2	8810.1	56011.	3077.6
#3	8797.3	55793.	3132.6

Approved: June 25, 2016

Sample Name: L1606128901 Acquired: 6/24/2016 14:52:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00029**	**.04962**	**.00112**	**.00988**	**5.2736**	**-.00000**	**172.96**
Stddev	.00150	.00386	.00106	.00285	.0237	.00005	.90
%RSD	521.82	7.7690	94.694	28.895	.44889	7806.7	.52141
#1	.00036	.05342	.00225	.00730	5.2908	-.00004	173.59
#2	.00175	.04571	.00014	.00938	5.2466	.00005	171.93
#3	-.00125	.04974	.00097	.01295	5.2835	-.00001	173.36
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00136**	**.04532**	**.13640**	**.02803**	**.82377**	**2.0910**	**.06524**
Stddev	.00008	.00075	.00127	.00169	.01843	.0634	.00121
%RSD	6.1045	1.6593	.93452	6.0401	2.2378	3.0301	1.8477
#1	.00135	.04615	.13543	.02951	.80742	2.1500	.06406
#2	.00144	.04511	.13594	.02618	.82014	2.0990	.06519
#3	.00128	.04469	.13784	.02838	.84375	2.0241	.06647
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**132.57**	**1.5484**	**.00399**	F **475.43**	**.60664**	**-.00181**	**.00112**
Stddev	1.22	.0105	.00019	6.67	.00940	.00176	.00123
%RSD	.92353	.67771	4.8057	1.4023	1.5491	97.473	109.90
#1	133.54	1.5549	.00379	480.67	.61634	-.00043	.00090
#2	131.19	1.5363	.00417	477.68	.60602	-.00120	.00245
#3	132.97	1.5541	.00401	467.92	.59758	-.00379	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 25, 2016

Sample Name: L1606128901 Acquired: 6/24/2016 14:52:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00043**	**.00044**	**20.411**	**-.00001**	**3.3220**	**-.02680**	**-.00165**
Stddev	.00177	.00688	.223	.00059	.0144	.00356	.00200
%RSD	411.04	1578.1	1.0946	9208.5	.43324	13.269	121.77
#1	-.00012	.00683	20.657	.00066	3.3359	-.02623	-.00015
#2	-.00234	.00133	20.356	-.00024	3.3072	-.03061	-.00392
#3	.00117	-.00685	20.220	-.00044	3.3229	-.02356	-.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00230**	**.01606**	**-.00030**
Stddev	.00111	.00038	.00039
%RSD	48.336	2.3357	128.61
#1	-.00215	.01640	.00003
#2	-.00348	.01614	-.00073
#3	-.00127	.01566	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8386.8**	**53296.**	**3021.6**
Stddev	37.8	223.	29.3
%RSD	.45026	.41852	.97129
#1	8352.5	53490.	2991.9
#2	8427.3	53347.	3050.6
#3	8380.7	53052.	3022.3

Approved: June 25, 2016

Sample Name: L1606128904 Acquired: 6/24/2016 14:56:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00078	.89254	-.00069	.01964	.04255	.00011	5.6683	.00028
Stddev	.00076	.01581	.00109	.00257	.00109	.00004	.0152	.00014
%RSD	98.022	1.7713	158.41	13.060	2.5725	41.643	.26758	50.825
#1	-.00164	.87537	-.00125	.01833	.04129	.00015	5.6815	.00024
#2	-.00048	.89576	.00057	.01800	.04324	.00007	5.6517	.00016
#3	-.00021	.90650	-.00137	.02260	.04312	.00010	5.6716	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	.00425	.00494	1.2848	1.7945	.00004	1.0750	.06944
Stddev	.00027	.00147	.00133	.0357	.1112	.00319	.1047	.00259
%RSD	122.02	34.538	27.001	2.7795	6.1951	7919.7	9.7411	3.7251
#1	-.00019	.00333	.00648	1.3254	1.8687	-.00206	1.1443	.06646
#2	-.00051	.00594	.00405	1.2582	1.8481	.00371	1.1263	.07089
#3	.00003	.00347	.00430	1.2709	1.6666	-.00153	.95457	.07099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00253	11.300	.00403	.05743	-.00017	-.00179	.00195	3.8550
Stddev	.00020	.072	.00110	.00105	.00329	.00658	.00226	.1069
%RSD	7.7182	.63637	27.173	1.8233	1906.1	368.28	115.87	2.7717
#1	.00264	11.368	.00517	.05829	.00210	-.00819	-.00037	3.9182
#2	.00264	11.309	.00299	.05627	-.00395	.00496	.00208	3.9152
#3	.00230	11.225	.00394	.05774	.00133	-.00213	.00413	3.7317
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606128904 Acquired: 6/24/2016 14:56:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.05757**	**.02633**	**-.00071**	**.00137**	**.00722**	**.00200**
Stddev	.00035	.00023	.00560	.00355	.00071	.00007	.00033
%RSD	91.722	.39740	21.269	498.75	51.627	.91462	16.350
#1	-.00073	.05778	.02000	-.00383	.00175	.00716	.00162
#2	-.00038	.05732	.02834	-.00145	.00181	.00729	.00222
#3	-.00003	.05760	.03065	.00315	.00055	.00719	.00216
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8865.6**	**56649.**	**3059.6**
Stddev	13.5	96.	21.0
%RSD	.15270	.17031	.68631
#1	8866.0	56591.	3042.3
#2	8878.9	56761.	3053.7
#3	8851.9	56596.	3083.0

Approved: June 25, 2016

Sample Name: L1606129003 Acquired: 6/24/2016 15:00:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00079	.23085	.01034	.01559	.36719	.00005	21.705	.00048
Stddev	.00066	.01132	.00405	.00112	.00034	.00003	.125	.00008
%RSD	83.316	4.9053	39.209	7.1670	.09361	52.637	.57576	16.613
#1	-.00053	.21806	.00670	.01651	.36734	.00007	21.802	.00057
#2	-.00154	.23489	.01470	.01592	.36743	.00007	21.749	.00042
#3	-.00030	.23961	.00961	.01435	.36680	.00002	21.564	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00832	.00224	.00061	33.420	3.2767	.01261	13.855	.58209
Stddev	.00025	.00111	.00133	.070	.0433	.00234	.192	.00232
%RSD	3.0553	49.670	217.79	.20879	1.3202	18.546	1.3850	.39779
#1	.00834	.00100	.00061	33.467	3.2844	.00992	14.064	.58474
#2	.00805	.00316	.00195	33.452	3.3155	.01415	13.814	.58108
#3	.00856	.00256	-.00072	33.340	3.2300	.01376	13.686	.58045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	119.40	.01660	.07210	.00341	.00143	.00513	10.118
Stddev	.00033	.47	.00077	.00340	.00220	.00378	.00738	.080
%RSD	1430.2	.39268	4.6557	4.7101	64.624	264.86	143.85	.79057
#1	.00020	119.78	.01610	.06894	.00133	.00564	-.00235	10.112
#2	-.00035	119.55	.01749	.07569	.00317	-.00168	.00533	10.200
#3	.00022	118.87	.01621	.07166	.00572	.00033	.01240	10.041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606129003 Acquired: 6/24/2016 15:00:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00825	.48338	.01285	-.00007	-.00099	.02470	.00130
Stddev	.00046	.00133	.00609	.00020	.00008	.00029	.00043
%RSD	5.5459	.27526	47.375	267.50	8.5468	1.1648	33.241
#1	.00847	.48381	.01168	-.00026	-.00091	.02465	.00080
#2	.00855	.48444	.00743	-.00009	-.00108	.02501	.00160
#3	.00772	.48189	.01943	.00013	-.00099	.02444	.00149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8589.3	54682.	3050.6
Stddev	24.0	271.	24.0
%RSD	.27972	.49573	.78517
#1	8590.4	54964.	3023.0
#2	8564.7	54423.	3063.9
#3	8612.7	54659.	3065.0

Approved: June 25, 2016

Sample Name: L1606129005 Acquired: 6/24/2016 15:04:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00093	2.8940	.00006	.01007	.07684	.00018	1.8409	.00000
Stddev	.00144	.0184	.00220	.00073	.00162	.00006	.0138	.00046
%RSD	154.30	.63640	3601.3	7.2287	2.1026	31.323	.75067	9347.2
#1	-.00260	2.9086	-.00247	.00925	.07870	.00012	1.8257	.00046
#2	-.00011	2.9000	.00139	.01032	.07576	.00019	1.8444	.00000
#3	-.00010	2.8733	.00126	.01063	.07607	.00023	1.8526	-.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	.00434	-.00038	3.1829	.55321	.00872	1.5188	.02267
Stddev	.00018	.00090	.00079	.0133	.03931	.00184	.0455	.00119
%RSD	20.184	20.776	205.81	.41668	7.1064	21.146	2.9981	5.2528
#1	.00112	.00469	-.00125	3.1779	.59786	.01068	1.4921	.02373
#2	.00082	.00502	.00029	3.1979	.52378	.00846	1.5714	.02138
#3	.00078	.00332	-.00019	3.1728	.53798	.00702	1.4930	.02289
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	27.020	.00272	.08458	.00016	.00433	.00430	18.456
Stddev	.00073	.100	.00065	.00188	.00203	.00206	.00371	.304
%RSD	171.02	.37092	23.861	2.2211	1248.4	47.523	86.151	1.6472
#1	-.00010	27.134	.00249	.08421	.00247	.00531	.00264	18.631
#2	.00012	26.983	.00222	.08662	-.00061	.00572	.00172	18.633
#3	.00126	26.944	.00345	.08292	-.00137	.00197	.00855	18.105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606129005 Acquired: 6/24/2016 15:04:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00100	.03803	.06036	-.00240	.00545	.00944	.00214
Stddev	.00054	.00054	.00300	.00069	.00057	.00004	.00035
%RSD	54.381	1.4172	4.9720	28.734	10.423	.45223	16.538
#1	.00056	.03865	.06382	-.00184	.00519	.00939	.00180
#2	.00160	.03778	.05850	-.00219	.00610	.00947	.00213
#3	.00083	.03766	.05876	-.00318	.00505	.00946	.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8715.6	55373.	3004.3
Stddev	28.8	88.	20.9
%RSD	.33098	.15973	.69504
#1	8735.4	55391.	2980.2
#2	8728.9	55276.	3014.4
#3	8682.5	55450.	3018.2

Approved: June 25, 2016

Sample Name: L1606112901 Acquired: 6/24/2016 15:08:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00153	.04742	-.00095	.03453	.02713	.00001	86.360	.00034
Stddev	.00217	.00415	.00049	.00360	.00063	.00009	.224	.00044
%RSD	141.80	8.7609	51.957	10.417	2.3220	657.60	.25919	128.64
#1	-.00346	.04486	-.00039	.03082	.02758	-.00008	86.344	.00072
#2	-.00196	.04519	-.00115	.03800	.02641	.00009	86.145	-.00014
#3	.00082	.05221	-.00131	.03476	.02740	.00002	86.592	.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.00312	.00177	.94597	3.2694	-.00206	18.533	.11547
Stddev	.00014	.00126	.00037	.01236	.0834	.00303	.037	.00006
%RSD	78.771	40.351	21.042	1.3061	2.5502	147.38	.19767	.05424
#1	-.00029	.00408	.00217	.94560	3.3573	-.00518	18.524	.11541
#2	-.00002	.00169	.00170	.93380	3.1914	.00088	18.501	.11554
#3	-.00020	.00357	.00144	.95851	3.2594	-.00189	18.573	.11545
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	63.757	.00088	-.00345	-.00001	.00390	.00201	4.3369
Stddev	.00012	.098	.00080	.00790	.00073	.00356	.00350	.0154
%RSD	20.681	.15440	91.170	229.23	11400.	91.387	174.14	.35496
#1	.00052	63.708	.00165	-.00774	-.00051	.00796	-.00076	4.3485
#2	.00048	63.692	.00005	.00567	-.00034	.00129	.00594	4.3428
#3	.00070	63.870	.00094	-.00827	.00083	.00245	.00085	4.3194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606112901 Acquired: 6/24/2016 15:08:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00155	.26173	-.00856	-.00313	-.00118	.00293	.00052
Stddev	.00080	.00134	.00446	.00054	.00143	.00016	.00098
%RSD	51.891	.51077	52.060	17.221	121.68	5.3885	189.16
#1	.00076	.26032	-.01247	-.00264	-.00215	.00304	.00128
#2	.00236	.26190	-.00951	-.00371	.00047	.00300	.00086
#3	.00153	.26298	-.00371	-.00305	-.00185	.00275	-.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8540.9	54113.	2989.8
Stddev	45.6	156.	19.9
%RSD	.53331	.28793	.66720
#1	8508.8	54182.	2978.9
#2	8520.8	53935.	2977.6
#3	8593.0	54223.	3012.8

Approved: June 25, 2016

Sample Name: L1606112902 Acquired: 6/24/2016 15:12:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	.29983	.00210	.00463	.01662	.00001	61.912	.00008
Stddev	.00140	.00599	.00218	.00166	.00062	.00006	.415	.00006
%RSD	851.26	1.9983	103.64	35.749	3.7122	644.92	.67074	85.148
#1	.00063	.30673	.00242	.00653	.01642	-.00001	62.250	.00000
#2	.00065	.29672	.00410	.00344	.01613	.00007	61.449	.00009
#3	-.00178	.29603	-.00022	.00393	.01731	-.00004	62.038	.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.01059	.00129	.94804	2.0675	.00069	20.139	.47034
Stddev	.00027	.00122	.00016	.02696	.0775	.00357	.320	.00402
%RSD	2948.5	11.527	12.380	2.8436	3.7492	519.77	1.5901	.85492
#1	-.00008	.00944	.00121	.97580	2.0012	.00465	20.332	.47062
#2	-.00020	.01048	.00148	.92196	2.0486	-.00226	19.770	.46619
#3	.00031	.01187	.00119	.94637	2.1528	-.00033	20.317	.47422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00109	30.320	.00364	.05395	.00396	.00836	-.00176	4.3013
Stddev	.00027	.212	.00081	.00668	.00208	.00440	.00252	.0395
%RSD	24.472	.70024	22.172	12.380	52.449	52.578	143.06	.91824
#1	.00086	30.527	.00437	.06160	.00615	.01344	-.00322	4.3162
#2	.00138	30.102	.00277	.04930	.00201	.00571	.00115	4.3312
#3	.00102	30.330	.00377	.05095	.00373	.00594	-.00320	4.2566
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606112902 Acquired: 6/24/2016 15:12:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.22725**	**.00528**	**-.00256**	**-.00043**	**.00529**	**.00068**
Stddev	.00083	.00096	.00459	.00338	.00037	.00010	.00058
%RSD	564.50	.42062	86.815	132.11	87.049	1.8289	84.780
#1	-.00087	.22693	.00443	-.00640	-.00011	.00518	.00078
#2	.00076	.22649	.00118	-.00002	-.00084	.00537	.00006
#3	-.00033	.22832	.01024	-.00126	-.00035	.00532	.00120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8571.6**	**54279.**	**2969.2**
Stddev	16.1	210.	28.2
%RSD	.18756	.38604	.95029
#1	8572.3	54497.	2938.5
#2	8555.3	54260.	2975.3
#3	8587.4	54079.	2993.9

Approved: June 25, 2016

Sample Name: L1606112903 Acquired: 6/24/2016 15:16:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00206	.02810	.00131	.04316	.02401	.00003	88.103	-.00001
Stddev	.00163	.00424	.00349	.00036	.00097	.00004	.414	.00006
%RSD	79.332	15.095	266.64	.84369	4.0298	138.71	.47027	1013.7
#1	-.00372	.03153	.00085	.04353	.02406	.00000	88.569	-.00003
#2	-.00046	.02336	-.00193	.04281	.02302	.00007	87.962	-.00006
#3	-.00199	.02942	.00501	.04314	.02496	.00001	87.777	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00060	.00253	.00131	.96589	1.3495	.00123	21.585	.10128
Stddev	.00042	.00035	.00067	.03405	.0842	.00325	.244	.00173
%RSD	70.727	13.720	51.685	3.5257	6.2420	263.39	1.1308	1.7072
#1	-.00095	.00223	.00070	.96112	1.2530	.00259	21.821	.10325
#2	-.00013	.00291	.00203	1.0021	1.4081	.00359	21.599	.10062
#3	-.00070	.00244	.00119	.93447	1.3875	-.00247	21.334	.09998
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	45.687	-.00078	-.00721	.00004	.00503	.00046	5.7282
Stddev	.00004	.226	.00053	.00474	.00119	.00065	.00200	.0193
%RSD	10.964	.49543	68.227	65.769	3232.3	13.018	432.45	.33624
#1	.00035	45.948	-.00018	-.00213	-.00052	.00542	.00277	5.7412
#2	.00034	45.538	-.00095	-.00799	.00140	.00427	-.00053	5.7373
#3	.00041	45.576	-.00121	-.01151	-.00077	.00539	-.00085	5.7061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606112903 Acquired: 6/24/2016 15:16:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.26833**	**-.01816**	**-.00283**	**-.00066**	**.00168**	**-.00020**
Stddev	.00078	.00133	.00789	.00034	.00071	.00025	.00040
%RSD	532.76	.49719	43.454	11.860	108.55	14.856	199.35
#1	-.00105	.26982	-.01296	-.00288	-.00092	.00197	-.00067
#2	.00022	.26790	-.02724	-.00248	.00015	.00158	-.00001
#3	.00038	.26726	-.01427	-.00314	-.00120	.00151	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8598.7**	**54568.**	**2985.2**
Stddev	14.7	155.	28.7
%RSD	.17099	.28360	.96063
#1	8589.5	54461.	2952.2
#2	8615.7	54497.	2998.6
#3	8591.0	54745.	3004.7

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 15:20:08 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40824	10.420	.41623	.50512	1.0434	.05077	10.410	.05303
Stddev	.00102	.011	.00166	.00159	.0051	.00011	.048	.00003
%RSD	.24985	.10317	.39821	.31537	.48909	.20971	.45682	.05731
#1	.40928	10.415	.41742	.50640	1.0406	.05065	10.460	.05302
#2	.40724	10.413	.41433	.50561	1.0402	.05085	10.366	.05306
#3	.40821	10.433	.41693	.50333	1.0493	.05082	10.403	.05300
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21118	.51349	.53049	4.1296	52.613	1.0448	10.282	.52373
Stddev	.00035	.00153	.00198	.0197	.215	.0121	.119	.00095
%RSD	.16775	.29847	.37336	.47674	.40803	1.1621	1.1607	.18074
#1	.21141	.51175	.53242	4.1285	52.846	1.0585	10.343	.52404
#2	.21135	.51410	.53058	4.1499	52.423	1.0356	10.145	.52448
#3	.21077	.51463	.52847	4.1106	52.571	1.0402	10.359	.52266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0543	52.234	.52970	10.421	.53044	1.2449	.41601	5.4104
Stddev	.0058	.138	.00167	.015	.00320	.0077	.00786	.0069
%RSD	.55132	.26343	.31583	.14051	.60281	.61774	1.8884	.12671
#1	1.0591	52.228	.53040	10.408	.52788	1.2425	.41688	5.4032
#2	1.0560	52.100	.53092	10.437	.53402	1.2535	.42340	5.4168
#3	1.0478	52.375	.52780	10.419	.52942	1.2386	.40776	5.4113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 15:20:08 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0527**	**1.0427**	**1.0445**	**.52624**	**1.0215**	**1.0629**	**1.0377**
Stddev	.0032	.0041	.0034	.00504	.0054	.0007	.0080
%RSD	.30129	.38916	.32629	.95804	.53233	.06397	.77418
#1	1.0545	1.0426	1.0412	.52173	1.0217	1.0629	1.0451
#2	1.0546	1.0387	1.0480	.53168	1.0159	1.0636	1.0389
#3	1.0491	1.0468	1.0444	.52530	1.0268	1.0623	1.0291
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8453.3**	**53500.**	**2924.6**
Stddev	46.2	193.	16.5
%RSD	.54695	.36073	.56251
#1	8402.3	53503.	2906.8
#2	8492.4	53692.	2927.9
#3	8465.1	53306.	2939.2

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 15:23:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00065	.00992	.00234	.00351	.00116	.00005	.02900	-.00001
Stddev	.00127	.00415	.00228	.00015	.00102	.00007	.00886	.00016
%RSD	194.64	41.872	97.529	4.1352	87.524	137.88	30.568	1159.7
#1	-.00112	.01430	-.00008	.00361	.00056	.00012	.03894	-.00002
#2	-.00162	.00942	.00265	.00358	.00234	-.00001	.02614	.00015
#3	.00078	.00604	.00445	.00334	.00060	.00004	.02192	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00032	.00116	-.00112	-.00648	.12931	-.00349	.00279	-.00148
Stddev	.00033	.00174	.00093	.02647	.07085	.00052	.12182	.00041
%RSD	102.16	151.03	83.446	408.59	54.789	15.028	4365.9	27.406
#1	-.00027	.00292	-.00056	-.01439	.08320	-.00296	.07318	-.00103
#2	-.00002	.00111	-.00220	.02304	.09384	-.00350	-.13788	-.00160
#3	-.00068	-.00057	-.00060	-.02808	.21088	-.00401	.07307	-.00182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00377	.03069	-.00012	-.00362	.00099	.00980	-.00258	.00553
Stddev	.00021	.00731	.00017	.00052	.00072	.00250	.00356	.00133
%RSD	5.5503	23.828	141.85	14.411	72.602	25.470	137.60	24.033
#1	.00400	.03907	-.00021	-.00421	.00089	.01055	-.00604	.00429
#2	.00359	.02561	-.00021	-.00320	.00174	.01183	.00106	.00693
#3	.00372	.02739	.00007	-.00346	.00032	.00701	-.00278	.00538
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 15:23:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00006	.00390	-.00184	-.00019	.00017	.00074
Stddev	.00034	.00047	.00298	.00079	.00043	.00010	.00028
%RSD	126.24	847.27	76.444	42.940	222.76	60.338	37.477
#1	.00001	-.00046	.00433	-.00204	-.00069	.00029	.00091
#2	.00066	.00046	.00665	-.00251	.00004	.00014	.00042
#3	.00015	.00017	.00073	-.00097	.00007	.00009	.00089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9150.0	58046.	3103.6
Stddev	34.2	243.	28.5
%RSD	.37419	.41787	.91849
#1	9166.8	58132.	3091.9
#2	9172.6	58235.	3082.8
#3	9110.6	57773.	3136.1

Approved: June 25, 2016

Sample Name: L1606112904 Acquired: 6/24/2016 15:27:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.30610	.00349	.00484	.01680	-.00005	61.162	.00024
Stddev	.00266	.00425	.00225	.00067	.00024	.00004	.150	.00011
%RSD	1354.1	1.3879	64.385	13.909	1.4087	89.396	.24565	45.340
#1	-.00149	.30821	.00608	.00459	.01688	-.00002	61.102	.00011
#2	-.00119	.30889	.00214	.00560	.01653	-.00010	61.332	.00032
#3	.00327	.30121	.00224	.00432	.01699	-.00002	61.050	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.01616	.00247	1.0511	2.1639	.00265	19.710	.53272
Stddev	.00012	.00059	.00049	.0193	.0834	.00241	.173	.00246
%RSD	129.55	3.6203	19.814	1.8330	3.8560	91.029	.87731	.46259
#1	-.00009	.01640	.00191	1.0288	2.1065	.00152	19.534	.52992
#2	.00002	.01659	.00280	1.0622	2.1255	.00541	19.716	.53455
#3	-.00022	.01550	.00269	1.0622	2.2596	.00101	19.880	.53369
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00224	29.844	.00743	.06304	.00618	.01638	.00390	4.1954
Stddev	.00008	.159	.00126	.00450	.00021	.00264	.00288	.0213
%RSD	3.3560	.53301	16.998	7.1387	3.3773	16.138	73.999	.50670
#1	.00231	29.838	.00709	.06811	.00642	.01793	.00356	4.2121
#2	.00224	30.006	.00883	.05951	.00606	.01788	.00693	4.2026
#3	.00216	29.688	.00638	.06151	.00605	.01333	.00119	4.1715
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606112904 Acquired: 6/24/2016 15:27:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	.22406	.00181	.00036	-.00058	.00615	.00172
Stddev	.00007	.00022	.00734	.00244	.00087	.00015	.00076
%RSD	17.459	.09649	406.25	670.43	150.42	2.4773	44.222
#1	.00049	.22431	-.00276	.00318	.00042	.00630	.00086
#2	.00040	.22393	-.00209	-.00113	-.00100	.00600	.00231
#3	.00035	.22394	.01028	-.00095	-.00117	.00614	.00197
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8744.7	55412.	3026.9
Stddev	38.5	169.	22.6
%RSD	.44021	.30480	.74756
#1	8749.8	55267.	3016.4
#2	8780.4	55372.	3011.4
#3	8703.9	55597.	3052.8

Approved: June 25, 2016

Sample Name: L1606112905 Acquired: 6/24/2016 15:31:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	.01140	.00022	.00122	.00193	.00011	.07553	.00012
Stddev	.00193	.01011	.00272	.00166	.00083	.00003	.00088	.00020
%RSD	340.70	88.707	1246.3	135.40	43.103	31.594	1.1614	171.20
#1	.00179	.01735	.00330	.00313	.00287	.00010	.07465	-.00009
#2	.00157	.01711	-.00076	.00011	.00161	.00008	.07641	.00013
#3	-.00166	-.00028	-.00188	.00044	.00131	.00014	.07552	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	.00179	-.00013	-.00208	.05937	-.00493	.01993	-.00020
Stddev	.00039	.00092	.00162	.01996	.01936	.00171	.04297	.00398
%RSD	69.405	51.134	1287.4	957.73	32.612	34.778	215.57	2030.5
#1	-.00019	.00143	.00175	.00550	.07429	-.00691	-.01080	-.00459
#2	-.00097	.00283	-.00102	-.02473	.03749	-.00396	.06904	.00316
#3	-.00052	.00111	-.00111	.01297	.06632	-.00392	.00157	.00084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	.19673	.00066	-.00598	-.00007	.00185	.00246	.04335
Stddev	.00032	.01934	.00099	.00702	.00356	.00034	.00251	.00410
%RSD	52.254	9.8320	149.70	117.31	5122.7	18.375	102.19	9.4602
#1	.00034	.21710	.00051	-.01339	.00401	.00225	.00393	.03880
#2	.00096	.17861	-.00025	-.00514	-.00170	.00164	-.00044	.04677
#3	.00053	.19448	.00171	.00057	-.00252	.00167	.00389	.04446
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606112905 Acquired: 6/24/2016 15:31:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00101	.00050	.00137	-.00139	-.00093	.00257	-.00038
Stddev	.00056	.00024	.01168	.00187	.00042	.00002	.00017
%RSD	55.495	48.882	850.09	134.64	45.297	.75245	45.272
#1	.00129	.00076	.00019	-.00328	-.00062	.00258	-.00051
#2	.00036	.00028	.01360	.00046	-.00076	.00255	-.00018
#3	.00137	.00046	-.00967	-.00135	-.00142	.00257	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8734.1	55771.	2977.0
Stddev	61.0	169.	16.5
%RSD	.69849	.30321	.55417
#1	8730.3	55638.	2990.1
#2	8797.0	55713.	2958.5
#3	8675.1	55961.	2982.4

Approved: June 25, 2016

Sample Name: L1606127201 Acquired: 6/24/2016 15:35:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.02906	.00201	.10271	.01218	.00003	20.213	.00009
Stddev	.00117	.00902	.00030	.00201	.00114	.00005	.197	.00012
%RSD	4520.9	31.026	14.913	1.9615	9.3835	162.60	.97382	138.86
#1	.00128	.03946	.00223	.10504	.01090	.00001	20.371	.00012
#2	-.00038	.02417	.00215	.10159	.01253	-.00000	19.992	.00020
#3	-.00097	.02355	.00167	.10152	.01310	.00009	20.275	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	.00322	.00018	.00370	.50036	.00507	3.7531	-.00235
Stddev	.00050	.00044	.00072	.02394	.09084	.00627	.0578	.00152
%RSD	321.71	13.795	410.19	646.53	18.154	123.69	1.5413	64.541
#1	.00023	.00369	.00101	-.02389	.60518	.00467	3.7411	-.00063
#2	.00003	.00318	-.00019	.01903	.44485	-.00099	3.8160	-.00291
#3	-.00072	.00280	-.00029	.01596	.45103	.01152	3.7022	-.00351
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00122	138.48	-.00049	.00895	.00151	.00220	.00648	4.7916
Stddev	.00020	.68	.00066	.00484	.00341	.00275	.00555	.0247
%RSD	16.240	.49155	133.40	54.067	226.53	125.05	85.629	.51620
#1	.00108	138.86	-.00055	.01077	-.00143	.00260	.01252	4.8079
#2	.00145	137.70	.00019	.01263	.00069	-.00073	.00536	4.8036
#3	.00114	138.89	-.00113	.00347	.00525	.00472	.00158	4.7631
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606127201 Acquired: 6/24/2016 15:35:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	.06627	-.00304	-.00129	.00718	.00237	.00290
Stddev	.00103	.00053	.00409	.00463	.00068	.00008	.00098
%RSD	265.57	.80562	134.51	357.80	9.5384	3.2543	33.907
#1	.00080	.06650	-.00069	-.00660	.00664	.00231	.00179
#2	-.00096	.06566	-.00067	.00082	.00695	.00246	.00367
#3	-.00101	.06665	-.00777	.00190	.00795	.00235	.00323
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8640.6	54537.	2976.3
Stddev	33.4	414.	2.8
%RSD	.38600	.75997	.09304
#1	8644.3	54100.	2977.4
#2	8672.0	54589.	2978.3
#3	8605.6	54924.	2973.1

Approved: June 25, 2016

Sample Name: L1606127202 Acquired: 6/24/2016 15:39:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00186	.20642	.00481	.36475	.06011	.00013	99.662
Stddev	.00151	.00493	.00284	.00380	.00039	.00009	.247
%RSD	81.194	2.3881	58.969	1.0428	.65090	70.313	.24793
#1	-.00316	.20852	.00188	.36055	.06036	.00024	99.944
#2	-.00221	.20995	.00754	.36574	.06030	.00009	99.557
#3	-.00020	.20079	.00500	.36796	.05966	.00007	99.485
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	-.00019	.00432	.00026	.09326	2.6088	.04279
Stddev	.00015	.00023	.00087	.00198	.00865	.0720	.00422
%RSD	400.35	123.60	20.116	760.87	9.2780	2.7582	9.8647
#1	.00014	-.00025	.00365	-.00200	.10250	2.6023	.04293
#2	-.00013	.00007	.00402	.00170	.09194	2.6838	.03850
#3	.00011	-.00038	.00531	.00108	.08535	2.5403	.04694
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	56.637	.00259	.00352	F 291.42	.00153	.00653	.00125
Stddev	.045	.00205	.00017	.68	.00123	.00611	.00197
%RSD	.08009	79.394	4.9276	.23185	80.436	93.561	157.56
#1	56.602	.00444	.00340	292.14	.00132	.01203	-.00086
#2	56.688	.00294	.00372	291.32	.00042	.00760	.00158
#3	56.620	.00038	.00344	290.80	.00286	-.00004	.00304
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 25, 2016

Sample Name: L1606127202 Acquired: 6/24/2016 15:39:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00336	.01090	9.4240	.00071	1.0342	-.01392	-.00220
Stddev	.00383	.00615	.0240	.00151	.0037	.00663	.00343
%RSD	114.00	56.427	.25425	212.99	.35481	47.596	156.09
#1	.00463	.00381	9.4269	.00142	1.0381	-.00964	-.00233
#2	-.00094	.01477	9.4464	-.00103	1.0335	-.02155	-.00556
#3	.00639	.01413	9.3988	.00174	1.0309	-.01057	.00130
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00964	.00621	.00119
Stddev	.00038	.00006	.00099
%RSD	3.9446	.99408	82.742
#1	.00988	.00626	.00026
#2	.00920	.00614	.00109
#3	.00983	.00622	.00223
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8435.9	53530.	2970.9
Stddev	12.7	193.	17.9
%RSD	.15053	.36100	.60288
#1	8449.6	53485.	2950.4
#2	8433.7	53742.	2979.1
#3	8424.5	53363.	2983.2

Approved: June 25, 2016

Sample Name: L1606127901 Acquired: 6/24/2016 15:43:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00142	4.7663	.00159	.19149	.18987	.00044	117.30	.00019
Stddev	.00097	.0101	.00508	.00228	.00171	.00003	.36	.00019
%RSD	68.564	.21115	319.18	1.1931	.90121	7.9858	.30828	101.16
#1	-.00138	4.7733	-.00262	.19304	.18994	.00044	117.72	.00036
#2	-.00047	4.7548	.00724	.19255	.18812	.00047	117.12	-.00002
#3	-.00241	4.7708	.00015	.18886	.19154	.00040	117.06	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00381	.02665	.00736	7.4592	1.7020	.01711	47.630	.93316
Stddev	.00023	.00138	.00126	.0357	.0635	.00342	.150	.00698
%RSD	6.1636	5.1938	17.091	.47804	3.7303	19.974	.31555	.74834
#1	.00401	.02594	.00596	7.4987	1.7516	.02100	47.481	.93898
#2	.00386	.02577	.00840	7.4496	1.7241	.01458	47.626	.92542
#3	.00355	.02825	.00770	7.4293	1.6305	.01576	47.782	.93509
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00556	8.7030	.01355	.23085	.00447	-.00025	.00322	15.121
Stddev	.00008	.0290	.00146	.00413	.00381	.00657	.00291	.053
%RSD	1.3705	.33347	10.784	1.7907	85.136	2585.4	90.596	.35335
#1	.00557	8.7074	.01369	.22722	.00571	.00305	.00109	15.155
#2	.00548	8.6721	.01493	.23000	.00751	.00401	.00202	15.147
#3	.00563	8.7296	.01202	.23535	.00020	-.00782	.00654	15.059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606127901 Acquired: 6/24/2016 15:43:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00095**	**.60203**	**.04472**	**-.00029**	**.01037**	**.12433**	**.00197**
Stddev	.00031	.00068	.00309	.00162	.00044	.00100	.00042
%RSD	32.369	.11312	6.9034	565.97	4.2747	.80201	21.277
#1	.00130	.60249	.04781	-.00207	.01047	.12469	.00218
#2	.00073	.60125	.04470	.00012	.00988	.12510	.00223
#3	.00082	.60235	.04164	.00109	.01075	.12321	.00149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8541.6**	**54387.**	**2958.0**
Stddev	16.9	129.	6.0
%RSD	.19780	.23665	.20194
#1	8551.3	54242.	2952.3
#2	8522.0	54430.	2964.2
#3	8551.3	54488.	2957.4

Approved: June 25, 2016

Sample Name: L1606127905 Acquired: 6/24/2016 15:47:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	8.8519	.00642	.19520	.18168	.00060	88.855	.00021
Stddev	.00244	.0381	.00178	.00225	.00180	.00002	.745	.00017
%RSD	304.73	.43060	27.774	1.1510	.99112	4.1261	.83808	83.018
#1	-.00092	8.8959	.00767	.19423	.18198	.00060	88.810	.00015
#2	.00359	8.8302	.00438	.19361	.18331	.00058	89.621	.00007
#3	-.00027	8.8295	.00720	.19777	.17975	.00063	88.133	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00371	.01642	.00773	9.7705	2.6089	.02290	51.286	.37067
Stddev	.00016	.00003	.00088	.0365	.0601	.00215	.182	.00572
%RSD	4.3765	.17741	11.436	.37305	2.3051	9.3850	.35555	1.5433
#1	.00374	.01645	.00699	9.7786	2.6549	.02048	51.464	.37725
#2	.00353	.01639	.00870	9.8021	2.5408	.02367	51.099	.36781
#3	.00386	.01643	.00749	9.7306	2.6308	.02456	51.296	.36694
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00429	17.960	.01399	.58938	.00723	.00345	.01660	21.595
Stddev	.00025	.178	.00089	.00540	.00230	.00161	.00485	.031
%RSD	5.7811	.99221	6.3701	.91546	31.747	46.678	29.224	.14556
#1	.00411	17.965	.01309	.59443	.00477	.00160	.01386	21.612
#2	.00457	18.136	.01402	.58370	.00760	.00453	.01374	21.615
#3	.00418	17.779	.01487	.59001	.00932	.00422	.02220	21.559
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606127905 Acquired: 6/24/2016 15:47:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00678	.39124	.08635	-.00072	.01938	.20486	.00337
Stddev	.00081	.00258	.00286	.00091	.00084	.00112	.00043
%RSD	12.000	.65984	3.3097	126.77	4.3495	.54646	12.804
#1	.00772	.39217	.08786	-.00156	.01996	.20592	.00287
#2	.00628	.39323	.08814	.00025	.01978	.20498	.00362
#3	.00633	.38833	.08306	-.00084	.01842	.20369	.00361
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8506.2	53713.	2954.1
Stddev	7.0	248.	24.6
%RSD	.08199	.46129	.83302
#1	8500.8	53999.	2935.6
#2	8503.6	53563.	2944.7
#3	8514.1	53577.	2982.0

Approved: June 25, 2016

Sample Name: L1606072901 Acquired: 6/24/2016 15:51:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	1.8041	.00151	.01140	.10342	.00036	3.3368	.00006
Stddev	.00108	.0244	.00306	.00144	.00016	.00001	.0325	.00013
%RSD	427.84	1.3517	203.06	12.597	.15291	1.6360	.97262	213.80
#1	-.00004	1.8139	.00460	.01195	.10325	.00036	3.3478	.00020
#2	.00071	1.7764	.00145	.01248	.10357	.00035	3.3623	.00000
#3	-.00142	1.8221	-.00153	.00977	.10345	.00036	3.3003	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00601	.00511	.00285	8.2259	3.9554	.00145	2.3354	.17823
Stddev	.00015	.00146	.00144	.0492	.0266	.00103	.0397	.00509
%RSD	2.5410	28.552	50.611	.59798	.67201	71.162	1.7012	2.8559
#1	.00590	.00675	.00119	8.2785	3.9276	.00182	2.3174	.17617
#2	.00596	.00394	.00359	8.2184	3.9579	.00029	2.3079	.18402
#3	.00619	.00465	.00379	8.1810	3.9806	.00225	2.3809	.17449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	8.3779	.00603	.06450	.00384	.00090	.00053	7.1161
Stddev	.00020	.1155	.00102	.00385	.00543	.00485	.00847	.0228
%RSD	31.960	1.3781	16.958	5.9688	141.68	539.69	1590.2	.32114
#1	.00082	8.4900	.00592	.06848	.00179	-.00460	.00777	7.1376
#2	.00068	8.3843	.00710	.06080	-.00028	.00272	-.00879	7.1186
#3	.00042	8.2593	.00507	.06423	.01000	.00457	.00261	7.0921
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606072901 Acquired: 6/24/2016 15:51:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.04015	.03567	-.00369	.00716	.03681	.00098
Stddev	.00043	.00039	.00196	.00299	.00019	.00045	.00038
%RSD	304.20	.97044	5.5017	80.892	2.6476	1.2228	39.254
#1	.00025	.04034	.03670	-.00592	.00694	.03696	.00089
#2	-.00033	.04041	.03689	-.00486	.00725	.03716	.00065
#3	.00052	.03970	.03340	-.00030	.00729	.03630	.00140
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8601.0	55071.	2949.1
Stddev	22.1	435.	50.8
%RSD	.25740	.79039	1.7219
#1	8576.7	54573.	2940.0
#2	8620.1	55377.	2903.5
#3	8606.2	55264.	3003.9

Approved: June 25, 2016

Sample Name: L1606072902 Acquired: 6/24/2016 15:55:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00183	.07171	-.00004	.00877	.08968	.00017	3.1101	.00014
Stddev	.00133	.00367	.00088	.00181	.00076	.00008	.0257	.00041
%RSD	72.550	5.1181	2064.2	20.689	.84741	48.064	.82680	296.40
#1	-.00115	.07091	-.00060	.01060	.09049	.00019	3.1398	.00007
#2	-.00335	.06851	.00097	.00697	.08956	.00008	3.0951	.00058
#3	-.00098	.07572	-.00050	.00874	.08898	.00025	3.0953	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00206	.00242	-.00092	.10471	3.8808	.00116	2.1628	.09158
Stddev	.00017	.00058	.00163	.02662	.0547	.00465	.0847	.00129
%RSD	8.4444	23.790	177.68	25.419	1.4105	401.58	3.9169	1.4137
#1	.00216	.00221	-.00063	.12487	3.9348	.00494	2.1162	.09307
#2	.00216	.00307	-.00267	.07454	3.8824	.00256	2.1116	.09074
#3	.00186	.00198	.00055	.11471	3.8253	-.00403	2.2606	.09093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	8.6660	.00357	-.01372	-.00186	.00337	.00433	5.4192
Stddev	.00050	.0276	.00104	.00287	.00136	.00414	.00201	.0141
%RSD	81.607	.31795	29.178	20.893	72.911	123.08	46.400	.26036
#1	.00102	8.6437	.00292	-.01305	-.00038	.00625	.00365	5.4112
#2	.00005	8.6574	.00477	-.01686	-.00305	-.00138	.00275	5.4355
#3	.00077	8.6968	.00302	-.01125	-.00214	.00523	.00659	5.4109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606072902 Acquired: 6/24/2016 15:55:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.04141	.00013	-.00361	-.00026	.00979	-.00013
Stddev	.00063	.00072	.00249	.00115	.00139	.00018	.00021
%RSD	803.32	1.7354	1938.9	31.844	526.60	1.8652	168.23
#1	.00042	.04184	.00137	-.00388	-.00173	.00988	.00006
#2	.00046	.04058	.00175	-.00235	-.00009	.00991	-.00008
#3	-.00065	.04180	-.00274	-.00460	.00103	.00958	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8610.5	55271.	2985.6
Stddev	26.5	458.	16.5
%RSD	.30752	.82920	.55375
#1	8583.1	55190.	2988.7
#2	8612.5	55764.	2967.7
#3	8635.9	54858.	3000.3

Approved: June 25, 2016

Sample Name: L1606072903 Acquired: 6/24/2016 15:59:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00118	3.0417	.00235	.05187	.04806	.00261	52.177	.00034
Stddev	.00191	.0195	.00046	.00139	.00143	.00010	.964	.00029
%RSD	162.37	.64007	19.486	2.6772	2.9802	3.6445	1.8470	86.323
#1	-.00068	3.0605	.00250	.05336	.04904	.00255	52.373	.00001
#2	.00314	3.0430	.00183	.05062	.04641	.00272	51.130	.00058
#3	.00108	3.0216	.00270	.05162	.04872	.00256	53.027	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05155	.00163	.00615	3.2341	2.3681	.00264	15.355	.83166
Stddev	.00029	.00223	.00059	.0481	.0794	.00380	.178	.01170
%RSD	.56184	136.36	9.6575	1.4861	3.3536	143.97	1.1614	1.4068
#1	.05176	.00341	.00624	3.2584	2.3449	-.00169	15.410	.84099
#2	.05167	.00234	.00669	3.1788	2.4565	.00542	15.156	.81853
#3	.05122	-.00086	.00552	3.2652	2.3028	.00418	15.500	.83544
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	6.0920	.02162	-.00809	.00351	.00212	-.00139	5.6304
Stddev	.00023	.0506	.00096	.00241	.00275	.00391	.00054	.0235
%RSD	26.502	.83131	4.4295	29.822	78.325	184.24	38.556	.41692
#1	.00068	6.1333	.02268	-.00867	.00452	-.00008	-.00126	5.6575
#2	.00079	6.0355	.02082	-.00544	.00040	-.00019	-.00198	5.6160
#3	.00112	6.1071	.02136	-.01016	.00562	.00664	-.00093	5.6178
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606072903 Acquired: 6/24/2016 15:59:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.47657**	**-.00608**	**-.00476**	**-.00070**	**.06207**	**.00194**
Stddev	.00020	.00492	.00552	.00119	.00050	.00066	.00073
%RSD	500.65	1.0315	90.719	25.070	72.152	1.0565	37.457
#1	-.00001	.48049	.00025	-.00490	-.00086	.06272	.00252
#2	-.00026	.47105	-.00862	-.00588	-.00110	.06208	.00113
#3	.00015	.47816	-.00987	-.00350	-.00013	.06141	.00218
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8765.4**	**55697.**	**3007.0**
Stddev	29.6	471.	42.7
%RSD	.33730	.84576	1.4194
#1	8742.0	55550.	2962.9
#2	8755.4	55316.	3048.1
#3	8798.6	56224.	3009.9

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 16:03:03 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41289	10.450	.41348	.51043	1.0555	.05100	10.588	.05276
Stddev	.00257	.033	.00046	.00258	.0038	.00013	.036	.00002
%RSD	.62124	.31280	.11216	.50484	.35613	.25797	.33694	.04519
#1	.41200	10.430	.41401	.50751	1.0515	.05085	10.563	.05275
#2	.41089	10.432	.41328	.51239	1.0590	.05106	10.629	.05274
#3	.41578	10.488	.41315	.51139	1.0561	.05109	10.571	.05278
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21164	.51432	.52788	4.1964	53.258	1.0465	10.545	.52810
Stddev	.00062	.00111	.00081	.0580	.178	.0014	.008	.00391
%RSD	.29347	.21487	.15291	1.3823	.33451	.13725	.07407	.74105
#1	.21169	.51306	.52786	4.1294	53.061	1.0455	10.542	.52435
#2	.21223	.51514	.52709	4.2295	53.408	1.0459	10.540	.52778
#3	.21099	.51475	.52870	4.2303	53.304	1.0481	10.554	.53216
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0563	52.905	.52985	10.441	.52745	1.2469	.41732	5.4599
Stddev	.0050	.293	.00133	.026	.00100	.0023	.00481	.0125
%RSD	.47494	.55369	.25035	.25038	.18928	.18400	1.1515	.22826
#1	1.0597	52.572	.53125	10.452	.52655	1.2494	.41899	5.4724
#2	1.0587	53.123	.52861	10.460	.52727	1.2448	.42108	5.4598
#3	1.0506	53.021	.52970	10.412	.52852	1.2466	.41191	5.4474
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 16:03:03 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0560**	**1.0590**	**1.0626**	**.52607**	**1.0260**	**1.0604**	**1.0440**
Stddev	.0044	.0030	.0208	.00455	.0043	.0021	.0098
%RSD	.42093	.28690	1.9614	.86396	.41541	.20224	.93608
#1	1.0595	1.0556	1.0394	.53131	1.0214	1.0614	1.0527
#2	1.0574	1.0601	1.0799	.52323	1.0298	1.0619	1.0458
#3	1.0510	1.0613	1.0685	.52368	1.0267	1.0580	1.0334
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8488.4**	**53377.**	**2896.8**
Stddev	8.3	364.	12.7
%RSD	.09787	.68148	.43965
#1	8479.0	53754.	2889.4
#2	8491.5	53348.	2889.4
#3	8494.7	53029.	2911.5

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 16:06:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00237**	**.00904**	**-.00013**	**.00126**	**.00087**	**.00009**	**-.03750**	**-.00001**
Stddev	.00028	.00458	.00263	.00213	.00072	.00007	.02259	.00008
%RSD	11.906	50.683	2037.4	169.22	82.542	80.192	60.228	1296.7
#1	-.00241	.00648	.00161	-.00103	.00165	.00017	-.03103	-.00010
#2	-.00207	.01433	.00116	.00161	.00026	.00004	-.06261	.00006
#3	-.00263	.00631	-.00315	.00320	.00069	.00005	-.01886	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00039**	**.00163**	**-.00062**	**-.00620**	**.11573**	**-.00304**	**.01488**	**-.00078**
Stddev	.00019	.00081	.00029	.01930	.05076	.00240	.08011	.00324
%RSD	50.224	49.496	47.487	311.51	43.862	78.989	538.48	412.93
#1	-.00042	.00249	-.00061	-.01546	.17426	-.00529	-.06290	.00186
#2	-.00056	.00088	-.00092	-.01911	.08368	-.00051	.01039	.00018
#3	-.00018	.00152	-.00033	.01599	.08926	-.00333	.09714	-.00439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00388**	**.01952**	**-.00090**	**.00067**	**.00140**	**.00754**	**.00367**	**.00739**
Stddev	.00023	.03874	.00071	.00300	.00256	.00569	.00313	.00164
%RSD	6.0070	198.45	79.652	449.20	182.69	75.419	85.488	22.213
#1	.00376	.02524	-.00008	-.00038	.00209	.01012	.00682	.00912
#2	.00415	-.02176	-.00124	-.00167	-.00143	.01148	.00055	.00586
#3	.00373	.05509	-.00138	.00405	.00355	.00102	.00364	.00718
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 16:06:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00023	-.00285	.00152	-.00011	.00008	.00116
Stddev	.00056	.00010	.00052	.00103	.00094	.00006	.00015
%RSD	318.85	44.632	18.333	67.447	850.45	74.145	12.905
#1	.00055	.00034	-.00230	.00197	.00080	.00011	.00132
#2	-.00047	.00013	-.00334	.00225	-.00005	.00011	.00114
#3	.00045	.00022	-.00292	.00035	-.00108	.00001	.00103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8999.0	56919.	3062.6
Stddev	9.4	30.	18.0
%RSD	.10413	.05237	.58755
#1	9009.8	56950.	3042.1
#2	8994.5	56918.	3075.7
#3	8992.7	56890.	3070.0

Approved: June 25, 2016

Sample Name: L1606114801 Acquired: 6/24/2016 16:10:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00053**	**.79294**	**.00201**	**.13513**	**.08691**	**.00012**	**28.737**	**.00030**
Stddev	.00214	.00688	.00416	.00148	.00038	.00006	.282	.00020
%RSD	404.68	.86711	206.32	1.0978	.43964	55.958	.98042	65.656
#1	-.00285	.79770	.00316	.13676	.08683	.00010	28.751	.00014
#2	-.00010	.78505	.00548	.13388	.08658	.00006	28.449	.00052
#3	.00136	.79606	-.00260	.13474	.08733	.00019	29.012	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**.00303**	**.00093**	**.48318**	**5.0170**	**.00697**	**15.013**	**.02622**
Stddev	.00047	.00140	.00169	.02352	.0508	.00319	.317	.00088
%RSD	624.02	46.131	181.65	4.8676	1.0122	45.790	2.1109	3.3547
#1	-.00062	.00464	.00230	.46183	4.9691	.00964	14.955	.02533
#2	.00023	.00225	.00145	.50839	5.0118	.00344	14.729	.02708
#3	.00016	.00220	-.00096	.47933	5.0702	.00783	15.355	.02625
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00263**	**68.950**	**.00101**	**.04783**	**-.00130**	**.00580**	**.00131**	**4.7242**
Stddev	.00040	.584	.00074	.00541	.00251	.00495	.00256	.0383
%RSD	15.214	.84747	72.757	11.317	193.03	85.336	195.73	.81053
#1	.00232	69.030	.00034	.05397	-.00090	.00563	.00084	4.7496
#2	.00249	68.330	.00180	.04371	-.00398	.00094	.00407	4.7429
#3	.00308	69.490	.00090	.04583	.00099	.01083	-.00099	4.6802
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114801 Acquired: 6/24/2016 16:10:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.27997**	**.00221**	**-.00090**	**.00318**	**.00551**	**.00289**
Stddev	.00064	.00232	.00318	.00103	.00034	.00004	.00087
%RSD	411.94	.83018	144.19	113.71	10.535	.75135	29.945
#1	.00041	.28044	.00583	.00027	.00296	.00549	.00189
#2	-.00003	.27744	-.00015	-.00131	.00357	.00556	.00344
#3	-.00085	.28201	.00094	-.00166	.00301	.00548	.00335
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8599.5**	**54385.**	**2981.3**
Stddev	16.0	89.	24.9
%RSD	.18617	.16380	.83644
#1	8603.2	54438.	2974.6
#2	8613.3	54435.	3008.9
#3	8581.9	54282.	2960.3

Approved: June 25, 2016

Sample Name: L1606114802 Acquired: 6/24/2016 16:14:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00204**	**.04975**	**.00299**	**.13869**	**.15047**	**-.00005**	**55.818**	**.00017**
Stddev	.00109	.01051	.00093	.00193	.00152	.00005	.396	.00020
%RSD	53.121	21.121	30.942	1.3904	1.0132	102.05	.70964	116.40
#1	-.00265	.04009	.00388	.13978	.15223	-.00009	56.185	-.00006
#2	-.00269	.06094	.00203	.13983	.14951	.00001	55.872	.00027
#3	-.00079	.04821	.00306	.13647	.14968	-.00007	55.398	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.00481**	**.00009**	**.04662**	**2.9224**	**.00713**	**49.316**	**.00366**
Stddev	.00044	.00030	.00072	.01678	.0836	.00442	.171	.00293
%RSD	1148.5	6.2977	802.56	35.999	2.8609	61.973	.34731	80.138
#1	-.00051	.00471	-.00074	.03351	2.9561	.00300	49.393	.00341
#2	.00002	.00515	.00053	.04082	2.8272	.00660	49.435	.00671
#3	.00037	.00456	.00048	.06554	2.9839	.01179	49.119	.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00188**	**121.90**	**.00147**	**.02233**	**.00149**	**.00278**	**.01025**	**6.1560**
Stddev	.00035	.74	.00041	.00365	.00184	.00274	.00234	.0472
%RSD	18.786	.61102	27.946	16.368	123.30	98.711	22.816	.76606
#1	.00151	122.69	.00179	.01811	-.00020	.00379	.01254	6.1806
#2	.00191	121.83	.00160	.02439	.00122	-.00033	.01035	6.1857
#3	.00221	121.20	.00101	.02449	.00344	.00487	.00787	6.1016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606114802 Acquired: 6/24/2016 16:14:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.39251**	**-.00823**	**-.00167**	**.00748**	**.00735**	**.00172**
Stddev	.00093	.00157	.00304	.00302	.00088	.00035	.00065
%RSD	461.50	.40050	36.982	180.68	11.724	4.7920	38.067
#1	-.00008	.39329	-.00720	-.00346	.00697	.00775	.00121
#2	.00066	.39355	-.00584	-.00336	.00697	.00723	.00149
#3	-.00119	.39070	-.01166	.00181	.00849	.00708	.00246
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8495.3**	**54006.**	**2982.2**
Stddev	21.4	124.	30.9
%RSD	.25175	.22933	1.0346
#1	8477.7	53900.	2949.3
#2	8519.1	54142.	3010.5
#3	8489.1	53977.	2986.7

Approved: June 25, 2016

Sample Name: L1606115001 Acquired: 6/24/2016 16:18:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	1.0029	.00299	.14279	.11041	.00016	35.956	.00009
Stddev	.00251	.0141	.00281	.00105	.00192	.00007	.317	.00003
%RSD	627.75	1.4010	94.062	.73688	1.7392	40.398	.88245	32.058
#1	.00224	1.0135	.00421	.14372	.11062	.00023	36.172	.00007
#2	.00142	.98692	.00498	.14165	.10839	.00010	35.592	.00007
#3	-.00246	1.0082	-.00023	.14300	.11222	.00016	36.105	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.00317	.00169	.71808	2.8256	.00873	22.732	.05335
Stddev	.00027	.00048	.00070	.01344	.0315	.00112	.258	.00149
%RSD	4893.9	15.268	41.765	1.8711	1.1137	12.865	1.1351	2.7844
#1	.00025	.00269	.00090	.73141	2.8424	.00751	22.933	.05174
#2	.00004	.00315	.00188	.70454	2.7893	.00972	22.441	.05367
#3	-.00028	.00366	.00227	.71827	2.8451	.00896	22.823	.05466
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00379	119.94	.00083	.11747	.00336	.00193	-.00362	5.3987
Stddev	.00029	.91	.00054	.00963	.00165	.00170	.00327	.0216
%RSD	7.6691	.75510	65.143	8.1950	48.899	88.260	90.387	.40081
#1	.00400	120.59	.00089	.11089	.00147	.00389	-.00507	5.4237
#2	.00392	118.90	.00135	.11301	.00415	.00109	.00013	5.3854
#3	.00346	120.32	.00027	.12852	.00447	.00081	-.00591	5.3870
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115001 Acquired: 6/24/2016 16:18:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**.24860**	**.00831**	**.00040**	**.00721**	**.00897**	**.00156**
Stddev	.00102	.00079	.00563	.00208	.00033	.00019	.00032
%RSD	900.41	.31800	67.748	518.71	4.6076	2.0684	20.721
#1	-.00127	.24885	.00936	.00280	.00755	.00907	.00137
#2	.00028	.24771	.00223	-.00097	.00689	.00909	.00139
#3	.00065	.24923	.01334	-.00062	.00718	.00876	.00194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8658.5**	**54840.**	**3032.2**
Stddev	11.5	83.	32.1
%RSD	.13234	.15154	1.0598
#1	8653.8	54773.	3000.1
#2	8671.6	54933.	3064.4
#3	8650.2	54814.	3032.3

Approved: June 25, 2016

Sample Name: L1606115002 Acquired: 6/24/2016 16:22:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00114	.54802	.00239	.07237	.04756	.00011	17.868	-.00002
Stddev	.00116	.00304	.00234	.00183	.00074	.00011	.296	.00023
%RSD	101.69	.55434	98.297	2.5331	1.5569	98.769	1.6590	1035.8
#1	-.00186	.54599	.00388	.07434	.04758	.00024	18.086	-.00007
#2	.00020	.55151	.00360	.07071	.04682	.00003	17.530	-.00022
#3	-.00176	.54656	-.00032	.07205	.04830	.00007	17.987	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	.00269	.00128	.42445	5.1441	.00730	5.7440	.01494
Stddev	.00045	.00114	.00159	.02138	.0765	.00321	.0131	.00279
%RSD	2112.8	42.310	124.60	5.0376	1.4863	44.008	.22880	18.670
#1	.00037	.00359	.00010	.43132	5.0900	.01003	5.7588	.01523
#2	.00009	.00307	.00065	.40047	5.1108	.00376	5.7337	.01757
#3	-.00052	.00141	.00309	.44154	5.2316	.00811	5.7395	.01202
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00098	41.148	.00106	.06447	-.00062	.00281	.00337	1.7279
Stddev	.00070	.471	.00049	.00342	.00129	.00199	.00517	.0310
%RSD	71.365	1.1451	45.916	5.3017	208.13	70.714	153.38	1.7951
#1	.00087	41.063	.00159	.06818	.00051	.00505	.00033	1.7430
#2	.00034	40.725	.00095	.06144	-.00034	.00212	.00044	1.7484
#3	.00173	41.656	.00063	.06379	-.00203	.00126	.00935	1.6922
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115002 Acquired: 6/24/2016 16:22:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.10093**	**.00308**	**-.00183**	**.00519**	**.00618**	**.00126**
Stddev	.00067	.00110	.00218	.00277	.00055	.00020	.00057
%RSD	398.57	1.0927	70.842	151.99	10.532	3.3140	45.733
#1	-.00011	.10080	.00275	.00082	.00488	.00640	.00076
#2	-.00086	.09989	.00108	-.00159	.00582	.00617	.00189
#3	.00047	.10209	.00541	-.00471	.00488	.00599	.00112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8768.3**	**55601.**	**3006.8**
Stddev	44.8	353.	32.6
%RSD	.51146	.63549	1.0826
#1	8739.7	56008.	3020.9
#2	8745.2	55379.	3029.9
#3	8820.0	55415.	2969.6

Approved: June 25, 2016

Sample Name: L1606115102 Acquired: 6/24/2016 16:26:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00157	.16673	-.00164	.11324	.07508	.00006	35.965	.00009
Stddev	.00123	.00968	.00381	.00123	.00110	.00006	.070	.00012
%RSD	78.798	5.8070	231.94	1.0834	1.4713	89.197	.19353	140.18
#1	-.00058	.15593	.00273	.11273	.07407	.00011	35.891	.00006
#2	-.00295	.17462	-.00340	.11236	.07626	.00000	35.974	.00023
#3	-.00117	.16964	-.00425	.11464	.07493	.00008	36.029	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00021	.00268	.00078	.22571	2.4607	.00715	20.455	.06028
Stddev	.00017	.00071	.00110	.01627	.0572	.00329	.118	.00255
%RSD	80.425	26.322	141.38	7.2093	2.3240	45.999	.57620	4.2253
#1	-.00019	.00196	.00195	.23780	2.5245	.01081	20.570	.06072
#2	-.00005	.00272	-.00023	.23211	2.4140	.00618	20.461	.06258
#3	-.00038	.00337	.00061	.20721	2.4435	.00445	20.335	.05755
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00276	97.835	-.00067	.04806	-.00242	.00513	.00378	5.3799
Stddev	.00044	.396	.00100	.00252	.00339	.00529	.00744	.2322
%RSD	15.877	.40451	148.20	5.2532	139.98	103.15	196.88	4.3153
#1	.00319	97.412	.00043	.04730	.00016	.00550	.01195	5.2447
#2	.00231	98.197	-.00093	.05087	-.00625	.01022	-.00261	5.2471
#3	.00278	97.896	-.00151	.04600	-.00116	-.00034	.00199	5.6480
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115102 Acquired: 6/24/2016 16:26:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00071**	**.23607**	**-.00930**	**.00015**	**.00351**	**.01289**	**.00068**
Stddev	.00028	.00125	.00346	.00259	.00142	.00062	.00031
%RSD	39.765	.53152	37.213	1786.3	40.411	4.8488	45.284
#1	-.00042	.23498	-.00585	.00230	.00418	.01260	.00081
#2	-.00072	.23744	-.00927	.00087	.00188	.01246	.00090
#3	-.00098	.23579	-.01277	-.00273	.00448	.01361	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8582.8**	**55285.**	**3037.3**
Stddev	259.2	168.	27.1
%RSD	3.0201	.30413	.89376
#1	8731.0	55097.	3068.5
#2	8733.8	55422.	3018.9
#3	8283.5	55335.	3024.5

Approved: June 25, 2016

Sample Name: L1606115105 Acquired: 6/24/2016 16:30:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00162	.10538	.00245	.14951	.09631	.00009	45.968	.00027
Stddev	.00070	.00798	.00198	.00195	.00083	.00004	.579	.00038
%RSD	42.968	7.5757	80.657	1.3067	.86692	43.233	1.2597	142.70
#1	-.00098	.11396	.00050	.14740	.09536	.00011	46.292	.00068
#2	-.00153	.09816	.00240	.15125	.09664	.00005	45.300	-.00007
#3	-.00237	.10403	.00446	.14988	.09693	.00012	46.313	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	.00270	-.00048	.17572	2.0276	.00721	26.821	.07924
Stddev	.00018	.00083	.00087	.01470	.0656	.00380	.415	.00616
%RSD	45.378	30.889	179.73	8.3676	3.2368	52.699	1.5460	7.7799
#1	-.00018	.00343	-.00076	.15875	2.0306	.00292	26.890	.08485
#2	-.00050	.00179	-.00118	.18434	2.0917	.01014	26.377	.07264
#3	-.00048	.00289	.00049	.18408	1.9605	.00857	27.198	.08022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00327	129.55	-.00083	.03925	.00528	.00057	.00250	6.3879
Stddev	.00022	1.74	.00110	.00683	.00391	.00168	.00309	.0293
%RSD	6.5817	1.3407	132.79	17.395	74.018	296.78	123.71	.45807
#1	.00302	130.39	-.00047	.04701	.00428	.00171	.00164	6.4058
#2	.00340	127.55	-.00206	.03419	.00959	-.00136	-.00008	6.4037
#3	.00339	130.71	.00005	.03653	.00197	.00136	.00592	6.3541
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115105 Acquired: 6/24/2016 16:30:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00073**	**.30328**	**-.00537**	**-.00168**	**.00336**	**.00866**	**.00060**
Stddev	.00061	.00418	.00652	.00091	.00046	.00013	.00023
%RSD	83.700	1.3769	121.45	54.113	13.812	1.5061	38.244
#1	-.00141	.30492	-.01282	-.00078	.00283	.00877	.00050
#2	-.00022	.29853	-.00064	-.00260	.00371	.00870	.00044
#3	-.00057	.30639	-.00266	-.00165	.00352	.00851	.00087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8543.0**	**54064.**	**2974.7**
Stddev	21.3	458.	55.5
%RSD	.24931	.84639	1.8656
#1	8566.3	53562.	2939.2
#2	8524.4	54174.	3038.7
#3	8538.3	54457.	2946.3

Approved: June 25, 2016

Sample Name: L1606115401 Acquired: 6/24/2016 16:34:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00112**	**.08710**	**.00114**	**1.7588**	**.02106**	**.00002**	F **475.73**
Stddev	.00180	.00226	.00412	.0043	.00048	.00007	2.70
%RSD	160.71	2.5955	360.37	.24448	2.2952	394.51	.56675
#1	.00049	.08967	-.00088	1.7610	.02071	.00002	477.13
#2	-.00307	.08544	.00589	1.7616	.02085	.00009	472.62
#3	-.00079	.08619	-.00158	1.7539	.02161	-.00005	477.44
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**.00093**	**.00346**	**.00194**	**.05481**	**4.3815**	**.10949**
Stddev	.00005	.00052	.00138	.00145	.01743	.0383	.00511
%RSD	50.448	56.000	39.846	74.561	31.801	.87412	4.6701
#1	.00014	.00075	.00476	.00027	.04818	4.4220	.10952
#2	.00007	.00053	.00201	.00283	.07458	4.3766	.10437
#3	.00006	.00152	.00360	.00271	.04166	4.3458	.11459
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**113.88**	**.27248**	**.02443**	F **962.52**	**-.00144**	**.02893**	**.00007**
Stddev	.66	.00359	.00021	16.50	.00136	.00999	.00237
%RSD	.58361	1.3185	.87734	1.7144	94.283	34.540	3393.1
#1	114.28	.27132	.02429	980.75	-.00065	.03963	-.00254
#2	113.11	.26961	.02467	958.20	-.00301	.02733	.00065
#3	114.24	.27651	.02431	948.60	-.00067	.01983	.00210
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 25, 2016

Sample Name: L1606115401 Acquired: 6/24/2016 16:34:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00227	.05452	5.3738	-.00180	8.7578	F -.06233	-.00181
Stddev	.00372	.01187	.0403	.00058	.0451	.00486	.00179
%RSD	164.10	21.769	.74949	32.077	.51456	7.7978	98.539
#1	.00553	.05924	5.3959	-.00119	8.7791	-.06137	-.00108
#2	-.00178	.06330	5.3982	-.00185	8.7060	-.06760	-.00385
#3	.00305	.04102	5.3273	-.00234	8.7883	-.05802	-.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.01547	.00549	.00090
Stddev	.00027	.00005	.00051
%RSD	1.7389	.84148	56.410
#1	.01521	.00546	.00038
#2	.01575	.00554	.00139
#3	.01545	.00546	.00093
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7824.9	49741.	2897.8
Stddev	25.7	56.	41.7
%RSD	.32891	.11264	1.4378
#1	7852.3	49711.	2855.6
#2	7801.3	49805.	2938.9
#3	7821.1	49706.	2898.8

Approved: June 25, 2016

Sample Name: L1606115402S Acquired: 6/24/2016 16:38:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20827	5.3848	.22077	2.7748	.54172	.02512	F 481.48
Stddev	.00188	.0082	.00532	.0041	.00285	.00016	3.09
%RSD	.90285	.15294	2.4089	.14749	.52604	.62525	.64217
#1	.20610	5.3941	.22023	2.7718	.54377	.02494	484.49
#2	.20928	5.3784	.21574	2.7795	.53847	.02524	478.32
#3	.20943	5.3820	.22633	2.7732	.54294	.02519	481.64
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02719	.10282	.25237	.25450	2.0775	32.155	.65463
Stddev	.00089	.00263	.00138	.00503	.0009	.192	.00487
%RSD	3.2606	2.5533	.54827	1.9758	.04312	.59849	.74370
#1	.02745	.10267	.25157	.25657	2.0772	32.268	.65849
#2	.02620	.10027	.25158	.24877	2.0768	31.933	.64916
#3	.02792	.10551	.25397	.25816	2.0785	32.264	.65623
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	118.98	.51147	.55840	F 977.71	.24997	5.5144	.24919
Stddev	.84	.00370	.01031	13.22	.00452	.1131	.00286
%RSD	.70668	.72420	1.8456	1.3517	1.8092	2.0516	1.1484
#1	119.22	.51132	.56227	988.78	.25125	5.5401	.24784
#2	118.05	.50785	.54671	963.08	.24494	5.3907	.24725
#3	119.67	.51526	.56620	981.27	.25371	5.6125	.25247
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 25, 2016

Sample Name: L1606115402S Acquired: 6/24/2016 16:38:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-07

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.65290	.26530	8.4198	.51035	F 9.1325	.46797	.23861
Stddev	.01747	.00322	.1773	.00998	.0563	.00190	.00481
%RSD	2.6758	1.2148	2.1060	1.9552	.61631	.40567	2.0152
#1	.65559	.26528	8.4639	.51157	9.1879	.46964	.23992
#2	.63423	.26208	8.2246	.49982	9.0754	.46837	.23329
#3	.66886	.26853	8.5709	.51967	9.1341	.46591	.24263
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.52988	.50936	.00371
Stddev	.00272	.00898	.00129
%RSD	.51319	1.7635	34.695
#1	.52752	.51212	.00232
#2	.53285	.49932	.00397
#3	.52929	.51664	.00486
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7884.5	49106.	2856.5
Stddev	105.8	326.	14.3
%RSD	1.3422	.66476	.50060
#1	7820.3	49374.	2840.1
#2	8006.6	48742.	2866.5
#3	7826.4	49201.	2863.0

Approved: June 25, 2016

Sample Name: L1606115403SD Acquired: 6/24/2016 16:41:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21318**	**5.5219**	**.22092**	**2.8411**	**.55147**	**.02575**	F **492.79**
Stddev	.00065	.0112	.00589	.0011	.00218	.00014	1.50
%RSD	.30664	.20191	2.6650	.03940	.39554	.52600	.30476
#1	.21335	5.5119	.22701	2.8414	.55201	.02561	493.55
#2	.21373	5.5198	.21525	2.8420	.55334	.02574	493.76
#3	.21246	5.5339	.22050	2.8398	.54907	.02588	491.06
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02750**	**.10490**	**.25795**	**.25725**	**2.1243**	**32.619**	**.67266**
Stddev	.00021	.00070	.00047	.00265	.0074	.077	.00146
%RSD	.77118	.66790	.18314	1.0291	.34930	.23491	.21692
#1	.02742	.10569	.25827	.25739	2.1327	32.707	.67327
#2	.02774	.10437	.25740	.25983	2.1215	32.578	.67371
#3	.02733	.10462	.25816	.25454	2.1186	32.570	.67099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**121.94**	**.53555**	**.56884**	F **1003.0**	**.25497**	**5.6115**	**.25353**
Stddev	1.03	.00255	.00183	18.6	.00121	.0201	.00219
%RSD	.84627	.47696	.32086	1.8553	.47333	.35743	.86324
#1	122.15	.53804	.57050	985.68	.25562	5.6230	.25369
#2	122.86	.53294	.56914	1022.7	.25358	5.6231	.25563
#3	120.83	.53569	.56689	1000.7	.25572	5.5883	.25126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 25, 2016

Sample Name: L1606115403SD Acquired: 6/24/2016 16:41:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-08

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.65696	.26457	8.4131	.52165	F 9.4226	.46735	.23912
Stddev	.00333	.00374	.0316	.00269	.0362	.01011	.00184
%RSD	.50727	1.4118	.37513	.51544	.38375	2.1625	.76932
#1	.65370	.26813	8.4363	.52387	9.4401	.47243	.24121
#2	.65681	.26068	8.4259	.52242	9.4467	.47392	.23839
#3	.66036	.26490	8.3772	.51866	9.3810	.45571	.23775
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.54896	.51795	.00121
Stddev	.00138	.00177	.00029
%RSD	.25147	.34088	23.705
#1	.54994	.51962	.00099
#2	.54738	.51811	.00110
#3	.54956	.51610	.00153
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7860.1	48589.	2847.4
Stddev	50.1	121.	22.3
%RSD	.63713	.24945	.78175
#1	7818.4	48525.	2848.5
#2	7915.7	48729.	2824.6
#3	7846.2	48513.	2869.0

Approved: June 25, 2016

Sample Name: L1606115404 Acquired: 6/24/2016 16:45:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00122	.01860	-.00030	.01638	.00225	.00005	.28683	-.00012
Stddev	.00163	.00994	.00314	.00092	.00043	.00004	.01104	.00018
%RSD	133.72	53.451	1055.5	5.6210	18.855	79.103	3.8486	155.68
#1	-.00307	.02997	-.00390	.01572	.00263	.00002	.29952	-.00004
#2	-.00060	.01154	.00185	.01743	.00234	.00010	.27937	.00001
#3	.00001	.01428	.00116	.01599	.00179	.00004	.28161	-.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00024	.01568	.00001	.06012	.09546	-.00324	.00979	.00031
Stddev	.00056	.00036	.00106	.01420	.11597	.00346	.08319	.00089
%RSD	231.82	2.2719	10907.	23.626	121.49	106.87	849.48	288.55
#1	-.00089	.01585	.00111	.07503	.19093	-.00003	.06904	.00129
#2	.00009	.01527	-.00008	.05858	.12903	-.00690	.04565	.00007
#3	.00007	.01593	-.00101	.04675	-.03359	-.00278	-.08531	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00255	.66337	.00857	-.00604	-.00185	.00349	.00131	.15854
Stddev	.00019	.05593	.00126	.00424	.00110	.00087	.00666	.00230
%RSD	7.5264	8.4316	14.741	70.198	59.693	24.819	509.73	1.4538
#1	.00259	.72482	.00746	-.00130	-.00068	.00343	.00738	.16031
#2	.00235	.64984	.00994	-.00737	-.00288	.00439	.00236	.15939
#3	.00273	.61544	.00829	-.00947	-.00198	.00266	-.00582	.15593
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115404 Acquired: 6/24/2016 16:45:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00114	.00192	-.00273	-.00024	-.00105	.00380	-.00006
Stddev	.00043	.00049	.00812	.00123	.00122	.00012	.00020
%RSD	38.035	25.716	297.07	517.69	116.94	3.1680	325.23
#1	.00113	.00170	.00647	.00075	.00015	.00366	.00009
#2	.00071	.00158	-.00889	-.00162	-.00230	.00388	.00001
#3	.00157	.00249	-.00577	.00015	-.00099	.00385	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8580.0	54662.	2910.1
Stddev	27.2	355.	25.0
%RSD	.31663	.64995	.85931
#1	8600.6	54561.	2884.9
#2	8549.2	54369.	2910.5
#3	8590.1	55057.	2934.9

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 16:49:41 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.43680	F 11.176	.43789	.54982	F 1.1171	.05445	F 11.119
Stddev	.00172	.018	.00189	.00440	.0014	.00015	.036
%RSD	.39299	.15765	.43249	.80088	.12620	.27540	.32719
#1	.43691	11.183	.43822	.54528	1.1178	.05443	11.142
#2	.43503	11.190	.43585	.55010	1.1155	.05461	11.077
#3	.43846	11.156	.43959	.55407	1.1181	.05432	11.138
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Fail
Value		10.000			1.0000		10.000
Range		10.000%			10.000%		10.000%

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .05633	F .22617	F .55126	F .56533	F 4.4609	F 55.977	F 1.1059
Stddev	.00017	.00064	.00319	.00048	.0397	.128	.0055
%RSD	.29635	.28432	.57821	.08567	.88958	.22829	.49468
#1	.05616	.22640	.55107	.56585	4.4151	56.054	1.1075
#2	.05649	.22544	.55454	.56490	4.4847	56.049	1.0998
#3	.05636	.22667	.54818	.56522	4.4829	55.830	1.1104
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	.05000	.20000	.50000	.50000	4.0000	50.000	1.0000
Range	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 11.384	F .56189	F 1.1214	F 56.250	F .56448	F 11.114	F .56389
Stddev	.114	.00225	.0062	.207	.00324	.010	.00157
%RSD	1.0047	.39966	.55197	.36872	.57382	.08753	.27797
#1	11.258	.56141	1.1267	56.351	.56745	11.125	.56213
#2	11.411	.55993	1.1229	56.011	.56498	11.108	.56513
#3	11.482	.56434	1.1146	56.388	.56103	11.109	.56440
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	10.000	.50000	1.0000	50.000	.50000	10.000	.50000
Range	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 16:49:41 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 1.3274	F .44356	F 5.7903	F 1.1245	F 1.1149	F 1.1307	F .56203
Stddev	.0049	.00768	.0098	.0024	.0021	.0005	.00057
%RSD	.36997	1.7311	.16930	.21252	.19132	.04240	.10129
#1	1.3317	.45066	5.7923	1.1260	1.1167	1.1307	.56147
#2	1.3285	.43541	5.7990	1.1258	1.1126	1.1312	.56261
#3	1.3221	.44459	5.7797	1.1218	1.1155	1.1302	.56203
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
Value	1.2000	.40000	5.0000	1.0000	1.0000	1.0000	.50000
Range	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0960	F 1.1347	F 1.1407
Stddev	.0015	.0007	.0035
%RSD	.13658	.06108	.30311
#1	1.0952	1.1349	1.1440
#2	1.0977	1.1353	1.1410
#3	1.0950	1.1339	1.1371
Check ?	Chk Pass	Chk Fail	Chk Fail
Value		1.0000	1.0000
Range		10.000%	10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8096.2	51142.	2733.9
Stddev	29.8	63.	5.0
%RSD	.36765	.12288	.18140
#1	8130.4	51179.	2732.9
#2	8076.4	51177.	2739.3
#3	8081.7	51069.	2729.5

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 16:53:19 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00033	.01327	.00238	.00643	.00121	.00007	-.00167	-.00005
Stddev	.00141	.01171	.00342	.00125	.00080	.00010	.03044	.00029
%RSD	426.78	88.245	144.15	19.490	66.292	147.81	1819.0	607.59
#1	.00128	.01371	-.00152	.00772	.00190	.00009	.02045	.00023
#2	-.00132	.00135	.00372	.00522	.00033	-.00004	.01093	-.00002
#3	-.00095	.02475	.00492	.00636	.00140	.00016	-.03639	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00040	.00240	-.00122	.00892	.06454	-.00208	.01293	-.00217
Stddev	.00023	.00085	.00133	.03053	.04042	.00235	.09468	.00444
%RSD	57.271	35.494	108.62	342.28	62.627	112.51	732.17	204.98
#1	-.00056	.00224	-.00068	.03546	.02108	.00042	-.02621	-.00033
#2	-.00049	.00164	-.00274	-.02444	.10100	-.00423	-.05591	-.00724
#3	-.00014	.00333	-.00025	.01574	.07154	-.00243	.12091	.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00412	.05925	-.00060	.00128	-.00151	.00790	.00028	.00721
Stddev	.00047	.02488	.00110	.00409	.00218	.00364	.00257	.00069
%RSD	11.345	41.996	183.24	319.65	144.28	46.033	911.72	9.6357
#1	.00409	.04650	-.00151	.00204	-.00359	.00755	.00027	.00786
#2	.00461	.04332	-.00091	.00493	.00076	.00445	-.00228	.00728
#3	.00367	.08792	.00062	-.00314	-.00171	.01170	.00286	.00648
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 16:53:19 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00079	.00010	-.00054	-.00150	-.00005	-.00017	.00104
Stddev	.00040	.00035	.00043	.00099	.00012	.00015	.00121
%RSD	50.261	334.74	79.697	65.771	246.62	83.311	116.20
#1	-.00103	.00027	-.00013	-.00083	-.00015	-.00024	-.00027
#2	-.00033	-.00030	-.00099	-.00264	-.00008	-.00027	.00129
#3	-.00101	.00034	-.00050	-.00104	.00008	-.00001	.00211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8805.7	55774.	2937.7
Stddev	23.4	137.	34.1
%RSD	.26594	.24637	1.1609
#1	8792.6	55618.	2899.6
#2	8791.8	55877.	2948.2
#3	8832.7	55828.	2965.3

Approved: June 25, 2016

Sample Name: L1606115501 Acquired: 6/24/2016 16:57:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00057	.02931	.00224	.28378	.19240	.00016	48.483	.00005
Stddev	.00217	.00495	.00248	.00304	.00180	.00006	.260	.00014
%RSD	383.36	16.898	111.07	1.0699	.93528	36.773	.53700	254.61
#1	-.00028	.02866	.00462	.28285	.19438	.00013	48.783	.00004
#2	-.00287	.03456	.00243	.28717	.19087	.00022	48.333	-.00007
#3	.00145	.02472	-.00034	.28131	.19193	.00012	48.332	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	.00176	-.00033	.06151	1.8575	.00843	30.251	1.7892
Stddev	.00026	.00067	.00098	.00944	.0885	.00304	.179	.0058
%RSD	228.27	38.060	297.98	15.343	4.7667	36.016	.59249	.32588
#1	-.00041	.00253	.00018	.05715	1.7633	.00492	30.428	1.7956
#2	.00007	.00133	-.00146	.05504	1.9389	.01012	30.255	1.7880
#3	-.00000	.00141	.00029	.07234	1.8704	.01024	30.070	1.7841
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00582	81.691	.00244	.01501	-.00223	-.00056	-.00145	7.4745
Stddev	.00028	.416	.00117	.00629	.00029	.00368	.01007	.0211
%RSD	4.7345	.50929	48.012	41.908	13.132	656.69	696.09	.28232
#1	.00551	82.168	.00344	.01672	-.00255	-.00468	.00744	7.4894
#2	.00592	81.495	.00115	.00804	-.00198	.00243	-.01239	7.4839
#3	.00603	81.408	.00271	.02027	-.00215	.00056	.00060	7.4504
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: L1606115501 Acquired: 6/24/2016 16:57:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.33344	-.00658	-.00209	.00011	.00570	.00257
Stddev	.00106	.00035	.00428	.00263	.00083	.00010	.00078
%RSD	223.38	.10616	65.090	125.54	754.41	1.8064	30.180
#1	-.00065	.33321	-.01123	-.00333	-.00033	.00562	.00170
#2	.00062	.33384	-.00281	-.00388	.00107	.00566	.00320
#3	.00146	.33325	-.00569	.00092	-.00041	.00581	.00281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8634.4	54473.	2945.1
Stddev	22.0	176.	15.6
%RSD	.25462	.32393	.53091
#1	8609.5	54271.	2929.8
#2	8642.5	54551.	2944.5
#3	8651.2	54598.	2961.1

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 17:03:38 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.42367	10.747	.42629	.52762	1.0843	.05276	10.761
Stddev	.00097	.006	.00332	.00473	.0045	.00023	.022
%RSD	.22915	.05727	.77849	.89635	.41439	.43445	.20363
#1	.42292	10.740	.42268	.53147	1.0830	.05302	10.738
#2	.42477	10.748	.42699	.52904	1.0893	.05268	10.782
#3	.42334	10.752	.42920	.52234	1.0807	.05258	10.765
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05458	.21800	.53531	.54481	4.3293	54.482	1.0763
Stddev	.00018	.00077	.00463	.00133	.0649	.210	.0028
%RSD	.33409	.35513	.86430	.24390	1.5001	.38571	.26065
#1	.05444	.21711	.54060	.54342	4.3823	54.397	1.0795
#2	.05451	.21849	.53336	.54493	4.2568	54.722	1.0741
#3	.05479	.21841	.53198	.54607	4.3486	54.328	1.0754
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.954	.53768	1.0810	54.597	.54494	10.746	.54224
Stddev	.073	.00516	.0021	.145	.00206	.017	.00691
%RSD	.66315	.95904	.19634	.26611	.37752	.15638	1.2744
#1	10.974	.53636	1.0834	54.523	.54602	10.734	.54106
#2	10.873	.54337	1.0793	54.764	.54257	10.738	.53600
#3	11.014	.53331	1.0802	54.503	.54624	10.765	.54966
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 25, 2016

Sample Name: CCV Acquired: 6/24/2016 17:03:38 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2878**	**.42218**	F **5.5868**	**1.0842**	**1.0823**	**1.0915**	**.53968**
Stddev	.0066	.00770	.0181	.0027	.0008	.0080	.00486
%RSD	.51604	1.8246	.32415	.25252	.07373	.73397	.90080
#1	1.2824	.41329	5.5712	1.0822	1.0817	1.0897	.54355
#2	1.2952	.42684	5.5826	1.0830	1.0832	1.1002	.53422
#3	1.2859	.42641	5.6067	1.0873	1.0820	1.0845	.54127
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value			5.0000				
Range			10.000%				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0672**	**1.0954**	F **1.1050**
Stddev	.0073	.0020	.0196
%RSD	.68319	.18139	1.7744
#1	1.0743	1.0932	1.1148
#2	1.0677	1.0971	1.1179
#3	1.0597	1.0957	1.0825
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8333.6**	**52219.**	**2792.6**
Stddev	32.6	347.	29.8
%RSD	.39073	.66376	1.0675
#1	8369.0	52505.	2785.6
#2	8326.7	52317.	2766.9
#3	8305.0	51833.	2825.3

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 17:07:15 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00168**	**.00948**	**.00107**	**.00396**	**.00131**	**.00016**	**.00218**	**.00005**
Stddev	.00109	.00336	.00285	.00104	.00055	.00007	.03388	.00013
%RSD	65.124	35.414	267.10	26.281	42.238	42.512	1551.9	288.80
#1	-.00279	.00607	.00431	.00399	.00120	.00015	.00227	-.00009
#2	-.00060	.01278	-.00104	.00499	.00081	.00009	.03602	.00018
#3	-.00165	.00957	-.00007	.00291	.00190	.00023	-.03174	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00068**	**.00204**	**-.00144**	**.00580**	**.12922**	**-.00361**	**-.07098**	**-.00320**
Stddev	.00007	.00108	.00019	.02952	.06584	.00293	.01475	.00096
%RSD	10.271	52.987	13.402	509.07	50.955	81.051	20.781	29.927
#1	-.00071	.00324	-.00131	.01437	.20522	-.00696	-.05840	-.00311
#2	-.00072	.00112	-.00134	.03009	.09285	-.00151	-.06732	-.00419
#3	-.00060	.00177	-.00166	-.02706	.08958	-.00237	-.08722	-.00228
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00408**	**.05994**	**-.00013**	**-.00144**	**-.00210**	**.00616**	**.00859**	**.00767**
Stddev	.00025	.02279	.00056	.00665	.00161	.00436	.00553	.00095
%RSD	6.1054	38.019	429.27	461.82	76.927	70.723	64.392	12.387
#1	.00379	.03723	-.00071	-.00577	-.00238	.01090	.01202	.00667
#2	.00424	.05979	.00040	.00621	-.00355	.00232	.00221	.00777
#3	.00421	.08281	-.00008	-.00476	-.00036	.00527	.01155	.00857
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: CCB Acquired: 6/24/2016 17:07:15 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00018**	**.00001**	**-.00517**	**-.00304**	**-.00045**	**.00003**	**.00076**
Stddev	.00048	.00019	.00338	.00065	.00042	.00018	.00062
%RSD	261.79	1449.3	65.434	21.349	94.527	672.09	81.583
#1	-.00007	-.00010	-.00269	-.00319	-.00035	-.00018	.00059
#2	-.00071	.00023	-.00379	-.00360	-.00091	.00016	.00024
#3	.00023	-.00009	-.00902	-.00233	-.00008	.00010	.00144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8894.8**	**56498.**	**2997.3**
Stddev	31.9	155.	19.4
%RSD	.35842	.27403	.64771
#1	8872.9	56642.	2988.9
#2	8931.4	56516.	2983.4
#3	8880.1	56335.	3019.5

Approved: June 25, 2016

Sample Name: LLCCV Acquired: 6/24/2016 17:11:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00729	.17062	.00725	.08257	.00939	.00166	.43404	.00082
Stddev	.00150	.00550	.00171	.00143	.00067	.00000	.00453	.00026
%RSD	20.543	3.2221	23.640	1.7280	7.1418	.27584	1.0437	32.305
#1	.00698	.16434	.00552	.08412	.00866	.00166	.43775	.00111
#2	.00892	.17298	.00895	.08230	.00999	.00167	.42899	.00059
#3	.00598	.17455	.00726	.08130	.00952	.00166	.43538	.00075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00316	.00622	.00237	.08729	.82404	.07713	.38089	.00688
Stddev	.00032	.00044	.00096	.00991	.11097	.00284	.04555	.00202
%RSD	10.108	7.0265	40.647	11.357	13.466	3.6833	11.960	29.313
#1	.00327	.00595	.00209	.09021	.69916	.08037	.42142	.00748
#2	.00280	.00598	.00158	.07624	.86164	.07506	.38965	.00853
#3	.00341	.00672	.00344	.09542	.91132	.07596	.33159	.00463
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00923	.49030	.01578	.78636	.00525	.08658	.01834	.78477
Stddev	.00007	.03975	.00067	.00747	.00099	.00290	.00535	.00340
%RSD	.74996	8.1063	4.2563	.94991	18.916	3.3503	29.197	.43361
#1	.00926	.45824	.01504	.78721	.00446	.08899	.01320	.78668
#2	.00928	.47789	.01596	.79336	.00636	.08336	.01794	.78678
#3	.00915	.53477	.01635	.77850	.00492	.08740	.02388	.78084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LLCCV Acquired: 6/24/2016 17:11:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40023**	**.04088**	**.01998**	**.14896**	**.00689**	**.01796**	**.04648**
Stddev	.00496	.00040	.00962	.00157	.00043	.00056	.00102
%RSD	1.2386	.97028	48.154	1.0558	6.1789	3.1279	2.2003
#1	.40336	.04052	.01081	.14857	.00653	.01791	.04580
#2	.40281	.04082	.02999	.15069	.00680	.01855	.04599
#3	.39451	.04131	.01914	.14762	.00736	.01743	.04766
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8990.7**	**57102.**	**2996.8**
Stddev	6.3	282.	27.6
%RSD	.06972	.49387	.92128
#1	8985.6	56782.	2987.6
#2	8988.8	57212.	2975.0
#3	8997.7	57313.	3027.9

Approved: June 25, 2016

Sample Name: LLCCV Acquired: 6/24/2016 17:15:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01993	.40715	.01910	.19302	.02123	.00379	.98840	.00192
Stddev	.00107	.00875	.00166	.00240	.00062	.00009	.02416	.00014
%RSD	5.3570	2.1496	8.6872	1.2431	2.9288	2.2601	2.4441	7.0566
#1	.01892	.40857	.02077	.19136	.02062	.00370	.96658	.00208
#2	.01983	.41511	.01745	.19577	.02121	.00387	.98425	.00184
#3	.02105	.39778	.01908	.19192	.02186	.00380	1.0144	.00186
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00956	.01134	.01016	.19020	1.9527	.19631	.96503	.01651
Stddev	.00018	.00018	.00095	.01584	.0809	.00356	.08170	.00201
%RSD	1.8827	1.5892	9.3610	8.3286	4.1432	1.8125	8.4664	12.178
#1	.00947	.01153	.01097	.18785	1.9630	.19792	1.0093	.01700
#2	.00944	.01133	.01040	.20708	2.0279	.19878	1.0150	.01822
#3	.00976	.01117	.00911	.17566	1.8671	.19223	.87074	.01429
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01930	1.0243	.04009	1.9435	.01831	.21107	.04027	1.9113
Stddev	.00016	.0191	.00077	.0087	.00305	.00083	.00398	.0011
%RSD	.83239	1.8612	1.9166	.44854	16.636	.39124	9.8865	.05610
#1	.01914	1.0212	.03957	1.9465	.02165	.21172	.03698	1.9101
#2	.01929	1.0447	.04097	1.9503	.01761	.21014	.03912	1.9122
#3	.01946	1.0070	.03972	1.9336	.01568	.21134	.04469	1.9117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 25, 2016

Sample Name: LLCCV Acquired: 6/24/2016 17:15:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v972) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.98617**	**.09828**	**.05324**	**.36623**	**.01818**	**.04214**	**.10201**
Stddev	.00140	.00119	.00120	.00194	.00049	.00021	.00105
%RSD	.14233	1.2069	2.2499	.53068	2.7064	.48792	1.0280
#1	.98608	.09782	.05188	.36811	.01820	.04207	.10169
#2	.98481	.09963	.05376	.36635	.01768	.04237	.10318
#3	.98762	.09739	.05410	.36423	.01866	.04197	.10116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9036.2**	**57273.**	**3074.0**
Stddev	31.1	288.	33.7
%RSD	.34415	.50309	1.0950
#1	9072.0	57245.	3047.1
#2	9015.3	57573.	3063.1
#3	9021.4	56999.	3111.7

Approved: June 25, 2016

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.000219	0.051332	0.000000	1.000000
Al 308.215 {109}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.000797	0.008110	0.000000	1.000000
As 189.042 {478}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.000055	0.023360	0.000000	1.000000
B 249.678 {135}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.000001	0.022663	0.000000	1.000000
Ba 455.403 { 74}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.055586	2.146038	0.000000	1.000000
Be 313.107 {108}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.000688	0.950408	0.000000	1.000000
Ca 422.673 { 80}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.001692	0.045598	0.000000	1.000000
Cd 228.802 {447}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.000094	0.563612	0.000000	1.000000
Co 228.616 {447}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.000104	0.359063	0.000000	1.000000
Cr 267.716 {126}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.000207	0.060248	0.000000	1.000000
Cu 224.700 {450}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.000063	0.126227	0.000000	1.000000
Fe 261.187 {129}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.000073	0.023032	0.000000	1.000000
K 766.490 { 44}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.016555	0.054237	0.000000	1.000000
Li 670.784 { 50}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.004397	1.544241	0.000000	1.000000
Mg 279.079 {121}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.000044	0.008813	0.000000	1.000000
Mn 257.610 {131}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.000249	0.281817	0.000000	1.000000
Mo 202.030 {467}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.000046	0.182222	0.000000	1.000000
Na 589.592 { 57}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.062909	0.178536	0.000000	1.000000
Ni 231.604 {446}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.000706	0.133269	0.000000	1.000000
P 214.914 {457}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.000179	0.013467	0.000000	1.000000
Pb 220.353 {453}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.000979	0.062395	0.000000	1.000000
Sb 206.833 {463}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.000288	0.029684	0.000000	1.000000
Se 196.090 {472}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.000416	0.016174	0.000000	1.000000
Si 212.412 {459}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.002457	0.038614	0.000000	1.000000
Sn 189.989 {477}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.000032	0.070434	0.000000	1.000000
Sr 407.771 { 83}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.000984	3.576768	0.000000	1.000000
Ti 337.280 {100}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.001213	0.097488	0.000000	1.000000
Tl 190.856 {477}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.000404	0.028714	0.000000	1.000000
V 292.402 {115}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.000025	0.070640	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.000222	0.414339	0.000000	1.000000
Zr 339.198 { 99}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.004799	3.597030	0.000000	1.000000

Approved: June 28, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999219	0.000005	0.002404	0.008013	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999541	0.000016	0.010486	0.034953	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999717	0.000002	0.003514	0.011712	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999559	0.000003	0.003229	0.010763	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999622	0.000374	0.001188	0.003959	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999682	0.000008	0.000105	0.000351	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.998908	0.000135	0.046468	0.154893	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999582	0.000006	0.000295	0.000984	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999651	0.000012	0.000445	0.001484	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999210	0.000008	0.001312	0.004375	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999350	0.000015	0.001489	0.004962	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.998751	0.000029	0.029643	0.098810	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999643	0.000460	0.132623	0.442075	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999776	0.000321	0.004353	0.014511	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999436	0.000029	0.087066	0.290220	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999089	0.000038	0.002851	0.009505	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999789	0.000024	0.000466	0.001553	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999663	0.001472	0.035366	0.117888	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999563	0.000013	0.001271	0.004238	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999580	0.000024	0.007845	0.026150	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.998800	0.000010	0.003957	0.013189	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999499	0.000007	0.004891	0.016304	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999365	0.000002	0.007423	0.024744	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999891	0.000018	0.002581	0.008604	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999675	0.000011	0.000958	0.003192	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999546	0.000684	0.000493	0.001644	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.997531	0.000043	0.009062	0.030207	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999388	0.000005	0.003390	0.011298	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999660	0.000012	0.001079	0.003598	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999413	0.000090	0.000220	0.000735	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.999407	0.000786	0.000564	0.001879	OK.	1.000000	0.000000	1	0

Approved: June 28, 2016

Sample Name: S0 Acquired: 6/27/2016 10:11:09 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00022	.00080	.00005	-.00000	.05558	.00069	.00169
Stddev	.00009	.00005	.00001	.00001	.00343	.00010	.00171
%RSD	41.038	6.2901	19.225	757.31	6.1761	14.508	100.89
#1	-.00028	.00085	.00004	.00001	.05677	.00057	.00305
#2	-.00012	.00079	.00007	-.00001	.05827	.00074	-.00023
#3	-.00027	.00075	.00006	.00000	.05171	.00075	.00226

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00009	-.00010	.00021	.00006	.00007	-.01656	-.00440
Stddev	.00009	.00008	.00005	.00012	.00021	.00039	.00634
%RSD	91.046	78.768	26.095	189.05	283.56	2.3394	144.17
#1	-.00005	-.00014	.00014	.00010	.00028	-.01656	.00211
#2	-.00019	-.00016	.00023	.00016	.00009	-.01694	-.00474
#3	-.00004	-.00001	.00024	-.00007	-.00014	-.01617	-.01056

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00004	.00025	-.00005	-.06293	-.00071	-.00018	-.00098
Stddev	.00014	.00078	.00008	.01073	.00010	.00001	.00026
%RSD	309.31	312.25	167.27	17.052	14.737	6.2600	26.253
#1	-.00014	.00113	-.00005	-.06678	-.00074	-.00017	-.00122
#2	.00011	-.00035	.00003	-.05080	-.00079	-.00019	-.00101
#3	-.00010	-.00004	-.00012	-.07120	-.00059	-.00018	-.00071

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00029	-.00042	.00246	.00003	.00098	-.00121	-.00040
Stddev	.00006	.00008	.00007	.00002	.00168	.00048	.00011
%RSD	21.252	20.303	2.7310	73.870	172.37	39.424	26.113
#1	.00028	-.00050	.00242	.00001	.00288	-.00094	-.00028
#2	.00035	-.00033	.00242	.00005	-.00031	-.00176	-.00045
#3	.00023	-.00042	.00253	.00003	.00036	-.00093	-.00047

Approved: June 28, 2016

Sample Name: S0 Acquired: 6/27/2016 10:11:09 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**-.00002**	**.00022**	**-.00480**
Stddev	.00006	.00004	.00081
%RSD	232.69	19.281	16.811
#1	.00001	.00027	-.00516
#2	.00000	.00020	-.00387
#3	-.00009	.00019	-.00536
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9360.7**	**56289.**	**2789.5**
Stddev	12.0	199.	9.9
%RSD	.12862	.35359	.35524
#1	9347.7	56429.	2778.2
#2	9362.8	56061.	2796.7
#3	9371.5	56376.	2793.6

Approved: June 28, 2016

Sample Name: S1 Acquired: 6/27/2016 10:15:06 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00002**	**.00149**	**.07501**	**.00111**	**.00256**	**.00019**	**.00048**
Stddev	.00004	.00003	.00130	.00003	.00054	.00000	.00012
%RSD	235.36	1.8291	1.7274	3.0313	21.065	2.0861	24.410
#1	.00003	.00146	.07531	.00115	.00264	.00019	.00036
#2	-.00003	.00151	.07359	.00111	.00199	.00019	.00059
#3	.00005	.00151	.07613	.00108	.00306	.00020	.00049

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00052**	**.00073**	**.00021**	**.00590**	**.00180**	**.00157**	**.01873**
Stddev	.00010	.00013	.00039	.00261	.00100	.00005	.00232
%RSD	18.633	17.713	184.86	44.235	55.870	3.0472	12.407
#1	.00062	.00086	.00004	.00630	.00167	.00152	.02125
#2	.00042	.00060	.00065	.00312	.00086	.00158	.01668
#3	.00052	.00074	-.00007	.00829	.00286	.00161	.01826

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00019**	**.00098**	**-.00091**	**.00069**	**.00415**	**.00064**	**.03417**
Stddev	.00010	.00003	.00038	.00011	.00003	.00003	.00071
%RSD	53.461	3.4756	41.630	15.291	.77728	4.6599	2.0672
#1	-.00029	.00101	-.00109	.00069	.00416	.00068	.03441
#2	-.00009	.00099	-.00047	.00080	.00418	.00063	.03337
#3	-.00018	.00095	-.00116	.00059	.00412	.00062	.03472

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00142**	**.00056**	**.00379**	**.02139**
Stddev	.00038	.00006	.00002	.00234
%RSD	26.838	9.9829	.42124	10.947
#1	-.00118	.00061	.00377	.02369
#2	-.00121	.00058	.00380	.02146
#3	-.00186	.00050	.00379	.01901

Approved: June 28, 2016

Sample Name: S1 Acquired: 6/27/2016 10:15:06 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9406.4**	**56869.**	**2813.2**
Stddev	17.9	99.	5.4
%RSD	.18981	.17489	.19258
#1	9415.6	56895.	2818.5
#2	9417.7	56760.	2813.3
#3	9385.8	56954.	2807.7

Approved: June 28, 2016

Sample Name: S2 Acquired: 6/27/2016 10:19:03 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00019	.00217	.00019	.00017	.09097	.00148	.00981
Stddev	.00010	.00007	.00004	.00006	.00192	.00005	.00183
%RSD	52.118	3.1223	20.733	37.133	2.1077	3.6422	18.643
#1	.00022	.00221	.00022	.00021	.09288	.00154	.01182
#2	.00008	.00209	.00021	.00019	.09098	.00149	.00936
#3	.00027	.00220	.00015	.00010	.08905	.00143	.00824

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00046	.00101	.00085	.00125	.00147	.03094	.02040
Stddev	.00011	.00020	.00003	.00016	.00011	.00596	.00709
%RSD	24.286	20.196	3.9657	12.594	7.8265	19.261	34.737
#1	.00054	.00105	.00082	.00140	.00135	.03776	.02303
#2	.00050	.00119	.00084	.00127	.00157	.02830	.01238
#3	.00033	.00079	.00088	.00108	.00148	.02676	.02580

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00164	.00196	.00309	.09374	.00041	.00222	-.00046
Stddev	.00038	.00079	.00004	.01209	.00013	.00011	.00029
%RSD	23.225	40.222	1.2531	12.896	30.782	4.8080	63.126
#1	.00162	.00249	.00314	.08010	.00046	.00212	-.00025
#2	.00127	.00233	.00308	.09800	.00050	.00233	-.00079
#3	.00203	.00105	.00307	.10312	.00026	.00221	-.00034

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00091	-.00034	.00573	.00119	.06491	.00017	-.00015
Stddev	.00010	.00006	.00002	.00005	.00081	.00072	.00004
%RSD	10.635	17.225	.29680	4.1503	1.2526	428.70	27.714
#1	.00083	-.00029	.00572	.00116	.06568	.00089	-.00012
#2	.00102	-.00033	.00575	.00125	.06406	-.00056	-.00013
#3	.00090	-.00040	.00572	.00117	.06500	.00018	-.00019

Approved: June 28, 2016

Sample Name: S2 Acquired: 6/27/2016 10:19:03 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00120	.00738	.04944
Stddev	.00007	.00006	.00070
%RSD	5.6773	.87197	1.4116
#1	.00118	.00744	.05008
#2	.00114	.00738	.04954
#3	.00127	.00732	.04870

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9443.2	56709.	2845.2
Stddev	3.5	174.	6.8
%RSD	.03751	.30616	.23990
#1	9441.6	56633.	2837.4
#2	9447.3	56587.	2849.5
#3	9440.8	56908.	2848.9

Approved: June 28, 2016

Sample Name: S3 Acquired: 6/27/2016 10:23:00 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.02092	.08605	.00965	.01177	2.2814	.05082	.47399	.03171
Stddev	.00009	.00009	.00006	.00007	.0081	.00011	.00141	.00016
%RSD	.44413	.10972	.62223	.59949	.35348	.21174	.29780	.50827
#1	.02097	.08616	.00961	.01185	2.2766	.05071	.47378	.03182
#2	.02098	.08602	.00972	.01174	2.2908	.05092	.47550	.03179
#3	.02081	.08598	.00962	.01172	2.2769	.05085	.47271	.03153

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.07428	.03147	.06632	.09593	2.7929	1.5861	.09155	.14801
Stddev	.00025	.00009	.00009	.00042	.0165	.0024	.00035	.00046
%RSD	.34137	.28140	.13410	.43596	.58971	.15475	.37815	.31281
#1	.07440	.03141	.06640	.09607	2.7817	1.5848	.09185	.14757
#2	.07444	.03143	.06635	.09545	2.8118	1.5890	.09164	.14849
#3	.07398	.03157	.06622	.09625	2.7852	1.5847	.09117	.14798

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.18692	9.1586	.06869	.13735	.03188	.03618	.00633	.19982
Stddev	.00095	.0246	.00038	.00018	.00005	.00008	.00006	.00030
%RSD	.50865	.26851	.55910	.13312	.14375	.21004	.95433	.15185
#1	.18754	9.1579	.06868	.13721	.03187	.03616	.00627	.19957
#2	.18740	9.1836	.06909	.13756	.03193	.03626	.00639	.20015
#3	.18583	9.1344	.06832	.13729	.03184	.03611	.00632	.19973

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.07280	3.7149	.09996	.01331	.07292	.43380	3.7667
Stddev	.00018	.0060	.00049	.00007	.00019	.00078	.0189
%RSD	.24836	.16167	.49462	.49011	.25771	.17890	.50287
#1	.07265	3.7109	.09960	.01337	.07280	.43456	3.7451
#2	.07300	3.7218	.09976	.01324	.07314	.43381	3.7806
#3	.07274	3.7121	.10052	.01332	.07283	.43301	3.7744

Approved: June 28, 2016

Sample Name: S3 Acquired: 6/27/2016 10:23:00 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9721.9**	**58099.**	**2930.8**
Stddev	18.9	74.	10.9
%RSD	.19470	.12678	.37352
#1	9743.1	58020.	2942.5
#2	9706.5	58111.	2920.7
#3	9716.1	58166.	2929.2

Approved: June 28, 2016

Sample Name: S4 Acquired: 6/27/2016 10:26:37 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.03974	.16089	.01833	.02213	4.2645	.09586	.89929	.06038
Stddev	.00005	.00019	.00006	.00006	.0077	.00012	.00503	.00018
%RSD	.11654	.11956	.34341	.25502	.18096	.12203	.55878	.29985
#1	.03968	.16079	.01837	.02214	4.2575	.09600	.89526	.06018
#2	.03976	.16111	.01826	.02207	4.2633	.09579	.89769	.06053
#3	.03977	.16076	.01837	.02218	4.2728	.09580	.90492	.06045

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.14063	.05916	.12449	.18125	5.3047	3.0377	.17177	.27547
Stddev	.00052	.00006	.00037	.00104	.0273	.0084	.00079	.00147
%RSD	.37329	.09570	.29429	.57556	.51409	.27796	.45809	.53422
#1	.14021	.05914	.12420	.18098	5.2909	3.0280	.17115	.27390
#2	.14121	.05922	.12491	.18037	5.2872	3.0420	.17150	.27568
#3	.14045	.05912	.12437	.18241	5.3361	3.0431	.17265	.27682

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.35921	17.472	.12976	.25968	.06042	.06915	.01227	.38616
Stddev	.00077	.044	.00041	.00013	.00014	.00023	.00002	.00037
%RSD	.21360	.25231	.31950	.04942	.23319	.32893	.13923	.09489
#1	.35987	17.454	.12931	.25960	.06034	.06889	.01229	.38588
#2	.35938	17.440	.13013	.25983	.06033	.06932	.01226	.38658
#3	.35837	17.522	.12985	.25962	.06058	.06923	.01226	.38603

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13808	7.0066	.19048	.02529	.13828	.80821	7.0194
Stddev	.00024	.0219	.00266	.00011	.00020	.00129	.0190
%RSD	.17717	.31279	1.3974	.43280	.14820	.16017	.27028
#1	.13814	6.9980	.18870	.02521	.13848	.80908	7.0103
#2	.13829	6.9903	.18921	.02525	.13830	.80882	7.0066
#3	.13781	7.0315	.19354	.02541	.13807	.80672	7.0412

Approved: June 28, 2016

Sample Name: S4 Acquired: 6/27/2016 10:26:37 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9771.3**	**58546.**	**2991.1**
Stddev	5.3	169.	6.3
%RSD	.05411	.28803	.21196
#1	9765.6	58357.	2985.0
#2	9776.0	58602.	2997.6
#3	9772.3	58680.	2990.8

Approved: June 28, 2016

Sample Name: ICV Acquired: 6/27/2016 10:30:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39656	9.9968	.39605	.49913	.99354	.04949	9.8900	.04960
Stddev	.00038	.0168	.00361	.00130	.00797	.00012	.1192	.00034
%RSD	.09463	.16774	.91201	.26037	.80254	.24834	1.2050	.67893
#1	.39683	10.016	.39921	.49920	.99329	.04957	9.8437	.04996
#2	.39672	9.9871	.39211	.49780	1.0016	.04955	10.025	.04956
#3	.39613	9.9872	.39682	.50040	.98569	.04935	9.8010	.04929
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19960	.49616	.50076	3.9491	49.503	.98788	10.028	.49846
Stddev	.00072	.00107	.00153	.0174	.377	.01095	.058	.00163
%RSD	.36296	.21613	.30576	.43969	.76139	1.1083	.57412	.32766
#1	.20035	.49503	.50215	3.9291	49.521	.98444	9.9746	.49786
#2	.19954	.49627	.49912	3.9607	49.871	1.0001	10.089	.50030
#3	.19890	.49717	.50101	3.9574	49.117	.97907	10.020	.49721
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98929	49.553	.50008	9.9383	.49711	1.1842	.40491	4.9048
Stddev	.00695	.361	.00310	.0420	.00341	.0012	.00380	.0152
%RSD	.70230	.72857	.61963	.42238	.68619	.10088	.93725	.30954
#1	.99664	49.590	.50317	9.9837	.49981	1.1844	.40809	4.9217
#2	.98842	49.894	.50009	9.9303	.49824	1.1853	.40593	4.9005
#3	.98282	49.175	.49697	9.9009	.49328	1.1829	.40071	4.8922
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 28, 2016

Sample Name: ICV Acquired: 6/27/2016 10:30:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99382	.99081	.99014	.50327	.99007	1.0044	.99998
Stddev	.00477	.00901	.00242	.00334	.00183	.0042	.00712
%RSD	.47986	.90979	.24468	.66313	.18511	.41413	.71179
#1	.99906	.99161	.99266	.50658	.98958	1.0088	1.0007
#2	.99266	.99939	.98992	.50331	.99209	1.0036	1.0067
#3	.98974	.98142	.98783	.49991	.98852	1.0006	.99254
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9944.5	59548.	3007.2
Stddev	7.0	104.	19.1
%RSD	.07028	.17468	.63490
#1	9939.5	59668.	3013.8
#2	9941.5	59493.	2985.7
#3	9952.5	59483.	3022.1

Approved: June 28, 2016

Sample Name: ICB Acquired: 6/27/2016 10:33:39 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00174	.00806	-.00035	.00524	.00096	.00003	.04488
Stddev	.00255	.00339	.00155	.00316	.00054	.00006	.03416
%RSD	146.61	42.061	438.03	60.356	56.377	169.93	76.128
#1	.00413	.01096	-.00078	.00453	.00153	.00002	.04662
#2	-.00095	.00889	-.00165	.00869	.00045	-.00001	.07814
#3	.00204	.00433	.00137	.00249	.00091	.00010	.00988
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	.00021	.00264	.00138	-.01027	.11431	-.00187
Stddev	.00023	.00025	.00090	.00135	.02697	.10019	.00400
%RSD	90.076	117.41	34.187	98.005	262.67	87.648	214.31
#1	.00019	.00011	.00242	.00087	.02024	.22955	-.00367
#2	.00007	.00003	.00363	.00292	-.02010	.06552	-.00465
#3	.00052	.00050	.00186	.00036	-.03093	.04786	.00272
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.07897	.00101	.00510	.11885	-.00064	F .01147	-.00335
Stddev	.04472	.00084	.00024	.04616	.00013	.00517	.00352
%RSD	56.634	82.917	4.6972	38.837	20.205	45.049	105.12
#1	-.03785	.00103	.00483	.16190	-.00071	.01200	-.00401
#2	-.12658	.00016	.00517	.12455	-.00049	.01635	.00046
#3	-.07246	.00185	.00530	.07011	-.00073	.00606	-.00650
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						.01000	
Low Limit						-.01000	

Approved: June 28, 2016

Sample Name: ICB Acquired: 6/27/2016 10:33:39 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00383	-.00421	.01837	.00133	.00214	-.00619	.00159
Stddev	.00530	.00215	.00326	.00121	.00026	.00445	.00067
%RSD	138.24	51.159	17.738	90.647	12.024	71.914	42.141
#1	.00877	-.00203	.02032	.00237	.00238	-.00553	.00121
#2	-.00176	-.00633	.02019	.00162	.00218	-.01094	.00119
#3	.00449	-.00427	.01461	.00001	.00187	-.00211	.00236
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00117	.00107	.00150
Stddev	.00040	.00023	.00032
%RSD	33.968	21.646	21.450
#1	.00144	.00132	.00117
#2	.00136	.00103	.00151
#3	.00071	.00086	.00182
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9485.8	56960.	2827.2
Stddev	22.7	62.	13.4
%RSD	.23928	.10801	.47261
#1	9462.0	57031.	2842.2
#2	9488.3	56934.	2822.9
#3	9507.2	56917.	2816.6

Approved: June 28, 2016

Sample Name: LLICV Acquired: 6/27/2016 10:37:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00811	.16107	.00546	.08342	.00820	.00171	.41320	.00104
Stddev	.00154	.00831	.00174	.00283	.00174	.00005	.05309	.00032
%RSD	18.985	5.1608	31.869	3.3900	21.229	3.2040	12.848	30.976
#1	.00877	.17043	.00450	.08566	.00976	.00165	.44800	.00137
#2	.00635	.15823	.00748	.08024	.00632	.00173	.35210	.00072
#3	.00921	.15456	.00442	.08437	.00853	.00175	.43951	.00104
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00385	.00622	.00454	.06184	.83144	.08347	.36989	.00868
Stddev	.00035	.00111	.00053	.00835	.03960	.00277	.07407	.00380
%RSD	9.1544	17.869	11.677	13.497	4.7632	3.3221	20.024	43.760
#1	.00354	.00567	.00393	.06716	.81243	.08203	.29122	.00933
#2	.00376	.00549	.00491	.06614	.87696	.08170	.38018	.00459
#3	.00423	.00750	.00478	.05222	.80492	.08666	.43828	.01210
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00933	.45563	.01629	.80974	.00826	.08707	.01555	.84594
Stddev	.00021	.01951	.00128	.00898	.00183	.00241	.00253	.00721
%RSD	2.2323	4.2816	7.8796	1.1092	22.131	2.7708	16.251	.85208
#1	.00915	.46087	.01543	.81937	.00648	.08622	.01843	.85233
#2	.00956	.43404	.01777	.80827	.01013	.08979	.01372	.84735
#3	.00929	.47199	.01568	.80159	.00817	.08519	.01449	.83813
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: LLICV Acquired: 6/27/2016 10:37:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41453**	**.04310**	**.02153**	**.15768**	**.00889**	**.01738**	**.04625**
Stddev	.00755	.00023	.00874	.00411	.00040	.00018	.00135
%RSD	1.8207	.53307	40.597	2.6083	4.5428	1.0465	2.9262
#1	.41925	.04320	.01815	.15896	.00867	.01736	.04544
#2	.41852	.04284	.03146	.16100	.00865	.01758	.04550
#3	.40583	.04326	.01499	.15308	.00936	.01721	.04781
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9608.8**	**58008.**	**2882.7**
Stddev	13.9	202.	11.3
%RSD	.14503	.34866	.39311
#1	9595.5	57793.	2870.0
#2	9607.5	58037.	2891.6
#3	9623.3	58195.	2886.6

Approved: June 28, 2016

Sample Name: ICSA Acquired: 6/27/2016 10:41:31 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00348**	**274.46**	**-.00360**	**-.01905**	**-.00118**	**-.00005**	**255.24**	**-.00047**
Stddev	.00080	.12	.00424	.00363	.00140	.00007	.64	.00022
%RSD	22.958	.04489	117.79	19.069	118.85	159.46	.24922	45.496
#1	-.00266	274.32	-.00283	-.01618	-.00225	-.00002	254.54	-.00071
#2	-.00425	274.55	-.00817	-.01785	-.00168	-.00013	255.78	-.00029
#3	-.00353	274.52	.00020	-.02314	.00040	.00001	255.40	-.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00138**	**.00013**	**.00026**	**100.86**	**-.09019**	**.00712**	**258.19**	**-.00082**
Stddev	.00020	.00043	.00219	.24	.06234	.00564	.51	.00449
%RSD	14.369	328.27	851.02	.23590	69.125	79.115	.19632	546.94
#1	-.00121	.00037	.00206	100.59	-.14551	.00643	257.65	-.00388
#2	-.00133	-.00036	.00088	100.95	-.02263	.00187	258.26	-.00293
#3	-.00159	.00038	-.00218	101.04	-.10243	.01307	258.66	.00434
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**.08336**	**-.00068**	**.02055**	**.00062**	**-.00085**	**-.00510**	**-.01322**
Stddev	.00049	.00057	.00126	.01032	.00616	.00460	.00665	.00103
%RSD	550.79	.68258	185.29	50.215	988.12	543.87	130.28	7.7725
#1	-.00016	.08380	-.00213	.03143	-.00603	.00410	-.01192	-.01441
#2	.00065	.08356	.00000	.01933	.00179	-.00500	.00136	-.01264
#3	-.00023	.08271	.00009	.01090	.00611	-.00163	-.00475	-.01262
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: ICSA Acquired: 6/27/2016 10:41:31 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	.00072	.00255	-.00142	-.00297	-.00684	-.00350
Stddev	.00092	.00022	.00227	.00469	.00113	.00030	.00043
%RSD	104.29	30.744	88.699	331.16	38.033	4.3723	12.250
#1	.00194	.00091	.00433	-.00152	-.00422	-.00699	-.00322
#2	.00027	.00078	.00000	-.00606	-.00263	-.00650	-.00330
#3	.00043	.00048	.00332	.00333	-.00204	-.00704	-.00400
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9003.1	53741.	2830.1
Stddev	29.5	88.	13.2
%RSD	.32793	.16418	.46682
#1	8969.0	53843.	2836.5
#2	9019.7	53686.	2838.9
#3	9020.6	53695.	2814.9

Approved: June 28, 2016

Sample Name: ICSAB Acquired: 6/27/2016 10:45:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49885	256.39	.25252	-.01918	.24309	.23676	239.36	.48503
Stddev	.00077	.65	.00502	.00271	.00045	.00050	.30	.00068
%RSD	.15367	.25216	1.9898	14.136	.18678	.21093	.12664	.14053
#1	.49899	255.73	.25330	-.01721	.24333	.23629	239.67	.48508
#2	.49802	256.43	.25711	-.01805	.24256	.23671	239.35	.48569
#3	.49953	257.02	.24715	-.02227	.24337	.23729	239.06	.48433
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.23429	.24086	.24530	93.507	5.1189	.00241	239.40	.23738
Stddev	.00111	.00266	.00136	.226	.0691	.00187	.35	.00351
%RSD	.47486	1.1032	.55335	.24199	1.3498	77.806	.14736	1.4794
#1	.23518	.23891	.24433	93.596	5.0482	.00227	239.45	.24113
#2	.23465	.24388	.24472	93.675	5.1223	.00060	239.72	.23418
#3	.23304	.23978	.24685	93.249	5.1863	.00434	239.02	.23682
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00053	5.1902	.46938	.09211	.47966	.49223	.24503	-.02683
Stddev	.00007	.0094	.00026	.00814	.00226	.00746	.00251	.00281
%RSD	13.615	.18091	.05557	8.8363	.47050	1.5148	1.0231	10.477
#1	-.00046	5.1797	.46968	.08370	.48227	.49724	.24688	-.02680
#2	-.00060	5.1978	.46920	.09995	.47849	.49580	.24602	-.02404
#3	-.00052	5.1931	.46926	.09267	.47824	.48366	.24217	-.02966
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: ICSAB Acquired: 6/27/2016 10:45:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	.00073	-.00122	.45265	.24279	.46530	-.00351
Stddev	.00042	.00033	.00788	.00412	.00036	.00116	.00030
%RSD	67.531	45.343	645.29	.90940	.14968	.24968	8.4247
#1	.00101	.00064	-.00686	.45617	.24254	.46493	-.00322
#2	.00071	.00109	.00778	.44813	.24320	.46660	-.00349
#3	.00017	.00045	-.00458	.45366	.24261	.46437	-.00381
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9451.1	56687.	2980.7
Stddev	12.7	235.	6.1
%RSD	.13402	.41481	.20363
#1	9456.2	56956.	2985.6
#2	9436.6	56517.	2982.5
#3	9460.3	56590.	2973.9

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 10:49:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41238**	**10.669**	**.41191**	**.52005**	**1.0384**	**.05158**	**10.784**	**.05227**
Stddev	.00183	.046	.00331	.00113	.0055	.00021	.067	.00041
%RSD	.44263	.42702	.80236	.21781	.53089	.39861	.62379	.77509
#1	.41421	10.697	.41543	.52118	1.0324	.05173	10.736	.05274
#2	.41056	10.694	.40887	.52006	1.0433	.05167	10.860	.05201
#3	.41238	10.617	.41143	.51892	1.0395	.05134	10.754	.05206
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20803**	**.51861**	**.51945**	**4.3037**	**51.532**	**1.0319**	**10.785**	**.52164**
Stddev	.00094	.00265	.00200	.0480	.292	.0030	.169	.00151
%RSD	.45047	.51067	.38573	1.1144	.56743	.29472	1.5692	.28971
#1	.20905	.51951	.52105	4.2715	51.286	1.0285	10.755	.52005
#2	.20720	.52068	.51721	4.3588	51.855	1.0344	10.967	.52182
#3	.20783	.51562	.52010	4.2807	51.456	1.0328	10.633	.52306
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0260**	**51.605**	**.52017**	**10.355**	**.51948**	**1.2287**	**.42141**	**5.0896**
Stddev	.0062	.392	.00213	.026	.00211	.0063	.00578	.0141
%RSD	.60581	.75948	.40961	.24947	.40593	.51662	1.3721	.27654
#1	1.0327	51.153	.52203	10.384	.52081	1.2352	.42600	5.1052
#2	1.0247	51.808	.51785	10.341	.52057	1.2225	.42332	5.0779
#3	1.0205	51.853	.52065	10.339	.51705	1.2285	.41492	5.0858
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 10:49:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0329**	**1.0366**	**1.0326**	**.52078**	**1.0290**	**1.0446**	**1.0377**
Stddev	.0036	.0061	.0096	.00149	.0042	.0040	.0092
%RSD	.34765	.58644	.92987	.28568	.40577	.38739	.89149
#1	1.0370	1.0299	1.0217	.52198	1.0329	1.0493	1.0281
#2	1.0312	1.0418	1.0361	.52124	1.0295	1.0419	1.0386
#3	1.0304	1.0380	1.0399	.51911	1.0246	1.0427	1.0465
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9679.9**	**58019.**	**2940.7**
Stddev	31.4	99.	31.3
%RSD	.32391	.17011	1.0639
#1	9650.4	58117.	2973.3
#2	9676.5	57919.	2937.9
#3	9712.8	58020.	2910.9

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 10:52:41 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00082	.03709	-.00042	.00235	.00221	.00011	.02800	.00010
Stddev	.00285	.00947	.00333	.00050	.00064	.00007	.06022	.00006
%RSD	347.74	25.544	801.20	21.057	29.249	66.828	215.11	60.876
#1	.00282	.04765	-.00314	.00195	.00194	.00016	.00724	.00009
#2	.00208	.02934	.00330	.00220	.00174	.00014	.09585	.00005
#3	-.00244	.03428	-.00140	.00291	.00294	.00003	-.01910	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	.00256	-.00018	.01123	.17852	-.00287	.01155	.00102
Stddev	.00023	.00130	.00111	.02322	.06304	.00388	.06528	.00239
%RSD	1385.9	50.913	614.81	206.72	35.311	135.30	565.34	235.33
#1	-.00006	.00365	-.00083	-.00086	.24920	-.00008	.05161	.00372
#2	.00023	.00291	.00111	.03801	.15825	-.00730	.04682	.00017
#3	-.00022	.00112	-.00082	-.00345	.12812	-.00122	-.06378	-.00084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00391	.11054	-.00006	.00936	-.00106	.00780	-.00430	.01094
Stddev	.00026	.02224	.00106	.00259	.00450	.00116	.00727	.00205
%RSD	6.5484	20.121	1773.4	27.704	423.55	14.865	169.26	18.686
#1	.00386	.10773	-.00045	.01132	-.00217	.00693	-.00997	.01182
#2	.00368	.13405	.00114	.01035	.00389	.00735	.00390	.00861
#3	.00419	.08984	-.00087	.00642	-.00490	.00911	-.00683	.01240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 10:52:41 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	.00171	-.00592	.00236	.00119	.00045	.00147
Stddev	.00073	.00018	.00639	.00105	.00056	.00012	.00032
%RSD	97.462	10.324	107.89	44.349	47.225	27.229	21.897
#1	.00158	.00178	-.00302	.00218	.00104	.00058	.00181
#2	.00028	.00184	-.01324	.00141	.00182	.00042	.00143
#3	.00037	.00151	-.00150	.00348	.00072	.00034	.00117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9210.0	55620.	2799.3
Stddev	17.9	95.	5.4
%RSD	.19389	.17128	.19191
#1	9214.9	55547.	2802.8
#2	9190.2	55728.	2793.2
#3	9224.9	55585.	2802.1

Approved: June 28, 2016

Sample Name: PBW AD Acquired: 6/27/2016 10:56:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573656-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	-.00551	-.00164	.00133	-.00255	.00001	-.02140	.00006
Stddev	.00131	.00261	.00242	.00099	.00017	.00008	.01807	.00008
%RSD	918.94	47.461	147.34	73.999	6.7565	679.86	84.478	126.18
#1	.00002	-.00708	-.00377	.00068	-.00272	-.00003	-.02206	-.00001
#2	-.00152	-.00249	.00099	.00085	-.00237	.00011	-.00300	.00014
#3	.00108	-.00696	-.00214	.00247	-.00257	-.00004	-.03913	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	.00044	-.00011	-.01481	.08157	-.00450	-.05709	-.00127
Stddev	.00038	.00059	.00174	.01969	.08524	.00309	.05809	.00048
%RSD	282.02	134.36	1518.6	132.89	104.49	68.616	101.75	38.034
#1	-.00023	.00035	.00020	.00330	.03640	-.00806	-.03041	-.00111
#2	.00028	-.00010	.00145	-.03577	.17989	-.00289	-.01713	-.00088
#3	-.00045	.00107	-.00199	-.01198	.02843	-.00255	-.12373	-.00181
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00120	.12315	-.00007	.00271	.00049	-.00196	-.00731	-.02994
Stddev	.00005	.02063	.00058	.00658	.00069	.00072	.00330	.00107
%RSD	4.3907	16.754	814.35	242.50	141.11	36.905	45.123	3.5596
#1	.00125	.13009	.00059	.01030	.00122	-.00130	-.00403	-.02923
#2	.00120	.13943	-.00033	-.00131	.00041	-.00184	-.01063	-.02942
#3	.00114	.09994	-.00048	-.00086	-.00016	-.00274	-.00728	-.03117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Approved: June 28, 2016

Sample Name: PBW AD Acquired: 6/27/2016 10:56:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573656-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.00122	.00010	.00267	.00012	.00086	.00027
Stddev	.00021	.00039	.00337	.00318	.00091	.00006	.00046
%RSD	418.85	32.122	3386.6	119.01	765.24	7.0777	171.03
#1	.00014	.00104	-.00194	.00621	.00001	.00079	.00037
#2	-.00019	.00095	.00399	.00178	.00108	.00091	.00068
#3	.00020	.00167	-.00175	.00003	-.00073	.00089	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10078.	61154.	3066.5
Stddev	38.	65.	16.3
%RSD	.37265	.10633	.53272
#1	10035.	61205.	3085.2
#2	10105.	61081.	3054.8
#3	10094.	61176.	3059.6

Approved: June 28, 2016

Sample Name: PBW AD Acquired: 6/27/2016 10:56:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573656-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**-.00551**	**-.00164**	**.00133**	**-.00255**	**.00001**	**-.02140**	**.00006**
Stddev	.00131	.00261	.00242	.00099	.00017	.00008	.01807	.00008
%RSD	907.10	47.461	147.33	74.064	6.7565	679.87	84.478	126.16
#1	.00002	-.00708	-.00377	.00068	-.00272	-.00003	-.02206	-.00001
#2	-.00153	-.00249	.00099	.00085	-.00237	.00011	-.00300	.00014
#3	.00108	-.00696	-.00214	.00247	-.00257	-.00004	-.03913	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.00044**	**-.00011**	**-.01686**	**.08157**	**-.00450**	**-.05709**	**-.00127**
Stddev	.00038	.00059	.00176	.02442	.08524	.00309	.05809	.00048
%RSD	282.05	134.26	1612.9	144.86	104.49	68.616	101.75	38.034
#1	-.00023	.00035	.00021	-.00014	.03640	-.00806	-.03041	-.00111
#2	.00028	-.00010	.00147	-.04488	.17989	-.00289	-.01713	-.00088
#3	-.00045	.00107	-.00200	-.00555	.02843	-.00255	-.12373	-.00181
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00120**	**.12315**	**-.00007**	**.00272**	**.00049**	**-.00196**	**-.00731**	**-.02994**
Stddev	.00005	.02063	.00058	.00658	.00069	.00072	.00330	.00107
%RSD	4.3907	16.754	815.45	242.20	141.11	36.924	45.121	3.5596
#1	.00125	.13009	.00059	.01031	.00122	-.00130	-.00403	-.02923
#2	.00120	.13943	-.00033	-.00129	.00041	-.00184	-.01062	-.02942
#3	.00114	.09994	-.00048	-.00087	-.00016	-.00274	-.00727	-.03117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: PBW AD Acquired: 6/27/2016 10:56:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573656-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.00122	.00009	.00267	.00012	.00086	.00027
Stddev	.00021	.00039	.00336	.00318	.00091	.00006	.00046
%RSD	419.00	32.122	3582.0	119.01	765.15	7.0777	170.99
#1	.00014	.00104	-.00194	.00621	.00001	.00079	.00037
#2	-.00019	.00095	.00397	.00178	.00108	.00091	.00068
#3	.00020	.00167	-.00175	.00003	-.00073	.00089	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10078.	61154.	3066.5
Stddev	38.	65.	16.3
%RSD	.37265	.10633	.53272
#1	10035.	61205.	3085.2
#2	10105.	61081.	3054.8
#3	10094.	61176.	3059.6

Approved: June 28, 2016

Sample Name: LCSW AD Acquired: 6/27/2016 11:04:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573656-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.18930	4.7185	.19003	.93469	.47985	.02336	4.8179	.02393
Stddev	.00264	.0066	.00083	.00065	.00055	.00013	.0255	.00027
%RSD	1.3934	.14053	.43752	.06932	.11364	.56886	.52848	1.1239
#1	.18653	4.7163	.19007	.93542	.48039	.02321	4.8423	.02405
#2	.19179	4.7132	.19083	.93448	.47985	.02342	4.7915	.02363
#3	.18958	4.7259	.18917	.93418	.47930	.02346	4.8198	.02412
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09659	.23846	.24088	1.9086	23.854	.48243	4.8127	.24088
Stddev	.00021	.00006	.00176	.0299	.024	.00111	.0520	.00346
%RSD	.21848	.02654	.72986	1.5671	.09958	.22942	1.0798	1.4373
#1	.09683	.23854	.24210	1.8741	23.834	.48253	4.8448	.24488
#2	.09652	.23842	.24168	1.9261	23.880	.48128	4.7527	.23902
#3	.09642	.23843	.23887	1.9256	23.848	.48349	4.8404	.23875
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48317	24.148	.24158	4.6577	.24353	.56968	.18766	2.2805
Stddev	.00185	.055	.00273	.0177	.00404	.00132	.00193	.0062
%RSD	.38336	.22645	1.1294	.38107	1.6575	.23248	1.0271	.27261
#1	.48319	24.206	.24282	4.6549	.24677	.56938	.18565	2.2798
#2	.48502	24.139	.24347	4.6766	.24481	.56853	.18785	2.2870
#3	.48131	24.098	.23845	4.6414	.23901	.57113	.18949	2.2746
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: LCSW AD Acquired: 6/27/2016 11:04:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573656-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.47831	.48449	.47945	.24451	.47571	.47996	.00474
Stddev	.00220	.00031	.00246	.00024	.00157	.00168	.00104
%RSD	.46005	.06434	.51251	.09744	.33103	.35074	21.927
#1	.47940	.48464	.47744	.24424	.47543	.48089	.00375
#2	.47976	.48413	.48219	.24467	.47429	.48098	.00463
#3	.47578	.48470	.47872	.24462	.47740	.47802	.00582
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10036.	60667.	3061.3
Stddev	16.	132.	7.4
%RSD	.15906	.21753	.24216
#1	10038.	60818.	3054.0
#2	10019.	60573.	3061.1
#3	10050.	60609.	3068.8

Approved: June 28, 2016

Sample Name: L1606099601 Acquired: 6/27/2016 11:08:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573656-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00124	.00326	-.00134	.00556	.00464	-.00007	56.162	.00040
Stddev	.00178	.00987	.00131	.00195	.00069	.00003	.529	.00030
%RSD	144.06	302.41	98.032	35.136	14.856	45.396	.94107	74.669
#1	.00220	.00071	.00016	.00782	.00529	-.00003	55.776	.00007
#2	.00234	.01416	-.00191	.00447	.00392	-.00009	55.945	.00048
#3	-.00082	-.00508	-.00226	.00439	.00472	-.00008	56.764	.00066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00030	.00191	.00098	.00705	.36876	-.00116	22.804	.00093
Stddev	.00019	.00044	.00158	.01150	.11856	.00128	.343	.00214
%RSD	64.737	23.037	160.94	163.08	32.150	110.47	1.5021	228.81
#1	-.00024	.00235	.00067	.01641	.45961	-.00058	22.504	.00325
#2	-.00052	.00191	.00270	-.00578	.41204	-.00262	23.177	-.00096
#3	-.00015	.00147	-.00042	.01053	.23465	-.00027	22.730	.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00111	4.1289	.00028	.00948	.00046	.00145	.00097	2.9475
Stddev	.00031	.0524	.00074	.00210	.00339	.00155	.00585	.0217
%RSD	27.978	1.2680	265.78	22.177	735.63	107.03	604.94	.73695
#1	.00110	4.0702	-.00001	.00869	.00432	.00119	-.00275	2.9626
#2	.00081	4.1708	.00111	.00789	-.00092	.00310	.00771	2.9573
#3	.00143	4.1456	-.00027	.01186	-.00202	.00004	-.00206	2.9226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606099601 Acquired: 6/27/2016 11:08:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573656-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.08076	-.01280	.00056	.00130	.00146	-.00019
Stddev	.00029	.00049	.00307	.00274	.00086	.00015	.00072
%RSD	60.177	.60538	24.011	488.83	65.984	10.053	371.62
#1	.00039	.08032	-.01635	-.00058	.00183	.00138	-.00101
#2	.00024	.08128	-.01096	.00369	.00175	.00163	.00038
#3	.00080	.08066	-.01109	-.00142	.00031	.00137	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10059.	60827.	3058.7
Stddev	29.	228.	2.0
%RSD	.29168	.37466	.06551
#1	10025.	60569.	3056.7
#2	10081.	61002.	3058.5
#3	10070.	60909.	3060.7

Approved: June 28, 2016

Sample Name: L1606099602S Acquired: 6/27/2016 11:11:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573656-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.18813	4.7350	.18948	.94279	.48703	.02341	61.170	.02398
Stddev	.00277	.0076	.00172	.00254	.00188	.00011	.164	.00007
%RSD	1.4748	.16161	.90580	.26991	.38499	.47028	.26817	.30979
#1	.18980	4.7388	.19100	.94494	.48912	.02350	61.264	.02400
#2	.18493	4.7400	.18981	.93998	.48647	.02346	61.266	.02403
#3	.18966	4.7262	.18762	.94345	.48550	.02329	60.981	.02389
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09458	.23494	.23535	1.9256	24.153	.48381	27.282	.23869
Stddev	.00063	.00040	.00037	.0171	.111	.00423	.196	.00329
%RSD	.66218	.16824	.15837	.88843	.45831	.87512	.71904	1.3801
#1	.09454	.23528	.23512	1.9446	24.042	.48848	27.445	.23993
#2	.09522	.23450	.23515	1.9207	24.263	.48274	27.064	.24118
#3	.09397	.23504	.23578	1.9114	24.153	.48021	27.336	.23495
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48631	28.289	.23480	4.7714	.23561	.57505	.18257	5.2951
Stddev	.00099	.078	.00097	.0059	.00124	.00076	.00243	.0024
%RSD	.20421	.27704	.41396	.12448	.52582	.13199	1.3292	.04484
#1	.48717	28.373	.23464	4.7777	.23525	.57420	.18377	5.2952
#2	.48654	28.219	.23585	4.7707	.23699	.57531	.17978	5.2974
#3	.48523	28.274	.23393	4.7659	.23459	.57565	.18417	5.2926
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606099602S Acquired: 6/27/2016 11:11:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573656-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47604**	**.56589**	**.46385**	**.24049**	**.47449**	**.47286**	**.00122**
Stddev	.00004	.00229	.00771	.00260	.00102	.00053	.00044
%RSD	.00866	.40463	1.6627	1.0819	.21533	.11153	35.825
#1	.47602	.56845	.46505	.24323	.47561	.47256	.00081
#2	.47609	.56517	.45561	.23806	.47362	.47346	.00118
#3	.47602	.56404	.47090	.24019	.47423	.47254	.00168
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9956.7**	**60350.**	**3056.9**
Stddev	32.2	88.	8.3
%RSD	.32388	.14559	.27133
#1	9988.9	60290.	3047.9
#2	9924.4	60310.	3058.6
#3	9956.7	60451.	3064.2

Approved: June 28, 2016

Sample Name: L1606099603SD Acquired: 6/27/2016 11:15:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573656-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19028	4.7868	.19269	.94867	.48722	.02346	60.919	.02406
Stddev	.00212	.0181	.00136	.00219	.00189	.00006	.253	.00014
%RSD	1.1126	.37744	.70818	.23039	.38720	.26793	.41487	.57233
#1	.19148	4.7722	.19359	.94673	.48507	.02353	60.675	.02401
#2	.18784	4.8070	.19112	.95104	.48802	.02344	60.902	.02395
#3	.19154	4.7811	.19336	.94824	.48858	.02341	61.180	.02421
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09518	.23692	.23715	1.9314	24.167	.48716	27.262	.23905
Stddev	.00047	.00079	.00143	.0184	.183	.00439	.044	.00192
%RSD	.49502	.33520	.60154	.95364	.75718	.90103	.16297	.80434
#1	.09469	.23782	.23571	1.9395	23.964	.48436	27.211	.23873
#2	.09522	.23634	.23856	1.9445	24.216	.48492	27.285	.23730
#3	.09563	.23660	.23717	1.9104	24.319	.49222	27.291	.24111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48886	28.229	.23606	4.7975	.24121	.57136	.18866	5.3330
Stddev	.00146	.184	.00176	.0017	.00169	.00269	.01260	.0141
%RSD	.29961	.65348	.74735	.03493	.70048	.47096	6.6800	.26466
#1	.49043	28.016	.23710	4.7973	.24241	.57255	.18833	5.3193
#2	.48863	28.338	.23706	4.7959	.24195	.57324	.20142	5.3475
#3	.48753	28.333	.23402	4.7993	.23928	.56827	.17622	5.3323
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606099603SD Acquired: 6/27/2016 11:15:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573656-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47890**	**.56537**	**.47324**	**.24435**	**.47813**	**.47683**	**.00060**
Stddev	.00286	.00273	.01175	.00100	.00128	.00077	.00020
%RSD	.59645	.48334	2.4839	.40879	.26843	.16191	32.886
#1	.48155	.56309	.46094	.24471	.47955	.47751	.00072
#2	.47926	.56463	.47442	.24512	.47781	.47699	.00071
#3	.47587	.56840	.48436	.24322	.47704	.47599	.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9937.3**	**60391.**	**3077.2**
Stddev	14.8	124.	21.3
%RSD	.14891	.20584	.69260
#1	9920.4	60281.	3101.8
#2	9943.6	60366.	3065.2
#3	9947.9	60526.	3064.6

Approved: June 28, 2016

Sample Name: L1606117901 Acquired: 6/27/2016 11:19:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00072	.02080	-.00015	.00912	-.00135	-.00001	.18554	.00009
Stddev	.00163	.01061	.00134	.00085	.00073	.00009	.03244	.00025
%RSD	227.50	50.989	907.80	9.2958	53.948	957.01	17.482	271.74
#1	.00097	.03252	.00133	.00831	-.00071	.00008	.19286	-.00017
#2	.00220	.01803	-.00129	.01000	-.00120	-.00010	.15007	.00033
#3	-.00102	.01186	-.00049	.00904	-.00214	-.00001	.21370	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00031	.00195	.00009	.02926	.07448	-.00083	.07412	.00218
Stddev	.00030	.00118	.00112	.04525	.16774	.00245	.02265	.00214
%RSD	96.395	60.268	1181.8	154.65	225.20	294.22	30.559	98.076
#1	-.00038	.00143	-.00002	-.01797	-.07824	-.00029	.04822	.00395
#2	.00002	.00330	.00126	.03352	.04769	.00130	.09021	.00278
#3	-.00058	.00112	-.00096	.07223	.25401	-.00351	.08393	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	.15073	.00024	.00759	-.00104	.00154	-.00041	-.01205
Stddev	.00034	.03848	.00074	.00602	.00153	.00314	.00173	.00267
%RSD	38.727	25.532	313.77	79.298	146.52	204.07	419.45	22.167
#1	.00069	.14959	-.00056	.01447	.00072	.00196	.00111	-.00897
#2	.00069	.18977	.00089	.00499	-.00186	.00444	-.00229	-.01372
#3	.00129	.11282	.00038	.00331	-.00200	-.00179	-.00006	-.01346
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606117901 Acquired: 6/27/2016 11:19:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00000	.00123	-.00396	-.00083	.00060	.00107	-.00024
Stddev	.00073	.00029	.00070	.00214	.00012	.00021	.00050
%RSD	69743.	23.931	17.704	257.74	20.309	19.961	205.14
#1	.00084	.00157	-.00320	.00160	.00049	.00130	-.00015
#2	-.00035	.00106	-.00411	-.00168	.00073	.00102	-.00078
#3	-.00049	.00105	-.00458	-.00242	.00059	.00088	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10211.	62110.	3089.5
Stddev	13.	186.	5.8
%RSD	.12645	.29961	.18789
#1	10203.	62198.	3083.6
#2	10225.	61896.	3095.2
#3	10204.	62236.	3089.7

Approved: June 28, 2016

Sample Name: L1606117901PS Acquired: 6/27/2016 11:23:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574214-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.18751	4.6924	.18741	.92180	.47420	.02302	4.9755	.02354
Stddev	.00138	.0184	.00060	.00040	.00158	.00005	.0105	.00025
%RSD	.73597	.39242	.32238	.04391	.33360	.22042	.21030	1.0799
#1	.18888	4.7119	.18682	.92179	.47602	.02303	4.9647	.02334
#2	.18612	4.6753	.18739	.92141	.47324	.02296	4.9856	.02383
#3	.18752	4.6899	.18803	.92222	.47333	.02306	4.9762	.02345
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09588	.23472	.23888	1.9126	23.415	.47894	4.7182	.23827
Stddev	.00035	.00100	.00116	.0071	.048	.00290	.0903	.00057
%RSD	.36630	.42739	.48450	.37295	.20447	.60570	1.9132	.24122
#1	.09598	.23575	.23947	1.9074	23.375	.48172	4.6611	.23837
#2	.09616	.23375	.23962	1.9096	23.402	.47593	4.6712	.23766
#3	.09549	.23467	.23755	1.9207	23.468	.47917	4.8222	.23879
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.47661	23.842	.23804	4.6066	.23860	.55603	.17930	2.2773
Stddev	.00152	.022	.00175	.0111	.00481	.00366	.00848	.0068
%RSD	.31904	.09402	.73670	.24161	2.0142	.65792	4.7280	.29846
#1	.47744	23.817	.23835	4.6121	.23447	.55198	.16952	2.2796
#2	.47754	23.847	.23962	4.6139	.24387	.55702	.18392	2.2826
#3	.47486	23.861	.23616	4.5938	.23746	.55910	.18447	2.2696
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606117901PS Acquired: 6/27/2016 11:23:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574214-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47165**	**.47956**	**.47085**	**.24029**	**.46670**	**.47457**	**.00055**
Stddev	.00140	.00029	.00956	.00263	.00189	.00170	.00039
%RSD	.29768	.06000	2.0311	1.0939	.40453	.35895	71.804
#1	.47125	.47964	.47754	.23905	.46790	.47446	.00081
#2	.47321	.47924	.47511	.23851	.46452	.47633	.00075
#3	.47048	.47980	.45990	.24331	.46767	.47292	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10135.**	**61356.**	**3086.5**
Stddev	4.	169.	6.2
%RSD	.04127	.27468	.20041
#1	10138.	61169.	3079.4
#2	10130.	61496.	3090.6
#3	10136.	61402.	3089.5

Approved: June 28, 2016

Sample Name: L1606117901SDL Acquired: 6/27/2016 11:26:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574214-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00182	-.00876	-.00158	.00420	-.00145	-.00006	.01959	.00013
Stddev	.00139	.00831	.00054	.00197	.00159	.00007	.02852	.00015
%RSD	76.113	94.876	34.316	46.949	109.92	115.61	145.60	111.05
#1	.00305	.00028	-.00125	.00647	-.00089	.00000	.04998	.00030
#2	.00209	-.01048	-.00128	.00316	-.00021	-.00005	.01539	.00002
#3	.00032	-.01607	-.00220	.00296	-.00325	-.00013	-.00660	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00024	.00078	.00077	.02010	.17744	-.00181	-.00514	.00019
Stddev	.00029	.00095	.00050	.00816	.07146	.00342	.03381	.00246
%RSD	124.09	121.80	65.402	40.597	40.275	189.49	657.34	1314.0
#1	-.00049	.00179	.00026	.01194	.25402	.00022	-.02869	.00024
#2	-.00029	-.00010	.00079	.02826	.11253	-.00576	-.02034	-.00230
#3	.00008	.00065	.00126	.02009	.16576	.00012	.03360	.00262
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00092	.10897	.00042	.00853	-.00135	.00022	-.00397	-.02369
Stddev	.00009	.00391	.00083	.00771	.00206	.00158	.00375	.00072
%RSD	9.7431	3.5859	195.85	90.342	152.42	719.67	94.434	3.0224
#1	.00096	.10458	.00127	.00472	.00097	.00168	-.00530	-.02420
#2	.00082	.11027	-.00039	.00348	-.00298	-.00146	.00026	-.02287
#3	.00099	.11207	.00039	.01741	-.00204	.00043	-.00687	-.02400
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606117901SDL Acquired: 6/27/2016 11:26:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574214-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00095	.00206	.00175	.00023	.00090	-.00011
Stddev	.00081	.00029	.00575	.00174	.00011	.00015	.00028
%RSD	447.31	30.155	279.47	99.665	49.179	16.523	251.35
#1	-.00057	.00062	.00863	.00026	.00024	.00096	-.00037
#2	.00104	.00111	-.00043	.00367	.00012	.00101	-.00014
#3	.00008	.00112	-.00203	.00132	.00035	.00073	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10479.	63800.	3157.1
Stddev	55.	94.	17.6
%RSD	.52430	.14744	.55775
#1	10534.	63713.	3156.5
#2	10480.	63899.	3175.0
#3	10424.	63787.	3139.8

Approved: June 28, 2016

Sample Name: L1606117901SDL Acquired: 6/27/2016 11:30:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574214-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**-.01463**	**-.00147**	**.00136**	**-.00217**	**-.00007**	**-.02052**
Stddev	.00223	.00395	.00125	.00151	.00072	.00009	.04242
%RSD	4811.9	27.034	84.817	111.15	33.177	132.09	206.74
#1	-.00198	-.01008	-.00234	.00035	-.00228	-.00011	.02000
#2	-.00031	-.01726	-.00004	.00309	-.00284	.00003	-.06461
#3	.00243	-.01654	-.00202	.00064	-.00141	-.00012	-.01694
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**-.00005**	**.00100**	**-.00041**	F **-.02087**	**.05390**	**-.00380**
Stddev	.00014	.00044	.00061	.00080	.02667	.11692	.00540
%RSD	89.389	864.20	61.266	196.75	127.82	216.92	141.87
#1	.00015	-.00056	.00069	-.00020	-.05130	-.07225	-.00999
#2	.00002	.00022	.00171	.00027	-.00157	.15862	-.00007
#3	.00030	.00019	.00061	-.00129	-.00972	.07533	-.00135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03363**	**.00221**	**.00046**	**.04075**	**-.00021**	**.00528**	**-.00228**
Stddev	.02463	.00034	.00014	.01938	.00110	.00417	.00173
%RSD	73.257	15.401	29.515	47.560	531.64	78.936	75.715
#1	.00529	.00248	.00060	.03410	.00021	.00120	-.00371
#2	.04992	.00232	.00047	.02557	-.00145	.00953	-.00036
#3	.04568	.00183	.00032	.06258	.00062	.00510	-.00278
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 28, 2016

Sample Name: L1606117901SDL Acquired: 6/27/2016 11:30:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574214-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00148**	**.00052**	**-.02939**	**-.00005**	**.00027**	**-.00175**	**.00170**
Stddev	.00281	.00262	.00025	.00021	.00036	.00601	.00037
%RSD	189.85	505.51	.84423	394.19	132.35	344.06	22.015
#1	-.00270	.00158	-.02920	-.00027	.00047	-.00069	.00166
#2	-.00348	-.00246	-.02967	.00015	-.00014	.00367	.00209
#3	.00173	.00244	-.02930	-.00004	.00049	-.00822	.00134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00042**	**.00042**	**-.00030**
Stddev	.00063	.00012	.00034
%RSD	149.80	28.720	112.76
#1	-.00114	.00032	-.00062
#2	.00002	.00038	-.00036
#3	-.00014	.00055	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10431.**	**63091.**	**3111.2**
Stddev	16.	252.	21.2
%RSD	.15804	.39869	.68135
#1	10444.	63211.	3098.3
#2	10438.	63260.	3135.7
#3	10413.	62802.	3099.7

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 11:34:45 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41029**	**10.314**	**.41311**	**.51300**	**1.0292**	**.05084**	**10.180**	**.05150**
Stddev	.00136	.009	.00246	.00180	.0068	.00017	.038	.00051
%RSD	.33182	.09125	.59569	.35017	.65999	.32692	.37198	.99887
#1	.40919	10.310	.41560	.51161	1.0232	.05065	10.141	.05186
#2	.40986	10.307	.41306	.51237	1.0366	.05092	10.217	.05173
#3	.41181	10.325	.41068	.51503	1.0278	.05095	10.182	.05091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20710**	**.51032**	**.52099**	**4.0892**	**50.815**	**1.0221**	**10.252**	**.51220**
Stddev	.00166	.00085	.00175	.0040	.318	.0029	.037	.00281
%RSD	.80235	.16676	.33637	.09673	.62496	.28272	.36345	.54826
#1	.20850	.50937	.52285	4.0847	50.552	1.0201	10.295	.50976
#2	.20755	.51102	.52076	4.0921	51.168	1.0255	10.238	.51527
#3	.20526	.51055	.51937	4.0908	50.726	1.0208	10.224	.51156
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0210**	**51.237**	**.51895**	**10.296**	**.51615**	**1.2226**	**.41042**	**5.0648**
Stddev	.0077	.306	.00211	.030	.00345	.0091	.00397	.0173
%RSD	.75227	.59797	.40704	.29113	.66809	.74330	.96773	.34141
#1	1.0285	50.954	.52109	10.330	.51651	1.2329	.41221	5.0786
#2	1.0215	51.563	.51889	10.286	.51254	1.2195	.41319	5.0704
#3	1.0131	51.194	.51687	10.272	.51941	1.2156	.40587	5.0454
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 11:34:45 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0301**	**1.0276**	**1.0224**	**.52111**	**1.0183**	**1.0425**	**1.0206**
Stddev	.0050	.0038	.0117	.00210	.0025	.0036	.0032
%RSD	.48419	.37352	1.1487	.40271	.24354	.34135	.30940
#1	1.0346	1.0244	1.0153	.52324	1.0181	1.0453	1.0170
#2	1.0309	1.0319	1.0359	.52105	1.0159	1.0436	1.0231
#3	1.0247	1.0267	1.0159	.51905	1.0209	1.0385	1.0217
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9545.4**	**57355.**	**2920.6**
Stddev	16.0	98.	12.9
%RSD	.16742	.17123	.44036
#1	9535.4	57468.	2935.4
#2	9537.0	57297.	2914.0
#3	9563.8	57299.	2912.3

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 11:38:22 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**.00504**	**-.00201**	**.00368**	**.00256**	**.00009**	**.01404**
Stddev	.00219	.00642	.00250	.00148	.00163	.00009	.04911
%RSD	527.90	127.30	124.48	40.110	63.751	100.94	349.75
#1	.00239	.00398	.00030	.00311	.00407	.00018	.06082
#2	-.00194	.01193	-.00166	.00536	.00276	.00009	.01840
#3	.00080	-.00078	-.00467	.00258	.00083	.00000	-.03710
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00012**	**-.00005**	**.00229**	**.00038**	**.02444**	**.20214**	**-.00177**
Stddev	.00013	.00037	.00132	.00078	.03885	.05544	.00386
%RSD	111.48	696.52	57.782	205.08	158.97	27.426	217.74
#1	-.00023	.00007	.00222	.00101	.05224	.16080	.00022
#2	.00003	-.00047	.00100	.00062	-.01995	.26514	-.00622
#3	-.00016	.00024	.00364	-.00049	.04104	.18047	.00068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.03023**	**.00028**	**.00420**	**.13919**	**-.00004**	F **.01462**	**.00241**
Stddev	.11455	.00120	.00024	.02048	.00017	.00305	.00207
%RSD	378.91	434.05	5.6517	14.715	417.93	20.859	86.062
#1	-.03575	.00137	.00447	.15454	-.00014	.01761	.00384
#2	-.14193	-.00101	.00411	.11593	.00015	.01475	.00003
#3	.08698	.00047	.00403	.14709	-.00013	.01151	.00335
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						.01000	
Low Limit						-.01000	

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 11:38:22 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00518	-.00119	.01136	.00155	.00215	-.00792	.00076
Stddev	.00420	.00357	.00200	.00064	.00047	.00257	.00569
%RSD	81.176	299.26	17.574	41.045	21.906	32.387	751.91
#1	.00995	-.00456	.01333	.00222	.00256	-.00563	-.00271
#2	.00206	.00254	.01141	.00146	.00225	-.01069	-.00235
#3	.00351	-.00155	.00934	.00096	.00164	-.00745	.00733
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00124	.00038	.00159
Stddev	.00096	.00031	.00019
%RSD	76.994	82.329	11.704
#1	.00222	.00051	.00138
#2	.00031	.00062	.00166
#3	.00119	.00002	.00173
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9358.9	56547.	2794.8
Stddev	20.4	165.	12.6
%RSD	.21850	.29146	.44991
#1	9359.7	56591.	2780.9
#2	9338.0	56684.	2805.3
#3	9378.9	56364.	2798.2

Approved: June 28, 2016

Sample Name: L1606102602 Acquired: 6/27/2016 11:42:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**.26453**	**-.00232**	**.01137**	**.14455**	**.00168**	**156.80**
Stddev	.00213	.00553	.00315	.00190	.00153	.00005	.86
%RSD	514.79	2.0924	135.85	16.713	1.0603	2.7135	.54868
#1	.00257	.27024	-.00572	.00947	.14575	.00166	157.76
#2	.00036	.26416	-.00174	.01139	.14507	.00165	156.58
#3	-.00169	.25919	.00050	.01327	.14282	.00174	156.08
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00793**	**.29026**	**4.1463**	**.79834**	**18.146**	**10.415**	**.14997**
Stddev	.00013	.00197	.0069	.00546	.096	.012	.00155
%RSD	1.6398	.67726	.16696	.68358	.52983	.11605	1.0303
#1	.00806	.29105	4.1518	.80306	18.217	10.402	.15171
#2	.00780	.29171	4.1487	.79960	18.185	10.426	.14875
#3	.00793	.28803	4.1385	.79237	18.036	10.416	.14945
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**117.35**	**2.7508**	**.04403**	F **463.92**	**11.613**	**.23944**	**.00538**
Stddev	.19	.0034	.00069	5.22	.075	.00408	.00236
%RSD	.16323	.12385	1.5776	1.1254	.64419	1.7056	43.762
#1	117.53	2.7538	.04451	469.94	11.676	.23503	.00518
#2	117.15	2.7516	.04435	460.70	11.634	.24308	.00783
#3	117.37	2.7471	.04323	461.11	11.530	.24022	.00313
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 28, 2016

Sample Name: L1606102602 Acquired: 6/27/2016 11:42:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -.03604	.00167	21.855	-.00030	2.7919	-.02523	.00328
Stddev	.00078	.00175	.048	.00077	.0132	.01080	.00542
%RSD	2.1519	104.78	.21795	256.83	.47315	42.798	165.41
#1	-.03690	.00316	21.910	-.00045	2.8052	-.02849	.00549
#2	-.03581	.00211	21.837	.00053	2.7919	-.03401	-.00290
#3	-.03540	-.00026	21.820	-.00099	2.7788	-.01317	.00724
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	45.000						
Low Limit	-.02000						

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00181	.12543	-.00203
Stddev	.00054	.00077	.00044
%RSD	29.945	.61364	21.462
#1	-.00127	.12603	-.00164
#2	-.00180	.12571	-.00195
#3	-.00236	.12456	-.00250
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9341.9	56331.	2987.1
Stddev	32.3	177.	26.1
%RSD	.34579	.31360	.87222
#1	9359.2	56340.	2957.6
#2	9362.0	56151.	2996.7
#3	9304.7	56503.	3007.0

Approved: June 28, 2016

Sample Name: L1606102604 Acquired: 6/27/2016 11:46:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.51537	-.00135	.04849	.25692	.00002	10.597	.00065
Stddev	.00097	.00417	.00160	.00232	.00117	.00006	.071	.00028
%RSD	119.61	.80856	118.17	4.7769	.45645	334.00	.67436	43.209
#1	.00084	.51600	-.00179	.04829	.25614	.00001	10.599	.00088
#2	.00178	.51092	-.00268	.05091	.25827	-.00004	10.668	.00073
#3	-.00017	.51918	.00042	.04629	.25636	.00009	10.525	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00143	.00804	.00219	.94506	.57282	.01957	8.3432	.04056
Stddev	.00025	.00118	.00070	.02358	.17090	.00552	.1393	.00132
%RSD	17.728	14.672	31.807	2.4955	29.835	28.200	1.6694	3.2511
#1	.00136	.00921	.00247	.92684	.76429	.02561	8.4862	.03904
#2	.00171	.00806	.00270	.97170	.43570	.01479	8.3352	.04139
#3	.00122	.00685	.00140	.93664	.51849	.01831	8.2080	.04125
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00079	111.22	.01184	.05038	.00139	.00283	-.00142	30.099
Stddev	.00005	.58	.00193	.00219	.00224	.00277	.00860	.182
%RSD	6.3443	.52474	16.326	4.3492	161.71	98.192	607.40	.60408
#1	.00082	110.78	.01373	.04932	.00371	.00258	-.00365	30.191
#2	.00082	111.88	.01193	.05290	.00122	.00018	-.00868	30.217
#3	.00073	111.00	.00987	.04892	-.00077	.00571	.00808	29.890
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606102604 Acquired: 6/27/2016 11:46:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00070	.21272	.00487	.00126	.00108	.00766	.00061
Stddev	.00022	.00072	.00311	.00378	.00014	.00024	.00054
%RSD	31.509	.33665	63.798	300.82	12.513	3.1489	89.018
#1	.00046	.21236	.00741	.00517	.00119	.00770	.00081
#2	.00077	.21354	.00140	.00095	.00112	.00788	.00102
#3	.00089	.21225	.00580	-.00236	.00093	.00740	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9804.0	59120.	3006.8
Stddev	14.0	114.	4.7
%RSD	.14307	.19206	.15632
#1	9819.7	59017.	3005.4
#2	9792.7	59241.	3002.9
#3	9799.5	59101.	3012.0

Approved: June 28, 2016

Sample Name: L1606102606 Acquired: 6/27/2016 11:50:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	1.2239	-.00174	.01161	.03727	.00027	5.5157
Stddev	.00080	.0104	.00223	.00250	.00221	.00006	.1070
%RSD	652.80	.85109	128.19	21.558	5.9287	21.417	1.9394
#1	.00092	1.2359	.00079	.01170	.03931	.00028	5.6257
#2	.00014	1.2178	-.00341	.00906	.03758	.00032	5.4120
#3	-.00069	1.2180	-.00260	.01407	.03493	.00021	5.5094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.01245	.00844	.00357	1.6333	1.2394	.06022
Stddev	.00012	.00034	.00111	.00096	.0776	.0714	.00425
%RSD	29.771	2.7570	13.173	26.915	4.7517	5.7615	7.0639
#1	.00032	.01223	.00839	.00440	1.7197	1.3197	.06065
#2	.00055	.01228	.00957	.00252	1.5695	1.2156	.06423
#3	.00036	.01285	.00735	.00380	1.6107	1.1830	.05576
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.8139	.13811	.00206	248.44	.05729	.26089	.00094
Stddev	.1184	.00127	.00026	6.69	.00127	.00873	.00227
%RSD	2.0371	.91838	12.474	2.6922	2.2255	3.3451	240.98
#1	5.8695	.13935	.00185	255.89	.05875	.25082	.00120
#2	5.8943	.13817	.00234	242.94	.05639	.26617	-.00144
#3	5.6779	.13682	.00197	246.50	.05673	.26568	.00307
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 28, 2016

Sample Name: L1606102606 Acquired: 6/27/2016 11:50:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.00105	F 36.384	.00024	.10851	.01712	-.00030
Stddev	.00500	.00476	.192	.00071	.00323	.00573	.00124
%RSD	1024.8	454.95	.52638	293.29	2.9813	33.469	416.21
#1	.00624	-.00445	36.500	-.00042	.11191	.02347	-.00061
#2	-.00191	.00369	36.488	.00015	.10548	.01232	-.00135
#3	-.00286	.00389	36.163	.00100	.10813	.01557	.00107
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-1.0000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00535	.16936	.00138
Stddev	.00042	.00122	.00039
%RSD	7.7851	.71943	28.035
#1	.00578	.16980	.00152
#2	.00533	.17029	.00168
#3	.00495	.16798	.00094
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9626.3	57886.	2983.8
Stddev	18.3	261.	74.6
%RSD	.19058	.45101	2.5006
#1	9647.5	57585.	2901.3
#2	9616.7	58049.	3046.6
#3	9614.8	58025.	3003.6

Approved: June 28, 2016

Sample Name: L1606102607 Acquired: 6/27/2016 11:54:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00031	1.1323	-.00238	.04660	.10958	.00010	6.5258	.00037
Stddev	.00080	.0175	.00050	.00030	.00243	.00010	.0579	.00010
%RSD	257.95	1.5429	20.924	.64173	2.2156	104.38	.88676	26.723
#1	-.00092	1.1127	-.00240	.04687	.10738	.00021	6.4875	.00037
#2	.00060	1.1463	-.00188	.04628	.10917	.00010	6.4976	.00027
#3	-.00061	1.1378	-.00287	.04666	.11218	-.00000	6.5924	.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00187	.00297	.00159	1.3290	.57069	.00275	3.8665	.01222
Stddev	.00009	.00021	.00046	.0290	.04032	.00285	.0619	.00283
%RSD	4.6234	7.1037	28.704	2.1787	7.0656	103.56	1.6015	23.182
#1	.00187	.00273	.00106	1.3104	.54271	.00511	3.8437	.01540
#2	.00178	.00310	.00180	1.3143	.61691	.00356	3.8192	.00998
#3	.00195	.00309	.00189	1.3624	.55245	-.00042	3.9366	.01126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00103	20.808	.00171	.02360	-.00106	.00153	.00040	8.8461
Stddev	.00018	.091	.00048	.00800	.00292	.00392	.00140	.1098
%RSD	17.429	.43937	27.803	33.897	275.11	256.50	351.43	1.2414
#1	.00085	20.802	.00191	.01627	-.00308	.00603	-.00121	8.9294
#2	.00103	20.719	.00205	.03214	.00229	-.00117	.00118	8.8872
#3	.00121	20.902	.00117	.02239	-.00240	-.00027	.00122	8.7216
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606102607 Acquired: 6/27/2016 11:54:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.12250	.01094	.00018	.00267	.07442	.00061
Stddev	.00032	.00081	.00149	.00374	.00039	.00117	.00047
%RSD	181.48	.65945	13.593	2023.2	14.549	1.5745	76.234
#1	-.00005	.12246	.01133	-.00363	.00276	.07517	.00038
#2	.00054	.12171	.01218	.00033	.00300	.07502	.00115
#3	.00004	.12332	.00929	.00385	.00224	.07307	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9791.2	59635.	2975.2
Stddev	8.5	18.	25.1
%RSD	.08713	.02982	.84202
#1	9783.0	59652.	2959.7
#2	9790.4	59616.	3004.1
#3	9800.1	59637.	2961.9

Approved: June 28, 2016

Sample Name: L1606084001 Acquired: 6/27/2016 11:57:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00102	.00453	-.00231	.01392	.03067	-.00008	53.120	.00080
Stddev	.00088	.01618	.00071	.00201	.00012	.00007	.441	.00016
%RSD	86.051	357.15	30.592	14.417	.38086	81.244	.83058	20.432
#1	.00104	-.00250	-.00154	.01565	.03054	-.00015	53.330	.00085
#2	.00013	-.00695	-.00246	.01439	.03076	-.00007	53.418	.00062
#3	.00188	.02304	-.00294	.01172	.03072	-.00002	52.613	.00093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.00170	.00123	.32459	1.0265	-.00206	12.392	.94460
Stddev	.00013	.00072	.00102	.00668	.0613	.00244	.121	.00127
%RSD	16.603	42.489	83.413	2.0577	5.9742	118.69	.97455	.13438
#1	.00096	.00095	.00005	.31956	1.0133	-.00472	12.401	.94427
#2	.00077	.00177	.00186	.33217	.97280	-.00155	12.267	.94353
#3	.00070	.00239	.00178	.32204	1.0933	.00009	12.508	.94600
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00065	5.1723	.00021	.01672	-.00134	-.00196	.00063	4.1375
Stddev	.00018	.0275	.00068	.00105	.00210	.00242	.00481	.0318
%RSD	28.323	.53205	318.26	6.3027	156.43	123.76	761.62	.76821
#1	.00086	5.1913	.00009	.01551	.00023	.00018	.00452	4.1074
#2	.00051	5.1849	-.00040	.01723	-.00053	-.00459	.00212	4.1343
#3	.00057	5.1407	.00095	.01742	-.00372	-.00146	-.00475	4.1707
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606084001 Acquired: 6/27/2016 11:57:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00070**	**.24263**	**-.01886**	**-.00031**	**-.00033**	**.01399**	**-.00001**
Stddev	.00032	.00045	.00470	.00047	.00081	.00026	.00028
%RSD	46.464	.18625	24.915	152.40	243.31	1.8674	2189.7
#1	-.00052	.24229	-.02136	-.00072	-.00123	.01369	-.00029
#2	-.00050	.24315	-.01344	-.00041	.00034	.01408	-.00002
#3	-.00107	.24246	-.02177	.00020	-.00011	.01419	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9610.5**	**58693.**	**2932.5**
Stddev	88.7	624.	9.6
%RSD	.92300	1.0624	.32835
#1	9677.1	58033.	2921.5
#2	9644.5	59272.	2936.8
#3	9509.8	58775.	2939.2

Approved: June 28, 2016

Sample Name: L1606084002 Acquired: 6/27/2016 12:01:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00128**	**-.00139**	**.00224**	**.08634**	**.09552**	**-.00002**	**120.61**	**.00014**
Stddev	.00250	.00876	.00171	.00338	.00036	.00006	.69	.00026
%RSD	194.67	631.07	76.296	3.9175	.37645	245.45	.57215	192.80
#1	-.00402	-.01109	.00064	.08244	.09586	.00004	119.84	.00033
#2	-.00069	.00593	.00204	.08824	.09555	-.00007	121.15	-.00016
#3	.00087	.00100	.00403	.08835	.09514	-.00004	120.85	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00063**	**.00077**	**.00147**	**43.081**	**4.5386**	**.00310**	**11.268**	**.67312**
Stddev	.00017	.00005	.00320	.235	.0338	.00167	.145	.00147
%RSD	26.964	6.9558	217.13	.54506	.74492	54.079	1.2833	.21851
#1	-.00075	.00072	.00503	42.809	4.5769	.00120	11.171	.67359
#2	-.00043	.00076	.00055	43.216	4.5263	.00372	11.198	.67430
#3	-.00069	.00082	-.00116	43.216	4.5127	.00437	11.434	.67147
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00116**	**5.4244**	**.00012**	**.11801**	**.00233**	**.00183**	**-.00652**	**7.6403**
Stddev	.00020	.0386	.00089	.00434	.00125	.00095	.00211	.1136
%RSD	17.017	.71102	759.90	3.6803	53.783	51.671	32.377	1.4866
#1	.00110	5.3838	-.00060	.11342	.00098	.00292	-.00818	7.7661
#2	.00100	5.4288	.00111	.11857	.00255	.00144	-.00414	7.6097
#3	.00138	5.4605	-.00016	.12205	.00346	.00115	-.00724	7.5452
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606084002 Acquired: 6/27/2016 12:01:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.68115	.00149	.00003	.00035	.00200	-.00075
Stddev	.00013	.00063	.00809	.00250	.00042	.00020	.00050
%RSD	21.360	.09243	543.95	9778.5	119.63	9.8337	66.242
#1	.00061	.68055	.00036	-.00281	-.00013	.00223	-.00067
#2	.00046	.68181	-.00598	.00096	.00057	.00186	-.00128
#3	.00071	.68110	.01008	.00193	.00063	.00192	-.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9739.0	57938.	2928.4
Stddev	102.1	129.	16.1
%RSD	1.0478	.22223	.54818
#1	9622.7	57791.	2946.0
#2	9781.2	57992.	2924.9
#3	9813.3	58031.	2914.5

Approved: June 28, 2016

Sample Name: L1606084003 Acquired: 6/27/2016 12:05:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00121	.08071	.00172	.09081	.09959	-.00012	123.30	.00045
Stddev	.00149	.00384	.00171	.00145	.00117	.00007	1.07	.00020
%RSD	122.93	4.7551	99.258	1.5948	1.1749	56.220	.86783	45.782
#1	.00002	.08463	.00369	.09156	.09973	-.00020	122.33	.00068
#2	.00073	.07696	.00088	.08914	.10068	-.00009	124.45	.00031
#3	.00288	.08054	.00059	.09174	.09835	-.00007	123.11	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00069	.00087	.00289	43.973	4.6960	.00430	11.675	.66419
Stddev	.00015	.00041	.00047	.300	.1683	.00551	.133	.00687
%RSD	21.226	47.747	16.160	.68244	3.5840	127.88	1.1395	1.0342
#1	-.00071	.00059	.00238	43.670	4.7091	-.00204	11.575	.65887
#2	-.00082	.00134	.00298	44.270	4.8574	.00712	11.826	.67195
#3	-.00053	.00067	.00330	43.978	4.5216	.00783	11.625	.66177
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00136	5.5885	.00111	.13500	.00082	.00343	-.00607	7.9482
Stddev	.00015	.0707	.00031	.00464	.00148	.00147	.00397	.0520
%RSD	10.645	1.2649	27.924	3.4356	181.08	42.697	65.305	.65412
#1	.00123	5.5076	.00132	.14035	.00252	.00509	-.00876	7.9966
#2	.00152	5.6384	.00075	.13201	-.00018	.00231	-.00152	7.9546
#3	.00135	5.6196	.00126	.13265	.00012	.00290	-.00794	7.8933
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606084003 Acquired: 6/27/2016 12:05:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00054**	**.69838**	**.00629**	**.00178**	**-.00059**	**.00222**	**-.00084**
Stddev	.00157	.00675	.00940	.00291	.00056	.00018	.00039
%RSD	291.19	.96596	149.56	163.25	95.098	8.3166	46.054
#1	-.00069	.69240	.00543	.00493	-.00119	.00201	-.00053
#2	.00110	.70570	.01609	.00124	-.00007	.00234	-.00128
#3	-.00203	.69705	-.00266	-.00082	-.00052	.00232	-.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9762.2**	**58678.**	**2957.0**
Stddev	32.4	138.	19.3
%RSD	.33194	.23584	.65148
#1	9726.5	58612.	2972.9
#2	9770.6	58584.	2935.6
#3	9789.6	58837.	2962.6

Approved: June 28, 2016

Sample Name: L1606084004 Acquired: 6/27/2016 12:09:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00340	.57839	.00309	.04986	.07128	-.00014	78.157	.00024
Stddev	.00231	.00473	.00177	.00231	.00149	.00006	.489	.00016
%RSD	67.902	.81696	57.428	4.6304	2.0875	41.855	.62597	66.282
#1	.00236	.58363	.00106	.04772	.07297	-.00021	78.703	.00036
#2	.00179	.57447	.00437	.05231	.07070	-.00013	77.759	.00006
#3	.00604	.57706	.00382	.04954	.07017	-.00009	78.008	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	.00268	.00209	13.902	2.3115	.00063	10.947	6.5059
Stddev	.00048	.00131	.00044	.065	.1653	.00105	.167	.0351
%RSD	65.715	48.910	20.939	.46649	7.1526	166.23	1.5274	.53929
#1	.00027	.00338	.00167	13.930	2.4961	.00110	10.946	6.5456
#2	.00070	.00349	.00255	13.949	2.1770	.00137	10.779	6.4928
#3	.00124	.00117	.00206	13.828	2.2613	-.00057	11.114	6.4792
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	6.4050	.00124	.08236	.00411	-.00373	.00110	7.1748
Stddev	.00021	.0135	.00010	.00949	.00291	.00074	.00066	.0315
%RSD	24.174	.21060	7.7642	11.522	70.779	19.789	59.906	.43949
#1	.00092	6.4182	.00133	.09095	.00714	-.00298	.00137	7.1943
#2	.00065	6.3912	.00123	.08397	.00386	-.00375	.00158	7.1917
#3	.00106	6.4055	.00114	.07217	.00134	-.00446	.00035	7.1384
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606084004 Acquired: 6/27/2016 12:09:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00046**	**.46037**	**.01892**	**-.00148**	**.00190**	**.00560**	**.00084**
Stddev	.00044	.00319	.00662	.00110	.00051	.00012	.00070
%RSD	94.473	.69285	34.994	74.711	26.966	2.1834	83.839
#1	-.00082	.46398	.02521	-.00240	.00240	.00568	.00094
#2	.00003	.45792	.01952	-.00177	.00138	.00566	.00149
#3	-.00060	.45920	.01202	-.00026	.00192	.00546	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9834.1**	**59607.**	**3008.2**
Stddev	10.8	123.	8.6
%RSD	.10933	.20604	.28680
#1	9822.0	59582.	3001.2
#2	9842.6	59499.	3017.8
#3	9837.6	59741.	3005.5

Approved: June 28, 2016

Sample Name: L1606084005 Acquired: 6/27/2016 12:13:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.00668	-.00213	.05778	.13125	-.00012	73.966	.00069
Stddev	.00063	.00810	.00246	.00044	.00094	.00005	.524	.00019
%RSD	961.46	121.37	115.65	.76854	.71462	44.545	.70822	27.315
#1	.00045	.01321	-.00423	.05814	.13220	-.00015	74.552	.00072
#2	.00012	-.00239	-.00273	.05791	.13032	-.00015	73.804	.00085
#3	-.00077	.00921	.00058	.05728	.13121	-.00006	73.542	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.00184	.00120	7.9376	2.7914	-.00180	9.2146	6.0686
Stddev	.00052	.00037	.00060	.0230	.0535	.00432	.1741	.0460
%RSD	124.87	20.296	50.060	.29024	1.9151	239.98	1.8892	.75859
#1	.00002	.00226	.00162	7.9508	2.7329	-.00167	9.4003	6.1216
#2	.00100	.00155	.00148	7.9110	2.8376	.00245	9.1881	6.0382
#3	.00022	.00171	.00051	7.9510	2.8038	-.00619	9.0552	6.0461
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00401	5.5235	.00009	.03809	.00162	.00315	.00025	5.3185
Stddev	.00034	.0158	.00120	.00432	.00281	.00219	.00692	.0583
%RSD	8.3556	.28595	1268.4	11.330	173.81	69.373	2730.8	1.0955
#1	.00384	5.5412	-.00129	.03382	.00477	.00067	-.00567	5.2569
#2	.00440	5.5110	.00065	.04245	-.00066	.00477	-.00143	5.3727
#3	.00379	5.5181	.00092	.03799	.00075	.00402	.00786	5.3258
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606084005 Acquired: 6/27/2016 12:13:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.43025	-.01337	.00358	.00145	.00273	.00046
Stddev	.00078	.00329	.00402	.00506	.00034	.00007	.00083
%RSD	245.46	.76446	30.110	141.13	23.301	2.6980	182.02
#1	-.00058	.43394	-.01623	-.00199	.00115	.00271	.00009
#2	.00069	.42916	-.00876	.00789	.00138	.00281	-.00013
#3	.00083	.42764	-.01510	.00485	.00182	.00266	.00141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9841.4	59195.	3025.3
Stddev	94.8	297.	10.0
%RSD	.96296	.50136	.33059
#1	9950.6	59537.	3015.3
#2	9781.1	59011.	3035.3
#3	9792.5	59037.	3025.3

Approved: June 28, 2016

Sample Name: L1606084006 Acquired: 6/27/2016 12:17:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00164	-.00719	-.00434	.00375	-.00054	.00002	.11974	.00043
Stddev	.00261	.00725	.00073	.00189	.00054	.00006	.00960	.00020
%RSD	159.01	100.86	16.872	50.405	100.03	227.54	8.0185	45.897
#1	-.00010	-.00070	-.00454	.00485	-.00005	-.00000	.11624	.00065
#2	.00465	-.00585	-.00353	.00157	-.00045	-.00001	.13060	.00028
#3	.00038	-.01502	-.00495	.00483	-.00112	.00009	.11238	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.00229	.00265	-.00130	.02514	-.00449	.04252	.00721
Stddev	.00026	.00051	.00063	.00266	.08048	.00083	.04044	.00181
%RSD	173.46	22.403	23.726	203.56	320.08	18.531	95.099	25.105
#1	.00029	.00183	.00312	-.00319	.11298	-.00545	.04311	.00535
#2	.00032	.00284	.00289	.00173	-.04506	-.00414	.00179	.00897
#3	-.00015	.00218	.00193	-.00246	.00751	-.00389	.08265	.00733
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.18897	.00020	-.00594	-.00252	-.00088	-.00520	-.00198
Stddev	.00048	.00835	.00100	.00884	.00248	.00457	.00518	.00107
%RSD	253.64	4.4186	510.98	148.75	98.389	518.63	99.733	53.864
#1	-.00019	.19627	-.00072	.00197	-.00532	.00083	-.00935	-.00093
#2	.00002	.17986	.00004	-.01549	-.00162	.00258	.00061	-.00194
#3	.00073	.19077	.00127	-.00432	-.00061	-.00606	-.00686	-.00307
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606084006 Acquired: 6/27/2016 12:17:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00085	.00072	-.00045	-.00026	.00094	.00173	-.00031
Stddev	.00035	.00028	.00524	.00154	.00035	.00024	.00032
%RSD	41.281	38.237	1171.4	600.81	37.636	13.582	100.73
#1	.00126	.00102	-.00580	.00038	.00116	.00170	-.00050
#2	.00070	.00048	.00466	-.00202	.00112	.00152	-.00049
#3	.00061	.00067	-.00020	.00086	.00053	.00198	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9745.8	60648.	2978.8
Stddev	99.8	834.	31.6
%RSD	1.0242	1.3759	1.0602
#1	9633.7	61604.	2998.6
#2	9778.5	60275.	2942.3
#3	9825.2	60065.	2995.3

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 12:21:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40982**	**10.326**	**.41213**	**.51242**	**1.0926**	**.05082**	**10.880**	**.05201**
Stddev	.00878	.252	.01063	.01050	.0236	.00138	.223	.00114
%RSD	2.1419	2.4371	2.5798	2.0490	2.1601	2.7195	2.0480	2.1946
#1	.40490	10.191	.41289	.50779	1.1037	.04992	11.005	.05241
#2	.41995	10.616	.40114	.52444	1.0655	.05241	10.623	.05073
#3	.40460	10.170	.42237	.50503	1.1087	.05012	11.012	.05290
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20803**	**.50919**	**.52134**	**4.3447**	**53.527**	**1.0805**	**10.776**	**.54239**
Stddev	.00484	.01280	.01202	.1267	1.095	.0260	.268	.00962
%RSD	2.3249	2.5137	2.3048	2.9152	2.0452	2.4085	2.4916	1.7730
#1	.20997	.50240	.52340	4.3706	54.097	1.0939	10.816	.54819
#2	.20252	.52396	.50843	4.2071	52.265	1.0505	10.489	.53129
#3	.21159	.50123	.53220	4.4564	54.220	1.0971	11.021	.54769
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0267**	**54.607**	**.52138**	**10.371**	**.52185**	**1.2269**	**.41575**	**5.0879**
Stddev	.0227	1.123	.01426	.241	.01274	.0284	.01189	.1164
%RSD	2.2055	2.0562	2.7346	2.3230	2.4413	2.3136	2.8599	2.2884
#1	1.0360	55.161	.52713	10.417	.52334	1.2314	.41415	5.1192
#2	1.0009	53.314	.50515	10.110	.50843	1.1965	.40474	4.9590
#3	1.0433	55.345	.53187	10.585	.53378	1.2528	.42836	5.1854
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 12:21:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0336**	**1.0901**	**1.0684**	**.51892**	**1.0206**	**1.0509**	**1.0769**
Stddev	.0240	.0234	.0198	.00908	.0266	.0248	.0112
%RSD	2.3229	2.1457	1.8498	1.7494	2.6067	2.3611	1.0424
#1	1.0429	1.1002	1.0762	.52256	1.0058	1.0571	1.0826
#2	1.0064	1.0633	1.0460	.50859	1.0513	1.0236	1.0640
#3	1.0516	1.1067	1.0831	.52561	1.0046	1.0721	1.0842
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9564.4**	**57358.**	**2776.3**
Stddev	173.7	1171.	41.5
%RSD	1.8165	2.0418	1.4935
#1	9502.6	58080.	2762.2
#2	9760.6	56007.	2823.0
#3	9430.0	57987.	2743.8

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 12:25:07 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00801	-.00103	.00276	.00212	.00010	.01237
Stddev	.00054	.00191	.00555	.00165	.00059	.00005	.02593
%RSD	305.81	23.874	537.57	59.553	27.793	47.886	209.61
#1	-.00026	.00966	.00519	.00338	.00190	.00007	.02126
#2	.00001	.00845	-.00548	.00401	.00279	.00007	.03268
#3	.00077	.00592	-.00281	.00090	.00167	.00015	-.01683
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	-.00008	.00176	.00058	-.00953	.07351	-.00534
Stddev	.00020	.00028	.00092	.00111	.01699	.12532	.00361
%RSD	218.62	347.28	52.557	191.12	178.34	170.47	67.695
#1	-.00011	-.00011	.00227	.00172	-.02080	.11336	-.00262
#2	.00029	.00021	.00069	.00051	-.01780	.17407	-.00944
#3	.00010	-.00035	.00231	-.00049	.01002	-.06689	-.00396
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03981	.00109	.00405	.14258	-.00036	F .01086	-.00169
Stddev	.10294	.00213	.00039	.04484	.00148	.00691	.00374
%RSD	258.57	194.73	9.6251	31.448	414.81	63.624	221.75
#1	.05401	.00259	.00446	.16898	.00116	.01849	-.00130
#2	-.06949	-.00134	.00368	.16795	-.00043	.00505	.00185
#3	.13492	.00203	.00401	.09081	-.00180	.00903	-.00561
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						.01000	
Low Limit						-.01000	

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 12:25:07 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00417	-.00073	.01248	.00092	.00175	-.00304	-.00057
Stddev	.00221	.00348	.00144	.00071	.00054	.00973	.00215
%RSD	53.083	478.32	11.507	77.419	30.591	319.59	377.76
#1	.00663	.00318	.01101	.00084	.00217	.00790	.00142
#2	.00236	-.00349	.01254	.00166	.00193	-.00634	-.00285
#3	.00351	-.00187	.01388	.00025	.00115	-.01070	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00062	.00044	.00126
Stddev	.00058	.00021	.00081
%RSD	93.624	46.980	64.473
#1	.00079	.00067	.00217
#2	-.00003	.00035	.00059
#3	.00109	.00029	.00103
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9088.4	55797.	2803.9
Stddev	32.8	363.	16.7
%RSD	.36063	.64995	.59502
#1	9123.1	56185.	2793.2
#2	9058.0	55741.	2823.1
#3	9084.0	55466.	2795.3

Approved: June 28, 2016

Sample Name: L1606099604 Acquired: 6/27/2016 12:29:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.00580	.00190	.08139	.16840	-.00013	103.32	.00028
Stddev	.00128	.00535	.00228	.00254	.00185	.00011	.61	.00017
%RSD	659.73	92.321	120.00	3.1234	1.1007	81.225	.59136	59.820
#1	-.00019	.00495	.00330	.08419	.17029	-.00020	104.00	.00042
#2	.00163	.00092	-.00073	.08076	.16658	-.00019	103.14	.00010
#3	-.00085	.01152	.00315	.07922	.16832	-.00001	102.82	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00208	.00210	.00220	6.9135	5.7572	.00318	22.797	1.3714
Stddev	.00011	.00106	.00087	.0506	.1417	.00514	.164	.0068
%RSD	5.4227	50.496	39.640	.73143	2.4607	161.87	.71742	.49651
#1	.00195	.00113	.00136	6.9709	5.9167	.00682	22.816	1.3781
#2	.00218	.00193	.00214	6.8940	5.7092	-.00270	22.951	1.3717
#3	.00210	.00323	.00310	6.8755	5.6458	.00541	22.625	1.3644
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00150	62.898	.00398	.00777	.00038	.00178	-.00471	6.2512
Stddev	.00040	.352	.00112	.00125	.00232	.00142	.00311	.1087
%RSD	26.641	.56029	28.045	16.108	606.93	79.640	66.020	1.7380
#1	.00104	63.287	.00289	.00700	.00207	.00015	-.00636	6.1377
#2	.00168	62.806	.00392	.00922	.00135	.00276	-.00666	6.3542
#3	.00178	62.600	.00512	.00710	-.00227	.00244	-.00112	6.2616
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606099604 Acquired: 6/27/2016 12:29:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00021**	**.65534**	**-.02030**	**.00255**	**.00033**	**.00193**	**.00063**
Stddev	.00084	.00661	.00061	.00162	.00088	.00009	.00010
%RSD	408.85	1.0090	3.0257	63.401	268.16	4.7892	15.595
#1	.00026	.66296	-.01985	.00143	.00108	.00204	.00054
#2	.00030	.65206	-.02005	.00182	-.00064	.00187	.00073
#3	-.00118	.65102	-.02100	.00441	.00055	.00188	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9558.4**	**57612.**	**2936.4**
Stddev	116.5	315.	16.4
%RSD	1.2191	.54701	.55800
#1	9690.7	57619.	2920.8
#2	9471.2	57923.	2953.4
#3	9513.3	57293.	2935.0

Approved: June 28, 2016

Sample Name: L1606099605 Acquired: 6/27/2016 12:32:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00062	.00440	.00035	.08600	.15334	-.00004	92.678	.00021
Stddev	.00208	.00968	.00234	.00157	.00545	.00009	2.912	.00015
%RSD	334.34	219.84	676.18	1.8291	3.5523	214.26	3.1425	70.670
#1	-.00176	.01391	-.00219	.08664	.15180	.00006	91.339	.00015
#2	-.00188	.00474	.00081	.08715	.14883	-.00009	90.677	.00010
#3	.00178	-.00544	.00241	.08421	.15939	-.00010	96.020	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00365	.00086	.00243	6.0484	5.7709	.00063	31.503	.66090
Stddev	.00047	.00042	.00069	.1770	.1598	.00208	1.094	.02168
%RSD	12.764	48.920	28.484	2.9268	2.7695	327.96	3.4720	3.2802
#1	.00403	.00109	.00318	5.9427	5.7426	.00246	30.808	.65326
#2	.00379	.00111	.00182	5.9498	5.6271	.00107	30.938	.64407
#3	.00313	.00037	.00230	6.2528	5.9430	-.00163	32.764	.68536
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00159	61.738	.00237	.01553	-.00133	-.00075	.00297	7.5875
Stddev	.00014	1.868	.00046	.00404	.00513	.00268	.00109	.0444
%RSD	9.1322	3.0264	19.551	26.021	385.98	357.61	36.581	.58550
#1	.00174	60.825	.00241	.01740	.00350	-.00313	.00247	7.6172
#2	.00145	60.502	.00188	.01089	-.00672	.00216	.00422	7.5364
#3	.00158	63.888	.00280	.01829	-.00077	-.00128	.00222	7.6088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606099605 Acquired: 6/27/2016 12:32:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.55768	-.01630	.00067	-.00017	.00329	-.00008
Stddev	.00043	.01691	.00417	.00102	.00046	.00006	.00023
%RSD	123.49	3.0323	25.549	153.35	265.30	1.7576	273.28
#1	-.00015	.55046	-.02083	.00130	.00034	.00334	.00017
#2	.00059	.54557	-.01263	.00121	-.00055	.00330	-.00027
#3	.00062	.57700	-.01545	-.00051	-.00031	.00322	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9505.0	58408.	2954.9
Stddev	81.9	1154.	71.1
%RSD	.86161	1.9755	2.4052
#1	9512.0	57442.	2997.1
#2	9583.1	58096.	2994.7
#3	9419.8	59685.	2872.8

Approved: June 28, 2016

Sample Name: L1606099606 Acquired: 6/27/2016 12:36:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	-.00165	-.00025	.08564	.14629	-.00000	89.804	.00032
Stddev	.00112	.01113	.00212	.00090	.00530	.00004	2.055	.00020
%RSD	524.99	674.83	853.55	1.0466	3.6261	1039.4	2.2878	63.164
#1	-.00107	-.01404	-.00260	.08522	.14152	-.00005	87.909	.00022
#2	.00100	.00748	.00036	.08503	.14536	.00003	89.515	.00019
#3	.00071	.00161	.00150	.08667	.15200	.00000	91.988	.00055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00381	.00210	.00165	5.4359	5.6681	.00480	30.776	.64316
Stddev	.00033	.00040	.00014	.1393	.3324	.00308	.659	.01538
%RSD	8.6138	18.872	8.4193	2.5628	5.8637	64.199	2.1405	2.3911
#1	.00416	.00166	.00181	5.3390	5.2912	.00550	30.170	.63168
#2	.00374	.00222	.00155	5.3732	5.9193	.00143	30.682	.63716
#3	.00352	.00242	.00160	5.5956	5.7937	.00748	31.477	.66063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00113	59.640	.00253	.00574	-.00082	.00120	-.00418	7.2856
Stddev	.00018	1.339	.00036	.00490	.00097	.00213	.00105	.0742
%RSD	16.247	2.2447	14.289	85.380	118.02	177.90	25.030	1.0179
#1	.00127	58.460	.00258	.00918	-.00191	.00329	-.00447	7.3494
#2	.00120	59.366	.00286	.00013	-.00009	.00129	-.00505	7.3032
#3	.00092	61.095	.00214	.00790	-.00046	-.00098	-.00302	7.2042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606099606 Acquired: 6/27/2016 12:36:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	.54135	-.01376	.00040	-.00120	.00295	.00019
Stddev	.00026	.01206	.01048	.00370	.00038	.00007	.00031
%RSD	36.596	2.2286	76.185	932.18	31.665	2.5208	166.02
#1	.00092	.53114	-.02355	-.00349	-.00076	.00294	.00053
#2	.00079	.53824	-.01502	.00080	-.00140	.00303	.00011
#3	.00042	.55466	-.00270	.00387	-.00144	.00288	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9559.9	57603.	2976.2
Stddev	50.2	882.	41.3
%RSD	.52468	1.5319	1.3891
#1	9523.1	58519.	3014.9
#2	9539.5	56758.	2981.1
#3	9617.0	57532.	2932.6

Approved: June 28, 2016

Sample Name: L1606099607 Acquired: 6/27/2016 12:40:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00065	.02230	-.00450	.01108	.02439	-.00009	66.480	.00028
Stddev	.00090	.00160	.00101	.00392	.00092	.00006	.638	.00009
%RSD	138.75	7.1527	22.436	35.403	3.7818	65.215	.95998	33.028
#1	.00137	.02347	-.00529	.01551	.02514	-.00011	66.633	.00038
#2	.00095	.02049	-.00484	.00964	.02466	-.00015	67.029	.00020
#3	-.00037	.02295	-.00336	.00808	.02336	-.00003	65.780	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	.00261	.00143	.00596	.78106	-.00208	22.738	.00477
Stddev	.00016	.00097	.00054	.00364	.04317	.00124	.231	.00310
%RSD	209.97	37.223	38.069	61.110	5.5276	59.612	1.0158	65.020
#1	.00010	.00357	.00150	.00834	.79239	-.00102	22.748	.00706
#2	-.00014	.00263	.00194	.00177	.73335	-.00177	22.964	.00601
#3	-.00020	.00163	.00085	.00778	.81744	-.00344	22.502	.00124
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00133	37.923	-.00023	.01749	-.00363	.00068	-.00604	3.0026
Stddev	.00021	.357	.00012	.00610	.00208	.00469	.01001	.0238
%RSD	15.717	.94215	53.708	34.863	57.244	691.11	165.66	.79333
#1	.00125	38.024	-.00022	.01463	-.00430	.00280	.00439	3.0290
#2	.00117	38.219	-.00036	.02449	-.00528	.00393	-.00694	2.9963
#3	.00157	37.526	-.00011	.01335	-.00130	-.00469	-.01558	2.9826
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606099607 Acquired: 6/27/2016 12:40:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00021**	**.18785**	**-.01422**	**.00080**	**-.00056**	**.00150**	**.00005**
Stddev	.00064	.00221	.01247	.00073	.00042	.00008	.00019
%RSD	298.26	1.1744	87.668	90.724	75.529	5.2164	388.21
#1	-.00057	.18821	-.01454	-.00004	-.00039	.00152	.00027
#2	-.00060	.18986	-.00160	.00120	-.00025	.00158	-.00007
#3	.00052	.18549	-.02652	.00124	-.00105	.00142	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9625.0**	**57772.**	**2941.4**
Stddev	36.2	586.	22.1
%RSD	.37614	1.0139	.75110
#1	9589.4	58436.	2946.1
#2	9661.8	57328.	2917.4
#3	9623.9	57553.	2960.8

Approved: June 28, 2016

Sample Name: L1606099608 Acquired: 6/27/2016 12:44:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	-.00400	-.00422	.02442	.03822	-.00001	83.891	.00034
Stddev	.00221	.00770	.00245	.00158	.00186	.00003	2.002	.00031
%RSD	807.22	192.30	58.014	6.4809	4.8795	554.60	2.3863	89.786
#1	.00167	.00126	-.00362	.02390	.03905	.00003	85.735	.00061
#2	.00143	-.01284	-.00691	.02619	.03952	-.00002	84.176	.00001
#3	-.00228	-.00043	-.00212	.02316	.03608	-.00003	81.762	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00047	.00209	-.00003	-.01556	1.4704	.00084	27.649	.00085
Stddev	.00056	.00083	.00024	.04252	.1367	.00339	.634	.00109
%RSD	120.26	39.828	718.46	273.26	9.2945	402.48	2.2947	127.95
#1	-.00029	.00113	.00015	.01609	1.6204	-.00304	28.230	.00203
#2	-.00110	.00260	.00006	-.06389	1.3530	.00320	27.744	-.00012
#3	-.00002	.00253	-.00031	.00112	1.4378	.00237	26.972	.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	14.025	.00030	.00574	-.00047	.00142	-.00271	4.1744
Stddev	.00012	.309	.00096	.00391	.00392	.00326	.00511	.0659
%RSD	19.654	2.2009	321.09	68.078	840.14	229.87	188.88	1.5797
#1	.00046	14.291	-.00049	.00124	.00385	-.00144	-.00858	4.2497
#2	.00065	14.097	.00137	.00774	-.00380	.00496	.00078	4.1468
#3	.00067	13.687	.00002	.00825	-.00145	.00073	-.00032	4.1267
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606099608 Acquired: 6/27/2016 12:44:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00084	.27436	-.01978	.00108	-.00021	.00139	.00004
Stddev	.00051	.00737	.00167	.00298	.00020	.00042	.00088
%RSD	60.476	2.6846	8.4580	276.35	96.056	30.038	2176.4
#1	.00048	.28120	-.02080	-.00127	-.00011	.00096	-.00045
#2	.00143	.27533	-.02070	.00007	-.00045	.00179	-.00049
#3	.00062	.26656	-.01785	.00444	-.00007	.00143	.00105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9658.7	58755.	2964.1
Stddev	91.6	479.	46.2
%RSD	.94862	.81444	1.5591
#1	9554.0	59299.	2924.6
#2	9698.2	58563.	2952.9
#3	9724.0	58402.	3014.9

Approved: June 28, 2016

Sample Name: L1606099609 Acquired: 6/27/2016 12:48:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	-.00165	-.00164	.02800	.04080	-.00005	79.419	.00020
Stddev	.00144	.01010	.00345	.00084	.00081	.00005	.294	.00013
%RSD	904.18	610.85	210.58	3.0153	1.9890	101.31	.37081	67.386
#1	-.00165	-.00621	.00217	.02847	.04012	-.00005	79.151	.00012
#2	-.00005	-.00866	-.00254	.02851	.04170	-.00010	79.371	.00035
#3	.00122	.00992	-.00454	.02703	.04060	-.00000	79.734	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00217	.00166	1.5879	2.0306	-.00104	26.930	.09297
Stddev	.00011	.00067	.00041	.0178	.0539	.00177	.185	.00101
%RSD	198.11	31.130	24.824	1.1212	2.6567	169.28	.68530	1.0817
#1	-.00004	.00198	.00182	1.5969	2.0012	-.00243	26.817	.09181
#2	.00003	.00160	.00198	1.5673	2.0929	.00095	26.831	.09351
#3	.00018	.00291	.00120	1.5993	1.9978	-.00165	27.143	.09359
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00378	15.834	.00047	.00185	-.00068	.00054	-.00357	4.8185
Stddev	.00016	.099	.00142	.00274	.00173	.00291	.00711	.0240
%RSD	4.2873	.62302	302.36	147.91	253.19	536.20	199.32	.49750
#1	.00360	15.733	.00204	.00453	-.00160	.00292	-.01102	4.8453
#2	.00391	15.841	-.00074	.00196	-.00175	.00142	-.00283	4.8113
#3	.00382	15.930	.00011	-.00094	.00131	-.00271	.00315	4.7990
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606099609 Acquired: 6/27/2016 12:48:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00041**	**.50689**	**-.01603**	**-.00012**	**.00024**	**.00132**	**.00004**
Stddev	.00051	.00207	.00331	.00296	.00071	.00015	.00003
%RSD	122.28	.40838	20.614	2431.3	295.76	11.101	65.300
#1	-.00086	.50564	-.01656	.00002	.00084	.00147	.00001
#2	-.00052	.50575	-.01250	-.00315	-.00055	.00118	.00004
#3	.00014	.50928	-.01905	.00276	.00043	.00130	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9626.1**	**58293.**	**2964.2**
Stddev	20.6	405.	2.4
%RSD	.21356	.69449	.08122
#1	9613.0	58609.	2962.4
#2	9649.8	58434.	2966.9
#3	9615.6	57837.	2963.3

Approved: June 28, 2016

Sample Name: L1606111623 Acquired: 6/27/2016 12:52:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00147	.01556	.00438	.34960	.01944	.00464	21.262	.00011
Stddev	.00220	.00714	.00244	.00217	.00139	.00008	.175	.00026
%RSD	150.19	45.914	55.653	.61929	7.1373	1.6984	.82515	246.93
#1	.00261	.02114	.00269	.35205	.01916	.00470	21.452	.00033
#2	-.00107	.01803	.00328	.34794	.02095	.00467	21.229	.00017
#3	.00286	.00751	.00718	.34880	.01822	.00455	21.106	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	.00359	.00308	.01919	4.9518	.00186	9.2859	.00223
Stddev	.00020	.00096	.00072	.01132	.0871	.00204	.0483	.00253
%RSD	26.204	26.861	23.462	58.996	1.7581	109.65	.51972	113.63
#1	.00052	.00359	.00285	.02309	4.8522	.00180	9.2359	.00360
#2	.00086	.00263	.00390	.00644	4.9899	.00393	9.3323	-.00069
#3	.00087	.00455	.00250	.02805	5.0133	-.00015	9.2894	.00377
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2853	142.47	.00504	.05255	-.00148	-.00027	.00638	3.3753
Stddev	.0046	.05	.00090	.00619	.00245	.00321	.00461	.0181
%RSD	.36184	.03676	17.858	11.771	165.71	1172.5	72.258	.53501
#1	1.2812	142.46	.00437	.04543	-.00416	.00001	.00525	3.3544
#2	1.2904	142.53	.00606	.05561	-.00095	-.00361	.00244	3.3867
#3	1.2843	142.43	.00468	.05661	.00066	.00278	.01145	3.3846
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606111623 Acquired: 6/27/2016 12:52:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	.17063	-.00486	.10658	2.7863	.00832	.00293
Stddev	.00042	.00034	.00551	.00239	.0072	.00022	.00040
%RSD	65.420	.19950	113.37	2.2436	.25677	2.6012	13.547
#1	.00097	.17024	-.00043	.10882	2.7881	.00807	.00261
#2	.00017	.17079	-.00312	.10406	2.7784	.00847	.00281
#3	.00077	.17087	-.01102	.10687	2.7923	.00842	.00338
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9640.9	57918.	2931.6
Stddev	63.9	253.	5.2
%RSD	.66309	.43737	.17860
#1	9706.3	57711.	2937.4
#2	9637.9	58200.	2927.2
#3	9578.6	57841.	2930.2

Approved: June 28, 2016

Sample Name: L1606111624 Acquired: 6/27/2016 12:56:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00035	-.00937	.00229	.34841	.01823	.00462	20.849	.00020
Stddev	.00272	.00762	.00155	.00132	.00111	.00006	.357	.00036
%RSD	778.23	81.308	67.611	.37972	6.0899	1.2421	1.7140	175.16
#1	.00231	-.00854	.00224	.34926	.01889	.00469	20.690	.00048
#2	-.00024	-.00220	.00077	.34688	.01695	.00458	20.599	-.00020
#3	-.00312	-.01737	.00386	.34907	.01886	.00460	21.258	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.00358	.00241	.00141	4.9328	-.00143	8.9933	.00088
Stddev	.00039	.00084	.00071	.01661	.0286	.00191	.2621	.00152
%RSD	41.102	23.367	29.333	1179.3	.58066	133.79	2.9139	171.80
#1	.00128	.00441	.00275	.00238	4.9523	-.00291	8.7732	.00227
#2	.00104	.00274	.00288	.01751	4.9000	.00073	8.9236	.00111
#3	.00052	.00360	.00159	-.01567	4.9463	-.00209	9.2832	-.00074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.3099	139.68	.00458	.05064	.00100	.00160	.00511	3.3994
Stddev	.0115	1.69	.00119	.00399	.00202	.00134	.01025	.0147
%RSD	.87517	1.2074	26.070	7.8709	201.03	83.535	200.37	.43322
#1	1.3217	138.45	.00428	.05313	.00056	.00152	.01443	3.4160
#2	1.3093	138.98	.00357	.04605	-.00076	.00031	-.00586	3.3942
#3	1.2988	141.60	.00590	.05276	.00320	.00298	.00677	3.3879
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606111624 Acquired: 6/27/2016 12:56:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.16713**	**-.01305**	**.10902**	**2.8061**	**.00565**	**.00181**
Stddev	.00110	.00200	.00201	.00362	.0198	.00017	.00047
%RSD	2965.9	1.1939	15.396	3.3176	.70560	3.0758	26.191
#1	.00109	.16647	-.01124	.11271	2.8277	.00557	.00141
#2	-.00111	.16554	-.01521	.10886	2.8016	.00554	.00169
#3	-.00010	.16937	-.01269	.10548	2.7889	.00585	.00234
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9621.1**	**58104.**	**2981.3**
Stddev	30.0	389.	29.4
%RSD	.31156	.66925	.98702
#1	9591.7	57688.	2988.3
#2	9651.6	58165.	3006.6
#3	9620.1	58458.	2949.0

Approved: June 28, 2016

Sample Name: L1606102602 Acquired: 6/27/2016 13:00:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.00205	-.00136	.00107	.00338	-.00000	7.7827	.00040
Stddev	.00107	.00744	.00195	.00235	.00045	.00005	.1451	.00005
%RSD	486.55	362.63	143.73	219.19	13.467	1020.0	1.8641	13.006
#1	-.00007	.00972	-.00084	.00337	.00386	-.00001	7.6418	.00039
#2	-.00067	-.00514	.00028	.00118	.00331	.00005	7.9316	.00045
#3	.00141	.00158	-.00351	-.00133	.00296	-.00005	7.7745	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01549	.21171	.04406	.85896	.46778	.00399	5.8381	.13373
Stddev	.00042	.00465	.00090	.03523	.09590	.00226	.2053	.00527
%RSD	2.6989	2.1945	2.0404	4.1009	20.502	56.710	3.5163	3.9399
#1	.01595	.21640	.04347	.85962	.49628	.00152	5.6471	.12924
#2	.01537	.20711	.04509	.89386	.36085	.00448	6.0552	.13953
#3	.01514	.21162	.04361	.82342	.54620	.00596	5.8120	.13242
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00408	23.497	.65304	.01847	-.00152	-.00473	.00137	1.1130
Stddev	.00023	.589	.00091	.00293	.00244	.00451	.00512	.0018
%RSD	5.7186	2.5087	.13863	15.888	160.52	95.318	373.36	.15722
#1	.00432	22.966	.65370	.01509	-.00185	-.00890	.00472	1.1127
#2	.00405	24.132	.65201	.01989	.00107	-.00537	.00391	1.1149
#3	.00386	23.394	.65342	.02042	-.00378	.00006	-.00452	1.1114
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606102602 Acquired: 6/27/2016 13:00:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.13845**	**-.00360**	**.00164**	**.00318**	**.00781**	**-.00040**
Stddev	.00028	.00342	.01364	.00088	.00009	.00014	.00006
%RSD	162.07	2.4708	378.91	53.643	2.7914	1.8499	16.297
#1	-.00041	.13497	.01208	.00068	.00319	.00794	-.00047
#2	.00013	.14180	-.01270	.00183	.00309	.00785	-.00038
#3	-.00024	.13857	-.01018	.00241	.00326	.00765	-.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10522.**	**63691.**	**3160.7**
Stddev	147.	1450.	56.7
%RSD	1.3981	2.2767	1.7935
#1	10388.	62026.	3208.2
#2	10501.	64677.	3097.9
#3	10679.	64370.	3176.0

Approved: June 28, 2016

Sample Name: L1606102604 Acquired: 6/27/2016 13:03:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00120	.02320	-.00068	.00317	.01081	-.00005	.53402	.00002
Stddev	.00006	.00903	.00370	.00080	.00173	.00015	.04625	.00007
%RSD	4.8840	38.933	545.28	25.090	16.044	287.43	8.6606	360.15
#1	.00115	.03309	.00318	.00228	.01279	-.00004	.54280	.00007
#2	.00120	.01539	-.00419	.00343	.01009	.00009	.57525	.00005
#3	.00127	.02113	-.00102	.00380	.00955	-.00021	.48401	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.00131	-.00136	.02682	.04953	-.00210	.41888	.00169
Stddev	.00009	.00024	.00075	.02522	.04733	.00367	.07583	.00236
%RSD	89.070	18.283	55.333	94.024	95.563	174.33	18.102	140.13
#1	-.00016	.00148	-.00209	.01757	.00624	-.00538	.50346	.00180
#2	.00000	.00141	-.00059	.00754	.04227	.00186	.35699	.00399
#3	-.00016	.00104	-.00138	.05537	.10006	-.00279	.39619	-.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	5.8344	.00024	.00937	-.00078	-.00008	-.00087	1.5329
Stddev	.00017	.1289	.00146	.00288	.00160	.00208	.00351	.0177
%RSD	18.772	2.2091	603.01	30.760	204.78	2500.1	404.55	1.1558
#1	.00104	5.9515	.00088	.00698	-.00120	.00230	-.00352	1.5130
#2	.00098	5.6963	-.00143	.01257	.00098	-.00158	.00311	1.5385
#3	.00072	5.8554	.00127	.00855	-.00212	-.00096	-.00220	1.5471
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606102604 Acquired: 6/27/2016 13:03:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.01129**	**-.00425**	**.00453**	**.00073**	**.00062**	**-.00033**
Stddev	.00016	.00049	.00124	.00218	.00029	.00001	.00040
%RSD	168.17	4.3032	29.246	48.226	39.627	1.7802	124.10
#1	-.00024	.01184	-.00555	.00662	.00044	.00062	-.00011
#2	.00008	.01092	-.00308	.00226	.00073	.00061	-.00008
#3	-.00014	.01111	-.00410	.00470	.00102	.00063	-.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10264.**	**61770.**	**3063.1**
Stddev	82.	1823.	36.6
%RSD	.80048	2.9515	1.1947
#1	10355.	59854.	3033.0
#2	10241.	61974.	3103.8
#3	10196.	63483.	3052.5

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 13:07:53 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39855	9.9772	.42046	.50344	.95772	.04895	9.5448	.05172
Stddev	.00683	.1980	.00527	.01093	.00739	.00095	.0947	.00030
%RSD	1.7128	1.9841	1.2532	2.1714	.77178	1.9362	.99206	.57149
#1	.39069	9.7501	.42628	.49084	.95811	.04786	9.4971	.05193
#2	.40204	10.069	.41910	.50905	.95015	.04942	9.4833	.05186
#3	.40294	10.113	.41601	.51043	.96492	.04957	9.6538	.05138
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20728	.49174	.52427	3.7658	47.113	.95130	9.4667	.47419
Stddev	.00145	.01084	.00292	.0457	.314	.00824	.2111	.00912
%RSD	.70027	2.2054	.55705	1.2121	.66610	.86617	2.2300	1.9228
#1	.20870	.48004	.52679	3.7302	47.107	.95111	9.2849	.48066
#2	.20735	.49371	.52495	3.7499	46.802	.94315	9.4170	.46377
#3	.20580	.50146	.52107	3.8173	47.430	.95963	9.6982	.47816
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0270	48.116	.52240	10.440	.51931	1.2424	.42085	5.1300
Stddev	.0100	.448	.00357	.065	.00444	.0023	.00479	.0296
%RSD	.97214	.93093	.68267	.62704	.85492	.18669	1.1372	.57801
#1	1.0357	48.131	.52517	10.496	.52062	1.2397	.42531	5.1539
#2	1.0293	47.660	.52366	10.455	.52295	1.2439	.42146	5.1394
#3	1.0161	48.555	.51838	10.368	.51436	1.2434	.41579	5.0968
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 13:07:53 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0297**	**.95746**	**.93834**	**.51847**	**.98130**	**1.0528**	**.95999**
Stddev	.0063	.00952	.01582	.00063	.02074	.0067	.01007
%RSD	.61354	.99395	1.6856	.12159	2.1136	.63322	1.0495
#1	1.0359	.95765	.94753	.51819	.95739	1.0591	.95621
#2	1.0300	.94785	.92008	.51919	.99197	1.0533	.95235
#3	1.0233	.96688	.94742	.51802	.99452	1.0458	.97141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9551.0**	**58673.**	**3085.7**
Stddev	21.5	957.	26.3
%RSD	.22509	1.6314	.85238
#1	9526.7	59766.	3082.4
#2	9558.6	58271.	3113.4
#3	9567.7	57983.	3061.2

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 13:11:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**-.00445**	**-.00119**	**.00208**	**-.00135**	**-.00001**	**-.01457**	**.00003**
Stddev	.00236	.00341	.00067	.00250	.00099	.00005	.05566	.00031
%RSD	1640.9	76.698	56.614	120.45	73.479	318.32	382.09	1088.0
#1	-.00287	-.00801	-.00141	.00100	-.00037	-.00003	.02640	.00026
#2	.00127	-.00415	-.00043	.00029	-.00133	.00004	-.07794	.00015
#3	.00117	-.00120	-.00172	.00493	-.00235	-.00005	.00784	-.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00027**	**.00199**	**-.00040**	**-.00353**	**.17000**	**-.00171**	**.00538**	**.00159**
Stddev	.00010	.00055	.00131	.03844	.02716	.00277	.06978	.00187
%RSD	35.764	27.862	324.55	1087.7	15.978	162.37	1297.3	117.63
#1	.00032	.00216	.00054	.04081	.15267	-.00456	-.00664	.00232
#2	.00016	.00244	-.00190	-.02729	.20130	.00098	-.05761	.00298
#3	.00034	.00137	.00015	-.02412	.15602	-.00155	.08039	-.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00379**	**.14492**	**.00033**	**.00576**	**-.00060**	**.00422**	**.00182**	**.00473**
Stddev	.00034	.01572	.00035	.01026	.00051	.00038	.00185	.00216
%RSD	8.8594	10.849	107.73	177.93	84.779	8.9533	101.57	45.720
#1	.00391	.14066	.00063	-.00473	-.00071	.00432	.00390	.00674
#2	.00406	.16233	-.00006	.00626	-.00004	.00454	.00119	.00499
#3	.00342	.13177	.00041	.01577	-.00103	.00380	.00036	.00244
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 13:11:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	.00183	-.00426	.00298	.00111	.00029	.00146
Stddev	.00071	.00019	.00560	.00028	.00120	.00009	.00044
%RSD	94.654	10.537	131.40	9.4307	107.69	30.310	30.073
#1	-.00003	.00189	-.00424	.00272	.00097	.00036	.00109
#2	.00137	.00161	.00133	.00328	.00238	.00032	.00194
#3	.00091	.00198	-.00988	.00294	-.00001	.00019	.00134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9906.1	59989.	3002.2
Stddev	128.4	1165.	36.0
%RSD	1.2959	1.9425	1.1986
#1	9929.8	60699.	2993.2
#2	9767.5	58645.	2971.6
#3	10021.	60625.	3041.8

Approved: June 28, 2016

Sample Name: L1606102606 Acquired: 6/27/2016 13:15:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00116	.04310	-.00091	.00135	-.00138	-.00011	.24063	-.00005
Stddev	.00111	.00627	.00105	.00334	.00056	.00005	.02008	.00033
%RSD	96.010	14.536	114.92	247.26	40.605	47.397	8.3444	670.72
#1	.00206	.03718	.00029	.00008	-.00171	-.00017	.26380	-.00039
#2	-.00008	.04246	-.00143	.00513	-.00073	-.00009	.22972	.00028
#3	.00149	.04966	-.00159	-.00117	-.00170	-.00007	.22837	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.00158	.00015	.07506	.12658	-.00200	.31903	.00533
Stddev	.00016	.00116	.00212	.01437	.08050	.00181	.11842	.00296
%RSD	39.271	73.288	1442.2	19.147	63.596	90.890	37.118	55.433
#1	.00059	.00233	.00165	.06693	.20692	-.00396	.40405	.00527
#2	.00032	.00216	.00107	.09165	.12692	-.00037	.18378	.00241
#3	.00031	.00025	-.00228	.06659	.04591	-.00166	.36926	.00832
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00102	12.138	.00292	.01735	-.00104	-.00224	-.00069	1.7912
Stddev	.00024	.512	.00070	.00389	.00235	.00340	.00256	.0299
%RSD	23.803	4.2149	24.131	22.406	225.03	151.77	368.24	1.6684
#1	.00119	12.592	.00310	.01880	-.00327	.00006	.00221	1.7616
#2	.00113	11.584	.00351	.02030	-.00127	-.00063	-.00261	1.7906
#3	.00074	12.237	.00214	.01294	.00141	-.00615	-.00168	1.8214
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606102606 Acquired: 6/27/2016 13:15:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.00523**	**-.00029**	**.00262**	**.00035**	**.00896**	**.00010**
Stddev	.00061	.00027	.00252	.00323	.00155	.00029	.00031
%RSD	158.35	5.1856	883.43	123.20	444.62	3.2537	301.10
#1	-.00031	.00523	.00262	.00309	-.00004	.00869	.00034
#2	-.00102	.00496	-.00161	-.00082	-.00097	.00891	.00022
#3	.00019	.00550	-.00187	.00560	.00206	.00927	-.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10417.**	**62883.**	**3149.1**
Stddev	112.	932.	103.0
%RSD	1.0779	1.4828	3.2700
#1	10511.	63478.	3064.6
#2	10447.	63364.	3263.8
#3	10293.	61809.	3118.8

Approved: June 28, 2016

Sample Name: L1606129003 Acquired: 6/27/2016 13:19:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	-.00490	-.00263	.00116	.01488	-.00005	.94835	.00015
Stddev	.00069	.00784	.00207	.00095	.00153	.00008	.04705	.00024
%RSD	1049.5	159.97	78.911	82.431	10.267	159.57	4.9610	155.58
#1	.00007	.00408	-.00489	.00009	.01319	-.00005	.89413	.00038
#2	-.00081	-.01036	-.00082	.00191	.01529	-.00014	.97836	-.00009
#3	.00054	-.00843	-.00217	.00147	.01616	.00003	.97256	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.00029	-.00021	1.5518	.25213	-.00855	.61811	.02470
Stddev	.00039	.00089	.00104	.0399	.11756	.00244	.10475	.00149
%RSD	197.27	311.51	508.66	2.5733	46.628	28.589	16.946	6.0350
#1	.00030	-.00038	.00014	1.5114	.14886	-.01109	.56411	.02301
#2	.00052	-.00006	-.00138	1.5912	.22746	-.00621	.73884	.02584
#3	-.00023	.00130	.00062	1.5527	.38007	-.00834	.55139	.02525
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	5.6687	.00119	.01042	-.00074	.00208	.00052	.41967
Stddev	.00026	.1634	.00066	.00843	.00287	.00220	.00352	.01113
%RSD	90.448	2.8821	55.491	80.953	390.80	105.66	671.07	2.6529
#1	.00015	5.4801	.00181	.00715	.00094	.00366	-.00340	.42637
#2	.00058	5.7661	.00050	.00411	-.00406	-.00043	.00157	.42582
#3	.00012	5.7600	.00125	.02000	.00091	.00301	.00340	.40682
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606129003 Acquired: 6/27/2016 13:19:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.02183	.00273	.00216	.00029	.00131	-.00013
Stddev	.00047	.00102	.00597	.00367	.00048	.00011	.00029
%RSD	147.15	4.6769	218.71	169.95	165.96	8.6066	231.95
#1	.00006	.02065	.00326	.00621	.00084	.00127	.00001
#2	.00004	.02241	-.00349	-.00095	.00002	.00123	-.00046
#3	.00086	.02242	.00842	.00122	.00000	.00144	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10192.	62198.	3074.6
Stddev	151.	896.	60.3
%RSD	1.4841	1.4413	1.9622
#1	10087.	63037.	3142.4
#2	10123.	62304.	3026.8
#3	10365.	61254.	3054.7

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 13:23:20 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39466**	**9.8952**	**.40043**	**.50143**	**.97919**	**.04849**	**9.7927**	**.05038**
Stddev	.01306	.3836	.01000	.02169	.00739	.00183	.0660	.00133
%RSD	3.3098	3.8763	2.4963	4.3256	.75498	3.7815	.67452	2.6465
#1	.38704	9.6439	.40978	.48959	.97741	.04728	9.8281	.05184
#2	.38719	9.7049	.40160	.48825	.98731	.04758	9.8334	.05005
#3	.40974	10.337	.38990	.52647	.97285	.05060	9.7165	.04923
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20069**	**.48650**	**.50460**	**3.8975**	**47.776**	**.97248**	**9.4955**	**.48926**
Stddev	.00441	.01900	.01134	.0630	.388	.00867	.0671	.00174
%RSD	2.1979	3.9054	2.2474	1.6171	.81251	.89105	.70691	.35652
#1	.20508	.47470	.51551	3.8721	47.744	.97251	9.4735	.48919
#2	.20071	.47638	.50543	3.9692	48.180	.98114	9.5709	.49104
#3	.19626	.50842	.49287	3.8510	47.405	.96381	9.4422	.48755
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99535**	**49.328**	**.50566**	**10.124**	**.50743**	**1.2005**	**.40926**	**4.9655**
Stddev	.02398	.381	.01095	.218	.01442	.0269	.00502	.1016
%RSD	2.4097	.77333	2.1647	2.1554	2.8422	2.2416	1.2268	2.0468
#1	1.0203	49.197	.51675	10.351	.52175	1.2284	.41424	5.0701
#2	.99336	49.758	.50537	10.104	.50763	1.1982	.40933	4.9591
#3	.97242	49.030	.49486	9.9158	.49291	1.1748	.40420	4.8672
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 13:23:20 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99630	.97913	.95380	.50300	.97315	1.0214	.97706
Stddev	.02300	.00787	.00906	.01053	.03812	.0240	.00719
%RSD	2.3082	.80329	.94947	2.0942	3.9168	2.3493	.73581
#1	1.0198	.97521	.96013	.51368	.94863	1.0450	.97116
#2	.99534	.98818	.95783	.50269	.95376	1.0222	.97495
#3	.97380	.97399	.94342	.49262	1.0171	.99699	.98507
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9660.1	58486.	3001.0
Stddev	163.9	1564.	9.9
%RSD	1.6964	2.6746	.32945
#1	9505.7	59464.	2995.2
#2	9642.7	59312.	2995.4
#3	9832.0	56682.	3012.5

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 13:26:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.00303**	**-.00373**	**.00500**	**-.00055**	**-.00003**	**.00393**
Stddev	.00170	.00499	.00268	.00031	.00065	.00008	.03122
%RSD	1689.8	164.71	71.961	6.1638	118.06	299.30	794.56
#1	.00106	.00037	-.00375	.00491	-.00130	.00001	-.03094
#2	.00068	-.00007	-.00103	.00474	-.00008	.00003	.01342
#3	-.00205	.00879	-.00640	.00534	-.00028	-.00012	.02931
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**.00015**	**.00156**	**-.00015**	**-.01189**	**.13544**	**-.00177**
Stddev	.00011	.00034	.00096	.00093	.01157	.09102	.00528
%RSD	70.413	226.11	61.816	600.89	97.339	67.203	297.58
#1	.00003	.00039	.00064	-.00100	-.00558	.20922	-.00741
#2	.00018	-.00024	.00149	-.00030	-.02525	.03373	.00306
#3	.00025	.00029	.00256	.00084	-.00484	.16338	-.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01205**	**.00050**	**.00395**	**.16416**	**.00017**	F **.01114**	**-.00270**
Stddev	.01807	.00205	.00042	.03616	.00046	.00174	.00166
%RSD	150.01	409.81	10.590	22.026	265.71	15.573	61.523
#1	.02884	.00064	.00398	.19851	-.00024	.01014	-.00178
#2	-.00708	.00248	.00436	.12643	.00066	.01014	-.00462
#3	.01438	-.00162	.00352	.16753	.00010	.01315	-.00170
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						.01000	
Low Limit						-.01000	

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 13:26:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00393	.00112	.00872	.00073	.00181	.01167	.00102
Stddev	.00151	.00746	.00139	.00019	.00058	.00506	.00117
%RSD	38.515	664.39	15.940	25.365	32.293	43.335	115.09
#1	.00316	-.00100	.00967	.00052	.00245	.00931	.00206
#2	.00567	.00941	.00935	.00088	.00131	.00823	.00126
#3	.00295	-.00504	.00712	.00078	.00166	.01748	-.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00126	.00021	.00147
Stddev	.00076	.00021	.00080
%RSD	60.083	103.19	54.681
#1	.00163	.00042	.00075
#2	.00039	.00020	.00233
#3	.00175	-.00000	.00132
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9947.5	59758.	3010.4
Stddev	96.7	1863.	52.9
%RSD	.97166	3.1170	1.7571
#1	10052.	59475.	3024.7
#2	9862.1	61746.	2951.8
#3	9928.1	58053.	3054.7

Approved: June 28, 2016

Sample Name: LLCCV Acquired: 6/27/2016 13:30:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00878	.16766	.00389	.08557	.00677	.00157	.40977	.00073
Stddev	.00207	.00346	.00021	.00327	.00081	.00006	.02595	.00024
%RSD	23.531	2.0622	5.4293	3.8191	11.914	3.9744	6.3339	33.165
#1	.01068	.16888	.00391	.08931	.00721	.00156	.38214	.00070
#2	.00908	.17034	.00409	.08409	.00584	.00164	.41351	.00098
#3	.00658	.16376	.00367	.08329	.00727	.00151	.43365	.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00384	.00587	.00477	.06082	.91229	.08113	.39200	.00719
Stddev	.00038	.00131	.00041	.02730	.02861	.00171	.10933	.00172
%RSD	9.8067	22.365	8.5727	44.890	3.1359	2.1106	27.890	23.950
#1	.00418	.00493	.00504	.05726	.93538	.08181	.26640	.00586
#2	.00392	.00737	.00430	.03548	.92120	.07919	.44374	.00914
#3	.00343	.00531	.00496	.08973	.88029	.08240	.46585	.00658
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00867	.49948	.01573	.80363	.00797	.08206	.01475	.83298
Stddev	.00028	.02628	.00123	.00471	.00119	.00489	.00371	.00454
%RSD	3.1854	5.2609	7.8331	.58570	14.963	5.9538	25.165	.54557
#1	.00835	.47045	.01523	.80835	.00800	.08756	.01866	.83750
#2	.00881	.52163	.01713	.80362	.00915	.08036	.01127	.83302
#3	.00884	.50635	.01482	.79893	.00677	.07824	.01432	.82841
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: LLCCV Acquired: 6/27/2016 13:30:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40284**	**.04313**	**.02333**	**.15595**	**.00848**	**.01704**	**.04589**
Stddev	.00545	.00068	.00788	.00367	.00039	.00004	.00162
%RSD	1.3539	1.5742	33.792	2.3562	4.5484	.25639	3.5272
#1	.40779	.04330	.03084	.15591	.00827	.01709	.04451
#2	.40373	.04238	.02402	.15965	.00892	.01703	.04548
#3	.39699	.04370	.01512	.15230	.00824	.01701	.04767
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9797.4**	**58651.**	**2881.8**
Stddev	19.7	674.	40.9
%RSD	.20082	1.1484	1.4200
#1	9782.0	58269.	2909.3
#2	9819.6	58255.	2901.4
#3	9790.6	59429.	2834.8

Approved: June 28, 2016

2.3.2 Metals ICP-MS Data

2.3.2.1 Summary Data

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW16F-062116	**Prep Method:**	3015	**Prep Date:**	06/28/2016 07:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574808	**Analyst:**	JYH	**Run Date:**	07/01/2016 12:38
Collect Date:	06/21/2016 14:40	**Dilution:**	1	**File ID:**	NI.070116.123834
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.0156		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000563	J	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00236	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00976		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00200	U	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0181		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.000902	J	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0293	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW16F-062116	**Prep Method:**	3015	**Prep Date:**	06/28/2016 07:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574808	**Analyst:**	JYH	**Run Date:**	07/01/2016 16:08
Collect Date:	06/21/2016 14:40	**Dilution:**	10	**File ID:**	NI.070116.160841
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.411		0.0600	0.0300	0.0150
Manganese, Total	7439-96-5	0.659		0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-05	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	109-062216	**Prep Method:**	3015	**Prep Date:**	06/28/2016 07:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574808	**Analyst:**	JYH	**Run Date:**	07/01/2016 12:41
Collect Date:	06/22/2016 07:20	**Dilution:**	1	**File ID:**	NI.070116.124145
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00137	J	0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.0812		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00387	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00149	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00212	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00176	J	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.0280		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00389	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00678		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0126	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer NexION 300X

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	100
Vi = Initial volume	40
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/L)	0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	200
Vi = Initial volume	0.5
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/kg)	40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	40
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	50

50 ug/kg = 0.050 mg/kg

Perkin Elmer NexION ICP/MS

STANDARDS KEY

QC Std 1 - ICV
QC Std 2 - ICB
QC Std 3 - LLICV
QC Std 4 - ICSA
QC Std 5 - ICSAB
QC Std 6 - CCV
QC Std 7 - CCB
QC Std 8 - LLCCV

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.00005	0.05	0.1
Sb	10	0	0.00005	0.05	0.1
As	10	0	0.00005	0.05	0.1
Ba	10	0	0.00005	0.05	0.1
Be	10	0	0.00005	0.05	0.1
Ca	1000	0	0.005	5	10
Cd	10	0	0.0005	0.05	0.1
Cr	10	0	0.0005	0.05	0.1
Co	10	0	0.0005	0.05	0.1
Cu	10	0	0.0005	0.05	0.1
Fe	1000	0	0.005	5	10
Pb	10	0	0.00005	0.05	0.1
Mg	1000	0	0.005	5	10
Mn	10	0	0.00005	0.05	0.1
Ni	10	0	0.00005	0.05	0.1
K	1000	0	0.005	5	10
Se	10	0	0.00005	0.05	0.1
Ag	10	0	0.00005	0.05	0.1
Na	1000	0	0.005	5	10
Tl	10	0	0.00005	0.05	0.1
V	10	0	0.00005	0.05	0.1
U	1000	0	0.00005	0.05	0.1
Zn	10	0	0.00005	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG574416
Analyst: VC
Spike Analyst: VC
Run Date: 06/28/2016 07:30
Method: 3015
Balance: BAL016
Instrument: MW-3
Instrument Start: 06/28/2016 07:36

SOP: ME407 Revison 19
Spike Solution: STD75998
Spike Witness: ERP
40 & 50 ML. DIGESTION TU COA18987
HNO3 Lot #: COA18905
MS Filters- fisher-Lot#R RGT35621

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG574416-04	BLANK	1	20 mL	50 mL	180.382 g	180.312 g		
2	WG574416-05	LCS	1	20 mL	50 mL	183.694 g	183.682 g	.25 mL	
3	L16061289-01	SAMP	1	20 mL	50 mL	182.848 g	182.84 g		07/05/16
4	L16061289-04	SAMP	1	20 mL	50 mL	182.912 g	182.885 g		07/05/16
5	L16061290-03	SAMP	1	20 mL	50 mL	184.003 g	183.986 g		07/05/16
6	L16061290-05	SAMP	1	20 mL	50 mL	181.663 g	181.642 g		07/05/16
7	L16061417-01	SAMP	1	20 mL	50 mL	179.943 g	179.922 g		07/01/16
8	L16061417-02	SAMP	1	20 mL	50 mL	179.851 g	179.837 g		07/01/16
9	L16061417-03	SAMP	1	20 mL	50 mL	182.296 g	182.285 g		07/01/16
10	L16061417-04	SAMP	1	20 mL	50 mL	184.788 g	184.773 g		07/01/16
11	WG574416-01	REF	1	20 mL	50 mL	183.479 g	183.463 g		
12	L16061417-05	RS01	1	20 mL	50 mL	183.479 g	183.463 g		07/01/16
13	WG574416-06	MS	1	20 mL	50 mL	181.151 g	181.132 g	.25 mL	
14	L16061417-06	MS01	1	20 mL	50 mL	181.151 g	181.132 g	.25 mL	07/01/16
15	WG574416-07	MSD	1	20 mL	50 mL	182.336 g	182.32 g	.25 mL	
16	L16061417-07	SD01	1	20 mL	50 mL	182.336 g	182.32 g	.25 mL	07/01/16
17	L16061417-08	SAMP	1	20 mL	50 mL	182.44 g	182.422 g		07/01/16
18	L16061417-09	SAMP	1	20 mL	50 mL	182.182 g	182.167 g		07/01/16
19	L16061441-01	SAMP	1	20 mL	50 mL	181.307 g	181.285 g		06/30/16
20	L16061441-02	SAMP	1	20 mL	50 mL	182.852 g	182.839 g		06/30/16
21	WG574416-02	REF	1	20 mL	50 mL	183.787 g	183.766 g		
22	L16061442-01	RS01	1	20 mL	50 mL	183.787 g	183.766 g		06/30/16
23	L16061442-02	SAMP	1	20 mL	50 mL	182.815 g	182.785 g		06/30/16
24	WG574416-08	MS	1	20 mL	50 mL	181.69 g	181.68 g	.25 mL	
25	L16061442-03	MS01	1	20 mL	50 mL	181.69 g	181.68 g	.25 mL	06/30/16
26	WG574416-09	MSD	1	20 mL	50 mL	183.48 g	183.462 g	.25 mL	
27	L16061442-04	SD01	1	20 mL	50 mL	183.48 g	183.462 g	.25 mL	06/30/16
28	L16061446-01	SAMP	2	20 mL	50 mL	182.938 g	182.914 g		06/30/16
29	WG574416-03	REF	2	20 mL	50 mL	183.343 g	183.326 g		
30	L16061447-01	SAMP	2	20 mL	50 mL	183.343 g	183.326 g		06/30/16
31	WG574416-10	DUP	1	20 mL	50 mL	182.848 g	182.825 g		

L16061442-03	FILTERED DIGESTATE
L16061442-04	FILTERED DIGESTATE
L16061441-01	FILTERED DIGESTATE
L16061441-02	FILTERED DIGESTATE
L16061442-01	FILTERED DIGESTATE
WG574416-02	FILTERED DIGESTATE

MW_DIG - Modified 09/30/2009
PDF ID: 4828145
Report generated: 06/28/2016 09:42

Microbac Laboratories Inc.
Microwave Digestion Log

L16061442-02	FILTERED DIGESTATE	SOP:
WG574416-08	FILTERED DIGESTATE	Spike Solution:
WG574416-09	FILTERED DIGESTATE	Spike Witness:

Method:
Balance:
Analyst: Nicki Collins
Instrument:
Instrument Start:

Reviewer: Erin Potter

MW_DIG - Modified 09/30/2009
PDF ID: 4828145
Report generated: 06/28/2016 09:42

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070116A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 574808,574849,574824,574804,575057

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.070116.102728	Blank	Blank		1		07/01/16 10:27
2	NI.070116.103040	WG575028-01	Calibration Point		1		07/01/16 10:30
3	NI.070116.103351	WG575028-02	Calibration Point		1		07/01/16 10:33
4	NI.070116.103702	WG575028-03	Calibration Point		1		07/01/16 10:37
5	NI.070116.104014	WG575028-04	Calibration Point		1		07/01/16 10:40
6	NI.070116.104327	WG575028-05	Initial Calibration Verification		1		07/01/16 10:43
7	NI.070116.104640	WG575028-06	Initial Calib Blank		1		07/01/16 10:46
8	NI.070116.104953	WG575028-07	Low Level Initial Calibration V		1		07/01/16 10:49
9	NI.070116.105304	WG575028-08	Interference Check		1		07/01/16 10:53
10	NI.070116.105616	WG575028-09	Interference Check		1		07/01/16 10:56
11	NI.070116.105929	WG575028-10	CCV		1		07/01/16 10:59
12	NI.070116.110241	WG575028-11	CCB		1		07/01/16 11:02
13	NI.070116.110553	WG574416-04	Method/Prep Blank	20/50	1		07/01/16 11:05
14	NI.070116.110904	WG574416-05	Laboratory Control S	20/50	1		07/01/16 11:09
15	NI.070116.111216	WG574416-01	Reference Sample		1	L16061417-05	07/01/16 11:12
16	NI.070116.111527	WG574416-06	Matrix Spike	20/50	1	L16061417-05	07/01/16 11:15
17	NI.070116.111839	WG574416-07	Matrix Spike Duplica	20/50	1	L16061417-05	07/01/16 11:18
18	NI.070116.112150	L16061417-01	SS007MW0B04-007	20/50	1		07/01/16 11:21
19	NI.070116.112502	L16061417-02	SS007MW0B06-007	20/50	1		07/01/16 11:25
20	NI.070116.112813	WG574808-01	Post Digestion Spike		1	L16061417-02	07/01/16 11:28
21	NI.070116.113125	WG574808-02	Serial Dilution		5	L16061417-02	07/01/16 11:31
22	NI.070116.113436	WG574808-02	Serial Dilution		25	L16061417-02	07/01/16 11:34
23	NI.070116.113750	WG575028-12	CCV		1		07/01/16 11:37
24	NI.070116.114101	WG575028-13	CCB		1		07/01/16 11:41
25	NI.070116.114414	L16061417-03	SS007MW0B06-007DUP	20/50	1		07/01/16 11:44
26	NI.070116.114726	L16061417-04	SS007MW0B13-007	20/50	1		07/01/16 11:47
27	NI.070116.115037	L16061417-08	SS007MWN748-007	20/50	1		07/01/16 11:50
28	NI.070116.115349	L16061417-09	FQC-RB06221601-CC	20/50	1		07/01/16 11:53
29	NI.070116.115701	L16061441-01	TS935TW002A	20/50	1		07/01/16 11:57
30	NI.070116.120012	L16061441-02	TS935TW005A	20/50	1		07/01/16 12:00
31	NI.070116.120324	WG574416-02	Reference Sample		1	L16061442-01	07/01/16 12:03
32	NI.070116.120635	L16061442-02	TS935TW010C	20/50	1		07/01/16 12:06
33	NI.070116.120947	WG574416-08	Matrix Spike	20/50	1	L16061442-01	07/01/16 12:09
34	NI.070116.121258	WG574416-09	Matrix Spike Duplica	20/50	1	L16061442-01	07/01/16 12:12

Page: 1 Approved: July 05, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070116A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 574808,574849,574824,574804,575057

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.070116.121611	WG575028-14	CCV		1		07/01/16 12:16
36	NI.070116.121923	WG575028-15	CCB		1		07/01/16 12:19
37	NI.070116.122236	L16061446-01	GH9-HSPRING	20/50	1		07/01/16 12:22
38	NI.070116.122548	WG574416-03	Reference Sample		1	L16061447-01	07/01/16 12:25
39	NI.070116.122859	WG574416-10	Duplicate	20/50	1	L16061447-01	07/01/16 12:28
40	NI.070116.123211	L16061289-01	MW21-062216	20/50	1		07/01/16 12:32
41	NI.070116.123523	L16061289-04	18WW02F-062216	20/50	1		07/01/16 12:35
42	NI.070116.123834	L16061290-03	MW16F-062116	20/50	1		07/01/16 12:38
43	NI.070116.124145	L16061290-05	109-062216	20/50	1		07/01/16 12:41
44	NI.070116.124458	WG575028-16	CCV		1		07/01/16 12:44
45	NI.070116.124810	WG575028-17	CCB		1		07/01/16 12:48
46	NI.070116.125836	WG574419-03	Method/Prep Blank	20/50	1		07/01/16 12:58
47	NI.070116.130334	WG574419-04	Laboratory Control S	20/50	1		07/01/16 13:03
48	NI.070116.130646	WG574419-01	Reference Sample		1	L16061400-06	07/01/16 13:06
49	NI.070116.130957	WG574419-05	Matrix Spike	20/50	1	L16061400-06	07/01/16 13:09
50	NI.070116.131309	WG574419-06	Matrix Spike Duplica	20/50	1	L16061400-06	07/01/16 13:13
51	NI.070116.131620	WG574419-02	Reference Sample		1	L16061427-01	07/01/16 13:16
52	NI.070116.131932	WG574419-07	Duplicate	20/50	1	L16061427-01	07/01/16 13:19
53	NI.070116.132243	L16061468-01	H6F0605-01	20/50	1		07/01/16 13:22
54	NI.070116.132555	WG574824-01	Post Digestion Spike		1	L16061468-01	07/01/16 13:25
55	NI.070116.132906	WG574824-02	Serial Dilution		5	L16061468-01	07/01/16 13:29
56	NI.070116.133218	WG575028-18	CCV		1		07/01/16 13:32
57	NI.070116.133530	WG575028-19	CCB		1		07/01/16 13:35
58	NI.070116.133842	L16061470-01	S6F0639-01	20/50	1		07/01/16 13:38
59	NI.070116.134154	L16061471-01	S6F0244-01	20/50	1		07/01/16 13:41
60	NI.070116.134505	WG574593-01	Reference Sample		2	L16061536-01	07/01/16 13:45
61	NI.070116.134817	WG574593-04	Duplicate	20/50	2	L16061536-01	07/01/16 13:48
62	NI.070116.135128	WG574593-05	Matrix Spike	20/50	2	L16061536-01	07/01/16 13:51
63	NI.070116.135440	WG574593-06	Matrix Spike Duplica	20/50	2	L16061536-01	07/01/16 13:54
64	NI.070116.135751	L16061068-04	C01-061716	20/50	50		07/01/16 13:57
65	NI.070116.140103	L16061068-05	C01FD-061716	20/50	50		07/01/16 14:01
66	NI.070116.140414	L16061068-11	MW19F-061716	20/50	10		07/01/16 14:04
67	NI.070116.140725	WG574840-01	Post Digestion Spike		10	L16061622-02	07/01/16 14:07
68	NI.070116.141039	WG575028-20	CCV		1		07/01/16 14:10

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070116A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 574808,574849,574824,574804,575057

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.070116.141350	WG575028-21	CCB		1		07/01/16 14:13
70	NI.070116.141703	WG574840-04	L1606106815S WG574840-0	20/50	10		07/01/16 14:17
71	NI.070116.142015	WG574840-05	L1606106817SD WG574840	20/50	10		07/01/16 14:20
72	NI.070116.142326	L16061065-02	MW-23-006	20/50	50		07/01/16 14:23
73	NI.070116.142637	L16061065-03	MW-23-008	20/50	50		07/01/16 14:26
74	NI.070116.142949	L16061065-04	MW-23-009	20/50	50		07/01/16 14:29
75	NI.070116.143302	WG575028-22	CCV		1		07/01/16 14:33
76	NI.070116.143613	WG575028-23	CCB		1		07/01/16 14:36
77	NI.070116.143926	WG575028-24	Low Level Continuing Calibra		1		07/01/16 14:39
78	NI.070116.151112	L16061360-01	NP0116-LM1	20/50	1		07/01/16 15:11
79	NI.070116.151423	L16061360-02	EB-062416	20/50	1		07/01/16 15:14
80	NI.070116.151735	L16061400-01	MW-22-008	20/50	1		07/01/16 15:17
81	NI.070116.152046	L16061400-02	MW-22-016	20/50	1		07/01/16 15:20
82	NI.070116.152358	L16061400-03	MW-22-006	20/50	1		07/01/16 15:23
83	NI.070116.152709	L16061400-04	MW-22-005	20/50	1		07/01/16 15:27
84	NI.070116.153021	L16061400-05	MW-22-001	20/50	1		07/01/16 15:30
85	NI.070116.153332	L16061400-09	MW-22-003	20/50	1		07/01/16 15:33
86	NI.070116.153643	L16061400-10	MW-22-004	20/50	1		07/01/16 15:36
87	NI.070116.153955	L16061444-11	EB03	20/50	1		07/01/16 15:39
88	NI.070116.154308	WG575028-25	CCV		1		07/01/16 15:43
89	NI.070116.154619	WG575028-26	CCB		1		07/01/16 15:46
90	NI.070116.154932	L16061452-01	18CPTMW12SW-062416	20/50	1		07/01/16 15:49
91	NI.070116.155244	L16061453-01	MW2-062416	20/50	1		07/01/16 15:52
92	NI.070116.155555	L16061453-03	18CPTMW01SW-062416	20/50	1		07/01/16 15:55
93	NI.070116.155907	WG574419-02	Reference Sample		5	L16061427-01	07/01/16 15:59
94	NI.070116.160218	WG574419-07	Duplicate	20/50	5	L16061427-01	07/01/16 16:02
95	NI.070116.160530	L16061289-01	MW21-062216	20/50	50		07/01/16 16:05
96	NI.070116.160841	L16061290-03	MW16F-062116	20/50	10		07/01/16 16:08
97	NI.070116.161155	WG575028-27	CCV		1		07/01/16 16:11
98	NI.070116.161506	WG575028-28	CCB		1		07/01/16 16:15
99	NI.070116.163708	WG574521-03	Method/Prep Blank	.25/100	1		07/01/16 16:37
100	NI.070116.164019	WG574521-04	Laboratory Control S	.25/100	1		07/01/16 16:40
101	NI.070116.164331	WG574521-01	Reference Sample		1	L16061445-04	07/01/16 16:43
102	NI.070116.164642	WG574521-05	Matrix Spike	.254/100	1	L16061445-04	07/01/16 16:46

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070116A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 574808,574849,574824,574804,575057

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.070116.164954	WG574521-06	Matrix Spike Duplica	.25/100	1	L16061445-04	07/01/16 16:49
104	NI.070116.165305	L16061451-01	GS165SS062016S-ES	.251/100	1		07/01/16 16:53
105	NI.070116.165617	L16061451-02	GS159SS062116G-ES	.25/100	1		07/01/16 16:56
106	NI.070116.165928	WG575057-01	Post Digestion Spike		1	L16061451-02	07/01/16 16:59
107	NI.070116.170240	WG575057-02	Serial Dilution		5	L16061451-02	07/01/16 17:02
108	NI.070116.170552	WG575057-02	Serial Dilution		25	L16061451-02	07/01/16 17:05
109	NI.070116.170905	WG575028-29	CCV		1		07/01/16 17:09
110	NI.070116.171217	WG575028-30	CCB		1		07/01/16 17:12
111	NI.070116.171825	L16061451-03	GS164SS062116S-ES	.251/100	1		07/01/16 17:18
112	NI.070116.172204	L16061451-04	GS164SS062116P-ES	.253/100	1		07/01/16 17:22
113	NI.070116.172516	L16061451-05	GS154SS062316X-ES	.253/100	1		07/01/16 17:25
114	NI.070116.172827	WG574521-02	Reference Sample		1	L16061451-06	07/01/16 17:28
115	NI.070116.173139	L16061451-07	GS153SS0622316X-ES	.253/100	1		07/01/16 17:31
116	NI.070116.173450	L16061451-08	GS153SS062316X-ESD	.256/100	1		07/01/16 17:34
117	NI.070116.173802	WG574521-07	Matrix Spike	.258/100	1	L16061451-06	07/01/16 17:38
118	NI.070116.174113	WG574521-08	Matrix Spike Duplica	.256/100	1	L16061451-06	07/01/16 17:41
119	NI.070116.174425	L16061445-01	TS935DS00700A	.258/100	1		07/01/16 17:44
120	NI.070116.174736	L16061445-02	TS935DS00705A	.256/100	1		07/01/16 17:47
121	NI.070116.175049	WG575028-31	CCV		1		07/01/16 17:50
122	NI.070116.175401	WG575028-32	CCB		1		07/01/16 17:54
123	NI.070116.175714	L16061445-03	TS935DS00800A		1		07/01/16 17:57
124	NI.070116.180025	L16061445-07	TS935DS00900A		1		07/01/16 18:00
125	NI.070116.180337	L16061445-08	TS935DS00905A		1		07/01/16 18:03
126	NI.070116.180648	L16061445-09	TS935DS00905C		1		07/01/16 18:06
127	NI.070116.181000	L16061445-10	TS935DS01000A		1		07/01/16 18:10
128	NI.070116.181311	L16061445-11	TS935DS01005A		1		07/01/16 18:13
129	NI.070116.181623	L16061445-12	TS935DS01205A		1		07/01/16 18:16
130	NI.070116.181934	L16061451-01	GS165SS062016S-ES		10		07/01/16 18:19
131	NI.070116.182246	L16061451-02	GS159SS062116G-ES		10		07/01/16 18:22
132	NI.070116.182557	WG575057-01	Post Digestion Spike		10	L16061451-02	07/01/16 18:25
133	NI.070116.182910	WG575028-33	CCV		1		07/01/16 18:29
134	NI.070116.183222	WG575028-34	CCB		1		07/01/16 18:32
135	NI.070116.183535	WG575057-02	Serial Dilution		50	L16061451-02	07/01/16 18:35
136	NI.070116.183846	L16061451-03	GS164SS062116S-ES		10		07/01/16 18:38

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070116A.REP

Analyst1: JYH Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705

ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607

CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345

Stannous : Hydroxylamine :

Workgroups: 574808,574849,574824,574804,575057

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	NI.070116.184158	L16061451-04	GS164SS062116P-ES		10		07/01/16 18:41
138	NI.070116.184509	L16061451-05	GS154SS062316X-ES		10		07/01/16 18:45
139	NI.070116.184821	WG574521-02	Reference Sample		10	L16061451-06	07/01/16 18:48
140	NI.070116.185132	L16061451-07	GS153SS0622316X-ES		10		07/01/16 18:51
141	NI.070116.185444	L16061451-08	GS153SS062316X-ESD		10		07/01/16 18:54
142	NI.070116.185755	WG574521-07	Matrix Spike		10	L16061451-06	07/01/16 18:57
143	NI.070116.190107	WG574521-08	Matrix Spike Duplica		10	L16061451-06	07/01/16 19:01
144	NI.070116.190419	WG575028-35	CCV		1		07/01/16 19:04
145	NI.070116.190731	WG575028-36	CCB		1		07/01/16 19:07
146	NI.070116.191044	WG575028-37	Low Level Continuing Calibra		1		07/01/16 19:10

Comments

Seq.	Rerun	Dil.	Reason	Analytes
67				
Seq. 67, 70-71: wrong WG numbers. JYH				

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Microbac Laboratories Inc.

Data Checklist

Date: 01-JUL-2016
Analyst: JYH
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 575028
Runlog ID: 76079
Analytical Workgroups: 574808,574849,574824,574804,575057

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1441,1442,1360,1400,1444,1445
Level 4	1289,12901417,1452,1453,1068
	1065,1451
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	BKT
Comments	

Primary Reviewer:

Secondary Reviewer:
05-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-05-2016 15:57:13

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG574808

Login Number: L16061290

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW16F-062116	03	06/21/16					06/28/2016	6.7	180		07/01/16	10.1	180	
MW16F-062116	03	06/21/16					06/28/2016	6.7	180		07/01/16	9.9	180	
109-062216	05	06/22/16					06/28/2016	6	180		07/01/16	9.2	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4837104
Report generated 07/02/2016 13:13

METHOD BLANK SUMMARY

Login Number: L16061290
Blank File ID: NI.070116.110553
Prep Date: 06/28/16 07:30
Analyzed Date: 07/01/16 11:05
Analyst: JYH

Work Group: WG574808
Blank Sample ID: WG574416-04
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG574416-05	NI.070116.110904	07/01/16 11:09	01
DUP	WG574416-10	NI.070116.122859	07/01/16 12:28	01
MW16F-062116	L16061290-03	NI.070116.123834	07/01/16 12:38	01
109-062216	L16061290-05	NI.070116.124145	07/01/16 12:41	01
MW16F-062116	L16061290-03	NI.070116.160841	07/01/16 16:08	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4837105
Report generated 07/02/2016 13:13

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061290 Prep Date: 06/28/16 07:30 Sample ID: WG574416-04
Instrument ID: ICP-MS2 Run Date: 07/01/16 11:05 Prep Method: 3015
File ID: NI.070116.110553 Analyst: JYH Method: 6020A
Workgroup (AAB#): WG574808 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-01-JUL-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Antimony, Total	0.000500	0.00200	0.000500	1	U
Arsenic, Total	0.000500	0.00200	0.000500	1	U
Barium, Total	0.00150	0.00600	0.00150	1	U
Cadmium, Total	0.000300	0.00120	0.000300	1	U
Chromium, Total	0.00100	0.00400	0.00100	1	U
Cobalt, Total	0.000500	0.00200	0.000500	1	U
Copper, Total	0.00100	0.00400	0.00100	1	U
Lead, Total	0.000500	0.00200	0.000500	1	U
Manganese, Total	0.00100	0.00400	0.00100	1	U
Nickel, Total	0.00200	0.00800	0.00200	1	U
Silver, Total	0.000500	0.00200	0.000500	1	U
Thallium, Total	0.000100	0.000400	0.000150	1	J
Vanadium, Total	0.000500	0.00200	0.000500	1	U
Zinc, Total	0.0125	0.0500	0.0125	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4837106
02-JUL-2016 13:13

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061290 Run Date: 07/01/2016 Sample ID: WG574416-05
Instrument ID: ICP-MS2 Run Time: 11:09 Prep Method: 3015
File ID: NI.070116.110904 Analyst: JYH Method: 6020A
Workgroup (AAB#): WG574808 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD75998 Cal ID: ICP-MS-01-JUL-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Antimony, Total	0.125	0.120	95.7	80 - 120	
Arsenic, Total	0.125	0.127	102	80 - 120	
Barium, Total	0.125	0.125	99.9	80 - 120	
Cadmium, Total	0.125	0.127	101	80 - 120	
Chromium, Total	0.125	0.126	101	80 - 120	
Cobalt, Total	0.125	0.126	101	80 - 120	
Copper, Total	0.125	0.129	103	80 - 120	
Lead, Total	0.125	0.127	101	80 - 120	
Manganese, Total	0.125	0.128	103	80 - 120	
Nickel, Total	0.125	0.126	101	80 - 120	
Silver, Total	0.125	0.128	103	80 - 120	
Thallium, Total	0.125	0.126	101	80 - 120	
Vanadium, Total	0.125	0.126	101	80 - 120	
Zinc, Total	0.125	0.129	103	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4837107
Report generated: 07/02/2016 13:13

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061290 Cal ID: ICP-MS2- Worknum: WG574808
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG574416-01 File ID: NI.070116.111216 Dil: 1 Matrix: WATER
Sample ID: WG574416-06 MS File ID: NI.070116.111527 Dil: 1 Units: mg/L
Sample ID: WG574416-07 MSD File ID: NI.070116.111839 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Antimony	0.00144	0.125	0.131	104	0.125	0.131	104	0.181	80 - 120	20	
Arsenic	0.00444	0.125	0.136	105	0.125	0.137	106	1.09	80 - 120	20	
Barium	0.0818	0.125	0.203	96.9	0.125	0.203	96.8	0.0521	80 - 120	20	
Cadmium	ND	0.125	0.124	98.9	0.125	0.125	100	1.35	80 - 120	20	
Chromium	0.00255	0.125	0.127	99.6	0.125	0.128	100	0.615	80 - 120	20	
Cobalt	ND	0.125	0.125	100	0.125	0.126	101	0.860	80 - 120	20	
Copper	0.00221	0.125	0.124	97.3	0.125	0.124	97.5	0.251	80 - 120	20	
Lead	ND	0.125	0.126	101	0.125	0.127	102	1.02	80 - 120	20	
Manganese	0.00484	0.125	0.128	98.6	0.125	0.127	97.8	0.814	80 - 120	20	
Nickel	0.00380	0.125	0.124	96.6	0.125	0.127	98.5	1.92	80 - 120	20	
Silver	ND	0.125	0.0941	75.3	0.125	0.0975	78.0	3.59	80 - 120	20	*
Thallium	0.000110	0.125	0.126	101	0.125	0.126	101	0.436	80 - 120	20	
Vanadium	0.0113	0.125	0.140	103	0.125	0.140	103	0.406	80 - 120	20	
Zinc	ND	0.125	0.135	108	0.125	0.133	106	1.61	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4837108
Report generated 07/02/2016 13:13

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061290 Cal ID: ICP-MS2- Worknum: WG574808
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG574416-02 File ID: NI.070116.120324 Dil: 1 Matrix: WATER
Sample ID: WG574416-08 MS File ID: NI.070116.120947 Dil: 1 Units: mg/L
Sample ID: WG574416-09 MSD File ID: NI.070116.121258 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Antimony	ND	0.125	0.0862	69.0	0.125	0.0829	66.3	3.92	80 - 120	20	*
Arsenic	0.00389	0.125	0.129	100	0.125	0.130	101	0.631	80 - 120	20	
Barium	0.210	0.125	0.338	103	0.125	0.342	106	1.10	80 - 120	20	
Cadmium	ND	0.125	0.122	98.0	0.125	0.123	98.5	0.508	80 - 120	20	
Chromium	0.00565	0.125	0.129	99.0	0.125	0.130	99.8	0.778	80 - 120	20	
Cobalt	0.00360	0.125	0.129	101	0.125	0.130	101	0.830	80 - 120	20	
Copper	0.00453	0.125	0.125	96.4	0.125	0.124	95.9	0.486	80 - 120	20	
Lead	0.00377	0.125	0.128	99.0	0.125	0.129	100	1.39	80 - 120	20	
Manganese	0.159	0.125	0.320	129	0.125	0.319	128	0.176	80 - 120	20	*
Nickel	0.00998	0.125	0.132	97.5	0.125	0.130	96.4	1.09	80 - 120	20	
Silver	ND	0.125	0.117	93.4	0.125	0.119	95.0	1.65	80 - 120	20	
Thallium	ND	0.125	0.123	98.3	0.125	0.125	100	1.70	80 - 120	20	
Vanadium	0.0141	0.125	0.143	103	0.125	0.142	102	0.636	80 - 120	20	
Zinc	0.0428	0.125	0.171	102	0.125	0.159	92.7	7.41	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4837108
Report generated 07/12/2016 11:06

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16061290 **Worknum:** WG574808
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG574808-02 **File ID:** NI.070116.113125 **Dil:** 5 **Units:** ug/L
Sample: L16061417-02 **File ID:** NI.070116.112502 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	ND	U	1.64	F	2480.00	
Arsenic	1.32	X	1.35	F	2.60	
Barium	8.30	X	8.28	F	0.33	
Cadmium	ND	U	ND	U		
Chromium	1.74	X	ND	U		
Cobalt	ND	U	ND	U		
Copper	0.623	F	ND	U		
Lead	ND	U	ND	U		
Manganese	0.853	F	ND	U		
Nickel	1.38	F	ND	U		
Silver	ND	U	ND	U		
Thallium	ND	U	ND	U		
Vanadium	3.65	X	3.68	F	0.78	
Zinc	ND	U	ND	U		

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4837102
07/02/2016 13:13

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061290 **Worknum:** WG574808
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG574808-01 **File ID:** NI.070116.112813 **Dil:** 1 **Units:** ug/L
Sample ID: L16061417-02 **File ID:** NI.070116.112502 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	50.8		0	U	50	101.7	75 - 125	
ARSENIC	55.6		1.32		50	108.7	75 - 125	
BARIUM	59.2		8.30		50	101.9	75 - 125	
CADMIUM	51.5		0	U	50	103.0	75 - 125	
CHROMIUM	53.7		1.74		50	103.9	75 - 125	
COBALT	52.2		0	U	50	104.4	75 - 125	
COPPER	51.5		0.623	F	50	101.7	75 - 125	
LEAD	52.8		0	U	50	105.6	75 - 125	
MANGANESE	52.6		0.853	F	50	103.6	75 - 125	
NICKEL	51.7		1.38	F	50	100.6	75 - 125	
SILVER	49.5		0	U	50	98.9	75 - 125	
THALLIUM	52.3		0	U	50	104.7	75 - 125	
VANADIUM	57.2		3.65		50	107.1	75 - 125	
ZINC	54.8		0	U	50	109.7	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4837103
Report generated: 07/02/2016 13:13

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061290	Workgroup (AAB#):	WG574808
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG575028	Initial Calibration Date:	01-JUL-2016 10:40

	WG575028-01		WG575028-02		WG575028-03		WG575028-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	259	.4	428	50	250000	100	508000	.999935	
ARSENIC	0	-59.9	.4	5.90	50	61400	100	123000	.999997	
BARIUM	0	20.7	.4	146	50	107000	100	210000	.99998	
CADMIUM	0	2.60	.4	119	50	113000	100	223000	.999998	
CHROMIUM	0	7690	.4	8190	50	412000	100	812000	1	
COBALT	0	201	.4	604	50	385000	100	759000	.999986	
COPPER	0	167	.4	251	50	103000	100	201000	.999949	
LEAD	0	930	.4	2060	50	1040000	100	2040000	.999999	
MANGANESE	0	715	.4	1140	50	380000	100	751000	.999989	
NICKEL	0	335	.4	418	50	105000	100	205000	.999979	
SILVER	0	83.3	.4	447	50	352000	100	698000	1	
THALLIUM	0	7.70	.4	454	50	444000	100	872000	.999994	
VANADIUM	0	1560	.4	2030	50	413000	100	818000	.999998	
ZINC	0	240	.4	280	50	61600	100	122000	.999992	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4837112
Report generated: 02-JUL-2016 13:14

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061290
Instrument ID: ICP-MS2
File ID: NI.070116.104640
Workgroup (AAB#): WG574808
Matrix: WATER

Run Date: 07/01/2016
Run Time: 10:46
Analyst: JYH
Cal ID: ICP-MS2 - 01-JUL-16

Sample ID: WG575028-06
Method: 6020A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
COPPER	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.2	U
THALLIUM	.04	.16	.04	U
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4837114
Report generated 07/02/2016 13:14

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575028-11
Instrument ID: ICP-MS2
Run Time: 11:02
Method: 6020A
File ID: NI.070116.110241
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.276	F
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837117
Report generated 07/02/2016 13:14

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575028-13
Instrument ID: ICP-MS2
Run Time: 11:41
Method: 6020A
File ID: NI.070116.114101
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837117
Report generated 07/02/2016 13:14

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575028-15
Instrument ID: ICP-MS2
Run Time: 12:19
Method: 6020A
File ID: NI.070116.121923
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
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Report generated 07/02/2016 13:14

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575028-17
Instrument ID: ICP-MS2
Run Time: 12:48
Method: 6020A
File ID: NI.070116.124810
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837117
Report generated 07/02/2016 13:14

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575028-26
Instrument ID: ICP-MS2
Run Time: 15:46
Method: 6020A
File ID: NI.070116.154619
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837117
Report generated 07/02/2016 13:14

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575028-28
Instrument ID: ICP-MS2
Run Time: 16:15
Method: 6020A
File ID: NI.070116.161506
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837117
Report generated 07/02/2016 13:14

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575028-05
Instrument ID: ICP-MS2
Run Time: 10:43
Method: 6020A
File ID: NI.070116.104327
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	49.5	98.9	90 - 110	
Arsenic		50	50.5	101	90 - 110	
Barium		50	49.1	98.3	90 - 110	
Cadmium		50	49.7	99.4	90 - 110	
Chromium		50	50.3	101	90 - 110	
Cobalt		50	50.9	102	90 - 110	
Copper		50	50.6	101	90 - 110	
Lead		50	50.4	101	90 - 110	
Manganese		50	51.2	102	90 - 110	
Nickel		50	50.3	101	90 - 110	
Silver		50	49.2	98.3	90 - 110	
Thallium		50	49.7	99.3	90 - 110	
Vanadium		50	50.3	101	90 - 110	
Zinc		50	51.2	102	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4837113
Report generated 07/02/2016 13:14

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575028-10
Instrument ID: ICP-MS2
Run Time: 10:59
Method: 6020A
File ID: NI.070116.105929
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0511	mg/L	102	90 - 110		
Arsenic		0.0500	0.0505	mg/L	101	90 - 110		
Barium		0.0500	0.0496	mg/L	99.2	90 - 110		
Cadmium		0.0500	0.0500	mg/L	100	90 - 110		
Chromium		0.0500	0.0504	mg/L	101	90 - 110		
Cobalt		0.0500	0.0509	mg/L	102	90 - 110		
Copper		0.0500	0.0506	mg/L	101	90 - 110		
Lead		0.0500	0.0507	mg/L	101	90 - 110		
Manganese		0.0500	0.0505	mg/L	101	90 - 110		
Nickel		0.0500	0.0502	mg/L	100	90 - 110		
Silver		0.0500	0.0502	mg/L	100	90 - 110		
Thallium		0.0500	0.0505	mg/L	101	90 - 110		
Vanadium		0.0500	0.0509	mg/L	102	90 - 110		
Zinc		0.0500	0.0502	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837116
Report generated 07/02/2016 13:14

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575028-12
Instrument ID: ICP-MS2
Run Time: 11:37
Method: 6020A
File ID: NI.070116.113750
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0494	mg/L	98.9	90 - 110		
Arsenic		0.0500	0.0503	mg/L	101	90 - 110		
Barium		0.0500	0.0493	mg/L	98.6	90 - 110		
Cadmium		0.0500	0.0498	mg/L	99.6	90 - 110		
Chromium		0.0500	0.0499	mg/L	99.8	90 - 110		
Cobalt		0.0500	0.0512	mg/L	102	90 - 110		
Copper		0.0500	0.0505	mg/L	101	90 - 110		
Lead		0.0500	0.0507	mg/L	101	90 - 110		
Manganese		0.0500	0.0500	mg/L	100	90 - 110		
Nickel		0.0500	0.0502	mg/L	100	90 - 110		
Silver		0.0500	0.0497	mg/L	99.4	90 - 110		
Thallium		0.0500	0.0497	mg/L	99.5	90 - 110		
Vanadium		0.0500	0.0506	mg/L	101	90 - 110		
Zinc		0.0500	0.0500	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837116
Report generated 07/02/2016 13:14

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290 | Run Date: 07/01/2016 | Sample ID: WG575028-14
Instrument ID: ICP-MS2 | Run Time: 12:16 | Method: 6020A
File ID: NI.070116.121611 | Analyst: JYH | QC Key: DOD4
Workgroup (AAB#): WG574808 | Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0495	mg/L	98.9	90 - 110		
Arsenic		0.0500	0.0500	mg/L	99.9	90 - 110		
Barium		0.0500	0.0486	mg/L	97.3	90 - 110		
Cadmium		0.0500	0.0496	mg/L	99.2	90 - 110		
Chromium		0.0500	0.0495	mg/L	99.1	90 - 110		
Cobalt		0.0500	0.0518	mg/L	104	90 - 110		
Copper		0.0500	0.0496	mg/L	99.1	90 - 110		
Lead		0.0500	0.0504	mg/L	101	90 - 110		
Manganese		0.0500	0.0499	mg/L	99.9	90 - 110		
Nickel		0.0500	0.0494	mg/L	98.9	90 - 110		
Silver		0.0500	0.0496	mg/L	99.3	90 - 110		
Thallium		0.0500	0.0500	mg/L	100	90 - 110		
Vanadium		0.0500	0.0506	mg/L	101	90 - 110		
Zinc		0.0500	0.0493	mg/L	98.6	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837116
Report generated 07/02/2016 13:14

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290 Run Date: 07/01/2016 Sample ID: WG575028-16
Instrument ID: ICP-MS2 Run Time: 12:44 Method: 6020A
File ID: NI.070116.124458 Analyst: JYH QC Key: DOD4
Workgroup (AAB#): WG574808 Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0495	mg/L	99.0	90 - 110		
Arsenic		0.0500	0.0496	mg/L	99.1	90 - 110		
Barium		0.0500	0.0491	mg/L	98.3	90 - 110		
Cadmium		0.0500	0.0500	mg/L	100	90 - 110		
Chromium		0.0500	0.0504	mg/L	101	90 - 110		
Cobalt		0.0500	0.0509	mg/L	102	90 - 110		
Copper		0.0500	0.0506	mg/L	101	90 - 110		
Lead		0.0500	0.0509	mg/L	102	90 - 110		
Manganese		0.0500	0.0503	mg/L	101	90 - 110		
Nickel		0.0500	0.0502	mg/L	100	90 - 110		
Silver		0.0500	0.0498	mg/L	99.5	90 - 110		
Thallium		0.0500	0.0507	mg/L	101	90 - 110		
Vanadium		0.0500	0.0502	mg/L	100	90 - 110		
Zinc		0.0500	0.0498	mg/L	99.7	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837116
Report generated 07/02/2016 13:14

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290 | Run Date: 07/01/2016 | Sample ID: WG575028-25
Instrument ID: ICP-MS2 | Run Time: 15:43 | Method: 6020A
File ID: NI.070116.154308 | Analyst: JYH | QC Key: DOD4
Workgroup (AAB#): WG574808 | Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0499	mg/L	99.9	90 - 110		
Arsenic		0.0500	0.0504	mg/L	101	90 - 110		
Barium		0.0500	0.0490	mg/L	97.9	90 - 110		
Cadmium		0.0500	0.0497	mg/L	99.4	90 - 110		
Chromium		0.0500	0.0499	mg/L	99.8	90 - 110		
Cobalt		0.0500	0.0515	mg/L	103	90 - 110		
Copper		0.0500	0.0508	mg/L	102	90 - 110		
Lead		0.0500	0.0513	mg/L	103	90 - 110		
Manganese		0.0500	0.0505	mg/L	101	90 - 110		
Nickel		0.0500	0.0502	mg/L	100	90 - 110		
Silver		0.0500	0.0499	mg/L	99.7	90 - 110		
Thallium		0.0500	0.0502	mg/L	100	90 - 110		
Vanadium		0.0500	0.0509	mg/L	102	90 - 110		
Zinc		0.0500	0.0507	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837116
Report generated 07/02/2016 13:14

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575028-27
Instrument ID: ICP-MS2
Run Time: 16:11
Method: 6020A
File ID: NI.070116.161155
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0489	mg/L	97.7	90 - 110		
Arsenic		0.0500	0.0500	mg/L	100	90 - 110		
Barium		0.0500	0.0487	mg/L	97.3	90 - 110		
Cadmium		0.0500	0.0502	mg/L	100	90 - 110		
Chromium		0.0500	0.0502	mg/L	100	90 - 110		
Cobalt		0.0500	0.0512	mg/L	102	90 - 110		
Copper		0.0500	0.0503	mg/L	101	90 - 110		
Lead		0.0500	0.0522	mg/L	104	90 - 110		
Manganese		0.0500	0.0497	mg/L	99.4	90 - 110		
Nickel		0.0500	0.0503	mg/L	101	90 - 110		
Silver		0.0500	0.0498	mg/L	99.7	90 - 110		
Thallium		0.0500	0.0505	mg/L	101	90 - 110		
Vanadium		0.0500	0.0500	mg/L	100	90 - 110		
Zinc		0.0500	0.0500	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837116
Report generated 07/02/2016 13:14

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

00687900

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575028-07
Instrument ID: ICP-MS2
Run Time: 10:49
Method: 6020A
File ID: NI.070116.104953
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.364	ug/L	91.0	70 - 130		
Arsenic		0.400	0.390	ug/L	97.6	70 - 130		
Barium		0.750	0.697	ug/L	92.9	70 - 130		
Cadmium		0.240	0.238	ug/L	99.3	70 - 130		
Chromium		0.800	0.709	ug/L	88.6	70 - 130		
Cobalt		0.400	0.371	ug/L	92.7	70 - 130		
Copper		0.800	0.775	ug/L	96.9	70 - 130		
Lead		0.200	0.193	ug/L	96.3	70 - 130		
Manganese		0.500	0.457	ug/L	91.3	70 - 130		
Nickel		1.60	1.52	ug/L	95.0	70 - 130		
Silver		0.400	0.392	ug/L	98.0	70 - 130		
Thallium		0.0800	0.0815	ug/L	102	70 - 130		
Vanadium		0.400	0.339	ug/L	84.7	70 - 130		
Zinc		6.25	6.40	ug/L	102	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4837118
Report generated 07/02/2016 13:14

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575028-24
Instrument ID: ICP-MS2
Run Time: 14:39
Method: 6020A
File ID: NI.070116.143926
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.364	ug/L	90.9	70 - 130		
Arsenic		0.400	0.415	ug/L	104	70 - 130		
Barium		0.750	0.660	ug/L	88.0	70 - 130		
Cadmium		0.240	0.234	ug/L	97.3	70 - 130		
Chromium		0.800	0.671	ug/L	83.8	70 - 130		
Cobalt		0.400	0.393	ug/L	98.3	70 - 130		
Copper		0.800	0.781	ug/L	97.7	70 - 130		
Lead		0.200	0.199	ug/L	99.6	70 - 130		
Manganese		0.500	0.428	ug/L	85.7	70 - 130		
Nickel		1.60	1.54	ug/L	96.4	70 - 130		
Silver		0.400	0.385	ug/L	96.2	70 - 130		
Thallium		0.0800	0.0813	ug/L	102	70 - 130		
Vanadium		0.400	0.360	ug/L	90.0	70 - 130		
Zinc		6.25	7.08	ug/L	113	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4837118
Report generated 07/02/2016 13:14

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575028-37
Instrument ID: ICP-MS2
Run Time: 19:10
Method: 6020A
File ID: NI.070116.191044
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574808
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.327	ug/L	81.8	70 - 130		
Arsenic		0.400	0.408	ug/L	102	70 - 130		
Barium		0.750	0.693	ug/L	92.4	70 - 130		
Cadmium		0.240	0.228	ug/L	94.8	70 - 130		
Chromium		0.800	0.796	ug/L	99.5	70 - 130		
Cobalt		0.400	0.378	ug/L	94.5	70 - 130		
Copper		0.800	0.768	ug/L	96.0	70 - 130		
Lead		0.200	0.198	ug/L	98.9	70 - 130		
Manganese		0.500	0.461	ug/L	92.1	70 - 130		
Nickel		1.60	1.51	ug/L	94.1	70 - 130		
Silver		0.400	0.387	ug/L	96.6	70 - 130		
Thallium		0.0800	0.0773	ug/L	96.6	70 - 130		
Vanadium		0.400	0.364	ug/L	91.0	70 - 130		
Zinc		6.25	7.03	ug/L	113	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4837118
Report generated 07/02/2016 13:14

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061290
Instrument ID: ICP-MS2
Sol. A : WG575028-08 **File ID:** NI.070116.105304
Sol. AB : WG575028-09 **File ID:** NI.070116.105616

Workgroup (AAB#): WG574808
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.118	NS	100	96.8	96.8	
Arsenic	NS	0	NS	100	100	100	
Barium	NS	0.406	NS	100	98.7	98.7	
Cadmium	NS	-0.0920	NS	100	99.5	99.5	
Chromium	NS	0.0974	NS	100	97.8	97.8	
Cobalt	NS	0.0353	NS	100	98.4	98.4	
Copper	NS	0.287	NS	100	98.5	98.5	
Lead	NS	0.0642	NS	100	98.7	98.7	
Manganese	NS	0.0949	NS	100	99.2	99.2	
Nickel	NS	0.398	NS	100	97.1	97.1	
Silver	NS	0.0605	NS	100	87.4	87.4	
Thallium	NS	0.0383	NS	100	98.2	98.2	
Vanadium	NS	0.0180	NS	100	99.7	99.7	
Zinc	NS	1.24	NS	100	103	103	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4837115
Report generated 07/02/2016 13:14

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16061290 **Analytical Method:** 6020
Analytical Workgroup: WG574808 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** JYH
ICAL Date: 01-JUL-2016 10:30

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16061290-03	SAMP	01-JUL-2016 12:38	100.88	108.228	104.29
L16061290-03	SAMP	01-JUL-2016 16:08	98.288	99.516	97.353
L16061290-05	SAMP	01-JUL-2016 12:41	104.049	109.28	107.894
L16061417-02	SAMP	01-JUL-2016 11:25	91.126	95.137	93.308
WG574416-04	BLANK	01-JUL-2016 11:05	100.583	100.822	100.484
WG574416-05	LCS	01-JUL-2016 11:09	100.945	101.711	100.689
WG574808-01	PSPK	01-JUL-2016 11:28	92.143	96.479	93.904
WG574808-02	SERIAL	01-JUL-2016 11:31	92.982	94.302	91.966
WG575028-05	ICV	01-JUL-2016 10:43	99.388	100.45	101.227
WG575028-06	ICB	01-JUL-2016 10:46	99.921	101.195	100.88
WG575028-07	LLICV	01-JUL-2016 10:49	97.843	98.579	96.464
WG575028-08	ICS	01-JUL-2016 10:53	97.097	100.956	98.373
WG575028-09	ICS	01-JUL-2016 10:56	99.537	101.553	98.936
WG575028-10	CCV	01-JUL-2016 10:59	98.413	100.239	99.347
WG575028-11	CCB	01-JUL-2016 11:02	101.078	100.828	100.108
WG575028-12	CCV	01-JUL-2016 11:37	99.995	101.052	100.573
WG575028-13	CCB	01-JUL-2016 11:41	101.368	101.564	100.677
WG575028-14	CCV	01-JUL-2016 12:16	105.497	108.146	107.23
WG575028-15	CCB	01-JUL-2016 12:19	107.619	108.395	108.168
WG575028-16	CCV	01-JUL-2016 12:44	103.303	109.496	107.231
WG575028-17	CCB	01-JUL-2016 12:48	105.044	109.74	107.547
WG575028-24	LLCCV	01-JUL-2016 14:39	100.804	98.706	100.09
WG575028-25	CCV	01-JUL-2016 15:43	100.989	103.315	102.712
WG575028-26	CCB	01-JUL-2016 15:46	101.711	104.453	104.379
WG575028-27	CCV	01-JUL-2016 16:11	100.912	105.898	104.016
WG575028-28	CCB	01-JUL-2016 16:15	103.124	105.323	105.946
WG575028-37	LLCCV	01-JUL-2016 19:10	93.446	100.247	96.576

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4837111
Report generated: 07/02/2016 13:13

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16061290 **Date:** 04/19/2016
Insturment ID: ICP-MS2 **Method:** 6020A

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Uranium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4837109
Report generated: 07/02/2016 13:13

2.3.2.3 Raw Data

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Friday, July 01, 2016 10:13:04

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1329	2024	0.709	
Mg	23.985	23.975	4503	2020	0.696	
Co	58.933	58.925	11692	2022	0.691	
In	114.904	114.875	22859	2028	0.686	
U	238.050	238.025	47457	2043	0.687	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	3.598
5.575	4.718
5.625	3.789
5.675	2.527
5.725	1.318
5.775	1.142
5.825	2.913
5.875	3.428
5.925	4.580
5.975	3.116
6.025	1.509
6.075	2.372
6.125	1.519
6.175	1.841
6.225	5.064
6.275	40.937
6.325	69.722
6.375	49.793
6.425	63.949
6.475	46.187
6.525	18.017
6.575	4.888
6.625	1.946
6.675	3.206
6.725	1.995
6.775	2.218
6.825	1.690

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6.875	1.781
6.925	1.186
6.975	1.328
7.025	1.344
7.075	1.081
7.125	0.453
7.175	2.067
7.225	2.391
7.275	2.950
7.325	17.639
7.375	57.735
7.425	72.436
7.475	223.607
7.525	61.237
7.575	61.237
7.625	74.689
7.675	43.853
7.725	81.441
7.775	70.711
7.825	49.793
7.875	81.441
7.925	71.261
7.975	63.888
8.025	108.327
8.075	69.722
8.125	100.000
8.175	69.722
8.225	63.191
8.275	46.481
8.325	59.265
8.375	94.786
8.425	43.853
8.475	35.355
22.525	100.000
22.575	24.845
22.625	11.877
22.675	14.821
22.725	27.507
22.775	16.675
22.825	18.109
22.875	27.152
22.925	12.748
22.975	17.626
23.025	12.284
23.075	17.138
23.125	22.852
23.175	24.755

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23.225	27.794
23.275	13.465
23.325	28.287
23.375	27.216
23.425	29.613
23.475	25.156
23.525	5.738
23.575	3.240
23.625	2.912
23.675	3.295
23.725	2.834
23.775	3.434
23.825	2.694
23.875	2.849
23.925	2.371
23.975	2.335
24.025	3.002
24.075	2.407
24.125	2.590
24.175	2.561
24.225	3.038
24.275	3.732
24.325	13.243
24.375	46.291
24.425	31.044
24.475	3.900
24.525	3.690
24.575	1.518
24.625	2.041
24.675	1.011
24.725	0.948
24.775	1.552
24.825	1.240
24.875	0.999
24.925	2.206
24.975	1.206
25.025	1.519
25.075	1.903
25.125	0.579
25.175	1.714
25.225	2.460
25.275	18.990
25.325	26.352
25.375	57.810
25.425	13.305
25.475	13.731
57.525	8.299

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57.575	3.825
57.625	2.379
57.675	1.810
57.725	1.941
57.775	3.194
57.825	3.753
57.875	1.813
57.925	1.247
57.975	2.156
58.025	1.826
58.075	1.503
58.125	1.715
58.175	3.179
58.225	2.838
58.275	20.250
58.325	47.507
58.375	33.055
58.425	7.046
58.475	7.950
58.525	1.298
58.575	2.456
58.625	0.689
58.675	2.468
58.725	2.353
58.775	0.839
58.825	1.215
58.875	1.050
58.925	1.190
58.975	1.362
59.025	1.477
59.075	1.339
59.125	2.122
59.175	2.562
59.225	3.714
59.275	10.687
59.325	73.193
59.375	43.301
59.425	29.315
59.475	15.449
59.525	9.592
59.575	4.491
59.625	3.077
59.675	2.739
59.725	2.974
59.775	4.607
59.825	3.985
59.875	2.185

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59.925	2.525
59.975	1.104
60.025	3.006
60.075	3.085
60.125	2.240
60.175	5.388
60.225	7.934
60.275	43.006
60.325	15.215
60.375	46.351
60.425	85.267
60.475	44.721
113.525	8.024
113.575	2.930
113.625	3.520
113.675	3.350
113.725	2.512
113.775	1.897
113.825	2.146
113.875	1.417
113.925	2.337
113.975	2.849
114.025	1.596
114.075	1.757
114.125	1.986
114.175	3.937
114.225	7.420
114.275	16.156
114.325	23.697
114.375	19.422
114.425	6.964
114.475	6.194
114.525	3.847
114.575	1.824
114.625	1.449
114.675	1.397
114.725	1.117
114.775	1.853
114.825	0.668
114.875	1.048
114.925	1.062
114.975	0.807
115.025	1.604
115.075	0.617
115.125	0.990
115.175	1.502
115.225	4.478

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115.275	6.474
115.325	39.891
115.375	63.816
115.425	37.630
115.475	30.031
115.525	14.465
115.575	9.978
115.625	2.212
115.675	2.597
115.725	4.004
115.775	4.700
115.825	2.647
115.875	1.521
115.925	0.934
115.975	2.944
116.025	2.211
116.075	6.400
116.125	6.342
116.175	7.120
116.225	10.108
116.275	16.197
116.325	46.481
116.375	69.722
116.425	51.349
116.475	37.029
236.525	
236.575	29.186
236.625	24.495
236.675	29.186
236.725	31.126
236.775	17.430
236.825	21.320
236.875	35.016
236.925	29.487
236.975	22.480
237.025	20.328
237.075	5.167
237.125	26.770
237.175	39.033
237.225	35.209
237.275	32.070
237.325	18.731
237.375	19.628
237.425	26.854
237.475	32.050
237.525	17.891
237.575	10.999

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237.625	4.356
237.675	1.280
237.725	1.988
237.775	1.816
237.825	1.251
237.875	1.667
237.925	1.057
237.975	0.998
238.025	0.960
238.075	1.070
238.125	0.734
238.175	2.008
238.225	0.722
238.275	1.413
238.325	1.849
238.375	2.376
238.425	2.444
238.475	2.524
238.525	19.935
238.575	20.360
238.625	13.507
238.675	21.195
238.725	21.155
238.775	6.804
238.825	10.080
238.875	12.811
238.925	23.344
238.975	11.513
239.025	14.758
239.075	30.366
239.125	18.763
239.175	14.417
239.225	4.027
239.275	13.280
239.325	20.761
239.375	27.288
239.425	21.246
239.475	21.217

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SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 7/1/2016 10:17:38 AM
End Time: 7/1/2016 10:19:50 AM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 6753.37
        Obtained Intensity (Mg 23.985): 350422.63
        Obtained Intensity (In 114.904): 74054.21
        Obtained Intensity (U 238.05): 161864.28
        Obtained Intensity (Bkgd 220): 0.13
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.020 (=4067.61 / 207928.14)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.011 (=2367.92 / 207928.14)
```

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SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 7/1/2016 10:17:38 AM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 6753.37
                Obtained Intensity (Mg 23.985): 350422.63
                Obtained Intensity (In 114.904): 74054.21
                Obtained Intensity (U 238.05): 161864.28
                Obtained Intensity (Bkgd 220): 0.13
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.020 (=4067.61 / 207928.14)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.011 (=2367.92 / 207928.14)
[Passed]  Optimum value(s): N/A

End Time: 7/1/2016 10:19:50 AM
```


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Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Friday, July 01, 2016 10:27:28
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	76455.8	1.4				ug/L		Standard
	Be	9	20.0	50.0				ug/L		Standard
	Al	27	1306.7	8.4				ug/L		Standard
	Sc	45	41174.2	1.3				ug/L		Standard
	Ti	47	27.3	20.1				ug/L		Standard
	V	51	1434.3	4.1				ug/L		Standard
	Cr	52	7733.0	1.4				ug/L		Standard
	Cr	53	441.7	6.2				ug/L		Standard
	Mn	55	722.7	2.8				ug/L		Standard
	Co	59	217.3	3.4				ug/L		Standard
	Ni	60	304.3	3.8				ug/L		Standard
	Cu	65	181.0	9.6				ug/L		Standard
	Zn	66	214.7	7.4				ug/L		Standard
>	Ge	72	520809.4	1.3				ug/L		Standard
	As	75	-51.8	28.3				ug/L		Standard
	Se	82	16.9	16.8				ug/L		Standard
	Se-1	77	56.0	13.9				ug/L		Standard
>	Ga	71	25.0	34.6				mg/L		Standard
	Rb	85	28.3	71.3				ug/L		Standard
	Y	89	447394.9	1.2				ug/L		Standard
>	Rh	103	15.0	0.0				ug/L		Standard
	Mo	98	112.7	27.3				ug/L		Standard
	Ag	107	108.0	3.2				ug/L		Standard
	Cd	111	3.1	49.9				mg/L		Standard
	Cd	114	19.8	49.9				ug/L		Standard
>	In	115	625727.9	1.1				ug/L		Standard
	Sn	118	568.3	11.1				ug/L		Standard
	Sb	123	611.9	31.5				ug/L		Standard
	Ba	135	21.0	20.8				ug/L		Standard
	Ce	140	245.0	41.7				ug/L		Standard
>	Tb	159	950397.3	0.8				ug/L		Standard
	Ho	165	6.7	114.6				ug/L		Standard
	Tl	203	15.0	17.6				ug/L		Standard
	Tl	205	13.3	57.3				ug/L		Standard
	Pb	206	263.7	1.3				ug/L		Standard
	Pb	207	221.7	2.3				ug/L		Standard
	Pb	208	958.7	0.3				ug/L		Standard
	U	238	9.3	30.9				ug/L		Standard
>	Bi	209	552820.8	0.2				ug/L		Standard

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Na	23	1.7	173.2	mg/L	Standard
Mg	24	55.0	15.7	mg/L	Standard
K	39	28.3	27.0	mg/L	Standard
Ca	43	26.7	47.2	mg/L	Standard
Fe	54	147.3	8.3	mg/L	Standard
Fe	57	268.3	12.1	mg/L	Standard
> **Sc-1**	45	41174.2	1.3	mg/L	Standard
Cl	35	69550.0	1.7	ug/L	Standard
Kr	83	0.7	86.6	ug/L	Standard
Br	81	1950.1	7.9	ug/L	Standard
P	31	21156.4	1.5	ug/L	Standard
S	34	3418.7	4.4	ug/L	Standard
Sr	88	71.7	49.5	ug/L	Standard
C	12	163.3	19.7	mg/L	Standard
N	14	0.0		mg/L	Standard
Hg	202	16.7	69.3	mg/L	Standard
Dy	164	16.3	91.8	mg/L	Standard
Ho-1	165	6.7	114.6	mg/L	Standard
Er	166	6.7	86.6	mg/L	Standard
I	127	19499.2	0.9	mg/L	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Blank
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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Friday, July 01, 2016 10:30:40
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76115.8	2.8				ug/L	76456	Standard
	Be	9	13.3	21.7				ug/L	20	Standard
	Al	27	1265.1	6.9				ug/L	1307	Standard
	Sc	45	40428.9	1.7				ug/L	41174	Standard
	Ti	47	21.7	32.4				ug/L	27	Standard
	V	51	1555.0	2.9				ug/L	1434	Standard
	Cr	52	7686.3	1.0				ug/L	7733	Standard
	Cr	53	466.7	11.8				ug/L	442	Standard
	Mn	55	715.0	5.0				ug/L	723	Standard
	Co	59	200.7	6.9				ug/L	217	Standard
	Ni	60	335.0	2.6				ug/L	304	Standard
	Cu	65	166.7	3.3				ug/L	181	Standard
	Zn	66	240.0	2.6				ug/L	215	Standard
>	**Ge**	72	524095.0	0.6				ug/L	520809	Standard
	As	75	-59.9	59.9				ug/L	-52	Standard
	Se	82	13.2	52.5				ug/L	17	Standard
	Se-1	77	54.7	18.5				ug/L	56	Standard
>	**Ga**	71	33.3	45.8				mg/L	25	Standard
	Rb	85	11.7	89.2				ug/L	28	Standard
	Y	89	451430.1	1.0				ug/L	447395	Standard
>	**Rh**	103	13.3	142.0				ug/L	15	Standard
	Mo	98	59.2	36.8				ug/L	113	Standard
	Ag	107	83.3	15.2				ug/L	108	Standard
	Cd	111	2.6	60.3				mg/L	3	Standard
	Cd	114	6.8	257.6				ug/L	20	Standard
>	**In**	115	626754.1	0.5				ug/L	625728	Standard
	Sn	118	553.3	6.0				ug/L	568	Standard
	Sb	123	259.4	31.5				ug/L	612	Standard
	Ba	135	20.7	14.8				ug/L	21	Standard
	Ce	140	71.7	8.1				ug/L	245	Standard
>	**Tb**	159	970231.2	1.1				ug/L	950397	Standard
	Ho	165	3.3	173.2				ug/L	7	Standard
	Tl	203	7.7	32.8				ug/L	15	Standard
	Tl	205	6.7	43.3				ug/L	13	Standard
	Pb	206	273.7	9.4				ug/L	264	Standard
	Pb	207	216.3	5.9				ug/L	222	Standard
	Pb	208	930.0	2.3				ug/L	959	Standard
	U	238	2.3	24.7				ug/L	9	Standard
>	**Bi**	209	552479.9	0.9				ug/L	552821	Standard

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	Na	23	0.0		mg/L	2	Standard
	Mg	24	65.0	20.4	mg/L	55	Standard
	K	39	38.3	19.9	mg/L	28	Standard
	Ca	43	28.3	53.9	mg/L	27	Standard
	Fe	54	142.9	16.5	mg/L	147	Standard
	Fe	57	211.7	5.9	mg/L	268	Standard
>	**Sc-1**	45	40428.9	1.7	mg/L	41174	Standard
	Cl	35	69484.3	2.2	ug/L	69550	Standard
	Kr	83	1.0	0.0	ug/L	1	Standard
	Br	81	2066.8	4.1	ug/L	1950	Standard
	P	31	21174.8	5.7	ug/L	21156	Standard
	S	34	3378.7	3.5	ug/L	3419	Standard
	Sr	88	91.7	20.7	ug/L	72	Standard
	C	12	160.0	28.6	mg/L	163	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	16.7	91.7	mg/L	17	Standard
	Dy	164	6.3	93.2	mg/L	16	Standard
	Ho-1	165	3.3	173.2	mg/L	7	Standard
	Er	166	6.7	86.6	mg/L	7	Standard
	I	127	19828.0	1.1	mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Friday, July 01, 2016 10:33:51
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74986.8	1.6				ug/L	76456	Standard
	Be	9	76.7	43.4				ug/L	20	Standard
	Al	27	10110.0	3.2				ug/L	1307	Standard
	Sc	45	40704.6	1.5				ug/L	41174	Standard
	Ti	47	59.7	6.8				ug/L	27	Standard
	V	51	2028.1	3.7				ug/L	1434	Standard
	Cr	52	8189.5	1.1				ug/L	7733	Standard
	Cr	53	468.3	4.9				ug/L	442	Standard
	Mn	55	1137.0	2.8				ug/L	723	Standard
	Co	59	604.0	2.0				ug/L	217	Standard
	Ni	60	418.3	1.4				ug/L	304	Standard
	Cu	65	251.3	1.9				ug/L	181	Standard
	Zn	66	280.0	1.2				ug/L	215	Standard
>	**Ge**	72	516908.5	0.1				ug/L	520809	Standard
	As	75	5.9	557.4				ug/L	-52	Standard
	Se	82	22.1	63.4				ug/L	17	Standard
	Se-1	77	62.3	6.5				ug/L	56	Standard
>	**Ga**	71	28.3	62.0				mg/L	25	Standard
	Rb	85	13.3	142.0				ug/L	28	Standard
	Y	89	452397.3	1.6				ug/L	447395	Standard
>	**Rh**	103	8.3	91.7				ug/L	15	Standard
	Mo	98	371.2	3.3				ug/L	113	Standard
	Ag	107	447.0	1.8				ug/L	108	Standard
	Cd	111	119.4	7.1				mg/L	3	Standard
	Cd	114	282.1	4.3				ug/L	20	Standard
>	**In**	115	619630.9	0.5				ug/L	625728	Standard
	Sn	118	855.0	13.6				ug/L	568	Standard
	Sb	123	428.3	12.3				ug/L	612	Standard
	Ba	135	146.3	3.9				ug/L	21	Standard
	Ce	140	45.0	50.9				ug/L	245	Standard
>	**Tb**	159	965634.3	1.4				ug/L	950397	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	454.3	3.7				ug/L	15	Standard
	Tl	205	475.0	1.1				ug/L	13	Standard
	Pb	206	529.3	1.0				ug/L	264	Standard
	Pb	207	492.7	3.7				ug/L	222	Standard
	Pb	208	2058.4	0.9				ug/L	959	Standard
	U	238	404.0	3.6				ug/L	9	Standard
>	**Bi**	209	551272.3	0.2				ug/L	552821	Standard

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	Na	23	0.0		mg/L	2	Standard
	Mg	24	55.0	39.6	mg/L	55	Standard
	K	39	35.0	51.5	mg/L	28	Standard
	Ca	43	26.7	28.6	mg/L	27	Standard
	Fe	54	131.1	29.5	mg/L	147	Standard
	Fe	57	260.0	13.9	mg/L	268	Standard
>	**Sc-1**	45	40704.6	1.5	mg/L	41174	Standard
	Cl	35	69075.1	1.1	ug/L	69550	Standard
	Kr	83	2.0	50.0	ug/L	1	Standard
	Br	81	2083.5	5.5	ug/L	1950	Standard
	P	31	20977.8	1.6	ug/L	21156	Standard
	S	34	3237.0	8.2	ug/L	3419	Standard
	Sr	88	66.7	30.3	ug/L	72	Standard
	C	12	120.0	16.7	mg/L	163	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	16.7	34.6	mg/L	17	Standard
	Dy	164	19.5	0.0	mg/L	16	Standard
	Ho-1	165	8.3	69.3	mg/L	7	Standard
	Er	166	10.0		mg/L	7	Standard
	I	127	19168.8	3.3	mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Friday, July 01, 2016 10:37:02
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74971.7	1.7				ug/L	76456	Standard
	Be	9	54860.9	3.6	**50.0000**	1.210	2.4	ug/L	20	Standard
	Al	27	8440082.6	0.7	**50.0000**	0.980	2.0	ug/L	1307	Standard
	Sc	45	40865.0	1.5				ug/L	41174	Standard
	Ti	47	32329.8	0.6	**100.0000**	0.832	0.8	ug/L	27	Standard
	V	51	412896.9	0.3	**50.0000**	0.270	0.5	ug/L	1434	Standard
	Cr	52	411678.8	0.9	**50.0000**	0.611	1.2	ug/L	7733	Standard
	Cr	53	51159.6	0.9	**50.0000**	0.580	1.2	ug/L	442	Standard
	Mn	55	380443.4	1.4	**50.0000**	0.789	1.6	ug/L	723	Standard
	Co	59	384667.7	0.9	**50.0000**	0.374	0.7	ug/L	217	Standard
	Ni	60	104566.9	0.5	**50.0000**	0.292	0.6	ug/L	304	Standard
	Cu	65	103056.3	0.1	**50.0000**	0.150	0.3	ug/L	181	Standard
	Zn	66	61622.7	0.7	**50.0000**	0.151	0.3	ug/L	215	Standard
>	**Ge**	72	520018.0	0.4				ug/L	520809	Standard
	As	75	61417.5	0.3	**50.0000**	0.279	0.6	ug/L	-52	Standard
	Se	82	6337.3	1.0	**50.0000**	0.692	1.4	ug/L	17	Standard
	Se-1	77	4335.3	1.3	**50.0000**	0.572	1.1	ug/L	56	Standard
>	**Ga**	71	61.7	40.0				mg/L	25	Standard
	Rb	85	878.4	2.6				ug/L	28	Standard
	Y	89	444837.1	3.4				ug/L	447395	Standard
>	**Rh**	103	30.0	44.1				ug/L	15	Standard
	Mo	98	294287.0	0.6	**100.0000**	0.409	0.4	ug/L	113	Standard
	Ag	107	351901.5	1.0	**50.0000**	0.404	0.8	ug/L	108	Standard
	Cd	111	112966.0	0.5	**50.0000**	0.196	0.4	mg/L	3	Standard
	Cd	114	280940.2	0.5	**50.0000**	0.110	0.2	ug/L	20	Standard
>	**In**	115	612769.1	0.4				ug/L	625728	Standard
	Sn	118	314258.0	2.0	**50.0000**	1.163	2.3	ug/L	568	Standard
	Sb	123	250330.0	0.3	**50.0000**	0.094	0.2	ug/L	612	Standard
	Ba	135	107237.2	0.5	**50.0000**	0.330	0.7	ug/L	21	Standard
	Ce	140	96.7	19.6				ug/L	245	Standard
>	**Tb**	159	945727.5	1.1				ug/L	950397	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	443860.6	0.2	**50.0000**	0.306	0.6	ug/L	15	Standard
	Tl	205	392135.3	1.5	**50.0000**	0.676	1.4	ug/L	13	Standard
	Pb	206	280519.3	0.4	**50.0000**	0.226	0.5	ug/L	264	Standard
	Pb	207	254589.8	0.6	**50.0000**	0.448	0.9	ug/L	222	Standard
	Pb	208	1037250.6	0.5	**50.0000**	0.611	1.2	ug/L	959	Standard
	U	238	392629.2	0.3	**50.0000**	0.515	1.0	ug/L	9	Standard
>	**Bi**	209	544795.2	0.7				ug/L	552821	Standard

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Na	23	3.3	86.6	**5.0000**	4.327	86.5	mg/L	2	Standard
Mg	24	4290.6	8.9	**5.0000**	0.514	10.3	mg/L	55	Standard
K	39	1336.7	14.8	**5.0000**	0.680	13.6	mg/L	28	Standard
Ca	43	78.3	9.8	**5.0000**	0.715	14.3	mg/L	27	Standard
Fe	54	6652.7	2.6	**5.0000**	0.189	3.8	mg/L	147	Standard
Fe	57	1848.4	3.7	**5.0000**	0.193	3.9	mg/L	268	Standard
Sc-1	45	40865.0	1.5				mg/L	41174	Standard
Cl	35	67370.1	1.9				ug/L	69550	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	1980.1	7.8				ug/L	1950	Standard
P	31	22366.5	1.7				ug/L	21156	Standard
S	34	3632.1	4.0				ug/L	3419	Standard
Sr	88	68.3	33.8				ug/L	72	Standard
C	12	116.7	13.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	120.2				mg/L	17	Standard
Dy	164	5.7	108.5				mg/L	16	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	24309.5	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Friday, July 01, 2016 10:40:14
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74573.1	2.4				ug/L	76456	Standard
	Be	9	109282.8	1.9	**100.0980**	2.509	2.5	ug/L	20	Standard
	Al	27	16601431.1	0.9	**99.4425**	1.710	1.7	ug/L	1307	Standard
	Sc	45	41180.9	0.8				ug/L	41174	Standard
	Ti	47	65332.6	0.8	**201.3970**	0.318	0.2	ug/L	27	Standard
	V	51	817909.9	1.4	**99.7804**	1.578	1.6	ug/L	1434	Standard
	Cr	52	812246.8	1.3	**99.9568**	0.856	0.9	ug/L	7733	Standard
	Cr	53	100426.9	3.2	**99.4382**	3.780	3.8	ug/L	442	Standard
	Mn	55	750652.7	0.8	**99.5323**	0.364	0.4	ug/L	723	Standard
	Co	59	758624.4	0.2	**99.4757**	0.655	0.7	ug/L	217	Standard
	Ni	60	205495.5	0.6	**99.3580**	0.343	0.3	ug/L	304	Standard
	Cu	65	201186.2	0.4	**98.9880**	0.686	0.7	ug/L	181	Standard
	Zn	66	121678.0	0.3	**99.6126**	1.153	1.2	ug/L	215	Standard
>	Ge	72	518357.9	0.9				ug/L	520809	Standard
	As	75	123132.9	0.9	**100.2583**	0.732	0.7	ug/L	-52	Standard
	Se	82	12560.6	0.3	**99.7710**	0.579	0.6	ug/L	17	Standard
	Se-1	77	8548.4	1.2	**99.7880**	1.005	1.0	ug/L	56	Standard
>	Ga	71	40.0	45.1				mg/L	25	Standard
	Rb	85	1701.8	13.2				ug/L	28	Standard
	Y	89	451914.9	2.5				ug/L	447395	Standard
>	Rh	103	40.0	25.0				ug/L	15	Standard
	Mo	98	592109.5	0.9	**201.3215**	2.481	1.2	ug/L	113	Standard
	Ag	107	698129.6	0.3	**99.9561**	0.390	0.4	ug/L	108	Standard
	Cd	111	223398.5	0.3	**99.7914**	0.348	0.3	mg/L	3	Standard
	Cd	114	550589.1	2.0	**99.3411**	2.205	2.2	ug/L	20	Standard
>	In	115	608447.5	0.3				ug/L	625728	Standard
	Sn	118	629099.1	1.2	**100.4410**	1.420	1.4	ug/L	568	Standard
	Sb	123	508420.5	1.6	**101.1418**	1.887	1.9	ug/L	612	Standard
	Ba	135	210242.6	0.2	**99.3661**	0.116	0.1	ug/L	21	Standard
	Ce	140	141.7	20.7				ug/L	245	Standard
>	Tb	159	939885.9	0.8				ug/L	950397	Standard
	Ho	165	13.3	21.7				ug/L	7	Standard
	Tl	203	872285.6	0.1	**99.6647**	0.211	0.2	ug/L	15	Standard
	Tl	205	778762.6	2.1	**100.1937**	1.912	1.9	ug/L	13	Standard
	Pb	206	549521.0	0.7	**99.5257**	0.453	0.5	ug/L	264	Standard
	Pb	207	499379.9	0.5	**99.5919**	0.286	0.3	ug/L	222	Standard
	Pb	208	2044680.9	0.3	**99.8400**	0.419	0.4	ug/L	959	Standard
	U	238	794936.5	0.3	**101.1523**	0.190	0.2	ug/L	9	Standard
>	Bi	209	538915.4	0.3				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	8624.1	2.7	**10.0117**	0.211	2.1	mg/L	55	Standard
K	39	2628.6	4.6	**9.9475**	0.505	5.1	mg/L	28	Standard
Ca	43	143.3	11.2	**10.5644**	1.388	13.1	mg/L	27	Standard
Fe	54	12475.4	2.0	**9.6818**	0.117	1.2	mg/L	147	Standard
Fe	57	3570.4	3.6	**10.1632**	0.334	3.3	mg/L	268	Standard
Sc-1	45	41180.9	0.8				mg/L	41174	Standard
Cl	35	66505.0	1.1				ug/L	69550	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	1963.5	9.6				ug/L	1950	Standard
P	31	23055.9	3.6				ug/L	21156	Standard
S	34	3625.4	3.4				ug/L	3419	Standard
Sr	88	81.7	21.5				ug/L	72	Standard
C	12	133.3	30.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	17	Standard
Dy	164	12.1	43.5				mg/L	16	Standard
Ho-1	165	13.3	21.7				mg/L	7	Standard
Er	166	26.7	57.3				mg/L	7	Standard
I	127	3062.0	8.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998

Sample ID: Standard 4
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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Friday, July 01, 2016 10:43:27
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73226.6	2.1				ug/L	76456	Standard
	Be	9	55138.5	1.1	**51.4232**	1.173	2.3	ug/L	20	Standard
	Al	27	8364287.3	0.8	**51.0145**	0.701	1.4	ug/L	1307	Standard
	Sc	45	42051.6	1.4				ug/L	41174	Standard
	Ti	47	32632.1	1.2	**99.6299**	0.273	0.3	ug/L	27	Standard
	V	51	416986.8	1.2	**50.3040**	0.153	0.3	ug/L	1434	Standard
	Cr	52	416377.2	0.8	**50.2986**	0.675	1.3	ug/L	7733	Standard
	Cr	53	51450.5	1.0	**50.2662**	0.513	1.0	ug/L	442	Standard
	Mn	55	390114.9	0.6	**51.2101**	0.808	1.6	ug/L	723	Standard
	Co	59	391917.0	0.9	**50.9056**	0.274	0.5	ug/L	217	Standard
	Ni	60	105069.4	0.7	**50.2680**	0.977	1.9	ug/L	304	Standard
	Cu	65	103770.8	0.9	**50.5551**	0.555	1.1	ug/L	181	Standard
	Zn	66	63280.5	0.6	**51.2430**	0.408	0.8	ug/L	215	Standard
>	Ge	72	523154.7	1.4				ug/L	520809	Standard
	As	75	62592.0	0.8	**50.5289**	1.093	2.2	ug/L	-52	Standard
	Se	82	6421.3	0.7	**50.4779**	0.451	0.9	ug/L	17	Standard
	Se-1	77	4421.6	3.1	**50.8264**	2.224	4.4	ug/L	56	Standard
>	Ga	71	38.3	30.1				mg/L	25	Standard
	Rb	85	941.7	14.7				ug/L	28	Standard
	Y	89	448213.9	1.5				ug/L	447395	Standard
>	Rh	103	35.0	49.5				ug/L	15	Standard
	Mo	98	294940.7	1.4	**96.3152**	0.728	0.8	ug/L	113	Standard
	Ag	107	357502.4	1.0	**49.1663**	0.717	1.5	ug/L	108	Standard
	Cd	111	115768.3	0.2	**49.6787**	0.607	1.2	mg/L	3	Standard
	Cd	114	281209.7	0.6	**48.7423**	0.787	1.6	ug/L	20	Standard
>	In	115	633404.9	1.1				ug/L	625728	Standard
	Sn	118	321628.0	0.8	**49.2868**	0.611	1.2	ug/L	568	Standard
	Sb	123	258956.5	0.4	**49.4694**	0.480	1.0	ug/L	612	Standard
	Ba	135	108217.8	0.6	**49.1275**	0.780	1.6	ug/L	21	Standard
	Ce	140	141.7	45.4				ug/L	245	Standard
>	Tb	159	959365.6	0.2				ug/L	950397	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	443048.1	0.6	**49.6569**	0.744	1.5	ug/L	15	Standard
	Tl	205	398039.0	0.4	**50.2306**	0.560	1.1	ug/L	13	Standard
	Pb	206	281925.4	0.1	**50.0662**	0.613	1.2	ug/L	264	Standard
	Pb	207	256662.1	1.0	**50.1891**	0.845	1.7	ug/L	222	Standard
	Pb	208	1053544.2	0.4	**50.4385**	0.548	1.1	ug/L	959	Standard
	U	238	395989.8	1.3	**49.4226**	0.077	0.2	ug/L	9	Standard
>	Bi	209	549436.2	1.2				ug/L	552821	Standard

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Na	23	1.7	173.2	**4.9322**	8.534	173.0	mg/L	2	Standard
Mg	24	4375.6	3.8	**4.9437**	0.134	2.7	mg/L	55	Standard
K	39	1525.1	4.3	**5.5930**	0.165	3.0	mg/L	28	Standard
Ca	43	100.0	13.2	**6.4519**	1.261	19.5	mg/L	27	Standard
Fe	54	6527.6	4.7	**4.9145**	0.265	5.4	mg/L	147	Standard
Fe	57	1855.1	8.5	**4.7782**	0.491	10.3	mg/L	268	Standard
> **Sc-1**	45	42051.6	1.4				mg/L	41174	Standard
Cl	35	67170.6	2.2				ug/L	69550	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	1903.5	10.0				ug/L	1950	Standard
P	31	22763.8	0.6				ug/L	21156	Standard
S	34	3593.8	4.0				ug/L	3419	Standard
Sr	88	85.0	40.8				ug/L	72	Standard
C	12	133.3	15.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	132.3				mg/L	17	Standard
Dy	164	16.5	70.8				mg/L	16	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	23309.6	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	102.846		
Al	27	102.029		
Sc	45			
Ti	47	99.630		
V	51	100.608		
Cr	52	100.597		
Cr	53			
Mn	55	102.420		
Co	59	101.811		
Ni	60	100.536		
Cu	65	101.110		
Zn	66	102.486		
> Ge	72		100.450	
As	75	101.058		
Se	82	100.956		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	96.315		
Ag	107	98.333		
Cd	111	99.357		
Cd	114			
> In	115		101.227	
Sn	118	98.574		
Sb	123	98.939		
Ba	135	98.255		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.314		
Tl	205			
Pb	206	100.132		
Pb	207	100.378		
Pb	208	100.877		
U	238	98.845		
> Bi	209		99.388	
Na	23	98.644		
Mg	24	98.874		
K	39	111.859		
Ca	43	129.039		
Fe	54	98.290		
Fe	57	95.564		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	K	39	
QC Std 1	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Friday, July 01, 2016 10:46:40
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73082.5	1.7				ug/L	76456	Standard
	Be	9	35.0	65.5	**0.0129**	0.022	168.2	ug/L	20	Standard
	Al	27	2900.3	16.4	**0.0075**	0.003	39.6	ug/L	1307	Standard
	Sc	45	41413.2	2.8				ug/L	41174	Standard
	Ti	47	35.3	18.8	**0.0225**	0.019	85.6	ug/L	27	Standard
	V	51	1420.2	5.2	**-0.0279**	0.008	27.9	ug/L	1434	Standard
	Cr	52	6961.6	2.3	**-0.1197**	0.018	14.9	ug/L	7733	Standard
	Cr	53	446.7	2.3	**0.0198**	0.006	30.4	ug/L	442	Standard
	Mn	55	849.7	3.5	**0.0096**	0.004	44.1	ug/L	723	Standard
	Co	59	304.7	6.6	**0.0099**	0.003	30.2	ug/L	217	Standard
	Ni	60	329.3	2.5	**0.0037**	0.005	136.9	ug/L	304	Standard
	Cu	65	206.0	9.7	**0.0257**	0.010	38.8	ug/L	181	Standard
	Zn	66	265.3	8.1	**0.0337**	0.016	46.4	ug/L	215	Standard
>	**Ge**	72	527031.7	1.0				ug/L	520809	Standard
	As	75	-62.3	20.0	**-0.0048**	0.010	219.6	ug/L	-52	Standard
	Se	82	14.1	36.1	**-0.0165**	0.039	235.1	ug/L	17	Standard
	Se-1	77	48.7	10.1	**-0.1219**	0.059	48.3	ug/L	56	Standard
>	**Ga**	71	25.0	20.0				mg/L	25	Standard
	Rb	85	26.7	84.5				ug/L	28	Standard
	Y	89	456491.7	1.0				ug/L	447395	Standard
>	**Rh**	103	26.7	57.3				ug/L	15	Standard
	Mo	98	335.9	6.6	**0.0861**	0.007	7.7	ug/L	113	Standard
	Ag	107	180.3	7.4	**0.0120**	0.002	16.2	ug/L	108	Standard
	Cd	111	27.1	26.6	**0.0093**	0.003	33.3	mg/L	3	Standard
	Cd	114	66.3	29.5	**0.0115**	0.003	29.4	ug/L	20	Standard
>	**In**	115	631231.9	0.6				ug/L	625728	Standard
	Sn	118	1070.0	25.4	**0.0807**	0.043	52.8	ug/L	568	Standard
	Sb	123	986.7	28.6	**0.1557**	0.055	35.3	ug/L	612	Standard
	Ba	135	49.3	8.4	**0.0046**	0.002	42.1	ug/L	21	Standard
	Ce	140	21.7	58.1				ug/L	245	Standard
>	**Tb**	159	958993.9	0.7				ug/L	950397	Standard
	Ho	165	1.7	173.2				ug/L	7	Standard
	Tl	203	132.3	25.5	**0.0140**	0.004	27.2	ug/L	15	Standard
	Tl	205	123.3	29.3	**0.0057**	0.005	80.1	ug/L	13	Standard
	Pb	206	354.7	6.4	**0.0189**	0.004	22.4	ug/L	264	Standard
	Pb	207	298.7	4.5	**0.0120**	0.003	23.0	ug/L	222	Standard
	Pb	208	1215.7	2.5	**0.0096**	0.002	16.0	ug/L	959	Standard
	U	238	110.7	12.5	**0.0135**	0.002	13.1	ug/L	9	Standard
>	**Bi**	209	552384.0	0.3				ug/L	552821	Standard

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Na	23	1.7	173.2	**5.1172**	8.855	173.0	mg/L	2	Standard
Mg	24	61.7	49.5	**0.0114**	0.035	305.2	mg/L	55	Standard
K	39	43.3	29.0	**0.0349**	0.052	149.9	mg/L	28	Standard
Ca	43	15.0	66.7	**-1.1126**	0.876	78.7	mg/L	27	Standard
Fe	54	155.9	11.0	**0.0227**	0.013	57.8	mg/L	147	Standard
Fe	57	246.7	5.1	**-0.0507**	0.023	46.3	mg/L	268	Standard
> **Sc-1**	45	41413.2	2.8				mg/L	41174	Standard
Cl	35	67081.5	1.7				ug/L	69550	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	1926.8	4.5				ug/L	1950	Standard
P	31	22241.3	1.7				ug/L	21156	Standard
S	34	3415.4	3.5				ug/L	3419	Standard
Sr	88	56.7	39.8				ug/L	72	Standard
C	12	120.0	30.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	17	Standard
Dy	164	12.7	43.5				mg/L	16	Standard
Ho-1	165	1.7	173.2				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	18017.4	0.5				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.195	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.880	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.921	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Na	23	
QC Std 2	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Friday, July 01, 2016 10:49:53
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71014.5	3.1				ug/L	76456	Standard
	Be	9	276.7	13.7	**0.2467**	0.041	16.7	ug/L	20	Standard
	Al	27	1433.4	19.2	**-0.0012**	0.001	117.3	ug/L	1307	Standard
	Sc	45	40355.3	1.3				ug/L	41174	Standard
	Ti	47	21.0	29.7	**-0.0191**	0.020	103.3	ug/L	27	Standard
	V	51	4354.1	2.4	**0.3388**	0.016	4.6	ug/L	1434	Standard
	Cr	52	13385.9	0.6	**0.7089**	0.010	1.4	ug/L	7733	Standard
	Cr	53	1290.1	5.1	**0.8778**	0.062	7.0	ug/L	442	Standard
	Mn	55	4164.2	0.5	**0.4567**	0.004	0.8	ug/L	723	Standard
	Co	59	3022.0	3.5	**0.3708**	0.015	4.0	ug/L	217	Standard
	Ni	60	3422.7	3.0	**1.5204**	0.058	3.8	ug/L	304	Standard
	Cu	65	1708.4	1.3	**0.7752**	0.014	1.9	ug/L	181	Standard
	Zn	66	7949.4	1.3	**6.4016**	0.063	1.0	ug/L	215	Standard
>	**Ge**	72	513410.3	0.5				ug/L	520809	Standard
	As	75	420.2	2.0	**0.3904**	0.006	1.5	ug/L	-52	Standard
	Se	82	57.4	15.1	**0.3348**	0.072	21.4	ug/L	17	Standard
	Se-1	77	86.3	6.6	**0.3399**	0.069	20.2	ug/L	56	Standard
>	**Ga**	71	38.3	7.5				mg/L	25	Standard
	Rb	85	15.0	115.5				ug/L	28	Standard
	Y	89	441603.6	1.2				ug/L	447395	Standard
>	**Rh**	103	16.7	17.3				ug/L	15	Standard
	Mo	98	125.5	7.4	**0.0191**	0.003	17.3	ug/L	113	Standard
	Ag	107	2803.6	3.0	**0.3918**	0.011	2.9	ug/L	108	Standard
	Cd	111	534.5	1.7	**0.2383**	0.004	1.8	mg/L	3	Standard
	Cd	114	1340.9	4.1	**0.2439**	0.009	3.8	ug/L	20	Standard
>	**In**	115	603601.4	0.4				ug/L	625728	Standard
	Sn	118	588.3	20.4	**0.0106**	0.020	185.6	ug/L	568	Standard
	Sb	123	1982.0	3.1	**0.3639**	0.013	3.7	ug/L	612	Standard
	Ba	135	1500.1	4.2	**0.6970**	0.033	4.7	ug/L	21	Standard
	Ce	140	13.3	57.3				ug/L	245	Standard
>	**Tb**	159	923552.7	1.3				ug/L	950397	Standard
	Ho	165	18.3	41.7				ug/L	7	Standard
	Tl	203	722.4	6.5	**0.0815**	0.005	6.2	ug/L	15	Standard
	Tl	205	658.3	9.8	**0.0746**	0.008	10.9	ug/L	13	Standard
	Pb	206	1350.7	0.3	**0.2001**	0.002	0.8	ug/L	264	Standard
	Pb	207	1167.0	2.9	**0.1859**	0.007	3.6	ug/L	222	Standard
	Pb	208	4949.3	2.3	**0.1926**	0.005	2.7	ug/L	959	Standard
	U	238	3051.6	1.8	**0.3866**	0.007	1.9	ug/L	9	Standard
>	**Bi**	209	540899.0	0.4				ug/L	552821	Standard

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Na	23	3.3	86.6	**10.1911**	8.823	86.6	mg/L	2	Standard
Mg	24	73.3	17.2	**0.0273**	0.016	58.3	mg/L	55	Standard
K	39	43.3	17.6	**0.0384**	0.030	78.8	mg/L	28	Standard
Ca	43	21.7	13.3	**-0.4451**	0.256	57.4	mg/L	27	Standard
Fe	54	112.1	10.4	**-0.0092**	0.008	90.3	mg/L	147	Standard
Fe	57	220.0	10.4	**-0.1144**	0.071	61.7	mg/L	268	Standard
Sc-1	45	40355.3	1.3				mg/L	41174	Standard
Cl	35	64985.1	1.0				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	1890.1	8.2				ug/L	1950	Standard
P	31	15399.5	2.8				ug/L	21156	Standard
S	34	3492.1	3.5				ug/L	3419	Standard
Sr	88	78.3	3.7				ug/L	72	Standard
C	12	140.0	14.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	17	Standard
Dy	164	12.9	182.9				mg/L	16	Standard
Ho-1	165	18.3	41.7				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	2308.5	15.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	123.368		
Al	27	-0.122		
Sc	45			
Ti	47			
V	51	84.694		
Cr	52	88.608		
Cr	53			
Mn	55	91.340		
Co	59	92.690		
Ni	60	95.026		
Cu	65	96.904		
Zn	66	102.426		
Ge	72		98.579	
As	75	97.610		
Se	82	83.691		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	97.953		
Cd	111	99.297		
Cd	114			
> In	115			96.464
Sn	118			
Sb	123	90.972		
Ba	135	92.929		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.839		
Tl	205			
Pb	206			
Pb	207			
Pb	208	96.295		
U	238	96.660		
> Bi	209			97.843
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Friday, July 01, 2016 10:53:04
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72812.9	1.2				ug/L	76456	Standard
	Be	9	36.7	20.8	**0.0145**	0.007	47.6	ug/L	20	Standard
	Al	27	8248243.5	1.3	**50.5822**	0.139	0.3	ug/L	1307	Standard
	Sc	45	42120.1	1.9				ug/L	41174	Standard
	Ti	47	35838.7	1.4	**108.8763**	0.923	0.8	ug/L	27	Standard
	V	51	1796.6	6.7	**0.0180**	0.017	92.8	ug/L	1434	Standard
	Cr	52	8717.2	1.4	**0.0974**	0.005	5.1	ug/L	7733	Standard
	Cr	53	5294.3	3.4	**4.7714**	0.146	3.1	ug/L	442	Standard
	Mn	55	1499.1	2.5	**0.0949**	0.007	6.9	ug/L	723	Standard
	Co	59	500.3	4.2	**0.0353**	0.003	8.8	ug/L	217	Standard
	Ni	60	1153.7	2.9	**0.3978**	0.021	5.4	ug/L	304	Standard
	Cu	65	743.0	1.9	**0.2866**	0.009	3.1	ug/L	181	Standard
	Zn	66	1750.4	2.4	**1.2353**	0.049	3.9	ug/L	215	Standard
>	Ge	72	525789.4	1.1				ug/L	520809	Standard
	As	75	-56.5	78.0	**0.0000**	0.035	94213.4	ug/L	-52	Standard
	Se	82	21.9	13.2	**0.0450**	0.024	52.9	ug/L	17	Standard
	Se-1	77	369.0	3.8	**3.5902**	0.118	3.3	ug/L	56	Standard
>	Ga	71	190.0	4.6				mg/L	25	Standard
	Rb	85	1346.7	12.1				ug/L	28	Standard
	Y	89	446130.3	1.4				ug/L	447395	Standard
>	Rh	103	20.0	66.1				ug/L	15	Standard
	Mo	98	294809.8	0.7	**99.0666**	0.826	0.8	ug/L	113	Standard
	Ag	107	518.7	43.1	**0.0605**	0.032	52.1	ug/L	108	Standard
	Cd	111	-203.1	6.2	**-0.0920**	0.006	6.1	mg/L	3	Standard
	Cd	114	646.5	2.5	**0.1153**	0.003	2.6	ug/L	20	Standard
>	In	115	615550.0	0.1				ug/L	625728	Standard
	Sn	118	1126.7	15.8	**0.0937**	0.028	29.8	ug/L	568	Standard
	Sb	123	769.4	36.4	**0.1176**	0.055	46.8	ug/L	612	Standard
	Ba	135	907.7	4.8	**0.4062**	0.020	4.9	ug/L	21	Standard
	Ce	140	310.0	5.6				ug/L	245	Standard
>	Tb	159	945278.1	1.3				ug/L	950397	Standard
	Ho	165	18.3	41.7				ug/L	7	Standard
	Tl	203	340.3	40.4	**0.0383**	0.016	41.1	ug/L	15	Standard
	Tl	205	238.3	11.6	**0.0211**	0.004	17.6	ug/L	13	Standard
	Pb	206	679.7	9.3	**0.0799**	0.011	14.4	ug/L	264	Standard
	Pb	207	580.3	10.0	**0.0701**	0.011	16.1	ug/L	222	Standard
	Pb	208	2295.1	2.9	**0.0642**	0.002	3.2	ug/L	959	Standard
	U	238	77.3	37.1	**0.0096**	0.004	37.6	ug/L	9	Standard
>	Bi	209	536774.2	1.2				ug/L	552821	Standard

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Na	23	3.3	173.2	**9.7734**	16.919	173.1	mg/L	2	Standard
Mg	24	10777.2	2.6	**12.2531**	0.537	4.4	mg/L	55	Standard
K	39	1383.4	9.9	**5.0519**	0.468	9.3	mg/L	28	Standard
Ca	43	138.3	7.5	**9.8265**	0.682	6.9	mg/L	27	Standard
Fe	54	16161.2	1.3	**12.2930**	0.303	2.5	mg/L	147	Standard
Fe	57	4369.0	2.7	**12.3260**	0.594	4.8	mg/L	268	Standard
> **Sc-1**	45	42120.1	1.9				mg/L	41174	Standard
Cl	35	65421.7	2.5				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	1906.8	13.4				ug/L	1950	Standard
P	31	21114.7	2.7				ug/L	21156	Standard
S	34	3085.3	2.7				ug/L	3419	Standard
Sr	88	60.0	33.3				ug/L	72	Standard
C	12	210.0	31.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	106.7	54.9				mg/L	17	Standard
Dy	164	19.7	50.8				mg/L	16	Standard
Ho-1	165	18.3	41.7				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	3048.6	5.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27	1.012		
Sc	45			
Ti	47	108.876		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.956	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	99.067		
Ag	107			
Cd	111			
Cd	114			
> In	115			98.373
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209			97.097
Na	23	78.187		
Mg	24	245.062		
K	39	101.039		
Ca	43	65.510		
Fe	54	98.344		
Fe	57	98.608		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Ba	135	
QC Std 4	Na	23	

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QC Std 4	Mg	24
QC Std 4	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Friday, July 01, 2016 10:56:16
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75903.0	2.2				ug/L	76456	Standard
	Be	9	113931.8	1.0	**102.5442**	3.204	3.1	ug/L	20	Standard
	Al	27	7231990.8	1.8	**42.5454**	0.182	0.4	ug/L	1307	Standard
	Sc	45	42432.7	2.4				ug/L	41174	Standard
	Ti	47	30737.8	1.0	**92.8199**	0.734	0.8	ug/L	27	Standard
	V	51	833696.6	0.9	**99.6740**	0.237	0.2	ug/L	1434	Standard
	Cr	52	810709.3	1.6	**97.7572**	1.161	1.2	ug/L	7733	Standard
	Cr	53	105220.8	1.3	**102.1011**	1.018	1.0	ug/L	442	Standard
	Mn	55	763205.2	1.1	**99.1800**	1.093	1.1	ug/L	723	Standard
	Co	59	765446.7	1.5	**98.3652**	1.221	1.2	ug/L	217	Standard
	Ni	60	204863.4	0.8	**97.0735**	0.398	0.4	ug/L	304	Standard
	Cu	65	204176.2	1.0	**98.4523**	0.417	0.4	ug/L	181	Standard
	Zn	66	128188.4	1.6	**102.8491**	1.339	1.3	ug/L	215	Standard
>	Ge	72	528896.0	0.7				ug/L	520809	Standard
	As	75	125724.6	1.1	**100.3319**	1.466	1.5	ug/L	-52	Standard
	Se	82	12709.7	1.6	**98.9446**	1.879	1.9	ug/L	17	Standard
	Se-1	77	8838.2	1.3	**101.1222**	0.967	1.0	ug/L	56	Standard
>	Ga	71	141.7	2.0				mg/L	25	Standard
	Rb	85	858.4	8.2				ug/L	28	Standard
	Y	89	450945.0	1.6				ug/L	447395	Standard
>	Rh	103	58.3	17.8				ug/L	15	Standard
	Mo	98	252063.2	0.9	**84.2200**	0.957	1.1	ug/L	113	Standard
	Ag	107	620939.1	2.7	**87.3716**	1.954	2.2	ug/L	108	Standard
	Cd	111	226578.4	0.5	**99.4783**	0.760	0.8	mg/L	3	Standard
	Cd	114	558953.6	2.4	**99.1106**	1.789	1.8	ug/L	20	Standard
>	In	115	619069.3	0.8				ug/L	625728	Standard
	Sn	118	1101.7	13.0	**0.0889**	0.024	26.9	ug/L	568	Standard
	Sb	123	495062.3	2.0	**96.7840**	1.258	1.3	ug/L	612	Standard
	Ba	135	212436.2	0.4	**98.6825**	0.524	0.5	ug/L	21	Standard
	Ce	140	106.7	5.4				ug/L	245	Standard
>	Tb	159	965012.6	0.9				ug/L	950397	Standard
	Ho	165	11.7	89.2				ug/L	7	Standard
	Tl	203	877864.5	0.6	**98.2340**	0.597	0.6	ug/L	15	Standard
	Tl	205	786061.6	0.2	**99.0500**	0.141	0.1	ug/L	13	Standard
	Pb	206	570990.7	1.2	**101.2826**	1.116	1.1	ug/L	264	Standard
	Pb	207	499235.8	0.8	**97.5091**	0.551	0.6	ug/L	222	Standard
	Pb	208	2063776.1	0.5	**98.6933**	0.341	0.3	ug/L	959	Standard
	U	238	778595.3	0.8	**97.0297**	0.672	0.7	ug/L	9	Standard
>	Bi	209	550260.8	0.2				ug/L	552821	Standard

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Na	23	5.0	100.0	**14.6626**	14.607	99.6	mg/L	2	Standard
Mg	24	9379.6	3.3	**10.5777**	0.497	4.7	mg/L	55	Standard
K	39	1123.4	14.5	**4.0598**	0.702	17.3	mg/L	28	Standard
Ca	43	151.7	14.9	**10.9556**	2.287	20.9	mg/L	27	Standard
Fe	54	13756.2	0.9	**10.3738**	0.327	3.2	mg/L	147	Standard
Fe	57	3798.8	1.3	**10.5253**	0.250	2.4	mg/L	268	Standard
> **Sc-1**	45	42432.7	2.4				mg/L	41174	Standard
Cl	35	63162.8	2.2				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	2016.8	12.5				ug/L	1950	Standard
P	31	19924.8	3.7				ug/L	21156	Standard
S	34	3145.3	1.7				ug/L	3419	Standard
Sr	88	73.3	10.4				ug/L	72	Standard
C	12	216.7	17.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	17	Standard
Dy	164	29.4	59.5				mg/L	16	Standard
Ho-1	165	11.7	89.2				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	7	Standard
I	127	3137.0	10.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	102.544		
Al	27	0.851		
Sc	45			
Ti	47	92.820		
V	51	99.674		
Cr	52	97.757		
Cr	53			
Mn	55	99.180		
Co	59	98.365		
Ni	60	97.073		
Cu	65	98.452		
Zn	66	102.849		
> Ge	72		101.553	
As	75	100.332		
Se	82	98.945		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	84.220		
Ag	107	87.372		
Cd	111	99.478		
Cd	114			
> In	115		98.936	
Sn	118			
Sb	123	96.784		
Ba	135	98.683		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.234		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.693		
U	238	97.030		
> Bi	209		99.537	
Na	23	117.301		
Mg	24	211.554		
K	39	81.196		
Ca	43	73.037		
Fe	54	82.990		
Fe	57	84.202		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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QC Std 5	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 10:59:29
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	76397.1	0.4				ug/L	76456	Standard
	Be	9	56429.9	0.6	**50.4288**	0.323	0.6	ug/L	20	Standard
	Al	27	8608329.7	1.2	**50.3148**	0.658	1.3	ug/L	1307	Standard
	Sc	45	41418.2	1.5				ug/L	41174	Standard
	Ti	47	32560.9	0.4	**99.6282**	1.278	1.3	ug/L	27	Standard
	V	51	420616.9	0.3	**50.8527**	0.410	0.8	ug/L	1434	Standard
	Cr	52	416237.8	1.3	**50.3856**	0.640	1.3	ug/L	7733	Standard
	Cr	53	51529.2	2.3	**50.4433**	0.671	1.3	ug/L	442	Standard
	Mn	55	384144.6	2.2	**50.5271**	1.192	2.4	ug/L	723	Standard
	Co	59	391365.2	2.6	**50.9408**	1.337	2.6	ug/L	217	Standard
	Ni	60	104660.9	0.3	**50.1718**	0.419	0.8	ug/L	304	Standard
	Cu	65	103744.3	0.5	**50.6474**	0.422	0.8	ug/L	181	Standard
	Zn	66	61920.9	0.7	**50.2420**	0.301	0.6	ug/L	215	Standard
>	Ge	72	522053.0	1.0				ug/L	520809	Standard
	As	75	62496.7	0.9	**50.5498**	0.506	1.0	ug/L	-52	Standard
	Se	82	6394.4	1.6	**50.3673**	0.526	1.0	ug/L	17	Standard
	Se-1	77	4303.6	0.6	**49.5434**	0.744	1.5	ug/L	56	Standard
>	Ga	71	55.0	9.1				mg/L	25	Standard
	Rb	85	888.4	10.1				ug/L	28	Standard
	Y	89	456826.7	1.0				ug/L	447395	Standard
>	Rh	103	20.0	66.1				ug/L	15	Standard
	Mo	98	297194.2	1.6	**98.9144**	2.943	3.0	ug/L	113	Standard
	Ag	107	358131.2	0.8	**50.1903**	1.051	2.1	ug/L	108	Standard
	Cd	111	114353.1	0.3	**50.0023**	0.782	1.6	mg/L	3	Standard
	Cd	114	281397.0	1.0	**49.6948**	0.508	1.0	ug/L	20	Standard
>	In	115	621643.5	1.3				ug/L	625728	Standard
	Sn	118	312305.8	0.1	**48.7658**	0.722	1.5	ug/L	568	Standard
	Sb	123	262685.9	0.2	**51.1341**	0.568	1.1	ug/L	612	Standard
	Ba	135	107196.2	0.5	**49.5868**	0.878	1.8	ug/L	21	Standard
	Ce	140	91.7	19.2				ug/L	245	Standard
>	Tb	159	949369.3	0.9				ug/L	950397	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	446446.9	0.3	**50.5283**	0.234	0.5	ug/L	15	Standard
	Tl	205	397524.5	2.6	**50.6566**	1.177	2.3	ug/L	13	Standard
	Pb	206	283032.1	0.6	**50.7560**	0.110	0.2	ug/L	264	Standard
	Pb	207	256737.6	0.4	**50.6961**	0.167	0.3	ug/L	222	Standard
	Pb	208	1049117.6	0.6	**50.7200**	0.161	0.3	ug/L	959	Standard
	U	238	395685.5	0.4	**49.8743**	0.152	0.3	ug/L	9	Standard
>	Bi	209	544048.8	0.4				ug/L	552821	Standard

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Na	23	3.3	173.2	**9.9687**	17.258	173.1	mg/L	2	Standard
Mg	24	4517.3	2.2	**5.1854**	0.050	1.0	mg/L	55	Standard
K	39	1296.7	2.0	**4.8131**	0.164	3.4	mg/L	28	Standard
Ca	43	80.0	16.5	**4.7867**	1.292	27.0	mg/L	27	Standard
Fe	54	6442.2	3.1	**4.9235**	0.148	3.0	mg/L	147	Standard
Fe	57	1841.8	2.1	**4.8233**	0.186	3.8	mg/L	268	Standard
Sc-1	45	41418.2	1.5				mg/L	41174	Standard
Cl	35	65714.2	0.5				ug/L	69550	Standard
Kr	83	3.0	33.3				ug/L	1	Standard
Br	81	1946.8	7.2				ug/L	1950	Standard
P	31	21396.8	2.5				ug/L	21156	Standard
S	34	3327.0	3.8				ug/L	3419	Standard
Sr	88	70.0	18.9				ug/L	72	Standard
C	12	130.0	20.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	17	Standard
Dy	164	9.5	107.6				mg/L	16	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	23620.1	0.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	100.858		
Al	27	100.630		
Sc	45			
Ti	47	99.628		
V	51	101.705		
Cr	52	100.771		
Cr	53			
Mn	55	101.054		
Co	59	101.882		
Ni	60	100.344		
Cu	65	101.295		
Zn	66	100.484		
Ge	72		100.239	
As	75	101.100		
Se	82	100.735		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	98.914		
Ag	107	100.381		
Cd	111	100.005		
Cd	114			
In	115			99.347
Sn	118	97.532		
Sb	123	102.268		
Ba	135	99.174		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.057		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.440		
U	238	99.749		
Bi	209			98.413
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 11:02:41
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	76638.3	0.9				ug/L	76456	Standard
	Be	9	45.0	69.4	**0.0201**	0.027	136.2	ug/L	20	Standard
	Al	27	2771.9	19.2	**0.0059**	0.003	49.8	ug/L	1307	Standard
	Sc	45	41874.5	1.3				ug/L	41174	Standard
	Ti	47	34.3	22.6	**0.0199**	0.023	116.0	ug/L	27	Standard
	V	51	1314.7	3.0	**-0.0400**	0.005	13.2	ug/L	1434	Standard
	Cr	52	7063.3	2.5	**-0.1041**	0.024	23.4	ug/L	7733	Standard
	Cr	53	583.3	6.1	**0.1556**	0.035	22.3	ug/L	442	Standard
	Mn	55	795.7	2.1	**0.0029**	0.003	97.4	ug/L	723	Standard
	Co	59	301.0	14.0	**0.0095**	0.006	58.4	ug/L	217	Standard
	Ni	60	322.3	4.2	**0.0009**	0.006	613.3	ug/L	304	Standard
	Cu	65	188.3	9.4	**0.0175**	0.009	51.5	ug/L	181	Standard
	Zn	66	246.3	14.0	**0.0191**	0.028	144.2	ug/L	215	Standard
>	Ge	72	525121.4	0.6				ug/L	520809	Standard
	As	75	-40.2	86.9	**0.0130**	0.028	214.4	ug/L	-52	Standard
	Se	82	15.7	75.3	**-0.0027**	0.093	3488.1	ug/L	17	Standard
	Se-1	77	53.7	18.4	**-0.0615**	0.118	192.4	ug/L	56	Standard
>	Ga	71	31.7	18.2				mg/L	25	Standard
	Rb	85	18.3	15.7				ug/L	28	Standard
	Y	89	447115.8	1.8				ug/L	447395	Standard
>	Rh	103	16.7	17.3				ug/L	15	Standard
	Mo	98	330.0	12.1	**0.0850**	0.013	15.3	ug/L	113	Standard
	Ag	107	352.0	8.7	**0.0361**	0.004	11.5	ug/L	108	Standard
	Cd	111	29.4	26.4	**0.0104**	0.003	32.2	mg/L	3	Standard
	Cd	114	71.8	39.3	**0.0126**	0.005	39.2	ug/L	20	Standard
>	In	115	626402.7	0.2				ug/L	625728	Standard
	Sn	118	865.0	27.7	**0.0501**	0.037	74.4	ug/L	568	Standard
	Sb	123	1603.3	32.0	**0.2763**	0.100	36.1	ug/L	612	Standard
	Ba	135	44.0	23.9	**0.0023**	0.005	210.3	ug/L	21	Standard
	Ce	140	16.7	34.6				ug/L	245	Standard
>	Tb	159	964218.0	1.0				ug/L	950397	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	134.0	19.6	**0.0140**	0.003	21.2	ug/L	15	Standard
	Tl	205	110.0	16.4	**0.0039**	0.002	58.2	ug/L	13	Standard
	Pb	206	338.3	8.4	**0.0154**	0.006	35.8	ug/L	264	Standard
	Pb	207	297.0	6.8	**0.0111**	0.004	39.6	ug/L	222	Standard
	Pb	208	1217.7	7.2	**0.0091**	0.005	50.4	ug/L	959	Standard
	U	238	104.0	26.4	**0.0125**	0.003	27.7	ug/L	9	Standard
>	Bi	209	558778.4	1.0				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	40.0	45.1	**-0.0142**	0.021	147.6	mg/L	55	Standard
K	39	25.0	72.1	**-0.0375**	0.066	177.3	mg/L	28	Standard
Ca	43	30.0	33.3	**0.2279**	0.902	395.6	mg/L	27	Standard
Fe	54	134.1	12.9	**0.0047**	0.015	308.3	mg/L	147	Standard
Fe	57	221.7	27.3	**-0.1357**	0.173	127.8	mg/L	268	Standard
> **Sc-1**	45	41874.5	1.3				mg/L	41174	Standard
Cl	35	67946.0	1.7				ug/L	69550	Standard
Kr	83	1.0	173.2				ug/L	1	Standard
Br	81	1943.5	9.7				ug/L	1950	Standard
P	31	20762.6	2.5				ug/L	21156	Standard
S	34	3392.0	1.6				ug/L	3419	Standard
Sr	88	48.3	36.3				ug/L	72	Standard
C	12	116.7	42.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	89.2				mg/L	17	Standard
Dy	164	15.9	71.9				mg/L	16	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	7	Standard
I	127	17685.3	1.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.828	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.108
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.078
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW 78 WG574416-04
Sample Date/Time: Friday, July 01, 2016 11:05:53
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76067.2	2.6				ug/L	76456	Standard
	Be	9	91.7	22.0	**0.0624**	0.018	28.1	ug/L	20	Standard
	Al	27	9900.0	18.4	**0.0479**	0.010	21.7	ug/L	1307	Standard
	Sc	45	42185.3	1.2				ug/L	41174	Standard
	Ti	47	37.3	6.7	**0.0291**	0.007	24.8	ug/L	27	Standard
	V	51	1740.2	8.5	**0.0114**	0.018	156.7	ug/L	1434	Standard
	Cr	52	8205.6	2.3	**0.0360**	0.018	50.7	ug/L	7733	Standard
	Cr	53	613.3	22.1	**0.1846**	0.130	70.5	ug/L	442	Standard
	Mn	55	2289.5	4.2	**0.1986**	0.011	5.7	ug/L	723	Standard
	Co	59	620.0	11.0	**0.0508**	0.009	16.8	ug/L	217	Standard
	Ni	60	519.3	1.9	**0.0951**	0.005	5.1	ug/L	304	Standard
	Cu	65	329.0	6.1	**0.0858**	0.009	10.4	ug/L	181	Standard
	Zn	66	3237.3	0.8	**2.4406**	0.012	0.5	ug/L	215	Standard
>	**Ge**	72	525088.2	0.5				ug/L	520809	Standard
	As	75	30.8	108.7	**0.0699**	0.027	38.5	ug/L	-52	Standard
	Se	82	25.8	16.5	**0.0760**	0.033	43.0	ug/L	17	Standard
	Se-1	77	68.3	8.1	**0.1083**	0.066	60.6	ug/L	56	Standard
>	**Ga**	71	20.0	66.1				mg/L	25	Standard
	Rb	85	38.3	7.5				ug/L	28	Standard
	Y	89	448293.9	2.2				ug/L	447395	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	197.6	7.0	**0.0411**	0.005	11.2	ug/L	113	Standard
	Ag	107	356.3	27.8	**0.0365**	0.014	37.3	ug/L	108	Standard
	Cd	111	135.0	20.3	**0.0560**	0.012	21.0	mg/L	3	Standard
	Cd	114	292.8	13.1	**0.0511**	0.007	12.9	ug/L	20	Standard
>	**In**	115	628756.6	0.3				ug/L	625728	Standard
	Sn	118	890.0	6.8	**0.0534**	0.009	17.4	ug/L	568	Standard
	Sb	123	903.8	20.1	**0.1404**	0.035	25.1	ug/L	612	Standard
	Ba	135	176.0	12.6	**0.0626**	0.010	15.9	ug/L	21	Standard
	Ce	140	53.3	61.0				ug/L	245	Standard
>	**Tb**	159	955139.7	2.0				ug/L	950397	Standard
	Ho	165	11.7	49.5				ug/L	7	Standard
	Tl	203	548.0	21.5	**0.0598**	0.012	20.5	ug/L	15	Standard
	Tl	205	510.0	24.7	**0.0537**	0.015	27.8	ug/L	13	Standard
	Pb	206	677.0	11.7	**0.0750**	0.013	16.8	ug/L	264	Standard
	Pb	207	544.7	11.6	**0.0591**	0.011	18.5	ug/L	222	Standard
	Pb	208	2290.4	8.0	**0.0601**	0.007	12.3	ug/L	959	Standard
	U	238	102.7	66.1	**0.0123**	0.008	66.3	ug/L	9	Standard
>	**Bi**	209	556043.1	1.2				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	61.7	46.1	**0.0100**	0.032	319.9	mg/L	55	Standard
K	39	35.0	57.1	**0.0003**	0.076	23783.0	mg/L	28	Standard
Ca	43	23.3	32.7	**-0.3783**	0.697	184.3	mg/L	27	Standard
Fe	54	175.9	11.5	**0.0357**	0.014	38.5	mg/L	147	Standard
Fe	57	216.7	10.7	**-0.1545**	0.066	42.5	mg/L	268	Standard
Sc-1	45	42185.3	1.2				mg/L	41174	Standard
Cl	35	67744.4	0.4				ug/L	69550	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	2090.1	1.7				ug/L	1950	Standard
P	31	21226.5	2.4				ug/L	21156	Standard
S	34	3468.7	3.7				ug/L	3419	Standard
Sr	88	66.7	18.9				ug/L	72	Standard
C	12	106.7	51.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	17	Standard
Dy	164	6.2	100.1				mg/L	16	Standard
Ho-1	165	11.7	49.5				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	2538.5	15.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		99.492	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.822	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.484
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.583
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 78 WG574416-05
Sample Date/Time: Friday, July 01, 2016 11:09:04
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	76480.9	1.3				ug/L	76456	Standard
	Be	9	57299.8	1.8	**51.1515**	0.782	1.5	ug/L	20	Standard
	Al	27	13893.0	5.9	**0.0710**	0.006	8.3	ug/L	1307	Standard
	Sc	45	41525.2	3.0				ug/L	41174	Standard
	Ti	47	50.0	14.4	**0.0663**	0.021	31.6	ug/L	27	Standard
	V	51	423867.5	0.4	**50.5009**	0.287	0.6	ug/L	1434	Standard
	Cr	52	423554.6	0.4	**50.5309**	0.121	0.2	ug/L	7733	Standard
	Cr	53	51463.9	0.2	**49.6485**	0.215	0.4	ug/L	442	Standard
	Mn	55	395604.7	0.2	**51.2819**	0.431	0.8	ug/L	723	Standard
	Co	59	393078.4	0.7	**50.4221**	0.467	0.9	ug/L	217	Standard
	Ni	60	106911.2	0.9	**50.5097**	0.714	1.4	ug/L	304	Standard
	Cu	65	106870.6	0.8	**51.4201**	0.725	1.4	ug/L	181	Standard
	Zn	66	64695.2	1.1	**51.7405**	0.880	1.7	ug/L	215	Standard
>	Ge	72	529720.7	0.6				ug/L	520809	Standard
	As	75	63865.6	0.7	**50.9077**	0.332	0.7	ug/L	-52	Standard
	Se	82	6442.1	1.2	**50.0074**	0.423	0.8	ug/L	17	Standard
	Se-1	77	4460.3	1.4	**50.6149**	0.735	1.5	ug/L	56	Standard
>	Ga	71	33.3	48.2				mg/L	25	Standard
	Rb	85	51.7	53.3				ug/L	28	Standard
	Y	89	451210.1	0.7				ug/L	447395	Standard
>	Rh	103	28.3	10.2				ug/L	15	Standard
	Mo	98	211.5	58.2	**0.0455**	0.040	88.5	ug/L	113	Standard
	Ag	107	371127.1	0.8	**51.3096**	0.429	0.8	ug/L	108	Standard
	Cd	111	117429.0	0.6	**50.6559**	0.197	0.4	mg/L	3	Standard
	Cd	114	286369.4	2.1	**49.8969**	1.108	2.2	ug/L	20	Standard
>	In	115	630039.4	0.2				ug/L	625728	Standard
	Sn	118	975.0	11.8	**0.0662**	0.017	26.4	ug/L	568	Standard
	Sb	123	249155.3	2.4	**47.8470**	1.151	2.4	ug/L	612	Standard
	Ba	135	109490.5	0.6	**49.9659**	0.356	0.7	ug/L	21	Standard
	Ce	140	110.0	22.7				ug/L	245	Standard
>	Tb	159	961658.5	1.2				ug/L	950397	Standard
	Ho	165	8.3	124.9				ug/L	7	Standard
	Tl	203	456267.9	0.6	**50.3461**	0.267	0.5	ug/L	15	Standard
	Tl	205	402501.7	1.2	**50.0083**	0.617	1.2	ug/L	13	Standard
	Pb	206	293954.8	0.6	**51.3969**	0.546	1.1	ug/L	264	Standard
	Pb	207	256579.6	0.1	**49.3966**	0.497	1.0	ug/L	222	Standard
	Pb	208	1074330.1	0.6	**50.6396**	0.527	1.0	ug/L	959	Standard
	U	238	394562.7	0.9	**48.4869**	0.395	0.8	ug/L	9	Standard
>	Bi	209	558043.6	1.1				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	61.7	20.4	**0.0111**	0.013	120.9	mg/L	55	Standard
K	39	35.0	37.8	**0.0010**	0.048	4646.6	mg/L	28	Standard
Ca	43	28.3	36.7	**0.0919**	0.886	964.6	mg/L	27	Standard
Fe	54	169.1	21.5	**0.0325**	0.027	81.8	mg/L	147	Standard
Fe	57	220.0	8.2	**-0.1334**	0.058	43.3	mg/L	268	Standard
Sc-1	45	41525.2	3.0				mg/L	41174	Standard
Cl	35	67082.2	2.2				ug/L	69550	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	2023.5	3.3				ug/L	1950	Standard
P	31	22251.3	1.9				ug/L	21156	Standard
S	34	3218.7	6.1				ug/L	3419	Standard
Sr	88	76.7	10.0				ug/L	72	Standard
C	12	130.0	27.7				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	17	Standard
Dy	164	12.2	119.1				mg/L	16	Standard
Ho-1	165	8.3	124.9				mg/L	7	Standard
Er	166	23.3	65.5				mg/L	7	Standard
I	127	1945.1	18.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.033	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.711	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.689
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.945
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606141705 WG574416-01
Sample Date/Time: Friday, July 01, 2016 11:12:16
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78995.4	1.2				ug/L	76456	Standard
	Be	9	58.3	4.9	**0.0306**	0.003	9.8	ug/L	20	Standard
	Al	27	21381126.3	0.9	**120.8920**	2.463	2.0	ug/L	1307	Standard
	Sc	45	41005.4	0.8				ug/L	41174	Standard
	Ti	47	385.7	14.4	**1.1313**	0.162	14.4	ug/L	27	Standard
	V	51	37880.1	0.4	**4.5394**	0.067	1.5	ug/L	1434	Standard
	Cr	52	15651.7	0.4	**1.0197**	0.032	3.2	ug/L	7733	Standard
	Cr	53	6074.6	20.3	**5.7629**	1.265	22.0	ug/L	442	Standard
	Mn	55	15005.4	0.7	**1.9367**	0.029	1.5	ug/L	723	Standard
	Co	59	1426.7	2.3	**0.1620**	0.002	1.4	ug/L	217	Standard
	Ni	60	3377.0	1.1	**1.5203**	0.032	2.1	ug/L	304	Standard
	Cu	65	1905.1	1.9	**0.8856**	0.009	1.0	ug/L	181	Standard
	Zn	66	4588.7	1.0	**3.6704**	0.063	1.7	ug/L	215	Standard
>	**Ge**	72	506618.0	1.2				ug/L	520809	Standard
	As	75	2080.8	8.4	**1.7774**	0.135	7.6	ug/L	-52	Standard
	Se	82	818.2	2.3	**6.5307**	0.077	1.2	ug/L	17	Standard
	Se-1	77	895.7	3.3	**10.0889**	0.428	4.2	ug/L	56	Standard
>	**Ga**	71	153.3	31.3				mg/L	25	Standard
	Rb	85	3665.4	2.3				ug/L	28	Standard
	Y	89	429409.0	1.3				ug/L	447395	Standard
>	**Rh**	103	178.3	12.6				ug/L	15	Standard
	Mo	98	683.2	5.3	**0.2157**	0.014	6.4	ug/L	113	Standard
	Ag	107	300.3	34.9	**0.0315**	0.016	49.6	ug/L	108	Standard
	Cd	111	82.5	7.8	**0.0356**	0.003	8.6	mg/L	3	Standard
	Cd	114	158.8	23.9	**0.0295**	0.007	23.3	ug/L	20	Standard
>	**In**	115	590046.0	0.5				ug/L	625728	Standard
	Sn	118	975.0	8.9	**0.0764**	0.014	18.3	ug/L	568	Standard
	Sb	123	2972.1	30.5	**0.5762**	0.187	32.4	ug/L	612	Standard
	Ba	135	67195.3	0.7	**32.7370**	0.271	0.8	ug/L	21	Standard
	Ce	140	5165.9	1.6				ug/L	245	Standard
>	**Tb**	159	918152.8	1.4				ug/L	950397	Standard
	Ho	165	105.0	29.7				ug/L	7	Standard
	Tl	203	363.0	14.1	**0.0439**	0.007	15.0	ug/L	15	Standard
	Tl	205	258.3	37.0	**0.0260**	0.013	51.2	ug/L	13	Standard
	Pb	206	917.4	3.4	**0.1351**	0.007	5.1	ug/L	264	Standard
	Pb	207	764.4	2.1	**0.1180**	0.005	4.0	ug/L	222	Standard
	Pb	208	3197.8	4.0	**0.1198**	0.007	5.7	ug/L	959	Standard
	U	238	29042.1	0.6	**3.9760**	0.053	1.3	ug/L	9	Standard
>	**Bi**	209	500900.4	0.8				ug/L	552821	Standard

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Na	23	6.7	43.3	**19.9855**	8.657	43.3	mg/L	2	Standard
Mg	24	126521.1	1.0	**148.3441**	0.501	0.3	mg/L	55	Standard
K	39	181.7	30.9	**0.5679**	0.214	37.7	mg/L	28	Standard
Ca	43	465.0	16.3	**40.0054**	7.184	18.0	mg/L	27	Standard
Fe	54	240.2	12.6	**0.0904**	0.025	28.1	mg/L	147	Standard
Fe	57	603.3	4.8	**1.0579**	0.102	9.7	mg/L	268	Standard
> **Sc-1**	45	41005.4	0.8				mg/L	41174	Standard
Cl	35	90433.8	0.8				ug/L	69550	Standard
Kr	83	2.7	43.3				ug/L	1	Standard
Br	81	57739.9	3.1				ug/L	1950	Standard
P	31	24640.0	1.7				ug/L	21156	Standard
S	34	3010.3	1.4				ug/L	3419	Standard
Sr	88	401.7	14.4				ug/L	72	Standard
C	12	506.7	3.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	132.3				mg/L	17	Standard
Dy	164	121.7	25.2				mg/L	16	Standard
Ho-1	165	105.0	29.7				mg/L	7	Standard
Er	166	103.3	29.6				mg/L	7	Standard
I	127	25413.0	5.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.322	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.275	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	94.298	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	90.608	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606141706S WG574416-06
Sample Date/Time: Friday, July 01, 2016 11:15:27
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	82487.3	1.1				ug/L	76456	Standard
	Be	9	59434.7	2.0	**49.1890**	0.474	1.0	ug/L	20	Standard
	Al	27	21126866.6	0.7	**114.3857**	1.245	1.1	ug/L	1307	Standard
	Sc	45	42071.7	1.5				ug/L	41174	Standard
	Ti	47	445.7	9.0	**1.3272**	0.106	8.0	ug/L	27	Standard
	V	51	448794.0	1.2	**56.1906**	0.338	0.6	ug/L	1434	Standard
	Cr	52	405302.2	0.8	**50.8030**	0.762	1.5	ug/L	7733	Standard
	Cr	53	55872.8	0.8	**56.6886**	1.157	2.0	ug/L	442	Standard
	Mn	55	376409.4	1.7	**51.2605**	1.187	2.3	ug/L	723	Standard
	Co	59	371466.0	0.9	**50.0608**	1.026	2.0	ug/L	217	Standard
	Ni	60	100340.5	1.4	**49.7984**	1.011	2.0	ug/L	304	Standard
	Cu	65	97977.1	1.5	**49.5201**	1.028	2.1	ug/L	181	Standard
	Zn	66	64249.3	1.5	**53.9822**	0.650	1.2	ug/L	215	Standard
>	Ge	72	504287.9	1.5				ug/L	520809	Standard
	As	75	64736.7	1.2	**54.2084**	0.977	1.8	ug/L	-52	Standard
	Se	82	7105.9	2.4	**57.9770**	1.906	3.3	ug/L	17	Standard
	Se-1	77	5081.5	1.0	**60.7211**	1.522	2.5	ug/L	56	Standard
>	Ga	71	93.3	21.7				mg/L	25	Standard
	Rb	85	3385.4	7.7				ug/L	28	Standard
	Y	89	437587.9	1.2				ug/L	447395	Standard
>	Rh	103	133.3	19.2				ug/L	15	Standard
	Mo	98	712.0	6.4	**0.2258**	0.015	6.5	ug/L	113	Standard
	Ag	107	254706.8	0.6	**37.6267**	0.420	1.1	ug/L	108	Standard
	Cd	111	107324.5	0.5	**49.4721**	0.054	0.1	mg/L	3	Standard
	Cd	114	266264.7	1.6	**49.5778**	1.034	2.1	ug/L	20	Standard
>	In	115	589608.9	0.6				ug/L	625728	Standard
	Sn	118	1198.4	5.9	**0.1134**	0.011	9.9	ug/L	568	Standard
	Sb	123	255276.2	0.1	**52.3884**	0.301	0.6	ug/L	612	Standard
	Ba	135	166458.1	0.3	**81.1840**	0.412	0.5	ug/L	21	Standard
	Ce	140	2188.5	3.6				ug/L	245	Standard
>	Tb	159	935892.6	1.8				ug/L	950397	Standard
	Ho	165	80.0	12.5				ug/L	7	Standard
	Tl	203	416301.7	0.5	**50.3128**	0.740	1.5	ug/L	15	Standard
	Tl	205	372797.3	0.4	**50.7287**	0.513	1.0	ug/L	13	Standard
	Pb	206	269916.3	0.3	**51.6884**	0.658	1.3	ug/L	264	Standard
	Pb	207	235694.4	0.5	**49.6950**	0.399	0.8	ug/L	222	Standard
	Pb	208	976732.6	0.6	**50.4213**	0.371	0.7	ug/L	959	Standard
	U	238	405996.3	0.5	**54.6443**	0.642	1.2	ug/L	9	Standard
>	Bi	209	509531.8	1.0				ug/L	552821	Standard

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Na	23	6.7	86.6	**19.6383**	17.003	86.6	mg/L	2	Standard
Mg	24	124588.6	1.9	**142.3700**	0.938	0.7	mg/L	55	Standard
K	39	133.3	31.9	**0.3687**	0.159	43.1	mg/L	28	Standard
Ca	43	506.7	5.0	**42.5935**	1.641	3.9	mg/L	27	Standard
Fe	54	191.0	18.5	**0.0477**	0.027	55.6	mg/L	147	Standard
Fe	57	573.3	0.5	**0.9203**	0.025	2.7	mg/L	268	Standard
> **Sc-1**	45	42071.7	1.5				mg/L	41174	Standard
Cl	35	93134.7	1.1				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	57294.9	3.7				ug/L	1950	Standard
P	31	24481.4	0.9				ug/L	21156	Standard
S	34	3050.3	2.6				ug/L	3419	Standard
Sr	88	351.7	17.1				ug/L	72	Standard
C	12	470.0	15.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	17	Standard
Dy	164	66.5	44.7				mg/L	16	Standard
Ho-1	165	80.0	12.5				mg/L	7	Standard
Er	166	73.3	92.8				mg/L	7	Standard
I	127	27035.8	3.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.889	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.828	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.228
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.169
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606141706S WG574416-06
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Method 6020 - Summary Report

Sample ID: L1606141707SD WG574416-07
Sample Date/Time: Friday, July 01, 2016 11:18:39
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83771.0	2.5				ug/L	76456	Standard
	Be	9	60537.4	1.9	**49.3442**	0.599	1.2	ug/L	20	Standard
	Al	27	20909187.8	2.0	**111.4909**	2.320	2.1	ug/L	1307	Standard
	Sc	45	42178.7	2.5				ug/L	41174	Standard
	Ti	47	385.0	17.2	**1.1368**	0.214	18.9	ug/L	27	Standard
	V	51	446877.6	0.6	**55.9631**	0.571	1.0	ug/L	1434	Standard
	Cr	52	407703.5	1.0	**51.1164**	0.567	1.1	ug/L	7733	Standard
	Cr	53	57269.7	0.1	**58.1199**	0.209	0.4	ug/L	442	Standard
	Mn	55	373320.3	1.2	**50.8451**	0.769	1.5	ug/L	723	Standard
	Co	59	374639.0	0.7	**50.4931**	0.593	1.2	ug/L	217	Standard
	Ni	60	102269.7	0.8	**50.7649**	0.500	1.0	ug/L	304	Standard
	Cu	65	98211.9	0.3	**49.6447**	0.334	0.7	ug/L	181	Standard
	Zn	66	63211.9	0.4	**53.1189**	0.394	0.7	ug/L	215	Standard
>	Ge	72	504167.3	0.4				ug/L	520809	Standard
	As	75	65436.1	0.6	**54.8009**	0.553	1.0	ug/L	-52	Standard
	Se	82	7107.1	0.1	**57.9877**	0.247	0.4	ug/L	17	Standard
	Se-1	77	5193.9	0.7	**62.0795**	0.521	0.8	ug/L	56	Standard
>	Ga	71	93.3	56.3				mg/L	25	Standard
	Rb	85	2987.0	1.6				ug/L	28	Standard
	Y	89	428781.1	0.8				ug/L	447395	Standard
>	Rh	103	146.7	3.9				ug/L	15	Standard
	Mo	98	634.9	1.7	**0.2009**	0.001	0.6	ug/L	113	Standard
	Ag	107	261558.3	0.6	**39.0020**	0.323	0.8	ug/L	108	Standard
	Cd	111	107761.1	1.2	**50.1421**	0.734	1.5	mg/L	3	Standard
	Cd	114	265170.0	1.2	**49.8331**	0.062	0.1	ug/L	20	Standard
>	In	115	584141.3	1.3				ug/L	625728	Standard
	Sn	118	778.4	10.9	**0.0453**	0.014	30.6	ug/L	568	Standard
	Sb	123	253357.3	0.7	**52.4833**	0.432	0.8	ug/L	612	Standard
	Ba	135	164823.3	0.7	**81.1417**	0.473	0.6	ug/L	21	Standard
	Ce	140	1715.1	1.1				ug/L	245	Standard
>	Tb	159	919374.0	0.5				ug/L	950397	Standard
	Ho	165	48.3	26.0				ug/L	7	Standard
	Tl	203	415993.7	1.0	**50.5326**	0.446	0.9	ug/L	15	Standard
	Tl	205	377462.4	0.7	**51.6305**	0.656	1.3	ug/L	13	Standard
	Pb	206	269578.4	0.3	**51.8894**	0.298	0.6	ug/L	264	Standard
	Pb	207	236101.7	0.1	**50.0395**	0.358	0.7	ug/L	222	Standard
	Pb	208	981599.1	1.3	**50.9367**	0.779	1.5	ug/L	959	Standard
	U	238	408604.0	0.1	**55.2799**	0.488	0.9	ug/L	9	Standard
>	Bi	209	506896.7	0.8				ug/L	552821	Standard

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Na	23	6.7	86.6	**19.7141**	17.069	86.6	mg/L	2	Standard
Mg	24	123424.1	1.3	**140.7631**	4.816	3.4	mg/L	55	Standard
K	39	126.7	21.7	**0.3448**	0.114	32.9	mg/L	28	Standard
Ca	43	478.3	6.3	**39.9606**	1.868	4.7	mg/L	27	Standard
Fe	54	159.8	26.4	**0.0241**	0.035	144.2	mg/L	147	Standard
Fe	57	558.3	4.0	**0.8725**	0.108	12.4	mg/L	268	Standard
Sc-1	45	42178.7	2.5				mg/L	41174	Standard
Cl	35	93263.5	1.5				ug/L	69550	Standard
Kr	83	3.0	33.3				ug/L	1	Standard
Br	81	55210.4	0.6				ug/L	1950	Standard
P	31	24391.3	2.2				ug/L	21156	Standard
S	34	2932.0	3.7				ug/L	3419	Standard
Sr	88	386.7	9.1				ug/L	72	Standard
C	12	800.0	2.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	17	Standard
Dy	164	64.1	17.0				mg/L	16	Standard
Ho-1	165	48.3	26.0				mg/L	7	Standard
Er	166	53.3	39.0				mg/L	7	Standard
I	127	27236.1	1.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		109.568	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.805	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.354
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.693
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606141707SD WG574416-07
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Method 6020 - Summary Report

Sample ID: L1606141701
Sample Date/Time: Friday, July 01, 2016 11:21:50
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83420.7	1.6				ug/L	76456	Standard
	Be	9	53.3	21.7	**0.0237**	0.009	37.8	ug/L	20	Standard
	Al	27	31084082.3	1.3	**166.4192**	1.988	1.2	ug/L	1307	Standard
	Sc	45	42130.2	2.0				ug/L	41174	Standard
	Ti	47	170.3	8.2	**0.4375**	0.044	10.0	ug/L	27	Standard
	V	51	22939.6	1.3	**2.5877**	0.032	1.2	ug/L	1434	Standard
	Cr	52	13097.0	1.3	**0.6468**	0.025	3.9	ug/L	7733	Standard
	Cr	53	1960.1	6.9	**1.5196**	0.135	8.9	ug/L	442	Standard
	Mn	55	3766.5	0.8	**0.3954**	0.005	1.2	ug/L	723	Standard
	Co	59	709.0	6.9	**0.0630**	0.006	10.1	ug/L	217	Standard
	Ni	60	2223.2	1.0	**0.9167**	0.012	1.3	ug/L	304	Standard
	Cu	65	739.0	2.4	**0.2875**	0.008	2.9	ug/L	181	Standard
	Zn	66	2322.5	1.8	**1.7125**	0.036	2.1	ug/L	215	Standard
>	Ge	72	521624.8	0.2				ug/L	520809	Standard
	As	75	515.4	8.1	**0.4620**	0.033	7.2	ug/L	-52	Standard
	Se	82	150.1	4.3	**1.0601**	0.051	4.8	ug/L	17	Standard
	Se-1	77	163.7	3.7	**1.2270**	0.071	5.8	ug/L	56	Standard
>	Ga	71	35.0	42.9				mg/L	25	Standard
	Rb	85	1295.1	7.1				ug/L	28	Standard
	Y	89	450422.8	1.4				ug/L	447395	Standard
>	Rh	103	130.0	23.4				ug/L	15	Standard
	Mo	98	654.1	6.4	**0.1969**	0.014	7.3	ug/L	113	Standard
	Ag	107	196.0	12.7	**0.0150**	0.004	24.0	ug/L	108	Standard
	Cd	111	38.8	25.3	**0.0149**	0.004	28.8	mg/L	3	Standard
	Cd	114	102.9	24.1	**0.0184**	0.004	23.7	ug/L	20	Standard
>	In	115	612771.9	0.4				ug/L	625728	Standard
	Sn	118	700.0	1.2	**0.0268**	0.002	5.6	ug/L	568	Standard
	Sb	123	677.6	31.8	**0.1003**	0.043	43.0	ug/L	612	Standard
	Ba	135	79352.9	0.7	**37.2291**	0.386	1.0	ug/L	21	Standard
	Ce	140	398.3	12.2				ug/L	245	Standard
>	Tb	159	943156.7	0.8				ug/L	950397	Standard
	Ho	165	36.7	20.8				ug/L	7	Standard
	Tl	203	227.0	14.0	**0.0253**	0.004	14.6	ug/L	15	Standard
	Tl	205	246.7	13.8	**0.0221**	0.004	19.4	ug/L	13	Standard
	Pb	206	454.7	7.7	**0.0390**	0.006	16.7	ug/L	264	Standard
	Pb	207	363.0	3.8	**0.0266**	0.003	11.0	ug/L	222	Standard
	Pb	208	1563.4	3.8	**0.0284**	0.003	10.4	ug/L	959	Standard
	U	238	20328.0	1.2	**2.5974**	0.039	1.5	ug/L	9	Standard
>	Bi	209	536649.8	0.3				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	14153.3	4.2	**16.0944**	0.416	2.6	mg/L	55	Standard
K	39	73.3	50.3	**0.1418**	0.131	92.5	mg/L	28	Standard
Ca	43	301.7	14.5	**24.2946**	3.319	13.7	mg/L	27	Standard
Fe	54	192.1	16.5	**0.0481**	0.021	43.9	mg/L	147	Standard
Fe	57	448.3	3.9	**0.5433**	0.078	14.4	mg/L	268	Standard
> **Sc-1**	45	42130.2	2.0				mg/L	41174	Standard
Cl	35	78637.6	2.5				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	17710.4	7.6				ug/L	1950	Standard
P	31	24940.5	2.0				ug/L	21156	Standard
S	34	3180.3	5.3				ug/L	3419	Standard
Sr	88	363.3	6.9				ug/L	72	Standard
C	12	386.7	16.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	17	Standard
Dy	164	45.1	46.6				mg/L	16	Standard
Ho-1	165	36.7	20.8				mg/L	7	Standard
Er	166	33.3	17.3				mg/L	7	Standard
I	127	17748.8	7.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.110	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.157	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.929
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.075
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606141702
Sample Date/Time: Friday, July 01, 2016 11:25:02
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84178.2	0.8				ug/L	76456	Standard
	Be	9	68.3	33.0	**0.0357**	0.019	52.5	ug/L	20	Standard
	Al	27	21395590.4	1.7	**113.5091**	1.891	1.7	ug/L	1307	Standard
	Sc	45	40557.5	1.2				ug/L	41174	Standard
	Ti	47	235.3	3.5	**0.6749**	0.030	4.5	ug/L	27	Standard
	V	51	30102.8	0.4	**3.6510**	0.042	1.2	ug/L	1434	Standard
	Cr	52	20877.7	0.2	**1.7436**	0.023	1.3	ug/L	7733	Standard
	Cr	53	13953.1	1.5	**14.0948**	0.198	1.4	ug/L	442	Standard
	Mn	55	6869.6	2.0	**0.8525**	0.013	1.6	ug/L	723	Standard
	Co	59	1049.0	2.3	**0.1145**	0.004	3.2	ug/L	217	Standard
	Ni	60	3023.6	1.9	**1.3787**	0.032	2.3	ug/L	304	Standard
	Cu	65	1353.7	2.9	**0.6232**	0.017	2.7	ug/L	181	Standard
	Zn	66	2790.6	0.7	**2.2139**	0.010	0.4	ug/L	215	Standard
>	**Ge**	72	495483.9	0.7				ug/L	520809	Standard
	As	75	1494.2	7.1	**1.3177**	0.098	7.4	ug/L	-52	Standard
	Se	82	1155.8	1.9	**9.4896**	0.142	1.5	ug/L	17	Standard
	Se-1	77	1366.7	2.9	**16.1232**	0.600	3.7	ug/L	56	Standard
>	**Ga**	71	65.0	46.8				mg/L	25	Standard
	Rb	85	1118.4	6.5				ug/L	28	Standard
	Y	89	431041.5	1.8				ug/L	447395	Standard
>	**Rh**	103	106.7	2.7				ug/L	15	Standard
	Mo	98	636.9	5.4	**0.2018**	0.013	6.3	ug/L	113	Standard
	Ag	107	175.7	31.4	**0.0134**	0.008	62.4	ug/L	108	Standard
	Cd	111	69.9	26.7	**0.0302**	0.009	28.8	mg/L	3	Standard
	Cd	114	141.9	41.1	**0.0267**	0.011	41.2	ug/L	20	Standard
>	**In**	115	583855.1	0.8				ug/L	625728	Standard
	Sn	118	985.0	7.5	**0.0798**	0.012	15.3	ug/L	568	Standard
	Sb	123	469.0	23.7	**0.0635**	0.023	35.9	ug/L	612	Standard
	Ba	135	16891.1	0.4	**8.3035**	0.096	1.2	ug/L	21	Standard
	Ce	140	950.0	9.1				ug/L	245	Standard
>	**Tb**	159	915987.8	1.1				ug/L	950397	Standard
	Ho	165	58.3	13.1				ug/L	7	Standard
	Tl	203	239.0	33.8	**0.0285**	0.010	35.2	ug/L	15	Standard
	Tl	205	226.7	28.0	**0.0215**	0.009	41.6	ug/L	13	Standard
	Pb	206	491.0	11.7	**0.0515**	0.012	22.7	ug/L	264	Standard
	Pb	207	417.3	7.3	**0.0430**	0.007	16.1	ug/L	222	Standard
	Pb	208	1796.4	4.5	**0.0456**	0.005	10.2	ug/L	959	Standard
	U	238	24911.1	0.1	**3.3908**	0.016	0.5	ug/L	9	Standard
>	**Bi**	209	503762.9	0.6				ug/L	552821	Standard

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Na	23	3.3	86.6	**10.0444**	8.695	86.6	mg/L	2	Standard
Mg	24	132735.6	1.2	**157.3747**	3.155	2.0	mg/L	55	Standard
K	39	131.7	11.6	**0.3818**	0.065	17.1	mg/L	28	Standard
Ca	43	436.7	8.3	**37.8132**	2.966	7.8	mg/L	27	Standard
Fe	54	188.4	13.0	**0.0512**	0.020	39.7	mg/L	147	Standard
Fe	57	626.7	13.5	**1.1530**	0.288	25.0	mg/L	268	Standard
> **Sc-1**	45	40557.5	1.2				mg/L	41174	Standard
Cl	35	95111.1	2.9				ug/L	69550	Standard
Kr	83	2.0	132.3				ug/L	1	Standard
Br	81	69814.0	4.5				ug/L	1950	Standard
P	31	24122.5	3.6				ug/L	21156	Standard
S	34	3262.0	2.8				ug/L	3419	Standard
Sr	88	431.7	9.9				ug/L	72	Standard
C	12	460.0	22.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	17	Standard
Dy	164	50.5	77.6				mg/L	16	Standard
Ho-1	165	58.3	13.1				mg/L	7	Standard
Er	166	60.0	44.1				mg/L	7	Standard
I	127	37230.7	1.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.101	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.137	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.308
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.126
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606141702
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Method 6020 - Summary Report

Sample ID: L1606141702PS WG574808-01
Sample Date/Time: Friday, July 01, 2016 11:28:13
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	84706.2	1.4				ug/L	76456	Standard
	Be	9	61248.6	0.7	**49.3719**	0.771	1.6	ug/L	20	Standard
	Al	27	21521134.5	1.9	**113.4962**	3.763	3.3	ug/L	1307	Standard
	Sc	45	40794.9	2.7				ug/L	41174	Standard
	Ti	47	240.0	10.1	**0.6796**	0.085	12.5	ug/L	27	Standard
	V	51	455261.1	1.0	**57.2107**	0.562	1.0	ug/L	1434	Standard
	Cr	52	426443.6	1.0	**53.6956**	0.415	0.8	ug/L	7733	Standard
	Cr	53	63767.3	2.8	**64.9856**	1.904	2.9	ug/L	442	Standard
	Mn	55	385209.5	0.8	**52.6493**	0.868	1.6	ug/L	723	Standard
	Co	59	385929.7	0.6	**52.1919**	0.293	0.6	ug/L	217	Standard
	Ni	60	103771.2	0.7	**51.6879**	0.282	0.5	ug/L	304	Standard
	Cu	65	101476.7	1.4	**51.4688**	0.149	0.3	ug/L	181	Standard
	Zn	66	65028.6	0.8	**54.8362**	0.235	0.4	ug/L	215	Standard
>	Ge	72	502470.5	1.2				ug/L	520809	Standard
	As	75	66227.4	1.6	**55.6481**	0.524	0.9	ug/L	-52	Standard
	Se	82	7664.8	0.5	**62.7619**	0.423	0.7	ug/L	17	Standard
	Se-1	77	5635.0	2.2	**67.6351**	0.810	1.2	ug/L	56	Standard
>	Ga	71	56.7	41.7				mg/L	25	Standard
	Rb	85	1151.7	5.5				ug/L	28	Standard
	Y	89	435252.0	2.3				ug/L	447395	Standard
>	Rh	103	131.7	9.6				ug/L	15	Standard
	Mo	98	659.3	4.3	**0.2083**	0.012	5.6	ug/L	113	Standard
	Ag	107	333584.9	1.2	**49.4501**	0.303	0.6	ug/L	108	Standard
	Cd	111	111317.0	0.6	**51.4929**	0.677	1.3	mg/L	3	Standard
	Cd	114	272508.8	2.4	**50.9184**	1.531	3.0	ug/L	20	Standard
>	In	115	587582.2	0.8				ug/L	625728	Standard
	Sn	118	1173.4	7.2	**0.1100**	0.015	13.8	ug/L	568	Standard
	Sb	123	246884.2	2.4	**50.8360**	0.942	1.9	ug/L	612	Standard
	Ba	135	121048.6	0.4	**59.2388**	0.725	1.2	ug/L	21	Standard
	Ce	140	995.0	2.7				ug/L	245	Standard
>	Tb	159	924930.3	1.0				ug/L	950397	Standard
	Ho	165	51.7	39.1				ug/L	7	Standard
	Tl	203	432904.6	0.1	**52.3301**	0.247	0.5	ug/L	15	Standard
	Tl	205	391263.3	1.6	**53.2578**	1.128	2.1	ug/L	13	Standard
	Pb	206	282728.2	0.5	**54.1561**	0.449	0.8	ug/L	264	Standard
	Pb	207	246312.6	0.2	**51.9491**	0.256	0.5	ug/L	222	Standard
	Pb	208	1022028.0	0.9	**52.7764**	0.638	1.2	ug/L	959	Standard
	U	238	421958.1	0.7	**56.8072**	0.698	1.2	ug/L	9	Standard
>	Bi	209	509385.6	0.5				ug/L	552821	Standard

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Na	23	10.0	50.0	**29.8847**	14.237	47.6	mg/L	2	Standard
Mg	24	133593.1	0.8	**157.5206**	4.134	2.6	mg/L	55	Standard
K	39	128.3	35.1	**0.3678**	0.182	49.5	mg/L	28	Standard
Ca	43	420.0	20.7	**36.0275**	7.706	21.4	mg/L	27	Standard
Fe	54	180.1	10.8	**0.0439**	0.018	40.9	mg/L	147	Standard
Fe	57	538.3	4.2	**0.8651**	0.032	3.7	mg/L	268	Standard
> **Sc-1**	45	40794.9	2.7				mg/L	41174	Standard
Cl	35	96279.6	0.7				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	71609.1	5.3				ug/L	1950	Standard
P	31	24898.8	2.0				ug/L	21156	Standard
S	34	3225.3	2.1				ug/L	3419	Standard
Sr	88	406.7	4.3				ug/L	72	Standard
C	12	440.0	36.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	17	Standard
Dy	164	27.8	36.1				mg/L	16	Standard
Ho-1	165	51.7	39.1				mg/L	7	Standard
Er	166	46.7	24.7				mg/L	7	Standard
I	127	36331.8	0.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.791	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.479	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.904
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.143
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606141702PS WG574808-01
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Method 6020 - Summary Report

Sample ID: L1606141702SDL WG574808-02
Sample Date/Time: Friday, July 01, 2016 11:31:25
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79270.2	1.4				ug/L	76456	Standard
	Be	9	48.3	15.8	**0.0218**	0.006	29.8	ug/L	20	Standard
	Al	27	4222516.4	1.3	**23.7801**	0.015	0.1	ug/L	1307	Standard
	Sc	45	38916.6	1.8				ug/L	41174	Standard
	Ti	47	59.3	17.5	**0.1088**	0.035	32.6	ug/L	27	Standard
	V	51	7243.4	2.3	**0.7359**	0.026	3.5	ug/L	1434	Standard
	Cr	52	10348.9	1.0	**0.3868**	0.014	3.5	ug/L	7733	Standard
	Cr	53	3842.2	2.6	**3.6141**	0.077	2.1	ug/L	442	Standard
	Mn	55	1712.4	2.4	**0.1385**	0.004	3.2	ug/L	723	Standard
	Co	59	414.7	3.6	**0.0280**	0.003	9.0	ug/L	217	Standard
	Ni	60	921.4	5.7	**0.3179**	0.030	9.6	ug/L	304	Standard
	Cu	65	476.3	6.6	**0.1735**	0.018	10.2	ug/L	181	Standard
	Zn	66	1250.7	2.0	**0.9024**	0.030	3.3	ug/L	215	Standard
>	Ge	72	491133.0	0.8				ug/L	520809	Standard
	As	75	262.0	15.9	**0.2704**	0.037	13.9	ug/L	-52	Standard
	Se	82	270.1	2.3	**2.1408**	0.063	2.9	ug/L	17	Standard
	Se-1	77	339.3	3.5	**3.5247**	0.142	4.0	ug/L	56	Standard
>	Ga	71	25.0	20.0				mg/L	25	Standard
	Rb	85	250.0	13.1				ug/L	28	Standard
	Y	89	411909.2	0.7				ug/L	447395	Standard
>	Rh	103	60.0	30.0				ug/L	15	Standard
	Mo	98	158.0	15.1	**0.0328**	0.008	25.5	ug/L	113	Standard
	Ag	107	268.7	10.2	**0.0278**	0.004	15.6	ug/L	108	Standard
	Cd	111	28.7	19.4	**0.0112**	0.003	23.8	mg/L	3	Standard
	Cd	114	92.0	14.0	**0.0176**	0.002	14.2	ug/L	20	Standard
>	In	115	575454.3	0.4				ug/L	625728	Standard
	Sn	118	298.3	6.8	**-0.0338**	0.003	9.9	ug/L	568	Standard
	Sb	123	1720.4	31.0	**0.3280**	0.111	33.8	ug/L	612	Standard
	Ba	135	3347.4	3.0	**1.6553**	0.056	3.4	ug/L	21	Standard
	Ce	140	181.7	6.9				ug/L	245	Standard
>	Tb	159	890346.9	0.6				ug/L	950397	Standard
	Ho	165	23.3	32.7				ug/L	7	Standard
	Tl	203	214.3	9.6	**0.0249**	0.002	9.4	ug/L	15	Standard
	Tl	205	275.0	41.2	**0.0273**	0.015	55.9	ug/L	13	Standard
	Pb	206	399.7	2.6	**0.0322**	0.002	4.9	ug/L	264	Standard
	Pb	207	322.7	4.0	**0.0214**	0.002	11.0	ug/L	222	Standard
	Pb	208	1435.0	2.3	**0.0252**	0.002	7.2	ug/L	959	Standard
	U	238	5076.5	3.7	**0.6771**	0.028	4.1	ug/L	9	Standard
>	Bi	209	514021.2	0.5				ug/L	552821	Standard

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Na	23	6.7	114.6	**21.2259**	24.589	115.8	mg/L	2	Standard
Mg	24	26095.8	2.9	**32.1961**	0.941	2.9	mg/L	55	Standard
K	39	48.3	21.5	**0.0648**	0.042	64.9	mg/L	28	Standard
Ca	43	73.3	25.8	**4.5982**	1.826	39.7	mg/L	27	Standard
Fe	54	79.1	19.4	**-0.0333**	0.012	34.7	mg/L	147	Standard
Fe	57	293.3	4.3	**0.1499**	0.049	32.9	mg/L	268	Standard
Sc-1	45	38916.6	1.8				mg/L	41174	Standard
Cl	35	81436.9	1.0				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	16265.4	2.3				ug/L	1950	Standard
P	31	10428.6	1.9				ug/L	21156	Standard
S	34	3263.7	1.5				ug/L	3419	Standard
Sr	88	118.3	30.0				ug/L	72	Standard
C	12	173.3	3.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	17	Standard
Dy	164	22.2	71.3				mg/L	16	Standard
Ho-1	165	23.3	32.7				mg/L	7	Standard
Er	166	23.3	107.9				mg/L	7	Standard
I	127	34272.1	2.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.681	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.302	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606141702SDL WG574808-02
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.966
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.982
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606141702SDL WG574808-02
Sample Date/Time: Friday, July 01, 2016 11:34:36
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75492.7	3.2				ug/L	76456	Standard
	Be	9	23.3	12.4	**0.0012**	0.002	197.6	ug/L	20	Standard
	Al	27	829607.4	2.3	**4.8996**	0.125	2.6	ug/L	1307	Standard
	Sc	45	37073.7	3.1				ug/L	41174	Standard
	Ti	47	28.0	12.9	**0.0070**	0.012	174.3	ug/L	27	Standard
	V	51	3170.1	5.9	**0.2118**	0.020	9.4	ug/L	1434	Standard
	Cr	52	8461.0	1.1	**0.1435**	0.006	4.5	ug/L	7733	Standard
	Cr	53	1218.4	12.8	**0.8668**	0.167	19.3	ug/L	442	Standard
	Mn	55	694.0	1.2	**-0.0037**	0.001	25.0	ug/L	723	Standard
	Co	59	224.0	8.2	**0.0017**	0.003	168.9	ug/L	217	Standard
	Ni	60	457.0	4.9	**0.0814**	0.014	16.9	ug/L	304	Standard
	Cu	65	221.3	9.3	**0.0415**	0.012	28.9	ug/L	181	Standard
	Zn	66	1093.0	3.6	**0.7694**	0.029	3.8	ug/L	215	Standard
>	**Ge**	72	489217.1	1.1				ug/L	520809	Standard
	As	75	21.5	96.2	**0.0638**	0.018	28.2	ug/L	-52	Standard
	Se	82	69.4	5.3	**0.4582**	0.034	7.4	ug/L	17	Standard
	Se-1	77	109.3	5.9	**0.6765**	0.067	9.8	ug/L	56	Standard
>	**Ga**	71	15.0	33.3				mg/L	25	Standard
	Rb	85	76.7	16.4				ug/L	28	Standard
	Y	89	405198.5	2.3				ug/L	447395	Standard
>	**Rh**	103	26.7	60.3				ug/L	15	Standard
	Mo	98	142.2	38.6	**0.0281**	0.020	72.6	ug/L	113	Standard
	Ag	107	112.7	10.2	**0.0045**	0.002	36.8	ug/L	108	Standard
	Cd	111	8.1	48.9	**0.0015**	0.002	126.2	mg/L	3	Standard
	Cd	114	16.9	33.2	**0.0033**	0.001	33.5	ug/L	20	Standard
>	**In**	115	566627.7	0.7				ug/L	625728	Standard
	Sn	118	178.3	10.6	**-0.0536**	0.003	6.2	ug/L	568	Standard
	Sb	123	679.8	12.9	**0.1116**	0.020	17.6	ug/L	612	Standard
	Ba	135	676.7	1.6	**0.3256**	0.006	1.8	ug/L	21	Standard
	Ce	140	45.0	61.9				ug/L	245	Standard
>	**Tb**	159	881967.0	0.2				ug/L	950397	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	116.0	4.3	**0.0131**	0.001	4.5	ug/L	15	Standard
	Tl	205	140.0	3.6	**0.0090**	0.001	6.9	ug/L	13	Standard
	Pb	206	294.0	3.6	**0.0118**	0.002	17.2	ug/L	264	Standard
	Pb	207	254.0	8.5	**0.0068**	0.004	64.3	ug/L	222	Standard
	Pb	208	1072.0	4.7	**0.0063**	0.003	41.6	ug/L	959	Standard
	U	238	957.7	4.8	**0.1269**	0.006	4.8	ug/L	9	Standard
>	**Bi**	209	516500.7	0.3				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4970.8	4.5	**6.3914**	0.307	4.8	mg/L	55	Standard
K	39	25.0	0.0	**-0.0247**	0.003	13.3	mg/L	28	Standard
Ca	43	50.0	34.6	**2.6288**	1.919	73.0	mg/L	27	Standard
Fe	54	54.5	0.1	**-0.0513**	0.002	3.0	mg/L	147	Standard
Fe	57	253.3	6.3	**0.0613**	0.067	109.5	mg/L	268	Standard
> **Sc-1**	45	37073.7	3.1				mg/L	41174	Standard
Cl	35	80495.3	1.6				ug/L	69550	Standard
Kr	83	3.3	75.5				ug/L	1	Standard
Br	81	5040.8	9.7				ug/L	1950	Standard
P	31	7305.1	3.6				ug/L	21156	Standard
S	34	3295.4	6.8				ug/L	3419	Standard
Sr	88	108.3	11.6				ug/L	72	Standard
C	12	146.7	3.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	43.3	35.3				mg/L	17	Standard
Dy	164	-1.1	89.2				mg/L	16	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	23.3	89.2				mg/L	7	Standard
I	127	33724.2	0.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.740	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.934	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.555
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.430
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 11:37:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79886.8	2.4				ug/L	76456	Standard
	Be	9	60216.2	2.8	**51.4590**	0.417	0.8	ug/L	20	Standard
	Al	27	8658161.3	1.0	**48.4053**	0.695	1.4	ug/L	1307	Standard
	Sc	45	41946.3	1.7				ug/L	41174	Standard
	Ti	47	32783.8	1.1	**99.4934**	0.341	0.3	ug/L	27	Standard
	V	51	421947.6	0.5	**50.6006**	0.209	0.4	ug/L	1434	Standard
	Cr	52	415783.8	0.5	**49.9191**	0.677	1.4	ug/L	7733	Standard
	Cr	53	52323.5	0.7	**50.8163**	0.079	0.2	ug/L	442	Standard
	Mn	55	383488.2	0.5	**50.0327**	0.303	0.6	ug/L	723	Standard
	Co	59	396921.5	0.3	**51.2480**	0.300	0.6	ug/L	217	Standard
	Ni	60	105550.0	0.7	**50.1916**	0.654	1.3	ug/L	304	Standard
	Cu	65	104187.0	0.3	**50.4533**	0.298	0.6	ug/L	181	Standard
	Zn	66	62119.1	0.9	**49.9953**	0.242	0.5	ug/L	215	Standard
>	Ge	72	526287.7	0.8				ug/L	520809	Standard
	As	75	62653.6	0.5	**50.2687**	0.288	0.6	ug/L	-52	Standard
	Se	82	6502.0	0.1	**50.8075**	0.476	0.9	ug/L	17	Standard
	Se-1	77	4394.6	2.3	**50.1962**	1.546	3.1	ug/L	56	Standard
>	Ga	71	41.7	34.6				mg/L	25	Standard
	Rb	85	811.7	7.3				ug/L	28	Standard
	Y	89	449443.8	0.8				ug/L	447395	Standard
>	Rh	103	28.3	20.4				ug/L	15	Standard
	Mo	98	299240.3	0.5	**98.3551**	0.449	0.5	ug/L	113	Standard
	Ag	107	359054.0	0.7	**49.6967**	0.335	0.7	ug/L	108	Standard
	Cd	111	115287.0	0.4	**49.7893**	0.202	0.4	mg/L	3	Standard
	Cd	114	284203.9	0.6	**49.5756**	0.249	0.5	ug/L	20	Standard
>	In	115	629316.2	0.1				ug/L	625728	Standard
	Sn	118	316403.3	1.4	**48.7968**	0.695	1.4	ug/L	568	Standard
	Sb	123	257145.7	0.4	**49.4396**	0.256	0.5	ug/L	612	Standard
	Ba	135	107880.7	0.2	**49.2873**	0.099	0.2	ug/L	21	Standard
	Ce	140	80.0	12.5				ug/L	245	Standard
>	Tb	159	959375.1	0.6				ug/L	950397	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	446456.6	0.5	**49.7300**	0.195	0.4	ug/L	15	Standard
	Tl	205	404447.0	0.4	**50.7263**	0.364	0.7	ug/L	13	Standard
	Pb	206	281579.7	0.3	**49.6971**	0.317	0.6	ug/L	264	Standard
	Pb	207	257039.7	0.6	**49.9528**	0.358	0.7	ug/L	222	Standard
	Pb	208	1065428.7	1.4	**50.6922**	0.446	0.9	ug/L	959	Standard
	U	238	401590.9	0.5	**49.8178**	0.056	0.1	ug/L	9	Standard
>	Bi	209	552793.0	0.6				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4465.7	1.7	**5.0623**	0.170	3.4	mg/L	55	Standard
K	39	1175.0	4.1	**4.2914**	0.166	3.9	mg/L	28	Standard
Ca	43	80.0	12.5	**4.6810**	0.869	18.6	mg/L	27	Standard
Fe	54	6475.2	2.0	**4.8865**	0.136	2.8	mg/L	147	Standard
Fe	57	1960.1	2.3	**5.1091**	0.183	3.6	mg/L	268	Standard
> **Sc-1**	45	41946.3	1.7				mg/L	41174	Standard
Cl	35	79383.6	3.3				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	2656.9	5.2				ug/L	1950	Standard
P	31	23768.6	2.4				ug/L	21156	Standard
S	34	4000.5	6.6				ug/L	3419	Standard
Sr	88	80.0	43.3				ug/L	72	Standard
C	12	120.0	25.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	69.3				mg/L	17	Standard
Dy	164	12.4	100.1				mg/L	16	Standard
Ho-1	165	8.3	69.3				mg/L	7	Standard
Er	166	20.0	100.0				mg/L	7	Standard
I	127	22111.1	1.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	102.918		
Al	27	96.811		
Sc	45			
Ti	47	99.493		
V	51	101.201		
Cr	52	99.838		
Cr	53			
Mn	55	100.065		
Co	59	102.496		
Ni	60	100.383		
Cu	65	100.907		
Zn	66	99.991		
> Ge	72		101.052	
As	75	100.537		
Se	82	101.615		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	98.355		
Ag	107	99.393		
Cd	111	99.579		
Cd	114			
In	115			100.573
Sn	118	97.594		
Sb	123	98.879		
Ba	135	98.575		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.460		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.384		
U	238	99.636		
Bi	209			99.995
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 11:40:07
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Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 11:41:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79854.9	1.2				ug/L	76456	Standard
	Be	9	28.3	44.4	**0.0043**	0.011	247.6	ug/L	20	Standard
	Al	27	4860.8	30.8	**0.0170**	0.009	51.0	ug/L	1307	Standard
	Sc	45	40828.3	2.4				ug/L	41174	Standard
	Ti	47	33.7	26.8	**0.0170**	0.026	153.3	ug/L	27	Standard
	V	51	1448.8	4.8	**-0.0250**	0.010	39.6	ug/L	1434	Standard
	Cr	52	7320.1	2.9	**-0.0792**	0.016	19.8	ug/L	7733	Standard
	Cr	53	573.3	8.4	**0.1415**	0.043	30.2	ug/L	442	Standard
	Mn	55	774.7	1.8	**-0.0006**	0.001	182.2	ug/L	723	Standard
	Co	59	305.0	4.6	**0.0098**	0.001	15.1	ug/L	217	Standard
	Ni	60	339.0	2.3	**0.0078**	0.005	67.4	ug/L	304	Standard
	Cu	65	197.7	11.1	**0.0212**	0.010	48.2	ug/L	181	Standard
	Zn	66	269.3	7.5	**0.0362**	0.017	46.8	ug/L	215	Standard
>	**Ge**	72	528956.5	1.1				ug/L	520809	Standard
	As	75	-45.6	52.3	**0.0087**	0.019	224.1	ug/L	-52	Standard
	Se	82	23.2	12.4	**0.0547**	0.023	42.1	ug/L	17	Standard
	Se-1	77	56.7	21.6	**-0.0309**	0.148	479.3	ug/L	56	Standard
>	**Ga**	71	35.0	62.3				mg/L	25	Standard
	Rb	85	25.0	34.6				ug/L	28	Standard
	Y	89	451349.1	0.6				ug/L	447395	Standard
>	**Rh**	103	21.7	48.0				ug/L	15	Standard
	Mo	98	237.5	8.6	**0.0541**	0.007	13.2	ug/L	113	Standard
	Ag	107	234.7	5.8	**0.0196**	0.002	10.5	ug/L	108	Standard
	Cd	111	27.2	17.4	**0.0094**	0.002	21.1	mg/L	3	Standard
	Cd	114	66.4	34.3	**0.0116**	0.004	34.4	ug/L	20	Standard
>	**In**	115	629965.8	0.8				ug/L	625728	Standard
	Sn	118	940.0	21.0	**0.0607**	0.029	48.4	ug/L	568	Standard
	Sb	123	1092.2	32.6	**0.1759**	0.067	38.2	ug/L	612	Standard
	Ba	135	59.0	17.7	**0.0090**	0.005	54.2	ug/L	21	Standard
	Ce	140	21.7	70.5				ug/L	245	Standard
>	**Tb**	159	955018.0	0.8				ug/L	950397	Standard
	Ho	165	13.3	43.3				ug/L	7	Standard
	Tl	203	126.3	20.6	**0.0132**	0.003	22.7	ug/L	15	Standard
	Tl	205	113.3	18.4	**0.0043**	0.003	62.2	ug/L	13	Standard
	Pb	206	346.7	4.9	**0.0167**	0.003	20.4	ug/L	264	Standard
	Pb	207	322.3	7.2	**0.0158**	0.005	30.9	ug/L	222	Standard
	Pb	208	1248.7	4.5	**0.0104**	0.003	28.9	ug/L	959	Standard
	U	238	111.7	26.1	**0.0134**	0.004	27.1	ug/L	9	Standard
>	**Bi**	209	560384.3	0.8				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	55.0	59.6	**0.0047**	0.039	831.6	mg/L	55	Standard
K	39	35.0	37.8	**0.0039**	0.051	1305.2	mg/L	28	Standard
Ca	43	11.7	24.7	**-1.3816**	0.279	20.2	mg/L	27	Standard
Fe	54	175.9	8.8	**0.0403**	0.012	30.1	mg/L	147	Standard
Fe	57	250.0	2.0	**-0.0293**	0.009	29.6	mg/L	268	Standard
Sc-1	45	40828.3	2.4				mg/L	41174	Standard
Cl	35	77022.6	1.0				ug/L	69550	Standard
Kr	83	3.3	34.6				ug/L	1	Standard
Br	81	2493.5	3.8				ug/L	1950	Standard
P	31	23044.2	2.3				ug/L	21156	Standard
S	34	3880.5	1.7				ug/L	3419	Standard
Sr	88	65.0	33.5				ug/L	72	Standard
C	12	130.0	40.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	17	Standard
Dy	164	9.0	113.3				mg/L	16	Standard
Ho-1	165	13.3	43.3				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	16675.8	0.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.564	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 11:43:18
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.677
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.368
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 11:43:18
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Method 6020 - Summary Report

Sample ID: L1606141703
Sample Date/Time: Friday, July 01, 2016 11:44:14
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81889.0	0.6				ug/L	76456	Standard
	Be	9	25.0	91.7	**0.0010**	0.019	1981.7	ug/L	20	Standard
	Al	27	20848394.4	0.7	**113.6982**	1.012	0.9	ug/L	1307	Standard
	Sc	45	42434.3	1.1				ug/L	41174	Standard
	Ti	47	234.7	10.2	**0.6592**	0.078	11.8	ug/L	27	Standard
	V	51	28681.8	1.4	**3.4038**	0.038	1.1	ug/L	1434	Standard
	Cr	52	19756.9	2.1	**1.5522**	0.054	3.5	ug/L	7733	Standard
	Cr	53	14119.9	6.2	**14.0078**	0.905	6.5	ug/L	442	Standard
	Mn	55	3334.7	3.0	**0.3535**	0.012	3.4	ug/L	723	Standard
	Co	59	938.4	1.3	**0.0970**	0.001	0.7	ug/L	217	Standard
	Ni	60	2864.9	3.9	**1.2722**	0.046	3.6	ug/L	304	Standard
	Cu	65	1854.4	2.7	**0.8643**	0.032	3.7	ug/L	181	Standard
	Zn	66	2610.6	1.0	**2.0198**	0.039	1.9	ug/L	215	Standard
>	Ge	72	504450.0	0.8				ug/L	520809	Standard
	As	75	1324.6	1.2	**1.1530**	0.022	1.9	ug/L	-52	Standard
	Se	82	1104.4	0.5	**8.8990**	0.094	1.1	ug/L	17	Standard
	Se-1	77	1261.1	5.7	**14.5449**	0.840	5.8	ug/L	56	Standard
>	Ga	71	50.0	43.6				mg/L	25	Standard
	Rb	85	1121.7	4.1				ug/L	28	Standard
	Y	89	436048.7	1.9				ug/L	447395	Standard
>	Rh	103	121.7	29.7				ug/L	15	Standard
	Mo	98	645.7	3.5	**0.2020**	0.005	2.6	ug/L	113	Standard
	Ag	107	223.7	26.2	**0.0200**	0.008	40.7	ug/L	108	Standard
	Cd	111	51.2	16.5	**0.0212**	0.004	16.8	mg/L	3	Standard
	Cd	114	113.2	6.3	**0.0210**	0.002	7.4	ug/L	20	Standard
>	In	115	591186.7	1.3				ug/L	625728	Standard
	Sn	118	875.0	14.2	**0.0597**	0.021	34.7	ug/L	568	Standard
	Sb	123	602.8	25.4	**0.0895**	0.030	33.5	ug/L	612	Standard
	Ba	135	16459.3	1.1	**7.9899**	0.039	0.5	ug/L	21	Standard
	Ce	140	880.0	5.0				ug/L	245	Standard
>	Tb	159	920155.8	2.2				ug/L	950397	Standard
	Ho	165	50.0	34.6				ug/L	7	Standard
	Tl	203	157.7	7.1	**0.0182**	0.001	6.2	ug/L	15	Standard
	Tl	205	155.0	27.9	**0.0113**	0.006	51.8	ug/L	13	Standard
	Pb	206	453.0	2.5	**0.0428**	0.002	4.5	ug/L	264	Standard
	Pb	207	378.7	4.5	**0.0335**	0.003	9.5	ug/L	222	Standard
	Pb	208	1616.4	3.0	**0.0349**	0.002	5.2	ug/L	959	Standard
	U	238	24675.7	1.0	**3.3100**	0.026	0.8	ug/L	9	Standard
>	Bi	209	511192.5	1.2				ug/L	552821	Standard

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Na	23	5.0	100.0	**14.4476**	14.513	100.4	mg/L	2	Standard
Mg	24	129302.7	0.5	**146.5117**	1.623	1.1	mg/L	55	Standard
K	39	120.0	31.5	**0.3147**	0.137	43.6	mg/L	28	Standard
Ca	43	443.3	15.8	**36.6451**	6.259	17.1	mg/L	27	Standard
Fe	54	170.0	14.6	**0.0304**	0.017	57.5	mg/L	147	Standard
Fe	57	581.7	5.3	**0.9302**	0.090	9.7	mg/L	268	Standard
> **Sc-1**	45	42434.3	1.1				mg/L	41174	Standard
Cl	35	97340.4	1.2				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	68893.1	4.4				ug/L	1950	Standard
P	31	25483.1	3.6				ug/L	21156	Standard
S	34	3482.1	6.0				ug/L	3419	Standard
Sr	88	398.3	9.6				ug/L	72	Standard
C	12	456.7	3.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	17	Standard
Dy	164	44.0	27.1				mg/L	16	Standard
Ho-1	165	50.0	34.6				mg/L	7	Standard
Er	166	56.7	53.9				mg/L	7	Standard
I	127	49472.4	4.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.106	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.859	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.480
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.470
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606141704
Sample Date/Time: Friday, July 01, 2016 11:47:26
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	84196.6	0.3				ug/L	76456	Standard
	Be	9	33.3	22.9	**0.0072**	0.006	86.7	ug/L	20	Standard
	Al	27	15514677.9	3.0	**82.2819**	2.194	2.7	ug/L	1307	Standard
	Sc	45	43039.4	2.0				ug/L	41174	Standard
	Ti	47	214.3	5.1	**0.5706**	0.026	4.6	ug/L	27	Standard
	V	51	104787.8	1.3	**12.4991**	0.095	0.8	ug/L	1434	Standard
	Cr	52	15259.3	0.7	**0.9095**	0.033	3.7	ug/L	7733	Standard
	Cr	53	5951.2	3.9	**5.4474**	0.187	3.4	ug/L	442	Standard
	Mn	55	4057.5	2.5	**0.4326**	0.014	3.2	ug/L	723	Standard
	Co	59	713.7	6.2	**0.0633**	0.005	7.8	ug/L	217	Standard
	Ni	60	1861.4	2.8	**0.7406**	0.029	3.9	ug/L	304	Standard
	Cu	65	1343.1	2.6	**0.5817**	0.025	4.2	ug/L	181	Standard
	Zn	66	2743.6	1.9	**2.0501**	0.019	0.9	ug/L	215	Standard
>	Ge	72	522881.1	1.2				ug/L	520809	Standard
	As	75	2151.6	2.6	**1.7810**	0.033	1.9	ug/L	-52	Standard
	Se	82	460.2	1.1	**3.5021**	0.008	0.2	ug/L	17	Standard
	Se-1	77	457.3	2.7	**4.6435**	0.083	1.8	ug/L	56	Standard
>	Ga	71	48.3	41.8				mg/L	25	Standard
	Rb	85	1016.7	4.8				ug/L	28	Standard
	Y	89	448180.4	0.4				ug/L	447395	Standard
>	Rh	103	61.7	28.5				ug/L	15	Standard
	Mo	98	2950.5	2.8	**0.9697**	0.025	2.6	ug/L	113	Standard
	Ag	107	125.3	5.6	**0.0049**	0.001	22.3	ug/L	108	Standard
	Cd	111	47.4	9.4	**0.0186**	0.002	10.0	mg/L	3	Standard
	Cd	114	120.7	5.3	**0.0216**	0.001	5.2	ug/L	20	Standard
>	In	115	614296.5	0.6				ug/L	625728	Standard
	Sn	118	906.7	10.1	**0.0592**	0.014	23.4	ug/L	568	Standard
	Sb	123	614.0	19.1	**0.0872**	0.022	25.7	ug/L	612	Standard
	Ba	135	28748.9	0.6	**13.4426**	0.042	0.3	ug/L	21	Standard
	Ce	140	528.3	5.7				ug/L	245	Standard
>	Tb	159	947954.0	1.2				ug/L	950397	Standard
	Ho	165	23.3	12.4				ug/L	7	Standard
	Tl	203	129.3	12.8	**0.0142**	0.002	13.1	ug/L	15	Standard
	Tl	205	116.7	9.9	**0.0055**	0.002	28.8	ug/L	13	Standard
	Pb	206	445.0	3.2	**0.0379**	0.002	6.0	ug/L	264	Standard
	Pb	207	341.0	4.4	**0.0228**	0.003	12.0	ug/L	222	Standard
	Pb	208	1493.7	0.5	**0.0256**	0.000	1.6	ug/L	959	Standard
	U	238	70565.6	0.2	**9.0963**	0.034	0.4	ug/L	9	Standard
>	Bi	209	531969.0	0.4				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	88574.8	1.4	**98.9343**	0.707	0.7	mg/L	55	Standard
K	39	85.0	11.8	**0.1808**	0.038	21.2	mg/L	28	Standard
Ca	43	236.7	3.2	**18.1358**	1.082	6.0	mg/L	27	Standard
Fe	54	139.8	11.5	**0.0060**	0.011	187.7	mg/L	147	Standard
Fe	57	440.0	15.9	**0.4880**	0.189	38.8	mg/L	268	Standard
> **Sc-1**	45	43039.4	2.0				mg/L	41174	Standard
Cl	35	92305.0	1.1				ug/L	69550	Standard
Kr	83	2.7	57.3				ug/L	1	Standard
Br	81	47838.7	1.5				ug/L	1950	Standard
P	31	25832.0	1.0				ug/L	21156	Standard
S	34	3398.7	3.3				ug/L	3419	Standard
Sr	88	276.7	16.4				ug/L	72	Standard
C	12	396.7	10.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	17	Standard
Dy	164	28.9	100.6				mg/L	16	Standard
Ho-1	165	23.3	12.4				mg/L	7	Standard
Er	166	23.3	89.2				mg/L	7	Standard
I	127	50935.5	2.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.125	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.398	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.173	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.228	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606141708
Sample Date/Time: Friday, July 01, 2016 11:50:37
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	89411.4	1.5				ug/L	76456	Standard
	Be	9	40.0	65.0	**0.0106**	0.020	184.8	ug/L	20	Standard
	Al	27	22078727.0	1.3	**110.2973**	2.573	2.3	ug/L	1307	Standard
	Sc	45	45105.4	2.6				ug/L	41174	Standard
	Ti	47	320.0	7.2	**0.8822**	0.060	6.8	ug/L	27	Standard
	V	51	99984.6	2.1	**11.7774**	0.066	0.6	ug/L	1434	Standard
	Cr	52	21104.0	1.8	**1.5998**	0.060	3.7	ug/L	7733	Standard
	Cr	53	17553.5	0.8	**16.6868**	0.266	1.6	ug/L	442	Standard
	Mn	55	6430.0	0.9	**0.7351**	0.014	1.9	ug/L	723	Standard
	Co	59	852.7	2.7	**0.0802**	0.004	4.4	ug/L	217	Standard
	Ni	60	2949.0	1.3	**1.2465**	0.031	2.4	ug/L	304	Standard
	Cu	65	1272.1	1.7	**0.5397**	0.010	1.8	ug/L	181	Standard
	Zn	66	3425.7	3.7	**2.5723**	0.060	2.3	ug/L	215	Standard
>	Ge	72	528948.8	1.6				ug/L	520809	Standard
	As	75	3475.1	1.0	**2.8171**	0.043	1.5	ug/L	-52	Standard
	Se	82	859.6	2.0	**6.5725**	0.024	0.4	ug/L	17	Standard
	Se-1	77	1345.7	4.1	**14.8113**	0.393	2.7	ug/L	56	Standard
>	Ga	71	66.7	11.5				mg/L	25	Standard
	Rb	85	4762.4	2.0				ug/L	28	Standard
	Y	89	458548.0	1.5				ug/L	447395	Standard
>	Rh	103	130.0	17.6				ug/L	15	Standard
	Mo	98	5253.1	0.6	**1.7250**	0.023	1.4	ug/L	113	Standard
	Ag	107	143.3	4.2	**0.0072**	0.001	7.4	ug/L	108	Standard
	Cd	111	26.0	42.6	**0.0090**	0.005	53.4	mg/L	3	Standard
	Cd	114	74.8	31.1	**0.0133**	0.004	31.5	ug/L	20	Standard
>	In	115	621514.7	1.7				ug/L	625728	Standard
	Sn	118	2120.1	10.2	**0.2472**	0.030	12.0	ug/L	568	Standard
	Sb	123	722.8	13.7	**0.1069**	0.018	16.5	ug/L	612	Standard
	Ba	135	16530.7	1.8	**7.6319**	0.034	0.4	ug/L	21	Standard
	Ce	140	651.7	0.4				ug/L	245	Standard
>	Tb	159	970516.7	2.5				ug/L	950397	Standard
	Ho	165	30.0	28.9				ug/L	7	Standard
	Tl	203	115.3	7.9	**0.0125**	0.001	8.0	ug/L	15	Standard
	Tl	205	93.3	21.7	**0.0024**	0.003	115.8	ug/L	13	Standard
	Pb	206	443.0	3.9	**0.0372**	0.003	8.7	ug/L	264	Standard
	Pb	207	377.3	5.1	**0.0298**	0.003	10.5	ug/L	222	Standard
	Pb	208	1645.4	1.3	**0.0327**	0.002	5.5	ug/L	959	Standard
	U	238	38430.4	2.4	**4.9290**	0.066	1.3	ug/L	9	Standard
>	Bi	209	534585.3	1.1				ug/L	552821	Standard

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Na	23	3.3	173.2	**9.3062**	16.110	173.1	mg/L	2	Standard
Mg	24	132828.1	1.2	**141.6540**	4.533	3.2	mg/L	55	Standard
K	39	191.7	1.5	**0.5400**	0.021	3.8	mg/L	28	Standard
Ca	43	260.0	27.1	**19.0243**	5.272	27.7	mg/L	27	Standard
Fe	54	173.3	10.7	**0.0254**	0.016	61.2	mg/L	147	Standard
Fe	57	418.3	15.9	**0.3725**	0.215	57.6	mg/L	268	Standard
> **Sc-1**	45	45105.4	2.6				mg/L	41174	Standard
Cl	35	100939.1	0.9				ug/L	69550	Standard
Kr	83	1.0	0.0				ug/L	1	Standard
Br	81	47925.8	4.8				ug/L	1950	Standard
P	31	29869.4	2.0				ug/L	21156	Standard
S	34	3397.0	1.1				ug/L	3419	Standard
Sr	88	423.3	25.1				ug/L	72	Standard
C	12	363.3	14.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	17	Standard
Dy	164	21.9	26.4				mg/L	16	Standard
Ho-1	165	30.0	28.9				mg/L	7	Standard
Er	166	30.0	0.0				mg/L	7	Standard
I	127	41419.9	2.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.945	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.563	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.327
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.701
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606141709
Sample Date/Time: Friday, July 01, 2016 11:53:49
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	89000.7	1.7				ug/L	76456	Standard
	Be	9	21.7	53.3	**-0.0032**	0.009	283.0	ug/L	20	Standard
	Al	27	81398.6	19.6	**0.3975**	0.073	18.3	ug/L	1307	Standard
	Sc	45	44555.4	0.6				ug/L	41174	Standard
	Ti	47	68.3	11.1	**0.1083**	0.021	19.5	ug/L	27	Standard
	V	51	3436.2	9.0	**0.1857**	0.034	18.2	ug/L	1434	Standard
	Cr	52	29812.6	1.5	**2.4193**	0.055	2.3	ug/L	7733	Standard
	Cr	53	3683.8	3.4	**2.9342**	0.118	4.0	ug/L	442	Standard
	Mn	55	6681.5	2.0	**0.7101**	0.015	2.0	ug/L	723	Standard
	Co	59	555.0	20.9	**0.0372**	0.014	37.4	ug/L	217	Standard
	Ni	60	3463.7	2.0	**1.3816**	0.031	2.2	ug/L	304	Standard
	Cu	65	1056.0	4.0	**0.4017**	0.019	4.6	ug/L	181	Standard
	Zn	66	4593.4	1.7	**3.2666**	0.053	1.6	ug/L	215	Standard
>	Ge	72	566488.4	0.2				ug/L	520809	Standard
	As	75	-5.4	928.8	**0.0411**	0.038	91.4	ug/L	-52	Standard
	Se	82	29.8	40.3	**0.0905**	0.087	96.5	ug/L	17	Standard
	Se-1	77	89.0	15.9	**0.2724**	0.151	55.6	ug/L	56	Standard
>	Ga	71	38.3	15.1				mg/L	25	Standard
	Rb	85	258.3	31.9				ug/L	28	Standard
	Y	89	491649.6	0.6				ug/L	447395	Standard
>	Rh	103	20.0	0.0				ug/L	15	Standard
	Mo	98	1080.6	3.0	**0.3054**	0.011	3.5	ug/L	113	Standard
	Ag	107	233.3	81.3	**0.0171**	0.024	142.6	ug/L	108	Standard
	Cd	111	62.5	42.8	**0.0227**	0.011	47.4	mg/L	3	Standard
	Cd	114	173.3	77.7	**0.0281**	0.022	77.8	ug/L	20	Standard
>	In	115	678768.0	0.3				ug/L	625728	Standard
	Sn	118	3542.1	5.1	**0.4232**	0.027	6.3	ug/L	568	Standard
	Sb	123	458.8	15.3	**0.0481**	0.013	26.4	ug/L	612	Standard
	Ba	135	1179.0	5.3	**0.4817**	0.027	5.6	ug/L	21	Standard
	Ce	140	250.0	8.7				ug/L	245	Standard
>	Tb	159	1017740.7	0.9				ug/L	950397	Standard
	Ho	165	16.7	62.4				ug/L	7	Standard
	Tl	203	186.0	120.6	**0.0185**	0.023	124.9	ug/L	15	Standard
	Tl	205	108.3	94.3	**0.0029**	0.012	410.9	ug/L	13	Standard
	Pb	206	582.3	26.2	**0.0521**	0.024	46.8	ug/L	264	Standard
	Pb	207	512.3	24.2	**0.0467**	0.022	46.6	ug/L	222	Standard
	Pb	208	1988.1	15.4	**0.0399**	0.013	32.1	ug/L	959	Standard
	U	238	126.0	91.3	**0.0142**	0.013	92.3	ug/L	9	Standard
>	Bi	209	592807.4	1.2				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	260.0	26.4	**0.2207**	0.075	34.1	mg/L	55	Standard
K	39	20.0	25.0	**-0.0603**	0.018	29.6	mg/L	28	Standard
Ca	43	25.0	40.0	**-0.3533**	0.844	239.0	mg/L	27	Standard
Fe	54	209.5	1.2	**0.0530**	0.003	4.8	mg/L	147	Standard
Fe	57	231.7	15.2	**-0.1465**	0.097	65.9	mg/L	268	Standard
Sc-1	45	44555.4	0.6				mg/L	41174	Standard
Cl	35	92666.6	2.2				ug/L	69550	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	3473.7	14.7				ug/L	1950	Standard
P	31	23892.2	1.7				ug/L	21156	Standard
S	34	3687.1	4.5				ug/L	3419	Standard
Sr	88	46.7	37.6				ug/L	72	Standard
C	12	203.3	12.4				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	17	Standard
Dy	164	32.1	49.0				mg/L	16	Standard
Ho-1	165	16.7	62.4				mg/L	7	Standard
Er	166	26.7	43.3				mg/L	7	Standard
I	127	2500.2	19.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.408	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.771	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		108.477
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		107.233
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606144101
Sample Date/Time: Friday, July 01, 2016 11:57:01
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	90118.9	1.7				ug/L	76456	Standard
	Be	9	590.0	6.6	**0.4275**	0.033	7.7	ug/L	20	Standard
	Al	27	41637732.7	0.8	**206.3623**	2.003	1.0	ug/L	1307	Standard
	Sc	45	52748.3	1.3				ug/L	41174	Standard
	Ti	47	25849.4	0.9	**75.9425**	0.582	0.8	ug/L	27	Standard
	V	51	119191.4	0.7	**13.6962**	0.128	0.9	ug/L	1434	Standard
	Cr	52	206171.6	0.2	**23.4624**	0.147	0.6	ug/L	7733	Standard
	Cr	53	26030.7	3.1	**24.2644**	0.827	3.4	ug/L	442	Standard
	Mn	55	3362426.1	1.3	**425.5410**	6.574	1.5	ug/L	723	Standard
	Co	59	45394.2	0.9	**5.6490**	0.060	1.1	ug/L	217	Standard
	Ni	60	38170.7	0.8	**17.4748**	0.075	0.4	ug/L	304	Standard
	Cu	65	32375.9	0.9	**15.1289**	0.102	0.7	ug/L	181	Standard
	Zn	66	132720.1	0.4	**103.6234**	0.326	0.3	ug/L	215	Standard
>	Ge	72	543517.2	0.4				ug/L	520809	Standard
	As	75	40511.0	0.4	**31.4895**	0.240	0.8	ug/L	-52	Standard
	Se	82	271.3	7.7	**1.9305**	0.150	7.7	ug/L	17	Standard
	Se-1	77	159.7	0.7	**1.1051**	0.008	0.7	ug/L	56	Standard
>	Ga	71	10717.1	0.7				mg/L	25	Standard
	Rb	85	127736.4	2.6				ug/L	28	Standard
	Y	89	566400.0	1.2				ug/L	447395	Standard
>	Rh	103	230.0	10.0				ug/L	15	Standard
	Mo	98	19958.9	0.3	**6.3798**	0.036	0.6	ug/L	113	Standard
	Ag	107	307.3	4.7	**0.0287**	0.002	7.3	ug/L	108	Standard
	Cd	111	352.1	11.3	**0.1461**	0.017	11.5	mg/L	3	Standard
	Cd	114	941.3	14.8	**0.1602**	0.023	14.2	ug/L	20	Standard
>	In	115	644859.8	0.7				ug/L	625728	Standard
	Sn	118	2065.1	2.2	**0.2271**	0.006	2.7	ug/L	568	Standard
	Sb	123	1536.5	9.5	**0.2547**	0.026	10.2	ug/L	612	Standard
	Ba	135	755795.9	0.3	**337.0929**	2.903	0.9	ug/L	21	Standard
	Ce	140	578983.3	0.3				ug/L	245	Standard
>	Tb	159	997623.6	0.4				ug/L	950397	Standard
	Ho	165	8542.4	1.8				ug/L	7	Standard
	Tl	203	679.7	2.4	**0.0742**	0.002	2.6	ug/L	15	Standard
	Tl	205	551.7	3.8	**0.0587**	0.002	3.1	ug/L	13	Standard
	Pb	206	82465.5	0.5	**14.3726**	0.198	1.4	ug/L	264	Standard
	Pb	207	67377.8	0.6	**12.9242**	0.183	1.4	ug/L	222	Standard
	Pb	208	291536.5	0.2	**13.6926**	0.174	1.3	ug/L	959	Standard
	U	238	4078.5	1.0	**0.5004**	0.006	1.2	ug/L	9	Standard
>	Bi	209	558632.4	1.1				ug/L	552821	Standard

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Na	23	6.7	43.3	**15.4842**	6.494	41.9	mg/L	2	Standard
Mg	24	15246.0	1.4	**13.8434**	0.267	1.9	mg/L	55	Standard
K	39	708.3	3.5	**1.9891**	0.079	4.0	mg/L	28	Standard
Ca	43	650.0	13.5	**43.6069**	5.619	12.9	mg/L	27	Standard
Fe	54	24640.5	1.6	**14.9863**	0.360	2.4	mg/L	147	Standard
Fe	57	6984.9	0.7	**15.9501**	0.213	1.3	mg/L	268	Standard
Sc-1	45	52748.3	1.3				mg/L	41174	Standard
Cl	35	77949.4	2.2				ug/L	69550	Standard
Kr	83	4.0	50.0				ug/L	1	Standard
Br	81	47491.0	0.5				ug/L	1950	Standard
P	31	44155.9	1.6				ug/L	21156	Standard
S	34	4003.9	3.1				ug/L	3419	Standard
Sr	88	953.4	8.4				ug/L	72	Standard
C	12	680.0	10.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	56.8				mg/L	17	Standard
Dy	164	14685.5	3.1				mg/L	16	Standard
Ho-1	165	8542.4	1.8				mg/L	7	Standard
Er	166	7695.3	3.1				mg/L	7	Standard
I	127	857640.2	8.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		117.871	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		104.360	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.058
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.051
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606144102
Sample Date/Time: Friday, July 01, 2016 12:00:12
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	98658.5	1.5				ug/L	76456	Standard
	Be	9	2670.2	2.5	**1.8290**	0.053	2.9	ug/L	20	Standard
	Al	27	100018655.9	1.5	**452.7643**	1.271	0.3	ug/L	1307	Standard
	Sc	45	67269.1	3.4				ug/L	41174	Standard
	Ti	47	65558.9	1.5	**191.1007**	3.376	1.8	ug/L	27	Standard
	V	51	394103.6	0.8	**45.3542**	0.603	1.3	ug/L	1434	Standard
	Cr	52	244910.5	0.4	**27.8063**	0.223	0.8	ug/L	7733	Standard
	Cr	53	30011.4	1.8	**27.7958**	0.566	2.0	ug/L	442	Standard
	Mn	55	9446087.0	0.8	**1185.4895**	15.339	1.3	ug/L	723	Standard
	Co	59	127992.0	0.5	**15.8451**	0.159	1.0	ug/L	217	Standard
	Ni	60	80262.0	0.9	**36.5997**	0.485	1.3	ug/L	304	Standard
	Cu	65	41760.1	1.2	**19.3697**	0.328	1.7	ug/L	181	Standard
	Zn	66	117095.1	0.6	**90.6239**	0.738	0.8	ug/L	215	Standard
>	Ge	72	548186.8	0.5				ug/L	520809	Standard
	As	75	12213.4	1.0	**9.4446**	0.140	1.5	ug/L	-52	Standard
	Se	82	168.5	1.4	**1.1404**	0.019	1.7	ug/L	17	Standard
	Se-1	77	183.7	6.1	**1.3567**	0.128	9.4	ug/L	56	Standard
>	Ga	71	38156.3	0.9				mg/L	25	Standard
	Rb	85	401776.2	1.3				ug/L	28	Standard
	Y	89	977933.0	0.9				ug/L	447395	Standard
>	Rh	103	285.0	6.1				ug/L	15	Standard
	Mo	98	2398.4	0.8	**0.7441**	0.003	0.4	ug/L	113	Standard
	Ag	107	404.7	5.9	**0.0417**	0.003	8.1	ug/L	108	Standard
	Cd	111	528.3	1.5	**0.2199**	0.003	1.2	mg/L	3	Standard
	Cd	114	1302.9	4.8	**0.2213**	0.008	3.8	ug/L	20	Standard
>	In	115	646109.7	1.1				ug/L	625728	Standard
	Sn	118	1073.4	7.7	**0.0773**	0.012	15.1	ug/L	568	Standard
	Sb	123	1069.4	22.8	**0.1664**	0.044	26.2	ug/L	612	Standard
	Ba	135	1753079.8	0.5	**780.4145**	5.897	0.8	ug/L	21	Standard
	Ce	140	2444826.3	0.9				ug/L	245	Standard
>	Tb	159	1048030.7	0.8				ug/L	950397	Standard
	Ho	165	43214.9	0.3				ug/L	7	Standard
	Tl	203	1815.1	1.2	**0.2022**	0.002	1.2	ug/L	15	Standard
	Tl	205	1641.8	6.8	**0.1969**	0.014	6.9	ug/L	13	Standard
	Pb	206	125036.8	0.6	**22.1250**	0.076	0.3	ug/L	264	Standard
	Pb	207	102892.9	0.5	**20.0422**	0.120	0.6	ug/L	222	Standard
	Pb	208	445404.9	0.2	**21.2431**	0.093	0.4	ug/L	959	Standard
	U	238	8589.4	1.3	**1.0692**	0.015	1.4	ug/L	9	Standard
>	Bi	209	550757.7	0.3				ug/L	552821	Standard

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Na	23	15.0	33.3	**27.3614**	8.722	31.9	mg/L	2	Standard
Mg	24	11512.7	3.2	**8.1734**	0.184	2.3	mg/L	55	Standard
K	39	1368.4	5.6	**3.0793**	0.098	3.2	mg/L	28	Standard
Ca	43	1295.1	4.3	**69.6682**	4.720	6.8	mg/L	27	Standard
Fe	54	38707.5	2.1	**18.4898**	0.545	2.9	mg/L	147	Standard
Fe	57	11109.1	1.4	**20.0998**	0.536	2.7	mg/L	268	Standard
> **Sc-1**	45	67269.1	3.4				mg/L	41174	Standard
Cl	35	76892.0	1.5				ug/L	69550	Standard
Kr	83	0.0					ug/L	1	Standard
Br	81	13365.9	1.5				ug/L	1950	Standard
P	31	63609.9	1.5				ug/L	21156	Standard
S	34	3752.1	6.7				ug/L	3419	Standard
Sr	88	1298.4	6.6				ug/L	72	Standard
C	12	780.0	10.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	20.4				mg/L	17	Standard
Dy	164	72319.7	1.0				mg/L	16	Standard
Ho-1	165	43214.9	0.3				mg/L	7	Standard
Er	166	38789.6	1.4				mg/L	7	Standard
I	127	200464.2	1.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.040	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.257	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.257	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.627	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ti 47 Upper, S, EEE	Ti	47	

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Mn 55 Upper, S, EEE	Mn	55
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606144201 WG574416-02
Sample Date/Time: Friday, July 01, 2016 12:03:24
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	91136.7	2.7				ug/L	76456	Standard
	Be	9	201.7	10.3	**0.1314**	0.018	13.5	ug/L	20	Standard
	Al	27	21905405.8	1.2	**107.3706**	1.869	1.7	ug/L	1307	Standard
	Sc	45	50086.0	0.8				ug/L	41174	Standard
	Ti	47	9316.5	1.4	**26.0675**	0.608	2.3	ug/L	27	Standard
	V	51	52523.0	0.3	**5.6447**	0.076	1.3	ug/L	1434	Standard
	Cr	52	28573.6	1.1	**2.2609**	0.041	1.8	ug/L	7733	Standard
	Cr	53	3023.6	5.3	**2.3192**	0.157	6.8	ug/L	442	Standard
	Mn	55	526886.3	1.1	**63.5454**	0.695	1.1	ug/L	723	Standard
	Co	59	12298.0	1.4	**1.4386**	0.020	1.4	ug/L	217	Standard
	Ni	60	9400.9	1.0	**3.9901**	0.052	1.3	ug/L	304	Standard
	Cu	65	4207.6	2.8	**1.8116**	0.065	3.6	ug/L	181	Standard
	Zn	66	23172.4	0.3	**17.1155**	0.171	1.0	ug/L	215	Standard
>	Ge	72	569574.4	1.1				ug/L	520809	Standard
	As	75	2039.6	1.1	**1.5560**	0.025	1.6	ug/L	-52	Standard
	Se	82	85.8	3.3	**0.4942**	0.015	3.0	ug/L	17	Standard
	Se-1	77	88.7	8.5	**0.2643**	0.088	33.1	ug/L	56	Standard
>	Ga	71	3267.0	3.2				mg/L	25	Standard
	Rb	85	51683.0	1.3				ug/L	28	Standard
	Y	89	529527.6	0.3				ug/L	447395	Standard
>	Rh	103	150.0	5.8				ug/L	15	Standard
	Mo	98	1541.7	1.1	**0.4475**	0.001	0.3	ug/L	113	Standard
	Ag	107	153.0	7.4	**0.0069**	0.002	23.0	ug/L	108	Standard
	Cd	111	40.7	6.3	**0.0140**	0.001	8.1	mg/L	3	Standard
	Cd	114	102.3	14.8	**0.0166**	0.003	15.4	ug/L	20	Standard
>	In	115	676532.0	0.8				ug/L	625728	Standard
	Sn	118	971.7	4.9	**0.0555**	0.008	14.3	ug/L	568	Standard
	Sb	123	639.0	14.8	**0.0807**	0.018	21.8	ug/L	612	Standard
	Ba	135	197467.2	0.8	**83.9345**	0.680	0.8	ug/L	21	Standard
	Ce	140	158462.8	1.7				ug/L	245	Standard
>	Tb	159	1025960.2	1.0				ug/L	950397	Standard
	Ho	165	2715.2	3.4				ug/L	7	Standard
	Tl	203	280.3	9.2	**0.0292**	0.003	9.9	ug/L	15	Standard
	Tl	205	271.7	10.1	**0.0229**	0.003	13.4	ug/L	13	Standard
	Pb	206	9533.7	0.7	**1.5691**	0.011	0.7	ug/L	264	Standard
	Pb	207	7883.1	1.1	**1.4223**	0.009	0.6	ug/L	222	Standard
	Pb	208	34084.4	0.9	**1.5063**	0.007	0.5	ug/L	959	Standard
	U	238	20271.2	0.7	**2.4081**	0.030	1.3	ug/L	9	Standard
>	Bi	209	577230.0	0.8				ug/L	552821	Standard

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Na	23	10.0	86.6	**24.6403**	21.507	87.3	mg/L	2	Standard
Mg	24	4422.3	4.5	**4.1870**	0.202	4.8	mg/L	55	Standard
K	39	186.7	8.6	**0.4573**	0.052	11.3	mg/L	28	Standard
Ca	43	566.7	10.9	**39.8634**	4.346	10.9	mg/L	27	Standard
Fe	54	2666.0	2.2	**1.6199**	0.041	2.5	mg/L	147	Standard
Fe	57	1331.7	5.5	**2.5595**	0.178	6.9	mg/L	268	Standard
> **Sc-1**	45	50086.0	0.8				mg/L	41174	Standard
Cl	35	83929.2	1.1				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	13155.7	1.8				ug/L	1950	Standard
P	31	31337.4	1.4				ug/L	21156	Standard
S	34	3528.7	1.1				ug/L	3419	Standard
Sr	88	476.7	5.8				ug/L	72	Standard
C	12	400.0	7.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	17	Standard
Dy	164	4673.5	1.6				mg/L	16	Standard
Ho-1	165	2715.2	3.4				mg/L	7	Standard
Er	166	2656.9	8.5				mg/L	7	Standard
I	127	16687.6	14.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.202	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.363	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.119
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.415
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606144202
Sample Date/Time: Friday, July 01, 2016 12:06:35
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	90507.9	1.9				ug/L	76456	Standard
	Be	9	248.3	5.8	**0.1675**	0.008	4.9	ug/L	20	Standard
	Al	27	22277088.2	0.8	**109.9375**	1.745	1.6	ug/L	1307	Standard
	Sc	45	50101.1	3.7				ug/L	41174	Standard
	Ti	47	12264.6	1.2	**34.7196**	0.584	1.7	ug/L	27	Standard
	V	51	62744.3	1.8	**6.8585**	0.146	2.1	ug/L	1434	Standard
	Cr	52	32463.4	1.9	**2.7415**	0.091	3.3	ug/L	7733	Standard
	Cr	53	3775.5	3.5	**3.0371**	0.138	4.6	ug/L	442	Standard
	Mn	55	731304.2	2.1	**89.2163**	2.199	2.5	ug/L	723	Standard
	Co	59	14984.4	2.2	**1.7791**	0.048	2.7	ug/L	217	Standard
	Ni	60	11028.3	1.8	**4.7605**	0.068	1.4	ug/L	304	Standard
	Cu	65	5131.2	1.5	**2.2507**	0.042	1.9	ug/L	181	Standard
	Zn	66	19672.8	1.3	**14.6652**	0.250	1.7	ug/L	215	Standard
>	Ge	72	563354.5	0.6				ug/L	520809	Standard
	As	75	2285.7	4.9	**1.7571**	0.090	5.1	ug/L	-52	Standard
	Se	82	78.7	24.0	**0.4498**	0.141	31.2	ug/L	17	Standard
	Se-1	77	96.3	4.2	**0.3571**	0.042	11.8	ug/L	56	Standard
>	Ga	71	4088.9	0.8				mg/L	25	Standard
	Rb	85	66167.5	0.6				ug/L	28	Standard
	Y	89	527047.3	1.0				ug/L	447395	Standard
>	Rh	103	133.3	20.7				ug/L	15	Standard
	Mo	98	1560.3	2.2	**0.4569**	0.008	1.8	ug/L	113	Standard
	Ag	107	236.0	37.0	**0.0178**	0.011	63.3	ug/L	108	Standard
	Cd	111	70.9	65.6	**0.0263**	0.019	71.1	mg/L	3	Standard
	Cd	114	182.9	70.7	**0.0299**	0.021	70.2	ug/L	20	Standard
>	In	115	671365.1	1.0				ug/L	625728	Standard
	Sn	118	1011.7	2.2	**0.0623**	0.004	5.8	ug/L	568	Standard
	Sb	123	671.0	17.2	**0.0874**	0.022	24.8	ug/L	612	Standard
	Ba	135	208248.7	0.6	**89.2003**	0.372	0.4	ug/L	21	Standard
	Ce	140	195369.9	1.1				ug/L	245	Standard
>	Tb	159	1017569.8	0.3				ug/L	950397	Standard
	Ho	165	3448.7	3.2				ug/L	7	Standard
	Tl	203	464.3	26.6	**0.0488**	0.013	26.2	ug/L	15	Standard
	Tl	205	373.3	2.0	**0.0351**	0.001	2.1	ug/L	13	Standard
	Pb	206	11404.0	0.3	**1.8871**	0.014	0.7	ug/L	264	Standard
	Pb	207	9244.8	0.8	**1.6776**	0.026	1.6	ug/L	222	Standard
	Pb	208	39660.1	0.9	**1.7621**	0.018	1.0	ug/L	959	Standard
	U	238	20504.2	1.2	**2.4376**	0.012	0.5	ug/L	9	Standard
>	Bi	209	576748.8	0.8				ug/L	552821	Standard

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Na	23	8.3	34.6	**20.5955**	7.569	36.8	mg/L	2	Standard
Mg	24	4662.4	4.9	**4.4148**	0.085	1.9	mg/L	55	Standard
K	39	218.3	22.9	**0.5540**	0.135	24.3	mg/L	28	Standard
Ca	43	601.7	7.9	**42.4925**	3.322	7.8	mg/L	27	Standard
Fe	54	3310.4	1.9	**2.0364**	0.082	4.1	mg/L	147	Standard
Fe	57	1525.1	5.8	**3.0549**	0.352	11.5	mg/L	268	Standard
> **Sc-1**	45	50101.1	3.7				mg/L	41174	Standard
Cl	35	83923.1	0.7				ug/L	69550	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	11030.7	1.9				ug/L	1950	Standard
P	31	32000.4	1.7				ug/L	21156	Standard
S	34	3522.1	3.8				ug/L	3419	Standard
Sr	88	531.7	5.7				ug/L	72	Standard
C	12	333.3	12.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	17	Standard
Dy	164	5934.4	7.8				mg/L	16	Standard
Ho-1	165	3448.7	3.2				mg/L	7	Standard
Er	166	3343.7	6.8				mg/L	7	Standard
I	127	14929.0	2.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.379	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.169	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.293
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.328
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606144203S WG574416-08
Sample Date/Time: Friday, July 01, 2016 12:09:47
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90030.2	2.8				ug/L	76456	Standard
	Be	9	67451.5	0.8	**51.1736**	1.267	2.5	ug/L	20	Standard
	Al	27	22083553.0	1.2	**109.5762**	1.952	1.8	ug/L	1307	Standard
	Sc	45	48706.5	1.6				ug/L	41174	Standard
	Ti	47	11744.6	3.0	**33.6397**	0.840	2.5	ug/L	27	Standard
	V	51	504596.4	0.3	**57.2364**	0.479	0.8	ug/L	1434	Standard
	Cr	52	455560.7	0.5	**51.7411**	0.108	0.2	ug/L	7733	Standard
	Cr	53	56769.5	0.3	**52.1372**	0.385	0.7	ug/L	442	Standard
	Mn	55	1036346.8	0.7	**127.9850**	0.471	0.4	ug/L	723	Standard
	Co	59	423691.1	0.7	**51.7179**	0.252	0.5	ug/L	217	Standard
	Ni	60	117301.3	0.2	**52.7412**	0.343	0.7	ug/L	304	Standard
	Cu	65	109232.0	1.3	**50.0075**	0.589	1.2	ug/L	181	Standard
	Zn	66	89717.5	1.0	**68.3316**	0.407	0.6	ug/L	215	Standard
>	**Ge**	72	556663.9	0.5				ug/L	520809	Standard
	As	75	68119.8	0.9	**51.6696**	0.438	0.8	ug/L	-52	Standard
	Se	82	6698.0	0.6	**49.4767**	0.038	0.1	ug/L	17	Standard
	Se-1	77	4484.0	0.7	**48.3919**	0.526	1.1	ug/L	56	Standard
>	**Ga**	71	4812.4	3.6				mg/L	25	Standard
	Rb	85	61444.3	0.8				ug/L	28	Standard
	Y	89	517239.3	0.8				ug/L	447395	Standard
>	**Rh**	103	106.7	32.9				ug/L	15	Standard
	Mo	98	1731.4	0.3	**0.5186**	0.008	1.5	ug/L	113	Standard
	Ag	107	354175.3	0.9	**46.7205**	0.584	1.2	ug/L	108	Standard
	Cd	111	119010.3	1.4	**48.9848**	0.748	1.5	mg/L	3	Standard
	Cd	114	293416.8	0.7	**48.7814**	0.554	1.1	ug/L	20	Standard
>	**In**	115	660339.6	1.1				ug/L	625728	Standard
	Sn	118	1475.1	6.5	**0.1329**	0.012	9.2	ug/L	568	Standard
	Sb	123	188284.4	1.5	**34.4893**	0.374	1.1	ug/L	612	Standard
	Ba	135	310505.8	0.4	**135.2331**	0.887	0.7	ug/L	21	Standard
	Ce	140	169550.1	0.7				ug/L	245	Standard
>	**Tb**	159	1009819.6	1.8				ug/L	950397	Standard
	Ho	165	3057.0	3.5				ug/L	7	Standard
	Tl	203	459336.1	0.3	**49.1469**	0.484	1.0	ug/L	15	Standard
	Tl	205	419582.5	1.2	**50.5538**	1.161	2.3	ug/L	13	Standard
	Pb	206	306250.8	0.1	**51.9221**	0.623	1.2	ug/L	264	Standard
	Pb	207	267507.5	0.3	**49.9387**	0.751	1.5	ug/L	222	Standard
	Pb	208	1116297.0	0.4	**51.0219**	0.722	1.4	ug/L	959	Standard
	U	238	433722.1	0.8	**51.6863**	1.022	2.0	ug/L	9	Standard
>	**Bi**	209	575528.3	1.2				ug/L	552821	Standard

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Na	23	16.7	75.5	**41.7692**	31.215	74.7	mg/L	2	Standard
Mg	24	4830.8	1.7	**4.7112**	0.123	2.6	mg/L	55	Standard
K	39	223.3	5.2	**0.5924**	0.027	4.5	mg/L	28	Standard
Ca	43	666.7	3.0	**48.7692**	1.740	3.6	mg/L	27	Standard
Fe	54	3420.8	4.4	**2.1691**	0.101	4.6	mg/L	147	Standard
Fe	57	1528.4	2.8	**3.1654**	0.056	1.8	mg/L	268	Standard
Sc-1	45	48706.5	1.6				mg/L	41174	Standard
Cl	35	82992.7	2.0				ug/L	69550	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	7521.9	4.9				ug/L	1950	Standard
P	31	32994.2	3.4				ug/L	21156	Standard
S	34	3745.5	4.1				ug/L	3419	Standard
Sr	88	541.7	13.3				ug/L	72	Standard
C	12	350.0	24.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	62.5				mg/L	17	Standard
Dy	164	4986.9	2.7				mg/L	16	Standard
Ho-1	165	3057.0	3.5				mg/L	7	Standard
Er	166	2656.9	3.8				mg/L	7	Standard
I	127	14203.3	3.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.755	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.884	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	105.531	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	104.108	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144204SD WG574416-09
Sample Date/Time: Friday, July 01, 2016 12:12:58
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	90070.3	0.3				ug/L	76456	Standard
	Be	9	67068.2	2.3	50.8355	1.023	2.0	ug/L	20	Standard
	Al	27	22820326.8	1.6	113.1467	1.840	1.6	ug/L	1307	Standard
	Sc	45	48614.5	1.1				ug/L	41174	Standard
	Ti	47	12429.8	0.9	35.6977	0.390	1.1	ug/L	27	Standard
	V	51	500213.8	0.9	56.8738	0.256	0.4	ug/L	1434	Standard
	Cr	52	457920.4	0.8	52.1452	0.679	1.3	ug/L	7733	Standard
	Cr	53	55433.0	3.5	51.0119	1.142	2.2	ug/L	442	Standard
	Mn	55	1032001.7	0.7	127.7596	0.851	0.7	ug/L	723	Standard
	Co	59	426181.5	0.6	52.1492	0.363	0.7	ug/L	217	Standard
	Ni	60	115745.8	0.4	52.1679	0.569	1.1	ug/L	304	Standard
	Cu	65	108435.6	0.5	49.7650	0.481	1.0	ug/L	181	Standard
	Zn	66	83122.4	0.9	63.4509	0.540	0.9	ug/L	215	Standard
>	Ge	72	555340.6	1.3				ug/L	520809	Standard
	As	75	68386.4	1.0	51.9966	0.210	0.4	ug/L	-52	Standard
	Se	82	6617.0	1.4	48.9951	0.511	1.0	ug/L	17	Standard
	Se-1	77	4553.0	1.4	49.2655	0.470	1.0	ug/L	56	Standard
>	Ga	71	4989.2	4.2				mg/L	25	Standard
	Rb	85	63782.3	0.6				ug/L	28	Standard
	Y	89	508585.3	3.2				ug/L	447395	Standard
>	Rh	103	155.0	16.8				ug/L	15	Standard
	Mo	98	1690.9	2.2	0.5065	0.021	4.1	ug/L	113	Standard
	Ag	107	359804.6	1.4	47.4968	0.270	0.6	ug/L	108	Standard
	Cd	111	119520.8	0.7	49.2344	0.563	1.1	mg/L	3	Standard
	Cd	114	293080.3	1.6	48.7653	1.035	2.1	ug/L	20	Standard
>	In	115	659870.1	1.8				ug/L	625728	Standard
	Sn	118	1175.0	5.3	0.0889	0.010	10.9	ug/L	568	Standard
	Sb	123	180927.8	2.0	33.1631	0.062	0.2	ug/L	612	Standard
	Ba	135	313663.8	0.6	136.7260	2.307	1.7	ug/L	21	Standard
	Ce	140	181386.0	0.5				ug/L	245	Standard
>	Tb	159	1008393.6	0.8				ug/L	950397	Standard
	Ho	165	2945.3	1.9				ug/L	7	Standard
	Tl	203	461671.8	0.2	49.9891	0.298	0.6	ug/L	15	Standard
	Tl	205	421242.1	0.2	51.3576	0.369	0.7	ug/L	13	Standard
	Pb	206	307820.1	0.5	52.8142	0.466	0.9	ug/L	264	Standard
	Pb	207	267725.9	1.2	50.5746	0.254	0.5	ug/L	222	Standard
	Pb	208	1118569.9	0.5	51.7383	0.472	0.9	ug/L	959	Standard
	U	238	435363.6	0.2	52.5003	0.385	0.7	ug/L	9	Standard
>	Bi	209	568683.1	0.8				ug/L	552821	Standard

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Na	23	10.0	50.0	**25.2590**	12.492	49.5	mg/L	2	Standard
Mg	24	4682.4	0.4	**4.5730**	0.070	1.5	mg/L	55	Standard
K	39	196.7	12.8	**0.5079**	0.086	17.0	mg/L	28	Standard
Ca	43	620.0	2.8	**45.2717**	1.537	3.4	mg/L	27	Standard
Fe	54	3578.4	8.9	**2.2770**	0.195	8.6	mg/L	147	Standard
Fe	57	1561.7	1.9	**3.2607**	0.102	3.1	mg/L	268	Standard
Sc-1	45	48614.5	1.1				mg/L	41174	Standard
Cl	35	83140.8	0.7				ug/L	69550	Standard
Kr	83	1.3	86.6				ug/L	1	Standard
Br	81	7508.5	3.6				ug/L	1950	Standard
P	31	33216.4	1.3				ug/L	21156	Standard
S	34	3633.8	2.2				ug/L	3419	Standard
Sr	88	566.7	11.0				ug/L	72	Standard
C	12	476.7	6.7				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	62.5				mg/L	17	Standard
Dy	164	4984.3	2.5				mg/L	16	Standard
Ho-1	165	2945.3	1.9				mg/L	7	Standard
Er	166	2850.3	2.1				mg/L	7	Standard
I	127	15054.2	4.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.807	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.630	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	105.456
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.869
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 12:16:11
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	87445.1	3.4				ug/L	76456	Standard
	Be	9	64070.2	0.9	**50.0545**	1.445	2.9	ug/L	20	Standard
	Al	27	9240352.4	0.8	**47.2275**	1.909	4.0	ug/L	1307	Standard
	Sc	45	44832.9	2.4				ug/L	41174	Standard
	Ti	47	34259.7	1.0	**97.1606**	1.714	1.8	ug/L	27	Standard
	V	51	451230.5	0.6	**50.5628**	0.294	0.6	ug/L	1434	Standard
	Cr	52	441549.7	0.7	**49.5261**	0.488	1.0	ug/L	7733	Standard
	Cr	53	54047.9	0.8	**49.0333**	0.166	0.3	ug/L	442	Standard
	Mn	55	409600.5	0.8	**49.9366**	0.757	1.5	ug/L	723	Standard
	Co	59	429332.5	1.0	**51.7968**	0.540	1.0	ug/L	217	Standard
	Ni	60	111250.6	0.3	**49.4298**	0.556	1.1	ug/L	304	Standard
	Cu	65	109537.2	0.3	**49.5637**	0.351	0.7	ug/L	181	Standard
	Zn	66	65566.2	0.7	**49.3061**	0.180	0.4	ug/L	215	Standard
>	Ge	72	563235.2	0.9				ug/L	520809	Standard
	As	75	66627.6	0.4	**49.9511**	0.273	0.5	ug/L	-52	Standard
	Se	82	6922.5	0.6	**50.5422**	0.157	0.3	ug/L	17	Standard
	Se-1	77	4596.0	1.5	**49.0283**	0.390	0.8	ug/L	56	Standard
>	Ga	71	40.0	21.7				mg/L	25	Standard
	Rb	85	993.4	8.3				ug/L	28	Standard
	Y	89	482225.9	1.1				ug/L	447395	Standard
>	Rh	103	20.0	66.1				ug/L	15	Standard
	Mo	98	318941.8	1.3	**98.3261**	1.568	1.6	ug/L	113	Standard
	Ag	107	382282.6	0.5	**49.6279**	0.362	0.7	ug/L	108	Standard
	Cd	111	122482.8	0.3	**49.6133**	0.042	0.1	mg/L	3	Standard
	Cd	114	296548.6	0.8	**48.5180**	0.351	0.7	ug/L	20	Standard
>	In	115	670966.5	0.3				ug/L	625728	Standard
	Sn	118	338852.8	1.5	**49.0149**	0.673	1.4	ug/L	568	Standard
	Sb	123	274306.5	0.2	**49.4654**	0.232	0.5	ug/L	612	Standard
	Ba	135	113482.1	0.5	**48.6277**	0.189	0.4	ug/L	21	Standard
	Ce	140	308.3	9.8				ug/L	245	Standard
>	Tb	159	1016008.3	2.4				ug/L	950397	Standard
	Ho	165	16.7	45.8				ug/L	7	Standard
	Tl	203	473547.1	1.1	**49.9959**	0.041	0.1	ug/L	15	Standard
	Tl	205	428096.0	1.4	**50.8923**	0.684	1.3	ug/L	13	Standard
	Pb	206	298789.4	0.8	**49.9841**	0.126	0.3	ug/L	264	Standard
	Pb	207	271570.2	0.6	**50.0267**	0.582	1.2	ug/L	222	Standard
	Pb	208	1117926.1	0.2	**50.4203**	0.478	0.9	ug/L	959	Standard
	U	238	428309.5	0.4	**50.3630**	0.285	0.6	ug/L	9	Standard
>	Bi	209	583209.8	1.0				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4910.8	1.7	**5.2115**	0.207	4.0	mg/L	55	Standard
K	39	1366.7	7.2	**4.6780**	0.226	4.8	mg/L	28	Standard
Ca	43	96.7	13.0	**5.6017**	0.863	15.4	mg/L	27	Standard
Fe	54	7079.3	0.6	**5.0021**	0.155	3.1	mg/L	147	Standard
Fe	57	2068.5	8.1	**5.0303**	0.399	7.9	mg/L	268	Standard
> **Sc-1**	45	44832.9	2.4				mg/L	41174	Standard
Cl	35	82615.3	1.2				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	2370.2	6.2				ug/L	1950	Standard
P	31	24917.1	2.0				ug/L	21156	Standard
S	34	4207.3	4.1				ug/L	3419	Standard
Sr	88	65.0	33.5				ug/L	72	Standard
C	12	150.0	30.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	69.3				mg/L	17	Standard
Dy	164	25.7	41.7				mg/L	16	Standard
Ho-1	165	16.7	45.8				mg/L	7	Standard
Er	166	20.0	100.0				mg/L	7	Standard
I	127	20977.9	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	100.109		
Al	27	94.455		
Sc	45			
Ti	47	97.161		
V	51	101.126		
Cr	52	99.052		
Cr	53			
Mn	55	99.873		
Co	59	103.594		
Ni	60	98.860		
Cu	65	99.127		
Zn	66	98.612		
> Ge	72		108.146	
As	75	99.902		
Se	82	101.084		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.326		
Ag	107	99.256		
Cd	111	99.227		
Cd	114			
> In	115			107.230
Sn	118	98.030		
Sb	123	98.931		
Ba	135	97.255		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.992		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.841		
U	238	100.726		
> Bi	209			105.497
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 12:19:23
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86888.4	1.2				ug/L	76456	Standard
	Be	9	43.3	6.7	**0.0142**	0.002	14.4	ug/L	20	Standard
	Al	27	10504.4	54.9	**0.0440**	0.030	68.3	ug/L	1307	Standard
	Sc	45	44657.4	2.0				ug/L	41174	Standard
	Ti	47	39.3	11.5	**0.0270**	0.014	53.3	ug/L	27	Standard
	V	51	1529.0	2.6	**-0.0269**	0.007	25.9	ug/L	1434	Standard
	Cr	52	7711.0	1.1	**-0.0906**	0.015	16.9	ug/L	7733	Standard
	Cr	53	511.7	5.7	**0.0505**	0.033	65.1	ug/L	442	Standard
	Mn	55	1157.7	24.7	**0.0401**	0.037	91.8	ug/L	723	Standard
	Co	59	342.7	7.9	**0.0119**	0.004	32.6	ug/L	217	Standard
	Ni	60	345.0	7.1	**0.0004**	0.013	3536.3	ug/L	304	Standard
	Cu	65	196.7	14.8	**0.0150**	0.014	96.7	ug/L	181	Standard
	Zn	66	265.3	6.8	**0.0197**	0.016	82.6	ug/L	215	Standard
>	**Ge**	72	564532.3	1.4				ug/L	520809	Standard
	As	75	-63.0	4.9	**-0.0020**	0.003	148.8	ug/L	-52	Standard
	Se	82	13.5	49.1	**-0.0274**	0.049	178.6	ug/L	17	Standard
	Se-1	77	66.7	9.6	**0.0356**	0.080	224.7	ug/L	56	Standard
>	**Ga**	71	36.7	34.3				mg/L	25	Standard
	Rb	85	50.0	17.3				ug/L	28	Standard
	Y	89	485264.3	1.4				ug/L	447395	Standard
>	**Rh**	103	23.3	65.5				ug/L	15	Standard
	Mo	98	248.2	9.5	**0.0519**	0.007	13.4	ug/L	113	Standard
	Ag	107	217.7	28.5	**0.0151**	0.008	51.7	ug/L	108	Standard
	Cd	111	38.2	50.7	**0.0130**	0.008	59.2	mg/L	3	Standard
	Cd	114	103.6	56.8	**0.0168**	0.009	56.1	ug/L	20	Standard
>	**In**	115	676839.2	0.6				ug/L	625728	Standard
	Sn	118	985.0	18.1	**0.0572**	0.025	43.7	ug/L	568	Standard
	Sb	123	1289.0	34.6	**0.1967**	0.079	40.2	ug/L	612	Standard
	Ba	135	163.7	48.0	**0.0515**	0.033	64.0	ug/L	21	Standard
	Ce	140	190.0	43.5				ug/L	245	Standard
>	**Tb**	159	1027800.2	0.9				ug/L	950397	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	185.7	43.6	**0.0185**	0.008	45.3	ug/L	15	Standard
	Tl	205	140.0	34.4	**0.0066**	0.006	85.8	ug/L	13	Standard
	Pb	206	391.7	5.7	**0.0205**	0.004	17.4	ug/L	264	Standard
	Pb	207	348.0	8.5	**0.0168**	0.005	31.6	ug/L	222	Standard
	Pb	208	1428.4	8.6	**0.0149**	0.005	36.0	ug/L	959	Standard
	U	238	152.0	24.6	**0.0173**	0.004	24.9	ug/L	9	Standard
>	**Bi**	209	594942.4	0.2				ug/L	552821	Standard

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Na	23	1.7	173.2	**4.6930**	8.120	173.0	mg/L	2	Standard
Mg	24	61.7	4.7	**0.0063**	0.004	70.3	mg/L	55	Standard
K	39	21.7	58.1	**-0.0541**	0.046	85.2	mg/L	28	Standard
Ca	43	16.7	45.8	**-1.0495**	0.670	63.8	mg/L	27	Standard
Fe	54	185.9	12.3	**0.0354**	0.014	39.9	mg/L	147	Standard
Fe	57	231.7	7.6	**-0.1482**	0.038	25.4	mg/L	268	Standard
> **Sc-1**	45	44657.4	2.0				mg/L	41174	Standard
Cl	35	83476.7	1.5				ug/L	69550	Standard
Kr	83	1.0	173.2				ug/L	1	Standard
Br	81	2133.5	9.1				ug/L	1950	Standard
P	31	25304.5	3.5				ug/L	21156	Standard
S	34	4207.3	4.6				ug/L	3419	Standard
Sr	88	80.0	16.5				ug/L	72	Standard
C	12	116.7	44.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	17	Standard
Dy	164	15.7	39.4				mg/L	16	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	16377.2	4.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.395	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.168
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.619
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 12:21:40
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Method 6020 - Summary Report

Sample ID: L1606144601
Sample Date/Time: Friday, July 01, 2016 12:22:36
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	85066.5	1.2				ug/L	76456	Standard
	Be	9	16.7	45.8	**-0.0065**	0.006	94.4	ug/L	20	Standard
	Al	27	9710029.6	1.9	**50.9822**	1.574	3.1	ug/L	1307	Standard
	Sc	45	45336.1	0.8				ug/L	41174	Standard
	Ti	47	130.7	11.5	**0.2865**	0.040	13.8	ug/L	27	Standard
	V	51	2965.5	17.4	**0.1358**	0.062	45.7	ug/L	1434	Standard
	Cr	52	10925.6	1.4	**0.2804**	0.032	11.4	ug/L	7733	Standard
	Cr	53	6674.8	19.2	**5.7008**	1.204	21.1	ug/L	442	Standard
	Mn	55	17608.9	0.7	**2.0519**	0.031	1.5	ug/L	723	Standard
	Co	59	843.4	6.2	**0.0725**	0.007	9.6	ug/L	217	Standard
	Ni	60	3752.8	1.2	**1.5211**	0.029	1.9	ug/L	304	Standard
	Cu	65	735.7	3.5	**0.2597**	0.015	5.9	ug/L	181	Standard
	Zn	66	4713.1	0.8	**3.3806**	0.039	1.2	ug/L	215	Standard
>	Ge	72	562685.3	1.1				ug/L	520809	Standard
	As	75	331.7	14.1	**0.2942**	0.038	12.9	ug/L	-52	Standard
	Se	82	169.7	3.4	**1.1168**	0.055	5.0	ug/L	17	Standard
	Se-1	77	298.3	16.2	**2.5437**	0.506	19.9	ug/L	56	Standard
>	Ga	71	43.3	17.6				mg/L	25	Standard
	Rb	85	1375.1	8.1				ug/L	28	Standard
	Y	89	479863.0	1.4				ug/L	447395	Standard
>	Rh	103	75.0	23.1				ug/L	15	Standard
	Mo	98	184.0	20.7	**0.0331**	0.012	35.3	ug/L	113	Standard
	Ag	107	187.7	22.7	**0.0116**	0.006	47.6	ug/L	108	Standard
	Cd	111	61.4	13.6	**0.0226**	0.003	14.9	mg/L	3	Standard
	Cd	114	163.1	19.9	**0.0268**	0.005	19.9	ug/L	20	Standard
>	In	115	667538.0	0.2				ug/L	625728	Standard
	Sn	118	1128.4	13.7	**0.0801**	0.022	27.7	ug/L	568	Standard
	Sb	123	642.2	32.3	**0.0827**	0.037	45.2	ug/L	612	Standard
	Ba	135	124733.7	0.4	**53.7257**	0.253	0.5	ug/L	21	Standard
	Ce	140	376.7	16.7				ug/L	245	Standard
>	Tb	159	1007994.8	2.0				ug/L	950397	Standard
	Ho	165	16.7	45.8				ug/L	7	Standard
	Tl	203	197.3	10.9	**0.0203**	0.002	12.2	ug/L	15	Standard
	Tl	205	216.7	21.8	**0.0163**	0.006	35.8	ug/L	13	Standard
	Pb	206	891.0	6.5	**0.1071**	0.008	7.9	ug/L	264	Standard
	Pb	207	795.4	2.4	**0.1022**	0.003	2.6	ug/L	222	Standard
	Pb	208	3278.5	4.0	**0.1014**	0.007	7.1	ug/L	959	Standard
	U	238	85.3	43.4	**0.0099**	0.004	45.2	ug/L	9	Standard
>	Bi	209	576617.3	0.8				ug/L	552821	Standard

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Na	23	5.0	0.0	**13.5582**	0.108	0.8	mg/L	2	Standard
Mg	24	5319.3	4.2	**5.5837**	0.252	4.5	mg/L	55	Standard
K	39	98.3	41.1	**0.2120**	0.143	67.6	mg/L	28	Standard
Ca	43	363.3	7.8	**27.5274**	2.210	8.0	mg/L	27	Standard
Fe	54	179.0	5.5	**0.0286**	0.006	20.9	mg/L	147	Standard
Fe	57	463.3	13.0	**0.4888**	0.165	33.8	mg/L	268	Standard
> **Sc-1**	45	45336.1	0.8				mg/L	41174	Standard
Cl	35	89142.8	0.6				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	30834.8	6.1				ug/L	1950	Standard
P	31	26140.9	1.9				ug/L	21156	Standard
S	34	4027.2	2.4				ug/L	3419	Standard
Sr	88	260.0	15.3				ug/L	72	Standard
C	12	170.0	10.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	17	Standard
Dy	164	38.6	3.3				mg/L	16	Standard
Ho-1	165	16.7	45.8				mg/L	7	Standard
Er	166	30.0	88.2				mg/L	7	Standard
I	127	3538.7	10.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.262	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.041	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.682
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.305
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606144701 WG574416-03
Sample Date/Time: Friday, July 01, 2016 12:25:48
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88482.7	2.3				ug/L	76456	Standard
	Be	9	38.3	39.8	**0.0099**	0.012	125.1	ug/L	20	Standard
	Al	27	11359959.6	1.4	**57.3517**	1.667	2.9	ug/L	1307	Standard
	Sc	45	45563.4	2.6				ug/L	41174	Standard
	Ti	47	479.3	13.4	**1.2787**	0.172	13.4	ug/L	27	Standard
	V	51	3530.4	7.8	**0.1998**	0.034	17.3	ug/L	1434	Standard
	Cr	52	12134.2	0.3	**0.4209**	0.011	2.6	ug/L	7733	Standard
	Cr	53	7648.6	5.0	**6.6019**	0.407	6.2	ug/L	442	Standard
	Mn	55	16091.5	2.0	**1.8699**	0.055	2.9	ug/L	723	Standard
	Co	59	1173.0	4.1	**0.1126**	0.006	5.8	ug/L	217	Standard
	Ni	60	3889.5	2.3	**1.5848**	0.031	1.9	ug/L	304	Standard
	Cu	65	1317.7	0.5	**0.5246**	0.003	0.5	ug/L	181	Standard
	Zn	66	3687.1	0.9	**2.6100**	0.006	0.2	ug/L	215	Standard
>	**Ge**	72	561722.8	0.8				ug/L	520809	Standard
	As	75	1392.1	5.5	**1.0905**	0.054	4.9	ug/L	-52	Standard
	Se	82	606.7	3.3	**4.3252**	0.116	2.7	ug/L	17	Standard
	Se-1	77	418.0	2.5	**3.8492**	0.119	3.1	ug/L	56	Standard
>	**Ga**	71	115.0	8.7				mg/L	25	Standard
	Rb	85	5234.2	9.4				ug/L	28	Standard
	Y	89	487944.7	1.1				ug/L	447395	Standard
>	**Rh**	103	568.3	20.1				ug/L	15	Standard
	Mo	98	1044.2	2.3	**0.3054**	0.008	2.6	ug/L	113	Standard
	Ag	107	187.3	42.9	**0.0121**	0.011	91.2	ug/L	108	Standard
	Cd	111	55.0	27.2	**0.0204**	0.006	30.3	mg/L	3	Standard
	Cd	114	135.5	6.2	**0.0227**	0.001	5.1	ug/L	20	Standard
>	**In**	115	656101.2	1.3				ug/L	625728	Standard
	Sn	118	1038.4	15.8	**0.0699**	0.026	37.7	ug/L	568	Standard
	Sb	123	573.4	30.4	**0.0724**	0.034	46.6	ug/L	612	Standard
	Ba	135	501979.0	0.4	**220.0552**	2.127	1.0	ug/L	21	Standard
	Ce	140	2408.5	3.7				ug/L	245	Standard
>	**Tb**	159	999721.2	1.2				ug/L	950397	Standard
	Ho	165	475.0	13.8				ug/L	7	Standard
	Tl	203	180.7	18.9	**0.0191**	0.004	19.9	ug/L	15	Standard
	Tl	205	181.7	18.3	**0.0127**	0.004	33.1	ug/L	13	Standard
	Pb	206	1433.1	5.5	**0.2055**	0.013	6.5	ug/L	264	Standard
	Pb	207	1269.4	7.4	**0.1971**	0.019	9.6	ug/L	222	Standard
	Pb	208	5249.0	0.8	**0.1978**	0.003	1.5	ug/L	959	Standard
	U	238	833.4	3.5	**0.1015**	0.003	3.3	ug/L	9	Standard
>	**Bi**	209	561437.9	0.5				ug/L	552821	Standard

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Na	23	3.3	86.6	**9.1266**	7.900	86.6	mg/L	2	Standard
Mg	24	22316.4	4.6	**23.4898**	0.474	2.0	mg/L	55	Standard
K	39	291.7	17.2	**0.8820**	0.191	21.6	mg/L	28	Standard
Ca	43	361.7	17.8	**27.2179**	4.974	18.3	mg/L	27	Standard
Fe	54	219.1	19.9	**0.0560**	0.027	47.8	mg/L	147	Standard
Fe	57	508.3	13.1	**0.6052**	0.153	25.3	mg/L	268	Standard
> **Sc-1**	45	45563.4	2.6				mg/L	41174	Standard
Cl	35	95139.1	0.6				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	117746.0	3.1				ug/L	1950	Standard
P	31	26077.4	3.3				ug/L	21156	Standard
S	34	3920.5	3.9				ug/L	3419	Standard
Sr	88	1768.4	4.8				ug/L	72	Standard
C	12	193.3	38.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	89.2				mg/L	17	Standard
Dy	164	700.0	19.1				mg/L	16	Standard
Ho-1	165	475.0	13.8				mg/L	7	Standard
Er	166	486.7	19.4				mg/L	7	Standard
I	127	22775.4	2.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.731	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.856	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.854
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.559
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144701DP WG574416-10
Sample Date/Time: Friday, July 01, 2016 12:28:59
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	88142.4	1.7				ug/L	76456	Standard
	Be	9	40.0	37.5	**0.0111**	0.011	101.8	ug/L	20	Standard
	Al	27	11494838.5	2.0	**58.2408**	1.266	2.2	ug/L	1307	Standard
	Sc	45	46242.2	2.8				ug/L	41174	Standard
	Ti	47	491.0	28.0	**1.3133**	0.392	29.8	ug/L	27	Standard
	V	51	4065.2	7.6	**0.2601**	0.033	12.8	ug/L	1434	Standard
	Cr	52	12264.0	1.3	**0.4365**	0.008	1.9	ug/L	7733	Standard
	Cr	53	8637.5	5.6	**7.5132**	0.490	6.5	ug/L	442	Standard
	Mn	55	16026.8	1.0	**1.8627**	0.011	0.6	ug/L	723	Standard
	Co	59	1127.4	3.0	**0.1071**	0.004	3.8	ug/L	217	Standard
	Ni	60	3889.8	1.2	**1.5861**	0.030	1.9	ug/L	304	Standard
	Cu	65	1351.4	4.3	**0.5403**	0.027	5.0	ug/L	181	Standard
	Zn	66	3072.3	1.9	**2.1459**	0.033	1.5	ug/L	215	Standard
>	Ge	72	561430.2	0.7				ug/L	520809	Standard
	As	75	1450.6	6.2	**1.1355**	0.075	6.6	ug/L	-52	Standard
	Se	82	626.4	4.3	**4.4737**	0.217	4.8	ug/L	17	Standard
	Se-1	77	446.7	4.4	**4.1629**	0.222	5.3	ug/L	56	Standard
>	Ga	71	118.3	21.3				mg/L	25	Standard
	Rb	85	5335.9	4.4				ug/L	28	Standard
	Y	89	485232.7	0.7				ug/L	447395	Standard
>	Rh	103	503.3	5.6				ug/L	15	Standard
	Mo	98	890.3	4.1	**0.2555**	0.010	3.8	ug/L	113	Standard
	Ag	107	130.0	4.8	**0.0043**	0.001	19.6	ug/L	108	Standard
	Cd	111	38.1	10.0	**0.0134**	0.002	12.3	mg/L	3	Standard
	Cd	114	93.0	28.3	**0.0155**	0.004	28.0	ug/L	20	Standard
>	In	115	659077.6	0.9				ug/L	625728	Standard
	Sn	118	881.7	14.6	**0.0459**	0.019	42.5	ug/L	568	Standard
	Sb	123	507.6	19.6	**0.0596**	0.019	31.6	ug/L	612	Standard
	Ba	135	515199.9	0.5	**224.8243**	2.217	1.0	ug/L	21	Standard
	Ce	140	2820.3	8.4				ug/L	245	Standard
>	Tb	159	1000855.8	0.8				ug/L	950397	Standard
	Ho	165	511.7	6.7				ug/L	7	Standard
	Tl	203	145.0	5.2	**0.0151**	0.001	5.3	ug/L	15	Standard
	Tl	205	140.0	29.2	**0.0075**	0.005	66.5	ug/L	13	Standard
	Pb	206	896.0	1.8	**0.1117**	0.003	2.6	ug/L	264	Standard
	Pb	207	768.4	3.7	**0.1007**	0.005	5.0	ug/L	222	Standard
	Pb	208	3189.1	0.1	**0.1009**	0.001	0.5	ug/L	959	Standard
	U	238	824.4	5.0	**0.1002**	0.005	5.0	ug/L	9	Standard
>	Bi	209	562695.6	0.4				ug/L	552821	Standard

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Na	23	8.3	34.6	**22.1713**	7.744	34.9	mg/L	2	Standard
Mg	24	23199.4	1.6	**24.0879**	0.996	4.1	mg/L	55	Standard
K	39	276.7	2.8	**0.8134**	0.006	0.8	mg/L	28	Standard
Ca	43	471.7	6.8	**35.7746**	3.568	10.0	mg/L	27	Standard
Fe	54	212.8	23.2	**0.0499**	0.035	69.4	mg/L	147	Standard
Fe	57	470.0	11.3	**0.4850**	0.177	36.5	mg/L	268	Standard
> **Sc-1**	45	46242.2	2.8				mg/L	41174	Standard
Cl	35	96975.4	1.3				ug/L	69550	Standard
Kr	83	2.3	137.8				ug/L	1	Standard
Br	81	120957.8	2.8				ug/L	1950	Standard
P	31	25446.4	2.8				ug/L	21156	Standard
S	34	3975.5	1.0				ug/L	3419	Standard
Sr	88	1878.4	2.6				ug/L	72	Standard
C	12	223.3	38.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	17	Standard
Dy	164	658.1	9.2				mg/L	16	Standard
Ho-1	165	511.7	6.7				mg/L	7	Standard
Er	166	526.7	11.0				mg/L	7	Standard
I	127	23127.6	2.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.285	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.800	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.330
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.786
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144701DP WG574416-10
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Method 6020 - Summary Report

Sample ID: L1606128901
Sample Date/Time: Friday, July 01, 2016 12:32:11
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	100202.1	2.7				ug/L	76456	Standard
	Be	9	85.0	61.4	**0.0383**	0.036	94.9	ug/L	20	Standard
	Al	27	121494771.0	1.8	**541.6309**	8.514	1.6	ug/L	1307	Standard
	Sc	45	48803.5	2.8				ug/L	41174	Standard
	Ti	47	545.3	5.0	**1.5278**	0.038	2.5	ug/L	27	Standard
	V	51	10661.2	18.0	**1.0481**	0.197	18.8	ug/L	1434	Standard
	Cr	52	662482.0	2.6	**77.9794**	0.550	0.7	ug/L	7733	Standard
	Cr	53	138513.8	2.3	**131.6729**	2.729	2.1	ug/L	442	Standard
	Mn	55	5966787.8	1.9	**759.5704**	10.887	1.4	ug/L	723	Standard
	Co	59	181210.6	0.8	**22.7724**	0.421	1.8	ug/L	217	Standard
	Ni	60	645750.8	2.4	**299.7645**	3.348	1.1	ug/L	304	Standard
	Cu	65	22297.4	3.7	**10.4538**	0.196	1.9	ug/L	181	Standard
	Zn	66	11919.4	2.6	**9.1948**	0.114	1.2	ug/L	215	Standard
>	**Ge**	72	540486.8	2.6				ug/L	520809	Standard
	As	75	4102.0	1.8	**3.2473**	0.027	0.8	ug/L	-52	Standard
	Se	82	1886.5	4.1	**14.2618**	0.413	2.9	ug/L	17	Standard
	Se-1	77	4801.8	0.7	**53.4605**	1.123	2.1	ug/L	56	Standard
>	**Ga**	71	275.0	24.6				mg/L	25	Standard
	Rb	85	16008.5	1.9				ug/L	28	Standard
	Y	89	482574.6	0.5				ug/L	447395	Standard
>	**Rh**	103	891.7	13.1				ug/L	15	Standard
	Mo	98	6427.1	1.7	**2.1501**	0.036	1.7	ug/L	113	Standard
	Ag	107	215.3	42.5	**0.0178**	0.013	73.5	ug/L	108	Standard
	Cd	111	1192.8	4.2	**0.5277**	0.023	4.3	mg/L	3	Standard
	Cd	114	2955.5	4.3	**0.5305**	0.024	4.6	ug/L	20	Standard
>	**In**	115	611635.6	0.3				ug/L	625728	Standard
	Sn	118	1171.7	1.6	**0.1020**	0.003	2.8	ug/L	568	Standard
	Sb	123	952.5	13.3	**0.1549**	0.025	16.4	ug/L	612	Standard
	Ba	135	5659971.5	1.5	**2661.5360**	36.316	1.4	ug/L	21	Standard
	Ce	140	34602.8	2.7				ug/L	245	Standard
>	**Tb**	159	987729.2	0.4				ug/L	950397	Standard
	Ho	165	555.0	3.6				ug/L	7	Standard
	Tl	203	271.3	38.8	**0.0315**	0.013	40.1	ug/L	15	Standard
	Tl	205	228.3	29.2	**0.0208**	0.009	43.4	ug/L	13	Standard
	Pb	206	682.3	7.9	**0.0848**	0.010	12.2	ug/L	264	Standard
	Pb	207	562.7	4.7	**0.0706**	0.006	7.9	ug/L	222	Standard
	Pb	208	2400.7	5.1	**0.0736**	0.007	9.1	ug/L	959	Standard
	U	238	485.7	17.4	**0.0640**	0.011	17.8	ug/L	9	Standard
>	**Bi**	209	518402.7	0.8				ug/L	552821	Standard

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Na	23	6.7	43.3	**16.7312**	6.981	41.7	mg/L	2	Standard
Mg	24	234951.0	0.3	**231.6239**	7.038	3.0	mg/L	55	Standard
K	39	286.7	15.7	**0.7989**	0.169	21.2	mg/L	28	Standard
Ca	43	935.0	7.2	**69.1820**	3.528	5.1	mg/L	27	Standard
Fe	54	758.4	8.2	**0.4032**	0.043	10.6	mg/L	147	Standard
Fe	57	1138.4	6.9	**2.1447**	0.127	5.9	mg/L	268	Standard
> **Sc-1**	45	48803.5	2.8				mg/L	41174	Standard
Cl	35	88877.9	0.3				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	391239.0	2.6				ug/L	1950	Standard
P	31	37070.3	1.2				ug/L	21156	Standard
S	34	4178.9	3.9				ug/L	3419	Standard
Sr	88	2831.9	1.5				ug/L	72	Standard
C	12	466.7	21.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	17.3				mg/L	17	Standard
Dy	164	667.5	12.4				mg/L	16	Standard
Ho-1	165	555.0	3.6				mg/L	7	Standard
Er	166	540.0	8.5				mg/L	7	Standard
I	127	188266.3	8.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		131.059	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.778	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	97.748	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	93.774	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Cr 53 Upper, S, EEE	Cr	53	

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Mn 55 Upper, S, EEE	Mn	55
Ni 60 Upper, S, EEE	Ni	60
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606128904
Sample Date/Time: Friday, July 01, 2016 12:35:23
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80174.9	0.5				ug/L	76456	Standard
	Be	9	53.3	27.1	**0.0255**	0.012	47.2	ug/L	20	Standard
	Al	27	1032791.8	1.6	**5.7430**	0.086	1.5	ug/L	1307	Standard
	Sc	45	47549.6	3.6				ug/L	41174	Standard
	Ti	47	1435.7	2.3	**3.8643**	0.058	1.5	ug/L	27	Standard
	V	51	10110.4	0.9	**0.9038**	0.025	2.8	ug/L	1434	Standard
	Cr	52	20122.7	4.1	**1.2588**	0.042	3.3	ug/L	7733	Standard
	Cr	53	3665.5	16.0	**2.8260**	0.446	15.8	ug/L	442	Standard
	Mn	55	288289.9	2.5	**34.0207**	0.139	0.4	ug/L	723	Standard
	Co	59	1477.7	1.3	**0.1434**	0.004	2.6	ug/L	217	Standard
	Ni	60	4239.3	2.2	**1.6775**	0.005	0.3	ug/L	304	Standard
	Cu	65	5707.4	2.9	**2.4318**	0.022	0.9	ug/L	181	Standard
	Zn	66	6174.6	2.5	**4.3354**	0.036	0.8	ug/L	215	Standard
>	Ge	72	581260.9	2.3				ug/L	520809	Standard
	As	75	447.8	4.7	**0.3704**	0.019	5.1	ug/L	-52	Standard
	Se	82	65.6	5.7	**0.3388**	0.024	6.9	ug/L	17	Standard
	Se-1	77	141.0	9.5	**0.7917**	0.108	13.6	ug/L	56	Standard
>	Ga	71	390.0	12.2				mg/L	25	Standard
	Rb	85	14513.6	3.3				ug/L	28	Standard
	Y	89	508182.1	0.9				ug/L	447395	Standard
>	Rh	103	35.0	14.3				ug/L	15	Standard
	Mo	98	3302.1	0.9	**0.9834**	0.006	0.6	ug/L	113	Standard
	Ag	107	192.0	6.8	**0.0118**	0.002	15.7	ug/L	108	Standard
	Cd	111	79.5	7.9	**0.0295**	0.002	7.8	mg/L	3	Standard
	Cd	114	220.0	7.1	**0.0356**	0.003	7.0	ug/L	20	Standard
>	In	115	678248.4	0.8				ug/L	625728	Standard
	Sn	118	933.4	10.8	**0.0496**	0.015	30.5	ug/L	568	Standard
	Sb	123	584.6	1.8	**0.0706**	0.002	3.0	ug/L	612	Standard
	Ba	135	45177.6	1.6	**19.1408**	0.317	1.7	ug/L	21	Standard
	Ce	140	30016.4	0.4				ug/L	245	Standard
>	Tb	159	1007751.2	0.8				ug/L	950397	Standard
	Ho	165	761.7	12.8				ug/L	7	Standard
	Tl	203	113.3	7.1	**0.0112**	0.001	7.0	ug/L	15	Standard
	Tl	205	111.7	14.4	**0.0035**	0.002	52.8	ug/L	13	Standard
	Pb	206	3404.0	3.3	**0.5260**	0.017	3.3	ug/L	264	Standard
	Pb	207	2818.6	2.1	**0.4734**	0.010	2.1	ug/L	222	Standard
	Pb	208	12328.3	2.3	**0.5080**	0.010	2.0	ug/L	959	Standard
	U	238	374.0	2.0	**0.0437**	0.001	1.8	ug/L	9	Standard
>	Bi	209	583367.9	0.5				ug/L	552821	Standard

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Na	23	1.7	173.2	**4.1425**	7.166	173.0	mg/L	2	Standard
Mg	24	5377.6	1.9	**5.3817**	0.098	1.8	mg/L	55	Standard
K	39	255.0	12.2	**0.7172**	0.121	16.8	mg/L	28	Standard
Ca	43	56.7	51.7	**1.9556**	2.109	107.9	mg/L	27	Standard
Fe	54	965.3	12.0	**0.5554**	0.055	10.0	mg/L	147	Standard
Fe	57	456.7	2.8	**0.4120**	0.054	13.1	mg/L	268	Standard
> **Sc-1**	45	47549.6	3.6				mg/L	41174	Standard
Cl	35	89186.5	3.0				ug/L	69550	Standard
Kr	83	2.3	89.2				ug/L	1	Standard
Br	81	9616.5	21.7				ug/L	1950	Standard
P	31	24750.2	1.9				ug/L	21156	Standard
S	34	3972.2	3.0				ug/L	3419	Standard
Sr	88	126.7	22.8				ug/L	72	Standard
C	12	306.7	35.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	89.2				mg/L	17	Standard
Dy	164	1037.0	4.9				mg/L	16	Standard
Ho-1	165	761.7	12.8				mg/L	7	Standard
Er	166	690.0	14.7				mg/L	7	Standard
I	127	33632.4	5.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.864	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.607	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.393
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.526
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129003
Sample Date/Time: Friday, July 01, 2016 12:38:34
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	84017.4	2.6				ug/L	76456	Standard
	Be	9	56.7	41.7	**0.0265**	0.020	76.1	ug/L	20	Standard
	Al	27	11410287.5	2.4	**60.6815**	2.547	4.2	ug/L	1307	Standard
	Sc	45	47460.9	2.7				ug/L	41174	Standard
	Ti	47	632.0	2.0	**1.7083**	0.053	3.1	ug/L	27	Standard
	V	51	4979.6	9.0	**0.3608**	0.043	11.9	ug/L	1434	Standard
	Cr	52	16733.9	1.7	**0.9422**	0.057	6.1	ug/L	7733	Standard
	Cr	53	16242.1	5.6	**14.4384**	0.968	6.7	ug/L	442	Standard
	Mn	55	2106790.2	0.3	**257.0785**	2.759	1.1	ug/L	723	Standard
	Co	59	32596.4	0.7	**3.9025**	0.026	0.7	ug/L	217	Standard
	Ni	60	16570.4	1.9	**7.2264**	0.135	1.9	ug/L	304	Standard
	Cu	65	821.7	5.9	**0.2979**	0.020	6.6	ug/L	181	Standard
	Zn	66	15799.9	1.0	**11.7367**	0.172	1.5	ug/L	215	Standard
>	Ge	72	563660.3	1.3				ug/L	520809	Standard
	As	75	8280.0	0.5	**6.2429**	0.078	1.2	ug/L	-52	Standard
	Se	82	523.6	3.6	**3.7022**	0.090	2.4	ug/L	17	Standard
	Se-1	77	661.3	8.7	**6.4700**	0.719	11.1	ug/L	56	Standard
>	Ga	71	153.3	26.4				mg/L	25	Standard
	Rb	85	22955.7	2.8				ug/L	28	Standard
	Y	89	481907.4	0.8				ug/L	447395	Standard
>	Rh	103	116.7	21.1				ug/L	15	Standard
	Mo	98	609.0	1.0	**0.1691**	0.001	0.8	ug/L	113	Standard
	Ag	107	122.3	6.1	**0.0035**	0.001	30.0	ug/L	108	Standard
	Cd	111	546.6	6.3	**0.2253**	0.014	6.3	mg/L	3	Standard
	Cd	114	1227.9	3.1	**0.2066**	0.006	2.8	ug/L	20	Standard
>	In	115	652572.6	0.4				ug/L	625728	Standard
	Sn	118	2255.2	0.8	**0.2518**	0.004	1.5	ug/L	568	Standard
	Sb	123	396.5	22.6	**0.0398**	0.016	41.0	ug/L	612	Standard
	Ba	135	362353.4	0.4	**159.6881**	0.037	0.0	ug/L	21	Standard
	Ce	140	11014.0	2.2				ug/L	245	Standard
>	Tb	159	996583.7	1.1				ug/L	950397	Standard
	Ho	165	233.3	12.4				ug/L	7	Standard
	Tl	203	149.3	13.7	**0.0157**	0.002	13.7	ug/L	15	Standard
	Tl	205	146.7	18.8	**0.0085**	0.003	39.2	ug/L	13	Standard
	Pb	206	578.7	5.4	**0.0575**	0.005	8.6	ug/L	264	Standard
	Pb	207	484.0	0.4	**0.0472**	0.000	0.8	ug/L	222	Standard
	Pb	208	2033.4	0.6	**0.0477**	0.001	2.3	ug/L	959	Standard
	U	238	110.3	15.4	**0.0133**	0.002	15.3	ug/L	9	Standard
>	Bi	209	557686.0	0.7				ug/L	552821	Standard

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Na	23	1.7	173.2	**4.4332**	7.670	173.0	mg/L	2	Standard
Mg	24	51897.1	1.5	**52.5721**	2.174	4.1	mg/L	55	Standard
K	39	418.3	15.8	**1.2584**	0.193	15.3	mg/L	28	Standard
Ca	43	125.0	28.0	**7.4017**	2.760	37.3	mg/L	27	Standard
Fe	54	21570.7	2.6	**14.5894**	0.772	5.3	mg/L	147	Standard
Fe	57	5684.4	0.4	**14.3563**	0.459	3.2	mg/L	268	Standard
> **Sc-1**	45	47460.9	2.7				mg/L	41174	Standard
Cl	35	86591.4	1.7				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	106345.6	3.6				ug/L	1950	Standard
P	31	31901.9	1.3				ug/L	21156	Standard
S	34	4255.6	0.8				ug/L	3419	Standard
Sr	88	460.0	1.1				ug/L	72	Standard
C	12	313.3	22.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	17	Standard
Dy	164	343.4	18.1				mg/L	16	Standard
Ho-1	165	233.3	12.4				mg/L	7	Standard
Er	166	276.7	12.7				mg/L	7	Standard
I	127	558531.1	6.5				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		109.890	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		108.228	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.290
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.880
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606129005
Sample Date/Time: Friday, July 01, 2016 12:41:45
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85192.2	0.8				ug/L	76456	Standard
	Be	9	115.0	19.0	**0.0724**	0.018	24.9	ug/L	20	Standard
	Al	27	1289763.0	0.8	**6.7519**	0.110	1.6	ug/L	1307	Standard
	Sc	45	49773.3	2.8				ug/L	41174	Standard
	Ti	47	6020.5	2.3	**16.8263**	0.429	2.6	ug/L	27	Standard
	V	51	26156.2	0.5	**2.7133**	0.015	0.6	ug/L	1434	Standard
	Cr	52	22253.3	0.9	**1.5480**	0.025	1.6	ug/L	7733	Standard
	Cr	53	3922.2	9.7	**3.1342**	0.341	10.9	ug/L	442	Standard
	Mn	55	93436.0	2.3	**11.1943**	0.294	2.6	ug/L	723	Standard
	Co	59	5246.2	1.4	**0.5973**	0.011	1.8	ug/L	217	Standard
	Ni	60	3873.2	3.3	**1.5552**	0.062	4.0	ug/L	304	Standard
	Cu	65	2052.1	1.1	**0.8462**	0.011	1.3	ug/L	181	Standard
	Zn	66	6978.9	2.8	**5.0326**	0.156	3.1	ug/L	215	Standard
>	**Ge**	72	569140.4	0.4				ug/L	520809	Standard
	As	75	675.9	4.5	**0.5462**	0.024	4.5	ug/L	-52	Standard
	Se	82	122.4	11.2	**0.7599**	0.101	13.3	ug/L	17	Standard
	Se-1	77	130.3	23.7	**0.7102**	0.329	46.3	ug/L	56	Standard
>	**Ga**	71	1996.8	2.2				mg/L	25	Standard
	Rb	85	22308.1	1.4				ug/L	28	Standard
	Y	89	509803.9	1.2				ug/L	447395	Standard
>	**Rh**	103	36.7	31.5				ug/L	15	Standard
	Mo	98	326.9	4.2	**0.0762**	0.004	5.1	ug/L	113	Standard
	Ag	107	126.0	4.2	**0.0034**	0.001	17.4	ug/L	108	Standard
	Cd	111	98.1	1.5	**0.0371**	0.001	1.9	mg/L	3	Standard
	Cd	114	296.0	9.7	**0.0481**	0.005	9.6	ug/L	20	Standard
>	**In**	115	675122.4	0.6				ug/L	625728	Standard
	Sn	118	1330.1	3.9	**0.1073**	0.007	6.6	ug/L	568	Standard
	Sb	123	517.6	11.1	**0.0591**	0.010	16.6	ug/L	612	Standard
	Ba	135	76309.4	0.8	**32.4918**	0.196	0.6	ug/L	21	Standard
	Ce	140	95146.2	1.3				ug/L	245	Standard
>	**Tb**	159	1016001.4	1.3				ug/L	950397	Standard
	Ho	165	1441.7	4.0				ug/L	7	Standard
	Tl	203	251.7	11.3	**0.0262**	0.003	11.5	ug/L	15	Standard
	Tl	205	263.3	19.1	**0.0220**	0.006	26.3	ug/L	13	Standard
	Pb	206	4604.0	0.8	**0.7379**	0.007	1.0	ug/L	264	Standard
	Pb	207	3793.5	2.8	**0.6632**	0.027	4.1	ug/L	222	Standard
	Pb	208	16401.2	0.5	**0.7024**	0.005	0.7	ug/L	959	Standard
	U	238	755.4	2.7	**0.0898**	0.002	2.3	ug/L	9	Standard
>	**Bi**	209	575207.2	1.1				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	11827.9	2.0	**11.3730**	0.250	2.2	mg/L	55	Standard
K	39	63.3	12.1	**0.0696**	0.022	31.4	mg/L	28	Standard
Ca	43	26.7	39.0	**-0.4604**	0.739	160.5	mg/L	27	Standard
Fe	54	2263.3	3.3	**1.3710**	0.089	6.5	mg/L	147	Standard
Fe	57	798.4	7.3	**1.2235**	0.092	7.5	mg/L	268	Standard
> **Sc-1**	45	49773.3	2.8				mg/L	41174	Standard
Cl	35	80793.5	1.2				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	20093.3	2.4				ug/L	1950	Standard
P	31	35491.5	0.9				ug/L	21156	Standard
S	34	3435.4	2.3				ug/L	3419	Standard
Sr	88	86.7	16.7				ug/L	72	Standard
C	12	120.0	16.7				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	56.8				mg/L	17	Standard
Dy	164	2283.5	2.5				mg/L	16	Standard
Ho-1	165	1441.7	4.0				mg/L	7	Standard
Er	166	1253.4	17.9				mg/L	7	Standard
I	127	29910.2	19.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.427	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.280	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.894
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.049
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 12:44:58
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83031.9	1.8				ug/L	76456	Standard
	Be	9	62607.4	1.8	**51.4790**	0.092	0.2	ug/L	20	Standard
	Al	27	9205440.0	1.0	**49.5101**	0.482	1.0	ug/L	1307	Standard
	Sc	45	45279.2	0.9				ug/L	41174	Standard
	Ti	47	35616.8	0.8	**99.7569**	0.384	0.4	ug/L	27	Standard
	V	51	453381.0	1.3	**50.1773**	0.834	1.7	ug/L	1434	Standard
	Cr	52	454717.9	0.4	**50.3900**	0.329	0.7	ug/L	7733	Standard
	Cr	53	56792.9	2.0	**50.9006**	0.670	1.3	ug/L	442	Standard
	Mn	55	417865.9	1.4	**50.3140**	0.768	1.5	ug/L	723	Standard
	Co	59	427490.0	0.8	**50.9392**	0.677	1.3	ug/L	217	Standard
	Ni	60	114502.7	0.7	**50.2468**	0.055	0.1	ug/L	304	Standard
	Cu	65	113283.0	1.3	**50.6253**	0.452	0.9	ug/L	181	Standard
	Zn	66	67088.2	1.2	**49.8311**	0.666	1.3	ug/L	215	Standard
>	**Ge**	72	570265.5	0.7				ug/L	520809	Standard
	As	75	66940.7	0.7	**49.5659**	0.028	0.1	ug/L	-52	Standard
	Se	82	6904.8	0.9	**49.7902**	0.542	1.1	ug/L	17	Standard
	Se-1	77	4848.4	1.0	**51.1131**	0.306	0.6	ug/L	56	Standard
>	**Ga**	71	33.3	34.6				mg/L	25	Standard
	Rb	85	945.0	6.5				ug/L	28	Standard
	Y	89	486567.9	0.8				ug/L	447395	Standard
>	**Rh**	103	36.7	43.8				ug/L	15	Standard
	Mo	98	321546.8	0.2	**99.1357**	1.367	1.4	ug/L	113	Standard
	Ag	107	383263.2	0.3	**49.7591**	0.678	1.4	ug/L	108	Standard
	Cd	111	123447.9	0.3	**50.0091**	0.713	1.4	mg/L	3	Standard
	Cd	114	300381.5	2.0	**49.1538**	1.432	2.9	ug/L	20	Standard
>	**In**	115	670977.0	1.2				ug/L	625728	Standard
	Sn	118	339655.3	1.3	**49.1307**	0.150	0.3	ug/L	568	Standard
	Sb	123	274538.6	0.7	**49.5136**	0.951	1.9	ug/L	612	Standard
	Ba	135	114656.9	0.7	**49.1372**	0.870	1.8	ug/L	21	Standard
	Ce	140	131.7	33.2				ug/L	245	Standard
>	**Tb**	159	1007430.4	0.6				ug/L	950397	Standard
	Ho	165	15.0	88.2				ug/L	7	Standard
	Tl	203	470169.7	1.1	**50.6935**	0.361	0.7	ug/L	15	Standard
	Tl	205	427547.4	1.3	**51.9072**	0.778	1.5	ug/L	13	Standard
	Pb	206	295170.9	0.9	**50.4289**	0.577	1.1	ug/L	264	Standard
	Pb	207	268434.7	0.6	**50.4969**	0.171	0.3	ug/L	222	Standard
	Pb	208	1104478.8	0.4	**50.8716**	0.540	1.1	ug/L	959	Standard
	U	238	418715.2	0.4	**50.2797**	0.305	0.6	ug/L	9	Standard
>	**Bi**	209	571081.7	0.7				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4769.1	1.8	**5.0062**	0.108	2.1	mg/L	55	Standard
K	39	1336.7	4.6	**4.5306**	0.241	5.3	mg/L	28	Standard
Ca	43	75.0	17.6	**3.7457**	1.100	29.4	mg/L	27	Standard
Fe	54	7200.7	4.3	**5.0367**	0.239	4.8	mg/L	147	Standard
Fe	57	2128.5	4.4	**5.1427**	0.247	4.8	mg/L	268	Standard
> **Sc-1**	45	45279.2	0.9				mg/L	41174	Standard
Cl	35	81839.8	0.8				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	3040.3	8.6				ug/L	1950	Standard
P	31	24877.1	2.1				ug/L	21156	Standard
S	34	3887.2	7.0				ug/L	3419	Standard
Sr	88	81.7	7.1				ug/L	72	Standard
C	12	123.3	12.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	100.0				mg/L	17	Standard
Dy	164	9.4	3.0				mg/L	16	Standard
Ho-1	165	15.0	88.2				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	7	Standard
I	127	21875.8	2.3				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	102.958		
	Al	27	99.020		
	Sc	45			
	Ti	47	99.757		
	V	51	100.355		
	Cr	52	100.780		
	Cr	53			
	Mn	55	100.628		
	Co	59	101.878		
	Ni	60	100.494		
	Cu	65	101.251		
	Zn	66	99.662		
>	Ge	72		109.496	
	As	75	99.132		
	Se	82	99.580		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	99.136		
Ag	107	99.518		
Cd	111	100.018		
Cd	114			
In	115			107.231
Sn	118	98.261		
Sb	123	99.027		
Ba	135	98.274		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.387		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.743		
U	238	100.559		
Bi	209			103.303
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 12:48:10
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79667.3	2.3				ug/L	76456	Standard
	Be	9	48.3	39.2	**0.0215**	0.016	74.4	ug/L	20	Standard
	Al	27	13667.3	103.9	**0.0663**	0.079	119.0	ug/L	1307	Standard
	Sc	45	44725.9	0.8				ug/L	41174	Standard
	Ti	47	40.3	36.1	**0.0282**	0.040	143.2	ug/L	27	Standard
	V	51	1800.6	20.7	**0.0010**	0.041	3971.4	ug/L	1434	Standard
	Cr	52	8069.5	1.6	**-0.0611**	0.005	7.9	ug/L	7733	Standard
	Cr	53	805.0	12.6	**0.3085**	0.086	27.9	ug/L	442	Standard
	Mn	55	1891.2	86.3	**0.1261**	0.196	155.3	ug/L	723	Standard
	Co	59	402.0	57.1	**0.0183**	0.027	148.1	ug/L	217	Standard
	Ni	60	380.0	16.0	**0.0137**	0.026	190.1	ug/L	304	Standard
	Cu	65	200.3	16.4	**0.0153**	0.014	94.0	ug/L	181	Standard
	Zn	66	277.3	5.9	**0.0260**	0.012	46.5	ug/L	215	Standard
>	**Ge**	72	571534.4	1.1				ug/L	520809	Standard
	As	75	-32.7	47.9	**0.0211**	0.011	53.6	ug/L	-52	Standard
	Se	82	21.0	34.3	**0.0252**	0.052	206.6	ug/L	17	Standard
	Se-1	77	64.3	8.6	**0.0008**	0.051	6596.2	ug/L	56	Standard
>	**Ga**	71	30.0	16.7				mg/L	25	Standard
	Rb	85	26.7	75.8				ug/L	28	Standard
	Y	89	488434.0	1.5				ug/L	447395	Standard
>	**Rh**	103	18.3	56.8				ug/L	15	Standard
	Mo	98	360.1	51.7	**0.0867**	0.057	65.8	ug/L	113	Standard
	Ag	107	301.7	75.6	**0.0262**	0.029	112.6	ug/L	108	Standard
	Cd	111	35.8	64.4	**0.0121**	0.009	76.9	mg/L	3	Standard
	Cd	114	93.7	41.3	**0.0153**	0.006	41.1	ug/L	20	Standard
>	**In**	115	672952.0	0.6				ug/L	625728	Standard
	Sn	118	2098.5	22.4	**0.2192**	0.070	31.8	ug/L	568	Standard
	Sb	123	1021.0	31.2	**0.1501**	0.058	38.5	ug/L	612	Standard
	Ba	135	296.3	92.5	**0.1088**	0.117	107.6	ug/L	21	Standard
	Ce	140	101.7	62.5				ug/L	245	Standard
>	**Tb**	159	1018483.3	2.2				ug/L	950397	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	228.7	95.2	**0.0235**	0.023	98.1	ug/L	15	Standard
	Tl	205	170.0	71.4	**0.0105**	0.014	137.1	ug/L	13	Standard
	Pb	206	473.7	49.2	**0.0358**	0.039	109.0	ug/L	264	Standard
	Pb	207	396.7	45.3	**0.0273**	0.033	121.3	ug/L	222	Standard
	Pb	208	1490.7	28.8	**0.0193**	0.019	100.6	ug/L	959	Standard
	U	238	168.7	71.3	**0.0196**	0.014	72.1	ug/L	9	Standard
>	**Bi**	209	580702.6	1.0				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	85.0	38.6	**0.0310**	0.035	111.2	mg/L	55	Standard
K	39	35.0	37.8	**-0.0077**	0.046	604.4	mg/L	28	Standard
Ca	43	16.7	105.4	**-1.0542**	1.482	140.5	mg/L	27	Standard
Fe	54	153.9	28.2	**0.0123**	0.031	255.3	mg/L	147	Standard
Fe	57	300.0	3.3	**0.0447**	0.032	71.4	mg/L	268	Standard
Sc-1	45	44725.9	0.8				mg/L	41174	Standard
Cl	35	82881.4	0.4				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	2540.2	1.8				ug/L	1950	Standard
P	31	24578.3	4.0				ug/L	21156	Standard
S	34	4135.6	7.4				ug/L	3419	Standard
Sr	88	55.0	27.3				ug/L	72	Standard
C	12	116.7	21.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	17	Standard
Dy	164	16.5	36.7				mg/L	16	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	16210.3	1.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.740	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.547
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.044
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 12:50:27
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Method 6020 - Summary Report

Sample ID: PBW 07 WG574419-03
Sample Date/Time: Friday, July 01, 2016 12:58:36
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81259.0	1.7				ug/L	76456	Standard
	Be	9	25.0	52.9	**0.0011**	0.011	980.8	ug/L	20	Standard
	Al	27	43520.8	2.0	**0.2290**	0.003	1.2	ug/L	1307	Standard
	Sc	45	45160.6	1.8				ug/L	41174	Standard
	Ti	47	37.3	12.7	**0.0196**	0.013	67.8	ug/L	27	Standard
	V	51	1890.1	0.3	**0.0103**	0.002	20.9	ug/L	1434	Standard
	Cr	52	10254.5	1.2	**0.1819**	0.016	8.6	ug/L	7733	Standard
	Cr	53	800.0	8.4	**0.3021**	0.055	18.2	ug/L	442	Standard
	Mn	55	1844.4	0.9	**0.1201**	0.001	0.9	ug/L	723	Standard
	Co	59	227.3	7.0	**-0.0025**	0.002	69.8	ug/L	217	Standard
	Ni	60	435.3	6.3	**0.0376**	0.014	36.1	ug/L	304	Standard
	Cu	65	169.0	18.5	**0.0011**	0.014	1207.4	ug/L	181	Standard
	Zn	66	2605.6	4.5	**1.7518**	0.074	4.2	ug/L	215	Standard
>	**Ge**	72	573164.6	0.8				ug/L	520809	Standard
	As	75	-74.5	34.0	**-0.0097**	0.019	192.2	ug/L	-52	Standard
	Se	82	11.5	10.8	**-0.0437**	0.008	19.0	ug/L	17	Standard
	Se-1	77	70.7	5.9	**0.0666**	0.045	68.1	ug/L	56	Standard
>	**Ga**	71	35.0	65.5				mg/L	25	Standard
	Rb	85	83.3	9.2				ug/L	28	Standard
	Y	89	497110.0	0.3				ug/L	447395	Standard
>	**Rh**	103	13.3	43.3				ug/L	15	Standard
	Mo	98	63.4	20.9	**-0.0047**	0.004	88.1	ug/L	113	Standard
	Ag	107	104.7	2.9	**0.0005**	0.001	97.2	ug/L	108	Standard
	Cd	111	8.9	29.5	**0.0012**	0.001	90.2	mg/L	3	Standard
	Cd	114	20.2	129.3	**0.0033**	0.004	129.2	ug/L	20	Standard
>	**In**	115	681820.3	1.0				ug/L	625728	Standard
	Sn	118	1671.8	12.8	**0.1542**	0.031	19.9	ug/L	568	Standard
	Sb	123	510.3	25.3	**0.0569**	0.023	40.1	ug/L	612	Standard
	Ba	135	135.7	5.5	**0.0393**	0.003	7.0	ug/L	21	Standard
	Ce	140	68.3	33.0				ug/L	245	Standard
>	**Tb**	159	1025294.3	0.6				ug/L	950397	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	44.0	21.7	**0.0039**	0.001	25.6	ug/L	15	Standard
	Tl	205	40.0	25.0	**-0.0050**	0.001	25.0	ug/L	13	Standard
	Pb	206	314.3	3.7	**0.0090**	0.002	26.0	ug/L	264	Standard
	Pb	207	276.7	9.5	**0.0051**	0.005	106.7	ug/L	222	Standard
	Pb	208	1132.0	1.7	**0.0030**	0.001	48.7	ug/L	959	Standard
	U	238	26.0	17.6	**0.0028**	0.001	20.4	ug/L	9	Standard
>	**Bi**	209	581506.6	1.1				ug/L	552821	Standard

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Na	23	1.7	173.2	**4.6090**	7.974	173.0	mg/L	2	Standard
Mg	24	81.7	9.4	**0.0269**	0.009	33.7	mg/L	55	Standard
K	39	40.0	21.7	**0.0086**	0.030	348.4	mg/L	28	Standard
Ca	43	30.0	33.3	**0.0262**	0.793	3031.4	mg/L	27	Standard
Fe	54	180.2	26.2	**0.0304**	0.036	118.2	mg/L	147	Standard
Fe	57	258.3	6.2	**-0.0804**	0.042	52.2	mg/L	268	Standard
> **Sc-1**	45	45160.6	1.8				mg/L	41174	Standard
Cl	35	85551.6	2.1				ug/L	69550	Standard
Kr	83	1.0	173.2				ug/L	1	Standard
Br	81	2493.5	7.2				ug/L	1950	Standard
P	31	25546.6	9.0				ug/L	21156	Standard
S	34	4053.9	0.5				ug/L	3419	Standard
Sr	88	75.0	13.3				ug/L	72	Standard
C	12	136.7	53.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	69.3				mg/L	17	Standard
Dy	164	19.4	51.7				mg/L	16	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	10762.2	1.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.282	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.053	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.964
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.189
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 07 WG574419-04
Sample Date/Time: Friday, July 01, 2016 13:03:34
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80883.7	2.2				ug/L	76456	Standard
	Be	9	63273.5	1.3	**53.4233**	1.134	2.1	ug/L	20	Standard
	Al	27	15556.3	4.2	**0.0758**	0.006	7.3	ug/L	1307	Standard
	Sc	45	46230.4	2.2				ug/L	41174	Standard
	Ti	47	48.3	18.7	**0.0475**	0.025	52.8	ug/L	27	Standard
	V	51	465592.0	1.2	**50.1984**	0.441	0.9	ug/L	1434	Standard
	Cr	52	471783.2	1.2	**50.9433**	0.486	1.0	ug/L	7733	Standard
	Cr	53	57119.2	2.3	**49.8721**	1.291	2.6	ug/L	442	Standard
	Mn	55	436781.1	0.8	**51.2372**	0.113	0.2	ug/L	723	Standard
	Co	59	434567.5	1.2	**50.4450**	0.373	0.7	ug/L	217	Standard
	Ni	60	118551.0	1.3	**50.6835**	0.443	0.9	ug/L	304	Standard
	Cu	65	119119.1	1.3	**51.8651**	0.602	1.2	ug/L	181	Standard
	Zn	66	71172.1	1.7	**51.5055**	0.595	1.2	ug/L	215	Standard
>	**Ge**	72	585340.9	0.6				ug/L	520809	Standard
	As	75	69945.5	1.2	**50.4563**	0.545	1.1	ug/L	-52	Standard
	Se	82	7094.3	1.4	**49.8362**	0.433	0.9	ug/L	17	Standard
	Se-1	77	4867.8	0.7	**49.9806**	0.170	0.3	ug/L	56	Standard
>	**Ga**	71	31.7	24.1				mg/L	25	Standard
	Rb	85	36.7	41.7				ug/L	28	Standard
	Y	89	498458.5	0.8				ug/L	447395	Standard
>	**Rh**	103	18.3	41.7				ug/L	15	Standard
	Mo	98	78.0	18.4	**-0.0003**	0.004	1563.8	ug/L	113	Standard
	Ag	107	402127.6	1.2	**51.3787**	0.778	1.5	ug/L	108	Standard
	Cd	111	126507.9	1.2	**50.4309**	0.392	0.8	mg/L	3	Standard
	Cd	114	308784.3	0.8	**49.7196**	0.327	0.7	ug/L	20	Standard
>	**In**	115	681801.9	1.3				ug/L	625728	Standard
	Sn	118	1796.8	16.1	**0.1722**	0.043	25.0	ug/L	568	Standard
	Sb	123	288724.4	0.5	**51.2448**	0.727	1.4	ug/L	612	Standard
	Ba	135	116686.9	0.7	**49.2097**	0.376	0.8	ug/L	21	Standard
	Ce	140	85.0	38.6				ug/L	245	Standard
>	**Tb**	159	1014866.4	0.7				ug/L	950397	Standard
	Ho	165	16.7	45.8				ug/L	7	Standard
	Tl	203	482185.7	0.8	**50.5384**	0.275	0.5	ug/L	15	Standard
	Tl	205	444917.2	1.5	**52.5153**	1.373	2.6	ug/L	13	Standard
	Pb	206	312986.7	0.5	**51.9814**	0.469	0.9	ug/L	264	Standard
	Pb	207	271686.9	0.6	**49.6820**	0.381	0.8	ug/L	222	Standard
	Pb	208	1142411.3	0.4	**51.1494**	0.415	0.8	ug/L	959	Standard
	U	238	421119.4	1.0	**49.1551**	0.103	0.2	ug/L	9	Standard
>	**Bi**	209	587494.5	1.1				ug/L	552821	Standard

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Na	23	3.3	86.6	**8.7572**	7.580	86.6	mg/L	2	Standard
Mg	24	76.7	21.0	**0.0195**	0.016	83.2	mg/L	55	Standard
K	39	21.7	26.6	**-0.0575**	0.018	32.0	mg/L	28	Standard
Ca	43	18.3	83.3	**-0.9528**	1.279	134.3	mg/L	27	Standard
Fe	54	147.9	28.9	**0.0041**	0.028	686.0	mg/L	147	Standard
Fe	57	245.0	10.8	**-0.1326**	0.084	63.2	mg/L	268	Standard
> **Sc-1**	45	46230.4	2.2				mg/L	41174	Standard
Cl	35	86090.6	2.1				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	2420.2	0.7				ug/L	1950	Standard
P	31	25546.5	4.4				ug/L	21156	Standard
S	34	3980.5	6.3				ug/L	3419	Standard
Sr	88	56.7	20.4				ug/L	72	Standard
C	12	156.7	16.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	88.2				mg/L	17	Standard
Dy	164	19.7	89.4				mg/L	16	Standard
Ho-1	165	16.7	45.8				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	4735.7	3.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.792	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		112.391	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.961
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.272
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606140006 WG574419-01
Sample Date/Time: Friday, July 01, 2016 13:06:46
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80758.0	0.8				ug/L	76456	Standard
	Be	9	41.7	6.9	**0.0154**	0.002	16.2	ug/L	20	Standard
	Al	27	11868534.0	1.1	**65.6266**	0.514	0.8	ug/L	1307	Standard
	Sc	45	45759.0	1.2				ug/L	41174	Standard
	Ti	47	2320.2	10.4	**6.5166**	0.703	10.8	ug/L	27	Standard
	V	51	6253.1	3.7	**0.5063**	0.022	4.3	ug/L	1434	Standard
	Cr	52	20690.1	0.7	**1.4009**	0.007	0.5	ug/L	7733	Standard
	Cr	53	7241.7	4.8	**6.2224**	0.278	4.5	ug/L	442	Standard
	Mn	55	361893.7	0.6	**44.2063**	0.556	1.3	ug/L	723	Standard
	Co	59	1899.1	4.5	**0.2003**	0.011	5.6	ug/L	217	Standard
	Ni	60	3188.7	2.0	**1.2710**	0.022	1.8	ug/L	304	Standard
	Cu	65	3204.0	1.0	**1.3811**	0.024	1.8	ug/L	181	Standard
	Zn	66	3650.1	1.8	**2.5809**	0.057	2.2	ug/L	215	Standard
>	**Ge**	72	561976.5	0.7				ug/L	520809	Standard
	As	75	349.0	10.2	**0.3073**	0.028	9.1	ug/L	-52	Standard
	Se	82	95.4	7.6	**0.5731**	0.052	9.1	ug/L	17	Standard
	Se-1	77	310.3	6.8	**2.6788**	0.206	7.7	ug/L	56	Standard
>	**Ga**	71	306.7	3.4				mg/L	25	Standard
	Rb	85	9304.5	4.6				ug/L	28	Standard
	Y	89	479158.2	2.5				ug/L	447395	Standard
>	**Rh**	103	63.3	19.9				ug/L	15	Standard
	Mo	98	462.6	2.2	**0.1212**	0.004	3.1	ug/L	113	Standard
	Ag	107	229.3	10.2	**0.0174**	0.003	18.1	ug/L	108	Standard
	Cd	111	314.9	4.8	**0.1274**	0.007	5.3	mg/L	3	Standard
	Cd	114	778.8	0.7	**0.1296**	0.002	1.2	ug/L	20	Standard
>	**In**	115	659596.7	0.4				ug/L	625728	Standard
	Sn	118	3462.1	8.7	**0.4262**	0.046	10.8	ug/L	568	Standard
	Sb	123	25160.0	1.7	**4.5846**	0.068	1.5	ug/L	612	Standard
	Ba	135	24755.2	1.0	**10.7771**	0.149	1.4	ug/L	21	Standard
	Ce	140	10733.8	0.6				ug/L	245	Standard
>	**Tb**	159	997525.3	0.9				ug/L	950397	Standard
	Ho	165	248.3	11.4				ug/L	7	Standard
	Tl	203	323.7	9.0	**0.0349**	0.003	8.9	ug/L	15	Standard
	Tl	205	295.0	13.5	**0.0268**	0.005	17.8	ug/L	13	Standard
	Pb	206	13733.6	1.1	**2.3523**	0.014	0.6	ug/L	264	Standard
	Pb	207	11541.7	1.2	**2.1713**	0.021	1.0	ug/L	222	Standard
	Pb	208	49582.7	0.8	**2.2840**	0.012	0.5	ug/L	959	Standard
	U	238	794.4	5.3	**0.0971**	0.005	5.3	ug/L	9	Standard
>	**Bi**	209	559684.2	0.5				ug/L	552821	Standard

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Na	23	5.0	100.0	**13.3851**	13.441	100.4	mg/L	2	Standard
Mg	24	23146.0	2.0	**24.2692**	0.405	1.7	mg/L	55	Standard
K	39	161.7	7.1	**0.4263**	0.034	7.9	mg/L	28	Standard
Ca	43	226.7	16.0	**16.1036**	3.136	19.5	mg/L	27	Standard
Fe	54	423.4	7.8	**0.1999**	0.022	10.8	mg/L	147	Standard
Fe	57	503.3	8.4	**0.5885**	0.131	22.2	mg/L	268	Standard
> **Sc-1**	45	45759.0	1.2				mg/L	41174	Standard
Cl	35	89790.6	1.3				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	17466.7	4.8				ug/L	1950	Standard
P	31	27324.6	2.0				ug/L	21156	Standard
S	34	4078.9	2.0				ug/L	3419	Standard
Sr	88	211.7	20.1				ug/L	72	Standard
C	12	163.3	9.4				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	17	Standard
Dy	164	363.3	15.2				mg/L	16	Standard
Ho-1	165	248.3	11.4				mg/L	7	Standard
Er	166	280.0	3.6				mg/L	7	Standard
I	127	49912.2	3.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.627	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.904	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.413
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.242
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140007S WG574419-05
Sample Date/Time: Friday, July 01, 2016 13:09:57
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80711.1	0.9				ug/L	76456	Standard
	Be	9	64078.6	1.3	54.2065	0.745	1.4	ug/L	20	Standard
	Al	27	12211012.4	1.5	67.5580	0.517	0.8	ug/L	1307	Standard
	Sc	45	44934.9	0.8				ug/L	41174	Standard
	Ti	47	2064.8	6.8	5.8866	0.415	7.1	ug/L	27	Standard
	V	51	459064.1	0.1	52.4156	0.397	0.8	ug/L	1434	Standard
	Cr	52	459452.2	0.5	52.5615	0.550	1.0	ug/L	7733	Standard
	Cr	53	62920.4	1.2	58.2380	1.104	1.9	ug/L	442	Standard
	Mn	55	774817.1	0.6	96.3273	0.870	0.9	ug/L	723	Standard
	Co	59	418465.0	0.9	51.4354	0.672	1.3	ug/L	217	Standard
	Ni	60	114181.6	0.7	51.6930	0.726	1.4	ug/L	304	Standard
	Cu	65	110934.3	0.7	51.1428	0.660	1.3	ug/L	181	Standard
	Zn	66	70146.7	0.6	53.7582	0.090	0.2	ug/L	215	Standard
>	Ge	72	552840.2	0.7				ug/L	520809	Standard
	As	75	68517.6	0.7	52.3310	0.386	0.7	ug/L	-52	Standard
	Se	82	6918.4	0.6	51.4649	0.420	0.8	ug/L	17	Standard
	Se-1	77	5005.2	0.2	54.4756	0.506	0.9	ug/L	56	Standard
>	Ga	71	246.7	21.7				mg/L	25	Standard
	Rb	85	8369.0	3.4				ug/L	28	Standard
	Y	89	475828.1	0.8				ug/L	447395	Standard
>	Rh	103	60.0	8.3				ug/L	15	Standard
	Mo	98	444.1	3.8	0.1178	0.005	4.5	ug/L	113	Standard
	Ag	107	373105.8	0.7	50.1488	0.527	1.1	ug/L	108	Standard
	Cd	111	121300.2	0.5	50.8704	0.210	0.4	mg/L	3	Standard
	Cd	114	296777.5	0.3	50.2713	0.199	0.4	ug/L	20	Standard
>	In	115	648070.4	0.4				ug/L	625728	Standard
	Sn	118	3198.7	11.7	0.3955	0.054	13.6	ug/L	568	Standard
	Sb	123	305348.9	0.8	57.0152	0.685	1.2	ug/L	612	Standard
	Ba	135	127151.7	1.1	56.4152	0.853	1.5	ug/L	21	Standard
	Ce	140	10170.1	11.9				ug/L	245	Standard
>	Tb	159	984910.5	1.3				ug/L	950397	Standard
	Ho	165	243.3	11.3				ug/L	7	Standard
	Tl	203	460227.9	0.5	50.9164	0.584	1.1	ug/L	15	Standard
	Tl	205	419164.2	0.8	52.2197	1.079	2.1	ug/L	13	Standard
	Pb	206	308797.4	0.7	54.1380	1.001	1.8	ug/L	264	Standard
	Pb	207	269438.3	0.3	52.0122	0.916	1.8	ug/L	222	Standard
	Pb	208	1139591.7	0.5	53.8600	0.817	1.5	ug/L	959	Standard
	U	238	412122.6	0.9	50.7770	0.583	1.1	ug/L	9	Standard
>	Bi	209	556623.0	1.5				ug/L	552821	Standard

Sample ID: L1606140007S WG574419-05
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Na	23	5.0	0.0	**13.6792**	0.103	0.8	mg/L	2	Standard
Mg	24	24264.4	1.3	**25.9117**	0.145	0.6	mg/L	55	Standard
K	39	138.3	27.1	**0.3549**	0.133	37.4	mg/L	28	Standard
Ca	43	288.3	17.1	**21.5709**	4.241	19.7	mg/L	27	Standard
Fe	54	394.0	6.5	**0.1843**	0.018	9.9	mg/L	147	Standard
Fe	57	461.7	10.0	**0.4961**	0.134	27.1	mg/L	268	Standard
> **Sc-1**	45	44934.9	0.8				mg/L	41174	Standard
Cl	35	90855.7	2.0				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	11284.2	7.1				ug/L	1950	Standard
P	31	27506.6	4.3				ug/L	21156	Standard
S	34	4052.2	3.2				ug/L	3419	Standard
Sr	88	215.0	8.1				ug/L	72	Standard
C	12	163.3	9.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	17.3				mg/L	17	Standard
Dy	164	319.9	13.5				mg/L	16	Standard
Ho-1	165	243.3	11.3				mg/L	7	Standard
Er	166	280.0	25.8				mg/L	7	Standard
I	127	66618.3	7.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.566	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.150	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.571
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.688
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140008SD WG574419-06
Sample Date/Time: Friday, July 01, 2016 13:13:09
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79700.7	0.7				ug/L	76456	Standard
	Be	9	61700.4	1.6	**52.8560**	0.961	1.8	ug/L	20	Standard
	Al	27	12099353.2	1.1	**67.7900**	0.341	0.5	ug/L	1307	Standard
	Sc	45	46046.6	2.1				ug/L	41174	Standard
	Ti	47	1942.8	6.7	**5.5490**	0.345	6.2	ug/L	27	Standard
	V	51	439192.0	0.4	**50.2950**	0.725	1.4	ug/L	1434	Standard
	Cr	52	444362.9	0.8	**50.9606**	0.244	0.5	ug/L	7733	Standard
	Cr	53	61436.0	0.3	**57.0274**	0.463	0.8	ug/L	442	Standard
	Mn	55	751669.2	0.7	**93.7402**	1.592	1.7	ug/L	723	Standard
	Co	59	399707.3	0.9	**49.2832**	0.963	2.0	ug/L	217	Standard
	Ni	60	109770.2	0.4	**49.8430**	0.612	1.2	ug/L	304	Standard
	Cu	65	108323.5	0.5	**50.0917**	0.642	1.3	ug/L	181	Standard
	Zn	66	68554.1	0.3	**52.6985**	0.620	1.2	ug/L	215	Standard
>	Ge	72	551156.5	1.1				ug/L	520809	Standard
	As	75	66401.2	0.7	**50.8743**	0.706	1.4	ug/L	-52	Standard
	Se	82	6730.1	0.5	**50.2159**	0.522	1.0	ug/L	17	Standard
	Se-1	77	4856.1	2.0	**53.0004**	1.342	2.5	ug/L	56	Standard
>	Ga	71	258.3	16.5				mg/L	25	Standard
	Rb	85	8118.8	3.8				ug/L	28	Standard
	Y	89	478755.4	1.4				ug/L	447395	Standard
>	Rh	103	76.7	3.8				ug/L	15	Standard
	Mo	98	512.6	9.1	**0.1403**	0.015	10.9	ug/L	113	Standard
	Ag	107	359474.2	1.7	**48.4964**	0.550	1.1	ug/L	108	Standard
	Cd	111	117797.3	1.3	**49.5872**	0.214	0.4	mg/L	3	Standard
	Cd	114	286908.0	1.1	**48.7832**	0.247	0.5	ug/L	20	Standard
>	In	115	645632.6	1.1				ug/L	625728	Standard
	Sn	118	3095.3	10.7	**0.3822**	0.054	14.0	ug/L	568	Standard
	Sb	123	295379.5	0.9	**55.3607**	0.341	0.6	ug/L	612	Standard
	Ba	135	123159.2	0.4	**54.8524**	0.674	1.2	ug/L	21	Standard
	Ce	140	9327.9	2.1				ug/L	245	Standard
>	Tb	159	983378.7	0.8				ug/L	950397	Standard
	Ho	165	230.0	2.2				ug/L	7	Standard
	Tl	203	446759.8	0.8	**49.4389**	0.212	0.4	ug/L	15	Standard
	Tl	205	408461.1	0.9	**50.8970**	0.668	1.3	ug/L	13	Standard
	Pb	206	301254.5	0.8	**52.8246**	0.290	0.5	ug/L	264	Standard
	Pb	207	261947.7	0.8	**50.5743**	0.209	0.4	ug/L	222	Standard
	Pb	208	1104059.4	0.6	**52.1919**	0.419	0.8	ug/L	959	Standard
	U	238	402584.9	0.8	**49.6175**	0.619	1.2	ug/L	9	Standard
>	Bi	209	556417.0	0.4				ug/L	552821	Standard

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Na	23	5.0	100.0	**13.3094**	13.444	101.0	mg/L	2	Standard
Mg	24	23635.1	1.3	**24.6326**	0.412	1.7	mg/L	55	Standard
K	39	136.7	2.1	**0.3374**	0.002	0.7	mg/L	28	Standard
Ca	43	218.3	2.6	**15.2980**	0.780	5.1	mg/L	27	Standard
Fe	54	402.8	5.8	**0.1835**	0.012	6.4	mg/L	147	Standard
Fe	57	453.3	11.2	**0.4438**	0.163	36.7	mg/L	268	Standard
> **Sc-1**	45	46046.6	2.1				mg/L	41174	Standard
Cl	35	91583.3	0.2				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	12164.9	6.2				ug/L	1950	Standard
P	31	27852.3	5.0				ug/L	21156	Standard
S	34	4047.2	6.0				ug/L	3419	Standard
Sr	88	165.0	13.2				ug/L	72	Standard
C	12	173.3	28.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	17	Standard
Dy	164	272.5	13.7				mg/L	16	Standard
Ho-1	165	230.0	2.2				mg/L	7	Standard
Er	166	296.7	5.1				mg/L	7	Standard
I	127	59372.8	2.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.244	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.827	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.181
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.651
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606142701 WG574419-02
Sample Date/Time: Friday, July 01, 2016 13:16:20
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	94406.8	3.4				ug/L	76456	Standard
	Be	9	85.0	35.3	**0.0412**	0.020	47.7	ug/L	20	Standard
	Al	27	56617238.2	4.0	**267.8022**	1.372	0.5	ug/L	1307	Standard
	Sc	45	46416.0	2.3				ug/L	41174	Standard
	Ti	47	884.0	4.8	**2.5428**	0.066	2.6	ug/L	27	Standard
	V	51	553940.5	2.9	**65.0728**	0.307	0.5	ug/L	1434	Standard
	Cr	52	299233.7	2.3	**34.8806**	0.725	2.1	ug/L	7733	Standard
	Cr	53	52044.3	2.2	**49.4662**	0.542	1.1	ug/L	442	Standard
	Mn	55	240351.0	1.7	**30.6595**	0.508	1.7	ug/L	723	Standard
	Co	59	198012.4	2.6	**25.0083**	0.182	0.7	ug/L	217	Standard
	Ni	60	153480.0	2.1	**71.5090**	1.345	1.9	ug/L	304	Standard
	Cu	65	58814.7	2.8	**27.8441**	0.424	1.5	ug/L	181	Standard
	Zn	66	154855.3	2.4	**122.2558**	1.271	1.0	ug/L	215	Standard
>	**Ge**	72	537771.5	3.3				ug/L	520809	Standard
	As	75	14927.7	4.1	**11.7537**	0.103	0.9	ug/L	-52	Standard
	Se	82	5918.7	4.3	**45.2355**	0.439	1.0	ug/L	17	Standard
	Se-1	77	1154.4	4.7	**12.3907**	0.295	2.4	ug/L	56	Standard
>	**Ga**	71	381.7	7.4				mg/L	25	Standard
	Rb	85	99551.2	2.9				ug/L	28	Standard
	Y	89	473605.3	2.9				ug/L	447395	Standard
>	**Rh**	103	343.3	14.9				ug/L	15	Standard
	Mo	98	2403599.9	3.3	**789.6820**	1.502	0.2	ug/L	113	Standard
	Ag	107	348.7	11.5	**0.0353**	0.004	11.4	ug/L	108	Standard
	Cd	111	-1248.7	2.3	**-0.5414**	0.006	1.1	mg/L	3	Standard
	Cd	114	4967.3	3.8	**0.8659**	0.009	1.0	ug/L	20	Standard
>	**In**	115	629706.1	3.1				ug/L	625728	Standard
	Sn	118	2805.3	14.7	**0.3479**	0.050	14.4	ug/L	568	Standard
	Sb	123	2974.2	8.0	**0.5376**	0.028	5.2	ug/L	612	Standard
	Ba	135	206845.8	2.1	**94.4794**	0.976	1.0	ug/L	21	Standard
	Ce	140	2191.8	6.3				ug/L	245	Standard
>	**Tb**	159	977368.8	3.8				ug/L	950397	Standard
	Ho	165	160.0	22.5				ug/L	7	Standard
	Tl	203	430.0	2.3	**0.0496**	0.002	4.9	ug/L	15	Standard
	Tl	205	390.0	8.0	**0.0417**	0.005	11.7	ug/L	13	Standard
	Pb	206	8083.8	1.9	**1.4566**	0.015	1.0	ug/L	264	Standard
	Pb	207	6744.5	3.2	**1.3320**	0.010	0.7	ug/L	222	Standard
	Pb	208	28675.7	2.4	**1.3865**	0.012	0.8	ug/L	959	Standard
	U	238	878.7	4.2	**0.1143**	0.007	5.7	ug/L	9	Standard
>	**Bi**	209	526224.9	2.9				ug/L	552821	Standard

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Na	23	10.0	100.0	**26.3285**	25.935	98.5	mg/L	2	Standard
Mg	24	138231.5	3.2	**143.1647**	1.819	1.3	mg/L	55	Standard
K	39	2051.8	3.6	**6.8480**	0.212	3.1	mg/L	28	Standard
Ca	43	1005.0	4.6	**78.6144**	4.822	6.1	mg/L	27	Standard
Fe	54	1298.8	6.4	**0.8054**	0.072	8.9	mg/L	147	Standard
Fe	57	1345.1	6.6	**2.8597**	0.164	5.7	mg/L	268	Standard
> **Sc-1**	45	46416.0	2.3				mg/L	41174	Standard
Cl	35	167690.5	2.1				ug/L	69550	Standard
Kr	83	3.0	66.7				ug/L	1	Standard
Br	81	1167966.9	3.9				ug/L	1950	Standard
P	31	32757.0	0.7				ug/L	21156	Standard
S	34	3867.2	4.1				ug/L	3419	Standard
Sr	88	1343.4	2.4				ug/L	72	Standard
C	12	240.0	12.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1276.7	2.5				mg/L	17	Standard
Dy	164	1123.0	11.7				mg/L	16	Standard
Ho-1	165	160.0	22.5				mg/L	7	Standard
Er	166	146.7	14.2				mg/L	7	Standard
I	127	116304.4	6.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.479	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.257	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.636	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	95.189	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Zn 66 Upper, S, EEE	Zn	66	

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Mo 98 Upper, S, EEE	Mo	98
Cd 111 Lower	Cd	111

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Method 6020 - Summary Report

Sample ID: L1606142701DP WG574419-07
Sample Date/Time: Friday, July 01, 2016 13:19:32
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	104046.1	2.0				ug/L	76456	Standard
	Be	9	46.7	34.4	**0.0108**	0.011	98.8	ug/L	20	Standard
	Al	27	58682132.6	0.8	**251.9338**	4.223	1.7	ug/L	1307	Standard
	Sc	45	49029.2	0.9				ug/L	41174	Standard
	Ti	47	887.4	3.2	**2.4062**	0.089	3.7	ug/L	27	Standard
	V	51	572508.3	0.6	**63.4877**	0.191	0.3	ug/L	1434	Standard
	Cr	52	308728.3	0.4	**33.9428**	0.266	0.8	ug/L	7733	Standard
	Cr	53	52407.2	1.8	**46.9988**	0.886	1.9	ug/L	442	Standard
	Mn	55	248854.2	1.2	**29.9599**	0.484	1.6	ug/L	723	Standard
	Co	59	205279.2	0.1	**24.4744**	0.076	0.3	ug/L	217	Standard
	Ni	60	157071.7	0.8	**69.0682**	0.457	0.7	ug/L	304	Standard
	Cu	65	60395.8	1.4	**26.9893**	0.358	1.3	ug/L	181	Standard
	Zn	66	157884.7	1.0	**117.6566**	1.110	0.9	ug/L	215	Standard
>	Ge	72	569569.1	0.4				ug/L	520809	Standard
	As	75	17073.6	1.5	**12.6909**	0.145	1.1	ug/L	-52	Standard
	Se	82	6774.5	1.0	**48.9062**	0.303	0.6	ug/L	17	Standard
	Se-1	77	1068.4	1.0	**10.7433**	0.123	1.1	ug/L	56	Standard
>	Ga	71	446.7	9.5				mg/L	25	Standard
	Rb	85	100812.6	1.2				ug/L	28	Standard
	Y	89	506159.4	0.9				ug/L	447395	Standard
>	Rh	103	378.3	6.5				ug/L	15	Standard
	Mo	98	2476607.9	0.6	**769.3094**	6.421	0.8	ug/L	113	Standard
	Ag	107	277.0	7.6	**0.0234**	0.003	11.5	ug/L	108	Standard
	Cd	111	-1309.7	3.6	**-0.5367**	0.015	2.9	mg/L	3	Standard
	Cd	114	4986.9	3.4	**0.8220**	0.028	3.4	ug/L	20	Standard
>	In	115	666048.1	0.7				ug/L	625728	Standard
	Sn	118	2695.2	8.4	**0.3091**	0.031	9.9	ug/L	568	Standard
	Sb	123	2859.3	3.8	**0.4860**	0.016	3.4	ug/L	612	Standard
	Ba	135	211685.9	0.6	**91.3948**	0.192	0.2	ug/L	21	Standard
	Ce	140	2868.6	2.4				ug/L	245	Standard
>	Tb	159	1029121.0	0.5				ug/L	950397	Standard
	Ho	165	185.0	14.3				ug/L	7	Standard
	Tl	203	334.0	8.3	**0.0363**	0.003	8.5	ug/L	15	Standard
	Tl	205	321.7	4.7	**0.0304**	0.002	6.7	ug/L	13	Standard
	Pb	206	8239.2	0.3	**1.4051**	0.008	0.6	ug/L	264	Standard
	Pb	207	6707.8	0.3	**1.2527**	0.005	0.4	ug/L	222	Standard
	Pb	208	28813.8	0.3	**1.3177**	0.005	0.4	ug/L	959	Standard
	U	238	815.7	5.7	**0.1005**	0.006	5.9	ug/L	9	Standard
>	Bi	209	555326.9	0.6				ug/L	552821	Standard

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Na	23	11.7	89.2	**29.1295**	26.033	89.4	mg/L	2	Standard
Mg	24	145830.2	1.6	**142.9963**	1.122	0.8	mg/L	55	Standard
K	39	1910.1	4.3	**6.0209**	0.304	5.1	mg/L	28	Standard
Ca	43	1011.7	3.6	**74.7713**	3.380	4.5	mg/L	27	Standard
Fe	54	1358.4	2.2	**0.7959**	0.027	3.4	mg/L	147	Standard
Fe	57	1346.7	4.5	**2.6702**	0.125	4.7	mg/L	268	Standard
> **Sc-1**	45	49029.2	0.9				mg/L	41174	Standard
Cl	35	174677.8	0.8				ug/L	69550	Standard
Kr	83	3.3	45.8				ug/L	1	Standard
Br	81	1284910.2	3.2				ug/L	1950	Standard
P	31	34656.3	1.1				ug/L	21156	Standard
S	34	3823.8	7.2				ug/L	3419	Standard
Sr	88	1511.7	7.3				ug/L	72	Standard
C	12	326.7	14.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1320.1	5.5				mg/L	17	Standard
Dy	164	1289.7	16.2				mg/L	16	Standard
Ho-1	165	185.0	14.3				mg/L	7	Standard
Er	166	146.7	50.3				mg/L	7	Standard
I	127	128302.1	5.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		136.087	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.362	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	106.444
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.453
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Zn 66 Upper, S, EEE	Zn	66	

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Mo 98 Upper, S, EEE	Mo	98
Cd 111 Lower	Cd	111

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Method 6020 - Summary Report

Sample ID: L1606146801
Sample Date/Time: Friday, July 01, 2016 13:22:43
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	95246.8	1.7				ug/L	76456	Standard
	Be	9	60.0	36.3	**0.0230**	0.015	65.8	ug/L	20	Standard
	Al	27	35472226.0	0.8	**166.3429**	2.244	1.3	ug/L	1307	Standard
	Sc	45	46670.1	1.2				ug/L	41174	Standard
	Ti	47	140.0	21.5	**0.3094**	0.088	28.6	ug/L	27	Standard
	V	51	4190.3	5.3	**0.2681**	0.025	9.2	ug/L	1434	Standard
	Cr	52	13346.9	2.4	**0.5405**	0.016	3.1	ug/L	7733	Standard
	Cr	53	6873.2	1.9	**5.8101**	0.177	3.1	ug/L	442	Standard
	Mn	55	19772.6	3.3	**2.2894**	0.049	2.1	ug/L	723	Standard
	Co	59	1288.4	10.2	**0.1244**	0.014	11.2	ug/L	217	Standard
	Ni	60	3544.7	6.0	**1.4102**	0.074	5.2	ug/L	304	Standard
	Cu	65	6205.3	5.0	**2.7088**	0.103	3.8	ug/L	181	Standard
	Zn	66	22108.8	2.9	**16.3375**	0.265	1.6	ug/L	215	Standard
>	Ge	72	568906.9	1.3				ug/L	520809	Standard
	As	75	543.4	5.2	**0.4480**	0.017	3.7	ug/L	-52	Standard
	Se	82	262.1	5.1	**1.7720**	0.073	4.1	ug/L	17	Standard
	Se-1	77	440.0	5.3	**4.0275**	0.247	6.1	ug/L	56	Standard
>	Ga	71	158.3	3.6				mg/L	25	Standard
	Rb	85	31255.6	3.8				ug/L	28	Standard
	Y	89	486688.8	1.2				ug/L	447395	Standard
>	Rh	103	48.3	15.8				ug/L	15	Standard
	Mo	98	2311.5	33.1	**0.6846**	0.225	32.9	ug/L	113	Standard
	Ag	107	184.3	31.5	**0.0110**	0.007	66.0	ug/L	108	Standard
	Cd	111	67.6	38.4	**0.0249**	0.010	40.7	mg/L	3	Standard
	Cd	114	137.0	32.2	**0.0223**	0.007	31.3	ug/L	20	Standard
>	In	115	673094.9	1.4				ug/L	625728	Standard
	Sn	118	1788.4	15.0	**0.1745**	0.042	24.3	ug/L	568	Standard
	Sb	123	351.8	14.1	**0.0296**	0.010	32.6	ug/L	612	Standard
	Ba	135	56024.1	0.9	**23.9231**	0.201	0.8	ug/L	21	Standard
	Ce	140	3798.8	2.1				ug/L	245	Standard
>	Tb	159	1033945.4	1.1				ug/L	950397	Standard
	Ho	165	101.7	7.5				ug/L	7	Standard
	Tl	203	1144.4	9.6	**0.1229**	0.010	8.3	ug/L	15	Standard
	Tl	205	953.4	4.2	**0.1063**	0.005	4.8	ug/L	13	Standard
	Pb	206	1672.1	2.6	**0.2429**	0.007	2.7	ug/L	264	Standard
	Pb	207	1423.7	2.4	**0.2227**	0.003	1.2	ug/L	222	Standard
	Pb	208	6035.8	3.4	**0.2307**	0.005	2.3	ug/L	959	Standard
	U	238	4452.3	3.5	**0.5357**	0.011	2.0	ug/L	9	Standard
>	Bi	209	569516.4	1.6				ug/L	552821	Standard

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Na	23	8.3	34.6	**21.9971**	7.770	35.3	mg/L	2	Standard
Mg	24	21678.8	1.3	**22.2848**	0.435	2.0	mg/L	55	Standard
K	39	2645.2	6.0	**8.8196**	0.578	6.6	mg/L	28	Standard
Ca	43	443.3	15.1	**33.0787**	5.254	15.9	mg/L	27	Standard
Fe	54	243.9	19.5	**0.0697**	0.031	44.8	mg/L	147	Standard
Fe	57	548.3	7.8	**0.6829**	0.122	17.9	mg/L	268	Standard
Sc-1	45	46670.1	1.2				mg/L	41174	Standard
Cl	35	103993.1	1.8				ug/L	69550	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	45849.6	8.7				ug/L	1950	Standard
P	31	27049.2	4.2				ug/L	21156	Standard
S	34	3738.8	3.2				ug/L	3419	Standard
Sr	88	155.0	11.6				ug/L	72	Standard
C	12	323.3	23.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	32.7				mg/L	17	Standard
Dy	164	114.1	9.2				mg/L	16	Standard
Ho-1	165	101.7	7.5				mg/L	7	Standard
Er	166	123.3	9.4				mg/L	7	Standard
I	127	41777.5	0.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		124.578	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		109.235	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.570
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.020
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606146801PS WG574824-01
Sample Date/Time: Friday, July 01, 2016 13:25:55
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	90108.8	0.5				ug/L	76456	Standard
	Be	9	70249.2	1.7	**53.2245**	0.671	1.3	ug/L	20	Standard
	Al	27	34044331.9	1.0	**168.7325**	2.084	1.2	ug/L	1307	Standard
	Sc	45	45399.6	0.8				ug/L	41174	Standard
	Ti	47	138.7	17.3	**0.3148**	0.070	22.1	ug/L	27	Standard
	V	51	476317.0	1.0	**54.1491**	0.294	0.5	ug/L	1434	Standard
	Cr	52	466031.0	0.5	**53.0857**	0.077	0.1	ug/L	7733	Standard
	Cr	53	63049.2	0.3	**58.0938**	0.175	0.3	ug/L	442	Standard
	Mn	55	440401.5	1.9	**54.4612**	0.687	1.3	ug/L	723	Standard
	Co	59	434977.5	1.9	**53.2245**	0.684	1.3	ug/L	217	Standard
	Ni	60	116940.2	0.8	**52.7068**	0.130	0.2	ug/L	304	Standard
	Cu	65	117328.2	0.6	**53.8548**	0.631	1.2	ug/L	181	Standard
	Zn	66	90120.9	0.2	**68.8123**	0.512	0.7	ug/L	215	Standard
>	Ge	72	555295.5	0.6				ug/L	520809	Standard
	As	75	70805.4	0.6	**53.8379**	0.372	0.7	ug/L	-52	Standard
	Se	82	7397.3	0.8	**54.7911**	0.368	0.7	ug/L	17	Standard
	Se-1	77	5164.9	2.2	**55.9837**	1.347	2.4	ug/L	56	Standard
>	Ga	71	125.0	14.4				mg/L	25	Standard
	Rb	85	30505.7	1.7				ug/L	28	Standard
	Y	89	478605.6	2.2				ug/L	447395	Standard
>	Rh	103	46.7	43.3				ug/L	15	Standard
	Mo	98	839.0	9.3	**0.2402**	0.025	10.4	ug/L	113	Standard
	Ag	107	377133.6	0.1	**49.9818**	0.291	0.6	ug/L	108	Standard
	Cd	111	125097.0	1.5	**51.7283**	0.533	1.0	mg/L	3	Standard
	Cd	114	305450.5	0.6	**51.0188**	0.497	1.0	ug/L	20	Standard
>	In	115	657251.3	0.6				ug/L	625728	Standard
	Sn	118	2133.5	27.9	**0.2313**	0.087	37.7	ug/L	568	Standard
	Sb	123	274150.2	2.6	**50.4698**	1.311	2.6	ug/L	612	Standard
	Ba	135	169708.2	1.1	**74.2483**	0.737	1.0	ug/L	21	Standard
	Ce	140	3655.4	2.8				ug/L	245	Standard
>	Tb	159	997893.3	1.3				ug/L	950397	Standard
	Ho	165	96.7	3.0				ug/L	7	Standard
	Tl	203	479768.6	1.3	**52.5300**	0.668	1.3	ug/L	15	Standard
	Tl	205	441867.2	0.2	**54.4752**	0.081	0.1	ug/L	13	Standard
	Pb	206	307910.6	0.5	**53.4209**	0.305	0.6	ug/L	264	Standard
	Pb	207	270893.2	0.6	**51.7493**	0.347	0.7	ug/L	222	Standard
	Pb	208	1132008.2	0.1	**52.9464**	0.115	0.2	ug/L	959	Standard
	U	238	437881.5	0.7	**53.3944**	0.388	0.7	ug/L	9	Standard
>	Bi	209	562372.5	0.1				ug/L	552821	Standard

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Na	23	3.3	173.2	**9.0238**	15.621	173.1	mg/L	2	Standard
Mg	24	21021.2	2.0	**22.2136**	0.609	2.7	mg/L	55	Standard
K	39	2403.5	9.2	**8.2292**	0.795	9.7	mg/L	28	Standard
Ca	43	463.3	6.3	**35.7330**	2.393	6.7	mg/L	27	Standard
Fe	54	243.1	16.8	**0.0741**	0.029	39.0	mg/L	147	Standard
Fe	57	501.7	6.6	**0.5936**	0.084	14.1	mg/L	268	Standard
> **Sc-1**	45	45399.6	0.8				mg/L	41174	Standard
Cl	35	103755.4	0.3				ug/L	69550	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	34723.1	4.1				ug/L	1950	Standard
P	31	26186.0	3.6				ug/L	21156	Standard
S	34	3878.8	0.5				ug/L	3419	Standard
Sr	88	156.7	22.4				ug/L	72	Standard
C	12	250.0	6.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	24.7				mg/L	17	Standard
Dy	164	122.0	12.6				mg/L	16	Standard
Ho-1	165	96.7	3.0				mg/L	7	Standard
Er	166	96.7	21.5				mg/L	7	Standard
I	127	39521.5	2.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.857	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.622	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606146801PS WG574824-01
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.038
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.728
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606146801SDL WG574824-02
Sample Date/Time: Friday, July 01, 2016 13:29:06
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81934.4	2.4				ug/L	76456	Standard
	Be	9	23.3	12.4	**-0.0004**	0.002	528.6	ug/L	20	Standard
	Al	27	6372058.3	0.6	**34.7368**	0.867	2.5	ug/L	1307	Standard
	Sc	45	41202.6	2.0				ug/L	41174	Standard
	Ti	47	41.3	2.8	**0.0406**	0.003	7.7	ug/L	27	Standard
	V	51	2837.9	5.4	**0.1420**	0.017	12.0	ug/L	1434	Standard
	Cr	52	10022.3	0.9	**0.2524**	0.016	6.4	ug/L	7733	Standard
	Cr	53	2263.5	3.6	**1.7926**	0.079	4.4	ug/L	442	Standard
	Mn	55	3961.5	5.6	**0.4150**	0.030	7.3	ug/L	723	Standard
	Co	59	455.7	11.3	**0.0293**	0.007	23.1	ug/L	217	Standard
	Ni	60	945.7	5.5	**0.2966**	0.026	8.9	ug/L	304	Standard
	Cu	65	1313.7	2.7	**0.5610**	0.018	3.2	ug/L	181	Standard
	Zn	66	5244.2	0.6	**4.0427**	0.043	1.1	ug/L	215	Standard
>	**Ge**	72	527921.1	0.4				ug/L	520809	Standard
	As	75	85.0	19.3	**0.1131**	0.013	11.5	ug/L	-52	Standard
	Se	82	67.2	5.5	**0.3985**	0.027	6.7	ug/L	17	Standard
	Se-1	77	133.3	10.0	**0.8545**	0.159	18.6	ug/L	56	Standard
>	**Ga**	71	51.7	34.0				mg/L	25	Standard
	Rb	85	5692.7	3.6				ug/L	28	Standard
	Y	89	450949.6	1.2				ug/L	447395	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	345.8	14.9	**0.0912**	0.015	16.7	ug/L	113	Standard
	Ag	107	237.3	15.4	**0.0205**	0.005	24.9	ug/L	108	Standard
	Cd	111	35.8	40.8	**0.0133**	0.006	46.9	mg/L	3	Standard
	Cd	114	93.4	10.0	**0.0165**	0.001	8.4	ug/L	20	Standard
>	**In**	115	620231.7	1.6				ug/L	625728	Standard
	Sn	118	866.7	12.4	**0.0518**	0.019	35.8	ug/L	568	Standard
	Sb	123	1735.5	30.3	**0.3061**	0.107	34.9	ug/L	612	Standard
	Ba	135	10779.2	0.9	**4.9812**	0.056	1.1	ug/L	21	Standard
	Ce	140	791.7	4.9				ug/L	245	Standard
>	**Tb**	159	942729.5	1.8				ug/L	950397	Standard
	Ho	165	28.3	36.7				ug/L	7	Standard
	Tl	203	339.3	13.7	**0.0372**	0.005	12.3	ug/L	15	Standard
	Tl	205	293.3	14.5	**0.0272**	0.005	18.3	ug/L	13	Standard
	Pb	206	612.0	8.4	**0.0647**	0.008	11.7	ug/L	264	Standard
	Pb	207	519.7	9.7	**0.0553**	0.008	14.9	ug/L	222	Standard
	Pb	208	2221.7	7.6	**0.0579**	0.007	11.9	ug/L	959	Standard
	U	238	900.0	3.6	**0.1118**	0.003	3.1	ug/L	9	Standard
>	**Bi**	209	550585.9	1.6				ug/L	552821	Standard

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Na	23	1.7	173.2	**5.0521**	8.742	173.0	mg/L	2	Standard
Mg	24	4062.2	4.3	**4.6808**	0.132	2.8	mg/L	55	Standard
K	39	498.3	11.6	**1.7809**	0.252	14.1	mg/L	28	Standard
Ca	43	101.7	7.5	**6.7726**	0.507	7.5	mg/L	27	Standard
Fe	54	107.3	30.2	**-0.0145**	0.026	180.3	mg/L	147	Standard
Fe	57	291.7	13.3	**0.0919**	0.123	133.6	mg/L	268	Standard
> **Sc-1**	45	41202.6	2.0				mg/L	41174	Standard
Cl	35	96829.8	0.1				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	10183.4	2.4				ug/L	1950	Standard
P	31	11094.1	2.9				ug/L	21156	Standard
S	34	3683.8	0.7				ug/L	3419	Standard
Sr	88	95.0	24.1				ug/L	72	Standard
C	12	163.3	7.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	17	Standard
Dy	164	29.5	32.3				mg/L	16	Standard
Ho-1	165	28.3	36.7				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	35264.3	1.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.166	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.366	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.122
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.596
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 13:32:18
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83467.6	1.4				ug/L	76456	Standard
	Be	9	63718.7	0.7	**52.1231**	0.475	0.9	ug/L	20	Standard
	Al	27	9062605.1	0.9	**48.4842**	0.275	0.6	ug/L	1307	Standard
	Sc	45	44059.0	1.3				ug/L	41174	Standard
	Ti	47	34404.0	1.1	**99.0094**	0.671	0.7	ug/L	27	Standard
	V	51	443244.1	0.4	**50.4051**	0.454	0.9	ug/L	1434	Standard
	Cr	52	434951.0	1.6	**49.5050**	0.344	0.7	ug/L	7733	Standard
	Cr	53	55258.9	0.5	**50.8922**	0.303	0.6	ug/L	442	Standard
	Mn	55	403371.8	0.9	**49.9032**	0.315	0.6	ug/L	723	Standard
	Co	59	418724.4	1.0	**51.2643**	0.239	0.5	ug/L	217	Standard
	Ni	60	110119.8	2.0	**49.6473**	0.559	1.1	ug/L	304	Standard
	Cu	65	108317.9	1.6	**49.7353**	0.387	0.8	ug/L	181	Standard
	Zn	66	65643.9	0.2	**50.1012**	0.420	0.8	ug/L	215	Standard
>	**Ge**	72	555003.0	0.9				ug/L	520809	Standard
	As	75	65592.7	0.9	**49.9040**	0.350	0.7	ug/L	-52	Standard
	Se	82	6752.9	1.3	**50.0327**	0.319	0.6	ug/L	17	Standard
	Se-1	77	4634.4	1.8	**50.1857**	0.510	1.0	ug/L	56	Standard
>	**Ga**	71	43.3	43.7				mg/L	25	Standard
	Rb	85	895.0	1.7				ug/L	28	Standard
	Y	89	470300.0	1.3				ug/L	447395	Standard
>	**Rh**	103	21.7	53.3				ug/L	15	Standard
	Mo	98	316268.1	0.4	**99.0881**	0.889	0.9	ug/L	113	Standard
	Ag	107	376354.5	0.2	**49.6535**	0.293	0.6	ug/L	108	Standard
	Cd	111	120441.8	1.1	**49.5792**	0.292	0.6	mg/L	3	Standard
	Cd	114	295637.4	1.1	**49.1550**	0.340	0.7	ug/L	20	Standard
>	**In**	115	660227.7	0.5				ug/L	625728	Standard
	Sn	118	331178.7	0.6	**48.6841**	0.135	0.3	ug/L	568	Standard
	Sb	123	273404.4	0.5	**50.1048**	0.039	0.1	ug/L	612	Standard
	Ba	135	110185.5	0.7	**47.9831**	0.253	0.5	ug/L	21	Standard
	Ce	140	71.7	8.1				ug/L	245	Standard
>	**Tb**	159	984792.3	0.6				ug/L	950397	Standard
	Ho	165	13.3	78.1				ug/L	7	Standard
	Tl	203	462531.1	0.4	**50.2621**	0.297	0.6	ug/L	15	Standard
	Tl	205	421818.4	1.3	**51.6134**	0.810	1.6	ug/L	13	Standard
	Pb	206	290494.8	0.7	**50.0181**	0.451	0.9	ug/L	264	Standard
	Pb	207	263168.3	0.9	**49.8939**	0.483	1.0	ug/L	222	Standard
	Pb	208	1101207.6	0.2	**51.1172**	0.228	0.4	ug/L	959	Standard
	U	238	418119.7	0.4	**50.6018**	0.328	0.6	ug/L	9	Standard
>	**Bi**	209	566634.4	0.3				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4939.1	6.4	**5.3310**	0.320	6.0	mg/L	55	Standard
K	39	1245.1	5.8	**4.3288**	0.211	4.9	mg/L	28	Standard
Ca	43	85.0	25.6	**4.7651**	1.854	38.9	mg/L	27	Standard
Fe	54	6867.9	1.6	**4.9353**	0.136	2.8	mg/L	147	Standard
Fe	57	2071.8	2.6	**5.1454**	0.157	3.1	mg/L	268	Standard
> **Sc-1**	45	44059.0	1.3				mg/L	41174	Standard
Cl	35	90383.1	4.1				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	4354.0	6.6				ug/L	1950	Standard
P	31	26625.0	1.6				ug/L	21156	Standard
S	34	4595.7	0.9				ug/L	3419	Standard
Sr	88	73.3	21.9				ug/L	72	Standard
C	12	80.0	25.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	17	Standard
Dy	164	9.7	105.8				mg/L	16	Standard
Ho-1	165	13.3	78.1				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	17566.9	5.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	104.246		
Al	27	96.968		
Sc	45			
Ti	47	99.009		
V	51	100.810		
Cr	52	99.010		
Cr	53			
Mn	55	99.806		
Co	59	102.529		
Ni	60	99.295		
Cu	65	99.471		
Zn	66	100.202		
> Ge	72		106.565	
As	75	99.808		
Se	82	100.065		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	99.088		
Ag	107	99.307		
Cd	111	99.158		
Cd	114			
In	115			105.514
Sn	118	97.368		
Sb	123	100.210		
Ba	135	95.966		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.524		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.234		
U	238	101.204		
Bi	209			102.499
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 13:35:30
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81907.5	2.0				ug/L	76456	Standard
	Be	9	33.3	37.7	**0.0081**	0.011	136.7	ug/L	20	Standard
	Al	27	3658.8	6.2	**0.0097**	0.001	9.1	ug/L	1307	Standard
	Sc	45	43395.4	0.6				ug/L	41174	Standard
	Ti	47	24.0	4.2	**-0.0151**	0.003	16.8	ug/L	27	Standard
	V	51	1486.9	6.2	**-0.0280**	0.012	41.3	ug/L	1434	Standard
	Cr	52	7626.6	0.2	**-0.0811**	0.008	9.6	ug/L	7733	Standard
	Cr	53	623.3	4.9	**0.1647**	0.029	17.3	ug/L	442	Standard
	Mn	55	758.4	6.6	**-0.0069**	0.006	85.9	ug/L	723	Standard
	Co	59	258.3	7.6	**0.0024**	0.003	111.1	ug/L	217	Standard
	Ni	60	313.7	6.6	**-0.0106**	0.010	91.1	ug/L	304	Standard
	Cu	65	185.7	9.2	**0.0117**	0.008	71.7	ug/L	181	Standard
	Zn	66	252.7	5.5	**0.0142**	0.012	81.1	ug/L	215	Standard
>	**Ge**	72	552319.3	0.7				ug/L	520809	Standard
	As	75	-27.0	147.4	**0.0246**	0.030	123.9	ug/L	-52	Standard
	Se	82	28.2	27.0	**0.0839**	0.058	69.1	ug/L	17	Standard
	Se-1	77	72.0	11.0	**0.1099**	0.092	83.3	ug/L	56	Standard
>	**Ga**	71	16.7	62.4				mg/L	25	Standard
	Rb	85	41.7	61.6				ug/L	28	Standard
	Y	89	471686.6	0.8				ug/L	447395	Standard
>	**Rh**	103	6.7	114.6				ug/L	15	Standard
	Mo	98	354.1	7.5	**0.0877**	0.008	9.3	ug/L	113	Standard
	Ag	107	160.0	3.9	**0.0084**	0.001	9.7	ug/L	108	Standard
	Cd	111	21.1	31.9	**0.0064**	0.003	43.8	mg/L	3	Standard
	Cd	114	42.3	49.2	**0.0071**	0.003	48.8	ug/L	20	Standard
>	**In**	115	656112.9	0.3				ug/L	625728	Standard
	Sn	118	1841.8	22.7	**0.1887**	0.062	32.7	ug/L	568	Standard
	Sb	123	1164.1	37.2	**0.1810**	0.080	44.0	ug/L	612	Standard
	Ba	135	49.7	23.3	**0.0039**	0.005	131.8	ug/L	21	Standard
	Ce	140	23.3	81.1				ug/L	245	Standard
>	**Tb**	159	980631.2	1.7				ug/L	950397	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	97.0	22.3	**0.0098**	0.002	24.1	ug/L	15	Standard
	Tl	205	98.3	10.6	**0.0022**	0.001	58.4	ug/L	13	Standard
	Pb	206	329.0	7.5	**0.0127**	0.004	31.8	ug/L	264	Standard
	Pb	207	298.7	13.9	**0.0104**	0.008	73.2	ug/L	222	Standard
	Pb	208	1210.7	3.3	**0.0078**	0.002	20.2	ug/L	959	Standard
	U	238	84.3	9.6	**0.0099**	0.001	9.3	ug/L	9	Standard
>	**Bi**	209	568472.1	0.5				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	38.3	32.8	**-0.0177**	0.014	79.8	mg/L	55	Standard
K	39	20.0	43.3	**-0.0585**	0.031	53.1	mg/L	28	Standard
Ca	43	10.0	50.0	**-1.5919**	0.429	27.0	mg/L	27	Standard
Fe	54	159.5	25.8	**0.0198**	0.030	153.3	mg/L	147	Standard
Fe	57	218.3	15.2	**-0.1678**	0.094	56.0	mg/L	268	Standard
> **Sc-1**	45	43395.4	0.6				mg/L	41174	Standard
Cl	35	88102.1	0.5				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	3323.7	4.5				ug/L	1950	Standard
P	31	24955.5	2.9				ug/L	21156	Standard
S	34	4405.6	3.7				ug/L	3419	Standard
Sr	88	81.7	3.5				ug/L	72	Standard
C	12	120.0	8.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	17	Standard
Dy	164	-1.1	49.5				mg/L	16	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	23.3	49.5				mg/L	7	Standard
I	127	13129.0	1.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.050	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.856
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.831
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 13:37:47
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Method 6020 - Summary Report

Sample ID: L1606147001
Sample Date/Time: Friday, July 01, 2016 13:38:42
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81631.0	0.4				ug/L	76456	Standard
	Be	9	53.3	51.6	**0.0248**	0.023	93.4	ug/L	20	Standard
	Al	27	1267924.9	0.3	**6.9269**	0.012	0.2	ug/L	1307	Standard
	Sc	45	44398.3	2.2				ug/L	41174	Standard
	Ti	47	2584.6	3.5	**7.4850**	0.306	4.1	ug/L	27	Standard
	V	51	6589.9	3.8	**0.5661**	0.025	4.4	ug/L	1434	Standard
	Cr	52	17924.3	2.1	**1.1443**	0.040	3.5	ug/L	7733	Standard
	Cr	53	3320.4	0.9	**2.7174**	0.024	0.9	ug/L	442	Standard
	Mn	55	64462.5	1.4	**8.0226**	0.071	0.9	ug/L	723	Standard
	Co	59	2066.5	2.4	**0.2279**	0.005	2.1	ug/L	217	Standard
	Ni	60	3389.4	1.0	**1.4053**	0.013	0.9	ug/L	304	Standard
	Cu	65	36919.6	0.8	**17.1868**	0.112	0.7	ug/L	181	Standard
	Zn	66	100190.5	0.7	**77.8387**	0.507	0.7	ug/L	215	Standard
>	Ge	72	545904.9	0.6				ug/L	520809	Standard
	As	75	297.3	18.2	**0.2747**	0.041	14.8	ug/L	-52	Standard
	Se	82	57.3	13.9	**0.3062**	0.059	19.1	ug/L	17	Standard
	Se-1	77	123.0	8.6	**0.6885**	0.126	18.3	ug/L	56	Standard
>	Ga	71	431.7	8.5				mg/L	25	Standard
	Rb	85	29366.8	1.1				ug/L	28	Standard
	Y	89	475138.4	0.5				ug/L	447395	Standard
>	Rh	103	50.0	45.8				ug/L	15	Standard
	Mo	98	2283.8	2.0	**0.7046**	0.016	2.2	ug/L	113	Standard
	Ag	107	471.3	8.2	**0.0505**	0.006	10.9	ug/L	108	Standard
	Cd	111	442.4	4.4	**0.1831**	0.009	4.8	mg/L	3	Standard
	Cd	114	1113.8	8.0	**0.1885**	0.014	7.5	ug/L	20	Standard
>	In	115	648548.7	0.6				ug/L	625728	Standard
	Sn	118	6074.6	8.1	**0.8267**	0.078	9.5	ug/L	568	Standard
	Sb	123	3585.4	3.4	**0.6357**	0.026	4.1	ug/L	612	Standard
	Ba	135	28482.1	1.1	**12.6131**	0.063	0.5	ug/L	21	Standard
	Ce	140	9227.8	4.3				ug/L	245	Standard
>	Tb	159	980514.4	0.6				ug/L	950397	Standard
	Ho	165	175.0	22.7				ug/L	7	Standard
	Tl	203	154.0	7.9	**0.0159**	0.001	7.9	ug/L	15	Standard
	Tl	205	146.7	61.1	**0.0082**	0.011	135.5	ug/L	13	Standard
	Pb	206	300241.0	0.6	**51.5086**	0.588	1.1	ug/L	264	Standard
	Pb	207	251797.0	0.4	**47.5618**	0.476	1.0	ug/L	222	Standard
	Pb	208	1082895.4	0.4	**50.0819**	0.392	0.8	ug/L	959	Standard
	U	238	477.3	8.6	**0.0573**	0.005	9.4	ug/L	9	Standard
>	Bi	209	568731.4	0.7				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4449.0	1.5	**4.7618**	0.165	3.5	mg/L	55	Standard
K	39	216.7	12.7	**0.6389**	0.091	14.3	mg/L	28	Standard
Ca	43	100.0	13.2	**5.9773**	1.125	18.8	mg/L	27	Standard
Fe	54	785.4	6.3	**0.4720**	0.024	5.1	mg/L	147	Standard
Fe	57	430.0	12.3	**0.4211**	0.144	34.2	mg/L	268	Standard
> **Sc-1**	45	44398.3	2.2				mg/L	41174	Standard
Cl	35	84373.7	2.1				ug/L	69550	Standard
Kr	83	2.0	132.3				ug/L	1	Standard
Br	81	8569.1	5.7				ug/L	1950	Standard
P	31	27454.9	2.2				ug/L	21156	Standard
S	34	3758.8	6.0				ug/L	3419	Standard
Sr	88	151.7	5.0				ug/L	72	Standard
C	12	163.3	44.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	436.7	46.5				mg/L	17	Standard
Dy	164	239.6	2.7				mg/L	16	Standard
Ho-1	165	175.0	22.7				mg/L	7	Standard
Er	166	146.7	15.7				mg/L	7	Standard
I	127	165778.6	7.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.769	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.819	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.647
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.878
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606147101
Sample Date/Time: Friday, July 01, 2016 13:41:54
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	82165.6	1.5				ug/L	76456	Standard
	Be	9	25.0	60.0	**0.0010**	0.013	1235.0	ug/L	20	Standard
	Al	27	7420176.1	1.8	**40.3263**	0.745	1.8	ug/L	1307	Standard
	Sc	45	43403.8	1.8				ug/L	41174	Standard
	Ti	47	118.3	2.1	**0.2622**	0.007	2.8	ug/L	27	Standard
	V	51	2485.8	8.9	**0.0901**	0.026	28.6	ug/L	1434	Standard
	Cr	52	11852.6	4.6	**0.4290**	0.067	15.6	ug/L	7733	Standard
	Cr	53	3065.3	10.5	**2.4783**	0.300	12.1	ug/L	442	Standard
	Mn	55	13532.4	4.2	**1.6054**	0.074	4.6	ug/L	723	Standard
	Co	59	973.4	27.9	**0.0919**	0.034	37.1	ug/L	217	Standard
	Ni	60	2788.9	4.3	**1.1302**	0.057	5.1	ug/L	304	Standard
	Cu	65	167698.1	1.5	**78.3834**	1.378	1.8	ug/L	181	Standard
	Zn	66	18490.9	1.1	**14.2285**	0.192	1.3	ug/L	215	Standard
>	Ge	72	545541.7	0.2				ug/L	520809	Standard
	As	75	56.9	102.5	**0.0892**	0.045	50.6	ug/L	-52	Standard
	Se	82	46.0	7.1	**0.2215**	0.025	11.4	ug/L	17	Standard
	Se-1	77	165.0	10.0	**1.1579**	0.182	15.8	ug/L	56	Standard
>	Ga	71	40.0	45.1				mg/L	25	Standard
	Rb	85	1635.1	4.7				ug/L	28	Standard
	Y	89	467449.1	1.6				ug/L	447395	Standard
>	Rh	103	46.7	27.0				ug/L	15	Standard
	Mo	98	638.2	33.3	**0.1798**	0.068	38.0	ug/L	113	Standard
	Ag	107	803.4	8.9	**0.0950**	0.010	10.3	ug/L	108	Standard
	Cd	111	142.8	28.8	**0.0575**	0.017	29.9	mg/L	3	Standard
	Cd	114	382.8	34.4	**0.0647**	0.022	33.9	ug/L	20	Standard
>	In	115	648871.9	1.3				ug/L	625728	Standard
	Sn	118	1820.1	16.8	**0.1889**	0.050	26.3	ug/L	568	Standard
	Sb	123	517.0	31.6	**0.0630**	0.032	50.1	ug/L	612	Standard
	Ba	135	105021.4	1.0	**46.5367**	0.469	1.0	ug/L	21	Standard
	Ce	140	176.7	12.8				ug/L	245	Standard
>	Tb	159	974106.7	1.7				ug/L	950397	Standard
	Ho	165	20.0	43.3				ug/L	7	Standard
	Tl	203	182.7	61.2	**0.0196**	0.013	64.0	ug/L	15	Standard
	Tl	205	260.0	110.0	**0.0228**	0.036	157.4	ug/L	13	Standard
	Pb	206	1477.4	2.4	**0.2162**	0.008	3.6	ug/L	264	Standard
	Pb	207	1248.7	8.1	**0.1959**	0.021	10.5	ug/L	222	Standard
	Pb	208	5698.4	18.4	**0.2221**	0.051	22.9	ug/L	959	Standard
	U	238	669.4	46.7	**0.0825**	0.039	47.3	ug/L	9	Standard
>	Bi	209	555056.3	0.6				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	8267.3	1.5	**9.1027**	0.178	2.0	mg/L	55	Standard
K	39	178.3	20.3	**0.5189**	0.142	27.4	mg/L	28	Standard
Ca	43	265.0	15.0	**20.3615**	3.046	15.0	mg/L	27	Standard
Fe	54	255.7	20.5	**0.0914**	0.039	42.6	mg/L	147	Standard
Fe	57	411.7	6.1	**0.3970**	0.095	23.9	mg/L	268	Standard
> **Sc-1**	45	43403.8	1.8				mg/L	41174	Standard
Cl	35	91879.7	0.6				ug/L	69550	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	5647.7	9.0				ug/L	1950	Standard
P	31	26070.8	4.0				ug/L	21156	Standard
S	34	4028.9	4.5				ug/L	3419	Standard
Sr	88	183.3	6.3				ug/L	72	Standard
C	12	180.0	24.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	53.3	57.3				mg/L	17	Standard
Dy	164	38.6	26.6				mg/L	16	Standard
Ho-1	165	20.0	43.3				mg/L	7	Standard
Er	166	30.0	33.3				mg/L	7	Standard
I	127	15740.0	17.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.468	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.749	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.699
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.404
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606153601 WG574593-01
Sample Date/Time: Friday, July 01, 2016 13:45:05
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	105632.1	2.8				ug/L	76456	Standard
	Be	9	31.7	39.7	**0.0005**	0.008	1597.2	ug/L	20	Standard
	Al	27	9212844.4	2.9	**38.9423**	0.330	0.8	ug/L	1307	Standard
	Sc	45	37845.6	1.8				ug/L	41174	Standard
	Ti	47	303.7	8.6	**0.9123**	0.111	12.1	ug/L	27	Standard
	V	51	24245.6	11.6	**2.9541**	0.410	13.9	ug/L	1434	Standard
	Cr	52	16917.1	2.1	**1.2643**	0.091	7.2	ug/L	7733	Standard
	Cr	53	9354.6	13.4	**9.4775**	1.472	15.5	ug/L	442	Standard
	Mn	55	60166.6	2.3	**8.3838**	0.064	0.8	ug/L	723	Standard
	Co	59	59968.5	3.2	**8.3264**	0.059	0.7	ug/L	217	Standard
	Ni	60	11329.9	3.4	**5.6751**	0.056	1.0	ug/L	304	Standard
	Cu	65	10538.7	5.5	**5.4379**	0.239	4.4	ug/L	181	Standard
	Zn	66	77341.6	1.9	**67.2161**	0.503	0.7	ug/L	215	Standard
>	Ge	72	487884.6	2.6				ug/L	520809	Standard
	As	75	3262.4	6.3	**2.8666**	0.175	6.1	ug/L	-52	Standard
	Se	82	371.0	19.1	**3.0068**	0.587	19.5	ug/L	17	Standard
	Se-1	77	623.3	8.4	**7.1096**	0.803	11.3	ug/L	56	Standard
>	Ga	71	1885.1	4.1				mg/L	25	Standard
	Rb	85	131658.3	3.5				ug/L	28	Standard
	Y	89	431897.9	2.3				ug/L	447395	Standard
>	Rh	103	143.3	38.9				ug/L	15	Standard
	Mo	98	627591.1	3.5	**227.1784**	5.050	2.2	ug/L	113	Standard
	Ag	107	276.3	2.5	**0.0293**	0.001	4.0	ug/L	108	Standard
	Cd	111	-404.3	7.2	**-0.1947**	0.015	7.6	mg/L	3	Standard
	Cd	114	1007.4	4.4	**0.1935**	0.003	1.7	ug/L	20	Standard
>	In	115	571506.3	2.8				ug/L	625728	Standard
	Sn	118	2893.6	2.8	**0.4084**	0.024	5.8	ug/L	568	Standard
	Sb	123	6941.9	4.4	**1.4365**	0.025	1.7	ug/L	612	Standard
	Ba	135	39683.6	1.8	**19.9579**	0.305	1.5	ug/L	21	Standard
	Ce	140	421.7	17.2				ug/L	245	Standard
>	Tb	159	912620.2	2.1				ug/L	950397	Standard
	Ho	165	31.7	24.1				ug/L	7	Standard
	Tl	203	8399.3	2.5	**1.0755**	0.030	2.8	ug/L	15	Standard
	Tl	205	7106.7	3.1	**1.0155**	0.022	2.2	ug/L	13	Standard
	Pb	206	2580.9	3.9	**0.4804**	0.009	1.9	ug/L	264	Standard
	Pb	207	2297.2	1.5	**0.4679**	0.011	2.3	ug/L	222	Standard
	Pb	208	9454.2	3.4	**0.4694**	0.008	1.7	ug/L	959	Standard
	U	238	1115.7	2.4	**0.1590**	0.005	3.3	ug/L	9	Standard
>	Bi	209	480711.3	2.7				ug/L	552821	Standard

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Na	23	8.3	34.6	**27.1734**	9.738	35.8	mg/L	2	Standard
Mg	24	507921.7	2.6	**645.4329**	9.385	1.5	mg/L	55	Standard
K	39	415.0	4.8	**1.6014**	0.114	7.1	mg/L	28	Standard
Ca	43	481.7	12.6	**45.2243**	6.627	14.7	mg/L	27	Standard
Fe	54	127.9	17.8	**0.0101**	0.018	174.2	mg/L	147	Standard
Fe	57	770.0	11.3	**1.7671**	0.242	13.7	mg/L	268	Standard
Sc-1	45	37845.6	1.8				mg/L	41174	Standard
Cl	35	383189.3	2.3				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	30317.0	3.7				ug/L	1950	Standard
P	31	15528.0	3.6				ug/L	21156	Standard
S	34	3745.5	2.5				ug/L	3419	Standard
Sr	88	250.0	23.1				ug/L	72	Standard
C	12	176.7	14.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26862.7	37.9				mg/L	17	Standard
Dy	164	21.9	26.7				mg/L	16	Standard
Ho-1	165	31.7	24.1				mg/L	7	Standard
Er	166	30.0	66.7				mg/L	7	Standard
I	127	123380.9	8.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		138.161	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.678	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.335
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		86.956
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

Sample ID: L1606153601 WG574593-01
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Method 6020 - Summary Report

Sample ID: L1606153601DP WG574593-04
Sample Date/Time: Friday, July 01, 2016 13:48:17
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	113476.7	0.3				ug/L	76456	Standard
	Be	9	31.7	39.7	**-0.0008**	0.008	933.9	ug/L	20	Standard
	Al	27	9155815.3	1.0	**36.0246**	0.289	0.8	ug/L	1307	Standard
	Sc	45	38106.2	3.0				ug/L	41174	Standard
	Ti	47	317.7	11.6	**0.9598**	0.126	13.2	ug/L	27	Standard
	V	51	23799.7	13.5	**2.9030**	0.438	15.1	ug/L	1434	Standard
	Cr	52	15774.9	0.6	**1.1182**	0.010	0.9	ug/L	7733	Standard
	Cr	53	7253.4	7.9	**7.2700**	0.659	9.1	ug/L	442	Standard
	Mn	55	54277.4	0.5	**7.5755**	0.086	1.1	ug/L	723	Standard
	Co	59	56802.6	1.1	**7.9092**	0.067	0.8	ug/L	217	Standard
	Ni	60	10522.3	1.7	**5.2767**	0.120	2.3	ug/L	304	Standard
	Cu	65	10358.5	2.3	**5.3602**	0.097	1.8	ug/L	181	Standard
	Zn	66	63839.2	1.1	**55.6043**	0.258	0.5	ug/L	215	Standard
>	Ge	72	486471.3	0.9				ug/L	520809	Standard
	As	75	3361.1	6.7	**2.9591**	0.174	5.9	ug/L	-52	Standard
	Se	82	440.0	19.1	**3.5994**	0.683	19.0	ug/L	17	Standard
	Se-1	77	548.0	6.3	**6.1810**	0.486	7.9	ug/L	56	Standard
>	Ga	71	1580.1	9.0				mg/L	25	Standard
	Rb	85	128497.6	0.7				ug/L	28	Standard
	Y	89	437852.1	1.2				ug/L	447395	Standard
>	Rh	103	195.0	13.3				ug/L	15	Standard
	Mo	98	610817.8	0.2	**219.3028**	1.490	0.7	ug/L	113	Standard
	Ag	107	270.0	5.4	**0.0280**	0.002	7.9	ug/L	108	Standard
	Cd	111	-435.5	5.5	**-0.2078**	0.012	5.8	mg/L	3	Standard
	Cd	114	1008.9	7.4	**0.1923**	0.015	7.6	ug/L	20	Standard
>	In	115	576209.6	0.5				ug/L	625728	Standard
	Sn	118	2962.0	1.1	**0.4156**	0.007	1.7	ug/L	568	Standard
	Sb	123	5993.6	0.1	**1.2257**	0.006	0.5	ug/L	612	Standard
	Ba	135	37997.3	1.1	**18.9491**	0.250	1.3	ug/L	21	Standard
	Ce	140	438.3	13.3				ug/L	245	Standard
>	Tb	159	912922.8	0.6				ug/L	950397	Standard
	Ho	165	23.3	44.6				ug/L	7	Standard
	Tl	203	7035.6	2.0	**0.8846**	0.019	2.1	ug/L	15	Standard
	Tl	205	6231.3	4.9	**0.8732**	0.041	4.7	ug/L	13	Standard
	Pb	206	2197.2	4.0	**0.3947**	0.019	4.9	ug/L	264	Standard
	Pb	207	1945.1	0.8	**0.3813**	0.005	1.2	ug/L	222	Standard
	Pb	208	7974.8	0.5	**0.3808**	0.004	1.1	ug/L	959	Standard
	U	238	1110.0	6.5	**0.1553**	0.010	6.5	ug/L	9	Standard
>	Bi	209	489368.4	0.9				ug/L	552821	Standard

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Na	23	1.7	173.2	**5.3506**	9.259	173.0	mg/L	2	Standard
Mg	24	497934.2	1.5	**628.6633**	12.777	2.0	mg/L	55	Standard
K	39	386.7	13.3	**1.4712**	0.210	14.3	mg/L	28	Standard
Ca	43	468.3	8.9	**43.5651**	4.343	10.0	mg/L	27	Standard
Fe	54	108.4	32.3	**-0.0071**	0.029	411.5	mg/L	147	Standard
Fe	57	688.3	12.0	**1.4795**	0.238	16.1	mg/L	268	Standard
> **Sc-1**	45	38106.2	3.0				mg/L	41174	Standard
Cl	35	369584.8	0.9				ug/L	69550	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	29598.9	3.8				ug/L	1950	Standard
P	31	15125.9	2.3				ug/L	21156	Standard
S	34	3780.5	5.9				ug/L	3419	Standard
Sr	88	230.0	13.6				ug/L	72	Standard
C	12	213.3	38.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30656.1	29.8				mg/L	17	Standard
Dy	164	16.0	70.4				mg/L	16	Standard
Ho-1	165	23.3	44.6				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	76869.6	2.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		148.421	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.407	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606153601DP WG574593-04
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	92.086	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	88.522	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

Sample ID: L1606153601DP WG574593-04
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Method 6020 - Summary Report

Sample ID: L1606153601S WG574593-05
Sample Date/Time: Friday, July 01, 2016 13:51:28
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	114783.5	3.4				ug/L	76456	Standard
	Be	9	31472.7	2.0	**18.7219**	0.754	4.0	ug/L	20	Standard
	Al	27	8967809.3	2.2	**34.8925**	0.413	1.2	ug/L	1307	Standard
	Sc	45	36838.1	2.1				ug/L	41174	Standard
	Ti	47	293.0	5.4	**0.9041**	0.043	4.8	ug/L	27	Standard
	V	51	144707.0	17.5	**19.1390**	3.192	16.7	ug/L	1434	Standard
	Cr	52	181657.1	2.0	**23.7324**	0.270	1.1	ug/L	7733	Standard
	Cr	53	26979.0	1.6	**28.9363**	0.245	0.8	ug/L	442	Standard
	Mn	55	196630.4	2.3	**28.4601**	0.390	1.4	ug/L	723	Standard
	Co	59	229358.7	1.0	**32.8948**	0.071	0.2	ug/L	217	Standard
	Ni	60	50822.4	1.0	**26.7818**	0.048	0.2	ug/L	304	Standard
	Cu	65	50564.2	0.8	**27.1746**	0.164	0.6	ug/L	181	Standard
	Zn	66	34538.3	0.8	**30.8215**	0.391	1.3	ug/L	215	Standard
>	Ge	72	473620.3	1.0				ug/L	520809	Standard
	As	75	32972.2	0.9	**29.4152**	0.246	0.8	ug/L	-52	Standard
	Se	82	3843.3	1.0	**33.3303**	0.606	1.8	ug/L	17	Standard
	Se-1	77	2661.6	3.4	**33.5483**	0.893	2.7	ug/L	56	Standard
>	Ga	71	381.7	15.1				mg/L	25	Standard
	Rb	85	125348.3	2.7				ug/L	28	Standard
	Y	89	429677.9	2.4				ug/L	447395	Standard
>	Rh	103	226.7	13.3				ug/L	15	Standard
	Mo	98	605966.7	1.3	**219.9601**	1.216	0.6	ug/L	113	Standard
	Ag	107	143805.9	1.0	**21.9725**	0.186	0.8	ug/L	108	Standard
	Cd	111	47375.9	2.4	**22.5887**	0.138	0.6	mg/L	3	Standard
	Cd	114	117916.6	2.4	**22.7105**	0.229	1.0	ug/L	20	Standard
>	In	115	569946.5	1.8				ug/L	625728	Standard
	Sn	118	2151.8	16.9	**0.2836**	0.068	23.8	ug/L	568	Standard
	Sb	123	117947.9	1.3	**25.0246**	0.247	1.0	ug/L	612	Standard
	Ba	135	80315.6	0.5	**40.5194**	0.565	1.4	ug/L	21	Standard
	Ce	140	525.0	16.6				ug/L	245	Standard
>	Tb	159	909446.5	2.1				ug/L	950397	Standard
	Ho	165	18.3	56.8				ug/L	7	Standard
	Tl	203	188663.7	0.8	**24.0492**	0.050	0.2	ug/L	15	Standard
	Tl	205	172066.6	1.3	**24.6917**	0.238	1.0	ug/L	13	Standard
	Pb	206	123402.9	1.1	**24.9025**	0.136	0.5	ug/L	264	Standard
	Pb	207	107579.3	1.1	**23.9013**	0.073	0.3	ug/L	222	Standard
	Pb	208	446533.6	1.0	**24.2893**	0.091	0.4	ug/L	959	Standard
	U	238	179675.3	1.7	**25.5069**	0.325	1.3	ug/L	9	Standard
>	Bi	209	483038.3	0.9				ug/L	552821	Standard

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Na	23	13.3	21.7	**44.4001**	9.083	20.5	mg/L	2	Standard
Mg	24	482486.9	1.9	**629.9240**	1.410	0.2	mg/L	55	Standard
K	39	456.7	2.3	**1.8260**	0.024	1.3	mg/L	28	Standard
Ca	43	443.3	6.2	**42.6201**	3.595	8.4	mg/L	27	Standard
Fe	54	107.2	30.6	**-0.0052**	0.027	515.1	mg/L	147	Standard
Fe	57	646.7	6.6	**1.4187**	0.179	12.6	mg/L	268	Standard
> **Sc-1**	45	36838.1	2.1				mg/L	41174	Standard
Cl	35	363789.4	1.4				ug/L	69550	Standard
Kr	83	0.3	173.2				ug/L	1	Standard
Br	81	29438.6	3.1				ug/L	1950	Standard
P	31	15032.5	1.4				ug/L	21156	Standard
S	34	3710.5	3.9				ug/L	3419	Standard
Sr	88	215.0	4.7				ug/L	72	Standard
C	12	186.7	18.8				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	44900.2	29.0				mg/L	17	Standard
Dy	164	12.5	117.7				mg/L	16	Standard
Ho-1	165	18.3	56.8				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	7	Standard
I	127	80914.0	3.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		150.131	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.939	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.085
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.377
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	

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Method 6020 - Summary Report

Sample ID: L1606153601SD WG574593-06
Sample Date/Time: Friday, July 01, 2016 13:54:40
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	112397.1	1.9				ug/L	76456	Standard
	Be	9	31070.2	1.4	**18.8667**	0.550	2.9	ug/L	20	Standard
	Al	27	8839135.1	2.6	**35.1153**	0.794	2.3	ug/L	1307	Standard
	Sc	45	36505.6	0.6				ug/L	41174	Standard
	Ti	47	313.3	8.2	**0.9879**	0.083	8.4	ug/L	27	Standard
	V	51	166809.7	7.9	**22.4386**	1.861	8.3	ug/L	1434	Standard
	Cr	52	176635.7	0.7	**23.3939**	0.040	0.2	ug/L	7733	Standard
	Cr	53	26448.1	1.1	**28.7705**	0.310	1.1	ug/L	442	Standard
	Mn	55	190612.1	1.7	**27.9819**	0.319	1.1	ug/L	723	Standard
	Co	59	229904.6	2.0	**33.4420**	0.439	1.3	ug/L	217	Standard
	Ni	60	50248.2	1.0	**26.8570**	0.085	0.3	ug/L	304	Standard
	Cu	65	50373.6	1.7	**27.4578**	0.363	1.3	ug/L	181	Standard
	Zn	66	32810.8	2.5	**29.6880**	0.646	2.2	ug/L	215	Standard
>	Ge	72	466958.0	0.7				ug/L	520809	Standard
	As	75	31818.9	1.7	**28.7902**	0.285	1.0	ug/L	-52	Standard
	Se	82	3739.0	3.2	**32.8806**	0.943	2.9	ug/L	17	Standard
	Se-1	77	2572.6	1.3	**32.8825**	0.665	2.0	ug/L	56	Standard
>	Ga	71	335.0	0.0				mg/L	25	Standard
	Rb	85	123842.4	1.0				ug/L	28	Standard
	Y	89	424204.0	1.6				ug/L	447395	Standard
>	Rh	103	250.0	19.1				ug/L	15	Standard
	Mo	98	596887.3	1.2	**220.8114**	1.891	0.9	ug/L	113	Standard
	Ag	107	140477.5	2.4	**21.8716**	0.278	1.3	ug/L	108	Standard
	Cd	111	46478.5	0.9	**22.5882**	0.134	0.6	mg/L	3	Standard
	Cd	114	114740.4	2.4	**22.5229**	0.416	1.8	ug/L	20	Standard
>	In	115	559219.9	1.1				ug/L	625728	Standard
	Sn	118	2036.8	20.6	**0.2701**	0.075	27.8	ug/L	568	Standard
	Sb	123	115612.8	1.8	**24.9963**	0.192	0.8	ug/L	612	Standard
	Ba	135	78486.8	0.7	**40.3510**	0.202	0.5	ug/L	21	Standard
	Ce	140	446.7	6.2				ug/L	245	Standard
>	Tb	159	894070.3	0.6				ug/L	950397	Standard
	Ho	165	23.3	24.7				ug/L	7	Standard
	Tl	203	185499.3	0.6	**23.8373**	0.171	0.7	ug/L	15	Standard
	Tl	205	169836.9	2.3	**24.5659**	0.283	1.2	ug/L	13	Standard
	Pb	206	121903.1	0.8	**24.7990**	0.171	0.7	ug/L	264	Standard
	Pb	207	105852.8	0.4	**23.7090**	0.262	1.1	ug/L	222	Standard
	Pb	208	438929.8	1.6	**24.0671**	0.200	0.8	ug/L	959	Standard
	U	238	177358.8	1.6	**25.3810**	0.202	0.8	ug/L	9	Standard
>	Bi	209	479179.3	1.2				ug/L	552821	Standard

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Na	23	6.7	86.6	**22.4621**	19.450	86.6	mg/L	2	Standard
Mg	24	471196.6	0.7	**620.7791**	4.974	0.8	mg/L	55	Standard
K	39	408.3	16.7	**1.6356**	0.302	18.5	mg/L	28	Standard
Ca	43	436.7	18.5	**42.2777**	8.047	19.0	mg/L	27	Standard
Fe	54	118.9	19.0	**0.0063**	0.019	307.7	mg/L	147	Standard
Fe	57	681.7	4.2	**1.5588**	0.115	7.4	mg/L	268	Standard
> **Sc-1**	45	36505.6	0.6				mg/L	41174	Standard
Cl	35	356982.4	1.5				ug/L	69550	Standard
Kr	83	1.3	86.6				ug/L	1	Standard
Br	81	28717.2	3.6				ug/L	1950	Standard
P	31	15301.1	0.8				ug/L	21156	Standard
S	34	3565.4	1.6				ug/L	3419	Standard
Sr	88	228.3	25.6				ug/L	72	Standard
C	12	156.7	38.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50532.6	17.8				mg/L	17	Standard
Dy	164	15.4	96.7				mg/L	16	Standard
Ho-1	165	23.3	24.7				mg/L	7	Standard
Er	166	26.7	78.1				mg/L	7	Standard
I	127	86335.9	6.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		147.009	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		89.660	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.371
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		86.679
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	

Sample ID: L1606153601SD WG574593-06
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Method 6020 - Summary Report

Sample ID: L1606106804
Sample Date/Time: Friday, July 01, 2016 13:57:51
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	92136.1	2.7				ug/L	76456	Standard
	Be	9	31.7	32.9	**0.0036**	0.008	216.5	ug/L	20	Standard
	Al	27	859023.9	1.9	**4.1545**	0.040	1.0	ug/L	1307	Standard
	Sc	45	36834.7	2.5				ug/L	41174	Standard
	Ti	47	40.0	19.5	**0.0448**	0.025	54.9	ug/L	27	Standard
	V	51	5203.8	19.0	**0.4694**	0.132	28.1	ug/L	1434	Standard
	Cr	52	6735.2	1.8	**-0.0924**	0.015	16.5	ug/L	7733	Standard
	Cr	53	918.4	10.2	**0.5415**	0.104	19.3	ug/L	442	Standard
	Mn	55	2241.8	1.6	**0.2108**	0.003	1.6	ug/L	723	Standard
	Co	59	300.7	9.6	**0.0119**	0.004	33.8	ug/L	217	Standard
	Ni	60	672.3	1.0	**0.1885**	0.006	3.2	ug/L	304	Standard
	Cu	65	1685.8	29.1	**0.7955**	0.246	31.0	ug/L	181	Standard
	Zn	66	3230.4	18.8	**2.5967**	0.499	19.2	ug/L	215	Standard
>	Ge	72	494044.1	0.8				ug/L	520809	Standard
	As	75	465.2	37.5	**0.4417**	0.146	33.1	ug/L	-52	Standard
	Se	82	234.7	30.5	**1.8293**	0.582	31.8	ug/L	17	Standard
	Se-1	77	90.3	10.8	**0.4300**	0.128	29.8	ug/L	56	Standard
>	Ga	71	38.3	39.8				mg/L	25	Standard
	Rb	85	223.3	18.1				ug/L	28	Standard
	Y	89	421894.0	1.5				ug/L	447395	Standard
>	Rh	103	131.7	22.3				ug/L	15	Standard
	Mo	98	5006.3	9.4	**1.7140**	0.193	11.2	ug/L	113	Standard
	Ag	107	126.3	16.6	**0.0056**	0.003	50.1	ug/L	108	Standard
	Cd	111	16.1	25.5	**0.0049**	0.002	35.5	mg/L	3	Standard
	Cd	114	61.4	11.1	**0.0113**	0.001	10.9	ug/L	20	Standard
>	In	115	596688.0	1.6				ug/L	625728	Standard
	Sn	118	568.3	15.2	**0.0085**	0.015	181.1	ug/L	568	Standard
	Sb	123	246.2	18.9	**0.0163**	0.010	61.8	ug/L	612	Standard
	Ba	135	7350.5	3.5	**3.5247**	0.082	2.3	ug/L	21	Standard
	Ce	140	23.3	32.7				ug/L	245	Standard
>	Tb	159	916453.6	1.2				ug/L	950397	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	304.7	24.9	**0.0334**	0.008	23.6	ug/L	15	Standard
	Tl	205	111.7	6.8	**0.0044**	0.001	16.4	ug/L	13	Standard
	Pb	206	327.7	8.6	**0.0145**	0.004	27.3	ug/L	264	Standard
	Pb	207	301.0	9.8	**0.0128**	0.005	36.7	ug/L	222	Standard
	Pb	208	1200.4	8.2	**0.0093**	0.004	42.0	ug/L	959	Standard
	U	238	75.7	24.1	**0.0092**	0.002	23.9	ug/L	9	Standard
>	Bi	209	548664.2	1.8				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	2398.5	7.1	**3.0753**	0.279	9.1	mg/L	55	Standard
K	39	18.3	56.8	**-0.0529**	0.044	83.5	mg/L	28	Standard
Ca	43	20.0	43.3	**-0.4071**	0.939	230.7	mg/L	27	Standard
Fe	54	72.6	4.6	**-0.0352**	0.002	4.7	mg/L	147	Standard
Fe	57	226.7	6.4	**-0.0245**	0.066	267.2	mg/L	268	Standard
Sc-1	45	36834.7	2.5				mg/L	41174	Standard
Cl	35	83689.9	2.1				ug/L	69550	Standard
Kr	83	3.3	17.3				ug/L	1	Standard
Br	81	5874.5	1.4				ug/L	1950	Standard
P	31	8095.5	4.0				ug/L	21156	Standard
S	34	3318.7	0.5				ug/L	3419	Standard
Sr	88	98.3	10.6				ug/L	72	Standard
C	12	110.0	9.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	12785.7	29.7				mg/L	17	Standard
Dy	164	19.7	89.4				mg/L	16	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	43990.5	2.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		120.509	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		94.861	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606106804
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.359
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.248
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606106805
Sample Date/Time: Friday, July 01, 2016 14:01:03
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	88670.5	2.3				ug/L	76456	Standard
	Be	9	28.3	53.9	**0.0021**	0.012	582.5	ug/L	20	Standard
	Al	27	846462.5	1.2	**4.2550**	0.126	3.0	ug/L	1307	Standard
	Sc	45	36754.5	1.7				ug/L	41174	Standard
	Ti	47	37.0	14.0	**0.0369**	0.018	47.7	ug/L	27	Standard
	V	51	2755.7	12.5	**0.1599**	0.048	29.8	ug/L	1434	Standard
	Cr	52	6950.6	2.2	**-0.0520**	0.020	37.7	ug/L	7733	Standard
	Cr	53	901.7	5.0	**0.5360**	0.035	6.6	ug/L	442	Standard
	Mn	55	2061.5	1.0	**0.1896**	0.005	2.5	ug/L	723	Standard
	Co	59	262.3	1.3	**0.0071**	0.000	6.4	ug/L	217	Standard
	Ni	60	603.3	3.0	**0.1577**	0.014	9.0	ug/L	304	Standard
	Cu	65	649.0	15.6	**0.2657**	0.052	19.6	ug/L	181	Standard
	Zn	66	1686.8	6.3	**1.2909**	0.094	7.3	ug/L	215	Standard
>	Ge	72	487470.5	1.6				ug/L	520809	Standard
	As	75	91.9	24.0	**0.1249**	0.020	16.4	ug/L	-52	Standard
	Se	82	68.6	9.5	**0.4538**	0.061	13.4	ug/L	17	Standard
	Se-1	77	88.7	15.6	**0.4255**	0.192	45.1	ug/L	56	Standard
>	Ga	71	20.0	25.0				mg/L	25	Standard
	Rb	85	151.7	6.9				ug/L	28	Standard
	Y	89	408691.1	1.5				ug/L	447395	Standard
>	Rh	103	55.0	47.2				ug/L	15	Standard
	Mo	98	2038.3	34.8	**0.7007**	0.261	37.3	ug/L	113	Standard
	Ag	107	89.7	17.4	**0.0005**	0.003	460.6	ug/L	108	Standard
	Cd	111	8.9	44.4	**0.0018**	0.002	101.9	mg/L	3	Standard
	Cd	114	22.8	93.4	**0.0043**	0.004	93.2	ug/L	20	Standard
>	In	115	583988.4	1.5				ug/L	625728	Standard
	Sn	118	641.7	21.4	**0.0228**	0.025	107.3	ug/L	568	Standard
	Sb	123	149.4	23.6	**-0.0027**	0.008	291.8	ug/L	612	Standard
	Ba	135	7693.6	5.0	**3.7701**	0.138	3.7	ug/L	21	Standard
	Ce	140	23.3	32.7				ug/L	245	Standard
>	Tb	159	893255.5	0.4				ug/L	950397	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	160.7	5.8	**0.0177**	0.001	6.5	ug/L	15	Standard
	Tl	205	106.7	47.9	**0.0040**	0.007	165.6	ug/L	13	Standard
	Pb	206	280.3	10.7	**0.0072**	0.005	74.5	ug/L	264	Standard
	Pb	207	240.3	4.9	**0.0020**	0.003	130.9	ug/L	222	Standard
	Pb	208	1064.0	7.7	**0.0038**	0.004	108.8	ug/L	959	Standard
	U	238	55.7	89.2	**0.0069**	0.006	93.0	ug/L	9	Standard
>	Bi	209	537449.2	0.6				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	2241.8	5.9	**2.8723**	0.129	4.5	mg/L	55	Standard
K	39	31.7	48.2	**0.0047**	0.065	1378.1	mg/L	28	Standard
Ca	43	28.3	53.9	**0.4489**	1.610	358.7	mg/L	27	Standard
Fe	54	77.8	24.1	**-0.0306**	0.015	50.4	mg/L	147	Standard
Fe	57	243.3	20.8	**0.0319**	0.163	509.9	mg/L	268	Standard
> **Sc-1**	45	36754.5	1.7				mg/L	41174	Standard
Cl	35	86917.3	0.6				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	5100.9	3.4				ug/L	1950	Standard
P	31	8162.2	1.3				ug/L	21156	Standard
S	34	3385.4	1.8				ug/L	3419	Standard
Sr	88	96.7	14.9				ug/L	72	Standard
C	12	130.0	13.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	4313.9	5.0				mg/L	17	Standard
Dy	164	12.7	43.5				mg/L	16	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	41831.0	1.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.976	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.599	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.329
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.219
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606106811
Sample Date/Time: Friday, July 01, 2016 14:04:14
Number of Replicates: 3
Autosampler Position: 346
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	87384.7	2.1				ug/L	76456	Standard
	Be	9	386.7	6.4	**0.2826**	0.024	8.6	ug/L	20	Standard
	Al	27	801461.1	1.1	**4.0865**	0.037	0.9	ug/L	1307	Standard
	Sc	45	38134.6	2.7				ug/L	41174	Standard
	Ti	47	4667.1	1.1	**15.1502**	0.207	1.4	ug/L	27	Standard
	V	51	48516.8	1.5	**6.0786**	0.102	1.7	ug/L	1434	Standard
	Cr	52	40220.3	0.9	**4.3195**	0.059	1.4	ug/L	7733	Standard
	Cr	53	4720.7	0.9	**4.5507**	0.057	1.3	ug/L	442	Standard
	Mn	55	311842.6	1.0	**43.7090**	0.370	0.8	ug/L	723	Standard
	Co	59	8423.7	2.0	**1.1400**	0.022	1.9	ug/L	217	Standard
	Ni	60	8146.2	0.4	**4.0222**	0.012	0.3	ug/L	304	Standard
	Cu	65	10805.5	1.3	**5.5573**	0.061	1.1	ug/L	181	Standard
	Zn	66	50531.5	0.7	**43.6829**	0.260	0.6	ug/L	215	Standard
>	Ge	72	489720.8	0.2				ug/L	520809	Standard
	As	75	655.4	1.6	**0.6098**	0.008	1.3	ug/L	-52	Standard
	Se	82	60.2	5.5	**0.3806**	0.029	7.6	ug/L	17	Standard
	Se-1	77	67.3	4.5	**0.1530**	0.036	23.8	ug/L	56	Standard
>	Ga	71	4829.1	0.8				mg/L	25	Standard
	Rb	85	40306.9	0.9				ug/L	28	Standard
	Y	89	441421.4	0.7				ug/L	447395	Standard
>	Rh	103	40.0	54.5				ug/L	15	Standard
	Mo	98	794.4	11.9	**0.2560**	0.030	11.9	ug/L	113	Standard
	Ag	107	205.0	13.7	**0.0176**	0.004	24.9	ug/L	108	Standard
	Cd	111	469.4	3.6	**0.2151**	0.008	3.7	mg/L	3	Standard
	Cd	114	1178.5	4.6	**0.2206**	0.012	5.5	ug/L	20	Standard
>	In	115	586618.1	1.1				ug/L	625728	Standard
	Sn	118	1050.0	35.8	**0.0894**	0.061	68.0	ug/L	568	Standard
	Sb	123	166.1	12.7	**0.0005**	0.004	734.3	ug/L	612	Standard
	Ba	135	56741.7	0.9	**27.8031**	0.108	0.4	ug/L	21	Standard
	Ce	140	116496.1	0.3				ug/L	245	Standard
>	Tb	159	902035.2	0.5				ug/L	950397	Standard
	Ho	165	2190.2	5.6				ug/L	7	Standard
	Tl	203	356.0	5.6	**0.0396**	0.002	5.7	ug/L	15	Standard
	Tl	205	270.0	10.3	**0.0247**	0.004	14.6	ug/L	13	Standard
	Pb	206	16366.5	1.5	**2.8988**	0.049	1.7	ug/L	264	Standard
	Pb	207	13229.8	1.5	**2.5731**	0.042	1.6	ug/L	222	Standard
	Pb	208	57216.2	0.2	**2.7252**	0.006	0.2	ug/L	959	Standard
	U	238	2067.8	1.8	**0.2608**	0.005	1.9	ug/L	9	Standard
>	Bi	209	543128.9	0.1				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	836.7	5.2	**0.9955**	0.059	5.9	mg/L	55	Standard
K	39	96.7	23.3	**0.2695**	0.095	35.1	mg/L	28	Standard
Ca	43	25.0	52.9	**-0.0121**	1.244	10273.4	mg/L	27	Standard
Fe	54	3385.4	5.7	**2.7677**	0.147	5.3	mg/L	147	Standard
Fe	57	1086.7	6.1	**2.8007**	0.187	6.7	mg/L	268	Standard
> **Sc-1**	45	38134.6	2.7				mg/L	41174	Standard
Cl	35	72343.0	2.0				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	2266.8	11.8				ug/L	1950	Standard
P	31	15112.5	3.0				ug/L	21156	Standard
S	34	3132.0	3.9				ug/L	3419	Standard
Sr	88	90.0	11.1				ug/L	72	Standard
C	12	160.0	39.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1193.4	7.9				mg/L	17	Standard
Dy	164	3446.2	2.4				mg/L	16	Standard
Ho-1	165	2190.2	5.6				mg/L	7	Standard
Er	166	2036.8	6.1				mg/L	7	Standard
I	127	34445.8	1.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.294	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.031	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.750
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.247
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606106813 ~~WG574840-01~~ WG573840-01
Sample Date/Time: Friday, July 01, 2016 14:07:25
Number of Replicates: 3
Autosampler Position: 347
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	85735.2	1.3				ug/L	76456	Standard
	Be	9	26.7	28.6	**0.0014**	0.006	443.3	ug/L	20	Standard
	Al	27	449795.7	0.8	**2.3331**	0.023	1.0	ug/L	1307	Standard
	Sc	45	35930.9	1.1				ug/L	41174	Standard
	Ti	47	472.3	1.7	**1.4707**	0.057	3.8	ug/L	27	Standard
	V	51	4534.5	3.6	**0.3927**	0.010	2.6	ug/L	1434	Standard
	Cr	52	9314.9	0.9	**0.2650**	0.027	10.0	ug/L	7733	Standard
	Cr	53	2433.5	4.4	**2.1645**	0.092	4.2	ug/L	442	Standard
	Mn	55	102294.5	0.4	**14.3920**	0.341	2.4	ug/L	723	Standard
	Co	59	3018.3	3.5	**0.3929**	0.007	1.8	ug/L	217	Standard
	Ni	60	5415.6	1.7	**2.6457**	0.041	1.6	ug/L	304	Standard
	Cu	65	743.0	9.7	**0.3169**	0.044	14.0	ug/L	181	Standard
	Zn	66	3480.1	1.7	**2.8660**	0.076	2.6	ug/L	215	Standard
>	Ge	72	485745.7	2.0				ug/L	520809	Standard
	As	75	242.8	9.7	**0.2563**	0.025	9.6	ug/L	-52	Standard
	Se	82	97.2	2.1	**0.6986**	0.030	4.2	ug/L	17	Standard
	Se-1	77	117.0	14.6	**0.7818**	0.201	25.7	ug/L	56	Standard
>	Ga	71	268.3	10.3				mg/L	25	Standard
	Rb	85	4108.9	5.5				ug/L	28	Standard
	Y	89	416309.3	1.5				ug/L	447395	Standard
>	Rh	103	45.0	50.9				ug/L	15	Standard
	Mo	98	680.6	19.4	**0.2163**	0.043	19.7	ug/L	113	Standard
	Ag	107	83.7	9.0	**-0.0004**	0.001	316.0	ug/L	108	Standard
	Cd	111	203.5	6.4	**0.0922**	0.005	5.5	mg/L	3	Standard
	Cd	114	545.9	14.8	**0.1025**	0.015	14.8	ug/L	20	Standard
>	In	115	585054.4	1.7				ug/L	625728	Standard
	Sn	118	836.7	33.0	**0.0543**	0.043	80.0	ug/L	568	Standard
	Sb	123	125.9	11.8	**-0.0077**	0.003	35.5	ug/L	612	Standard
	Ba	135	12781.1	0.9	**6.2667**	0.128	2.0	ug/L	21	Standard
	Ce	140	5152.5	0.8				ug/L	245	Standard
>	Tb	159	900548.7	1.5				ug/L	950397	Standard
	Ho	165	100.0	10.0				ug/L	7	Standard
	Tl	203	107.7	11.0	**0.0117**	0.001	10.8	ug/L	15	Standard
	Tl	205	76.7	10.0	**0.0002**	0.001	348.4	ug/L	13	Standard
	Pb	206	778.4	4.5	**0.0993**	0.008	7.9	ug/L	264	Standard
	Pb	207	661.0	3.8	**0.0876**	0.005	5.2	ug/L	222	Standard
	Pb	208	2799.8	2.1	**0.0904**	0.002	2.4	ug/L	959	Standard
	U	238	156.0	3.6	**0.0199**	0.000	2.4	ug/L	9	Standard
>	Bi	209	531551.0	1.5				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	8015.5	3.4	**10.6709**	0.401	3.8	mg/L	55	Standard
K	39	28.3	50.9	**-0.0070**	0.062	882.4	mg/L	28	Standard
Ca	43	31.7	36.5	**0.8382**	1.170	139.6	mg/L	27	Standard
Fe	54	628.6	3.1	**0.4660**	0.014	3.0	mg/L	147	Standard
Fe	57	371.7	8.1	**0.5046**	0.104	20.5	mg/L	268	Standard
> **Sc-1**	45	35930.9	1.1				mg/L	41174	Standard
Cl	35	72947.2	1.3				ug/L	69550	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	16705.9	1.9				ug/L	1950	Standard
P	31	9869.9	4.0				ug/L	21156	Standard
S	34	3002.0	2.0				ug/L	3419	Standard
Sr	88	73.3	38.8				ug/L	72	Standard
C	12	123.3	24.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	670.0	12.2				mg/L	17	Standard
Dy	164	162.7	37.8				mg/L	16	Standard
Ho-1	165	100.0	10.0				mg/L	7	Standard
Er	166	83.3	25.0				mg/L	7	Standard
I	127	64636.1	5.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.137	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.267	
As	75			
Se	82			
Se-1	77			
> Ga	71			

WG573840-01

Sample ID: L1606106813 ~~WG574840-01~~
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.500
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.152
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
WG573840-01			

Sample ID: L1606106813 ~~WG574840-01~~
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 14:10:39
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	88849.8	2.1				ug/L	76456	Standard
	Be	9	66753.5	2.5	**51.2959**	0.926	1.8	ug/L	20	Standard
	Al	27	8854426.6	1.6	**44.5025**	0.510	1.1	ug/L	1307	Standard
	Sc	45	39063.7	3.7				ug/L	41174	Standard
	Ti	47	30764.2	0.5	**94.6692**	0.333	0.4	ug/L	27	Standard
	V	51	413476.1	0.1	**50.2774**	0.192	0.4	ug/L	1434	Standard
	Cr	52	400969.6	0.9	**48.7893**	0.334	0.7	ug/L	7733	Standard
	Cr	53	49330.2	1.0	**48.5611**	0.384	0.8	ug/L	442	Standard
	Mn	55	368164.8	0.7	**48.7020**	0.201	0.4	ug/L	723	Standard
	Co	59	403506.1	0.3	**52.8271**	0.036	0.1	ug/L	217	Standard
	Ni	60	101394.2	1.2	**48.8833**	0.523	1.1	ug/L	304	Standard
	Cu	65	100114.0	0.9	**49.1563**	0.410	0.8	ug/L	181	Standard
	Zn	66	60654.2	0.4	**49.4979**	0.106	0.2	ug/L	215	Standard
>	Ge	72	519017.5	0.3				ug/L	520809	Standard
	As	75	61466.0	0.5	**50.0055**	0.153	0.3	ug/L	-52	Standard
	Se	82	6464.5	2.4	**51.2180**	1.098	2.1	ug/L	17	Standard
	Se-1	77	4373.3	1.3	**50.6496**	0.533	1.1	ug/L	56	Standard
>	Ga	71	66.7	18.9				mg/L	25	Standard
	Rb	85	861.7	5.9				ug/L	28	Standard
	Y	89	449328.6	2.0				ug/L	447395	Standard
>	Rh	103	36.7	31.5				ug/L	15	Standard
	Mo	98	305460.5	0.7	**100.5610**	1.227	1.2	ug/L	113	Standard
	Ag	107	357889.2	0.5	**49.6167**	0.755	1.5	ug/L	108	Standard
	Cd	111	115251.7	0.3	**49.8541**	0.558	1.1	mg/L	3	Standard
	Cd	114	285891.9	1.9	**49.9459**	0.709	1.4	ug/L	20	Standard
>	In	115	628352.9	1.0				ug/L	625728	Standard
	Sn	118	322603.7	1.4	**49.8300**	0.182	0.4	ug/L	568	Standard
	Sb	123	256839.4	0.5	**49.4582**	0.316	0.6	ug/L	612	Standard
	Ba	135	105057.6	0.5	**48.0726**	0.299	0.6	ug/L	21	Standard
	Ce	140	361.7	34.4				ug/L	245	Standard
>	Tb	159	960077.3	1.9				ug/L	950397	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	452676.3	0.7	**49.9830**	0.213	0.4	ug/L	15	Standard
	Tl	205	410938.2	0.4	**51.0915**	0.351	0.7	ug/L	13	Standard
	Pb	206	286259.6	0.4	**50.0826**	0.130	0.3	ug/L	264	Standard
	Pb	207	259240.1	0.9	**49.9407**	0.356	0.7	ug/L	222	Standard
	Pb	208	1080903.3	0.1	**50.9831**	0.221	0.4	ug/L	959	Standard
	U	238	414937.8	0.7	**51.0249**	0.218	0.4	ug/L	9	Standard
>	Bi	209	557647.7	0.3				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4484.0	1.2	**5.4671**	0.257	4.7	mg/L	55	Standard
K	39	1023.4	3.3	**4.0066**	0.130	3.2	mg/L	28	Standard
Ca	43	43.3	53.3	**1.7517**	2.400	137.0	mg/L	27	Standard
Fe	54	6523.2	1.6	**5.2995**	0.275	5.2	mg/L	147	Standard
Fe	57	1890.1	7.4	**5.3143**	0.301	5.7	mg/L	268	Standard
Sc-1	45	39063.7	3.7				mg/L	41174	Standard
Cl	35	79213.9	1.2				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	2563.6	1.5				ug/L	1950	Standard
P	31	24057.4	1.2				ug/L	21156	Standard
S	34	3523.7	3.2				ug/L	3419	Standard
Sr	88	65.0	7.7				ug/L	72	Standard
C	12	140.0	57.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	940.0	34.1				mg/L	17	Standard
Dy	164	25.2	57.6				mg/L	16	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	30.0	88.2				mg/L	7	Standard
I	127	15756.5	3.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.592		
Al	27	89.005		
Sc	45			
Ti	47	94.669		
V	51	100.555		
Cr	52	97.579		
Cr	53			
Mn	55	97.404		
Co	59	105.654		
Ni	60	97.767		
Cu	65	98.313		
Zn	66	98.996		
Ge	72		99.656	
As	75	100.011		
Se	82	102.436		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	100.561		
Ag	107	99.233		
Cd	111	99.708		
Cd	114			
> In	115			100.420
Sn	118	99.660		
Sb	123	98.916		
Ba	135	96.145		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.966		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.966		
U	238	102.050		
> Bi	209			100.873
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 14:13:50
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	88888.4	2.2				ug/L	76456	Standard
	Be	9	38.3	52.7	**0.0094**	0.015	161.5	ug/L	20	Standard
	Al	27	2825.3	17.3	**0.0040**	0.002	53.4	ug/L	1307	Standard
	Sc	45	39005.1	1.5				ug/L	41174	Standard
	Ti	47	28.0	19.9	**0.0028**	0.016	582.3	ug/L	27	Standard
	V	51	2415.4	18.1	**0.1010**	0.058	57.8	ug/L	1434	Standard
	Cr	52	6917.2	0.7	**-0.0998**	0.014	13.7	ug/L	7733	Standard
	Cr	53	555.0	5.9	**0.1417**	0.025	17.3	ug/L	442	Standard
	Mn	55	752.7	2.2	**-0.0001**	0.003	2090.7	ug/L	723	Standard
	Co	59	252.7	11.5	**0.0041**	0.003	85.1	ug/L	217	Standard
	Ni	60	429.7	6.2	**0.0575**	0.011	18.3	ug/L	304	Standard
	Cu	65	263.0	14.8	**0.0569**	0.017	30.5	ug/L	181	Standard
	Zn	66	279.3	0.5	**0.0518**	0.003	5.0	ug/L	215	Standard
>	Ge	72	511815.0	1.6				ug/L	520809	Standard
	As	75	-18.1	92.8	**0.0301**	0.014	46.4	ug/L	-52	Standard
	Se	82	24.7	15.0	**0.0723**	0.029	39.9	ug/L	17	Standard
	Se-1	77	58.0	10.8	**0.0062**	0.079	1288.4	ug/L	56	Standard
>	Ga	71	13.3	78.1				mg/L	25	Standard
	Rb	85	38.3	7.5				ug/L	28	Standard
	Y	89	444682.5	1.8				ug/L	447395	Standard
>	Rh	103	18.3	15.7				ug/L	15	Standard
	Mo	98	598.8	12.4	**0.1734**	0.026	14.8	ug/L	113	Standard
	Ag	107	140.0	4.0	**0.0066**	0.001	12.4	ug/L	108	Standard
	Cd	111	12.3	61.1	**0.0030**	0.003	109.1	mg/L	3	Standard
	Cd	114	49.0	43.7	**0.0086**	0.004	42.9	ug/L	20	Standard
>	In	115	628245.6	0.7				ug/L	625728	Standard
	Sn	118	1961.8	30.2	**0.2198**	0.093	42.5	ug/L	568	Standard
	Sb	123	904.2	34.2	**0.1408**	0.061	43.0	ug/L	612	Standard
	Ba	135	57.3	10.7	**0.0083**	0.003	31.6	ug/L	21	Standard
	Ce	140	128.3	30.3				ug/L	245	Standard
>	Tb	159	944365.6	0.9				ug/L	950397	Standard
	Ho	165	13.3	94.4				ug/L	7	Standard
	Tl	203	108.0	13.0	**0.0111**	0.001	13.5	ug/L	15	Standard
	Tl	205	96.7	15.8	**0.0022**	0.002	85.6	ug/L	13	Standard
	Pb	206	339.7	1.4	**0.0152**	0.001	5.3	ug/L	264	Standard
	Pb	207	305.3	7.3	**0.0122**	0.004	33.7	ug/L	222	Standard
	Pb	208	1308.0	3.7	**0.0129**	0.002	16.1	ug/L	959	Standard
	U	238	87.3	40.5	**0.0104**	0.004	41.2	ug/L	9	Standard
>	Bi	209	562720.5	0.3				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	75.0	23.1	**0.0324**	0.022	69.0	mg/L	55	Standard
K	39	33.3	45.8	**0.0031**	0.060	1894.0	mg/L	28	Standard
Ca	43	15.0	33.3	**-1.0175**	0.462	45.4	mg/L	27	Standard
Fe	54	165.7	9.2	**0.0385**	0.014	37.1	mg/L	147	Standard
Fe	57	250.0	12.0	**0.0061**	0.086	1418.1	mg/L	268	Standard
> **Sc-1**	45	39005.1	1.5				mg/L	41174	Standard
Cl	35	79585.8	1.1				ug/L	69550	Standard
Kr	83	3.0	33.3				ug/L	1	Standard
Br	81	2136.8	1.9				ug/L	1950	Standard
P	31	23918.9	4.5				ug/L	21156	Standard
S	34	3433.7	5.0				ug/L	3419	Standard
Sr	88	81.7	12.7				ug/L	72	Standard
C	12	130.0	20.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	723.4	38.9				mg/L	17	Standard
Dy	164	12.1	100.4				mg/L	16	Standard
Ho-1	165	13.3	94.4				mg/L	7	Standard
Er	166	26.7	57.3				mg/L	7	Standard
I	127	11843.0	2.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.273	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.402
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.791
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

WG573840-04

Sample ID: L1606106815S ~~WG574840-04~~
Sample Date/Time: Friday, July 01, 2016 14:17:03
Number of Replicates: 3
Autosampler Position: 348
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83265.1	4.4				ug/L	76456	Standard
	Be	9	6339.7	3.7	**5.1828**	0.150	2.9	ug/L	20	Standard
	Al	27	349898.6	2.2	**1.8682**	0.063	3.4	ug/L	1307	Standard
	Sc	45	36113.0	0.7				ug/L	41174	Standard
	Ti	47	374.0	5.7	**1.1636**	0.064	5.5	ug/L	27	Standard
	V	51	40708.6	1.1	**5.1868**	0.031	0.6	ug/L	1434	Standard
	Cr	52	46718.3	0.7	**5.3127**	0.067	1.3	ug/L	7733	Standard
	Cr	53	6618.1	2.8	**6.7048**	0.239	3.6	ug/L	442	Standard
	Mn	55	114395.6	0.5	**16.3321**	0.067	0.4	ug/L	723	Standard
	Co	59	38195.1	1.8	**5.3924**	0.078	1.4	ug/L	217	Standard
	Ni	60	13663.5	1.3	**7.0078**	0.080	1.1	ug/L	304	Standard
	Cu	65	9944.3	1.7	**5.2251**	0.077	1.5	ug/L	181	Standard
	Zn	66	9492.0	1.6	**8.2445**	0.108	1.3	ug/L	215	Standard
>	**Ge**	72	478934.2	0.5				ug/L	520809	Standard
	As	75	6298.1	2.1	**5.5931**	0.137	2.4	ug/L	-52	Standard
	Se	82	745.3	1.6	**6.2890**	0.131	2.1	ug/L	17	Standard
	Se-1	77	565.0	3.4	**6.5031**	0.256	3.9	ug/L	56	Standard
>	**Ga**	71	210.0	14.9				mg/L	25	Standard
	Rb	85	3015.3	2.7				ug/L	28	Standard
	Y	89	406713.6	1.2				ug/L	447395	Standard
>	**Rh**	103	30.0	44.1				ug/L	15	Standard
	Mo	98	643.2	26.9	**0.2086**	0.062	29.9	ug/L	113	Standard
	Ag	107	33003.9	0.1	**5.0128**	0.031	0.6	ug/L	108	Standard
	Cd	111	11239.0	0.3	**5.3366**	0.046	0.9	mg/L	3	Standard
	Cd	114	27301.6	1.5	**5.2380**	0.071	1.4	ug/L	20	Standard
>	**In**	115	572178.3	0.7				ug/L	625728	Standard
	Sn	118	856.7	28.9	**0.0614**	0.042	68.6	ug/L	568	Standard
	Sb	123	23676.7	0.6	**4.9767**	0.063	1.3	ug/L	612	Standard
	Ba	135	19520.2	0.7	**9.7948**	0.108	1.1	ug/L	21	Standard
	Ce	140	4247.3	5.7				ug/L	245	Standard
>	**Tb**	159	879458.6	1.4				ug/L	950397	Standard
	Ho	165	76.7	30.1				ug/L	7	Standard
	Tl	203	41384.8	1.8	**4.8673**	0.052	1.1	ug/L	15	Standard
	Tl	205	37817.2	2.3	**4.9998**	0.080	1.6	ug/L	13	Standard
	Pb	206	27923.4	1.8	**5.1651**	0.060	1.2	ug/L	264	Standard
	Pb	207	24211.0	1.2	**4.9273**	0.030	0.6	ug/L	222	Standard
	Pb	208	101923.3	0.8	**5.0783**	0.055	1.1	ug/L	959	Standard
	U	238	37622.7	0.8	**4.9287**	0.050	1.0	ug/L	9	Standard
>	**Bi**	209	523442.8	0.7				ug/L	552821	Standard

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Na	23	1.7	173.2	**5.6795**	9.828	173.1	mg/L	2	Standard
Mg	24	6323.0	5.1	**8.3634**	0.482	5.8	mg/L	55	Standard
K	39	55.0	24.1	**0.1095**	0.059	54.3	mg/L	28	Standard
Ca	43	28.3	83.4	**0.4924**	2.471	501.8	mg/L	27	Standard
Fe	54	574.3	6.7	**0.4148**	0.038	9.1	mg/L	147	Standard
Fe	57	356.7	11.3	**0.4458**	0.147	32.9	mg/L	268	Standard
> **Sc-1**	45	36113.0	0.7				mg/L	41174	Standard
Cl	35	72434.1	0.7				ug/L	69550	Standard
Kr	83	2.0	0.0				ug/L	1	Standard
Br	81	13466.0	3.1				ug/L	1950	Standard
P	31	9684.8	1.1				ug/L	21156	Standard
S	34	3162.0	7.4				ug/L	3419	Standard
Sr	88	88.3	6.5				ug/L	72	Standard
C	12	126.7	19.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	493.3	11.2				mg/L	17	Standard
Dy	164	135.8	20.6				mg/L	16	Standard
Ho-1	165	76.7	30.1				mg/L	7	Standard
Er	166	86.7	40.5				mg/L	7	Standard
I	127	53586.4	4.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.906	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		91.960	
As	75			
Se	82			
Se-1	77			
> Ga	71			

WG573840-04

Sample ID: L1606106815S ~~WG574840-04~~
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.442
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.686
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

WG573840-04

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Method 6020 - Summary Report

WG573840-05

Sample ID: L1606106817SD ~~WG574840-05~~
Sample Date/Time: Friday, July 01, 2016 14:20:15
Number of Replicates: 3
Autosampler Position: 349
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81106.5	1.7				ug/L	76456	Standard
	Be	9	6459.7	2.4	**5.4224**	0.225	4.2	ug/L	20	Standard
	Al	27	501960.4	2.3	**2.7550**	0.103	3.7	ug/L	1307	Standard
	Sc	45	36201.5	0.9				ug/L	41174	Standard
	Ti	47	1052.0	1.1	**3.4327**	0.017	0.5	ug/L	27	Standard
	V	51	46082.9	1.9	**5.9078**	0.087	1.5	ug/L	1434	Standard
	Cr	52	58550.9	1.6	**6.9166**	0.078	1.1	ug/L	7733	Standard
	Cr	53	8594.1	3.3	**8.8449**	0.268	3.0	ug/L	442	Standard
	Mn	55	145669.8	2.3	**20.8582**	0.361	1.7	ug/L	723	Standard
	Co	59	40340.0	2.3	**5.7063**	0.097	1.7	ug/L	217	Standard
	Ni	60	15750.9	2.0	**8.1157**	0.154	1.9	ug/L	304	Standard
	Cu	65	10601.7	1.3	**5.5848**	0.040	0.7	ug/L	181	Standard
	Zn	66	10298.5	1.1	**8.9757**	0.069	0.8	ug/L	215	Standard
>	Ge	72	478135.2	0.6				ug/L	520809	Standard
	As	75	6490.3	1.3	**5.7717**	0.072	1.2	ug/L	-52	Standard
	Se	82	783.8	3.6	**6.6313**	0.232	3.5	ug/L	17	Standard
	Se-1	77	575.7	8.4	**6.6484**	0.573	8.6	ug/L	56	Standard
>	Ga	71	653.3	4.4				mg/L	25	Standard
	Rb	85	7186.7	2.7				ug/L	28	Standard
	Y	89	409741.2	2.1				ug/L	447395	Standard
>	Rh	103	31.7	18.2				ug/L	15	Standard
	Mo	98	998.2	56.5	**0.3366**	0.205	60.9	ug/L	113	Standard
	Ag	107	33931.3	1.3	**5.1521**	0.034	0.7	ug/L	108	Standard
	Cd	111	11629.2	3.5	**5.5186**	0.109	2.0	mg/L	3	Standard
	Cd	114	28711.5	1.0	**5.5071**	0.084	1.5	ug/L	20	Standard
>	In	115	572419.1	1.9				ug/L	625728	Standard
	Sn	118	771.7	35.0	**0.0463**	0.043	93.9	ug/L	568	Standard
	Sb	123	22618.6	1.5	**4.7509**	0.051	1.1	ug/L	612	Standard
	Ba	135	24808.3	0.6	**12.4494**	0.172	1.4	ug/L	21	Standard
	Ce	140	9864.9	1.2				ug/L	245	Standard
>	Tb	159	882133.3	1.2				ug/L	950397	Standard
	Ho	165	175.0	13.1				ug/L	7	Standard
	Tl	203	43094.9	1.3	**5.0490**	0.012	0.2	ug/L	15	Standard
	Tl	205	38782.9	1.4	**5.1088**	0.109	2.1	ug/L	13	Standard
	Pb	206	28842.8	0.9	**5.3164**	0.076	1.4	ug/L	264	Standard
	Pb	207	24928.5	1.0	**5.0552**	0.065	1.3	ug/L	222	Standard
	Pb	208	104803.4	1.3	**5.2025**	0.040	0.8	ug/L	959	Standard
	U	238	38305.0	0.8	**4.9987**	0.028	0.6	ug/L	9	Standard
>	Bi	209	525482.1	1.1				ug/L	552821	Standard

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Na	23	3.3	173.2	**11.2046**	19.398	173.1	mg/L	2	Standard
Mg	24	8434.0	5.4	**11.1454**	0.594	5.3	mg/L	55	Standard
K	39	58.3	13.1	**0.1234**	0.036	28.8	mg/L	28	Standard
Ca	43	20.0	75.0	**-0.3837**	1.563	407.4	mg/L	27	Standard
Fe	54	968.4	3.8	**0.7651**	0.040	5.3	mg/L	147	Standard
Fe	57	503.3	13.7	**0.9549**	0.241	25.2	mg/L	268	Standard
> **Sc-1**	45	36201.5	0.9				mg/L	41174	Standard
Cl	35	71982.6	1.3				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	18638.1	5.1				ug/L	1950	Standard
P	31	10710.5	1.0				ug/L	21156	Standard
S	34	3345.4	0.8				ug/L	3419	Standard
Sr	88	73.3	27.6				ug/L	72	Standard
C	12	120.0	57.7				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	436.7	13.4				mg/L	17	Standard
Dy	164	280.4	13.3				mg/L	16	Standard
Ho-1	165	175.0	13.1				mg/L	7	Standard
Er	166	200.0	13.2				mg/L	7	Standard
I	127	66018.7	4.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.083	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		91.806	
As	75			
Se	82			
Se-1	77			
> Ga	71	WG573840-05		

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.481
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.055
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606106502
Sample Date/Time: Friday, July 01, 2016 14:23:26
Number of Replicates: 3
Autosampler Position: 350
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80066.0	1.1				ug/L	76456	Standard
	Be	9	30.0	115.5	**0.0056**	0.029	520.4	ug/L	20	Standard
	Al	27	180778.3	4.1	**0.9982**	0.041	4.1	ug/L	1307	Standard
	Sc	45	36360.3	2.0				ug/L	41174	Standard
	Ti	47	27.3	18.4	**0.0052**	0.016	312.3	ug/L	27	Standard
	V	51	1588.1	11.5	**0.0081**	0.023	286.5	ug/L	1434	Standard
	Cr	52	81053.1	3.8	**9.7557**	0.368	3.8	ug/L	7733	Standard
	Cr	53	9971.6	2.0	**10.1419**	0.234	2.3	ug/L	442	Standard
	Mn	55	13954.4	0.7	**1.8714**	0.017	0.9	ug/L	723	Standard
	Co	59	649.0	8.3	**0.0612**	0.008	12.7	ug/L	217	Standard
	Ni	60	1447.4	0.9	**0.5934**	0.004	0.6	ug/L	304	Standard
	Cu	65	486.7	11.5	**0.1810**	0.028	15.4	ug/L	181	Standard
	Zn	66	1353.4	2.5	**1.0020**	0.034	3.4	ug/L	215	Standard
>	**Ge**	72	486676.1	0.5				ug/L	520809	Standard
	As	75	-22.0	245.7	**0.0260**	0.047	179.9	ug/L	-52	Standard
	Se	82	18.1	72.4	**0.0263**	0.110	418.7	ug/L	17	Standard
	Se-1	77	60.7	2.5	**0.0749**	0.022	28.9	ug/L	56	Standard
>	**Ga**	71	25.0	20.0				mg/L	25	Standard
	Rb	85	138.3	26.6				ug/L	28	Standard
	Y	89	406376.2	1.0				ug/L	447395	Standard
>	**Rh**	103	16.7	69.3				ug/L	15	Standard
	Mo	98	1770.7	17.5	**0.6016**	0.111	18.5	ug/L	113	Standard
	Ag	107	129.0	37.0	**0.0063**	0.007	112.2	ug/L	108	Standard
	Cd	111	16.9	116.6	**0.0055**	0.009	166.8	mg/L	3	Standard
	Cd	114	59.1	100.8	**0.0111**	0.011	100.7	ug/L	20	Standard
>	**In**	115	585828.3	0.2				ug/L	625728	Standard
	Sn	118	591.7	24.5	**0.0140**	0.024	173.1	ug/L	568	Standard
	Sb	123	173.5	26.1	**0.0021**	0.009	438.7	ug/L	612	Standard
	Ba	135	254.0	14.4	**0.1068**	0.018	16.8	ug/L	21	Standard
	Ce	140	36.7	55.1				ug/L	245	Standard
>	**Tb**	159	883738.0	0.6				ug/L	950397	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	137.0	50.5	**0.0151**	0.008	51.9	ug/L	15	Standard
	Tl	205	130.0	90.1	**0.0071**	0.015	211.0	ug/L	13	Standard
	Pb	206	304.3	19.3	**0.0122**	0.010	84.1	ug/L	264	Standard
	Pb	207	261.0	10.0	**0.0068**	0.005	70.4	ug/L	222	Standard
	Pb	208	1149.7	15.1	**0.0087**	0.008	92.0	ug/L	959	Standard
	U	238	112.0	113.8	**0.0141**	0.016	115.0	ug/L	9	Standard
>	**Bi**	209	530616.0	1.0				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	1146.7	22.2	**1.4533**	0.307	21.1	mg/L	55	Standard
K	39	28.3	44.4	**-0.0074**	0.057	769.4	mg/L	28	Standard
Ca	43	26.7	54.1	**0.3104**	1.522	490.2	mg/L	27	Standard
Fe	54	101.6	8.0	**-0.0086**	0.008	94.5	mg/L	147	Standard
Fe	57	255.0	17.0	**0.0854**	0.166	194.4	mg/L	268	Standard
> **Sc-1**	45	36360.3	2.0				mg/L	41174	Standard
Cl	35	73712.2	1.2				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	2090.1	10.3				ug/L	1950	Standard
P	31	7825.4	0.6				ug/L	21156	Standard
S	34	3022.0	4.6				ug/L	3419	Standard
Sr	88	71.7	8.1				ug/L	72	Standard
C	12	96.7	23.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1313.4	4.6				mg/L	17	Standard
Dy	164	22.1	25.6				mg/L	16	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	26.7	21.7				mg/L	7	Standard
I	127	28513.5	2.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.722	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.446	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.623
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.983
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606106503
Sample Date/Time: Friday, July 01, 2016 14:26:37
Number of Replicates: 3
Autosampler Position: 351
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79132.8	1.3				ug/L	76456	Standard
	Be	9	20.0	90.1	**-0.0027**	0.015	566.6	ug/L	20	Standard
	Al	27	183681.8	1.0	**1.0266**	0.021	2.0	ug/L	1307	Standard
	Sc	45	35984.4	2.9				ug/L	41174	Standard
	Ti	47	20.7	12.2	**-0.0167**	0.009	53.6	ug/L	27	Standard
	V	51	1554.3	4.0	**0.0034**	0.007	204.4	ug/L	1434	Standard
	Cr	52	22825.5	4.8	**2.0452**	0.152	7.4	ug/L	7733	Standard
	Cr	53	2823.6	3.2	**2.5679**	0.111	4.3	ug/L	442	Standard
	Mn	55	25588.9	0.9	**3.5097**	0.037	1.1	ug/L	723	Standard
	Co	59	286.3	4.8	**0.0105**	0.002	16.3	ug/L	217	Standard
	Ni	60	1267.4	3.9	**0.4993**	0.024	4.9	ug/L	304	Standard
	Cu	65	240.7	4.8	**0.0519**	0.005	9.1	ug/L	181	Standard
	Zn	66	1398.4	2.4	**1.0389**	0.016	1.6	ug/L	215	Standard
>	**Ge**	72	487565.1	1.1				ug/L	520809	Standard
	As	75	-30.6	81.1	**0.0187**	0.022	115.7	ug/L	-52	Standard
	Se	82	20.5	30.4	**0.0466**	0.051	110.3	ug/L	17	Standard
	Se-1	77	71.3	18.1	**0.2061**	0.156	75.5	ug/L	56	Standard
>	**Ga**	71	30.0	33.3				mg/L	25	Standard
	Rb	85	90.0	53.6				ug/L	28	Standard
	Y	89	411794.3	0.5				ug/L	447395	Standard
>	**Rh**	103	21.7	13.3				ug/L	15	Standard
	Mo	98	702.5	37.7	**0.2235**	0.093	41.6	ug/L	113	Standard
	Ag	107	100.7	6.4	**0.0021**	0.001	44.2	ug/L	108	Standard
	Cd	111	3.1	64.7	**-0.0009**	0.001	98.3	mg/L	3	Standard
	Cd	114	10.2	126.7	**0.0019**	0.002	125.3	ug/L	20	Standard
>	**In**	115	587395.6	0.4				ug/L	625728	Standard
	Sn	118	551.7	28.8	**0.0071**	0.026	370.3	ug/L	568	Standard
	Sb	123	119.5	11.5	**-0.0091**	0.003	31.3	ug/L	612	Standard
	Ba	135	603.3	5.0	**0.2775**	0.015	5.3	ug/L	21	Standard
	Ce	140	43.3	40.5				ug/L	245	Standard
>	**Tb**	159	891615.0	1.6				ug/L	950397	Standard
	Ho	165	15.0	66.7				ug/L	7	Standard
	Tl	203	80.7	10.3	**0.0085**	0.001	11.1	ug/L	15	Standard
	Tl	205	53.3	57.3	**-0.0028**	0.004	140.3	ug/L	13	Standard
	Pb	206	274.3	3.4	**0.0064**	0.002	26.4	ug/L	264	Standard
	Pb	207	227.0	9.3	**-0.0004**	0.004	980.7	ug/L	222	Standard
	Pb	208	977.7	5.7	**-0.0001**	0.003	2332.0	ug/L	959	Standard
	U	238	23.7	16.0	**0.0028**	0.000	17.0	ug/L	9	Standard
>	**Bi**	209	534397.5	0.8				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	1421.7	2.1	**1.8418**	0.090	4.9	mg/L	55	Standard
K	39	28.3	40.8	**-0.0067**	0.051	756.8	mg/L	28	Standard
Ca	43	21.7	35.3	**-0.2051**	0.778	379.2	mg/L	27	Standard
Fe	54	96.5	16.4	**-0.0124**	0.012	96.4	mg/L	147	Standard
Fe	57	246.7	7.7	**0.0625**	0.044	71.0	mg/L	268	Standard
> **Sc-1**	45	35984.4	2.9				mg/L	41174	Standard
Cl	35	75787.1	1.4				ug/L	69550	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	1940.1	11.4				ug/L	1950	Standard
P	31	7708.6	3.3				ug/L	21156	Standard
S	34	3283.7	7.0				ug/L	3419	Standard
Sr	88	81.7	3.5				ug/L	72	Standard
C	12	93.3	6.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	810.0	7.7				mg/L	17	Standard
Dy	164	19.4	51.7				mg/L	16	Standard
Ho-1	165	15.0	66.7				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	28069.3	3.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.501	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.617	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85	
Y	89	
> Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
> In	115	93.874
Sn	118	
Sb	123	
Ba	135	
Ce	140	
> Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
> Bi	209	96.667
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
> Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606106504
Sample Date/Time: Friday, July 01, 2016 14:29:49
Number of Replicates: 3
Autosampler Position: 352
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79397.5	1.7				ug/L	76456	Standard
	Be	9	16.7	45.8	**-0.0055**	0.007	119.4	ug/L	20	Standard
	Al	27	291025.7	1.9	**1.6271**	0.036	2.2	ug/L	1307	Standard
	Sc	45	36009.4	0.8				ug/L	41174	Standard
	Ti	47	26.7	15.2	**0.0019**	0.013	690.9	ug/L	27	Standard
	V	51	1704.2	12.5	**0.0204**	0.028	139.1	ug/L	1434	Standard
	Cr	52	30766.6	4.8	**3.0469**	0.189	6.2	ug/L	7733	Standard
	Cr	53	3653.8	5.4	**3.4005**	0.215	6.3	ug/L	442	Standard
	Mn	55	17036.6	2.3	**2.2748**	0.050	2.2	ug/L	723	Standard
	Co	59	958.7	6.2	**0.1027**	0.008	8.2	ug/L	217	Standard
	Ni	60	2008.1	1.5	**0.8687**	0.014	1.6	ug/L	304	Standard
	Cu	65	251.7	3.4	**0.0561**	0.005	9.3	ug/L	181	Standard
	Zn	66	1482.7	0.2	**1.0976**	0.010	0.9	ug/L	215	Standard
>	Ge	72	493269.0	0.6				ug/L	520809	Standard
	As	75	-44.8	49.5	**0.0068**	0.019	282.1	ug/L	-52	Standard
	Se	82	18.7	10.9	**0.0294**	0.017	58.4	ug/L	17	Standard
	Se-1	77	64.3	6.3	**0.1099**	0.049	45.0	ug/L	56	Standard
>	Ga	71	26.7	43.3				mg/L	25	Standard
	Rb	85	2356.8	1.6				ug/L	28	Standard
	Y	89	413880.0	0.1				ug/L	447395	Standard
>	Rh	103	25.0	0.0				ug/L	15	Standard
	Mo	98	624.4	36.8	**0.1955**	0.081	41.4	ug/L	113	Standard
	Ag	107	92.7	17.9	**0.0009**	0.003	292.7	ug/L	108	Standard
	Cd	111	11.5	37.2	**0.0030**	0.002	67.8	mg/L	3	Standard
	Cd	114	45.1	23.2	**0.0084**	0.002	22.0	ug/L	20	Standard
>	In	115	588539.3	1.1				ug/L	625728	Standard
	Sn	118	616.7	20.1	**0.0176**	0.020	114.5	ug/L	568	Standard
	Sb	123	351.6	3.8	**0.0386**	0.003	9.0	ug/L	612	Standard
	Ba	135	231.7	10.0	**0.0953**	0.011	11.7	ug/L	21	Standard
	Ce	140	43.3	88.1				ug/L	245	Standard
>	Tb	159	885756.3	0.8				ug/L	950397	Standard
	Ho	165	16.7	34.6				ug/L	7	Standard
	Tl	203	73.3	2.8	**0.0077**	0.000	3.3	ug/L	15	Standard
	Tl	205	65.0	13.3	**-0.0013**	0.001	87.3	ug/L	13	Standard
	Pb	206	322.7	5.3	**0.0151**	0.003	19.7	ug/L	264	Standard
	Pb	207	256.3	3.1	**0.0054**	0.001	26.7	ug/L	222	Standard
	Pb	208	1164.0	5.3	**0.0090**	0.003	33.0	ug/L	959	Standard
	U	238	19.0	34.5	**0.0022**	0.001	38.3	ug/L	9	Standard
>	Bi	209	534942.7	0.4				ug/L	552821	Standard

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Na	23	3.3	86.6	**11.3879**	9.859	86.6	mg/L	2	Standard
Mg	24	1060.0	6.8	**1.3559**	0.099	7.3	mg/L	55	Standard
K	39	55.0	32.8	**0.1095**	0.077	70.3	mg/L	28	Standard
Ca	43	21.7	48.0	**-0.2024**	1.077	531.9	mg/L	27	Standard
Fe	54	98.8	37.3	**-0.0103**	0.032	312.2	mg/L	147	Standard
Fe	57	268.3	7.1	**0.1387**	0.065	46.8	mg/L	268	Standard
> **Sc-1**	45	36009.4	0.8				mg/L	41174	Standard
Cl	35	77523.2	0.3				ug/L	69550	Standard
Kr	83	2.7	114.6				ug/L	1	Standard
Br	81	2113.5	9.3				ug/L	1950	Standard
P	31	7710.3	3.6				ug/L	21156	Standard
S	34	3393.7	3.0				ug/L	3419	Standard
Sr	88	65.0	23.1				ug/L	72	Standard
C	12	106.7	28.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	623.3	9.8				mg/L	17	Standard
Dy	164	15.7	70.9				mg/L	16	Standard
Ho-1	165	16.7	34.6				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	28194.6	4.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.848	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.712	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.057
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.766
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 14:33:02
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	84479.9	0.6				ug/L	76456	Standard
	Be	9	65431.0	1.7	**52.8839**	1.234	2.3	ug/L	20	Standard
	Al	27	9107293.6	1.3	**48.1391**	0.761	1.6	ug/L	1307	Standard
	Sc	45	41221.0	1.1				ug/L	41174	Standard
	Ti	47	32532.9	2.1	**96.4064**	2.590	2.7	ug/L	27	Standard
	V	51	430170.6	0.9	**50.3648**	0.150	0.3	ug/L	1434	Standard
	Cr	52	419842.9	0.7	**49.1999**	0.629	1.3	ug/L	7733	Standard
	Cr	53	51666.3	1.8	**48.9792**	1.063	2.2	ug/L	442	Standard
	Mn	55	386049.1	1.6	**49.1731**	0.734	1.5	ug/L	723	Standard
	Co	59	420011.6	1.0	**52.9472**	0.520	1.0	ug/L	217	Standard
	Ni	60	107142.5	0.5	**49.7412**	0.431	0.9	ug/L	304	Standard
	Cu	65	106376.5	0.2	**50.2954**	0.371	0.7	ug/L	181	Standard
	Zn	66	63768.9	0.5	**50.1114**	0.441	0.9	ug/L	215	Standard
>	Ge	72	539029.9	0.6				ug/L	520809	Standard
	As	75	63720.4	0.2	**49.9158**	0.187	0.4	ug/L	-52	Standard
	Se	82	6616.1	1.4	**50.4720**	0.409	0.8	ug/L	17	Standard
	Se-1	77	4538.7	1.1	**50.6161**	0.744	1.5	ug/L	56	Standard
>	Ga	71	41.7	36.7				mg/L	25	Standard
	Rb	85	886.7	6.2				ug/L	28	Standard
	Y	89	466133.9	1.1				ug/L	447395	Standard
>	Rh	103	45.0	48.4				ug/L	15	Standard
	Mo	98	316079.0	1.2	**100.9623**	1.590	1.6	ug/L	113	Standard
	Ag	107	372581.7	1.1	**50.1169**	0.847	1.7	ug/L	108	Standard
	Cd	111	118352.7	0.1	**49.6717**	0.324	0.7	mg/L	3	Standard
	Cd	114	294028.3	2.4	**49.8404**	1.066	2.1	ug/L	20	Standard
>	In	115	647595.9	0.6				ug/L	625728	Standard
	Sn	118	333519.2	0.4	**49.9888**	0.512	1.0	ug/L	568	Standard
	Sb	123	262566.9	2.8	**49.0609**	1.554	3.2	ug/L	612	Standard
	Ba	135	108230.2	0.7	**48.0518**	0.424	0.9	ug/L	21	Standard
	Ce	140	185.0	15.0				ug/L	245	Standard
>	Tb	159	963986.1	0.6				ug/L	950397	Standard
	Ho	165	15.0	115.5				ug/L	7	Standard
	Tl	203	457975.8	1.0	**50.2126**	0.379	0.8	ug/L	15	Standard
	Tl	205	420042.8	0.3	**51.8564**	0.350	0.7	ug/L	13	Standard
	Pb	206	291174.6	0.8	**50.5849**	0.394	0.8	ug/L	264	Standard
	Pb	207	263877.7	0.4	**50.4775**	0.161	0.3	ug/L	222	Standard
	Pb	208	1113044.3	0.4	**52.1318**	0.466	0.9	ug/L	959	Standard
	U	238	419550.2	0.5	**51.2295**	0.115	0.2	ug/L	9	Standard
>	Bi	209	561599.8	0.5				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4695.7	3.2	**5.4185**	0.141	2.6	mg/L	55	Standard
K	39	1080.0	1.9	**4.0059**	0.102	2.5	mg/L	28	Standard
Ca	43	58.3	9.9	**2.8430**	0.540	19.0	mg/L	27	Standard
Fe	54	6681.6	1.6	**5.1353**	0.107	2.1	mg/L	147	Standard
Fe	57	1935.1	3.8	**5.1339**	0.159	3.1	mg/L	268	Standard
> **Sc-1**	45	41221.0	1.1				mg/L	41174	Standard
Cl	35	86136.9	2.1				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	2180.2	1.6				ug/L	1950	Standard
P	31	25733.5	2.6				ug/L	21156	Standard
S	34	4153.9	3.6				ug/L	3419	Standard
Sr	88	75.0	13.3				ug/L	72	Standard
C	12	106.7	28.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	720.0	29.7				mg/L	17	Standard
Dy	164	22.7	24.3				mg/L	16	Standard
Ho-1	165	15.0	115.5				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	15117.5	1.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	105.768		
Al	27	96.278		
Sc	45			
Ti	47	96.406		
V	51	100.730		
Cr	52	98.400		
Cr	53			
Mn	55	98.346		
Co	59	105.894		
Ni	60	99.482		
Cu	65	100.591		
Zn	66	100.223		
> Ge	72		103.499	
As	75	99.832		
Se	82	100.944		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	100.962		
Ag	107	100.234		
Cd	111	99.343		
Cd	114			
In	115			103.495
Sn	118	99.978		
Sb	123	98.122		
Ba	135	96.104		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.425		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.264		
U	238	102.459		
Bi	209			101.588
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 14:36:13
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84748.1	2.2				ug/L	76456	Standard
	Be	9	28.3	27.0	**0.0029**	0.006	204.3	ug/L	20	Standard
	Al	27	2800.3	34.3	**0.0045**	0.005	111.4	ug/L	1307	Standard
	Sc	45	41077.3	1.7				ug/L	41174	Standard
	Ti	47	26.0	26.6	**-0.0072**	0.021	288.8	ug/L	27	Standard
	V	51	1826.7	11.6	**0.0166**	0.026	154.1	ug/L	1434	Standard
	Cr	52	7089.7	2.6	**-0.1215**	0.019	15.7	ug/L	7733	Standard
	Cr	53	518.3	19.4	**0.0795**	0.095	119.0	ug/L	442	Standard
	Mn	55	744.0	2.7	**-0.0062**	0.002	40.3	ug/L	723	Standard
	Co	59	250.7	12.3	**0.0022**	0.004	175.9	ug/L	217	Standard
	Ni	60	366.0	4.1	**0.0177**	0.007	39.1	ug/L	304	Standard
	Cu	65	215.0	5.8	**0.0279**	0.006	21.4	ug/L	181	Standard
	Zn	66	258.3	5.8	**0.0239**	0.012	50.5	ug/L	215	Standard
>	**Ge**	72	537853.0	0.3				ug/L	520809	Standard
	As	75	-50.7	30.0	**0.0054**	0.012	222.4	ug/L	-52	Standard
	Se	82	23.4	28.3	**0.0526**	0.050	95.5	ug/L	17	Standard
	Se-1	77	56.3	13.3	**-0.0464**	0.086	185.9	ug/L	56	Standard
>	**Ga**	71	38.3	66.9				mg/L	25	Standard
	Rb	85	33.3	67.6				ug/L	28	Standard
	Y	89	471394.3	0.7				ug/L	447395	Standard
>	**Rh**	103	18.3	63.0				ug/L	15	Standard
	Mo	98	398.2	17.4	**0.1019**	0.023	22.4	ug/L	113	Standard
	Ag	107	141.3	16.6	**0.0060**	0.003	53.5	ug/L	108	Standard
	Cd	111	18.0	20.7	**0.0051**	0.002	31.3	mg/L	3	Standard
	Cd	114	51.0	12.7	**0.0086**	0.001	12.0	ug/L	20	Standard
>	**In**	115	655049.2	0.7				ug/L	625728	Standard
	Sn	118	1826.8	33.6	**0.1873**	0.093	49.6	ug/L	568	Standard
	Sb	123	1005.7	35.1	**0.1525**	0.066	43.6	ug/L	612	Standard
	Ba	135	50.7	11.6	**0.0043**	0.003	59.6	ug/L	21	Standard
	Ce	140	55.0	18.2				ug/L	245	Standard
>	**Tb**	159	963692.0	2.2				ug/L	950397	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	91.3	32.5	**0.0091**	0.003	36.2	ug/L	15	Standard
	Tl	205	100.0	20.0	**0.0024**	0.003	107.2	ug/L	13	Standard
	Pb	206	358.7	4.9	**0.0174**	0.003	18.6	ug/L	264	Standard
	Pb	207	299.3	9.7	**0.0101**	0.006	57.2	ug/L	222	Standard
	Pb	208	1241.0	6.1	**0.0088**	0.004	42.7	ug/L	959	Standard
	U	238	67.3	26.7	**0.0078**	0.002	28.5	ug/L	9	Standard
>	**Bi**	209	572676.0	1.1				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	58.3	27.6	**0.0080**	0.018	227.2	mg/L	55	Standard
K	39	31.7	24.1	**-0.0097**	0.028	287.6	mg/L	28	Standard
Ca	43	30.0	60.1	**0.2757**	1.623	588.8	mg/L	27	Standard
Fe	54	132.3	15.7	**0.0051**	0.015	299.1	mg/L	147	Standard
Fe	57	226.7	3.4	**-0.1060**	0.019	17.5	mg/L	268	Standard
Sc-1	45	41077.3	1.7				mg/L	41174	Standard
Cl	35	85337.0	1.5				ug/L	69550	Standard
Kr	83	3.3	17.3				ug/L	1	Standard
Br	81	2146.8	7.1				ug/L	1950	Standard
P	31	24845.4	3.5				ug/L	21156	Standard
S	34	4015.5	0.7				ug/L	3419	Standard
Sr	88	58.3	27.6				ug/L	72	Standard
C	12	116.7	9.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	523.3	24.3				mg/L	17	Standard
Dy	164	6.0	187.1				mg/L	16	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	11185.8	0.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.273	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.686
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.592
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 14:38:30
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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Friday, July 01, 2016 14:39:26
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82750.5	2.9				ug/L	76456	Standard
	Be	9	285.0	17.8	**0.2151**	0.039	18.0	ug/L	20	Standard
	Al	27	1818.4	16.8	**-0.0004**	0.002	418.1	ug/L	1307	Standard
	Sc	45	39031.9	2.5				ug/L	41174	Standard
	Ti	47	23.0	28.5	**-0.0130**	0.020	154.9	ug/L	27	Standard
	V	51	4531.3	0.6	**0.3599**	0.004	1.1	ug/L	1434	Standard
	Cr	52	13097.3	0.4	**0.6705**	0.008	1.2	ug/L	7733	Standard
	Cr	53	1321.7	4.4	**0.9081**	0.059	6.5	ug/L	442	Standard
	Mn	55	3958.5	1.2	**0.4284**	0.005	1.2	ug/L	723	Standard
	Co	59	3194.7	3.0	**0.3931**	0.014	3.5	ug/L	217	Standard
	Ni	60	3472.1	3.0	**1.5421**	0.046	3.0	ug/L	304	Standard
	Cu	65	1723.1	3.0	**0.7813**	0.023	3.0	ug/L	181	Standard
	Zn	66	8776.2	0.9	**7.0769**	0.052	0.7	ug/L	215	Standard
>	**Ge**	72	514072.5	0.3				ug/L	520809	Standard
	As	75	450.1	8.8	**0.4145**	0.032	7.7	ug/L	-52	Standard
	Se	82	70.4	7.3	**0.4383**	0.043	9.7	ug/L	17	Standard
	Se-1	77	94.3	4.8	**0.4334**	0.056	12.9	ug/L	56	Standard
>	**Ga**	71	21.7	35.3				mg/L	25	Standard
	Rb	85	21.7	53.3				ug/L	28	Standard
	Y	89	438183.2	1.3				ug/L	447395	Standard
>	**Rh**	103	16.7	105.4				ug/L	15	Standard
	Mo	98	167.4	18.5	**0.0314**	0.011	34.8	ug/L	113	Standard
	Ag	107	2856.9	3.2	**0.3846**	0.011	2.9	ug/L	108	Standard
	Cd	111	543.4	2.2	**0.2335**	0.007	3.2	mg/L	3	Standard
	Cd	114	1301.0	2.4	**0.2280**	0.003	1.3	ug/L	20	Standard
>	**In**	115	626288.8	1.2				ug/L	625728	Standard
	Sn	118	1146.7	25.4	**0.0941**	0.047	50.1	ug/L	568	Standard
	Sb	123	2055.0	1.9	**0.3637**	0.012	3.3	ug/L	612	Standard
	Ba	135	1475.7	2.5	**0.6597**	0.010	1.5	ug/L	21	Standard
	Ce	140	10.0	50.0				ug/L	245	Standard
>	**Tb**	159	937003.8	0.8				ug/L	950397	Standard
	Ho	165	13.3	94.4				ug/L	7	Standard
	Tl	203	742.4	3.9	**0.0813**	0.003	3.9	ug/L	15	Standard
	Tl	205	635.0	7.6	**0.0693**	0.006	9.0	ug/L	13	Standard
	Pb	206	1423.4	1.3	**0.2057**	0.004	1.8	ug/L	264	Standard
	Pb	207	1222.7	2.7	**0.1898**	0.007	3.5	ug/L	222	Standard
	Pb	208	5238.4	1.7	**0.1992**	0.005	2.7	ug/L	959	Standard
	U	238	3209.7	2.1	**0.3947**	0.010	2.6	ug/L	9	Standard
>	**Bi**	209	557268.2	0.5				ug/L	552821	Standard

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Na	23	1.7	173.2	**5.3145**	9.196	173.0	mg/L	2	Standard
Mg	24	45.0	11.1	**-0.0048**	0.005	106.0	mg/L	55	Standard
K	39	16.7	45.8	**-0.0643**	0.029	45.1	mg/L	28	Standard
Ca	43	28.3	40.8	**0.2822**	1.159	410.5	mg/L	27	Standard
Fe	54	125.5	27.9	**0.0049**	0.029	586.2	mg/L	147	Standard
Fe	57	236.7	18.2	**-0.0367**	0.142	386.3	mg/L	268	Standard
> **Sc-1**	45	39031.9	2.5				mg/L	41174	Standard
Cl	35	80966.5	1.6				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	2093.5	4.3				ug/L	1950	Standard
P	31	17104.7	1.6				ug/L	21156	Standard
S	34	3810.5	3.5				ug/L	3419	Standard
Sr	88	53.3	51.6				ug/L	72	Standard
C	12	146.7	52.1				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	223.3	40.6				mg/L	17	Standard
Dy	164	5.7	102.5				mg/L	16	Standard
Ho-1	165	13.3	94.4				mg/L	7	Standard
Er	166	20.0	100.0				mg/L	7	Standard
I	127	1610.1	16.8				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	107.542		
	Al	27			
	Sc	45			
	Ti	47			
	V	51	89.972		
	Cr	52	83.818		
	Cr	53			
	Mn	55	85.687		
	Co	59	98.272		
	Ni	60	96.381		
	Cu	65	97.667		
	Zn	66	113.230		
>	Ge	72		98.706	
	As	75	103.620		
	Se	82	109.583		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	96.144		
Cd	111	97.300		
Cd	114			
> In	115			100.090
Sn	118			
Sb	123	90.914		
Ba	135	87.967		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.600		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.596		
U	238	98.687		
> Bi	209			100.804
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606136001
Sample Date/Time: Friday, July 01, 2016 15:11:12
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	102032.6	2.7				ug/L	76456	Standard
	Be	9	25.0	34.6	-0.0031	0.006	188.0	ug/L	20	Standard
	Al	27	55269386.4	1.6	242.0065	6.248	2.6	ug/L	1307	Standard
	Sc	45	42982.6	3.7				ug/L	41174	Standard
	Ti	47	671.0	5.7	1.9148	0.128	6.7	ug/L	27	Standard
	V	51	4267.5	6.4	0.3052	0.033	10.8	ug/L	1434	Standard
	Cr	52	10596.7	1.5	0.3014	0.025	8.3	ug/L	7733	Standard
	Cr	53	1925.1	6.6	1.4310	0.107	7.5	ug/L	442	Standard
	Mn	55	5430678.9	1.0	696.1378	12.327	1.8	ug/L	723	Standard
	Co	59	2218.2	2.4	0.2516	0.009	3.5	ug/L	217	Standard
	Ni	60	4312.3	3.2	1.8641	0.080	4.3	ug/L	304	Standard
	Cu	65	798.0	4.6	0.3054	0.016	5.3	ug/L	181	Standard
	Zn	66	2494.5	0.6	1.7957	0.026	1.4	ug/L	215	Standard
>	Ge	72	536693.6	0.8				ug/L	520809	Standard
	As	75	4266.7	1.8	3.3992	0.072	2.1	ug/L	-52	Standard
	Se	82	495.3	5.2	3.6793	0.225	6.1	ug/L	17	Standard
	Se-1	77	148.7	2.7	1.0032	0.054	5.4	ug/L	56	Standard
>	Ga	71	150.0	23.3				mg/L	25	Standard
	Rb	85	52107.8	0.6				ug/L	28	Standard
	Y	89	450964.8	1.0				ug/L	447395	Standard
>	Rh	103	411.7	6.2				ug/L	15	Standard
	Mo	98	1387.0	5.2	0.4385	0.030	6.9	ug/L	113	Standard
	Ag	107	200.3	32.4	0.0153	0.009	61.2	ug/L	108	Standard
	Cd	111	14.4	26.9	0.0039	0.002	40.7	mg/L	3	Standard
	Cd	114	17.5	189.3	0.0031	0.006	189.4	ug/L	20	Standard
>	In	115	620931.3	1.4				ug/L	625728	Standard
	Sn	118	1585.1	13.6	0.1643	0.037	22.3	ug/L	568	Standard
	Sb	123	1484.9	28.1	0.2566	0.085	33.0	ug/L	612	Standard
	Ba	135	185434.9	0.7	85.8822	0.643	0.7	ug/L	21	Standard
	Ce	140	220.0	14.2				ug/L	245	Standard
>	Tb	159	948217.7	1.1				ug/L	950397	Standard
	Ho	165	31.7	9.1				ug/L	7	Standard
	Tl	203	125.3	17.6	0.0138	0.003	19.7	ug/L	15	Standard
	Tl	205	88.3	14.2	0.0018	0.002	100.1	ug/L	13	Standard
	Pb	206	400.7	10.7	0.0298	0.009	29.3	ug/L	264	Standard
	Pb	207	353.0	2.8	0.0252	0.002	8.1	ug/L	222	Standard
	Pb	208	1381.0	1.8	0.0200	0.002	10.5	ug/L	959	Standard
	U	238	1004.0	3.9	0.1291	0.007	5.4	ug/L	9	Standard
>	Bi	209	532629.6	1.5				ug/L	552821	Standard

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Na	23	15.0	33.3	**42.5757**	12.711	29.9	mg/L	2	Standard
Mg	24	49159.6	0.3	**55.0024**	2.117	3.8	mg/L	55	Standard
K	39	1461.7	10.0	**5.2295**	0.334	6.4	mg/L	28	Standard
Ca	43	601.7	4.7	**50.0156**	4.072	8.1	mg/L	27	Standard
Fe	54	4574.4	1.8	**3.3398**	0.110	3.3	mg/L	147	Standard
Fe	57	1803.4	3.2	**4.5113**	0.320	7.1	mg/L	268	Standard
Sc-1	45	42982.6	3.7				mg/L	41174	Standard
Cl	35	94962.0	0.7				ug/L	69550	Standard
Kr	83	2.0	0.0				ug/L	1	Standard
Br	81	95694.6	1.2				ug/L	1950	Standard
P	31	33902.9	0.5				ug/L	21156	Standard
S	34	4128.9	1.2				ug/L	3419	Standard
Sr	88	1591.8	1.7				ug/L	72	Standard
C	12	436.7	25.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	510.0	42.5				mg/L	17	Standard
Dy	164	37.8	54.9				mg/L	16	Standard
Ho-1	165	31.7	9.1				mg/L	7	Standard
Er	166	46.7	32.7				mg/L	7	Standard
I	127	121671837.9	2.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		133.453	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.050	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.233
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.348
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606136002
Sample Date/Time: Friday, July 01, 2016 15:14:23
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	85581.0	1.5				ug/L	76456	Standard
	Be	9	25.0	60.0	**0.0002**	0.012	7141.4	ug/L	20	Standard
	Al	27	55900.2	24.1	**0.2811**	0.067	23.9	ug/L	1307	Standard
	Sc	45	42536.3	1.1				ug/L	41174	Standard
	Ti	47	133.7	20.6	**0.3028**	0.078	25.8	ug/L	27	Standard
	V	51	2309.2	3.2	**0.0668**	0.010	14.4	ug/L	1434	Standard
	Cr	52	10748.5	0.6	**0.2852**	0.003	0.9	ug/L	7733	Standard
	Cr	53	1006.7	5.2	**0.5242**	0.053	10.1	ug/L	442	Standard
	Mn	55	5954.9	24.0	**0.6413**	0.175	27.3	ug/L	723	Standard
	Co	59	262.0	8.2	**0.0029**	0.003	90.0	ug/L	217	Standard
	Ni	60	497.3	9.2	**0.0733**	0.022	29.6	ug/L	304	Standard
	Cu	65	2911.9	5.2	**1.2738**	0.065	5.1	ug/L	181	Standard
	Zn	66	1381.4	5.9	**0.8847**	0.058	6.6	ug/L	215	Standard
>	Ge	72	551341.1	0.5				ug/L	520809	Standard
	As	75	-21.8	42.5	**0.0285**	0.007	24.8	ug/L	-52	Standard
	Se	82	22.1	22.3	**0.0391**	0.037	95.8	ug/L	17	Standard
	Se-1	77	66.7	24.4	**0.0515**	0.176	341.9	ug/L	56	Standard
>	Ga	71	61.7	33.8				mg/L	25	Standard
	Rb	85	408.3	7.2				ug/L	28	Standard
	Y	89	470361.2	0.7				ug/L	447395	Standard
>	Rh	103	16.7	45.8				ug/L	15	Standard
	Mo	98	156.0	25.9	**0.0252**	0.013	53.1	ug/L	113	Standard
	Ag	107	109.0	5.1	**0.0016**	0.001	52.8	ug/L	108	Standard
	Cd	111	14.4	21.7	**0.0036**	0.001	37.8	mg/L	3	Standard
	Cd	114	35.6	84.3	**0.0060**	0.005	83.9	ug/L	20	Standard
>	In	115	658802.4	1.3				ug/L	625728	Standard
	Sn	118	3085.3	1.9	**0.3711**	0.008	2.1	ug/L	568	Standard
	Sb	123	348.5	35.2	**0.0306**	0.023	76.5	ug/L	612	Standard
	Ba	135	1852.8	5.0	**0.7908**	0.032	4.1	ug/L	21	Standard
	Ce	140	210.0	16.5				ug/L	245	Standard
>	Tb	159	984012.0	1.0				ug/L	950397	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	41.3	6.1	**0.0037**	0.000	7.2	ug/L	15	Standard
	Tl	205	46.7	68.9	**-0.0041**	0.004	94.4	ug/L	13	Standard
	Pb	206	460.7	0.7	**0.0345**	0.001	2.0	ug/L	264	Standard
	Pb	207	404.0	4.8	**0.0295**	0.003	11.6	ug/L	222	Standard
	Pb	208	1690.4	3.1	**0.0292**	0.002	7.9	ug/L	959	Standard
	U	238	26.3	7.9	**0.0029**	0.000	8.7	ug/L	9	Standard
>	Bi	209	574438.2	0.4				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	250.0	12.5	**0.2227**	0.038	16.8	mg/L	55	Standard
K	39	21.7	48.0	**-0.0507**	0.039	76.8	mg/L	28	Standard
Ca	43	33.3	45.8	**0.4827**	1.350	279.7	mg/L	27	Standard
Fe	54	174.0	19.0	**0.0332**	0.024	72.4	mg/L	147	Standard
Fe	57	240.0	20.1	**-0.0912**	0.137	149.9	mg/L	268	Standard
> **Sc-1**	45	42536.3	1.1				mg/L	41174	Standard
Cl	35	95107.6	2.0				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	2680.2	5.4				ug/L	1950	Standard
P	31	27181.0	2.6				ug/L	21156	Standard
S	34	4080.5	2.6				ug/L	3419	Standard
Sr	88	60.0	8.3				ug/L	72	Standard
C	12	186.7	8.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	346.7	61.6				mg/L	17	Standard
Dy	164	25.7	79.6				mg/L	16	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	835274.3	37.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.935	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.862	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.286
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.910
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140001
Sample Date/Time: Friday, July 01, 2016 15:17:35
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83445.8	0.6				ug/L	76456	Standard
	Be	9	45.0	29.4	**0.0170**	0.011	63.9	ug/L	20	Standard
	Al	27	7040110.3	1.1	**37.6724**	0.642	1.7	ug/L	1307	Standard
	Sc	45	41625.4	2.0				ug/L	41174	Standard
	Ti	47	4285.9	4.9	**12.7764**	0.570	4.5	ug/L	27	Standard
	V	51	7078.2	1.9	**0.6435**	0.022	3.4	ug/L	1434	Standard
	Cr	52	21057.0	0.1	**1.5759**	0.026	1.6	ug/L	7733	Standard
	Cr	53	3443.7	1.2	**2.9149**	0.056	1.9	ug/L	442	Standard
	Mn	55	883702.1	0.7	**114.0510**	1.835	1.6	ug/L	723	Standard
	Co	59	2499.5	0.8	**0.2896**	0.004	1.4	ug/L	217	Standard
	Ni	60	4161.2	2.0	**1.8082**	0.061	3.4	ug/L	304	Standard
	Cu	65	3327.7	0.9	**1.5204**	0.005	0.4	ug/L	181	Standard
	Zn	66	4188.9	1.5	**3.1626**	0.022	0.7	ug/L	215	Standard
>	Ge	72	532673.4	1.1				ug/L	520809	Standard
	As	75	1321.1	0.2	**1.0915**	0.014	1.3	ug/L	-52	Standard
	Se	82	41.1	15.2	**0.1918**	0.049	25.5	ug/L	17	Standard
	Se-1	77	114.0	7.6	**0.6197**	0.107	17.2	ug/L	56	Standard
>	Ga	71	1218.4	5.9				mg/L	25	Standard
	Rb	85	38403.6	2.5				ug/L	28	Standard
	Y	89	469727.3	1.0				ug/L	447395	Standard
>	Rh	103	41.7	25.0				ug/L	15	Standard
	Mo	98	855.3	9.6	**0.2517**	0.030	12.0	ug/L	113	Standard
	Ag	107	118.0	3.1	**0.0031**	0.000	8.0	ug/L	108	Standard
	Cd	111	168.9	5.8	**0.0690**	0.003	4.5	mg/L	3	Standard
	Cd	114	422.3	16.9	**0.0721**	0.011	15.8	ug/L	20	Standard
>	In	115	642729.5	1.7				ug/L	625728	Standard
	Sn	118	2336.8	13.7	**0.2695**	0.050	18.6	ug/L	568	Standard
	Sb	123	10092.5	4.2	**1.8672**	0.060	3.2	ug/L	612	Standard
	Ba	135	14880.6	0.5	**6.6421**	0.083	1.2	ug/L	21	Standard
	Ce	140	38117.9	1.2				ug/L	245	Standard
>	Tb	159	971949.7	2.4				ug/L	950397	Standard
	Ho	165	766.7	0.8				ug/L	7	Standard
	Tl	203	84.7	11.9	**0.0086**	0.001	13.1	ug/L	15	Standard
	Tl	205	65.0	26.6	**-0.0017**	0.002	121.5	ug/L	13	Standard
	Pb	206	5500.7	2.1	**0.9180**	0.006	0.6	ug/L	264	Standard
	Pb	207	4505.0	2.1	**0.8213**	0.015	1.9	ug/L	222	Standard
	Pb	208	19667.7	0.6	**0.8791**	0.020	2.3	ug/L	959	Standard
	U	238	150.0	6.0	**0.0182**	0.001	7.7	ug/L	9	Standard
>	Bi	209	558473.2	1.6				ug/L	552821	Standard

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Na	23	1.7	173.2	**4.9489**	8.563	173.0	mg/L	2	Standard
Mg	24	2895.3	5.1	**3.2866**	0.193	5.9	mg/L	55	Standard
K	39	586.7	6.5	**2.0948**	0.159	7.6	mg/L	28	Standard
Ca	43	126.7	13.9	**8.9443**	1.703	19.0	mg/L	27	Standard
Fe	54	1267.9	7.9	**0.8860**	0.097	10.9	mg/L	147	Standard
Fe	57	600.0	6.3	**1.0204**	0.129	12.6	mg/L	268	Standard
> **Sc-1**	45	41625.4	2.0				mg/L	41174	Standard
Cl	35	87177.5	2.1				ug/L	69550	Standard
Kr	83	2.0	173.2				ug/L	1	Standard
Br	81	7248.4	5.5				ug/L	1950	Standard
P	31	28932.6	1.2				ug/L	21156	Standard
S	34	4053.9	3.3				ug/L	3419	Standard
Sr	88	248.3	11.1				ug/L	72	Standard
C	12	190.0	13.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	326.7	32.7				mg/L	17	Standard
Dy	164	1103.7	6.9				mg/L	16	Standard
Ho-1	165	766.7	0.8				mg/L	7	Standard
Er	166	690.0	9.5				mg/L	7	Standard
I	127	358932.7	7.2				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		109.143	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		102.278	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.717
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.022
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606140002
Sample Date/Time: Friday, July 01, 2016 15:20:46
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83243.1	1.8				ug/L	76456	Standard
	Be	9	40.0	66.1	**0.0127**	0.021	164.7	ug/L	20	Standard
	Al	27	20806325.7	1.5	**111.6281**	1.089	1.0	ug/L	1307	Standard
	Sc	45	42705.1	1.7				ug/L	41174	Standard
	Ti	47	521.0	4.2	**1.4841**	0.067	4.5	ug/L	27	Standard
	V	51	3344.5	4.3	**0.2005**	0.017	8.4	ug/L	1434	Standard
	Cr	52	11575.8	0.5	**0.4337**	0.008	1.8	ug/L	7733	Standard
	Cr	53	3380.4	6.9	**2.8639**	0.226	7.9	ug/L	442	Standard
	Mn	55	948881.0	1.2	**122.8502**	1.452	1.2	ug/L	723	Standard
	Co	59	2088.1	1.4	**0.2379**	0.004	1.7	ug/L	217	Standard
	Ni	60	3829.2	1.0	**1.6570**	0.016	1.0	ug/L	304	Standard
	Cu	65	1020.7	3.6	**0.4165**	0.018	4.3	ug/L	181	Standard
	Zn	66	1711.1	3.0	**1.1897**	0.044	3.7	ug/L	215	Standard
>	**Ge**	72	530967.7	0.1				ug/L	520809	Standard
	As	75	120.6	26.2	**0.1410**	0.025	17.8	ug/L	-52	Standard
	Se	82	48.6	18.0	**0.2506**	0.068	27.3	ug/L	17	Standard
	Se-1	77	180.0	11.7	**1.3805**	0.238	17.3	ug/L	56	Standard
>	**Ga**	71	128.3	39.0				mg/L	25	Standard
	Rb	85	2536.9	2.3				ug/L	28	Standard
	Y	89	459396.3	1.3				ug/L	447395	Standard
>	**Rh**	103	68.3	16.9				ug/L	15	Standard
	Mo	98	164.7	11.0	**0.0301**	0.006	21.2	ug/L	113	Standard
	Ag	107	87.7	14.4	**-0.0008**	0.002	218.3	ug/L	108	Standard
	Cd	111	68.1	9.8	**0.0269**	0.003	10.0	mg/L	3	Standard
	Cd	114	155.0	26.9	**0.0270**	0.007	27.3	ug/L	20	Standard
>	**In**	115	631529.9	1.1				ug/L	625728	Standard
	Sn	118	1490.1	25.7	**0.1455**	0.061	42.2	ug/L	568	Standard
	Sb	123	888.6	10.6	**0.1367**	0.019	13.9	ug/L	612	Standard
	Ba	135	26458.7	0.5	**12.0331**	0.137	1.1	ug/L	21	Standard
	Ce	140	9911.6	1.3				ug/L	245	Standard
>	**Tb**	159	958775.7	0.7				ug/L	950397	Standard
	Ho	165	208.3	2.8				ug/L	7	Standard
	Tl	203	123.7	9.6	**0.0132**	0.001	9.6	ug/L	15	Standard
	Tl	205	103.3	42.3	**0.0034**	0.005	161.1	ug/L	13	Standard
	Pb	206	646.3	4.8	**0.0721**	0.004	5.3	ug/L	264	Standard
	Pb	207	521.7	7.3	**0.0568**	0.007	11.5	ug/L	222	Standard
	Pb	208	2324.1	2.2	**0.0641**	0.003	5.2	ug/L	959	Standard
	U	238	1352.7	2.4	**0.1701**	0.003	1.9	ug/L	9	Standard
>	**Bi**	209	544667.8	1.5				ug/L	552821	Standard

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Na	23	3.3	173.2	**9.5374**	16.511	173.1	mg/L	2	Standard
Mg	24	12897.2	1.9	**14.4668**	0.241	1.7	mg/L	55	Standard
K	39	143.3	40.4	**0.3966**	0.206	52.0	mg/L	28	Standard
Ca	43	550.0	11.0	**45.7421**	5.294	11.6	mg/L	27	Standard
Fe	54	409.1	1.1	**0.2106**	0.008	3.9	mg/L	147	Standard
Fe	57	643.3	9.1	**1.1039**	0.202	18.3	mg/L	268	Standard
> **Sc-1**	45	42705.1	1.7				mg/L	41174	Standard
Cl	35	94915.1	1.1				ug/L	69550	Standard
Kr	83	2.0	0.0				ug/L	1	Standard
Br	81	7108.3	0.6				ug/L	1950	Standard
P	31	28478.4	1.9				ug/L	21156	Standard
S	34	4015.5	4.7				ug/L	3419	Standard
Sr	88	310.0	10.1				ug/L	72	Standard
C	12	300.0	17.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	246.7	10.2				mg/L	17	Standard
Dy	164	399.0	15.6				mg/L	16	Standard
Ho-1	165	208.3	2.8				mg/L	7	Standard
Er	166	230.0	11.5				mg/L	7	Standard
I	127	149991.1	7.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.877	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.950	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.927
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.525
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606140003
Sample Date/Time: Friday, July 01, 2016 15:23:58
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82504.1	1.6				ug/L	76456	Standard
	Be	9	21.7	48.0	**-0.0018**	0.009	480.2	ug/L	20	Standard
	Al	27	13452706.7	0.5	**72.8294**	1.526	2.1	ug/L	1307	Standard
	Sc	45	41709.0	1.4				ug/L	41174	Standard
	Ti	47	2378.5	5.3	**7.0809**	0.376	5.3	ug/L	27	Standard
	V	51	7214.8	5.3	**0.6629**	0.045	6.8	ug/L	1434	Standard
	Cr	52	13978.1	0.6	**0.7263**	0.017	2.4	ug/L	7733	Standard
	Cr	53	7091.7	6.1	**6.4687**	0.376	5.8	ug/L	442	Standard
	Mn	55	62406.3	0.1	**7.9906**	0.075	0.9	ug/L	723	Standard
	Co	59	1446.4	2.2	**0.1559**	0.006	3.6	ug/L	217	Standard
	Ni	60	2083.8	4.2	**0.8328**	0.047	5.6	ug/L	304	Standard
	Cu	65	965.4	1.3	**0.3903**	0.010	2.5	ug/L	181	Standard
	Zn	66	2028.5	1.9	**1.4450**	0.043	3.0	ug/L	215	Standard
>	**Ge**	72	530627.2	0.9				ug/L	520809	Standard
	As	75	140.1	24.4	**0.1567**	0.028	17.9	ug/L	-52	Standard
	Se	82	39.3	18.1	**0.1786**	0.052	29.4	ug/L	17	Standard
	Se-1	77	316.3	5.9	**2.9476**	0.217	7.4	ug/L	56	Standard
>	**Ga**	71	366.7	8.0				mg/L	25	Standard
	Rb	85	8984.3	2.4				ug/L	28	Standard
	Y	89	458813.5	0.8				ug/L	447395	Standard
>	**Rh**	103	51.7	39.1				ug/L	15	Standard
	Mo	98	313.7	15.4	**0.0798**	0.016	20.1	ug/L	113	Standard
	Ag	107	93.7	11.2	**0.0002**	0.001	781.2	ug/L	108	Standard
	Cd	111	28.1	20.3	**0.0099**	0.002	24.9	mg/L	3	Standard
	Cd	114	65.8	57.7	**0.0116**	0.007	57.4	ug/L	20	Standard
>	**In**	115	625934.2	0.5				ug/L	625728	Standard
	Sn	118	1398.4	16.4	**0.1329**	0.035	26.4	ug/L	568	Standard
	Sb	123	422.7	21.1	**0.0480**	0.017	35.9	ug/L	612	Standard
	Ba	135	6793.5	0.6	**3.1038**	0.028	0.9	ug/L	21	Standard
	Ce	140	15908.3	1.9				ug/L	245	Standard
>	**Tb**	159	944178.7	1.1				ug/L	950397	Standard
	Ho	165	355.0	16.2				ug/L	7	Standard
	Tl	203	120.3	15.9	**0.0130**	0.002	16.8	ug/L	15	Standard
	Tl	205	111.7	23.0	**0.0046**	0.003	71.8	ug/L	13	Standard
	Pb	206	1028.4	3.3	**0.1425**	0.006	4.1	ug/L	264	Standard
	Pb	207	909.0	1.6	**0.1352**	0.003	2.4	ug/L	222	Standard
	Pb	208	3805.2	1.1	**0.1376**	0.002	1.8	ug/L	959	Standard
	U	238	790.4	10.0	**0.1003**	0.010	10.2	ug/L	9	Standard
>	**Bi**	209	538993.4	0.2				ug/L	552821	Standard

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Na	23	3.3	86.6	**9.8709**	8.546	86.6	mg/L	2	Standard
Mg	24	22061.0	0.3	**25.3844**	0.436	1.7	mg/L	55	Standard
K	39	113.3	9.2	**0.2976**	0.036	12.0	mg/L	28	Standard
Ca	43	235.0	16.1	**18.6613**	3.690	19.8	mg/L	27	Standard
Fe	54	444.8	12.4	**0.2457**	0.044	17.8	mg/L	147	Standard
Fe	57	475.0	1.1	**0.6368**	0.010	1.6	mg/L	268	Standard
Sc-1	45	41709.0	1.4				mg/L	41174	Standard
Cl	35	94012.8	1.3				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	5417.6	1.0				ug/L	1950	Standard
P	31	27702.0	0.2				ug/L	21156	Standard
S	34	3952.2	4.7				ug/L	3419	Standard
Sr	88	203.3	6.2				ug/L	72	Standard
C	12	180.0	5.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	206.7	46.0				mg/L	17	Standard
Dy	164	524.4	5.0				mg/L	16	Standard
Ho-1	165	355.0	16.2				mg/L	7	Standard
Er	166	326.7	23.8				mg/L	7	Standard
I	127	92501.9	4.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		107.911	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.885	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.033
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.499
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606140004
Sample Date/Time: Friday, July 01, 2016 15:27:09
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81751.7	2.2				ug/L	76456	Standard
	Be	9	135.0	7.4	**0.0930**	0.010	10.5	ug/L	20	Standard
	Al	27	16409591.9	0.7	**89.6714**	2.399	2.7	ug/L	1307	Standard
	Sc	45	43657.8	2.3				ug/L	41174	Standard
	Ti	47	15858.0	1.7	**48.2292**	0.843	1.7	ug/L	27	Standard
	V	51	24903.7	1.5	**2.8088**	0.058	2.1	ug/L	1434	Standard
	Cr	52	24554.9	2.0	**2.0436**	0.044	2.1	ug/L	7733	Standard
	Cr	53	8734.2	4.6	**8.1598**	0.352	4.3	ug/L	442	Standard
	Mn	55	321581.9	1.2	**42.0644**	0.335	0.8	ug/L	723	Standard
	Co	59	9091.1	1.5	**1.1485**	0.011	1.0	ug/L	217	Standard
	Ni	60	4968.8	2.8	**2.2237**	0.057	2.6	ug/L	304	Standard
	Cu	65	4956.5	2.1	**2.3370**	0.063	2.7	ug/L	181	Standard
	Zn	66	24116.8	0.6	**19.3591**	0.218	1.1	ug/L	215	Standard
>	Ge	72	524703.9	0.5				ug/L	520809	Standard
	As	75	614.6	10.2	**0.5395**	0.053	9.9	ug/L	-52	Standard
	Se	82	60.0	7.2	**0.3447**	0.037	10.6	ug/L	17	Standard
	Se-1	77	320.0	6.3	**3.0305**	0.221	7.3	ug/L	56	Standard
>	Ga	71	2358.5	3.8				mg/L	25	Standard
	Rb	85	29106.3	0.5				ug/L	28	Standard
	Y	89	488820.8	1.3				ug/L	447395	Standard
>	Rh	103	41.7	36.7				ug/L	15	Standard
	Mo	98	207.5	20.0	**0.0449**	0.014	31.5	ug/L	113	Standard
	Ag	107	157.7	11.6	**0.0091**	0.002	27.1	ug/L	108	Standard
	Cd	111	394.0	4.6	**0.1692**	0.008	4.7	mg/L	3	Standard
	Cd	114	994.3	3.1	**0.1748**	0.005	2.7	ug/L	20	Standard
>	In	115	624414.0	0.6				ug/L	625728	Standard
	Sn	118	1828.4	12.1	**0.2006**	0.036	17.9	ug/L	568	Standard
	Sb	123	719.7	13.7	**0.1059**	0.020	18.8	ug/L	612	Standard
	Ba	135	28855.8	0.8	**13.2740**	0.137	1.0	ug/L	21	Standard
	Ce	140	181035.3	1.7				ug/L	245	Standard
>	Tb	159	950705.2	0.6				ug/L	950397	Standard
	Ho	165	3198.7	2.4				ug/L	7	Standard
	Tl	203	267.3	11.5	**0.0298**	0.004	11.9	ug/L	15	Standard
	Tl	205	255.0	10.9	**0.0230**	0.004	15.5	ug/L	13	Standard
	Pb	206	5712.7	1.8	**0.9909**	0.019	1.9	ug/L	264	Standard
	Pb	207	4766.7	1.5	**0.9045**	0.014	1.5	ug/L	222	Standard
	Pb	208	20771.3	1.3	**0.9660**	0.013	1.3	ug/L	959	Standard
	U	238	597.3	5.0	**0.0757**	0.004	5.0	ug/L	9	Standard
>	Bi	209	539160.5	0.0				ug/L	552821	Standard

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Na	23	3.3	86.6	**9.3434**	8.093	86.6	mg/L	2	Standard
Mg	24	23045.8	1.2	**25.3403**	0.746	2.9	mg/L	55	Standard
K	39	200.0	16.4	**0.5941**	0.134	22.5	mg/L	28	Standard
Ca	43	263.3	19.5	**20.1662**	4.729	23.5	mg/L	27	Standard
Fe	54	2633.0	5.5	**1.8499**	0.135	7.3	mg/L	147	Standard
Fe	57	1085.0	6.4	**2.3396**	0.175	7.5	mg/L	268	Standard
> **Sc-1**	45	43657.8	2.3				mg/L	41174	Standard
Cl	35	89531.9	3.2				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	8986.0	7.5				ug/L	1950	Standard
P	31	30121.6	2.2				ug/L	21156	Standard
S	34	4117.2	5.6				ug/L	3419	Standard
Sr	88	208.3	27.6				ug/L	72	Standard
C	12	203.3	12.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	336.7	30.9				mg/L	17	Standard
Dy	164	4587.9	2.0				mg/L	16	Standard
Ho-1	165	3198.7	2.4				mg/L	7	Standard
Er	166	3260.4	5.8				mg/L	7	Standard
I	127	86340.3	0.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.927	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.748	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.790
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.529
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606140005
Sample Date/Time: Friday, July 01, 2016 15:30:21
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81575.7	1.3				ug/L	76456	Standard
	Be	9	31.7	45.6	**0.0067**	0.012	182.8	ug/L	20	Standard
	Al	27	11361131.6	0.7	**62.2005**	1.160	1.9	ug/L	1307	Standard
	Sc	45	41289.5	1.9				ug/L	41174	Standard
	Ti	47	446.7	4.2	**1.2710**	0.064	5.1	ug/L	27	Standard
	V	51	6339.2	1.7	**0.5637**	0.005	0.9	ug/L	1434	Standard
	Cr	52	14053.8	0.9	**0.7478**	0.031	4.1	ug/L	7733	Standard
	Cr	53	3397.0	0.8	**2.9061**	0.060	2.1	ug/L	442	Standard
	Mn	55	91180.2	0.3	**11.8062**	0.126	1.1	ug/L	723	Standard
	Co	59	1636.1	3.3	**0.1817**	0.006	3.3	ug/L	217	Standard
	Ni	60	2420.2	3.0	**0.9998**	0.030	3.0	ug/L	304	Standard
	Cu	65	1115.7	0.8	**0.4664**	0.010	2.1	ug/L	181	Standard
	Zn	66	4102.9	4.8	**3.1313**	0.189	6.0	ug/L	215	Standard
>	Ge	72	526864.0	1.0				ug/L	520809	Standard
	As	75	209.1	23.9	**0.2126**	0.040	18.9	ug/L	-52	Standard
	Se	82	44.2	19.7	**0.2192**	0.067	30.8	ug/L	17	Standard
	Se-1	77	143.0	9.9	**0.9701**	0.178	18.4	ug/L	56	Standard
>	Ga	71	123.3	14.2				mg/L	25	Standard
	Rb	85	2268.5	7.3				ug/L	28	Standard
	Y	89	460843.6	0.6				ug/L	447395	Standard
>	Rh	103	38.3	7.5				ug/L	15	Standard
	Mo	98	138.6	17.2	**0.0223**	0.008	37.4	ug/L	113	Standard
	Ag	107	89.7	12.2	**-0.0003**	0.002	618.7	ug/L	108	Standard
	Cd	111	119.1	4.0	**0.0498**	0.002	3.9	mg/L	3	Standard
	Cd	114	332.6	23.3	**0.0590**	0.014	24.0	ug/L	20	Standard
>	In	115	620430.9	1.0				ug/L	625728	Standard
	Sn	118	1270.1	10.3	**0.1149**	0.022	19.3	ug/L	568	Standard
	Sb	123	506.5	10.9	**0.0652**	0.012	17.9	ug/L	612	Standard
	Ba	135	12723.7	1.4	**5.8806**	0.073	1.2	ug/L	21	Standard
	Ce	140	16098.5	0.3				ug/L	245	Standard
>	Tb	159	949690.5	1.0				ug/L	950397	Standard
	Ho	165	733.4	8.1				ug/L	7	Standard
	Tl	203	89.0	5.8	**0.0094**	0.001	6.1	ug/L	15	Standard
	Tl	205	71.7	4.0	**-0.0005**	0.000	65.6	ug/L	13	Standard
	Pb	206	791.4	4.4	**0.0994**	0.006	5.9	ug/L	264	Standard
	Pb	207	690.7	3.6	**0.0915**	0.005	5.0	ug/L	222	Standard
	Pb	208	2860.4	1.4	**0.0912**	0.002	1.7	ug/L	959	Standard
	U	238	438.0	6.5	**0.0554**	0.003	6.2	ug/L	9	Standard
>	Bi	209	539820.6	0.5				ug/L	552821	Standard

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Na	23	3.3	173.2	**9.8050**	16.974	173.1	mg/L	2	Standard
Mg	24	7792.0	1.0	**9.0186**	0.177	2.0	mg/L	55	Standard
K	39	263.3	14.7	**0.8766**	0.155	17.6	mg/L	28	Standard
Ca	43	330.0	19.8	**27.4186**	5.627	20.5	mg/L	27	Standard
Fe	54	735.5	15.2	**0.4767**	0.090	18.9	mg/L	147	Standard
Fe	57	581.7	10.7	**0.9796**	0.205	21.0	mg/L	268	Standard
> **Sc-1**	45	41289.5	1.9				mg/L	41174	Standard
Cl	35	92233.2	0.5				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	7218.4	8.8				ug/L	1950	Standard
P	31	25119.1	2.5				ug/L	21156	Standard
S	34	4015.5	4.2				ug/L	3419	Standard
Sr	88	198.3	12.9				ug/L	72	Standard
C	12	296.7	7.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	153.3	29.4				mg/L	17	Standard
Dy	164	946.6	5.7				mg/L	16	Standard
Ho-1	165	733.4	8.1				mg/L	7	Standard
Er	166	766.7	15.2				mg/L	7	Standard
I	127	70972.5	1.4				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		106.697	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.163	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.153
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.648
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606140009
Sample Date/Time: Friday, July 01, 2016 15:33:32
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81176.9	1.8				ug/L	76456	Standard
	Be	9	121.7	33.5	**0.0827**	0.035	42.4	ug/L	20	Standard
	Al	27	9588194.5	0.1	**52.7539**	0.999	1.9	ug/L	1307	Standard
	Sc	45	43500.7	0.9				ug/L	41174	Standard
	Ti	47	16231.4	1.0	**49.4700**	1.142	2.3	ug/L	27	Standard
	V	51	27177.8	1.2	**3.0895**	0.018	0.6	ug/L	1434	Standard
	Cr	52	30590.2	0.3	**2.7921**	0.043	1.5	ug/L	7733	Standard
	Cr	53	15214.3	3.9	**14.5584**	0.723	5.0	ug/L	442	Standard
	Mn	55	419736.2	0.6	**55.0489**	1.027	1.9	ug/L	723	Standard
	Co	59	9146.8	1.6	**1.1580**	0.019	1.6	ug/L	217	Standard
	Ni	60	5875.8	2.7	**2.6630**	0.065	2.4	ug/L	304	Standard
	Cu	65	6513.4	1.0	**3.1007**	0.066	2.1	ug/L	181	Standard
	Zn	66	26692.5	0.5	**21.4893**	0.375	1.7	ug/L	215	Standard
>	Ge	72	523713.8	1.4				ug/L	520809	Standard
	As	75	573.5	19.4	**0.5079**	0.095	18.7	ug/L	-52	Standard
	Se	82	88.9	5.9	**0.5739**	0.045	7.8	ug/L	17	Standard
	Se-1	77	673.7	3.9	**7.1522**	0.285	4.0	ug/L	56	Standard
>	Ga	71	2611.9	4.8				mg/L	25	Standard
	Rb	85	28024.2	1.3				ug/L	28	Standard
	Y	89	508019.1	1.4				ug/L	447395	Standard
>	Rh	103	75.0	11.5				ug/L	15	Standard
	Mo	98	440.1	11.3	**0.1259**	0.017	13.3	ug/L	113	Standard
	Ag	107	293.3	3.4	**0.0292**	0.001	4.2	ug/L	108	Standard
	Cd	111	123.6	12.9	**0.0529**	0.007	13.0	mg/L	3	Standard
	Cd	114	259.6	1.9	**0.0469**	0.001	2.3	ug/L	20	Standard
>	In	115	607695.5	0.5				ug/L	625728	Standard
	Sn	118	1815.1	15.8	**0.2060**	0.044	21.6	ug/L	568	Standard
	Sb	123	1181.5	5.3	**0.2017**	0.012	6.1	ug/L	612	Standard
	Ba	135	44851.3	1.2	**21.2102**	0.264	1.2	ug/L	21	Standard
	Ce	140	233746.2	1.6				ug/L	245	Standard
>	Tb	159	940005.0	0.9				ug/L	950397	Standard
	Ho	165	4862.4	3.3				ug/L	7	Standard
	Tl	203	294.3	3.6	**0.0336**	0.001	3.3	ug/L	15	Standard
	Tl	205	293.3	8.4	**0.0288**	0.003	10.7	ug/L	13	Standard
	Pb	206	14978.4	0.2	**2.7295**	0.019	0.7	ug/L	264	Standard
	Pb	207	12667.6	1.3	**2.5366**	0.044	1.7	ug/L	222	Standard
	Pb	208	54283.9	0.6	**2.6615**	0.029	1.1	ug/L	959	Standard
	U	238	853.7	3.9	**0.1108**	0.005	4.3	ug/L	9	Standard
>	Bi	209	527415.0	0.5				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	58944.5	2.4	**65.1233**	1.989	3.1	mg/L	55	Standard
K	39	308.3	15.9	**0.9880**	0.180	18.2	mg/L	28	Standard
Ca	43	298.3	31.7	**23.1691**	7.979	34.4	mg/L	27	Standard
Fe	54	3472.7	3.0	**2.4787**	0.071	2.9	mg/L	147	Standard
Fe	57	1280.1	3.7	**2.9195**	0.164	5.6	mg/L	268	Standard
> **Sc-1**	45	43500.7	0.9				mg/L	41174	Standard
Cl	35	88358.4	3.5				ug/L	69550	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	13829.7	7.0				ug/L	1950	Standard
P	31	28925.9	0.9				ug/L	21156	Standard
S	34	3962.2	5.0				ug/L	3419	Standard
Sr	88	261.7	17.1				ug/L	72	Standard
C	12	160.0	39.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	233.3	49.3				mg/L	17	Standard
Dy	164	7255.6	1.4				mg/L	16	Standard
Ho-1	165	4862.4	3.3				mg/L	7	Standard
Er	166	4654.0	5.4				mg/L	7	Standard
I	127	97026.7	3.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.175	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.558	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.118
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.404
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140010
Sample Date/Time: Friday, July 01, 2016 15:36:43
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81063.0	2.2				ug/L	76456	Standard
	Be	9	45.0	40.1	**0.0179**	0.015	82.9	ug/L	20	Standard
	Al	27	11177331.1	2.6	**61.5680**	0.262	0.4	ug/L	1307	Standard
	Sc	45	42046.6	2.8				ug/L	41174	Standard
	Ti	47	3513.4	4.8	**10.6195**	0.508	4.8	ug/L	27	Standard
	V	51	6549.3	3.1	**0.5923**	0.026	4.4	ug/L	1434	Standard
	Cr	52	28159.1	0.6	**2.4863**	0.028	1.1	ug/L	7733	Standard
	Cr	53	13474.3	4.4	**12.8172**	0.601	4.7	ug/L	442	Standard
	Mn	55	64803.6	1.2	**8.3962**	0.117	1.4	ug/L	723	Standard
	Co	59	2906.3	2.0	**0.3471**	0.007	2.1	ug/L	217	Standard
	Ni	60	4725.7	1.8	**2.1076**	0.036	1.7	ug/L	304	Standard
	Cu	65	5144.9	0.4	**2.4285**	0.010	0.4	ug/L	181	Standard
	Zn	66	4108.2	1.9	**3.1482**	0.066	2.1	ug/L	215	Standard
>	Ge	72	524692.7	0.2				ug/L	520809	Standard
	As	75	145.9	6.5	**0.1625**	0.008	4.8	ug/L	-52	Standard
	Se	82	112.8	12.6	**0.7595**	0.112	14.8	ug/L	17	Standard
	Se-1	77	626.7	4.9	**6.5924**	0.373	5.7	ug/L	56	Standard
>	Ga	71	708.3	9.6				mg/L	25	Standard
	Rb	85	114385.2	1.8				ug/L	28	Standard
	Y	89	451161.9	0.3				ug/L	447395	Standard
>	Rh	103	126.7	19.5				ug/L	15	Standard
	Mo	98	337.8	3.9	**0.0889**	0.005	5.8	ug/L	113	Standard
	Ag	107	99.0	14.6	**0.0011**	0.002	190.6	ug/L	108	Standard
	Cd	111	210.4	3.4	**0.0899**	0.004	4.2	mg/L	3	Standard
	Cd	114	526.0	13.1	**0.0932**	0.013	13.7	ug/L	20	Standard
>	In	115	619724.1	0.7				ug/L	625728	Standard
	Sn	118	3008.6	5.9	**0.3878**	0.029	7.5	ug/L	568	Standard
	Sb	123	32833.7	1.0	**6.3811**	0.045	0.7	ug/L	612	Standard
	Ba	135	22694.3	1.2	**10.5145**	0.070	0.7	ug/L	21	Standard
	Ce	140	24100.8	3.3				ug/L	245	Standard
>	Tb	159	942819.0	1.4				ug/L	950397	Standard
	Ho	165	435.0	17.4				ug/L	7	Standard
	Tl	203	173.7	3.3	**0.0194**	0.001	3.9	ug/L	15	Standard
	Tl	205	150.0	13.3	**0.0098**	0.003	26.2	ug/L	13	Standard
	Pb	206	11753.6	0.5	**2.1162**	0.005	0.2	ug/L	264	Standard
	Pb	207	9878.9	1.2	**1.9529**	0.015	0.8	ug/L	222	Standard
	Pb	208	42950.0	0.3	**2.0797**	0.006	0.3	ug/L	959	Standard
	U	238	632.3	2.5	**0.0814**	0.002	2.7	ug/L	9	Standard
>	Bi	209	531366.5	0.5				ug/L	552821	Standard

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Na	23	3.3	173.2	**10.0447**	17.389	173.1	mg/L	2	Standard
Mg	24	54402.5	1.7	**62.2231**	2.757	4.4	mg/L	55	Standard
K	39	598.3	6.5	**2.1139**	0.085	4.0	mg/L	28	Standard
Ca	43	330.0	10.9	**26.8723**	2.438	9.1	mg/L	27	Standard
Fe	54	560.8	9.0	**0.3316**	0.032	9.6	mg/L	147	Standard
Fe	57	588.3	6.5	**0.9662**	0.103	10.6	mg/L	268	Standard
> **Sc-1**	45	42046.6	2.8				mg/L	41174	Standard
Cl	35	90806.6	0.2				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	18608.1	1.3				ug/L	1950	Standard
P	31	26292.8	1.7				ug/L	21156	Standard
S	34	4085.6	2.8				ug/L	3419	Standard
Sr	88	385.0	14.8				ug/L	72	Standard
C	12	186.7	30.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	136.7	27.7				mg/L	17	Standard
Dy	164	734.0	6.8				mg/L	16	Standard
Ho-1	165	435.0	17.4				mg/L	7	Standard
Er	166	403.3	10.0				mg/L	7	Standard
I	127	125158.4	2.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.026	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.746	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.041
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.119
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144411
Sample Date/Time: Friday, July 01, 2016 15:39:55
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81448.4	1.6				ug/L	76456	Standard
	Be	9	11.7	65.5	**-0.0101**	0.006	63.9	ug/L	20	Standard
	Al	27	21525.3	7.9	**0.1077**	0.007	6.9	ug/L	1307	Standard
	Sc	45	43096.2	1.6				ug/L	41174	Standard
	Ti	47	91.7	3.5	**0.1831**	0.008	4.3	ug/L	27	Standard
	V	51	5715.4	7.0	**0.4625**	0.039	8.5	ug/L	1434	Standard
	Cr	52	72666.9	1.2	**7.5774**	0.036	0.5	ug/L	7733	Standard
	Cr	53	9179.5	6.4	**8.2203**	0.500	6.1	ug/L	442	Standard
	Mn	55	17987.3	2.4	**2.1587**	0.042	2.0	ug/L	723	Standard
	Co	59	1272.7	1.0	**0.1286**	0.001	0.4	ug/L	217	Standard
	Ni	60	1771.4	2.8	**0.6589**	0.022	3.3	ug/L	304	Standard
	Cu	65	890.7	4.0	**0.3410**	0.015	4.4	ug/L	181	Standard
	Zn	66	2169.2	1.7	**1.5037**	0.020	1.3	ug/L	215	Standard
>	**Ge**	72	547560.2	1.1				ug/L	520809	Standard
	As	75	-25.7	84.9	**0.0255**	0.017	64.8	ug/L	-52	Standard
	Se	82	30.2	19.3	**0.1012**	0.046	45.5	ug/L	17	Standard
	Se-1	77	82.7	3.0	**0.2352**	0.029	12.5	ug/L	56	Standard
>	**Ga**	71	61.7	16.9				mg/L	25	Standard
	Rb	85	225.0	18.2				ug/L	28	Standard
	Y	89	463078.5	0.6				ug/L	447395	Standard
>	**Rh**	103	16.7	34.6				ug/L	15	Standard
	Mo	98	9345.0	1.0	**2.9323**	0.025	0.9	ug/L	113	Standard
	Ag	107	88.3	4.7	**-0.0011**	0.001	50.3	ug/L	108	Standard
	Cd	111	4.7	106.3	**-0.0004**	0.002	489.8	mg/L	3	Standard
	Cd	114	53.3	48.8	**0.0090**	0.004	49.5	ug/L	20	Standard
>	**In**	115	654026.5	1.0				ug/L	625728	Standard
	Sn	118	6959.9	4.7	**0.9503**	0.045	4.8	ug/L	568	Standard
	Sb	123	309.2	21.8	**0.0236**	0.013	55.3	ug/L	612	Standard
	Ba	135	560.7	1.9	**0.2287**	0.006	2.5	ug/L	21	Standard
	Ce	140	275.0	28.4				ug/L	245	Standard
>	**Tb**	159	972057.0	0.8				ug/L	950397	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	71.3	7.7	**0.0070**	0.001	9.6	ug/L	15	Standard
	Tl	205	56.7	27.0	**-0.0028**	0.002	64.9	ug/L	13	Standard
	Pb	206	408.7	2.4	**0.0268**	0.002	8.8	ug/L	264	Standard
	Pb	207	323.7	7.4	**0.0155**	0.005	32.9	ug/L	222	Standard
	Pb	208	1481.0	2.8	**0.0207**	0.002	11.3	ug/L	959	Standard
	U	238	26.3	21.6	**0.0029**	0.001	22.8	ug/L	9	Standard
>	**Bi**	209	565291.9	1.0				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	118.3	31.7	**0.0714**	0.040	55.7	mg/L	55	Standard
K	39	33.3	8.7	**-0.0090**	0.012	135.9	mg/L	28	Standard
Ca	43	25.0	20.0	**-0.2843**	0.417	146.5	mg/L	27	Standard
Fe	54	653.3	3.0	**0.3905**	0.007	1.8	mg/L	147	Standard
Fe	57	318.3	7.9	**0.1302**	0.066	51.0	mg/L	268	Standard
> **Sc-1**	45	43096.2	1.6				mg/L	41174	Standard
Cl	35	93637.8	1.2				ug/L	69550	Standard
Kr	83	2.7	57.3				ug/L	1	Standard
Br	81	4000.5	7.9				ug/L	1950	Standard
P	31	25331.2	1.4				ug/L	21156	Standard
S	34	4190.6	5.7				ug/L	3419	Standard
Sr	88	63.3	25.4				ug/L	72	Standard
C	12	126.7	19.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	170.0	56.1				mg/L	17	Standard
Dy	164	16.0	67.7				mg/L	16	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	7	Standard
I	127	17883.9	8.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.530	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.136	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.523
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.256
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 15:43:08
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79848.2	1.4				ug/L	76456	Standard
	Be	9	61340.6	1.3	**52.4607**	1.344	2.6	ug/L	20	Standard
	Al	27	8840196.9	1.7	**49.4449**	1.243	2.5	ug/L	1307	Standard
	Sc	45	42292.3	2.5				ug/L	41174	Standard
	Ti	47	33237.8	0.4	**98.6642**	0.509	0.5	ug/L	27	Standard
	V	51	434298.1	1.3	**50.9427**	0.727	1.4	ug/L	1434	Standard
	Cr	52	424946.0	0.9	**49.8972**	0.200	0.4	ug/L	7733	Standard
	Cr	53	51918.8	0.3	**49.3069**	0.192	0.4	ug/L	442	Standard
	Mn	55	396032.4	2.3	**50.5349**	0.943	1.9	ug/L	723	Standard
	Co	59	408091.6	1.9	**51.5332**	0.754	1.5	ug/L	217	Standard
	Ni	60	107986.8	0.7	**50.2226**	0.157	0.3	ug/L	304	Standard
	Cu	65	107294.9	0.3	**50.8210**	0.440	0.9	ug/L	181	Standard
	Zn	66	64441.1	1.0	**50.7299**	0.295	0.6	ug/L	215	Standard
>	**Ge**	72	538072.4	0.6				ug/L	520809	Standard
	As	75	64224.3	0.8	**50.3990**	0.228	0.5	ug/L	-52	Standard
	Se	82	6653.0	0.9	**50.8468**	0.498	1.0	ug/L	17	Standard
	Se-1	77	4539.7	1.5	**50.7170**	0.744	1.5	ug/L	56	Standard
>	**Ga**	71	38.3	19.9				mg/L	25	Standard
	Rb	85	878.4	4.8				ug/L	28	Standard
	Y	89	464875.9	0.9				ug/L	447395	Standard
>	**Rh**	103	28.3	56.7				ug/L	15	Standard
	Mo	98	306641.4	1.5	**98.6937**	1.489	1.5	ug/L	113	Standard
	Ag	107	367901.9	1.4	**49.8620**	0.492	1.0	ug/L	108	Standard
	Cd	111	117489.0	1.1	**49.6867**	0.641	1.3	mg/L	3	Standard
	Cd	114	291631.0	1.7	**49.8103**	0.297	0.6	ug/L	20	Standard
>	**In**	115	642695.4	1.1				ug/L	625728	Standard
	Sn	118	325840.7	2.1	**49.2102**	1.100	2.2	ug/L	568	Standard
	Sb	123	265299.9	1.4	**49.9473**	0.644	1.3	ug/L	612	Standard
	Ba	135	109451.6	0.3	**48.9670**	0.439	0.9	ug/L	21	Standard
	Ce	140	91.7	17.5				ug/L	245	Standard
>	**Tb**	159	960139.4	0.5				ug/L	950397	Standard
	Ho	165	13.3	43.3				ug/L	7	Standard
	Tl	203	455308.6	0.4	**50.2176**	0.333	0.7	ug/L	15	Standard
	Tl	205	418174.0	0.6	**51.9308**	0.055	0.1	ug/L	13	Standard
	Pb	206	287949.4	0.0	**50.3217**	0.263	0.5	ug/L	264	Standard
	Pb	207	261570.9	0.7	**50.3350**	0.638	1.3	ug/L	222	Standard
	Pb	208	1088813.8	0.8	**51.2998**	0.701	1.4	ug/L	959	Standard
	U	238	413789.6	1.0	**50.8288**	0.805	1.6	ug/L	9	Standard
>	**Bi**	209	558286.7	0.5				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4697.4	5.9	**5.2790**	0.180	3.4	mg/L	55	Standard
K	39	1176.7	4.0	**4.2662**	0.289	6.8	mg/L	28	Standard
Ca	43	75.0	40.6	**4.2243**	2.811	66.5	mg/L	27	Standard
Fe	54	6836.4	1.2	**5.1227**	0.153	3.0	mg/L	147	Standard
Fe	57	1986.8	1.5	**5.1413**	0.153	3.0	mg/L	268	Standard
> **Sc-1**	45	42292.3	2.5				mg/L	41174	Standard
Cl	35	87844.6	1.1				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	2156.8	5.6				ug/L	1950	Standard
P	31	26853.8	2.9				ug/L	21156	Standard
S	34	4549.0	3.6				ug/L	3419	Standard
Sr	88	63.3	24.1				ug/L	72	Standard
C	12	106.7	10.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	173.3	43.3				mg/L	17	Standard
Dy	164	9.0	191.8				mg/L	16	Standard
Ho-1	165	13.3	43.3				mg/L	7	Standard
Er	166	20.0	100.0				mg/L	7	Standard
I	127	21254.9	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	104.921		
Al	27	98.890		
Sc	45			
Ti	47	98.664		
V	51	101.885		
Cr	52	99.794		
Cr	53			
Mn	55	101.070		
Co	59	103.066		
Ni	60	100.445		
Cu	65	101.642		
Zn	66	101.460		
> Ge	72		103.315	
As	75	100.798		
Se	82	101.694		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.694		
Ag	107	99.724		
Cd	111	99.373		
Cd	114			
> In	115			102.712
Sn	118	98.420		
Sb	123	99.895		
Ba	135	97.934		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.435		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.600		
U	238	101.658		
> Bi	209			100.989
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 15:46:19
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79389.1	1.5				ug/L	76456	Standard
	Be	9	21.7	58.1	**-0.0012**	0.011	924.7	ug/L	20	Standard
	Al	27	2653.6	26.5	**0.0047**	0.004	80.6	ug/L	1307	Standard
	Sc	45	42380.9	4.0				ug/L	41174	Standard
	Ti	47	29.7	33.8	**0.0025**	0.028	1148.4	ug/L	27	Standard
	V	51	1542.6	6.8	**-0.0189**	0.014	72.9	ug/L	1434	Standard
	Cr	52	7249.7	1.4	**-0.1121**	0.006	5.1	ug/L	7733	Standard
	Cr	53	556.7	17.0	**0.1098**	0.084	76.1	ug/L	442	Standard
	Mn	55	781.0	5.8	**-0.0026**	0.005	178.6	ug/L	723	Standard
	Co	59	230.7	5.2	**-0.0006**	0.001	192.9	ug/L	217	Standard
	Ni	60	287.0	3.3	**-0.0207**	0.003	16.9	ug/L	304	Standard
	Cu	65	178.0	9.4	**0.0094**	0.008	88.1	ug/L	181	Standard
	Zn	66	241.3	7.8	**0.0083**	0.014	168.4	ug/L	215	Standard
>	**Ge**	72	544000.0	1.1				ug/L	520809	Standard
	As	75	-38.4	128.5	**0.0152**	0.039	254.8	ug/L	-52	Standard
	Se	82	20.0	53.3	**0.0245**	0.079	323.1	ug/L	17	Standard
	Se-1	77	71.7	19.7	**0.1170**	0.150	127.9	ug/L	56	Standard
>	**Ga**	71	30.0	16.7				mg/L	25	Standard
	Rb	85	31.7	9.1				ug/L	28	Standard
	Y	89	461634.5	1.4				ug/L	447395	Standard
>	**Rh**	103	13.3	21.7				ug/L	15	Standard
	Mo	98	249.2	9.7	**0.0550**	0.007	12.4	ug/L	113	Standard
	Ag	107	132.3	12.7	**0.0048**	0.002	45.5	ug/L	108	Standard
	Cd	111	16.9	42.6	**0.0047**	0.003	63.4	mg/L	3	Standard
	Cd	114	56.7	84.7	**0.0095**	0.008	83.3	ug/L	20	Standard
>	**In**	115	653131.6	1.3				ug/L	625728	Standard
	Sn	118	1488.4	26.0	**0.1378**	0.060	43.6	ug/L	568	Standard
	Sb	123	795.3	31.1	**0.1141**	0.047	41.5	ug/L	612	Standard
	Ba	135	49.7	33.1	**0.0039**	0.007	180.6	ug/L	21	Standard
	Ce	140	41.7	13.9				ug/L	245	Standard
>	**Tb**	159	951623.8	1.5				ug/L	950397	Standard
	Ho	165	3.3	173.2				ug/L	7	Standard
	Tl	203	77.3	16.4	**0.0077**	0.001	17.6	ug/L	15	Standard
	Tl	205	83.3	27.7	**0.0005**	0.003	538.8	ug/L	13	Standard
	Pb	206	329.3	15.7	**0.0134**	0.008	63.3	ug/L	264	Standard
	Pb	207	295.3	8.1	**0.0104**	0.004	40.0	ug/L	222	Standard
	Pb	208	1227.0	6.3	**0.0091**	0.003	35.4	ug/L	959	Standard
	U	238	66.0	40.1	**0.0078**	0.003	40.9	ug/L	9	Standard
>	**Bi**	209	562277.6	0.8				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	61.7	16.9	**0.0099**	0.013	128.3	mg/L	55	Standard
K	39	20.0	25.0	**-0.0563**	0.020	35.8	mg/L	28	Standard
Ca	43	20.0	25.0	**-0.6925**	0.397	57.4	mg/L	27	Standard
Fe	54	164.3	3.0	**0.0265**	0.005	17.4	mg/L	147	Standard
Fe	57	226.7	11.3	**-0.1282**	0.057	44.8	mg/L	268	Standard
> **Sc-1**	45	42380.9	4.0				mg/L	41174	Standard
Cl	35	88109.5	1.2				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	2156.8	5.0				ug/L	1950	Standard
P	31	25852.0	1.3				ug/L	21156	Standard
S	34	4487.3	2.3				ug/L	3419	Standard
Sr	88	56.7	5.1				ug/L	72	Standard
C	12	96.7	39.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	113.3	10.2				mg/L	17	Standard
Dy	164	6.2	100.1				mg/L	16	Standard
Ho-1	165	3.3	173.2				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	15996.8	2.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.453	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.379
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.711
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606145201
Sample Date/Time: Friday, July 01, 2016 15:49:32
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	94816.0	3.6				ug/L	76456	Standard
	Be	9	25.0	40.0	**-0.0020**	0.007	332.6	ug/L	20	Standard
	Al	27	21072085.0	1.8	**99.2963**	2.302	2.3	ug/L	1307	Standard
	Sc	45	43716.3	1.4				ug/L	41174	Standard
	Ti	47	397.0	3.2	**1.1396**	0.053	4.7	ug/L	27	Standard
	V	51	4169.6	18.7	**0.3116**	0.101	32.4	ug/L	1434	Standard
	Cr	52	31233.8	0.8	**2.9091**	0.081	2.8	ug/L	7733	Standard
	Cr	53	20687.6	10.5	**20.1582**	2.403	11.9	ug/L	442	Standard
	Mn	55	2658788.2	0.4	**352.6307**	4.074	1.2	ug/L	723	Standard
	Co	59	29637.6	0.8	**3.8558**	0.023	0.6	ug/L	217	Standard
	Ni	60	6462.7	2.0	**2.9745**	0.037	1.3	ug/L	304	Standard
	Cu	65	861.0	3.9	**0.3497**	0.019	5.5	ug/L	181	Standard
	Zn	66	6645.5	1.6	**5.2668**	0.080	1.5	ug/L	215	Standard
>	Ge	72	518645.6	1.3				ug/L	520809	Standard
	As	75	3126.8	4.4	**2.5897**	0.143	5.5	ug/L	-52	Standard
	Se	82	664.6	4.5	**5.1588**	0.301	5.8	ug/L	17	Standard
	Se-1	77	930.7	11.1	**10.2587**	1.337	13.0	ug/L	56	Standard
>	Ga	71	203.3	20.9				mg/L	25	Standard
	Rb	85	1041748.9	1.1				ug/L	28	Standard
	Y	89	448254.4	0.8				ug/L	447395	Standard
>	Rh	103	201.7	17.6				ug/L	15	Standard
	Mo	98	637.0	2.3	**0.1927**	0.005	2.4	ug/L	113	Standard
	Ag	107	163.3	33.8	**0.0105**	0.008	72.2	ug/L	108	Standard
	Cd	111	106.6	9.0	**0.0453**	0.005	10.1	mg/L	3	Standard
	Cd	114	259.2	18.0	**0.0469**	0.009	19.3	ug/L	20	Standard
>	In	115	608292.3	1.4				ug/L	625728	Standard
	Sn	118	1770.1	23.1	**0.1984**	0.063	31.6	ug/L	568	Standard
	Sb	123	609.0	15.5	**0.0875**	0.018	20.6	ug/L	612	Standard
	Ba	135	570406.1	1.3	**269.6937**	1.874	0.7	ug/L	21	Standard
	Ce	140	4143.9	0.7				ug/L	245	Standard
>	Tb	159	943834.4	0.3				ug/L	950397	Standard
	Ho	165	73.3	37.6				ug/L	7	Standard
	Tl	203	318.3	4.1	**0.0368**	0.002	4.3	ug/L	15	Standard
	Tl	205	295.0	13.5	**0.0294**	0.005	17.1	ug/L	13	Standard
	Pb	206	463.0	0.4	**0.0429**	0.001	1.6	ug/L	264	Standard
	Pb	207	397.7	5.2	**0.0359**	0.005	12.9	ug/L	222	Standard
	Pb	208	1684.0	4.4	**0.0367**	0.004	11.5	ug/L	959	Standard
	U	238	1098.4	2.7	**0.1441**	0.005	3.4	ug/L	9	Standard
>	Bi	209	521779.5	0.6				ug/L	552821	Standard

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Na	23	1.7	173.2	**4.7590**	8.234	173.0	mg/L	2	Standard
Mg	24	80860.2	1.3	**88.9060**	0.128	0.1	mg/L	55	Standard
K	39	8253.9	2.9	**29.6886**	1.293	4.4	mg/L	28	Standard
Ca	43	198.3	3.9	**14.5226**	0.636	4.4	mg/L	27	Standard
Fe	54	1838.9	5.0	**1.2589**	0.053	4.2	mg/L	147	Standard
Fe	57	841.7	4.0	**1.6326**	0.120	7.3	mg/L	268	Standard
> **Sc-1**	45	43716.3	1.4				mg/L	41174	Standard
Cl	35	88622.4	0.4				ug/L	69550	Standard
Kr	83	1.0	0.0				ug/L	1	Standard
Br	81	138083.1	1.2				ug/L	1950	Standard
P	31	31377.5	0.7				ug/L	21156	Standard
S	34	4085.6	4.2				ug/L	3419	Standard
Sr	88	866.7	4.6				ug/L	72	Standard
C	12	386.7	12.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	150.0	63.6				mg/L	17	Standard
Dy	164	120.3	12.9				mg/L	16	Standard
Ho-1	165	73.3	37.6				mg/L	7	Standard
Er	166	63.3	9.1				mg/L	7	Standard
I	127	189740.0	7.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.014	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.585	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.214
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.385
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606145301
Sample Date/Time: Friday, July 01, 2016 15:52:44
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	89907.9	3.9				ug/L	76456	Standard
	Be	9	211.7	15.2	**0.1412**	0.026	18.7	ug/L	20	Standard
	Al	27	42254036.6	2.1	**209.9919**	4.107	2.0	ug/L	1307	Standard
	Sc	45	48114.6	1.7				ug/L	41174	Standard
	Ti	47	742.0	6.1	**2.0824**	0.104	5.0	ug/L	27	Standard
	V	51	8101.4	4.4	**0.7396**	0.044	5.9	ug/L	1434	Standard
	Cr	52	57499.6	0.2	**5.7989**	0.111	1.9	ug/L	7733	Standard
	Cr	53	37860.6	3.1	**35.2327**	0.609	1.7	ug/L	442	Standard
	Mn	55	6394718.4	1.0	**803.9667**	4.505	0.6	ug/L	723	Standard
	Co	59	184000.3	2.5	**22.8310**	0.339	1.5	ug/L	217	Standard
	Ni	60	37990.6	1.7	**17.2738**	0.133	0.8	ug/L	304	Standard
	Cu	65	1519.1	2.8	**0.6345**	0.018	2.9	ug/L	181	Standard
	Zn	66	65750.7	0.3	**50.9054**	0.635	1.2	ug/L	215	Standard
>	Ge	72	547197.2	1.5				ug/L	520809	Standard
	As	75	6205.1	1.8	**4.8294**	0.085	1.7	ug/L	-52	Standard
	Se	82	411.3	4.6	**2.9717**	0.112	3.8	ug/L	17	Standard
	Se-1	77	1750.8	0.4	**18.8117**	0.357	1.9	ug/L	56	Standard
>	Ga	71	151.7	19.9				mg/L	25	Standard
	Rb	85	17248.1	1.6				ug/L	28	Standard
	Y	89	479799.4	2.3				ug/L	447395	Standard
>	Rh	103	326.7	3.2				ug/L	15	Standard
	Mo	98	555.5	3.1	**0.1551**	0.002	1.1	ug/L	113	Standard
	Ag	107	126.3	11.0	**0.0043**	0.002	53.3	ug/L	108	Standard
	Cd	111	138.7	16.3	**0.0566**	0.011	19.3	mg/L	3	Standard
	Cd	114	356.3	13.9	**0.0611**	0.010	15.7	ug/L	20	Standard
>	In	115	641727.3	2.7				ug/L	625728	Standard
	Sn	118	1815.1	14.3	**0.1914**	0.045	23.5	ug/L	568	Standard
	Sb	123	789.7	10.3	**0.1155**	0.018	15.5	ug/L	612	Standard
	Ba	135	2472744.3	1.1	**1108.6111**	20.421	1.8	ug/L	21	Standard
	Ce	140	34706.4	3.0				ug/L	245	Standard
>	Tb	159	985263.1	3.4				ug/L	950397	Standard
	Ho	165	401.7	6.3				ug/L	7	Standard
	Tl	203	117.7	8.7	**0.0126**	0.001	10.2	ug/L	15	Standard
	Tl	205	90.0	11.1	**0.0018**	0.001	56.0	ug/L	13	Standard
	Pb	206	577.0	6.7	**0.0602**	0.005	9.1	ug/L	264	Standard
	Pb	207	486.3	6.2	**0.0505**	0.006	11.6	ug/L	222	Standard
	Pb	208	2130.1	2.6	**0.0553**	0.003	5.9	ug/L	959	Standard
	U	238	158.7	10.2	**0.0198**	0.002	9.7	ug/L	9	Standard
>	Bi	209	541702.7	2.6				ug/L	552821	Standard

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Na	23	6.7	114.6	**17.2516**	19.854	115.1	mg/L	2	Standard
Mg	24	87429.9	0.9	**87.3596**	1.878	2.1	mg/L	55	Standard
K	39	405.0	18.3	**1.2003**	0.260	21.7	mg/L	28	Standard
Ca	43	375.0	6.7	**26.7244**	2.231	8.3	mg/L	27	Standard
Fe	54	4204.7	3.3	**2.7242**	0.135	5.0	mg/L	147	Standard
Fe	57	1598.4	2.6	**3.4000**	0.148	4.3	mg/L	268	Standard
Sc-1	45	48114.6	1.7				mg/L	41174	Standard
Cl	35	91040.7	1.1				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	68651.9	2.9				ug/L	1950	Standard
P	31	44045.6	3.3				ug/L	21156	Standard
S	34	4263.9	3.9				ug/L	3419	Standard
Sr	88	1216.7	5.1				ug/L	72	Standard
C	12	740.0	12.4				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	150.0	40.6				mg/L	17	Standard
Dy	164	420.2	5.3				mg/L	16	Standard
Ho-1	165	401.7	6.3				mg/L	7	Standard
Er	166	413.3	49.7				mg/L	7	Standard
I	127	1073738.4	7.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.595	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.067	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.557	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.989	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606145303
Sample Date/Time: Friday, July 01, 2016 15:55:55
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	86373.8	1.1				ug/L	76456	Standard
	Be	9	46.7	12.4	**0.0170**	0.005	27.0	ug/L	20	Standard
	Al	27	14145040.2	0.8	**73.1395**	1.317	1.8	ug/L	1307	Standard
	Sc	45	47950.8	2.8				ug/L	41174	Standard
	Ti	47	645.7	4.6	**1.7427**	0.078	4.5	ug/L	27	Standard
	V	51	5119.6	16.2	**0.3758**	0.094	25.1	ug/L	1434	Standard
	Cr	52	15660.8	1.2	**0.8154**	0.028	3.4	ug/L	7733	Standard
	Cr	53	17461.7	5.9	**15.5162**	0.994	6.4	ug/L	442	Standard
	Mn	55	1851750.9	0.7	**225.4523**	0.893	0.4	ug/L	723	Standard
	Co	59	6079.9	0.1	**0.7024**	0.002	0.3	ug/L	217	Standard
	Ni	60	3414.1	2.2	**1.3640**	0.029	2.1	ug/L	304	Standard
	Cu	65	716.4	2.9	**0.2496**	0.010	3.9	ug/L	181	Standard
	Zn	66	5607.0	0.9	**4.0396**	0.027	0.7	ug/L	215	Standard
>	Ge	72	564834.0	0.3				ug/L	520809	Standard
	As	75	9187.6	1.4	**6.9075**	0.115	1.7	ug/L	-52	Standard
	Se	82	374.5	2.3	**2.6072**	0.072	2.8	ug/L	17	Standard
	Se-1	77	677.0	5.1	**6.6170**	0.347	5.3	ug/L	56	Standard
>	Ga	71	156.7	12.9				mg/L	25	Standard
	Rb	85	67336.0	0.8				ug/L	28	Standard
	Y	89	479624.4	2.5				ug/L	447395	Standard
>	Rh	103	165.0	24.1				ug/L	15	Standard
	Mo	98	376.6	7.3	**0.0951**	0.009	9.5	ug/L	113	Standard
	Ag	107	95.7	7.7	**-0.0001**	0.001	907.0	ug/L	108	Standard
	Cd	111	85.6	10.8	**0.0332**	0.004	11.6	mg/L	3	Standard
	Cd	114	251.0	20.4	**0.0421**	0.008	19.8	ug/L	20	Standard
>	In	115	654613.0	0.6				ug/L	625728	Standard
	Sn	118	2261.8	11.1	**0.2519**	0.039	15.5	ug/L	568	Standard
	Sb	123	469.5	25.9	**0.0532**	0.023	43.1	ug/L	612	Standard
	Ba	135	790046.7	0.9	**347.1125**	3.141	0.9	ug/L	21	Standard
	Ce	140	7066.6	1.9				ug/L	245	Standard
>	Tb	159	995476.8	2.0				ug/L	950397	Standard
	Ho	165	136.7	9.2				ug/L	7	Standard
	Tl	203	120.3	3.1	**0.0125**	0.000	3.4	ug/L	15	Standard
	Tl	205	115.0	19.9	**0.0045**	0.003	61.6	ug/L	13	Standard
	Pb	206	675.0	1.7	**0.0742**	0.002	2.8	ug/L	264	Standard
	Pb	207	573.0	0.8	**0.0642**	0.001	1.0	ug/L	222	Standard
	Pb	208	2423.1	1.0	**0.0659**	0.001	2.1	ug/L	959	Standard
	U	238	289.7	4.3	**0.0353**	0.002	5.0	ug/L	9	Standard
>	Bi	209	558695.9	0.8				ug/L	552821	Standard

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Na	23	5.0	100.0	**12.9192**	12.771	98.9	mg/L	2	Standard
Mg	24	36766.2	0.7	**36.8431**	1.290	3.5	mg/L	55	Standard
K	39	516.7	3.4	**1.5703**	0.055	3.5	mg/L	28	Standard
Ca	43	131.7	25.3	**7.7852**	2.329	29.9	mg/L	27	Standard
Fe	54	27742.4	0.7	**18.5905**	0.497	2.7	mg/L	147	Standard
Fe	57	7620.3	4.0	**19.3167**	1.147	5.9	mg/L	268	Standard
> **Sc-1**	45	47950.8	2.8				mg/L	41174	Standard
Cl	35	87125.8	1.5				ug/L	69550	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	74331.9	2.0				ug/L	1950	Standard
P	31	38512.2	1.7				ug/L	21156	Standard
S	34	4447.3	3.4				ug/L	3419	Standard
Sr	88	553.3	7.8				ug/L	72	Standard
C	12	426.7	14.3				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	150.0	48.1				mg/L	17	Standard
Dy	164	179.8	21.5				mg/L	16	Standard
Ho-1	165	136.7	9.2				mg/L	7	Standard
Er	166	143.3	22.4				mg/L	7	Standard
I	127	215985.2	0.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.972	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.453	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.616
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.063
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606142701 WG574419-02
Sample Date/Time: Friday, July 01, 2016 15:59:07
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79441.0	0.3				ug/L	76456	Standard
	Be	9	21.7	96.1	**-0.0013**	0.018	1415.0	ug/L	20	Standard
	Al	27	10303389.4	2.0	**57.9147**	1.116	1.9	ug/L	1307	Standard
	Sc	45	40113.1	2.6				ug/L	41174	Standard
	Ti	47	184.0	9.4	**0.4748**	0.053	11.1	ug/L	27	Standard
	V	51	103393.4	0.6	**12.2581**	0.142	1.2	ug/L	1434	Standard
	Cr	52	60643.8	2.1	**6.4579**	0.232	3.6	ug/L	7733	Standard
	Cr	53	11869.6	1.2	**11.2148**	0.255	2.3	ug/L	442	Standard
	Mn	55	46538.0	1.1	**5.9867**	0.050	0.8	ug/L	723	Standard
	Co	59	37235.0	0.6	**4.7844**	0.072	1.5	ug/L	217	Standard
	Ni	60	30036.7	0.7	**14.1841**	0.259	1.8	ug/L	304	Standard
	Cu	65	12213.6	1.3	**5.8539**	0.146	2.5	ug/L	181	Standard
	Zn	66	33617.6	0.9	**26.9954**	0.533	2.0	ug/L	215	Standard
>	**Ge**	72	525941.0	1.1				ug/L	520809	Standard
	As	75	2649.6	1.8	**2.1706**	0.042	1.9	ug/L	-52	Standard
	Se	82	1059.1	1.9	**8.1767**	0.235	2.9	ug/L	17	Standard
	Se-1	77	280.3	4.4	**2.5625**	0.130	5.1	ug/L	56	Standard
>	**Ga**	71	101.7	18.6				mg/L	25	Standard
	Rb	85	18985.2	1.5				ug/L	28	Standard
	Y	89	446075.2	1.3				ug/L	447395	Standard
>	**Rh**	103	71.7	26.4				ug/L	15	Standard
	Mo	98	435588.8	0.8	**147.3741**	1.220	0.8	ug/L	113	Standard
	Ag	107	124.3	1.7	**0.0049**	0.000	10.0	ug/L	108	Standard
	Cd	111	-216.2	12.9	**-0.0985**	0.013	12.8	mg/L	3	Standard
	Cd	114	902.1	8.1	**0.1619**	0.011	7.0	ug/L	20	Standard
>	**In**	115	611441.0	1.1				ug/L	625728	Standard
	Sn	118	915.0	18.3	**0.0613**	0.027	44.2	ug/L	568	Standard
	Sb	123	652.5	5.8	**0.0955**	0.006	6.7	ug/L	612	Standard
	Ba	135	39982.7	1.2	**18.7899**	0.104	0.6	ug/L	21	Standard
	Ce	140	376.7	4.3				ug/L	245	Standard
>	**Tb**	159	929616.4	0.5				ug/L	950397	Standard
	Ho	165	33.3	48.2				ug/L	7	Standard
	Tl	203	136.7	9.3	**0.0150**	0.001	9.9	ug/L	15	Standard
	Tl	205	106.7	11.8	**0.0041**	0.002	39.6	ug/L	13	Standard
	Pb	206	1749.8	1.5	**0.2761**	0.005	1.9	ug/L	264	Standard
	Pb	207	1478.4	2.6	**0.2515**	0.008	3.1	ug/L	222	Standard
	Pb	208	6375.9	0.9	**0.2660**	0.002	0.9	ug/L	959	Standard
	U	238	161.7	12.3	**0.0205**	0.003	12.5	ug/L	9	Standard
>	**Bi**	209	534118.6	0.2				ug/L	552821	Standard

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Na	23	3.3	86.6	**10.0941**	8.741	86.6	mg/L	2	Standard
Mg	24	25695.1	1.2	**30.7602**	0.665	2.2	mg/L	55	Standard
K	39	365.0	11.7	**1.3075**	0.193	14.8	mg/L	28	Standard
Ca	43	230.0	14.3	**18.9742**	2.668	14.1	mg/L	27	Standard
Fe	54	302.2	7.9	**0.1442**	0.013	8.8	mg/L	147	Standard
Fe	57	455.0	18.2	**0.6271**	0.222	35.4	mg/L	268	Standard
> **Sc-1**	45	40113.1	2.6				mg/L	41174	Standard
Cl	35	98380.0	3.9				ug/L	69550	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	216720.0	3.3				ug/L	1950	Standard
P	31	13189.1	3.4				ug/L	21156	Standard
S	34	3895.5	7.2				ug/L	3419	Standard
Sr	88	283.3	22.8				ug/L	72	Standard
C	12	173.3	27.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	316.7	12.8				mg/L	17	Standard
Dy	164	233.8	13.8				mg/L	16	Standard
Ho-1	165	33.3	48.2				mg/L	7	Standard
Er	166	60.0	33.3				mg/L	7	Standard
I	127	62818.3	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.905	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.985	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	97.717	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.617	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mo 98 Upper, S, EEE	Mo	98	

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Method 6020 - Summary Report

Sample ID: L1606142701DP WG574419-07
Sample Date/Time: Friday, July 01, 2016 16:02:18
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77749.0	1.6				ug/L	76456	Standard
	Be	9	6.7	43.3	**-0.0140**	0.002	17.3	ug/L	20	Standard
	Al	27	9817097.2	1.8	**56.3855**	0.837	1.5	ug/L	1307	Standard
	Sc	45	39810.6	1.5				ug/L	41174	Standard
	Ti	47	174.0	5.5	**0.4563**	0.027	5.9	ug/L	27	Standard
	V	51	99457.7	1.9	**12.0558**	0.214	1.8	ug/L	1434	Standard
	Cr	52	58802.6	0.7	**6.3951**	0.090	1.4	ug/L	7733	Standard
	Cr	53	11255.8	2.7	**10.8641**	0.366	3.4	ug/L	442	Standard
	Mn	55	43355.3	1.9	**5.6990**	0.079	1.4	ug/L	723	Standard
	Co	59	35792.9	1.2	**4.7027**	0.031	0.7	ug/L	217	Standard
	Ni	60	28593.6	0.6	**13.8042**	0.061	0.4	ug/L	304	Standard
	Cu	65	11425.0	1.5	**5.5962**	0.062	1.1	ug/L	181	Standard
	Zn	66	32386.6	1.1	**26.5937**	0.385	1.4	ug/L	215	Standard
>	Ge	72	514230.5	0.6				ug/L	520809	Standard
	As	75	2594.3	1.9	**2.1736**	0.050	2.3	ug/L	-52	Standard
	Se	82	1064.6	1.8	**8.4087**	0.182	2.2	ug/L	17	Standard
	Se-1	77	269.0	6.0	**2.5031**	0.207	8.3	ug/L	56	Standard
>	Ga	71	116.7	27.9				mg/L	25	Standard
	Rb	85	18095.8	1.8				ug/L	28	Standard
	Y	89	436440.0	0.3				ug/L	447395	Standard
>	Rh	103	98.3	34.6				ug/L	15	Standard
	Mo	98	417319.1	1.0	**143.2353**	2.296	1.6	ug/L	113	Standard
	Ag	107	105.3	7.0	**0.0024**	0.001	42.1	ug/L	108	Standard
	Cd	111	-221.7	8.5	**-0.1024**	0.009	8.7	mg/L	3	Standard
	Cd	114	915.2	5.7	**0.1667**	0.008	5.0	ug/L	20	Standard
>	In	115	602737.8	0.7				ug/L	625728	Standard
	Sn	118	925.0	27.3	**0.0648**	0.040	61.0	ug/L	568	Standard
	Sb	123	629.8	5.8	**0.0928**	0.007	7.1	ug/L	612	Standard
	Ba	135	37742.0	0.9	**17.9925**	0.177	1.0	ug/L	21	Standard
	Ce	140	530.0	15.0				ug/L	245	Standard
>	Tb	159	918022.5	0.6				ug/L	950397	Standard
	Ho	165	26.7	47.2				ug/L	7	Standard
	Tl	203	122.7	8.6	**0.0136**	0.001	8.7	ug/L	15	Standard
	Tl	205	120.0	23.2	**0.0061**	0.004	61.9	ug/L	13	Standard
	Pb	206	1673.8	3.7	**0.2676**	0.008	2.9	ug/L	264	Standard
	Pb	207	1385.7	3.3	**0.2377**	0.006	2.4	ug/L	222	Standard
	Pb	208	6038.1	1.4	**0.2546**	0.001	0.3	ug/L	959	Standard
	U	238	134.0	4.7	**0.0173**	0.001	3.8	ug/L	9	Standard
>	Bi	209	524841.4	1.3				ug/L	552821	Standard

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Na	23	3.3	86.6	**10.3333**	8.947	86.6	mg/L	2	Standard
Mg	24	24359.6	1.9	**29.3745**	0.694	2.4	mg/L	55	Standard
K	39	391.7	23.4	**1.4257**	0.389	27.3	mg/L	28	Standard
Ca	43	220.0	19.4	**18.2274**	4.000	21.9	mg/L	27	Standard
Fe	54	293.3	15.9	**0.1391**	0.037	26.9	mg/L	147	Standard
Fe	57	398.3	15.7	**0.4602**	0.182	39.6	mg/L	268	Standard
> **Sc-1**	45	39810.6	1.5				mg/L	41174	Standard
Cl	35	101579.4	0.9				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	218312.6	3.3				ug/L	1950	Standard
P	31	12735.4	2.4				ug/L	21156	Standard
S	34	3657.1	4.9				ug/L	3419	Standard
Sr	88	253.3	24.1				ug/L	72	Standard
C	12	143.3	20.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	270.0	11.1				mg/L	17	Standard
Dy	164	258.1	16.7				mg/L	16	Standard
Ho-1	165	26.7	47.2				mg/L	7	Standard
Er	166	40.0	25.0				mg/L	7	Standard
I	127	57368.4	1.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.691	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.737	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.326
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.939
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mo 98 Upper, S, EEE	Mo	98	

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Method 6020 - Summary Report

Sample ID: L1606128901
Sample Date/Time: Friday, July 01, 2016 16:05:30
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	76109.2	3.3				ug/L	76456	Standard
	Be	9	26.7	10.8	**0.0041**	0.003	75.2	ug/L	20	Standard
	Al	27	2157263.5	1.2	**12.6549**	0.272	2.1	ug/L	1307	Standard
	Sc	45	39362.7	1.0				ug/L	41174	Standard
	Ti	47	31.0	25.6	**0.0115**	0.025	213.1	ug/L	27	Standard
	V	51	2160.8	9.2	**0.0669**	0.026	39.1	ug/L	1434	Standard
	Cr	52	18224.3	3.5	**1.3053**	0.079	6.0	ug/L	7733	Standard
	Cr	53	3937.2	3.2	**3.5166**	0.125	3.6	ug/L	442	Standard
	Mn	55	109531.5	1.1	**14.5084**	0.090	0.6	ug/L	723	Standard
	Co	59	3522.7	2.0	**0.4349**	0.006	1.3	ug/L	217	Standard
	Ni	60	12809.7	0.5	**6.0810**	0.080	1.3	ug/L	304	Standard
	Cu	65	624.3	3.1	**0.2348**	0.009	4.0	ug/L	181	Standard
	Zn	66	2829.3	0.5	**2.1516**	0.027	1.3	ug/L	215	Standard
>	Ge	72	515809.2	1.0				ug/L	520809	Standard
	As	75	48.3	6.2	**0.0847**	0.002	2.4	ug/L	-52	Standard
	Se	82	67.8	11.0	**0.4157**	0.062	15.0	ug/L	17	Standard
	Se-1	77	139.0	6.9	**0.9565**	0.097	10.1	ug/L	56	Standard
>	Ga	71	33.3	31.2				mg/L	25	Standard
	Rb	85	320.0	16.9				ug/L	28	Standard
	Y	89	425911.6	0.3				ug/L	447395	Standard
>	Rh	103	23.3	61.9				ug/L	15	Standard
	Mo	98	1200.8	19.7	**0.3848**	0.082	21.3	ug/L	113	Standard
	Ag	107	75.3	7.8	**-0.0021**	0.001	36.3	ug/L	108	Standard
	Cd	111	25.6	20.9	**0.0091**	0.002	26.3	mg/L	3	Standard
	Cd	114	59.2	25.8	**0.0107**	0.003	26.4	ug/L	20	Standard
>	In	115	608157.1	1.0				ug/L	625728	Standard
	Sn	118	525.0	20.9	**-0.0004**	0.017	4881.3	ug/L	568	Standard
	Sb	123	165.4	19.3	**-0.0007**	0.007	874.9	ug/L	612	Standard
	Ba	135	100056.7	1.7	**47.3091**	1.176	2.5	ug/L	21	Standard
	Ce	140	223.3	64.9				ug/L	245	Standard
>	Tb	159	910863.8	0.3				ug/L	950397	Standard
	Ho	165	15.0	57.7				ug/L	7	Standard
	Tl	203	83.0	10.7	**0.0087**	0.001	10.8	ug/L	15	Standard
	Tl	205	80.0	31.3	**0.0005**	0.003	626.9	ug/L	13	Standard
	Pb	206	270.7	3.7	**0.0052**	0.002	42.5	ug/L	264	Standard
	Pb	207	242.0	6.8	**0.0021**	0.003	162.6	ug/L	222	Standard
	Pb	208	1024.7	1.6	**0.0016**	0.001	40.9	ug/L	959	Standard
	U	238	10.0	43.6	**0.0010**	0.001	55.3	ug/L	9	Standard
>	Bi	209	540336.1	0.9				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4055.5	6.4	**4.8960**	0.330	6.7	mg/L	55	Standard
K	39	15.0	66.7	**-0.0710**	0.040	57.0	mg/L	28	Standard
Ca	43	48.3	26.0	**2.1421**	1.207	56.4	mg/L	27	Standard
Fe	54	63.5	15.9	**-0.0467**	0.009	18.5	mg/L	147	Standard
Fe	57	253.3	5.0	**0.0103**	0.042	410.2	mg/L	268	Standard
Sc-1	45	39362.7	1.0				mg/L	41174	Standard
Cl	35	90744.3	1.5				ug/L	69550	Standard
Kr	83	2.0	0.0				ug/L	1	Standard
Br	81	11220.8	7.7				ug/L	1950	Standard
P	31	8672.5	2.6				ug/L	21156	Standard
S	34	4007.2	6.6				ug/L	3419	Standard
Sr	88	146.7	20.0				ug/L	72	Standard
C	12	96.7	36.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	436.7	13.4				mg/L	17	Standard
Dy	164	6.5	179.6				mg/L	16	Standard
Ho-1	165	15.0	57.7				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	40273.5	3.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.547	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.040	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.192
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.742
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606129003
Sample Date/Time: Friday, July 01, 2016 16:08:41
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74300.1	2.3				ug/L	76456	Standard
	Be	9	33.3	70.9	**0.0108**	0.022	200.3	ug/L	20	Standard
	Al	27	1109788.9	1.6	**6.6634**	0.204	3.1	ug/L	1307	Standard
	Sc	45	38913.3	2.4				ug/L	41174	Standard
	Ti	47	72.3	13.4	**0.1384**	0.027	19.6	ug/L	27	Standard
	V	51	1833.5	12.2	**0.0257**	0.030	115.0	ug/L	1434	Standard
	Cr	52	6791.5	6.8	**-0.1263**	0.061	48.5	ug/L	7733	Standard
	Cr	53	2288.5	7.5	**1.8597**	0.192	10.3	ug/L	442	Standard
	Mn	55	199243.2	0.7	**26.3506**	0.434	1.6	ug/L	723	Standard
	Co	59	3319.7	2.1	**0.4061**	0.014	3.4	ug/L	217	Standard
	Ni	60	1865.1	2.1	**0.7502**	0.017	2.3	ug/L	304	Standard
	Cu	65	304.7	2.9	**0.0760**	0.006	7.4	ug/L	181	Standard
	Zn	66	5878.8	1.2	**4.6424**	0.117	2.5	ug/L	215	Standard
>	**Ge**	72	518291.1	1.3				ug/L	520809	Standard
	As	75	792.5	2.6	**0.6902**	0.010	1.5	ug/L	-52	Standard
	Se	82	76.5	13.2	**0.4817**	0.073	15.2	ug/L	17	Standard
	Se-1	77	129.3	15.3	**0.8357**	0.233	27.9	ug/L	56	Standard
>	**Ga**	71	50.0	26.5				mg/L	25	Standard
	Rb	85	2285.2	6.7				ug/L	28	Standard
	Y	89	427107.4	1.7				ug/L	447395	Standard
>	**Rh**	103	36.7	56.8				ug/L	15	Standard
	Mo	98	394.1	11.3	**0.1099**	0.015	13.4	ug/L	113	Standard
	Ag	107	108.3	28.6	**0.0026**	0.004	163.3	ug/L	108	Standard
	Cd	111	66.5	18.4	**0.0273**	0.005	18.9	mg/L	3	Standard
	Cd	114	176.4	7.1	**0.0318**	0.002	6.8	ug/L	20	Standard
>	**In**	115	609166.7	1.0				ug/L	625728	Standard
	Sn	118	880.0	21.8	**0.0564**	0.032	56.6	ug/L	568	Standard
	Sb	123	119.8	10.9	**-0.0099**	0.003	28.1	ug/L	612	Standard
	Ba	135	34816.0	1.5	**16.4201**	0.118	0.7	ug/L	21	Standard
	Ce	140	1188.4	1.5				ug/L	245	Standard
>	**Tb**	159	905742.5	1.6				ug/L	950397	Standard
	Ho	165	23.3	32.7				ug/L	7	Standard
	Tl	203	105.7	16.3	**0.0112**	0.002	15.9	ug/L	15	Standard
	Tl	205	100.0	22.9	**0.0030**	0.003	94.5	ug/L	13	Standard
	Pb	206	323.0	3.6	**0.0143**	0.002	17.0	ug/L	264	Standard
	Pb	207	282.3	3.6	**0.0098**	0.001	12.1	ug/L	222	Standard
	Pb	208	1225.0	3.7	**0.0111**	0.002	20.3	ug/L	959	Standard
	U	238	27.3	27.5	**0.0032**	0.001	29.6	ug/L	9	Standard
>	**Bi**	209	543356.0	1.6				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4887.5	0.8	**5.9826**	0.111	1.8	mg/L	55	Standard
K	39	70.0	31.1	**0.1543**	0.094	61.0	mg/L	28	Standard
Ca	43	26.7	78.1	**0.1318**	2.068	1569.3	mg/L	27	Standard
Fe	54	2091.2	5.6	**1.6384**	0.138	8.4	mg/L	147	Standard
Fe	57	790.0	3.5	**1.7657**	0.122	6.9	mg/L	268	Standard
Sc-1	45	38913.3	2.4				mg/L	41174	Standard
Cl	35	85357.9	2.8				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	12818.8	1.9				ug/L	1950	Standard
P	31	10578.7	2.6				ug/L	21156	Standard
S	34	4063.9	1.6				ug/L	3419	Standard
Sr	88	108.3	11.6				ug/L	72	Standard
C	12	110.0	32.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	27.0				mg/L	17	Standard
Dy	164	55.7	26.3				mg/L	16	Standard
Ho-1	165	23.3	32.7				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	7	Standard
I	127	94261.3	5.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		97.181	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.516	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.353
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.288
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 16:11:55
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	78995.5	2.2				ug/L	76456	Standard
	Be	9	60502.3	2.1	**52.2922**	0.491	0.9	ug/L	20	Standard
	Al	27	8989002.2	0.8	**50.8245**	0.985	1.9	ug/L	1307	Standard
	Sc	45	42305.6	0.7				ug/L	41174	Standard
	Ti	47	34061.9	1.0	**98.6488**	1.546	1.6	ug/L	27	Standard
	V	51	436960.5	1.1	**50.0001**	0.513	1.0	ug/L	1434	Standard
	Cr	52	437865.8	0.9	**50.1688**	0.753	1.5	ug/L	7733	Standard
	Cr	53	53937.5	1.4	**49.9817**	0.858	1.7	ug/L	442	Standard
	Mn	55	399271.1	0.3	**49.7080**	0.463	0.9	ug/L	723	Standard
	Co	59	415402.7	0.9	**51.1776**	0.121	0.2	ug/L	217	Standard
	Ni	60	110781.9	0.5	**50.2680**	0.560	1.1	ug/L	304	Standard
	Cu	65	108848.6	0.7	**50.2966**	0.042	0.1	ug/L	181	Standard
	Zn	66	65152.1	0.8	**50.0366**	0.239	0.5	ug/L	215	Standard
>	Ge	72	551526.5	0.7				ug/L	520809	Standard
	As	75	65288.4	0.5	**49.9868**	0.536	1.1	ug/L	-52	Standard
	Se	82	6767.7	1.1	**50.4635**	0.866	1.7	ug/L	17	Standard
	Se-1	77	4643.0	1.4	**50.6038**	0.550	1.1	ug/L	56	Standard
>	Ga	71	51.7	27.9				mg/L	25	Standard
	Rb	85	896.7	7.7				ug/L	28	Standard
	Y	89	469245.9	0.9				ug/L	447395	Standard
>	Rh	103	30.0	50.0				ug/L	15	Standard
	Mo	98	315176.0	0.7	**100.1655**	0.835	0.8	ug/L	113	Standard
	Ag	107	372454.9	1.5	**49.8448**	0.674	1.4	ug/L	108	Standard
	Cd	111	120309.5	0.5	**50.2390**	0.275	0.5	mg/L	3	Standard
	Cd	114	296771.3	0.4	**50.0551**	0.319	0.6	ug/L	20	Standard
>	In	115	650857.3	0.3				ug/L	625728	Standard
	Sn	118	332008.2	0.6	**49.5103**	0.318	0.6	ug/L	568	Standard
	Sb	123	262896.6	1.7	**48.8713**	0.775	1.6	ug/L	612	Standard
	Ba	135	110171.1	0.5	**48.6680**	0.323	0.7	ug/L	21	Standard
	Ce	140	123.3	16.9				ug/L	245	Standard
>	Tb	159	962981.5	0.4				ug/L	950397	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	457474.5	0.7	**50.4943**	0.334	0.7	ug/L	15	Standard
	Tl	205	418439.6	0.8	**52.0062**	0.714	1.4	ug/L	13	Standard
	Pb	206	289168.5	1.0	**50.5726**	0.399	0.8	ug/L	264	Standard
	Pb	207	263060.3	0.2	**50.6591**	0.254	0.5	ug/L	222	Standard
	Pb	208	1106275.9	0.6	**52.1627**	0.606	1.2	ug/L	959	Standard
	U	238	414349.5	1.0	**50.9359**	0.727	1.4	ug/L	9	Standard
>	Bi	209	557861.1	0.5				ug/L	552821	Standard

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Na	23	1.7	173.2	**4.8874**	8.457	173.0	mg/L	2	Standard
Mg	24	4582.4	2.1	**5.1503**	0.148	2.9	mg/L	55	Standard
K	39	1161.7	7.3	**4.2028**	0.289	6.9	mg/L	28	Standard
Ca	43	63.3	9.1	**3.1474**	0.494	15.7	mg/L	27	Standard
Fe	54	6769.4	2.9	**5.0672**	0.121	2.4	mg/L	147	Standard
Fe	57	2078.5	6.0	**5.4119**	0.382	7.1	mg/L	268	Standard
> **Sc-1**	45	42305.6	0.7				mg/L	41174	Standard
Cl	35	87401.4	1.9				ug/L	69550	Standard
Kr	83	0.3	173.2				ug/L	1	Standard
Br	81	3040.3	9.5				ug/L	1950	Standard
P	31	27000.7	1.2				ug/L	21156	Standard
S	34	4354.0	2.5				ug/L	3419	Standard
Sr	88	48.3	31.6				ug/L	72	Standard
C	12	120.0	22.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	296.7	25.3				mg/L	17	Standard
Dy	164	9.4	107.0				mg/L	16	Standard
Ho-1	165	8.3	69.3				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	16158.6	6.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	104.584		
Al	27	101.649		
Sc	45			
Ti	47	98.649		
V	51	100.000		
Cr	52	100.338		
Cr	53			
Mn	55	99.416		
Co	59	102.355		
Ni	60	100.536		
Cu	65	100.593		
Zn	66	100.073		
> Ge	72		105.898	
As	75	99.974		
Se	82	100.927		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	100.165		
Ag	107	99.690		
Cd	111	100.478		
Cd	114			
In	115			104.016
Sn	118	99.021		
Sb	123	97.743		
Ba	135	97.336		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.989		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.325		
U	238	101.872		
Bi	209			100.912
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Friday, July 01, 2016 16:14:12
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 16:15:06
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79089.3	2.9				ug/L	76456	Standard
	Be	9	15.0	57.7	**-0.0068**	0.008	113.4	ug/L	20	Standard
	Al	27	2235.2	13.9	**0.0024**	0.001	57.8	ug/L	1307	Standard
	Sc	45	43469.0	3.3				ug/L	41174	Standard
	Ti	47	28.3	17.4	**-0.0019**	0.015	796.4	ug/L	27	Standard
	V	51	1493.4	3.9	**-0.0261**	0.008	30.6	ug/L	1434	Standard
	Cr	52	7368.5	3.1	**-0.1054**	0.021	19.8	ug/L	7733	Standard
	Cr	53	613.3	6.6	**0.1595**	0.042	26.4	ug/L	442	Standard
	Mn	55	787.0	3.1	**-0.0026**	0.002	90.1	ug/L	723	Standard
	Co	59	245.7	12.9	**0.0010**	0.004	377.8	ug/L	217	Standard
	Ni	60	277.3	6.7	**-0.0262**	0.009	35.5	ug/L	304	Standard
	Cu	65	184.0	15.4	**0.0115**	0.013	111.3	ug/L	181	Standard
	Zn	66	259.7	4.8	**0.0209**	0.009	40.6	ug/L	215	Standard
>	**Ge**	72	548531.1	0.8				ug/L	520809	Standard
	As	75	-66.9	12.4	**-0.0063**	0.007	105.6	ug/L	-52	Standard
	Se	82	22.1	15.5	**0.0395**	0.025	62.6	ug/L	17	Standard
	Se-1	77	54.7	22.1	**-0.0780**	0.131	167.8	ug/L	56	Standard
>	**Ga**	71	23.3	75.3				mg/L	25	Standard
	Rb	85	18.3	56.8				ug/L	28	Standard
	Y	89	474502.6	0.9				ug/L	447395	Standard
>	**Rh**	103	10.0					ug/L	15	Standard
	Mo	98	353.6	10.5	**0.0864**	0.011	12.8	ug/L	113	Standard
	Ag	107	117.0	12.6	**0.0025**	0.002	78.3	ug/L	108	Standard
	Cd	111	11.4	37.7	**0.0023**	0.002	74.6	mg/L	3	Standard
	Cd	114	48.0	51.5	**0.0079**	0.004	50.7	ug/L	20	Standard
>	**In**	115	662932.4	0.6				ug/L	625728	Standard
	Sn	118	1505.1	27.3	**0.1367**	0.061	44.7	ug/L	568	Standard
	Sb	123	848.9	30.9	**0.1215**	0.049	40.0	ug/L	612	Standard
	Ba	135	79.0	17.7	**0.0163**	0.006	35.9	ug/L	21	Standard
	Ce	140	31.7	24.1				ug/L	245	Standard
>	**Tb**	159	977903.3	1.9				ug/L	950397	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	71.7	6.3	**0.0070**	0.000	7.1	ug/L	15	Standard
	Tl	205	66.7	28.4	**-0.0016**	0.002	147.5	ug/L	13	Standard
	Pb	206	325.0	5.7	**0.0119**	0.003	21.2	ug/L	264	Standard
	Pb	207	293.0	9.6	**0.0091**	0.005	50.3	ug/L	222	Standard
	Pb	208	1180.4	1.4	**0.0062**	0.001	14.3	ug/L	959	Standard
	U	238	63.3	11.6	**0.0074**	0.001	11.2	ug/L	9	Standard
>	**Bi**	209	570093.4	1.3				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	13.3	**-0.0123**	0.005	38.9	mg/L	55	Standard
K	39	35.0	14.3	**-0.0036**	0.022	615.4	mg/L	28	Standard
Ca	43	20.0	25.0	**-0.7333**	0.424	57.9	mg/L	27	Standard
Fe	54	187.6	24.1	**0.0414**	0.038	91.6	mg/L	147	Standard
Fe	57	236.7	10.0	**-0.1153**	0.063	54.7	mg/L	268	Standard
> **Sc-1**	45	43469.0	3.3				mg/L	41174	Standard
Cl	35	86433.8	0.2				ug/L	69550	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	2503.5	3.8				ug/L	1950	Standard
P	31	25746.9	1.4				ug/L	21156	Standard
S	34	4332.3	3.9				ug/L	3419	Standard
Sr	88	76.7	27.2				ug/L	72	Standard
C	12	100.0	65.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	203.3	49.3				mg/L	17	Standard
Dy	164	6.3	86.6				mg/L	16	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	12004.8	4.7				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		105.323	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.946
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.124
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 16:17:23
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Method 6020 - Summary Report

Sample ID: PBS H2 WG574521-03
Sample Date/Time: Friday, July 01, 2016 16:37:08
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79271.8	0.3				ug/L	76456	Standard
	Be	9	20.0	66.1	**-0.0027**	0.011	426.9	ug/L	20	Standard
	Al	27	18129.4	51.1	**0.0920**	0.053	57.1	ug/L	1307	Standard
	Sc	45	43671.2	1.7				ug/L	41174	Standard
	Ti	47	42.0	27.0	**0.0356**	0.031	88.1	ug/L	27	Standard
	V	51	1815.5	7.2	**0.0075**	0.013	168.1	ug/L	1434	Standard
	Cr	52	9893.9	1.4	**0.1721**	0.017	10.1	ug/L	7733	Standard
	Cr	53	775.0	10.2	**0.2997**	0.080	26.8	ug/L	442	Standard
	Mn	55	2337.2	54.3	**0.1861**	0.154	82.5	ug/L	723	Standard
	Co	59	338.7	60.7	**0.0117**	0.025	210.3	ug/L	217	Standard
	Ni	60	460.3	4.6	**0.0540**	0.007	13.4	ug/L	304	Standard
	Cu	65	246.0	5.3	**0.0385**	0.005	13.8	ug/L	181	Standard
	Zn	66	1190.0	1.7	**0.7267**	0.005	0.6	ug/L	215	Standard
>	**Ge**	72	557757.5	1.2				ug/L	520809	Standard
	As	75	-45.2	46.1	**0.0109**	0.016	146.4	ug/L	-52	Standard
	Se	82	21.5	16.2	**0.0326**	0.024	74.5	ug/L	17	Standard
	Se-1	77	60.7	14.0	**-0.0215**	0.097	452.0	ug/L	56	Standard
>	**Ga**	71	30.0	33.3				mg/L	25	Standard
	Rb	85	78.3	35.2				ug/L	28	Standard
	Y	89	482555.7	1.9				ug/L	447395	Standard
>	**Rh**	103	8.3	91.7				ug/L	15	Standard
	Mo	98	332.0	91.4	**0.0799**	0.095	118.5	ug/L	113	Standard
	Ag	107	123.7	31.0	**0.0035**	0.005	145.5	ug/L	108	Standard
	Cd	111	20.3	82.0	**0.0060**	0.007	114.1	mg/L	3	Standard
	Cd	114	52.4	144.8	**0.0087**	0.013	144.6	ug/L	20	Standard
>	**In**	115	660410.5	0.4				ug/L	625728	Standard
	Sn	118	1340.1	28.5	**0.1130**	0.056	49.2	ug/L	568	Standard
	Sb	123	501.3	30.5	**0.0581**	0.028	47.8	ug/L	612	Standard
	Ba	135	141.0	74.3	**0.0434**	0.045	104.7	ug/L	21	Standard
	Ce	140	65.0	13.3				ug/L	245	Standard
>	**Tb**	159	984326.5	0.5				ug/L	950397	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	36.3	87.4	**0.0032**	0.003	108.0	ug/L	15	Standard
	Tl	205	81.7	141.4	**0.0002**	0.014	6303.1	ug/L	13	Standard
	Pb	206	357.0	4.6	**0.0175**	0.003	15.4	ug/L	264	Standard
	Pb	207	301.0	13.7	**0.0108**	0.008	73.3	ug/L	222	Standard
	Pb	208	1410.0	25.6	**0.0170**	0.017	98.8	ug/L	959	Standard
	U	238	79.0	155.7	**0.0093**	0.015	160.0	ug/L	9	Standard
>	**Bi**	209	568547.7	0.3				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	83.3	70.3	**0.0311**	0.063	203.4	mg/L	55	Standard
K	39	26.7	47.2	**-0.0352**	0.044	125.3	mg/L	28	Standard
Ca	43	13.3	43.3	**-1.3140**	0.480	36.5	mg/L	27	Standard
Fe	54	179.3	22.8	**0.0338**	0.030	89.2	mg/L	147	Standard
Fe	57	248.3	6.5	**-0.0850**	0.036	42.0	mg/L	268	Standard
> **Sc-1**	45	43671.2	1.7				mg/L	41174	Standard
Cl	35	94694.4	1.8				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	2446.9	5.5				ug/L	1950	Standard
P	31	26514.9	2.3				ug/L	21156	Standard
S	34	4310.6	3.2				ug/L	3419	Standard
Sr	88	95.0	13.9				ug/L	72	Standard
C	12	123.3	28.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	223.3	40.1				mg/L	17	Standard
Dy	164	6.2	193.4				mg/L	16	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	20320.3	3.3				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		103.683	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		107.094	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.543
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.845
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBS H2 WG574521-03
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Method 6020 - Summary Report

Sample ID: LCSS H2 WG574521-04
Sample Date/Time: Friday, July 01, 2016 16:40:19
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	78206.3	1.2				ug/L	76456	Standard
	Be	9	30357.1	1.3	**26.4935**	0.412	1.6	ug/L	20	Standard
	Al	27	14527.0	3.3	**0.0727**	0.002	2.4	ug/L	1307	Standard
	Sc	45	43500.7	0.4				ug/L	41174	Standard
	Ti	47	50.0	23.1	**0.0598**	0.033	54.4	ug/L	27	Standard
	V	51	219978.8	0.3	**24.9959**	0.252	1.0	ug/L	1434	Standard
	Cr	52	227773.4	1.1	**25.5491**	0.376	1.5	ug/L	7733	Standard
	Cr	53	27710.3	2.0	**25.3978**	0.708	2.8	ug/L	442	Standard
	Mn	55	209603.4	1.5	**25.9644**	0.258	1.0	ug/L	723	Standard
	Co	59	210851.5	1.3	**25.8831**	0.352	1.4	ug/L	217	Standard
	Ni	60	56751.8	1.2	**25.5968**	0.369	1.4	ug/L	304	Standard
	Cu	65	56217.4	1.4	**25.8605**	0.261	1.0	ug/L	181	Standard
	Zn	66	34071.3	0.3	**26.0003**	0.170	0.7	ug/L	215	Standard
>	Ge	72	553234.9	0.8				ug/L	520809	Standard
	As	75	33169.4	0.5	**25.3389**	0.170	0.7	ug/L	-52	Standard
	Se	82	3351.8	0.3	**24.8507**	0.232	0.9	ug/L	17	Standard
	Se-1	77	2368.9	3.2	**25.4071**	1.040	4.1	ug/L	56	Standard
>	Ga	71	33.3	31.2				mg/L	25	Standard
	Rb	85	63.3	32.9				ug/L	28	Standard
	Y	89	471256.9	0.9				ug/L	447395	Standard
>	Rh	103	23.3	75.3				ug/L	15	Standard
	Mo	98	151.2	23.7	**0.0237**	0.012	48.5	ug/L	113	Standard
	Ag	107	190870.7	0.3	**25.3271**	0.087	0.3	ug/L	108	Standard
	Cd	111	60282.1	0.5	**24.9635**	0.019	0.1	mg/L	3	Standard
	Cd	114	147909.0	1.0	**24.7417**	0.334	1.4	ug/L	20	Standard
>	In	115	656276.3	0.4				ug/L	625728	Standard
	Sn	118	1236.7	17.5	**0.0991**	0.033	33.0	ug/L	568	Standard
	Sb	123	139998.4	0.5	**25.7951**	0.218	0.8	ug/L	612	Standard
	Ba	135	55761.4	0.2	**24.4204**	0.141	0.6	ug/L	21	Standard
	Ce	140	101.7	7.5				ug/L	245	Standard
>	Tb	159	982894.1	0.9				ug/L	950397	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	233767.2	0.4	**25.3362**	0.353	1.4	ug/L	15	Standard
	Tl	205	211866.2	1.4	**25.8487**	0.316	1.2	ug/L	13	Standard
	Pb	206	151902.3	0.4	**26.0680**	0.572	2.2	ug/L	264	Standard
	Pb	207	132458.5	0.8	**25.0234**	0.298	1.2	ug/L	222	Standard
	Pb	208	562733.9	0.2	**26.0307**	0.442	1.7	ug/L	959	Standard
	U	238	206496.7	1.0	**24.9238**	0.246	1.0	ug/L	9	Standard
>	Bi	209	568206.0	1.8				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	58.3	26.2	**0.0044**	0.017	394.1	mg/L	55	Standard
K	39	25.0	20.0	**-0.0405**	0.018	44.5	mg/L	28	Standard
Ca	43	28.3	10.2	**-0.0167**	0.239	1431.0	mg/L	27	Standard
Fe	54	163.4	6.9	**0.0225**	0.008	36.3	mg/L	147	Standard
Fe	57	255.0	14.8	**-0.0621**	0.113	181.2	mg/L	268	Standard
Sc-1	45	43500.7	0.4				mg/L	41174	Standard
Cl	35	91778.5	1.5				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	5150.9	3.9				ug/L	1950	Standard
P	31	26144.2	2.1				ug/L	21156	Standard
S	34	4105.6	2.0				ug/L	3419	Standard
Sr	88	88.3	25.5				ug/L	72	Standard
C	12	90.0	19.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	216.7	38.7				mg/L	17	Standard
Dy	164	12.1	119.9				mg/L	16	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	26.7	86.6				mg/L	7	Standard
I	127	5989.5	2.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		102.290	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.226	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.882
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.783
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSS H2 WG574521-04
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Method 6020 - Summary Report

Sample ID: L1606144504 WG574521-01
Sample Date/Time: Friday, July 01, 2016 16:43:31
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82711.9	1.7				ug/L	76456	Standard
	Be	9	1393.4	1.7	**1.1308**	0.019	1.7	ug/L	20	Standard
	Al	27	12446064.6	0.4	**67.2063**	1.063	1.6	ug/L	1307	Standard
	Sc	45	49798.4	0.9				ug/L	41174	Standard
	Ti	47	3275.7	2.4	**9.3815**	0.258	2.8	ug/L	27	Standard
	V	51	187113.3	0.3	**21.2321**	0.189	0.9	ug/L	1434	Standard
	Cr	52	137212.2	0.9	**15.0050**	0.153	1.0	ug/L	7733	Standard
	Cr	53	16570.7	1.1	**15.0184**	0.113	0.8	ug/L	442	Standard
	Mn	55	3185070.4	0.3	**396.0143**	1.958	0.5	ug/L	723	Standard
	Co	59	91536.7	1.1	**11.2200**	0.101	0.9	ug/L	217	Standard
	Ni	60	45707.8	1.2	**20.5854**	0.156	0.8	ug/L	304	Standard
	Cu	65	23258.8	1.9	**10.6559**	0.153	1.4	ug/L	181	Standard
	Zn	66	46036.5	0.5	**35.1961**	0.406	1.2	ug/L	215	Standard
>	**Ge**	72	553218.9	0.6				ug/L	520809	Standard
	As	75	5739.6	2.8	**4.4216**	0.100	2.3	ug/L	-52	Standard
	Se	82	54.0	18.0	**0.2758**	0.072	26.2	ug/L	17	Standard
	Se-1	77	126.7	3.9	**0.7105**	0.061	8.6	ug/L	56	Standard
>	**Ga**	71	21134.7	1.1				mg/L	25	Standard
	Rb	85	212914.0	1.2				ug/L	28	Standard
	Y	89	733052.8	0.4				ug/L	447395	Standard
>	**Rh**	103	31.7	50.8				ug/L	15	Standard
	Mo	98	356.5	15.7	**0.0888**	0.017	19.2	ug/L	113	Standard
	Ag	107	670.0	12.8	**0.0764**	0.011	14.4	ug/L	108	Standard
	Cd	111	132.6	4.8	**0.0528**	0.002	4.3	mg/L	3	Standard
	Cd	114	355.4	28.0	**0.0597**	0.017	27.7	ug/L	20	Standard
>	**In**	115	653864.1	0.7				ug/L	625728	Standard
	Sn	118	1290.1	26.4	**0.1075**	0.050	46.3	ug/L	568	Standard
	Sb	123	594.8	48.0	**0.0762**	0.052	68.5	ug/L	612	Standard
	Ba	135	574692.3	0.9	**252.7729**	0.765	0.3	ug/L	21	Standard
	Ce	140	1393840.8	0.9				ug/L	245	Standard
>	**Tb**	159	1000230.3	1.3				ug/L	950397	Standard
	Ho	165	21410.1	1.0				ug/L	7	Standard
	Tl	203	1416.4	11.1	**0.1555**	0.018	11.5	ug/L	15	Standard
	Tl	205	1253.4	9.7	**0.1459**	0.016	10.8	ug/L	13	Standard
	Pb	206	71530.8	0.4	**12.4648**	0.067	0.5	ug/L	264	Standard
	Pb	207	58749.0	0.7	**11.2666**	0.094	0.8	ug/L	222	Standard
	Pb	208	258108.7	0.1	**12.1209**	0.070	0.6	ug/L	959	Standard
	U	238	3402.4	1.9	**0.4176**	0.009	2.1	ug/L	9	Standard
>	**Bi**	209	558413.2	0.5				ug/L	552821	Standard

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Na	23	1.7	173.2	**4.0919**	7.079	173.0	mg/L	2	Standard
Mg	24	115.0	19.0	**0.0509**	0.021	40.8	mg/L	55	Standard
K	39	340.0	8.9	**0.9470**	0.101	10.7	mg/L	28	Standard
Ca	43	83.3	24.2	**3.8084**	1.512	39.7	mg/L	27	Standard
Fe	54	19898.8	3.5	**12.8021**	0.403	3.1	mg/L	147	Standard
Fe	57	5240.9	4.1	**12.5122**	0.602	4.8	mg/L	268	Standard
> **Sc-1**	45	49798.4	0.9				mg/L	41174	Standard
Cl	35	83679.2	2.8				ug/L	69550	Standard
Kr	83	2.0	132.3				ug/L	1	Standard
Br	81	3150.3	10.3				ug/L	1950	Standard
P	31	25890.4	3.1				ug/L	21156	Standard
S	34	4145.6	3.5				ug/L	3419	Standard
Sr	88	115.0	15.1				ug/L	72	Standard
C	12	180.0	25.5				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	210.0	42.3				mg/L	17	Standard
Dy	164	35643.1	1.6				mg/L	16	Standard
Ho-1	165	21410.1	1.0				mg/L	7	Standard
Er	166	18878.4	2.2				mg/L	7	Standard
I	127	27002.4	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.183	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.223	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.497
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.012
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144505S WG574521-05
Sample Date/Time: Friday, July 01, 2016 16:46:42
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81052.9	2.1				ug/L	76456	Standard
	Be	9	30676.0	2.4	**25.8290**	0.259	1.0	ug/L	20	Standard
	Al	27	13294166.7	2.5	**73.2465**	1.294	1.8	ug/L	1307	Standard
	Sc	45	48179.8	2.6				ug/L	41174	Standard
	Ti	47	6953.9	1.9	**20.0934**	0.295	1.5	ug/L	27	Standard
	V	51	398485.1	1.1	**45.6308**	0.280	0.6	ug/L	1434	Standard
	Cr	52	346453.3	0.7	**39.5366**	0.280	0.7	ug/L	7733	Standard
	Cr	53	41902.9	1.3	**38.7788**	0.379	1.0	ug/L	442	Standard
	Mn	55	3061942.5	1.0	**382.3072**	4.386	1.1	ug/L	723	Standard
	Co	59	255934.9	0.7	**31.5572**	0.332	1.1	ug/L	217	Standard
	Ni	60	90655.7	0.5	**41.1541**	0.349	0.8	ug/L	304	Standard
	Cu	65	74619.0	0.4	**34.4964**	0.137	0.4	ug/L	181	Standard
	Zn	66	75694.3	0.6	**58.2286**	0.173	0.3	ug/L	215	Standard
>	Ge	72	550897.8	0.5				ug/L	520809	Standard
	As	75	34828.9	0.1	**26.7169**	0.137	0.5	ug/L	-52	Standard
	Se	82	2635.3	1.9	**19.5943**	0.381	1.9	ug/L	17	Standard
	Se-1	77	1869.4	1.0	**19.9893**	0.095	0.5	ug/L	56	Standard
>	Ga	71	20570.6	1.4				mg/L	25	Standard
	Rb	85	177643.7	0.9				ug/L	28	Standard
	Y	89	691746.1	1.0				ug/L	447395	Standard
>	Rh	103	35.0	37.8				ug/L	15	Standard
	Mo	98	1110.7	3.0	**0.3333**	0.010	3.0	ug/L	113	Standard
	Ag	107	178239.6	0.1	**24.1330**	0.242	1.0	ug/L	108	Standard
	Cd	111	58613.6	0.8	**24.7671**	0.188	0.8	mg/L	3	Standard
	Cd	114	143184.7	2.0	**24.4376**	0.381	1.6	ug/L	20	Standard
>	In	115	643190.5	1.0				ug/L	625728	Standard
	Sn	118	1398.4	22.6	**0.1275**	0.050	39.0	ug/L	568	Standard
	Sb	123	4282.3	1.0	**0.7725**	0.016	2.0	ug/L	612	Standard
	Ba	135	345608.0	0.5	**154.5433**	2.126	1.4	ug/L	21	Standard
	Ce	140	1299122.5	1.1				ug/L	245	Standard
>	Tb	159	990488.4	0.8				ug/L	950397	Standard
	Ho	165	18067.4	1.7				ug/L	7	Standard
	Tl	203	217125.4	0.9	**24.1291**	0.277	1.1	ug/L	15	Standard
	Tl	205	198577.9	0.6	**24.8432**	0.213	0.9	ug/L	13	Standard
	Pb	206	259935.7	1.5	**45.7680**	0.825	1.8	ug/L	264	Standard
	Pb	207	221787.2	1.0	**42.9961**	0.567	1.3	ug/L	222	Standard
	Pb	208	955436.3	0.5	**45.3507**	0.360	0.8	ug/L	959	Standard
	U	238	203540.4	0.9	**25.1914**	0.306	1.2	ug/L	9	Standard
>	Bi	209	554076.2	0.3				ug/L	552821	Standard

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Na	23	3.3	173.2	**8.7132**	15.083	173.1	mg/L	2	Standard
Mg	24	123.3	10.2	**0.0629**	0.011	18.2	mg/L	55	Standard
K	39	401.7	6.9	**1.1840**	0.057	4.8	mg/L	28	Standard
Ca	43	85.0	17.6	**4.1392**	1.063	25.7	mg/L	27	Standard
Fe	54	19135.8	0.4	**12.7297**	0.274	2.2	mg/L	147	Standard
Fe	57	5282.6	2.0	**13.0758**	0.572	4.4	mg/L	268	Standard
> **Sc-1**	45	48179.8	2.6				mg/L	41174	Standard
Cl	35	81193.7	1.4				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	3463.7	11.3				ug/L	1950	Standard
P	31	25893.8	3.3				ug/L	21156	Standard
S	34	3793.8	6.6				ug/L	3419	Standard
Sr	88	98.3	7.8				ug/L	72	Standard
C	12	150.0	24.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	203.3	31.6				mg/L	17	Standard
Dy	164	30043.9	1.0				mg/L	16	Standard
Ho-1	165	18067.4	1.7				mg/L	7	Standard
Er	166	16368.8	2.5				mg/L	7	Standard
I	127	31820.1	1.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.013	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.777	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.791	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.227	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144505S WG574521-05
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Method 6020 - Summary Report

Sample ID: L1606144506SD WG574521-06
Sample Date/Time: Friday, July 01, 2016 16:49:54
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80097.9	2.8				ug/L	76456	Standard
	Be	9	30038.1	2.5	25.6081	1.007	3.9	ug/L	20	Standard
	Al	27	25838350.2	1.3	144.1079	2.593	1.8	ug/L	1307	Standard
	Sc	45	47559.6	2.9				ug/L	41174	Standard
	Ti	47	6556.4	1.8	19.3875	0.685	3.5	ug/L	27	Standard
	V	51	371950.4	0.9	43.5770	0.897	2.1	ug/L	1434	Standard
	Cr	52	331664.7	2.0	38.7230	1.629	4.2	ug/L	7733	Standard
	Cr	53	41130.8	1.7	38.9560	1.095	2.8	ug/L	442	Standard
	Mn	55	3596932.1	1.0	459.6785	15.165	3.3	ug/L	723	Standard
	Co	59	263231.1	1.3	33.2200	1.092	3.3	ug/L	217	Standard
	Ni	60	95938.5	1.6	44.5917	1.721	3.9	ug/L	304	Standard
	Cu	65	74284.7	1.9	35.1502	1.281	3.6	ug/L	181	Standard
	Zn	66	76677.6	1.5	60.3810	2.186	3.6	ug/L	215	Standard
>	Ge	72	538522.8	2.5				ug/L	520809	Standard
	As	75	31096.8	1.3	24.4196	0.873	3.6	ug/L	-52	Standard
	Se	82	2411.7	1.1	18.3435	0.519	2.8	ug/L	17	Standard
	Se-1	77	1751.1	3.2	19.1315	0.710	3.7	ug/L	56	Standard
>	Ga	71	19424.1	1.9				mg/L	25	Standard
	Rb	85	183661.6	1.6				ug/L	28	Standard
	Y	89	704841.2	2.1				ug/L	447395	Standard
>	Rh	103	36.7	20.8				ug/L	15	Standard
	Mo	98	611.4	5.3	0.1763	0.010	5.6	ug/L	113	Standard
	Ag	107	174143.9	1.6	24.0046	0.280	1.2	ug/L	108	Standard
	Cd	111	57620.6	0.9	24.7920	0.490	2.0	mg/L	3	Standard
	Cd	114	139765.7	1.6	24.2901	0.536	2.2	ug/L	20	Standard
>	In	115	631733.1	1.1				ug/L	625728	Standard
	Sn	118	1106.7	20.2	0.0862	0.035	40.7	ug/L	568	Standard
	Sb	123	5971.0	2.3	1.1106	0.013	1.2	ug/L	612	Standard
	Ba	135	389506.4	0.2	177.3323	1.766	1.0	ug/L	21	Standard
	Ce	140	1279386.9	0.6				ug/L	245	Standard
>	Tb	159	976334.8	1.3				ug/L	950397	Standard
	Ho	165	21239.9	2.3				ug/L	7	Standard
	Tl	203	212476.8	0.4	24.3917	0.306	1.3	ug/L	15	Standard
	Tl	205	190802.6	2.3	24.6603	0.758	3.1	ug/L	13	Standard
	Pb	206	194049.7	0.6	35.2833	0.374	1.1	ug/L	264	Standard
	Pb	207	165998.7	0.6	33.2303	0.156	0.5	ug/L	222	Standard
	Pb	208	711047.9	1.1	34.8555	0.746	2.1	ug/L	959	Standard
	U	238	196776.4	1.6	25.1602	0.659	2.6	ug/L	9	Standard
>	Bi	209	536411.2	1.1				ug/L	552821	Standard

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Na	23	5.0	0.0	**12.9314**	0.378	2.9	mg/L	2	Standard
Mg	24	121.7	21.1	**0.0630**	0.027	42.3	mg/L	55	Standard
K	39	396.7	12.8	**1.1837**	0.137	11.6	mg/L	28	Standard
Ca	43	198.3	9.5	**13.1529**	1.459	11.1	mg/L	27	Standard
Fe	54	17265.4	3.0	**11.6302**	0.519	4.5	mg/L	147	Standard
Fe	57	5002.5	1.8	**12.5110**	0.483	3.9	mg/L	268	Standard
> **Sc-1**	45	47559.6	2.9				mg/L	41174	Standard
Cl	35	82047.6	0.3				ug/L	69550	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	2713.6	16.2				ug/L	1950	Standard
P	31	26575.0	0.8				ug/L	21156	Standard
S	34	4360.6	2.1				ug/L	3419	Standard
Sr	88	131.7	17.9				ug/L	72	Standard
C	12	140.0	31.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	120.0	25.0				mg/L	17	Standard
Dy	164	35523.7	1.8				mg/L	16	Standard
Ho-1	165	21239.9	2.3				mg/L	7	Standard
Er	166	19068.7	0.7				mg/L	7	Standard
I	127	21363.4	3.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.764	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.401	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.960	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.032	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144506SD WG574521-06
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Method 6020 - Summary Report

Sample ID: L1606145101
Sample Date/Time: Friday, July 01, 2016 16:53:05
Number of Replicates: 3
Autosampler Position: 227
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77083.9	1.4				ug/L	76456	Standard
	Be	9	475.0	1.1	**0.4010**	0.005	1.3	ug/L	20	Standard
	Al	27	2237415.9	0.9	**12.9552**	0.241	1.9	ug/L	1307	Standard
	Sc	45	46143.5	0.6				ug/L	41174	Standard
	Ti	47	14229.3	1.3	**40.3569**	0.503	1.2	ug/L	27	Standard
	V	51	81926.5	1.2	**9.0305**	0.138	1.5	ug/L	1434	Standard
	Cr	52	71884.8	0.5	**7.2617**	0.092	1.3	ug/L	7733	Standard
	Cr	53	8222.2	3.8	**7.1184**	0.362	5.1	ug/L	442	Standard
	Mn	55	1326114.2	0.7	**162.1111**	1.014	0.6	ug/L	723	Standard
	Co	59	18265.0	0.3	**2.1786**	0.035	1.6	ug/L	217	Standard
	Ni	60	14421.9	1.4	**6.2826**	0.026	0.4	ug/L	304	Standard
	Cu	65	20275.6	1.0	**9.1261**	0.043	0.5	ug/L	181	Standard
	Zn	66	84084.7	0.5	**63.3707**	0.506	0.8	ug/L	215	Standard
>	Ge	72	562486.4	1.3				ug/L	520809	Standard
	As	75	12273.7	0.0	**9.2515**	0.118	1.3	ug/L	-52	Standard
	Se	82	80.8	6.1	**0.4662**	0.041	8.7	ug/L	17	Standard
	Se-1	77	117.0	7.4	**0.5834**	0.109	18.6	ug/L	56	Standard
>	Ga	71	7775.3	1.7				mg/L	25	Standard
	Rb	85	53367.2	1.6				ug/L	28	Standard
	Y	89	546880.1	0.9				ug/L	447395	Standard
>	Rh	103	25.0	34.6				ug/L	15	Standard
	Mo	98	1997.9	3.1	**0.5987**	0.021	3.5	ug/L	113	Standard
	Ag	107	409.7	7.2	**0.0409**	0.004	9.7	ug/L	108	Standard
	Cd	111	850.8	2.0	**0.3460**	0.009	2.5	mg/L	3	Standard
	Cd	114	2106.8	7.8	**0.3483**	0.025	7.1	ug/L	20	Standard
>	In	115	663939.9	0.6				ug/L	625728	Standard
	Sn	118	2050.1	14.8	**0.2160**	0.045	20.8	ug/L	568	Standard
	Sb	123	671.1	9.1	**0.0887**	0.011	12.6	ug/L	612	Standard
	Ba	135	107917.7	1.0	**46.7326**	0.441	0.9	ug/L	21	Standard
	Ce	140	627825.8	0.9				ug/L	245	Standard
>	Tb	159	987128.9	0.6				ug/L	950397	Standard
	Ho	165	5104.2	2.7				ug/L	7	Standard
	Tl	203	689.0	1.9	**0.0742**	0.001	1.8	ug/L	15	Standard
	Tl	205	618.3	5.7	**0.0660**	0.005	7.0	ug/L	13	Standard
	Pb	206	276291.1	0.7	**47.6167**	0.411	0.9	ug/L	264	Standard
	Pb	207	230628.0	0.7	**43.7624**	0.472	1.1	ug/L	222	Standard
	Pb	208	1006911.8	0.1	**46.7816**	0.251	0.5	ug/L	959	Standard
	U	238	4725.7	2.3	**0.5722**	0.012	2.1	ug/L	9	Standard
>	Bi	209	566085.1	0.4				ug/L	552821	Standard

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Na	23	8.3	124.9	**22.1583**	27.707	125.0	mg/L	2	Standard
Mg	24	85.0	11.8	**0.0284**	0.010	35.7	mg/L	55	Standard
K	39	100.0	15.0	**0.2109**	0.050	23.9	mg/L	28	Standard
Ca	43	75.0	6.7	**3.6275**	0.385	10.6	mg/L	27	Standard
Fe	54	8171.7	3.6	**5.6200**	0.239	4.3	mg/L	147	Standard
Fe	57	2388.5	3.0	**5.7441**	0.167	2.9	mg/L	268	Standard
> **Sc-1**	45	46143.5	0.6				mg/L	41174	Standard
Cl	35	81155.5	2.1				ug/L	69550	Standard
Kr	83	0.3	173.2				ug/L	1	Standard
Br	81	3463.7	7.7				ug/L	1950	Standard
P	31	25539.9	4.4				ug/L	21156	Standard
S	34	3917.2	3.0				ug/L	3419	Standard
Sr	88	76.7	18.8				ug/L	72	Standard
C	12	486.7	15.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	256.7	4.5				mg/L	17	Standard
Dy	164	8760.5	4.1				mg/L	16	Standard
Ho-1	165	5104.2	2.7				mg/L	7	Standard
Er	166	4777.4	5.8				mg/L	7	Standard
I	127	36602.6	6.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.822	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.002	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.107
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.399
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606145102
Sample Date/Time: Friday, July 01, 2016 16:56:17
Number of Replicates: 3
Autosampler Position: 228
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	78477.8	2.4				ug/L	76456	Standard
	Be	9	601.7	8.2	**0.5033**	0.031	6.2	ug/L	20	Standard
	Al	27	4781763.5	1.4	**27.2109**	0.622	2.3	ug/L	1307	Standard
	Sc	45	48186.5	2.1				ug/L	41174	Standard
	Ti	47	26915.6	1.4	**75.8086**	1.495	2.0	ug/L	27	Standard
	V	51	170171.2	0.3	**18.8187**	0.180	1.0	ug/L	1434	Standard
	Cr	52	138418.5	1.4	**14.7553**	0.301	2.0	ug/L	7733	Standard
	Cr	53	16907.8	0.5	**14.9504**	0.076	0.5	ug/L	442	Standard
	Mn	55	4385050.3	0.1	**532.0225**	4.124	0.8	ug/L	723	Standard
	Co	59	55284.7	0.4	**6.6001**	0.055	0.8	ug/L	217	Standard
	Ni	60	30764.2	0.1	**13.4670**	0.097	0.7	ug/L	304	Standard
	Cu	65	65698.5	1.0	**29.5008**	0.365	1.2	ug/L	181	Standard
	Zn	66	217089.2	0.9	**162.5825**	0.761	0.5	ug/L	215	Standard
>	Ge	72	566980.9	0.7				ug/L	520809	Standard
	As	75	11103.7	0.8	**8.3069**	0.047	0.6	ug/L	-52	Standard
	Se	82	132.6	4.8	**0.8380**	0.046	5.5	ug/L	17	Standard
	Se-1	77	150.3	12.7	**0.9313**	0.212	22.8	ug/L	56	Standard
>	Ga	71	15192.6	2.9				mg/L	25	Standard
	Rb	85	155948.5	0.6				ug/L	28	Standard
	Y	89	601495.0	1.4				ug/L	447395	Standard
>	Rh	103	23.3	32.7				ug/L	15	Standard
	Mo	98	5496.7	0.9	**1.6857**	0.006	0.4	ug/L	113	Standard
	Ag	107	775.4	2.6	**0.0887**	0.002	2.3	ug/L	108	Standard
	Cd	111	1034.2	3.3	**0.4202**	0.011	2.7	mg/L	3	Standard
	Cd	114	2656.7	6.0	**0.4384**	0.024	5.5	ug/L	20	Standard
>	In	115	665198.2	0.6				ug/L	625728	Standard
	Sn	118	1311.7	13.8	**0.1076**	0.028	25.7	ug/L	568	Standard
	Sb	123	507.6	23.3	**0.0588**	0.022	37.4	ug/L	612	Standard
	Ba	135	246404.5	0.4	**106.5243**	0.535	0.5	ug/L	21	Standard
	Ce	140	708985.8	1.9				ug/L	245	Standard
>	Tb	159	1000873.3	0.7				ug/L	950397	Standard
	Ho	165	8867.6	1.0				ug/L	7	Standard
	Tl	203	1805.8	2.5	**0.1960**	0.004	2.0	ug/L	15	Standard
	Tl	205	1731.8	4.2	**0.2027**	0.009	4.2	ug/L	13	Standard
	Pb	206	179680.5	0.2	**31.0013**	0.201	0.6	ug/L	264	Standard
	Pb	207	147967.3	0.2	**28.1058**	0.174	0.6	ug/L	222	Standard
	Pb	208	649286.1	0.4	**30.1982**	0.309	1.0	ug/L	959	Standard
	U	238	11590.8	1.2	**1.4062**	0.023	1.6	ug/L	9	Standard
>	Bi	209	565178.3	0.6				ug/L	552821	Standard

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Na	23	3.3	173.2	**8.3775**	14.502	173.1	mg/L	2	Standard
Mg	24	161.7	21.7	**0.1008**	0.032	31.7	mg/L	55	Standard
K	39	290.0	13.0	**0.8193**	0.124	15.2	mg/L	28	Standard
Ca	43	116.7	13.8	**6.5999**	1.152	17.5	mg/L	27	Standard
Fe	54	19162.0	2.8	**12.7406**	0.220	1.7	mg/L	147	Standard
Fe	57	5199.2	1.1	**12.8525**	0.447	3.5	mg/L	268	Standard
> **Sc-1**	45	48186.5	2.1				mg/L	41174	Standard
Cl	35	81627.3	0.9				ug/L	69550	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	4627.4	6.5				ug/L	1950	Standard
P	31	26000.6	1.2				ug/L	21156	Standard
S	34	3977.2	4.8				ug/L	3419	Standard
Sr	88	111.7	18.6				ug/L	72	Standard
C	12	856.7	2.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	230.0	17.4				mg/L	17	Standard
Dy	164	14613.4	2.0				mg/L	16	Standard
Ho-1	165	8867.6	1.0				mg/L	7	Standard
Er	166	8085.5	6.9				mg/L	7	Standard
I	127	50293.4	2.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.645	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.865	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.308
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.235
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606145102PS WG575057-01
Sample Date/Time: Friday, July 01, 2016 16:59:28
Number of Replicates: 3
Autosampler Position: 229
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79385.8	1.3				ug/L	76456	Standard
	Be	9	66132.4	2.2	**56.8900**	1.804	3.2	ug/L	20	Standard
	Al	27	4677646.6	0.6	**26.3080**	0.258	1.0	ug/L	1307	Standard
	Sc	45	48036.1	2.2				ug/L	41174	Standard
	Ti	47	26404.3	1.4	**75.0881**	1.235	1.6	ug/L	27	Standard
	V	51	638356.3	0.3	**71.8329**	0.463	0.6	ug/L	1434	Standard
	Cr	52	595924.0	0.5	**67.3875**	0.498	0.7	ug/L	7733	Standard
	Cr	53	74037.1	1.4	**67.5313**	1.159	1.7	ug/L	442	Standard
	Mn	55	4772659.1	0.6	**584.6747**	1.033	0.2	ug/L	723	Standard
	Co	59	500476.8	0.3	**60.5691**	0.409	0.7	ug/L	217	Standard
	Ni	60	148905.8	0.4	**66.4112**	0.102	0.2	ug/L	304	Standard
	Cu	65	183049.8	0.4	**83.1281**	0.455	0.5	ug/L	181	Standard
	Zn	66	287669.1	1.1	**217.6035**	2.596	1.2	ug/L	215	Standard
>	Ge	72	561514.3	0.4				ug/L	520809	Standard
	As	75	82895.8	0.4	**62.3258**	0.436	0.7	ug/L	-52	Standard
	Se	82	7441.1	0.8	**54.5039**	0.359	0.7	ug/L	17	Standard
	Se-1	77	5169.2	1.0	**55.4015**	0.590	1.1	ug/L	56	Standard
>	Ga	71	15267.7	1.1				mg/L	25	Standard
	Rb	85	154189.3	2.6				ug/L	28	Standard
	Y	89	603447.9	0.9				ug/L	447395	Standard
>	Rh	103	43.3	24.0				ug/L	15	Standard
	Mo	98	5476.6	2.0	**1.7012**	0.041	2.4	ug/L	113	Standard
	Ag	107	391731.6	0.9	**51.9492**	0.634	1.2	ug/L	108	Standard
	Cd	111	129263.1	1.2	**53.4846**	0.463	0.9	mg/L	3	Standard
	Cd	114	313124.4	0.6	**52.3315**	0.333	0.6	ug/L	20	Standard
>	In	115	656847.0	0.4				ug/L	625728	Standard
	Sn	118	1576.8	23.5	**0.1493**	0.056	37.2	ug/L	568	Standard
	Sb	123	282627.6	1.8	**52.0619**	0.839	1.6	ug/L	612	Standard
	Ba	135	360531.0	1.0	**157.8560**	2.191	1.4	ug/L	21	Standard
	Ce	140	708239.5	1.1				ug/L	245	Standard
>	Tb	159	993751.4	0.6				ug/L	950397	Standard
	Ho	165	9054.4	1.6				ug/L	7	Standard
	Tl	203	489986.8	0.9	**53.0644**	0.590	1.1	ug/L	15	Standard
	Tl	205	443077.3	1.1	**54.0276**	0.463	0.9	ug/L	13	Standard
	Pb	206	490668.3	0.8	**84.2254**	0.742	0.9	ug/L	264	Standard
	Pb	207	417558.3	0.6	**78.9219**	0.638	0.8	ug/L	222	Standard
	Pb	208	1796810.4	0.6	**83.1513**	0.452	0.5	ug/L	959	Standard
	U	238	437485.4	0.2	**52.7644**	0.211	0.4	ug/L	9	Standard
>	Bi	209	568575.4	0.3				ug/L	552821	Standard

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Na	23	1.7	173.2	**4.3123**	7.460	173.0	mg/L	2	Standard
Mg	24	195.0	13.6	**0.1353**	0.029	21.4	mg/L	55	Standard
K	39	278.3	18.2	**0.7825**	0.157	20.1	mg/L	28	Standard
Ca	43	116.7	21.1	**6.6089**	1.697	25.7	mg/L	27	Standard
Fe	54	18988.9	2.1	**12.6650**	0.048	0.4	mg/L	147	Standard
Fe	57	5222.6	2.2	**12.9542**	0.402	3.1	mg/L	268	Standard
> **Sc-1**	45	48036.1	2.2				mg/L	41174	Standard
Cl	35	79157.6	0.9				ug/L	69550	Standard
Kr	83	3.0	88.2				ug/L	1	Standard
Br	81	4567.4	7.8				ug/L	1950	Standard
P	31	25140.8	1.9				ug/L	21156	Standard
S	34	3993.9	5.1				ug/L	3419	Standard
Sr	88	141.7	14.7				ug/L	72	Standard
C	12	916.7	5.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	220.0	20.8				mg/L	17	Standard
Dy	164	14636.5	2.9				mg/L	16	Standard
Ho-1	165	9054.4	1.6				mg/L	7	Standard
Er	166	8719.2	6.2				mg/L	7	Standard
I	127	60985.9	3.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.832	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.816	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.973
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.850
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606145102SDL WG575057-02
Sample Date/Time: Friday, July 01, 2016 17:02:40
Number of Replicates: 3
Autosampler Position: 230
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72896.8	3.6				ug/L	76456	Standard
	Be	9	151.7	28.0	**0.1215**	0.035	28.7	ug/L	20	Standard
	Al	27	886084.1	1.1	**5.4244**	0.245	4.5	ug/L	1307	Standard
	Sc	45	40265.1	1.1				ug/L	41174	Standard
	Ti	47	4872.5	1.7	**14.8447**	0.431	2.9	ug/L	27	Standard
	V	51	31678.7	1.1	**3.6484**	0.093	2.5	ug/L	1434	Standard
	Cr	52	29443.9	1.3	**2.6645**	0.094	3.5	ug/L	7733	Standard
	Cr	53	3295.4	2.1	**2.8380**	0.099	3.5	ug/L	442	Standard
	Mn	55	811630.5	1.3	**106.9281**	2.799	2.6	ug/L	723	Standard
	Co	59	10016.3	0.5	**1.2757**	0.020	1.5	ug/L	217	Standard
	Ni	60	6049.9	1.8	**2.7576**	0.087	3.1	ug/L	304	Standard
	Cu	65	12638.9	1.7	**6.1089**	0.185	3.0	ug/L	181	Standard
	Zn	66	44343.1	2.3	**35.9528**	1.298	3.6	ug/L	215	Standard
>	Ge	72	521851.4	1.3				ug/L	520809	Standard
	As	75	2135.0	1.6	**1.7715**	0.050	2.8	ug/L	-52	Standard
	Se	82	32.7	15.9	**0.1321**	0.044	33.6	ug/L	17	Standard
	Se-1	77	80.0	15.4	**0.2505**	0.153	61.0	ug/L	56	Standard
>	Ga	71	2831.9	8.0				mg/L	25	Standard
	Rb	85	29441.9	2.0				ug/L	28	Standard
	Y	89	460347.3	0.7				ug/L	447395	Standard
>	Rh	103	23.3	44.6				ug/L	15	Standard
	Mo	98	1036.0	4.3	**0.3306**	0.018	5.5	ug/L	113	Standard
	Ag	107	240.3	7.9	**0.0218**	0.002	11.3	ug/L	108	Standard
	Cd	111	192.5	10.6	**0.0842**	0.009	10.8	mg/L	3	Standard
	Cd	114	501.8	24.8	**0.0913**	0.024	25.9	ug/L	20	Standard
>	In	115	604796.3	1.1				ug/L	625728	Standard
	Sn	118	678.3	14.5	**0.0250**	0.017	67.9	ug/L	568	Standard
	Sb	123	1577.0	34.7	**0.2828**	0.113	39.9	ug/L	612	Standard
	Ba	135	46358.8	0.3	**22.0307**	0.285	1.3	ug/L	21	Standard
	Ce	140	135977.5	1.1				ug/L	245	Standard
>	Tb	159	909731.4	0.9				ug/L	950397	Standard
	Ho	165	1651.8	7.4				ug/L	7	Standard
	Tl	203	404.7	3.9	**0.0462**	0.002	3.6	ug/L	15	Standard
	Tl	205	413.3	12.1	**0.0442**	0.006	14.3	ug/L	13	Standard
	Pb	206	34246.7	0.6	**6.2517**	0.027	0.4	ug/L	264	Standard
	Pb	207	28334.8	0.4	**5.6896**	0.033	0.6	ug/L	222	Standard
	Pb	208	122940.1	1.3	**6.0452**	0.111	1.8	ug/L	959	Standard
	U	238	2224.5	2.8	**0.2869**	0.007	2.3	ug/L	9	Standard
>	Bi	209	531198.7	0.5				ug/L	552821	Standard

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Na	23	1.7	173.2	**5.1506**	8.913	173.0	mg/L	2	Standard
Mg	24	81.7	18.7	**0.0373**	0.018	48.0	mg/L	55	Standard
K	39	76.7	26.4	**0.1697**	0.081	47.8	mg/L	28	Standard
Ca	43	40.0	25.0	**1.2573**	0.889	70.7	mg/L	27	Standard
Fe	54	3471.8	1.5	**2.6857**	0.073	2.7	mg/L	147	Standard
Fe	57	1143.4	4.3	**2.7898**	0.194	6.9	mg/L	268	Standard
> **Sc-1**	45	40265.1	1.1				mg/L	41174	Standard
Cl	35	70995.3	1.2				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	2253.5	3.8				ug/L	1950	Standard
P	31	10969.0	0.7				ug/L	21156	Standard
S	34	3750.5	0.4				ug/L	3419	Standard
Sr	88	80.0	12.5				ug/L	72	Standard
C	12	226.7	9.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	41.7				mg/L	17	Standard
Dy	164	2685.5	6.0				mg/L	16	Standard
Ho-1	165	1651.8	7.4				mg/L	7	Standard
Er	166	1560.1	5.1				mg/L	7	Standard
I	127	40504.1	2.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.345	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.200	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.655
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.089
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606145102SDL WG575057-02
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Method 6020 - Summary Report

Sample ID: L1606145102SDL WG575057-02
Sample Date/Time: Friday, July 01, 2016 17:05:52
Number of Replicates: 3
Autosampler Position: 231
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70195.6	2.2				ug/L	76456	Standard
	Be	9	78.3	41.0	**0.0567**	0.033	57.8	ug/L	20	Standard
	Al	27	176403.2	5.8	**1.1130**	0.082	7.4	ug/L	1307	Standard
	Sc	45	38834.7	0.9				ug/L	41174	Standard
	Ti	47	931.7	5.0	**2.8080**	0.157	5.6	ug/L	27	Standard
	V	51	7219.8	2.6	**0.6896**	0.020	2.9	ug/L	1434	Standard
	Cr	52	9795.8	4.3	**0.2546**	0.049	19.3	ug/L	7733	Standard
	Cr	53	816.7	8.0	**0.4003**	0.064	16.0	ug/L	442	Standard
	Mn	55	156110.5	2.6	**20.7536**	0.477	2.3	ug/L	723	Standard
	Co	59	2209.5	13.5	**0.2622**	0.038	14.6	ug/L	217	Standard
	Ni	60	1399.1	2.2	**0.5287**	0.012	2.4	ug/L	304	Standard
	Cu	65	2640.2	2.1	**1.2343**	0.024	2.0	ug/L	181	Standard
	Zn	66	9656.7	1.3	**7.7908**	0.073	0.9	ug/L	215	Standard
>	**Ge**	72	514985.8	0.4				ug/L	520809	Standard
	As	75	413.0	1.8	**0.3835**	0.006	1.4	ug/L	-52	Standard
	Se	82	23.7	20.7	**0.0632**	0.039	61.2	ug/L	17	Standard
	Se-1	77	57.0	6.1	**-0.0104**	0.039	372.4	ug/L	56	Standard
>	**Ga**	71	518.3	3.7				mg/L	25	Standard
	Rb	85	5472.7	4.6				ug/L	28	Standard
	Y	89	432045.4	1.1				ug/L	447395	Standard
>	**Rh**	103	21.7	13.3				ug/L	15	Standard
	Mo	98	406.8	30.7	**0.1173**	0.043	37.1	ug/L	113	Standard
	Ag	107	155.3	56.4	**0.0098**	0.013	129.9	ug/L	108	Standard
	Cd	111	62.6	64.4	**0.0262**	0.018	70.2	mg/L	3	Standard
	Cd	114	167.6	61.4	**0.0309**	0.019	61.4	ug/L	20	Standard
>	**In**	115	596116.9	0.1				ug/L	625728	Standard
	Sn	118	588.3	26.0	**0.0117**	0.025	212.4	ug/L	568	Standard
	Sb	123	388.4	28.3	**0.0452**	0.022	49.6	ug/L	612	Standard
	Ba	135	8995.0	2.1	**4.3221**	0.097	2.2	ug/L	21	Standard
	Ce	140	24040.7	2.3				ug/L	245	Standard
>	**Tb**	159	895791.4	0.8				ug/L	950397	Standard
	Ho	165	243.3	11.3				ug/L	7	Standard
	Tl	203	146.7	64.0	**0.0163**	0.011	66.9	ug/L	15	Standard
	Tl	205	206.7	97.8	**0.0173**	0.026	152.8	ug/L	13	Standard
	Pb	206	6377.7	1.6	**1.1327**	0.021	1.9	ug/L	264	Standard
	Pb	207	5284.9	1.3	**1.0274**	0.015	1.5	ug/L	222	Standard
	Pb	208	23160.0	2.5	**1.1036**	0.032	2.9	ug/L	959	Standard
	U	238	525.7	30.5	**0.0678**	0.021	30.5	ug/L	9	Standard
>	**Bi**	209	529365.9	0.5				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	68.3	23.5	**0.0243**	0.019	79.3	mg/L	55	Standard
K	39	26.7	78.1	**-0.0227**	0.085	373.8	mg/L	28	Standard
Ca	43	28.3	36.7	**0.2726**	0.981	359.8	mg/L	27	Standard
Fe	54	762.6	6.6	**0.5352**	0.041	7.7	mg/L	147	Standard
Fe	57	421.7	1.8	**0.5696**	0.019	3.3	mg/L	268	Standard
> **Sc-1**	45	38834.7	0.9				mg/L	41174	Standard
Cl	35	69123.3	0.3				ug/L	69550	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	1883.5	2.0				ug/L	1950	Standard
P	31	7872.0	1.6				ug/L	21156	Standard
S	34	3360.4	5.9				ug/L	3419	Standard
Sr	88	80.0	32.5				ug/L	72	Standard
C	12	90.0	22.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	153.3	38.2				mg/L	17	Standard
Dy	164	420.7	27.3				mg/L	16	Standard
Ho-1	165	243.3	11.3				mg/L	7	Standard
Er	166	263.3	34.5				mg/L	7	Standard
I	127	37972.5	2.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.812	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.882	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.268
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.757
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 17:09:05
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74588.1	0.3				ug/L	76456	Standard
	Be	9	57897.1	2.0	**52.9977**	1.204	2.3	ug/L	20	Standard
	Al	27	8733198.2	1.7	**52.2835**	0.984	1.9	ug/L	1307	Standard
	Sc	45	42748.6	2.7				ug/L	41174	Standard
	Ti	47	34213.3	0.6	**98.3209**	0.421	0.4	ug/L	27	Standard
	V	51	442681.7	1.0	**50.2684**	0.638	1.3	ug/L	1434	Standard
	Cr	52	439186.0	0.4	**49.9273**	0.312	0.6	ug/L	7733	Standard
	Cr	53	53859.0	4.5	**49.5163**	2.076	4.2	ug/L	442	Standard
	Mn	55	408283.6	1.1	**50.4406**	0.633	1.3	ug/L	723	Standard
	Co	59	418347.3	1.1	**51.1465**	0.625	1.2	ug/L	217	Standard
	Ni	60	111527.3	0.5	**50.2172**	0.479	1.0	ug/L	304	Standard
	Cu	65	110380.0	1.0	**50.6153**	0.665	1.3	ug/L	181	Standard
	Zn	66	65800.9	0.7	**50.1493**	0.538	1.1	ug/L	215	Standard
>	Ge	72	555788.6	0.5				ug/L	520809	Standard
	As	75	65659.0	0.5	**49.8836**	0.337	0.7	ug/L	-52	Standard
	Se	82	6718.9	0.9	**49.7097**	0.395	0.8	ug/L	17	Standard
	Se-1	77	4636.4	0.7	**50.1376**	0.106	0.2	ug/L	56	Standard
>	Ga	71	43.3	35.3				mg/L	25	Standard
	Rb	85	1065.0	6.1				ug/L	28	Standard
	Y	89	468359.1	2.1				ug/L	447395	Standard
>	Rh	103	20.0	25.0				ug/L	15	Standard
	Mo	98	314455.9	1.0	**100.8766**	0.307	0.3	ug/L	113	Standard
	Ag	107	371694.7	0.4	**50.2132**	0.146	0.3	ug/L	108	Standard
	Cd	111	119048.0	0.9	**50.1804**	0.274	0.5	mg/L	3	Standard
	Cd	114	295369.7	1.4	**50.2861**	0.415	0.8	ug/L	20	Standard
>	In	115	644781.5	0.7				ug/L	625728	Standard
	Sn	118	326587.3	0.5	**49.1617**	0.446	0.9	ug/L	568	Standard
	Sb	123	269765.0	0.9	**50.6219**	0.112	0.2	ug/L	612	Standard
	Ba	135	109973.0	0.0	**49.0395**	0.330	0.7	ug/L	21	Standard
	Ce	140	1043.4	21.6				ug/L	245	Standard
>	Tb	159	966885.6	0.6				ug/L	950397	Standard
	Ho	165	16.7	45.8				ug/L	7	Standard
	Tl	203	449950.1	0.5	**50.5682**	0.198	0.4	ug/L	15	Standard
	Tl	205	409109.7	0.2	**51.7709**	0.214	0.4	ug/L	13	Standard
	Pb	206	284448.3	0.6	**50.6536**	0.284	0.6	ug/L	264	Standard
	Pb	207	258444.3	0.7	**50.6761**	0.292	0.6	ug/L	222	Standard
	Pb	208	1085344.7	0.3	**52.1064**	0.244	0.5	ug/L	959	Standard
	U	238	403930.8	0.4	**50.5574**	0.115	0.2	ug/L	9	Standard
>	Bi	209	547878.4	0.3				ug/L	552821	Standard

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Na	23	3.3	86.6	**9.4428**	8.174	86.6	mg/L	2	Standard
Mg	24	4510.7	2.8	**5.0184**	0.235	4.7	mg/L	55	Standard
K	39	1208.4	6.0	**4.3343**	0.305	7.0	mg/L	28	Standard
Ca	43	88.3	31.2	**5.2894**	2.418	45.7	mg/L	27	Standard
Fe	54	6821.5	2.8	**5.0554**	0.184	3.6	mg/L	147	Standard
Fe	57	2156.8	8.4	**5.5723**	0.370	6.6	mg/L	268	Standard
Sc-1	45	42748.6	2.7				mg/L	41174	Standard
Cl	35	80981.2	1.3				ug/L	69550	Standard
Kr	83	1.3	86.6				ug/L	1	Standard
Br	81	2280.2	6.1				ug/L	1950	Standard
P	31	25067.4	1.4				ug/L	21156	Standard
S	34	4143.9	4.2				ug/L	3419	Standard
Sr	88	66.7	51.1				ug/L	72	Standard
C	12	116.7	24.7				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	173.3	61.7				mg/L	17	Standard
Dy	164	15.5	97.9				mg/L	16	Standard
Ho-1	165	16.7	45.8				mg/L	7	Standard
Er	166	23.3	24.7				mg/L	7	Standard
I	127	10653.7	0.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	105.995		
Al	27	104.567		
Sc	45			
Ti	47	98.321		
V	51	100.537		
Cr	52	99.855		
Cr	53			
Mn	55	100.881		
Co	59	102.293		
Ni	60	100.434		
Cu	65	101.231		
Zn	66	100.299		
Ge	72		106.716	
As	75	99.767		
Se	82	99.419		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	100.877		
Ag	107	100.426		
Cd	111	100.361		
Cd	114			
In	115			103.045
Sn	118	98.323		
Sb	123	101.244		
Ba	135	98.079		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.136		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.213		
U	238	101.115		
Bi	209			99.106
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 17:12:17
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73740.8	2.8				ug/L	76456	Standard
	Be	9	30.0	16.7	**0.0079**	0.005	57.8	ug/L	20	Standard
	Al	27	2383.5	29.7	**0.0042**	0.004	92.9	ug/L	1307	Standard
	Sc	45	42364.1	1.1				ug/L	41174	Standard
	Ti	47	28.3	8.2	**-0.0020**	0.008	409.9	ug/L	27	Standard
	V	51	1463.8	6.3	**-0.0298**	0.010	33.6	ug/L	1434	Standard
	Cr	52	7082.7	1.2	**-0.1402**	0.009	6.6	ug/L	7733	Standard
	Cr	53	485.0	17.5	**0.0388**	0.087	223.5	ug/L	442	Standard
	Mn	55	856.7	6.3	**0.0059**	0.006	103.8	ug/L	723	Standard
	Co	59	239.7	17.2	**0.0002**	0.005	2435.9	ug/L	217	Standard
	Ni	60	264.7	3.4	**-0.0322**	0.006	18.2	ug/L	304	Standard
	Cu	65	171.0	2.0	**0.0054**	0.002	46.6	ug/L	181	Standard
	Zn	66	243.3	6.7	**0.0079**	0.011	133.5	ug/L	215	Standard
>	**Ge**	72	549483.2	1.7				ug/L	520809	Standard
	As	75	-74.2	16.4	**-0.0117**	0.009	74.0	ug/L	-52	Standard
	Se	82	18.9	27.4	**0.0161**	0.041	258.0	ug/L	17	Standard
	Se-1	77	51.3	15.1	**-0.1160**	0.081	69.5	ug/L	56	Standard
>	**Ga**	71	21.7	53.3				mg/L	25	Standard
	Rb	85	48.3	33.3				ug/L	28	Standard
	Y	89	469146.0	2.8				ug/L	447395	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	269.5	12.3	**0.0621**	0.010	15.8	ug/L	113	Standard
	Ag	107	131.3	8.8	**0.0048**	0.002	32.6	ug/L	108	Standard
	Cd	111	13.9	69.3	**0.0035**	0.004	115.1	mg/L	3	Standard
	Cd	114	67.3	28.0	**0.0114**	0.003	28.7	ug/L	20	Standard
>	**In**	115	647674.1	1.6				ug/L	625728	Standard
	Sn	118	1591.8	26.5	**0.1547**	0.062	40.2	ug/L	568	Standard
	Sb	123	1048.5	31.2	**0.1625**	0.061	37.8	ug/L	612	Standard
	Ba	135	62.3	27.9	**0.0097**	0.008	77.5	ug/L	21	Standard
	Ce	140	363.3	30.0				ug/L	245	Standard
>	**Tb**	159	949797.9	2.5				ug/L	950397	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	92.0	24.5	**0.0095**	0.002	24.5	ug/L	15	Standard
	Tl	205	60.0	22.0	**-0.0022**	0.002	85.3	ug/L	13	Standard
	Pb	206	340.0	6.2	**0.0166**	0.004	25.1	ug/L	264	Standard
	Pb	207	288.7	4.1	**0.0103**	0.002	15.3	ug/L	222	Standard
	Pb	208	1226.7	6.9	**0.0104**	0.004	37.3	ug/L	959	Standard
	U	238	77.0	45.5	**0.0093**	0.004	45.3	ug/L	9	Standard
>	**Bi**	209	550276.1	2.1				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	46.7	24.7	**-0.0073**	0.013	171.5	mg/L	55	Standard
K	39	21.7	48.0	**-0.0502**	0.039	78.2	mg/L	28	Standard
Ca	43	33.3	17.3	**0.4877**	0.477	97.9	mg/L	27	Standard
Fe	54	195.9	17.0	**0.0503**	0.024	47.6	mg/L	147	Standard
Fe	57	191.7	26.4	**-0.2314**	0.152	65.8	mg/L	268	Standard
> **Sc-1**	45	42364.1	1.1				mg/L	41174	Standard
Cl	35	80980.6	1.9				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	2003.5	11.5				ug/L	1950	Standard
P	31	23999.0	2.6				ug/L	21156	Standard
S	34	4252.3	5.6				ug/L	3419	Standard
Sr	88	71.7	21.3				ug/L	72	Standard
C	12	100.0	34.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	110.0	36.4				mg/L	17	Standard
Dy	164	16.5	70.8				mg/L	16	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	7548.5	1.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.506	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.507
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.540
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Friday, July 01, 2016 17:14:34
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Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145103
Sample Date/Time: Friday, July 01, 2016 17:18:25
Number of Replicates: 3
Autosampler Position: 232
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77464.3	3.3				ug/L	76456	Standard
	Be	9	561.7	8.9	**0.4749**	0.032	6.7	ug/L	20	Standard
	Al	27	1784965.6	1.0	**10.2905**	0.435	4.2	ug/L	1307	Standard
	Sc	45	46648.4	2.7				ug/L	41174	Standard
	Ti	47	18184.2	0.6	**50.8412**	0.521	1.0	ug/L	27	Standard
	V	51	103032.2	1.3	**11.2383**	0.206	1.8	ug/L	1434	Standard
	Cr	52	92595.8	0.6	**9.4776**	0.042	0.4	ug/L	7733	Standard
	Cr	53	11107.4	3.1	**9.6118**	0.373	3.9	ug/L	442	Standard
	Mn	55	2019437.5	1.0	**243.2931**	1.293	0.5	ug/L	723	Standard
	Co	59	22651.9	1.2	**2.6686**	0.043	1.6	ug/L	217	Standard
	Ni	60	16329.8	0.7	**7.0275**	0.020	0.3	ug/L	304	Standard
	Cu	65	24727.8	0.3	**10.9821**	0.036	0.3	ug/L	181	Standard
	Zn	66	127705.3	0.5	**94.9239**	0.754	0.8	ug/L	215	Standard
>	Ge	72	570830.0	0.6				ug/L	520809	Standard
	As	75	6011.6	0.9	**4.4881**	0.053	1.2	ug/L	-52	Standard
	Se	82	95.5	2.7	**0.5629**	0.016	2.8	ug/L	17	Standard
	Se-1	77	101.0	4.3	**0.3932**	0.042	10.6	ug/L	56	Standard
>	Ga	71	9259.5	1.6				mg/L	25	Standard
	Rb	85	72246.9	1.1				ug/L	28	Standard
	Y	89	547009.7	0.9				ug/L	447395	Standard
>	Rh	103	31.7	24.1				ug/L	15	Standard
	Mo	98	3914.2	0.5	**1.1794**	0.014	1.2	ug/L	113	Standard
	Ag	107	483.7	3.9	**0.0498**	0.002	4.8	ug/L	108	Standard
	Cd	111	987.4	2.0	**0.3964**	0.008	2.0	mg/L	3	Standard
	Cd	114	2496.5	1.3	**0.4073**	0.007	1.6	ug/L	20	Standard
>	In	115	673007.1	0.7				ug/L	625728	Standard
	Sn	118	1876.8	14.9	**0.1869**	0.040	21.4	ug/L	568	Standard
	Sb	123	1273.6	19.1	**0.1953**	0.043	22.1	ug/L	612	Standard
	Ba	135	110926.6	0.4	**47.3888**	0.135	0.3	ug/L	21	Standard
	Ce	140	529177.4	0.3				ug/L	245	Standard
>	Tb	159	1007132.0	0.8				ug/L	950397	Standard
	Ho	165	4118.9	3.9				ug/L	7	Standard
	Tl	203	1019.0	7.4	**0.1098**	0.008	7.6	ug/L	15	Standard
	Tl	205	931.7	3.7	**0.1041**	0.004	4.2	ug/L	13	Standard
	Pb	206	349755.5	0.5	**60.1201**	0.233	0.4	ug/L	264	Standard
	Pb	207	290008.2	0.8	**54.8870**	0.434	0.8	ug/L	222	Standard
	Pb	208	1256548.1	0.6	**58.2295**	0.582	1.0	ug/L	959	Standard
	U	238	5395.3	1.0	**0.6515**	0.003	0.5	ug/L	9	Standard
>	Bi	209	567672.3	0.6				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	71.7	26.4	**0.0141**	0.021	150.8	mg/L	55	Standard
K	39	116.7	6.5	**0.2640**	0.032	12.1	mg/L	28	Standard
Ca	43	40.0	33.1	**0.7666**	1.123	146.5	mg/L	27	Standard
Fe	54	10538.1	0.8	**7.1995**	0.244	3.4	mg/L	147	Standard
Fe	57	2908.6	5.3	**7.0806**	0.202	2.9	mg/L	268	Standard
> **Sc-1**	45	46648.4	2.7				mg/L	41174	Standard
Cl	35	80143.5	2.5				ug/L	69550	Standard
Kr	83	2.7	78.1				ug/L	1	Standard
Br	81	3830.5	4.5				ug/L	1950	Standard
P	31	23700.2	1.3				ug/L	21156	Standard
S	34	3720.5	5.4				ug/L	3419	Standard
Sr	88	83.3	28.4				ug/L	72	Standard
C	12	560.0	12.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	286.7	34.2				mg/L	17	Standard
Dy	164	6970.4	6.6				mg/L	16	Standard
Ho-1	165	4118.9	3.9				mg/L	7	Standard
Er	166	3853.8	3.6				mg/L	7	Standard
I	127	33669.0	1.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.319	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.604	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.556
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.686
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606145104
Sample Date/Time: Friday, July 01, 2016 17:22:04
Number of Replicates: 3
Autosampler Position: 233
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75591.5	2.3				ug/L	76456	Standard
	Be	9	436.7	14.5	**0.3755**	0.064	17.2	ug/L	20	Standard
	Al	27	7695752.7	1.5	**45.4726**	1.098	2.4	ug/L	1307	Standard
	Sc	45	44985.0	2.4				ug/L	41174	Standard
	Ti	47	18604.1	2.8	**52.8354**	1.232	2.3	ug/L	27	Standard
	V	51	86248.0	1.1	**9.5259**	0.091	1.0	ug/L	1434	Standard
	Cr	52	84116.5	1.2	**8.6708**	0.090	1.0	ug/L	7733	Standard
	Cr	53	9486.3	1.6	**8.2820**	0.108	1.3	ug/L	442	Standard
	Mn	55	1964825.3	2.7	**240.4380**	5.305	2.2	ug/L	723	Standard
	Co	59	30224.8	2.1	**3.6271**	0.056	1.5	ug/L	217	Standard
	Ni	60	18384.5	0.8	**8.0589**	0.068	0.8	ug/L	304	Standard
	Cu	65	28824.7	1.7	**13.0170**	0.152	1.2	ug/L	181	Standard
	Zn	66	125736.6	1.1	**94.9340**	0.526	0.6	ug/L	215	Standard
>	Ge	72	561947.7	0.6				ug/L	520809	Standard
	As	75	5595.8	2.2	**4.2465**	0.119	2.8	ug/L	-52	Standard
	Se	82	88.4	10.6	**0.5221**	0.073	13.9	ug/L	17	Standard
	Se-1	77	109.0	11.9	**0.4966**	0.134	27.0	ug/L	56	Standard
>	Ga	71	7550.2	3.3				mg/L	25	Standard
	Rb	85	65005.8	0.9				ug/L	28	Standard
	Y	89	541545.4	1.1				ug/L	447395	Standard
>	Rh	103	25.0	34.6				ug/L	15	Standard
	Mo	98	5215.9	1.9	**1.6229**	0.033	2.0	ug/L	113	Standard
	Ag	107	406.7	7.0	**0.0412**	0.004	9.1	ug/L	108	Standard
	Cd	111	829.8	3.4	**0.3418**	0.009	2.5	mg/L	3	Standard
	Cd	114	1989.6	6.7	**0.3333**	0.022	6.7	ug/L	20	Standard
>	In	115	655315.6	1.0				ug/L	625728	Standard
	Sn	118	1885.1	5.0	**0.1955**	0.016	8.1	ug/L	568	Standard
	Sb	123	963.7	16.2	**0.1445**	0.030	21.0	ug/L	612	Standard
	Ba	135	109632.3	1.8	**48.0987**	0.601	1.2	ug/L	21	Standard
	Ce	140	540393.1	1.7				ug/L	245	Standard
>	Tb	159	980324.3	0.6				ug/L	950397	Standard
	Ho	165	4750.7	4.0				ug/L	7	Standard
	Tl	203	1323.7	5.2	**0.1446**	0.008	5.6	ug/L	15	Standard
	Tl	205	1150.0	7.8	**0.1324**	0.010	7.6	ug/L	13	Standard
	Pb	206	276145.9	0.9	**48.0493**	0.456	0.9	ug/L	264	Standard
	Pb	207	230196.6	0.9	**44.1005**	0.476	1.1	ug/L	222	Standard
	Pb	208	1005008.2	0.4	**47.1436**	0.504	1.1	ug/L	959	Standard
	U	238	6299.6	1.7	**0.7703**	0.019	2.4	ug/L	9	Standard
>	Bi	209	560704.1	0.8				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	86.7	31.8	**0.0328**	0.031	93.1	mg/L	55	Standard
K	39	151.7	23.2	**0.4031**	0.135	33.6	mg/L	28	Standard
Ca	43	201.7	16.5	**14.3695**	3.198	22.3	mg/L	27	Standard
Fe	54	9525.1	4.7	**6.7386**	0.306	4.5	mg/L	147	Standard
Fe	57	2743.6	3.6	**6.9108**	0.154	2.2	mg/L	268	Standard
> **Sc-1**	45	44985.0	2.4				mg/L	41174	Standard
Cl	35	83879.0	2.3				ug/L	69550	Standard
Kr	83	3.7	68.6				ug/L	1	Standard
Br	81	3460.4	7.8				ug/L	1950	Standard
P	31	24561.6	1.4				ug/L	21156	Standard
S	34	4369.0	1.4				ug/L	3419	Standard
Sr	88	116.7	25.8				ug/L	72	Standard
C	12	810.0	9.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	280.0	22.3				mg/L	17	Standard
Dy	164	8460.7	2.9				mg/L	16	Standard
Ho-1	165	4750.7	4.0				mg/L	7	Standard
Er	166	4977.5	6.3				mg/L	7	Standard
I	127	28665.4	1.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.870	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.899	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.729
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.426
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606145105
Sample Date/Time: Friday, July 01, 2016 17:25:16
Number of Replicates: 3
Autosampler Position: 234
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	76445.7	1.5				ug/L	76456	Standard
	Be	9	1478.4	3.1	**1.3014**	0.055	4.2	ug/L	20	Standard
	Al	27	1064223.2	1.9	**6.2082**	0.151	2.4	ug/L	1307	Standard
	Sc	45	47139.9	1.1				ug/L	41174	Standard
	Ti	47	53065.8	1.2	**150.6405**	1.848	1.2	ug/L	27	Standard
	V	51	112245.2	0.3	**12.4388**	0.221	1.8	ug/L	1434	Standard
	Cr	52	137183.3	1.2	**14.7291**	0.173	1.2	ug/L	7733	Standard
	Cr	53	16672.5	1.8	**14.8516**	0.459	3.1	ug/L	442	Standard
	Mn	55	332066.2	0.6	**40.4939**	0.573	1.4	ug/L	723	Standard
	Co	59	15191.9	1.6	**1.8061**	0.055	3.0	ug/L	217	Standard
	Ni	60	16308.4	0.5	**7.1212**	0.143	2.0	ug/L	304	Standard
	Cu	65	21255.2	1.0	**9.5654**	0.170	1.8	ug/L	181	Standard
	Zn	66	82188.0	0.4	**61.9044**	1.216	2.0	ug/L	215	Standard
>	Ge	72	562856.9	1.5				ug/L	520809	Standard
	As	75	14736.1	1.0	**11.0928**	0.282	2.5	ug/L	-52	Standard
	Se	82	116.4	6.1	**0.7268**	0.063	8.7	ug/L	17	Standard
	Se-1	77	132.3	7.3	**0.7485**	0.116	15.5	ug/L	56	Standard
>	Ga	71	12084.8	1.2				mg/L	25	Standard
	Rb	85	57895.4	0.4				ug/L	28	Standard
	Y	89	579341.1	3.7				ug/L	447395	Standard
>	Rh	103	25.0	52.9				ug/L	15	Standard
	Mo	98	3018.2	2.6	**0.9183**	0.011	1.2	ug/L	113	Standard
	Ag	107	450.3	2.5	**0.0464**	0.001	1.9	ug/L	108	Standard
	Cd	111	1161.6	1.5	**0.4742**	0.011	2.3	mg/L	3	Standard
	Cd	114	2894.3	3.4	**0.4797**	0.022	4.7	ug/L	20	Standard
>	In	115	662690.4	1.5				ug/L	625728	Standard
	Sn	118	2460.2	11.3	**0.2766**	0.040	14.4	ug/L	568	Standard
	Sb	123	1480.8	9.6	**0.2369**	0.027	11.6	ug/L	612	Standard
	Ba	135	103973.2	0.1	**45.1144**	0.613	1.4	ug/L	21	Standard
	Ce	140	278912.2	1.0				ug/L	245	Standard
>	Tb	159	988921.6	2.1				ug/L	950397	Standard
	Ho	165	6249.6	2.1				ug/L	7	Standard
	Tl	203	4793.4	0.3	**0.5229**	0.004	0.8	ug/L	15	Standard
	Tl	205	4507.3	1.9	**0.5447**	0.012	2.1	ug/L	13	Standard
	Pb	206	156846.0	1.0	**27.1285**	0.554	2.0	ug/L	264	Standard
	Pb	207	129940.5	0.3	**24.7412**	0.348	1.4	ug/L	222	Standard
	Pb	208	563558.5	1.1	**26.2711**	0.203	0.8	ug/L	959	Standard
	U	238	4562.4	2.7	**0.5547**	0.010	1.7	ug/L	9	Standard
>	Bi	209	563740.5	1.2				ug/L	552821	Standard

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Na	23	5.0	0.0	**13.0402**	0.148	1.1	mg/L	2	Standard
Mg	24	245.0	9.4	**0.1897**	0.021	11.0	mg/L	55	Standard
K	39	223.3	12.3	**0.6174**	0.098	15.9	mg/L	28	Standard
Ca	43	61.7	26.1	**2.4323**	1.213	49.9	mg/L	27	Standard
Fe	54	13777.8	1.0	**9.3394**	0.181	1.9	mg/L	147	Standard
Fe	57	3655.4	2.7	**9.0074**	0.309	3.4	mg/L	268	Standard
Sc-1	45	47139.9	1.1				mg/L	41174	Standard
Cl	35	79351.4	2.7				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	3307.0	6.7				ug/L	1950	Standard
P	31	25337.8	0.8				ug/L	21156	Standard
S	34	3845.5	8.8				ug/L	3419	Standard
Sr	88	98.3	15.5				ug/L	72	Standard
C	12	523.3	19.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	236.7	19.1				mg/L	17	Standard
Dy	164	9446.5	2.6				mg/L	16	Standard
Ho-1	165	6249.6	2.1				mg/L	7	Standard
Er	166	6261.3	4.0				mg/L	7	Standard
I	127	33405.2	4.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.987	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.073	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.907
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.975
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	

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Method 6020 - Summary Report

Sample ID: L1606145106 WG574521-02
Sample Date/Time: Friday, July 01, 2016 17:28:27
Number of Replicates: 3
Autosampler Position: 235
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77424.0	1.4				ug/L	76456	Standard
	Be	9	1420.1	5.3	1.2334	0.078	6.4	ug/L	20	Standard
	Al	27	3898597.3	2.1	22.4779	0.265	1.2	ug/L	1307	Standard
	Sc	45	51348.6	3.6				ug/L	41174	Standard
	Ti	47	30144.6	2.1	85.8695	0.856	1.0	ug/L	27	Standard
	V	51	531061.4	1.0	59.8240	0.037	0.1	ug/L	1434	Standard
	Cr	52	163422.1	1.8	17.8054	0.173	1.0	ug/L	7733	Standard
	Cr	53	19674.4	1.7	17.6680	0.130	0.7	ug/L	442	Standard
	Mn	55	2218244.0	2.3	272.1177	3.374	1.2	ug/L	723	Standard
	Co	59	32222.6	2.7	3.8780	0.063	1.6	ug/L	217	Standard
	Ni	60	47836.8	2.1	21.2646	0.223	1.0	ug/L	304	Standard
	Cu	65	112081.4	1.4	50.9532	0.215	0.4	ug/L	181	Standard
	Zn	66	110645.9	1.3	83.7216	0.252	0.3	ug/L	215	Standard
>	Ge	72	560589.7	1.1				ug/L	520809	Standard
	As	75	18364.3	1.7	13.8646	0.106	0.8	ug/L	-52	Standard
	Se	82	562.0	1.7	4.0067	0.091	2.3	ug/L	17	Standard
	Se-1	77	479.0	3.5	4.5225	0.226	5.0	ug/L	56	Standard
>	Ga	71	14325.1	2.5				mg/L	25	Standard
	Rb	85	53934.2	0.6				ug/L	28	Standard
	Y	89	962525.9	0.6				ug/L	447395	Standard
>	Rh	103	61.7	4.7				ug/L	15	Standard
	Mo	98	10152.0	1.8	3.1844	0.030	1.0	ug/L	113	Standard
	Ag	107	989.4	6.5	0.1188	0.009	7.5	ug/L	108	Standard
	Cd	111	5112.5	1.5	2.1203	0.021	1.0	mg/L	3	Standard
	Cd	114	12820.7	1.5	2.1502	0.050	2.3	ug/L	20	Standard
>	In	115	654652.2	1.1				ug/L	625728	Standard
	Sn	118	1108.4	23.7	0.0806	0.040	50.1	ug/L	568	Standard
	Sb	123	662.0	36.0	0.0890	0.045	50.9	ug/L	612	Standard
	Ba	135	290178.7	0.4	127.4785	1.030	0.8	ug/L	21	Standard
	Ce	140	1471841.9	0.9				ug/L	245	Standard
>	Tb	159	1014801.8	1.4				ug/L	950397	Standard
	Ho	165	35576.7	1.0				ug/L	7	Standard
	Tl	203	2282.2	3.2	0.2479	0.009	3.5	ug/L	15	Standard
	Tl	205	2125.1	5.8	0.2510	0.016	6.2	ug/L	13	Standard
	Pb	206	184986.8	1.0	31.9104	0.323	1.0	ug/L	264	Standard
	Pb	207	153794.0	1.0	29.2069	0.234	0.8	ug/L	222	Standard
	Pb	208	672139.8	1.3	31.2540	0.308	1.0	ug/L	959	Standard
	U	238	23718.9	1.7	2.8769	0.043	1.5	ug/L	9	Standard
>	Bi	209	565303.0	0.3				ug/L	552821	Standard

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Na	23	5.0	100.0	**12.1905**	12.475	102.3	mg/L	2	Standard
Mg	24	515.0	7.3	**0.4218**	0.020	4.8	mg/L	55	Standard
K	39	145.0	15.8	**0.3133**	0.055	17.6	mg/L	28	Standard
Ca	43	251.7	14.6	**15.9361**	3.051	19.1	mg/L	27	Standard
Fe	54	21541.2	1.4	**13.4547**	0.377	2.8	mg/L	147	Standard
Fe	57	6066.2	2.9	**14.1508**	0.552	3.9	mg/L	268	Standard
Sc-1	45	51348.6	3.6				mg/L	41174	Standard
Cl	35	83904.4	2.5				ug/L	69550	Standard
Kr	83	3.3	17.3				ug/L	1	Standard
Br	81	7455.2	1.0				ug/L	1950	Standard
P	31	24167.7	6.9				ug/L	21156	Standard
S	34	4078.9	4.5				ug/L	3419	Standard
Sr	88	178.3	24.5				ug/L	72	Standard
C	12	1733.4	9.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	446.7	14.4				mg/L	17	Standard
Dy	164	52369.2	4.0				mg/L	16	Standard
Ho-1	165	35576.7	1.0				mg/L	7	Standard
Er	166	35010.4	0.8				mg/L	7	Standard
I	127	69199.4	2.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.266	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.638	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.623
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.258
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606145107
Sample Date/Time: Friday, July 01, 2016 17:31:39
Number of Replicates: 3
Autosampler Position: 236
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77976.9	3.0				ug/L	76456	Standard
	Be	9	4238.9	1.2	**3.6947**	0.093	2.5	ug/L	20	Standard
	Al	27	6498898.5	1.0	**37.2377**	1.289	3.5	ug/L	1307	Standard
	Sc	45	49464.0	2.1				ug/L	41174	Standard
	Ti	47	128073.0	0.5	**363.1539**	6.490	1.8	ug/L	27	Standard
	V	51	349457.1	2.0	**39.0869**	1.161	3.0	ug/L	1434	Standard
	Cr	52	339178.2	1.4	**37.7839**	0.334	0.9	ug/L	7733	Standard
	Cr	53	41896.2	0.9	**37.8898**	0.902	2.4	ug/L	442	Standard
	Mn	55	1606512.7	1.3	**195.9725**	1.717	0.9	ug/L	723	Standard
	Co	59	54787.2	1.9	**6.5778**	0.027	0.4	ug/L	217	Standard
	Ni	60	49280.4	1.6	**21.7906**	0.290	1.3	ug/L	304	Standard
	Cu	65	58505.7	1.0	**26.4179**	0.486	1.8	ug/L	181	Standard
	Zn	66	199363.7	0.4	**150.1818**	2.763	1.8	ug/L	215	Standard
>	Ge	72	563783.0	2.2				ug/L	520809	Standard
	As	75	72841.2	1.2	**54.5595**	0.676	1.2	ug/L	-52	Standard
	Se	82	260.0	4.3	**1.7742**	0.048	2.7	ug/L	17	Standard
	Se-1	77	240.0	3.1	**1.9101**	0.113	5.9	ug/L	56	Standard
>	Ga	71	27433.2	2.3				mg/L	25	Standard
	Rb	85	214873.2	1.9				ug/L	28	Standard
	Y	89	688224.7	2.2				ug/L	447395	Standard
>	Rh	103	50.0	34.6				ug/L	15	Standard
	Mo	98	15750.9	1.3	**5.0545**	0.122	2.4	ug/L	113	Standard
	Ag	107	1137.7	4.6	**0.1417**	0.010	7.3	ug/L	108	Standard
	Cd	111	4595.8	1.9	**1.9447**	0.072	3.7	mg/L	3	Standard
	Cd	114	11753.0	1.4	**2.0112**	0.076	3.8	ug/L	20	Standard
>	In	115	641892.6	2.4				ug/L	625728	Standard
	Sn	118	2545.2	5.6	**0.3012**	0.016	5.3	ug/L	568	Standard
	Sb	123	1737.1	5.6	**0.2941**	0.021	7.1	ug/L	612	Standard
	Ba	135	236984.3	0.4	**106.2043**	2.197	2.1	ug/L	21	Standard
	Ce	140	773385.4	0.4				ug/L	245	Standard
>	Tb	159	984938.0	3.6				ug/L	950397	Standard
	Ho	165	16265.4	1.5				ug/L	7	Standard
	Tl	203	22667.3	0.8	**2.5566**	0.057	2.2	ug/L	15	Standard
	Tl	205	20584.0	2.7	**2.6047**	0.030	1.2	ug/L	13	Standard
	Pb	206	321586.0	1.4	**57.4914**	1.247	2.2	ug/L	264	Standard
	Pb	207	267373.6	0.8	**52.6407**	1.680	3.2	ug/L	222	Standard
	Pb	208	1175990.0	0.9	**56.6808**	1.299	2.3	ug/L	959	Standard
	U	238	16091.9	1.2	**2.0215**	0.038	1.9	ug/L	9	Standard
>	Bi	209	546013.7	3.1				ug/L	552821	Standard

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Na	23	3.3	173.2	**8.3896**	14.523	173.1	mg/L	2	Standard
Mg	24	313.3	12.2	**0.2450**	0.042	17.2	mg/L	55	Standard
K	39	578.3	4.1	**1.7142**	0.039	2.3	mg/L	28	Standard
Ca	43	190.0	22.5	**11.8882**	2.994	25.2	mg/L	27	Standard
Fe	54	47361.4	0.7	**30.8245**	0.629	2.0	mg/L	147	Standard
Fe	57	12388.4	2.6	**30.8824**	0.658	2.1	mg/L	268	Standard
> **Sc-1**	45	49464.0	2.1				mg/L	41174	Standard
Cl	35	79796.9	1.5				ug/L	69550	Standard
Kr	83	1.0	173.2				ug/L	1	Standard
Br	81	3437.1	6.8				ug/L	1950	Standard
P	31	26398.0	3.4				ug/L	21156	Standard
S	34	4072.2	2.6				ug/L	3419	Standard
Sr	88	165.0	6.1				ug/L	72	Standard
C	12	630.0	4.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	340.0	26.1				mg/L	17	Standard
Dy	164	25210.3	0.7				mg/L	16	Standard
Ho-1	165	16265.4	1.5				mg/L	7	Standard
Er	166	15487.9	0.9				mg/L	7	Standard
I	127	25923.8	3.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.990	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.251	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.583	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.769	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606145108
Sample Date/Time: Friday, July 01, 2016 17:34:50
Number of Replicates: 3
Autosampler Position: 237
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	78296.8	0.6				ug/L	76456	Standard
	Be	9	5035.8	1.1	**4.3730**	0.045	1.0	ug/L	20	Standard
	Al	27	8296103.3	2.9	**47.3081**	1.104	2.3	ug/L	1307	Standard
	Sc	45	51448.9	3.1				ug/L	41174	Standard
	Ti	47	143723.1	0.7	**413.9468**	6.279	1.5	ug/L	27	Standard
	V	51	366509.9	0.1	**41.6481**	0.419	1.0	ug/L	1434	Standard
	Cr	52	544163.4	1.5	**62.1923**	1.314	2.1	ug/L	7733	Standard
	Cr	53	66433.7	1.1	**61.2720**	0.593	1.0	ug/L	442	Standard
	Mn	55	1841665.0	0.6	**228.2274**	2.393	1.0	ug/L	723	Standard
	Co	59	60732.8	1.2	**7.4113**	0.113	1.5	ug/L	217	Standard
	Ni	60	55300.1	1.5	**24.8624**	0.580	2.3	ug/L	304	Standard
	Cu	65	53837.8	1.0	**24.6886**	0.479	1.9	ug/L	181	Standard
	Zn	66	206840.0	0.6	**158.2701**	2.252	1.4	ug/L	215	Standard
>	Ge	72	554963.2	0.9				ug/L	520809	Standard
	As	75	66893.4	0.9	**50.8958**	0.201	0.4	ug/L	-52	Standard
	Se	82	248.2	6.5	**1.7168**	0.104	6.0	ug/L	17	Standard
	Se-1	77	241.0	3.2	**1.9609**	0.071	3.6	ug/L	56	Standard
>	Ga	71	28399.9	2.1				mg/L	25	Standard
	Rb	85	238607.6	1.1				ug/L	28	Standard
	Y	89	727081.9	1.3				ug/L	447395	Standard
>	Rh	103	48.3	48.9				ug/L	15	Standard
	Mo	98	16138.3	0.6	**5.1475**	0.088	1.7	ug/L	113	Standard
	Ag	107	1178.0	3.1	**0.1461**	0.006	4.0	ug/L	108	Standard
	Cd	111	4690.3	1.4	**1.9722**	0.048	2.4	mg/L	3	Standard
	Cd	114	11637.8	1.7	**1.9789**	0.055	2.8	ug/L	20	Standard
>	In	115	645732.9	1.1				ug/L	625728	Standard
	Sn	118	2240.2	14.5	**0.2530**	0.048	19.0	ug/L	568	Standard
	Sb	123	1441.2	4.7	**0.2365**	0.011	4.5	ug/L	612	Standard
	Ba	135	274841.1	0.7	**122.4109**	1.640	1.3	ug/L	21	Standard
	Ce	140	887134.9	0.7				ug/L	245	Standard
>	Tb	159	985869.5	0.8				ug/L	950397	Standard
	Ho	165	18397.8	1.0				ug/L	7	Standard
	Tl	203	22726.7	1.1	**2.5470**	0.017	0.7	ug/L	15	Standard
	Tl	205	20669.1	0.8	**2.5996**	0.009	0.3	ug/L	13	Standard
	Pb	206	304509.2	0.5	**54.0918**	0.193	0.4	ug/L	264	Standard
	Pb	207	255448.0	0.1	**49.9624**	0.361	0.7	ug/L	222	Standard
	Pb	208	1107233.4	0.4	**53.0246**	0.467	0.9	ug/L	959	Standard
	U	238	17326.6	1.5	**2.1631**	0.047	2.2	ug/L	9	Standard
>	Bi	209	549274.6	0.7				ug/L	552821	Standard

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Na	23	3.3	173.2	**8.1301**	14.073	173.1	mg/L	2	Standard
Mg	24	360.0	2.4	**0.2767**	0.016	5.7	mg/L	55	Standard
K	39	590.0	10.2	**1.6839**	0.234	13.9	mg/L	28	Standard
Ca	43	221.7	16.9	**13.7026**	2.998	21.9	mg/L	27	Standard
Fe	54	51880.7	2.5	**32.4850**	1.445	4.4	mg/L	147	Standard
Fe	57	13546.1	1.6	**32.5153**	0.491	1.5	mg/L	268	Standard
> **Sc-1**	45	51448.9	3.1				mg/L	41174	Standard
Cl	35	79311.7	1.5				ug/L	69550	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	2893.6	2.1				ug/L	1950	Standard
P	31	26569.9	1.7				ug/L	21156	Standard
S	34	4178.9	3.2				ug/L	3419	Standard
Sr	88	200.0	24.6				ug/L	72	Standard
C	12	570.0	12.7				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	283.3	10.2				mg/L	17	Standard
Dy	164	28615.4	0.7				mg/L	16	Standard
Ho-1	165	18397.8	1.0				mg/L	7	Standard
Er	166	17950.6	1.5				mg/L	7	Standard
I	127	24543.2	0.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.408	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.558	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.197
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.359
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606145109S WG574521-07
Sample Date/Time: Friday, July 01, 2016 17:38:02
Number of Replicates: 3
Autosampler Position: 238
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77300.2	4.1				ug/L	76456	Standard
	Be	9	31013.4	0.9	**27.4058**	0.869	3.2	ug/L	20	Standard
	Al	27	4089154.1	3.2	**23.6238**	0.470	2.0	ug/L	1307	Standard
	Sc	45	51686.4	2.6				ug/L	41174	Standard
	Ti	47	34757.2	1.7	**100.2574**	1.039	1.0	ug/L	27	Standard
	V	51	798652.3	3.3	**91.1648**	1.278	1.4	ug/L	1434	Standard
	Cr	52	383358.6	3.0	**43.6124**	0.316	0.7	ug/L	7733	Standard
	Cr	53	46656.8	2.4	**42.9982**	0.311	0.7	ug/L	442	Standard
	Mn	55	2313030.1	2.9	**287.2366**	2.286	0.8	ug/L	723	Standard
	Co	59	229099.5	3.1	**28.0933**	0.227	0.8	ug/L	217	Standard
	Ni	60	103411.0	3.4	**46.7113**	0.544	1.2	ug/L	304	Standard
	Cu	65	167787.3	3.4	**77.2413**	0.870	1.1	ug/L	181	Standard
	Zn	66	148653.6	2.3	**113.9303**	0.817	0.7	ug/L	215	Standard
>	Ge	72	553789.9	2.3				ug/L	520809	Standard
	As	75	50674.7	3.7	**38.6402**	0.614	1.6	ug/L	-52	Standard
	Se	82	4006.1	3.7	**29.6916**	0.620	2.1	ug/L	17	Standard
	Se-1	77	2822.3	6.3	**30.3505**	1.406	4.6	ug/L	56	Standard
>	Ga	71	15926.7	1.8				mg/L	25	Standard
	Rb	85	61213.5	2.5				ug/L	28	Standard
	Y	89	995780.9	3.8				ug/L	447395	Standard
>	Rh	103	80.0	39.0				ug/L	15	Standard
	Mo	98	11202.2	1.3	**3.5351**	0.100	2.8	ug/L	113	Standard
	Ag	107	172476.6	3.4	**23.0491**	0.075	0.3	ug/L	108	Standard
	Cd	111	62525.5	2.9	**26.0819**	0.217	0.8	mg/L	3	Standard
	Cd	114	155090.1	3.1	**26.1298**	0.108	0.4	ug/L	20	Standard
>	In	115	651612.6	3.5				ug/L	625728	Standard
	Sn	118	1198.4	14.3	**0.0953**	0.032	33.2	ug/L	568	Standard
	Sb	123	13746.3	2.5	**2.5212**	0.035	1.4	ug/L	612	Standard
	Ba	135	355128.0	2.7	**156.7604**	1.139	0.7	ug/L	21	Standard
	Ce	140	1618154.9	2.5				ug/L	245	Standard
>	Tb	159	1001149.2	2.4				ug/L	950397	Standard
	Ho	165	38079.5	2.2				ug/L	7	Standard
	Tl	203	217506.4	3.1	**24.1924**	0.167	0.7	ug/L	15	Standard
	Tl	205	199413.9	1.5	**24.9766**	0.301	1.2	ug/L	13	Standard
	Pb	206	340199.5	1.6	**59.9805**	0.583	1.0	ug/L	264	Standard
	Pb	207	287102.8	2.6	**55.7262**	0.520	0.9	ug/L	222	Standard
	Pb	208	1239148.8	1.7	**58.8977**	0.622	1.1	ug/L	959	Standard
	U	238	215333.8	2.0	**26.6800**	0.294	1.1	ug/L	9	Standard
>	Bi	209	553529.4	2.5				ug/L	552821	Standard

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Na	23	3.3	86.6	**8.0461**	6.964	86.6	mg/L	2	Standard
Mg	24	420.0	23.2	**0.3305**	0.090	27.3	mg/L	55	Standard
K	39	140.0	12.9	**0.2971**	0.061	20.5	mg/L	28	Standard
Ca	43	243.3	22.2	**15.1089**	3.441	22.8	mg/L	27	Standard
Fe	54	22645.6	2.0	**14.0499**	0.221	1.6	mg/L	147	Standard
Fe	57	6007.9	4.3	**13.9009**	0.509	3.7	mg/L	268	Standard
Sc-1	45	51686.4	2.6				mg/L	41174	Standard
Cl	35	80429.2	4.3				ug/L	69550	Standard
Kr	83	2.7	86.6				ug/L	1	Standard
Br	81	13772.9	3.0				ug/L	1950	Standard
P	31	24882.1	4.1				ug/L	21156	Standard
S	34	3928.8	5.2				ug/L	3419	Standard
Sr	88	231.7	13.2				ug/L	72	Standard
C	12	2016.8	5.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	526.7	13.7				mg/L	17	Standard
Dy	164	57272.5	3.0				mg/L	16	Standard
Ho-1	165	38079.5	2.2				mg/L	7	Standard
Er	166	36791.3	0.3				mg/L	7	Standard
I	127	68461.0	1.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.105	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.333	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.137
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.128
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606145110SD WG574521-08
Sample Date/Time: Friday, July 01, 2016 17:41:13
Number of Replicates: 3
Autosampler Position: 239
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75000.2	2.3				ug/L	76456	Standard
	Be	9	30976.6	1.7	**28.1959**	0.613	2.2	ug/L	20	Standard
	Al	27	3439220.2	1.5	**20.4763**	0.514	2.5	ug/L	1307	Standard
	Sc	45	50167.9	0.3				ug/L	41174	Standard
	Ti	47	20331.3	1.6	**60.1182**	0.386	0.6	ug/L	27	Standard
	V	51	735011.2	1.2	**86.0697**	0.811	0.9	ug/L	1434	Standard
	Cr	52	348065.1	1.5	**40.5590**	0.525	1.3	ug/L	7733	Standard
	Cr	53	41963.1	3.7	**39.6270**	0.656	1.7	ug/L	442	Standard
	Mn	55	2126490.8	1.0	**270.9327**	3.985	1.5	ug/L	723	Standard
	Co	59	224148.6	1.1	**28.2013**	0.328	1.2	ug/L	217	Standard
	Ni	60	97510.5	1.6	**45.1854**	0.391	0.9	ug/L	304	Standard
	Cu	65	159657.8	0.8	**75.4140**	0.961	1.3	ug/L	181	Standard
	Zn	66	122702.2	1.2	**96.4430**	0.853	0.9	ug/L	215	Standard
>	Ge	72	539893.8	2.0				ug/L	520809	Standard
	As	75	43731.6	1.5	**34.2188**	0.207	0.6	ug/L	-52	Standard
	Se	82	3851.1	1.9	**29.2807**	0.182	0.6	ug/L	17	Standard
	Se-1	77	2693.2	3.6	**29.7006**	0.473	1.6	ug/L	56	Standard
>	Ga	71	10877.2	4.3				mg/L	25	Standard
	Rb	85	26646.7	1.9				ug/L	28	Standard
	Y	89	984741.5	1.3				ug/L	447395	Standard
>	Rh	103	75.0	23.1				ug/L	15	Standard
	Mo	98	12396.0	1.1	**4.0096**	0.009	0.2	ug/L	113	Standard
	Ag	107	167394.8	1.6	**22.9251**	0.326	1.4	ug/L	108	Standard
	Cd	111	61689.6	0.9	**26.3685**	0.182	0.7	mg/L	3	Standard
	Cd	114	150249.5	3.1	**25.9377**	0.589	2.3	ug/L	20	Standard
>	In	115	635843.6	1.2				ug/L	625728	Standard
	Sn	118	1905.1	12.7	**0.2074**	0.041	19.5	ug/L	568	Standard
	Sb	123	35922.0	1.1	**6.8066**	0.045	0.7	ug/L	612	Standard
	Ba	135	328480.5	1.3	**148.5677**	0.342	0.2	ug/L	21	Standard
	Ce	140	1483643.4	1.0				ug/L	245	Standard
>	Tb	159	980223.1	1.4				ug/L	950397	Standard
	Ho	165	36555.7	1.5				ug/L	7	Standard
	Tl	203	214476.5	1.2	**24.1754**	0.120	0.5	ug/L	15	Standard
	Tl	205	195033.9	0.4	**24.7497**	0.108	0.4	ug/L	13	Standard
	Pb	206	331178.4	0.7	**59.1601**	0.433	0.7	ug/L	264	Standard
	Pb	207	281134.0	0.6	**55.2947**	0.155	0.3	ug/L	222	Standard
	Pb	208	1213063.3	0.7	**58.4179**	0.082	0.1	ug/L	959	Standard
	U	238	215012.5	0.4	**26.9929**	0.177	0.7	ug/L	9	Standard
>	Bi	209	546245.7	0.8				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	401.7	8.7	**0.3249**	0.034	10.5	mg/L	55	Standard
K	39	65.0	53.8	**0.0732**	0.110	149.7	mg/L	28	Standard
Ca	43	258.3	8.9	**16.8169**	1.773	10.5	mg/L	27	Standard
Fe	54	18860.0	1.9	**12.0398**	0.263	2.2	mg/L	147	Standard
Fe	57	5239.2	5.1	**12.4090**	0.703	5.7	mg/L	268	Standard
> **Sc-1**	45	50167.9	0.3				mg/L	41174	Standard
Cl	35	77473.7	3.0				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	7528.5	1.9				ug/L	1950	Standard
P	31	23025.8	3.4				ug/L	21156	Standard
S	34	3772.1	4.4				ug/L	3419	Standard
Sr	88	236.7	6.8				ug/L	72	Standard
C	12	2743.6	3.7				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	510.0	3.4				mg/L	17	Standard
Dy	164	54236.1	2.2				mg/L	16	Standard
Ho-1	165	36555.7	1.5				mg/L	7	Standard
Er	166	36333.5	1.9				mg/L	7	Standard
I	127	50945.5	2.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.096	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.664	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.617	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.811	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606145110SD WG574521-08
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Method 6020 - Summary Report

Sample ID: L1606144501
Sample Date/Time: Friday, July 01, 2016 17:44:25
Number of Replicates: 3
Autosampler Position: 240
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75614.9	1.3				ug/L	76456	Standard
	Be	9	616.7	9.4	**0.5370**	0.050	9.3	ug/L	20	Standard
	Al	27	13167988.3	1.5	**77.7749**	1.539	2.0	ug/L	1307	Standard
	Sc	45	44936.5	0.9				ug/L	41174	Standard
	Ti	47	2539.2	1.9	**7.5419**	0.159	2.1	ug/L	27	Standard
	V	51	86547.1	1.5	**10.1041**	0.180	1.8	ug/L	1434	Standard
	Cr	52	60907.8	0.8	**6.4000**	0.028	0.4	ug/L	7733	Standard
	Cr	53	7250.1	1.9	**6.6027**	0.158	2.4	ug/L	442	Standard
	Mn	55	1905061.9	1.8	**246.1332**	2.751	1.1	ug/L	723	Standard
	Co	59	36801.3	0.6	**4.6715**	0.060	1.3	ug/L	217	Standard
	Ni	60	21869.8	1.0	**10.1605**	0.108	1.1	ug/L	304	Standard
	Cu	65	17811.5	0.6	**8.4670**	0.104	1.2	ug/L	181	Standard
	Zn	66	27607.8	0.3	**21.8690**	0.071	0.3	ug/L	215	Standard
>	Ge	72	532269.5	0.7				ug/L	520809	Standard
	As	75	3673.7	1.1	**2.9570**	0.036	1.2	ug/L	-52	Standard
	Se	82	41.1	14.0	**0.1921**	0.043	22.6	ug/L	17	Standard
	Se-1	77	92.7	12.4	**0.3761**	0.133	35.3	ug/L	56	Standard
>	Ga	71	8445.7	4.3				mg/L	25	Standard
	Rb	85	79397.5	0.6				ug/L	28	Standard
	Y	89	617711.9	0.3				ug/L	447395	Standard
>	Rh	103	20.0	50.0				ug/L	15	Standard
	Mo	98	513.2	4.5	**0.1463**	0.008	5.2	ug/L	113	Standard
	Ag	107	411.0	5.4	**0.0445**	0.003	7.0	ug/L	108	Standard
	Cd	111	224.8	17.0	**0.0956**	0.017	17.3	mg/L	3	Standard
	Cd	114	528.5	15.3	**0.0930**	0.014	15.2	ug/L	20	Standard
>	In	115	623854.0	0.2				ug/L	625728	Standard
	Sn	118	1113.4	15.3	**0.0893**	0.027	30.1	ug/L	568	Standard
	Sb	123	402.5	19.7	**0.0444**	0.016	34.9	ug/L	612	Standard
	Ba	135	200643.8	0.9	**92.4876**	1.043	1.1	ug/L	21	Standard
	Ce	140	742147.0	0.8				ug/L	245	Standard
>	Tb	159	959744.7	0.8				ug/L	950397	Standard
	Ho	165	13928.1	1.6				ug/L	7	Standard
	Tl	203	447.0	8.8	**0.0505**	0.005	9.0	ug/L	15	Standard
	Tl	205	406.7	11.9	**0.0427**	0.006	14.6	ug/L	13	Standard
	Pb	206	40310.6	0.6	**7.2786**	0.040	0.5	ug/L	264	Standard
	Pb	207	33326.3	0.4	**6.6200**	0.027	0.4	ug/L	222	Standard
	Pb	208	145576.7	0.6	**7.0813**	0.040	0.6	ug/L	959	Standard
	U	238	2828.3	0.6	**0.3605**	0.002	0.6	ug/L	9	Standard
>	Bi	209	537569.5	0.1				ug/L	552821	Standard

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Na	23	3.3	86.6	**9.1104**	7.886	86.6	mg/L	2	Standard
Mg	24	76.7	7.5	**0.0219**	0.006	26.1	mg/L	55	Standard
K	39	218.3	9.5	**0.6363**	0.080	12.5	mg/L	28	Standard
Ca	43	151.7	22.0	**10.1772**	2.793	27.4	mg/L	27	Standard
Fe	54	7340.4	3.8	**5.1756**	0.204	3.9	mg/L	147	Standard
Fe	57	2196.8	7.0	**5.3817**	0.451	8.4	mg/L	268	Standard
> **Sc-1**	45	44936.5	0.9				mg/L	41174	Standard
Cl	35	75625.0	1.8				ug/L	69550	Standard
Kr	83	2.3	89.2				ug/L	1	Standard
Br	81	2456.9	6.6				ug/L	1950	Standard
P	31	22234.7	4.3				ug/L	21156	Standard
S	34	3950.5	4.3				ug/L	3419	Standard
Sr	88	111.7	18.1				ug/L	72	Standard
C	12	203.3	42.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	103.3	36.6				mg/L	17	Standard
Dy	164	23311.5	2.8				mg/L	16	Standard
Ho-1	165	13928.1	1.6				mg/L	7	Standard
Er	166	12401.8	5.5				mg/L	7	Standard
I	127	16120.2	3.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.900	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.200	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.701
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.241
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606144502
Sample Date/Time: Friday, July 01, 2016 17:47:36
Number of Replicates: 3
Autosampler Position: 241
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80582.1	0.6				ug/L	76456	Standard
	Be	9	1050.0	6.5	**0.8699**	0.053	6.1	ug/L	20	Standard
	Al	27	10543226.3	2.9	**58.4275**	1.839	3.1	ug/L	1307	Standard
	Sc	45	50111.1	1.7				ug/L	41174	Standard
	Ti	47	7592.6	3.2	**21.5864**	0.745	3.5	ug/L	27	Standard
	V	51	232882.8	0.5	**26.1453**	0.088	0.3	ug/L	1434	Standard
	Cr	52	180590.6	0.7	**19.7971**	0.199	1.0	ug/L	7733	Standard
	Cr	53	21970.9	2.4	**19.7976**	0.515	2.6	ug/L	442	Standard
	Mn	55	4529682.0	0.5	**556.3104**	4.224	0.8	ug/L	723	Standard
	Co	59	72279.7	0.5	**8.7442**	0.060	0.7	ug/L	217	Standard
	Ni	60	42964.2	0.1	**19.1012**	0.022	0.1	ug/L	304	Standard
	Cu	65	47497.7	0.8	**21.5696**	0.226	1.0	ug/L	181	Standard
	Zn	66	105865.9	1.3	**80.1698**	1.221	1.5	ug/L	215	Standard
>	Ge	72	560104.1	0.3				ug/L	520809	Standard
	As	75	7808.3	0.8	**5.9264**	0.056	0.9	ug/L	-52	Standard
	Se	82	138.7	8.9	**0.8941**	0.089	9.9	ug/L	17	Standard
	Se-1	77	161.0	3.3	**1.0667**	0.061	5.7	ug/L	56	Standard
>	Ga	71	24149.2	0.8				mg/L	25	Standard
	Rb	85	233795.1	1.1				ug/L	28	Standard
	Y	89	725001.6	1.1				ug/L	447395	Standard
>	Rh	103	41.7	18.3				ug/L	15	Standard
	Mo	98	1317.7	5.6	**0.3993**	0.019	4.9	ug/L	113	Standard
	Ag	107	864.0	1.1	**0.1041**	0.002	2.4	ug/L	108	Standard
	Cd	111	1117.0	0.9	**0.4692**	0.009	1.8	mg/L	3	Standard
	Cd	114	2788.0	2.8	**0.4754**	0.015	3.1	ug/L	20	Standard
>	In	115	643922.1	1.0				ug/L	625728	Standard
	Sn	118	2010.1	12.1	**0.2191**	0.034	15.5	ug/L	568	Standard
	Sb	123	437.2	13.5	**0.0484**	0.010	21.4	ug/L	612	Standard
	Ba	135	1679042.7	0.5	**749.9950**	6.832	0.9	ug/L	21	Standard
	Ce	140	1471540.7	0.8				ug/L	245	Standard
>	Tb	159	984687.8	0.7				ug/L	950397	Standard
	Ho	165	20360.3	1.4				ug/L	7	Standard
	Tl	203	1212.7	2.5	**0.1370**	0.004	2.6	ug/L	15	Standard
	Tl	205	1158.4	9.0	**0.1384**	0.013	9.2	ug/L	13	Standard
	Pb	206	419173.3	0.5	**75.4515**	0.814	1.1	ug/L	264	Standard
	Pb	207	344138.4	0.6	**68.2056**	0.866	1.3	ug/L	222	Standard
	Pb	208	1506247.3	0.9	**73.0918**	0.807	1.1	ug/L	959	Standard
	U	238	5748.4	0.4	**0.7268**	0.007	1.0	ug/L	9	Standard
>	Bi	209	542199.4	0.6				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	146.7	3.9	**0.0806**	0.004	4.7	mg/L	55	Standard
K	39	706.7	5.1	**2.0968**	0.148	7.0	mg/L	28	Standard
Ca	43	91.7	22.0	**4.4031**	1.569	35.6	mg/L	27	Standard
Fe	54	24940.6	4.4	**15.9770**	0.842	5.3	mg/L	147	Standard
Fe	57	6641.5	3.9	**15.9699**	0.826	5.2	mg/L	268	Standard
> **Sc-1**	45	50111.1	1.7				mg/L	41174	Standard
Cl	35	76057.1	1.3				ug/L	69550	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	3847.2	5.3				ug/L	1950	Standard
P	31	23633.4	0.7				ug/L	21156	Standard
S	34	3662.1	4.5				ug/L	3419	Standard
Sr	88	171.7	11.8				ug/L	72	Standard
C	12	470.0	20.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	233.3	19.3				mg/L	17	Standard
Dy	164	34433.8	0.7				mg/L	16	Standard
Ho-1	165	20360.3	1.4				mg/L	7	Standard
Er	166	19082.0	1.0				mg/L	7	Standard
I	127	32727.0	1.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.397	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.545	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.908	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.079	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 17:50:49
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75660.1	1.1				ug/L	76456	Standard
	Be	9	60406.9	2.0	**54.5087**	0.731	1.3	ug/L	20	Standard
	Al	27	8901183.3	0.4	**52.5361**	0.439	0.8	ug/L	1307	Standard
	Sc	45	43571.0	4.5				ug/L	41174	Standard
	Ti	47	34622.5	2.0	**98.8044**	2.139	2.2	ug/L	27	Standard
	V	51	445398.2	1.1	**50.2213**	0.481	1.0	ug/L	1434	Standard
	Cr	52	446008.3	0.3	**50.3583**	0.638	1.3	ug/L	7733	Standard
	Cr	53	54342.3	1.8	**49.6105**	0.179	0.4	ug/L	442	Standard
	Mn	55	412872.1	1.4	**50.6530**	0.943	1.9	ug/L	723	Standard
	Co	59	423920.9	1.9	**51.4674**	1.144	2.2	ug/L	217	Standard
	Ni	60	112641.5	1.2	**50.3629**	0.567	1.1	ug/L	304	Standard
	Cu	65	112208.4	1.7	**51.0893**	0.402	0.8	ug/L	181	Standard
	Zn	66	66744.0	0.4	**50.5145**	0.608	1.2	ug/L	215	Standard
>	Ge	72	559742.9	1.5				ug/L	520809	Standard
	As	75	66794.1	0.6	**50.3914**	0.530	1.1	ug/L	-52	Standard
	Se	82	6873.9	1.4	**50.5047**	0.860	1.7	ug/L	17	Standard
	Se-1	77	4690.7	2.0	**50.3684**	0.411	0.8	ug/L	56	Standard
>	Ga	71	70.0	37.1				mg/L	25	Standard
	Rb	85	931.7	8.4				ug/L	28	Standard
	Y	89	472026.6	0.3				ug/L	447395	Standard
>	Rh	103	31.7	32.9				ug/L	15	Standard
	Mo	98	318819.4	0.9	**100.5497**	0.545	0.5	ug/L	113	Standard
	Ag	107	375898.4	1.4	**49.9218**	0.531	1.1	ug/L	108	Standard
	Cd	111	121191.8	0.6	**50.2220**	0.334	0.7	mg/L	3	Standard
	Cd	114	302196.5	1.8	**50.5816**	0.945	1.9	ug/L	20	Standard
>	In	115	655853.7	0.4				ug/L	625728	Standard
	Sn	118	335213.1	1.5	**49.6075**	0.708	1.4	ug/L	568	Standard
	Sb	123	270386.5	1.1	**49.8811**	0.362	0.7	ug/L	612	Standard
	Ba	135	111336.6	0.9	**48.8080**	0.417	0.9	ug/L	21	Standard
	Ce	140	1411.7	25.7				ug/L	245	Standard
>	Tb	159	970990.0	1.2				ug/L	950397	Standard
	Ho	165	26.7	71.0				ug/L	7	Standard
	Tl	203	450496.8	1.2	**50.6789**	0.648	1.3	ug/L	15	Standard
	Tl	205	413746.4	0.4	**52.4089**	0.448	0.9	ug/L	13	Standard
	Pb	206	283628.8	0.6	**50.5558**	0.102	0.2	ug/L	264	Standard
	Pb	207	257451.9	0.7	**50.5301**	0.341	0.7	ug/L	222	Standard
	Pb	208	1074344.6	0.3	**51.6273**	0.180	0.3	ug/L	959	Standard
	U	238	402853.9	0.7	**50.4710**	0.276	0.5	ug/L	9	Standard
>	Bi	209	547356.6	0.6				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4665.7	4.0	**5.1012**	0.401	7.9	mg/L	55	Standard
K	39	1318.4	2.8	**4.6563**	0.350	7.5	mg/L	28	Standard
Ca	43	68.3	16.9	**3.4315**	1.098	32.0	mg/L	27	Standard
Fe	54	7100.4	2.7	**5.1707**	0.292	5.6	mg/L	147	Standard
Fe	57	2145.2	7.2	**5.4299**	0.465	8.6	mg/L	268	Standard
Sc-1	45	43571.0	4.5				mg/L	41174	Standard
Cl	35	80089.1	0.5				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	2080.1	5.8				ug/L	1950	Standard
P	31	24411.3	2.1				ug/L	21156	Standard
S	34	4227.3	2.4				ug/L	3419	Standard
Sr	88	76.7	45.8				ug/L	72	Standard
C	12	110.0	45.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	56.7				mg/L	17	Standard
Dy	164	54.4	29.0				mg/L	16	Standard
Ho-1	165	26.7	71.0				mg/L	7	Standard
Er	166	46.7	24.7				mg/L	7	Standard
I	127	7775.3	3.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	109.017		
Al	27	105.072		
Sc	45			
Ti	47	98.804		
V	51	100.443		
Cr	52	100.717		
Cr	53			
Mn	55	101.306		
Co	59	102.935		
Ni	60	100.726		
Cu	65	102.179		
Zn	66	101.029		
Ge	72		107.476	
As	75	100.783		
Se	82	101.009		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	100.550		
Ag	107	99.844		
Cd	111	100.444		
Cd	114			
> In	115			104.815
Sn	118	99.215		
Sb	123	99.762		
Ba	135	97.616		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.358		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.255		
U	238	100.942		
> Bi	209			99.012
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 17:54:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76125.8	1.7				ug/L	76456	Standard
	Be	9	28.3	40.8	**0.0054**	0.010	184.7	ug/L	20	Standard
	Al	27	3772.2	25.1	**0.0119**	0.005	45.3	ug/L	1307	Standard
	Sc	45	44115.8	1.5				ug/L	41174	Standard
	Ti	47	36.0	36.4	**0.0190**	0.038	200.0	ug/L	27	Standard
	V	51	1432.6	3.3	**-0.0355**	0.004	12.4	ug/L	1434	Standard
	Cr	52	7275.4	1.9	**-0.1286**	0.011	8.9	ug/L	7733	Standard
	Cr	53	543.3	3.8	**0.0861**	0.017	20.2	ug/L	442	Standard
	Mn	55	1260.1	9.4	**0.0544**	0.014	25.4	ug/L	723	Standard
	Co	59	264.3	9.7	**0.0028**	0.003	106.4	ug/L	217	Standard
	Ni	60	263.3	2.3	**-0.0344**	0.002	7.2	ug/L	304	Standard
	Cu	65	186.3	1.1	**0.0113**	0.000	4.4	ug/L	181	Standard
	Zn	66	283.0	3.7	**0.0359**	0.009	24.2	ug/L	215	Standard
>	**Ge**	72	556594.5	0.6				ug/L	520809	Standard
	As	75	-80.7	20.9	**-0.0160**	0.013	82.1	ug/L	-52	Standard
	Se	82	15.4	35.3	**-0.0124**	0.040	323.4	ug/L	17	Standard
	Se-1	77	60.3	15.0	**-0.0241**	0.101	419.2	ug/L	56	Standard
>	**Ga**	71	31.7	63.8				mg/L	25	Standard
	Rb	85	60.0					ug/L	28	Standard
	Y	89	477190.1	1.0				ug/L	447395	Standard
>	**Rh**	103	8.3	124.9				ug/L	15	Standard
	Mo	98	226.0	18.3	**0.0476**	0.013	27.7	ug/L	113	Standard
	Ag	107	150.7	15.9	**0.0072**	0.003	44.5	ug/L	108	Standard
	Cd	111	16.6	57.3	**0.0046**	0.004	86.9	mg/L	3	Standard
	Cd	114	59.8	49.5	**0.0101**	0.005	49.3	ug/L	20	Standard
>	**In**	115	653461.3	0.4				ug/L	625728	Standard
	Sn	118	1496.7	19.9	**0.1384**	0.044	31.8	ug/L	568	Standard
	Sb	123	746.4	28.2	**0.1046**	0.039	37.1	ug/L	612	Standard
	Ba	135	171.7	17.2	**0.0577**	0.013	22.8	ug/L	21	Standard
	Ce	140	668.3	13.8				ug/L	245	Standard
>	**Tb**	159	971042.5	0.5				ug/L	950397	Standard
	Ho	165	16.7	62.4				ug/L	7	Standard
	Tl	203	88.3	25.2	**0.0090**	0.002	27.2	ug/L	15	Standard
	Tl	205	80.0	16.5	**0.0002**	0.002	912.8	ug/L	13	Standard
	Pb	206	378.0	7.1	**0.0223**	0.005	20.2	ug/L	264	Standard
	Pb	207	334.0	19.5	**0.0182**	0.012	68.6	ug/L	222	Standard
	Pb	208	1457.7	7.9	**0.0204**	0.005	25.7	ug/L	959	Standard
	U	238	80.3	16.8	**0.0096**	0.002	17.0	ug/L	9	Standard
>	**Bi**	209	558602.1	0.7				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	60.0	25.0	**0.0053**	0.017	313.2	mg/L	55	Standard
K	39	28.3	44.4	**-0.0302**	0.044	144.5	mg/L	28	Standard
Ca	43	16.7	75.5	**-1.0452**	1.061	101.5	mg/L	27	Standard
Fe	54	162.7	23.0	**0.0200**	0.026	130.3	mg/L	147	Standard
Fe	57	228.3	8.3	**-0.1492**	0.054	36.5	mg/L	268	Standard
> **Sc-1**	45	44115.8	1.5				mg/L	41174	Standard
Cl	35	79992.6	1.1				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	2276.8	13.7				ug/L	1950	Standard
P	31	23509.9	2.2				ug/L	21156	Standard
S	34	4122.2	2.6				ug/L	3419	Standard
Sr	88	61.7	24.8				ug/L	72	Standard
C	12	93.3	16.4				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	60.0	16.7				mg/L	17	Standard
Dy	164	41.6	40.0				mg/L	16	Standard
Ho-1	165	16.7	62.4				mg/L	7	Standard
Er	166	36.7	83.3				mg/L	7	Standard
I	127	5142.5	3.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.871	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.432
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.046
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606144503
Sample Date/Time: Friday, July 01, 2016 17:57:14
Number of Replicates: 3
Autosampler Position: 242
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81064.6	1.5				ug/L	76456	Standard
	Be	9	923.4	4.6	**0.7579**	0.026	3.5	ug/L	20	Standard
	Al	27	9265006.3	1.5	**51.0345**	0.228	0.4	ug/L	1307	Standard
	Sc	45	49278.4	2.1				ug/L	41174	Standard
	Ti	47	6532.7	0.9	**18.1480**	0.376	2.1	ug/L	27	Standard
	V	51	196838.4	1.2	**21.5756**	0.486	2.3	ug/L	1434	Standard
	Cr	52	144221.5	0.4	**15.2461**	0.132	0.9	ug/L	7733	Standard
	Cr	53	17702.0	4.1	**15.5134**	0.839	5.4	ug/L	442	Standard
	Mn	55	4322666.6	0.8	**519.0669**	3.003	0.6	ug/L	723	Standard
	Co	59	73004.8	0.8	**8.6351**	0.046	0.5	ug/L	217	Standard
	Ni	60	37595.6	1.2	**16.3200**	0.066	0.4	ug/L	304	Standard
	Cu	65	29226.2	0.6	**12.9475**	0.087	0.7	ug/L	181	Standard
	Zn	66	73620.1	0.4	**54.4550**	0.675	1.2	ug/L	215	Standard
>	Ge	72	572863.4	1.2				ug/L	520809	Standard
	As	75	5889.9	1.0	**4.3827**	0.015	0.3	ug/L	-52	Standard
	Se	82	131.9	5.2	**0.8223**	0.038	4.7	ug/L	17	Standard
	Se-1	77	184.3	3.7	**1.2757**	0.064	5.0	ug/L	56	Standard
>	Ga	71	19340.7	1.8				mg/L	25	Standard
	Rb	85	221404.3	0.5				ug/L	28	Standard
	Y	89	706877.6	0.9				ug/L	447395	Standard
>	Rh	103	30.0	72.6				ug/L	15	Standard
	Mo	98	2018.2	3.9	**0.6082**	0.025	4.1	ug/L	113	Standard
	Ag	107	770.7	2.0	**0.0888**	0.002	2.2	ug/L	108	Standard
	Cd	111	2871.4	1.3	**1.1792**	0.015	1.3	mg/L	3	Standard
	Cd	114	6981.1	2.4	**1.1603**	0.029	2.5	ug/L	20	Standard
>	In	115	660500.6	0.1				ug/L	625728	Standard
	Sn	118	1633.4	19.7	**0.1562**	0.047	30.4	ug/L	568	Standard
	Sb	123	766.2	17.6	**0.1067**	0.025	23.2	ug/L	612	Standard
	Ba	135	509530.1	0.7	**221.8605**	1.691	0.8	ug/L	21	Standard
	Ce	140	1234713.5	0.5				ug/L	245	Standard
>	Tb	159	1007837.3	0.4				ug/L	950397	Standard
	Ho	165	17965.6	2.4				ug/L	7	Standard
	Tl	203	1067.0	3.3	**0.1181**	0.003	2.2	ug/L	15	Standard
	Tl	205	1001.7	2.4	**0.1159**	0.004	3.7	ug/L	13	Standard
	Pb	206	195840.9	0.6	**34.5471**	0.280	0.8	ug/L	264	Standard
	Pb	207	161774.1	0.6	**31.4180**	0.202	0.6	ug/L	222	Standard
	Pb	208	705256.5	0.4	**33.5368**	0.236	0.7	ug/L	959	Standard
	U	238	5486.7	0.6	**0.6803**	0.004	0.5	ug/L	9	Standard
>	Bi	209	552878.3	1.1				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	775.0	0.6	**0.6965**	0.018	2.6	mg/L	55	Standard
K	39	456.7	20.3	**1.3315**	0.288	21.7	mg/L	28	Standard
Ca	43	66.7	11.5	**2.6050**	0.520	20.0	mg/L	27	Standard
Fe	54	19066.0	1.2	**12.3984**	0.367	3.0	mg/L	147	Standard
Fe	57	5245.9	1.7	**12.6645**	0.072	0.6	mg/L	268	Standard
> **Sc-1**	45	49278.4	2.1				mg/L	41174	Standard
Cl	35	75533.8	1.8				ug/L	69550	Standard
Kr	83	1.7	124.9				ug/L	1	Standard
Br	81	12581.9	2.8				ug/L	1950	Standard
P	31	23234.5	1.4				ug/L	21156	Standard
S	34	3415.4	8.9				ug/L	3419	Standard
Sr	88	155.0	8.5				ug/L	72	Standard
C	12	606.7	24.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	183.3	45.4				mg/L	17	Standard
Dy	164	30531.0	0.8				mg/L	16	Standard
Ho-1	165	17965.6	2.4				mg/L	7	Standard
Er	166	16101.9	2.4				mg/L	7	Standard
I	127	47399.3	7.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.028	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.995	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	105.557	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.010	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144507
Sample Date/Time: Friday, July 01, 2016 18:00:25
Number of Replicates: 3
Autosampler Position: 243
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81719.8	0.5				ug/L	76456	Standard
	Be	9	1150.0	3.4	**0.9414**	0.038	4.0	ug/L	20	Standard
	Al	27	19122972.5	1.5	**104.5075**	1.996	1.9	ug/L	1307	Standard
	Sc	45	50161.3	3.1				ug/L	41174	Standard
	Ti	47	4290.6	1.9	**12.0513**	0.158	1.3	ug/L	27	Standard
	V	51	176002.8	1.5	**19.5347**	0.381	2.0	ug/L	1434	Standard
	Cr	52	202519.5	0.7	**22.1111**	0.164	0.7	ug/L	7733	Standard
	Cr	53	24688.4	0.5	**22.0962**	0.312	1.4	ug/L	442	Standard
	Mn	55	3882576.5	0.7	**472.5626**	1.691	0.4	ug/L	723	Standard
	Co	59	74015.0	0.7	**8.8755**	0.153	1.7	ug/L	217	Standard
	Ni	60	49898.7	0.5	**22.0097**	0.116	0.5	ug/L	304	Standard
	Cu	65	49732.2	0.6	**22.3872**	0.351	1.6	ug/L	181	Standard
	Zn	66	114291.8	0.2	**85.7937**	1.009	1.2	ug/L	215	Standard
>	Ge	72	565157.3	1.0				ug/L	520809	Standard
	As	75	14435.4	1.1	**10.8205**	0.032	0.3	ug/L	-52	Standard
	Se	82	92.4	6.7	**0.5475**	0.040	7.3	ug/L	17	Standard
	Se-1	77	153.7	16.6	**0.9738**	0.293	30.1	ug/L	56	Standard
>	Ga	71	20582.3	3.6				mg/L	25	Standard
	Rb	85	203311.7	0.8				ug/L	28	Standard
	Y	89	751032.3	1.4				ug/L	447395	Standard
>	Rh	103	46.7	44.6				ug/L	15	Standard
	Mo	98	590.9	4.0	**0.1610**	0.008	5.2	ug/L	113	Standard
	Ag	107	615.7	5.5	**0.0683**	0.004	5.9	ug/L	108	Standard
	Cd	111	2075.5	3.1	**0.8510**	0.024	2.8	mg/L	3	Standard
	Cd	114	5077.8	10.1	**0.8428**	0.077	9.1	ug/L	20	Standard
>	In	115	661094.1	1.5				ug/L	625728	Standard
	Sn	118	1358.4	19.5	**0.1160**	0.042	36.3	ug/L	568	Standard
	Sb	123	1552.9	6.2	**0.2509**	0.021	8.4	ug/L	612	Standard
	Ba	135	403285.7	0.6	**175.4541**	1.609	0.9	ug/L	21	Standard
	Ce	140	1308604.3	1.2				ug/L	245	Standard
>	Tb	159	1004791.8	1.1				ug/L	950397	Standard
	Ho	165	21420.1	0.2				ug/L	7	Standard
	Tl	203	1393.7	1.3	**0.1546**	0.002	1.2	ug/L	15	Standard
	Tl	205	1293.4	6.5	**0.1525**	0.010	6.7	ug/L	13	Standard
	Pb	206	576456.5	0.6	**101.8203**	0.799	0.8	ug/L	264	Standard
	Pb	207	487118.2	0.8	**94.7368**	0.502	0.5	ug/L	222	Standard
	Pb	208	2107804.8	0.1	**100.3728**	0.432	0.4	ug/L	959	Standard
	U	238	4448.0	2.0	**0.5517**	0.009	1.6	ug/L	9	Standard
>	Bi	209	552606.6	0.3				ug/L	552821	Standard

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Na	23	1.7	173.2	**3.9605**	6.851	173.0	mg/L	2	Standard
Mg	24	146.7	22.7	**0.0801**	0.030	37.5	mg/L	55	Standard
K	39	540.0	0.9	**1.5696**	0.061	3.9	mg/L	28	Standard
Ca	43	96.7	3.0	**4.7655**	0.419	8.8	mg/L	27	Standard
Fe	54	17314.9	1.0	**11.0515**	0.258	2.3	mg/L	147	Standard
Fe	57	4700.7	3.1	**11.0529**	0.214	1.9	mg/L	268	Standard
> **Sc-1**	45	50161.3	3.1				mg/L	41174	Standard
Cl	35	76662.1	1.5				ug/L	69550	Standard
Kr	83	3.0	57.7				ug/L	1	Standard
Br	81	3767.1	7.9				ug/L	1950	Standard
P	31	23611.7	2.9				ug/L	21156	Standard
S	34	3682.1	3.0				ug/L	3419	Standard
Sr	88	63.3	31.9				ug/L	72	Standard
C	12	343.3	8.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	210.0	26.5				mg/L	17	Standard
Dy	164	35453.0	4.2				mg/L	16	Standard
Ho-1	165	21420.1	0.2				mg/L	7	Standard
Er	166	19218.8	0.6				mg/L	7	Standard
I	127	28176.2	1.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.885	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.515	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	105.652	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.961	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Pb 206 Upper, S, EEE	Pb	206
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1606144508
Sample Date/Time: Friday, July 01, 2016 18:03:37
Number of Replicates: 3
Autosampler Position: 244
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80067.7	0.8				ug/L	76456	Standard
	Be	9	1216.7	3.5	**1.0182**	0.042	4.1	ug/L	20	Standard
	Al	27	26828418.5	2.0	**149.6306**	1.983	1.3	ug/L	1307	Standard
	Sc	45	50947.2	1.6				ug/L	41174	Standard
	Ti	47	5410.0	2.3	**15.2604**	0.406	2.7	ug/L	27	Standard
	V	51	186134.5	1.5	**20.7252**	0.259	1.2	ug/L	1434	Standard
	Cr	52	142957.3	0.4	**15.3665**	0.097	0.6	ug/L	7733	Standard
	Cr	53	17178.1	1.5	**15.2891**	0.249	1.6	ug/L	442	Standard
	Mn	55	4606939.6	1.4	**562.2720**	9.197	1.6	ug/L	723	Standard
	Co	59	80106.5	0.8	**9.6337**	0.111	1.2	ug/L	217	Standard
	Ni	60	49331.5	0.8	**21.8172**	0.266	1.2	ug/L	304	Standard
	Cu	65	27262.5	1.2	**12.2715**	0.190	1.6	ug/L	181	Standard
	Zn	66	50487.3	0.6	**37.8990**	0.363	1.0	ug/L	215	Standard
>	Ge	72	563626.3	0.4				ug/L	520809	Standard
	As	75	5127.9	0.4	**3.8833**	0.025	0.7	ug/L	-52	Standard
	Se	82	63.4	13.7	**0.3372**	0.065	19.3	ug/L	17	Standard
	Se-1	77	127.0	8.8	**0.6885**	0.125	18.2	ug/L	56	Standard
>	Ga	71	20874.4	1.1				mg/L	25	Standard
	Rb	85	200244.6	0.8				ug/L	28	Standard
	Y	89	753887.4	1.4				ug/L	447395	Standard
>	Rh	103	23.3	24.7				ug/L	15	Standard
	Mo	98	546.6	7.3	**0.1509**	0.014	9.6	ug/L	113	Standard
	Ag	107	629.3	8.8	**0.0718**	0.007	9.6	ug/L	108	Standard
	Cd	111	214.4	9.4	**0.0877**	0.009	10.1	mg/L	3	Standard
	Cd	114	474.4	3.2	**0.0805**	0.003	3.5	ug/L	20	Standard
>	In	115	647228.9	1.0				ug/L	625728	Standard
	Sn	118	1141.7	25.6	**0.0873**	0.044	50.2	ug/L	568	Standard
	Sb	123	347.3	21.7	**0.0313**	0.014	45.5	ug/L	612	Standard
	Ba	135	428959.8	0.0	**190.6168**	1.771	0.9	ug/L	21	Standard
	Ce	140	1454827.7	0.7				ug/L	245	Standard
>	Tb	159	993072.0	0.4				ug/L	950397	Standard
	Ho	165	23219.4	1.9				ug/L	7	Standard
	Tl	203	1106.7	1.7	**0.1248**	0.002	1.9	ug/L	15	Standard
	Tl	205	985.0	10.2	**0.1162**	0.014	11.7	ug/L	13	Standard
	Pb	206	63645.1	1.2	**11.4085**	0.083	0.7	ug/L	264	Standard
	Pb	207	52266.7	0.7	**10.3105**	0.095	0.9	ug/L	222	Standard
	Pb	208	232091.9	0.7	**11.2123**	0.155	1.4	ug/L	959	Standard
	U	238	4568.7	1.3	**0.5771**	0.011	1.9	ug/L	9	Standard
>	Bi	209	542669.3	0.8				ug/L	552821	Standard

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Na	23	1.7	173.2	**4.0478**	7.002	173.0	mg/L	2	Standard
Mg	24	115.0	7.5	**0.0484**	0.008	16.3	mg/L	55	Standard
K	39	411.7	8.1	**1.1441**	0.093	8.1	mg/L	28	Standard
Ca	43	256.7	13.7	**16.4263**	2.858	17.4	mg/L	27	Standard
Fe	54	19822.2	2.5	**12.4655**	0.367	2.9	mg/L	147	Standard
Fe	57	5277.6	3.2	**12.3025**	0.438	3.6	mg/L	268	Standard
Sc-1	45	50947.2	1.6				mg/L	41174	Standard
Cl	35	80549.5	0.6				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	2766.9	10.3				ug/L	1950	Standard
P	31	24564.9	2.5				ug/L	21156	Standard
S	34	4093.9	1.0				ug/L	3419	Standard
Sr	88	131.7	11.6				ug/L	72	Standard
C	12	213.3	21.7				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	70.0	37.8				mg/L	17	Standard
Dy	164	39354.5	1.1				mg/L	16	Standard
Ho-1	165	23219.4	1.9				mg/L	7	Standard
Er	166	20997.9	3.9				mg/L	7	Standard
I	127	17520.1	0.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		104.724	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		108.221	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.436	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.164	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144508
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Method 6020 - Summary Report

Sample ID: L1606144509
Sample Date/Time: Friday, July 01, 2016 18:06:48
Number of Replicates: 3
Autosampler Position: 245
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79442.8	2.3				ug/L	76456	Standard
	Be	9	943.4	17.8	**0.7923**	0.154	19.4	ug/L	20	Standard
	Al	27	24668673.1	1.9	**138.6963**	2.466	1.8	ug/L	1307	Standard
	Sc	45	50062.6	1.9				ug/L	41174	Standard
	Ti	47	4807.4	4.3	**13.5672**	0.456	3.4	ug/L	27	Standard
	V	51	136414.7	0.2	**15.1594**	0.132	0.9	ug/L	1434	Standard
	Cr	52	121344.3	1.1	**12.9168**	0.132	1.0	ug/L	7733	Standard
	Cr	53	14567.0	3.2	**12.9202**	0.381	2.9	ug/L	442	Standard
	Mn	55	3584400.6	1.7	**438.0976**	8.663	2.0	ug/L	723	Standard
	Co	59	62786.5	0.8	**7.5554**	0.042	0.6	ug/L	217	Standard
	Ni	60	42141.2	1.3	**18.6419**	0.218	1.2	ug/L	304	Standard
	Cu	65	21722.6	0.6	**9.7770**	0.072	0.7	ug/L	181	Standard
	Zn	66	42178.0	0.8	**31.6788**	0.359	1.1	ug/L	215	Standard
>	Ge	72	562814.6	1.1				ug/L	520809	Standard
	As	75	3148.0	1.0	**2.4049**	0.028	1.2	ug/L	-52	Standard
	Se	82	55.8	21.4	**0.2824**	0.087	30.8	ug/L	17	Standard
	Se-1	77	111.3	15.0	**0.5195**	0.168	32.3	ug/L	56	Standard
>	Ga	71	17067.9	0.7				mg/L	25	Standard
	Rb	85	155458.5	0.3				ug/L	28	Standard
	Y	89	728811.9	0.2				ug/L	447395	Standard
>	Rh	103	40.0	21.7				ug/L	15	Standard
	Mo	98	532.8	6.7	**0.1442**	0.009	6.6	ug/L	113	Standard
	Ag	107	508.0	7.7	**0.0547**	0.005	9.0	ug/L	108	Standard
	Cd	111	168.7	12.8	**0.0676**	0.009	13.2	mg/L	3	Standard
	Cd	114	363.5	9.1	**0.0610**	0.006	10.1	ug/L	20	Standard
>	In	115	655174.8	1.1				ug/L	625728	Standard
	Sn	118	1111.7	18.9	**0.0808**	0.031	38.4	ug/L	568	Standard
	Sb	123	305.1	22.1	**0.0226**	0.012	54.1	ug/L	612	Standard
	Ba	135	334401.7	0.7	**146.7912**	1.362	0.9	ug/L	21	Standard
	Ce	140	1157016.3	1.7				ug/L	245	Standard
>	Tb	159	995793.1	2.4				ug/L	950397	Standard
	Ho	165	19706.1	2.6				ug/L	7	Standard
	Tl	203	788.7	4.8	**0.0883**	0.005	5.9	ug/L	15	Standard
	Tl	205	705.0	5.8	**0.0799**	0.004	5.3	ug/L	13	Standard
	Pb	206	52940.3	0.9	**9.4349**	0.070	0.7	ug/L	264	Standard
	Pb	207	43455.2	0.3	**8.5217**	0.073	0.9	ug/L	222	Standard
	Pb	208	192505.6	0.3	**9.2450**	0.110	1.2	ug/L	959	Standard
	U	238	3706.1	1.6	**0.4657**	0.006	1.4	ug/L	9	Standard
>	Bi	209	545400.8	1.1				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	125.0	18.3	**0.0601**	0.024	39.7	mg/L	55	Standard
K	39	280.0	4.7	**0.7524**	0.056	7.4	mg/L	28	Standard
Ca	43	271.7	13.1	**17.8657**	2.769	15.5	mg/L	27	Standard
Fe	54	13853.2	3.1	**8.8410**	0.431	4.9	mg/L	147	Standard
Fe	57	3842.2	1.2	**8.9061**	0.079	0.9	mg/L	268	Standard
> **Sc-1**	45	50062.6	1.9				mg/L	41174	Standard
Cl	35	80728.5	0.4				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	3187.0	4.9				ug/L	1950	Standard
P	31	24401.3	1.1				ug/L	21156	Standard
S	34	4165.6	2.7				ug/L	3419	Standard
Sr	88	115.0	7.5				ug/L	72	Standard
C	12	200.0	13.2				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	93.3	32.7				mg/L	17	Standard
Dy	164	33342.9	1.0				mg/L	16	Standard
Ho-1	165	19706.1	2.6				mg/L	7	Standard
Er	166	17443.4	2.1				mg/L	7	Standard
I	127	18624.8	0.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.907	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.065	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	104.706	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.658	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144510
Sample Date/Time: Friday, July 01, 2016 18:10:00
Number of Replicates: 3
Autosampler Position: 246
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79271.9	1.9				ug/L	76456	Standard
	Be	9	960.0	8.0	**0.8081**	0.079	9.8	ug/L	20	Standard
	Al	27	12161180.8	1.6	**68.5142**	1.144	1.7	ug/L	1307	Standard
	Sc	45	48484.1	1.3				ug/L	41174	Standard
	Ti	47	2552.9	3.2	**7.1191**	0.297	4.2	ug/L	27	Standard
	V	51	134266.7	0.5	**14.8155**	0.217	1.5	ug/L	1434	Standard
	Cr	52	132714.7	0.2	**14.1160**	0.211	1.5	ug/L	7733	Standard
	Cr	53	15915.0	2.5	**14.0541**	0.174	1.2	ug/L	442	Standard
	Mn	55	2692161.6	0.9	**326.7761**	3.297	1.0	ug/L	723	Standard
	Co	59	60946.7	0.7	**7.2843**	0.165	2.3	ug/L	217	Standard
	Ni	60	37036.2	0.7	**16.2553**	0.354	2.2	ug/L	304	Standard
	Cu	65	25813.0	0.6	**11.5528**	0.129	1.1	ug/L	181	Standard
	Zn	66	59196.1	0.9	**44.2314**	0.719	1.6	ug/L	215	Standard
>	Ge	72	566689.9	1.6				ug/L	520809	Standard
	As	75	6333.8	0.9	**4.7613**	0.105	2.2	ug/L	-52	Standard
	Se	82	64.1	11.3	**0.3404**	0.060	17.7	ug/L	17	Standard
	Se-1	77	129.7	6.6	**0.7103**	0.107	15.1	ug/L	56	Standard
>	Ga	71	16113.6	0.3				mg/L	25	Standard
	Rb	85	159279.6	1.1				ug/L	28	Standard
	Y	89	713422.0	1.5				ug/L	447395	Standard
>	Rh	103	25.0	60.0				ug/L	15	Standard
	Mo	98	950.0	4.7	**0.2755**	0.014	5.2	ug/L	113	Standard
	Ag	107	562.7	10.8	**0.0618**	0.008	12.5	ug/L	108	Standard
	Cd	111	481.0	9.3	**0.1967**	0.017	8.8	mg/L	3	Standard
	Cd	114	1249.3	10.0	**0.2089**	0.020	9.7	ug/L	20	Standard
>	In	115	656399.0	0.7				ug/L	625728	Standard
	Sn	118	1210.0	13.0	**0.0951**	0.024	25.2	ug/L	568	Standard
	Sb	123	969.1	5.8	**0.1450**	0.010	7.1	ug/L	612	Standard
	Ba	135	317720.7	1.4	**139.1962**	1.098	0.8	ug/L	21	Standard
	Ce	140	1155794.9	1.0				ug/L	245	Standard
>	Tb	159	984841.2	0.9				ug/L	950397	Standard
	Ho	165	19197.2	4.8				ug/L	7	Standard
	Tl	203	845.0	15.2	**0.0944**	0.014	15.2	ug/L	15	Standard
	Tl	205	828.4	29.5	**0.0953**	0.031	32.1	ug/L	13	Standard
	Pb	206	243494.3	0.6	**43.4500**	0.261	0.6	ug/L	264	Standard
	Pb	207	203498.1	0.4	**39.9806**	0.200	0.5	ug/L	222	Standard
	Pb	208	891072.1	0.5	**42.8651**	0.261	0.6	ug/L	959	Standard
	U	238	4045.9	6.6	**0.5073**	0.034	6.6	ug/L	9	Standard
>	Bi	209	546682.6	0.7				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	171.7	38.0	**0.1098**	0.063	57.3	mg/L	55	Standard
K	39	336.7	16.4	**0.9661**	0.187	19.4	mg/L	28	Standard
Ca	43	73.3	23.9	**3.2010**	1.330	41.6	mg/L	27	Standard
Fe	54	13407.2	1.8	**8.8316**	0.255	2.9	mg/L	147	Standard
Fe	57	3832.2	1.2	**9.1972**	0.235	2.6	mg/L	268	Standard
Sc-1	45	48484.1	1.3				mg/L	41174	Standard
Cl	35	75838.8	2.7				ug/L	69550	Standard
Kr	83	1.3	86.6				ug/L	1	Standard
Br	81	3700.5	4.5				ug/L	1950	Standard
P	31	23035.9	5.5				ug/L	21156	Standard
S	34	3642.1	4.8				ug/L	3419	Standard
Sr	88	118.3	23.3				ug/L	72	Standard
C	12	246.7	10.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	110.0	39.6				mg/L	17	Standard
Dy	164	31661.9	4.0				mg/L	16	Standard
Ho-1	165	19197.2	4.8				mg/L	7	Standard
Er	166	17109.7	2.4				mg/L	7	Standard
I	127	24686.8	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		103.683	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		108.809	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	104.902	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.890	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144511
Sample Date/Time: Friday, July 01, 2016 18:13:11
Number of Replicates: 3
Autosampler Position: 247
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81056.3	1.5				ug/L	76456	Standard
	Be	9	1300.1	7.1	**1.0750**	0.063	5.9	ug/L	20	Standard
	Al	27	14087735.3	1.0	**77.6176**	0.555	0.7	ug/L	1307	Standard
	Sc	45	51079.3	2.3				ug/L	41174	Standard
	Ti	47	4050.2	1.8	**11.4166**	0.113	1.0	ug/L	27	Standard
	V	51	160903.7	0.9	**17.9135**	0.308	1.7	ug/L	1434	Standard
	Cr	52	157358.9	0.5	**17.0353**	0.148	0.9	ug/L	7733	Standard
	Cr	53	18739.9	2.5	**16.7418**	0.591	3.5	ug/L	442	Standard
	Mn	55	3983343.0	1.3	**486.7711**	7.837	1.6	ug/L	723	Standard
	Co	59	83282.3	0.9	**10.0291**	0.055	0.6	ug/L	217	Standard
	Ni	60	47596.6	1.1	**21.0730**	0.432	2.1	ug/L	304	Standard
	Cu	65	29877.1	1.6	**13.4740**	0.341	2.5	ug/L	181	Standard
	Zn	66	86877.7	1.2	**65.4276**	0.744	1.1	ug/L	215	Standard
>	Ge	72	562928.2	1.0				ug/L	520809	Standard
	As	75	5744.5	1.7	**4.3502**	0.061	1.4	ug/L	-52	Standard
	Se	82	56.4	20.2	**0.2867**	0.086	29.8	ug/L	17	Standard
	Se-1	77	130.3	3.1	**0.7263**	0.056	7.7	ug/L	56	Standard
>	Ga	71	21874.1	2.3				mg/L	25	Standard
	Rb	85	221462.0	1.4				ug/L	28	Standard
	Y	89	734796.1	0.6				ug/L	447395	Standard
>	Rh	103	31.7	24.1				ug/L	15	Standard
	Mo	98	474.5	3.0	**0.1270**	0.006	4.5	ug/L	113	Standard
	Ag	107	695.0	1.5	**0.0803**	0.002	2.7	ug/L	108	Standard
	Cd	111	1334.9	2.9	**0.5556**	0.015	2.7	mg/L	3	Standard
	Cd	114	3103.4	3.0	**0.5239**	0.011	2.1	ug/L	20	Standard
>	In	115	650267.1	1.0				ug/L	625728	Standard
	Sn	118	1253.4	12.9	**0.1031**	0.024	22.9	ug/L	568	Standard
	Sb	123	352.0	10.4	**0.0318**	0.006	20.1	ug/L	612	Standard
	Ba	135	635709.1	1.1	**281.1732**	3.369	1.2	ug/L	21	Standard
	Ce	140	1385894.9	1.0				ug/L	245	Standard
>	Tb	159	992786.2	1.1				ug/L	950397	Standard
	Ho	165	21371.7	1.6				ug/L	7	Standard
	Tl	203	1170.7	2.5	**0.1317**	0.002	1.8	ug/L	15	Standard
	Tl	205	1111.7	6.4	**0.1319**	0.009	7.1	ug/L	13	Standard
	Pb	206	547145.1	0.5	**98.1007**	0.480	0.5	ug/L	264	Standard
	Pb	207	460226.0	0.7	**90.8567**	0.149	0.2	ug/L	222	Standard
	Pb	208	1990544.8	1.0	**96.2154**	0.264	0.3	ug/L	959	Standard
	U	238	4825.8	2.0	**0.6077**	0.015	2.5	ug/L	9	Standard
>	Bi	209	544394.6	0.9				ug/L	552821	Standard

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Na	23	5.0	100.0	**11.9370**	12.019	100.7	mg/L	2	Standard
Mg	24	136.7	11.2	**0.0686**	0.016	23.2	mg/L	55	Standard
K	39	338.3	18.4	**0.9175**	0.216	23.5	mg/L	28	Standard
Ca	43	100.0	10.0	**4.8632**	0.562	11.6	mg/L	27	Standard
Fe	54	19768.1	3.7	**12.3944**	0.190	1.5	mg/L	147	Standard
Fe	57	5529.3	1.5	**12.8981**	0.490	3.8	mg/L	268	Standard
> **Sc-1**	45	51079.3	2.3				mg/L	41174	Standard
Cl	35	74695.0	1.8				ug/L	69550	Standard
Kr	83	2.3	49.5				ug/L	1	Standard
Br	81	3833.8	5.0				ug/L	1950	Standard
P	31	23369.7	3.5				ug/L	21156	Standard
S	34	3573.8	8.7				ug/L	3419	Standard
Sr	88	135.0	7.4				ug/L	72	Standard
C	12	190.0	24.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	156.7	38.5				mg/L	17	Standard
Dy	164	36620.1	2.1				mg/L	16	Standard
Ho-1	165	21371.7	1.6				mg/L	7	Standard
Er	166	19966.5	1.7				mg/L	7	Standard
I	127	25928.9	6.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.017	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.087	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.922
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.476
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606144512
Sample Date/Time: Friday, July 01, 2016 18:16:23
Number of Replicates: 3
Autosampler Position: 248
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80562.0	2.1				ug/L	76456	Standard
	Be	9	1056.7	6.8	**0.8755**	0.044	5.0	ug/L	20	Standard
	Al	27	20325479.9	1.3	**112.6812**	0.924	0.8	ug/L	1307	Standard
	Sc	45	51024.2	3.8				ug/L	41174	Standard
	Ti	47	4124.6	2.4	**11.6241**	0.214	1.8	ug/L	27	Standard
	V	51	179971.8	1.0	**20.0519**	0.111	0.6	ug/L	1434	Standard
	Cr	52	122094.3	0.7	**12.9955**	0.054	0.4	ug/L	7733	Standard
	Cr	53	14728.8	1.7	**13.0624**	0.219	1.7	ug/L	442	Standard
	Mn	55	2566086.0	1.4	**313.4230**	2.590	0.8	ug/L	723	Standard
	Co	59	71959.5	1.0	**8.6588**	0.038	0.4	ug/L	217	Standard
	Ni	60	44539.0	0.4	**19.7019**	0.201	1.0	ug/L	304	Standard
	Cu	65	25837.7	1.3	**11.6371**	0.150	1.3	ug/L	181	Standard
	Zn	66	46860.0	0.7	**35.1959**	0.095	0.3	ug/L	215	Standard
>	Ge	72	563090.4	0.6				ug/L	520809	Standard
	As	75	4748.6	0.5	**3.6029**	0.030	0.8	ug/L	-52	Standard
	Se	82	50.2	5.5	**0.2414**	0.021	8.8	ug/L	17	Standard
	Se-1	77	123.7	5.2	**0.6532**	0.062	9.5	ug/L	56	Standard
>	Ga	71	18362.8	1.6				mg/L	25	Standard
	Rb	85	168707.6	2.0				ug/L	28	Standard
	Y	89	736703.2	2.4				ug/L	447395	Standard
>	Rh	103	25.0	52.9				ug/L	15	Standard
	Mo	98	488.2	3.8	**0.1323**	0.005	4.0	ug/L	113	Standard
	Ag	107	511.0	3.1	**0.0560**	0.002	3.4	ug/L	108	Standard
	Cd	111	253.2	7.3	**0.1041**	0.008	7.3	mg/L	3	Standard
	Cd	114	604.4	7.2	**0.1026**	0.007	6.9	ug/L	20	Standard
>	In	115	646543.9	0.3				ug/L	625728	Standard
	Sn	118	893.4	21.7	**0.0501**	0.029	58.0	ug/L	568	Standard
	Sb	123	312.5	6.0	**0.0248**	0.004	14.8	ug/L	612	Standard
	Ba	135	248072.4	0.5	**110.3400**	0.769	0.7	ug/L	21	Standard
	Ce	140	1301357.0	1.2				ug/L	245	Standard
>	Tb	159	989062.4	0.6				ug/L	950397	Standard
	Ho	165	20744.2	1.0				ug/L	7	Standard
	Tl	203	836.4	5.3	**0.0943**	0.005	5.4	ug/L	15	Standard
	Tl	205	765.0	4.3	**0.0882**	0.004	4.8	ug/L	13	Standard
	Pb	206	112087.8	1.3	**20.1669**	0.259	1.3	ug/L	264	Standard
	Pb	207	94165.7	0.9	**18.6506**	0.174	0.9	ug/L	222	Standard
	Pb	208	412221.0	0.6	**19.9915**	0.120	0.6	ug/L	959	Standard
	U	238	4509.7	0.8	**0.5708**	0.005	0.8	ug/L	9	Standard
>	Bi	209	541556.4	0.0				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	148.3	8.5	**0.0799**	0.015	18.6	mg/L	55	Standard
K	39	408.3	5.1	**1.1318**	0.019	1.7	mg/L	28	Standard
Ca	43	105.0	12.6	**5.2550**	1.011	19.2	mg/L	27	Standard
Fe	54	15896.3	3.5	**9.9615**	0.123	1.2	mg/L	147	Standard
Fe	57	4270.6	7.1	**9.8107**	1.132	11.5	mg/L	268	Standard
> **Sc-1**	45	51024.2	3.8				mg/L	41174	Standard
Cl	35	77017.9	0.8				ug/L	69550	Standard
Kr	83	1.7	124.9				ug/L	1	Standard
Br	81	2873.6	4.9				ug/L	1950	Standard
P	31	23741.9	3.7				ug/L	21156	Standard
S	34	3792.1	2.1				ug/L	3419	Standard
Sr	88	118.3	26.8				ug/L	72	Standard
C	12	150.0	24.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	66.7	31.2				mg/L	17	Standard
Dy	164	35215.7	0.8				mg/L	16	Standard
Ho-1	165	20744.2	1.0				mg/L	7	Standard
Er	166	18591.4	0.2				mg/L	7	Standard
I	127	15219.3	3.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.371	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.118	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.327	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.962	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606145101
Sample Date/Time: Friday, July 01, 2016 18:19:34
Number of Replicates: 3
Autosampler Position: 249
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70388.2	2.1				ug/L	76456	Standard
	Be	9	61.7	23.4	**0.0400**	0.014	34.9	ug/L	20	Standard
	Al	27	209415.6	0.4	**1.3190**	0.033	2.5	ug/L	1307	Standard
	Sc	45	39780.5	3.1				ug/L	41174	Standard
	Ti	47	1335.7	4.5	**4.0093**	0.186	4.6	ug/L	27	Standard
	V	51	9011.5	1.4	**0.8961**	0.016	1.8	ug/L	1434	Standard
	Cr	52	11942.0	0.5	**0.5043**	0.017	3.5	ug/L	7733	Standard
	Cr	53	965.0	9.9	**0.5365**	0.094	17.4	ug/L	442	Standard
	Mn	55	122738.2	0.8	**16.0893**	0.228	1.4	ug/L	723	Standard
	Co	59	1833.1	0.9	**0.2095**	0.004	1.9	ug/L	217	Standard
	Ni	60	1543.4	2.6	**0.5897**	0.025	4.3	ug/L	304	Standard
	Cu	65	2084.5	3.4	**0.9460**	0.041	4.4	ug/L	181	Standard
	Zn	66	9962.3	1.5	**7.9386**	0.062	0.8	ug/L	215	Standard
>	**Ge**	72	521595.8	0.8				ug/L	520809	Standard
	As	75	1195.1	0.9	**1.0118**	0.011	1.1	ug/L	-52	Standard
	Se	82	24.1	17.0	**0.0642**	0.032	49.3	ug/L	17	Standard
	Se-1	77	62.0	12.6	**0.0393**	0.087	222.5	ug/L	56	Standard
>	**Ga**	71	756.7	9.6				mg/L	25	Standard
	Rb	85	4860.8	2.7				ug/L	28	Standard
	Y	89	439023.6	1.3				ug/L	447395	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	289.5	25.4	**0.0755**	0.025	33.7	ug/L	113	Standard
	Ag	107	108.0	4.2	**0.0028**	0.001	24.8	ug/L	108	Standard
	Cd	111	86.5	15.6	**0.0367**	0.006	16.4	mg/L	3	Standard
	Cd	114	262.8	23.2	**0.0479**	0.011	23.5	ug/L	20	Standard
>	**In**	115	602493.1	0.2				ug/L	625728	Standard
	Sn	118	640.0	28.2	**0.0191**	0.029	153.5	ug/L	568	Standard
	Sb	123	159.0	14.4	**-0.0017**	0.005	267.5	ug/L	612	Standard
	Ba	135	10231.8	1.1	**4.8666**	0.057	1.2	ug/L	21	Standard
	Ce	140	59325.9	0.4				ug/L	245	Standard
>	**Tb**	159	901387.3	1.6				ug/L	950397	Standard
	Ho	165	468.3	19.0				ug/L	7	Standard
	Tl	203	67.3	15.2	**0.0072**	0.001	16.6	ug/L	15	Standard
	Tl	205	53.3	56.5	**-0.0027**	0.004	151.9	ug/L	13	Standard
	Pb	206	25545.5	0.9	**4.7304**	0.064	1.3	ug/L	264	Standard
	Pb	207	21325.3	0.3	**4.3424**	0.022	0.5	ug/L	222	Standard
	Pb	208	92265.3	0.3	**4.6006**	0.019	0.4	ug/L	959	Standard
	U	238	418.3	2.9	**0.0547**	0.002	3.4	ug/L	9	Standard
>	**Bi**	209	522518.3	0.5				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	45.0	0.0	**-0.0057**	0.002	29.9	mg/L	55	Standard
K	39	30.0	28.9	**-0.0116**	0.036	313.3	mg/L	28	Standard
Ca	43	28.3	50.9	**0.2419**	1.466	606.3	mg/L	27	Standard
Fe	54	830.6	5.4	**0.5751**	0.021	3.7	mg/L	147	Standard
Fe	57	475.0	3.8	**0.7085**	0.100	14.1	mg/L	268	Standard
Sc-1	45	39780.5	3.1				mg/L	41174	Standard
Cl	35	69290.7	0.6				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	2023.5	4.8				ug/L	1950	Standard
P	31	8517.4	4.8				ug/L	21156	Standard
S	34	3302.0	4.3				ug/L	3419	Standard
Sr	88	81.7	7.1				ug/L	72	Standard
C	12	106.7	19.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	43.3				mg/L	17	Standard
Dy	164	723.4	6.0				mg/L	16	Standard
Ho-1	165	468.3	19.0				mg/L	7	Standard
Er	166	416.7	9.7				mg/L	7	Standard
I	127	33121.2	4.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.064	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.151	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85	
Y	89	
> Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
> In	115	96.287
Sn	118	
Sb	123	
Ba	135	
Ce	140	
> Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
> Bi	209	94.519
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
> Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606145102
Sample Date/Time: Friday, July 01, 2016 18:22:46
Number of Replicates: 3
Autosampler Position: 250
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	69181.0	2.1				ug/L	76456	Standard
	Be	9	58.3	32.5	**0.0378**	0.019	50.7	ug/L	20	Standard
	Al	27	441238.9	1.7	**2.8389**	0.059	2.1	ug/L	1307	Standard
	Sc	45	40783.2	1.8				ug/L	41174	Standard
	Ti	47	2459.5	1.5	**7.4205**	0.178	2.4	ug/L	27	Standard
	V	51	16925.1	1.2	**1.8483**	0.038	2.1	ug/L	1434	Standard
	Cr	52	18122.2	1.5	**1.2572**	0.011	0.8	ug/L	7733	Standard
	Cr	53	1788.4	11.0	**1.3411**	0.181	13.5	ug/L	442	Standard
	Mn	55	409161.8	0.6	**53.6291**	0.654	1.2	ug/L	723	Standard
	Co	59	5121.9	2.3	**0.6351**	0.012	1.9	ug/L	217	Standard
	Ni	60	3165.0	1.3	**1.3633**	0.033	2.4	ug/L	304	Standard
	Cu	65	6880.2	2.6	**3.2772**	0.073	2.2	ug/L	181	Standard
	Zn	66	23732.9	1.1	**19.0745**	0.015	0.1	ug/L	215	Standard
>	Ge	72	523960.3	1.1				ug/L	520809	Standard
	As	75	1016.3	2.7	**0.8637**	0.031	3.5	ug/L	-52	Standard
	Se	82	21.9	9.7	**0.0461**	0.018	39.0	ug/L	17	Standard
	Se-1	77	60.7	6.2	**0.0211**	0.052	244.3	ug/L	56	Standard
>	Ga	71	1423.4	6.3				mg/L	25	Standard
	Rb	85	14632.1	2.4				ug/L	28	Standard
	Y	89	450617.7	0.3				ug/L	447395	Standard
>	Rh	103	8.3	69.3				ug/L	15	Standard
	Mo	98	554.2	6.5	**0.1661**	0.012	7.3	ug/L	113	Standard
	Ag	107	138.0	6.6	**0.0071**	0.001	19.2	ug/L	108	Standard
	Cd	111	114.3	13.8	**0.0491**	0.007	14.2	mg/L	3	Standard
	Cd	114	241.5	19.5	**0.0440**	0.009	19.7	ug/L	20	Standard
>	In	115	603273.3	0.3				ug/L	625728	Standard
	Sn	118	566.7	21.3	**0.0071**	0.019	272.0	ug/L	568	Standard
	Sb	123	143.4	25.7	**-0.0049**	0.007	148.6	ug/L	612	Standard
	Ba	135	23042.5	1.3	**10.9682**	0.165	1.5	ug/L	21	Standard
	Ce	140	67983.9	1.1				ug/L	245	Standard
>	Tb	159	906786.3	1.4				ug/L	950397	Standard
	Ho	165	761.7	6.0				ug/L	7	Standard
	Tl	203	182.7	10.3	**0.0207**	0.002	11.4	ug/L	15	Standard
	Tl	205	140.0	10.7	**0.0088**	0.002	22.7	ug/L	13	Standard
	Pb	206	16671.2	1.2	**3.0640**	0.050	1.6	ug/L	264	Standard
	Pb	207	13875.7	1.0	**2.8020**	0.007	0.2	ug/L	222	Standard
	Pb	208	60739.5	0.7	**3.0044**	0.029	1.0	ug/L	959	Standard
	U	238	1048.7	0.5	**0.1370**	0.000	0.3	ug/L	9	Standard
>	Bi	209	523858.2	0.8				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	55.0		**0.0047**	0.001	24.2	mg/L	55	Standard
K	39	31.7	48.2	**-0.0079**	0.061	772.0	mg/L	28	Standard
Ca	43	26.7	92.5	**0.0138**	2.317	16826.1	mg/L	27	Standard
Fe	54	1768.8	1.5	**1.3016**	0.007	0.5	mg/L	147	Standard
Fe	57	735.0	6.2	**1.4753**	0.115	7.8	mg/L	268	Standard
> **Sc-1**	45	40783.2	1.8				mg/L	41174	Standard
Cl	35	69789.0	1.4				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	1950.1	1.4				ug/L	1950	Standard
P	31	8389.0	2.9				ug/L	21156	Standard
S	34	3198.7	3.3				ug/L	3419	Standard
Sr	88	73.3	17.2				ug/L	72	Standard
C	12	130.0	27.7				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	20.8				mg/L	17	Standard
Dy	164	1484.1	12.1				mg/L	16	Standard
Ho-1	165	761.7	6.0				mg/L	7	Standard
Er	166	820.0	8.5				mg/L	7	Standard
I	127	32808.8	1.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.485	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.605	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.411
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.761
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606145102PS WG575057-01
Sample Date/Time: Friday, July 01, 2016 18:25:57
Number of Replicates: 3
Autosampler Position: 251
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68702.1	2.1				ug/L	76456	Standard
	Be	9	54558.1	0.5	**54.2325**	1.076	2.0	ug/L	20	Standard
	Al	27	435359.5	0.4	**2.8209**	0.068	2.4	ug/L	1307	Standard
	Sc	45	39865.7	0.5				ug/L	41174	Standard
	Ti	47	2435.2	3.0	**7.3862**	0.145	2.0	ug/L	27	Standard
	V	51	420388.1	0.9	**50.9256**	0.275	0.5	ug/L	1434	Standard
	Cr	52	419034.6	1.2	**50.8325**	0.081	0.2	ug/L	7733	Standard
	Cr	53	51908.8	1.8	**50.9245**	0.712	1.4	ug/L	442	Standard
	Mn	55	776755.3	1.1	**102.4737**	0.893	0.9	ug/L	723	Standard
	Co	59	378685.6	0.4	**49.3890**	0.417	0.8	ug/L	217	Standard
	Ni	60	108298.4	0.9	**52.0251**	0.585	1.1	ug/L	304	Standard
	Cu	65	113206.4	0.7	**55.3835**	0.277	0.5	ug/L	181	Standard
	Zn	66	96400.4	0.9	**78.4751**	0.327	0.4	ug/L	215	Standard
>	Ge	72	521011.3	1.1				ug/L	520809	Standard
	As	75	67285.7	0.6	**54.5295**	0.414	0.8	ug/L	-52	Standard
	Se	82	7236.2	0.6	**57.1362**	0.906	1.6	ug/L	17	Standard
	Se-1	77	4996.5	1.7	**57.7421**	0.807	1.4	ug/L	56	Standard
>	Ga	71	1458.4	7.9				mg/L	25	Standard
	Rb	85	14268.4	1.9				ug/L	28	Standard
	Y	89	451572.6	1.0				ug/L	447395	Standard
>	Rh	103	11.7	65.5				ug/L	15	Standard
	Mo	98	552.6	6.3	**0.1658**	0.011	6.4	ug/L	113	Standard
	Ag	107	351874.8	0.5	**50.8757**	0.454	0.9	ug/L	108	Standard
	Cd	111	117424.6	1.2	**52.9718**	0.394	0.7	mg/L	3	Standard
	Cd	114	288020.9	0.5	**52.4815**	0.298	0.6	ug/L	20	Standard
>	In	115	602467.1	0.7				ug/L	625728	Standard
	Sn	118	795.0	18.9	**0.0440**	0.023	53.3	ug/L	568	Standard
	Sb	123	215335.2	6.0	**43.2556**	2.906	6.7	ug/L	612	Standard
	Ba	135	125031.8	0.4	**59.6735**	0.233	0.4	ug/L	21	Standard
	Ce	140	66756.7	0.9				ug/L	245	Standard
>	Tb	159	900882.6	0.1				ug/L	950397	Standard
	Ho	165	808.4	8.4				ug/L	7	Standard
	Tl	203	420669.9	0.3	**49.6255**	0.118	0.2	ug/L	15	Standard
	Tl	205	380791.1	1.2	**50.5823**	0.852	1.7	ug/L	13	Standard
	Pb	206	285006.3	0.5	**53.2753**	0.097	0.2	ug/L	264	Standard
	Pb	207	249618.4	0.3	**51.3775**	0.277	0.5	ug/L	222	Standard
	Pb	208	1065809.7	0.5	**53.7118**	0.481	0.9	ug/L	959	Standard
	U	238	362717.7	0.5	**47.6544**	0.373	0.8	ug/L	9	Standard
>	Bi	209	521960.5	0.5				ug/L	552821	Standard

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Na	23	3.3	173.2	**10.3171**	17.861	173.1	mg/L	2	Standard
Mg	24	45.0	11.1	**-0.0059**	0.006	106.3	mg/L	55	Standard
K	39	41.7	36.7	**0.0338**	0.061	179.3	mg/L	28	Standard
Ca	43	31.7	39.7	**0.5190**	1.184	228.2	mg/L	27	Standard
Fe	54	1881.8	1.4	**1.4253**	0.028	2.0	mg/L	147	Standard
Fe	57	691.7	14.6	**1.3919**	0.331	23.7	mg/L	268	Standard
> **Sc-1**	45	39865.7	0.5				mg/L	41174	Standard
Cl	35	69700.6	0.3				ug/L	69550	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	2040.1	6.7				ug/L	1950	Standard
P	31	8364.0	2.5				ug/L	21156	Standard
S	34	3095.3	6.1				ug/L	3419	Standard
Sr	88	78.3	13.3				ug/L	72	Standard
C	12	143.3	45.4				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	76.7	27.2				mg/L	17	Standard
Dy	164	1201.3	2.6				mg/L	16	Standard
Ho-1	165	808.4	8.4				mg/L	7	Standard
Er	166	740.0	7.2				mg/L	7	Standard
I	127	33642.3	3.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.859	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.039	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.283
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.418
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606145102PS WG575057-01
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 18:29:10
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	58021.1	45.4				ug/L	76456	Standard
	Be	9	6020.3	96.8	**8.3334**	6.673	80.1	ug/L	20	Standard
	Al	27	1011614.4	93.0	**9.3377**	7.369	78.9	ug/L	1307	Standard
	Sc	45	36951.3	31.6				ug/L	41174	Standard
	Ti	47	4070.2	92.8	**14.0397**	11.313	80.6	ug/L	27	Standard
	V	51	57472.3	77.9	**8.2250**	6.608	80.3	ug/L	1434	Standard
	Cr	52	54950.0	85.4	**6.7134**	5.707	85.0	ug/L	7733	Standard
	Cr	53	6442.1	89.3	**6.7802**	5.559	82.0	ug/L	442	Standard
	Mn	55	56604.6	81.4	**8.6926**	6.701	77.1	ug/L	723	Standard
	Co	59	53000.8	82.9	**8.1234**	6.317	77.8	ug/L	217	Standard
	Ni	60	12997.1	88.3	**6.9634**	5.472	78.6	ug/L	304	Standard
	Cu	65	12947.1	88.8	**7.1426**	5.586	78.2	ug/L	181	Standard
	Zn	66	7783.4	89.0	**6.9746**	5.495	78.8	ug/L	215	Standard
>	Ge	72	483616.6	27.5				ug/L	520809	Standard
	As	75	8453.5	94.9	**7.7122**	6.230	80.8	ug/L	-52	Standard
	Se	82	939.4	85.8	**8.3049**	6.310	76.0	ug/L	17	Standard
	Se-1	77	622.0	88.3	**7.4670**	6.184	82.8	ug/L	56	Standard
>	Ga	71	31.7	18.2				mg/L	25	Standard
	Rb	85	225.0	67.8				ug/L	28	Standard
	Y	89	466261.8	17.1				ug/L	447395	Standard
>	Rh	103	20.0	25.0				ug/L	15	Standard
	Mo	98	38601.8	81.6	**16.0710**	14.394	89.6	ug/L	113	Standard
	Ag	107	46584.8	78.1	**8.1335**	7.118	87.5	ug/L	108	Standard
	Cd	111	17137.6	87.9	**9.4386**	9.351	99.1	mg/L	3	Standard
	Cd	114	41205.7	85.8	**9.1450**	8.904	97.4	ug/L	20	Standard
>	In	115	568605.0	21.6				ug/L	625728	Standard
	Sn	118	45202.2	81.7	**8.7560**	8.318	95.0	ug/L	568	Standard
	Sb	123	37304.6	74.8	**8.9935**	7.626	84.8	ug/L	612	Standard
	Ba	135	15451.6	84.3	**8.9549**	8.599	96.0	ug/L	21	Standard
	Ce	140	933.4	35.7				ug/L	245	Standard
>	Tb	159	834241.1	25.5				ug/L	950397	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	59816.1	84.3	**8.9067**	8.400	94.3	ug/L	15	Standard
	Tl	205	54932.9	85.7	**9.2244**	8.777	95.1	ug/L	13	Standard
	Pb	206	36885.4	75.9	**8.5933**	7.372	85.8	ug/L	264	Standard
	Pb	207	34161.2	77.5	**8.7804**	7.649	87.1	ug/L	222	Standard
	Pb	208	153924.2	83.6	**9.7508**	9.146	93.8	ug/L	959	Standard
	U	238	54480.0	85.8	**9.0581**	8.618	95.1	ug/L	9	Standard
>	Bi	209	483651.3	25.0				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	588.3	82.1	**0.7880**	0.634	80.5	mg/L	55	Standard
K	39	178.3	67.8	**0.7306**	0.604	82.7	mg/L	28	Standard
Ca	43	45.0	40.1	**2.8887**	3.750	129.8	mg/L	27	Standard
Fe	54	989.8	78.7	**0.8883**	0.763	85.9	mg/L	147	Standard
Fe	57	551.7	36.3	**1.2806**	1.046	81.6	mg/L	268	Standard
> **Sc-1**	45	36951.3	31.6				mg/L	41174	Standard
Cl	35	32002.2	14.3				ug/L	69550	Standard
Kr	83	3.3	75.5				ug/L	1	Standard
Br	81	793.4	7.2				ug/L	1950	Standard
P	31	12486.0	48.7				ug/L	21156	Standard
S	34	1356.7	20.0				ug/L	3419	Standard
Sr	88	81.7	21.5				ug/L	72	Standard
C	12	106.7	35.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	246.7	83.3				mg/L	17	Standard
Dy	164	12.1	44.0				mg/L	16	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	26.7	86.6				mg/L	7	Standard
I	127	4540.7	35.1				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	16.667		
	Al	27	18.675		
	Sc	45			
	Ti	47	14.040		
	V	51	16.450		
	Cr	52	13.427		
	Cr	53			
	Mn	55	17.385		
	Co	59	16.247		
	Ni	60	13.927		
	Cu	65	14.285		
	Zn	66	13.949		
>	Ge	72		92.859	
	As	75	15.424		
	Se	82	16.610		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	16.071		
Ag	107	16.267		
Cd	111	18.877		
Cd	114			
In	115			90.871
Sn	118	17.512		
Sb	123	17.987		
Ba	135	17.910		
Ce	140			
Tb	159			
Ho	165			
Tl	203	17.813		
Tl	205			
Pb	206			
Pb	207			
Pb	208	19.502		
U	238	18.116		
Bi	209			87.488
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	
QC Std 6	Ti	47	

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QC Std 6	V	51
QC Std 6	Cr	52
QC Std 6	Mn	55
QC Std 6	Co	59
QC Std 6	Ni	60
QC Std 6	Cu	65
QC Std 6	Zn	66
QC Std 6	As	75
QC Std 6	Se	82
QC Std 6	Mo	98
QC Std 6	Ag	107
QC Std 6	Cd	111
QC Std 6	Sb	123
QC Std 6	Ba	135
QC Std 6	Tl	203
QC Std 6	Pb	208
QC Std 6	U	238

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 18:32:22
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73071.2	5.8				ug/L	76456	Standard
	Be	9	8.3	34.6	**-0.0120**	0.003	24.3	ug/L	20	Standard
	Al	27	2066.8	22.2	**0.0025**	0.003	126.6	ug/L	1307	Standard
	Sc	45	38902.0	12.0				ug/L	41174	Standard
	Ti	47	28.7	14.1	**0.0029**	0.006	212.7	ug/L	27	Standard
	V	51	892.2	10.9	**-0.0904**	0.007	8.2	ug/L	1434	Standard
	Cr	52	3594.8	10.0	**-0.5264**	0.046	8.8	ug/L	7733	Standard
	Cr	53	233.3	24.1	**-0.1899**	0.023	11.9	ug/L	442	Standard
	Mn	55	789.0	24.3	**0.0021**	0.023	1087.1	ug/L	723	Standard
	Co	59	303.0	15.4	**0.0101**	0.007	68.9	ug/L	217	Standard
	Ni	60	205.0	9.3	**-0.0541**	0.015	27.0	ug/L	304	Standard
	Cu	65	106.0	5.3	**-0.0215**	0.011	50.6	ug/L	181	Standard
	Zn	66	184.7	6.5	**-0.0287**	0.024	81.9	ug/L	215	Standard
>	Ge	72	527063.8	18.3				ug/L	520809	Standard
	As	75	45.7	91.0	**0.0818**	0.037	44.8	ug/L	-52	Standard
	Se	82	44.8	44.7	**0.2236**	0.160	71.7	ug/L	17	Standard
	Se-1	77	43.0	11.6	**-0.1831**	0.048	26.1	ug/L	56	Standard
>	Ga	71	36.7	7.9				mg/L	25	Standard
	Rb	85	58.3	40.5				ug/L	28	Standard
	Y	89	504597.8	24.2				ug/L	447395	Standard
>	Rh	103	18.3	83.3				ug/L	15	Standard
	Mo	98	262.6	10.7	**0.0552**	0.011	19.4	ug/L	113	Standard
	Ag	107	185.3	19.2	**0.0107**	0.005	48.4	ug/L	108	Standard
	Cd	111	28.5	36.7	**0.0089**	0.004	43.7	mg/L	3	Standard
	Cd	114	81.6	56.2	**0.0129**	0.006	47.4	ug/L	20	Standard
>	In	115	700695.8	22.4				ug/L	625728	Standard
	Sn	118	6341.5	38.7	**0.7820**	0.237	30.3	ug/L	568	Standard
	Sb	123	763.9	43.6	**0.0944**	0.040	42.0	ug/L	612	Standard
	Ba	135	62.7	16.0	**0.0082**	0.003	42.5	ug/L	21	Standard
	Ce	140	145.0	79.5				ug/L	245	Standard
>	Tb	159	1042763.2	15.4				ug/L	950397	Standard
	Ho	165	1.7	173.2				ug/L	7	Standard
	Tl	203	182.0	22.0	**0.0180**	0.002	11.1	ug/L	15	Standard
	Tl	205	148.3	9.7	**0.0076**	0.002	25.0	ug/L	13	Standard
	Pb	206	414.0	16.3	**0.0241**	0.004	18.3	ug/L	264	Standard
	Pb	207	348.0	9.0	**0.0172**	0.006	37.6	ug/L	222	Standard
	Pb	208	1430.4	10.4	**0.0153**	0.006	41.0	ug/L	959	Standard
	U	238	124.7	10.8	**0.0142**	0.002	12.8	ug/L	9	Standard
>	Bi	209	596038.7	14.4				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	26.7	65.8	**-0.0280**	0.021	73.8	mg/L	55	Standard
K	39	30.0	60.1	**-0.0132**	0.067	507.4	mg/L	28	Standard
Ca	43	28.3	10.2	**0.2774**	0.122	44.0	mg/L	27	Standard
Fe	54	104.6	43.7	**-0.0136**	0.033	242.5	mg/L	147	Standard
Fe	57	286.7	7.0	**0.1321**	0.048	36.6	mg/L	268	Standard
Sc-1	45	38902.0	12.0				mg/L	41174	Standard
Cl	35	29524.2	6.8				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	630.0	34.9				ug/L	1950	Standard
P	31	11456.4	38.3				ug/L	21156	Standard
S	34	1375.1	3.3				ug/L	3419	Standard
Sr	88	53.3	37.9				ug/L	72	Standard
C	12	66.7	48.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	77.5				mg/L	17	Standard
Dy	164	13.0	179.6				mg/L	16	Standard
Ho-1	165	1.7	173.2				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	7	Standard
I	127	2638.6	27.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.201	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	111.981	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	107.818	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Se	82	
QC Std 7	Sn	118	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606145102SDL WG575057-02
Sample Date/Time: Friday, July 01, 2016 18:35:35
Number of Replicates: 3
Autosampler Position: 252
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62174.0	2.2				ug/L	76456	Standard
	Be	9	20.0	25.0	**0.0022**	0.006	269.5	ug/L	20	Standard
	Al	27	84546.9	0.4	**0.5973**	0.011	1.9	ug/L	1307	Standard
	Sc	45	38149.7	3.1				ug/L	41174	Standard
	Ti	47	483.3	4.9	**1.4725**	0.081	5.5	ug/L	27	Standard
	V	51	4248.5	1.3	**0.3438**	0.006	1.8	ug/L	1434	Standard
	Cr	52	8109.2	1.0	**0.0820**	0.013	16.2	ug/L	7733	Standard
	Cr	53	496.7	23.7	**0.0992**	0.125	126.0	ug/L	442	Standard
	Mn	55	78567.9	0.9	**10.7900**	0.016	0.2	ug/L	723	Standard
	Co	59	1117.0	0.8	**0.1236**	0.000	0.1	ug/L	217	Standard
	Ni	60	775.4	3.9	**0.2391**	0.018	7.4	ug/L	304	Standard
	Cu	65	1369.4	4.4	**0.6302**	0.035	5.5	ug/L	181	Standard
	Zn	66	5157.9	1.7	**4.2377**	0.083	2.0	ug/L	215	Standard
>	**Ge**	72	496310.3	0.7				ug/L	520809	Standard
	As	75	145.9	13.8	**0.1691**	0.016	9.6	ug/L	-52	Standard
	Se	82	21.4	35.8	**0.0511**	0.064	125.1	ug/L	17	Standard
	Se-1	77	46.7	8.7	**-0.1116**	0.053	47.6	ug/L	56	Standard
>	**Ga**	71	255.0	16.8				mg/L	25	Standard
	Rb	85	2703.6	4.1				ug/L	28	Standard
	Y	89	417509.6	1.1				ug/L	447395	Standard
>	**Rh**	103	16.7	69.3				ug/L	15	Standard
	Mo	98	345.0	36.3	**0.1002**	0.045	45.1	ug/L	113	Standard
	Ag	107	125.3	22.2	**0.0061**	0.004	68.7	ug/L	108	Standard
	Cd	111	34.3	46.4	**0.0139**	0.008	54.2	mg/L	3	Standard
	Cd	114	42.7	17.1	**0.0082**	0.001	17.1	ug/L	20	Standard
>	**In**	115	575196.5	0.1				ug/L	625728	Standard
	Sn	118	706.7	42.9	**0.0352**	0.051	145.6	ug/L	568	Standard
	Sb	123	527.1	13.9	**0.0772**	0.015	20.0	ug/L	612	Standard
	Ba	135	4163.9	5.4	**2.0642**	0.113	5.5	ug/L	21	Standard
	Ce	140	7787.1	30.7				ug/L	245	Standard
>	**Tb**	159	864381.3	0.7				ug/L	950397	Standard
	Ho	165	85.0	63.6				ug/L	7	Standard
	Tl	203	83.3	41.3	**0.0096**	0.004	45.0	ug/L	15	Standard
	Tl	205	73.3	55.1	**0.0005**	0.006	1188.2	ug/L	13	Standard
	Pb	206	2545.5	9.1	**0.4551**	0.047	10.4	ug/L	264	Standard
	Pb	207	2088.8	9.3	**0.4046**	0.043	10.7	ug/L	222	Standard
	Pb	208	9232.8	9.4	**0.4395**	0.047	10.7	ug/L	959	Standard
	U	238	222.7	20.7	**0.0304**	0.006	21.2	ug/L	9	Standard
>	**Bi**	209	498353.7	0.7				ug/L	552821	Standard

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Na	23	1.7	173.2	**5.2196**	9.032	173.0	mg/L	2	Standard
Mg	24	50.0	30.0	**0.0033**	0.021	637.4	mg/L	55	Standard
K	39	31.7	32.9	**-0.0007**	0.041	5467.5	mg/L	28	Standard
Ca	43	28.3	50.9	**0.3254**	1.410	433.3	mg/L	27	Standard
Fe	54	321.0	6.6	**0.1731**	0.021	12.0	mg/L	147	Standard
Fe	57	343.3	20.8	**0.3318**	0.218	65.6	mg/L	268	Standard
> **Sc-1**	45	38149.7	3.1				mg/L	41174	Standard
Cl	35	66614.8	2.2				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	1683.4	14.0				ug/L	1950	Standard
P	31	6868.2	3.4				ug/L	21156	Standard
S	34	2993.6	2.7				ug/L	3419	Standard
Sr	88	78.3	16.1				ug/L	72	Standard
C	12	60.0					mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	190.0	34.5				mg/L	17	Standard
Dy	164	136.6	41.3				mg/L	16	Standard
Ho-1	165	85.0	63.6				mg/L	7	Standard
Er	166	140.0	70.3				mg/L	7	Standard
I	127	27162.7	3.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		81.320	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.296	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.924
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.147
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145103
Sample Date/Time: Friday, July 01, 2016 18:38:46
Number of Replicates: 3
Autosampler Position: 253
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63245.1	2.3				ug/L	76456	Standard
	Be	9	45.0	29.4	**0.0289**	0.015	52.5	ug/L	20	Standard
	Al	27	154217.6	1.4	**1.0792**	0.028	2.6	ug/L	1307	Standard
	Sc	45	38011.0	1.7				ug/L	41174	Standard
	Ti	47	1647.1	2.7	**5.2249**	0.166	3.2	ug/L	27	Standard
	V	51	10217.6	1.1	**1.1067**	0.009	0.8	ug/L	1434	Standard
	Cr	52	13566.7	1.7	**0.7914**	0.021	2.7	ug/L	7733	Standard
	Cr	53	1203.4	4.0	**0.8334**	0.047	5.6	ug/L	442	Standard
	Mn	55	179485.2	0.5	**24.7976**	0.092	0.4	ug/L	723	Standard
	Co	59	2042.5	2.9	**0.2506**	0.009	3.7	ug/L	217	Standard
	Ni	60	1701.1	1.2	**0.7078**	0.006	0.9	ug/L	304	Standard
	Cu	65	2602.9	0.6	**1.2654**	0.012	0.9	ug/L	181	Standard
	Zn	66	13566.1	2.3	**11.4481**	0.299	2.6	ug/L	215	Standard
>	Ge	72	495954.1	0.5				ug/L	520809	Standard
	As	75	526.1	8.4	**0.4926**	0.036	7.4	ug/L	-52	Standard
	Se	82	19.2	20.2	**0.0327**	0.031	96.0	ug/L	17	Standard
	Se-1	77	60.7	19.3	**0.0602**	0.141	233.6	ug/L	56	Standard
>	Ga	71	858.4	5.0				mg/L	25	Standard
	Rb	85	6271.3	6.6				ug/L	28	Standard
	Y	89	419752.0	1.1				ug/L	447395	Standard
>	Rh	103	16.7	45.8				ug/L	15	Standard
	Mo	98	384.6	7.0	**0.1144**	0.010	8.4	ug/L	113	Standard
	Ag	107	109.3	5.4	**0.0037**	0.001	23.4	ug/L	108	Standard
	Cd	111	94.6	7.9	**0.0424**	0.003	8.2	mg/L	3	Standard
	Cd	114	251.8	5.8	**0.0481**	0.003	5.6	ug/L	20	Standard
>	In	115	575203.1	0.2				ug/L	625728	Standard
	Sn	118	680.0	22.3	**0.0307**	0.025	82.8	ug/L	568	Standard
	Sb	123	333.6	22.9	**0.0365**	0.016	43.9	ug/L	612	Standard
	Ba	135	10023.6	1.9	**4.9942**	0.091	1.8	ug/L	21	Standard
	Ce	140	48280.1	1.0				ug/L	245	Standard
>	Tb	159	860542.4	0.9				ug/L	950397	Standard
	Ho	165	373.3	17.4				ug/L	7	Standard
	Tl	203	98.7	6.5	**0.0114**	0.001	7.5	ug/L	15	Standard
	Tl	205	111.7	22.1	**0.0057**	0.003	56.6	ug/L	13	Standard
	Pb	206	31345.7	1.0	**6.0875**	0.078	1.3	ug/L	264	Standard
	Pb	207	25979.9	0.2	**5.5497**	0.058	1.0	ug/L	222	Standard
	Pb	208	113055.9	0.8	**5.9143**	0.107	1.8	ug/L	959	Standard
	U	238	480.3	2.8	**0.0657**	0.001	2.2	ug/L	9	Standard
>	Bi	209	499251.2	1.0				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	46.7	6.2	**-0.0011**	0.005	417.9	mg/L	55	Standard
K	39	40.0	50.0	**0.0355**	0.084	236.7	mg/L	28	Standard
Ca	43	20.0	43.3	**-0.4832**	0.857	177.3	mg/L	27	Standard
Fe	54	979.0	3.0	**0.7328**	0.021	2.8	mg/L	147	Standard
Fe	57	456.7	4.4	**0.7168**	0.091	12.6	mg/L	268	Standard
Sc-1	45	38011.0	1.7				mg/L	41174	Standard
Cl	35	67610.5	0.8				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	1716.8	12.9				ug/L	1950	Standard
P	31	8008.8	5.2				ug/L	21156	Standard
S	34	2928.6	6.6				ug/L	3419	Standard
Sr	88	71.7	26.4				ug/L	72	Standard
C	12	106.7	54.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	68.6				mg/L	17	Standard
Dy	164	644.2	14.1				mg/L	16	Standard
Ho-1	165	373.3	17.4				mg/L	7	Standard
Er	166	400.0	22.2				mg/L	7	Standard
I	127	30482.3	1.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		82.721	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.228	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.925
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.310
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606145104
Sample Date/Time: Friday, July 01, 2016 18:41:58
Number of Replicates: 3
Autosampler Position: 254
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63385.7	2.2				ug/L	76456	Standard
	Be	9	50.0	26.5	**0.0338**	0.013	38.3	ug/L	20	Standard
	Al	27	725235.3	1.5	**5.1021**	0.166	3.3	ug/L	1307	Standard
	Sc	45	39148.9	2.8				ug/L	41174	Standard
	Ti	47	1767.4	1.7	**5.5568**	0.163	2.9	ug/L	27	Standard
	V	51	9435.8	2.3	**0.9951**	0.038	3.8	ug/L	1434	Standard
	Cr	52	13141.4	0.9	**0.7193**	0.019	2.6	ug/L	7733	Standard
	Cr	53	1133.4	1.8	**0.7491**	0.025	3.3	ug/L	442	Standard
	Mn	55	184948.0	0.3	**25.3023**	0.378	1.5	ug/L	723	Standard
	Co	59	2891.6	3.9	**0.3629**	0.009	2.4	ug/L	217	Standard
	Ni	60	1981.8	1.1	**0.8399**	0.007	0.8	ug/L	304	Standard
	Cu	65	2972.3	0.4	**1.4404**	0.025	1.7	ug/L	181	Standard
	Zn	66	14124.9	1.1	**11.8061**	0.091	0.8	ug/L	215	Standard
>	**Ge**	72	500981.4	1.8				ug/L	520809	Standard
	As	75	525.3	4.0	**0.4878**	0.024	5.0	ug/L	-52	Standard
	Se	82	27.2	11.1	**0.0974**	0.029	29.5	ug/L	17	Standard
	Se-1	77	60.0	10.4	**0.0461**	0.088	191.5	ug/L	56	Standard
>	**Ga**	71	815.0	2.8				mg/L	25	Standard
	Rb	85	6224.6	2.3				ug/L	28	Standard
	Y	89	425374.4	1.5				ug/L	447395	Standard
>	**Rh**	103	25.0	40.0				ug/L	15	Standard
	Mo	98	520.6	8.2	**0.1605**	0.013	8.3	ug/L	113	Standard
	Ag	107	111.7	7.6	**0.0038**	0.001	37.5	ug/L	108	Standard
	Cd	111	92.7	8.2	**0.0408**	0.003	7.6	mg/L	3	Standard
	Cd	114	200.3	11.6	**0.0377**	0.005	12.6	ug/L	20	Standard
>	**In**	115	583569.6	1.1				ug/L	625728	Standard
	Sn	118	673.3	18.0	**0.0279**	0.019	69.1	ug/L	568	Standard
	Sb	123	316.8	22.4	**0.0319**	0.014	44.3	ug/L	612	Standard
	Ba	135	10430.3	1.6	**5.1226**	0.027	0.5	ug/L	21	Standard
	Ce	140	51980.7	2.3				ug/L	245	Standard
>	**Tb**	159	866344.8	1.0				ug/L	950397	Standard
	Ho	165	438.3	11.9				ug/L	7	Standard
	Tl	203	128.0	6.4	**0.0149**	0.001	5.7	ug/L	15	Standard
	Tl	205	108.3	13.3	**0.0051**	0.002	35.3	ug/L	13	Standard
	Pb	206	26433.4	1.2	**5.0710**	0.132	2.6	ug/L	264	Standard
	Pb	207	22121.5	0.6	**4.6673**	0.113	2.4	ug/L	222	Standard
	Pb	208	95760.1	0.8	**4.9468**	0.074	1.5	ug/L	959	Standard
	U	238	579.3	5.3	**0.0785**	0.005	6.6	ug/L	9	Standard
>	**Bi**	209	504799.5	1.9				ug/L	552821	Standard

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Na	23	1.7	173.2	**5.2809**	9.138	173.0	mg/L	2	Standard
Mg	24	46.7	27.0	**-0.0030**	0.014	461.6	mg/L	55	Standard
K	39	46.7	6.2	**0.0571**	0.014	24.3	mg/L	28	Standard
Ca	43	46.7	16.4	**2.0216**	0.845	41.8	mg/L	27	Standard
Fe	54	948.7	5.1	**0.6833**	0.021	3.0	mg/L	147	Standard
Fe	57	496.7	2.9	**0.8012**	0.035	4.4	mg/L	268	Standard
> **Sc-1**	45	39148.9	2.8				mg/L	41174	Standard
Cl	35	69866.8	2.4				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	1733.4	3.8				ug/L	1950	Standard
P	31	8088.8	1.5				ug/L	21156	Standard
S	34	3277.0	4.5				ug/L	3419	Standard
Sr	88	95.0	27.9				ug/L	72	Standard
C	12	93.3	49.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	17	Standard
Dy	164	709.7	12.9				mg/L	16	Standard
Ho-1	165	438.3	11.9				mg/L	7	Standard
Er	166	493.3	16.5				mg/L	7	Standard
I	127	31300.6	1.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		82.905	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.193	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.263
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.313
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606145105
Sample Date/Time: Friday, July 01, 2016 18:45:09
Number of Replicates: 3
Autosampler Position: 255
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64614.2	2.4				ug/L	76456	Standard
	Be	9	185.0	11.8	**0.1761**	0.027	15.5	ug/L	20	Standard
	Al	27	102955.3	1.3	**0.7016**	0.016	2.3	ug/L	1307	Standard
	Sc	45	38894.9	1.6				ug/L	41174	Standard
	Ti	47	5095.2	2.9	**16.0563**	0.595	3.7	ug/L	27	Standard
	V	51	12093.5	2.4	**1.3198**	0.050	3.8	ug/L	1434	Standard
	Cr	52	18515.6	1.7	**1.3928**	0.062	4.4	ug/L	7733	Standard
	Cr	53	1865.1	14.6	**1.4862**	0.264	17.8	ug/L	442	Standard
	Mn	55	32921.4	0.8	**4.3867**	0.071	1.6	ug/L	723	Standard
	Co	59	1608.8	2.8	**0.1873**	0.008	4.3	ug/L	217	Standard
	Ni	60	1860.4	4.4	**0.7722**	0.043	5.6	ug/L	304	Standard
	Cu	65	2193.8	2.2	**1.0354**	0.028	2.7	ug/L	181	Standard
	Zn	66	9716.8	1.5	**8.0047**	0.192	2.4	ug/L	215	Standard
>	**Ge**	72	504722.0	1.0				ug/L	520809	Standard
	As	75	1470.5	3.8	**1.2746**	0.057	4.4	ug/L	-52	Standard
	Se	82	28.8	14.7	**0.1088**	0.036	32.9	ug/L	17	Standard
	Se-1	77	55.7	13.5	**-0.0132**	0.085	641.5	ug/L	56	Standard
>	**Ga**	71	1173.4	4.0				mg/L	25	Standard
	Rb	85	5657.7	5.6				ug/L	28	Standard
	Y	89	430091.6	2.7				ug/L	447395	Standard
>	**Rh**	103	10.0	100.0				ug/L	15	Standard
	Mo	98	330.9	6.7	**0.0921**	0.006	6.8	ug/L	113	Standard
	Ag	107	127.3	16.8	**0.0060**	0.003	57.0	ug/L	108	Standard
	Cd	111	132.1	1.6	**0.0585**	0.002	2.8	mg/L	3	Standard
	Cd	114	337.6	10.3	**0.0629**	0.007	11.3	ug/L	20	Standard
>	**In**	115	589920.6	1.4				ug/L	625728	Standard
	Sn	118	773.4	25.8	**0.0430**	0.031	72.7	ug/L	568	Standard
	Sb	123	374.2	12.0	**0.0430**	0.008	19.0	ug/L	612	Standard
	Ba	135	10208.8	2.5	**4.9590**	0.061	1.2	ug/L	21	Standard
	Ce	140	28101.1	3.0				ug/L	245	Standard
>	**Tb**	159	866375.5	1.2				ug/L	950397	Standard
	Ho	165	575.0	13.6				ug/L	7	Standard
	Tl	203	486.0	6.3	**0.0582**	0.003	5.7	ug/L	15	Standard
	Tl	205	386.7	8.6	**0.0431**	0.004	8.7	ug/L	13	Standard
	Pb	206	15320.4	2.2	**2.9057**	0.025	0.9	ug/L	264	Standard
	Pb	207	12702.3	2.1	**2.6467**	0.028	1.1	ug/L	222	Standard
	Pb	208	55482.0	1.8	**2.8316**	0.013	0.4	ug/L	959	Standard
	U	238	430.7	1.5	**0.0580**	0.000	0.2	ug/L	9	Standard
>	**Bi**	209	507193.8	1.5				ug/L	552821	Standard

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Na	23	1.7	173.2	**5.2063**	9.009	173.0	mg/L	2	Standard
Mg	24	56.7	27.0	**0.0097**	0.018	185.7	mg/L	55	Standard
K	39	65.0	33.5	**0.1320**	0.085	64.4	mg/L	28	Standard
Ca	43	21.7	13.3	**-0.3705**	0.255	68.8	mg/L	27	Standard
Fe	54	1363.7	6.4	**1.0335**	0.073	7.1	mg/L	147	Standard
Fe	57	556.7	6.9	**1.0056**	0.095	9.5	mg/L	268	Standard
Sc-1	45	38894.9	1.6				mg/L	41174	Standard
Cl	35	69609.5	0.8				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	1780.1	1.7				ug/L	1950	Standard
P	31	8205.6	2.3				ug/L	21156	Standard
S	34	3335.4	2.7				ug/L	3419	Standard
Sr	88	61.7	20.4				ug/L	72	Standard
C	12	93.3	6.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	50.0				mg/L	17	Standard
Dy	164	880.2	8.3				mg/L	16	Standard
Ho-1	165	575.0	13.6				mg/L	7	Standard
Er	166	553.3	3.8				mg/L	7	Standard
I	127	31464.3	3.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		84.512	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.911	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.277
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.747
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145106 WG574521-02
Sample Date/Time: Friday, July 01, 2016 18:48:21
Number of Replicates: 3
Autosampler Position: 256
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64025.1	3.2				ug/L	76456	Standard
	Be	9	150.0	10.0	**0.1401**	0.015	10.9	ug/L	20	Standard
	Al	27	373954.4	3.8	**2.6005**	0.138	5.3	ug/L	1307	Standard
	Sc	45	39992.7	0.8				ug/L	41174	Standard
	Ti	47	2911.6	0.9	**9.0743**	0.125	1.4	ug/L	27	Standard
	V	51	51458.1	1.3	**6.2169**	0.098	1.6	ug/L	1434	Standard
	Cr	52	21030.6	1.9	**1.6951**	0.060	3.5	ug/L	7733	Standard
	Cr	53	2078.5	6.6	**1.6910**	0.147	8.7	ug/L	442	Standard
	Mn	55	214722.6	3.4	**28.9695**	1.071	3.7	ug/L	723	Standard
	Co	59	3170.7	6.3	**0.3948**	0.028	7.2	ug/L	217	Standard
	Ni	60	4965.8	2.8	**2.2998**	0.080	3.5	ug/L	304	Standard
	Cu	65	11632.1	2.0	**5.7677**	0.126	2.2	ug/L	181	Standard
	Zn	66	12643.6	1.6	**10.3959**	0.197	1.9	ug/L	215	Standard
>	Ge	72	508214.5	0.5				ug/L	520809	Standard
	As	75	1760.7	0.9	**1.5067**	0.007	0.5	ug/L	-52	Standard
	Se	82	70.2	4.5	**0.4430**	0.026	5.8	ug/L	17	Standard
	Se-1	77	108.3	3.0	**0.6142**	0.044	7.2	ug/L	56	Standard
>	Ga	71	1403.4	6.8				mg/L	25	Standard
	Rb	85	5152.5	5.6				ug/L	28	Standard
	Y	89	465204.1	0.9				ug/L	447395	Standard
>	Rh	103	8.3	34.6				ug/L	15	Standard
	Mo	98	986.2	8.1	**0.3241**	0.024	7.4	ug/L	113	Standard
	Ag	107	197.7	29.4	**0.0165**	0.008	50.2	ug/L	108	Standard
	Cd	111	516.3	5.7	**0.2371**	0.011	4.7	mg/L	3	Standard
	Cd	114	1344.3	1.8	**0.2519**	0.006	2.5	ug/L	20	Standard
>	In	115	585874.6	1.3				ug/L	625728	Standard
	Sn	118	588.3	39.7	**0.0131**	0.038	286.1	ug/L	568	Standard
	Sb	123	350.0	28.7	**0.0385**	0.020	51.5	ug/L	612	Standard
	Ba	135	28617.3	1.6	**14.0306**	0.052	0.4	ug/L	21	Standard
	Ce	140	147578.6	1.0				ug/L	245	Standard
>	Tb	159	879044.3	0.3				ug/L	950397	Standard
	Ho	165	3460.4	5.6				ug/L	7	Standard
	Tl	203	284.7	28.0	**0.0338**	0.010	29.0	ug/L	15	Standard
	Tl	205	251.7	41.0	**0.0246**	0.014	57.8	ug/L	13	Standard
	Pb	206	17853.2	2.3	**3.3893**	0.091	2.7	ug/L	264	Standard
	Pb	207	14882.6	2.2	**3.1053**	0.081	2.6	ug/L	222	Standard
	Pb	208	65337.9	2.2	**3.3392**	0.088	2.6	ug/L	959	Standard
	U	238	2254.5	5.6	**0.3042**	0.018	6.0	ug/L	9	Standard
>	Bi	209	507833.7	0.4				ug/L	552821	Standard

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Na	23	1.7	173.2	**5.0936**	8.814	173.0	mg/L	2	Standard
Mg	24	113.3	21.8	**0.0760**	0.029	37.9	mg/L	55	Standard
K	39	38.3	27.2	**0.0199**	0.040	200.6	mg/L	28	Standard
Ca	43	53.3	27.1	**2.5349**	1.339	52.8	mg/L	27	Standard
Fe	54	2059.6	7.3	**1.5638**	0.117	7.5	mg/L	147	Standard
Fe	57	870.0	4.0	**1.9479**	0.099	5.1	mg/L	268	Standard
> **Sc-1**	45	39992.7	0.8				mg/L	41174	Standard
Cl	35	70901.6	2.0				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	2260.2	4.2				ug/L	1950	Standard
P	31	8212.2	3.0				ug/L	21156	Standard
S	34	3600.4	1.9				ug/L	3419	Standard
Sr	88	90.0	9.6				ug/L	72	Standard
C	12	176.7	19.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	40.0				mg/L	17	Standard
Dy	164	5100.9	5.6				mg/L	16	Standard
Ho-1	165	3460.4	5.6				mg/L	7	Standard
Er	166	3200.3	6.8				mg/L	7	Standard
I	127	34541.0	3.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		83.741	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.582	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.631
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.862
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145107
Sample Date/Time: Friday, July 01, 2016 18:51:32
Number of Replicates: 3
Autosampler Position: 257
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64661.0	1.8				ug/L	76456	Standard
	Be	9	435.0	25.2	**0.4383**	0.108	24.7	ug/L	20	Standard
	Al	27	688124.2	2.3	**4.7442**	0.162	3.4	ug/L	1307	Standard
	Sc	45	39658.5	2.4				ug/L	41174	Standard
	Ti	47	13864.7	2.7	**43.2019**	1.047	2.4	ug/L	27	Standard
	V	51	37809.2	1.4	**4.4801**	0.052	1.2	ug/L	1434	Standard
	Cr	52	41323.6	2.8	**4.2278**	0.133	3.1	ug/L	7733	Standard
	Cr	53	4789.1	2.3	**4.4030**	0.102	2.3	ug/L	442	Standard
	Mn	55	173827.6	1.4	**23.2563**	0.280	1.2	ug/L	723	Standard
	Co	59	5908.8	1.9	**0.7552**	0.015	2.0	ug/L	217	Standard
	Ni	60	5550.3	1.2	**2.5679**	0.031	1.2	ug/L	304	Standard
	Cu	65	7217.7	3.4	**3.5237**	0.120	3.4	ug/L	181	Standard
	Zn	66	24798.3	1.6	**20.4085**	0.308	1.5	ug/L	215	Standard
>	**Ge**	72	512004.2	0.3				ug/L	520809	Standard
	As	75	8113.7	1.3	**6.7304**	0.082	1.2	ug/L	-52	Standard
	Se	82	47.8	17.9	**0.2581**	0.069	26.7	ug/L	17	Standard
	Se-1	77	78.3	7.5	**0.2474**	0.068	27.6	ug/L	56	Standard
>	**Ga**	71	2850.3	1.2				mg/L	25	Standard
	Rb	85	22646.9	3.8				ug/L	28	Standard
	Y	89	456860.0	1.6				ug/L	447395	Standard
>	**Rh**	103	15.0	57.7				ug/L	15	Standard
	Mo	98	1709.2	2.3	**0.5713**	0.010	1.8	ug/L	113	Standard
	Ag	107	176.7	8.5	**0.0131**	0.002	17.8	ug/L	108	Standard
	Cd	111	527.4	1.5	**0.2390**	0.005	2.0	mg/L	3	Standard
	Cd	114	1273.9	8.3	**0.2354**	0.018	7.7	ug/L	20	Standard
>	**In**	115	594063.6	0.5				ug/L	625728	Standard
	Sn	118	725.0	18.7	**0.0344**	0.022	63.4	ug/L	568	Standard
	Sb	123	399.2	21.2	**0.0476**	0.017	35.7	ug/L	612	Standard
	Ba	135	25921.5	1.4	**12.5319**	0.140	1.1	ug/L	21	Standard
	Ce	140	84609.0	2.8				ug/L	245	Standard
>	**Tb**	159	884122.7	1.5				ug/L	950397	Standard
	Ho	165	1811.8	3.2				ug/L	7	Standard
	Tl	203	2382.2	2.0	**0.2851**	0.004	1.5	ug/L	15	Standard
	Tl	205	2155.2	0.8	**0.2815**	0.002	0.8	ug/L	13	Standard
	Pb	206	34780.5	0.5	**6.5761**	0.037	0.6	ug/L	264	Standard
	Pb	207	29105.6	0.4	**6.0542**	0.048	0.8	ug/L	222	Standard
	Pb	208	126449.0	1.6	**6.4404**	0.086	1.3	ug/L	959	Standard
	U	238	1711.1	3.8	**0.2285**	0.010	4.3	ug/L	9	Standard
>	**Bi**	209	513045.7	0.5				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	66.7	21.7	**0.0208**	0.018	87.5	mg/L	55	Standard
K	39	66.7	33.8	**0.1333**	0.086	64.5	mg/L	28	Standard
Ca	43	33.3	8.7	**0.6944**	0.305	44.0	mg/L	27	Standard
Fe	54	5014.4	0.7	**3.9857**	0.129	3.2	mg/L	147	Standard
Fe	57	1586.7	5.6	**4.2576**	0.247	5.8	mg/L	268	Standard
> **Sc-1**	45	39658.5	2.4				mg/L	41174	Standard
Cl	35	72080.4	1.0				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	1970.1	9.5				ug/L	1950	Standard
P	31	8810.9	5.8				ug/L	21156	Standard
S	34	3717.1	6.6				ug/L	3419	Standard
Sr	88	71.7	22.4				ug/L	72	Standard
C	12	120.0	16.7				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	43.3	13.3				mg/L	17	Standard
Dy	164	2375.7	6.5				mg/L	16	Standard
Ho-1	165	1811.8	3.2				mg/L	7	Standard
Er	166	1693.4	3.3				mg/L	7	Standard
I	127	32022.1	0.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		84.573	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.309	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.940
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.805
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606145108
Sample Date/Time: Friday, July 01, 2016 18:54:44
Number of Replicates: 3
Autosampler Position: 258
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65516.4	2.1				ug/L	76456	Standard
	Be	9	508.3	16.0	**0.5110**	0.092	17.9	ug/L	20	Standard
	Al	27	800380.4	1.8	**5.4489**	0.215	3.9	ug/L	1307	Standard
	Sc	45	41087.3	0.8				ug/L	41174	Standard
	Ti	47	14067.5	1.7	**43.1737**	0.244	0.6	ug/L	27	Standard
	V	51	35953.7	1.5	**4.1835**	0.016	0.4	ug/L	1434	Standard
	Cr	52	58594.1	1.0	**6.2897**	0.017	0.3	ug/L	7733	Standard
	Cr	53	6973.3	2.0	**6.4961**	0.144	2.2	ug/L	442	Standard
	Mn	55	180922.6	1.7	**23.8431**	0.175	0.7	ug/L	723	Standard
	Co	59	6047.5	0.4	**0.7616**	0.011	1.5	ug/L	217	Standard
	Ni	60	5785.8	2.5	**2.6404**	0.042	1.6	ug/L	304	Standard
	Cu	65	5630.4	0.4	**2.6905**	0.031	1.2	ug/L	181	Standard
	Zn	66	23391.7	1.5	**18.9480**	0.094	0.5	ug/L	215	Standard
>	Ge	72	519833.8	1.1				ug/L	520809	Standard
	As	75	6871.0	0.9	**5.6213**	0.013	0.2	ug/L	-52	Standard
	Se	82	36.9	12.8	**0.1662**	0.040	24.4	ug/L	17	Standard
	Se-1	77	75.7	12.8	**0.2017**	0.109	53.9	ug/L	56	Standard
>	Ga	71	2690.2	10.4				mg/L	25	Standard
	Rb	85	22987.4	0.8				ug/L	28	Standard
	Y	89	454979.6	1.6				ug/L	447395	Standard
>	Rh	103	13.3	78.1				ug/L	15	Standard
	Mo	98	1493.9	2.8	**0.4956**	0.012	2.5	ug/L	113	Standard
	Ag	107	175.0	7.7	**0.0128**	0.002	15.5	ug/L	108	Standard
	Cd	111	498.3	4.3	**0.2253**	0.011	4.8	mg/L	3	Standard
	Cd	114	1246.2	5.5	**0.2300**	0.012	5.2	ug/L	20	Standard
>	In	115	594885.0	1.0				ug/L	625728	Standard
	Sn	118	763.4	27.5	**0.0404**	0.033	82.5	ug/L	568	Standard
	Sb	123	358.6	20.7	**0.0392**	0.014	36.9	ug/L	612	Standard
	Ba	135	27274.9	0.9	**13.1693**	0.072	0.5	ug/L	21	Standard
	Ce	140	89319.2	2.1				ug/L	245	Standard
>	Tb	159	880456.6	1.2				ug/L	950397	Standard
	Ho	165	2008.5	5.9				ug/L	7	Standard
	Tl	203	2224.8	1.1	**0.2667**	0.002	0.9	ug/L	15	Standard
	Tl	205	2000.1	8.4	**0.2612**	0.026	9.8	ug/L	13	Standard
	Pb	206	30072.5	0.9	**5.6895**	0.126	2.2	ug/L	264	Standard
	Pb	207	25200.3	0.2	**5.2438**	0.069	1.3	ug/L	222	Standard
	Pb	208	108593.2	0.7	**5.5329**	0.068	1.2	ug/L	959	Standard
	U	238	1657.1	2.7	**0.2215**	0.003	1.4	ug/L	9	Standard
>	Bi	209	512295.4	1.3				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	71.7	51.4	**0.0236**	0.043	182.4	mg/L	55	Standard
K	39	88.3	14.2	**0.2082**	0.048	23.2	mg/L	28	Standard
Ca	43	35.0	42.9	**0.7276**	1.340	184.1	mg/L	27	Standard
Fe	54	5032.2	2.8	**3.8559**	0.118	3.1	mg/L	147	Standard
Fe	57	1495.1	12.3	**3.7984**	0.557	14.7	mg/L	268	Standard
> **Sc-1**	45	41087.3	0.8				mg/L	41174	Standard
Cl	35	70479.6	1.8				ug/L	69550	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	1836.8	12.0				ug/L	1950	Standard
P	31	8665.8	3.6				ug/L	21156	Standard
S	34	3460.4	4.7				ug/L	3419	Standard
Sr	88	80.0	18.8				ug/L	72	Standard
C	12	90.0	22.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	20.0				mg/L	17	Standard
Dy	164	2628.5	8.2				mg/L	16	Standard
Ho-1	165	2008.5	5.9				mg/L	7	Standard
Er	166	1706.8	7.3				mg/L	7	Standard
I	127	30609.2	2.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		85.692	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.813	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.071
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.669
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145109S WG574521-07
Sample Date/Time: Friday, July 01, 2016 18:57:55
Number of Replicates: 3
Autosampler Position: 259
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66169.2	2.4				ug/L	76456	Standard
	Be	9	2845.3	1.4	**2.9179**	0.070	2.4	ug/L	20	Standard
	Al	27	402052.1	1.7	**2.7039**	0.037	1.4	ug/L	1307	Standard
	Sc	45	40838.3	0.3				ug/L	41174	Standard
	Ti	47	3598.8	1.2	**10.9719**	0.146	1.3	ug/L	27	Standard
	V	51	79956.8	0.6	**9.5376**	0.034	0.4	ug/L	1434	Standard
	Cr	52	43849.7	0.5	**4.4576**	0.028	0.6	ug/L	7733	Standard
	Cr	53	4982.5	0.8	**4.5178**	0.059	1.3	ug/L	442	Standard
	Mn	55	232874.6	0.3	**30.6911**	0.183	0.6	ug/L	723	Standard
	Co	59	22573.1	0.9	**2.9200**	0.017	0.6	ug/L	217	Standard
	Ni	60	11202.5	1.2	**5.2509**	0.054	1.0	ug/L	304	Standard
	Cu	65	17763.4	0.2	**8.6391**	0.027	0.3	ug/L	181	Standard
	Zn	66	17798.8	0.5	**14.3610**	0.032	0.2	ug/L	215	Standard
>	**Ge**	72	520328.1	0.5				ug/L	520809	Standard
	As	75	5212.0	2.2	**4.2712**	0.111	2.6	ug/L	-52	Standard
	Se	82	460.7	3.7	**3.5240**	0.138	3.9	ug/L	17	Standard
	Se-1	77	349.3	2.1	**3.4060**	0.106	3.1	ug/L	56	Standard
>	**Ga**	71	1643.4	2.5				mg/L	25	Standard
	Rb	85	6298.0	3.7				ug/L	28	Standard
	Y	89	489232.3	1.4				ug/L	447395	Standard
>	**Rh**	103	18.3	15.7				ug/L	15	Standard
	Mo	98	1075.7	0.6	**0.3442**	0.006	1.8	ug/L	113	Standard
	Ag	107	17796.8	1.4	**2.5517**	0.014	0.5	ug/L	108	Standard
	Cd	111	6560.4	0.7	**2.9469**	0.016	0.6	mg/L	3	Standard
	Cd	114	16108.1	2.8	**2.9255**	0.113	3.9	ug/L	20	Standard
>	**In**	115	604614.2	1.1				ug/L	625728	Standard
	Sn	118	576.7	20.9	**0.0084**	0.019	221.8	ug/L	568	Standard
	Sb	123	1529.4	1.9	**0.2726**	0.009	3.4	ug/L	612	Standard
	Ba	135	36016.4	1.8	**17.1151**	0.222	1.3	ug/L	21	Standard
	Ce	140	166971.8	1.4				ug/L	245	Standard
>	**Tb**	159	893545.7	0.7				ug/L	950397	Standard
	Ho	165	3838.8	4.6				ug/L	7	Standard
	Tl	203	21813.4	0.5	**2.5793**	0.005	0.2	ug/L	15	Standard
	Tl	205	20096.7	2.1	**2.6671**	0.046	1.7	ug/L	13	Standard
	Pb	206	33592.2	0.8	**6.2573**	0.064	1.0	ug/L	264	Standard
	Pb	207	28855.8	0.9	**5.9141**	0.073	1.2	ug/L	222	Standard
	Pb	208	125010.5	0.5	**6.2737**	0.013	0.2	ug/L	959	Standard
	U	238	20841.0	0.6	**2.7450**	0.006	0.2	ug/L	9	Standard
>	**Bi**	209	520594.3	0.4				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	78.3	32.1	**0.0321**	0.030	93.3	mg/L	55	Standard
K	39	38.3	30.1	**0.0170**	0.045	263.0	mg/L	28	Standard
Ca	43	36.7	7.9	**0.9069**	0.276	30.5	mg/L	27	Standard
Fe	54	2344.4	2.1	**1.7548**	0.045	2.6	mg/L	147	Standard
Fe	57	823.4	10.1	**1.7471**	0.264	15.1	mg/L	268	Standard
> **Sc-1**	45	40838.3	0.3				mg/L	41174	Standard
Cl	35	72934.5	2.0				ug/L	69550	Standard
Kr	83	1.0	0.0				ug/L	1	Standard
Br	81	2890.3	3.7				ug/L	1950	Standard
P	31	8855.9	3.2				ug/L	21156	Standard
S	34	3612.1	4.5				ug/L	3419	Standard
Sr	88	103.3	32.9				ug/L	72	Standard
C	12	236.7	17.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	20.8				mg/L	17	Standard
Dy	164	5672.6	5.0				mg/L	16	Standard
Ho-1	165	3838.8	4.6				mg/L	7	Standard
Er	166	3727.1	2.9				mg/L	7	Standard
I	127	35476.5	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		86.546	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.908	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.626
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.171
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145110SD WG574521-08
Sample Date/Time: Friday, July 01, 2016 19:01:07
Number of Replicates: 3
Autosampler Position: 260
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67019.7	4.1				ug/L	76456	Standard
	Be	9	2773.6	7.8	**2.8076**	0.211	7.5	ug/L	20	Standard
	Al	27	343053.6	0.5	**2.2782**	0.082	3.6	ug/L	1307	Standard
	Sc	45	40390.5	2.4				ug/L	41174	Standard
	Ti	47	2125.1	3.6	**6.3589**	0.289	4.5	ug/L	27	Standard
	V	51	73913.9	1.7	**8.6823**	0.187	2.2	ug/L	1434	Standard
	Cr	52	39647.8	1.1	**3.8723**	0.091	2.4	ug/L	7733	Standard
	Cr	53	4390.6	6.6	**3.8749**	0.313	8.1	ug/L	442	Standard
	Mn	55	211704.6	1.1	**27.5205**	0.540	2.0	ug/L	723	Standard
	Co	59	22138.2	1.1	**2.8248**	0.052	1.9	ug/L	217	Standard
	Ni	60	10229.1	2.4	**4.7164**	0.156	3.3	ug/L	304	Standard
	Cu	65	16797.3	0.8	**8.0558**	0.132	1.6	ug/L	181	Standard
	Zn	66	14601.7	0.9	**11.5899**	0.103	0.9	ug/L	215	Standard
>	**Ge**	72	527370.0	0.8				ug/L	520809	Standard
	As	75	4454.0	0.3	**3.6083**	0.041	1.1	ug/L	-52	Standard
	Se	82	433.6	3.6	**3.2627**	0.107	3.3	ug/L	17	Standard
	Se-1	77	342.3	4.4	**3.2706**	0.183	5.6	ug/L	56	Standard
>	**Ga**	71	1086.7	7.6				mg/L	25	Standard
	Rb	85	2715.2	5.0				ug/L	28	Standard
	Y	89	495479.9	0.9				ug/L	447395	Standard
>	**Rh**	103	16.7	45.8				ug/L	15	Standard
	Mo	98	1199.6	3.2	**0.3822**	0.017	4.5	ug/L	113	Standard
	Ag	107	16994.5	0.8	**2.4097**	0.040	1.7	ug/L	108	Standard
	Cd	111	6581.3	0.3	**2.9241**	0.026	0.9	mg/L	3	Standard
	Cd	114	16115.1	1.4	**2.8941**	0.037	1.3	ug/L	20	Standard
>	**In**	115	611286.5	1.2				ug/L	625728	Standard
	Sn	118	688.3	30.3	**0.0255**	0.034	134.7	ug/L	568	Standard
	Sb	123	3492.9	2.6	**0.6580**	0.010	1.5	ug/L	612	Standard
	Ba	135	33066.0	1.8	**15.5404**	0.233	1.5	ug/L	21	Standard
	Ce	140	153693.9	0.5				ug/L	245	Standard
>	**Tb**	159	899836.2	0.9				ug/L	950397	Standard
	Ho	165	3548.7	3.5				ug/L	7	Standard
	Tl	203	21026.9	1.7	**2.4700**	0.040	1.6	ug/L	15	Standard
	Tl	205	19092.0	1.1	**2.5170**	0.051	2.0	ug/L	13	Standard
	Pb	206	32793.8	0.3	**6.0676**	0.075	1.2	ug/L	264	Standard
	Pb	207	27703.0	0.3	**5.6387**	0.064	1.1	ug/L	222	Standard
	Pb	208	120754.5	1.4	**6.0193**	0.142	2.4	ug/L	959	Standard
	U	238	20391.4	0.6	**2.6683**	0.017	0.6	ug/L	9	Standard
>	**Bi**	209	524030.2	1.0				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	73.3	17.2	**0.0271**	0.015	54.1	mg/L	55	Standard
K	39	33.3	22.9	**-0.0010**	0.029	2803.3	mg/L	28	Standard
Ca	43	38.3	52.7	**1.0972**	1.891	172.3	mg/L	27	Standard
Fe	54	1833.3	6.8	**1.3677**	0.115	8.4	mg/L	147	Standard
Fe	57	725.0	5.5	**1.4696**	0.176	12.0	mg/L	268	Standard
> **Sc-1**	45	40390.5	2.4				mg/L	41174	Standard
Cl	35	74325.2	0.8				ug/L	69550	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	2540.2	14.3				ug/L	1950	Standard
P	31	8757.5	2.9				ug/L	21156	Standard
S	34	3718.8	1.1				ug/L	3419	Standard
Sr	88	85.0					ug/L	72	Standard
C	12	270.0	14.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	63.3	32.9				mg/L	17	Standard
Dy	164	5206.1	3.7				mg/L	16	Standard
Ho-1	165	3548.7	3.5				mg/L	7	Standard
Er	166	3510.4	5.0				mg/L	7	Standard
I	127	34255.4	2.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		87.658	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.260	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.692
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.792
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606145110SD WG574521-08
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 19:04:19
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73296.1	8.8				ug/L	76456	Standard
	Be	9	3.3	86.6	**-0.0168**	0.003	15.9	ug/L	20	Standard
	Al	27	943.4	25.1	**-0.0045**	0.001	28.6	ug/L	1307	Standard
	Sc	45	42173.6	2.9				ug/L	41174	Standard
	Ti	47	21.7	46.5	**-0.0224**	0.026	115.7	ug/L	27	Standard
	V	51	784.0	11.8	**-0.1085**	0.008	7.8	ug/L	1434	Standard
	Cr	52	3455.1	8.0	**-0.5654**	0.042	7.4	ug/L	7733	Standard
	Cr	53	226.7	14.2	**-0.2044**	0.032	15.6	ug/L	442	Standard
	Mn	55	689.7	25.5	**-0.0155**	0.019	124.5	ug/L	723	Standard
	Co	59	203.0	2.5	**-0.0043**	0.002	53.5	ug/L	217	Standard
	Ni	60	207.7	13.9	**-0.0589**	0.005	8.9	ug/L	304	Standard
	Cu	65	99.0	11.2	**-0.0283**	0.002	6.7	ug/L	181	Standard
	Zn	66	182.3	13.6	**-0.0400**	0.008	19.1	ug/L	215	Standard
>	**Ge**	72	551871.4	10.1				ug/L	520809	Standard
	As	75	90.2	75.8	**0.1123**	0.046	40.9	ug/L	-52	Standard
	Se	82	68.2	54.7	**0.3731**	0.233	62.5	ug/L	17	Standard
	Se-1	77	38.3	14.4	**-0.2548**	0.102	40.0	ug/L	56	Standard
>	**Ga**	71	36.7	7.9				mg/L	25	Standard
	Rb	85	36.7	39.4				ug/L	28	Standard
	Y	89	441182.6	6.0				ug/L	447395	Standard
>	**Rh**	103	10.0	50.0				ug/L	15	Standard
	Mo	98	46.2	9.0	**-0.0083**	0.001	14.8	ug/L	113	Standard
	Ag	107	129.7	15.8	**0.0056**	0.002	35.3	ug/L	108	Standard
	Cd	111	10.6	19.3	**0.0023**	0.001	28.9	mg/L	3	Standard
	Cd	114	32.4	13.3	**0.0058**	0.001	9.2	ug/L	20	Standard
>	**In**	115	611252.6	5.3				ug/L	625728	Standard
	Sn	118	5131.0	39.9	**0.7226**	0.283	39.2	ug/L	568	Standard
	Sb	123	96.0	32.5	**-0.0149**	0.005	34.0	ug/L	612	Standard
	Ba	135	116.3	18.2	**0.0366**	0.007	20.0	ug/L	21	Standard
	Ce	140	506.7	18.4				ug/L	245	Standard
>	**Tb**	159	937034.7	2.8				ug/L	950397	Standard
	Ho	165	13.3	78.1				ug/L	7	Standard
	Tl	203	55.7	37.9	**0.0055**	0.002	44.3	ug/L	15	Standard
	Tl	205	48.3	15.8	**-0.0037**	0.001	24.8	ug/L	13	Standard
	Pb	206	388.7	9.1	**0.0251**	0.008	30.5	ug/L	264	Standard
	Pb	207	329.7	11.1	**0.0183**	0.008	44.7	ug/L	222	Standard
	Pb	208	1314.7	9.8	**0.0144**	0.005	32.0	ug/L	959	Standard
	U	238	44.3	33.9	**0.0053**	0.002	35.7	ug/L	9	Standard
>	**Bi**	209	551718.3	2.9				ug/L	552821	Standard

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Na	23	1.7	173.2	**4.9772**	8.612	173.0	mg/L	2	Standard
Mg	24	23.3	12.4	**-0.0336**	0.003	9.5	mg/L	55	Standard
K	39	23.3	12.4	**-0.0439**	0.009	21.3	mg/L	28	Standard
Ca	43	31.7	24.1	**0.3653**	0.722	197.6	mg/L	27	Standard
Fe	54	110.7	37.7	**-0.0145**	0.030	207.1	mg/L	147	Standard
Fe	57	338.3	3.4	**0.2110**	0.026	12.2	mg/L	268	Standard
Sc-1	45	42173.6	2.9				mg/L	41174	Standard
Cl	35	30776.6	3.7				ug/L	69550	Standard
Kr	83	3.3	45.8				ug/L	1	Standard
Br	81	663.3	12.3				ug/L	1950	Standard
P	31	11284.4	27.3				ug/L	21156	Standard
S	34	1555.1	2.6				ug/L	3419	Standard
Sr	88	83.3	25.0				ug/L	72	Standard
C	12	73.3	15.7				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	44.4				mg/L	17	Standard
Dy	164	28.9	93.2				mg/L	16	Standard
Ho-1	165	13.3	78.1				mg/L	7	Standard
Er	166	23.3	65.5				mg/L	7	Standard
I	127	2166.8	15.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	-0.034		
Al	27	-0.009		
Sc	45			
Ti	47	-0.022		
V	51	-0.217		
Cr	52	-1.131		
Cr	53			
Mn	55	-0.031		
Co	59	-0.009		
Ni	60	-0.118		
Cu	65	-0.057		
Zn	66	-0.080		
> Ge	72		105.964	
As	75	0.225		
Se	82	0.746		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	-0.008		
Ag	107	0.011		
Cd	111	0.005		
Cd	114			
> In	115		97.687	
Sn	118	1.445		
Sb	123	-0.030		
Ba	135	0.073		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	0.011		
Tl	205			
Pb	206			
Pb	207			
Pb	208	0.029		
U	238	0.011		
> Bi	209		99.801	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	
QC Std 6	Ti	47	

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QC Std 6	V	51
QC Std 6	Cr	52
QC Std 6	Mn	55
QC Std 6	Co	59
QC Std 6	Ni	60
QC Std 6	Cu	65
QC Std 6	Zn	66
QC Std 6	As	75
QC Std 6	Se	82
QC Std 6	Mo	98
QC Std 6	Ag	107
QC Std 6	Cd	111
QC Std 6	Sb	123
QC Std 6	Ba	135
QC Std 6	Tl	203
QC Std 6	Pb	208
QC Std 6	U	238

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 19:07:31
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63162.0	21.4				ug/L	76456	Standard
	Be	9	3.3	86.6	**-0.0166**	0.003	17.1	ug/L	20	Standard
	Al	27	735.0	20.4	**-0.0048**	0.002	36.2	ug/L	1307	Standard
	Sc	45	35650.7	12.8				ug/L	41174	Standard
	Ti	47	25.7	17.6	**-0.0049**	0.017	351.0	ug/L	27	Standard
	V	51	759.8	6.3	**-0.1049**	0.017	16.4	ug/L	1434	Standard
	Cr	52	3500.7	6.1	**-0.5352**	0.034	6.4	ug/L	7733	Standard
	Cr	53	196.7	21.6	**-0.2204**	0.047	21.1	ug/L	442	Standard
	Mn	55	654.0	15.9	**-0.0132**	0.024	180.8	ug/L	723	Standard
	Co	59	209.0	9.3	**-0.0019**	0.004	213.5	ug/L	217	Standard
	Ni	60	214.3	6.6	**-0.0494**	0.006	12.6	ug/L	304	Standard
	Cu	65	67.0	1.5	**-0.0410**	0.004	9.4	ug/L	181	Standard
	Zn	66	162.0	9.0	**-0.0461**	0.027	57.9	ug/L	215	Standard
>	**Ge**	72	520650.3	11.0				ug/L	520809	Standard
	As	75	34.9	127.0	**0.0765**	0.042	54.6	ug/L	-52	Standard
	Se	82	46.9	39.0	**0.2593**	0.198	76.5	ug/L	17	Standard
	Se-1	77	47.0	7.4	**-0.1317**	0.051	38.8	ug/L	56	Standard
>	**Ga**	71	33.3	37.7				mg/L	25	Standard
	Rb	85	20.0	0.0				ug/L	28	Standard
	Y	89	481329.7	5.0				ug/L	447395	Standard
>	**Rh**	103	10.0	50.0				ug/L	15	Standard
	Mo	98	40.1	16.4	**-0.0110**	0.002	22.0	ug/L	113	Standard
	Ag	107	85.7	14.5	**-0.0013**	0.001	114.3	ug/L	108	Standard
	Cd	111	7.3	15.9	**0.0008**	0.001	101.5	mg/L	3	Standard
	Cd	114	33.4	55.5	**0.0060**	0.004	67.7	ug/L	20	Standard
>	**In**	115	646206.1	11.6				ug/L	625728	Standard
	Sn	118	4905.8	30.1	**0.6479**	0.164	25.3	ug/L	568	Standard
	Sb	123	55.7	59.6	**-0.0232**	0.006	25.1	ug/L	612	Standard
	Ba	135	35.0	22.9	**-0.0022**	0.004	171.6	ug/L	21	Standard
	Ce	140	271.7	45.9				ug/L	245	Standard
>	**Tb**	159	974497.4	20.4				ug/L	950397	Standard
	Ho	165	18.3	41.7				ug/L	7	Standard
	Tl	203	26.0	40.2	**0.0024**	0.002	88.7	ug/L	15	Standard
	Tl	205	23.3	32.7	**-0.0066**	0.002	26.3	ug/L	13	Standard
	Pb	206	286.0	20.6	**0.0054**	0.003	50.2	ug/L	264	Standard
	Pb	207	250.0	14.9	**0.0018**	0.006	349.2	ug/L	222	Standard
	Pb	208	1018.7	14.9	**-0.0005**	0.007	1419.7	ug/L	959	Standard
	U	238	28.0	71.2	**0.0037**	0.004	102.7	ug/L	9	Standard
>	**Bi**	209	573676.7	25.6				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	33.3	31.2	**-0.0144**	0.017	121.3	mg/L	55	Standard
K	39	30.0	44.1	**-0.0003**	0.051	19938.3	mg/L	28	Standard
Ca	43	26.7	47.2	**0.2749**	0.978	355.7	mg/L	27	Standard
Fe	54	97.7	28.6	**-0.0085**	0.033	388.9	mg/L	147	Standard
Fe	57	278.3	18.1	**0.2066**	0.281	136.1	mg/L	268	Standard
Sc-1	45	35650.7	12.8				mg/L	41174	Standard
Cl	35	30318.5	8.6				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	573.3	9.6				ug/L	1950	Standard
P	31	10907.3	13.1				ug/L	21156	Standard
S	34	1410.1	10.3				ug/L	3419	Standard
Sr	88	83.3	36.7				ug/L	72	Standard
C	12	66.7	60.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	90.0	38.5				mg/L	17	Standard
Dy	164	2.1	274.3				mg/L	16	Standard
Ho-1	165	18.3	41.7				mg/L	7	Standard
Er	166	26.7	21.7				mg/L	7	Standard
I	127	2056.8	3.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.969	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.273
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.773
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Se	82	
QC Std 7	Sn	118	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Friday, July 01, 2016 19:10:44
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	61946.4	1.9				ug/L	76456	Standard
	Be	9	210.0	10.4	**0.2115**	0.020	9.6	ug/L	20	Standard
	Al	27	790.0	4.9	**-0.0045**	0.000	4.1	ug/L	1307	Standard
	Sc	45	40494.0	1.1				ug/L	41174	Standard
	Ti	47	28.3	17.8	**0.0022**	0.015	682.7	ug/L	27	Standard
	V	51	4636.0	0.9	**0.3641**	0.011	3.1	ug/L	1434	Standard
	Cr	52	14316.1	1.4	**0.7957**	0.001	0.1	ug/L	7733	Standard
	Cr	53	1240.1	3.8	**0.8075**	0.059	7.3	ug/L	442	Standard
	Mn	55	4264.3	2.5	**0.4605**	0.007	1.5	ug/L	723	Standard
	Co	59	3130.7	5.2	**0.3781**	0.017	4.5	ug/L	217	Standard
	Ni	60	3450.1	1.6	**1.5055**	0.006	0.4	ug/L	304	Standard
	Cu	65	1721.8	1.7	**0.7678**	0.026	3.4	ug/L	181	Standard
	Zn	66	8860.9	0.9	**7.0348**	0.045	0.6	ug/L	215	Standard
>	Ge	72	522095.7	1.4				ug/L	520809	Standard
	As	75	448.5	11.8	**0.4078**	0.044	10.9	ug/L	-52	Standard
	Se	82	67.9	14.5	**0.4100**	0.082	20.0	ug/L	17	Standard
	Se-1	77	86.0	19.1	**0.3190**	0.193	60.5	ug/L	56	Standard
>	Ga	71	40.0	37.5				mg/L	25	Standard
	Rb	85	30.0	28.9				ug/L	28	Standard
	Y	89	446341.0	1.0				ug/L	447395	Standard
>	Rh	103	11.7	65.5				ug/L	15	Standard
	Mo	98	31.0	24.0	**-0.0133**	0.003	19.1	ug/L	113	Standard
	Ag	107	2769.6	1.6	**0.3865**	0.006	1.6	ug/L	108	Standard
	Cd	111	511.0	7.5	**0.2275**	0.017	7.5	mg/L	3	Standard
	Cd	114	1362.0	6.3	**0.2474**	0.016	6.3	ug/L	20	Standard
>	In	115	604305.4	0.0				ug/L	625728	Standard
	Sn	118	1045.0	27.9	**0.0839**	0.047	56.0	ug/L	568	Standard
	Sb	123	1800.2	6.2	**0.3270**	0.022	6.8	ug/L	612	Standard
	Ba	135	1494.4	2.1	**0.6933**	0.015	2.2	ug/L	21	Standard
	Ce	140	240.0	28.9				ug/L	245	Standard
>	Tb	159	892072.4	1.2				ug/L	950397	Standard
	Ho	165	18.3	41.7				ug/L	7	Standard
	Tl	203	655.0	0.9	**0.0773**	0.001	1.2	ug/L	15	Standard
	Tl	205	608.3	6.1	**0.0719**	0.005	7.4	ug/L	13	Standard
	Pb	206	1282.4	3.9	**0.1986**	0.006	3.2	ug/L	264	Standard
	Pb	207	1103.0	2.6	**0.1835**	0.003	1.7	ug/L	222	Standard
	Pb	208	4828.3	0.4	**0.1978**	0.004	2.3	ug/L	959	Standard
	U	238	2919.9	3.2	**0.3875**	0.018	4.7	ug/L	9	Standard
>	Bi	209	516591.6	1.5				ug/L	552821	Standard

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Na	23	1.7	173.2	**5.0546**	8.746	173.0	mg/L	2	Standard
Mg	24	45.0	50.9	**-0.0067**	0.027	406.4	mg/L	55	Standard
K	39	28.3	71.3	**-0.0210**	0.078	373.7	mg/L	28	Standard
Ca	43	15.0	33.3	**-1.0703**	0.448	41.8	mg/L	27	Standard
Fe	54	120.9	25.4	**-0.0025**	0.024	952.7	mg/L	147	Standard
Fe	57	251.7	19.1	**-0.0185**	0.145	784.6	mg/L	268	Standard
> **Sc-1**	45	40494.0	1.1				mg/L	41174	Standard
Cl	35	72851.4	0.8				ug/L	69550	Standard
Kr	83	2.3	99.0				ug/L	1	Standard
Br	81	1900.1	5.1				ug/L	1950	Standard
P	31	14266.7	2.8				ug/L	21156	Standard
S	34	3213.7	2.6				ug/L	3419	Standard
Sr	88	90.0	16.7				ug/L	72	Standard
C	12	96.7	57.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	50.0				mg/L	17	Standard
Dy	164	16.2	35.8				mg/L	16	Standard
Ho-1	165	18.3	41.7				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	1820.1	14.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	105.733		
Al	27			
Sc	45			
Ti	47			
V	51	91.026		
Cr	52	99.459		
Cr	53			
Mn	55	92.107		
Co	59	94.532		
Ni	60	94.095		
Cu	65	95.977		
Zn	66	112.556		
> Ge	72		100.247	
As	75	101.941		
Se	82	102.498		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	96.613		
Cd	111	94.773		
Cd	114			
> In	115			96.576
Sn	118			
Sb	123	81.741		
Ba	135	92.447		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	96.671		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.904		
U	238	96.884		
> Bi	209			93.446
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
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2.3.3 Metals CVAA Data (Mercury)

2.3.3.1 Summary Data

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-03	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW16F-062116	**Prep Method:**	7470A	**Prep Date:**	06/25/2016 11:30
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	07/01/2016 10:18
Workgroup #:	WG574691	**Analyst:**	AMA	**Run Date:**	07/01/2016 11:39
Collect Date:	06/21/2016 14:40	**Dilution:**	1	**File ID:**	M7.070116.113952
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061290-05	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	109-062216	**Prep Method:**	7470A	**Prep Date:**	06/25/2016 11:30
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	07/01/2016 10:18
Workgroup #:	WG574691	**Analyst:**	AMA	**Run Date:**	07/01/2016 11:42
Collect Date:	06/22/2016 07:20	**Dilution:**	1	**File ID:**	M7.070116.114222
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061290
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.3.2 QC Summary

Example Cold Vapor Mercury Calculations
Hydra AA Mercury Analyzer / CETAC M-7600 Quick Trace Mercury Analyzer

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and five standards.

2.0 Calculating the concentration (C) of an element in water using data from run log and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to Volume (mL)	40
Vi = Aliquot Volume (mL)	40
D = Manual dilution factor, if required (10X = 10)	1
Cx = Concentration of element in ppb (ug/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Ws} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to volume (mL)	40
Ws = Aliquot weight (g)	0.6
D = Manual dilution factor	1
Cx = Concentration of element in ug/kg	6.67

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

1 Cx = Concentration calculated as received (wet basis)	6.67
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	8.33

8.33 ug/kg = 0.00833 mg/kg

Microbac Laboratories Inc.
Metals Digest Log

Workgroup: WG574194
Analyst: ERP
Spike Analyst: ERP
Method: 7470A
Run Date: 06/25/2016 11:30
Hotblock Start Temp: 95.2 @ 06:35
Hotblock End Temp: 95.7 @ 08:35
Instrument: HB6

SOP: ME404 Revison 17
Spike Solution: STD76824
Spike Witness: VC
HNO3 Lot #: COA18905
40 & 50 ML. DIGESTION TU COA18987
KMnO4 1:1 Lot #: RGT37128
H2SO4 Lot #: COA18359
K2S2O8 1:1 Lot #: RGT37142
Mercury Water ICV Lot #: STD76826
HG H2O STDS 10PPM Lot #: STD76832

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Spike Amount	Due Date
1	WG574194-02	BLANK	1	40 mL	40 mL		
2	WG574194-03	LCS	1	40 mL	40 mL	4 mL	
3	L16061130-01	SAMP	1	40 mL	40 mL		07/05/16
4	L16061130-02	SAMP	1	40 mL	40 mL		07/05/16
5	L16061130-03	SAMP	1	40 mL	40 mL		07/05/16
6	L16061130-04	SAMP	1	40 mL	40 mL		07/05/16
7	L16061130-05	SAMP	1	40 mL	40 mL		07/05/16
8	L16061244-01	SAMP	17	4 mL	40 mL		06/29/16
9	L16061244-02	SAMP	17	4 mL	40 mL		06/29/16
10	WG574194-01	REF	1	40 mL	40 mL		
11	L16061265-01	RS01	1	40 mL	40 mL		06/30/16
12	WG574194-04	MS	1	36 mL	40 mL	4 mL	
13	L16061265-02	MS01	1	36 mL	40 mL	4 mL	06/30/16
14	WG574194-05	MSD	1	36 mL	40 mL	4 mL	
15	L16061265-03	SD01	1	36 mL	40 mL	4 mL	06/30/16
16	L16061265-04	SAMP	1	40 mL	40 mL		06/30/16
17	L16061265-05	SAMP	1	40 mL	40 mL		06/30/16
18	L16061265-06	SAMP	1	40 mL	40 mL		06/30/16
19	L16061266-01	SAMP	1	40 mL	40 mL		06/30/16
20	L16061269-01	SAMP	1	40 mL	40 mL		06/30/16
21	L16061272-01	SAMP	1	40 mL	40 mL		06/30/16
22	L16061272-02	SAMP	1	40 mL	40 mL		06/30/16
23	L16061289-01	SAMP	1	40 mL	40 mL		07/05/16
24	L16061289-04	SAMP	1	40 mL	40 mL		07/05/16
25	L16061290-03	SAMP	1	40 mL	40 mL		07/05/16
26	L16061290-05	SAMP	1	40 mL	40 mL		07/05/16
27	L16061402-01	SAMP	1	40 mL	40 mL		07/01/16

Analyst: Erin Potter

Reviewer: Vicki Collins

* All calibration and check standards are prepared and digested with sample batch following the procedures in section 7.0 of SOP ME404/ME405.

HB_DIG - Modified 07/26/2012
PDF ID: 4824610
Report generated: 06/25/2016 11:30

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 070116A.CSV

Analyst1: AMA Analyst2: N/A

Method: 7470A/245.1 SOP: ME404 Rev: 17

Maintenance Log ID:

Calibration Std: STD76832 ICV Std: STD76826 Post Spike: STD76832

ICSA: N/A ICSAB: N/A Int. Std:

CCV: LLCCV: Tuning Sol :

Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 574691

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	M7.070116.100604	WG575044-01	Calibration Point		1		07/01/16 10:06
2	M7.070116.100835	WG575044-02	Calibration Point		1		07/01/16 10:08
3	M7.070116.101107	WG575044-03	Calibration Point		1		07/01/16 10:11
4	M7.070116.101340	WG575044-04	Calibration Point		1		07/01/16 10:13
5	M7.070116.101613	WG575044-05	Calibration Point		1		07/01/16 10:16
6	M7.070116.101846	WG575044-06	Calibration Point		1		07/01/16 10:18
7	M7.070116.102121	WG575044-07	Initial Calibration Verification		1		07/01/16 10:21
8	M7.070116.102351	WG575044-08	Initial Calib Blank		1		07/01/16 10:23
9	M7.070116.102624	WG575044-09	CCV		1		07/01/16 10:26
10	M7.070116.102855	WG575044-10	CCB		1		07/01/16 10:28
11	M7.070116.103126	WG574194-02	Method/Prep Blank	40/40	1		07/01/16 10:31
12	M7.070116.103357	WG574194-03	Laboratory Control S	40/40	1		07/01/16 10:33
13	M7.070116.103628	L16061130-01	MW-23-012	40/40	1		07/01/16 10:36
14	M7.070116.103900	WG574691-01	Post Digestion Spike		1	L16061130-01	07/01/16 10:39
15	M7.070116.104132	L16061130-02	MW-23-003	40/40	1		07/01/16 10:41
16	M7.070116.104404	L16061130-03	MW-23-013	40/40	1		07/01/16 10:44
17	M7.070116.104636	L16061130-04	MW-23-001	40/40	1		07/01/16 10:46
18	M7.070116.104909	L16061130-05	EB (1) WATER A	40/40	1		07/01/16 10:49
19	M7.070116.105142	L16061244-01	K6F0679-01	4/40	1		07/01/16 10:51
20	M7.070116.105416	WG574691-02	Post Digestion Spike		1	L16061244-01	07/01/16 10:54
21	M7.070116.105648	WG575044-11	CCV		1		07/01/16 10:56
22	M7.070116.105919	WG575044-12	CCB		1		07/01/16 10:59
23	M7.070116.110152	L16061244-02	K6F0679-02	4/40	1		07/01/16 11:01
24	M7.070116.110426	WG574194-01	Reference Sample	40/40	1	L16061265-01	07/01/16 11:04
25	M7.070116.110657	L16061265-02	SS007MWN750-007 MS	36/40	1	WG574194-04	07/01/16 11:06
26	M7.070116.110927	L16061265-03	SS007MWN750-007 MSD	36/40	1	WG574194-05	07/01/16 11:09
27	M7.070116.111158	L16061265-04	SS007MWOB16-007	40/40	1		07/01/16 11:11
28	M7.070116.111429	L16061265-05	SS007MWOB21-007	40/40	1		07/01/16 11:14
29	M7.070116.111701	L16061265-06	FQC-RB06211601-CC	40/40	1		07/01/16 11:17
30	M7.070116.111932	L16061266-01	ST008MW0805-007	40/40	1		07/01/16 11:19
31	M7.070116.112204	L16061269-01	FT002MW0204-007	40/40	1		07/01/16 11:22
32	M7.070116.112437	L16061272-01	SS007MW0B18-007	40/40	1		07/01/16 11:24
33	M7.070116.112709	WG575044-13	CCV		1		07/01/16 11:27
34	M7.070116.112940	WG575044-14	CCB		1		07/01/16 11:29

Page: 1 Approved: July 05, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 070116A.CSV

Analyst1: AMA Analyst2: N/A

Method: 7470A/245.1 SOP: ME404 Rev: 17

Maintenance Log ID:

Calibration Std: STD76832 ICV Std: STD76826 Post Spike: STD76832

ICSA: N/A ICSAB: N/A Int. Std:

CCV: LLCCV: Tuning Sol :

Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 574691

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	M7.070116.113212	L16061272-02	SS007MWN752-007	40/40	1		07/01/16 11:32
36	M7.070116.113445	L16061289-01	MW21-062216	40/40	1		07/01/16 11:34
37	M7.070116.113718	L16061289-04	18WW02F-062216	40/40	1		07/01/16 11:37
38	M7.070116.113952	L16061290-03	MW16F-062116	40/40	1		07/01/16 11:39
39	M7.070116.114222	L16061290-05	109-062216	40/40	1		07/01/16 11:42
40	M7.070116.114453	L16061402-01	SS007MW0715-007	40/40	1		07/01/16 11:44
41	M7.070116.114725	WG575044-15	CCV		1		07/01/16 11:47
42	M7.070116.114956	WG575044-16	CCB		1		07/01/16 11:49

Page: 2 Approved: July 05, 2016

Microbac Laboratories Inc.

Data Checklist

Date: 01-JUL-2016
Analyst: AMA
Analyst: NA
Method: 7470A/245.1
Instrument: CVAA1
Curve Workgroup: 575044
Runlog ID: 76085
Analytical Workgroups: 574691

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	1130,1265,1266,1269,
Case Narrative	1272,1289,1290,1402
Client Forms	X
Level X	
Level 3	1130
Level 4	1265,1266,1269,1272
Level 4	1289,1290,1402
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	AMA
Secondary Reviewer	BKT
Comments	

Primary Reviewer:
01-JUL-2016
Alexandra M. Alfred

Secondary Reviewer:
05-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-05-2016 12:35:40

Microbac Laboratories Inc.

00688378

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 7470A

AAB#: WG574691

Login Number: L16061290

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW16F-062116	03	06/21/16					06/25/2016	3.9	28		07/01/16	9.9	28	
109-062216	05	06/22/16					06/25/2016	3.2	28		07/01/16	9.2	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4834842
Report generated 07/01/2016 15:49

METHOD BLANK SUMMARY

Login Number: L16061290
Blank File ID: M7.070116.103126
Prep Date: 06/25/16 11:30
Analyzed Date: 07/01/16 10:31
Analyst: AMA

Work Group: WG574691
Blank Sample ID: WG574194-02
Instrument ID: CVAA1
Method: 7470A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG574194-03	M7.070116.103357	07/01/16 10:33	01
MW16F-062116	L16061290-03	M7.070116.113952	07/01/16 11:39	01
109-062216	L16061290-05	M7.070116.114222	07/01/16 11:42	01

Report Name: BLANK_SUMMARY
PDF File ID: 4834843
Report generated 07/01/2016 15:49

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061290 Prep Date: 06/25/16 11:30 Sample ID: WG574194-02
Instrument ID: CVAA1 Run Date: 07/01/16 10:31 Prep Method: 7470A
File ID: M7.070116.103126 Analyst: AMA Method: 7470A
Workgroup (AAB#): WG574691 Matrix: Water Units: mg/L
Contract #: Cal ID: CVAA1-01-JUL-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Mercury	0.000100	0.000400	0.000100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4834844
01-JUL-2016 15:49

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061290 Run Date: 07/01/2016 Sample ID: WG574194-03
Instrument ID: CVAA1 Run Time: 10:33 Prep Method: 7470A
File ID: M7.070116.103357 Analyst: AMA Method: 7470A
Workgroup (AAB#): WG574691 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76824 Cal ID: CVAA1-01-JUL-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Mercury	0.00400	0.00401	100	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4834845
Report generated: 07/01/2016 15:49

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061290 Cal ID: CVAA1 - Worknum: WG574691
Instrument ID: CVAA1 Contract #: Method: 7470A
Parent ID: WG574194-01 File ID: M7.070116.110426 Dil: 1 Matrix: WATER
Sample ID: WG574194-04 MS File ID: M7.070116.110657 Dil: 1 Units: mg/L
Sample ID: WG574194-05 MSD File ID: M7.070116.110927 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Mercury	ND	0.00444	0.00450	101	0.00444	0.00445	100	1.07	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4834846
Report generated 07/01/2016 15:49

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061290 **Worknum:** WG574691
Instrument ID: CVAA1 **Method:** 7470A
Post Spike ID: WG574691-01 **File ID:** M7.070116.103900 **Dil:** 1 **Units:** ug/L
Sample ID: L16061130-01 **File ID:** M7.070116.103628 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MERCURY	1.00		0	U	1	100.0	85 - 115	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4834841
Report generated: 07/01/2016 15:49

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061290
Analytical Method: 7470A
ICAL Worknum: WG575044

Workgroup (AAB#): WG574691
Instrument ID: CVAA1
Initial Calibration Date: 07/01/2016 10:18

Analyte	WG575044-01		WG575044-02		WG575044-03		WG575044-04		WG575044-05		WG575044-06	
	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT
Mercury	0	32.06	0.200	2295	1.00	10710	2.00	21560	5.00	53500	10.0	104800

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4834847
Report generated 07/01/2016 15:49

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061290
Analytical Method: 7470A
ICAL Worknum: WG575044

Workgroup (AAB#): WG574691
Instrument ID: CVAA1
Initial Calibration Date: 07/01/2016 10:18

Analyte	R	Q
Mercury	1.000	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4834847
Report generated 07/01/2016 15:49

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061290
Instrument ID: CVAA1
File ID: M7.070116.102351
Workgroup (AAB#): WG574691
Matrix: WATER

Run Date: 07/01/2016
Run Time: 10:23
Analyst: AMA
Cal ID: CVAA1 - 01-JUL-16

Sample ID: WG575044-08
Method: 7470A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
MERCURY	.1	.4	.1	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4834849
Report generated 07/01/2016 15:49

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575044-10
Instrument ID: CVAA1
Run Time: 10:28
Method: 7470A
File ID: M7.070116.102855
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG574691
Cal ID: CVAA1 - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4834851
Report generated 07/01/2016 15:50

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575044-12
Instrument ID: CVAA1
Run Time: 10:59
Method: 7470A
File ID: M7.070116.105919
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG574691
Cal ID: CVAA1 - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4834851
Report generated 07/01/2016 15:50

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575044-14
Instrument ID: CVAA1
Run Time: 11:29
Method: 7470A
File ID: M7.070116.112940
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG574691
Cal ID: CVAA1 - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4834851
Report generated 07/01/2016 15:50

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575044-16
Instrument ID: CVAA1
Run Time: 11:49
Method: 7470A
File ID: M7.070116.114956
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG574691
Cal ID: CVAA1 - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4834851
Report generated 07/01/2016 15:50

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061290 Run Date: 07/01/2016 Sample ID: WG575044-07
Instrument ID: CVAA1 Run Time: 10:21 Method: 7470A
File ID: M7.070116.102121 Analyst: AMA Units: ug/L
Workgroup (AAB#): WG574691 Cal ID: CVAA1 - 01-JUL-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Mercury		2	2.10	105	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4834848
Report generated 07/01/2016 15:49

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575044-09
Instrument ID: CVAA1
Run Time: 10:26
Method: 7470A
File ID: M7.070116.102624
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG574691
Cal ID: CVAA1 - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00207	mg/L	103	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4834850
Report generated 07/01/2016 15:50

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575044-11
Instrument ID: CVAA1
Run Time: 10:56
Method: 7470A
File ID: M7.070116.105648
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG574691
Cal ID: CVAA1 - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00216	mg/L	108	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4834850
Report generated 07/01/2016 15:50

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575044-13
Instrument ID: CVAA1
Run Time: 11:27
Method: 7470A
File ID: M7.070116.112709
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG574691
Cal ID: CVAA1 - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00220	mg/L	110	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4834850
Report generated 07/01/2016 15:50

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061290
Run Date: 07/01/2016
Sample ID: WG575044-15
Instrument ID: CVAA1
Run Time: 11:47
Method: 7470A
File ID: M7.070116.114725
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG574691
Cal ID: CVAA1 - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00224	mg/L	112	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4834850
Report generated 07/01/2016 15:50

2.3.3.3 Raw Data

PDM CVAA1 245.1/7470/7471

Report Generated By CETAC QuickTrace
Analyst: VOA
Worksheet file: C:\Program Files (x86)\QuickTrace\Worksheets\070116A.wsz
Date Started: 7/1/2016 9:38:14 AM
Comment:

Results

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
Standard #0					STD	07/01/16 10:06:04 am	0.0000	32	51.53		1.00
Replicates	33.9	9.2	48.5	36.7							
Standard #1 (0.2 ug/L)					STD	07/01/16 10:08:35 am	0.2000	2295	0.39		1.00
Replicates	2283.8	2292.8	2302.1	2302.8							
Standard #2 (1.0 ug/L)					STD	07/01/16 10:11:07 am	1.0000	10713	0.20		1.00
Replicates	10683.7	10720.4	10713.1	10735.4							
Standard #3 (2.0 ug/L)					STD	07/01/16 10:13:40 am	2.0000	21562	0.38		1.00
Replicates	21463.6	21528.1	21609.0	21649.1							
Standard #4 (5.0 ug/L)					STD	07/01/16 10:16:13 am	5.0000	53499	0.23		1.00
Replicates	53337.3	53478.0	53550.0	53628.8							
Standard #5 (10.0 ug/L)					STD	07/01/16 10:18:46 am	10.0000	104841	0.45		1.00
Replicates	104298.3	104651.5	105011.5	105402.7							

Calibration

Equation: A = 339.906 + 10489.180C
R2: 0.99990
SEE: 460.6227
Flags:

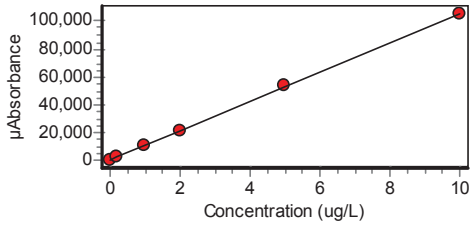

ICV					ICV	07/01/16 10:21:21 am	2.0960	22321	0.23		1.00
Replicates	22263.7	22304.4	22327.0	22388.5							
% Recovery	104.78										

Approved: July 01, 2016
Alexandra M. Alpred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
ICB					ICB	07/01/16 10:23:51 am	-0.0320	5	241.36		1.00
Replicates	21.4	0.6	-0.6	-2.8							
CCV					CCV	07/01/16 10:26:24 am	2.0690	22040	0.78		1.00
Replicates	21832.9	21978.2	22121.4	22228.2							
% Recovery	103.44										
CCB					CCB	07/01/16 10:28:55 am	-0.0304	21	102.47		1.00
Replicates	31.7	46.9	5.0	1.4							
WG574194-02					MB	07/01/16 10:31:26 am	-0.0310	15	206.72		1.00
Replicates	11.9	54.7	15.1	-21.4							
WG574194-03					LCS	07/01/16 10:33:57 am	4.0120	42423	0.07		1.00
Replicates	42391.4	42417.5	42418.6	42464.5							
% Recovery	100.30										
L1606113001					UNK	07/01/16 10:36:28 am	-0.0328	-4	248.94		1.00
Replicates	-5.3	-15.2	-6.7	10.2							
WG574691-01					SPK	07/01/16 10:39:00 am	1.0000	10832	0.07		1.00
Replicates	10831.4	10821.7	10839.2	10836.2							
% Recovery	103.31										
L1606113002					UNK	07/01/16 10:41:32 am	-0.0290	35	27.30		1.00
Replicates	21.8	43.2	41.1	35.2							
L1606113003					UNK	07/01/16 10:44:04 am	-0.0301	24	48.09		1.00
Replicates	39.8	14.8	15.9	25.9							
L1606113004					UNK	07/01/16 10:46:36 am	-0.0259	69	17.22		1.00
Replicates	69.2	78.1	51.8	75.3							
L1606113005					UNK	07/01/16 10:49:09 am	-0.0288	38	73.36		1.00
Replicates	2.3	62.5	29.7	58.0							
L1606124401					UNK	07/01/16 10:51:42 am	-0.0319	5	147.97		1.00
Replicates	16.8	-2.4	2.9	4.6							

Approved: July 01, 2016

Alexandra M. Alpred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
WG574691-02					SPK	07/01/16 10:54:16 am	0.9821	10641	0.47		1.00
Replicates	10703.5	10646.3	10632.5	10582.2							
% Recovery	101.40										
CCV					CCV	07/01/16 10:56:48 am	2.1580	22970	0.40		1.00
Replicates	22846.6	22954.2	23027.7	23053.0							
% Recovery	107.88										
CCB					CCB	07/01/16 10:59:19 am	-0.0323	1	266.19		1.00
Replicates	13.4	-2.1	-22.0	16.2							
L1606124402					UNK	07/01/16 11:01:52 am	-0.0296	29	53.06		1.00
Replicates	28.3	10.8	29.3	48.8							
L1606126501					UNK	07/01/16 11:04:26 am	-0.0300	25	44.66		1.00
Replicates	39.4	11.6	25.9	24.9							
WG574194-04					UNK	07/01/16 11:06:57 am	4.0520	42840	0.26		1.00
Replicates	42715.4	42805.0	42864.0	42976.5							
WG574194-05					UNK	07/01/16 11:09:27 am	4.0090	42388	0.05		1.00
Replicates	42388.5	42402.2	42406.7	42355.4							
L1606126504					UNK	07/01/16 11:11:58 am	-0.0336	-12	175.35		1.00
Replicates	-17.4	-39.9	-0.4	8.8							
L1606126505					UNK	07/01/16 11:14:29 am	-0.0296	29	54.43		1.00
Replicates	29.8	49.7	11.6	25.1							
L1606126506					UNK	07/01/16 11:17:01 am	-0.0334	-11	155.89		1.00
Replicates	-19.7	-0.3	6.5	-28.8							
L1606126601					UNK	07/01/16 11:19:32 am	-0.0029	310	3.21		1.00
Replicates	312.8	299.6	322.1	304.1							
L1606126901					UNK	07/01/16 11:22:04 am	-0.0296	30	92.97		1.00
Replicates	-11.7	44.4	42.9	43.0							

Approved: July 01, 2016
Alexandra M. Alpred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1606127201					UNK	07/01/16 11:24:37 am	-0.0307	18	64.86		1.00
Replicates	9.0	12.6	34.5	14.5							
CCV					CCV	07/01/16 11:27:09 am	2.1950	23367	0.59		1.00
Replicates	23176.4	23356.5	23444.0	23490.0							
% Recovery	109.76										
CCB					CCB	07/01/16 11:29:40 am	-0.0286	40	27.79		1.00
Replicates	38.5	31.4	56.3	34.3							
L1606127202					UNK	07/01/16 11:32:12 am	-0.0315	10	178.11		1.00
Replicates	23.2	25.6	-7.1	-3.2							
L1606128901					UNK	07/01/16 11:34:45 am	-0.0302	23	90.38		1.00
Replicates	52.6	15.7	6.4	15.7							
L1606128904					UNK	07/01/16 11:37:18 am	-0.0247	81	20.61		1.00
Replicates	93.7	94.1	75.4	59.4							
L1606129003					UNK	07/01/16 11:39:52 am	-0.0269	58	24.23		1.00
Replicates	77.1	56.4	53.5	43.9							
L1606129005					UNK	07/01/16 11:42:22 am	-0.0181	150	5.19		1.00
Replicates	152.2	159.2	141.7	145.2							
L1606140201					UNK	07/01/16 11:44:53 am	-0.0291	35	65.85		1.00
Replicates	2.6	54.3	34.9	48.3							
CCV					CCV	07/01/16 11:47:25 am	2.2370	23803	0.28		1.00
Replicates	23718.6	23781.3	23841.0	23871.3							
% Recovery	111.84										
CCB					CCB	07/01/16 11:49:56 am	-0.0306	19	30.24		1.00
Replicates	12.2	24.2	22.5	15.7							

Approved: July 01, 2016
Alexandra M. Alpred

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
July 18, 2016

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001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BNB - Brandi N. Bentley
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJQ - Cameron J. Quick
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
CV - Carl Volkman
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
EMW - ERIC M. WILKEN
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
HDC - Hanah D. Coe
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LJH - Lacey J. Hendershot
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
NPH - Natalie P. Hart
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RNP - RICK N. PETTY
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
July 18, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
July 18, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Debra Richmann
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD	pH:	
Project Name/Location:	Longhorn		
Project Number:	60274185.0013BH 1824 MR10		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Total Metals	1,4 - DIOXANE	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 18/24	18CPTmw16-062216			6/21/16	1320		✓	W	3		✓		✓					
	mw16-062216			6/21/16	1440		✓	W	6	✓	✓		✓					
	mw16F-062216			6/21/16	1440		✓	W	1			✓						
	125-062216			6/22/16	0655		✓	W	4	✓	✓							
	109-062216			6/22/16	0720		✓	W	7	✓	✓	✓	✓					
	18CPTmw07-062216			6/22/16	0830		✓	W	6	✓	✓		✓					
	TRip Blank			6/22/16			✓	W	2	✓								

Comments: **STANDARD TAT**

	Date	Time	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature) Scott Beesinger	6/22/16	1545					
Relinquished by: (Signature)	Date	Time	Received (Signature)				Remarks:

Microbac OVD
Received: 06/23/2016 09:57
By: BRENDA GREGORY
221000087582

Brenda Gregory

*Homogenize all composite samples prior to analysis

Pink QA/QC Manager

00688405

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061290
Account: 2551
Project: 2551.096
Samples: 7
Due Date: 05-JUL-2016

Samplenum	Container ID	Products
L16061290-01	765250	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:47	CLS		
2	PREP	W1	EXT	27-JUN-2016 16:13	CPD	CLS	
3	DISP	EXT	DISP	28-JUN-2016 15:01	BJO	BJO	
4	ANALYZ*	EXT	SEMI	30-JUN-2016 09:48	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:47	CLS		
2	STORE	W1	A1	24-JUN-2016 10:20	BRG	BRG	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061290-01	765251	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:47	CLS		
2	ANALYZ	W1	SEM	01-JUL-2016 10:23	JWR	CLS	
3	STORE	SEM	A1	05-JUL-2016 13:46	BRG	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061290
Account: 2551
Project: 2551.096
Samples: 7
Due Date: 05-JUL-2016

Samplenum	Container ID	Products
L16061290-02	765252	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:47	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:47	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:47	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

Samplenum	Container ID	Products
L16061290-02	765253	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:47	CLS		
2	PREP	W1	EXT	27-JUN-2016 16:13	CPD	CLS	
3	DISP	EXT	DISP	28-JUN-2016 15:00	BJO	BJO	
4	ANALYZ*	EXT	SEMI	30-JUN-2016 09:48	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:47	CLS		
2	STORE	W1	A1	24-JUN-2016 10:20	BRG	BRG	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061290
Account: 2551
Project: 2551.096
Samples: 7
Due Date: 05-JUL-2016

Samplenum	Container ID	Products
L16061290-02	765254	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:47	CLS		
2	ANALYZ	W1	SEM	01-JUL-2016 10:24	JWR	CLS	
3	STORE	SEM	A1	05-JUL-2016 13:46	BRG	JWR	

Samplenum	Container ID	Products
L16061290-03	765255	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:47	CLS		
2	PREP	W1	DIG	23-JUN-2016 15:10	ERP	BRG	
3	ANALYZ*	DIG	METALS	24-JUN-2016 11:51	JYH	ERP	
4	STORE	DIG	A1	28-JUN-2016 13:55	CLS	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061290-04	765256	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:47	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:47	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:47	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061290
Account: 2551
Project: 2551.096
Samples: 7
Due Date: 05-JUL-2016

Samplenum	Container ID	Products
L16061290-04	765257	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:47	CLS		
2	ANALYZ	W1	SEM	01-JUL-2016 10:24	JWR	CLS	
3	STORE	SEM	A1	05-JUL-2016 13:46	BRG	JWR	

Samplenum	Container ID	Products
L16061290-05	765258	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:47	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:47	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:47	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061290
Account: 2551
Project: 2551.096
Samples: 7
Due Date: 05-JUL-2016

Samplenum	Container ID	Products
L16061290-05	765259	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:47	CLS		
2	PREP	W1	EXT	27-JUN-2016 16:13	CPD	CLS	
3	DISP	EXT	DISP	28-JUN-2016 15:00	BJO	BJO	
4	ANALYZ*	EXT	SEMI	30-JUN-2016 09:48	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:47	CLS		
2	STORE	W1	A1	24-JUN-2016 10:00	BRG	BRG	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061290-05	765260	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:47	CLS		
2	ANALYZ	W1	SEM	01-JUL-2016 10:24	JWR	CLS	
3	STORE	SEM	A1	11-JUL-2016 11:21	CLS	JWR	

Samplenum	Container ID	Products
L16061290-05	765261	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:47	CLS		
2	PREP	W1	DIG	23-JUN-2016 15:10	ERP	BRG	
3	ANALYZ*	DIG	METALS	24-JUN-2016 11:51	JYH	ERP	
4	STORE	DIG	A1	28-JUN-2016 13:56	CLS	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061290
Account: 2551
Project: 2551.096
Samples: 7
Due Date: 05-JUL-2016

Samplenum	Container ID	Products
L16061290-06	765262	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:47	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:47	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:47	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

Samplenum	Container ID	Products
L16061290-06	765263	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:47	CLS		
2	PREP	W1	EXT	27-JUN-2016 16:13	CPD	CLS	
3	DISP	EXT	DISP	28-JUN-2016 15:00	BJO	BJO	
4	ANALYZ*	EXT	SEMI	30-JUN-2016 09:48	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:47	CLS		
2	STORE	W1	A1	24-JUN-2016 10:00	BRG	BRG	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061290
Account: 2551
Project: 2551.096
Samples: 7
Due Date: 05-JUL-2016

Samplenum	Container ID	Products
L16061290-06	765264	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	23-JUN-2016 13:47	CLS		
2	ANALYZ	W1	SEM	01-JUL-2016 10:24	JWR	CLS	
3	STORE	SEM	A1	05-JUL-2016 13:46	BRG	JWR	

Samplenum	Container ID	Products
L16061290-07	765265	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:47	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	23-JUN-2016 13:47	CLS		
2	ANALYZ	V1	ORG4	24-JUN-2016 07:43	AWE	CLS	
3	STORE	ORG4	A1	07-JUL-2016 07:32	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16061452

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Michelle Taylor – Client Services Specialist
(740) 373-4071
Michelle.Taylor@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on July 19 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
0019234	H	3.0		J2317164877	X
0018829	H	3.0		J2317164868	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18CPTMW12SW-062416	L16061452-01	06/24/2016 07:50	06/25/2016 10:39
18CPTMW12DW-062416	L16061452-02	06/24/2016 08:55	06/25/2016 10:39
MW7-062416	L16061452-03	06/24/2016 09:55	06/25/2016 10:39
TRIP BLANK	L16061452-04	06/24/2016 00:01	06/25/2016 10:39

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16061452
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.0 Summary Data

1.1 Narratives

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG575199	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-13 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Wade DeLong	Wade DeLong	Chemist I	2016-07-13 13:01:36

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG575199	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-13 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG575199	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-13 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		X			2
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG575199	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-13 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG575199	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-13 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG575199	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-13 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. Acetone and 2-Butanone were below the lower control limit in the CCV WG575198-02 analyzed 07/05/2016 on HPMS11.

2. 1,1-Dichloroethene, Chloromethane, Dichlorodifluoromethane were below the lower control limit in the LCS WG575199-02 and the LCSD WG575199-03 analyzed 07/05/2016 on HPMS11. Vinyl chloride was below the lower control limit in the LCSD WG575199-03 analyzed 07/05/2016 on HPMS11.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG574286	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-12 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-07-12 12:36:23

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG574286	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-12 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG574286	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-12 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG574286	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-12 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG574286	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-12 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG574286	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-12 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575005	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Wade DeLong	Wade DeLong	Chemist I	2016-07-06 18:31:04

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575005	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575005	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575005	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575005	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575005	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG574636	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-19 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-07-19 13:35:19

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG574636	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-19 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?		X			ER#1
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG574636	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-19 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG574636	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-19 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			ER#2
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG574636	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-19 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG574636	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-19 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - Client sample 01 required dilution analyses in order to obtain results for calcium, magnesium, and sodium within the calibration range.

ER#2 - The low level continuing calibration verification analyzed initially on 30-Jun-2016 at 14:46 yielded a noncompliant recovery for iron. Client sample 01 and batch QA/QC samples were reanalyzed on a later calibration which was compliant for iron.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG574419	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-19 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-07-19 13:26:36

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG574419	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-19 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?		X			ER#1
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG574419	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-19 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG574419	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-19 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG574419	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-19 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG574419	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-19 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - Client sample 01 required dilution analysis in order to obtain results for barium and manganese within the calibration range.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG574502	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-19 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-07-19 13:23:22

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG574502	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-19 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG574502	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-19 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG574502	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-19 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG574502	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-19 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

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Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061452
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG574502	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-19 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061452-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	18CPTMW12SW-062416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG575199	**Analyst:**	JDS	**Run Date:**	07/06/2016 02:10
Collect Date:	06/24/2016 07:50	**Dilution:**	1	**File ID:**	11M13093
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	1.70		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	89.0	70	120	
Toluene-d8	98.6	85	120	
4-Bromofluorobenzene	94.8	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061452-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW12SW-062416	**Prep Method:**	3520C	**Prep Date:**	06/27/2016 14:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574772	**Analyst:**	MES	**Run Date:**	07/05/2016 22:02
Collect Date:	06/24/2016 07:50	**Dilution:**	1	**File ID:**	15M18736
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	55.4	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061452-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW12SW-062416	**Prep Method:**	6850	**Prep Date:**	07/01/2016 13:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575005	**Analyst:**	JWR	**Run Date:**	07/01/2016 22:52
Collect Date:	06/24/2016 07:50	**Dilution:**	1	**File ID:**	1LM.LM35590
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3.92		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16061452-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW12SW-062416	**Prep Method:**	3015	**Prep Date:**	06/29/2016 12:37
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/30/2016 12:04
Workgroup #:	WG574839	**Analyst:**	JYH	**Run Date:**	06/30/2016 17:41
Collect Date:	06/24/2016 07:50	**Dilution:**	1	**File ID:**	T3.063016.174121
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.0712	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Potassium, Total	7440-09-7	82.0		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061452-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW12SW-062416	**Prep Method:**	3015	**Prep Date:**	06/29/2016 12:37
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	07/14/2016 12:14
Workgroup #:	WG574839	**Analyst:**	JYH	**Run Date:**	07/14/2016 17:27
Collect Date:	06/24/2016 07:50	**Dilution:**	5	**File ID:**	T3.071416.172719
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	45.3		2.50	1.25	0.625
Iron, Total	7439-89-6	3.46		1.00	0.500	0.250
Magnesium, Total	7439-95-4	32.8		5.00	2.50	1.25
Sodium, Total	7440-23-5	235		5.00	2.50	1.25

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061452-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW12SW-062416	**Prep Method:**	3015	**Prep Date:**	06/28/2016 08:58
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574824	**Analyst:**	JYH	**Run Date:**	07/01/2016 15:49
Collect Date:	06/24/2016 07:50	**Dilution:**	1	**File ID:**	NI.070116.154932
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00647		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00727		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00964		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00200	U	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.00744	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.000779	J	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0132	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061452-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW12SW-062416	**Prep Method:**	3015	**Prep Date:**	06/28/2016 08:58
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/06/2016 09:17
Workgroup #:	WG574824	**Analyst:**	JYH	**Run Date:**	07/06/2016 18:43
Collect Date:	06/24/2016 07:50	**Dilution:**	50	**File ID:**	NI.070616.184328
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.667		0.300	0.150	0.0750
Manganese, Total	7439-96-5	0.893		0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061452-01	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18CPTMW12SW-062416	**Prep Method:**	7470A	**Prep Date:**	06/28/2016 13:03
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	07/01/2016 13:34
Workgroup #:	WG574982	**Analyst:**	AMA	**Run Date:**	07/01/2016 14:38
Collect Date:	06/24/2016 07:50	**Dilution:**	1	**File ID:**	M7.070116.143807
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061452-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW12DW-062416	**Prep Method:**	3520C	**Prep Date:**	06/27/2016 14:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574772	**Analyst:**	MES	**Run Date:**	07/05/2016 22:24
Collect Date:	06/24/2016 08:55	**Dilution:**	1	**File ID:**	15M18737
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	56.5	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061452-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	MW7-062416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG575199	**Analyst:**	JDS	**Run Date:**	07/06/2016 03:46
Collect Date:	06/24/2016 09:55	**Dilution:**	10	**File ID:**	11M13096
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	50.0	Q	100	50.0	25.0
Benzene	71-43-2	2.50	U	10.0	2.50	1.25
Bromobenzene	108-86-1	2.50	U	10.0	2.50	1.25
Bromochloromethane	74-97-5	4.00	U	10.0	4.00	2.00
Bromodichloromethane	75-27-4	5.00	U	10.0	5.00	2.50
Bromoform	75-25-2	10.0	U	20.0	10.0	5.00
Bromomethane	74-83-9	10.0	U	20.0	10.0	5.00
2-Butanone	78-93-3	50.0	Q	100	50.0	25.0
n-Butylbenzene	104-51-8	5.00	U	10.0	5.00	2.50
sec-Butylbenzene	135-98-8	5.00	U	10.0	5.00	2.50
tert-Butylbenzene	98-06-6	5.00	U	10.0	5.00	2.50
Carbon disulfide	75-15-0	10.0	U	20.0	10.0	5.00
Carbon tetrachloride	56-23-5	2.77	J	10.0	5.00	2.50
Chlorobenzene	108-90-7	2.50	U	10.0	2.50	1.25
Chlorodibromomethane	124-48-1	5.00	U	10.0	5.00	2.50
Chloroethane	75-00-3	10.0	U	20.0	10.0	5.00
Chloroform	67-66-3	14.1		10.0	2.50	1.25
Chloromethane	74-87-3	10.0	U	20.0	10.0	5.00
2-Chlorotoluene	95-49-8	2.50	U	10.0	2.50	1.25
4-Chlorotoluene	106-43-4	5.00	U	10.0	5.00	2.50
1,2-Dibromo-3-chloropropane	96-12-8	20.0	U	50.0	20.0	10.0
1,2-Dibromoethane	106-93-4	5.00	U	10.0	5.00	2.50
Dibromomethane	74-95-3	5.00	U	10.0	5.00	2.50
1,2-Dichlorobenzene	95-50-1	2.50	U	10.0	2.50	1.25
1,3-Dichlorobenzene	541-73-1	5.00	U	10.0	5.00	2.50
1,4-Dichlorobenzene	106-46-7	2.50	U	10.0	2.50	1.25
Dichlorodifluoromethane	75-71-8	5.00	U	10.0	5.00	2.50
1,1-Dichloroethane	75-34-3	2.50	U	10.0	2.50	1.25
1,2-Dichloroethane	107-06-2	28.0		10.0	5.00	2.50
1,1-Dichloroethene	75-35-4	5.80	J	20.0	10.0	5.00
cis-1,2-Dichloroethene	156-59-2	13.8		10.0	5.00	2.50

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	5.00	U	10.0	5.00	2.50
1,2-Dichloropropane	78-87-5	4.00	U	10.0	4.00	2.00
1,3-Dichloropropane	142-28-9	4.00	U	10.0	4.00	2.00
2,2-Dichloropropane	594-20-7	5.00	U	10.0	5.00	2.50
cis-1,3-Dichloropropene	10061-01-5	5.00	U	10.0	5.00	2.50
trans-1,3-Dichloropropene	10061-02-6	10.0	U	20.0	10.0	5.00
1,1-Dichloropropene	563-58-6	5.00	U	10.0	5.00	2.50
Ethylbenzene	100-41-4	5.00	U	10.0	5.00	2.50
2-Hexanone	591-78-6	50.0	U	100	50.0	25.0
Hexachlorobutadiene	87-68-3	5.00	U	10.0	5.00	2.50
Isopropylbenzene	98-82-8	5.00	U	10.0	5.00	2.50
p-Isopropyltoluene	99-87-6	5.00	U	10.0	5.00	2.50
4-Methyl-2-pentanone	108-10-1	50.0	U	100	50.0	25.0
Methylene chloride	75-09-2	5.00	U	10.0	5.00	2.50
Naphthalene	91-20-3	4.00	U	10.0	4.00	2.00
n-Propylbenzene	103-65-1	2.50	U	10.0	2.50	1.25
Styrene	100-42-5	2.50	U	10.0	2.50	1.25
1,1,1,2-Tetrachloroethane	630-20-6	5.00	U	10.0	5.00	2.50
1,1,2,2-Tetrachloroethane	79-34-5	4.00	U	10.0	4.00	2.00
Tetrachloroethene	127-18-4	5.00	U	10.0	5.00	2.50
Toluene	108-88-3	5.00	U	10.0	5.00	2.50
1,2,3-Trichlorobenzene	87-61-6	3.00	U	10.0	3.00	1.50
1,2,4-Trichlorobenzene	120-82-1	4.00	U	10.0	4.00	2.00
1,1,1-Trichloroethane	71-55-6	5.00	U	10.0	5.00	2.50
1,1,2-Trichloroethane	79-00-5	5.00	U	10.0	5.00	2.50
Trichloroethene	79-01-6	1740		10.0	5.00	2.50
Trichlorofluoromethane	75-69-4	5.00	U	10.0	5.00	2.50
1,2,3-Trichloropropane	96-18-4	10.0	U	20.0	10.0	5.00
1,2,4-Trimethylbenzene	95-63-6	5.00	U	10.0	5.00	2.50
1,3,5-Trimethylbenzene	108-67-8	5.00	U	10.0	5.00	2.50
Vinyl chloride	75-01-4	5.00	U	10.0	5.00	2.50
o-Xylene	95-47-6	5.00	U	10.0	5.00	2.50
m-,p-Xylene	179601-23-1	10.0	U	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	85	115	
1,2-Dichloroethane-d4	89.1	70	120	
Toluene-d8	98.9	85	120	
4-Bromofluorobenzene	92.7	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061452-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	MW7-062416	**Prep Method:**	3520C	**Prep Date:**	06/27/2016 14:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574772	**Analyst:**	MES	**Run Date:**	07/06/2016 12:35
Collect Date:	06/24/2016 09:55	**Dilution:**	2	**File ID:**	15M18762
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	13.4		4.00	2.00	1.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	91.2	20	129	

Certificate of Analysis

Sample #:	L16061452-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW7-062416	**Prep Method:**	6850	**Prep Date:**	07/01/2016 13:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575005	**Analyst:**	JWR	**Run Date:**	07/01/2016 23:11
Collect Date:	06/24/2016 09:55	**Dilution:**	10000	**File ID:**	1LM.LM35591
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	22200		4000	2000	1000

Certificate of Analysis

Sample #:	L16061452-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG575199	**Analyst:**	JDS	**Run Date:**	07/06/2016 01:06
Collect Date:	06/24/2016 00:01	**Dilution:**	1	**File ID:**	11M13091
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	85	115	
1,2-Dichloroethane-d4	89.2	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	91.7	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061452-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	18CPTMW12SW-062416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG575199	**Analyst:**	JDS	**Run Date:**	07/06/2016 02:10
Collect Date:	06/24/2016 07:50	**Dilution:**	1	**File ID:**	11M13093
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	1.70		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	89.0	70	120	
Toluene-d8	98.6	85	120	
4-Bromofluorobenzene	94.8	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061452-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	MW7-062416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG575199	**Analyst:**	JDS	**Run Date:**	07/06/2016 03:46
Collect Date:	06/24/2016 09:55	**Dilution:**	10	**File ID:**	11M13096
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	50.0	Q	100	50.0	25.0
Benzene	71-43-2	2.50	U	10.0	2.50	1.25
Bromobenzene	108-86-1	2.50	U	10.0	2.50	1.25
Bromochloromethane	74-97-5	4.00	U	10.0	4.00	2.00
Bromodichloromethane	75-27-4	5.00	U	10.0	5.00	2.50
Bromoform	75-25-2	10.0	U	20.0	10.0	5.00
Bromomethane	74-83-9	10.0	U	20.0	10.0	5.00
2-Butanone	78-93-3	50.0	Q	100	50.0	25.0
n-Butylbenzene	104-51-8	5.00	U	10.0	5.00	2.50
sec-Butylbenzene	135-98-8	5.00	U	10.0	5.00	2.50
tert-Butylbenzene	98-06-6	5.00	U	10.0	5.00	2.50
Carbon disulfide	75-15-0	10.0	U	20.0	10.0	5.00
Carbon tetrachloride	56-23-5	2.77	J	10.0	5.00	2.50
Chlorobenzene	108-90-7	2.50	U	10.0	2.50	1.25
Chlorodibromomethane	124-48-1	5.00	U	10.0	5.00	2.50
Chloroethane	75-00-3	10.0	U	20.0	10.0	5.00
Chloroform	67-66-3	14.1		10.0	2.50	1.25
Chloromethane	74-87-3	10.0	U	20.0	10.0	5.00
2-Chlorotoluene	95-49-8	2.50	U	10.0	2.50	1.25
4-Chlorotoluene	106-43-4	5.00	U	10.0	5.00	2.50
1,2-Dibromo-3-chloropropane	96-12-8	20.0	U	50.0	20.0	10.0
1,2-Dibromoethane	106-93-4	5.00	U	10.0	5.00	2.50
Dibromomethane	74-95-3	5.00	U	10.0	5.00	2.50
1,2-Dichlorobenzene	95-50-1	2.50	U	10.0	2.50	1.25
1,3-Dichlorobenzene	541-73-1	5.00	U	10.0	5.00	2.50
1,4-Dichlorobenzene	106-46-7	2.50	U	10.0	2.50	1.25
Dichlorodifluoromethane	75-71-8	5.00	U	10.0	5.00	2.50
1,1-Dichloroethane	75-34-3	2.50	U	10.0	2.50	1.25
1,2-Dichloroethane	107-06-2	28.0		10.0	5.00	2.50
1,1-Dichloroethene	75-35-4	5.80	J	20.0	10.0	5.00
cis-1,2-Dichloroethene	156-59-2	13.8		10.0	5.00	2.50

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	5.00	U	10.0	5.00	2.50
1,2-Dichloropropane	78-87-5	4.00	U	10.0	4.00	2.00
1,3-Dichloropropane	142-28-9	4.00	U	10.0	4.00	2.00
2,2-Dichloropropane	594-20-7	5.00	U	10.0	5.00	2.50
cis-1,3-Dichloropropene	10061-01-5	5.00	U	10.0	5.00	2.50
trans-1,3-Dichloropropene	10061-02-6	10.0	U	20.0	10.0	5.00
1,1-Dichloropropene	563-58-6	5.00	U	10.0	5.00	2.50
Ethylbenzene	100-41-4	5.00	U	10.0	5.00	2.50
2-Hexanone	591-78-6	50.0	U	100	50.0	25.0
Hexachlorobutadiene	87-68-3	5.00	U	10.0	5.00	2.50
Isopropylbenzene	98-82-8	5.00	U	10.0	5.00	2.50
p-Isopropyltoluene	99-87-6	5.00	U	10.0	5.00	2.50
4-Methyl-2-pentanone	108-10-1	50.0	U	100	50.0	25.0
Methylene chloride	75-09-2	5.00	U	10.0	5.00	2.50
Naphthalene	91-20-3	4.00	U	10.0	4.00	2.00
n-Propylbenzene	103-65-1	2.50	U	10.0	2.50	1.25
Styrene	100-42-5	2.50	U	10.0	2.50	1.25
1,1,1,2-Tetrachloroethane	630-20-6	5.00	U	10.0	5.00	2.50
1,1,2,2-Tetrachloroethane	79-34-5	4.00	U	10.0	4.00	2.00
Tetrachloroethene	127-18-4	5.00	U	10.0	5.00	2.50
Toluene	108-88-3	5.00	U	10.0	5.00	2.50
1,2,3-Trichlorobenzene	87-61-6	3.00	U	10.0	3.00	1.50
1,2,4-Trichlorobenzene	120-82-1	4.00	U	10.0	4.00	2.00
1,1,1-Trichloroethane	71-55-6	5.00	U	10.0	5.00	2.50
1,1,2-Trichloroethane	79-00-5	5.00	U	10.0	5.00	2.50
Trichloroethene	79-01-6	1740		10.0	5.00	2.50
Trichlorofluoromethane	75-69-4	5.00	U	10.0	5.00	2.50
1,2,3-Trichloropropane	96-18-4	10.0	U	20.0	10.0	5.00
1,2,4-Trimethylbenzene	95-63-6	5.00	U	10.0	5.00	2.50
1,3,5-Trimethylbenzene	108-67-8	5.00	U	10.0	5.00	2.50
Vinyl chloride	75-01-4	5.00	U	10.0	5.00	2.50
o-Xylene	95-47-6	5.00	U	10.0	5.00	2.50
m-,p-Xylene	179601-23-1	10.0	U	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	85	115	
1,2-Dichloroethane-d4	89.1	70	120	
Toluene-d8	98.9	85	120	
4-Bromofluorobenzene	92.7	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061452-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG575199	**Analyst:**	JDS	**Run Date:**	07/06/2016 01:06
Collect Date:	06/24/2016 00:01	**Dilution:**	1	**File ID:**	11M13091
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

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Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	85	115	
1,2-Dichloroethane-d4	89.2	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	91.7	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 051316
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 / OVAP MSV01 Rev: 23 / 0
Method: 5030B/5030C/5035A SOP: PAT01 / OVAP PAT01 Rev: 18 / 0
Method: 624 SOP: MSV10 Rev: 14
Maintenance Log ID:

Internal Standard: STD76110 Surrogate Standard: STD75929
CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG568769

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M11835	RINSE	NA	1	1		05/13/16 11:59
11M11836	WG568769-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 14:15
11M11837	WG568769-02 0.3ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 14:40
11M11838	WG568769-03 0.4ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 15:12
11M11839	WG568769-04 1.0ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 15:43
11M11840	WG568769-05 2.0ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 16:15
11M11841	WG568769-06 5.0ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 16:47
11M11842	WG568769-07 20ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 17:19
11M11843	WG568769-08 50ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 17:51
11M11844	WG568769-09 100ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 18:22
11M11845	WG568769-10 200ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 18:54
11M11846	WG568769-11 300ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 19:26
11M11847	RINSE	NA	1	1		05/13/16 19:58
11M11848	WG568769-12 50ug/L ALT SRC STD 8260	NA	1	1	STD76109	05/13/16 20:30
11M11849	RINSE	NA	1	1		05/13/16 21:02
11M11850	RINSE	NA	1	1		05/13/16 21:34

Approved: May 23, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 070516
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 24
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD76881 Surrogate Standard: STD76782
CCV: STD76892 LCS: STD76870 MS/MSD: NA

Column 1 ID: Column 2 ID: NA
Workgroups: WG575199

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M13072	WG575198-01 50ng BFB STD 8260	NA	1	1	STD76496	07/05/16 14:37
11M13073	WG575198-02 50ug/L CCV STD 8260	NA	1	1	STD76892	07/05/16 15:03
11M13074	WG575198-02 50ug/L CCV STD 8260	NA	1	1	STD76892	07/05/16 15:40
11M13076	WG575198-01 50ng BFB STD 8260	NA	1	1	STD76496	07/05/16 17:13
11M13077	WG575198-02 50ug/L CCV STD 8260	NA	1	1	STD76892	07/05/16 17:37
11M13078	WG575198-02 50ug/L CCV STD 8260	NA	1	1	STD76892	07/05/16 18:11
11M13079	WGXXXXXX-01 50ug/L A9-CCV STD 8260	NA	1	1	STDXXXXX	07/05/16 18:43
11M13080	WG575199-01 BLANK STD 8260	NA	1	1		07/05/16 19:15
11M13081	WG575199-02 20ug/L LCS STD 8260	NA	1	1	STD76870	07/05/16 19:47
11M13082	WG575199-03 20ug/L LCS2 STD 8260	NA	1	1	STD76870	07/05/16 20:19
11M13083	L16061509-02 B D1 100X 826-BETX	<2	1	100		07/05/16 20:51
11M13084	L16061509-03 B D1 100X 826-BETX	<2	1	100		07/05/16 21:23
11M13085	L16061509-06 B D1 10X 826-BETX	<2	1	10		07/05/16 21:54
11M13086	L16061509-10 B D1 5X 826-BETX	<2	1	5		07/05/16 22:26
11M13087	L16061507-01 B D1 100X 826-SPE2	<2	1	100		07/05/16 22:59
11M13088	L16061507-02 B D1 5X 826-SPE2	<2	1	5		07/05/16 23:30
11M13089	L16061406-04 B 00 2.5X 826-SPE	<2	1	2.5		07/06/16 00:02
11M13090	L16061290-04 B A1 826-SPE	<2	1	1		07/06/16 00:34
11M13091	L16061452-04 A TB 826-LOW	<2	1	1		07/06/16 01:06
11M13092	L16061453-04 A TB 826-LOW	<2	1	1		07/06/16 01:38
11M13093	L16061452-01 A 826-LOW	<2	1	1		07/06/16 02:10
11M13094	L16061453-02 A 826-LOW	<2	1	1		07/06/16 02:42
11M13095	L16061561-01 10X AF 826-TC	<2	17	10		07/06/16 03:14
11M13096	L16061452-03 10X A 826-LOW	<2	1	10		07/06/16 03:46
11M13097	L16061453-01 500X A 826-LOW	<2	1	500		07/06/16 04:18
11M13098	L16061453-03 25X A 826-LOW	<2	1	25		07/06/16 04:50
11M13099	L16061410-01 5X A 826-LOW	<2	1	5		07/06/16 05:21
11M13100	CCV	NA	1	1		07/06/16 05:53
11M13101	RINSE	NA	1	1		07/06/16 06:25
11M13102	RINSE	NA	1	1		07/06/16 06:57

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Approved: July 13, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 070516
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 24
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD76881 Surrogate Standard: STD76782
CCV: STD76892 LCS: STD76870 MS/MSD: NA

Column 1 ID: Column 2 ID: NA
Workgroups: WG575199

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
3	X			
File ID: 11M13074				
	WG575198-02 CCV aborted due to analyst error			
6			Check Standard Failure	
File ID: 11M13078				
	failed low for ace., meth. ace., 2-but.			
25	X	250	Analyzed too dilute	
File ID: 11M13097				
	L16061453-01			
26	X	10	Analyzed too dilute	
File ID: 11M13098				
	L16061453-03			
27	X	1	Analyzed too dilute	
File ID: 11M13099				
	L16061410-01			

Approved: July 13, 2016

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 13-MAY-2016
Analyst: JDS
Analyst: NA
Method: 8260B
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 75133
Analytical Workgroups: WG568769

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	X
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
23-MAY-2016

Secondary Reviewer:
23-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-23-2016 15:39:32

Microbac Laboratories Inc.

Data Checklist

Date: 05-JUL-2016
Analyst: JDS
Analyst: NA
Method: 8260B
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 76231
Analytical Workgroups: WG575199

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	JDS
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
11-JUL-2016

Secondary Reviewer:
13-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-13-2016 08:01:44

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG575199

Login Number: L16061452

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW12SW-062416	01	06/24/16					07/06/2016	11.8	14		07/06/16	11.8	14	
MW7-062416	03	06/24/16					07/06/2016	11.7	14		07/06/16	11.7	14	
TRIP BLANK	04	06/24/16					07/06/2016	12	14		07/06/16	12	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4849104
Report generated 07/13/2016 08:51

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061452
Instrument Id: HPMS11
Workgroup (AAB#): WG575199

Method: 8260
CAL ID: HPMS11-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16061452-01	1.00	01	89.0	103	94.8	98.6
L16061452-03	10.0	DL01	89.1	100	92.7	98.9
L16061452-04	1.00	01	89.2	100	91.7	101
WG575199-01	1.00	01	87.7	99.4	91.6	98.6
WG575199-02	1.00	01	86.3	100	91.2	99.2
WG575199-03	1.00	01	85.3	98.0	89.1	97.4

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4849112
Report generated: 07/13/2016 08:52

METHOD BLANK SUMMARY

Login Number: L16061452
Blank File ID: 11M13080
Prep Date: 07/05/16 19:15
Analyzed Date: 07/05/16 19:15
Analyst: JDS

Work Group: WG575199
Blank Sample ID: WG575199-01
Instrument ID: HPMS11
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG575199-02	11M13081	07/05/16 19:47	01
LCS2	WG575199-03	11M13082	07/05/16 20:19	01
TRIP BLANK	L16061452-04	11M13091	07/06/16 01:06	01
18CPTMW12SW-062416	L16061452-01	11M13093	07/06/16 02:10	01
MW7-062416	L16061452-03	11M13096	07/06/16 03:46	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4849105
Report generated 07/13/2016 08:51

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16061452 Prep Date: 07/05/16 19:15 Sample ID: WG575199-01
Instrument ID: HPMS11 Run Date: 07/05/16 19:15 Prep Method: 5030B/5030C/503
File ID: 11M13080 Analyst: JDS Method: 8260B
Workgroup (AAB#): WG575199 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4849106
13-JUL-2016 08:51

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16061452 Prep Date: 07/05/16 19:15 Sample ID: WG575199-01
Instrument ID: HPMS11 Run Date: 07/05/16 19:15 Prep Method: 5030B/5030C/503
File ID: 11M13080 Analyst: JDS Method: 8260B
Workgroup (AAB#): WG575199 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11 - 13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	99.4	85 - 115	PASS
1,2-Dichloroethane-d4	87.7	70 - 120	PASS
Toluene-d8	98.6	85 - 120	PASS
4-Bromofluorobenzene	91.6	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4849106
13-JUL-2016 08:51

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061452 Analyst: JDS Prep Method: 5030B/5030C/503
Instrument ID: HPMS11 Matrix: Water Method: 8260B
Workgroup (AAB#): WG575199 Units: ug/L
QC Key: DOD4 Lot #: STD76870

Sample ID: WG575199-02 LCS File ID: 11M13081 Run Date: 07/05/2016 19:47
Sample ID: WG575199-03 LCS2 File ID: 11M13082 Run Date: 07/05/2016 20:19

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	21.4	107	20.0	20.9	104	2.29	80 - 130	30	
1,1,1-Trichloroethane	20.0	17.1	85.4	20.0	16.9	84.4	1.27	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	19.1	95.3	20.0	17.9	89.5	6.36	65 - 130	30	
1,1,2-Trichloroethane	20.0	20.5	102	20.0	19.7	98.7	3.61	75 - 125	30	
1,1-Dichloroethane	20.0	15.9	79.5	20.0	15.8	78.9	0.648	70 - 135	30	
1,1-Dichloroethene	20.0	11.0	54.9	20.0	10.9	54.7	0.448	70 - 130	30	*
1,1-Dichloropropene	20.0	16.7	83.4	20.0	16.4	81.8	1.87	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	19.9	99.6	20.0	19.9	99.5	0.0479	55 - 140	30	
1,2,3-Trichloropropane	20.0	20.4	102	20.0	19.3	96.4	5.43	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	20.4	102	20.0	20.3	101	0.902	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	20.8	104	20.0	20.6	103	0.852	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	17.9	89.5	20.0	16.5	82.7	7.89	50 - 130	30	
1,2-Dibromoethane	20.0	20.4	102	20.0	19.0	95.2	6.71	80 - 120	30	
1,2-Dichlorobenzene	20.0	21.4	107	20.0	21.2	106	1.22	70 - 120	30	
1,2-Dichloroethane	20.0	17.7	88.4	20.0	17.3	86.6	2.12	70 - 130	30	
1,2-Dichloropropane	20.0	19.0	94.9	20.0	18.3	91.4	3.80	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	20.7	104	20.0	20.6	103	0.666	75 - 130	30	
1,3-Dichlorobenzene	20.0	21.2	106	20.0	20.9	105	1.55	75 - 125	30	
1,3-Dichloropropane	20.0	20.6	103	20.0	20.5	103	0.100	75 - 125	30	
1,4-Dichlorobenzene	20.0	21.3	107	20.0	21.1	106	1.05	75 - 125	30	
2,2-Dichloropropane	20.0	16.7	83.7	20.0	16.0	80.0	4.60	70 - 135	30	
2-Butanone	20.0	17.3	86.6	20.0	16.1	80.4	7.46	30 - 150	30	
2-Chlorotoluene	20.0	20.8	104	20.0	20.5	102	1.87	75 - 125	30	
2-Hexanone	20.0	16.2	80.8	20.0	15.0	74.8	7.69	55 - 130	30	
4-Chlorotoluene	20.0	20.5	103	20.0	20.2	101	1.53	75 - 130	30	
4-Methyl-2-pentanone	20.0	18.2	91.2	20.0	17.2	85.8	6.08	60 - 135	30	
Acetone	20.0	16.3	81.7	20.0	15.8	79.0	3.31	40 - 140	30	
Benzene	20.0	17.5	87.7	20.0	17.2	85.9	2.07	80 - 120	30	
Bromobenzene	20.0	20.9	105	20.0	20.5	103	1.96	75 - 125	30	
Bromochloromethane	20.0	20.0	100	20.0	19.6	97.8	2.31	65 - 130	30	
Bromodichloromethane	20.0	19.5	97.5	20.0	19.0	94.8	2.85	75 - 120	30	
Bromoform	20.0	20.4	102	20.0	19.4	97.0	5.15	70 - 130	30	
Bromomethane	20.0	14.4	71.9	20.0	13.3	66.5	7.77	30 - 145	30	
Carbon disulfide	20.0	12.5	62.6	20.0	12.2	61.1	2.44	35 - 160	30	
Carbon tetrachloride	20.0	17.4	86.8	20.0	16.9	84.5	2.67	65 - 140	30	
Chlorobenzene	20.0	21.1	106	20.0	20.6	103	2.39	80 - 120	30	
Chloroethane	20.0	14.7	73.5	20.0	14.5	72.4	1.54	60 - 135	30	
Chloroform	20.0	17.8	89.0	20.0	17.4	87.2	2.00	65 - 135	30	
Chloromethane	20.0	6.21	31.1	20.0	6.18	30.9	0.505	40 - 125	30	*
cis-1,2-Dichloroethene	20.0	18.9	94.5	20.0	17.9	89.5	5.43	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4849107
Report generated: 07/13/2016 08:51

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061452 Analyst: JDS Prep Method: 5030B/5030C/503
Instrument ID: HPMS11 Matrix: Water Method: 8260B
Workgroup (AAB#): WG575199 Units: ug/L
QC Key: DOD4 Lot #: STD76870

Sample ID: WG575199-02 LCS File ID: 11M13081 Run Date: 07/05/2016 19:47
Sample ID: WG575199-03 LCS2 File ID: 11M13082 Run Date: 07/05/2016 20:19

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	21.1	105	20.0	20.6	103	2.50	70 - 130	30	
Chlorodibromomethane	20.0	21.3	107	20.0	20.4	102	4.47	60 - 135	30	
Dibromomethane	20.0	18.0	90.0	20.0	17.9	89.3	0.808	75 - 125	30	
Dichlorodifluoromethane	20.0	2.14	10.7	20.0	2.10	10.5	2.02	30 - 155	30	*
Ethylbenzene	20.0	19.9	99.6	20.0	20.1	100	0.735	75 - 125	30	
Hexachlorobutadiene	20.0	18.7	93.5	20.0	19.3	96.4	3.14	50 - 140	30	
Isopropylbenzene	20.0	21.1	106	20.0	20.7	103	2.03	75 - 125	30	
m-,p-Xylene	40.0	41.3	103	40.0	40.4	101	2.27	75 - 130	30	
Methylene chloride	20.0	16.2	80.9	20.0	15.9	79.7	1.45	55 - 140	30	
n-Butylbenzene	20.0	19.7	98.5	20.0	19.3	96.3	2.26	70 - 135	30	
n-Propylbenzene	20.0	21.0	105	20.0	20.7	104	1.18	70 - 130	30	
Naphthalene	20.0	18.1	90.6	20.0	17.7	88.6	2.24	55 - 140	30	
o-Xylene	20.0	21.1	106	20.0	20.7	103	2.20	80 - 120	30	
p-Isopropyltoluene	20.0	21.0	105	20.0	20.7	103	1.41	75 - 130	30	
sec-Butylbenzene	20.0	21.1	105	20.0	20.6	103	2.25	70 - 125	30	
Styrene	20.0	21.5	108	20.0	20.9	105	2.76	65 - 135	30	
tert-Butylbenzene	20.0	22.8	114	20.0	21.4	107	6.21	70 - 130	30	
Tetrachloroethene	20.0	19.6	98.2	20.0	19.5	97.5	0.741	45 - 150	30	
Toluene	20.0	19.6	97.8	20.0	19.0	95.1	2.82	75 - 120	30	
trans-1,2-Dichloroethene	20.0	15.6	78.2	20.0	15.4	77.0	1.50	60 - 140	30	
trans-1,3-Dichloropropene	20.0	19.1	95.7	20.0	18.4	92.0	3.94	55 - 140	30	
Trichloroethene	20.0	20.6	103	20.0	20.7	104	0.456	70 - 125	30	
Trichlorofluoromethane	20.0	14.3	71.6	20.0	13.8	68.9	3.84	60 - 145	30	
Vinyl chloride	20.0	10.4	51.9	20.0	9.79	49.0	5.91	50 - 145	30	*

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	86.3	85.3	70 - 120	PASS
Dibromofluoromethane	100	98.0	85 - 115	PASS
4-Bromofluorobenzene	91.2	89.1	75 - 120	PASS
Toluene-d8	99.2	97.4	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4849107
Report generated: 07/13/2016 08:51

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061452
Instrument: HPMS11
Analyst: JDS
Workgroup: WG568769

Tune ID: WG568769-01
Run Date: 05/13/2016
Run Time: 14:15
File ID: 11M11836
Cal ID: HPMS11 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	24.2	11638	PASS
75.0	95.0	30.0	60.0	50.2	24088	PASS
95.0	95.0	100	100	100	48016	PASS
96.0	95.0	5.00	9.00	6.26	3008	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	86.2	41402	PASS
175	174	5.00	9.00	8.26	3421	PASS
176	174	95.0	101	97.3	40288	PASS
177	176	5.00	9.00	6.92	2789	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG568769-02	STD	01	05/13/2016 14:40	
WG568769-03	STD	01	05/13/2016 15:12	
WG568769-04	STD	01	05/13/2016 15:43	
WG568769-05	STD	01	05/13/2016 16:15	
WG568769-06	STD	01	05/13/2016 16:47	
WG568769-07	STD	01	05/13/2016 17:19	
WG568769-08	STD-CCV	01	05/13/2016 17:51	
WG568769-09	STD	01	05/13/2016 18:22	
WG568769-10	STD	01	05/13/2016 18:54	
WG568769-11	STD	01	05/13/2016 19:26	
WG568769-12	SSCV	01	05/13/2016 20:30	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4849109
Report generated 07/13/2016 08:51

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061452
Instrument: HPMS11
Analyst: JDS
Workgroup: WG575198

Tune ID: WG575198-01
Run Date: 07/05/2016
Run Time: 17:13
File ID: 11M13076
Cal ID: HPMS11 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.4	8258	PASS
75.0	95.0	30.0	60.0	46.8	19945	PASS
95.0	95.0	100	100	100	42653	PASS
96.0	95.0	5.00	9.00	6.71	2862	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	94.0	40085	PASS
175	174	5.00	9.00	7.72	3095	PASS
176	174	95.0	101	96.5	38688	PASS
177	176	5.00	9.00	7.06	2730	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG575198-02	CCV	01	07/05/2016 18:11	
WG575199-01	BLANK	01	07/05/2016 19:15	
WG575199-02	LCS	01	07/05/2016 19:47	
WG575199-03	LCS2	01	07/05/2016 20:19	
L16061452-04	TRIP BLANK	01	07/06/2016 01:06	
L16061452-01	18CPTMW12SW-062416	01	07/06/2016 02:10	
L16061452-03	MW7-062416	DL01	07/06/2016 03:46	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4849109
Report generated 07/13/2016 08:51

Calibration Table Report
Method: 8260WT.M
Title: 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Calibration: Sat May 14 18:45:57 2016
Curve: WG568769
Calibration Files

	Compound	0.3 11M11837.D	0.4 11M11838.D	1 11M11839.D	2 11M11840.D	5 11M11841.D	20 11M11842.D	50 11M11843.D	100 11M11844.D	200 11M11845.D	300 11M11846.D	Avg	%RSD	Linear	Quadratic
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.345	0.368	0.326	0.431	0.400	0.424	0.417	0.424	0.392	10.308		
P	Chloromethane			0.348	0.363	0.289	0.310	0.276	0.296	0.305	0.324	0.314	9.474		
C	Vinyl Chloride		0.275	0.241	0.249	0.244	0.268	0.250	0.271	0.271	0.276	0.261	5.458		
T	1,3-Butadiene					0.242	0.284	0.269	0.264	0.256	0.240	0.259	6.530		
T	Bromomethane			0.167	0.174	0.164	0.180	0.165	0.182	0.194	0.206	0.179	8.292		
T	Chloroethane			0.164	0.165	0.151	0.174	0.161	0.171	0.173	0.181	0.167	5.524		
T	Trichlorofluoromethane		0.514	0.523	0.537	0.496	0.552	0.498	0.524	0.514	0.514	0.519	3.376		
T	Diethyl ether			0.189	0.191	0.195	0.196	0.188	0.193		0.192	0.192	1.552		
T	Isoprene					0.299	0.331	0.317	0.323	0.325	0.325	0.320	3.522		
T	Acrolein			0.013	0.022	0.024	0.024	0.024	0.025		0.027	0.023	19.436	0.999	
T	1,1,2-Trichloro-1,2,2-Trifluor			0.261	0.245	0.234	0.268	0.245	0.252	0.254	0.257	0.252	4.225		
T	Acetone					0.063	0.067	0.058	0.057	0.057	0.054	0.059	7.931		
C	1,1-Dichloroethene		0.459	0.452	0.460	0.429	0.492	0.441	0.464	0.461	0.461	0.458	3.810		
T	Tert-Butyl Alcohol			0.014	0.015	0.017	0.018	0.017	0.017		0.017	0.016	9.673		
T	Dimethyl Sulfide					0.169	0.185	0.186	0.185	0.188	0.184	0.183	3.765		
T	Iodomethane				0.043	0.072	0.164	0.206	0.217	0.219	0.208	0.162	45.603		0.999
T	Methyl acetate				0.182	0.317	0.215	0.178	0.176	0.169	0.168	0.201	26.745		1.000
T	Methylene Chloride			0.239	0.256	0.230	0.243	0.224	0.232	0.234	0.238	0.237	4.076		
T	Carbon Disulfide			0.737	0.762	0.714	0.798	0.783	0.783	0.782	0.770	0.766	3.624		
T	Acrylonitrile			0.072	0.069	0.075	0.085	0.081	0.085		0.090	0.080	9.576		
T	Methyl Tert Butyl Ether			0.568	0.546	0.564	0.650	0.585	0.606	0.612	0.595	0.591	5.543		
T	trans-1,2-Dichloroethene		0.288	0.230	0.264	0.229	0.263	0.242	0.251	0.254	0.260	0.253	7.263		
T	n-Hexane				0.424	0.377	0.450	0.431	0.426	0.424	0.422	0.422	5.186		
T	Diisopropyl ether			1.034	1.075	1.083	1.055	1.046	1.062		1.015	1.053	2.218		
T	Vinyl Acetate					0.235	0.391	0.393	0.395	0.430	0.431	0.379	19.260	0.999	
P	1,1-Dichloroethane		0.463	0.517	0.527	0.505	0.535	0.495	0.513	0.511	0.508	0.508	4.023		
T	Ethyl-Tert-Butyl ether			0.815	0.854	0.881	0.876	0.855	0.873		0.844	0.857	2.667		
T	2-Butanone					0.079	0.097	0.087	0.092	0.092	0.091	0.090	6.720		
T	Propionitrile			0.023	0.025	0.026	0.029	0.027	0.027		0.027	0.026	7.381		
T	2,2-Dichloropropane		0.325	0.372	0.435	0.395	0.406	0.386	0.422	0.418	0.419	0.398	8.479		
T	cis-1,2-Dichloroethene		0.276	0.266	0.289	0.269	0.294	0.271	0.280	0.284	0.285	0.279	3.456		
C	Chloroform	0.587	0.483	0.491	0.514	0.480	0.509	0.470	0.486	0.489	0.482	0.499	6.767		
T	1-Bromopropane			0.014	0.041	0.045	0.047	0.048	0.049	0.050	0.050	0.043	28.190	1.000	
T	Bromochloromethane		0.115	0.140	0.169	0.167	0.188	0.172	0.179	0.180	0.181	0.166	14.065		
T	Tetrahydrofuran			0.074	0.061	0.058	0.067	0.061	0.062		0.059	0.063	8.769		
S	Dibromofluoromethane				0.251	0.266	0.284	0.268	0.284	0.285	0.278	0.274	4.605		
T	1,1,1-Trichloroethane		0.475	0.478	0.508	0.471	0.515	0.477	0.502	0.499	0.495	0.491	3.293		
T	Cyclohexane		0.477	0.485	0.547	0.509	0.574	0.551	0.560	0.558	0.556	0.535	6.606		
T	1,1-Dichloropropene		0.342	0.350	0.346	0.332	0.370	0.339	0.358	0.359	0.362	0.351	3.562		
T	Carbon Tetrachloride		0.409	0.457	0.522	0.465	0.518	0.473	0.496	0.492	0.486	0.480	7.177		
T	Tert-Amyl-Methyl ether			0.565	0.596	0.603	0.611	0.588	0.605		0.6	0.59537	2.5818		
S	1,2-Dichloroethane-d4			0.315	0.304	0.32	0.326	0.303	0.319	0.31	0.298	0.31197	3.15125		
T	1,2-Dichloroethane		0.388	0.391	0.419	0.395	0.441	0.402	0.413	0.409	0.391	0.40536	4.2274		
T	Benzene		1.058	0.952	1.016	0.923	0.996	0.908	0.943	0.931	0.914	0.96002	5.38884		
T	Trichloroethene		0.308	0.317	0.329	0.306	0.322	0.294	0.313	0.309	0.311	0.31204	3.21019		
T	Methylcyclohexane		0.332	0.37	0.389	0.35	0.411	0.401	0.4	0.405	0.407	0.3851	7.28708		
C	1,2-Dichloropropane		0.259	0.262	0.273	0.254	0.276	0.257	0.268	0.27	0.273	0.26575	2.95636		
T	1,4-Dioxane				0.001	0.001	0.002	0.001	0.002		0.002	0.0014	19.4617	0.999	
T	Bromodichloromethane		0.346	0.346	0.373	0.362	0.4	0.369	0.387	0.389	0.385	0.37307	5.09783		
T	Dibromomethane		0.118	0.136	0.135	0.137	0.149	0.137	0.146	0.145	0.144	0.13848	6.69192		
T	2-Chloroethyl Vinyl Ether					0.112	0.138	0.128	0.136	0.138	0.135	0.13098	7.7176		
T	4-Methyl-2-Pentanone					0.06	0.08	0.073	0.076	0.077	0.077	0.07387	9.67651		
T	cis-1,3-Dichloropropene		0.326	0.338	0.358	0.357	0.406	0.379	0.395	0.401	0.399	0.37315	7.91395		
T	Dimethyl Disulfide					0.185	0.229	0.227	0.233	0.238	0.235	0.22454	8.74309		

I	Chlorobenzene-d5	ISTD												
S	Toluene-d8				1.101	1.093	1.115	1.056	1.103	1.092	1.044	1.08625	2.42896	
C	Toluene		1.309	1.253	1.287	1.269	1.347	1.249	1.287	1.241	1.149	1.2656	4.33323	
T	Ethyl Methacrylate			0.234	0.233	0.25	0.299	0.285	0.289	0.291	0.281	0.27024	9.93745	
T	trans-1,3-Dichloropropene			0.335	0.388	0.387	0.448	0.418	0.432	0.43	0.412	0.40623	8.82781	
T	1,1,2-Trichloroethane		0.222	0.201	0.243	0.21	0.246	0.221	0.228	0.227	0.221	0.22442	6.30977	
T	2-Hexanone					0.137	0.179	0.165	0.172	0.172	0.165	0.16482	8.91224	
T	1,3-Dichloropropane		0.337	0.338	0.351	0.355	0.396	0.361	0.374	0.373	0.358	0.36039	5.16222	
T	Tetrachloroethene		0.274	0.287	0.317	0.286	0.306	0.286	0.3	0.299	0.294	0.29431	4.41886	
T	Dibromochloromethane		0.283	0.297	0.336	0.33	0.378	0.354	0.372	0.372	0.359	0.3423	9.88235	
T	1,2-Dibromoethane		0.232	0.182	0.228	0.214	0.243	0.224	0.233	0.235	0.232	0.22485	7.92714	
T	1-Chlorohexane		0.37	0.399	0.414	0.391	0.442	0.429	0.44	0.438	0.432	0.41726	6.09034	
P	Chlorobenzene		0.927	0.917	0.998	0.932	0.976	0.909	0.93	0.902	0.853	0.92715	4.48215	
T	1,1,1,2-Tetrachloroethane		0.341	0.361	0.405	0.366	0.388	0.371	0.384	0.385	0.376	0.37515	4.87731	
C	Ethylbenzene		0.453	0.457	0.512	0.463	0.495	0.466	0.482	0.479	0.472	0.47542	3.94078	
T	m-,p-Xylene		0.619	0.583	0.605	0.564	0.604	0.568	0.579	0.559	0.522	0.57798	5.08853	
T	o-Xylene		0.539	0.549	0.574	0.539	0.6	0.561	0.574	0.57	0.557	0.56249	3.43829	
T	Styrene		0.865	0.848	0.897	0.918	1.018	0.955	0.985	0.959	0.917	0.92933	5.96246	
P	Bromoform			0.172	0.189	0.185	0.226	0.21	0.225	0.226	0.228	0.20747	10.9157	
T	Isopropylbenzene		1.515	1.456	1.567	1.46	1.592	1.493	1.534	1.449	1.323	1.48754	5.34769	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.288	0.357	0.369	0.371	0.441	0.396	0.412	0.428	0.442	0.38931	12.6902	
S	p-Bromofluorobenzene				0.772	0.784	0.794	0.716	0.767	0.789	0.773	0.77065	3.38935	
T	1,2,3-Trichloropropane			0.087	0.129	0.138	0.151	0.137	0.142	0.148	0.148	0.13515	15.3522	0.999
T	trans-1,4-Dichloro-2-Butene			0.105	0.117	0.124	0.177	0.178	0.184	0.192	0.193	0.15883	23.0996	0.999
T	n-Propylbenzene		2.87	2.8	3.077	2.949	3.134	2.886	2.979	2.836	2.526	2.89527	6.10377	
T	Bromobenzene	0.663	0.778	0.81	0.798	0.765	0.784	0.718	0.752	0.769	0.76	0.75973	5.57443	
T	1,3,5-Trimethylbenzene		2.338	2.056	2.263	2.172	2.357	2.166	2.252	2.223	2.059	2.20939	4.86261	
T	2-Chlorotoluene		2.158	2.096	2.122	2.033	2.128	1.936	2.002	1.954	1.82	2.0279	5.4704	
T	4-Chlorotoluene		1.782	1.755	1.937	1.808	1.916	1.763	1.832	1.838	1.717	1.8165	4.03452	
T	a-Methylstyrene			1	1.066	1.101	1.241	1.231	1.235	1.242	1.208	1.16555	8.18507	
T	tert-Butylbenzene		0.378	0.44	0.48	0.489	0.498	0.458	0.483	0.49	0.497	0.46809	8.31778	
T	1,2,4-Trimethylbenzene		2.159	2.195	2.274	2.295	2.472	2.234	2.309	2.244	2.067	2.24981	4.97706	
T	sec-Butylbenzene			2.593	2.734	2.647	2.87	2.634	2.723	2.617	2.404	2.65291	5.05975	
T	p-Isopropyltoluene			2.247	2.592	2.45	2.641	2.43	2.506	2.404	2.226	2.43674	6.05243	
T	1,3-Dichlorobenzene		1.487	1.488	1.538	1.46	1.53	1.398	1.451	1.446	1.406	1.46732	3.33475	
T	1,4-Dichlorobenzene	1.482	1.601	1.511	1.569	1.484	1.538	1.404	1.456	1.434	1.395	1.4873	4.59741	
T	n-Butylbenzene		2.048	2.099	2.295	2.049	2.32	2.134	2.224	2.136	2.021	2.14721	5.09289	
T	1,2-Dichlorobenzene	1.33	1.26	1.333	1.432	1.33	1.406	1.296	1.343	1.326	1.31	1.33665	3.71841	
T	1,2-Dibromo-3-Chloropropane				0.057	0.079	0.096	0.081	0.086	0.087	0.091	0.08248	15.3444	0.999
T	1,2,4-Trichlorobenzene		0.927	0.903	0.957	0.956	1.042	0.972	0.998	1.002	1.047	0.97808	4.96993	
T	Hexachlorobutadiene		0.393	0.381	0.451	0.418	0.447	0.415	0.441	0.442	0.49	0.43089	7.64497	
T	Naphthalene		1.885	1.633	1.765	1.712	2.026	1.824	1.878	1.821	1.794	1.81543	6.15168	
T	1,2,3-Trichlorobenzene	0.854	0.957	0.865	0.918	0.834	0.946	0.86	0.889	0.912	0.943	0.89764	4.8559	

Tue May 17 13:57:02 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061452 Run Date: 05/13/2016 Sample ID: WG568769-12
Instrument ID: HPMS11 Run Time: 20:30 Method: 8260B
File ID: 11M11848 Analyst: JDS QC Key: DOD4
ICal Workgroup: WG568769 Cal ID: HPMS11 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.6	ug/L	0.475	4.80	20	
1,1-Dichloroethene	CCC	50.0	47.5	ug/L	0.435	4.90	20	
1,2-Dichloropropane	CCC	50.0	52.8	ug/L	0.281	5.60	20	
Ethylbenzene	CCC	50.0	52.4	ug/L	0.498	4.80	20	
Toluene	CCC	50.0	53.8	ug/L	1.36	7.50	20	
Vinyl Chloride	CCC	50.0	56.1	ug/L	0.292	12.2	20	
Bromoform	SPCC	50.0	49.8	ug/L	0.207	0.300	20	
Chlorobenzene	SPCC	50.0	53.3	ug/L	0.988	6.60	20	
Chloromethane	SPCC	50.0	55.1	ug/L	0.346	10.2	20	
1,1-Dichloroethane	SPCC	50.0	48.5	ug/L	0.493	3.00	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	54.9	ug/L	0.428	9.90	20	
Acetone		50.0	49.7	ug/L	0.0590	0.700	20	
Benzene		50.0	51.2	ug/L	0.983	2.40	20	
Bromobenzene		50.0	51.6	ug/L	0.785	3.30	20	
Bromochloromethane		50.0	53.9	ug/L	0.179	7.80	20	
Bromodichloromethane		50.0	49.5	ug/L	0.370	0.900	20	
Bromomethane		50.0	50.5	ug/L	0.181	1.00	20	
2-Butanone		50.0	50.3	ug/L	0.0904	0.700	20	
n-Butylbenzene		50.0	53.9	ug/L	2.31	7.80	20	
sec-Butylbenzene		50.0	55.9	ug/L	2.97	11.8	20	
tert-Butylbenzene		50.0	56.5	ug/L	0.529	13.1	20	
Carbon Disulfide		50.0	44.7	ug/L	0.685	10.6	20	
Carbon Tetrachloride		50.0	47.3	ug/L	0.454	5.30	20	
Dibromochloromethane		50.0	52.5	ug/L	0.360	5.10	20	
Chloroethane		50.0	58.9	ug/L	0.197	17.7	20	
2-Chlorotoluene		50.0	52.8	ug/L	2.14	5.50	20	
4-Chlorotoluene		50.0	55.4	ug/L	2.01	10.8	20	
1,2-Dibromo-3-Chloropropane		50.0	48.1	ug/L	0.0844	3.80	20	
1,2-Dibromoethane		50.0	52.6	ug/L	0.237	5.30	20	
Dibromomethane		50.0	48.0	ug/L	0.133	3.90	20	
1,2-Dichlorobenzene		50.0	53.6	ug/L	1.43	7.20	20	
1,3-Dichlorobenzene		50.0	52.7	ug/L	1.55	5.40	20	
1,4-Dichlorobenzene		50.0	53.0	ug/L	1.58	6.10	20	
Dichlorodifluoromethane		50.0	56.6	ug/L	0.443	13.2	20	
1,2-Dichloroethane		50.0	47.9	ug/L	0.388	4.20	20	
cis-1,2-Dichloroethene		50.0	53.2	ug/L	0.297	6.30	20	
trans-1,2-Dichloroethene		50.0	52.1	ug/L	0.264	4.30	20	
1,3-Dichloropropane		50.0	56.3	ug/L	0.406	12.6	20	
2,2-Dichloropropane		50.0	45.6	ug/L	0.362	8.90	20	
cis-1,3-Dichloropropene		50.0	57.6	ug/L	0.430	15.2	20	
trans-1,3-Dichloropropene		50.0	52.1	ug/L	0.423	4.20	20	
1,1-Dichloropropene		50.0	50.1	ug/L	0.352	0.200	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4849108
Report generated 07/13/2016 08:51

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061452 Run Date: 05/13/2016 Sample ID: WG568769-12
Instrument ID: HPMS11 Run Time: 20:30 Method: 8260B
File ID: 11M11848 Analyst: JDS QC Key: DOD4
ICal Workgroup: WG568769 Cal ID: HPMS11 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	52.2	ug/L	0.172	4.40	20	
Hexachlorobutadiene		50.0	55.9	ug/L	0.482	11.8	20	
Isopropylbenzene		50.0	54.2	ug/L	1.61	8.50	20	
p-Isopropyltoluene		50.0	54.7	ug/L	2.67	9.40	20	
4-Methyl-2-Pentanone		50.0	52.6	ug/L	0.0777	5.10	20	
Methylene Chloride		50.0	52.0	ug/L	0.246	4.00	20	
Naphthalene		50.0	51.1	ug/L	1.86	2.30	20	
n-Propylbenzene		50.0	56.6	ug/L	3.28	13.2	20	
Styrene		50.0	55.0	ug/L	1.02	9.90	20	
1,1,1,2-Tetrachloroethane		50.0	51.0	ug/L	0.383	2.10	20	
Tetrachloroethene		50.0	52.2	ug/L	0.307	4.40	20	
1,2,3-Trichlorobenzene		50.0	54.1	ug/L	0.971	8.10	20	
1,2,4-Trichlorobenzene		50.0	55.4	ug/L	1.08	10.9	20	
1,1,1-Trichloroethane		50.0	48.1	ug/L	0.472	3.90	20	
1,1,2-Trichloroethane		50.0	52.8	ug/L	0.237	5.50	20	
Trichloroethene		50.0	52.3	ug/L	0.327	4.60	20	
Trichlorofluoromethane		50.0	47.5	ug/L	0.494	4.90	20	
1,2,3-Trichloropropane		50.0	50.1	ug/L	0.147	0.300	20	
1,2,4-Trimethylbenzene		50.0	53.8	ug/L	2.42	7.70	20	
1,3,5-Trimethylbenzene		50.0	55.1	ug/L	2.44	10.3	20	
o-Xylene		50.0	54.7	ug/L	0.615	9.40	20	
m-,p-Xylene		100	107	ug/L	0.620	7.20	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4849108
Report generated 07/13/2016 08:51

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452 Run Date: 07/05/2016 Sample ID: WG575198-02
Instrument ID: HPMS11 Run Time: 18:11 Method: 8260B
File ID: 11M13078 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG575199 Cal ID: HPMS11 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	48.7	ug/L	0.487	2.51	20	
1,1-Dichloroethene	CCC	50.0	48.6	ug/L	0.445	2.78	20	
1,2-Dichloropropane	CCC	50.0	49.1	ug/L	0.261	1.71	20	
Ethylbenzene	CCC	50.0	52.2	ug/L	0.497	4.47	20	
Toluene	CCC	50.0	52.3	ug/L	1.32	4.62	20	
Vinyl Chloride	CCC	50.0	53.3	ug/L	0.278	6.68	20	
Bromoform	SPCC	50.0	54.5	ug/L	0.226	9.02	20	
Chlorobenzene	SPCC	50.0	52.8	ug/L	0.979	5.54	20	
Chloromethane	SPCC	50.0	50.3	ug/L	0.316	0.684	20	
1,1-Dichloroethane	SPCC	50.0	49.8	ug/L	0.507	0.335	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.3	ug/L	0.384	1.32	20	
Xylenes		150	158	ug/L	0.598	5.12	20	
Acetone		50.0	39.4	ug/L	0.0468	21.2	20	*
Benzene		50.0	50.4	ug/L	0.969	0.895	20	
Bromobenzene		50.0	51.4	ug/L	0.781	2.78	20	
Bromochloromethane		50.0	57.2	ug/L	0.190	14.4	20	
Bromodichloromethane		50.0	50.7	ug/L	0.379	1.45	20	
Bromomethane		50.0	52.8	ug/L	0.189	5.69	20	
2-Butanone		50.0	39.7	ug/L	0.0712	20.6	20	*
n-Butylbenzene		50.0	49.5	ug/L	2.12	1.05	20	
sec-Butylbenzene		50.0	51.3	ug/L	2.72	2.51	20	
tert-Butylbenzene		50.0	53.4	ug/L	0.500	6.73	20	
Carbon Disulfide		50.0	49.7	ug/L	0.762	0.603	20	
Carbon Tetrachloride		50.0	52.3	ug/L	0.502	4.58	20	
Dibromochloromethane		50.0	53.9	ug/L	0.369	7.74	20	
Chloroethane		50.0	51.0	ug/L	0.171	1.95	20	
2-Chlorotoluene		50.0	49.1	ug/L	1.99	1.90	20	
4-Chlorotoluene		50.0	49.5	ug/L	1.80	1.10	20	
1,2-Dibromo-3-Chloropropane		50.0	42.8	ug/L	0.0749	14.4	20	
1,2-Dibromoethane		50.0	51.2	ug/L	0.230	2.36	20	
Dibromomethane		50.0	51.4	ug/L	0.143	2.89	20	
1,2-Dichlorobenzene		50.0	50.7	ug/L	1.36	1.46	20	
1,3-Dichlorobenzene		50.0	51.0	ug/L	1.50	2.00	20	
1,4-Dichlorobenzene		50.0	50.2	ug/L	1.49	0.313	20	
Dichlorodifluoromethane		50.0	55.7	ug/L	0.437	11.4	20	
1,2-Dichloroethane		50.0	46.6	ug/L	0.378	6.72	20	
cis-1,2-Dichloroethene		50.0	52.2	ug/L	0.292	4.46	20	
trans-1,2-Dichloroethene		50.0	52.5	ug/L	0.266	5.09	20	
1,3-Dichloropropane		50.0	50.0	ug/L	0.360	0.00380	20	
2,2-Dichloropropane		50.0	55.4	ug/L	0.441	10.8	20	
cis-1,3-Dichloropropene		50.0	52.5	ug/L	0.392	5.02	20	
trans-1,3-Dichloropropene		50.0	50.9	ug/L	0.414	1.89	20	

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452 Run Date: 07/05/2016 Sample ID: WG575198-02
Instrument ID: HPMS11 Run Time: 18:11 Method: 8260B
File ID: 11M13078 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG575199 Cal ID: HPMS11 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	51.4	ug/L	0.361	2.85	20	
2-Hexanone		50.0	40.1	ug/L	0.132	19.7	20	
Hexachlorobutadiene		50.0	47.1	ug/L	0.406	5.83	20	
Isopropylbenzene		50.0	52.9	ug/L	1.57	5.74	20	
p-Isopropyltoluene		50.0	52.0	ug/L	2.53	4.01	20	
4-Methyl-2-Pentanone		50.0	45.5	ug/L	0.0673	8.96	20	
Methylene Chloride		50.0	50.4	ug/L	0.239	0.865	20	
Naphthalene		50.0	47.8	ug/L	1.74	4.41	20	
n-Propylbenzene		50.0	51.5	ug/L	2.98	3.05	20	
Styrene		50.0	54.3	ug/L	1.01	8.66	20	
1,1,1,2-Tetrachloroethane		50.0	52.8	ug/L	0.396	5.62	20	
Tetrachloroethene		50.0	54.7	ug/L	0.322	9.38	20	
1,2,3-Trichlorobenzene		50.0	48.2	ug/L	0.866	3.55	20	
1,2,4-Trichlorobenzene		50.0	49.7	ug/L	0.972	0.637	20	
1,1,1-Trichloroethane		50.0	50.7	ug/L	0.498	1.45	20	
1,1,2-Trichloroethane		50.0	50.3	ug/L	0.226	0.659	20	
Trichloroethene		50.0	53.3	ug/L	0.333	6.67	20	
Trichlorofluoromethane		50.0	50.7	ug/L	0.527	1.50	20	
1,2,3-Trichloropropane		50.0	46.7	ug/L	0.137	6.53	20	
1,2,4-Trimethylbenzene		50.0	51.5	ug/L	2.32	3.04	20	
1,3,5-Trimethylbenzene		50.0	50.8	ug/L	2.25	1.69	20	
o-Xylene		50.0	52.2	ug/L	0.587	4.30	20	
m-,p-Xylene		100	106	ug/L	0.610	5.52	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4849110
Report generated 07/13/2016 08:51

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061452
Instrument ID: HPMS11
Workgroup (AAB#): WG575199

ICAL CCV Number: WG568769-08
CAL ID: HPMS11-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568769-08	NA	NA	263885	438582	521583
Upper Limit	NA	NA	527770	877164	1043166
Lower Limit	NA	NA	131943	219291	260792
L16061452-01	1.00	01	226151	395202	452230
L16061452-03	10.0	DL01	225213	391581	454519
L16061452-04	1.00	01	232571	394530	459223
WG575199-01	1.00	01	236090	408648	472304
WG575199-02	1.00	01	250949	420960	485527
WG575199-03	1.00	01	257746	435197	499574

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4849111
Report generated 07/13/2016 08:52

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061452
Instrument ID: HPMS11
Workgroup (AAB#): WG575199

ICAL CCV Number: WG568769-08
CAL ID: HPMS11-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568769-08	NA	NA	17.06	14.25	10.61
Upper Limit	NA	NA	17.56	14.75	11.11
Lower Limit	NA	NA	16.56	13.75	10.11
L16061452-01	1.00	01	17.06	14.25	10.61
L16061452-03	10.0	DL01	17.06	14.25	10.61
L16061452-04	1.00	01	17.06	14.25	10.61
WG575199-01	1.00	01	17.06	14.25	10.61
WG575199-02	1.00	01	17.06	14.25	10.61
WG575199-03	1.00	01	17.06	14.25	10.61

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4849113
Report generated: 07/13/2016 08:52

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070516\11M13093.D Vial: 18
Acq On : 6 Jul 2016 2:10 Operator: JDS
Sample : L16061452-01 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 06 09:19:49 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	452230	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	395202	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	226151	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	126967	25.6536 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.60%		
43) 1,2-Dichloroethane-d4	10.23	65	125530	22.2441 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 88.96%		
57) Toluene-d8	12.47	98	423325	24.6527 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.60%		
78) p-Bromofluorobenzene	15.64	95	165165	23.6920 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.76%		

Target Compounds					Qvalue
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	2160	0.4739 ug/L	98
13) Acetone	6.34	43	917	0.8539 ug/L #	49
46) Trichloroethene	11.09	130	9583	1.6977 ug/L	95

(#) = qualifier out of range (m) = manual integration
11M13093.D 8260WT.M Wed Jul 06 09:19:50 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070516\11M13093.D Vial: 18
Acq On : 6 Jul 2016 2:10 Operator: JDS
Sample : L16061452-01 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 6 9:19 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

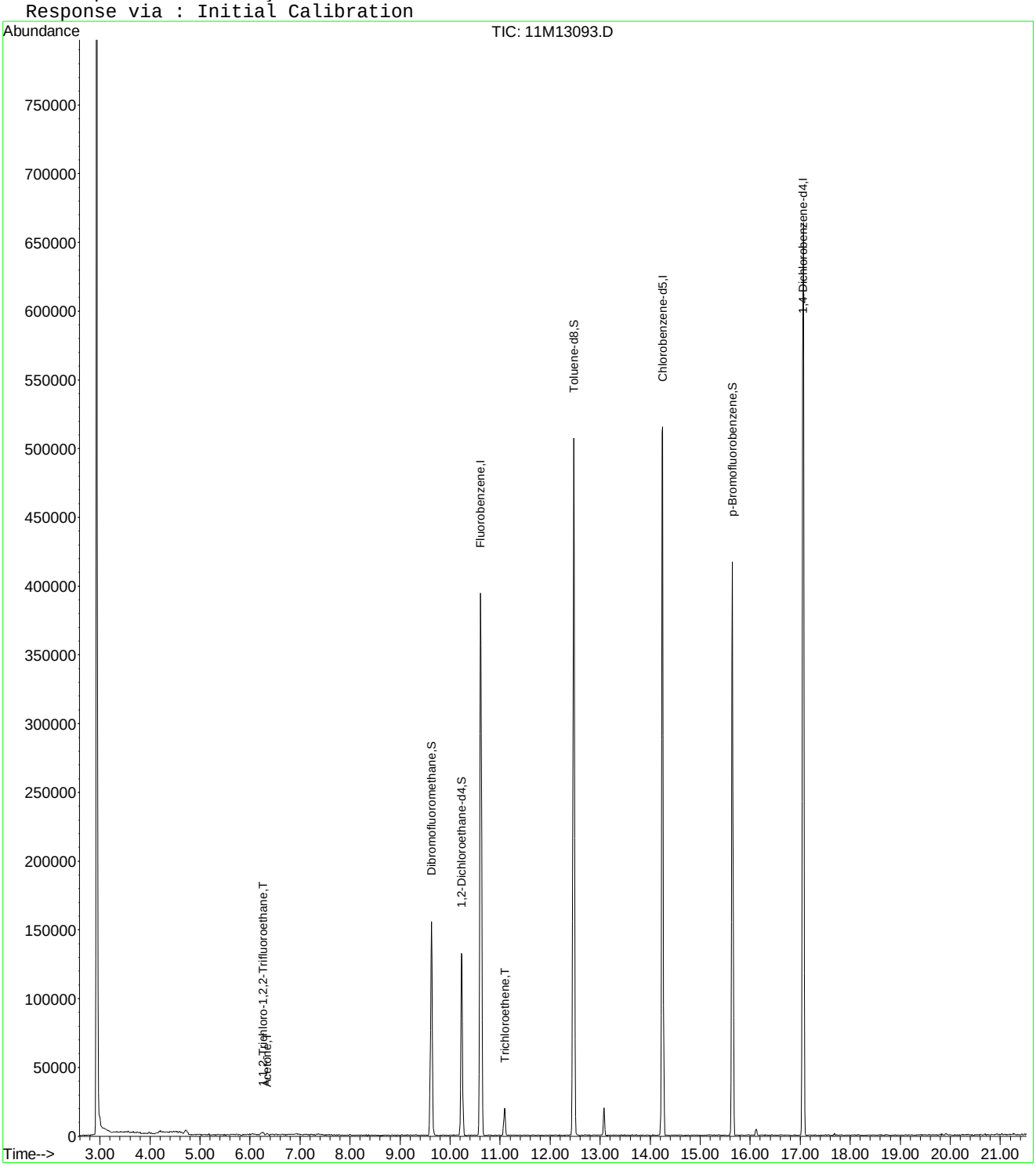

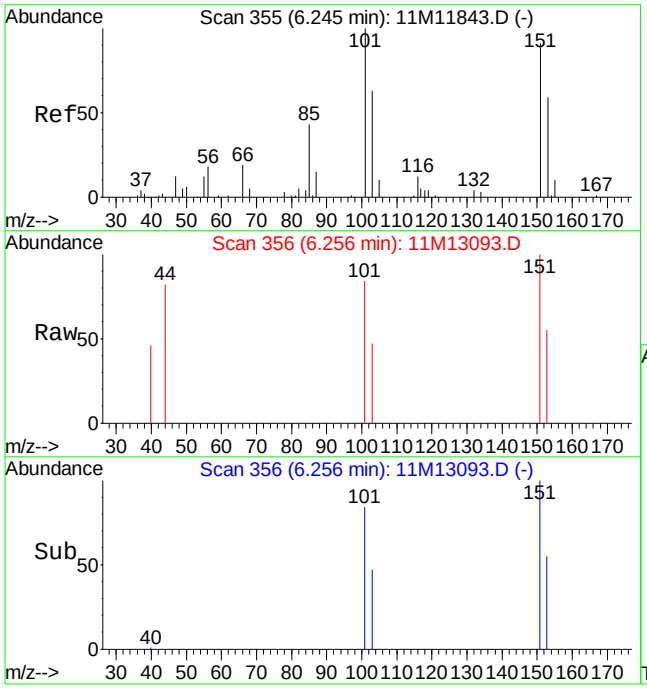

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 0.47 ug/L
RT: 6.26 min Scan# 356
Delta R.T. 0.01 min
Lab File: 11M13093.D
Acq: 6 Jul 2016 2:10

Tgt Ion:101 Resp: 2160

Ion	Ratio	Lower	Upper
101	100		
151	88.7	50.7	130.7

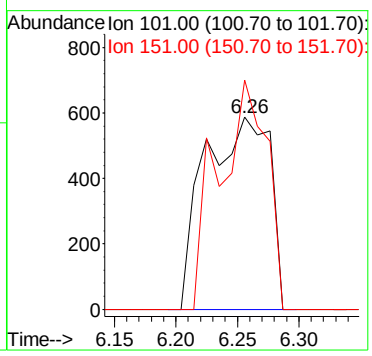

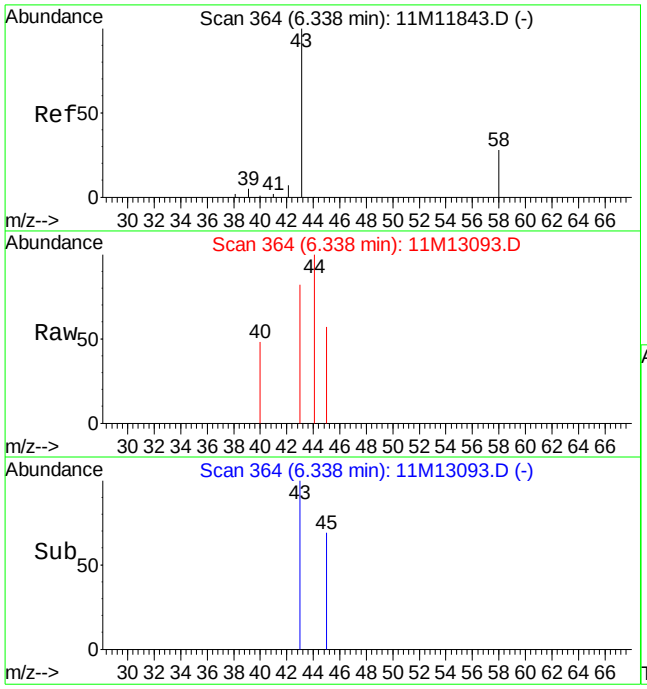

#13
Acetone
Concen: 0.85 ug/L
RT: 6.34 min Scan# 364
Delta R.T. 0.00 min
Lab File: 11M13093.D
Acq: 6 Jul 2016 2:10

Tgt Ion: 43 Resp: 917

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

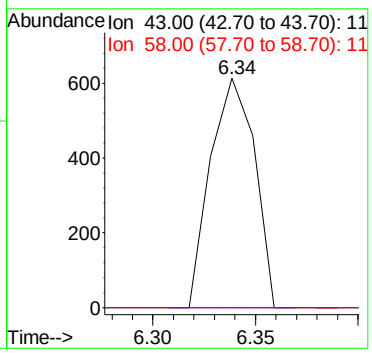

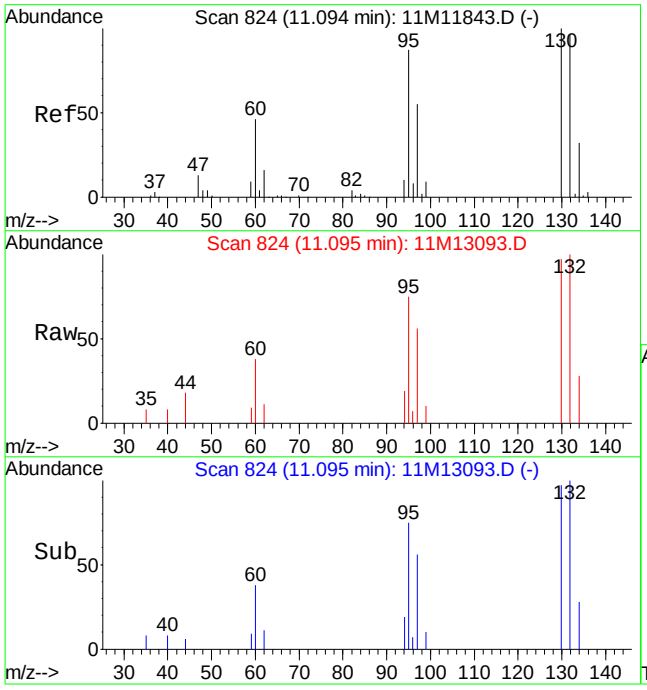

#46
Trichloroethene
Concen: 1.70 ug/L
RT: 11.09 min Scan# 824
Delta R.T. 0.00 min
Lab File: 11M13093.D
Acq: 6 Jul 2016 2:10

Tgt Ion:130 Resp: 9583

Ion	Ratio	Lower	Upper
130	100		
132	98.6	58.3	136.1
95	84.4	55.6	129.8

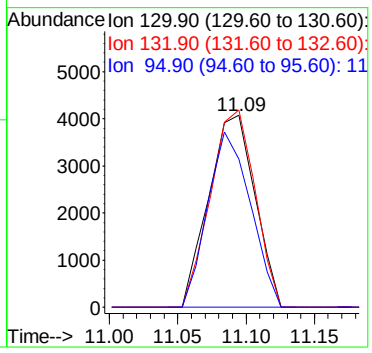

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070516\11M13096.D Vial: 21
Acq On : 6 Jul 2016 3:46 Operator: JDS
Sample : L16061452-03 10X A 826-LOW Inst : hpms11
Misc : 1,10 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 06 09:20:00 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	454519	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	391581	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	225213	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	124515	25.0315 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.12%		
43) 1,2-Dichloroethane-d4	10.23	65	126317	22.2709 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 89.08%		
57) Toluene-d8	12.47	98	420681	24.7253 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.92%		
78) p-Bromofluorobenzene	15.64	95	160848	23.1689 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.68%		

Target Compounds

					Qvalue
3) Chloromethane	3.73	50	1166	0.2044 ug/L #	73
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	24204	5.2836 ug/L	98
13) Acetone	6.34	43	388	0.3595 ug/L #	49
14) 1,1-Dichloroethene	6.57	61	4828	0.5802 ug/L	100
26) Vinyl Acetate	8.22	43	1039	2.5657 ug/L #	79
29) 2-Butanone	8.87	43	699	0.4284 ug/L #	62
32) cis-1,2-Dichloroethene	9.15	96	7006	1.3798 ug/L	81
33) Chloroform	9.35	83	12772	1.4075 ug/L	97
36) Tetrahydrofuran	9.60	42	759	0.6587 ug/L #	47
41) Carbon Tetrachloride	10.20	117	2412	0.2766 ug/L #	89
44) 1,2-Dichloroethane	10.34	62	20608	2.7963 ug/L	92
46) Trichloroethene	11.09	130	985023	173.6281 ug/L	98
47) Methylcyclohexane	11.09	83	9583	1.3687 ug/L #	1
58) Toluene	12.57	91	2496	0.1259 ug/L #	64
70) Ethylbenzene	14.40	106	966	0.1297 ug/L	66

(#) = qualifier out of range (m) = manual integration
11M13096.D 8260WT.M Wed Jul 06 09:20:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070516\11M13096.D Vial: 21
Acq On : 6 Jul 2016 3:46 Operator: JDS
Sample : L16061452-03 10X A 826-LOW Inst : hpms11
Misc : 1,10 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 6 9:20 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

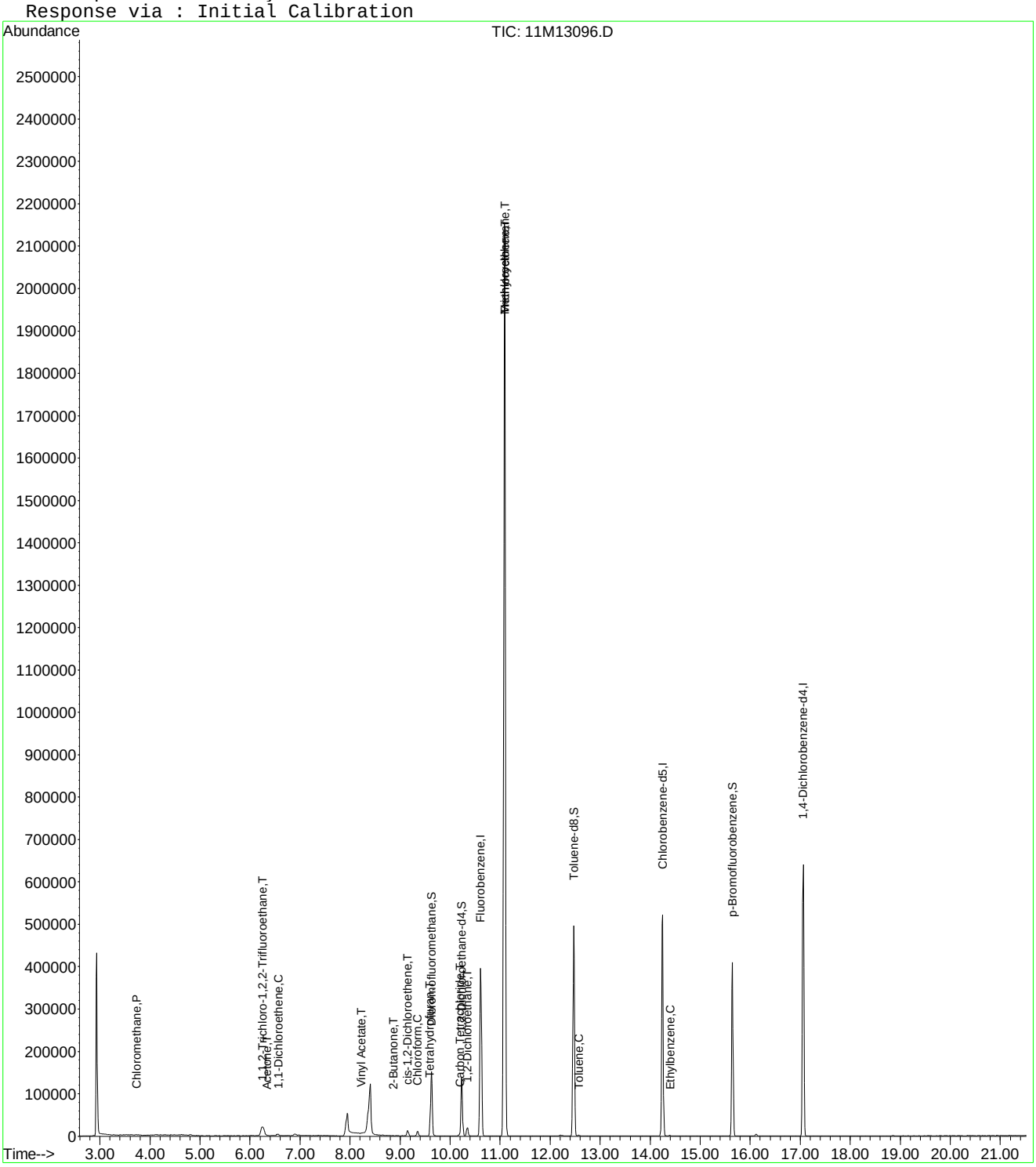

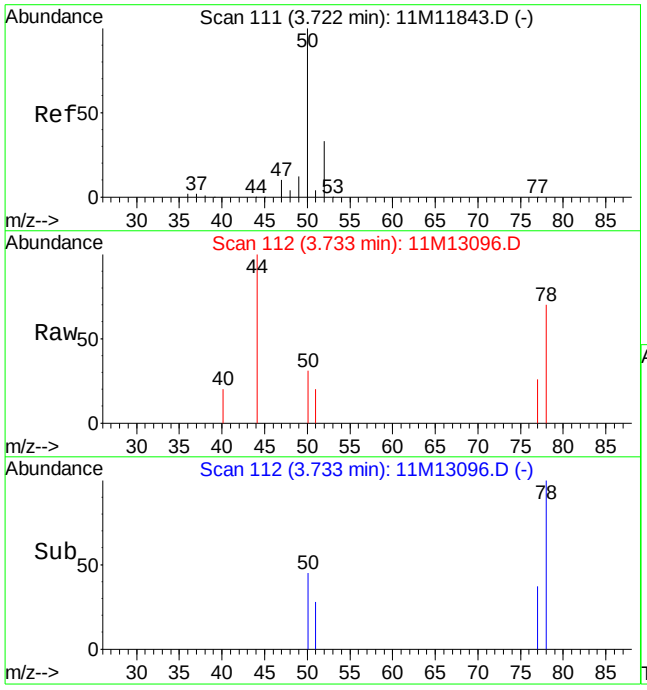

#3
Chloromethane
Concen: 0.20 ug/L
RT: 3.73 min Scan# 112
Delta R.T. 0.01 min
Lab File: 11M13096.D
Acq: 6 Jul 2016 3:46

Tgt Ion: 50 Resp: 1166

Ion	Ratio	Lower	Upper
50	100		
52	17.8	20.0	46.6#

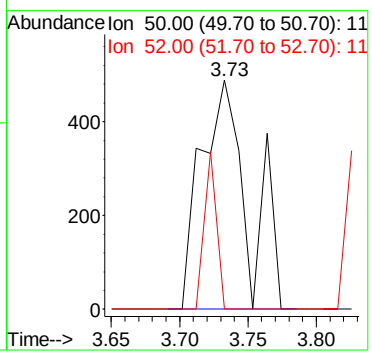

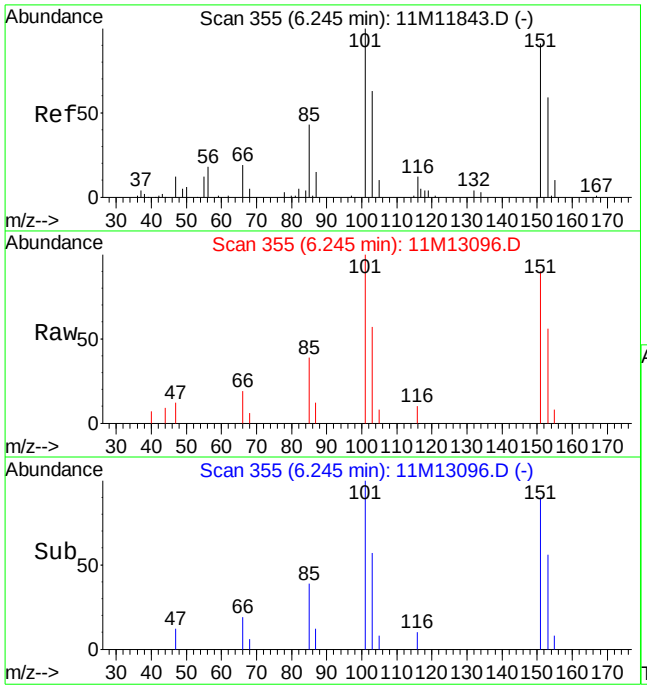

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 5.28 ug/L
RT: 6.25 min Scan# 355
Delta R.T. 0.00 min
Lab File: 11M13096.D
Acq: 6 Jul 2016 3:46

Tgt Ion:101 Resp: 24204

Ion	Ratio	Lower	Upper
101	100		
151	92.2	50.7	130.7

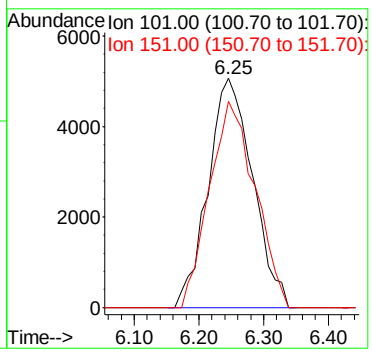

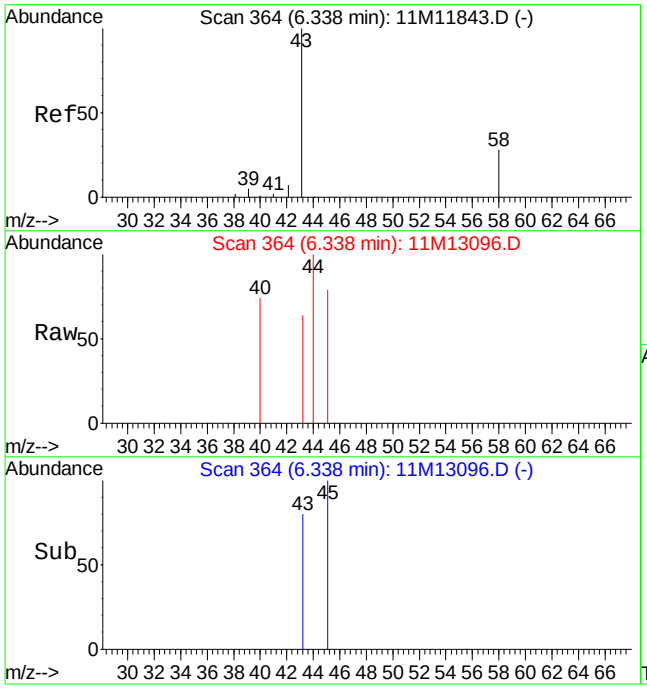

#13
Acetone
Concen: 0.36 ug/L
RT: 6.34 min Scan# 364
Delta R.T. 0.00 min
Lab File: 11M13096.D
Acq: 6 Jul 2016 3:46

Tgt Ion: 43 Resp: 388

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

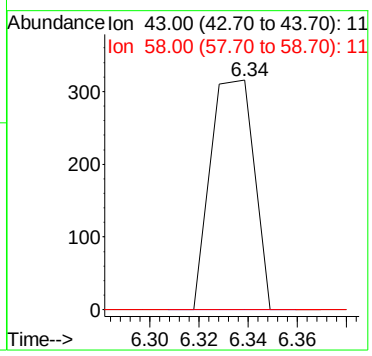

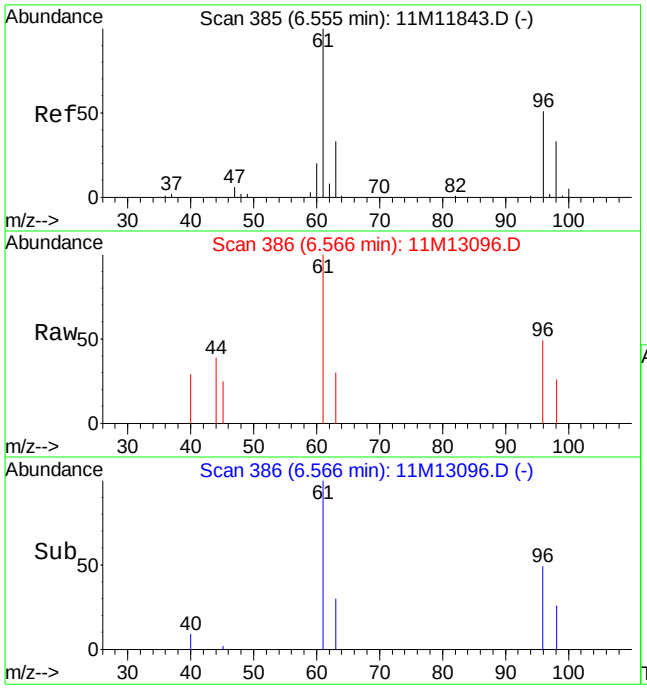

#14
1,1-Dichloroethene
Concen: 0.58 ug/L
RT: 6.57 min Scan# 386
Delta R.T. 0.01 min
Lab File: 11M13096.D
Acq: 6 Jul 2016 3:46

Tgt Ion: 61 Resp: 4828

Ion	Ratio	Lower	Upper
61	100		
96	49.9	30.1	70.3

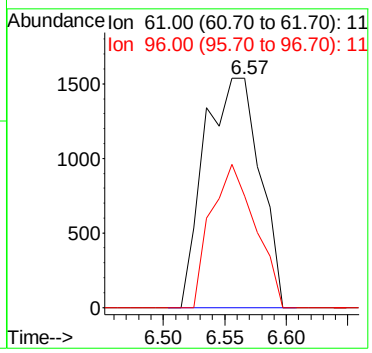

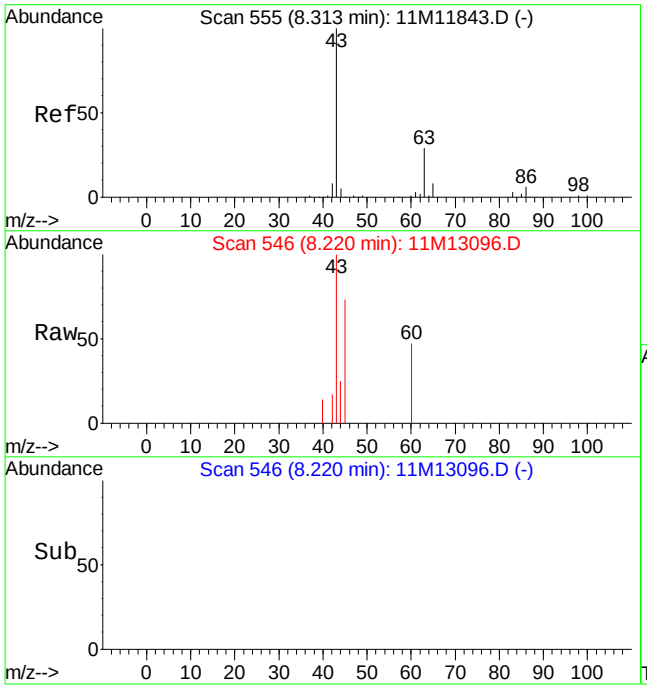

#26
Vinyl Acetate
Concen: 2.57 ug/L
RT: 8.22 min Scan# 546
Delta R.T. -0.09 min
Lab File: 11M13096.D
Acq: 6 Jul 2016 3:46

Tgt Ion: 43 Resp: 1039

Ion	Ratio	Lower	Upper
43	100		
42	0.0	5.0	11.6#
86	0.0	3.8	9.0#

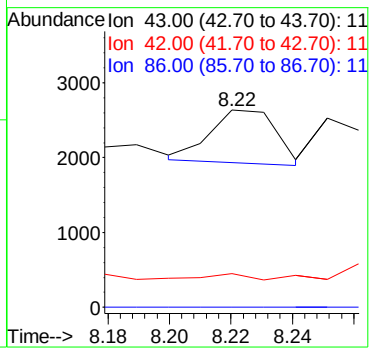

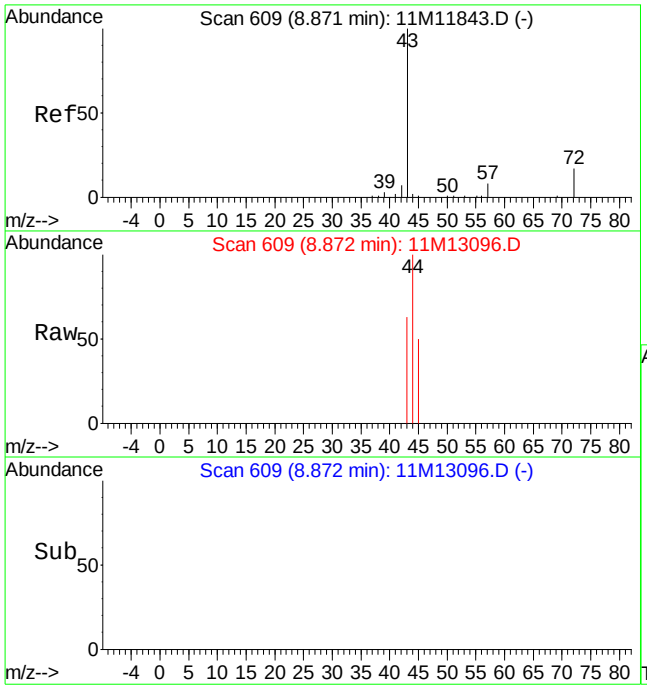

#29
2-Butanone
Concen: 0.43 ug/L
RT: 8.87 min Scan# 609
Delta R.T. 0.00 min
Lab File: 11M13096.D
Acq: 6 Jul 2016 3:46

Tgt Ion: 43 Resp: 699

Ion	Ratio	Lower	Upper
43	100		
72	0.0	9.6	22.4#

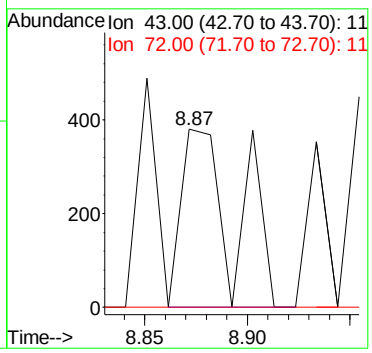

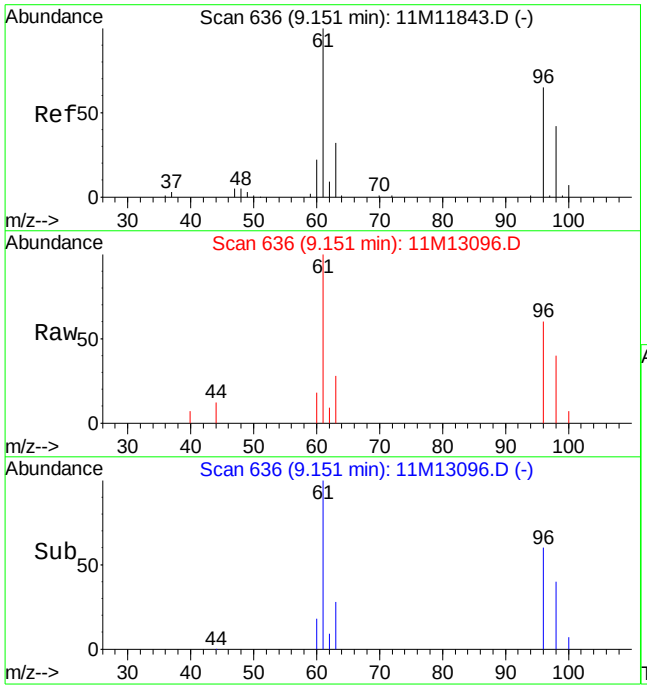

#32
cis-1,2-Dichloroethene
Concen: 1.38 ug/L
RT: 9.15 min Scan# 636
Delta R.T. 0.00 min
Lab File: 11M13096.D
Acq: 6 Jul 2016 3:46

Tgt Ion: 96 Resp: 7006

Ion	Ratio	Lower	Upper
96	100		
61	148.5	105.2	245.6

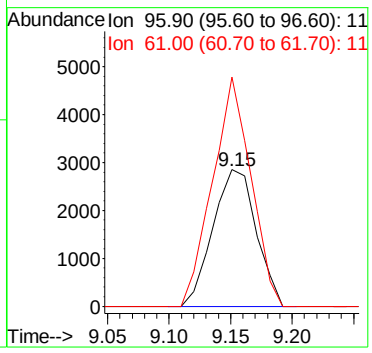

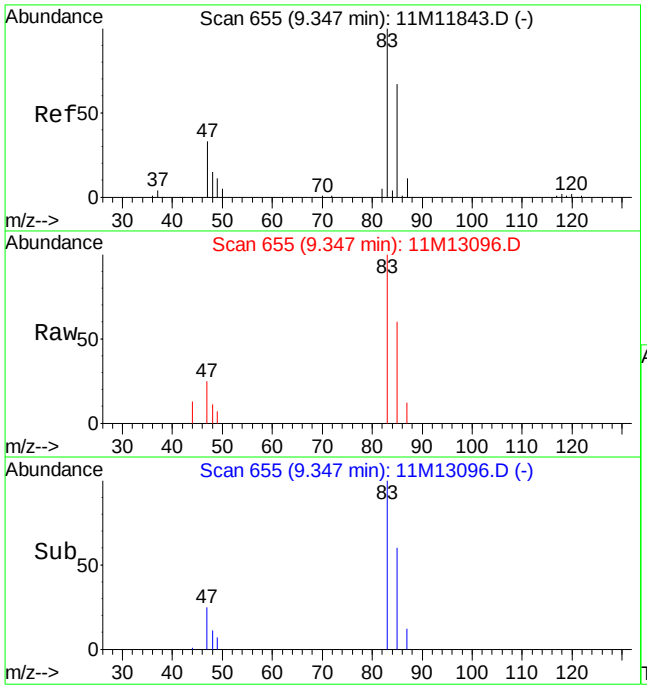

#33
Chloroform
Concen: 1.41 ug/L
RT: 9.35 min Scan# 655
Delta R.T. 0.00 min
Lab File: 11M13096.D
Acq: 6 Jul 2016 3:46

Tgt Ion: 83 Resp: 12772

Ion	Ratio	Lower	Upper
83	100		
85	63.0	39.2	91.4

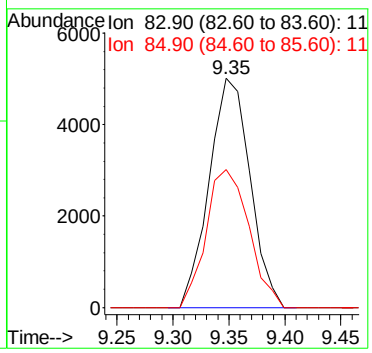

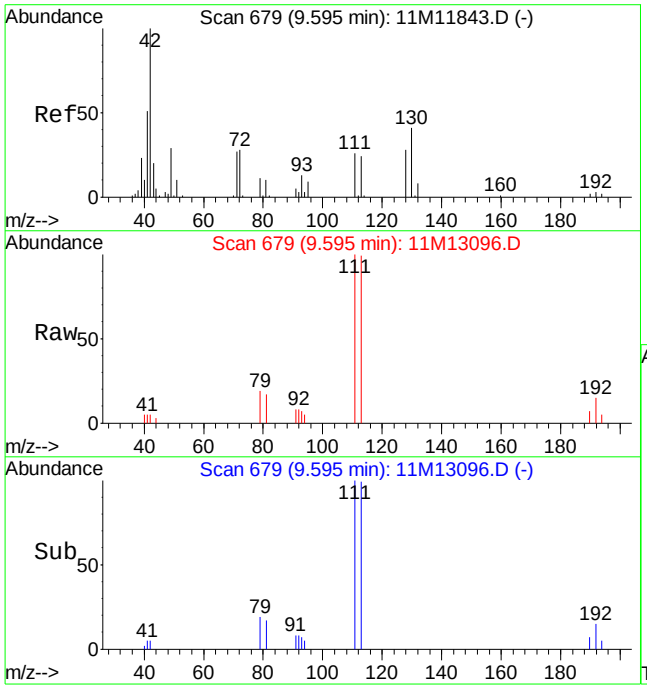

#36
Tetrahydrofuran
Concen: 0.66 ug/L
RT: 9.60 min Scan# 679
Delta R.T. 0.00 min
Lab File: 11M13096.D
Acq: 6 Jul 2016 3:46

Tgt Ion: 42 Resp: 759

Ion	Ratio	Lower	Upper
42	100		
71	0.0	16.4	38.2#
72	0.0	16.6	38.8#

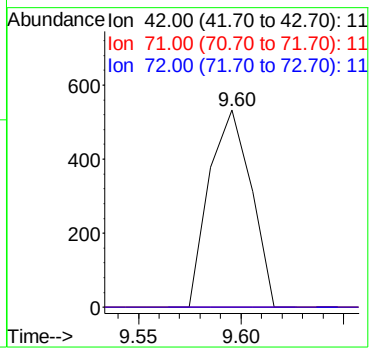

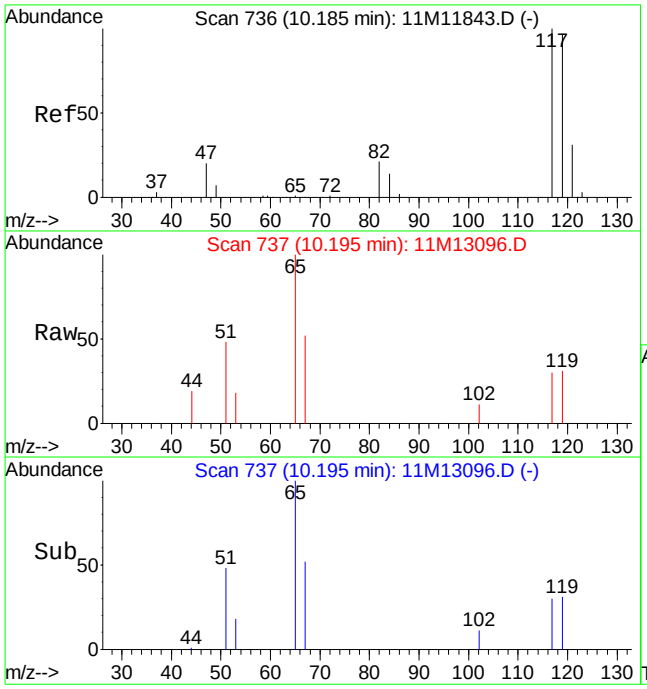

#41
Carbon Tetrachloride
Concen: 0.28 ug/L
RT: 10.20 min Scan# 737
Delta R.T. 0.01 min
Lab File: 11M13096.D
Acq: 6 Jul 2016 3:46

Tgt Ion:117 Resp: 2412

Ion	Ratio	Lower	Upper
117	100		
119	99.1	57.7	134.5
82	0.0	13.0	30.2#

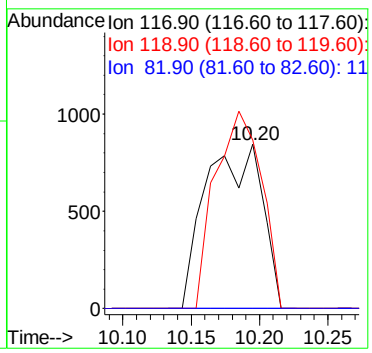

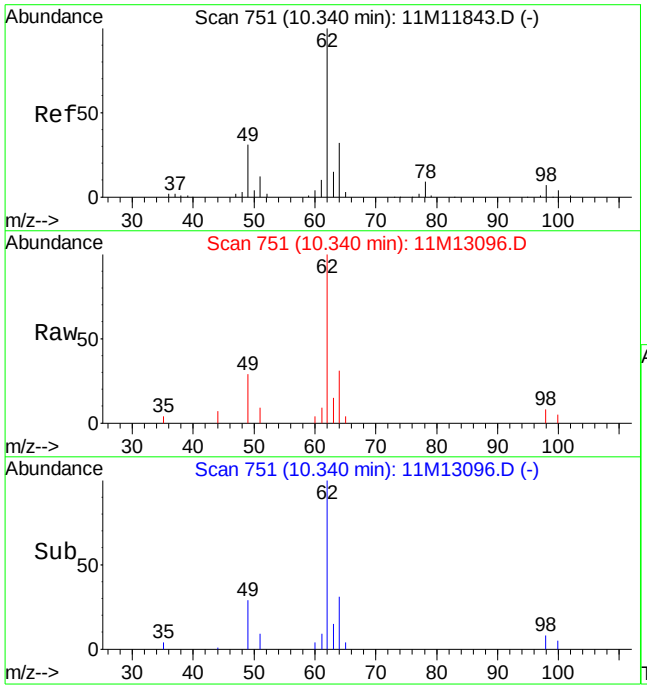

#44
1,2-Dichloroethane
Concen: 2.80 ug/L
RT: 10.34 min Scan# 751
Delta R.T. 0.00 min
Lab File: 11M13096.D
Acq: 6 Jul 2016 3:46

Tgt Ion: 62 Resp: 20608

Ion	Ratio	Lower	Upper
62	100		
64	30.2	18.7	43.7
49	28.9	22.3	52.1

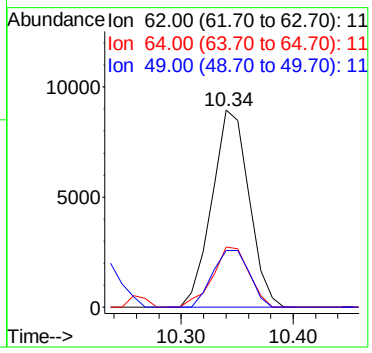

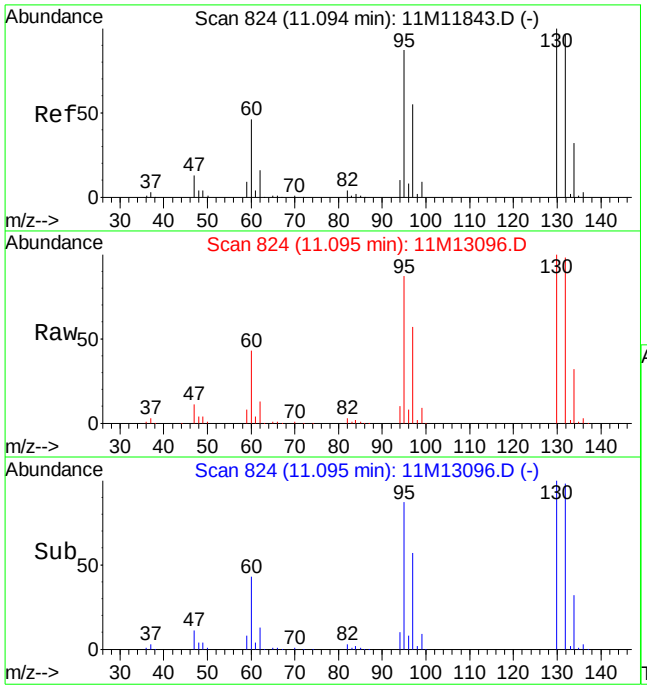

#46
Trichloroethene
Concen: 173.63 ug/L
RT: 11.09 min Scan# 824
Delta R.T. 0.00 min
Lab File: 11M13096.D
Acq: 6 Jul 2016 3:46

Tgt Ion:130 Resp: 985023

Ion	Ratio	Lower	Upper
130	100		
132	97.3	58.3	136.1
95	89.1	55.6	129.8

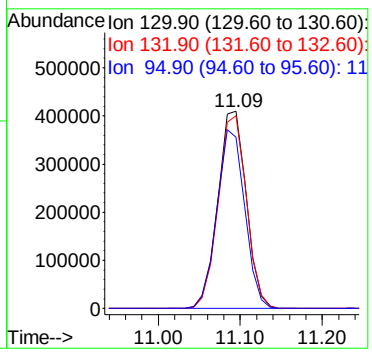

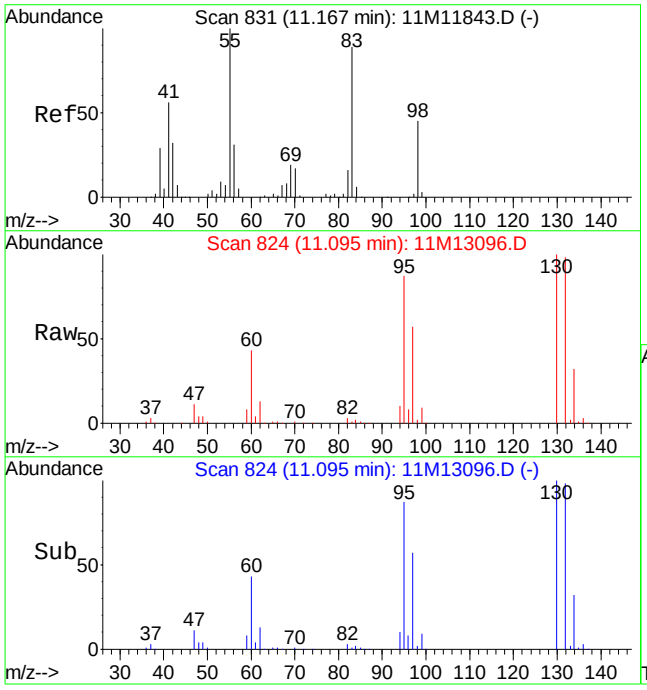

#47
Methylcyclohexane
Concen: 1.37 ug/L
RT: 11.09 min Scan# 824
Delta R.T. -0.07 min
Lab File: 11M13096.D
Acq: 6 Jul 2016 3:46

Tgt Ion: 83 Resp: 9583

Ion	Ratio	Lower	Upper
83	100		
55	0.0	66.5	155.1#
98	249.8	29.9	69.7#

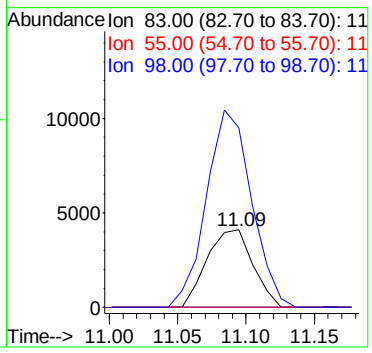

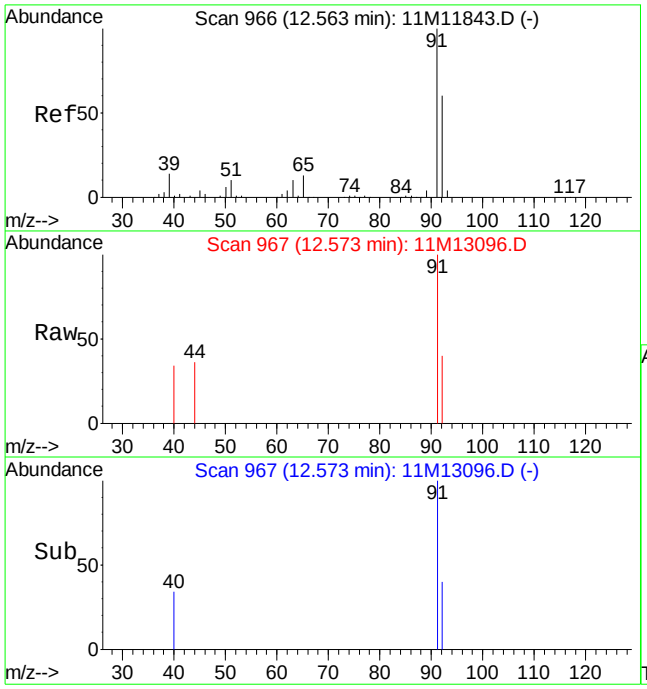

#58
Toluene
Concen: 0.13 ug/L
RT: 12.57 min Scan# 967
Delta R.T. 0.01 min
Lab File: 11M13096.D
Acq: 6 Jul 2016 3:46

Tgt Ion: 91 Resp: 2496

Ion	Ratio	Lower	Upper
91	100		
92	32.1	35.7	83.3#

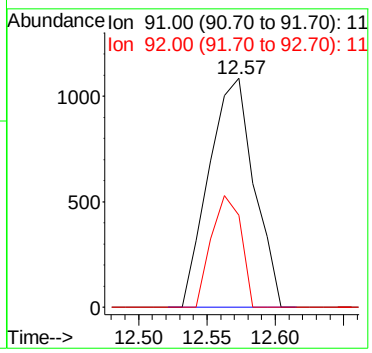

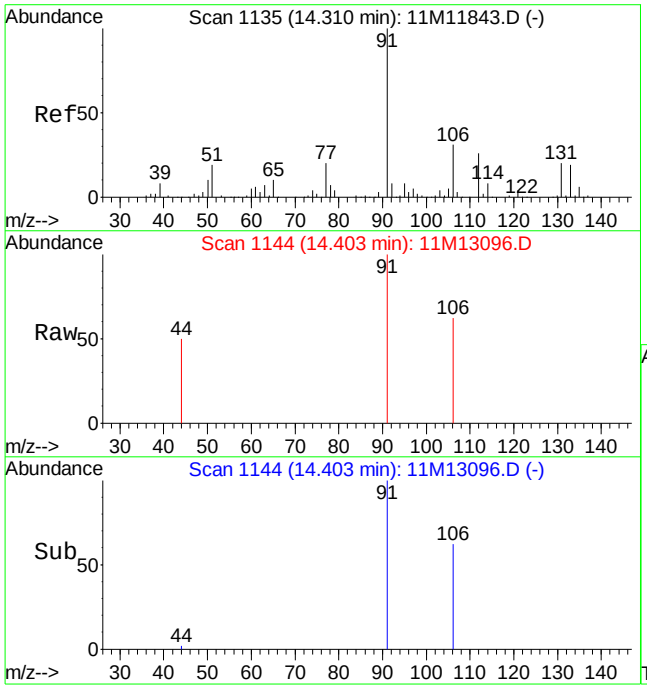

#70
Ethylbenzene
Concen: 0.13 ug/L
RT: 14.40 min Scan# 1144
Delta R.T. 0.09 min
Lab File: 11M13096.D
Acq: 6 Jul 2016 3:46

Tgt Ion:106 Resp: 966

Ion	Ratio	Lower	Upper
106	100		
91	252.2	193.5	451.5

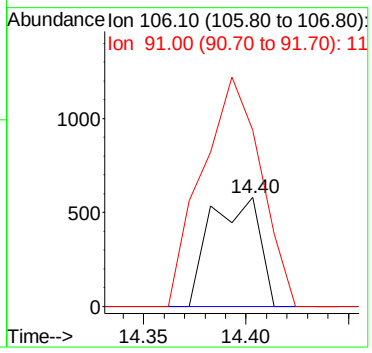

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070516\11M13091.D Vial: 16
Acq On : 6 Jul 2016 1:06 Operator: JDS
Sample : L16061452-04 A TB 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 06 09:19:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	459223	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	394530	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	232571	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	125608	24.9926 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.96%		
43) 1,2-Dichloroethane-d4	10.23	65	127778	22.2977 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 89.20%		
57) Toluene-d8	12.47	98	431782	25.1881 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.76%		
78) p-Bromofluorobenzene	15.64	95	164373	22.9276 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 91.72%		

Target Compounds					Qvalue
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	14279	3.0851 ug/L	96
13) Acetone	6.34	43	208	0.1907 ug/L #	49
36) Tetrahydrofuran	9.60	42	1115	0.9578 ug/L #	47

(#) = qualifier out of range (m) = manual integration
11M13091.D 8260WT.M Wed Jul 06 09:19:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070516\11M13091.D Vial: 16
Acq On : 6 Jul 2016 1:06 Operator: JDS
Sample : L16061452-04 A TB 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 6 9:19 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

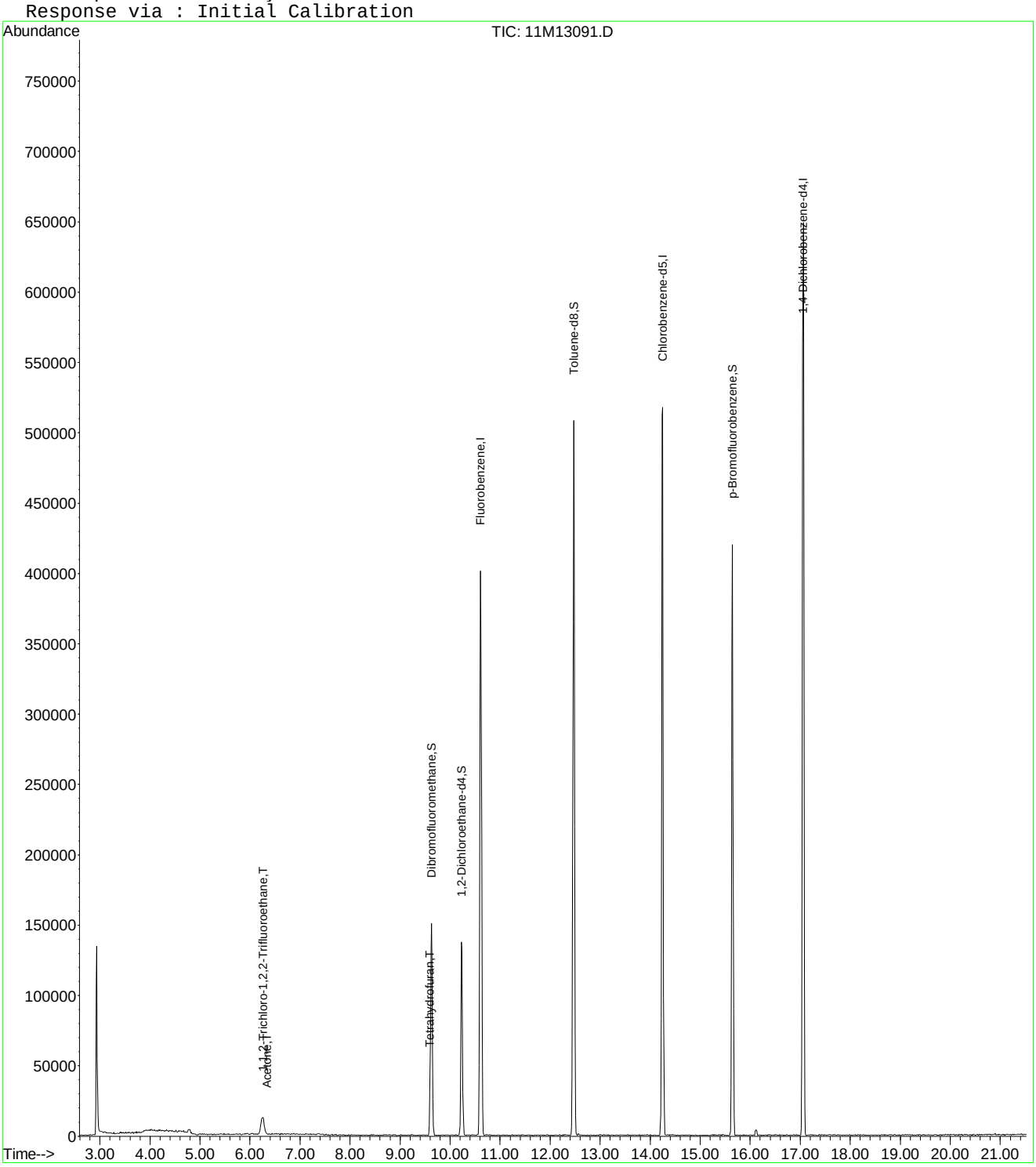

11M13091.D 8260WT.M Wed Jul 06 09:19:46 2016 Page 2

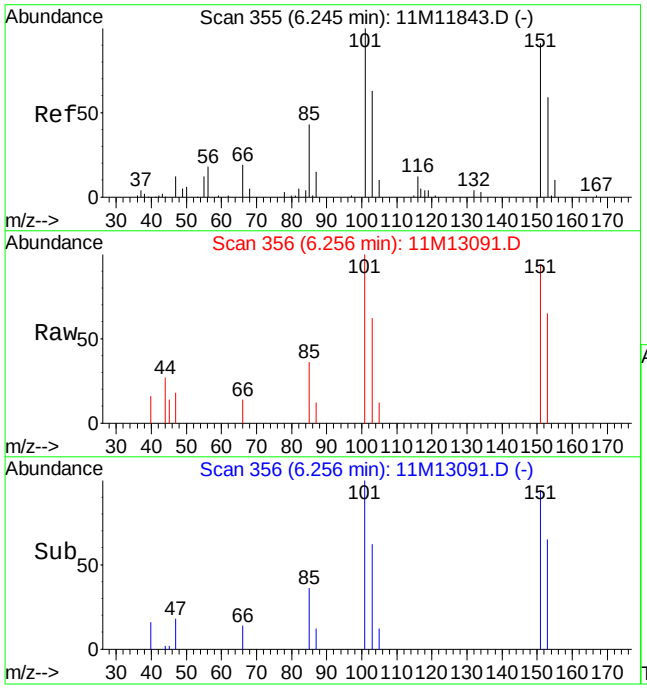

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 3.09 ug/L
RT: 6.26 min Scan# 356
Delta R.T. 0.01 min
Lab File: 11M13091.D
Acq: 6 Jul 2016 1:06

Tgt Ion:101 Resp: 14279

Ion	Ratio	Lower	Upper
101	100		
151	94.0	50.7	130.7

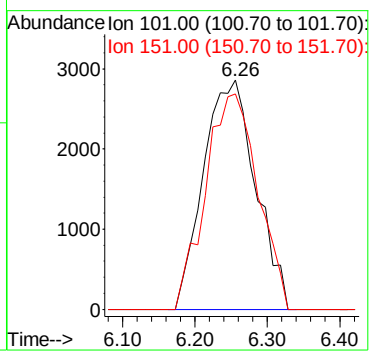

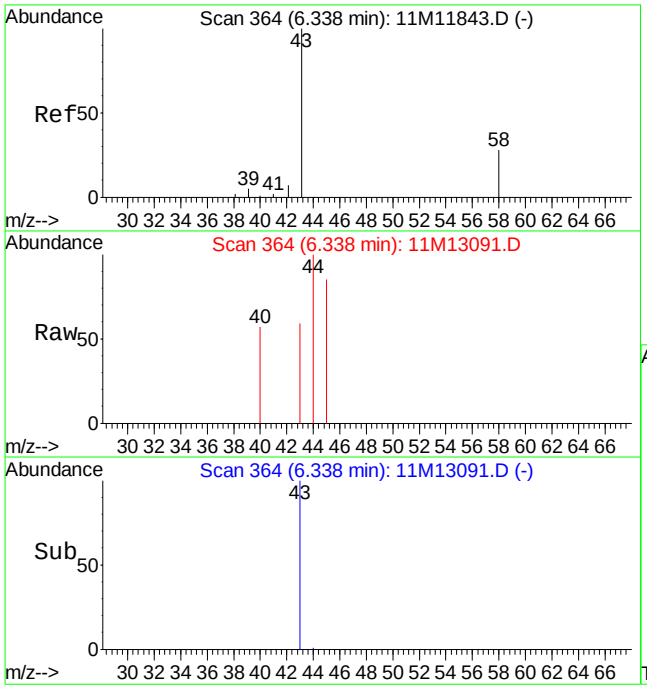

#13
Acetone
Concen: 0.19 ug/L
RT: 6.34 min Scan# 364
Delta R.T. 0.00 min
Lab File: 11M13091.D
Acq: 6 Jul 2016 1:06

Tgt Ion: 43 Resp: 208

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

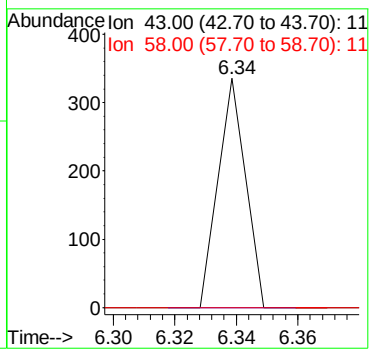

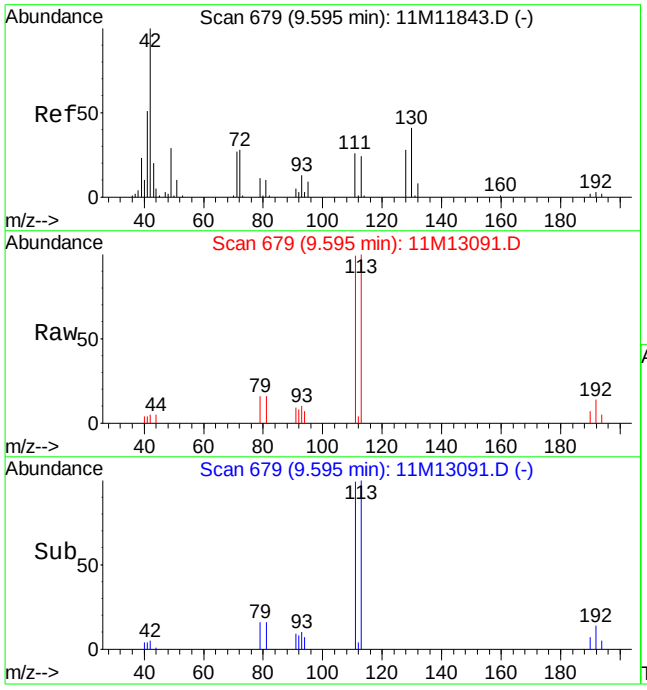

#36
Tetrahydrofuran
Concen: 0.96 ug/L
RT: 9.60 min Scan# 679
Delta R.T. 0.00 min
Lab File: 11M13091.D
Acq: 6 Jul 2016 1:06

Tgt Ion: 42 Resp: 1115

Ion	Ratio	Lower	Upper
42	100		
71	0.0	16.4	38.2#
72	0.0	16.6	38.8#

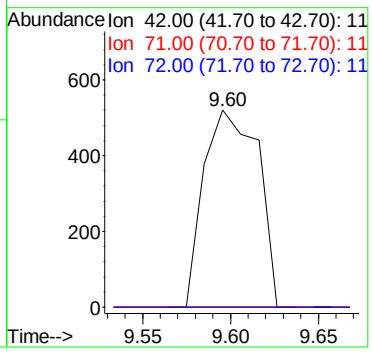

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:20 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	538041	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	450050	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	251600	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
57) Toluene-d8	12.47	98	210	0.0099 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.04%#	
78) p-Bromofluorobenzene	15.64	95	566	0.0689 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	2475	0.3135 ug/L #	66
3) Chloromethane	3.72	50	4639	0.6471 ug/L	91
4) Vinyl Chloride	3.96	62	1882	0.3288 ug/L #	44
5) 1,3-Butadiene	4.01	54	1564	0.2900 ug/L #	19
6) Bromomethane	4.84	94	1717	0.4723 ug/L	83
7) Chloroethane	5.00	64	616	0.1589 ug/L #	45
8) Trichlorofluoromethane	5.49	101	3531	0.3330 ug/L	97
10) Isoprene	6.04	67	1746	0.2381 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	1344	0.2515 ug/L	96
13) Acetone	6.34	43	2389	1.4850 ug/L #	45
14) 1,1-Dichloroethene	6.56	61	3780	0.3817 ug/L	78
16) Dimethyl Sulfide	6.80	62	762	0.1697 ug/L	78
18) Methyl acetate	7.02	43	24685	4.4975 ug/L #	70
19) Methylene Chloride	7.31	84	1766	0.3184 ug/L	74
20) Carbon Disulfide	7.36	76	5848	0.3373 ug/L	92
22) Methyl Tert Butyl Ether	7.54	73	3068	0.2131 ug/L #	48
23) trans-1,2-Dichloroethene	7.75	96	1449	0.2556 ug/L	91
24) n-Hexane	7.82	57	3745	0.4031 ug/L #	73
26) Vinyl Acetate	8.30	43	2410	0.6995 ug/L #	78
27) 1,1-Dichloroethane	8.35	63	3312	0.2969 ug/L #	76
31) 2,2-Dichloropropane	9.10	77	2449	0.3040 ug/L #	42
32) cis-1,2-Dichloroethene	9.15	96	1729	0.2748 ug/L	96
33) Chloroform	9.35	83	3792	0.3639 ug/L	92
35) Bromochloromethane	9.56	130	948	0.2355 ug/L #	68
38) 1,1,1-Trichloroethane	9.85	97	3449	0.3423 ug/L #	79
39) Cyclohexane	9.88	56	3639	0.2986 ug/L #	84
40) 1,1-Dichloropropene	10.04	75	2365	0.3106 ug/L #	53
41) Carbon Tetrachloride	10.17	117	2613	0.2748 ug/L	87
44) 1,2-Dichloroethane	10.35	62	2493	0.2788 ug/L #	73
45) Benzene	10.38	78	7133	0.3275 ug/L	99
46) Trichloroethene	11.09	130	1973	0.2780 ug/L	93
47) Methylcyclohexane	11.17	83	2570	0.2986 ug/L	84
48) 1,2-Dichloropropane	11.29	63	1665	0.2692 ug/L	87
50) Bromodichloromethane	11.57	83	2418	0.2950 ug/L #	82
51) Dibromomethane	11.65	93	756	0.2331 ug/L	88
54) cis-1,3-Dichloropropene	12.17	75	1869	0.2166 ug/L #	82
55) Dimethyl Disulfide	12.42	79	1028	0.1910 ug/L	95
58) Toluene	12.57	91	7355	0.3156 ug/L	91
59) Ethyl Methacrylate	12.64	69	1041	0.1887 ug/L	88
60) trans-1,3-Dichloropropene	12.72	75	1951	0.2556 ug/L #	51

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:20 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
61) 1,1,2-Trichloroethane	12.92	97	1087	0.2492 ug/L	87
62) 2-Hexanone	12.86	43	687	0.1910 ug/L #	29
63) 1,3-Dichloropropane	13.21	76	1673	0.2309 ug/L	94
64) Tetrachloroethene	13.34	164	1703	0.3238 ug/L	94
65) Dibromochloromethane	13.59	129	1515	0.2406 ug/L	92
66) 1,2-Dibromoethane	13.82	107	966	0.2181 ug/L	98
67) 1-Chlorohexane	13.89	91	2128	0.2784 ug/L	97
68) Chlorobenzene	14.29	112	5248	0.3062 ug/L	99
69) 1,1,1,2-Tetrachloroethane	14.32	131	2025	0.3082 ug/L	98
70) Ethylbenzene	14.31	106	2602	0.2992 ug/L	88
71) m-,p-Xylene	14.40	106	6296	0.6083 ug/L	82
72) o-Xylene	14.92	106	3032	0.2937 ug/L	95
73) Styrene	14.95	104	4953	0.2828 ug/L	95
75) Isopropylbenzene	15.31	105	7848	0.3006 ug/L	93
77) 1,1,2,2-Tetrachloroethane	15.52	83	1145	0.2759 ug/L	68
81) n-Propylbenzene	15.79	91	9421	0.3332 ug/L	94
82) Bromobenzene	15.92	156	2002	0.2551 ug/L	66
83) 1,3,5-Trimethylbenzene	15.95	105	6742	0.3138 ug/L	91
84) 2-Chlorotoluene	16.05	91	6735	0.3228 ug/L	96
85) 4-Chlorotoluene	16.09	91	6023	0.3518 ug/L	99
86) a-Methylstyrene	16.34	118	2850	0.2387 ug/L	95
87) tert-Butylbenzene	16.39	134	1197	0.2539 ug/L	64
88) 1,2,4-Trimethylbenzene	16.44	105	6992	0.3180 ug/L	88
89) sec-Butylbenzene	16.65	105	8335	0.3278 ug/L	97
90) p-Isopropyltoluene	16.79	119	7094	0.3065 ug/L	96
91) 1,3-Dichlorobenzene	16.98	146	4505	0.3090 ug/L	96
92) 1,4-Dichlorobenzene	17.10	146	4475	0.3006 ug/L #	1
93) n-Butylbenzene	17.28	91	7076	0.3396 ug/L #	93
94) 1,2-Dichlorobenzene	17.56	146	4016	0.2922 ug/L	100
96) 1,2,4-Trichlorobenzene	19.55	180	2964	0.2902 ug/L	99
97) Hexachlorobutadiene	19.69	225	1160	0.2796 ug/L #	71
98) Naphthalene	19.90	128	4679	0.2394 ug/L #	93
99) 1,2,3-Trichlorobenzene	20.19	180	2578	0.2696 ug/L	87

(#) = qualifier out of range (m) = manual integration
11M11837.D 8260WT.M Fri May 13 17:04:21 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration

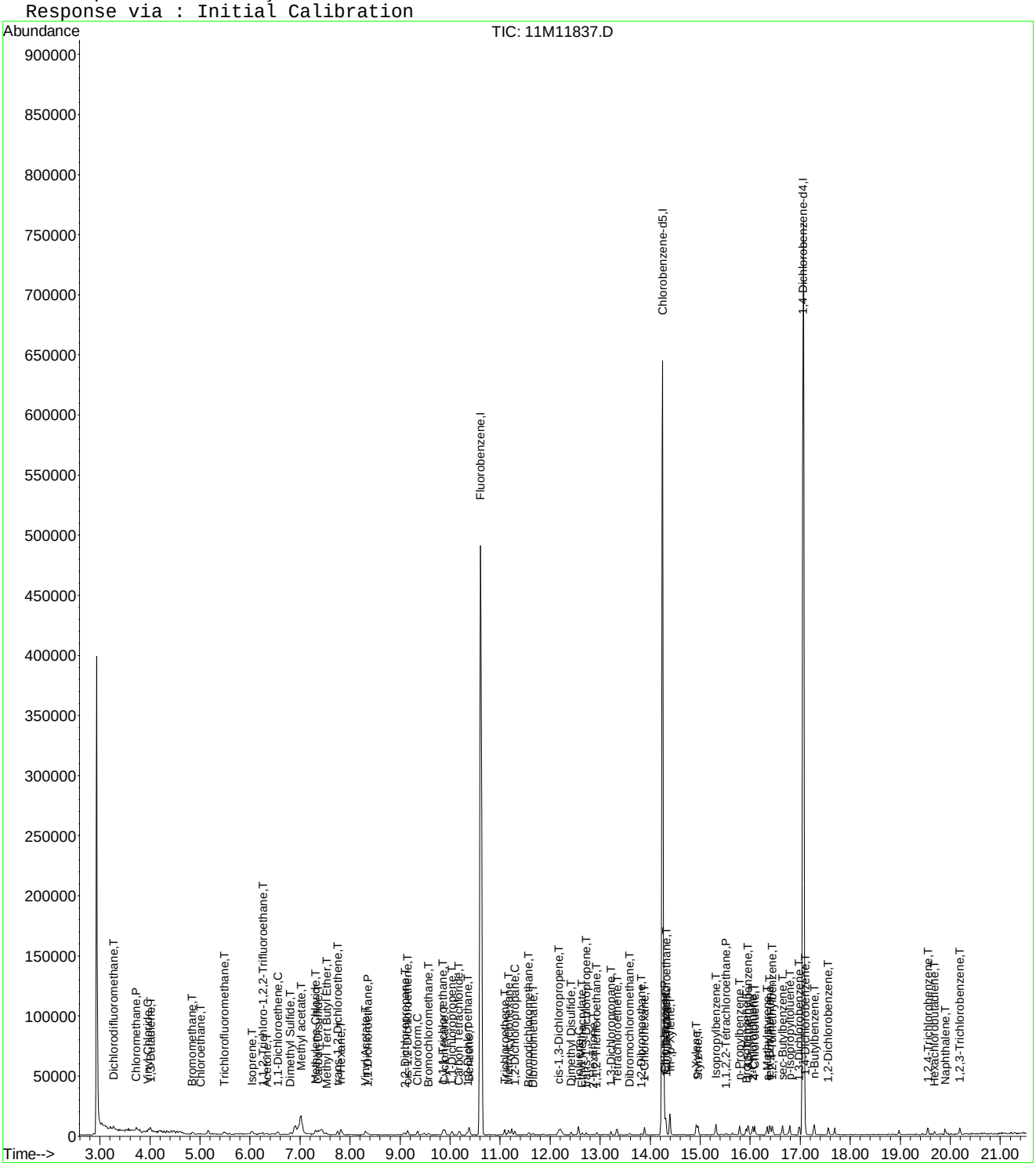

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:40:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2936	0.0	0	0.00
3	P	Chloromethane	-1.0000	0.6871	0.0	0	0.00
4	C	Vinyl Chloride	-1.0000	0.3357	0.0	0	0.00
5	T	1,3-Butadiene	-1.0000	0.2805	0.0	0	0.01
6	T	Bromomethane	-1.0000	0.4454	0.0	0	-0.01
7	T	Chloroethane	-1.0000	0.1710	0.0	0	0.00
8	T	Trichlorofluoromethane	-1.0000	0.3160	0.0	0	0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.01#
10	T	Isoprene	-1.0000	0.2535	0.0	0	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.23#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2478	0.0	0	0.01
13	T	Acetone	-1.0000	1.8699	0.0	0	0.00
14	C	1,1-Dichloroethene	-1.0000	0.3838	0.0	0	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.66#
16	T	Dimethyl Sulfide	-1.0000	0.1937	0.0	0	-0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.06#
18	T	Methyl acetate	-1.0000	5.1442	0.0	0	-0.04
19	T	Methylene Chloride	-1.0000	0.3464	0.0	0	0.00
20	T	Carbon Disulfide	-1.0000	0.3546	0.0	0	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.49#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2413	0.0	0	0.02
23	T	trans-1,2-Dichloroethene	-1.0000	0.2658	0.0	0	0.01
24	T	n-Hexane	-1.0000	0.4125	0.0	0	0.00
25	T	Diisopropyl ether	-1.0000	0.0083	0.0	0	0.08
26	T	Vinyl Acetate	-1.0000	2.6933	0.0	0	-0.01
27	P	1,1-Dichloroethane	-1.0000	0.3028	0.0	0	0.01
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.70#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.87#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.97#
31	T	2,2-Dichloropropane	-1.0000	0.2862	0.0	0	0.01
32	T	cis-1,2-Dichloroethene	-1.0000	0.2877	0.0	0	0.00
33	C	Chloroform	0.3000	0.3530	-17.7	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.48#
35	T	Bromochloromethane	-1.0000	0.2656	0.0	0	-0.01
36	T	Tetrahydrofuran	-1.0000	0.0000	0.0	0	-9.60#
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.63#
38	T	1,1,1-Trichloroethane	-1.0000	0.3263	0.0	0	0.00
39	T	Cyclohexane	-1.0000	0.3159	0.0	0	0.00
40	T	1,1-Dichloropropene	-1.0000	0.3134	0.0	0	0.00
41	T	Carbon Tetrachloride	-1.0000	0.2532	0.0	0	-0.01
42	T	Tert-Amyl-Methyl ether	-1.0000	0.0152	0.0	0	-0.09
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.23#
44	T	1,2-Dichloroethane	-1.0000	0.2858	0.0	0	0.01
45	T	Benzene	-1.0000	0.3452	0.0	0	0.00
46	T	Trichloroethene	-1.0000	0.2938	0.0	0	0.00
47	T	Methylcyclohexane	-1.0000	0.3101	0.0	0	0.00
48	C	1,2-Dichloropropane	-1.0000	0.2911	0.0	0	0.00
49	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.55#
50	T	Bromodichloromethane	-1.0000	0.3012	0.0	0	0.00
51	T	Dibromomethane	-1.0000	0.2537	0.0	0	0.00
52	T	2-Chloroethyl Vinyl Ether	-1.0000	0.0000	0.0	0	-11.84#
53	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-11.87#
54	T	cis-1,3-Dichloropropene	-1.0000	0.2327	0.0	0	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:40:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	-1.0000	0.2127	0.0	0	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	-1.0000	0.0107	0.0	0	0.00
58	C	Toluene	-1.0000	0.3228	0.0	0	0.01
59	T	Ethyl Methacrylate	-1.0000	0.2140	0.0	0	-0.01
60	T	trans-1,3-Dichloropropene	-1.0000	0.2668	0.0	0	-0.01
61	T	1,1,2-Trichloroethane	-1.0000	0.2691	0.0	0	-0.01
62	T	2-Hexanone	-1.0000	0.2315	0.0	0	0.00
63	T	1,3-Dichloropropane	-1.0000	0.2579	0.0	0	0.00
64	T	Tetrachloroethene	-1.0000	0.3214	0.0	0	0.00
65	T	Dibromochloromethane	-1.0000	0.2459	0.0	0	0.00
66	T	1,2-Dibromoethane	-1.0000	0.2387	0.0	0	0.00
67	T	1-Chlorohexane	-1.0000	0.2833	0.0	0	0.00
68	P	Chlorobenzene	-1.0000	0.3144	0.0	0	0.00
69	T	1,1,1,2-Tetrachloroethane	-1.0000	0.2998	0.0	0	0.00
70	C	Ethylbenzene	-1.0000	0.3040	0.0	0	0.00
71	T	m-,p-Xylene	-1.0000	0.6051	0.0	0	0.01
72	T	o-Xylene	-1.0000	0.2994	0.0	0	0.00
73	T	Styrene	-1.0000	0.2961	0.0	0	0.00
74	P	Bromoform	-1.0000	0.0798	0.0	0	-0.01
75	T	Isopropylbenzene	-1.0000	0.2931	0.0	0	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2922	0.0	0	0.00
78	S	p-Bromofluorobenzene	-1.0000	0.0730	0.0	0	0.00
79	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-15.70#
80	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-15.74#
81	T	n-Propylbenzene	-1.0000	0.3233	0.0	0	0.00
82	T	Bromobenzene	0.3000	0.2618	12.7	100	0.00
83	T	1,3,5-Trimethylbenzene	-1.0000	0.3032	0.0	0	-0.01
84	T	2-Chlorotoluene	-1.0000	0.3300	0.0	0	0.00
85	T	4-Chlorotoluene	-1.0000	0.3295	0.0	0	0.00
86	T	a-Methylstyrene	-1.0000	0.2430	0.0	0	0.00
87	T	tert-Butylbenzene	-1.0000	0.2541	0.0	0	-0.01
88	T	1,2,4-Trimethylbenzene	-1.0000	0.3088	0.0	0	0.00
89	T	sec-Butylbenzene	-1.0000	0.3122	0.0	0	0.00
90	T	p-Isopropyltoluene	-1.0000	0.2893	0.0	0	0.00
91	T	1,3-Dichlorobenzene	-1.0000	0.3051	0.0	0	0.00
92	T	1,4-Dichlorobenzene	0.3000	0.2990	0.3	100	0.00
93	T	n-Butylbenzene	-1.0000	0.3274	0.0	0	0.00
94	T	1,2-Dichlorobenzene	0.3000	0.2985	0.5	100	-0.01
95	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-18.49#
96	T	1,2,4-Trichlorobenzene	-1.0000	0.3011	0.0	0	0.00
97	T	Hexachlorobutadiene	-1.0000	0.2675	0.0	0	0.00
98	T	Naphthalene	-1.0000	0.2561	0.0	0	0.00
99	T	1,2,3-Trichlorobenzene	0.3000	0.2854	4.9	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11837.D 8260WT.M Sat May 14 18:41:07 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11838.D Vial: 4
Acq On : 13 May 2016 15:12 Operator: JDS
Sample : WG568769-03 0.4ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:23 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	515473	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	435266	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	244818	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
57) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
78) p-Bromofluorobenzene	15.64	95	236	0.0295 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	2765	0.3656 ug/L #	66
3) Chloromethane	3.72	50	4021	0.5854 ug/L #	77
4) Vinyl Chloride	3.96	62	2267	0.4134 ug/L #	64
5) 1,3-Butadiene	4.01	54	2044	0.3956 ug/L #	18
6) Bromomethane	4.85	94	1571	0.4511 ug/L	89
7) Chloroethane	5.01	64	1496	0.4029 ug/L #	45
8) Trichlorofluoromethane	5.49	101	4241	0.4175 ug/L	96
10) Isoprene	6.03	67	2394	0.3408 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	1439	0.2811 ug/L #	23
13) Acetone	6.33	43	1125	0.7299 ug/L #	45
14) 1,1-Dichloroethene	6.56	61	3786	0.3990 ug/L	77
16) Dimethyl Sulfide	6.80	62	1622	0.3769 ug/L	59
18) Methyl acetate	7.01	43	21364	4.0629 ug/L #	70
19) Methylene Chloride	7.32	84	2266	0.4265 ug/L	97
20) Carbon Disulfide	7.35	76	6628	0.3991 ug/L #	82
22) Methyl Tert Butyl Ether	7.52	73	4808	0.3486 ug/L #	74
23) trans-1,2-Dichloroethene	7.74	96	2372	0.4368 ug/L	93
24) n-Hexane	7.83	57	4212	0.4732 ug/L #	73
26) Vinyl Acetate	8.34	43	434	0.1315 ug/L #	78
27) 1,1-Dichloroethane	8.34	63	3822	0.3576 ug/L #	89
29) 2-Butanone	8.88	43	484	0.2099 ug/L #	60
31) 2,2-Dichloropropane	9.09	77	2680	0.3472 ug/L #	55
32) cis-1,2-Dichloroethene	9.15	96	2277	0.3777 ug/L	91
33) Chloroform	9.35	83	3981	0.3988 ug/L	89
35) Bromochloromethane	9.57	130	952	0.2468 ug/L	57
36) Tetrahydrofuran	9.59	42	212	0.1340 ug/L #	46
38) 1,1,1-Trichloroethane	9.85	97	3917	0.4058 ug/L #	84
39) Cyclohexane	9.88	56	3935	0.3371 ug/L #	80
40) 1,1-Dichloropropene	10.04	75	2817	0.3862 ug/L	82
41) Carbon Tetrachloride	10.18	117	3373	0.3702 ug/L #	88
44) 1,2-Dichloroethane	10.35	62	3201	0.3737 ug/L #	78
45) Benzene	10.39	78	8729	0.4184 ug/L	90
46) Trichloroethene	11.08	130	2537	0.3731 ug/L	93
47) Methylcyclohexane	11.17	83	2742	0.3325 ug/L	90
48) 1,2-Dichloropropane	11.29	63	2133	0.3600 ug/L	84
50) Bromodichloromethane	11.58	83	2857	0.3638 ug/L #	84
51) Dibromomethane	11.65	93	972	0.3128 ug/L	81
52) 2-Chloroethyl Vinyl Ether	11.85	63	791	0.2560 ug/L #	50
54) cis-1,3-Dichloropropene	12.17	75	2689	0.3253 ug/L	99
55) Dimethyl Disulfide	12.42	79	1113	0.2158 ug/L	74

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11838.D Vial: 4
Acq On : 13 May 2016 15:12 Operator: JDS
Sample : WG568769-03 0.4ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:23 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
58)	Toluene	12.56	91	9113	0.4043 ug/L		99
59)	Ethyl Methacrylate	12.65	69	1556	0.2916 ug/L		96
60)	trans-1,3-Dichloropropene	12.73	75	2303	0.3119 ug/L		86
61)	1,1,2-Trichloroethane	12.94	97	1549	0.3672 ug/L		85
62)	2-Hexanone	12.86	43	840	0.2415 ug/L	#	11
63)	1,3-Dichloropropane	13.21	76	2345	0.3346 ug/L		82
64)	Tetrachloroethene	13.34	164	1905	0.3745 ug/L		88
65)	Dibromochloromethane	13.59	129	1972	0.3238 ug/L		89
66)	1,2-Dibromoethane	13.82	107	1617	0.3776 ug/L		69
67)	1-Chlorohexane	13.89	91	2578	0.3487 ug/L		77
68)	Chlorobenzene	14.29	112	6458	0.3896 ug/L		93
69)	1,1,1,2-Tetrachloroethane	14.31	131	2374	0.3736 ug/L		98
70)	Ethylbenzene	14.31	106	3158	0.3754 ug/L		79
71)	m-,p-Xylene	14.39	106	8621	0.8613 ug/L		93
72)	o-Xylene	14.93	106	3752	0.3758 ug/L		96
73)	Styrene	14.95	104	6027	0.3558 ug/L		90
74)	Bromoform	15.44	173	931	0.2454 ug/L		87
75)	Isopropylbenzene	15.31	105	10551	0.4179 ug/L		95
77)	1,1,2,2-Tetrachloroethane	15.52	83	1129	0.2796 ug/L		84
79)	1,2,3-Trichloropropane	15.71	110	200	0.1341 ug/L	#	28
81)	n-Propylbenzene	15.79	91	11244	0.4087 ug/L		98
82)	Bromobenzene	15.91	156	3048	0.3991 ug/L		95
83)	1,3,5-Trimethylbenzene	15.96	105	9158	0.4381 ug/L		92
84)	2-Chlorotoluene	16.05	91	8455	0.4164 ug/L		96
85)	4-Chlorotoluene	16.09	91	6979	0.4189 ug/L		92
86)	a-Methylstyrene	16.34	118	4052	0.3488 ug/L		74
87)	tert-Butylbenzene	16.40	134	1479	0.3224 ug/L		63
88)	1,2,4-Trimethylbenzene	16.45	105	8457	0.3953 ug/L		95
89)	sec-Butylbenzene	16.65	105	10479	0.4236 ug/L		93
90)	p-Isopropyltoluene	16.79	119	9613	0.4269 ug/L		93
91)	1,3-Dichlorobenzene	16.98	146	5826	0.4107 ug/L		93
92)	1,4-Dichlorobenzene	17.10	146	6273	0.4331 ug/L	#	74
93)	n-Butylbenzene	17.28	91	8021	0.3956 ug/L	#	91
94)	1,2-Dichlorobenzene	17.57	146	4937	0.3691 ug/L		97
96)	1,2,4-Trichlorobenzene	19.55	180	3632	0.3655 ug/L		95
97)	Hexachlorobutadiene	19.69	225	1539	0.3812 ug/L		96
98)	Naphthalene	19.90	128	7383	0.3882 ug/L		97
99)	1,2,3-Trichlorobenzene	20.19	180	3748	0.4028 ug/L		84

(#) = qualifier out of range (m) = manual integration
11M11838.D 8260WT.M Fri May 13 17:04:24 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11838.D Vial: 4
Acq On : 13 May 2016 15:12 Operator: JDS
Sample : WG568769-03 0.4ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration

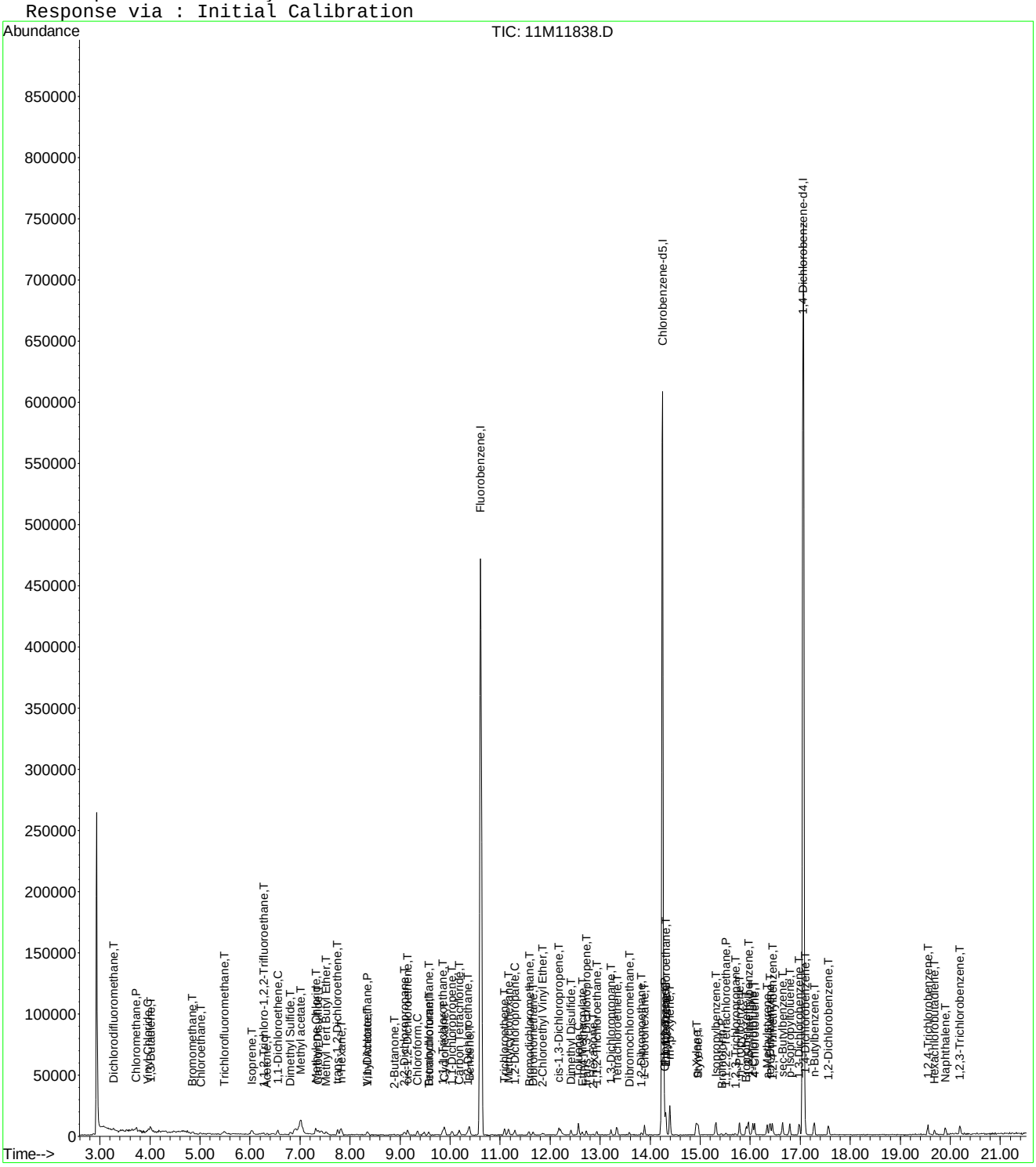

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:25 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	523425	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	440574	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	249989	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	1729	0.2910 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.16%#	
43) 1,2-Dichloroethane-d4	10.23	65	3301	0.4585 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	1.84%#	
57) Toluene-d8	12.47	98	9307	0.4494 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	1.80%#	
78) p-Bromofluorobenzene	15.64	95	4047	0.4956 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	7215	0.9394 ug/L	98
3) Chloromethane	3.72	50	7292	1.0455 ug/L	80
4) Vinyl Chloride	3.96	62	5040	0.9051 ug/L	92
5) 1,3-Butadiene	4.02	54	5876	1.1198 ug/L #	76
6) Bromomethane	4.85	94	3488	0.9862 ug/L	94
7) Chloroethane	4.99	64	3425	0.9083 ug/L #	57
8) Trichlorofluoromethane	5.49	101	10960	1.0625 ug/L	95
9) Diethyl ether	6.01	59	19830	4.2253 ug/L	90
10) Isoprene	6.04	67	6121	0.8582 ug/L	94
11) Acrolein	6.25	56	697	1.2730 ug/L	65
12) 1,1,2-Trichloro-1,2,2-Trif	6.27	101	5456	1.0497 ug/L	90
13) Acetone	6.34	43	1782	1.1386 ug/L #	45
14) 1,1-Dichloroethene	6.55	61	9456	0.9814 ug/L	91
15) Tert-Butyl Alcohol	6.67	59	2848	6.8484 ug/L #	67
16) Dimethyl Sulfide	6.80	62	3631	0.8310 ug/L	93
18) Methyl acetate	7.01	43	20953	3.9242 ug/L #	70
19) Methylene Chloride	7.31	84	5001	0.9270 ug/L	97
20) Carbon Disulfide	7.36	76	15438	0.9154 ug/L	99
21) Acrylonitrile	7.50	53	3780	1.8795 ug/L	89
22) Methyl Tert Butyl Ether	7.53	73	11891	0.8490 ug/L	90
23) trans-1,2-Dichloroethene	7.75	96	4815	0.8732 ug/L	95
24) n-Hexane	7.82	57	9213	1.0194 ug/L #	81
25) Diisopropyl ether	8.15	45	108233	4.5267 ug/L	99
26) Vinyl Acetate	8.31	43	1723	0.5141 ug/L #	78
27) 1,1-Dichloroethane	8.34	63	10818	0.9968 ug/L	95
28) Ethyl-Tert-Butyl ether	8.70	59	85288	4.3548 ug/L	99
29) 2-Butanone	8.88	43	1368	0.5844 ug/L #	60
30) Propionitrile	8.99	54	2406	3.5185 ug/L #	60
31) 2,2-Dichloropropane	9.09	77	7787	0.9935 ug/L	90
32) cis-1,2-Dichloroethene	9.15	96	5567	0.9095 ug/L	94
33) Chloroform	9.35	83	10278	1.0139 ug/L	96
34) 1-Bromopropane	9.48	122	295	0.2934 ug/L	49
35) Bromochloromethane	9.57	130	2941	0.7509 ug/L	88
36) Tetrahydrofuran	9.60	42	7790	4.8493 ug/L	92
38) 1,1,1-Trichloroethane	9.85	97	10000	1.0202 ug/L #	90
39) Cyclohexane	9.88	56	10164	0.8574 ug/L	98
40) 1,1-Dichloropropene	10.04	75	7321	0.9884 ug/L	92
41) Carbon Tetrachloride	10.18	117	9558	1.0331 ug/L	98
42) Tert-Amyl-Methyl ether	10.13	73	59107	4.2417 ug/L	97
44) 1,2-Dichloroethane	10.34	62	8181	0.9406 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:25 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	Benzene	10.38	78	19924	0.9404 ug/L		95
46)	Trichloroethene	11.08	130	6636	0.9611 ug/L		92
47)	Methylcyclohexane	11.18	83	7740	0.9243 ug/L		94
48)	1,2-Dichloropropane	11.29	63	5477	0.9103 ug/L		99
49)	1,4-Dioxane	11.55	88	187	5.1264 ug/L	#	10
50)	Bromodichloromethane	11.57	83	7238	0.9076 ug/L		94
51)	Dibromomethane	11.65	93	2839	0.8997 ug/L		97
52)	2-Chloroethyl Vinyl Ether	11.84	63	1934	0.6164 ug/L	#	72
53)	4-Methyl-2-Pentanone	11.87	58	1016	0.5282 ug/L	#	42
54)	cis-1,3-Dichloropropene	12.17	75	7078	0.8432 ug/L		99
55)	Dimethyl Disulfide	12.42	79	3514	0.6710 ug/L		93
58)	Toluene	12.56	91	22074	0.9676 ug/L		96
59)	Ethyl Methacrylate	12.64	69	4130	0.7646 ug/L		88
60)	trans-1,3-Dichloropropene	12.73	75	5897	0.7891 ug/L		90
61)	1,1,2-Trichloroethane	12.94	97	3547	0.8307 ug/L		96
62)	2-Hexanone	12.87	43	2461	0.6990 ug/L	#	63
63)	1,3-Dichloropropane	13.21	76	5965	0.8410 ug/L		87
64)	Tetrachloroethene	13.34	164	5050	0.9809 ug/L		94
65)	Dibromochloromethane	13.59	129	5237	0.8497 ug/L		90
66)	1,2-Dibromoethane	13.82	107	3214	0.7414 ug/L		91
67)	1-Chlorohexane	13.89	91	7025	0.9387 ug/L		91
68)	Chlorobenzene	14.29	112	16160	0.9630 ug/L		95
69)	1,1,1,2-Tetrachloroethane	14.32	131	6361	0.9889 ug/L		97
70)	Ethylbenzene	14.31	106	8050	0.9455 ug/L		93
71)	m-,p-Xylene	14.39	106	20545	2.0278 ug/L		95
72)	o-Xylene	14.92	106	9683	0.9581 ug/L		96
73)	Styrene	14.96	104	14946	0.8716 ug/L		98
74)	Bromoform	15.43	173	3024	0.7876 ug/L		97
75)	Isopropylbenzene	15.31	105	25656	1.0039 ug/L		92
77)	1,1,2,2-Tetrachloroethane	15.52	83	3569	0.8655 ug/L		89
79)	1,2,3-Trichloropropane	15.71	110	872	0.5724 ug/L		84
80)	trans-1,4-Dichloro-2-Buten	15.74	53	1048	0.6163 ug/L	#	44
81)	n-Propylbenzene	15.79	91	27998	0.9967 ug/L		98
82)	Bromobenzene	15.92	156	8101	1.0388 ug/L		89
83)	1,3,5-Trimethylbenzene	15.96	105	20563	0.9633 ug/L		98
84)	2-Chlorotoluene	16.05	91	20962	1.0111 ug/L		96
85)	4-Chlorotoluene	16.09	91	17553	1.0318 ug/L		100
86)	a-Methylstyrene	16.34	118	10002	0.8431 ug/L		97
87)	tert-Butylbenzene	16.40	134	4396	0.9384 ug/L		84
88)	1,2,4-Trimethylbenzene	16.44	105	21945	1.0045 ug/L		96
89)	sec-Butylbenzene	16.65	105	25927	1.0263 ug/L		100
90)	p-Isopropyltoluene	16.79	119	22467	0.9771 ug/L		96
91)	1,3-Dichlorobenzene	16.98	146	14883	1.0274 ug/L		96
92)	1,4-Dichlorobenzene	17.10	146	15106	1.0213 ug/L	#	67
93)	n-Butylbenzene	17.28	91	20991	1.0139 ug/L		98
94)	1,2-Dichlorobenzene	17.57	146	13331	0.9762 ug/L		99
95)	1,2-Dibromo-3-Chloropropan	18.49	75	493	0.5750 ug/L		75
96)	1,2,4-Trichlorobenzene	19.55	180	9030	0.8899 ug/L		96
97)	Hexachlorobutadiene	19.69	225	3810	0.9242 ug/L		95
98)	Naphthalene	19.90	128	16333	0.8410 ug/L		99
99)	1,2,3-Trichlorobenzene	20.19	180	8645	0.9098 ug/L		88

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration

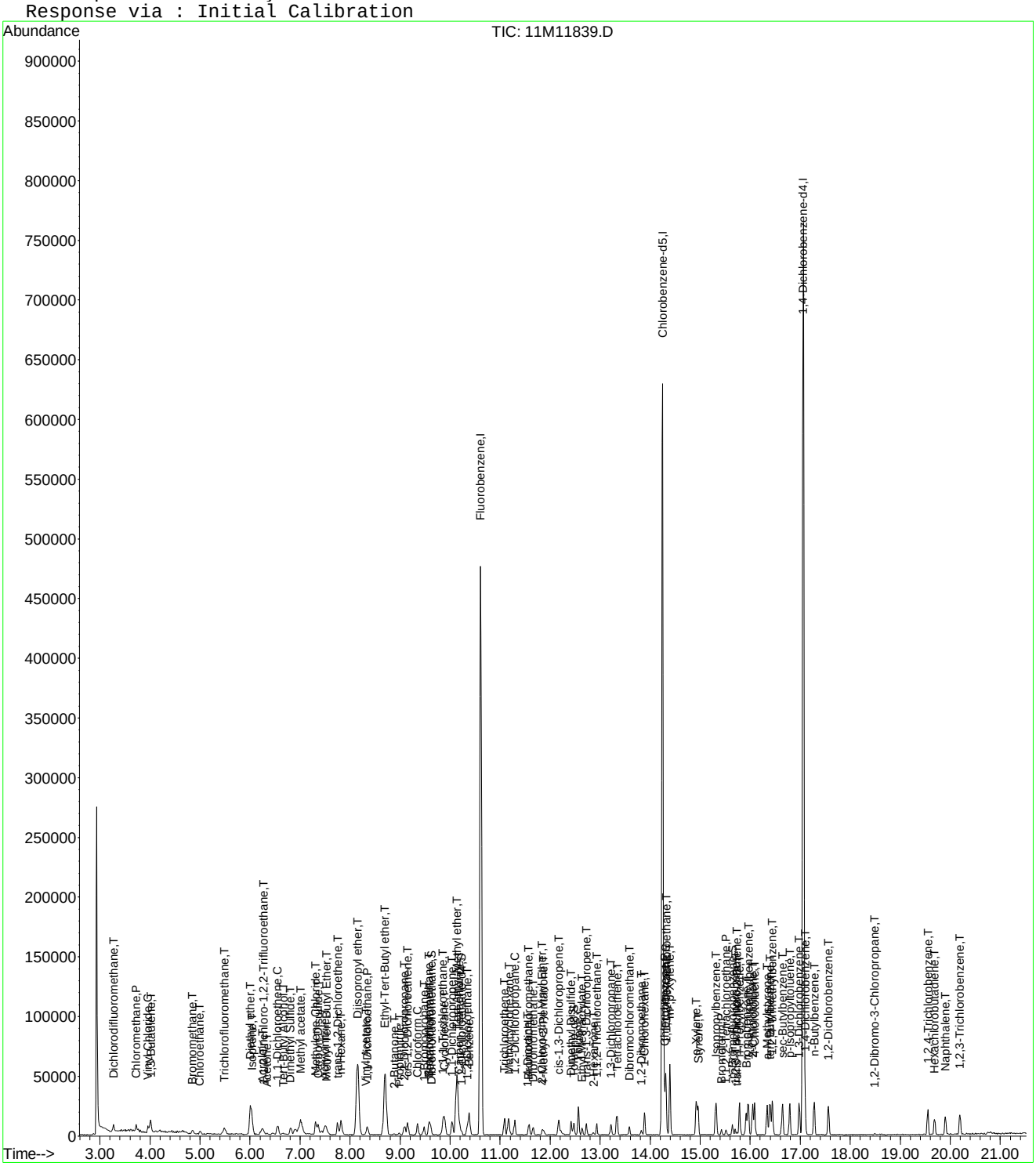

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:40:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.8798	12.0	100	0.00
3	P	Chloromethane	1.0000	1.1102	-11.0	100	0.00
4	C	Vinyl Chloride	1.0000	0.9240	7.6	100	0.00
5	T	1,3-Butadiene	-1.0000	1.0834	0.0	100	0.02
6	T	Bromomethane	1.0000	0.9301	7.0	100	0.00
7	T	Chloroethane	1.0000	0.9773	2.3	100	-0.01
8	T	Trichlorofluoromethane	1.0000	1.0081	-0.8	100	0.01
9	T	Diethyl ether	5.0000	4.9318	1.4	100	0.00
10	T	Isoprene	-1.0000	0.9134	0.0	100	0.00
11	T	Acrolein	2.5000	2.7854	-11.4	100	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0342	-3.4	100	0.02
13	T	Acetone	-1.0000	1.4337	0.0	0	0.00
14	C	1,1-Dichloroethene	1.0000	0.9868	1.3	100	-0.01
15	T	Tert-Butyl Alcohol	10.0000	8.2841	17.2	100	0.01
16	T	Dimethyl Sulfide	-1.0000	0.9488	0.0	100	-0.01
17	T	Iodomethane	-1.0000	2.2962	0.0	0	0.01
18	T	Methyl acetate	-1.0000	4.2835	0.0	0	-0.05
19	T	Methylene Chloride	1.0000	1.0084	-0.8	100	0.00
20	T	Carbon Disulfide	1.0000	0.9624	3.8	100	0.00
21	T	Acrylonitrile	2.5000	2.2683	9.3	100	0.01
22	T	Methyl Tert Butyl Ether	1.0000	0.9614	3.9	100	0.01
23	T	trans-1,2-Dichloroethene	1.0000	0.9079	9.2	100	0.01
24	T	n-Hexane	-1.0000	1.0430	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	4.9106	1.8	100	0.00
26	T	Vinyl Acetate	-1.0000	2.6242	0.0	0	0.00
27	P	1,1-Dichloroethane	1.0000	1.0166	-1.7	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.7543	4.9	100	0.00
29	T	2-Butanone	-1.0000	0.7280	0.0	0	0.01
30	T	Propionitrile	5.0000	4.3718	12.6	100	0.01
31	T	2,2-Dichloropropane	1.0000	0.9353	6.5	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	0.9520	4.8	100	0.00
33	C	Chloroform	1.0000	0.9836	1.6	100	0.00
34	T	1-Bromopropane	1.0000	0.9106	8.9	100	0.00
35	T	Bromochloromethane	1.0000	0.8469	15.3	100	0.00
36	T	Tetrahydrofuran	5.0000	5.8710	-17.4	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.3018	0.0	100	0.00
38	T	1,1,1-Trichloroethane	1.0000	0.9725	2.8	100	0.00
39	T	Cyclohexane	1.0000	0.9069	9.3	100	0.00
40	T	1,1-Dichloropropene	1.0000	0.9971	0.3	100	0.00
41	T	Carbon Tetrachloride	1.0000	0.9518	4.8	100	0.00
42	T	Tert-Amyl-Methyl ether	5.0000	4.7417	5.2	100	0.00
43	S	1,2-Dichloroethane-d4	0.5000	0.5054	-1.1	100	0.00
44	T	1,2-Dichloroethane	1.0000	0.9639	3.6	100	0.00
45	T	Benzene	1.0000	0.9912	0.9	100	0.00
46	T	Trichloroethene	1.0000	1.0157	-1.6	100	-0.01
47	T	Methylcyclohexane	1.0000	0.9600	4.0	100	0.01
48	C	1,2-Dichloropropane	1.0000	0.9844	1.6	100	0.00
49	T	1,4-Dioxane	-1.0000	28.5532	0.0	0	0.00
50	T	Bromodichloromethane	1.0000	0.9266	7.3	100	0.00
51	T	Dibromomethane	1.0000	0.9792	2.1	100	0.00
52	T	2-Chloroethyl Vinyl Ether	-1.0000	0.7053	0.0	100	0.00
53	T	4-Methyl-2-Pentanone	-1.0000	0.6569	0.0	0	0.00
54	T	cis-1,3-Dichloropropene	1.0000	0.9060	9.4	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:40:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	-1.0000	0.7475	0.0	100	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	-1.0000	0.4862	0.0	100	0.00
58	C	Toluene	1.0000	0.9897	1.0	100	0.00
59	T	Ethyl Methacrylate	1.0000	0.8672	13.3	100	-0.01
60	T	trans-1,3-Dichloropropene	1.0000	0.8237	17.6	100	0.00
61	T	1,1,2-Trichloroethane	1.0000	0.8969	10.3	100	0.00
62	T	2-Hexanone	-1.0000	0.8473	0.0	100	0.01
63	T	1,3-Dichloropropane	1.0000	0.9392	6.1	100	0.00
64	T	Tetrachloroethene	1.0000	0.9737	2.6	100	0.00
65	T	Dibromochloromethane	1.0000	0.8681	13.2	100	0.00
66	T	1,2-Dibromoethane	1.0000	0.8111	18.9	100	0.00
67	T	1-Chlorohexane	1.0000	0.9554	4.5	100	0.00
68	P	Chlorobenzene	1.0000	0.9890	1.1	100	0.00
69	T	1,1,1,2-Tetrachloroethane	1.0000	0.9621	3.8	100	0.00
70	C	Ethylbenzene	1.0000	0.9608	3.9	100	0.00
71	T	m-,p-Xylene	2.0000	2.0170	-0.9	100	0.00
72	T	o-Xylene	1.0000	0.9768	2.3	100	0.00
73	T	Styrene	1.0000	0.9126	8.7	100	0.01
74	P	Bromoform	1.0000	0.8271	17.3	100	0.00
75	T	Isopropylbenzene	1.0000	0.9787	2.1	100	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	1.0000	0.9168	8.3	100	0.00
78	S	p-Bromofluorobenzene	-1.0000	0.5252	0.0	100	0.00
79	T	1,2,3-Trichloropropane	1.0000	0.9573	4.3	100	0.01
80	T	trans-1,4-Dichloro-2-Butene	1.0000	1.2934	-29.3#	100	0.00
81	T	n-Propylbenzene	1.0000	0.9671	3.3	100	0.00
82	T	Bromobenzene	1.0000	1.0663	-6.6	100	0.00
83	T	1,3,5-Trimethylbenzene	1.0000	0.9307	6.9	100	0.00
84	T	2-Chlorotoluene	1.0000	1.0337	-3.4	100	0.00
85	T	4-Chlorotoluene	1.0000	0.9664	3.4	100	0.00
86	T	a-Methylstyrene	1.0000	0.8582	14.2	100	0.00
87	T	tert-Butylbenzene	1.0000	0.9392	6.1	100	0.00
88	T	1,2,4-Trimethylbenzene	1.0000	0.9755	2.5	100	0.00
89	T	sec-Butylbenzene	1.0000	0.9774	2.3	100	0.00
90	T	p-Isopropyltoluene	1.0000	0.9221	7.8	100	0.00
91	T	1,3-Dichlorobenzene	1.0000	1.0144	-1.4	100	0.00
92	T	1,4-Dichlorobenzene	1.0000	1.0157	-1.6	100	0.00
93	T	n-Butylbenzene	1.0000	0.9776	2.2	100	0.00
94	T	1,2-Dichlorobenzene	1.0000	0.9974	0.3	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.1961	0.0	100	0.00
96	T	1,2,4-Trichlorobenzene	1.0000	0.9233	7.7	100	0.00
97	T	Hexachlorobutadiene	1.0000	0.8843	11.6	100	0.00
98	T	Naphthalene	1.0000	0.8997	10.0	100	0.00
99	T	1,2,3-Trichlorobenzene	1.0000	0.9631	3.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11839.D 8260WT.M Sat May 14 18:41:49 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:26 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	504626	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	418265	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	241104	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	5067	0.8846 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.52%#	
43) 1,2-Dichloroethane-d4	10.23	65	6143	0.8851 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.56%#	
57) Toluene-d8	12.47	98	18425	0.9371 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	3.76%#	
78) p-Bromofluorobenzene	15.64	95	7442	0.9449 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	3.76%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	14866	2.0077 ug/L	98
3) Chloromethane	3.72	50	14641	2.1775 ug/L	94
4) Vinyl Chloride	3.96	62	10045	1.8711 ug/L	99
5) 1,3-Butadiene	4.01	54	10590	2.0934 ug/L	82
6) Bromomethane	4.85	94	7024	2.0600 ug/L	94
7) Chloroethane	4.99	64	6661	1.8324 ug/L	97
8) Trichlorofluoromethane	5.49	101	21690	2.1811 ug/L	99
9) Diethyl ether	6.01	59	96350	21.2945 ug/L	97
10) Isoprene	6.04	67	12682	1.8443 ug/L	94
11) Acrolein	6.23	56	5531	10.4784 ug/L	91
12) 1,1,2-Trichloro-1,2,2-Trif	6.23	101	9909	1.9774 ug/L	96
13) Acetone	6.35	43	3346	2.2176 ug/L #	68
14) 1,1-Dichloroethene	6.56	61	18584	2.0007 ug/L	98
15) Tert-Butyl Alcohol	6.66	59	15203	37.9194 ug/L #	93
16) Dimethyl Sulfide	6.81	62	7308	1.7348 ug/L	98
17) Iodomethane	7.06	142	1747	0.4335 ug/L #	49
18) Methyl acetate	7.01	43	17794	3.4567 ug/L #	75
19) Methylene Chloride	7.31	84	10330	1.9861 ug/L	99
20) Carbon Disulfide	7.36	76	30745	1.8910 ug/L	99
21) Acrylonitrile	7.49	53	17499	9.0252 ug/L	91
22) Methyl Tert Butyl Ether	7.52	73	22031	1.6315 ug/L	97
23) trans-1,2-Dichloroethene	7.74	96	10660	2.0051 ug/L	95
24) n-Hexane	7.82	57	17125	1.9654 ug/L #	94
25) Diisopropyl ether	8.15	45	542272	23.5246 ug/L	99
26) Vinyl Acetate	8.31	43	6813	2.1084 ug/L #	84
27) 1,1-Dichloroethane	8.34	63	21278	2.0336 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	431080	22.8311 ug/L	100
29) 2-Butanone	8.87	43	3175	1.4068 ug/L #	60
30) Propionitrile	8.99	54	12529	19.0049 ug/L	98
31) 2,2-Dichloropropane	9.09	77	17576	2.3259 ug/L	94
32) cis-1,2-Dichloroethene	9.15	96	11652	1.9746 ug/L	96
33) Chloroform	9.35	83	20769	2.1252 ug/L	96
34) 1-Bromopropane	9.48	122	1648	1.7003 ug/L	70
35) Bromochloromethane	9.57	130	6812	1.8040 ug/L	100
36) Tetrahydrofuran	9.60	42	30834	19.9093 ug/L	96
38) 1,1,1-Trichloroethane	9.84	97	20518	2.1713 ug/L #	94
39) Cyclohexane	9.88	56	22087	1.9325 ug/L	98
40) 1,1-Dichloropropene	10.04	75	13954	1.9542 ug/L	98
41) Carbon Tetrachloride	10.18	117	21054	2.3604 ug/L	98
42) Tert-Amyl-Methyl ether	10.13	73	300593	22.3753 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M11840.D 8260WT.M Fri May 13 17:04:27 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:26 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
44)	1,2-Dichloroethane	10.34	62	16928	2.0188 ug/L		98
45)	Benzene	10.38	78	41004	2.0075 ug/L		97
46)	Trichloroethene	11.08	130	13283	1.9954 ug/L		96
47)	Methylcyclohexane	11.17	83	15711	1.9461 ug/L		95
48)	1,2-Dichloropropane	11.29	63	11010	1.8980 ug/L		91
49)	1,4-Dioxane	11.55	88	898	25.5347 ug/L		88
50)	Bromodichloromethane	11.57	83	15058	1.9584 ug/L		100
51)	Dibromomethane	11.66	93	5461	1.7952 ug/L		97
52)	2-Chloroethyl Vinyl Ether	11.84	63	4894	1.6180 ug/L		83
53)	4-Methyl-2-Pentanone	11.87	58	2173	1.1717 ug/L	#	65
54)	cis-1,3-Dichloropropene	12.17	75	14440	1.7842 ug/L		91
55)	Dimethyl Disulfide	12.42	79	7378	1.4613 ug/L		97
58)	Toluene	12.56	91	43051	1.9877 ug/L		98
59)	Ethyl Methacrylate	12.64	69	7792	1.5195 ug/L		95
60)	trans-1,3-Dichloropropene	12.73	75	12991	1.8310 ug/L		98
61)	1,1,2-Trichloroethane	12.93	97	8138	2.0075 ug/L		91
62)	2-Hexanone	12.86	43	4715	1.4106 ug/L	#	61
63)	1,3-Dichloropropane	13.21	76	11740	1.7434 ug/L		95
64)	Tetrachloroethene	13.34	164	10610	2.1708 ug/L		90
65)	Dibromochloromethane	13.59	129	11236	1.9202 ug/L		96
66)	1,2-Dibromoethane	13.82	107	7613	1.8499 ug/L		99
67)	1-Chlorohexane	13.89	91	13853	1.9499 ug/L		96
68)	Chlorobenzene	14.29	112	33381	2.0954 ug/L		99
69)	1,1,1,2-Tetrachloroethane	14.32	131	13541	2.2175 ug/L		97
70)	Ethylbenzene	14.31	106	17116	2.1175 ug/L		98
71)	m-,p-Xylene	14.39	106	40469	4.2073 ug/L		95
72)	o-Xylene	14.92	106	19196	2.0006 ug/L		99
73)	Styrene	14.96	104	30019	1.8440 ug/L		92
74)	Bromoform	15.43	173	6309	1.7308 ug/L		96
75)	Isopropylbenzene	15.31	105	52419	2.1605 ug/L		98
77)	1,1,2,2-Tetrachloroethane	15.51	83	7118	1.7898 ug/L		100
79)	1,2,3-Trichloropropane	15.70	110	2487	1.6927 ug/L		98
80)	trans-1,4-Dichloro-2-Buten	15.74	53	2265	1.3810 ug/L		68
81)	n-Propylbenzene	15.79	91	59353	2.1908 ug/L		100
82)	Bromobenzene	15.91	156	15393	2.0465 ug/L		97
83)	1,3,5-Trimethylbenzene	15.95	105	43641	2.1197 ug/L		98
84)	2-Chlorotoluene	16.05	91	40923	2.0467 ug/L		96
85)	4-Chlorotoluene	16.09	91	37360	2.2771 ug/L		97
86)	a-Methylstyrene	16.34	118	20567	1.7976 ug/L		92
87)	tert-Butylbenzene	16.40	134	9253	2.0481 ug/L		89
88)	1,2,4-Trimethylbenzene	16.44	105	43857	2.0815 ug/L		99
89)	sec-Butylbenzene	16.65	105	52733	2.1643 ug/L		99
90)	p-Isopropyltoluene	16.79	119	49990	2.2541 ug/L		98
91)	1,3-Dichlorobenzene	16.98	146	29674	2.1240 ug/L		99
92)	1,4-Dichlorobenzene	17.10	146	30258	2.1211 ug/L		87
93)	n-Butylbenzene	17.28	91	44260	2.2167 ug/L		98
94)	1,2-Dichlorobenzene	17.57	146	27619	2.0969 ug/L		95
95)	1,2-Dibromo-3-Chloropropan	18.49	75	1094	1.3229 ug/L		60
96)	1,2,4-Trichlorobenzene	19.55	180	18455	1.8857 ug/L		98
97)	Hexachlorobutadiene	19.69	225	8691	2.1858 ug/L		89
98)	Naphthalene	19.90	128	34041	1.8174 ug/L	#	95
99)	1,2,3-Trichlorobenzene	20.19	180	17703	1.9318 ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration

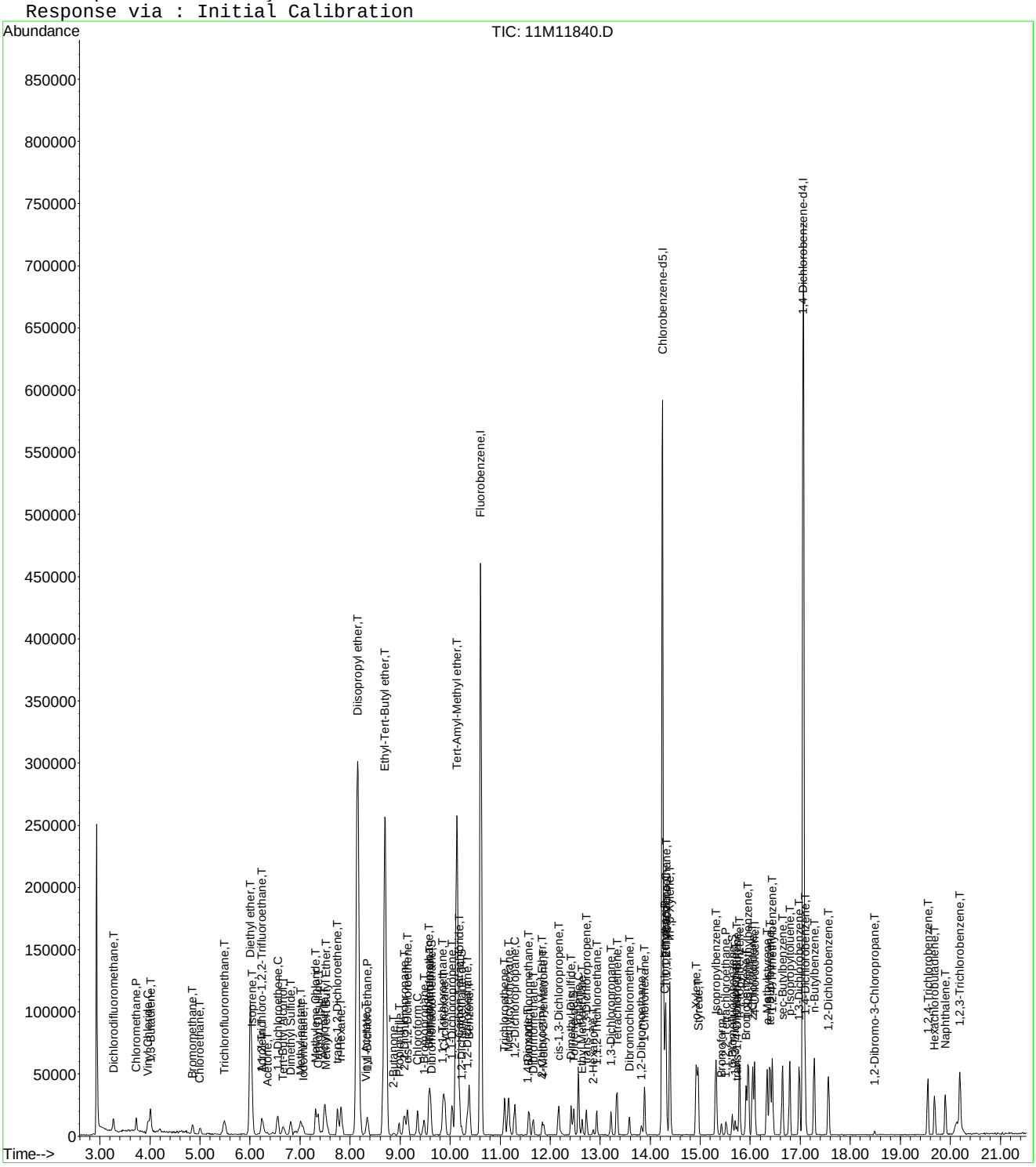

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.8802	6.0	100	0.00
3	P	Chloromethane	2.0000	2.3121	-15.6	100	0.00
4	C	Vinyl Chloride	2.0000	1.9102	4.5	100	0.00
5	T	1,3-Butadiene	-1.0000	2.0253	0.0	100	0.01
6	T	Bromomethane	2.0000	1.9427	2.9	100	0.00
7	T	Chloroethane	2.0000	1.9714	1.4	100	-0.01
8	T	Trichlorofluoromethane	2.0000	2.0694	-3.5	100	0.01
9	T	Diethyl ether	25.0000	24.8555	0.6	100	0.00
10	T	Isoprene	-1.0000	1.9630	0.0	100	0.00
11	T	Acrolein	12.5000	12.0322	3.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.9483	2.6	100	-0.01
13	T	Acetone	-1.0000	2.7924	0.0	100	0.01
14	C	1,1-Dichloroethene	2.0000	2.0117	-0.6	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	45.8688	8.3	100	0.00
16	T	Dimethyl Sulfide	-1.0000	1.9809	0.0	100	0.00
17	T	Iodomethane	2.0000	2.6580	-32.9#	100	0.00
18	T	Methyl acetate	2.0000	0.8555	57.2#	100	0.00
19	T	Methylene Chloride	2.0000	2.1606	-8.0	100	0.00
20	T	Carbon Disulfide	2.0000	1.9879	0.6	100	0.00
21	T	Acrylonitrile	12.5000	10.8919	12.9	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.8475	7.6	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	2.0850	-4.2	100	0.00
24	T	n-Hexane	2.0000	2.0110	-0.6	100	0.00
25	T	Diisopropyl ether	25.0000	25.5200	-2.1	100	0.00
26	T	Vinyl Acetate	-1.0000	3.2184	0.0	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.0741	-3.7	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	24.9254	0.3	100	0.00
29	T	2-Butanone	-1.0000	1.7527	0.0	0	0.00
30	T	Propionitrile	25.0000	23.6140	5.5	100	0.01
31	T	2,2-Dichloropropane	2.0000	2.1897	-9.5	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0669	-3.3	100	0.00
33	C	Chloroform	2.0000	2.0616	-3.1	100	0.00
34	T	1-Bromopropane	2.0000	2.2551	-12.8	100	0.00
35	T	Bromochloromethane	2.0000	2.0347	-1.7	100	0.00
36	T	Tetrahydrofuran	25.0000	24.1040	3.6	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9175	8.3	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	2.0696	-3.5	100	-0.01
39	T	Cyclohexane	2.0000	2.0442	-2.2	100	0.00
40	T	1,1-Dichloropropene	2.0000	1.9713	1.4	100	0.00
41	T	Carbon Tetrachloride	2.0000	2.1748	-8.7	100	0.00
42	T	Tert-Amyl-Methyl ether	25.0000	25.0128	-0.1	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	0.9755	2.4	100	0.00
44	T	1,2-Dichloroethane	2.0000	2.0689	-3.4	100	0.00
45	T	Benzene	2.0000	2.1160	-5.8	100	0.00
46	T	Trichloroethene	2.0000	2.1089	-5.4	100	-0.01
47	T	Methylcyclohexane	2.0000	2.0212	-1.1	100	0.00
48	C	1,2-Dichloropropane	2.0000	2.0525	-2.6	100	0.00
49	T	1,4-Dioxane	50.0000	49.5313	0.9	100	0.00
50	T	Bromodichloromethane	2.0000	1.9996	0.0	100	0.00
51	T	Dibromomethane	2.0000	1.9537	2.3	100	0.01
52	T	2-Chloroethyl Vinyl Ether	-1.0000	1.8512	0.0	100	0.00
53	T	4-Methyl-2-Pentanone	-1.0000	1.4573	0.0	100	0.00
54	T	cis-1,3-Dichloropropene	2.0000	1.9172	4.1	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	-1.0000	1.6278	0.0	100	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	1.0000	1.0138	-1.4	100	0.00
58	C	Toluene	2.0000	2.0332	-1.7	100	0.00
59	T	Ethyl Methacrylate	2.0000	1.7234	13.8	100	-0.01
60	T	trans-1,3-Dichloropropene	2.0000	1.9114	4.4	100	0.00
61	T	1,1,2-Trichloroethane	2.0000	2.1674	-8.4	100	0.00
62	T	2-Hexanone	-1.0000	1.7098	0.0	100	0.00
63	T	1,3-Dichloropropane	2.0000	1.9471	2.6	100	0.00
64	T	Tetrachloroethene	2.0000	2.1547	-7.7	100	0.00
65	T	Dibromochloromethane	2.0000	1.9620	1.9	100	0.00
66	T	1,2-Dibromoethane	2.0000	2.0238	-1.2	100	0.00
67	T	1-Chlorohexane	2.0000	1.9844	0.8	100	0.00
68	P	Chlorobenzene	2.0000	2.1520	-7.6	100	0.00
69	T	1,1,1,2-Tetrachloroethane	2.0000	2.1574	-7.9	100	0.00
70	C	Ethylbenzene	2.0000	2.1518	-7.6	100	0.00
71	T	m-,p-Xylene	4.0000	4.1851	-4.6	100	0.00
72	T	o-Xylene	2.0000	2.0398	-2.0	100	0.00
73	T	Styrene	2.0000	1.9307	3.5	100	0.01
74	P	Bromoform	2.0000	1.8176	9.1	100	0.00
75	T	Isopropylbenzene	2.0000	2.1063	-5.3	100	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	2.0000	1.8958	5.2	100	-0.01
78	S	p-Bromofluorobenzene	1.0000	1.0013	-0.1	100	0.00
79	T	1,2,3-Trichloropropane	2.0000	2.1172	-5.9	100	0.00
80	T	trans-1,4-Dichloro-2-Butene	2.0000	1.9762	1.2	100	0.00
81	T	n-Propylbenzene	2.0000	2.1256	-6.3	100	0.00
82	T	Bromobenzene	2.0000	2.1009	-5.0	100	-0.01
83	T	1,3,5-Trimethylbenzene	2.0000	2.0481	-2.4	100	-0.01
84	T	2-Chlorotoluene	2.0000	2.0925	-4.6	100	0.00
85	T	4-Chlorotoluene	2.0000	2.1326	-6.6	100	0.00
86	T	a-Methylstyrene	2.0000	1.8297	8.5	100	0.00
87	T	tert-Butylbenzene	2.0000	2.0497	-2.5	100	0.00
88	T	1,2,4-Trimethylbenzene	2.0000	2.0213	-1.1	100	0.00
89	T	sec-Butylbenzene	2.0000	2.0611	-3.1	100	0.00
90	T	p-Isopropyltoluene	2.0000	2.1272	-6.4	100	0.00
91	T	1,3-Dichlorobenzene	2.0000	2.0970	-4.8	100	0.00
92	T	1,4-Dichlorobenzene	2.0000	2.1095	-5.5	100	0.00
93	T	n-Butylbenzene	2.0000	2.1373	-6.9	100	0.00
94	T	1,2-Dichlorobenzene	2.0000	2.1425	-7.1	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	2.0000	1.9175	4.1	100	0.00
96	T	1,2,4-Trichlorobenzene	2.0000	1.9565	2.2	100	0.00
97	T	Hexachlorobutadiene	2.0000	2.0914	-4.6	100	0.00
98	T	Naphthalene	2.0000	1.9443	2.8	100	0.00
99	T	1,2,3-Trichlorobenzene	2.0000	2.0449	-2.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11840.D 8260WT.M Sat May 14 18:46:53 2016 Page 2

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:46 2016 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Single Level Calibration

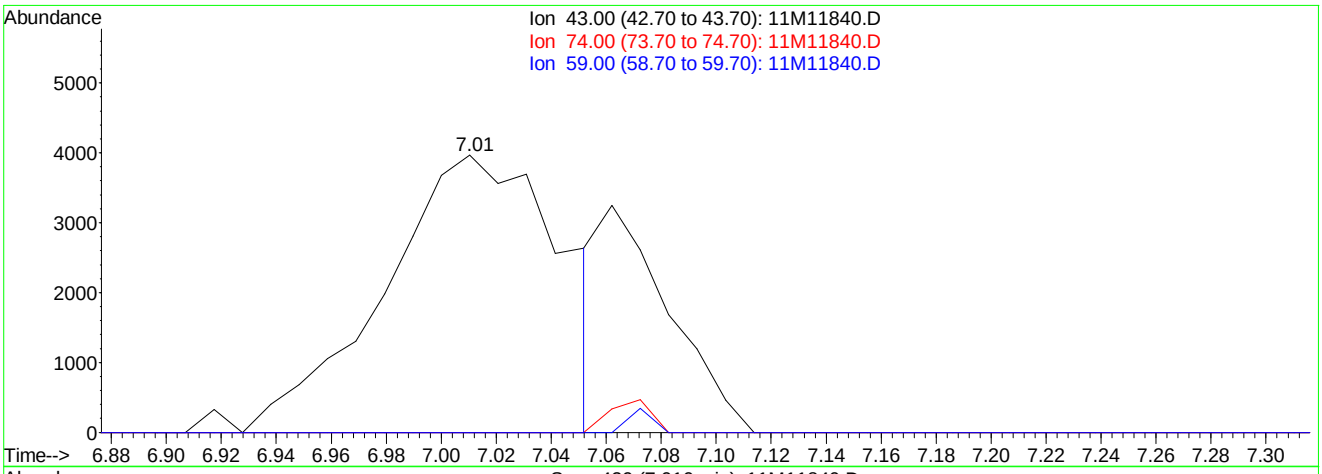

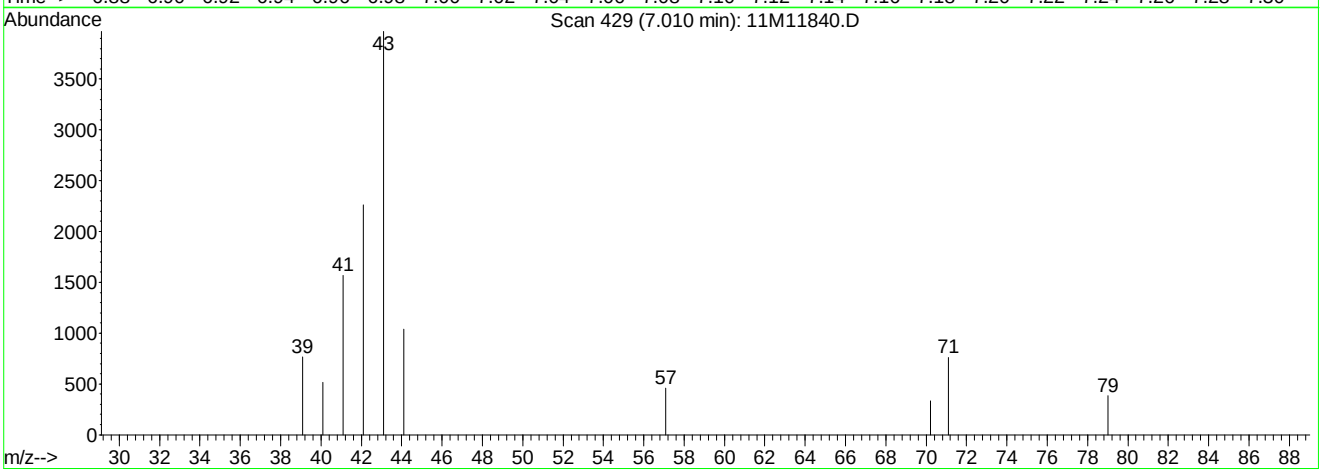

TIC: 11M11840.D

(18) Methyl acetate (T)

7.01min 3.69ug/L

response 17794

Ion	Exp%	Act%
43.00	100	100
74.00	13.60	2.82#
59.00	6.50	1.21#
0.00	0.00	0.00

11M11840.D 8260WT.M Sat May 14 18:46:34 2016

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:46 2016 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Single Level Calibration

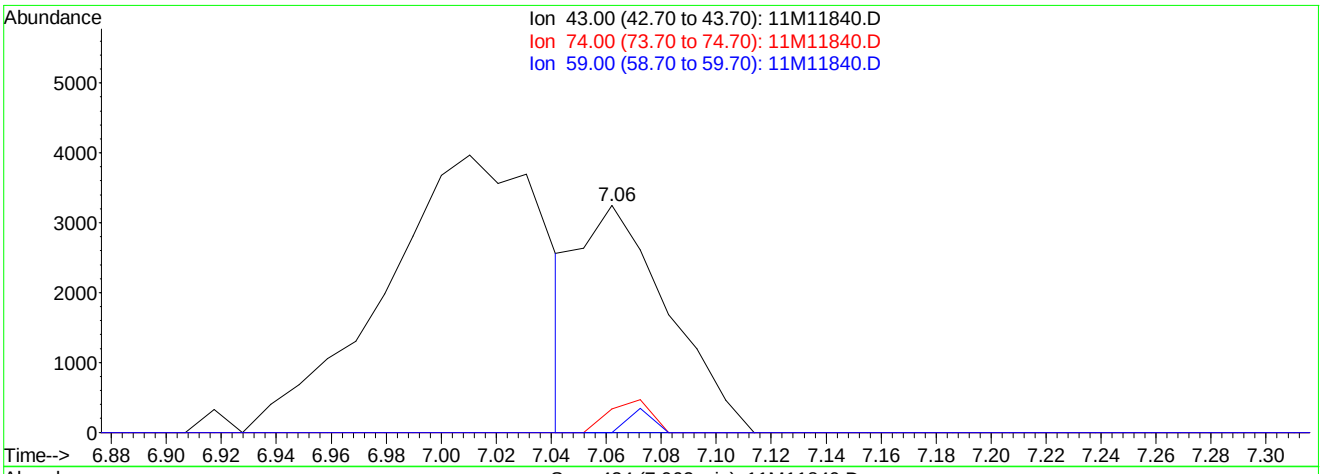

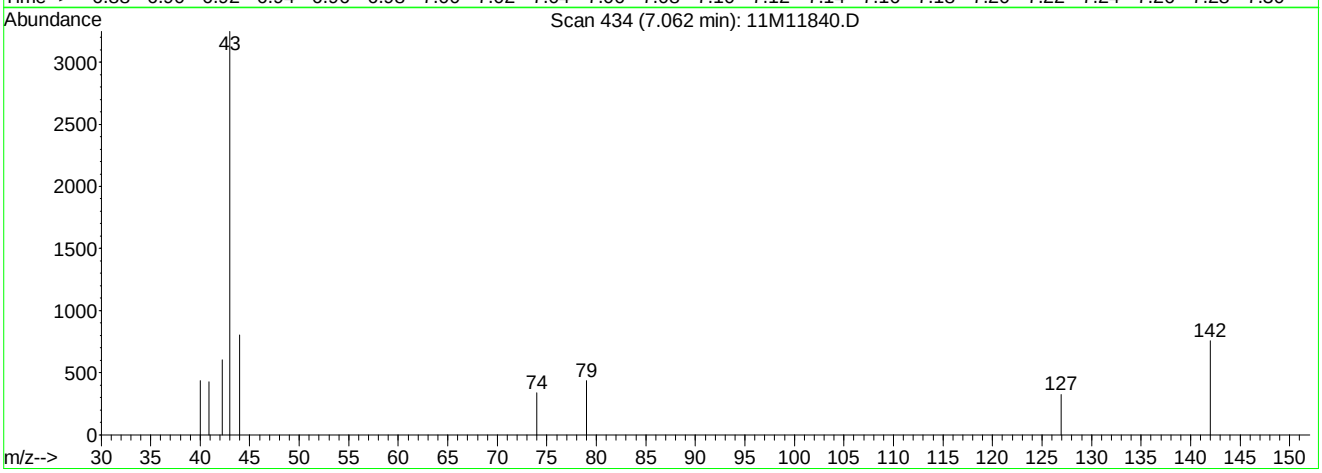

TIC: 11M11840.D

(18) Methyl acetate (T)

7.06min 0.86ug/L mint

response 7344

Ion	Exp%	Act%
43.00	100	100
74.00	13.60	6.84#
59.00	6.50	2.93#
0.00	0.00	0.00

11M11840.D 8260WT.M Sat May 14 18:46:39 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:12:58 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 17:07:56 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	510485	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	424113	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	244127	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	13577	2.3093 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	9.24%#	
43) 1,2-Dichloroethane-d4	10.23	65	16340	2.3640 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	9.44%#	
57) Toluene-d8	12.47	98	46369	2.3570 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	9.44%#	
78) p-Bromofluorobenzene	15.64	95	19139	2.4218 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	9.68%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	33260	4.2909 ug/L	97
3) Chloromethane	3.72	50	29484	4.2588 ug/L	100
4) Vinyl Chloride	3.96	62	24947	4.6446 ug/L	98
5) 1,3-Butadiene	4.00	54	24704	4.8274 ug/L	87
6) Bromomethane	4.85	94	16794	4.7876 ug/L	96
7) Chloroethane	5.00	64	15417	4.1982 ug/L	96
8) Trichlorofluoromethane	5.48	101	50663	4.8750 ug/L	98
9) Diethyl ether	6.01	59	199353	45.0064 ug/L	100
10) Isoprene	6.04	67	30513	4.3864 ug/L	99
11) Acrolein	6.25	56	12345	23.3877 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	23865	4.5585 ug/L	97
13) Acetone	6.35	43	6439	4.2186 ug/L	86
14) 1,1-Dichloroethene	6.56	61	43769	4.6158 ug/L	96
15) Tert-Butyl Alcohol	6.66	59	34212	87.4805 ug/L	100
16) Dimethyl Sulfide	6.81	62	17251	4.0482 ug/L	99
17) Iodomethane	7.06	142	7385	2.0684 ug/L	94
18) Methyl acetate	7.06	43	32363	5.4250 ug/L #	83
19) Methylene Chloride	7.31	84	23476	4.4707 ug/L	98
20) Carbon Disulfide	7.36	76	72931	4.4715 ug/L	98
21) Acrylonitrile	7.49	53	38039	20.0847 ug/L	96
22) Methyl Tert Butyl Ether	7.52	73	57597	4.3071 ug/L	98
23) trans-1,2-Dichloroethene	7.74	96	23369	4.3390 ug/L	99
24) n-Hexane	7.82	57	38507	4.3615 ug/L	99
25) Diisopropyl ether	8.15	45	1105208	48.2180 ug/L	99
26) Vinyl Acetate	8.31	43	24007	7.3442 ug/L	97
27) 1,1-Dichloroethane	8.34	63	51535	4.8316 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	899266	48.1312 ug/L	99
29) 2-Butanone	8.88	43	8098	3.5469 ug/L	98
30) Propionitrile	8.98	54	26204	41.2561 ug/L	97
31) 2,2-Dichloropropane	9.09	77	40285	5.2526 ug/L	97
32) cis-1,2-Dichloroethene	9.15	96	27456	4.6081 ug/L	91
33) Chloroform	9.35	83	48958	4.7306 ug/L	97
34) 1-Bromopropane	9.47	122	4632	4.9482 ug/L	88
35) Bromochloromethane	9.57	130	17073	4.6807 ug/L	99
36) Tetrahydrofuran	9.60	42	59638	39.6839 ug/L	99
38) 1,1,1-Trichloroethane	9.85	97	48123	4.8983 ug/L	100
39) Cyclohexane	9.88	56	51945	4.5931 ug/L	98
40) 1,1-Dichloropropene	10.04	75	33867	4.6344 ug/L	99
41) Carbon Tetrachloride	10.17	117	47434	5.0851 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	615710	46.3601 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:12:58 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 17:07:56 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	40281	4.6727 ug/L	99
45)	Benzene	10.38	78	94223	4.6151 ug/L	99
46)	Trichloroethene	11.08	130	31195	4.7740 ug/L	96
47)	Methylcyclohexane	11.17	83	35731	4.4100 ug/L	96
48)	1,2-Dichloropropane	11.29	63	25973	4.4921 ug/L	93
49)	1,4-Dioxane	11.56	88	2747	80.2363 ug/L	93
50)	Bromodichloromethane	11.57	83	36997	4.7467 ug/L	99
51)	Dibromomethane	11.65	93	13963	4.5774 ug/L	97
52)	2-Chloroethyl Vinyl Ether	11.84	63	11417	3.7313 ug/L	95
53)	4-Methyl-2-Pentanone	11.87	58	6133	3.2690 ug/L	90
54)	cis-1,3-Dichloropropene	12.17	75	36461	4.5343 ug/L	100
55)	Dimethyl Disulfide	12.42	79	18914	3.7032 ug/L	99
58)	Toluene	12.56	91	107617	4.9467 ug/L	100
59)	Ethyl Methacrylate	12.65	69	21187	4.1021 ug/L	99
60)	trans-1,3-Dichloropropene	12.73	75	32824	4.5778 ug/L	99
61)	1,1,2-Trichloroethane	12.94	97	17791	4.3060 ug/L	98
62)	2-Hexanone	12.86	43	11606	3.4244 ug/L	99
63)	1,3-Dichloropropane	13.21	76	30121	4.5460 ug/L	97
64)	Tetrachloroethene	13.33	164	24241	4.8819 ug/L	95
65)	Dibromochloromethane	13.59	129	27989	4.7024 ug/L	95
66)	1,2-Dibromoethane	13.82	107	18147	4.4382 ug/L	96
67)	1-Chlorohexane	13.89	91	33195	4.6591 ug/L	97
68)	Chlorobenzene	14.29	112	79059	4.9583 ug/L	98
69)	1,1,1,2-Tetrachloroethane	14.32	131	31047	4.8956 ug/L	97
70)	Ethylbenzene	14.31	106	39304	4.8168 ug/L	95
71)	m-,p-Xylene	14.39	106	95751	9.7273 ug/L	95
72)	o-Xylene	14.92	106	45759	4.7228 ug/L	96
73)	Styrene	14.95	104	77900	4.8227 ug/L	98
74)	Bromoform	15.43	173	15663	4.1856 ug/L	97
75)	Isopropylbenzene	15.31	105	123883	4.9827 ug/L	99
77)	1,1,2,2-Tetrachloroethane	15.51	83	18105	4.4049 ug/L	100
79)	1,2,3-Trichloropropane	15.70	110	6717	4.7266 ug/L	85
80)	trans-1,4-Dichloro-2-Buten	15.74	53	6067	3.6507 ug/L	69
81)	n-Propylbenzene	15.79	91	143972	5.2435 ug/L	99
82)	Bromobenzene	15.92	156	37345	4.9800 ug/L	93
83)	1,3,5-Trimethylbenzene	15.95	105	106030	5.0309 ug/L	100
84)	2-Chlorotoluene	16.05	91	99279	4.9734 ug/L	100
85)	4-Chlorotoluene	16.09	91	88275	5.1992 ug/L	98
86)	a-Methylstyrene	16.34	118	53766	4.7153 ug/L	98
87)	tert-Butylbenzene	16.39	134	23868	5.2956 ug/L	97
88)	1,2,4-Trimethylbenzene	16.44	105	112072	5.2401 ug/L	99
89)	sec-Butylbenzene	16.65	105	129249	5.1810 ug/L	99
90)	p-Isopropyltoluene	16.79	119	119605	5.2524 ug/L	98
91)	1,3-Dichlorobenzene	16.98	146	71265	5.0271 ug/L	99
92)	1,4-Dichlorobenzene	17.10	146	72437	5.0122 ug/L	96
93)	n-Butylbenzene	17.28	91	100062	4.9277 ug/L	99
94)	1,2-Dichlorobenzene	17.57	146	64925	4.9520 ug/L	98
95)	1,2-Dibromo-3-Chloropropan	18.49	75	3875	4.6567 ug/L	87
96)	1,2,4-Trichlorobenzene	19.55	180	46664	4.8629 ug/L	97
97)	Hexachlorobutadiene	19.69	225	20419	5.1319 ug/L	96
98)	Naphthalene	19.90	128	83612	4.4869 ug/L	99
99)	1,2,3-Trichlorobenzene	20.19	180	40714	4.5323 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M11841.D 8260WT.M Fri May 13 17:12:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:12 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 17:07:56 2016
Response via : Initial Calibration

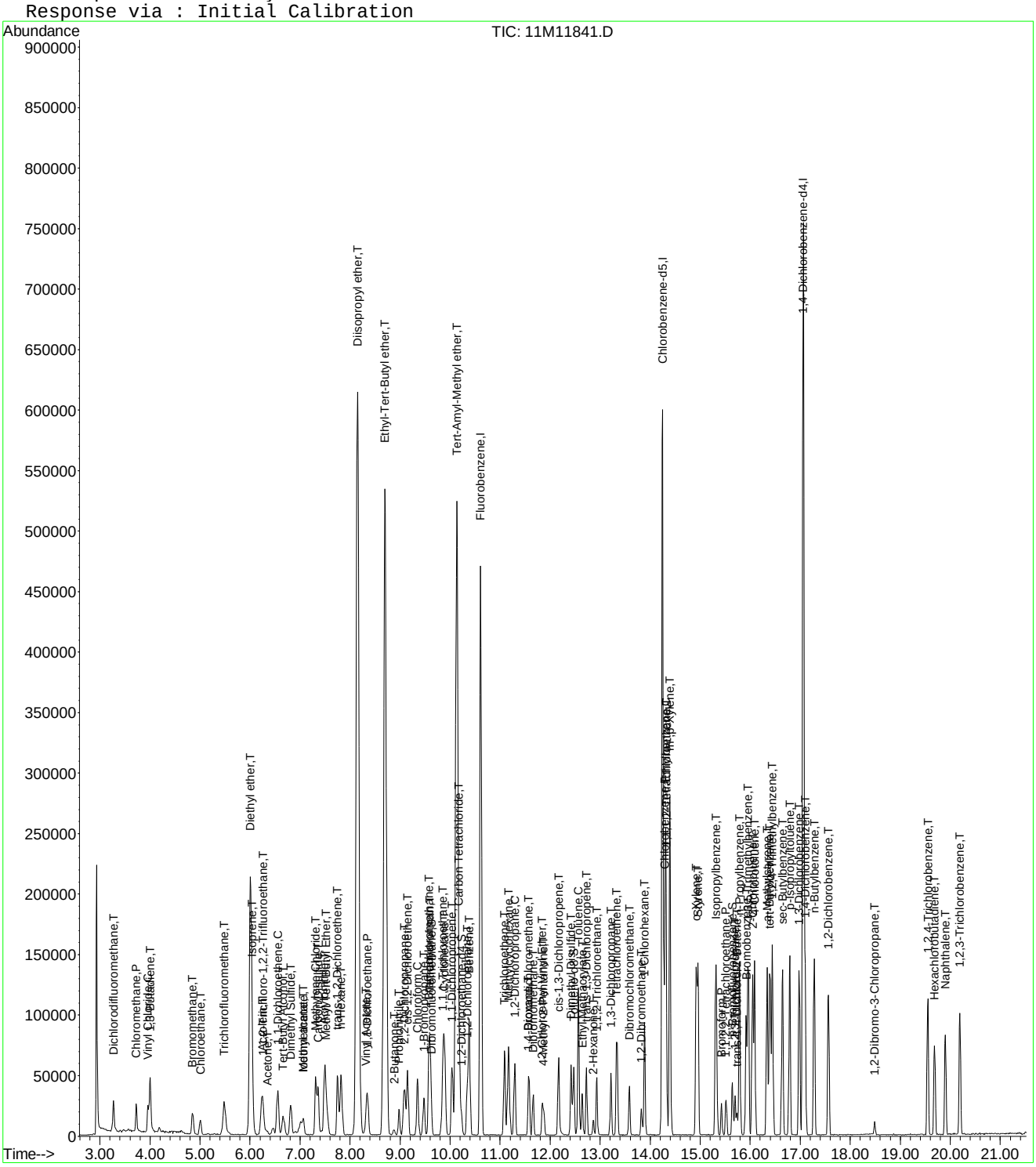

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.1584	16.8	100	0.00
3	P	Chloromethane	5.0000	4.6027	7.9	100	0.00
4	C	Vinyl Chloride	5.0000	4.6895	6.2	100	0.00
5	T	1,3-Butadiene	5.0000	4.6702	6.6	100	0.00
6	T	Bromomethane	5.0000	4.5915	8.2	100	0.00
7	T	Chloroethane	5.0000	4.5105	9.8	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.7781	4.4	100	0.00
9	T	Diethyl ether	50.0000	50.8371	-1.7	100	0.00
10	T	Isoprene	5.0000	4.6688	6.6	100	0.00
11	T	Acrolein	25.0000	24.7297	1.1	100	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.6385	7.2	100	0.01
13	T	Acetone	5.0000	5.3120	-6.2	100	0.01
14	C	1,1-Dichloroethene	5.0000	4.6835	6.3	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	102.0360	-2.0	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.6223	7.6	100	0.00
17	T	Iodomethane	5.0000	3.9124	21.8	100	0.00
18	T	Methyl acetate	5.0000	7.5474	-50.9#	100	0.00
19	T	Methylene Chloride	5.0000	4.8539	2.9	100	0.00
20	T	Carbon Disulfide	5.0000	4.6615	6.8	100	0.00
21	T	Acrylonitrile	25.0000	23.4049	6.4	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.7747	4.5	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.5182	9.6	100	0.00
24	T	n-Hexane	5.0000	4.4700	10.6	100	0.00
25	T	Diisopropyl ether	50.0000	51.4154	-2.8	100	0.00
26	T	Vinyl Acetate	5.0000	5.1698	-3.4	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.9658	0.7	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	51.3996	-2.8	100	0.00
29	T	2-Butanone	5.0000	4.4190	11.6	100	0.01
30	T	Propionitrile	50.0000	48.8210	2.4	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.9614	0.8	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.8145	3.7	100	0.00
33	C	Chloroform	5.0000	4.8039	3.9	100	0.00
34	T	1-Bromopropane	5.0000	5.1449	-2.9	100	0.00
35	T	Bromochloromethane	5.0000	5.0410	-0.8	100	0.00
36	T	Tetrahydrofuran	50.0000	46.0861	7.8	100	0.00
37	S	Dibromofluoromethane	2.5000	2.4302	2.8	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.7984	4.0	100	0.00
39	T	Cyclohexane	5.0000	4.7526	4.9	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.7295	5.4	100	0.00
41	T	Carbon Tetrachloride	5.0000	4.8435	3.1	100	-0.01
42	T	Tert-Amyl-Methyl ether	50.0000	50.6462	-1.3	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.5650	-2.6	100	0.00
44	T	1,2-Dichloroethane	5.0000	4.8665	2.7	100	0.00
45	T	Benzene	5.0000	4.8065	3.9	100	0.00
46	T	Trichloroethene	5.0000	4.8959	2.1	100	-0.01
47	T	Methylcyclohexane	5.0000	4.5439	9.1	100	0.00
48	C	1,2-Dichloropropane	5.0000	4.7864	4.3	100	0.00
49	T	1,4-Dioxane	100.0000	102.6541	-2.7	100	0.01
50	T	Bromodichloromethane	5.0000	4.8566	2.9	100	0.00
51	T	Dibromomethane	5.0000	4.9379	1.2	100	0.00
52	T	2-Chloroethyl Vinyl Ether	5.0000	4.2689	14.6	100	0.00
53	T	4-Methyl-2-Pentanone	5.0000	4.0658	18.7	100	0.00
54	T	cis-1,3-Dichloropropene	5.0000	4.7853	4.3	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	5.0000	4.1252	17.5	100	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	2.5000	2.5163	-0.7	100	0.00
58	C	Toluene	5.0000	5.0124	-0.2	100	0.00
59	T	Ethyl Methacrylate	5.0000	4.6214	7.6	100	0.00
60	T	trans-1,3-Dichloropropene	5.0000	4.7629	4.7	100	0.00
61	T	1,1,2-Trichloroethane	5.0000	4.6730	6.5	100	0.00
62	T	2-Hexanone	5.0000	4.1507	17.0	100	0.00
63	T	1,3-Dichloropropane	5.0000	4.9267	1.5	100	0.00
64	T	Tetrachloroethene	5.0000	4.8551	2.9	100	-0.01
65	T	Dibromochloromethane	5.0000	4.8199	3.6	100	0.00
66	T	1,2-Dibromoethane	5.0000	4.7575	4.8	100	0.00
67	T	1-Chlorohexane	5.0000	4.6895	6.2	100	0.00
68	P	Chlorobenzene	5.0000	5.0264	-0.5	100	0.00
69	T	1,1,1,2-Tetrachloroethane	5.0000	4.8783	2.4	100	0.00
70	C	Ethylbenzene	5.0000	4.8732	2.5	100	0.00
71	T	m-,p-Xylene	10.0000	9.7654	2.3	100	0.00
72	T	o-Xylene	5.0000	4.7954	4.1	100	0.00
73	T	Styrene	5.0000	4.9411	1.2	100	0.00
74	P	Bromoform	5.0000	4.4503	11.0	100	0.00
75	T	Isopropylbenzene	5.0000	4.9091	1.8	100	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	5.0000	4.7624	4.8	100	-0.01
78	S	p-Bromofluorobenzene	2.5000	2.5432	-1.7	100	0.00
79	T	1,2,3-Trichloropropane	5.0000	5.0393	-0.8	100	0.00
80	T	trans-1,4-Dichloro-2-Butene	5.0000	4.0050	19.9	100	0.00
81	T	n-Propylbenzene	5.0000	5.0923	-1.8	100	0.00
82	T	Bromobenzene	5.0000	5.0338	-0.7	100	0.00
83	T	1,3,5-Trimethylbenzene	5.0000	4.9145	1.7	100	-0.01
84	T	2-Chlorotoluene	5.0000	5.0134	-0.3	100	0.00
85	T	4-Chlorotoluene	5.0000	4.9765	0.5	100	0.00
86	T	a-Methylstyrene	5.0000	4.7239	5.5	100	0.00
87	T	tert-Butylbenzene	5.0000	5.2217	-4.4	100	-0.01
88	T	1,2,4-Trimethylbenzene	5.0000	5.1012	-2.0	100	0.00
89	T	sec-Butylbenzene	5.0000	4.9892	0.2	100	0.00
90	T	p-Isopropyltoluene	5.0000	5.0265	-0.5	100	0.00
91	T	1,3-Dichlorobenzene	5.0000	4.9737	0.5	100	0.00
92	T	1,4-Dichlorobenzene	5.0000	4.9875	0.2	100	0.00
93	T	n-Butylbenzene	5.0000	4.7722	4.6	100	0.00
94	T	1,2-Dichlorobenzene	5.0000	4.9741	0.5	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	5.0000	5.1051	-2.1	100	0.00
96	T	1,2,4-Trichlorobenzene	5.0000	4.8858	2.3	100	0.00
97	T	Hexachlorobutadiene	5.0000	4.8528	2.9	100	0.00
98	T	Naphthalene	5.0000	4.7164	5.7	100	0.00
99	T	1,2,3-Trichlorobenzene	5.0000	4.6448	7.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11841.D 8260WT.M Sat May 14 18:48:20 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11842.D Vial: 7
Acq On : 13 May 2016 17:19 Operator: JDS
Sample : WG568769-07 20ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:53 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	512017	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	433937	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	255524	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	58089	10.3664 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 41.48%#		
43) 1,2-Dichloroethane-d4	10.23	65	66804	10.4555 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 41.84%#		
57) Toluene-d8	12.47	98	193532	10.2645 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 41.04%#		
78) p-Bromofluorobenzene	15.64	95	81186	10.3070 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 41.24%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	176636	22.0179 ug/L	99
3) Chloromethane	3.72	50	126901	19.7510 ug/L	98
4) Vinyl Chloride	3.96	62	109592	20.5394 ug/L	98
5) 1,3-Butadiene	4.00	54	116317	21.9237 ug/L	96
6) Bromomethane	4.85	94	73878	20.1380 ug/L	93
7) Chloroethane	5.00	64	71103	20.7401 ug/L	100
8) Trichlorofluoromethane	5.49	101	225913	21.2425 ug/L	99
9) Diethyl ether	6.01	59	321203	81.6650 ug/L	99
10) Isoprene	6.04	67	135641	20.6925 ug/L	98
11) Acrolein	6.24	56	19366	37.8284 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	109792	21.2757 ug/L	99
13) Acetone	6.34	43	27399	22.5356 ug/L	96
14) 1,1-Dichloroethene	6.56	61	201658	21.5139 ug/L	98
15) Tert-Butyl Alcohol	6.67	59	60081	178.6532 ug/L	99
16) Dimethyl Sulfide	6.81	62	75759	20.2383 ug/L	97
17) Iodomethane	7.06	142	67280	17.2594 ug/L	97
18) Methyl acetate	7.07	43	87945	22.4983 ug/L	96
19) Methylene Chloride	7.31	84	99453	20.5013 ug/L	100
20) Carbon Disulfide	7.36	76	327043	20.8410 ug/L	100
21) Acrylonitrile	7.49	53	69618	42.7070 ug/L	95
22) Methyl Tert Butyl Ether	7.52	73	266288	22.0086 ug/L	99
23) trans-1,2-Dichloroethene	7.75	96	107858	20.7912 ug/L	99
24) n-Hexane	7.82	57	184135	21.3111 ug/L	99
25) Diisopropyl ether	8.15	45	1729257	80.2062 ug/L	99
26) Vinyl Acetate	8.31	43	160029	20.6235 ug/L	99
27) 1,1-Dichloroethane	8.34	63	218994	21.0387 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1435318	81.7933 ug/L	100
29) 2-Butanone	8.87	43	39878	21.6958 ug/L	99
30) Propionitrile	8.97	54	47221	87.7149 ug/L	99
31) 2,2-Dichloropropane	9.09	77	166427	20.4352 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	120620	21.0877 ug/L	99
33) Chloroform	9.35	83	208615	20.4085 ug/L	99
34) 1-Bromopropane	9.48	122	19153	19.2424 ug/L	96
35) Bromochloromethane	9.57	130	77189	22.7226 ug/L	99
36) Tetrahydrofuran	9.60	42	109362	84.2581 ug/L	100
38) 1,1,1-Trichloroethane	9.85	97	210871	20.9631 ug/L	98
39) Cyclohexane	9.88	56	235071	21.4428 ug/L	99
40) 1,1-Dichloropropene	10.04	75	151682	21.1188 ug/L	99
41) Carbon Tetrachloride	10.17	117	212111	21.5941 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	1001790	82.1572 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11842.D Vial: 7
Acq On : 13 May 2016 17:19 Operator: JDS
Sample : WG568769-07 20ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:53 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.34	62	180438	21.7339 ug/L	99
45) Benzene	10.38	78	407777	20.7394 ug/L	100
46) Trichloroethene	11.08	130	132094	20.6692 ug/L	99
47) Methylcyclohexane	11.17	83	168355	21.3455 ug/L	98
48) 1,2-Dichloropropane	11.29	63	112875	20.7388 ug/L	99
49) 1,4-Dioxane	11.56	88	4948	165.8209 ug/L	99
50) Bromodichloromethane	11.57	83	163762	21.4329 ug/L	98
51) Dibromomethane	11.65	93	61028	21.5174 ug/L	98
52) 2-Chloroethyl Vinyl Ether	11.84	63	56664	21.1238 ug/L	99
53) 4-Methyl-2-Pentanone	11.87	58	32621	21.5609 ug/L	99
54) cis-1,3-Dichloropropene	12.17	75	166399	21.7735 ug/L	100
55) Dimethyl Disulfide	12.42	79	93808	20.3984 ug/L	99
58) Toluene	12.56	91	467769	21.2936 ug/L	99
59) Ethyl Methacrylate	12.64	69	103892	22.1484 ug/L	98
60) trans-1,3-Dichloropropene	12.73	75	155661	22.0759 ug/L	100
61) 1,1,2-Trichloroethane	12.94	97	85297	21.8971 ug/L	100
62) 2-Hexanone	12.86	43	62113	21.7109 ug/L	99
63) 1,3-Dichloropropane	13.21	76	137448	21.9726 ug/L	98
64) Tetrachloroethene	13.34	164	106368	20.8217 ug/L	99
65) Dibromochloromethane	13.59	129	131143	22.0723 ug/L	99
66) 1,2-Dibromoethane	13.82	107	84381	21.6209 ug/L	99
67) 1-Chlorohexane	13.89	91	153420	21.1830 ug/L	100
68) Chlorobenzene	14.29	112	338669	21.0446 ug/L	99
69) 1,1,1,2-Tetrachloroethane	14.32	131	134571	20.6660 ug/L	98
70) Ethylbenzene	14.31	106	171752	20.8130 ug/L	97
71) m-,p-Xylene	14.39	106	419228	41.7882 ug/L	99
72) o-Xylene	14.92	106	208125	21.3170 ug/L	99
73) Styrene	14.95	104	353452	21.9116 ug/L	98
74) Bromoform	15.43	173	78592	21.8247 ug/L	100
75) Isopropylbenzene	15.31	105	552747	21.4078 ug/L	99
77) 1,1,2,2-Tetrachloroethane	15.52	83	90122	22.6486 ug/L	98
79) 1,2,3-Trichloropropane	15.70	110	30969	20.9562 ug/L	97
80) trans-1,4-Dichloro-2-Buten	15.74	53	36190	19.3325 ug/L	86
81) n-Propylbenzene	15.79	91	640711	21.6512 ug/L	100
82) Bromobenzene	15.92	156	160227	20.6340 ug/L	100
83) 1,3,5-Trimethylbenzene	15.95	105	481759	21.3337 ug/L	100
84) 2-Chlorotoluene	16.05	91	435100	20.9919 ug/L	99
85) 4-Chlorotoluene	16.09	91	391759	21.1004 ug/L	100
86) a-Methylstyrene	16.34	118	253642	21.2911 ug/L	99
87) tert-Butylbenzene	16.39	134	101859	21.2903 ug/L	99
88) 1,2,4-Trimethylbenzene	16.44	105	505239	21.9714 ug/L	98
89) sec-Butylbenzene	16.65	105	586770	21.6398 ug/L	100
90) p-Isopropyltoluene	16.79	119	539795	21.6735 ug/L	100
91) 1,3-Dichlorobenzene	16.98	146	312832	20.8591 ug/L	99
92) 1,4-Dichlorobenzene	17.10	146	314339	20.6779 ug/L	99
93) n-Butylbenzene	17.28	91	474312	21.6121 ug/L	99
94) 1,2-Dichlorobenzene	17.57	146	287316	21.0305 ug/L	100
95) 1,2-Dibromo-3-Chloropropan	18.49	75	19607	22.2193 ug/L	89
96) 1,2,4-Trichlorobenzene	19.55	180	212916	21.2982 ug/L	100
97) Hexachlorobutadiene	19.69	225	91388	20.7507 ug/L	99
98) Naphthalene	19.90	128	414073	22.3154 ug/L	99
99) 1,2,3-Trichlorobenzene	20.19	180	193437	21.0836 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M11842.D 8260WT.M Sat May 14 18:50:54 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11842.D Vial: 7
Acq On : 13 May 2016 17:19 Operator: JDS
Sample : WG568769-07 20ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

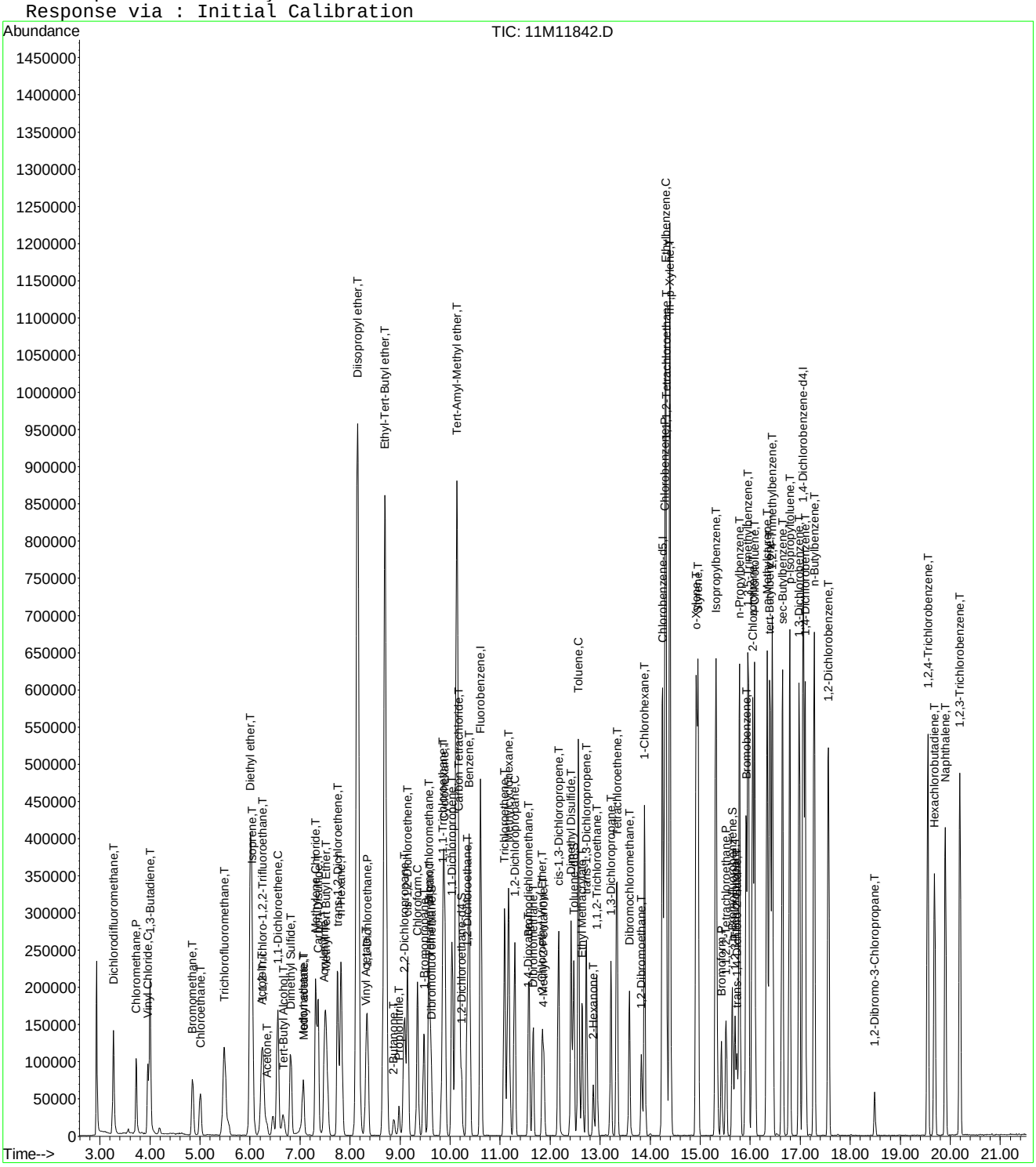

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11843.D Vial: 8
Acq On : 13 May 2016 17:51 Operator: JDS
Sample : WG568769-08 50ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:56 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	521583	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	438582	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	263885	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	139784	24.4879 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.96%		
43) 1,2-Dichloroethane-d4	10.23	65	158200	24.3058 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.24%		
57) Toluene-d8	12.47	98	462969	24.2947 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.16%		
78) p-Bromofluorobenzene	15.64	95	188875	23.2189 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.88%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	416971	51.0228 ug/L	100
3) Chloromethane	3.72	50	287508	43.9273 ug/L	100
4) Vinyl Chloride	3.96	62	261024	48.0232 ug/L	100
5) 1,3-Butadiene	4.00	54	280913	51.9760 ug/L	100
6) Bromomethane	4.85	94	172294	46.1032 ug/L	100
7) Chloroethane	5.00	64	167978	48.0991 ug/L	100
8) Trichlorofluoromethane	5.48	101	519806	47.9806 ug/L	100
9) Diethyl ether	6.01	59	391891	97.8098 ug/L	100
10) Isoprene	6.04	67	331169	49.5943 ug/L	100
11) Acrolein	6.23	56	25228	47.9550 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	255341	48.5730 ug/L	100
13) Acetone	6.34	43	57896	46.7459 ug/L	98
14) 1,1-Dichloroethene	6.56	61	459793	48.1534 ug/L	100
15) Tert-Butyl Alcohol	6.66	59	69395	202.5643 ug/L	100
16) Dimethyl Sulfide	6.81	62	193959	50.8640 ug/L	100
17) Iodomethane	7.06	142	214554	49.3519 ug/L	100
18) Methyl acetate	7.06	43	185465	48.1983 ug/L	100
19) Methylene Chloride	7.31	84	233601	47.2715 ug/L	100
20) Carbon Disulfide	7.36	76	816514	51.0786 ug/L	100
21) Acrylonitrile	7.49	53	84821	51.0789 ug/L	100
22) Methyl Tert Butyl Ether	7.52	73	610666	49.5457 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	252405	47.7624 ug/L	100
24) n-Hexane	7.82	57	449694	51.0913 ug/L	100
25) Diisopropyl ether	8.15	45	2181723	99.3365 ug/L	100
26) Vinyl Acetate	8.31	43	410275	48.2141 ug/L	100
27) 1,1-Dichloroethane	8.34	63	516691	48.7281 ug/L	100
28) Ethyl-Tert-Butyl ether	8.70	59	1783350	99.7625 ug/L	100
29) 2-Butanone	8.87	43	91238	48.7281 ug/L	100
30) Propionitrile	8.97	54	56538	103.0954 ug/L	100
31) 2,2-Dichloropropane	9.09	77	402511	48.5170 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	282222	48.4353 ug/L	100
33) Chloroform	9.35	83	489993	47.0562 ug/L	100
34) 1-Bromopropane	9.48	122	50180	48.4991 ug/L	100
35) Bromochloromethane	9.57	130	179921	51.9932 ug/L	100
36) Tetrahydrofuran	9.60	42	127999	96.8083 ug/L	100
38) 1,1,1-Trichloroethane	9.85	97	497667	48.5667 ug/L	100
39) Cyclohexane	9.88	56	575045	51.4928 ug/L	100
40) 1,1-Dichloropropene	10.04	75	353148	48.2674 ug/L	100
41) Carbon Tetrachloride	10.18	117	493225	49.2921 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	1227500	98.8215 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11843.D Vial: 8
Acq On : 13 May 2016 17:51 Operator: JDS
Sample : WG568769-08 50ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:56 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.34	62	419000	49.5434 ug/L	100
45) Benzene	10.38	78	947514	47.3064 ug/L	100
46) Trichloroethene	11.09	130	307211	47.1888 ug/L	100
47) Methylcyclohexane	11.17	83	418631	52.1043 ug/L	100
48) 1,2-Dichloropropane	11.29	63	268423	48.4136 ug/L	100
49) 1,4-Dioxane	11.55	88	5866	189.1665 ug/L	100
50) Bromodichloromethane	11.57	83	385292	49.5015 ug/L	100
51) Dibromomethane	11.65	93	142910	49.4635 ug/L	100
52) 2-Chloroethyl Vinyl Ether	11.84	63	133225	48.7541 ug/L	100
53) 4-Methyl-2-Pentanone	11.87	58	75720	49.1295 ug/L	100
54) cis-1,3-Dichloropropene	12.17	75	394857	50.7199 ug/L	100
55) Dimethyl Disulfide	12.42	79	236984	50.5867 ug/L	100
58) Toluene	12.56	91	1095397	49.3360 ug/L	100
59) Ethyl Methacrylate	12.65	69	249821	52.6944 ug/L	100
60) trans-1,3-Dichloropropene	12.73	75	366443	51.4187 ug/L	100
61) 1,1,2-Trichloroethane	12.93	97	194150	49.3135 ug/L	100
62) 2-Hexanone	12.86	43	144364	49.9264 ug/L	100
63) 1,3-Dichloropropane	13.21	76	316783	50.1049 ug/L	100
64) Tetrachloroethene	13.34	164	251037	48.6205 ug/L	100
65) Dibromochloromethane	13.59	129	310662	51.7330 ug/L	100
66) 1,2-Dibromoethane	13.82	107	196704	49.8676 ug/L	100
67) 1-Chlorohexane	13.89	91	376690	51.4596 ug/L	100
68) Chlorobenzene	14.29	112	797442	49.0276 ug/L	100
69) 1,1,1,2-Tetrachloroethane	14.32	131	325801	49.5033 ug/L	100
70) Ethylbenzene	14.31	106	408749	49.0078 ug/L	100
71) m-,p-Xylene	14.39	106	996141	98.2427 ug/L	100
72) o-Xylene	14.92	106	492043	49.8632 ug/L	100
73) Styrene	14.95	104	838125	51.4077 ug/L	100
74) Bromoform	15.43	173	184100	50.5823 ug/L	100
75) Isopropylbenzene	15.31	105	1309383	50.1751 ug/L	100
77) 1,1,2,2-Tetrachloroethane	15.52	83	208930	50.8426 ug/L	100
79) 1,2,3-Trichloropropane	15.70	110	72411	46.9859 ug/L	100
80) trans-1,4-Dichloro-2-Buten	15.74	53	94075	47.5347 ug/L	100
81) n-Propylbenzene	15.79	91	1522917	49.8325 ug/L	100
82) Bromobenzene	15.92	156	379178	47.2834 ug/L	100
83) 1,3,5-Trimethylbenzene	15.96	105	1143246	49.0221 ug/L	100
84) 2-Chlorotoluene	16.05	91	1021921	47.7415 ug/L	100
85) 4-Chlorotoluene	16.09	91	930690	48.5394 ug/L	100
86) a-Methylstyrene	16.34	118	649847	52.8208 ug/L	100
87) tert-Butylbenzene	16.40	134	241955	48.9705 ug/L	100
88) 1,2,4-Trimethylbenzene	16.44	105	1178963	49.6454 ug/L	100
89) sec-Butylbenzene	16.65	105	1390388	49.6522 ug/L	100
90) p-Isopropyltoluene	16.79	119	1282252	49.8529 ug/L	100
91) 1,3-Dichlorobenzene	16.98	146	737967	47.6473 ug/L	100
92) 1,4-Dichlorobenzene	17.10	146	740977	47.1987 ug/L	100
93) n-Butylbenzene	17.28	91	1126170	49.6883 ug/L	100
94) 1,2-Dichlorobenzene	17.57	146	684016	48.4812 ug/L	100
95) 1,2-Dibromo-3-Chloropropan	18.49	75	42848	46.3023 ug/L	100
96) 1,2,4-Trichlorobenzene	19.55	180	512927	49.6830 ug/L	100
97) Hexachlorobutadiene	19.69	225	219129	48.1793 ug/L	100
98) Naphthalene	19.90	128	962852	50.2463 ug/L	100
99) 1,2,3-Trichlorobenzene	20.19	180	453828	47.8975 ug/L	100

(#) = qualifier out of range (m) = manual integration
11M11843.D 8260WT.M Sat May 14 18:50:57 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11843.D Vial: 8
Acq On : 13 May 2016 17:51 Operator: JDS
Sample : WG568769-08 50ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

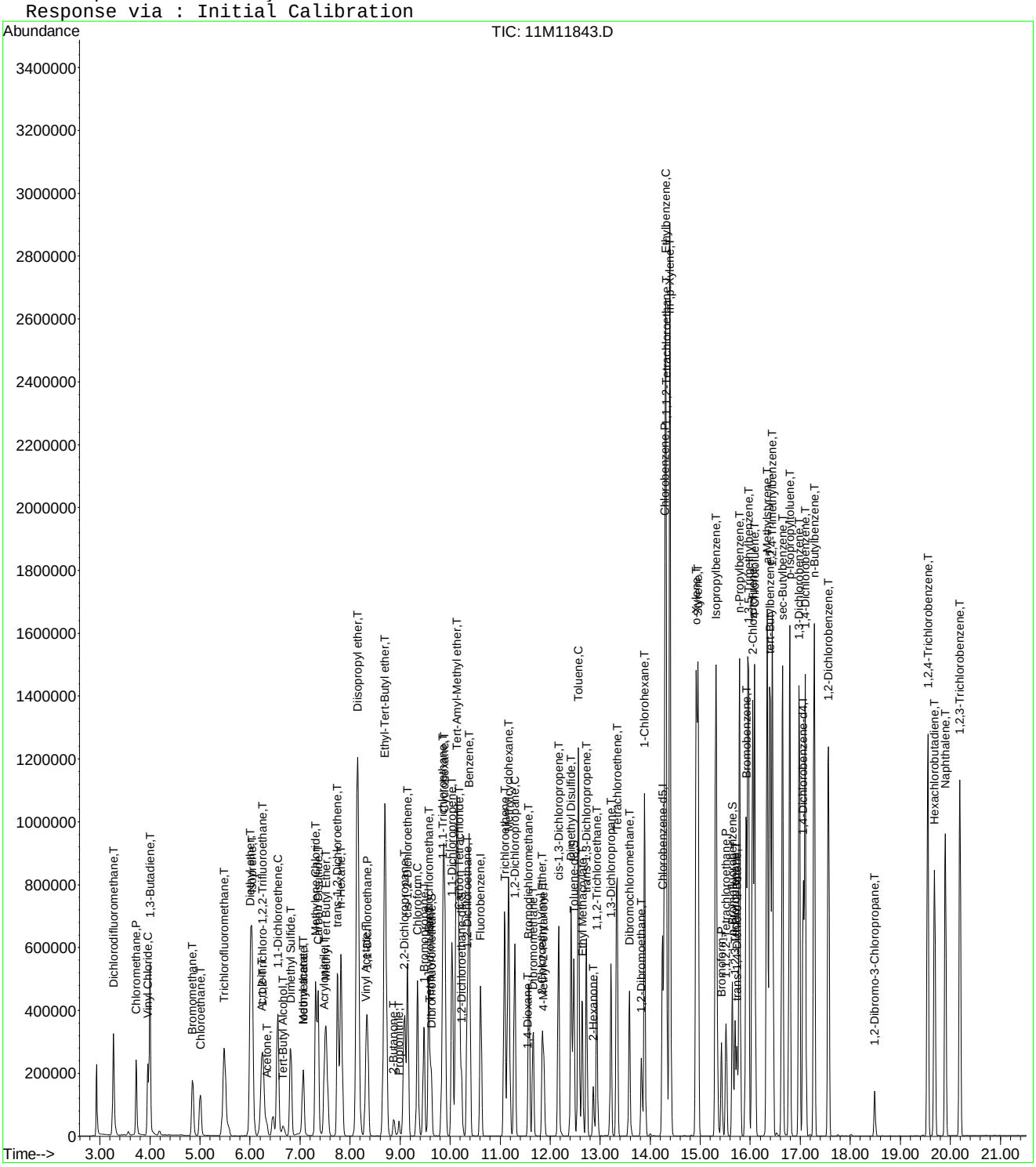

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11844.D Vial: 9
Acq On : 13 May 2016 18:22 Operator: JDS
Sample : WG568769-09 100ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:57 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	541540	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	458522	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	275719	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	307700	51.9175 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 207.68%#		
43) 1,2-Dichloroethane-d4	10.23	65	345779	51.1676 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 204.68%#		
57) Toluene-d8	12.47	98	1011334	50.7627 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 203.04%#		
78) p-Bromofluorobenzene	15.64	95	423157	49.7872 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 199.16%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	918088	108.2020 ug/L	100
3) Chloromethane	3.72	50	641242	94.3625 ug/L	99
4) Vinyl Chloride	3.95	62	586615	103.9481 ug/L	100
5) 1,3-Butadiene	3.99	54	571156	101.7838 ug/L	99
6) Bromomethane	4.85	94	394826	101.7560 ug/L	99
7) Chloroethane	5.00	64	370541	102.1913 ug/L	99
8) Trichlorofluoromethane	5.48	101	1135647	100.9627 ug/L	98
9) Diethyl ether	6.01	59	836495	201.0821 ug/L	99
10) Isoprene	6.04	67	699724	100.9257 ug/L	100
11) Acrolein	6.24	56	55228	99.4421 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	545013	99.8560 ug/L	100
13) Acetone	6.34	43	123799	96.2731 ug/L	95
14) 1,1-Dichloroethene	6.56	61	1004294	101.3022 ug/L	100
15) Tert-Butyl Alcohol	6.66	59	148134	416.4687 ug/L	98
16) Dimethyl Sulfide	6.81	62	401237	101.3432 ug/L	100
17) Iodomethane	7.06	142	471112	102.3553 ug/L	100
18) Methyl acetate	7.07	43	381031	98.0957 ug/L	99
19) Methylene Chloride	7.31	84	501609	97.7649 ug/L	99
20) Carbon Disulfide	7.36	76	1695322	102.1458 ug/L	100
21) Acrylonitrile	7.49	53	184461	106.9881 ug/L	99
22) Methyl Tert Butyl Ether	7.52	73	1312901	102.5951 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	542907	98.9478 ug/L	98
24) n-Hexane	7.82	57	921942	100.8849 ug/L	99
25) Diisopropyl ether	8.15	45	4599625	201.7086 ug/L	99
26) Vinyl Acetate	8.31	43	855488	94.3763 ug/L	99
27) 1,1-Dichloroethane	8.34	63	1111115	100.9254 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	3780769	203.7060 ug/L	100
29) 2-Butanone	8.87	43	198511	102.1130 ug/L	100
30) Propionitrile	8.98	54	118699	208.4678 ug/L	97
31) 2,2-Dichloropropane	9.09	77	914695	106.1904 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	606774	100.2977 ug/L	99
33) Chloroform	9.35	83	1053766	97.4685 ug/L	100
34) 1-Bromopropane	9.48	122	106914	98.8615 ug/L	100
35) Bromochloromethane	9.57	130	387239	107.7795 ug/L	100
36) Tetrahydrofuran	9.60	42	270148	196.7890 ug/L	99
38) 1,1,1-Trichloroethane	9.85	97	1088263	102.2884 ug/L	99
39) Cyclohexane	9.88	56	1213186	104.6320 ug/L	100
40) 1,1-Dichloropropene	10.04	75	775674	102.1101 ug/L	98
41) Carbon Tetrachloride	10.18	117	1074698	103.4456 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	2619501	203.1147 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11844.D Vial: 9
Acq On : 13 May 2016 18:22 Operator: JDS
Sample : WG568769-09 100ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:57 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	895394	101.9714 ug/L	100
45)	Benzene	10.38	78	2041856	98.1867 ug/L	100
46)	Trichloroethene	11.08	130	677193	100.1861 ug/L	99
47)	Methylcyclohexane	11.17	83	867487	103.9915 ug/L	100
48)	1,2-Dichloropropane	11.29	63	580562	100.8530 ug/L	98
49)	1,4-Dioxane	11.56	88	13651	395.0901 ug/L	100
50)	Bromodichloromethane	11.57	83	837797	103.6717 ug/L	99
51)	Dibromomethane	11.65	93	315786	105.2707 ug/L	99
52)	2-Chloroethyl Vinyl Ether	11.84	63	293822	103.5626 ug/L	100
53)	4-Methyl-2-Pentanone	11.87	58	164890	103.0430 ug/L	98
54)	cis-1,3-Dichloropropene	12.17	75	854611	105.7305 ug/L	99
55)	Dimethyl Disulfide	12.42	79	505463	103.9202 ug/L	99
58)	Toluene	12.56	91	2361378	101.7300 ug/L	100
59)	Ethyl Methacrylate	12.65	69	529740	106.8782 ug/L	98
60)	trans-1,3-Dichloropropene	12.73	75	793063	106.4420 ug/L	99
61)	1,1,2-Trichloroethane	12.94	97	418327	101.6330 ug/L	99
62)	2-Hexanone	12.86	43	314588	104.0648 ug/L	99
63)	1,3-Dichloropropane	13.21	76	685844	103.7610 ug/L	100
64)	Tetrachloroethene	13.34	164	550335	101.9528 ug/L	99
65)	Dibromochloromethane	13.59	129	681591	108.5659 ug/L	100
66)	1,2-Dibromoethane	13.82	107	427945	103.7729 ug/L	99
67)	1-Chlorohexane	13.89	91	807177	105.4730 ug/L	98
68)	Chlorobenzene	14.29	112	1705646	100.3046 ug/L	99
69)	1,1,1,2-Tetrachloroethane	14.32	131	704959	102.4557 ug/L	100
70)	Ethylbenzene	14.31	106	883839	101.3614 ug/L	99
71)	m-,p-Xylene	14.39	106	2123651	200.3333 ug/L	98
72)	o-Xylene	14.92	106	1053682	102.1356 ug/L	100
73)	Styrene	14.95	104	1807222	106.0282 ug/L	99
74)	Bromoform	15.43	173	412378	108.3755 ug/L	100
75)	Isopropylbenzene	15.31	105	2813193	103.1127 ug/L	99
77)	1,1,2,2-Tetrachloroethane	15.52	83	454052	105.7501 ug/L	99
79)	1,2,3-Trichloropropane	15.70	110	156532	96.8210 ug/L	100
80)	trans-1,4-Dichloro-2-Buten	15.74	53	203327	97.5343 ug/L	96
81)	n-Propylbenzene	15.79	91	3285915	102.9061 ug/L	99
82)	Bromobenzene	15.92	156	828973	98.9359 ug/L	99
83)	1,3,5-Trimethylbenzene	15.96	105	2483230	101.9102 ug/L	100
84)	2-Chlorotoluene	16.05	91	2208423	98.7437 ug/L	100
85)	4-Chlorotoluene	16.09	91	2020827	100.8710 ug/L	100
86)	a-Methylstyrene	16.34	118	1361545	105.9190 ug/L	99
87)	tert-Butylbenzene	16.40	134	532522	103.1540 ug/L	98
88)	1,2,4-Trimethylbenzene	16.44	105	2546912	102.6457 ug/L	100
89)	sec-Butylbenzene	16.65	105	3003570	102.6569 ug/L	99
90)	p-Isopropyltoluene	16.79	119	2763313	102.8241 ug/L	99
91)	1,3-Dichlorobenzene	16.98	146	1600684	98.9134 ug/L	100
92)	1,4-Dichlorobenzene	17.10	146	1605475	97.8762 ug/L	100
93)	n-Butylbenzene	17.28	91	2452438	103.5609 ug/L	100
94)	1,2-Dichlorobenzene	17.57	146	1481276	100.4827 ug/L	100
95)	1,2-Dibromo-3-Chloropropan	18.49	75	95062	97.5959 ug/L	99
96)	1,2,4-Trichlorobenzene	19.55	180	1100416	102.0133 ug/L	100
97)	Hexachlorobutadiene	19.69	225	486893	102.4572 ug/L	100
98)	Naphthalene	19.90	128	2071229	103.4477 ug/L	100
99)	1,2,3-Trichlorobenzene	20.19	180	980181	99.0092 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M11844.D 8260WT.M Sat May 14 18:50:58 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11844.D Vial: 9
Acq On : 13 May 2016 18:22 Operator: JDS
Sample : WG568769-09 100ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

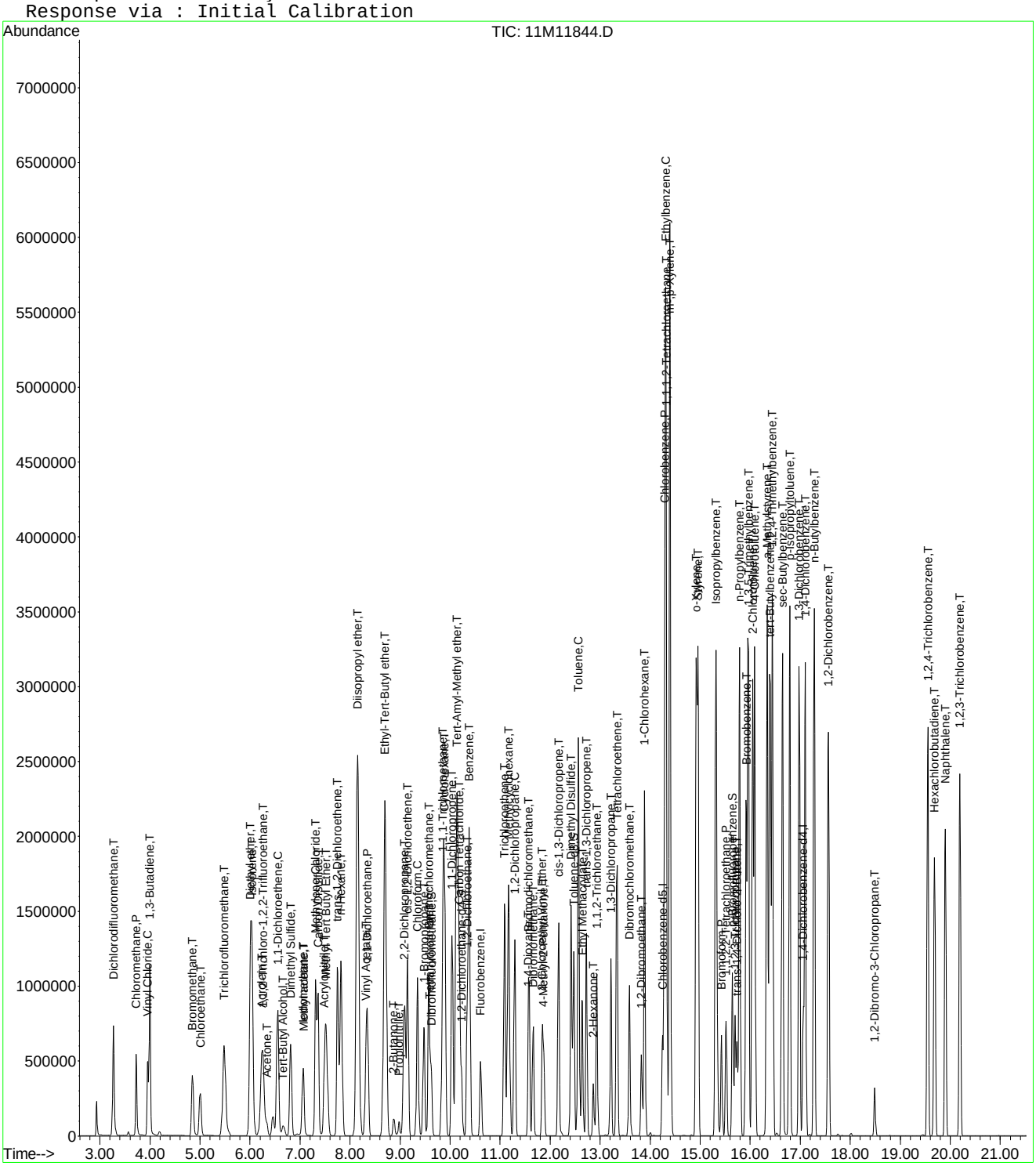

11M11844.D 8260WT.M Sat May 14 18:50:59 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11845.D Vial: 10
Acq On : 13 May 2016 18:54 Operator: JDS
Sample : WG568769-10 200ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:59 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	552905	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	473364	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	274188	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	629894	104.0960 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 416.40%#		
43) 1,2-Dichloroethane-d4	10.23	65	684792	99.2511 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 397.00%#		
57) Toluene-d8	12.47	98	2068111	100.5516 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 402.20%#		
78) p-Bromofluorobenzene	15.64	95	864999	102.3411 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 409.36%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	1843265	212.7741 ug/L	99
3) Chloromethane	3.72	50	1346993	194.1434 ug/L	100
4) Vinyl Chloride	3.95	62	1199147	208.1209 ug/L	100
5) 1,3-Butadiene	3.99	54	1131910	197.5677 ug/L	97
6) Bromomethane	4.85	94	859963	217.0771 ug/L	100
7) Chloroethane	5.00	64	764060	206.3883 ug/L	100
8) Trichlorofluoromethane	5.48	101	2275404	198.1327 ug/L	100
9) Diethyl ether	6.03	59	2592	0.6103 ug/L #	21
10) Isoprene	6.04	67	1435794	202.8369 ug/L	97
11) Acrolein	6.25	56	3061	6.8231 ug/L	88
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	1123889	201.6837 ug/L	99
13) Acetone	6.34	43	254053	193.5049 ug/L	96
14) 1,1-Dichloroethene	6.56	61	2040432	201.5858 ug/L	99
15) Tert-Butyl Alcohol	6.67	59	7729	21.2829 ug/L #	82
16) Dimethyl Sulfide	6.81	62	830179	205.3739 ug/L	99
17) Iodomethane	7.06	142	969857	206.1133 ug/L	99
18) Methyl acetate	7.07	43	749575	196.5068 ug/L	97
19) Methylene Chloride	7.31	84	1035656	197.7029 ug/L	97
20) Carbon Disulfide	7.36	76	3459748	204.1704 ug/L	99
21) Acrylonitrile	7.52	53	35662	20.2589 ug/L #	39
22) Methyl Tert Butyl Ether	7.52	73	2706665	207.1616 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	1121963	200.2808 ug/L	99
24) n-Hexane	7.82	57	1873652	200.8128 ug/L	99
25) Diisopropyl ether	8.16	45	16567	0.7116 ug/L #	87
26) Vinyl Acetate	8.31	43	1904053	202.8645 ug/L	100
27) 1,1-Dichloroethane	8.34	63	2261904	201.2314 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	9063	0.4783 ug/L	90
29) 2-Butanone	8.87	43	407543	205.3288 ug/L	99
30) Propionitrile	8.97	54	4182	7.1938 ug/L #	60
31) 2,2-Dichloropropane	9.09	77	1850091	210.3692 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	1257477	203.5843 ug/L	100
33) Chloroform	9.35	83	2160999	195.7739 ug/L	100
34) 1-Bromopropane	9.48	122	222798	201.1267 ug/L	98
35) Bromochloromethane	9.57	130	798076	217.5612 ug/L	99
36) Tetrahydrofuran	9.60	42	9110	6.4998 ug/L	97
38) 1,1,1-Trichloroethane	9.85	97	2208198	203.2875 ug/L	99
39) Cyclohexane	9.88	56	2467804	208.4625 ug/L	100
40) 1,1-Dichloropropene	10.04	75	1587009	204.6205 ug/L	99
41) Carbon Tetrachloride	10.18	117	2174730	205.0269 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	6538	0.4965 ug/L #	83

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11845.D Vial: 10
Acq On : 13 May 2016 18:54 Operator: JDS
Sample : WG568769-10 200ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:59 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
44)	1,2-Dichloroethane	10.34	62	1808450	201.7209 ug/L		99
45)	Benzene	10.38	78	4119227	194.0096 ug/L		99
46)	Trichloroethene	11.09	130	1367103	198.0963 ug/L		100
47)	Methylcyclohexane	11.17	83	1789256	210.0812 ug/L		99
48)	1,2-Dichloropropane	11.29	63	1196100	203.5109 ug/L		99
49)	1,4-Dioxane	11.57	88	2656	94.1370 ug/L	#	31
50)	Bromodichloromethane	11.58	83	1721733	208.6734 ug/L		99
51)	Dibromomethane	11.66	93	641583	209.4825 ug/L		100
52)	2-Chloroethyl Vinyl Ether	11.84	63	608231	209.9748 ug/L		99
53)	4-Methyl-2-Pentanone	11.87	58	342251	209.4831 ug/L		99
54)	cis-1,3-Dichloropropene	12.17	75	1772737	214.8108 ug/L		100
55)	Dimethyl Disulfide	12.42	79	1052498	211.9395 ug/L		98
58)	Toluene	12.56	91	4699240	196.0993 ug/L		98
59)	Ethyl Methacrylate	12.65	69	1101451	215.2567 ug/L		97
60)	trans-1,3-Dichloropropene	12.73	75	1627488	211.5866 ug/L		99
61)	1,1,2-Trichloroethane	12.93	97	860113	202.4133 ug/L		99
62)	2-Hexanone	12.86	43	651287	208.6888 ug/L		99
63)	1,3-Dichloropropane	13.21	76	1412360	206.9756 ug/L		99
64)	Tetrachloroethene	13.34	164	1133410	203.3874 ug/L		99
65)	Dibromochloromethane	13.59	129	1409248	217.4313 ug/L		99
66)	1,2-Dibromoethane	13.82	107	889951	209.0389 ug/L		99
67)	1-Chlorohexane	13.89	91	1659272	210.0173 ug/L		97
68)	Chlorobenzene	14.29	112	3416597	194.6214 ug/L		98
69)	1,1,1,2-Tetrachloroethane	14.32	131	1457008	205.1158 ug/L		100
70)	Ethylbenzene	14.31	106	1814385	201.5551 ug/L		91
71)	m-,p-Xylene	14.39	106	4230307	386.5510 ug/L		85
72)	o-Xylene	14.92	106	2156790	202.5071 ug/L		96
73)	Styrene	14.96	104	3630570	206.3240 ug/L		98
74)	Bromoform	15.43	173	854308	217.4778 ug/L		100
75)	Isopropylbenzene	15.31	105	5485636	194.7621 ug/L		97
77)	1,1,2,2-Tetrachloroethane	15.52	83	939708	220.0830 ug/L		98
79)	1,2,3-Trichloropropane	15.70	110	325518	202.0716 ug/L		99
80)	trans-1,4-Dichloro-2-Buten	15.74	53	421012	202.2796 ug/L		97
81)	n-Propylbenzene	15.79	91	6220435	195.8952 ug/L		95
82)	Bromobenzene	15.92	156	1685980	202.3412 ug/L		99
83)	1,3,5-Trimethylbenzene	15.96	105	4875063	201.1866 ug/L		97
84)	2-Chlorotoluene	16.05	91	4287026	192.7532 ug/L		98
85)	4-Chlorotoluene	16.09	91	4030756	202.3214 ug/L		98
86)	a-Methylstyrene	16.34	118	2724122	213.1015 ug/L		98
87)	tert-Butylbenzene	16.40	134	1075661	209.5280 ug/L		96
88)	1,2,4-Trimethylbenzene	16.44	105	4921395	199.4496 ug/L		97
89)	sec-Butylbenzene	16.65	105	5740919	197.3104 ug/L		97
90)	p-Isopropyltoluene	16.79	119	5274037	197.3451 ug/L		95
91)	1,3-Dichlorobenzene	16.98	146	3171808	197.0945 ug/L		99
92)	1,4-Dichlorobenzene	17.10	146	3145357	192.8244 ug/L		99
93)	n-Butylbenzene	17.28	91	4684496	198.9203 ug/L		97
94)	1,2-Dichlorobenzene	17.57	146	2909224	198.4498 ug/L		99
95)	1,2-Dibromo-3-Chloropropan	18.49	75	191088	196.6217 ug/L		99
96)	1,2,4-Trichlorobenzene	19.55	180	2198003	204.9021 ug/L		99
97)	Hexachlorobutadiene	19.69	225	969160	205.0797 ug/L		99
98)	Naphthalene	19.90	128	3994903	200.6399 ug/L		98
99)	1,2,3-Trichlorobenzene	20.19	180	1999949	203.1452 ug/L		99

(#) = qualifier out of range (m) = manual integration
11M11845.D 8260WT.M Sat May 14 18:51:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11845.D Vial: 10
Acq On : 13 May 2016 18:54 Operator: JDS
Sample : WG568769-10 200ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

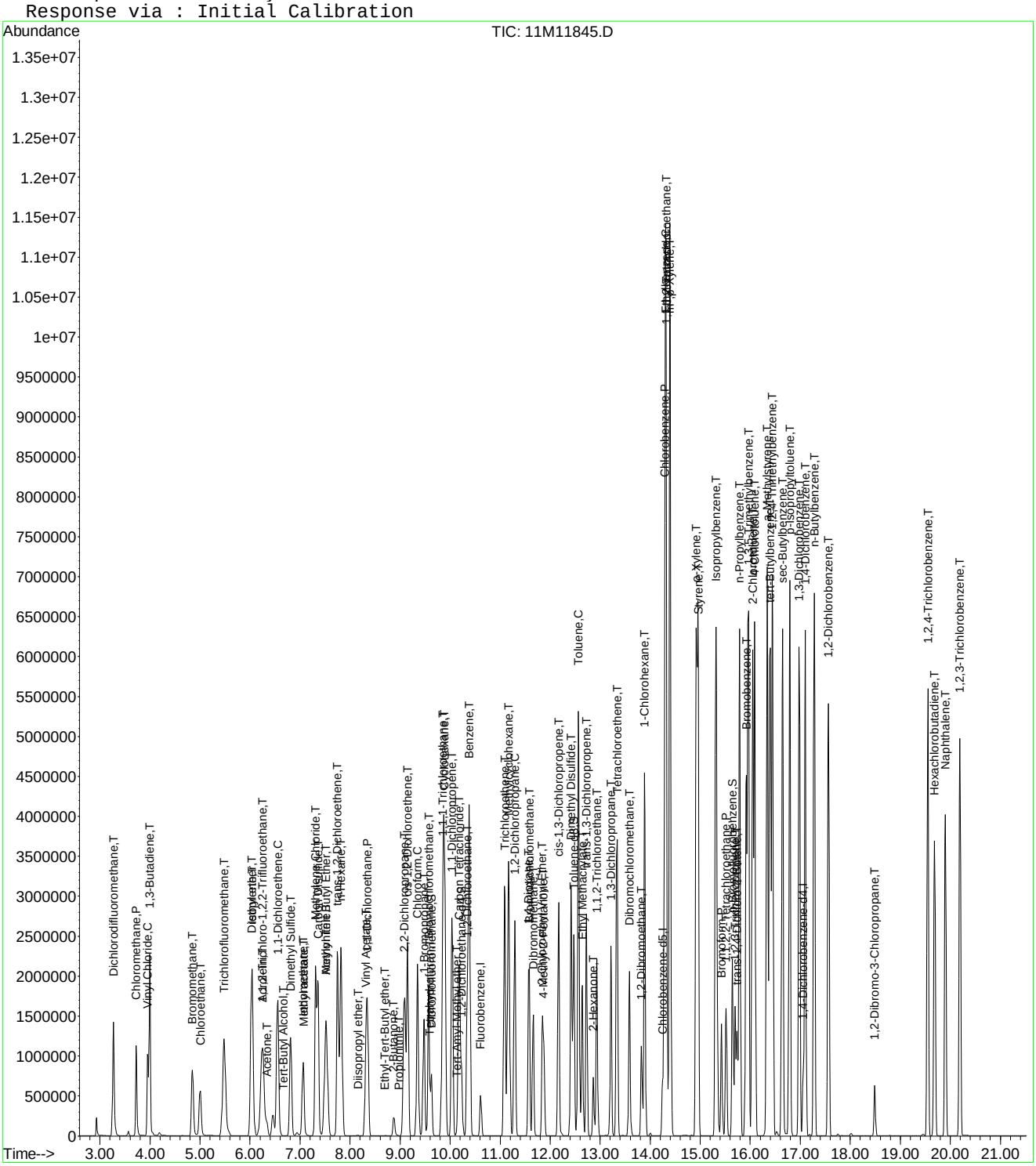

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11846.D Vial: 11
Acq On : 13 May 2016 19:26 Operator: JDS
Sample : WG568769-11 300ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:51:01 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	543599	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	479542	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	277309	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	905755	152.2472 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 609.00%#		
43) 1,2-Dichloroethane-d4	10.23	65	970758	143.1066 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 572.44%#		
57) Toluene-d8	12.47	98	3002456	144.0987 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 576.40%#		
78) p-Bromofluorobenzene	15.64	95	1285822	150.4179 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 601.68%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	2762707	324.3678 ug/L	99
3) Chloromethane	3.72	50	2113477	309.8323 ug/L	100
4) Vinyl Chloride	3.95	62	1802126	318.1269 ug/L	100
5) 1,3-Butadiene	3.99	54	1562377	277.3715 ug/L	98
6) Bromomethane	4.85	94	1341865	344.5204 ug/L	100
7) Chloroethane	5.00	64	1181546	324.6236 ug/L	100
8) Trichlorofluoromethane	5.48	101	3351045	296.7904 ug/L	99
9) Diethyl ether	6.01	59	1250668	299.5049 ug/L	97
10) Isoprene	6.04	67	2121830	304.8859 ug/L	97
11) Acrolein	6.23	56	87016	155.2272 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	1679276	306.5076 ug/L	99
13) Acetone	6.34	43	352141	272.8074 ug/L	95
14) 1,1-Dichloroethene	6.56	61	3009080	302.3733 ug/L	98
15) Tert-Butyl Alcohol	6.67	59	227782	637.9680 ug/L	97
16) Dimethyl Sulfide	6.81	62	1199487	301.8151 ug/L	96
17) Iodomethane	7.06	142	1359092	295.3515 ug/L	96
18) Methyl acetate	7.07	43	1093862	303.3719 ug/L	97
19) Methylene Chloride	7.31	84	1550974	301.1438 ug/L	91
20) Carbon Disulfide	7.36	76	5025219	301.6304 ug/L	99
21) Acrylonitrile	7.49	53	292311	168.8994 ug/L	94
22) Methyl Tert Butyl Ether	7.52	73	3880019	302.0512 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	1693308	307.4459 ug/L	98
24) n-Hexane	7.82	57	2752540	300.0599 ug/L	99
25) Diisopropyl ether	8.15	45	6621718	289.2841 ug/L	99
26) Vinyl Acetate	8.31	43	2814279	303.7518 ug/L	99
27) 1,1-Dichloroethane	8.34	63	3313473	299.8312 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	5508427	295.6672 ug/L	99
29) 2-Butanone	8.87	43	590742	302.7235 ug/L	97
30) Propionitrile	8.99	54	177454	310.4771 ug/L	98
31) 2,2-Dichloropropane	9.09	77	2735421	316.3626 ug/L	99
32) cis-1,2-Dichloroethene	9.15	96	1856543	305.7181 ug/L	98
33) Chloroform	9.35	83	3144758	289.7739 ug/L	100
34) 1-Bromopropane	9.48	122	329211	301.9597 ug/L	98
35) Bromochloromethane	9.57	130	1179409	327.0194 ug/L	97
36) Tetrahydrofuran	9.60	42	386389	280.3985 ug/L	96
38) 1,1,1-Trichloroethane	9.85	97	3227247	302.1877 ug/L	99
39) Cyclohexane	9.88	56	3625895	311.5332 ug/L	99
40) 1,1-Dichloropropene	10.04	75	2360605	309.5743 ug/L	100
41) Carbon Tetrachloride	10.18	117	3172921	304.2542 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	3912691	302.2388 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11846.D Vial: 11
Acq On : 13 May 2016 19:26 Operator: JDS
Sample : WG568769-11 300ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:51:01 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
44)	1,2-Dichloroethane	10.34	62	2551762	289.5052	ug/L		98
45)	Benzene	10.38	78	5961793	285.5987	ug/L		97
46)	Trichloroethene	11.09	130	2025948	298.5901	ug/L		99
47)	Methylcyclohexane	11.17	83	2657028	317.3092	ug/L		98
48)	1,2-Dichloropropane	11.29	63	1781372	308.2809	ug/L		96
49)	1,4-Dioxane	11.56	88	21540	607.7372	ug/L		100
50)	Bromodichloromethane	11.57	83	2511276	309.5762	ug/L		100
51)	Dibromomethane	11.65	93	939605	312.0413	ug/L		99
52)	2-Chloroethyl Vinyl Ether	11.84	63	879534	308.8327	ug/L		100
53)	4-Methyl-2-Pentanone	11.87	58	505191	314.5081	ug/L		99
54)	cis-1,3-Dichloropropene	12.17	75	2604960	321.0589	ug/L		99
55)	Dimethyl Disulfide	12.42	79	1529785	313.3234	ug/L		99
58)	Toluene	12.56	91	6613670	272.4329	ug/L		95
59)	Ethyl Methacrylate	12.65	69	1618015	312.1351	ug/L		94
60)	trans-1,3-Dichloropropene	12.73	75	2369133	304.0383	ug/L		98
61)	1,1,2-Trichloroethane	12.93	97	1271039	295.2644	ug/L		98
62)	2-Hexanone	12.86	43	950079	300.5074	ug/L		97
63)	1,3-Dichloropropane	13.21	76	2062188	298.3119	ug/L		97
64)	Tetrachloroethene	13.34	164	1691190	299.5697	ug/L		98
65)	Dibromochloromethane	13.59	129	2065480	314.5750	ug/L		100
66)	1,2-Dibromoethane	13.82	107	1334668	309.4588	ug/L		99
67)	1-Chlorohexane	13.89	91	2483371	310.2757	ug/L		95
68)	Chlorobenzene	14.29	112	4911463	276.1698	ug/L		96
69)	1,1,1,2-Tetrachloroethane	14.32	131	2161701	300.4009	ug/L		100
70)	Ethylbenzene	14.31	106	2715675	297.7904	ug/L		79
71)	m-,p-Xylene	14.39	106	6004062	541.5626	ug/L		73
72)	o-Xylene	14.92	106	3202500	296.8179	ug/L		90
73)	Styrene	14.96	104	5278134	296.0902	ug/L		96
74)	Bromoform	15.43	173	1313245	330.0007	ug/L		100
75)	Isopropylbenzene	15.31	105	7610374	266.7178	ug/L		92
77)	1,1,2,2-Tetrachloroethane	15.52	83	1470787	340.5868	ug/L		97
79)	1,2,3-Trichloropropane	15.70	110	494041	303.0514	ug/L		98
80)	trans-1,4-Dichloro-2-Buten	15.74	53	640812	304.0444	ug/L		94
81)	n-Propylbenzene	15.79	91	8405785	261.7374	ug/L		88
82)	Bromobenzene	15.92	156	2530711	300.3025	ug/L		98
83)	1,3,5-Trimethylbenzene	15.96	105	6851753	279.5793	ug/L		93
84)	2-Chlorotoluene	16.05	91	6055423	269.1996	ug/L		95
85)	4-Chlorotoluene	16.09	91	5712933	283.5299	ug/L		94
86)	a-Methylstyrene	16.34	118	4020347	310.9625	ug/L		96
87)	tert-Butylbenzene	16.40	134	1654009	318.5583	ug/L		89
88)	1,2,4-Trimethylbenzene	16.44	105	6879061	275.6504	ug/L		91
89)	sec-Butylbenzene	16.65	105	7999374	271.8373	ug/L		92
90)	p-Isopropyltoluene	16.79	119	7406083	274.0036	ug/L		90
91)	1,3-Dichlorobenzene	16.98	146	4679194	287.4903	ug/L		97
92)	1,4-Dichlorobenzene	17.10	146	4642399	281.3967	ug/L		96
93)	n-Butylbenzene	17.28	91	6723928	282.3084	ug/L		93
94)	1,2-Dichlorobenzene	17.57	146	4360022	294.0672	ug/L		96
95)	1,2-Dibromo-3-Chloropropan	18.49	75	302346	307.2381	ug/L		100
96)	1,2,4-Trichlorobenzene	19.55	180	3482946	321.0328	ug/L		97
97)	Hexachlorobutadiene	19.69	225	1629665	340.9652	ug/L		98
98)	Naphthalene	19.90	128	5970381	296.4815	ug/L	#	96
99)	1,2,3-Trichlorobenzene	20.19	180	3137470	315.1025	ug/L		98

(#) = qualifier out of range (m) = manual integration
11M11846.D 8260WT.M Sat May 14 18:51:02 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11846.D Vial: 11
Acq On : 13 May 2016 19:26 Operator: JDS
Sample : WG568769-11 300ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:51 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

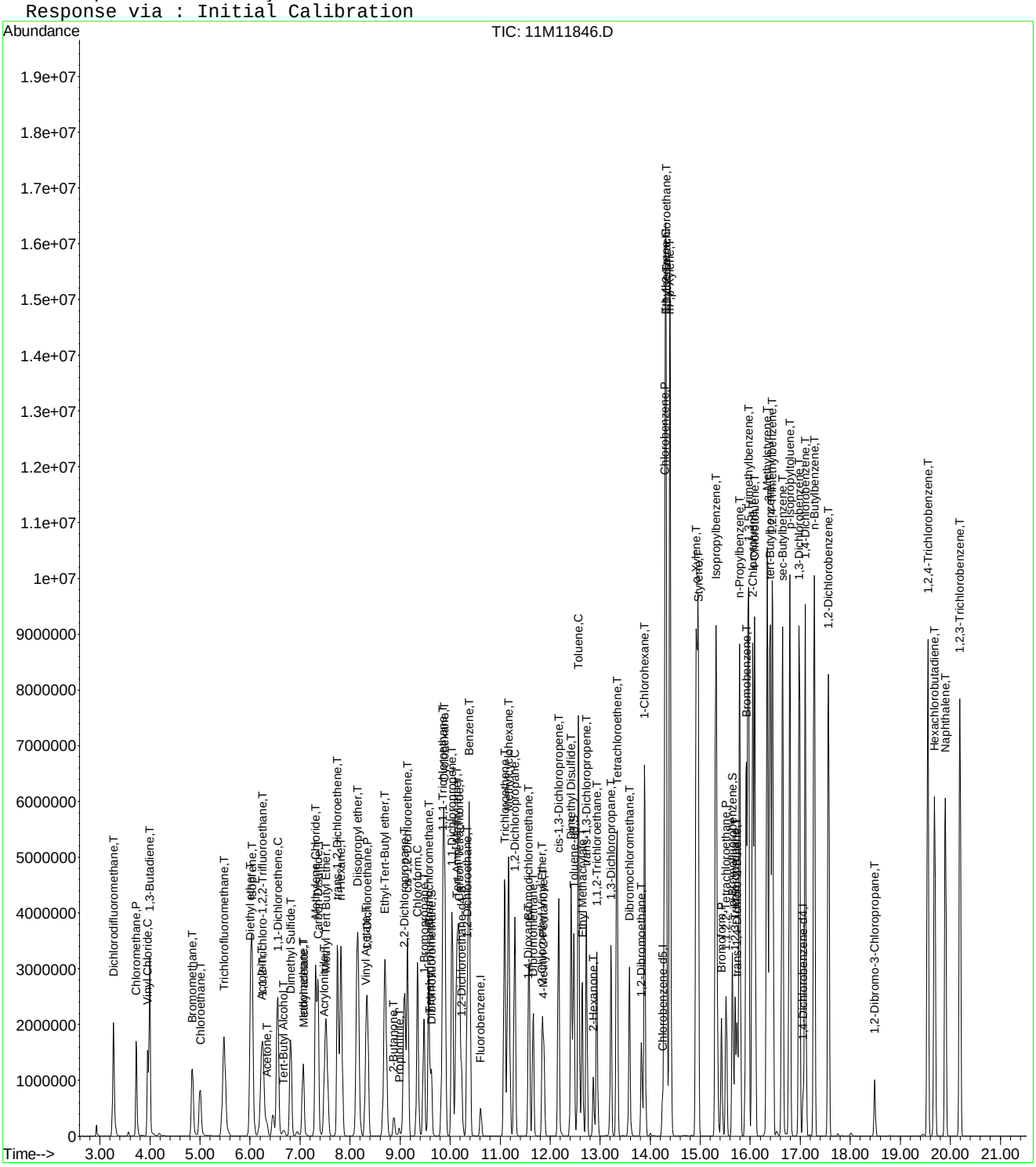

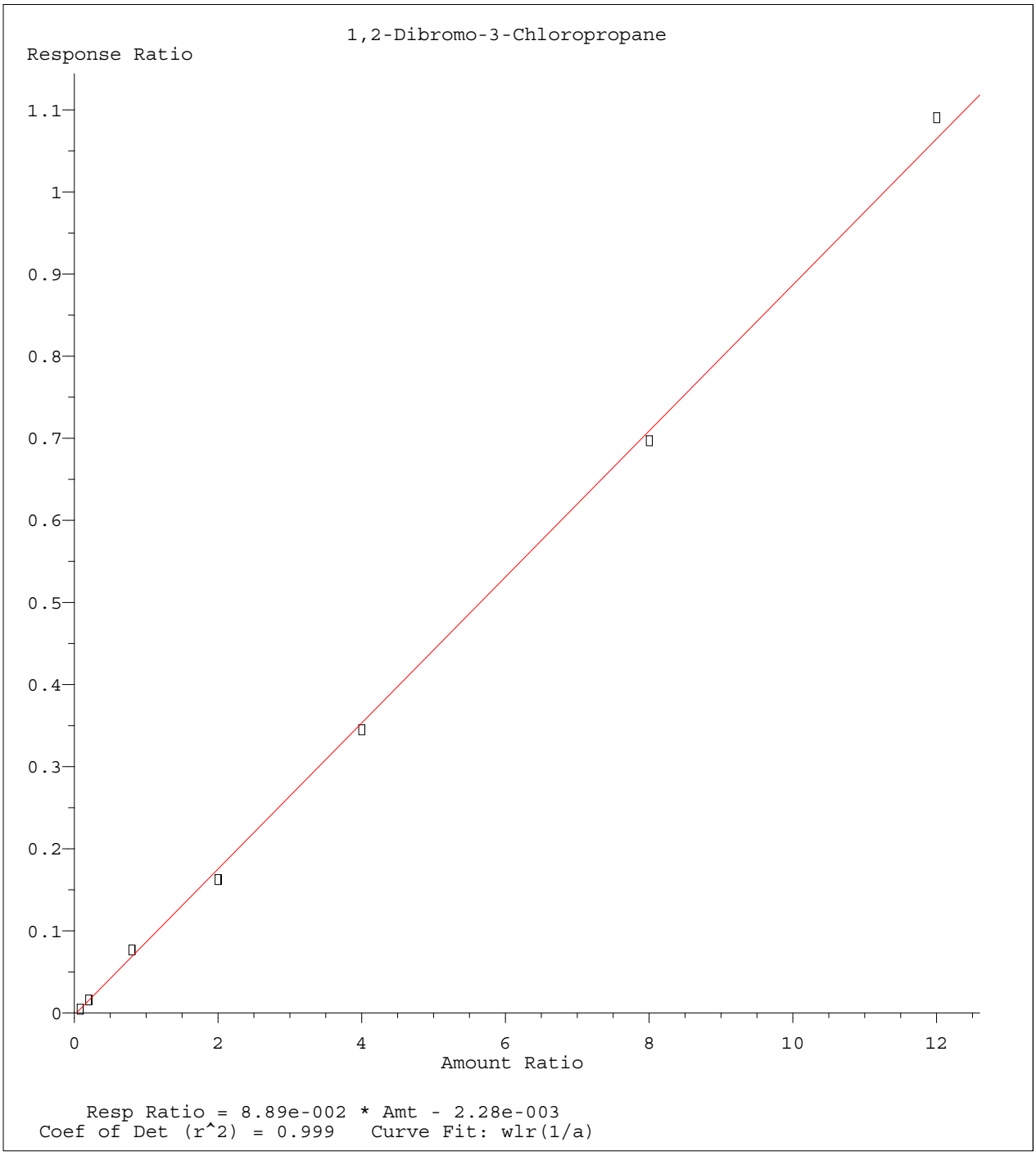

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

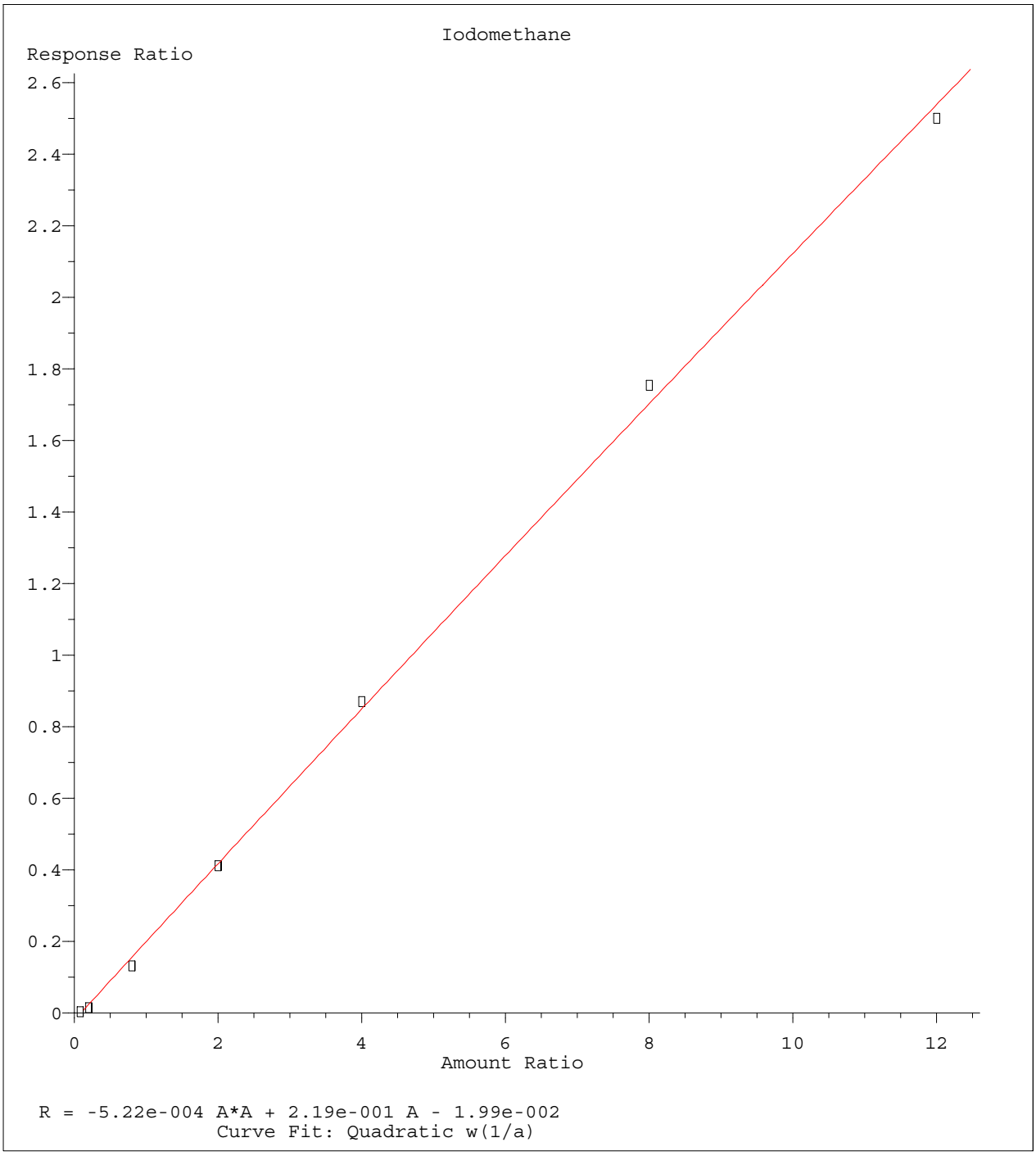

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

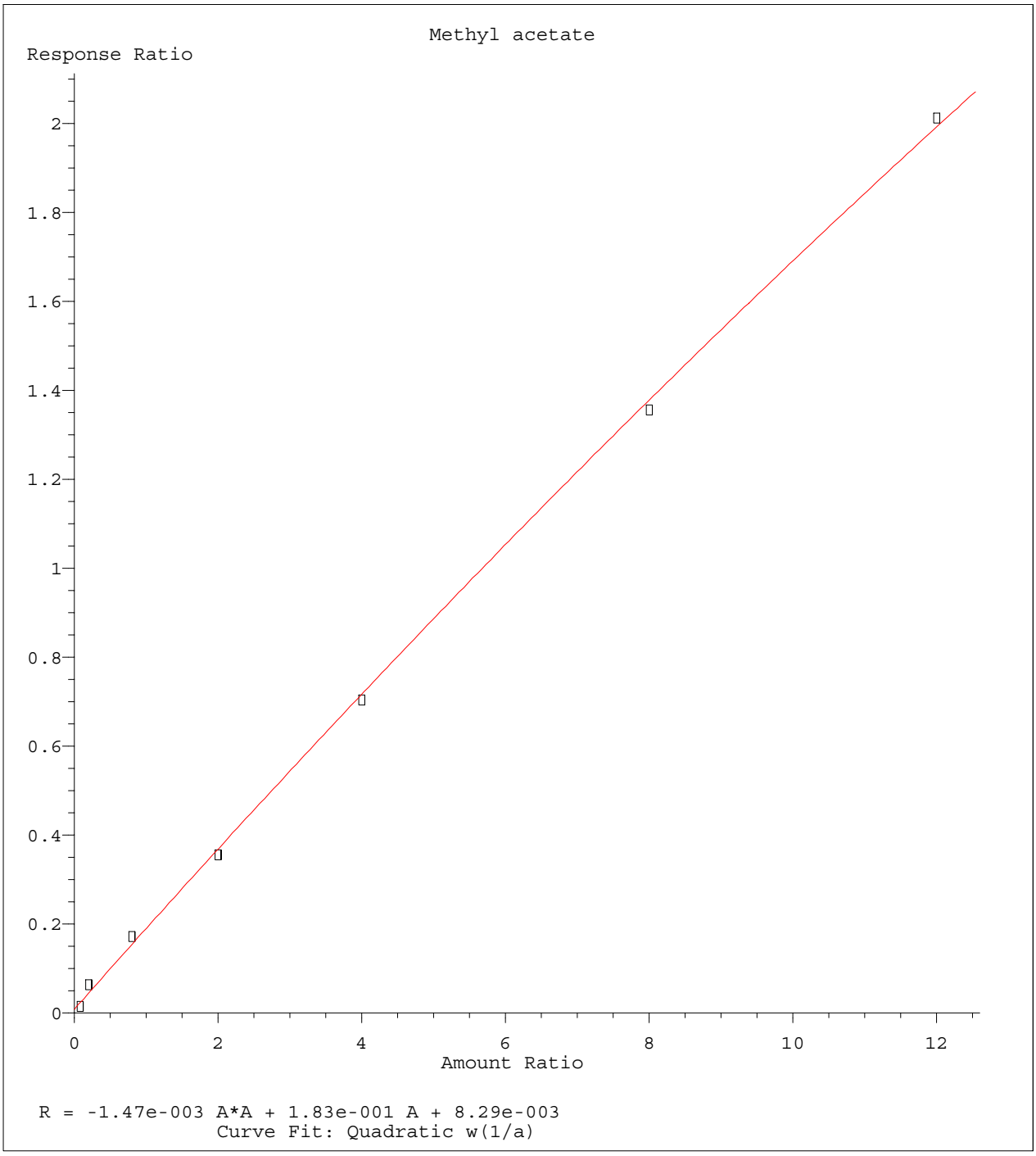

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

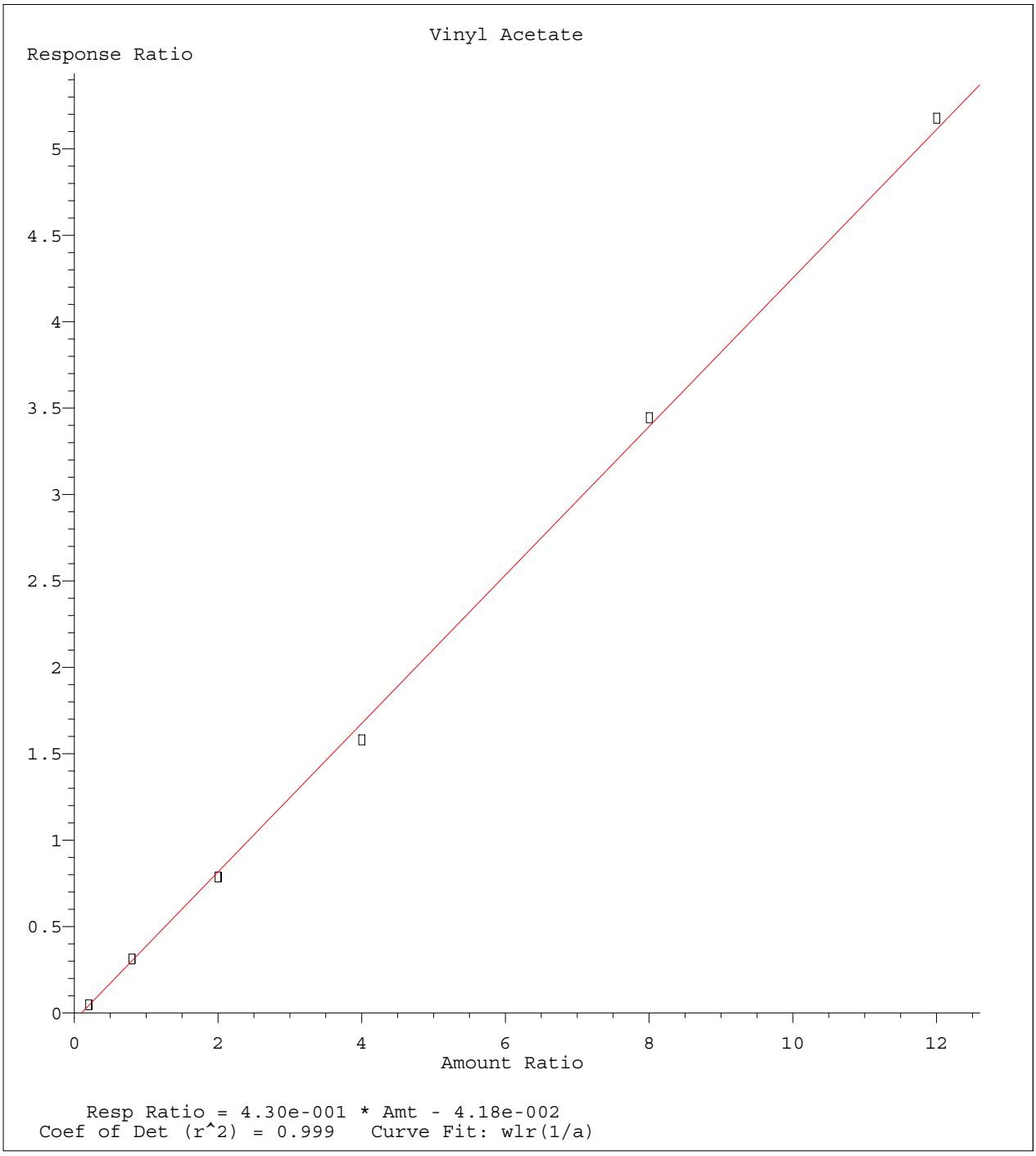

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

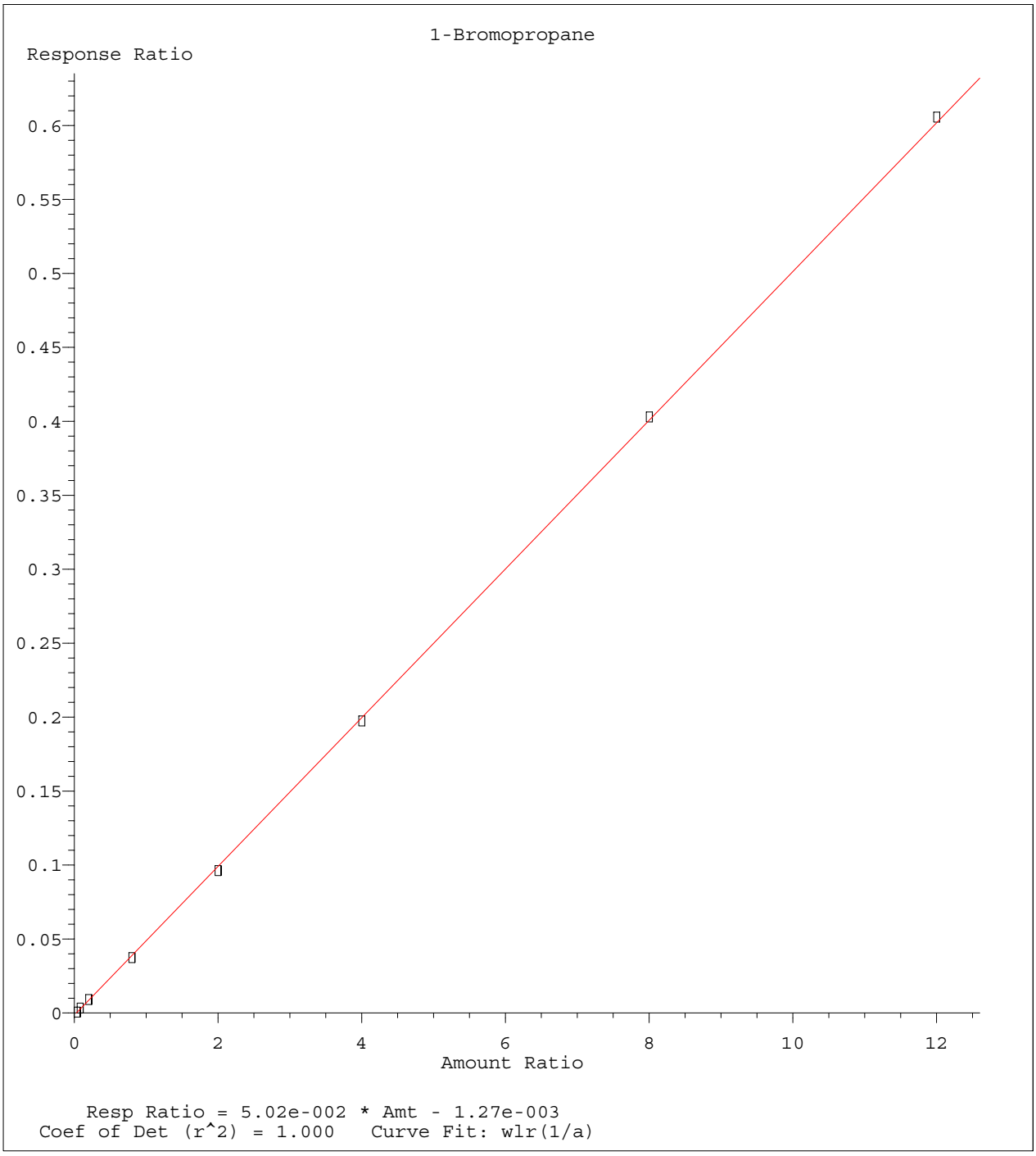

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

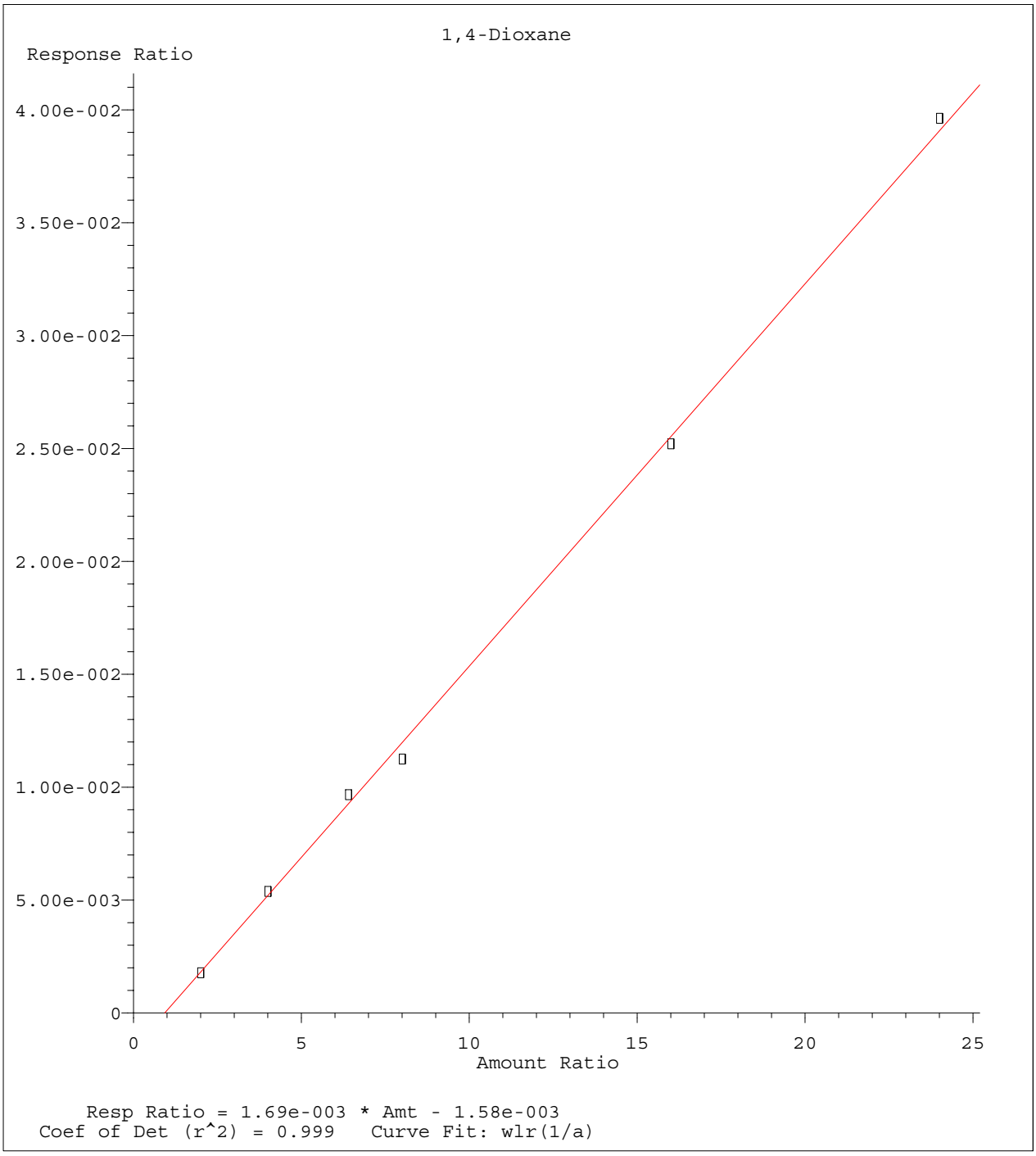

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

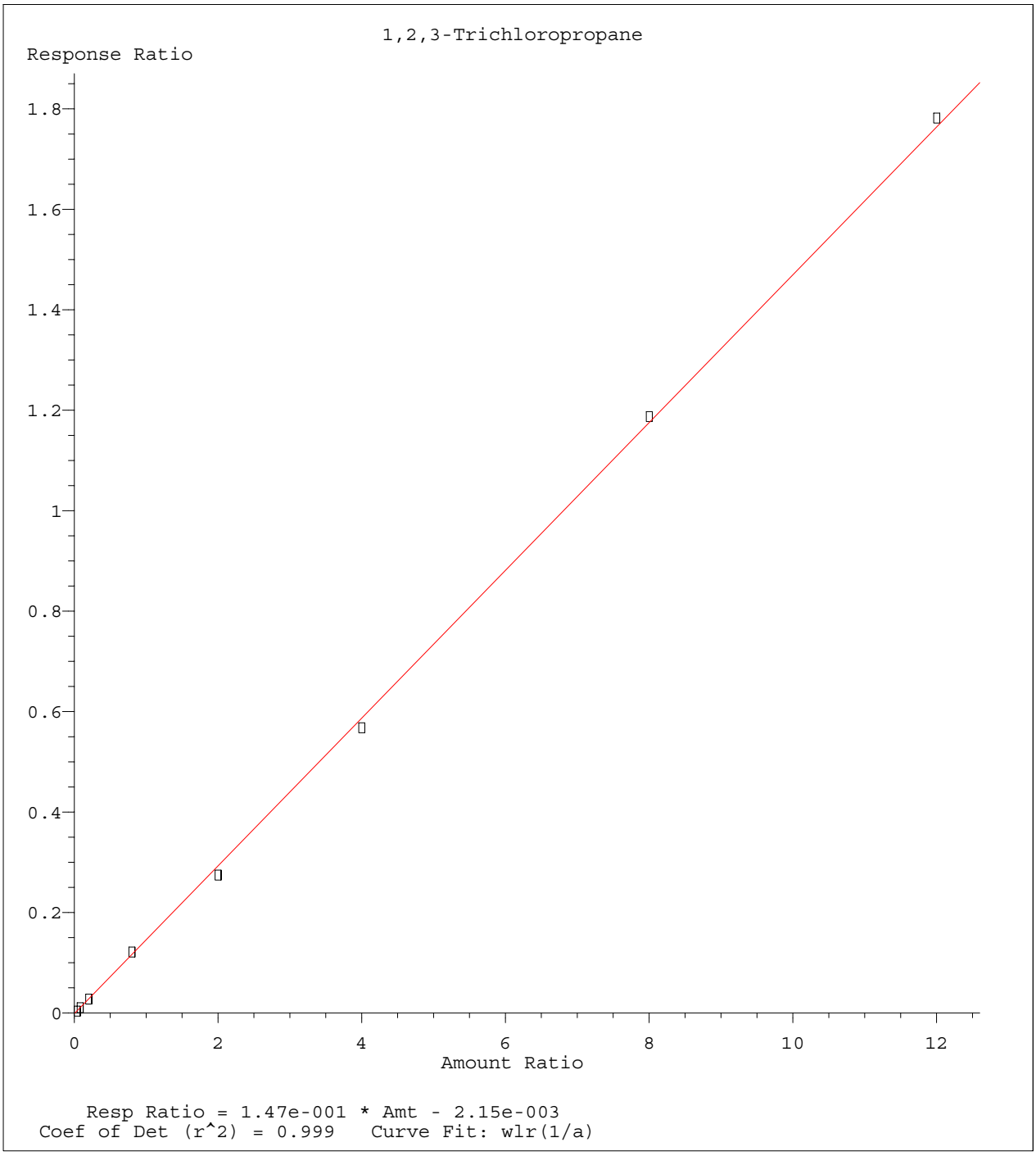

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

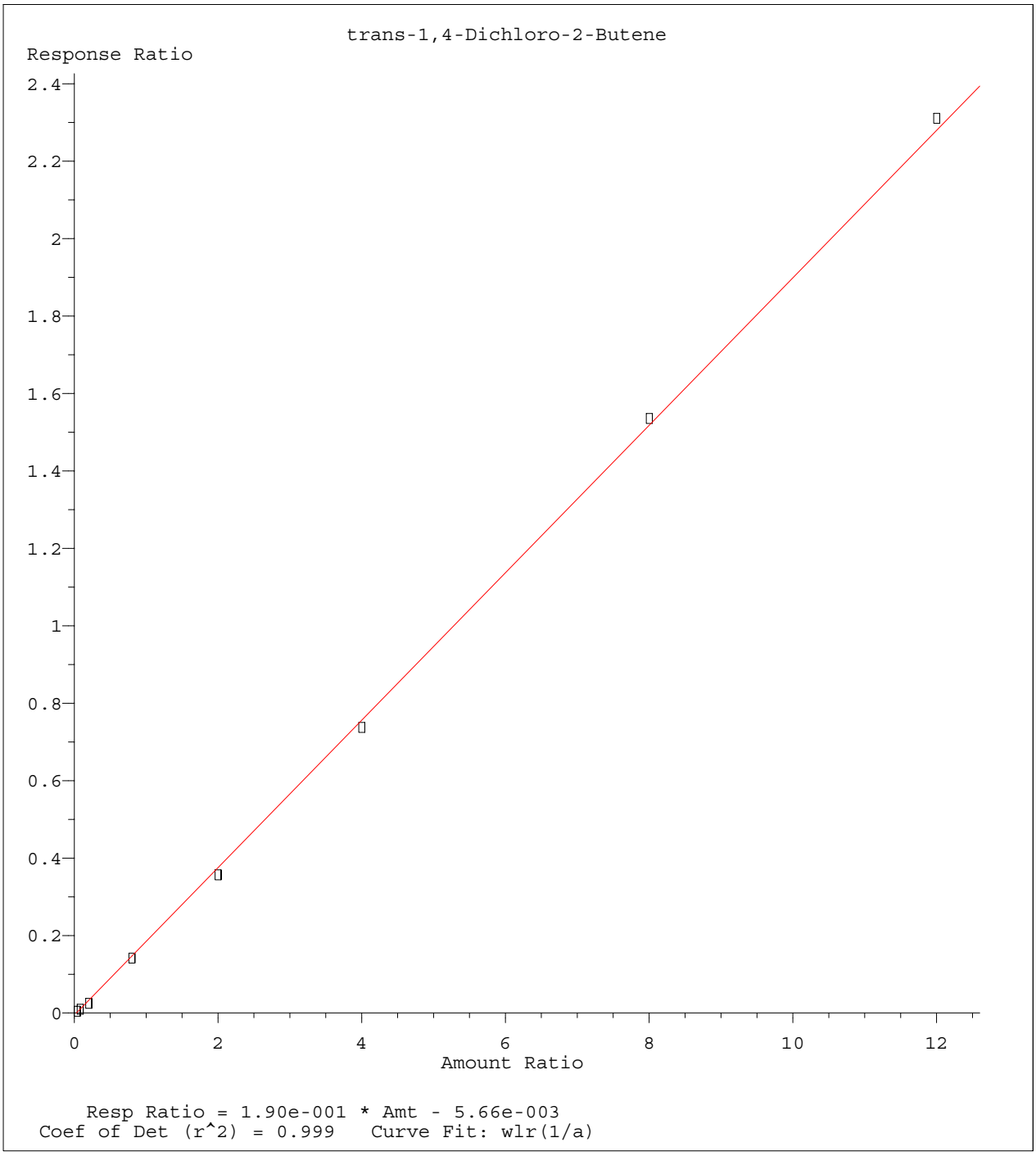

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

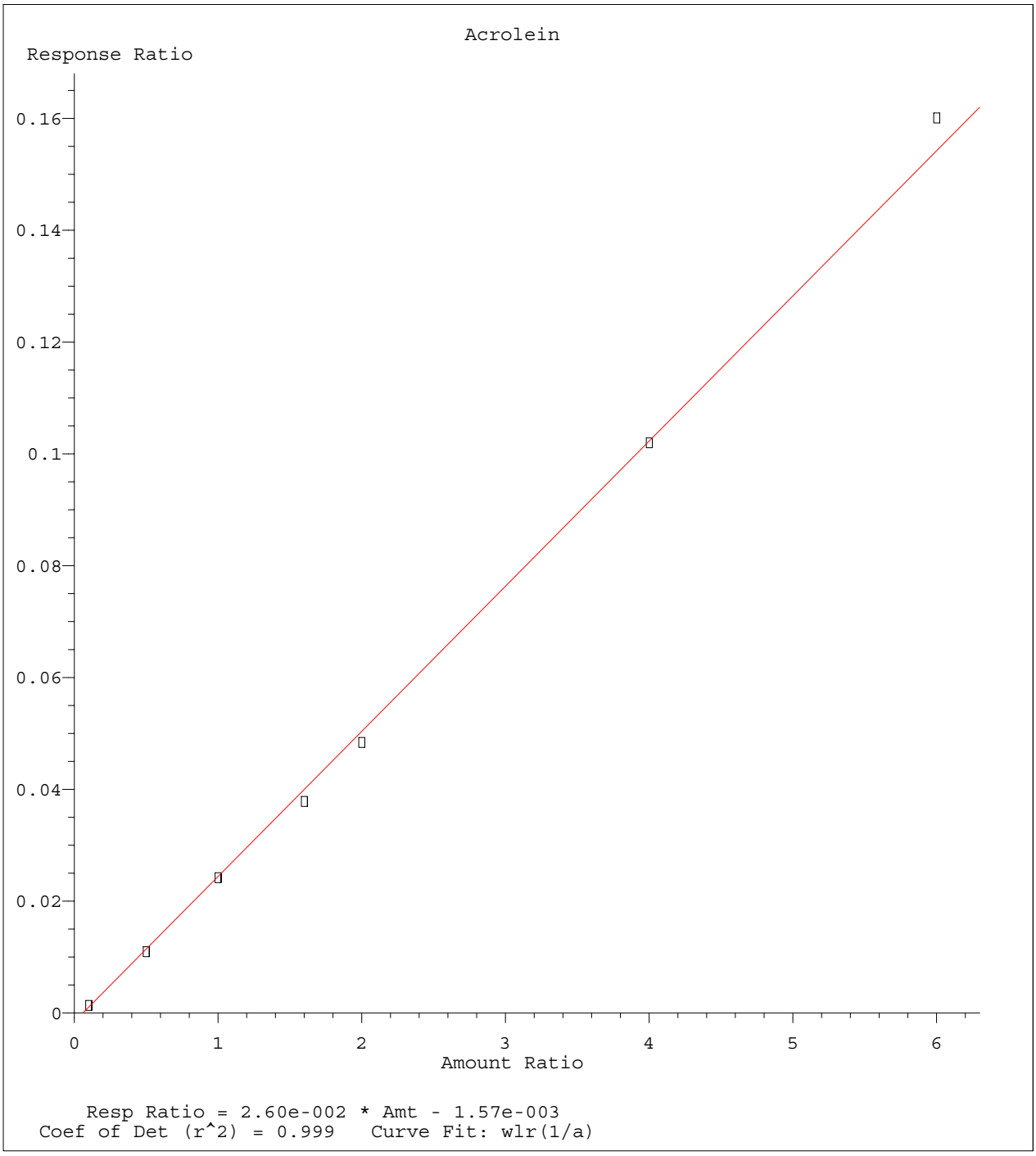

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:47:09 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	559172	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	461765	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	267551	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	155853	25.4675 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.88%		
43) 1,2-Dichloroethane-d4	10.23	65	160000	22.9299 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 91.72%		
57) Toluene-d8	12.47	98	531547	26.4930 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.96%		
78) p-Bromofluorobenzene	15.64	95	203747	24.7040 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.80%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	495777	56.5878 ug/L	98
3) Chloromethane	3.72	50	386673	55.1069 ug/L	100
4) Vinyl Chloride	3.95	62	326996	56.1165 ug/L	100
5) 1,3-Butadiene	3.99	54	212443	36.6650 ug/L	98
6) Bromomethane	4.84	94	202280	50.4885 ug/L	99
7) Chloroethane	5.00	64	220373	58.8601 ug/L	99
8) Trichlorofluoromethane	5.48	101	552017	47.5286 ug/L	99
9) Diethyl ether	6.01	59	453011	105.4639 ug/L	97
10) Isoprene	6.04	67	388108	54.2141 ug/L	93
11) Acrolein	6.23	56	56029	97.7296 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	292836	51.9609 ug/L	99
13) Acetone	6.35	43	65954	49.6723 ug/L	97
14) 1,1-Dichloroethene	6.55	61	486567	47.5319 ug/L	96
15) Tert-Butyl Alcohol	6.67	59	79387	216.1534 ug/L	96
16) Dimethyl Sulfide	6.81	62	290204	70.9875 ug/L	94
17) Iodomethane	7.06	142	176766	38.4128 ug/L	92
18) Methyl acetate	7.07	43	200985	48.7416 ug/L	98
19) Methylene Chloride	7.31	84	275442	51.9916 ug/L	91
20) Carbon Disulfide	7.35	76	765803	44.6859 ug/L	99
21) Acrylonitrile	7.49	53	93674	52.6181 ug/L	100
22) Methyl Tert Butyl Ether	7.52	73	687029	51.9942 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	295337	52.1295 ug/L	97
24) n-Hexane	7.82	57	420811	44.5959 ug/L	99
25) Diisopropyl ether	8.15	45	2449232	104.0201 ug/L	98
26) Vinyl Acetate	8.31	43	395913	43.6417 ug/L	99
27) 1,1-Dichloroethane	8.34	63	551372	48.5033 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1884917	98.3560 ug/L	99
29) 2-Butanone	8.87	43	101045	50.3380 ug/L	98
30) Propionitrile	8.99	54	62190	105.7785 ug/L	98
31) 2,2-Dichloropropane	9.09	77	405332	45.5727 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	332086	53.1618 ug/L	94
33) Chloroform	9.35	83	531122	47.5773 ug/L	100
34) 1-Bromopropane	9.48	122	76460	68.6656 ug/L	96
35) Bromochloromethane	9.57	130	199933	53.8923 ug/L	96
36) Tetrahydrofuran	9.60	42	131835	93.0068 ug/L	96
38) 1,1,1-Trichloroethane	9.85	97	527857	48.0501 ug/L	99
39) Cyclohexane	9.88	56	601180	50.2142 ug/L	99
40) 1,1-Dichloropropene	10.04	75	393057	50.1107 ug/L	100
41) Carbon Tetrachloride	10.18	117	507914	47.3479 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	1406419	105.6143 ug/L	97

(#) = qualifier out of range (m) = manual integration

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:47:09 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.34	62	434117	47.8802 ug/L	99
45) Benzene	10.38	78	1098993	51.1808 ug/L	100
46) Trichloroethene	11.08	130	365193	52.3242 ug/L	99
47) Methylcyclohexane	11.17	83	450581	52.3110 ug/L	97
48) 1,2-Dichloropropane	11.29	63	313901	52.8102 ug/L	94
49) 1,4-Dioxane	11.56	88	6366	191.2043 ug/L	95
50) Bromodichloromethane	11.57	83	413329	49.5339 ug/L	99
51) Dibromomethane	11.65	93	148822	48.0471 ug/L	97
52) 2-Chloroethyl Vinyl Ether	11.84	63	152083	51.9140 ug/L	99
53) 4-Methyl-2-Pentanone	11.87	58	86849	52.5623 ug/L	99
54) cis-1,3-Dichloropropene	12.17	75	480729	57.5993 ug/L	99
55) Dimethyl Disulfide	12.42	79	261188	52.0055 ug/L	96
58) Toluene	12.56	91	1256481	53.7500 ug/L	100
59) Ethyl Methacrylate	12.65	69	284944	57.0854 ug/L	90
60) trans-1,3-Dichloropropene	12.73	75	391013	52.1118 ug/L	97
61) 1,1,2-Trichloroethane	12.93	97	218717	52.7643 ug/L	99
62) 2-Hexanone	12.86	43	158873	52.1857 ug/L	98
63) 1,3-Dichloropropane	13.21	76	374611	56.2767 ug/L	95
64) Tetrachloroethene	13.34	164	283714	52.1906 ug/L	97
65) Dibromochloromethane	13.59	129	332092	52.5252 ug/L	99
66) 1,2-Dibromoethane	13.82	107	218604	52.6373 ug/L	99
67) 1-Chlorohexane	13.89	91	420217	54.5237 ug/L	92
68) Chlorobenzene	14.29	112	912650	53.2936 ug/L	100
69) 1,1,1,2-Tetrachloroethane	14.32	131	353663	51.0389 ug/L	98
70) Ethylbenzene	14.31	106	460093	52.3943 ug/L	99
71) m-,p-Xylene	14.39	106	1144896	107.2445 ug/L	98
72) o-Xylene	14.92	106	568307	54.7003 ug/L	100
73) Styrene	14.95	104	943635	54.9735 ug/L	98
74) Bromoform	15.43	173	190959	49.8328 ug/L	99
75) Isopropylbenzene	15.31	105	1490416	54.2449 ug/L	100
77) 1,1,2,2-Tetrachloroethane	15.52	83	228913	54.9422 ug/L	100
79) 1,2,3-Trichloropropane	15.70	110	78385	50.1407 ug/L	92
80) trans-1,4-Dichloro-2-Buten	15.74	53	73730	36.9129 ug/L	62
81) n-Propylbenzene	15.79	91	1753049	56.5769 ug/L	99
82) Bromobenzene	15.92	156	419932	51.6479 ug/L	99
83) 1,3,5-Trimethylbenzene	15.95	105	1303495	55.1277 ug/L	99
84) 2-Chlorotoluene	16.05	91	1145029	52.7599 ug/L	99
85) 4-Chlorotoluene	16.09	91	1077116	55.4064 ug/L	99
86) a-Methylstyrene	16.34	118	741671	59.4584 ug/L	99
87) tert-Butylbenzene	16.40	134	283244	56.5417 ug/L	95
88) 1,2,4-Trimethylbenzene	16.44	105	1296091	53.8297 ug/L	99
89) sec-Butylbenzene	16.65	105	1586978	55.8961 ug/L	100
90) p-Isopropyltoluene	16.79	119	1426648	54.7069 ug/L	99
91) 1,3-Dichlorobenzene	16.98	146	827515	52.6969 ug/L	98
92) 1,4-Dichlorobenzene	17.10	146	844174	53.0354 ug/L	98
93) n-Butylbenzene	17.28	91	1238500	53.8957 ug/L	99
94) 1,2-Dichlorobenzene	17.57	146	766416	53.5772 ug/L	98
95) 1,2-Dibromo-3-Chloropropan	18.49	75	45158	48.1046 ug/L	97
96) 1,2,4-Trichlorobenzene	19.55	180	580278	55.4365 ug/L	99
97) Hexachlorobutadiene	19.69	225	257859	55.9180 ug/L	98
98) Naphthalene	19.90	128	993390	51.1296 ug/L	100
99) 1,2,3-Trichlorobenzene	20.19	180	519374	54.0642 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:47 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

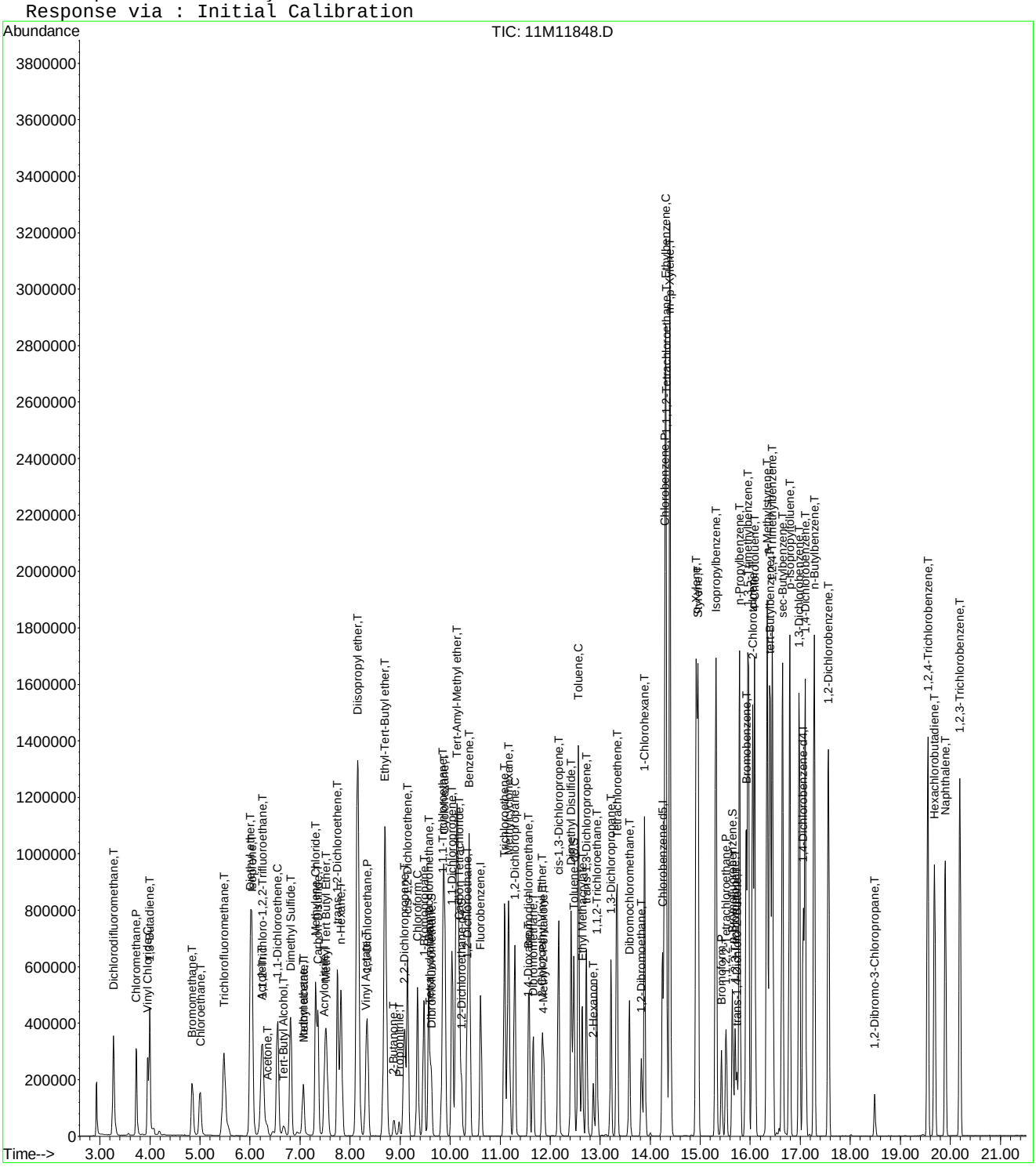

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	107	0.00
2	T	Dichlorodifluoromethane	50.0000	56.5878	-13.2	119	0.00
3	P	Chloromethane	50.0000	55.1069	-10.2	134	0.00
4	C	Vinyl Chloride	50.0000	56.1165	-12.2	125	-0.01
5	T	1,3-Butadiene	50.0000	36.6650	26.7#	76	-0.01
6	T	Bromomethane	50.0000	50.4885	-1.0	117	-0.01
7	T	Chloroethane	50.0000	58.8601	-17.7	131	0.00
8	T	Trichlorofluoromethane	50.0000	47.5286	4.9	106	0.00
9	T	Diethyl ether	100.0000	105.4639	-5.5	116	0.00
10	T	Isoprene	50.0000	54.2141	-8.4	117	0.00
11	T	Acrolein	50.0000	97.7296	-95.5#	222	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	51.9609	-3.9	115	0.00
13	T	Acetone	50.0000	49.6723	0.7	110	0.01
14	C	1,1-Dichloroethene	50.0000	47.5320	4.9	106	-0.01
15	T	Tert-Butyl Alcohol	200.0000	216.1534	-8.1	114	0.01
16	T	Dimethyl Sulfide	50.0000	70.9875	-42.0#	150	0.00
17	T	Iodomethane	50.0000	38.4128	23.2	82	0.00
18	T	Methyl acetate	50.0000	48.7416	2.5	108	0.01
19	T	Methylene Chloride	50.0000	51.9916	-4.0	118	0.00
20	T	Carbon Disulfide	50.0000	44.6859	10.6	94	-0.01
21	T	Acrylonitrile	50.0000	52.6181	-5.2	110	0.00
22	T	Methyl Tert Butyl Ether	50.0000	51.9942	-4.0	113	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.1295	-4.3	117	0.00
24	T	n-Hexane	50.0000	44.5959	10.8	94	0.00
25	T	Diisopropyl ether	100.0000	104.0201	-4.0	112	0.00
26	T	Vinyl Acetate	50.0000	43.6417	12.7	96	0.00
27	P	1,1-Dichloroethane	50.0000	48.5033	3.0	107	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.3560	1.6	106	0.00
29	T	2-Butanone	50.0000	50.3381	-0.7	111	0.00
30	T	Propionitrile	100.0000	105.7786	-5.8	110	0.01
31	T	2,2-Dichloropropane	50.0000	45.5727	8.9	101	0.00
32	T	cis-1,2-Dichloroethene	50.0000	53.1618	-6.3	118	0.00
33	C	Chloroform	50.0000	47.5773	4.8	108	0.00
34	T	1-Bromopropane	50.0000	68.6656	-37.3#	152	0.00
35	T	Bromochloromethane	50.0000	53.8923	-7.8	111	0.00
36	T	Tetrahydrofuran	100.0000	93.0068	7.0	103	0.00
37	S	Dibromofluoromethane	25.0000	25.4675	-1.9	111	0.00
38	T	1,1,1-Trichloroethane	50.0000	48.0501	3.9	106	0.00
39	T	Cyclohexane	50.0000	50.2142	-0.4	105	0.00
40	T	1,1-Dichloropropene	50.0000	50.1107	-0.2	111	0.00
41	T	Carbon Tetrachloride	50.0000	47.3479	5.3	103	0.00
42	T	Tert-Amyl-Methyl ether	100.0000	105.6143	-5.6	115	0.00
43	S	1,2-Dichloroethane-d4	25.0000	22.9299	8.3	101	0.00
44	T	1,2-Dichloroethane	50.0000	47.8802	4.2	104	0.00
45	T	Benzene	50.0000	51.1809	-2.4	116	0.00
46	T	Trichloroethene	50.0000	52.3242	-4.6	119	-0.01
47	T	Methylcyclohexane	50.0000	52.3110	-4.6	108	0.00
48	C	1,2-Dichloropropane	50.0000	52.8102	-5.6	117	0.00
49	T	1,4-Dioxane	200.0000	191.2043	4.4	109	0.01
50	T	Bromodichloromethane	50.0000	49.5339	0.9	107	0.00
51	T	Dibromomethane	50.0000	48.0471	3.9	104	0.00
52	T	2-Chloroethyl Vinyl Ether	50.0000	51.9140	-3.8	114	0.00
53	T	4-Methyl-2-Pentanone	50.0000	52.5623	-5.1	115	0.00
54	T	cis-1,3-Dichloropropene	50.0000	57.5993	-15.2	122	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	50.0000	52.0055	-4.0	110	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	105	0.00
57	S	Toluene-d8	25.0000	26.4930	-6.0	115	0.00
58	C	Toluene	50.0000	53.7500	-7.5	115	0.00
59	T	Ethyl Methacrylate	50.0000	57.0854	-14.2	114	0.00
60	T	trans-1,3-Dichloropropene	50.0000	52.1118	-4.2	107	0.00
61	T	1,1,2-Trichloroethane	50.0000	52.7643	-5.5	113	0.00
62	T	2-Hexanone	50.0000	52.1857	-4.4	110	0.00
63	T	1,3-Dichloropropane	50.0000	56.2767	-12.6	118	0.00
64	T	Tetrachloroethene	50.0000	52.1906	-4.4	113	0.00
65	T	Dibromochloromethane	50.0000	52.5251	-5.1	107	0.00
66	T	1,2-Dibromoethane	50.0000	52.6373	-5.3	111	0.00
67	T	1-Chlorohexane	50.0000	54.5237	-9.0	112	0.00
68	P	Chlorobenzene	50.0000	53.2936	-6.6	114	0.00
69	T	1,1,1,2-Tetrachloroethane	50.0000	51.0388	-2.1	109	0.00
70	C	Ethylbenzene	50.0000	52.3943	-4.8	113	0.00
71	T	m-,p-Xylene	100.0000	107.2445	-7.2	115	0.00
72	T	o-Xylene	50.0000	54.7003	-9.4	115	0.00
73	T	Styrene	50.0000	54.9735	-9.9	113	0.00
74	P	Bromoform	50.0000	49.8327	0.3	104	0.00
75	T	Isopropylbenzene	50.0000	54.2449	-8.5	114	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	101	0.00
77	P	1,1,2,2-Tetrachloroethane	50.0000	54.9422	-9.9	110	0.00
78	S	p-Bromofluorobenzene	25.0000	24.7040	1.2	108	0.00
79	T	1,2,3-Trichloropropane	50.0000	50.1407	-0.3	108	0.00
80	T	trans-1,4-Dichloro-2-Butene	50.0000	36.9129	26.2#	78	0.00
81	T	n-Propylbenzene	50.0000	56.5769	-13.2	115	0.00
82	T	Bromobenzene	50.0000	51.6479	-3.3	111	0.00
83	T	1,3,5-Trimethylbenzene	50.0000	55.1277	-10.3	114	-0.01
84	T	2-Chlorotoluene	50.0000	52.7599	-5.5	112	0.00
85	T	4-Chlorotoluene	50.0000	55.4064	-10.8	116	0.00
86	T	a-Methylstyrene	50.0000	59.4584	-18.9	114	0.00
87	T	tert-Butylbenzene	50.0000	56.5417	-13.1	117	0.00
88	T	1,2,4-Trimethylbenzene	50.0000	53.8297	-7.7	110	0.00
89	T	sec-Butylbenzene	50.0000	55.8961	-11.8	114	0.00
90	T	p-Isopropyltoluene	50.0000	54.7069	-9.4	111	0.00
91	T	1,3-Dichlorobenzene	50.0000	52.6969	-5.4	112	0.00
92	T	1,4-Dichlorobenzene	50.0000	53.0354	-6.1	114	0.00
93	T	n-Butylbenzene	50.0000	53.8957	-7.8	110	0.00
94	T	1,2-Dichlorobenzene	50.0000	53.5772	-7.2	112	0.00
95	T	1,2-Dibromo-3-Chloropropane	50.0000	48.1046	3.8	105	0.00
96	T	1,2,4-Trichlorobenzene	50.0000	55.4365	-10.9	113	0.00
97	T	Hexachlorobutadiene	50.0000	55.9180	-11.8	118	0.00
98	T	Naphthalene	50.0000	51.1296	-2.3	103	0.00
99	T	1,2,3-Trichlorobenzene	50.0000	54.0642	-8.1	114	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11848.D 8260WT.M Sat May 14 18:47:20 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070516\11M13078.D Vial: 3
Acq On : 5 Jul 2016 18:11 Operator: JDS
Sample : WG575198-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 05 18:32:42 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	519117	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	445640	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	268117	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	142795	25.1342 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.52%		
43) 1,2-Dichloroethane-d4	10.24	65	140499	21.6888 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 86.76%		
57) Toluene-d8	12.47	98	479312	24.7539 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.00%		
78) p-Bromofluorobenzene	15.64	95	190243	23.0180 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.08%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	453155	55.7138 ug/L	95
3) Chloromethane	3.72	50	327935	50.3420 ug/L	99
4) Vinyl Chloride	3.96	62	288555	53.3405 ug/L	100
5) 1,3-Butadiene	4.00	54	251573	46.7685 ug/L	98
6) Bromomethane	4.85	94	196547	52.8428 ug/L	99
7) Chloroethane	5.00	64	177181	50.9753 ug/L	99
8) Trichlorofluoromethane	5.48	101	547200	50.7492 ug/L	100
9) Diethyl ether	6.01	59	360421	90.3827 ug/L	92
10) Isoprene	6.04	67	300874	45.2715 ug/L	89
11) Acrolein	6.23	56	26861	51.1966 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	280747	53.6596 ug/L	96
13) Acetone	6.34	43	48590	39.4185 ug/L	92
14) 1,1-Dichloroethene	6.56	61	461972	48.6115 ug/L	93
15) Tert-Butyl Alcohol	6.66	59	52416	153.7293 ug/L	96
16) Dimethyl Sulfide	6.81	62	167274	44.0745 ug/L	86
17) Iodomethane	7.06	142	192346	44.6594 ug/L	94
18) Methyl acetate	7.07	43	135963	35.0481 ug/L	93
19) Methylene Chloride	7.31	84	248044	50.4326 ug/L	79
20) Carbon Disulfide	7.36	76	790696	49.6985 ug/L	99
21) Acrylonitrile	7.49	53	72060	43.6004 ug/L	99
22) Methyl Tert Butyl Ether	7.52	73	603474	49.1947 ug/L	97
23) trans-1,2-Dichloroethene	7.75	96	276353	52.5425 ug/L	90
24) n-Hexane	7.82	57	406376	46.3891 ug/L	97
25) Diisopropyl ether	8.15	45	1802503	82.4600 ug/L	97
26) Vinyl Acetate	8.31	43	363953	43.2381 ug/L	98
27) 1,1-Dichloroethane	8.34	63	525902	49.8324 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	1605084	90.2167 ug/L	97
29) 2-Butanone	8.87	43	73968	39.6922 ug/L	90
30) Propionitrile	8.97	54	45453	83.2760 ug/L	99
31) 2,2-Dichloropropane	9.09	77	457421	55.3975 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	302897	52.2305 ug/L	91
33) Chloroform	9.35	83	505159	48.7431 ug/L	100
34) 1-Bromopropane	9.48	122	54957	53.3051 ug/L	95
35) Bromochloromethane	9.57	130	197042	57.2112 ug/L	84
36) Tetrahydrofuran	9.60	42	98177	74.6061 ug/L	90
38) 1,1,1-Trichloroethane	9.85	97	517330	50.7254 ug/L	96
39) Cyclohexane	9.88	56	509177	45.8112 ug/L	94
40) 1,1-Dichloropropene	10.04	75	374472	51.4250 ug/L	98
41) Carbon Tetrachloride	10.18	117	520748	52.2900 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	1170914	94.7138 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M13078.D 8260WT.M Tue Jul 05 18:32:45 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070516\11M13078.D Vial: 3
Acq On : 5 Jul 2016 18:11 Operator: JDS
Sample : WG575198-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 05 18:32:42 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	392578	46.6397 ug/L	97
45)	Benzene	10.38	78	1005654	50.4477 ug/L	99
46)	Trichloroethene	11.09	130	345580	53.3346 ug/L	97
47)	Methylcyclohexane	11.17	83	401328	50.1879 ug/L	92
48)	1,2-Dichloropropane	11.29	63	271197	49.1462 ug/L	98
49)	1,4-Dioxane	11.56	88	3852	132.7307 ug/L	95
50)	Bromodichloromethane	11.57	83	392958	50.7262 ug/L	99
51)	Dibromomethane	11.65	93	147932	51.4449 ug/L	96
52)	2-Chloroethyl Vinyl Ether	11.84	63	120595	44.3418 ug/L	96
53)	4-Methyl-2-Pentanone	11.87	58	69824	45.5192 ug/L	95
54)	cis-1,3-Dichloropropene	12.17	75	406877	52.5122 ug/L	100
55)	Dimethyl Disulfide	12.42	79	222479	47.7161 ug/L	97
58)	Toluene	12.56	91	1180139	52.3109 ug/L	99
59)	Ethyl Methacrylate	12.64	69	238449	49.4992 ug/L	83
60)	trans-1,3-Dichloropropene	12.73	75	368912	50.9453 ug/L	97
61)	1,1,2-Trichloroethane	12.94	97	201340	50.3297 ug/L	99
62)	2-Hexanone	12.86	43	117905	40.1301 ug/L	93
63)	1,3-Dichloropropane	13.21	76	321195	49.9981 ug/L	84
64)	Tetrachloroethene	13.34	164	286918	54.6897 ug/L	97
65)	Dibromochloromethane	13.59	129	328698	53.8695 ug/L	100
66)	1,2-Dibromoethane	13.82	107	205135	51.1814 ug/L	99
67)	1-Chlorohexane	13.89	91	371751	49.9805 ug/L	88
68)	Chlorobenzene	14.29	112	872095	52.7681 ug/L	100
69)	1,1,1,2-Tetrachloroethane	14.32	131	353143	52.8079 ug/L	100
70)	Ethylbenzene	14.31	106	442668	52.2340 ug/L	98
71)	m-,p-Xylene	14.39	106	1087185	105.5236 ug/L	95
72)	o-Xylene	14.92	106	522904	52.1513 ug/L	97
73)	Styrene	14.95	104	900060	54.3322 ug/L	95
74)	Bromoform	15.43	173	201589	54.5103 ug/L	98
75)	Isopropylbenzene	15.31	105	1401962	52.8719 ug/L	99
77)	1,1,2,2-Tetrachloroethane	15.52	83	206004	49.3393 ug/L	97
79)	1,2,3-Trichloropropane	15.70	110	73178	46.7361 ug/L	93
80)	trans-1,4-Dichloro-2-Buten	15.74	53	69553	34.7917 ug/L	65
81)	n-Propylbenzene	15.79	91	1599961	51.5272 ug/L	98
82)	Bromobenzene	15.92	156	418724	51.3906 ug/L	89
83)	1,3,5-Trimethylbenzene	15.95	105	1204780	50.8453 ug/L	98
84)	2-Chlorotoluene	16.05	91	1066813	49.0521 ug/L	96
85)	4-Chlorotoluene	16.09	91	963367	49.4506 ug/L	97
86)	a-Methylstyrene	16.34	118	621072	49.6851 ug/L	98
87)	tert-Butylbenzene	16.39	134	267904	53.3666 ug/L	89
88)	1,2,4-Trimethylbenzene	16.44	105	1243081	51.5191 ug/L	99
89)	sec-Butylbenzene	16.65	105	1458282	51.2548 ug/L	99
90)	p-Isopropyltoluene	16.79	119	1359102	52.0067 ug/L	98
91)	1,3-Dichlorobenzene	16.98	146	802523	50.9975 ug/L	96
92)	1,4-Dichlorobenzene	17.10	146	800036	50.1563 ug/L	97
93)	n-Butylbenzene	17.28	91	1139305	49.4744 ug/L	98
94)	1,2-Dichlorobenzene	17.57	146	727247	50.7317 ug/L	97
95)	1,2-Dibromo-3-Chloropropan	18.49	75	40180	42.7833 ug/L	94
96)	1,2,4-Trichlorobenzene	19.55	180	521138	49.6815 ug/L	99
97)	Hexachlorobutadiene	19.69	225	217588	47.0854 ug/L	96
98)	Naphthalene	19.90	128	930586	47.7960 ug/L	100
99)	1,2,3-Trichlorobenzene	20.19	180	464270	48.2261 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070516\11M13078.D Vial: 3
Acq On : 5 Jul 2016 18:11 Operator: JDS
Sample : WG575198-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 5 18:32 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

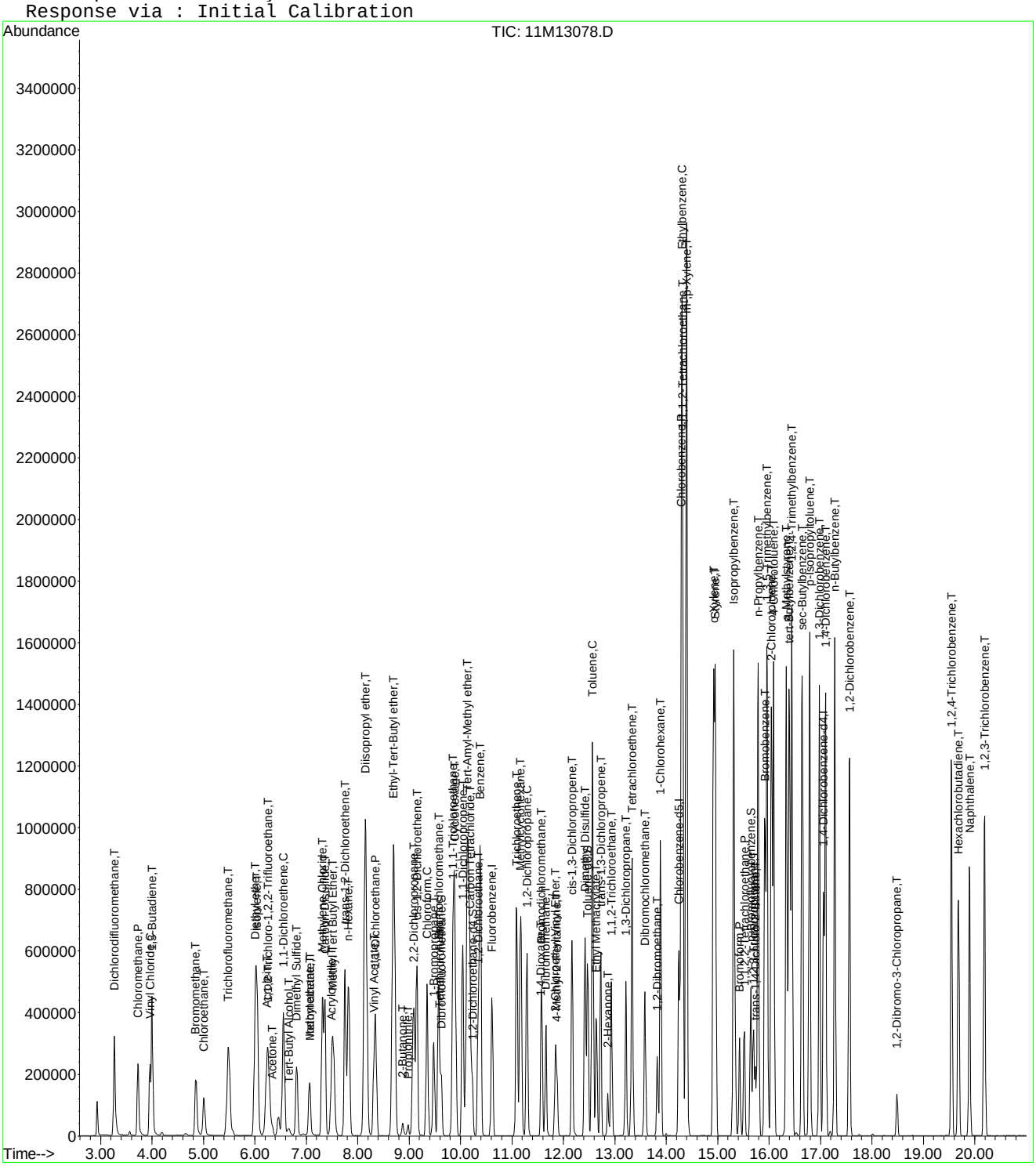

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\070516\11M13078.D Vial: 3
Acq On : 5 Jul 2016 18:11 Operator: JDS
Sample : WG575198-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	0.3917	0.4365	-11.4	109	0.00
3	P	Chloromethane	0.3137	0.3159	-0.7	114	0.00
4	C	Vinyl Chloride	0.2605	0.2779	-6.7	111	0.00
5	T	1,3-Butadiene	0.2591	0.2423	6.5	90	0.00
6	T	Bromomethane	0.1791	0.1893	-5.7	114	0.00
7	T	Chloroethane	0.1674	0.1707	-2.0	105	0.00
8	T	Trichlorofluoromethane	0.5193	0.5271	-1.5	105	0.00
9	T	Diethyl ether	0.1920	0.1736	9.6	92	0.00
10	T	Isoprene	0.3201	0.2898	9.5	91	0.00
11	T	Acrolein	0.0228	0.0259	-13.6	106	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2520	0.2704	-7.3	110	0.01
13	T	Acetone	0.0594	0.0468	21.2	81	0.00
14	C	1,1-Dichloroethene	0.4577	0.4450	2.8	100	0.00
15	T	Tert-Butyl Alcohol	0.0164	0.0126	23.1	76	0.00
16	T	Dimethyl Sulfide	0.1828	0.1611	11.9	86	0.00
17	T	Iodomethane	0.1615	0.1853	-14.7	90	0.00
18	T	Methyl acetate	0.2006	0.1310	34.7#	73	0.01
19	T	Methylene Chloride	0.2369	0.2389	-0.9	106	0.00
20	T	Carbon Disulfide	0.7662	0.7616	0.6	97	0.00
21	T	Acrylonitrile	0.0796	0.0694	12.8	85	0.00
22	T	Methyl Tert Butyl Ether	0.5908	0.5813	1.6	99	0.00
23	T	trans-1,2-Dichloroethene	0.2533	0.2662	-5.1	109	0.01
24	T	n-Hexane	0.4219	0.3914	7.2	90	0.00
25	T	Diisopropyl ether	1.0527	0.8681	17.5	83	0.00
26	T	Vinyl Acetate	0.3793	0.3505	7.6	89	0.00
27	P	1,1-Dichloroethane	0.5082	0.5065	0.3	102	0.00
28	T	Ethyl-Tert-Butyl ether	0.8568	0.7730	9.8	90	0.00
29	T	2-Butanone	0.0897	0.0712	20.6	81	0.00
30	T	Propionitrile	0.0263	0.0219	16.7	80	0.00
31	T	2,2-Dichloropropane	0.3977	0.4406	-10.8	114	0.00
32	T	cis-1,2-Dichloroethene	0.2793	0.2917	-4.5	107	0.00
33	C	Chloroform	0.4991	0.4866	2.5	103	0.00
34	T	1-Bromopropane	0.0432	0.0529	-22.6	110	0.00
35	T	Bromochloromethane	0.1659	0.1898	-14.4	110	0.00
36	T	Tetrahydrofuran	0.0634	0.0473	25.4#	77	0.00
37	S	Dibromofluoromethane	0.2736	0.2751	-0.5	102	0.00
38	T	1,1,1-Trichloroethane	0.4911	0.4983	-1.5	104	0.00
39	T	Cyclohexane	0.5353	0.4904	8.4	89	0.00
40	T	1,1-Dichloropropene	0.3507	0.3607	-2.8	106	0.00
41	T	Carbon Tetrachloride	0.4796	0.5016	-4.6	106	0.00
42	T	Tert-Amyl-Methyl ether	0.5954	0.5639	5.3	95	0.00
43	S	1,2-Dichloroethane-d4	0.3120	0.2707	13.2	89	0.01
44	T	1,2-Dichloroethane	0.4054	0.3781	6.7	94	0.00
45	T	Benzene	0.9600	0.9686	-0.9	106	0.00
46	T	Trichloroethene	0.3120	0.3328	-6.7	112	0.00
47	T	Methylcyclohexane	0.3851	0.3866	-0.4	96	0.00
48	C	1,2-Dichloropropane	0.2657	0.2612	1.7	101	0.00
49	T	1,4-Dioxane	0.0014	0.0009	33.6#	66	0.01
50	T	Bromodichloromethane	0.3731	0.3785	-1.5	102	0.00
51	T	Dibromomethane	0.1385	0.1425	-2.9	104	0.00
52	T	2-Chloroethyl Vinyl Ether	0.1310	0.1162	11.3	91	0.00
53	T	4-Methyl-2-Pentanone	0.0739	0.0673	9.0	92	0.00
54	T	cis-1,3-Dichloropropene	0.3731	0.3919	-5.0	103	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\070516\11M13078.D Vial: 3
Acq On : 5 Jul 2016 18:11 Operator: JDS
Sample : WG575198-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	0.2245	0.2143	4.6	94	0.00
56	I	Chlorobenzene-d5	1.0000	1.0000	0.0	102	0.00
57	S	Toluene-d8	1.0862	1.0756	1.0	104	0.00
58	C	Toluene	1.2656	1.3241	-4.6	108	0.00
59	T	Ethyl Methacrylate	0.2702	0.2675	1.0	95	-0.01
60	T	trans-1,3-Dichloropropene	0.4062	0.4139	-1.9	101	0.00
61	T	1,1,2-Trichloroethane	0.2244	0.2259	-0.7	104	0.00
62	T	2-Hexanone	0.1648	0.1323	19.7	82	0.00
63	T	1,3-Dichloropropane	0.3604	0.3604	0.0	101	0.00
64	T	Tetrachloroethene	0.2943	0.3219	-9.4	114	0.00
65	T	Dibromochloromethane	0.3423	0.3688	-7.7	106	0.00
66	T	1,2-Dibromoethane	0.2248	0.2302	-2.4	104	0.00
67	T	1-Chlorohexane	0.4173	0.4171	0.0	99	0.00
68	P	Chlorobenzene	0.9272	0.9785	-5.5	109	0.00
69	T	1,1,1,2-Tetrachloroethane	0.3751	0.3962	-5.6	108	0.00
70	C	Ethylbenzene	0.4754	0.4967	-4.5	108	0.00
71	T	m-,p-Xylene	0.5780	0.6099	-5.5	109	0.00
72	T	o-Xylene	0.5625	0.5867	-4.3	106	0.00
73	T	Styrene	0.9293	1.0098	-8.7	107	0.00
74	P	Bromoform	0.2075	0.2262	-9.0	109	0.00
75	T	Isopropylbenzene	1.4875	1.5730	-5.7	107	0.00
76	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	102	0.00
77	P	1,1,2,2-Tetrachloroethane	0.3893	0.3842	1.3	99	0.00
78	S	p-Bromofluorobenzene	0.7706	0.7096	7.9	101	0.00
79	T	1,2,3-Trichloropropane	0.1351	0.1365	-1.0	101	0.00
80	T	trans-1,4-Dichloro-2-Butene	0.1588	0.1297	18.3	74	0.00
81	T	n-Propylbenzene	2.8953	2.9837	-3.1	105	0.00
82	T	Bromobenzene	0.7597	0.7809	-2.8	110	0.00
83	T	1,3,5-Trimethylbenzene	2.2094	2.2467	-1.7	105	-0.01
84	T	2-Chlorotoluene	2.0279	1.9894	1.9	104	0.00
85	T	4-Chlorotoluene	1.8165	1.7965	1.1	104	0.00
86	T	a-Methylstyrene	1.1656	1.1582	0.6	96	0.00
87	T	tert-Butylbenzene	0.4681	0.4996	-6.7	111	-0.01
88	T	1,2,4-Trimethylbenzene	2.2498	2.3182	-3.0	105	0.00
89	T	sec-Butylbenzene	2.6529	2.7195	-2.5	105	0.00
90	T	p-Isopropyltoluene	2.4367	2.5345	-4.0	106	0.00
91	T	1,3-Dichlorobenzene	1.4673	1.4966	-2.0	109	0.00
92	T	1,4-Dichlorobenzene	1.4873	1.4920	-0.3	108	0.00
93	T	n-Butylbenzene	2.1472	2.1246	1.1	101	0.00
94	T	1,2-Dichlorobenzene	1.3366	1.3562	-1.5	106	0.00
95	T	1,2-Dibromo-3-Chloropropane	0.0825	0.0749	9.2	94	0.00
96	T	1,2,4-Trichlorobenzene	0.9781	0.9718	0.6	102	0.00
97	T	Hexachlorobutadiene	0.4309	0.4058	5.8	99	0.00
98	T	Naphthalene	1.8154	1.7354	4.4	97	0.00
99	T	1,2,3-Trichlorobenzene	0.8976	0.8658	3.5	102	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M13078.D 8260WT.M Tue Jul 05 18:32:59 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\070516\11M13078.D Vial: 3
Acq On : 5 Jul 2016 18:11 Operator: JDS
Sample : WG575198-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	50.0000	55.7138	-11.4	109	0.00
3	P	Chloromethane	50.0000	50.3420	-0.7	114	0.00
4	C	Vinyl Chloride	50.0000	53.3405	-6.7	111	0.00
5	T	1,3-Butadiene	50.0000	46.7685	6.5	90	0.00
6	T	Bromomethane	50.0000	52.8428	-5.7	114	0.00
7	T	Chloroethane	50.0000	50.9753	-2.0	105	0.00
8	T	Trichlorofluoromethane	50.0000	50.7492	-1.5	105	0.00
9	T	Diethyl ether	100.0000	90.3827	9.6	92	0.00
10	T	Isoprene	50.0000	45.2715	9.5	91	0.00
11	T	Acrolein	50.0000	51.1966	-2.4	106	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	53.6596	-7.3	110	0.01
13	T	Acetone	50.0000	39.4185	21.2	81	0.00
14	C	1,1-Dichloroethene	50.0000	48.6115	2.8	100	0.00
15	T	Tert-Butyl Alcohol	200.0000	153.7293	23.1	76	0.00
16	T	Dimethyl Sulfide	50.0000	44.0745	11.9	86	0.00
17	T	Iodomethane	50.0000	44.6594	10.7	90	0.00
18	T	Methyl acetate	50.0000	35.0481	29.9#	73	0.01
19	T	Methylene Chloride	50.0000	50.4326	-0.9	106	0.00
20	T	Carbon Disulfide	50.0000	49.6985	0.6	97	0.00
21	T	Acrylonitrile	50.0000	43.6004	12.8	85	0.00
22	T	Methyl Tert Butyl Ether	50.0000	49.1947	1.6	99	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.5425	-5.1	109	0.01
24	T	n-Hexane	50.0000	46.3891	7.2	90	0.00
25	T	Diisopropyl ether	100.0000	82.4600	17.5	83	0.00
26	T	Vinyl Acetate	50.0000	43.2381	13.5	89	0.00
27	P	1,1-Dichloroethane	50.0000	49.8324	0.3	102	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	90.2167	9.8	90	0.00
29	T	2-Butanone	50.0000	39.6922	20.6	81	0.00
30	T	Propionitrile	100.0000	83.2760	16.7	80	0.00
31	T	2,2-Dichloropropane	50.0000	55.3976	-10.8	114	0.00
32	T	cis-1,2-Dichloroethene	50.0000	52.2305	-4.5	107	0.00
33	C	Chloroform	50.0000	48.7431	2.5	103	0.00
34	T	1-Bromopropane	50.0000	53.3051	-6.6	110	0.00
35	T	Bromochloromethane	50.0000	57.2112	-14.4	110	0.00
36	T	Tetrahydrofuran	100.0000	74.6060	25.4#	77	0.00
37	S	Dibromofluoromethane	25.0000	25.1342	-0.5	102	0.00
38	T	1,1,1-Trichloroethane	50.0000	50.7254	-1.5	104	0.00
39	T	Cyclohexane	50.0000	45.8112	8.4	89	0.00
40	T	1,1-Dichloropropene	50.0000	51.4250	-2.8	106	0.00
41	T	Carbon Tetrachloride	50.0000	52.2900	-4.6	106	0.00
42	T	Tert-Amyl-Methyl ether	100.0000	94.7138	5.3	95	0.00
43	S	1,2-Dichloroethane-d4	25.0000	21.6888	13.2	89	0.01
44	T	1,2-Dichloroethane	50.0000	46.6397	6.7	94	0.00
45	T	Benzene	50.0000	50.4477	-0.9	106	0.00
46	T	Trichloroethene	50.0000	53.3346	-6.7	112	0.00
47	T	Methylcyclohexane	50.0000	50.1879	-0.4	96	0.00
48	C	1,2-Dichloropropane	50.0000	49.1462	1.7	101	0.00
49	T	1,4-Dioxane	200.0000	132.7307	33.6#	66	0.01
50	T	Bromodichloromethane	50.0000	50.7262	-1.5	102	0.00
51	T	Dibromomethane	50.0000	51.4449	-2.9	104	0.00
52	T	2-Chloroethyl Vinyl Ether	50.0000	44.3418	11.3	91	0.00
53	T	4-Methyl-2-Pentanone	50.0000	45.5192	9.0	92	0.00
54	T	cis-1,3-Dichloropropene	50.0000	52.5122	-5.0	103	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\070516\11M13078.D Vial: 3
Acq On : 5 Jul 2016 18:11 Operator: JDS
Sample : WG575198-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	50.0000	47.7161	4.6	94	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	102	0.00
57	S	Toluene-d8	25.0000	24.7539	1.0	104	0.00
58	C	Toluene	50.0000	52.3109	-4.6	108	0.00
59	T	Ethyl Methacrylate	50.0000	49.4992	1.0	95	-0.01
60	T	trans-1,3-Dichloropropene	50.0000	50.9453	-1.9	101	0.00
61	T	1,1,2-Trichloroethane	50.0000	50.3297	-0.7	104	0.00
62	T	2-Hexanone	50.0000	40.1301	19.7	82	0.00
63	T	1,3-Dichloropropane	50.0000	49.9981	0.0	101	0.00
64	T	Tetrachloroethene	50.0000	54.6897	-9.4	114	0.00
65	T	Dibromochloromethane	50.0000	53.8695	-7.7	106	0.00
66	T	1,2-Dibromoethane	50.0000	51.1814	-2.4	104	0.00
67	T	1-Chlorohexane	50.0000	49.9805	0.0	99	0.00
68	P	Chlorobenzene	50.0000	52.7681	-5.5	109	0.00
69	T	1,1,1,2-Tetrachloroethane	50.0000	52.8079	-5.6	108	0.00
70	C	Ethylbenzene	50.0000	52.2340	-4.5	108	0.00
71	T	m-,p-Xylene	100.0000	105.5236	-5.5	109	0.00
72	T	o-Xylene	50.0000	52.1513	-4.3	106	0.00
73	T	Styrene	50.0000	54.3322	-8.7	107	0.00
74	P	Bromoform	50.0000	54.5103	-9.0	109	0.00
75	T	Isopropylbenzene	50.0000	52.8719	-5.7	107	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	102	0.00
77	P	1,1,2,2-Tetrachloroethane	50.0000	49.3393	1.3	99	0.00
78	S	p-Bromofluorobenzene	25.0000	23.0180	7.9	101	0.00
79	T	1,2,3-Trichloropropane	50.0000	46.7361	6.5	101	0.00
80	T	trans-1,4-Dichloro-2-Butene	50.0000	34.7917	30.4#	74	0.00
81	T	n-Propylbenzene	50.0000	51.5272	-3.1	105	0.00
82	T	Bromobenzene	50.0000	51.3906	-2.8	110	0.00
83	T	1,3,5-Trimethylbenzene	50.0000	50.8453	-1.7	105	-0.01
84	T	2-Chlorotoluene	50.0000	49.0521	1.9	104	0.00
85	T	4-Chlorotoluene	50.0000	49.4506	1.1	104	0.00
86	T	a-Methylstyrene	50.0000	49.6851	0.6	96	0.00
87	T	tert-Butylbenzene	50.0000	53.3666	-6.7	111	-0.01
88	T	1,2,4-Trimethylbenzene	50.0000	51.5191	-3.0	105	0.00
89	T	sec-Butylbenzene	50.0000	51.2548	-2.5	105	0.00
90	T	p-Isopropyltoluene	50.0000	52.0067	-4.0	106	0.00
91	T	1,3-Dichlorobenzene	50.0000	50.9975	-2.0	109	0.00
92	T	1,4-Dichlorobenzene	50.0000	50.1563	-0.3	108	0.00
93	T	n-Butylbenzene	50.0000	49.4744	1.1	101	0.00
94	T	1,2-Dichlorobenzene	50.0000	50.7317	-1.5	106	0.00
95	T	1,2-Dibromo-3-Chloropropane	50.0000	42.7833	14.4	94	0.00
96	T	1,2,4-Trichlorobenzene	50.0000	49.6815	0.6	102	0.00
97	T	Hexachlorobutadiene	50.0000	47.0854	5.8	99	0.00
98	T	Naphthalene	50.0000	47.7960	4.4	97	0.00
99	T	1,2,3-Trichlorobenzene	50.0000	48.2261	3.5	102	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M13078.D 8260WT.M Tue Jul 05 18:33:02 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\1\DATA\051316\11M11836.D          Vial: 2
Acq On    : 13 May 2016  14:15                       Operator: JDS
Sample    : WG568769-01 50ng BFB STD 8260            Inst    : hpms11
Misc      : 1,1 STD76034                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title     : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
```

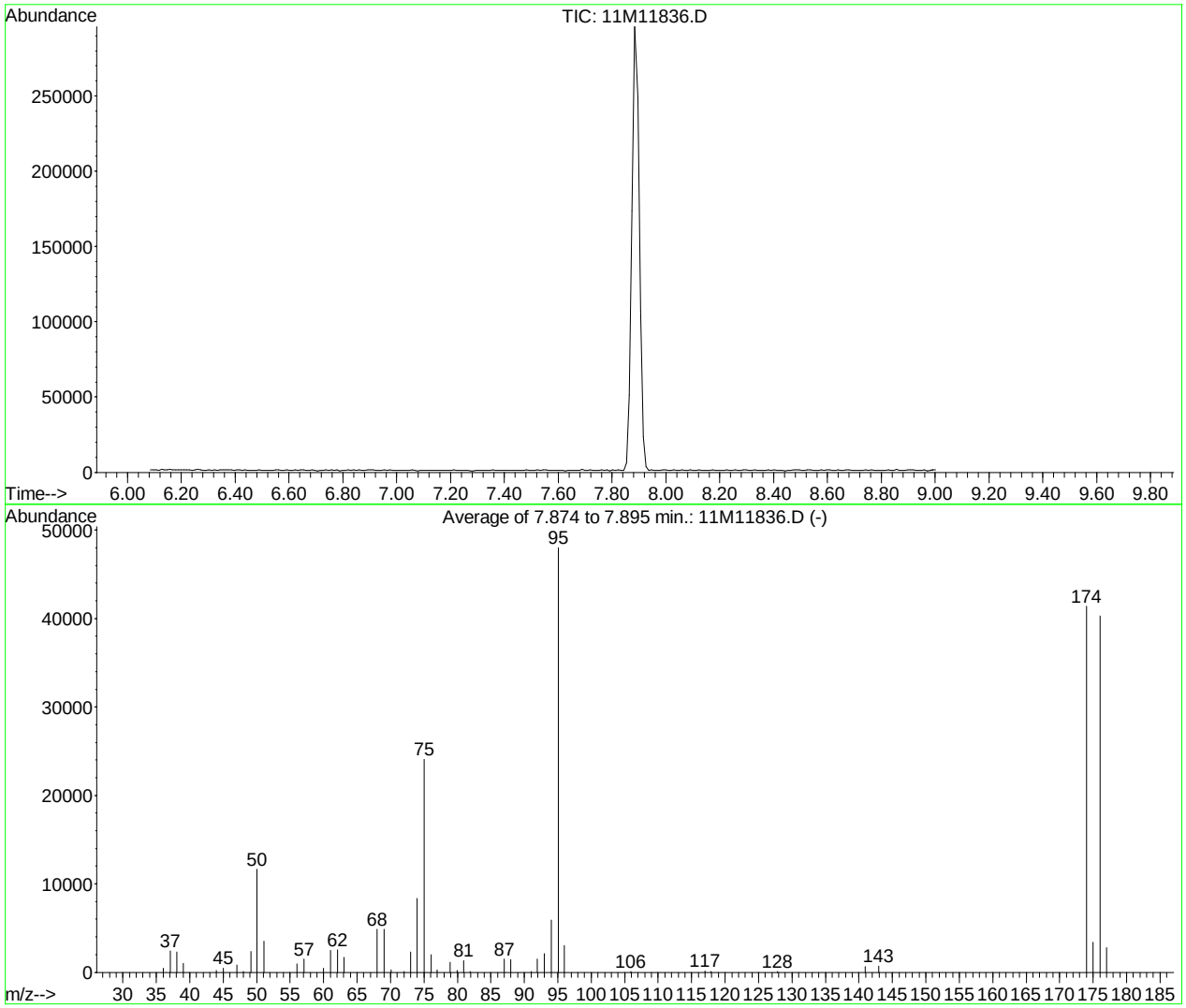

AutoFind: Scans 174, 175, 176; Background Corrected with Scan 169

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	24.2	11638	PASS
75	95	30	60	50.2	24088	PASS
95	95	100	100	100.0	48016	PASS
96	95	5	9	6.3	3008	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	86.2	41402	PASS
175	174	5	9	8.3	3421	PASS
176	174	95	101	97.3	40288	PASS
177	176	5	9	6.9	2789	PASS

11M11836.D 8260WT.M Tue May 17 14:18:03 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\070516\11M13076.D          Vial: 1
Acq On    :  5 Jul 2016  17:13                       Operator: JDS
Sample    : WG575198-01 50ng BFB STD 8260            Inst    : hpms11
Misc      : 1,1 STD76496                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title     : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
```

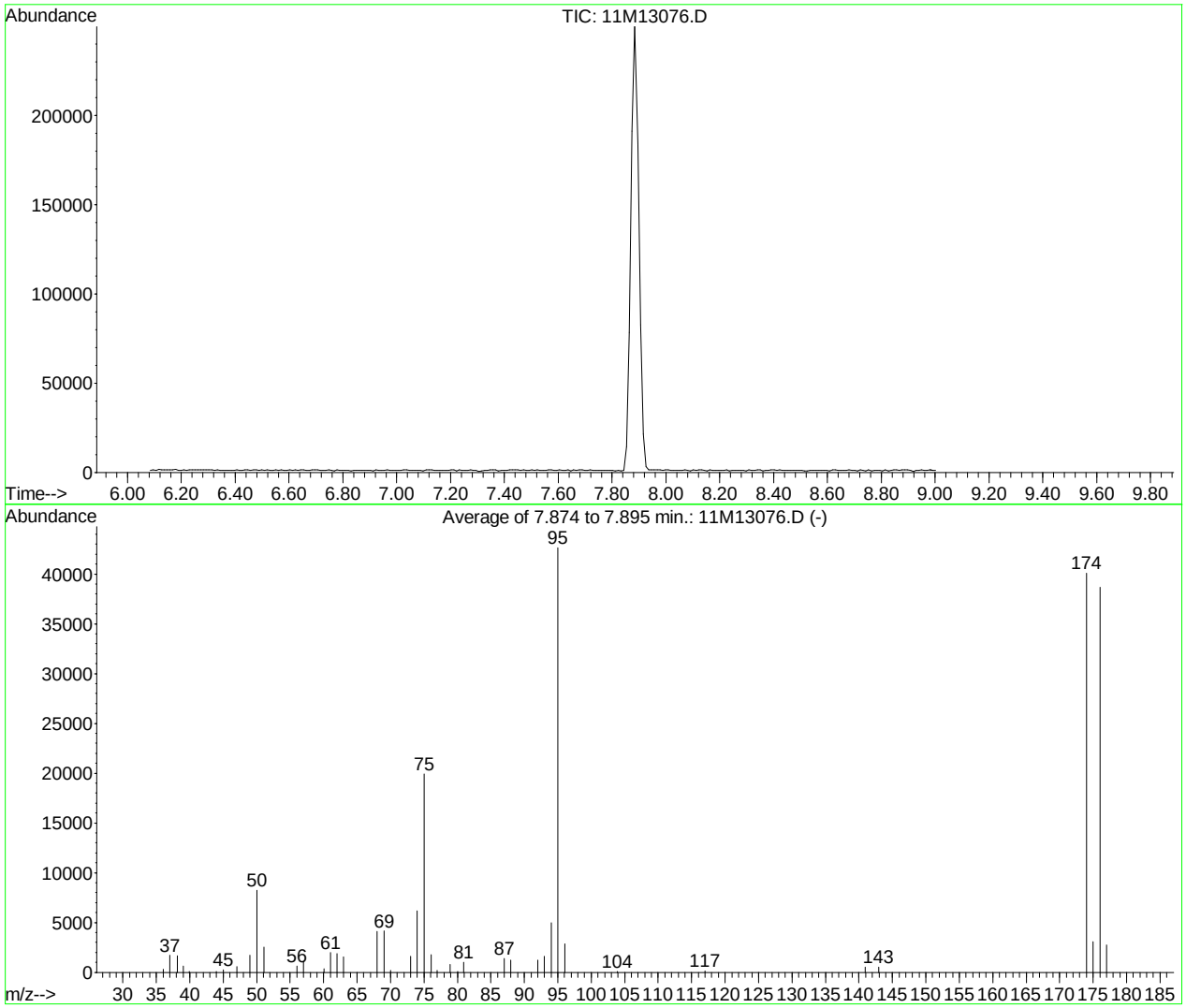

AutoFind: Scans 174, 175, 176; Background Corrected with Scan 169

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.4	8258	PASS
75	95	30	60	46.8	19945	PASS
95	95	100	100	100.0	42653	PASS
96	95	5	9	6.7	2862	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	94.0	40085	PASS
175	174	5	9	7.7	3095	PASS
176	174	95	101	96.5	38688	PASS
177	176	5	9	7.1	2730	PASS

11M13076.D 8260WT.M Wed Jul 06 09:11:17 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070516\11M13080.D Vial: 5
Acq On : 5 Jul 2016 19:15 Operator: JDS
Sample : WG575199-01 BLANK STD 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 06 09:19:09 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	472304	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	408648	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	236090	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	128454	24.8510 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.40%		
43) 1,2-Dichloroethane-d4	10.23	65	129250	21.9299 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 87.72%		
57) Toluene-d8	12.47	98	437801	24.6568 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.64%		
78) p-Bromofluorobenzene	15.64	95	166664	22.9006 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 91.60%		

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M13080.D 8260WT.M Wed Jul 06 09:19:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070516\11M13080.D Vial: 5
Acq On : 5 Jul 2016 19:15 Operator: JDS
Sample : WG575199-01 BLANK STD 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 6 9:19 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

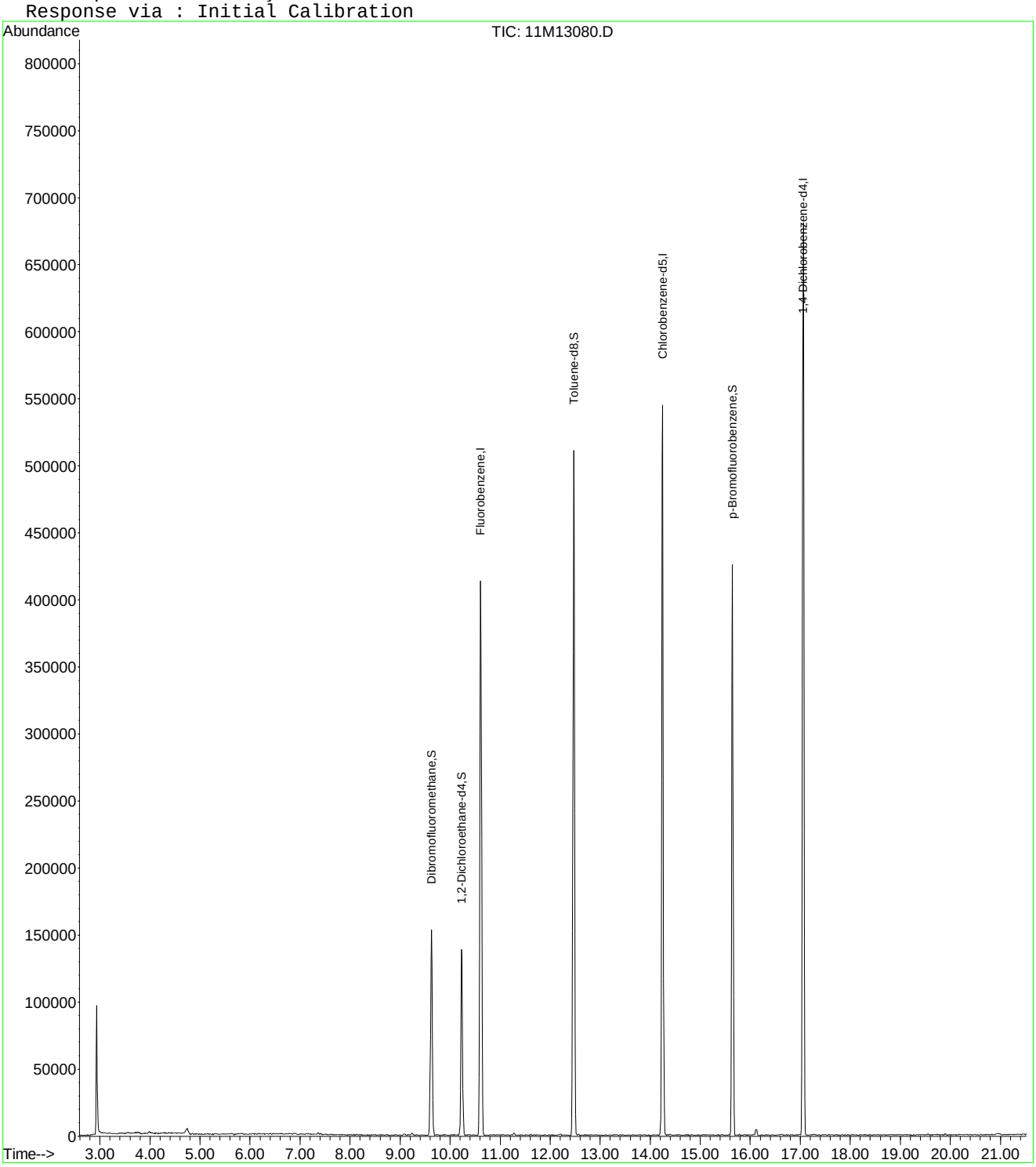

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070516\11M13081.D Vial: 6
Acq On : 5 Jul 2016 19:47 Operator: JDS
Sample : WG575199-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD76870 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 05 20:09:12 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	485527	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	420960	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	250949	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	133281	25.0826 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.32%		
43) 1,2-Dichloroethane-d4	10.23	65	130691	21.5705 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 86.28%		
57) Toluene-d8	12.47	98	453731	24.8066 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.24%		
78) p-Bromofluorobenzene	15.64	95	176443	22.8088 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 91.24%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	16305	2.1433 ug/L	88
3) Chloromethane	3.72	50	37862	6.2144 ug/L	97
4) Vinyl Chloride	3.96	62	52558	10.3877 ug/L	100
5) 1,3-Butadiene	3.99	54	55112	10.9544 ug/L	97
6) Bromomethane	4.85	94	50018	14.3780 ug/L	99
7) Chloroethane	5.00	64	47789	14.7002 ug/L	95
8) Trichlorofluoromethane	5.48	101	144326	14.3113 ug/L	100
9) Diethyl ether	6.01	59	347541	93.1823 ug/L	91
10) Isoprene	6.05	67	92238	14.8389 ug/L	89
11) Acrolein	6.24	56	53640	107.5996 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	84494	17.2667 ug/L	94
13) Acetone	6.34	43	18831	16.3335 ug/L	91
14) 1,1-Dichloroethene	6.56	61	97590	10.9794 ug/L	94
15) Tert-Butyl Alcohol	6.66	59	56281	176.4845 ug/L	96
16) Dimethyl Sulfide	6.81	62	96926	27.3055 ug/L	83
17) Iodomethane	7.06	142	33415	10.1123 ug/L	89
18) Methyl acetate	7.06	43	54804	14.3559 ug/L	91
19) Methylene Chloride	7.31	84	74421	16.1782 ug/L	82
20) Carbon Disulfide	7.36	76	186343	12.5227 ug/L	100
21) Acrylonitrile	7.49	53	26646	17.2377 ug/L	98
22) Methyl Tert Butyl Ether	7.52	73	214315	18.6795 ug/L	96
23) trans-1,2-Dichloroethene	7.75	96	76897	15.6317 ug/L	93
24) n-Hexane	7.82	57	104395	12.7415 ug/L	98
25) Diisopropyl ether	8.15	45	1823373	89.1856 ug/L	97
26) Vinyl Acetate	8.31	43	82525	12.3252 ug/L	98
27) 1,1-Dichloroethane	8.34	63	156858	15.8915 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1486876	89.3543 ug/L	97
29) 2-Butanone	8.87	43	30190	17.3211 ug/L	92
30) Propionitrile	8.98	54	45375	88.8844 ug/L	99
31) 2,2-Dichloropropane	9.09	77	129310	16.7440 ug/L	99
32) cis-1,2-Dichloroethene	9.15	96	102485	18.8948 ug/L	87
33) Chloroform	9.35	83	172538	17.8001 ug/L	99
34) 1-Bromopropane	9.48	122	23188	24.3929 ug/L	96
35) Bromochloromethane	9.57	130	64466	20.0127 ug/L	85
36) Tetrahydrofuran	9.60	42	90443	73.4837 ug/L	90
38) 1,1,1-Trichloroethane	9.85	97	163000	17.0882 ug/L	97
39) Cyclohexane	9.88	56	162076	15.5910 ug/L	95
40) 1,1-Dichloropropene	10.04	75	113575	16.6759 ug/L	99
41) Carbon Tetrachloride	10.18	117	161700	17.3601 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	1157324	100.0910 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M13081.D 8260WT.M Tue Jul 05 20:09:14 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070516\11M13081.D Vial: 6
Acq On : 5 Jul 2016 19:47 Operator: JDS
Sample : WG575199-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD76870 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 05 20:09:12 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.34	62	139210	17.6828 ug/L	97
45) Benzene	10.38	78	327011	17.5391 ug/L	100
46) Trichloroethene	11.09	130	124940	20.6164 ug/L	97
47) Methylcyclohexane	11.17	83	129576	17.3251 ug/L	94
48) 1,2-Dichloropropane	11.29	63	98003	18.9888 ug/L	99
49) 1,4-Dioxane	11.56	88	4293	153.6995 ug/L	93
50) Bromodichloromethane	11.58	83	141356	19.5098 ug/L	99
51) Dibromomethane	11.66	93	48416	18.0020 ug/L	91
52) 2-Chloroethyl Vinyl Ether	11.84	63	43754	17.2010 ug/L	95
53) 4-Methyl-2-Pentanone	11.87	58	26172	18.2422 ug/L	96
54) cis-1,3-Dichloropropene	12.17	75	152721	21.0740 ug/L	99
55) Dimethyl Disulfide	12.42	79	79762	18.2904 ug/L	86
58) Toluene	12.56	91	416905	19.5632 ug/L	99
59) Ethyl Methacrylate	12.65	69	89611	19.6928 ug/L	81
60) trans-1,3-Dichloropropene	12.73	75	130874	19.1328 ug/L	96
61) 1,1,2-Trichloroethane	12.94	97	77302	20.4564 ug/L	98
62) 2-Hexanone	12.86	43	44868	16.1666 ug/L	96
63) 1,3-Dichloropropane	13.21	76	124753	20.5579 ug/L	86
64) Tetrachloroethene	13.34	164	97379	19.6497 ug/L	97
65) Dibromochloromethane	13.59	129	123036	21.3462 ug/L	98
66) 1,2-Dibromoethane	13.82	107	77090	20.3617 ug/L	98
67) 1-Chlorohexane	13.89	91	134106	19.0871 ug/L	88
68) Chlorobenzene	14.29	112	329746	21.1218 ug/L	100
69) 1,1,1,2-Tetrachloroethane	14.32	131	134990	21.3694 ug/L	100
70) Ethylbenzene	14.31	106	159392	19.9106 ug/L	98
71) m-,p-Xylene	14.39	106	402286	41.3356 ug/L	98
72) o-Xylene	14.92	106	200275	21.1453 ug/L	95
73) Styrene	14.95	104	336945	21.5322 ug/L	95
74) Bromoform	15.43	173	71332	20.4192 ug/L	99
75) Isopropylbenzene	15.31	105	528646	21.1056 ug/L	99
77) 1,1,2,2-Tetrachloroethane	15.51	83	74522	19.0696 ug/L	100
79) 1,2,3-Trichloropropane	15.70	110	29529	20.3567 ug/L	81
80) trans-1,4-Dichloro-2-Buten	15.74	53	17694	9.9975 ug/L #	1
81) n-Propylbenzene	15.79	91	609142	20.9597 ug/L	98
82) Bromobenzene	15.92	156	159575	20.9247 ug/L	88
83) 1,3,5-Trimethylbenzene	15.95	105	459994	20.7412 ug/L	98
84) 2-Chlorotoluene	16.05	91	424313	20.8447 ug/L	97
85) 4-Chlorotoluene	16.09	91	374404	20.5333 ug/L	97
86) a-Methylstyrene	16.34	118	255080	21.8022 ug/L	96
87) tert-Butylbenzene	16.39	134	107044	22.7820 ug/L	86
88) 1,2,4-Trimethylbenzene	16.44	105	470116	20.8168 ug/L	98
89) sec-Butylbenzene	16.65	105	560911	21.0633 ug/L	99
90) p-Isopropyltoluene	16.79	119	512984	20.9725 ug/L	98
91) 1,3-Dichlorobenzene	16.98	146	312636	21.2261 ug/L	97
92) 1,4-Dichlorobenzene	17.10	146	318443	21.3298 ug/L	99
93) n-Butylbenzene	17.28	91	424537	19.6968 ug/L	97
94) 1,2-Dichlorobenzene	17.57	146	287798	21.4498 ug/L	98
95) 1,2-Dibromo-3-Chloropropan	18.49	75	15410	17.9096 ug/L	92
96) 1,2,4-Trichlorobenzene	19.55	180	200754	20.4477 ug/L	99
97) Hexachlorobutadiene	19.69	225	80845	18.6915 ug/L	97
98) Naphthalene	19.89	128	330356	18.1283 ug/L	99
99) 1,2,3-Trichlorobenzene	20.19	180	179442	19.9147 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070516\11M13081.D Vial: 6
Acq On : 5 Jul 2016 19:47 Operator: JDS
Sample : WG575199-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD76870 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 5 20:09 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

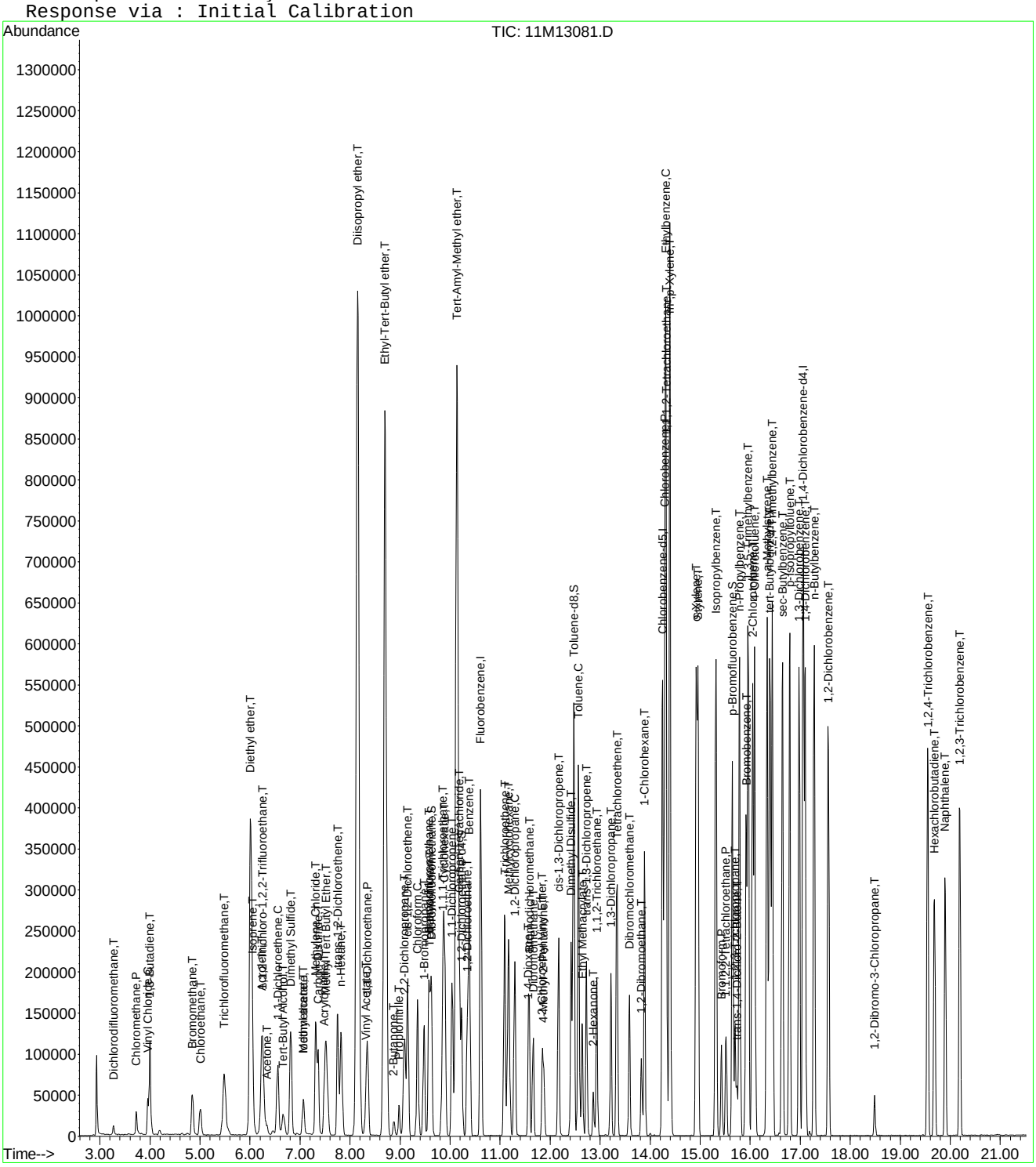

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070516\11M13082.D Vial: 7
Acq On : 5 Jul 2016 20:19 Operator: JDS
Sample : WG575199-03 20ug/L LCS2 STD 8260 Inst : hpms11
Misc : 1,1 STD76870 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 05 20:41:09 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	499574	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	435197	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	257746	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	133896	24.4898 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.96%		
43) 1,2-Dichloroethane-d4	10.24	65	132952	21.3266 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 85.32%		
57) Toluene-d8	12.47	98	460639	24.3604 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.44%		
78) p-Bromofluorobenzene	15.64	95	177047	22.2833 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 89.12%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	16441	2.1004 ug/L	91
3) Chloromethane	3.72	50	38761	6.1831 ug/L	99
4) Vinyl Chloride	3.95	62	50973	9.7912 ug/L	99
5) 1,3-Butadiene	3.99	54	54702	10.5672 ug/L	98
6) Bromomethane	4.85	94	47616	13.3026 ug/L	100
7) Chloroethane	5.00	64	48422	14.4761 ug/L	99
8) Trichlorofluoromethane	5.48	101	142912	13.7726 ug/L	100
9) Diethyl ether	6.01	59	346761	90.3589 ug/L	91
10) Isoprene	6.04	67	91920	14.3719 ug/L	89
11) Acrolein	6.24	56	52005	101.4736 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	84842	16.8503 ug/L	96
13) Acetone	6.34	43	18744	15.8009 ug/L	87
14) 1,1-Dichloroethene	6.56	61	99965	10.9304 ug/L	95
15) Tert-Butyl Alcohol	6.66	59	56349	171.7293 ug/L	95
16) Dimethyl Sulfide	6.81	62	96196	26.3379 ug/L	85
17) Iodomethane	7.06	142	59265	15.8001 ug/L	91
18) Methyl acetate	7.07	43	54456	13.8222 ug/L	95
19) Methylene Chloride	7.31	84	75472	15.9454 ug/L	80
20) Carbon Disulfide	7.36	76	187108	12.2206 ug/L	100
21) Acrylonitrile	7.50	53	26454	16.6323 ug/L	99
22) Methyl Tert Butyl Ether	7.52	73	210169	17.8030 ug/L	95
23) trans-1,2-Dichloroethene	7.75	96	77946	15.3995 ug/L	92
24) n-Hexane	7.82	57	105297	12.4902 ug/L	97
25) Diisopropyl ether	8.15	45	1837066	87.3288 ug/L	98
26) Vinyl Acetate	8.31	43	73482	10.9935 ug/L	98
27) 1,1-Dichloroethane	8.34	63	160354	15.7889 ug/L	100
28) Ethyl-Tert-Butyl ether	8.70	59	1490520	87.0547 ug/L	98
29) 2-Butanone	8.87	43	28830	16.0758 ug/L	93
30) Propionitrile	8.97	54	46405	88.3461 ug/L	99
31) 2,2-Dichloropropane	9.09	77	127067	15.9909 ug/L	99
32) cis-1,2-Dichloroethene	9.15	96	99878	17.8964 ug/L	91
33) Chloroform	9.35	83	174018	17.4480 ug/L	99
34) 1-Bromopropane	9.48	122	23460	23.9956 ug/L	99
35) Bromochloromethane	9.57	130	64818	19.5562 ug/L	85
36) Tetrahydrofuran	9.60	42	91952	72.6091 ug/L	90
38) 1,1,1-Trichloroethane	9.85	97	165597	16.8724 ug/L	97
39) Cyclohexane	9.88	56	161922	15.1382 ug/L	93
40) 1,1-Dichloropropene	10.04	75	114691	16.3663 ug/L	98
41) Carbon Tetrachloride	10.17	117	161998	16.9031 ug/L	98
42) Tert-Amyl-Methyl ether	10.13	73	1149931	96.6552 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M13082.D 8260WT.M Tue Jul 05 20:41:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070516\11M13082.D Vial: 7
Acq On : 5 Jul 2016 20:19 Operator: JDS
Sample : WG575199-03 20ug/L LCS2 STD 8260 Inst : hpms11
Misc : 1,1 STD76870 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 05 20:41:09 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.34	62	140231	17.3117 ug/L	97
45) Benzene	10.38	78	329594	17.1806 ug/L	100
46) Trichloroethene	11.09	130	129142	20.7106 ug/L	96
47) Methylcyclohexane	11.17	83	136280	17.7091 ug/L	92
48) 1,2-Dichloropropane	11.29	63	97074	18.2799 ug/L	98
49) 1,4-Dioxane	11.56	88	5277	179.0847 ug/L	87
50) Bromodichloromethane	11.57	83	141358	18.9615 ug/L	99
51) Dibromomethane	11.66	93	49416	17.8572 ug/L	94
52) 2-Chloroethyl Vinyl Ether	11.84	63	45259	17.2924 ug/L	99
53) 4-Methyl-2-Pentanone	11.87	58	25341	17.1664 ug/L	97
54) cis-1,3-Dichloropropene	12.17	75	153263	20.5542 ug/L	99
55) Dimethyl Disulfide	12.42	79	79868	17.7998 ug/L	87
58) Toluene	12.56	91	419026	19.0195 ug/L	100
59) Ethyl Methacrylate	12.64	69	87618	18.6249 ug/L	83
60) trans-1,3-Dichloropropene	12.73	75	130070	18.3932 ug/L	95
61) 1,1,2-Trichloroethane	12.94	97	77080	19.7303 ug/L	98
62) 2-Hexanone	12.86	43	42951	14.9696 ug/L	90
63) 1,3-Dichloropropane	13.21	76	128843	20.5373 ug/L	83
64) Tetrachloroethene	13.34	164	99929	19.5046 ug/L	96
65) Dibromochloromethane	13.59	129	121633	20.4125 ug/L	99
66) 1,2-Dibromoethane	13.82	107	74524	19.0400 ug/L	100
67) 1-Chlorohexane	13.89	91	134491	18.5157 ug/L	89
68) Chlorobenzene	14.29	112	332854	20.6234 ug/L	99
69) 1,1,1,2-Tetrachloroethane	14.32	131	136389	20.8846 ug/L	99
70) Ethylbenzene	14.31	106	165999	20.0576 ug/L	96
71) m-,p-Xylene	14.39	106	406553	40.4074 ug/L	98
72) o-Xylene	14.92	106	202548	20.6857 ug/L	96
73) Styrene	14.95	104	338874	20.9470 ug/L	95
74) Bromoform	15.43	173	70042	19.3940 ug/L	100
75) Isopropylbenzene	15.31	105	535530	20.6810 ug/L	100
77) 1,1,2,2-Tetrachloroethane	15.52	83	71826	17.8950 ug/L	97
79) 1,2,3-Trichloropropane	15.70	110	28697	19.2811 ug/L	86
80) trans-1,4-Dichloro-2-Buten	15.74	53	17321	9.5635 ug/L #	14
81) n-Propylbenzene	15.79	91	618279	20.7130 ug/L	97
82) Bromobenzene	15.91	156	160721	20.5192 ug/L	88
83) 1,3,5-Trimethylbenzene	15.95	105	469315	20.6034 ug/L	98
84) 2-Chlorotoluene	16.05	91	427722	20.4580 ug/L	97
85) 4-Chlorotoluene	16.09	91	378690	20.2207 ug/L	97
86) a-Methylstyrene	16.34	118	256680	21.3604 ug/L	96
87) tert-Butylbenzene	16.39	134	103322	21.4100 ug/L	94
88) 1,2,4-Trimethylbenzene	16.44	105	478753	20.6402 ug/L	99
89) sec-Butylbenzene	16.65	105	563310	20.5955 ug/L	99
90) p-Isopropyltoluene	16.79	119	519522	20.6797 ug/L	98
91) 1,3-Dichlorobenzene	16.98	146	316178	20.9005 ug/L	97
92) 1,4-Dichlorobenzene	17.10	146	323650	21.1069 ug/L	98
93) n-Butylbenzene	17.28	91	426283	19.2562 ug/L	98
94) 1,2-Dichlorobenzene	17.57	146	292022	21.1907 ug/L	97
95) 1,2-Dibromo-3-Chloropropan	18.49	75	14581	16.5498 ug/L	89
96) 1,2,4-Trichlorobenzene	19.55	180	204340	20.2641 ug/L	97
97) Hexachlorobutadiene	19.69	225	85684	19.2878 ug/L	96
98) Naphthalene	19.90	128	331784	17.7265 ug/L	100
99) 1,2,3-Trichlorobenzene	20.19	180	184214	19.9052 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M13082.D 8260WT.M Tue Jul 05 20:41:11 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\070516\11M13082.D Vial: 7
Acq On : 5 Jul 2016 20:19 Operator: JDS
Sample : WG575199-03 20ug/L LCS2 STD 8260 Inst : hpms11
Misc : 1,1 STD76870 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jul 5 20:41 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

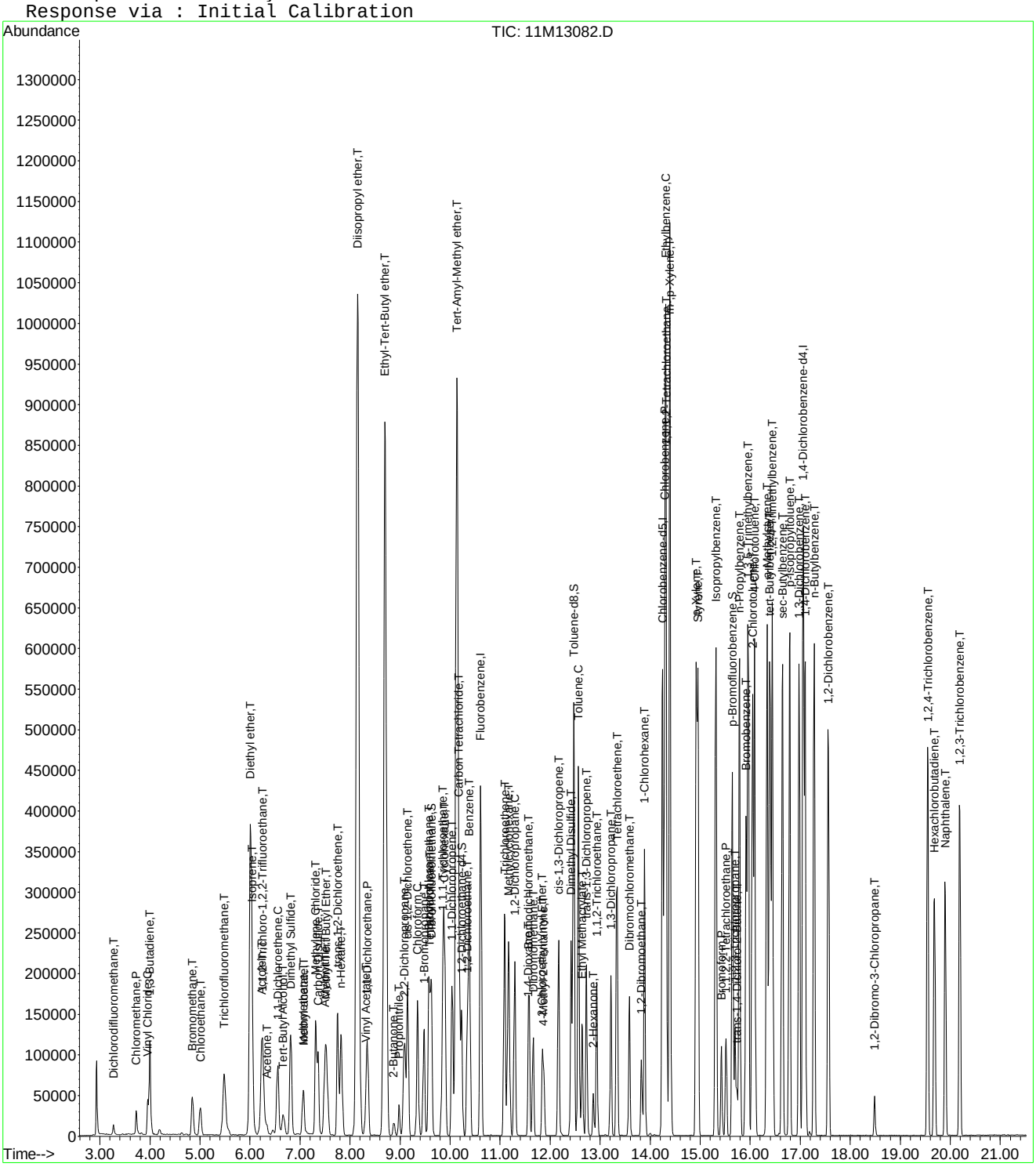

11M13082.D 8260WT.M Tue Jul 05 20:41:13 2016 Page 3

2.2 Semivolatiles Data

2.2.1 Semivolatiles GC/MS Data (Dioxane)

2.2.1.1 Summary Data

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061452-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW12SW-062416	**Prep Method:**	3520C	**Prep Date:**	06/27/2016 14:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574772	**Analyst:**	MES	**Run Date:**	07/05/2016 22:02
Collect Date:	06/24/2016 07:50	**Dilution:**	1	**File ID:**	15M18736
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	55.4	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061452-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW12DW-062416	**Prep Method:**	3520C	**Prep Date:**	06/27/2016 14:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574772	**Analyst:**	MES	**Run Date:**	07/05/2016 22:24
Collect Date:	06/24/2016 08:55	**Dilution:**	1	**File ID:**	15M18737
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	56.5	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061452-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	MW7-062416	**Prep Method:**	3520C	**Prep Date:**	06/27/2016 14:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG574772	**Analyst:**	MES	**Run Date:**	07/06/2016 12:35
Collect Date:	06/24/2016 09:55	**Dilution:**	2	**File ID:**	15M18762
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	13.4		4.00	2.00	1.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	91.2	20	129	

2.2.1.2 QC Summary Data

Example 8270 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	1261197
Cis = Concentration of the specific internal standard (ug/mL)	40
Ais = Area of the characteristic ion of the specific internal standard	608044
Cx = Concentration of the compound in the standard being measured (ug/mL)	50
RF = Calculated Response Factor	**1.65935**

2.0 Calculating the concentration (C) of a compound in water using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Vi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Vi = Initial volume of sample extracted from prep log (mL)	1021
Cx = Concentration of the compound in the sample being measured (ug/mL)	0.016947
Cx = Concentration of the compound in the sample being measured (ug/L)	**16.947**

3.0 Calculating the concentration (C) of a compound in soil using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Wi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Wi = Initial weight of sample extracted (g) from prep log	30
Cx = Concentration of the compound in the sample being measured (ug/g)	0.576763
Cx = Concentration of the compound in the sample being measured (ug/kg)	**576.7627**

Dry weight correction:

Percent solids (PCT_S)	50
Cd = (Cx) (100)/PCT_S	**1153.525** ug/kg

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve plot

b = intercept from curve plot

Step 2: Calculate y from Quantitation Report

y = 16790/784838 = 0.02139

Step 3: Solve for x

x = (y - b)/m = [(0.02139 -(- 0.0435)]/ 0.0783 = 0.829

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.829) = 20.72 ug/L

Example Spreadsheet Calculation:

Slope from curve, m:	0.0783	
Intercept from curve, b:	-0.0435	
Area of analyte, Ax:	16790	
Area of Internal Standard , Ais:	784484	
Concentration of IS, Cis	25.00	ug/L
Response Ratio (y) :	0.021403	
Amount Ratio:	0.828897	
Concentration (Cx):	20.72241	ug/L

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**0.0259**	
Value of B from plot:	**0.0596**	
Value of C from plot:	**-0.0165**	
Area of analyte from quantitation report:	**203233**	
Area of IS from quantiation report:	**1425653**	
Response ratio, y:	**0.142554**	
C - y:	**-0.15905**	
Root 1 - Computed amount ratio , X1:	**-3.88278**	
Root 2 - Computed amount ratio , X2:	**1.581623**	use this solution
Concentration of IS, Cis:	**40.00**	
Concentration of analyte, Cx:	**63.26**	ug/L

Microbac Laboratories Inc.
Continuous Sample Extract Log

Workgroup: WG574286
Analyst: CPD
Spike Analyst: CPD
Method: 3520C
Run Date: 06/27/2016 14:01
SOP: EXB01 Revison 20
Spike Witness: NPH
Surr Solution: STD76628

TIME ON: 17:30 OFF: 11:35 ON: 16:50 OFF: 10:35

CH2CL2 Lot #: COA18982
Sodium Sulfate Lot #: COA18814
10N NaOH Lot #: RGT37076
1:1 H2SO4 Lot #: RGT36755

	SAMPLE #	Type	Reference	Prod	pH	Init Amnt	Surr Amnt	Spike Amnt	Spike Sol	Final Vol	Color
1	L16061289-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
2	L16061289-02	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
3	L16061289-03	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Colored
4	L16061289-05	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
5	L16061290-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
6	L16061290-02	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
7	L16061290-05	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
8	L16061290-06	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
9	L16061345-04	RS01		827-DIOX	<2>12	810 mL	.05 mL			1 mL	Colored
10	L16061345-05	MS01	L16061345-04	827-DIOX	<2>12	760 mL	.05 mL	.5 mL	STD75268	1 mL	Colored
11	L16061345-06	SD01	L16061345-04	827-DIOX	<2>12	810 mL	.05 mL	.5 mL	STD75268	1 mL	Colored
12	L16061345-08	SAMP		827-DIOX	<2>12	950 mL	.05 mL			1 mL	Transparent
13	L16061413-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Colored
14	L16061450-04	SAMP		827-DIOX	<2>12	840 mL	.05 mL			1 mL	Colored
15	L16061450-05	SAMP		827-DIOX	<2>12	740 mL	.05 mL			1 mL	Transparent
16	L16061452-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
17	L16061452-02	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
18	L16061452-03	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
19	L16061453-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
20	L16061453-02	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
21	L16061453-03	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
22	WG574286-01	BLANK		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
23	WG574286-02	LCS		827-DIOXANE	<2>12	1000 mL	.05 mL	.05 mL	STD75256	1 mL	Transparent
24	WG574286-03	REF	L16061345-04	827-DIOX	<2>12	810 mL	.05 mL			1 mL	Colored
25	WG574286-04	MS	L16061345-04	827-DIOX	<2>12	760 mL	.05 mL	.5 mL	STD75268	1 mL	Colored
26	WG574286-05	MSD	L16061345-04	827-DIOX	<2>12	810 mL	.05 mL	.5 mL	STD75268	1 mL	Colored

Analyst: Chelsea Davis

Reviewer: Chris Hill

EXTRACT - Modified 01/23/2009
PDF ID: 4831962
Report generated: 06/29/2016 18:18

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062116
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573365

Internal STD: STD76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: STD74214 MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18455	BAKEOUT	1	1		06/21/16 08:46
2	15M18456	WG573501-01 5PPM DFTPP STD	1	1	STD75016	06/21/16 09:05
3	15M18457	WG573501-01 5PPM DFTPP STD	1	1	STD75016	06/21/16 09:34
4	15M18458	WG573501-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 09:52
5	15M18459	WG573501-03 10 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 10:27
6	15M18460	WG573501-04 7.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 10:49
7	15M18461	WG573501-05 2.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:12
8	15M18462	WG573501-06 1 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:34
9	15M18463	WG573501-07 0.4 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:57
10	15M18464	WG573501-08 5PPM 1,4-DIOXANE ALT SRC	1	1	STD74214	06/21/16 12:20
11	15M18465	WG572806-01 BLANK 6/15	1	1		06/21/16 12:54
12	15M18466	WG572806-02 LCS 6/15	1	1		06/21/16 13:17
13	15M18467	WG572806-03 LCSDUP 6/15	1	1		06/21/16 13:40
14	15M18468	WG573008-01 BLANK 6/17	7	1	SOIL	06/21/16 14:03
15	15M18469	WG573008-02 LCS 6/17	7	1	SOIL	06/21/16 14:26
16	15M18470	WG573008-03 LCSDUP 6/17	7	1	SOIL	06/21/16 14:48
17	15M18471	L16060730-01	1	1		06/21/16 15:11
18	15M18472	L16060730-02	1	1		06/21/16 15:34
19	15M18473	L16060854-01	1	1		06/21/16 15:57
20	15M18474	L16060730-03	1	1		06/21/16 16:19
21	15M18475	L16060756-04 827-DIOX	1	1		06/21/16 16:46
22	15M18476	L16060822-01	1	1		06/21/16 17:08
23	15M18477	L16060822-03	1	1		06/21/16 17:31
24	15M18478	L16060822-04	1	1		06/21/16 17:54
25	15M18479	L16060822-05	1	1		06/21/16 18:17
26	15M18480	L16060823-01	1	1		06/21/16 18:40
27	15M18481	L16060823-03	1	1		06/21/16 19:02
28	15M18482	L16060823-04	1	1		06/21/16 19:25
29	15M18483	L16060809-03 827-DIOX	1	1		06/21/16 19:48
30	15M18484	L16060854-01 2X	1	2		06/21/16 20:10
31	15M18485	BAKEOUT	1	1		06/21/16 20:33
32	15M18486	BAKEOUT	1	1		06/21/16 20:55
33	15M18487	BAKEOUT	1	1		06/21/16 21:18

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062116

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573365

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD: STD74214

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
	WG573501-01 5PPM DFTPP STD rerun DFTPP, pentachlorophenol tailing >2.			
14				
	WG573008-01 BLANK 6/17 DNR-not needed.			
15				
	WG573008-02 LCS DNR-not needed.			
16				
	WG573008-03 LCSDUP DNR-not needed.			
19	X	2	Over Calibration Range	
	L16060854-01			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 063016

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574772,WG574775

Internal STD: STD76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18666	BAKEOUT	1	1		06/30/16 10:57
2	15M18667	WG574781-01 5PPM DFTPP STD	1	1	STD75016	06/30/16 11:17
3	15M18668	WG574781-01 5PPM DFTPP STD	1	1	STD75016	06/30/16 11:34
4	15M18669	WG574781-01 5PPM DFTPP STD	1	1	STD75016	06/30/16 12:17
5	15M18670	WG574781-01 5PPM DFTPP STD	1	1	STD75016	06/30/16 12:34
6	15M18671	WG574781-01 5PPM DFTPP STD	1	1	STD75016	06/30/16 13:23
7	15M18672	WG574781-01 5PPM DFTPP STD	1	1	STD75016	06/30/16 13:39
8	15M18673	WG574781-01 5PPM DFTPP STD	1	1	STD75016	06/30/16 14:24
9	15M18674	WG574781-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/30/16 14:42
10	15M18675	WG574543-01 BLANK 6/29	7	1	SOIL	06/30/16 15:04
11	15M18676	WG574543-02 LCS 6/29	7	1	SOIL	06/30/16 15:27
12	15M18677	WG574543-03 LCSDUP 6/29	7	1	SOIL	06/30/16 15:49
13	15M18678	WG574286-01 BLANK 6/27	1	1		06/30/16 16:12
14	15M18679	WG574286-02 LCS 6/27	1	1		06/30/16 16:34
15	15M18680	L16060637-02 RE 827-DIOX	7	1	SOIL	06/30/16 16:57
16	15M18681	L16060756-01 RE 827-DIOX	7	1	SOIL	06/30/16 17:19
17	15M18682	L16060756-02 RE 827-DIOX	7	1	SOIL	06/30/16 17:42
18	15M18683	L16060756-03 RE 827-DIOX	7	1	SOIL	06/30/16 18:05
19	15M18684	L16060809-01 RE 827-DIOX	7	1	SOIL	06/30/16 18:28
20	15M18685	L16060809-02 RE 827-DIOX	7	1	SOIL	06/30/16 18:50
21	15M18686	L16060930-01 RE 827-DIOX	7	1	SOIL	06/30/16 19:13
22	15M18687	L16060930-02 RE 827-DIOX	7	1	SOIL	06/30/16 19:35
23	15M18688	L16061413-01 827-DIOX	1	1		06/30/16 19:58
24	15M18689	L16061213-01 RE 827-DIOX	7	1	SOIL	06/30/16 20:21
25	15M18690	L16061213-02 RE 827-DIOX	7	1	SOIL	06/30/16 20:43
26	15M18691	L16061213-03 RE 827-DIOX	7	1	SOIL	06/30/16 21:06
27	15M18692	L16061213-04 RE 827-DIOX	7	1	SOIL	06/30/16 21:28
28	15M18693	L16061213-05 RE 827-DIOX	7	1	SOIL	06/30/16 21:51
29	15M18694	L16061213-06 RE 827-DIOX	7	1	SOIL	06/30/16 22:13
30	15M18695	L16061450-01 827-DIOX	7	1	SOIL	06/30/16 22:36
31	15M18696	L16061450-02 827-DIOX	7	1	SOIL	06/30/16 22:59
32	15M18697	L16061450-03 827-DIOX	7	1	SOIL	06/30/16 23:22
33	15M18698	L16061289-01 827-DIOX	1	1		06/30/16 23:44

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 063016

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574772,WG574775

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	15M18699	L16061289-02 827-DIOX	1	1		07/01/16 00:06
35	15M18700	L16061289-03 827-DIOX	1	1		07/01/16 00:29
36	15M18701	L16061289-05 827-DIOX	1	1		07/01/16 00:51
37	15M18702	L16061290-01 827-DIOX	1	1		07/01/16 01:14
38	15M18703	L16061290-02 827-DIOX	1	1		07/01/16 01:36
39	15M18704	L16061290-05 827-DIOX	1	1		07/01/16 01:59
40	15M18705	BAKEOUT	1	1		07/01/16 02:21
41	15M18706	BAKEOUT	1	1		07/01/16 02:43
42	15M18707	BAKEOUT	1	1		07/01/16 03:06

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
	Rerun DFTPP, ion ratio failed.			
3				
	Rerun DFTPP, ion ratio failed. Performed a quicktune.			
4				
	Rerun DFTPP, ion ratio failed. Changed the liner.			
5				
	Rerun DFTPP, ion ratio failed. PCP tailing >2. Changed gold seal and clipped column.			
6				
	Rerun DFTPP, ion ratio failed. Retuned.			
7				
	Rerun DFTPP, ion ratio failed. Retuned.			
31				
	L16061450-02 827-DIOX surrogate recovery is less than 10%. Needs re-extracted.			
33	X	10	Surrogate standard failure	
	L16061289-01 827-DIOX surrogate is high due to SMI.			
38	X	5	Over Calibration Range	
	L16061290-02 827-DIOX			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 070516
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574772,WG575045,WG575070

Internal STD: STD76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: MS/MSD STD:

Comments: File 15M18715 does not exist.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18708	BAKEOUT	1	1		07/05/16 10:31
2	15M18709	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 10:51
3	15M18710	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 11:11
4	15M18711	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 11:33
5	15M18712	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 12:30
6	15M18713	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 12:47
7	15M18714	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 14:14
8	15M18716	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 14:33
9	15M18717	WG575159-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	07/05/16 14:51
10	15M18718	WG574706-01 BLANK 6/30	1	1		07/05/16 15:14
11	15M18719	WG574706-02 LCS 6/30	1	1		07/05/16 15:38
12	15M18720	WG574706-03 LCSDUP 6/30	1	1		07/05/16 16:01
13	15M18721	WG574873-01 BLANK 7/1	7	1	SOIL	07/05/16 16:23
14	15M18722	WG574873-02 LCS 7/1	7	1	SOIL	07/05/16 16:45
15	15M18723	WG574873-03 LCSDUP 7/1	7	1	SOIL	07/05/16 17:07
16	15M18724	L16061290-02 5X 827-DIOX	1	5		07/05/16 17:29
17	15M18725	L16061289-01 10X 827-DIOX	1	10		07/05/16 17:52
18	15M18726	L16061227-01 RE 827-DIOX	1	10		07/05/16 18:15
19	15M18727	L16061290-06 827-DIOX	1	1		07/05/16 18:37
20	15M18728	L16061345-08 827-DIOX	1	1		07/05/16 19:00
21	15M18729	L16061345-04 REF 827-DIOX	1	1		07/05/16 19:23
22	15M18730	L16061345-05 MS 827-DIOX	1	1		07/05/16 19:45
23	15M18731	L16061345-06 MSD 827-DIOX	1	1		07/05/16 20:08
24	15M18732	L16061345-03 RE 827-DIOX	7	1	SOIL	07/05/16 20:31
25	15M18733	L16061345-01 RE 827-DIOX	7	1	SOIL	07/05/16 20:54
26	15M18734	L16061560-01 827-DIOX	1	1		07/05/16 21:16
27	15M18735	L16061648-01 827-DIOX	1	1		07/05/16 21:39
28	15M18736	L16061452-01 827-DIOX	1	1		07/05/16 22:02
29	15M18737	L16061452-02 827-DIOX	1	1		07/05/16 22:24
30	15M18738	L16061452-03 827-DIOX	1	1		07/05/16 22:46
31	15M18739	L16061453-01 827-DIOX	1	1		07/05/16 23:09
32	15M18740	L16061453-02 827-DIOX	1	1		07/05/16 23:32
33	15M18741	L16061453-03 827-DIOX	1	1		07/05/16 23:54

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 070516
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574772,WG575045,WG575070

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	15M18742	L16061450-04 827-DIOX	1	1		07/06/16 00:17
35	15M18743	L16061450-05 827-DIOX	1	1		07/06/16 00:39
36	15M18744	BAKEOUT	1	1		07/06/16 01:02
37	15M18745	BAKEOUT	1	1		07/06/16 01:25
38	15M18746	BAKEOUT	1	1		07/06/16 01:47
39	15M18747	BAKEOUT	1	1		07/06/16 02:10
40	15M18748	BAKEOUT	1	1		07/06/16 02:32
41	15M18749	BAKEOUT	1	1		07/06/16 02:55
42	15M18750	BAKEOUT	1	1		07/06/16 03:17
43	15M18751	BAKEOUT	1	1		07/06/16 03:40
44	15M18752	BAKEOUT	1	1		07/06/16 04:03

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
	Rerun DFTPP, ion ratio fails.			
3				
	Rerun DFTPP, ion ratio fails. Performed a quicktune.			
4				
	Rerun DFTPP, ion ratio fails. Changed the liner.			
5				
	Rerun DFTPP, ion ratio fails. Retuned.			
6				
	Rerun DFTPP, PCP tailing >2.			
7				
	Rerun DFTPP, PCP tailing >2. Clipping the column.			
13				
	WG574873-01 BLANK 7/1 surrogate is low.			
17				
	L16061289-01 10X 827-DIOX confirms high surrogate recovery; DNR. Surrogate is high due to SMI. Sample is not being re-extracted.			
18				
	L16061227-01 RE 827-DIOX surrogate recovery is good; does not confirm original extraction.			
21	X	20	Over Calibration Range	
	L16061345-04 REF			
22				
	L16061345-05 MS 827-DIOX DNR-sample is spiked for 827-SPE-DIOX			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 070516

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574772,WG575045,WG575070

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
23				
	L16061345-06 MSD 827-DIOX DNR-sample is spiked for 827-SPE-DIOX			
24				
	L16061345-03 RE 827-DIOX confirms low surrogate recovery.			
25				
	L16061345-01 RE 827-DIOX confirms low surrogate recovery.			
26	X	5	Over Calibration Range	
	L16061560-01 827-DIOX			
30	X	2	Over Calibration Range	
	L16061452-03 827-DIOX			
31	X	10	Surrogate standard failure	
	L16061453-01 surrogate high due to SMI. Not re-extracting.			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 070616
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574772,WG575045

Internal STD: STD76976 Surrogate STD: NA Calibration STD
CCV STD: STD74784 LCS STD: MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
17	15M18753	BAKEOUT	1	1		07/06/16 08:49
1	15M18754	WG575269-01 5PPM DFTPP STD	1	1	STD75016	07/06/16 09:09
2	15M18755	WG575269-01 5PPM DFTPP STD	1	1	STD75016	07/06/16 09:28
3	15M18756	WG575269-01 5PPM DFTPP STD	1	1	STD75016	07/06/16 09:55
4	15M18757	WG575269-01 5PPM DFTPP STD	1	1	STD75016	07/06/16 10:43
5	15M18758	WG575269-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	07/06/16 11:01
6	15M18759	WG574873-01 BLANK RR	7	1	SOIL	07/06/16 11:27
7	15M18760	L16061345-04 REF 20X 827-DIOX	1	20		07/06/16 11:49
8	15M18761	L16061560-01 5X 827-DIOX	1	5		07/06/16 12:12
9	15M18762	L16061452-03 2X 827-DIOX	1	2		07/06/16 12:35
10	15M18763	L16061453-01 10X 827-DIOX	1	10		07/06/16 12:58
18	15M18764	BAKEOUT	1	1		07/06/16 13:20
19	15M18765	L16061345-04 REF 40X 827-DIOX	1	40		07/06/16 13:43
12	15M18766	10PPM PAHL STD FULL SCAN	1	1		07/06/16 14:04
13	15M18767	WG575382-01 5PPM DFTPP STD	1	1	STD75016	07/06/16 15:15
14	15M18768	WG575382-01 5PPM DFTPP STD	1	1	STD75016	07/06/16 15:35
15	15M18769	WG575382-01 5PPM DFTPP STD	1	1	STD75016	07/06/16 15:54
16	15M18771	RINSE	1	1		07/06/16 16:36

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1				
	Rerun DFTPP, ion ratio failed.			
2				
	Rerun DFTPP, benzidine tailing >2. Tightened column nut.			
3				
	Rerun DFTPP, benzidine tailing >2. Clipped 5cm from the column.			
6				
	WG574873-01 BLANK RR DNR-confirms low surrogate recovery.			
7	X	40	Over Calibration Range	
	L16061345-04 REF 20X 827-DIOX DNR			
10				
	L16061453-01 10X 827-DIOX DNR-confirms high surrogate recovery.			

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Microbac Laboratories Inc.

Data Checklist

Date: 21-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75850
Analytical Workgroups: L16060730, 060756, 060809, 060822, 060823, 060854

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 22-JUN-2016

Secondary Reviewer: 22-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-22-2016 16:00:51

Microbac Laboratories Inc.

Data Checklist

Date: 30-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 76103
Analytical Workgroups: L16060637,0756,0809,0930,1213,1450,1289,1290,1413

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 05-JUL-2016

Secondary Reviewer: 06-JUL-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUL-06-2016 10:46:55

Microbac Laboratories Inc.

Data Checklist

Date: 05-JUL-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 76120
Analytical Workgroups: L16061345, 061227, 1560, 1648, 1290, 1450, 1452, 1453

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 06-JUL-2016

Secondary Reviewer: 11-JUL-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUL-11-2016 11:01:30

Microbac Laboratories Inc.

Data Checklist

Date: 06-JUL-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 76152
Analytical Workgroups: L16061345, L16061452, L16061560

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	NA
TCL hits	NA
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	NA
Recoveries	NA
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 07-JUL-2016

Secondary Reviewer: 11-JUL-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUL-11-2016 11:06:44

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8270D

AAB#: WG574772

Login Number: L16061452

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW12SW-062416	01	06/24/16					06/27/2016	3.3	7		07/05/16	8.3	40	
18CPTMW12DW-062416	02	06/24/16					06/27/2016	3.2	7		07/05/16	8.3	40	
MW7-062416	03	06/24/16					06/27/2016	3.2	7		07/06/16	8.9	40	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4840897
Report generated 07/07/2016 11:45

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061452
Instrument Id: HPMS15
Workgroup (AAB#): WG574772

Method: 827-DIOXANE
CAL ID: HPMS15-21-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1
L16061452-01	1.00	01	55.4
L16061452-02	1.00	01	56.5
L16061452-03	2.00	DL01	91.2
WG574286-01	1.00	01	43.4
WG574286-02	1.00	01	48.9

Surrogates	Surrogate Limits		
1 - 1,4-Dioxane-d8	20	-	129

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4840905
Report generated: 07/07/2016 11:45

METHOD BLANK SUMMARY

Login Number: L16061452
Blank File ID: 15M18678
Prep Date: 06/27/16 14:01
Analyzed Date: 06/30/16 16:12
Analyst: MES

Work Group: WG574772
Blank Sample ID: WG574286-01
Instrument ID: HPMS15
Method: 8270D

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG574286-02	15M18679	06/30/16 16:34	01
18CPTMW12SW-062416	L16061452-01	15M18736	07/05/16 22:02	01
18CPTMW12DW-062416	L16061452-02	15M18737	07/05/16 22:24	01
MW7-062416	L16061452-03	15M18762	07/06/16 12:35	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4848540
Report generated 07/12/2016 08:35

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061452 Prep Date: 06/27/16 14:01 Sample ID: WG574286-01
Instrument ID: HPMS15 Run Date: 06/30/16 16:12 Prep Method: 3520C
File ID: 15M18678 Analyst: MES Method: 8270D
Workgroup (AAB#): WG574772 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS15-21-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
1,4-Dioxane	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	43.4	20 - 129	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4840898
07-JUL-2016 11:45

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061452 Run Date: 06/30/2016 Sample ID: WG574286-02
Instrument ID: HPMS15 Run Time: 16:34 Prep Method: 3520C
File ID: 15M18679 Analyst: MES Method: 8270D
Workgroup (AAB#): WG574772 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD75256 Cal ID: HPMS15-21-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
1,4-Dioxane	5.00	2.78	55.6	30 - 104	

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	48.9	20 - 129	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4840899
Report generated: 07/07/2016 11:45

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16061452
Instrument: HPMS15
Analyst: MES
Workgroup: WG573501

Tune ID: WG573501-01
Run Date: 06/21/2016
Run Time: 09:34
File ID: 15M18457
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	38.8	34488	PASS
68.0	69.0	0	2.00	1.36	500	PASS
69.0	198	0	100	41.4	36833	PASS
70.0	69.0	0	2.00	0.467	172	PASS
127	198	40.0	60.0	51.9	46131	PASS
197	198	0	1.00	0	0	PASS
198	198	100	100	100	88880	PASS
199	198	5.00	9.00	6.66	5918	PASS
275	198	10.0	30.0	24.9	22090	PASS
365	198	1.00	100	2.65	2358	PASS
441	443	0.0100	100	75.7	9586	PASS
442	198	40.0	100	73.4	65261	PASS
443	442	17.0	23.0	19.4	12659	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573501-02	STD-CCV	01	06/21/2016 09:52	
WG573501-03	STD	01	06/21/2016 10:27	
WG573501-04	STD	01	06/21/2016 10:49	
WG573501-05	STD	01	06/21/2016 11:12	
WG573501-06	STD	01	06/21/2016 11:34	
WG573501-07	STD	01	06/21/2016 11:57	
WG573501-08	SSCV	01	06/21/2016 12:20	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4840902
Report generated 07/07/2016 11:45

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16061452
Instrument: HPMS15
Analyst: MES
Workgroup: WG574781

Tune ID: WG574781-01
Run Date: 06/30/2016
Run Time: 14:24
File ID: 15M18673
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	44.6	24370	PASS
68.0	69.0	0	2.00	1.41	352	PASS
69.0	198	0	100	45.7	24921	PASS
70.0	69.0	0	2.00	0.959	239	PASS
127	198	40.0	60.0	57.0	31104	PASS
197	198	0	1.00	0.291	159	PASS
198	198	100	100	100	54589	PASS
199	198	5.00	9.00	7.03	3838	PASS
275	198	10.0	30.0	24.8	13523	PASS
365	198	1.00	100	2.78	1520	PASS
441	443	0.0100	100	75.2	5686	PASS
442	198	40.0	100	70.8	38669	PASS
443	442	17.0	23.0	19.5	7559	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG574781-02	CCV	01	06/30/2016 14:42	
WG574286-01	BLANK	01	06/30/2016 16:12	
WG574286-02	LCS	01	06/30/2016 16:34	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4840902
Report generated 07/07/2016 11:45

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16061452
Instrument: HPMS15
Analyst: MES
Workgroup: WG575159

Tune ID: WG575159-01
Run Date: 07/05/2016
Run Time: 14:33
File ID: 15M18716
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	46.2	37745	PASS
68.0	69.0	0	2.00	1.95	734	PASS
69.0	198	0	100	46.2	37667	PASS
70.0	69.0	0	2.00	0.337	127	PASS
127	198	40.0	60.0	57.5	46941	PASS
197	198	0	1.00	0.380	310	PASS
198	198	100	100	100	81613	PASS
199	198	5.00	9.00	7.55	6162	PASS
275	198	10.0	30.0	24.6	20072	PASS
365	198	1.00	100	2.93	2392	PASS
441	443	0.0100	100	70.8	8479	PASS
442	198	40.0	100	73.3	59805	PASS
443	442	17.0	23.0	20.0	11980	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG575159-02	CCV	01	07/05/2016 14:51	
L16061452-01	18CPTMW12SW-062416	01	07/05/2016 22:02	
L16061452-02	18CPTMW12DW-062416	01	07/05/2016 22:24	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4840902
Report generated 07/07/2016 11:45

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16061452
Instrument: HPMS15
Analyst: MES
Workgroup: WG575269

Tune ID: WG575269-01
Run Date: 07/06/2016
Run Time: 10:43
File ID: 15M18757
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	48.8	33792	PASS
68.0	69.0	0	2.00	0.927	307	PASS
69.0	198	0	100	47.8	33107	PASS
70.0	69.0	0	2.00	0.390	129	PASS
127	198	40.0	60.0	59.4	41184	PASS
197	198	0	1.00	0	0	PASS
198	198	100	100	100	69301	PASS
199	198	5.00	9.00	7.21	4997	PASS
275	198	10.0	30.0	23.4	16187	PASS
365	198	1.00	100	2.72	1882	PASS
441	443	0.0100	100	72.2	6174	PASS
442	198	40.0	100	60.3	41784	PASS
443	442	17.0	23.0	20.5	8552	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG575269-02	CCV	01	07/06/2016 11:01	
L16061452-03	MW7-062416	DL01	07/06/2016 12:35	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4840902
Report generated 07/07/2016 11:45

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061452
Analytical Method: 8270D
ICAL Workgroup: WG573501

Instrument ID: HPMS15
Initial Calibration Date: 21-JUN-16 11:57
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
1,4-Dioxane		0.3060	2.56		

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4840900
Report generated 07/07/2016 11:45

Login Number: L16061452
Analytical Method: 8270D

Instrument ID: HPMS15
Initial Calibration Date: 21-JUN-16 11:57
Column ID: F

Analyte	WG573501-02			WG573501-03			WG573501-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	5.00	60883.0000	0.3073	10.0	138820.000	0.3164	7.50	103182.000	0.3106

INT_CAL - Modified 03/06/2008
PDF File ID: 4840900
Report generated 07/07/2016 11:45

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061452

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 21-JUN-16 11:57

Column ID: F

Analyte	WG573501-05			WG573501-06			WG573501-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	2.50	26333.0000	0.2969	1.00	13250.0000	0.2966	0.400	5650.00000	0.3081

INT_CAL - Modified 03/06/2008
PDF File ID: 4840900
Report generated 07/07/2016 11:45

Calibration Table Report
Method: DIOXANE_D8.M
Title: OVD MSS01 SIM 1,4-dioxane ICAL 062116
Last Calibration: Tue Jun 21 12:51:17 2016
Curve:WG573501
Calibration Files

Compound	10 15M18459.D	7.5 15M18460.D	5 15M18458.D	2.5 15M18461.D	1 15M18462.D	0.4 15M18463.D	Avg	%RSD
1,4-Dichlorobenzene-d4	ISTD							
1,4-Dioxane	0.316	0.311	0.307	0.297	0.297	0.308	0.306	2.558
1,4-Dioxane-d8	0.426	0.418	0.417	0.402	0.395		0.411	3.044
Nitrobenzene-d5	1.202	1.173	1.128	1.002	0.927	0.906	1.056	12.163
2-Fluorobiphenyl	2.735	2.736	2.691	2.621	2.563	2.651	2.666	2.548
p-Terphenyl-d14	2.793	2.774	2.622	2.460	2.367	2.405	2.570	7.266

Wed Jun 22 12:17:33 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061452 Run Date: 06/21/2016 Sample ID: WG573501-08
Instrument ID: HPMS15 Run Time: 12:20 Method: 8270D
File ID: 15M18464 Analyst: MES QC Key: DOD4
ICal Workgroup: WG573501 Cal ID: HPMS15 - 21-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
1,4-Dioxane		5000	5050	ug/L	0.309	0.900	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4840901
Report generated 07/07/2016 11:45

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 06/30/2016
Sample ID: WG574781-02
Instrument ID: HPMS15
Run Time: 14:42
Method: 8270D
File ID: 15M18674
Analyst: MES
QC Key: DOD4
Workgroup (AAB#): WG574772
Cal ID: HPMS15 - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,4-Dioxane		5000	5210	ug/L	0.319	4.14	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4840903
Report generated 07/07/2016 11:45

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 07/05/2016
Sample ID: WG575159-02
Instrument ID: HPMS15
Run Time: 14:51
Method: 8270D
File ID: 15M18717
Analyst: MES
QC Key: DOD4
Workgroup (AAB#): WG574772
Cal ID: HPMS15 - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,4-Dioxane		5000	5230	ug/L	0.320	4.63	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4840903
Report generated 07/07/2016 11:45

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 07/06/2016
Sample ID: WG575269-02
Instrument ID: HPMS15
Run Time: 11:01
Method: 8270D
File ID: 15M18758
Analyst: MES
QC Key: DOD4
Workgroup (AAB#): WG574772
Cal ID: HPMS15 - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,4-Dioxane		5000	5560	ug/L	0.341	11.3	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4840903
Report generated 07/07/2016 11:45

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061452
Instrument ID: HPMS15
Workgroup (AAB#): WG574772

ICAL CCV Number: WG573501-02
CAL ID: HPMS15-21-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG573501-02	NA	NA	39637
Upper Limit	NA	NA	79274
Lower Limit	NA	NA	19819
L16061452-01	1.00	01	32054
L16061452-02	1.00	01	31996
L16061452-03	2.00	DL01	26788
WG574286-01	1.00	01	28516
WG574286-02	1.00	01	22815

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4840904
Report generated 07/07/2016 11:45

2.2.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18736.D
Acq On : 5 Jul 2016 22:02
Operator : MES
Sample : L16061452-01 827-DIOX
Misc : 1,1
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Jul 06 08:13:25 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.867	152	32054	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.771	96	36502	2.7675	ug/L	-0.01
Spiked Amount 5.000			Recovery	=	55.40%	
4) Nitrobenzene-d5	7.372	82	3271	0.0966	ug/L	0.00
Spiked Amount 5.000			Recovery	=	2.00%	
5) 2-Fluorobiphenyl	8.853	172	387	0.0045	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.078	244	1179	0.0143	ug/L	-0.01
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.806	58	2013	0.2053	ug/L #	48

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18736.D
Acq On : 5 Jul 2016 22:02
Operator : MES
Sample : L16061452-01 827-DIOX
Misc : 1,1
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Jul 06 08:13:25 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

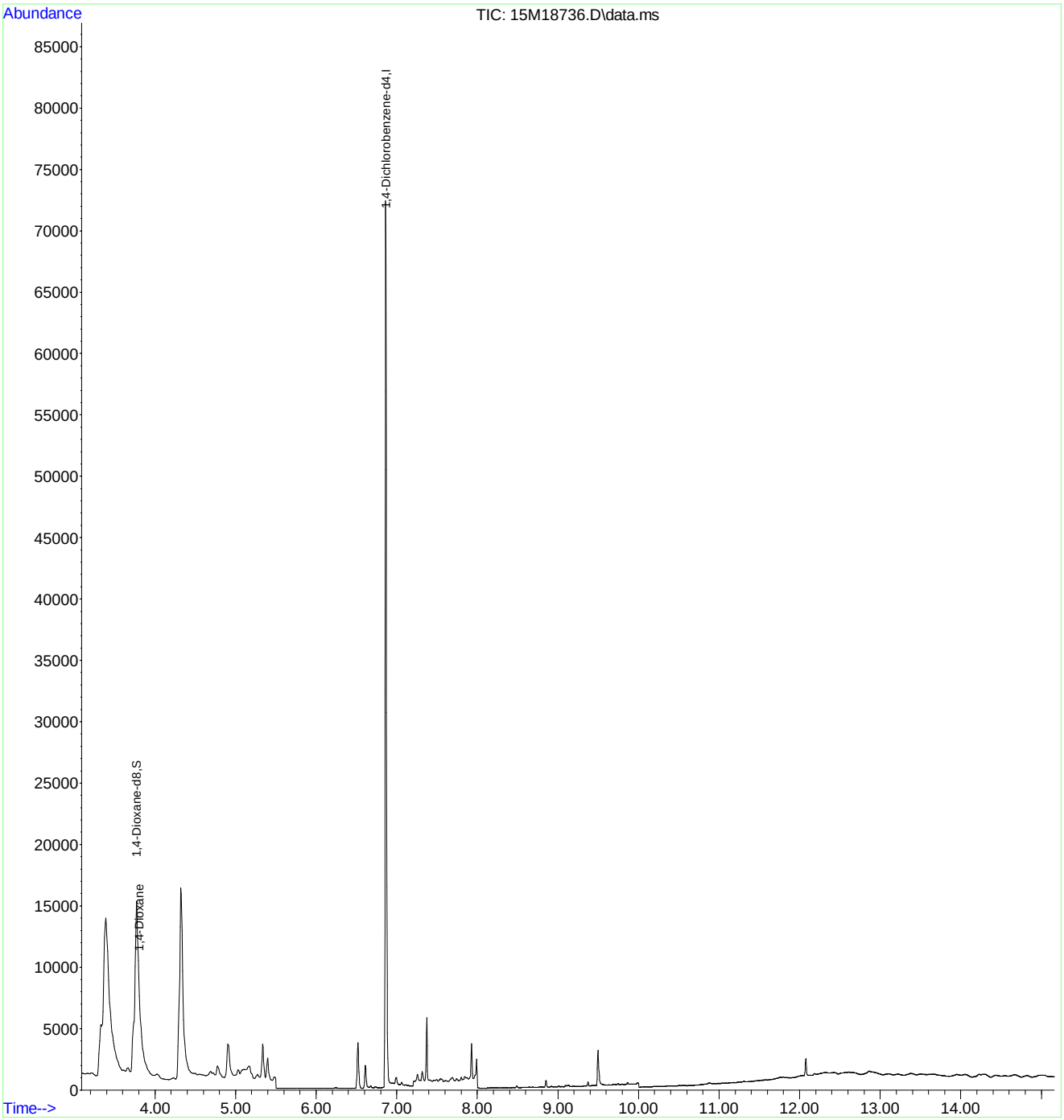

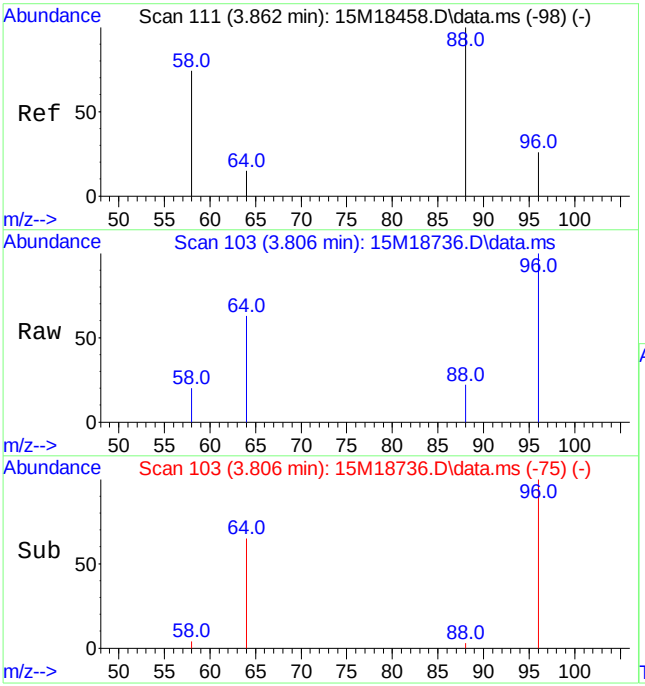

#2
1,4-Dioxane
Concen: 0.21 ug/L
RT: 3.806 min Scan# 103
Delta R.T. -0.014 min
Lab File: 15M18736.D
Acq: 5 Jul 2016 22:02

Tgt Ion: 58 Resp: 2013

Ion	Ratio	Lower	Upper
58	100		
88	100.0	103.1	240.7#

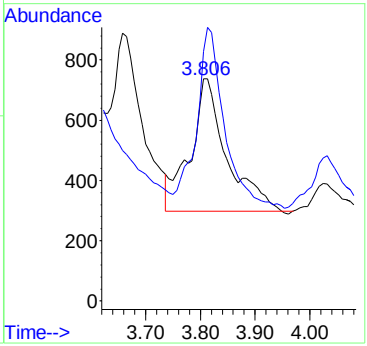

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18737.D
Acq On : 5 Jul 2016 22:24
Operator : MES
Sample : L16061452-02 827-DIOX
Misc : 1,1
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Jul 06 08:13:28 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.866	152	31996	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.770	96	37214	2.8266	ug/L	-0.01
Spiked Amount 5.000			Recovery	=	56.60%	
4) Nitrobenzene-d5	7.372	82	2854	0.0844	ug/L	0.00
Spiked Amount 5.000			Recovery	=	1.60%	
5) 2-Fluorobiphenyl	8.852	172	230	0.0027	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.096	244	2177	0.0265	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.60%	

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18737.D
Acq On : 5 Jul 2016 22:24
Operator : MES
Sample : L16061452-02 827-DIOX
Misc : 1,1
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Jul 06 08:13:28 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

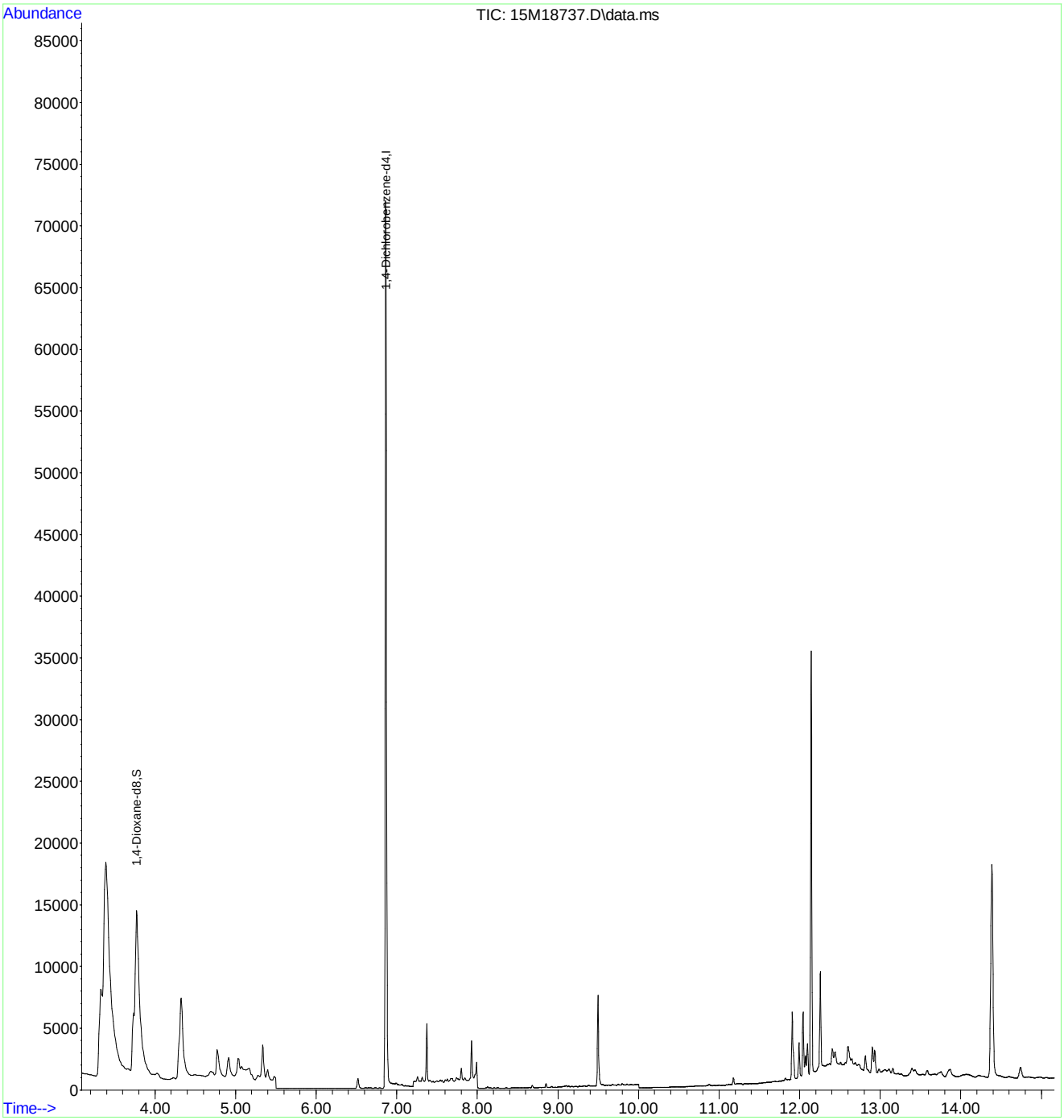

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\070616\
Data File : 15M18762.D
Acq On : 6 Jul 2016 12:35
Operator : MES
Sample : L16061452-03 2X 827-DIOX
Misc : 1,2
ALS Vial : 6 Sample Multiplier: 2

Quant Time: Jul 06 13:17:03 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.855	152	26788	1.0000	ug/mL	#-0.01
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.721	96	25119	4.5576	ug/L	-0.06
Spiked Amount 5.000			Recovery	=	91.20%	
4) Nitrobenzene-d5	7.366	82	1371	0.0969	ug/L	0.00
Spiked Amount 5.000			Recovery	=	2.00%	
5) 2-Fluorobiphenyl	8.849	172	80	0.0022	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.000	244	7	0.0002	ug/L	-0.09
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.756	58	54889	6.6969	ug/L	81

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\070616\
Data File : 15M18762.D
Acq On : 6 Jul 2016 12:35
Operator : MES
Sample : L16061452-03 2X 827-DIOX
Misc : 1,2
ALS Vial : 6 Sample Multiplier: 2

Quant Time: Jul 06 13:17:03 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

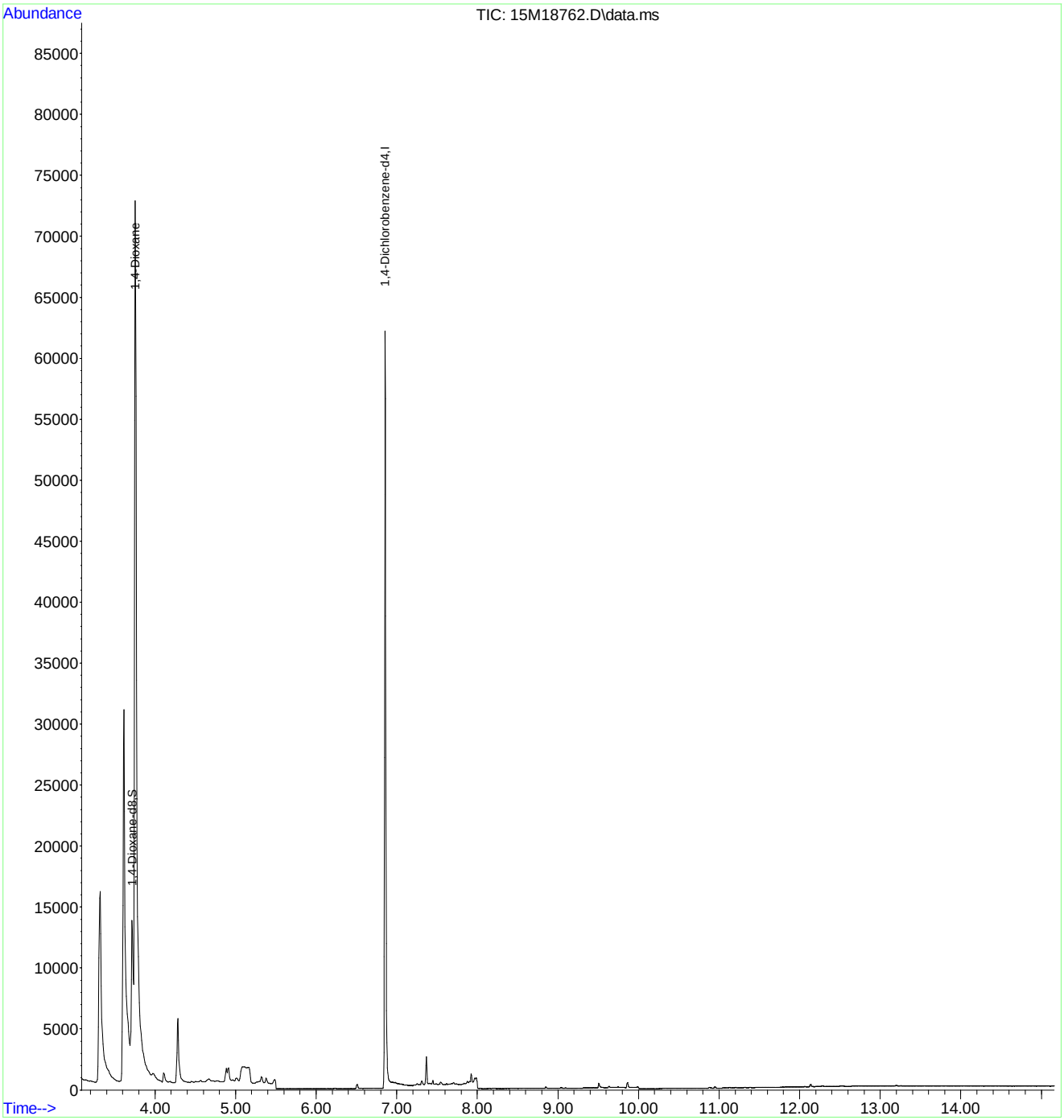

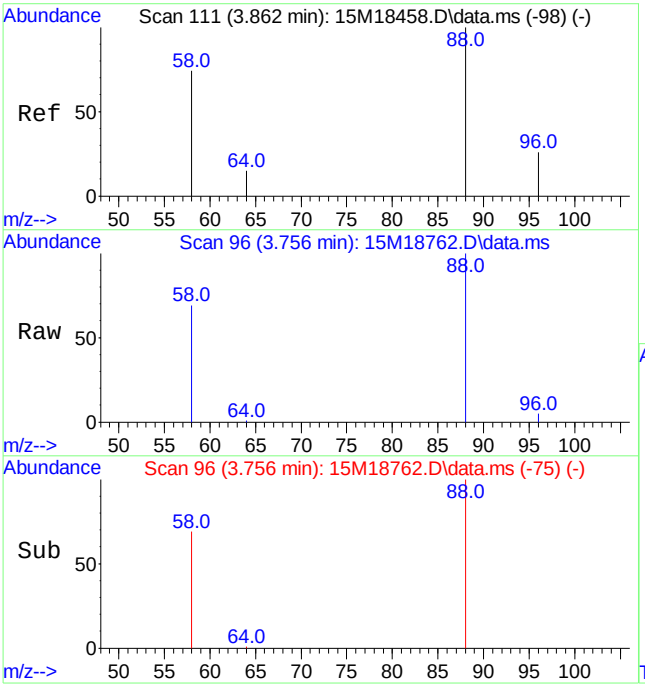

#2
1,4-Dioxane
Concen: 6.70 ug/L
RT: 3.756 min Scan# 96
Delta R.T. -0.063 min
Lab File: 15M18762.D
Acq: 6 Jul 2016 12:35

Tgt Ion: 58 Resp: 54889

Ion	Ratio	Lower	Upper
58	100		
88	145.2	103.1	240.7

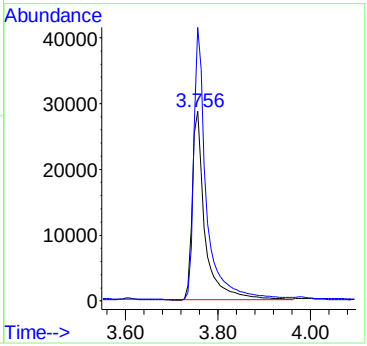

2.2.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 22 08:04:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	39637	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.827	96	82573	5.0627 ug/L	0.00
Spiked Amount 5.000			Recovery	= 101.20%	
4) Nitrobenzene-d5	7.431	82	223381	5.3353 ug/L	0.00
Spiked Amount 5.000			Recovery	= 106.80%	
5) 2-Fluorobiphenyl	8.922	172	533101	5.0444 ug/L	0.00
Spiked Amount 5.000			Recovery	= 100.80%	
6) p-Terphenyl-d14	12.184	244	519544	5.1003 ug/L	0.00
Spiked Amount 5.000			Recovery	= 102.00%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.862	58	60883	5.0202 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 21 10:23:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	60	0.00
2	1,4-Dioxane	0.325	0.307	5.5	57	-0.03
3 S	1,4-Dioxane-d8	0.419	0.417	0.5	60	-0.04
4 S	Nitrobenzene-d5	0.904	1.128	-24.8	69	0.00
5 S	2-Fluorobiphenyl	2.613	2.691	-3.0	63	0.00
6 S	p-Terphenyl-d14	2.562	2.622	-2.3	61	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 21 10:23:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	60	0.00
2	1,4-Dioxane	5.000	4.721	5.6	57	-0.03
3 S	1,4-Dioxane-d8	5.000	4.979	0.4	60	-0.04
4 S	Nitrobenzene-d5	5.000	5.474	-9.5	69	0.00
5 S	2-Fluorobiphenyl	5.000	5.150	-3.0	63	0.00
6 S	p-Terphenyl-d14	5.000	5.115	-2.3	61	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 22 08:04:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

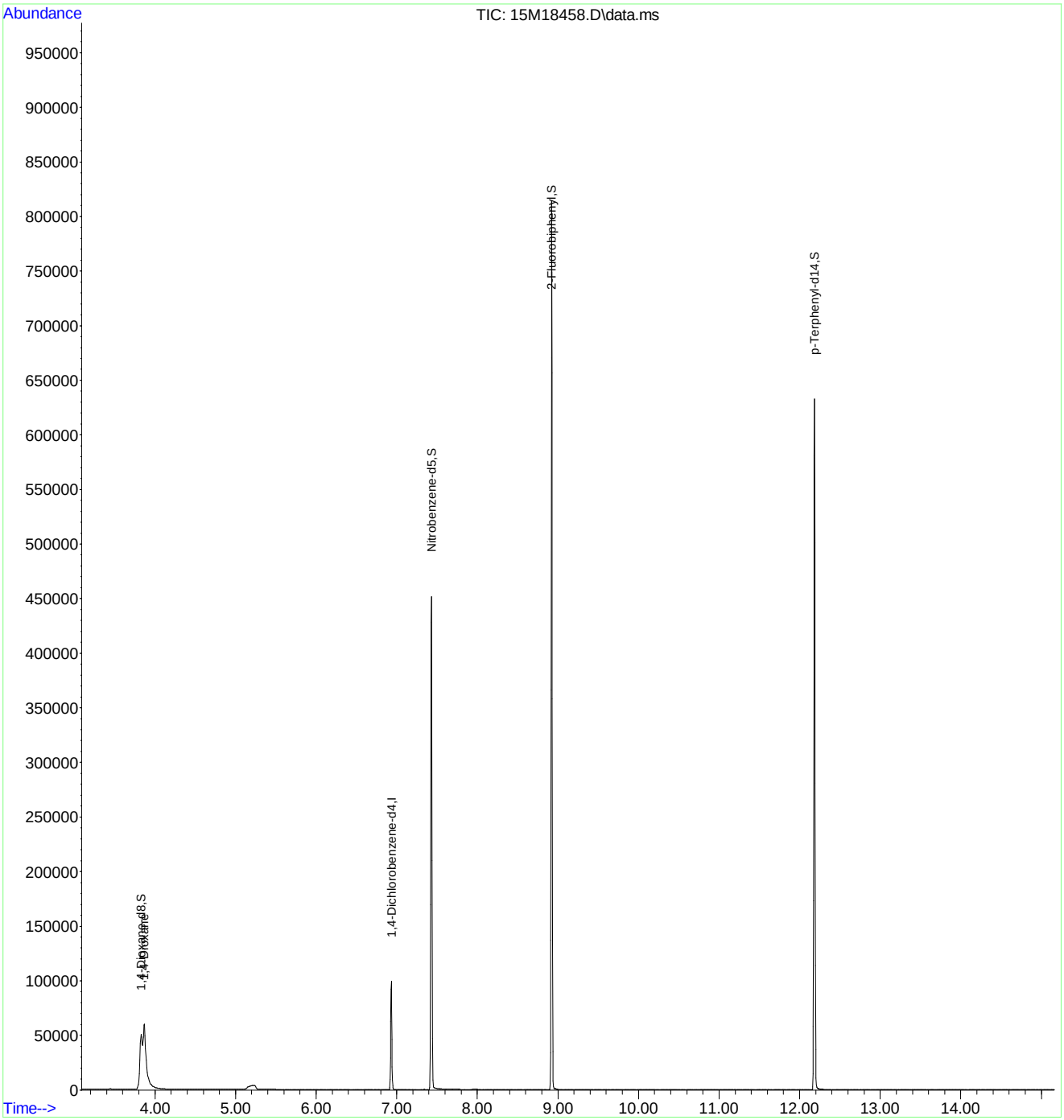

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18459.D
Acq On : 21 Jun 2016 10:27
Operator : MES
Sample : WG573501-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 22 08:04:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	43874	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	186767	10.3452	ug/L	0.00
Spiked Amount 5.000			Recovery = 207.00%			
4) Nitrobenzene-d5	7.431	82	527549	11.3834	ug/L	0.00
Spiked Amount 5.000			Recovery = 227.60%			
5) 2-Fluorobiphenyl	8.926	172	1199799	10.2565	ug/L	0.00
Spiked Amount 5.000			Recovery = 205.20%			
6) p-Terphenyl-d14	12.240	244	1225328	10.8672	ug/L	0.06
Spiked Amount 5.000			Recovery = 217.40%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	138820	10.3412	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18459.D
Acq On : 21 Jun 2016 10:27
Operator : MES
Sample : WG573501-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 22 08:04:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

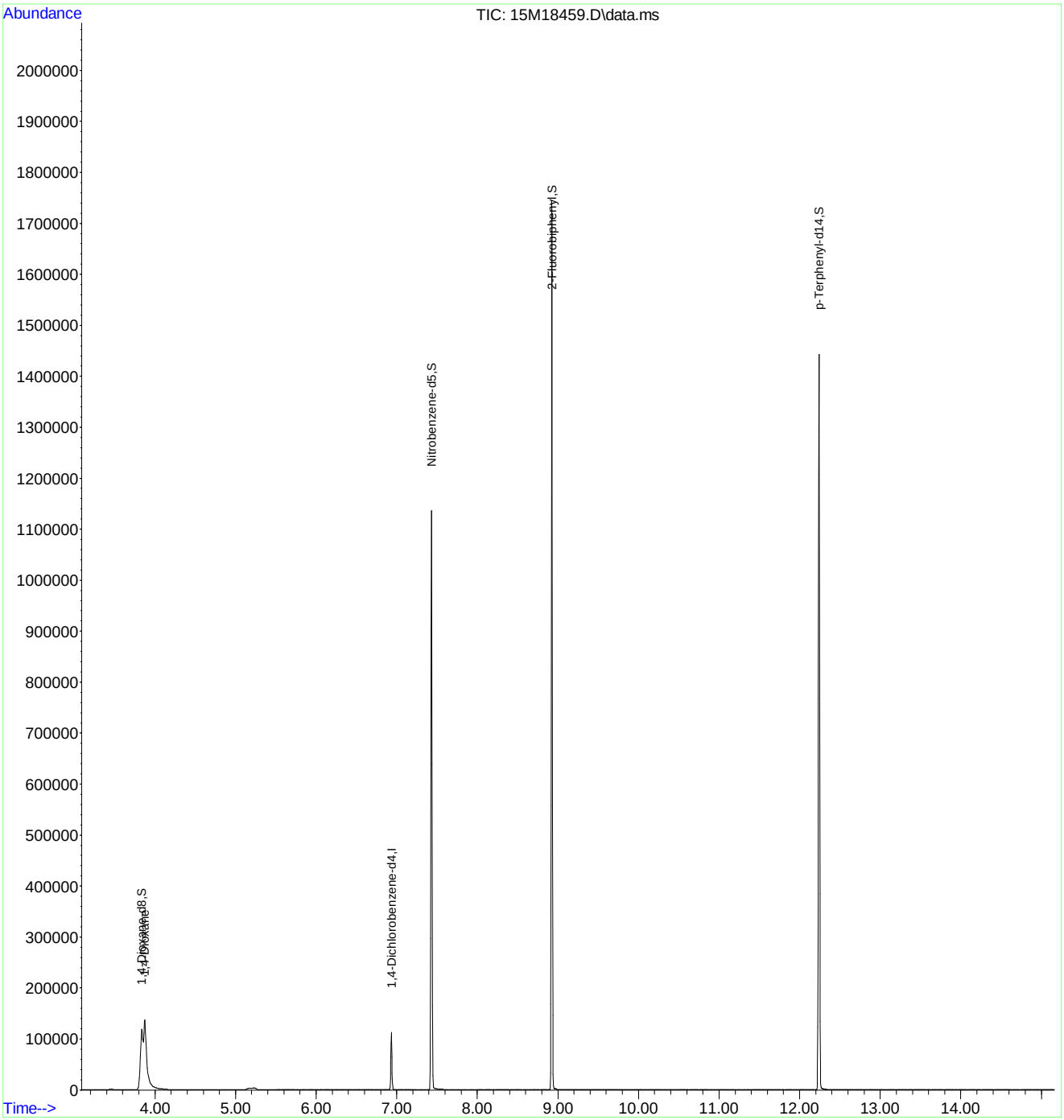

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18460.D
Acq On : 21 Jun 2016 10:49
Operator : MES
Sample : WG573501-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 22 08:04:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	44299	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.834	96	138833	7.6163 ug/L	0.00
Spiked Amount 5.000			Recovery	= 152.40%	
4) Nitrobenzene-d5	7.431	82	389810	8.3306 ug/L	0.00
Spiked Amount 5.000			Recovery	= 166.60%	
5) 2-Fluorobiphenyl	8.923	172	909050	7.6965 ug/L	0.00
Spiked Amount 5.000			Recovery	= 154.00%	
6) p-Terphenyl-d14	12.203	244	921380	8.0931 ug/L	0.02
Spiked Amount 5.000			Recovery	= 161.80%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.876	58	103182	7.6127 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18460.D
Acq On : 21 Jun 2016 10:49
Operator : MES
Sample : WG573501-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 22 08:04:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

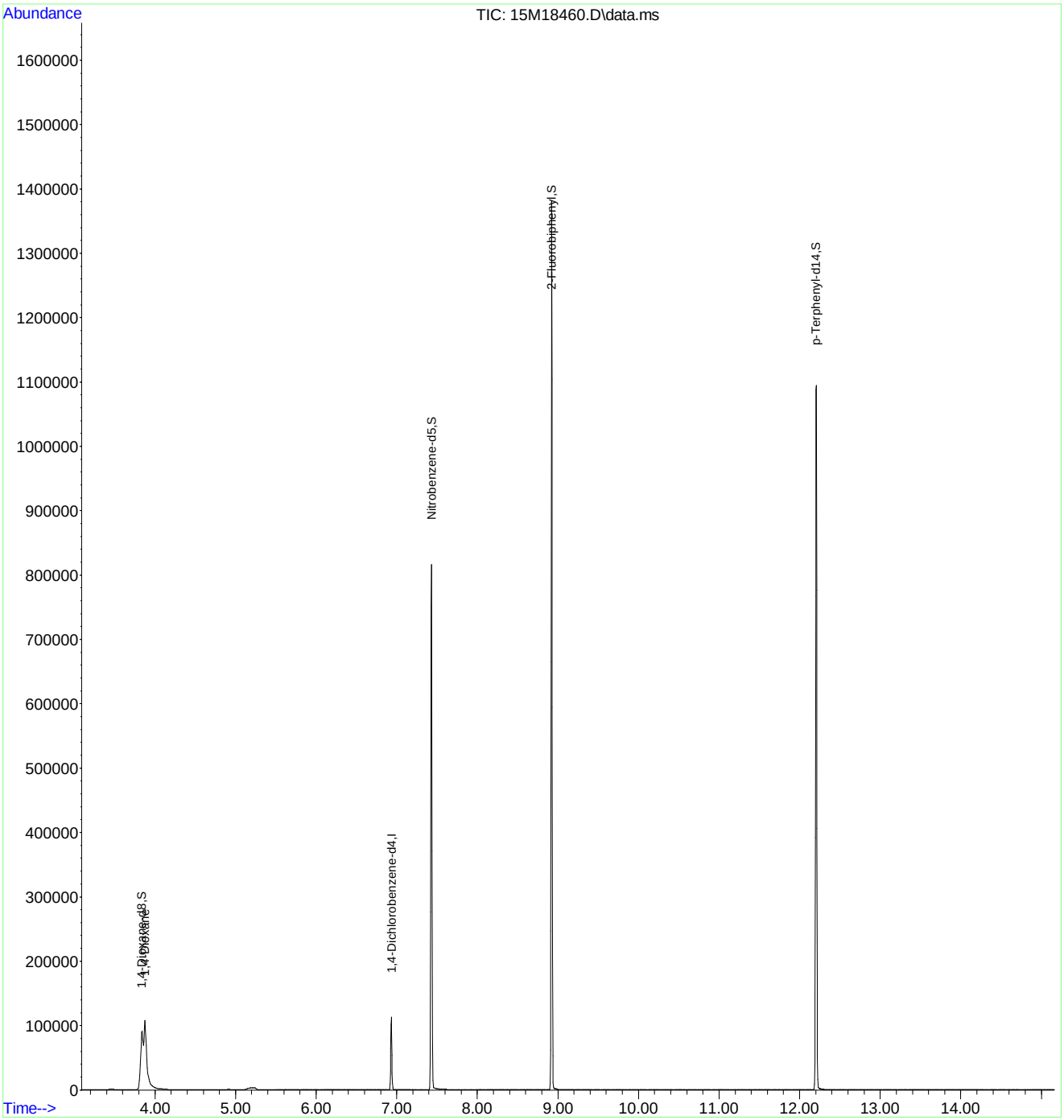

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18461.D
Acq On : 21 Jun 2016 11:12
Operator : MES
Sample : WG573501-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 22 08:04:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	35478	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.827	96	35630	2.4406 ug/L	0.00
Spiked Amount 5.000			Recovery	= 48.80%	
4) Nitrobenzene-d5	7.431	82	88869	2.3714 ug/L	0.00
Spiked Amount 5.000			Recovery	= 47.40%	
5) 2-Fluorobiphenyl	8.923	172	232500	2.4579 ug/L	0.00
Spiked Amount 5.000			Recovery	= 49.20%	
6) p-Terphenyl-d14	12.199	244	218191	2.3930 ug/L	0.02
Spiked Amount 5.000			Recovery	= 47.80%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.862	58	26333	2.4259 ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18461.D
Acq On : 21 Jun 2016 11:12
Operator : MES
Sample : WG573501-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 22 08:04:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

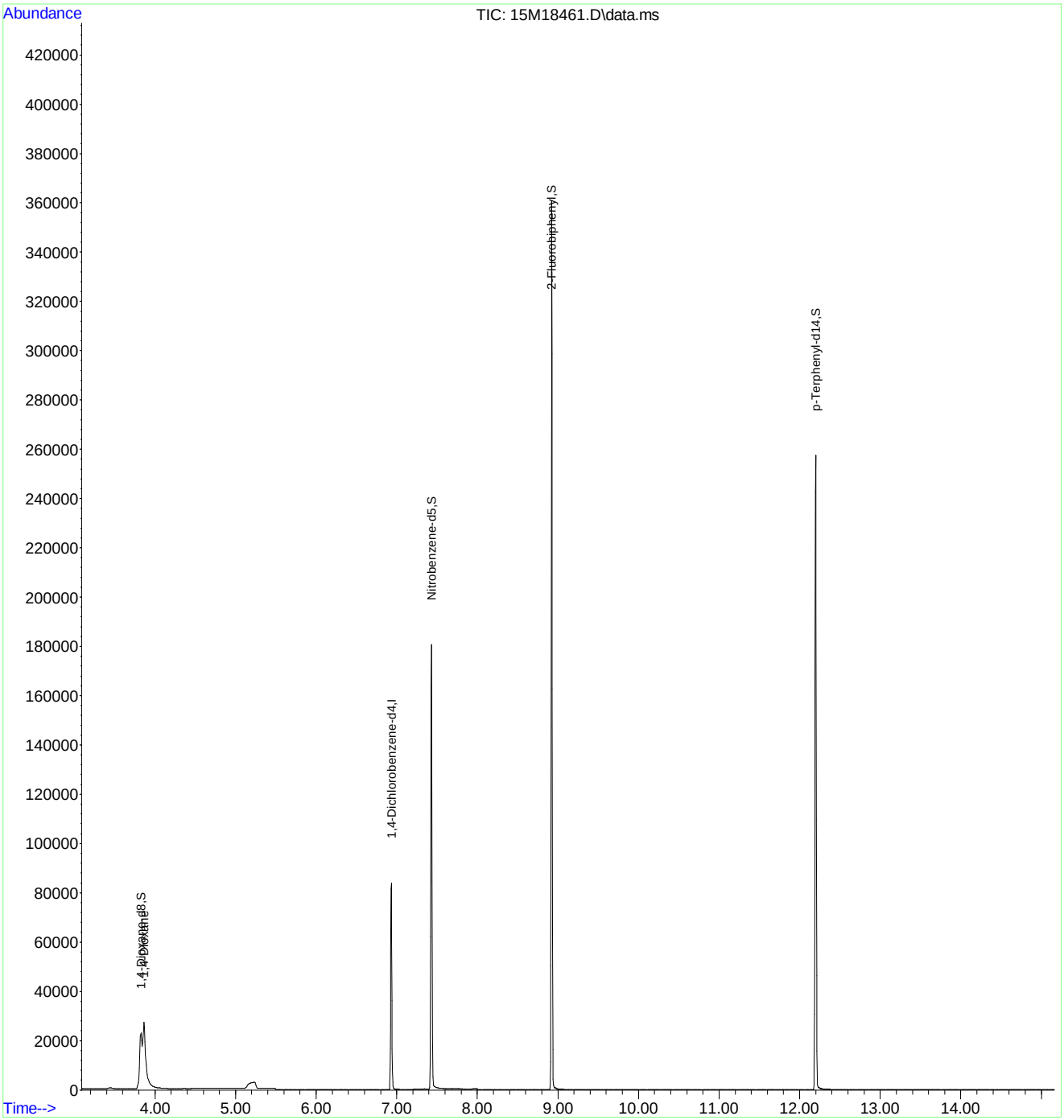

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18462.D
Acq On : 21 Jun 2016 11:34
Operator : MES
Sample : WG573501-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 22 08:04:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	44672	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.841	96	17660	0.9607	ug/L	0.01
Spiked Amount 5.000			Recovery	=	19.20%	
4) Nitrobenzene-d5	7.431	82	41409	0.8776	ug/L	0.00
Spiked Amount 5.000			Recovery	=	17.60%	
5) 2-Fluorobiphenyl	8.922	172	114491	0.9612	ug/L	0.00
Spiked Amount 5.000			Recovery	=	19.20%	
6) p-Terphenyl-d14	12.203	244	105713	0.9208	ug/L	0.02
Spiked Amount 5.000			Recovery	=	18.40%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.876	58	13250	0.9694	ug/L	82

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18462.D
Acq On : 21 Jun 2016 11:34
Operator : MES
Sample : WG573501-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 22 08:04:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

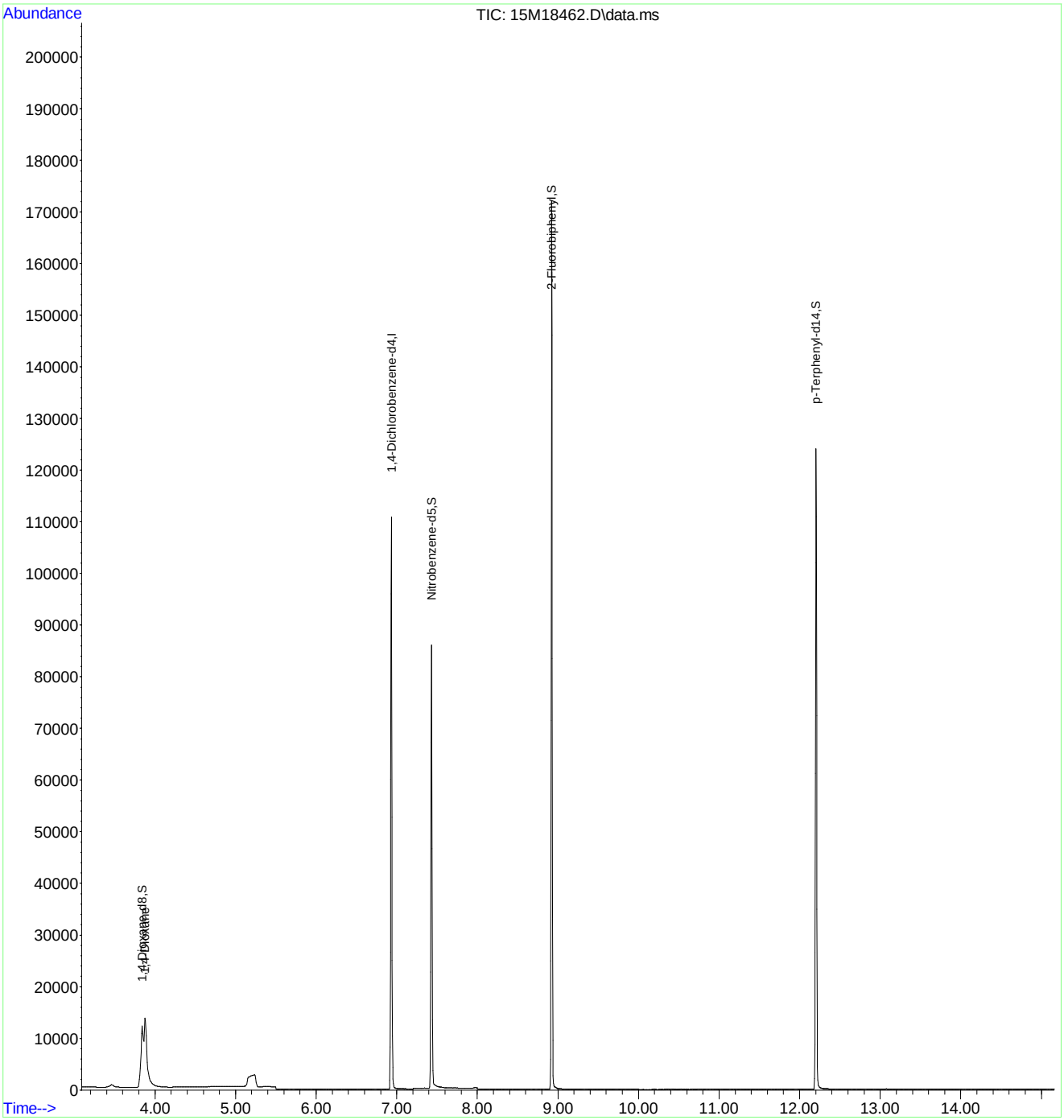

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18463.D
Acq On : 21 Jun 2016 11:57
Operator : MES
Sample : WG573501-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 22 08:04:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	45840	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.841	96	7629	0.4045	ug/L	0.01
Spiked Amount 5.000			Recovery	=	8.00%	
4) Nitrobenzene-d5	7.431	82	16604	0.3429	ug/L	0.00
Spiked Amount 5.000			Recovery	=	6.80%	
5) 2-Fluorobiphenyl	8.923	172	48617	0.3978	ug/L	0.00
Spiked Amount 5.000			Recovery	=	8.00%	
6) p-Terphenyl-d14	12.210	244	44097	0.3743	ug/L	0.03
Spiked Amount 5.000			Recovery	=	7.40%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.876	58	5650	0.4028	ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18463.D
Acq On : 21 Jun 2016 11:57
Operator : MES
Sample : WG573501-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 22 08:04:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

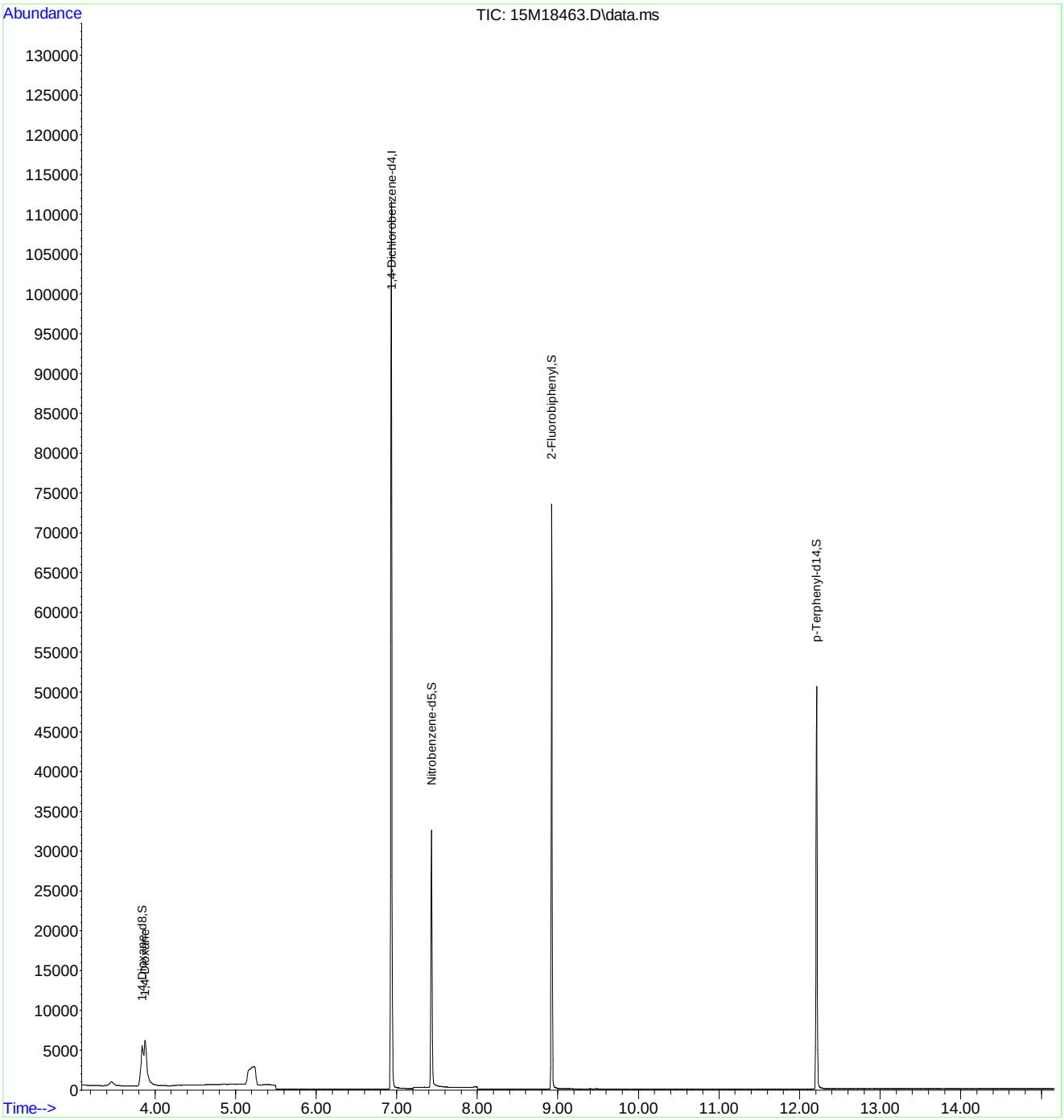

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	41944	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.792	96	22	0.0013	ug/L	-0.04
Spiked Amount 5.000			Recovery	=	0.00%	
4) Nitrobenzene-d5	7.436	82	56	0.0013	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
5) 2-Fluorobiphenyl	8.926	172	23	0.0002	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.214	244	128	0.0012	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	64750	5.0454	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	106	0.00
2	1,4-Dioxane	5.000	5.045	-0.9	106	0.00
3 S	1,4-Dioxane-d8	5.000	0.001	100.0#	0	-0.04
4 S	Nitrobenzene-d5	5.000	0.001	100.0#	0	0.00
5 S	2-Fluorobiphenyl	5.000	0.000	100.0#	0	0.00
6 S	p-Terphenyl-d14	5.000	0.001	100.0#	0	0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

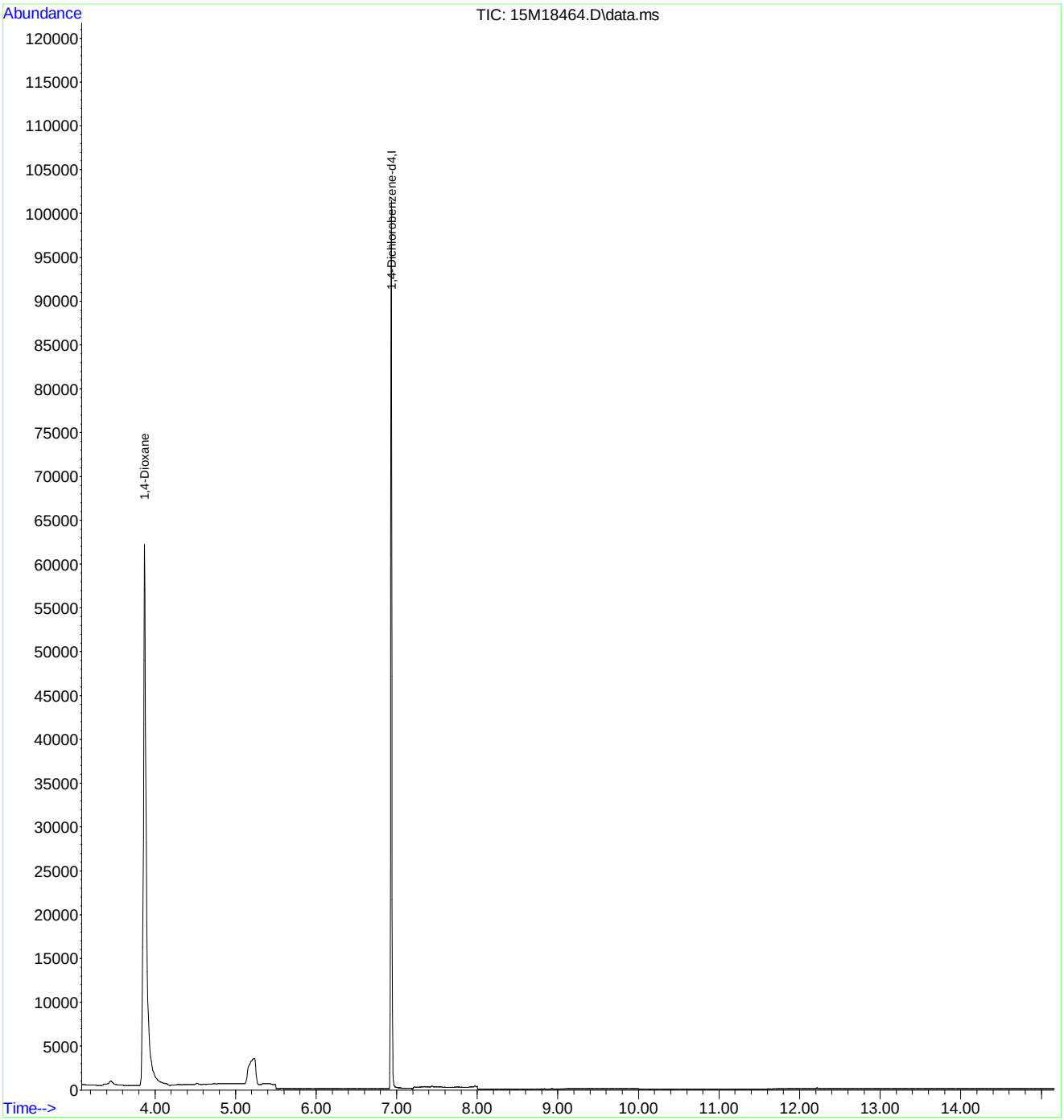

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18674.D
Acq On : 30 Jun 2016 14:42
Operator : MES
Sample : WG574781-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 30 14:58:21 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.870	152	31348	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.777	96	62277	4.8280 ug/L	0.00
Spiked Amount 5.000			Recovery	= 96.60%	
4) Nitrobenzene-d5	7.366	82	199647	6.0293 ug/L	0.00
Spiked Amount 5.000			Recovery	= 120.60%	
5) 2-Fluorobiphenyl	8.856	172	445070	5.3250 ug/L	0.00
Spiked Amount 5.000			Recovery	= 106.40%	
6) p-Terphenyl-d14	12.147	244	423287	5.2541 ug/L	0.06
Spiked Amount 5.000			Recovery	= 105.00%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.813	58	49944	5.2072 ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Continuing Calibration Area and RT check

Instrument: HPMS15
Initial cal date: 06/21/16
CCV date: 06/30/16
CCV Filename: 15M18674

1,4-Dichlorobenzene-d4

	Amount	RT
InitCal	39637	6.93
CCV	31348	6.87

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18674.D
Acq On : 30 Jun 2016 14:42
Operator : MES
Sample : WG574781-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 30 14:58:21 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	79	0.00
2	1,4-Dioxane	5.000	5.207	-4.1	82	0.00
3 S	1,4-Dioxane-d8	5.000	4.828	3.4	75	0.00
4 S	Nitrobenzene-d5	5.000	6.029	-20.6	89	0.00
5 S	2-Fluorobiphenyl	5.000	5.325	-6.5	83	0.00
6 S	p-Terphenyl-d14	5.000	5.254	-5.1	82	0.06

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18674.D
Acq On : 30 Jun 2016 14:42
Operator : MES
Sample : WG574781-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 30 14:58:21 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

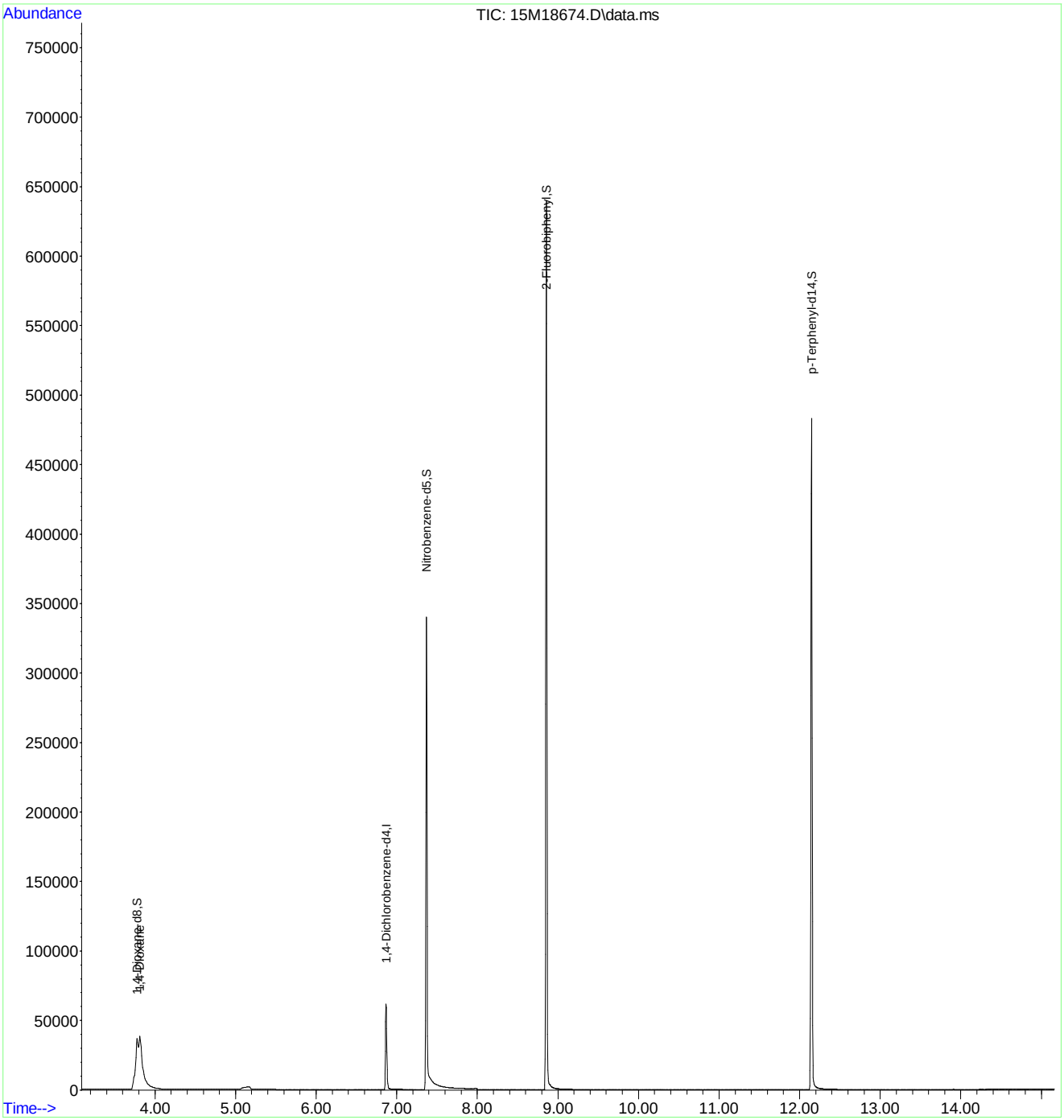

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18717.D
Acq On : 5 Jul 2016 14:51
Operator : MES
Sample : WG575159-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 05 15:07:06 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.867	152	50685	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.778	96	100564	4.8218 ug/L	0.00
Spiked Amount 5.000			Recovery	= 96.40%	
4) Nitrobenzene-d5	7.367	82	310249	5.7949 ug/L	0.00
Spiked Amount 5.000			Recovery	= 115.80%	
5) 2-Fluorobiphenyl	8.853	172	677739	5.0151 ug/L	0.00
Spiked Amount 5.000			Recovery	= 100.40%	
6) p-Terphenyl-d14	12.122	244	688752	5.2876 ug/L	0.03
Spiked Amount 5.000			Recovery	= 105.80%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.813	58	81128	5.2314 ug/L	78

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Continuing Calibration Area and RT check

Instrument: HPMS15
Initial cal date: 06/21/16
CCV date: 07/05/16
CCV Filename: 15M18717

1,4-Dichlorobenzene-d4

	Amount	RT
InitCal	39637	6.93
CCV	50685	6.87

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18717.D
Acq On : 5 Jul 2016 14:51
Operator : MES
Sample : WG575159-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 05 15:07:06 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	128	0.00
2	1,4-Dioxane	5.000	5.231	-4.6	133	0.00
3 S	1,4-Dioxane-d8	5.000	4.822	3.6	122	0.00
4 S	Nitrobenzene-d5	5.000	5.795	-15.9	139	0.00
5 S	2-Fluorobiphenyl	5.000	5.015	-0.3	127	0.00
6 S	p-Terphenyl-d14	5.000	5.288	-5.8	133	0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18717.D
Acq On : 5 Jul 2016 14:51
Operator : MES
Sample : WG575159-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 05 15:07:06 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

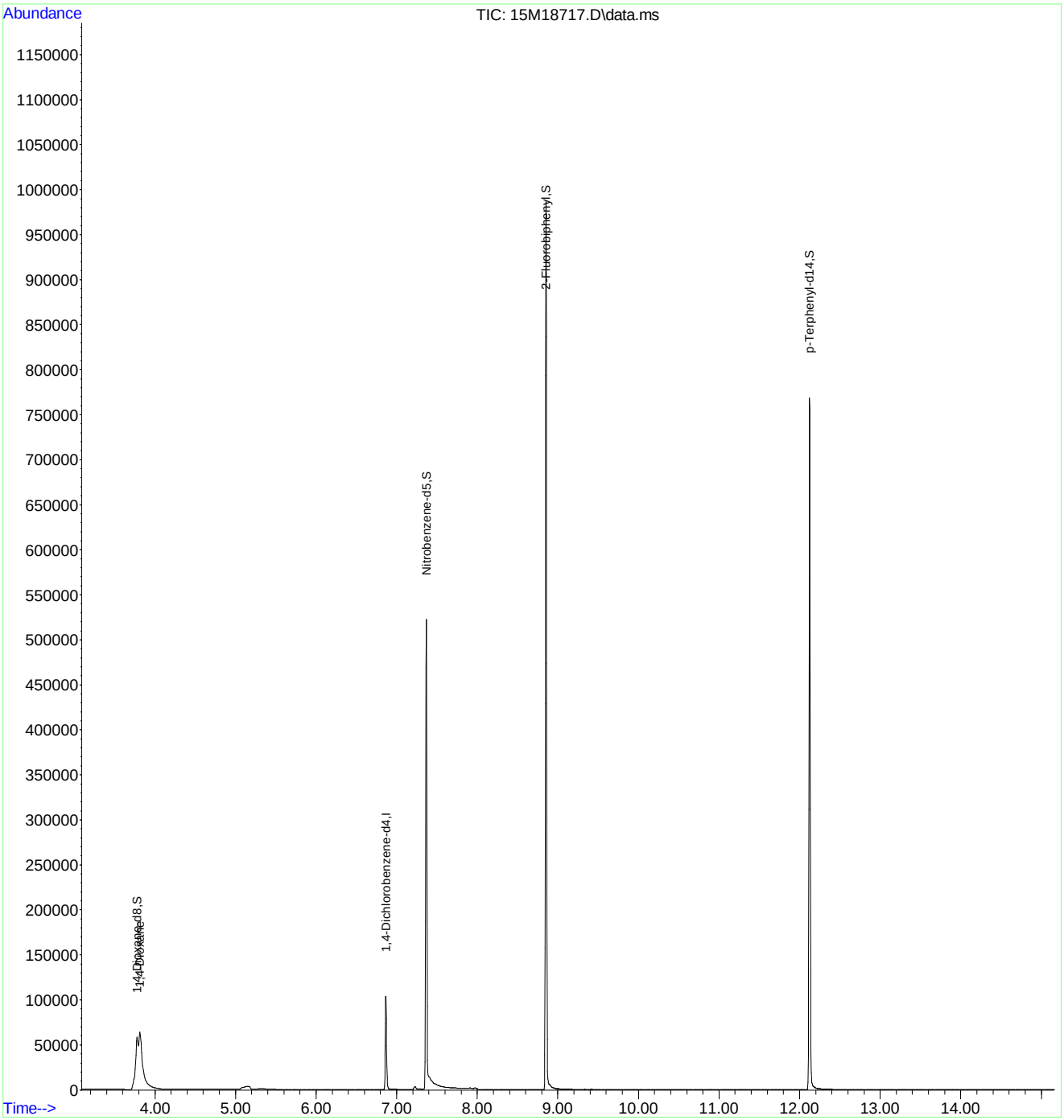

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\070616\
Data File : 15M18758.D
Acq On : 6 Jul 2016 11:01
Operator : MES
Sample : WG575269-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 06 11:18:09 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.856	152	39125	1.0000 ug/mL	#-0.01
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.714	96	83422	5.1817 ug/L	-0.07
Spiked Amount 5.000			Recovery	= 103.60%	
4) Nitrobenzene-d5	7.361	82	223113	5.3987 ug/L	0.00
Spiked Amount 5.000			Recovery	= 108.00%	
5) 2-Fluorobiphenyl	8.849	172	486814	4.6667 ug/L	0.00
Spiked Amount 5.000			Recovery	= 93.40%	
6) p-Terphenyl-d14	12.118	244	498003	4.9528 ug/L	0.03
Spiked Amount 5.000			Recovery	= 99.00%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.749	58	66606	5.5640 ug/L	79

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Continuing Calibration Area and RT check

Instrument: HPMS15
Initial cal date: 06/21/16
CCV date: 07/06/16
CCV Filename: 15M18758

1,4-Dichlorobenzene-d4

	Amount	RT
InitCal	39637	6.93
CCV	39125	6.86

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\070616\
Data File : 15M18758.D
Acq On : 6 Jul 2016 11:01
Operator : MES
Sample : WG575269-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 06 11:18:09 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	99	-0.01
2	1,4-Dioxane	5.000	5.564	-11.3	109	-0.07
3 S	1,4-Dioxane-d8	5.000	5.182	-3.6	101	-0.07
4 S	Nitrobenzene-d5	5.000	5.399	-8.0	100	0.00
5 S	2-Fluorobiphenyl	5.000	4.667	6.7	91	0.00
6 S	p-Terphenyl-d14	5.000	4.953	0.9	96	0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data Path : C:\msdchem\1\data\070616\
Data File : 15M18758.D
Acq On : 6 Jul 2016 11:01
Operator : MES
Sample : WG575269-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 06 11:18:09 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

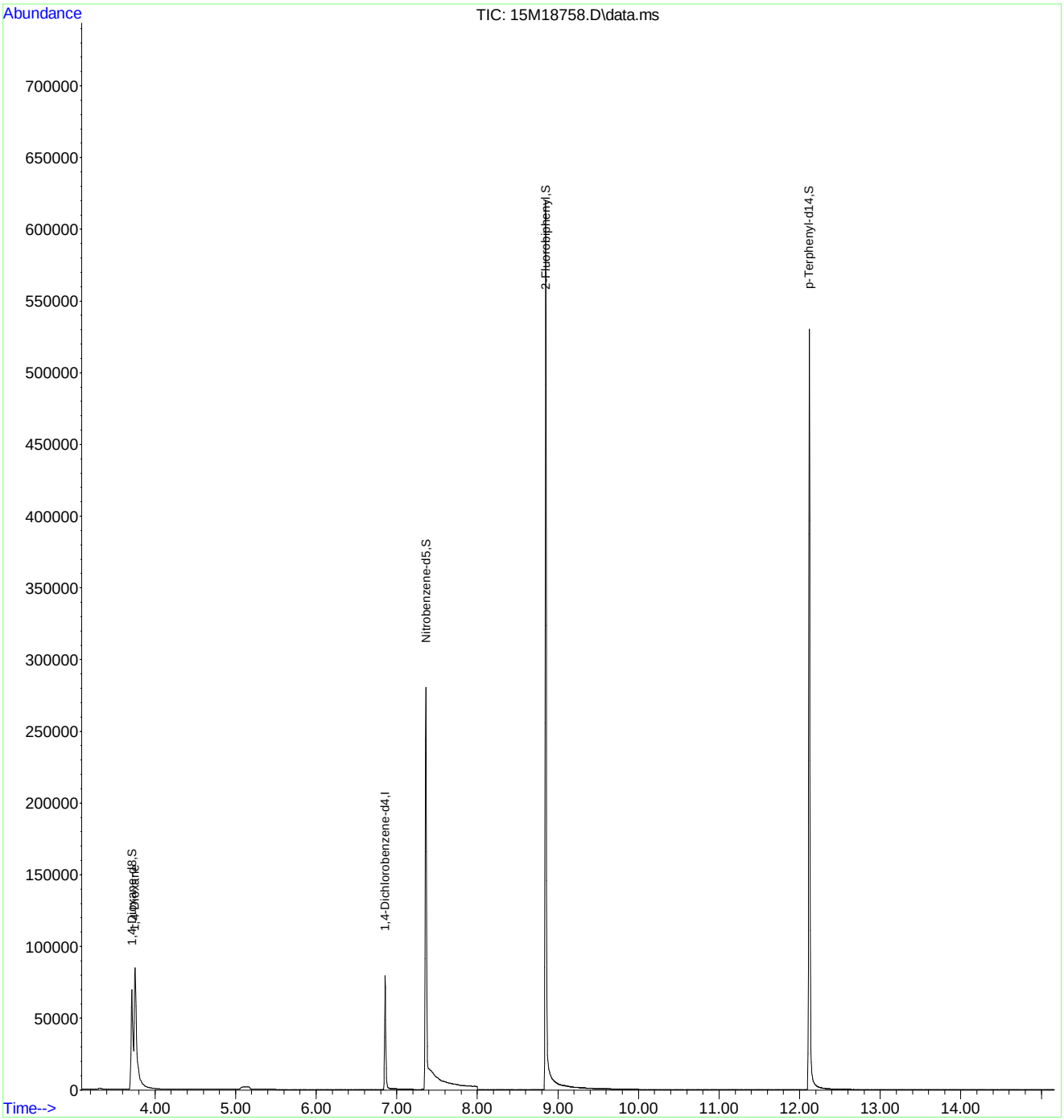

2.2.1.5 Raw QC Data

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

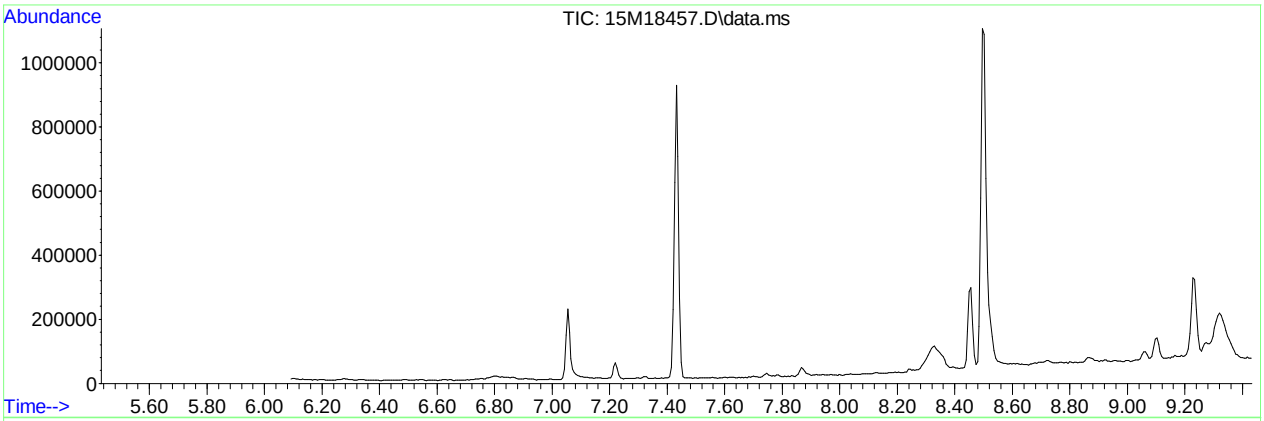

AutoFind: Scans 234, 235, 236; Background Corrected with Scan 228

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	38.8	34488	PASS
68	69	0.00	2	1.4	500	PASS
69	198	0.00	100	41.4	36833	PASS
70	69	0.00	2	0.5	172	PASS
127	198	40	60	51.9	46131	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	88880	PASS
199	198	5	9	6.7	5918	PASS
275	198	10	30	24.9	22090	PASS
365	198	1	100	2.7	2358	PASS
441	443	0.01	100	75.7	9586	PASS
442	198	40	100	73.4	65261	PASS
443	442	17	23	19.4	12659	PASS

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

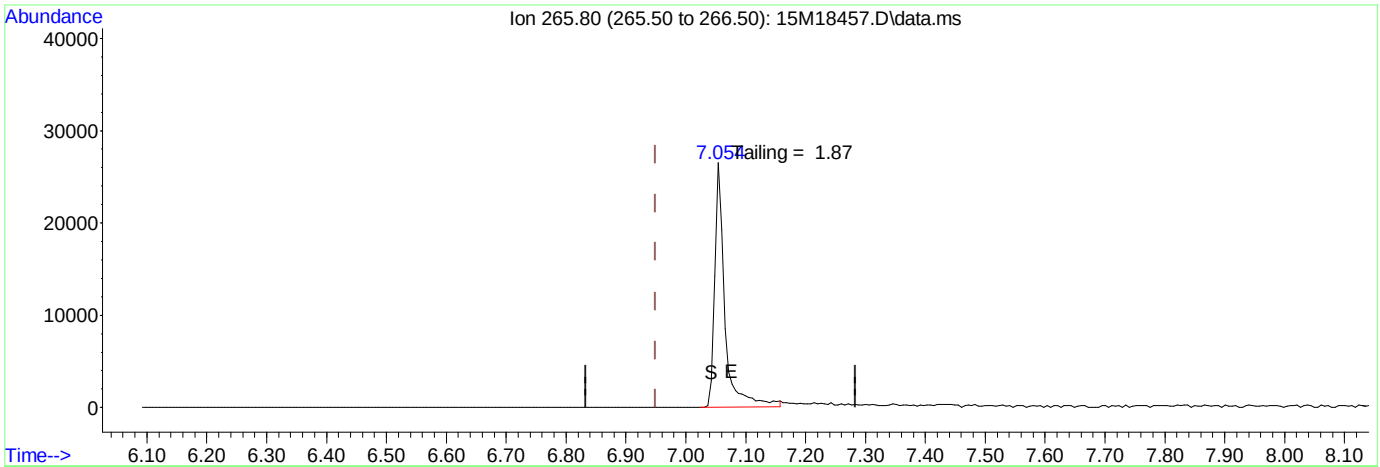

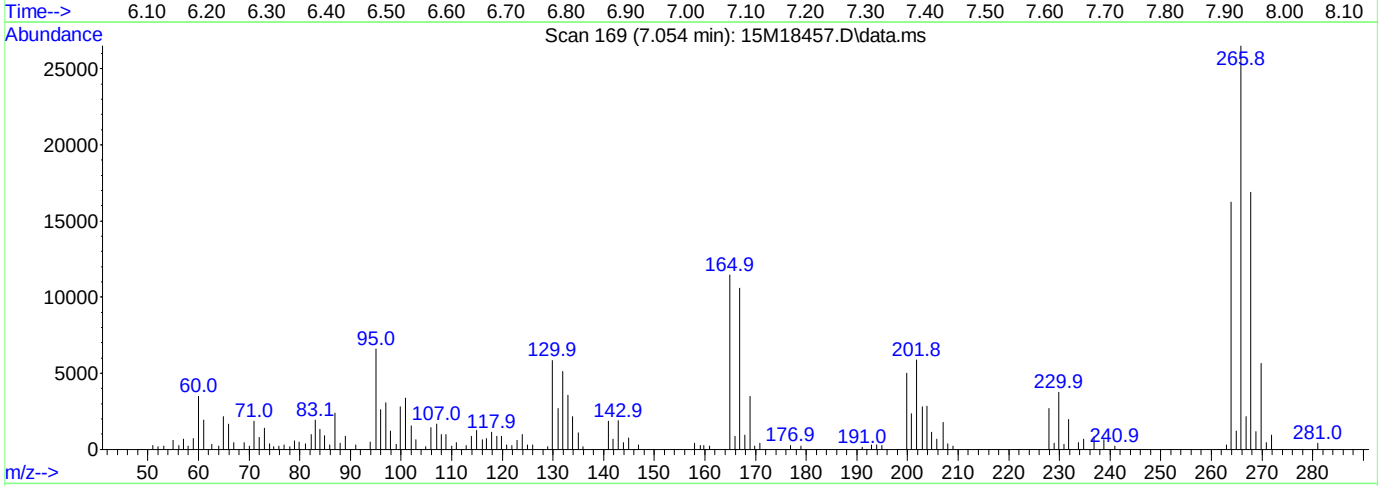

TIC: 15M18457.D\data.ms

(1) Pentachlorophenol

7.054min (+ 0.105) 0.00 ug/ml

response 30738

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

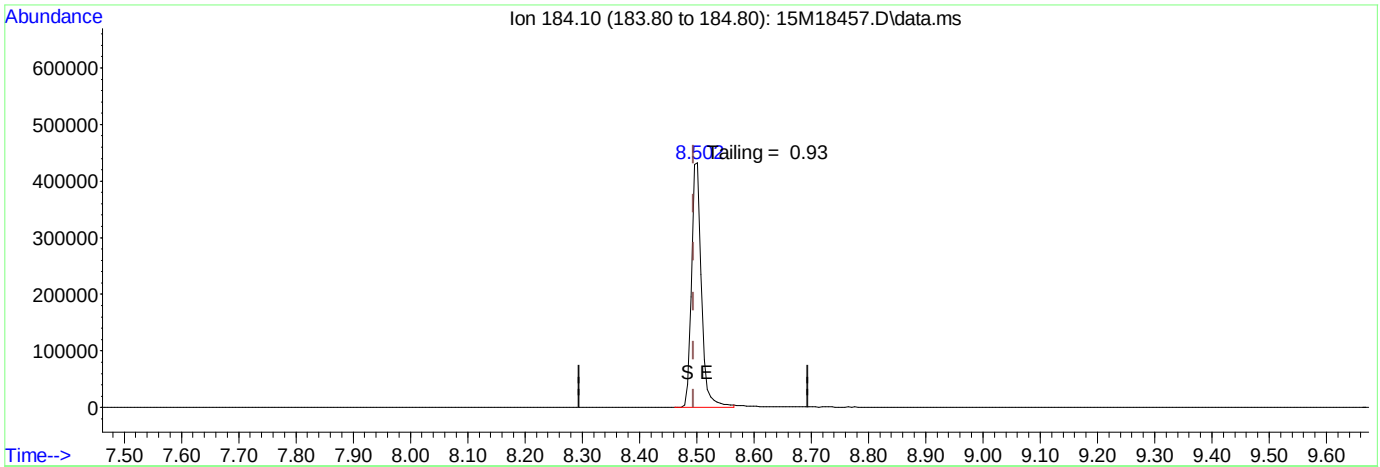

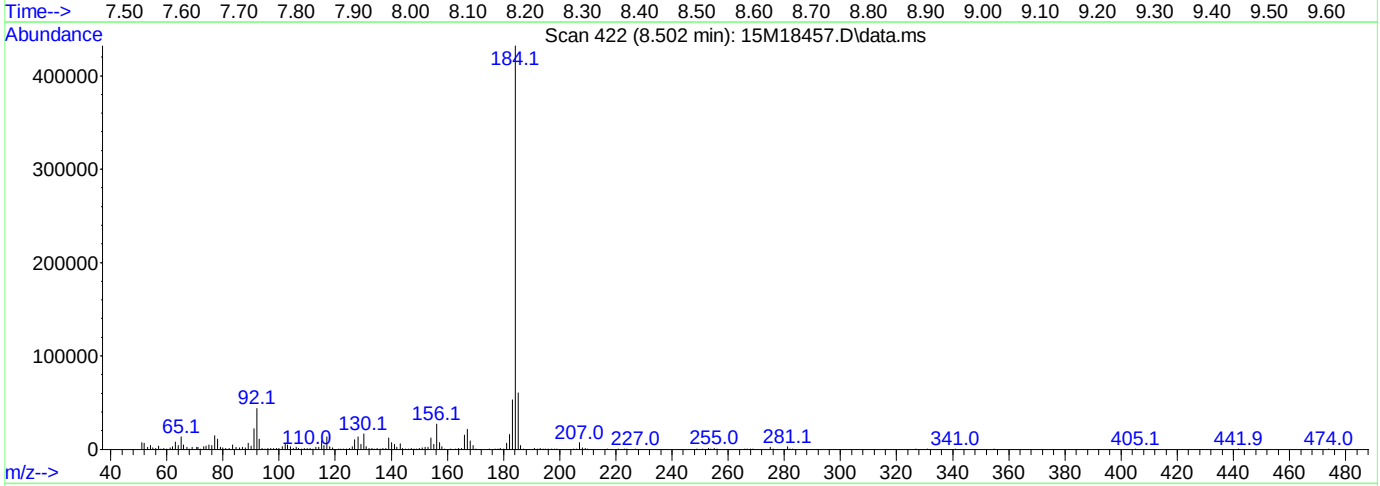

(2) Benzidine

8.502min (+ 0.008) 0.00 ug/ml

response 532770

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

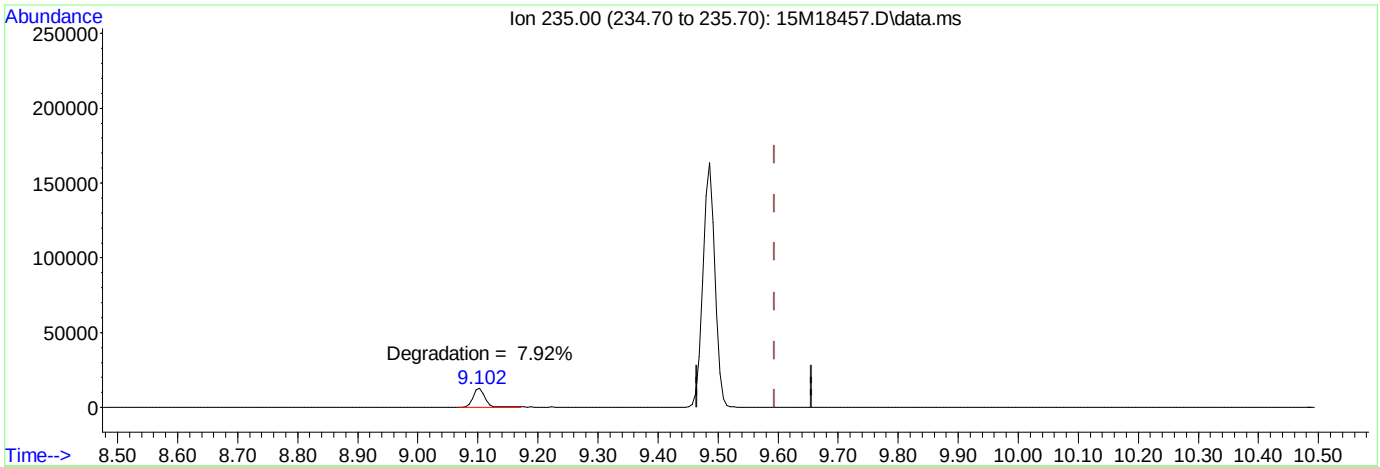

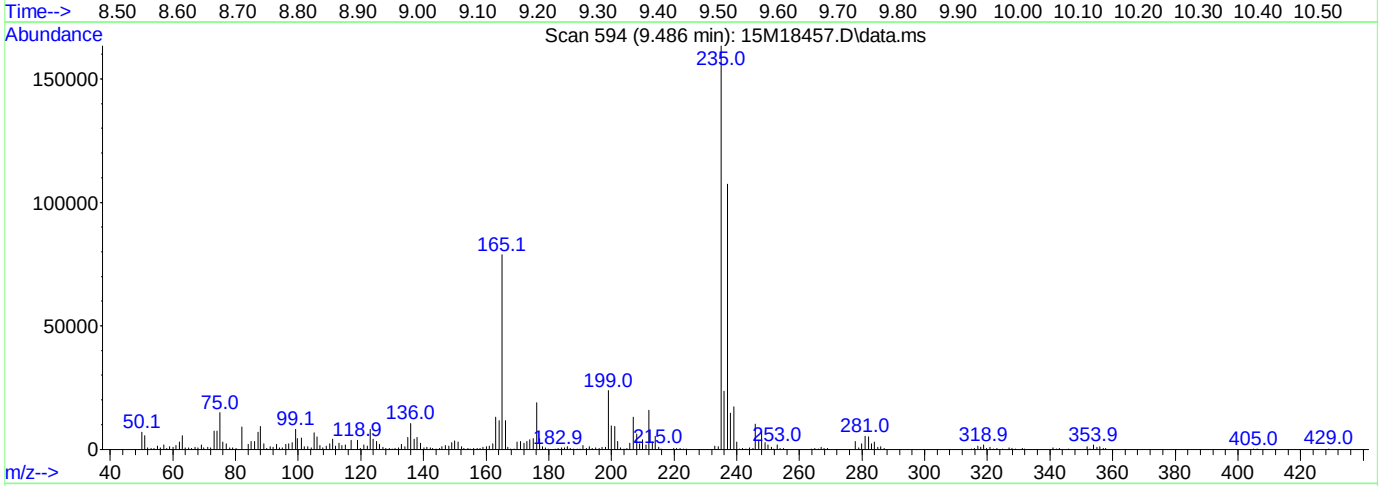

TIC: 15M18457.D\data.ms

(3) DDT

9.486min (-0.108) 0.00 ug/ml

response 180187

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18673.D
Acq On : 30 Jun 2016 14:24
Operator : MES
Sample : WG574781-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

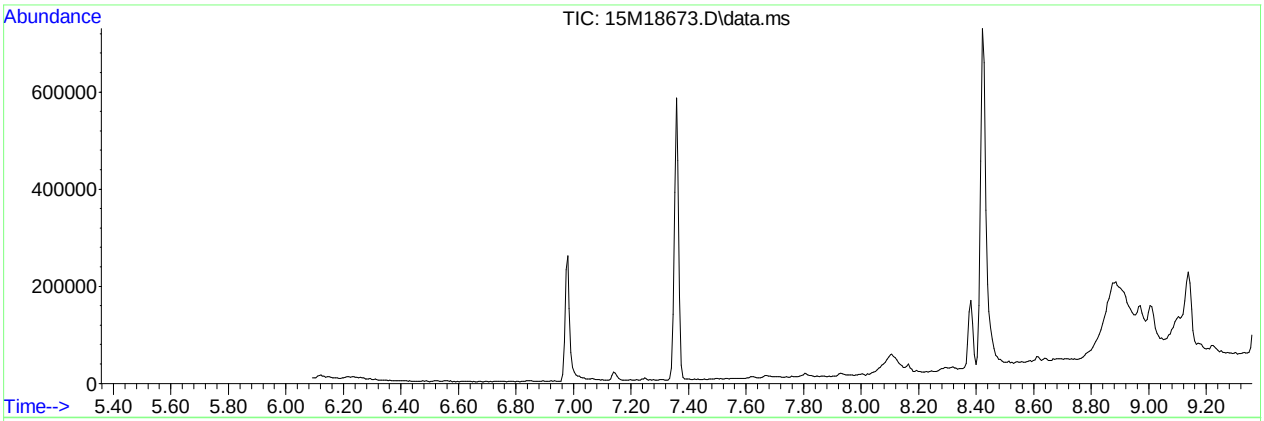

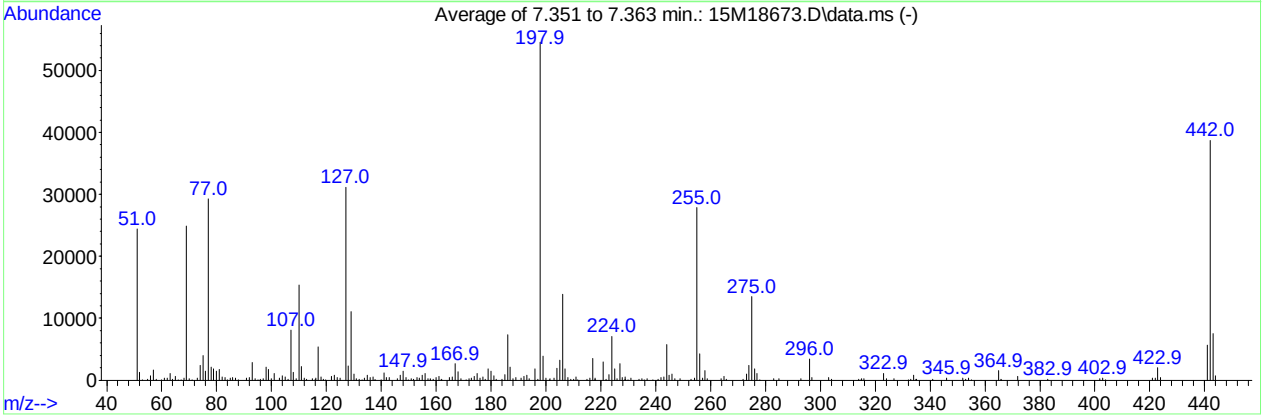

AutoFind: Scans 221, 222, 223; Background Corrected with Scan 215

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	44.6	24370	PASS
68	69	0.00	2	1.4	352	PASS
69	198	0.00	100	45.7	24921	PASS
70	69	0.00	2	1.0	239	PASS
127	198	40	60	57.0	31104	PASS
197	198	0.00	1	0.3	159	PASS
198	198	100	100	100.0	54589	PASS
199	198	5	9	7.0	3838	PASS
275	198	10	30	24.8	13523	PASS
365	198	1	100	2.8	1520	PASS
441	443	0.01	100	75.2	5686	PASS
442	198	40	100	70.8	38669	PASS
443	442	17	23	19.5	7559	PASS

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18673.D
Acq On : 30 Jun 2016 14:24
Operator : MES
Sample : WG574781-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 30 14:35:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

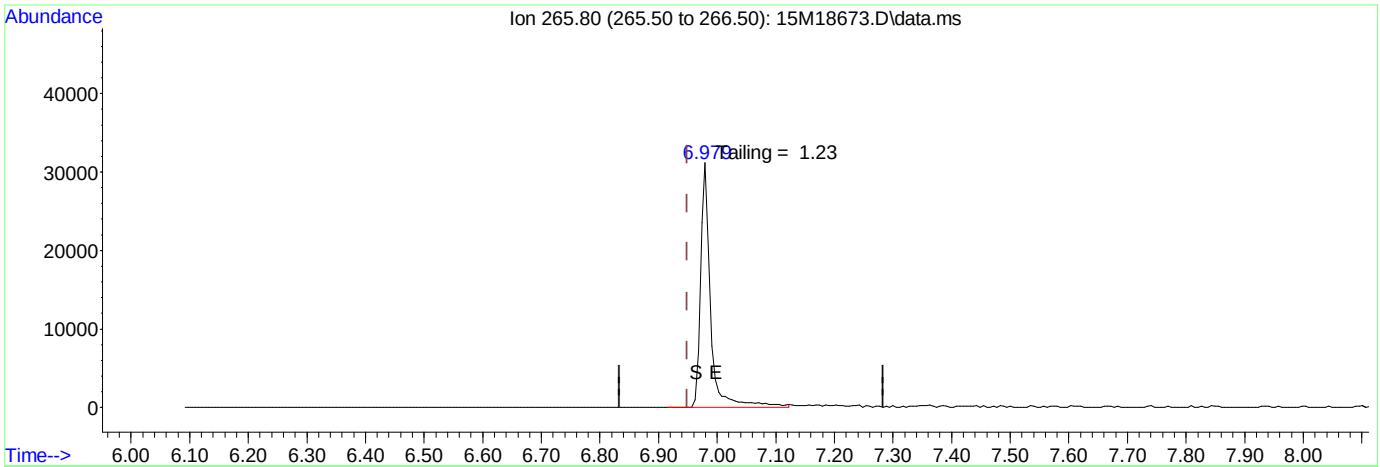

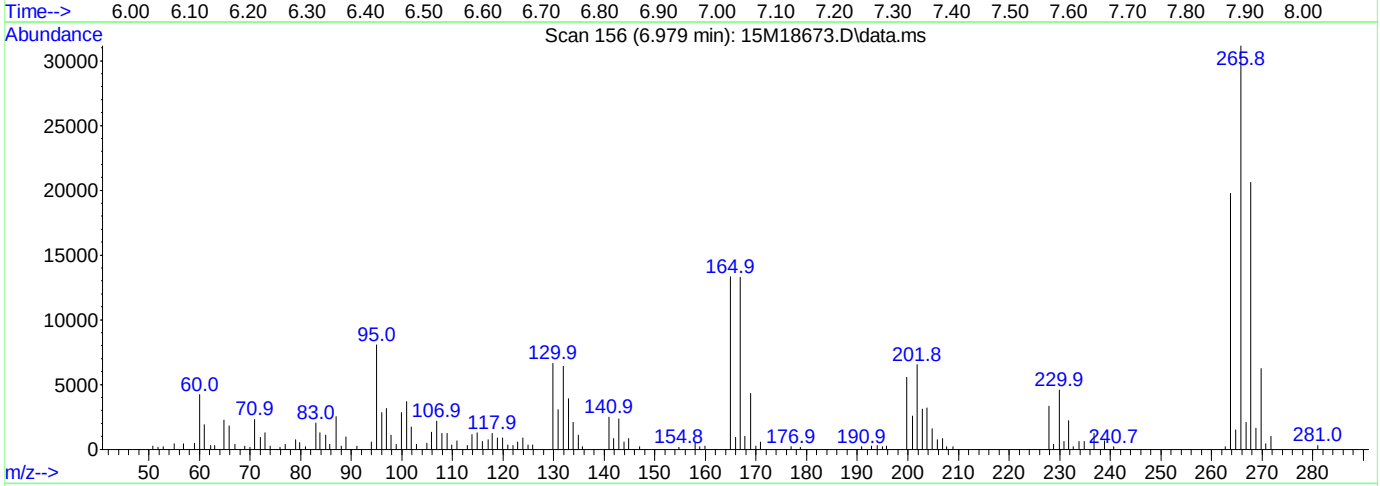

TIC: 15M18673.D\data.ms

(1) Pentachlorophenol

6.979min (+ 0.030) 0.00 ug/ml

response 37511

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18673.D
Acq On : 30 Jun 2016 14:24
Operator : MES
Sample : WG574781-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 30 14:35:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

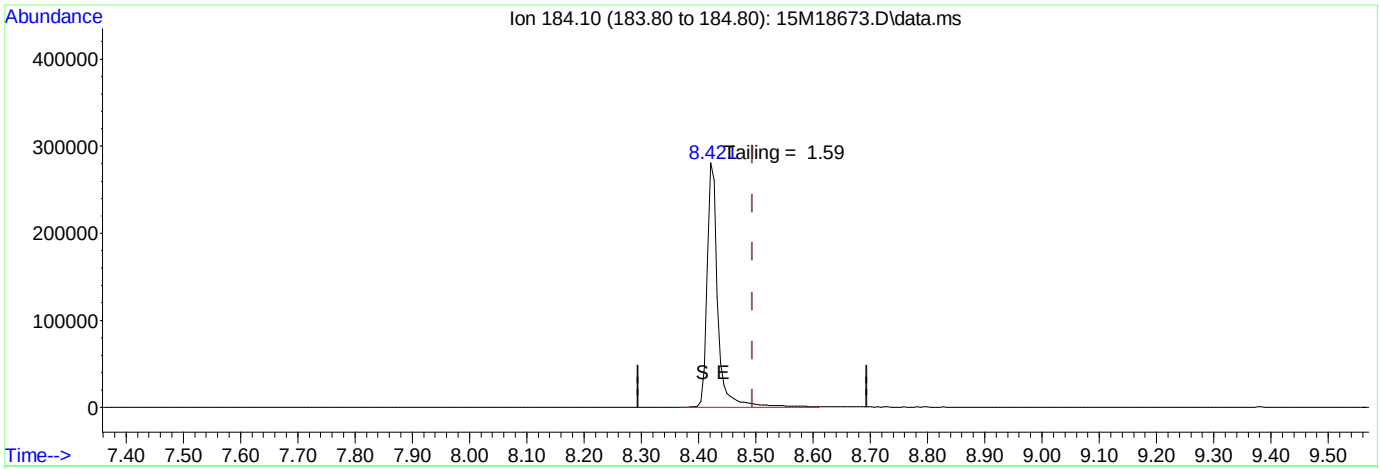

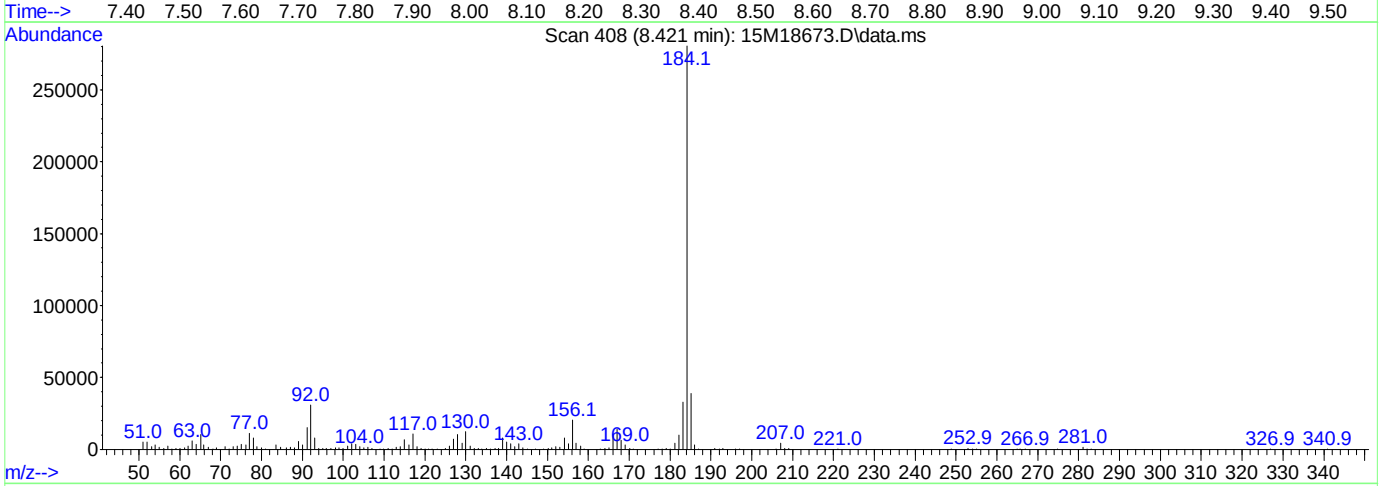

TIC: 15M18673.D\data.ms

(2) Benzidine

8.421min (-0.073) 0.00 ug/ml

response 363129

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18673.D
Acq On : 30 Jun 2016 14:24
Operator : MES
Sample : WG574781-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 30 14:35:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

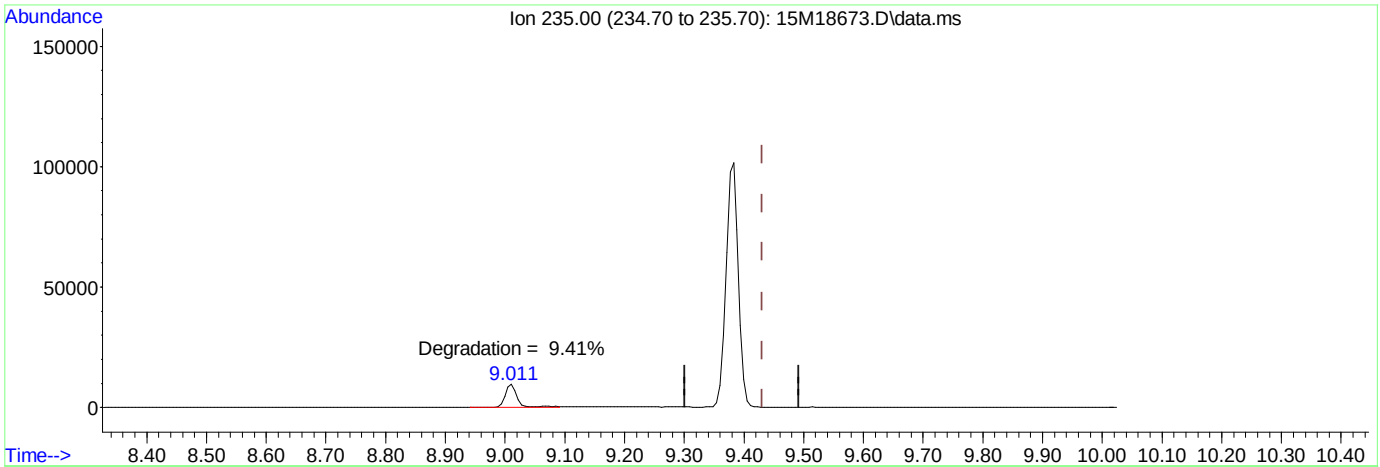

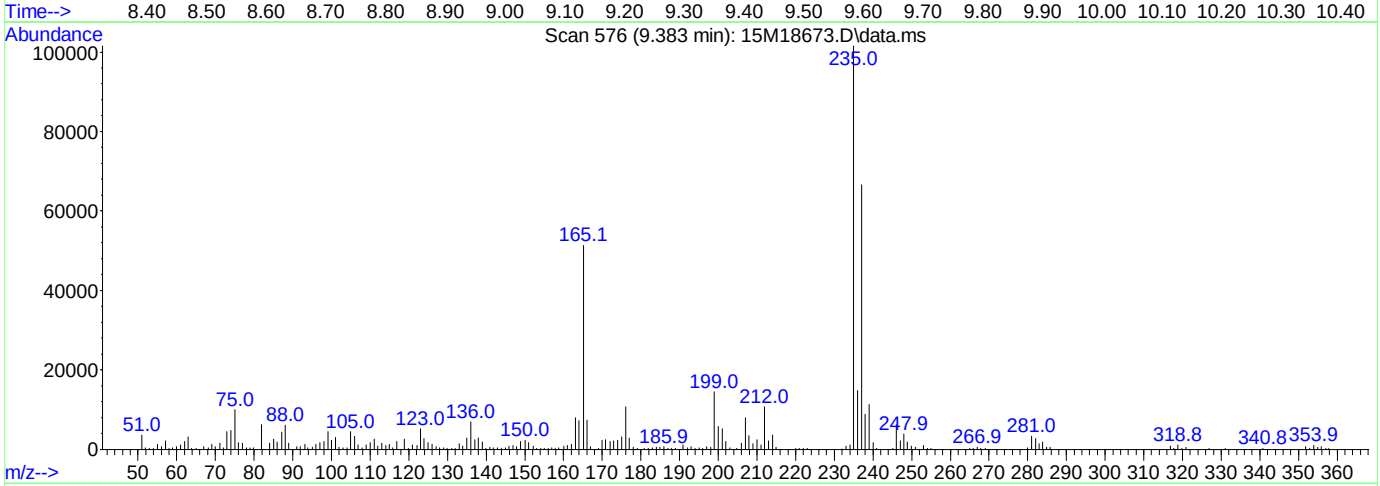

(3) DDT

9.383min (-0.047) 0.00 ug/ml

response 147438

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18716.D
Acq On : 5 Jul 2016 14:33
Operator : MES
Sample : WG575159-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

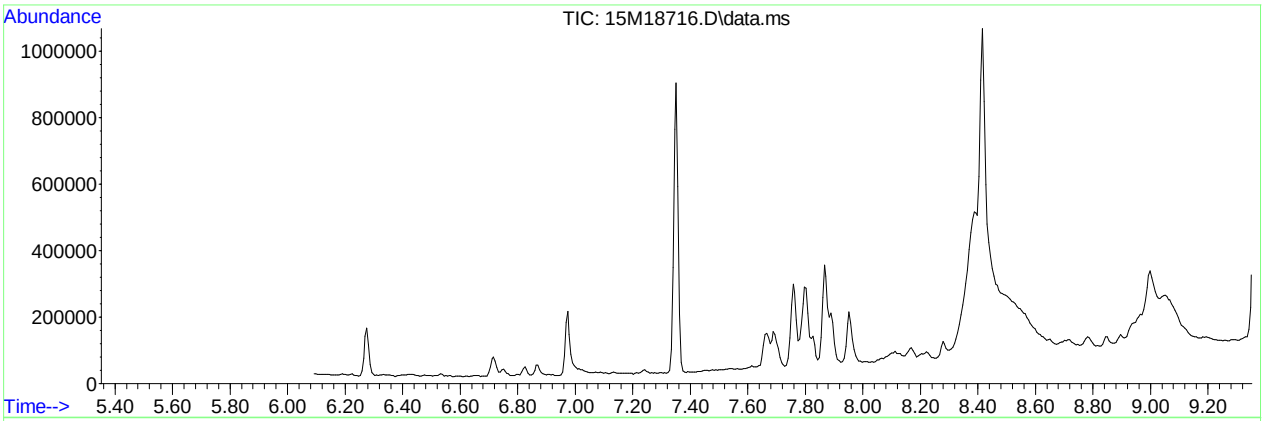

AutoFind: Scans 220, 221, 222; Background Corrected with Scan 214

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	46.2	37745	PASS
68	69	0.00	2	1.9	734	PASS
69	198	0.00	100	46.2	37667	PASS
70	69	0.00	2	0.3	127	PASS
127	198	40	60	57.5	46941	PASS
197	198	0.00	1	0.4	310	PASS
198	198	100	100	100.0	81613	PASS
199	198	5	9	7.6	6162	PASS
275	198	10	30	24.6	20072	PASS
365	198	1	100	2.9	2392	PASS
441	443	0.01	100	70.8	8479	PASS
442	198	40	100	73.3	59805	PASS
443	442	17	23	20.0	11980	PASS

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18716.D
Acq On : 5 Jul 2016 14:33
Operator : MES
Sample : WG575159-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 05 14:45:10 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

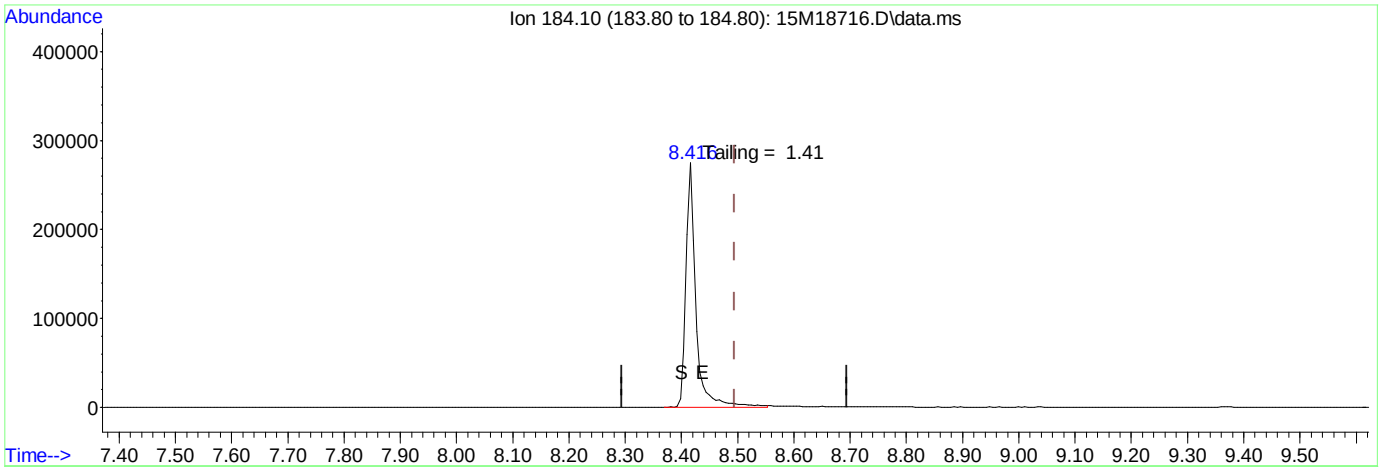

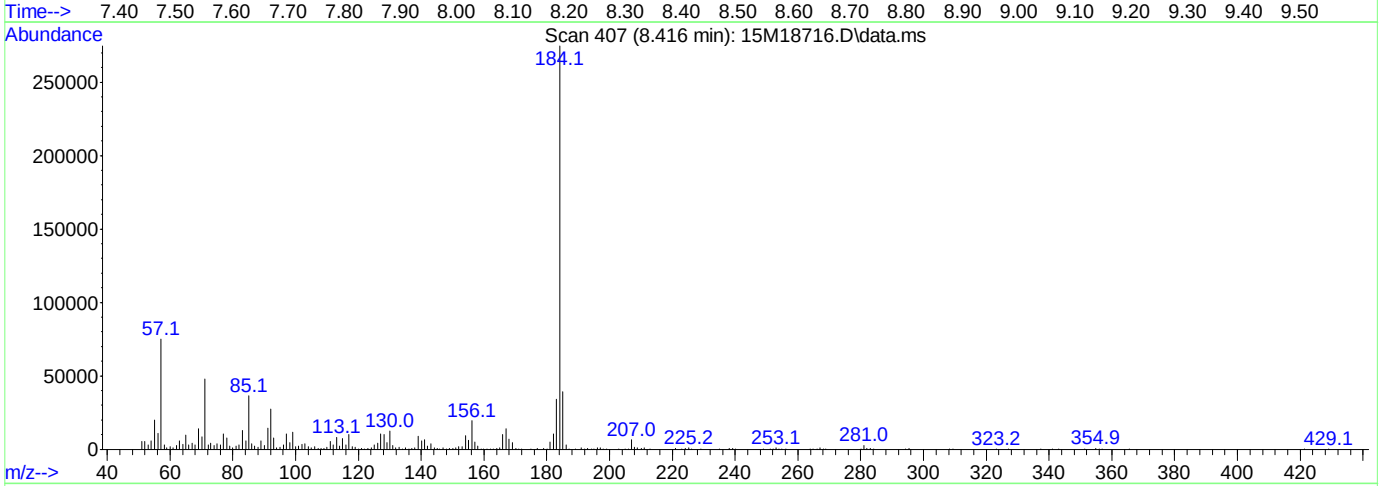

TIC: 15M18716.D\data.ms

(2) Benzidine

8.416min (-0.078) 0.00 ug/ml

response 340801

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18716.D
Acq On : 5 Jul 2016 14:33
Operator : MES
Sample : WG575159-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 05 14:45:10 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

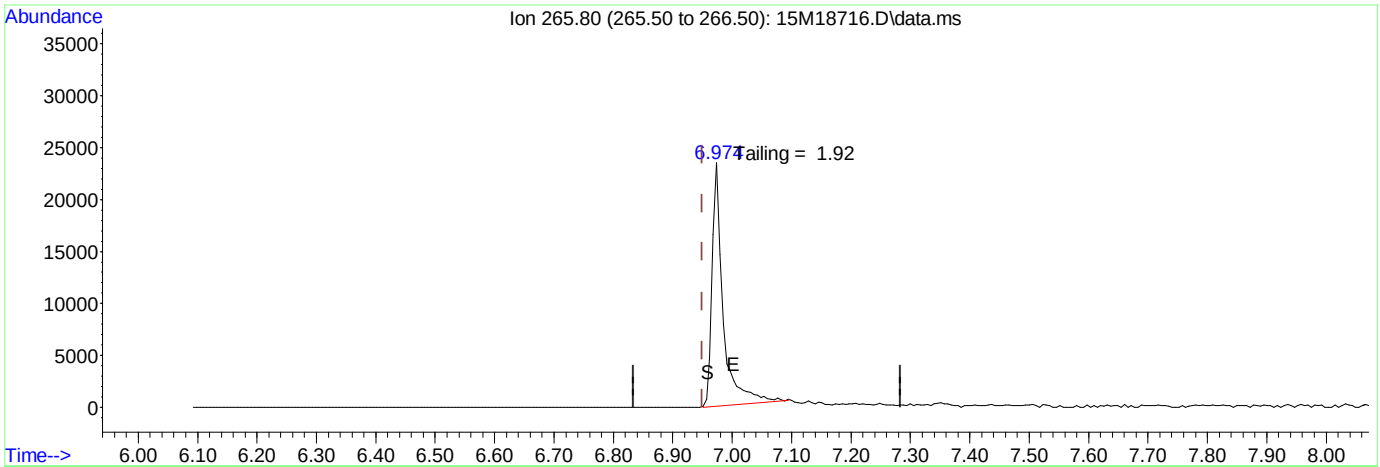

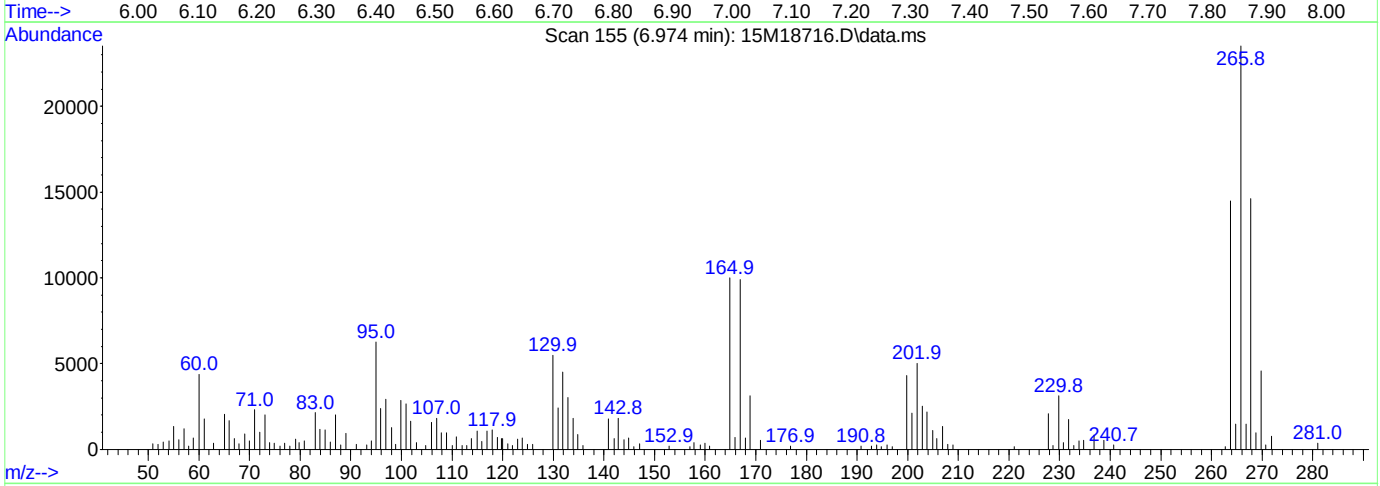

(1) Pentachlorophenol

6.974min (+ 0.025) 0.00 ug/ml

response 32364

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18716.D
Acq On : 5 Jul 2016 14:33
Operator : MES
Sample : WG575159-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 05 14:45:10 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

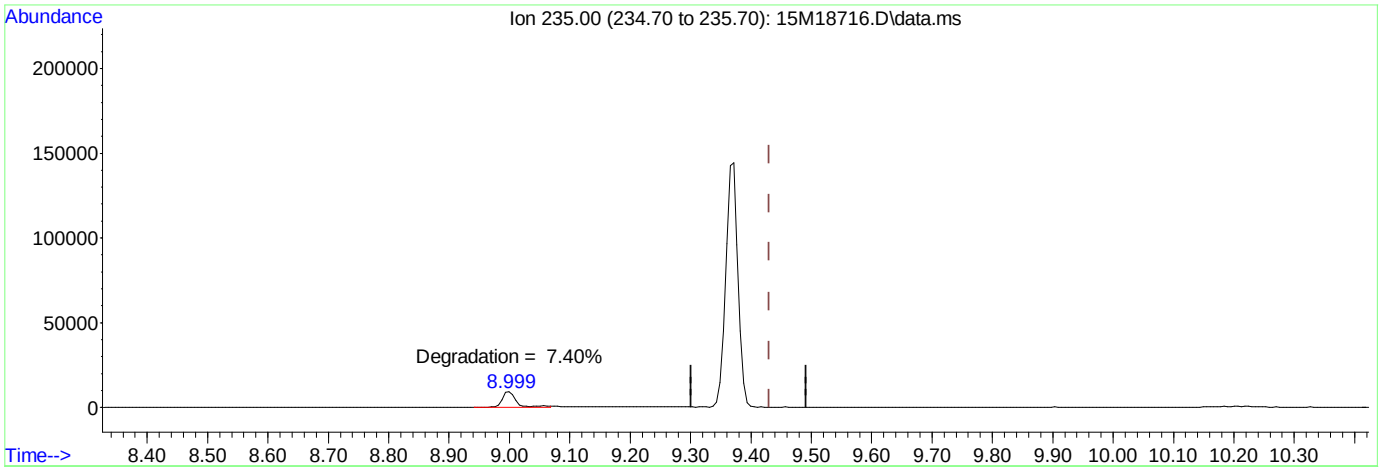

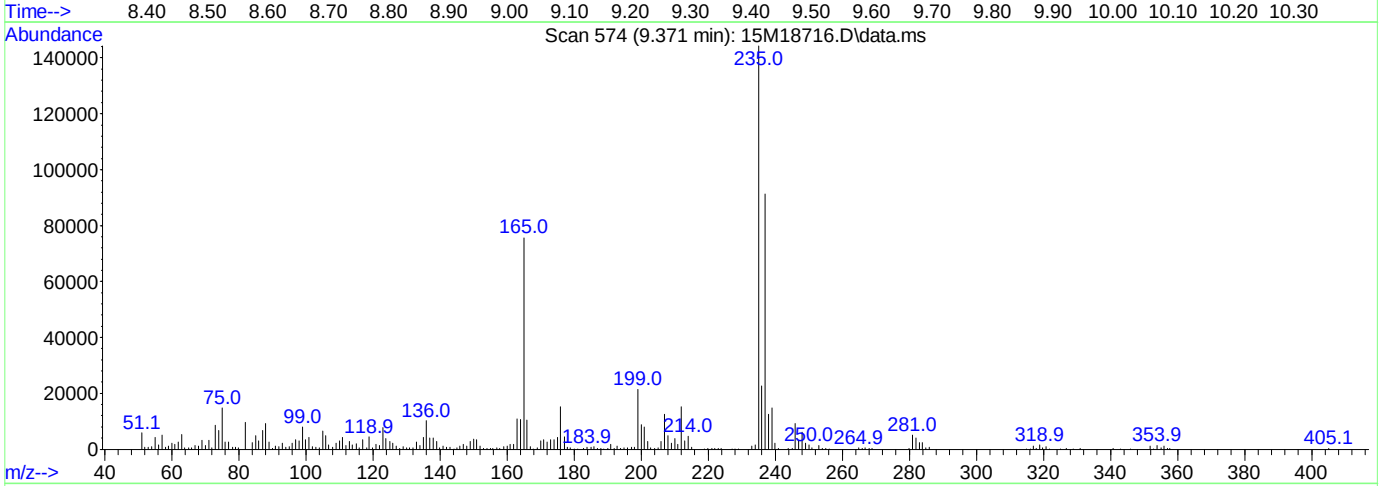

TIC: 15M18716.D\data.ms

(3) DDT

9.371min (-0.059) 0.00 ug/ml

response 208755

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\070616\
Data File : 15M18757.D
Acq On : 6 Jul 2016 10:43
Operator : MES
Sample : WG575269-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

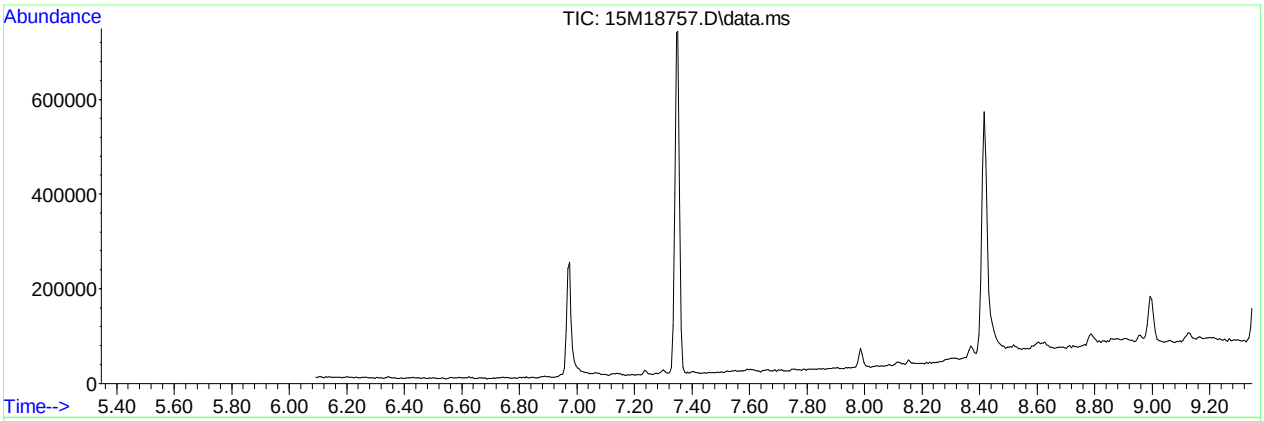

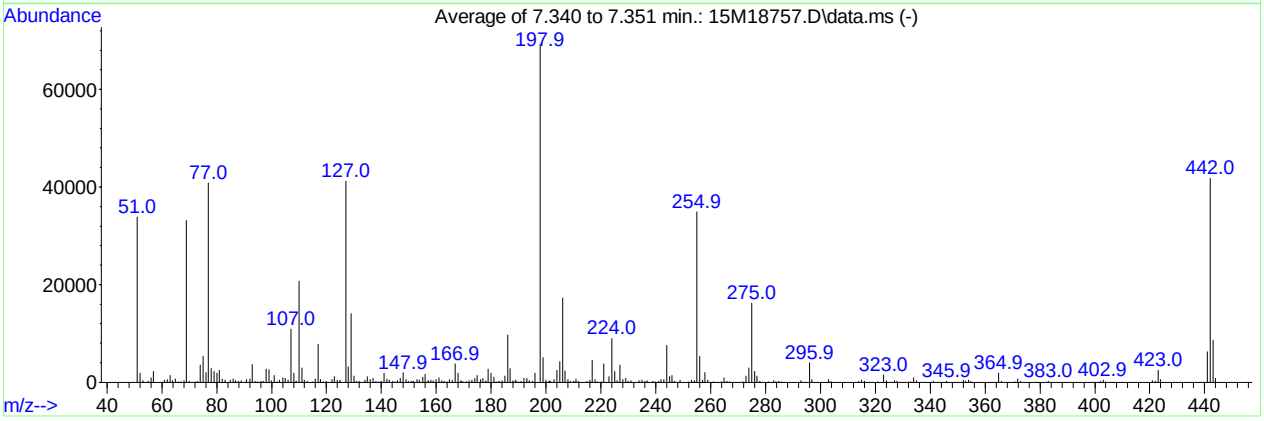

AutoFind: Scans 219, 220, 221; Background Corrected with Scan 214

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	48.8	33792	PASS
68	69	0.00	2	0.9	307	PASS
69	198	0.00	100	47.8	33107	PASS
70	69	0.00	2	0.4	129	PASS
127	198	40	60	59.4	41184	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	69301	PASS
199	198	5	9	7.2	4997	PASS
275	198	10	30	23.4	16187	PASS
365	198	1	100	2.7	1882	PASS
441	443	0.01	100	72.2	6174	PASS
442	198	40	100	60.3	41784	PASS
443	442	17	23	20.5	8552	PASS

Data Path : C:\msdchem\1\data\070616\
Data File : 15M18757.D
Acq On : 6 Jul 2016 10:43
Operator : MES
Sample : WG575269-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 06 10:55:17 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

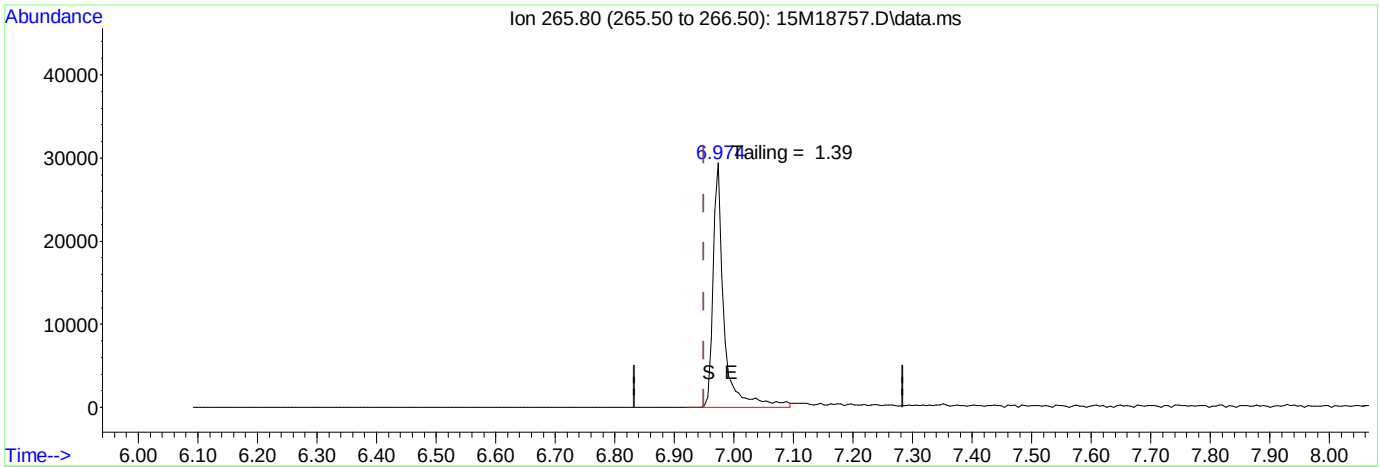

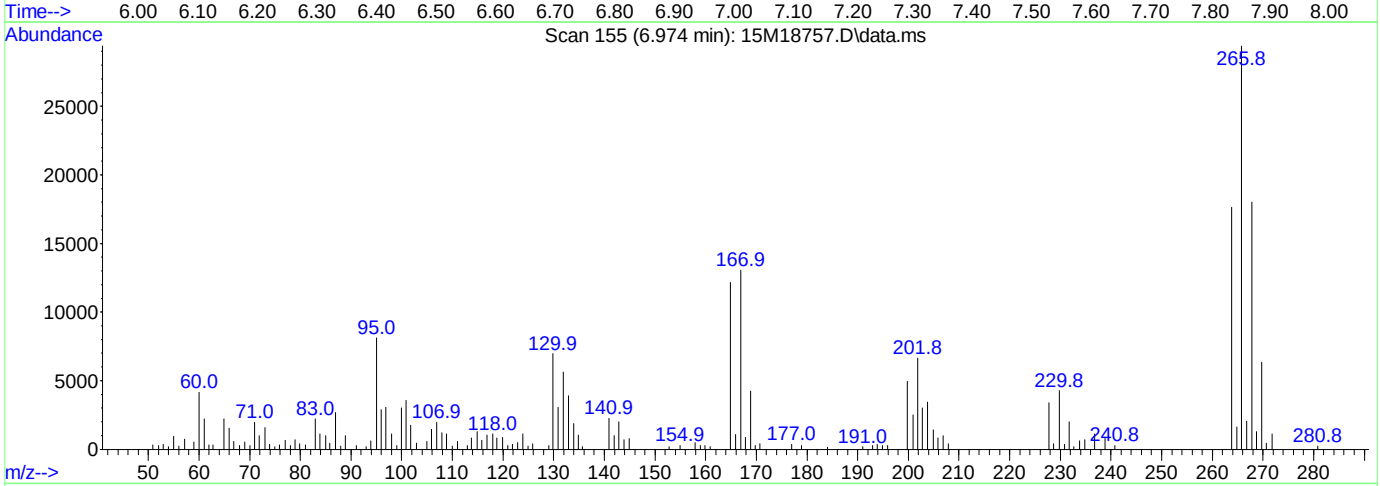

TIC: 15M18757.D\data.ms

(1) Pentachlorophenol

6.974min (+ 0.025) 0.00 ug/ml

response 36263

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\070616\
Data File : 15M18757.D
Acq On : 6 Jul 2016 10:43
Operator : MES
Sample : WG575269-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 06 10:55:17 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

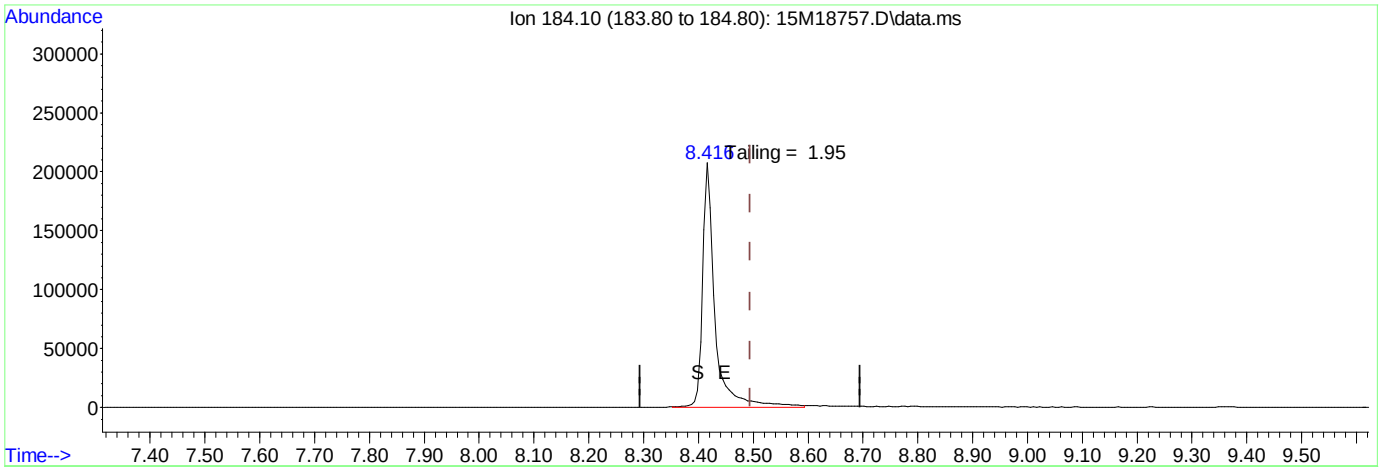

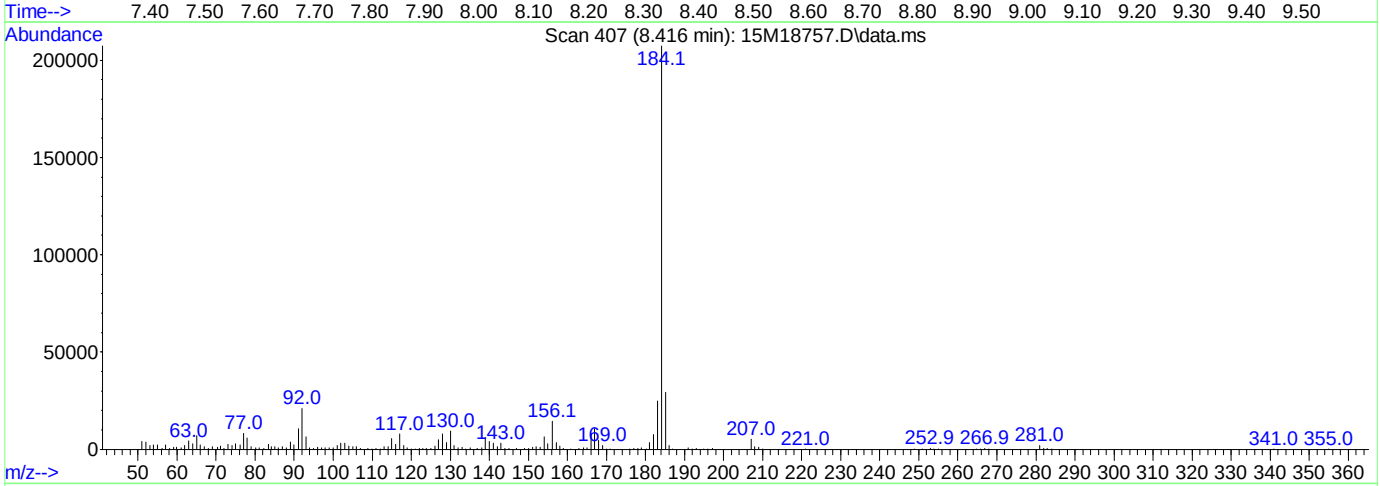

TIC: 15M18757.D\data.ms

(2) Benzidine

8.416min (-0.078) 0.00 ug/ml

response 331099

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\070616\
Data File : 15M18757.D
Acq On : 6 Jul 2016 10:43
Operator : MES
Sample : WG575269-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 06 10:55:17 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

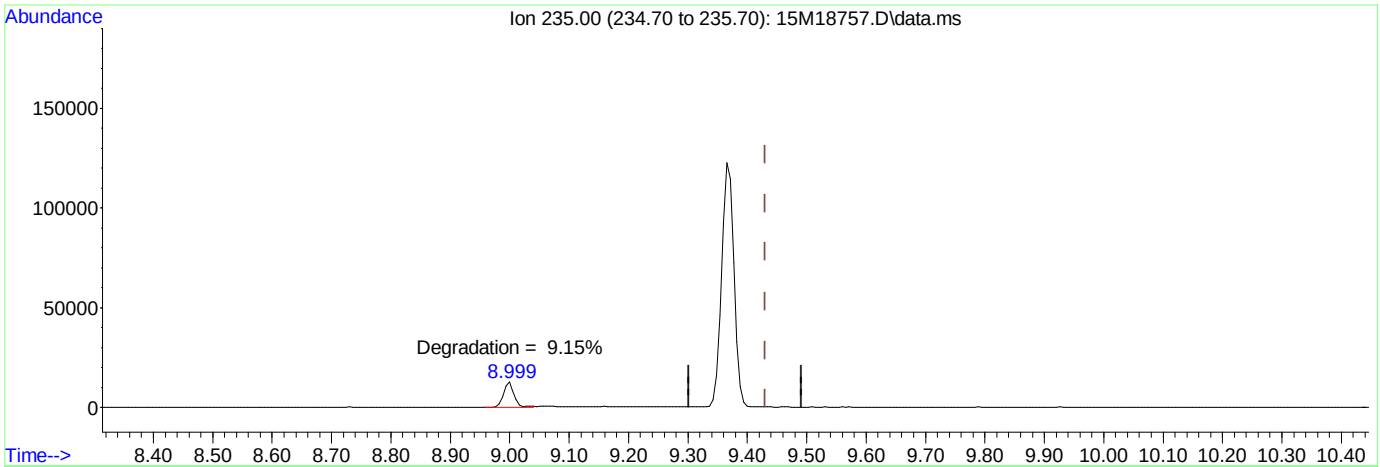

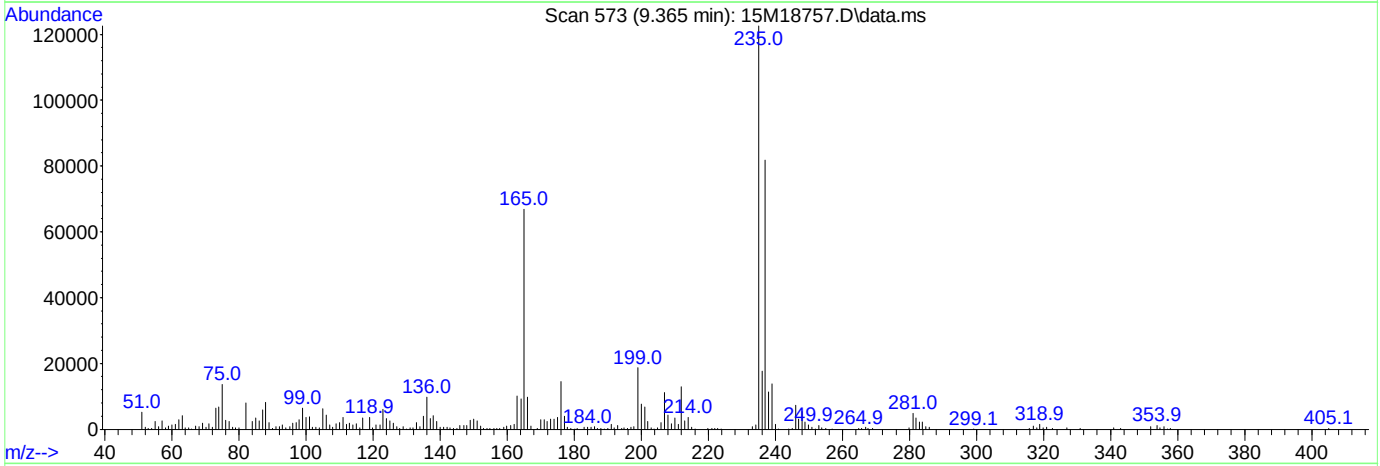

TIC: 15M18757.D\data.ms

(3) DDT

9.365min (-0.065) 0.00 ug/ml

response 178077

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18678.D
Acq On : 30 Jun 2016 16:12
Operator : MES
Sample : WG574286-01 BLANK 6/27
Misc : 1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 30 16:57:35 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.870	152	28516	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.778	96	25448	2.1688	ug/L	0.00
Spiked Amount 5.000			Recovery = 43.40%			
4) Nitrobenzene-d5	7.367	82	1047426	34.7736	ug/L	0.00
Spiked Amount 5.000			Recovery = 695.40%			
5) 2-Fluorobiphenyl	8.856	172	1915171	25.1894	ug/L	0.00
Spiked Amount 5.000			Recovery = 503.80%			
6) p-Terphenyl-d14	12.137	244	2891842	39.4601	ug/L	0.05
Spiked Amount 5.000			Recovery = 789.20%			

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18678.D
Acq On : 30 Jun 2016 16:12
Operator : MES
Sample : WG574286-01 BLANK 6/27
Misc : 1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 30 16:57:35 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

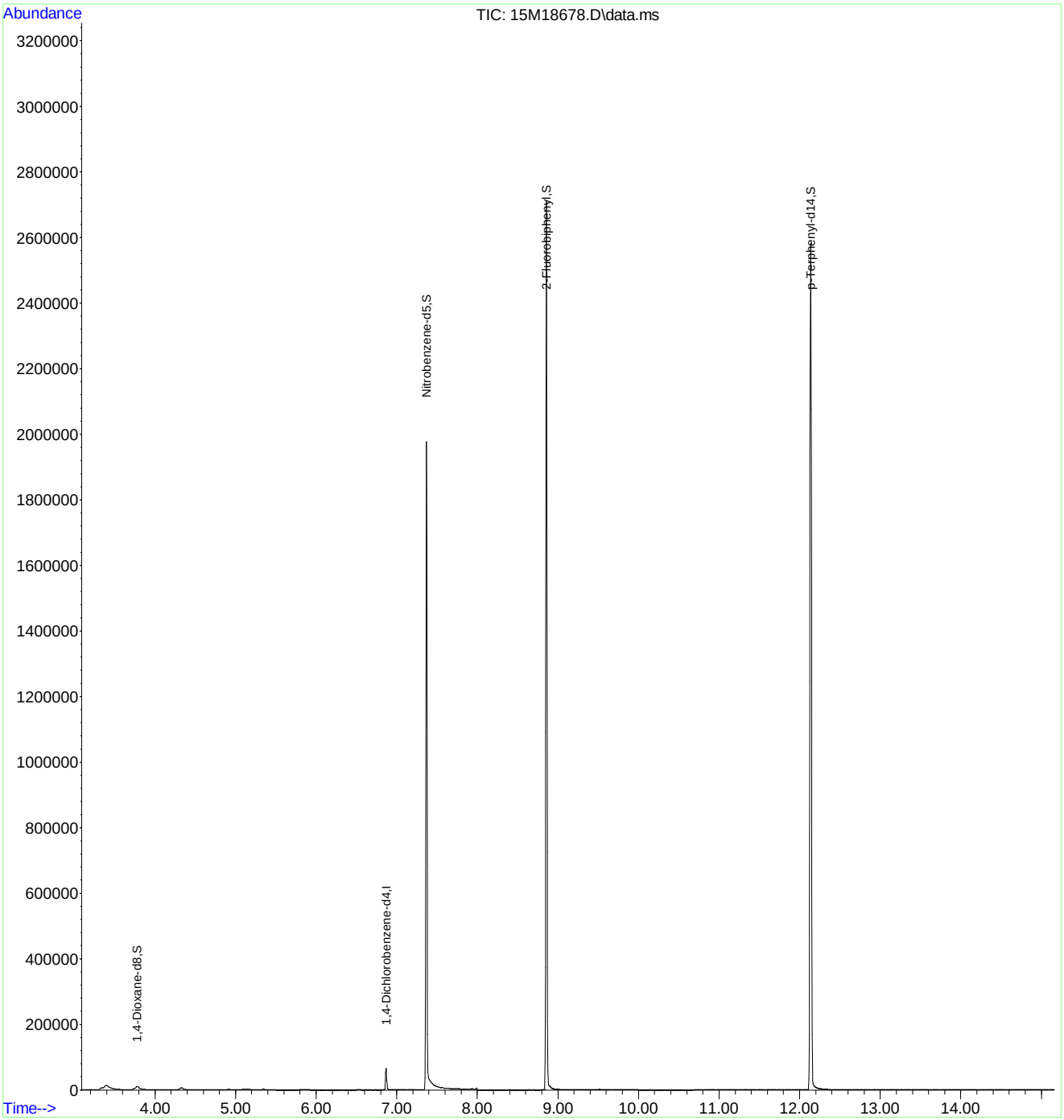

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18679.D
Acq On : 30 Jun 2016 16:34
Operator : MES
Sample : WG574286-02 LCS 6/27
Misc : 1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 30 16:57:20 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.870	152	22815	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.770	96	22955	2.4451	ug/L	-0.01
Spiked Amount 5.000			Recovery	=	49.00%	
4) Nitrobenzene-d5	7.372	82	1584	0.0657	ug/L	0.00
Spiked Amount 5.000			Recovery	=	1.40%	
5) 2-Fluorobiphenyl	8.860	172	964	0.0158	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.40%	
6) p-Terphenyl-d14	12.107	244	620	0.0106	ug/L	0.02
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.806	58	19389	2.7776	ug/L	67

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\063016\
Data File : 15M18679.D
Acq On : 30 Jun 2016 16:34
Operator : MES
Sample : WG574286-02 LCS 6/27
Misc : 1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 30 16:57:20 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

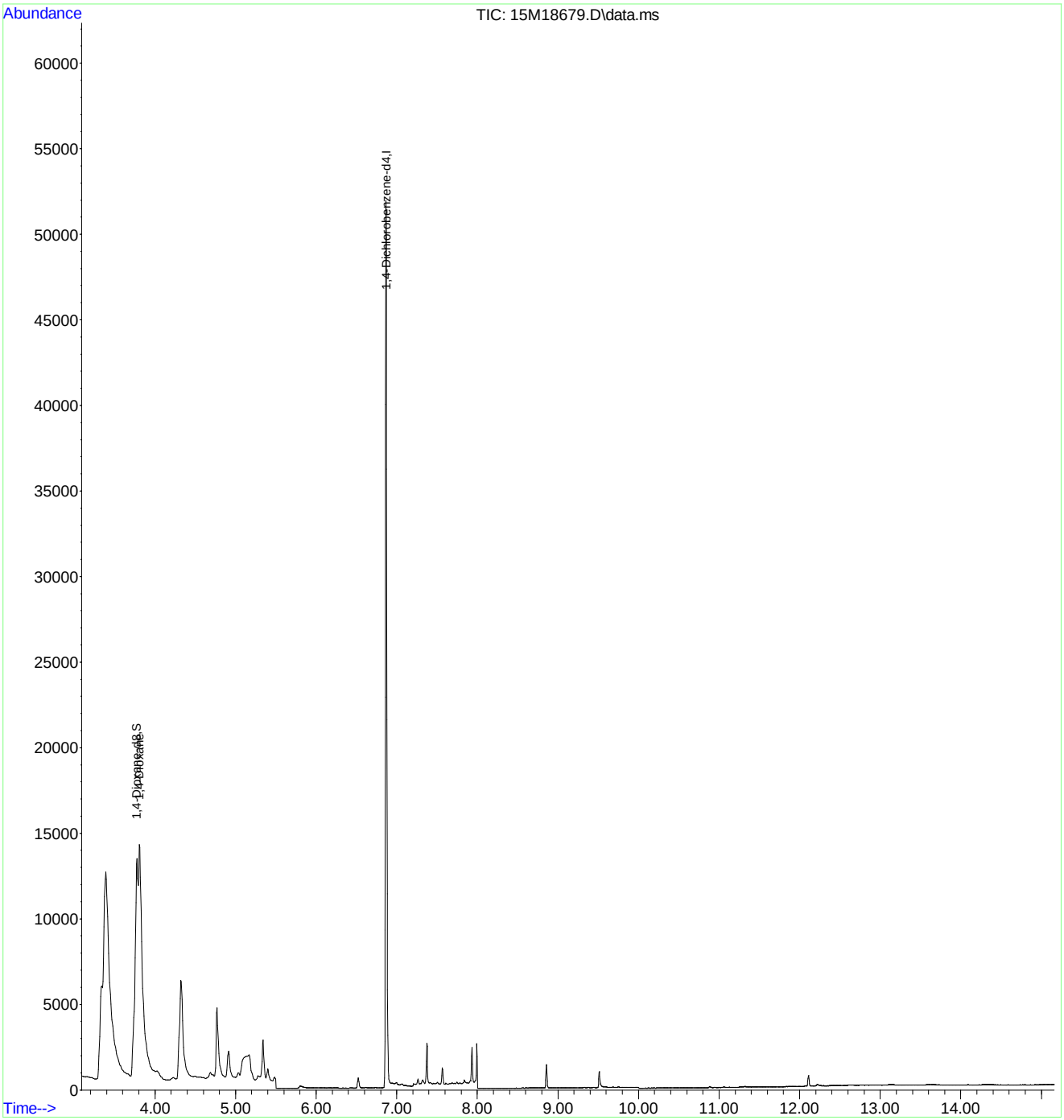

2.2 General Chromatography Data

2.2.2 6850 LC/MS Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061452-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW12SW-062416	**Prep Method:**	6850	**Prep Date:**	07/01/2016 13:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575005	**Analyst:**	JWR	**Run Date:**	07/01/2016 22:52
Collect Date:	06/24/2016 07:50	**Dilution:**	1	**File ID:**	1LM.LM35590
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3.92		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16061452-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW7-062416	**Prep Method:**	6850	**Prep Date:**	07/01/2016 13:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575005	**Analyst:**	JWR	**Run Date:**	07/01/2016 23:11
Collect Date:	06/24/2016 09:55	**Dilution:**	10000	**File ID:**	1LM.LM35591
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	22200		4000	2000	1000

2.2.2.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1415 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG575005-01 MCT	10,020.	
-02 Blank	0.31	
-03 LCS	0.44	
-04 LCS2	0.41	
L16070001-01 LOD	0.38	
L16070003-01 LOQ	0.43	
-09 LOQ	0.45	
L16061289-01	6,210.	
-02	147.9	
-03	105.2	
-05	1,381.	
L16061290-01	594.	
-02	1,157.	
-04	219.	
-05	172.8	
-06	826.	
L16061452-01	1,890.	
-03	1,179.	
L16061453-01	2,610.	
-02	1,188.	
-03	1,101.	
L16061559-01	3,040.	
-02	3,140.	
L16061648-01	669.	

Analyst: John Richards

Date/Time: 07/01/16 19:50

DCN#119454

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

Page: 1 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

Page: 2 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 070116_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG575005 (waters)

Internal STD: STD18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments: Samples L16061289(-01,-02), L16061290-05 and L16061452-03 were analyzed at dilutions based on their historical results.
Samples L16061290-04 and L16061453-01 had inconsistent historical results. These samples were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35568	WG575015-01 CCB	1	1		07/01/16 15:55
2	1LM.LM35569	WG575015-02 CCV (1.0ug/L)	1	1	STD75510	07/01/16 16:14
3	1LM.LM35570	WG575005-05 MRL (0.2ug/L)	1	1	STD75510	07/01/16 16:33
4	1LM.LM35571	WG575005-01 MCT (0.2ug/L)	1	1	STD75512	07/01/16 16:52
5	1LM.LM35572	WG575005-02 BLANK	1	1		07/01/16 17:11
6	1LM.LM35573	WG575005-03 LCS (0.2ug/L)	1	1	STD75512	07/01/16 17:30
7	1LM.LM35574	WG575005-04 LCS2 (0.2ug/L)	1	1	STD75512	07/01/16 17:49
8	1LM.LM35575	L16070001-01 LOD (0.1ug/L)	1	1	STD75512	07/01/16 18:08
9	1LM.LM35576	L16070003-01 LOQ (0.2ug/L)	1	1	STD75512	07/01/16 18:27
10	1LM.LM35577	L16070003-09 LOQ (0.2ug/L)	1	1	STD75512	07/01/16 18:46
11	1LM.LM35578	L16061289-01 (10,000x)	1	10000		07/01/16 19:05
12	1LM.LM35579	L16061289-02 (100x)	1	100		07/01/16 19:24
13	1LM.LM35580	L16061289-03	1	1		07/01/16 19:43
14	1LM.LM35581	WG575015-03 CCV (1.0ug/L)	1	1	STD75510	07/01/16 20:02
15	1LM.LM35582	WG575005-06 MRL (0.2ug/L)	1	1	STD75510	07/01/16 20:21
16	1LM.LM35583	WG575015-04 CCB	1	1		07/01/16 20:39
17	1LM.LM35584	L16061289-05	1	1		07/01/16 20:58
18	1LM.LM35585	L16061290-01	1	1		07/01/16 21:17
19	1LM.LM35586	L16061290-02	1	1		07/01/16 21:36
20	1LM.LM35587	L16061290-04 (500x)	1	500		07/01/16 21:55
21	1LM.LM35588	L16061290-05 (10,000x) (NR)	1	10000		07/01/16 22:14
22	1LM.LM35589	L16061290-06	1	1		07/01/16 22:33
23	1LM.LM35590	L16061452-01	1	1		07/01/16 22:52
24	1LM.LM35591	L16061452-03 (10,000x)	1	10000		07/01/16 23:11
25	1LM.LM35592	L16061453-01 (10x)	1	10		07/01/16 23:30
26	1LM.LM35593	L16061453-02	1	1		07/01/16 23:49
27	1LM.LM35594	WG575015-05 CCV (1.0ug/L)	1	1	STD75510	07/02/16 00:08
28	1LM.LM35595	WG575005-07 MRL (0.2ug/L)	1	1	STD75510	07/02/16 00:27
29	1LM.LM35596	WG575015-06 CCB	1	1		07/02/16 00:46
30	1LM.LM35597	L16061453-03	1	1		07/02/16 01:05
31	1LM.LM35598	L16061559-01	1	1		07/02/16 01:23
32	1LM.LM35599	L16061559-02	1	1		07/02/16 01:42

Page: 1 Approved: 06-JUL-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 070116_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG575005 (waters)

Internal STD: STD18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 NA

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
33	1LM.LM35600	L16061648-01	1	1		07/02/16 02:01
34	1LM.LM35601	WG575015-07 CCV (1.0ug/L)	1	1	STD75510	07/02/16 02:20
35	1LM.LM35602	WG575005-08 MRL (0.2ug/L)	1	1	STD75510	07/02/16 02:39
36	1LM.LM35603	WG575015-08 CCB	1	1		07/02/16 02:58

Comments

Seq.	Rerun	Dil.	Reason	Analytes
21	X	1000	Analyzed too dilute	
	L16061290-05 (10,000x) (NR) : This sample did not conform to its historical results and was analyzed too dilute at 10,000x dilution. This sample will be ungrouped from this analytical batch and reanalyzed at a 1000x dilution on another day.			

Page: 2 Approved: 06-JUL-16

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
04-MAY-2016
John Richards

Secondary Reviewer:
05-MAY-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 01-JUL-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 76123
Analytical Workgroups: L16061289,1290,1452,1453,1559,1648 L16070001(LOD), 0003(LOQ)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 06-JUL-2016 John Richards

Secondary Reviewer: 06-JUL-2016 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-06-2016 14:48:43

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG575005

Login Number: L16061452

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW12SW-062416	01	06/24/16					07/01/2016	7.2	28		07/01/16	.4	28	
MW7-062416	03	06/24/16					07/01/2016	7.1	28		07/01/16	.4	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4841043
Report generated 07/07/2016 09:02

METHOD BLANK SUMMARY

Login Number: L16061452
Blank File ID: 1LM.LM35572
Prep Date: 07/01/16 13:30
Analyzed Date: 07/01/16 17:11
Analyst: JWR

Work Group: WG575005
Blank Sample ID: WG575005-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG575005-05	1LM.LM35570	07/01/16 16:33	01
MCT	WG575005-01	1LM.LM35571	07/01/16 16:52	01
LCS	WG575005-03	1LM.LM35573	07/01/16 17:30	01
LCS2	WG575005-04	1LM.LM35574	07/01/16 17:49	01
QCMRL	WG575005-06	1LM.LM35582	07/01/16 20:21	01
18CPTMW12SW-062416	L16061452-01	1LM.LM35590	07/01/16 22:52	01
MW7-062416	L16061452-03	1LM.LM35591	07/01/16 23:11	DL01
QCMRL	WG575005-07	1LM.LM35595	07/02/16 00:27	01
QCMRL	WG575005-08	1LM.LM35602	07/02/16 02:39	01

Report Name: BLANK_SUMMARY
PDF File ID: 4841044
Report generated 07/07/2016 09:02

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061452 Prep Date: 07/01/16 13:30 Sample ID: WG575005-02
Instrument ID: LCMS1 Run Date: 07/01/16 17:11 Prep Method: 6850
File ID: 1LM.LM35572 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575005 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4841045
07-JUL-2016 09:02

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061452 Analyst: JWR Prep Method: 6850
Instrument ID: LCMS1 Matrix: Water Method: 6850
Workgroup (AAB#): WG575005 Units: ug/L
QC Key: DOD4 Lot #: STD75512

Sample ID: WG575005-03 LCS File ID: 1LM.LM35573 Run Date: 07/01/2016 17:30
Sample ID: WG575005-04 LCS2 File ID: 1LM.LM35574 Run Date: 07/01/2016 17:49

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Perchlorate	0.200	0.201	101	0.200	0.211	106	4.85	80 - 120	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4841046
Report generated: 07/07/2016 09:02

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061452
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4841503
Report generated 07/07/2016 09:03

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061452

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4841503
Report generated 07/07/2016 09:03

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061452

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4841503
Report generated 07/07/2016 09:03

INITIAL CALIBRATION DATA

Login Number: L16061452
Analytical Method: 6850
Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008
PDF File ID: 4841503
Report generated 07/07/2016 09:03

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061452 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4841504
Report generated 07/07/2016 09:03

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061452
Run Date: 07/01/2016
Sample ID: WG575015-01
Instrument ID: LCMS1
Run Time: 15:55
Method: 6850
File ID: 1LM.LM35568
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4841049
Report generated 07/07/2016 09:03

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061452
Run Date: 07/01/2016
Sample ID: WG575015-04
Instrument ID: LCMS1
Run Time: 20:39
Method: 6850
File ID: 1LM.LM35583
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4841049
Report generated 07/07/2016 09:03

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061452
Run Date: 07/02/2016
Sample ID: WG575015-06
Instrument ID: LCMS1
Run Time: 00:46
Method: 6850
File ID: 1LM.LM35596
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4841049
Report generated 07/07/2016 09:03

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061452
Run Date: 07/02/2016
Sample ID: WG575015-08
Instrument ID: LCMS1
Run Time: 02:58
Method: 6850
File ID: 1LM.LM35603
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4841049
Report generated 07/07/2016 09:03

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 07/01/2016
Sample ID: WG575015-02
Instrument ID: LCMS1
Run Time: 16:14
Method: 6850
File ID: 1LM.LM35569
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.73	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4841048
Report generated 07/07/2016 09:03

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 07/01/2016
Sample ID: WG575015-03
Instrument ID: LCMS1
Run Time: 20:02
Method: 6850
File ID: 1LM.LM35581
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.72	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4841048
Report generated 07/07/2016 09:03

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 07/02/2016
Sample ID: WG575015-05
Instrument ID: LCMS1
Run Time: 00:08
Method: 6850
File ID: 1LM.LM35594
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.74	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4841048
Report generated 07/07/2016 09:03

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 07/02/2016
Sample ID: WG575015-07
Instrument ID: LCMS1
Run Time: 02:20
Method: 6850
File ID: 1LM.LM35601
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.71	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4841048
Report generated 07/07/2016 09:03

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061452 Run Date: 07/01/2016 Sample ID: WG575005-05
Instrument ID: LCMS1 Run Time: 16:33 Prep Method: 6850
File ID: 1LM.LM35570 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575005 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.207	104	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4841047
Report generated 07/07/2016 09:03

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061452 Run Date: 07/01/2016 Sample ID: WG575005-06
Instrument ID: LCMS1 Run Time: 20:21 Prep Method: 6850
File ID: 1LM.LM35582 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575005 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4841047
Report generated 07/07/2016 09:03

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061452 Run Date: 07/02/2016 Sample ID: WG575005-07
Instrument ID: LCMS1 Run Time: 00:27 Prep Method: 6850
File ID: 1LM.LM35595 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575005 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.207	104	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4841047
Report generated 07/07/2016 09:03

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061452 Run Date: 07/02/2016 Sample ID: WG575005-08
Instrument ID: LCMS1 Run Time: 02:39 Prep Method: 6850
File ID: 1LM.LM35602 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575005 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.209	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4841047
Report generated 07/07/2016 09:03

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16061452
Instrument ID: LCMS1
Workgroup (AAB#): WG575005

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16061452-01	1.00	01	345000
L16061452-03	10000	DL01	430000
WG575005-02	1.00	01	451000
WG575005-03	1.00	01	451000
WG575005-04	1.00	01	450000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4841050
Report generated 07/07/2016 09:03

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**	6850	**Samplenum:**	L16061452-01
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35590
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 22:52	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	456000	156000	2.92	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**	6850	**Samplenum:**	L16061452-03
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35591
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 23:11	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	321000	107000	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**	6850	**Samplenum:**	WG575005-01
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35571
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 16:52	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	30200	9940	3.04	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**	6850	**Samplenum:**	WG575005-02
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35572
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 17:11	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**	6850	**Samplenum:**	WG575005-03
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35573
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 17:30	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	31100	11300	2.75	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**	6850	**Samplenum:**	WG575005-04
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35574
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 17:49	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32500	11800	2.75	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**	6850	**Samplenum:**	WG575005-05
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35570
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 16:33	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	33000	11700	2.82	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**	6850	**Samplenum:**	WG575005-06
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35582
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 20:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32800	11400	2.88	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**	6850	**Samplenum:**	WG575005-07
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35595
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 00:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35700	12900	2.77	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**	6850	**Samplenum:**	WG575005-08
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35602
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 02:39	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36500	12300	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**		**Samplenum:**	WG575015-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35568
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 15:55	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**		**Samplenum:**	WG575015-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35569
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 16:14	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	163000	56900	2.86	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**		**Samplenum:**	WG575015-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35581
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 20:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	167000	58000	2.88	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**		**Samplenum:**	WG575015-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35583
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 20:39	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**		**Samplenum:**	WG575015-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35594
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 00:08	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	175000	57200	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**		**Samplenum:**	WG575015-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35596
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 00:46	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**		**Samplenum:**	WG575015-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35601
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 02:20	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	175000	58500	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061452	**Prep Method:**		**Samplenum:**	WG575015-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35603
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 02:58	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

2.2.2.3 Sample Data

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Data File	LM35590.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 10:52:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061452-01	**Injection Vial**	20.00
Data File	LM35590.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 10:52:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	L16061452-01	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.450e+05	9.26	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.560e+05	9.27	N/A	3.92
Perchlorate conf	1.560e+05	9.26	N/A	4.03

O18LP (Internal Standard)

RT (Exp. RT): 9.26(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

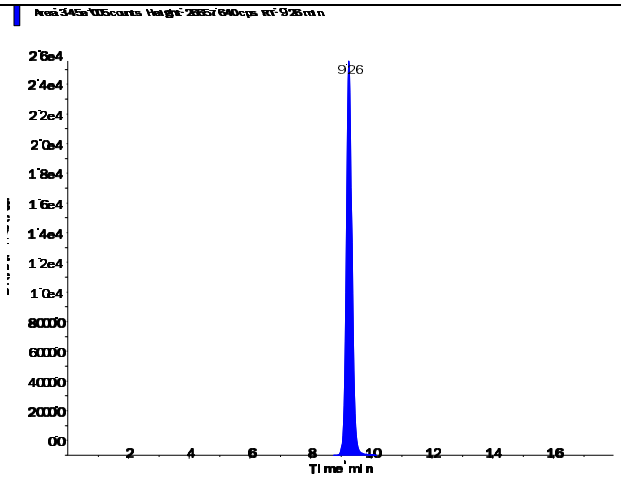

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.27 (9.84) min
Calculated conc:	3.92 ng/ml
Area Ratio:	1.32
Sample Type:	(Unknown)

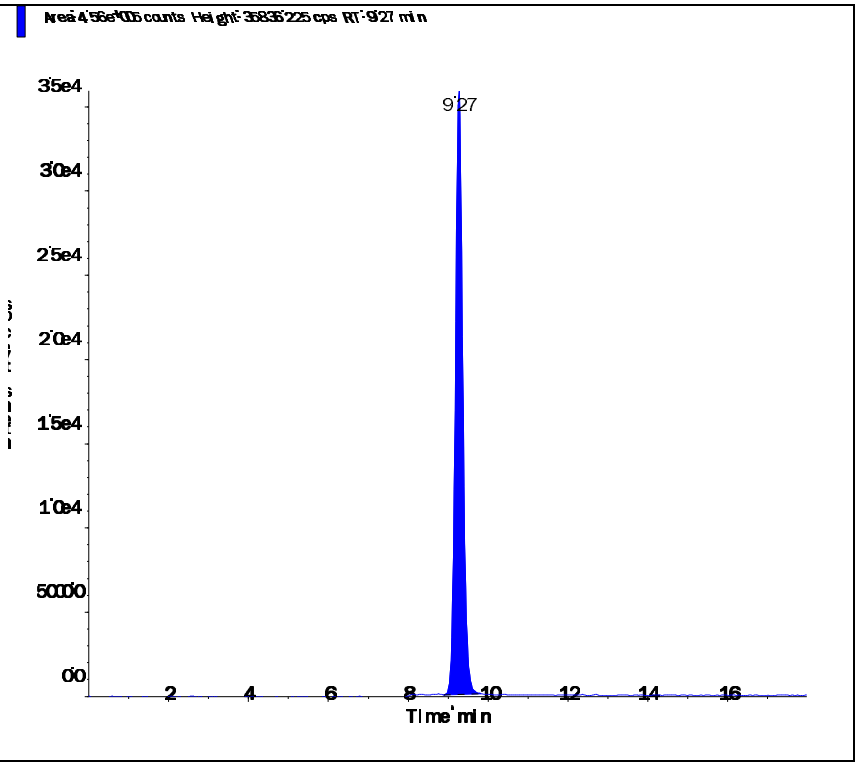

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.26 (9.84) min
Calculated conc:	4.03 ng/ml
Area Ratio:	0.452
Sample Type:	(Unknown)

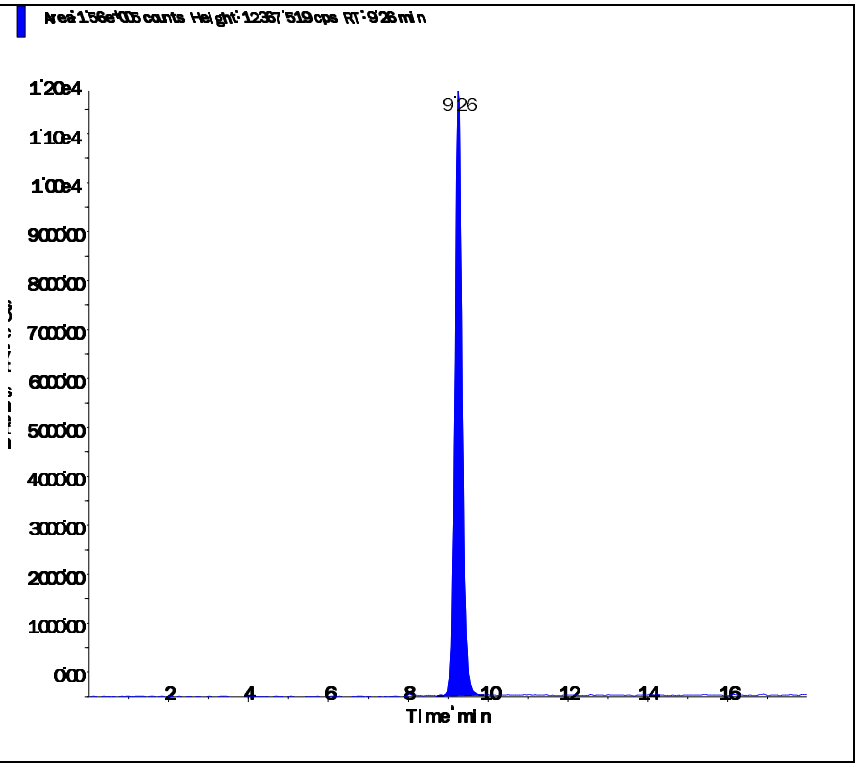

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Data File	LM35591.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 11:11:27 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061452-03 (10,000x)	**Injection Vial**	21.00
Data File	LM35591.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 11:11:27 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	L16061452-03	**Dilution Factor**	1.00
Sample Comment	1,10000 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.300e+05	9.69	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.210e+05	9.70	N/A	2.22
Perchlorate conf	1.070e+05	9.68	N/A	2.22

O18LP (Internal Standard)

RT (Exp. RT): 9.69(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

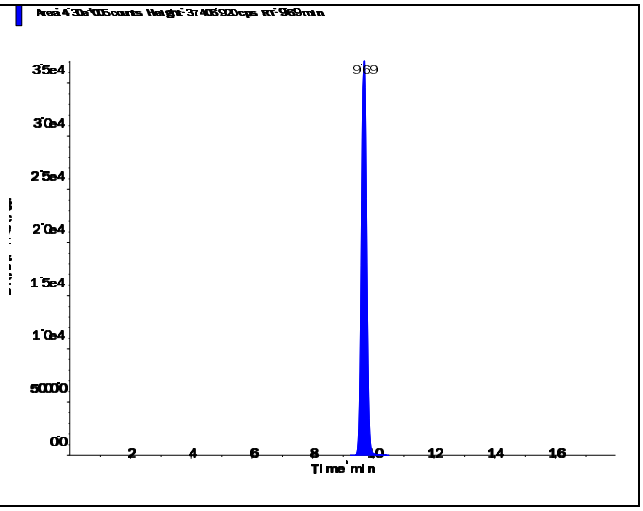

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.70 (9.84) min
Calculated conc:	2.22 ng/ml
Area Ratio:	0.747
Sample Type:	(Unknown)

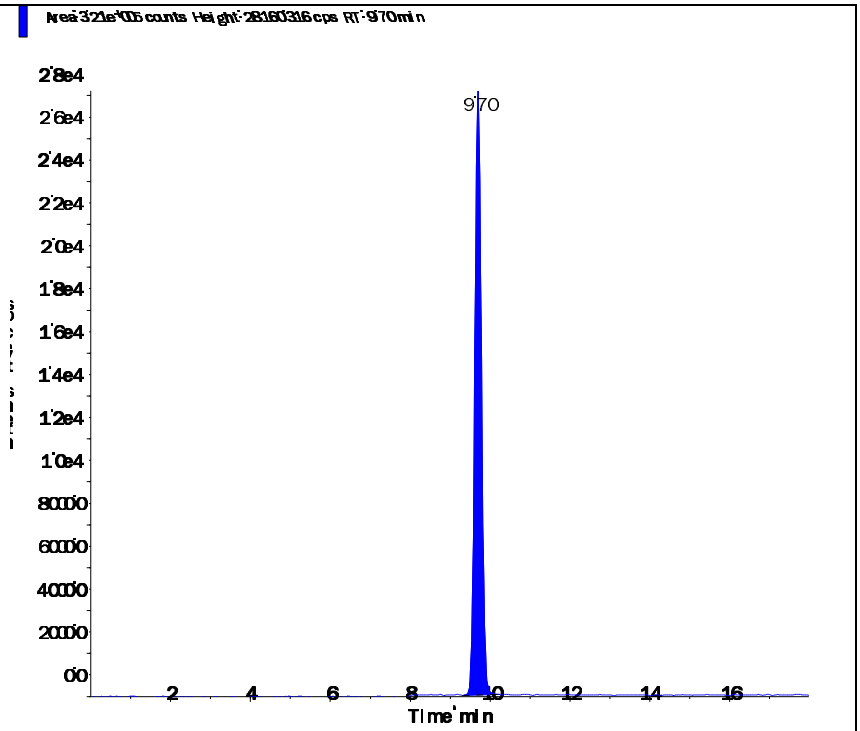

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.68 (9.84) min
Calculated conc:	2.22 ng/ml
Area Ratio:	0.25
Sample Type:	(Unknown)

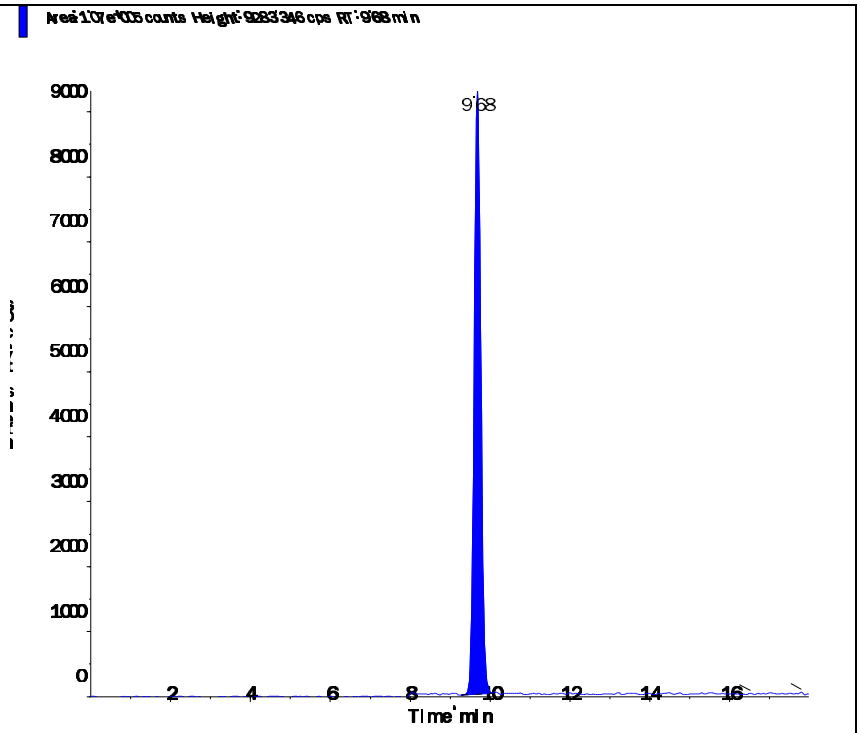

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2.2.2.4 Standards Data

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Data File	LM34686.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

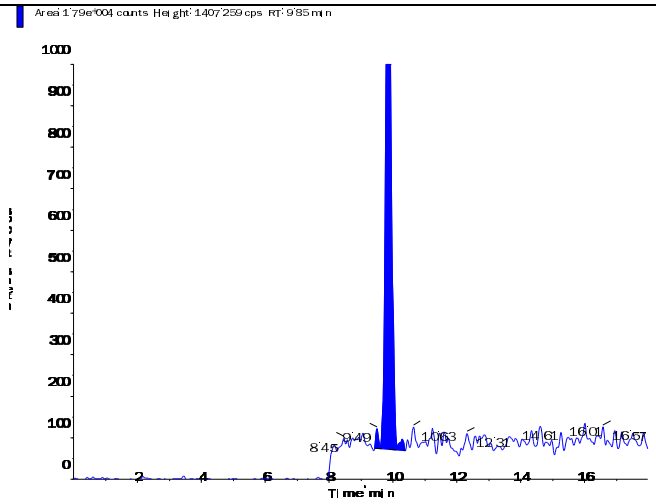

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

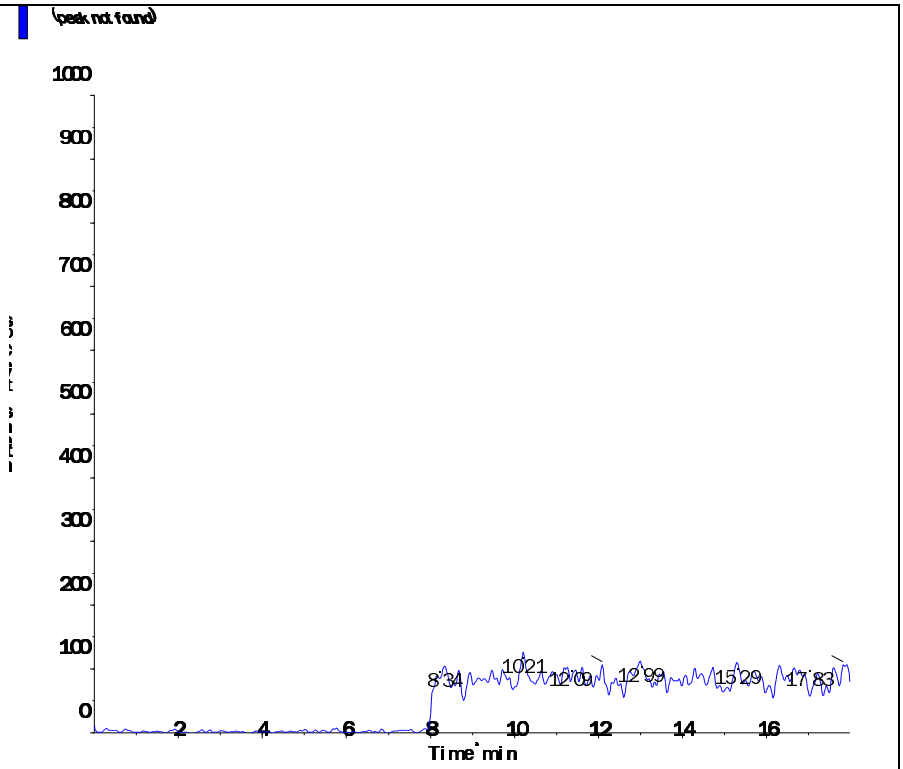

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

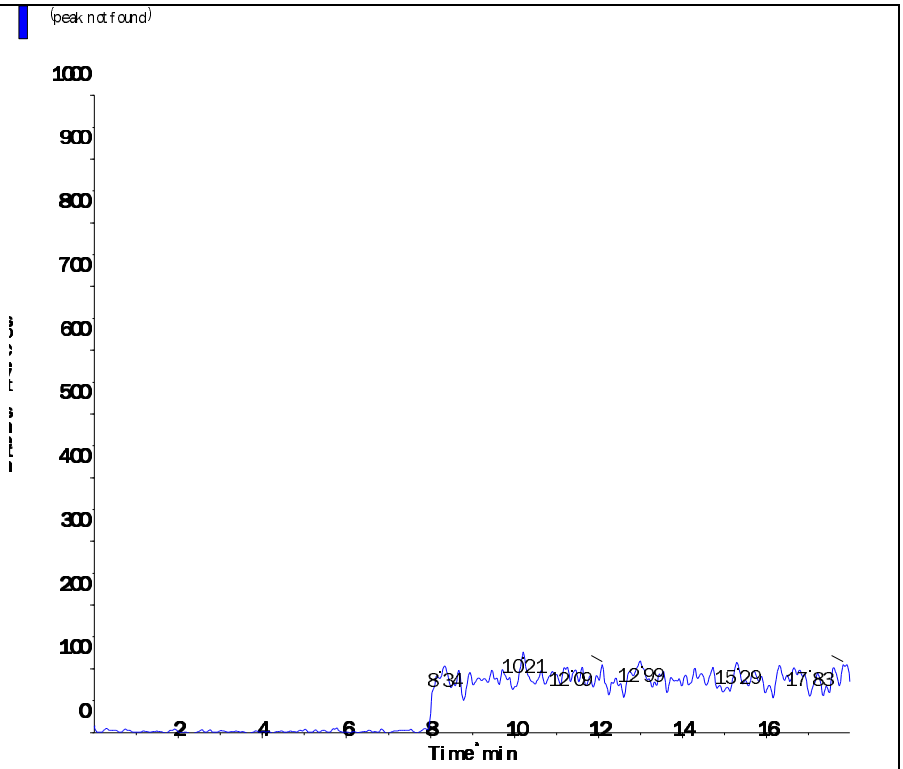

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Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

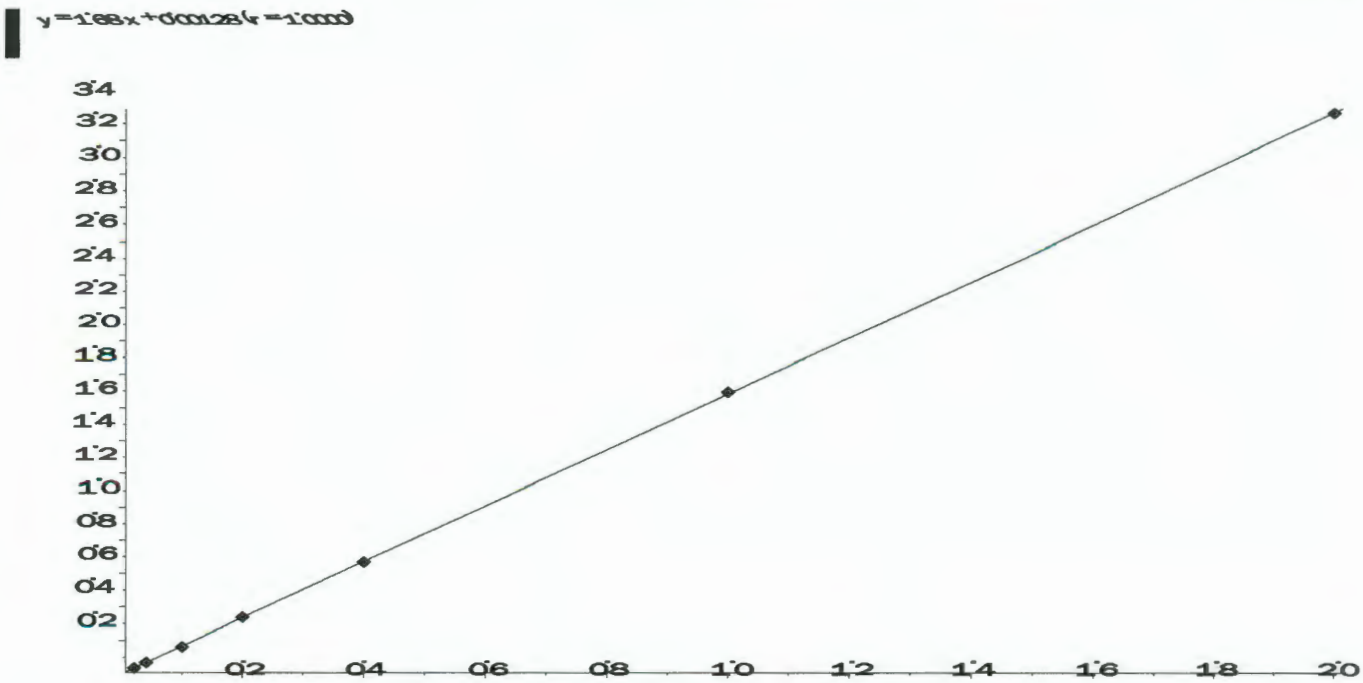

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Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

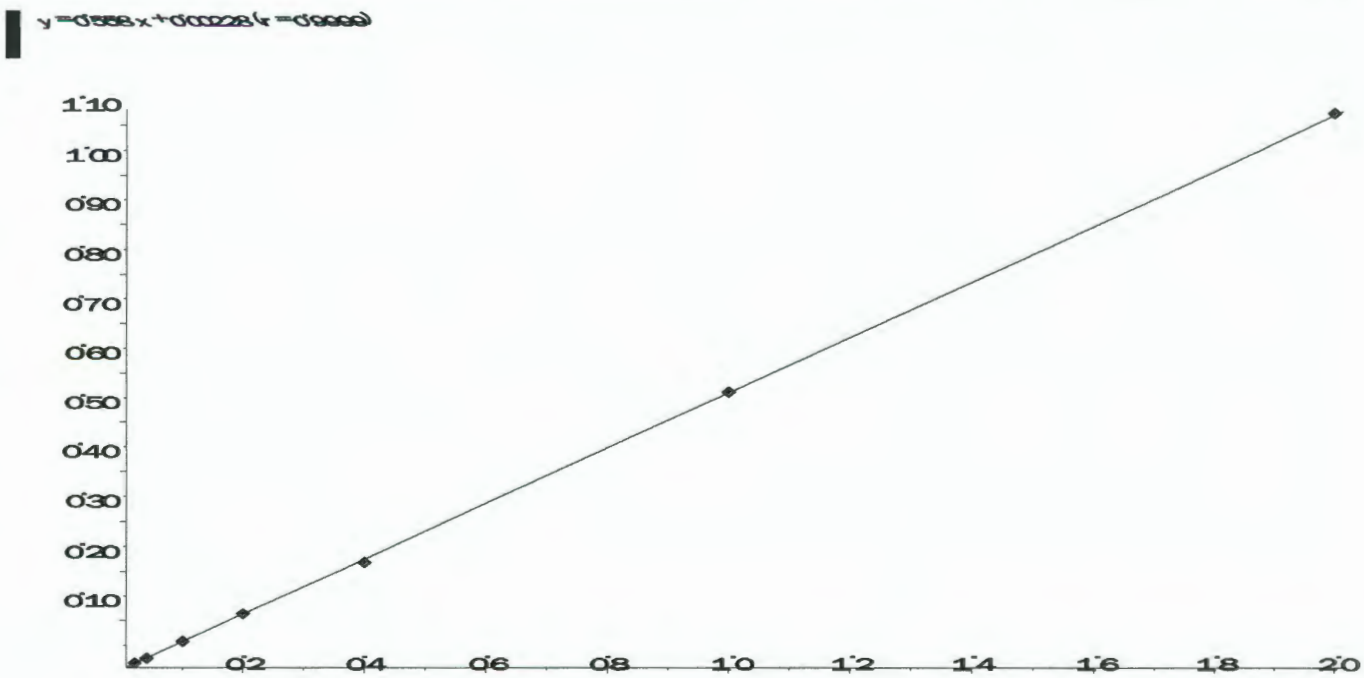

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Data File	LM34687.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

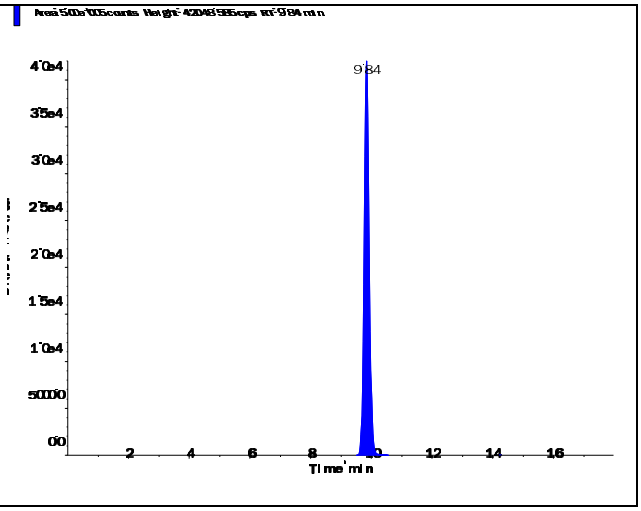

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.103 ng/ml
Area Ratio:	0.036
Sample Type:	(Standard)

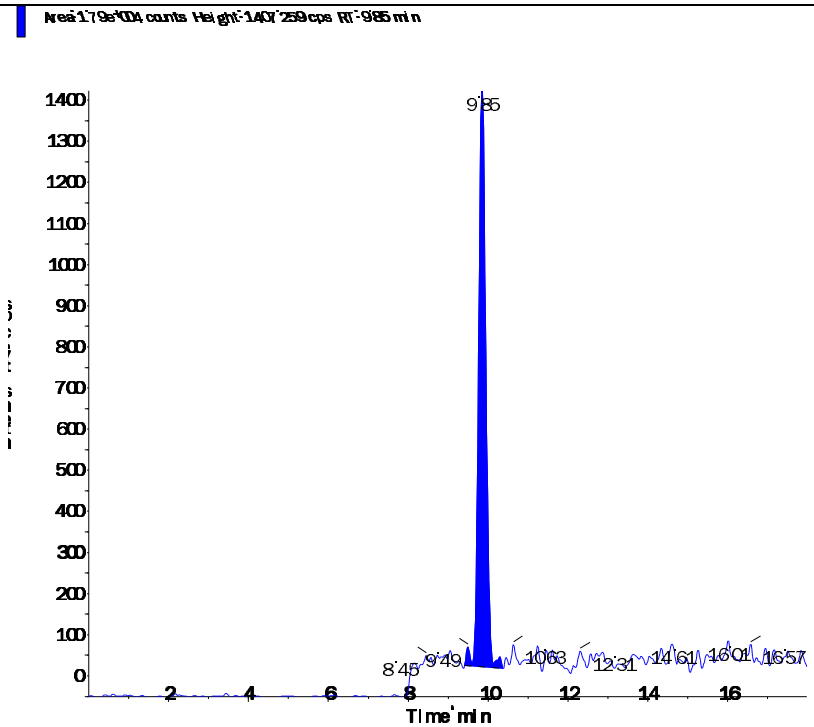

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.104 ng/ml
Area Ratio:	0.014
Sample Type:	(Standard)

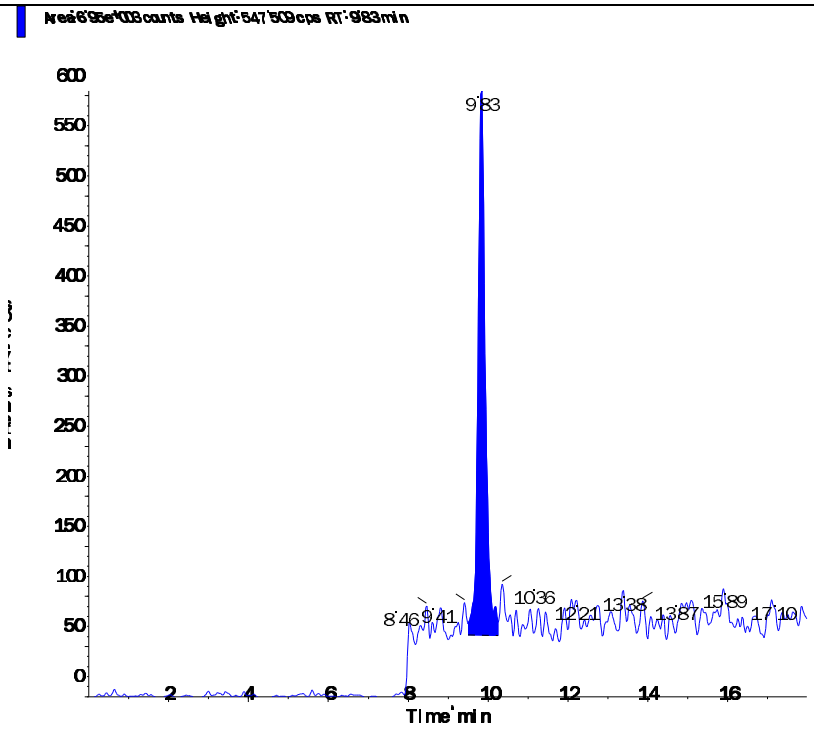

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Data File	LM34688.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

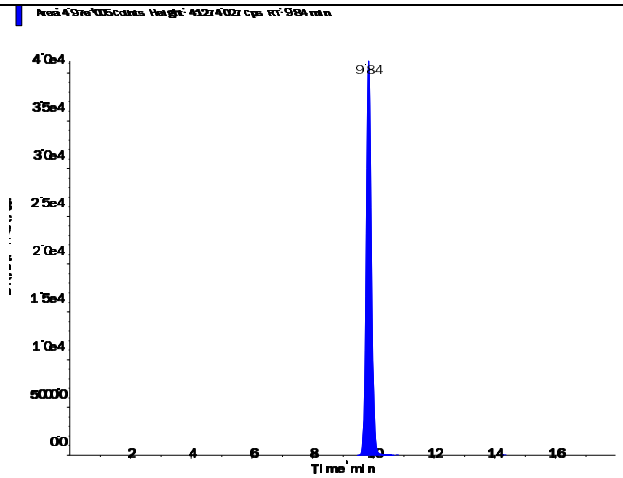

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

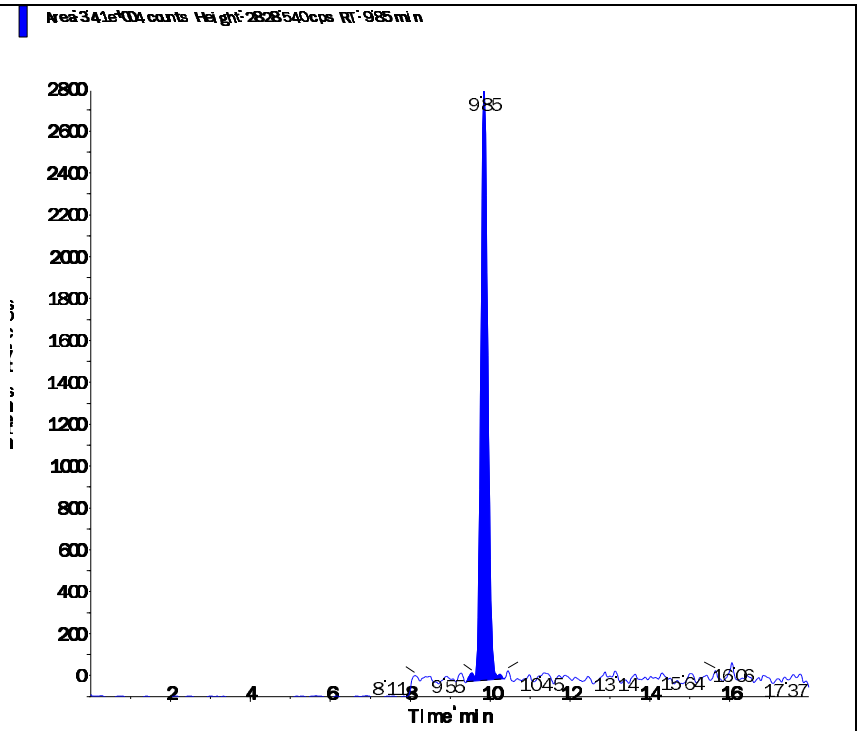

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

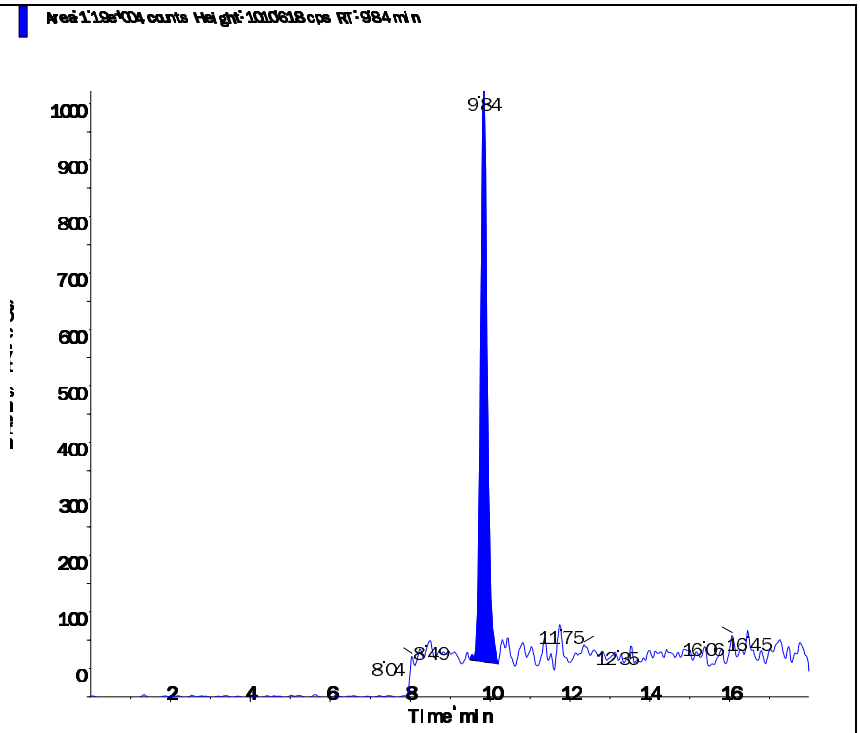

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Data File	LM34689.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

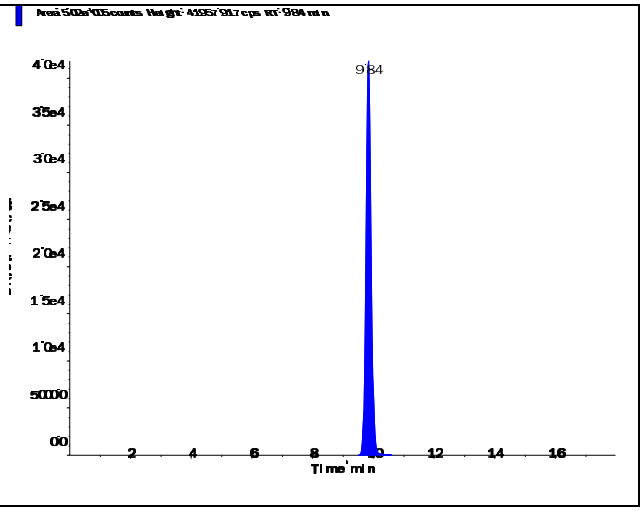

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.483 ng/ml
Area Ratio:	0.164
Sample Type:	(Standard)

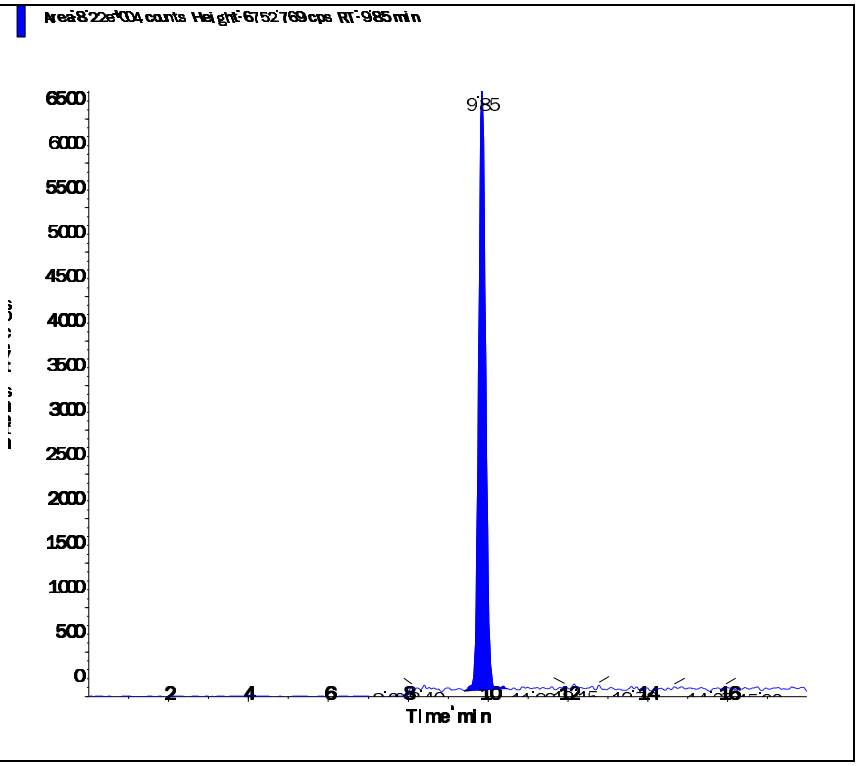

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.503 ng/ml
Area Ratio:	0.058
Sample Type:	(Standard)

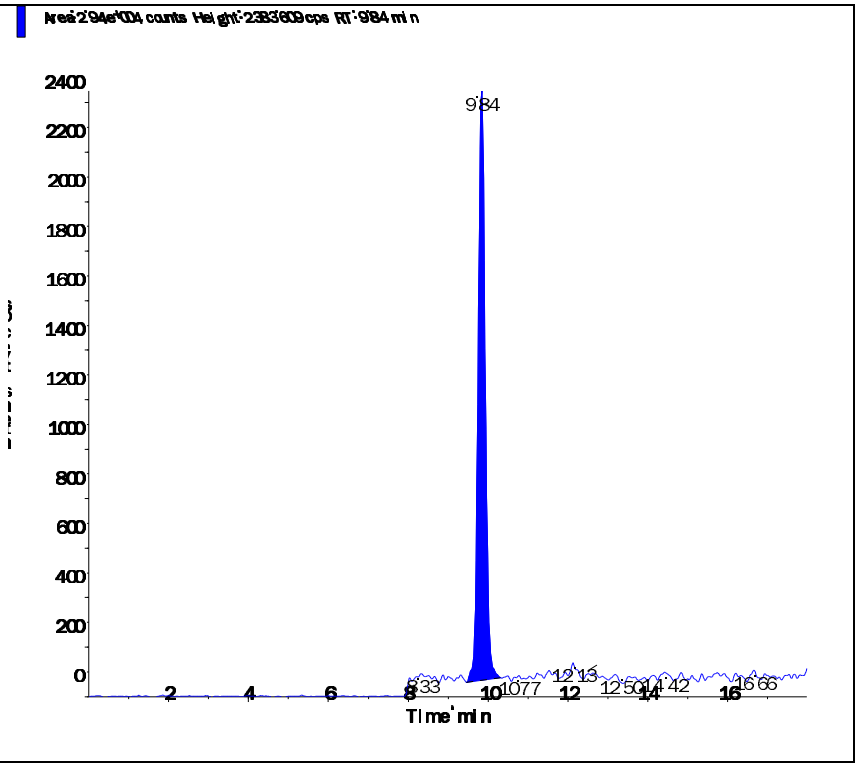

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Data File	LM34690.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

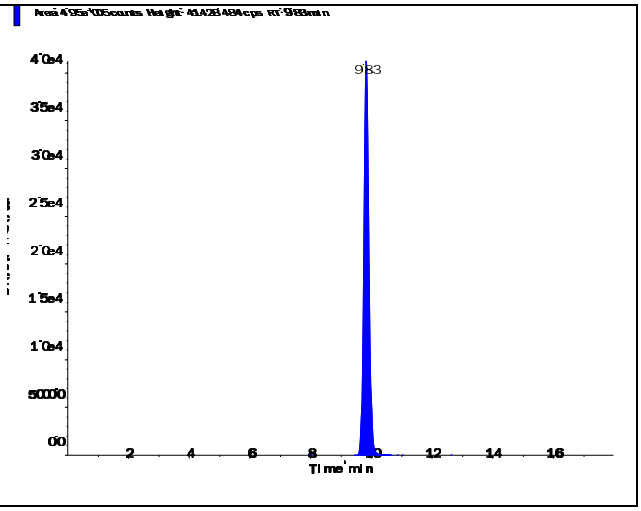

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

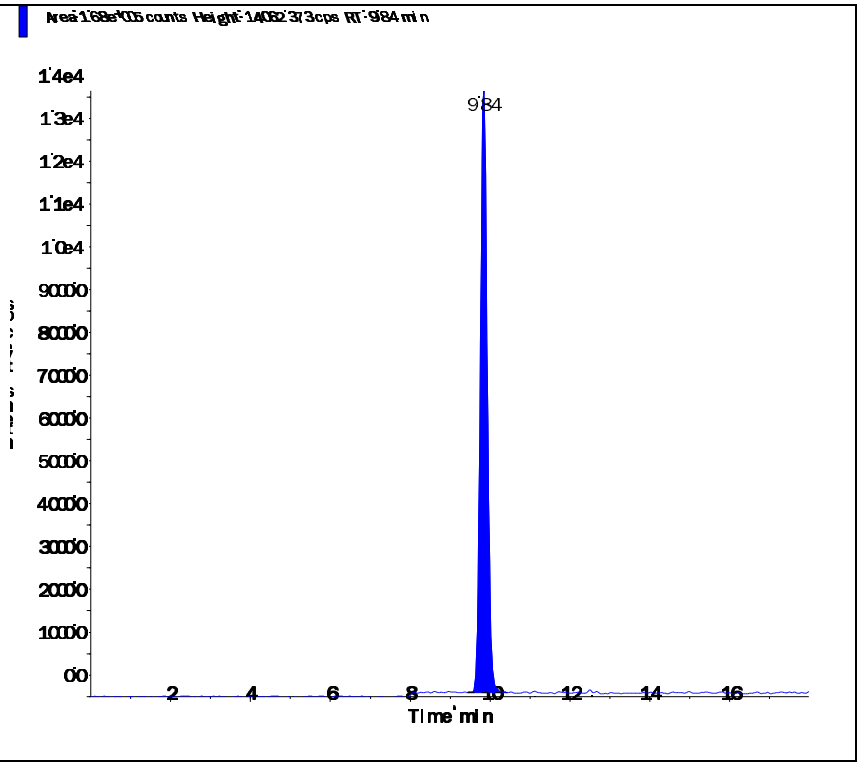

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

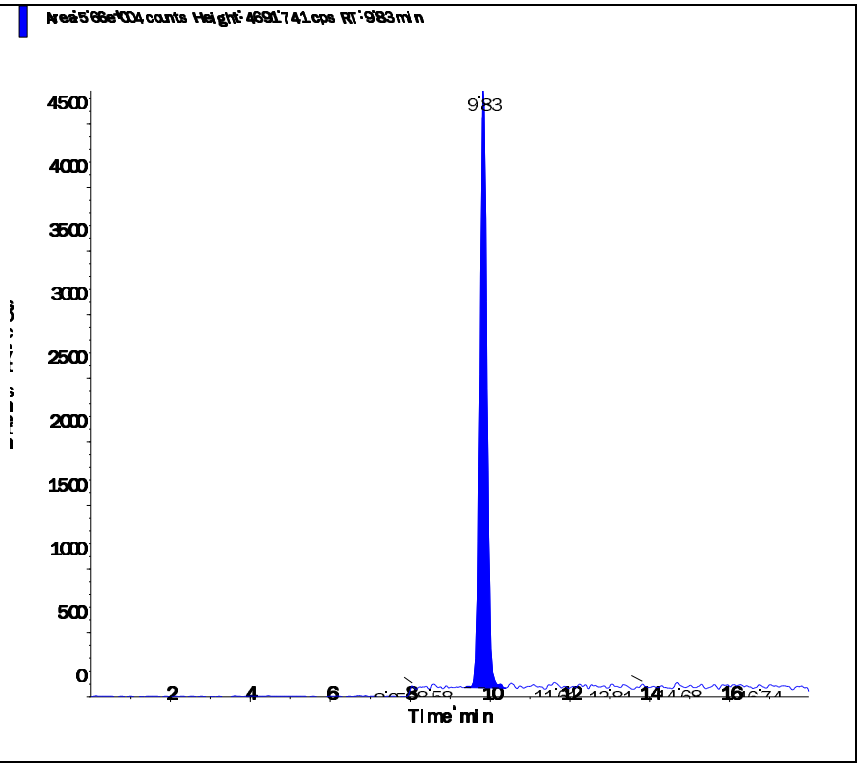

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Data File	LM34691.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

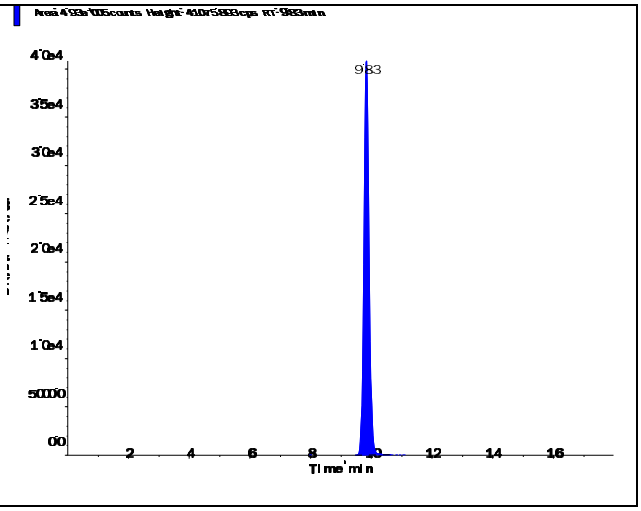

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 1.99 ng/ml Area Ratio: 0.669 Sample Type: (Standard)	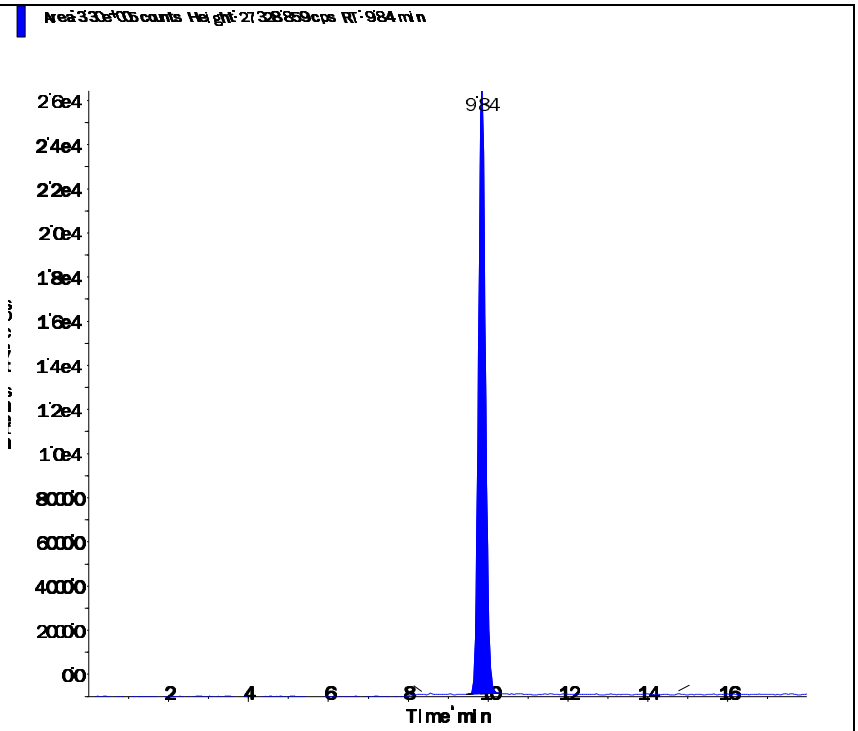
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 1.94 ng/ml Area Ratio: 0.219 Sample Type: (Standard)	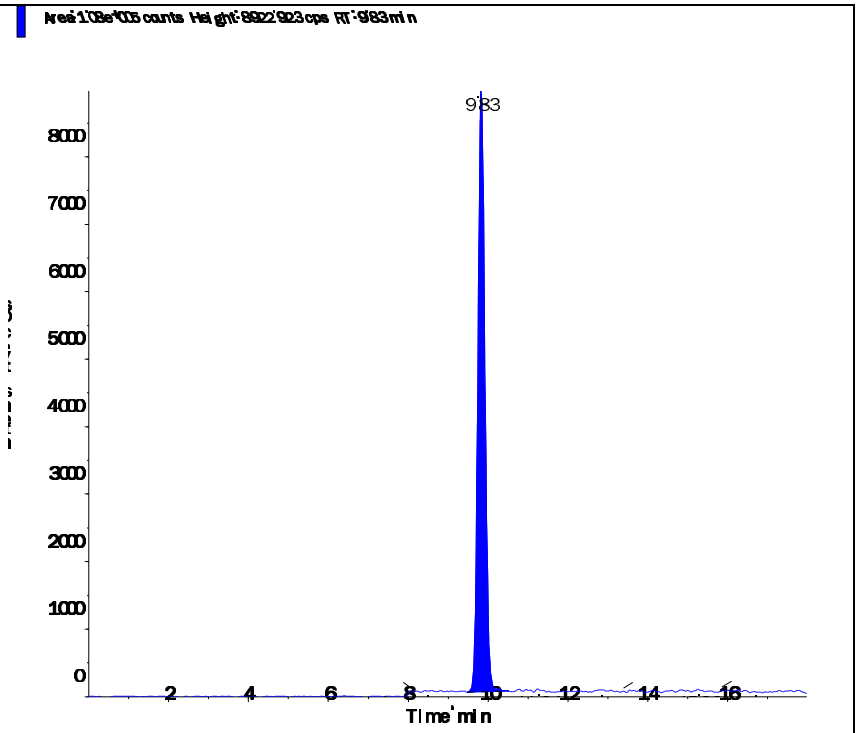

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Data File	LM34692.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

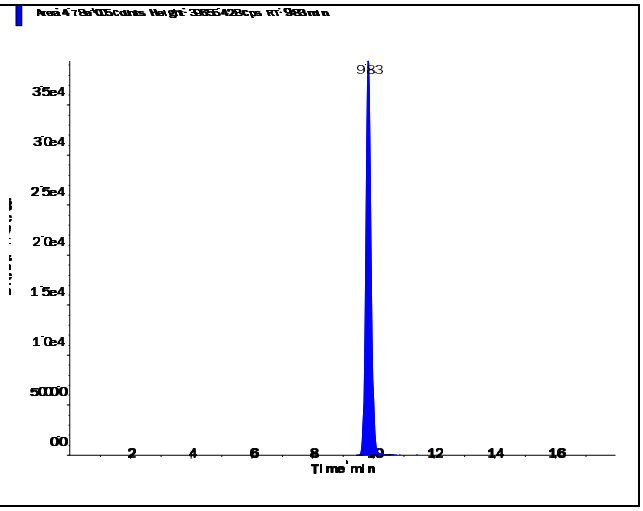

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

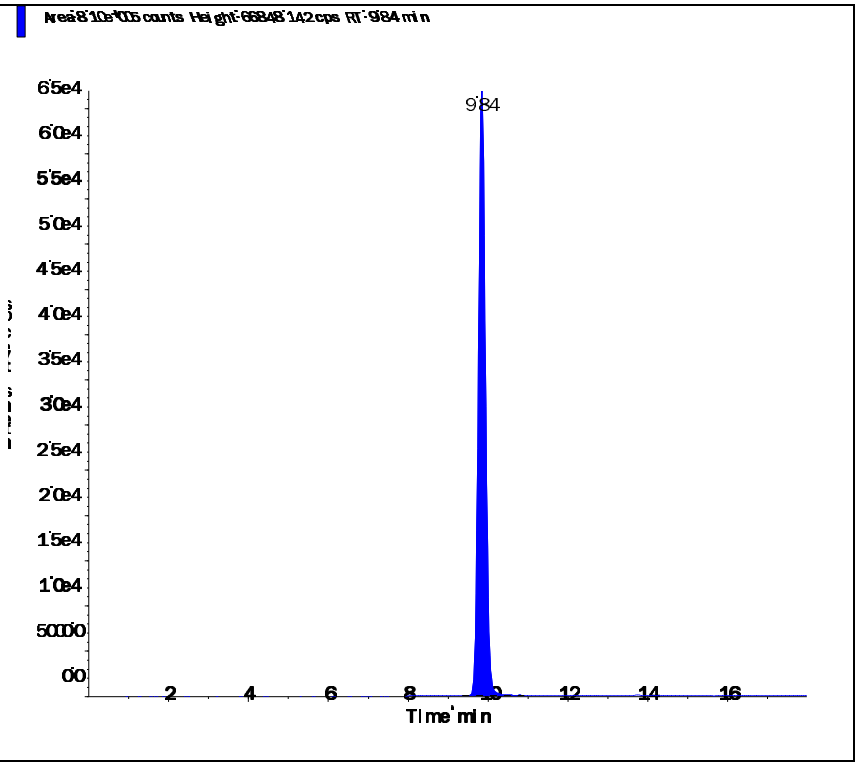

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

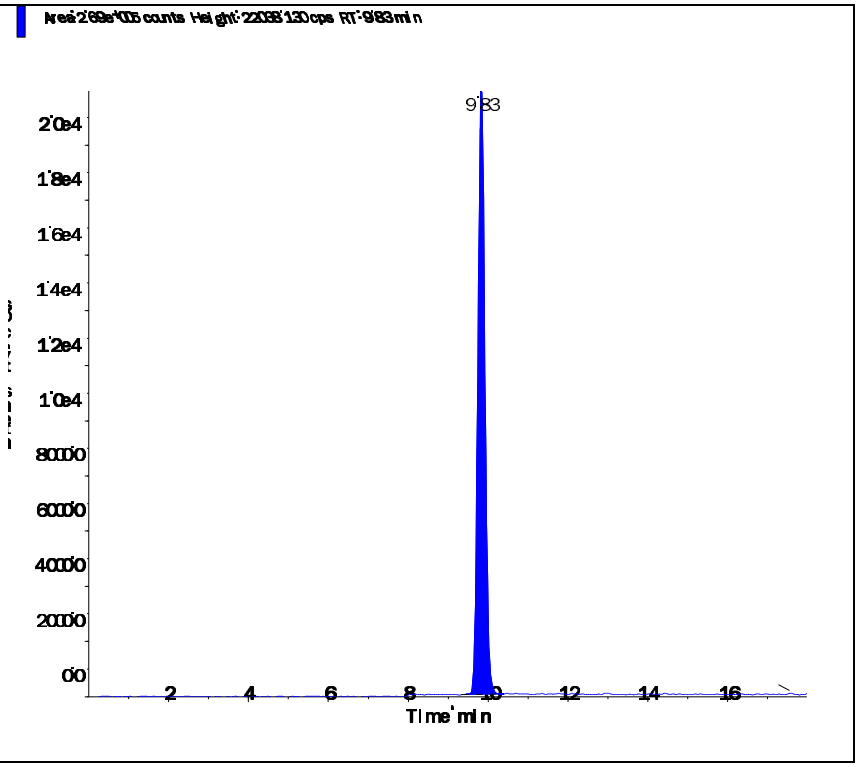

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Data File	LM34693.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

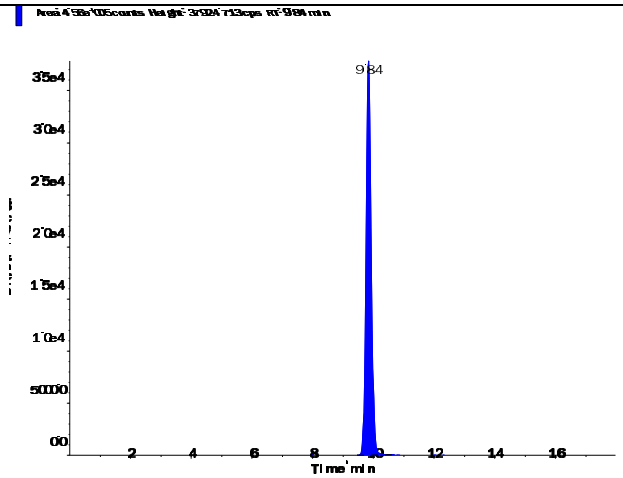

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	9.99 ng/ml
Area Ratio:	3.36
Sample Type:	(Standard)

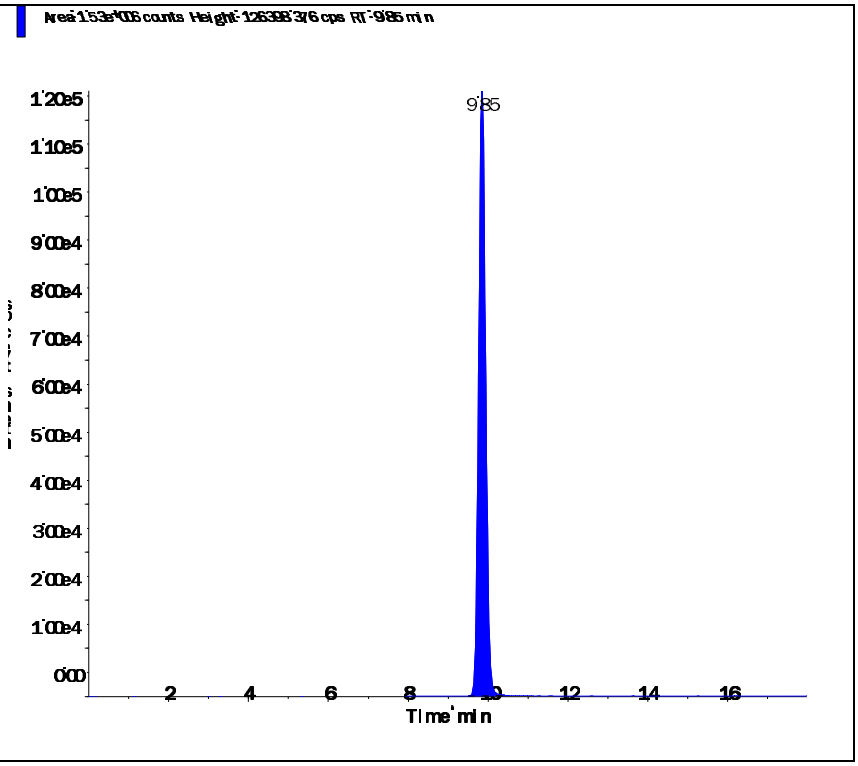

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	10.00 ng/ml
Area Ratio:	1.122
Sample Type:	(Standard)

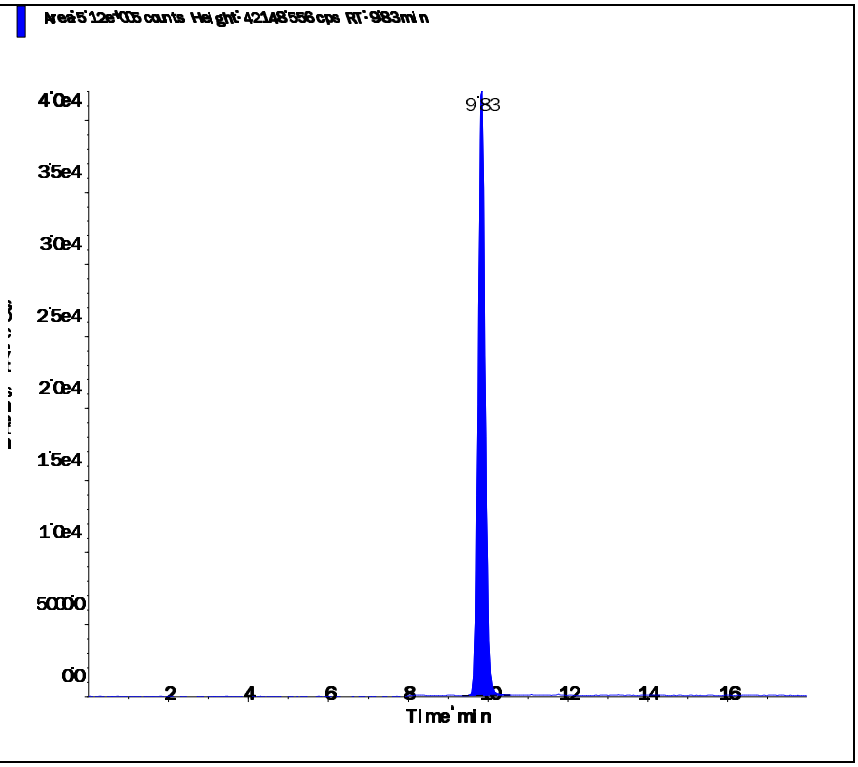

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Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

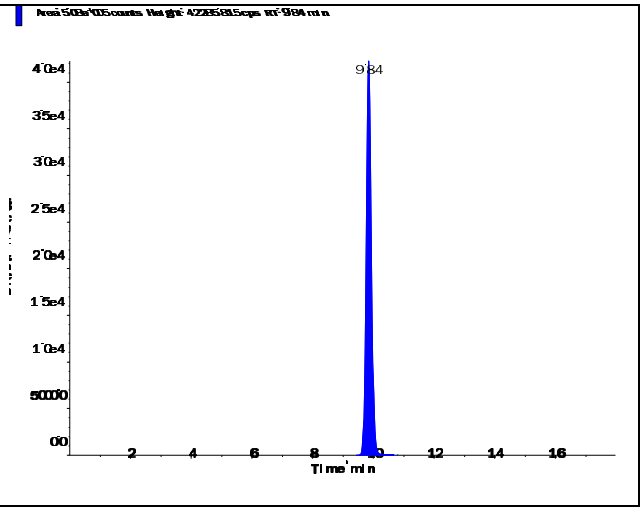

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.332
Sample Type:	(Quality Control)

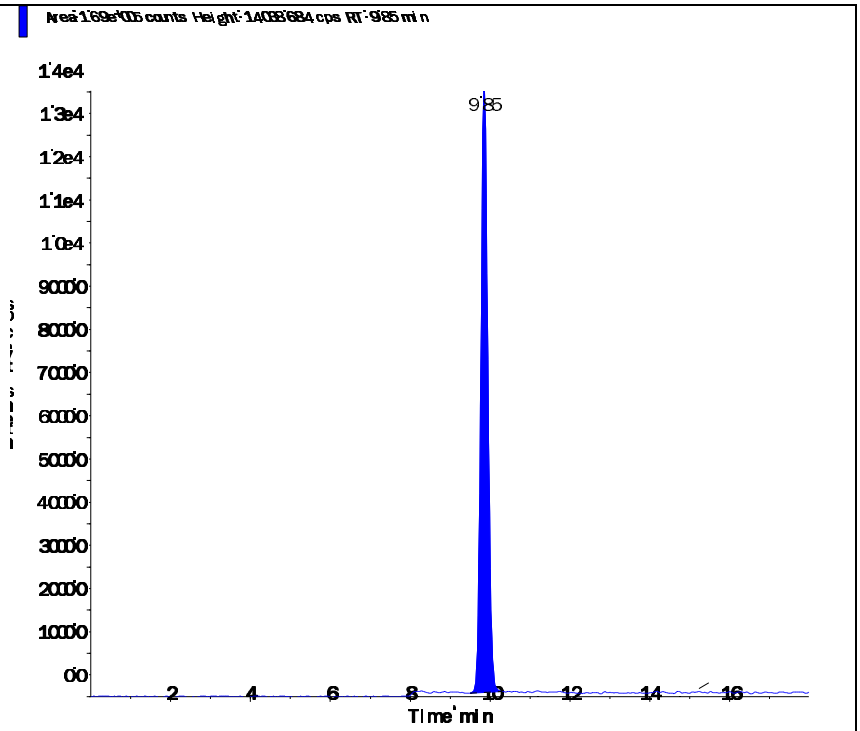

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

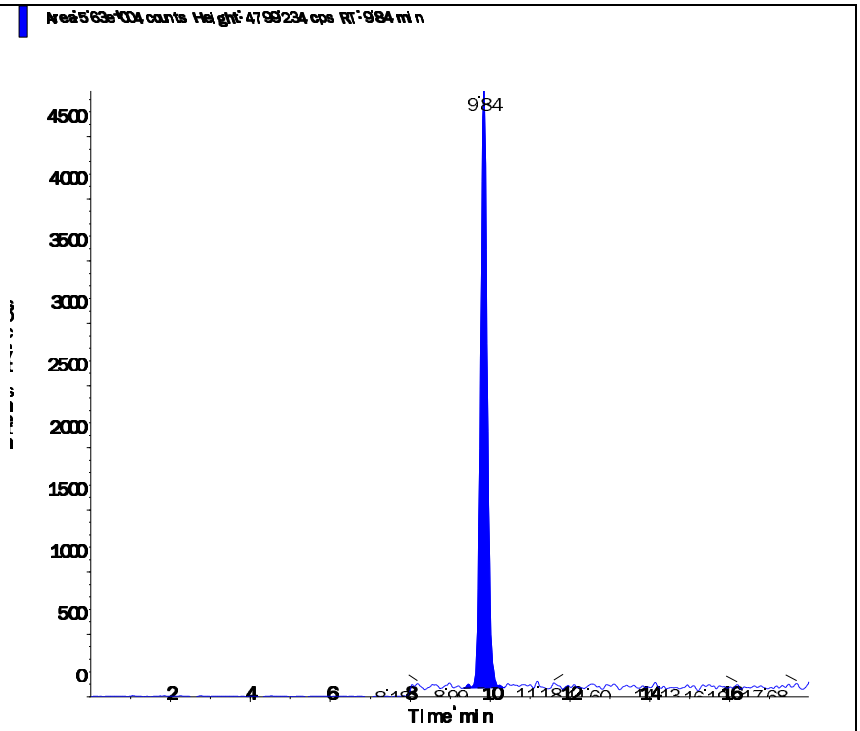

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Data File	LM35569.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 4:14:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35569.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 4:14:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.720e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.630e+05	9.40	1.00	1.03
Perchlorate conf	5.690e+04	9.38	1.00	1.06

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

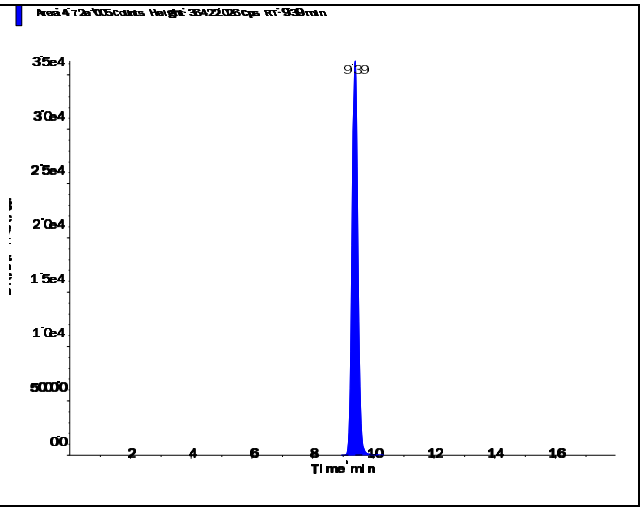

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.346
Sample Type:	(Quality Control)

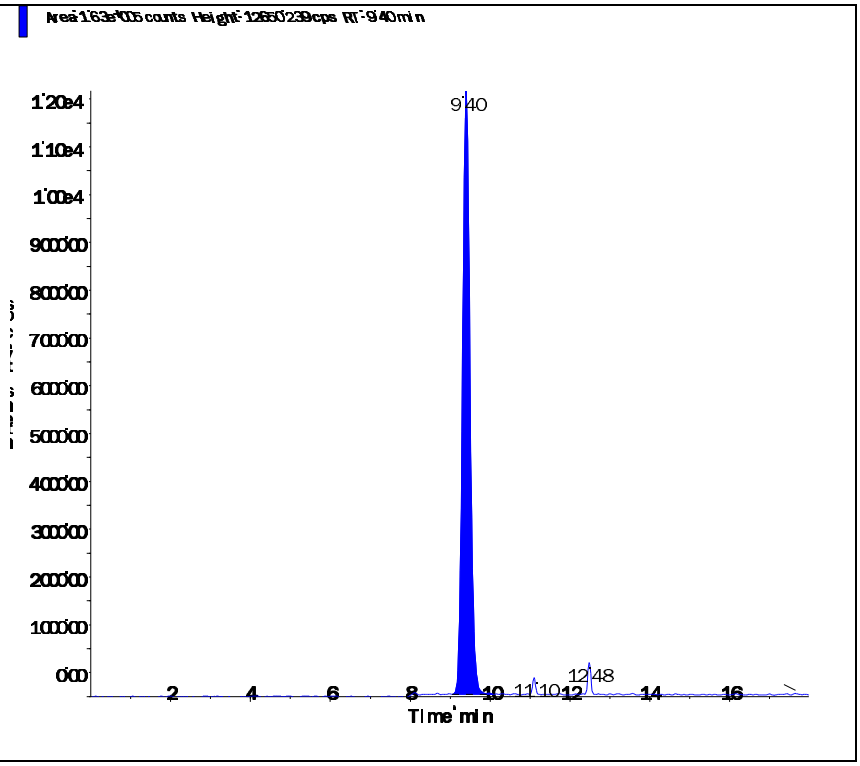

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.12
Sample Type:	(Quality Control)

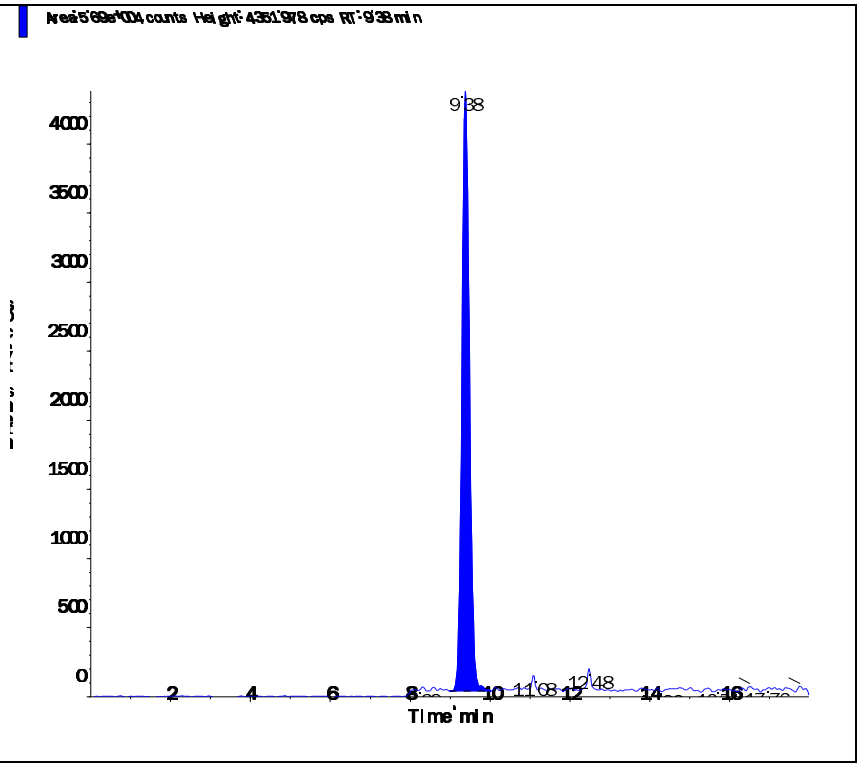

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Data File	LM35581.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 8:02:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35581.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 8:02:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.870e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.670e+05	9.40	1.00	1.02
Perchlorate conf	5.800e+04	9.39	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

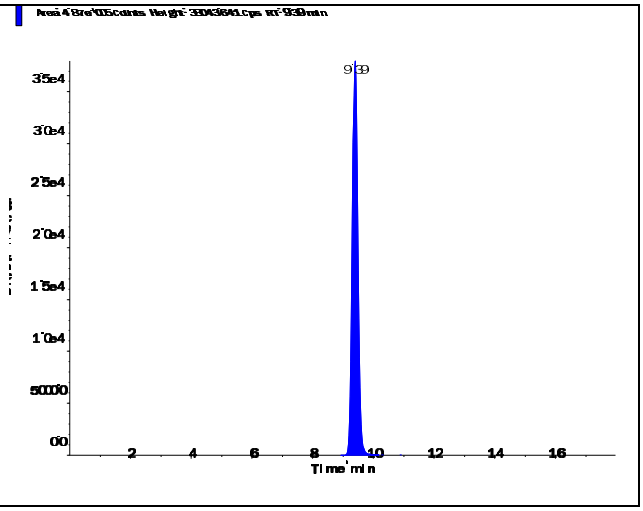

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.343
Sample Type:	(Quality Control)

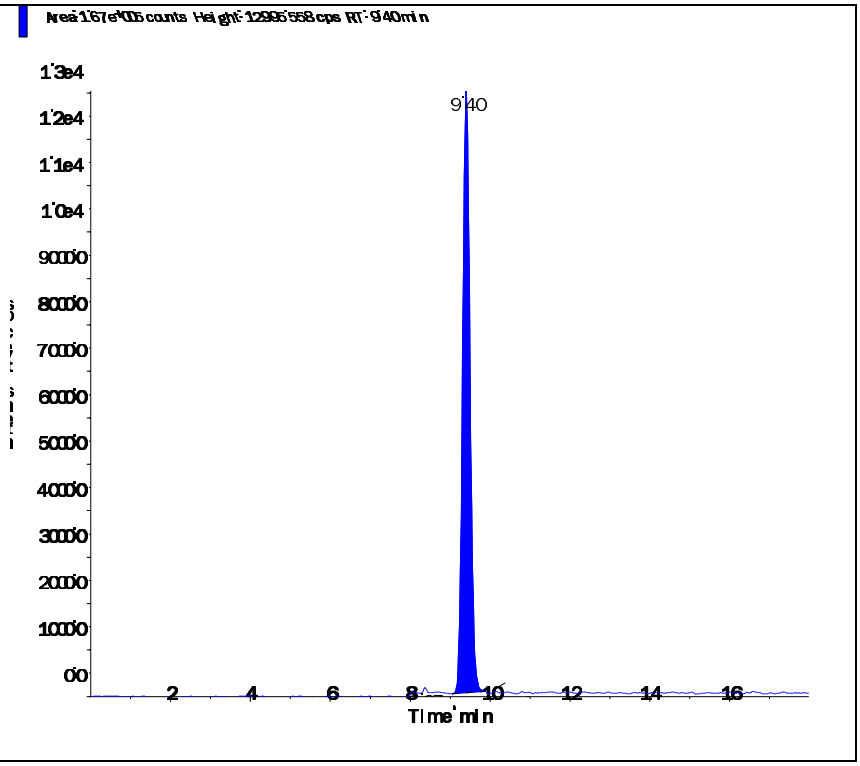

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

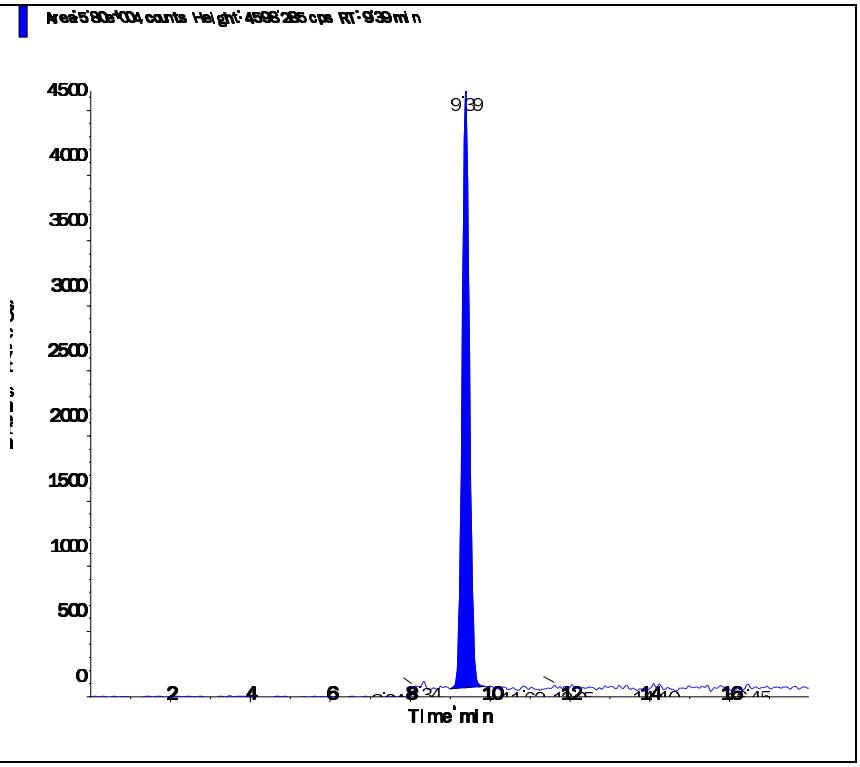

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Data File	LM35594.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 12:08:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35594.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 12:08:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.040e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.750e+05	9.40	1.00	1.03
Perchlorate conf	5.720e+04	9.39	1.00	0.997

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

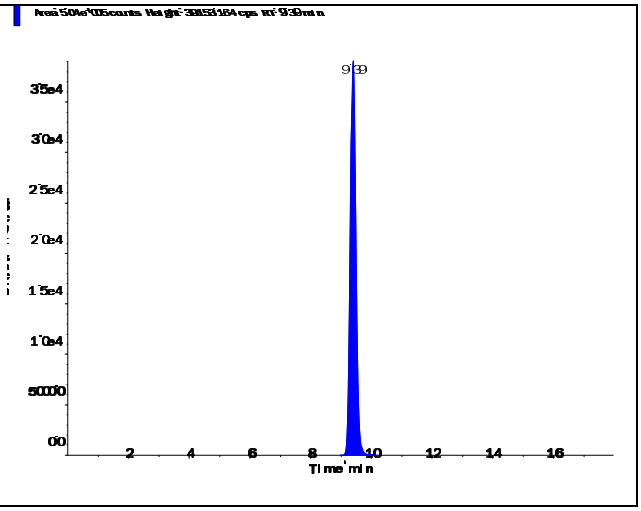

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.348
Sample Type:	(Quality Control)

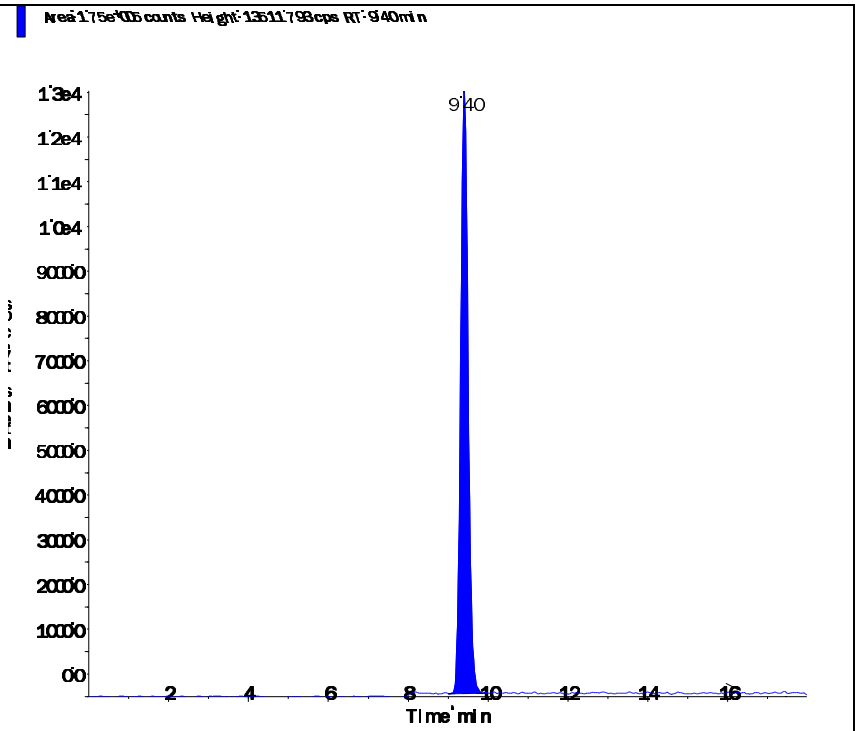

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	0.997 ng/ml
Area Ratio:	0.114
Sample Type:	(Quality Control)

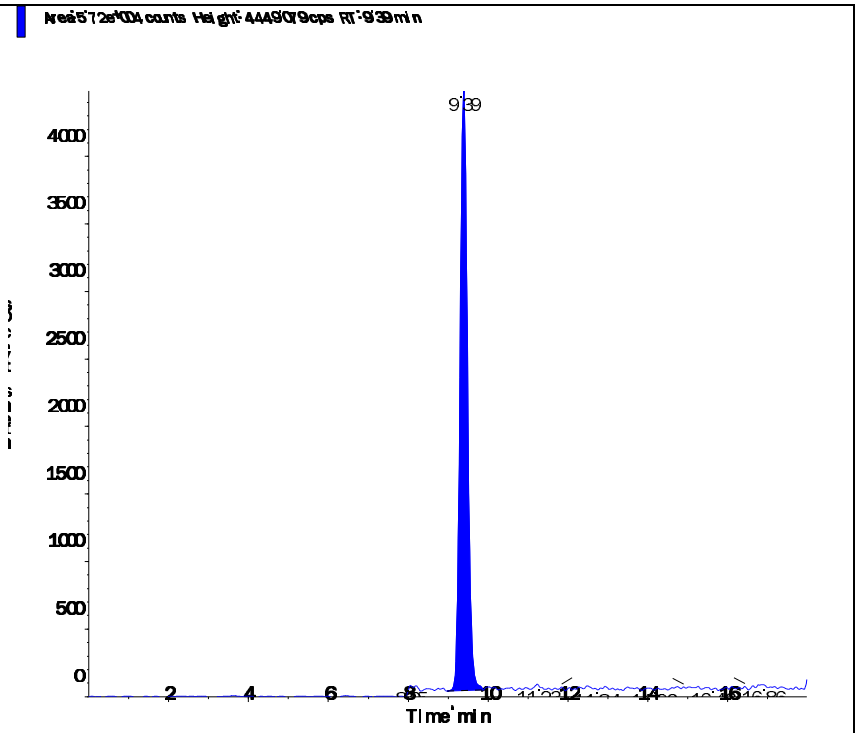

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Data File	LM35601.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 2:20:47 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35601.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 2:20:47 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.120e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.750e+05	9.40	1.00	1.01
Perchlorate conf	5.850e+04	9.38	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

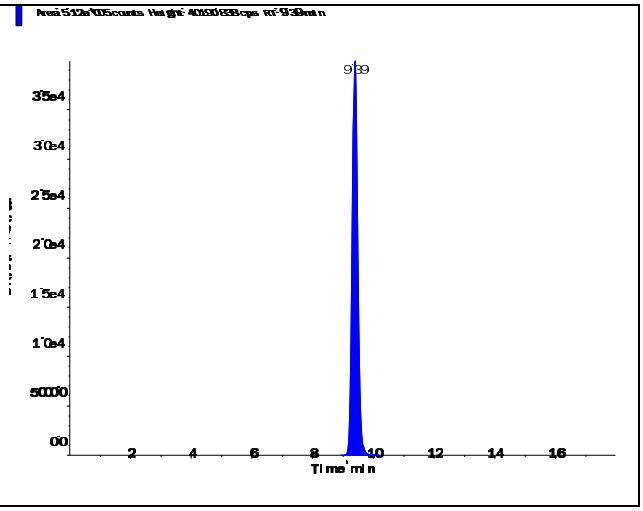

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.341
Sample Type:	(Quality Control)

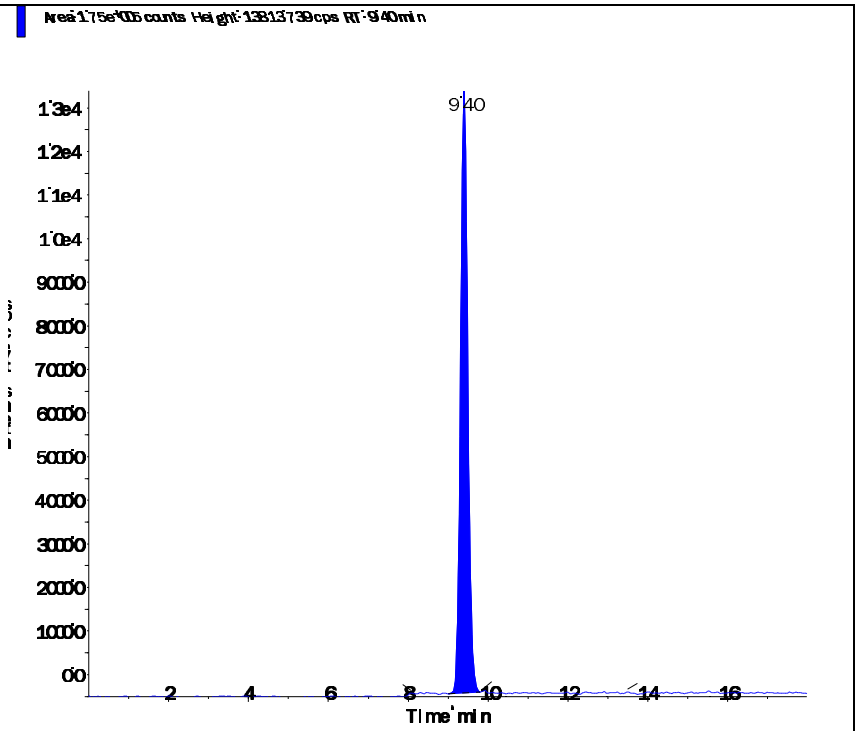

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Quality Control)

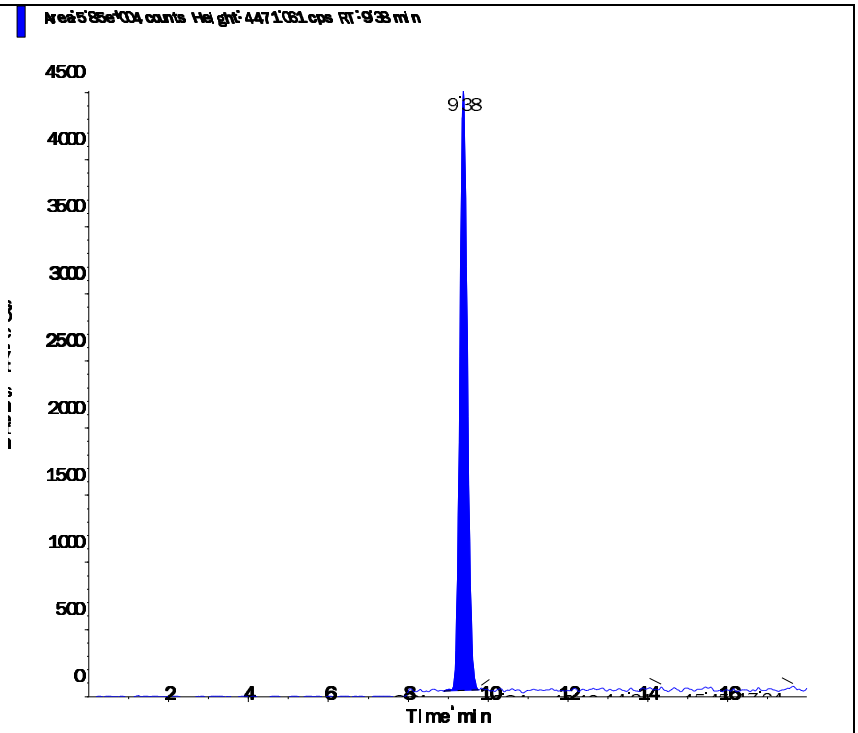

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Data File	LM35570.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 4:33:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-05 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35570.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 4:33:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.660e+05	9.44	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+04	9.44	N/A	0.207
Perchlorate conf	1.170e+04	9.44	N/A	0.204

O18LP (Internal Standard)

RT (Exp. RT): 9.44(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

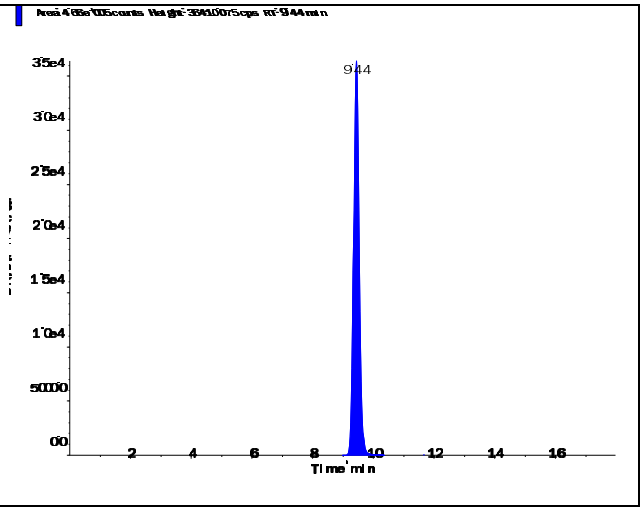

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.44 (9.84) min Calculated conc: 0.207 ng/ml Area Ratio: 0.071 Sample Type: (Unknown)	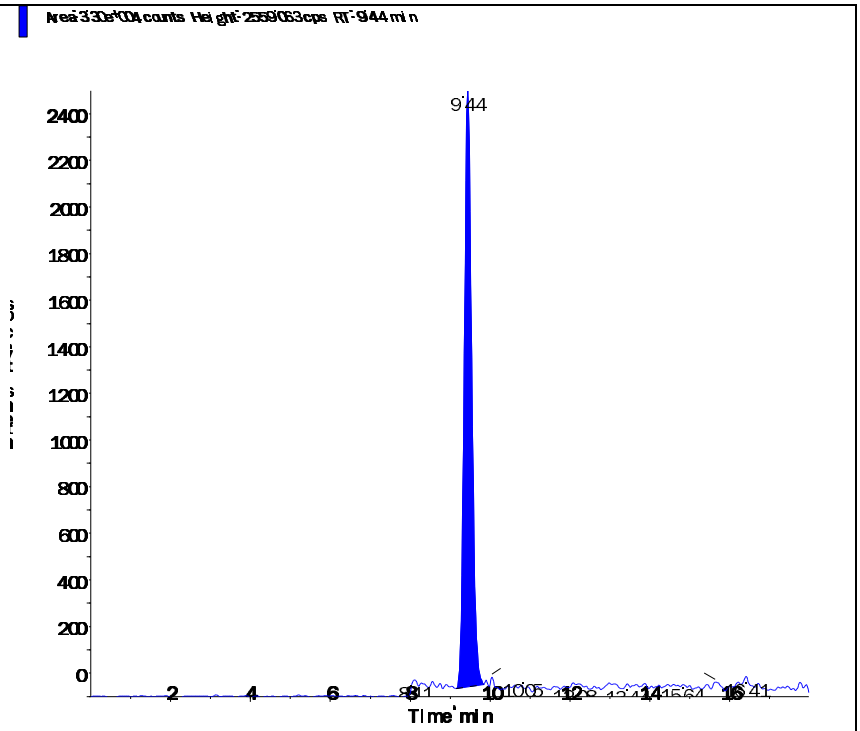
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.44 (9.84) min Calculated conc: 0.204 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	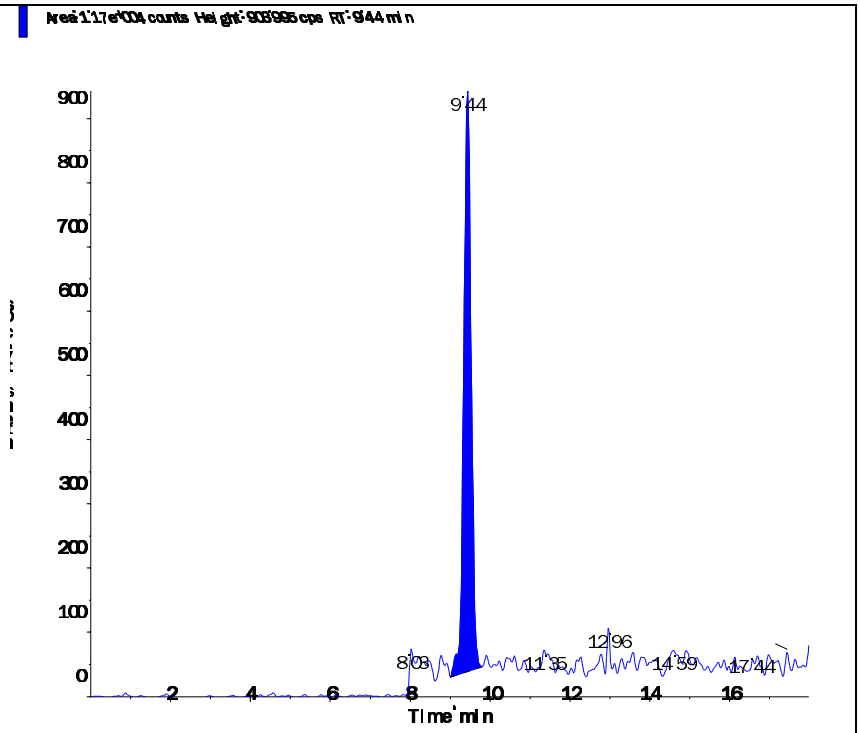

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Data File	LM35582.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 8:21:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-06 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35582.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 8:21:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.650e+05	9.43	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.280e+04	9.44	N/A	0.206
Perchlorate conf	1.140e+04	9.43	N/A	0.20

O18LP (Internal Standard)

RT (Exp. RT): 9.43(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

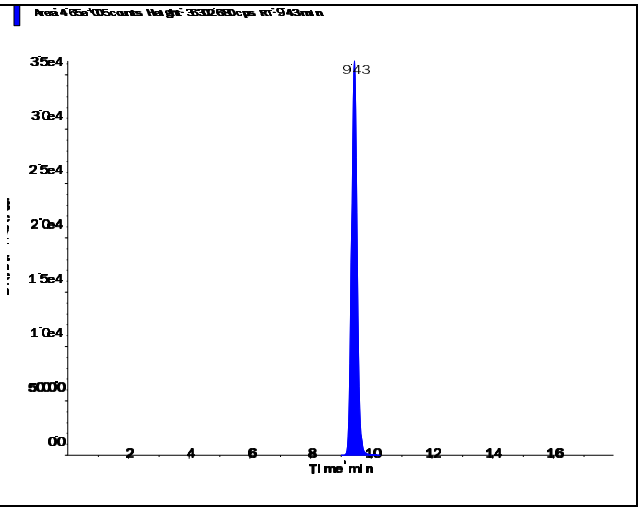

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

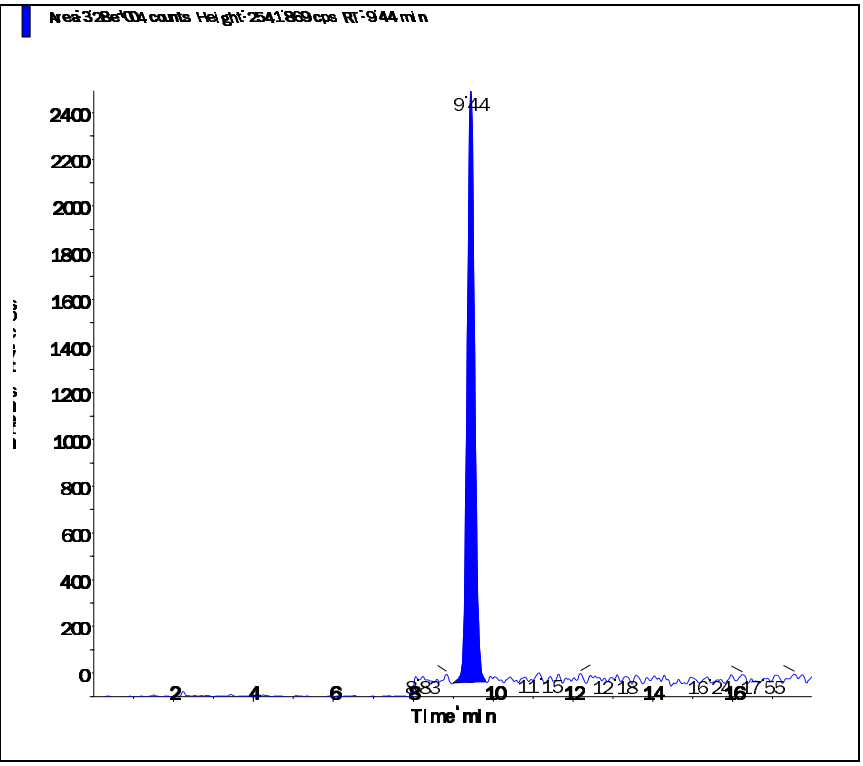

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.43 (9.84) min
Calculated conc:	0.20 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

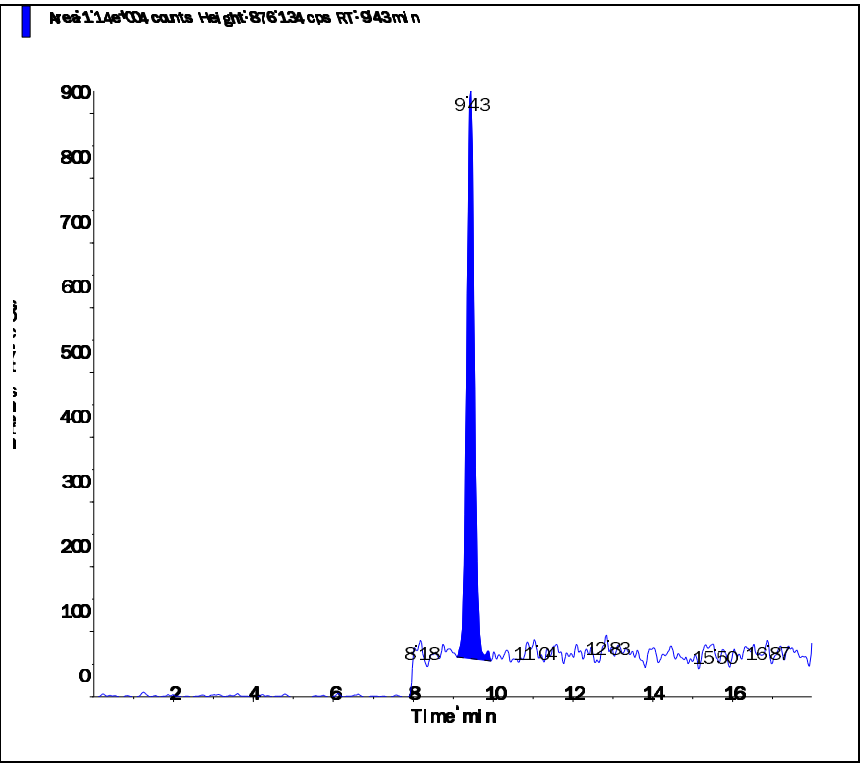

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Data File	LM35595.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 12:27:11 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35595.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 12:27:11 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.040e+05	9.43	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.570e+04	9.45	N/A	0.207
Perchlorate conf	1.290e+04	9.44	N/A	0.21

O18LP (Internal Standard)

RT (Exp. RT): 9.43(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

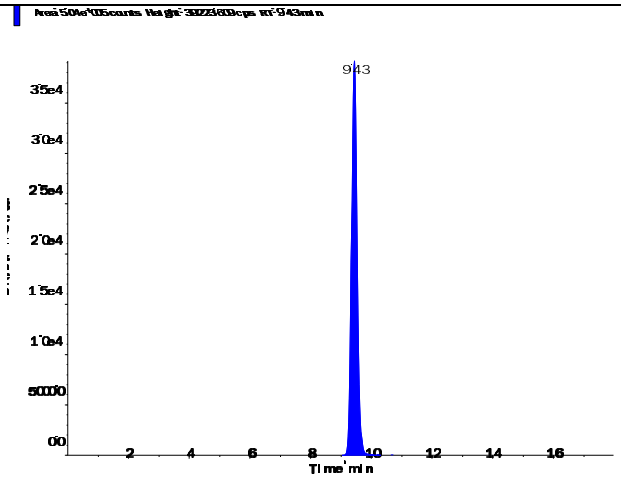

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.45 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

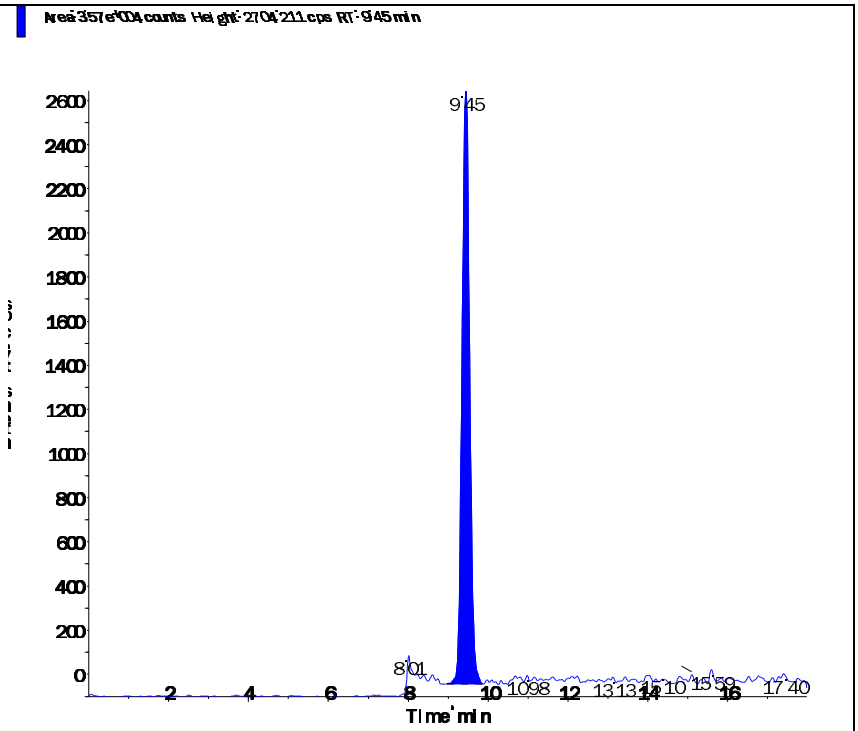

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

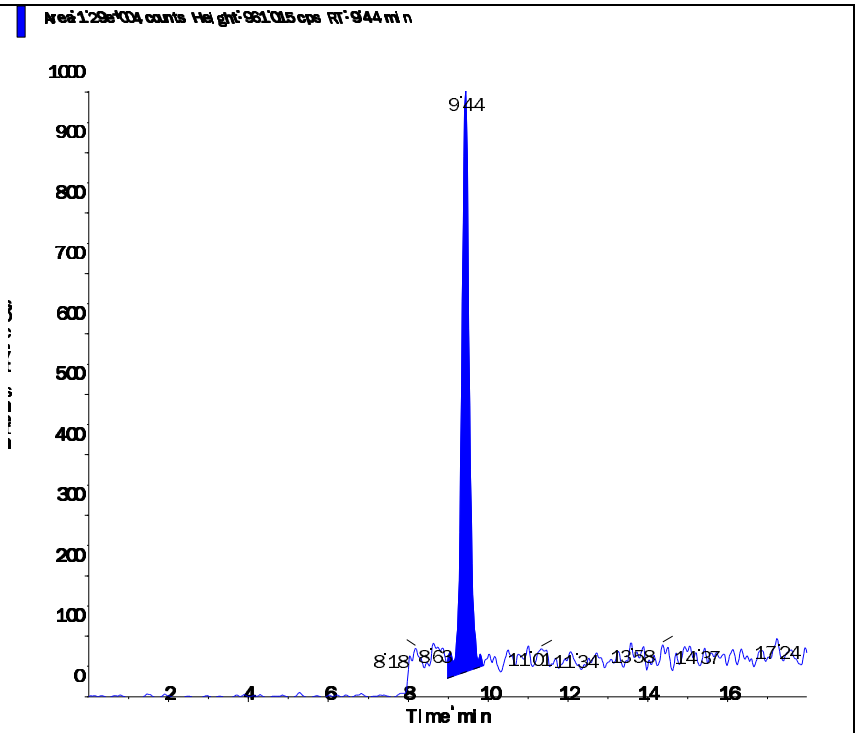

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Data File	LM35602.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 2:39:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-08 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35602.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 2:39:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.43	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.650e+04	9.44	N/A	0.209
Perchlorate conf	1.230e+04	9.42	N/A	0.196

O18LP (Internal Standard)

RT (Exp. RT): 9.43(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

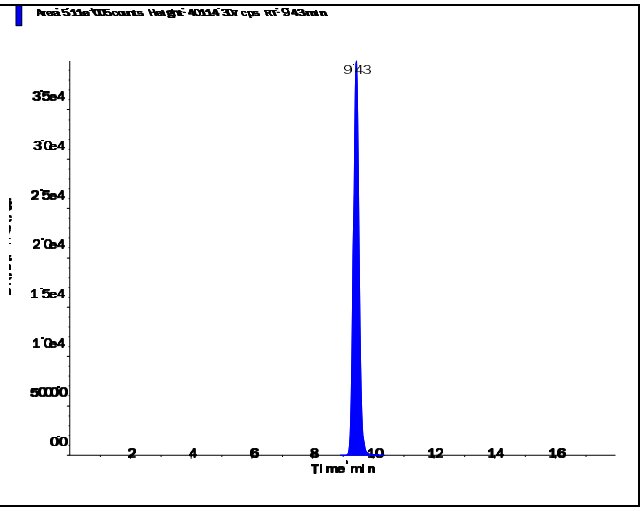

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	0.209 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

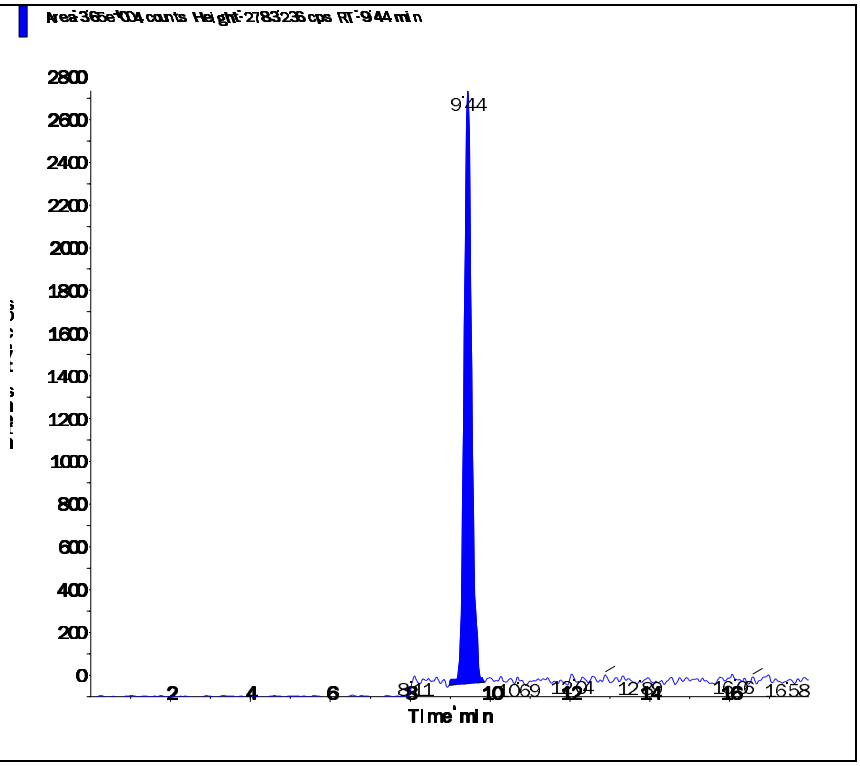

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.42 (9.84) min
Calculated conc:	0.196 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

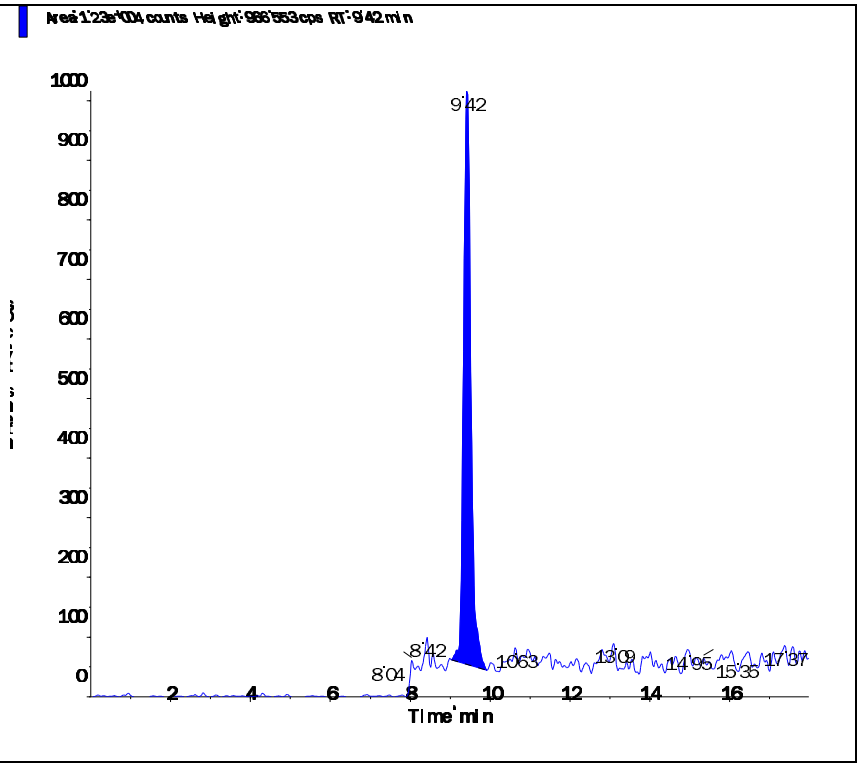

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Data File	LM35568.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 3:55:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-01 CCB	**Injection Vial**	1.00
Data File	LM35568.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 3:55:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.500e+05	9.68	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.68(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

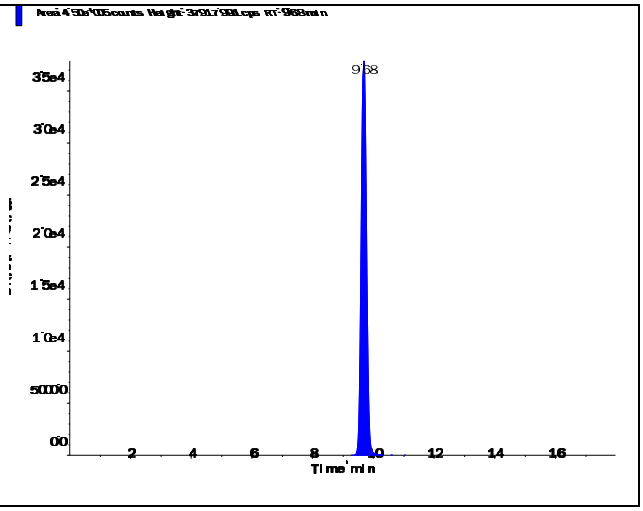

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

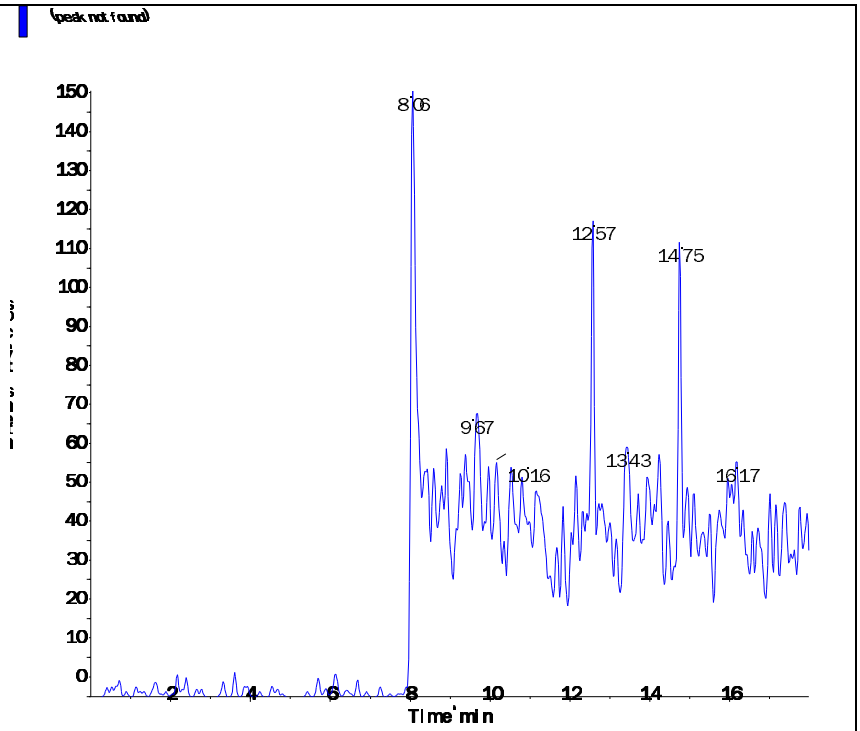

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

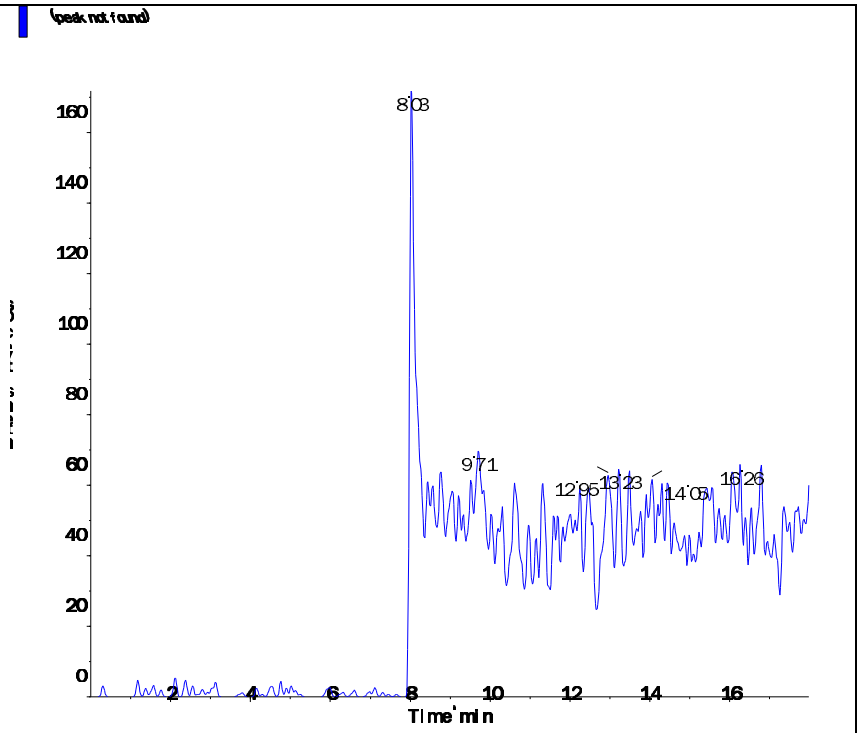

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Data File	LM35583.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 8:39:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-04 CCB	**Injection Vial**	1.00
Data File	LM35583.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 8:39:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

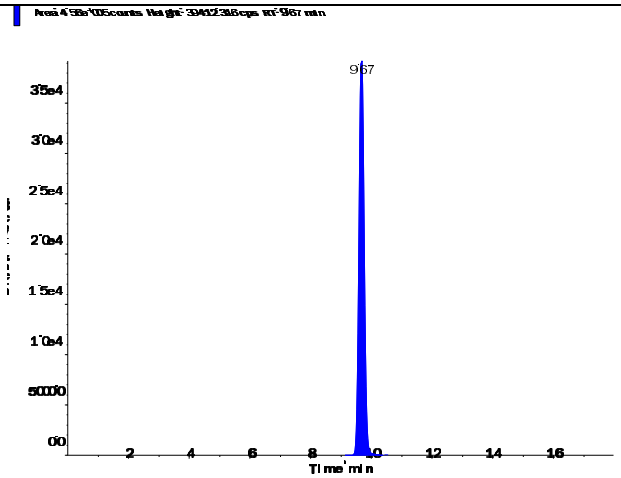

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Printed: 7/5/2016 12:31 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

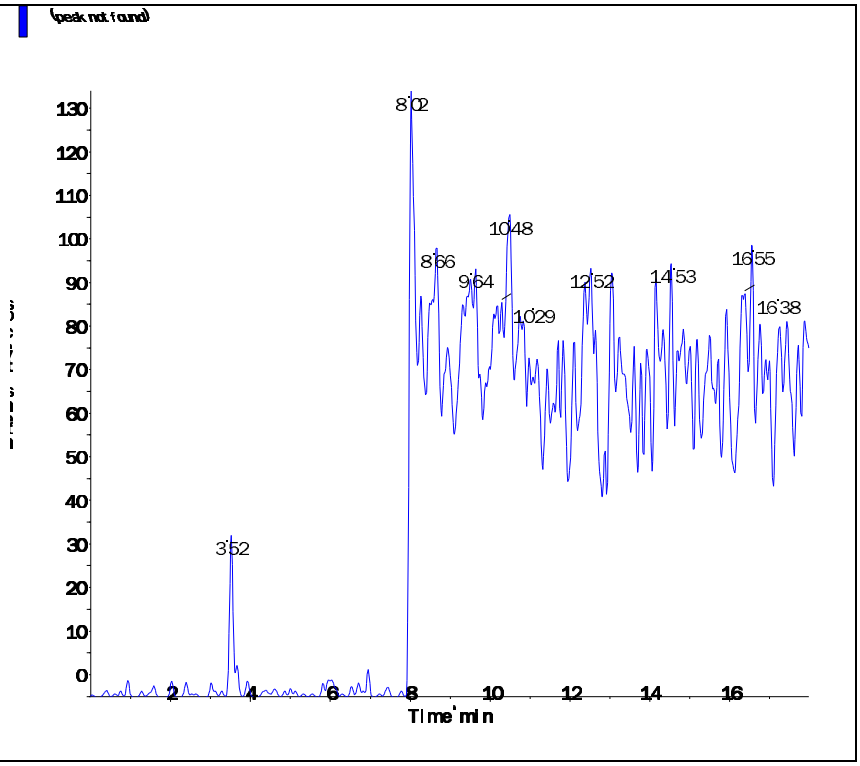

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

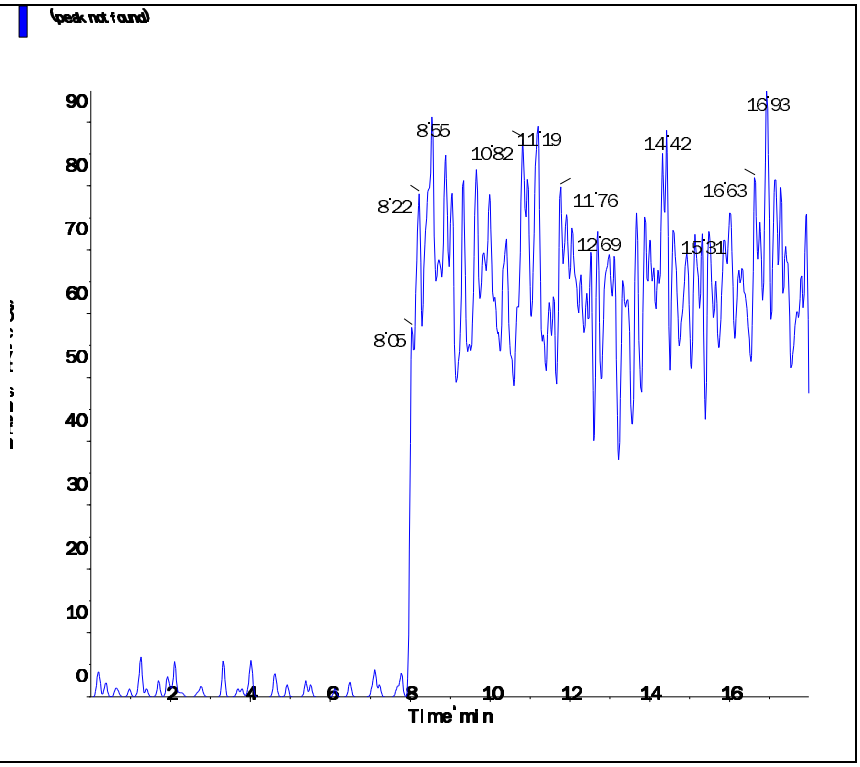

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Data File	LM35596.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 12:46:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-06 CCB	**Injection Vial**	1.00
Data File	LM35596.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 12:46:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.120e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

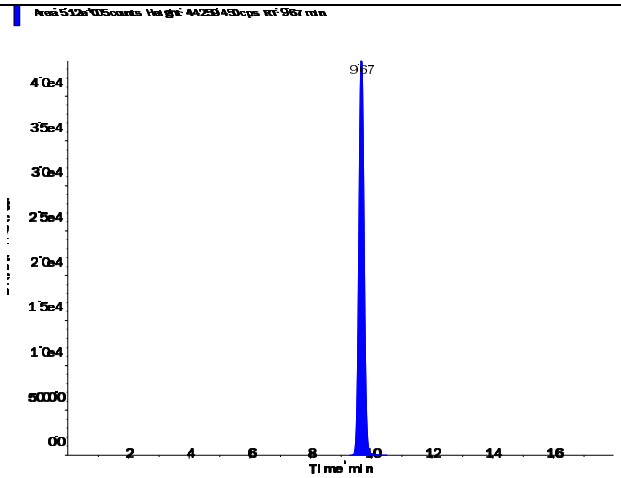

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

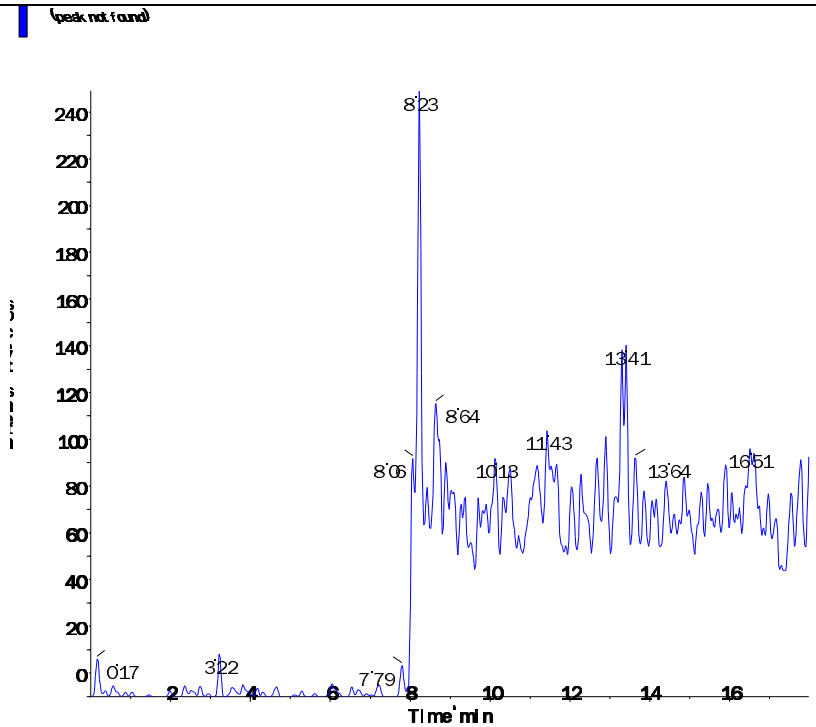

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

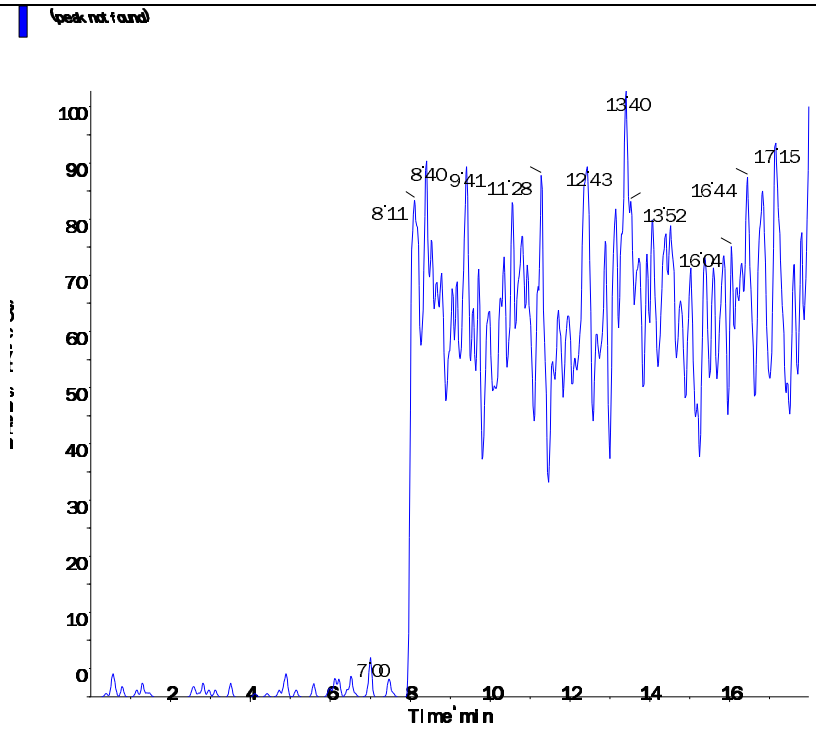

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Created with Analyst Reporter
Printed: 7/5/2016 12:37 PM

Data File	LM35603.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 2:58:39 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-08 CCB	**Injection Vial**	1.00
Data File	LM35603.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 2:58:39 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.250e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

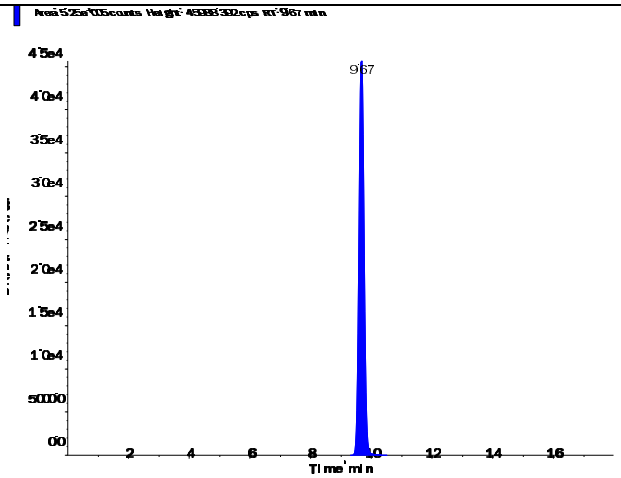

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:37 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

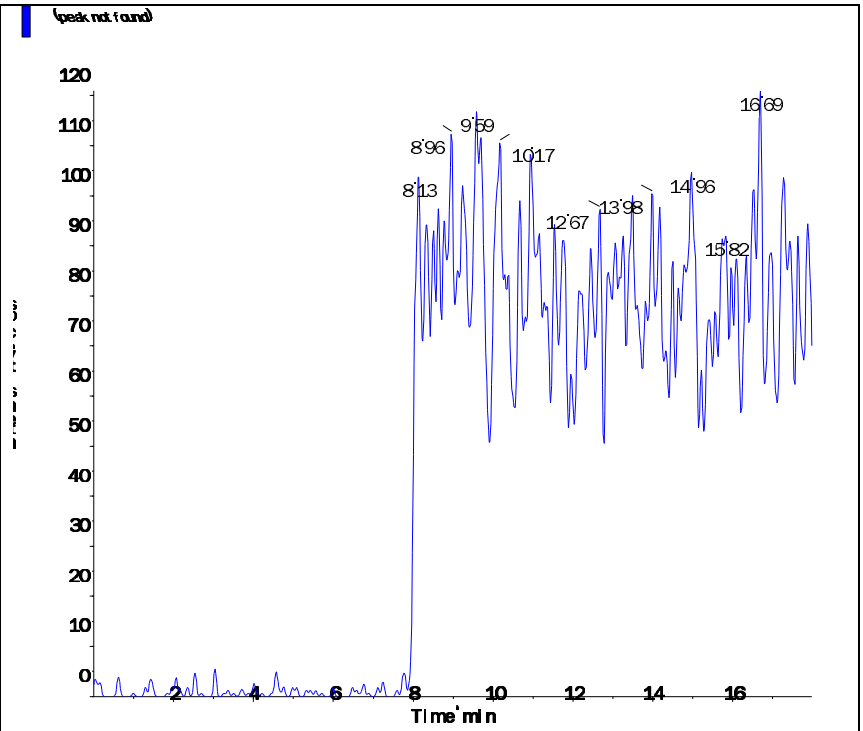

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

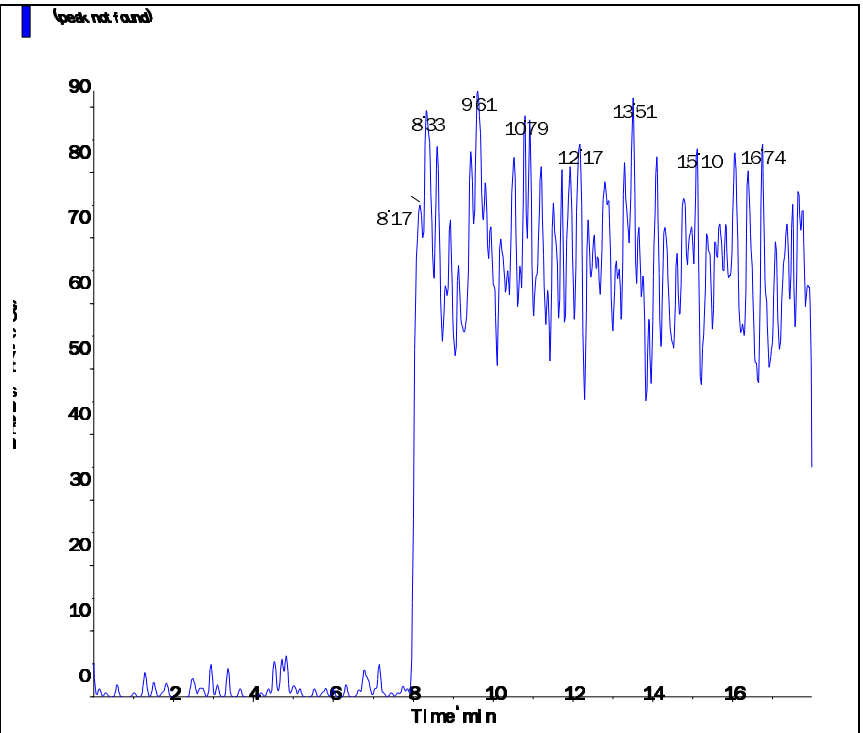

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:27 PM

Data File	LM35571.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 4:52:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM35571.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 4:52:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.330e+05	9.04	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.020e+04	9.05	N/A	0.204
Perchlorate conf	9.940e+03	9.05	N/A	0.185

O18LP (Internal Standard)

RT (Exp. RT): 9.04(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

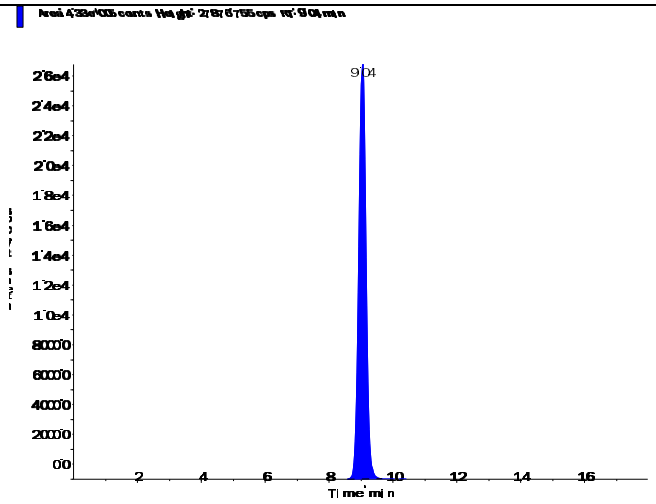

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:27 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.05 (9.84) min Calculated conc: 0.204 ng/ml Area Ratio: 0.07 Sample Type: (Unknown)	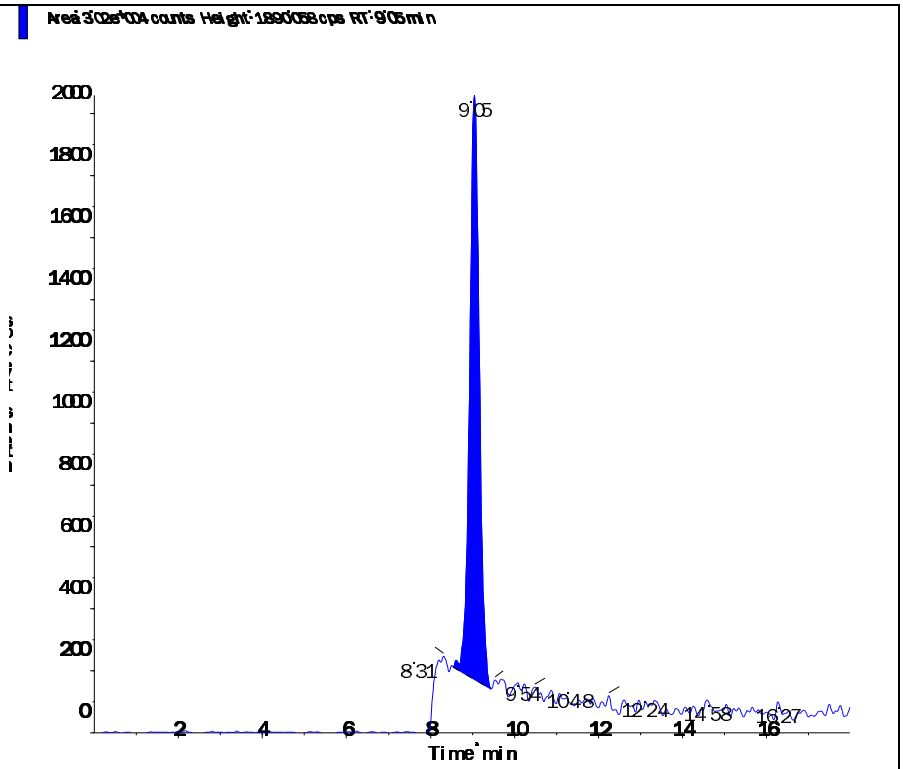
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.05 (9.84) min Calculated conc: 0.185 ng/ml Area Ratio: 0.023 Sample Type: (Unknown)	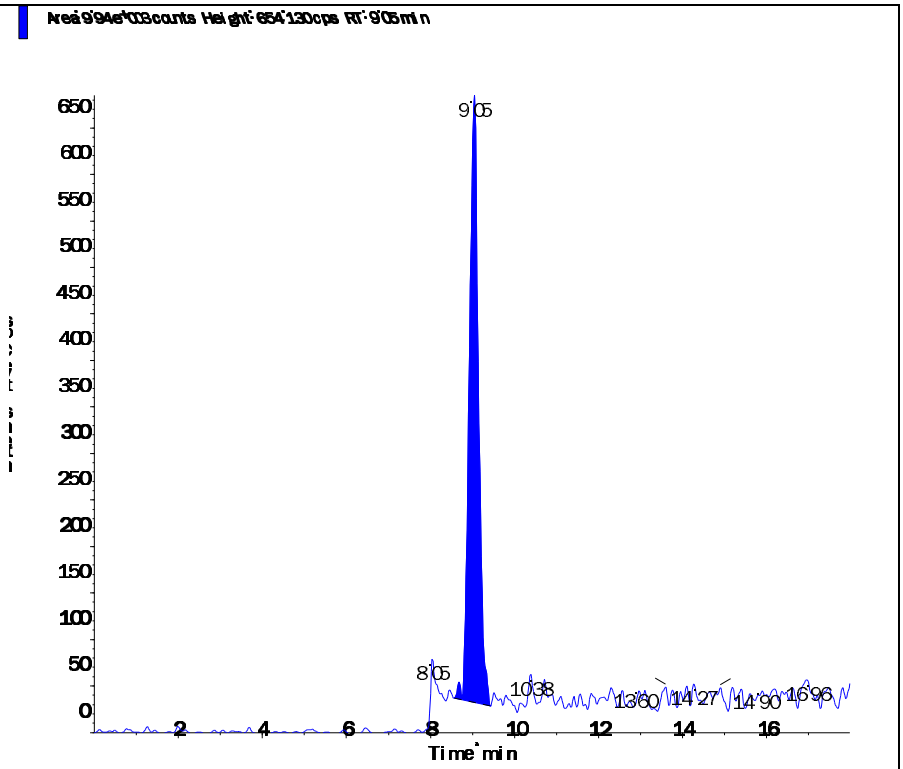

s.dataFile Page 2 of 2

Printing Time: 6:47:51 PM
Printing Date: Friday, July 01, 2016

Sample Name: "WG575005-01 MCT (0.2ug/L)" Sample ID: "WG575005-01" File: "LM35571.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.231 ug/L
Acq. Date:	7/1/2016
Acq. Time:	4:52:43 PM
Modified:	No
Proc. Algorithm:	Analyst Classic
Bunching Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Exp. Width:	0.20
Exp. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Valley
Retention Time:	9.05 min
Area:	3.42e+004 counts
Height:	1959.447 cps
Start Time:	8.566 min
End Time:	9.457 min

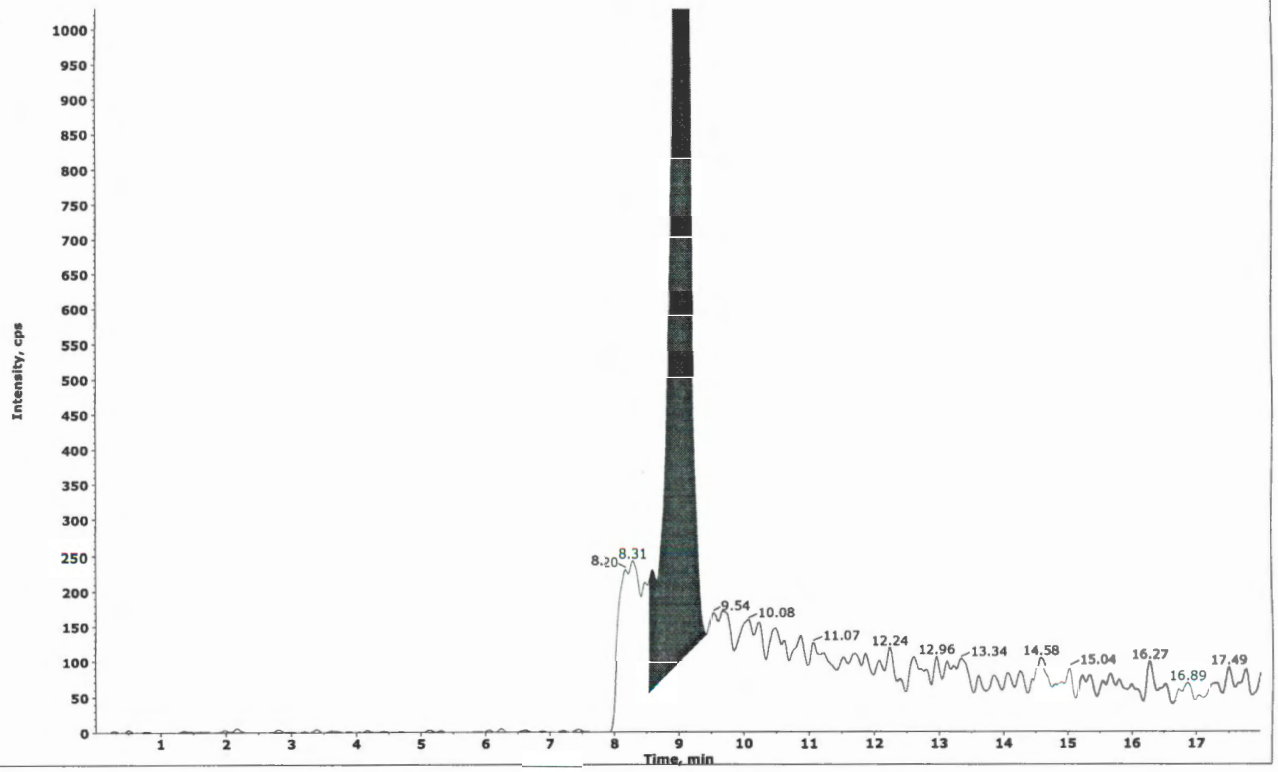

Collected by: N/A
Electronic Signature: no
Operator: lcms1

Printing Time: 6:51:20 PM
Printing Date: Friday, July 01, 2016

Sample Name: "WG575005-01 HCT (0.2ug/L)" Sample ID: "WG575005-01" File: "LM35571.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.204 ug/L
Acq. Date:	7/1/2016
Acq. Time:	4:52:43 PM
Modified:	Yes
Proc. Algorithm:	Analyst Classic
Smoothing Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Exp. Width:	0.20
Exp. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Manual
Retention Time:	9.05 min
Area:	3.02e+004 counts
Height:	1890.058 cps
Start Time:	8.546 min
End Time:	9.437 min

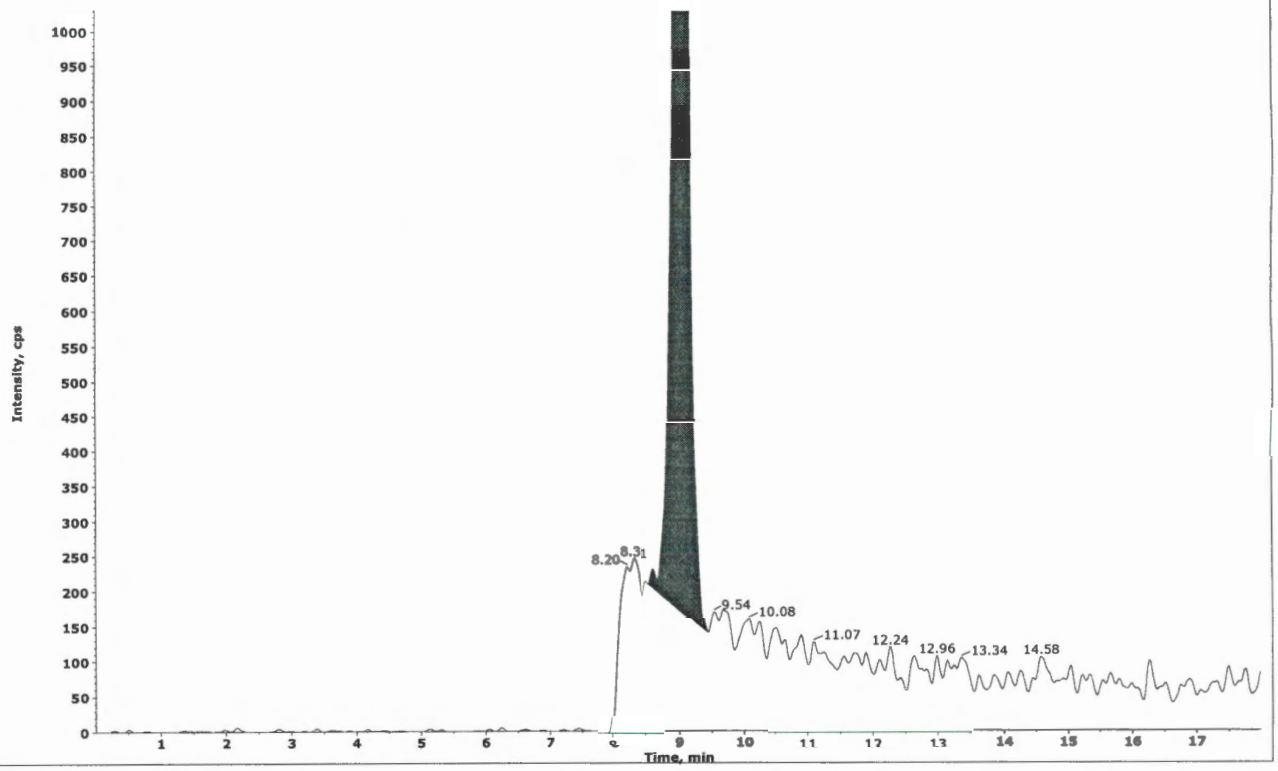

#4
JWR/07/01/16

✓ MED
7-6-16

Collected by: N/A
Electronic Signature: no
Operator: lcms1

2.2.2.5 Raw QC Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:27 PM

Data File	LM35572.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 5:11:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-02 BLANK	**Injection Vial**	5.00
Data File	LM35572.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 5:11:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.510e+05	9.58	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.58(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

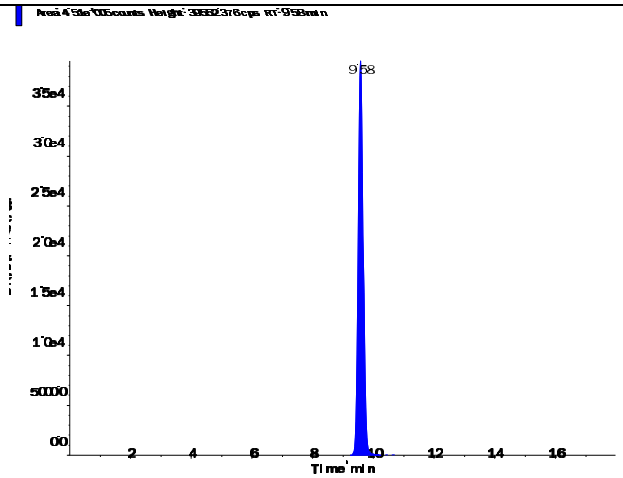

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:27 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

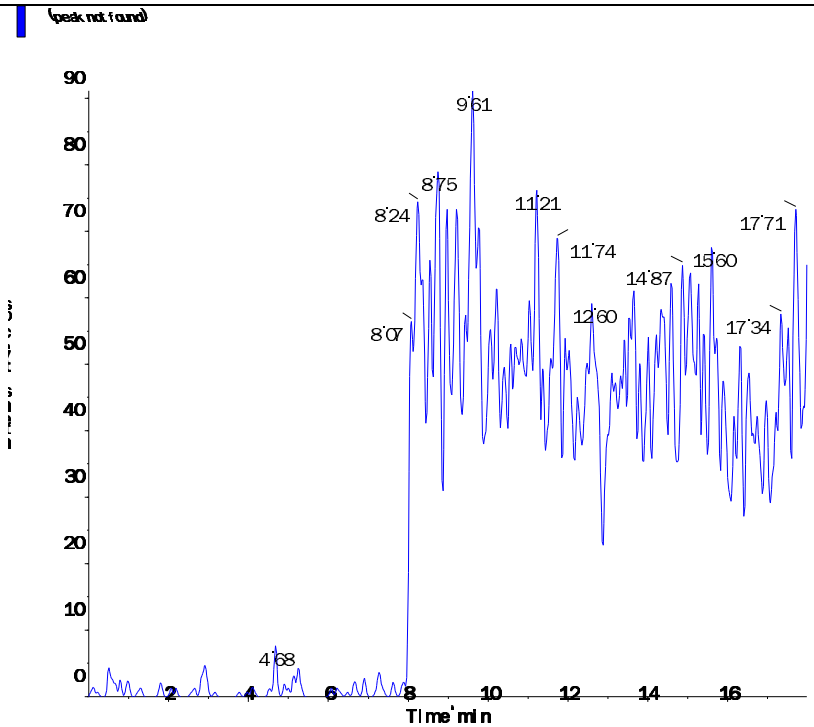

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

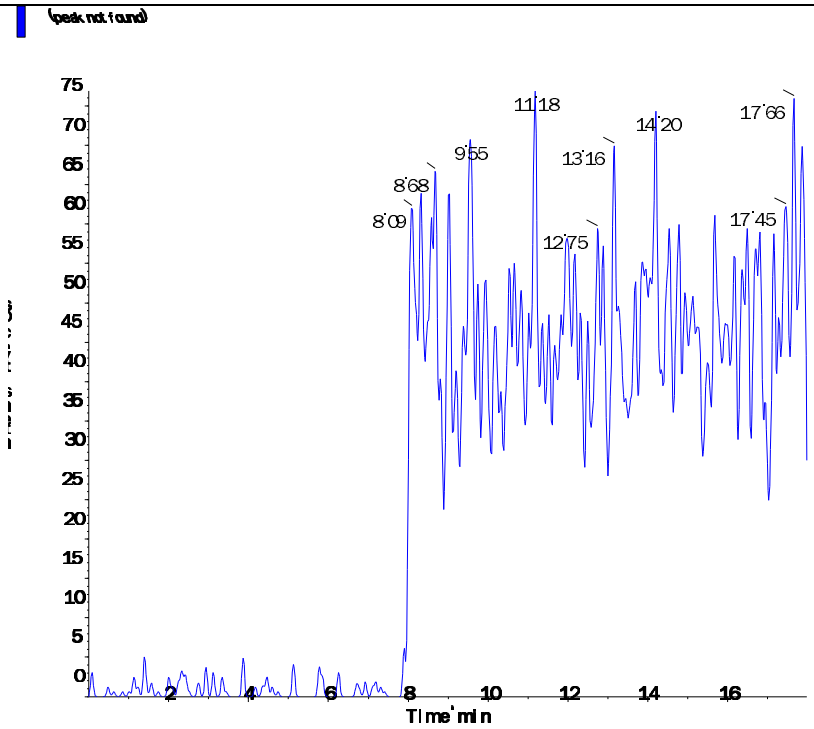

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:27 PM

Data File	LM35573.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 5:30:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM35573.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 5:30:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.510e+05	9.60	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.110e+04	9.61	N/A	0.201
Perchlorate conf	1.130e+04	9.60	N/A	0.204

O18LP (Internal Standard)

RT (Exp. RT): 9.60(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

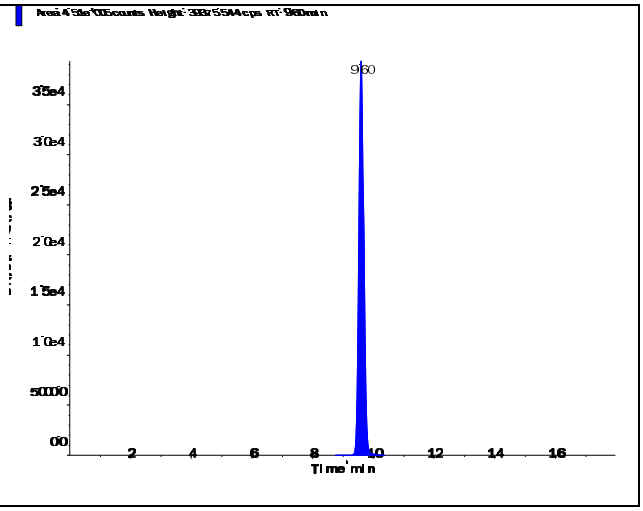

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:27 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.61 (9.84) min Calculated conc: 0.201 ng/ml Area Ratio: 0.069 Sample Type: (Unknown)	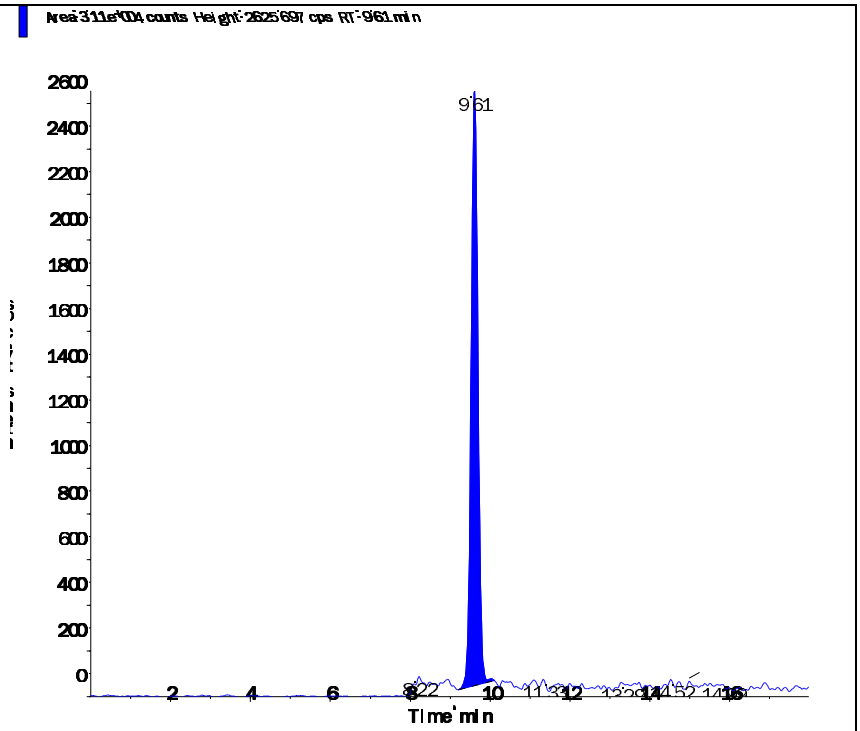
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.60 (9.84) min Calculated conc: 0.204 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	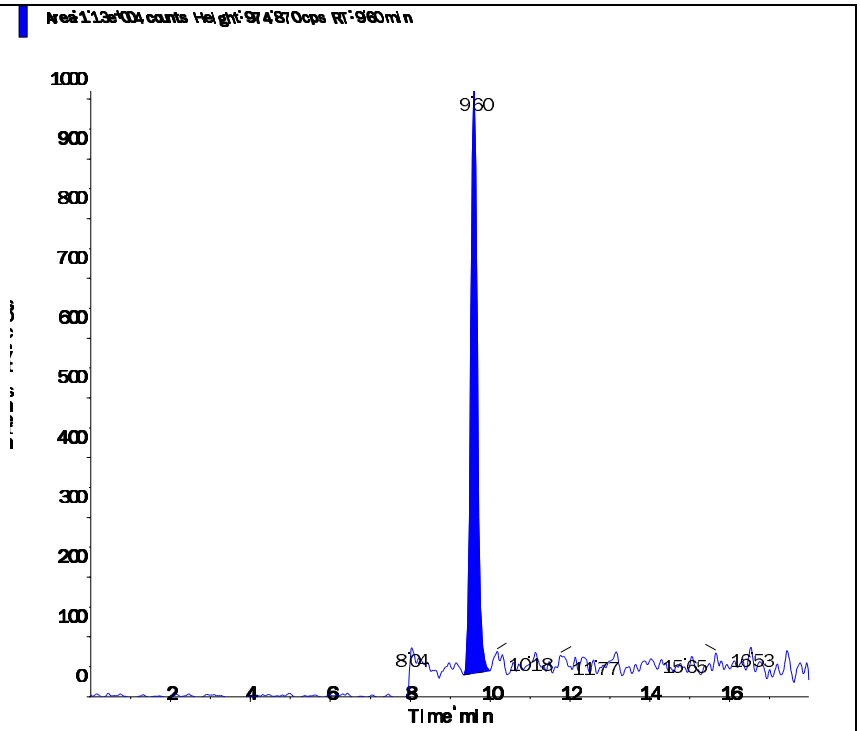

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:28 PM

Data File	LM35574.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 5:49:31 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-04 LCS2 (0.2ug/L)	**Injection Vial**	7.00
Data File	LM35574.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 5:49:31 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.500e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.250e+04	9.66	N/A	0.211
Perchlorate conf	1.180e+04	9.65	N/A	0.214

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

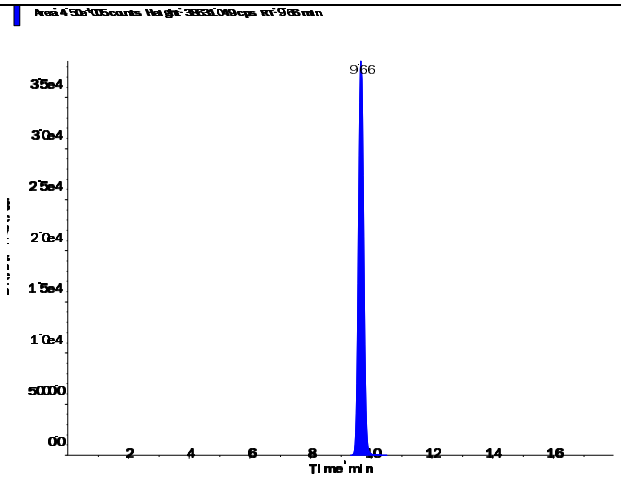

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:28 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.211 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

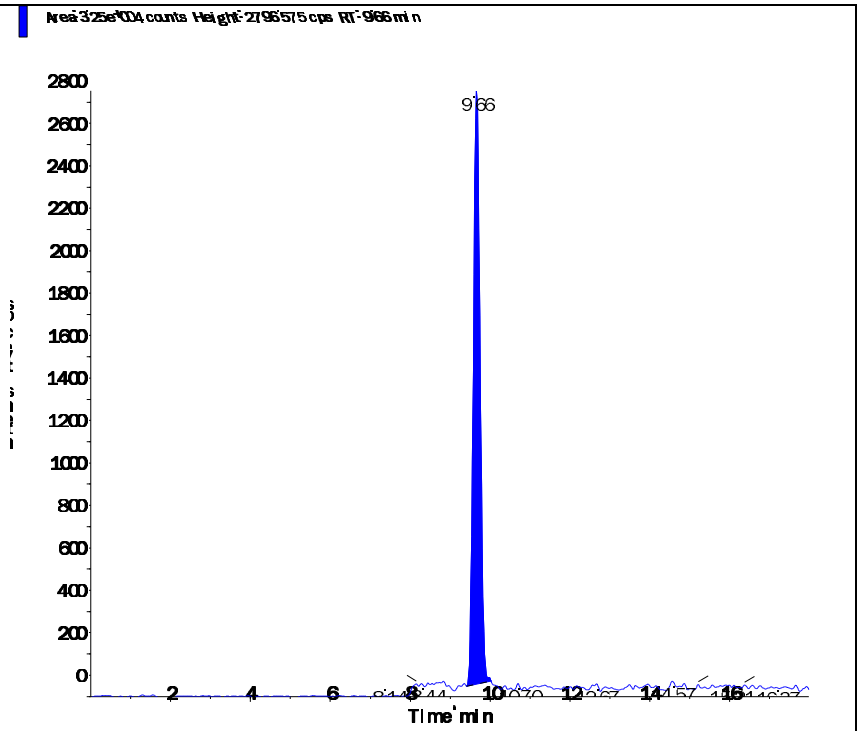

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.65 (9.84) min
Calculated conc:	0.214 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

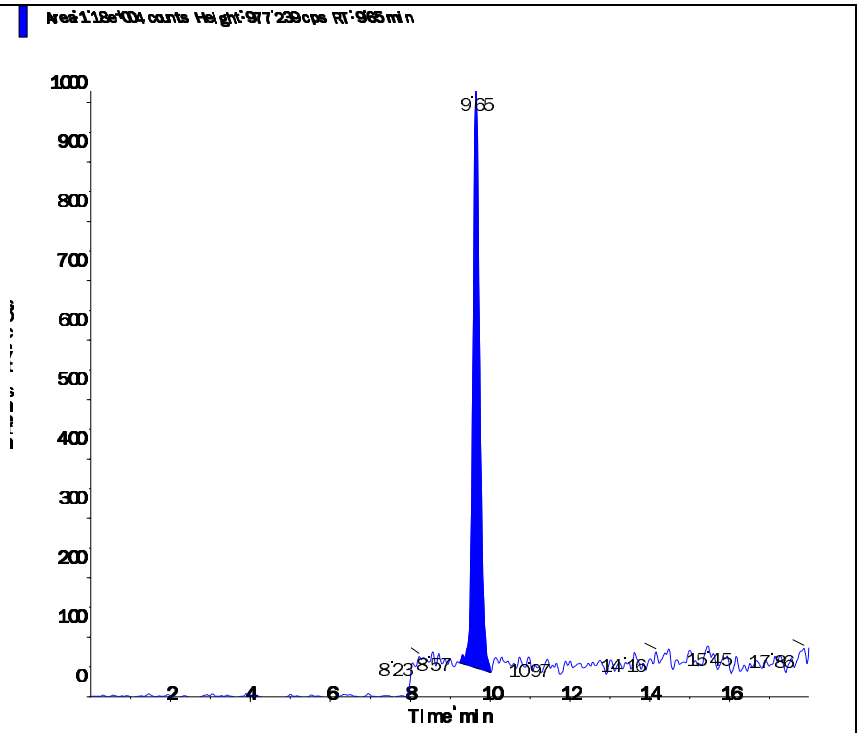

s.dataFile Page 2 of 2

2.3 Metals Data

2.3.1 Metals I C P Data

2.3.1.1 Summary Data

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061452-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW12SW-062416	**Prep Method:**	3015	**Prep Date:**	06/29/2016 12:37
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/30/2016 12:04
Workgroup #:	WG574839	**Analyst:**	JYH	**Run Date:**	06/30/2016 17:41
Collect Date:	06/24/2016 07:50	**Dilution:**	1	**File ID:**	T3.063016.174121
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.0712	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Potassium, Total	7440-09-7	82.0		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061452-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW12SW-062416	**Prep Method:**	3015	**Prep Date:**	06/29/2016 12:37
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	07/14/2016 12:14
Workgroup #:	WG574839	**Analyst:**	JYH	**Run Date:**	07/14/2016 17:27
Collect Date:	06/24/2016 07:50	**Dilution:**	5	**File ID:**	T3.071416.172719
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	45.3		2.50	1.25	0.625
Iron, Total	7439-89-6	3.46		1.00	0.500	0.250
Magnesium, Total	7439-95-4	32.8		5.00	2.50	1.25
Sodium, Total	7440-23-5	235		5.00	2.50	1.25

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.1.2 QC Summary Data

Example 6010 Calculations
Thermo Scientific iCAP

1.0 Initial Calibration (ICAL) Parameters
For a multi-point calibration, the system performs linear regression from data consisting of a blank and four standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG574636
Analyst: AC
Spike Analyst: AC
Run Date: 06/29/2016 12:37
Method: 3015
Balance: BAL019
Instrument: MW-4
Instrument Start: 06/29/2016 12:37

SOP: ME407 Revison 19
Spike Solution: STD76576
Spike Witness: VC
HNO3 Lot #: COA18905
HCL Lot #: COA18769
ICP Filters- fisher-Lot# RGT35619
40 & 50 ML. DIGESTION TU COA18987

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG574636-02	BLANK	1	40 mL	50 mL	203.949 g	203.936 g		
2	WG574636-03	LCS	1	40 mL	50 mL	211.247 g	211.242 g	5 mL	
3	L16061452-01	SAMP	1	40 mL	50 mL	205.209 g	205.197 g		07/08/16
4	L16061453-01	SAMP	1	40 mL	50 mL	204.971 g	204.957 g		07/08/16
5	L16061453-03	SAMP	1	40 mL	50 mL	206.906 g	206.897 g		07/08/16
6	L16061455-01	SAMP	1	40 mL	50 mL	205.053 g	205.028 g		07/11/16
7	WG574636-01	REF	1	40 mL	50 mL	205.051 g	205.04 g		
8	L16061455-02	RS01	1	40 mL	50 mL	205.051 g	205.04 g		07/11/16
9	WG574636-04	MS	1	40 mL	50 mL	208.99 g	208.978 g	5 mL	
10	L16061455-03	MS01	1	40 mL	50 mL	208.99 g	208.978 g	5 mL	07/11/16
11	WG574636-05	MSD	1	40 mL	50 mL	211.873 g	211.856 g	5 mL	
12	L16061455-04	SD01	1	40 mL	50 mL	211.873 g	211.856 g	5 mL	07/11/16
13	L16061455-05	SAMP	1	40 mL	50 mL	204.175 g	204.154 g		07/11/16
14	L16061478-01	SAMP	1	40 mL	50 mL	204.905 g	204.899 g		07/06/16
15	L16061478-02	SAMP	1	40 mL	50 mL	206.065 g	206.052 g		07/06/16
16	L16061498-01	SAMP	1	40 mL	50 mL	206.923 g	206.908 g		07/12/16
17	L16061540-01	SAMP	1	40 mL	50 mL	205.199 g	205.179 g		07/06/16
18	L16061540-02	SAMP	1	40 mL	50 mL	206.627 g	206.611 g		07/06/16
19	L16061540-03	SAMP	1	40 mL	50 mL	204.117 g	204.101 g		07/06/16
20	L16061559-01	SAMP	1	40 mL	50 mL	206.575 g	206.562 g		07/08/16
21	L16061559-02	SAMP	1	40 mL	50 mL	206.502 g	206.484 g		07/08/16
22	L16061564-02	SAMP	1	1 mL	50 mL	203.852 g	203.837 g		07/08/16
23	L16061564-04	SAMP	1	1 mL	50 mL	206.627 g	206.612 g		07/08/16
24	L16061564-06	SAMP	1	1 mL	50 mL	204.592 g	204.578 g		07/08/16

L16061564-04	Filtered Digestate

Analyst: Andrea R Cochrane

Reviewer: Erin Potter

MW_DIG - Modified 09/30/2009
PDF ID: 4831260
Report generated: 06/29/2016 13:20

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 063016T3.3R.TXT

Analyst1: JYH Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76882 ICSAB: STD76834 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 574685,574802,574668,574839,574840

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.063016.114847	WG574911-01	Calibration Point		1		06/30/16 11:48
2	T3.063016.115245	WG574911-02	Calibration Point		1		06/30/16 11:52
3	T3.063016.115645	WG574911-03	Calibration Point		1		06/30/16 11:56
4	T3.063016.120044	WG574911-04	Calibration Point		1		06/30/16 12:00
5	T3.063016.120423	WG574911-05	Calibration Point		1		06/30/16 12:04
6	T3.063016.120759	WG574911-06	Initial Calibration Verification		1		06/30/16 12:07
7	T3.063016.121137	WG574911-07	Initial Calib Blank		1		06/30/16 12:11
8	T3.063016.121535	WG574911-08	Low Level Initial Calibration V		1		06/30/16 12:15
9	T3.063016.121930	WG574911-09	Low Level Initial Calibration V		1		06/30/16 12:19
10	T3.063016.122323	WG574911-10	Interference Check		1		06/30/16 12:23
11	T3.063016.122713	WG574911-11	Interference Check		1		06/30/16 12:27
12	T3.063016.123056	WG574911-12	CCV		1		06/30/16 12:30
13	T3.063016.123434	WG574911-13	CCB		1		06/30/16 12:34
14	T3.063016.123832	WG574028-02	Method/Prep Blank	40/50	1		06/30/16 12:38
15	T3.063016.124230	WG574028-03	Laboratory Control S	40/50	1		06/30/16 12:42
16	T3.063016.124558	L16061244-01	K6F0679-01	5/50	1		06/30/16 12:45
17	T3.063016.124958	L16061244-02	K6F0679-02	5/50	1		06/30/16 12:49
18	T3.063016.125356	L16061251-01	35006890800-W-1-06-22-16	40/50	1		06/30/16 12:53
19	T3.063016.125749	L16061251-03	35006890800-W-2-06-22-16	40/50	1		06/30/16 12:57
20	T3.063016.130142	L16061253-01	350068392000-W-1-06-22-16	40/50	1		06/30/16 13:01
21	T3.063016.130536	L16061253-03	350068392000-W-1-06-22-16	40/50	1		06/30/16 13:05
22	T3.063016.130928	L16061254-01	350068384000-W-1-06-22-16	40/50	1		06/30/16 13:09
23	T3.063016.131322	L16061255-01	350069852000-06-22-16 P1	40/50	1		06/30/16 13:13
24	T3.063016.131717	WG574911-14	CCV		1		06/30/16 13:17
25	T3.063016.132056	WG574911-15	CCB		1		06/30/16 13:20
26	T3.063016.132454	L16061255-03	350069848000-W-1-06-22-16	40/50	1		06/30/16 13:24
27	T3.063016.132849	L16061255-05	350069848000-W-2-06-22-16	40/50	1		06/30/16 13:28
28	T3.063016.133242	L16061256-01	350070123001-W-1-06-22-16	40/50	1		06/30/16 13:32
29	T3.063016.133638	WG574028-01	Reference Sample		1	L16061265-01	06/30/16 13:36
30	T3.063016.134037	WG574028-04	Matrix Spike	40/50	1	L16061265-01	06/30/16 13:40
31	T3.063016.134423	WG574028-05	Matrix Spike Duplica	40/50	1	L16061265-01	06/30/16 13:44
32	T3.063016.134811	L16061265-04	SS007MWOB16-007	40/50	1		06/30/16 13:48
33	T3.063016.135206	L16061265-05	SS007MWOB21-007	40/50	1		06/30/16 13:52
34	T3.063016.135600	L16061265-06	FQC-RB06211601-CC	40/50	1		06/30/16 13:56

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Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 063016T3.3R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76882 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574685,574802,574668,574839,574840

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.063016.140000	L16061266-01	ST008MW0805-007	40/50	1		06/30/16 14:00
36	T3.063016.140354	WG574911-16	CCV		1		06/30/16 14:03
37	T3.063016.140732	WG574911-17	CCB		1		06/30/16 14:07
38	T3.063016.141130	L16061269-01	FT002MW0204-007	40/50	1		06/30/16 14:11
39	T3.063016.141526	L16061292-01	350069904000-W-1-06-23-16	40/50	1		06/30/16 14:15
40	T3.063016.141921	L16061293-01	STREAM 1-06-23-16	40/50	1		06/30/16 14:19
41	T3.063016.142313	L16061294-03	EB01	40/50	1		06/30/16 14:23
42	T3.063016.142711	WG574685-01	Post Digestion Spike		1	L16061293-01	06/30/16 14:27
43	T3.063016.143050	WG574685-02	Serial Dilution		5	L16061293-01	06/30/16 14:30
44	T3.063016.143445	WG574685-02	Serial Dilution		25	L16061293-01	06/30/16 14:34
45	T3.063016.143844	WG574911-18	CCV		1		06/30/16 14:38
46	T3.063016.144222	WG574911-19	CCB		1		06/30/16 14:42
47	T3.063016.144622	WG574911-20	Low Level Continuing Calibra		1		06/30/16 14:46
48	T3.063016.145015	WG574911-21	Low Level Continuing Calibra		1		06/30/16 14:50
49	T3.063016.145407	WG574448-07	Method/Prep Blank	40/50	1		06/30/16 14:54
50	T3.063016.145806	WG574448-08	Laboratory Control S	40/50	1		06/30/16 14:58
51	T3.063016.150145	WG574277-01	Fluid Blank 1		1		06/30/16 15:01
52	T3.063016.150543	WG574277-02	Fluid Blank 2		1		06/30/16 15:05
53	T3.063016.150942	L16061396-02	062316-FA	5/50	1		06/30/16 15:09
54	T3.063016.151338	L16061396-06	062316-BA	5/50	1		06/30/16 15:13
55	T3.063016.151735	L16061396-08	062316-WWC	5/50	1		06/30/16 15:17
56	T3.063016.152132	L16061398-01	LIME GRIT WASTE	5/50	1		06/30/16 15:21
57	T3.063016.152520	L16061400-01	MW-22-008	40/50	1		06/30/16 15:25
58	T3.063016.152915	L16061400-02	MW-22-016	40/50	1		06/30/16 15:29
59	T3.063016.153313	WG574911-22	CCV		1		06/30/16 15:33
60	T3.063016.153652	WG574911-23	CCB		1		06/30/16 15:36
61	T3.063016.154040	L16061400-03	MW-22-006	40/50	1		06/30/16 15:40
62	T3.063016.154436	L16061400-04	MW-22-005	40/50	1		06/30/16 15:44
63	T3.063016.154832	L16061400-05	MW-22-001	40/50	1		06/30/16 15:48
64	T3.063016.155220	WG574448-06	Reference Sample		1	L16061400-06	06/30/16 15:52
65	T3.063016.160144	WG574448-09	Matrix Spike	40/50	1	L16061400-06	06/30/16 16:01
66	T3.063016.160523	WG574448-10	Matrix Spike Duplica	40/50	1	L16061400-06	06/30/16 16:05
67	T3.063016.160902	L16061400-09	MW-22-003	40/50	1		06/30/16 16:09
68	T3.063016.161254	L16061400-10	MW-22-004	40/50	1		06/30/16 16:12

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 063016T3.3R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76882 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574685,574802,574668,574839,574840

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.063016.161648	L16061412-01	SS007MW0B05-007	40/50	1		06/30/16 16:16
70	T3.063016.162042	L16061412-02	SS007MW0B02-007	40/50	1		06/30/16 16:20
71	T3.063016.162436	WG574911-24	CCV		1		06/30/16 16:24
72	T3.063016.162814	WG574911-25	CCB		1		06/30/16 16:28
73	T3.063016.163211	L16061413-01	DP005MW0504-007	40/50	1		06/30/16 16:32
74	T3.063016.163604	L16061416-01	DP005MW0509-007	40/50	1		06/30/16 16:36
75	T3.063016.163958	L16061416-02	DP005MW0518-007	40/50	1		06/30/16 16:39
76	T3.063016.164352	L16061421-01	LF003MW03	40/50	1		06/30/16 16:43
77	T3.063016.164746	WG574802-01	Post Digestion Spike		1	L16061421-01	06/30/16 16:47
78	T3.063016.165125	WG574802-02	Serial Dilution		5	L16061421-01	06/30/16 16:51
79	T3.063016.165520	WG574802-02	Serial Dilution		25	L16061421-01	06/30/16 16:55
80	T3.063016.165917	WG574911-26	CCV		1		06/30/16 16:59
81	T3.063016.170256	WG574911-27	CCB		1		06/30/16 17:02
82	T3.063016.170652	L16061476-56	16300-WP01-WP010	1/50	1		06/30/16 17:06
83	T3.063016.171037	L16061476-42	13283-WP07-WP044	1/50	1		06/30/16 17:10
84	T3.063016.171434	WG574668-01	Post Digestion Spike		1	L16061476-42	06/30/16 17:14
85	T3.063016.171813	WG574668-02	Serial Dilution		5	L16061476-42	06/30/16 17:18
86	T3.063016.172211	WG574668-02	Serial Dilution		25	L16061476-42	06/30/16 17:22
87	T3.063016.172607	WG574911-28	CCV		1		06/30/16 17:26
88	T3.063016.172945	WG574911-29	CCB		1		06/30/16 17:29
89	T3.063016.173343	WG574636-02	Method/Prep Blank	40/50	1		06/30/16 17:33
90	T3.063016.173741	WG574636-03	Laboratory Control S	40/50	1		06/30/16 17:37
91	T3.063016.174121	L16061452-01	18CPTMW12SW-062416	40/50	1		06/30/16 17:41
92	T3.063016.174514	L16061453-01	MW2-062416	40/50	1		06/30/16 17:45
93	T3.063016.174906	L16061453-03	18CPTMW01SW-062416	40/50	1		06/30/16 17:49
94	T3.063016.175259	L16061455-01	ST2H15-SW-02	40/50	1		06/30/16 17:52
95	T3.063016.175652	WG574636-01	Reference Sample		1	L16061455-02	06/30/16 17:56
96	T3.063016.180045	WG574636-04	Matrix Spike	40/50	1	L16061455-02	06/30/16 18:00
97	T3.063016.180425	WG574636-05	Matrix Spike Duplica	40/50	1	L16061455-02	06/30/16 18:04
98	T3.063016.180804	L16061455-05	ST2H15-SW-04	40/50	1		06/30/16 18:08
99	T3.063016.181159	WG574911-30	CCV		1		06/30/16 18:11
100	T3.063016.181537	WG574911-31	CCB		1		06/30/16 18:15
101	T3.063016.181936	L16061478-01	40582-01	40/50	1		06/30/16 18:19
102	T3.063016.182331	L16061478-02	BRNSCR-14	40/50	1		06/30/16 18:23

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 063016T3.3R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76882 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574685,574802,574668,574839,574840

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T3.063016.182725	L16061498-01	AG6056	40/50	1		06/30/16 18:27
104	T3.063016.183118	L16061540-01	27-11-5.04 RW3 (T)	40/50	1		06/30/16 18:31
105	T3.063016.183515	L16061540-02	27-11-5.04 RW3 (U)	40/50	1		06/30/16 18:35
106	T3.063016.183909	L16061540-03	27-18-4.03 RW1	40/50	1		06/30/16 18:39
107	T3.063016.184303	L16061559-01	LH18/24-SP650-6374-GRAB	40/50	1		06/30/16 18:43
108	T3.063016.184657	L16061559-02	LH18/24-SP650-6374-COMP	40/50	1		06/30/16 18:46
109	T3.063016.185051	L16061564-02	PERMEATE	1/50	1		06/30/16 18:50
110	T3.063016.185448	L16061564-04	BLEED	1/50	1		06/30/16 18:54
111	T3.063016.185841	WG574911-32	CCV		1		06/30/16 18:58
112	T3.063016.190219	WG574911-33	CCB		1		06/30/16 19:02
113	T3.063016.190618	L16061564-06	N. DOCK FLUME	1/50	1		06/30/16 19:06
114	T3.063016.191016	WG574839-01	Post Digestion Spike		1	L16061564-06	06/30/16 19:10
115	T3.063016.191356	WG574839-02	SERIAL DILUTION		5	L16061564-06	06/30/16 19:13
116	T3.063016.191752	WG574839-02	SERIAL DILUTION		25	L16061564-06	06/30/16 19:17
117	T3.063016.192150	WG574911-34	CCV		1		06/30/16 19:21
118	T3.063016.192529	WG574911-35	CCB		1		06/30/16 19:25
119	T3.063016.192926	WG574911-36	Low Level Continuing Calibra		1		06/30/16 19:29
120	T3.063016.193321	WG574911-37	Low Level Continuing Calibra		1		06/30/16 19:33
121	T3.063016.193712	WG574770-02	Method/Prep Blank	40/50	1		06/30/16 19:37
122	T3.063016.194110	WG574770-03	Laboratory Control S	40/50	1		06/30/16 19:41
123	T3.063016.194450	WG574635-01	Fluid Blank 1		1		06/30/16 19:44
124	T3.063016.194847	L16061501-01	KILN AREA RIGHT	5/50	1		06/30/16 19:48
125	T3.063016.195239	L16061501-02	KILN AREA LEFT	5/50	1		06/30/16 19:52
126	T3.063016.195630	L16061534-01	WC01	5/50	1		06/30/16 19:56
127	T3.063016.200025	L16061561-01	V-1105	5/50	1		06/30/16 20:00
128	T3.063016.200419	L16061568-01	IA N\&S	40/50	1		06/30/16 20:04
129	T3.063016.200813	L16061569-01	SP-1A-30	40/50	1		06/30/16 20:08
130	T3.063016.201209	L16061570-01	POND OUTFALL	40/50	1		06/30/16 20:12
131	T3.063016.201605	WG574911-38	CCV		1		06/30/16 20:16
132	T3.063016.201943	WG574911-39	CCB		1		06/30/16 20:19
133	T3.063016.202330	L16061576-01	6-10-27.06 W1	40/50	1		06/30/16 20:23
134	T3.063016.202724	L16061577-01	1802-134 W1 (S)	40/50	1		06/30/16 20:27
135	T3.063016.203116	L16061577-02	1802-134 W1 (F)	40/50	1		06/30/16 20:31
136	T3.063016.203512	L16061578-01	SHOT BLAST	5/50	1		06/30/16 20:35

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 063016T3.3R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76882 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574685,574802,574668,574839,574840

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	T3.063016.203905	WG574770-01	Reference Sample		1	L16061588-01	06/30/16 20:39
138	T3.063016.204301	WG574770-04	Matrix Spike	40/50	1	L16061588-01	06/30/16 20:43
139	T3.063016.204641	WG574770-05	Matrix Spike Duplica	40/50	1	L16061588-01	06/30/16 20:46
140	T3.063016.205020	L16061614-01	GREENWOOD RPW1	40/50	1		06/30/16 20:50
141	T3.063016.205414	L16061618-01	27-18-4.08 RW2 (T)	40/50	1		06/30/16 20:54
142	T3.063016.205808	L16061618-02	27-18-4.08 RW2 (U)	40/50	1		06/30/16 20:58
143	T3.063016.210203	WG574911-40	CCV		1		06/30/16 21:02
144	T3.063016.210541	WG574911-41	CCB		1		06/30/16 21:05
145	T3.063016.210938	L16061619-01	45-10-5.02 W1	40/50	1		06/30/16 21:09
146	T3.063016.211333	L16061622-01	2016PRE-131SOUTHST	40/50	1		06/30/16 21:13
147	T3.063016.211727	L16061622-02	2016PRE-131SOUTHST-D	40/50	1		06/30/16 21:17
148	T3.063016.212122	WG574840-01	Post Digestion Spike		1	L16061622-02	06/30/16 21:21
149	T3.063016.212502	WG574840-02	Serial Dilution		5	L16061622-02	06/30/16 21:25
150	T3.063016.212858	WG574840-02	Serial Dilution		25	L16061622-02	06/30/16 21:28
151	T3.063016.213256	WG574911-42	CCV		1		06/30/16 21:32
152	T3.063016.213635	WG574911-43	CCB		1		06/30/16 21:36

Comments

Seq.	Rerun	Dil.	Reason	Analytes
56			Wrong sample label. JYH	
109			Wrong sample label. JYH	
110			Wrong sample label. JYH	

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 071416T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD77091 ICV Std: STD77090 Post Spike: STD75838
ICSA: STD76882 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD77089 LLCCV: STD77092 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 576082,576110

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.071416.115859	WG576454-01	Calibration Point		1		07/14/16 11:58
2	T3.071416.120258	WG576454-02	Calibration Point		1		07/14/16 12:02
3	T3.071416.120656	WG576454-03	Calibration Point		1		07/14/16 12:06
4	T3.071416.121043	WG576454-04	Calibration Point		1		07/14/16 12:10
5	T3.071416.121419	WG576454-05	Calibration Point		1		07/14/16 12:14
6	T3.071416.121756	WG576454-06	Initial Calibration Verification		1		07/14/16 12:17
7	T3.071416.122133	WG576454-07	Initial Calib Blank		1		07/14/16 12:21
8	T3.071416.122530	WG576454-08	Low Level Initial Calibration V		1		07/14/16 12:25
9	T3.071416.122922	WG576454-09	Low Level Initial Calibration V		1		07/14/16 12:29
10	T3.071416.123313	WG576454-10	Interference Check		1		07/14/16 12:33
11	T3.071416.123702	WG576454-11	Interference Check		1		07/14/16 12:37
12	T3.071416.124032	WG576454-12	CCV		1		07/14/16 12:40
13	T3.071416.124410	WG576454-13	CCB		1		07/14/16 12:44
14	T3.071416.124809	WG575851-02	Method/Prep Blank	40/50	1		07/14/16 12:48
15	T3.071416.125537	WG575851-03	Laboratory Control S	40/50	1		07/14/16 12:55
16	T3.071416.125915	L16070001-01	MDL-1	40/50	1		07/14/16 12:59
17	T3.071416.130312	L16070003-01	LOQ-1	40/50	1		07/14/16 13:03
18	T3.071416.130705	L16070003-09	LOQ-9	40/50	1		07/14/16 13:07
19	T3.071416.131101	WG576454-14	CCV		1		07/14/16 13:11
20	T3.071416.131436	WG576454-15	CCB		1		07/14/16 13:14
21	T3.071416.131836	WG575851-01	Reference Sample		1	L16070291-01	07/14/16 13:18
22	T3.071416.132229	WG575851-04	Matrix Spike	40/50	1	L16070291-01	07/14/16 13:22
23	T3.071416.132606	WG575851-05	Matrix Spike Duplica	40/50	1	L16070291-01	07/14/16 13:26
24	T3.071416.132943	L16070376-01	1260-B01-WQ-W0002	40/50	1		07/14/16 13:29
25	T3.071416.133339	L16070376-02	1261-F01-WQ-W0012	40/50	1		07/14/16 13:33
26	T3.071416.133736	L16070376-03	5334-B02-WQ-W0008	40/50	1		07/14/16 13:37
27	T3.071416.134133	L16070201-03	T1363	40/50	1		07/14/16 13:41
28	T3.071416.134523	WG576082-01	Post Digestion Spike		1	L16070201-03	07/14/16 13:45
29	T3.071416.134907	WG576082-02	Serial Dilution		5	L16070201-03	07/14/16 13:49
30	T3.071416.135252	WG576082-02	Serial Dilution		25	L16070201-03	07/14/16 13:52
31	T3.071416.135643	WG576454-16	CCV		1		07/14/16 13:56
32	T3.071416.140020	WG576454-17	CCB		1		07/14/16 14:00
33	T3.071416.140419	WG576011-02	Method/Prep Blank	40/50	1		07/14/16 14:04
34	T3.071416.140817	WG576011-03	Laboratory Control S	40/50	1		07/14/16 14:08

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Kim H. Rhoden

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 071416T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD77091 ICV Std: STD77090 Post Spike: STD75838
ICSA: STD76882 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD77089 LLCCV: STD77092 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 576082,576110

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.071416.141154	WG575805-01	Fluid Blank 1		1		07/14/16 14:11
36	T3.071416.141552	WG575805-02	Fluid Blank 2		1		07/14/16 14:15
37	T3.071416.141949	WG576011-01	Reference Sample		1	L16070397-01	07/14/16 14:19
38	T3.071416.142344	WG576011-04	Matrix Spike	5/50	1	L16070397-01	07/14/16 14:23
39	T3.071416.142721	WG576011-05	Matrix Spike Duplica	5/50	1	L16070397-01	07/14/16 14:27
40	T3.071416.143058	L16070347-01	TANK 001/INTERIOR	5/50	1		07/14/16 14:30
41	T3.071416.143452	WG576110-01	Post Digestion Spike		1	L16070347-01	07/14/16 14:34
42	T3.071416.143828	WG576110-02	Serial Dilution		5	L16070347-01	07/14/16 14:38
43	T3.071416.144225	WG576454-18	CCV		1		07/14/16 14:42
44	T3.071416.144601	WG576454-19	CCB		1		07/14/16 14:46
45	T3.071416.145001	L16070397-02	S6G0190-02	5/50	1		07/14/16 14:50
46	T3.071416.145355	L16070404-01	18502-G05-WQ-W0025	40/50	1		07/14/16 14:53
47	T3.071416.145752	L16070404-02	18502-G10-WQ-W0049	40/50	1		07/14/16 14:57
48	T3.071416.150148	L16070404-03	19124-G02-WQ-W7	40/50	1		07/14/16 15:01
49	T3.071416.150547	WG576454-20	CCV		1		07/14/16 15:05
50	T3.071416.150924	WG576454-21	CCB		1		07/14/16 15:09
51	T3.071416.151324	L16070238-01	WT-WL-02	5/50	1		07/14/16 15:13
52	T3.071416.151714	L16070340-01	DYNEGY	5/50	1		07/14/16 15:17
53	T3.071416.152107	L16070451-01	59-10-1.02 W1	40/50	1		07/14/16 15:21
54	T3.071416.152459	L16070451-02	59-10-1.02 S1	40/50	1		07/14/16 15:24
55	T3.071416.152852	L16070452-01	1804-105 W1	40/50	1		07/14/16 15:28
56	T3.071416.153244	L16070452-02	1804-105-A W1/S1	40/50	1		07/14/16 15:32
57	T3.071416.153637	L16070453-01	15-13-22 S1	40/50	1		07/14/16 15:36
58	T3.071416.154033	L16070453-02	2212-112 S1	40/50	1		07/14/16 15:40
59	T3.071416.154416	L16070453-03	2212-112 W1	40/50	1		07/14/16 15:44
60	T3.071416.154810	L16070453-04	2212-112 S2	40/50	1		07/14/16 15:48
61	T3.071416.155155	WG576454-22	CCV		1		07/14/16 15:51
62	T3.071416.155532	WG576454-23	CCB		1		07/14/16 15:55
63	T3.071416.155931	L16070453-05	2212-112 P1	40/50	1		07/14/16 15:59
64	T3.071416.160324	L16070454-01	1802-138 W1	40/50	1		07/14/16 16:03
65	T3.071416.160716	L16070201-01	T1360	40/50	2		07/14/16 16:07
66	T3.071416.161109	L16070201-02	T1362	40/50	2		07/14/16 16:11
67	T3.071416.161502	L16070201-04	T1365	40/50	2		07/14/16 16:15
68	T3.071416.161853	L16070249-03	25034-S		1		07/14/16 16:18

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Kim H. Rhoden

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 071416T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD77091 ICV Std: STD77090 Post Spike: STD75838
ICSA: STD76882 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD77089 LLCCV: STD77092 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 576082,576110

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.071416.162238	WG576454-24	CCV		1		07/14/16 16:22
70	T3.071416.162613	WG576454-25	CCB		1		07/14/16 16:26
71	T3.071416.163012	L16070291-02	MOR9 MW2	40/50	1		07/14/16 16:30
72	T3.071416.163355	L16070291-03	MOR9 MW3	40/50	1		07/14/16 16:33
73	T3.071416.163748	L16070291-04	MOR9 MW4	40/50	1		07/14/16 16:37
74	T3.071416.164139	L16070380-01	2208-127 W1	40/50	1		07/14/16 16:41
75	T3.071416.164530	L16070380-02	15-13-12 W1	40/50	1		07/14/16 16:45
76	T3.071416.164921	L16070380-03	15-13-12 W1	40/50	1		07/14/16 16:49
77	T3.071416.165314	L16070380-04	15-13-23.2 W1	40/50	1		07/14/16 16:53
78	T3.071416.165709	L16070381-01	WATER	40/50	1		07/14/16 16:57
79	T3.071416.170107	WG576454-26	CCV		1		07/14/16 17:01
80	T3.071416.170443	WG576454-27	CCB		1		07/14/16 17:04
81	T3.071416.170841	WG574636-02	Method/Prep Blank	40/50	1		07/14/16 17:08
82	T3.071416.171237	WG574636-03	Laboratory Control S	40/50	1		07/14/16 17:12
83	T3.071416.171614	WG574636-01	Reference Sample		1	L16061455-02	07/14/16 17:16
84	T3.071416.172007	WG574636-04	Matrix Spike	40/50	1	L16061455-02	07/14/16 17:20
85	T3.071416.172342	WG574636-05	Matrix Spike Duplica	40/50	1	L16061455-02	07/14/16 17:23
86	T3.071416.172719	L16061452-01	18CPTMW12SW-062416	40/50	1		07/14/16 17:27
87	T3.071416.173113	L16061453-01	MW2-062416	40/50	5		07/14/16 17:31
88	T3.071416.173506	L16061453-03	18CPTMW01SW-062416	40/50	10		07/14/16 17:35
89	T3.071416.173901	WG574839-03	Post Digestion Spike		10	L16061453-03	07/14/16 17:39
90	T3.071416.174238	WG574839-04	Serial Dilution		50	L16061453-03	07/14/16 17:42
91	T3.071416.174637	WG576454-28	CCV		1		07/14/16 17:46
92	T3.071416.175004	WG576454-29	CCB		1		07/14/16 17:50
93	T3.071416.175404	L16061648-02	18WW25F-062916	40/50	20		07/14/16 17:54
94	T3.071416.175800	WG576454-30	CCV		1		07/14/16 17:58
95	T3.071416.180136	WG576454-31	CCB		1		07/14/16 18:01
96	T3.071416.180534	WG576454-32	Low Level Continuing Calibra		1		07/14/16 18:05
97	T3.071416.180927	WG576454-33	Low Level Continuing Calibra		1		07/14/16 18:09
98	T3.071416.181316	WG575642-07	Method/Prep Blank	40/50	1		07/14/16 18:13
99	T3.071416.181713	WG575642-08	Laboratory Control S	40/50	1		07/14/16 18:17
100	T3.071416.182051	WG575642-06	Reference Sample		1	L16070227-07	07/14/16 18:20
101	T3.071416.182445	WG575642-09	Matrix Spike	40/50	1	L16070227-07	07/14/16 18:24
102	T3.071416.182823	WG575642-10	Matrix Spike Duplica	40/50	1	L16070227-07	07/14/16 18:28

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 071416T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD77091 ICV Std: STD77090 Post Spike: STD75838
ICSA: STD76882 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD77089 LLCCV: STD77092 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 576082,576110

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T3.071416.183200	L16070184-02	LH18/24-SP650-6376-GRAB	40/50	1		07/14/16 18:32
104	T3.071416.183551	WG576077-03	Post Digestion Spike		1	L16070184-02	07/14/16 18:35
105	T3.071416.183929	WG576077-04	Serial Dilution		5	L16070184-02	07/14/16 18:39
106	T3.071416.184322	WG576077-04	Serial Dilution		25	L16070184-02	07/14/16 18:43
107	T3.071416.184717	WG576454-34	CCV		1		07/14/16 18:47
108	T3.071416.185053	WG576454-35	CCB		1		07/14/16 18:50
109	T3.071416.185451	L16070209-01	T6F1104-05	40/50	1		07/14/16 18:54
110	T3.071416.185846	L16070209-02	T6F1104-06	40/50	1		07/14/16 18:58
111	T3.071416.190239	L16070209-03	T6F1104-07	40/50	1		07/14/16 19:02
112	T3.071416.190634	WG576454-36	CCV		1		07/14/16 19:06
113	T3.071416.191010	WG576454-37	CCB		1		07/14/16 19:10
114	T3.071416.191407	WG576454-38	Low Level Continuing Calibra		1		07/14/16 19:14
115	T3.071416.191801	WG576227-02	Method/Prep Blank	40/50	1		07/14/16 19:18
116	T3.071416.192158	WG576227-03	Laboratory Control S	40/50	1		07/14/16 19:21
117	T3.071416.192535	WG576038-02	Fluid Blank 1		1		07/14/16 19:25
118	T3.071416.192933	WG576038-01	Fluid Blank 2		1		07/14/16 19:29
119	T3.071416.193330	WG576227-04	Filter Blank		1		07/14/16 19:33
120	T3.071416.193729	L16070449-01	VTR 850	5/50	1		07/14/16 19:37
121	T3.071416.194121	WG576493-01	Post Digestion Spike		1	L16070449-01	07/14/16 19:41
122	T3.071416.194458	WG576493-02	Serial Dilution		5	L16070449-01	07/14/16 19:44
123	T3.071416.194853	WG576493-02	Serial Dilution		25	L16070449-01	07/14/16 19:48
124	T3.071416.195249	WG576454-39	CCV		1		07/14/16 19:52
125	T3.071416.195625	WG576454-40	CCB		1		07/14/16 19:56
126	T3.071416.200022	WG576227-01	Reference Sample		1	L16070521-01	07/14/16 20:00
127	T3.071416.200403	WG576227-05	Matrix Spike	40/50	1	L16070521-01	07/14/16 20:04
128	T3.071416.200739	WG576227-06	Matrix Spike Duplica	40/50	1	L16070521-01	07/14/16 20:07
129	T3.071416.201104	L16070348-01	350067872000_W1_070820	40/50	1		07/14/16 20:11
130	T3.071416.201454	L16070348-02	350067872000_W1_070820	40/50	1		07/14/16 20:14
131	T3.071416.201844	L16070447-01	REVAN FINES/EXP\#4888	5/50	1		07/14/16 20:18
132	T3.071416.202236	L16070464-01	SAPA 20 BAGS	5/50	1		07/14/16 20:22
133	T3.071416.202631	L16070465-01	ALAN 22 BAGS	5/50	1		07/14/16 20:26
134	T3.071416.203026	L16070466-01	380 SALTCAKE SCREW 10	5/50	1		07/14/16 20:30
135	T3.071416.203424	L16070468-01	URV	5/50	1		07/14/16 20:34
136	T3.071416.203822	WG576454-41	CCV		1		07/14/16 20:38

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Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 071416T3.1R.TXT

Analyst1: JYH Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD77091 ICV Std: STD77090 Post Spike: STD75838

ICSA: STD76882 ICSAB: STD76834 Int. Std: RGT31668

CCV: STD77089 LLCCV: STD77092 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 576082,576110

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	T3.071416.204158	WG576454-42	CCB		1		07/14/16 20:41
138	T3.071416.204555	L16070474-01	LH18/24-SP650-6378-GRAB	40/50	1		07/14/16 20:45
139	T3.071416.204944	L16070474-02	LH18/24-SP650-6378-COMP	40/50	1		07/14/16 20:49
140	T3.071416.205335	L16070485-01	60500-SSP0045-SSP0045	5/50	1		07/14/16 20:53
141	T3.071416.205723	L16070487-01	13837-SSP0552	5/50	1		07/14/16 20:57
142	T3.071416.210115	L16070519-01	2016PRE-42230BROOKSRD	40/50	1		07/14/16 21:01
143	T3.071416.210507	L16070519-02	2016PRE-2616BEACHDR	40/50	1		07/14/16 21:05
144	T3.071416.210859	L16070524-01	59-8-2.02 W1	40/50	1		07/14/16 21:08
145	T3.071416.211252	WG576454-43	CCV		1		07/14/16 21:12
146	T3.071416.211629	WG576454-44	CCB		1		07/14/16 21:16
147	T3.071416.212025	WG576454-45	Low Level Continuing Calibra		1		07/14/16 21:20

Page: 5 Approved: July 14, 2016

Kim H. Rhoden

Microbac Laboratories Inc.

Data Checklist

Date: 30-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 574911
Runlog ID: 76064
Analytical Workgroups: 574685,574802,574668,574839,574840

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1400,1568,1569,1570,1588,1622
Level 4	1265,1266,1269,1294,1412,1413
Level 4	1416,1421,1476,1452,1453,1498
Check for compliance with method and project specific requirements	X
	1559,1534
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	BKT
Comments	

Primary Reviewer:
01-JUL-2016

Secondary Reviewer:
01-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-01-2016 15:42:54

Microbac Laboratories Inc.

Data Checklist

Date: 14-JUL-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 576454
Runlog ID: 76318
Analytical Workgroups: 576082,576110

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	
Level 4	0001,376,404
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer: Secondary Reviewer: 14-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-14-2016 15:54:24

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010C

AAB#: WG574839

Login Number: L16061452

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW12SW-062416	01	06/24/16					06/29/2016	5.2	180		06/30/16	6.4	180	
18CPTMW12SW-062416	01	06/24/16					06/29/2016	5.2	180		07/14/16	20.4	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4836433
Report generated 07/15/2016 07:55

METHOD BLANK SUMMARY

Login Number: L16061452
Blank File ID: T3.063016.173343
Prep Date: 06/29/16 12:37
Analyzed Date: 06/30/16 17:33
Analyst: JYH

Work Group: WG574839
Blank Sample ID: WG574636-02
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG574636-03	T3.063016.173741	06/30/16 17:37	01
18CPTMW12SW-062416	L16061452-01	T3.063016.174121	06/30/16 17:41	01
LCS	WG574636-03	T3.071416.171237	07/14/16 17:12	02
18CPTMW12SW-062416	L16061452-01	T3.071416.172719	07/14/16 17:27	02

Report Name: BLANK_SUMMARY
PDF File ID: 4836434
Report generated 07/15/2016 08:19

METHOD BLANK SUMMARY

Login Number: L16061452
Blank File ID: T3.071416.170841
Prep Date: 06/29/16 12:37
Analyzed Date: 07/14/16 17:08
Analyst: JYH

Work Group: WG574839
Blank Sample ID: WG574636-02
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG574636-03	T3.063016.173741	06/30/16 17:37	01
18CPTMW12SW-062416	L16061452-01	T3.063016.174121	06/30/16 17:41	01
LCS	WG574636-03	T3.071416.171237	07/14/16 17:12	02
18CPTMW12SW-062416	L16061452-01	T3.071416.172719	07/14/16 17:27	02

Report Name: BLANK_SUMMARY
PDF File ID: 4836434
Report generated 07/15/2016 08:19

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061452 Prep Date: 06/29/16 12:37 Sample ID: WG574636-02
Instrument ID: ICP-THERMO3 Run Date: 06/30/16 17:33 Prep Method: 3015
File ID: T3.063016.173343 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG574839 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-30-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Aluminum, Total	0.0500	0.200	0.0500	1	U
Beryllium, Total	0.00500	0.0200	0.00500	1	U
Calcium, Total	0.125	0.500	0.125	1	U
Magnesium, Total	0.250	1.00	0.250	1	U
Potassium, Total	0.500	2.00	0.500	1	U
Selenium, Total	0.00500	0.0200	0.00500	1	U
Sodium, Total	0.250	1.00	0.250	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4836435
16-JUL-2016 11:41

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061452 Prep Date: 06/29/16 12:37 Sample ID: WG574636-02
Instrument ID: ICP-THERMO3 Run Date: 07/14/16 17:08 Prep Method: 3015
File ID: T3.071416.170841 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG574839 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-14-JUL-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Iron, Total	0.0500	0.200	0.0500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4836435
16-JUL-2016 11:41

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061452 Run Date: 06/30/2016 Sample ID: WG574636-03
Instrument ID: ICP-THERMO3 Run Time: 17:37 Prep Method: 3015
File ID: T3.063016.173741 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG574839 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76576 Cal ID: ICP-TH-30-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Aluminum, Total	6.25	5.94	95.0	80 - 120	
Beryllium, Total	0.0313	0.0293	93.8	80 - 120	
Calcium, Total	6.25	5.94	95.1	80 - 120	
Magnesium, Total	6.25	6.06	97.0	80 - 120	
Potassium, Total	31.3	30.2	96.5	80 - 120	
Selenium, Total	0.250	0.221	88.6	80 - 120	
Sodium, Total	31.3	29.3	93.7	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4836436
Report generated: 07/16/2016 11:41

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061452 Run Date: 07/14/2016 Sample ID: WG574636-03
Instrument ID: ICP-THERMO3 Run Time: 17:12 Prep Method: 3015
File ID: T3.071416.171237 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG574839 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76576 Cal ID: ICP-TH-14-JUL-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Iron, Total	2.50	2.60	104	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4836436
Report generated: 07/16/2016 11:41

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061452 Cal ID: ICP-THERMO3 - Worknum: WG574839
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG574636-01 File ID: T3.063016.175652 Dil: 1 Matrix: WATER
Sample ID: WG574636-04 MS File ID: T3.063016.180045 Dil: 1 Units: mg/L
Sample ID: WG574636-05 MSD File ID: T3.063016.180425 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Aluminum	0.411	6.25	6.30	94.2	6.25	6.71	101	6.35	80 - 120	20	
Beryllium	ND	0.0313	0.0290	92.7	0.0313	0.0300	96.0	3.52	80 - 120	20	
Calcium	46.1	6.25	50.5	70.0	6.25	52.0	94.2	2.95	80 - 120	20	*
Magnesium	7.31	6.25	13.1	93.3	6.25	13.6	101	3.64	80 - 120	20	
Potassium	4.41	31.3	34.4	95.9	31.3	35.3	98.8	2.60	80 - 120	20	
Selenium	0.00596	0.250	0.221	85.8	0.250	0.229	89.2	3.68	80 - 120	20	
Sodium	1.20	31.3	30.0	92.3	31.3	31.0	95.4	3.21	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4836437
Report generated 07/16/2016 11:41

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061452 Cal ID: ICP-THERMO3 - Worknum: WG574839
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG574636-01 File ID: T3.071416.171614 Dil: 1 Matrix: WATER
Sample ID: WG574636-04 MS File ID: T3.071416.172007 Dil: 1 Units: mg/L
Sample ID: WG574636-05 MSD File ID: T3.071416.172342 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Iron	0.647	2.50	3.11	98.4	2.50	3.48	113	11.3	80 - 120	20	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4836437
Report generated 07/16/2016 11:41

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16061452 **Worknum:** WG574839
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG574839-02 **File ID:** T3.063016.191356 **Dil:** 5 **Units:** ug/L
Sample: L16061564-06 **File ID:** T3.063016.190618 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	ND	U	ND	U		
Beryllium	ND	U	0.400		4100.00	
Calcium	1680		1270		24.00	E
Iron	ND	U	ND	U		
Magnesium	286		281		1.76	
Potassium	248		ND	U		
Selenium	ND	U	7.00		344.00	
Sodium	583		448		23.20	E

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4836431
07/15/2016 07:55

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16061452 **Worknum:** WG574839
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG574839-04 **File ID:** T3.071416.174238 **Dil:** 50 **Units:** ug/L
Sample: L16061453-03 **File ID:** T3.071416.173506 **Dil:** 10

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	14.3		121		743.00	E
Beryllium	0.400	X	ND	U		
Calcium	23500		21600		8.21	
Iron	43200		40400		6.46	
Magnesium	16100		15200		5.62	
Potassium	3930		5100		30.00	E
Selenium	ND	U	ND	U		
Sodium	81600		83200		2.03	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4836431
07/15/2016 07:55

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061452 **Worknum:** WG574839
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG574839-01 **File ID:** T3.063016.191016 **Dil:** 1 **Units:** ug/L
Sample ID: L16061564-06 **File ID:** T3.063016.190618 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	4930		0	U	5000	98.7	75 - 125	
BERYLLIUM	24.6		0	U	25	98.5	75 - 125	
CALCIUM	6400		1680		5000	97.9	75 - 125	
IRON	1950		0	U	2000	97.3	75 - 125	
MAGNESIUM	5220		286	F	5000	99.2	75 - 125	
POTASSIUM	25400		0	U	25000	101.6	75 - 125	
SELENIUM	185		0	U	200	92.4	75 - 125	
SODIUM	24500		583	F	25000	96.0	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4836432
Report generated: 07/15/2016 08:19

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061452 **Worknum:** WG574839
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG574839-03 **File ID:** T3.071416.173901 **Dil:** 10 **Units:** ug/L
Sample ID: L16061453-03 **File ID:** T3.071416.173506 **Dil:** 10 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	4850		0	U	5000	97.1	75 - 125	
BERYLLIUM	23.3		0	U	25	93.3	75 - 125	
CALCIUM	7320		2350		5000	99.4	75 - 125	
IRON	6130		4320		2000	90.5	75 - 125	
MAGNESIUM	6470		1610		5000	97.2	75 - 125	
POTASSIUM	25000		0	U	25000	99.8	75 - 125	
SELENIUM	201		0	U	200	100.6	75 - 125	
SODIUM	32600		8160		25000	97.8	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4836432
Report generated: 07/15/2016 08:19

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061452	Workgroup (AAB#):	WG574839
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG574911	Initial Calibration Date:	30-JUN-2016 12:04

	WG574911-01		WG574911-02		WG574911-03		WG574911-04		WG574911-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000810	.1	0.00145	.2	0.00216	10	0.0857	20	0.171	.999995	
BERYLLIUM	0	0.000680	.0005	0.00104	.001	0.00144	.05	0.0501	.1	0.100	.999985	
CALCIUM	0	0.00271	.1	0.00455	.2	0.00879	10	0.483	20	0.976	.999491	
IRON	0	0.000140	.04	0.000300	.08	0.00134	4	0.0941	8	0.187	.999068	
MAGNESIUM	0	-0.000430	NA	NA	.2	0.000550	10	0.0870	20	0.176	.999752	
POTASSIUM	0	-0.0138	.5	0.00806	1	0.0262	50	3.01	100	6.13	.999875	
SELENIUM	0	-0.000490	NA	NA	.008	-0.000370	.4	0.00651	.8	0.0136	.999987	
SODIUM	0	-0.0587	.5	0.0213	1	0.107	50	10.0	100	20.4	.999978	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4836440
Report generated: 15-JUL-2016 07:55

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061452	Workgroup (AAB#):	WG574839
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG576454	Initial Calibration Date:	14-JUL-2016 12:14

	WG576454-01		WG576454-02		WG576454-03		WG576454-04		WG576454-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000730	.1	0.00145	.2	0.00229	10	0.0875	20	0.176	.999953	
BERYLLIUM	0	0.000470	.0005	0.000870	.001	0.00149	.05	0.0553	.1	0.110	.999925	
CALCIUM	0	0.00307	.1	0.00539	.2	0.0101	10	0.447	20	0.906	.999805	
IRON	0	-0.000210	.04	0.0000300	.08	0.000830	4	0.0895	8	0.178	.999221	
MAGNESIUM	0	-0.000220	NA	NA	.2	0.00130	10	0.0877	20	0.174	.999966	
POTASSIUM	0	-0.0139	.5	0.0110	1	0.0388	50	3.64	100	7.33	.99994	
SELENIUM	0	-0.000340	NA	NA	.008	-0.000300	.4	0.00698	.8	0.0142	.998889	
SODIUM	0	-0.0611	.5	0.0269	1	0.0997	50	9.63	100	19.5	.999971	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4836440
Report generated: 15-JUL-2016 07:55

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061452
Run Date: 06/30/2016
Sample ID: WG574911-07
Instrument ID: ICP-THERMO3
Run Time: 12:11
Method: 6010C
File ID: T3.063016.121137
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574839
Cal ID: ICP-THERI - 30-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	-.00415	F
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4836442
Report generated 07/15/2016 07:55

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061452
Run Date: 07/14/2016
Sample ID: WG576454-07
Instrument ID: ICP-THERMO3
Run Time: 12:21
Method: 6010C
File ID: T3.071416.122133
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574839
Cal ID: ICP-THERI - 14-JUL-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	.004	U
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4836442
Report generated 07/15/2016 07:55

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061452
Run Date: 06/30/2016
Sample ID: WG574911-13
Instrument ID: ICP-THERMO3
Run Time: 12:34
Method: 6010C
File ID: T3.063016.123434
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574839
Cal ID: ICP-TH - 30-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00475	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061452
Run Date: 06/30/2016
Sample ID: WG574911-29
Instrument ID: ICP-THERMO3
Run Time: 17:29
Method: 6010C
File ID: T3.063016.172945
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574839
Cal ID: ICP-TH - 30-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Report generated 07/15/2016 07:55

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061452
Run Date: 06/30/2016
Sample ID: WG574911-31
Instrument ID: ICP-THERMO3
Run Time: 18:15
Method: 6010C
File ID: T3.063016.181537
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574839
Cal ID: ICP-TH - 30-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061452
Run Date: 06/30/2016
Sample ID: WG574911-33
Instrument ID: ICP-THERMO3
Run Time: 19:02
Method: 6010C
File ID: T3.063016.190219
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574839
Cal ID: ICP-TH - 30-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061452
Run Date: 06/30/2016
Sample ID: WG574911-35
Instrument ID: ICP-THERMO3
Run Time: 19:25
Method: 6010C
File ID: T3.063016.192529
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574839
Cal ID: ICP-TH - 30-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00442	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061452
Run Date: 07/14/2016
Sample ID: WG576454-13
Instrument ID: ICP-THERMO3
Run Time: 12:44
Method: 6010C
File ID: T3.071416.124410
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574839
Cal ID: ICP-TH - 14-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061452
Run Date: 07/14/2016
Sample ID: WG576454-27
Instrument ID: ICP-THERMO3
Run Time: 17:04
Method: 6010C
File ID: T3.071416.170443
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574839
Cal ID: ICP-TH - 14-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	-0.00776	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4836445
Report generated 07/15/2016 07:55

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061452
Run Date: 07/14/2016
Sample ID: WG576454-29
Instrument ID: ICP-THERMO3
Run Time: 17:50
Method: 6010C
File ID: T3.071416.175004
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574839
Cal ID: ICP-TH - 14-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	-0.00589	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4836445
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INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061452
Run Date: 07/14/2016
Sample ID: WG576454-06
Instrument ID: ICP-THERMO3
Run Time: 12:17
Method: 6010C
File ID: T3.071416.121756
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574839
Cal ID: ICP-TH - 14-JUL-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	9.90	99.0	90 - 110	
Beryllium		.05	0.0501	100	90 - 110	
Calcium		10	9.84	98.4	90 - 110	
Iron		4	3.96	99.0	90 - 110	
Magnesium		10	9.78	97.8	90 - 110	
Potassium		50	49.7	99.3	90 - 110	
Selenium		.4	0.405	101	90 - 110	
Sodium		50	49.4	98.8	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4836441
Report generated 07/15/2016 07:55

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061452 Run Date: 06/30/2016 Sample ID: WG574911-06
Instrument ID: ICP-THERMO3 Run Time: 12:07 Method: 6010C
File ID: T3.063016.120759 Analyst: JYH Units: mg/L
Workgroup (AAB#): WG574839 Cal ID: ICP-TH - 30-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	10.0	100	90 - 110	
Beryllium		.05	0.0501	100	90 - 110	
Calcium		10	9.98	99.8	90 - 110	
Iron		4	3.97	99.2	90 - 110	
Magnesium		10	10.2	102	90 - 110	
Potassium		50	49.7	99.4	90 - 110	
Selenium		.4	0.406	102	90 - 110	
Sodium		50	49.5	99.0	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4836441
Report generated 07/15/2016 07:55

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 06/30/2016
Sample ID: WG574911-12
Instrument ID: ICP-THERMO3
Run Time: 12:30
Method: 6010C
File ID: T3.063016.123056
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574839
Cal ID: ICP-TH - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.1	mg/L	101	90 - 110		
Beryllium		0.0500	0.0500	mg/L	100	90 - 110		
Calcium		10.0	10.0	mg/L	100	90 - 110		
Iron		4.00	4.02	mg/L	100	90 - 110		
Magnesium		10.0	10.1	mg/L	101	90 - 110		
Potassium		50.0	50.1	mg/L	100	90 - 110		
Selenium		0.400	0.406	mg/L	102	90 - 110		
Sodium		50.0	49.6	mg/L	99.1	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Report generated 07/15/2016 07:55

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 06/30/2016
Sample ID: WG574911-28
Instrument ID: ICP-THERMO3
Run Time: 17:26
Method: 6010C
File ID: T3.063016.172607
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574839
Cal ID: ICP-TH - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.32	mg/L	93.2	90 - 110		
Beryllium		0.0500	0.0466	mg/L	93.2	90 - 110		
Calcium		10.0	9.08	mg/L	90.8	90 - 110		
Iron		4.00	3.64	mg/L	91.0	90 - 110		
Magnesium		10.0	9.45	mg/L	94.5	90 - 110		
Potassium		50.0	47.0	mg/L	93.9	90 - 110		
Selenium		0.400	0.364	mg/L	91.1	90 - 110		
Sodium		50.0	45.3	mg/L	90.6	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 06/30/2016
Sample ID: WG574911-30
Instrument ID: ICP-THERMO3
Run Time: 18:11
Method: 6010C
File ID: T3.063016.181159
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574839
Cal ID: ICP-TH - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.44	mg/L	94.4	90 - 110		
Beryllium		0.0500	0.0471	mg/L	94.3	90 - 110		
Calcium		10.0	9.26	mg/L	92.6	90 - 110		
Iron		4.00	3.71	mg/L	92.7	90 - 110		
Magnesium		10.0	9.60	mg/L	96.0	90 - 110		
Potassium		50.0	48.4	mg/L	96.8	90 - 110		
Selenium		0.400	0.373	mg/L	93.2	90 - 110		
Sodium		50.0	46.4	mg/L	92.8	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 06/30/2016
Sample ID: WG574911-32
Instrument ID: ICP-THERMO3
Run Time: 18:58
Method: 6010C
File ID: T3.063016.185841
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574839
Cal ID: ICP-TH - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.56	mg/L	95.6	90 - 110		
Beryllium		0.0500	0.0478	mg/L	95.5	90 - 110		
Calcium		10.0	9.39	mg/L	93.9	90 - 110		
Iron		4.00	3.73	mg/L	93.2	90 - 110		
Magnesium		10.0	9.86	mg/L	98.6	90 - 110		
Potassium		50.0	48.8	mg/L	97.6	90 - 110		
Selenium		0.400	0.372	mg/L	93.1	90 - 110		
Sodium		50.0	46.9	mg/L	93.7	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 06/30/2016
Sample ID: WG574911-34
Instrument ID: ICP-THERMO3
Run Time: 19:21
Method: 6010C
File ID: T3.063016.192150
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574839
Cal ID: ICP-TH - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.43	mg/L	94.3	90 - 110		
Beryllium		0.0500	0.0478	mg/L	95.5	90 - 110		
Calcium		10.0	9.18	mg/L	91.8	90 - 110		
Iron		4.00	3.66	mg/L	91.4	90 - 110		
Magnesium		10.0	9.64	mg/L	96.4	90 - 110		
Potassium		50.0	48.7	mg/L	97.4	90 - 110		
Selenium		0.400	0.373	mg/L	93.3	90 - 110		
Sodium		50.0	45.5	mg/L	91.1	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 07/14/2016
Sample ID: WG576454-12
Instrument ID: ICP-THERMO3
Run Time: 12:40
Method: 6010C
File ID: T3.071416.124032
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574839
Cal ID: ICP-TH - 14-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.89	mg/L	98.9	90 - 110		
Beryllium		0.0500	0.0498	mg/L	99.6	90 - 110		
Calcium		10.0	9.93	mg/L	99.3	90 - 110		
Iron		4.00	3.97	mg/L	99.2	90 - 110		
Magnesium		10.0	9.98	mg/L	99.8	90 - 110		
Potassium		50.0	49.9	mg/L	99.7	90 - 110		
Selenium		0.400	0.406	mg/L	101	90 - 110		
Sodium		50.0	49.5	mg/L	99.0	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 07/14/2016
Sample ID: WG576454-26
Instrument ID: ICP-THERMO3
Run Time: 17:01
Method: 6010C
File ID: T3.071416.170107
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574839
Cal ID: ICP-TH - 14-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.1	mg/L	101	90 - 110		
Beryllium		0.0500	0.0504	mg/L	101	90 - 110		
Calcium		10.0	10.3	mg/L	103	90 - 110		
Iron		4.00	4.15	mg/L	104	90 - 110		
Magnesium		10.0	10.2	mg/L	102	90 - 110		
Potassium		50.0	51.8	mg/L	104	90 - 110		
Selenium		0.400	0.418	mg/L	104	90 - 110		
Sodium		50.0	52.1	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4836444
Report generated 07/15/2016 07:55

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 07/14/2016
Sample ID: WG576454-28
Instrument ID: ICP-THERMO3
Run Time: 17:46
Method: 6010C
File ID: T3.071416.174637
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574839
Cal ID: ICP-TH - 14-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.91	mg/L	99.1	90 - 110		
Beryllium		0.0500	0.0488	mg/L	97.7	90 - 110		
Calcium		10.0	10.1	mg/L	101	90 - 110		
Iron		4.00	4.04	mg/L	101	90 - 110		
Magnesium		10.0	9.93	mg/L	99.3	90 - 110		
Potassium		50.0	50.8	mg/L	102	90 - 110		
Selenium		0.400	0.409	mg/L	102	90 - 110		
Sodium		50.0	51.1	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4836444
Report generated 07/15/2016 07:55

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061452
Run Date: 06/30/2016
Sample ID: WG574911-08
Instrument ID: ICP-THERMO3
Run Time: 12:15
Method: 6010C
File ID: T3.063016.121535
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574839
Cal ID: ICP-TH - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.160	mg/L	99.9	70 - 130		
Beryllium		0.00160	0.00144	mg/L	90.0	70 - 130		
Calcium		0.400	0.404	mg/L	101	70 - 130		
Iron		0.0800	0.0611	mg/L	76.4	70 - 130		
Magnesium		0.400	0.436	mg/L	109	70 - 130		
Potassium		0.800	0.733	mg/L	91.6	70 - 130		
Selenium		0.0160	0.0192	mg/L	120	70 - 130		
Sodium		0.400	0.458	mg/L	114	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4836788
Report generated 07/16/2016 11:41

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061452
Run Date: 06/30/2016
Sample ID: WG574911-20
Instrument ID: ICP-THERMO3
Run Time: 14:46
Method: 6010C
File ID: T3.063016.144622
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574839
Cal ID: ICP-TH - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.138	mg/L	86.0	70 - 130		
Beryllium		0.00160	0.00140	mg/L	87.5	70 - 130		
Calcium		0.400	0.380	mg/L	95.0	70 - 130		
Iron		0.0800	0.0325	mg/L	40.6	70 - 130		*
Magnesium		0.400	0.346	mg/L	86.4	70 - 130		
Potassium		0.800	0.718	mg/L	89.7	70 - 130		
Selenium		0.0160	0.0162	mg/L	101	70 - 130		
Sodium		0.400	0.408	mg/L	102	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4836788
Report generated 07/16/2016 11:41

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061452
Run Date: 06/30/2016
Sample ID: WG574911-36
Instrument ID: ICP-THERMO3
Run Time: 19:29
Method: 6010C
File ID: T3.063016.192926
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574839
Cal ID: ICP-TH - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.142	mg/L	88.7	70 - 130		
Beryllium		0.00160	0.00152	mg/L	95.0	70 - 130		
Calcium		0.400	0.301	mg/L	75.2	70 - 130		
Iron		0.0800	0.0595	mg/L	74.4	70 - 130		
Magnesium		0.400	0.439	mg/L	110	70 - 130		
Potassium		0.800	0.847	mg/L	106	70 - 130		
Selenium		0.0160	0.0188	mg/L	118	70 - 130		
Sodium		0.400	0.391	mg/L	97.6	70 - 130		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061452
Run Date: 07/14/2016
Sample ID: WG576454-08
Instrument ID: ICP-THERMO3
Run Time: 12:25
Method: 6010C
File ID: T3.071416.122530
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574839
Cal ID: ICP-TH - 14-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Calcium		0.400	0.383	mg/L	95.7	70 - 130		
Iron		0.0800	0.0902	mg/L	113	70 - 130		
Magnesium		0.400	0.334	mg/L	83.6	70 - 130		
Selenium		0.0160	0.0166	mg/L	104	70 - 130		
Sodium		0.400	0.430	mg/L	108	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4836788
Report generated 07/16/2016 11:41

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061452
Run Date: 07/14/2016
Sample ID: WG576454-32
Instrument ID: ICP-THERMO3
Run Time: 18:05
Method: 6010C
File ID: T3.071416.180534
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574839
Cal ID: ICP-TH - 14-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Calcium		0.400	0.343	mg/L	85.7	70 - 130		
Iron		0.0800	0.0818	mg/L	102	70 - 130		
Magnesium		0.400	0.418	mg/L	104	70 - 130		
Selenium		0.0160	0.0124	mg/L	77.4	70 - 130		
Sodium		0.400	0.472	mg/L	118	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4836788
Report generated 07/16/2016 11:41

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061452
Instrument ID: ICP-THERMO3
Sol. A : WG574911-10 **File ID:** T3.063016.122323
Sol. AB : WG574911-11 **File ID:** T3.063016.122713

Workgroup (AAB#): WG574839
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	259	104	250	265	106	
Beryllium	NS	-0.000160	NS	0.250	0.240	96.0	
Calcium	250	241	96.4	250	246	98.4	
Iron	100	95.3	95.3	100	96.1	96.1	
Magnesium	250	245	98.0	250	247	98.8	
Potassium	NS	0.0132	NS	5.00	5.23	105	
Selenium	NS	0.00668	NS	0.250	0.245	98.0	
Sodium	NS	0.0676	NS	5.00	5.26	105	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
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Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061452
Instrument ID: ICP-THERMO3
Sol. A : WG576454-10 **File ID:** T3.071416.123313
Sol. AB : WG576454-11 **File ID:** T3.071416.123702

Workgroup (AAB#): WG574839
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	268	107	250	266	106	
Beryllium	NS	-0.0000100	NS	0.250	0.246	98.4	
Calcium	250	251	100	250	249	99.6	
Iron	100	99.1	99.1	100	96.8	96.8	
Magnesium	250	255	102	250	249	99.6	
Potassium	NS	-0.0266	NS	5.00	5.17	103	
Selenium	NS	0.00789	NS	0.250	0.259	104	
Sodium	NS	0.0552	NS	5.00	5.32	106	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4836443
Report generated 07/15/2016 07:55

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061452 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	AG	AL	AS	B	BA
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000410	0	0	0
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0.0115	0	-0.0000800
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0.000260	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	-0.000289	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	-0.0000490	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.0000120	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0.0000300	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4836439
Report generated: 07/15/2016 07:55

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061452 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	BE	CA	CD	CO	CR
ALUMINUM	308.20	0	0	0	-0.000820	0
ANTIMONY	206.80	0	0	0	0	0.0200
ARSENIC	189.00	0	0	0	0	-0.00190
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0.00343	0
CADMIUM	228.80	0	0	0	-0.00390	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	-0.000200
COPPER	224.70	0	0	0	0.0000770	-0.00100
IRON	261.10	0	0	0	0	-0.00100
LEAD	220.30	0	0	0	-0.0000130	-0.000132
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.0000500
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	-0.000860	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0.00000500	0	0	0
THALLIUM	190.80	0	0	0	0.00240	0.000276
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	-0.00480
ZINC	206.20	0	0	0	0	-0.00180
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061452 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	CU	FE	K	LI	MG
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000560	0	0	0
ARSENIC	189.00	0	-0.0000500	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0.000300	0	0	0
CADMIUM	228.80	0	-0.0000190	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000500	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0.00160	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0.000609	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.00000300
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0.0000420	0	0	0
PHOSPHORUS	214.90	-0.323	0.000900	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000270	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000400	0	0	0
VANADIUM	292.40	0	0.00000700	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	-0.0000300	0	0	0

CORR_FACTORS - Modified 03/05/2008
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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061452 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	MN	MO	NA	NI	P
ALUMINUM	308.20	0	0.0163	0	0	0
ANTIMONY	206.80	0	-0.00310	0	-0.00350	0
ARSENIC	189.00	0	0.00120	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	-0.00190	0	0	0
CADMIUM	228.80	0	0.0000320	0	-0.000770	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0.000360	0	0	0	0
COBALT	228.60	0	-0.00200	0	0.000100	0
COPPER	224.70	0	0.00160	0	-0.0123	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	-0.00210	0	0.000110	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	-0.00290	-0.0230	0	0	0
MANGANESE	257.60	0	0.0000300	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0.00710	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0.000600	0.000580	0	0	0
SILICON	212.40	0	0.0187	0	0	0
SILVER	328.00	0	-0.0000430	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0.00100	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000153	0	0	0
VANADIUM	292.40	-0.000200	-0.00830	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061452 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	PB	SB	SE	SI	SN
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0	0	0	-0.0220
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0.00440	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061452 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	SR	TI	TL	V	ZN
ALUMINUM	308.20	0	0	0	0.0950	0
ANTIMONY	206.80	0	0.00110	0	-0.00360	0
ARSENIC	189.00	0	0	0	0.000107	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	-0.00000700	0	0.000990	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0.000102	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000550	0	0	0
COBALT	228.60	0	0.00210	0	0.0000200	0
COPPER	224.70	0	0.000269	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	-0.000126	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	-0.00290	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	-0.000110	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	-0.00100	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000720	0	-0.000260	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.000800	0	-0.00490	0
TIN	189.90	0	-0.00190	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0.000820	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061452 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	ZR
ALUMINUM	308.20	0
ANTIMONY	206.80	0
ARSENIC	189.00	0
BARIUM	455.40	0
BERYLLIUM	313.10	0
BORON	249.60	0
CADMIUM	228.80	0
CALCIUM	422.60	0
CHROMIUM	267.70	0
COBALT	228.60	0
COPPER	224.70	0
IRON	261.10	0
LEAD	220.30	0
LITHIUM	670.70	0
MAGNESIUM	279.00	0
MANGANESE	257.60	0
MOLYBDENUM	202.00	0
NICKEL	231.60	0
PHOSPHORUS	214.90	0
POTASSIUM	766.40	0
SELENIUM	196.00	0
SILICON	212.40	0
SILVER	328.00	0
SODIUM	589.50	0
STRONTIUM	407.70	0
THALLIUM	190.80	0
TIN	189.90	0
TITANIUM	337.20	0
VANADIUM	292.40	0
ZINC	206.20	0
ZIRCONIUM	339.10	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4836439
Report generated: 07/15/2016 07:55

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16061452 **Date:** 04/29/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	900.0
Antimony	20.00	45.0
Arsenic	10.00	45.0
Barium	10.00	45.0
Beryllium	10.00	1.8
Boron	20.00	45.0
Cadmium	20.00	4.5
Calcium	5.00	270.0
Chromium	20.00	36.0
Cobalt	20.00	45.0
Copper	20.00	180.0
Iron	5.00	720.0
Lead	20.00	225.0
Lithium	5.00	36.0
Magnesium	5.00	900.0
Manganese	10.00	36.0
Molybdenum	20.00	27.0
Nickel	20.00	90.0
Phosphorus	20.00	180.0
Potassium	5.00	450.0
Selenium	20.00	90.0
Silicon	20.00	36.0
Silver	10.00	9.0
Sodium	5.00	270.0
Strontium	5.00	9.0
Thallium	20.00	18.0
Tin	20.00	45.0
Titanium	5.00	36.0
Vanadium	20.00	27.0
Zinc	20.00	45.0
Zirconium	10.00	45.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4836438
Report generated: 07/15/2016 07:55

2.3.1.3 Raw Data

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	-0.000193	0.052798	0.000000	1.000000
Al 308.215 {109}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	0.000809	0.008423	0.000000	1.000000
As 189.042 {478}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	0.000056	0.025275	0.000000	1.000000
B 249.678 {135}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	-0.000036	0.024307	0.000000	1.000000
Ba 455.403 { 74}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	0.060327	2.321617	0.000000	1.000000
Be 313.107 {108}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	0.000676	0.972709	0.000000	1.000000
Ca 422.673 { 80}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	0.002708	0.048326	0.000000	1.000000
Cd 228.802 {447}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	-0.000098	0.597598	0.000000	1.000000
Co 228.616 {447}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	-0.000214	0.374470	0.000000	1.000000
Cr 267.716 {126}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	0.000267	0.061064	0.000000	1.000000
Cu 224.700 {450}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	0.000137	0.133806	0.000000	1.000000
Fe 261.187 {129}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	0.000143	0.023347	0.000000	1.000000
K 766.490 { 44}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	-0.013804	0.061019	0.000000	1.000000
Li 670.784 { 50}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	-0.009937	1.786167	0.000000	1.000000
Mg 279.079 {121}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	-0.000430	0.008802	0.000000	1.000000
Mn 257.610 {131}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	0.000243	0.287231	0.000000	1.000000
Mo 202.030 {467}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	-0.000016	0.190780	0.000000	1.000000
Na 589.592 { 57}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	-0.058690	0.203593	0.000000	1.000000
Ni 231.604 {446}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	-0.000690	0.140071	0.000000	1.000000
P 214.914 {457}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	-0.000105	0.014460	0.000000	1.000000
Pb 220.353 {453}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	-0.001037	0.065557	0.000000	1.000000
Sb 206.833 {463}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	0.000213	0.031777	0.000000	1.000000
Se 196.090 {472}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	-0.000487	0.017604	0.000000	1.000000
Si 212.412 {459}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	0.000878	0.041134	0.000000	1.000000
Sn 189.989 {477}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	0.000050	0.072964	0.000000	1.000000
Sr 407.771 { 83}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	0.001911	3.795036	0.000000	1.000000
Ti 337.280 {100}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	-0.003085	0.127329	0.000000	1.000000
Tl 190.856 {477}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	-0.000326	0.029804	0.000000	1.000000
V 292.402 {115}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	-0.000042	0.071368	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	0.000111	0.441556	0.000000	1.000000
Zr 339.198 { 99}	6/30/2016 12:07:53	6/30/2016 12:07:53	Linear	1/Conc	-0.007325	4.038535	0.000000	1.000000

Approved: July 01, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999524	0.000004	0.002246	0.007488	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999995	0.000002	0.009695	0.032315	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999564	0.000003	0.003153	0.010509	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999831	0.000002	0.002907	0.009690	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999869	0.000238	0.001120	0.003735	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999985	0.000002	0.000098	0.000327	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999491	0.000098	0.044375	0.147918	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999896	0.000003	0.000270	0.000899	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999959	0.000004	0.000413	0.001377	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999994	0.000001	0.001236	0.004119	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999801	0.000008	0.001358	0.004527	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999068	0.000026	0.029323	0.097744	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999875	0.000306	0.125185	0.417285	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999800	0.000351	0.003979	0.013263	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999752	0.000019	0.087917	0.293055	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999695	0.000023	0.002818	0.009395	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999958	0.000011	0.000431	0.001437	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999978	0.000428	0.032363	0.107877	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999830	0.000008	0.001169	0.003898	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999967	0.000007	0.007069	0.023562	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.998915	0.000010	0.003642	0.012140	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999939	0.000003	0.004429	0.014764	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999987	0.000000	0.006620	0.022067	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999914	0.000017	0.002347	0.007824	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999905	0.000006	0.000895	0.002984	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999995	0.000074	0.000471	0.001570	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999442	0.000027	0.007566	0.025219	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999792	0.000003	0.003157	0.010522	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999979	0.000003	0.001023	0.003409	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999969	0.000022	0.000201	0.000669	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.999994	0.000092	0.000531	0.001769	OK.	1.000000	0.000000	1	0

Approved: July 01, 2016

Sample Name: S0 Acquired: 6/30/2016 11:48:47 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00019**	**.00081**	**.00006**	**-.00004**	**.06033**	**.00068**	**.00271**
Stddev	.00006	.00005	.00002	.00004	.00169	.00010	.00129
%RSD	29.272	5.9332	31.921	122.93	2.8032	14.598	47.655
#1	-.00023	.00075	.00007	-.00008	.06224	.00079	.00308
#2	-.00022	.00084	.00006	-.00004	.05976	.00061	.00127
#3	-.00013	.00083	.00004	.00001	.05900	.00063	.00378

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00010**	**-.00021**	**.00027**	**.00014**	**.00014**	**-.01380**	**-.00993**
Stddev	.00003	.00004	.00009	.00011	.00047	.00053	.00373
%RSD	33.005	17.919	34.379	79.164	329.81	3.8567	37.607
#1	-.00013	-.00023	.00037	.00025	-.00026	-.01347	-.01335
#2	-.00010	-.00017	.00024	.00012	.00066	-.01441	-.00594
#3	-.00006	-.00024	.00019	.00004	.00003	-.01352	-.01050

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00043**	**.00024**	**-.00002**	**-.05869**	**-.00069**	**-.00010**	**-.00104**
Stddev	.00101	.00039	.00006	.00542	.00011	.00010	.00004
%RSD	234.70	161.11	374.83	9.2329	15.537	98.599	3.9316
#1	.00049	.00054	.00003	-.05526	-.00057	-.00003	-.00099
#2	-.00151	.00039	-.00008	-.06494	-.00072	-.00006	-.00107
#3	-.00027	-.00020	.00001	-.05587	-.00078	-.00022	-.00106

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00021**	**-.00049**	**.00088**	**.00005**	**.00191**	**-.00309**	**-.00033**
Stddev	.00004	.00005	.00003	.00003	.00014	.00055	.00009
%RSD	18.597	10.112	3.6380	56.311	7.5467	17.814	28.554
#1	.00024	-.00054	.00084	.00002	.00174	-.00354	-.00042
#2	.00017	-.00044	.00090	.00008	.00199	-.00247	-.00033
#3	.00023	-.00048	.00089	.00005	.00200	-.00324	-.00023

Approved: July 01, 2016

Sample Name: S0 Acquired: 6/30/2016 11:48:47 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**-.00004**	**.00011**	**-.00733**
Stddev	.00004	.00005	.00118
%RSD	90.668	45.589	16.170
#1	-.00003	.00005	-.00632
#2	-.00001	.00015	-.00703
#3	-.00009	.00013	-.00863
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9689.1**	**58572.**	**2664.3**
Stddev	28.1	81.	6.0
%RSD	.28991	.13777	.22425
#1	9657.5	58643.	2657.5
#2	9698.4	58484.	2667.0
#3	9711.3	58589.	2668.5

Approved: July 01, 2016

Sample Name: S1 Acquired: 6/30/2016 11:52:45 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00012**	**.00145**	**.07519**	**.00104**	**.00455**	**.00019**	**.00048**
Stddev	.00006	.00004	.00133	.00007	.00130	.00012	.00023
%RSD	54.165	2.5700	1.7657	6.3207	28.530	63.516	47.402
#1	-.00016	.00143	.07366	.00103	.00516	.00020	.00068
#2	-.00014	.00149	.07605	.00099	.00306	.00031	.00053
#3	-.00004	.00142	.07586	.00112	.00542	.00007	.00023

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00053**	**.00053**	**.00030**	**.00806**	**.00191**	**.00134**	**.02128**
Stddev	.00005	.00014	.00039	.00264	.00011	.00032	.00383
%RSD	10.291	25.801	129.91	32.752	5.9498	23.478	18.013
#1	.00049	.00054	.00023	.01092	.00194	.00151	.02118
#2	.00050	.00066	-.00005	.00571	.00179	.00154	.02516
#3	.00059	.00039	.00072	.00756	.00201	.00098	.01749

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00025**	**.00090**	**-.00099**	**.00056**	**.00228**	**.00052**	**.03280**
Stddev	.00011	.00016	.00015	.00017	.00024	.00006	.00112
%RSD	44.619	17.852	14.855	29.590	10.330	12.365	3.4124
#1	-.00028	.00102	-.00094	.00075	.00236	.00055	.03409
#2	-.00013	.00097	-.00088	.00045	.00246	.00056	.03203
#3	-.00036	.00072	-.00115	.00048	.00201	.00044	.03230

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00192**	**.00058**	**.00326**	**.02585**
Stddev	.00024	.00002	.00065	.00251
%RSD	12.475	4.1985	20.032	9.6992
#1	-.00164	.00056	.00356	.02423
#2	-.00209	.00061	.00370	.02874
#3	-.00201	.00058	.00251	.02458

Approved: July 01, 2016

Sample Name: S1 Acquired: 6/30/2016 11:52:45 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9718.1**	**58956.**	**2683.8**
Stddev	35.2	165.	1.3
%RSD	.36207	.28019	.04958
#1	9697.0	59140.	2685.3
#2	9698.5	58822.	2683.2
#3	9758.7	58905.	2682.9

Approved: July 01, 2016

Sample Name: S2 Acquired: 6/30/2016 11:56:45 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00009	.00216	.00015	.00020	.09127	.00144	.00879
Stddev	.00006	.00005	.00002	.00007	.00099	.00007	.00013
%RSD	74.681	2.2882	13.294	34.410	1.0812	4.6029	1.4802
#1	.00003	.00221	.00014	.00013	.09227	.00150	.00873
#2	.00016	.00217	.00014	.00022	.09030	.00146	.00871
#3	.00007	.00211	.00018	.00027	.09125	.00137	.00894

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00048	.00105	.00075	.00100	.00134	.02621	.01117
Stddev	.00015	.00022	.00005	.00014	.00042	.00208	.00237
%RSD	30.682	21.185	7.3050	13.696	31.034	7.9418	21.243
#1	.00049	.00115	.00074	.00102	.00087	.02591	.01003
#2	.00062	.00121	.00070	.00113	.00163	.02842	.01390
#3	.00033	.00080	.00081	.00086	.00154	.02429	.00958

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00055	.00232	.00276	.10726	.00021	.00201	-.00066
Stddev	.00047	.00077	.00032	.00636	.00021	.00029	.00021
%RSD	84.481	33.124	11.523	5.9311	100.68	14.470	32.556
#1	.00098	.00239	.00297	.10161	.00042	.00220	-.00056
#2	.00005	.00305	.00291	.11415	.00021	.00216	-.00090
#3	.00063	.00152	.00239	.10601	.00000	.00168	-.00051

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00087	-.00037	.00378	.00107	.06397	-.00017	-.00016
Stddev	.00014	.00009	.00036	.00020	.00163	.00066	.00001
%RSD	16.131	24.406	9.4278	18.634	2.5530	389.76	6.5339
#1	.00098	-.00047	.00401	.00115	.06224	-.00092	-.00016
#2	.00092	-.00030	.00397	.00121	.06418	.00009	-.00018
#3	.00071	-.00034	.00337	.00084	.06549	.00032	-.00016

Approved: July 01, 2016

Sample Name: S2 Acquired: 6/30/2016 11:56:45 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00110	.00668	.05897
Stddev	.00002	.00100	.00170
%RSD	2.0668	15.028	2.8886
#1	.00111	.00728	.06039
#2	.00112	.00724	.05945
#3	.00108	.00552	.05709
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9701.0	58835.	2699.2
Stddev	46.3	136.	2.1
%RSD	.47776	.23076	.07848
#1	9680.9	58909.	2696.8
#2	9668.1	58679.	2700.3
#3	9754.0	58918.	2700.6

Approved: July 01, 2016

Sample Name: S3 Acquired: 6/30/2016 12:00:44 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.02084	.08568	.01009	.01196	2.3772	.05007	.48271	.03232
Stddev	.00017	.00007	.00003	.00009	.0175	.00017	.00297	.00020
%RSD	.80625	.07788	.28827	.73467	.73651	.34557	.61514	.62884
#1	.02073	.08561	.01008	.01200	2.3572	.04993	.48550	.03254
#2	.02103	.08570	.01012	.01202	2.3900	.05001	.48302	.03226
#3	.02075	.08574	.01007	.01186	2.3843	.05026	.47959	.03215

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.07450	.03078	.06744	.09405	3.0113	1.7635	.08697	.14299
Stddev	.00022	.00011	.00023	.00115	.0167	.0103	.00138	.00114
%RSD	.29388	.34426	.34550	1.2235	.55307	.58445	1.5826	.79775
#1	.07458	.03088	.06771	.09297	2.9936	1.7518	.08613	.14239
#2	.07468	.03067	.06733	.09391	3.0266	1.7711	.08856	.14431
#3	.07426	.03079	.06728	.09526	3.0137	1.7676	.08622	.14228

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.19165	10.028	.06961	.14205	.03209	.03768	.00651	.20921
Stddev	.00087	.071	.00030	.00031	.00004	.00005	.00008	.00032
%RSD	.45298	.70594	.42969	.21587	.12919	.12025	1.1966	.15375
#1	.19244	9.9490	.06977	.14240	.03214	.03764	.00650	.20952
#2	.19178	10.048	.06980	.14186	.03207	.03772	.00643	.20923
#3	.19072	10.086	.06927	.14188	.03207	.03769	.00659	.20888

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.07293	3.7832	.12232	.01348	.07069	.44298	4.0452
Stddev	.00035	.0208	.00072	.00009	.00020	.00104	.0273
%RSD	.47635	.54843	.59050	.63389	.28487	.23561	.67545
#1	.07322	3.7596	.12174	.01339	.07046	.44419	4.0163
#2	.07303	3.7913	.12210	.01349	.07075	.44237	4.0705
#3	.07254	3.7987	.12313	.01356	.07085	.44239	4.0488

Approved: July 01, 2016

Sample Name: S3 Acquired: 6/30/2016 12:00:44 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9475.5**	**57220.**	**2657.2**
Stddev	30.5	81.	10.6
%RSD	.32150	.14099	.39801
#1	9441.3	57209.	2668.9
#2	9485.2	57305.	2654.5
#3	9499.9	57145.	2648.3

Approved: July 01, 2016

Sample Name: S4 Acquired: 6/30/2016 12:04:23 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.04213**	**.17091**	**.02023**	**.02426**	**4.7183**	**.10012**	**.97616**	**.06536**
Stddev	.00002	.00007	.00011	.00006	.0096	.00035	.00369	.00031
%RSD	.05249	.04163	.52269	.25339	.20378	.35302	.37813	.47583
#1	.04214	.17094	.02012	.02433	4.7100	.10046	.97523	.06504
#2	.04210	.17083	.02026	.02420	4.7160	.09976	.97302	.06566
#3	.04214	.17096	.02032	.02426	4.7288	.10013	.98023	.06537

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.14922**	**.06142**	**.13402**	**.18726**	**6.1252**	**3.5826**	**.17594**	**.28818**
Stddev	.00094	.00001	.00074	.00052	.0137	.0130	.00188	.00031
%RSD	.62842	.02163	.55027	.27843	.22422	.36191	1.0687	.10830
#1	.14839	.06143	.13341	.18670	6.1250	3.5743	.17482	.28853
#2	.15023	.06140	.13484	.18734	6.1391	3.5759	.17811	.28805
#3	.14903	.06143	.13380	.18773	6.1116	3.5975	.17489	.28794

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.38105**	**20.392**	**.13946**	**.28511**	**.06517**	**.07497**	**.01363**	**.41251**
Stddev	.00134	.058	.00080	.00053	.00048	.00031	.00018	.00077
%RSD	.35235	.28256	.57055	.18524	.73271	.41308	1.3105	.18681
#1	.38127	20.356	.13877	.28489	.06463	.07466	.01346	.41257
#2	.38226	20.362	.14033	.28572	.06555	.07528	.01382	.41325
#3	.37961	20.459	.13928	.28473	.06533	.07497	.01362	.41172

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.14591**	**7.6044**	**.25148**	**.02688**	**.14272**	**.88207**	**8.0517**
Stddev	.00063	.0119	.00134	.00011	.00041	.00284	.0418
%RSD	.43229	.15645	.53128	.40207	.28594	.32157	.51852
#1	.14587	7.6087	.24999	.02695	.14307	.88357	8.0903
#2	.14656	7.5909	.25257	.02693	.14227	.88383	8.0074
#3	.14530	7.6135	.25189	.02675	.14281	.87879	8.0575

Approved: July 01, 2016

Sample Name: S4 Acquired: 6/30/2016 12:04:23 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9363.5	56326.	2647.2
Stddev	14.2	70.	17.3
%RSD	.15200	.12444	.65335
#1	9371.0	56246.	2630.5
#2	9372.3	56378.	2665.1
#3	9347.1	56355.	2645.9

Approved: July 01, 2016

Sample Name: ICV Acquired: 6/30/2016 12:07:59 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40027**	**10.040**	**.40094**	**.49789**	**1.0009**	**.05011**	**9.9815**	**.05001**
Stddev	.00088	.028	.00642	.00467	.0005	.00013	.0371	.00077
%RSD	.21957	.27612	1.6003	.93850	.05356	.26156	.37153	1.5336
#1	.39943	10.038	.40203	.49914	1.0013	.05010	9.9398	.05078
#2	.40020	10.014	.40673	.49272	1.0003	.04998	10.011	.04999
#3	.40118	10.069	.39404	.50181	1.0011	.05024	9.9938	.04925
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20005**	**.50020**	**.50121**	**3.9698**	**49.687**	**.99123**	**10.176**	**.49943**
Stddev	.00305	.00161	.00891	.0576	.357	.00597	.077	.00033
%RSD	1.5234	.32135	1.7781	1.4508	.71866	.60270	.75624	.06545
#1	.20189	.49870	.50647	4.0146	49.908	.99717	10.089	.49922
#2	.20174	.50001	.50623	3.9049	49.878	.98522	10.206	.49926
#3	.19654	.50190	.49092	3.9900	49.275	.99131	10.234	.49980
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.98147**	**49.498**	**.50196**	**9.8218**	**.50424**	**1.2065**	**.40615**	**4.9303**
Stddev	.01676	.028	.00947	.1023	.00367	.0241	.00614	.0450
%RSD	1.7072	.05564	1.8857	1.0420	.72692	2.0000	1.5110	.91304
#1	.99008	49.471	.50761	9.8807	.50041	1.2231	.41272	4.9514
#2	.99217	49.499	.50724	9.8810	.50771	1.2177	.40056	4.9609
#3	.96216	49.526	.49104	9.7036	.50460	1.1788	.40519	4.8786
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 01, 2016

Sample Name: ICV Acquired: 6/30/2016 12:07:59 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0104**	**.98895**	**.99394**	**.50636**	**.99673**	**1.0027**	**1.0113**
Stddev	.0176	.00171	.00427	.00473	.00283	.0150	.0049
%RSD	1.7368	.17311	.42947	.93453	.28425	1.5003	.48055
#1	1.0196	.98962	.99781	.51089	.99845	1.0111	1.0158
#2	1.0214	.98700	.99466	.50673	.99346	1.0117	1.0061
#3	.99016	.99022	.98936	.50145	.99829	.98533	1.0119
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9476.1**	**57239.**	**2653.6**
Stddev	27.0	189.	16.7
%RSD	.28497	.33077	.62854
#1	9449.3	57065.	2635.7
#2	9475.6	57441.	2668.7
#3	9503.3	57211.	2656.3

Approved: July 01, 2016

Sample Name: ICB Acquired: 6/30/2016 12:11:37 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00088**	**.00390**	**-.00095**	**.00506**	**-.00081**	**-.00003**	**-.04954**	**.00020**
Stddev	.00194	.00471	.00108	.00177	.00077	.00005	.02644	.00011
%RSD	220.94	120.73	113.92	34.947	95.404	204.36	53.382	53.738
#1	-.00078	.00429	-.00205	.00310	.00007	-.00002	-.07970	.00008
#2	.00101	-.00099	.00010	.00554	-.00115	.00003	-.03036	.00027
#3	-.00286	.00841	-.00089	.00654	-.00135	-.00008	-.03855	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00044**	**.00069**	**-.00061**	**-.02541**	**.00201**	**.00114**	**-.01391**	**.00121**
Stddev	.00030	.00074	.00046	.00762	.10357	.00122	.08551	.00475
%RSD	67.224	107.97	75.175	29.993	5164.7	107.87	614.73	392.27
#1	.00078	.00088	-.00112	-.03074	.07373	.00062	.04435	.00394
#2	.00022	-.00013	-.00044	-.02881	.04902	.00025	-.11208	-.00427
#3	.00033	.00131	-.00026	-.01668	-.11673	.00253	.02600	.00397
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00059**	**.06174**	**.00036**	**-.00244**	**-.00143**	**.00317**	**-.00415**	**.00880**
Stddev	.00047	.03575	.00026	.00310	.00198	.00431	.00373	.00115
%RSD	79.805	57.900	73.662	126.85	138.10	135.86	89.892	13.047
#1	.00111	.03252	.00020	-.00500	-.00371	-.00154	-.00019	.00818
#2	.00021	.05111	.00021	.00100	-.00012	.00414	-.00465	.01013
#3	.00044	.10160	.00066	-.00333	-.00047	.00692	-.00759	.00810
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: ICB Acquired: 6/30/2016 12:11:37 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.00059	.00769	-.00266	.00058	.00089	.00077
Stddev	.00059	.00020	.00206	.00182	.00108	.00021	.00059
%RSD	197.36	33.572	26.840	68.537	184.19	22.970	76.283
#1	-.00036	.00080	.00793	-.00476	.00164	.00112	.00142
#2	.00079	.00055	.00552	-.00146	.00063	.00085	.00026
#3	.00046	.00041	.00963	-.00177	-.00051	.00072	.00064
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9648.6	58614.	2680.4
Stddev	49.6	124.	18.5
%RSD	.51441	.21107	.68937
#1	9611.1	58476.	2666.9
#2	9629.9	58651.	2672.7
#3	9704.9	58715.	2701.4

Approved: July 01, 2016

Sample Name: LLICV Acquired: 6/30/2016 12:15:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00655**	**.15983**	**.00660**	**.08050**	**.00602**	**.00144**	**.40388**	**.00092**
Stddev	.00125	.00368	.00319	.00287	.00035	.00003	.02155	.00016
%RSD	19.088	2.3016	48.400	3.5594	5.8115	1.9143	5.3357	16.794
#1	.00524	.15965	.00921	.07941	.00635	.00145	.38701	.00105
#2	.00772	.16360	.00304	.07835	.00607	.00146	.39646	.00097
#3	.00670	.15625	.00754	.08375	.00565	.00141	.42816	.00075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00380**	**.00427**	**.00360**	**.06111**	**.73280**	**.07686**	**.43553**	**.00840**
Stddev	.00038	.00115	.00055	.00976	.06213	.00329	.07930	.00255
%RSD	10.114	26.924	15.212	15.970	8.4781	4.2814	18.207	30.402
#1	.00413	.00375	.00299	.05035	.74873	.07338	.46978	.00713
#2	.00390	.00347	.00405	.06939	.78541	.07727	.34487	.01134
#3	.00338	.00558	.00376	.06359	.66425	.07992	.49195	.00673
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00740**	**.45782**	**.01545**	**.73259**	**.00602**	**.07788**	**.01924**	**.70650**
Stddev	.00052	.01037	.00160	.07584	.00157	.01046	.00177	.06617
%RSD	6.9947	2.2656	10.344	10.352	25.999	13.426	9.1871	9.3660
#1	.00780	.45101	.01523	.78128	.00774	.08176	.01721	.74614
#2	.00758	.45268	.01715	.77129	.00467	.08583	.02007	.74325
#3	.00681	.46975	.01397	.64521	.00566	.06603	.02045	.63011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: LLICV Acquired: 6/30/2016 12:15:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37544**	**.04032**	**.03397**	**.14245**	**.00780**	**.01618**	**.04089**
Stddev	.04800	.00052	.00953	.01417	.00048	.00177	.00047
%RSD	12.785	1.2931	28.044	9.9482	6.1481	10.969	1.1412
#1	.40450	.03988	.04113	.15342	.00727	.01731	.04124
#2	.40179	.04090	.03763	.14748	.00790	.01708	.04036
#3	.32004	.04018	.02316	.12645	.00822	.01413	.04108
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9716.1**	**59066.**	**2701.3**
Stddev	10.5	109.	6.5
%RSD	.10825	.18513	.24001
#1	9706.1	59087.	2705.8
#2	9715.2	59162.	2704.2
#3	9727.1	58947.	2693.8

Approved: July 01, 2016

Sample Name: LLICV Acquired: 6/30/2016 12:19:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01850	.39387	.01539	.19444	.01763	.00374	.99224	.00205
Stddev	.00214	.00293	.00156	.00091	.00067	.00003	.04643	.00016
%RSD	11.577	.74349	10.113	.46775	3.7898	.70038	4.6797	7.5824
#1	.01706	.39721	.01514	.19522	.01792	.00371	1.0024	.00189
#2	.01748	.39270	.01705	.19344	.01810	.00376	1.0327	.00219
#3	.02096	.39172	.01397	.19466	.01686	.00376	.94156	.00209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00982	.01005	.00983	.18802	1.9090	.19634	.93539	.01791
Stddev	.00078	.00056	.00052	.00630	.1160	.00089	.06965	.00274
%RSD	7.9294	5.5747	5.2557	3.3491	6.0769	.45277	7.4465	15.282
#1	.01059	.01002	.01033	.19118	1.8837	.19545	.95017	.01574
#2	.00985	.01063	.00988	.18077	1.8077	.19722	.85954	.01701
#3	.00903	.00951	.00930	.19211	2.0356	.19635	.99648	.02099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01865	1.0310	.03891	1.8639	.02022	.19179	.03887	1.7887
Stddev	.00079	.0105	.00256	.0803	.00258	.00180	.00127	.0654
%RSD	4.2580	1.0184	6.5715	4.3101	12.754	.93792	3.2653	3.6569
#1	.01946	1.0295	.03924	1.9113	.01902	.19202	.04034	1.8307
#2	.01862	1.0422	.04129	1.9093	.02319	.19346	.03815	1.8221
#3	.01787	1.0214	.03621	1.7712	.01847	.18989	.03813	1.7134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: LLICV Acquired: 6/30/2016 12:19:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.96496**	**.09889**	**.06924**	**.36758**	**.01960**	**.04190**	**.10028**
Stddev	.05420	.00135	.01159	.01230	.00107	.00194	.00029
%RSD	5.6169	1.3693	16.742	3.3463	5.4822	4.6260	.29077
#1	.99568	.09753	.07596	.37571	.01836	.04303	.10001
#2	.99683	.10024	.07590	.37359	.02018	.04301	.10059
#3	.90238	.09890	.05585	.35343	.02027	.03966	.10025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9620.2**	**58472.**	**2675.8**
Stddev	7.5	159.	7.9
%RSD	.07808	.27163	.29594
#1	9617.7	58289.	2684.9
#2	9614.3	58560.	2670.3
#3	9628.7	58568.	2672.3

Approved: July 01, 2016

Sample Name: ICSA Acquired: 6/30/2016 12:23:23 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00392**	**258.87**	**.00148**	**-.01294**	**-.00171**	**-.00016**	**240.77**	**-.00062**
Stddev	.00113	.12	.00167	.00160	.00012	.00003	1.27	.00026
%RSD	28.927	.04479	113.16	12.378	6.8370	19.030	.52945	41.473
#1	-.00451	258.96	.00295	-.01143	-.00175	-.00012	241.30	-.00034
#2	-.00462	258.91	-.00034	-.01462	-.00181	-.00018	241.70	-.00068
#3	-.00261	258.74	.00183	-.01277	-.00158	-.00016	239.32	-.00084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00099**	**-.00075**	**.00080**	**95.292**	**.01319**	**.00586**	**244.73**	**-.00267**
Stddev	.00020	.00108	.00181	.307	.05666	.00244	.25	.00154
%RSD	20.404	144.30	226.36	.32234	429.73	41.538	.10142	57.722
#1	-.00117	-.00134	.00165	95.350	-.01870	.00602	244.61	-.00422
#2	-.00077	.00050	.00202	95.566	-.02035	.00335	245.02	-.00263
#3	-.00103	-.00141	-.00128	94.960	.07861	.00822	244.57	-.00114
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00097**	**.06759**	**-.00033**	**.00820**	**.00333**	**.00319**	**.00668**	**.02797**
Stddev	.00052	.02950	.00034	.00852	.00251	.00513	.00557	.00214
%RSD	53.804	43.637	103.14	103.85	75.340	161.09	83.357	7.6618
#1	-.00157	.05698	-.00073	.00978	.00612	-.00247	.00053	.02784
#2	-.00071	.10093	-.00014	.01583	.00258	.00448	.00814	.03017
#3	-.00063	.04487	-.00013	-.00099	.00128	.00754	.01136	.02589
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: ICSA Acquired: 6/30/2016 12:23:23 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00027**	**.00047**	**.00144**	**-.00468**	**-.00233**	**-.00780**	**-.00305**
Stddev	.00135	.00016	.00281	.00175	.00046	.00024	.00029
%RSD	508.06	33.727	194.75	37.301	19.705	3.0738	9.6489
#1	.00019	.00057	.00159	-.00564	-.00229	-.00781	-.00331
#2	.00080	.00029	-.00144	-.00574	-.00190	-.00756	-.00273
#3	-.00179	.00054	.00417	-.00267	-.00281	-.00804	-.00311
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9010.9**	**54583.**	**2627.6**
Stddev	2.3	84.	19.1
%RSD	.02548	.15428	.72748
#1	9013.0	54675.	2610.1
#2	9008.5	54561.	2624.8
#3	9011.2	54511.	2648.0

Approved: July 01, 2016

Sample Name: ICSAB Acquired: 6/30/2016 12:27:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50787	265.04	.25154	-.01164	.24798	.24040	245.66	.48600
Stddev	.00113	.70	.00266	.00098	.00067	.00071	1.55	.00204
%RSD	.22260	.26421	1.0574	8.4340	.27184	.29603	.63147	.41874
#1	.50676	264.28	.25163	-.01271	.24727	.23980	243.90	.48669
#2	.50782	265.19	.24883	-.01077	.24805	.24021	246.25	.48760
#3	.50902	265.65	.25415	-.01145	.24861	.24119	246.82	.48371
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.23726	.24990	.25094	96.136	5.2328	.00737	247.03	.24107
Stddev	.00135	.00160	.00264	.560	.0707	.00291	1.33	.00219
%RSD	.56863	.64022	1.0510	.58292	1.3504	39.522	.53829	.90669
#1	.23719	.24895	.24905	95.500	5.3140	.00969	245.57	.23954
#2	.23863	.24901	.25395	96.349	5.1989	.00410	247.38	.24009
#3	.23594	.25175	.24982	96.558	5.1854	.00833	248.16	.24357
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00065	5.2624	.47565	.08607	.48880	.50254	.24514	.03415
Stddev	.00023	.0236	.00349	.00379	.00233	.00126	.00862	.00136
%RSD	35.931	.44907	.73398	4.4063	.47670	.24981	3.5157	3.9779
#1	-.00049	5.2383	.47779	.08171	.48795	.50176	.24659	.03260
#2	-.00091	5.2632	.47755	.08862	.49144	.50399	.23588	.03514
#3	-.00054	5.2856	.47162	.08787	.48702	.50188	.25293	.03470
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: ICSAB Acquired: 6/30/2016 12:27:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**.00102**	**-.00422**	**.45490**	**.25147**	**.47398**	**-.00300**
Stddev	.00060	.00024	.00647	.00450	.00239	.00260	.00064
%RSD	1162.9	23.595	153.45	.99023	.95219	.54922	21.292
#1	.00029	.00078	-.00877	.45596	.25022	.47379	-.00351
#2	.00050	.00102	.00319	.45879	.24996	.47667	-.00228
#3	-.00063	.00125	-.00708	.44997	.25423	.47147	-.00321
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9078.9**	**54620.**	**2626.9**
Stddev	15.3	90.	11.7
%RSD	.16868	.16486	.44498
#1	9089.3	54724.	2631.7
#2	9086.0	54578.	2635.5
#3	9061.3	54559.	2613.6

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 12:30:56 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40314**	**10.095**	**.40022**	**.49822**	**.99850**	**.05003**	**10.0000**
Stddev	.00174	.030	.00262	.00202	.00182	.00020	.06119
%RSD	.43086	.29715	.65572	.40642	.18197	.39284	.61193
#1	.40227	10.114	.40307	.50045	.99925	.05000	9.9707
#2	.40514	10.110	.39791	.49651	.99643	.05023	9.9590
#3	.40200	10.060	.39968	.49769	.99983	.04984	10.070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05052**	**.20273**	**.50052**	**.50644**	**4.0177**	**50.053**	**.99630**
Stddev	.00029	.00059	.00123	.00098	.0206	.277	.00488
%RSD	.57672	.29104	.24609	.19424	.51302	.55395	.48966
#1	.05039	.20205	.50158	.50654	4.0123	50.137	.99940
#2	.05086	.20312	.50081	.50736	4.0405	49.743	.99067
#3	.05032	.20301	.49917	.50540	4.0003	50.278	.99882
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.137**	**.50111**	**1.0165**	**49.554**	**.50645**	**10.021**	**.50302**
Stddev	.071	.00808	.0013	.140	.00182	.014	.00062
%RSD	.70125	1.6128	.12474	.28192	.36013	.14423	.12305
#1	10.146	.49628	1.0157	49.501	.50438	10.009	.50359
#2	10.203	.49660	1.0179	49.447	.50783	10.037	.50236
#3	10.062	.51044	1.0158	49.712	.50715	10.017	.50311
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 12:30:56 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2040**	**.40648**	**5.0746**	**1.0134**	**.99771**	**.99875**	**.50706**
Stddev	.0041	.00563	.0079	.0023	.00324	.00193	.00143
%RSD	.33812	1.3858	.15506	.22871	.32513	.19321	.28237
#1	1.2054	.40050	5.0658	1.0150	.99840	1.0009	.50635
#2	1.1994	.40726	5.0768	1.0144	.99418	.99718	.50613
#3	1.2072	.41169	5.0811	1.0107	1.0006	.99816	.50871
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0047**	**1.0071**	**1.0113**
Stddev	.0062	.0013	.0025
%RSD	.62124	.12593	.24844
#1	1.0119	1.0062	1.0120
#2	1.0005	1.0065	1.0134
#3	1.0018	1.0086	1.0086
Check ?	Chk Pass	Chk Pass	Chk Pass
Value			
Range			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9437.1**	**57173.**	**2647.0**
Stddev	11.1	189.	10.6
%RSD	.11759	.33018	.40036
#1	9424.3	57084.	2648.9
#2	9444.5	57390.	2656.5
#3	9442.4	57046.	2635.6

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 12:34:34 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00097	.02111	-.00086	.00219	-.00139	.00002	-.00845	.00016
Stddev	.00116	.00377	.00323	.00193	.00117	.00003	.01962	.00008
%RSD	119.14	17.856	377.85	88.206	83.806	136.41	232.08	48.587
#1	.00074	.02512	-.00326	.00031	-.00139	-.00000	-.01655	.00013
#2	.00223	.01764	.00282	.00209	-.00023	.00001	.01392	.00010
#3	-.00005	.02057	-.00212	.00416	-.00256	.00006	-.02273	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	-.00009	-.00094	-.01876	-.07769	.00011	-.02585	.00236
Stddev	.00045	.00073	.00032	.01010	.05795	.00383	.01305	.00184
%RSD	161.49	779.20	34.624	53.807	74.589	3521.7	50.461	77.731
#1	.00045	-.00093	-.00060	-.01043	-.10278	.00078	-.03852	.00301
#2	-.00023	.00028	-.00097	-.01587	-.11886	-.00401	-.02658	.00378
#3	.00062	.00037	-.00124	-.02999	-.01142	.00356	-.01246	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.03700	-.00037	.00255	.00125	.00182	.00475	.00458
Stddev	.00011	.03028	.00104	.00495	.00253	.00276	.00337	.00359
%RSD	557.45	81.824	281.36	193.82	201.98	151.88	70.910	78.269
#1	-.00010	.06158	-.00075	.00805	-.00153	.00388	.00799	.00602
#2	.00012	.04625	-.00116	-.00155	.00187	.00289	.00126	.00050
#3	.00004	.00318	.00080	.00116	.00342	-.00132	.00500	.00723
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 12:34:34 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00011**	**.00000**	**.00745**	**-.00213**	**.00035**	**.00062**	**.00027**
Stddev	.00050	.00036	.00272	.00318	.00064	.00007	.00055
%RSD	448.33	10415.	36.591	149.11	186.29	10.715	202.17
#1	-.00045	.00031	.00977	-.00201	.00107	.00066	.00076
#2	.00028	-.00039	.00812	.00098	-.00017	.00066	.00039
#3	.00052	.00009	.00445	-.00537	.00015	.00054	-.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9577.8**	**58193.**	**2646.6**
Stddev	22.6	215.	14.1
%RSD	.23584	.36905	.53134
#1	9596.7	58438.	2646.6
#2	9584.0	58035.	2632.6
#3	9552.8	58108.	2660.7

Approved: July 01, 2016

Sample Name: PBW 12 Acquired: 6/30/2016 12:38:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574028-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.01656**	**-.00190**	**.00427**	**-.00172**	**-.00000**	**.00141**	**.00043**
Stddev	.00298	.00573	.00277	.00221	.00011	.00010	.02317	.00018
%RSD	13600.	34.629	145.49	51.776	6.1770	2595.5	1646.2	42.456
#1	-.00149	.01378	.00129	.00174	-.00185	-.00010	-.02192	.00057
#2	-.00198	.02315	-.00365	.00525	-.00167	.00009	.00172	.00022
#3	.00340	.01275	-.00335	.00581	-.00165	-.00001	.02442	.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00011**	**.00098**	**-.00033**	**-.00015**	**-.10602**	**-.00259**	**.04159**	**-.00044**
Stddev	.00018	.00084	.00094	.01560	.02296	.00137	.02839	.00056
%RSD	164.62	85.731	282.86	10243.	21.653	52.761	68.250	125.72
#1	.00025	.00063	-.00128	-.01146	-.08011	-.00113	.02765	-.00041
#2	.00018	.00194	.00060	.01764	-.11411	-.00281	.02287	-.00102
#3	-.00010	.00037	-.00031	-.00664	-.12383	-.00384	.07425	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**.05287**	**-.00005**	**.00039**	**-.00067**	**-.00079**	**.00113**	**.02996**
Stddev	.00032	.03022	.00083	.00424	.00143	.00242	.00494	.00306
%RSD	399.83	57.161	1640.2	1098.5	213.41	305.28	436.54	10.198
#1	-.00029	.06553	-.00030	.00346	-.00065	.00187	-.00418	.03157
#2	.00027	.01838	-.00073	-.00445	.00075	-.00287	.00560	.03188
#3	.00025	.07469	.00088	.00215	-.00211	-.00138	.00198	.02644
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: PBW 12 Acquired: 6/30/2016 12:38:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574028-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**.00052**	**.00333**	**-.00311**	**.00028**	**.00217**	**.00049**
Stddev	.00057	.00035	.01014	.00145	.00029	.00009	.00015
%RSD	7598.2	67.426	304.58	46.722	105.43	4.0176	31.045
#1	.00052	.00056	.01350	-.00144	.00029	.00225	.00033
#2	-.00061	.00085	-.00677	-.00377	.00056	.00218	.00052
#3	.00011	.00015	.00326	-.00411	-.00002	.00208	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9566.4**	**58615.**	**2684.2**
Stddev	18.5	91.	21.8
%RSD	.19356	.15580	.81091
#1	9551.8	58649.	2668.6
#2	9587.2	58511.	2674.9
#3	9560.2	58684.	2709.1

Approved: July 01, 2016

Sample Name: LCSW 12 Acquired: 6/30/2016 12:42:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574028-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19282**	**4.8757**	**.19057**	**.94851**	**.49215**	**.02414**	**4.9651**	**.02390**
Stddev	.00166	.0068	.00489	.00238	.00190	.00024	.0369	.00059
%RSD	.86218	.14014	2.5652	.25069	.38537	1.0051	.74411	2.4505
#1	.19170	4.8688	.19370	.94728	.49421	.02388	4.9815	.02434
#2	.19202	4.8824	.19306	.95125	.49048	.02417	4.9228	.02412
#3	.19473	4.8760	.18493	.94700	.49176	.02436	4.9910	.02323
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09810**	**.24657**	**.24408**	**1.9478**	**24.541**	**.49154**	**4.9010**	**.24467**
Stddev	.00323	.00042	.00882	.0302	.110	.00217	.1185	.00078
%RSD	3.2937	.17173	3.6134	1.5533	.45006	.44111	2.4171	.31882
#1	.10024	.24609	.25123	1.9167	24.668	.49305	4.7643	.24441
#2	.09967	.24690	.24680	1.9493	24.493	.48906	4.9745	.24555
#3	.09438	.24671	.23422	1.9772	24.463	.49252	4.9640	.24405
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49192**	**24.584**	**.24441**	**4.6987**	**.24689**	**.57220**	**.18799**	**2.4537**
Stddev	.01597	.046	.00846	.1271	.00454	.01965	.00500	.0519
%RSD	3.2466	.18865	3.4623	2.7045	1.8383	3.4342	2.6592	2.1133
#1	.50210	24.621	.24891	4.7880	.24920	.58377	.19301	2.4881
#2	.50015	24.599	.24967	4.7548	.24981	.58331	.18794	2.4788
#3	.47352	24.532	.23465	4.5532	.24167	.54951	.18301	2.3940
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: LCSW 12 Acquired: 6/30/2016 12:42:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574028-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48595	.49590	.49197	.24525	.49382	.48417	.00127
Stddev	.01774	.00021	.00649	.00402	.00172	.01490	.00039
%RSD	3.6497	.04176	1.3193	1.6373	.34825	3.0775	30.532
#1	.49801	.49570	.48656	.24817	.49270	.49649	.00114
#2	.49425	.49587	.49916	.24691	.49297	.48842	.00170
#3	.46559	.49611	.49018	.24067	.49580	.46761	.00096
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9584.6	58298.	2687.5
Stddev	18.7	42.	6.6
%RSD	.19502	.07205	.24374
#1	9563.5	58336.	2692.9
#2	9591.7	58252.	2689.4
#3	9598.8	58305.	2680.2

Approved: July 01, 2016

Sample Name: L1606124401 Acquired: 6/30/2016 12:45:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00037	.00985	-.00123	.37618	-.00063	-.00002	.11529	.00015
Stddev	.00130	.01037	.00370	.00295	.00036	.00013	.05187	.00019
%RSD	351.16	105.36	300.16	.78437	57.632	540.17	44.994	129.55
#1	-.00049	.00177	.00254	.37318	-.00023	.00012	.06173	-.00004
#2	.00099	.00623	-.00486	.37627	-.00072	-.00012	.11884	.00034
#3	-.00161	.02155	-.00138	.37908	-.00094	-.00007	.16530	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	.00153	.00044	-.00693	113.20	-.00374	.05769	-.00032
Stddev	.00051	.00049	.00038	.02108	.61	.00241	.02570	.00175
%RSD	180.12	31.824	86.220	304.28	.53878	64.434	44.543	543.87
#1	-.00015	.00102	.00007	-.00312	113.64	-.00270	.05018	.00021
#2	.00085	.00199	.00083	-.02965	113.44	-.00203	.08631	-.00228
#3	.00016	.00159	.00042	.01199	112.50	-.00650	.03659	.00110
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01999	64.541	.00143	.01379	.00188	.00227	-.00352	.06382
Stddev	.00324	.389	.00087	.01011	.00097	.00209	.00114	.00825
%RSD	16.192	.60240	60.924	73.296	51.292	92.314	32.329	12.929
#1	.02207	64.977	.00217	.01539	.00096	.00325	-.00456	.06972
#2	.02163	64.229	.00047	.02301	.00289	.00369	-.00370	.06734
#3	.01626	64.417	.00165	.00298	.00180	-.00014	-.00230	.05439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606124401 Acquired: 6/30/2016 12:45:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.00041**	**.00954**	**-.00206**	**.00028**	**.00341**	**.00006**
Stddev	.00019	.00015	.00744	.00539	.00057	.00050	.00051
%RSD	97.407	36.577	77.950	261.58	202.99	14.671	854.67
#1	-.00003	.00054	.01813	-.00473	-.00038	.00372	.00028
#2	-.00041	.00045	.00537	.00414	.00062	.00368	-.00052
#3	-.00015	.00025	.00513	-.00560	.00059	.00283	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9447.3**	**57116.**	**2654.3**
Stddev	24.9	123.	24.8
%RSD	.26382	.21478	.93324
#1	9418.5	56979.	2626.0
#2	9460.7	57215.	2665.0
#3	9462.6	57154.	2672.0

Approved: July 01, 2016

Sample Name: L1606124402 Acquired: 6/30/2016 12:49:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00196**	**-.00192**	**-.00106**	**.17303**	**-.00178**	**-.00014**	**.10595**
Stddev	.00155	.00646	.00197	.00022	.00056	.00006	.04150
%RSD	79.203	336.68	185.68	.12453	31.700	44.069	39.173
#1	-.00081	.00230	-.00259	.17291	-.00115	-.00018	.12292
#2	-.00134	-.00935	.00116	.17289	-.00194	-.00017	.05865
#3	-.00373	.00130	-.00175	.17328	-.00224	-.00007	.13629
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00059**	**.00006**	**.00107**	**-.00115**	F **-.02594**	**66.403**	**-.00243**
Stddev	.00022	.00029	.00050	.00094	.01784	.379	.00301
%RSD	37.208	467.53	46.272	82.161	68.749	.57002	123.84
#1	.00082	-.00025	.00111	-.00039	-.00876	66.374	-.00590
#2	.00054	.00032	.00056	-.00220	-.02470	66.039	-.00081
#3	.00039	.00011	.00155	-.00085	-.04437	66.795	-.00057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04020**	**.00120**	**.02603**	**40.857**	**.00057**	**-.00513**	**-.00224**
Stddev	.04109	.00077	.00231	.136	.00083	.00278	.00082
%RSD	102.20	64.089	8.8589	.33216	146.18	54.157	36.805
#1	.08119	.00101	.02727	40.721	.00050	-.00239	-.00275
#2	-.00099	.00205	.02745	40.859	-.00023	-.00506	-.00129
#3	.04041	.00055	.02337	40.992	.00143	-.00795	-.00268
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 01, 2016

Sample Name: L1606124402 Acquired: 6/30/2016 12:49:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00256	.00189	.04624	.00036	-.00000	.00369	-.00200
Stddev	.00139	.00311	.00415	.00117	.00019	.00286	.00263
%RSD	54.432	164.74	8.9681	321.70	13285.	77.386	131.56
#1	.00107	-.00035	.04575	-.00086	-.00009	.00257	-.00477
#2	.00383	.00544	.05061	.00048	-.00014	.00156	-.00171
#3	.00278	.00058	.04236	.00147	.00022	.00693	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00006	.00326	.00046
Stddev	.00035	.00033	.00038
%RSD	619.92	10.125	83.267
#1	-.00040	.00336	.00085
#2	.00030	.00352	.00008
#3	-.00007	.00289	.00045
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9522.6	57730.	2678.1
Stddev	47.8	146.	12.0
%RSD	.50234	.25320	.44624
#1	9547.2	57784.	2688.5
#2	9553.1	57565.	2680.8
#3	9467.5	57842.	2665.1

Approved: July 01, 2016

Sample Name: L1606125101 Acquired: 6/30/2016 12:53:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00058	.00235	-.00126	.02061	.08163	-.00006	62.777	.00015
Stddev	.00150	.01071	.00252	.00069	.00187	.00004	.240	.00021
%RSD	257.88	456.09	199.30	3.3405	2.2852	64.775	.38304	138.00
#1	-.00143	.01237	.00158	.01986	.08369	-.00010	62.843	.00033
#2	-.00147	-.00893	-.00218	.02074	.08004	-.00006	62.978	.00021
#3	.00115	.00361	-.00320	.02122	.08118	-.00002	62.511	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	.00060	.00046	.87830	1.3885	.00931	19.065	.16215
Stddev	.00017	.00073	.00117	.02247	.0856	.00226	.063	.00196
%RSD	76.565	121.64	256.69	2.5583	6.1678	24.227	.32904	1.2087
#1	.00041	.00021	-.00037	.86037	1.4839	.00681	19.129	.16027
#2	.00021	.00015	-.00006	.90351	1.3633	.00995	19.003	.16419
#3	.00006	.00144	.00179	.87103	1.3183	.01119	19.064	.16200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00284	10.906	.00036	.00164	.00167	.00217	-.00308	4.4508
Stddev	.00027	.079	.00021	.00467	.00194	.00244	.00374	.2818
%RSD	9.5730	.72162	59.955	284.97	116.11	112.51	121.39	6.3302
#1	.00294	10.904	.00044	.00022	.00113	.00360	-.00507	4.6006
#2	.00304	10.986	.00051	.00686	.00006	.00355	.00123	4.6260
#3	.00253	10.828	.00011	-.00216	.00383	-.00065	-.00541	4.1258
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606125101 Acquired: 6/30/2016 12:53:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00018**	**.08937**	**-.00365**	**-.00547**	**.00080**	**.09270**	**-.00022**
Stddev	.00034	.00044	.00398	.00193	.00039	.00749	.00024
%RSD	195.67	.49368	109.01	35.286	48.731	8.0793	110.45
#1	-.00033	.08944	-.00007	-.00574	.00038	.09701	.00003
#2	-.00041	.08890	-.00294	-.00725	.00115	.09704	-.00023
#3	.00022	.08978	-.00793	-.00342	.00089	.08405	-.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9563.1**	**57952.**	**2701.4**
Stddev	57.5	129.	4.5
%RSD	.60144	.22202	.16823
#1	9627.5	58013.	2706.5
#2	9545.0	57805.	2700.1
#3	9516.9	58040.	2697.6

Approved: July 01, 2016

Sample Name: L1606125103 Acquired: 6/30/2016 12:57:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00041	.00618	.00178	.01973	.03921	-.00005	58.184	.00001
Stddev	.00071	.00571	.00088	.00035	.00071	.00005	.621	.00012
%RSD	174.82	92.370	49.608	1.7989	1.8142	93.390	1.0678	913.36
#1	-.00053	.00445	.00280	.01952	.03944	-.00003	58.890	-.00011
#2	.00036	.00154	.00132	.02014	.03977	-.00002	57.940	.00014
#3	-.00104	.01255	.00123	.01953	.03841	-.00011	57.722	.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00184	.12253	.01104	5.1118	.74960	.00338	16.129	.23671
Stddev	.00041	.00075	.00203	.0205	.07046	.00175	.193	.00341
%RSD	22.386	.61005	18.380	.40078	9.3994	51.889	1.1974	1.4415
#1	.00202	.12167	.01191	5.0937	.73471	.00136	15.995	.23330
#2	.00213	.12293	.01250	5.1078	.82631	.00448	16.042	.23671
#3	.00137	.12298	.00872	5.1340	.68778	.00430	16.350	.24013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00367	12.954	.05744	-.00021	.00094	.00173	.00297	4.1400
Stddev	.00090	.038	.00608	.00465	.00238	.00138	.00189	.3665
%RSD	24.404	.29546	10.590	2270.3	253.94	79.606	63.495	8.8530
#1	.00418	12.941	.06059	.00209	-.00060	.00085	.00264	4.3496
#2	.00420	12.997	.06129	.00286	.00369	.00332	.00127	4.3536
#3	.00264	12.924	.05042	-.00556	-.00027	.00103	.00500	3.7168
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606125103 Acquired: 6/30/2016 12:57:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00025**	**.13461**	**-.00342**	**-.00293**	**.00020**	**.00730**	**-.00022**
Stddev	.00066	.00083	.00266	.00137	.00093	.00086	.00030
%RSD	265.12	.61730	77.629	46.777	460.46	11.826	138.60
#1	-.00075	.13380	-.00169	-.00205	-.00070	.00762	.00013
#2	-.00049	.13458	-.00648	-.00223	.00116	.00796	-.00036
#3	.00050	.13546	-.00210	-.00451	.00014	.00632	-.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9564.3**	**58403.**	**2697.1**
Stddev	18.0	120.	9.6
%RSD	.18851	.20555	.35773
#1	9582.8	58530.	2686.9
#2	9563.4	58291.	2698.4
#3	9546.7	58387.	2706.1

Approved: July 01, 2016

Sample Name: L1606125301 Acquired: 6/30/2016 13:01:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00140**	**-.00101**	**-.00090**	**.01628**	**.09404**	**-.00001**	**61.963**	**.00031**
Stddev	.00106	.00568	.00138	.00024	.00153	.00002	.158	.00001
%RSD	75.790	564.62	152.81	1.4949	1.6273	181.32	.25437	4.5728
#1	-.00194	.00058	-.00207	.01635	.09272	-.00001	62.141	.00030
#2	-.00018	-.00731	-.00126	.01649	.09572	.00001	61.905	.00033
#3	-.00209	.00371	.00062	.01601	.09368	-.00003	61.843	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**.00126**	**.00209**	**.00546**	**1.2668**	**.00559**	**13.363**	**.00055**
Stddev	.00061	.00045	.00171	.01304	.0700	.00174	.072	.00162
%RSD	766.88	35.691	81.716	238.86	5.5289	31.168	.54025	295.85
#1	-.00038	.00114	.00406	.01012	1.2604	.00752	13.319	-.00132
#2	-.00048	.00176	.00091	-.00927	1.2002	.00515	13.324	.00142
#3	.00062	.00089	.00131	.01552	1.3398	.00412	13.447	.00155
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00068**	**7.0971**	**.00034**	**.00627**	**.00254**	**.00005**	**-.00240**	**4.2462**
Stddev	.00024	.0587	.00074	.00701	.00262	.00105	.00212	.1974
%RSD	35.470	.82709	214.60	111.70	103.20	2231.1	88.081	4.6476
#1	.00093	7.1567	-.00040	.01433	.00309	.00012	-.00084	4.3703
#2	.00046	7.0393	.00108	.00294	.00483	.00106	-.00156	4.3496
#3	.00064	7.0953	.00035	.00155	-.00032	-.00103	-.00481	4.0186
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606125301 Acquired: 6/30/2016 13:01:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.16573	.00435	-.00157	.00010	.09981	.00008
Stddev	.00060	.00092	.00485	.00052	.00042	.00670	.00029
%RSD	632.62	.55585	111.58	33.029	441.61	6.7166	340.46
#1	-.00002	.16624	.00748	-.00126	-.00016	.10413	-.00024
#2	-.00044	.16466	.00680	-.00129	.00058	.10323	.00029
#3	.00075	.16628	-.00124	-.00217	-.00014	.09209	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9499.0	58149.	2692.9
Stddev	22.4	133.	9.1
%RSD	.23563	.22843	.33830
#1	9505.6	58090.	2682.5
#2	9517.3	58301.	2699.2
#3	9474.0	58055.	2697.1

Approved: July 01, 2016

Sample Name: L1606125303 Acquired: 6/30/2016 13:05:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	-.00535	-.00309	.01535	.09003	-.00005	58.758	.00003
Stddev	.00128	.00541	.00079	.00292	.00043	.00005	.113	.00015
%RSD	939.38	101.11	25.443	19.013	.47643	98.554	.19197	455.16
#1	-.00024	-.00460	-.00398	.01407	.09052	-.00004	58.870	-.00014
#2	.00156	-.01110	-.00284	.01329	.08986	-.00001	58.761	.00009
#3	-.00091	-.00035	-.00247	.01869	.08972	-.00011	58.644	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.00116	.00152	-.00904	1.2747	.00252	12.653	.00068
Stddev	.00038	.00025	.00112	.02963	.2178	.00137	.057	.00236
%RSD	250.87	21.244	73.488	327.93	17.089	54.572	.44860	347.27
#1	-.00019	.00087	.00159	.02384	1.0509	.00142	12.613	.00144
#2	.00009	.00129	.00037	-.01727	1.4860	.00406	12.718	-.00197
#3	.00056	.00131	.00260	-.03367	1.2872	.00208	12.628	.00256
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	6.7052	.00015	.00053	.00012	.00296	.00170	4.0670
Stddev	.00045	.0198	.00067	.00611	.00223	.00190	.00240	.1105
%RSD	59.477	.29508	462.19	1144.6	1829.8	64.176	141.27	2.7172
#1	.00118	6.7131	-.00056	.00715	.00077	.00200	.00009	4.1333
#2	.00028	6.7198	.00022	-.00066	-.00236	.00515	.00055	4.1283
#3	.00080	6.6827	.00078	-.00489	.00196	.00173	.00445	3.9394
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606125303 Acquired: 6/30/2016 13:05:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00062**	**.15631**	**-.00440**	**-.00198**	**.00012**	**.09816**	**-.00007**
Stddev	.00076	.00065	.00445	.00491	.00025	.00363	.00038
%RSD	123.28	.41483	101.02	247.70	214.14	3.6944	545.15
#1	-.00150	.15704	-.00702	.00051	.00004	.10021	.00034
#2	-.00022	.15582	.00073	.00118	.00040	.10030	-.00042
#3	-.00014	.15606	-.00692	-.00763	-.00009	.09398	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9545.7**	**58351.**	**2690.8**
Stddev	18.4	219.	4.4
%RSD	.19260	.37505	.16345
#1	9530.5	58523.	2693.2
#2	9566.1	58105.	2685.8
#3	9540.5	58426.	2693.5

Approved: July 01, 2016

Sample Name: L1606125401 Acquired: 6/30/2016 13:09:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00053**	**.00053**	**-.00107**	**.02180**	**.04649**	**-.00005**	**57.424**	**.00006**
Stddev	.00038	.00784	.00174	.00259	.00024	.00004	.105	.00004
%RSD	73.196	1490.3	162.11	11.893	.52498	76.899	.18249	68.089
#1	-.00090	.00344	.00021	.02355	.04673	-.00006	57.380	.00004
#2	-.00055	-.00835	-.00305	.02303	.04624	-.00008	57.544	.00011
#3	-.00013	.00649	-.00038	.01882	.04651	-.00001	57.349	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00011**	**.00129**	**.00169**	**.02815**	**1.1996**	**.00303**	**11.719**	**.00244**
Stddev	.00028	.00115	.00158	.02458	.1009	.00245	.125	.00182
%RSD	247.48	89.078	93.317	87.320	8.4070	80.939	1.0640	74.460
#1	.00039	.00116	.00308	.05234	1.2954	.00039	11.579	.00412
#2	.00012	.00251	.00201	.02891	1.0944	.00348	11.816	.00270
#3	-.00017	.00021	-.00002	.00320	1.2090	.00523	11.763	.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00017**	**8.2654**	**.00019**	**.00497**	**.00007**	**.00462**	**-.00319**	**4.0727**
Stddev	.00028	.0415	.00016	.00548	.00314	.00149	.00332	.3228
%RSD	165.20	.50232	81.741	110.23	4299.2	32.159	104.24	7.9254
#1	-.00015	8.2181	.00020	.00029	-.00354	.00358	-.00069	4.2685
#2	.00029	8.2829	.00034	.01100	.00159	.00632	-.00696	4.2495
#3	.00037	8.2954	.00003	.00362	.00217	.00396	-.00191	3.7002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606125401 Acquired: 6/30/2016 13:09:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00041**	**.10425**	**-.00107**	**-.00065**	**.00058**	**.00400**	**.00030**
Stddev	.00042	.00065	.00527	.00452	.00044	.00082	.00014
%RSD	103.61	.62658	491.18	692.55	76.285	20.478	48.326
#1	-.00031	.10406	-.00248	-.00449	.00010	.00468	.00046
#2	-.00087	.10371	.00476	.00433	.00096	.00422	.00019
#3	-.00004	.10497	-.00550	-.00179	.00069	.00309	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9527.3**	**58277.**	**2677.8**
Stddev	18.0	183.	7.4
%RSD	.18875	.31342	.27669
#1	9520.7	58161.	2669.4
#2	9547.6	58183.	2683.2
#3	9513.5	58488.	2681.0

Approved: July 01, 2016

Sample Name: L1606125501 Acquired: 6/30/2016 13:13:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00028	.24388	-.00038	.02993	.01716	-.00008	13.329	.00006
Stddev	.00021	.00081	.00348	.00311	.00068	.00002	.011	.00039
%RSD	72.523	.33290	917.95	10.402	3.9482	31.305	.08546	643.76
#1	-.00012	.24294	.00364	.02999	.01643	-.00010	13.342	-.00035
#2	-.00022	.24437	-.00240	.02679	.01776	-.00005	13.324	.00010
#3	-.00052	.24432	-.00238	.03302	.01730	-.00008	13.321	.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	.00140	-.00007	.32569	2.1692	-.00143	7.7164	.03974
Stddev	.00019	.00024	.00052	.02274	.0605	.00212	.0505	.00358
%RSD	34.355	17.281	693.97	6.9830	2.7892	148.00	.65378	9.0068
#1	.00076	.00167	-.00032	.35076	2.1057	.00101	7.6631	.03705
#2	.00040	.00120	.00052	.30637	2.1758	-.00250	7.7635	.03837
#3	.00047	.00133	-.00042	.31994	2.2262	-.00281	7.7225	.04381
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	7.2840	.00010	.02596	.00156	.00233	.00144	.46864
Stddev	.00025	.0334	.00116	.00620	.00138	.00154	.00057	.04408
%RSD	32.428	.45851	1110.1	23.864	88.228	65.848	39.666	9.4059
#1	.00049	7.2656	.00135	.03190	.00183	.00278	.00089	.49543
#2	.00083	7.2638	-.00093	.02644	.00279	.00062	.00203	.49274
#3	.00097	7.3225	-.00012	.01954	.00007	.00360	.00141	.41777
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606125501 Acquired: 6/30/2016 13:13:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00026**	**.10993**	**.00758**	**-.00211**	**.00165**	**.00657**	**.00037**
Stddev	.00018	.00027	.00636	.00321	.00012	.00085	.00049
%RSD	69.652	.24680	83.966	151.97	7.3778	12.896	133.98
#1	.00007	.11008	.00977	-.00446	.00157	.00694	.00076
#2	.00043	.11010	.00041	-.00341	.00160	.00717	-.00018
#3	.00029	.10962	.01256	.00154	.00180	.00560	.00052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9673.0**	**59056.**	**2699.3**
Stddev	70.4	385.	6.4
%RSD	.72800	.65210	.23718
#1	9697.9	58796.	2698.5
#2	9727.6	58874.	2693.4
#3	9593.5	59499.	2706.1

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 13:17:17 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40859	10.295	.39725	.50480	1.0230	.05098	10.239	.05037
Stddev	.00170	.031	.01233	.00357	.0022	.00009	.055	.00230
%RSD	.41659	.30269	3.1034	.70776	.21693	.18438	.53290	4.5663
#1	.40986	10.297	.40512	.50769	1.0207	.05102	10.180	.05116
#2	.40926	10.263	.40359	.50080	1.0251	.05105	10.287	.05217
#3	.40666	10.325	.38304	.50590	1.0232	.05088	10.250	.04778
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20257	.51569	.50670	4.0877	51.079	1.0153	10.459	.51576
Stddev	.01027	.00186	.02616	.0458	.265	.0034	.035	.00418
%RSD	5.0697	.36110	5.1631	1.1208	.51935	.33577	.33670	.81029
#1	.20812	.51597	.52196	4.0676	50.800	1.0116	10.443	.51462
#2	.20886	.51370	.52164	4.1401	51.328	1.0160	10.500	.52039
#3	.19071	.51739	.47649	4.0553	51.110	1.0183	10.435	.51227
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0067	50.582	.50575	10.063	.50730	1.2042	.40331	5.0904
Stddev	.0546	.174	.02538	.406	.01562	.0534	.00676	.1780
%RSD	5.4222	.34314	5.0182	4.0363	3.0796	4.4343	1.6754	3.4964
#1	1.0290	50.649	.52023	10.281	.51652	1.2366	.40682	5.1859
#2	1.0465	50.712	.52057	10.315	.51612	1.2335	.40758	5.2003
#3	.94446	50.385	.47644	9.5948	.48926	1.1426	.39552	4.8851
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 13:17:17 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0098**	**1.0208**	**1.0140**	**.51459**	**1.0290**	**1.0047**	**1.0392**
Stddev	.0578	.0015	.0091	.01136	.0022	.0475	.0042
%RSD	5.7215	.14475	.89857	2.2079	.21531	4.7265	.40621
#1	1.0438	1.0202	1.0230	.51954	1.0265	1.0298	1.0343
#2	1.0426	1.0224	1.0144	.52264	1.0301	1.0344	1.0421
#3	.94311	1.0196	1.0048	.50160	1.0305	.94991	1.0410
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9223.2**	**55745.**	**2568.9**
Stddev	64.5	29.	14.2
%RSD	.69973	.05129	.55429
#1	9193.9	55739.	2584.5
#2	9178.4	55777.	2556.7
#3	9297.2	55720.	2565.3

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 13:20:56 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00106**	**-.00581**	**-.00328**	**.00332**	**-.00025**	**.00006**	**-.00635**	**.00008**
Stddev	.00184	.00465	.00340	.00321	.00038	.00002	.03185	.00013
%RSD	173.27	79.946	103.71	96.764	149.75	28.109	501.46	155.83
#1	.00182	-.00045	-.00426	.00021	.00007	.00006	.02456	.00023
#2	.00240	-.00867	-.00609	.00312	-.00016	.00008	-.00455	.00004
#3	-.00104	-.00832	.00050	.00662	-.00067	.00005	-.03907	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**.00106**	**-.00014**	**-.04273**	**.05116**	**-.00149**	**.05552**	**-.00045**
Stddev	.00034	.00027	.00082	.01400	.13907	.00090	.07584	.00226
%RSD	239.70	25.865	578.88	32.758	271.85	60.624	136.60	501.98
#1	-.00021	.00103	-.00070	-.03242	-.01769	-.00249	.02482	.00211
#2	.00047	.00135	.00080	-.03710	-.04006	-.00075	-.00015	-.00217
#3	.00017	.00081	-.00052	-.05867	.21123	-.00122	.14191	-.00129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**.01455**	**-.00044**	**.00023**	**.00104**	**.00189**	**-.00614**	**.00249**
Stddev	.00025	.02450	.00077	.00650	.00166	.00357	.00202	.00174
%RSD	828.31	168.41	175.82	2766.4	158.43	188.69	32.839	69.844
#1	.00030	.02549	.00023	.00270	.00236	.00594	-.00505	.00234
#2	-.00019	.03167	-.00027	-.00714	-.00081	.00060	-.00847	.00083
#3	-.00002	-.01352	-.00127	.00514	.00159	-.00085	-.00491	.00429
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 13:20:56 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**.00009**	**.00080**	**-.00315**	**-.00001**	**-.00021**	**.00014**
Stddev	.00060	.00024	.00527	.00140	.00034	.00005	.00027
%RSD	313.58	260.83	658.31	44.438	2349.4	22.654	194.24
#1	-.00044	-.00002	.00246	-.00474	-.00040	-.00018	.00042
#2	.00074	-.00007	-.00510	-.00208	.00024	-.00020	.00013
#3	.00027	.00037	.00504	-.00264	.00011	-.00027	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9588.0**	**58148.**	**2626.3**
Stddev	37.9	59.	5.0
%RSD	.39570	.10150	.19153
#1	9562.4	58189.	2631.5
#2	9570.0	58081.	2625.9
#3	9631.6	58176.	2621.4

Approved: July 01, 2016

Sample Name: L1606125503 Acquired: 6/30/2016 13:24:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	-.00223	.00433	.02208	.04920	-.00009	56.298	.00015
Stddev	.00212	.01039	.00167	.00134	.00082	.00003	.044	.00016
%RSD	1116.8	466.35	38.641	6.0536	1.6627	32.546	.07814	102.79
#1	.00007	.00572	.00267	.02054	.04828	-.00008	56.292	-.00003
#2	-.00242	-.01398	.00431	.02292	.04985	-.00006	56.345	.00022
#3	.00178	.00158	.00602	.02278	.04946	-.00012	56.258	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.00125	.00013	.48031	1.0529	.00260	10.829	.18445
Stddev	.00024	.00096	.00059	.00387	.1016	.00130	.089	.00111
%RSD	70.607	76.596	463.27	.80619	9.6521	49.897	.81905	.60205
#1	.00042	.00047	-.00012	.47643	1.1552	.00273	10.727	.18478
#2	.00053	.00096	.00080	.48034	.95198	.00125	10.880	.18537
#3	.00007	.00231	-.00030	.48417	1.0515	.00383	10.881	.18322
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00124	11.636	-.00019	.00183	.00098	.00161	.00560	4.0285
Stddev	.00030	.024	.00039	.00256	.00481	.00207	.00258	.2501
%RSD	24.196	.20284	211.60	139.59	490.71	128.71	46.095	6.2074
#1	.00143	11.632	.00003	.00255	.00011	.00064	.00816	4.1779
#2	.00140	11.615	.00005	.00396	.00616	.00020	.00563	4.1679
#3	.00090	11.662	-.00064	-.00101	-.00334	.00398	.00300	3.7398
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606125503 Acquired: 6/30/2016 13:24:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**.09871**	**-.00184**	**-.00135**	**-.00035**	**.01428**	**-.00031**
Stddev	.00104	.00041	.00595	.00054	.00026	.00117	.00062
%RSD	400.60	.41259	322.49	39.765	74.842	8.2174	202.16
#1	-.00109	.09836	-.00736	-.00156	-.00007	.01520	-.00089
#2	.00090	.09861	.00446	-.00074	-.00038	.01468	.00035
#3	-.00059	.09916	-.00264	-.00175	-.00059	.01296	-.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9520.6**	**58480.**	**2683.1**
Stddev	5.9	91.	7.4
%RSD	.06236	.15525	.27435
#1	9521.6	58379.	2676.2
#2	9514.2	58506.	2682.2
#3	9526.0	58555.	2690.8

Approved: July 01, 2016

Sample Name: L1606125505 Acquired: 6/30/2016 13:28:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.00072	-.00257	.01964	.05955	-.00003	56.704	.00011
Stddev	.00153	.00423	.00344	.00047	.00065	.00010	.206	.00027
%RSD	704.35	584.20	133.58	2.3880	1.0978	408.62	.36347	239.64
#1	.00168	.00297	-.00131	.01921	.05977	-.00010	56.730	.00029
#2	.00033	-.00416	.00006	.02014	.06007	.00009	56.896	-.00019
#3	-.00137	.00336	-.00646	.01958	.05882	-.00007	56.486	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	.00203	.00161	.10977	1.0715	.00442	10.811	.00101
Stddev	.00035	.00057	.00090	.02619	.0771	.00161	.112	.00281
%RSD	225.69	28.125	56.056	23.863	7.2004	36.534	1.0382	278.21
#1	.00022	.00190	.00067	.11777	1.1267	.00275	10.881	-.00134
#2	-.00022	.00265	.00246	.13104	.98333	.00454	10.870	.00412
#3	-.00047	.00153	.00170	.08051	1.1044	.00597	10.681	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00156	10.758	-.00004	.00066	.00151	.00277	-.00097	4.0576
Stddev	.00030	.032	.00104	.00754	.00232	.00065	.00332	.3373
%RSD	19.492	.29350	2344.1	1136.8	152.97	23.412	341.45	8.3130
#1	.00171	10.751	-.00120	-.00389	.00274	.00329	-.00050	4.2563
#2	.00121	10.792	.00022	.00937	-.00116	.00298	-.00450	4.2484
#3	.00176	10.730	.00085	-.00349	.00295	.00204	.00208	3.6682
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606125505 Acquired: 6/30/2016 13:28:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00000**	**.09681**	**-.00595**	**-.00399**	**.00118**	**.05062**	**.00006**
Stddev	.00036	.00008	.00489	.00162	.00027	.00565	.00034
%RSD	16089.	.08620	82.262	40.671	22.739	11.155	556.84
#1	-.00041	.09690	-.00091	-.00585	.00094	.05421	.00042
#2	.00020	.09678	-.00624	-.00326	.00147	.05354	.00002
#3	.00020	.09674	-.01068	-.00285	.00113	.04411	-.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9539.6**	**58178.**	**2689.9**
Stddev	6.8	44.	4.0
%RSD	.07102	.07498	.14991
#1	9536.3	58200.	2685.3
#2	9547.4	58206.	2692.9
#3	9535.2	58127.	2691.6

Approved: July 01, 2016

Sample Name: L1606125601 Acquired: 6/30/2016 13:32:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00047	-.00146	-.00347	.01883	.06140	-.00007	59.596	.00018
Stddev	.00066	.00636	.00185	.00057	.00179	.00006	.178	.00015
%RSD	141.02	434.01	53.365	3.0489	2.9162	90.759	.29927	81.673
#1	-.00119	.00536	-.00144	.01862	.05959	-.00013	59.464	.00034
#2	.00011	-.00253	-.00506	.01948	.06317	-.00000	59.799	.00008
#3	-.00032	-.00722	-.00391	.01840	.06142	-.00009	59.525	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00024	.00077	.00464	-.01139	1.2508	.00101	12.937	.00059
Stddev	.00013	.00018	.00072	.02613	.0448	.00114	.014	.00143
%RSD	53.364	22.768	15.603	229.38	3.5786	112.96	.10452	241.41
#1	-.00022	.00097	.00463	.00947	1.2957	.00078	12.922	-.00059
#2	-.00037	.00064	.00393	-.00294	1.2508	.00000	12.939	.00018
#3	-.00012	.00071	.00538	-.04069	1.2061	.00224	12.949	.00218
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	8.4809	-.00076	.00446	-.00152	.00215	.00503	4.4194
Stddev	.00034	.0394	.00081	.01015	.00157	.00173	.00081	.1773
%RSD	114.98	.46507	106.06	227.36	103.15	80.671	16.045	4.0112
#1	.00029	8.4358	-.00159	.00141	-.00050	.00369	.00420	4.5284
#2	.00065	8.5089	-.00072	.01579	-.00332	.00247	.00508	4.5150
#3	-.00004	8.4979	.00003	-.00381	-.00073	.00028	.00581	4.2149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606125601 Acquired: 6/30/2016 13:32:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00025**	**.11428**	**-.00118**	**-.00370**	**.00069**	**.00748**	**.00017**
Stddev	.00047	.00044	.00575	.00114	.00047	.00047	.00020
%RSD	189.89	.38739	489.21	30.753	68.823	6.2339	117.77
#1	-.00075	.11386	-.00773	-.00345	.00034	.00775	-.00004
#2	.00017	.11474	.00117	-.00495	.00123	.00775	.00020
#3	-.00015	.11422	.00303	-.00271	.00049	.00694	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9599.5**	**58437.**	**2701.3**
Stddev	40.4	47.	11.9
%RSD	.42101	.08082	.43894
#1	9552.9	58490.	2693.3
#2	9623.9	58423.	2695.8
#3	9621.8	58399.	2715.0

Approved: July 01, 2016

Sample Name: L1606126501 Acquired: 6/30/2016 13:36:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574028-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00037**	**.00901**	**.00348**	**.47756**	**.01945**	**-.00001**	**100.07**
Stddev	.00211	.00641	.00091	.00750	.00060	.00002	.15
%RSD	574.62	71.111	26.120	1.5710	3.0839	159.64	.14754
#1	.00181	.00728	.00248	.47636	.01912	.00001	100.22
#2	-.00206	.00365	.00372	.47073	.01909	-.00004	99.926
#3	.00135	.01611	.00425	.48559	.02014	-.00001	100.07
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00055**	**.00092**	**.00565**	**.00040**	**.00548**	**3.2874**	**.04338**
Stddev	.00003	.00023	.00049	.00076	.00681	.1250	.00217
%RSD	6.2981	25.250	8.6582	191.26	124.27	3.8021	4.9968
#1	.00056	.00107	.00595	-.00038	-.00046	3.1512	.04579
#2	.00052	.00065	.00509	.00044	.00398	3.3969	.04160
#3	.00059	.00103	.00592	.00114	.01291	3.3140	.04274
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**69.500**	**-.00011**	**.00350**	F **395.79**	**.00055**	**.00223**	**-.00223**
Stddev	.132	.00065	.00079	4.55	.00081	.00564	.00210
%RSD	.18950	601.77	22.572	1.1501	148.00	253.48	94.109
#1	69.539	-.00084	.00417	400.37	-.00034	-.00342	-.00097
#2	69.353	.00040	.00369	391.27	.00125	.00786	-.00465
#3	69.608	.00011	.00263	395.72	.00073	.00224	-.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 01, 2016

Sample Name: L1606126501 Acquired: 6/30/2016 13:36:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574028-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00385	.02029	8.0727	-.00079	1.3291	-.00831	-.00303
Stddev	.00274	.00516	.7628	.00084	.0052	.00351	.00314
%RSD	71.081	25.434	9.4485	106.40	.39045	42.222	103.75
#1	.00107	.02394	8.4911	-.00158	1.3348	-.00644	-.00034
#2	.00394	.02255	8.5348	-.00086	1.3246	-.00613	-.00226
#3	.00654	.01439	7.1923	.00009	1.3281	-.01235	-.00649
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.01883	.00469	.00064
Stddev	.00066	.00079	.00049
%RSD	3.4994	16.784	76.560
#1	.01847	.00501	.00108
#2	.01842	.00526	.00011
#3	.01959	.00379	.00072
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9119.6	55276.	2659.2
Stddev	22.5	187.	17.6
%RSD	.24641	.33790	.66099
#1	9141.7	55321.	2643.5
#2	9096.7	55437.	2678.2
#3	9120.4	55071.	2655.9

Approved: July 01, 2016

Sample Name: L1606126502S Acquired: 6/30/2016 13:40:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574028-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19267**	**4.8857**	**.19848**	**1.4440**	**.50442**	**.02403**	**109.09**
Stddev	.00532	.0205	.00913	.0065	.00103	.00020	.07
%RSD	2.7612	.42019	4.5983	.45166	.20391	.82951	.06198
#1	.19858	4.9092	.20511	1.4507	.50331	.02422	109.02
#2	.18828	4.8766	.20225	1.4377	.50463	.02382	109.16
#3	.19113	4.8713	.18807	1.4437	.50533	.02405	109.09
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02373**	**.09320**	**.24561**	**.22859**	**1.9045**	**28.507**	**.54037**
Stddev	.00081	.00546	.00272	.01307	.0350	.099	.00653
%RSD	3.3993	5.8546	1.1082	5.7158	1.8381	.34784	1.2080
#1	.02401	.09622	.24574	.23691	1.9035	28.392	.53335
#2	.02436	.09647	.24826	.23533	1.8700	28.563	.54150
#3	.02282	.08690	.24282	.21353	1.9400	28.565	.54626
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**77.399**	**.23795**	**.48526**	F **436.12**	**.22674**	**4.7964**	**.23177**
Stddev	.622	.00173	.02727	.76	.01278	.2255	.01057
%RSD	.80364	.72532	5.6200	.17534	5.6375	4.7018	4.5594
#1	76.681	.23598	.49972	435.52	.23371	4.9314	.23947
#2	77.739	.23872	.50225	436.98	.23453	4.9218	.23611
#3	77.777	.23917	.45380	435.85	.21199	4.5361	.21972
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 01, 2016

Sample Name: L1606126502S Acquired: 6/30/2016 13:40:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574028-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.56829	.20154	10.866	.46902	1.8612	.46853	.22591
Stddev	.03425	.00869	.454	.02967	.0048	.01242	.00992
%RSD	6.0261	4.3126	4.1801	6.3256	.25555	2.6516	4.3910
#1	.58581	.20505	11.110	.48448	1.8567	.47588	.22871
#2	.59023	.20793	11.145	.48776	1.8662	.45418	.23413
#3	.52883	.19164	10.342	.43481	1.8607	.47552	.21489
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.51373	.45961	.00086
Stddev	.00073	.02683	.00031
%RSD	.14270	5.8377	35.988
#1	.51414	.47520	.00101
#2	.51416	.47499	.00050
#3	.51288	.42863	.00106
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9073.3	54696.	2629.2
Stddev	7.3	63.	2.4
%RSD	.08023	.11531	.09192
#1	9081.2	54645.	2626.5
#2	9072.0	54677.	2630.1
#3	9066.8	54767.	2631.1

Approved: July 01, 2016

Sample Name: L1606126503SD Acquired: 6/30/2016 13:44:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574028-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19262**	**4.8735**	**.19834**	**1.4316**	**.49490**	**.02396**	**106.44**
Stddev	.00091	.0162	.00177	.0020	.00424	.00008	.64
%RSD	.47122	.33318	.89356	.14064	.85762	.33853	.60003
#1	.19366	4.8548	.20026	1.4320	.49607	.02392	106.72
#2	.19202	4.8838	.19799	1.4335	.49019	.02406	105.71
#3	.19218	4.8819	.19677	1.4295	.49843	.02392	106.89
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02395**	**.09387**	**.24479**	**.23120**	**1.9082**	**28.137**	**.53735**
Stddev	.00041	.00211	.00223	.00604	.0251	.149	.00299
%RSD	1.7224	2.2483	.90955	2.6143	1.3178	.52986	.55593
#1	.02395	.09508	.24346	.23512	1.8832	28.298	.53763
#2	.02436	.09509	.24736	.23424	1.9078	28.003	.53423
#3	.02354	.09143	.24355	.22424	1.9335	28.111	.54019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**75.840**	**.23218**	**.48984**	F **425.23**	**.23007**	**4.8095**	**.23124**
Stddev	.204	.00584	.00967	3.81	.00559	.0646	.00058
%RSD	.26886	2.5163	1.9736	.89660	2.4283	1.3423	.25013
#1	75.733	.23035	.49566	429.43	.23333	4.8463	.23191
#2	75.713	.22748	.49518	421.98	.23326	4.8473	.23093
#3	76.076	.23872	.47868	424.27	.22362	4.7350	.23089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 01, 2016

Sample Name: L1606126503SD Acquired: 6/30/2016 13:44:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574028-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.56903**	**.20706**	**10.813**	**.47475**	**1.8175**	**.46737**	**.22771**
Stddev	.00898	.00349	.131	.01059	.0116	.00214	.00305
%RSD	1.5775	1.6866	1.2126	2.2316	.63909	.45721	1.3406
#1	.57287	.21041	10.875	.48135	1.8167	.46540	.22785
#2	.57545	.20732	10.902	.48037	1.8063	.46706	.23069
#3	.55878	.20344	10.663	.46253	1.8295	.46964	.22459
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.50984**	**.46479**	**.00084**
Stddev	.00085	.00864	.00031
%RSD	.16624	1.8598	37.308
#1	.51042	.46959	.00084
#2	.50887	.46997	.00115
#3	.51023	.45481	.00053
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9022.9**	**54405.**	**2610.6**
Stddev	26.8	134.	15.3
%RSD	.29666	.24562	.58733
#1	9046.9	54502.	2603.7
#2	9027.6	54253.	2628.1
#3	8994.0	54460.	2599.9

Approved: July 01, 2016

Sample Name: L1606126504 Acquired: 6/30/2016 13:48:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00055	.06542	-.00015	.08571	.01569	-.00000	65.452	.00017
Stddev	.00170	.00081	.00113	.00144	.00055	.00011	.453	.00004
%RSD	307.72	1.2368	738.87	1.6851	3.4789	2398.8	.69275	20.627
#1	.00099	.06597	-.00100	.08518	.01611	-.00012	65.769	.00018
#2	-.00027	.06580	.00113	.08735	.01590	.00009	65.656	.00021
#3	-.00238	.06449	-.00059	.08461	.01508	.00001	64.933	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.00324	.00031	.02195	.60653	.01735	18.858	.00255
Stddev	.00033	.00051	.00025	.01540	.02297	.00252	.243	.00077
%RSD	64.477	15.842	82.099	70.183	3.7877	14.525	1.2889	29.991
#1	.00052	.00264	.00056	.03323	.58117	.01978	18.700	.00181
#2	.00018	.00354	.00005	.00440	.61245	.01752	19.138	.00334
#3	.00084	.00352	.00032	.02821	.62596	.01475	18.735	.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	262.71	.00020	.01777	-.00100	.00015	.00684	5.9516
Stddev	.00032	2.21	.00057	.00140	.00120	.00461	.00201	.5482
%RSD	52.379	.84153	283.37	7.9002	119.79	2972.3	29.421	9.2112
#1	.00096	263.71	-.00036	.01618	-.00027	-.00342	.00532	6.2565
#2	.00051	264.24	.00019	.01831	-.00035	-.00147	.00912	6.2795
#3	.00035	260.18	.00077	.01883	-.00239	.00535	.00608	5.3187
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606126504 Acquired: 6/30/2016 13:48:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00055**	**.26527**	**.00442**	**-.00400**	**.00881**	**.00481**	**.00065**
Stddev	.00007	.00102	.00300	.00092	.00156	.00057	.00034
%RSD	12.505	.38500	67.908	23.107	17.671	11.749	52.377
#1	-.00063	.26515	.00518	-.00465	.01051	.00525	.00101
#2	-.00051	.26634	.00697	-.00440	.00746	.00500	.00060
#3	-.00051	.26431	.00111	-.00294	.00846	.00417	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9235.9**	**55537.**	**2644.9**
Stddev	25.1	150.	6.7
%RSD	.27151	.26931	.25461
#1	9259.0	55629.	2640.5
#2	9209.3	55365.	2641.5
#3	9239.5	55618.	2652.6

Approved: July 01, 2016

Sample Name: L1606126505 Acquired: 6/30/2016 13:52:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00288	.10056	.00955	.23212	.12837	.00007	123.87	.00051
Stddev	.00285	.00261	.00093	.00288	.00067	.00007	.73	.00028
%RSD	99.078	2.5943	9.7059	1.2395	.52089	107.42	.59299	55.885
#1	-.00420	.10148	.01005	.23277	.12888	.00000	124.63	.00026
#2	-.00483	.10259	.00848	.22897	.12761	.00006	123.81	.00045
#3	.00039	.09762	.01012	.23461	.12861	.00015	123.17	.00082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00104	.00187	.00547	4.4898	.40529	.01487	38.674	.88254
Stddev	.00026	.00063	.00088	.0388	.08814	.00302	.328	.00207
%RSD	25.084	33.621	16.152	.86426	21.746	20.330	.84933	.23456
#1	.00090	.00120	.00494	4.5179	.50643	.01465	38.888	.88095
#2	.00088	.00196	.00649	4.5059	.34494	.01800	38.837	.88179
#3	.00134	.00244	.00498	4.4455	.36451	.01196	38.295	.88488
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	236.56	.00027	.06732	.00029	.00304	.00215	8.4977
Stddev	.00014	1.72	.00041	.00402	.00051	.00596	.00463	.1554
%RSD	81.318	.72841	150.20	5.9714	172.61	196.26	215.05	1.8286
#1	.00033	238.38	.00057	.07029	-.00027	-.00346	-.00301	8.5874
#2	.00008	236.36	-.00019	.06892	.00072	.00433	.00595	8.5874
#3	.00010	234.95	.00043	.06274	.00043	.00824	.00351	8.3183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606126505 Acquired: 6/30/2016 13:52:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00021**	**.57071**	**-.01069**	**-.00505**	**.00109**	**.00334**	**.00084**
Stddev	.00071	.00188	.00214	.00288	.00095	.00017	.00067
%RSD	340.08	.32880	20.000	57.013	86.712	5.0678	80.074
#1	-.00096	.57210	-.00992	-.00427	.00113	.00327	.00156
#2	.00045	.57145	-.00904	-.00263	.00013	.00353	.00071
#3	-.00012	.56857	-.01311	-.00823	.00203	.00321	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9207.6**	**55634.**	**2637.3**
Stddev	17.5	74.	21.5
%RSD	.18960	.13237	.81472
#1	9209.9	55567.	2614.2
#2	9223.8	55623.	2641.2
#3	9189.1	55713.	2656.6

Approved: July 01, 2016

Sample Name: L1606126506 Acquired: 6/30/2016 13:56:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00110**	**.00553**	**-.00323**	**.00322**	**.00015**	**.00001**	**.33113**	**.00009**
Stddev	.00063	.00290	.00066	.00260	.00041	.00007	.04591	.00019
%RSD	57.096	52.477	20.331	80.856	278.48	520.95	13.865	215.50
#1	-.00137	.00730	-.00354	.00473	.00048	-.00001	.29384	-.00013
#2	-.00154	.00218	-.00247	.00021	.00028	.00009	.38241	.00022
#3	-.00038	.00711	-.00367	.00472	-.00031	-.00004	.31714	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00052**	**.01266**	**.00025**	**.05696**	**.09105**	**-.00190**	**.08123**	**.00101**
Stddev	.00007	.00094	.00139	.00960	.07615	.00494	.01617	.00187
%RSD	14.031	7.3900	547.75	16.845	83.636	259.75	19.910	185.21
#1	.00048	.01367	.00113	.06560	.02919	-.00502	.07845	.00210
#2	.00048	.01247	.00098	.04664	.17609	.00379	.06663	.00208
#3	.00061	.01183	-.00135	.05865	.06786	-.00447	.09862	-.00115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00136**	**.41990**	**.00577**	**.00325**	**.00138**	**.00333**	**.00206**	**.19153**
Stddev	.00048	.03623	.00104	.00320	.00048	.00104	.00160	.02084
%RSD	35.016	8.6292	18.018	98.673	34.453	31.329	77.793	10.879
#1	.00185	.46076	.00698	.00108	.00158	.00424	.00387	.20545
#2	.00135	.40728	.00520	.00693	.00172	.00355	.00150	.20157
#3	.00089	.39167	.00515	.00174	.00084	.00219	.00081	.16758
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606126506 Acquired: 6/30/2016 13:56:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00138	.00136	.00413	-.00414	.00080	.00843	.00028
Stddev	.00031	.00049	.00767	.00088	.00095	.00141	.00039
%RSD	22.401	36.279	185.67	21.232	118.69	16.697	137.81
#1	.00106	.00146	-.00467	-.00313	.00040	.00941	-.00015
#2	.00168	.00180	.00943	-.00462	.00012	.00906	.00061
#3	.00139	.00082	.00763	-.00468	.00189	.00681	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9515.8	58296.	2666.5
Stddev	88.1	169.	12.6
%RSD	.92571	.28964	.47111
#1	9569.7	58364.	2678.2
#2	9563.5	58104.	2653.2
#3	9414.1	58421.	2668.1

Approved: July 01, 2016

Sample Name: L1606126601 Acquired: 6/30/2016 14:00:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00084**	**.00332**	**-.00000**	**.37559**	**.09290**	**.00003**	**75.476**	**.00029**
Stddev	.00146	.01112	.00198	.00159	.00120	.00004	.090	.00007
%RSD	174.96	335.31	157970.	.42353	1.2935	135.27	.11966	24.194
#1	-.00073	.01187	.00091	.37465	.09196	.00006	75.469	.00033
#2	-.00235	-.00925	-.00228	.37469	.09249	-.00002	75.389	.00032
#3	.00057	.00733	.00136	.37743	.09426	.00005	75.569	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**.00117**	**.00015**	**-.01167**	**.59626**	**.00839**	**51.345**	**.03775**
Stddev	.00065	.00031	.00111	.02722	.04006	.00103	.279	.00443
%RSD	2552.9	26.245	755.96	233.29	6.7189	12.224	.54398	11.732
#1	-.00032	.00100	.00116	.01270	.64171	.00746	51.662	.03364
#2	-.00038	.00152	-.00104	-.04104	.56604	.00821	51.136	.04244
#3	.00077	.00099	.00033	-.00665	.58105	.00949	51.236	.03716
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00030**	**77.502**	**.00076**	**.02496**	**-.00017**	**.00241**	**.00415**	**6.4003**
Stddev	.00034	.279	.00050	.00156	.00306	.00125	.00452	.5324
%RSD	113.08	.36002	65.490	6.2298	1765.5	52.146	109.00	8.3186
#1	-.00006	77.705	.00023	.02580	-.00365	.00169	.00418	6.7216
#2	.00034	77.184	.00121	.02591	.00101	.00167	-.00039	6.6935
#3	.00062	77.617	.00084	.02317	.00212	.00386	.00865	5.7857
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606126601 Acquired: 6/30/2016 14:00:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00006	.63792	-.00217	-.00276	.00515	.00364	.00077
Stddev	.00101	.00258	.00639	.00274	.00011	.00025	.00052
%RSD	1764.8	.40475	294.27	99.476	2.2275	6.7486	67.791
#1	.00001	.63686	.00360	-.00250	.00528	.00378	.00126
#2	-.00110	.63604	-.00107	-.00015	.00506	.00378	.00023
#3	.00092	.64086	-.00904	-.00562	.00512	.00336	.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9278.9	56149.	2621.9
Stddev	25.7	263.	11.3
%RSD	.27654	.46799	.42954
#1	9252.7	56139.	2610.8
#2	9304.0	55891.	2633.3
#3	9279.9	56417.	2621.7

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 14:03:54 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39170**	**9.7592**	**.38143**	**.47972**	**.95914**	**.04886**	**9.5971**	**.04841**
Stddev	.00177	.0101	.00111	.00218	.00768	.00013	.0876	.00037
%RSD	.45074	.10391	.29190	.45387	.80062	.27247	.91241	.76080
#1	.39315	9.7506	.38271	.48195	.95301	.04872	9.5001	.04865
#2	.38974	9.7565	.38092	.47961	.96775	.04898	9.6703	.04859
#3	.39221	9.7704	.38067	.47760	.95665	.04887	9.6209	.04799
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19575**	**.49111**	**.48818**	**3.8627**	**49.142**	**.96710**	**9.9610**	**.48203**
Stddev	.00192	.00084	.00403	.0576	.299	.00822	.1386	.00543
%RSD	.97870	.17120	.82507	1.4904	.60851	.84982	1.3910	1.1257
#1	.19691	.49198	.49126	3.8171	49.303	.96417	9.8347	.47600
#2	.19681	.49104	.48967	3.9274	49.325	.97638	10.109	.48651
#3	.19354	.49031	.48362	3.8436	48.796	.96074	9.9390	.48357
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.97901**	**47.695**	**.48597**	**9.6210**	**.48847**	**1.1641**	**.39024**	**4.8612**
Stddev	.01058	.506	.00583	.0619	.00024	.0107	.00974	.0254
%RSD	1.0810	1.0615	1.1993	.64353	.04966	.91899	2.4955	.52183
#1	.98696	47.349	.49095	9.6680	.48820	1.1692	.40028	4.8768
#2	.98308	48.276	.48741	9.6442	.48853	1.1713	.38961	4.8748
#3	.96700	47.460	.47956	9.5509	.48867	1.1518	.38083	4.8319
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 14:03:54 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.97960	.95900	.95728	.49446	.98476	.96397	.98556
Stddev	.01146	.01028	.00388	.00124	.00058	.00855	.00661
%RSD	1.1701	1.0722	.40529	.25031	.05940	.88676	.67085
#1	.98677	.95174	.95534	.49318	.98505	.97024	.98593
#2	.98565	.97077	.96174	.49565	.98409	.96744	.99198
#3	.96638	.95450	.95475	.49456	.98514	.95423	.97877
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9508.3	57309.	2646.1
Stddev	12.2	211.	22.4
%RSD	.12872	.36798	.84491
#1	9506.4	57536.	2657.6
#2	9521.4	57271.	2620.4
#3	9497.1	57120.	2660.4

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 14:07:32 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00179**	**-.01036**	**-.00217**	**.00092**	**-.00110**	**-.00003**	**-.03937**	**.00011**
Stddev	.00051	.01017	.00271	.00178	.00030	.00001	.05809	.00030
%RSD	28.477	98.172	124.76	194.17	27.273	35.091	147.56	274.76
#1	.00215	-.01592	-.00147	-.00098	-.00076	-.00002	-.08365	.00004
#2	.00202	-.01653	-.00516	.00118	-.00124	-.00004	-.06085	.00044
#3	.00121	.00138	.00012	.00256	-.00131	-.00003	.02640	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00040**	**.00098**	**-.00072**	**-.01290**	**-.00613**	**-.00088**	**.08244**	**.00108**
Stddev	.00017	.00054	.00062	.01648	.05244	.00071	.10081	.00138
%RSD	41.017	55.444	86.493	127.80	855.15	80.912	122.28	127.71
#1	.00031	.00050	-.00140	-.02007	.05138	-.00046	-.00379	.00172
#2	.00060	.00087	-.00059	.00596	-.01848	-.00048	.19328	.00201
#3	.00030	.00157	-.00018	-.02457	-.05129	-.00169	.05783	-.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.06021**	**.00019**	**-.00155**	**.00199**	**.00102**	**.00189**	**.00310**
Stddev	.00002	.01862	.00059	.00440	.00021	.00175	.00282	.00052
%RSD	11.110	30.920	314.86	284.07	10.339	171.10	149.01	16.843
#1	-.00020	.08171	-.00025	-.00654	.00209	.00215	.00513	.00354
#2	-.00023	.04950	-.00005	.00177	.00175	.00191	-.00001	.00324
#3	-.00018	.04942	.00086	.00012	.00211	-.00099	.00056	.00252
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 14:07:32 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**-.00020**	**.00736**	**.00055**	**.00049**	**-.00015**	**.00016**
Stddev	.00081	.00042	.01014	.00019	.00045	.00003	.00024
%RSD	1760.9	207.97	137.67	34.258	90.481	20.144	154.66
#1	-.00047	-.00024	.01835	.00052	.00001	-.00018	.00042
#2	.00089	-.00061	-.00163	.00038	.00057	-.00012	.00009
#3	-.00056	.00024	.00537	.00075	.00090	-.00016	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10385.**	**60266.**	**2712.7**
Stddev	76.	209.	7.6
%RSD	.72783	.34681	.28069
#1	10421.	60114.	2710.3
#2	10298.	60504.	2721.2
#3	10437.	60179.	2706.6

Approved: July 01, 2016

Sample Name: L1606126901 Acquired: 6/30/2016 14:11:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00063	.00785	-.00025	.30299	.14573	-.00008	46.402	.00025
Stddev	.00200	.00617	.00067	.00299	.00096	.00007	.082	.00032
%RSD	318.45	78.553	262.76	.98543	.65680	86.986	.17570	125.45
#1	-.00293	.01154	.00006	.30060	.14641	-.00015	46.425	.00062
#2	.00066	.01128	.00020	.30203	.14614	-.00006	46.470	.00006
#3	.00039	.00073	-.00102	.30633	.14463	-.00002	46.312	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	-.00010	-.00013	.06515	.99925	.00734	28.955	.12411
Stddev	.00012	.00090	.00177	.01454	.08997	.00112	.111	.00118
%RSD	22.582	870.56	1350.9	22.318	9.0040	15.305	.38416	.95442
#1	.00063	-.00088	-.00081	.05171	.99471	.00837	28.902	.12330
#2	.00062	.00088	.00188	.06315	.91163	.00614	29.083	.12547
#3	.00041	-.00032	-.00146	.08058	1.0914	.00751	28.881	.12357
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	255.49	.00031	.01715	-.00155	.00417	-.00231	7.1871
Stddev	.00033	.50	.00083	.00777	.00276	.00247	.00327	.6995
%RSD	120.88	.19466	266.32	45.289	178.28	59.334	141.74	9.7328
#1	.00033	255.75	.00003	.02562	-.00439	.00668	-.00326	7.6057
#2	.00057	255.79	.00124	.01037	-.00139	.00174	-.00500	7.5761
#3	-.00008	254.91	-.00034	.01546	.00113	.00408	.00133	6.3796
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606126901 Acquired: 6/30/2016 14:11:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00095**	**.24562**	**.00303**	**-.00094**	**.00263**	**.00470**	**.00187**
Stddev	.00061	.00076	.00932	.00417	.00105	.00060	.00025
%RSD	64.659	.31140	307.57	444.38	39.945	12.740	13.188
#1	-.00024	.24579	.01010	-.00422	.00377	.00514	.00158
#2	-.00129	.24629	-.00753	.00375	.00170	.00495	.00201
#3	-.00131	.24479	.00653	-.00235	.00242	.00402	.00202
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9400.9**	**56451.**	**2701.9**
Stddev	51.1	43.	8.1
%RSD	.54335	.07621	.29970
#1	9371.2	56500.	2700.0
#2	9371.5	56419.	2694.9
#3	9459.8	56434.	2710.8

Approved: July 01, 2016

Sample Name: L1606129201 Acquired: 6/30/2016 14:15:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00049**	**-.00995**	**-.00104**	**.02107**	**.08041**	**-.00009**	**62.526**	**.00010**
Stddev	.00193	.00906	.00196	.00307	.00024	.00007	.284	.00017
%RSD	394.29	91.096	189.36	14.546	.29674	76.551	.45384	163.34
#1	-.00047	-.02040	-.00021	.01911	.08068	-.00017	62.320	.00003
#2	-.00242	-.00525	.00038	.02461	.08033	-.00009	62.409	-.00002
#3	.00143	-.00420	-.00327	.01950	.08023	-.00002	62.850	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.00149**	**.00651**	**.15014**	**1.2753**	**.00367**	**13.253**	**.00039**
Stddev	.00021	.00067	.00130	.02260	.0329	.00316	.099	.00218
%RSD	1047.0	45.014	19.976	15.054	2.5814	86.001	.74570	556.39
#1	-.00018	.00072	.00682	.16833	1.2806	.00053	13.199	-.00201
#2	-.00010	.00190	.00762	.15726	1.2400	.00684	13.193	.00226
#3	.00022	.00185	.00508	.12484	1.3052	.00364	13.367	.00092
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00062**	**7.2253**	**-.00012**	**-.00206**	**.00275**	**-.00034**	**.00616**	**4.4083**
Stddev	.00014	.1194	.00107	.00179	.00054	.00135	.00262	.2414
%RSD	22.483	1.6520	856.03	87.075	19.791	398.00	42.492	5.4758
#1	.00050	7.2986	.00039	-.00307	.00337	.00081	.00788	4.5559
#2	.00077	7.0876	-.00135	.00001	.00239	-.00000	.00315	4.5392
#3	.00058	7.2897	.00059	-.00312	.00248	-.00182	.00745	4.1297
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606129201 Acquired: 6/30/2016 14:15:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00046**	**.14057**	**-.00464**	**-.00506**	**.00004**	**.02568**	**-.00011**
Stddev	.00024	.00176	.00256	.00118	.00039	.00178	.00057
%RSD	52.108	1.2510	55.205	23.351	1040.3	6.9472	534.50
#1	-.00018	.14079	-.00238	-.00628	-.00040	.02668	-.00077
#2	-.00060	.13871	-.00412	-.00392	.00018	.02674	.00025
#3	-.00061	.14221	-.00743	-.00498	.00033	.02362	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9614.6**	**58901.**	**2697.9**
Stddev	10.4	303.	17.8
%RSD	.10835	.51382	.65975
#1	9604.2	58692.	2698.0
#2	9625.0	59248.	2715.7
#3	9614.4	58764.	2680.1

Approved: July 01, 2016

Sample Name: L1606129301 Acquired: 6/30/2016 14:19:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00158**	**2.2366**	**.00008**	**.03043**	**.04877**	**.00015**	**14.674**	**.00005**
Stddev	.00105	.0195	.00130	.00197	.00060	.00005	.079	.00014
%RSD	66.702	.87196	1568.8	6.4718	1.2215	30.799	.54082	274.12
#1	-.00066	2.2414	.00147	.03101	.04944	.00016	14.706	.00004
#2	-.00135	2.2533	-.00112	.03205	.04857	.00019	14.733	.00019
#3	-.00273	2.2151	-.00009	.02824	.04831	.00010	14.584	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00137**	**.00451**	**.00732**	**3.4857**	**2.4744**	**.00023**	**4.5398**	**.10605**
Stddev	.00043	.00017	.00190	.0470	.0315	.00318	.0353	.00339
%RSD	31.586	3.7289	25.949	1.3487	1.2743	1388.0	.77742	3.1961
#1	.00146	.00431	.00929	3.5397	2.4395	-.00094	4.4999	.10406
#2	.00175	.00461	.00716	3.4537	2.4826	-.00220	4.5669	.10412
#3	.00090	.00460	.00550	3.4637	2.5010	.00383	4.5525	.10996
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00060**	**4.2799**	**.00279**	**.11576**	**.00515**	**.00043**	**.00215**	**4.8273**
Stddev	.00027	.0086	.00081	.00972	.00314	.00098	.00607	.3449
%RSD	45.367	.19979	29.184	8.3946	61.101	227.74	282.49	7.1454
#1	.00029	4.2853	.00338	.12222	.00158	-.00065	.00453	5.0481
#2	.00078	4.2700	.00313	.12046	.00752	.00068	.00666	5.0039
#3	.00075	4.2843	.00186	.10458	.00633	.00126	-.00475	4.4298
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606129301 Acquired: 6/30/2016 14:19:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.08094**	**.03839**	**-.00286**	**.00521**	**.05493**	**.00060**
Stddev	.00060	.00020	.00403	.00146	.00088	.00506	.00025
%RSD	373.14	.24219	10.495	51.167	16.912	9.2090	41.857
#1	-.00070	.08116	.03600	-.00250	.00419	.05819	.00089
#2	-.00026	.08087	.04304	-.00447	.00575	.05750	.00052
#3	.00048	.08079	.03614	-.00161	.00568	.04910	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9698.0**	**59164.**	**2696.8**
Stddev	8.7	91.	18.4
%RSD	.08991	.15447	.68281
#1	9688.3	59248.	2680.4
#2	9705.2	59177.	2693.2
#3	9700.6	59067.	2716.7

Approved: July 01, 2016

Sample Name: L1606129403 Acquired: 6/30/2016 14:23:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00062	.00138	-.00210	.00211	-.00049	.00003	.18633	.00008
Stddev	.00078	.00436	.00146	.00189	.00016	.00003	.01865	.00015
%RSD	126.50	315.63	69.815	89.473	33.623	108.39	10.007	195.85
#1	.00002	.00402	-.00102	-.00006	-.00031	.00001	.20124	-.00004
#2	-.00039	-.00365	-.00376	.00305	-.00063	.00001	.19231	.00025
#3	-.00148	.00378	-.00151	.00335	-.00052	.00006	.16542	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.00127	.00037	-.01884	.05160	-.00121	.10386	-.00077
Stddev	.00060	.00084	.00043	.00206	.07896	.00371	.11172	.00081
%RSD	343.71	66.139	115.24	10.933	153.01	305.17	107.57	104.56
#1	-.00035	.00205	-.00003	-.01735	.00352	.00279	.22926	-.00028
#2	.00049	.00038	.00033	-.01797	.00856	-.00191	.01491	-.00170
#3	-.00066	.00139	.00082	-.02119	.14273	-.00453	.06741	-.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00336	.83415	.00069	-.00307	.00205	.00549	.00143	.03310
Stddev	.00054	.03129	.00080	.00236	.00152	.00435	.00390	.00194
%RSD	16.068	3.7512	115.04	76.883	74.031	79.384	272.02	5.8661
#1	.00350	.81553	.00032	-.00476	.00144	.01022	.00211	.03458
#2	.00383	.87027	.00015	-.00407	.00094	.00459	.00495	.03381
#3	.00277	.81664	.00161	-.00037	.00379	.00165	-.00276	.03090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606129403 Acquired: 6/30/2016 14:23:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.00192**	**.00344**	**-.00330**	**.00039**	**.00159**	**.00052**
Stddev	.00026	.00028	.00731	.00111	.00012	.00042	.00029
%RSD	190.14	14.594	212.73	33.506	30.138	26.329	55.849
#1	.00014	.00197	-.00419	-.00203	.00037	.00191	.00041
#2	-.00038	.00162	.00412	-.00383	.00052	.00174	.00029
#3	-.00017	.00218	.01039	-.00404	.00029	.00112	.00084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9685.2**	**59286.**	**2691.4**
Stddev	27.7	258.	21.2
%RSD	.28565	.43475	.78677
#1	9668.1	58989.	2667.6
#2	9670.3	59422.	2707.9
#3	9717.1	59448.	2698.8

Approved: July 01, 2016

Sample Name: L1606129301PS Acquired: 6/30/2016 14:27:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574685-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18778**	**6.7328**	**.18653**	**.94044**	**.51594**	**.02353**	**17.952**	**.02321**
Stddev	.00085	.0127	.00438	.00239	.00217	.00016	.057	.00052
%RSD	.45149	.18822	2.3480	.25366	.41986	.66178	.31912	2.2303
#1	.18873	6.7191	.18790	.93853	.51378	.02336	17.891	.02333
#2	.18710	6.7441	.19006	.94312	.51811	.02356	17.962	.02366
#3	.18751	6.7353	.18163	.93968	.51592	.02367	18.004	.02265
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09662**	**.24212**	**.24177**	**5.0279**	**26.075**	**.47943**	**8.8907**	**.32902**
Stddev	.00266	.00132	.00699	.0295	.199	.00203	.0939	.00294
%RSD	2.7557	.54553	2.8931	.58623	.76327	.42424	1.0557	.89412
#1	.09787	.24097	.24528	5.0149	26.191	.47719	8.8681	.33154
#2	.09842	.24356	.24630	5.0072	25.845	.48117	8.9938	.32579
#3	.09356	.24182	.23371	5.0617	26.188	.47994	8.8102	.32974
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47572**	**27.394**	**.23868**	**4.6754**	**.23838**	**.55707**	**.18775**	**6.6695**
Stddev	.01494	.042	.00801	.1195	.00505	.01681	.00455	.1364
%RSD	3.1405	.15188	3.3566	2.5562	2.1181	3.0174	2.4246	2.0445
#1	.48360	27.347	.24344	4.7290	.23942	.56309	.18425	6.7479
#2	.48507	27.425	.24317	4.7587	.24283	.57004	.19289	6.7485
#3	.45849	27.410	.22943	4.5384	.23289	.53808	.18610	6.5120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606129301PS Acquired: 6/30/2016 14:27:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574685-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47257**	**.55223**	**.50982**	**.23900**	**.48398**	**.51147**	**.00125**
Stddev	.01673	.00163	.00980	.00305	.00028	.01530	.00012
%RSD	3.5406	.29484	1.9224	1.2744	.05810	2.9913	9.8620
#1	.48213	.55035	.51451	.24013	.48429	.52047	.00111
#2	.48233	.55330	.51639	.24133	.48390	.52014	.00135
#3	.45325	.55303	.49855	.23556	.48375	.49381	.00128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9631.8**	**58344.**	**2705.5**
Stddev	44.5	18.	7.9
%RSD	.46249	.03003	.29140
#1	9601.3	58348.	2697.4
#2	9611.1	58360.	2713.1
#3	9682.9	58325.	2706.1

Approved: July 01, 2016

Sample Name: L1606129301SDL Acquired: 6/30/2016 14:30:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574685-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00122**	**.44646**	**.00050**	**.00949**	**.00850**	**.00003**	**2.8723**	**.00009**
Stddev	.00039	.00916	.00166	.00114	.00114	.00006	.0319	.00017
%RSD	32.201	2.0516	330.40	12.018	13.423	184.55	1.1122	192.02
#1	-.00161	.44404	.00002	.00910	.00947	.00010	2.9016	.00025
#2	-.00082	.45658	-.00086	.00859	.00724	-.00002	2.8771	.00010
#3	-.00124	.43875	.00235	.01077	.00880	.00001	2.8382	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00072**	**.00115**	**.00155**	**.69493**	**.44493**	**-.00213**	**.89613**	**.02093**
Stddev	.00046	.00043	.00135	.00592	.05853	.00146	.05037	.00167
%RSD	64.535	37.180	87.333	.85253	13.155	68.245	5.6214	7.9641
#1	.00073	.00102	.00259	.68830	.38184	-.00376	.86800	.01967
#2	.00025	.00163	.00205	.69680	.49746	-.00170	.86609	.02030
#3	.00117	.00080	.00002	.69969	.45548	-.00094	.95428	.02282
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00029**	**.86844**	**.00024**	**.02452**	**.00055**	**.00351**	**.00234**	**.93080**
Stddev	.00015	.03799	.00013	.00522	.00205	.00102	.00542	.09474
%RSD	51.903	4.3750	54.697	21.271	370.81	29.228	231.65	10.179
#1	.00047	.87349	.00037	.03037	-.00035	.00413	.00716	.99078
#2	.00020	.82817	.00024	.02282	-.00089	.00407	-.00352	.98004
#3	.00021	.90365	.00011	.02037	.00290	.00232	.00338	.82158
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606129301SDL Acquired: 6/30/2016 14:30:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574685-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00080**	**.01563**	**.01488**	**-.00299**	**.00116**	**.04614**	**.00016**
Stddev	.00035	.00031	.00233	.00200	.00117	.00494	.00037
%RSD	43.643	1.9782	15.675	66.816	101.16	10.697	232.99
#1	-.00044	.01534	.01435	-.00152	.00209	.04938	-.00013
#2	-.00114	.01595	.01286	-.00526	.00153	.04858	.00058
#3	-.00081	.01562	.01743	-.00219	-.00016	.04046	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10127.**	**61315.**	**2765.9**
Stddev	9.	151.	16.2
%RSD	.09094	.24617	.58688
#1	10118.	61146.	2754.0
#2	10125.	61435.	2759.3
#3	10137.	61366.	2784.4

Approved: July 01, 2016

Sample Name: L1606129301SDL Acquired: 6/30/2016 14:34:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574685-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00117**	**.08819**	**-.00121**	**.00342**	**.00200**	**.00002**	**.58325**	**-.00005**
Stddev	.00045	.00351	.00148	.00202	.00042	.00006	.02347	.00004
%RSD	38.662	3.9811	122.52	59.006	20.838	261.07	4.0239	78.563
#1	-.00111	.08538	-.00017	.00112	.00152	-.00004	.57977	-.00009
#2	-.00075	.08707	-.00290	.00427	.00221	.00008	.60826	-.00001
#3	-.00164	.09213	-.00055	.00489	.00228	.00002	.56171	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00023**	**.00042**	**-.00035**	**.11464**	**-.04959**	**.00049**	**.24466**	**.00161**
Stddev	.00034	.00144	.00104	.02109	.01857	.00125	.05679	.00301
%RSD	151.68	342.26	300.56	18.400	37.435	255.21	23.212	187.44
#1	.00034	-.00105	-.00094	.09731	-.04831	.00076	.31023	-.00098
#2	-.00016	.00049	-.00095	.13813	-.03170	.00158	.21243	.00492
#3	.00050	.00183	.00085	.10848	-.06877	-.00087	.21132	.00089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**.19292**	**-.00062**	**.00664**	**-.00094**	**.00135**	**.00343**	**.19335**
Stddev	.00025	.03602	.00111	.00238	.00121	.00525	.00275	.01949
%RSD	360.23	18.674	180.56	35.847	128.37	388.02	80.068	10.082
#1	-.00021	.15165	.00054	.00449	-.00223	.00681	.00655	.20434
#2	.00027	.21807	-.00070	.00920	.00017	-.00365	.00236	.20488
#3	.00014	.20903	-.00168	.00622	-.00077	.00089	.00138	.17085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606129301SDL Acquired: 6/30/2016 14:34:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574685-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**.00341**	**.00668**	**-.00320**	**.00064**	**.00317**	**.00012**
Stddev	.00109	.00041	.00357	.00419	.00123	.00038	.00058
%RSD	1392.3	11.897	53.464	131.01	190.53	12.090	471.62
#1	-.00115	.00324	.00653	-.00803	.00000	.00328	.00064
#2	.00093	.00311	.01032	-.00062	-.00013	.00348	-.00051
#3	.00045	.00387	.00318	-.00094	.00206	.00274	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9908.5**	**59787.**	**2658.0**
Stddev	52.0	164.	20.4
%RSD	.52499	.27446	.76744
#1	9853.7	59904.	2657.4
#2	9914.5	59858.	2637.9
#3	9957.2	59600.	2678.7

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 14:38:44 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37250**	**9.2477**	**.36416**	**.45644**	**.91594**	**.04626**	**9.1216**	**.04632**
Stddev	.00057	.0561	.00589	.00131	.00288	.00022	.0330	.00059
%RSD	.15279	.60608	1.6165	.28649	.31426	.47201	.36224	1.2795
#1	.37272	9.3122	.36497	.45791	.91911	.04650	9.0856	.04657
#2	.37185	9.2109	.36960	.45542	.91350	.04618	9.1287	.04675
#3	.37293	9.2200	.35791	.45598	.91521	.04609	9.1505	.04564
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18685**	**.46584**	**.46467**	**3.6604**	**46.698**	**.91712**	**9.4912**	**.45834**
Stddev	.00338	.00170	.00782	.0384	.059	.00708	.0845	.00952
%RSD	1.8075	.36548	1.6834	1.0488	.12618	.77252	.89051	2.0770
#1	.18777	.46597	.46713	3.6871	46.671	.92389	9.4436	.45805
#2	.18966	.46747	.47097	3.6164	46.657	.90976	9.4413	.44897
#3	.18310	.46407	.45591	3.6778	46.765	.91771	9.5888	.46800
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.93189**	**45.427**	**.46176**	**9.1792**	**.46193**	**1.1026**	**.36822**	**4.6412**
Stddev	.01584	.165	.00840	.1148	.00623	.0147	.00118	.0453
%RSD	1.6993	.36268	1.8190	1.2506	1.3483	1.3366	.32122	.97580
#1	.93843	45.576	.46368	9.2181	.46291	1.1072	.36946	4.6482
#2	.94341	45.250	.46904	9.2694	.46761	1.1145	.36809	4.6826
#3	.91383	45.456	.45257	9.0500	.45527	1.0861	.36710	4.5928
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 14:38:44 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.93297	.91496	.92070	.47171	.93543	.91891	.93060
Stddev	.01874	.00290	.00626	.00306	.00537	.01363	.00707
%RSD	2.0092	.31646	.67977	.64876	.57378	1.4834	.75998
#1	.94124	.91714	.92762	.47287	.93978	.92410	.93711
#2	.94615	.91168	.91906	.47402	.93708	.92918	.92308
#3	.91151	.91607	.91543	.46824	.92943	.90344	.93163
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9795.1	59278.	2755.6
Stddev	20.4	187.	21.0
%RSD	.20823	.31474	.76352
#1	9794.3	59063.	2737.6
#2	9775.1	59370.	2778.8
#3	9815.9	59401.	2750.6

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 14:42:22 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**-.00955**	**-.00391**	**.00413**	**-.00113**	**.00000**	**-.04836**	**.00012**
Stddev	.00172	.00372	.00343	.00212	.00068	.00005	.02850	.00008
%RSD	667.51	38.907	87.871	51.308	59.878	1421.8	58.936	62.949
#1	.00141	-.00637	-.00446	.00447	-.00097	.00003	-.07734	.00004
#2	-.00015	-.00865	-.00703	.00606	-.00188	-.00005	-.02036	.00019
#3	-.00203	-.01363	-.00023	.00186	-.00055	.00003	-.04738	.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**.00019**	**-.00126**	**-.02300**	**.12573**	**-.00254**	**.04800**	**-.00313**
Stddev	.00025	.00087	.00109	.02544	.03413	.00305	.00982	.00272
%RSD	113.53	458.55	86.900	110.58	27.146	120.48	20.468	86.926
#1	.00029	-.00031	.00000	-.00924	.11302	-.00056	.04943	-.00606
#2	.00043	-.00031	-.00194	-.00741	.09978	-.00605	.05703	-.00068
#3	-.00006	.00119	-.00183	-.05236	.16440	-.00100	.03754	-.00266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.04606**	**-.00083**	**-.00141**	**-.00021**	**.00282**	**-.00174**	**.00321**
Stddev	.00005	.02765	.00044	.00315	.00195	.00490	.00375	.00240
%RSD	141.27	60.025	53.457	223.34	930.54	173.59	215.79	74.887
#1	.00001	.07431	-.00117	-.00438	.00179	.00572	.00079	.00490
#2	-.00008	.01905	-.00100	.00189	-.00032	-.00283	.00005	.00425
#3	-.00003	.04482	-.00033	-.00174	-.00210	.00558	-.00605	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 14:42:22 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00044**	**-.00007**	**.00693**	**-.00126**	**.00028**	**.00004**	**.00047**
Stddev	.00006	.00074	.00234	.00199	.00034	.00013	.00028
%RSD	13.458	1007.3	33.724	158.81	121.60	313.22	60.062
#1	-.00042	-.00050	.00720	-.00317	.00053	-.00010	.00041
#2	-.00039	.00078	.00912	.00081	-.00011	.00015	.00023
#3	-.00050	-.00050	.00447	-.00141	.00041	.00008	.00078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9965.4**	**60529.**	**2743.0**
Stddev	28.5	120.	6.2
%RSD	.28565	.19837	.22544
#1	9939.6	60624.	2736.0
#2	9960.6	60570.	2745.5
#3	9996.0	60394.	2747.6

Approved: July 01, 2016

Sample Name: LLCCV Acquired: 6/30/2016 14:46:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00755**	**.13755**	**.00504**	**.07625**	**.00622**	**.00140**	**.37985**	**.00091**
Stddev	.00060	.00766	.00141	.00302	.00039	.00009	.02688	.00006
%RSD	7.9750	5.5712	27.958	3.9578	6.3357	6.5001	7.0775	6.3246
#1	.00694	.14586	.00387	.07280	.00611	.00130	.40922	.00094
#2	.00757	.13076	.00465	.07840	.00666	.00147	.37388	.00095
#3	.00815	.13604	.00661	.07754	.00589	.00143	.35645	.00084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00332**	**.00458**	**.00370**	**.03249**	**.71781**	**.07474**	**.34559**	**.00830**
Stddev	.00037	.00056	.00217	.01148	.06703	.00263	.12362	.00172
%RSD	11.218	12.257	58.654	35.329	9.3385	3.5127	35.771	20.744
#1	.00375	.00522	.00404	.04550	.76371	.07171	.20549	.00754
#2	.00311	.00433	.00569	.02817	.74883	.07616	.43933	.00709
#3	.00310	.00418	.00138	.02380	.64088	.07636	.39193	.01027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00664**	**.40817**	**.01405**	**.68747**	**.00938**	**.06899**	**.01621**	**.66527**
Stddev	.00113	.03058	.00213	.06242	.00022	.00684	.00387	.05694
%RSD	16.959	7.4930	15.168	9.0796	2.3936	9.9201	23.895	8.5592
#1	.00721	.43641	.01592	.72340	.00913	.07059	.01820	.70168
#2	.00736	.41241	.01449	.72361	.00957	.07489	.01869	.69448
#3	.00534	.37568	.01173	.61539	.00945	.06149	.01175	.59965
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: LLCCV Acquired: 6/30/2016 14:46:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.35879**	**.03831**	**.02146**	**.13890**	**.00875**	**.01518**	**.03944**
Stddev	.04244	.00010	.00491	.01112	.00087	.00155	.00053
%RSD	11.830	.25366	22.857	8.0048	9.9857	10.225	1.3499
#1	.38655	.03820	.01999	.14334	.00973	.01612	.03979
#2	.37988	.03839	.02694	.14710	.00806	.01604	.03883
#3	.30993	.03832	.01746	.12624	.00846	.01339	.03971
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9944.1**	**60263.**	**2739.7**
Stddev	6.2	35.	12.9
%RSD	.06261	.05790	.47239
#1	9948.5	60275.	2724.9
#2	9937.0	60224.	2749.2
#3	9946.8	60291.	2744.9

Approved: July 01, 2016

Sample Name: LLCCV Acquired: 6/30/2016 14:50:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02008	.36043	.01582	.18333	.01808	.00367	.89770	.00211
Stddev	.00057	.00484	.00197	.00027	.00061	.00007	.04584	.00034
%RSD	2.8551	1.3431	12.444	.14908	3.3589	1.8076	5.1064	16.294
#1	.01985	.35830	.01648	.18323	.01766	.00366	.93117	.00228
#2	.01965	.35702	.01738	.18364	.01780	.00373	.84545	.00233
#3	.02073	.36597	.01361	.18313	.01878	.00360	.91646	.00171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00935	.00935	.00971	.16081	1.9021	.18770	1.0385	.01901
Stddev	.00045	.00015	.00099	.01332	.0692	.00221	.0321	.00306
%RSD	4.7935	1.5924	10.206	8.2832	3.6359	1.1750	3.0900	16.085
#1	.00958	.00936	.01052	.17429	1.8351	.18922	1.0720	.01700
#2	.00964	.00920	.01002	.14765	1.9732	.18517	1.0354	.02253
#3	.00883	.00950	.00860	.16049	1.8979	.18871	1.0081	.01750
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01769	1.0187	.03593	1.7426	.01840	.18087	.03737	1.6760
Stddev	.00160	.0308	.00380	.1010	.00163	.00915	.00446	.0886
%RSD	9.0314	3.0274	10.581	5.7950	8.8845	5.0596	11.943	5.2845
#1	.01848	1.0035	.03744	1.7988	.02022	.18104	.04056	1.7200
#2	.01875	.99838	.03875	1.8030	.01793	.18993	.03928	1.7340
#3	.01585	1.0542	.03161	1.6260	.01705	.17163	.03227	1.5741
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: LLCCV Acquired: 6/30/2016 14:50:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.91598**	**.09467**	**.05722**	**.35077**	**.01889**	**.03740**	**.09695**
Stddev	.07316	.00055	.00579	.01781	.00047	.00261	.00068
%RSD	7.9872	.57785	10.120	5.0788	2.4819	6.9816	.69991
#1	.95780	.09489	.05081	.35940	.01940	.03901	.09639
#2	.95864	.09405	.05879	.36263	.01847	.03881	.09770
#3	.83150	.09507	.06207	.33028	.01881	.03439	.09675
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9958.3**	**60305.**	**2738.4**
Stddev	16.7	86.	3.9
%RSD	.16799	.14205	.14249
#1	9977.1	60381.	2742.4
#2	9945.1	60322.	2734.6
#3	9952.8	60212.	2738.1

Approved: July 01, 2016

Sample Name: PBW 76 Acquired: 6/30/2016 14:54:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574448-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00140**	**-.00637**	**-.00205**	**.00030**	**-.00218**	**-.00007**	**-.01698**
Stddev	.00228	.00959	.00232	.00217	.00038	.00006	.03411
%RSD	162.77	150.58	113.16	720.50	17.455	92.464	200.87
#1	-.00259	-.01740	-.00006	.00261	-.00175	-.00005	.00605
#2	.00123	-.00166	-.00459	.00000	-.00246	-.00014	-.00083
#3	-.00284	-.00004	-.00148	-.00170	-.00234	-.00002	-.05617
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00017**	**.00020**	**.00068**	**.00040**	F **-.02842**	**-.00096**	**-.00216**
Stddev	.00026	.00010	.00096	.00052	.05198	.06514	.00120
%RSD	150.63	50.555	141.66	131.72	182.93	6770.7	55.717
#1	.00017	.00009	.00067	.00085	.01168	-.07310	-.00226
#2	.00043	.00023	-.00028	.00051	-.00978	.01664	-.00331
#3	-.00009	.00028	.00165	-.00017	-.08715	.05357	-.00091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03167**	**.00193**	**-.00016**	**.03711**	**.00033**	**.00003**	**.00043**
Stddev	.04509	.00160	.00032	.00715	.00052	.00250	.00314
%RSD	142.37	82.593	204.60	19.273	155.88	8318.8	733.61
#1	.02993	.00377	-.00007	.03245	.00026	.00135	.00350
#2	.07761	.00094	.00011	.03355	.00088	-.00285	.00057
#3	-.01252	.00108	-.00051	.04535	-.00015	.00159	-.00278
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 01, 2016

Sample Name: PBW 76 Acquired: 6/30/2016 14:54:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574448-07

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00507**	**-.00132**	**.01027**	**-.00020**	**.00037**	**.00581**	**-.00273**
Stddev	.00072	.00169	.00061	.00051	.00051	.00630	.00145
%RSD	14.304	128.19	5.9637	253.93	138.15	108.41	53.239
#1	.00569	.00051	.01067	.00037	.00061	.01014	-.00244
#2	.00524	-.00283	.00956	-.00062	.00072	.00872	-.00430
#3	.00427	-.00163	.01056	-.00035	-.00022	-.00142	-.00144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00006**	**.00098**	**.00009**
Stddev	.00016	.00007	.00077
%RSD	254.01	7.5782	812.10
#1	.00007	.00092	.00092
#2	-.00010	.00106	-.00059
#3	.00022	.00096	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9735.7**	**59578.**	**2708.4**
Stddev	18.1	126.	18.2
%RSD	.18593	.21090	.67054
#1	9736.3	59492.	2688.3
#2	9717.3	59722.	2723.7
#3	9753.5	59521.	2713.1

Approved: July 01, 2016

Sample Name: LCSW 76 Acquired: 6/30/2016 14:58:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574448-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19406**	**4.8372**	**.18772**	**.93548**	**.48472**	**.02398**	**4.9184**	**.02417**
Stddev	.00040	.0223	.00254	.00287	.00046	.00006	.0222	.00071
%RSD	.20408	.46030	1.3506	.30661	.09484	.26564	.45075	2.9279
#1	.19431	4.8400	.18763	.93285	.48456	.02403	4.8996	.02468
#2	.19426	4.8580	.19031	.93854	.48437	.02399	4.9127	.02445
#3	.19360	4.8137	.18524	.93505	.48524	.02391	4.9429	.02336
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09817**	**.24697**	**.24350**	**1.9478**	**24.753**	**.49093**	**5.0002**	**.24461**
Stddev	.00353	.00097	.00776	.0138	.005	.00461	.0771	.00049
%RSD	3.5987	.39459	3.1868	.70954	.02098	.93975	1.5427	.19915
#1	.10026	.24687	.24716	1.9341	24.750	.48827	5.0680	.24490
#2	.10016	.24798	.24875	1.9475	24.759	.48826	4.9163	.24404
#3	.09409	.24604	.23459	1.9618	24.750	.49625	5.0164	.24487
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49023**	**24.214**	**.24212**	**4.6436**	**.24249**	**.56796**	**.18453**	**2.3355**
Stddev	.01425	.037	.00605	.0954	.00510	.01564	.00049	.0413
%RSD	2.9073	.15160	2.4970	2.0550	2.1046	2.7539	.26334	1.7675
#1	.49820	24.181	.24420	4.6986	.24833	.57604	.18508	2.3596
#2	.49872	24.253	.24685	4.6988	.23892	.57792	.18436	2.3591
#3	.47378	24.208	.23531	4.5334	.24020	.54994	.18415	2.2879
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: LCSW 76 Acquired: 6/30/2016 14:58:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574448-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48783**	**.49146**	**.49341**	**.24648**	**.49446**	**.47899**	**.00066**
Stddev	.01537	.00161	.00809	.00316	.00160	.01185	.00006
%RSD	3.1498	.32695	1.6398	1.2839	.32453	2.4740	8.7665
#1	.49644	.48999	.48436	.24565	.49598	.48288	.00063
#2	.49696	.49318	.49589	.24998	.49461	.48840	.00073
#3	.47009	.49120	.49996	.24381	.49278	.46568	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9596.1**	**58301.**	**2689.5**
Stddev	3.2	165.	6.3
%RSD	.03287	.28220	.23368
#1	9593.7	58186.	2689.5
#2	9594.8	58227.	2683.2
#3	9599.7	58489.	2695.8

Approved: July 01, 2016

Sample Name: F BLANK Acquired: 6/30/2016 15:01:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574277-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00035**	**.04188**	**-.00253**	**.00671**	**.00001**	**-.00001**	**.07425**	**.00010**
Stddev	.00045	.00312	.00159	.00179	.00075	.00007	.02200	.00034
%RSD	127.57	7.4533	62.652	26.717	5191.7	1380.5	29.632	326.19
#1	.00083	.04161	-.00425	.00877	.00026	.00002	.08439	-.00027
#2	-.00007	.03890	-.00224	.00585	.00060	.00005	.04900	.00039
#3	.00030	.04513	-.00111	.00551	-.00082	-.00009	.08935	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00050**	**.00060**	**.00005**	**.09768**	**.04096**	**-.00403**	**.08723**	**.00302**
Stddev	.00012	.00118	.00122	.00997	.19928	.00207	.05436	.00323
%RSD	23.723	198.15	2257.8	10.209	486.57	51.324	62.313	106.91
#1	.00064	-.00069	.00115	.10704	.05407	-.00227	.06313	.00142
#2	.00042	.00083	.00027	.09880	.23335	-.00631	.04910	.00674
#3	.00044	.00164	-.00126	.08719	-.16456	-.00352	.14947	.00091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**128.93**	**-.00045**	**-.00284**	**-.00011**	**-.00048**	**.00433**	**.03532**
Stddev	.00010	.74	.00049	.00497	.00134	.00169	.00496	.00606
%RSD	97.546	.57783	108.83	174.98	1259.0	350.08	114.49	17.150
#1	-.00015	129.69	-.00014	.00264	.00091	-.00099	.00418	.04092
#2	-.00017	128.20	-.00019	-.00705	.00039	.00140	-.00055	.03615
#3	.00001	128.90	-.00101	-.00410	-.00162	-.00187	.00937	.02889
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: F BLANK Acquired: 6/30/2016 15:01:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574277-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**.00116**	**.00074**	**-.00383**	**.00028**	**.00325**	**.00008**
Stddev	.00064	.00038	.00159	.00162	.00072	.00067	.00047
%RSD	295.46	32.327	215.45	42.440	252.05	20.614	621.83
#1	.00042	.00096	-.00088	-.00536	.00032	.00365	.00046
#2	-.00022	.00160	.00079	-.00212	-.00045	.00362	-.00045
#3	-.00086	.00093	.00230	-.00400	.00099	.00248	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9569.0**	**57799.**	**2697.0**
Stddev	46.7	20.	33.0
%RSD	.48836	.03469	1.2229
#1	9531.9	57822.	2659.1
#2	9553.6	57793.	2719.1
#3	9621.5	57783.	2712.9

Approved: July 01, 2016

Sample Name: F BLANK 2 Acquired: 6/30/2016 15:05:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574277-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**-.01028**	**-.00410**	**.00380**	**-.00087**	**-.00000**	**-.03482**	**-.00004**
Stddev	.00138	.00666	.00219	.00034	.00075	.00006	.05685	.00017
%RSD	2784.7	64.806	53.550	9.0182	85.907	17783.	163.29	441.49
#1	-.00099	-.01791	-.00228	.00384	-.00056	.00001	-.06566	-.00022
#2	-.00069	-.00726	-.00653	.00412	-.00033	.00005	.03079	-.00000
#3	.00153	-.00566	-.00347	.00344	-.00172	-.00007	-.06959	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00026**	**.00011**	**.00037**	**-.00243**	**.03190**	**-.00498**	**-.00348**	**.00156**
Stddev	.00013	.00056	.00067	.01662	.10860	.00351	.01276	.00128
%RSD	50.704	487.54	179.30	683.46	340.43	70.496	366.97	82.153
#1	.00038	-.00026	-.00024	-.00213	.05825	-.00123	.00349	.00019
#2	.00012	.00075	.00027	.01404	.12490	-.00552	-.01821	.00273
#3	.00029	-.00015	.00109	-.01920	-.08745	-.00819	.00428	.00176
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00000**	**.05802**	**.00034**	**-.00425**	**.00211**	**.00013**	**-.00121**	**.01397**
Stddev	.00051	.00757	.00051	.00317	.00276	.00125	.00407	.00270
%RSD	11931.	13.055	151.01	74.792	130.40	961.41	336.01	19.292
#1	-.00002	.06263	.00089	-.00624	.00309	.00129	-.00319	.01705
#2	.00052	.04927	-.00010	-.00058	.00425	.00029	-.00391	.01285
#3	-.00051	.06214	.00021	-.00591	-.00100	-.00119	.00347	.01202
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: F BLANK 2 Acquired: 6/30/2016 15:05:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574277-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00066**	**.00035**	**.00385**	**-.00176**	**.00072**	**.00333**	**.00018**
Stddev	.00104	.00039	.00353	.00276	.00033	.00038	.00028
%RSD	157.58	110.48	91.527	156.45	45.661	11.275	158.19
#1	-.00086	-.00005	-.00001	-.00415	.00076	.00349	.00002
#2	.00046	.00072	.00467	.00125	.00102	.00359	.00001
#3	-.00159	.00038	.00690	-.00239	.00037	.00290	.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9701.1**	**59235.**	**2684.9**
Stddev	13.0	36.	11.0
%RSD	.13445	.06028	.41025
#1	9691.5	59200.	2689.5
#2	9695.8	59272.	2692.9
#3	9715.9	59233.	2672.4

Approved: July 01, 2016

Sample Name: L1606139602 Acquired: 6/30/2016 15:09:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00193	.13965	.01057	.19322	.02665	.00036	21.590	.00045
Stddev	.00053	.00863	.00082	.00235	.00053	.00010	.075	.00007
%RSD	27.357	6.1828	7.7196	1.2183	1.9761	27.322	.34585	16.520
#1	-.00254	.14822	.01053	.19336	.02625	.00038	21.584	.00045
#2	-.00164	.13095	.00978	.19550	.02646	.00044	21.667	.00038
#3	-.00162	.13979	.01141	.19080	.02725	.00025	21.518	.00052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00393	.00185	.00357	-.01299	1.5109	.05210	1.1273	.07142
Stddev	.00033	.00106	.00211	.01165	.1543	.00339	.0576	.00238
%RSD	8.2754	57.310	59.089	89.708	10.211	6.5060	5.1107	3.3274
#1	.00407	.00118	.00578	-.00344	1.5483	.05002	1.1938	.07152
#2	.00415	.00307	.00336	-.00955	1.3414	.05026	1.0960	.07374
#3	.00356	.00129	.00158	-.02598	1.6430	.05601	1.0921	.06899
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01932	129.15	.00573	.00349	.00021	.00277	.00435	2.0497
Stddev	.00279	.31	.00105	.00606	.00075	.00257	.00077	.1872
%RSD	14.417	.23972	18.356	173.77	359.99	92.696	17.808	9.1320
#1	.02127	129.19	.00639	.00949	-.00016	.00160	.00351	2.1635
#2	.02057	129.44	.00628	-.00262	-.00028	.00571	.00450	2.1519
#3	.01613	128.83	.00452	.00358	.00107	.00100	.00504	1.8337
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606139602 Acquired: 6/30/2016 15:09:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**.11945**	**.00644**	**.00002**	**.00957**	**.02080**	**.00065**
Stddev	.00054	.00027	.00243	.00255	.00035	.00231	.00027
%RSD	345.27	.22972	37.753	11640.	3.6445	11.103	41.165
#1	-.00037	.11966	.00690	.00294	.00956	.02210	.00055
#2	.00070	.11955	.00862	-.00104	.00923	.02216	.00044
#3	.00013	.11914	.00382	-.00183	.00993	.01813	.00095
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9557.0**	**57455.**	**2684.7**
Stddev	15.2	92.	11.0
%RSD	.15952	.15990	.41139
#1	9547.5	57372.	2672.7
#2	9549.0	57440.	2694.5
#3	9574.6	57554.	2686.9

Approved: July 01, 2016

Sample Name: L1606139606 Acquired: 6/30/2016 15:13:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00064**	**.09530**	**-.00072**	**.03528**	**.06156**	**.00012**	**5.0471**	**.00028**
Stddev	.00106	.00355	.00196	.00202	.00249	.00004	.0899	.00042
%RSD	166.97	3.7208	272.19	5.7243	4.0484	36.498	1.7812	147.70
#1	-.00076	.09130	-.00135	.03487	.06181	.00008	5.1439	-.00019
#2	-.00164	.09654	.00148	.03349	.06391	.00011	4.9663	.00058
#3	.00048	.09806	-.00230	.03747	.05895	.00017	5.0311	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00138**	**.00095**	**.00308**	**.00486**	**.43506**	**.00111**	**.84859**	**.04325**
Stddev	.00015	.00022	.00039	.04175	.08069	.00465	.01252	.00244
%RSD	10.691	23.353	12.625	858.42	18.548	418.47	1.4759	5.6390
#1	.00129	.00111	.00352	.01545	.51238	.00571	.86234	.04251
#2	.00155	.00069	.00284	.04030	.44144	-.00359	.84559	.04126
#3	.00130	.00104	.00287	-.04116	.35136	.00122	.83784	.04597
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**131.98**	**.00225**	**.00332**	**-.00045**	**.00078**	**.00435**	**.74799**
Stddev	.00023	.57	.00018	.00401	.00278	.00648	.00343	.04482
%RSD	151.07	.43348	7.9993	120.94	619.11	834.73	78.744	5.9924
#1	.00019	132.64	.00246	.00793	-.00097	-.00027	.00562	.77723
#2	-.00009	131.69	.00219	.00064	.00256	-.00512	.00047	.77035
#3	.00036	131.61	.00212	.00138	-.00293	.00771	.00696	.69638
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606139606 Acquired: 6/30/2016 15:13:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	.03637	.00336	-.00239	-.00016	.01827	.00048
Stddev	.00051	.00026	.00355	.00026	.00025	.00122	.00026
%RSD	194.48	.70234	105.80	11.003	152.75	6.7033	53.237
#1	.00032	.03651	.00398	-.00225	-.00042	.01900	.00019
#2	.00073	.03652	.00655	-.00224	.00008	.01895	.00065
#3	-.00027	.03607	-.00046	-.00270	-.00016	.01685	.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9575.1	57728.	2688.0
Stddev	33.2	86.	13.8
%RSD	.34673	.14866	.51328
#1	9550.5	57665.	2673.3
#2	9561.8	57694.	2689.8
#3	9612.8	57826.	2700.7

Approved: July 01, 2016

Sample Name: L1606139608 Acquired: 6/30/2016 15:17:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00072**	**.01043**	**-.00095**	**.07564**	**.02234**	**.00003**	**5.9300**	**.00020**
Stddev	.00100	.00531	.00262	.00145	.00086	.00002	.0495	.00009
%RSD	139.29	50.966	274.91	1.9163	3.8305	66.694	.83521	47.200
#1	-.00017	.01646	-.00208	.07729	.02250	.00005	5.9868	.00017
#2	-.00187	.00644	-.00282	.07459	.02142	.00004	5.8955	.00030
#3	-.00011	.00838	.00204	.07505	.02310	.00001	5.9078	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00126**	**.00091**	**.00054**	**.00106**	**.16961**	**.00075**	**.76401**	**2.1240**
Stddev	.00021	.00078	.00035	.02269	.05820	.00533	.08914	.0166
%RSD	16.446	85.103	63.925	2137.1	34.316	714.71	11.667	.78020
#1	.00136	.00148	.00083	.02466	.10952	.00328	.72826	2.1431
#2	.00102	.00123	.00063	-.02060	.22573	-.00538	.86547	2.1157
#3	.00141	.00003	.00016	-.00087	.17359	.00434	.69829	2.1133
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**148.78**	**.00393**	**.00694**	**.00054**	**.00245**	**-.00136**	**.64270**
Stddev	.00006	.68	.00056	.00260	.00234	.00542	.00234	.05700
%RSD	281.15	.45475	14.224	37.424	429.64	221.47	172.16	8.8681
#1	.00008	149.56	.00457	.00729	.00045	.00849	-.00229	.67682
#2	-.00004	148.35	.00364	.00935	-.00175	.00083	.00131	.67438
#3	.00002	148.43	.00357	.00419	.00293	-.00198	-.00310	.57690
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606139608 Acquired: 6/30/2016 15:17:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**.02476**	**.00581**	**-.00365**	**.00091**	**.01158**	**.00036**
Stddev	.00010	.00047	.00442	.00253	.00030	.00127	.00058
%RSD	44.503	1.8837	76.125	69.348	33.356	11.006	160.99
#1	-.00017	.02422	.00975	-.00084	.00057	.01227	.00089
#2	-.00017	.02500	.00102	-.00575	.00098	.01237	-.00026
#3	-.00035	.02506	.00667	-.00436	.00117	.01011	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9556.2**	**57642.**	**2695.6**
Stddev	16.4	82.	31.1
%RSD	.17205	.14191	1.1528
#1	9547.3	57553.	2660.1
#2	9546.2	57659.	2709.0
#3	9575.2	57714.	2717.7

Approved: July 01, 2016

L1606139801

Sample Name: ~~L1606138601~~ Acquired: 6/30/2016 15:21:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00078**	**.00164**	**-.00329**	**.00626**	**.04173**	**-.00007**	**245.26**
Stddev	.00097	.00239	.00272	.00167	.00093	.00003	.32
%RSD	125.66	145.36	82.750	26.638	2.2174	41.389	.12947
#1	.00134	.00318	-.00139	.00592	.04243	-.00009	244.89
#2	-.00035	.00286	-.00207	.00807	.04209	-.00009	245.44
#3	.00133	-.00111	-.00640	.00479	.04068	-.00004	245.44
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00053**	**.00033**	**.00215**	**.00154**	**-.00866**	**.25593**	**.00433**
Stddev	.00014	.00040	.00088	.00046	.01684	.09389	.00401
%RSD	25.713	123.72	41.024	30.015	194.52	36.685	92.521
#1	.00038	.00041	.00314	.00102	-.02748	.18616	.00850
#2	.00058	-.00011	.00187	.00172	.00498	.36268	.00399
#3	.00065	.00069	.00144	.00189	-.00347	.21895	.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.07132**	**.00090**	**.00020**	**2.0087**	**-.00055**	**.00693**	**.00071**
Stddev	.05358	.00277	.00011	.0238	.00107	.00516	.00240
%RSD	75.129	307.41	57.758	1.1847	195.72	74.462	335.51
#1	.12964	-.00218	.00029	1.9890	.00062	.01119	-.00136
#2	.06004	.00319	.00007	2.0351	-.00148	.00842	.00334
#3	.02427	.00169	.00024	2.0019	-.00077	.00119	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 01, 2016

Sample Name: ~~L1606138601~~ Acquired: 6/30/2016 15:21:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00144**	**-.00188**	**.04205**	**-.00036**	**.14545**	F **-.03015**	**-.00381**
Stddev	.00369	.00389	.00358	.00022	.00087	.00823	.00222
%RSD	256.14	206.23	8.5220	61.641	.60068	27.290	58.270
#1	-.00093	-.00569	.04547	-.00062	.14476	-.02643	-.00545
#2	-.00044	.00208	.04234	-.00024	.14515	-.02443	-.00468
#3	.00570	-.00204	.03832	-.00022	.14643	-.03958	-.00128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00016**	**.00484**	**.00047**
Stddev	.00078	.00034	.00022
%RSD	492.70	6.9665	47.623
#1	-.00073	.00512	.00063
#2	.00050	.00493	.00055
#3	.00071	.00446	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9432.1**	**57669.**	**2697.3**
Stddev	22.9	224.	.8
%RSD	.24274	.38909	.03026
#1	9417.4	57410.	2696.5
#2	9420.3	57787.	2697.5
#3	9458.5	57809.	2698.1

Approved: July 01, 2016

Sample Name: L1606140001 Acquired: 6/30/2016 15:25:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00187	.83314	.00036	.00919	.01492	-.00003	27.124	.00028
Stddev	.00155	.01146	.00163	.00194	.00102	.00001	.118	.00011
%RSD	82.849	1.3755	457.03	21.111	6.8444	46.522	.43432	40.753
#1	-.00277	.82049	.00208	.00988	.01414	-.00004	27.231	.00017
#2	-.00274	.83610	.00013	.00700	.01454	-.00003	27.144	.00039
#3	-.00008	.84283	-.00114	.01070	.01607	-.00001	26.997	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	.00842	.00507	1.9258	5.7321	.00213	8.2091	.23426
Stddev	.00022	.00034	.00176	.0442	.0776	.00202	.1210	.00106
%RSD	31.278	3.9863	34.635	2.2975	1.3546	94.931	1.4742	.45460
#1	.00063	.00852	.00414	1.9749	5.8065	.00051	8.2600	.23504
#2	.00096	.00869	.00710	1.9136	5.6516	.00149	8.2963	.23469
#3	.00054	.00804	.00398	1.8890	5.7382	.00440	8.0709	.23305
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00085	6.2660	.00368	.16817	.00379	.00396	.00066	6.4590
Stddev	.00019	.0479	.00036	.01251	.00049	.00250	.00140	.4302
%RSD	22.783	.76417	9.8606	7.4370	12.975	63.174	213.56	6.6610
#1	.00078	6.3193	.00332	.16753	.00418	.00134	-.00079	6.7130
#2	.00107	6.2267	.00367	.18098	.00395	.00632	.00200	6.7018
#3	.00070	6.2519	.00405	.15599	.00324	.00423	.00075	5.9623
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606140001 Acquired: 6/30/2016 15:25:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.15481	.03538	-.00557	.00144	.00618	.00095
Stddev	.00067	.00167	.00384	.00312	.00048	.00069	.00020
%RSD	541.56	1.0797	10.849	56.074	33.433	11.125	21.594
#1	.00008	.15582	.03938	-.00363	.00188	.00659	.00075
#2	.00081	.15573	.03504	-.00391	.00152	.00656	.00093
#3	-.00052	.15289	.03173	-.00918	.00092	.00539	.00116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9600.2	58359.	2664.5
Stddev	21.5	40.	25.0
%RSD	.22389	.06892	.93818
#1	9582.5	58324.	2651.8
#2	9594.0	58349.	2648.4
#3	9624.1	58403.	2693.3

Approved: July 01, 2016

Sample Name: L1606140002 Acquired: 6/30/2016 15:29:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00145	.04897	-.00204	.02891	.02411	-.00005	92.303	.00042
Stddev	.00119	.01185	.00155	.00126	.00077	.00001	.266	.00034
%RSD	82.297	24.206	75.782	4.3570	3.1740	9.5947	.28790	81.525
#1	-.00252	.04721	-.00286	.03023	.02442	-.00006	92.582	.00004
#2	-.00164	.06161	-.00301	.02771	.02324	-.00005	92.052	.00053
#3	-.00017	.03810	-.00026	.02881	.02467	-.00005	92.275	.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00065	.00156	.00172	.34047	1.3056	-.00041	23.126	.30684
Stddev	.00014	.00149	.00089	.00617	.0366	.00298	.102	.00392
%RSD	21.777	95.963	51.691	1.8116	2.8038	720.23	.44074	1.2761
#1	.00069	.00104	.00163	.34457	1.3386	-.00386	23.242	.31082
#2	.00049	.00324	.00088	.33338	1.3119	.00143	23.085	.30299
#3	.00076	.00039	.00265	.34346	1.2662	.00119	23.052	.30671
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	27.360	-.00015	.00025	.00070	-.00126	-.00235	4.5098
Stddev	.00022	.085	.00052	.00307	.00461	.00468	.00348	.4297
%RSD	126.98	.31143	339.42	1219.1	659.79	370.28	148.08	9.5271
#1	.00025	27.437	-.00065	.00376	.00598	-.00568	-.00299	4.7749
#2	.00033	27.268	.00038	-.00197	-.00245	.00365	-.00546	4.7405
#3	-.00007	27.374	-.00019	-.00104	-.00144	-.00176	.00141	4.0141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606140002 Acquired: 6/30/2016 15:29:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.26031	-.00979	-.00354	.00076	.00183	.00006
Stddev	.00038	.00137	.00739	.00193	.00073	.00039	.00080
%RSD	727.87	.52705	75.512	54.425	95.192	21.438	1318.5
#1	-.00012	.26145	-.00223	-.00425	.00116	.00209	-.00082
#2	.00049	.25879	-.01014	-.00136	-.00008	.00203	.00072
#3	-.00021	.26069	-.01700	-.00502	.00120	.00138	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9438.9	57499.	2626.2
Stddev	30.3	24.	10.9
%RSD	.32090	.04103	.41621
#1	9421.1	57472.	2615.0
#2	9421.6	57508.	2636.8
#3	9473.8	57517.	2626.9

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 15:33:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38576**	**9.5844**	**.37779**	**.46864**	**.94654**	**.04790**	**9.4615**	**.04768**
Stddev	.00255	.0433	.00108	.00150	.00224	.00011	.1008	.00032
%RSD	.66017	.45200	.28485	.31920	.23617	.23065	1.0653	.67507
#1	.38312	9.5764	.37657	.46863	.94563	.04794	9.3756	.04759
#2	.38594	9.6311	.37860	.47014	.94908	.04798	9.5725	.04742
#3	.38821	9.5456	.37821	.46714	.94490	.04778	9.4366	.04804
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19474**	**.48209**	**.48249**	**3.7949**	**48.672**	**.95105**	**9.7453**	**.47506**
Stddev	.00009	.00260	.00046	.0361	.138	.00693	.1521	.00571
%RSD	.04592	.53985	.09560	.95082	.28253	.72875	1.5607	1.2023
#1	.19465	.48508	.48251	3.7550	48.557	.94309	9.7664	.47993
#2	.19482	.48034	.48294	3.8044	48.824	.95438	9.5838	.47646
#3	.19475	.48085	.48202	3.8253	48.633	.95569	9.8858	.46877
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.96668**	**46.965**	**.47815**	**9.4566**	**.47807**	**1.1381**	**.38347**	**4.7637**
Stddev	.00069	.137	.00033	.0141	.00224	.0026	.00188	.0073
%RSD	.07099	.29073	.06880	.14882	.46912	.22567	.49154	.15410
#1	.96596	46.868	.47802	9.4426	.47550	1.1363	.38415	4.7552
#2	.96676	47.121	.47852	9.4708	.47966	1.1410	.38133	4.7679
#3	.96732	46.905	.47790	9.4565	.47904	1.1369	.38492	4.7679
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 15:33:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.97131	.94689	.95484	.48552	.96927	.95066	.97219
Stddev	.00290	.00264	.00612	.00081	.00377	.00018	.00522
%RSD	.29903	.27872	.64127	.16759	.38939	.01932	.53659
#1	.97066	.94502	.94859	.48514	.97145	.95050	.97230
#2	.97449	.94991	.95510	.48646	.97145	.95062	.97734
#3	.96879	.94573	.96083	.48498	.96491	.95086	.96691
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9665.6	58251.	2674.3
Stddev	7.9	34.	5.5
%RSD	.08158	.05773	.20493
#1	9666.8	58280.	2679.6
#2	9672.8	58258.	2668.6
#3	9657.2	58214.	2674.8

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 15:36:52 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00207**	**-.01107**	**-.00235**	**.00250**	**-.00030**	**-.00005**	**-.00958**	**-.00000**
Stddev	.00263	.00880	.00227	.00118	.00061	.00004	.00980	.00016
%RSD	127.19	79.535	96.631	47.024	203.01	78.950	102.32	9501.3
#1	-.00272	-.01877	-.00168	.00114	-.00094	-.00004	-.02037	-.00001
#2	.00083	-.00147	-.00488	.00314	-.00023	-.00001	-.00716	-.00016
#3	-.00432	-.01297	-.00049	.00322	.00027	-.00009	-.00121	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00047**	**.00040**	**-.00055**	**-.01341**	**-.04630**	**-.00230**	**-.02725**	**.00059**
Stddev	.00029	.00028	.00091	.03178	.12019	.00146	.09790	.00357
%RSD	62.754	69.240	166.97	237.02	259.58	63.516	359.24	607.25
#1	.00056	.00026	-.00150	-.00558	-.16566	-.00111	.08541	-.00274
#2	.00014	.00073	.00032	-.04837	-.04797	-.00392	-.09173	.00014
#3	.00071	.00022	-.00046	.01373	.07471	-.00186	-.07544	.00436
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00006**	**.03701**	**.00014**	**-.00135**	**.00005**	**.00536**	**-.00171**	**.00424**
Stddev	.00064	.01177	.00089	.00702	.00208	.00079	.00266	.00398
%RSD	1023.7	31.797	616.31	519.22	3870.8	14.771	155.99	93.993
#1	.00055	.02363	-.00088	.00650	.00142	.00517	-.00386	.00836
#2	-.00066	.04573	.00059	-.00703	.00109	.00468	-.00254	.00394
#3	.00029	.04168	.00073	-.00352	-.00235	.00623	.00127	.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 15:36:52 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00046**	**.00034**	**.00286**	**-.00055**	**.00081**	**.00033**	**.00068**
Stddev	.00030	.00018	.00565	.00085	.00042	.00016	.00043
%RSD	65.960	53.768	197.39	155.65	52.745	48.193	63.861
#1	-.00074	.00048	-.00128	-.00060	.00110	.00017	.00118
#2	-.00014	.00039	.00931	.00033	.00100	.00035	.00040
#3	-.00050	.00013	.00056	-.00137	.00032	.00048	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9773.8**	**59366.**	**2699.5**
Stddev	21.8	114.	2.7
%RSD	.22330	.19241	.10052
#1	9794.7	59234.	2697.4
#2	9775.5	59433.	2702.6
#3	9751.1	59431.	2698.7

Approved: July 01, 2016

Sample Name: L1606140003 Acquired: 6/30/2016 15:40:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00130**	**.21185**	**-.00229**	**.00993**	**.00416**	**.00003**	**41.208**	**.00004**
Stddev	.00082	.00287	.00187	.00113	.00135	.00005	.461	.00009
%RSD	63.130	1.3563	81.642	11.389	32.480	190.77	1.1190	236.87
#1	-.00183	.21040	-.00022	.00948	.00563	.00004	41.476	.00009
#2	-.00036	.20998	-.00385	.00909	.00298	.00007	40.676	.00010
#3	-.00171	.21515	-.00281	.01122	.00386	-.00003	41.472	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00038**	**.00098**	**.00133**	**.32267**	**.87287**	**-.00173**	**15.303**	**.01519**
Stddev	.00027	.00059	.00077	.04257	.09542	.00261	.108	.00315
%RSD	72.790	59.493	58.460	13.194	10.932	150.85	.70528	20.717
#1	.00035	.00097	.00119	.33232	.76749	-.00474	15.182	.01262
#2	.00011	.00041	.00216	.27610	.95342	-.00010	15.340	.01427
#3	.00066	.00158	.00063	.35959	.89768	-.00035	15.388	.01870
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**47.347**	**-.00108**	**.02126**	**-.00029**	**.00213**	**.00016**	**4.0100**
Stddev	.00009	.565	.00067	.00484	.00405	.00373	.00231	.2023
%RSD	125.60	1.1923	62.401	22.757	1390.4	175.26	1488.5	5.0441
#1	.00005	47.679	-.00125	.02320	.00287	.00633	.00277	4.1228
#2	.00016	46.695	-.00164	.02484	-.00485	-.00082	-.00069	4.1307
#3	-.00001	47.667	-.00033	.01576	.00111	.00088	-.00162	3.7765
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606140003 Acquired: 6/30/2016 15:40:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.14971	.00443	-.00542	.00140	.00211	.00062
Stddev	.00072	.00013	.00425	.00279	.00029	.00021	.00062
%RSD	194.63	.08734	96.068	51.430	20.441	9.8730	100.70
#1	.00119	.14974	.00754	-.00228	.00158	.00233	.00110
#2	-.00017	.14982	-.00042	-.00760	.00107	.00192	.00082
#3	.00009	.14956	.00616	-.00639	.00156	.00207	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9465.7	57524.	2678.3
Stddev	27.4	92.	31.7
%RSD	.28940	.15975	1.1854
#1	9440.6	57448.	2650.8
#2	9461.5	57626.	2713.1
#3	9494.9	57496.	2671.1

Approved: July 01, 2016

Sample Name: L1606140004 Acquired: 6/30/2016 15:44:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -.00439	2.1069	-.00036	.00811	.02436	.00016	53.033
Stddev	.00175	.0158	.00155	.00100	.00104	.00003	.255
%RSD	39.926	.74764	429.44	12.362	4.2636	18.219	.48106
#1	-.00433	2.1030	.00141	.00903	.02555	.00018	53.318
#2	-.00266	2.1242	-.00143	.00825	.02388	.00016	52.825
#3	-.00616	2.0934	-.00106	.00704	.02364	.00013	52.955
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	9.0000						
Low Limit	-.00400						

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	.00236	.00434	.00769	3.7039	1.2386	.00243
Stddev	.00024	.00015	.00023	.00081	.0191	.1833	.00075
%RSD	49.330	6.4744	5.3152	10.550	.51660	14.799	30.957
#1	.00053	.00226	.00412	.00832	3.7243	1.4362	.00330
#2	.00072	.00253	.00434	.00677	3.6863	1.0741	.00209
#3	.00023	.00229	.00458	.00797	3.7010	1.2054	.00191
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	19.146	.08127	.00078	50.809	.00192	.12575	.00366
Stddev	.084	.00336	.00006	.245	.00104	.01315	.00051
%RSD	.43667	4.1375	7.7223	.48239	53.963	10.459	14.025
#1	19.219	.08482	.00085	51.091	.00140	.13316	.00309
#2	19.164	.08084	.00073	50.642	.00311	.13352	.00408
#3	19.055	.07813	.00077	50.696	.00124	.11056	.00380
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 01, 2016

Sample Name: L1606140004 Acquired: 6/30/2016 15:44:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00301**	**-.00458**	**7.0828**	**-.00006**	**.14891**	**.08149**	**-.00034**
Stddev	.00093	.00379	.5359	.00043	.00109	.00886	.00142
%RSD	30.917	82.848	7.5666	747.20	.73370	10.873	423.59
#1	.00350	-.00025	7.3964	.00037	.15015	.09015	.00084
#2	.00194	-.00730	7.3879	-.00005	.14850	.08188	.00007
#3	.00360	-.00619	6.4639	-.00049	.14808	.07245	-.00192
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00646**	**.02911**	**.00154**
Stddev	.00029	.00285	.00015
%RSD	4.4759	9.7847	9.7325
#1	.00650	.03085	.00137
#2	.00673	.03066	.00162
#3	.00616	.02582	.00164
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9463.4**	**57379.**	**2658.5**
Stddev	36.0	78.	24.1
%RSD	.38066	.13637	.90477
#1	9469.5	57431.	2631.4
#2	9424.7	57289.	2677.4
#3	9496.0	57416.	2666.6

Approved: July 01, 2016

Sample Name: L1606140005 Acquired: 6/30/2016 15:48:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00079	.06724	-.00440	.03130	.01082	-.00003	58.752	.00036
Stddev	.00129	.00594	.00182	.00087	.00052	.00002	.431	.00018
%RSD	163.54	8.8413	41.352	2.7793	4.7775	84.589	.73372	50.368
#1	-.00059	.06320	-.00649	.03156	.01141	-.00004	58.739	.00052
#2	.00197	.07407	-.00337	.03200	.01056	-.00000	58.328	.00038
#3	.00099	.06446	-.00332	.03032	.01048	-.00004	59.190	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00280	.00113	.94752	1.8602	-.00157	13.382	.02354
Stddev	.00026	.00051	.00036	.02916	.1452	.00068	.094	.00433
%RSD	141.39	18.320	31.579	3.0776	7.8069	43.113	.69897	18.397
#1	.00034	.00221	.00112	.91889	1.8021	-.00168	13.360	.02352
#2	.00033	.00301	.00149	.94650	2.0255	-.00218	13.301	.02787
#3	-.00012	.00316	.00078	.97718	1.7530	-.00084	13.484	.01921
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	16.537	-.00035	.02480	.00133	.00227	.00282	3.4736
Stddev	.00036	.184	.00075	.00247	.00310	.00275	.00164	.2334
%RSD	669.96	1.1114	215.70	9.9487	233.59	120.92	58.246	6.7201
#1	.00046	16.632	-.00060	.02214	.00415	.00374	.00427	3.6134
#2	-.00011	16.325	-.00094	.02701	-.00199	-.00090	.00104	3.6034
#3	-.00019	16.654	.00050	.02526	.00182	.00397	.00316	3.2042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606140005 Acquired: 6/30/2016 15:48:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**.15339**	**.00083**	**-.00343**	**.00066**	**.00222**	**.00086**
Stddev	.00069	.00028	.00115	.00180	.00100	.00030	.00028
%RSD	3194.2	.18432	137.48	52.572	150.94	13.665	32.419
#1	.00018	.15339	.00022	-.00491	.00175	.00223	.00097
#2	.00062	.15311	.00216	-.00394	.00045	.00251	.00107
#3	-.00074	.15368	.00012	-.00142	-.00022	.00191	.00054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9511.2**	**57867.**	**2667.0**
Stddev	32.7	143.	24.6
%RSD	.34366	.24750	.92087
#1	9492.3	57716.	2648.6
#2	9492.3	57885.	2694.9
#3	9548.9	58001.	2657.5

Approved: July 01, 2016

Sample Name: L1606140006 Acquired: 6/30/2016 15:52:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574448-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00172**	**.27444**	**-.00132**	**.00563**	**.02326**	**-.00006**	**41.161**	**.00046**
Stddev	.00200	.00452	.00102	.00216	.00178	.00005	.095	.00005
%RSD	116.12	1.6476	77.270	38.393	7.6330	82.177	.23040	10.245
#1	-.00141	.27610	-.00029	.00380	.02460	-.00002	41.250	.00050
#2	-.00385	.27789	-.00233	.00508	.02125	-.00004	41.061	.00041
#3	.00011	.26932	-.00133	.00802	.02393	-.00011	41.171	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00050**	**.00308**	**.00341**	**.39315**	**1.2081**	**.00013**	**14.442**	**.09392**
Stddev	.00010	.00044	.00109	.01840	.1358	.00122	.061	.00201
%RSD	20.764	14.306	32.066	4.6803	11.237	964.48	.42182	2.1445
#1	.00057	.00270	.00429	.38744	1.3170	.00152	14.415	.09584
#2	.00056	.00357	.00219	.37828	1.2514	-.00073	14.511	.09410
#3	.00038	.00299	.00374	.41373	1.0560	-.00041	14.399	.09182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00047**	**51.840**	**.00079**	**.02251**	**.00461**	**.01268**	**-.00197**	**3.7102**
Stddev	.00045	.199	.00061	.00210	.00185	.00246	.00292	.3415
%RSD	94.985	.38465	76.845	9.3432	40.170	19.411	148.59	9.2053
#1	.00039	52.046	.00146	.02466	.00623	.01362	.00029	3.9116
#2	.00095	51.648	.00064	.02242	.00500	.01454	-.00093	3.9032
#3	.00007	51.827	.00027	.02046	.00259	.00989	-.00526	3.3159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606140006 Acquired: 6/30/2016 15:52:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v989) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574448-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.15402	.01400	-.00156	.00059	.00354	.00030
Stddev	.00078	.00043	.00510	.00204	.00089	.00043	.00048
%RSD	402.26	.27702	36.471	130.41	150.38	12.245	158.00
#1	.00069	.15428	.01540	-.00253	.00085	.00348	-.00025
#2	.00060	.15425	.00834	-.00293	-.00040	.00399	.00064
#3	-.00071	.15353	.01825	.00078	.00133	.00313	.00052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9498.6	57375.	2639.1
Stddev	31.2	53.	16.6
%RSD	.32838	.09190	.63024
#1	9487.5	57333.	2619.9
#2	9474.5	57434.	2649.3
#3	9533.8	57357.	2648.1

Approved: July 01, 2016

Sample Name: L1606140007S Acquired: 6/30/2016 16:01:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574448-09

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18866**	**5.0184**	**.18666**	**.91442**	**.48512**	**.02369**	**44.403**	**.02378**
Stddev	.00148	.0137	.00163	.00580	.00110	.00015	.055	.00004
%RSD	.78686	.27352	.87111	.63474	.22624	.62869	.12482	.16408
#1	.18950	5.0294	.18525	.90825	.48393	.02364	44.456	.02377
#2	.18694	5.0030	.18631	.91524	.48608	.02358	44.346	.02383
#3	.18953	5.0227	.18844	.91977	.48536	.02386	44.407	.02376
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09597**	**.24513**	**.23641**	**2.2957**	**25.369**	**.48290**	**18.691**	**.32040**
Stddev	.00069	.00040	.00167	.0356	.129	.00186	.108	.00519
%RSD	.71789	.16278	.70458	1.5510	.50875	.38586	.57758	1.6186
#1	.09567	.24519	.23688	2.2595	25.488	.48417	18.573	.32024
#2	.09547	.24550	.23456	2.3307	25.232	.48076	18.714	.31530
#3	.09675	.24471	.23779	2.2970	25.386	.48377	18.785	.32566
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48536**	**74.314**	**.23351**	**4.6379**	**.23838**	**.57392**	**.18108**	**6.1060**
Stddev	.00144	.106	.00055	.0161	.00065	.00104	.00277	.0063
%RSD	.29765	.14299	.23349	.34696	.27073	.18099	1.5283	.10297
#1	.48631	74.400	.23406	4.6504	.23811	.57443	.18408	6.1118
#2	.48370	74.195	.23297	4.6198	.23911	.57273	.17863	6.1069
#3	.48608	74.348	.23350	4.6436	.23790	.57461	.18054	6.0993
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606140007S Acquired: 6/30/2016 16:01:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574448-09

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48284**	**.62685**	**.48603**	**.23408**	**.48868**	**.47103**	**.00136**
Stddev	.00108	.00215	.01644	.00058	.00101	.00266	.00049
%RSD	.22442	.34304	3.3821	.24928	.20686	.56474	36.076
#1	.48295	.62496	.49931	.23371	.48795	.46827	.00127
#2	.48171	.62640	.46764	.23377	.48825	.47125	.00188
#3	.48387	.62919	.49114	.23475	.48983	.47357	.00092
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9327.7**	**56205.**	**2612.4**
Stddev	16.1	43.	13.1
%RSD	.17271	.07738	.50052
#1	9315.2	56239.	2602.0
#2	9345.9	56156.	2627.0
#3	9321.9	56219.	2608.1

Approved: July 01, 2016

Sample Name: L1606140008SD Acquired: 6/30/2016 16:05:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574448-10

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.18810	4.9300	.18713	.91248	.48307	.02361	43.592	.02384
Stddev	.00120	.0140	.00095	.00339	.00032	.00008	.038	.00011
%RSD	.63726	.28423	.50919	.37105	.06693	.33698	.08708	.44708
#1	.18673	4.9385	.18822	.91406	.48314	.02359	43.578	.02372
#2	.18895	4.9138	.18671	.90860	.48271	.02354	43.635	.02393
#3	.18862	4.9377	.18646	.91479	.48335	.02370	43.562	.02386
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09647	.24359	.23654	2.2388	25.406	.48411	18.687	.32347
Stddev	.00047	.00158	.00136	.0679	.047	.00652	.047	.00238
%RSD	.48882	.64777	.57391	3.0340	.18491	1.3469	.25366	.73503
#1	.09681	.24438	.23783	2.2853	25.362	.48874	18.636	.32306
#2	.09593	.24462	.23665	2.2703	25.456	.48694	18.730	.32602
#3	.09666	.24177	.23512	2.1608	25.400	.47666	18.695	.32132
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48898	73.348	.23574	4.6681	.24046	.56838	.18043	5.9164
Stddev	.00106	.130	.00255	.0141	.00169	.00585	.00189	.0080
%RSD	.21769	.17724	1.0821	.30193	.70369	1.0296	1.0493	.13455
#1	.49011	73.426	.23621	4.6823	.24109	.56467	.18025	5.9235
#2	.48800	73.420	.23802	4.6541	.24174	.57513	.17864	5.9179
#3	.48883	73.198	.23299	4.6677	.23854	.56536	.18241	5.9078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606140008SD Acquired: 6/30/2016 16:05:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574448-10

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48690**	**.62508**	**.48342**	**.23951**	**.49002**	**.46642**	**.00091**
Stddev	.00184	.00179	.00801	.00041	.00150	.00308	.00017
%RSD	.37838	.28587	1.6561	.17299	.30573	.66129	19.179
#1	.48711	.62321	.47537	.23920	.49161	.46493	.00078
#2	.48496	.62677	.49139	.23935	.48980	.46436	.00110
#3	.48862	.62525	.48351	.23998	.48864	.46996	.00084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9346.6**	**56558.**	**2644.0**
Stddev	12.9	266.	15.6
%RSD	.13768	.47105	.59028
#1	9333.4	56260.	2629.0
#2	9359.2	56774.	2642.7
#3	9347.1	56638.	2660.2

Approved: July 01, 2016

Sample Name: L1606140009 Acquired: 6/30/2016 16:09:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00192**	**3.0624**	**-.00042**	**.02250**	**.04130**	**.00021**	**53.122**	**.00041**
Stddev	.00195	.0247	.00218	.00143	.00128	.00001	.229	.00031
%RSD	101.77	.80534	521.86	6.3732	3.1067	5.2598	.43080	76.136
#1	-.00356	3.0552	-.00105	.02229	.04069	.00022	52.938	.00044
#2	.00024	3.0421	-.00222	.02118	.04044	.00020	53.378	.00008
#3	-.00244	3.0898	.00201	.02402	.04278	.00021	53.050	.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00302**	**.00746**	**.00623**	**6.2600**	**2.1833**	**.00072**	**11.000**	**.11215**
Stddev	.00025	.00078	.00107	.0730	.0356	.00083	.115	.00174
%RSD	8.4310	10.394	17.217	1.1667	1.6299	114.03	1.0437	1.5543
#1	.00318	.00834	.00544	6.2288	2.2219	-.00019	11.024	.11023
#2	.00316	.00715	.00745	6.3434	2.1760	.00093	10.876	.11364
#3	.00273	.00689	.00580	6.2077	2.1519	.00143	11.102	.11258
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00046**	**123.71**	**.00413**	**.25190**	**.00521**	**.00255**	**.00255**	**7.0118**
Stddev	.00024	.62	.00127	.02433	.00093	.00313	.00367	.3930
%RSD	52.190	.49851	30.630	9.6600	17.868	122.55	143.81	5.6043
#1	.00042	123.26	.00559	.26971	.00583	.00603	.00510	7.2415
#2	.00025	124.42	.00357	.26183	.00567	-.00004	.00421	7.2359
#3	.00073	123.47	.00325	.22418	.00414	.00167	-.00165	6.5581
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606140009 Acquired: 6/30/2016 16:09:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00043**	**.20365**	**.10716**	**-.00154**	**.00817**	**.03423**	**.00283**
Stddev	.00011	.00139	.00857	.00155	.00011	.00260	.00041
%RSD	26.106	.68378	7.9977	100.10	1.3509	7.5860	14.579
#1	.00056	.20207	.11024	-.00010	.00820	.03556	.00313
#2	.00036	.20417	.09748	-.00136	.00805	.03590	.00236
#3	.00036	.20470	.11377	-.00318	.00827	.03124	.00299
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9411.8**	**56682.**	**2656.6**
Stddev	8.6	112.	20.3
%RSD	.09172	.19707	.76559
#1	9406.2	56601.	2667.1
#2	9407.5	56635.	2633.1
#3	9421.8	56809.	2669.4

Approved: July 01, 2016

Sample Name: L1606140010 Acquired: 6/30/2016 16:12:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.43593	-.00139	.01923	.02204	-.00003	65.468	.00024
Stddev	.00074	.00361	.00155	.00176	.00081	.00010	.469	.00002
%RSD	383.62	.82820	111.69	9.1542	3.6774	363.24	.71640	10.431
#1	.00039	.43641	-.00033	.02092	.02172	.00008	65.128	.00024
#2	-.00063	.43211	-.00067	.01741	.02296	-.00010	66.003	.00021
#3	.00082	.43928	-.00317	.01935	.02144	-.00006	65.272	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00070	.00720	.00413	.74332	4.8677	.00458	13.555	.01855
Stddev	.00035	.00063	.00083	.03170	.0933	.00493	.024	.00145
%RSD	50.703	8.7027	20.005	4.2647	1.9174	107.67	.17926	7.8347
#1	.00033	.00648	.00356	.72348	4.8141	.00731	13.540	.02021
#2	.00073	.00764	.00507	.72660	4.8137	-.00111	13.583	.01792
#3	.00103	.00747	.00374	.77988	4.9755	.00755	13.543	.01752
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	123.18	.00269	.05336	.00665	.01278	.00374	4.7040
Stddev	.00044	.64	.00097	.00897	.00097	.00099	.00581	.3521
%RSD	1651.2	.51682	36.235	16.803	14.615	7.7709	155.52	7.4860
#1	-.00029	122.91	.00181	.05304	.00762	.01217	.00716	4.9283
#2	-.00016	123.91	.00374	.06248	.00665	.01224	.00703	4.8855
#3	.00053	122.73	.00252	.04456	.00568	.01392	-.00297	4.2981
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606140010 Acquired: 6/30/2016 16:12:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	.40052	.01863	-.00093	.00134	.00491	.00060
Stddev	.00026	.00280	.00504	.00185	.00029	.00054	.00028
%RSD	49.404	.69820	27.031	198.61	21.606	10.973	46.239
#1	.00057	.39839	.01283	.00097	.00150	.00519	.00028
#2	.00077	.40369	.02189	-.00104	.00101	.00525	.00076
#3	.00025	.39949	.02117	-.00273	.00151	.00429	.00077
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9374.2	56624.	2643.8
Stddev	35.7	29.	7.0
%RSD	.38051	.05206	.26426
#1	9333.9	56608.	2645.8
#2	9386.7	56658.	2636.1
#3	9401.9	56606.	2649.6

Approved: July 01, 2016

Sample Name: L1606141201 Acquired: 6/30/2016 16:16:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00219**	**.13192**	**-.00095**	**.09989**	**.02380**	**.00003**	**62.500**
Stddev	.00007	.01254	.00368	.00205	.00122	.00003	1.025
%RSD	3.3953	9.5062	387.07	2.0494	5.1091	112.20	1.6406
#1	-.00215	.12518	-.00080	.09757	.02519	-.00000	63.681
#2	-.00215	.12418	.00265	.10145	.02326	.00003	61.984
#3	-.00228	.14639	-.00471	.10065	.02294	.00006	61.835
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00025**	**.00083**	**.00246**	**.00040**	**.16001**	**.70151**	**.01534**
Stddev	.00029	.00039	.00068	.00035	.00726	.19844	.00113
%RSD	114.84	47.511	27.753	88.616	4.5352	28.288	7.3505
#1	-.00005	.00094	.00252	.00039	.15240	.50779	.01408
#2	.00027	.00039	.00312	.00075	.16685	.90435	.01624
#3	.00053	.00115	.00175	.00005	.16079	.69239	.01572
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**18.586**	**.00774**	**.00037**	F **272.84**	**-.00086**	**.02763**	**-.00064**
Stddev	.148	.00065	.00031	2.41	.00061	.00111	.00307
%RSD	.79897	8.3644	83.509	.88361	71.301	4.0103	482.43
#1	18.644	.00845	.00043	275.55	-.00091	.02655	.00284
#2	18.697	.00759	.00064	272.03	-.00022	.02757	-.00296
#3	18.417	.00718	.00004	270.93	-.00144	.02876	-.00179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 01, 2016

Sample Name: L1606141201 Acquired: 6/30/2016 16:16:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00246	.00691	5.1725	.00007	.24993	.00106	-.00322
Stddev	.00299	.00070	.3498	.00044	.00167	.00381	.00196
%RSD	121.58	10.198	6.7627	616.62	.66656	358.69	61.021
#1	-.00087	.00758	5.3387	-.00003	.25147	-.00166	-.00424
#2	.00490	.00698	5.4082	-.00031	.25017	.00541	-.00095
#3	.00335	.00617	4.7706	.00056	.24816	-.00056	-.00446
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.01026	.00363	.00054
Stddev	.00080	.00048	.00023
%RSD	7.8231	13.240	41.490
#1	.00934	.00388	.00028
#2	.01072	.00393	.00067
#3	.01074	.00308	.00068
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9282.0	55482.	2621.7
Stddev	20.9	92.	32.6
%RSD	.22487	.16650	1.2439
#1	9283.3	55562.	2590.4
#2	9260.6	55504.	2619.2
#3	9302.2	55381.	2655.5

Approved: July 01, 2016

Sample Name: L1606141202 Acquired: 6/30/2016 16:20:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00185	.00460	-.00037	.17389	.07244	-.00003	70.731	.00017
Stddev	.00017	.00192	.00250	.00131	.00136	.00005	.324	.00014
%RSD	9.2275	41.798	670.17	.75356	1.8787	191.46	.45787	83.528
#1	-.00173	.00392	-.00029	.17489	.07207	.00000	70.504	.00022
#2	-.00205	.00677	.00209	.17438	.07395	-.00009	71.102	.00029
#3	-.00177	.00311	-.00291	.17241	.07131	.00000	70.586	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00065	.00037	-.00006	.00787	.37716	.01115	44.826	.00810
Stddev	.00035	.00113	.00073	.03171	.10278	.00524	.158	.00173
%RSD	53.798	305.13	1190.3	402.69	27.250	46.987	.35335	21.324
#1	.00031	-.00094	.00077	-.01536	.46680	.01498	44.882	.00618
#2	.00064	.00098	-.00032	-.00502	.26499	.01330	44.949	.00952
#3	.00101	.00107	-.00063	.04399	.39970	.00518	44.647	.00861
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	93.093	-.00078	.01292	.00127	.00176	.00260	6.6127
Stddev	.00033	.382	.00110	.00802	.00134	.00359	.00177	.3947
%RSD	85.556	.41075	141.03	62.078	105.80	203.37	68.166	5.9687
#1	.00052	92.970	.00039	.01940	.00121	-.00018	.00465	6.8367
#2	.00001	93.522	-.00180	.01541	-.00004	.00590	.00166	6.8445
#3	.00062	92.787	-.00093	.00395	.00264	-.00043	.00150	6.1570
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606141202 Acquired: 6/30/2016 16:20:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**.52286**	**-.00633**	**-.00297**	**.00652**	**.00295**	**.00025**
Stddev	.00034	.00132	.00446	.00381	.00065	.00028	.00009
%RSD	91.424	.25191	70.388	128.22	10.009	9.5778	36.128
#1	-.00070	.52352	-.01119	-.00006	.00640	.00314	.00034
#2	-.00037	.52372	-.00537	-.00728	.00594	.00310	.00023
#3	-.00003	.52134	-.00243	-.00157	.00723	.00263	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9345.2**	**56322.**	**2623.5**
Stddev	38.5	121.	21.0
%RSD	.41188	.21562	.79918
#1	9326.3	56182.	2621.8
#2	9319.7	56392.	2603.4
#3	9389.5	56392.	2645.2

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 16:24:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38677**	**9.6528**	**.38007**	**.46687**	**.94914**	**.04838**	**9.4879**	**.04775**
Stddev	.00357	.0225	.00134	.00569	.00210	.00009	.0254	.00002
%RSD	.92263	.23268	.35340	1.2195	.22144	.19625	.26801	.05088
#1	.38438	9.6771	.37867	.46672	.95089	.04830	9.4763	.04777
#2	.39087	9.6328	.38020	.46125	.94681	.04848	9.5171	.04773
#3	.38505	9.6486	.38135	.47263	.94971	.04836	9.4704	.04776
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19458**	**.48794**	**.48413**	**3.7744**	**49.128**	**.95639**	**9.8363**	**.47858**
Stddev	.00077	.00141	.00179	.0327	.195	.00278	.0724	.00208
%RSD	.39481	.28993	.36992	.86628	.39775	.29092	.73574	.43562
#1	.19469	.48860	.48456	3.7383	49.299	.95460	9.8667	.47617
#2	.19528	.48632	.48566	3.7828	48.915	.95959	9.7537	.47985
#3	.19376	.48891	.48216	3.8021	49.171	.95497	9.8886	.47971
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.96636**	**46.946**	**.47716**	**9.4273**	**.47711**	**1.1338**	**.38114**	**4.7253**
Stddev	.00200	.079	.00096	.0272	.00114	.0029	.00637	.0119
%RSD	.20709	.16736	.20141	.28806	.23806	.25533	1.6720	.25172
#1	.96602	47.028	.47652	9.4145	.47663	1.1362	.38594	4.7174
#2	.96852	46.871	.47827	9.4585	.47629	1.1346	.38356	4.7390
#3	.96456	46.941	.47670	9.4090	.47841	1.1306	.37391	4.7195
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 16:24:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.97454	.94753	.95107	.48737	.97884	.94761	.97767
Stddev	.00376	.00319	.00855	.00267	.00304	.00258	.00325
%RSD	.38560	.33699	.89915	.54682	.31096	.27211	.33293
#1	.97466	.95117	.94928	.49044	.97559	.94690	.98099
#2	.97824	.94519	.94356	.48567	.97929	.95047	.97753
#3	.97073	.94624	.96038	.48600	.98162	.94546	.97449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9645.4	57898.	2650.8
Stddev	20.0	157.	7.6
%RSD	.20733	.27069	.28799
#1	9667.9	57729.	2642.3
#2	9629.6	58039.	2653.2
#3	9638.7	57925.	2657.0

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 16:28:14 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00172**	**-.01186**	**-.00257**	**.00600**	**-.00045**	**-.00002**	**-.04322**	**.00012**
Stddev	.00183	.00298	.00229	.00271	.00039	.00003	.03107	.00028
%RSD	106.40	25.132	88.947	45.198	86.496	147.10	71.883	229.67
#1	.00022	-.01521	-.00520	.00816	-.00034	-.00006	-.01901	.00042
#2	-.00343	-.00952	-.00139	.00688	-.00087	.00001	-.03241	.00006
#3	-.00196	-.01084	-.00112	.00296	-.00012	-.00001	-.07825	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**-.00041**	**-.00045**	**-.03912**	**.05379**	**-.00254**	**.08150**	**-.00106**
Stddev	.00047	.00108	.00031	.02119	.02577	.00099	.05859	.00065
%RSD	480.05	266.71	69.661	54.179	47.906	39.025	71.894	61.574
#1	.00062	-.00068	-.00054	-.05934	.04456	-.00317	.02951	-.00180
#2	-.00030	-.00133	-.00010	-.04094	.08291	-.00306	.14499	-.00054
#3	-.00002	.00079	-.00071	-.01707	.03391	-.00140	.07000	-.00085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**.04392**	**.00040**	**.00084**	**-.00167**	**.00408**	**.00196**	**.00325**
Stddev	.00025	.00508	.00057	.00155	.00156	.00368	.00279	.00116
%RSD	263.67	11.571	142.48	185.68	93.630	90.332	142.38	35.692
#1	.00031	.04969	-.00025	.00256	-.00210	.00797	.00256	.00459
#2	.00016	.04011	.00080	-.00045	.00006	.00065	-.00108	.00249
#3	-.00018	.04196	.00064	.00040	-.00297	.00362	.00441	.00268
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 16:28:14 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**-.00010**	**.00331**	**-.00180**	**.00038**	**.00028**	**.00100**
Stddev	.00035	.00034	.00208	.00037	.00095	.00005	.00015
%RSD	237.72	328.08	62.774	20.633	248.74	18.464	14.690
#1	-.00029	-.00050	.00555	-.00143	-.00071	.00025	.00104
#2	-.00041	.00013	.00292	-.00179	.00082	.00025	.00084
#3	.00025	.00006	.00145	-.00217	.00103	.00034	.00113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9752.2**	**59111.**	**2679.2**
Stddev	15.6	76.	8.0
%RSD	.15986	.12838	.29905
#1	9745.5	59186.	2682.2
#2	9741.0	59112.	2685.2
#3	9770.0	59034.	2670.1

Approved: July 01, 2016

Sample Name: L1606141301 Acquired: 6/30/2016 16:32:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00076	.07124	.02734	.36396	.20333	-.00002	74.824	.00006
Stddev	.00134	.00883	.00323	.00274	.00274	.00009	.654	.00040
%RSD	177.83	12.396	11.812	.75306	1.3495	384.76	.87352	643.16
#1	.00012	.07772	.03106	.36119	.20147	.00006	74.617	-.00016
#2	-.00230	.07483	.02574	.36667	.20204	-.00002	74.299	.00052
#3	-.00008	.06118	.02523	.36403	.20648	-.00011	75.556	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00138	.00030	-.00130	13.367	1.6715	.00951	51.834	.51519
Stddev	.00027	.00126	.00407	.173	.0378	.00284	.421	.00667
%RSD	19.493	415.65	312.48	1.2961	2.2606	29.828	.81182	1.2955
#1	.00136	.00164	-.00005	13.348	1.6317	.01212	52.143	.51408
#2	.00166	-.00085	.00199	13.203	1.7069	.00991	51.355	.50914
#3	.00112	.00012	-.00585	13.548	1.6758	.00649	52.004	.52235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00310	260.78	.00244	.31260	-.00017	.00141	.00223	7.7775
Stddev	.00026	2.39	.00136	.02772	.00053	.00210	.00381	.5086
%RSD	8.4965	.91737	55.682	8.8680	316.39	149.49	170.46	6.5389
#1	.00326	260.56	.00119	.32587	-.00060	-.00092	.00611	8.0786
#2	.00325	258.50	.00388	.33120	.00043	.00198	-.00150	8.0635
#3	.00280	263.27	.00225	.28074	-.00033	.00317	.00209	7.1903
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606141301 Acquired: 6/30/2016 16:32:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00079**	**.49770**	**.00309**	**-.00156**	**.00091**	**.00424**	**.00141**
Stddev	.00095	.00350	.01377	.00208	.00027	.00035	.00019
%RSD	120.67	.70267	445.20	133.08	30.170	8.2547	13.545
#1	-.00187	.49801	-.00597	.00066	.00100	.00453	.00119
#2	-.00009	.49405	-.00369	-.00189	.00060	.00433	.00152
#3	-.00040	.50103	.01894	-.00345	.00113	.00385	.00153
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9201.2**	**55415.**	**2635.7**
Stddev	40.2	104.	22.5
%RSD	.43699	.18744	.85209
#1	9167.3	55535.	2630.8
#2	9190.7	55366.	2660.2
#3	9245.7	55345.	2616.1

Approved: July 01, 2016

Sample Name: L1606141601 Acquired: 6/30/2016 16:36:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.00726	-.00145	.49237	.00876	-.00002	191.66	.00016
Stddev	.00233	.00320	.00152	.00361	.00018	.00009	1.22	.00014
%RSD	4247.4	44.081	104.65	.73262	2.0583	465.22	.63827	90.321
#1	-.00261	.00868	-.00169	.49488	.00867	-.00012	191.71	.00002
#2	.00107	.00359	.00017	.48824	.00897	.00001	190.41	.00030
#3	.00171	.00949	-.00284	.49400	.00865	.00005	192.86	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00058	.00443	.00071	-.00959	2.1721	.04360	93.286	-.00113
Stddev	.00017	.00054	.00201	.04123	.1082	.00282	.523	.00126
%RSD	29.129	12.161	284.68	429.85	4.9826	6.4577	.56014	110.84
#1	.00040	.00498	.00140	-.04342	2.1594	.04394	93.330	.00029
#2	.00073	.00441	.00227	-.02168	2.0708	.04622	92.743	-.00160
#3	.00062	.00390	-.00156	.03633	2.2861	.04062	93.785	-.00210
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00377	236.02	-.00058	.00576	-.00135	.00456	.02662	8.4969
Stddev	.00035	1.51	.00091	.00129	.00333	.00316	.00413	.5483
%RSD	9.2028	.63776	157.66	22.461	246.61	69.385	15.522	6.4526
#1	.00412	236.36	-.00156	.00647	-.00215	.00557	.02232	8.8261
#2	.00378	234.38	.00025	.00654	-.00421	.00101	.02697	8.8006
#3	.00342	237.33	-.00043	.00426	.00231	.00709	.03056	7.8640
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606141601 Acquired: 6/30/2016 16:36:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00061**	**3.2193**	**-.01896**	**-.00325**	**.02076**	**.00839**	**.00039**
Stddev	.00048	.0198	.00256	.00265	.00089	.00080	.00036
%RSD	79.219	.61605	13.487	81.593	4.2946	9.5831	91.012
#1	-.00072	3.2202	-.01825	-.00439	.02172	.00877	.00009
#2	-.00008	3.1991	-.01683	-.00514	.01996	.00893	.00029
#3	-.00103	3.2387	-.02179	-.00022	.02059	.00747	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9121.7**	**54675.**	**2588.7**
Stddev	44.3	117.	18.2
%RSD	.48577	.21456	.70428
#1	9083.8	54587.	2574.9
#2	9110.7	54629.	2609.3
#3	9170.4	54808.	2581.8

Approved: July 01, 2016

Sample Name: L1606141602 Acquired: 6/30/2016 16:39:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00079	.04290	.00210	.18996	.01706	.00011	133.24	.00029
Stddev	.00145	.00571	.00129	.00422	.00156	.00003	.25	.00003
%RSD	183.65	13.300	61.535	2.2228	9.1720	23.945	.18524	12.061
#1	-.00030	.03905	.00332	.18567	.01687	.00009	133.30	.00033
#2	.00035	.04021	.00224	.19009	.01559	.00014	133.44	.00026
#3	-.00242	.04946	.00074	.19411	.01871	.00011	132.96	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	.00637	.00092	-.01504	1.9739	.03725	87.399	.00140
Stddev	.00030	.00075	.00121	.01681	.0154	.00089	.321	.00347
%RSD	71.248	11.778	131.00	111.78	.77778	2.3798	.36691	248.89
#1	.00063	.00567	.00076	-.03295	1.9721	.03766	87.064	.00521
#2	.00008	.00716	.00220	.00040	1.9595	.03786	87.428	.00057
#3	.00054	.00627	-.00020	-.01257	1.9901	.03623	87.704	-.00159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	205.43	-.00065	.00118	.00125	.00495	.01190	10.111
Stddev	.00036	.41	.00028	.00194	.00239	.00295	.00291	.722
%RSD	52.157	.20137	43.323	165.34	190.24	59.644	24.406	7.1376
#1	.00030	205.45	-.00042	.00185	-.00148	.00791	.01025	10.540
#2	.00075	205.84	-.00056	.00270	.00230	.00490	.01526	10.514
#3	.00101	205.01	-.00096	-.00102	.00294	.00202	.01020	9.2775
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606141602 Acquired: 6/30/2016 16:39:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00020**	**1.8638**	**-.01183**	**-.00209**	**.01413**	**.00250**	**.00081**
Stddev	.00041	.0046	.00427	.00335	.00050	.00029	.00026
%RSD	208.99	.24890	36.060	160.05	3.5486	11.421	32.622
#1	-.00025	1.8620	-.01327	-.00010	.01355	.00262	.00083
#2	.00056	1.8690	-.00703	-.00022	.01435	.00271	.00054
#3	.00029	1.8603	-.01520	-.00597	.01448	.00218	.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9214.7**	**55336.**	**2632.3**
Stddev	43.5	30.	9.7
%RSD	.47224	.05406	.36682
#1	9177.0	55310.	2627.6
#2	9204.8	55368.	2626.0
#3	9262.3	55330.	2643.4

Approved: July 01, 2016

Sample Name: L1606142101 Acquired: 6/30/2016 16:43:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	.01664	.01373	.16137	.22037	.00006	83.928	.00039
Stddev	.00115	.00914	.00251	.00124	.00105	.00002	.233	.00004
%RSD	493.46	54.936	18.243	.77000	.47749	31.629	.27721	10.356
#1	-.00125	.00608	.01107	.16153	.22136	.00005	84.163	.00036
#2	.00101	.02184	.01605	.16005	.22050	.00005	83.698	.00037
#3	-.00045	.02200	.01408	.16252	.21926	.00008	83.924	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00098	.00136	.00118	1.7633	.27515	.00739	46.529	.74033
Stddev	.00026	.00054	.00133	.0077	.05593	.00242	.227	.00121
%RSD	26.219	40.132	113.13	.43611	20.328	32.679	.48778	.16406
#1	.00097	.00187	.00231	1.7710	.26279	.01012	46.524	.73903
#2	.00124	.00078	.00152	1.7632	.22643	.00552	46.304	.74053
#3	.00073	.00142	-.00029	1.7556	.33623	.00654	46.758	.74144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	191.41	-.00044	.01137	.05887	.00565	-.00019	7.2489
Stddev	.00046	.54	.00058	.00992	.00444	.00102	.00276	.1426
%RSD	165.71	.28300	134.19	87.255	7.5412	18.086	1422.2	1.9674
#1	.00064	191.99	.00018	.00098	.05522	.00551	.00175	7.3305
#2	.00042	190.92	-.00098	.01239	.06381	.00674	.00101	7.3320
#3	-.00024	191.33	-.00050	.02074	.05758	.00471	-.00335	7.0843
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606142101 Acquired: 6/30/2016 16:43:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.57473**	**-.00980**	**-.00414**	**.00480**	**.00572**	**.00137**
Stddev	.00063	.00158	.00424	.00226	.00031	.00006	.00027
%RSD	449.21	.27490	43.282	54.670	6.5044	1.1356	19.922
#1	-.00071	.57497	-.01372	-.00154	.00513	.00564	.00169
#2	.00053	.57304	-.01037	-.00524	.00451	.00577	.00125
#3	-.00024	.57617	-.00530	-.00565	.00476	.00574	.00118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9300.3**	**56148.**	**2682.8**
Stddev	18.0	156.	8.8
%RSD	.19314	.27844	.32758
#1	9310.2	55969.	2676.4
#2	9279.6	56256.	2679.3
#3	9311.2	56220.	2692.9

Approved: July 01, 2016

Sample Name: L1606142101PS Acquired: 6/30/2016 16:47:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574802-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19178**	**4.8125**	**.20707**	**1.0743**	**.67527**	**.02403**	**81.863**	**.02383**
Stddev	.00164	.0285	.00109	.0024	.00201	.00016	.169	.00008
%RSD	.85366	.59221	.52821	.21915	.29797	.67417	.20680	.32546
#1	.19364	4.8042	.20820	1.0722	.67455	.02400	81.960	.02392
#2	.19057	4.7891	.20700	1.0737	.67755	.02389	81.961	.02378
#3	.19112	4.8443	.20602	1.0768	.67372	.02421	81.668	.02380
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09512**	**.24097**	**.23259**	**3.5012**	**25.091**	**.49820**	**47.311**	**.91171**
Stddev	.00172	.00113	.00408	.0258	.041	.00094	.034	.01047
%RSD	1.8084	.46778	1.7523	.73730	.16185	.18785	.07276	1.1489
#1	.09615	.24217	.23551	3.5104	25.121	.49728	47.272	.91325
#2	.09609	.24079	.23431	3.4721	25.106	.49915	47.338	.90055
#3	.09314	.23994	.22793	3.5212	25.044	.49818	47.322	.92133
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48785**	**199.21**	**.23016**	**4.7632**	**.28950**	**.56273**	**.18625**	**8.9142**
Stddev	.00735	.35	.00400	.0522	.00315	.00902	.00258	.0900
%RSD	1.5064	.17436	1.7393	1.0964	1.0892	1.6028	1.3845	1.0091
#1	.49219	199.40	.23237	4.7814	.28963	.56983	.18913	8.9684
#2	.49201	199.42	.23257	4.8039	.29259	.56578	.18416	8.9638
#3	.47937	198.81	.22554	4.7043	.28629	.55258	.18546	8.8103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606142101PS Acquired: 6/30/2016 16:47:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574802-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.47878	.98280	.48177	.23332	.49777	.47051	.00157
Stddev	.00648	.00312	.00867	.00261	.00274	.00529	.00060
%RSD	1.3527	.31773	1.8000	1.1172	.55066	1.1239	38.097
#1	.48377	.98305	.47225	.23632	.50020	.47580	.00149
#2	.48111	.98578	.48922	.23198	.49832	.47050	.00220
#3	.47146	.97955	.48385	.23165	.49480	.46523	.00101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9287.7	56036.	2656.2
Stddev	39.0	138.	12.5
%RSD	.41984	.24649	.47094
#1	9260.6	56118.	2646.3
#2	9270.1	56114.	2652.2
#3	9332.4	55877.	2670.3

Approved: July 01, 2016

Sample Name: L1606142101DL Acquired: 6/30/2016 16:51:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574802-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00092**	**-.01156**	**-.00221**	**.03452**	**.04090**	**.00002**	**16.303**	**.00028**
Stddev	.00033	.00214	.00165	.00245	.00075	.00005	.041	.00002
%RSD	35.838	18.557	74.669	7.1086	1.8316	290.39	.24985	6.7403
#1	.00074	-.01171	-.00075	.03629	.04004	.00002	16.271	.00027
#2	.00130	-.01362	-.00401	.03555	.04135	.00007	16.348	.00030
#3	.00072	-.00934	-.00188	.03172	.04131	-.00003	16.289	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00038**	**-.00022**	**.00044**	**.32664**	**.13133**	**.00034**	**9.1016**	**.14646**
Stddev	.00022	.00078	.00070	.03049	.11585	.00132	.0625	.00583
%RSD	58.791	347.19	157.82	9.3334	88.213	382.07	.68711	3.9792
#1	.00013	-.00040	.00041	.31962	.16884	.00162	9.0479	.14159
#2	.00046	-.00090	.00115	.30028	.00137	.00042	9.0867	.15292
#3	.00055	.00063	-.00024	.36003	.22376	-.00101	9.1703	.14488
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**37.176**	**-.00089**	**.00206**	**.01136**	**-.00128**	**.00406**	**1.3491**
Stddev	.00026	.162	.00037	.00485	.00242	.00082	.00482	.1062
%RSD	186.36	.43540	41.505	235.83	21.345	64.391	118.77	7.8693
#1	-.00011	36.995	-.00048	-.00353	.01179	-.00195	.00036	1.4073
#2	-.00040	37.307	-.00120	.00517	.01354	-.00036	.00231	1.4134
#3	.00011	37.227	-.00099	.00453	.00875	-.00153	.00951	1.2266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606142101DL Acquired: 6/30/2016 16:51:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574802-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00034**	**.11051**	**.00333**	**-.00231**	**.00104**	**.00206**	**.00078**
Stddev	.00078	.00052	.00727	.00096	.00065	.00028	.00048
%RSD	227.08	.47278	217.94	41.400	61.901	13.816	60.933
#1	.00031	.11013	-.00429	-.00124	.00145	.00204	.00102
#2	-.00013	.11029	.01018	-.00309	.00138	.00235	.00110
#3	-.00120	.11110	.00412	-.00260	.00030	.00178	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10040.**	**60876.**	**2752.8**
Stddev	22.	98.	21.7
%RSD	.22300	.16078	.78970
#1	10065.	60767.	2766.7
#2	10025.	60903.	2727.7
#3	10029.	60957.	2763.9

Approved: July 01, 2016

Sample Name: L1606142101DL Acquired: 6/30/2016 16:55:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574802-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00012**	**-.01278**	**-.00314**	**.00860**	**.00810**	**-.00002**	**3.3570**	**.00002**
Stddev	.00060	.00600	.00107	.00339	.00129	.00008	.0518	.00020
%RSD	499.44	47.004	34.032	39.389	15.979	372.90	1.5438	1281.4
#1	.00054	-.01951	-.00330	.00500	.00924	-.00008	3.3224	.00014
#2	-.00062	-.01085	-.00412	.00908	.00837	-.00006	3.4166	-.00022
#3	-.00028	-.00797	-.00200	.01172	.00670	.00007	3.3321	.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00021**	**.00046**	**-.00005**	**.04654**	**.00533**	**-.00363**	**2.0080**	**.03106**
Stddev	.00004	.00051	.00014	.03762	.07499	.00358	.0984	.00462
%RSD	19.699	112.22	295.88	80.835	1407.4	98.668	4.9032	14.870
#1	.00016	-.00011	-.00007	.03092	.05687	-.00750	1.9620	.02604
#2	.00022	.00089	-.00017	.08945	.03981	-.00043	2.1210	.03513
#3	.00024	.00059	.00010	.01924	-.08070	-.00296	1.9410	.03202
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00021**	**7.7053**	**-.00113**	**.00074**	**.00004**	**.00072**	**.00206**	**.27891**
Stddev	.00032	.0621	.00014	.00299	.00209	.00221	.00250	.01916
%RSD	153.27	.80663	12.741	403.10	5593.1	305.29	121.67	6.8711
#1	-.00036	7.6413	-.00123	.00225	-.00063	.00271	.00042	.28930
#2	-.00043	7.7654	-.00119	.00269	.00238	-.00166	.00081	.29063
#3	.00016	7.7093	-.00096	-.00271	-.00164	.00112	.00494	.25679
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606142101DL Acquired: 6/30/2016 16:55:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574802-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00089**	**.02314**	**.00270**	**-.00173**	**.00040**	**.00082**	**.00065**
Stddev	.00130	.00056	.00154	.00092	.00116	.00007	.00056
%RSD	146.41	2.4023	57.267	52.864	290.24	8.0739	86.396
#1	-.00239	.02354	.00159	-.00183	-.00060	.00081	.00071
#2	-.00004	.02338	.00204	-.00260	.00168	.00089	.00118
#3	-.00024	.02251	.00446	-.00077	.00012	.00076	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10073.**	**60587.**	**2744.5**
Stddev	15.	336.	11.9
%RSD	.15199	.55487	.43216
#1	10057.	60763.	2751.9
#2	10076.	60798.	2730.8
#3	10087.	60199.	2750.8

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 16:59:17 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38341**	**9.5291**	**.37694**	**.46993**	**.94064**	**.04767**	**9.3796**	**.04706**
Stddev	.00339	.0137	.00736	.00136	.00339	.00016	.0428	.00109
%RSD	.88491	.14413	1.9515	.28933	.36065	.32654	.45620	2.3223
#1	.38037	9.5320	.37925	.46836	.94453	.04777	9.4085	.04778
#2	.38707	9.5411	.38286	.47067	.93911	.04775	9.3304	.04759
#3	.38279	9.5141	.36871	.47076	.93829	.04749	9.3998	.04580
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19041**	**.47904**	**.47355**	**3.7390**	**48.504**	**.94392**	**9.8246**	**.47415**
Stddev	.00561	.00227	.01101	.0154	.282	.00204	.0549	.00176
%RSD	2.9450	.47393	2.3242	.41049	.58204	.21595	.55867	.37051
#1	.19341	.48163	.47978	3.7519	48.750	.94594	9.8237	.47219
#2	.19388	.47811	.48003	3.7432	48.196	.94395	9.8799	.47559
#3	.18394	.47739	.46084	3.7220	48.566	.94186	9.7702	.47466
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.94769**	**46.774**	**.46731**	**9.3033**	**.47558**	**1.1226**	**.38196**	**4.6778**
Stddev	.02706	.113	.01425	.1959	.00811	.0259	.00078	.0780
%RSD	2.8558	.24202	3.0490	2.1059	1.7063	2.3090	.20414	1.6683
#1	.96294	46.903	.47554	9.4101	.48042	1.1346	.38205	4.7080
#2	.96370	46.690	.47553	9.4226	.48011	1.1403	.38114	4.7363
#3	.91645	46.730	.45086	9.0772	.46621	1.0928	.38269	4.5892
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 16:59:17 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.95040**	**.94259**	**.94176**	**.48154**	**.96476**	**.92914**	**.96355**
Stddev	.03134	.00297	.00766	.00460	.00259	.02503	.00159
%RSD	3.2980	.31533	.81353	.95457	.26868	2.6938	.16525
#1	.96627	.94584	.93649	.48254	.96730	.94432	.96358
#2	.97063	.94195	.95055	.48555	.96212	.94284	.96195
#3	.91429	.94000	.93823	.47653	.96485	.90025	.96513
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9725.5**	**58467.**	**2692.1**
Stddev	21.4	126.	9.3
%RSD	.22047	.21629	.34552
#1	9709.5	58322.	2682.8
#2	9717.1	58527.	2701.4
#3	9749.8	58552.	2692.3

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 17:02:56 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00103**	**-.01276**	**-.00413**	**.00320**	**-.00036**	**.00005**	**-.02203**	**.00000**
Stddev	.00045	.00754	.00305	.00033	.00139	.00002	.02799	.00024
%RSD	43.829	59.100	73.853	10.417	387.51	51.756	127.07	4936.0
#1	-.00081	-.01884	-.00108	.00345	-.00149	.00008	.01029	-.00025
#2	-.00073	-.00432	-.00719	.00333	.00119	.00004	-.03864	.00022
#3	-.00155	-.01512	-.00413	.00282	-.00077	.00003	-.03773	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00020**	**.00038**	**-.00133**	**.00143**	**.08444**	**-.00182**	**-.00119**	**-.00147**
Stddev	.00003	.00052	.00044	.01868	.19546	.00275	.05915	.00215
%RSD	14.418	137.49	33.259	1304.1	231.50	151.23	4953.2	146.46
#1	.00023	.00021	-.00129	.02286	-.00836	-.00211	.06417	-.00038
#2	.00019	.00096	-.00090	-.01141	-.04735	.00107	-.05101	-.00394
#3	.00017	-.00004	-.00178	-.00716	.30901	-.00441	-.01675	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00017**	**.02374**	**-.00012**	**-.00135**	**-.00155**	**.00076**	**.01114**	**.00414**
Stddev	.00007	.03792	.00039	.00155	.00135	.00393	.00339	.00097
%RSD	40.140	159.75	338.22	115.10	87.479	514.96	30.455	23.330
#1	.00011	.03042	-.00056	-.00285	-.00069	-.00183	.01323	.00311
#2	.00025	-.01708	.00004	-.00143	-.00310	-.00117	.00722	.00429
#3	.00016	.05787	.00018	.00024	-.00085	.00529	.01296	.00503
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 17:02:56 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.00007**	**.00682**	**-.00271**	**.00025**	**.00032**	**-.00001**
Stddev	.00090	.00006	.00608	.00158	.00070	.00006	.00034
%RSD	3389.0	81.306	89.109	58.447	281.94	17.422	2621.0
#1	-.00024	.00010	.01370	-.00320	-.00056	.00029	-.00041
#2	-.00080	.00011	.00216	-.00094	.00072	.00030	.00017
#3	.00096	.00000	.00461	-.00399	.00060	.00039	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9911.2**	**60010.**	**2720.9**
Stddev	5.1	106.	21.9
%RSD	.05154	.17678	.80435
#1	9909.3	59887.	2735.0
#2	9907.3	60071.	2695.7
#3	9917.0	60071.	2732.0

Approved: July 01, 2016

Sample Name: L1606147656 Acquired: 6/30/2016 17:06:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00216	.02574	.02735	-.01074	.00272	-.00007	5.5892	.00047
Stddev	.00098	.00463	.00278	.00176	.00038	.00002	.0183	.00003
%RSD	45.179	17.983	10.160	16.336	14.031	32.851	.32778	6.2699
#1	-.00241	.02171	.02818	-.01074	.00259	-.00009	5.5761	.00045
#2	-.00300	.02473	.02962	-.01250	.00315	-.00007	5.6102	.00045
#3	-.00109	.03080	.02425	-.00899	.00243	-.00005	5.5814	.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	.00167	.03264	.08383	2.5454	-.00546	2.7564	.00461
Stddev	.00014	.00074	.00270	.03292	.0598	.00308	.0088	.00176
%RSD	49.431	44.399	8.2597	39.271	2.3483	56.422	.31914	38.133
#1	.00043	.00119	.03452	.09305	2.6010	-.00825	2.7543	.00652
#2	.00015	.00252	.03384	.04728	2.4822	-.00215	2.7489	.00428
#3	.00029	.00129	.02955	.11116	2.5529	-.00600	2.7661	.00305
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	2.3388	.00167	.38470	.00303	.00480	.02496	.67178
Stddev	.00057	.0419	.00062	.03245	.00118	.00482	.00333	.04754
%RSD	178.58	1.7917	37.082	8.4364	39.009	100.32	13.329	7.0773
#1	.00060	2.3197	.00230	.40548	.00437	.00209	.02132	.69910
#2	.00069	2.3098	.00106	.40132	.00257	.01037	.02784	.69936
#3	-.00033	2.3868	.00165	.34730	.00215	.00195	.02572	.61688
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606147656 Acquired: 6/30/2016 17:06:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00965	.00953	.01291	-.03002	.00077	1.6496	.00137
Stddev	.00032	.00033	.00213	.00181	.00061	.1500	.00036
%RSD	3.2893	3.4535	16.525	6.0343	78.618	9.0949	26.547
#1	.00996	.00925	.01537	-.03013	.00056	1.7440	.00124
#2	.00966	.00989	.01154	-.03177	.00030	1.7282	.00178
#3	.00932	.00945	.01183	-.02815	.00146	1.4766	.00109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9413.4	58682.	2785.1
Stddev	48.2	263.	8.2
%RSD	.51237	.44761	.29506
#1	9379.7	58558.	2778.9
#2	9391.9	58504.	2794.4
#3	9468.7	58984.	2782.0

Approved: July 01, 2016

Sample Name: L1606147642 Acquired: 6/30/2016 17:10:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00137	.10525	.02711	.00767	.00851	-.00005	3.8338	.00036
Stddev	.00130	.00685	.00178	.00291	.00046	.00006	.0660	.00016
%RSD	95.012	6.5109	6.5555	37.904	5.4546	120.28	1.7226	44.824
#1	.00005	.11304	.02718	.00499	.00898	.00000	3.8949	.00054
#2	-.00251	.10258	.02885	.01076	.00850	-.00012	3.8429	.00026
#3	-.00165	.10014	.02529	.00727	.00806	-.00004	3.7637	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00297	.00201	.03313	.19077	3.3368	.00236	2.4022	.01414
Stddev	.00048	.00012	.00201	.03205	.1289	.00317	.1334	.00089
%RSD	16.161	5.8146	6.0739	16.798	3.8621	134.13	5.5514	6.2899
#1	.00324	.00193	.03359	.16761	3.2148	-.00090	2.4051	.01418
#2	.00326	.00197	.03486	.17735	3.4716	.00543	2.2675	.01323
#3	.00242	.00215	.03092	.22734	3.3241	.00256	2.5342	.01501
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00039	4.2710	.00157	.75361	.01051	.00498	.02828	.58190
Stddev	.00037	.0192	.00064	.06613	.00359	.00089	.00283	.04099
%RSD	96.607	.44933	40.958	8.7755	34.190	17.788	10.006	7.0443
#1	.00029	4.2493	.00190	.79597	.00784	.00396	.02551	.60150
#2	.00080	4.2777	.00197	.78745	.01460	.00560	.02818	.60942
#3	.00007	4.2859	.00083	.67741	.00909	.00537	.03116	.53479
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606147642 Acquired: 6/30/2016 17:10:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01179	.01210	.01451	-.03013	.00109	1.3936	.00078
Stddev	.00113	.00010	.00117	.00525	.00034	.1241	.00032
%RSD	9.6095	.85623	8.0561	17.436	30.959	8.9033	41.134
#1	.01222	.01200	.01404	-.03189	.00077	1.4640	.00058
#2	.01265	.01221	.01365	-.03427	.00145	1.4664	.00061
#3	.01051	.01208	.01584	-.02422	.00107	1.2503	.00115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9475.0	57518.	2703.1
Stddev	50.7	237.	24.4
%RSD	.53559	.41200	.90109
#1	9465.3	57598.	2675.0
#2	9429.8	57704.	2716.0
#3	9529.9	57251.	2718.4

Approved: July 01, 2016

Sample Name: L1606147642PS Acquired: 6/30/2016 17:14:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574668-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.17933**	**4.3132**	**.23260**	**.84659**	**.48051**	**.02491**	**7.9187**	**.02308**
Stddev	.00246	.0817	.00630	.01309	.00268	.00050	.0270	.00021
%RSD	1.3703	1.8930	2.7076	1.5457	.55695	1.9951	.34035	.92831
#1	.17686	4.2389	.23813	.83376	.48230	.02442	7.9497	.02307
#2	.17936	4.3000	.23391	.84609	.48179	.02490	7.9046	.02330
#3	.18177	4.4006	.22574	.85992	.47743	.02542	7.9016	.02287
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10131**	**.25085**	**.26804**	**2.0322**	**26.136**	**.47663**	**6.8371**	**.24733**
Stddev	.00195	.00335	.00645	.0075	.221	.00216	.0329	.00301
%RSD	1.9240	1.3343	2.4081	.37106	.84441	.45350	.48074	1.2184
#1	.10265	.24701	.27203	2.0239	26.324	.47507	6.8332	.24385
#2	.10222	.25315	.27150	2.0339	26.192	.47910	6.8717	.24912
#3	.09908	.25239	.26059	2.0387	25.893	.47572	6.8063	.24902
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51011**	**26.207**	**.24062**	**5.3789**	**.24088**	**.54256**	**.25755**	**2.8405**
Stddev	.01050	.067	.00601	.0881	.00464	.01805	.00922	.0325
%RSD	2.0579	.25503	2.4974	1.6372	1.9281	3.3269	3.5789	1.1430
#1	.51632	26.267	.24289	5.4363	.24607	.55596	.26714	2.8643
#2	.51602	26.218	.24516	5.4229	.23943	.54968	.24875	2.8536
#3	.49799	26.135	.23380	5.2775	.23712	.52203	.25675	2.8035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606147642PS Acquired: 6/30/2016 17:14:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574668-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48976**	**.49275**	**.48165**	**.19836**	**.50439**	**1.8118**	**.00132**
Stddev	.01007	.00245	.00444	.00480	.00982	.0347	.00032
%RSD	2.0551	.49817	.92253	2.4197	1.9473	1.9126	24.246
#1	.49590	.49175	.48434	.19622	.49638	1.8351	.00100
#2	.49523	.49555	.48409	.20385	.50143	1.8285	.00132
#3	.47814	.49096	.47652	.19499	.51535	1.7720	.00165
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9091.5**	**56567.**	**2779.3**
Stddev	61.1	812.	19.2
%RSD	.67239	1.4356	.69021
#1	9040.8	57339.	2757.9
#2	9074.3	56643.	2785.2
#3	9159.3	55720.	2794.9

Approved: July 01, 2016

Sample Name: L1606147642SDL Acquired: 6/30/2016 17:18:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574668-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.01148	.00271	.00558	.00118	.00001	.73661	.00007
Stddev	.00077	.00528	.00411	.00218	.00084	.00002	.05335	.00019
%RSD	377.93	46.000	151.46	39.013	70.796	123.70	7.2426	280.78
#1	-.00068	.00676	.00728	.00326	.00214	.00002	.73199	-.00015
#2	.00051	.01719	.00154	.00590	.00079	-.00001	.79212	.00015
#3	.00078	.01050	-.00068	.00759	.00061	.00003	.68572	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.00052	.00565	.01544	.78444	-.00167	.44279	.00464
Stddev	.00011	.00087	.00191	.01281	.07875	.00493	.07736	.00197
%RSD	21.021	166.17	33.830	82.953	10.039	294.93	17.470	42.467
#1	.00046	.00092	.00782	.02814	.85901	-.00714	.47573	.00480
#2	.00064	.00111	.00492	.01567	.79223	-.00031	.49822	.00653
#3	.00045	-.00047	.00421	.00252	.70209	.00243	.35442	.00260
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	.86188	-.00027	.14710	.00269	.00045	.01213	.12134
Stddev	.00024	.03869	.00032	.01843	.00182	.00359	.00727	.01444
%RSD	2058.1	4.4895	118.49	12.529	67.795	796.70	59.943	11.902
#1	-.00027	.87206	-.00002	.16164	.00206	-.00306	.00999	.13217
#2	.00005	.89447	-.00063	.15330	.00126	.00413	.02024	.12690
#3	.00019	.81912	-.00017	.12637	.00474	.00029	.00618	.10495
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606147642SDL Acquired: 6/30/2016 17:18:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574668-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00165**	**.00260**	**.00727**	**-.00541**	**.00016**	**.28436**	**.00035**
Stddev	.00097	.00025	.00245	.00407	.00115	.03494	.00051
%RSD	59.024	9.4669	33.668	75.252	737.95	12.288	145.31
#1	.00154	.00244	.00804	-.00876	.00144	.30686	.00070
#2	.00267	.00289	.00453	-.00658	-.00018	.30213	-.00024
#3	.00074	.00249	.00925	-.00088	-.00079	.24411	.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9967.9**	**60793.**	**2719.5**
Stddev	34.3	234.	9.7
%RSD	.34433	.38443	.35586
#1	9947.7	60597.	2709.5
#2	9948.5	60730.	2720.3
#3	10008.	61052.	2728.8

Approved: July 01, 2016

Sample Name: L1606147642SDL Acquired: 6/30/2016 17:22:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574668-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00211**	**-.00581**	**-.00253**	**-.00015**	**.00046**	**.00002**	**.12491**	**.00027**
Stddev	.00173	.00943	.00250	.00356	.00032	.00007	.03067	.00010
%RSD	81.840	162.22	98.898	2328.8	70.208	295.72	24.558	36.889
#1	-.00142	-.01664	-.00101	-.00177	.00040	-.00006	.11410	.00020
#2	-.00408	.00061	-.00116	-.00261	.00018	.00008	.10110	.00038
#3	-.00083	-.00141	-.00541	.00392	.00081	.00005	.15952	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00058**	**.00036**	**.00030**	**.00936**	**.09022**	**-.00184**	**.12697**	**.00228**
Stddev	.00012	.00054	.00100	.02332	.10659	.00196	.09330	.00026
%RSD	20.976	149.81	338.71	249.23	118.15	106.50	73.488	11.418
#1	.00072	.00093	.00087	.01728	.05050	.00011	.01948	.00231
#2	.00053	.00031	.00089	-.01689	.21097	-.00382	.17435	.00253
#3	.00050	-.00015	-.00086	.02768	.00919	-.00182	.18707	.00201
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.17716**	**-.00091**	**.02663**	**-.00067**	**.00146**	**.00210**	**.02360**
Stddev	.00012	.02294	.00073	.00799	.00406	.00203	.00421	.00232
%RSD	167.48	12.948	80.581	30.028	603.68	139.26	200.47	9.8313
#1	-.00018	.15084	-.00146	.02395	-.00532	.00255	.00534	.02603
#2	-.00009	.19291	-.00119	.03561	.00212	-.00088	-.00266	.02335
#3	.00005	.18774	-.00008	.02031	.00119	.00270	.00362	.02141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606147642SDL Acquired: 6/30/2016 17:22:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574668-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00045**	**.00087**	**.00346**	**-.00239**	**.00014**	**.05998**	**.00011**
Stddev	.00010	.00015	.00343	.00385	.00070	.00485	.00019
%RSD	23.404	17.562	99.081	160.77	487.65	8.0834	176.41
#1	-.00046	.00104	.00123	.00204	.00067	.06284	.00002
#2	-.00034	.00085	.00174	-.00484	-.00065	.06272	-.00002
#3	-.00055	.00073	.00741	-.00439	.00041	.05438	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9878.1**	**59985.**	**2672.7**
Stddev	9.2	103.	20.5
%RSD	.09268	.17234	.76670
#1	9867.5	59939.	2685.9
#2	9884.3	59913.	2649.1
#3	9882.4	60104.	2683.1

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 17:26:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.37379	9.3240	.36598	.45191	.91323	.04659	9.0822	.04593
Stddev	.00214	.0078	.00624	.00375	.00228	.00009	.0471	.00083
%RSD	.57333	.08393	1.7045	.83068	.24927	.18882	.51826	1.8045
#1	.37449	9.3283	.36799	.45544	.91512	.04659	9.1296	.04662
#2	.37550	9.3149	.37096	.45233	.91387	.04668	9.0354	.04615
#3	.37139	9.3286	.35898	.44796	.91071	.04650	9.0816	.04501
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.18589	.47067	.46089	3.6404	46.958	.91542	9.4510	.45853
Stddev	.00485	.00268	.01133	.0312	.129	.00343	.0821	.00215
%RSD	2.6072	.56930	2.4576	.85607	.27368	.37482	.86824	.46825
#1	.18840	.46936	.46817	3.6513	46.827	.91905	9.5294	.45972
#2	.18895	.47375	.46667	3.6646	46.965	.91223	9.3657	.45606
#3	.18030	.46890	.44784	3.6052	47.083	.91497	9.4579	.45983
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.92130	45.291	.45492	9.0079	.46008	1.0889	.36443	4.5353
Stddev	.02405	.139	.01181	.1631	.00373	.0226	.00177	.0701
%RSD	2.6100	.30690	2.5965	1.8110	.81149	2.0776	.48681	1.5455
#1	.93626	45.424	.46055	9.0974	.46366	1.1025	.36639	4.5711
#2	.93407	45.301	.46287	9.1066	.46036	1.1014	.36397	4.5803
#3	.89356	45.147	.44135	8.8196	.45621	1.0628	.36294	4.4546
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 17:26:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.92754	.91355	.92342	.47305	.94276	.90281	.94350
Stddev	.02944	.00470	.00076	.00426	.00231	.02079	.00458
%RSD	3.1741	.51428	.08181	.90144	.24543	2.3023	.48496
#1	.94287	.91895	.92384	.46930	.94013	.91494	.93984
#2	.94616	.91124	.92255	.47769	.94365	.91469	.94203
#3	.89360	.91045	.92387	.47215	.94449	.87881	.94863
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9707.1	58371.	2677.1
Stddev	12.0	129.	12.0
%RSD	.12330	.22054	.44642
#1	9709.1	58405.	2685.7
#2	9718.0	58228.	2682.3
#3	9694.3	58479.	2663.5

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 17:29:45 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	-.01169	-.00349	.00153	.00021	.00004	-.01275	.00010
Stddev	.00206	.00211	.00436	.00317	.00100	.00003	.01847	.00019
%RSD	1726.2	18.022	125.03	207.01	473.06	77.252	144.88	177.99
#1	-.00156	-.01400	-.00158	.00516	.00112	.00006	-.01341	-.00001
#2	-.00051	-.01118	-.00847	-.00066	.00038	.00005	.00605	.00032
#3	.00243	-.00988	-.00041	.00008	-.00086	.00000	-.03087	.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	.00021	-.00073	-.01325	.01884	-.00128	.00833	-.00008
Stddev	.00022	.00141	.00112	.04267	.04750	.00618	.03383	.00068
%RSD	47.652	688.35	152.96	322.00	252.14	484.10	406.10	903.26
#1	.00050	.00133	-.00185	-.06036	.07084	-.00830	-.02320	.00070
#2	.00023	.00067	-.00073	.02280	.00793	.00117	.04406	-.00033
#3	.00067	-.00138	.00039	-.00219	-.02226	.00330	.00413	-.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.06276	-.00119	-.00057	.00052	-.00008	.00118	.00425
Stddev	.00022	.04430	.00026	.00433	.00376	.00360	.00210	.00250
%RSD	123.05	70.578	22.097	764.40	719.68	4309.2	178.35	58.857
#1	.00003	.10932	-.00089	.00009	.00445	.00166	.00215	.00713
#2	.00043	.05782	-.00138	-.00518	-.00305	.00231	.00261	.00303
#3	.00007	.02114	-.00129	.00340	.00017	-.00422	-.00123	.00260
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 17:29:45 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	-.00001	.00630	-.00137	.00044	.00027	.00047
Stddev	.00043	.00001	.00321	.00130	.00021	.00005	.00015
%RSD	144.75	84.841	50.858	95.504	46.764	16.981	31.543
#1	-.00015	-.00002	.00633	-.00199	.00067	.00028	.00030
#2	.00071	-.00001	.00950	-.00224	.00030	.00022	.00057
#3	.00033	-.00000	.00309	.00013	.00034	.00032	.00055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9814.0	59681.	2718.0
Stddev	14.3	119.	8.4
%RSD	.14536	.20019	.31088
#1	9807.5	59669.	2710.5
#2	9830.4	59806.	2716.5
#3	9804.2	59568.	2727.1

Approved: July 01, 2016

Sample Name: PBW 76 Acquired: 6/30/2016 17:33:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	-.00556	-.00198	.00276	-.00150	-.00004	-.04662	.00032
Stddev	.00058	.00154	.00297	.00145	.00039	.00004	.01019	.00019
%RSD	494.86	27.753	149.82	52.604	25.961	117.03	21.858	61.694
#1	.00010	-.00709	-.00516	.00428	-.00185	-.00004	-.05810	.00011
#2	.00071	-.00400	.00072	.00261	-.00157	-.00007	-.03862	.00049
#3	-.00045	-.00559	-.00150	.00139	-.00108	.00001	-.04315	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	.00059	-.00043	.00498	.04378	-.00296	.02568	.00122
Stddev	.00008	.00018	.00053	.02233	.05656	.00044	.05071	.00145
%RSD	33.114	30.117	123.71	447.99	129.18	14.876	197.43	118.82
#1	.00021	.00040	-.00101	.01812	-.01095	-.00281	.04171	.00171
#2	.00017	.00061	-.00027	-.02080	.04028	-.00345	-.03110	-.00041
#3	.00031	.00075	.00001	.01763	.10201	-.00261	.06645	.00236
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.03034	-.00015	.00067	-.00333	.00066	.00203	.01484
Stddev	.00013	.03201	.00097	.00487	.00277	.00595	.00485	.00329
%RSD	173.99	105.50	634.03	725.06	83.182	903.01	238.83	22.193
#1	.00001	-.00525	-.00038	.00293	-.00064	-.00322	-.00331	.01812
#2	.00023	.05678	-.00098	-.00492	-.00318	.00751	.00324	.01486
#3	-.00001	.03951	.00091	.00400	-.00617	-.00231	.00616	.01154
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: PBW 76 Acquired: 6/30/2016 17:33:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00021**	**.00021**	**.00986**	**-.00247**	**.00028**	**.00084**	**.00051**
Stddev	.00021	.00006	.00267	.00259	.00039	.00018	.00017
%RSD	102.07	26.298	27.025	104.75	137.49	21.840	33.533
#1	.00003	.00017	.01287	.00052	.00018	.00105	.00041
#2	-.00029	.00028	.00780	-.00397	.00072	.00073	.00042
#3	-.00036	.00019	.00891	-.00397	-.00004	.00074	.00071
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9609.8**	**59048.**	**2676.8**
Stddev	13.6	134.	3.9
%RSD	.14131	.22684	.14473
#1	9623.5	59097.	2681.0
#2	9596.3	58896.	2673.4
#3	9609.6	59150.	2676.0

Approved: July 01, 2016

Sample Name: LCSW 76 Acquired: 6/30/2016 17:37:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18938**	**4.7480**	**.18377**	**.91162**	**.47052**	**.02344**	**4.7536**	**.02352**
Stddev	.00136	.0050	.00560	.00178	.00387	.00012	.0521	.00096
%RSD	.71940	.10622	3.0498	.19535	.82148	.49560	1.0968	4.0716
#1	.19093	4.7538	.18224	.90998	.47299	.02356	4.8044	.02439
#2	.18841	4.7454	.18998	.91135	.46606	.02333	4.7002	.02367
#3	.18878	4.7448	.17908	.91351	.47249	.02344	4.7560	.02250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09637**	**.24250**	**.23781**	**1.8588**	**24.124**	**.48091**	**4.8490**	**.23448**
Stddev	.00293	.00194	.00662	.0220	.141	.00254	.0807	.00228
%RSD	3.0449	.79999	2.7817	1.1854	.58629	.52762	1.6646	.97361
#1	.09783	.24121	.23926	1.8334	23.994	.48018	4.8931	.23626
#2	.09829	.24474	.24357	1.8694	24.103	.47882	4.7559	.23191
#3	.09299	.24157	.23058	1.8735	24.275	.48373	4.8981	.23529
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47733**	**23.414**	**.23502**	**4.5158**	**.23659**	**.55305**	**.17713**	**2.2423**
Stddev	.01346	.127	.00845	.1066	.00792	.01680	.00960	.0456
%RSD	2.8208	.54217	3.5969	2.3597	3.3470	3.0368	5.4182	2.0312
#1	.48406	23.482	.23967	4.5768	.23958	.56435	.18484	2.2645
#2	.48611	23.268	.24012	4.5777	.24258	.56105	.18016	2.2725
#3	.46183	23.493	.22526	4.3927	.22761	.53375	.16638	2.1899
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: LCSW 76 Acquired: 6/30/2016 17:37:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47749**	**.47838**	**.47351**	**.24281**	**.48685**	**.46333**	**.00108**
Stddev	.01636	.00222	.00511	.00296	.00165	.01517	.00024
%RSD	3.4271	.46473	1.0795	1.2181	.33885	3.2737	22.258
#1	.48519	.47899	.47174	.24518	.48536	.47483	.00080
#2	.48858	.47592	.46952	.24376	.48656	.46902	.00123
#3	.45869	.48024	.47928	.23950	.48862	.44614	.00121
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9513.3**	**57619.**	**2650.5**
Stddev	11.7	129.	9.3
%RSD	.12262	.22378	.34948
#1	9510.5	57526.	2641.6
#2	9503.3	57565.	2660.1
#3	9526.1	57767.	2649.9

Approved: July 01, 2016

Sample Name: L1606145201 Acquired: 6/30/2016 17:41:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00090	.05699	.00253	.05053	.54161	.00002	33.238	.00037
Stddev	.00052	.01069	.00056	.00032	.00142	.00007	.108	.00007
%RSD	58.078	18.754	22.005	.63387	.26133	276.32	.32504	18.990
#1	-.00035	.05219	.00252	.05054	.54135	.00010	33.137	.00029
#2	-.00138	.04955	.00309	.05020	.54035	-.00002	33.225	.00039
#3	-.00096	.06924	.00198	.05084	.54314	-.00001	33.352	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00749	.00633	.00098	2.4547	65.629	.13804	24.719	.68796
Stddev	.00026	.00102	.00095	.0307	.151	.00276	.126	.00624
%RSD	3.4225	16.162	97.017	1.2510	.22999	1.9980	.50817	.90713
#1	.00771	.00607	.00025	2.4635	65.802	.13519	24.710	.68264
#2	.00756	.00746	.00205	2.4206	65.558	.14069	24.598	.68640
#3	.00721	.00546	.00063	2.4801	65.526	.13823	24.848	.69483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	173.49	.00356	.00270	.00289	.00493	-.00740	8.8349
Stddev	.00016	.35	.00019	.00185	.00116	.00164	.00178	.4730
%RSD	67.120	.20205	5.3314	68.572	39.928	33.202	24.021	5.3535
#1	.00033	173.83	.00343	.00374	.00164	.00368	-.00679	9.0700
#2	.00032	173.13	.00378	.00380	.00391	.00678	-.00940	9.1442
#3	.00005	173.51	.00347	.00056	.00314	.00432	-.00601	8.2904
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606145201 Acquired: 6/30/2016 17:41:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.87304**	**.00301**	**-.00233**	**.00030**	**.01611**	**.00070**
Stddev	.00105	.00131	.00261	.00142	.00058	.00103	.00051
%RSD	1039.8	.14963	86.556	60.994	194.18	6.4152	72.887
#1	-.00100	.87454	.00016	-.00349	-.00036	.01667	.00124
#2	.00105	.87229	.00527	-.00074	.00073	.01674	.00066
#3	-.00034	.87227	.00361	-.00275	.00052	.01491	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9301.5**	**55838.**	**2620.1**
Stddev	57.8	131.	9.1
%RSD	.62148	.23421	.34860
#1	9314.0	55961.	2612.4
#2	9238.5	55701.	2630.2
#3	9352.1	55852.	2617.8

Approved: July 01, 2016

Sample Name: L1606145301 Acquired: 6/30/2016 17:45:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00118	.00561	.00368	.01236	2.1197	.00021	62.883	.00044
Stddev	.00062	.00444	.00294	.00256	.0070	.00004	.285	.00006
%RSD	52.566	79.046	79.854	20.693	.32935	20.964	.45337	13.366
#1	-.00186	.00754	.00458	.01519	2.1260	.00018	63.180	.00037
#2	-.00104	.00054	.00040	.01021	2.1209	.00018	62.859	.00048
#3	-.00065	.00876	.00607	.01168	2.1122	.00026	62.611	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04182	.01142	.00073	5.7506	2.7421	.03915	45.929	1.5726
Stddev	.00313	.00097	.00162	.0301	.0766	.00209	.251	.0059
%RSD	7.4890	8.4602	221.04	.52384	2.7936	5.3361	.54738	.37377
#1	.04375	.01032	.00169	5.7635	2.6622	.04155	45.999	1.5765
#2	.04351	.01213	.00165	5.7162	2.8149	.03777	46.138	1.5754
#3	.03821	.01180	-.00114	5.7721	2.7493	.03812	45.650	1.5658
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	176.27	.02835	.02582	-.00081	.00122	.00056	23.977
Stddev	.00011	.68	.00220	.00910	.00285	.00577	.00708	1.386
%RSD	87.179	.38555	7.7676	35.235	351.90	472.89	1268.3	5.7816
#1	.00025	176.89	.03066	.03580	-.00235	.00446	-.00348	24.793
#2	.00003	176.39	.02812	.01799	-.00255	.00464	.00873	24.763
#3	.00011	175.54	.02628	.02367	.00247	-.00544	-.00358	22.377
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606145301 Acquired: 6/30/2016 17:45:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	1.2897	-.00168	-.00535	.00112	.08235	.00011
Stddev	.00027	.0046	.00732	.00324	.00022	.00649	.00031
%RSD	119.32	.36066	434.54	60.467	19.865	7.8782	273.65
#1	.00054	1.2938	.00260	-.00591	.00136	.08611	-.00023
#2	.00000	1.2908	.00248	-.00827	.00107	.08609	.00019
#3	.00015	1.2846	-.01013	-.00187	.00092	.07486	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9174.5	55276.	2573.2
Stddev	14.7	164.	8.2
%RSD	.15972	.29606	.31954
#1	9172.1	55090.	2564.0
#2	9161.1	55400.	2575.8
#3	9190.1	55336.	2579.9

Approved: July 01, 2016

Sample Name: L1606145303 Acquired: 6/30/2016 17:49:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -.00548	.03491	.00778	.01717	.72545	.00010	22.398
Stddev	.00110	.00407	.00296	.00257	.00628	.00014	.155
%RSD	20.151	11.643	37.982	14.970	.86569	145.84	.69323
#1	-.00658	.03204	.00609	.01619	.72586	.00014	22.396
#2	-.00437	.03957	.01119	.01523	.73152	-.00006	22.555
#3	-.00548	.03314	.00606	.02008	.71898	.00021	22.244
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	9.0000						
Low Limit	-.00400						

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.00129	.00039	.00126	39.510	3.9877	.03266
Stddev	.00004	.00024	.00099	.00706	.306	.1105	.00114
%RSD	20.390	18.671	257.60	559.26	.77377	2.7702	3.5002
#1	.00023	.00148	.00137	.00579	39.558	3.9460	.03395
#2	.00022	.00102	-.00062	.00487	39.789	4.1130	.03177
#3	.00015	.00136	.00040	-.00688	39.183	3.9042	.03225
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	16.042	.45838	-.00021	75.857	.00187	.16486	.00183
Stddev	.300	.00614	.00032	.719	.00074	.01544	.00269
%RSD	1.8703	1.3393	151.32	.94803	39.666	9.3680	146.82
#1	16.205	.45448	-.00046	75.779	.00127	.17660	-.00104
#2	16.225	.46546	-.00033	76.612	.00270	.17061	.00429
#3	15.695	.45521	.00015	75.180	.00164	.14736	.00225
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 01, 2016

Sample Name: L1606145303 Acquired: 6/30/2016 17:49:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00373**	**-.00422**	**14.047**	**-.00015**	**.52315**	**.02021**	**-.00310**
Stddev	.00621	.00350	.839	.00039	.00553	.00490	.00080
%RSD	166.37	82.973	5.9737	267.34	1.0572	24.232	25.793
#1	.01089	-.00661	14.542	-.00010	.52114	.01463	-.00311
#2	.00055	-.00020	14.520	.00022	.52940	.02225	-.00389
#3	-.00024	-.00584	13.078	-.00056	.51890	.02376	-.00230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00010**	**.00663**	**-.00123**
Stddev	.00032	.00046	.00021
%RSD	318.68	6.9483	17.240
#1	.00046	.00672	-.00147
#2	.00000	.00703	-.00112
#3	-.00016	.00613	-.00109
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9401.2**	**56714.**	**2605.3**
Stddev	21.2	158.	17.3
%RSD	.22499	.27863	.66210
#1	9377.4	56733.	2604.4
#2	9417.7	56547.	2588.6
#3	9408.6	56861.	2623.0

Approved: July 01, 2016

Sample Name: L1606145501 Acquired: 6/30/2016 17:52:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00282**	**.21736**	**-.00226**	**.01260**	**.01874**	**.00002**	**41.381**	**.00278**
Stddev	.00123	.00598	.00262	.00172	.00217	.00004	.271	.00035
%RSD	43.797	2.7526	116.21	13.644	11.594	202.69	.65600	12.421
#1	-.00141	.22193	-.00525	.01341	.01725	.00002	41.465	.00296
#2	-.00332	.21957	-.00112	.01062	.02123	-.00002	41.600	.00299
#3	-.00372	.21059	-.00039	.01376	.01774	.00006	41.077	.00238
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00051**	**.00080**	**.00867**	**.25453**	**3.1341**	**.00197**	**5.2516**	**.01425**
Stddev	.00015	.00091	.00129	.04532	.0183	.00562	.0550	.00143
%RSD	29.355	114.15	14.822	17.807	.58315	285.84	1.0469	10.043
#1	.00047	.00005	.00846	.30683	3.1298	.00375	5.3151	.01572
#2	.00067	.00053	.01005	.22658	3.1542	.00648	5.2188	.01417
#3	.00038	.00181	.00751	.23019	3.1184	-.00433	5.2210	.01286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00070**	**.82414**	**.00469**	**.08251**	**.00108**	**.00385**	**.00215**	**2.3946**
Stddev	.00031	.03204	.00103	.00847	.00264	.00323	.00202	.1940
%RSD	44.050	3.8880	22.038	10.270	245.10	83.871	93.928	8.1016
#1	.00079	.86099	.00475	.08783	-.00090	.00076	.00110	2.5318
#2	.00095	.80859	.00569	.08696	.00005	.00359	.00087	2.4793
#3	.00035	.80283	.00363	.07274	.00407	.00720	.00447	2.1726
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606145501 Acquired: 6/30/2016 17:52:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00081**	**.08617**	**.00783**	**-.00280**	**.00059**	**.28951**	**.00095**
Stddev	.00026	.00070	.00127	.00278	.00104	.02495	.00062
%RSD	32.042	.81443	16.284	99.307	176.21	8.6168	65.229
#1	-.00109	.08600	.00644	-.00020	.00172	.30460	.00045
#2	-.00058	.08694	.00811	-.00573	.00041	.30322	.00076
#3	-.00076	.08557	.00894	-.00247	-.00035	.26071	.00164
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9512.0**	**57840.**	**2621.0**
Stddev	14.2	196.	16.7
%RSD	.14930	.33963	.63859
#1	9496.5	57971.	2611.9
#2	9515.0	57934.	2610.8
#3	9524.4	57614.	2640.3

Approved: July 01, 2016

Sample Name: L1606145502 Acquired: 6/30/2016 17:56:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00063	.32894	-.00179	.01410	.01795	.00004	36.890	.00054
Stddev	.00128	.00649	.00267	.00168	.00122	.00008	.216	.00007
%RSD	204.19	1.9731	148.58	11.945	6.8135	188.76	.58557	13.418
#1	-.00121	.33396	-.00450	.01482	.01934	.00013	36.883	.00058
#2	.00084	.33124	.00082	.01531	.01702	.00002	37.110	.00059
#3	-.00151	.32161	-.00170	.01218	.01750	-.00002	36.678	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	.00133	.01164	.52857	3.5247	.00291	5.8514	.01428
Stddev	.00024	.00102	.00073	.05343	.1718	.00302	.0401	.00261
%RSD	31.589	76.967	6.2965	10.108	4.8731	103.77	.68598	18.306
#1	.00061	.00139	.01224	.48968	3.6743	-.00021	5.8120	.01451
#2	.00105	.00232	.01185	.58949	3.3371	.00313	5.8501	.01678
#3	.00064	.00028	.01082	.50655	3.5626	.00581	5.8922	.01156
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00143	.95984	.00376	.11198	.00066	.00313	.00477	2.8042
Stddev	.00021	.04744	.00036	.01081	.00235	.00217	.00369	.1915
%RSD	14.747	4.9421	9.6509	9.6511	353.47	69.486	77.451	6.8277
#1	.00153	.93016	.00381	.11811	.00337	.00272	.00068	2.9135
#2	.00119	.93480	.00337	.11832	-.00078	.00119	.00575	2.9160
#3	.00158	1.0145	.00410	.09950	-.00060	.00548	.00787	2.5831
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606145502 Acquired: 6/30/2016 17:56:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00056**	**.08248**	**.01219**	**-.00198**	**.00127**	**.30399**	**.00028**
Stddev	.00070	.00038	.00253	.00118	.00008	.02015	.00032
%RSD	124.93	.45971	20.743	59.883	6.0114	6.6281	111.74
#1	.00019	.08280	.00977	-.00282	.00120	.31595	.00008
#2	-.00120	.08258	.01199	-.00062	.00126	.31530	.00065
#3	-.00067	.08206	.01481	-.00248	.00136	.28073	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9528.4**	**57847.**	**2640.7**
Stddev	4.7	59.	18.9
%RSD	.04884	.10124	.71498
#1	9533.2	57849.	2627.7
#2	9528.2	57905.	2632.0
#3	9523.9	57788.	2662.4

Approved: July 01, 2016

Sample Name: L1606145503S Acquired: 6/30/2016 18:00:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18556**	**5.0410**	**.18044**	**.90274**	**.47925**	**.02317**	**40.391**	**.02327**
Stddev	.00318	.0123	.00740	.00412	.00199	.00011	.190	.00052
%RSD	1.7155	.24374	4.1020	.45644	.41465	.48529	.47082	2.2372
#1	.18493	5.0481	.18723	.90573	.48089	.02328	40.500	.02338
#2	.18273	5.0480	.18156	.89804	.47981	.02318	40.502	.02373
#3	.18901	5.0268	.17255	.90445	.47704	.02306	40.171	.02270
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09419**	**.23876**	**.24153**	**2.2713**	**27.489**	**.47632**	**10.518**	**.24450**
Stddev	.00255	.00039	.00716	.0485	.126	.00472	.163	.00146
%RSD	2.7055	.16246	2.9650	2.1331	.45921	.99195	1.5503	.59901
#1	.09610	.23832	.24603	2.3226	27.383	.47151	10.524	.24281
#2	.09516	.23904	.24529	2.2651	27.629	.47649	10.351	.24542
#3	.09130	.23892	.23327	2.2263	27.456	.48095	10.677	.24527
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47009**	**24.035**	**.23319**	**4.5902**	**.22904**	**.54548**	**.17646**	**5.0963**
Stddev	.01298	.132	.00666	.0938	.00274	.01589	.00381	.1114
%RSD	2.7606	.55032	2.8544	2.0428	1.1970	2.9137	2.1618	2.1865
#1	.47859	23.994	.23621	4.6513	.23088	.56030	.17880	5.1486
#2	.47653	24.184	.23781	4.6370	.23036	.54745	.17853	5.1720
#3	.45515	23.929	.22556	4.4822	.22589	.52869	.17206	4.9684
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606145503S Acquired: 6/30/2016 18:00:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.46796**	**.55066**	**.47408**	**.23529**	**.47797**	**.74398**	**.00127**
Stddev	.01449	.00072	.00517	.00312	.00131	.01911	.00057
%RSD	3.0963	.13147	1.0897	1.3260	.27449	2.5685	44.764
#1	.47807	.55139	.47107	.23297	.47799	.75667	.00066
#2	.47446	.55065	.48005	.23884	.47665	.75327	.00179
#3	.45136	.54995	.47113	.23405	.47927	.72201	.00138
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9414.8**	**56970.**	**2618.1**
Stddev	15.9	144.	22.5
%RSD	.16933	.25235	.85992
#1	9407.9	56815.	2594.2
#2	9433.0	56994.	2621.0
#3	9403.5	57100.	2639.0

Approved: July 01, 2016

Sample Name: L1606145504SD Acquired: 6/30/2016 18:04:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19310**	**5.3714**	**.18751**	**.93355**	**.49745**	**.02400**	**41.601**	**.02405**
Stddev	.00338	.0111	.00271	.00212	.00073	.00017	.072	.00056
%RSD	1.7500	.20670	1.4427	.22755	.14720	.70655	.17267	2.3246
#1	.19560	5.3757	.18995	.93232	.49816	.02398	41.634	.02432
#2	.19445	5.3796	.18796	.93232	.49669	.02418	41.519	.02443
#3	.18926	5.3587	.18460	.93600	.49749	.02385	41.651	.02341
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09756**	**.24719**	**.25038**	**2.4552**	**28.214**	**.49449**	**10.908**	**.25608**
Stddev	.00307	.00128	.00521	.0185	.078	.00448	.137	.00220
%RSD	3.1450	.51896	2.0799	.75329	.27754	.90680	1.2556	.86097
#1	.09964	.24867	.25381	2.4746	28.293	.49965	11.051	.25481
#2	.09900	.24657	.25294	2.4378	28.212	.49153	10.777	.25863
#3	.09404	.24634	.24439	2.4532	28.136	.49228	10.897	.25481
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48597**	**24.818**	**.23976**	**4.7527**	**.23917**	**.56426**	**.18308**	**5.4535**
Stddev	.01227	.094	.00663	.0831	.00423	.01482	.00241	.1162
%RSD	2.5240	.38048	2.7659	1.7492	1.7687	2.6259	1.3171	2.1299
#1	.49281	24.872	.24415	4.7840	.23720	.57746	.18057	5.5208
#2	.49329	24.873	.24301	4.8157	.24403	.56709	.18329	5.5203
#3	.47181	24.709	.23213	4.6585	.23628	.54823	.18538	5.3193
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606145504SD Acquired: 6/30/2016 18:04:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48448**	**.56991**	**.48728**	**.24314**	**.49496**	**.76857**	**.00110**
Stddev	.01265	.00039	.00650	.00228	.00154	.01891	.00039
%RSD	2.6106	.06833	1.3337	.93731	.31047	2.4602	35.526
#1	.49241	.56951	.48468	.24408	.49575	.77976	.00075
#2	.49113	.57028	.48249	.24480	.49319	.77921	.00152
#3	.46989	.56993	.49468	.24054	.49594	.74674	.00104
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9416.3**	**56962.**	**2600.6**
Stddev	29.4	188.	18.2
%RSD	.31267	.33038	.69932
#1	9447.8	56826.	2580.7
#2	9411.8	56882.	2616.4
#3	9389.5	57176.	2604.6

Approved: July 01, 2016

Sample Name: L1606145505 Acquired: 6/30/2016 18:08:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00248	.19496	-.00401	.02037	.01718	.00001	33.328	.00097
Stddev	.00088	.01021	.00178	.00185	.00051	.00001	.271	.00015
%RSD	35.337	5.2379	44.383	9.1039	2.9426	80.320	.81393	15.528
#1	-.00163	.18848	-.00222	.01985	.01756	.00001	33.623	.00099
#2	-.00338	.20673	-.00578	.01883	.01737	.00001	33.273	.00081
#3	-.00242	.18967	-.00403	.02243	.01661	.00003	33.089	.00111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.00043	.02295	.23706	3.7131	.00165	3.8675	.00727
Stddev	.00034	.00009	.00228	.02449	.1323	.00195	.0726	.00091
%RSD	96.701	20.807	9.9299	10.329	3.5637	118.54	1.8780	12.545
#1	.00030	.00042	.02448	.22566	3.8403	.00038	3.9331	.00680
#2	.00004	.00035	.02404	.26516	3.5762	.00066	3.8799	.00832
#3	.00073	.00052	.02033	.22035	3.7230	.00389	3.7895	.00669
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00153	.89125	.01136	.11133	.00137	.00310	.00199	3.0229
Stddev	.00024	.03718	.00220	.00668	.00096	.00343	.00319	.2645
%RSD	15.771	4.1720	19.389	5.9983	69.947	110.67	160.53	8.7481
#1	.00164	.88307	.01211	.11780	.00031	-.00036	.00470	3.2076
#2	.00170	.93183	.01310	.11174	.00217	.00650	-.00152	3.1412
#3	.00125	.85883	.00888	.10446	.00162	.00316	.00277	2.7200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606145505 Acquired: 6/30/2016 18:08:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00045**	**.08728**	**.00883**	**-.00169**	**.00124**	**1.1754**	**.00075**
Stddev	.00068	.00047	.00800	.00109	.00024	.1124	.00066
%RSD	153.29	.53469	90.576	64.439	19.630	9.5638	87.132
#1	-.00109	.08763	.01115	-.00293	.00121	1.2455	.00078
#2	.00027	.08746	.01541	-.00086	.00150	1.2350	.00008
#3	-.00052	.08675	-.00007	-.00129	.00102	1.0458	.00139
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9476.8**	**57883.**	**2627.2**
Stddev	14.5	172.	28.0
%RSD	.15345	.29689	1.0647
#1	9463.1	57837.	2596.4
#2	9492.1	58073.	2634.1
#3	9475.1	57739.	2651.1

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 18:11:59 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37902**	**9.4416**	**.36890**	**.45937**	**.93295**	**.04713**	**9.2594**	**.04626**
Stddev	.00195	.0037	.00869	.00364	.00366	.00005	.0663	.00119
%RSD	.51446	.03878	2.3549	.79291	.39231	.10186	.71582	2.5775
#1	.37957	9.4452	.37529	.45532	.93572	.04708	9.3301	.04704
#2	.37686	9.4379	.37240	.46041	.93433	.04713	9.2493	.04685
#3	.38064	9.4416	.35901	.46238	.92880	.04718	9.1987	.04489
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18886**	**.47596**	**.46765**	**3.7091**	**48.421**	**.93841**	**9.6002**	**.46922**
Stddev	.00540	.00022	.01369	.0151	.267	.00678	.0311	.00320
%RSD	2.8606	.04648	2.9279	.40697	.55085	.72285	.32402	.68161
#1	.19242	.47621	.47897	3.7201	48.542	.93411	9.5665	.46565
#2	.19151	.47578	.47154	3.7153	48.605	.94623	9.6279	.47183
#3	.18264	.47590	.45243	3.6919	48.115	.93489	9.6062	.47019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.93646**	**46.392**	**.46214**	**9.1787**	**.46691**	**1.1040**	**.37282**	**4.6181**
Stddev	.02656	.208	.01403	.2017	.01153	.0271	.00867	.0812
%RSD	2.8367	.44930	3.0361	2.1974	2.4687	2.4517	2.3249	1.7572
#1	.95544	46.433	.47252	9.3251	.47610	1.1213	.37551	4.6782
#2	.94783	46.577	.46772	9.2622	.47065	1.1178	.37983	4.6502
#3	.90610	46.167	.44618	8.9486	.45397	1.0728	.36313	4.5258
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 18:11:59 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.94160**	**.93419**	**.93215**	**.47746**	**.95734**	**.92285**	**.96268**
Stddev	.03048	.00478	.01127	.00266	.00102	.02468	.00196
%RSD	3.2371	.51143	1.2087	.55672	.10631	2.6746	.20344
#1	.96249	.93592	.92019	.47890	.95660	.94147	.96262
#2	.95567	.93787	.93370	.47909	.95691	.93223	.96468
#3	.90662	.92879	.94257	.47439	.95850	.89486	.96076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9631.8**	**57971.**	**2640.1**
Stddev	18.0	61.	9.4
%RSD	.18659	.10524	.35512
#1	9611.5	57939.	2630.1
#2	9638.2	58041.	2641.4
#3	9645.6	57933.	2648.7

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 18:15:37 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**-.00707**	**-.00309**	**.00499**	**.00032**	**.00002**	**-.04126**	**.00007**
Stddev	.00165	.00634	.00132	.00038	.00008	.00012	.04258	.00011
%RSD	811.23	89.773	42.777	7.6852	23.661	523.44	103.20	155.82
#1	.00141	-.00058	-.00165	.00534	.00029	-.00011	-.04140	.00004
#2	-.00013	-.00736	-.00339	.00506	.00027	.00011	.00139	.00020
#3	-.00189	-.01326	-.00424	.00458	.00041	.00007	-.08377	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00032**	**-.00049**	**.00063**	**-.01034**	**.03401**	**.00039**	**.01781**	**-.00065**
Stddev	.00025	.00043	.00054	.01993	.09163	.00225	.03349	.00185
%RSD	75.727	89.059	84.724	192.65	269.46	576.06	188.06	284.17
#1	.00037	.00001	.00003	-.01255	.13861	.00296	-.01934	-.00159
#2	.00006	-.00076	.00105	-.02908	-.03209	-.00055	.04570	.00148
#3	.00055	-.00071	.00083	.01059	-.00450	-.00123	.02707	-.00185
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00000**	**.03505**	**-.00118**	**.00242**	**.00074**	**.00202**	**.00122**	**.00338**
Stddev	.00033	.01921	.00105	.00238	.00588	.00218	.00143	.00216
%RSD	6972.9	54.814	88.470	98.079	791.88	108.22	117.41	63.891
#1	.00035	.04959	-.00124	.00244	.00719	.00014	-.00043	.00413
#2	-.00006	.04229	-.00220	.00479	-.00434	.00441	.00200	.00505
#3	-.00030	.01327	-.00011	.00004	-.00062	.00150	.00208	.00094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 18:15:37 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.00034**	**.00291**	**-.00003**	**.00058**	**-.00012**	**.00035**
Stddev	.00064	.00019	.00955	.00053	.00091	.00014	.00052
%RSD	369.28	56.580	327.70	1924.5	156.02	116.22	148.55
#1	.00028	.00028	.01106	.00018	.00027	-.00009	.00031
#2	-.00090	.00018	.00528	-.00063	.00160	.00000	-.00015
#3	.00010	.00055	-.00760	.00036	-.00013	-.00028	.00089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9702.1**	**58918.**	**2651.3**
Stddev	12.5	84.	10.0
%RSD	.12841	.14288	.37853
#1	9705.7	58860.	2662.2
#2	9712.2	58879.	2642.4
#3	9688.2	59014.	2649.4

Approved: July 01, 2016

Sample Name: L1606147801 Acquired: 6/30/2016 18:19:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00118	.48384	.00060	.01785	.04804	.00007	29.066	.00013
Stddev	.00288	.00538	.00319	.00258	.00084	.00013	.471	.00027
%RSD	243.63	1.1125	529.08	14.446	1.7486	180.94	1.6218	196.73
#1	-.00387	.48281	.00045	.02080	.04729	.00022	29.610	.00044
#2	-.00152	.48967	.00387	.01601	.04895	-.00004	28.802	-.00002
#3	.00185	.47906	-.00251	.01675	.04787	.00005	28.785	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00090	.00102	.00097	.73194	3.4244	.00083	4.7227	.13878
Stddev	.00019	.00084	.00083	.00211	.0891	.00561	.0980	.00207
%RSD	20.662	82.512	85.510	.28881	2.6021	679.74	2.0744	1.4891
#1	.00069	.00098	.00191	.73375	3.4145	.00122	4.8261	.14092
#2	.00105	.00020	.00037	.72962	3.5181	.00622	4.7108	.13680
#3	.00095	.00187	.00062	.73245	3.3407	-.00497	4.6313	.13862
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00039	3.0620	.00013	.04951	.00095	.00242	-.00362	3.1683
Stddev	.00005	.0154	.00105	.00983	.00211	.00176	.00195	.1888
%RSD	12.835	.50117	788.77	19.853	222.65	72.715	53.790	5.9591
#1	.00041	3.0713	.00075	.05163	-.00005	.00444	-.00403	3.2809
#2	.00033	3.0443	-.00108	.05811	.00337	.00152	-.00534	3.2737
#3	.00042	3.0703	.00073	.03880	-.00048	.00129	-.00150	2.9503
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606147801 Acquired: 6/30/2016 18:19:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00085**	**.10073**	**.00811**	**-.00477**	**.00157**	**.00395**	**.00038**
Stddev	.00056	.00046	.00495	.00121	.00087	.00037	.00091
%RSD	66.125	.45422	60.943	25.394	55.489	9.4191	237.01
#1	-.00122	.10118	.01032	-.00580	.00075	.00417	.00117
#2	-.00113	.10074	.00245	-.00344	.00148	.00416	.00059
#3	-.00020	.10026	.01157	-.00507	.00249	.00352	-.00061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9394.2**	**57266.**	**2607.9**
Stddev	9.1	199.	9.3
%RSD	.09713	.34688	.35491
#1	9404.0	57037.	2597.4
#2	9385.9	57398.	2612.0
#3	9392.8	57363.	2614.5

Approved: July 01, 2016

Sample Name: L1606147802 Acquired: 6/30/2016 18:23:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	1.5011	-.00124	.02902	.06173	.00002	44.072	.00015
Stddev	.00232	.0079	.00210	.00256	.00035	.00004	.122	.00031
%RSD	1002.1	.52532	169.14	8.8293	.57268	179.88	.27581	197.09
#1	.00197	1.4997	-.00021	.03180	.06182	.00001	44.205	.00005
#2	-.00240	1.5096	-.00366	.02675	.06134	.00007	43.967	.00050
#3	.00113	1.4940	.00014	.02853	.06203	-.00001	44.045	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00171	.00304	.00405	2.4214	6.4590	.00132	8.8818	.78923
Stddev	.00013	.00062	.00045	.0181	.1277	.00126	.0280	.00161
%RSD	7.6921	20.262	11.111	.74925	1.9769	95.851	.31552	.20401
#1	.00175	.00238	.00409	2.4419	6.5810	.00237	8.8521	.78968
#2	.00156	.00360	.00448	2.4149	6.3263	-.00008	8.8855	.79056
#3	.00182	.00313	.00358	2.4075	6.4697	.00167	8.9077	.78744
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00196	8.6913	.00288	.07214	.00165	.00103	.00683	4.5873
Stddev	.00011	.0464	.00050	.00951	.00315	.00350	.00245	.3470
%RSD	5.5354	.53399	17.474	13.183	191.38	338.81	35.828	7.5651
#1	.00207	8.7316	.00304	.07491	.00467	.00128	.00892	4.7980
#2	.00194	8.6406	.00232	.07996	-.00161	.00440	.00414	4.7771
#3	.00186	8.7019	.00329	.06155	.00188	-.00258	.00742	4.1867
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606147802 Acquired: 6/30/2016 18:23:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00060**	**.12293**	**.02761**	**-.00211**	**.00316**	**.00846**	**.00093**
Stddev	.00065	.00087	.00694	.00218	.00008	.00060	.00013
%RSD	108.09	.70913	25.142	103.05	2.4502	7.0820	13.728
#1	-.00065	.12390	.02469	.00039	.00314	.00855	.00087
#2	-.00121	.12222	.02260	-.00320	.00310	.00900	.00107
#3	.00008	.12267	.03553	-.00353	.00325	.00781	.00084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9409.7**	**57046.**	**2602.7**
Stddev	14.8	130.	20.1
%RSD	.15712	.22860	.77202
#1	9393.1	57144.	2579.6
#2	9414.5	56898.	2615.6
#3	9421.4	57096.	2613.0

Approved: July 01, 2016

Sample Name: L1606149801 Acquired: 6/30/2016 18:27:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00340	.13468	.02483	.02047	.04621	.00070	36.795	.00015
Stddev	.00210	.00765	.00300	.00221	.00117	.00007	.093	.00025
%RSD	61.792	5.6795	12.089	10.804	2.5342	9.9073	.25176	171.08
#1	-.00295	.13661	.02479	.01924	.04554	.00072	36.786	.00003
#2	-.00156	.14118	.02785	.02303	.04552	.00076	36.707	-.00002
#3	-.00569	.12625	.02185	.01916	.04756	.00063	36.892	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00100	.00285	.01192	7.2324	3.4712	.00637	2.5525	.83316
Stddev	.00012	.00081	.00238	.0450	.0517	.00375	.0362	.00322
%RSD	11.574	28.515	19.923	.62206	1.4890	58.850	1.4184	.38623
#1	.00098	.00317	.01314	7.1981	3.4234	.00264	2.5296	.83071
#2	.00112	.00346	.01344	7.2159	3.5260	.01014	2.5336	.83198
#3	.00090	.00193	.00919	7.2834	3.4643	.00633	2.5942	.83681
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00084	18.081	.00200	.41861	.00212	.00481	.00268	7.8667
Stddev	.00043	.130	.00025	.02670	.00081	.00253	.00307	.4729
%RSD	51.124	.71828	12.704	6.3786	38.110	52.573	114.76	6.0116
#1	.00099	18.012	.00211	.43565	.00293	.00305	.00539	8.1479
#2	.00036	17.999	.00217	.43234	.00211	.00367	.00331	8.1315
#3	.00118	18.231	.00171	.38784	.00132	.00771	-.00066	7.3207
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606149801 Acquired: 6/30/2016 18:27:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**.21281**	**.00999**	**-.00319**	**.00181**	**.03737**	**.00054**
Stddev	.00051	.00055	.00673	.00107	.00040	.00279	.00043
%RSD	193.84	.26018	67.337	33.581	21.978	7.4776	78.885
#1	.00006	.21270	.01741	-.00208	.00221	.03895	.00075
#2	-.00084	.21341	.00830	-.00327	.00181	.03900	.00082
#3	.00000	.21231	.00428	-.00422	.00141	.03414	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9268.9**	**56064.**	**2582.7**
Stddev	19.3	147.	15.5
%RSD	.20811	.26254	.59905
#1	9252.1	56177.	2583.8
#2	9290.0	56118.	2597.6
#3	9264.7	55898.	2566.7

Approved: July 01, 2016

Sample Name: L1606154001 Acquired: 6/30/2016 18:31:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00057**	**.00808**	**-.00558**	**.08750**	**.00402**	**.00010**	**1.2213**	**.00028**
Stddev	.00234	.00525	.00437	.00362	.00071	.00012	.0267	.00025
%RSD	414.63	65.065	78.336	4.1343	17.581	119.62	2.1854	89.078
#1	.00192	.01282	-.00981	.08961	.00362	.00003	1.2521	-.00001
#2	-.00274	.00899	-.00108	.08333	.00483	.00003	1.2057	.00041
#3	-.00088	.00243	-.00585	.08957	.00360	.00023	1.2061	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00067**	**.00170**	**.03755**	**-.00681**	**.28069**	**.00076**	**.43574**	**-.00133**
Stddev	.00015	.00062	.00276	.01600	.08088	.00550	.04929	.00283
%RSD	22.007	36.124	7.3610	235.02	28.816	719.07	11.311	212.69
#1	.00050	.00113	.03895	.01003	.20164	.00242	.48967	.00058
#2	.00071	.00235	.03934	-.02183	.27713	-.00537	.39303	-.00459
#3	.00079	.00163	.03437	-.00863	.36329	.00524	.42452	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00083**	**132.15**	**-.00082**	**.02127**	**.00031**	**.00191**	**-.00183**	**3.1975**
Stddev	.00027	.60	.00088	.00347	.00022	.00165	.00318	.2073
%RSD	32.190	.45543	107.97	16.310	71.564	86.578	174.47	6.4844
#1	.00064	132.84	-.00102	.02505	.00005	.00002	-.00532	3.3246
#2	.00114	131.72	.00015	.01823	.00042	.00310	.00092	3.3096
#3	.00072	131.90	-.00158	.02053	.00045	.00261	-.00107	2.9582
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606154001 Acquired: 6/30/2016 18:31:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.03802	.00388	-.00386	.00047	.01734	.00086
Stddev	.00061	.00030	.00532	.00297	.00009	.00133	.00028
%RSD	1510.1	.78789	137.01	76.892	19.154	7.6763	32.913
#1	.00024	.03835	-.00121	-.00044	.00037	.01808	.00115
#2	.00052	.03794	.00941	-.00541	.00054	.01813	.00058
#3	-.00064	.03777	.00345	-.00575	.00049	.01580	.00085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9201.3	55428.	2535.6
Stddev	13.7	92.	13.7
%RSD	.14863	.16593	.54119
#1	9215.8	55418.	2520.1
#2	9199.6	55341.	2540.6
#3	9188.6	55525.	2546.2

Approved: July 01, 2016

Sample Name: L1606154002 Acquired: 6/30/2016 18:35:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00190**	**.02125**	**-.00102**	**.08131**	**.09253**	**.00000**	**55.030**	**.00012**
Stddev	.00206	.00624	.00143	.00056	.00111	.00010	.267	.00020
%RSD	108.31	29.358	140.64	.68342	1.1967	2768.8	.48559	168.02
#1	-.00087	.02026	-.00075	.08190	.09204	-.00006	55.121	-.00011
#2	-.00427	.02793	.00026	.08124	.09380	-.00004	55.240	.00019
#3	-.00056	.01557	-.00256	.08079	.09175	.00012	54.729	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00020**	**.00113**	**.02097**	**.01775**	**2.1093**	**.00676**	**24.179**	**.01907**
Stddev	.00005	.00101	.00204	.00984	.0831	.00422	.021	.00251
%RSD	24.053	89.605	9.7060	55.443	3.9401	62.398	.08670	13.156
#1	.00015	.00022	.02232	.00661	2.0149	.01118	24.195	.02004
#2	.00024	.00096	.02196	.02138	2.1716	.00277	24.155	.02095
#3	.00020	.00222	.01863	.02525	2.1413	.00633	24.187	.01622
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00062**	**25.477**	**.00046**	**.01527**	**.00231**	**.00081**	**.00394**	**3.6193**
Stddev	.00059	.112	.00093	.00554	.00138	.00133	.00385	.2465
%RSD	95.322	.44074	202.16	36.302	59.737	164.68	97.575	6.8117
#1	.00121	25.586	.00018	.01196	.00186	.00099	-.00049	3.7728
#2	.00002	25.483	-.00030	.02167	.00121	-.00060	.00586	3.7501
#3	.00064	25.362	.00150	.01218	.00385	.00204	.00646	3.3349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606154002 Acquired: 6/30/2016 18:35:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	1.8324	-.00173	-.00240	-.00017	.04399	.00042
Stddev	.00068	.0080	.00465	.00110	.00042	.00367	.00022
%RSD	614.96	.43412	268.53	45.676	243.07	8.3462	51.638
#1	.00082	1.8388	-.00647	-.00196	.00004	.04609	.00033
#2	-.00052	1.8350	-.00155	-.00365	-.00066	.04613	.00067
#3	.00003	1.8235	.00283	-.00159	.00010	.03975	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9224.8	55792.	2582.4
Stddev	11.3	57.	7.5
%RSD	.12243	.10138	.29222
#1	9217.6	55833.	2573.7
#2	9218.9	55815.	2587.3
#3	9237.8	55727.	2586.3

Approved: July 01, 2016

Sample Name: L1606154003 Acquired: 6/30/2016 18:39:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.00076**	**-.00147**	**.01379**	**.07034**	**.00003**	**60.113**	**.00003**
Stddev	.00045	.00903	.00040	.00203	.00188	.00009	.353	.00025
%RSD	804.34	1186.0	26.892	14.721	2.6786	315.40	.58678	879.50
#1	-.00051	.00468	-.00190	.01604	.07166	-.00005	60.230	.00030
#2	.00039	-.00957	-.00139	.01322	.07118	.00012	60.392	-.00004
#3	-.00005	.00717	-.00112	.01210	.06819	.00001	59.716	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00051**	**.00109**	**.00608**	**.03884**	**1.5358**	**-.00064**	**5.6654**	**.00097**
Stddev	.00027	.00041	.00139	.02432	.1208	.00483	.0597	.00146
%RSD	52.815	37.552	22.849	62.604	7.8638	754.45	1.0533	151.13
#1	.00081	.00094	.00556	.01430	1.4467	-.00375	5.6313	.00146
#2	.00032	.00156	.00766	.06292	1.6733	.00493	5.7343	.00212
#3	.00038	.00078	.00503	.03931	1.4875	-.00310	5.6305	-.00068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00028**	**8.9187**	**.06481**	**.00248**	**-.00412**	**.00335**	**-.00015**	**2.5330**
Stddev	.00012	.0331	.00656	.00783	.00043	.00214	.00382	.1867
%RSD	44.238	.37087	10.115	315.35	10.516	63.921	2604.2	7.3713
#1	.00014	8.9184	.06951	.01099	-.00460	.00575	.00399	2.6454
#2	.00034	8.9519	.06760	-.00443	-.00401	.00162	-.00088	2.6360
#3	.00036	8.8858	.05732	.00088	-.00375	.00269	-.00355	2.3174
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606154003 Acquired: 6/30/2016 18:39:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00110**	**.15481**	**-.00035**	**-.00548**	**-.00004**	**.00448**	**.00018**
Stddev	.00057	.00074	.00903	.00113	.00081	.00035	.00084
%RSD	51.803	.47621	2581.8	20.683	1814.6	7.9051	472.09
#1	-.00084	.15458	-.00191	-.00467	.00044	.00470	.00046
#2	-.00071	.15563	.00936	-.00500	-.00098	.00466	.00085
#3	-.00175	.15421	-.00850	-.00678	.00041	.00407	-.00077
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9214.8**	**56266.**	**2566.6**
Stddev	16.4	75.	20.2
%RSD	.17793	.13321	.78652
#1	9216.4	56335.	2547.5
#2	9230.4	56186.	2564.6
#3	9197.7	56278.	2587.7

Approved: July 01, 2016

Sample Name: L1606155901 Acquired: 6/30/2016 18:43:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00103**	**.00915**	**-.00006**	**.02511**	**.22313**	**.00003**	**27.206**
Stddev	.00195	.00516	.00220	.00238	.00233	.00005	.176
%RSD	189.18	56.362	3958.2	9.4822	1.0451	161.49	.64824
#1	-.00014	.01510	.00154	.02376	.22382	-.00003	27.337
#2	-.00326	.00641	-.00256	.02786	.22503	.00005	27.275
#3	.00032	.00594	.00086	.02370	.22052	.00006	27.005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**.00197**	**.00338**	**.00033**	**.12395**	**1.4772**	**.02068**
Stddev	.00019	.00037	.00053	.00032	.01645	.0909	.00350
%RSD	556.70	18.672	15.556	98.395	13.269	6.1505	16.945
#1	.00025	.00184	.00285	.00068	.13997	1.4018	.01671
#2	-.00003	.00169	.00390	.00006	.10711	1.4518	.02197
#3	-.00012	.00239	.00339	.00023	.12477	1.5781	.02335
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**36.505**	**.03598**	**.00034**	F **328.33**	**.00090**	**1.3227**	**.00051**
Stddev	.192	.00185	.00014	2.60	.00092	.0696	.00253
%RSD	.52727	5.1335	39.993	.79262	101.70	5.2623	491.82
#1	36.665	.03803	.00039	329.59	.00144	1.3578	-.00149
#2	36.559	.03546	.00044	330.07	.00142	1.3677	-.00033
#3	36.292	.03445	.00018	325.34	-.00016	1.2425	.00336
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 01, 2016

Sample Name: L1606155901 Acquired: 6/30/2016 18:43:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00587	.00063	13.412	.00080	.52856	.00479	-.00502
Stddev	.00438	.00389	.677	.00054	.00281	.00375	.00196
%RSD	74.538	614.35	5.0458	67.579	.53244	78.243	39.098
#1	.00422	.00209	13.796	.00021	.52982	.00059	-.00650
#2	.00256	-.00378	13.811	.00094	.53053	.00779	-.00578
#3	.01083	.00359	12.631	.00127	.52534	.00599	-.00279
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00059	.00948	.00045
Stddev	.00081	.00047	.00050
%RSD	138.29	5.0027	109.72
#1	-.00090	.00970	.00051
#2	.00033	.00981	.00092
#3	-.00119	.00894	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8973.2	53735.	2541.3
Stddev	7.9	49.	24.7
%RSD	.08778	.09207	.97057
#1	8964.3	53678.	2522.8
#2	8979.4	53757.	2531.9
#3	8975.9	53770.	2569.3

Approved: July 01, 2016

Sample Name: L1606155902 Acquired: 6/30/2016 18:46:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00244	.01624	-.00371	.02632	.23418	.00007	29.152
Stddev	.00143	.00695	.00143	.00328	.00031	.00009	.072
%RSD	58.755	42.835	38.582	12.450	.13394	125.85	.24584
#1	.00296	.01470	-.00473	.02272	.23412	.00004	29.119
#2	.00082	.01018	-.00432	.02710	.23452	.00017	29.235
#3	.00354	.02383	-.00207	.02914	.23390	.00000	29.103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.00211	.00295	.00036	.12305	1.3767	.01982
Stddev	.00020	.00038	.00054	.00055	.01275	.1204	.00452
%RSD	103.98	17.810	18.399	152.04	10.363	8.7447	22.831
#1	-.00003	.00236	.00348	.00029	.13775	1.3527	.01502
#2	.00036	.00230	.00295	.00095	.11640	1.2701	.02401
#3	.00024	.00168	.00240	-.00015	.11499	1.5073	.02042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	39.148	.03862	.00050	F 330.95	.00173	1.3177	.00129
Stddev	.198	.00101	.00025	.35	.00033	.1006	.00315
%RSD	.50480	2.6116	49.807	.10455	19.053	7.6360	244.31
#1	39.081	.03839	.00078	331.33	.00166	1.3804	-.00218
#2	38.994	.03774	.00042	330.87	.00209	1.3711	.00398
#3	39.371	.03972	.00030	330.65	.00144	1.2016	.00207
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 01, 2016

Sample Name: L1606155902 Acquired: 6/30/2016 18:46:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00473**	**.00003**	**13.130**	**.00048**	**.57157**	**-.00066**	**-.00274**
Stddev	.00273	.00287	.897	.00048	.00056	.00707	.00045
%RSD	57.634	10579.	6.8310	100.42	.09786	1066.9	16.351
#1	.00717	.00182	13.659	.00082	.57149	.00683	-.00231
#2	.00524	.00154	13.636	-.00007	.57105	-.00160	-.00321
#3	.00179	-.00328	12.095	.00068	.57216	-.00722	-.00271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00047**	**.01058**	**.00006**
Stddev	.00117	.00093	.00020
%RSD	250.33	8.7802	319.39
#1	-.00129	.01102	.00001
#2	.00087	.01122	.00028
#3	-.00099	.00952	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8985.6**	**53846.**	**2554.2**
Stddev	8.9	69.	11.9
%RSD	.09849	.12868	.46530
#1	8991.6	53866.	2541.0
#2	8989.6	53769.	2557.8
#3	8975.4	53904.	2563.9

Approved: July 01, 2016

L1606156402

Sample Name: ~~L1606056402~~ Acquired: 6/30/2016 18:50:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00063**	**.00091**	**-.00442**	**.00758**	**.00182**	**.00004**	**2.7560**	**.00027**
Stddev	.00046	.00834	.00199	.00270	.00068	.00004	.0483	.00008
%RSD	73.738	914.61	45.113	35.621	37.420	110.13	1.7507	30.038
#1	-.00016	-.00664	-.00365	.00483	.00204	.00001	2.7637	.00036
#2	-.00108	.00986	-.00293	.01023	.00236	.00002	2.8000	.00021
#3	-.00064	-.00049	-.00669	.00767	.00106	.00008	2.7044	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00021**	**.00037**	**.00086**	**-.00822**	**14.689**	**-.00554**	**.60363**	**.00630**
Stddev	.00019	.00106	.00097	.00515	.035	.00351	.08108	.00126
%RSD	90.068	287.42	112.24	62.597	.23781	63.375	13.432	19.961
#1	.00005	.00026	-.00005	-.00249	14.654	-.00158	.51466	.00634
#2	.00017	.00147	.00188	-.00972	14.691	-.00827	.62286	.00754
#3	.00043	-.00063	.00077	-.01246	14.724	-.00677	.67336	.00502
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00082**	**30.747**	**.00163**	**1.4604**	**.00027**	**.00382**	**.00086**	**.18117**
Stddev	.00041	.130	.00024	.1469	.00118	.00265	.00289	.01449
%RSD	49.262	.42266	14.494	10.060	441.77	69.427	334.02	7.9981
#1	.00097	30.803	.00138	1.5520	-.00106	.00573	-.00001	.18924
#2	.00114	30.840	.00168	1.5383	.00120	.00079	.00409	.18983
#3	.00037	30.599	.00184	1.2910	.00067	.00493	-.00148	.16444
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606056402 Acquired: 6/30/2016 18:50:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00040**	**.00276**	**.00764**	**-.00417**	**.00010**	**.00972**	**-.00021**
Stddev	.00026	.00081	.00384	.00211	.00121	.00113	.00045
%RSD	65.574	29.145	50.239	50.705	1221.0	11.618	214.32
#1	-.00057	.00368	.00446	-.00586	.00080	.01021	-.00070
#2	-.00010	.00217	.01190	-.00484	-.00130	.01053	.00019
#3	-.00052	.00244	.00655	-.00180	.00079	.00843	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9289.5**	**56314.**	**2571.9**
Stddev	27.9	213.	11.3
%RSD	.29991	.37742	.44088
#1	9260.0	56322.	2561.9
#2	9293.4	56097.	2569.6
#3	9315.3	56522.	2584.2

Approved: July 01, 2016

L1606156404

Sample Name: L~~1606056404~~ Acquired: 6/30/2016 18:54:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00236**	**.09250**	**-.00082**	**.01190**	**.01643**	**.00007**	**84.766**	**.00027**
Stddev	.00131	.01090	.00314	.00363	.00083	.00004	1.026	.00020
%RSD	55.394	11.779	381.97	30.469	5.0571	66.485	1.2105	73.636
#1	-.00091	.08595	.00219	.01407	.01704	.00009	85.951	.00048
#2	-.00346	.08647	-.00408	.00771	.01678	.00002	84.156	.00021
#3	-.00271	.10508	-.00058	.01392	.01549	.00009	84.192	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00025**	**.00709**	**.01669**	**.36840**	**14.831**	**.00068**	**4.4269**	**.18786**
Stddev	.00031	.00078	.00069	.02474	.224	.00099	.0879	.00632
%RSD	126.42	10.963	4.1275	6.7167	1.5073	144.98	1.9853	3.3646
#1	.00020	.00641	.01726	.35693	15.086	-.00046	4.3604	.19356
#2	.00058	.00692	.01688	.35148	14.742	.00127	4.3938	.18897
#3	-.00004	.00794	.01592	.39680	14.667	.00124	4.5266	.18106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00187**	**31.314**	**.00427**	**45.036**	**-.00243**	**.00302**	**.00325**	**.29155**
Stddev	.00048	.346	.00032	2.716	.00035	.00294	.00433	.01560
%RSD	25.385	1.1058	7.4817	6.0298	14.238	97.365	133.25	5.3491
#1	.00231	31.709	.00416	46.655	-.00206	.00611	-.00173	.29688
#2	.00194	31.064	.00463	46.553	-.00275	.00025	.00530	.30378
#3	.00137	31.169	.00403	41.901	-.00247	.00271	.00617	.27399
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

L1606156404

Sample Name: ~~L1606056404~~ Acquired: 6/30/2016 18:54:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	.05885	-.00775	-.00194	.00227	.10541	-.00021
Stddev	.00131	.00040	.00857	.00250	.00144	.00839	.00070
%RSD	1165.7	.68788	110.57	128.47	63.571	7.9588	330.02
#1	-.00091	.05922	-.01596	-.00430	.00115	.11051	-.00080
#2	.00159	.05842	.00115	-.00220	.00390	.10999	.00057
#3	-.00034	.05892	-.00845	.00067	.00176	.09573	-.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9021.4	54495.	2469.3
Stddev	12.4	321.	11.7
%RSD	.13767	.58877	.47380
#1	9015.2	54137.	2459.9
#2	9013.3	54757.	2465.5
#3	9035.7	54590.	2482.4

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 18:58:41 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38449**	**9.5576**	**.37097**	**.46331**	**.94045**	**.04776**	**9.3865**	**.04705**
Stddev	.00267	.0246	.00770	.00163	.00112	.00007	.0785	.00086
%RSD	.69398	.25745	2.0769	.35102	.11957	.13857	.83674	1.8287
#1	.38676	9.5746	.37369	.46466	.93921	.04775	9.2958	.04763
#2	.38517	9.5294	.37694	.46150	.94140	.04770	9.4349	.04746
#3	.38155	9.5687	.36227	.46376	.94073	.04783	9.4287	.04606
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19104**	**.48097**	**.47121**	**3.7295**	**48.822**	**.94615**	**9.8577**	**.47373**
Stddev	.00553	.00117	.01299	.0687	.163	.00468	.1509	.00378
%RSD	2.8961	.24368	2.7563	1.8418	.33468	.49471	1.5309	.79865
#1	.19456	.48077	.48007	3.6666	48.932	.94970	9.7065	.47024
#2	.19389	.47991	.47726	3.7191	48.901	.94790	10.008	.47321
#3	.18466	.48223	.45630	3.8028	48.634	.94085	9.8582	.47775
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.94402**	**46.861**	**.46610**	**9.2472**	**.46824**	**1.1122**	**.37247**	**4.6461**
Stddev	.02559	.080	.01367	.1813	.00647	.0251	.00302	.0686
%RSD	2.7110	.17021	2.9320	1.9611	1.3821	2.2576	.81209	1.4774
#1	.95932	46.788	.47619	9.3639	.47147	1.1319	.37188	4.6874
#2	.95828	46.947	.47155	9.3395	.47245	1.1207	.37575	4.6840
#3	.91448	46.849	.45054	9.0383	.46078	1.0839	.36979	4.5669
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 18:58:41 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.94950**	**.94033**	**.94994**	**.48312**	**.96399**	**.92909**	**.97815**
Stddev	.03011	.00011	.01017	.00567	.00123	.02409	.00297
%RSD	3.1714	.01190	1.0708	1.1738	.12757	2.5929	.30383
#1	.96894	.94028	.93825	.48548	.96507	.94516	.98127
#2	.96475	.94046	.95675	.48724	.96424	.94071	.97784
#3	.91482	.94026	.95483	.47665	.96265	.90139	.97535
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9540.5**	**57585.**	**2609.0**
Stddev	20.5	117.	6.0
%RSD	.21478	.20311	.23076
#1	9562.9	57615.	2602.1
#2	9535.8	57684.	2611.9
#3	9522.7	57456.	2613.0

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 19:02:19 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00149**	**-.01552**	**-.00316**	**.00197**	**.00094**	**.00002**	**-.03638**	**-.00004**
Stddev	.00121	.00451	.00141	.00096	.00118	.00003	.02087	.00011
%RSD	80.878	29.062	44.471	48.505	124.93	155.61	57.367	291.47
#1	-.00235	-.02073	-.00313	.00133	-.00008	-.00001	-.06026	.00007
#2	-.00011	-.01274	-.00458	.00151	.00068	.00004	-.02163	-.00003
#3	-.00201	-.01310	-.00177	.00307	.00223	.00002	-.02725	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00027**	**.00057**	**-.00009**	**-.00268**	**.06236**	**-.00245**	**.02522**	**-.00160**
Stddev	.00029	.00112	.00125	.01684	.19080	.00148	.02965	.00081
%RSD	105.92	195.93	1387.5	628.60	305.96	60.478	117.58	50.497
#1	.00025	-.00009	-.00153	.01409	.27386	-.00171	-.00722	-.00253
#2	.00057	-.00006	.00060	-.01959	-.09681	-.00149	.03196	-.00120
#3	-.00001	.00187	.00066	-.00254	.01003	-.00416	.05092	-.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**.03479**	**-.00152**	**.00337**	**.00087**	**.00212**	**.00172**	**.00394**
Stddev	.00050	.00757	.00020	.00161	.00244	.00267	.00281	.00328
%RSD	577.03	21.753	13.047	47.779	280.61	125.91	163.16	83.246
#1	-.00003	.02673	-.00166	.00157	.00354	.00520	-.00126	.00767
#2	-.00035	.04175	-.00129	.00387	-.00125	.00079	.00210	.00256
#3	.00064	.03589	-.00160	.00466	.00032	.00038	.00433	.00157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 19:02:19 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**.00006**	**.00408**	**-.00100**	**.00056**	**.00009**	**.00041**
Stddev	.00053	.00046	.00592	.00189	.00072	.00021	.00043
%RSD	379.02	796.89	145.37	189.36	129.08	242.48	106.17
#1	-.00046	-.00012	-.00015	-.00242	-.00023	-.00015	.00045
#2	.00054	-.00029	.01085	.00114	.00074	.00016	.00081
#3	.00033	.00058	.00152	-.00171	.00117	.00025	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9547.6**	**57674.**	**2603.6**
Stddev	11.8	121.	10.0
%RSD	.12314	.20945	.38395
#1	9534.0	57539.	2614.8
#2	9554.1	57709.	2595.8
#3	9554.6	57773.	2600.1

Approved: July 01, 2016

Sample Name: L1606156406 Acquired: 6/30/2016 19:06:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	-.00831	-.00316	.00480	.00255	-.00001	1.6758	.00005
Stddev	.00065	.00701	.00308	.00242	.00098	.00007	.0313	.00009
%RSD	370.16	84.451	97.402	50.286	38.419	567.21	1.8693	181.45
#1	-.00002	-.00478	-.00059	.00755	.00203	-.00003	1.7074	-.00003
#2	-.00089	-.01638	-.00232	.00383	.00194	-.00007	1.6448	.00003
#3	.00038	-.00375	-.00658	.00303	.00368	.00006	1.6752	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00029	-.00052	-.01620	.24819	-.00030	.28577	.03578
Stddev	.00004	.00059	.00084	.01965	.12899	.00500	.04605	.00192
%RSD	13.214	202.26	162.53	121.27	51.971	1684.3	16.114	5.3726
#1	.00029	-.00024	.00039	.00536	.12090	-.00308	.29949	.03795
#2	.00036	.00092	-.00126	-.02087	.24487	-.00328	.32340	.03428
#3	.00029	.00020	-.00068	-.03310	.37880	.00548	.23442	.03512
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	.58307	.00022	.08846	.00028	.00280	-.00287	.07941
Stddev	.00032	.02717	.00038	.00938	.00070	.00119	.00124	.00619
%RSD	79.689	4.6599	170.52	10.606	247.25	42.389	43.058	7.7987
#1	.00054	.55222	-.00018	.09425	.00082	.00382	-.00308	.08522
#2	.00003	.59357	.00056	.09350	-.00051	.00308	-.00154	.08012
#3	.00061	.60342	.00028	.07763	.00055	.00150	-.00399	.07290
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606156406 Acquired: 6/30/2016 19:06:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**.00491**	**.00225**	**-.00406**	**.00006**	**.00305**	**-.00019**
Stddev	.00077	.00020	.01296	.00128	.00014	.00037	.00025
%RSD	540.12	4.0326	576.42	31.529	221.32	12.262	133.62
#1	-.00042	.00476	.00960	-.00321	-.00001	.00316	.00010
#2	.00102	.00514	.00986	-.00343	-.00002	.00336	-.00033
#3	-.00017	.00484	-.01271	-.00553	.00022	.00263	-.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9308.5**	**56770.**	**2560.2**
Stddev	29.6	145.	7.5
%RSD	.31804	.25535	.29287
#1	9316.4	56603.	2551.6
#2	9333.3	56863.	2563.7
#3	9275.7	56845.	2565.4

Approved: July 01, 2016

Sample Name: L1606156406PS Acquired: 6/30/2016 19:10:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574839-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19522**	**4.9335**	**.18892**	**.92811**	**.48642**	**.02462**	**6.4020**	**.02402**
Stddev	.00133	.0257	.00349	.00076	.00294	.00021	.0598	.00077
%RSD	.67932	.52075	1.8462	.08158	.60538	.85247	.93391	3.1888
#1	.19409	4.9453	.19273	.92726	.48548	.02443	6.4043	.02444
#2	.19668	4.9040	.18815	.92837	.48971	.02484	6.4606	.02450
#3	.19491	4.9512	.18588	.92871	.48405	.02458	6.3411	.02314
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10004**	**.25393**	**.24723**	**1.9455**	**25.393**	**.49650**	**5.2156**	**.27536**
Stddev	.00180	.00156	.00478	.0442	.084	.00244	.1119	.00233
%RSD	1.7965	.61492	1.9322	2.2723	.33007	.49150	2.1452	.84690
#1	.10146	.25272	.24929	1.9733	25.412	.49410	5.1780	.27413
#2	.10065	.25337	.25063	1.9687	25.466	.49897	5.3414	.27804
#3	.09802	.25569	.24177	1.8945	25.302	.49643	5.1273	.27389
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49262**	**24.528**	**.24264**	**4.7530**	**.24151**	**.56841**	**.18488**	**2.3398**
Stddev	.01010	.145	.00516	.0624	.00718	.00865	.00209	.0287
%RSD	2.0511	.58943	2.1253	1.3140	2.9748	1.5225	1.1326	1.2258
#1	.49806	24.551	.24643	4.7800	.24584	.57678	.18615	2.3588
#2	.49884	24.659	.24472	4.7974	.24548	.56894	.18246	2.3539
#3	.48096	24.373	.23677	4.6816	.23322	.55950	.18603	2.3068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606156406PS Acquired: 6/30/2016 19:10:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574839-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49468**	**.49462**	**.48468**	**.24698**	**.50622**	**.48337**	**.00116**
Stddev	.01218	.00261	.00393	.00141	.00056	.00564	.00008
%RSD	2.4630	.52750	.81027	.57177	.11040	1.1667	6.9776
#1	.50282	.49564	.48159	.24852	.50558	.48707	.00118
#2	.50054	.49656	.48910	.24575	.50653	.48616	.00107
#3	.48067	.49165	.48336	.24667	.50656	.47688	.00123
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9250.3**	**55578.**	**2550.1**
Stddev	31.5	34.	9.9
%RSD	.34105	.06038	.38788
#1	9214.6	55569.	2552.1
#2	9274.3	55616.	2539.3
#3	9262.1	55551.	2558.8

Approved: July 01, 2016

Sample Name: L1606156406DL Acquired: 6/30/2016 19:13:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574839-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00155**	**-.01507**	**.00026**	**.00451**	**.00331**	**.00008**	**.25484**
Stddev	.00041	.00276	.00086	.00137	.00140	.00008	.06716
%RSD	26.342	18.297	328.91	30.288	42.328	89.618	26.354
#1	.00149	-.01255	.00120	.00302	.00306	.00016	.33086
#2	.00198	-.01801	.00007	.00481	.00205	.00008	.20355
#3	.00117	-.01463	-.00048	.00570	.00482	.00001	.23011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**.00029**	**-.00070**	**-.00085**	F **-.02287**	**-.00067**	**-.00618**
Stddev	.00008	.00010	.00036	.00050	.03470	.09395	.00185
%RSD	149.91	36.427	50.885	58.509	151.76	14123.	29.901
#1	.00014	.00017	-.00039	-.00105	-.03303	.10564	-.00822
#2	-.00000	.00035	-.00109	-.00123	-.05136	-.03506	-.00569
#3	.00002	.00034	-.00063	-.00029	.01578	-.07258	-.00462
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05615**	**.00563**	**-.00013**	**.08951**	**-.00080**	**.01495**	**.00016**
Stddev	.04244	.00397	.00020	.02875	.00023	.00346	.00383
%RSD	75.583	70.422	146.87	32.119	28.849	23.154	2377.1
#1	.01359	.00700	-.00019	.06174	-.00102	.01401	-.00216
#2	.09846	.00116	-.00030	.11915	-.00056	.01879	.00458
#3	.05639	.00874	.00008	.08766	-.00082	.01206	-.00194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 01, 2016

Sample Name: L1606156406DL Acquired: 6/30/2016 19:13:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574839-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00451**	**.00140**	**.01552**	**.00007**	**.00104**	**.00088**	**-.00058**
Stddev	.00270	.00452	.00103	.00034	.00036	.00401	.00223
%RSD	59.873	321.85	6.6495	498.95	34.792	455.41	385.32
#1	.00331	-.00159	.01664	-.00003	.00098	-.00159	.00089
#2	.00262	-.00080	.01531	-.00021	.00072	-.00127	-.00315
#3	.00761	.00661	.01461	.00044	.00143	.00550	.00052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00015**	**.00179**	**.00012**
Stddev	.00069	.00019	.00043
%RSD	468.45	10.795	354.25
#1	.00038	.00168	-.00022
#2	-.00063	.00201	-.00001
#3	.00069	.00167	.00060
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9410.0**	**56706.**	**2543.1**
Stddev	19.6	51.	2.8
%RSD	.20881	.09072	.10969
#1	9427.6	56756.	2545.8
#2	9413.5	56708.	2540.3
#3	9388.8	56654.	2543.1

Approved: July 01, 2016

Sample Name: L1606156406DL Acquired: 6/30/2016 19:17:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574839-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00204**	**-.01447**	**-.00202**	**-.00098**	**.00092**	**.00012**	**-.00827**	**-.00001**
Stddev	.00182	.00242	.00261	.00051	.00043	.00011	.03770	.00015
%RSD	89.119	16.699	129.47	52.234	46.850	92.420	455.57	1206.5
#1	.00001	-.01438	.00030	-.00149	.00140	.00001	-.04414	-.00000
#2	-.00344	-.01693	-.00484	-.00097	.00077	.00012	-.01171	.00013
#3	-.00269	-.01210	-.00150	-.00047	.00058	.00022	.03102	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00034**	**.00096**	**-.00004**	**-.00936**	**-.06859**	**-.00139**	**.05644**	**-.00116**
Stddev	.00024	.00023	.00119	.02466	.08484	.00348	.08192	.00532
%RSD	70.523	23.899	3085.0	263.46	123.69	251.13	145.14	457.54
#1	.00019	.00082	.00129	-.03046	-.11887	-.00098	.07856	.00491
#2	.00021	.00123	-.00103	-.01537	-.11627	-.00506	-.03427	-.00335
#3	.00062	.00084	-.00038	.01775	.02937	.00187	.12502	-.00504
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**.02020**	**-.00158**	**.00200**	**-.00099**	**.00203**	**.00019**	**.00279**
Stddev	.00035	.02600	.00029	.00545	.00277	.00244	.00611	.00157
%RSD	4041.6	128.72	18.187	272.94	280.45	120.62	3223.9	56.377
#1	-.00034	.03895	-.00158	.00123	-.00311	.00480	-.00667	.00178
#2	.00036	-.00948	-.00129	.00779	-.00200	.00017	.00217	.00460
#3	.00000	.03112	-.00187	-.00303	.00215	.00111	.00506	.00198
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606156406DL Acquired: 6/30/2016 19:17:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574839-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00051**	**.00077**	**.00033**	**-.00360**	**-.00016**	**.00082**	**.00005**
Stddev	.00036	.00017	.00181	.00460	.00024	.00009	.00041
%RSD	69.080	21.510	543.79	127.67	152.17	10.883	846.22
#1	-.00028	.00068	-.00174	-.00823	-.00038	.00092	.00029
#2	-.00092	.00097	.00110	-.00353	-.00018	.00075	.00028
#3	-.00034	.00067	.00164	.00096	.00009	.00080	-.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9416.4**	**56461.**	**2536.3**
Stddev	54.5	180.	12.7
%RSD	.57880	.31878	.49908
#1	9470.6	56420.	2521.7
#2	9416.9	56305.	2544.0
#3	9361.6	56658.	2543.2

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 19:21:50 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.37989	9.4266	.37394	.46053	.92537	.04776	9.1769	.04659
Stddev	.00050	.0222	.00409	.00376	.00224	.00017	.0540	.00054
%RSD	.13167	.23513	1.0950	.81559	.24164	.35483	.58823	1.1625
#1	.37950	9.4215	.37766	.46434	.92506	.04795	9.2172	.04605
#2	.38045	9.4074	.37460	.46041	.92774	.04767	9.1980	.04714
#3	.37972	9.4509	.36955	.45683	.92330	.04765	9.1156	.04659
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.18972	.47785	.47043	3.6570	48.698	.93221	9.6440	.46194
Stddev	.00166	.00215	.00205	.0258	.237	.00108	.0984	.00104
%RSD	.87356	.45051	.43649	.70646	.48626	.11634	1.0208	.22551
#1	.19033	.48032	.47022	3.6680	48.720	.93283	9.6174	.46262
#2	.19098	.47678	.47258	3.6756	48.923	.93096	9.7531	.46074
#3	.18784	.47644	.46849	3.6275	48.451	.93285	9.5616	.46246
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.93845	45.537	.46470	9.1672	.46456	1.1027	.37301	4.6027
Stddev	.00695	.109	.00329	.0522	.00369	.0073	.00288	.0204
%RSD	.74014	.23993	.70702	.56943	.79336	.65917	.77319	.44348
#1	.94067	45.567	.46658	9.1832	.46377	1.1010	.37485	4.5977
#2	.94401	45.629	.46660	9.2095	.46858	1.1107	.37450	4.6252
#3	.93066	45.416	.46090	9.1088	.46134	1.0965	.36969	4.5853
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 19:21:50 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.94714	.92126	.92080	.47754	.96155	.92174	.95158
Stddev	.00868	.00244	.00984	.00381	.00234	.00561	.00540
%RSD	.91656	.26481	1.0685	.79859	.24286	.60866	.56747
#1	.94757	.92393	.91193	.47627	.96296	.92370	.95381
#2	.95559	.92070	.93138	.48183	.95886	.92611	.95551
#3	.93825	.91915	.91910	.47452	.96284	.91541	.94543
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9585.7	57144.	2635.2
Stddev	14.1	131.	17.0
%RSD	.14692	.22988	.64631
#1	9569.6	56993.	2628.9
#2	9591.6	57207.	2622.2
#3	9595.9	57232.	2654.5

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 19:25:29 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00049**	**-.01027**	**-.00494**	**.00286**	**.00003**	**.00001**	**-.00762**	**-.00003**
Stddev	.00097	.00209	.00224	.00282	.00109	.00003	.01196	.00026
%RSD	198.18	20.310	45.301	98.518	3236.4	464.49	157.06	887.56
#1	.00136	-.01178	-.00703	.00231	.00125	.00003	-.02120	-.00032
#2	.00065	-.01115	-.00522	.00592	-.00086	.00002	.00138	.00003
#3	-.00055	-.00789	-.00258	.00036	-.00029	-.00003	-.00304	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**.00060**	**-.00160**	**-.03551**	**.07474**	**-.00287**	**.00210**	**-.00068**
Stddev	.00021	.00062	.00056	.01357	.24087	.00227	.08878	.00165
%RSD	78.600	103.08	35.382	38.199	322.26	79.060	4230.3	243.28
#1	-.00003	-.00008	-.00118	-.03437	-.19654	-.00400	.03302	-.00251
#2	-.00041	.00114	-.00224	-.02256	.26348	-.00026	.07128	.00071
#3	-.00035	.00074	-.00136	-.04962	.15729	-.00437	-.09800	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**-.00184**	**-.00102**	**-.00373**	**-.00151**	**.00181**	**.00442**	**.00181**
Stddev	.00018	.01094	.00178	.00218	.00323	.00049	.00377	.00175
%RSD	1889.0	592.83	173.67	58.476	214.00	26.995	85.232	96.712
#1	.00022	-.01446	-.00307	-.00588	-.00073	.00192	.00228	.00313
#2	-.00010	.00498	-.00012	-.00378	-.00506	.00223	.00221	.00248
#3	-.00009	.00395	.00012	-.00152	.00126	.00127	.00877	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 19:25:29 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00012**	**.00041**	**.00359**	**-.00107**	**.00002**	**-.00010**	**.00004**
Stddev	.00080	.00052	.00699	.00320	.00066	.00018	.00038
%RSD	664.90	126.94	194.50	299.81	3652.6	190.50	994.70
#1	-.00057	.00087	.00041	.00251	.00010	.00008	.00040
#2	-.00059	-.00016	.01161	-.00204	.00063	-.00029	.00008
#3	.00081	.00052	-.00124	-.00367	-.00068	-.00008	-.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9765.0**	**58807.**	**2672.7**
Stddev	27.2	225.	19.1
%RSD	.27828	.38249	.71519
#1	9772.2	58564.	2652.8
#2	9735.0	59007.	2690.9
#3	9787.9	58852.	2674.5

Approved: July 01, 2016

Sample Name: LLCCV Acquired: 6/30/2016 19:29:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00659	.14196	.00415	.07320	.00737	.00152	.30097	.00069
Stddev	.00120	.00519	.00159	.00166	.00078	.00012	.02655	.00013
%RSD	18.190	3.6566	38.262	2.2611	10.524	7.8236	8.8228	18.508
#1	.00700	.13883	.00594	.07268	.00707	.00141	.28197	.00079
#2	.00754	.13910	.00289	.07187	.00679	.00164	.33131	.00074
#3	.00524	.14795	.00364	.07505	.00825	.00151	.28963	.00055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00398	.00405	.00361	.05952	.84748	.07063	.43935	.00901
Stddev	.00037	.00081	.00120	.01766	.08757	.00293	.01480	.00253
%RSD	9.3136	20.053	33.359	29.670	10.333	4.1551	3.3691	28.106
#1	.00367	.00496	.00236	.06982	.94553	.06982	.44124	.00872
#2	.00439	.00340	.00372	.06960	.77706	.07389	.42369	.01167
#3	.00389	.00379	.00476	.03913	.81984	.06819	.45311	.00663
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00714	.39055	.01370	.71353	.00877	.07288	.01882	.67934
Stddev	.00036	.02434	.00031	.00775	.00193	.00031	.00876	.00208
%RSD	5.0289	6.2318	2.2738	1.0857	22.004	.43091	46.541	.30546
#1	.00752	.38525	.01405	.70489	.01020	.07322	.00874	.68065
#2	.00709	.41711	.01349	.71986	.00954	.07261	.02320	.68044
#3	.00681	.36931	.01354	.71582	.00658	.07279	.02453	.67695
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: LLCCV Acquired: 6/30/2016 19:29:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38140**	**.03705**	**.03005**	**.14049**	**.00794**	**.01593**	**.03897**
Stddev	.00126	.00043	.00977	.00287	.00040	.00006	.00047
%RSD	.33142	1.1473	32.526	2.0393	5.0741	.36901	1.2053
#1	.37994	.03683	.04110	.14313	.00773	.01589	.03904
#2	.38213	.03754	.02650	.13744	.00840	.01599	.03847
#3	.38212	.03679	.02255	.14091	.00769	.01589	.03940
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9795.9**	**58956.**	**2677.8**
Stddev	12.5	242.	10.2
%RSD	.12715	.41066	.37978
#1	9781.5	59081.	2679.4
#2	9802.4	59110.	2687.1
#3	9803.7	58677.	2667.0

Approved: July 01, 2016

Sample Name: LLCCV Acquired: 6/30/2016 19:33:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01886**	**.36039**	**.01451**	**.17889**	**.01802**	**.00368**	**.92055**	**.00186**
Stddev	.00221	.01202	.00255	.00304	.00106	.00003	.05203	.00013
%RSD	11.727	3.3359	17.599	1.6994	5.8624	.81679	5.6525	7.0178
#1	.01641	.35880	.01746	.17539	.01732	.00366	.86761	.00194
#2	.02071	.34924	.01306	.18088	.01751	.00367	.97163	.00193
#3	.01945	.37313	.01301	.18040	.01923	.00372	.92242	.00171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00974**	**.00955**	**.00834**	**.15349**	**1.8985**	**.18667**	**.91387**	**.01659**
Stddev	.00065	.00088	.00094	.01618	.0476	.00125	.03132	.00130
%RSD	6.6949	9.2008	11.222	10.542	2.5101	.67029	3.4270	7.8120
#1	.00970	.00901	.00882	.13549	1.8939	.18756	.90974	.01801
#2	.01041	.01057	.00893	.15812	1.8533	.18524	.88483	.01547
#3	.00911	.00908	.00726	.16684	1.9483	.18721	.94706	.01629
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01763**	**.92448**	**.03587**	**1.7319**	**.01672**	**.18405**	**.03953**	**1.6631**
Stddev	.00083	.01718	.00274	.0473	.00199	.00558	.00126	.0430
%RSD	4.6918	1.8585	7.6334	2.7332	11.918	3.0298	3.1862	2.5841
#1	.01773	.91392	.03721	1.7559	.01902	.18975	.03815	1.6872
#2	.01840	.94430	.03768	1.7625	.01548	.18381	.04062	1.6886
#3	.01675	.91521	.03272	1.6774	.01566	.17860	.03981	1.6135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: LLCCV Acquired: 6/30/2016 19:33:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.92566**	**.09190**	**.05968**	**.35088**	**.01953**	**.03727**	**.09620**
Stddev	.03288	.00060	.00162	.00944	.00115	.00116	.00106
%RSD	3.5522	.65258	2.7114	2.6903	5.8817	3.1049	1.1004
#1	.94559	.09126	.05926	.35671	.02028	.03807	.09508
#2	.94368	.09245	.05831	.35594	.02010	.03780	.09634
#3	.88771	.09198	.06147	.33999	.01820	.03595	.09718
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9792.0**	**58978.**	**2666.7**
Stddev	4.2	25.	15.3
%RSD	.04312	.04241	.57223
#1	9787.2	59006.	2682.1
#2	9794.1	58963.	2651.6
#3	9794.8	58963.	2666.5

Approved: July 01, 2016

Sample Name: PBW 7P Acquired: 6/30/2016 19:37:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574770-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**-.00164**	**-.00126**	**-.00047**	**.00093**	**.00002**	**-.02341**
Stddev	.00144	.00777	.00134	.00096	.00088	.00008	.01945
%RSD	1909.0	473.50	106.27	206.44	94.742	362.34	83.071
#1	.00029	.00657	-.00014	.00061	.00009	-.00002	-.03718
#2	.00140	-.00886	-.00274	-.00124	.00086	-.00003	-.00116
#3	-.00146	-.00263	-.00090	-.00077	.00185	.00012	-.03190
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00017**	**-.00011**	**.00132**	**-.00025**	F **-.02223**	**-.00674**	**-.00345**
Stddev	.00025	.00023	.00035	.00114	.02329	.06446	.00160
%RSD	152.22	201.22	26.462	458.86	104.77	956.25	46.308
#1	-.00012	-.00033	.00117	-.00073	-.00445	.01547	-.00165
#2	.00035	.00012	.00171	.00106	-.04860	.04368	-.00397
#3	.00027	-.00012	.00107	-.00107	-.01365	-.07937	-.00472
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09089**	**-.00078**	**.00013**	**.01644**	**-.00048**	**.00257**	**-.00335**
Stddev	.01606	.00252	.00047	.02156	.00050	.00205	.00156
%RSD	17.670	322.40	379.22	131.12	105.45	79.913	46.752
#1	.09132	-.00332	.00050	.01500	-.00053	.00106	-.00412
#2	.10674	.00173	.00029	.03869	.00005	.00491	-.00438
#3	.07462	-.00076	-.00041	-.00436	-.00095	.00174	-.00155
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 01, 2016

Sample Name: PBW 7P Acquired: 6/30/2016 19:37:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574770-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00058**	**.00300**	**.00283**	**-.00023**	**.00105**	**.00205**	**-.00138**
Stddev	.00441	.00186	.00024	.00043	.00051	.00280	.00117
%RSD	762.37	61.880	8.4100	184.61	48.169	136.13	85.040
#1	-.00538	.00515	.00261	.00024	.00049	.00523	-.00257
#2	.00331	.00194	.00308	-.00059	.00147	-.00005	-.00022
#3	.00034	.00192	.00280	-.00034	.00120	.00099	-.00135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00060**	**.00076**	**.00026**
Stddev	.00055	.00006	.00030
%RSD	91.026	7.9367	114.29
#1	.00011	.00077	.00050
#2	.00120	.00082	-.00007
#3	.00051	.00070	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9307.2**	**56410.**	**2568.9**
Stddev	36.5	227.	11.0
%RSD	.39233	.40172	.42870
#1	9343.1	56149.	2579.0
#2	9308.4	56556.	2570.5
#3	9270.1	56526.	2557.2

Approved: July 01, 2016

Sample Name: LCSW 7P Acquired: 6/30/2016 19:41:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574770-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19482**	**4.9546**	**.18718**	**.93123**	**.48681**	**.02474**	**4.9273**	**.02447**
Stddev	.00171	.0157	.00248	.00465	.00116	.00010	.0106	.00014
%RSD	.87629	.31702	1.3273	.49921	.23754	.40937	.21442	.57083
#1	.19369	4.9709	.18912	.92992	.48683	.02464	4.9223	.02453
#2	.19679	4.9535	.18804	.93639	.48796	.02472	4.9394	.02456
#3	.19400	4.9395	.18438	.92738	.48564	.02485	4.9201	.02431
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10072**	**.25411**	**.24817**	**1.9618**	**25.319**	**.50113**	**5.1562**	**.24562**
Stddev	.00180	.00103	.00380	.0377	.140	.00409	.1137	.00509
%RSD	1.7871	.40402	1.5316	1.9229	.55464	.81599	2.2049	2.0735
#1	.10129	.25458	.25131	1.9989	25.345	.50097	5.2867	.24663
#2	.10217	.25481	.24927	1.9630	25.445	.50529	5.1032	.24010
#3	.09871	.25293	.24394	1.9235	25.168	.49712	5.0787	.25014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49629**	**24.002**	**.24499**	**4.6501**	**.24411**	**.57131**	**.18624**	**2.3053**
Stddev	.00768	.019	.00338	.0447	.00289	.00423	.00319	.0197
%RSD	1.5479	.07960	1.3813	.96243	1.1854	.73967	1.7149	.85616
#1	.49937	23.979	.24550	4.6686	.24083	.57525	.18947	2.3162
#2	.50195	24.013	.24810	4.6827	.24522	.57184	.18308	2.3172
#3	.48754	24.012	.24139	4.5991	.24629	.56685	.18618	2.2825
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: LCSW 7P Acquired: 6/30/2016 19:41:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574770-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50032**	**.49495**	**.49124**	**.24894**	**.50880**	**.48167**	**.00028**
Stddev	.00792	.00143	.00695	.00366	.00241	.00823	.00040
%RSD	1.5829	.28959	1.4141	1.4711	.47295	1.7084	142.66
#1	.50560	.49403	.49638	.25132	.50799	.48550	.00019
#2	.50416	.49660	.49399	.25079	.50690	.48728	-.00007
#3	.49122	.49421	.48333	.24473	.51150	.47222	.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9182.5**	**55354.**	**2538.7**
Stddev	22.3	130.	.7
%RSD	.24274	.23530	.02660
#1	9168.9	55204.	2539.2
#2	9170.4	55434.	2538.9
#3	9208.2	55424.	2538.0

Approved: July 01, 2016

Sample Name: F BLANK Acquired: 6/30/2016 19:44:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574635-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00059**	**-.00655**	**-.00220**	**.00598**	**.00061**	**.00002**	**-.03586**
Stddev	.00140	.00934	.00120	.00233	.00049	.00005	.01949
%RSD	235.37	142.58	54.560	38.877	79.885	228.45	54.344
#1	-.00149	-.00839	-.00351	.00862	.00110	-.00004	-.03873
#2	-.00131	.00357	-.00192	.00424	.00060	.00004	-.01510
#3	.00102	-.01482	-.00116	.00509	.00013	.00006	-.05376
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00025**	**.00040**	**.00115**	**.00064**	F **-.02161**	**-.01966**	**-.00526**
Stddev	.00010	.00034	.00117	.00081	.03456	.05113	.00392
%RSD	38.407	86.462	102.31	127.58	159.90	260.06	74.623
#1	.00018	.00079	.00014	.00118	-.04360	-.07502	-.00073
#2	.00036	.00018	.00243	-.00030	.01822	.02580	-.00746
#3	.00022	.00022	.00086	.00103	-.03946	-.00976	-.00758
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.11283**	**-.00019**	**.00010**	**133.88**	**-.00098**	**-.00308**	**-.00041**
Stddev	.03451	.00259	.00029	.25	.00069	.00326	.00326
%RSD	30.583	1395.8	284.25	.18637	69.887	105.77	790.16
#1	.15207	.00277	.00035	133.64	-.00169	-.00590	.00137
#2	.09918	-.00126	.00017	134.14	-.00095	.00049	-.00418
#3	.08723	-.00207	-.00022	133.84	-.00031	-.00382	.00157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 01, 2016

Sample Name: F BLANK Acquired: 6/30/2016 19:44:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574635-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00231	-.00111	.00786	-.00061	.00041	.00524	-.00406
Stddev	.00414	.00223	.00278	.00053	.00049	.00348	.00128
%RSD	178.86	200.46	35.344	86.884	118.59	66.392	31.510
#1	.00242	-.00359	.01106	-.00122	.00089	.00836	-.00498
#2	-.00188	-.00048	.00620	-.00029	.00045	.00588	-.00260
#3	.00640	.00073	.00631	-.00032	-.00009	.00149	-.00459
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00006	.00292	-.00012
Stddev	.00056	.00013	.00095
%RSD	903.76	4.3908	791.46
#1	.00065	.00306	.00045
#2	-.00000	.00288	-.00122
#3	-.00046	.00282	.00041
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9181.4	54900.	2554.4
Stddev	15.7	48.	10.3
%RSD	.17110	.08659	.40182
#1	9181.6	54852.	2562.3
#2	9197.0	54901.	2542.8
#3	9165.6	54947.	2558.1

Approved: July 01, 2016

Sample Name: L1606150101 Acquired: 6/30/2016 19:48:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00173	-.00290	-.00344	.01862	.06701	.00006	53.553	.00250
Stddev	.00153	.00663	.00184	.00289	.00128	.00003	.188	.00015
%RSD	88.423	228.47	53.449	15.529	1.9104	53.653	.35047	5.8334
#1	-.00009	.00191	-.00243	.02071	.06574	.00009	53.519	.00242
#2	-.00197	-.01046	-.00556	.01532	.06830	.00002	53.755	.00267
#3	-.00312	-.00015	-.00232	.01983	.06699	.00008	53.384	.00241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00113	.00032	.98925	.00197	.64028	.00141	.98994	.15346
Stddev	.00020	.00052	.06702	.01933	.03539	.00268	.10606	.00132
%RSD	17.870	158.85	6.7744	980.59	5.5266	189.35	10.714	.86091
#1	.00122	.00087	1.0289	.01902	.59949	.00446	1.0624	.15475
#2	.00090	.00025	1.0270	-.01903	.66277	.00036	1.0392	.15211
#3	.00127	-.00015	.91187	.00593	.65857	-.00057	.86821	.15353
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00033	131.62	.01495	.32828	.00186	.00521	.00228	.39535
Stddev	.00016	.76	.00159	.01542	.00217	.00141	.00489	.01770
%RSD	49.125	.57648	10.645	4.6983	116.52	27.042	214.74	4.4767
#1	-.00026	131.25	.01445	.33144	.00346	.00545	-.00300	.40634
#2	-.00051	132.49	.01673	.34188	-.00061	.00370	.00318	.40479
#3	-.00021	131.11	.01367	.31152	.00272	.00649	.00665	.37494
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606150101 Acquired: 6/30/2016 19:48:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.09764	.00075	-.00089	.00014	.45909	.00012
Stddev	.00037	.00011	.00810	.00173	.00038	.03124	.00019
%RSD	231.95	.11361	1084.7	193.80	277.77	6.8037	159.66
#1	.00020	.09763	.00729	.00110	.00056	.47422	.00015
#2	-.00023	.09776	-.00831	-.00181	-.00015	.47989	.00029
#3	.00051	.09754	.00326	-.00197	-.00000	.42317	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9106.1	54464.	2536.2
Stddev	24.7	257.	7.7
%RSD	.27123	.47195	.30494
#1	9104.3	54754.	2528.3
#2	9131.6	54373.	2536.5
#3	9082.3	54265.	2543.7

Approved: July 01, 2016

Sample Name: L1606150102 Acquired: 6/30/2016 19:52:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00151	.29200	.00053	.04049	.06863	-.00001	21.238	.00298
Stddev	.00242	.00690	.00211	.00202	.00084	.00009	.132	.00009
%RSD	160.04	2.3635	401.62	4.9827	1.2206	1027.8	.61938	3.1183
#1	-.00256	.29981	.00239	.04244	.06846	-.00003	21.086	.00299
#2	.00125	.28672	.00096	.04062	.06955	.00009	21.321	.00289
#3	-.00322	.28947	-.00177	.03841	.06790	-.00008	21.306	.00307
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00883	.00131	15.665	.25177	.67222	.00425	.70674	.45310
Stddev	.00076	.00021	.974	.02762	.16484	.00236	.03378	.00494
%RSD	8.6239	15.974	6.2179	10.968	24.521	55.479	4.7797	1.0911
#1	.00938	.00124	16.248	.22271	.86134	.00156	.68575	.45009
#2	.00915	.00115	16.206	.27767	.55903	.00522	.74571	.45881
#3	.00796	.00155	14.540	.25493	.59630	.00597	.68877	.45041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	138.32	.00837	4.6566	.00883	.00428	.00410	.49375
Stddev	.00021	.97	.00031	.2916	.00280	.00182	.00555	.02380
%RSD	2120.9	.70020	3.7647	6.2628	31.775	42.465	135.36	4.8198
#1	.00020	137.21	.00870	4.8268	.00887	.00233	.00679	.50932
#2	-.00022	138.97	.00832	4.8231	.00600	.00593	-.00228	.50558
#3	-.00001	138.78	.00807	4.3198	.01161	.00458	.00780	.46636
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606150102 Acquired: 6/30/2016 19:52:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.09801	.00095	-.00229	-.00054	3.9913	.00061
Stddev	.00080	.00098	.00424	.00064	.00134	.2506	.00035
%RSD	259.16	1.0048	444.74	28.065	247.04	6.2786	57.112
#1	-.00028	.09705	-.00295	-.00275	.00047	4.1412	.00073
#2	.00122	.09901	.00547	-.00257	-.00207	4.1307	.00022
#3	-.00002	.09798	.00035	-.00156	-.00003	3.7020	.00088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8991.2	55005.	2566.6
Stddev	15.5	65.	10.6
%RSD	.17239	.11760	.41211
#1	8975.4	55063.	2576.9
#2	9006.4	54935.	2555.8
#3	8992.0	55017.	2567.3

Approved: July 01, 2016

Sample Name: L1606153401 Acquired: 6/30/2016 19:56:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00084	-.00038	-.00134	.01749	.10035	.00004	30.511	.00027
Stddev	.00144	.00862	.00090	.00090	.00051	.00008	.102	.00003
%RSD	171.97	2274.5	67.179	5.1658	.51247	206.91	.33514	10.906
#1	.00077	.00795	-.00030	.01716	.10061	-.00002	30.489	.00028
#2	-.00201	.00018	-.00180	.01680	.09976	.00012	30.421	.00023
#3	-.00129	-.00926	-.00191	.01851	.10068	.00000	30.622	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00098	.00148	.00025	-.01992	.20630	.00257	3.8838	.11561
Stddev	.00014	.00089	.00052	.01697	.09091	.00277	.0666	.00215
%RSD	13.783	60.502	208.62	85.192	44.069	108.16	1.7155	1.8576
#1	.00088	.00161	.00079	-.03701	.29163	.00292	3.8821	.11430
#2	.00094	.00052	.00023	-.00307	.21659	-.00037	3.9513	.11808
#3	.00114	.00230	-.00026	-.01970	.11068	.00515	3.8181	.11444
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00024	130.84	-.00000	.00178	.00001	.00468	.00113	.83118
Stddev	.00013	.27	.00110	.00951	.00414	.00207	.00342	.05276
%RSD	55.504	.20995	88053.	533.01	68283.	44.289	303.02	6.3473
#1	-.00038	131.10	-.00072	.00032	-.00382	.00528	-.00061	.86085
#2	-.00019	130.55	.00127	.01195	-.00055	.00639	.00506	.86241
#3	-.00014	130.86	-.00055	-.00691	.00439	.00238	-.00107	.77026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606153401 Acquired: 6/30/2016 19:56:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00078**	**.07216**	**.00269**	**-.00278**	**.00032**	**.00450**	**.00054**
Stddev	.00093	.00027	.00015	.00139	.00052	.00034	.00070
%RSD	119.93	.36826	5.4635	50.049	163.92	7.6269	130.45
#1	-.00028	.07240	.00255	-.00164	.00073	.00477	.00025
#2	-.00186	.07187	.00268	-.00433	.00050	.00461	.00134
#3	-.00020	.07220	.00284	-.00238	-.00027	.00411	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9155.5**	**55030.**	**2567.9**
Stddev	7.4	223.	6.8
%RSD	.08055	.40444	.26356
#1	9163.6	55242.	2560.1
#2	9153.6	54798.	2571.5
#3	9149.3	55050.	2572.2

Approved: July 01, 2016

Sample Name: L1606156101 Acquired: 6/30/2016 20:00:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00162**	**-.00040**	**-.00026**	**.22109**	**.25770**	**-.00001**	**67.199**	**.00030**
Stddev	.00164	.00035	.00178	.00234	.00191	.00006	.496	.00009
%RSD	101.44	87.531	677.11	1.0584	.74220	504.88	.73822	29.324
#1	-.00001	-.00019	-.00152	.22181	.25752	-.00007	66.849	.00040
#2	-.00154	-.00081	-.00104	.21847	.25970	.00003	67.766	.00027
#3	-.00329	-.00022	.00177	.22298	.25589	.00001	66.980	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00227**	**.00144**	**-.00018**	**.39220**	**1.5737**	**.03169**	**2.2713**	**2.5439**
Stddev	.00043	.00109	.00016	.02226	.1639	.00416	.0873	.0209
%RSD	18.974	75.940	87.875	5.6759	10.412	13.124	3.8452	.82235
#1	.00213	.00022	.00000	.37147	1.6379	.03562	2.3555	2.5343
#2	.00276	.00175	-.00025	.38941	1.6957	.02733	2.1811	2.5679
#3	.00194	.00234	-.00030	.41573	1.3875	.03214	2.2773	2.5295
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00204**	**159.36**	**.00510**	**.00107**	**-.00176**	**.00232**	**.00244**	**1.0365**
Stddev	.00054	.90	.00023	.00256	.00308	.00411	.01076	.0288
%RSD	26.670	.56698	4.5286	238.90	174.89	177.32	440.44	2.7773
#1	.00183	159.00	.00534	.00287	-.00505	-.00241	.00467	1.0513
#2	.00266	160.39	.00508	-.00186	-.00126	.00432	.01192	1.0549
#3	.00164	158.69	.00488	.00221	.00104	.00503	-.00926	1.0034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606156101 Acquired: 6/30/2016 20:00:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00059**	**2.5107**	**-.00818**	**-.00066**	**.00051**	**.01848**	**.00037**
Stddev	.00088	.0141	.00279	.00256	.00040	.00062	.00036
%RSD	148.22	.56312	34.175	385.07	79.123	3.3757	96.232
#1	-.00160	2.5085	-.00524	-.00108	.00095	.01878	.00020
#2	-.00025	2.5258	-.00848	.00208	.00018	.01890	.00013
#3	.00007	2.4977	-.01080	-.00299	.00039	.01776	.00078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9071.7**	**54313.**	**2558.7**
Stddev	26.8	157.	13.4
%RSD	.29585	.28923	.52515
#1	9047.8	54179.	2561.7
#2	9100.7	54273.	2544.1
#3	9066.5	54486.	2570.5

Approved: July 01, 2016

Sample Name: L1606156801 Acquired: 6/30/2016 20:04:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00102**	**.02920**	**-.00319**	**.02322**	**.01815**	**.00010**	**47.735**	**.00032**
Stddev	.00229	.00586	.00154	.00218	.00051	.00005	.530	.00036
%RSD	223.78	20.063	48.187	9.3729	2.7901	49.822	1.1111	111.60
#1	-.00159	.03449	-.00313	.02075	.01869	.00015	47.980	-.00009
#2	-.00297	.03022	-.00476	.02403	.01808	.00009	48.098	.00047
#3	.00150	.02290	-.00169	.02487	.01769	.00005	47.126	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00034**	**.00116**	**.00030**	**.94359**	**2.1307**	**-.00457**	**10.213**	**.12867**
Stddev	.00038	.00049	.00134	.02428	.0725	.00467	.035	.00297
%RSD	113.91	41.966	441.97	2.5735	3.4028	102.20	.34628	2.3084
#1	-.00004	.00129	-.00026	.95570	2.2090	.00069	10.248	.13207
#2	.00032	.00157	.00183	.91563	2.1175	-.00619	10.177	.12659
#3	.00073	.00062	-.00066	.95943	2.0658	-.00822	10.216	.12734
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00040**	**63.415**	**-.00034**	**.01200**	**.00204**	**-.00037**	**.00043**	**2.9761**
Stddev	.00038	.276	.00030	.00298	.00039	.00410	.00517	.1962
%RSD	95.364	.43470	89.141	24.838	19.142	1094.0	1207.2	6.5924
#1	.00075	63.407	-.00017	.01164	.00237	.00276	-.00235	3.0957
#2	-.00000	63.695	-.00015	.00922	.00215	-.00502	.00639	3.0829
#3	.00045	63.144	-.00069	.01515	.00161	.00114	-.00275	2.7497
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606156801 Acquired: 6/30/2016 20:04:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00066**	**.15583**	**.00196**	**-.00005**	**.00048**	**.02531**	**.00056**
Stddev	.00025	.00068	.00486	.00079	.00059	.00215	.00058
%RSD	38.557	.43441	247.68	1657.4	121.92	8.4992	102.45
#1	-.00093	.15634	.00302	.00001	.00033	.02681	.00111
#2	-.00043	.15506	-.00334	.00072	.00114	.02628	.00061
#3	-.00062	.15610	.00621	-.00087	-.00002	.02285	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9149.7**	**55168.**	**2544.0**
Stddev	16.5	50.	10.4
%RSD	.18046	.09132	.40866
#1	9137.2	55202.	2532.3
#2	9168.4	55110.	2547.7
#3	9143.4	55192.	2552.1

Approved: July 01, 2016

Sample Name: L1606156901 Acquired: 6/30/2016 20:08:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00238	.00208	-.00126	.02632	.00889	-.00001	50.430	.00012
Stddev	.00089	.00276	.00087	.00167	.00055	.00011	.339	.00019
%RSD	37.128	132.77	69.127	6.3621	6.1843	851.84	.67165	158.70
#1	-.00316	.00050	-.00218	.02697	.00948	.00003	50.125	.00005
#2	-.00142	.00047	-.00113	.02442	.00878	.00006	50.795	-.00003
#3	-.00257	.00526	-.00046	.02757	.00840	-.00014	50.371	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	.00059	-.00026	.15793	1.2618	.00287	14.852	.11243
Stddev	.00044	.00064	.00128	.01062	.1316	.00418	.013	.00211
%RSD	67.391	108.79	487.15	6.7221	10.426	145.47	.08681	1.8775
#1	.00015	.00097	-.00056	.16294	1.1852	-.00142	14.849	.11464
#2	.00087	.00095	-.00137	.16512	1.1865	.00310	14.840	.11223
#3	.00095	-.00015	.00114	.14574	1.4137	.00693	14.866	.11043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	15.220	-.00003	.00294	-.00144	.00326	.00341	4.4389
Stddev	.00026	.162	.00027	.00545	.00311	.00719	.00365	.3109
%RSD	56.713	1.0645	791.86	185.05	215.41	220.34	107.17	7.0045
#1	.00041	15.117	-.00025	.00912	.00117	-.00494	.00636	4.6242
#2	.00074	15.407	-.00011	.00087	-.00062	.00628	-.00068	4.6126
#3	.00023	15.136	.00026	-.00116	-.00488	.00845	.00454	4.0800
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606156901 Acquired: 6/30/2016 20:08:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	.16437	.00174	-.00639	.00065	.00420	.00042
Stddev	.00031	.00089	.00260	.00355	.00048	.00068	.00048
%RSD	134.31	.54401	149.47	55.565	74.051	16.184	115.40
#1	-.00011	.16336	-.00126	-.00880	.00120	.00463	.00089
#2	.00049	.16507	.00334	-.00805	.00033	.00454	-.00007
#3	.00031	.16467	.00313	-.00231	.00041	.00341	.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9179.7	55494.	2553.6
Stddev	45.8	121.	20.8
%RSD	.49859	.21731	.81371
#1	9193.0	55459.	2555.0
#2	9217.4	55395.	2532.2
#3	9128.8	55629.	2573.6

Approved: July 01, 2016

Sample Name: L1606157001 Acquired: 6/30/2016 20:12:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00031	.01359	-.00208	.01579	.02062	-.00000	37.577	.00007
Stddev	.00080	.00638	.00060	.00049	.00126	.00009	.168	.00030
%RSD	258.38	46.907	28.924	3.1197	6.1075	4053.7	.44696	452.15
#1	-.00066	.01520	-.00271	.01627	.02155	.00007	37.547	-.00027
#2	.00060	.01901	-.00203	.01579	.01918	-.00011	37.758	.00016
#3	-.00087	.00657	-.00151	.01529	.02111	.00003	37.426	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	.00079	.00017	.35996	2.2660	-.00258	7.4617	.04586
Stddev	.00023	.00040	.00077	.02292	.1275	.00184	.0920	.00231
%RSD	39.242	50.391	458.20	6.3663	5.6272	71.429	1.2334	5.0333
#1	.00075	.00116	-.00029	.38049	2.3012	-.00442	7.4015	.04789
#2	.00071	.00037	.00106	.36415	2.3722	-.00073	7.5676	.04335
#3	.00033	.00085	-.00026	.33524	2.1246	-.00260	7.4160	.04633
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00082	5.6377	.00015	.01361	.00165	.00219	-.00255	1.2769
Stddev	.00014	.0369	.00076	.00344	.00097	.00091	.00570	.0853
%RSD	17.184	.65373	506.35	25.252	58.793	41.842	223.46	6.6780
#1	.00066	5.6086	-.00053	.01020	.00092	.00213	-.00185	1.3294
#2	.00093	5.6792	.00098	.01356	.00274	.00313	.00276	1.3227
#3	.00086	5.6254	.00001	.01707	.00128	.00130	-.00857	1.1785
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606157001 Acquired: 6/30/2016 20:12:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**.14209**	**-.00244**	**-.00266**	**-.00035**	**.00221**	**-.00009**
Stddev	.00008	.00101	.00663	.00134	.00059	.00010	.00004
%RSD	70.682	.71355	272.29	50.299	168.05	4.7227	45.675
#1	-.00006	.14124	-.00365	-.00413	.00005	.00233	-.00004
#2	-.00021	.14321	-.00837	-.00235	-.00102	.00214	-.00012
#3	-.00008	.14181	.00472	-.00151	-.00008	.00215	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9220.7**	**55950.**	**2539.1**
Stddev	11.0	115.	15.1
%RSD	.11926	.20583	.59477
#1	9212.2	55890.	2546.3
#2	9233.1	55878.	2521.8
#3	9216.9	56083.	2549.3

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 20:16:05 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37698**	**9.3522**	**.36778**	**.45378**	**.91434**	**.04732**	**9.1088**	**.04641**
Stddev	.00421	.0196	.00085	.00296	.00309	.00005	.0584	.00021
%RSD	1.1162	.20939	.23175	.65213	.33819	.11429	.64127	.45317
#1	.37521	9.3314	.36872	.45053	.91077	.04738	9.0427	.04623
#2	.38178	9.3703	.36705	.45632	.91628	.04727	9.1535	.04636
#3	.37394	9.3549	.36757	.45449	.91596	.04733	9.1303	.04664
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18926**	**.47369**	**.46865**	**3.6577**	**48.172**	**.92281**	**9.5018**	**.46131**
Stddev	.00075	.00133	.00288	.0273	.261	.00749	.1346	.00302
%RSD	.39376	.28049	.61495	.74670	.54207	.81138	1.4170	.65431
#1	.18947	.47215	.46681	3.6302	48.046	.91522	9.3610	.46150
#2	.18988	.47443	.47197	3.6580	47.997	.92301	9.5153	.46422
#3	.18843	.47448	.46717	3.6848	48.472	.93019	9.6293	.45819
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.93610**	**45.265**	**.46450**	**9.1319**	**.46582**	**1.0988**	**.37221**	**4.5787**
Stddev	.00250	.226	.00254	.0247	.00420	.0022	.00873	.0078
%RSD	.26711	.49990	.54702	.27041	.90228	.20255	2.3446	.17121
#1	.93771	45.004	.46536	9.1282	.46344	1.0985	.38228	4.5738
#2	.93736	45.379	.46651	9.1583	.47067	1.1011	.36763	4.5877
#3	.93322	45.412	.46165	9.1093	.46333	1.0967	.36673	4.5745
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 20:16:05 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.94464	.91269	.90903	.47747	.95345	.91921	.95463
Stddev	.00578	.00504	.00855	.00191	.00459	.00321	.00332
%RSD	.61240	.55199	.94090	.40089	.48108	.34907	.34799
#1	.94726	.90725	.90345	.47530	.94863	.91972	.95142
#2	.94866	.91361	.91888	.47823	.95776	.92213	.95806
#3	.93801	.91720	.90476	.47890	.95397	.91578	.95441
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9642.8	57909.	2639.7
Stddev	14.8	150.	9.9
%RSD	.15343	.25828	.37515
#1	9645.6	58000.	2649.7
#2	9626.7	57991.	2639.4
#3	9655.9	57736.	2629.9

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 20:19:43 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00192**	**-.01084**	**-.00233**	**.00352**	**.00039**	**-.00001**	**-.06163**	**.00017**
Stddev	.00182	.00183	.00059	.00285	.00091	.00005	.05545	.00024
%RSD	94.894	16.858	25.456	80.790	235.22	569.95	89.974	137.10
#1	-.00311	-.01164	-.00193	.00033	.00136	.00002	-.03579	.00024
#2	.00018	-.01213	-.00302	.00443	-.00044	-.00007	-.12529	-.00009
#3	-.00283	-.00875	-.00205	.00581	.00024	.00002	-.02382	.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.00057**	**.00030**	**-.04588**	**-.06569**	**.00149**	**.07690**	**-.00054**
Stddev	.00023	.00024	.00054	.02167	.10274	.00159	.03418	.00273
%RSD	1990.3	41.497	183.29	47.227	156.39	106.79	44.455	501.90
#1	-.00027	.00043	.00019	-.05238	-.11555	.00148	.04225	.00261
#2	.00008	.00084	-.00019	-.06356	.05246	-.00009	.07784	-.00204
#3	.00016	.00043	.00089	-.02171	-.13399	.00309	.11060	-.00220
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**.00427**	**-.00060**	**.00383**	**-.00088**	**.00333**	**.00254**	**.00212**
Stddev	.00040	.03166	.00026	.00661	.00313	.00640	.00309	.00221
%RSD	619.41	741.48	44.159	172.62	355.82	192.15	121.87	104.37
#1	-.00040	-.00071	-.00089	-.00057	.00245	.00722	.00125	.00438
#2	.00030	.03812	-.00049	.01144	-.00134	.00683	.00607	.00202
#3	.00030	-.02460	-.00040	.00063	-.00375	-.00406	.00029	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 20:19:43 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00051**	**.00000**	**.00414**	**-.00333**	**.00048**	**-.00008**	**.00043**
Stddev	.00047	.00054	.00426	.00181	.00084	.00010	.00049
%RSD	92.496	451070.	102.77	54.433	175.02	126.54	113.13
#1	-.00035	-.00028	.00858	-.00223	.00029	-.00020	.00018
#2	-.00104	.00062	.00377	-.00234	.00140	.00001	.00100
#3	-.00014	-.00034	.00009	-.00542	-.00025	-.00006	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9747.8**	**58694.**	**2637.3**
Stddev	6.8	53.	16.1
%RSD	.06936	.08981	.60991
#1	9740.1	58753.	2622.9
#2	9752.1	58651.	2634.4
#3	9751.4	58679.	2654.7

Approved: July 01, 2016

Sample Name: L1606157601 Acquired: 6/30/2016 20:23:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.00149	-.00501	.02252	.29037	.00001	44.922	.00028
Stddev	.00060	.00297	.00160	.00034	.00192	.00015	.189	.00011
%RSD	695.50	199.05	31.856	1.5039	.66104	1051.2	.42140	38.920
#1	.00057	.00282	-.00602	.02213	.29118	.00005	45.068	.00017
#2	-.00024	-.00191	-.00584	.02267	.29175	-.00015	44.990	.00038
#3	-.00060	.00357	-.00317	.02276	.28817	.00015	44.708	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.00168	.02226	.14035	1.2713	.00156	5.8297	.04839
Stddev	.00023	.00087	.00283	.02078	.0402	.00502	.0778	.00219
%RSD	69.398	51.541	12.701	14.808	3.1639	322.53	1.3346	4.5245
#1	.00008	.00088	.02499	.14534	1.2977	.00498	5.9195	.04903
#2	.00037	.00260	.02243	.15818	1.2911	.00389	5.7815	.05018
#3	.00053	.00156	.01935	.11752	1.2250	-.00421	5.7883	.04595
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	8.0518	-.00031	.02681	.00250	.00314	-.00298	2.7521
Stddev	.00020	.0603	.00039	.00359	.00237	.00412	.00532	.1513
%RSD	413.06	.74899	127.04	13.388	94.830	130.98	178.91	5.4974
#1	.00026	8.0375	.00009	.02379	.00408	.00253	-.00910	2.8379
#2	.00001	8.1180	-.00069	.03078	-.00023	.00754	-.00034	2.8410
#3	-.00013	7.9999	-.00032	.02587	.00366	-.00063	.00051	2.5774
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606157601 Acquired: 6/30/2016 20:23:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00109**	**.34251**	**.00100**	**-.00134**	**-.00011**	**.05143**	**.00064**
Stddev	.00035	.00114	.00466	.00214	.00067	.00360	.00065
%RSD	32.077	.33269	465.57	160.18	631.24	6.9901	102.34
#1	.00092	.34297	.00624	-.00329	-.00075	.05366	.00067
#2	.00149	.34335	-.00269	-.00167	.00059	.05335	-.00003
#3	.00086	.34122	-.00055	.00095	-.00016	.04728	.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9177.5**	**55616.**	**2539.9**
Stddev	17.6	51.	22.2
%RSD	.19230	.09089	.87571
#1	9195.8	55617.	2517.1
#2	9175.9	55666.	2540.9
#3	9160.6	55565.	2561.6

Approved: July 01, 2016

Sample Name: L1606157701 Acquired: 6/30/2016 20:27:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00051	.48692	.00617	.11569	.06403	.00010	10.881	.00031
Stddev	.00225	.00938	.00089	.00393	.00067	.00003	.066	.00022
%RSD	441.53	1.9264	14.400	3.3964	1.0423	31.510	.60561	71.147
#1	.00160	.49237	.00633	.12007	.06420	.00014	10.928	.00006
#2	-.00287	.49230	.00521	.11450	.06461	.00007	10.910	.00045
#3	-.00025	.47609	.00696	.11249	.06330	.00009	10.806	.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00078	.00080	.26215	.38327	.86561	.00586	2.5129	.02447
Stddev	.00036	.00050	.01598	.02651	.10470	.00180	.0507	.00420
%RSD	45.782	62.875	6.0961	6.9171	12.095	30.812	2.0176	17.178
#1	.00085	.00044	.27105	.37364	.97824	.00788	2.5393	.02893
#2	.00040	.00058	.27170	.41325	.77125	.00443	2.4545	.02390
#3	.00110	.00137	.24370	.36292	.84735	.00525	2.5450	.02058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00211	149.05	.00160	.11047	.02288	.00360	.00020	3.9085
Stddev	.00043	1.16	.00007	.01220	.00061	.00588	.00439	.2522
%RSD	20.271	.77744	4.4060	11.045	2.6453	163.26	2193.9	6.4532
#1	.00260	149.51	.00158	.12059	.02301	-.00282	.00526	4.0820
#2	.00187	149.90	.00168	.11390	.02222	.00873	-.00256	4.0242
#3	.00185	147.73	.00155	.09692	.02341	.00491	-.00210	3.6191
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606157701 Acquired: 6/30/2016 20:27:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00151	.15038	.01593	-.00130	.00029	.04234	.00046
Stddev	.00016	.00221	.00915	.00125	.00013	.00276	.00036
%RSD	10.332	1.4686	57.435	96.214	45.850	6.5236	76.973
#1	.00133	.15071	.01678	-.00158	.00016	.04424	.00008
#2	.00159	.15240	.02462	.00007	.00043	.04361	.00078
#3	.00162	.14802	.00638	-.00238	.00028	.03917	.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9069.8	54569.	2509.1
Stddev	13.5	90.	13.6
%RSD	.14886	.16564	.54117
#1	9056.3	54572.	2495.4
#2	9069.9	54477.	2509.3
#3	9083.3	54658.	2522.5

Approved: July 01, 2016

Sample Name: L1606157702 Acquired: 6/30/2016 20:31:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.05824	.00730	.11297	.05914	.00008	10.696	.00023
Stddev	.00065	.00607	.00243	.00416	.00049	.00005	.016	.00019
%RSD	240.90	10.423	33.364	3.6828	.83160	60.573	.15026	85.744
#1	.00101	.05756	.01011	.11045	.05858	.00014	10.680	.00000
#2	-.00002	.05253	.00577	.11777	.05947	.00007	10.697	.00037
#3	-.00018	.06462	.00602	.11069	.05938	.00004	10.712	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00092	.02668	.02478	.75897	.00558	2.3348	.00536
Stddev	.00037	.00141	.00129	.01427	.04006	.00537	.0450	.00233
%RSD	121.74	152.74	4.8407	57.566	5.2779	96.253	1.9282	43.566
#1	.00013	.00245	.02785	.04121	.79568	.00293	2.3521	.00604
#2	.00073	-.00032	.02688	.01761	.71624	.00205	2.3686	.00276
#3	.00006	.00064	.02529	.01552	.76498	.01177	2.2837	.00728
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00188	148.06	-.00059	.02385	-.00253	.00093	.00136	3.2485
Stddev	.00030	.31	.00054	.00550	.00343	.00464	.00552	.2038
%RSD	15.885	.20993	91.137	23.058	135.69	498.45	406.17	6.2740
#1	.00158	147.72	-.00001	.02418	-.00617	.00333	.00772	3.3639
#2	.00217	148.33	-.00070	.02917	.00064	-.00442	-.00222	3.3684
#3	.00189	148.12	-.00106	.01819	-.00205	.00388	-.00142	3.0131
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606157702 Acquired: 6/30/2016 20:31:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00047**	**.14683**	**.00720**	**-.00490**	**.00046**	**.00166**	**.00017**
Stddev	.00099	.00084	.00391	.00141	.00056	.00023	.00023
%RSD	211.93	.57314	54.311	28.758	122.34	13.636	139.25
#1	.00067	.14732	.00760	-.00328	.00109	.00183	.00001
#2	-.00094	.14731	.01088	-.00584	.00025	.00175	.00005
#3	-.00112	.14586	.00310	-.00557	.00003	.00141	.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9070.9**	**54307.**	**2507.2**
Stddev	7.2	142.	11.2
%RSD	.07961	.26154	.44596
#1	9065.0	54335.	2498.3
#2	9079.0	54153.	2519.8
#3	9068.8	54433.	2503.6

Approved: July 01, 2016

Sample Name: L1606157801 Acquired: 6/30/2016 20:35:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -.00458	-.00454	-.00227	.00236	.01255	-.00002	1.5071
Stddev	.00156	.01133	.00128	.00045	.00037	.00004	.0089
%RSD	33.974	249.54	56.288	18.909	2.9180	179.41	.58850
#1	-.00313	.00784	-.00159	.00276	.01232	.00001	1.5079
#2	-.00439	-.01438	-.00375	.00243	.01237	-.00001	1.4978
#3	-.00622	-.00708	-.00148	.00188	.01297	-.00007	1.5155
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	9.0000						
Low Limit	-.00400						

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	.00535	-.00177	.00377	63.580	.24647	.00116
Stddev	.00002	.00018	.00097	.00909	.165	.07461	.00286
%RSD	13.024	3.3090	54.675	241.32	.25921	30.270	247.14
#1	-.00016	.00553	-.00104	.00841	63.448	.26280	.00253
#2	-.00020	.00534	-.00141	.00960	63.765	.31157	.00307
#3	-.00018	.00518	-.00287	-.00671	63.528	.16506	-.00213
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.18562	1.5518	-.00035	124.43	.06791	-.03175	.00128
Stddev	.07598	.0043	.00058	.38	.00432	.00824	.00014
%RSD	40.935	.27780	163.43	.30520	6.3605	25.960	10.626
#1	.15343	1.5487	-.00045	124.13	.07043	-.02448	.00115
#2	.13103	1.5567	-.00087	124.86	.07037	-.03006	.00142
#3	.27240	1.5499	.00027	124.30	.06292	-.04071	.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 01, 2016

Sample Name: L1606157801 Acquired: 6/30/2016 20:35:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00158	-.00714	.12162	.00046	.02687	.01812	-.00299
Stddev	.00189	.00080	.00570	.00023	.00016	.00349	.00190
%RSD	119.76	11.252	4.6845	50.139	.57762	19.269	63.582
#1	-.00060	-.00624	.12518	.00020	.02669	.02207	-.00302
#2	.00283	-.00779	.12463	.00063	.02696	.01685	-.00488
#3	.00250	-.00739	.11505	.00054	.02697	.01544	-.00108
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00012	.07635	-.00182
Stddev	.00004	.00519	.00025
%RSD	34.863	6.7976	13.454
#1	-.00012	.07945	-.00175
#2	-.00008	.07925	-.00163
#3	-.00016	.07036	-.00210
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9116.4	54937.	2532.3
Stddev	18.1	297.	10.2
%RSD	.19870	.53981	.40314
#1	9102.4	55240.	2542.1
#2	9136.9	54922.	2533.0
#3	9109.9	54648.	2521.7

Approved: July 01, 2016

Sample Name: L1606158801 Acquired: 6/30/2016 20:39:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574770-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00138	.07504	.00400	.23121	.04362	.00010	2.0421
Stddev	.00137	.00035	.00375	.00323	.00119	.00002	.0344
%RSD	98.966	.47159	93.720	1.3985	2.7248	21.780	1.6842
#1	-.00277	.07534	.00008	.23004	.04492	.00008	2.0712
#2	-.00135	.07465	.00756	.22873	.04258	.00009	2.0042
#3	-.00003	.07511	.00437	.23487	.04336	.00012	2.0510
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.00067	.00074	.00416	.19363	.41691	.00620
Stddev	.00019	.00025	.00039	.00167	.01702	.12873	.00420
%RSD	924.24	37.207	51.850	40.251	8.7877	30.878	67.776
#1	-.00003	.00038	.00118	.00559	.20663	.56307	.01033
#2	-.00014	.00083	.00062	.00457	.19987	.32037	.00635
#3	.00024	.00080	.00043	.00232	.17437	.36728	.00192
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.47166	.00889	.01641	F 308.49	-.00061	.01528	.00033
Stddev	.11628	.00148	.00119	3.04	.00088	.00228	.00259
%RSD	24.653	16.621	7.2272	.98576	144.57	14.920	795.85
#1	.41574	.00978	.01720	311.84	.00041	.01475	.00071
#2	.39391	.00719	.01700	307.72	-.00106	.01332	-.00244
#3	.60533	.00971	.01505	305.91	-.00119	.01778	.00271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 01, 2016

Sample Name: L1606158801 Acquired: 6/30/2016 20:39:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574770-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00185**	**-.00087**	**2.5722**	**-.00038**	**.12701**	**.00978**	**-.00344**
Stddev	.00636	.00123	.1837	.00033	.00102	.00795	.00129
%RSD	343.78	142.11	7.1434	87.853	.80319	81.252	37.441
#1	.00865	-.00106	2.6827	-.00001	.12803	.01896	-.00352
#2	.00086	-.00199	2.6737	-.00066	.12699	.00492	-.00469
#3	-.00395	.00045	2.3601	-.00046	.12599	.00548	-.00211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00023**	**.01043**	**.00061**
Stddev	.00130	.00105	.00053
%RSD	568.87	10.070	86.359
#1	.00154	.01123	.00121
#2	.00020	.01081	.00046
#3	-.00105	.00924	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8968.7**	**53176.**	**2488.6**
Stddev	29.4	269.	33.2
%RSD	.32755	.50509	1.3332
#1	8983.6	53269.	2450.3
#2	8987.7	53385.	2507.0
#3	8934.9	52873.	2508.5

Approved: July 01, 2016

Sample Name: L1606158802S Acquired: 6/30/2016 20:43:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574770-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19813**	**5.0304**	**.20034**	**1.1726**	**.53175**	**.02543**	**6.8940**
Stddev	.00177	.0170	.00174	.0068	.00351	.00004	.0692
%RSD	.89547	.33739	.86638	.57639	.66071	.14454	1.0042
#1	.20012	5.0114	.20041	1.1656	.53279	.02540	6.8749
#2	.19671	5.0358	.20204	1.1731	.53463	.02542	6.9708
#3	.19756	5.0441	.19857	1.1791	.52784	.02547	6.8363
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02446**	**.10048**	**.25397**	**.25059**	**2.1275**	**26.451**	**.51548**
Stddev	.00026	.00080	.00121	.00321	.0197	.102	.00358
%RSD	1.0641	.79577	.47648	1.2803	.92727	.38548	.69453
#1	.02475	.10079	.25321	.24985	2.1418	26.557	.51208
#2	.02437	.10107	.25536	.25411	2.1358	26.354	.51922
#3	.02425	.09957	.25333	.24782	2.1050	26.440	.51515
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.4313**	**.25262**	**.51935**	F **331.66**	**.24305**	**4.8442**	**.23983**
Stddev	.1224	.00302	.00468	1.76	.00093	.0343	.00554
%RSD	2.2533	1.1965	.90054	.53144	.38060	.70881	2.3109
#1	5.3457	.25342	.52127	332.59	.24320	4.8464	.23570
#2	5.3768	.25515	.52275	332.76	.24389	4.8773	.24613
#3	5.5715	.24927	.51401	329.63	.24206	4.8088	.23765
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 01, 2016

Sample Name: L1606158802S Acquired: 6/30/2016 20:43:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574770-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.57379	.18780	5.0978	.50126	.62292	.49594	.24079
Stddev	.00436	.00389	.0209	.00452	.00157	.00401	.00209
%RSD	.75964	2.0713	.40911	.90126	.25134	.80934	.86630
#1	.57683	.18377	5.1048	.50459	.62430	.49424	.23966
#2	.57576	.19153	5.1142	.50309	.62324	.49306	.23952
#3	.56880	.18810	5.0743	.49612	.62122	.50053	.24320
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.51651	.49980	.00075
Stddev	.00136	.00621	.00075
%RSD	.26256	1.2427	99.715
#1	.51514	.50560	.00058
#2	.51785	.50056	.00157
#3	.51653	.49325	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8971.1	53233.	2524.1
Stddev	8.1	37.	16.7
%RSD	.09033	.06860	.66013
#1	8965.3	53199.	2505.6
#2	8980.3	53229.	2528.8
#3	8967.5	53272.	2537.9

Approved: July 01, 2016

Sample Name: L1606158803SD Acquired: 6/30/2016 20:46:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574770-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19131	4.8374	.19365	1.1382	.51552	.02442	6.7396
Stddev	.00423	.0047	.00500	.0030	.00185	.00010	.0770
%RSD	2.2114	.09825	2.5840	.26616	.35808	.39455	1.1422
#1	.18726	4.8421	.19942	1.1350	.51592	.02453	6.8193
#2	.19096	4.8326	.19049	1.1385	.51713	.02435	6.7337
#3	.19570	4.8374	.19103	1.1410	.51351	.02438	6.6657
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02397	.09794	.24609	.24163	2.1058	25.647	.50151
Stddev	.00016	.00025	.00155	.00070	.0323	.157	.00381
%RSD	.64970	.25693	.63064	.28906	1.5343	.61150	.75939
#1	.02410	.09819	.24614	.24205	2.1431	25.721	.49983
#2	.02400	.09794	.24451	.24083	2.0869	25.754	.50587
#3	.02380	.09769	.24761	.24203	2.0874	25.467	.49883
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.3907	.24552	.50463	F 329.44	.23571	4.6863	.23479
Stddev	.0615	.00461	.00072	1.20	.00110	.0089	.00312
%RSD	1.1414	1.8766	.14366	.36561	.46522	.18976	1.3281
#1	5.3226	.24581	.50380	330.45	.23454	4.6808	.23141
#2	5.4422	.24077	.50495	329.77	.23589	4.6815	.23756
#3	5.4075	.24997	.50514	328.11	.23671	4.6965	.23540
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 01, 2016

Sample Name: L1606158803SD Acquired: 6/30/2016 20:46:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574770-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.56092	.18087	4.9972	.48820	.60532	.47561	.23635
Stddev	.00385	.00091	.0110	.00153	.00229	.01241	.00087
%RSD	.68560	.50282	.22041	.31377	.37910	2.6086	.36674
#1	.55891	.18071	4.9845	.48650	.60620	.46203	.23565
#2	.56535	.18185	5.0032	.48946	.60703	.47848	.23732
#3	.55849	.18006	5.0038	.48866	.60271	.48634	.23607
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.49814	.49045	.00093
Stddev	.00181	.00108	.00084
%RSD	.36328	.21982	90.424
#1	.49940	.48942	.00057
#2	.49606	.49157	.00188
#3	.49894	.49035	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8996.9	53595.	2514.9
Stddev	19.5	276.	17.0
%RSD	.21686	.51567	.67531
#1	8977.4	53345.	2505.3
#2	9016.5	53892.	2504.8
#3	8996.9	53549.	2534.5

Approved: July 01, 2016

Sample Name: L1606161401 Acquired: 6/30/2016 20:50:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00063	.40077	-.00052	.02867	.05511	-.00002	65.677	-.00004
Stddev	.00218	.00634	.00272	.00161	.00160	.00008	.528	.00020
%RSD	347.67	1.5820	525.59	5.6200	2.8997	416.56	.80320	522.84
#1	-.00103	.40458	-.00000	.03013	.05454	-.00002	66.123	.00018
#2	-.00258	.39345	-.00346	.02894	.05692	-.00009	65.812	-.00022
#3	.00172	.40428	.00191	.02694	.05388	.00006	65.095	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	.00386	.01689	.30460	1.7018	.00515	33.119	.01148
Stddev	.00019	.00085	.00138	.01762	.1964	.00466	.144	.00357
%RSD	21.269	21.925	8.1478	5.7836	11.539	90.456	.43335	31.117
#1	.00097	.00289	.01766	.32460	1.9110	.01017	33.276	.01468
#2	.00101	.00442	.01771	.29783	1.5214	.00429	32.994	.01212
#3	.00067	.00428	.01530	.29138	1.6729	.00098	33.088	.00763
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00181	9.0919	.00148	.01747	-.00039	.00313	-.00165	4.2256
Stddev	.00047	.0387	.00078	.00130	.00287	.00046	.00457	.3091
%RSD	26.057	.42572	52.981	7.4576	728.68	14.738	276.12	7.3144
#1	.00183	9.1325	.00074	.01775	.00099	.00364	.00168	4.4453
#2	.00227	9.0878	.00230	.01605	.00152	.00275	.00022	4.3593
#3	.00133	9.0554	.00139	.01860	-.00369	.00299	-.00686	3.8722
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606161401 Acquired: 6/30/2016 20:50:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00061	1.1339	.00818	-.00388	-.00004	.01599	.00090
Stddev	.00023	.0076	.00786	.00213	.00022	.00102	.00039
%RSD	38.562	.66900	96.118	54.910	527.24	6.3767	43.436
#1	-.00087	1.1393	.00449	-.00321	-.00003	.01663	.00108
#2	-.00053	1.1371	.00284	-.00217	-.00027	.01654	.00118
#3	-.00042	1.1252	.01720	-.00627	.00017	.01482	.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9130.0	55186.	2520.1
Stddev	28.7	70.	25.3
%RSD	.31416	.12659	1.0053
#1	9105.9	55242.	2506.9
#2	9161.7	55108.	2504.1
#3	9122.5	55209.	2549.3

Approved: July 01, 2016

Sample Name: L1606161801 Acquired: 6/30/2016 20:54:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00103**	**.04204**	**.00035**	**.08383**	**.13930**	**.00009**	**24.755**	**.00019**
Stddev	.00304	.00694	.00111	.00025	.00195	.00010	.181	.00019
%RSD	294.37	16.511	320.17	.30207	1.4009	116.80	.73247	100.76
#1	.00247	.04605	-.00048	.08409	.14155	-.00003	24.943	.00038
#2	-.00272	.04605	.00162	.08382	.13818	.00017	24.581	-.00001
#3	-.00285	.03403	-.00009	.08359	.13817	.00012	24.743	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00073**	**.00144**	**.04820**	**.00428**	**1.0999**	**.00769**	**6.4189**	**.00425**
Stddev	.00035	.00070	.00406	.02724	.1351	.00120	.0878	.00173
%RSD	48.406	48.291	8.4196	636.22	12.285	15.654	1.3676	40.770
#1	.00082	.00076	.05134	-.01914	1.1945	.00787	6.3463	.00388
#2	.00102	.00142	.04964	-.00220	.94511	.00641	6.3939	.00613
#3	.00034	.00215	.04362	.03418	1.1600	.00880	6.5164	.00273
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00157**	**135.23**	**-.00010**	**.01814**	**.00132**	**.00365**	**.00043**	**2.8192**
Stddev	.00020	.93	.00158	.00266	.00218	.00310	.00246	.1300
%RSD	12.642	.68514	1509.5	14.689	164.69	84.863	567.27	4.6128
#1	.00166	136.20	.00150	.01602	-.00107	.00594	.00130	2.9008
#2	.00171	134.36	-.00015	.01726	.00319	.00490	-.00234	2.8876
#3	.00134	135.14	-.00166	.02113	.00184	.00012	.00234	2.6692
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606161801 Acquired: 6/30/2016 20:54:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.36615**	**-.00040**	**-.00252**	**-.00007**	**.01247**	**.00042**
Stddev	.00088	.00044	.00696	.00253	.00067	.00071	.00017
%RSD	526.93	.11976	1737.9	100.74	958.44	5.7302	39.794
#1	-.00091	.36658	-.00832	-.00057	-.00075	.01287	.00027
#2	-.00040	.36571	.00474	-.00538	-.00005	.01289	.00038
#3	.00081	.36618	.00238	-.00159	.00059	.01164	.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9080.7**	**54522.**	**2536.0**
Stddev	9.2	62.	20.8
%RSD	.10142	.11320	.81883
#1	9081.6	54593.	2512.0
#2	9089.4	54480.	2547.3
#3	9071.1	54493.	2548.7

Approved: July 01, 2016

Sample Name: L1606161802 Acquired: 6/30/2016 20:58:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.01457**	**-.00266**	**.08699**	**.13840**	**.00003**	**24.322**	**.00042**
Stddev	.00138	.00386	.00042	.00179	.00117	.00003	.145	.00031
%RSD	985.97	26.522	15.631	2.0559	.84445	118.41	.59775	74.857
#1	.00089	.01011	-.00272	.08867	.13887	.00006	24.426	.00019
#2	.00040	.01687	-.00304	.08719	.13927	.00004	24.384	.00078
#3	-.00171	.01672	-.00222	.08511	.13707	-.00001	24.156	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00032**	**.00035**	**.02068**	**-.01744**	**1.1259**	**.00652**	**6.2547**	**.00219**
Stddev	.00030	.00065	.00170	.00504	.1125	.00222	.0997	.00179
%RSD	94.216	186.78	8.2025	28.913	9.9881	34.129	1.5944	81.603
#1	.00023	.00101	.02252	-.01831	1.0008	.00465	6.3238	.00366
#2	.00008	.00031	.02035	-.02200	1.2186	.00593	6.1404	.00020
#3	.00066	-.00028	.01917	-.01202	1.1583	.00898	6.2999	.00271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00142**	**134.06**	**-.00010**	**.00701**	**-.00116**	**.00073**	**.00205**	**2.7534**
Stddev	.00022	.94	.00033	.00742	.00240	.00279	.00724	.1550
%RSD	15.482	.70004	337.03	105.82	206.32	381.35	352.87	5.6301
#1	.00157	134.53	.00028	.01546	-.00208	.00271	.00384	2.8450
#2	.00152	134.67	-.00031	.00398	-.00297	.00195	.00823	2.8407
#3	.00117	132.98	-.00027	.00158	.00156	-.00246	-.00591	2.5744
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606161802 Acquired: 6/30/2016 20:58:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.36175**	**-.00367**	**-.00469**	**.00019**	**.01036**	**.00002**
Stddev	.00028	.00009	.00400	.00281	.00041	.00076	.00030
%RSD	75.038	.02551	108.97	59.978	210.77	7.3626	1271.1
#1	-.00068	.36172	-.00114	-.00145	-.00002	.01082	-.00010
#2	-.00033	.36167	-.00828	-.00651	-.00006	.01077	-.00020
#3	-.00012	.36185	-.00159	-.00610	.00066	.00948	.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9091.1**	**54411.**	**2518.3**
Stddev	13.2	128.	11.7
%RSD	.14466	.23480	.46536
#1	9106.2	54285.	2515.3
#2	9082.4	54408.	2508.4
#3	9084.7	54541.	2531.3

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 21:02:03 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37706**	**9.4010**	**.36986**	**.45564**	**.92042**	**.04735**	**9.1691**	**.04640**
Stddev	.00268	.0109	.00208	.00365	.00083	.00013	.0217	.00069
%RSD	.71124	.11536	.56275	.80063	.09062	.27220	.23687	1.4918
#1	.37495	9.3932	.37051	.45151	.92118	.04745	9.1523	.04698
#2	.38008	9.3963	.37154	.45845	.91953	.04740	9.1614	.04659
#3	.37616	9.4134	.36753	.45694	.92057	.04721	9.1936	.04563
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18907**	**.47340**	**.46881**	**3.6776**	**48.313**	**.93410**	**9.5767**	**.46282**
Stddev	.00330	.00047	.00637	.0211	.176	.00299	.0241	.00410
%RSD	1.7459	.09923	1.3583	.57402	.36327	.31977	.25128	.88663
#1	.19095	.47318	.47389	3.6636	48.147	.93608	9.5954	.45853
#2	.19100	.47394	.47088	3.6672	48.497	.93555	9.5496	.46671
#3	.18526	.47308	.46166	3.7019	48.296	.93066	9.5853	.46322
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.93809**	**45.850**	**.46286**	**9.1311**	**.46464**	**1.0959**	**.36881**	**4.5819**
Stddev	.01440	.095	.00740	.0887	.00547	.0103	.00398	.0297
%RSD	1.5355	.20631	1.5998	.97118	1.1777	.93919	1.0797	.64780
#1	.94465	45.824	.46652	9.1748	.46997	1.1018	.36449	4.5946
#2	.94804	45.955	.46772	9.1894	.46492	1.1018	.36962	4.6031
#3	.92157	45.771	.45433	9.0290	.45903	1.0840	.37233	4.5480
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 21:02:03 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.94225	.91998	.92362	.47767	.95680	.92114	.95496
Stddev	.01627	.00075	.01453	.00243	.00225	.01269	.00457
%RSD	1.7266	.08157	1.5735	.50785	.23509	1.3773	.47830
#1	.94985	.92067	.90748	.47666	.95516	.92810	.94980
#2	.95334	.92010	.92772	.48044	.95937	.92882	.95659
#3	.92358	.91918	.93566	.47591	.95589	.90650	.95848
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9607.9	57769.	2644.0
Stddev	15.0	139.	3.0
%RSD	.15585	.24126	.11293
#1	9595.8	57614.	2646.7
#2	9603.4	57811.	2644.5
#3	9624.7	57883.	2640.8

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 21:05:41 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00246**	**-.01425**	**-.00244**	**.00062**	**.00071**	**.00005**	**-.05016**	**.00008**
Stddev	.00324	.00356	.00126	.00231	.00094	.00007	.02301	.00011
%RSD	131.55	24.962	51.485	373.87	131.88	135.14	45.883	133.82
#1	.00574	-.01332	-.00189	.00254	.00060	.00012	-.03354	-.00003
#2	.00238	-.01819	-.00155	-.00194	-.00017	.00004	-.07643	.00019
#3	-.00074	-.01126	-.00388	.00126	.00171	-.00001	-.04051	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00030**	**.00041**	**-.00053**	**-.02066**	**.02601**	**-.00412**	**.04365**	**-.00273**
Stddev	.00014	.00046	.00138	.01303	.03098	.00553	.06430	.00168
%RSD	47.790	112.01	259.62	63.055	119.12	134.48	147.32	61.530
#1	.00026	-.00010	-.00053	-.00584	.05157	-.01042	.10653	-.00089
#2	.00018	.00081	.00085	-.03030	.03491	-.00007	.04640	-.00312
#3	.00046	.00053	-.00191	-.02583	-.00845	-.00185	-.02199	-.00418
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00000**	**.05039**	**-.00043**	**-.00257**	**-.00100**	**.00023**	**-.00109**	**.00188**
Stddev	.00029	.02467	.00040	.00265	.00191	.00315	.00552	.00281
%RSD	168080.	48.960	92.004	103.40	190.75	1342.0	504.57	149.22
#1	.00017	.07401	-.00066	-.00078	-.00146	-.00317	-.00133	.00509
#2	-.00034	.02479	.00003	-.00562	-.00263	.00084	-.00649	.00071
#3	.00017	.05237	-.00067	-.00130	.00109	.00303	.00454	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 21:05:41 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00063**	**.00005**	**.00510**	**-.00333**	**.00058**	**-.00022**	**.00001**
Stddev	.00042	.00051	.00686	.00220	.00100	.00006	.00035
%RSD	67.960	1026.0	134.53	66.106	171.56	29.895	3323.6
#1	-.00105	.00063	-.00132	-.00429	.00158	-.00028	-.00035
#2	-.00020	-.00017	.00429	-.00081	.00057	-.00023	.00036
#3	-.00062	-.00031	.01233	-.00489	-.00041	-.00015	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9761.2**	**58796.**	**2645.1**
Stddev	5.7	84.	9.6
%RSD	.05870	.14316	.36242
#1	9757.7	58751.	2636.6
#2	9767.8	58743.	2655.5
#3	9758.1	58893.	2643.2

Approved: July 01, 2016

Sample Name: L1606161901 Acquired: 6/30/2016 21:09:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00138	.02118	-.00362	.01717	.08790	-.00000	65.246	.00031
Stddev	.00074	.00541	.00180	.00063	.00043	.00002	.609	.00014
%RSD	53.083	25.542	49.697	3.6505	.48390	1194.6	.93398	43.748
#1	-.00197	.02384	-.00566	.01692	.08839	-.00002	64.850	.00025
#2	-.00163	.02475	-.00295	.01671	.08767	.00002	65.948	.00022
#3	-.00056	.01496	-.00225	.01789	.08763	-.00001	64.940	.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00348	.00121	.00650	1.4850	1.1722	.00326	6.8283	.56449
Stddev	.00026	.00008	.00055	.0148	.0846	.00276	.1154	.00458
%RSD	7.5381	6.5059	8.4863	.99693	7.2178	84.748	1.6904	.81090
#1	.00376	.00124	.00712	1.4968	1.1524	.00416	6.8182	.55934
#2	.00346	.00112	.00606	1.4684	1.2650	.00016	6.9484	.56605
#3	.00323	.00127	.00633	1.4899	1.0993	.00546	6.7182	.56808
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	5.1663	.00102	.05449	.00448	.00031	-.00384	4.5514
Stddev	.00010	.0262	.00072	.01132	.00164	.00361	.00194	.2575
%RSD	19.498	.50758	70.818	20.784	36.666	1165.6	50.576	5.6577
#1	.00050	5.1573	.00053	.06658	.00613	-.00316	-.00213	4.7033
#2	.00058	5.1959	.00068	.05276	.00444	.00003	-.00343	4.6968
#3	.00039	5.1459	.00185	.04413	.00285	.00405	-.00595	4.2541
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606161901 Acquired: 6/30/2016 21:09:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	.27411	-.00317	-.00486	-.00054	.01607	.00054
Stddev	.00057	.00159	.00424	.00272	.00030	.00116	.00034
%RSD	248.55	.57980	133.83	55.942	55.849	7.2462	63.582
#1	-.00011	.27227	-.00023	-.00677	-.00072	.01678	.00014
#2	.00089	.27510	-.00124	-.00175	-.00019	.01670	.00070
#3	-.00009	.27495	-.00803	-.00606	-.00071	.01472	.00076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9197.1	55837.	2541.1
Stddev	22.3	173.	27.8
%RSD	.24231	.30900	1.0921
#1	9217.3	55819.	2554.1
#2	9200.8	55674.	2509.2
#3	9173.2	56018.	2560.0

Approved: July 01, 2016

Sample Name: L1606162201 Acquired: 6/30/2016 21:13:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00086	.01035	-.00080	.06350	.24641	.00002	46.410	.00016
Stddev	.00303	.00329	.00467	.00179	.00055	.00009	.141	.00004
%RSD	354.31	31.839	584.54	2.8174	.22291	358.16	.30453	22.095
#1	.00020	.00833	-.00192	.06143	.24703	-.00005	46.424	.00019
#2	.00151	.01415	.00433	.06453	.24598	.00012	46.544	.00012
#3	-.00428	.00857	-.00481	.06453	.24622	.00001	46.262	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	.00061	.00415	-.00204	1.8074	.01015	17.826	.01918
Stddev	.00022	.00014	.00166	.01392	.0430	.00350	.064	.00141
%RSD	280.88	22.933	39.916	681.55	2.3773	34.460	.36011	7.3716
#1	.00002	.00075	.00478	.01311	1.7992	.01107	17.763	.02053
#2	-.00033	.00047	.00541	-.00498	1.7690	.01310	17.822	.01929
#3	.00007	.00063	.00227	-.01426	1.8538	.00629	17.892	.01771
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00272	97.511	-.00072	-.00064	-.00172	-.00099	.00011	2.9703
Stddev	.00014	.235	.00138	.00617	.00208	.00439	.00308	.1152
%RSD	5.1266	.24087	192.55	965.60	120.94	444.05	2922.4	3.8784
#1	.00269	97.601	.00087	.00223	-.00412	.00402	-.00008	3.0309
#2	.00287	97.687	-.00141	-.00773	-.00067	-.00281	-.00288	3.0426
#3	.00259	97.244	-.00162	.00358	-.00037	-.00417	.00328	2.8374
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606162201 Acquired: 6/30/2016 21:13:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00062**	**.99712**	**-.00602**	**-.00233**	**-.00035**	**.00334**	**.00015**
Stddev	.00111	.00312	.00486	.00041	.00062	.00014	.00014
%RSD	178.08	.31248	80.706	17.536	177.04	4.1480	87.717
#1	-.00021	.99632	-.01098	-.00205	.00010	.00338	.00001
#2	-.00187	1.0006	-.00582	-.00214	-.00009	.00346	.00028
#3	.00022	.99448	-.00127	-.00280	-.00106	.00319	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9094.3**	**54899.**	**2525.4**
Stddev	10.0	53.	6.7
%RSD	.11030	.09695	.26574
#1	9087.4	54840.	2519.9
#2	9089.8	54913.	2523.5
#3	9105.8	54944.	2532.9

Approved: July 01, 2016

Sample Name: L1606162202 Acquired: 6/30/2016 21:17:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00227**	**.00160**	**.00220**	**.07022**	**.25723**	**.00010**	**45.653**
Stddev	.00213	.00866	.00058	.00088	.00087	.00002	.204
%RSD	93.740	540.32	26.355	1.2594	.33713	22.987	.44723
#1	-.00009	-.00157	.00283	.07120	.25639	.00012	45.535
#2	-.00434	.01140	.00169	.06996	.25812	.00009	45.889
#3	-.00238	-.00502	.00210	.06949	.25718	.00007	45.536
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.00022**	**.00122**	**.00764**	F **-.02121**	**1.7515**	**.01407**
Stddev	.00012	.00046	.00101	.00208	.03832	.0448	.00007
%RSD	83.645	213.05	83.124	27.188	180.66	2.5566	.46494
#1	-.00029	-.00029	.00027	.01000	-.04860	1.7704	.01409
#2	-.00007	.00031	.00229	.00681	.02258	1.7004	.01399
#3	-.00008	.00063	.00109	.00610	-.03761	1.7837	.01412
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**17.316**	**.00811**	**.00356**	**105.72**	**-.00049**	**.00440**	**-.00202**
Stddev	.158	.00124	.00043	.73	.00074	.00075	.00240
%RSD	.91120	15.317	12.151	.68946	149.53	17.088	119.02
#1	17.237	.00946	.00341	105.37	.00009	.00526	-.00104
#2	17.497	.00701	.00323	106.55	-.00132	.00385	-.00475
#3	17.213	.00785	.00405	105.22	-.00024	.00409	-.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 01, 2016

Sample Name: L1606162202 Acquired: 6/30/2016 21:17:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00056**	**.00029**	**2.8555**	**.00040**	**1.0023**	**.00722**	**-.00401**
Stddev	.00307	.00010	.1204	.00073	.0063	.00226	.00267
%RSD	549.97	35.451	4.2160	184.37	.62998	31.329	66.504
#1	-.00400	.00028	2.9212	.00112	1.0016	.00464	-.00309
#2	.00046	.00019	2.9287	.00040	1.0089	.00886	-.00193
#3	.00187	.00040	2.7165	-.00034	.99630	.00816	-.00702
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00013**	**.00476**	**.00050**
Stddev	.00054	.00023	.00041
%RSD	433.79	4.8481	82.860
#1	-.00054	.00497	.00097
#2	.00049	.00481	.00021
#3	-.00033	.00451	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9075.0**	**54589.**	**2525.0**
Stddev	25.0	118.	16.5
%RSD	.27593	.21657	.65155
#1	9046.9	54453.	2536.9
#2	9083.1	54657.	2506.2
#3	9095.1	54658.	2531.9

Approved: July 01, 2016

Sample Name: L1606162202PS Acquired: 6/30/2016 21:21:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574840-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19964**	**5.0348**	**.19798**	**1.0214**	**.72915**	**.02527**	**46.421**	**.02494**
Stddev	.00184	.0121	.00167	.0016	.00511	.00006	.281	.00019
%RSD	.92277	.23977	.84567	.15579	.70069	.23132	.60509	.77851
#1	.19890	5.0474	.19949	1.0224	.73482	.02522	46.716	.02515
#2	.20174	5.0233	.19828	1.0223	.72770	.02525	46.388	.02493
#3	.19829	5.0338	.19618	1.0196	.72491	.02534	46.158	.02476
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10011**	**.25407**	**.25029**	**1.9748**	**27.343**	**.52167**	**20.880**	**.25422**
Stddev	.00243	.00142	.00629	.0223	.219	.00392	.140	.00494
%RSD	2.4316	.55805	2.5130	1.1311	.79968	.75165	.67132	1.9437
#1	.10154	.25473	.25347	1.9639	27.256	.52006	21.033	.25725
#2	.10149	.25244	.25435	1.9600	27.180	.52614	20.851	.24852
#3	.09730	.25504	.24304	2.0005	27.591	.51880	20.757	.25689
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50982**	**120.44**	**.24193**	**4.8860**	**.24444**	**.58728**	**.19236**	**5.0040**
Stddev	.01143	.77	.00561	.0878	.00600	.01670	.00212	.0649
%RSD	2.2416	.63821	2.3191	1.7973	2.4563	2.8437	1.1026	1.2981
#1	.51626	121.33	.24507	4.9431	.24757	.59827	.19409	5.0462
#2	.51657	120.05	.24526	4.9300	.24824	.59551	.19299	5.0367
#3	.49662	119.95	.23545	4.7849	.23752	.56806	.18999	4.9292
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606162202PS Acquired: 6/30/2016 21:21:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574840-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50687	1.4004	.49100	.24787	.51688	.49521	.00119
Stddev	.01299	.0108	.01820	.00286	.00259	.00916	.00018
%RSD	2.5627	.77300	3.7066	1.1547	.50192	1.8491	15.050
#1	.51584	1.4129	.51069	.25004	.51931	.49791	.00098
#2	.51280	1.3946	.47481	.24893	.51415	.50270	.00132
#3	.49198	1.3937	.48748	.24462	.51719	.48500	.00126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9036.6	54538.	2519.5
Stddev	36.5	180.	15.5
%RSD	.40422	.32936	.61704
#1	9077.0	54346.	2502.0
#2	9027.1	54568.	2524.7
#3	9005.8	54701.	2531.7

Approved: July 01, 2016

Sample Name: L1606162202DL Acquired: 6/30/2016 21:25:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574840-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00060**	**-.00899**	**.00019**	**.01659**	**.04919**	**.00001**	**8.8429**
Stddev	.00178	.00150	.00232	.00199	.00182	.00004	.0404
%RSD	295.80	16.684	1210.7	11.984	3.7060	345.55	.45661
#1	.00131	-.01067	.00261	.01763	.05130	-.00003	8.7986
#2	-.00090	-.00779	-.00200	.01785	.04813	.00004	8.8525
#3	-.00222	-.00850	-.00004	.01430	.04816	.00002	8.8776
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.00005**	**-.00025**	**.00101**	F **-.02719**	**.32378**	**-.00063**
Stddev	.00018	.00015	.00040	.00116	.02841	.07120	.00224
%RSD	113.34	288.61	161.04	114.78	104.48	21.991	356.23
#1	-.00033	-.00010	-.00060	-.00019	-.05696	.33602	.00107
#2	.00002	.00018	-.00033	.00109	-.00037	.24725	-.00317
#3	-.00016	.00007	.00018	.00214	-.02424	.38806	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.5167**	**.00210**	**.00068**	**20.553**	**-.00090**	**-.00089**	**.00066**
Stddev	.0440	.00319	.00044	.052	.00089	.00768	.00347
%RSD	1.2504	151.70	64.383	.25185	99.236	865.19	528.76
#1	3.4716	-.00137	.00115	20.613	-.00072	-.00866	.00463
#2	3.5191	.00490	.00057	20.522	-.00186	-.00071	-.00091
#3	3.5594	.00278	.00030	20.525	-.00011	.00670	-.00176
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 01, 2016

Sample Name: L1606162202DL Acquired: 6/30/2016 21:25:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574840-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00229**	**.00018**	**.53743**	**.00007**	**.19779**	**.00740**	**-.00200**
Stddev	.00391	.00145	.03935	.00034	.00088	.00431	.00219
%RSD	170.25	809.40	7.3224	498.77	.44517	58.222	109.63
#1	-.00202	.00026	.56098	-.00030	.19835	.00746	-.00069
#2	.00559	.00159	.55932	.00013	.19824	.00306	-.00078
#3	.00332	-.00131	.49200	.00037	.19677	.01167	-.00453
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00006**	**.00195**	**.00011**
Stddev	.00053	.00033	.00055
%RSD	954.52	16.723	490.69
#1	.00024	.00190	.00031
#2	.00026	.00229	.00054
#3	-.00067	.00164	-.00051
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9700.9**	**57886.**	**2596.9**
Stddev	70.4	193.	9.2
%RSD	.72617	.33274	.35380
#1	9658.1	57689.	2594.2
#2	9662.3	57894.	2607.1
#3	9782.2	58074.	2589.3

Approved: July 01, 2016

Sample Name: L1606162202DL Acquired: 6/30/2016 21:28:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574840-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00108**	**-.01124**	**-.00060**	**.00580**	**.00801**	**-.00001**	**1.6771**	**-.00019**
Stddev	.00271	.00590	.00072	.00142	.00100	.00006	.0363	.00013
%RSD	251.56	52.485	119.54	24.444	12.539	467.25	2.1671	70.867
#1	-.00406	-.01247	-.00019	.00678	.00904	.00003	1.6505	-.00011
#2	.00123	-.01642	-.00144	.00417	.00704	-.00009	1.7185	-.00011
#3	-.00040	-.00482	-.00019	.00644	.00794	.00001	1.6623	-.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**-.00007**	**.00006**	**.00891**	**.09664**	**-.00201**	**.70798**	**-.00172**
Stddev	.00027	.00014	.00018	.00678	.04421	.00120	.02896	.00233
%RSD	200.16	195.72	298.06	76.011	45.747	59.665	4.0902	135.14
#1	-.00015	.00003	-.00015	.00559	.05946	-.00338	.67466	-.00441
#2	.00038	-.00022	.00020	.01671	.14553	-.00138	.72711	-.00020
#3	.00017	-.00002	.00013	.00445	.08494	-.00125	.72216	-.00057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00038**	**4.0974**	**-.00013**	**.00175**	**.00053**	**-.00001**	**.00136**	**.09847**
Stddev	.00028	.0693	.00066	.00173	.00206	.00363	.00174	.00945
%RSD	74.280	1.6906	491.01	98.776	388.04	68921.	128.31	9.5991
#1	.00055	4.1773	-.00054	.00358	-.00040	-.00369	.00200	.10505
#2	.00052	4.0532	.00063	.00014	.00289	.00012	-.00061	.10271
#3	.00005	4.0619	-.00050	.00153	-.00090	.00356	.00269	.08764
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: L1606162202DL Acquired: 6/30/2016 21:28:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574840-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00004**	**.03845**	**.00919**	**-.00038**	**-.00028**	**.00067**	**.00027**
Stddev	.00011	.00024	.00316	.00249	.00050	.00008	.00040
%RSD	249.10	.63701	34.397	658.77	179.80	11.539	150.18
#1	-.00004	.03867	.00659	.00128	.00029	.00060	-.00004
#2	.00017	.03850	.01271	.00083	-.00065	.00075	.00072
#3	-.00000	.03819	.00827	-.00324	-.00047	.00065	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10355.**	**63173.**	**2831.2**
Stddev	41.	64.	21.0
%RSD	.39473	.10198	.74086
#1	10362.	63223.	2807.3
#2	10391.	63101.	2846.4
#3	10311.	63197.	2839.9

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 21:32:56 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38276**	**9.4386**	**.37842**	**.46803**	**.94286**	**.04668**	**9.3775**	**.04723**
Stddev	.00134	.0146	.00449	.00318	.00647	.00022	.0415	.00086
%RSD	.34923	.15494	1.1875	.67907	.68668	.47116	.44212	1.8125
#1	.38359	9.4548	.38023	.46440	.94193	.04685	9.3298	.04796
#2	.38347	9.4350	.38174	.46938	.94974	.04643	9.4048	.04745
#3	.38121	9.4262	.37331	.47031	.93689	.04675	9.3981	.04629
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19049**	**.47081**	**.47204**	**3.7263**	**48.050**	**.94755**	**9.6544**	**.47138**
Stddev	.00462	.00080	.00976	.0097	.441	.00525	.1095	.00314
%RSD	2.4245	.17014	2.0671	.26131	.91781	.55401	1.1344	.66703
#1	.19268	.47172	.47844	3.7357	48.011	.94968	9.6375	.47376
#2	.19360	.47019	.47686	3.7162	48.510	.95140	9.7713	.47257
#3	.18518	.47053	.46081	3.7270	47.630	.94157	9.5542	.46782
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.94568**	**46.984**	**.46635**	**9.3053**	**.46936**	**1.1207**	**.37680**	**4.6469**
Stddev	.02305	.179	.01079	.1672	.00686	.0180	.00470	.0587
%RSD	2.4372	.38076	2.3141	1.7971	1.4606	1.6057	1.2481	1.2641
#1	.95788	47.006	.47157	9.3900	.47014	1.1325	.37239	4.6390
#2	.96006	47.151	.47354	9.4133	.47579	1.1296	.38175	4.7092
#3	.91910	46.795	.45394	9.1127	.46215	1.1000	.37626	4.5926
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 01, 2016

Sample Name: CCV Acquired: 6/30/2016 21:32:56 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.94939	.94658	.95179	.48286	.94935	.92902	.95172
Stddev	.02624	.00429	.01638	.00457	.00358	.01980	.00466
%RSD	2.7635	.45361	1.7210	.94672	.37758	2.1314	.48986
#1	.96219	.94501	.95661	.48789	.95264	.93840	.95214
#2	.96677	.95144	.96522	.48174	.94553	.94238	.95615
#3	.91921	.94330	.93354	.47895	.94989	.90627	.94686
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10021.	60756.	2807.2
Stddev	24.	157.	16.6
%RSD	.23969	.25880	.59019
#1	10030.	60576.	2798.7
#2	10038.	60866.	2796.6
#3	9993.2	60827.	2826.3

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 21:36:35 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00046**	**-.01224**	**-.00574**	**.00345**	**-.00118**	**.00001**	**-.02455**	**-.00004**
Stddev	.00177	.00378	.00121	.00043	.00005	.00002	.03203	.00014
%RSD	381.76	30.894	21.124	12.412	4.1353	195.38	130.46	322.06
#1	-.00030	-.01429	-.00712	.00335	-.00123	.00001	-.00125	.00005
#2	.00122	-.01455	-.00530	.00392	-.00117	.00003	-.01133	.00002
#3	-.00231	-.00788	-.00481	.00308	-.00114	-.00001	-.06107	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**.00063**	**-.00102**	**-.03175**	**.02410**	**-.00307**	**.02654**	**-.00113**
Stddev	.00034	.00083	.00075	.01034	.05863	.00516	.06014	.00231
%RSD	80.983	131.70	73.627	32.552	243.26	167.91	226.64	204.10
#1	.00042	-.00025	-.00044	-.02390	.09171	.00024	.08429	.00100
#2	.00075	.00139	-.00187	-.02790	-.01270	-.00044	-.03573	-.00360
#3	.00008	.00073	-.00075	-.04346	-.00671	-.00901	.03105	-.00080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00012**	**.05183**	**-.00042**	**.00094**	**.00077**	**-.00049**	**.00862**	**.00229**
Stddev	.00018	.03714	.00063	.00207	.00231	.00200	.00116	.00042
%RSD	159.51	71.653	148.47	220.21	298.54	407.29	13.440	18.355
#1	.00033	.09438	-.00006	.00262	.00267	.00063	.00884	.00190
#2	-.00001	.02588	-.00115	-.00138	.00146	-.00280	.00736	.00274
#3	.00002	.03524	-.00006	.00159	-.00180	.00070	.00965	.00223
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 01, 2016

Sample Name: CCB Acquired: 6/30/2016 21:36:35 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v991) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**.00018**	**.00318**	**-.00143**	**.00060**	**-.00018**	**.00051**
Stddev	.00049	.00048	.00406	.00310	.00073	.00005	.00064
%RSD	187.53	268.12	127.60	217.43	120.92	25.551	124.32
#1	-.00060	-.00013	.00073	.00143	.00007	-.00019	.00049
#2	-.00047	-.00006	.00787	-.00099	.00143	-.00013	.00117
#3	.00030	.00074	.00094	-.00472	.00031	-.00022	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10023.**	**60724.**	**2788.0**
Stddev	43.	89.	20.1
%RSD	.42527	.14655	.72198
#1	9984.0	60826.	2769.6
#2	10016.	60662.	2784.8
#3	10069.	60684.	2809.5

Approved: July 01, 2016

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.000090	0.054978	0.000000	1.000000
Al 308.215 {109}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.000726	0.008658	0.000000	1.000000
As 189.042 {478}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.000011	0.025290	0.000000	1.000000
B 249.678 {135}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.000097	0.025088	0.000000	1.000000
Ba 455.403 { 74}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.056022	2.203041	0.000000	1.000000
Be 313.107 {108}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.000475	1.073722	0.000000	1.000000
Ca 422.673 { 80}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.003067	0.044871	0.000000	1.000000
Cd 228.802 {447}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.000159	0.598146	0.000000	1.000000
Co 228.616 {447}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.000119	0.373840	0.000000	1.000000
Cr 267.716 {126}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.000216	0.065586	0.000000	1.000000
Cu 224.700 {450}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.000146	0.132310	0.000000	1.000000
Fe 261.187 {129}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.000215	0.022272	0.000000	1.000000
K 766.490 { 44}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.013881	0.073290	0.000000	1.000000
Li 670.784 { 50}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.022514	1.830799	0.000000	1.000000
Mg 279.079 {121}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.000222	0.008751	0.000000	1.000000
Mn 257.610 {131}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.000374	0.274882	0.000000	1.000000
Mo 202.030 {467}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.000008	0.189442	0.000000	1.000000
Na 589.592 { 57}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.061070	0.194853	0.000000	1.000000
Ni 231.604 {446}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.000582	0.139018	0.000000	1.000000
P 214.914 {457}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.000163	0.014579	0.000000	1.000000
Pb 220.353 {453}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.000812	0.064848	0.000000	1.000000
Sb 206.833 {463}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.000190	0.031630	0.000000	1.000000
Se 196.090 {472}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.000338	0.018191	0.000000	1.000000
Si 212.412 {459}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.000649	0.039906	0.000000	1.000000
Sn 189.989 {477}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.000015	0.073602	0.000000	1.000000
Sr 407.771 { 83}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.002405	3.565105	0.000000	1.000000
Ti 337.280 {100}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.002239	0.118308	0.000000	1.000000
Tl 190.856 {477}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.000380	0.030488	0.000000	1.000000
V 292.402 {115}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.000019	0.077582	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.000174	0.431759	0.000000	1.000000
Zr 339.198 { 99}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.006027	4.377591	0.000000	1.000000

Approved: July 16, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999635	0.000004	0.002083	0.006943	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999953	0.000005	0.009238	0.030795	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999836	0.000002	0.002994	0.009980	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999733	0.000003	0.002739	0.009131	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999972	0.000105	0.001135	0.003785	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999925	0.000004	0.000090	0.000299	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999805	0.000056	0.045625	0.152082	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999434	0.000007	0.000255	0.000850	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999934	0.000005	0.000392	0.001306	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999962	0.000002	0.001142	0.003806	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999904	0.000006	0.001299	0.004330	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999221	0.000022	0.030236	0.100786	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999940	0.000254	0.095451	0.318171	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999709	0.000433	0.003821	0.012737	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999966	0.000007	0.086381	0.287938	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999259	0.000034	0.002854	0.009512	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999985	0.000007	0.000412	0.001374	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999971	0.000474	0.033509	0.111696	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999978	0.000003	0.001116	0.003719	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999983	0.000005	0.006652	0.022173	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.998838	0.000010	0.003486	0.011619	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999850	0.000004	0.004214	0.014046	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.998889	0.000003	0.006099	0.020330	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999822	0.000024	0.002292	0.007639	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999970	0.000004	0.000849	0.002831	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999992	0.000090	0.000477	0.001589	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999887	0.000011	0.007758	0.025861	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999852	0.000002	0.002951	0.009837	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999971	0.000004	0.000932	0.003107	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999976	0.000019	0.000194	0.000647	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.999897	0.000399	0.000497	0.001657	OK.	1.000000	0.000000	1	0

Approved: July 16, 2016

Sample Name: S0 Acquired: 7/14/2016 11:58:59 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00009	.00073	-.00001	-.00010	.05602	.00047	.00307
Stddev	.00019	.00008	.00002	.00005	.00161	.00007	.00067
%RSD	210.06	10.455	185.29	49.405	2.8812	14.035	21.784
#1	.00013	.00072	-.00001	-.00009	.05433	.00040	.00230
#2	-.00021	.00081	-.00003	-.00015	.05621	.00049	.00348
#3	-.00018	.00066	.00001	-.00005	.05754	.00053	.00342

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00016	-.00012	.00022	.00015	-.00021	-.01387	-.02252
Stddev	.00012	.00012	.00005	.00005	.00056	.00297	.00367
%RSD	74.910	104.04	22.993	35.021	263.02	21.374	16.288
#1	-.00002	-.00026	.00016	.00010	-.00068	-.01088	-.02668
#2	-.00023	-.00009	.00024	.00013	-.00037	-.01681	-.01973
#3	-.00023	-.00002	.00025	.00020	.00041	-.01393	-.02116

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00022	.00038	.00001	-.06108	-.00058	-.00016	-.00081
Stddev	.00034	.00060	.00003	.00244	.00009	.00005	.00019
%RSD	151.73	160.15	321.53	3.9966	15.819	30.351	23.858
#1	.00012	-.00022	-.00000	-.06037	-.00057	-.00013	-.00061
#2	-.00023	.00036	.00004	-.05908	-.00068	-.00014	-.00100
#3	-.00055	.00099	-.00001	-.06380	-.00050	-.00022	-.00083

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00019	-.00034	.00065	.00001	.00240	-.00224	-.00038
Stddev	.00010	.00001	.00003	.00005	.00098	.00102	.00002
%RSD	52.529	4.3798	5.3665	347.08	40.865	45.623	5.5830
#1	.00008	-.00033	.00069	.00006	.00130	-.00235	-.00039
#2	.00027	-.00033	.00062	.00002	.00275	-.00320	-.00039
#3	.00022	-.00035	.00064	-.00004	.00317	-.00116	-.00036

Approved: July 16, 2016

Sample Name: S0 Acquired: 7/14/2016 11:58:59 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00002	.00017	-.00603
Stddev	.00010	.00005	.00159
%RSD	532.23	31.191	26.374
#1	.00013	.00014	-.00659
#2	-.00006	.00024	-.00423
#3	-.00001	.00015	-.00726
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10146.	59083.	2608.1
Stddev	33.	133.	3.5
%RSD	.32073	.22459	.13291
#1	10184.	59033.	2612.1
#2	10131.	59233.	2606.8
#3	10124.	58982.	2605.5

Approved: July 16, 2016

Sample Name: S1 Acquired: 7/14/2016 12:02:58 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00002**	**.00145**	**.07175**	**.00087**	**.00539**	**.00019**	**.00037**
Stddev	.00002	.00001	.00036	.00005	.00151	.00018	.00013
%RSD	67.067	.78603	.49677	6.0419	28.072	93.785	35.479
#1	.00001	.00145	.07186	.00081	.00713	.00023	.00052
#2	.00004	.00144	.07136	.00090	.00470	.00035	.00032
#3	.00001	.00146	.07204	.00090	.00435	-.00000	.00027

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00047**	**.00057**	**.00003**	**.01104**	**.00103**	**.00139**	**.02687**
Stddev	.00003	.00011	.00039	.00275	.00109	.00018	.00365
%RSD	7.0748	19.705	1561.4	24.872	105.86	12.664	13.586
#1	.00048	.00064	-.00042	.00920	.00000	.00154	.02869
#2	.00043	.00063	.00018	.00974	.00092	.00144	.02267
#3	.00050	.00044	.00032	.01420	.00217	.00120	.02925

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00009**	**.00089**	**-.00079**	**.00056**	**.00212**	**.00060**	**.03198**
Stddev	.00014	.00010	.00009	.00010	.00015	.00007	.00195
%RSD	150.39	11.662	11.639	18.121	6.9890	12.404	6.1090
#1	-.00001	.00099	-.00080	.00065	.00225	.00066	.02999
#2	-.00002	.00088	-.00069	.00059	.00215	.00062	.03390
#3	-.00025	.00078	-.00087	.00045	.00196	.00052	.03205

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00152**	**.00058**	**.00340**	**.02671**
Stddev	.00153	.00002	.00045	.00078
%RSD	100.50	3.9098	13.189	2.9187
#1	-.00260	.00056	.00369	.02647
#2	.00023	.00060	.00364	.02758
#3	-.00220	.00059	.00289	.02608

Approved: July 16, 2016

Sample Name: S1 Acquired: 7/14/2016 12:02:58 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10199.**	**59583.**	**2616.4**
Stddev	3.	113.	4.9
%RSD	.03154	.18926	.18723
#1	10198.	59453.	2615.1
#2	10202.	59656.	2612.2
#3	10196.	59640.	2621.8

Approved: July 16, 2016

Sample Name: S2 Acquired: 7/14/2016 12:06:56 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00017**	**.00229**	**.00011**	**.00016**	**.08980**	**.00149**	**.01014**
Stddev	.00003	.00003	.00007	.00004	.00737	.00005	.00118
%RSD	20.364	1.2987	60.531	26.923	8.2097	3.3393	11.618
#1	.00014	.00231	.00006	.00017	.08218	.00144	.00976
#2	.00020	.00226	.00009	.00020	.09033	.00148	.00919
#3	.00015	.00231	.00019	.00012	.09690	.00154	.01145

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00054**	**.00118**	**.00080**	**.00135**	**.00083**	**.03879**	**.01623**
Stddev	.00012	.00008	.00006	.00014	.00097	.00757	.00311
%RSD	23.164	6.9444	7.5106	10.193	116.76	19.514	19.162
#1	.00042	.00127	.00083	.00135	-.00028	.03008	.01266
#2	.00067	.00113	.00084	.00120	.00147	.04253	.01766
#3	.00053	.00113	.00073	.00148	.00129	.04377	.01836

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00130**	**.00160**	**.00315**	**.09973**	**.00051**	**.00225**	**-.00035**
Stddev	.00047	.00051	.00009	.00708	.00009	.00006	.00021
%RSD	35.945	31.748	2.9835	7.0966	16.941	2.6594	60.528
#1	.00144	.00212	.00318	.09207	.00058	.00223	-.00059
#2	.00167	.00110	.00305	.10110	.00041	.00232	-.00030
#3	.00077	.00158	.00323	.10602	.00054	.00220	-.00017

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00088**	**-.00030**	**.00401**	**.00131**	**.06045**	**-.00055**	**-.00011**
Stddev	.00007	.00002	.00008	.00001	.00636	.00072	.00003
%RSD	8.0754	5.8068	2.0733	.72540	10.520	131.79	25.280
#1	.00080	-.00031	.00407	.00132	.05314	-.00002	-.00009
#2	.00090	-.00028	.00392	.00131	.06470	-.00137	-.00014
#3	.00093	-.00031	.00406	.00131	.06352	-.00026	-.00009

Approved: July 16, 2016

Sample Name: S2 Acquired: 7/14/2016 12:06:56 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00133	.00762	.06496
Stddev	.00003	.00006	.00491
%RSD	2.3176	.76689	7.5621
#1	.00134	.00767	.05942
#2	.00129	.00764	.06671
#3	.00135	.00756	.06876
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9665.5	56421.	2606.9
Stddev	9.5	142.	145.0
%RSD	.09835	.25179	5.5635
#1	9676.5	56431.	2767.4
#2	9660.5	56274.	2568.1
#3	9659.6	56557.	2485.2

Approved: July 16, 2016

Sample Name: S3 Acquired: 7/14/2016 12:10:43 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.02184	.08752	.01000	.01228	2.2476	.05532	.44737	.03249
Stddev	.00003	.00025	.00022	.00008	.0142	.00014	.00350	.00081
%RSD	.13782	.28009	2.1521	.68206	.63198	.25076	.78215	2.4809
#1	.02182	.08770	.01013	.01236	2.2449	.05531	.44714	.03297
#2	.02188	.08724	.01011	.01219	2.2629	.05519	.45097	.03295
#3	.02182	.08763	.00975	.01228	2.2349	.05546	.44399	.03156

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.07472	.03290	.06683	.08945	3.6435	1.7919	.08765	.13775
Stddev	.00227	.00003	.00190	.00089	.0170	.0228	.00059	.00085
%RSD	3.0394	.10324	2.8463	.99201	.46579	1.2751	.67187	.62010
#1	.07591	.03293	.06806	.09047	3.6371	1.8168	.08833	.13794
#2	.07614	.03286	.06778	.08903	3.6627	1.7869	.08729	.13849
#3	.07210	.03290	.06464	.08885	3.6306	1.7720	.08734	.13681

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.18984	9.6336	.06871	.14355	.03167	.03718	.00698	.19579
Stddev	.00672	.0287	.00204	.00313	.00062	.00094	.00009	.00361
%RSD	3.5404	.29796	2.9671	2.1783	1.9728	2.5286	1.2817	1.8418
#1	.19390	9.6233	.06981	.14574	.03226	.03778	.00703	.19808
#2	.19353	9.6661	.06996	.14494	.03173	.03766	.00703	.19766
#3	.18208	9.6115	.06636	.13997	.03101	.03610	.00688	.19163

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.07354	3.5504	.11661	.01372	.07692	.43032	4.4581
Stddev	.00250	.0129	.00157	.00008	.00018	.01199	.0460
%RSD	3.4003	.36214	1.3473	.59054	.22773	2.7869	1.0308
#1	.07509	3.5474	.11568	.01375	.07692	.43740	4.4608
#2	.07487	3.5646	.11842	.01378	.07674	.43709	4.5027
#3	.07066	3.5394	.11572	.01362	.07709	.41648	4.4109

Approved: July 16, 2016

Sample Name: S3 Acquired: 7/14/2016 12:10:43 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10113.**	**58678.**	**2612.5**
Stddev	16.	202.	21.5
%RSD	.15673	.34362	.82166
#1	10104.	58732.	2614.6
#2	10105.	58847.	2590.0
#3	10131.	58455.	2632.8

Approved: July 16, 2016

Sample Name: S4 Acquired: 7/14/2016 12:14:19 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.04375	.17576	.02018	.02498	4.4769	.10976	.90627	.06497
Stddev	.00009	.00020	.00045	.00013	.0129	.00044	.00342	.00119
%RSD	.19555	.11328	2.2250	.51044	.28897	.39755	.37726	1.8257
#1	.04376	.17559	.02046	.02501	4.4637	.10945	.90283	.06549
#2	.04382	.17598	.02042	.02509	4.4896	.11026	.90966	.06581
#3	.04365	.17570	.01966	.02484	4.4776	.10958	.90633	.06362

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.14898	.06594	.13367	.17820	7.3325	3.6460	.17360	.27671
Stddev	.00375	.00017	.00320	.00045	.0190	.0073	.00162	.00178
%RSD	2.5186	.25861	2.3926	.25381	.25849	.20165	.93277	.64154
#1	.15095	.06589	.13537	.17772	7.3110	3.6375	.17178	.27502
#2	.15134	.06613	.13565	.17862	7.3396	3.6507	.17414	.27856
#3	.14465	.06580	.12998	.17826	7.3469	3.6498	.17489	.27656

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.37846	19.457	.13874	.28670	.06482	.07486	.01423	.40630
Stddev	.00977	.034	.00371	.00507	.00116	.00153	.00023	.00607
%RSD	2.5813	.17451	2.6752	1.7673	1.7893	2.0460	1.5926	1.4942
#1	.38387	19.419	.14065	.28913	.06511	.07563	.01434	.40918
#2	.38433	19.484	.14110	.29010	.06580	.07585	.01438	.41039
#3	.36718	19.469	.13446	.28088	.06354	.07309	.01397	.39932

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.14675	7.1481	.23379	.02737	.15525	.86428	8.6624
Stddev	.00417	.0196	.00207	.00030	.00050	.02107	.0311
%RSD	2.8434	.27344	.88575	1.0955	.32249	2.4384	.35911
#1	.14920	7.1257	.23144	.02740	.15505	.87643	8.6443
#2	.14913	7.1575	.23458	.02765	.15582	.87646	8.6983
#3	.14193	7.1612	.23534	.02705	.15488	.83994	8.6445

Approved: July 16, 2016

Sample Name: S4 Acquired: 7/14/2016 12:14:19 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9985.8**	**57666.**	**2610.5**
Stddev	22.9	256.	9.5
%RSD	.22950	.44447	.36475
#1	9962.1	57790.	2618.9
#2	9987.5	57836.	2612.3
#3	10008.	57371.	2600.1

Approved: July 16, 2016

Sample Name: ICV Acquired: 7/14/2016 12:17:56 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39916**	**9.9044**	**.39875**	**.49582**	**.98580**	**.05007**	**9.8368**	**.04976**
Stddev	.00127	.0242	.00904	.00044	.00643	.00012	.0162	.00139
%RSD	.31728	.24394	2.2680	.08819	.65218	.24106	.16430	2.7861
#1	.39821	9.9001	.40308	.49573	.97900	.05002	9.8249	.05082
#2	.39868	9.8826	.40482	.49544	.99178	.04998	9.8552	.05027
#3	.40060	9.9304	.38836	.49630	.98662	.05021	9.8303	.04819
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19958**	**.49555**	**.49704**	**3.9586**	**49.667**	**.99011**	**9.7795**	**.49668**
Stddev	.00643	.00030	.01443	.0300	.356	.00497	.0902	.00349
%RSD	3.2195	.06027	2.9035	.75670	.71716	.50204	.92213	.70201
#1	.20353	.49584	.50622	3.9931	49.297	.99403	9.7031	.49462
#2	.20305	.49557	.50449	3.9431	50.008	.99179	9.7563	.50071
#3	.19217	.49524	.48041	3.9395	49.695	.98452	9.8790	.49472
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99290**	**49.381**	**.49609**	**9.9800**	**.49510**	**1.1836**	**.40536**	**4.8641**
Stddev	.03309	.220	.01429	.2341	.00930	.0243	.00631	.0871
%RSD	3.3323	.44492	2.8807	2.3461	1.8794	2.0493	1.5557	1.7899
#1	1.0176	49.153	.50463	10.119	.50095	1.1975	.41264	4.9207
#2	1.0058	49.591	.50405	10.111	.49999	1.1978	.40150	4.9077
#3	.95531	49.400	.47959	9.7097	.48437	1.1556	.40194	4.7638
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: ICV Acquired: 7/14/2016 12:17:56 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99483**	**.98365**	**.98155**	**.50149**	**.99145**	**.99250**	**1.0046**
Stddev	.03487	.00508	.00899	.00315	.00235	.02760	.0065
%RSD	3.5050	.51612	.91561	.62741	.23697	2.7806	.64434
#1	1.0178	.97781	.97466	.50436	.99003	1.0093	.99709
#2	1.0120	.98700	.97827	.50197	.99015	1.0076	1.0083
#3	.95470	.98614	.99171	.49812	.99416	.96065	1.0083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10144.**	**58592.**	**2633.8**
Stddev	33.	28.	18.2
%RSD	.32593	.04817	.69189
#1	10108.	58625.	2652.9
#2	10152.	58572.	2616.6
#3	10173.	58580.	2631.8

Approved: July 16, 2016

Sample Name: ICB Acquired: 7/14/2016 12:21:33 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00046**	**.00069**	**-.00000**	**.00415**	**.00002**	**.00002**	**-.03169**	**.00003**
Stddev	.00066	.00496	.00111	.00100	.00071	.00002	.06486	.00008
%RSD	145.05	715.58	243600.	24.205	3121.0	92.313	204.70	277.67
#1	-.00121	.00102	-.00124	.00522	.00060	.00000	.02395	.00008
#2	-.00018	.00548	.00090	.00401	.00023	.00005	-.01607	-.00006
#3	.00002	-.00442	.00034	.00322	-.00077	.00003	-.10293	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00032**	**.00007**	**.00044**	**-.00341**	**.04719**	**.00442**	**-.03448**	**-.00333**
Stddev	.00038	.00098	.00074	.04090	.07336	.00355	.04733	.00325
%RSD	120.24	1493.8	168.50	1198.2	155.47	80.160	137.27	97.634
#1	-.00024	-.00101	-.00000	-.04100	.10796	.00845	.01722	-.00035
#2	.00002	.00090	.00129	.04015	.06791	.00179	-.07566	-.00679
#3	-.00073	.00031	.00002	-.00939	-.03431	.00303	-.04499	-.00284
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**.01951**	**-.00052**	**.00204**	**-.00209**	**.00255**	**-.00186**	**.00541**
Stddev	.00030	.02134	.00063	.00329	.00130	.00313	.00380	.00090
%RSD	324.08	109.37	120.99	160.93	62.541	122.71	203.87	16.580
#1	.00007	.00462	-.00064	-.00134	-.00058	.00558	-.00520	.00605
#2	-.00020	.00995	.00016	.00522	-.00289	-.00067	.00227	.00580
#3	.00040	.04396	-.00108	.00224	-.00279	.00274	-.00265	.00439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: ICB Acquired: 7/14/2016 12:21:33 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	.00021	-.00229	-.00010	-.00112	.00052	-.00018
Stddev	.00044	.00025	.01066	.00054	.00021	.00006	.00005
%RSD	56.829	120.30	465.46	554.79	18.848	12.036	29.794
#1	.00053	-.00007	-.01459	.00018	-.00098	.00045	-.00015
#2	.00128	.00041	.00366	.00025	-.00137	.00057	-.00016
#3	.00051	.00029	.00406	-.00072	-.00103	.00055	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10208.	59408.	2627.4
Stddev	29.	39.	10.9
%RSD	.28794	.06596	.41658
#1	10178.	59376.	2636.2
#2	10209.	59396.	2615.1
#3	10237.	59451.	2630.9

Approved: July 16, 2016

Sample Name: LLICV Acquired: 7/14/2016 12:25:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00801	.16056	.00772	.08082	.00812	.00155	.38268	.00092
Stddev	.00066	.01078	.00524	.00145	.00079	.00004	.01020	.00022
%RSD	8.2398	6.7169	67.856	1.7927	9.6814	2.8252	2.6662	23.566
#1	.00729	.14830	.01255	.08078	.00849	.00150	.37215	.00078
#2	.00818	.16480	.00846	.08229	.00722	.00158	.38337	.00117
#3	.00857	.16858	.00215	.07939	.00866	.00157	.39252	.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00381	.00457	.00345	.09019	.79243	.08368	.33444	.00637
Stddev	.00075	.00086	.00079	.00663	.04807	.00018	.11231	.00150
%RSD	19.646	18.893	22.965	7.3476	6.0662	.21416	33.583	23.619
#1	.00439	.00544	.00397	.08533	.80460	.08348	.29771	.00793
#2	.00408	.00455	.00254	.09774	.83325	.08374	.24508	.00493
#3	.00297	.00371	.00385	.08750	.73944	.08382	.46052	.00625
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00754	.43034	.01420	.74129	.00660	.07662	.01656	.72803
Stddev	.00080	.03411	.00205	.07234	.00062	.00597	.00108	.06547
%RSD	10.637	7.9253	14.468	9.7581	9.3569	7.7881	6.5210	8.9926
#1	.00830	.46884	.01613	.78449	.00700	.07852	.01742	.76990
#2	.00762	.41825	.01443	.78159	.00589	.08141	.01691	.76160
#3	.00670	.40393	.01204	.65778	.00692	.06994	.01535	.65258
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: LLICV Acquired: 7/14/2016 12:25:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38028**	**.04070**	**.03122**	**.14703**	**.00766**	**.01561**	**.04051**
Stddev	.04668	.00043	.00350	.01334	.00058	.00176	.00028
%RSD	12.276	1.0617	11.208	9.0757	7.6051	11.306	.68933
#1	.40961	.04096	.02868	.15251	.00735	.01662	.04032
#2	.40479	.04020	.03521	.15676	.00833	.01663	.04083
#3	.32644	.04094	.02977	.13181	.00730	.01357	.04037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10236.**	**59493.**	**2629.1**
Stddev	36.	53.	7.3
%RSD	.35109	.08833	.27667
#1	10227.	59544.	2635.9
#2	10205.	59439.	2621.5
#3	10275.	59495.	2629.8

Approved: July 16, 2016

Sample Name: LLICV Acquired: 7/14/2016 12:29:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02046**	**.40440**	**.02096**	**.19597**	**.02076**	**.00389**	**.97486**	**.00218**
Stddev	.00178	.00540	.00321	.00085	.00152	.00012	.03214	.00007
%RSD	8.7191	1.3354	15.312	.43158	7.3225	3.1173	3.2967	3.1653
#1	.02248	.39925	.02466	.19587	.02248	.00394	.98402	.00224
#2	.01909	.40391	.01907	.19518	.02019	.00376	1.0014	.00210
#3	.01982	.41002	.01914	.19686	.01961	.00399	.93914	.00219
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01022**	**.01029**	**.00962**	**.19185**	**1.9260**	**.19907**	**.95467**	**.01798**
Stddev	.00031	.00044	.00102	.01498	.0506	.00178	.07069	.00254
%RSD	3.0614	4.3176	10.614	7.8072	2.6283	.89590	7.4047	14.097
#1	.01027	.01004	.01054	.20819	1.9476	.19956	.95071	.01952
#2	.00989	.01002	.00979	.18856	1.8681	.19709	1.0273	.01937
#3	.01051	.01080	.00852	.17878	1.9622	.20056	.88604	.01506
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01943**	**1.0251**	**.03988**	**1.9258**	**.01796**	**.20123**	**.03731**	**1.8975**
Stddev	.00049	.0081	.00006	.0058	.00259	.00304	.00288	.0032
%RSD	2.5261	.78639	.15862	.30336	14.422	1.5085	7.7275	.17045
#1	.01895	1.0341	.03996	1.9227	.01956	.20473	.03826	1.9007
#2	.01942	1.0186	.03984	1.9326	.01934	.19956	.03961	1.8976
#3	.01993	1.0226	.03985	1.9222	.01497	.19939	.03408	1.8942
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: LLICV Acquired: 7/14/2016 12:29:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0143**	**.10031**	**.06148**	**.37673**	**.01872**	**.04161**	**.10056**
Stddev	.0026	.00064	.00479	.00086	.00017	.00006	.00083
%RSD	.25134	.63916	7.7960	.22701	.92152	.15197	.82242
#1	1.0170	.10092	.06640	.37579	.01884	.04167	.10080
#2	1.0140	.09964	.06122	.37746	.01852	.04161	.09964
#3	1.0119	.10036	.05682	.37695	.01879	.04155	.10124
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10246.**	**59854.**	**2639.7**
Stddev	25.	162.	9.7
%RSD	.23981	.27063	.36661
#1	10231.	60029.	2631.3
#2	10232.	59824.	2650.2
#3	10274.	59710.	2637.5

Approved: July 16, 2016

Sample Name: ICSA Acquired: 7/14/2016 12:33:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00352**	**268.21**	**.00132**	**-.01430**	**-.00014**	**-.00001**	**250.51**	**-.00027**
Stddev	.00171	.39	.00147	.00270	.00030	.00013	.97	.00017
%RSD	48.671	.14382	111.78	18.904	211.85	1475.1	.38717	64.091
#1	-.00273	267.82	.00277	-.01118	.00009	.00014	249.42	-.00015
#2	-.00234	268.22	.00135	-.01586	-.00003	-.00011	250.82	-.00046
#3	-.00548	268.59	-.00017	-.01587	-.00047	-.00007	251.29	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00131**	**-.00145**	**-.00251**	**99.133**	**-.02663**	**.00787**	**254.82**	**.00226**
Stddev	.00034	.00054	.01112	.349	.06423	.00149	.81	.00458
%RSD	25.893	37.260	443.61	.35175	241.20	18.981	.31849	202.37
#1	-.00104	-.00208	.00432	98.767	-.03428	.00759	253.89	.00029
#2	-.00119	-.00111	.00350	99.462	-.08669	.00949	255.26	.00750
#3	-.00169	-.00117	-.01534	99.170	.04108	.00654	255.33	-.00100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00062**	**.05520**	**-.00048**	**.00498**	**-.00036**	**-.00125**	**.00789**	**.03566**
Stddev	.00048	.01144	.00085	.00913	.00672	.00721	.00164	.00322
%RSD	77.513	20.720	175.28	183.40	1889.6	576.41	20.743	9.0419
#1	-.00101	.06840	-.00067	.01425	.00354	.00089	.00632	.03936
#2	-.00008	.04895	.00044	.00471	.00351	.00464	.00775	.03412
#3	-.00076	.04825	-.00122	-.00401	-.00812	-.00929	.00958	.03350
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: ICSA Acquired: 7/14/2016 12:33:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00123**	**.00079**	**-.01204**	**-.00145**	**-.00330**	**-.00618**	**-.00334**
Stddev	.00094	.00062	.00619	.00307	.00081	.00026	.00026
%RSD	76.416	78.625	51.412	211.95	24.461	4.1417	7.8886
#1	.00015	.00070	-.01646	-.00485	-.00273	-.00595	-.00360
#2	.00173	.00144	-.00497	.00113	-.00294	-.00614	-.00334
#3	.00183	.00022	-.01469	-.00063	-.00422	-.00646	-.00308
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9564.1**	**55032.**	**2578.1**
Stddev	8.0	57.	10.1
%RSD	.08404	.10400	.39196
#1	9573.3	55094.	2568.1
#2	9560.8	55022.	2588.3
#3	9558.3	54981.	2577.9

Approved: July 16, 2016

Sample Name: ICSAB Acquired: 7/14/2016 12:37:02 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51935	266.20	.25555	-.01844	.25489	.24607	249.00	.48809
Stddev	.00146	.04	.00540	.00081	.00174	.00013	.54	.01531
%RSD	.28065	.01371	2.1146	4.4042	.68219	.05127	.21847	3.1361
#1	.52024	266.16	.25582	-.01751	.25377	.24614	248.71	.49669
#2	.51767	266.22	.26082	-.01901	.25400	.24614	248.67	.49716
#3	.52015	266.23	.25002	-.01879	.25689	.24593	249.63	.47041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.23850	.25126	.25015	96.758	5.1663	.01221	248.97	.25158
Stddev	.00921	.00041	.01719	.198	.0803	.00405	1.14	.00060
%RSD	3.8619	.16289	6.8711	.20451	1.5547	33.190	.45597	.23775
#1	.24396	.25113	.26001	96.788	5.1507	.00759	248.75	.25156
#2	.24368	.25171	.26013	96.547	5.0949	.01515	247.96	.25098
#3	.22787	.25092	.23030	96.939	5.2533	.01389	250.20	.25218
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00078	5.3224	.48019	.08706	.49141	.49782	.25896	.01272
Stddev	.00042	.0112	.01851	.00797	.01542	.02690	.00595	.00154
%RSD	53.575	.21119	3.8542	9.1580	3.1382	5.4034	2.2991	12.143
#1	-.00126	5.3300	.49059	.09580	.50374	.50659	.25989	.01236
#2	-.00059	5.3095	.49116	.08519	.49637	.51924	.26439	.01441
#3	-.00049	5.3277	.45882	.08019	.47412	.46763	.25259	.01138
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: ICSAB Acquired: 7/14/2016 12:37:02 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.00059	-.01474	.45777	.25278	.47104	-.00342
Stddev	.00024	.00037	.00230	.01005	.00015	.01736	.00041
%RSD	25.813	62.694	15.615	2.1962	.05870	3.6855	12.087
#1	.00085	.00069	-.01684	.46101	.25261	.48084	-.00294
#2	.00076	.00018	-.01511	.46581	.25286	.48128	-.00371
#3	.00122	.00091	-.01228	.44650	.25287	.45099	-.00359
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9533.9	55010.	2550.3
Stddev	21.7	89.	2.0
%RSD	.22774	.16160	.07801
#1	9512.3	54952.	2548.5
#2	9533.7	55112.	2552.4
#3	9555.7	54966.	2549.9

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 12:40:32 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40238	9.8867	.40036	.49049	.99013	.04980	9.9286	.05000
Stddev	.00148	.0081	.00874	.00168	.00465	.00010	.1044	.00113
%RSD	.36685	.08214	2.1832	.34260	.46945	.19665	1.0517	2.2636
#1	.40077	9.8812	.40304	.48920	.99204	.04975	9.9140	.05020
#2	.40367	9.8829	.40745	.48987	.99352	.04992	10.040	.05101
#3	.40270	9.8960	.39059	.49239	.98483	.04974	9.8322	.04878
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20108	.49572	.50095	3.9683	49.867	.99106	9.9766	.50269
Stddev	.00629	.00154	.01284	.0290	.172	.00752	.0535	.00376
%RSD	3.1270	.30972	2.5637	.73039	.34559	.75891	.53662	.74729
#1	.20316	.49681	.50503	4.0017	49.951	.99884	9.9213	.49899
#2	.20606	.49637	.51126	3.9510	49.981	.99049	10.028	.50650
#3	.19401	.49396	.48656	3.9520	49.669	.98383	9.9804	.50258
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99796	49.503	.49773	10.015	.49955	1.1926	.40587	4.8726
Stddev	.02275	.223	.01406	.204	.00908	.0266	.00592	.0851
%RSD	2.2794	.45040	2.8238	2.0344	1.8183	2.2276	1.4596	1.7466
#1	1.0027	49.640	.50153	10.054	.50243	1.2005	.40344	4.8797
#2	1.0180	49.623	.50949	10.197	.50684	1.2143	.41262	4.9540
#3	.97321	49.246	.48216	9.7950	.48937	1.1629	.40154	4.7842
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 12:40:32 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0005**	**.99100**	**.99102**	**.50480**	**.98756**	**.99587**	**1.0041**
Stddev	.0306	.00467	.00048	.00314	.00318	.02535	.0047
%RSD	3.0533	.47110	.04893	.62136	.32230	2.5457	.46601
#1	1.0120	.99267	.99158	.50466	.98820	1.0031	1.0094
#2	1.0237	.99460	.99076	.50801	.98411	1.0168	1.0024
#3	.96591	.98573	.99071	.50174	.99038	.96769	1.0006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10101.**	**58744.**	**2633.3**
Stddev	58.	89.	11.2
%RSD	.57499	.15080	.42587
#1	10167.	58762.	2620.5
#2	10078.	58822.	2637.9
#3	10058.	58647.	2641.5

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 12:44:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00378	-.00158	.00512	.00056	.00002	-.02572	.00022
Stddev	.00126	.00318	.00125	.00197	.00002	.00002	.01927	.00018
%RSD	1011.4	84.314	78.639	38.402	4.4181	86.513	74.934	81.598
#1	-.00120	.00280	-.00284	.00290	.00054	.00003	-.02358	.00041
#2	.00028	.00733	-.00156	.00582	.00057	.00004	-.04597	.00017
#3	.00130	.00119	-.00035	.00665	.00058	.00000	-.00761	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	.00132	-.00067	.01076	-.03728	.00303	-.01580	-.00042
Stddev	.00022	.00035	.00163	.02779	.06295	.00069	.10846	.00069
%RSD	104.52	26.753	244.12	258.26	168.84	22.805	686.61	163.49
#1	.00037	.00123	-.00030	-.01309	-.10766	.00288	.02300	-.00006
#2	.00030	.00171	.00075	.04127	-.01783	.00243	-.13832	.00001
#3	-.00004	.00103	-.00245	.00410	.01364	.00379	.06793	-.00122
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	.02743	-.00095	.00601	-.00340	.00104	-.00278	.00333
Stddev	.00043	.03496	.00127	.00109	.00147	.00092	.00286	.00024
%RSD	546.43	127.48	134.28	18.126	43.056	88.048	103.18	7.3358
#1	.00000	.04430	.00045	.00476	-.00479	.00153	-.00043	.00359
#2	.00031	-.01277	-.00204	.00671	-.00355	.00161	-.00597	.00330
#3	-.00054	.05075	-.00126	.00657	-.00187	-.00002	-.00193	.00310
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 12:44:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00019	-.00234	.00087	-.00097	-.00025	-.00001
Stddev	.00084	.00032	.00663	.00116	.00048	.00009	.00011
%RSD	266.28	168.80	283.33	132.65	49.744	38.367	1063.7
#1	.00006	.00006	-.00811	.00085	-.00061	-.00016	.00005
#2	.00125	-.00005	.00490	.00204	-.00152	-.00035	-.00014
#3	-.00037	.00055	-.00381	-.00027	-.00078	-.00024	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10161.	59298.	2623.8
Stddev	52.	195.	14.5
%RSD	.51553	.32854	.55092
#1	10137.	59080.	2613.6
#2	10125.	59455.	2640.4
#3	10221.	59358.	2617.6

Approved: July 16, 2016

Sample Name: PBW 96 Acquired: 7/14/2016 12:48:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575851-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00101	.02118	-.00173	.00664	-.00063	.00005	.02058	.00034
Stddev	.00124	.01222	.00184	.00134	.00159	.00009	.01848	.00022
%RSD	122.28	57.695	106.41	20.126	251.86	176.10	89.799	65.325
#1	-.00226	.03501	-.00275	.00818	.00118	-.00005	.00270	.00008
#2	-.00098	.01184	-.00283	.00575	-.00178	.00011	.03960	.00046
#3	.00021	.01669	.00039	.00600	-.00129	.00008	.01943	.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00028	.00095	.00052	.03112	-.04723	.00148	-.01572	-.00029
Stddev	.00020	.00046	.00075	.00728	.06974	.00180	.05242	.00445
%RSD	69.586	48.379	143.88	23.383	147.65	121.57	333.47	1552.0
#1	-.00020	.00081	.00115	.03907	-.12744	.00268	-.04647	.00356
#2	-.00014	.00058	.00073	.02480	-.01338	-.00059	.04481	-.00515
#3	-.00051	.00146	-.00031	.02948	-.00088	.00234	-.04550	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	-.00094	-.00032	.00552	-.00104	.00014	-.00642	.00416
Stddev	.00020	.00881	.00086	.00329	.00232	.00290	.00342	.00028
%RSD	82.567	935.35	271.65	59.505	223.25	2034.3	53.297	6.8324
#1	.00043	-.01014	-.00112	.00633	.00100	.00054	-.01005	.00446
#2	.00003	-.00012	.00059	.00833	-.00357	-.00293	-.00325	.00413
#3	.00029	.00743	-.00041	.00191	-.00055	.00282	-.00596	.00390
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: PBW 96 Acquired: 7/14/2016 12:48:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575851-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.00116	-.00151	-.00126	-.00013	.00179	.00036
Stddev	.00052	.00041	.00824	.00228	.00092	.00025	.00065
%RSD	571.98	35.251	545.70	181.06	694.31	14.205	181.67
#1	-.00069	.00070	.00552	-.00264	-.00119	.00187	.00059
#2	.00020	.00147	.00053	-.00251	.00053	.00199	.00087
#3	.00022	.00132	-.01058	.00137	.00026	.00150	-.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10099.	59711.	2612.6
Stddev	91.	229.	8.2
%RSD	.89987	.38396	.31568
#1	10146.	59561.	2609.0
#2	10157.	59598.	2622.0
#3	9994.6	59975.	2606.7

Approved: July 16, 2016

Sample Name: LCSW 96 Acquired: 7/14/2016 12:55:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575851-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19901**	**4.9118**	**.19676**	**.95271**	**.50121**	**.02418**	**5.1433**	**.02451**
Stddev	.00070	.0213	.00187	.00514	.00368	.00011	.0819	.00034
%RSD	.35148	.43319	.94827	.54001	.73371	.45747	1.5920	1.3726
#1	.19910	4.9253	.19761	.95756	.50321	.02430	5.0874	.02481
#2	.19828	4.9228	.19805	.95325	.50345	.02418	5.2373	.02457
#3	.19967	4.8873	.19462	.94731	.49697	.02408	5.1052	.02414
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09928**	**.24602**	**.24915**	**1.9977**	**24.597**	**.50418**	**4.9673**	**.25253**
Stddev	.00287	.00203	.00600	.0334	.115	.00280	.0931	.00570
%RSD	2.8920	.82342	2.4069	1.6738	.46897	.55517	1.8753	2.2579
#1	.10073	.24636	.25379	2.0197	24.637	.50627	5.0686	.24888
#2	.10114	.24785	.25128	1.9592	24.467	.50527	4.8854	.24960
#3	.09597	.24384	.24238	2.0141	24.687	.50100	4.9480	.25910
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50146**	**24.812**	**.24914**	**4.7840**	**.24748**	**.58682**	**.18364**	**2.4233**
Stddev	.01118	.101	.00643	.0903	.00300	.01558	.00353	.0295
%RSD	2.2296	.40523	2.5807	1.8867	1.2110	2.6548	1.9205	1.2165
#1	.50790	24.911	.25356	4.8339	.25081	.59773	.18228	2.4432
#2	.50794	24.814	.25210	4.8384	.24499	.59375	.18764	2.4373
#3	.48855	24.710	.24177	4.6799	.24664	.56898	.18099	2.3894
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: LCSW 96 Acquired: 7/14/2016 12:55:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575851-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49639	.50926	.49701	.24847	.49343	.49269	.52077
Stddev	.01104	.00139	.01620	.00025	.00073	.01058	.00534
%RSD	2.2247	.27241	3.2596	.09945	.14801	2.1478	1.0251
#1	.50341	.51070	.50549	.24875	.49406	.49849	.52650
#2	.50210	.50793	.50721	.24837	.49263	.49911	.51593
#3	.48366	.50914	.47833	.24828	.49359	.48048	.51990
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10033.	58482.	2596.2
Stddev	17.	224.	25.4
%RSD	.16614	.38323	.97644
#1	10020.	58368.	2567.8
#2	10026.	58337.	2616.5
#3	10051.	58740.	2604.2

Approved: July 16, 2016

Sample Name: L1607000101 Acquired: 7/14/2016 12:59:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00362	.08134	.00334	.04281	.00297	.00084	.19444	.00062
Stddev	.00163	.01069	.00072	.00142	.00076	.00001	.03650	.00004
%RSD	45.144	13.141	21.568	3.3277	25.614	.87250	18.769	7.1566
#1	.00346	.08525	.00378	.04348	.00358	.00083	.16630	.00060
#2	.00207	.08952	.00374	.04117	.00212	.00085	.23568	.00059
#3	.00533	.06924	.00251	.04376	.00322	.00085	.18135	.00067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00177	.00173	.00141	.02885	.41855	.04169	.16030	.00436
Stddev	.00057	.00082	.00112	.00578	.08108	.00472	.06384	.00079
%RSD	32.534	47.098	79.188	20.024	19.372	11.322	39.823	18.135
#1	.00229	.00084	.00094	.03549	.36110	.03624	.23048	.00364
#2	.00186	.00191	.00269	.02609	.38325	.04462	.14472	.00521
#3	.00115	.00244	.00061	.02497	.51130	.04420	.10569	.00424
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00382	.23448	.00688	.35769	.00040	.03771	.00204	.35876
Stddev	.00064	.00508	.00118	.03491	.00384	.00200	.00218	.03179
%RSD	16.789	2.1647	17.213	9.7585	959.30	5.2947	106.95	8.8619
#1	.00415	.23676	.00811	.37682	.00362	.03777	.00075	.38030
#2	.00423	.23802	.00679	.37885	-.00385	.03968	.00456	.37374
#3	.00308	.22867	.00574	.31740	.00143	.03568	.00081	.32224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607000101 Acquired: 7/14/2016 12:59:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.18708	.02058	.00645	.06881	.00338	.00853	.02042
Stddev	.02211	.00038	.00483	.00544	.00041	.00090	.00034
%RSD	11.819	1.8236	74.856	7.9060	12.030	10.604	1.6690
#1	.20186	.02088	.00142	.07187	.00336	.00910	.02061
#2	.19773	.02016	.01106	.07204	.00380	.00900	.02062
#3	.16166	.02071	.00688	.06253	.00298	.00749	.02002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10107.	59785.	2611.1
Stddev	66.	310.	14.4
%RSD	.65080	.51823	.55174
#1	10147.	59448.	2594.5
#2	10144.	59852.	2620.6
#3	10031.	60056.	2618.1

Approved: July 16, 2016

Sample Name: L1607000301 Acquired: 7/14/2016 13:03:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00707**	**.15479**	**.00656**	**.07574**	**.00715**	**.00154**	**.37229**	**.00094**
Stddev	.00119	.00291	.00112	.00155	.00056	.00008	.02330	.00014
%RSD	16.777	1.8829	17.106	2.0478	7.7978	5.2224	6.2594	15.006
#1	.00679	.15640	.00527	.07722	.00742	.00162	.34685	.00078
#2	.00605	.15143	.00727	.07413	.00651	.00155	.39261	.00103
#3	.00838	.15655	.00715	.07588	.00752	.00146	.37740	.00101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00366**	**.00448**	**.00347**	**.09037**	**.71712**	**.08126**	**.43194**	**.00865**
Stddev	.00038	.00082	.00126	.02534	.04015	.00137	.04733	.00071
%RSD	10.257	18.387	36.178	28.035	5.5985	1.6836	10.957	8.1670
#1	.00332	.00359	.00474	.08258	.68692	.08251	.42874	.00800
#2	.00407	.00464	.00347	.06985	.76268	.08147	.38629	.00855
#3	.00359	.00521	.00222	.11869	.70177	.07980	.48078	.00940
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00723**	**.41507**	**.01409**	**.69703**	**.00568**	**.07383**	**.01422**	**.70007**
Stddev	.00056	.04617	.00136	.04864	.00127	.00301	.00427	.04737
%RSD	7.7879	11.123	9.6615	6.9784	22.287	4.0745	30.025	6.7657
#1	.00758	.39998	.01379	.72869	.00703	.07668	.01113	.72769
#2	.00753	.46690	.01558	.72138	.00552	.07412	.01243	.72715
#3	.00658	.37834	.01291	.64103	.00451	.07068	.01909	.64538
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607000301 Acquired: 7/14/2016 13:03:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.36737**	**.03935**	**.02892**	**.13781**	**.00661**	**.01544**	**.03915**
Stddev	.03417	.00040	.00233	.00842	.00120	.00148	.00064
%RSD	9.3000	1.0108	8.0718	6.1090	18.228	9.5855	1.6394
#1	.38939	.03951	.03042	.14332	.00658	.01631	.03969
#2	.38471	.03964	.03011	.14200	.00542	.01627	.03933
#3	.32801	.03889	.02623	.12812	.00782	.01373	.03844
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10132.**	**59900.**	**2603.5**
Stddev	59.	116.	19.3
%RSD	.58657	.19426	.73979
#1	10166.	59883.	2591.7
#2	10168.	59792.	2593.1
#3	10064.	60023.	2625.7

Approved: July 16, 2016

Sample Name: L1607000309 Acquired: 7/14/2016 13:07:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00868	.15826	.00443	.07648	.00740	.00150	.34773	.00107
Stddev	.00126	.00317	.00212	.00046	.00042	.00007	.03651	.00020
%RSD	14.498	2.0033	47.871	.60112	5.7225	4.5237	10.500	18.954
#1	.00996	.16192	.00488	.07620	.00777	.00158	.36220	.00115
#2	.00745	.15659	.00629	.07701	.00751	.00146	.37479	.00121
#3	.00863	.15627	.00212	.07622	.00694	.00146	.30620	.00084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00373	.00314	.00357	.07231	.74241	.08067	.36064	.00745
Stddev	.00004	.00036	.00192	.03185	.13652	.00269	.04648	.00094
%RSD	.99003	11.574	53.693	44.043	18.389	3.3365	12.888	12.656
#1	.00376	.00356	.00558	.08055	.89828	.07834	.35768	.00647
#2	.00369	.00289	.00338	.03716	.64408	.08005	.31571	.00755
#3	.00373	.00297	.00176	.09923	.68486	.08361	.40853	.00835
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00735	.39509	.01308	.69376	.00719	.07399	.01335	.69759
Stddev	.00081	.02978	.00091	.04569	.00056	.00794	.00272	.04912
%RSD	10.975	7.5379	6.9624	6.5854	7.7531	10.727	20.384	7.0416
#1	.00776	.36388	.01370	.71707	.00708	.07846	.01358	.72385
#2	.00786	.42321	.01351	.72309	.00669	.07869	.01596	.72801
#3	.00642	.39819	.01204	.64112	.00779	.06483	.01053	.64092
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607000309 Acquired: 7/14/2016 13:07:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.36560**	**.03879**	**.01616**	**.13563**	**.00713**	**.01530**	**.03908**
Stddev	.03537	.00054	.00409	.01173	.00013	.00133	.00024
%RSD	9.6758	1.3812	25.309	8.6510	1.8900	8.6947	.60851
#1	.38717	.03835	.01978	.14187	.00698	.01618	.03884
#2	.38485	.03939	.01173	.14293	.00722	.01595	.03909
#3	.32477	.03863	.01699	.12210	.00720	.01377	.03932
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10142.**	**59652.**	**2619.1**
Stddev	46.	239.	8.3
%RSD	.45833	.40114	.31815
#1	10160.	59385.	2618.3
#2	10177.	59720.	2627.7
#3	10089.	59849.	2611.1

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 13:11:01 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39209**	**9.6626**	**.39114**	**.48329**	**.97702**	**.04869**	**9.7483**	**.04910**
Stddev	.00117	.0164	.00853	.00419	.00520	.00014	.0490	.00115
%RSD	.29857	.17019	2.1810	.86735	.53235	.28145	.50212	2.3516
#1	.39143	9.6761	.39643	.48489	.97600	.04877	9.7076	.04979
#2	.39344	9.6443	.39568	.47853	.97241	.04877	9.7348	.04974
#3	.39139	9.6675	.38130	.48644	.98266	.04853	9.8026	.04777
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19636**	**.48195**	**.48918**	**3.8704**	**49.159**	**.97872**	**9.6913**	**.49012**
Stddev	.00550	.00326	.01345	.0217	.316	.00125	.1868	.00223
%RSD	2.8035	.67697	2.7488	.55988	.64225	.12764	1.9276	.45503
#1	.19966	.48533	.49738	3.8782	48.931	.97934	9.4798	.49270
#2	.19941	.48170	.49649	3.8459	49.026	.97953	9.7607	.48892
#3	.19000	.47882	.47366	3.8871	49.519	.97728	9.8336	.48875
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.98297**	**49.093**	**.48923**	**9.8316**	**.48878**	**1.1703**	**.39633**	**4.7902**
Stddev	.02718	.329	.01389	.1991	.00674	.0280	.00932	.0793
%RSD	2.7652	.66928	2.8401	2.0255	1.3781	2.3934	2.3509	1.6560
#1	.99943	48.952	.49842	9.9532	.48993	1.1873	.39813	4.8379
#2	.99789	48.857	.49603	9.9399	.49486	1.1856	.40462	4.8340
#3	.95160	49.468	.47325	9.6018	.48154	1.1379	.38625	4.6986
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 13:11:01 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.97732**	**.97928**	**.98403**	**.49246**	**.96166**	**.97770**	**.99179**
Stddev	.03254	.00666	.00644	.00304	.00129	.02521	.00506
%RSD	3.3290	.67989	.65458	.61636	.13367	2.5788	.51043
#1	.99711	.97762	.98058	.49444	.96295	.99264	.99618
#2	.99507	.97361	.98006	.49397	.96166	.99187	.98626
#3	.93977	.98661	.99147	.48897	.96038	.94859	.99294
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10322.**	**60008.**	**2667.2**
Stddev	10.	181.	10.3
%RSD	.10067	.30161	.38796
#1	10311.	59931.	2656.0
#2	10331.	59879.	2676.5
#3	10325.	60215.	2669.1

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 13:14:36 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**.00198**	**.00150**	**.00266**	**-.00164**	**.00006**	**-.02969**	**.00019**
Stddev	.00056	.00466	.00337	.00239	.00071	.00007	.02380	.00021
%RSD	253.73	235.76	224.32	89.835	43.533	115.74	80.180	111.91
#1	-.00070	-.00212	-.00031	.00396	-.00101	.00015	-.02182	.00028
#2	.00039	.00704	.00539	-.00010	-.00242	.00000	-.05643	-.00005
#3	-.00035	.00101	-.00057	.00412	-.00149	.00004	-.01082	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00000**	**-.00043**	**-.00038**	**-.00988**	**.05401**	**.00572**	**-.04989**	**.00025**
Stddev	.00061	.00032	.00131	.02973	.06948	.00241	.07690	.00167
%RSD	51970.	74.651	341.38	301.09	128.65	42.238	154.12	666.11
#1	.00069	-.00014	-.00162	-.00470	.02679	.00832	-.12192	.00167
#2	-.00046	-.00037	.00099	.01693	.13298	.00527	.03109	-.00159
#3	-.00023	-.00077	-.00052	-.04186	.00226	.00355	-.05885	.00067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00020**	**.04110**	**-.00180**	**.00246**	**-.00211**	**-.00062**	**-.00155**	**.00121**
Stddev	.00008	.01575	.00105	.00671	.00069	.00258	.00339	.00099
%RSD	40.493	38.327	58.231	272.31	32.851	414.89	218.70	81.907
#1	.00024	.05834	-.00273	-.00395	-.00172	-.00314	-.00507	.00192
#2	.00026	.02745	-.00201	.00943	-.00169	-.00073	-.00127	.00163
#3	.00011	.03752	-.00066	.00191	-.00290	.00201	.00169	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 13:14:36 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	.00009	-.00125	.00226	-.00039	.00000	.00016
Stddev	.00013	.00030	.00536	.00136	.00044	.00009	.00011
%RSD	31.290	317.77	428.84	59.920	114.40	3153.2	67.014
#1	.00035	.00001	.00030	.00363	-.00026	-.00010	.00028
#2	.00058	.00042	.00316	.00091	-.00002	.00008	.00009
#3	.00035	-.00016	-.00722	.00225	-.00088	.00003	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10445.	60838.	2680.8
Stddev	96.	168.	1.4
%RSD	.91584	.27608	.05226
#1	10374.	61030.	2682.3
#2	10408.	60716.	2680.6
#3	10554.	60769.	2679.6

Approved: July 16, 2016

Sample Name: L1607029101 Acquired: 7/14/2016 13:18:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575851-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00084	.32642	-.00031	.01385	.02386	-.00001	51.815	.00026
Stddev	.00038	.01098	.00257	.00055	.00201	.00008	.238	.00009
%RSD	45.770	3.3653	841.18	3.9542	8.4206	859.13	.45923	33.196
#1	-.00040	.33277	.00211	.01434	.02190	-.00009	51.644	.00018
#2	-.00109	.31373	-.00301	.01326	.02592	.00008	52.086	.00024
#3	-.00103	.33275	-.00001	.01394	.02375	-.00002	51.714	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.00149	.00101	.44480	1.2917	.01137	14.606	.00632
Stddev	.00011	.00051	.00079	.01679	.0693	.00113	.093	.00282
%RSD	106.14	34.599	77.857	3.7744	5.3682	9.9059	.63949	44.622
#1	.00002	.00101	.00166	.42768	1.2650	.01032	14.498	.00315
#2	-.00014	.00142	.00124	.44547	1.3704	.01124	14.670	.00726
#3	-.00018	.00203	.00014	.46124	1.2397	.01256	14.648	.00856
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00149	5.1891	-.00024	.02482	-.00109	.00074	-.00359	4.3086
Stddev	.00052	.0291	.00050	.00431	.00113	.00181	.00330	.3602
%RSD	34.981	.56144	210.90	17.378	104.00	243.49	91.772	8.3590
#1	.00117	5.1714	.00033	.02814	-.00124	.00278	-.00001	4.5415
#2	.00209	5.2228	-.00061	.02636	-.00213	-.00071	-.00426	4.4904
#3	.00120	5.1732	-.00043	.01994	.00011	.00017	-.00650	3.8937
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607029101 Acquired: 7/14/2016 13:18:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575851-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.12122	-.00724	-.00014	-.00027	.00565	.00090
Stddev	.00008	.00080	.00438	.00150	.00062	.00069	.00009
%RSD	143.72	.66213	60.516	1045.6	230.68	12.146	9.8070
#1	-.00003	.12118	-.00634	.00010	.00033	.00600	.00081
#2	.00007	.12205	-.00338	-.00175	-.00091	.00609	.00090
#3	.00012	.12044	-.01201	.00122	-.00022	.00486	.00099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10037.	58875.	2628.3
Stddev	49.	21.	31.5
%RSD	.49154	.03535	1.1971
#1	10051.	58852.	2624.5
#2	10078.	58882.	2598.9
#3	9982.5	58892.	2661.5

Approved: July 16, 2016

Sample Name: L1607029101S Acquired: 7/14/2016 13:22:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575851-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19676	5.1877	.19876	.96856	.52248	.02400	55.795	.02431
Stddev	.00110	.0149	.00120	.00268	.00458	.00015	.296	.00051
%RSD	.55862	.28628	.60569	.27667	.87683	.62369	.53038	2.0985
#1	.19799	5.1824	.20014	.96567	.52598	.02416	55.740	.02471
#2	.19643	5.2045	.19817	.96906	.52417	.02388	56.115	.02448
#3	.19587	5.1762	.19795	.97096	.51730	.02395	55.531	.02374
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09761	.24516	.24487	2.4340	25.943	.51058	19.238	.25663
Stddev	.00209	.00059	.00523	.0358	.153	.00378	.052	.00488
%RSD	2.1411	.23975	2.1344	1.4707	.58919	.74104	.27180	1.8997
#1	.09890	.24485	.24929	2.4746	26.015	.51246	19.294	.25256
#2	.09874	.24583	.24622	2.4070	26.047	.51306	19.226	.26203
#3	.09520	.24478	.23911	2.4203	25.767	.50623	19.192	.25529
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50326	29.765	.24405	4.9073	.24736	.58908	.18922	6.8713
Stddev	.00914	.194	.00463	.0615	.00907	.01086	.00306	.1047
%RSD	1.8161	.65028	1.8987	1.2541	3.6674	1.8436	1.6162	1.5238
#1	.51063	29.831	.24714	4.9572	.25292	.59997	.19220	6.9543
#2	.50612	29.917	.24629	4.9261	.25227	.58901	.18609	6.9060
#3	.49303	29.547	.23872	4.8385	.23689	.57826	.18936	6.7537
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607029101S Acquired: 7/14/2016 13:22:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575851-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49668	.62528	.49611	.24735	.49079	.49133	.50130
Stddev	.01014	.00395	.00277	.00343	.00177	.01043	.00287
%RSD	2.0419	.63130	.55898	1.3849	.36098	2.1223	.57327
#1	.50375	.62567	.49368	.24510	.49281	.50026	.50396
#2	.50122	.62901	.49913	.25129	.48951	.49385	.50169
#3	.48506	.62115	.49552	.24565	.49004	.47987	.49825
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9986.4	58246.	2619.9
Stddev	29.6	163.	15.8
%RSD	.29604	.28057	.60173
#1	9956.3	58188.	2606.9
#2	10015.	58120.	2615.3
#3	9987.4	58431.	2637.4

Approved: July 16, 2016

Sample Name: L1607029101SD Acquired: 7/14/2016 13:26:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575851-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19520	5.1529	.19620	.96066	.51534	.02385	54.634	.02431
Stddev	.00106	.0057	.00430	.00358	.00473	.00003	.358	.00039
%RSD	.54478	.11047	2.1894	.37255	.91809	.14341	.65562	1.5843
#1	.19627	5.1488	.20113	.96004	.52007	.02381	55.048	.02444
#2	.19518	5.1506	.19418	.95743	.51534	.02386	54.445	.02462
#3	.19414	5.1594	.19329	.96451	.51060	.02388	54.410	.02388
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09666	.24347	.24263	2.4310	25.478	.50556	18.991	.25130
Stddev	.00197	.00059	.00414	.0194	.034	.00224	.197	.00176
%RSD	2.0423	.24173	1.7076	.79819	.13175	.44221	1.0354	.70138
#1	.09780	.24335	.24426	2.4518	25.507	.50784	19.218	.24962
#2	.09780	.24295	.24572	2.4276	25.442	.50547	18.884	.25314
#3	.09438	.24411	.23792	2.4134	25.486	.50337	18.871	.25115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49742	29.320	.24128	4.8467	.24222	.58007	.18473	6.8037
Stddev	.01044	.165	.00571	.0670	.00403	.01143	.00580	.0957
%RSD	2.0998	.56313	2.3661	1.3820	1.6626	1.9707	3.1404	1.4072
#1	.50316	29.508	.24583	4.8890	.24221	.58608	.18252	6.8648
#2	.50373	29.257	.24314	4.8816	.24625	.58725	.19132	6.8530
#3	.48536	29.196	.23488	4.7694	.23820	.56689	.18037	6.6934
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607029101SD Acquired: 7/14/2016 13:26:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575851-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49216	.61721	.48993	.24351	.48664	.48647	.49949
Stddev	.01120	.00345	.00256	.00348	.00159	.00666	.00223
%RSD	2.2756	.55907	.52285	1.4276	.32636	1.3682	.44568
#1	.49780	.62072	.48985	.24567	.48619	.48964	.50200
#2	.49942	.61709	.49253	.24537	.48532	.49094	.49875
#3	.47927	.61383	.48741	.23950	.48840	.47882	.49774
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9989.9	58353.	2629.1
Stddev	18.1	77.	14.5
%RSD	.18119	.13154	.55115
#1	10010.	58436.	2613.3
#2	9974.3	58285.	2632.2
#3	9985.7	58337.	2641.7

Approved: July 16, 2016

Sample Name: L1607037601 Acquired: 7/14/2016 13:29:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.00416**	**-.00100**	**.00681**	**-.00147**	**.00010**	**-.03190**	**.00034**
Stddev	.00134	.00273	.00310	.00244	.00055	.00004	.02724	.00019
%RSD	7403.4	65.522	310.63	35.835	37.306	42.751	85.379	54.191
#1	-.00057	.00537	.00211	.00707	-.00097	.00007	-.05955	.00023
#2	-.00100	.00104	-.00102	.00425	-.00138	.00015	-.03106	.00024
#3	.00151	.00608	-.00408	.00911	-.00206	.00008	-.00509	.00056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**.00067**	**.00160**	**-.00147**	**.03594**	**.00114**	**.00845**	**.00079**
Stddev	.00035	.00055	.00043	.01146	.09224	.00155	.16441	.00192
%RSD	1049.3	82.795	26.996	778.30	256.67	136.37	1945.0	243.41
#1	.00003	.00108	.00121	.00081	-.06499	.00112	.14758	.00054
#2	-.00032	.00004	.00206	.00867	.05693	.00270	.05074	-.00099
#3	.00039	.00088	.00152	-.01391	.11587	-.00040	-.17297	.00282
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.04769**	**-.00049**	**.00198**	**-.00140**	**.00304**	**-.00276**	**.00508**
Stddev	.00031	.01664	.00039	.00531	.00377	.00115	.00551	.00224
%RSD	1513.4	34.887	79.928	268.11	269.66	37.782	199.83	44.032
#1	-.00009	.06178	-.00083	.00787	.00251	.00373	.00146	.00559
#2	-.00029	.05197	-.00006	.00052	-.00501	.00367	-.00899	.00701
#3	.00032	.02934	-.00058	-.00245	-.00169	.00171	-.00074	.00263
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607037601 Acquired: 7/14/2016 13:29:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	.00001	.00395	.00062	-.00046	.00239	.00003
Stddev	.00015	.00042	.00364	.00143	.00030	.00011	.00061
%RSD	58.181	3611.8	92.127	230.74	64.248	4.5360	1946.0
#1	.00009	.00038	-.00023	-.00031	-.00027	.00249	-.00035
#2	.00031	.00009	.00567	-.00010	-.00031	.00239	.00073
#3	.00039	-.00044	.00642	.00227	-.00080	.00227	-.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10157.	59870.	2638.2
Stddev	36.	30.	24.9
%RSD	.35834	.04975	.94494
#1	10189.	59885.	2618.4
#2	10163.	59836.	2630.0
#3	10118.	59890.	2666.2

Approved: July 16, 2016

Sample Name: L1607037602 Acquired: 7/14/2016 13:33:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00135	-.00015	-.00194	.00303	-.00098	.00006	-.00465	.00037
Stddev	.00133	.00358	.00147	.00061	.00095	.00005	.03003	.00014
%RSD	98.541	2428.3	75.826	20.173	96.491	82.678	645.56	37.857
#1	.00011	-.00421	-.00035	.00373	-.00117	.00002	-.03726	.00049
#2	-.00167	.00256	-.00326	.00269	.00004	.00012	.00144	.00039
#3	-.00249	.00121	-.00221	.00265	-.00182	.00004	.02186	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00075	.00087	-.01341	-.04036	.00222	-.03097	-.00102
Stddev	.00023	.00131	.00108	.01851	.05248	.00076	.03266	.00124
%RSD	374.90	175.00	123.66	137.97	130.05	34.089	105.46	121.71
#1	-.00014	.00099	-.00028	.00796	-.07877	.00308	-.06558	.00040
#2	.00032	-.00067	.00103	-.02420	.01944	.00163	-.00071	-.00192
#3	.00001	.00192	.00186	-.02400	-.06174	.00197	-.02661	-.00155
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.05378	-.00021	.00090	-.00385	.00292	.00090	.00814
Stddev	.00015	.01097	.00037	.00696	.00323	.00235	.00226	.00247
%RSD	90.287	20.389	175.54	775.89	83.876	80.412	250.28	30.355
#1	-.00015	.05978	.00021	.00854	-.00409	.00468	-.00001	.01074
#2	-.00003	.04113	-.00050	-.00075	-.00051	.00383	.00348	.00786
#3	-.00033	.06044	-.00036	-.00510	-.00696	.00025	-.00076	.00582
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607037602 Acquired: 7/14/2016 13:33:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	-.00003	-.00287	.00020	.00005	.00150	-.00025
Stddev	.00090	.00030	.00341	.00183	.00029	.00019	.00020
%RSD	1081.2	1171.7	118.60	936.22	548.67	12.644	82.153
#1	-.00090	.00027	-.00223	.00064	.00026	.00157	-.00005
#2	.00030	-.00001	-.00656	.00176	-.00028	.00163	-.00024
#3	.00085	-.00034	.00017	-.00182	.00018	.00128	-.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10127.	59766.	2634.1
Stddev	39.	143.	19.9
%RSD	.38363	.23889	.75667
#1	10130.	59628.	2616.9
#2	10164.	59913.	2629.3
#3	10087.	59758.	2655.9

Approved: July 16, 2016

Sample Name: L1607037603 Acquired: 7/14/2016 13:37:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00146	-.00102	-.00058	.00353	-.00016	.00004	.03206	.00051
Stddev	.00130	.01039	.00232	.00201	.00071	.00002	.03561	.00010
%RSD	89.374	1014.9	403.17	56.770	455.86	49.604	111.06	20.003
#1	-.00281	.00303	.00021	.00122	-.00014	.00006	.04972	.00057
#2	-.00020	.00673	-.00319	.00457	-.00087	.00003	-.00892	.00055
#3	-.00137	-.01283	.00125	.00481	.00055	.00002	.05540	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	.00132	.00177	.00187	-.02373	.00399	-.05238	-.00120
Stddev	.00037	.00037	.00032	.01301	.05515	.00111	.05243	.00268
%RSD	162.08	27.783	17.780	694.43	232.41	27.796	100.11	222.80
#1	.00019	.00151	.00196	-.00516	-.08100	.00329	-.10212	-.00267
#2	-.00051	.00090	.00141	-.00611	-.01920	.00340	.00239	-.00284
#3	-.00037	.00155	.00194	.01689	.02901	.00526	-.05740	.00189
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.02785	-.00089	.00624	-.00221	.00191	-.00283	.01222
Stddev	.00031	.02918	.00109	.00101	.00339	.00121	.00227	.00126
%RSD	680.81	104.79	122.87	16.124	153.54	63.678	80.230	10.286
#1	-.00006	-.00374	-.00148	.00544	.00030	.00276	-.00085	.01264
#2	-.00019	.05380	.00037	.00592	-.00086	.00052	-.00233	.01321
#3	.00039	.03350	-.00155	.00737	-.00606	.00244	-.00531	.01080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607037603 Acquired: 7/14/2016 13:37:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	.00008	.00113	.00306	-.00061	.00087	-.00036
Stddev	.00061	.00037	.00609	.00043	.00047	.00017	.00027
%RSD	71.726	477.68	540.26	14.175	76.472	19.519	76.909
#1	.00142	.00050	.00504	.00352	-.00007	.00077	-.00066
#2	.00020	-.00016	-.00589	.00301	-.00093	.00107	-.00012
#3	.00094	-.00011	.00423	.00266	-.00084	.00078	-.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10138.	59762.	2625.0
Stddev	34.	105.	23.6
%RSD	.33482	.17513	.89831
#1	10159.	59652.	2598.8
#2	10157.	59860.	2631.8
#3	10099.	59775.	2644.4

Approved: July 16, 2016

Sample Name: L1607020103 Acquired: 7/14/2016 13:41:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00045**	**175.05**	**.00833**	**.85524**	**.10512**	**.00019**	**249.47**
Stddev	.00073	1.23	.00356	.01361	.00189	.00004	3.00
%RSD	163.57	.70286	42.693	1.5910	1.8005	20.053	1.2032
#1	.00020	176.47	.01166	.86058	.10682	.00015	252.06
#2	-.00124	174.37	.00875	.83977	.10546	.00019	250.17
#3	-.00031	174.30	.00459	.86536	.10308	.00022	246.18
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09339**	**30.632**	**.50318**	**1.0206**	**5.1057**	**32.384**	**7.6010**
Stddev	.00578	2.073	.00423	.0683	.0388	.365	.0858
%RSD	6.1848	6.7674	.84149	6.6874	.76059	1.1267	1.1284
#1	.09715	31.919	.50801	1.0626	5.1495	32.592	7.6675
#2	.09627	31.736	.50010	1.0573	5.0919	32.597	7.6312
#3	.08674	28.241	.50143	.94182	5.0756	31.963	7.5042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**64.563**	**.95180**	**.00246**	F **910.05**	**59.165**	**166.02**	**.03448**
Stddev	.630	.01164	.00052	15.46	3.947	9.38	.00649
%RSD	.97545	1.2227	21.293	1.6989	6.6708	5.6488	18.827
#1	65.116	.95716	.00235	916.89	61.621	171.65	.03987
#2	64.695	.95978	.00304	920.91	61.261	171.22	.03628
#3	63.878	.93845	.00201	892.35	54.612	155.19	.02727
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 16, 2016

Sample Name: L1607020103 Acquired: 7/14/2016 13:41:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00132**	**.01005**	**6.8387**	**-.00032**	**1.9000**	F **-.03514**	**.04196**
Stddev	.00252	.00313	.3632	.00114	.0224	.00596	.00339
%RSD	190.41	31.173	5.3112	351.39	1.1778	16.972	8.0894
#1	.00125	.00649	7.0569	.00035	1.9171	-.03945	.04557
#2	.00388	.01124	7.0398	-.00163	1.9081	-.02834	.04149
#3	-.00116	.01241	6.4194	.00032	1.8747	-.03765	.03883
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00855**	**3.7754**	**.00010**
Stddev	.00013	.2525	.00028
%RSD	1.5179	6.6883	293.15
#1	.00867	3.9326	.00042
#2	.00841	3.9094	-.00003
#3	.00856	3.4841	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9639.9**	**55431.**	**2597.1**
Stddev	20.4	237.	43.2
%RSD	.21187	.42681	1.6632
#1	9618.9	55167.	2560.7
#2	9659.7	55624.	2585.8
#3	9641.2	55503.	2644.9

Approved: July 16, 2016

Sample Name: L1607020103PS Acquired: 7/14/2016 13:45:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576082-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19991**	**161.84**	**.20875**	**1.7416**	**.60272**	**.02442**	**229.20**
Stddev	.00083	.73	.00779	.0026	.00811	.00023	2.81
%RSD	.41737	.44979	3.7323	.15001	1.3453	.95902	1.2248
#1	.20088	162.63	.21354	1.7429	.61096	.02466	232.04
#2	.19941	161.69	.21296	1.7386	.60243	.02439	229.14
#3	.19945	161.20	.19976	1.7433	.59476	.02420	226.43
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10805**	**27.836**	**.68719**	**1.1612**	**6.5462**	**55.613**	**7.3345**
Stddev	.00549	1.466	.00513	.0596	.0516	.508	.0827
%RSD	5.0847	5.2678	.74619	5.1350	.78871	.91257	1.1278
#1	.11130	28.789	.69311	1.1995	6.5907	56.148	7.4157
#2	.11113	28.570	.68435	1.1917	6.5582	55.554	7.3376
#3	.10170	26.147	.68412	1.0925	6.4896	55.138	7.2503
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**62.563**	**1.1076**	**.48744**	F **829.85**	**53.984**	**155.55**	**.26062**
Stddev	.442	.0140	.02510	10.82	2.788	6.61	.01339
%RSD	.70617	1.2646	5.1485	1.3041	5.1646	4.2514	5.1383
#1	63.035	1.1227	.50419	841.57	55.765	159.68	.27048
#2	62.160	1.0950	.49954	820.24	55.417	159.05	.26601
#3	62.493	1.1050	.45859	827.73	50.771	147.93	.24538
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 16, 2016

Sample Name: L1607020103PS Acquired: 7/14/2016 13:45:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576082-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.58685	.20160	8.6258	.47100	2.2040	.46954	.25617
Stddev	.03107	.00376	.3451	.02758	.0236	.00407	.01077
%RSD	5.2938	1.8668	4.0008	5.8548	1.0713	.86651	4.2030
#1	.60683	.20529	8.8428	.48886	2.2287	.46490	.26068
#2	.60267	.20174	8.8067	.48490	2.2017	.47248	.26396
#3	.55106	.19777	8.2278	.43924	2.1816	.47124	.24389
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.49866	3.8831	.00056
Stddev	.00120	.1971	.00049
%RSD	.24041	5.0755	89.017
#1	.50003	4.0080	.00087
#2	.49781	3.9854	-.00001
#3	.49813	3.6559	.00081
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9671.7	55553.	2620.0
Stddev	16.5	167.	35.2
%RSD	.17049	.30006	1.3442
#1	9653.0	55379.	2582.8
#2	9683.8	55568.	2624.2
#3	9678.5	55711.	2652.9

Approved: July 16, 2016

Sample Name: L1607020103SDL Acquired: 7/14/2016 13:49:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG576082-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00107**	**34.629**	**.00088**	**.17909**	**.01645**	**.00004**	**46.434**	**.02004**
Stddev	.00033	.049	.00319	.00255	.00357	.00009	4.644	.00090
%RSD	30.725	.14157	361.20	1.4253	21.721	237.88	10.002	4.4784
#1	-.00088	34.582	-.00280	.17638	.01235	.00000	41.109	.02072
#2	-.00088	34.626	.00259	.18145	.01888	-.00003	48.548	.02037
#3	-.00145	34.680	.00285	.17943	.01813	.00014	49.645	.01902
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**6.4706**	**.10186**	**.21937**	**.93639**	**5.8240**	**1.3235**	**11.836**	**.16952**
Stddev	.1554	.00092	.00564	.08422	.6556	.1315	1.120	.01998
%RSD	2.4012	.89860	2.5695	8.9941	11.257	9.9368	9.4626	11.788
#1	6.5974	.10111	.22381	.83918	5.0953	1.1730	10.548	.14710
#2	6.5173	.10158	.22127	.98728	6.0110	1.3811	12.380	.17596
#3	6.2973	.10288	.21303	.98272	6.3659	1.4164	12.581	.18548
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00069**	**171.48**	**12.727**	**34.095**	**.00728**	**.00254**	**-.00050**	**1.3826**
Stddev	.00020	17.13	.304	.879	.00405	.00157	.00508	.0342
%RSD	28.523	9.9887	2.3880	2.5779	55.635	61.745	1014.3	2.4753
#1	.00047	151.81	12.975	34.806	.00615	.00083	.00312	1.4082
#2	.00085	179.58	12.819	34.365	.01178	.00287	.00169	1.3958
#3	.00075	183.06	12.388	33.112	.00392	.00391	-.00631	1.3437
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607020103SDL Acquired: 7/14/2016 13:49:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG576082-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.34604	-.00426	.01077	.00139	.81498	.00014
Stddev	.00070	.03435	.00491	.00329	.00071	.02044	.00017
%RSD	1434.0	9.9260	115.18	30.553	50.699	2.5083	118.26
#1	.00055	.30666	.00028	.01272	.00180	.83156	.00003
#2	-.00076	.36166	-.00947	.01262	.00180	.82125	.00034
#3	.00036	.36981	-.00359	.00697	.00058	.79214	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10488.	60924.	2886.1
Stddev	33.	131.	138.7
%RSD	.31234	.21578	4.8055
#1	10521.	60995.	3045.1
#2	10487.	61005.	2822.9
#3	10455.	60773.	2790.2

Approved: July 16, 2016

Sample Name: L1607020103SDL Acquired: 7/14/2016 13:52:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG576082-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00079**	**7.2353**	**.00134**	**.03956**	**.00275**	**.00005**	**10.451**	**.00433**
Stddev	.00045	.0060	.00232	.00084	.00044	.00006	.081	.00002
%RSD	56.482	.08244	173.32	2.1218	15.868	111.32	.77720	.38077
#1	-.00115	7.2421	-.00059	.03860	.00229	.00011	10.360	.00431
#2	-.00029	7.2326	.00391	.04014	.00281	.00005	10.515	.00434
#3	-.00094	7.2311	.00069	.03994	.00316	-.00000	10.478	.00433
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.3551**	**.02141**	**.04651**	**.21559**	**1.2467**	**.30504**	**2.7669**	**.03496**
Stddev	.0629	.00064	.00347	.02632	.0480	.00164	.0659	.00347
%RSD	4.6402	2.9773	7.4614	12.207	3.8533	.53708	2.3798	9.9141
#1	1.3908	.02204	.04832	.23707	1.2147	.30615	2.6995	.03228
#2	1.3920	.02144	.04871	.22349	1.2235	.30581	2.7702	.03887
#3	1.2825	.02076	.04251	.18623	1.3019	.30316	2.8310	.03374
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00017**	**38.448**	**2.6925**	**6.9794**	**.00051**	**-.00106**	**.00118**	**.27878**
Stddev	.00024	.063	.1248	.4866	.00142	.00226	.00367	.01875
%RSD	143.20	.16274	4.6331	6.9723	275.91	212.90	310.24	6.7272
#1	-.00010	38.469	2.7654	7.2909	-.00095	-.00205	.00155	.29160
#2	.00025	38.497	2.7636	7.2286	.00188	-.00267	-.00266	.28749
#3	.00035	38.377	2.5485	6.4186	.00061	.00153	.00466	.25726
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607020103SDL Acquired: 7/14/2016 13:52:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG576082-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.07845	.00236	.00489	.00061	.17472	-.00023
Stddev	.00051	.00026	.00726	.00152	.00045	.00850	.00020
%RSD	288.32	.33381	307.87	30.993	73.320	4.8626	88.947
#1	.00076	.07816	.00930	.00497	.00027	.17949	-.00007
#2	-.00018	.07864	.00297	.00334	.00044	.17977	-.00016
#3	-.00005	.07857	-.00519	.00637	.00112	.16491	-.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10610.	61883.	2759.7
Stddev	76.	120.	3.9
%RSD	.71451	.19442	.14149
#1	10674.	62016.	2756.9
#2	10631.	61850.	2758.0
#3	10527.	61782.	2764.2

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 13:56:43 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38616**	**9.4206**	**.38676**	**.47772**	**.94740**	**.04733**	**9.4813**	**.04840**
Stddev	.00267	.0175	.00960	.00605	.00560	.00021	.0693	.00067
%RSD	.69074	.18586	2.4833	1.2662	.59117	.44937	.73096	1.3893
#1	.38649	9.4060	.39078	.47781	.94992	.04711	9.5502	.04884
#2	.38334	9.4400	.39371	.48372	.95130	.04753	9.4821	.04874
#3	.38864	9.4159	.37580	.47162	.94098	.04736	9.4116	.04763
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19251**	**.46912**	**.48298**	**3.7785**	**47.637**	**.95100**	**9.4238**	**.47720**
Stddev	.00501	.00215	.01141	.0145	.388	.01085	.0073	.00473
%RSD	2.6008	.45910	2.3633	.38372	.81507	1.1408	.07704	.99147
#1	.19554	.46698	.49043	3.7905	47.732	.96331	9.4220	.48231
#2	.19525	.47129	.48867	3.7825	47.969	.94687	9.4318	.47630
#3	.18673	.46909	.46984	3.7624	47.210	.94282	9.4176	.47298
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.96285**	**47.829**	**.48195**	**9.7801**	**.48593**	**1.1610**	**.39705**	**4.7527**
Stddev	.02721	.223	.01310	.1970	.01154	.0234	.00337	.0734
%RSD	2.8260	.46558	2.7177	2.0143	2.3742	2.0201	.84921	1.5444
#1	.98277	47.941	.48805	9.8702	.49145	1.1738	.39681	4.7861
#2	.97393	47.974	.49089	9.9160	.49368	1.1752	.40053	4.8035
#3	.93185	47.573	.46692	9.5541	.47267	1.1339	.39380	4.6686
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 13:56:43 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.96040	.95124	.96325	.48756	.93623	.96395	.94566
Stddev	.02861	.00475	.01383	.00305	.00199	.02259	.00860
%RSD	2.9786	.49930	1.4362	.62612	.21254	2.3440	.90980
#1	.97623	.95340	.95536	.48847	.93397	.97653	.94588
#2	.97760	.95453	.97923	.48416	.93771	.97746	.95415
#3	.92738	.94579	.95517	.49006	.93700	.93787	.93694
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10518.	61390.	2796.7
Stddev	30.	107.	25.2
%RSD	.28580	.17356	.89939
#1	10510.	61513.	2797.4
#2	10552.	61332.	2771.2
#3	10493.	61325.	2821.5

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 14:00:20 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00119**	**.00725**	**.00001**	**.00618**	**-.00314**	**.00001**	**-.05384**	**.00025**
Stddev	.00094	.00509	.00203	.00372	.00058	.00004	.03163	.00013
%RSD	78.898	70.169	21490.	60.172	18.383	390.29	58.759	50.361
#1	-.00182	.01126	-.00029	.00985	-.00268	-.00003	-.09002	.00026
#2	-.00162	.00153	-.00185	.00627	-.00379	.00000	-.04011	.00012
#3	-.00011	.00896	.00217	.00242	-.00296	.00006	-.03139	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**.00036**	**.00045**	**.00845**	**.11558**	**.00342**	**.01691**	**.00045**
Stddev	.00014	.00118	.00074	.01368	.07581	.00231	.11117	.00037
%RSD	150.72	330.89	162.96	161.82	65.596	67.510	657.35	81.766
#1	-.00016	-.00100	-.00031	.02240	.02804	.00093	-.05060	.00003
#2	.00007	.00092	.00116	-.00495	.15923	.00384	-.04388	.00064
#3	-.00017	.00115	.00050	.00792	.15947	.00549	.14523	.00069
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00011**	**.07194**	**-.00046**	**.00154**	**-.00239**	**.00206**	**.00158**	**.00136**
Stddev	.00018	.00412	.00130	.00314	.00097	.00209	.00607	.00092
%RSD	159.22	5.7225	281.37	203.60	40.504	101.34	383.06	67.875
#1	.00020	.07536	.00104	.00415	-.00147	-.00031	.00102	.00187
#2	-.00009	.06737	-.00118	-.00195	-.00231	.00287	-.00418	.00029
#3	.00023	.07309	-.00125	.00243	-.00340	.00362	.00791	.00192
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 14:00:20 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	-.00023	.00812	.00260	-.00089	-.00004	-.00000
Stddev	.00063	.00020	.00150	.00125	.00025	.00012	.00058
%RSD	184.89	84.265	18.496	48.131	27.809	282.80	25045.
#1	-.00005	-.00031	.00662	.00231	-.00117	-.00011	.00063
#2	.00000	-.00037	.00963	.00397	-.00070	-.00011	-.00050
#3	.00106	-.00001	.00811	.00152	-.00080	.00009	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10292.	61823.	2785.5
Stddev	70.	386.	10.2
%RSD	.68150	.62447	.36505
#1	10356.	62027.	2793.3
#2	10217.	62065.	2789.1
#3	10302.	61378.	2774.0

Approved: July 16, 2016

Sample Name: PBW 68 Acquired: 7/14/2016 14:04:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576011-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00206**	**.01332**	**-.00061**	**.00467**	**-.00214**	**.00006**	**-.02156**	**.00037**
Stddev	.00180	.00723	.00190	.00124	.00038	.00005	.01338	.00030
%RSD	87.459	54.287	310.80	26.513	17.907	87.606	62.053	80.203
#1	-.00116	.02122	-.00235	.00427	-.00203	-.00000	-.01584	.00039
#2	-.00414	.01170	.00142	.00606	-.00256	.00009	-.01199	.00007
#3	-.00089	.00703	-.00091	.00368	-.00182	.00008	-.03685	.00067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.00038**	**-.00012**	**-.01265**	**-.02006**	**.00467**	**-.07916**	**-.00207**
Stddev	.00023	.00046	.00045	.02361	.08332	.00167	.01428	.00327
%RSD	478.10	121.27	362.68	186.74	415.31	35.787	18.045	158.11
#1	.00020	.00065	.00008	-.02335	-.06604	.00373	-.09264	-.00485
#2	-.00025	-.00015	.00019	.01442	.07612	.00660	-.08065	.00154
#3	-.00009	.00063	-.00064	-.02902	-.07026	.00368	-.06419	-.00290
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**.06208**	**-.00088**	**-.00115**	**-.00324**	**.00231**	**.00056**	**.00372**
Stddev	.00012	.00621	.00112	.00335	.00207	.00129	.00181	.00246
%RSD	51.776	10.008	127.06	290.68	63.681	55.943	325.85	66.032
#1	-.00018	.05915	.00023	-.00106	-.00122	.00108	.00244	.00265
#2	-.00014	.06921	-.00087	.00215	-.00535	.00365	.00039	.00198
#3	-.00037	.05787	-.00200	-.00454	-.00316	.00220	-.00117	.00653
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: PBW 68 Acquired: 7/14/2016 14:04:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576011-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	-.00015	.00531	.00059	-.00102	.00269	.00019
Stddev	.00040	.00019	.00671	.00337	.00032	.00045	.00060
%RSD	387.77	130.68	126.42	572.93	31.440	16.708	308.77
#1	-.00035	-.00031	.00562	.00446	-.00070	.00307	-.00020
#2	.00040	.00006	-.00155	-.00168	-.00102	.00281	.00088
#3	.00026	-.00019	.01187	-.00102	-.00135	.00220	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10215.	60573.	2679.7
Stddev	45.	267.	7.9
%RSD	.44375	.44138	.29424
#1	10240.	60306.	2674.4
#2	10242.	60573.	2676.0
#3	10162.	60841.	2688.8

Approved: July 16, 2016

Sample Name: LCSW 68 Acquired: 7/14/2016 14:08:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576011-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19572**	**4.9050**	**.20175**	**.96744**	**.50443**	**.02417**	**5.1413**	**.02485**
Stddev	.00252	.0030	.00712	.00474	.00249	.00007	.0294	.00080
%RSD	1.2874	.06141	3.5282	.49023	.49308	.29565	.57173	3.2263
#1	.19362	4.9015	.20283	.96962	.50276	.02418	5.1512	.02563
#2	.19851	4.9071	.20827	.96200	.50325	.02409	5.1083	.02490
#3	.19502	4.9063	.19416	.97071	.50729	.02423	5.1645	.02403
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10012**	**.24751**	**.25348**	**2.0110**	**24.726**	**.50778**	**5.0021**	**.25217**
Stddev	.00287	.00219	.00527	.0246	.074	.00256	.0729	.00248
%RSD	2.8664	.88653	2.0805	1.2219	.29844	.50391	1.4567	.98186
#1	.10189	.24499	.25663	1.9832	24.702	.50795	5.0573	.24932
#2	.10167	.24896	.25642	2.0298	24.666	.50513	4.9195	.25340
#3	.09681	.24859	.24739	2.0200	24.808	.51024	5.0296	.25379
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50945**	**25.061**	**.25446**	**4.8868**	**.24939**	**.59984**	**.19307**	**2.4912**
Stddev	.01258	.054	.00635	.0912	.00535	.01296	.00539	.0419
%RSD	2.4687	.21732	2.4940	1.8657	2.1445	2.1610	2.7893	1.6811
#1	.51800	25.037	.25927	4.9545	.25441	.60812	.19837	2.5193
#2	.51534	25.023	.25685	4.9227	.24998	.60649	.18761	2.5113
#3	.49501	25.123	.24727	4.7831	.24377	.58490	.19324	2.4430
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: LCSW 68 Acquired: 7/14/2016 14:08:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576011-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50347	.51298	.51101	.25241	.49377	.50054	.00130
Stddev	.01517	.00123	.00309	.00248	.00016	.01185	.00014
%RSD	3.0122	.23891	.60418	.98237	.03340	2.3678	10.828
#1	.51360	.51222	.50993	.25300	.49379	.50821	.00144
#2	.51077	.51232	.51449	.25454	.49392	.50653	.00116
#3	.48603	.51439	.50861	.24968	.49359	.48689	.00129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10156.	59814.	2681.8
Stddev	18.	224.	11.6
%RSD	.17564	.37439	.43130
#1	10141.	60055.	2683.7
#2	10176.	59613.	2692.4
#3	10151.	59774.	2669.5

Approved: July 16, 2016

Sample Name: F BLANK Acquired: 7/14/2016 14:11:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575805-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00170	.01612	.00020	.00581	-.00094	-.00001	-.01134	.00032
Stddev	.00177	.00244	.00203	.00180	.00036	.00005	.03567	.00002
%RSD	104.20	15.112	1014.4	30.970	37.776	416.22	314.54	7.4520
#1	-.00330	.01838	.00088	.00565	-.00062	-.00003	.02980	.00035
#2	-.00200	.01644	.00180	.00769	-.00132	.00004	-.03025	.00030
#3	.00020	.01354	-.00208	.00410	-.00088	-.00005	-.03357	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.00110	-.00056	-.01365	.02379	.00103	-.03449	-.00097
Stddev	.00026	.00061	.00102	.03614	.06862	.00401	.08407	.00103
%RSD	150.34	55.310	180.50	264.73	288.39	388.51	243.72	105.91
#1	-.00007	.00097	-.00169	.01302	.08871	.00545	.05466	-.00005
#2	.00014	.00056	-.00030	-.05479	.03068	-.00236	-.11233	-.00208
#3	.00044	.00176	.00029	.00081	-.04801	.00000	-.04581	-.00078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00028	142.97	-.00056	.00150	-.00292	.00178	.00002	.00737
Stddev	.00037	.12	.00035	.00247	.00181	.00073	.00081	.00057
%RSD	132.05	.08527	62.170	164.68	61.807	41.115	5008.0	7.6909
#1	-.00041	143.10	-.00030	.00233	-.00288	.00250	.00076	.00779
#2	-.00056	142.95	-.00042	-.00128	-.00475	.00104	.00015	.00760
#3	.00014	142.86	-.00095	.00346	-.00114	.00178	-.00086	.00672
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: F BLANK Acquired: 7/14/2016 14:11:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575805-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00067	.00009	-.00316	.00018	-.00053	.00362	.00023
Stddev	.00122	.00018	.00350	.00273	.00117	.00058	.00018
%RSD	182.03	202.82	110.84	1549.9	220.80	16.084	77.779
#1	.00201	.00012	-.00097	.00017	.00067	.00414	.00041
#2	.00038	-.00011	-.00131	-.00255	-.00167	.00373	.00005
#3	-.00038	.00025	-.00719	.00290	-.00059	.00299	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10133.	59358.	2696.6
Stddev	16.	148.	14.9
%RSD	.15573	.24969	.55433
#1	10123.	59494.	2680.1
#2	10125.	59200.	2709.2
#3	10151.	59378.	2700.6

Approved: July 16, 2016

Sample Name: F BLANK Acquired: 7/14/2016 14:15:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575805-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.00535	.00117	.00406	-.00177	-.00001	-.01783	.00029
Stddev	.00203	.00551	.00227	.00193	.00062	.00006	.00560	.00024
%RSD	216.76	102.93	193.66	47.682	34.918	542.40	31.423	81.908
#1	.00102	.00772	.00185	.00286	-.00246	-.00004	-.02193	.00004
#2	-.00113	-.00094	.00304	.00302	-.00129	.00006	-.02013	.00052
#3	.00292	.00928	-.00136	.00629	-.00155	-.00005	-.01145	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	.00108	.00185	-.00508	.02480	.00344	-.06770	-.00279
Stddev	.00012	.00015	.00047	.00816	.07237	.00211	.05064	.00033
%RSD	105.98	13.872	25.343	160.67	291.86	61.523	74.801	11.861
#1	-.00024	.00116	.00145	.00431	.05482	.00560	-.02833	-.00283
#2	-.00009	.00091	.00237	-.01047	-.05776	.00138	-.04994	-.00244
#3	-.00000	.00117	.00174	-.00907	.07733	.00333	-.12482	-.00309
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.66923	-.00062	.00088	-.00452	.00187	-.00123	.00560
Stddev	.00045	.01325	.00034	.00794	.00121	.00404	.00501	.00077
%RSD	517.94	1.9799	54.191	901.34	26.778	215.40	407.28	13.757
#1	.00026	.68325	-.00025	-.00579	-.00321	.00645	.00007	.00649
#2	-.00059	.66753	-.00090	.00966	-.00476	.00035	.00300	.00520
#3	.00007	.65691	-.00071	-.00123	-.00559	-.00118	-.00676	.00511
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: F BLANK Acquired: 7/14/2016 14:15:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575805-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**-.00013**	**.00323**	**.00044**	**-.00003**	**.00408**	**.00022**
Stddev	.00035	.00052	.00146	.00251	.00053	.00055	.00013
%RSD	179.43	413.87	45.216	570.27	1558.7	13.430	57.269
#1	.00060	.00028	.00194	-.00169	-.00063	.00444	.00036
#2	-.00002	-.00072	.00482	-.00020	.00039	.00436	.00011
#3	.00001	.00006	.00293	.00321	.00014	.00345	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10310.**	**60905.**	**2722.5**
Stddev	12.	149.	12.0
%RSD	.11675	.24450	.44031
#1	10316.	60822.	2720.7
#2	10296.	61077.	2711.6
#3	10317.	60816.	2735.3

Approved: July 16, 2016

Sample Name: L1607039701 Acquired: 7/14/2016 14:19:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576011-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00212**	**.05238**	**-.00138**	**.01980**	**.00085**	**.00005**	**9.5331**	**.00042**
Stddev	.00111	.00492	.00092	.00390	.00040	.00004	.0580	.00013
%RSD	52.194	9.3947	66.676	19.691	47.369	67.750	.60823	30.671
#1	-.00222	.05461	-.00148	.02345	.00076	.00006	9.4990	.00045
#2	-.00097	.04674	-.00041	.02027	.00050	.00001	9.6000	.00052
#3	-.00318	.05579	-.00224	.01569	.00128	.00008	9.5003	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00148**	**.09868**	**.03441**	**.03124**	**1.1026**	**.00376**	**.51937**	**.14683**
Stddev	.00005	.00072	.00439	.00638	.0239	.00133	.05477	.00213
%RSD	3.3244	.73052	12.761	20.429	2.1672	35.472	10.545	1.4526
#1	.00147	.09919	.03637	.02466	1.0762	.00224	.46101	.14455
#2	.00154	.09785	.03748	.03740	1.1229	.00427	.56965	.14878
#3	.00144	.09899	.02938	.03166	1.1086	.00476	.52744	.14714
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00027**	**144.04**	**.00780**	**.04330**	**-.00248**	**.00101**	**-.00003**	**.27103**
Stddev	.00047	.11	.00149	.00034	.00252	.00202	.00487	.01973
%RSD	176.60	.07915	19.163	.79629	101.48	198.77	15835.	7.2804
#1	-.00049	144.04	.00868	.04353	-.00282	.00334	.00138	.28228
#2	.00027	143.93	.00864	.04347	-.00481	-.00022	.00397	.28256
#3	-.00058	144.16	.00607	.04291	.00019	-.00008	-.00545	.24824
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607039701 Acquired: 7/14/2016 14:19:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576011-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.88538	-.00530	.00116	-.00058	1.3399	.00024
Stddev	.00028	.00044	.00488	.00133	.00088	.1268	.00028
%RSD	40.337	.04953	91.916	115.06	151.42	9.4644	119.08
#1	.00101	.88585	-.01074	.00239	-.00040	1.4200	.00051
#2	.00049	.88529	-.00384	-.00025	.00019	1.4059	-.00005
#3	.00058	.88499	-.00133	.00133	-.00155	1.1937	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10109.	59195.	2732.9
Stddev	11.	81.	19.7
%RSD	.10597	.13725	.72008
#1	10098.	59191.	2732.6
#2	10120.	59115.	2752.8
#3	10109.	59278.	2713.4

Approved: July 16, 2016

Sample Name: L1607039701S Acquired: 7/14/2016 14:23:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576011-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19436**	**4.9227**	**.20109**	**.97853**	**.49861**	**.02407**	**14.067**	**.02468**
Stddev	.00122	.0163	.00547	.00255	.00168	.00002	.054	.00032
%RSD	.62640	.33053	2.7208	.26069	.33715	.08542	.38620	1.3064
#1	.19342	4.9219	.20632	.98113	.49961	.02405	14.124	.02476
#2	.19574	4.9069	.20154	.97604	.49667	.02408	14.016	.02495
#3	.19392	4.9394	.19541	.97841	.49956	.02408	14.062	.02432
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09999**	**.33450**	**.28195**	**2.0159**	**25.932**	**.50658**	**5.4317**	**.38921**
Stddev	.00170	.00125	.00553	.0104	.084	.00221	.1546	.00352
%RSD	1.7018	.37339	1.9621	.51583	.32268	.43720	2.8463	.90375
#1	.10104	.33517	.28617	2.0146	26.004	.50403	5.4514	.38760
#2	.10090	.33306	.28398	2.0270	25.840	.50762	5.2682	.38679
#3	.09803	.33528	.27569	2.0063	25.952	.50807	5.5755	.39325
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50540**	**162.31**	**.25629**	**4.9820**	**.24652**	**.58905**	**.19128**	**2.7966**
Stddev	.01009	.28	.00483	.0720	.00386	.01023	.00340	.0326
%RSD	1.9966	.17432	1.8865	1.4458	1.5676	1.7371	1.7763	1.1672
#1	.51110	162.46	.25914	5.0364	.24986	.59720	.19355	2.8164
#2	.51135	161.98	.25902	5.0092	.24740	.59238	.19290	2.8143
#3	.49375	162.49	.25070	4.9003	.24228	.57757	.18737	2.7589
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607039701S Acquired: 7/14/2016 14:23:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576011-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49761	1.3421	.50305	.24041	.48973	1.8124	.00138
Stddev	.01042	.0022	.00428	.00194	.00197	.0321	.00059
%RSD	2.0946	.16423	.85075	.80529	.40310	1.7709	42.549
#1	.50396	1.3431	.50617	.24106	.49030	1.8318	.00206
#2	.50329	1.3396	.49817	.24194	.48753	1.8301	.00109
#3	.48558	1.3436	.50481	.23823	.49136	1.7754	.00100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10112.	59489.	2725.2
Stddev	11.	249.	12.6
%RSD	.10882	.41931	.46416
#1	10100.	59407.	2710.8
#2	10122.	59769.	2734.6
#3	10115.	59291.	2730.2

Approved: July 16, 2016

Sample Name: L1607039701SD Acquired: 7/14/2016 14:27:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576011-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19129**	**4.8592**	**.20129**	**.97067**	**.49784**	**.02385**	**14.255**	**.02486**
Stddev	.00520	.1219	.00231	.02623	.00264	.00068	.136	.00064
%RSD	2.7173	2.5081	1.1461	2.7022	.53099	2.8646	.95212	2.5895
#1	.19327	4.9241	.20163	.98909	.50087	.02430	14.408	.02532
#2	.19522	4.9349	.20341	.98227	.49597	.02420	14.206	.02512
#3	.18540	4.7186	.19883	.94064	.49669	.02307	14.150	.02412
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10127**	**.33542**	**.28795**	**1.9968**	**25.850**	**.50709**	**5.4125**	**.39161**
Stddev	.00311	.00892	.00715	.0276	.133	.00240	.0519	.00269
%RSD	3.0682	2.6585	2.4841	1.3832	.51268	.47246	.95962	.68564
#1	.10287	.34090	.29099	2.0280	25.988	.50982	5.4180	.39346
#2	.10324	.34022	.29307	1.9755	25.723	.50534	5.3581	.38853
#3	.09768	.32513	.27978	1.9869	25.839	.50610	5.4615	.39285
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51189**	**166.67**	**.25894**	**5.0434**	**.25071**	**.59989**	**.19864**	**2.8261**
Stddev	.01155	1.04	.00559	.0825	.00702	.01360	.00443	.0424
%RSD	2.2570	.62258	2.1601	1.6369	2.7987	2.2673	2.2313	1.4991
#1	.51749	167.84	.26299	5.0773	.25650	.61154	.19899	2.8470
#2	.51957	165.88	.26127	5.1036	.25272	.60320	.20289	2.8540
#3	.49860	166.28	.25256	4.9493	.24291	.58494	.19404	2.7773
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607039701SD Acquired: 7/14/2016 14:27:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576011-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50182**	**1.3701**	**.50557**	**.24405**	**.48688**	**1.8739**	**.00155**
Stddev	.01366	.0092	.00057	.00404	.01183	.0439	.00051
%RSD	2.7224	.67324	.11312	1.6549	2.4295	2.3447	33.103
#1	.50895	1.3803	.50587	.24478	.49320	1.8943	.00096
#2	.51045	1.3624	.50491	.24768	.49421	1.9040	.00190
#3	.48607	1.3677	.50593	.23970	.47324	1.8235	.00179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10053.**	**59698.**	**2731.2**
Stddev	42.	896.	21.6
%RSD	.42127	1.5004	.79199
#1	10040.	59078.	2706.4
#2	10019.	59291.	2741.0
#3	10101.	60725.	2746.2

Approved: July 16, 2016

Sample Name: L1607034701 Acquired: 7/14/2016 14:30:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00136	.20647	-.00059	.02106	.27600	.00004	1.1209	.00022
Stddev	.00060	.00692	.00227	.00283	.00164	.00002	.0057	.00007
%RSD	44.261	3.3521	387.81	13.459	.59366	44.500	.50866	30.091
#1	-.00201	.21124	.00051	.02093	.27450	.00003	1.1254	.00016
#2	-.00082	.20964	-.00319	.01829	.27775	.00003	1.1227	.00029
#3	-.00124	.19854	.00093	.02396	.27576	.00006	1.1145	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00084	.00198	.00075	7.0465	.17124	.00283	.26358	.07646
Stddev	.00032	.00068	.00222	.0282	.05761	.00089	.05706	.00078
%RSD	37.945	34.399	296.51	.39961	33.645	31.493	21.650	1.0171
#1	.00109	.00241	.00255	7.0140	.22305	.00205	.27323	.07579
#2	.00094	.00234	.00143	7.0633	.10920	.00265	.20231	.07731
#3	.00048	.00120	-.00173	7.0622	.18146	.00380	.31520	.07627
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	139.94	.00277	.00940	-.00060	.00054	.00084	.48387
Stddev	.00030	.27	.00118	.00523	.00135	.00193	.00233	.04228
%RSD	138.24	.19331	42.690	55.645	226.54	359.36	276.93	8.7387
#1	-.00008	139.78	.00270	.00769	.00015	.00255	-.00169	.50783
#2	-.00057	140.25	.00399	.01527	-.00216	-.00129	.00132	.50874
#3	-.00001	139.78	.00163	.00524	.00022	.00034	.00290	.43505
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607034701 Acquired: 7/14/2016 14:30:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.02074	.01225	-.00032	-.00018	.02831	-.00023
Stddev	.00061	.00029	.00371	.00190	.00069	.00279	.00019
%RSD	185.27	1.3870	30.276	598.73	389.30	9.8441	85.624
#1	.00004	.02053	.01194	-.00169	-.00084	.02992	-.00027
#2	-.00009	.02107	.01610	.00186	.00053	.02991	-.00039
#3	.00102	.02062	.00870	-.00112	-.00023	.02509	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10218.	59713.	2719.4
Stddev	8.	209.	7.5
%RSD	.07729	.34945	.27437
#1	10217.	59494.	2727.2
#2	10210.	59735.	2712.3
#3	10226.	59910.	2718.5

Approved: July 16, 2016

Sample Name: L1607034701PS Acquired: 7/14/2016 14:34:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576110-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19689**	**5.1294**	**.20349**	**.99499**	**.75803**	**.02446**	**6.1926**	**.02487**
Stddev	.00231	.0038	.00312	.00508	.00091	.00002	.0274	.00047
%RSD	1.1733	.07440	1.5337	.51091	.11957	.08213	.44215	1.8771
#1	.19859	5.1274	.20501	.99508	.75803	.02444	6.2184	.02534
#2	.19426	5.1269	.20556	.98986	.75713	.02447	6.1639	.02487
#3	.19781	5.1338	.19990	1.0000	.75894	.02448	6.1953	.02440
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10084**	**.25098**	**.25379**	**8.3770**	**25.224**	**.51448**	**5.1382**	**.32265**
Stddev	.00206	.00152	.00646	.0079	.007	.00221	.0417	.00173
%RSD	2.0402	.60709	2.5465	.09440	.02659	.42960	.81204	.53546
#1	.10205	.25195	.25858	8.3747	25.222	.51342	5.1835	.32232
#2	.10201	.24923	.25634	8.3858	25.231	.51300	5.1014	.32110
#3	.09846	.25177	.24644	8.3705	25.218	.51702	5.1298	.32451
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51208**	**151.85**	**.25530**	**4.9624**	**.25170**	**.60210**	**.19468**	**2.9419**
Stddev	.01171	.26	.00643	.0902	.00413	.01457	.00517	.0447
%RSD	2.2861	.16905	2.5173	1.8169	1.6390	2.4196	2.6558	1.5203
#1	.52021	151.56	.25971	5.0187	.25303	.61402	.20054	2.9711
#2	.51738	151.98	.25827	5.0099	.25500	.60643	.19077	2.9642
#3	.49866	152.02	.24793	4.8584	.24707	.58586	.19273	2.8904
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607034701PS Acquired: 7/14/2016 14:34:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576110-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50407**	**.53383**	**.51465**	**.24579**	**.49748**	**.52815**	**.00076**
Stddev	.01245	.00164	.00580	.00282	.00154	.01193	.00043
%RSD	2.4695	.30765	1.1279	1.1475	.30953	2.2592	56.241
#1	.51232	.53232	.50795	.24861	.49712	.53486	.00036
#2	.51014	.53359	.51788	.24579	.49616	.53521	.00070
#3	.48975	.53558	.51813	.24297	.49917	.51437	.00121
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10129.**	**59386.**	**2705.7**
Stddev	26.	167.	3.9
%RSD	.26152	.28159	.14478
#1	10124.	59568.	2701.4
#2	10106.	59239.	2706.7
#3	10158.	59351.	2709.0

Approved: July 16, 2016

Sample Name: L1607034701SDL Acquired: 7/14/2016 14:38:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG576110-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00161**	**.03923**	**-.00117**	**.00889**	**.05412**	**.00005**	**.16897**	**.00016**
Stddev	.00064	.00423	.00027	.00139	.00121	.00005	.03373	.00006
%RSD	39.816	10.772	22.907	15.692	2.2401	88.648	19.964	37.097
#1	-.00102	.03443	-.00115	.01003	.05464	.00011	.15142	.00009
#2	-.00229	.04090	-.00091	.00930	.05273	.00005	.20786	.00019
#3	-.00151	.04237	-.00144	.00733	.05498	.00001	.14764	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.00112**	**-.00058**	**1.4335**	**.02615**	**-.00054**	**.03956**	**.01439**
Stddev	.00018	.00087	.00043	.0427	.03662	.00144	.03081	.00161
%RSD	701.33	77.654	73.534	2.9779	140.05	268.29	77.891	11.190
#1	-.00017	.00037	-.00068	1.4104	.06656	.00112	.07007	.01454
#2	.00018	.00207	-.00095	1.4073	.01670	-.00132	.04014	.01592
#3	-.00009	.00091	-.00011	1.4828	-.00482	-.00142	.00846	.01271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**28.105**	**.00022**	**.00272**	**.00087**	**.00240**	**-.00180**	**.09388**
Stddev	.00006	.129	.00077	.00746	.00242	.00260	.00430	.01272
%RSD	25.554	.46014	355.24	274.36	278.82	108.25	238.96	13.544
#1	-.00016	28.253	-.00030	.01085	-.00192	.00211	-.00329	.10271
#2	-.00028	28.015	-.00015	-.00382	.00229	-.00004	-.00517	.09963
#3	-.00024	28.046	.00110	.00113	.00223	.00514	.00305	.07931
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607034701SDL Acquired: 7/14/2016 14:38:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG576110-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.00434**	**.00284**	**.00345**	**-.00094**	**.00612**	**-.00006**
Stddev	.00022	.00025	.00286	.00225	.00015	.00084	.00008
%RSD	496.48	5.7636	100.92	65.172	16.224	13.718	129.32
#1	-.00001	.00457	.00479	.00373	-.00110	.00675	-.00002
#2	.00016	.00437	.00418	.00107	-.00093	.00645	-.00002
#3	-.00027	.00408	-.00045	.00555	-.00080	.00517	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10479.**	**61148.**	**2709.8**
Stddev	8.	138.	10.5
%RSD	.07748	.22534	.38901
#1	10478.	61114.	2697.6
#2	10487.	61300.	2716.4
#3	10471.	61031.	2715.3

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 14:42:25 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41120**	**10.118**	**.40826**	**.51260**	**1.0143**	**.05057**	**10.112**	**.05099**
Stddev	.00201	.013	.00619	.00151	.0025	.00024	.022	.00131
%RSD	.49001	.12608	1.5171	.29421	.24330	.48067	.21888	2.5672
#1	.40889	10.131	.41331	.51355	1.0134	.05074	10.132	.05188
#2	.41207	10.117	.41012	.51339	1.0170	.05068	10.116	.05160
#3	.41263	10.106	.40135	.51086	1.0123	.05029	10.088	.04949
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20304**	**.50463**	**.50760**	**4.0319**	**50.666**	**1.0137**	**10.083**	**.51068**
Stddev	.00667	.00149	.01686	.0427	.090	.0121	.034	.00183
%RSD	3.2842	.29561	3.3214	1.0592	.17687	1.1885	.33765	.35801
#1	.20764	.50495	.51715	4.0053	50.564	1.0273	10.122	.51277
#2	.20609	.50594	.51752	4.0092	50.700	1.0098	10.069	.50940
#3	.19539	.50300	.48813	4.0811	50.733	1.0041	10.059	.50987
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0092**	**51.016**	**.50730**	**10.270**	**.50596**	**1.2257**	**.41429**	**4.9915**
Stddev	.0297	.094	.01522	.238	.01197	.0283	.00769	.0835
%RSD	2.9426	.18445	3.0005	2.3133	2.3658	2.3113	1.8562	1.6739
#1	1.0277	50.977	.51616	10.425	.51182	1.2419	.41990	5.0106
#2	1.0251	51.123	.51602	10.388	.51386	1.2422	.41744	5.0638
#3	.97498	50.948	.48972	9.9966	.49219	1.1930	.40552	4.9000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 14:42:25 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0117**	**1.0154**	**1.0207**	**.50755**	**1.0017**	**1.0128**	**1.0106**
Stddev	.0359	.0007	.0080	.00627	.0036	.0281	.0009
%RSD	3.5447	.07085	.78097	1.2361	.35761	2.7713	.08465
#1	1.0350	1.0148	1.0200	.51327	1.0049	1.0300	1.0116
#2	1.0298	1.0162	1.0290	.50853	1.0024	1.0280	1.0100
#3	.97042	1.0153	1.0131	.50084	.99782	.98042	1.0101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10174.**	**58886.**	**2687.0**
Stddev	14.	212.	6.2
%RSD	.14175	.36012	.23092
#1	10158.	58888.	2687.3
#2	10177.	58672.	2680.7
#3	10186.	59097.	2693.1

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 14:46:01 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00060**	**.00351**	**-.00095**	**.00454**	**-.00202**	**.00002**	**-.00794**	**.00007**
Stddev	.00026	.00246	.00223	.00055	.00036	.00004	.03471	.00007
%RSD	42.481	70.180	236.01	12.167	18.019	162.61	437.16	92.161
#1	-.00077	.00586	-.00282	.00395	-.00177	.00005	-.04754	.00008
#2	-.00073	.00371	.00152	.00462	-.00243	-.00002	.01722	.00000
#3	-.00031	.00095	-.00154	.00505	-.00185	.00005	.00650	.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.00004**	**-.00107**	**.00083**	**.01134**	**.00307**	**-.08953**	**-.00333**
Stddev	.00011	.00062	.00091	.02376	.07329	.00249	.07914	.00141
%RSD	182.39	1401.7	85.207	2871.9	646.52	81.223	88.400	42.300
#1	.00004	-.00045	-.00082	.01987	.01506	.00286	-.07144	-.00230
#2	-.00018	.00074	-.00031	-.02580	.08269	.00566	-.17615	-.00276
#3	-.00004	-.00015	-.00208	.00841	-.06374	.00069	-.02100	-.00494
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00000**	**.05458**	**-.00137**	**.00275**	**-.00045**	**-.00008**	**-.00339**	**.00216**
Stddev	.00039	.02744	.00076	.00123	.00471	.00393	.00164	.00161
%RSD	27739.	50.283	55.399	44.538	1056.8	5186.1	48.569	74.468
#1	-.00045	.07743	-.00212	.00168	-.00247	.00273	-.00254	.00399
#2	.00015	.02414	-.00061	.00409	-.00381	-.00457	-.00528	.00149
#3	.00030	.06215	-.00137	.00248	.00494	.00161	-.00234	.00099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 14:46:01 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00082	.00003	.00004	-.00018	-.00066	.00000	.00009
Stddev	.00052	.00022	.00286	.00023	.00061	.00012	.00022
%RSD	63.598	826.69	7584.3	123.98	92.692	10978.	238.15
#1	.00134	-.00021	.00209	-.00045	-.00131	.00003	.00001
#2	.00082	.00008	.00126	-.00008	-.00011	.00010	.00034
#3	.00030	.00021	-.00323	-.00003	-.00055	-.00013	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10269.	60526.	2698.2
Stddev	54.	114.	17.4
%RSD	.52151	.18897	.64645
#1	10328.	60634.	2714.5
#2	10224.	60406.	2700.2
#3	10253.	60537.	2679.8

Approved: July 16, 2016

Sample Name: L1607039702 Acquired: 7/14/2016 14:50:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00114	.04371	.00147	.02388	.00094	.00002	7.3981	.00027
Stddev	.00126	.00465	.00161	.00152	.00031	.00007	.0257	.00040
%RSD	110.89	10.638	109.71	6.3687	33.065	427.77	.34716	147.30
#1	.00010	.03851	.00014	.02472	.00102	-.00006	7.3702	-.00018
#2	-.00110	.04514	.00326	.02479	.00119	.00008	7.4207	.00058
#3	-.00242	.04748	.00100	.02212	.00059	.00003	7.4034	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	.23440	.02578	.03275	.90890	.00873	.42465	.10659
Stddev	.00038	.00043	.00173	.00835	.06109	.00400	.06132	.00100
%RSD	50.030	.18470	6.6941	25.498	6.7218	45.811	14.439	.94038
#1	.00048	.23473	.02693	.02382	.97431	.00648	.49544	.10774
#2	.00119	.23391	.02662	.03405	.85330	.00637	.38822	.10613
#3	.00060	.23456	.02380	.04036	.89909	.01335	.39030	.10591
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	138.32	.00551	.03545	.00002	.00011	-.00298	.20834
Stddev	.00046	.52	.00049	.00414	.00040	.00142	.00172	.01345
%RSD	228.90	.37261	8.8942	11.687	2007.2	1331.1	57.549	6.4539
#1	.00023	138.83	.00607	.03872	-.00037	.00014	-.00101	.21643
#2	-.00015	138.33	.00529	.03079	.00043	.00151	-.00415	.21577
#3	-.00069	137.80	.00517	.03683	-.00000	-.00133	-.00379	.19282
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607039702 Acquired: 7/14/2016 14:50:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00119**	**.97246**	**.00274**	**-.00078**	**-.00057**	**1.1100**	**.00052**
Stddev	.00015	.00378	.00113	.00262	.00025	.0930	.00032
%RSD	12.338	.38821	41.384	336.96	44.031	8.3788	60.948
#1	.00118	.97679	.00401	.00113	-.00087	1.1682	.00016
#2	.00105	.97070	.00182	-.00376	-.00042	1.1590	.00066
#3	.00135	.96988	.00239	.00030	-.00044	1.0027	.00075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10242.**	**59937.**	**2754.4**
Stddev	28.	328.	16.3
%RSD	.27406	.54723	.59331
#1	10212.	59560.	2741.7
#2	10268.	60157.	2748.7
#3	10245.	60094.	2772.9

Approved: July 16, 2016

Sample Name: L1607040401 Acquired: 7/14/2016 14:53:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	.06170	-.00132	.01504	-.00091	.00008	.50947	.00035
Stddev	.00097	.00824	.00295	.00171	.00085	.00003	.02112	.00010
%RSD	213.90	13.353	223.68	11.388	92.576	31.900	4.1446	29.206
#1	-.00029	.07115	-.00147	.01694	-.00032	.00011	.51559	.00034
#2	.00155	.05609	-.00419	.01364	-.00188	.00006	.48598	.00046
#3	.00010	.05784	.00170	.01453	-.00054	.00006	.52686	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	.00135	.00759	.07424	.08107	.00079	.06188	.00109
Stddev	.00020	.00026	.00081	.02102	.02319	.00253	.08225	.00246
%RSD	79.419	19.119	10.736	28.317	28.603	318.48	132.92	225.09
#1	-.00041	.00113	.00760	.09314	.08294	-.00201	.00552	-.00150
#2	-.00003	.00164	.00840	.07798	.05700	.00290	.02385	.00137
#3	-.00032	.00130	.00677	.05160	.10326	.00149	.15626	.00341
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.16785	.00027	.01079	.00092	-.00131	-.00488	.14463
Stddev	.00029	.00614	.00088	.00380	.00055	.00159	.00389	.01211
%RSD	496.91	3.6589	330.11	35.249	60.001	121.95	79.663	8.3719
#1	.00039	.16876	.00054	.01498	.00082	-.00308	-.00758	.14937
#2	-.00017	.17348	-.00072	.00755	.00151	-.00084	-.00042	.15364
#3	-.00004	.16130	.00098	.00986	.00042	.00000	-.00663	.13086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607040401 Acquired: 7/14/2016 14:53:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.00146	.00697	.00083	-.00019	.00455	.00001
Stddev	.00058	.00034	.00403	.00205	.00061	.00038	.00006
%RSD	113.99	23.428	57.858	246.58	315.31	8.3353	396.90
#1	-.00010	.00182	.00293	.00152	-.00032	.00478	.00006
#2	.00105	.00144	.00699	.00246	.00047	.00476	.00004
#3	.00056	.00113	.01100	-.00148	-.00073	.00411	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10353.	61636.	2734.1
Stddev	40.	167.	14.4
%RSD	.38292	.27039	.52505
#1	10395.	61561.	2730.1
#2	10350.	61520.	2750.0
#3	10316.	61827.	2722.1

Approved: July 16, 2016

Sample Name: L1607040402 Acquired: 7/14/2016 14:57:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00090	.07661	-.00080	.01882	-.00067	.00001	.42932	.00031
Stddev	.00200	.00148	.00294	.00103	.00063	.00004	.02358	.00011
%RSD	222.42	1.9382	367.66	5.4617	93.964	360.84	5.4917	34.206
#1	.00081	.07578	-.00345	.01948	-.00113	.00002	.40881	.00037
#2	-.00040	.07572	.00236	.01934	-.00093	.00004	.42408	.00019
#3	-.00310	.07832	-.00131	.01764	.00005	-.00003	.45508	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.00029	.05945	.04715	.19542	.00515	-.00201	-.00006
Stddev	.00021	.00019	.00682	.03561	.05155	.00125	.04330	.00092
%RSD	232.28	66.193	11.481	75.527	26.381	24.231	2157.3	1662.0
#1	.00001	.00049	.06467	.03181	.15671	.00583	-.02726	.00064
#2	.00005	.00030	.06194	.08786	.17560	.00592	-.02675	-.00110
#3	-.00033	.00010	.05172	.02178	.25394	.00371	.04799	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.36485	-.00042	.02233	.00100	.00063	-.00632	.15893
Stddev	.00027	.03801	.00090	.00633	.00225	.00134	.00209	.01355
%RSD	181.41	10.419	215.42	28.340	226.29	212.19	33.163	8.5245
#1	-.00014	.38418	-.00070	.02370	.00138	-.00036	-.00442	.16795
#2	.00038	.38931	-.00114	.02786	-.00142	.00010	-.00596	.16550
#3	.00021	.32105	.00059	.01543	.00303	.00215	-.00857	.14335
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607040402 Acquired: 7/14/2016 14:57:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00141	.00547	.00748	-.00062	-.00065	.01550	.00036
Stddev	.00065	.00038	.00294	.00225	.00037	.00167	.00042
%RSD	45.945	6.9370	39.259	365.10	56.339	10.799	115.19
#1	.00066	.00590	.00757	.00198	-.00067	.01630	.00084
#2	.00176	.00537	.01038	-.00209	-.00027	.01662	.00006
#3	.00180	.00516	.00451	-.00173	-.00100	.01358	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10373.	61411.	2726.0
Stddev	24.	268.	9.8
%RSD	.23397	.43711	.36069
#1	10401.	61721.	2720.7
#2	10365.	61238.	2737.3
#3	10355.	61275.	2720.0

Approved: July 16, 2016

Sample Name: L1607040403 Acquired: 7/14/2016 15:01:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00090	.01070	-.00167	.01791	-.00095	.00004	.13865	.00035
Stddev	.00168	.00467	.00219	.00061	.00115	.00009	.02923	.00013
%RSD	187.48	43.628	131.38	3.4185	121.55	201.35	21.080	36.487
#1	.00064	.01334	-.00216	.01859	-.00228	.00005	.12186	.00035
#2	.00269	.01344	.00073	.01774	-.00025	.00013	.17240	.00048
#3	-.00064	.00531	-.00357	.01740	-.00032	-.00004	.12170	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00040	.00050	.00682	.02484	.12797	.00642	-.08225	-.00132
Stddev	.00017	.00105	.00068	.01723	.09987	.00193	.03690	.00178
%RSD	42.935	208.86	9.9358	69.354	78.040	30.131	44.868	135.18
#1	-.00058	.00133	.00677	.01118	.20650	.00475	-.06623	.00063
#2	-.00024	.00085	.00753	.01915	.16184	.00854	-.05606	-.00172
#3	-.00038	-.00068	.00617	.04419	.01557	.00597	-.12446	-.00287
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.22354	.00041	.00681	-.00212	.00121	-.00540	.02539
Stddev	.00022	.01670	.00088	.00237	.00228	.00264	.00225	.00452
%RSD	3709.7	7.4720	213.99	34.816	107.42	219.03	41.688	17.793
#1	-.00014	.21123	.00118	.00436	-.00393	.00156	-.00650	.02760
#2	-.00010	.24255	.00060	.00699	-.00288	-.00159	-.00689	.02837
#3	.00026	.21684	-.00055	.00909	.00044	.00366	-.00281	.02019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607040403 Acquired: 7/14/2016 15:01:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.00059	.00458	.00101	-.00063	.00476	.00005
Stddev	.00029	.00021	.00632	.00255	.00054	.00055	.00021
%RSD	30.557	35.407	138.18	252.57	86.263	11.470	430.75
#1	.00063	.00083	.00792	.00352	-.00125	.00517	-.00010
#2	.00119	.00043	.00853	-.00159	-.00034	.00497	-.00004
#3	.00101	.00051	-.00272	.00110	-.00029	.00414	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10361.	61619.	2734.4
Stddev	22.	29.	10.0
%RSD	.21098	.04782	.36488
#1	10355.	61605.	2737.9
#2	10385.	61599.	2723.2
#3	10342.	61653.	2742.2

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 15:05:47 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41187**	**10.159**	**.40899**	**.51126**	**1.0335**	**.05093**	**10.274**	**.05118**
Stddev	.00053	.008	.00739	.00338	.0051	.00010	.072	.00145
%RSD	.12756	.07732	1.8062	.66177	.49672	.19342	.69707	2.8305
#1	.41236	10.165	.41345	.50783	1.0376	.05102	10.283	.05180
#2	.41194	10.150	.41305	.51460	1.0351	.05083	10.340	.05220
#3	.41132	10.163	.40046	.51137	1.0277	.05096	10.198	.04952
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20512**	**.50434**	**.51196**	**4.1131**	**51.600**	**1.0194**	**10.311**	**.51759**
Stddev	.00613	.00160	.01563	.0491	.254	.0053	.078	.00590
%RSD	2.9894	.31682	3.0538	1.1938	.49248	.51908	.75175	1.1397
#1	.20929	.50618	.52134	4.1624	51.680	1.0247	10.333	.52011
#2	.20800	.50357	.52063	4.1128	51.804	1.0194	10.376	.52181
#3	.19808	.50327	.49391	4.0642	51.315	1.0141	10.225	.51085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0149**	**51.890**	**.51080**	**10.335**	**.51267**	**1.2320**	**.40828**	**5.0521**
Stddev	.0286	.187	.01599	.239	.01222	.0272	.00624	.1051
%RSD	2.8140	.36075	3.1296	2.3137	2.3840	2.0274	1.5287	2.0812
#1	1.0329	52.009	.51986	10.487	.51852	1.2481	.41467	5.1144
#2	1.0298	51.987	.52020	10.458	.52087	1.2472	.40795	5.1112
#3	.98195	51.674	.49234	10.059	.49862	1.2006	.40220	4.9307
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 15:05:47 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0213**	**1.0339**	**1.0418**	**.51478**	**1.0077**	**1.0210**	**1.0274**
Stddev	.0377	.0043	.0003	.00392	.0015	.0296	.0039
%RSD	3.6926	.42034	.03057	.76192	.14631	2.9017	.37910
#1	1.0438	1.0372	1.0421	.51760	1.0066	1.0389	1.0263
#2	1.0423	1.0356	1.0417	.51644	1.0094	1.0374	1.0317
#3	.97775	1.0290	1.0415	.51030	1.0071	.98685	1.0241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10156.**	**58861.**	**2652.0**
Stddev	4.	29.	7.1
%RSD	.03728	.04938	.26749
#1	10160.	58831.	2654.3
#2	10156.	58889.	2644.1
#3	10152.	58864.	2657.7

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 15:09:24 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.01156	-.00156	.00382	-.00114	.00005	-.03587	.00024
Stddev	.00155	.00575	.00231	.00275	.00075	.00008	.03480	.00013
%RSD	2633.4	49.780	148.64	72.137	65.523	181.00	97.028	53.707
#1	.00014	.00529	.00107	.00207	-.00044	.00007	.00309	.00020
#2	-.00153	.01277	-.00331	.00239	-.00105	.00012	-.06389	.00014
#3	.00156	.01660	-.00243	.00699	-.00193	-.00005	-.04681	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	.00099	-.00017	.00056	.09122	.00421	-.01023	-.00094
Stddev	.00032	.00056	.00046	.00714	.08203	.00382	.05538	.00406
%RSD	158.12	56.051	279.27	1270.2	89.919	90.882	541.60	433.19
#1	.00015	.00074	.00037	-.00758	.10408	.00862	.05164	-.00077
#2	-.00029	.00060	-.00038	.00351	.16607	.00216	-.05518	-.00509
#3	-.00047	.00163	-.00049	.00575	.00353	.00185	-.02714	.00304
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.04707	-.00031	.00297	-.00194	.00055	-.00346	.00345
Stddev	.00058	.01583	.00073	.00778	.00142	.00145	.00520	.00065
%RSD	1771.1	33.637	234.16	262.07	72.883	265.81	150.30	18.825
#1	-.00055	.03035	-.00079	.00681	-.00357	.00211	-.00237	.00272
#2	.00060	.04902	.00053	-.00598	-.00096	.00029	.00111	.00395
#3	-.00015	.06184	-.00067	.00807	-.00130	-.00076	-.00913	.00370
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 15:09:24 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.00010	.00017	.00063	-.00063	-.00006	.00029
Stddev	.00084	.00022	.00040	.00280	.00034	.00024	.00042
%RSD	486.15	228.06	240.20	441.55	54.566	407.41	143.41
#1	.00044	.00002	.00027	-.00019	-.00059	.00004	-.00019
#2	-.00077	.00035	-.00027	.00375	-.00099	-.00033	.00060
#3	.00084	-.00008	.00051	-.00166	-.00031	.00011	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10219.	60159.	2663.7
Stddev	21.	106.	14.7
%RSD	.20353	.17581	.55236
#1	10197.	60086.	2646.8
#2	10238.	60110.	2670.9
#3	10223.	60280.	2673.4

Approved: July 16, 2016

Sample Name: L1607023801 Acquired: 7/14/2016 15:13:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	.00124	-.00037	.01139	.40499	.00003	19.608	-.00004
Stddev	.00030	.00198	.00359	.00166	.00310	.00005	.129	.00011
%RSD	234.05	160.08	969.81	14.562	.76448	184.35	.65883	295.12
#1	.00020	.00324	-.00451	.01268	.40744	-.00002	19.649	.00007
#2	-.00020	-.00072	.00197	.00952	.40601	.00003	19.712	-.00015
#3	-.00039	.00119	.00143	.01196	.40151	.00007	19.463	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01052	-.00090	-.00069	61.116	.21949	.00596	.35309	.57986
Stddev	.00052	.00063	.00902	.239	.08082	.00239	.11606	.00612
%RSD	4.9350	70.334	1306.6	.39056	36.824	40.098	32.868	1.0552
#1	.01103	-.00032	.00698	61.008	.12645	.00370	.30204	.58157
#2	.01052	-.00080	.00158	61.389	.25958	.00846	.48592	.58494
#3	.00999	-.00157	-.01063	60.950	.27243	.00572	.27131	.57307
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00035	138.34	.03006	-.01760	.00330	-.00122	-.00487	.65822
Stddev	.00024	.52	.00285	.00635	.00308	.00063	.00345	.03478
%RSD	67.924	.37254	9.4824	36.056	93.492	51.911	70.802	5.2837
#1	-.00061	138.31	.03076	-.01157	.00466	-.00130	-.00504	.68062
#2	-.00014	138.86	.03250	-.01702	.00546	-.00055	-.00134	.67588
#3	-.00030	137.83	.02692	-.02422	-.00023	-.00181	-.00822	.61815
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607023801 Acquired: 7/14/2016 15:13:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.03346**	**.01260**	**.00029**	**-.00076**	**.57445**	**-.00204**
Stddev	.00041	.00013	.01012	.00252	.00023	.03786	.00016
%RSD	403.93	.38237	80.349	879.57	30.085	6.5901	8.0158
#1	.00028	.03357	.01870	.00310	-.00102	.59765	-.00206
#2	-.00053	.03348	.00091	-.00047	-.00063	.59494	-.00219
#3	-.00006	.03332	.01817	-.00177	-.00062	.53076	-.00186
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10281.**	**60255.**	**2750.7**
Stddev	5.	186.	9.0
%RSD	.05246	.30939	.32692
#1	10275.	60330.	2760.1
#2	10285.	60393.	2742.3
#3	10284.	60043.	2749.6

Approved: July 16, 2016

Sample Name: L1607034001 Acquired: 7/14/2016 15:17:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	.00330	-.00306	.03422	.09113	-.00004	173.84	.00041
Stddev	.00051	.00850	.00094	.00303	.00101	.00006	.82	.00019
%RSD	183.46	257.42	30.587	8.8466	1.1074	148.70	.47332	46.896
#1	.00011	-.00594	-.00406	.03247	.09054	-.00008	173.52	.00059
#2	-.00013	.00506	-.00220	.03247	.09229	.00003	174.77	.00044
#3	.00085	.01079	-.00292	.03771	.09055	-.00007	173.22	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	.00171	.00104	.01416	.22471	.00869	5.0930	.62882
Stddev	.00023	.00020	.00062	.01612	.01335	.00168	.0502	.00558
%RSD	58.051	11.918	59.358	113.85	5.9388	19.348	.98590	.88768
#1	.00061	.00148	.00112	-.00335	.21644	.01061	5.0974	.62260
#2	.00015	.00187	.00161	.02838	.24010	.00751	5.1409	.63340
#3	.00043	.00177	.00038	.01745	.21758	.00794	5.0408	.63047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	3.6952	.00185	.00446	-.00203	-.00110	-.00645	.94394
Stddev	.00002	.0098	.00056	.00846	.00337	.00066	.00194	.07957
%RSD	17.871	.26507	30.191	189.71	165.83	59.840	30.046	8.4295
#1	.00009	3.7004	.00247	.01421	-.00272	-.00107	-.00860	.99740
#2	.00010	3.7013	.00138	-.00083	-.00501	-.00046	-.00485	.98191
#3	.00007	3.6839	.00171	-.00001	.00163	-.00177	-.00589	.85249
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607034001 Acquired: 7/14/2016 15:17:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.27148	-.02643	.00222	-.00045	.00399	-.00009
Stddev	.00031	.00031	.00611	.00240	.00011	.00031	.00038
%RSD	62.017	.11260	23.129	108.10	25.252	7.7145	395.06
#1	.00084	.27115	-.03009	.00346	-.00037	.00426	.00022
#2	.00048	.27153	-.01937	.00375	-.00040	.00406	-.00051
#3	.00021	.27176	-.02982	-.00055	-.00058	.00365	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10306.	60666.	2758.6
Stddev	17.	112.	25.2
%RSD	.16374	.18381	.91392
#1	10297.	60699.	2756.3
#2	10295.	60542.	2734.6
#3	10325.	60758.	2784.9

Approved: July 16, 2016

Sample Name: L1607045101 Acquired: 7/14/2016 15:21:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00084	.00648	-.00229	.04687	.11420	-.00001	139.97	.00035
Stddev	.00342	.00635	.00119	.00145	.00084	.00011	.08	.00012
%RSD	407.81	98.054	51.872	3.0899	.73298	842.50	.05528	35.525
#1	-.00073	.00435	-.00354	.04796	.11412	.00010	139.88	.00021
#2	.00252	.01362	-.00214	.04743	.11341	-.00012	140.00	.00041
#3	-.00431	.00146	-.00118	.04523	.11508	-.00002	140.02	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.00104	.13312	.00684	1.7352	.03119	21.782	.04463
Stddev	.00022	.00076	.01006	.02907	.0827	.00294	.235	.00099
%RSD	130.42	72.911	7.5576	425.05	4.7660	9.4120	1.0800	2.2257
#1	-.00004	.00095	.13952	.02156	1.6778	.02837	21.511	.04573
#2	.00015	.00185	.13831	.02561	1.8300	.03099	21.933	.04439
#3	.00039	.00033	.12152	-.02665	1.6979	.03423	21.903	.04378
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	23.130	-.00032	.04866	-.00139	.00261	-.00421	7.7364
Stddev	.00036	.054	.00044	.00868	.00323	.00262	.00684	.4451
%RSD	178.61	.23140	137.34	17.832	232.40	100.48	162.53	5.7530
#1	.00055	23.072	-.00006	.04876	-.00512	.00501	.00165	8.0057
#2	.00023	23.177	-.00007	.05729	.00036	.00300	-.00255	7.9809
#3	-.00017	23.141	-.00082	.03994	.00059	-.00019	-.01173	7.2227
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607045101 Acquired: 7/14/2016 15:21:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	.87757	-.01634	.00066	-.00130	.02493	-.00003
Stddev	.00080	.00121	.00234	.00193	.00025	.00166	.00016
%RSD	190.79	.13741	14.328	291.96	19.214	6.6523	590.68
#1	-.00050	.87644	-.01384	.00288	-.00120	.02591	-.00021
#2	.00096	.87743	-.01849	-.00045	-.00111	.02588	.00011
#3	.00080	.87884	-.01669	-.00046	-.00158	.02302	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10098.	59779.	2734.4
Stddev	18.	40.	8.3
%RSD	.17924	.06636	.30442
#1	10118.	59802.	2734.3
#2	10082.	59733.	2742.7
#3	10093.	59802.	2726.1

Approved: July 16, 2016

Sample Name: L1607045102 Acquired: 7/14/2016 15:24:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00216	.02623	-.00083	.01776	.05863	.00001	62.695	.00032
Stddev	.00295	.00896	.00144	.00251	.00298	.00001	1.710	.00009
%RSD	136.61	34.163	173.20	14.148	5.0842	215.82	2.7275	27.763
#1	-.00145	.01617	-.00234	.01488	.05960	.00001	62.548	.00022
#2	.00037	.03336	-.00071	.01949	.05529	-.00001	61.064	.00036
#3	-.00540	.02916	.00054	.01891	.06101	.00002	64.474	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00031	.00056	.01632	.03326	.67939	.01231	6.3568	.00200
Stddev	.00029	.00055	.00068	.00474	.03550	.00227	.2045	.00216
%RSD	93.527	96.568	4.1837	14.257	5.2260	18.430	3.2167	108.26
#1	-.00009	.00063	.01684	.03125	.71994	.01209	6.1978	.00426
#2	-.00020	-.00001	.01658	.02986	.65390	.01016	6.2852	-.00004
#3	-.00064	.00107	.01555	.03868	.66432	.01468	6.5875	.00177
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	5.2789	.00015	.00944	-.00076	.00184	-.00701	3.5690
Stddev	.00015	.1437	.00079	.00405	.00254	.00107	.00247	.1922
%RSD	49.371	2.7220	537.91	42.929	334.63	58.426	35.163	5.3849
#1	.00014	5.2604	.00076	.01317	-.00353	.00278	-.00575	3.6735
#2	.00038	5.1454	-.00075	.01001	.00146	.00067	-.00543	3.6864
#3	.00042	5.4309	.00043	.00513	-.00021	.00208	-.00986	3.3473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607045102 Acquired: 7/14/2016 15:24:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	.22016	-.00790	.00119	-.00057	.01300	-.00015
Stddev	.00128	.00554	.00135	.00202	.00093	.00109	.00034
%RSD	142.71	2.5161	17.136	169.51	162.22	8.3909	218.63
#1	-.00057	.21981	-.00744	.00138	-.00164	.01346	.00014
#2	.00151	.21480	-.00683	.00312	.00005	.01378	-.00052
#3	.00174	.22586	-.00942	-.00092	-.00013	.01175	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10140.	59956.	2722.3
Stddev	23.	124.	49.0
%RSD	.22282	.20641	1.8017
#1	10152.	59824.	2714.7
#2	10114.	60070.	2774.7
#3	10154.	59973.	2677.5

Approved: July 16, 2016

Sample Name: L1607045201 Acquired: 7/14/2016 15:28:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00087**	**.06566**	**-.00220**	**.04250**	**.93272**	**.00006**	**74.906**	**.00010**
Stddev	.00040	.00289	.00233	.00206	.00513	.00005	.210	.00016
%RSD	46.652	4.4084	106.13	4.8501	.55039	83.691	.28097	161.62
#1	-.00052	.06899	-.00064	.04224	.93627	.00004	75.087	.00014
#2	-.00077	.06376	-.00107	.04058	.93505	.00003	74.956	-.00008
#3	-.00131	.06423	-.00487	.04468	.92683	.00012	74.675	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**.00133**	**.08408**	**.43998**	**1.7929**	**.01472**	**12.002**	**.23157**
Stddev	.00024	.00067	.00570	.01256	.0409	.00421	.063	.00406
%RSD	103.15	50.410	6.7816	2.8547	2.2830	28.581	.52439	1.7542
#1	-.00051	.00059	.08703	.44336	1.8331	.01588	12.075	.23575
#2	-.00006	.00150	.08771	.42608	1.7944	.01823	11.972	.23132
#3	-.00013	.00190	.07751	.45051	1.7513	.01006	11.961	.22764
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**29.725**	**-.00102**	**.03144**	**-.00076**	**-.00088**	**-.00329**	**6.5605**
Stddev	.00047	.025	.00064	.00121	.00033	.00400	.00253	.3725
%RSD	794.93	.08274	62.434	3.8605	44.261	454.50	76.717	5.6776
#1	-.00060	29.744	-.00155	.03116	-.00113	.00281	-.00365	6.7175
#2	.00028	29.733	-.00031	.03277	-.00064	-.00032	-.00562	6.8287
#3	.00014	29.697	-.00121	.03039	-.00050	-.00512	-.00061	6.1352
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607045201 Acquired: 7/14/2016 15:28:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	1.1102	-.01770	-.00115	-.00097	.02057	.00031
Stddev	.00029	.0037	.00343	.00057	.00051	.00144	.00027
%RSD	2403.4	.33248	19.394	49.297	51.981	7.0008	87.345
#1	-.00006	1.1125	-.01764	-.00062	-.00045	.02147	.00039
#2	-.00028	1.1121	-.02116	-.00175	-.00146	.02132	.00052
#3	.00030	1.1059	-.01430	-.00107	-.00101	.01891	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10003.	59663.	2705.0
Stddev	80.	161.	21.4
%RSD	.79504	.27038	.78932
#1	10087.	59645.	2686.5
#2	9928.7	59511.	2728.4
#3	9993.0	59832.	2700.3

Approved: July 16, 2016

Sample Name: L1607045202 Acquired: 7/14/2016 15:32:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.09844	.00227	.08765	.27299	.00005	22.855	.00027
Stddev	.00100	.00766	.00249	.00086	.00038	.00007	.048	.00016
%RSD	2222.4	7.7832	110.02	.98084	.13952	146.68	.20865	59.916
#1	.00119	.10432	-.00058	.08833	.27331	.00002	22.847	.00020
#2	-.00064	.08977	.00408	.08794	.27257	.00013	22.906	.00016
#3	-.00042	.10122	.00330	.08668	.27308	-.00000	22.812	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00145	.00323	.20737	.92473	.01088	4.0563	.14642
Stddev	.00005	.00067	.00032	.04061	.05819	.00340	.0630	.00163
%RSD	44.396	46.540	9.7844	19.585	6.2931	31.243	1.5534	1.1136
#1	.00017	.00072	.00359	.22120	.90509	.00816	4.0034	.14487
#2	.00011	.00157	.00312	.16165	.87890	.00978	4.0395	.14812
#3	.00007	.00206	.00298	.23927	.99021	.01468	4.1260	.14627
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	111.48	.00001	.06066	-.00219	.00430	-.00212	3.7832
Stddev	.00027	.22	.00046	.00567	.00125	.00144	.00600	.2766
%RSD	52.583	.19503	3603.8	9.3447	57.151	33.594	282.54	7.3108
#1	.00021	111.61	.00039	.06101	-.00303	.00597	-.00904	3.9544
#2	.00061	111.59	-.00050	.06614	-.00279	.00342	.00153	3.9311
#3	.00072	111.23	.00014	.05482	-.00075	.00352	.00114	3.4641
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607045202 Acquired: 7/14/2016 15:32:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.30590	.00005	.00237	-.00015	.01446	.00030
Stddev	.00046	.00062	.00486	.00143	.00063	.00138	.00024
%RSD	67.451	.20423	9186.2	60.424	429.50	9.5182	78.565
#1	.00095	.30648	-.00433	.00073	.00058	.01532	.00016
#2	.00096	.30524	.00528	.00335	-.00052	.01518	.00058
#3	.00015	.30599	-.00079	.00302	-.00051	.01287	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9996.0	58512.	2665.0
Stddev	54.9	184.	12.9
%RSD	.54950	.31493	.48576
#1	9962.1	58720.	2659.5
#2	9966.5	58443.	2655.8
#3	10059.	58372.	2679.8

Approved: July 16, 2016

Sample Name: L1607045301 Acquired: 7/14/2016 15:36:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00081	.01293	.00168	.01299	.05197	-.00001	39.081	.00036
Stddev	.00173	.00318	.00152	.00167	.00144	.00005	.265	.00015
%RSD	213.83	24.570	90.916	12.867	2.7708	823.43	.67934	41.023
#1	-.00190	.00927	.00068	.01139	.05116	-.00004	39.386	.00032
#2	-.00172	.01457	.00091	.01286	.05112	-.00003	38.903	.00024
#3	.00119	.01494	.00343	.01473	.05363	.00005	38.953	.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	.00145	.00091	-.00506	.63940	.00752	3.8300	-.00088
Stddev	.00015	.00065	.00058	.01633	.08967	.00481	.0742	.00138
%RSD	325.85	45.046	63.174	322.98	14.024	64.026	1.9366	157.68
#1	-.00005	.00070	.00035	-.01128	.53616	.00201	3.7446	.00048
#2	-.00019	.00185	.00150	.01347	.69779	.00962	3.8787	-.00229
#3	.00010	.00180	.00088	-.01736	.68425	.01093	3.8667	-.00083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	2.2494	-.00064	.00616	-.00148	.00116	-.00600	3.8310
Stddev	.00049	.0267	.00135	.00545	.00265	.00236	.00416	.2915
%RSD	855.29	1.1881	210.27	88.341	179.23	202.94	69.391	7.6084
#1	.00057	2.2772	-.00013	.00004	.00114	-.00136	-.00391	4.0057
#2	-.00041	2.2238	-.00217	.01046	-.00415	.00153	-.01079	3.9928
#3	.00002	2.2472	.00038	.00799	-.00143	.00331	-.00329	3.4945
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607045301 Acquired: 7/14/2016 15:36:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	.12006	-.00977	.00061	-.00063	.00124	-.00048
Stddev	.00086	.00004	.00451	.00058	.00034	.00017	.00068
%RSD	112.64	.03384	46.206	93.884	54.110	13.859	141.31
#1	-.00016	.12002	-.00512	.00020	-.00093	.00138	.00007
#2	.00154	.12011	-.01413	.00127	-.00071	.00130	-.00124
#3	.00090	.12006	-.01006	.00037	-.00026	.00105	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10126.	59759.	2669.8
Stddev	14.	183.	9.7
%RSD	.13943	.30677	.36350
#1	10110.	59716.	2678.3
#2	10132.	59601.	2659.2
#3	10136.	59960.	2671.8

Approved: July 16, 2016

Sample Name: L1607045302 Acquired: 7/14/2016 15:40:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00091	.02677	-.00295	.02743	.03881	.00004	34.085	.00048
Stddev	.00096	.00673	.00291	.00134	.00090	.00008	.115	.00020
%RSD	105.37	25.130	98.831	4.8804	2.3223	193.76	.33744	41.394
#1	-.00030	.03453	-.00105	.02677	.03800	-.00003	34.132	.00055
#2	-.00041	.02310	-.00149	.02655	.03978	.00013	33.953	.00026
#3	-.00202	.02267	-.00630	.02897	.03864	.00002	34.168	.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.00026	.00144	.00123	1.2934	.00259	4.8913	.14913
Stddev	.00020	.00035	.00069	.02334	.0748	.00126	.0323	.00296
%RSD	267.65	134.19	47.485	1896.5	5.7818	48.391	.66141	1.9878
#1	.00015	.00021	.00142	.01993	1.2935	.00250	4.9275	.14788
#2	-.00014	.00064	.00077	.00870	1.2186	.00139	4.8651	.14699
#3	-.00023	-.00006	.00214	-.02493	1.3682	.00390	4.8813	.15251
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	9.7879	-.00000	.02585	-.00262	-.00055	-.00676	3.0061
Stddev	.00021	.0554	.00037	.00262	.00027	.00369	.00397	.1971
%RSD	218.96	.56551	8816.1	10.150	10.299	669.08	58.768	6.5584
#1	-.00008	9.8068	-.00010	.02685	-.00271	-.00221	-.01066	3.1232
#2	.00033	9.7255	-.00031	.02783	-.00232	.00368	-.00688	3.1167
#3	.00004	9.8313	.00040	.02288	-.00283	-.00312	-.00272	2.7785
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607045302 Acquired: 7/14/2016 15:40:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	TI1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00062	.09017	.00218	-.00128	-.00068	.00650	-.00022
Stddev	.00044	.00030	.00214	.00350	.00087	.00043	.00021
%RSD	71.638	.33324	98.374	273.17	127.61	6.5835	92.672
#1	.00079	.09042	-.00030	.00162	.00019	.00677	-.00039
#2	.00095	.08983	.00342	-.00030	-.00155	.00672	.00001
#3	.00012	.09025	.00342	-.00517	-.00068	.00600	-.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10124.	59917.	2672.4
Stddev	21.	22.	14.1
%RSD	.21207	.03695	.52650
#1	10132.	59905.	2657.7
#2	10141.	59904.	2685.7
#3	10100.	59943.	2673.8

Approved: July 16, 2016

Sample Name: L1607045303 Acquired: 7/14/2016 15:44:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00028	.11477	.00005	.02832	.04154	.00000	33.515	.00046
Stddev	.00128	.00389	.00222	.00142	.00032	.00002	.041	.00005
%RSD	461.11	3.3919	4417.9	5.0297	.76627	13967.	.12260	10.804
#1	-.00052	.11121	.00188	.02691	.04189	.00002	33.470	.00051
#2	.00111	.11893	-.00242	.02976	.04126	.00001	33.551	.00041
#3	-.00141	.11416	.00069	.02830	.04147	-.00002	33.524	.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00032	.00208	.00105	.08791	.87230	.00475	4.8254	.00534
Stddev	.00022	.00080	.00137	.02794	.06321	.00202	.1170	.00212
%RSD	68.175	38.641	131.38	31.782	7.2461	42.586	2.4244	39.724
#1	-.00041	.00202	.00260	.06334	.92653	.00642	4.8420	.00388
#2	-.00007	.00131	.00054	.08208	.88750	.00532	4.9333	.00437
#3	-.00048	.00291	-.00001	.11830	.80288	.00250	4.7011	.00777
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	7.9321	.00002	.03083	-.00150	.00183	-.00613	3.5489
Stddev	.00018	.0956	.00108	.00399	.00101	.00138	.00352	.2536
%RSD	42.107	1.2048	4784.9	12.959	67.054	75.292	57.407	7.1456
#1	.00031	8.0070	-.00114	.03227	-.00240	.00325	-.00373	3.7031
#2	.00064	7.8245	.00100	.03390	-.00042	.00050	-.01016	3.6873
#3	.00035	7.9650	.00021	.02631	-.00169	.00173	-.00448	3.2562
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607045303 Acquired: 7/14/2016 15:44:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00070	.08860	.00518	.00006	-.00008	.01768	-.00014
Stddev	.00040	.00084	.00549	.00068	.00035	.00149	.00014
%RSD	57.836	.95274	106.05	1124.5	461.77	8.4264	98.917
#1	.00086	.08781	.01144	-.00072	.00024	.01863	-.00028
#2	.00099	.08949	.00118	.00040	-.00001	.01845	-.00001
#3	.00024	.08851	.00291	.00050	-.00045	.01596	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10108.	59886.	2703.7
Stddev	16.	243.	18.7
%RSD	.15972	.40646	.69114
#1	10111.	59981.	2684.0
#2	10122.	59610.	2705.8
#3	10091.	60068.	2721.2

Approved: July 16, 2016

Sample Name: L1607045304 Acquired: 7/14/2016 15:48:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00104	.04609	-.00259	.01661	.04185	.00000	53.688	.00026
Stddev	.00143	.00554	.00254	.00136	.00052	.00015	.044	.00024
%RSD	137.87	12.025	98.311	8.1948	1.2536	5982.1	.08111	93.025
#1	.00061	.05248	-.00148	.01730	.04125	.00015	53.732	.00005
#2	-.00200	.04322	-.00549	.01750	.04224	.00001	53.644	.00021
#3	-.00173	.04257	-.00078	.01504	.04205	-.00015	53.688	.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.00165	.00147	.02797	.74724	.00776	7.3161	-.00091
Stddev	.00015	.00065	.00066	.01864	.08009	.00304	.0571	.00182
%RSD	87.565	39.326	44.655	66.671	10.718	39.158	.78102	198.79
#1	-.00007	.00240	.00140	.01106	.79166	.01083	7.3065	-.00220
#2	-.00009	.00134	.00215	.04797	.79527	.00476	7.3775	-.00170
#3	-.00033	.00122	.00085	.02487	.65478	.00768	7.2644	.00116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	6.6382	.00038	.01478	-.00045	.00121	-.00451	4.3497
Stddev	.00014	.0450	.00072	.00070	.00103	.00203	.00805	.2945
%RSD	35.268	.67731	188.13	4.7157	230.77	168.27	178.32	6.7696
#1	.00028	6.6742	.00100	.01404	.00018	.00321	-.01354	4.5394
#2	.00057	6.6528	-.00041	.01488	-.00164	-.00085	-.00190	4.4993
#3	.00038	6.5878	.00055	.01543	.00012	.00126	.00190	4.0105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607045304 Acquired: 7/14/2016 15:48:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.14559	-.00979	-.00041	-.00025	.00164	.00007
Stddev	.00061	.00057	.00143	.00074	.00062	.00019	.00042
%RSD	605.68	.39359	14.616	181.98	246.67	11.510	628.41
#1	-.00028	.14493	-.00971	.00044	.00030	.00156	-.00042
#2	.00080	.14590	-.00840	-.00093	-.00012	.00186	.00028
#3	-.00022	.14594	-.01126	-.00073	-.00093	.00151	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10100.	59661.	2695.6
Stddev	21.	164.	11.4
%RSD	.20561	.27496	.42443
#1	10096.	59513.	2691.1
#2	10122.	59634.	2687.1
#3	10081.	59837.	2708.6

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 15:51:55 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40796**	**10.059**	**.40720**	**.50405**	**1.0261**	**.05046**	**10.204**	**.05088**
Stddev	.00123	.049	.01073	.00460	.0026	.00019	.059	.00088
%RSD	.30156	.48521	2.6352	.91256	.25296	.37839	.58033	1.7324
#1	.40845	10.112	.41445	.50930	1.0290	.05066	10.252	.05115
#2	.40887	10.050	.41228	.50210	1.0253	.05044	10.222	.05160
#3	.40656	10.016	.39487	.50074	1.0240	.05028	10.138	.04990
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20407**	**.50149**	**.50985**	**4.0911**	**51.405**	**1.0178**	**10.148**	**.51811**
Stddev	.00538	.00201	.01185	.0117	.199	.0027	.056	.00226
%RSD	2.6363	.40007	2.3233	.28473	.38729	.26251	.54909	.43553
#1	.20741	.50370	.51732	4.0918	51.515	1.0189	10.110	.51954
#2	.20694	.50100	.51605	4.0791	51.524	1.0197	10.122	.51551
#3	.19787	.49978	.49620	4.1024	51.175	1.0147	10.212	.51928
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0150**	**51.404**	**.50795**	**10.261**	**.50797**	**1.2230**	**.40958**	**5.0096**
Stddev	.0305	.136	.01439	.188	.00381	.0281	.00727	.0755
%RSD	3.0046	.26420	2.8326	1.8359	.75047	2.2996	1.7760	1.5076
#1	1.0255	51.509	.51560	10.364	.51076	1.2404	.41143	5.0517
#2	1.0389	51.452	.51691	10.376	.50953	1.2381	.41575	5.0546
#3	.98069	51.250	.49136	10.043	.50363	1.1906	.40156	4.9224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 15:51:55 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0148**	**1.0275**	**1.0320**	**.50964**	**.99752**	**1.0138**	**1.0220**
Stddev	.0330	.0021	.0113	.00335	.00178	.0252	.0077
%RSD	3.2533	.20526	1.0964	.65704	.17814	2.4825	.75429
#1	1.0350	1.0298	1.0443	.50604	.99922	1.0272	1.0299
#2	1.0326	1.0256	1.0296	.51266	.99766	1.0294	1.0217
#3	.97666	1.0270	1.0221	.51023	.99567	.98473	1.0144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10173.**	**59187.**	**2657.7**
Stddev	15.	34.	7.5
%RSD	.14988	.05731	.28105
#1	10190.	59181.	2652.9
#2	10161.	59224.	2653.9
#3	10169.	59158.	2666.3

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 15:55:32 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00114**	**-.00042**	**-.00038**	**.00297**	**-.00154**	**.00006**	**-.03848**	**.00033**
Stddev	.00105	.00382	.00048	.00071	.00040	.00005	.03753	.00008
%RSD	92.481	918.90	126.42	23.911	26.034	74.438	97.532	23.409
#1	-.00180	-.00332	.00013	.00306	-.00163	.00007	-.00100	.00038
#2	.00008	-.00184	-.00082	.00222	-.00189	.00011	-.03838	.00035
#3	-.00169	.00391	-.00044	.00362	-.00110	.00001	-.07605	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**-.00025**	**-.00026**	**-.01626**	**.02061**	**.00330**	**.00899**	**.00020**
Stddev	.00034	.00035	.00107	.04420	.07945	.00182	.05829	.00278
%RSD	310.97	140.30	410.54	271.81	385.54	55.171	648.61	1361.1
#1	-.00048	.00011	-.00109	-.05476	.06984	.00310	-.04291	-.00278
#2	.00020	-.00059	.00095	.03201	.06303	.00521	.07206	.00272
#3	-.00005	-.00027	-.00065	-.02603	-.07105	.00159	-.00219	.00067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**.06140**	**-.00092**	**.00667**	**-.00468**	**.00168**	**-.00497**	**.00209**
Stddev	.00004	.00667	.00032	.00225	.00246	.00186	.00074	.00008
%RSD	662.70	10.858	34.509	33.770	52.490	110.83	14.915	3.6185
#1	.00005	.06909	-.00060	.00858	-.00700	.00294	-.00433	.00201
#2	-.00004	.05728	-.00123	.00418	-.00210	.00255	-.00479	.00216
#3	.00001	.05782	-.00093	.00725	-.00493	-.00046	-.00578	.00210
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 15:55:32 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**-.00015**	**-.00413**	**.00146**	**-.00128**	**-.00008**	**-.00001**
Stddev	.00058	.00033	.00405	.00172	.00057	.00009	.00013
%RSD	350.98	222.31	97.914	118.39	44.240	104.34	954.04
#1	-.00060	.00023	.00049	.00158	-.00076	-.00001	.00010
#2	.00049	-.00030	-.00701	-.00033	-.00121	-.00018	.00001
#3	-.00039	-.00038	-.00589	.00311	-.00188	-.00006	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10430.**	**61440.**	**2752.3**
Stddev	73.	42.	10.2
%RSD	.70212	.06800	.37131
#1	10380.	61480.	2746.8
#2	10397.	61444.	2764.1
#3	10514.	61396.	2746.1

Approved: July 16, 2016

Sample Name: L1607045305 Acquired: 7/14/2016 15:59:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.07317	-.00055	.03477	.04226	.00001	31.067	.00038
Stddev	.00181	.00702	.00244	.00029	.00098	.00011	.154	.00005
%RSD	531.05	9.5991	443.37	.84671	2.3122	746.10	.49486	12.309
#1	-.00058	.07948	-.00060	.03462	.04250	-.00009	31.106	.00043
#2	-.00083	.07444	.00192	.03458	.04310	.00012	30.897	.00035
#3	.00243	.06560	-.00297	.03511	.04119	.00002	31.197	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	.00054	.00099	.76935	2.0823	.00140	4.2033	.68062
Stddev	.00032	.00052	.00006	.01931	.0578	.00111	.0170	.00249
%RSD	280.89	95.470	6.1316	2.5100	2.7781	79.095	.40554	.36513
#1	-.00010	.00042	.00095	.77097	2.0175	.00154	4.2154	.68311
#2	.00048	.00010	.00106	.78780	2.1005	.00242	4.2106	.68059
#3	-.00004	.00111	.00096	.74929	2.1289	.00023	4.1838	.67814
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	7.0364	-.00051	.13532	-.00272	.00098	-.00165	4.1730
Stddev	.00026	.0644	.00026	.00644	.00154	.00065	.00251	.2649
%RSD	50.191	.91530	50.770	4.7607	56.369	66.390	152.38	6.3489
#1	.00024	7.1021	-.00041	.13717	-.00260	.00163	-.00032	4.3378
#2	.00055	7.0338	-.00080	.14064	-.00125	.00099	-.00455	4.3138
#3	.00076	6.9734	-.00031	.12816	-.00432	.00033	-.00008	3.8674
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607045305 Acquired: 7/14/2016 15:59:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	.08904	-.00632	.00012	.00029	.00357	.00001
Stddev	.00101	.00090	.00459	.00097	.00095	.00047	.00034
%RSD	447.42	1.0085	72.574	784.86	326.84	13.054	2698.7
#1	.00125	.08998	-.01093	.00067	.00111	.00404	-.00002
#2	.00021	.08895	-.00176	.00069	-.00075	.00356	.00037
#3	-.00078	.08819	-.00627	-.00099	.00051	.00311	-.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10111.	59961.	2698.0
Stddev	23.	206.	31.3
%RSD	.22901	.34322	1.1588
#1	10097.	59729.	2671.2
#2	10099.	60035.	2690.4
#3	10138.	60120.	2732.4

Approved: July 16, 2016

Sample Name: L1607045401 Acquired: 7/14/2016 16:03:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00097	1.7098	-.00018	.02342	.18371	.00011	57.052	.00034
Stddev	.00138	.0173	.00079	.00084	.00284	.00006	.417	.00023
%RSD	142.94	1.0129	443.13	3.5659	1.5441	58.280	.73157	68.027
#1	.00023	1.7173	.00070	.02427	.18558	.00009	57.271	.00016
#2	-.00065	1.6900	-.00083	.02260	.18045	.00018	56.571	.00060
#3	-.00248	1.7221	-.00041	.02339	.18511	.00006	57.314	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	.00281	.01143	2.0912	1.2497	.01159	6.4373	.19742
Stddev	.00014	.00046	.00174	.0173	.1098	.00392	.0795	.00299
%RSD	22.916	16.323	15.213	.82818	8.7881	33.852	1.2356	1.5124
#1	.00061	.00313	.01261	2.0934	1.1863	.01294	6.3850	.19664
#2	.00076	.00229	.01225	2.0729	1.1863	.00717	6.5288	.19490
#3	.00047	.00303	.00944	2.1073	1.3765	.01465	6.3980	.20071
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	10.858	.00694	.05840	-.00128	.00195	-.00385	6.2356
Stddev	.00046	.067	.00144	.00397	.00156	.00214	.00202	.3623
%RSD	113.66	.61678	20.780	6.7899	122.47	109.47	52.366	5.8097
#1	.00003	10.903	.00823	.05420	-.00234	.00063	-.00153	6.4608
#2	.00027	10.781	.00722	.05893	.00052	.00442	-.00489	6.4282
#3	.00092	10.890	.00538	.06208	-.00201	.00081	-.00514	5.8177
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607045401 Acquired: 7/14/2016 16:03:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.23216	.02416	-.00060	.00164	.01207	.00084
Stddev	.00089	.00146	.00468	.00042	.00030	.00067	.00019
%RSD	407.21	.62691	19.351	70.649	18.479	5.5177	22.509
#1	.00084	.23318	.01876	-.00094	.00197	.01248	.00063
#2	-.00080	.23049	.02684	-.00013	.00156	.01242	.00099
#3	.00062	.23279	.02689	-.00073	.00138	.01130	.00091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10079.	59708.	2697.8
Stddev	13.	76.	22.8
%RSD	.12513	.12654	.84565
#1	10073.	59684.	2682.0
#2	10093.	59792.	2723.9
#3	10069.	59646.	2687.4

Approved: July 16, 2016

Sample Name: L1607020101 Acquired: 7/14/2016 16:07:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00084	39.300	.00403	.23325	.23400	.00007	50.376
Stddev	.00181	.074	.00289	.00505	.00104	.00006	.092
%RSD	215.50	.18951	71.636	2.1659	.44616	85.768	.18317
#1	-.00106	39.271	.00349	.22936	.23516	.00002	50.461
#2	-.00254	39.245	.00716	.23142	.23371	.00013	50.388
#3	.00107	39.385	.00146	.23896	.23313	.00005	50.278
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01680	5.2940	.14580	.25879	5.2918	6.3355	2.6635
Stddev	.00171	.5967	.00085	.02987	.0160	.1420	.0010
%RSD	10.194	11.271	.58132	11.540	.30161	2.2407	.03901
#1	.01792	5.6844	.14509	.27829	5.2746	6.2445	2.6647
#2	.01767	5.5905	.14556	.27368	5.3061	6.2630	2.6628
#3	.01483	4.6071	.14674	.22441	5.2948	6.4991	2.6629
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	13.044	.17370	.01376	F 424.50	13.789	42.362	.01446
Stddev	.131	.00157	.00139	3.52	1.546	4.360	.00240
%RSD	1.0049	.90620	10.103	.82951	11.215	10.292	16.576
#1	13.028	.17202	.01442	428.46	14.801	45.128	.01702
#2	13.182	.17392	.01470	423.30	14.558	44.621	.01227
#3	12.921	.17515	.01216	421.73	12.009	37.336	.01409
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 16, 2016

Sample Name: L1607020101 Acquired: 7/14/2016 16:07:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00200	.00204	2.0004	.00062	.38129	-.00008	.00589
Stddev	.00711	.00084	.1967	.00061	.00018	.00304	.00188
%RSD	354.49	41.398	9.8317	97.782	.04791	3957.1	31.933
#1	.00473	.00258	2.1291	.00113	.38149	.00030	.00423
#2	.00734	.00107	2.0980	.00079	.38125	-.00328	.00794
#3	-.00606	.00247	1.7740	-.00005	.38113	.00275	.00552
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00174	.70378	-.00007
Stddev	.00053	.07745	.00096
%RSD	30.700	11.005	1344.8
#1	.00235	.75443	-.00088
#2	.00143	.74229	-.00032
#3	.00143	.61462	.00099
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10112.	58404.	2673.0
Stddev	23.	42.	41.5
%RSD	.22486	.07116	1.5539
#1	10086.	58371.	2628.7
#2	10124.	58390.	2679.3
#3	10127.	58451.	2711.0

Approved: July 16, 2016

Sample Name: L1607020102 Acquired: 7/14/2016 16:11:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00121	39.765	.00797	.26672	.34361	.00000	53.917
Stddev	.00159	.061	.00064	.00598	.00261	.00006	.342
%RSD	131.82	.15275	8.0095	2.2425	.75983	1470.5	.63469
#1	-.00304	39.695	.00859	.26065	.34060	-.00003	53.570
#2	-.00046	39.796	.00731	.26690	.34501	-.00003	53.926
#3	-.00013	39.805	.00801	.27261	.34522	.00007	54.254
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01628	5.2023	.16700	.27773	9.4615	5.9353	2.4496
Stddev	.00227	.7339	.00033	.04160	.1053	.0312	.0168
%RSD	13.948	14.107	.19717	14.978	1.1131	.52588	.68547
#1	.01780	5.7191	.16662	.30654	9.3498	5.9002	2.4304
#2	.01736	5.5256	.16725	.29663	9.4760	5.9598	2.4573
#3	.01367	4.3623	.16712	.23004	9.5589	5.9460	2.4612
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	14.594	.17354	.03256	F 414.62	13.161	50.704	.02223
Stddev	.073	.00098	.00445	4.37	1.844	6.879	.00474
%RSD	.50303	.56307	13.670	1.0534	14.009	13.566	21.320
#1	14.511	.17328	.03564	410.03	14.457	55.490	.02636
#2	14.651	.17271	.03458	415.11	13.976	53.800	.02328
#3	14.621	.17462	.02745	418.73	11.050	42.821	.01705
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 16, 2016

Sample Name: L1607020102 Acquired: 7/14/2016 16:11:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	.00343	2.5250	.00180	.39746	.01041	.00638
Stddev	.00280	.00505	.3217	.00017	.00208	.00840	.00264
%RSD	657.90	147.32	12.741	9.6329	.52360	80.711	41.306
#1	-.00169	-.00086	2.7388	.00171	.39536	.00749	.00932
#2	-.00063	.00215	2.6813	.00200	.39749	.00386	.00422
#3	.00360	.00900	2.1550	.00168	.39952	.01988	.00560
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00377	.67234	.00059
Stddev	.00137	.09352	.00033
%RSD	36.348	13.909	56.612
#1	.00262	.73794	.00039
#2	.00529	.71382	.00097
#3	.00341	.56526	.00041
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10298.	59464.	2796.9
Stddev	90.	217.	8.9
%RSD	.87698	.36437	.31911
#1	10238.	59706.	2805.7
#2	10254.	59397.	2797.1
#3	10402.	59288.	2787.8

Approved: July 16, 2016

Sample Name: L1607020104 Acquired: 7/14/2016 16:15:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	60.218	.00289	.41001	.12995	.00014	133.89
Stddev	.00186	.117	.00344	.00555	.00068	.00004	.34
%RSD	397.74	.19452	119.03	1.3535	.52502	30.438	.25393
#1	.00236	60.117	.00682	.40395	.13018	.00011	134.28
#2	-.00136	60.191	.00044	.41125	.13048	.00011	133.68
#3	.00040	60.347	.00140	.41483	.12918	.00019	133.71
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04705	13.940	.16845	.40258	2.2411	14.455	3.5228
Stddev	.00544	1.635	.00090	.04935	.0150	.073	.0076
%RSD	11.553	11.730	.53363	12.258	.66897	.50284	.21511
#1	.05071	15.022	.16938	.43568	2.2542	14.531	3.5236
#2	.04964	14.740	.16837	.42619	2.2247	14.450	3.5300
#3	.04080	12.059	.16759	.34586	2.2444	14.385	3.5149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	36.656	.44609	.00428	F 481.57	21.075	66.240	.01195
Stddev	.062	.00224	.00052	9.56	2.479	7.133	.00340
%RSD	.16827	.50124	12.219	1.9853	11.764	10.768	28.412
#1	36.598	.44417	.00466	492.58	22.715	70.859	.01584
#2	36.649	.44855	.00449	475.36	22.287	69.835	.01049
#3	36.720	.44555	.00368	476.78	18.223	58.024	.00954
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 16, 2016

Sample Name: L1607020104 Acquired: 7/14/2016 16:15:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00031	.00043	3.6836	.00054	.93720	-.01316	.01739
Stddev	.00600	.00550	.3797	.00064	.00258	.00648	.00295
%RSD	1938.0	1268.3	10.308	118.26	.27570	49.270	16.993
#1	.00624	-.00585	3.9244	.00113	.94012	-.00790	.01732
#2	-.00552	.00440	3.8805	.00065	.93629	-.01118	.02038
#3	-.00165	.00275	3.2459	-.00014	.93520	-.02040	.01447
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00392	1.7517	.00018
Stddev	.00097	.2030	.00008
%RSD	24.681	11.587	46.115
#1	.00358	1.8851	.00019
#2	.00318	1.8517	.00027
#3	.00502	1.5181	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9775.5	56260.	2611.5
Stddev	78.2	69.	12.7
%RSD	.80002	.12328	.48775
#1	9756.4	56286.	2600.9
#2	9708.5	56181.	2608.0
#3	9861.4	56312.	2625.6

Approved: July 16, 2016

Sample Name: L1607024903 Acquired: 7/14/2016 16:18:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .00134	k 6.6657	k .00854	k .10522	1.0159	k .00105	^ *****	k .00092
Stddev	.00632	.1035	.00097	.00095	.3466	.00004	-----	.00036
%RSD	471.73	1.5525	11.409	.89995	34.121	3.9679	-----	38.577
#1	k -.00589	k 6.6772	k .00956	k .10523	.61857	k .00108	^ -----	k .00059
#2	.00585	6.5569	.00763	.10426	1.1729	.00100	119.98	.00130
#3	.00406	6.7629	.00842	.10616	1.2563	.00107	129.32	.00088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .02186	k .13681	k .14198	k 24.855	1.5410	.01578	k 4.6375	^ *****
Stddev	.00389	.00558	.03724	7.997	.4875	.00225	1.6831	-----
%RSD	17.804	4.0771	26.230	32.174	31.635	14.256	36.293	-----
#1	k .02587	k .14315	k .18386	k 15.706	.98199	.01326	k 2.7043	^ -----
#2	.02161	.13264	.12947	28.351	1.7634	.01649	5.4320	23.955
#3	.01810	.13464	.11260	30.509	1.8777	.01758	5.7763	25.755
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .02347	5.1991	k .16132	k 10.140	k .01925	k .00179	k .01399	8.3431
Stddev	.00155	1.8916	.01650	.734	.00459	.00255	.00860	.6433
%RSD	6.6018	36.384	10.225	7.2393	23.843	142.66	61.483	7.7106
#1	k .02507	3.0517	k .17819	k 10.806	k .02373	k -.00095	k .02376	8.9194
#2	.02337	5.9271	.16056	10.262	.01946	.00409	.00756	8.4607
#3	.02198	6.6186	.14522	9.3529	.01456	.00222	.01065	7.6491
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607024903 Acquired: 7/14/2016 16:18:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .21909	k .39945	k .15193	k .01418	k .02768	k .95855	k .00274
Stddev	.01412	.13434	.04517	.01345	.00287	.06475	.00068
%RSD	6.4470	33.631	29.733	94.896	10.383	6.7545	24.778
#1	k .23228	k .24578	k .09978	k .02958	k .02445	k 1.0209	k .00196
#2	.22080	.45800	.17712	.00824	.02865	.96304	.00318
#3	.20419	.49458	.17889	.00471	.02994	.89168	.00307
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9989.6	58927.	3108.9
Stddev	42.8	511.	581.9
%RSD	.42832	.86788	18.718
#1	9942.4	59039.	3780.1
#2	10026.	59374.	2801.1
#3	10000.	58369.	2745.6

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 16:22:38 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40141	9.8066	.40530	.49543	.99416	.04891	9.9274	.05042
Stddev	.00442	.0172	.00799	.00134	.00648	.00011	.0224	.00133
%RSD	1.1006	.17498	1.9713	.27116	.65136	.23045	.22548	2.6332
#1	.39666	9.7925	.40914	.49402	1.0005	.04902	9.9412	.05080
#2	.40540	9.8016	.41063	.49557	.98756	.04890	9.9395	.05151
#3	.40216	9.8257	.39611	.49669	.99440	.04880	9.9016	.04894
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20105	.48729	.50288	3.9850	49.874	.98892	9.8808	.50244
Stddev	.00544	.00195	.01205	.0424	.435	.00464	.1062	.00142
%RSD	2.7066	.39964	2.3966	1.0640	.87281	.46898	1.0750	.28202
#1	.20396	.48511	.50843	4.0160	50.330	.99333	9.7655	.50389
#2	.20441	.48790	.51115	3.9367	49.463	.98409	9.9022	.50106
#3	.19477	.48885	.48905	4.0023	49.829	.98933	9.9747	.50237
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0036	49.906	.49993	10.136	.50215	1.2085	.40683	4.9894
Stddev	.0236	.406	.01301	.188	.00615	.0197	.00534	.0821
%RSD	2.3466	.81450	2.6031	1.8505	1.2254	1.6266	1.3125	1.6453
#1	1.0106	50.307	.50612	10.229	.50671	1.2205	.40692	5.0309
#2	1.0229	49.494	.50870	10.258	.50460	1.2191	.41213	5.0425
#3	.97734	49.919	.48498	9.9196	.49515	1.1858	.40145	4.8949
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 16:22:38 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99883	.99802	1.0041	.50208	.96914	.99781	.98634
Stddev	.03066	.00660	.0076	.00335	.00254	.02462	.00196
%RSD	3.0698	.66092	.76083	.66816	.26236	2.4674	.19870
#1	1.0153	1.0039	1.0117	.50252	.96845	1.0100	.98649
#2	1.0177	.99090	.99639	.50519	.96701	1.0140	.98431
#3	.96345	.99923	1.0042	.49852	.97195	.96948	.98822
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10253.	60205.	2730.3
Stddev	27.	83.	4.8
%RSD	.26382	.13728	.17407
#1	10278.	60155.	2725.8
#2	10259.	60300.	2735.3
#3	10224.	60160.	2729.7

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 16:26:13 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00084	.00693	.00004	.00329	-.00064	.00008	-.04658	.00033
Stddev	.00216	.00079	.00020	.00240	.00058	.00002	.02232	.00008
%RSD	258.05	11.321	544.76	72.957	90.922	28.177	47.916	24.640
#1	.00145	.00650	.00026	.00055	.00002	.00007	-.07187	.00026
#2	-.00285	.00784	-.00009	.00427	-.00087	.00011	-.03821	.00042
#3	-.00111	.00646	-.00006	.00504	-.00107	.00007	-.02965	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.00042	-.00041	-.00320	.05261	.00130	-.04620	.00044
Stddev	.00027	.00070	.00035	.03152	.07100	.00421	.06598	.00078
%RSD	156.44	165.34	85.933	985.22	134.97	324.93	142.82	179.49
#1	-.00007	-.00038	-.00019	-.02061	.05839	-.00356	.01057	.00108
#2	.00012	.00076	-.00022	.03318	.12054	.00353	-.11858	.00067
#3	.00046	.00089	-.00081	-.02217	-.02111	.00393	-.03059	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	.08500	-.00095	.00360	-.00124	.00257	-.00552	.00768
Stddev	.00030	.01715	.00028	.00317	.00304	.00333	.00209	.00069
%RSD	224.99	20.173	29.483	88.269	244.96	129.52	37.753	9.0048
#1	-.00032	.10445	-.00098	.00209	.00197	.00598	-.00404	.00763
#2	.00021	.07848	-.00121	.00146	-.00162	-.00067	-.00462	.00840
#3	-.00030	.07206	-.00065	.00724	-.00408	.00239	-.00791	.00701
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 16:26:13 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00010	-.00094	-.00112	-.00069	.00011	-.00000
Stddev	.00018	.00016	.00717	.00221	.00084	.00005	.00006
%RSD	98.291	152.20	766.70	198.42	121.65	44.310	2421.7
#1	.00020	.00028	.00730	-.00251	-.00135	.00009	-.00005
#2	-.00000	.00002	-.00432	.00144	-.00095	.00017	-.00001
#3	.00035	.00001	-.00578	-.00227	.00025	.00008	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9666.1	57466.	2626.1
Stddev	8.4	464.	5.4
%RSD	.08697	.80688	.20502
#1	9657.3	57700.	2631.6
#2	9674.0	57766.	2625.8
#3	9666.9	56932.	2620.8

Approved: July 16, 2016

Sample Name: L1607029102 Acquired: 7/14/2016 16:30:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	1.1867	-.00206	.01154	.02452	.00008	17.286	.00038
Stddev	.00124	.0048	.00264	.00239	.00183	.00002	.049	.00010
%RSD	347.24	.40589	128.13	20.669	7.4462	27.829	.28632	26.278
#1	.00067	1.1822	-.00468	.01072	.02663	.00011	17.341	.00049
#2	.00000	1.1861	.00061	.01423	.02346	.00007	17.274	.00035
#3	-.00174	1.1918	-.00212	.00968	.02347	.00007	17.244	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00095	.00213	.00289	2.0895	1.1450	.00594	2.6275	.04525
Stddev	.00034	.00024	.00030	.0270	.0376	.00223	.0701	.00391
%RSD	35.847	11.300	10.279	1.2940	3.2823	37.626	2.6674	8.6494
#1	.00133	.00187	.00272	2.1070	1.1414	.00805	2.5665	.04146
#2	.00088	.00235	.00271	2.1031	1.1093	.00360	2.6118	.04927
#3	.00065	.00217	.00323	2.0583	1.1843	.00616	2.7040	.04501
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00101	2.5388	.00137	.06471	-.00042	-.00031	.00052	5.0057
Stddev	.00011	.0305	.00048	.00071	.00221	.00118	.00236	.3706
%RSD	11.240	1.2012	35.074	1.1030	527.10	376.76	449.67	7.4031
#1	.00100	2.5367	.00190	.06494	-.00002	-.00044	.00319	5.2064
#2	.00091	2.5093	.00095	.06529	.00156	.00093	-.00130	5.2326
#3	.00114	2.5702	.00127	.06391	-.00280	-.00143	-.00031	4.5781
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607029102 Acquired: 7/14/2016 16:30:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	.04893	.01795	.00062	.00192	.03617	.00078
Stddev	.00063	.00042	.00646	.00253	.00061	.00326	.00028
%RSD	92.318	.85552	35.979	407.70	31.834	9.0114	35.922
#1	.00106	.04859	.02482	.00259	.00122	.03817	.00046
#2	.00104	.04940	.01201	-.00223	.00218	.03794	.00099
#3	-.00005	.04881	.01701	.00150	.00236	.03241	.00089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10248.	60671.	2707.4
Stddev	59.	246.	18.6
%RSD	.57913	.40483	.68686
#1	10289.	60622.	2688.9
#2	10276.	60453.	2707.3
#3	10180.	60937.	2726.1

Approved: July 16, 2016

Sample Name: L1607029103 Acquired: 7/14/2016 16:33:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	1.8695	.00195	.01468	.02602	.00017	26.738	.00037
Stddev	.00124	.0065	.00158	.00303	.00165	.00005	.190	.00014
%RSD	7025.6	.34955	81.044	20.651	6.3371	30.509	.70997	38.838
#1	-.00026	1.8695	.00343	.01743	.02679	.00013	26.876	.00021
#2	.00137	1.8761	.00028	.01143	.02714	.00015	26.817	.00049
#3	-.00105	1.8630	.00215	.01518	.02413	.00023	26.521	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	.00433	.00482	3.0936	1.2736	.00561	5.2465	.05894
Stddev	.00027	.00111	.00133	.0156	.0357	.00232	.1059	.00211
%RSD	30.904	25.728	27.515	.50272	2.8011	41.395	2.0183	3.5851
#1	.00062	.00452	.00614	3.0892	1.2540	.00552	5.3391	.06121
#2	.00085	.00534	.00482	3.1109	1.2520	.00334	5.2693	.05856
#3	.00116	.00314	.00349	3.0807	1.3147	.00798	5.1310	.05704
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	3.0795	.00242	.06464	-.00005	.00297	-.00155	5.6872
Stddev	.00028	.0063	.00062	.00985	.00187	.00241	.00426	.3786
%RSD	57.590	.20335	25.599	15.233	4033.1	80.986	275.03	6.6572
#1	.00068	3.0771	.00232	.07320	.00191	.00548	-.00459	5.9148
#2	.00063	3.0866	.00308	.06684	-.00182	.00278	.00332	5.8967
#3	.00017	3.0748	.00185	.05388	-.00022	.00067	-.00337	5.2502
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607029103 Acquired: 7/14/2016 16:33:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	.06853	.01763	-.00083	.00165	.03804	.00097
Stddev	.00037	.00029	.00573	.00119	.00015	.00331	.00016
%RSD	60.794	.43013	32.475	144.06	9.3800	8.6959	16.676
#1	.00103	.06854	.02353	-.00002	.00171	.04034	.00079
#2	.00042	.06823	.01729	-.00027	.00148	.03952	.00109
#3	.00036	.06882	.01209	-.00220	.00177	.03425	.00102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10216.	60428.	2709.6
Stddev	39.	91.	25.5
%RSD	.38120	.15037	.94223
#1	10218.	60329.	2682.2
#2	10254.	60448.	2713.9
#3	10176.	60507.	2732.7

Approved: July 16, 2016

Sample Name: L1607029104 Acquired: 7/14/2016 16:37:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00104	3.3244	.00180	.01960	.08210	.00028	93.243	.00060
Stddev	.00135	.0149	.00237	.00206	.00136	.00001	.445	.00032
%RSD	129.58	.44746	132.03	10.532	1.6569	2.2977	.47719	54.129
#1	-.00028	3.3355	.00353	.02054	.08084	.00028	92.865	.00083
#2	-.00261	3.3302	-.00091	.02103	.08354	.00029	93.130	.00023
#3	-.00025	3.3075	.00278	.01723	.08191	.00027	93.734	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00460	.00724	.00832	6.1093	3.0817	.01515	15.392	2.3640
Stddev	.00053	.00031	.00239	.0351	.0428	.00309	.106	.0043
%RSD	11.549	4.2686	28.737	.57466	1.3898	20.370	.69136	.18078
#1	.00519	.00707	.00910	6.0688	3.0349	.01611	15.271	2.3618
#2	.00416	.00704	.01023	6.1315	3.1190	.01766	15.470	2.3613
#3	.00445	.00759	.00564	6.1276	3.0912	.01170	15.435	2.3689
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	8.5530	.01230	.17924	.00526	.00166	-.00373	7.7557
Stddev	.00017	.0857	.00125	.00966	.00432	.00061	.00150	.4323
%RSD	35.120	1.0023	10.125	5.3885	82.039	36.998	40.061	5.5739
#1	.00053	8.6517	.01236	.17999	.00318	.00218	-.00208	8.0157
#2	.00030	8.4972	.01351	.18850	.01022	.00098	-.00499	7.9946
#3	.00064	8.5102	.01102	.16923	.00238	.00183	-.00413	7.2566
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607029104 Acquired: 7/14/2016 16:37:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00133	.32868	.03666	.00109	.00431	.04269	.00105
Stddev	.00035	.00244	.00621	.00397	.00044	.00300	.00005
%RSD	26.088	.74147	16.927	363.13	10.286	7.0183	5.0059
#1	.00173	.32596	.04305	.00165	.00458	.04460	.00111
#2	.00116	.32942	.03066	-.00313	.00456	.04424	.00100
#3	.00110	.33066	.03627	.00476	.00380	.03924	.00105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10125.	59777.	2701.6
Stddev	28.	114.	10.9
%RSD	.27506	.19105	.40188
#1	10131.	59660.	2713.7
#2	10149.	59888.	2692.7
#3	10094.	59784.	2698.3

Approved: July 16, 2016

Sample Name: L1607038001 Acquired: 7/14/2016 16:41:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00134	.01853	-.00194	.01623	.12932	-.00001	42.240	.00033
Stddev	.00043	.00712	.00135	.00276	.00177	.00004	.256	.00012
%RSD	31.724	38.406	69.588	16.987	1.3698	409.40	.60614	36.884
#1	-.00152	.01031	-.00349	.01360	.12949	-.00006	41.947	.00023
#2	-.00165	.02281	-.00132	.01598	.12747	.00003	42.359	.00047
#3	-.00086	.02246	-.00101	.01910	.13100	-.00000	42.415	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	.00049	.03008	.87688	1.3340	.00503	4.8098	.12251
Stddev	.00002	.00122	.00181	.03156	.0978	.00264	.0856	.00127
%RSD	25.928	247.52	6.0294	3.5989	7.3307	52.428	1.7803	1.0371
#1	-.00008	-.00009	.03159	.84738	1.4408	.00775	4.7135	.12129
#2	-.00011	-.00033	.03057	.91015	1.3122	.00486	4.8387	.12383
#3	-.00007	.00190	.02807	.87311	1.2489	.00248	4.8772	.12241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	2.6953	.00056	.01908	.00745	-.00031	-.00296	2.8755
Stddev	.00017	.0308	.00060	.00973	.00052	.00340	.00430	.1834
%RSD	224.99	1.1429	107.24	50.977	6.9370	1112.5	145.45	6.3761
#1	.00026	2.6620	.00114	.03022	.00790	.00362	.00138	2.9863
#2	.00004	2.7010	-.00005	.01472	.00688	-.00245	-.00302	2.9764
#3	-.00007	2.7228	.00057	.01230	.00757	-.00208	-.00722	2.6639
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607038001 Acquired: 7/14/2016 16:41:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00132	.26267	-.00100	-.00034	-.00092	.24632	.00005
Stddev	.00074	.00149	.00446	.00093	.00041	.01932	.00035
%RSD	56.201	.56675	446.89	273.34	44.859	7.8441	649.03
#1	.00048	.26096	-.00499	.00073	-.00079	.25817	.00010
#2	.00159	.26366	-.00182	-.00098	-.00139	.25677	.00038
#3	.00189	.26340	.00381	-.00078	-.00059	.22402	-.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10380.	61476.	2768.1
Stddev	31.	177.	6.8
%RSD	.29934	.28819	.24500
#1	10383.	61513.	2775.1
#2	10348.	61631.	2761.5
#3	10410.	61283.	2767.8

Approved: July 16, 2016

Sample Name: L1607038002 Acquired: 7/14/2016 16:45:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	5.0204	.00218	.02584	.20975	.00044	16.452	.00041
Stddev	.00149	.0084	.00077	.00021	.00157	.00004	.117	.00038
%RSD	234.89	.16826	35.499	.79621	.74761	10.088	.71185	93.351
#1	-.00049	5.0148	.00306	.02564	.21150	.00040	16.581	.00080
#2	.00232	5.0164	.00188	.02582	.20847	.00048	16.352	.00040
#3	.00007	5.0301	.00160	.02605	.20928	.00043	16.423	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00323	.00801	.00871	13.581	2.8801	.00688	3.4753	.40424
Stddev	.00003	.00054	.00260	.137	.0456	.00093	.0725	.00394
%RSD	1.0657	6.7234	29.896	1.0106	1.5825	13.516	2.0856	.97463
#1	.00319	.00863	.01017	13.738	2.8907	.00704	3.4080	.40855
#2	.00324	.00765	.01025	13.486	2.9195	.00771	3.4658	.40083
#3	.00325	.00775	.00570	13.518	2.8302	.00588	3.5521	.40333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00112	58.898	.00726	.33069	.00644	.00329	-.00728	8.3754
Stddev	.00037	.337	.00123	.02578	.00296	.00022	.00147	.4880
%RSD	32.969	.57136	16.868	7.7962	45.960	6.5480	20.146	5.8266
#1	.00128	59.240	.00680	.33890	.00490	.00304	-.00603	8.6862
#2	.00070	58.567	.00866	.35137	.00985	.00344	-.00691	8.6271
#3	.00138	58.886	.00634	.30181	.00456	.00340	-.00889	7.8130
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607038002 Acquired: 7/14/2016 16:45:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.17198	.06567	.00276	.01099	.09259	.00088
Stddev	.00051	.00090	.00336	.00249	.00012	.00695	.00020
%RSD	104.04	.52464	5.1104	90.473	1.1287	7.5020	22.752
#1	.00001	.17299	.06676	.00194	.01102	.09684	.00076
#2	.00103	.17124	.06835	.00556	.01110	.09636	.00077
#3	.00045	.17172	.06191	.00078	.01085	.08458	.00111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10129.	59770.	2703.1
Stddev	25.	78.	17.9
%RSD	.24450	.13111	.66134
#1	10158.	59859.	2686.2
#2	10115.	59711.	2721.8
#3	10115.	59740.	2701.1

Approved: July 16, 2016

Sample Name: L1607038003 Acquired: 7/14/2016 16:49:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00043	.04855	.00052	.02623	.08332	.00002	15.480	.00036
Stddev	.00060	.00369	.00282	.00251	.00009	.00008	.063	.00013
%RSD	138.53	7.5952	546.28	9.5762	.10513	466.96	.40584	36.658
#1	-.00111	.04486	-.00133	.02436	.08325	-.00005	15.545	.00028
#2	-.00021	.04856	.00376	.02908	.08329	-.00001	15.475	.00051
#3	.00003	.05223	-.00088	.02525	.08342	.00011	15.420	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.00130	.00302	.07723	1.5043	.00544	2.3626	.00233
Stddev	.00010	.00033	.00140	.00817	.0599	.00102	.0476	.00258
%RSD	238.46	25.056	46.446	10.576	3.9838	18.741	2.0158	110.68
#1	.00002	.00157	.00460	.08519	1.5363	.00609	2.3676	.00436
#2	-.00005	.00139	.00192	.07764	1.5415	.00427	2.4076	-.00058
#3	.00016	.00094	.00255	.06887	1.4352	.00598	2.3127	.00322
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	63.852	-.00005	.05706	-.00184	.00231	-.00132	2.5851
Stddev	.00048	.293	.00033	.00626	.00279	.00428	.00306	.1832
%RSD	63.443	.45832	664.00	10.966	151.99	185.08	232.36	7.0853
#1	.00104	64.001	.00029	.06219	-.00158	.00695	-.00022	2.6965
#2	.00105	64.040	-.00007	.05891	.00082	-.00149	.00104	2.6851
#3	.00020	63.515	-.00037	.05009	-.00475	.00147	-.00478	2.3737
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607038003 Acquired: 7/14/2016 16:49:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00140	.16519	-.00167	-.00057	-.00029	.00414	.00043
Stddev	.00059	.00011	.00605	.00216	.00073	.00052	.00036
%RSD	42.344	.06932	362.80	382.64	255.38	12.577	82.485
#1	.00081	.16524	-.00567	.00003	-.00028	.00416	.00010
#2	.00200	.16528	.00529	-.00296	.00044	.00465	.00040
#3	.00141	.16506	-.00462	.00123	-.00102	.00361	.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10125.	59818.	2684.1
Stddev	19.	64.	23.8
%RSD	.18560	.10675	.88785
#1	10146.	59819.	2660.7
#2	10112.	59754.	2683.2
#3	10115.	59882.	2708.4

Approved: July 16, 2016

Sample Name: L1607038004 Acquired: 7/14/2016 16:53:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00066	.03271	-.00129	.14829	.05204	-.00008	1.4588	.00027
Stddev	.00211	.01771	.00134	.00139	.00075	.00003	.0045	.00024
%RSD	319.99	54.134	103.73	.93467	1.4410	32.889	.30777	88.417
#1	.00177	.01925	-.00126	.14669	.05134	-.00005	1.4568	.00047
#2	-.00167	.02612	.00004	.14910	.05283	-.00010	1.4556	.00000
#3	-.00207	.05277	-.00263	.14909	.05195	-.00009	1.4639	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.00073	.00156	-.01782	.33850	.01017	.23569	.00137
Stddev	.00019	.00070	.00080	.03203	.06408	.00091	.09170	.00086
%RSD	420.93	95.961	51.275	179.74	18.930	8.9685	38.909	63.043
#1	.00026	.00085	.00146	-.04271	.38826	.00966	.18224	.00080
#2	-.00003	-.00002	.00241	.01832	.36104	.00963	.18325	.00095
#3	-.00010	.00136	.00082	-.02908	.26620	.01123	.34158	.00236
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00085	156.79	-.00101	.03392	-.00345	.00263	-.00566	2.7826
Stddev	.00018	.18	.00055	.00013	.00210	.00382	.00179	.2276
%RSD	21.550	.11415	54.403	.38554	60.848	145.14	31.619	8.1810
#1	.00092	156.79	-.00090	.03405	-.00190	.00646	-.00482	2.9236
#2	.00099	156.97	-.00052	.03394	-.00261	-.00118	-.00771	2.9042
#3	.00064	156.62	-.00161	.03379	-.00584	.00262	-.00444	2.5200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607038004 Acquired: 7/14/2016 16:53:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.06588	.00301	-.00124	-.00101	.00333	.00034
Stddev	.00035	.00091	.00715	.00104	.00027	.00050	.00030
%RSD	915.54	1.3865	237.45	84.422	26.322	14.947	87.714
#1	-.00015	.06631	.00147	-.00043	-.00120	.00349	.00008
#2	.00044	.06483	-.00324	-.00087	-.00071	.00372	.00027
#3	-.00017	.06649	.01081	-.00242	-.00113	.00277	.00067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10048.	58987.	2688.9
Stddev	20.	109.	11.8
%RSD	.20051	.18442	.43933
#1	10050.	58861.	2684.5
#2	10067.	59057.	2679.9
#3	10027.	59042.	2702.3

Approved: July 16, 2016

Sample Name: L1607038101 Acquired: 7/14/2016 16:57:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00081	.01572	-.00170	.03053	.03562	.00005	40.029	.00044
Stddev	.00110	.01035	.00127	.00160	.00115	.00002	.077	.00013
%RSD	136.10	65.838	75.106	5.2291	3.2289	28.897	.19274	29.091
#1	.00014	.00378	-.00133	.03216	.03653	.00007	39.952	.00044
#2	-.00202	.02217	-.00311	.03047	.03601	.00004	40.028	.00031
#3	-.00056	.02122	-.00065	.02897	.03433	.00006	40.106	.00056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	.00142	.00159	.01751	1.2089	.00521	3.1514	.00197
Stddev	.00038	.00095	.00165	.02767	.0646	.00392	.0543	.00291
%RSD	2986.8	66.756	103.85	157.97	5.3452	75.206	1.7215	148.09
#1	-.00044	.00241	.00066	.03464	1.1406	.00931	3.2082	.00271
#2	.00029	.00132	.00349	.03230	1.2690	.00151	3.1459	.00443
#3	.00011	.00053	.00061	-.01440	1.2170	.00480	3.1001	-.00125
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	5.7023	-.00057	.09557	-.00147	.00125	-.00717	4.1217
Stddev	.00013	.0072	.00025	.00842	.00162	.00283	.00428	.3111
%RSD	41.200	.12631	44.783	8.8068	110.49	226.27	59.640	7.5477
#1	.00018	5.6980	-.00067	.10223	.00038	.00262	-.00946	4.3113
#2	.00035	5.7106	-.00075	.09838	-.00212	.00313	-.00982	4.2911
#3	.00044	5.6982	-.00028	.08611	-.00266	-.00200	-.00224	3.7627
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607038101 Acquired: 7/14/2016 16:57:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.13332	-.00021	.00091	-.00088	.00753	-.00018
Stddev	.00049	.00017	.00227	.00279	.00034	.00078	.00039
%RSD	93.429	.12620	1095.9	305.84	38.541	10.322	211.50
#1	.00090	.13350	.00149	.00299	-.00049	.00794	.00025
#2	.00069	.13316	.00067	-.00226	-.00113	.00801	-.00032
#3	-.00003	.13329	-.00278	.00200	-.00103	.00663	-.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10157.	60473.	2709.6
Stddev	37.	180.	11.5
%RSD	.35968	.29841	.42428
#1	10146.	60458.	2697.1
#2	10198.	60300.	2711.9
#3	10128.	60660.	2719.7

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 17:01:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41338**	**10.125**	**.41455**	**.51185**	**1.0365**	**.05040**	**10.287**	**.05167**
Stddev	.00120	.020	.00973	.00127	.0045	.00012	.011	.00117
%RSD	.29130	.20013	2.3479	.24887	.43519	.23840	.10426	2.2597
#1	.41304	10.126	.42041	.51068	1.0406	.05028	10.279	.05230
#2	.41472	10.144	.41993	.51167	1.0374	.05052	10.299	.05238
#3	.41239	10.104	.40332	.51321	1.0317	.05040	10.283	.05032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20684**	**.50089**	**.51728**	**4.1508**	**51.804**	**1.0224**	**10.182**	**.52227**
Stddev	.00616	.00119	.01540	.0385	.315	.0113	.109	.00199
%RSD	2.9793	.23683	2.9771	.92773	.60900	1.1074	1.0663	.38076
#1	.21065	.50047	.52567	4.1262	52.122	1.0239	10.200	.52097
#2	.21014	.50223	.52665	4.1952	51.797	1.0329	10.065	.52456
#3	.19973	.49997	.49950	4.1311	51.492	1.0104	10.280	.52129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0333**	**52.061**	**.51703**	**10.437**	**.51981**	**1.2452**	**.41775**	**5.1131**
Stddev	.0271	.273	.01625	.212	.00626	.0279	.00829	.1006
%RSD	2.6219	.52356	3.1429	2.0330	1.2044	2.2393	1.9842	1.9679
#1	1.0440	52.346	.52700	10.561	.52141	1.2605	.42561	5.1698
#2	1.0534	52.034	.52581	10.558	.52512	1.2620	.41855	5.1726
#3	1.0025	51.803	.49828	10.192	.51291	1.2130	.40909	4.9969
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 17:01:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0294**	**1.0397**	**1.0539**	**.51323**	**.99797**	**1.0308**	**1.0267**
Stddev	.0351	.0054	.0060	.00509	.00324	.0283	.0004
%RSD	3.4141	.52118	.56626	.99191	.32418	2.7402	.03930
#1	1.0498	1.0448	1.0604	.51655	1.0015	1.0467	1.0271
#2	1.0495	1.0402	1.0527	.51577	.99733	1.0474	1.0263
#3	.98879	1.0340	1.0487	.50737	.99510	.99816	1.0268
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10042.**	**58910.**	**2650.0**
Stddev	23.	134.	10.1
%RSD	.23090	.22826	.38042
#1	10041.	58803.	2639.6
#2	10020.	58866.	2650.6
#3	10066.	59061.	2659.7

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 17:04:43 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00086	.00735	-.00053	.00383	-.00133	.00006	-.00283	.00043
Stddev	.00040	.00420	.00195	.00131	.00090	.00008	.01562	.00027
%RSD	45.922	57.163	370.24	34.243	68.098	134.87	551.87	62.844
#1	-.00129	.00278	-.00118	.00356	-.00053	.00006	-.02058	.00023
#2	-.00051	.00822	.00167	.00267	-.00114	.00013	.00881	.00033
#3	-.00079	.01105	-.00207	.00525	-.00231	-.00002	.00328	.00074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00057	-.00072	-.00496	.02287	.00171	-.08680	.00013
Stddev	.00050	.00052	.00052	.04659	.06681	.00032	.08419	.00221
%RSD	809.36	91.089	71.424	939.39	292.15	18.721	97.002	1697.1
#1	.00008	.00076	-.00086	-.05296	.04171	.00134	-.18401	-.00026
#2	.00056	.00097	-.00015	.04007	-.05134	.00190	-.03746	-.00186
#3	-.00045	-.00002	-.00115	-.00198	.07823	.00188	-.03892	.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.04528	-.00076	.00055	-.00356	.00495	-.00776	.00416
Stddev	.00024	.02835	.00046	.00561	.00220	.00289	.00116	.00138
%RSD	323.22	62.607	60.292	1019.4	61.775	58.256	14.940	33.130
#1	-.00000	.01380	-.00092	-.00567	-.00113	.00272	-.00744	.00441
#2	.00012	.06881	-.00024	.00208	-.00414	.00821	-.00904	.00267
#3	-.00034	.05324	-.00112	.00524	-.00542	.00392	-.00679	.00538
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 17:04:43 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	-.00017	-.00002	.00032	-.00055	.00004	-.00013
Stddev	.00026	.00008	.00604	.00221	.00079	.00016	.00028
%RSD	62.330	45.334	27283.	695.57	142.89	407.77	216.17
#1	.00044	-.00009	-.00374	-.00058	-.00112	-.00010	.00010
#2	.00065	-.00024	.00694	-.00130	-.00090	.00000	-.00004
#3	.00014	-.00018	-.00327	.00284	.00035	.00021	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10137.	59445.	2663.4
Stddev	86.	339.	33.8
%RSD	.85165	.57019	1.2702
#1	10082.	59083.	2628.5
#2	10091.	59498.	2696.0
#3	10236.	59754.	2665.6

Approved: July 16, 2016

Sample Name: PBW 76 Acquired: 7/14/2016 17:08:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.01451**	**-.00095**	**.00413**	**-.00278**	**.00006**	**-.04258**	**.00023**
Stddev	.00105	.00584	.00071	.00168	.00043	.00004	.01760	.00001
%RSD	518.39	40.237	75.036	40.700	15.583	70.858	41.337	5.3576
#1	-.00088	.02100	-.00164	.00601	-.00230	.00001	-.03182	.00022
#2	-.00073	.01282	-.00022	.00360	-.00314	.00010	-.03302	.00024
#3	.00101	.00970	-.00098	.00278	-.00291	.00007	-.06289	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.00078**	**.00057**	**.00268**	**-.03299**	**.00122**	**.00746**	**-.00096**
Stddev	.00030	.00117	.00059	.01188	.12353	.00385	.04260	.00046
%RSD	210.12	150.26	103.54	442.94	374.47	314.73	571.18	48.254
#1	-.00024	-.00053	.00023	-.00416	-.13556	.00553	.02821	-.00118
#2	-.00038	.00116	.00023	.01640	.10415	.00004	.03571	-.00127
#3	.00019	.00171	.00125	-.00420	-.06756	-.00189	-.04155	-.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.06484**	**-.00027**	**.00175**	**-.00312**	**.00227**	**-.00225**	**.02091**
Stddev	.00031	.02335	.00069	.00202	.00187	.00358	.00195	.00148
%RSD	297.81	36.005	252.77	115.33	59.800	157.59	86.386	7.0929
#1	.00014	.03808	-.00106	-.00041	-.00337	-.00105	-.00262	.01983
#2	.00000	.07540	.00020	.00208	-.00114	.00606	-.00015	.02260
#3	-.00046	.08104	.00005	.00360	-.00485	.00181	-.00399	.02029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: PBW 76 Acquired: 7/14/2016 17:08:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.00023	.00044	-.00117	-.00070	.00069	-.00019
Stddev	.00019	.00035	.00313	.00101	.00069	.00032	.00057
%RSD	55.195	151.80	711.67	86.544	97.859	45.550	303.41
#1	.00042	.00025	.00096	-.00138	.00003	.00086	-.00064
#2	.00048	-.00013	.00328	-.00007	-.00134	.00089	-.00038
#3	.00013	.00057	-.00292	-.00206	-.00080	.00033	.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10235.	60911.	2718.1
Stddev	35.	100.	10.9
%RSD	.34043	.16386	.39985
#1	10266.	60798.	2705.5
#2	10241.	60985.	2723.6
#3	10197.	60950.	2725.0

Approved: July 16, 2016

Sample Name: LCSW 76 Acquired: 7/14/2016 17:12:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19559**	**4.9300**	**.20044**	**.97707**	**.51179**	**.02399**	**5.1758**	**.02522**
Stddev	.00080	.0250	.00234	.00398	.00221	.00004	.0410	.00051
%RSD	.41154	.50731	1.1678	.40782	.43233	.16552	.79245	2.0114
#1	.19551	4.9159	.20062	.97338	.51418	.02394	5.2081	.02525
#2	.19644	4.9589	.20268	.97652	.50982	.02401	5.1897	.02570
#3	.19483	4.9152	.19801	.98130	.51135	.02401	5.1297	.02469
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10159**	**.24814**	**.25573**	**2.0797**	**25.144**	**.51757**	**4.9823**	**.25380**
Stddev	.00246	.00085	.00551	.0218	.108	.00308	.0723	.00372
%RSD	2.4256	.34230	2.1554	1.0469	.42993	.59578	1.4517	1.4655
#1	.10317	.24905	.25858	2.0545	25.214	.51716	5.0402	.25278
#2	.10285	.24736	.25924	2.0925	25.020	.52084	4.9012	.25792
#3	.09875	.24800	.24938	2.0919	25.199	.51471	5.0054	.25070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51305**	**25.490**	**.25666**	**4.9356**	**.25380**	**.60597**	**.18871**	**2.5368**
Stddev	.01128	.099	.00596	.0799	.00260	.01127	.00267	.0367
%RSD	2.1978	.38734	2.3236	1.6194	1.0253	1.8590	1.4128	1.4452
#1	.52070	25.500	.25957	4.9886	.25605	.61136	.19104	2.5602
#2	.51835	25.584	.26061	4.9745	.25439	.61352	.18930	2.5558
#3	.50010	25.387	.24980	4.8437	.25095	.59302	.18580	2.4946
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: LCSW 76 Acquired: 7/14/2016 17:12:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50673	.52174	.51681	.25277	.49056	.50164	.00078
Stddev	.01294	.00196	.00824	.00587	.00027	.01104	.00020
%RSD	2.5542	.37604	1.5949	2.3237	.05433	2.2002	25.229
#1	.51418	.52108	.50872	.25784	.49083	.50865	.00072
#2	.51423	.52395	.52520	.25413	.49029	.50736	.00100
#3	.49179	.52020	.51652	.24633	.49056	.48892	.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10117.	59881.	2697.8
Stddev	6.	186.	3.9
%RSD	.06141	.31103	.14590
#1	10110.	59752.	2696.5
#2	10122.	59798.	2694.6
#3	10119.	60095.	2702.2

Approved: July 16, 2016

Sample Name: L1606145502 Acquired: 7/14/2016 17:16:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.25043	-.00066	.01942	.01622	.00006	39.573	.00066
Stddev	.00066	.00527	.00166	.00283	.00098	.00005	.193	.00015
%RSD	551.41	2.1045	251.79	14.564	6.0157	87.124	.48790	22.343
#1	.00023	.25587	.00123	.02118	.01570	.00008	39.570	.00077
#2	-.00059	.25007	-.00188	.02091	.01735	.00009	39.768	.00072
#3	.00072	.24534	-.00133	.01615	.01561	.00000	39.382	.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.00071	.01270	.51790	3.7198	.00727	5.9513	.01793
Stddev	.00019	.00044	.00181	.01865	.0948	.00365	.0709	.00226
%RSD	58.185	62.487	14.240	3.6004	2.5487	50.259	1.1922	12.617
#1	.00014	.00080	.01332	.49945	3.8272	.00788	5.9432	.01865
#2	.00052	.00023	.01413	.53674	3.6476	.00335	6.0260	.01540
#3	.00033	.00109	.01067	.51752	3.6847	.01057	5.8848	.01975
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00119	1.0901	.00398	.12178	-.00033	-.00038	-.00346	2.9544
Stddev	.00030	.0334	.00025	.00726	.00190	.00199	.00446	.1976
%RSD	25.605	3.0624	6.1561	5.9635	574.56	520.60	129.06	6.6880
#1	.00084	1.0515	.00410	.12007	-.00032	-.00267	-.00837	3.0757
#2	.00136	1.1099	.00414	.12974	.00157	.00071	.00034	3.0611
#3	.00137	1.1088	.00370	.11552	-.00224	.00082	-.00235	2.7264
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1606145502 Acquired: 7/14/2016 17:16:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	.08856	.00958	-.00068	.00013	.32531	.00041
Stddev	.00044	.00036	.00270	.00085	.00017	.02687	.00036
%RSD	180.12	.40394	28.146	125.22	130.03	8.2592	87.088
#1	.00071	.08898	.00647	-.00094	.00004	.34099	.00038
#2	-.00017	.08838	.01117	.00027	.00032	.34066	.00007
#3	.00019	.08833	.01111	-.00136	.00003	.29429	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10183.	60648.	2721.9
Stddev	17.	132.	7.5
%RSD	.16204	.21835	.27721
#1	10197.	60624.	2721.2
#2	10188.	60791.	2714.7
#3	10165.	60529.	2729.7

Approved: July 16, 2016

Sample Name: L1606145503S Acquired: 7/14/2016 17:20:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19455**	**5.2080**	**.20330**	**.97591**	**.52017**	**.02360**	**43.711**	**.02485**
Stddev	.00136	.0126	.00220	.00087	.00481	.00009	.275	.00029
%RSD	.69908	.24153	1.0844	.08929	.92384	.37234	.62911	1.1476
#1	.19517	5.1937	.20367	.97565	.52488	.02368	43.900	.02503
#2	.19299	5.2171	.20530	.97519	.52036	.02360	43.837	.02500
#3	.19550	5.2132	.20094	.97688	.51528	.02351	43.395	.02452
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09991**	**.24298**	**.26234**	**2.4864**	**28.264**	**.50823**	**10.832**	**.26534**
Stddev	.00176	.00047	.00499	.0467	.211	.00059	.150	.00175
%RSD	1.7601	.19395	1.9039	1.8772	.74501	.11533	1.3856	.65814
#1	.10104	.24291	.26515	2.4622	28.461	.50859	10.908	.26655
#2	.10081	.24255	.26529	2.5402	28.290	.50854	10.929	.26612
#3	.09788	.24349	.25657	2.4568	28.042	.50755	10.659	.26334
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50769**	**26.068**	**.25477**	**5.0509**	**.24922**	**.60228**	**.18627**	**5.7136**
Stddev	.01047	.170	.00649	.0741	.00190	.00835	.01108	.0683
%RSD	2.0615	.65358	2.5491	1.4667	.76280	1.3859	5.9503	1.1963
#1	.51529	26.182	.25991	5.1049	.24703	.60333	.19840	5.7639
#2	.51202	26.151	.25692	5.0812	.25045	.61006	.18377	5.7411
#3	.49575	25.872	.24747	4.9664	.25018	.59346	.17665	5.6358
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1606145503S Acquired: 7/14/2016 17:20:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49873**	**.60220**	**.50667**	**.24600**	**.48209**	**.81803**	**.00079**
Stddev	.01192	.00168	.00995	.00188	.00120	.01355	.00018
%RSD	2.3896	.27910	1.9638	.76258	.24934	1.6565	22.459
#1	.50758	.60271	.50884	.24745	.48334	.82639	.00060
#2	.50345	.60356	.49581	.24665	.48095	.82531	.00095
#3	.48518	.60032	.51535	.24388	.48199	.80240	.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10022.**	**59592.**	**2697.3**
Stddev	19.	112.	42.7
%RSD	.19384	.18782	1.5815
#1	10001.	59712.	2661.5
#2	10040.	59490.	2686.0
#3	10024.	59574.	2744.5

Approved: July 16, 2016

Sample Name: L1606145504SD Acquired: 7/14/2016 17:23:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20476**	**5.7375**	**.21015**	**1.0380**	**.55226**	**.02515**	**46.383**	**.02655**
Stddev	.00077	.0231	.00704	.0020	.00166	.00005	.286	.00029
%RSD	.37377	.40322	3.3490	.19066	.30076	.18669	.61629	1.1098
#1	.20437	5.7635	.21281	1.0385	.55367	.02520	46.683	.02681
#2	.20427	5.7302	.21546	1.0396	.55267	.02512	46.352	.02662
#3	.20564	5.7190	.20217	1.0357	.55043	.02512	46.114	.02623
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10455**	**.25906**	**.27580**	**2.7842**	**29.865**	**.54213**	**11.396**	**.28495**
Stddev	.00209	.00225	.00601	.0214	.043	.00270	.106	.00170
%RSD	1.9983	.86894	2.1806	.76713	.14322	.49847	.93273	.59552
#1	.10589	.26149	.28109	2.7742	29.862	.54512	11.365	.28335
#2	.10561	.25705	.27706	2.7696	29.823	.54142	11.514	.28477
#3	.10214	.25864	.26926	2.8087	29.909	.53986	11.309	.28673
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53361**	**27.613**	**.26733**	**5.3106**	**.25970**	**.62709**	**.20062**	**6.2455**
Stddev	.01001	.121	.00610	.0824	.00500	.01394	.00353	.0803
%RSD	1.8758	.43670	2.2830	1.5518	1.9270	2.2232	1.7597	1.2857
#1	.54004	27.740	.27074	5.3647	.26389	.63736	.19787	6.3002
#2	.53871	27.500	.27097	5.3513	.26105	.63269	.20460	6.2829
#3	.52208	27.598	.26029	5.2157	.25416	.61122	.19939	6.1533
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1606145504SD Acquired: 7/14/2016 17:23:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52422	.63790	.53477	.25895	.51355	.85705	.00093
Stddev	.01199	.00186	.00831	.00353	.00222	.01603	.00031
%RSD	2.2877	.29091	1.5532	1.3639	.43151	1.8708	32.921
#1	.53232	.63980	.54391	.26078	.51582	.86812	.00074
#2	.52990	.63609	.53272	.26120	.51139	.86436	.00078
#3	.51045	.63781	.52768	.25488	.51343	.83866	.00129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9938.6	58561.	2642.6
Stddev	38.0	121.	22.8
%RSD	.38233	.20616	.86221
#1	9898.5	58428.	2616.4
#2	9943.2	58663.	2657.6
#3	9974.1	58593.	2653.8

Approved: July 16, 2016

Sample Name: L1606145201 Acquired: 7/14/2016 17:27:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00078	.01275	-.00155	.01616	.11553	-.00001	7.2477	.00036
Stddev	.00019	.00601	.00275	.00170	.00162	.00004	.0631	.00023
%RSD	24.744	47.104	177.52	10.525	1.4059	273.50	.87038	65.407
#1	-.00070	.01961	-.00041	.01796	.11620	-.00003	7.3044	.00031
#2	-.00065	.01021	-.00469	.01595	.11367	-.00004	7.1797	.00061
#3	-.00100	.00843	.00045	.01458	.11670	.00003	7.2589	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00124	.00075	-.00050	.55363	13.964	.03022	5.2451	.14867
Stddev	.00029	.00083	.00111	.01652	.035	.00348	.0482	.00456
%RSD	23.833	109.36	220.06	2.9831	.25295	11.503	.91897	3.0694
#1	.00120	-.00015	-.00177	.53552	13.984	.02649	5.2796	.15345
#2	.00155	.00096	.00025	.55751	13.984	.03081	5.1900	.14436
#3	.00097	.00146	.00002	.56786	13.923	.03336	5.2656	.14820
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00038	37.662	.00040	.00850	-.00169	-.00142	-.00431	2.0303
Stddev	.00018	.032	.00095	.00465	.00193	.00074	.00595	.1811
%RSD	48.707	.08378	236.37	54.758	113.87	52.228	138.13	8.9177
#1	-.00032	37.630	-.00037	.00955	.00051	-.00131	-.00031	2.1298
#2	-.00023	37.663	.00146	.00341	-.00254	-.00222	-.01115	2.1398
#3	-.00058	37.693	.00011	.01253	-.00305	-.00074	-.00147	1.8213
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1606145201 Acquired: 7/14/2016 17:27:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**.19323**	**-.00355**	**.00227**	**-.00101**	**.00228**	**-.00049**
Stddev	.00040	.00108	.00803	.00190	.00034	.00030	.00051
%RSD	178.28	.56019	226.41	83.579	33.741	13.054	103.10
#1	-.00056	.19199	-.01259	.00426	-.00062	.00248	-.00012
#2	.00022	.19371	-.00079	.00048	-.00120	.00242	-.00029
#3	-.00033	.19398	.00274	.00207	-.00122	.00194	-.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10205.**	**60612.**	**2728.5**
Stddev	63.	131.	10.8
%RSD	.61988	.21653	.39405
#1	10270.	60740.	2738.3
#2	10199.	60618.	2717.0
#3	10144.	60478.	2730.1

Approved: July 16, 2016

Sample Name: L1606145301 Acquired: 7/14/2016 17:31:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00058	.00322	-.00069	.00537	.22484	.00008	6.6978	.00032
Stddev	.00227	.00542	.00274	.00193	.00085	.00004	.0383	.00005
%RSD	388.96	168.56	395.65	35.963	.37640	55.762	.57208	15.233
#1	-.00220	.00345	-.00056	.00404	.22402	.00004	6.7176	.00026
#2	-.00156	-.00232	-.00349	.00449	.22571	.00013	6.6537	.00034
#3	.00201	.00851	.00197	.00759	.22479	.00007	6.7222	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00435	.00138	.00060	.64236	.26791	.01145	4.8324	.16966
Stddev	.00037	.00072	.00100	.03109	.07923	.00271	.0451	.00095
%RSD	8.4880	52.179	165.43	4.8404	29.575	23.716	.93313	.56120
#1	.00461	.00198	.00097	.65606	.35485	.01447	4.8500	.16991
#2	.00452	.00058	.00136	.60676	.24914	.01066	4.7812	.16861
#3	.00393	.00156	-.00052	.66424	.19975	.00921	4.8662	.17046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	18.925	.00290	.00700	-.00404	.00316	-.00054	2.7265
Stddev	.00036	.067	.00121	.00132	.00075	.00392	.00693	.2427
%RSD	210.70	.35330	41.717	18.892	18.594	124.06	1286.7	8.9023
#1	.00023	18.862	.00352	.00808	-.00390	.00671	.00466	2.8678
#2	-.00048	18.996	.00366	.00741	-.00486	-.00105	.00212	2.8655
#3	-.00027	18.918	.00150	.00552	-.00337	.00384	-.00840	2.4463
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1606145301 Acquired: 7/14/2016 17:31:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00041	.14108	.00220	.00173	-.00070	.00980	-.00018
Stddev	.00086	.00115	.00571	.00166	.00051	.00090	.00031
%RSD	209.46	.81581	259.11	96.265	72.545	9.1468	176.40
#1	.00053	.13981	-.00208	-.00006	-.00124	.01026	.00011
#2	-.00116	.14205	.00001	.00323	-.00063	.01037	-.00050
#3	-.00060	.14138	.00868	.00201	-.00023	.00877	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10380.	61157.	2743.8
Stddev	29.	287.	10.5
%RSD	.28166	.46966	.38261
#1	10408.	61450.	2754.7
#2	10383.	61146.	2733.8
#3	10349.	60876.	2742.8

Approved: July 16, 2016

Sample Name: L1606145303 Acquired: 7/14/2016 17:35:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00140**	**.00143**	**-.00068**	**.00417**	**.07438**	**.00004**	**2.3532**	**.00013**
Stddev	.00175	.00081	.00150	.00106	.00141	.00001	.0153	.00012
%RSD	125.48	56.790	221.82	25.427	1.8930	32.576	.64798	86.036
#1	.00036	.00092	.00082	.00346	.07295	.00005	2.3590	.00010
#2	-.00315	.00101	-.00218	.00366	.07577	.00004	2.3359	.00004
#3	-.00140	.00237	-.00067	.00538	.07443	.00003	2.3647	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**.00049**	**-.00009**	**4.3182**	**.39251**	**.00316**	**1.6064**	**.04862**
Stddev	.00009	.00064	.00038	.0717	.06543	.00252	.0525	.00196
%RSD	56.970	130.21	449.41	1.6603	16.670	79.833	3.2681	4.0258
#1	.00008	.00122	.00015	4.2588	.31697	.00357	1.5464	.05023
#2	.00025	.00023	.00012	4.2978	.43140	.00545	1.6442	.04918
#3	.00013	.00002	-.00053	4.3978	.42917	.00046	1.6284	.04644
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00045**	**8.1561**	**-.00003**	**.01935**	**-.00053**	**.00045**	**-.00287**	**1.5654**
Stddev	.00027	.0436	.00113	.00257	.00205	.00263	.00253	.1590
%RSD	60.693	.53438	4001.8	13.292	384.61	587.93	88.106	10.160
#1	-.00014	8.1083	.00037	.02046	.00171	-.00259	-.00578	1.6707
#2	-.00066	8.1936	-.00131	.01641	-.00099	.00195	-.00124	1.6431
#3	-.00054	8.1664	.00085	.02119	-.00232	.00198	-.00158	1.3825
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1606145303 Acquired: 7/14/2016 17:35:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00000	.05576	.00132	.00095	-.00080	.00097	-.00020
Stddev	.00019	.00007	.00099	.00123	.00025	.00009	.00038
%RSD	8441.9	.12613	74.750	129.63	30.934	9.2769	192.82
#1	.00002	.05579	.00122	.00162	-.00104	.00104	.00016
#2	.00018	.05582	.00039	-.00047	-.00081	.00100	-.00015
#3	-.00020	.05568	.00236	.00170	-.00055	.00087	-.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10420.	61586.	2754.2
Stddev	62.	99.	16.8
%RSD	.59231	.16067	.61111
#1	10402.	61670.	2772.8
#2	10489.	61612.	2740.0
#3	10370.	61477.	2749.9

Approved: July 16, 2016

Sample Name: L1606145303PS Acquired: 7/14/2016 17:39:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG574839-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19182	4.8542	.20166	.97722	.56716	.02332	7.3237	.02474
Stddev	.00144	.0176	.00582	.00288	.00534	.00004	.0727	.00046
%RSD	.74869	.36370	2.8845	.29476	.94240	.17190	.99321	1.8615
#1	.19049	4.8736	.20348	.98010	.56834	.02331	7.3484	.02491
#2	.19334	4.8498	.20635	.97722	.56132	.02336	7.2419	.02509
#3	.19164	4.8391	.19515	.97434	.57181	.02328	7.3809	.02422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09886	.23774	.24962	6.1274	24.956	.50068	6.4674	.29650
Stddev	.00235	.00153	.00553	.0473	.254	.00609	.0689	.00413
%RSD	2.3738	.64288	2.2154	.77188	1.0166	1.2172	1.0654	1.3942
#1	.09982	.23904	.25237	6.0887	24.901	.50219	6.5343	.29597
#2	.10058	.23813	.25323	6.1134	24.735	.49398	6.3967	.29265
#3	.09619	.23606	.24325	6.1802	25.233	.50588	6.4713	.30087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49332	32.606	.24944	4.9727	.24819	.59728	.20122	4.0583
Stddev	.01219	.285	.00632	.1027	.00616	.01427	.00813	.0661
%RSD	2.4706	.87396	2.5337	2.0643	2.4808	2.3891	4.0413	1.6283
#1	.49921	32.611	.25280	5.0073	.25228	.60333	.20611	4.0796
#2	.50145	32.319	.25338	5.0536	.25118	.60753	.20572	4.1112
#3	.47931	32.889	.24215	4.8573	.24110	.58098	.19184	3.9842
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1606145303PS Acquired: 7/14/2016 17:39:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG574839-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49135**	**.55563**	**.50247**	**.24787**	**.46839**	**.50359**	**.00047**
Stddev	.01612	.00397	.00941	.00465	.00345	.01181	.00042
%RSD	3.2814	.71411	1.8721	1.8780	.73642	2.3450	89.600
#1	.49983	.55697	.50973	.25284	.47235	.50946	.00095
#2	.50146	.55117	.49185	.24718	.46684	.51131	.00024
#3	.47275	.55876	.50585	.24361	.46600	.49000	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10547.**	**62217.**	**2780.4**
Stddev	20.	275.	16.5
%RSD	.19171	.44179	.59288
#1	10569.	61901.	2761.5
#2	10529.	62348.	2791.7
#3	10544.	62402.	2788.1

Approved: July 16, 2016

Sample Name: L1606145303SDL Acquired: 7/14/2016 17:42:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 50 Custom ID2: Custom ID3:
Comment: WG574839-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00053**	**.00241**	**-.00022**	**.00589**	**.01269**	**-.00002**	**.43202**	**.00018**
Stddev	.00087	.01080	.00188	.00233	.00063	.00003	.01711	.00020
%RSD	164.29	448.10	870.33	39.615	4.9380	205.51	3.9597	110.60
#1	-.00117	-.00962	-.00089	.00325	.01207	-.00003	.43852	-.00005
#2	.00046	.01128	-.00166	.00673	.01267	.00002	.41262	.00028
#3	-.00088	.00557	.00191	.00768	.01332	-.00004	.44492	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**-.00018**	**-.00055**	**.80787**	**.10209**	**.00283**	**.30322**	**.01035**
Stddev	.00027	.00074	.00021	.01933	.10235	.00247	.10069	.00201
%RSD	240.05	405.60	37.754	2.3928	100.25	87.229	33.206	19.451
#1	-.00016	-.00056	-.00072	.79382	.21552	.00537	.22544	.00971
#2	-.00036	.00067	-.00060	.79988	.01665	.00269	.41694	.01261
#3	.00018	-.00065	-.00032	.82991	.07411	.00044	.26727	.00874
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**1.6643**	**-.00043**	**.00696**	**-.00212**	**.00206**	**-.00048**	**.30019**
Stddev	.00034	.0062	.00012	.00390	.00280	.00362	.00328	.03265
%RSD	220.27	.37091	27.746	56.016	132.43	175.27	688.74	10.875
#1	.00053	1.6615	-.00057	.00448	.00063	.00176	.00320	.31997
#2	.00009	1.6601	-.00040	.01145	-.00200	.00582	-.00307	.31810
#3	-.00015	1.6714	-.00033	.00495	-.00498	-.00139	-.00156	.26251
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1606145303SDL Acquired: 7/14/2016 17:42:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 50 Custom ID2: Custom ID3:
Comment: WG574839-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	.01058	.00180	.00054	-.00084	.00053	.00020
Stddev	.00034	.00017	.00415	.00030	.00049	.00009	.00029
%RSD	159.95	1.5849	230.92	54.577	58.644	16.185	144.56
#1	.00060	.01068	.00540	.00087	-.00053	.00059	-.00005
#2	-.00003	.01039	.00274	.00029	-.00141	.00043	.00013
#3	.00006	.01068	-.00274	.00048	-.00058	.00057	.00052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10816.	64472.	2857.3
Stddev	34.	113.	23.0
%RSD	.31429	.17477	.80585
#1	10835.	64560.	2880.7
#2	10836.	64511.	2856.7
#3	10777.	64345.	2834.6

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 17:46:37 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40502	9.9100	.40602	.50773	1.0142	.04883	10.127	.05081
Stddev	.00179	.0087	.00832	.00346	.0072	.00011	.022	.00091
%RSD	.44213	.08795	2.0496	.68106	.70770	.22834	.21412	1.7963
#1	.40611	9.9040	.41249	.50432	1.0220	.04890	10.125	.05116
#2	.40599	9.9059	.40894	.50762	1.0127	.04889	10.106	.05149
#3	.40295	9.9200	.39663	.51124	1.0079	.04870	10.149	.04977
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20259	.48635	.50696	4.0372	50.812	1.0067	9.9299	.50970
Stddev	.00550	.00251	.01316	.0071	.152	.0121	.0711	.00191
%RSD	2.7137	.51616	2.5965	.17562	.29878	1.2068	.71606	.37479
#1	.20577	.48924	.51317	4.0405	50.964	1.0207	9.9709	.51188
#2	.20576	.48510	.51586	4.0420	50.660	1.0007	9.8478	.50833
#3	.19624	.48470	.49184	4.0291	50.813	.99873	9.9710	.50889
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0131	51.135	.50510	10.253	.50913	1.2317	.40886	5.0306
Stddev	.0238	.293	.01238	.206	.00699	.0268	.00599	.0863
%RSD	2.3440	.57276	2.4510	2.0133	1.3726	2.1754	1.4662	1.7158
#1	1.0197	51.469	.51128	10.359	.51487	1.2454	.41393	5.0743
#2	1.0329	51.016	.51317	10.386	.51116	1.2488	.41040	5.0863
#3	.98678	50.921	.49085	10.015	.50135	1.2008	.40224	4.9311
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 17:46:37 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0051**	**1.0186**	**1.0339**	**.50513**	**.96878**	**1.0109**	**.99576**
Stddev	.0319	.0037	.0062	.00274	.00225	.0249	.00174
%RSD	3.1781	.36659	.60141	.54163	.23200	2.4646	.17518
#1	1.0230	1.0225	1.0406	.50694	.96646	1.0242	.99776
#2	1.0241	1.0183	1.0329	.50648	.97095	1.0263	.99454
#3	.96823	1.0150	1.0283	.50199	.96894	.98215	.99498
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10100.**	**59302.**	**2691.8**
Stddev	45.	55.	9.5
%RSD	.44177	.09333	.35199
#1	10083.	59240.	2681.1
#2	10067.	59319.	2694.8
#3	10151.	59346.	2699.3

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 17:50:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.01461**	**-.00102**	**.00459**	**-.00139**	**.00011**	**-.02346**	**.00033**
Stddev	.00171	.00505	.00154	.00097	.00097	.00004	.00830	.00007
%RSD	1002.2	34.589	151.28	21.210	69.809	35.441	35.394	20.973
#1	.00148	.01939	-.00203	.00450	-.00186	.00006	-.02434	.00025
#2	-.00005	.01511	.00075	.00366	-.00205	.00012	-.01475	.00036
#3	-.00194	.00932	-.00177	.00560	-.00028	.00014	-.03128	.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00000**	**.00088**	**.00014**	**-.01037**	**.05229**	**.00303**	**.00649**	**-.00251**
Stddev	.00026	.00059	.00037	.01130	.06064	.00035	.08122	.00211
%RSD	11636.	66.411	273.32	108.91	115.97	11.408	1252.1	84.082
#1	-.00006	.00060	.00015	-.00887	.11443	.00294	-.06118	-.00145
#2	-.00023	.00050	.00050	.00009	-.00673	.00341	-.01592	-.00114
#3	.00029	.00156	-.00024	-.02235	.04916	.00273	.09655	-.00494
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.07541**	**-.00042**	**.00229**	**-.00376**	**.00363**	**-.00589**	**.00316**
Stddev	.00017	.02750	.00132	.00195	.00199	.00549	.00616	.00037
%RSD	120.49	36.468	311.43	85.036	52.994	151.24	104.60	11.789
#1	-.00031	.10259	.00108	.00448	-.00270	.00974	-.01259	.00291
#2	-.00014	.04759	-.00137	.00073	-.00606	-.00090	-.00457	.00359
#3	.00003	.07606	-.00099	.00167	-.00252	.00206	-.00049	.00298
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 17:50:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00070	.00020	.00140	.00232	-.00064	-.00016	.00030
Stddev	.00035	.00046	.00563	.00092	.00014	.00007	.00014
%RSD	50.186	231.25	402.89	39.402	22.523	42.896	46.416
#1	.00030	.00012	-.00354	.00224	-.00051	-.00017	.00015
#2	.00094	-.00022	.00753	.00328	-.00079	-.00021	.00032
#3	.00087	.00070	.00020	.00146	-.00061	-.00008	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10128.	60348.	2685.4
Stddev	14.	210.	10.1
%RSD	.13753	.34805	.37517
#1	10143.	60192.	2684.6
#2	10126.	60587.	2695.9
#3	10115.	60265.	2675.8

Approved: July 16, 2016

Sample Name: L1606164802 Acquired: 7/14/2016 17:54:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00107	-.00118	.00655	.01456	.00009	1.2811	.00025
Stddev	.00056	.00259	.00172	.00151	.00016	.00003	.0222	.00012
%RSD	448.55	242.47	146.10	22.963	1.1200	36.103	1.7355	47.185
#1	.00073	.00327	.00052	.00518	.01470	.00012	1.3066	.00024
#2	-.00037	.00172	-.00113	.00816	.01461	.00006	1.2657	.00037
#3	.00002	-.00178	-.00292	.00632	.01438	.00008	1.2711	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.00020	-.00033	.79599	.06159	.00057	.79547	.21923
Stddev	.00023	.00059	.00093	.04095	.01674	.00049	.05959	.00435
%RSD	71.343	288.17	280.06	5.1450	27.176	85.471	7.4909	1.9828
#1	.00057	-.00047	-.00106	.83822	.04235	.00065	.83446	.22417
#2	.00029	.00058	.00071	.79330	.06962	.00005	.72687	.21751
#3	.00011	.00050	-.00065	.75645	.07279	.00101	.82506	.21600
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	2.1534	.00045	.00319	-.00114	.00031	.00213	.56095
Stddev	.00019	.0089	.00053	.00484	.00194	.00337	.00101	.05192
%RSD	201.37	.41198	119.13	151.73	170.42	1105.6	47.506	9.2554
#1	.00011	2.1484	-.00008	.00080	-.00216	-.00243	.00302	.59583
#2	-.00026	2.1482	.00044	.00001	-.00236	-.00073	.00103	.58574
#3	-.00013	2.1636	.00098	.00876	.00110	.00407	.00235	.50129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1606164802 Acquired: 7/14/2016 17:54:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**.02537**	**.00344**	**.00157**	**-.00084**	**.00102**	**-.00008**
Stddev	.00071	.00070	.00973	.00162	.00053	.00005	.00057
%RSD	900.65	2.7611	282.73	103.42	63.616	4.7393	689.73
#1	.00073	.02616	.01228	.00104	-.00144	.00103	.00007
#2	-.00034	.02510	-.00699	.00338	-.00066	.00107	.00040
#3	-.00063	.02484	.00504	.00028	-.00042	.00097	-.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10908.**	**62915.**	**2874.0**
Stddev	95.	3111.	66.2
%RSD	.86918	4.9445	2.3047
#1	10860.	65247.	2797.6
#2	11017.	59382.	2908.8
#3	10847.	64114.	2915.6

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 17:58:00 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39562	9.6758	.40267	.49695	.98901	.04747	9.8552	.05005
Stddev	.00285	.0544	.00160	.00173	.00427	.00033	.0191	.00043
%RSD	.71914	.56262	.39733	.34797	.43210	.70136	.19402	.85562
#1	.39694	9.6547	.40451	.49628	.98408	.04739	9.8365	.05014
#2	.39236	9.6351	.40175	.49566	.99116	.04719	9.8545	.05043
#3	.39757	9.7377	.40174	.49892	.99178	.04784	9.8747	.04959
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20001	.47608	.49898	3.9000	49.598	.98554	9.6768	.49758
Stddev	.00287	.00256	.00529	.0303	.170	.00642	.1448	.00373
%RSD	1.4340	.53725	1.0611	.77729	.34290	.65182	1.4968	.74932
#1	.20096	.47718	.50147	3.8692	49.525	.99150	9.5285	.49337
#2	.20229	.47316	.50256	3.9011	49.793	.98638	9.6841	.49889
#3	.19679	.47790	.49290	3.9298	49.477	.97874	9.8179	.50048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0015	49.870	.49802	10.094	.50206	1.2116	.40253	4.9544
Stddev	.0112	.101	.00589	.072	.00253	.0088	.00613	.0280
%RSD	1.1189	.20330	1.1824	.71091	.50384	.72549	1.5240	.56455
#1	.99906	49.760	.50088	10.118	.50131	1.2142	.40890	4.9581
#2	1.0138	49.960	.50194	10.150	.50488	1.2188	.40203	4.9804
#3	.99180	49.889	.49125	10.013	.49999	1.2018	.39666	4.9248
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 17:58:00 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99351	.99395	1.0112	.49293	.94523	.99913	.97166
Stddev	.01326	.00261	.0055	.00292	.00397	.01069	.00132
%RSD	1.3343	.26284	.54753	.59227	.42009	1.0703	.13537
#1	.99937	.99094	1.0067	.49621	.94220	1.0038	.97036
#2	1.0028	.99561	1.0095	.49062	.94378	1.0067	.97162
#3	.97833	.99532	1.0174	.49197	.94973	.98689	.97299
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10226.	60388.	2744.5
Stddev	24.	191.	5.7
%RSD	.23139	.31643	.20748
#1	10246.	60540.	2749.8
#2	10233.	60450.	2738.5
#3	10200.	60173.	2745.2

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 18:01:36 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00051	.00678	-.00228	.00501	-.00142	.00008	.01111	.00027
Stddev	.00110	.00653	.00232	.00073	.00131	.00001	.02181	.00008
%RSD	213.70	96.397	101.76	14.642	92.322	14.031	196.38	29.668
#1	.00073	.01376	-.00227	.00583	-.00267	.00007	.03453	.00018
#2	-.00134	.00576	.00003	.00443	-.00006	.00009	-.00862	.00033
#3	-.00092	.00081	-.00461	.00475	-.00152	.00007	.00741	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	.00013	-.00058	-.00686	.06854	.00315	-.00069	-.00079
Stddev	.00024	.00088	.00090	.01367	.08042	.00242	.06290	.00207
%RSD	112.74	654.31	156.19	199.21	117.33	76.612	9161.5	261.19
#1	-.00002	-.00026	-.00043	-.02121	.16129	.00269	.07185	.00133
#2	-.00014	-.00048	-.00154	.00602	.02614	.00577	-.03363	-.00091
#3	-.00049	.00114	.00024	-.00540	.01820	.00100	-.04028	-.00281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.04678	.00021	.00195	-.00404	.00086	-.00164	.00299
Stddev	.00015	.00630	.00092	.00329	.00153	.00280	.00640	.00079
%RSD	545.43	13.474	449.63	168.51	37.895	325.08	389.54	26.502
#1	.00002	.04162	-.00086	-.00063	-.00249	.00038	-.00752	.00249
#2	.00010	.04492	.00081	.00083	-.00406	.00387	.00518	.00391
#3	-.00020	.05381	.00066	.00565	-.00555	-.00166	-.00258	.00258
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 18:01:36 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00055**	**-.00003**	**.00151**	**-.00076**	**-.00078**	**.00004**	**-.00001**
Stddev	.00021	.00041	.00731	.00145	.00094	.00020	.00021
%RSD	37.609	1536.0	483.70	190.37	120.73	504.01	2002.3
#1	.00046	-.00049	-.00537	.00082	-.00111	-.00017	.00006
#2	.00041	.00028	.00072	-.00109	-.00151	.00022	.00016
#3	.00079	.00013	.00918	-.00201	.00028	.00006	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10145.**	**59750.**	**2665.9**
Stddev	97.	143.	14.4
%RSD	.95209	.23955	.54155
#1	10059.	59587.	2653.9
#2	10250.	59809.	2662.0
#3	10125.	59854.	2681.9

Approved: July 16, 2016

Sample Name: LLCCV Acquired: 7/14/2016 18:05:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00661	.15818	.00588	.08209	.00530	.00151	.34264	.00090
Stddev	.00063	.00248	.00364	.00104	.00007	.00005	.02019	.00012
%RSD	9.5020	1.5657	61.772	1.2626	1.3728	3.1340	5.8919	12.908
#1	.00705	.15838	.00312	.08241	.00538	.00153	.32094	.00102
#2	.00589	.15561	.01000	.08093	.00524	.00153	.34613	.00090
#3	.00689	.16055	.00454	.08292	.00527	.00145	.36086	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00367	.00490	.00403	.08175	.76390	.08624	.41759	.00875
Stddev	.00058	.00082	.00055	.02068	.12561	.00364	.03351	.00213
%RSD	15.754	16.716	13.702	25.293	16.443	4.2194	8.0239	24.320
#1	.00364	.00580	.00413	.06281	.72588	.08217	.38666	.00984
#2	.00427	.00473	.00453	.10381	.66170	.08919	.45318	.00630
#3	.00311	.00418	.00344	.07864	.90413	.08736	.41291	.01012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00735	.47173	.01492	.75012	.00788	.08177	.01238	.74304
Stddev	.00100	.01289	.00229	.06823	.00146	.00797	.00388	.06308
%RSD	13.630	2.7329	15.325	9.0955	18.545	9.7448	31.341	8.4891
#1	.00784	.48527	.01689	.78698	.00928	.08472	.01644	.77930
#2	.00800	.45961	.01546	.79199	.00799	.08785	.00871	.77961
#3	.00619	.47031	.01242	.67139	.00636	.07275	.01198	.67020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: LLCCV Acquired: 7/14/2016 18:05:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37878**	**.04087**	**.02946**	**.14136**	**.00680**	**.01608**	**.03982**
Stddev	.04351	.00087	.00456	.01351	.00124	.00164	.00044
%RSD	11.486	2.1186	15.486	9.5540	18.246	10.170	1.1116
#1	.40607	.04181	.02908	.14753	.00644	.01708	.03990
#2	.40165	.04012	.03421	.15068	.00577	.01696	.03935
#3	.32860	.04066	.02511	.12587	.00818	.01419	.04022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10386.**	**61504.**	**2737.8**
Stddev	25.	347.	19.0
%RSD	.24326	.56365	.69312
#1	10412.	61229.	2718.4
#2	10384.	61893.	2738.7
#3	10362.	61390.	2756.3

Approved: July 16, 2016

Sample Name: LLCCV Acquired: 7/14/2016 18:09:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01814	.38138	.01778	.19587	.01750	.00364	.94634	.00215
Stddev	.00115	.00823	.00148	.00171	.00055	.00006	.01361	.00018
%RSD	6.3286	2.1577	8.2993	.87082	3.1240	1.7155	1.4378	8.2170
#1	.01877	.37356	.01903	.19446	.01802	.00371	.96186	.00230
#2	.01681	.38062	.01816	.19777	.01755	.00362	.94074	.00219
#3	.01884	.38997	.01615	.19539	.01693	.00359	.93643	.00196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00915	.00971	.00931	.19221	1.9824	.20140	.95430	.01812
Stddev	.00067	.00040	.00106	.01847	.0200	.00166	.06054	.00070
%RSD	7.3195	4.1424	11.330	9.6080	1.0098	.82529	6.3440	3.8451
#1	.00971	.00943	.01053	.21298	1.9826	.19950	.89514	.01740
#2	.00933	.00954	.00869	.18601	1.9623	.20259	.95162	.01818
#3	.00840	.01017	.00872	.17763	2.0023	.20210	1.0161	.01879
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01790	1.0343	.03732	1.8220	.01595	.18992	.03523	1.8186
Stddev	.00140	.0313	.00326	.1189	.00386	.01072	.00683	.1110
%RSD	7.8195	3.0248	8.7224	6.5275	24.184	5.6425	19.385	6.1036
#1	.01889	1.0701	.03988	1.8975	.02003	.19420	.03873	1.8875
#2	.01851	1.0126	.03843	1.8835	.01545	.19783	.03960	1.8778
#3	.01630	1.0201	.03366	1.6849	.01237	.17773	.02736	1.6906
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: LLCCV Acquired: 7/14/2016 18:09:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.93307	.09982	.05820	.35162	.01804	.03870	.09683
Stddev	.08318	.00063	.00625	.02117	.00063	.00305	.00041
%RSD	8.9147	.63352	10.746	6.0213	3.5033	7.8874	.42610
#1	.98523	.10014	.05584	.36688	.01825	.04056	.09683
#2	.97683	.10022	.06529	.36052	.01733	.04037	.09724
#3	.83714	.09909	.05347	.32745	.01855	.03518	.09642
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10457.	62211.	2747.1
Stddev	3.	92.	23.7
%RSD	.03101	.14829	.86154
#1	10453.	62106.	2722.1
#2	10458.	62282.	2750.0
#3	10459.	62244.	2769.2

Approved: July 16, 2016

Sample Name: PBW AI Acquired: 7/14/2016 18:13:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575642-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00062**	**.00879**	**.00152**	**.00453**	**-.00208**	**.00007**	**-.05132**	**.00006**
Stddev	.00014	.00344	.00151	.00213	.00083	.00004	.01516	.00019
%RSD	22.643	39.122	99.226	47.046	39.847	65.973	29.537	344.60
#1	-.00057	.00763	.00324	.00406	-.00151	.00002	-.05696	.00023
#2	-.00051	.00608	.00088	.00267	-.00170	.00010	-.06285	.00008
#3	-.00078	.01266	.00043	.00686	-.00303	.00009	-.03415	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00029**	**.00032**	**.00025**	**.01264**	**.00126**	**.00346**	**-.00775**	**-.00149**
Stddev	.00048	.00018	.00085	.05521	.05350	.00385	.07031	.00242
%RSD	166.92	55.845	340.06	436.66	4235.0	111.30	907.47	162.53
#1	-.00003	.00053	-.00051	.06876	.05652	-.00088	-.04806	-.00021
#2	.00001	.00023	.00117	-.04161	-.05028	.00480	-.04863	.00003
#3	-.00084	.00021	.00009	.01078	-.00245	.00645	.07344	-.00428
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**.08915**	**-.00066**	**.00357**	**-.00275**	**-.00083**	**-.00515**	**.00483**
Stddev	.00056	.00908	.00081	.01181	.00081	.00328	.00155	.00200
%RSD	528.28	10.181	122.62	330.92	29.335	397.63	30.110	41.359
#1	-.00070	.09434	-.00130	-.00067	-.00353	.00018	-.00338	.00255
#2	.00041	.07867	-.00092	.01692	-.00281	-.00449	-.00626	.00629
#3	-.00003	.09444	.00025	-.00554	-.00191	.00184	-.00581	.00565
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: PBW AI Acquired: 7/14/2016 18:13:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575642-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	-.00006	.00586	-.00048	-.00105	.00091	.00029
Stddev	.00037	.00030	.00193	.00208	.00029	.00007	.00004
%RSD	41.022	537.12	32.852	431.90	27.420	7.3703	13.578
#1	.00127	.00029	.00808	.00166	-.00130	.00096	.00030
#2	.00092	-.00020	.00496	-.00250	-.00111	.00094	.00025
#3	.00052	-.00025	.00455	-.00060	-.00074	.00084	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10258.	61416.	2717.9
Stddev	12.	59.	20.6
%RSD	.11587	.09588	.75849
#1	10258.	61470.	2741.7
#2	10246.	61353.	2707.0
#3	10270.	61423.	2705.1

Approved: July 16, 2016

Sample Name: LCSW Al Acquired: 7/14/2016 18:17:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575642-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19104**	**4.7905**	**.19568**	**.95041**	**.49866**	**.02300**	**5.0434**	**.02438**
Stddev	.00176	.0180	.00354	.00074	.00411	.00006	.0973	.00048
%RSD	.92174	.37537	1.8068	.07765	.82384	.25803	1.9292	1.9838
#1	.19162	4.8108	.19976	.95010	.50181	.02302	5.0832	.02443
#2	.18906	4.7766	.19386	.94989	.49401	.02305	4.9325	.02484
#3	.19243	4.7840	.19343	.95126	.50016	.02294	5.1145	.02388
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09864**	**.23858**	**.24807**	**1.9994**	**24.569**	**.50440**	**4.9501**	**.24818**
Stddev	.00244	.00170	.00607	.0185	.319	.00217	.1531	.00408
%RSD	2.4704	.71445	2.4456	.92748	1.2993	.42994	3.0923	1.6422
#1	.10075	.23745	.25283	2.0209	24.833	.50297	4.9356	.25137
#2	.09919	.24054	.25013	1.9891	24.214	.50333	4.8048	.24358
#3	.09597	.23775	.24124	1.9883	24.659	.50689	5.1099	.24957
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49892**	**24.891**	**.24838**	**4.7838**	**.24775**	**.59079**	**.18434**	**2.4501**
Stddev	.01134	.205	.00521	.0926	.00122	.01390	.00456	.0393
%RSD	2.2727	.82397	2.0958	1.9362	.49379	2.3526	2.4731	1.6031
#1	.50776	25.076	.25257	4.8577	.24858	.60075	.18939	2.4864
#2	.50286	24.671	.25001	4.8139	.24634	.59671	.18052	2.4555
#3	.48614	24.927	.24255	4.6799	.24832	.57491	.18311	2.4084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: LCSW Al Acquired: 7/14/2016 18:17:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575642-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49215	.50929	.50906	.24622	.47603	.48824	.00095
Stddev	.01389	.00372	.00514	.00227	.00100	.01112	.00019
%RSD	2.8220	.73007	1.0099	.92293	.20963	2.2776	19.999
#1	.50251	.51043	.51234	.24794	.47669	.49690	.00106
#2	.49758	.50513	.51170	.24708	.47652	.49211	.00073
#3	.47637	.51230	.50313	.24365	.47488	.47570	.00105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10206.	60624.	2723.1
Stddev	36.	334.	13.2
%RSD	.35397	.55113	.48528
#1	10166.	60243.	2708.8
#2	10218.	60864.	2735.0
#3	10235.	60765.	2725.5

Approved: July 16, 2016

Sample Name: L1607022707 Acquired: 7/14/2016 18:20:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575642-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00085**	**.44765**	**-.00129**	**.00652**	**.02687**	**.00011**	**.49583**	**.00043**
Stddev	.00072	.01207	.00127	.00179	.00100	.00013	.02126	.00005
%RSD	85.434	2.6964	98.360	27.514	3.7109	111.96	4.2872	11.849
#1	-.00080	.45020	-.00009	.00680	.02736	.00020	.50379	.00044
#2	-.00159	.45825	-.00117	.00816	.02752	.00017	.51196	.00048
#3	-.00015	.43451	-.00261	.00460	.02572	-.00003	.47174	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00043**	**.00305**	**.00172**	**1.0939**	**.66243**	**.00575**	**.46543**	**.03027**
Stddev	.00030	.00112	.00051	.0179	.05846	.00200	.02786	.00030
%RSD	69.259	36.675	29.760	1.6398	8.8257	34.837	5.9860	.98112
#1	.00023	.00176	.00227	1.1093	.60799	.00635	.49539	.03055
#2	.00029	.00367	.00162	1.0984	.72422	.00739	.46061	.03031
#3	.00077	.00372	.00126	1.0742	.65507	.00352	.44030	.02996
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**1.5449**	**.00146**	**.02068**	**-.00097**	**.00084**	**-.00605**	**3.3514**
Stddev	.00013	.0185	.00107	.00100	.00276	.00035	.00263	.2686
%RSD	206.18	1.1996	72.933	4.8507	283.85	41.515	43.406	8.0141
#1	-.00013	1.5620	.00242	.01953	-.00410	.00073	-.00302	3.5112
#2	.00008	1.5475	.00166	.02110	.00113	.00056	-.00747	3.5016
#3	-.00014	1.5252	.00031	.02140	.00005	.00123	-.00767	3.0413
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607022707 Acquired: 7/14/2016 18:20:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575642-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.00537	.00269	.00188	-.00004	.00941	.00032
Stddev	.00069	.00003	.00161	.00073	.00054	.00087	.00022
%RSD	98.810	.52929	59.716	38.591	1212.3	9.2160	69.222
#1	.00088	.00534	.00455	.00154	-.00037	.00989	.00057
#2	.00126	.00539	.00170	.00271	.00058	.00994	.00019
#3	-.00007	.00539	.00183	.00139	-.00034	.00841	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10310.	61629.	2755.3
Stddev	28.	99.	9.0
%RSD	.27254	.16018	.32655
#1	10339.	61626.	2763.1
#2	10308.	61531.	2757.4
#3	10282.	61729.	2745.4

Approved: July 16, 2016

Sample Name: L1607022708S Acquired: 7/14/2016 18:24:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575642-09

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19550	5.6775	.19759	.95807	.53028	.02352	5.5452	.02480
Stddev	.00247	.0128	.00267	.00214	.00310	.00005	.0535	.00051
%RSD	1.2653	.22490	1.3535	.22297	.58483	.21530	.96417	2.0560
#1	.19287	5.6898	.19612	.95617	.53385	.02358	5.5776	.02526
#2	.19778	5.6643	.20067	.96039	.52831	.02348	5.4835	.02487
#3	.19584	5.6782	.19596	.95766	.52868	.02351	5.5745	.02425
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10096	.24869	.25251	3.7351	25.213	.50997	5.4910	.29661
Stddev	.00248	.00054	.00601	.0203	.058	.00053	.0552	.00594
%RSD	2.4583	.21556	2.3818	.54270	.23011	.10314	1.0054	2.0032
#1	.10272	.24853	.25686	3.7148	25.279	.51004	5.5382	.30330
#2	.10205	.24825	.25501	3.7553	25.168	.51046	5.4303	.29194
#3	.09812	.24928	.24564	3.7351	25.193	.50942	5.5044	.29458
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50600	26.600	.25456	4.8437	.24996	.59212	.18796	6.4818
Stddev	.01147	.115	.00592	.0868	.00654	.01404	.00372	.0986
%RSD	2.2666	.43283	2.3248	1.7915	2.6156	2.3705	1.9795	1.5211
#1	.51270	26.719	.25837	4.9007	.25677	.59936	.18900	6.5415
#2	.51253	26.489	.25758	4.8865	.24938	.60106	.19105	6.5359
#3	.49275	26.593	.24775	4.7438	.24373	.57594	.18383	6.3680
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607022708S Acquired: 7/14/2016 18:24:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575642-09

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50104	.51889	.51211	.24722	.48519	.50869	.00149
Stddev	.01237	.00285	.00240	.00365	.00079	.01116	.00020
%RSD	2.4680	.55000	.46875	1.4783	.16216	2.1940	13.531
#1	.50851	.51856	.51363	.24768	.48556	.51566	.00133
#2	.50784	.51622	.51336	.25062	.48429	.51459	.00172
#3	.48677	.52190	.50934	.24335	.48573	.49582	.00143
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10113.	59854.	2703.6
Stddev	37.	73.	13.6
%RSD	.36251	.12212	.50210
#1	10078.	59790.	2688.2
#2	10111.	59838.	2713.9
#3	10151.	59933.	2708.8

Approved: July 16, 2016

Sample Name: L1607022709SD Acquired: 7/14/2016 18:28:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575642-10

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19031	5.5331	.19557	.94235	.51893	.02317	5.5136	.02447
Stddev	.00148	.0093	.00257	.00232	.00095	.00012	.0307	.00068
%RSD	.78030	.16840	1.3157	.24575	.18360	.53767	.55655	2.7921
#1	.18871	5.5267	.19686	.94107	.52003	.02307	5.5482	.02519
#2	.19164	5.5438	.19724	.94502	.51831	.02331	5.5029	.02438
#3	.19059	5.5288	.19261	.94095	.51845	.02314	5.4897	.02383
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09957	.24355	.24984	3.5313	24.841	.50022	5.3178	.28791
Stddev	.00223	.00097	.00549	.0119	.075	.00298	.0282	.00230
%RSD	2.2443	.39636	2.1976	.33715	.30359	.59648	.52947	.79975
#1	.10114	.24244	.25178	3.5449	24.766	.49854	5.3266	.28832
#2	.10057	.24422	.25409	3.5227	24.840	.49846	5.2863	.28543
#3	.09701	.24398	.24364	3.5264	24.917	.50367	5.3405	.28998
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50008	26.068	.25175	4.7751	.24921	.58750	.18800	6.2927
Stddev	.00975	.059	.00651	.0681	.00363	.01283	.00574	.0823
%RSD	1.9500	.22512	2.5846	1.4258	1.4556	2.1832	3.0532	1.3070
#1	.50704	26.133	.25537	4.8219	.25014	.59571	.18845	6.3510
#2	.50427	26.052	.25565	4.8065	.25228	.59406	.19351	6.3284
#3	.48893	26.019	.24424	4.6970	.24521	.57272	.18205	6.1986
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607022709SD Acquired: 7/14/2016 18:28:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575642-10

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49520**	**.50999**	**.50488**	**.24556**	**.47605**	**.50046**	**.00118**
Stddev	.01218	.00125	.00775	.00389	.00016	.00984	.00059
%RSD	2.4588	.24599	1.5355	1.5858	.03330	1.9654	49.846
#1	.50303	.50956	.51259	.25005	.47623	.50613	.00051
#2	.50140	.50900	.49708	.24332	.47593	.50614	.00143
#3	.48117	.51140	.50497	.24331	.47599	.48910	.00159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10100.**	**60050.**	**2699.3**
Stddev	24.	19.	11.1
%RSD	.23650	.03132	.41284
#1	10073.	60070.	2694.1
#2	10119.	60034.	2712.1
#3	10109.	60044.	2691.7

Approved: July 16, 2016

Sample Name: L1607018402 Acquired: 7/14/2016 18:32:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00096	.02362	.00255	.03532	.19901	.00005	24.251
Stddev	.00099	.00866	.00098	.00289	.00346	.00005	.545
%RSD	103.09	36.651	38.471	8.1931	1.7390	96.051	2.2476
#1	-.00209	.01647	.00328	.03719	.19555	.00004	23.635
#2	-.00049	.02113	.00292	.03678	.19900	.00010	24.450
#3	-.00029	.03324	.00143	.03199	.20248	.00000	24.669
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.00277	.00380	.00127	.17941	.87256	.02255
Stddev	.00004	.00016	.00055	.00046	.00783	.05192	.00184
%RSD	11.603	5.9067	14.405	36.320	4.3634	5.9503	8.1737
#1	.00039	.00259	.00438	.00181	.17047	.84183	.02204
#2	.00036	.00283	.00370	.00103	.18507	.93251	.02459
#3	.00031	.00290	.00330	.00098	.18267	.84334	.02101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	37.002	.03185	.00082	F 360.94	.00612	1.5220	.00103
Stddev	.463	.00078	.00011	7.30	.00015	.0566	.00409
%RSD	1.2514	2.4476	13.777	2.0230	2.4941	3.7173	397.71
#1	36.573	.03105	.00082	352.63	.00601	1.5557	.00218
#2	36.941	.03191	.00093	363.85	.00605	1.5536	.00442
#3	37.493	.03261	.00070	366.33	.00629	1.4567	-.00352
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 16, 2016

Sample Name: L1607018402 Acquired: 7/14/2016 18:32:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	-.00133	14.872	-.00050	.47650	-.00531	-.00047
Stddev	.00505	.00221	.487	.00041	.01088	.00634	.00130
%RSD	3357.9	165.92	3.2745	83.489	2.2841	119.38	279.32
#1	.00469	.00117	15.167	-.00097	.46420	-.01155	.00062
#2	-.00528	-.00214	15.139	-.00018	.48042	.00112	-.00191
#3	.00105	-.00301	14.310	-.00034	.48488	-.00549	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00063	.02239	.00003
Stddev	.00029	.00102	.00024
%RSD	45.422	4.5751	876.89
#1	-.00090	.02303	-.00025
#2	-.00066	.02293	.00014
#3	-.00033	.02121	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9678.5	56910.	2587.2
Stddev	11.7	54.	107.7
%RSD	.12109	.09453	4.1621
#1	9676.3	56972.	2462.9
#2	9691.2	56882.	2648.5
#3	9668.0	56875.	2650.2

Approved: July 16, 2016

Sample Name: L1607018402PS Acquired: 7/14/2016 18:35:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576077-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19966**	**5.1303**	**.21107**	**1.0392**	**.70423**	**.02484**	**27.658**
Stddev	.00103	.0270	.00116	.0068	.00037	.00013	.071
%RSD	.51770	.52706	.55086	.65250	.05199	.50579	.25640
#1	.20052	5.1609	.21112	1.0468	.70428	.02499	27.583
#2	.19851	5.1205	.21221	1.0338	.70456	.02476	27.724
#3	.19994	5.1095	.20988	1.0369	.70384	.02478	27.667
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02544**	**.10331**	**.25359**	**.25401**	**2.2078**	**27.041**	**.54992**
Stddev	.00042	.00154	.00170	.00434	.0127	.142	.00036
%RSD	1.6586	1.4913	.67171	1.7082	.57425	.52529	.06534
#1	.02559	.10430	.25555	.25535	2.2083	27.201	.54998
#2	.02577	.10409	.25271	.25753	2.1949	26.992	.55025
#3	.02497	.10154	.25250	.24916	2.2202	26.930	.54953
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**39.054**	**.28985**	**.52264**	F **357.98**	**.25769**	**6.5377**	**.25096**
Stddev	.110	.00189	.00940	.85	.00425	.0792	.00291
%RSD	.28249	.65218	1.7983	.23622	1.6483	1.2113	1.1605
#1	39.058	.29203	.52827	358.46	.26050	6.5869	.25431
#2	39.162	.28867	.52785	358.47	.25977	6.5799	.24959
#3	38.942	.28884	.51179	357.00	.25281	6.4464	.24899
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 16, 2016

Sample Name: L1607018402PS Acquired: 7/14/2016 18:35:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576077-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.61751	.19988	16.125	.51681	.94395	.52659	.24609
Stddev	.01270	.00327	.190	.01133	.00264	.00971	.00234
%RSD	2.0563	1.6344	1.1808	2.1917	.27969	1.8446	.94944
#1	.62911	.20140	16.255	.52368	.94544	.53340	.24874
#2	.61946	.20211	16.213	.52302	.94550	.53090	.24435
#3	.60394	.19613	15.906	.50374	.94090	.51547	.24516
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.50633	.52597	.00131
Stddev	.00231	.00878	.00047
%RSD	.45531	1.6697	36.282
#1	.50899	.53105	.00076
#2	.50511	.53102	.00155
#3	.50489	.51583	.00162
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9652.2	56294.	2604.4
Stddev	17.8	154.	10.5
%RSD	.18482	.27426	.40136
#1	9632.2	56116.	2604.2
#2	9657.7	56399.	2594.0
#3	9666.6	56365.	2614.9

Approved: July 16, 2016

Sample Name: L1607018402SDL Acquired: 7/14/2016 18:39:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG576077-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00029	.00715	-.00194	.01023	.04028	.00010	5.0005	.00002
Stddev	.00075	.00272	.00278	.00286	.00134	.00008	.0564	.00022
%RSD	257.81	38.019	142.88	27.968	3.3287	82.933	1.1280	1208.1
#1	-.00078	.00590	.00096	.01160	.04114	.00000	4.9626	-.00011
#2	.00057	.00528	-.00222	.00694	.03873	.00014	4.9735	.00027
#3	-.00066	.01026	-.00457	.01215	.04097	.00014	5.0653	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00087	.00079	.03530	.13346	.00710	7.7658	.00338
Stddev	.00031	.00074	.00022	.02061	.07975	.00570	.1819	.00027
%RSD	101.35	84.995	28.131	58.380	59.755	80.277	2.3426	8.0358
#1	.00060	.00170	.00094	.05085	.13427	.00426	7.5591	.00352
#2	.00034	.00030	.00053	.04313	.21280	.00338	7.8367	.00306
#3	-.00002	.00061	.00088	.01192	.05331	.01367	7.9016	.00354
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	74.357	.00048	.30477	-.00365	.00135	-.00429	2.9898
Stddev	.00023	.284	.00134	.02615	.00065	.00092	.00419	.2514
%RSD	2134.0	.38197	278.93	8.5797	17.813	68.086	97.800	8.4087
#1	-.00027	74.136	.00161	.31554	-.00334	.00061	.00048	3.1349
#2	.00017	74.258	-.00100	.32381	-.00321	.00238	-.00739	3.1349
#3	.00007	74.677	.00082	.27496	-.00439	.00105	-.00594	2.6995
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607018402SDL Acquired: 7/14/2016 18:39:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG576077-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00012**	**.09696**	**.00086**	**-.00074**	**-.00046**	**.00502**	**.00042**
Stddev	.00017	.00107	.00140	.00310	.00014	.00067	.00005
%RSD	140.36	1.0986	163.38	419.92	30.741	13.361	11.144
#1	-.00025	.09575	.00117	-.00029	-.00030	.00535	.00045
#2	-.00018	.09740	-.00067	-.00404	-.00051	.00546	.00043
#3	.00007	.09774	.00207	.00211	-.00057	.00424	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10094.**	**59213.**	**2652.8**
Stddev	33.	128.	10.1
%RSD	.32887	.21662	.38137
#1	10059.	59337.	2641.8
#2	10098.	59081.	2661.7
#3	10125.	59221.	2654.8

Approved: July 16, 2016

Sample Name: L1607018402SDL Acquired: 7/14/2016 18:43:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG576077-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00140**	**.00543**	**.00160**	**.00313**	**.00649**	**.00003**	**.94357**	**.00015**
Stddev	.00009	.00303	.00227	.00210	.00074	.00005	.05096	.00021
%RSD	6.5955	55.716	141.55	66.973	11.372	200.58	5.4009	145.05
#1	-.00149	.00340	.00188	.00233	.00703	.00006	.91001	-.00010
#2	-.00140	.00398	-.00079	.00156	.00565	-.00004	1.0022	.00023
#3	-.00131	.00891	.00372	.00552	.00680	.00006	.91850	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**-.00003**	**-.00096**	**.00824**	**.02174**	**.00561**	**1.5096**	**-.00106**
Stddev	.00028	.00100	.00100	.02391	.04821	.00145	.0163	.00168
%RSD	147.11	3663.4	103.80	290.09	221.75	25.749	1.0825	158.93
#1	-.00002	-.00106	-.00211	.02676	.07372	.00614	1.5270	.00041
#2	.00051	.00093	-.00028	.01671	.01303	.00398	1.5072	-.00069
#3	.00009	.00005	-.00049	-.01875	-.02152	.00672	1.4946	-.00290
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**14.665**	**-.00012**	**.05905**	**-.00143**	**.00092**	**-.00253**	**.57889**
Stddev	.00017	.120	.00046	.00472	.00244	.00347	.00611	.04408
%RSD	343.68	.81508	394.89	7.9847	170.66	377.63	241.97	7.6140
#1	-.00024	14.553	.00031	.06372	-.00143	-.00031	-.00223	.60370
#2	-.00001	14.653	-.00060	.05914	-.00387	-.00177	-.00879	.60497
#3	.00010	14.791	-.00005	.05429	.00101	.00483	.00343	.52800
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607018402SDL Acquired: 7/14/2016 18:43:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG576077-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.01896	.00412	.00188	-.00064	.00136	.00011
Stddev	.00066	.00030	.00868	.00401	.00066	.00014	.00041
%RSD	336.82	1.5563	210.77	214.04	103.73	10.271	381.79
#1	.00006	.01863	.01370	.00326	-.00134	.00138	.00017
#2	-.00039	.01918	-.00321	-.00265	-.00056	.00149	.00049
#3	.00091	.01907	.00187	.00501	-.00002	.00122	-.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10529.	62154.	2747.0
Stddev	53.	186.	14.9
%RSD	.49874	.29862	.54105
#1	10578.	62228.	2754.9
#2	10534.	62290.	2756.3
#3	10474.	61942.	2729.9

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 18:47:17 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41638**	**10.254**	**.41978**	**.51594**	**1.0385**	**.05069**	**10.349**	**.05213**
Stddev	.00126	.022	.00768	.00251	.0085	.00028	.105	.00103
%RSD	.30159	.21084	1.8283	.48644	.81834	.55861	1.0116	1.9802
#1	.41668	10.268	.42604	.51793	1.0463	.05092	10.374	.05297
#2	.41745	10.265	.42210	.51312	1.0294	.05077	10.234	.05245
#3	.41500	10.229	.41122	.51676	1.0400	.05037	10.439	.05098
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20949**	**.50819**	**.51993**	**4.1519**	**52.009**	**1.0219**	**10.281**	**.52578**
Stddev	.00439	.00215	.00982	.0075	.375	.0034	.074	.00569
%RSD	2.0955	.42317	1.8889	.18001	.72159	.33698	.72375	1.0813
#1	.21271	.51067	.52603	4.1560	52.282	1.0222	10.363	.53229
#2	.21128	.50680	.52516	4.1565	51.581	1.0183	10.217	.52326
#3	.20449	.50710	.50860	4.1433	52.163	1.0251	10.264	.52179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0346**	**51.849**	**.51838**	**10.436**	**.51803**	**1.2533**	**.41942**	**5.1018**
Stddev	.0236	.297	.01336	.190	.00759	.0263	.00928	.1121
%RSD	2.2840	.57216	2.5763	1.8175	1.4643	2.1011	2.2132	2.1966
#1	1.0500	52.103	.52725	10.558	.52082	1.2709	.42296	5.1667
#2	1.0463	51.523	.52487	10.533	.52382	1.2660	.42641	5.1662
#3	1.0074	51.920	.50302	10.218	.50945	1.2230	.40889	4.9724
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 18:47:17 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0427**	**1.0416**	**1.0509**	**.52049**	**1.0117**	**1.0311**	**1.0331**
Stddev	.0278	.0070	.0106	.00098	.0040	.0216	.0077
%RSD	2.6644	.67006	1.0035	.18830	.39046	2.0897	.74777
#1	1.0595	1.0470	1.0594	.52161	1.0151	1.0452	1.0407
#2	1.0579	1.0337	1.0391	.52008	1.0126	1.0418	1.0253
#3	1.0106	1.0440	1.0542	.51979	1.0073	1.0063	1.0334
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9841.2**	**57511.**	**2600.8**
Stddev	16.9	190.	11.7
%RSD	.17141	.33075	.44824
#1	9829.6	57365.	2588.5
#2	9860.6	57441.	2611.7
#3	9833.5	57726.	2602.1

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 18:50:53 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00167	.00676	-.00195	.00644	.00004	.00009	.00370	.00022
Stddev	.00139	.00289	.00161	.00164	.00084	.00004	.00683	.00024
%RSD	83.555	42.711	82.319	25.488	2374.5	44.218	184.55	108.45
#1	-.00029	.00343	-.00200	.00820	-.00028	.00006	.00688	-.00002
#2	-.00164	.00826	-.00032	.00615	-.00060	.00014	.00836	.00023
#3	-.00307	.00860	-.00353	.00496	.00098	.00008	-.00414	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00012	.00036	-.00018	.01095	.01489	.00303	-.01140	-.00260
Stddev	.00043	.00056	.00066	.00899	.06241	.00247	.02510	.00232
%RSD	359.60	156.11	361.18	82.112	419.23	81.535	220.23	89.258
#1	-.00055	-.00029	-.00070	.01645	.06255	.00050	-.01686	-.00478
#2	.00032	.00067	.00056	.01581	-.05575	.00544	-.03332	-.00284
#3	-.00014	.00070	-.00040	.00057	.03787	.00315	.01599	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.07094	-.00117	-.00036	-.00305	.00141	-.00064	.00259
Stddev	.00014	.01016	.00068	.00480	.00368	.00420	.00347	.00230
%RSD	383.44	14.327	57.747	1316.6	120.71	296.66	542.77	88.843
#1	.00007	.06763	-.00048	-.00584	-.00234	-.00306	-.00406	.00307
#2	-.00012	.06285	-.00120	.00311	.00022	.00526	.00288	.00462
#3	.00016	.08235	-.00183	.00164	-.00704	.00204	-.00073	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 18:50:53 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00076**	**-.00003**	**-.00039**	**.00070**	**-.00021**	**-.00002**	**-.00018**
Stddev	.00044	.00025	.00097	.00147	.00031	.00016	.00044
%RSD	58.080	923.19	247.76	210.95	146.50	830.62	242.17
#1	.00031	-.00031	.00048	.00237	.00010	-.00020	-.00030
#2	.00078	.00016	-.00022	-.00040	-.00022	.00006	.00031
#3	.00120	.00007	-.00144	.00013	-.00053	.00008	-.00055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9960.5**	**59240.**	**2614.8**
Stddev	32.3	55.	20.4
%RSD	.32467	.09206	.78153
#1	9962.2	59210.	2592.4
#2	9992.0	59207.	2619.6
#3	9927.4	59303.	2632.3

Approved: July 16, 2016

Sample Name: L1607020901 Acquired: 7/14/2016 18:54:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00081	.01289	-.00008	.01132	-.00011	.00006	15.887	.00010
Stddev	.00061	.00507	.00419	.00134	.00112	.00005	.038	.00016
%RSD	75.574	39.360	5498.5	11.870	1050.0	89.763	.23710	170.78
#1	-.00121	.01489	-.00478	.01104	-.00135	-.00000	15.907	-.00009
#2	-.00010	.01665	.00327	.01013	.00082	.00010	15.844	.00022
#3	-.00111	.00712	.00128	.01277	.00021	.00008	15.911	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.00143	.00062	.06158	.27050	.00535	4.9301	-.00063
Stddev	.00015	.00030	.00045	.01176	.04396	.00311	.0764	.00327
%RSD	197.54	20.643	73.127	19.097	16.251	58.162	1.5486	521.04
#1	.00020	.00135	.00016	.07304	.22058	.00479	4.9545	.00309
#2	.00011	.00175	.00106	.04954	.28751	.00256	4.9912	-.00191
#3	-.00009	.00118	.00064	.06216	.30342	.00871	4.8445	-.00306
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	5.1049	-.00085	.00824	-.00229	.00118	-.00350	2.6733
Stddev	.00016	.0091	.00068	.00438	.00177	.00214	.00437	.1843
%RSD	109.72	.17875	80.610	53.127	77.156	181.34	124.95	6.8934
#1	.00026	5.1147	-.00027	.00590	-.00092	.00338	-.00088	2.7755
#2	-.00004	5.0966	-.00160	.00553	-.00166	.00104	-.00854	2.7839
#3	.00021	5.1035	-.00067	.01330	-.00429	-.00089	-.00107	2.4606
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607020901 Acquired: 7/14/2016 18:54:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.02291	.00516	.00000	-.00052	.00227	.00035
Stddev	.00018	.00027	.00416	.00340	.00031	.00038	.00014
%RSD	311.43	1.1637	80.747	157240.	59.424	16.598	39.621
#1	.00016	.02284	.00878	.00348	-.00076	.00243	.00025
#2	-.00015	.02268	.00061	-.00331	-.00017	.00254	.00051
#3	.00017	.02320	.00608	-.00016	-.00064	.00184	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10038.	59832.	2662.8
Stddev	31.	235.	16.0
%RSD	.30642	.39356	.60015
#1	10063.	59590.	2668.9
#2	10047.	60060.	2674.7
#3	10004.	59845.	2644.6

Approved: July 16, 2016

Sample Name: L1607020902 Acquired: 7/14/2016 18:58:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00069	.01216	-.00047	.02119	.02820	.00007	32.607	.00042
Stddev	.00051	.00651	.00111	.00148	.00099	.00005	.301	.00020
%RSD	73.537	53.536	237.35	6.9864	3.5267	78.355	.92439	47.888
#1	-.00123	.01832	.00061	.01970	.02932	.00006	32.779	.00063
#2	-.00064	.01280	-.00041	.02266	.02743	.00012	32.783	.00023
#3	-.00021	.00535	-.00161	.02122	.02784	.00002	32.259	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.00103	.00213	.66892	.63359	.00932	12.097	.01620
Stddev	.00039	.00050	.00044	.00711	.11312	.00262	.246	.00021
%RSD	111.14	48.651	20.526	1.0622	17.855	28.065	2.0350	1.3010
#1	-.00003	.00052	.00257	.67088	.62142	.01219	12.370	.01634
#2	.00034	.00152	.00214	.67484	.52704	.00708	12.029	.01596
#3	.00075	.00106	.00169	.66104	.75230	.00868	11.892	.01629
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	3.4436	-.00055	.01043	-.00360	.00025	-.00266	2.5148
Stddev	.00033	.0220	.00126	.00180	.00441	.00400	.00255	.1435
%RSD	219.40	.63881	229.90	17.243	122.33	1603.0	95.659	5.7075
#1	-.00020	3.4689	-.00080	.01205	-.00066	.00401	-.00383	2.5930
#2	.00021	3.4329	-.00167	.01073	-.00148	.00070	-.00443	2.6023
#3	.00045	3.4291	.00082	.00849	-.00867	-.00396	.00026	2.3492
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607020902 Acquired: 7/14/2016 18:58:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.08855	-.00634	.00318	-.00030	.00627	.00018
Stddev	.00023	.00068	.00566	.00128	.00034	.00057	.00065
%RSD	326.84	.76311	89.215	40.278	116.08	9.0130	359.84
#1	-.00015	.08832	-.00776	.00445	-.00045	.00665	.00049
#2	.00031	.08931	-.01116	.00320	-.00053	.00655	-.00056
#3	.00005	.08801	-.00011	.00189	.00010	.00562	.00061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10036.	59631.	2653.9
Stddev	11.	142.	24.0
%RSD	.10510	.23880	.90462
#1	10047.	59476.	2646.1
#2	10033.	59757.	2634.8
#3	10027.	59660.	2680.9

Approved: July 16, 2016

Sample Name: L1607020903 Acquired: 7/14/2016 19:02:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00051	.00794	-.00310	.00634	.00944	.00007	5.9632	.00040
Stddev	.00187	.00442	.00091	.00237	.00090	.00006	.0182	.00023
%RSD	369.92	55.671	29.413	37.368	9.5825	81.526	.30477	58.908
#1	-.00249	.01084	-.00258	.00785	.01026	.00002	5.9449	.00020
#2	-.00024	.01014	-.00415	.00361	.00959	.00013	5.9636	.00065
#3	.00122	.00285	-.00256	.00757	.00847	.00005	5.9813	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	-.00009	-.00035	.73554	.16610	.00403	2.3587	.01060
Stddev	.00012	.00075	.00041	.04316	.06942	.00142	.0945	.00064
%RSD	32.323	861.48	118.18	5.8675	41.791	35.205	4.0076	6.0197
#1	-.00040	-.00083	-.00078	.75831	.24378	.00437	2.4670	.01108
#2	-.00023	.00067	-.00029	.76255	.14438	.00525	2.2932	.00987
#3	-.00045	-.00010	.00003	.68577	.11014	.00247	2.3157	.01084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	1.4958	-.00063	.05359	-.00279	-.00031	-.00595	2.7102
Stddev	.00047	.0351	.00028	.00738	.00305	.00390	.00297	.1656
%RSD	396.92	2.3487	44.565	13.764	109.39	1252.1	49.837	6.1117
#1	.00048	1.4996	-.00093	.05673	-.00238	.00247	-.00581	2.8017
#2	-.00041	1.5288	-.00039	.05888	.00004	.00136	-.00899	2.8100
#3	.00029	1.4589	-.00056	.04517	-.00602	-.00477	-.00306	2.5190
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607020903 Acquired: 7/14/2016 19:02:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.01420	.00691	-.00133	-.00035	.06076	.00024
Stddev	.00093	.00041	.00626	.00159	.00062	.00483	.00043
%RSD	728.33	2.9028	90.536	119.77	177.64	7.9438	180.72
#1	.00111	.01462	.01381	-.00053	.00030	.06370	.00060
#2	-.00000	.01380	.00162	-.00317	-.00041	.06339	-.00024
#3	-.00073	.01416	.00530	-.00030	-.00093	.05519	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10088.	59706.	2640.5
Stddev	26.	142.	24.3
%RSD	.25598	.23773	.92108
#1	10109.	59792.	2625.9
#2	10095.	59542.	2627.1
#3	10059.	59784.	2668.6

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 19:06:34 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41635	10.260	.41810	.51243	1.0390	.05072	10.353	.05196
Stddev	.00315	.007	.00346	.00142	.0062	.00003	.076	.00104
%RSD	.75659	.07078	.82749	.27758	.59143	.06326	.73188	2.0087
#1	.41876	10.259	.42167	.51227	1.0335	.05068	10.323	.05267
#2	.41751	10.253	.41787	.51392	1.0457	.05073	10.439	.05246
#3	.41279	10.268	.41476	.51109	1.0379	.05074	10.297	.05076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20944	.50920	.52058	4.1813	52.115	1.0251	10.452	.52381
Stddev	.00455	.00086	.01219	.0095	.238	.0021	.023	.00252
%RSD	2.1704	.16959	2.3412	.22607	.45764	.19971	.21735	.48180
#1	.21227	.50910	.52808	4.1824	51.965	1.0251	10.432	.52672
#2	.21185	.51011	.52713	4.1901	52.390	1.0272	10.477	.52253
#3	.20419	.50839	.50651	4.1713	51.990	1.0231	10.448	.52220
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0325	51.919	.51533	10.370	.51802	1.2377	.41236	5.0236
Stddev	.0226	.085	.01059	.182	.00315	.0175	.00144	.0391
%RSD	2.1849	.16307	2.0554	1.7534	.60801	1.4170	.34925	.77846
#1	1.0461	51.902	.52228	10.484	.52054	1.2477	.41312	5.0518
#2	1.0450	52.012	.52057	10.466	.51904	1.2480	.41327	5.0400
#3	1.0065	51.845	.50314	10.160	.51449	1.2175	.41070	4.9789
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 19:06:34 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0418**	**1.0442**	**1.0543**	**.51930**	**1.0144**	**1.0280**	**1.0441**
Stddev	.0286	.0027	.0078	.00139	.0008	.0225	.0049
%RSD	2.7497	.26209	.73977	.26693	.08225	2.1915	.46761
#1	1.0571	1.0437	1.0579	.52087	1.0137	1.0429	1.0428
#2	1.0595	1.0472	1.0597	.51825	1.0141	1.0389	1.0495
#3	1.0087	1.0418	1.0454	.51878	1.0153	1.0020	1.0399
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9858.6**	**57806.**	**2584.0**
Stddev	11.9	62.	9.2
%RSD	.12063	.10774	.35782
#1	9845.5	57819.	2585.6
#2	9861.5	57862.	2574.0
#3	9868.7	57739.	2592.3

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 19:10:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00153	.00382	-.00077	.00388	-.00025	.00005	-.03073	.00023
Stddev	.00025	.00359	.00182	.00062	.00062	.00006	.03644	.00016
%RSD	16.568	93.829	235.39	15.935	243.77	120.20	118.59	67.680
#1	-.00155	.00791	.00028	.00317	.00033	.00009	.01034	.00028
#2	-.00127	.00120	.00028	.00424	-.00089	-.00002	-.04334	.00006
#3	-.00178	.00236	-.00288	.00424	-.00020	.00008	-.05918	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00038	.00071	-.00714	.02700	.00282	-.06020	-.00177
Stddev	.00032	.00074	.00095	.03283	.11873	.00083	.07532	.00126
%RSD	118.86	192.13	135.03	459.75	439.76	29.490	125.12	71.634
#1	-.00002	-.00041	.00179	.02898	.03190	.00235	-.14715	-.00052
#2	.00022	.00106	.00002	-.01523	.14321	.00233	-.01791	-.00173
#3	.00061	.00050	.00030	-.03517	-.09411	.00378	-.01553	-.00304
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	.03302	-.00115	.00236	-.00206	.00141	-.00562	.00232
Stddev	.00019	.02288	.00052	.00332	.00348	.00122	.00284	.00258
%RSD	123.92	69.297	45.014	140.86	169.24	86.799	50.599	111.09
#1	-.00003	.00727	-.00151	-.00099	.00155	.00170	-.00888	.00507
#2	-.00037	.05101	-.00139	.00564	-.00232	.00246	-.00432	-.00005
#3	-.00006	.04078	-.00056	.00242	-.00540	.00007	-.00366	.00194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 19:10:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	.00000	.00613	.00326	-.00044	-.00005	.00002
Stddev	.00045	.00045	.01114	.00219	.00049	.00011	.00035
%RSD	105.08	10774.	181.55	67.120	110.69	208.77	2220.7
#1	.00044	-.00049	-.00230	.00289	-.00045	-.00016	-.00000
#2	.00087	.00040	.01876	.00128	-.00092	-.00006	-.00033
#3	-.00003	.00010	.00195	.00561	.00005	.00006	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9953.5	58945.	2595.6
Stddev	51.4	240.	18.6
%RSD	.51641	.40739	.71674
#1	9979.0	58693.	2577.4
#2	9987.1	59171.	2614.6
#3	9894.3	58971.	2594.9

Approved: July 16, 2016

Sample Name: LLCCV Acquired: 7/14/2016 19:14:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00800	.17612	.00849	.08342	.00806	.00162	.33310	.00098
Stddev	.00083	.00563	.00269	.00192	.00011	.00004	.01634	.00006
%RSD	10.386	3.1972	31.669	2.3031	1.4159	2.7325	4.9057	6.2708
#1	.00883	.17242	.00564	.08135	.00794	.00157	.35074	.00097
#2	.00716	.17335	.01097	.08375	.00808	.00163	.31847	.00105
#3	.00801	.18260	.00886	.08515	.00816	.00165	.33009	.00093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00406	.00481	.00444	.09999	.86862	.08636	.36131	.00900
Stddev	.00029	.00068	.00105	.02363	.09726	.00139	.08280	.00088
%RSD	7.2296	14.083	23.677	23.628	11.197	1.6149	22.917	9.8065
#1	.00439	.00553	.00565	.12114	.77345	.08524	.26581	.00907
#2	.00399	.00472	.00380	.10434	.86455	.08592	.40508	.00808
#3	.00381	.00418	.00386	.07449	.96784	.08793	.41304	.00984
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00755	.45754	.01546	.77270	.00756	.08063	.01474	.76140
Stddev	.00060	.00559	.00159	.06446	.00289	.00763	.00263	.05542
%RSD	7.8899	1.2226	10.315	8.3425	38.276	9.4661	17.870	7.2783
#1	.00778	.45332	.01635	.81101	.00674	.08464	.01366	.79227
#2	.00799	.46389	.01641	.80881	.01077	.08541	.01774	.79451
#3	.00687	.45542	.01362	.69827	.00516	.07182	.01282	.69742
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: LLCCV Acquired: 7/14/2016 19:14:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40268	.04234	.03203	.15012	.00788	.01674	.04181
Stddev	.04075	.00054	.00561	.00954	.00065	.00162	.00047
%RSD	10.119	1.2716	17.503	6.3569	8.2625	9.6677	1.1194
#1	.42669	.04270	.03198	.15484	.00741	.01770	.04168
#2	.42572	.04261	.03766	.15638	.00862	.01766	.04142
#3	.35563	.04172	.02645	.13914	.00761	.01487	.04233
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9974.4	58987.	2607.1
Stddev	23.8	75.	14.6
%RSD	.23850	.12758	.55932
#1	9976.4	59021.	2591.6
#2	9997.1	58901.	2620.5
#3	9949.6	59039.	2609.3

Approved: July 16, 2016

Sample Name: PBW 04 Acquired: 7/14/2016 19:18:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576227-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00166**	**.00137**	**-.00193**	**.00328**	**-.00020**	**.00009**	**-.04077**
Stddev	.00276	.00492	.00188	.00187	.00115	.00005	.02639
%RSD	166.27	359.86	97.386	57.002	579.40	51.469	64.718
#1	.00101	.00194	-.00400	.00470	-.00057	.00004	-.07074
#2	-.00450	-.00381	-.00145	.00396	-.00111	.00011	-.03055
#3	-.00149	.00598	-.00034	.00116	.00109	.00013	-.02103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00031**	**-.00001**	**.00063**	**.00001**	F **-.03223**	**.08562**	**.00562**
Stddev	.00016	.00016	.00071	.00052	.01993	.07847	.00408
%RSD	51.178	2504.5	112.79	7474.6	61.841	91.648	72.473
#1	.00032	.00017	.00110	-.00058	-.01849	-.00012	.00332
#2	.00047	-.00003	-.00019	.00041	-.02311	.10310	.00323
#3	.00015	-.00016	.00097	.00019	-.05509	.15387	.01033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00983**	**-.00163**	**-.00003**	**.05471**	**-.00078**	**-.00110**	**-.00143**
Stddev	.04129	.00109	.00015	.00652	.00032	.00203	.00134
%RSD	420.09	66.973	462.08	11.922	40.850	184.52	93.894
#1	.05017	-.00044	.00008	.06166	-.00113	-.00244	-.00104
#2	-.03234	-.00187	.00003	.05374	-.00051	-.00209	-.00293
#3	.01166	-.00259	-.00021	.04872	-.00069	.00123	-.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 16, 2016

Sample Name: PBW 04 Acquired: 7/14/2016 19:18:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576227-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00210	-.00594	.00449	.00016	.00031	-.00044	.00095
Stddev	.00128	.00566	.00073	.00102	.00031	.00559	.00199
%RSD	61.092	95.319	16.210	635.13	102.65	1270.2	210.26
#1	.00317	-.01038	.00426	.00055	.00051	-.00687	-.00106
#2	.00068	.00044	.00392	.00093	-.00006	.00226	.00292
#3	.00243	-.00789	.00531	-.00100	.00046	.00328	.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00007	.00114	-.00025
Stddev	.00087	.00011	.00029
%RSD	1261.6	9.4250	115.37
#1	.00090	.00120	-.00041
#2	.00015	.00101	-.00042
#3	-.00084	.00120	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10086.	60051.	2637.9
Stddev	44.	102.	28.3
%RSD	.43237	.16937	1.0730
#1	10120.	59942.	2630.4
#2	10102.	60067.	2614.1
#3	10037.	60143.	2669.2

Approved: July 16, 2016

Sample Name: LCSW 04 Acquired: 7/14/2016 19:21:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576227-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19829**	**5.0217**	**.20442**	**.97799**	**.51468**	**.02449**	**5.1633**	**.02518**
Stddev	.00128	.0063	.00114	.00172	.00355	.00005	.0677	.00036
%RSD	.64455	.12642	.55934	.17542	.69039	.20404	1.3103	1.4418
#1	.19812	5.0290	.20568	.97983	.51785	.02451	5.2400	.02546
#2	.19711	5.0186	.20344	.97643	.51536	.02444	5.1376	.02532
#3	.19964	5.0175	.20415	.97772	.51084	.02453	5.1122	.02477
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10347**	**.25374**	**.25706**	**2.0871**	**25.342**	**.51890**	**5.3233**	**.25781**
Stddev	.00154	.00019	.00368	.0075	.056	.00256	.0387	.00661
%RSD	1.4891	.07518	1.4334	.35789	.22288	.49344	.72726	2.5645
#1	.10469	.25352	.26022	2.0869	25.381	.52179	5.3528	.26540
#2	.10400	.25384	.25793	2.0797	25.368	.51693	5.3378	.25470
#3	.10174	.25385	.25301	2.0946	25.277	.51797	5.2795	.25333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51988**	**25.320**	**.25580**	**4.8866**	**.25260**	**.60154**	**.18929**	**2.5152**
Stddev	.00732	.088	.00365	.0485	.00502	.00452	.00070	.0209
%RSD	1.4072	.34833	1.4259	.99343	1.9883	.75066	.37040	.83169
#1	.52523	25.421	.25868	4.9279	.25077	.60614	.19002	2.5309
#2	.52287	25.261	.25703	4.8988	.25828	.60137	.18862	2.5232
#3	.51154	25.277	.25170	4.8331	.24875	.59712	.18924	2.4914
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: LCSW 04 Acquired: 7/14/2016 19:21:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576227-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51654	.52531	.51243	.25610	.50437	.50144	.00071
Stddev	.00817	.00364	.01030	.00426	.00137	.00667	.00035
%RSD	1.5809	.69251	2.0098	1.6635	.27149	1.3303	48.964
#1	.52123	.52884	.51968	.26043	.50544	.50645	.00031
#2	.52128	.52552	.51696	.25596	.50282	.50400	.00095
#3	.50711	.52157	.50064	.25191	.50483	.49387	.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9991.4	58843.	2627.3
Stddev	12.4	226.	23.4
%RSD	.12384	.38482	.88994
#1	9984.7	58590.	2600.4
#2	10006.	58913.	2642.8
#3	9983.7	59026.	2638.6

Approved: July 16, 2016

Sample Name: F BLANK Acquired: 7/14/2016 19:25:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576038-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00163**	**.00325**	**-.00014**	**.00484**	**-.00005**	**.00008**	**-.00781**	**.00012**
Stddev	.00071	.00891	.00202	.00170	.00055	.00003	.01676	.00021
%RSD	43.804	274.23	1453.0	35.151	1028.0	37.469	214.62	167.09
#1	-.00082	.01183	-.00154	.00418	-.00003	.00006	.01095	.00023
#2	-.00218	.00387	.00218	.00677	.00049	.00006	-.01307	-.00011
#3	-.00188	-.00595	-.00106	.00357	-.00062	.00011	-.02130	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**.00090**	**-.00012**	**.00047**	**.02151**	**.00325**	**.02516**	**-.00187**
Stddev	.00050	.00105	.00109	.04140	.07609	.00180	.06895	.00201
%RSD	685.01	117.18	892.56	8770.1	353.78	55.333	274.03	107.30
#1	.00015	.00047	-.00130	.04818	-.01279	.00389	.05670	-.00387
#2	.00052	.00013	.00083	-.02065	.10871	.00122	-.05392	.00015
#3	-.00046	.00210	.00011	-.02611	-.03140	.00464	.07269	-.00191
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.03636**	**-.00031**	**.00220**	**-.00030**	**-.00072**	**-.00264**	**.00622**
Stddev	.00045	.00850	.00035	.00210	.00164	.00041	.00400	.00240
%RSD	630.49	23.363	112.53	95.703	556.44	57.278	151.62	38.646
#1	-.00008	.04251	-.00015	.00140	-.00083	-.00119	-.00594	.00884
#2	.00038	.03992	-.00007	.00061	-.00160	-.00050	.00181	.00573
#3	-.00051	.02667	-.00070	.00458	.00155	-.00046	-.00378	.00410
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: F BLANK Acquired: 7/14/2016 19:25:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576038-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00079	.00043	.00161	.00213	-.00081	.00205	.00009
Stddev	.00031	.00030	.00271	.00213	.00031	.00024	.00022
%RSD	39.851	70.970	168.28	99.605	38.445	11.483	256.60
#1	.00095	.00021	-.00149	.00127	-.00054	.00207	-.00011
#2	.00099	.00077	.00353	.00058	-.00115	.00228	.00004
#3	.00043	.00030	.00279	.00456	-.00073	.00181	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10184.	60070.	2643.9
Stddev	118.	42.	31.6
%RSD	1.1635	.07052	1.1945
#1	10119.	60119.	2614.0
#2	10112.	60052.	2640.8
#3	10320.	60040.	2676.9

Approved: July 16, 2016

Sample Name: F BLANK Acquired: 7/14/2016 19:29:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576038-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00112	.00875	.00007	.00575	-.00053	.00010	-.03007	-.00005
Stddev	.00165	.00781	.00356	.00125	.00071	.00002	.04818	.00017
%RSD	147.60	89.162	5107.0	21.648	134.92	25.717	160.23	344.37
#1	-.00281	.00834	-.00401	.00713	-.00128	.00011	-.00919	.00015
#2	.00049	.00116	.00170	.00471	.00014	.00007	.00415	-.00015
#3	-.00104	.01676	.00252	.00542	-.00044	.00012	-.08517	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00102	.00029	-.01442	-.02299	.00369	-.02807	-.00121
Stddev	.00034	.00059	.00085	.01043	.06879	.00263	.00995	.00171
%RSD	286.71	58.024	296.18	72.358	299.16	71.288	35.442	141.49
#1	.00041	.00101	.00063	-.00633	.01039	.00385	-.03953	-.00192
#2	-.00026	.00044	-.00068	-.01073	.02273	.00098	-.02171	-.00246
#3	.00021	.00162	.00092	-.02620	-.10210	.00623	-.02296	.00074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	143.28	-.00120	.00339	-.00176	.00101	-.00540	.00523
Stddev	.00025	.98	.00081	.00504	.00140	.00226	.00645	.00078
%RSD	96.054	.68329	67.920	148.66	79.525	223.79	119.46	14.909
#1	-.00007	144.37	-.00056	-.00241	-.00337	.00283	-.01270	.00580
#2	-.00054	143.00	-.00211	.00668	-.00078	.00173	-.00301	.00434
#3	-.00016	142.47	-.00092	.00591	-.00115	-.00152	-.00049	.00554
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: F BLANK Acquired: 7/14/2016 19:29:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576038-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00021	-.00001	-.00010	.00238	-.00030	.00266	.00017
Stddev	.00045	.00025	.00255	.00282	.00035	.00019	.00035
%RSD	210.63	2514.8	2474.8	118.29	115.49	7.0648	206.15
#1	.00019	-.00023	.00098	.00393	-.00053	.00279	-.00023
#2	-.00069	-.00007	.00173	-.00087	.00010	.00274	.00035
#3	-.00014	.00027	-.00302	.00410	-.00048	.00244	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9967.9	58561.	2640.4
Stddev	25.5	250.	22.3
%RSD	.25581	.42728	.84614
#1	9941.7	58284.	2615.2
#2	9992.6	58769.	2657.7
#3	9969.5	58631.	2648.3

Approved: July 16, 2016

Sample Name: F BLANK Acquired: 7/14/2016 19:33:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576227-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00113	.00784	-.00122	.00163	-.00035	.00009	.15155	.00045
Stddev	.00120	.01012	.00085	.00060	.00011	.00005	.03347	.00015
%RSD	106.17	129.13	70.196	37.088	32.191	61.114	22.084	33.070
#1	-.00202	.01952	-.00027	.00157	-.00041	.00013	.11615	.00043
#2	-.00161	.00212	-.00193	.00105	-.00043	.00003	.15584	.00031
#3	.00024	.00187	-.00146	.00225	-.00022	.00010	.18267	.00061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00041	-.00052	-.01081	.01922	.00191	.16475	-.00076
Stddev	.00023	.00038	.00118	.03059	.01907	.00341	.06474	.00072
%RSD	190.44	94.258	227.92	283.13	99.223	178.22	39.295	94.251
#1	.00035	.00062	-.00169	.01510	.01788	.00282	.23462	-.00002
#2	.00014	.00063	.00066	-.04456	.03892	.00478	.10679	-.00145
#3	-.00012	-.00004	-.00052	-.00295	.00085	-.00186	.15283	-.00082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	.14396	-.00080	-.00006	-.00176	.00031	-.00679	.00995
Stddev	.00013	.02442	.00059	.00110	.00154	.00039	.00397	.00145
%RSD	116.88	16.966	73.876	1967.9	87.171	127.65	58.466	14.538
#1	.00018	.15506	-.00037	.00077	-.00116	.00076	-.01138	.01153
#2	-.00004	.16086	-.00056	.00038	-.00062	.00004	-.00461	.00870
#3	.00020	.11596	-.00148	-.00131	-.00351	.00013	-.00439	.00961
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: F BLANK Acquired: 7/14/2016 19:33:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576227-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	.00109	-.00015	.00005	-.00084	.00139	-.00023
Stddev	.00021	.00028	.00675	.00197	.00042	.00038	.00049
%RSD	37.004	26.076	4478.2	3607.2	50.443	27.555	214.08
#1	.00071	.00142	-.00655	-.00071	-.00035	.00170	.00024
#2	.00069	.00094	-.00082	.00229	-.00110	.00150	-.00019
#3	.00033	.00091	.00691	-.00142	-.00107	.00096	-.00074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10102.	59575.	2646.2
Stddev	21.	196.	23.5
%RSD	.20935	.32837	.88696
#1	10124.	59785.	2621.3
#2	10100.	59543.	2649.3
#3	10081.	59397.	2668.0

Approved: July 16, 2016

Sample Name: L1607044901 Acquired: 7/14/2016 19:37:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00238	.14447	-.00069	.01678	.23318	.00011	1.6898	.00012
Stddev	.00224	.00714	.00138	.00275	.00115	.00009	.0068	.00008
%RSD	93.976	4.9431	198.59	16.411	.49502	78.254	.40237	67.494
#1	-.00062	.14426	-.00226	.01512	.23445	.00002	1.6948	.00016
#2	-.00490	.15172	.00033	.01526	.23290	.00019	1.6924	.00003
#3	-.00162	.13744	-.00015	.01996	.23219	.00014	1.6821	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	.00346	-.00059	13.951	.12228	.00239	.16320	.21488
Stddev	.00028	.00141	.00117	.081	.05484	.00295	.10681	.00268
%RSD	24.065	40.599	197.77	.57732	44.848	123.26	65.447	1.2459
#1	.00096	.00433	.00029	14.036	.18451	-.00084	.28652	.21763
#2	.00149	.00422	-.00015	13.875	.10131	.00309	.10355	.21228
#3	.00105	.00184	-.00191	13.943	.08102	.00492	.09954	.21474
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	139.53	.00209	-.00759	.00044	.00300	-.00422	.45142
Stddev	.00037	.75	.00008	.00726	.00018	.00113	.00565	.02130
%RSD	166.51	.53979	3.8763	95.694	41.637	37.732	133.96	4.7187
#1	.00019	140.39	.00211	-.00824	.00049	.00419	.00199	.46393
#2	-.00034	139.16	.00216	-.00003	.00059	.00193	-.00559	.46351
#3	-.00051	139.02	.00200	-.01451	.00023	.00289	-.00907	.42683
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607044901 Acquired: 7/14/2016 19:37:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.00897	.00522	.00386	.00098	.13695	-.00071
Stddev	.00005	.00028	.00669	.00127	.00112	.00909	.00030
%RSD	12.417	3.0747	128.21	33.001	113.97	6.6341	42.544
#1	.00047	.00866	.00376	.00339	.00012	.14211	-.00104
#2	.00040	.00918	.01252	.00289	.00057	.14229	-.00045
#3	.00037	.00907	-.00062	.00530	.00225	.12646	-.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9956.8	58108.	2626.1
Stddev	30.6	216.	21.0
%RSD	.30683	.37153	.80088
#1	9972.0	57859.	2602.9
#2	9976.8	58218.	2631.6
#3	9921.6	58246.	2643.8

Approved: July 16, 2016

Sample Name: L1607044901PS Acquired: 7/14/2016 19:41:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576493-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20019**	**5.1873**	**.20535**	**.98679**	**.71403**	**.02498**	**6.6530**	**.02531**
Stddev	.00174	.0089	.00332	.00205	.00206	.00011	.0718	.00028
%RSD	.86814	.17251	1.6173	.20807	.28784	.44490	1.0791	1.1237
#1	.20102	5.1940	.20558	.98905	.71190	.02486	6.6905	.02500
#2	.20136	5.1771	.20191	.98630	.71600	.02498	6.6982	.02557
#3	.19819	5.1908	.20854	.98503	.71421	.02509	6.5702	.02535
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10440**	**.25766**	**.25765**	**14.572**	**25.304**	**.51671**	**5.2826**	**.44819**
Stddev	.00029	.00264	.00054	.132	.129	.00314	.0647	.00516
%RSD	.27561	1.0264	.20790	.90613	.50839	.60821	1.2242	1.1516
#1	.10456	.25905	.25728	14.628	25.246	.51367	5.3309	.44254
#2	.10406	.25932	.25741	14.667	25.451	.51994	5.2091	.45267
#3	.10456	.25461	.25827	14.421	25.214	.51653	5.3078	.44936
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52249**	**149.41**	**.25686**	**4.9589**	**.25224**	**.60453**	**.19245**	**2.8981**
Stddev	.00130	.45	.00131	.0117	.00423	.00100	.00635	.0073
%RSD	.24907	.29999	.51067	.23579	1.6773	.16464	3.2985	.25353
#1	.52250	149.19	.25575	4.9480	.25212	.60567	.19554	2.9025
#2	.52378	149.92	.25653	4.9713	.24807	.60399	.19667	2.8896
#3	.52118	149.11	.25831	4.9575	.25653	.60391	.18515	2.9021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607044901PS Acquired: 7/14/2016 19:41:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576493-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51914**	**.52103**	**.51390**	**.25130**	**.51400**	**.62875**	**.00043**
Stddev	.00054	.00083	.00481	.00214	.00056	.00175	.00020
%RSD	.10408	.15972	.93612	.85103	.10969	.27818	47.021
#1	.51975	.52089	.51899	.25303	.51419	.63049	.00022
#2	.51873	.52192	.51330	.25197	.51445	.62876	.00062
#3	.51893	.52027	.50942	.24891	.51337	.62699	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9881.7**	**57501.**	**2628.4**
Stddev	20.7	49.	11.4
%RSD	.20933	.08456	.43279
#1	9858.6	57518.	2615.3
#2	9898.5	57447.	2636.0
#3	9887.9	57539.	2633.9

Approved: July 16, 2016

Sample Name: L1607044901SDL Acquired: 7/14/2016 19:44:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG576493-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00062	.03421	-.00024	.00737	.05293	.00014	.33398	.00023
Stddev	.00146	.00114	.00160	.00220	.00167	.00010	.02660	.00008
%RSD	235.86	3.3351	659.48	29.896	3.1583	69.457	7.9656	32.834
#1	-.00203	.03527	.00123	.00947	.05469	.00019	.35307	.00018
#2	-.00072	.03300	-.00194	.00508	.05136	.00021	.30359	.00020
#3	.00089	.03434	-.00002	.00755	.05274	.00003	.34527	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.00106	.00030	3.0860	.00592	.00395	.08856	.04707
Stddev	.00023	.00073	.00041	.0075	.04174	.00147	.02209	.00144
%RSD	40.418	69.235	137.61	.24251	704.88	37.207	24.948	3.0535
#1	.00079	.00076	.00023	3.0830	-.00751	.00227	.06692	.04552
#2	.00033	.00053	.00073	3.0945	.05273	.00459	.08768	.04836
#3	.00057	.00190	-.00007	3.0804	-.02745	.00499	.11108	.04731
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00033	30.357	-.00017	.00089	-.00382	.00230	-.00314	.10168
Stddev	.00036	.143	.00079	.00720	.00091	.00056	.00164	.00803
%RSD	108.57	.47258	456.20	811.17	23.928	24.159	52.256	7.8984
#1	-.00071	30.193	.00066	-.00679	-.00279	.00172	-.00125	.10455
#2	-.00029	30.421	-.00093	.00197	-.00454	.00283	-.00418	.10789
#3	.00000	30.459	-.00025	.00749	-.00412	.00235	-.00400	.09261
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607044901SDL Acquired: 7/14/2016 19:44:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG576493-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00195	.00133	.00195	.00002	.03194	-.00050
Stddev	.00054	.00051	.00840	.00137	.00045	.00282	.00007
%RSD	173.05	26.203	633.04	70.335	2371.8	8.8419	13.254
#1	-.00003	.00234	-.00837	.00232	.00032	.03354	-.00042
#2	.00003	.00214	.00603	.00309	.00024	.03361	-.00055
#3	.00093	.00137	.00632	.00043	-.00050	.02868	-.00052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9609.1	56151.	2483.9
Stddev	18.4	108.	6.5
%RSD	.19146	.19218	.26038
#1	9629.7	56044.	2485.5
#2	9603.5	56260.	2476.7
#3	9594.2	56150.	2489.3

Approved: July 16, 2016

Sample Name: L1607044901SDL Acquired: 7/14/2016 19:48:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG576493-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00109	.00747	-.00088	.00186	.00998	.00013	.01945	.00018
Stddev	.00151	.00752	.00195	.00196	.00106	.00007	.03764	.00031
%RSD	138.51	100.55	222.20	105.52	10.625	57.205	193.48	178.02
#1	-.00274	.01345	.00136	.00405	.00996	.00006	.04265	-.00018
#2	-.00077	.00994	-.00177	.00029	.00893	.00021	.03969	.00029
#3	.00023	-.00096	-.00223	.00123	.01105	.00011	-.02397	.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00006	.00109	-.00043	.56203	.00885	-.00166	-.03350	.00664
Stddev	.00004	.00051	.00081	.01000	.12294	.00214	.06379	.00283
%RSD	65.974	46.805	191.19	1.7795	1389.0	128.88	190.44	42.615
#1	-.00002	.00119	.00037	.55757	-.13256	-.00051	.00978	.00985
#2	-.00007	.00053	-.00039	.57349	.06873	-.00414	-.10675	.00559
#3	-.00011	.00154	-.00126	.55504	.09038	-.00034	-.00351	.00449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	5.7110	-.00027	.00869	-.00317	.00077	-.00149	.01803
Stddev	.00037	.0676	.00072	.00455	.00208	.00233	.00409	.00234
%RSD	223.21	1.1831	262.34	52.347	65.698	301.67	275.44	12.948
#1	-.00005	5.7869	-.00056	.01275	-.00095	.00346	-.00317	.01738
#2	.00013	5.6891	.00054	.00378	-.00507	-.00066	.00318	.02063
#3	-.00058	5.6572	-.00081	.00953	-.00348	-.00048	-.00447	.01609
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607044901SDL Acquired: 7/14/2016 19:48:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG576493-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00085	.00052	.00162	.00055	-.00019	.00611	-.00016
Stddev	.00054	.00041	.00424	.00109	.00026	.00040	.00028
%RSD	63.903	78.996	261.34	197.48	137.62	6.5172	176.18
#1	.00142	.00027	.00651	.00131	-.00005	.00609	-.00016
#2	.00034	.00099	-.00073	-.00070	-.00003	.00651	.00012
#3	.00079	.00029	-.00092	.00104	-.00049	.00572	-.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10045.	58408.	2562.8
Stddev	31.	76.	8.5
%RSD	.30924	.12937	.33200
#1	10054.	58377.	2553.4
#2	10070.	58494.	2564.9
#3	10010.	58353.	2570.1

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 19:52:49 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41922**	**10.424**	**.42150**	**.50886**	**1.0363**	**.05248**	**10.256**	**.05225**
Stddev	.00238	.034	.00450	.00594	.0071	.00024	.034	.00096
%RSD	.56787	.32579	1.0687	1.1671	.68620	.44984	.33008	1.8301
#1	.42035	10.410	.42142	.51178	1.0442	.05241	10.289	.05298
#2	.42083	10.463	.42604	.51278	1.0345	.05275	10.221	.05260
#3	.41649	10.400	.41704	.50203	1.0303	.05229	10.258	.05117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21151**	**.52164**	**.52459**	**4.2117**	**52.166**	**1.0350**	**10.514**	**.52254**
Stddev	.00384	.00275	.00879	.0305	.240	.0125	.074	.00358
%RSD	1.8136	.52749	1.6752	.72322	.46001	1.2082	.70776	.68456
#1	.21395	.52110	.53106	4.2377	52.443	1.0488	10.537	.52497
#2	.21349	.52462	.52813	4.1782	52.031	1.0318	10.574	.51843
#3	.20709	.51919	.51459	4.2192	52.024	1.0245	10.431	.52422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0475**	**51.148**	**.51714**	**10.338**	**.51836**	**1.2354**	**.41507**	**5.0199**
Stddev	.0176	.291	.01012	.142	.00606	.0162	.01320	.0514
%RSD	1.6814	.56810	1.9572	1.3733	1.6686	1.3112	3.1804	1.0229
#1	1.0642	51.483	.52265	10.414	.52131	1.2470	.42248	5.0048
#2	1.0492	50.971	.52331	10.425	.52238	1.2424	.42291	5.0771
#3	1.0291	50.988	.50546	10.174	.51139	1.2169	.39983	4.9778
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 19:52:49 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0559**	**1.0397**	**1.0454**	**.52382**	**1.0462**	**1.0267**	**1.0511**
Stddev	.0235	.0066	.0039	.00337	.0042	.0191	.0096
%RSD	2.2268	.63433	.36845	.64423	.40033	1.8609	.90925
#1	1.0709	1.0468	1.0435	.52644	1.0443	1.0391	1.0572
#2	1.0680	1.0385	1.0499	.52501	1.0510	1.0362	1.0559
#3	1.0288	1.0338	1.0430	.52002	1.0434	1.0047	1.0401
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9748.8**	**56306.**	**2537.8**
Stddev	28.3	82.	14.1
%RSD	.29017	.14648	.55433
#1	9719.1	56397.	2526.6
#2	9751.8	56287.	2533.3
#3	9775.5	56236.	2553.6

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 19:56:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00278**	**.00459**	**-.00005**	**.00494**	**.00026**	**.00013**	**-.01699**	**.00036**
Stddev	.00253	.00075	.00316	.00290	.00064	.00000	.03278	.00009
%RSD	91.020	16.337	5782.6	58.607	247.89	2.7938	192.98	25.173
#1	-.00006	.00416	.00029	.00813	.00018	.00013	-.02625	.00046
#2	-.00321	.00416	-.00338	.00422	.00094	.00013	-.04414	.00029
#3	-.00507	.00546	.00292	.00247	-.00034	.00013	.01943	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**.00022**	**.00012**	**-.00741**	**.04349**	**.00453**	**-.01273**	**-.00213**
Stddev	.00024	.00035	.00071	.02955	.04847	.00235	.08297	.00147
%RSD	326.39	159.06	613.23	398.73	111.43	51.723	651.68	68.724
#1	.00034	.00033	-.00014	.00734	.06373	.00608	-.10458	-.00273
#2	-.00014	.00051	.00092	-.04143	.07856	.00569	.05680	-.00046
#3	.00002	-.00017	-.00043	.01186	-.01181	.00184	.00958	-.00321
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**.00159**	**-.00152**	**.00602**	**-.00493**	**.00020**	**-.00205**	**.00279**
Stddev	.00050	.01074	.00009	.00156	.00255	.00424	.00147	.00084
%RSD	230.63	676.90	6.1073	25.860	51.669	2140.5	71.772	30.056
#1	.00022	.01384	-.00156	.00575	-.00521	.00510	-.00244	.00375
#2	-.00011	-.00290	-.00158	.00769	-.00733	-.00231	-.00042	.00237
#3	-.00076	-.00618	-.00141	.00462	-.00226	-.00219	-.00329	.00224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 19:56:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	.00014	.00116	.00119	-.00062	-.00007	.00007
Stddev	.00032	.00038	.00331	.00163	.00011	.00016	.00064
%RSD	70.414	268.40	286.17	137.03	17.382	226.37	861.35
#1	.00083	.00052	-.00069	-.00048	-.00050	.00000	.00051
#2	.00028	-.00023	.00498	.00128	-.00068	.00004	.00038
#3	.00026	.00014	-.00082	.00277	-.00068	-.00025	-.00066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9871.4	57694.	2565.0
Stddev	6.6	86.	2.7
%RSD	.06657	.14824	.10521
#1	9874.5	57788.	2568.0
#2	9875.8	57621.	2562.7
#3	9863.8	57674.	2564.5

Approved: July 16, 2016

Sample Name: L1607052101 Acquired: 7/14/2016 20:00:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576227-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	**.02011**	**.00048**	**.04817**	**.13762**	**.00002**	**43.337**	**.00030**
Stddev	.00174	.00328	.00285	.00082	.00049	.00004	.054	.00016
%RSD	923.09	16.307	592.86	1.7082	.35647	152.98	.12537	51.925
#1	-.00205	.01885	.00134	.04821	.13817	.00005	43.307	.00013
#2	.00008	.02384	.00279	.04898	.13724	-.00002	43.303	.00044
#3	.00141	.01766	-.00270	.04733	.13745	.00004	43.399	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**.00054**	**.05707**	**.00304**	**1.2420**	**.01246**	**19.282**	**-.00128**
Stddev	.00035	.00076	.00338	.01811	.0474	.00141	.218	.00314
%RSD	149.38	142.31	5.9166	595.16	3.8194	11.320	1.1288	246.30
#1	-.00008	.00136	.05966	-.01784	1.1934	.01230	19.119	.00224
#2	-.00064	.00038	.05831	.01442	1.2445	.01114	19.197	-.00381
#3	.00001	-.00014	.05325	.01254	1.2881	.01395	19.529	-.00226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00064**	**30.682**	**-.00124**	**.02840**	**-.00189**	**.00341**	**-.00560**	**3.8460**
Stddev	.00029	.106	.00009	.00295	.00217	.00289	.00326	.1685
%RSD	45.467	.34454	7.6006	10.382	115.05	84.603	58.145	4.3804
#1	.00094	30.653	-.00115	.02671	-.00305	.00160	-.00878	3.9531
#2	.00061	30.595	-.00125	.03180	.00062	.00675	-.00575	3.9331
#3	.00036	30.800	-.00133	.02668	-.00322	.00190	-.00227	3.6518
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607052101 Acquired: 7/14/2016 20:00:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576227-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.74938	-.00845	.00329	-.00098	.02228	.00048
Stddev	.00050	.00329	.00333	.00138	.00076	.00151	.00027
%RSD	103.65	.43914	39.334	42.043	77.068	6.7549	55.655
#1	.00102	.74936	-.00767	.00464	-.00021	.02303	.00078
#2	.00041	.74609	-.00559	.00188	-.00173	.02326	.00037
#3	.00002	.75267	-.01210	.00336	-.00101	.02055	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9922.6	58087.	2601.0
Stddev	19.1	54.	6.9
%RSD	.19288	.09373	.26447
#1	9941.3	58083.	2608.5
#2	9903.1	58035.	2595.0
#3	9923.3	58144.	2599.4

Approved: July 16, 2016

Sample Name: L1607052102S Acquired: 7/14/2016 20:04:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576227-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19827	5.0240	.20717	1.0055	.64303	.02473	48.882	.02536
Stddev	.00214	.0148	.00626	.0037	.00333	.00012	.129	.00052
%RSD	1.0771	.29495	3.0224	.36885	.51741	.47828	.26472	2.0552
#1	.20052	5.0341	.20473	1.0088	.64617	.02482	48.935	.02512
#2	.19626	5.0070	.21429	1.0015	.64336	.02460	48.977	.02596
#3	.19803	5.0309	.20250	1.0062	.63954	.02478	48.735	.02501
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10210	.25259	.31401	2.0357	26.203	.51725	24.696	.25130
Stddev	.00283	.00065	.00910	.0066	.080	.00100	.149	.00125
%RSD	2.7721	.25914	2.8987	.32278	.30343	.19401	.60401	.49595
#1	.10170	.25236	.31213	2.0393	26.141	.51609	24.817	.25016
#2	.10511	.25333	.32390	2.0281	26.292	.51791	24.742	.25263
#3	.09949	.25209	.30599	2.0397	26.174	.51774	24.530	.25112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52367	55.525	.25014	4.9992	.25151	.60632	.19120	6.4623
Stddev	.01445	.096	.00799	.1309	.00561	.01568	.00219	.1595
%RSD	2.7584	.17248	3.1929	2.6183	2.2288	2.5868	1.1448	2.4674
#1	.52141	55.520	.24904	4.9664	.24725	.60855	.19365	6.4129
#2	.53912	55.622	.25862	5.1434	.25786	.62077	.18942	6.6406
#3	.51050	55.431	.24277	4.8878	.24942	.58964	.19055	6.3335
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607052102S Acquired: 7/14/2016 20:04:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576227-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52095**	**1.2536**	**.49797**	**.25420**	**.50951**	**.51583**	**.00088**
Stddev	.01642	.0009	.00703	.00268	.00282	.01444	.00022
%RSD	3.1519	.07435	1.4120	1.0542	.55351	2.7987	24.541
#1	.51801	1.2539	.50535	.25490	.50983	.51324	.00080
#2	.53864	1.2544	.49135	.25646	.50655	.53139	.00113
#3	.50619	1.2526	.49720	.25123	.51216	.50287	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9739.3**	**57309.**	**2588.6**
Stddev	120.8	237.	24.1
%RSD	1.2407	.41275	.92931
#1	9807.7	57073.	2590.9
#2	9599.8	57546.	2563.5
#3	9810.4	57310.	2611.4

Approved: July 16, 2016

Sample Name: L1607052103SD Acquired: 7/14/2016 20:07:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576227-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20076	5.1495	.20934	1.0335	.65804	.02535	49.970	.02546
Stddev	.00019	.0097	.00487	.0037	.00701	.00011	.486	.00052
%RSD	.09354	.18806	2.3284	.35327	1.0649	.42285	.97256	2.0301
#1	.20068	5.1424	.21220	1.0349	.66242	.02525	50.303	.02582
#2	.20098	5.1605	.21211	1.0362	.66174	.02547	50.194	.02570
#3	.20064	5.1455	.20371	1.0293	.64996	.02534	49.412	.02487
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10274	.25972	.31690	2.0860	26.787	.53171	25.129	.25321
Stddev	.00157	.00165	.00394	.0357	.378	.00691	.093	.00165
%RSD	1.5312	.63409	1.2438	1.7140	1.4124	1.3000	.37028	.64977
#1	.10387	.26035	.32031	2.1198	27.116	.53968	25.234	.25506
#2	.10340	.26096	.31779	2.0486	26.871	.52795	25.092	.25191
#3	.10094	.25785	.31258	2.0895	26.373	.52749	25.059	.25266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52869	56.809	.25181	5.0308	.25452	.60813	.18840	6.5242
Stddev	.00778	.529	.00405	.0544	.00412	.00862	.00779	.0574
%RSD	1.4709	.93153	1.6078	1.0803	1.6203	1.4169	4.1359	.87977
#1	.53316	57.229	.25364	5.0608	.25888	.61347	.19335	6.5573
#2	.53319	56.983	.25462	5.0635	.25400	.61273	.19244	6.5574
#3	.51971	56.214	.24717	4.9680	.25068	.59819	.17942	6.4580
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607052103SD Acquired: 7/14/2016 20:07:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576227-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52597	1.2805	.51173	.25869	.52204	.52067	.00091
Stddev	.00592	.0128	.00474	.00124	.00147	.00704	.00038
%RSD	1.1261	1.0001	.92616	.47870	.28254	1.3530	41.947
#1	.53081	1.2895	.51343	.25729	.52299	.52490	.00122
#2	.52773	1.2861	.51539	.25917	.52279	.52457	.00049
#3	.51936	1.2658	.50638	.25962	.52034	.51254	.00102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9798.9	57264.	2583.0
Stddev	19.3	68.	26.7
%RSD	.19646	.11940	1.0353
#1	9791.3	57296.	2584.3
#2	9820.8	57186.	2555.6
#3	9784.6	57311.	2609.1

Approved: July 16, 2016

Sample Name: L1607034801 Acquired: 7/14/2016 20:11:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00199	.00027	-.00114	.02789	.05695	.00010	61.969	.00090
Stddev	.00106	.01053	.00232	.00135	.00065	.00005	.917	.00018
%RSD	53.273	3949.6	203.80	4.8316	1.1349	51.464	1.4793	20.085
#1	-.00087	.01184	-.00311	.02925	.05754	.00016	62.974	.00082
#2	-.00211	-.00229	.00142	.02786	.05707	.00005	61.755	.00111
#3	-.00298	-.00875	-.00173	.02656	.05626	.00010	61.179	.00078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.00062	.03884	.06720	1.2414	.00680	12.418	-.00033
Stddev	.00017	.00040	.00233	.01792	.0571	.00161	.055	.00211
%RSD	387.81	64.840	6.0086	26.671	4.6001	23.733	.44561	647.65
#1	.00004	.00109	.03961	.08734	1.3053	.00780	12.479	.00090
#2	.00022	.00041	.04069	.06125	1.2232	.00494	12.403	-.00276
#3	-.00013	.00037	.03622	.05301	1.1955	.00767	12.371	.00088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	9.0884	.00020	.01844	.00312	.00495	-.00106	4.6329
Stddev	.00031	.0251	.00177	.00394	.00241	.00291	.00342	.1788
%RSD	98.787	.27586	881.83	21.375	77.172	58.816	321.44	3.8603
#1	-.00002	9.0968	.00036	.02213	.00432	.00315	-.00500	4.7316
#2	.00059	9.1081	-.00164	.01889	.00035	.00338	.00061	4.7406
#3	.00037	9.0602	.00188	.01429	.00471	.00830	.00120	4.4265
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607034801 Acquired: 7/14/2016 20:11:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.10367	-.01099	-.00107	-.00048	.36515	-.00001
Stddev	.00059	.00027	.00309	.00205	.00032	.01947	.00025
%RSD	105.36	.25597	28.115	191.64	67.196	5.3318	4274.3
#1	.00029	.10395	-.01413	-.00156	-.00040	.37648	.00019
#2	.00125	.10363	-.01087	-.00284	-.00083	.37629	-.00029
#3	.00016	.10343	-.00796	.00118	-.00020	.34267	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9921.6	58090.	2590.1
Stddev	8.8	98.	21.0
%RSD	.08864	.16890	.81191
#1	9928.1	58131.	2580.8
#2	9911.6	57978.	2575.2
#3	9925.1	58161.	2614.1

Approved: July 16, 2016

Sample Name: L1607034802 Acquired: 7/14/2016 20:14:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	**.00137**	**-.00222**	**.02324**	**.05629**	**.00003**	**60.903**	**.00099**
Stddev	.00227	.00640	.00259	.00363	.00115	.00006	.896	.00016
%RSD	1209.9	467.42	116.67	15.627	2.0475	219.64	1.4705	16.404
#1	-.00173	.00875	.00077	.02278	.05751	-.00003	61.901	.00095
#2	-.00126	-.00224	-.00376	.01986	.05521	.00008	60.637	.00116
#3	.00242	-.00240	-.00368	.02708	.05617	.00002	60.170	.00085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.00117**	**.03574**	**-.00162**	**1.1723**	**.00720**	**12.108**	**.00065**
Stddev	.00034	.00038	.00283	.02908	.0388	.00007	.086	.00367
%RSD	89.266	32.307	7.9201	1795.0	3.3106	1.0157	.70718	563.33
#1	-.00048	.00124	.03698	.00574	1.1321	.00719	12.014	-.00135
#2	-.00000	.00150	.03775	-.03367	1.2095	.00713	12.130	.00488
#3	-.00067	.00076	.03250	.02307	1.1753	.00727	12.181	-.00158
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00076**	**8.9692**	**-.00096**	**.01610**	**.00195**	**-.00040**	**-.00208**	**4.5462**
Stddev	.00014	.0633	.00119	.00371	.00378	.00201	.00496	.1758
%RSD	18.899	.70616	123.92	23.044	193.70	504.63	238.04	3.8661
#1	.00074	8.9856	-.00189	.02038	-.00147	-.00150	.00234	4.6543
#2	.00092	9.0227	-.00137	.01402	.00601	.00192	-.00115	4.6410
#3	.00063	8.8993	.00038	.01389	.00131	-.00161	-.00744	4.3434
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607034802 Acquired: 7/14/2016 20:14:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.10133	-.01180	.00013	-.00086	.38022	.00022
Stddev	.00048	.00039	.00716	.00272	.00051	.02027	.00027
%RSD	320.85	.38179	60.680	2071.3	59.490	5.3305	123.89
#1	.00042	.10138	-.01944	.00189	-.00091	.39251	.00031
#2	.00043	.10169	-.01070	-.00300	-.00136	.39133	.00044
#3	-.00041	.10092	-.00525	.00150	-.00033	.35683	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9903.5	57910.	2595.9
Stddev	18.1	130.	24.2
%RSD	.18313	.22519	.93377
#1	9888.8	58005.	2569.9
#2	9923.7	57964.	2600.1
#3	9897.9	57761.	2617.8

Approved: July 16, 2016

Sample Name: L1607044701 Acquired: 7/14/2016 20:18:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00184	-.00391	-.00113	.05151	.39173	.00019	177.78	.00055
Stddev	.00208	.01011	.00433	.00324	.00053	.00005	.48	.00012
%RSD	112.97	258.59	384.46	6.2813	.13631	23.848	.26946	22.426
#1	-.00234	.00227	.00179	.04821	.39222	.00016	177.88	.00065
#2	-.00362	.00158	-.00610	.05468	.39182	.00017	177.26	.00041
#3	.00044	-.01558	.00094	.05163	.39116	.00024	178.20	.00057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	.00128	.00222	.02913	.59470	.00874	6.6851	.31741
Stddev	.00060	.00075	.00099	.02998	.13601	.00192	.0461	.00278
%RSD	129.07	58.350	44.565	102.92	22.871	21.960	.69041	.87441
#1	-.00017	.00065	.00286	.05624	.74977	.00948	6.7319	.31650
#2	.00054	.00211	.00272	-.00307	.53874	.01019	6.6836	.31521
#3	.00103	.00109	.00108	.03423	.49560	.00657	6.6396	.32053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05074	4.3885	.08664	.00345	-.00310	-.00001	-.00092	.72057
Stddev	.00320	.0130	.00486	.00531	.00121	.00265	.00560	.03631
%RSD	6.3097	.29541	5.6111	153.89	38.964	21021.	607.48	5.0390
#1	.05284	4.3976	.08985	-.00158	-.00269	-.00305	.00424	.74278
#2	.05232	4.3737	.08902	.00900	-.00215	.00122	-.00014	.74026
#3	.04705	4.3943	.08105	.00293	-.00446	.00180	-.00687	.67867
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607044701 Acquired: 7/14/2016 20:18:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	.39930	-.02625	.00561	.14226	.00624	-.00017
Stddev	.00087	.00082	.00839	.00366	.00051	.00056	.00019
%RSD	136.21	.20504	31.965	65.154	.36059	9.0405	111.98
#1	.00034	.39909	-.02943	.00475	.14190	.00646	-.00018
#2	-.00004	.39861	-.03259	.00246	.14204	.00667	.00003
#3	.00162	.40020	-.01673	.00962	.14285	.00560	-.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9855.3	57607.	2589.0
Stddev	26.3	176.	15.5
%RSD	.26669	.30567	.60017
#1	9837.7	57513.	2577.3
#2	9842.6	57810.	2606.7
#3	9885.5	57498.	2583.2

Approved: July 16, 2016

Sample Name: L1607046401 Acquired: 7/14/2016 20:22:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00172	.01141	.00176	.02109	.60441	.00009	F 295.18
Stddev	.00157	.00550	.00073	.00164	.00369	.00003	1.54
%RSD	90.978	48.253	41.472	7.7516	.61040	37.967	.52036
#1	-.00329	.01772	.00092	.02233	.60850	.00005	296.89
#2	-.00016	.00885	.00226	.02171	.60341	.00010	294.73
#3	-.00172	.00765	.00209	.01924	.60133	.00011	293.92
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00062	.00039	.00151	.00283	-.01140	242.15	.04908
Stddev	.00019	.00012	.00085	.00117	.01722	1.17	.00112
%RSD	30.256	30.441	56.445	41.348	151.03	.48446	2.2824
#1	.00083	.00037	.00059	.00416	.00333	243.43	.04841
#2	.00057	.00051	.00227	.00236	-.03033	241.88	.04846
#3	.00046	.00028	.00167	.00197	-.00720	241.13	.05037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03168	.00018	.00512	263.72	-.00007	.05699	.06792
Stddev	.11410	.00058	.00077	1.31	.00101	.00818	.00418
%RSD	360.18	316.53	14.958	.49522	1548.0	14.346	6.1512
#1	-.02941	-.00045	.00548	265.10	-.00083	.06643	.07273
#2	.16331	.00067	.00564	263.56	.00108	.05222	.06586
#3	-.03887	.00033	.00424	262.51	-.00045	.05232	.06517
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 16, 2016

Sample Name: L1607046401 Acquired: 7/14/2016 20:22:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00319	.01304	.15046	.00044	.33172	F -.04332	.00281
Stddev	.00353	.00592	.00794	.00028	.00053	.00634	.00468
%RSD	110.60	45.409	5.2771	64.597	.16115	14.644	166.39
#1	.00623	.00980	.15415	.00013	.33215	-.05043	-.00137
#2	.00402	.01988	.15589	.00051	.33112	-.03826	.00786
#3	-.00068	.00945	.14135	.00068	.33188	-.04125	.00195
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00094	.01315	-.00028
Stddev	.00018	.00086	.00074
%RSD	19.066	6.5117	268.44
#1	-.00096	.01359	.00046
#2	-.00111	.01370	-.00026
#3	-.00075	.01216	-.00103
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9480.0	54918.	2555.1
Stddev	14.1	157.	16.9
%RSD	.14841	.28511	.66224
#1	9481.2	55074.	2535.8
#2	9493.4	54761.	2562.5
#3	9465.3	54920.	2567.2

Approved: July 16, 2016

Sample Name: L1607046501 Acquired: 7/14/2016 20:26:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00136	.13792	.00051	.01479	.13059	.00012	F 287.25
Stddev	.00242	.00743	.00337	.00272	.00168	.00003	1.72
%RSD	178.28	5.3857	662.50	18.383	1.2887	21.744	.59867
#1	.00009	.13073	.00415	.01425	.13249	.00016	289.13
#2	-.00415	.13746	-.00012	.01774	.12929	.00011	286.88
#3	-.00001	.14556	-.00250	.01238	.12998	.00011	285.75
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	.00044	.00145	.00678	.01588	228.87	.04290
Stddev	.00014	.00028	.00064	.00076	.02093	1.52	.00248
%RSD	32.711	63.985	44.309	11.208	131.81	.66520	5.7757
#1	.00036	.00016	.00097	.00757	.00226	230.51	.04004
#2	.00033	.00073	.00218	.00605	.03998	228.61	.04428
#3	.00059	.00043	.00120	.00673	.00540	227.50	.04438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02800	-.00062	.00463	251.22	-.00208	.03147	-.00123
Stddev	.07806	.00144	.00029	1.34	.00158	.00079	.00288
%RSD	278.82	231.51	6.2369	.53469	76.111	2.5134	234.70
#1	.01891	-.00051	.00484	252.67	-.00120	.03085	-.00194
#2	-.04512	-.00211	.00476	250.98	-.00390	.03236	.00194
#3	.11020	.00076	.00430	250.01	-.00113	.03120	-.00368
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 16, 2016

Sample Name: L1607046501 Acquired: 7/14/2016 20:26:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00328	.08687	.26309	.00023	.41035	F -.04148	.00139
Stddev	.00352	.00207	.01399	.00082	.00164	.00469	.00226
%RSD	107.14	2.3855	5.3192	360.77	.40083	11.295	162.24
#1	.00036	.08910	.27140	.00112	.41225	-.04217	.00031
#2	.00230	.08500	.27094	.00008	.40944	-.04578	-.00013
#3	.00718	.08651	.24693	-.00051	.40937	-.03649	.00398
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00033	.00324	.00029
Stddev	.00019	.00018	.00038
%RSD	58.620	5.6235	128.73
#1	-.00011	.00328	.00005
#2	-.00041	.00340	.00010
#3	-.00046	.00304	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9501.2	55026.	2592.1
Stddev	26.5	259.	29.0
%RSD	.27928	.46977	1.1195
#1	9475.9	55113.	2570.8
#2	9498.9	54735.	2580.4
#3	9528.8	55229.	2625.2

Approved: July 16, 2016

Sample Name: L1607046601 Acquired: 7/14/2016 20:30:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00055	.16968	.00042	.18816	1.0441	.00014	14.631
Stddev	.00143	.00913	.00375	.00088	.0047	.00004	.081
%RSD	261.12	5.3781	887.62	.46510	.45424	24.522	.55039
#1	-.00142	.16593	.00302	.18716	1.0495	.00018	14.723
#2	-.00132	.16302	-.00387	.18880	1.0421	.00015	14.602
#3	.00110	.18008	.00212	.18853	1.0406	.00011	14.570
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.00527	.00083	.00275	1.3321	358.65	.03756
Stddev	.00023	.00052	.00102	.00097	.0210	3.13	.00110
%RSD	465.35	9.8795	122.90	35.348	1.5789	.87387	2.9292
#1	.00031	.00541	-.00034	.00309	1.3562	361.57	.03790
#2	-.00002	.00570	.00128	.00351	1.3224	359.05	.03632
#3	-.00014	.00469	.00155	.00165	1.3176	355.34	.03844
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	13.678	.85414	.00032	F 560.22	.02111	.10326	-.00326
Stddev	.201	.00280	.00024	10.41	.00217	.00858	.00111
%RSD	1.4716	.32795	75.412	1.8589	10.301	8.3135	33.901
#1	13.867	.85697	.00036	552.21	.02217	.11098	-.00218
#2	13.467	.85408	.00006	572.00	.02255	.10478	-.00321
#3	13.701	.85137	.00053	556.46	.01861	.09402	-.00439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 16, 2016

Sample Name: L1607046601 Acquired: 7/14/2016 20:30:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00135	-.00524	2.3148	.00081	.85078	-.00278	-.00058
Stddev	.00245	.00844	.1116	.00097	.00461	.00586	.00201
%RSD	181.44	161.11	4.8189	119.83	.54229	210.75	349.22
#1	.00268	-.00467	2.3713	.00157	.85488	-.00617	.00145
#2	-.00148	-.01395	2.3868	.00115	.85167	.00399	-.00060
#3	.00284	.00290	2.1863	-.00029	.84578	-.00617	-.00258
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00038	.17418	.00015
Stddev	.00084	.01671	.00049
%RSD	223.45	9.5911	321.26
#1	.00003	.18453	.00046
#2	-.00135	.18310	.00041
#3	.00019	.15491	-.00041
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9534.3	54166.	2591.2
Stddev	11.0	151.	22.3
%RSD	.11538	.27952	.86013
#1	9546.2	54001.	2584.3
#2	9524.5	54298.	2573.1
#3	9532.1	54201.	2616.1

Approved: July 16, 2016

Sample Name: L1607046801 Acquired: 7/14/2016 20:34:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**20.735**	**.00121**	**1.0386**	**.41748**	**.00181**	**18.350**
Stddev	.00122	.057	.00299	.0056	.00091	.00006	.093
%RSD	1628.4	.27670	247.76	.53790	.21695	3.5785	.50758
#1	-.00065	20.671	-.00023	1.0353	.41850	.00175	18.271
#2	.00149	20.783	-.00080	1.0355	.41715	.00188	18.453
#3	-.00062	20.751	.00464	1.0451	.41678	.00179	18.326
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00050**	**.00736**	**.01740**	**.05111**	**.04952**	**267.59**	**.04274**
Stddev	.00023	.00074	.00068	.00473	.04587	.96	.00220
%RSD	46.258	10.073	3.9072	9.2503	92.629	.35778	5.1433
#1	.00027	.00779	.01792	.05389	.06822	268.29	.04466
#2	.00074	.00779	.01663	.05380	-.00275	267.97	.04034
#3	.00049	.00651	.01764	.04566	.08309	266.50	.04323
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**41.284**	**3.0164**	**-.00002**	F **481.14**	**.06546**	**.03224**	**.00148**
Stddev	.194	.0284	.00028	6.16	.00549	.00393	.00077
%RSD	.46938	.94057	1532.1	1.2805	8.3855	12.180	52.088
#1	41.308	3.0238	-.00010	487.79	.06823	.03482	.00121
#2	41.080	2.9851	.00029	475.63	.06901	.03418	.00235
#3	41.465	3.0404	-.00024	479.99	.05913	.02772	.00088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 16, 2016

Sample Name: L1607046801 Acquired: 7/14/2016 20:34:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00451	-.00329	1.1264	.00084	.30427	.00715	-.00139
Stddev	.00278	.00119	.0570	.00110	.00024	.00318	.00072
%RSD	61.715	36.334	5.0564	131.11	.07823	44.513	51.753
#1	.00360	-.00286	1.1667	.00199	.30400	.00408	-.00177
#2	.00229	-.00464	1.1514	.00073	.30433	.00692	-.00184
#3	.00763	-.00236	1.0613	-.00020	.30446	.01043	-.00056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00810	1.5617	.00023
Stddev	.00045	.1163	.00009
%RSD	5.5772	7.4472	41.079
#1	.00843	1.6317	.00034
#2	.00759	1.6260	.00018
#3	.00829	1.4275	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9599.2	55202.	2597.7
Stddev	20.3	154.	17.4
%RSD	.21119	.27902	.66818
#1	9578.5	55050.	2579.2
#2	9619.0	55198.	2613.6
#3	9600.2	55358.	2600.2

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 20:38:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41606**	**10.387**	**.41723**	**.50313**	**1.0156**	**.05231**	**10.090**	**.05182**
Stddev	.00252	.032	.00298	.00346	.0014	.00008	.016	.00105
%RSD	.60594	.30473	.71370	.68854	.14295	.16086	.16043	2.0245
#1	.41315	10.380	.41817	.49974	1.0141	.05224	10.091	.05232
#2	.41764	10.421	.41963	.50666	1.0170	.05240	10.073	.05252
#3	.41738	10.359	.41390	.50300	1.0159	.05229	10.105	.05061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21093**	**.52097**	**.51862**	**4.1290**	**51.530**	**1.0126**	**10.513**	**.51014**
Stddev	.00438	.00325	.00914	.0301	.039	.0010	.043	.00812
%RSD	2.0786	.62433	1.7627	.72955	.07594	.09366	.41219	1.5920
#1	.21376	.52019	.52450	4.1293	51.512	1.0130	10.464	.50828
#2	.21316	.52454	.52326	4.1589	51.503	1.0133	10.529	.50311
#3	.20588	.51817	.50808	4.0986	51.575	1.0116	10.546	.51903
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0310**	**50.126**	**.51114**	**10.203**	**.51114**	**1.2162**	**.41011**	**4.9180**
Stddev	.0191	.052	.00947	.135	.00341	.0196	.00611	.0457
%RSD	1.8531	.10347	1.8527	1.3278	.66667	1.6133	1.4891	.92929
#1	1.0426	50.180	.51730	10.283	.51231	1.2273	.40979	4.9408
#2	1.0414	50.121	.51589	10.278	.51382	1.2277	.41637	4.9477
#3	1.0089	50.076	.50024	10.046	.50731	1.1935	.40417	4.8653
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 20:38:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0553**	**1.0150**	**1.0235**	**.52325**	**1.0460**	**1.0176**	**1.0522**
Stddev	.0246	.0007	.0094	.00254	.0075	.0176	.0037
%RSD	2.3307	.07058	.91615	.48473	.71372	1.7319	.34670
#1	1.0690	1.0156	1.0149	.52553	1.0397	1.0276	1.0561
#2	1.0699	1.0142	1.0335	.52051	1.0542	1.0279	1.0515
#3	1.0269	1.0151	1.0221	.52370	1.0441	.99723	1.0489
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9808.7**	**56603.**	**2537.4**
Stddev	24.3	186.	2.1
%RSD	.24736	.32883	.08214
#1	9792.1	56784.	2536.7
#2	9797.4	56412.	2539.7
#3	9836.5	56612.	2535.6

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 20:41:58 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00029**	**.00123**	**.00060**	**.00629**	**.00160**	**.00008**	**-.04145**	**.00016**
Stddev	.00170	.00151	.00220	.00222	.00096	.00011	.03198	.00028
%RSD	590.24	123.33	366.75	35.262	59.846	130.59	77.170	175.35
#1	-.00225	.00227	.00192	.00823	.00228	.00005	-.06193	.00000
#2	.00061	-.00051	.00182	.00676	.00051	-.00001	-.05782	-.00001
#3	.00078	.00192	-.00194	.00387	.00201	.00020	-.00459	.00049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.00061**	**-.00050**	**-.00266**	**.06537**	**.00082**	**-.04161**	**-.00065**
Stddev	.00048	.00025	.00112	.03015	.08211	.00220	.04629	.00119
%RSD	1750.6	40.900	225.21	1131.6	125.60	268.03	111.24	183.53
#1	-.00038	.00040	.00066	.02451	.00380	.00282	-.07625	-.00089
#2	-.00023	.00088	-.00157	.00261	.03372	.00118	.01096	-.00170
#3	.00052	.00054	-.00058	-.03511	.15860	-.00154	-.05953	.00064
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**.05418**	**-.00081**	**.00204**	**-.00152**	**-.00188**	**-.00311**	**.00734**
Stddev	.00009	.02493	.00070	.00599	.00153	.00577	.00522	.00090
%RSD	42.577	46.008	86.552	293.61	100.26	307.29	168.09	12.297
#1	-.00011	.08139	-.00063	.00845	-.00265	-.00837	.00233	.00698
#2	-.00029	.04868	-.00022	.00111	-.00213	.00263	-.00808	.00666
#3	-.00026	.03246	-.00158	-.00343	.00021	.00011	-.00357	.00836
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 20:41:58 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.00005	.00231	.00152	-.00036	-.00015	-.00028
Stddev	.00016	.00041	.00874	.00025	.00102	.00022	.00030
%RSD	96.351	801.41	379.17	16.483	280.69	141.71	109.52
#1	.00013	.00002	.01174	.00123	-.00143	-.00006	-.00014
#2	.00034	-.00035	.00069	.00167	.00062	.00000	-.00063
#3	.00003	.00047	-.00552	.00167	-.00028	-.00040	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9905.0	57758.	2543.2
Stddev	20.8	79.	3.7
%RSD	.20955	.13627	.14685
#1	9891.3	57848.	2547.4
#2	9928.9	57702.	2541.9
#3	9895.0	57723.	2540.2

Approved: July 16, 2016

Sample Name: L1607047401 Acquired: 7/14/2016 20:45:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	.01530	-.00220	.03320	.21551	.00011	26.946
Stddev	.00013	.00843	.00091	.00172	.00159	.00005	.053
%RSD	94.120	55.058	41.430	5.1812	.73809	42.886	.19532
#1	-.00012	.00651	-.00302	.03121	.21369	.00017	26.888
#2	-.00028	.02330	-.00122	.03429	.21620	.00007	26.990
#3	-.00002	.01611	-.00236	.03409	.21663	.00010	26.959
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.00330	.00387	.00191	.14503	1.6589	.02739
Stddev	.00019	.00039	.00016	.00068	.02870	.0355	.00262
%RSD	59.509	11.708	4.0943	35.448	19.788	2.1384	9.5732
#1	.00039	.00361	.00370	.00255	.15046	1.6266	.03015
#2	.00011	.00342	.00391	.00199	.17063	1.6969	.02494
#3	.00047	.00287	.00401	.00120	.11401	1.6532	.02707
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	38.953	.03530	.00060	F 331.66	.00495	1.4961	-.00310
Stddev	.205	.00278	.00023	.49	.00015	.0561	.00109
%RSD	.52645	7.8751	38.329	.14910	3.0111	3.7503	35.319
#1	39.185	.03482	.00035	331.14	.00490	1.5196	-.00413
#2	38.798	.03829	.00080	332.12	.00484	1.5367	-.00321
#3	38.875	.03279	.00066	331.74	.00512	1.4321	-.00195
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 16, 2016

Sample Name: L1607047401 Acquired: 7/14/2016 20:45:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	-.00124	15.596	.00025	.50749	-.00505	.00057
Stddev	.00305	.00038	.480	.00103	.00084	.00542	.00052
%RSD	859.53	30.951	3.0796	410.99	.16650	107.36	91.901
#1	-.00307	-.00127	15.875	.00087	.50827	-.00857	-.00001
#2	.00277	-.00160	15.872	-.00093	.50761	-.00776	.00070
#3	.00137	-.00084	15.042	.00081	.50659	.00119	.00100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00083	.04499	.00012
Stddev	.00082	.00203	.00016
%RSD	99.563	4.5149	126.02
#1	-.00087	.04610	.00013
#2	.00002	.04621	.00028
#3	-.00163	.04264	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9686.6	55925.	2570.0
Stddev	9.8	139.	13.2
%RSD	.10140	.24923	.51368
#1	9677.6	55767.	2569.2
#2	9697.1	55980.	2557.2
#3	9685.3	56029.	2583.6

Approved: July 16, 2016

Sample Name: L1607047402 Acquired: 7/14/2016 20:49:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00197	.01575	.00055	.03497	.20856	.00010	25.966
Stddev	.00073	.00626	.00230	.00087	.00335	.00004	.247
%RSD	36.882	39.721	416.23	2.4803	1.6049	41.062	.95272
#1	-.00281	.00853	.00319	.03507	.21214	.00011	26.233
#2	-.00151	.01934	-.00044	.03406	.20803	.00013	25.920
#3	-.00159	.01940	-.00108	.03579	.20551	.00005	25.745
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	.00348	.00368	.00234	.14803	1.5886	.02626
Stddev	.00015	.00044	.00097	.00106	.00991	.1659	.00283
%RSD	28.127	12.654	26.411	45.067	6.6972	10.441	10.761
#1	.00036	.00384	.00479	.00215	.15221	1.3991	.02819
#2	.00060	.00363	.00303	.00140	.15516	1.7073	.02302
#3	.00064	.00299	.00321	.00348	.13671	1.6594	.02758
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	38.283	.02949	.00049	F 328.50	.00487	1.5090	-.00394
Stddev	.034	.00040	.00024	2.77	.00058	.0670	.00134
%RSD	.08890	1.3572	49.673	.84246	11.945	4.4406	34.010
#1	38.321	.02994	.00077	331.62	.00539	1.5490	-.00374
#2	38.271	.02920	.00037	327.53	.00499	1.5464	-.00537
#3	38.256	.02931	.00033	326.34	.00424	1.4316	-.00271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 16, 2016

Sample Name: L1607047402 Acquired: 7/14/2016 20:49:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	-.00014	15.065	.00059	.49448	.00728	.00078
Stddev	.00342	.00423	.554	.00073	.00188	.00451	.00243
%RSD	479.54	3019.6	3.6796	122.06	.38113	61.866	312.46
#1	.00415	.00331	15.377	.00141	.49630	.00517	.00352
#2	.00067	.00114	15.393	.00003	.49460	.00422	-.00004
#3	-.00268	-.00487	14.425	.00034	.49254	.01246	-.00114
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00124	.04541	-.00037
Stddev	.00105	.00231	.00025
%RSD	84.638	5.0873	68.526
#1	-.00074	.04680	-.00014
#2	-.00244	.04668	-.00034
#3	-.00053	.04274	-.00064
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9700.6	55781.	2570.7
Stddev	16.1	127.	20.6
%RSD	.16580	.22848	.80114
#1	9705.9	55879.	2548.2
#2	9682.6	55637.	2575.4
#3	9713.4	55828.	2588.5

Approved: July 16, 2016

Sample Name: L1607048501 Acquired: 7/14/2016 20:53:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00119	.05482	.01046	.04670	.09435	.00010	119.87	.00845
Stddev	.00035	.00635	.00347	.00053	.00048	.00003	.83	.00038
%RSD	29.183	11.590	33.185	1.1273	.51208	34.151	.69118	4.4796
#1	-.00157	.05063	.01235	.04714	.09464	.00007	120.65	.00865
#2	-.00112	.06213	.01257	.04684	.09461	.00013	119.00	.00869
#3	-.00089	.05170	.00645	.04612	.09379	.00008	119.96	.00802
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.00179	.83222	.03152	1.4949	.00740	2.4960	.14739
Stddev	.00026	.00093	.04108	.03170	.0517	.00131	.1060	.00110
%RSD	358.00	51.784	4.9356	100.57	3.4594	17.780	4.2478	.74895
#1	-.00023	.00139	.85525	.02896	1.5037	.00670	2.3744	.14619
#2	.00023	.00113	.85661	.00118	1.4393	.00657	2.5690	.14836
#3	.00022	.00285	.78480	.06441	1.5417	.00891	2.5445	.14762
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	4.9229	.00155	.57878	.01395	.00179	-.00634	1.1176
Stddev	.00027	.0472	.00139	.02754	.00172	.00117	.00197	.0389
%RSD	917.18	.95835	89.564	4.7580	12.344	65.079	31.109	3.4784
#1	-.00004	4.9068	.00276	.59025	.01489	.00222	-.00465	1.1457
#2	.00025	4.8858	.00003	.59874	.01500	.00047	-.00851	1.1339
#3	-.00030	4.9760	.00186	.54737	.01197	.00268	-.00586	1.0732
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607048501 Acquired: 7/14/2016 20:53:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.42735	-.01785	-.00032	-.00106	.23372	.00025
Stddev	.00016	.00236	.00917	.00080	.00054	.01063	.00018
%RSD	31.558	.55167	51.370	246.36	51.277	4.5496	71.683
#1	.00062	.42974	-.00740	.00008	-.00060	.23966	.00020
#2	.00033	.42503	-.02455	.00019	-.00093	.24007	.00010
#3	.00062	.42729	-.02158	-.00125	-.00166	.22145	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9936.4	58126.	2630.9
Stddev	21.2	30.	12.9
%RSD	.21338	.05166	.49135
#1	9923.0	58161.	2616.2
#2	9960.8	58106.	2640.3
#3	9925.3	58112.	2636.3

Approved: July 16, 2016

Sample Name: L1607048701 Acquired: 7/14/2016 20:57:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00079	.03413	.00117	.03260	.10328	.00010	35.715	.02190
Stddev	.00173	.00398	.00122	.00158	.00080	.00006	.138	.00081
%RSD	217.88	11.663	104.46	4.8614	.77757	63.672	.38762	3.7129
#1	.00119	.02954	.00035	.03095	.10353	.00016	35.849	.02252
#2	-.00192	.03626	.00058	.03411	.10393	.00008	35.572	.02220
#3	-.00165	.03659	.00257	.03275	.10238	.00004	35.723	.02098
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.00079	.00633	.03904	.98578	.00426	1.6809	.12427
Stddev	.00015	.00074	.00051	.00870	.00964	.00368	.0604	.00207
%RSD	50.463	93.452	8.1006	22.277	.97784	86.453	3.5954	1.6667
#1	.00036	.00152	.00685	.04508	.97475	.00475	1.6390	.12299
#2	.00042	.00005	.00634	.02907	.99260	.00766	1.7502	.12316
#3	.00013	.00079	.00582	.04297	.98998	.00035	1.6536	.12666
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00029	134.59	.00039	.11540	.00986	.00063	.00040	.66900
Stddev	.00014	.33	.00063	.00694	.00343	.00293	.00097	.02889
%RSD	48.002	.24194	162.46	6.0133	34.807	465.70	244.17	4.3184
#1	-.00043	134.97	.00054	.11901	.00833	.00033	.00143	.69024
#2	-.00016	134.38	.00093	.11978	.00746	-.00214	-.00048	.68066
#3	-.00028	134.43	-.00030	.10740	.01380	.00369	.00024	.63611
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607048701 Acquired: 7/14/2016 20:57:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00116	.09407	-.00495	.00060	-.00022	2.3880	-.00012
Stddev	.00060	.00074	.00469	.00196	.00096	.1239	.00016
%RSD	51.835	.78887	94.786	325.16	438.03	5.1899	135.29
#1	.00171	.09459	-.01000	.00019	.00049	2.4640	-.00028
#2	.00052	.09440	-.00073	-.00112	.00016	2.4550	-.00010
#3	.00125	.09322	-.00413	.00274	-.00132	2.2450	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9867.3	57188.	2622.2
Stddev	7.5	115.	1.1
%RSD	.07620	.20033	.04272
#1	9872.2	57062.	2621.8
#2	9871.0	57216.	2621.3
#3	9858.6	57286.	2623.5

Approved: July 16, 2016

Sample Name: L1607051901 Acquired: 7/14/2016 21:01:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00132	.00486	-.00016	.00940	.13702	.00012	3.7067	.00032
Stddev	.00038	.00572	.00371	.00200	.00127	.00002	.0467	.00032
%RSD	28.886	117.77	2303.0	21.291	.92503	18.634	1.2590	100.67
#1	-.00175	.00262	-.00172	.00857	.13704	.00013	3.7231	.00049
#2	-.00105	.01136	-.00284	.00795	.13827	.00012	3.7430	.00051
#3	-.00114	.00060	.00407	.01168	.13574	.00009	3.6541	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	.00127	.09268	-.00952	1.3099	.00544	2.3329	.01942
Stddev	.00043	.00051	.00601	.02719	.0277	.00286	.0478	.00120
%RSD	212.41	40.137	6.4804	285.74	2.1163	52.552	2.0498	6.1798
#1	.00025	.00083	.09608	-.01175	1.2791	.00873	2.3710	.01977
#2	-.00060	.00115	.09622	.01873	1.3179	.00399	2.3484	.01808
#3	-.00025	.00183	.08575	-.03552	1.3328	.00360	2.2792	.02040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00029	3.0346	.00038	.03538	.00182	.00307	-.00429	5.2464
Stddev	.00011	.0279	.00035	.00379	.00137	.00245	.00450	.2178
%RSD	39.904	.92092	91.270	10.705	75.355	79.731	104.80	4.1512
#1	-.00042	3.0311	.00008	.03388	.00293	.00114	.00085	5.3691
#2	-.00022	3.0086	.00031	.03257	.00226	.00582	-.00621	5.3751
#3	-.00022	3.0641	.00077	.03969	.00028	.00225	-.00751	4.9949
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607051901 Acquired: 7/14/2016 21:01:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.04846	-.00480	.00064	-.00071	.03375	-.00001
Stddev	.00069	.00025	.00338	.00287	.00073	.00197	.00030
%RSD	133.81	.50798	70.406	452.09	103.96	5.8359	2199.2
#1	.00063	.04854	-.00217	.00176	-.00133	.03474	.00011
#2	.00115	.04818	-.00861	.00277	.00010	.03503	.00020
#3	-.00022	.04865	-.00362	-.00263	-.00090	.03148	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10028.	58788.	2607.1
Stddev	8.	65.	24.0
%RSD	.07920	.11088	.91975
#1	10035.	58856.	2585.0
#2	10029.	58727.	2603.8
#3	10020.	58782.	2632.6

Approved: July 16, 2016

Sample Name: L1607051902 Acquired: 7/14/2016 21:05:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00135	.00446	-.00092	.05199	.13366	.00009	82.096	.00032
Stddev	.00044	.00587	.00145	.00053	.00118	.00005	.411	.00016
%RSD	32.168	131.57	157.81	1.0254	.88231	53.380	.50028	48.525
#1	-.00162	.00975	-.00242	.05241	.13484	.00004	82.157	.00020
#2	-.00085	-.00185	-.00081	.05218	.13366	.00014	82.473	.00050
#3	-.00159	.00548	.00047	.05139	.13248	.00009	81.658	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00006	.00100	.00712	.01838	1.9293	.01105	11.284	.00226
Stddev	.00036	.00066	.00020	.01807	.0105	.00547	.043	.00194
%RSD	588.43	66.569	2.8575	98.325	.54489	49.522	.38039	86.009
#1	.00028	.00024	.00707	.02627	1.9177	.01035	11.248	.00152
#2	-.00002	.00128	.00735	-.00230	1.9382	.01683	11.331	.00446
#3	-.00043	.00147	.00696	.03115	1.9319	.00595	11.272	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	16.163	-.00076	.00997	-.00174	.00346	-.00106	5.9234
Stddev	.00028	.075	.00051	.00550	.00159	.00110	.00191	.1762
%RSD	111.98	.46206	67.284	55.203	91.177	31.913	179.10	2.9742
#1	-.00007	16.162	-.00130	.01578	-.00265	.00473	-.00099	6.0209
#2	.00035	16.238	-.00069	.00929	-.00266	.00272	.00080	6.0292
#3	.00048	16.088	-.00029	.00484	.00009	.00293	-.00301	5.7200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607051902 Acquired: 7/14/2016 21:05:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.25895	-.01195	.00148	-.00044	.42597	-.00021
Stddev	.00071	.00176	.00400	.00302	.00064	.01682	.00035
%RSD	363.96	.67866	33.447	204.40	143.52	3.9492	166.87
#1	.00093	.25854	-.01372	.00495	-.00115	.43554	-.00029
#2	-.00049	.26088	-.00737	.00002	-.00027	.43583	.00017
#3	.00014	.25744	-.01475	-.00053	.00009	.40655	-.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9809.7	57173.	2569.4
Stddev	9.6	163.	17.1
%RSD	.09828	.28490	.66369
#1	9799.7	57086.	2561.9
#2	9810.5	57361.	2557.4
#3	9818.9	57071.	2589.0

Approved: July 16, 2016

Sample Name: L1607052401 Acquired: 7/14/2016 21:08:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00169	.59548	-.00003	.05987	.13203	.00009	64.259	.00038
Stddev	.00259	.00897	.00177	.00101	.00073	.00003	.169	.00025
%RSD	153.46	1.5071	6237.8	1.6851	.55431	32.672	.26369	64.694
#1	-.00012	.60407	-.00192	.05960	.13285	.00009	64.086	.00041
#2	-.00027	.58617	.00159	.06099	.13182	.00013	64.269	.00061
#3	-.00468	.59621	.00025	.05903	.13143	.00007	64.424	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00084	.00480	.01299	.95933	1.3068	.01314	12.327	.06223
Stddev	.00011	.00125	.00140	.02033	.0543	.00325	.194	.00324
%RSD	13.598	26.030	10.769	2.1191	4.1531	24.714	1.5746	5.2027
#1	.00080	.00463	.01425	.98225	1.2961	.01261	12.110	.06588
#2	.00076	.00613	.01324	.95228	1.3656	.01018	12.388	.05971
#3	.00098	.00365	.01148	.94347	1.2586	.01661	12.484	.06110
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	14.177	.01328	.04592	.00064	.00119	-.00462	5.6420
Stddev	.00013	.049	.00122	.00979	.00348	.00332	.00428	.2680
%RSD	28.327	.34545	9.1778	21.310	546.05	277.59	92.616	4.7492
#1	.00037	14.122	.01468	.05698	-.00334	.00221	-.00249	5.8120
#2	.00043	14.217	.01264	.03838	.00211	-.00251	-.00955	5.7809
#3	.00062	14.192	.01251	.04241	.00313	.00388	-.00183	5.3331
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607052401 Acquired: 7/14/2016 21:08:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	.49699	.00213	.00030	-.00005	.01573	.00045
Stddev	.00086	.00166	.00310	.00420	.00072	.00096	.00025
%RSD	112.76	.33449	145.52	1413.9	1374.3	6.0945	54.223
#1	-.00018	.49578	.00517	.00202	.00057	.01631	.00029
#2	.00095	.49889	-.00102	.00336	-.00084	.01627	.00074
#3	.00151	.49631	.00224	-.00449	.00011	.01463	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9881.6	57638.	2580.6
Stddev	25.4	199.	8.0
%RSD	.25740	.34459	.31065
#1	9908.3	57477.	2583.6
#2	9878.9	57577.	2571.6
#3	9857.7	57860.	2586.8

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 21:12:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40867	10.140	.41183	.49550	.99292	.05119	9.8550	.05096
Stddev	.00040	.025	.00052	.00172	.00941	.00012	.0686	.00066
%RSD	.09760	.25036	.12686	.34716	.94817	.23423	.69586	1.2866
#1	.40913	10.131	.41213	.49474	.99605	.05129	9.8565	.05135
#2	.40840	10.168	.41213	.49747	.98234	.05122	9.7858	.05134
#3	.40848	10.120	.41123	.49429	1.0004	.05106	9.9229	.05021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20781	.51064	.51238	4.0367	50.208	.98935	10.339	.51121
Stddev	.00321	.00176	.00643	.0546	.348	.00599	.065	.00390
%RSD	1.5427	.34502	1.2558	1.3537	.69268	.60521	.62442	.76288
#1	.20976	.50864	.51693	4.0260	50.306	.98826	10.346	.51542
#2	.20955	.51133	.51519	3.9881	49.822	.98399	10.271	.50773
#3	.20411	.51196	.50502	4.0958	50.497	.99581	10.399	.51047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0197	49.165	.50748	10.123	.50586	1.2070	.40559	4.8816
Stddev	.0130	.383	.00700	.104	.00393	.0139	.00542	.0742
%RSD	1.2747	.77880	1.3801	1.0302	.77770	1.1507	1.3372	1.5200
#1	1.0278	49.167	.51147	10.200	.50980	1.2089	.40938	4.9619
#2	1.0265	48.781	.51159	10.164	.50585	1.2199	.40802	4.8672
#3	1.0047	49.547	.49940	10.004	.50193	1.1923	.39938	4.8156
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 21:12:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0427**	**.99398**	**1.0175**	**.51460**	**1.0184**	**1.0123**	**1.0264**
Stddev	.0187	.00667	.0039	.00607	.0018	.0120	.0088
%RSD	1.7924	.67154	.38346	1.1788	.17643	1.1817	.85683
#1	1.0511	.99528	1.0173	.51556	1.0181	1.0197	1.0283
#2	1.0556	.98675	1.0137	.52014	1.0169	1.0187	1.0167
#3	1.0212	.99991	1.0215	.50812	1.0204	.99850	1.0340
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10037.**	**58018.**	**2607.0**
Stddev	8.	108.	29.7
%RSD	.08262	.18557	1.1394
#1	10042.	58099.	2601.5
#2	10028.	58059.	2639.1
#3	10042.	57895.	2580.5

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 21:16:29 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00227**	**.00164**	**.00078**	**.00485**	**.00130**	**.00015**	**-.01287**	**.00009**
Stddev	.00067	.00604	.00342	.00251	.00047	.00004	.03147	.00005
%RSD	29.338	368.18	439.63	51.739	35.747	29.200	244.47	52.337
#1	-.00296	-.00513	.00427	.00474	.00092	.00020	.01670	.00005
#2	-.00223	.00645	-.00257	.00741	.00182	.00014	-.04595	.00008
#3	-.00163	.00360	.00063	.00240	.00117	.00011	-.00937	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.00019**	**-.00011**	**.00940**	**.04646**	**.00313**	**-.02505**	**-.00081**
Stddev	.00026	.00048	.00060	.02155	.05638	.00303	.06773	.00411
%RSD	1248.2	257.41	523.60	229.24	121.37	96.772	270.39	508.57
#1	.00005	.00072	.00052	.01306	.06200	.00393	-.04580	-.00494
#2	-.00030	-.00021	-.00067	-.01375	.09344	-.00022	.05063	-.00076
#3	.00020	.00005	-.00019	.02889	-.01607	.00567	-.07998	.00327
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00000**	**.03550**	**-.00094**	**.00428**	**-.00124**	**-.00013**	**.00102**	**.00286**
Stddev	.00026	.03698	.00126	.00343	.00117	.00131	.00039	.00286
%RSD	6994.9	104.18	133.02	80.010	94.296	1004.3	38.608	99.883
#1	-.00004	.05077	-.00239	.00824	-.00251	-.00162	.00061	.00133
#2	.00028	.06239	-.00026	.00237	-.00019	.00084	.00107	.00110
#3	-.00023	-.00667	-.00018	.00224	-.00103	.00039	.00139	.00616
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 21:16:29 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00097	.00008	.00132	.00160	.00012	.00006	.00041
Stddev	.00046	.00041	.00121	.00108	.00031	.00005	.00022
%RSD	47.414	496.21	91.746	67.829	266.02	79.006	53.242
#1	.00088	.00055	.00006	.00091	.00047	.00011	.00039
#2	.00056	-.00014	.00248	.00103	.00003	.00005	.00020
#3	.00146	-.00016	.00144	.00285	-.00014	.00002	.00064
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9994.5	58657.	2578.5
Stddev	74.8	30.	32.7
%RSD	.74820	.05139	1.2664
#1	10039.	58625.	2541.9
#2	10036.	58660.	2604.6
#3	9908.1	58685.	2588.9

Approved: July 16, 2016

Sample Name: LLCCV Acquired: 7/14/2016 21:20:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00729	.17130	.00692	.08527	.00992	.00182	.39864	.00105
Stddev	.00152	.00097	.00246	.00095	.00039	.00005	.03424	.00002
%RSD	20.857	.56341	35.594	1.1166	3.9637	2.7881	8.5897	2.3544
#1	.00878	.17214	.00542	.08635	.00951	.00178	.39029	.00105
#2	.00574	.17151	.00558	.08492	.00997	.00180	.36935	.00108
#3	.00735	.17024	.00977	.08454	.01029	.00187	.43629	.00103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00416	.00417	.00434	.08701	.91009	.08623	.39378	.00487
Stddev	.00032	.00083	.00065	.01640	.05631	.00224	.02982	.00457
%RSD	7.6463	19.962	14.936	18.850	6.1877	2.5959	7.5738	93.752
#1	.00442	.00413	.00484	.09629	.84959	.08768	.36245	.00635
#2	.00427	.00336	.00361	.06808	.91971	.08365	.42183	.00851
#3	.00381	.00503	.00457	.09668	.96098	.08735	.39707	-.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00818	.41159	.01661	.81568	.00457	.08469	.01061	.80216
Stddev	.00031	.01178	.00066	.00177	.00142	.00314	.00358	.00421
%RSD	3.7438	2.8610	3.9753	.21723	31.058	3.7046	33.681	.52506
#1	.00802	.41882	.01601	.81757	.00413	.08700	.01438	.80358
#2	.00853	.39800	.01649	.81541	.00615	.08112	.01020	.80548
#3	.00799	.41794	.01732	.81406	.00342	.08595	.00726	.79742
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: LLCCV Acquired: 7/14/2016 21:20:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.43996	.04281	.02397	.16176	.00812	.01840	.04358
Stddev	.00268	.00052	.00414	.00178	.00072	.00010	.00063
%RSD	.60974	1.2072	17.274	1.1023	8.8997	.53427	1.4532
#1	.44280	.04237	.02394	.16280	.00830	.01840	.04431
#2	.43961	.04338	.01984	.15970	.00873	.01849	.04323
#3	.43747	.04268	.02812	.16279	.00732	.01830	.04320
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9808.9	56807.	2507.3
Stddev	30.4	66.	20.3
%RSD	.30982	.11654	.81106
#1	9790.3	56807.	2483.9
#2	9792.4	56741.	2517.9
#3	9844.0	56873.	2520.2

Approved: July 16, 2016

2.3.2 Metals ICP-MS Data

2.3.2.1 Summary Data

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061452-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW12SW-062416	**Prep Method:**	3015	**Prep Date:**	06/28/2016 08:58
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/01/2016 10:40
Workgroup #:	WG574824	**Analyst:**	JYH	**Run Date:**	07/01/2016 15:49
Collect Date:	06/24/2016 07:50	**Dilution:**	1	**File ID:**	NI.070116.154932
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00647		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00727		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00964		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00200	U	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.00744	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.000779	J	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0132	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061452-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW12SW-062416	**Prep Method:**	3015	**Prep Date:**	06/28/2016 08:58
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/06/2016 09:17
Workgroup #:	WG574824	**Analyst:**	JYH	**Run Date:**	07/06/2016 18:43
Collect Date:	06/24/2016 07:50	**Dilution:**	50	**File ID:**	NI.070616.184328
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.667		0.300	0.150	0.0750
Manganese, Total	7439-96-5	0.893		0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer NexION 300X

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	100
Vi = Initial volume	40
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/L)	0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	200
Vi = Initial volume	0.5
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/kg)	40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	40
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	50

50 ug/kg = 0.050 mg/kg

Perkin Elmer NexION ICP/MS

STANDARDS KEY

QC Std 1 - ICV
QC Std 2 - ICB
QC Std 3 - LLICV
QC Std 4 - ICSA
QC Std 5 - ICSAB
QC Std 6 - CCV
QC Std 7 - CCB
QC Std 8 - LLCCV

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.00005	0.05	0.1
Sb	10	0	0.00005	0.05	0.1
As	10	0	0.00005	0.05	0.1
Ba	10	0	0.00005	0.05	0.1
Be	10	0	0.00005	0.05	0.1
Ca	1000	0	0.005	5	10
Cd	10	0	0.0005	0.05	0.1
Cr	10	0	0.0005	0.05	0.1
Co	10	0	0.0005	0.05	0.1
Cu	10	0	0.0005	0.05	0.1
Fe	1000	0	0.005	5	10
Pb	10	0	0.00005	0.05	0.1
Mg	1000	0	0.005	5	10
Mn	10	0	0.00005	0.05	0.1
Ni	10	0	0.00005	0.05	0.1
K	1000	0	0.005	5	10
Se	10	0	0.00005	0.05	0.1
Ag	10	0	0.00005	0.05	0.1
Na	1000	0	0.005	5	10
Tl	10	0	0.00005	0.05	0.1
V	10	0	0.00005	0.05	0.1
U	1000	0	0.00005	0.05	0.1
Zn	10	0	0.00005	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG574419
Analyst: VC
Spike Analyst: VC
Run Date: 06/28/2016 08:58
Method: 3015
Balance: BAL016
Instrument: MW-3
Instrument Start: 06/28/2016 09:02

SOP: ME407 Revison 19
Spike Solution: STD75998
Spike Witness: ERP
40 & 50 ML. DIGESTION TU COA18987
HNO3 Lot #: COA18905
MS Filters- fisher-Lot#R RGT35621

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG574419-03	BLANK	1	20 mL	50 mL	180.389 g	180.391 g		
2	WG574419-04	LCS	1	20 mL	50 mL	182.172 g	182.183 g	.25 mL	
3	L16061360-01	SAMP	2	20 mL	50 mL	182.032 g	182.031 g		07/05/16
4	L16061360-02	SAMP	2	20 mL	50 mL	182.567 g	182.564 g		07/05/16
5	L16061400-01	SAMP	1	20 mL	50 mL	181.061 g	181.059 g		07/08/16
6	L16061400-02	SAMP	1	20 mL	50 mL	181.722 g	181.713 g		07/08/16
7	L16061400-03	SAMP	1	20 mL	50 mL	184.279 g	184.279 g		07/08/16
8	L16061400-04	SAMP	1	20 mL	50 mL	182.065 g	182.038 g		07/08/16
9	L16061400-05	SAMP	1	20 mL	50 mL	182.153 g	182.136 g		07/08/16
10	WG574419-01	REF	1	20 mL	50 mL	182.509 g	182.498 g		
11	L16061400-06	RS01	1	20 mL	50 mL	182.509 g	182.498 g		07/08/16
12	WG574419-05	MS	1	20 mL	50 mL	180.405 g	180.408 g	.25 mL	
13	L16061400-07	MS01	1	20 mL	50 mL	180.405 g	180.408 g	.25 mL	07/08/16
14	WG574419-06	MSD	1	20 mL	50 mL	184.727 g	184.718 g	.25 mL	
15	L16061400-08	SD01	1	20 mL	50 mL	184.727 g	184.718 g	.25 mL	07/08/16
16	L16061400-09	SAMP	1	20 mL	50 mL	183.411 g	183.411 g		07/08/16
17	L16061400-10	SAMP	1	20 mL	50 mL	181.746 g	181.735 g		07/08/16
18	WG574419-02	REF	2	20 mL	50 mL	183.009 g	183.02 g		
19	L16061427-01	SAMP	2	20 mL	50 mL	183.009 g	183.02 g		07/06/16
20	L16061444-11	SAMP	1	20 mL	50 mL	181.662 g	181.659 g		07/08/16
21	L16061452-01	SAMP	1	20 mL	50 mL	181.538 g	181.524 g		07/08/16
22	L16061453-01	SAMP	1	20 mL	50 mL	182.609 g	182.6 g		07/08/16
23	L16061453-03	SAMP	1	20 mL	50 mL	182.794 g	182.785 g		07/08/16
24	L16061468-01	SAMP	2	20 mL	50 mL	185.027 g	185.007 g		07/01/16
25	L16061470-01	SAMP	2	20 mL	50 mL	181.721 g	181.695 g		07/01/16
26	L16061471-01	SAMP	2	20 mL	50 mL	179.446 g	179.44 g		07/01/16
27	WG574419-07	DUP	1	20 mL	50 mL	183.333 g	183.325 g		

L16061400-04	FILTERED DIGESTATE
L16061400-09	FILTERED DIGESTATE

Analyst: Vicki Collins

Reviewer: Erin Potter

MW_DIG - Modified 09/30/2009
PDF ID: 4828177
Report generated: 06/28/2016 10:16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070116A.REP

Analyst1: JYH Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705

ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607

CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345

Stannous : Hydroxylamine :

Workgroups: 574808,574849,574824,574804,575057

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.070116.102728	Blank	Blank		1		07/01/16 10:27
2	NI.070116.103040	WG575028-01	Calibration Point		1		07/01/16 10:30
3	NI.070116.103351	WG575028-02	Calibration Point		1		07/01/16 10:33
4	NI.070116.103702	WG575028-03	Calibration Point		1		07/01/16 10:37
5	NI.070116.104014	WG575028-04	Calibration Point		1		07/01/16 10:40
6	NI.070116.104327	WG575028-05	Initial Calibration Verification		1		07/01/16 10:43
7	NI.070116.104640	WG575028-06	Initial Calib Blank		1		07/01/16 10:46
8	NI.070116.104953	WG575028-07	Low Level Initial Calibration V		1		07/01/16 10:49
9	NI.070116.105304	WG575028-08	Interference Check		1		07/01/16 10:53
10	NI.070116.105616	WG575028-09	Interference Check		1		07/01/16 10:56
11	NI.070116.105929	WG575028-10	CCV		1		07/01/16 10:59
12	NI.070116.110241	WG575028-11	CCB		1		07/01/16 11:02
13	NI.070116.110553	WG574416-04	Method/Prep Blank	20/50	1		07/01/16 11:05
14	NI.070116.110904	WG574416-05	Laboratory Control S	20/50	1		07/01/16 11:09
15	NI.070116.111216	WG574416-01	Reference Sample		1	L16061417-05	07/01/16 11:12
16	NI.070116.111527	WG574416-06	Matrix Spike	20/50	1	L16061417-05	07/01/16 11:15
17	NI.070116.111839	WG574416-07	Matrix Spike Duplica	20/50	1	L16061417-05	07/01/16 11:18
18	NI.070116.112150	L16061417-01	SS007MW0B04-007	20/50	1		07/01/16 11:21
19	NI.070116.112502	L16061417-02	SS007MW0B06-007	20/50	1		07/01/16 11:25
20	NI.070116.112813	WG574808-01	Post Digestion Spike		1	L16061417-02	07/01/16 11:28
21	NI.070116.113125	WG574808-02	Serial Dilution		5	L16061417-02	07/01/16 11:31
22	NI.070116.113436	WG574808-02	Serial Dilution		25	L16061417-02	07/01/16 11:34
23	NI.070116.113750	WG575028-12	CCV		1		07/01/16 11:37
24	NI.070116.114101	WG575028-13	CCB		1		07/01/16 11:41
25	NI.070116.114414	L16061417-03	SS007MW0B06-007DUP	20/50	1		07/01/16 11:44
26	NI.070116.114726	L16061417-04	SS007MW0B13-007	20/50	1		07/01/16 11:47
27	NI.070116.115037	L16061417-08	SS007MWN748-007	20/50	1		07/01/16 11:50
28	NI.070116.115349	L16061417-09	FQC-RB06221601-CC	20/50	1		07/01/16 11:53
29	NI.070116.115701	L16061441-01	TS935TW002A	20/50	1		07/01/16 11:57
30	NI.070116.120012	L16061441-02	TS935TW005A	20/50	1		07/01/16 12:00
31	NI.070116.120324	WG574416-02	Reference Sample		1	L16061442-01	07/01/16 12:03
32	NI.070116.120635	L16061442-02	TS935TW010C	20/50	1		07/01/16 12:06
33	NI.070116.120947	WG574416-08	Matrix Spike	20/50	1	L16061442-01	07/01/16 12:09
34	NI.070116.121258	WG574416-09	Matrix Spike Duplica	20/50	1	L16061442-01	07/01/16 12:12

Page: 1 Approved: July 05, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070116A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 574808,574849,574824,574804,575057

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.070116.121611	WG575028-14	CCV		1		07/01/16 12:16
36	NI.070116.121923	WG575028-15	CCB		1		07/01/16 12:19
37	NI.070116.122236	L16061446-01	GH9-HSPRING	20/50	1		07/01/16 12:22
38	NI.070116.122548	WG574416-03	Reference Sample		1	L16061447-01	07/01/16 12:25
39	NI.070116.122859	WG574416-10	Duplicate	20/50	1	L16061447-01	07/01/16 12:28
40	NI.070116.123211	L16061289-01	MW21-062216	20/50	1		07/01/16 12:32
41	NI.070116.123523	L16061289-04	18WW02F-062216	20/50	1		07/01/16 12:35
42	NI.070116.123834	L16061290-03	MW16F-062116	20/50	1		07/01/16 12:38
43	NI.070116.124145	L16061290-05	109-062216	20/50	1		07/01/16 12:41
44	NI.070116.124458	WG575028-16	CCV		1		07/01/16 12:44
45	NI.070116.124810	WG575028-17	CCB		1		07/01/16 12:48
46	NI.070116.125836	WG574419-03	Method/Prep Blank	20/50	1		07/01/16 12:58
47	NI.070116.130334	WG574419-04	Laboratory Control S	20/50	1		07/01/16 13:03
48	NI.070116.130646	WG574419-01	Reference Sample		1	L16061400-06	07/01/16 13:06
49	NI.070116.130957	WG574419-05	Matrix Spike	20/50	1	L16061400-06	07/01/16 13:09
50	NI.070116.131309	WG574419-06	Matrix Spike Duplica	20/50	1	L16061400-06	07/01/16 13:13
51	NI.070116.131620	WG574419-02	Reference Sample		1	L16061427-01	07/01/16 13:16
52	NI.070116.131932	WG574419-07	Duplicate	20/50	1	L16061427-01	07/01/16 13:19
53	NI.070116.132243	L16061468-01	H6F0605-01	20/50	1		07/01/16 13:22
54	NI.070116.132555	WG574824-01	Post Digestion Spike		1	L16061468-01	07/01/16 13:25
55	NI.070116.132906	WG574824-02	Serial Dilution		5	L16061468-01	07/01/16 13:29
56	NI.070116.133218	WG575028-18	CCV		1		07/01/16 13:32
57	NI.070116.133530	WG575028-19	CCB		1		07/01/16 13:35
58	NI.070116.133842	L16061470-01	S6F0639-01	20/50	1		07/01/16 13:38
59	NI.070116.134154	L16061471-01	S6F0244-01	20/50	1		07/01/16 13:41
60	NI.070116.134505	WG574593-01	Reference Sample		2	L16061536-01	07/01/16 13:45
61	NI.070116.134817	WG574593-04	Duplicate	20/50	2	L16061536-01	07/01/16 13:48
62	NI.070116.135128	WG574593-05	Matrix Spike	20/50	2	L16061536-01	07/01/16 13:51
63	NI.070116.135440	WG574593-06	Matrix Spike Duplica	20/50	2	L16061536-01	07/01/16 13:54
64	NI.070116.135751	L16061068-04	C01-061716	20/50	50		07/01/16 13:57
65	NI.070116.140103	L16061068-05	C01FD-061716	20/50	50		07/01/16 14:01
66	NI.070116.140414	L16061068-11	MW19F-061716	20/50	10		07/01/16 14:04
67	NI.070116.140725	WG574840-01	Post Digestion Spike		10	L16061622-02	07/01/16 14:07
68	NI.070116.141039	WG575028-20	CCV		1		07/01/16 14:10

Page: 2 Approved: July 05, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070116A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 574808,574849,574824,574804,575057

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.070116.141350	WG575028-21	CCB		1		07/01/16 14:13
70	NI.070116.141703	WG574840-04	L1606106815S WG574840-0	20/50	10		07/01/16 14:17
71	NI.070116.142015	WG574840-05	L1606106817SD WG574840	20/50	10		07/01/16 14:20
72	NI.070116.142326	L16061065-02	MW-23-006	20/50	50		07/01/16 14:23
73	NI.070116.142637	L16061065-03	MW-23-008	20/50	50		07/01/16 14:26
74	NI.070116.142949	L16061065-04	MW-23-009	20/50	50		07/01/16 14:29
75	NI.070116.143302	WG575028-22	CCV		1		07/01/16 14:33
76	NI.070116.143613	WG575028-23	CCB		1		07/01/16 14:36
77	NI.070116.143926	WG575028-24	Low Level Continuing Calibra		1		07/01/16 14:39
78	NI.070116.151112	L16061360-01	NP0116-LM1	20/50	1		07/01/16 15:11
79	NI.070116.151423	L16061360-02	EB-062416	20/50	1		07/01/16 15:14
80	NI.070116.151735	L16061400-01	MW-22-008	20/50	1		07/01/16 15:17
81	NI.070116.152046	L16061400-02	MW-22-016	20/50	1		07/01/16 15:20
82	NI.070116.152358	L16061400-03	MW-22-006	20/50	1		07/01/16 15:23
83	NI.070116.152709	L16061400-04	MW-22-005	20/50	1		07/01/16 15:27
84	NI.070116.153021	L16061400-05	MW-22-001	20/50	1		07/01/16 15:30
85	NI.070116.153332	L16061400-09	MW-22-003	20/50	1		07/01/16 15:33
86	NI.070116.153643	L16061400-10	MW-22-004	20/50	1		07/01/16 15:36
87	NI.070116.153955	L16061444-11	EB03	20/50	1		07/01/16 15:39
88	NI.070116.154308	WG575028-25	CCV		1		07/01/16 15:43
89	NI.070116.154619	WG575028-26	CCB		1		07/01/16 15:46
90	NI.070116.154932	L16061452-01	18CPTMW12SW-062416	20/50	1		07/01/16 15:49
91	NI.070116.155244	L16061453-01	MW2-062416	20/50	1		07/01/16 15:52
92	NI.070116.155555	L16061453-03	18CPTMW01SW-062416	20/50	1		07/01/16 15:55
93	NI.070116.155907	WG574419-02	Reference Sample		5	L16061427-01	07/01/16 15:59
94	NI.070116.160218	WG574419-07	Duplicate	20/50	5	L16061427-01	07/01/16 16:02
95	NI.070116.160530	L16061289-01	MW21-062216	20/50	50		07/01/16 16:05
96	NI.070116.160841	L16061290-03	MW16F-062116	20/50	10		07/01/16 16:08
97	NI.070116.161155	WG575028-27	CCV		1		07/01/16 16:11
98	NI.070116.161506	WG575028-28	CCB		1		07/01/16 16:15
99	NI.070116.163708	WG574521-03	Method/Prep Blank	.25/100	1		07/01/16 16:37
100	NI.070116.164019	WG574521-04	Laboratory Control S	.25/100	1		07/01/16 16:40
101	NI.070116.164331	WG574521-01	Reference Sample		1	L16061445-04	07/01/16 16:43
102	NI.070116.164642	WG574521-05	Matrix Spike	.254/100	1	L16061445-04	07/01/16 16:46

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070116A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 574808,574849,574824,574804,575057

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.070116.164954	WG574521-06	Matrix Spike Duplica	.25/100	1	L16061445-04	07/01/16 16:49
104	NI.070116.165305	L16061451-01	GS165SS062016S-ES	.251/100	1		07/01/16 16:53
105	NI.070116.165617	L16061451-02	GS159SS062116G-ES	.25/100	1		07/01/16 16:56
106	NI.070116.165928	WG575057-01	Post Digestion Spike		1	L16061451-02	07/01/16 16:59
107	NI.070116.170240	WG575057-02	Serial Dilution		5	L16061451-02	07/01/16 17:02
108	NI.070116.170552	WG575057-02	Serial Dilution		25	L16061451-02	07/01/16 17:05
109	NI.070116.170905	WG575028-29	CCV		1		07/01/16 17:09
110	NI.070116.171217	WG575028-30	CCB		1		07/01/16 17:12
111	NI.070116.171825	L16061451-03	GS164SS062116S-ES	.251/100	1		07/01/16 17:18
112	NI.070116.172204	L16061451-04	GS164SS062116P-ES	.253/100	1		07/01/16 17:22
113	NI.070116.172516	L16061451-05	GS154SS062316X-ES	.253/100	1		07/01/16 17:25
114	NI.070116.172827	WG574521-02	Reference Sample		1	L16061451-06	07/01/16 17:28
115	NI.070116.173139	L16061451-07	GS153SS0622316X-ES	.253/100	1		07/01/16 17:31
116	NI.070116.173450	L16061451-08	GS153SS062316X-ESD	.256/100	1		07/01/16 17:34
117	NI.070116.173802	WG574521-07	Matrix Spike	.258/100	1	L16061451-06	07/01/16 17:38
118	NI.070116.174113	WG574521-08	Matrix Spike Duplica	.256/100	1	L16061451-06	07/01/16 17:41
119	NI.070116.174425	L16061445-01	TS935DS00700A	.258/100	1		07/01/16 17:44
120	NI.070116.174736	L16061445-02	TS935DS00705A	.256/100	1		07/01/16 17:47
121	NI.070116.175049	WG575028-31	CCV		1		07/01/16 17:50
122	NI.070116.175401	WG575028-32	CCB		1		07/01/16 17:54
123	NI.070116.175714	L16061445-03	TS935DS00800A		1		07/01/16 17:57
124	NI.070116.180025	L16061445-07	TS935DS00900A		1		07/01/16 18:00
125	NI.070116.180337	L16061445-08	TS935DS00905A		1		07/01/16 18:03
126	NI.070116.180648	L16061445-09	TS935DS00905C		1		07/01/16 18:06
127	NI.070116.181000	L16061445-10	TS935DS01000A		1		07/01/16 18:10
128	NI.070116.181311	L16061445-11	TS935DS01005A		1		07/01/16 18:13
129	NI.070116.181623	L16061445-12	TS935DS01205A		1		07/01/16 18:16
130	NI.070116.181934	L16061451-01	GS165SS062016S-ES		10		07/01/16 18:19
131	NI.070116.182246	L16061451-02	GS159SS062116G-ES		10		07/01/16 18:22
132	NI.070116.182557	WG575057-01	Post Digestion Spike		10	L16061451-02	07/01/16 18:25
133	NI.070116.182910	WG575028-33	CCV		1		07/01/16 18:29
134	NI.070116.183222	WG575028-34	CCB		1		07/01/16 18:32
135	NI.070116.183535	WG575057-02	Serial Dilution		50	L16061451-02	07/01/16 18:35
136	NI.070116.183846	L16061451-03	GS164SS062116S-ES		10		07/01/16 18:38

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070116A.REP

Analyst1: JYH Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705

ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607

CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76345

Stannous : Hydroxylamine :

Workgroups: 574808,574849,574824,574804,575057

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	NI.070116.184158	L16061451-04	GS164SS062116P-ES		10		07/01/16 18:41
138	NI.070116.184509	L16061451-05	GS154SS062316X-ES		10		07/01/16 18:45
139	NI.070116.184821	WG574521-02	Reference Sample		10	L16061451-06	07/01/16 18:48
140	NI.070116.185132	L16061451-07	GS153SS0622316X-ES		10		07/01/16 18:51
141	NI.070116.185444	L16061451-08	GS153SS062316X-ESD		10		07/01/16 18:54
142	NI.070116.185755	WG574521-07	Matrix Spike		10	L16061451-06	07/01/16 18:57
143	NI.070116.190107	WG574521-08	Matrix Spike Duplica		10	L16061451-06	07/01/16 19:01
144	NI.070116.190419	WG575028-35	CCV		1		07/01/16 19:04
145	NI.070116.190731	WG575028-36	CCB		1		07/01/16 19:07
146	NI.070116.191044	WG575028-37	Low Level Continuing Calibra		1		07/01/16 19:10

Comments

Seq.	Rerun	Dil.	Reason	Analytes
67				
Seq. 67, 70-71: wrong WG numbers. JYH				

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070616B.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD77006 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76989
Stannous : Hydroxylamine :

Workgroups: 574825,575052,575023,574822,574572,574573,574824,574688

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.070616.090452	Blank	Blank		1		07/06/16 09:04
2	NI.070616.090803	WG575370-01	Calibration Point		1		07/06/16 09:08
3	NI.070616.091115	WG575370-02	Calibration Point		1		07/06/16 09:11
4	NI.070616.091426	WG575370-03	Calibration Point		1		07/06/16 09:14
5	NI.070616.091738	WG575370-04	Calibration Point		1		07/06/16 09:17
6	NI.070616.092051	WG575370-05	Initial Calibration Verification		1		07/06/16 09:20
7	NI.070616.092404	WG575370-06	Initial Calib Blank		1		07/06/16 09:24
8	NI.070616.092717	WG575370-07	Low Level Initial Calibration V		1		07/06/16 09:27
9	NI.070616.093029	WG575370-08	Interference Check		1		07/06/16 09:30
10	NI.070616.093340	WG575370-09	Interference Check		1		07/06/16 09:33
11	NI.070616.093653	WG575370-10	CCV		1		07/06/16 09:36
12	NI.070616.094005	WG575370-11	CCB		1		07/06/16 09:40
13	NI.070616.094317	WG574195-02	Method/Prep Blank	.25/100	1		07/06/16 09:43
14	NI.070616.094629	WG574195-03	Laboratory Control S	.25/100	1		07/06/16 09:46
15	NI.070616.094940	WG574195-01	Reference Sample		1	L16061294-11	07/06/16 09:49
16	NI.070616.095252	WG574195-04	Matrix Spike	.257/100	1	L16061294-11	07/06/16 09:52
17	NI.070616.095603	WG574195-05	Matrix Spike Duplica	.252/100	1	L16061294-11	07/06/16 09:56
18	NI.070616.095915	L16061294-01	XU936DS00700A	.255/100	1		07/06/16 09:59
19	NI.070616.100226	L16061294-02	XU936DS00705A	.251/100	1		07/06/16 10:02
20	NI.070616.100538	WG574825-01	Post Digestion Spike		1	L16061294-02	07/06/16 10:05
21	NI.070616.100849	WG574825-02	Serial Dilution		5	L16061294-02	07/06/16 10:08
22	NI.070616.101201	WG574825-02	Serial Dilution		25	L16061294-02	07/06/16 10:12
23	NI.070616.101514	WG575370-12	CCV		1		07/06/16 10:15
24	NI.070616.101825	WG575370-13	CCB		1		07/06/16 10:18
25	NI.070616.102139	L16061294-04	XU936DS01100A	.25/100	1		07/06/16 10:21
26	NI.070616.102450	L16061294-05	XU936DS01105A	.252/100	1		07/06/16 10:24
27	NI.070616.102802	L16061294-06	XU936DS01500A	.25/100	1		07/06/16 10:28
28	NI.070616.103113	L16061294-07	XU936DS01505A	.25/100	1		07/06/16 10:31
29	NI.070616.103425	L16061294-08	XU936DS01505C	.255/100	1		07/06/16 10:34
30	NI.070616.103737	L16061294-09	XU936DS01900A	.256/100	1		07/06/16 10:37
31	NI.070616.104048	L16061294-10	XU936DS01905A	.251/100	1		07/06/16 10:40
32	NI.070616.104400	L16061294-14	XU936DS00200A	.256/100	1		07/06/16 10:44
33	NI.070616.104711	L16061294-15	XU936DS00205A	.251/100	1		07/06/16 10:47
34	NI.070616.105023	L16061381-08	XU936DS00405A	.256/100	1		07/06/16 10:50

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070616B.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD77006 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76989
Stannous : Hydroxylamine :

Workgroups: 574825,575052,575023,574822,574572,574573,574824,574688

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.070616.105336	WG575370-14	CCV		1		07/06/16 10:53
36	NI.070616.114231	WG575370-15	CCB		1		07/06/16 11:42
37	NI.070616.114547	WG575370-16	CCV		1		07/06/16 11:45
38	NI.070616.114858	WG575370-17	CCB		1		07/06/16 11:48
39	NI.070616.115343	WG574195-01	Reference Sample		50	L16061294-11	07/06/16 11:53
40	NI.070616.115654	WG574195-04	Matrix Spike	.257/100	50	L16061294-11	07/06/16 11:56
41	NI.070616.120005	WG574195-05	Matrix Spike Duplica	.252/100	50	L16061294-11	07/06/16 12:00
42	NI.070616.120317	L16061294-01	XU936DS00700A	.255/100	50		07/06/16 12:03
43	NI.070616.120628	L16061294-02	XU936DS00705A	.251/100	50		07/06/16 12:06
44	NI.070616.120940	WG574825-01	Post Digestion Spike		50	L16061294-02	07/06/16 12:09
45	NI.070616.121251	WG574825-02	Serial Dilution		250	L16061294-02	07/06/16 12:12
46	NI.070616.121603	L16061294-04	XU936DS01100A	.25/100	50		07/06/16 12:16
47	NI.070616.121914	L16061294-05	XU936DS01105A	.252/100	50		07/06/16 12:19
48	NI.070616.122225	L16061294-06	XU936DS01500A	.25/100	50		07/06/16 12:22
49	NI.070616.122538	WG575370-18	CCV		1		07/06/16 12:25
50	NI.070616.122850	WG575370-19	CCB		1		07/06/16 12:28
51	NI.070616.123202	L16061294-07	XU936DS01505A	.25/100	50		07/06/16 12:32
52	NI.070616.123514	L16061294-08	XU936DS01505C	.255/100	50		07/06/16 12:35
53	NI.070616.123825	L16061294-09	XU936DS01900A	.256/100	50		07/06/16 12:38
54	NI.070616.124137	L16061294-10	XU936DS01905A	.251/100	50		07/06/16 12:41
55	NI.070616.124448	L16061294-14	XU936DS00200A	.256/100	50		07/06/16 12:44
56	NI.070616.124759	L16061294-15	XU936DS00205A	.251/100	50		07/06/16 12:47
57	NI.070616.125111	L16061381-08	XU936DS00405A	.256/100	50		07/06/16 12:51
58	NI.070616.125423	WG575370-20	CCV		1		07/06/16 12:54
59	NI.070616.125735	WG575370-21	CCB		1		07/06/16 12:57
60	NI.070616.130440	L16061313-06	MW-4	20/50	1		07/06/16 13:04
61	NI.070616.130752	L16061313-07	MW-4	20/50	1		07/06/16 13:07
62	NI.070616.131103	L16061313-08	MW-3	20/50	1		07/06/16 13:11
63	NI.070616.131415	L16061313-09	MW-3	20/50	1		07/06/16 13:14
64	NI.070616.131726	L16061313-10	DUPLICATE	20/50	1		07/06/16 13:17
65	NI.070616.132037	L16061313-11	DUPLICATE	20/50	1		07/06/16 13:20
66	NI.070616.132349	L16061313-12	MW-2D	20/50	1		07/06/16 13:23
67	NI.070616.132700	L16061313-13	MW-2D	20/50	1		07/06/16 13:27
68	NI.070616.133012	L16061313-14	EQ-RINSE	20/50	1		07/06/16 13:30

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070616B.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD77006 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76989
Stannous : Hydroxylamine :

Workgroups: 574825,575052,575023,574822,574572,574573,574824,574688

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.070616.133325	WG575370-22	CCV		1		07/06/16 13:33
70	NI.070616.133636	WG575370-23	CCB		1		07/06/16 13:36
71	NI.070616.134017	WG574881-02	Method/Prep Blank	.25/100	1		07/06/16 13:40
72	NI.070616.134329	WG574881-03	Laboratory Control S	.25/100	1		07/06/16 13:43
73	NI.070616.134640	WG574881-01	Reference Sample		1	L16061533-03	07/06/16 13:46
74	NI.070616.134951	WG574881-04	Matrix Spike	.25/100	1	L16061533-03	07/06/16 13:49
75	NI.070616.135303	WG574881-05	Matrix Spike Duplica	.254/100	1	L16061533-03	07/06/16 13:53
76	NI.070616.135614	L16061488-01	NV79-01	.25/100	1		07/06/16 13:56
77	NI.070616.135926	L16061488-02	NV79-02	.258/100	1		07/06/16 13:59
78	NI.070616.140318	WG575023-01	Post Digestion Spike		1	L16061488-02	07/06/16 14:03
79	NI.070616.140630	WG575023-02	Serial Dilution		5	L16061488-02	07/06/16 14:06
80	NI.070616.140941	WG575023-02	Serial Dilution		25	L16061488-02	07/06/16 14:09
81	NI.070616.141254	WG575370-24	CCV		1		07/06/16 14:12
82	NI.070616.141606	WG575370-25	CCB		1		07/06/16 14:16
83	NI.070616.142024	L16061488-03	NV79-03	.259/100	1		07/06/16 14:20
84	NI.070616.142336	L16061488-04	NV79-04	.257/100	1		07/06/16 14:23
85	NI.070616.142647	L16061533-01	TS935DS01100A	.253/100	1		07/06/16 14:26
86	NI.070616.142958	L16061533-02	TS935DS01100C	.255/100	1		07/06/16 14:29
87	NI.070616.143310	L16061643-01	V6F0315-01	.254/100	1		07/06/16 14:33
88	NI.070616.143621	L16061643-02	V6F0315-02	.253/100	1		07/06/16 14:36
89	NI.070616.143933	L16061687-01	TR0059	.252/100	1		07/06/16 14:39
90	NI.070616.144244	L16061296-01	OUTFALL 002/COMP		1		07/06/16 14:42
91	NI.070616.144556	L16061313-08	MW-3	20/50	10		07/06/16 14:45
92	NI.070616.144907	L16061313-10	DUPLICATE	20/50	10		07/06/16 14:49
93	NI.070616.145220	WG575370-26	CCV		1		07/06/16 14:52
94	NI.070616.145531	WG575370-27	CCB		1		07/06/16 14:55
95	NI.070616.150731	L16060907-08	MW11S-061516	20/50	100		07/06/16 15:07
96	NI.070616.151042	L16060907-10	DUP-GW-061516	20/50	100		07/06/16 15:10
97	NI.070616.151354	L16060907-11	DUP-GW-061516	20/50	100		07/06/16 15:13
98	NI.070616.151705	L16060907-12	MW31-061516	20/50	1		07/06/16 15:17
99	NI.070616.152017	L16060907-13	MW31-061516	20/50	1		07/06/16 15:20
100	NI.070616.152328	L16061026-02	18WW16F-061616		1		07/06/16 15:23
101	NI.070616.152752	L16061026-02	18WW16F-061616	20/50	200		07/06/16 15:27
102	NI.070616.153105	WG575370-28	CCV		1		07/06/16 15:31

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070616B.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD77006 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76989
Stannous : Hydroxylamine :

Workgroups: 574825,575052,575023,574822,574572,574573,574824,574688

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.070616.153417	WG575370-29	CCB		1		07/06/16 15:34
104	NI.070616.155033	WG574306-02	Method/Prep Blank	.25/100	1		07/06/16 15:50
105	NI.070616.155345	WG574306-03	Laboratory Control S	.25/100	1		07/06/16 15:53
106	NI.070616.155656	L16061297-01	XU936DS01805A	.259/100	1		07/06/16 15:56
107	NI.070616.160008	L16061297-02	XU936DS01800A	.25/100	1		07/06/16 16:00
108	NI.070616.160319	L16061297-03	XU936DS01405A	.256/100	1		07/06/16 16:03
109	NI.070616.160631	L16061297-04	XU936DS01405C	.258/100	1		07/06/16 16:06
110	NI.070616.160942	L16061297-05	XU936DS02005A	.25/100	1		07/06/16 16:09
111	NI.070616.161318	L16061297-06	XU936DS01605A	.258/100	1		07/06/16 16:13
112	NI.070616.161629	WG574573-03	Post Digestion Spike		1	L16061297-06	07/06/16 16:16
113	NI.070616.161940	WG574573-04	Serial Dilution		5	L16061297-06	07/06/16 16:19
114	NI.070616.162253	WG575370-30	CCV		1		07/06/16 16:22
115	NI.070616.162605	WG575370-31	CCB		1		07/06/16 16:26
116	NI.070616.162917	WG574306-01	Reference Sample		1	L16061297-07	07/06/16 16:29
117	NI.070616.163229	WG574306-04	Matrix Spike	.253/100	1	L16061297-07	07/06/16 16:32
118	NI.070616.163540	WG574306-05	Matrix Spike Duplica	.255/100	1	L16061297-07	07/06/16 16:35
119	NI.070616.163852	L16061297-10	XU936DS01705A	.254/100	1		07/06/16 16:38
120	NI.070616.164203	L16061297-11	XU936DS01305A	.253/100	1		07/06/16 16:42
121	NI.070616.164515	L16061297-12	XU936DS01205A	.251/100	1		07/06/16 16:45
122	NI.070616.164826	L16061297-13	XU936DS00800A	.252/100	1		07/06/16 16:48
123	NI.070616.165137	L16061297-14	XU936DS00805A	.25/100	1		07/06/16 16:51
124	NI.070616.165449	L16061297-15	XU936DS00900A	.259/100	1		07/06/16 16:54
125	NI.070616.165800	L16061297-16	XU936DS00905A	.256/100	1		07/06/16 16:58
126	NI.070616.170113	WG575370-32	CCV		1		07/06/16 17:01
127	NI.070616.170425	WG575370-33	CCB		1		07/06/16 17:04
128	NI.070616.170737	L16061297-17	XU936DS00905C	.25/100	1		07/06/16 17:07
129	NI.070616.171049	L16061297-18	XU936DS01005A	.255/100	1		07/06/16 17:10
130	NI.070616.171400	L16061297-19	XU936DS00600A	.258/100	1		07/06/16 17:14
131	NI.070616.171712	L16061297-20	XU936DS00605A	.259/100	1		07/06/16 17:17
132	NI.070616.172023	L16061297-01	XU936DS01805A	.259/100	50		07/06/16 17:20
133	NI.070616.172334	L16061297-02	XU936DS01800A	.25/100	50		07/06/16 17:23
134	NI.070616.172646	L16061297-03	XU936DS01405A	.256/100	50		07/06/16 17:26
135	NI.070616.172957	L16061297-04	XU936DS01405C	.258/100	50		07/06/16 17:29
136	NI.070616.173309	L16061297-05	XU936DS02005A	.25/100	50		07/06/16 17:33

Page: 4 Approved: July 07, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070616B.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD77006 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76989
Stannous : Hydroxylamine :

Workgroups: 574825,575052,575023,574822,574572,574573,574824,574688

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	NI.070616.173620	L16061297-06	XU936DS01605A	.258/100	50		07/06/16 17:36
138	NI.070616.173934	WG575370-34	CCV		1		07/06/16 17:39
139	NI.070616.174245	WG575370-35	CCB		1		07/06/16 17:42
140	NI.070616.174559	WG574573-03	Post Digestion Spike		50	L16061297-06	07/06/16 17:45
141	NI.070616.174910	WG574573-04	Serial Dilution		250	L16061297-06	07/06/16 17:49
142	NI.070616.175222	WG574306-01	Reference Sample		50	L16061297-07	07/06/16 17:52
143	NI.070616.175533	WG574306-04	Matrix Spike	.253/100	50	L16061297-07	07/06/16 17:55
144	NI.070616.175844	WG574306-05	Matrix Spike Duplica	.255/100	50	L16061297-07	07/06/16 17:58
145	NI.070616.180156	L16061297-10	XU936DS01705A	.254/100	50		07/06/16 18:01
146	NI.070616.180507	L16061297-11	XU936DS01305A	.253/100	50		07/06/16 18:05
147	NI.070616.180818	L16061297-12	XU936DS01205A	.251/100	50		07/06/16 18:08
148	NI.070616.181130	L16061297-13	XU936DS00800A	.252/100	50		07/06/16 18:11
149	NI.070616.181441	L16061297-14	XU936DS00805A	.25/100	50		07/06/16 18:14
150	NI.070616.181755	WG575370-36	CCV		1		07/06/16 18:17
151	NI.070616.182106	WG575370-37	CCB		1		07/06/16 18:21
152	NI.070616.182419	L16061297-15	XU936DS00900A	.259/100	50		07/06/16 18:24
153	NI.070616.182731	L16061297-16	XU936DS00905A	.256/100	50		07/06/16 18:27
154	NI.070616.183042	L16061297-17	XU936DS00905C	.25/100	50		07/06/16 18:30
155	NI.070616.183353	L16061297-18	XU936DS01005A	.255/100	50		07/06/16 18:33
156	NI.070616.183705	L16061297-19	XU936DS00600A	.258/100	50		07/06/16 18:37
157	NI.070616.184016	L16061297-20	XU936DS00605A	.259/100	50		07/06/16 18:40
158	NI.070616.184328	L16061452-01	18CPTMW12SW-062416	20/50	50		07/06/16 18:43
159	NI.070616.184639	L16061453-01	MW2-062416	20/50	50		07/06/16 18:46
160	NI.070616.184952	WG575370-38	CCV		1		07/06/16 18:49
161	NI.070616.185304	WG575370-39	CCB		1		07/06/16 18:53
162	NI.070616.185616	L16061453-03	18CPTMW01SW-062416	20/50	50		07/06/16 18:56
163	NI.070616.185928	L16061296-01	OUTFALL 002/COMP	20/50	1		07/06/16 18:59
164	NI.070616.190239	L16061453-03	18CPTMW01SW-062416		500		07/06/16 19:02
165	NI.070616.190551	WG575370-40	Interference Check		1		07/06/16 19:05
166	NI.070616.190902	WG575370-41	Interference Check		1		07/06/16 19:09
167	NI.070616.191215	WG575370-42	CCV		1		07/06/16 19:12
168	NI.070616.191526	WG575370-43	CCB		1		07/06/16 19:15
169	NI.070616.191839	WG575370-44	Low Level Continuing Calibra		1		07/06/16 19:18

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Microbac Laboratories Inc.

Data Checklist

Date: 01-JUL-2016
Analyst: JYH
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 575028
Runlog ID: 76079
Analytical Workgroups: 574808,574849,574824,574804,575057

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1441,1442,1360,1400,1444,1445
Level 4	1289,12901417,1452,1453,1068
	1065,1451
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	BKT
Comments	

Primary Reviewer:

Secondary Reviewer:
05-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-05-2016 15:57:13

Microbac Laboratories Inc.

Data Checklist

Date: 06-JUL-2016
Analyst: JYH
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 575370
Runlog ID: 76130
Analytical Workgroups: 574825,575052,575023,574822,574572,574573,574824,574688

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1294,1533,1297
Level 4	1687,907,1026,1452,1453
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	BKT
Comments	

Primary Reviewer:
07-JUL-2016

Secondary Reviewer:
07-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-07-2016 15:29:19

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG574824

Login Number: L16061452

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW12SW-062416	01	06/24/16					06/28/2016	4	180		07/01/16	7.3	180	
18CPTMW12SW-062416	01	06/24/16					06/28/2016	4	180		07/06/16	12.5	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4837520
Report generated 07/07/2016 08:33

METHOD BLANK SUMMARY

Login Number: L16061452
Blank File ID: NI.070116.125836
Prep Date: 06/28/16 08:58
Analyzed Date: 07/01/16 12:58
Analyst: JYH

Work Group: WG574824
Blank Sample ID: WG574419-03
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG574419-04	NI.070116.130334	07/01/16 13:03	01
DUP	WG574419-07	NI.070116.131932	07/01/16 13:19	01
18CPTMW12SW-062416	L16061452-01	NI.070116.154932	07/01/16 15:49	01
DUP	WG574419-07	NI.070116.160218	07/01/16 16:02	DL01
18CPTMW12SW-062416	L16061452-01	NI.070616.184328	07/06/16 18:43	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4837521
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061452 Prep Date: 06/28/16 08:58 Sample ID: WG574419-03
Instrument ID: ICP-MS2 Run Date: 07/01/16 12:58 Prep Method: 3015
File ID: NI.070116.125836 Analyst: JYH Method: 6020A
Workgroup (AAB#): WG574824 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-01-JUL-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Antimony, Total	0.000500	0.00200	0.000500	1	U
Arsenic, Total	0.000500	0.00200	0.000500	1	U
Barium, Total	0.00150	0.00600	0.00150	1	U
Cadmium, Total	0.000300	0.00120	0.000300	1	U
Chromium, Total	0.00100	0.00400	0.00100	1	U
Cobalt, Total	0.000500	0.00200	0.000500	1	U
Copper, Total	0.00100	0.00400	0.00100	1	U
Lead, Total	0.000500	0.00200	0.000500	1	U
Manganese, Total	0.00100	0.00400	0.00100	1	U
Nickel, Total	0.00200	0.00800	0.00200	1	U
Silver, Total	0.000500	0.00200	0.000500	1	U
Thallium, Total	0.000100	0.000400	0.000100	1	U
Vanadium, Total	0.000500	0.00200	0.000500	1	U
Zinc, Total	0.0125	0.0500	0.0125	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4837522
07-JUL-2016 08:33

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061452 Run Date: 07/01/2016 Sample ID: WG574419-04
Instrument ID: ICP-MS2 Run Time: 13:03 Prep Method: 3015
File ID: NI.070116.130334 Analyst: JYH Method: 6020A
Workgroup (AAB#): WG574824 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD75998 Cal ID: ICP-MS-01-JUL-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Antimony, Total	0.125	0.128	102	80 - 120	
Arsenic, Total	0.125	0.126	101	80 - 120	
Barium, Total	0.125	0.123	98.4	80 - 120	
Cadmium, Total	0.125	0.126	101	80 - 120	
Chromium, Total	0.125	0.127	102	80 - 120	
Cobalt, Total	0.125	0.126	101	80 - 120	
Copper, Total	0.125	0.130	104	80 - 120	
Lead, Total	0.125	0.128	102	80 - 120	
Manganese, Total	0.125	0.128	102	80 - 120	
Nickel, Total	0.125	0.127	101	80 - 120	
Silver, Total	0.125	0.128	103	80 - 120	
Thallium, Total	0.125	0.126	101	80 - 120	
Vanadium, Total	0.125	0.125	100	80 - 120	
Zinc, Total	0.125	0.129	103	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4837523
Report generated: 07/07/2016 08:33

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061452 Cal ID: ICP-MS2 - Worknum: WG574824
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG574419-01 File ID: NI.070116.130646 Dil: 1 Matrix: WATER
Sample ID: WG574419-05 MS File ID: NI.070116.130957 Dil: 1 Units: mg/L
Sample ID: WG574419-06 MSD File ID: NI.070116.131309 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Antimony	0.0115	0.125	0.143	105	0.125	0.138	102	2.94	80 - 120	20	
Arsenic	0.000768	0.125	0.131	104	0.125	0.127	101	2.82	80 - 120	20	
Barium	0.0269	0.125	0.141	91.3	0.125	0.137	88.2	2.81	80 - 120	20	
Cadmium	0.000319	0.125	0.127	101	0.125	0.124	98.9	2.55	80 - 120	20	
Chromium	0.00350	0.125	0.131	102	0.125	0.127	99.1	3.09	80 - 120	20	
Cobalt	0.000501	0.125	0.129	102	0.125	0.123	98.2	4.27	80 - 120	20	
Copper	0.00345	0.125	0.128	99.5	0.125	0.125	97.4	2.08	80 - 120	20	
Lead	0.00571	0.125	0.135	103	0.125	0.130	99.8	3.15	80 - 120	20	
Manganese	0.111	0.125	0.241	104	0.125	0.234	99.1	2.72	80 - 120	20	
Nickel	0.00318	0.125	0.129	101	0.125	0.125	97.1	3.64	80 - 120	20	
Silver	ND	0.125	0.125	100	0.125	0.121	97.0	3.35	80 - 120	20	
Thallium	ND	0.125	0.127	102	0.125	0.124	98.9	2.94	80 - 120	20	
Vanadium	0.00127	0.125	0.131	104	0.125	0.126	99.6	4.13	80 - 120	20	
Zinc	ND	0.125	0.134	108	0.125	0.132	105	1.99	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4837524
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16061452 **Worknum:** WG574824
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG574824-02 **File ID:** NI.070116.132906 **Dil:** 5 **Units:** ug/L
Sample: L16061468-01 **File ID:** NI.070116.132243 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	ND	U	1.53	F	5070.00	
Arsenic	0.448	F	ND	U		
Barium	23.9	X	24.9	X	4.11	
Cadmium	ND	U	ND	U		
Chromium	0.541	F	ND	U		
Cobalt	ND	U	ND	U		
Copper	2.71	X	2.81	F	3.55	
Lead	0.231	F	ND	U		
Manganese	2.29	X	2.08	F	9.36	
Nickel	1.41	F	ND	U		
Silver	ND	U	ND	U		
Thallium	0.123	F	ND	U		
Vanadium	0.268	F	ND	U		
Zinc	16.3	F	ND	U		

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4837518
07/07/2016 08:33

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061452 **Worknum:** WG574824
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG574824-01 **File ID:** NI.070116.132555 **Dil:** 1 **Units:** ug/L
Sample ID: L16061468-01 **File ID:** NI.070116.132243 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	50.5		0	U	50	100.9	75 - 125	
ARSENIC	53.8		0.448	F	50	106.8	75 - 125	
BARIUM	74.2		23.9		50	100.7	75 - 125	
CADMIUM	51.7		0	U	50	103.5	75 - 125	
CHROMIUM	53.1		0.541	F	50	105.1	75 - 125	
COBALT	53.2		0	U	50	106.5	75 - 125	
COPPER	53.9		2.71		50	102.3	75 - 125	
LEAD	52.9		0.231	F	50	105.4	75 - 125	
MANGANESE	54.5		2.29		50	104.3	75 - 125	
NICKEL	52.7		1.41	F	50	102.6	75 - 125	
SILVER	50.0		0	U	50	100.0	75 - 125	
THALLIUM	52.5		0.123	F	50	104.8	75 - 125	
VANADIUM	54.1		0.268	F	50	107.8	75 - 125	
ZINC	68.8		16.3	F	50	105.0	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4837519
Report generated: 07/07/2016 08:33

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061452	Workgroup (AAB#):	WG574824
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG575028	Initial Calibration Date:	01-JUL-2016 10:40

	WG575028-01		WG575028-02		WG575028-03		WG575028-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	259	.4	428	50	250000	100	508000	.999935	
ARSENIC	0	-59.9	.4	5.90	50	61400	100	123000	.999997	
BARIUM	0	20.7	.4	146	50	107000	100	210000	.99998	
CADMIUM	0	2.60	.4	119	50	113000	100	223000	.999998	
CHROMIUM	0	7690	.4	8190	50	412000	100	812000	1	
COBALT	0	201	.4	604	50	385000	100	759000	.999986	
COPPER	0	167	.4	251	50	103000	100	201000	.999949	
LEAD	0	930	.4	2060	50	1040000	100	2040000	.999999	
MANGANESE	0	715	.4	1140	50	380000	100	751000	.999989	
NICKEL	0	335	.4	418	50	105000	100	205000	.999979	
SILVER	0	83.3	.4	447	50	352000	100	698000	1	
THALLIUM	0	7.70	.4	454	50	444000	100	872000	.999994	
VANADIUM	0	1560	.4	2030	50	413000	100	818000	.999998	
ZINC	0	240	.4	280	50	61600	100	122000	.999992	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4837527
Report generated: 07-JUL-2016 08:33

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061452	Workgroup (AAB#):	WG574824
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG575370	Initial Calibration Date:	06-JUL-2016 09:17

	WG575370-01		WG575370-02		WG575370-03		WG575370-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	280	.4	308	50	202000	100	429000	.999223	
ARSENIC	0	-74.4	.4	-50.4	50	52000	100	105000	1	
BARIUM	0	25.7	.4	66.7	50	92500	100	184000	.999984	
CADMIUM	0	4.30	.4	21.6	50	97200	100	190000	.999996	
CHROMIUM	0	6680	.4	6770	50	353000	100	705000	.999996	
COBALT	0	226	.4	269	50	306000	100	609000	.999959	
COPPER	0	110	.4	106	50	84100	100	171000	1	
LEAD	0	774	.4	923	50	894000	100	1760000	.999728	
MANGANESE	0	812	.4	892	50	312000	100	615000	.999906	
NICKEL	0	364	.4	348	50	84600	100	171000	1	
SILVER	0	71.3	.4	172	50	300000	100	609000	.99988	
THALLIUM	0	9.70	.4	134	50	381000	100	759000	.999873	
VANADIUM	0	1280	.4	1370	50	354000	100	719000	.999998	
ZINC	0	186	.4	165	50	50700	100	103000	.999997	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4837527
Report generated: 07-JUL-2016 08:33

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061452
Instrument ID: ICP-MS2
File ID: NI.070116.104640
Workgroup (AAB#): WG574824
Matrix: WATER

Run Date: 07/01/2016
Run Time: 10:46
Analyst: JYH
Cal ID: ICP-MS2 - 01-JUL-16

Sample ID: WG575028-06
Method: 6020A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
COPPER	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.2	U
THALLIUM	.04	.16	.04	U
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4837529
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061452
Instrument ID: ICP-MS2
File ID: NI.070616.092404
Workgroup (AAB#): WG574824
Matrix: WATER

Run Date: 07/06/2016
Run Time: 09:24
Analyst: JYH
Cal ID: ICP-MS2 - 06-JUL-16

Sample ID: WG575370-06
Method: 6020A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
COPPER	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.236	F
THALLIUM	.04	.16	.0496	F
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4837529
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061452
Run Date: 07/01/2016
Sample ID: WG575028-11
Instrument ID: ICP-MS2
Run Time: 11:02
Method: 6020A
File ID: NI.070116.110241
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574824
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.276	F
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837532
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061452
Run Date: 07/01/2016
Sample ID: WG575028-17
Instrument ID: ICP-MS2
Run Time: 12:48
Method: 6020A
File ID: NI.070116.124810
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574824
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837532
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061452
Run Date: 07/01/2016
Sample ID: WG575028-19
Instrument ID: ICP-MS2
Run Time: 13:35
Method: 6020A
File ID: NI.070116.133530
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574824
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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PDF File ID: 4837532
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061452
Run Date: 07/01/2016
Sample ID: WG575028-26
Instrument ID: ICP-MS2
Run Time: 15:46
Method: 6020A
File ID: NI.070116.154619
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574824
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061452
Run Date: 07/01/2016
Sample ID: WG575028-28
Instrument ID: ICP-MS2
Run Time: 16:15
Method: 6020A
File ID: NI.070116.161506
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574824
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837532
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061452
Run Date: 07/06/2016
Sample ID: WG575370-11
Instrument ID: ICP-MS2
Run Time: 09:40
Method: 6020A
File ID: NI.070616.094005
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574824
Cal ID: ICP-MS - 06-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.361	F
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0461	F
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837532
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061452
Run Date: 07/06/2016
Sample ID: WG575370-37
Instrument ID: ICP-MS2
Run Time: 18:21
Method: 6020A
File ID: NI.070616.182106
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574824
Cal ID: ICP-MS - 06-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0407	F
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837532
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061452
Run Date: 07/06/2016
Sample ID: WG575370-39
Instrument ID: ICP-MS2
Run Time: 18:53
Method: 6020A
File ID: NI.070616.185304
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574824
Cal ID: ICP-MS - 06-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0424	F
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837532
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061452
Run Date: 07/06/2016
Sample ID: WG575370-43
Instrument ID: ICP-MS2
Run Time: 19:15
Method: 6020A
File ID: NI.070616.191526
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574824
Cal ID: ICP-MS - 06-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.298	F
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0490	F
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837532
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061452 Run Date: 07/01/2016 Sample ID: WG575028-05
Instrument ID: ICP-MS2 Run Time: 10:43 Method: 6020A
File ID: NI.070116.104327 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG574824 Cal ID: ICP-MS - 01-JUL-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	49.5	98.9	90 - 110	
Arsenic		50	50.5	101	90 - 110	
Barium		50	49.1	98.3	90 - 110	
Cadmium		50	49.7	99.4	90 - 110	
Chromium		50	50.3	101	90 - 110	
Cobalt		50	50.9	102	90 - 110	
Copper		50	50.6	101	90 - 110	
Lead		50	50.4	101	90 - 110	
Manganese		50	51.2	102	90 - 110	
Nickel		50	50.3	101	90 - 110	
Silver		50	49.2	98.3	90 - 110	
Thallium		50	49.7	99.3	90 - 110	
Vanadium		50	50.3	101	90 - 110	
Zinc		50	51.2	102	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4837528
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061452 Run Date: 07/06/2016 Sample ID: WG575370-05
Instrument ID: ICP-MS2 Run Time: 09:20 Method: 6020A
File ID: NI.070616.092051 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG574824 Cal ID: ICP-MS - 06-JUL-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	51.8	104	90 - 110	
Arsenic		50	50.2	100	90 - 110	
Barium		50	51.1	102	90 - 110	
Cadmium		50	50.8	102	90 - 110	
Chromium		50	50.2	100	90 - 110	
Cobalt		50	50.7	101	90 - 110	
Copper		50	50.0	100	90 - 110	
Lead		50	50.8	102	90 - 110	
Manganese		50	50.7	101	90 - 110	
Nickel		50	49.7	99.4	90 - 110	
Silver		50	50.9	102	90 - 110	
Thallium		50	50.3	101	90 - 110	
Vanadium		50	50.7	101	90 - 110	
Zinc		50	50.3	101	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4837528
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 07/01/2016
Sample ID: WG575028-10
Instrument ID: ICP-MS2
Run Time: 10:59
Method: 6020A
File ID: NI.070116.105929
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574824
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0511	mg/L	102	90 - 110		
Arsenic		0.0500	0.0505	mg/L	101	90 - 110		
Barium		0.0500	0.0496	mg/L	99.2	90 - 110		
Cadmium		0.0500	0.0500	mg/L	100	90 - 110		
Chromium		0.0500	0.0504	mg/L	101	90 - 110		
Cobalt		0.0500	0.0509	mg/L	102	90 - 110		
Copper		0.0500	0.0506	mg/L	101	90 - 110		
Lead		0.0500	0.0507	mg/L	101	90 - 110		
Manganese		0.0500	0.0505	mg/L	101	90 - 110		
Nickel		0.0500	0.0502	mg/L	100	90 - 110		
Silver		0.0500	0.0502	mg/L	100	90 - 110		
Thallium		0.0500	0.0505	mg/L	101	90 - 110		
Vanadium		0.0500	0.0509	mg/L	102	90 - 110		
Zinc		0.0500	0.0502	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837531
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 07/01/2016
Sample ID: WG575028-16
Instrument ID: ICP-MS2
Run Time: 12:44
Method: 6020A
File ID: NI.070116.124458
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574824
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0495	mg/L	99.0	90 - 110		
Arsenic		0.0500	0.0496	mg/L	99.1	90 - 110		
Barium		0.0500	0.0491	mg/L	98.3	90 - 110		
Cadmium		0.0500	0.0500	mg/L	100	90 - 110		
Chromium		0.0500	0.0504	mg/L	101	90 - 110		
Cobalt		0.0500	0.0509	mg/L	102	90 - 110		
Copper		0.0500	0.0506	mg/L	101	90 - 110		
Lead		0.0500	0.0509	mg/L	102	90 - 110		
Manganese		0.0500	0.0503	mg/L	101	90 - 110		
Nickel		0.0500	0.0502	mg/L	100	90 - 110		
Silver		0.0500	0.0498	mg/L	99.5	90 - 110		
Thallium		0.0500	0.0507	mg/L	101	90 - 110		
Vanadium		0.0500	0.0502	mg/L	100	90 - 110		
Zinc		0.0500	0.0498	mg/L	99.7	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837531
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 07/01/2016
Sample ID: WG575028-18
Instrument ID: ICP-MS2
Run Time: 13:32
Method: 6020A
File ID: NI.070116.133218
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574824
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0501	mg/L	100	90 - 110		
Arsenic		0.0500	0.0499	mg/L	99.8	90 - 110		
Barium		0.0500	0.0480	mg/L	96.0	90 - 110		
Cadmium		0.0500	0.0496	mg/L	99.2	90 - 110		
Chromium		0.0500	0.0495	mg/L	99.0	90 - 110		
Cobalt		0.0500	0.0513	mg/L	103	90 - 110		
Copper		0.0500	0.0497	mg/L	99.5	90 - 110		
Lead		0.0500	0.0511	mg/L	102	90 - 110		
Manganese		0.0500	0.0499	mg/L	99.8	90 - 110		
Nickel		0.0500	0.0496	mg/L	99.3	90 - 110		
Silver		0.0500	0.0497	mg/L	99.3	90 - 110		
Thallium		0.0500	0.0503	mg/L	101	90 - 110		
Vanadium		0.0500	0.0504	mg/L	101	90 - 110		
Zinc		0.0500	0.0501	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837531
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 07/01/2016
Sample ID: WG575028-25
Instrument ID: ICP-MS2
Run Time: 15:43
Method: 6020A
File ID: NI.070116.154308
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574824
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0499	mg/L	99.9	90 - 110		
Arsenic		0.0500	0.0504	mg/L	101	90 - 110		
Barium		0.0500	0.0490	mg/L	97.9	90 - 110		
Cadmium		0.0500	0.0497	mg/L	99.4	90 - 110		
Chromium		0.0500	0.0499	mg/L	99.8	90 - 110		
Cobalt		0.0500	0.0515	mg/L	103	90 - 110		
Copper		0.0500	0.0508	mg/L	102	90 - 110		
Lead		0.0500	0.0513	mg/L	103	90 - 110		
Manganese		0.0500	0.0505	mg/L	101	90 - 110		
Nickel		0.0500	0.0502	mg/L	100	90 - 110		
Silver		0.0500	0.0499	mg/L	99.7	90 - 110		
Thallium		0.0500	0.0502	mg/L	100	90 - 110		
Vanadium		0.0500	0.0509	mg/L	102	90 - 110		
Zinc		0.0500	0.0507	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 07/01/2016
Sample ID: WG575028-27
Instrument ID: ICP-MS2
Run Time: 16:11
Method: 6020A
File ID: NI.070116.161155
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574824
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0489	mg/L	97.7	90 - 110		
Arsenic		0.0500	0.0500	mg/L	100	90 - 110		
Barium		0.0500	0.0487	mg/L	97.3	90 - 110		
Cadmium		0.0500	0.0502	mg/L	100	90 - 110		
Chromium		0.0500	0.0502	mg/L	100	90 - 110		
Cobalt		0.0500	0.0512	mg/L	102	90 - 110		
Copper		0.0500	0.0503	mg/L	101	90 - 110		
Lead		0.0500	0.0522	mg/L	104	90 - 110		
Manganese		0.0500	0.0497	mg/L	99.4	90 - 110		
Nickel		0.0500	0.0503	mg/L	101	90 - 110		
Silver		0.0500	0.0498	mg/L	99.7	90 - 110		
Thallium		0.0500	0.0505	mg/L	101	90 - 110		
Vanadium		0.0500	0.0500	mg/L	100	90 - 110		
Zinc		0.0500	0.0500	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Report generated 07/07/2016 08:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 07/06/2016
Sample ID: WG575370-10
Instrument ID: ICP-MS2
Run Time: 09:36
Method: 6020A
File ID: NI.070616.093653
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574824
Cal ID: ICP-MS - 06-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0511	mg/L	102	90 - 110		
Arsenic		0.0500	0.0505	mg/L	101	90 - 110		
Barium		0.0500	0.0490	mg/L	97.9	90 - 110		
Cadmium		0.0500	0.0493	mg/L	98.7	90 - 110		
Chromium		0.0500	0.0505	mg/L	101	90 - 110		
Cobalt		0.0500	0.0509	mg/L	102	90 - 110		
Copper		0.0500	0.0504	mg/L	101	90 - 110		
Lead		0.0500	0.0511	mg/L	102	90 - 110		
Manganese		0.0500	0.0513	mg/L	103	90 - 110		
Nickel		0.0500	0.0502	mg/L	100	90 - 110		
Silver		0.0500	0.0493	mg/L	98.6	90 - 110		
Thallium		0.0500	0.0505	mg/L	101	90 - 110		
Vanadium		0.0500	0.0507	mg/L	101	90 - 110		
Zinc		0.0500	0.0507	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 07/06/2016
Sample ID: WG575370-36
Instrument ID: ICP-MS2
Run Time: 18:17
Method: 6020A
File ID: NI.070616.181755
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574824
Cal ID: ICP-MS - 06-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0507	mg/L	101	90 - 110		
Arsenic		0.0500	0.0507	mg/L	101	90 - 110		
Barium		0.0500	0.0502	mg/L	100	90 - 110		
Cadmium		0.0500	0.0512	mg/L	102	90 - 110		
Chromium		0.0500	0.0518	mg/L	104	90 - 110		
Cobalt		0.0500	0.0506	mg/L	101	90 - 110		
Copper		0.0500	0.0521	mg/L	104	90 - 110		
Lead		0.0500	0.0528	mg/L	106	90 - 110		
Manganese		0.0500	0.0529	mg/L	106	90 - 110		
Nickel		0.0500	0.0521	mg/L	104	90 - 110		
Silver		0.0500	0.0504	mg/L	101	90 - 110		
Thallium		0.0500	0.0513	mg/L	103	90 - 110		
Vanadium		0.0500	0.0507	mg/L	101	90 - 110		
Zinc		0.0500	0.0516	mg/L	103	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837531
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 07/06/2016
Sample ID: WG575370-38
Instrument ID: ICP-MS2
Run Time: 18:49
Method: 6020A
File ID: NI.070616.184952
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574824
Cal ID: ICP-MS - 06-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0496	mg/L	99.2	90 - 110		
Arsenic		0.0500	0.0503	mg/L	101	90 - 110		
Barium		0.0500	0.0491	mg/L	98.3	90 - 110		
Cadmium		0.0500	0.0501	mg/L	100	90 - 110		
Chromium		0.0500	0.0517	mg/L	103	90 - 110		
Cobalt		0.0500	0.0499	mg/L	99.8	90 - 110		
Copper		0.0500	0.0514	mg/L	103	90 - 110		
Lead		0.0500	0.0522	mg/L	104	90 - 110		
Manganese		0.0500	0.0527	mg/L	105	90 - 110		
Nickel		0.0500	0.0516	mg/L	103	90 - 110		
Silver		0.0500	0.0490	mg/L	98.0	90 - 110		
Thallium		0.0500	0.0508	mg/L	102	90 - 110		
Vanadium		0.0500	0.0496	mg/L	99.2	90 - 110		
Zinc		0.0500	0.0512	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

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Report generated 07/07/2016 08:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 07/06/2016
Sample ID: WG575370-42
Instrument ID: ICP-MS2
Run Time: 19:12
Method: 6020A
File ID: NI.070616.191215
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574824
Cal ID: ICP-MS - 06-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0526	mg/L	105	90 - 110		
Arsenic		0.0500	0.0506	mg/L	101	90 - 110		
Barium		0.0500	0.0495	mg/L	99.0	90 - 110		
Cadmium		0.0500	0.0507	mg/L	101	90 - 110		
Chromium		0.0500	0.0517	mg/L	103	90 - 110		
Cobalt		0.0500	0.0513	mg/L	103	90 - 110		
Copper		0.0500	0.0513	mg/L	103	90 - 110		
Lead		0.0500	0.0521	mg/L	104	90 - 110		
Manganese		0.0500	0.0530	mg/L	106	90 - 110		
Nickel		0.0500	0.0514	mg/L	103	90 - 110		
Silver		0.0500	0.0501	mg/L	100	90 - 110		
Thallium		0.0500	0.0512	mg/L	102	90 - 110		
Vanadium		0.0500	0.0506	mg/L	101	90 - 110		
Zinc		0.0500	0.0513	mg/L	103	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837531
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061452
Run Date: 07/01/2016
Sample ID: WG575028-07
Instrument ID: ICP-MS2
Run Time: 10:49
Method: 6020A
File ID: NI.070116.104953
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574824
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.364	ug/L	91.0	70 - 130		
Arsenic		0.400	0.390	ug/L	97.6	70 - 130		
Barium		0.750	0.697	ug/L	92.9	70 - 130		
Cadmium		0.240	0.238	ug/L	99.3	70 - 130		
Chromium		0.800	0.709	ug/L	88.6	70 - 130		
Cobalt		0.400	0.371	ug/L	92.7	70 - 130		
Copper		0.800	0.775	ug/L	96.9	70 - 130		
Lead		0.200	0.193	ug/L	96.3	70 - 130		
Manganese		0.500	0.457	ug/L	91.3	70 - 130		
Nickel		1.60	1.52	ug/L	95.0	70 - 130		
Silver		0.400	0.392	ug/L	98.0	70 - 130		
Thallium		0.0800	0.0815	ug/L	102	70 - 130		
Vanadium		0.400	0.339	ug/L	84.7	70 - 130		
Zinc		6.25	6.40	ug/L	102	70 - 130		

* Exceeds LIMITS Criteria

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PDF File ID: 4837533
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061452
Run Date: 07/01/2016
Sample ID: WG575028-24
Instrument ID: ICP-MS2
Run Time: 14:39
Method: 6020A
File ID: NI.070116.143926
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574824
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.364	ug/L	90.9	70 - 130		
Arsenic		0.400	0.415	ug/L	104	70 - 130		
Barium		0.750	0.660	ug/L	88.0	70 - 130		
Cadmium		0.240	0.234	ug/L	97.3	70 - 130		
Chromium		0.800	0.671	ug/L	83.8	70 - 130		
Cobalt		0.400	0.393	ug/L	98.3	70 - 130		
Copper		0.800	0.781	ug/L	97.7	70 - 130		
Lead		0.200	0.199	ug/L	99.6	70 - 130		
Manganese		0.500	0.428	ug/L	85.7	70 - 130		
Nickel		1.60	1.54	ug/L	96.4	70 - 130		
Silver		0.400	0.385	ug/L	96.2	70 - 130		
Thallium		0.0800	0.0813	ug/L	102	70 - 130		
Vanadium		0.400	0.360	ug/L	90.0	70 - 130		
Zinc		6.25	7.08	ug/L	113	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4837533
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061452
Run Date: 07/01/2016
Sample ID: WG575028-37
Instrument ID: ICP-MS2
Run Time: 19:10
Method: 6020A
File ID: NI.070116.191044
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574824
Cal ID: ICP-MS - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.327	ug/L	81.8	70 - 130		
Arsenic		0.400	0.408	ug/L	102	70 - 130		
Barium		0.750	0.693	ug/L	92.4	70 - 130		
Cadmium		0.240	0.228	ug/L	94.8	70 - 130		
Chromium		0.800	0.796	ug/L	99.5	70 - 130		
Cobalt		0.400	0.378	ug/L	94.5	70 - 130		
Copper		0.800	0.768	ug/L	96.0	70 - 130		
Lead		0.200	0.198	ug/L	98.9	70 - 130		
Manganese		0.500	0.461	ug/L	92.1	70 - 130		
Nickel		1.60	1.51	ug/L	94.1	70 - 130		
Silver		0.400	0.387	ug/L	96.6	70 - 130		
Thallium		0.0800	0.0773	ug/L	96.6	70 - 130		
Vanadium		0.400	0.364	ug/L	91.0	70 - 130		
Zinc		6.25	7.03	ug/L	113	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4837533
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061452
Run Date: 07/06/2016
Sample ID: WG575370-07
Instrument ID: ICP-MS2
Run Time: 09:27
Method: 6020A
File ID: NI.070616.092717
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574824
Cal ID: ICP-MS - 06-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.435	ug/L	109	70 - 130		
Arsenic		0.400	0.418	ug/L	105	70 - 130		
Barium		0.750	0.739	ug/L	98.5	70 - 130		
Cadmium		0.240	0.274	ug/L	114	70 - 130		
Chromium		0.800	0.743	ug/L	92.9	70 - 130		
Cobalt		0.400	0.423	ug/L	106	70 - 130		
Copper		0.800	0.816	ug/L	102	70 - 130		
Lead		0.200	0.240	ug/L	120	70 - 130		
Manganese		0.500	0.495	ug/L	99.0	70 - 130		
Nickel		1.60	1.57	ug/L	98.4	70 - 130		
Silver		0.400	0.428	ug/L	107	70 - 130		
Thallium		0.0800	0.120	ug/L	150	70 - 130		*
Vanadium		0.400	0.398	ug/L	99.5	70 - 130		
Zinc		6.25	6.43	ug/L	103	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4837533
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061452
Run Date: 07/06/2016
Sample ID: WG575370-44
Instrument ID: ICP-MS2
Run Time: 19:18
Method: 6020A
File ID: NI.070616.191839
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574824
Cal ID: ICP-MS - 06-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.451	ug/L	113	70 - 130		
Arsenic		0.400	0.437	ug/L	109	70 - 130		
Barium		0.750	0.726	ug/L	96.8	70 - 130		
Cadmium		0.240	0.283	ug/L	118	70 - 130		
Chromium		0.800	0.809	ug/L	101	70 - 130		
Cobalt		0.400	0.419	ug/L	105	70 - 130		
Copper		0.800	0.837	ug/L	105	70 - 130		
Lead		0.200	0.243	ug/L	121	70 - 130		
Manganese		0.500	0.498	ug/L	99.7	70 - 130		
Nickel		1.60	1.57	ug/L	98.0	70 - 130		
Silver		0.400	0.418	ug/L	105	70 - 130		
Thallium		0.0800	0.113	ug/L	142	70 - 130		*
Vanadium		0.400	0.395	ug/L	98.8	70 - 130		
Zinc		6.25	6.69	ug/L	107	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4837533
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061452
Instrument ID: ICP-MS2
Sol. A : WG575028-08 **File ID:** NI.070116.105304
Sol. AB : WG575028-09 **File ID:** NI.070116.105616

Workgroup (AAB#): WG574824
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.118	NS	100	96.8	96.8	
Arsenic	NS	0	NS	100	100	100	
Barium	NS	0.406	NS	100	98.7	98.7	
Cadmium	NS	-0.0920	NS	100	99.5	99.5	
Chromium	NS	0.0974	NS	100	97.8	97.8	
Cobalt	NS	0.0353	NS	100	98.4	98.4	
Copper	NS	0.287	NS	100	98.5	98.5	
Lead	NS	0.0642	NS	100	98.7	98.7	
Manganese	NS	0.0949	NS	100	99.2	99.2	
Nickel	NS	0.398	NS	100	97.1	97.1	
Silver	NS	0.0605	NS	100	87.4	87.4	
Thallium	NS	0.0383	NS	100	98.2	98.2	
Vanadium	NS	0.0180	NS	100	99.7	99.7	
Zinc	NS	1.24	NS	100	103	103	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4837530
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061452
Instrument ID: ICP-MS2
Sol. A : WG575370-08 **File ID:** NI.070616.093029
Sol. AB : WG575370-09 **File ID:** NI.070616.093340

Workgroup (AAB#): WG574824
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.462	NS	100	101	101	
Arsenic	NS	0.0530	NS	100	103	103	
Barium	NS	0.0414	NS	100	101	101	
Cadmium	NS	-0.0508	NS	100	101	101	
Chromium	NS	-0.0525	NS	100	101	101	
Cobalt	NS	0.0720	NS	100	101	101	
Copper	NS	0.326	NS	100	102	102	
Lead	NS	0.0662	NS	100	103	103	
Manganese	NS	0.305	NS	100	102	102	
Nickel	NS	0.313	NS	100	100	100	
Silver	NS	0.0592	NS	100	85.4	85.4	
Thallium	NS	0.0459	NS	100	101	101	
Vanadium	NS	0.0677	NS	100	102	102	
Zinc	NS	0.776	NS	100	103	103	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4837530
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061452
Instrument ID: ICP-MS2
Sol. A : WG575370-40 **File ID:** NI.070616.190551
Sol. AB : WG575370-41 **File ID:** NI.070616.190902

Workgroup (AAB#): WG574824
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.149	NS	100	99.3	99.3	
Arsenic	NS	0.108	NS	100	102	102	
Barium	NS	0.0400	NS	100	97.8	97.8	
Cadmium	NS	-0.0433	NS	100	99.9	99.9	
Chromium	NS	-0.0569	NS	100	102	102	
Cobalt	NS	0.0640	NS	100	99.4	99.4	
Copper	NS	0.309	NS	100	101	101	
Lead	NS	0.0608	NS	100	104	104	
Manganese	NS	0.299	NS	100	105	105	
Nickel	NS	0.277	NS	100	101	101	
Silver	NS	0.0582	NS	100	60.3	60.3	*
Thallium	NS	0.0420	NS	100	101	101	
Vanadium	NS	0.0998	NS	100	99.1	99.1	
Zinc	NS	0.887	NS	100	103	103	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4837530
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16061452 **Analytical Method:** 6020
Analytical Workgroup: WG574824 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** JYH
ICAL Date: 01-JUL-2016 10:30

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16061452-01	SAMP	01-JUL-2016 15:49	94.385	99.585	97.214
WG574419-03	BLANK	01-JUL-2016 12:58	105.189	110.053	108.964
WG574419-04	LCS	01-JUL-2016 13:03	106.272	112.391	108.961
WG574824-01	PSPK	01-JUL-2016 13:25	101.728	106.622	105.038
WG574824-02	SERIAL	01-JUL-2016 13:29	99.596	101.366	99.122
WG575028-05	ICV	01-JUL-2016 10:43	99.388	100.45	101.227
WG575028-06	ICB	01-JUL-2016 10:46	99.921	101.195	100.88
WG575028-07	LLICV	01-JUL-2016 10:49	97.843	98.579	96.464
WG575028-08	ICS	01-JUL-2016 10:53	97.097	100.956	98.373
WG575028-09	ICS	01-JUL-2016 10:56	99.537	101.553	98.936
WG575028-10	CCV	01-JUL-2016 10:59	98.413	100.239	99.347
WG575028-11	CCB	01-JUL-2016 11:02	101.078	100.828	100.108
WG575028-16	CCV	01-JUL-2016 12:44	103.303	109.496	107.231
WG575028-17	CCB	01-JUL-2016 12:48	105.044	109.74	107.547
WG575028-18	CCV	01-JUL-2016 13:32	102.499	106.565	105.514
WG575028-19	CCB	01-JUL-2016 13:35	102.831	106.05	104.856
WG575028-24	LLCCV	01-JUL-2016 14:39	100.804	98.706	100.09
WG575028-25	CCV	01-JUL-2016 15:43	100.989	103.315	102.712
WG575028-26	CCB	01-JUL-2016 15:46	101.711	104.453	104.379
WG575028-27	CCV	01-JUL-2016 16:11	100.912	105.898	104.016
WG575028-28	CCB	01-JUL-2016 16:15	103.124	105.323	105.946
WG575028-37	LLCCV	01-JUL-2016 19:10	93.446	100.247	96.576

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4837526
Report generated: 07/07/2016 08:32

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16061452 **Analytical Method:** 6020
Analytical Workgroup: WG574824 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** JYH
ICAL Date: 06-JUL-2016 09:08

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16061452-01	SAMP	06-JUL-2016 18:43	94.475	99.476	93.914
WG575370-05	ICV	06-JUL-2016 09:20	100.585	102.463	96.381
WG575370-06	ICB	06-JUL-2016 09:24	100.788	98.692	102.109
WG575370-07	LLICV	06-JUL-2016 09:27	102.41	100.394	95.13
WG575370-08	ICS	06-JUL-2016 09:30	96.414	92.465	92.27
WG575370-09	ICS	06-JUL-2016 09:33	98.737	100.154	96.13
WG575370-10	CCV	06-JUL-2016 09:36	99.702	100.07	99.191
WG575370-11	CCB	06-JUL-2016 09:40	101.529	104.208	96.95
WG575370-36	CCV	06-JUL-2016 18:17	99.62	108.357	102.064
WG575370-37	CCB	06-JUL-2016 18:21	100.174	107.689	103.131
WG575370-38	CCV	06-JUL-2016 18:49	99.508	108.232	103.152
WG575370-39	CCB	06-JUL-2016 18:53	99.139	106.573	101.58
WG575370-40	ICS	06-JUL-2016 19:05	91.725	95.835	90.284
WG575370-41	ICS	06-JUL-2016 19:09	97.884	104.251	99.368
WG575370-42	CCV	06-JUL-2016 19:12	98.906	104.728	100.841
WG575370-43	CCB	06-JUL-2016 19:15	98.402	104.006	99.572
WG575370-44	LLCCV	06-JUL-2016 19:18	98.022	101.982	97.937

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4837526
Report generated: 07/07/2016 08:32

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16061452 **Analytical Method:** 6020
Analytical Workgroup: WG574824 **Matrix:** 2
Instrument: ICP-MS2 **Analyst:** JYH
ICAL Date: 01-JUL-2016 10:30

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16061468-01	SAMP	01-JUL-2016 13:22	103.02	109.235	107.57

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4837526
Report generated: 07/07/2016 08:32

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16061452 **Date:** 04/19/2016
Insturment ID: ICP-MS2 **Method:** 6020A

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Uranium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4837525
Report generated: 07/07/2016 08:33

2.3.2.3 Raw Data

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Friday, July 01, 2016 10:13:04

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1329	2024	0.709	
Mg	23.985	23.975	4503	2020	0.696	
Co	58.933	58.925	11692	2022	0.691	
In	114.904	114.875	22859	2028	0.686	
U	238.050	238.025	47457	2043	0.687	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	3.598
5.575	4.718
5.625	3.789
5.675	2.527
5.725	1.318
5.775	1.142
5.825	2.913
5.875	3.428
5.925	4.580
5.975	3.116
6.025	1.509
6.075	2.372
6.125	1.519
6.175	1.841
6.225	5.064
6.275	40.937
6.325	69.722
6.375	49.793
6.425	63.949
6.475	46.187
6.525	18.017
6.575	4.888
6.625	1.946
6.675	3.206
6.725	1.995
6.775	2.218
6.825	1.690

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6.875	1.781
6.925	1.186
6.975	1.328
7.025	1.344
7.075	1.081
7.125	0.453
7.175	2.067
7.225	2.391
7.275	2.950
7.325	17.639
7.375	57.735
7.425	72.436
7.475	223.607
7.525	61.237
7.575	61.237
7.625	74.689
7.675	43.853
7.725	81.441
7.775	70.711
7.825	49.793
7.875	81.441
7.925	71.261
7.975	63.888
8.025	108.327
8.075	69.722
8.125	100.000
8.175	69.722
8.225	63.191
8.275	46.481
8.325	59.265
8.375	94.786
8.425	43.853
8.475	35.355
22.525	100.000
22.575	24.845
22.625	11.877
22.675	14.821
22.725	27.507
22.775	16.675
22.825	18.109
22.875	27.152
22.925	12.748
22.975	17.626
23.025	12.284
23.075	17.138
23.125	22.852
23.175	24.755

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23.225	27.794
23.275	13.465
23.325	28.287
23.375	27.216
23.425	29.613
23.475	25.156
23.525	5.738
23.575	3.240
23.625	2.912
23.675	3.295
23.725	2.834
23.775	3.434
23.825	2.694
23.875	2.849
23.925	2.371
23.975	2.335
24.025	3.002
24.075	2.407
24.125	2.590
24.175	2.561
24.225	3.038
24.275	3.732
24.325	13.243
24.375	46.291
24.425	31.044
24.475	3.900
24.525	3.690
24.575	1.518
24.625	2.041
24.675	1.011
24.725	0.948
24.775	1.552
24.825	1.240
24.875	0.999
24.925	2.206
24.975	1.206
25.025	1.519
25.075	1.903
25.125	0.579
25.175	1.714
25.225	2.460
25.275	18.990
25.325	26.352
25.375	57.810
25.425	13.305
25.475	13.731
57.525	8.299

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57.575	3.825
57.625	2.379
57.675	1.810
57.725	1.941
57.775	3.194
57.825	3.753
57.875	1.813
57.925	1.247
57.975	2.156
58.025	1.826
58.075	1.503
58.125	1.715
58.175	3.179
58.225	2.838
58.275	20.250
58.325	47.507
58.375	33.055
58.425	7.046
58.475	7.950
58.525	1.298
58.575	2.456
58.625	0.689
58.675	2.468
58.725	2.353
58.775	0.839
58.825	1.215
58.875	1.050
58.925	1.190
58.975	1.362
59.025	1.477
59.075	1.339
59.125	2.122
59.175	2.562
59.225	3.714
59.275	10.687
59.325	73.193
59.375	43.301
59.425	29.315
59.475	15.449
59.525	9.592
59.575	4.491
59.625	3.077
59.675	2.739
59.725	2.974
59.775	4.607
59.825	3.985
59.875	2.185

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59.925	2.525
59.975	1.104
60.025	3.006
60.075	3.085
60.125	2.240
60.175	5.388
60.225	7.934
60.275	43.006
60.325	15.215
60.375	46.351
60.425	85.267
60.475	44.721
113.525	8.024
113.575	2.930
113.625	3.520
113.675	3.350
113.725	2.512
113.775	1.897
113.825	2.146
113.875	1.417
113.925	2.337
113.975	2.849
114.025	1.596
114.075	1.757
114.125	1.986
114.175	3.937
114.225	7.420
114.275	16.156
114.325	23.697
114.375	19.422
114.425	6.964
114.475	6.194
114.525	3.847
114.575	1.824
114.625	1.449
114.675	1.397
114.725	1.117
114.775	1.853
114.825	0.668
114.875	1.048
114.925	1.062
114.975	0.807
115.025	1.604
115.075	0.617
115.125	0.990
115.175	1.502
115.225	4.478

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115.275	6.474
115.325	39.891
115.375	63.816
115.425	37.630
115.475	30.031
115.525	14.465
115.575	9.978
115.625	2.212
115.675	2.597
115.725	4.004
115.775	4.700
115.825	2.647
115.875	1.521
115.925	0.934
115.975	2.944
116.025	2.211
116.075	6.400
116.125	6.342
116.175	7.120
116.225	10.108
116.275	16.197
116.325	46.481
116.375	69.722
116.425	51.349
116.475	37.029
236.525	
236.575	29.186
236.625	24.495
236.675	29.186
236.725	31.126
236.775	17.430
236.825	21.320
236.875	35.016
236.925	29.487
236.975	22.480
237.025	20.328
237.075	5.167
237.125	26.770
237.175	39.033
237.225	35.209
237.275	32.070
237.325	18.731
237.375	19.628
237.425	26.854
237.475	32.050
237.525	17.891
237.575	10.999

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237.625	4.356
237.675	1.280
237.725	1.988
237.775	1.816
237.825	1.251
237.875	1.667
237.925	1.057
237.975	0.998
238.025	0.960
238.075	1.070
238.125	0.734
238.175	2.008
238.225	0.722
238.275	1.413
238.325	1.849
238.375	2.376
238.425	2.444
238.475	2.524
238.525	19.935
238.575	20.360
238.625	13.507
238.675	21.195
238.725	21.155
238.775	6.804
238.825	10.080
238.875	12.811
238.925	23.344
238.975	11.513
239.025	14.758
239.075	30.366
239.125	18.763
239.175	14.417
239.225	4.027
239.275	13.280
239.325	20.761
239.375	27.288
239.425	21.246
239.475	21.217

Approved: July 02, 2016

SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 7/1/2016 10:17:38 AM
End Time: 7/1/2016 10:19:50 AM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 6753.37
        Obtained Intensity (Mg 23.985): 350422.63
        Obtained Intensity (In 114.904): 74054.21
        Obtained Intensity (U 238.05): 161864.28
        Obtained Intensity (Bkgd 220): 0.13
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.020 (=4067.61 / 207928.14)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.011 (=2367.92 / 207928.14)
```

Report Date/Time: Friday, July 01, 2016 10:19:50
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Approved: July 02, 2016

SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 7/1/2016 10:17:38 AM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 6753.37
                Obtained Intensity (Mg 23.985): 350422.63
                Obtained Intensity (In 114.904): 74054.21
                Obtained Intensity (U 238.05): 161864.28
                Obtained Intensity (Bkgd 220): 0.13
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.020 (=4067.61 / 207928.14)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.011 (=2367.92 / 207928.14)
[Passed]  Optimum value(s): N/A

End Time: 7/1/2016 10:19:50 AM
```


Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Friday, July 01, 2016 10:27:28
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	76455.8	1.4				ug/L		Standard
	Be	9	20.0	50.0				ug/L		Standard
	Al	27	1306.7	8.4				ug/L		Standard
	Sc	45	41174.2	1.3				ug/L		Standard
	Ti	47	27.3	20.1				ug/L		Standard
	V	51	1434.3	4.1				ug/L		Standard
	Cr	52	7733.0	1.4				ug/L		Standard
	Cr	53	441.7	6.2				ug/L		Standard
	Mn	55	722.7	2.8				ug/L		Standard
	Co	59	217.3	3.4				ug/L		Standard
	Ni	60	304.3	3.8				ug/L		Standard
	Cu	65	181.0	9.6				ug/L		Standard
	Zn	66	214.7	7.4				ug/L		Standard
>	Ge	72	520809.4	1.3				ug/L		Standard
	As	75	-51.8	28.3				ug/L		Standard
	Se	82	16.9	16.8				ug/L		Standard
	Se-1	77	56.0	13.9				ug/L		Standard
>	Ga	71	25.0	34.6				mg/L		Standard
	Rb	85	28.3	71.3				ug/L		Standard
	Y	89	447394.9	1.2				ug/L		Standard
>	Rh	103	15.0	0.0				ug/L		Standard
	Mo	98	112.7	27.3				ug/L		Standard
	Ag	107	108.0	3.2				ug/L		Standard
	Cd	111	3.1	49.9				mg/L		Standard
	Cd	114	19.8	49.9				ug/L		Standard
>	In	115	625727.9	1.1				ug/L		Standard
	Sn	118	568.3	11.1				ug/L		Standard
	Sb	123	611.9	31.5				ug/L		Standard
	Ba	135	21.0	20.8				ug/L		Standard
	Ce	140	245.0	41.7				ug/L		Standard
>	Tb	159	950397.3	0.8				ug/L		Standard
	Ho	165	6.7	114.6				ug/L		Standard
	Tl	203	15.0	17.6				ug/L		Standard
	Tl	205	13.3	57.3				ug/L		Standard
	Pb	206	263.7	1.3				ug/L		Standard
	Pb	207	221.7	2.3				ug/L		Standard
	Pb	208	958.7	0.3				ug/L		Standard
	U	238	9.3	30.9				ug/L		Standard
>	Bi	209	552820.8	0.2				ug/L		Standard

Sample ID: Blank
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	Na	23	1.7	173.2	mg/L	Standard
	Mg	24	55.0	15.7	mg/L	Standard
	K	39	28.3	27.0	mg/L	Standard
	Ca	43	26.7	47.2	mg/L	Standard
	Fe	54	147.3	8.3	mg/L	Standard
	Fe	57	268.3	12.1	mg/L	Standard
>	**Sc-1**	45	41174.2	1.3	mg/L	Standard
	Cl	35	69550.0	1.7	ug/L	Standard
	Kr	83	0.7	86.6	ug/L	Standard
	Br	81	1950.1	7.9	ug/L	Standard
	P	31	21156.4	1.5	ug/L	Standard
	S	34	3418.7	4.4	ug/L	Standard
	Sr	88	71.7	49.5	ug/L	Standard
	C	12	163.3	19.7	mg/L	Standard
	N	14	0.0		mg/L	Standard
	Hg	202	16.7	69.3	mg/L	Standard
	Dy	164	16.3	91.8	mg/L	Standard
	Ho-1	165	6.7	114.6	mg/L	Standard
	Er	166	6.7	86.6	mg/L	Standard
	I	127	19499.2	0.9	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Friday, July 01, 2016 10:30:40
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76115.8	2.8				ug/L	76456	Standard
	Be	9	13.3	21.7				ug/L	20	Standard
	Al	27	1265.1	6.9				ug/L	1307	Standard
	Sc	45	40428.9	1.7				ug/L	41174	Standard
	Ti	47	21.7	32.4				ug/L	27	Standard
	V	51	1555.0	2.9				ug/L	1434	Standard
	Cr	52	7686.3	1.0				ug/L	7733	Standard
	Cr	53	466.7	11.8				ug/L	442	Standard
	Mn	55	715.0	5.0				ug/L	723	Standard
	Co	59	200.7	6.9				ug/L	217	Standard
	Ni	60	335.0	2.6				ug/L	304	Standard
	Cu	65	166.7	3.3				ug/L	181	Standard
	Zn	66	240.0	2.6				ug/L	215	Standard
>	**Ge**	72	524095.0	0.6				ug/L	520809	Standard
	As	75	-59.9	59.9				ug/L	-52	Standard
	Se	82	13.2	52.5				ug/L	17	Standard
	Se-1	77	54.7	18.5				ug/L	56	Standard
>	**Ga**	71	33.3	45.8				mg/L	25	Standard
	Rb	85	11.7	89.2				ug/L	28	Standard
	Y	89	451430.1	1.0				ug/L	447395	Standard
>	**Rh**	103	13.3	142.0				ug/L	15	Standard
	Mo	98	59.2	36.8				ug/L	113	Standard
	Ag	107	83.3	15.2				ug/L	108	Standard
	Cd	111	2.6	60.3				mg/L	3	Standard
	Cd	114	6.8	257.6				ug/L	20	Standard
>	**In**	115	626754.1	0.5				ug/L	625728	Standard
	Sn	118	553.3	6.0				ug/L	568	Standard
	Sb	123	259.4	31.5				ug/L	612	Standard
	Ba	135	20.7	14.8				ug/L	21	Standard
	Ce	140	71.7	8.1				ug/L	245	Standard
>	**Tb**	159	970231.2	1.1				ug/L	950397	Standard
	Ho	165	3.3	173.2				ug/L	7	Standard
	Tl	203	7.7	32.8				ug/L	15	Standard
	Tl	205	6.7	43.3				ug/L	13	Standard
	Pb	206	273.7	9.4				ug/L	264	Standard
	Pb	207	216.3	5.9				ug/L	222	Standard
	Pb	208	930.0	2.3				ug/L	959	Standard
	U	238	2.3	24.7				ug/L	9	Standard
>	**Bi**	209	552479.9	0.9				ug/L	552821	Standard

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	Na	23	0.0		mg/L	2	Standard
	Mg	24	65.0	20.4	mg/L	55	Standard
	K	39	38.3	19.9	mg/L	28	Standard
	Ca	43	28.3	53.9	mg/L	27	Standard
	Fe	54	142.9	16.5	mg/L	147	Standard
	Fe	57	211.7	5.9	mg/L	268	Standard
>	**Sc-1**	45	40428.9	1.7	mg/L	41174	Standard
	Cl	35	69484.3	2.2	ug/L	69550	Standard
	Kr	83	1.0	0.0	ug/L	1	Standard
	Br	81	2066.8	4.1	ug/L	1950	Standard
	P	31	21174.8	5.7	ug/L	21156	Standard
	S	34	3378.7	3.5	ug/L	3419	Standard
	Sr	88	91.7	20.7	ug/L	72	Standard
	C	12	160.0	28.6	mg/L	163	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	16.7	91.7	mg/L	17	Standard
	Dy	164	6.3	93.2	mg/L	16	Standard
	Ho-1	165	3.3	173.2	mg/L	7	Standard
	Er	166	6.7	86.6	mg/L	7	Standard
	I	127	19828.0	1.1	mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Friday, July 01, 2016 10:33:51
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74986.8	1.6				ug/L	76456	Standard
	Be	9	76.7	43.4				ug/L	20	Standard
	Al	27	10110.0	3.2				ug/L	1307	Standard
	Sc	45	40704.6	1.5				ug/L	41174	Standard
	Ti	47	59.7	6.8				ug/L	27	Standard
	V	51	2028.1	3.7				ug/L	1434	Standard
	Cr	52	8189.5	1.1				ug/L	7733	Standard
	Cr	53	468.3	4.9				ug/L	442	Standard
	Mn	55	1137.0	2.8				ug/L	723	Standard
	Co	59	604.0	2.0				ug/L	217	Standard
	Ni	60	418.3	1.4				ug/L	304	Standard
	Cu	65	251.3	1.9				ug/L	181	Standard
	Zn	66	280.0	1.2				ug/L	215	Standard
>	**Ge**	72	516908.5	0.1				ug/L	520809	Standard
	As	75	5.9	557.4				ug/L	-52	Standard
	Se	82	22.1	63.4				ug/L	17	Standard
	Se-1	77	62.3	6.5				ug/L	56	Standard
>	**Ga**	71	28.3	62.0				mg/L	25	Standard
	Rb	85	13.3	142.0				ug/L	28	Standard
	Y	89	452397.3	1.6				ug/L	447395	Standard
>	**Rh**	103	8.3	91.7				ug/L	15	Standard
	Mo	98	371.2	3.3				ug/L	113	Standard
	Ag	107	447.0	1.8				ug/L	108	Standard
	Cd	111	119.4	7.1				mg/L	3	Standard
	Cd	114	282.1	4.3				ug/L	20	Standard
>	**In**	115	619630.9	0.5				ug/L	625728	Standard
	Sn	118	855.0	13.6				ug/L	568	Standard
	Sb	123	428.3	12.3				ug/L	612	Standard
	Ba	135	146.3	3.9				ug/L	21	Standard
	Ce	140	45.0	50.9				ug/L	245	Standard
>	**Tb**	159	965634.3	1.4				ug/L	950397	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	454.3	3.7				ug/L	15	Standard
	Tl	205	475.0	1.1				ug/L	13	Standard
	Pb	206	529.3	1.0				ug/L	264	Standard
	Pb	207	492.7	3.7				ug/L	222	Standard
	Pb	208	2058.4	0.9				ug/L	959	Standard
	U	238	404.0	3.6				ug/L	9	Standard
>	**Bi**	209	551272.3	0.2				ug/L	552821	Standard

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	Na	23	0.0		mg/L	2	Standard
	Mg	24	55.0	39.6	mg/L	55	Standard
	K	39	35.0	51.5	mg/L	28	Standard
	Ca	43	26.7	28.6	mg/L	27	Standard
	Fe	54	131.1	29.5	mg/L	147	Standard
	Fe	57	260.0	13.9	mg/L	268	Standard
>	**Sc-1**	45	40704.6	1.5	mg/L	41174	Standard
	Cl	35	69075.1	1.1	ug/L	69550	Standard
	Kr	83	2.0	50.0	ug/L	1	Standard
	Br	81	2083.5	5.5	ug/L	1950	Standard
	P	31	20977.8	1.6	ug/L	21156	Standard
	S	34	3237.0	8.2	ug/L	3419	Standard
	Sr	88	66.7	30.3	ug/L	72	Standard
	C	12	120.0	16.7	mg/L	163	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	16.7	34.6	mg/L	17	Standard
	Dy	164	19.5	0.0	mg/L	16	Standard
	Ho-1	165	8.3	69.3	mg/L	7	Standard
	Er	166	10.0		mg/L	7	Standard
	I	127	19168.8	3.3	mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 2
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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Friday, July 01, 2016 10:37:02
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74971.7	1.7				ug/L	76456	Standard
	Be	9	54860.9	3.6	**50.0000**	1.210	2.4	ug/L	20	Standard
	Al	27	8440082.6	0.7	**50.0000**	0.980	2.0	ug/L	1307	Standard
	Sc	45	40865.0	1.5				ug/L	41174	Standard
	Ti	47	32329.8	0.6	**100.0000**	0.832	0.8	ug/L	27	Standard
	V	51	412896.9	0.3	**50.0000**	0.270	0.5	ug/L	1434	Standard
	Cr	52	411678.8	0.9	**50.0000**	0.611	1.2	ug/L	7733	Standard
	Cr	53	51159.6	0.9	**50.0000**	0.580	1.2	ug/L	442	Standard
	Mn	55	380443.4	1.4	**50.0000**	0.789	1.6	ug/L	723	Standard
	Co	59	384667.7	0.9	**50.0000**	0.374	0.7	ug/L	217	Standard
	Ni	60	104566.9	0.5	**50.0000**	0.292	0.6	ug/L	304	Standard
	Cu	65	103056.3	0.1	**50.0000**	0.150	0.3	ug/L	181	Standard
	Zn	66	61622.7	0.7	**50.0000**	0.151	0.3	ug/L	215	Standard
>	**Ge**	72	520018.0	0.4				ug/L	520809	Standard
	As	75	61417.5	0.3	**50.0000**	0.279	0.6	ug/L	-52	Standard
	Se	82	6337.3	1.0	**50.0000**	0.692	1.4	ug/L	17	Standard
	Se-1	77	4335.3	1.3	**50.0000**	0.572	1.1	ug/L	56	Standard
>	**Ga**	71	61.7	40.0				mg/L	25	Standard
	Rb	85	878.4	2.6				ug/L	28	Standard
	Y	89	444837.1	3.4				ug/L	447395	Standard
>	**Rh**	103	30.0	44.1				ug/L	15	Standard
	Mo	98	294287.0	0.6	**100.0000**	0.409	0.4	ug/L	113	Standard
	Ag	107	351901.5	1.0	**50.0000**	0.404	0.8	ug/L	108	Standard
	Cd	111	112966.0	0.5	**50.0000**	0.196	0.4	mg/L	3	Standard
	Cd	114	280940.2	0.5	**50.0000**	0.110	0.2	ug/L	20	Standard
>	**In**	115	612769.1	0.4				ug/L	625728	Standard
	Sn	118	314258.0	2.0	**50.0000**	1.163	2.3	ug/L	568	Standard
	Sb	123	250330.0	0.3	**50.0000**	0.094	0.2	ug/L	612	Standard
	Ba	135	107237.2	0.5	**50.0000**	0.330	0.7	ug/L	21	Standard
	Ce	140	96.7	19.6				ug/L	245	Standard
>	**Tb**	159	945727.5	1.1				ug/L	950397	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	443860.6	0.2	**50.0000**	0.306	0.6	ug/L	15	Standard
	Tl	205	392135.3	1.5	**50.0000**	0.676	1.4	ug/L	13	Standard
	Pb	206	280519.3	0.4	**50.0000**	0.226	0.5	ug/L	264	Standard
	Pb	207	254589.8	0.6	**50.0000**	0.448	0.9	ug/L	222	Standard
	Pb	208	1037250.6	0.5	**50.0000**	0.611	1.2	ug/L	959	Standard
	U	238	392629.2	0.3	**50.0000**	0.515	1.0	ug/L	9	Standard
>	**Bi**	209	544795.2	0.7				ug/L	552821	Standard

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Na	23	3.3	86.6	**5.0000**	4.327	86.5	mg/L	2	Standard
Mg	24	4290.6	8.9	**5.0000**	0.514	10.3	mg/L	55	Standard
K	39	1336.7	14.8	**5.0000**	0.680	13.6	mg/L	28	Standard
Ca	43	78.3	9.8	**5.0000**	0.715	14.3	mg/L	27	Standard
Fe	54	6652.7	2.6	**5.0000**	0.189	3.8	mg/L	147	Standard
Fe	57	1848.4	3.7	**5.0000**	0.193	3.9	mg/L	268	Standard
Sc-1	45	40865.0	1.5				mg/L	41174	Standard
Cl	35	67370.1	1.9				ug/L	69550	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	1980.1	7.8				ug/L	1950	Standard
P	31	22366.5	1.7				ug/L	21156	Standard
S	34	3632.1	4.0				ug/L	3419	Standard
Sr	88	68.3	33.8				ug/L	72	Standard
C	12	116.7	13.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	120.2				mg/L	17	Standard
Dy	164	5.7	108.5				mg/L	16	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	24309.5	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Friday, July 01, 2016 10:40:14
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74573.1	2.4				ug/L	76456	Standard
	Be	9	109282.8	1.9	**100.0980**	2.509	2.5	ug/L	20	Standard
	Al	27	16601431.1	0.9	**99.4425**	1.710	1.7	ug/L	1307	Standard
	Sc	45	41180.9	0.8				ug/L	41174	Standard
	Ti	47	65332.6	0.8	**201.3970**	0.318	0.2	ug/L	27	Standard
	V	51	817909.9	1.4	**99.7804**	1.578	1.6	ug/L	1434	Standard
	Cr	52	812246.8	1.3	**99.9568**	0.856	0.9	ug/L	7733	Standard
	Cr	53	100426.9	3.2	**99.4382**	3.780	3.8	ug/L	442	Standard
	Mn	55	750652.7	0.8	**99.5323**	0.364	0.4	ug/L	723	Standard
	Co	59	758624.4	0.2	**99.4757**	0.655	0.7	ug/L	217	Standard
	Ni	60	205495.5	0.6	**99.3580**	0.343	0.3	ug/L	304	Standard
	Cu	65	201186.2	0.4	**98.9880**	0.686	0.7	ug/L	181	Standard
	Zn	66	121678.0	0.3	**99.6126**	1.153	1.2	ug/L	215	Standard
>	Ge	72	518357.9	0.9				ug/L	520809	Standard
	As	75	123132.9	0.9	**100.2583**	0.732	0.7	ug/L	-52	Standard
	Se	82	12560.6	0.3	**99.7710**	0.579	0.6	ug/L	17	Standard
	Se-1	77	8548.4	1.2	**99.7880**	1.005	1.0	ug/L	56	Standard
>	Ga	71	40.0	45.1				mg/L	25	Standard
	Rb	85	1701.8	13.2				ug/L	28	Standard
	Y	89	451914.9	2.5				ug/L	447395	Standard
>	Rh	103	40.0	25.0				ug/L	15	Standard
	Mo	98	592109.5	0.9	**201.3215**	2.481	1.2	ug/L	113	Standard
	Ag	107	698129.6	0.3	**99.9561**	0.390	0.4	ug/L	108	Standard
	Cd	111	223398.5	0.3	**99.7914**	0.348	0.3	mg/L	3	Standard
	Cd	114	550589.1	2.0	**99.3411**	2.205	2.2	ug/L	20	Standard
>	In	115	608447.5	0.3				ug/L	625728	Standard
	Sn	118	629099.1	1.2	**100.4410**	1.420	1.4	ug/L	568	Standard
	Sb	123	508420.5	1.6	**101.1418**	1.887	1.9	ug/L	612	Standard
	Ba	135	210242.6	0.2	**99.3661**	0.116	0.1	ug/L	21	Standard
	Ce	140	141.7	20.7				ug/L	245	Standard
>	Tb	159	939885.9	0.8				ug/L	950397	Standard
	Ho	165	13.3	21.7				ug/L	7	Standard
	Tl	203	872285.6	0.1	**99.6647**	0.211	0.2	ug/L	15	Standard
	Tl	205	778762.6	2.1	**100.1937**	1.912	1.9	ug/L	13	Standard
	Pb	206	549521.0	0.7	**99.5257**	0.453	0.5	ug/L	264	Standard
	Pb	207	499379.9	0.5	**99.5919**	0.286	0.3	ug/L	222	Standard
	Pb	208	2044680.9	0.3	**99.8400**	0.419	0.4	ug/L	959	Standard
	U	238	794936.5	0.3	**101.1523**	0.190	0.2	ug/L	9	Standard
>	Bi	209	538915.4	0.3				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	8624.1	2.7	**10.0117**	0.211	2.1	mg/L	55	Standard
K	39	2628.6	4.6	**9.9475**	0.505	5.1	mg/L	28	Standard
Ca	43	143.3	11.2	**10.5644**	1.388	13.1	mg/L	27	Standard
Fe	54	12475.4	2.0	**9.6818**	0.117	1.2	mg/L	147	Standard
Fe	57	3570.4	3.6	**10.1632**	0.334	3.3	mg/L	268	Standard
Sc-1	45	41180.9	0.8				mg/L	41174	Standard
Cl	35	66505.0	1.1				ug/L	69550	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	1963.5	9.6				ug/L	1950	Standard
P	31	23055.9	3.6				ug/L	21156	Standard
S	34	3625.4	3.4				ug/L	3419	Standard
Sr	88	81.7	21.5				ug/L	72	Standard
C	12	133.3	30.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	17	Standard
Dy	164	12.1	43.5				mg/L	16	Standard
Ho-1	165	13.3	21.7				mg/L	7	Standard
Er	166	26.7	57.3				mg/L	7	Standard
I	127	3062.0	8.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Friday, July 01, 2016 10:43:27
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73226.6	2.1				ug/L	76456	Standard
	Be	9	55138.5	1.1	**51.4232**	1.173	2.3	ug/L	20	Standard
	Al	27	8364287.3	0.8	**51.0145**	0.701	1.4	ug/L	1307	Standard
	Sc	45	42051.6	1.4				ug/L	41174	Standard
	Ti	47	32632.1	1.2	**99.6299**	0.273	0.3	ug/L	27	Standard
	V	51	416986.8	1.2	**50.3040**	0.153	0.3	ug/L	1434	Standard
	Cr	52	416377.2	0.8	**50.2986**	0.675	1.3	ug/L	7733	Standard
	Cr	53	51450.5	1.0	**50.2662**	0.513	1.0	ug/L	442	Standard
	Mn	55	390114.9	0.6	**51.2101**	0.808	1.6	ug/L	723	Standard
	Co	59	391917.0	0.9	**50.9056**	0.274	0.5	ug/L	217	Standard
	Ni	60	105069.4	0.7	**50.2680**	0.977	1.9	ug/L	304	Standard
	Cu	65	103770.8	0.9	**50.5551**	0.555	1.1	ug/L	181	Standard
	Zn	66	63280.5	0.6	**51.2430**	0.408	0.8	ug/L	215	Standard
>	Ge	72	523154.7	1.4				ug/L	520809	Standard
	As	75	62592.0	0.8	**50.5289**	1.093	2.2	ug/L	-52	Standard
	Se	82	6421.3	0.7	**50.4779**	0.451	0.9	ug/L	17	Standard
	Se-1	77	4421.6	3.1	**50.8264**	2.224	4.4	ug/L	56	Standard
>	Ga	71	38.3	30.1				mg/L	25	Standard
	Rb	85	941.7	14.7				ug/L	28	Standard
	Y	89	448213.9	1.5				ug/L	447395	Standard
>	Rh	103	35.0	49.5				ug/L	15	Standard
	Mo	98	294940.7	1.4	**96.3152**	0.728	0.8	ug/L	113	Standard
	Ag	107	357502.4	1.0	**49.1663**	0.717	1.5	ug/L	108	Standard
	Cd	111	115768.3	0.2	**49.6787**	0.607	1.2	mg/L	3	Standard
	Cd	114	281209.7	0.6	**48.7423**	0.787	1.6	ug/L	20	Standard
>	In	115	633404.9	1.1				ug/L	625728	Standard
	Sn	118	321628.0	0.8	**49.2868**	0.611	1.2	ug/L	568	Standard
	Sb	123	258956.5	0.4	**49.4694**	0.480	1.0	ug/L	612	Standard
	Ba	135	108217.8	0.6	**49.1275**	0.780	1.6	ug/L	21	Standard
	Ce	140	141.7	45.4				ug/L	245	Standard
>	Tb	159	959365.6	0.2				ug/L	950397	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	443048.1	0.6	**49.6569**	0.744	1.5	ug/L	15	Standard
	Tl	205	398039.0	0.4	**50.2306**	0.560	1.1	ug/L	13	Standard
	Pb	206	281925.4	0.1	**50.0662**	0.613	1.2	ug/L	264	Standard
	Pb	207	256662.1	1.0	**50.1891**	0.845	1.7	ug/L	222	Standard
	Pb	208	1053544.2	0.4	**50.4385**	0.548	1.1	ug/L	959	Standard
	U	238	395989.8	1.3	**49.4226**	0.077	0.2	ug/L	9	Standard
>	Bi	209	549436.2	1.2				ug/L	552821	Standard

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Na	23	1.7	173.2	**4.9322**	8.534	173.0	mg/L	2	Standard
Mg	24	4375.6	3.8	**4.9437**	0.134	2.7	mg/L	55	Standard
K	39	1525.1	4.3	**5.5930**	0.165	3.0	mg/L	28	Standard
Ca	43	100.0	13.2	**6.4519**	1.261	19.5	mg/L	27	Standard
Fe	54	6527.6	4.7	**4.9145**	0.265	5.4	mg/L	147	Standard
Fe	57	1855.1	8.5	**4.7782**	0.491	10.3	mg/L	268	Standard
> **Sc-1**	45	42051.6	1.4				mg/L	41174	Standard
Cl	35	67170.6	2.2				ug/L	69550	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	1903.5	10.0				ug/L	1950	Standard
P	31	22763.8	0.6				ug/L	21156	Standard
S	34	3593.8	4.0				ug/L	3419	Standard
Sr	88	85.0	40.8				ug/L	72	Standard
C	12	133.3	15.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	132.3				mg/L	17	Standard
Dy	164	16.5	70.8				mg/L	16	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	23309.6	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	102.846		
Al	27	102.029		
Sc	45			
Ti	47	99.630		
V	51	100.608		
Cr	52	100.597		
Cr	53			
Mn	55	102.420		
Co	59	101.811		
Ni	60	100.536		
Cu	65	101.110		
Zn	66	102.486		
> Ge	72		100.450	
As	75	101.058		
Se	82	100.956		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	96.315		
Ag	107	98.333		
Cd	111	99.357		
Cd	114			
> In	115		101.227	
Sn	118	98.574		
Sb	123	98.939		
Ba	135	98.255		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.314		
Tl	205			
Pb	206	100.132		
Pb	207	100.378		
Pb	208	100.877		
U	238	98.845		
> Bi	209		99.388	
Na	23	98.644		
Mg	24	98.874		
K	39	111.859		
Ca	43	129.039		
Fe	54	98.290		
Fe	57	95.564		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	K	39	
QC Std 1	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Friday, July 01, 2016 10:46:40
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73082.5	1.7				ug/L	76456	Standard
	Be	9	35.0	65.5	**0.0129**	0.022	168.2	ug/L	20	Standard
	Al	27	2900.3	16.4	**0.0075**	0.003	39.6	ug/L	1307	Standard
	Sc	45	41413.2	2.8				ug/L	41174	Standard
	Ti	47	35.3	18.8	**0.0225**	0.019	85.6	ug/L	27	Standard
	V	51	1420.2	5.2	**-0.0279**	0.008	27.9	ug/L	1434	Standard
	Cr	52	6961.6	2.3	**-0.1197**	0.018	14.9	ug/L	7733	Standard
	Cr	53	446.7	2.3	**0.0198**	0.006	30.4	ug/L	442	Standard
	Mn	55	849.7	3.5	**0.0096**	0.004	44.1	ug/L	723	Standard
	Co	59	304.7	6.6	**0.0099**	0.003	30.2	ug/L	217	Standard
	Ni	60	329.3	2.5	**0.0037**	0.005	136.9	ug/L	304	Standard
	Cu	65	206.0	9.7	**0.0257**	0.010	38.8	ug/L	181	Standard
	Zn	66	265.3	8.1	**0.0337**	0.016	46.4	ug/L	215	Standard
>	**Ge**	72	527031.7	1.0				ug/L	520809	Standard
	As	75	-62.3	20.0	**-0.0048**	0.010	219.6	ug/L	-52	Standard
	Se	82	14.1	36.1	**-0.0165**	0.039	235.1	ug/L	17	Standard
	Se-1	77	48.7	10.1	**-0.1219**	0.059	48.3	ug/L	56	Standard
>	**Ga**	71	25.0	20.0				mg/L	25	Standard
	Rb	85	26.7	84.5				ug/L	28	Standard
	Y	89	456491.7	1.0				ug/L	447395	Standard
>	**Rh**	103	26.7	57.3				ug/L	15	Standard
	Mo	98	335.9	6.6	**0.0861**	0.007	7.7	ug/L	113	Standard
	Ag	107	180.3	7.4	**0.0120**	0.002	16.2	ug/L	108	Standard
	Cd	111	27.1	26.6	**0.0093**	0.003	33.3	mg/L	3	Standard
	Cd	114	66.3	29.5	**0.0115**	0.003	29.4	ug/L	20	Standard
>	**In**	115	631231.9	0.6				ug/L	625728	Standard
	Sn	118	1070.0	25.4	**0.0807**	0.043	52.8	ug/L	568	Standard
	Sb	123	986.7	28.6	**0.1557**	0.055	35.3	ug/L	612	Standard
	Ba	135	49.3	8.4	**0.0046**	0.002	42.1	ug/L	21	Standard
	Ce	140	21.7	58.1				ug/L	245	Standard
>	**Tb**	159	958993.9	0.7				ug/L	950397	Standard
	Ho	165	1.7	173.2				ug/L	7	Standard
	Tl	203	132.3	25.5	**0.0140**	0.004	27.2	ug/L	15	Standard
	Tl	205	123.3	29.3	**0.0057**	0.005	80.1	ug/L	13	Standard
	Pb	206	354.7	6.4	**0.0189**	0.004	22.4	ug/L	264	Standard
	Pb	207	298.7	4.5	**0.0120**	0.003	23.0	ug/L	222	Standard
	Pb	208	1215.7	2.5	**0.0096**	0.002	16.0	ug/L	959	Standard
	U	238	110.7	12.5	**0.0135**	0.002	13.1	ug/L	9	Standard
>	**Bi**	209	552384.0	0.3				ug/L	552821	Standard

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Na	23	1.7	173.2	**5.1172**	8.855	173.0	mg/L	2	Standard
Mg	24	61.7	49.5	**0.0114**	0.035	305.2	mg/L	55	Standard
K	39	43.3	29.0	**0.0349**	0.052	149.9	mg/L	28	Standard
Ca	43	15.0	66.7	**-1.1126**	0.876	78.7	mg/L	27	Standard
Fe	54	155.9	11.0	**0.0227**	0.013	57.8	mg/L	147	Standard
Fe	57	246.7	5.1	**-0.0507**	0.023	46.3	mg/L	268	Standard
> **Sc-1**	45	41413.2	2.8				mg/L	41174	Standard
Cl	35	67081.5	1.7				ug/L	69550	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	1926.8	4.5				ug/L	1950	Standard
P	31	22241.3	1.7				ug/L	21156	Standard
S	34	3415.4	3.5				ug/L	3419	Standard
Sr	88	56.7	39.8				ug/L	72	Standard
C	12	120.0	30.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	17	Standard
Dy	164	12.7	43.5				mg/L	16	Standard
Ho-1	165	1.7	173.2				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	18017.4	0.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.195	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.880	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.921	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Na	23	
QC Std 2	Ca	43	

Sample ID: QC Std 2
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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Friday, July 01, 2016 10:49:53
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71014.5	3.1				ug/L	76456	Standard
	Be	9	276.7	13.7	**0.2467**	0.041	16.7	ug/L	20	Standard
	Al	27	1433.4	19.2	**-0.0012**	0.001	117.3	ug/L	1307	Standard
	Sc	45	40355.3	1.3				ug/L	41174	Standard
	Ti	47	21.0	29.7	**-0.0191**	0.020	103.3	ug/L	27	Standard
	V	51	4354.1	2.4	**0.3388**	0.016	4.6	ug/L	1434	Standard
	Cr	52	13385.9	0.6	**0.7089**	0.010	1.4	ug/L	7733	Standard
	Cr	53	1290.1	5.1	**0.8778**	0.062	7.0	ug/L	442	Standard
	Mn	55	4164.2	0.5	**0.4567**	0.004	0.8	ug/L	723	Standard
	Co	59	3022.0	3.5	**0.3708**	0.015	4.0	ug/L	217	Standard
	Ni	60	3422.7	3.0	**1.5204**	0.058	3.8	ug/L	304	Standard
	Cu	65	1708.4	1.3	**0.7752**	0.014	1.9	ug/L	181	Standard
	Zn	66	7949.4	1.3	**6.4016**	0.063	1.0	ug/L	215	Standard
>	**Ge**	72	513410.3	0.5				ug/L	520809	Standard
	As	75	420.2	2.0	**0.3904**	0.006	1.5	ug/L	-52	Standard
	Se	82	57.4	15.1	**0.3348**	0.072	21.4	ug/L	17	Standard
	Se-1	77	86.3	6.6	**0.3399**	0.069	20.2	ug/L	56	Standard
>	**Ga**	71	38.3	7.5				mg/L	25	Standard
	Rb	85	15.0	115.5				ug/L	28	Standard
	Y	89	441603.6	1.2				ug/L	447395	Standard
>	**Rh**	103	16.7	17.3				ug/L	15	Standard
	Mo	98	125.5	7.4	**0.0191**	0.003	17.3	ug/L	113	Standard
	Ag	107	2803.6	3.0	**0.3918**	0.011	2.9	ug/L	108	Standard
	Cd	111	534.5	1.7	**0.2383**	0.004	1.8	mg/L	3	Standard
	Cd	114	1340.9	4.1	**0.2439**	0.009	3.8	ug/L	20	Standard
>	**In**	115	603601.4	0.4				ug/L	625728	Standard
	Sn	118	588.3	20.4	**0.0106**	0.020	185.6	ug/L	568	Standard
	Sb	123	1982.0	3.1	**0.3639**	0.013	3.7	ug/L	612	Standard
	Ba	135	1500.1	4.2	**0.6970**	0.033	4.7	ug/L	21	Standard
	Ce	140	13.3	57.3				ug/L	245	Standard
>	**Tb**	159	923552.7	1.3				ug/L	950397	Standard
	Ho	165	18.3	41.7				ug/L	7	Standard
	Tl	203	722.4	6.5	**0.0815**	0.005	6.2	ug/L	15	Standard
	Tl	205	658.3	9.8	**0.0746**	0.008	10.9	ug/L	13	Standard
	Pb	206	1350.7	0.3	**0.2001**	0.002	0.8	ug/L	264	Standard
	Pb	207	1167.0	2.9	**0.1859**	0.007	3.6	ug/L	222	Standard
	Pb	208	4949.3	2.3	**0.1926**	0.005	2.7	ug/L	959	Standard
	U	238	3051.6	1.8	**0.3866**	0.007	1.9	ug/L	9	Standard
>	**Bi**	209	540899.0	0.4				ug/L	552821	Standard

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Na	23	3.3	86.6	**10.1911**	8.823	86.6	mg/L	2	Standard
Mg	24	73.3	17.2	**0.0273**	0.016	58.3	mg/L	55	Standard
K	39	43.3	17.6	**0.0384**	0.030	78.8	mg/L	28	Standard
Ca	43	21.7	13.3	**-0.4451**	0.256	57.4	mg/L	27	Standard
Fe	54	112.1	10.4	**-0.0092**	0.008	90.3	mg/L	147	Standard
Fe	57	220.0	10.4	**-0.1144**	0.071	61.7	mg/L	268	Standard
Sc-1	45	40355.3	1.3				mg/L	41174	Standard
Cl	35	64985.1	1.0				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	1890.1	8.2				ug/L	1950	Standard
P	31	15399.5	2.8				ug/L	21156	Standard
S	34	3492.1	3.5				ug/L	3419	Standard
Sr	88	78.3	3.7				ug/L	72	Standard
C	12	140.0	14.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	17	Standard
Dy	164	12.9	182.9				mg/L	16	Standard
Ho-1	165	18.3	41.7				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	2308.5	15.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	123.368		
Al	27	-0.122		
Sc	45			
Ti	47			
V	51	84.694		
Cr	52	88.608		
Cr	53			
Mn	55	91.340		
Co	59	92.690		
Ni	60	95.026		
Cu	65	96.904		
Zn	66	102.426		
Ge	72		98.579	
As	75	97.610		
Se	82	83.691		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	97.953		
Cd	111	99.297		
Cd	114			
> In	115			96.464
Sn	118			
Sb	123	90.972		
Ba	135	92.929		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.839		
Tl	205			
Pb	206			
Pb	207			
Pb	208	96.295		
U	238	96.660		
> Bi	209			97.843
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Friday, July 01, 2016 10:53:04
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72812.9	1.2				ug/L	76456	Standard
	Be	9	36.7	20.8	**0.0145**	0.007	47.6	ug/L	20	Standard
	Al	27	8248243.5	1.3	**50.5822**	0.139	0.3	ug/L	1307	Standard
	Sc	45	42120.1	1.9				ug/L	41174	Standard
	Ti	47	35838.7	1.4	**108.8763**	0.923	0.8	ug/L	27	Standard
	V	51	1796.6	6.7	**0.0180**	0.017	92.8	ug/L	1434	Standard
	Cr	52	8717.2	1.4	**0.0974**	0.005	5.1	ug/L	7733	Standard
	Cr	53	5294.3	3.4	**4.7714**	0.146	3.1	ug/L	442	Standard
	Mn	55	1499.1	2.5	**0.0949**	0.007	6.9	ug/L	723	Standard
	Co	59	500.3	4.2	**0.0353**	0.003	8.8	ug/L	217	Standard
	Ni	60	1153.7	2.9	**0.3978**	0.021	5.4	ug/L	304	Standard
	Cu	65	743.0	1.9	**0.2866**	0.009	3.1	ug/L	181	Standard
	Zn	66	1750.4	2.4	**1.2353**	0.049	3.9	ug/L	215	Standard
>	Ge	72	525789.4	1.1				ug/L	520809	Standard
	As	75	-56.5	78.0	**0.0000**	0.035	94213.4	ug/L	-52	Standard
	Se	82	21.9	13.2	**0.0450**	0.024	52.9	ug/L	17	Standard
	Se-1	77	369.0	3.8	**3.5902**	0.118	3.3	ug/L	56	Standard
>	Ga	71	190.0	4.6				mg/L	25	Standard
	Rb	85	1346.7	12.1				ug/L	28	Standard
	Y	89	446130.3	1.4				ug/L	447395	Standard
>	Rh	103	20.0	66.1				ug/L	15	Standard
	Mo	98	294809.8	0.7	**99.0666**	0.826	0.8	ug/L	113	Standard
	Ag	107	518.7	43.1	**0.0605**	0.032	52.1	ug/L	108	Standard
	Cd	111	-203.1	6.2	**-0.0920**	0.006	6.1	mg/L	3	Standard
	Cd	114	646.5	2.5	**0.1153**	0.003	2.6	ug/L	20	Standard
>	In	115	615550.0	0.1				ug/L	625728	Standard
	Sn	118	1126.7	15.8	**0.0937**	0.028	29.8	ug/L	568	Standard
	Sb	123	769.4	36.4	**0.1176**	0.055	46.8	ug/L	612	Standard
	Ba	135	907.7	4.8	**0.4062**	0.020	4.9	ug/L	21	Standard
	Ce	140	310.0	5.6				ug/L	245	Standard
>	Tb	159	945278.1	1.3				ug/L	950397	Standard
	Ho	165	18.3	41.7				ug/L	7	Standard
	Tl	203	340.3	40.4	**0.0383**	0.016	41.1	ug/L	15	Standard
	Tl	205	238.3	11.6	**0.0211**	0.004	17.6	ug/L	13	Standard
	Pb	206	679.7	9.3	**0.0799**	0.011	14.4	ug/L	264	Standard
	Pb	207	580.3	10.0	**0.0701**	0.011	16.1	ug/L	222	Standard
	Pb	208	2295.1	2.9	**0.0642**	0.002	3.2	ug/L	959	Standard
	U	238	77.3	37.1	**0.0096**	0.004	37.6	ug/L	9	Standard
>	Bi	209	536774.2	1.2				ug/L	552821	Standard

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Na	23	3.3	173.2	**9.7734**	16.919	173.1	mg/L	2	Standard
Mg	24	10777.2	2.6	**12.2531**	0.537	4.4	mg/L	55	Standard
K	39	1383.4	9.9	**5.0519**	0.468	9.3	mg/L	28	Standard
Ca	43	138.3	7.5	**9.8265**	0.682	6.9	mg/L	27	Standard
Fe	54	16161.2	1.3	**12.2930**	0.303	2.5	mg/L	147	Standard
Fe	57	4369.0	2.7	**12.3260**	0.594	4.8	mg/L	268	Standard
> **Sc-1**	45	42120.1	1.9				mg/L	41174	Standard
Cl	35	65421.7	2.5				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	1906.8	13.4				ug/L	1950	Standard
P	31	21114.7	2.7				ug/L	21156	Standard
S	34	3085.3	2.7				ug/L	3419	Standard
Sr	88	60.0	33.3				ug/L	72	Standard
C	12	210.0	31.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	106.7	54.9				mg/L	17	Standard
Dy	164	19.7	50.8				mg/L	16	Standard
Ho-1	165	18.3	41.7				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	3048.6	5.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27	1.012		
Sc	45			
Ti	47	108.876		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.956	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	99.067		
Ag	107			
Cd	111			
Cd	114			
In	115			98.373
Sn	118			
Sb	123			
Ba	135			
Ce	140			
Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
Bi	209			97.097
Na	23	78.187		
Mg	24	245.062		
K	39	101.039		
Ca	43	65.510		
Fe	54	98.344		
Fe	57	98.608		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Ba	135	
QC Std 4	Na	23	

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QC Std 4	Mg	24
QC Std 4	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Friday, July 01, 2016 10:56:16
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75903.0	2.2				ug/L	76456	Standard
	Be	9	113931.8	1.0	**102.5442**	3.204	3.1	ug/L	20	Standard
	Al	27	7231990.8	1.8	**42.5454**	0.182	0.4	ug/L	1307	Standard
	Sc	45	42432.7	2.4				ug/L	41174	Standard
	Ti	47	30737.8	1.0	**92.8199**	0.734	0.8	ug/L	27	Standard
	V	51	833696.6	0.9	**99.6740**	0.237	0.2	ug/L	1434	Standard
	Cr	52	810709.3	1.6	**97.7572**	1.161	1.2	ug/L	7733	Standard
	Cr	53	105220.8	1.3	**102.1011**	1.018	1.0	ug/L	442	Standard
	Mn	55	763205.2	1.1	**99.1800**	1.093	1.1	ug/L	723	Standard
	Co	59	765446.7	1.5	**98.3652**	1.221	1.2	ug/L	217	Standard
	Ni	60	204863.4	0.8	**97.0735**	0.398	0.4	ug/L	304	Standard
	Cu	65	204176.2	1.0	**98.4523**	0.417	0.4	ug/L	181	Standard
	Zn	66	128188.4	1.6	**102.8491**	1.339	1.3	ug/L	215	Standard
>	Ge	72	528896.0	0.7				ug/L	520809	Standard
	As	75	125724.6	1.1	**100.3319**	1.466	1.5	ug/L	-52	Standard
	Se	82	12709.7	1.6	**98.9446**	1.879	1.9	ug/L	17	Standard
	Se-1	77	8838.2	1.3	**101.1222**	0.967	1.0	ug/L	56	Standard
>	Ga	71	141.7	2.0				mg/L	25	Standard
	Rb	85	858.4	8.2				ug/L	28	Standard
	Y	89	450945.0	1.6				ug/L	447395	Standard
>	Rh	103	58.3	17.8				ug/L	15	Standard
	Mo	98	252063.2	0.9	**84.2200**	0.957	1.1	ug/L	113	Standard
	Ag	107	620939.1	2.7	**87.3716**	1.954	2.2	ug/L	108	Standard
	Cd	111	226578.4	0.5	**99.4783**	0.760	0.8	mg/L	3	Standard
	Cd	114	558953.6	2.4	**99.1106**	1.789	1.8	ug/L	20	Standard
>	In	115	619069.3	0.8				ug/L	625728	Standard
	Sn	118	1101.7	13.0	**0.0889**	0.024	26.9	ug/L	568	Standard
	Sb	123	495062.3	2.0	**96.7840**	1.258	1.3	ug/L	612	Standard
	Ba	135	212436.2	0.4	**98.6825**	0.524	0.5	ug/L	21	Standard
	Ce	140	106.7	5.4				ug/L	245	Standard
>	Tb	159	965012.6	0.9				ug/L	950397	Standard
	Ho	165	11.7	89.2				ug/L	7	Standard
	Tl	203	877864.5	0.6	**98.2340**	0.597	0.6	ug/L	15	Standard
	Tl	205	786061.6	0.2	**99.0500**	0.141	0.1	ug/L	13	Standard
	Pb	206	570990.7	1.2	**101.2826**	1.116	1.1	ug/L	264	Standard
	Pb	207	499235.8	0.8	**97.5091**	0.551	0.6	ug/L	222	Standard
	Pb	208	2063776.1	0.5	**98.6933**	0.341	0.3	ug/L	959	Standard
	U	238	778595.3	0.8	**97.0297**	0.672	0.7	ug/L	9	Standard
>	Bi	209	550260.8	0.2				ug/L	552821	Standard

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Na	23	5.0	100.0	**14.6626**	14.607	99.6	mg/L	2	Standard
Mg	24	9379.6	3.3	**10.5777**	0.497	4.7	mg/L	55	Standard
K	39	1123.4	14.5	**4.0598**	0.702	17.3	mg/L	28	Standard
Ca	43	151.7	14.9	**10.9556**	2.287	20.9	mg/L	27	Standard
Fe	54	13756.2	0.9	**10.3738**	0.327	3.2	mg/L	147	Standard
Fe	57	3798.8	1.3	**10.5253**	0.250	2.4	mg/L	268	Standard
Sc-1	45	42432.7	2.4				mg/L	41174	Standard
Cl	35	63162.8	2.2				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	2016.8	12.5				ug/L	1950	Standard
P	31	19924.8	3.7				ug/L	21156	Standard
S	34	3145.3	1.7				ug/L	3419	Standard
Sr	88	73.3	10.4				ug/L	72	Standard
C	12	216.7	17.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	17	Standard
Dy	164	29.4	59.5				mg/L	16	Standard
Ho-1	165	11.7	89.2				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	7	Standard
I	127	3137.0	10.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.544		
Al	27	0.851		
Sc	45			
Ti	47	92.820		
V	51	99.674		
Cr	52	97.757		
Cr	53			
Mn	55	99.180		
Co	59	98.365		
Ni	60	97.073		
Cu	65	98.452		
Zn	66	102.849		
Ge	72		101.553	
As	75	100.332		
Se	82	98.945		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	84.220		
Ag	107	87.372		
Cd	111	99.478		
Cd	114			
> In	115			98.936
Sn	118			
Sb	123	96.784		
Ba	135	98.683		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.234		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.693		
U	238	97.030		
> Bi	209			99.537
Na	23	117.301		
Mg	24	211.554		
K	39	81.196		
Ca	43	73.037		
Fe	54	82.990		
Fe	57	84.202		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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QC Std 5	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 10:59:29
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76397.1	0.4				ug/L	76456	Standard
	Be	9	56429.9	0.6	**50.4288**	0.323	0.6	ug/L	20	Standard
	Al	27	8608329.7	1.2	**50.3148**	0.658	1.3	ug/L	1307	Standard
	Sc	45	41418.2	1.5				ug/L	41174	Standard
	Ti	47	32560.9	0.4	**99.6282**	1.278	1.3	ug/L	27	Standard
	V	51	420616.9	0.3	**50.8527**	0.410	0.8	ug/L	1434	Standard
	Cr	52	416237.8	1.3	**50.3856**	0.640	1.3	ug/L	7733	Standard
	Cr	53	51529.2	2.3	**50.4433**	0.671	1.3	ug/L	442	Standard
	Mn	55	384144.6	2.2	**50.5271**	1.192	2.4	ug/L	723	Standard
	Co	59	391365.2	2.6	**50.9408**	1.337	2.6	ug/L	217	Standard
	Ni	60	104660.9	0.3	**50.1718**	0.419	0.8	ug/L	304	Standard
	Cu	65	103744.3	0.5	**50.6474**	0.422	0.8	ug/L	181	Standard
	Zn	66	61920.9	0.7	**50.2420**	0.301	0.6	ug/L	215	Standard
>	**Ge**	72	522053.0	1.0				ug/L	520809	Standard
	As	75	62496.7	0.9	**50.5498**	0.506	1.0	ug/L	-52	Standard
	Se	82	6394.4	1.6	**50.3673**	0.526	1.0	ug/L	17	Standard
	Se-1	77	4303.6	0.6	**49.5434**	0.744	1.5	ug/L	56	Standard
>	**Ga**	71	55.0	9.1				mg/L	25	Standard
	Rb	85	888.4	10.1				ug/L	28	Standard
	Y	89	456826.7	1.0				ug/L	447395	Standard
>	**Rh**	103	20.0	66.1				ug/L	15	Standard
	Mo	98	297194.2	1.6	**98.9144**	2.943	3.0	ug/L	113	Standard
	Ag	107	358131.2	0.8	**50.1903**	1.051	2.1	ug/L	108	Standard
	Cd	111	114353.1	0.3	**50.0023**	0.782	1.6	mg/L	3	Standard
	Cd	114	281397.0	1.0	**49.6948**	0.508	1.0	ug/L	20	Standard
>	**In**	115	621643.5	1.3				ug/L	625728	Standard
	Sn	118	312305.8	0.1	**48.7658**	0.722	1.5	ug/L	568	Standard
	Sb	123	262685.9	0.2	**51.1341**	0.568	1.1	ug/L	612	Standard
	Ba	135	107196.2	0.5	**49.5868**	0.878	1.8	ug/L	21	Standard
	Ce	140	91.7	19.2				ug/L	245	Standard
>	**Tb**	159	949369.3	0.9				ug/L	950397	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	446446.9	0.3	**50.5283**	0.234	0.5	ug/L	15	Standard
	Tl	205	397524.5	2.6	**50.6566**	1.177	2.3	ug/L	13	Standard
	Pb	206	283032.1	0.6	**50.7560**	0.110	0.2	ug/L	264	Standard
	Pb	207	256737.6	0.4	**50.6961**	0.167	0.3	ug/L	222	Standard
	Pb	208	1049117.6	0.6	**50.7200**	0.161	0.3	ug/L	959	Standard
	U	238	395685.5	0.4	**49.8743**	0.152	0.3	ug/L	9	Standard
>	**Bi**	209	544048.8	0.4				ug/L	552821	Standard

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Na	23	3.3	173.2	**9.9687**	17.258	173.1	mg/L	2	Standard
Mg	24	4517.3	2.2	**5.1854**	0.050	1.0	mg/L	55	Standard
K	39	1296.7	2.0	**4.8131**	0.164	3.4	mg/L	28	Standard
Ca	43	80.0	16.5	**4.7867**	1.292	27.0	mg/L	27	Standard
Fe	54	6442.2	3.1	**4.9235**	0.148	3.0	mg/L	147	Standard
Fe	57	1841.8	2.1	**4.8233**	0.186	3.8	mg/L	268	Standard
Sc-1	45	41418.2	1.5				mg/L	41174	Standard
Cl	35	65714.2	0.5				ug/L	69550	Standard
Kr	83	3.0	33.3				ug/L	1	Standard
Br	81	1946.8	7.2				ug/L	1950	Standard
P	31	21396.8	2.5				ug/L	21156	Standard
S	34	3327.0	3.8				ug/L	3419	Standard
Sr	88	70.0	18.9				ug/L	72	Standard
C	12	130.0	20.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	17	Standard
Dy	164	9.5	107.6				mg/L	16	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	23620.1	0.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	100.858		
Al	27	100.630		
Sc	45			
Ti	47	99.628		
V	51	101.705		
Cr	52	100.771		
Cr	53			
Mn	55	101.054		
Co	59	101.882		
Ni	60	100.344		
Cu	65	101.295		
Zn	66	100.484		
Ge	72		100.239	
As	75	101.100		
Se	82	100.735		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.914		
Ag	107	100.381		
Cd	111	100.005		
Cd	114			
> In	115			99.347
Sn	118	97.532		
Sb	123	102.268		
Ba	135	99.174		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.057		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.440		
U	238	99.749		
> Bi	209			98.413
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 11:02:41
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76638.3	0.9				ug/L	76456	Standard
	Be	9	45.0	69.4	**0.0201**	0.027	136.2	ug/L	20	Standard
	Al	27	2771.9	19.2	**0.0059**	0.003	49.8	ug/L	1307	Standard
	Sc	45	41874.5	1.3				ug/L	41174	Standard
	Ti	47	34.3	22.6	**0.0199**	0.023	116.0	ug/L	27	Standard
	V	51	1314.7	3.0	**-0.0400**	0.005	13.2	ug/L	1434	Standard
	Cr	52	7063.3	2.5	**-0.1041**	0.024	23.4	ug/L	7733	Standard
	Cr	53	583.3	6.1	**0.1556**	0.035	22.3	ug/L	442	Standard
	Mn	55	795.7	2.1	**0.0029**	0.003	97.4	ug/L	723	Standard
	Co	59	301.0	14.0	**0.0095**	0.006	58.4	ug/L	217	Standard
	Ni	60	322.3	4.2	**0.0009**	0.006	613.3	ug/L	304	Standard
	Cu	65	188.3	9.4	**0.0175**	0.009	51.5	ug/L	181	Standard
	Zn	66	246.3	14.0	**0.0191**	0.028	144.2	ug/L	215	Standard
>	**Ge**	72	525121.4	0.6				ug/L	520809	Standard
	As	75	-40.2	86.9	**0.0130**	0.028	214.4	ug/L	-52	Standard
	Se	82	15.7	75.3	**-0.0027**	0.093	3488.1	ug/L	17	Standard
	Se-1	77	53.7	18.4	**-0.0615**	0.118	192.4	ug/L	56	Standard
>	**Ga**	71	31.7	18.2				mg/L	25	Standard
	Rb	85	18.3	15.7				ug/L	28	Standard
	Y	89	447115.8	1.8				ug/L	447395	Standard
>	**Rh**	103	16.7	17.3				ug/L	15	Standard
	Mo	98	330.0	12.1	**0.0850**	0.013	15.3	ug/L	113	Standard
	Ag	107	352.0	8.7	**0.0361**	0.004	11.5	ug/L	108	Standard
	Cd	111	29.4	26.4	**0.0104**	0.003	32.2	mg/L	3	Standard
	Cd	114	71.8	39.3	**0.0126**	0.005	39.2	ug/L	20	Standard
>	**In**	115	626402.7	0.2				ug/L	625728	Standard
	Sn	118	865.0	27.7	**0.0501**	0.037	74.4	ug/L	568	Standard
	Sb	123	1603.3	32.0	**0.2763**	0.100	36.1	ug/L	612	Standard
	Ba	135	44.0	23.9	**0.0023**	0.005	210.3	ug/L	21	Standard
	Ce	140	16.7	34.6				ug/L	245	Standard
>	**Tb**	159	964218.0	1.0				ug/L	950397	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	134.0	19.6	**0.0140**	0.003	21.2	ug/L	15	Standard
	Tl	205	110.0	16.4	**0.0039**	0.002	58.2	ug/L	13	Standard
	Pb	206	338.3	8.4	**0.0154**	0.006	35.8	ug/L	264	Standard
	Pb	207	297.0	6.8	**0.0111**	0.004	39.6	ug/L	222	Standard
	Pb	208	1217.7	7.2	**0.0091**	0.005	50.4	ug/L	959	Standard
	U	238	104.0	26.4	**0.0125**	0.003	27.7	ug/L	9	Standard
>	**Bi**	209	558778.4	1.0				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	40.0	45.1	**-0.0142**	0.021	147.6	mg/L	55	Standard
K	39	25.0	72.1	**-0.0375**	0.066	177.3	mg/L	28	Standard
Ca	43	30.0	33.3	**0.2279**	0.902	395.6	mg/L	27	Standard
Fe	54	134.1	12.9	**0.0047**	0.015	308.3	mg/L	147	Standard
Fe	57	221.7	27.3	**-0.1357**	0.173	127.8	mg/L	268	Standard
> **Sc-1**	45	41874.5	1.3				mg/L	41174	Standard
Cl	35	67946.0	1.7				ug/L	69550	Standard
Kr	83	1.0	173.2				ug/L	1	Standard
Br	81	1943.5	9.7				ug/L	1950	Standard
P	31	20762.6	2.5				ug/L	21156	Standard
S	34	3392.0	1.6				ug/L	3419	Standard
Sr	88	48.3	36.3				ug/L	72	Standard
C	12	116.7	42.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	89.2				mg/L	17	Standard
Dy	164	15.9	71.9				mg/L	16	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	7	Standard
I	127	17685.3	1.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.828	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.108
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.078
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

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Method 6020 - Summary Report

Sample ID: PBW 78 WG574416-04
Sample Date/Time: Friday, July 01, 2016 11:05:53
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76067.2	2.6				ug/L	76456	Standard
	Be	9	91.7	22.0	**0.0624**	0.018	28.1	ug/L	20	Standard
	Al	27	9900.0	18.4	**0.0479**	0.010	21.7	ug/L	1307	Standard
	Sc	45	42185.3	1.2				ug/L	41174	Standard
	Ti	47	37.3	6.7	**0.0291**	0.007	24.8	ug/L	27	Standard
	V	51	1740.2	8.5	**0.0114**	0.018	156.7	ug/L	1434	Standard
	Cr	52	8205.6	2.3	**0.0360**	0.018	50.7	ug/L	7733	Standard
	Cr	53	613.3	22.1	**0.1846**	0.130	70.5	ug/L	442	Standard
	Mn	55	2289.5	4.2	**0.1986**	0.011	5.7	ug/L	723	Standard
	Co	59	620.0	11.0	**0.0508**	0.009	16.8	ug/L	217	Standard
	Ni	60	519.3	1.9	**0.0951**	0.005	5.1	ug/L	304	Standard
	Cu	65	329.0	6.1	**0.0858**	0.009	10.4	ug/L	181	Standard
	Zn	66	3237.3	0.8	**2.4406**	0.012	0.5	ug/L	215	Standard
>	**Ge**	72	525088.2	0.5				ug/L	520809	Standard
	As	75	30.8	108.7	**0.0699**	0.027	38.5	ug/L	-52	Standard
	Se	82	25.8	16.5	**0.0760**	0.033	43.0	ug/L	17	Standard
	Se-1	77	68.3	8.1	**0.1083**	0.066	60.6	ug/L	56	Standard
>	**Ga**	71	20.0	66.1				mg/L	25	Standard
	Rb	85	38.3	7.5				ug/L	28	Standard
	Y	89	448293.9	2.2				ug/L	447395	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	197.6	7.0	**0.0411**	0.005	11.2	ug/L	113	Standard
	Ag	107	356.3	27.8	**0.0365**	0.014	37.3	ug/L	108	Standard
	Cd	111	135.0	20.3	**0.0560**	0.012	21.0	mg/L	3	Standard
	Cd	114	292.8	13.1	**0.0511**	0.007	12.9	ug/L	20	Standard
>	**In**	115	628756.6	0.3				ug/L	625728	Standard
	Sn	118	890.0	6.8	**0.0534**	0.009	17.4	ug/L	568	Standard
	Sb	123	903.8	20.1	**0.1404**	0.035	25.1	ug/L	612	Standard
	Ba	135	176.0	12.6	**0.0626**	0.010	15.9	ug/L	21	Standard
	Ce	140	53.3	61.0				ug/L	245	Standard
>	**Tb**	159	955139.7	2.0				ug/L	950397	Standard
	Ho	165	11.7	49.5				ug/L	7	Standard
	Tl	203	548.0	21.5	**0.0598**	0.012	20.5	ug/L	15	Standard
	Tl	205	510.0	24.7	**0.0537**	0.015	27.8	ug/L	13	Standard
	Pb	206	677.0	11.7	**0.0750**	0.013	16.8	ug/L	264	Standard
	Pb	207	544.7	11.6	**0.0591**	0.011	18.5	ug/L	222	Standard
	Pb	208	2290.4	8.0	**0.0601**	0.007	12.3	ug/L	959	Standard
	U	238	102.7	66.1	**0.0123**	0.008	66.3	ug/L	9	Standard
>	**Bi**	209	556043.1	1.2				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	61.7	46.1	**0.0100**	0.032	319.9	mg/L	55	Standard
K	39	35.0	57.1	**0.0003**	0.076	23783.0	mg/L	28	Standard
Ca	43	23.3	32.7	**-0.3783**	0.697	184.3	mg/L	27	Standard
Fe	54	175.9	11.5	**0.0357**	0.014	38.5	mg/L	147	Standard
Fe	57	216.7	10.7	**-0.1545**	0.066	42.5	mg/L	268	Standard
> **Sc-1**	45	42185.3	1.2				mg/L	41174	Standard
Cl	35	67744.4	0.4				ug/L	69550	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	2090.1	1.7				ug/L	1950	Standard
P	31	21226.5	2.4				ug/L	21156	Standard
S	34	3468.7	3.7				ug/L	3419	Standard
Sr	88	66.7	18.9				ug/L	72	Standard
C	12	106.7	51.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	17	Standard
Dy	164	6.2	100.1				mg/L	16	Standard
Ho-1	165	11.7	49.5				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	2538.5	15.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.492	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.822	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.484
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.583
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 78 WG574416-05
Sample Date/Time: Friday, July 01, 2016 11:09:04
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	76480.9	1.3				ug/L	76456	Standard
	Be	9	57299.8	1.8	**51.1515**	0.782	1.5	ug/L	20	Standard
	Al	27	13893.0	5.9	**0.0710**	0.006	8.3	ug/L	1307	Standard
	Sc	45	41525.2	3.0				ug/L	41174	Standard
	Ti	47	50.0	14.4	**0.0663**	0.021	31.6	ug/L	27	Standard
	V	51	423867.5	0.4	**50.5009**	0.287	0.6	ug/L	1434	Standard
	Cr	52	423554.6	0.4	**50.5309**	0.121	0.2	ug/L	7733	Standard
	Cr	53	51463.9	0.2	**49.6485**	0.215	0.4	ug/L	442	Standard
	Mn	55	395604.7	0.2	**51.2819**	0.431	0.8	ug/L	723	Standard
	Co	59	393078.4	0.7	**50.4221**	0.467	0.9	ug/L	217	Standard
	Ni	60	106911.2	0.9	**50.5097**	0.714	1.4	ug/L	304	Standard
	Cu	65	106870.6	0.8	**51.4201**	0.725	1.4	ug/L	181	Standard
	Zn	66	64695.2	1.1	**51.7405**	0.880	1.7	ug/L	215	Standard
>	Ge	72	529720.7	0.6				ug/L	520809	Standard
	As	75	63865.6	0.7	**50.9077**	0.332	0.7	ug/L	-52	Standard
	Se	82	6442.1	1.2	**50.0074**	0.423	0.8	ug/L	17	Standard
	Se-1	77	4460.3	1.4	**50.6149**	0.735	1.5	ug/L	56	Standard
>	Ga	71	33.3	48.2				mg/L	25	Standard
	Rb	85	51.7	53.3				ug/L	28	Standard
	Y	89	451210.1	0.7				ug/L	447395	Standard
>	Rh	103	28.3	10.2				ug/L	15	Standard
	Mo	98	211.5	58.2	**0.0455**	0.040	88.5	ug/L	113	Standard
	Ag	107	371127.1	0.8	**51.3096**	0.429	0.8	ug/L	108	Standard
	Cd	111	117429.0	0.6	**50.6559**	0.197	0.4	mg/L	3	Standard
	Cd	114	286369.4	2.1	**49.8969**	1.108	2.2	ug/L	20	Standard
>	In	115	630039.4	0.2				ug/L	625728	Standard
	Sn	118	975.0	11.8	**0.0662**	0.017	26.4	ug/L	568	Standard
	Sb	123	249155.3	2.4	**47.8470**	1.151	2.4	ug/L	612	Standard
	Ba	135	109490.5	0.6	**49.9659**	0.356	0.7	ug/L	21	Standard
	Ce	140	110.0	22.7				ug/L	245	Standard
>	Tb	159	961658.5	1.2				ug/L	950397	Standard
	Ho	165	8.3	124.9				ug/L	7	Standard
	Tl	203	456267.9	0.6	**50.3461**	0.267	0.5	ug/L	15	Standard
	Tl	205	402501.7	1.2	**50.0083**	0.617	1.2	ug/L	13	Standard
	Pb	206	293954.8	0.6	**51.3969**	0.546	1.1	ug/L	264	Standard
	Pb	207	256579.6	0.1	**49.3966**	0.497	1.0	ug/L	222	Standard
	Pb	208	1074330.1	0.6	**50.6396**	0.527	1.0	ug/L	959	Standard
	U	238	394562.7	0.9	**48.4869**	0.395	0.8	ug/L	9	Standard
>	Bi	209	558043.6	1.1				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	61.7	20.4	**0.0111**	0.013	120.9	mg/L	55	Standard
K	39	35.0	37.8	**0.0010**	0.048	4646.6	mg/L	28	Standard
Ca	43	28.3	36.7	**0.0919**	0.886	964.6	mg/L	27	Standard
Fe	54	169.1	21.5	**0.0325**	0.027	81.8	mg/L	147	Standard
Fe	57	220.0	8.2	**-0.1334**	0.058	43.3	mg/L	268	Standard
Sc-1	45	41525.2	3.0				mg/L	41174	Standard
Cl	35	67082.2	2.2				ug/L	69550	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	2023.5	3.3				ug/L	1950	Standard
P	31	22251.3	1.9				ug/L	21156	Standard
S	34	3218.7	6.1				ug/L	3419	Standard
Sr	88	76.7	10.0				ug/L	72	Standard
C	12	130.0	27.7				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	17	Standard
Dy	164	12.2	119.1				mg/L	16	Standard
Ho-1	165	8.3	124.9				mg/L	7	Standard
Er	166	23.3	65.5				mg/L	7	Standard
I	127	1945.1	18.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		100.033	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.711	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.689
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.945
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606141705 WG574416-01
Sample Date/Time: Friday, July 01, 2016 11:12:16
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	78995.4	1.2				ug/L	76456	Standard
	Be	9	58.3	4.9	**0.0306**	0.003	9.8	ug/L	20	Standard
	Al	27	21381126.3	0.9	**120.8920**	2.463	2.0	ug/L	1307	Standard
	Sc	45	41005.4	0.8				ug/L	41174	Standard
	Ti	47	385.7	14.4	**1.1313**	0.162	14.4	ug/L	27	Standard
	V	51	37880.1	0.4	**4.5394**	0.067	1.5	ug/L	1434	Standard
	Cr	52	15651.7	0.4	**1.0197**	0.032	3.2	ug/L	7733	Standard
	Cr	53	6074.6	20.3	**5.7629**	1.265	22.0	ug/L	442	Standard
	Mn	55	15005.4	0.7	**1.9367**	0.029	1.5	ug/L	723	Standard
	Co	59	1426.7	2.3	**0.1620**	0.002	1.4	ug/L	217	Standard
	Ni	60	3377.0	1.1	**1.5203**	0.032	2.1	ug/L	304	Standard
	Cu	65	1905.1	1.9	**0.8856**	0.009	1.0	ug/L	181	Standard
	Zn	66	4588.7	1.0	**3.6704**	0.063	1.7	ug/L	215	Standard
>	Ge	72	506618.0	1.2				ug/L	520809	Standard
	As	75	2080.8	8.4	**1.7774**	0.135	7.6	ug/L	-52	Standard
	Se	82	818.2	2.3	**6.5307**	0.077	1.2	ug/L	17	Standard
	Se-1	77	895.7	3.3	**10.0889**	0.428	4.2	ug/L	56	Standard
>	Ga	71	153.3	31.3				mg/L	25	Standard
	Rb	85	3665.4	2.3				ug/L	28	Standard
	Y	89	429409.0	1.3				ug/L	447395	Standard
>	Rh	103	178.3	12.6				ug/L	15	Standard
	Mo	98	683.2	5.3	**0.2157**	0.014	6.4	ug/L	113	Standard
	Ag	107	300.3	34.9	**0.0315**	0.016	49.6	ug/L	108	Standard
	Cd	111	82.5	7.8	**0.0356**	0.003	8.6	mg/L	3	Standard
	Cd	114	158.8	23.9	**0.0295**	0.007	23.3	ug/L	20	Standard
>	In	115	590046.0	0.5				ug/L	625728	Standard
	Sn	118	975.0	8.9	**0.0764**	0.014	18.3	ug/L	568	Standard
	Sb	123	2972.1	30.5	**0.5762**	0.187	32.4	ug/L	612	Standard
	Ba	135	67195.3	0.7	**32.7370**	0.271	0.8	ug/L	21	Standard
	Ce	140	5165.9	1.6				ug/L	245	Standard
>	Tb	159	918152.8	1.4				ug/L	950397	Standard
	Ho	165	105.0	29.7				ug/L	7	Standard
	Tl	203	363.0	14.1	**0.0439**	0.007	15.0	ug/L	15	Standard
	Tl	205	258.3	37.0	**0.0260**	0.013	51.2	ug/L	13	Standard
	Pb	206	917.4	3.4	**0.1351**	0.007	5.1	ug/L	264	Standard
	Pb	207	764.4	2.1	**0.1180**	0.005	4.0	ug/L	222	Standard
	Pb	208	3197.8	4.0	**0.1198**	0.007	5.7	ug/L	959	Standard
	U	238	29042.1	0.6	**3.9760**	0.053	1.3	ug/L	9	Standard
>	Bi	209	500900.4	0.8				ug/L	552821	Standard

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Na	23	6.7	43.3	**19.9855**	8.657	43.3	mg/L	2	Standard
Mg	24	126521.1	1.0	**148.3441**	0.501	0.3	mg/L	55	Standard
K	39	181.7	30.9	**0.5679**	0.214	37.7	mg/L	28	Standard
Ca	43	465.0	16.3	**40.0054**	7.184	18.0	mg/L	27	Standard
Fe	54	240.2	12.6	**0.0904**	0.025	28.1	mg/L	147	Standard
Fe	57	603.3	4.8	**1.0579**	0.102	9.7	mg/L	268	Standard
> **Sc-1**	45	41005.4	0.8				mg/L	41174	Standard
Cl	35	90433.8	0.8				ug/L	69550	Standard
Kr	83	2.7	43.3				ug/L	1	Standard
Br	81	57739.9	3.1				ug/L	1950	Standard
P	31	24640.0	1.7				ug/L	21156	Standard
S	34	3010.3	1.4				ug/L	3419	Standard
Sr	88	401.7	14.4				ug/L	72	Standard
C	12	506.7	3.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	132.3				mg/L	17	Standard
Dy	164	121.7	25.2				mg/L	16	Standard
Ho-1	165	105.0	29.7				mg/L	7	Standard
Er	166	103.3	29.6				mg/L	7	Standard
I	127	25413.0	5.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.322	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.275	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.298
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.608
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606141706S WG574416-06
Sample Date/Time: Friday, July 01, 2016 11:15:27
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	82487.3	1.1				ug/L	76456	Standard
	Be	9	59434.7	2.0	**49.1890**	0.474	1.0	ug/L	20	Standard
	Al	27	21126866.6	0.7	**114.3857**	1.245	1.1	ug/L	1307	Standard
	Sc	45	42071.7	1.5				ug/L	41174	Standard
	Ti	47	445.7	9.0	**1.3272**	0.106	8.0	ug/L	27	Standard
	V	51	448794.0	1.2	**56.1906**	0.338	0.6	ug/L	1434	Standard
	Cr	52	405302.2	0.8	**50.8030**	0.762	1.5	ug/L	7733	Standard
	Cr	53	55872.8	0.8	**56.6886**	1.157	2.0	ug/L	442	Standard
	Mn	55	376409.4	1.7	**51.2605**	1.187	2.3	ug/L	723	Standard
	Co	59	371466.0	0.9	**50.0608**	1.026	2.0	ug/L	217	Standard
	Ni	60	100340.5	1.4	**49.7984**	1.011	2.0	ug/L	304	Standard
	Cu	65	97977.1	1.5	**49.5201**	1.028	2.1	ug/L	181	Standard
	Zn	66	64249.3	1.5	**53.9822**	0.650	1.2	ug/L	215	Standard
>	Ge	72	504287.9	1.5				ug/L	520809	Standard
	As	75	64736.7	1.2	**54.2084**	0.977	1.8	ug/L	-52	Standard
	Se	82	7105.9	2.4	**57.9770**	1.906	3.3	ug/L	17	Standard
	Se-1	77	5081.5	1.0	**60.7211**	1.522	2.5	ug/L	56	Standard
>	Ga	71	93.3	21.7				mg/L	25	Standard
	Rb	85	3385.4	7.7				ug/L	28	Standard
	Y	89	437587.9	1.2				ug/L	447395	Standard
>	Rh	103	133.3	19.2				ug/L	15	Standard
	Mo	98	712.0	6.4	**0.2258**	0.015	6.5	ug/L	113	Standard
	Ag	107	254706.8	0.6	**37.6267**	0.420	1.1	ug/L	108	Standard
	Cd	111	107324.5	0.5	**49.4721**	0.054	0.1	mg/L	3	Standard
	Cd	114	266264.7	1.6	**49.5778**	1.034	2.1	ug/L	20	Standard
>	In	115	589608.9	0.6				ug/L	625728	Standard
	Sn	118	1198.4	5.9	**0.1134**	0.011	9.9	ug/L	568	Standard
	Sb	123	255276.2	0.1	**52.3884**	0.301	0.6	ug/L	612	Standard
	Ba	135	166458.1	0.3	**81.1840**	0.412	0.5	ug/L	21	Standard
	Ce	140	2188.5	3.6				ug/L	245	Standard
>	Tb	159	935892.6	1.8				ug/L	950397	Standard
	Ho	165	80.0	12.5				ug/L	7	Standard
	Tl	203	416301.7	0.5	**50.3128**	0.740	1.5	ug/L	15	Standard
	Tl	205	372797.3	0.4	**50.7287**	0.513	1.0	ug/L	13	Standard
	Pb	206	269916.3	0.3	**51.6884**	0.658	1.3	ug/L	264	Standard
	Pb	207	235694.4	0.5	**49.6950**	0.399	0.8	ug/L	222	Standard
	Pb	208	976732.6	0.6	**50.4213**	0.371	0.7	ug/L	959	Standard
	U	238	405996.3	0.5	**54.6443**	0.642	1.2	ug/L	9	Standard
>	Bi	209	509531.8	1.0				ug/L	552821	Standard

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Na	23	6.7	86.6	**19.6383**	17.003	86.6	mg/L	2	Standard
Mg	24	124588.6	1.9	**142.3700**	0.938	0.7	mg/L	55	Standard
K	39	133.3	31.9	**0.3687**	0.159	43.1	mg/L	28	Standard
Ca	43	506.7	5.0	**42.5935**	1.641	3.9	mg/L	27	Standard
Fe	54	191.0	18.5	**0.0477**	0.027	55.6	mg/L	147	Standard
Fe	57	573.3	0.5	**0.9203**	0.025	2.7	mg/L	268	Standard
> **Sc-1**	45	42071.7	1.5				mg/L	41174	Standard
Cl	35	93134.7	1.1				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	57294.9	3.7				ug/L	1950	Standard
P	31	24481.4	0.9				ug/L	21156	Standard
S	34	3050.3	2.6				ug/L	3419	Standard
Sr	88	351.7	17.1				ug/L	72	Standard
C	12	470.0	15.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	17	Standard
Dy	164	66.5	44.7				mg/L	16	Standard
Ho-1	165	80.0	12.5				mg/L	7	Standard
Er	166	73.3	92.8				mg/L	7	Standard
I	127	27035.8	3.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.889	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.828	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.228
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.169
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606141706S WG574416-06
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Method 6020 - Summary Report

Sample ID: L1606141707SD WG574416-07
Sample Date/Time: Friday, July 01, 2016 11:18:39
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83771.0	2.5				ug/L	76456	Standard
	Be	9	60537.4	1.9	**49.3442**	0.599	1.2	ug/L	20	Standard
	Al	27	20909187.8	2.0	**111.4909**	2.320	2.1	ug/L	1307	Standard
	Sc	45	42178.7	2.5				ug/L	41174	Standard
	Ti	47	385.0	17.2	**1.1368**	0.214	18.9	ug/L	27	Standard
	V	51	446877.6	0.6	**55.9631**	0.571	1.0	ug/L	1434	Standard
	Cr	52	407703.5	1.0	**51.1164**	0.567	1.1	ug/L	7733	Standard
	Cr	53	57269.7	0.1	**58.1199**	0.209	0.4	ug/L	442	Standard
	Mn	55	373320.3	1.2	**50.8451**	0.769	1.5	ug/L	723	Standard
	Co	59	374639.0	0.7	**50.4931**	0.593	1.2	ug/L	217	Standard
	Ni	60	102269.7	0.8	**50.7649**	0.500	1.0	ug/L	304	Standard
	Cu	65	98211.9	0.3	**49.6447**	0.334	0.7	ug/L	181	Standard
	Zn	66	63211.9	0.4	**53.1189**	0.394	0.7	ug/L	215	Standard
>	Ge	72	504167.3	0.4				ug/L	520809	Standard
	As	75	65436.1	0.6	**54.8009**	0.553	1.0	ug/L	-52	Standard
	Se	82	7107.1	0.1	**57.9877**	0.247	0.4	ug/L	17	Standard
	Se-1	77	5193.9	0.7	**62.0795**	0.521	0.8	ug/L	56	Standard
>	Ga	71	93.3	56.3				mg/L	25	Standard
	Rb	85	2987.0	1.6				ug/L	28	Standard
	Y	89	428781.1	0.8				ug/L	447395	Standard
>	Rh	103	146.7	3.9				ug/L	15	Standard
	Mo	98	634.9	1.7	**0.2009**	0.001	0.6	ug/L	113	Standard
	Ag	107	261558.3	0.6	**39.0020**	0.323	0.8	ug/L	108	Standard
	Cd	111	107761.1	1.2	**50.1421**	0.734	1.5	mg/L	3	Standard
	Cd	114	265170.0	1.2	**49.8331**	0.062	0.1	ug/L	20	Standard
>	In	115	584141.3	1.3				ug/L	625728	Standard
	Sn	118	778.4	10.9	**0.0453**	0.014	30.6	ug/L	568	Standard
	Sb	123	253357.3	0.7	**52.4833**	0.432	0.8	ug/L	612	Standard
	Ba	135	164823.3	0.7	**81.1417**	0.473	0.6	ug/L	21	Standard
	Ce	140	1715.1	1.1				ug/L	245	Standard
>	Tb	159	919374.0	0.5				ug/L	950397	Standard
	Ho	165	48.3	26.0				ug/L	7	Standard
	Tl	203	415993.7	1.0	**50.5326**	0.446	0.9	ug/L	15	Standard
	Tl	205	377462.4	0.7	**51.6305**	0.656	1.3	ug/L	13	Standard
	Pb	206	269578.4	0.3	**51.8894**	0.298	0.6	ug/L	264	Standard
	Pb	207	236101.7	0.1	**50.0395**	0.358	0.7	ug/L	222	Standard
	Pb	208	981599.1	1.3	**50.9367**	0.779	1.5	ug/L	959	Standard
	U	238	408604.0	0.1	**55.2799**	0.488	0.9	ug/L	9	Standard
>	Bi	209	506896.7	0.8				ug/L	552821	Standard

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Na	23	6.7	86.6	**19.7141**	17.069	86.6	mg/L	2	Standard
Mg	24	123424.1	1.3	**140.7631**	4.816	3.4	mg/L	55	Standard
K	39	126.7	21.7	**0.3448**	0.114	32.9	mg/L	28	Standard
Ca	43	478.3	6.3	**39.9606**	1.868	4.7	mg/L	27	Standard
Fe	54	159.8	26.4	**0.0241**	0.035	144.2	mg/L	147	Standard
Fe	57	558.3	4.0	**0.8725**	0.108	12.4	mg/L	268	Standard
Sc-1	45	42178.7	2.5				mg/L	41174	Standard
Cl	35	93263.5	1.5				ug/L	69550	Standard
Kr	83	3.0	33.3				ug/L	1	Standard
Br	81	55210.4	0.6				ug/L	1950	Standard
P	31	24391.3	2.2				ug/L	21156	Standard
S	34	2932.0	3.7				ug/L	3419	Standard
Sr	88	386.7	9.1				ug/L	72	Standard
C	12	800.0	2.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	17	Standard
Dy	164	64.1	17.0				mg/L	16	Standard
Ho-1	165	48.3	26.0				mg/L	7	Standard
Er	166	53.3	39.0				mg/L	7	Standard
I	127	27236.1	1.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		109.568	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.805	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	93.354	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	91.693	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606141707SD WG574416-07
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Method 6020 - Summary Report

Sample ID: L1606141701
Sample Date/Time: Friday, July 01, 2016 11:21:50
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83420.7	1.6				ug/L	76456	Standard
	Be	9	53.3	21.7	**0.0237**	0.009	37.8	ug/L	20	Standard
	Al	27	31084082.3	1.3	**166.4192**	1.988	1.2	ug/L	1307	Standard
	Sc	45	42130.2	2.0				ug/L	41174	Standard
	Ti	47	170.3	8.2	**0.4375**	0.044	10.0	ug/L	27	Standard
	V	51	22939.6	1.3	**2.5877**	0.032	1.2	ug/L	1434	Standard
	Cr	52	13097.0	1.3	**0.6468**	0.025	3.9	ug/L	7733	Standard
	Cr	53	1960.1	6.9	**1.5196**	0.135	8.9	ug/L	442	Standard
	Mn	55	3766.5	0.8	**0.3954**	0.005	1.2	ug/L	723	Standard
	Co	59	709.0	6.9	**0.0630**	0.006	10.1	ug/L	217	Standard
	Ni	60	2223.2	1.0	**0.9167**	0.012	1.3	ug/L	304	Standard
	Cu	65	739.0	2.4	**0.2875**	0.008	2.9	ug/L	181	Standard
	Zn	66	2322.5	1.8	**1.7125**	0.036	2.1	ug/L	215	Standard
>	**Ge**	72	521624.8	0.2				ug/L	520809	Standard
	As	75	515.4	8.1	**0.4620**	0.033	7.2	ug/L	-52	Standard
	Se	82	150.1	4.3	**1.0601**	0.051	4.8	ug/L	17	Standard
	Se-1	77	163.7	3.7	**1.2270**	0.071	5.8	ug/L	56	Standard
>	**Ga**	71	35.0	42.9				mg/L	25	Standard
	Rb	85	1295.1	7.1				ug/L	28	Standard
	Y	89	450422.8	1.4				ug/L	447395	Standard
>	**Rh**	103	130.0	23.4				ug/L	15	Standard
	Mo	98	654.1	6.4	**0.1969**	0.014	7.3	ug/L	113	Standard
	Ag	107	196.0	12.7	**0.0150**	0.004	24.0	ug/L	108	Standard
	Cd	111	38.8	25.3	**0.0149**	0.004	28.8	mg/L	3	Standard
	Cd	114	102.9	24.1	**0.0184**	0.004	23.7	ug/L	20	Standard
>	**In**	115	612771.9	0.4				ug/L	625728	Standard
	Sn	118	700.0	1.2	**0.0268**	0.002	5.6	ug/L	568	Standard
	Sb	123	677.6	31.8	**0.1003**	0.043	43.0	ug/L	612	Standard
	Ba	135	79352.9	0.7	**37.2291**	0.386	1.0	ug/L	21	Standard
	Ce	140	398.3	12.2				ug/L	245	Standard
>	**Tb**	159	943156.7	0.8				ug/L	950397	Standard
	Ho	165	36.7	20.8				ug/L	7	Standard
	Tl	203	227.0	14.0	**0.0253**	0.004	14.6	ug/L	15	Standard
	Tl	205	246.7	13.8	**0.0221**	0.004	19.4	ug/L	13	Standard
	Pb	206	454.7	7.7	**0.0390**	0.006	16.7	ug/L	264	Standard
	Pb	207	363.0	3.8	**0.0266**	0.003	11.0	ug/L	222	Standard
	Pb	208	1563.4	3.8	**0.0284**	0.003	10.4	ug/L	959	Standard
	U	238	20328.0	1.2	**2.5974**	0.039	1.5	ug/L	9	Standard
>	**Bi**	209	536649.8	0.3				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	14153.3	4.2	**16.0944**	0.416	2.6	mg/L	55	Standard
K	39	73.3	50.3	**0.1418**	0.131	92.5	mg/L	28	Standard
Ca	43	301.7	14.5	**24.2946**	3.319	13.7	mg/L	27	Standard
Fe	54	192.1	16.5	**0.0481**	0.021	43.9	mg/L	147	Standard
Fe	57	448.3	3.9	**0.5433**	0.078	14.4	mg/L	268	Standard
> **Sc-1**	45	42130.2	2.0				mg/L	41174	Standard
Cl	35	78637.6	2.5				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	17710.4	7.6				ug/L	1950	Standard
P	31	24940.5	2.0				ug/L	21156	Standard
S	34	3180.3	5.3				ug/L	3419	Standard
Sr	88	363.3	6.9				ug/L	72	Standard
C	12	386.7	16.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	17	Standard
Dy	164	45.1	46.6				mg/L	16	Standard
Ho-1	165	36.7	20.8				mg/L	7	Standard
Er	166	33.3	17.3				mg/L	7	Standard
I	127	17748.8	7.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.110	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.157	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.929
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.075
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606141702
Sample Date/Time: Friday, July 01, 2016 11:25:02
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	84178.2	0.8				ug/L	76456	Standard
	Be	9	68.3	33.0	**0.0357**	0.019	52.5	ug/L	20	Standard
	Al	27	21395590.4	1.7	**113.5091**	1.891	1.7	ug/L	1307	Standard
	Sc	45	40557.5	1.2				ug/L	41174	Standard
	Ti	47	235.3	3.5	**0.6749**	0.030	4.5	ug/L	27	Standard
	V	51	30102.8	0.4	**3.6510**	0.042	1.2	ug/L	1434	Standard
	Cr	52	20877.7	0.2	**1.7436**	0.023	1.3	ug/L	7733	Standard
	Cr	53	13953.1	1.5	**14.0948**	0.198	1.4	ug/L	442	Standard
	Mn	55	6869.6	2.0	**0.8525**	0.013	1.6	ug/L	723	Standard
	Co	59	1049.0	2.3	**0.1145**	0.004	3.2	ug/L	217	Standard
	Ni	60	3023.6	1.9	**1.3787**	0.032	2.3	ug/L	304	Standard
	Cu	65	1353.7	2.9	**0.6232**	0.017	2.7	ug/L	181	Standard
	Zn	66	2790.6	0.7	**2.2139**	0.010	0.4	ug/L	215	Standard
>	Ge	72	495483.9	0.7				ug/L	520809	Standard
	As	75	1494.2	7.1	**1.3177**	0.098	7.4	ug/L	-52	Standard
	Se	82	1155.8	1.9	**9.4896**	0.142	1.5	ug/L	17	Standard
	Se-1	77	1366.7	2.9	**16.1232**	0.600	3.7	ug/L	56	Standard
>	Ga	71	65.0	46.8				mg/L	25	Standard
	Rb	85	1118.4	6.5				ug/L	28	Standard
	Y	89	431041.5	1.8				ug/L	447395	Standard
>	Rh	103	106.7	2.7				ug/L	15	Standard
	Mo	98	636.9	5.4	**0.2018**	0.013	6.3	ug/L	113	Standard
	Ag	107	175.7	31.4	**0.0134**	0.008	62.4	ug/L	108	Standard
	Cd	111	69.9	26.7	**0.0302**	0.009	28.8	mg/L	3	Standard
	Cd	114	141.9	41.1	**0.0267**	0.011	41.2	ug/L	20	Standard
>	In	115	583855.1	0.8				ug/L	625728	Standard
	Sn	118	985.0	7.5	**0.0798**	0.012	15.3	ug/L	568	Standard
	Sb	123	469.0	23.7	**0.0635**	0.023	35.9	ug/L	612	Standard
	Ba	135	16891.1	0.4	**8.3035**	0.096	1.2	ug/L	21	Standard
	Ce	140	950.0	9.1				ug/L	245	Standard
>	Tb	159	915987.8	1.1				ug/L	950397	Standard
	Ho	165	58.3	13.1				ug/L	7	Standard
	Tl	203	239.0	33.8	**0.0285**	0.010	35.2	ug/L	15	Standard
	Tl	205	226.7	28.0	**0.0215**	0.009	41.6	ug/L	13	Standard
	Pb	206	491.0	11.7	**0.0515**	0.012	22.7	ug/L	264	Standard
	Pb	207	417.3	7.3	**0.0430**	0.007	16.1	ug/L	222	Standard
	Pb	208	1796.4	4.5	**0.0456**	0.005	10.2	ug/L	959	Standard
	U	238	24911.1	0.1	**3.3908**	0.016	0.5	ug/L	9	Standard
>	Bi	209	503762.9	0.6				ug/L	552821	Standard

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Na	23	3.3	86.6	**10.0444**	8.695	86.6	mg/L	2	Standard
Mg	24	132735.6	1.2	**157.3747**	3.155	2.0	mg/L	55	Standard
K	39	131.7	11.6	**0.3818**	0.065	17.1	mg/L	28	Standard
Ca	43	436.7	8.3	**37.8132**	2.966	7.8	mg/L	27	Standard
Fe	54	188.4	13.0	**0.0512**	0.020	39.7	mg/L	147	Standard
Fe	57	626.7	13.5	**1.1530**	0.288	25.0	mg/L	268	Standard
> **Sc-1**	45	40557.5	1.2				mg/L	41174	Standard
Cl	35	95111.1	2.9				ug/L	69550	Standard
Kr	83	2.0	132.3				ug/L	1	Standard
Br	81	69814.0	4.5				ug/L	1950	Standard
P	31	24122.5	3.6				ug/L	21156	Standard
S	34	3262.0	2.8				ug/L	3419	Standard
Sr	88	431.7	9.9				ug/L	72	Standard
C	12	460.0	22.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	17	Standard
Dy	164	50.5	77.6				mg/L	16	Standard
Ho-1	165	58.3	13.1				mg/L	7	Standard
Er	166	60.0	44.1				mg/L	7	Standard
I	127	37230.7	1.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.101	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.137	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.308
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.126
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606141702PS WG574808-01
Sample Date/Time: Friday, July 01, 2016 11:28:13
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	84706.2	1.4				ug/L	76456	Standard
	Be	9	61248.6	0.7	**49.3719**	0.771	1.6	ug/L	20	Standard
	Al	27	21521134.5	1.9	**113.4962**	3.763	3.3	ug/L	1307	Standard
	Sc	45	40794.9	2.7				ug/L	41174	Standard
	Ti	47	240.0	10.1	**0.6796**	0.085	12.5	ug/L	27	Standard
	V	51	455261.1	1.0	**57.2107**	0.562	1.0	ug/L	1434	Standard
	Cr	52	426443.6	1.0	**53.6956**	0.415	0.8	ug/L	7733	Standard
	Cr	53	63767.3	2.8	**64.9856**	1.904	2.9	ug/L	442	Standard
	Mn	55	385209.5	0.8	**52.6493**	0.868	1.6	ug/L	723	Standard
	Co	59	385929.7	0.6	**52.1919**	0.293	0.6	ug/L	217	Standard
	Ni	60	103771.2	0.7	**51.6879**	0.282	0.5	ug/L	304	Standard
	Cu	65	101476.7	1.4	**51.4688**	0.149	0.3	ug/L	181	Standard
	Zn	66	65028.6	0.8	**54.8362**	0.235	0.4	ug/L	215	Standard
>	Ge	72	502470.5	1.2				ug/L	520809	Standard
	As	75	66227.4	1.6	**55.6481**	0.524	0.9	ug/L	-52	Standard
	Se	82	7664.8	0.5	**62.7619**	0.423	0.7	ug/L	17	Standard
	Se-1	77	5635.0	2.2	**67.6351**	0.810	1.2	ug/L	56	Standard
>	Ga	71	56.7	41.7				mg/L	25	Standard
	Rb	85	1151.7	5.5				ug/L	28	Standard
	Y	89	435252.0	2.3				ug/L	447395	Standard
>	Rh	103	131.7	9.6				ug/L	15	Standard
	Mo	98	659.3	4.3	**0.2083**	0.012	5.6	ug/L	113	Standard
	Ag	107	333584.9	1.2	**49.4501**	0.303	0.6	ug/L	108	Standard
	Cd	111	111317.0	0.6	**51.4929**	0.677	1.3	mg/L	3	Standard
	Cd	114	272508.8	2.4	**50.9184**	1.531	3.0	ug/L	20	Standard
>	In	115	587582.2	0.8				ug/L	625728	Standard
	Sn	118	1173.4	7.2	**0.1100**	0.015	13.8	ug/L	568	Standard
	Sb	123	246884.2	2.4	**50.8360**	0.942	1.9	ug/L	612	Standard
	Ba	135	121048.6	0.4	**59.2388**	0.725	1.2	ug/L	21	Standard
	Ce	140	995.0	2.7				ug/L	245	Standard
>	Tb	159	924930.3	1.0				ug/L	950397	Standard
	Ho	165	51.7	39.1				ug/L	7	Standard
	Tl	203	432904.6	0.1	**52.3301**	0.247	0.5	ug/L	15	Standard
	Tl	205	391263.3	1.6	**53.2578**	1.128	2.1	ug/L	13	Standard
	Pb	206	282728.2	0.5	**54.1561**	0.449	0.8	ug/L	264	Standard
	Pb	207	246312.6	0.2	**51.9491**	0.256	0.5	ug/L	222	Standard
	Pb	208	1022028.0	0.9	**52.7764**	0.638	1.2	ug/L	959	Standard
	U	238	421958.1	0.7	**56.8072**	0.698	1.2	ug/L	9	Standard
>	Bi	209	509385.6	0.5				ug/L	552821	Standard

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Na	23	10.0	50.0	**29.8847**	14.237	47.6	mg/L	2	Standard
Mg	24	133593.1	0.8	**157.5206**	4.134	2.6	mg/L	55	Standard
K	39	128.3	35.1	**0.3678**	0.182	49.5	mg/L	28	Standard
Ca	43	420.0	20.7	**36.0275**	7.706	21.4	mg/L	27	Standard
Fe	54	180.1	10.8	**0.0439**	0.018	40.9	mg/L	147	Standard
Fe	57	538.3	4.2	**0.8651**	0.032	3.7	mg/L	268	Standard
> **Sc-1**	45	40794.9	2.7				mg/L	41174	Standard
Cl	35	96279.6	0.7				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	71609.1	5.3				ug/L	1950	Standard
P	31	24898.8	2.0				ug/L	21156	Standard
S	34	3225.3	2.1				ug/L	3419	Standard
Sr	88	406.7	4.3				ug/L	72	Standard
C	12	440.0	36.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	17	Standard
Dy	164	27.8	36.1				mg/L	16	Standard
Ho-1	165	51.7	39.1				mg/L	7	Standard
Er	166	46.7	24.7				mg/L	7	Standard
I	127	36331.8	0.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.791	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.479	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.904
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.143
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606141702SDL WG574808-02
Sample Date/Time: Friday, July 01, 2016 11:31:25
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79270.2	1.4				ug/L	76456	Standard
	Be	9	48.3	15.8	**0.0218**	0.006	29.8	ug/L	20	Standard
	Al	27	4222516.4	1.3	**23.7801**	0.015	0.1	ug/L	1307	Standard
	Sc	45	38916.6	1.8				ug/L	41174	Standard
	Ti	47	59.3	17.5	**0.1088**	0.035	32.6	ug/L	27	Standard
	V	51	7243.4	2.3	**0.7359**	0.026	3.5	ug/L	1434	Standard
	Cr	52	10348.9	1.0	**0.3868**	0.014	3.5	ug/L	7733	Standard
	Cr	53	3842.2	2.6	**3.6141**	0.077	2.1	ug/L	442	Standard
	Mn	55	1712.4	2.4	**0.1385**	0.004	3.2	ug/L	723	Standard
	Co	59	414.7	3.6	**0.0280**	0.003	9.0	ug/L	217	Standard
	Ni	60	921.4	5.7	**0.3179**	0.030	9.6	ug/L	304	Standard
	Cu	65	476.3	6.6	**0.1735**	0.018	10.2	ug/L	181	Standard
	Zn	66	1250.7	2.0	**0.9024**	0.030	3.3	ug/L	215	Standard
>	Ge	72	491133.0	0.8				ug/L	520809	Standard
	As	75	262.0	15.9	**0.2704**	0.037	13.9	ug/L	-52	Standard
	Se	82	270.1	2.3	**2.1408**	0.063	2.9	ug/L	17	Standard
	Se-1	77	339.3	3.5	**3.5247**	0.142	4.0	ug/L	56	Standard
>	Ga	71	25.0	20.0				mg/L	25	Standard
	Rb	85	250.0	13.1				ug/L	28	Standard
	Y	89	411909.2	0.7				ug/L	447395	Standard
>	Rh	103	60.0	30.0				ug/L	15	Standard
	Mo	98	158.0	15.1	**0.0328**	0.008	25.5	ug/L	113	Standard
	Ag	107	268.7	10.2	**0.0278**	0.004	15.6	ug/L	108	Standard
	Cd	111	28.7	19.4	**0.0112**	0.003	23.8	mg/L	3	Standard
	Cd	114	92.0	14.0	**0.0176**	0.002	14.2	ug/L	20	Standard
>	In	115	575454.3	0.4				ug/L	625728	Standard
	Sn	118	298.3	6.8	**-0.0338**	0.003	9.9	ug/L	568	Standard
	Sb	123	1720.4	31.0	**0.3280**	0.111	33.8	ug/L	612	Standard
	Ba	135	3347.4	3.0	**1.6553**	0.056	3.4	ug/L	21	Standard
	Ce	140	181.7	6.9				ug/L	245	Standard
>	Tb	159	890346.9	0.6				ug/L	950397	Standard
	Ho	165	23.3	32.7				ug/L	7	Standard
	Tl	203	214.3	9.6	**0.0249**	0.002	9.4	ug/L	15	Standard
	Tl	205	275.0	41.2	**0.0273**	0.015	55.9	ug/L	13	Standard
	Pb	206	399.7	2.6	**0.0322**	0.002	4.9	ug/L	264	Standard
	Pb	207	322.7	4.0	**0.0214**	0.002	11.0	ug/L	222	Standard
	Pb	208	1435.0	2.3	**0.0252**	0.002	7.2	ug/L	959	Standard
	U	238	5076.5	3.7	**0.6771**	0.028	4.1	ug/L	9	Standard
>	Bi	209	514021.2	0.5				ug/L	552821	Standard

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Na	23	6.7	114.6	**21.2259**	24.589	115.8	mg/L	2	Standard
Mg	24	26095.8	2.9	**32.1961**	0.941	2.9	mg/L	55	Standard
K	39	48.3	21.5	**0.0648**	0.042	64.9	mg/L	28	Standard
Ca	43	73.3	25.8	**4.5982**	1.826	39.7	mg/L	27	Standard
Fe	54	79.1	19.4	**-0.0333**	0.012	34.7	mg/L	147	Standard
Fe	57	293.3	4.3	**0.1499**	0.049	32.9	mg/L	268	Standard
> **Sc-1**	45	38916.6	1.8				mg/L	41174	Standard
Cl	35	81436.9	1.0				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	16265.4	2.3				ug/L	1950	Standard
P	31	10428.6	1.9				ug/L	21156	Standard
S	34	3263.7	1.5				ug/L	3419	Standard
Sr	88	118.3	30.0				ug/L	72	Standard
C	12	173.3	3.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	17	Standard
Dy	164	22.2	71.3				mg/L	16	Standard
Ho-1	165	23.3	32.7				mg/L	7	Standard
Er	166	23.3	107.9				mg/L	7	Standard
I	127	34272.1	2.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.681	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.302	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.966
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.982
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606141702SDL WG574808-02
Sample Date/Time: Friday, July 01, 2016 11:34:36
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75492.7	3.2				ug/L	76456	Standard
	Be	9	23.3	12.4	**0.0012**	0.002	197.6	ug/L	20	Standard
	Al	27	829607.4	2.3	**4.8996**	0.125	2.6	ug/L	1307	Standard
	Sc	45	37073.7	3.1				ug/L	41174	Standard
	Ti	47	28.0	12.9	**0.0070**	0.012	174.3	ug/L	27	Standard
	V	51	3170.1	5.9	**0.2118**	0.020	9.4	ug/L	1434	Standard
	Cr	52	8461.0	1.1	**0.1435**	0.006	4.5	ug/L	7733	Standard
	Cr	53	1218.4	12.8	**0.8668**	0.167	19.3	ug/L	442	Standard
	Mn	55	694.0	1.2	**-0.0037**	0.001	25.0	ug/L	723	Standard
	Co	59	224.0	8.2	**0.0017**	0.003	168.9	ug/L	217	Standard
	Ni	60	457.0	4.9	**0.0814**	0.014	16.9	ug/L	304	Standard
	Cu	65	221.3	9.3	**0.0415**	0.012	28.9	ug/L	181	Standard
	Zn	66	1093.0	3.6	**0.7694**	0.029	3.8	ug/L	215	Standard
>	Ge	72	489217.1	1.1				ug/L	520809	Standard
	As	75	21.5	96.2	**0.0638**	0.018	28.2	ug/L	-52	Standard
	Se	82	69.4	5.3	**0.4582**	0.034	7.4	ug/L	17	Standard
	Se-1	77	109.3	5.9	**0.6765**	0.067	9.8	ug/L	56	Standard
>	Ga	71	15.0	33.3				mg/L	25	Standard
	Rb	85	76.7	16.4				ug/L	28	Standard
	Y	89	405198.5	2.3				ug/L	447395	Standard
>	Rh	103	26.7	60.3				ug/L	15	Standard
	Mo	98	142.2	38.6	**0.0281**	0.020	72.6	ug/L	113	Standard
	Ag	107	112.7	10.2	**0.0045**	0.002	36.8	ug/L	108	Standard
	Cd	111	8.1	48.9	**0.0015**	0.002	126.2	mg/L	3	Standard
	Cd	114	16.9	33.2	**0.0033**	0.001	33.5	ug/L	20	Standard
>	In	115	566627.7	0.7				ug/L	625728	Standard
	Sn	118	178.3	10.6	**-0.0536**	0.003	6.2	ug/L	568	Standard
	Sb	123	679.8	12.9	**0.1116**	0.020	17.6	ug/L	612	Standard
	Ba	135	676.7	1.6	**0.3256**	0.006	1.8	ug/L	21	Standard
	Ce	140	45.0	61.9				ug/L	245	Standard
>	Tb	159	881967.0	0.2				ug/L	950397	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	116.0	4.3	**0.0131**	0.001	4.5	ug/L	15	Standard
	Tl	205	140.0	3.6	**0.0090**	0.001	6.9	ug/L	13	Standard
	Pb	206	294.0	3.6	**0.0118**	0.002	17.2	ug/L	264	Standard
	Pb	207	254.0	8.5	**0.0068**	0.004	64.3	ug/L	222	Standard
	Pb	208	1072.0	4.7	**0.0063**	0.003	41.6	ug/L	959	Standard
	U	238	957.7	4.8	**0.1269**	0.006	4.8	ug/L	9	Standard
>	Bi	209	516500.7	0.3				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4970.8	4.5	**6.3914**	0.307	4.8	mg/L	55	Standard
K	39	25.0	0.0	**-0.0247**	0.003	13.3	mg/L	28	Standard
Ca	43	50.0	34.6	**2.6288**	1.919	73.0	mg/L	27	Standard
Fe	54	54.5	0.1	**-0.0513**	0.002	3.0	mg/L	147	Standard
Fe	57	253.3	6.3	**0.0613**	0.067	109.5	mg/L	268	Standard
> **Sc-1**	45	37073.7	3.1				mg/L	41174	Standard
Cl	35	80495.3	1.6				ug/L	69550	Standard
Kr	83	3.3	75.5				ug/L	1	Standard
Br	81	5040.8	9.7				ug/L	1950	Standard
P	31	7305.1	3.6				ug/L	21156	Standard
S	34	3295.4	6.8				ug/L	3419	Standard
Sr	88	108.3	11.6				ug/L	72	Standard
C	12	146.7	3.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	43.3	35.3				mg/L	17	Standard
Dy	164	-1.1	89.2				mg/L	16	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	23.3	89.2				mg/L	7	Standard
I	127	33724.2	0.5				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		98.740	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		93.934	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85	
Y	89	
> Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
> In	115	90.555
Sn	118	
Sb	123	
Ba	135	
Ce	140	
> Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
> Bi	209	93.430
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
> Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 11:37:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79886.8	2.4				ug/L	76456	Standard
	Be	9	60216.2	2.8	**51.4590**	0.417	0.8	ug/L	20	Standard
	Al	27	8658161.3	1.0	**48.4053**	0.695	1.4	ug/L	1307	Standard
	Sc	45	41946.3	1.7				ug/L	41174	Standard
	Ti	47	32783.8	1.1	**99.4934**	0.341	0.3	ug/L	27	Standard
	V	51	421947.6	0.5	**50.6006**	0.209	0.4	ug/L	1434	Standard
	Cr	52	415783.8	0.5	**49.9191**	0.677	1.4	ug/L	7733	Standard
	Cr	53	52323.5	0.7	**50.8163**	0.079	0.2	ug/L	442	Standard
	Mn	55	383488.2	0.5	**50.0327**	0.303	0.6	ug/L	723	Standard
	Co	59	396921.5	0.3	**51.2480**	0.300	0.6	ug/L	217	Standard
	Ni	60	105550.0	0.7	**50.1916**	0.654	1.3	ug/L	304	Standard
	Cu	65	104187.0	0.3	**50.4533**	0.298	0.6	ug/L	181	Standard
	Zn	66	62119.1	0.9	**49.9953**	0.242	0.5	ug/L	215	Standard
>	**Ge**	72	526287.7	0.8				ug/L	520809	Standard
	As	75	62653.6	0.5	**50.2687**	0.288	0.6	ug/L	-52	Standard
	Se	82	6502.0	0.1	**50.8075**	0.476	0.9	ug/L	17	Standard
	Se-1	77	4394.6	2.3	**50.1962**	1.546	3.1	ug/L	56	Standard
>	**Ga**	71	41.7	34.6				mg/L	25	Standard
	Rb	85	811.7	7.3				ug/L	28	Standard
	Y	89	449443.8	0.8				ug/L	447395	Standard
>	**Rh**	103	28.3	20.4				ug/L	15	Standard
	Mo	98	299240.3	0.5	**98.3551**	0.449	0.5	ug/L	113	Standard
	Ag	107	359054.0	0.7	**49.6967**	0.335	0.7	ug/L	108	Standard
	Cd	111	115287.0	0.4	**49.7893**	0.202	0.4	mg/L	3	Standard
	Cd	114	284203.9	0.6	**49.5756**	0.249	0.5	ug/L	20	Standard
>	**In**	115	629316.2	0.1				ug/L	625728	Standard
	Sn	118	316403.3	1.4	**48.7968**	0.695	1.4	ug/L	568	Standard
	Sb	123	257145.7	0.4	**49.4396**	0.256	0.5	ug/L	612	Standard
	Ba	135	107880.7	0.2	**49.2873**	0.099	0.2	ug/L	21	Standard
	Ce	140	80.0	12.5				ug/L	245	Standard
>	**Tb**	159	959375.1	0.6				ug/L	950397	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	446456.6	0.5	**49.7300**	0.195	0.4	ug/L	15	Standard
	Tl	205	404447.0	0.4	**50.7263**	0.364	0.7	ug/L	13	Standard
	Pb	206	281579.7	0.3	**49.6971**	0.317	0.6	ug/L	264	Standard
	Pb	207	257039.7	0.6	**49.9528**	0.358	0.7	ug/L	222	Standard
	Pb	208	1065428.7	1.4	**50.6922**	0.446	0.9	ug/L	959	Standard
	U	238	401590.9	0.5	**49.8178**	0.056	0.1	ug/L	9	Standard
>	**Bi**	209	552793.0	0.6				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4465.7	1.7	**5.0623**	0.170	3.4	mg/L	55	Standard
K	39	1175.0	4.1	**4.2914**	0.166	3.9	mg/L	28	Standard
Ca	43	80.0	12.5	**4.6810**	0.869	18.6	mg/L	27	Standard
Fe	54	6475.2	2.0	**4.8865**	0.136	2.8	mg/L	147	Standard
Fe	57	1960.1	2.3	**5.1091**	0.183	3.6	mg/L	268	Standard
> **Sc-1**	45	41946.3	1.7				mg/L	41174	Standard
Cl	35	79383.6	3.3				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	2656.9	5.2				ug/L	1950	Standard
P	31	23768.6	2.4				ug/L	21156	Standard
S	34	4000.5	6.6				ug/L	3419	Standard
Sr	88	80.0	43.3				ug/L	72	Standard
C	12	120.0	25.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	69.3				mg/L	17	Standard
Dy	164	12.4	100.1				mg/L	16	Standard
Ho-1	165	8.3	69.3				mg/L	7	Standard
Er	166	20.0	100.0				mg/L	7	Standard
I	127	22111.1	1.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	102.918		
Al	27	96.811		
Sc	45			
Ti	47	99.493		
V	51	101.201		
Cr	52	99.838		
Cr	53			
Mn	55	100.065		
Co	59	102.496		
Ni	60	100.383		
Cu	65	100.907		
Zn	66	99.991		
> Ge	72		101.052	
As	75	100.537		
Se	82	101.615		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.355		
Ag	107	99.393		
Cd	111	99.579		
Cd	114			
> In	115			100.573
Sn	118	97.594		
Sb	123	98.879		
Ba	135	98.575		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.460		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.384		
U	238	99.636		
> Bi	209			99.995
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 11:41:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79854.9	1.2				ug/L	76456	Standard
	Be	9	28.3	44.4	**0.0043**	0.011	247.6	ug/L	20	Standard
	Al	27	4860.8	30.8	**0.0170**	0.009	51.0	ug/L	1307	Standard
	Sc	45	40828.3	2.4				ug/L	41174	Standard
	Ti	47	33.7	26.8	**0.0170**	0.026	153.3	ug/L	27	Standard
	V	51	1448.8	4.8	**-0.0250**	0.010	39.6	ug/L	1434	Standard
	Cr	52	7320.1	2.9	**-0.0792**	0.016	19.8	ug/L	7733	Standard
	Cr	53	573.3	8.4	**0.1415**	0.043	30.2	ug/L	442	Standard
	Mn	55	774.7	1.8	**-0.0006**	0.001	182.2	ug/L	723	Standard
	Co	59	305.0	4.6	**0.0098**	0.001	15.1	ug/L	217	Standard
	Ni	60	339.0	2.3	**0.0078**	0.005	67.4	ug/L	304	Standard
	Cu	65	197.7	11.1	**0.0212**	0.010	48.2	ug/L	181	Standard
	Zn	66	269.3	7.5	**0.0362**	0.017	46.8	ug/L	215	Standard
>	**Ge**	72	528956.5	1.1				ug/L	520809	Standard
	As	75	-45.6	52.3	**0.0087**	0.019	224.1	ug/L	-52	Standard
	Se	82	23.2	12.4	**0.0547**	0.023	42.1	ug/L	17	Standard
	Se-1	77	56.7	21.6	**-0.0309**	0.148	479.3	ug/L	56	Standard
>	**Ga**	71	35.0	62.3				mg/L	25	Standard
	Rb	85	25.0	34.6				ug/L	28	Standard
	Y	89	451349.1	0.6				ug/L	447395	Standard
>	**Rh**	103	21.7	48.0				ug/L	15	Standard
	Mo	98	237.5	8.6	**0.0541**	0.007	13.2	ug/L	113	Standard
	Ag	107	234.7	5.8	**0.0196**	0.002	10.5	ug/L	108	Standard
	Cd	111	27.2	17.4	**0.0094**	0.002	21.1	mg/L	3	Standard
	Cd	114	66.4	34.3	**0.0116**	0.004	34.4	ug/L	20	Standard
>	**In**	115	629965.8	0.8				ug/L	625728	Standard
	Sn	118	940.0	21.0	**0.0607**	0.029	48.4	ug/L	568	Standard
	Sb	123	1092.2	32.6	**0.1759**	0.067	38.2	ug/L	612	Standard
	Ba	135	59.0	17.7	**0.0090**	0.005	54.2	ug/L	21	Standard
	Ce	140	21.7	70.5				ug/L	245	Standard
>	**Tb**	159	955018.0	0.8				ug/L	950397	Standard
	Ho	165	13.3	43.3				ug/L	7	Standard
	Tl	203	126.3	20.6	**0.0132**	0.003	22.7	ug/L	15	Standard
	Tl	205	113.3	18.4	**0.0043**	0.003	62.2	ug/L	13	Standard
	Pb	206	346.7	4.9	**0.0167**	0.003	20.4	ug/L	264	Standard
	Pb	207	322.3	7.2	**0.0158**	0.005	30.9	ug/L	222	Standard
	Pb	208	1248.7	4.5	**0.0104**	0.003	28.9	ug/L	959	Standard
	U	238	111.7	26.1	**0.0134**	0.004	27.1	ug/L	9	Standard
>	**Bi**	209	560384.3	0.8				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	55.0	59.6	**0.0047**	0.039	831.6	mg/L	55	Standard
K	39	35.0	37.8	**0.0039**	0.051	1305.2	mg/L	28	Standard
Ca	43	11.7	24.7	**-1.3816**	0.279	20.2	mg/L	27	Standard
Fe	54	175.9	8.8	**0.0403**	0.012	30.1	mg/L	147	Standard
Fe	57	250.0	2.0	**-0.0293**	0.009	29.6	mg/L	268	Standard
Sc-1	45	40828.3	2.4				mg/L	41174	Standard
Cl	35	77022.6	1.0				ug/L	69550	Standard
Kr	83	3.3	34.6				ug/L	1	Standard
Br	81	2493.5	3.8				ug/L	1950	Standard
P	31	23044.2	2.3				ug/L	21156	Standard
S	34	3880.5	1.7				ug/L	3419	Standard
Sr	88	65.0	33.5				ug/L	72	Standard
C	12	130.0	40.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	17	Standard
Dy	164	9.0	113.3				mg/L	16	Standard
Ho-1	165	13.3	43.3				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	16675.8	0.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.564	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.677
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.368
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606141703
Sample Date/Time: Friday, July 01, 2016 11:44:14
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81889.0	0.6				ug/L	76456	Standard
	Be	9	25.0	91.7	**0.0010**	0.019	1981.7	ug/L	20	Standard
	Al	27	20848394.4	0.7	**113.6982**	1.012	0.9	ug/L	1307	Standard
	Sc	45	42434.3	1.1				ug/L	41174	Standard
	Ti	47	234.7	10.2	**0.6592**	0.078	11.8	ug/L	27	Standard
	V	51	28681.8	1.4	**3.4038**	0.038	1.1	ug/L	1434	Standard
	Cr	52	19756.9	2.1	**1.5522**	0.054	3.5	ug/L	7733	Standard
	Cr	53	14119.9	6.2	**14.0078**	0.905	6.5	ug/L	442	Standard
	Mn	55	3334.7	3.0	**0.3535**	0.012	3.4	ug/L	723	Standard
	Co	59	938.4	1.3	**0.0970**	0.001	0.7	ug/L	217	Standard
	Ni	60	2864.9	3.9	**1.2722**	0.046	3.6	ug/L	304	Standard
	Cu	65	1854.4	2.7	**0.8643**	0.032	3.7	ug/L	181	Standard
	Zn	66	2610.6	1.0	**2.0198**	0.039	1.9	ug/L	215	Standard
>	Ge	72	504450.0	0.8				ug/L	520809	Standard
	As	75	1324.6	1.2	**1.1530**	0.022	1.9	ug/L	-52	Standard
	Se	82	1104.4	0.5	**8.8990**	0.094	1.1	ug/L	17	Standard
	Se-1	77	1261.1	5.7	**14.5449**	0.840	5.8	ug/L	56	Standard
>	Ga	71	50.0	43.6				mg/L	25	Standard
	Rb	85	1121.7	4.1				ug/L	28	Standard
	Y	89	436048.7	1.9				ug/L	447395	Standard
>	Rh	103	121.7	29.7				ug/L	15	Standard
	Mo	98	645.7	3.5	**0.2020**	0.005	2.6	ug/L	113	Standard
	Ag	107	223.7	26.2	**0.0200**	0.008	40.7	ug/L	108	Standard
	Cd	111	51.2	16.5	**0.0212**	0.004	16.8	mg/L	3	Standard
	Cd	114	113.2	6.3	**0.0210**	0.002	7.4	ug/L	20	Standard
>	In	115	591186.7	1.3				ug/L	625728	Standard
	Sn	118	875.0	14.2	**0.0597**	0.021	34.7	ug/L	568	Standard
	Sb	123	602.8	25.4	**0.0895**	0.030	33.5	ug/L	612	Standard
	Ba	135	16459.3	1.1	**7.9899**	0.039	0.5	ug/L	21	Standard
	Ce	140	880.0	5.0				ug/L	245	Standard
>	Tb	159	920155.8	2.2				ug/L	950397	Standard
	Ho	165	50.0	34.6				ug/L	7	Standard
	Tl	203	157.7	7.1	**0.0182**	0.001	6.2	ug/L	15	Standard
	Tl	205	155.0	27.9	**0.0113**	0.006	51.8	ug/L	13	Standard
	Pb	206	453.0	2.5	**0.0428**	0.002	4.5	ug/L	264	Standard
	Pb	207	378.7	4.5	**0.0335**	0.003	9.5	ug/L	222	Standard
	Pb	208	1616.4	3.0	**0.0349**	0.002	5.2	ug/L	959	Standard
	U	238	24675.7	1.0	**3.3100**	0.026	0.8	ug/L	9	Standard
>	Bi	209	511192.5	1.2				ug/L	552821	Standard

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Na	23	5.0	100.0	**14.4476**	14.513	100.4	mg/L	2	Standard
Mg	24	129302.7	0.5	**146.5117**	1.623	1.1	mg/L	55	Standard
K	39	120.0	31.5	**0.3147**	0.137	43.6	mg/L	28	Standard
Ca	43	443.3	15.8	**36.6451**	6.259	17.1	mg/L	27	Standard
Fe	54	170.0	14.6	**0.0304**	0.017	57.5	mg/L	147	Standard
Fe	57	581.7	5.3	**0.9302**	0.090	9.7	mg/L	268	Standard
> **Sc-1**	45	42434.3	1.1				mg/L	41174	Standard
Cl	35	97340.4	1.2				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	68893.1	4.4				ug/L	1950	Standard
P	31	25483.1	3.6				ug/L	21156	Standard
S	34	3482.1	6.0				ug/L	3419	Standard
Sr	88	398.3	9.6				ug/L	72	Standard
C	12	456.7	3.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	17	Standard
Dy	164	44.0	27.1				mg/L	16	Standard
Ho-1	165	50.0	34.6				mg/L	7	Standard
Er	166	56.7	53.9				mg/L	7	Standard
I	127	49472.4	4.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.106	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.859	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.480
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.470
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606141704
Sample Date/Time: Friday, July 01, 2016 11:47:26
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	84196.6	0.3				ug/L	76456	Standard
	Be	9	33.3	22.9	**0.0072**	0.006	86.7	ug/L	20	Standard
	Al	27	15514677.9	3.0	**82.2819**	2.194	2.7	ug/L	1307	Standard
	Sc	45	43039.4	2.0				ug/L	41174	Standard
	Ti	47	214.3	5.1	**0.5706**	0.026	4.6	ug/L	27	Standard
	V	51	104787.8	1.3	**12.4991**	0.095	0.8	ug/L	1434	Standard
	Cr	52	15259.3	0.7	**0.9095**	0.033	3.7	ug/L	7733	Standard
	Cr	53	5951.2	3.9	**5.4474**	0.187	3.4	ug/L	442	Standard
	Mn	55	4057.5	2.5	**0.4326**	0.014	3.2	ug/L	723	Standard
	Co	59	713.7	6.2	**0.0633**	0.005	7.8	ug/L	217	Standard
	Ni	60	1861.4	2.8	**0.7406**	0.029	3.9	ug/L	304	Standard
	Cu	65	1343.1	2.6	**0.5817**	0.025	4.2	ug/L	181	Standard
	Zn	66	2743.6	1.9	**2.0501**	0.019	0.9	ug/L	215	Standard
>	Ge	72	522881.1	1.2				ug/L	520809	Standard
	As	75	2151.6	2.6	**1.7810**	0.033	1.9	ug/L	-52	Standard
	Se	82	460.2	1.1	**3.5021**	0.008	0.2	ug/L	17	Standard
	Se-1	77	457.3	2.7	**4.6435**	0.083	1.8	ug/L	56	Standard
>	Ga	71	48.3	41.8				mg/L	25	Standard
	Rb	85	1016.7	4.8				ug/L	28	Standard
	Y	89	448180.4	0.4				ug/L	447395	Standard
>	Rh	103	61.7	28.5				ug/L	15	Standard
	Mo	98	2950.5	2.8	**0.9697**	0.025	2.6	ug/L	113	Standard
	Ag	107	125.3	5.6	**0.0049**	0.001	22.3	ug/L	108	Standard
	Cd	111	47.4	9.4	**0.0186**	0.002	10.0	mg/L	3	Standard
	Cd	114	120.7	5.3	**0.0216**	0.001	5.2	ug/L	20	Standard
>	In	115	614296.5	0.6				ug/L	625728	Standard
	Sn	118	906.7	10.1	**0.0592**	0.014	23.4	ug/L	568	Standard
	Sb	123	614.0	19.1	**0.0872**	0.022	25.7	ug/L	612	Standard
	Ba	135	28748.9	0.6	**13.4426**	0.042	0.3	ug/L	21	Standard
	Ce	140	528.3	5.7				ug/L	245	Standard
>	Tb	159	947954.0	1.2				ug/L	950397	Standard
	Ho	165	23.3	12.4				ug/L	7	Standard
	Tl	203	129.3	12.8	**0.0142**	0.002	13.1	ug/L	15	Standard
	Tl	205	116.7	9.9	**0.0055**	0.002	28.8	ug/L	13	Standard
	Pb	206	445.0	3.2	**0.0379**	0.002	6.0	ug/L	264	Standard
	Pb	207	341.0	4.4	**0.0228**	0.003	12.0	ug/L	222	Standard
	Pb	208	1493.7	0.5	**0.0256**	0.000	1.6	ug/L	959	Standard
	U	238	70565.6	0.2	**9.0963**	0.034	0.4	ug/L	9	Standard
>	Bi	209	531969.0	0.4				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	88574.8	1.4	**98.9343**	0.707	0.7	mg/L	55	Standard
K	39	85.0	11.8	**0.1808**	0.038	21.2	mg/L	28	Standard
Ca	43	236.7	3.2	**18.1358**	1.082	6.0	mg/L	27	Standard
Fe	54	139.8	11.5	**0.0060**	0.011	187.7	mg/L	147	Standard
Fe	57	440.0	15.9	**0.4880**	0.189	38.8	mg/L	268	Standard
> **Sc-1**	45	43039.4	2.0				mg/L	41174	Standard
Cl	35	92305.0	1.1				ug/L	69550	Standard
Kr	83	2.7	57.3				ug/L	1	Standard
Br	81	47838.7	1.5				ug/L	1950	Standard
P	31	25832.0	1.0				ug/L	21156	Standard
S	34	3398.7	3.3				ug/L	3419	Standard
Sr	88	276.7	16.4				ug/L	72	Standard
C	12	396.7	10.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	17	Standard
Dy	164	28.9	100.6				mg/L	16	Standard
Ho-1	165	23.3	12.4				mg/L	7	Standard
Er	166	23.3	89.2				mg/L	7	Standard
I	127	50935.5	2.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.125	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.398	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.173
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.228
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606141708
Sample Date/Time: Friday, July 01, 2016 11:50:37
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	89411.4	1.5				ug/L	76456	Standard
	Be	9	40.0	65.0	**0.0106**	0.020	184.8	ug/L	20	Standard
	Al	27	22078727.0	1.3	**110.2973**	2.573	2.3	ug/L	1307	Standard
	Sc	45	45105.4	2.6				ug/L	41174	Standard
	Ti	47	320.0	7.2	**0.8822**	0.060	6.8	ug/L	27	Standard
	V	51	99984.6	2.1	**11.7774**	0.066	0.6	ug/L	1434	Standard
	Cr	52	21104.0	1.8	**1.5998**	0.060	3.7	ug/L	7733	Standard
	Cr	53	17553.5	0.8	**16.6868**	0.266	1.6	ug/L	442	Standard
	Mn	55	6430.0	0.9	**0.7351**	0.014	1.9	ug/L	723	Standard
	Co	59	852.7	2.7	**0.0802**	0.004	4.4	ug/L	217	Standard
	Ni	60	2949.0	1.3	**1.2465**	0.031	2.4	ug/L	304	Standard
	Cu	65	1272.1	1.7	**0.5397**	0.010	1.8	ug/L	181	Standard
	Zn	66	3425.7	3.7	**2.5723**	0.060	2.3	ug/L	215	Standard
>	Ge	72	528948.8	1.6				ug/L	520809	Standard
	As	75	3475.1	1.0	**2.8171**	0.043	1.5	ug/L	-52	Standard
	Se	82	859.6	2.0	**6.5725**	0.024	0.4	ug/L	17	Standard
	Se-1	77	1345.7	4.1	**14.8113**	0.393	2.7	ug/L	56	Standard
>	Ga	71	66.7	11.5				mg/L	25	Standard
	Rb	85	4762.4	2.0				ug/L	28	Standard
	Y	89	458548.0	1.5				ug/L	447395	Standard
>	Rh	103	130.0	17.6				ug/L	15	Standard
	Mo	98	5253.1	0.6	**1.7250**	0.023	1.4	ug/L	113	Standard
	Ag	107	143.3	4.2	**0.0072**	0.001	7.4	ug/L	108	Standard
	Cd	111	26.0	42.6	**0.0090**	0.005	53.4	mg/L	3	Standard
	Cd	114	74.8	31.1	**0.0133**	0.004	31.5	ug/L	20	Standard
>	In	115	621514.7	1.7				ug/L	625728	Standard
	Sn	118	2120.1	10.2	**0.2472**	0.030	12.0	ug/L	568	Standard
	Sb	123	722.8	13.7	**0.1069**	0.018	16.5	ug/L	612	Standard
	Ba	135	16530.7	1.8	**7.6319**	0.034	0.4	ug/L	21	Standard
	Ce	140	651.7	0.4				ug/L	245	Standard
>	Tb	159	970516.7	2.5				ug/L	950397	Standard
	Ho	165	30.0	28.9				ug/L	7	Standard
	Tl	203	115.3	7.9	**0.0125**	0.001	8.0	ug/L	15	Standard
	Tl	205	93.3	21.7	**0.0024**	0.003	115.8	ug/L	13	Standard
	Pb	206	443.0	3.9	**0.0372**	0.003	8.7	ug/L	264	Standard
	Pb	207	377.3	5.1	**0.0298**	0.003	10.5	ug/L	222	Standard
	Pb	208	1645.4	1.3	**0.0327**	0.002	5.5	ug/L	959	Standard
	U	238	38430.4	2.4	**4.9290**	0.066	1.3	ug/L	9	Standard
>	Bi	209	534585.3	1.1				ug/L	552821	Standard

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Na	23	3.3	173.2	**9.3062**	16.110	173.1	mg/L	2	Standard
Mg	24	132828.1	1.2	**141.6540**	4.533	3.2	mg/L	55	Standard
K	39	191.7	1.5	**0.5400**	0.021	3.8	mg/L	28	Standard
Ca	43	260.0	27.1	**19.0243**	5.272	27.7	mg/L	27	Standard
Fe	54	173.3	10.7	**0.0254**	0.016	61.2	mg/L	147	Standard
Fe	57	418.3	15.9	**0.3725**	0.215	57.6	mg/L	268	Standard
> **Sc-1**	45	45105.4	2.6				mg/L	41174	Standard
Cl	35	100939.1	0.9				ug/L	69550	Standard
Kr	83	1.0	0.0				ug/L	1	Standard
Br	81	47925.8	4.8				ug/L	1950	Standard
P	31	29869.4	2.0				ug/L	21156	Standard
S	34	3397.0	1.1				ug/L	3419	Standard
Sr	88	423.3	25.1				ug/L	72	Standard
C	12	363.3	14.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	17	Standard
Dy	164	21.9	26.4				mg/L	16	Standard
Ho-1	165	30.0	28.9				mg/L	7	Standard
Er	166	30.0	0.0				mg/L	7	Standard
I	127	41419.9	2.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.945	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.563	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.327	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.701	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606141709
Sample Date/Time: Friday, July 01, 2016 11:53:49
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	89000.7	1.7				ug/L	76456	Standard
	Be	9	21.7	53.3	**-0.0032**	0.009	283.0	ug/L	20	Standard
	Al	27	81398.6	19.6	**0.3975**	0.073	18.3	ug/L	1307	Standard
	Sc	45	44555.4	0.6				ug/L	41174	Standard
	Ti	47	68.3	11.1	**0.1083**	0.021	19.5	ug/L	27	Standard
	V	51	3436.2	9.0	**0.1857**	0.034	18.2	ug/L	1434	Standard
	Cr	52	29812.6	1.5	**2.4193**	0.055	2.3	ug/L	7733	Standard
	Cr	53	3683.8	3.4	**2.9342**	0.118	4.0	ug/L	442	Standard
	Mn	55	6681.5	2.0	**0.7101**	0.015	2.0	ug/L	723	Standard
	Co	59	555.0	20.9	**0.0372**	0.014	37.4	ug/L	217	Standard
	Ni	60	3463.7	2.0	**1.3816**	0.031	2.2	ug/L	304	Standard
	Cu	65	1056.0	4.0	**0.4017**	0.019	4.6	ug/L	181	Standard
	Zn	66	4593.4	1.7	**3.2666**	0.053	1.6	ug/L	215	Standard
>	Ge	72	566488.4	0.2				ug/L	520809	Standard
	As	75	-5.4	928.8	**0.0411**	0.038	91.4	ug/L	-52	Standard
	Se	82	29.8	40.3	**0.0905**	0.087	96.5	ug/L	17	Standard
	Se-1	77	89.0	15.9	**0.2724**	0.151	55.6	ug/L	56	Standard
>	Ga	71	38.3	15.1				mg/L	25	Standard
	Rb	85	258.3	31.9				ug/L	28	Standard
	Y	89	491649.6	0.6				ug/L	447395	Standard
>	Rh	103	20.0	0.0				ug/L	15	Standard
	Mo	98	1080.6	3.0	**0.3054**	0.011	3.5	ug/L	113	Standard
	Ag	107	233.3	81.3	**0.0171**	0.024	142.6	ug/L	108	Standard
	Cd	111	62.5	42.8	**0.0227**	0.011	47.4	mg/L	3	Standard
	Cd	114	173.3	77.7	**0.0281**	0.022	77.8	ug/L	20	Standard
>	In	115	678768.0	0.3				ug/L	625728	Standard
	Sn	118	3542.1	5.1	**0.4232**	0.027	6.3	ug/L	568	Standard
	Sb	123	458.8	15.3	**0.0481**	0.013	26.4	ug/L	612	Standard
	Ba	135	1179.0	5.3	**0.4817**	0.027	5.6	ug/L	21	Standard
	Ce	140	250.0	8.7				ug/L	245	Standard
>	Tb	159	1017740.7	0.9				ug/L	950397	Standard
	Ho	165	16.7	62.4				ug/L	7	Standard
	Tl	203	186.0	120.6	**0.0185**	0.023	124.9	ug/L	15	Standard
	Tl	205	108.3	94.3	**0.0029**	0.012	410.9	ug/L	13	Standard
	Pb	206	582.3	26.2	**0.0521**	0.024	46.8	ug/L	264	Standard
	Pb	207	512.3	24.2	**0.0467**	0.022	46.6	ug/L	222	Standard
	Pb	208	1988.1	15.4	**0.0399**	0.013	32.1	ug/L	959	Standard
	U	238	126.0	91.3	**0.0142**	0.013	92.3	ug/L	9	Standard
>	Bi	209	592807.4	1.2				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	260.0	26.4	**0.2207**	0.075	34.1	mg/L	55	Standard
K	39	20.0	25.0	**-0.0603**	0.018	29.6	mg/L	28	Standard
Ca	43	25.0	40.0	**-0.3533**	0.844	239.0	mg/L	27	Standard
Fe	54	209.5	1.2	**0.0530**	0.003	4.8	mg/L	147	Standard
Fe	57	231.7	15.2	**-0.1465**	0.097	65.9	mg/L	268	Standard
Sc-1	45	44555.4	0.6				mg/L	41174	Standard
Cl	35	92666.6	2.2				ug/L	69550	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	3473.7	14.7				ug/L	1950	Standard
P	31	23892.2	1.7				ug/L	21156	Standard
S	34	3687.1	4.5				ug/L	3419	Standard
Sr	88	46.7	37.6				ug/L	72	Standard
C	12	203.3	12.4				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	17	Standard
Dy	164	32.1	49.0				mg/L	16	Standard
Ho-1	165	16.7	62.4				mg/L	7	Standard
Er	166	26.7	43.3				mg/L	7	Standard
I	127	2500.2	19.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.408	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.771	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.477
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.233
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606144101
Sample Date/Time: Friday, July 01, 2016 11:57:01
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	90118.9	1.7				ug/L	76456	Standard
	Be	9	590.0	6.6	**0.4275**	0.033	7.7	ug/L	20	Standard
	Al	27	41637732.7	0.8	**206.3623**	2.003	1.0	ug/L	1307	Standard
	Sc	45	52748.3	1.3				ug/L	41174	Standard
	Ti	47	25849.4	0.9	**75.9425**	0.582	0.8	ug/L	27	Standard
	V	51	119191.4	0.7	**13.6962**	0.128	0.9	ug/L	1434	Standard
	Cr	52	206171.6	0.2	**23.4624**	0.147	0.6	ug/L	7733	Standard
	Cr	53	26030.7	3.1	**24.2644**	0.827	3.4	ug/L	442	Standard
	Mn	55	3362426.1	1.3	**425.5410**	6.574	1.5	ug/L	723	Standard
	Co	59	45394.2	0.9	**5.6490**	0.060	1.1	ug/L	217	Standard
	Ni	60	38170.7	0.8	**17.4748**	0.075	0.4	ug/L	304	Standard
	Cu	65	32375.9	0.9	**15.1289**	0.102	0.7	ug/L	181	Standard
	Zn	66	132720.1	0.4	**103.6234**	0.326	0.3	ug/L	215	Standard
>	Ge	72	543517.2	0.4				ug/L	520809	Standard
	As	75	40511.0	0.4	**31.4895**	0.240	0.8	ug/L	-52	Standard
	Se	82	271.3	7.7	**1.9305**	0.150	7.7	ug/L	17	Standard
	Se-1	77	159.7	0.7	**1.1051**	0.008	0.7	ug/L	56	Standard
>	Ga	71	10717.1	0.7				mg/L	25	Standard
	Rb	85	127736.4	2.6				ug/L	28	Standard
	Y	89	566400.0	1.2				ug/L	447395	Standard
>	Rh	103	230.0	10.0				ug/L	15	Standard
	Mo	98	19958.9	0.3	**6.3798**	0.036	0.6	ug/L	113	Standard
	Ag	107	307.3	4.7	**0.0287**	0.002	7.3	ug/L	108	Standard
	Cd	111	352.1	11.3	**0.1461**	0.017	11.5	mg/L	3	Standard
	Cd	114	941.3	14.8	**0.1602**	0.023	14.2	ug/L	20	Standard
>	In	115	644859.8	0.7				ug/L	625728	Standard
	Sn	118	2065.1	2.2	**0.2271**	0.006	2.7	ug/L	568	Standard
	Sb	123	1536.5	9.5	**0.2547**	0.026	10.2	ug/L	612	Standard
	Ba	135	755795.9	0.3	**337.0929**	2.903	0.9	ug/L	21	Standard
	Ce	140	578983.3	0.3				ug/L	245	Standard
>	Tb	159	997623.6	0.4				ug/L	950397	Standard
	Ho	165	8542.4	1.8				ug/L	7	Standard
	Tl	203	679.7	2.4	**0.0742**	0.002	2.6	ug/L	15	Standard
	Tl	205	551.7	3.8	**0.0587**	0.002	3.1	ug/L	13	Standard
	Pb	206	82465.5	0.5	**14.3726**	0.198	1.4	ug/L	264	Standard
	Pb	207	67377.8	0.6	**12.9242**	0.183	1.4	ug/L	222	Standard
	Pb	208	291536.5	0.2	**13.6926**	0.174	1.3	ug/L	959	Standard
	U	238	4078.5	1.0	**0.5004**	0.006	1.2	ug/L	9	Standard
>	Bi	209	558632.4	1.1				ug/L	552821	Standard

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Na	23	6.7	43.3	**15.4842**	6.494	41.9	mg/L	2	Standard
Mg	24	15246.0	1.4	**13.8434**	0.267	1.9	mg/L	55	Standard
K	39	708.3	3.5	**1.9891**	0.079	4.0	mg/L	28	Standard
Ca	43	650.0	13.5	**43.6069**	5.619	12.9	mg/L	27	Standard
Fe	54	24640.5	1.6	**14.9863**	0.360	2.4	mg/L	147	Standard
Fe	57	6984.9	0.7	**15.9501**	0.213	1.3	mg/L	268	Standard
Sc-1	45	52748.3	1.3				mg/L	41174	Standard
Cl	35	77949.4	2.2				ug/L	69550	Standard
Kr	83	4.0	50.0				ug/L	1	Standard
Br	81	47491.0	0.5				ug/L	1950	Standard
P	31	44155.9	1.6				ug/L	21156	Standard
S	34	4003.9	3.1				ug/L	3419	Standard
Sr	88	953.4	8.4				ug/L	72	Standard
C	12	680.0	10.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	56.8				mg/L	17	Standard
Dy	164	14685.5	3.1				mg/L	16	Standard
Ho-1	165	8542.4	1.8				mg/L	7	Standard
Er	166	7695.3	3.1				mg/L	7	Standard
I	127	857640.2	8.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.871	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.360	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.058
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.051
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606144102
Sample Date/Time: Friday, July 01, 2016 12:00:12
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	98658.5	1.5				ug/L	76456	Standard
	Be	9	2670.2	2.5	**1.8290**	0.053	2.9	ug/L	20	Standard
	Al	27	100018655.9	1.5	**452.7643**	1.271	0.3	ug/L	1307	Standard
	Sc	45	67269.1	3.4				ug/L	41174	Standard
	Ti	47	65558.9	1.5	**191.1007**	3.376	1.8	ug/L	27	Standard
	V	51	394103.6	0.8	**45.3542**	0.603	1.3	ug/L	1434	Standard
	Cr	52	244910.5	0.4	**27.8063**	0.223	0.8	ug/L	7733	Standard
	Cr	53	30011.4	1.8	**27.7958**	0.566	2.0	ug/L	442	Standard
	Mn	55	9446087.0	0.8	**1185.4895**	15.339	1.3	ug/L	723	Standard
	Co	59	127992.0	0.5	**15.8451**	0.159	1.0	ug/L	217	Standard
	Ni	60	80262.0	0.9	**36.5997**	0.485	1.3	ug/L	304	Standard
	Cu	65	41760.1	1.2	**19.3697**	0.328	1.7	ug/L	181	Standard
	Zn	66	117095.1	0.6	**90.6239**	0.738	0.8	ug/L	215	Standard
>	Ge	72	548186.8	0.5				ug/L	520809	Standard
	As	75	12213.4	1.0	**9.4446**	0.140	1.5	ug/L	-52	Standard
	Se	82	168.5	1.4	**1.1404**	0.019	1.7	ug/L	17	Standard
	Se-1	77	183.7	6.1	**1.3567**	0.128	9.4	ug/L	56	Standard
>	Ga	71	38156.3	0.9				mg/L	25	Standard
	Rb	85	401776.2	1.3				ug/L	28	Standard
	Y	89	977933.0	0.9				ug/L	447395	Standard
>	Rh	103	285.0	6.1				ug/L	15	Standard
	Mo	98	2398.4	0.8	**0.7441**	0.003	0.4	ug/L	113	Standard
	Ag	107	404.7	5.9	**0.0417**	0.003	8.1	ug/L	108	Standard
	Cd	111	528.3	1.5	**0.2199**	0.003	1.2	mg/L	3	Standard
	Cd	114	1302.9	4.8	**0.2213**	0.008	3.8	ug/L	20	Standard
>	In	115	646109.7	1.1				ug/L	625728	Standard
	Sn	118	1073.4	7.7	**0.0773**	0.012	15.1	ug/L	568	Standard
	Sb	123	1069.4	22.8	**0.1664**	0.044	26.2	ug/L	612	Standard
	Ba	135	1753079.8	0.5	**780.4145**	5.897	0.8	ug/L	21	Standard
	Ce	140	2444826.3	0.9				ug/L	245	Standard
>	Tb	159	1048030.7	0.8				ug/L	950397	Standard
	Ho	165	43214.9	0.3				ug/L	7	Standard
	Tl	203	1815.1	1.2	**0.2022**	0.002	1.2	ug/L	15	Standard
	Tl	205	1641.8	6.8	**0.1969**	0.014	6.9	ug/L	13	Standard
	Pb	206	125036.8	0.6	**22.1250**	0.076	0.3	ug/L	264	Standard
	Pb	207	102892.9	0.5	**20.0422**	0.120	0.6	ug/L	222	Standard
	Pb	208	445404.9	0.2	**21.2431**	0.093	0.4	ug/L	959	Standard
	U	238	8589.4	1.3	**1.0692**	0.015	1.4	ug/L	9	Standard
>	Bi	209	550757.7	0.3				ug/L	552821	Standard

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Na	23	15.0	33.3	**27.3614**	8.722	31.9	mg/L	2	Standard
Mg	24	11512.7	3.2	**8.1734**	0.184	2.3	mg/L	55	Standard
K	39	1368.4	5.6	**3.0793**	0.098	3.2	mg/L	28	Standard
Ca	43	1295.1	4.3	**69.6682**	4.720	6.8	mg/L	27	Standard
Fe	54	38707.5	2.1	**18.4898**	0.545	2.9	mg/L	147	Standard
Fe	57	11109.1	1.4	**20.0998**	0.536	2.7	mg/L	268	Standard
> **Sc-1**	45	67269.1	3.4				mg/L	41174	Standard
Cl	35	76892.0	1.5				ug/L	69550	Standard
Kr	83	0.0					ug/L	1	Standard
Br	81	13365.9	1.5				ug/L	1950	Standard
P	31	63609.9	1.5				ug/L	21156	Standard
S	34	3752.1	6.7				ug/L	3419	Standard
Sr	88	1298.4	6.6				ug/L	72	Standard
C	12	780.0	10.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	20.4				mg/L	17	Standard
Dy	164	72319.7	1.0				mg/L	16	Standard
Ho-1	165	43214.9	0.3				mg/L	7	Standard
Er	166	38789.6	1.4				mg/L	7	Standard
I	127	200464.2	1.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.040	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.257	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.257	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.627	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ti 47 Upper, S, EEE	Ti	47	

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Mn 55 Upper, S, EEE	Mn	55
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606144201 WG574416-02
Sample Date/Time: Friday, July 01, 2016 12:03:24
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	91136.7	2.7				ug/L	76456	Standard
	Be	9	201.7	10.3	**0.1314**	0.018	13.5	ug/L	20	Standard
	Al	27	21905405.8	1.2	**107.3706**	1.869	1.7	ug/L	1307	Standard
	Sc	45	50086.0	0.8				ug/L	41174	Standard
	Ti	47	9316.5	1.4	**26.0675**	0.608	2.3	ug/L	27	Standard
	V	51	52523.0	0.3	**5.6447**	0.076	1.3	ug/L	1434	Standard
	Cr	52	28573.6	1.1	**2.2609**	0.041	1.8	ug/L	7733	Standard
	Cr	53	3023.6	5.3	**2.3192**	0.157	6.8	ug/L	442	Standard
	Mn	55	526886.3	1.1	**63.5454**	0.695	1.1	ug/L	723	Standard
	Co	59	12298.0	1.4	**1.4386**	0.020	1.4	ug/L	217	Standard
	Ni	60	9400.9	1.0	**3.9901**	0.052	1.3	ug/L	304	Standard
	Cu	65	4207.6	2.8	**1.8116**	0.065	3.6	ug/L	181	Standard
	Zn	66	23172.4	0.3	**17.1155**	0.171	1.0	ug/L	215	Standard
>	Ge	72	569574.4	1.1				ug/L	520809	Standard
	As	75	2039.6	1.1	**1.5560**	0.025	1.6	ug/L	-52	Standard
	Se	82	85.8	3.3	**0.4942**	0.015	3.0	ug/L	17	Standard
	Se-1	77	88.7	8.5	**0.2643**	0.088	33.1	ug/L	56	Standard
>	Ga	71	3267.0	3.2				mg/L	25	Standard
	Rb	85	51683.0	1.3				ug/L	28	Standard
	Y	89	529527.6	0.3				ug/L	447395	Standard
>	Rh	103	150.0	5.8				ug/L	15	Standard
	Mo	98	1541.7	1.1	**0.4475**	0.001	0.3	ug/L	113	Standard
	Ag	107	153.0	7.4	**0.0069**	0.002	23.0	ug/L	108	Standard
	Cd	111	40.7	6.3	**0.0140**	0.001	8.1	mg/L	3	Standard
	Cd	114	102.3	14.8	**0.0166**	0.003	15.4	ug/L	20	Standard
>	In	115	676532.0	0.8				ug/L	625728	Standard
	Sn	118	971.7	4.9	**0.0555**	0.008	14.3	ug/L	568	Standard
	Sb	123	639.0	14.8	**0.0807**	0.018	21.8	ug/L	612	Standard
	Ba	135	197467.2	0.8	**83.9345**	0.680	0.8	ug/L	21	Standard
	Ce	140	158462.8	1.7				ug/L	245	Standard
>	Tb	159	1025960.2	1.0				ug/L	950397	Standard
	Ho	165	2715.2	3.4				ug/L	7	Standard
	Tl	203	280.3	9.2	**0.0292**	0.003	9.9	ug/L	15	Standard
	Tl	205	271.7	10.1	**0.0229**	0.003	13.4	ug/L	13	Standard
	Pb	206	9533.7	0.7	**1.5691**	0.011	0.7	ug/L	264	Standard
	Pb	207	7883.1	1.1	**1.4223**	0.009	0.6	ug/L	222	Standard
	Pb	208	34084.4	0.9	**1.5063**	0.007	0.5	ug/L	959	Standard
	U	238	20271.2	0.7	**2.4081**	0.030	1.3	ug/L	9	Standard
>	Bi	209	577230.0	0.8				ug/L	552821	Standard

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Na	23	10.0	86.6	**24.6403**	21.507	87.3	mg/L	2	Standard
Mg	24	4422.3	4.5	**4.1870**	0.202	4.8	mg/L	55	Standard
K	39	186.7	8.6	**0.4573**	0.052	11.3	mg/L	28	Standard
Ca	43	566.7	10.9	**39.8634**	4.346	10.9	mg/L	27	Standard
Fe	54	2666.0	2.2	**1.6199**	0.041	2.5	mg/L	147	Standard
Fe	57	1331.7	5.5	**2.5595**	0.178	6.9	mg/L	268	Standard
> **Sc-1**	45	50086.0	0.8				mg/L	41174	Standard
Cl	35	83929.2	1.1				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	13155.7	1.8				ug/L	1950	Standard
P	31	31337.4	1.4				ug/L	21156	Standard
S	34	3528.7	1.1				ug/L	3419	Standard
Sr	88	476.7	5.8				ug/L	72	Standard
C	12	400.0	7.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	17	Standard
Dy	164	4673.5	1.6				mg/L	16	Standard
Ho-1	165	2715.2	3.4				mg/L	7	Standard
Er	166	2656.9	8.5				mg/L	7	Standard
I	127	16687.6	14.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.202	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.363	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.119
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.415
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606144201 WG574416-02
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Method 6020 - Summary Report

Sample ID: L1606144202
Sample Date/Time: Friday, July 01, 2016 12:06:35
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90507.9	1.9				ug/L	76456	Standard
	Be	9	248.3	5.8	**0.1675**	0.008	4.9	ug/L	20	Standard
	Al	27	22277088.2	0.8	**109.9375**	1.745	1.6	ug/L	1307	Standard
	Sc	45	50101.1	3.7				ug/L	41174	Standard
	Ti	47	12264.6	1.2	**34.7196**	0.584	1.7	ug/L	27	Standard
	V	51	62744.3	1.8	**6.8585**	0.146	2.1	ug/L	1434	Standard
	Cr	52	32463.4	1.9	**2.7415**	0.091	3.3	ug/L	7733	Standard
	Cr	53	3775.5	3.5	**3.0371**	0.138	4.6	ug/L	442	Standard
	Mn	55	731304.2	2.1	**89.2163**	2.199	2.5	ug/L	723	Standard
	Co	59	14984.4	2.2	**1.7791**	0.048	2.7	ug/L	217	Standard
	Ni	60	11028.3	1.8	**4.7605**	0.068	1.4	ug/L	304	Standard
	Cu	65	5131.2	1.5	**2.2507**	0.042	1.9	ug/L	181	Standard
	Zn	66	19672.8	1.3	**14.6652**	0.250	1.7	ug/L	215	Standard
>	**Ge**	72	563354.5	0.6				ug/L	520809	Standard
	As	75	2285.7	4.9	**1.7571**	0.090	5.1	ug/L	-52	Standard
	Se	82	78.7	24.0	**0.4498**	0.141	31.2	ug/L	17	Standard
	Se-1	77	96.3	4.2	**0.3571**	0.042	11.8	ug/L	56	Standard
>	**Ga**	71	4088.9	0.8				mg/L	25	Standard
	Rb	85	66167.5	0.6				ug/L	28	Standard
	Y	89	527047.3	1.0				ug/L	447395	Standard
>	**Rh**	103	133.3	20.7				ug/L	15	Standard
	Mo	98	1560.3	2.2	**0.4569**	0.008	1.8	ug/L	113	Standard
	Ag	107	236.0	37.0	**0.0178**	0.011	63.3	ug/L	108	Standard
	Cd	111	70.9	65.6	**0.0263**	0.019	71.1	mg/L	3	Standard
	Cd	114	182.9	70.7	**0.0299**	0.021	70.2	ug/L	20	Standard
>	**In**	115	671365.1	1.0				ug/L	625728	Standard
	Sn	118	1011.7	2.2	**0.0623**	0.004	5.8	ug/L	568	Standard
	Sb	123	671.0	17.2	**0.0874**	0.022	24.8	ug/L	612	Standard
	Ba	135	208248.7	0.6	**89.2003**	0.372	0.4	ug/L	21	Standard
	Ce	140	195369.9	1.1				ug/L	245	Standard
>	**Tb**	159	1017569.8	0.3				ug/L	950397	Standard
	Ho	165	3448.7	3.2				ug/L	7	Standard
	Tl	203	464.3	26.6	**0.0488**	0.013	26.2	ug/L	15	Standard
	Tl	205	373.3	2.0	**0.0351**	0.001	2.1	ug/L	13	Standard
	Pb	206	11404.0	0.3	**1.8871**	0.014	0.7	ug/L	264	Standard
	Pb	207	9244.8	0.8	**1.6776**	0.026	1.6	ug/L	222	Standard
	Pb	208	39660.1	0.9	**1.7621**	0.018	1.0	ug/L	959	Standard
	U	238	20504.2	1.2	**2.4376**	0.012	0.5	ug/L	9	Standard
>	**Bi**	209	576748.8	0.8				ug/L	552821	Standard

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Na	23	8.3	34.6	**20.5955**	7.569	36.8	mg/L	2	Standard
Mg	24	4662.4	4.9	**4.4148**	0.085	1.9	mg/L	55	Standard
K	39	218.3	22.9	**0.5540**	0.135	24.3	mg/L	28	Standard
Ca	43	601.7	7.9	**42.4925**	3.322	7.8	mg/L	27	Standard
Fe	54	3310.4	1.9	**2.0364**	0.082	4.1	mg/L	147	Standard
Fe	57	1525.1	5.8	**3.0549**	0.352	11.5	mg/L	268	Standard
Sc-1	45	50101.1	3.7				mg/L	41174	Standard
Cl	35	83923.1	0.7				ug/L	69550	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	11030.7	1.9				ug/L	1950	Standard
P	31	32000.4	1.7				ug/L	21156	Standard
S	34	3522.1	3.8				ug/L	3419	Standard
Sr	88	531.7	5.7				ug/L	72	Standard
C	12	333.3	12.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	17	Standard
Dy	164	5934.4	7.8				mg/L	16	Standard
Ho-1	165	3448.7	3.2				mg/L	7	Standard
Er	166	3343.7	6.8				mg/L	7	Standard
I	127	14929.0	2.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		118.379	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		108.169	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.293
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.328
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606144203S WG574416-08
Sample Date/Time: Friday, July 01, 2016 12:09:47
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	90030.2	2.8				ug/L	76456	Standard
	Be	9	67451.5	0.8	**51.1736**	1.267	2.5	ug/L	20	Standard
	Al	27	22083553.0	1.2	**109.5762**	1.952	1.8	ug/L	1307	Standard
	Sc	45	48706.5	1.6				ug/L	41174	Standard
	Ti	47	11744.6	3.0	**33.6397**	0.840	2.5	ug/L	27	Standard
	V	51	504596.4	0.3	**57.2364**	0.479	0.8	ug/L	1434	Standard
	Cr	52	455560.7	0.5	**51.7411**	0.108	0.2	ug/L	7733	Standard
	Cr	53	56769.5	0.3	**52.1372**	0.385	0.7	ug/L	442	Standard
	Mn	55	1036346.8	0.7	**127.9850**	0.471	0.4	ug/L	723	Standard
	Co	59	423691.1	0.7	**51.7179**	0.252	0.5	ug/L	217	Standard
	Ni	60	117301.3	0.2	**52.7412**	0.343	0.7	ug/L	304	Standard
	Cu	65	109232.0	1.3	**50.0075**	0.589	1.2	ug/L	181	Standard
	Zn	66	89717.5	1.0	**68.3316**	0.407	0.6	ug/L	215	Standard
>	Ge	72	556663.9	0.5				ug/L	520809	Standard
	As	75	68119.8	0.9	**51.6696**	0.438	0.8	ug/L	-52	Standard
	Se	82	6698.0	0.6	**49.4767**	0.038	0.1	ug/L	17	Standard
	Se-1	77	4484.0	0.7	**48.3919**	0.526	1.1	ug/L	56	Standard
>	Ga	71	4812.4	3.6				mg/L	25	Standard
	Rb	85	61444.3	0.8				ug/L	28	Standard
	Y	89	517239.3	0.8				ug/L	447395	Standard
>	Rh	103	106.7	32.9				ug/L	15	Standard
	Mo	98	1731.4	0.3	**0.5186**	0.008	1.5	ug/L	113	Standard
	Ag	107	354175.3	0.9	**46.7205**	0.584	1.2	ug/L	108	Standard
	Cd	111	119010.3	1.4	**48.9848**	0.748	1.5	mg/L	3	Standard
	Cd	114	293416.8	0.7	**48.7814**	0.554	1.1	ug/L	20	Standard
>	In	115	660339.6	1.1				ug/L	625728	Standard
	Sn	118	1475.1	6.5	**0.1329**	0.012	9.2	ug/L	568	Standard
	Sb	123	188284.4	1.5	**34.4893**	0.374	1.1	ug/L	612	Standard
	Ba	135	310505.8	0.4	**135.2331**	0.887	0.7	ug/L	21	Standard
	Ce	140	169550.1	0.7				ug/L	245	Standard
>	Tb	159	1009819.6	1.8				ug/L	950397	Standard
	Ho	165	3057.0	3.5				ug/L	7	Standard
	Tl	203	459336.1	0.3	**49.1469**	0.484	1.0	ug/L	15	Standard
	Tl	205	419582.5	1.2	**50.5538**	1.161	2.3	ug/L	13	Standard
	Pb	206	306250.8	0.1	**51.9221**	0.623	1.2	ug/L	264	Standard
	Pb	207	267507.5	0.3	**49.9387**	0.751	1.5	ug/L	222	Standard
	Pb	208	1116297.0	0.4	**51.0219**	0.722	1.4	ug/L	959	Standard
	U	238	433722.1	0.8	**51.6863**	1.022	2.0	ug/L	9	Standard
>	Bi	209	575528.3	1.2				ug/L	552821	Standard

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Na	23	16.7	75.5	**41.7692**	31.215	74.7	mg/L	2	Standard
Mg	24	4830.8	1.7	**4.7112**	0.123	2.6	mg/L	55	Standard
K	39	223.3	5.2	**0.5924**	0.027	4.5	mg/L	28	Standard
Ca	43	666.7	3.0	**48.7692**	1.740	3.6	mg/L	27	Standard
Fe	54	3420.8	4.4	**2.1691**	0.101	4.6	mg/L	147	Standard
Fe	57	1528.4	2.8	**3.1654**	0.056	1.8	mg/L	268	Standard
Sc-1	45	48706.5	1.6				mg/L	41174	Standard
Cl	35	82992.7	2.0				ug/L	69550	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	7521.9	4.9				ug/L	1950	Standard
P	31	32994.2	3.4				ug/L	21156	Standard
S	34	3745.5	4.1				ug/L	3419	Standard
Sr	88	541.7	13.3				ug/L	72	Standard
C	12	350.0	24.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	62.5				mg/L	17	Standard
Dy	164	4986.9	2.7				mg/L	16	Standard
Ho-1	165	3057.0	3.5				mg/L	7	Standard
Er	166	2656.9	3.8				mg/L	7	Standard
I	127	14203.3	3.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		117.755	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.884	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	105.531	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	104.108	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144204SD WG574416-09
Sample Date/Time: Friday, July 01, 2016 12:12:58
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	90070.3	0.3				ug/L	76456	Standard
	Be	9	67068.2	2.3	**50.8355**	1.023	2.0	ug/L	20	Standard
	Al	27	22820326.8	1.6	**113.1467**	1.840	1.6	ug/L	1307	Standard
	Sc	45	48614.5	1.1				ug/L	41174	Standard
	Ti	47	12429.8	0.9	**35.6977**	0.390	1.1	ug/L	27	Standard
	V	51	500213.8	0.9	**56.8738**	0.256	0.4	ug/L	1434	Standard
	Cr	52	457920.4	0.8	**52.1452**	0.679	1.3	ug/L	7733	Standard
	Cr	53	55433.0	3.5	**51.0119**	1.142	2.2	ug/L	442	Standard
	Mn	55	1032001.7	0.7	**127.7596**	0.851	0.7	ug/L	723	Standard
	Co	59	426181.5	0.6	**52.1492**	0.363	0.7	ug/L	217	Standard
	Ni	60	115745.8	0.4	**52.1679**	0.569	1.1	ug/L	304	Standard
	Cu	65	108435.6	0.5	**49.7650**	0.481	1.0	ug/L	181	Standard
	Zn	66	83122.4	0.9	**63.4509**	0.540	0.9	ug/L	215	Standard
>	Ge	72	555340.6	1.3				ug/L	520809	Standard
	As	75	68386.4	1.0	**51.9966**	0.210	0.4	ug/L	-52	Standard
	Se	82	6617.0	1.4	**48.9951**	0.511	1.0	ug/L	17	Standard
	Se-1	77	4553.0	1.4	**49.2655**	0.470	1.0	ug/L	56	Standard
>	Ga	71	4989.2	4.2				mg/L	25	Standard
	Rb	85	63782.3	0.6				ug/L	28	Standard
	Y	89	508585.3	3.2				ug/L	447395	Standard
>	Rh	103	155.0	16.8				ug/L	15	Standard
	Mo	98	1690.9	2.2	**0.5065**	0.021	4.1	ug/L	113	Standard
	Ag	107	359804.6	1.4	**47.4968**	0.270	0.6	ug/L	108	Standard
	Cd	111	119520.8	0.7	**49.2344**	0.563	1.1	mg/L	3	Standard
	Cd	114	293080.3	1.6	**48.7653**	1.035	2.1	ug/L	20	Standard
>	In	115	659870.1	1.8				ug/L	625728	Standard
	Sn	118	1175.0	5.3	**0.0889**	0.010	10.9	ug/L	568	Standard
	Sb	123	180927.8	2.0	**33.1631**	0.062	0.2	ug/L	612	Standard
	Ba	135	313663.8	0.6	**136.7260**	2.307	1.7	ug/L	21	Standard
	Ce	140	181386.0	0.5				ug/L	245	Standard
>	Tb	159	1008393.6	0.8				ug/L	950397	Standard
	Ho	165	2945.3	1.9				ug/L	7	Standard
	Tl	203	461671.8	0.2	**49.9891**	0.298	0.6	ug/L	15	Standard
	Tl	205	421242.1	0.2	**51.3576**	0.369	0.7	ug/L	13	Standard
	Pb	206	307820.1	0.5	**52.8142**	0.466	0.9	ug/L	264	Standard
	Pb	207	267725.9	1.2	**50.5746**	0.254	0.5	ug/L	222	Standard
	Pb	208	1118569.9	0.5	**51.7383**	0.472	0.9	ug/L	959	Standard
	U	238	435363.6	0.2	**52.5003**	0.385	0.7	ug/L	9	Standard
>	Bi	209	568683.1	0.8				ug/L	552821	Standard

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Na	23	10.0	50.0	**25.2590**	12.492	49.5	mg/L	2	Standard
Mg	24	4682.4	0.4	**4.5730**	0.070	1.5	mg/L	55	Standard
K	39	196.7	12.8	**0.5079**	0.086	17.0	mg/L	28	Standard
Ca	43	620.0	2.8	**45.2717**	1.537	3.4	mg/L	27	Standard
Fe	54	3578.4	8.9	**2.2770**	0.195	8.6	mg/L	147	Standard
Fe	57	1561.7	1.9	**3.2607**	0.102	3.1	mg/L	268	Standard
> **Sc-1**	45	48614.5	1.1				mg/L	41174	Standard
Cl	35	83140.8	0.7				ug/L	69550	Standard
Kr	83	1.3	86.6				ug/L	1	Standard
Br	81	7508.5	3.6				ug/L	1950	Standard
P	31	33216.4	1.3				ug/L	21156	Standard
S	34	3633.8	2.2				ug/L	3419	Standard
Sr	88	566.7	11.0				ug/L	72	Standard
C	12	476.7	6.7				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	62.5				mg/L	17	Standard
Dy	164	4984.3	2.5				mg/L	16	Standard
Ho-1	165	2945.3	1.9				mg/L	7	Standard
Er	166	2850.3	2.1				mg/L	7	Standard
I	127	15054.2	4.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.807	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.630	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.456
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.869
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144204SD WG574416-09
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 12:16:11
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	87445.1	3.4				ug/L	76456	Standard
	Be	9	64070.2	0.9	**50.0545**	1.445	2.9	ug/L	20	Standard
	Al	27	9240352.4	0.8	**47.2275**	1.909	4.0	ug/L	1307	Standard
	Sc	45	44832.9	2.4				ug/L	41174	Standard
	Ti	47	34259.7	1.0	**97.1606**	1.714	1.8	ug/L	27	Standard
	V	51	451230.5	0.6	**50.5628**	0.294	0.6	ug/L	1434	Standard
	Cr	52	441549.7	0.7	**49.5261**	0.488	1.0	ug/L	7733	Standard
	Cr	53	54047.9	0.8	**49.0333**	0.166	0.3	ug/L	442	Standard
	Mn	55	409600.5	0.8	**49.9366**	0.757	1.5	ug/L	723	Standard
	Co	59	429332.5	1.0	**51.7968**	0.540	1.0	ug/L	217	Standard
	Ni	60	111250.6	0.3	**49.4298**	0.556	1.1	ug/L	304	Standard
	Cu	65	109537.2	0.3	**49.5637**	0.351	0.7	ug/L	181	Standard
	Zn	66	65566.2	0.7	**49.3061**	0.180	0.4	ug/L	215	Standard
>	Ge	72	563235.2	0.9				ug/L	520809	Standard
	As	75	66627.6	0.4	**49.9511**	0.273	0.5	ug/L	-52	Standard
	Se	82	6922.5	0.6	**50.5422**	0.157	0.3	ug/L	17	Standard
	Se-1	77	4596.0	1.5	**49.0283**	0.390	0.8	ug/L	56	Standard
>	Ga	71	40.0	21.7				mg/L	25	Standard
	Rb	85	993.4	8.3				ug/L	28	Standard
	Y	89	482225.9	1.1				ug/L	447395	Standard
>	Rh	103	20.0	66.1				ug/L	15	Standard
	Mo	98	318941.8	1.3	**98.3261**	1.568	1.6	ug/L	113	Standard
	Ag	107	382282.6	0.5	**49.6279**	0.362	0.7	ug/L	108	Standard
	Cd	111	122482.8	0.3	**49.6133**	0.042	0.1	mg/L	3	Standard
	Cd	114	296548.6	0.8	**48.5180**	0.351	0.7	ug/L	20	Standard
>	In	115	670966.5	0.3				ug/L	625728	Standard
	Sn	118	338852.8	1.5	**49.0149**	0.673	1.4	ug/L	568	Standard
	Sb	123	274306.5	0.2	**49.4654**	0.232	0.5	ug/L	612	Standard
	Ba	135	113482.1	0.5	**48.6277**	0.189	0.4	ug/L	21	Standard
	Ce	140	308.3	9.8				ug/L	245	Standard
>	Tb	159	1016008.3	2.4				ug/L	950397	Standard
	Ho	165	16.7	45.8				ug/L	7	Standard
	Tl	203	473547.1	1.1	**49.9959**	0.041	0.1	ug/L	15	Standard
	Tl	205	428096.0	1.4	**50.8923**	0.684	1.3	ug/L	13	Standard
	Pb	206	298789.4	0.8	**49.9841**	0.126	0.3	ug/L	264	Standard
	Pb	207	271570.2	0.6	**50.0267**	0.582	1.2	ug/L	222	Standard
	Pb	208	1117926.1	0.2	**50.4203**	0.478	0.9	ug/L	959	Standard
	U	238	428309.5	0.4	**50.3630**	0.285	0.6	ug/L	9	Standard
>	Bi	209	583209.8	1.0				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4910.8	1.7	**5.2115**	0.207	4.0	mg/L	55	Standard
K	39	1366.7	7.2	**4.6780**	0.226	4.8	mg/L	28	Standard
Ca	43	96.7	13.0	**5.6017**	0.863	15.4	mg/L	27	Standard
Fe	54	7079.3	0.6	**5.0021**	0.155	3.1	mg/L	147	Standard
Fe	57	2068.5	8.1	**5.0303**	0.399	7.9	mg/L	268	Standard
> **Sc-1**	45	44832.9	2.4				mg/L	41174	Standard
Cl	35	82615.3	1.2				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	2370.2	6.2				ug/L	1950	Standard
P	31	24917.1	2.0				ug/L	21156	Standard
S	34	4207.3	4.1				ug/L	3419	Standard
Sr	88	65.0	33.5				ug/L	72	Standard
C	12	150.0	30.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	69.3				mg/L	17	Standard
Dy	164	25.7	41.7				mg/L	16	Standard
Ho-1	165	16.7	45.8				mg/L	7	Standard
Er	166	20.0	100.0				mg/L	7	Standard
I	127	20977.9	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	100.109		
Al	27	94.455		
Sc	45			
Ti	47	97.161		
V	51	101.126		
Cr	52	99.052		
Cr	53			
Mn	55	99.873		
Co	59	103.594		
Ni	60	98.860		
Cu	65	99.127		
Zn	66	98.612		
> Ge	72		108.146	
As	75	99.902		
Se	82	101.084		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.326		
Ag	107	99.256		
Cd	111	99.227		
Cd	114			
> In	115			107.230
Sn	118	98.030		
Sb	123	98.931		
Ba	135	97.255		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.992		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.841		
U	238	100.726		
> Bi	209			105.497
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 12:19:23
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86888.4	1.2				ug/L	76456	Standard
	Be	9	43.3	6.7	**0.0142**	0.002	14.4	ug/L	20	Standard
	Al	27	10504.4	54.9	**0.0440**	0.030	68.3	ug/L	1307	Standard
	Sc	45	44657.4	2.0				ug/L	41174	Standard
	Ti	47	39.3	11.5	**0.0270**	0.014	53.3	ug/L	27	Standard
	V	51	1529.0	2.6	**-0.0269**	0.007	25.9	ug/L	1434	Standard
	Cr	52	7711.0	1.1	**-0.0906**	0.015	16.9	ug/L	7733	Standard
	Cr	53	511.7	5.7	**0.0505**	0.033	65.1	ug/L	442	Standard
	Mn	55	1157.7	24.7	**0.0401**	0.037	91.8	ug/L	723	Standard
	Co	59	342.7	7.9	**0.0119**	0.004	32.6	ug/L	217	Standard
	Ni	60	345.0	7.1	**0.0004**	0.013	3536.3	ug/L	304	Standard
	Cu	65	196.7	14.8	**0.0150**	0.014	96.7	ug/L	181	Standard
	Zn	66	265.3	6.8	**0.0197**	0.016	82.6	ug/L	215	Standard
>	**Ge**	72	564532.3	1.4				ug/L	520809	Standard
	As	75	-63.0	4.9	**-0.0020**	0.003	148.8	ug/L	-52	Standard
	Se	82	13.5	49.1	**-0.0274**	0.049	178.6	ug/L	17	Standard
	Se-1	77	66.7	9.6	**0.0356**	0.080	224.7	ug/L	56	Standard
>	**Ga**	71	36.7	34.3				mg/L	25	Standard
	Rb	85	50.0	17.3				ug/L	28	Standard
	Y	89	485264.3	1.4				ug/L	447395	Standard
>	**Rh**	103	23.3	65.5				ug/L	15	Standard
	Mo	98	248.2	9.5	**0.0519**	0.007	13.4	ug/L	113	Standard
	Ag	107	217.7	28.5	**0.0151**	0.008	51.7	ug/L	108	Standard
	Cd	111	38.2	50.7	**0.0130**	0.008	59.2	mg/L	3	Standard
	Cd	114	103.6	56.8	**0.0168**	0.009	56.1	ug/L	20	Standard
>	**In**	115	676839.2	0.6				ug/L	625728	Standard
	Sn	118	985.0	18.1	**0.0572**	0.025	43.7	ug/L	568	Standard
	Sb	123	1289.0	34.6	**0.1967**	0.079	40.2	ug/L	612	Standard
	Ba	135	163.7	48.0	**0.0515**	0.033	64.0	ug/L	21	Standard
	Ce	140	190.0	43.5				ug/L	245	Standard
>	**Tb**	159	1027800.2	0.9				ug/L	950397	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	185.7	43.6	**0.0185**	0.008	45.3	ug/L	15	Standard
	Tl	205	140.0	34.4	**0.0066**	0.006	85.8	ug/L	13	Standard
	Pb	206	391.7	5.7	**0.0205**	0.004	17.4	ug/L	264	Standard
	Pb	207	348.0	8.5	**0.0168**	0.005	31.6	ug/L	222	Standard
	Pb	208	1428.4	8.6	**0.0149**	0.005	36.0	ug/L	959	Standard
	U	238	152.0	24.6	**0.0173**	0.004	24.9	ug/L	9	Standard
>	**Bi**	209	594942.4	0.2				ug/L	552821	Standard

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Na	23	1.7	173.2	**4.6930**	8.120	173.0	mg/L	2	Standard
Mg	24	61.7	4.7	**0.0063**	0.004	70.3	mg/L	55	Standard
K	39	21.7	58.1	**-0.0541**	0.046	85.2	mg/L	28	Standard
Ca	43	16.7	45.8	**-1.0495**	0.670	63.8	mg/L	27	Standard
Fe	54	185.9	12.3	**0.0354**	0.014	39.9	mg/L	147	Standard
Fe	57	231.7	7.6	**-0.1482**	0.038	25.4	mg/L	268	Standard
> **Sc-1**	45	44657.4	2.0				mg/L	41174	Standard
Cl	35	83476.7	1.5				ug/L	69550	Standard
Kr	83	1.0	173.2				ug/L	1	Standard
Br	81	2133.5	9.1				ug/L	1950	Standard
P	31	25304.5	3.5				ug/L	21156	Standard
S	34	4207.3	4.6				ug/L	3419	Standard
Sr	88	80.0	16.5				ug/L	72	Standard
C	12	116.7	44.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	17	Standard
Dy	164	15.7	39.4				mg/L	16	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	16377.2	4.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.395	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.168
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.619
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606144601
Sample Date/Time: Friday, July 01, 2016 12:22:36
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85066.5	1.2				ug/L	76456	Standard
	Be	9	16.7	45.8	**-0.0065**	0.006	94.4	ug/L	20	Standard
	Al	27	9710029.6	1.9	**50.9822**	1.574	3.1	ug/L	1307	Standard
	Sc	45	45336.1	0.8				ug/L	41174	Standard
	Ti	47	130.7	11.5	**0.2865**	0.040	13.8	ug/L	27	Standard
	V	51	2965.5	17.4	**0.1358**	0.062	45.7	ug/L	1434	Standard
	Cr	52	10925.6	1.4	**0.2804**	0.032	11.4	ug/L	7733	Standard
	Cr	53	6674.8	19.2	**5.7008**	1.204	21.1	ug/L	442	Standard
	Mn	55	17608.9	0.7	**2.0519**	0.031	1.5	ug/L	723	Standard
	Co	59	843.4	6.2	**0.0725**	0.007	9.6	ug/L	217	Standard
	Ni	60	3752.8	1.2	**1.5211**	0.029	1.9	ug/L	304	Standard
	Cu	65	735.7	3.5	**0.2597**	0.015	5.9	ug/L	181	Standard
	Zn	66	4713.1	0.8	**3.3806**	0.039	1.2	ug/L	215	Standard
>	**Ge**	72	562685.3	1.1				ug/L	520809	Standard
	As	75	331.7	14.1	**0.2942**	0.038	12.9	ug/L	-52	Standard
	Se	82	169.7	3.4	**1.1168**	0.055	5.0	ug/L	17	Standard
	Se-1	77	298.3	16.2	**2.5437**	0.506	19.9	ug/L	56	Standard
>	**Ga**	71	43.3	17.6				mg/L	25	Standard
	Rb	85	1375.1	8.1				ug/L	28	Standard
	Y	89	479863.0	1.4				ug/L	447395	Standard
>	**Rh**	103	75.0	23.1				ug/L	15	Standard
	Mo	98	184.0	20.7	**0.0331**	0.012	35.3	ug/L	113	Standard
	Ag	107	187.7	22.7	**0.0116**	0.006	47.6	ug/L	108	Standard
	Cd	111	61.4	13.6	**0.0226**	0.003	14.9	mg/L	3	Standard
	Cd	114	163.1	19.9	**0.0268**	0.005	19.9	ug/L	20	Standard
>	**In**	115	667538.0	0.2				ug/L	625728	Standard
	Sn	118	1128.4	13.7	**0.0801**	0.022	27.7	ug/L	568	Standard
	Sb	123	642.2	32.3	**0.0827**	0.037	45.2	ug/L	612	Standard
	Ba	135	124733.7	0.4	**53.7257**	0.253	0.5	ug/L	21	Standard
	Ce	140	376.7	16.7				ug/L	245	Standard
>	**Tb**	159	1007994.8	2.0				ug/L	950397	Standard
	Ho	165	16.7	45.8				ug/L	7	Standard
	Tl	203	197.3	10.9	**0.0203**	0.002	12.2	ug/L	15	Standard
	Tl	205	216.7	21.8	**0.0163**	0.006	35.8	ug/L	13	Standard
	Pb	206	891.0	6.5	**0.1071**	0.008	7.9	ug/L	264	Standard
	Pb	207	795.4	2.4	**0.1022**	0.003	2.6	ug/L	222	Standard
	Pb	208	3278.5	4.0	**0.1014**	0.007	7.1	ug/L	959	Standard
	U	238	85.3	43.4	**0.0099**	0.004	45.2	ug/L	9	Standard
>	**Bi**	209	576617.3	0.8				ug/L	552821	Standard

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Na	23	5.0	0.0	**13.5582**	0.108	0.8	mg/L	2	Standard
Mg	24	5319.3	4.2	**5.5837**	0.252	4.5	mg/L	55	Standard
K	39	98.3	41.1	**0.2120**	0.143	67.6	mg/L	28	Standard
Ca	43	363.3	7.8	**27.5274**	2.210	8.0	mg/L	27	Standard
Fe	54	179.0	5.5	**0.0286**	0.006	20.9	mg/L	147	Standard
Fe	57	463.3	13.0	**0.4888**	0.165	33.8	mg/L	268	Standard
> **Sc-1**	45	45336.1	0.8				mg/L	41174	Standard
Cl	35	89142.8	0.6				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	30834.8	6.1				ug/L	1950	Standard
P	31	26140.9	1.9				ug/L	21156	Standard
S	34	4027.2	2.4				ug/L	3419	Standard
Sr	88	260.0	15.3				ug/L	72	Standard
C	12	170.0	10.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	17	Standard
Dy	164	38.6	3.3				mg/L	16	Standard
Ho-1	165	16.7	45.8				mg/L	7	Standard
Er	166	30.0	88.2				mg/L	7	Standard
I	127	3538.7	10.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.262	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.041	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.682
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.305
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606144701 WG574416-03
Sample Date/Time: Friday, July 01, 2016 12:25:48
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88482.7	2.3				ug/L	76456	Standard
	Be	9	38.3	39.8	**0.0099**	0.012	125.1	ug/L	20	Standard
	Al	27	11359959.6	1.4	**57.3517**	1.667	2.9	ug/L	1307	Standard
	Sc	45	45563.4	2.6				ug/L	41174	Standard
	Ti	47	479.3	13.4	**1.2787**	0.172	13.4	ug/L	27	Standard
	V	51	3530.4	7.8	**0.1998**	0.034	17.3	ug/L	1434	Standard
	Cr	52	12134.2	0.3	**0.4209**	0.011	2.6	ug/L	7733	Standard
	Cr	53	7648.6	5.0	**6.6019**	0.407	6.2	ug/L	442	Standard
	Mn	55	16091.5	2.0	**1.8699**	0.055	2.9	ug/L	723	Standard
	Co	59	1173.0	4.1	**0.1126**	0.006	5.8	ug/L	217	Standard
	Ni	60	3889.5	2.3	**1.5848**	0.031	1.9	ug/L	304	Standard
	Cu	65	1317.7	0.5	**0.5246**	0.003	0.5	ug/L	181	Standard
	Zn	66	3687.1	0.9	**2.6100**	0.006	0.2	ug/L	215	Standard
>	**Ge**	72	561722.8	0.8				ug/L	520809	Standard
	As	75	1392.1	5.5	**1.0905**	0.054	4.9	ug/L	-52	Standard
	Se	82	606.7	3.3	**4.3252**	0.116	2.7	ug/L	17	Standard
	Se-1	77	418.0	2.5	**3.8492**	0.119	3.1	ug/L	56	Standard
>	**Ga**	71	115.0	8.7				mg/L	25	Standard
	Rb	85	5234.2	9.4				ug/L	28	Standard
	Y	89	487944.7	1.1				ug/L	447395	Standard
>	**Rh**	103	568.3	20.1				ug/L	15	Standard
	Mo	98	1044.2	2.3	**0.3054**	0.008	2.6	ug/L	113	Standard
	Ag	107	187.3	42.9	**0.0121**	0.011	91.2	ug/L	108	Standard
	Cd	111	55.0	27.2	**0.0204**	0.006	30.3	mg/L	3	Standard
	Cd	114	135.5	6.2	**0.0227**	0.001	5.1	ug/L	20	Standard
>	**In**	115	656101.2	1.3				ug/L	625728	Standard
	Sn	118	1038.4	15.8	**0.0699**	0.026	37.7	ug/L	568	Standard
	Sb	123	573.4	30.4	**0.0724**	0.034	46.6	ug/L	612	Standard
	Ba	135	501979.0	0.4	**220.0552**	2.127	1.0	ug/L	21	Standard
	Ce	140	2408.5	3.7				ug/L	245	Standard
>	**Tb**	159	999721.2	1.2				ug/L	950397	Standard
	Ho	165	475.0	13.8				ug/L	7	Standard
	Tl	203	180.7	18.9	**0.0191**	0.004	19.9	ug/L	15	Standard
	Tl	205	181.7	18.3	**0.0127**	0.004	33.1	ug/L	13	Standard
	Pb	206	1433.1	5.5	**0.2055**	0.013	6.5	ug/L	264	Standard
	Pb	207	1269.4	7.4	**0.1971**	0.019	9.6	ug/L	222	Standard
	Pb	208	5249.0	0.8	**0.1978**	0.003	1.5	ug/L	959	Standard
	U	238	833.4	3.5	**0.1015**	0.003	3.3	ug/L	9	Standard
>	**Bi**	209	561437.9	0.5				ug/L	552821	Standard

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Na	23	3.3	86.6	**9.1266**	7.900	86.6	mg/L	2	Standard
Mg	24	22316.4	4.6	**23.4898**	0.474	2.0	mg/L	55	Standard
K	39	291.7	17.2	**0.8820**	0.191	21.6	mg/L	28	Standard
Ca	43	361.7	17.8	**27.2179**	4.974	18.3	mg/L	27	Standard
Fe	54	219.1	19.9	**0.0560**	0.027	47.8	mg/L	147	Standard
Fe	57	508.3	13.1	**0.6052**	0.153	25.3	mg/L	268	Standard
> **Sc-1**	45	45563.4	2.6				mg/L	41174	Standard
Cl	35	95139.1	0.6				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	117746.0	3.1				ug/L	1950	Standard
P	31	26077.4	3.3				ug/L	21156	Standard
S	34	3920.5	3.9				ug/L	3419	Standard
Sr	88	1768.4	4.8				ug/L	72	Standard
C	12	193.3	38.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	89.2				mg/L	17	Standard
Dy	164	700.0	19.1				mg/L	16	Standard
Ho-1	165	475.0	13.8				mg/L	7	Standard
Er	166	486.7	19.4				mg/L	7	Standard
I	127	22775.4	2.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.731	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.856	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.854
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.559
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144701DP WG574416-10
Sample Date/Time: Friday, July 01, 2016 12:28:59
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	88142.4	1.7				ug/L	76456	Standard
	Be	9	40.0	37.5	**0.0111**	0.011	101.8	ug/L	20	Standard
	Al	27	11494838.5	2.0	**58.2408**	1.266	2.2	ug/L	1307	Standard
	Sc	45	46242.2	2.8				ug/L	41174	Standard
	Ti	47	491.0	28.0	**1.3133**	0.392	29.8	ug/L	27	Standard
	V	51	4065.2	7.6	**0.2601**	0.033	12.8	ug/L	1434	Standard
	Cr	52	12264.0	1.3	**0.4365**	0.008	1.9	ug/L	7733	Standard
	Cr	53	8637.5	5.6	**7.5132**	0.490	6.5	ug/L	442	Standard
	Mn	55	16026.8	1.0	**1.8627**	0.011	0.6	ug/L	723	Standard
	Co	59	1127.4	3.0	**0.1071**	0.004	3.8	ug/L	217	Standard
	Ni	60	3889.8	1.2	**1.5861**	0.030	1.9	ug/L	304	Standard
	Cu	65	1351.4	4.3	**0.5403**	0.027	5.0	ug/L	181	Standard
	Zn	66	3072.3	1.9	**2.1459**	0.033	1.5	ug/L	215	Standard
>	Ge	72	561430.2	0.7				ug/L	520809	Standard
	As	75	1450.6	6.2	**1.1355**	0.075	6.6	ug/L	-52	Standard
	Se	82	626.4	4.3	**4.4737**	0.217	4.8	ug/L	17	Standard
	Se-1	77	446.7	4.4	**4.1629**	0.222	5.3	ug/L	56	Standard
>	Ga	71	118.3	21.3				mg/L	25	Standard
	Rb	85	5335.9	4.4				ug/L	28	Standard
	Y	89	485232.7	0.7				ug/L	447395	Standard
>	Rh	103	503.3	5.6				ug/L	15	Standard
	Mo	98	890.3	4.1	**0.2555**	0.010	3.8	ug/L	113	Standard
	Ag	107	130.0	4.8	**0.0043**	0.001	19.6	ug/L	108	Standard
	Cd	111	38.1	10.0	**0.0134**	0.002	12.3	mg/L	3	Standard
	Cd	114	93.0	28.3	**0.0155**	0.004	28.0	ug/L	20	Standard
>	In	115	659077.6	0.9				ug/L	625728	Standard
	Sn	118	881.7	14.6	**0.0459**	0.019	42.5	ug/L	568	Standard
	Sb	123	507.6	19.6	**0.0596**	0.019	31.6	ug/L	612	Standard
	Ba	135	515199.9	0.5	**224.8243**	2.217	1.0	ug/L	21	Standard
	Ce	140	2820.3	8.4				ug/L	245	Standard
>	Tb	159	1000855.8	0.8				ug/L	950397	Standard
	Ho	165	511.7	6.7				ug/L	7	Standard
	Tl	203	145.0	5.2	**0.0151**	0.001	5.3	ug/L	15	Standard
	Tl	205	140.0	29.2	**0.0075**	0.005	66.5	ug/L	13	Standard
	Pb	206	896.0	1.8	**0.1117**	0.003	2.6	ug/L	264	Standard
	Pb	207	768.4	3.7	**0.1007**	0.005	5.0	ug/L	222	Standard
	Pb	208	3189.1	0.1	**0.1009**	0.001	0.5	ug/L	959	Standard
	U	238	824.4	5.0	**0.1002**	0.005	5.0	ug/L	9	Standard
>	Bi	209	562695.6	0.4				ug/L	552821	Standard

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Na	23	8.3	34.6	**22.1713**	7.744	34.9	mg/L	2	Standard
Mg	24	23199.4	1.6	**24.0879**	0.996	4.1	mg/L	55	Standard
K	39	276.7	2.8	**0.8134**	0.006	0.8	mg/L	28	Standard
Ca	43	471.7	6.8	**35.7746**	3.568	10.0	mg/L	27	Standard
Fe	54	212.8	23.2	**0.0499**	0.035	69.4	mg/L	147	Standard
Fe	57	470.0	11.3	**0.4850**	0.177	36.5	mg/L	268	Standard
> **Sc-1**	45	46242.2	2.8				mg/L	41174	Standard
Cl	35	96975.4	1.3				ug/L	69550	Standard
Kr	83	2.3	137.8				ug/L	1	Standard
Br	81	120957.8	2.8				ug/L	1950	Standard
P	31	25446.4	2.8				ug/L	21156	Standard
S	34	3975.5	1.0				ug/L	3419	Standard
Sr	88	1878.4	2.6				ug/L	72	Standard
C	12	223.3	38.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	17	Standard
Dy	164	658.1	9.2				mg/L	16	Standard
Ho-1	165	511.7	6.7				mg/L	7	Standard
Er	166	526.7	11.0				mg/L	7	Standard
I	127	23127.6	2.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.285	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.800	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.330
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.786
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144701DP WG574416-10
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Method 6020 - Summary Report

Sample ID: L1606128901
Sample Date/Time: Friday, July 01, 2016 12:32:11
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	100202.1	2.7				ug/L	76456	Standard
	Be	9	85.0	61.4	**0.0383**	0.036	94.9	ug/L	20	Standard
	Al	27	121494771.0	1.8	**541.6309**	8.514	1.6	ug/L	1307	Standard
	Sc	45	48803.5	2.8				ug/L	41174	Standard
	Ti	47	545.3	5.0	**1.5278**	0.038	2.5	ug/L	27	Standard
	V	51	10661.2	18.0	**1.0481**	0.197	18.8	ug/L	1434	Standard
	Cr	52	662482.0	2.6	**77.9794**	0.550	0.7	ug/L	7733	Standard
	Cr	53	138513.8	2.3	**131.6729**	2.729	2.1	ug/L	442	Standard
	Mn	55	5966787.8	1.9	**759.5704**	10.887	1.4	ug/L	723	Standard
	Co	59	181210.6	0.8	**22.7724**	0.421	1.8	ug/L	217	Standard
	Ni	60	645750.8	2.4	**299.7645**	3.348	1.1	ug/L	304	Standard
	Cu	65	22297.4	3.7	**10.4538**	0.196	1.9	ug/L	181	Standard
	Zn	66	11919.4	2.6	**9.1948**	0.114	1.2	ug/L	215	Standard
>	Ge	72	540486.8	2.6				ug/L	520809	Standard
	As	75	4102.0	1.8	**3.2473**	0.027	0.8	ug/L	-52	Standard
	Se	82	1886.5	4.1	**14.2618**	0.413	2.9	ug/L	17	Standard
	Se-1	77	4801.8	0.7	**53.4605**	1.123	2.1	ug/L	56	Standard
>	Ga	71	275.0	24.6				mg/L	25	Standard
	Rb	85	16008.5	1.9				ug/L	28	Standard
	Y	89	482574.6	0.5				ug/L	447395	Standard
>	Rh	103	891.7	13.1				ug/L	15	Standard
	Mo	98	6427.1	1.7	**2.1501**	0.036	1.7	ug/L	113	Standard
	Ag	107	215.3	42.5	**0.0178**	0.013	73.5	ug/L	108	Standard
	Cd	111	1192.8	4.2	**0.5277**	0.023	4.3	mg/L	3	Standard
	Cd	114	2955.5	4.3	**0.5305**	0.024	4.6	ug/L	20	Standard
>	In	115	611635.6	0.3				ug/L	625728	Standard
	Sn	118	1171.7	1.6	**0.1020**	0.003	2.8	ug/L	568	Standard
	Sb	123	952.5	13.3	**0.1549**	0.025	16.4	ug/L	612	Standard
	Ba	135	5659971.5	1.5	**2661.5360**	36.316	1.4	ug/L	21	Standard
	Ce	140	34602.8	2.7				ug/L	245	Standard
>	Tb	159	987729.2	0.4				ug/L	950397	Standard
	Ho	165	555.0	3.6				ug/L	7	Standard
	Tl	203	271.3	38.8	**0.0315**	0.013	40.1	ug/L	15	Standard
	Tl	205	228.3	29.2	**0.0208**	0.009	43.4	ug/L	13	Standard
	Pb	206	682.3	7.9	**0.0848**	0.010	12.2	ug/L	264	Standard
	Pb	207	562.7	4.7	**0.0706**	0.006	7.9	ug/L	222	Standard
	Pb	208	2400.7	5.1	**0.0736**	0.007	9.1	ug/L	959	Standard
	U	238	485.7	17.4	**0.0640**	0.011	17.8	ug/L	9	Standard
>	Bi	209	518402.7	0.8				ug/L	552821	Standard

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Na	23	6.7	43.3	**16.7312**	6.981	41.7	mg/L	2	Standard
Mg	24	234951.0	0.3	**231.6239**	7.038	3.0	mg/L	55	Standard
K	39	286.7	15.7	**0.7989**	0.169	21.2	mg/L	28	Standard
Ca	43	935.0	7.2	**69.1820**	3.528	5.1	mg/L	27	Standard
Fe	54	758.4	8.2	**0.4032**	0.043	10.6	mg/L	147	Standard
Fe	57	1138.4	6.9	**2.1447**	0.127	5.9	mg/L	268	Standard
> **Sc-1**	45	48803.5	2.8				mg/L	41174	Standard
Cl	35	88877.9	0.3				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	391239.0	2.6				ug/L	1950	Standard
P	31	37070.3	1.2				ug/L	21156	Standard
S	34	4178.9	3.9				ug/L	3419	Standard
Sr	88	2831.9	1.5				ug/L	72	Standard
C	12	466.7	21.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	17.3				mg/L	17	Standard
Dy	164	667.5	12.4				mg/L	16	Standard
Ho-1	165	555.0	3.6				mg/L	7	Standard
Er	166	540.0	8.5				mg/L	7	Standard
I	127	188266.3	8.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		131.059	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.778	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.748
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.774
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Cr 53 Upper, S, EEE	Cr	53	

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Mn 55 Upper, S, EEE	Mn	55
Ni 60 Upper, S, EEE	Ni	60
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606128904
Sample Date/Time: Friday, July 01, 2016 12:35:23
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80174.9	0.5				ug/L	76456	Standard
	Be	9	53.3	27.1	**0.0255**	0.012	47.2	ug/L	20	Standard
	Al	27	1032791.8	1.6	**5.7430**	0.086	1.5	ug/L	1307	Standard
	Sc	45	47549.6	3.6				ug/L	41174	Standard
	Ti	47	1435.7	2.3	**3.8643**	0.058	1.5	ug/L	27	Standard
	V	51	10110.4	0.9	**0.9038**	0.025	2.8	ug/L	1434	Standard
	Cr	52	20122.7	4.1	**1.2588**	0.042	3.3	ug/L	7733	Standard
	Cr	53	3665.5	16.0	**2.8260**	0.446	15.8	ug/L	442	Standard
	Mn	55	288289.9	2.5	**34.0207**	0.139	0.4	ug/L	723	Standard
	Co	59	1477.7	1.3	**0.1434**	0.004	2.6	ug/L	217	Standard
	Ni	60	4239.3	2.2	**1.6775**	0.005	0.3	ug/L	304	Standard
	Cu	65	5707.4	2.9	**2.4318**	0.022	0.9	ug/L	181	Standard
	Zn	66	6174.6	2.5	**4.3354**	0.036	0.8	ug/L	215	Standard
>	Ge	72	581260.9	2.3				ug/L	520809	Standard
	As	75	447.8	4.7	**0.3704**	0.019	5.1	ug/L	-52	Standard
	Se	82	65.6	5.7	**0.3388**	0.024	6.9	ug/L	17	Standard
	Se-1	77	141.0	9.5	**0.7917**	0.108	13.6	ug/L	56	Standard
>	Ga	71	390.0	12.2				mg/L	25	Standard
	Rb	85	14513.6	3.3				ug/L	28	Standard
	Y	89	508182.1	0.9				ug/L	447395	Standard
>	Rh	103	35.0	14.3				ug/L	15	Standard
	Mo	98	3302.1	0.9	**0.9834**	0.006	0.6	ug/L	113	Standard
	Ag	107	192.0	6.8	**0.0118**	0.002	15.7	ug/L	108	Standard
	Cd	111	79.5	7.9	**0.0295**	0.002	7.8	mg/L	3	Standard
	Cd	114	220.0	7.1	**0.0356**	0.003	7.0	ug/L	20	Standard
>	In	115	678248.4	0.8				ug/L	625728	Standard
	Sn	118	933.4	10.8	**0.0496**	0.015	30.5	ug/L	568	Standard
	Sb	123	584.6	1.8	**0.0706**	0.002	3.0	ug/L	612	Standard
	Ba	135	45177.6	1.6	**19.1408**	0.317	1.7	ug/L	21	Standard
	Ce	140	30016.4	0.4				ug/L	245	Standard
>	Tb	159	1007751.2	0.8				ug/L	950397	Standard
	Ho	165	761.7	12.8				ug/L	7	Standard
	Tl	203	113.3	7.1	**0.0112**	0.001	7.0	ug/L	15	Standard
	Tl	205	111.7	14.4	**0.0035**	0.002	52.8	ug/L	13	Standard
	Pb	206	3404.0	3.3	**0.5260**	0.017	3.3	ug/L	264	Standard
	Pb	207	2818.6	2.1	**0.4734**	0.010	2.1	ug/L	222	Standard
	Pb	208	12328.3	2.3	**0.5080**	0.010	2.0	ug/L	959	Standard
	U	238	374.0	2.0	**0.0437**	0.001	1.8	ug/L	9	Standard
>	Bi	209	583367.9	0.5				ug/L	552821	Standard

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Na	23	1.7	173.2	**4.1425**	7.166	173.0	mg/L	2	Standard
Mg	24	5377.6	1.9	**5.3817**	0.098	1.8	mg/L	55	Standard
K	39	255.0	12.2	**0.7172**	0.121	16.8	mg/L	28	Standard
Ca	43	56.7	51.7	**1.9556**	2.109	107.9	mg/L	27	Standard
Fe	54	965.3	12.0	**0.5554**	0.055	10.0	mg/L	147	Standard
Fe	57	456.7	2.8	**0.4120**	0.054	13.1	mg/L	268	Standard
> **Sc-1**	45	47549.6	3.6				mg/L	41174	Standard
Cl	35	89186.5	3.0				ug/L	69550	Standard
Kr	83	2.3	89.2				ug/L	1	Standard
Br	81	9616.5	21.7				ug/L	1950	Standard
P	31	24750.2	1.9				ug/L	21156	Standard
S	34	3972.2	3.0				ug/L	3419	Standard
Sr	88	126.7	22.8				ug/L	72	Standard
C	12	306.7	35.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	89.2				mg/L	17	Standard
Dy	164	1037.0	4.9				mg/L	16	Standard
Ho-1	165	761.7	12.8				mg/L	7	Standard
Er	166	690.0	14.7				mg/L	7	Standard
I	127	33632.4	5.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.864	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.607	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.393
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.526
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129003
Sample Date/Time: Friday, July 01, 2016 12:38:34
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84017.4	2.6				ug/L	76456	Standard
	Be	9	56.7	41.7	**0.0265**	0.020	76.1	ug/L	20	Standard
	Al	27	11410287.5	2.4	**60.6815**	2.547	4.2	ug/L	1307	Standard
	Sc	45	47460.9	2.7				ug/L	41174	Standard
	Ti	47	632.0	2.0	**1.7083**	0.053	3.1	ug/L	27	Standard
	V	51	4979.6	9.0	**0.3608**	0.043	11.9	ug/L	1434	Standard
	Cr	52	16733.9	1.7	**0.9422**	0.057	6.1	ug/L	7733	Standard
	Cr	53	16242.1	5.6	**14.4384**	0.968	6.7	ug/L	442	Standard
	Mn	55	2106790.2	0.3	**257.0785**	2.759	1.1	ug/L	723	Standard
	Co	59	32596.4	0.7	**3.9025**	0.026	0.7	ug/L	217	Standard
	Ni	60	16570.4	1.9	**7.2264**	0.135	1.9	ug/L	304	Standard
	Cu	65	821.7	5.9	**0.2979**	0.020	6.6	ug/L	181	Standard
	Zn	66	15799.9	1.0	**11.7367**	0.172	1.5	ug/L	215	Standard
>	**Ge**	72	563660.3	1.3				ug/L	520809	Standard
	As	75	8280.0	0.5	**6.2429**	0.078	1.2	ug/L	-52	Standard
	Se	82	523.6	3.6	**3.7022**	0.090	2.4	ug/L	17	Standard
	Se-1	77	661.3	8.7	**6.4700**	0.719	11.1	ug/L	56	Standard
>	**Ga**	71	153.3	26.4				mg/L	25	Standard
	Rb	85	22955.7	2.8				ug/L	28	Standard
	Y	89	481907.4	0.8				ug/L	447395	Standard
>	**Rh**	103	116.7	21.1				ug/L	15	Standard
	Mo	98	609.0	1.0	**0.1691**	0.001	0.8	ug/L	113	Standard
	Ag	107	122.3	6.1	**0.0035**	0.001	30.0	ug/L	108	Standard
	Cd	111	546.6	6.3	**0.2253**	0.014	6.3	mg/L	3	Standard
	Cd	114	1227.9	3.1	**0.2066**	0.006	2.8	ug/L	20	Standard
>	**In**	115	652572.6	0.4				ug/L	625728	Standard
	Sn	118	2255.2	0.8	**0.2518**	0.004	1.5	ug/L	568	Standard
	Sb	123	396.5	22.6	**0.0398**	0.016	41.0	ug/L	612	Standard
	Ba	135	362353.4	0.4	**159.6881**	0.037	0.0	ug/L	21	Standard
	Ce	140	11014.0	2.2				ug/L	245	Standard
>	**Tb**	159	996583.7	1.1				ug/L	950397	Standard
	Ho	165	233.3	12.4				ug/L	7	Standard
	Tl	203	149.3	13.7	**0.0157**	0.002	13.7	ug/L	15	Standard
	Tl	205	146.7	18.8	**0.0085**	0.003	39.2	ug/L	13	Standard
	Pb	206	578.7	5.4	**0.0575**	0.005	8.6	ug/L	264	Standard
	Pb	207	484.0	0.4	**0.0472**	0.000	0.8	ug/L	222	Standard
	Pb	208	2033.4	0.6	**0.0477**	0.001	2.3	ug/L	959	Standard
	U	238	110.3	15.4	**0.0133**	0.002	15.3	ug/L	9	Standard
>	**Bi**	209	557686.0	0.7				ug/L	552821	Standard

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Na	23	1.7	173.2	**4.4332**	7.670	173.0	mg/L	2	Standard
Mg	24	51897.1	1.5	**52.5721**	2.174	4.1	mg/L	55	Standard
K	39	418.3	15.8	**1.2584**	0.193	15.3	mg/L	28	Standard
Ca	43	125.0	28.0	**7.4017**	2.760	37.3	mg/L	27	Standard
Fe	54	21570.7	2.6	**14.5894**	0.772	5.3	mg/L	147	Standard
Fe	57	5684.4	0.4	**14.3563**	0.459	3.2	mg/L	268	Standard
Sc-1	45	47460.9	2.7				mg/L	41174	Standard
Cl	35	86591.4	1.7				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	106345.6	3.6				ug/L	1950	Standard
P	31	31901.9	1.3				ug/L	21156	Standard
S	34	4255.6	0.8				ug/L	3419	Standard
Sr	88	460.0	1.1				ug/L	72	Standard
C	12	313.3	22.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	17	Standard
Dy	164	343.4	18.1				mg/L	16	Standard
Ho-1	165	233.3	12.4				mg/L	7	Standard
Er	166	276.7	12.7				mg/L	7	Standard
I	127	558531.1	6.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.890	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.228	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.290
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.880
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129005
Sample Date/Time: Friday, July 01, 2016 12:41:45
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85192.2	0.8				ug/L	76456	Standard
	Be	9	115.0	19.0	**0.0724**	0.018	24.9	ug/L	20	Standard
	Al	27	1289763.0	0.8	**6.7519**	0.110	1.6	ug/L	1307	Standard
	Sc	45	49773.3	2.8				ug/L	41174	Standard
	Ti	47	6020.5	2.3	**16.8263**	0.429	2.6	ug/L	27	Standard
	V	51	26156.2	0.5	**2.7133**	0.015	0.6	ug/L	1434	Standard
	Cr	52	22253.3	0.9	**1.5480**	0.025	1.6	ug/L	7733	Standard
	Cr	53	3922.2	9.7	**3.1342**	0.341	10.9	ug/L	442	Standard
	Mn	55	93436.0	2.3	**11.1943**	0.294	2.6	ug/L	723	Standard
	Co	59	5246.2	1.4	**0.5973**	0.011	1.8	ug/L	217	Standard
	Ni	60	3873.2	3.3	**1.5552**	0.062	4.0	ug/L	304	Standard
	Cu	65	2052.1	1.1	**0.8462**	0.011	1.3	ug/L	181	Standard
	Zn	66	6978.9	2.8	**5.0326**	0.156	3.1	ug/L	215	Standard
>	**Ge**	72	569140.4	0.4				ug/L	520809	Standard
	As	75	675.9	4.5	**0.5462**	0.024	4.5	ug/L	-52	Standard
	Se	82	122.4	11.2	**0.7599**	0.101	13.3	ug/L	17	Standard
	Se-1	77	130.3	23.7	**0.7102**	0.329	46.3	ug/L	56	Standard
>	**Ga**	71	1996.8	2.2				mg/L	25	Standard
	Rb	85	22308.1	1.4				ug/L	28	Standard
	Y	89	509803.9	1.2				ug/L	447395	Standard
>	**Rh**	103	36.7	31.5				ug/L	15	Standard
	Mo	98	326.9	4.2	**0.0762**	0.004	5.1	ug/L	113	Standard
	Ag	107	126.0	4.2	**0.0034**	0.001	17.4	ug/L	108	Standard
	Cd	111	98.1	1.5	**0.0371**	0.001	1.9	mg/L	3	Standard
	Cd	114	296.0	9.7	**0.0481**	0.005	9.6	ug/L	20	Standard
>	**In**	115	675122.4	0.6				ug/L	625728	Standard
	Sn	118	1330.1	3.9	**0.1073**	0.007	6.6	ug/L	568	Standard
	Sb	123	517.6	11.1	**0.0591**	0.010	16.6	ug/L	612	Standard
	Ba	135	76309.4	0.8	**32.4918**	0.196	0.6	ug/L	21	Standard
	Ce	140	95146.2	1.3				ug/L	245	Standard
>	**Tb**	159	1016001.4	1.3				ug/L	950397	Standard
	Ho	165	1441.7	4.0				ug/L	7	Standard
	Tl	203	251.7	11.3	**0.0262**	0.003	11.5	ug/L	15	Standard
	Tl	205	263.3	19.1	**0.0220**	0.006	26.3	ug/L	13	Standard
	Pb	206	4604.0	0.8	**0.7379**	0.007	1.0	ug/L	264	Standard
	Pb	207	3793.5	2.8	**0.6632**	0.027	4.1	ug/L	222	Standard
	Pb	208	16401.2	0.5	**0.7024**	0.005	0.7	ug/L	959	Standard
	U	238	755.4	2.7	**0.0898**	0.002	2.3	ug/L	9	Standard
>	**Bi**	209	575207.2	1.1				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	11827.9	2.0	**11.3730**	0.250	2.2	mg/L	55	Standard
K	39	63.3	12.1	**0.0696**	0.022	31.4	mg/L	28	Standard
Ca	43	26.7	39.0	**-0.4604**	0.739	160.5	mg/L	27	Standard
Fe	54	2263.3	3.3	**1.3710**	0.089	6.5	mg/L	147	Standard
Fe	57	798.4	7.3	**1.2235**	0.092	7.5	mg/L	268	Standard
> **Sc-1**	45	49773.3	2.8				mg/L	41174	Standard
Cl	35	80793.5	1.2				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	20093.3	2.4				ug/L	1950	Standard
P	31	35491.5	0.9				ug/L	21156	Standard
S	34	3435.4	2.3				ug/L	3419	Standard
Sr	88	86.7	16.7				ug/L	72	Standard
C	12	120.0	16.7				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	56.8				mg/L	17	Standard
Dy	164	2283.5	2.5				mg/L	16	Standard
Ho-1	165	1441.7	4.0				mg/L	7	Standard
Er	166	1253.4	17.9				mg/L	7	Standard
I	127	29910.2	19.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.427	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.280	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.894
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.049
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 12:44:58
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83031.9	1.8				ug/L	76456	Standard
	Be	9	62607.4	1.8	**51.4790**	0.092	0.2	ug/L	20	Standard
	Al	27	9205440.0	1.0	**49.5101**	0.482	1.0	ug/L	1307	Standard
	Sc	45	45279.2	0.9				ug/L	41174	Standard
	Ti	47	35616.8	0.8	**99.7569**	0.384	0.4	ug/L	27	Standard
	V	51	453381.0	1.3	**50.1773**	0.834	1.7	ug/L	1434	Standard
	Cr	52	454717.9	0.4	**50.3900**	0.329	0.7	ug/L	7733	Standard
	Cr	53	56792.9	2.0	**50.9006**	0.670	1.3	ug/L	442	Standard
	Mn	55	417865.9	1.4	**50.3140**	0.768	1.5	ug/L	723	Standard
	Co	59	427490.0	0.8	**50.9392**	0.677	1.3	ug/L	217	Standard
	Ni	60	114502.7	0.7	**50.2468**	0.055	0.1	ug/L	304	Standard
	Cu	65	113283.0	1.3	**50.6253**	0.452	0.9	ug/L	181	Standard
	Zn	66	67088.2	1.2	**49.8311**	0.666	1.3	ug/L	215	Standard
>	**Ge**	72	570265.5	0.7				ug/L	520809	Standard
	As	75	66940.7	0.7	**49.5659**	0.028	0.1	ug/L	-52	Standard
	Se	82	6904.8	0.9	**49.7902**	0.542	1.1	ug/L	17	Standard
	Se-1	77	4848.4	1.0	**51.1131**	0.306	0.6	ug/L	56	Standard
>	**Ga**	71	33.3	34.6				mg/L	25	Standard
	Rb	85	945.0	6.5				ug/L	28	Standard
	Y	89	486567.9	0.8				ug/L	447395	Standard
>	**Rh**	103	36.7	43.8				ug/L	15	Standard
	Mo	98	321546.8	0.2	**99.1357**	1.367	1.4	ug/L	113	Standard
	Ag	107	383263.2	0.3	**49.7591**	0.678	1.4	ug/L	108	Standard
	Cd	111	123447.9	0.3	**50.0091**	0.713	1.4	mg/L	3	Standard
	Cd	114	300381.5	2.0	**49.1538**	1.432	2.9	ug/L	20	Standard
>	**In**	115	670977.0	1.2				ug/L	625728	Standard
	Sn	118	339655.3	1.3	**49.1307**	0.150	0.3	ug/L	568	Standard
	Sb	123	274538.6	0.7	**49.5136**	0.951	1.9	ug/L	612	Standard
	Ba	135	114656.9	0.7	**49.1372**	0.870	1.8	ug/L	21	Standard
	Ce	140	131.7	33.2				ug/L	245	Standard
>	**Tb**	159	1007430.4	0.6				ug/L	950397	Standard
	Ho	165	15.0	88.2				ug/L	7	Standard
	Tl	203	470169.7	1.1	**50.6935**	0.361	0.7	ug/L	15	Standard
	Tl	205	427547.4	1.3	**51.9072**	0.778	1.5	ug/L	13	Standard
	Pb	206	295170.9	0.9	**50.4289**	0.577	1.1	ug/L	264	Standard
	Pb	207	268434.7	0.6	**50.4969**	0.171	0.3	ug/L	222	Standard
	Pb	208	1104478.8	0.4	**50.8716**	0.540	1.1	ug/L	959	Standard
	U	238	418715.2	0.4	**50.2797**	0.305	0.6	ug/L	9	Standard
>	**Bi**	209	571081.7	0.7				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4769.1	1.8	**5.0062**	0.108	2.1	mg/L	55	Standard
K	39	1336.7	4.6	**4.5306**	0.241	5.3	mg/L	28	Standard
Ca	43	75.0	17.6	**3.7457**	1.100	29.4	mg/L	27	Standard
Fe	54	7200.7	4.3	**5.0367**	0.239	4.8	mg/L	147	Standard
Fe	57	2128.5	4.4	**5.1427**	0.247	4.8	mg/L	268	Standard
> **Sc-1**	45	45279.2	0.9				mg/L	41174	Standard
Cl	35	81839.8	0.8				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	3040.3	8.6				ug/L	1950	Standard
P	31	24877.1	2.1				ug/L	21156	Standard
S	34	3887.2	7.0				ug/L	3419	Standard
Sr	88	81.7	7.1				ug/L	72	Standard
C	12	123.3	12.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	100.0				mg/L	17	Standard
Dy	164	9.4	3.0				mg/L	16	Standard
Ho-1	165	15.0	88.2				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	7	Standard
I	127	21875.8	2.3				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	102.958		
	Al	27	99.020		
	Sc	45			
	Ti	47	99.757		
	V	51	100.355		
	Cr	52	100.780		
	Cr	53			
	Mn	55	100.628		
	Co	59	101.878		
	Ni	60	100.494		
	Cu	65	101.251		
	Zn	66	99.662		
>	Ge	72		109.496	
	As	75	99.132		
	Se	82	99.580		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	99.136		
Ag	107	99.518		
Cd	111	100.018		
Cd	114			
> In	115			107.231
Sn	118	98.261		
Sb	123	99.027		
Ba	135	98.274		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.387		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.743		
U	238	100.559		
> Bi	209			103.303
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 12:48:10
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79667.3	2.3				ug/L	76456	Standard
	Be	9	48.3	39.2	**0.0215**	0.016	74.4	ug/L	20	Standard
	Al	27	13667.3	103.9	**0.0663**	0.079	119.0	ug/L	1307	Standard
	Sc	45	44725.9	0.8				ug/L	41174	Standard
	Ti	47	40.3	36.1	**0.0282**	0.040	143.2	ug/L	27	Standard
	V	51	1800.6	20.7	**0.0010**	0.041	3971.4	ug/L	1434	Standard
	Cr	52	8069.5	1.6	**-0.0611**	0.005	7.9	ug/L	7733	Standard
	Cr	53	805.0	12.6	**0.3085**	0.086	27.9	ug/L	442	Standard
	Mn	55	1891.2	86.3	**0.1261**	0.196	155.3	ug/L	723	Standard
	Co	59	402.0	57.1	**0.0183**	0.027	148.1	ug/L	217	Standard
	Ni	60	380.0	16.0	**0.0137**	0.026	190.1	ug/L	304	Standard
	Cu	65	200.3	16.4	**0.0153**	0.014	94.0	ug/L	181	Standard
	Zn	66	277.3	5.9	**0.0260**	0.012	46.5	ug/L	215	Standard
>	**Ge**	72	571534.4	1.1				ug/L	520809	Standard
	As	75	-32.7	47.9	**0.0211**	0.011	53.6	ug/L	-52	Standard
	Se	82	21.0	34.3	**0.0252**	0.052	206.6	ug/L	17	Standard
	Se-1	77	64.3	8.6	**0.0008**	0.051	6596.2	ug/L	56	Standard
>	**Ga**	71	30.0	16.7				mg/L	25	Standard
	Rb	85	26.7	75.8				ug/L	28	Standard
	Y	89	488434.0	1.5				ug/L	447395	Standard
>	**Rh**	103	18.3	56.8				ug/L	15	Standard
	Mo	98	360.1	51.7	**0.0867**	0.057	65.8	ug/L	113	Standard
	Ag	107	301.7	75.6	**0.0262**	0.029	112.6	ug/L	108	Standard
	Cd	111	35.8	64.4	**0.0121**	0.009	76.9	mg/L	3	Standard
	Cd	114	93.7	41.3	**0.0153**	0.006	41.1	ug/L	20	Standard
>	**In**	115	672952.0	0.6				ug/L	625728	Standard
	Sn	118	2098.5	22.4	**0.2192**	0.070	31.8	ug/L	568	Standard
	Sb	123	1021.0	31.2	**0.1501**	0.058	38.5	ug/L	612	Standard
	Ba	135	296.3	92.5	**0.1088**	0.117	107.6	ug/L	21	Standard
	Ce	140	101.7	62.5				ug/L	245	Standard
>	**Tb**	159	1018483.3	2.2				ug/L	950397	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	228.7	95.2	**0.0235**	0.023	98.1	ug/L	15	Standard
	Tl	205	170.0	71.4	**0.0105**	0.014	137.1	ug/L	13	Standard
	Pb	206	473.7	49.2	**0.0358**	0.039	109.0	ug/L	264	Standard
	Pb	207	396.7	45.3	**0.0273**	0.033	121.3	ug/L	222	Standard
	Pb	208	1490.7	28.8	**0.0193**	0.019	100.6	ug/L	959	Standard
	U	238	168.7	71.3	**0.0196**	0.014	72.1	ug/L	9	Standard
>	**Bi**	209	580702.6	1.0				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	85.0	38.6	**0.0310**	0.035	111.2	mg/L	55	Standard
K	39	35.0	37.8	**-0.0077**	0.046	604.4	mg/L	28	Standard
Ca	43	16.7	105.4	**-1.0542**	1.482	140.5	mg/L	27	Standard
Fe	54	153.9	28.2	**0.0123**	0.031	255.3	mg/L	147	Standard
Fe	57	300.0	3.3	**0.0447**	0.032	71.4	mg/L	268	Standard
> **Sc-1**	45	44725.9	0.8				mg/L	41174	Standard
Cl	35	82881.4	0.4				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	2540.2	1.8				ug/L	1950	Standard
P	31	24578.3	4.0				ug/L	21156	Standard
S	34	4135.6	7.4				ug/L	3419	Standard
Sr	88	55.0	27.3				ug/L	72	Standard
C	12	116.7	21.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	17	Standard
Dy	164	16.5	36.7				mg/L	16	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	16210.3	1.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.740	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.547
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.044
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW 07 WG574419-03
Sample Date/Time: Friday, July 01, 2016 12:58:36
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81259.0	1.7				ug/L	76456	Standard
	Be	9	25.0	52.9	**0.0011**	0.011	980.8	ug/L	20	Standard
	Al	27	43520.8	2.0	**0.2290**	0.003	1.2	ug/L	1307	Standard
	Sc	45	45160.6	1.8				ug/L	41174	Standard
	Ti	47	37.3	12.7	**0.0196**	0.013	67.8	ug/L	27	Standard
	V	51	1890.1	0.3	**0.0103**	0.002	20.9	ug/L	1434	Standard
	Cr	52	10254.5	1.2	**0.1819**	0.016	8.6	ug/L	7733	Standard
	Cr	53	800.0	8.4	**0.3021**	0.055	18.2	ug/L	442	Standard
	Mn	55	1844.4	0.9	**0.1201**	0.001	0.9	ug/L	723	Standard
	Co	59	227.3	7.0	**-0.0025**	0.002	69.8	ug/L	217	Standard
	Ni	60	435.3	6.3	**0.0376**	0.014	36.1	ug/L	304	Standard
	Cu	65	169.0	18.5	**0.0011**	0.014	1207.4	ug/L	181	Standard
	Zn	66	2605.6	4.5	**1.7518**	0.074	4.2	ug/L	215	Standard
>	**Ge**	72	573164.6	0.8				ug/L	520809	Standard
	As	75	-74.5	34.0	**-0.0097**	0.019	192.2	ug/L	-52	Standard
	Se	82	11.5	10.8	**-0.0437**	0.008	19.0	ug/L	17	Standard
	Se-1	77	70.7	5.9	**0.0666**	0.045	68.1	ug/L	56	Standard
>	**Ga**	71	35.0	65.5				mg/L	25	Standard
	Rb	85	83.3	9.2				ug/L	28	Standard
	Y	89	497110.0	0.3				ug/L	447395	Standard
>	**Rh**	103	13.3	43.3				ug/L	15	Standard
	Mo	98	63.4	20.9	**-0.0047**	0.004	88.1	ug/L	113	Standard
	Ag	107	104.7	2.9	**0.0005**	0.001	97.2	ug/L	108	Standard
	Cd	111	8.9	29.5	**0.0012**	0.001	90.2	mg/L	3	Standard
	Cd	114	20.2	129.3	**0.0033**	0.004	129.2	ug/L	20	Standard
>	**In**	115	681820.3	1.0				ug/L	625728	Standard
	Sn	118	1671.8	12.8	**0.1542**	0.031	19.9	ug/L	568	Standard
	Sb	123	510.3	25.3	**0.0569**	0.023	40.1	ug/L	612	Standard
	Ba	135	135.7	5.5	**0.0393**	0.003	7.0	ug/L	21	Standard
	Ce	140	68.3	33.0				ug/L	245	Standard
>	**Tb**	159	1025294.3	0.6				ug/L	950397	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	44.0	21.7	**0.0039**	0.001	25.6	ug/L	15	Standard
	Tl	205	40.0	25.0	**-0.0050**	0.001	25.0	ug/L	13	Standard
	Pb	206	314.3	3.7	**0.0090**	0.002	26.0	ug/L	264	Standard
	Pb	207	276.7	9.5	**0.0051**	0.005	106.7	ug/L	222	Standard
	Pb	208	1132.0	1.7	**0.0030**	0.001	48.7	ug/L	959	Standard
	U	238	26.0	17.6	**0.0028**	0.001	20.4	ug/L	9	Standard
>	**Bi**	209	581506.6	1.1				ug/L	552821	Standard

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Na	23	1.7	173.2	**4.6090**	7.974	173.0	mg/L	2	Standard
Mg	24	81.7	9.4	**0.0269**	0.009	33.7	mg/L	55	Standard
K	39	40.0	21.7	**0.0086**	0.030	348.4	mg/L	28	Standard
Ca	43	30.0	33.3	**0.0262**	0.793	3031.4	mg/L	27	Standard
Fe	54	180.2	26.2	**0.0304**	0.036	118.2	mg/L	147	Standard
Fe	57	258.3	6.2	**-0.0804**	0.042	52.2	mg/L	268	Standard
> **Sc-1**	45	45160.6	1.8				mg/L	41174	Standard
Cl	35	85551.6	2.1				ug/L	69550	Standard
Kr	83	1.0	173.2				ug/L	1	Standard
Br	81	2493.5	7.2				ug/L	1950	Standard
P	31	25546.6	9.0				ug/L	21156	Standard
S	34	4053.9	0.5				ug/L	3419	Standard
Sr	88	75.0	13.3				ug/L	72	Standard
C	12	136.7	53.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	69.3				mg/L	17	Standard
Dy	164	19.4	51.7				mg/L	16	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	10762.2	1.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.282	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.053	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.964
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.189
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 07 WG574419-04
Sample Date/Time: Friday, July 01, 2016 13:03:34
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80883.7	2.2				ug/L	76456	Standard
	Be	9	63273.5	1.3	**53.4233**	1.134	2.1	ug/L	20	Standard
	Al	27	15556.3	4.2	**0.0758**	0.006	7.3	ug/L	1307	Standard
	Sc	45	46230.4	2.2				ug/L	41174	Standard
	Ti	47	48.3	18.7	**0.0475**	0.025	52.8	ug/L	27	Standard
	V	51	465592.0	1.2	**50.1984**	0.441	0.9	ug/L	1434	Standard
	Cr	52	471783.2	1.2	**50.9433**	0.486	1.0	ug/L	7733	Standard
	Cr	53	57119.2	2.3	**49.8721**	1.291	2.6	ug/L	442	Standard
	Mn	55	436781.1	0.8	**51.2372**	0.113	0.2	ug/L	723	Standard
	Co	59	434567.5	1.2	**50.4450**	0.373	0.7	ug/L	217	Standard
	Ni	60	118551.0	1.3	**50.6835**	0.443	0.9	ug/L	304	Standard
	Cu	65	119119.1	1.3	**51.8651**	0.602	1.2	ug/L	181	Standard
	Zn	66	71172.1	1.7	**51.5055**	0.595	1.2	ug/L	215	Standard
>	**Ge**	72	585340.9	0.6				ug/L	520809	Standard
	As	75	69945.5	1.2	**50.4563**	0.545	1.1	ug/L	-52	Standard
	Se	82	7094.3	1.4	**49.8362**	0.433	0.9	ug/L	17	Standard
	Se-1	77	4867.8	0.7	**49.9806**	0.170	0.3	ug/L	56	Standard
>	**Ga**	71	31.7	24.1				mg/L	25	Standard
	Rb	85	36.7	41.7				ug/L	28	Standard
	Y	89	498458.5	0.8				ug/L	447395	Standard
>	**Rh**	103	18.3	41.7				ug/L	15	Standard
	Mo	98	78.0	18.4	**-0.0003**	0.004	1563.8	ug/L	113	Standard
	Ag	107	402127.6	1.2	**51.3787**	0.778	1.5	ug/L	108	Standard
	Cd	111	126507.9	1.2	**50.4309**	0.392	0.8	mg/L	3	Standard
	Cd	114	308784.3	0.8	**49.7196**	0.327	0.7	ug/L	20	Standard
>	**In**	115	681801.9	1.3				ug/L	625728	Standard
	Sn	118	1796.8	16.1	**0.1722**	0.043	25.0	ug/L	568	Standard
	Sb	123	288724.4	0.5	**51.2448**	0.727	1.4	ug/L	612	Standard
	Ba	135	116686.9	0.7	**49.2097**	0.376	0.8	ug/L	21	Standard
	Ce	140	85.0	38.6				ug/L	245	Standard
>	**Tb**	159	1014866.4	0.7				ug/L	950397	Standard
	Ho	165	16.7	45.8				ug/L	7	Standard
	Tl	203	482185.7	0.8	**50.5384**	0.275	0.5	ug/L	15	Standard
	Tl	205	444917.2	1.5	**52.5153**	1.373	2.6	ug/L	13	Standard
	Pb	206	312986.7	0.5	**51.9814**	0.469	0.9	ug/L	264	Standard
	Pb	207	271686.9	0.6	**49.6820**	0.381	0.8	ug/L	222	Standard
	Pb	208	1142411.3	0.4	**51.1494**	0.415	0.8	ug/L	959	Standard
	U	238	421119.4	1.0	**49.1551**	0.103	0.2	ug/L	9	Standard
>	**Bi**	209	587494.5	1.1				ug/L	552821	Standard

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Na	23	3.3	86.6	**8.7572**	7.580	86.6	mg/L	2	Standard
Mg	24	76.7	21.0	**0.0195**	0.016	83.2	mg/L	55	Standard
K	39	21.7	26.6	**-0.0575**	0.018	32.0	mg/L	28	Standard
Ca	43	18.3	83.3	**-0.9528**	1.279	134.3	mg/L	27	Standard
Fe	54	147.9	28.9	**0.0041**	0.028	686.0	mg/L	147	Standard
Fe	57	245.0	10.8	**-0.1326**	0.084	63.2	mg/L	268	Standard
> **Sc-1**	45	46230.4	2.2				mg/L	41174	Standard
Cl	35	86090.6	2.1				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	2420.2	0.7				ug/L	1950	Standard
P	31	25546.5	4.4				ug/L	21156	Standard
S	34	3980.5	6.3				ug/L	3419	Standard
Sr	88	56.7	20.4				ug/L	72	Standard
C	12	156.7	16.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	88.2				mg/L	17	Standard
Dy	164	19.7	89.4				mg/L	16	Standard
Ho-1	165	16.7	45.8				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	4735.7	3.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.792	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		112.391	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.961
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.272
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 07 WG574419-04
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Method 6020 - Summary Report

Sample ID: L1606140006 WG574419-01
Sample Date/Time: Friday, July 01, 2016 13:06:46
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80758.0	0.8				ug/L	76456	Standard
	Be	9	41.7	6.9	**0.0154**	0.002	16.2	ug/L	20	Standard
	Al	27	11868534.0	1.1	**65.6266**	0.514	0.8	ug/L	1307	Standard
	Sc	45	45759.0	1.2				ug/L	41174	Standard
	Ti	47	2320.2	10.4	**6.5166**	0.703	10.8	ug/L	27	Standard
	V	51	6253.1	3.7	**0.5063**	0.022	4.3	ug/L	1434	Standard
	Cr	52	20690.1	0.7	**1.4009**	0.007	0.5	ug/L	7733	Standard
	Cr	53	7241.7	4.8	**6.2224**	0.278	4.5	ug/L	442	Standard
	Mn	55	361893.7	0.6	**44.2063**	0.556	1.3	ug/L	723	Standard
	Co	59	1899.1	4.5	**0.2003**	0.011	5.6	ug/L	217	Standard
	Ni	60	3188.7	2.0	**1.2710**	0.022	1.8	ug/L	304	Standard
	Cu	65	3204.0	1.0	**1.3811**	0.024	1.8	ug/L	181	Standard
	Zn	66	3650.1	1.8	**2.5809**	0.057	2.2	ug/L	215	Standard
>	**Ge**	72	561976.5	0.7				ug/L	520809	Standard
	As	75	349.0	10.2	**0.3073**	0.028	9.1	ug/L	-52	Standard
	Se	82	95.4	7.6	**0.5731**	0.052	9.1	ug/L	17	Standard
	Se-1	77	310.3	6.8	**2.6788**	0.206	7.7	ug/L	56	Standard
>	**Ga**	71	306.7	3.4				mg/L	25	Standard
	Rb	85	9304.5	4.6				ug/L	28	Standard
	Y	89	479158.2	2.5				ug/L	447395	Standard
>	**Rh**	103	63.3	19.9				ug/L	15	Standard
	Mo	98	462.6	2.2	**0.1212**	0.004	3.1	ug/L	113	Standard
	Ag	107	229.3	10.2	**0.0174**	0.003	18.1	ug/L	108	Standard
	Cd	111	314.9	4.8	**0.1274**	0.007	5.3	mg/L	3	Standard
	Cd	114	778.8	0.7	**0.1296**	0.002	1.2	ug/L	20	Standard
>	**In**	115	659596.7	0.4				ug/L	625728	Standard
	Sn	118	3462.1	8.7	**0.4262**	0.046	10.8	ug/L	568	Standard
	Sb	123	25160.0	1.7	**4.5846**	0.068	1.5	ug/L	612	Standard
	Ba	135	24755.2	1.0	**10.7771**	0.149	1.4	ug/L	21	Standard
	Ce	140	10733.8	0.6				ug/L	245	Standard
>	**Tb**	159	997525.3	0.9				ug/L	950397	Standard
	Ho	165	248.3	11.4				ug/L	7	Standard
	Tl	203	323.7	9.0	**0.0349**	0.003	8.9	ug/L	15	Standard
	Tl	205	295.0	13.5	**0.0268**	0.005	17.8	ug/L	13	Standard
	Pb	206	13733.6	1.1	**2.3523**	0.014	0.6	ug/L	264	Standard
	Pb	207	11541.7	1.2	**2.1713**	0.021	1.0	ug/L	222	Standard
	Pb	208	49582.7	0.8	**2.2840**	0.012	0.5	ug/L	959	Standard
	U	238	794.4	5.3	**0.0971**	0.005	5.3	ug/L	9	Standard
>	**Bi**	209	559684.2	0.5				ug/L	552821	Standard

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Na	23	5.0	100.0	**13.3851**	13.441	100.4	mg/L	2	Standard
Mg	24	23146.0	2.0	**24.2692**	0.405	1.7	mg/L	55	Standard
K	39	161.7	7.1	**0.4263**	0.034	7.9	mg/L	28	Standard
Ca	43	226.7	16.0	**16.1036**	3.136	19.5	mg/L	27	Standard
Fe	54	423.4	7.8	**0.1999**	0.022	10.8	mg/L	147	Standard
Fe	57	503.3	8.4	**0.5885**	0.131	22.2	mg/L	268	Standard
> **Sc-1**	45	45759.0	1.2				mg/L	41174	Standard
Cl	35	89790.6	1.3				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	17466.7	4.8				ug/L	1950	Standard
P	31	27324.6	2.0				ug/L	21156	Standard
S	34	4078.9	2.0				ug/L	3419	Standard
Sr	88	211.7	20.1				ug/L	72	Standard
C	12	163.3	9.4				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	17	Standard
Dy	164	363.3	15.2				mg/L	16	Standard
Ho-1	165	248.3	11.4				mg/L	7	Standard
Er	166	280.0	3.6				mg/L	7	Standard
I	127	49912.2	3.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.627	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.904	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.413
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.242
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140007S WG574419-05
Sample Date/Time: Friday, July 01, 2016 13:09:57
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80711.1	0.9				ug/L	76456	Standard
	Be	9	64078.6	1.3	**54.2065**	0.745	1.4	ug/L	20	Standard
	Al	27	12211012.4	1.5	**67.5580**	0.517	0.8	ug/L	1307	Standard
	Sc	45	44934.9	0.8				ug/L	41174	Standard
	Ti	47	2064.8	6.8	**5.8866**	0.415	7.1	ug/L	27	Standard
	V	51	459064.1	0.1	**52.4156**	0.397	0.8	ug/L	1434	Standard
	Cr	52	459452.2	0.5	**52.5615**	0.550	1.0	ug/L	7733	Standard
	Cr	53	62920.4	1.2	**58.2380**	1.104	1.9	ug/L	442	Standard
	Mn	55	774817.1	0.6	**96.3273**	0.870	0.9	ug/L	723	Standard
	Co	59	418465.0	0.9	**51.4354**	0.672	1.3	ug/L	217	Standard
	Ni	60	114181.6	0.7	**51.6930**	0.726	1.4	ug/L	304	Standard
	Cu	65	110934.3	0.7	**51.1428**	0.660	1.3	ug/L	181	Standard
	Zn	66	70146.7	0.6	**53.7582**	0.090	0.2	ug/L	215	Standard
>	Ge	72	552840.2	0.7				ug/L	520809	Standard
	As	75	68517.6	0.7	**52.3310**	0.386	0.7	ug/L	-52	Standard
	Se	82	6918.4	0.6	**51.4649**	0.420	0.8	ug/L	17	Standard
	Se-1	77	5005.2	0.2	**54.4756**	0.506	0.9	ug/L	56	Standard
>	Ga	71	246.7	21.7				mg/L	25	Standard
	Rb	85	8369.0	3.4				ug/L	28	Standard
	Y	89	475828.1	0.8				ug/L	447395	Standard
>	Rh	103	60.0	8.3				ug/L	15	Standard
	Mo	98	444.1	3.8	**0.1178**	0.005	4.5	ug/L	113	Standard
	Ag	107	373105.8	0.7	**50.1488**	0.527	1.1	ug/L	108	Standard
	Cd	111	121300.2	0.5	**50.8704**	0.210	0.4	mg/L	3	Standard
	Cd	114	296777.5	0.3	**50.2713**	0.199	0.4	ug/L	20	Standard
>	In	115	648070.4	0.4				ug/L	625728	Standard
	Sn	118	3198.7	11.7	**0.3955**	0.054	13.6	ug/L	568	Standard
	Sb	123	305348.9	0.8	**57.0152**	0.685	1.2	ug/L	612	Standard
	Ba	135	127151.7	1.1	**56.4152**	0.853	1.5	ug/L	21	Standard
	Ce	140	10170.1	11.9				ug/L	245	Standard
>	Tb	159	984910.5	1.3				ug/L	950397	Standard
	Ho	165	243.3	11.3				ug/L	7	Standard
	Tl	203	460227.9	0.5	**50.9164**	0.584	1.1	ug/L	15	Standard
	Tl	205	419164.2	0.8	**52.2197**	1.079	2.1	ug/L	13	Standard
	Pb	206	308797.4	0.7	**54.1380**	1.001	1.8	ug/L	264	Standard
	Pb	207	269438.3	0.3	**52.0122**	0.916	1.8	ug/L	222	Standard
	Pb	208	1139591.7	0.5	**53.8600**	0.817	1.5	ug/L	959	Standard
	U	238	412122.6	0.9	**50.7770**	0.583	1.1	ug/L	9	Standard
>	Bi	209	556623.0	1.5				ug/L	552821	Standard

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Na	23	5.0	0.0	**13.6792**	0.103	0.8	mg/L	2	Standard
Mg	24	24264.4	1.3	**25.9117**	0.145	0.6	mg/L	55	Standard
K	39	138.3	27.1	**0.3549**	0.133	37.4	mg/L	28	Standard
Ca	43	288.3	17.1	**21.5709**	4.241	19.7	mg/L	27	Standard
Fe	54	394.0	6.5	**0.1843**	0.018	9.9	mg/L	147	Standard
Fe	57	461.7	10.0	**0.4961**	0.134	27.1	mg/L	268	Standard
> **Sc-1**	45	44934.9	0.8				mg/L	41174	Standard
Cl	35	90855.7	2.0				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	11284.2	7.1				ug/L	1950	Standard
P	31	27506.6	4.3				ug/L	21156	Standard
S	34	4052.2	3.2				ug/L	3419	Standard
Sr	88	215.0	8.1				ug/L	72	Standard
C	12	163.3	9.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	17.3				mg/L	17	Standard
Dy	164	319.9	13.5				mg/L	16	Standard
Ho-1	165	243.3	11.3				mg/L	7	Standard
Er	166	280.0	25.8				mg/L	7	Standard
I	127	66618.3	7.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.566	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.150	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.571
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.688
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606140008SD WG574419-06
Sample Date/Time: Friday, July 01, 2016 13:13:09
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79700.7	0.7				ug/L	76456	Standard
	Be	9	61700.4	1.6	**52.8560**	0.961	1.8	ug/L	20	Standard
	Al	27	12099353.2	1.1	**67.7900**	0.341	0.5	ug/L	1307	Standard
	Sc	45	46046.6	2.1				ug/L	41174	Standard
	Ti	47	1942.8	6.7	**5.5490**	0.345	6.2	ug/L	27	Standard
	V	51	439192.0	0.4	**50.2950**	0.725	1.4	ug/L	1434	Standard
	Cr	52	444362.9	0.8	**50.9606**	0.244	0.5	ug/L	7733	Standard
	Cr	53	61436.0	0.3	**57.0274**	0.463	0.8	ug/L	442	Standard
	Mn	55	751669.2	0.7	**93.7402**	1.592	1.7	ug/L	723	Standard
	Co	59	399707.3	0.9	**49.2832**	0.963	2.0	ug/L	217	Standard
	Ni	60	109770.2	0.4	**49.8430**	0.612	1.2	ug/L	304	Standard
	Cu	65	108323.5	0.5	**50.0917**	0.642	1.3	ug/L	181	Standard
	Zn	66	68554.1	0.3	**52.6985**	0.620	1.2	ug/L	215	Standard
>	Ge	72	551156.5	1.1				ug/L	520809	Standard
	As	75	66401.2	0.7	**50.8743**	0.706	1.4	ug/L	-52	Standard
	Se	82	6730.1	0.5	**50.2159**	0.522	1.0	ug/L	17	Standard
	Se-1	77	4856.1	2.0	**53.0004**	1.342	2.5	ug/L	56	Standard
>	Ga	71	258.3	16.5				mg/L	25	Standard
	Rb	85	8118.8	3.8				ug/L	28	Standard
	Y	89	478755.4	1.4				ug/L	447395	Standard
>	Rh	103	76.7	3.8				ug/L	15	Standard
	Mo	98	512.6	9.1	**0.1403**	0.015	10.9	ug/L	113	Standard
	Ag	107	359474.2	1.7	**48.4964**	0.550	1.1	ug/L	108	Standard
	Cd	111	117797.3	1.3	**49.5872**	0.214	0.4	mg/L	3	Standard
	Cd	114	286908.0	1.1	**48.7832**	0.247	0.5	ug/L	20	Standard
>	In	115	645632.6	1.1				ug/L	625728	Standard
	Sn	118	3095.3	10.7	**0.3822**	0.054	14.0	ug/L	568	Standard
	Sb	123	295379.5	0.9	**55.3607**	0.341	0.6	ug/L	612	Standard
	Ba	135	123159.2	0.4	**54.8524**	0.674	1.2	ug/L	21	Standard
	Ce	140	9327.9	2.1				ug/L	245	Standard
>	Tb	159	983378.7	0.8				ug/L	950397	Standard
	Ho	165	230.0	2.2				ug/L	7	Standard
	Tl	203	446759.8	0.8	**49.4389**	0.212	0.4	ug/L	15	Standard
	Tl	205	408461.1	0.9	**50.8970**	0.668	1.3	ug/L	13	Standard
	Pb	206	301254.5	0.8	**52.8246**	0.290	0.5	ug/L	264	Standard
	Pb	207	261947.7	0.8	**50.5743**	0.209	0.4	ug/L	222	Standard
	Pb	208	1104059.4	0.6	**52.1919**	0.419	0.8	ug/L	959	Standard
	U	238	402584.9	0.8	**49.6175**	0.619	1.2	ug/L	9	Standard
>	Bi	209	556417.0	0.4				ug/L	552821	Standard

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Na	23	5.0	100.0	**13.3094**	13.444	101.0	mg/L	2	Standard
Mg	24	23635.1	1.3	**24.6326**	0.412	1.7	mg/L	55	Standard
K	39	136.7	2.1	**0.3374**	0.002	0.7	mg/L	28	Standard
Ca	43	218.3	2.6	**15.2980**	0.780	5.1	mg/L	27	Standard
Fe	54	402.8	5.8	**0.1835**	0.012	6.4	mg/L	147	Standard
Fe	57	453.3	11.2	**0.4438**	0.163	36.7	mg/L	268	Standard
> **Sc-1**	45	46046.6	2.1				mg/L	41174	Standard
Cl	35	91583.3	0.2				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	12164.9	6.2				ug/L	1950	Standard
P	31	27852.3	5.0				ug/L	21156	Standard
S	34	4047.2	6.0				ug/L	3419	Standard
Sr	88	165.0	13.2				ug/L	72	Standard
C	12	173.3	28.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	17	Standard
Dy	164	272.5	13.7				mg/L	16	Standard
Ho-1	165	230.0	2.2				mg/L	7	Standard
Er	166	296.7	5.1				mg/L	7	Standard
I	127	59372.8	2.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.244	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.827	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606140008SD WG574419-06
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.181
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.651
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606142701 WG574419-02
Sample Date/Time: Friday, July 01, 2016 13:16:20
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	94406.8	3.4				ug/L	76456	Standard
	Be	9	85.0	35.3	**0.0412**	0.020	47.7	ug/L	20	Standard
	Al	27	56617238.2	4.0	**267.8022**	1.372	0.5	ug/L	1307	Standard
	Sc	45	46416.0	2.3				ug/L	41174	Standard
	Ti	47	884.0	4.8	**2.5428**	0.066	2.6	ug/L	27	Standard
	V	51	553940.5	2.9	**65.0728**	0.307	0.5	ug/L	1434	Standard
	Cr	52	299233.7	2.3	**34.8806**	0.725	2.1	ug/L	7733	Standard
	Cr	53	52044.3	2.2	**49.4662**	0.542	1.1	ug/L	442	Standard
	Mn	55	240351.0	1.7	**30.6595**	0.508	1.7	ug/L	723	Standard
	Co	59	198012.4	2.6	**25.0083**	0.182	0.7	ug/L	217	Standard
	Ni	60	153480.0	2.1	**71.5090**	1.345	1.9	ug/L	304	Standard
	Cu	65	58814.7	2.8	**27.8441**	0.424	1.5	ug/L	181	Standard
	Zn	66	154855.3	2.4	**122.2558**	1.271	1.0	ug/L	215	Standard
>	Ge	72	537771.5	3.3				ug/L	520809	Standard
	As	75	14927.7	4.1	**11.7537**	0.103	0.9	ug/L	-52	Standard
	Se	82	5918.7	4.3	**45.2355**	0.439	1.0	ug/L	17	Standard
	Se-1	77	1154.4	4.7	**12.3907**	0.295	2.4	ug/L	56	Standard
>	Ga	71	381.7	7.4				mg/L	25	Standard
	Rb	85	99551.2	2.9				ug/L	28	Standard
	Y	89	473605.3	2.9				ug/L	447395	Standard
>	Rh	103	343.3	14.9				ug/L	15	Standard
	Mo	98	2403599.9	3.3	**789.6820**	1.502	0.2	ug/L	113	Standard
	Ag	107	348.7	11.5	**0.0353**	0.004	11.4	ug/L	108	Standard
	Cd	111	-1248.7	2.3	**-0.5414**	0.006	1.1	mg/L	3	Standard
	Cd	114	4967.3	3.8	**0.8659**	0.009	1.0	ug/L	20	Standard
>	In	115	629706.1	3.1				ug/L	625728	Standard
	Sn	118	2805.3	14.7	**0.3479**	0.050	14.4	ug/L	568	Standard
	Sb	123	2974.2	8.0	**0.5376**	0.028	5.2	ug/L	612	Standard
	Ba	135	206845.8	2.1	**94.4794**	0.976	1.0	ug/L	21	Standard
	Ce	140	2191.8	6.3				ug/L	245	Standard
>	Tb	159	977368.8	3.8				ug/L	950397	Standard
	Ho	165	160.0	22.5				ug/L	7	Standard
	Tl	203	430.0	2.3	**0.0496**	0.002	4.9	ug/L	15	Standard
	Tl	205	390.0	8.0	**0.0417**	0.005	11.7	ug/L	13	Standard
	Pb	206	8083.8	1.9	**1.4566**	0.015	1.0	ug/L	264	Standard
	Pb	207	6744.5	3.2	**1.3320**	0.010	0.7	ug/L	222	Standard
	Pb	208	28675.7	2.4	**1.3865**	0.012	0.8	ug/L	959	Standard
	U	238	878.7	4.2	**0.1143**	0.007	5.7	ug/L	9	Standard
>	Bi	209	526224.9	2.9				ug/L	552821	Standard

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Na	23	10.0	100.0	**26.3285**	25.935	98.5	mg/L	2	Standard
Mg	24	138231.5	3.2	**143.1647**	1.819	1.3	mg/L	55	Standard
K	39	2051.8	3.6	**6.8480**	0.212	3.1	mg/L	28	Standard
Ca	43	1005.0	4.6	**78.6144**	4.822	6.1	mg/L	27	Standard
Fe	54	1298.8	6.4	**0.8054**	0.072	8.9	mg/L	147	Standard
Fe	57	1345.1	6.6	**2.8597**	0.164	5.7	mg/L	268	Standard
> **Sc-1**	45	46416.0	2.3				mg/L	41174	Standard
Cl	35	167690.5	2.1				ug/L	69550	Standard
Kr	83	3.0	66.7				ug/L	1	Standard
Br	81	1167966.9	3.9				ug/L	1950	Standard
P	31	32757.0	0.7				ug/L	21156	Standard
S	34	3867.2	4.1				ug/L	3419	Standard
Sr	88	1343.4	2.4				ug/L	72	Standard
C	12	240.0	12.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1276.7	2.5				mg/L	17	Standard
Dy	164	1123.0	11.7				mg/L	16	Standard
Ho-1	165	160.0	22.5				mg/L	7	Standard
Er	166	146.7	14.2				mg/L	7	Standard
I	127	116304.4	6.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.479	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.257	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.636	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	95.189	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Zn 66 Upper, S, EEE	Zn	66	

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Mo 98 Upper, S, EEE	Mo	98
Cd 111 Lower	Cd	111

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Method 6020 - Summary Report

Sample ID: L1606142701DP WG574419-07
Sample Date/Time: Friday, July 01, 2016 13:19:32
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	104046.1	2.0				ug/L	76456	Standard
	Be	9	46.7	34.4	**0.0108**	0.011	98.8	ug/L	20	Standard
	Al	27	58682132.6	0.8	**251.9338**	4.223	1.7	ug/L	1307	Standard
	Sc	45	49029.2	0.9				ug/L	41174	Standard
	Ti	47	887.4	3.2	**2.4062**	0.089	3.7	ug/L	27	Standard
	V	51	572508.3	0.6	**63.4877**	0.191	0.3	ug/L	1434	Standard
	Cr	52	308728.3	0.4	**33.9428**	0.266	0.8	ug/L	7733	Standard
	Cr	53	52407.2	1.8	**46.9988**	0.886	1.9	ug/L	442	Standard
	Mn	55	248854.2	1.2	**29.9599**	0.484	1.6	ug/L	723	Standard
	Co	59	205279.2	0.1	**24.4744**	0.076	0.3	ug/L	217	Standard
	Ni	60	157071.7	0.8	**69.0682**	0.457	0.7	ug/L	304	Standard
	Cu	65	60395.8	1.4	**26.9893**	0.358	1.3	ug/L	181	Standard
	Zn	66	157884.7	1.0	**117.6566**	1.110	0.9	ug/L	215	Standard
>	Ge	72	569569.1	0.4				ug/L	520809	Standard
	As	75	17073.6	1.5	**12.6909**	0.145	1.1	ug/L	-52	Standard
	Se	82	6774.5	1.0	**48.9062**	0.303	0.6	ug/L	17	Standard
	Se-1	77	1068.4	1.0	**10.7433**	0.123	1.1	ug/L	56	Standard
>	Ga	71	446.7	9.5				mg/L	25	Standard
	Rb	85	100812.6	1.2				ug/L	28	Standard
	Y	89	506159.4	0.9				ug/L	447395	Standard
>	Rh	103	378.3	6.5				ug/L	15	Standard
	Mo	98	2476607.9	0.6	**769.3094**	6.421	0.8	ug/L	113	Standard
	Ag	107	277.0	7.6	**0.0234**	0.003	11.5	ug/L	108	Standard
	Cd	111	-1309.7	3.6	**-0.5367**	0.015	2.9	mg/L	3	Standard
	Cd	114	4986.9	3.4	**0.8220**	0.028	3.4	ug/L	20	Standard
>	In	115	666048.1	0.7				ug/L	625728	Standard
	Sn	118	2695.2	8.4	**0.3091**	0.031	9.9	ug/L	568	Standard
	Sb	123	2859.3	3.8	**0.4860**	0.016	3.4	ug/L	612	Standard
	Ba	135	211685.9	0.6	**91.3948**	0.192	0.2	ug/L	21	Standard
	Ce	140	2868.6	2.4				ug/L	245	Standard
>	Tb	159	1029121.0	0.5				ug/L	950397	Standard
	Ho	165	185.0	14.3				ug/L	7	Standard
	Tl	203	334.0	8.3	**0.0363**	0.003	8.5	ug/L	15	Standard
	Tl	205	321.7	4.7	**0.0304**	0.002	6.7	ug/L	13	Standard
	Pb	206	8239.2	0.3	**1.4051**	0.008	0.6	ug/L	264	Standard
	Pb	207	6707.8	0.3	**1.2527**	0.005	0.4	ug/L	222	Standard
	Pb	208	28813.8	0.3	**1.3177**	0.005	0.4	ug/L	959	Standard
	U	238	815.7	5.7	**0.1005**	0.006	5.9	ug/L	9	Standard
>	Bi	209	555326.9	0.6				ug/L	552821	Standard

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Na	23	11.7	89.2	**29.1295**	26.033	89.4	mg/L	2	Standard
Mg	24	145830.2	1.6	**142.9963**	1.122	0.8	mg/L	55	Standard
K	39	1910.1	4.3	**6.0209**	0.304	5.1	mg/L	28	Standard
Ca	43	1011.7	3.6	**74.7713**	3.380	4.5	mg/L	27	Standard
Fe	54	1358.4	2.2	**0.7959**	0.027	3.4	mg/L	147	Standard
Fe	57	1346.7	4.5	**2.6702**	0.125	4.7	mg/L	268	Standard
> **Sc-1**	45	49029.2	0.9				mg/L	41174	Standard
Cl	35	174677.8	0.8				ug/L	69550	Standard
Kr	83	3.3	45.8				ug/L	1	Standard
Br	81	1284910.2	3.2				ug/L	1950	Standard
P	31	34656.3	1.1				ug/L	21156	Standard
S	34	3823.8	7.2				ug/L	3419	Standard
Sr	88	1511.7	7.3				ug/L	72	Standard
C	12	326.7	14.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1320.1	5.5				mg/L	17	Standard
Dy	164	1289.7	16.2				mg/L	16	Standard
Ho-1	165	185.0	14.3				mg/L	7	Standard
Er	166	146.7	50.3				mg/L	7	Standard
I	127	128302.1	5.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		136.087	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.362	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.444
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.453
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Zn 66 Upper, S, EEE	Zn	66	

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Mo 98 Upper, S, EEE	Mo	98
Cd 111 Lower	Cd	111

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Method 6020 - Summary Report

Sample ID: L1606146801
Sample Date/Time: Friday, July 01, 2016 13:22:43
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	95246.8	1.7				ug/L	76456	Standard
	Be	9	60.0	36.3	**0.0230**	0.015	65.8	ug/L	20	Standard
	Al	27	35472226.0	0.8	**166.3429**	2.244	1.3	ug/L	1307	Standard
	Sc	45	46670.1	1.2				ug/L	41174	Standard
	Ti	47	140.0	21.5	**0.3094**	0.088	28.6	ug/L	27	Standard
	V	51	4190.3	5.3	**0.2681**	0.025	9.2	ug/L	1434	Standard
	Cr	52	13346.9	2.4	**0.5405**	0.016	3.1	ug/L	7733	Standard
	Cr	53	6873.2	1.9	**5.8101**	0.177	3.1	ug/L	442	Standard
	Mn	55	19772.6	3.3	**2.2894**	0.049	2.1	ug/L	723	Standard
	Co	59	1288.4	10.2	**0.1244**	0.014	11.2	ug/L	217	Standard
	Ni	60	3544.7	6.0	**1.4102**	0.074	5.2	ug/L	304	Standard
	Cu	65	6205.3	5.0	**2.7088**	0.103	3.8	ug/L	181	Standard
	Zn	66	22108.8	2.9	**16.3375**	0.265	1.6	ug/L	215	Standard
>	**Ge**	72	568906.9	1.3				ug/L	520809	Standard
	As	75	543.4	5.2	**0.4480**	0.017	3.7	ug/L	-52	Standard
	Se	82	262.1	5.1	**1.7720**	0.073	4.1	ug/L	17	Standard
	Se-1	77	440.0	5.3	**4.0275**	0.247	6.1	ug/L	56	Standard
>	**Ga**	71	158.3	3.6				mg/L	25	Standard
	Rb	85	31255.6	3.8				ug/L	28	Standard
	Y	89	486688.8	1.2				ug/L	447395	Standard
>	**Rh**	103	48.3	15.8				ug/L	15	Standard
	Mo	98	2311.5	33.1	**0.6846**	0.225	32.9	ug/L	113	Standard
	Ag	107	184.3	31.5	**0.0110**	0.007	66.0	ug/L	108	Standard
	Cd	111	67.6	38.4	**0.0249**	0.010	40.7	mg/L	3	Standard
	Cd	114	137.0	32.2	**0.0223**	0.007	31.3	ug/L	20	Standard
>	**In**	115	673094.9	1.4				ug/L	625728	Standard
	Sn	118	1788.4	15.0	**0.1745**	0.042	24.3	ug/L	568	Standard
	Sb	123	351.8	14.1	**0.0296**	0.010	32.6	ug/L	612	Standard
	Ba	135	56024.1	0.9	**23.9231**	0.201	0.8	ug/L	21	Standard
	Ce	140	3798.8	2.1				ug/L	245	Standard
>	**Tb**	159	1033945.4	1.1				ug/L	950397	Standard
	Ho	165	101.7	7.5				ug/L	7	Standard
	Tl	203	1144.4	9.6	**0.1229**	0.010	8.3	ug/L	15	Standard
	Tl	205	953.4	4.2	**0.1063**	0.005	4.8	ug/L	13	Standard
	Pb	206	1672.1	2.6	**0.2429**	0.007	2.7	ug/L	264	Standard
	Pb	207	1423.7	2.4	**0.2227**	0.003	1.2	ug/L	222	Standard
	Pb	208	6035.8	3.4	**0.2307**	0.005	2.3	ug/L	959	Standard
	U	238	4452.3	3.5	**0.5357**	0.011	2.0	ug/L	9	Standard
>	**Bi**	209	569516.4	1.6				ug/L	552821	Standard

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Na	23	8.3	34.6	**21.9971**	7.770	35.3	mg/L	2	Standard
Mg	24	21678.8	1.3	**22.2848**	0.435	2.0	mg/L	55	Standard
K	39	2645.2	6.0	**8.8196**	0.578	6.6	mg/L	28	Standard
Ca	43	443.3	15.1	**33.0787**	5.254	15.9	mg/L	27	Standard
Fe	54	243.9	19.5	**0.0697**	0.031	44.8	mg/L	147	Standard
Fe	57	548.3	7.8	**0.6829**	0.122	17.9	mg/L	268	Standard
Sc-1	45	46670.1	1.2				mg/L	41174	Standard
Cl	35	103993.1	1.8				ug/L	69550	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	45849.6	8.7				ug/L	1950	Standard
P	31	27049.2	4.2				ug/L	21156	Standard
S	34	3738.8	3.2				ug/L	3419	Standard
Sr	88	155.0	11.6				ug/L	72	Standard
C	12	323.3	23.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	32.7				mg/L	17	Standard
Dy	164	114.1	9.2				mg/L	16	Standard
Ho-1	165	101.7	7.5				mg/L	7	Standard
Er	166	123.3	9.4				mg/L	7	Standard
I	127	41777.5	0.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.578	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.235	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.570
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.020
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606146801PS WG574824-01
Sample Date/Time: Friday, July 01, 2016 13:25:55
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	90108.8	0.5				ug/L	76456	Standard
	Be	9	70249.2	1.7	**53.2245**	0.671	1.3	ug/L	20	Standard
	Al	27	34044331.9	1.0	**168.7325**	2.084	1.2	ug/L	1307	Standard
	Sc	45	45399.6	0.8				ug/L	41174	Standard
	Ti	47	138.7	17.3	**0.3148**	0.070	22.1	ug/L	27	Standard
	V	51	476317.0	1.0	**54.1491**	0.294	0.5	ug/L	1434	Standard
	Cr	52	466031.0	0.5	**53.0857**	0.077	0.1	ug/L	7733	Standard
	Cr	53	63049.2	0.3	**58.0938**	0.175	0.3	ug/L	442	Standard
	Mn	55	440401.5	1.9	**54.4612**	0.687	1.3	ug/L	723	Standard
	Co	59	434977.5	1.9	**53.2245**	0.684	1.3	ug/L	217	Standard
	Ni	60	116940.2	0.8	**52.7068**	0.130	0.2	ug/L	304	Standard
	Cu	65	117328.2	0.6	**53.8548**	0.631	1.2	ug/L	181	Standard
	Zn	66	90120.9	0.2	**68.8123**	0.512	0.7	ug/L	215	Standard
>	Ge	72	555295.5	0.6				ug/L	520809	Standard
	As	75	70805.4	0.6	**53.8379**	0.372	0.7	ug/L	-52	Standard
	Se	82	7397.3	0.8	**54.7911**	0.368	0.7	ug/L	17	Standard
	Se-1	77	5164.9	2.2	**55.9837**	1.347	2.4	ug/L	56	Standard
>	Ga	71	125.0	14.4				mg/L	25	Standard
	Rb	85	30505.7	1.7				ug/L	28	Standard
	Y	89	478605.6	2.2				ug/L	447395	Standard
>	Rh	103	46.7	43.3				ug/L	15	Standard
	Mo	98	839.0	9.3	**0.2402**	0.025	10.4	ug/L	113	Standard
	Ag	107	377133.6	0.1	**49.9818**	0.291	0.6	ug/L	108	Standard
	Cd	111	125097.0	1.5	**51.7283**	0.533	1.0	mg/L	3	Standard
	Cd	114	305450.5	0.6	**51.0188**	0.497	1.0	ug/L	20	Standard
>	In	115	657251.3	0.6				ug/L	625728	Standard
	Sn	118	2133.5	27.9	**0.2313**	0.087	37.7	ug/L	568	Standard
	Sb	123	274150.2	2.6	**50.4698**	1.311	2.6	ug/L	612	Standard
	Ba	135	169708.2	1.1	**74.2483**	0.737	1.0	ug/L	21	Standard
	Ce	140	3655.4	2.8				ug/L	245	Standard
>	Tb	159	997893.3	1.3				ug/L	950397	Standard
	Ho	165	96.7	3.0				ug/L	7	Standard
	Tl	203	479768.6	1.3	**52.5300**	0.668	1.3	ug/L	15	Standard
	Tl	205	441867.2	0.2	**54.4752**	0.081	0.1	ug/L	13	Standard
	Pb	206	307910.6	0.5	**53.4209**	0.305	0.6	ug/L	264	Standard
	Pb	207	270893.2	0.6	**51.7493**	0.347	0.7	ug/L	222	Standard
	Pb	208	1132008.2	0.1	**52.9464**	0.115	0.2	ug/L	959	Standard
	U	238	437881.5	0.7	**53.3944**	0.388	0.7	ug/L	9	Standard
>	Bi	209	562372.5	0.1				ug/L	552821	Standard

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Na	23	3.3	173.2	**9.0238**	15.621	173.1	mg/L	2	Standard
Mg	24	21021.2	2.0	**22.2136**	0.609	2.7	mg/L	55	Standard
K	39	2403.5	9.2	**8.2292**	0.795	9.7	mg/L	28	Standard
Ca	43	463.3	6.3	**35.7330**	2.393	6.7	mg/L	27	Standard
Fe	54	243.1	16.8	**0.0741**	0.029	39.0	mg/L	147	Standard
Fe	57	501.7	6.6	**0.5936**	0.084	14.1	mg/L	268	Standard
> **Sc-1**	45	45399.6	0.8				mg/L	41174	Standard
Cl	35	103755.4	0.3				ug/L	69550	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	34723.1	4.1				ug/L	1950	Standard
P	31	26186.0	3.6				ug/L	21156	Standard
S	34	3878.8	0.5				ug/L	3419	Standard
Sr	88	156.7	22.4				ug/L	72	Standard
C	12	250.0	6.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	24.7				mg/L	17	Standard
Dy	164	122.0	12.6				mg/L	16	Standard
Ho-1	165	96.7	3.0				mg/L	7	Standard
Er	166	96.7	21.5				mg/L	7	Standard
I	127	39521.5	2.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.857	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.622	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.038
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.728
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606146801PS WG574824-01
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Method 6020 - Summary Report

Sample ID: L1606146801SDL WG574824-02
Sample Date/Time: Friday, July 01, 2016 13:29:06
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81934.4	2.4				ug/L	76456	Standard
	Be	9	23.3	12.4	**-0.0004**	0.002	528.6	ug/L	20	Standard
	Al	27	6372058.3	0.6	**34.7368**	0.867	2.5	ug/L	1307	Standard
	Sc	45	41202.6	2.0				ug/L	41174	Standard
	Ti	47	41.3	2.8	**0.0406**	0.003	7.7	ug/L	27	Standard
	V	51	2837.9	5.4	**0.1420**	0.017	12.0	ug/L	1434	Standard
	Cr	52	10022.3	0.9	**0.2524**	0.016	6.4	ug/L	7733	Standard
	Cr	53	2263.5	3.6	**1.7926**	0.079	4.4	ug/L	442	Standard
	Mn	55	3961.5	5.6	**0.4150**	0.030	7.3	ug/L	723	Standard
	Co	59	455.7	11.3	**0.0293**	0.007	23.1	ug/L	217	Standard
	Ni	60	945.7	5.5	**0.2966**	0.026	8.9	ug/L	304	Standard
	Cu	65	1313.7	2.7	**0.5610**	0.018	3.2	ug/L	181	Standard
	Zn	66	5244.2	0.6	**4.0427**	0.043	1.1	ug/L	215	Standard
>	**Ge**	72	527921.1	0.4				ug/L	520809	Standard
	As	75	85.0	19.3	**0.1131**	0.013	11.5	ug/L	-52	Standard
	Se	82	67.2	5.5	**0.3985**	0.027	6.7	ug/L	17	Standard
	Se-1	77	133.3	10.0	**0.8545**	0.159	18.6	ug/L	56	Standard
>	**Ga**	71	51.7	34.0				mg/L	25	Standard
	Rb	85	5692.7	3.6				ug/L	28	Standard
	Y	89	450949.6	1.2				ug/L	447395	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	345.8	14.9	**0.0912**	0.015	16.7	ug/L	113	Standard
	Ag	107	237.3	15.4	**0.0205**	0.005	24.9	ug/L	108	Standard
	Cd	111	35.8	40.8	**0.0133**	0.006	46.9	mg/L	3	Standard
	Cd	114	93.4	10.0	**0.0165**	0.001	8.4	ug/L	20	Standard
>	**In**	115	620231.7	1.6				ug/L	625728	Standard
	Sn	118	866.7	12.4	**0.0518**	0.019	35.8	ug/L	568	Standard
	Sb	123	1735.5	30.3	**0.3061**	0.107	34.9	ug/L	612	Standard
	Ba	135	10779.2	0.9	**4.9812**	0.056	1.1	ug/L	21	Standard
	Ce	140	791.7	4.9				ug/L	245	Standard
>	**Tb**	159	942729.5	1.8				ug/L	950397	Standard
	Ho	165	28.3	36.7				ug/L	7	Standard
	Tl	203	339.3	13.7	**0.0372**	0.005	12.3	ug/L	15	Standard
	Tl	205	293.3	14.5	**0.0272**	0.005	18.3	ug/L	13	Standard
	Pb	206	612.0	8.4	**0.0647**	0.008	11.7	ug/L	264	Standard
	Pb	207	519.7	9.7	**0.0553**	0.008	14.9	ug/L	222	Standard
	Pb	208	2221.7	7.6	**0.0579**	0.007	11.9	ug/L	959	Standard
	U	238	900.0	3.6	**0.1118**	0.003	3.1	ug/L	9	Standard
>	**Bi**	209	550585.9	1.6				ug/L	552821	Standard

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Na	23	1.7	173.2	**5.0521**	8.742	173.0	mg/L	2	Standard
Mg	24	4062.2	4.3	**4.6808**	0.132	2.8	mg/L	55	Standard
K	39	498.3	11.6	**1.7809**	0.252	14.1	mg/L	28	Standard
Ca	43	101.7	7.5	**6.7726**	0.507	7.5	mg/L	27	Standard
Fe	54	107.3	30.2	**-0.0145**	0.026	180.3	mg/L	147	Standard
Fe	57	291.7	13.3	**0.0919**	0.123	133.6	mg/L	268	Standard
> **Sc-1**	45	41202.6	2.0				mg/L	41174	Standard
Cl	35	96829.8	0.1				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	10183.4	2.4				ug/L	1950	Standard
P	31	11094.1	2.9				ug/L	21156	Standard
S	34	3683.8	0.7				ug/L	3419	Standard
Sr	88	95.0	24.1				ug/L	72	Standard
C	12	163.3	7.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	17	Standard
Dy	164	29.5	32.3				mg/L	16	Standard
Ho-1	165	28.3	36.7				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	35264.3	1.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.166	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.366	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.122
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.596
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 13:32:18
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83467.6	1.4				ug/L	76456	Standard
	Be	9	63718.7	0.7	**52.1231**	0.475	0.9	ug/L	20	Standard
	Al	27	9062605.1	0.9	**48.4842**	0.275	0.6	ug/L	1307	Standard
	Sc	45	44059.0	1.3				ug/L	41174	Standard
	Ti	47	34404.0	1.1	**99.0094**	0.671	0.7	ug/L	27	Standard
	V	51	443244.1	0.4	**50.4051**	0.454	0.9	ug/L	1434	Standard
	Cr	52	434951.0	1.6	**49.5050**	0.344	0.7	ug/L	7733	Standard
	Cr	53	55258.9	0.5	**50.8922**	0.303	0.6	ug/L	442	Standard
	Mn	55	403371.8	0.9	**49.9032**	0.315	0.6	ug/L	723	Standard
	Co	59	418724.4	1.0	**51.2643**	0.239	0.5	ug/L	217	Standard
	Ni	60	110119.8	2.0	**49.6473**	0.559	1.1	ug/L	304	Standard
	Cu	65	108317.9	1.6	**49.7353**	0.387	0.8	ug/L	181	Standard
	Zn	66	65643.9	0.2	**50.1012**	0.420	0.8	ug/L	215	Standard
>	**Ge**	72	555003.0	0.9				ug/L	520809	Standard
	As	75	65592.7	0.9	**49.9040**	0.350	0.7	ug/L	-52	Standard
	Se	82	6752.9	1.3	**50.0327**	0.319	0.6	ug/L	17	Standard
	Se-1	77	4634.4	1.8	**50.1857**	0.510	1.0	ug/L	56	Standard
>	**Ga**	71	43.3	43.7				mg/L	25	Standard
	Rb	85	895.0	1.7				ug/L	28	Standard
	Y	89	470300.0	1.3				ug/L	447395	Standard
>	**Rh**	103	21.7	53.3				ug/L	15	Standard
	Mo	98	316268.1	0.4	**99.0881**	0.889	0.9	ug/L	113	Standard
	Ag	107	376354.5	0.2	**49.6535**	0.293	0.6	ug/L	108	Standard
	Cd	111	120441.8	1.1	**49.5792**	0.292	0.6	mg/L	3	Standard
	Cd	114	295637.4	1.1	**49.1550**	0.340	0.7	ug/L	20	Standard
>	**In**	115	660227.7	0.5				ug/L	625728	Standard
	Sn	118	331178.7	0.6	**48.6841**	0.135	0.3	ug/L	568	Standard
	Sb	123	273404.4	0.5	**50.1048**	0.039	0.1	ug/L	612	Standard
	Ba	135	110185.5	0.7	**47.9831**	0.253	0.5	ug/L	21	Standard
	Ce	140	71.7	8.1				ug/L	245	Standard
>	**Tb**	159	984792.3	0.6				ug/L	950397	Standard
	Ho	165	13.3	78.1				ug/L	7	Standard
	Tl	203	462531.1	0.4	**50.2621**	0.297	0.6	ug/L	15	Standard
	Tl	205	421818.4	1.3	**51.6134**	0.810	1.6	ug/L	13	Standard
	Pb	206	290494.8	0.7	**50.0181**	0.451	0.9	ug/L	264	Standard
	Pb	207	263168.3	0.9	**49.8939**	0.483	1.0	ug/L	222	Standard
	Pb	208	1101207.6	0.2	**51.1172**	0.228	0.4	ug/L	959	Standard
	U	238	418119.7	0.4	**50.6018**	0.328	0.6	ug/L	9	Standard
>	**Bi**	209	566634.4	0.3				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4939.1	6.4	**5.3310**	0.320	6.0	mg/L	55	Standard
K	39	1245.1	5.8	**4.3288**	0.211	4.9	mg/L	28	Standard
Ca	43	85.0	25.6	**4.7651**	1.854	38.9	mg/L	27	Standard
Fe	54	6867.9	1.6	**4.9353**	0.136	2.8	mg/L	147	Standard
Fe	57	2071.8	2.6	**5.1454**	0.157	3.1	mg/L	268	Standard
> **Sc-1**	45	44059.0	1.3				mg/L	41174	Standard
Cl	35	90383.1	4.1				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	4354.0	6.6				ug/L	1950	Standard
P	31	26625.0	1.6				ug/L	21156	Standard
S	34	4595.7	0.9				ug/L	3419	Standard
Sr	88	73.3	21.9				ug/L	72	Standard
C	12	80.0	25.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	17	Standard
Dy	164	9.7	105.8				mg/L	16	Standard
Ho-1	165	13.3	78.1				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	17566.9	5.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	104.246		
Al	27	96.968		
Sc	45			
Ti	47	99.009		
V	51	100.810		
Cr	52	99.010		
Cr	53			
Mn	55	99.806		
Co	59	102.529		
Ni	60	99.295		
Cu	65	99.471		
Zn	66	100.202		
> Ge	72		106.565	
As	75	99.808		
Se	82	100.065		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	99.088		
Ag	107	99.307		
Cd	111	99.158		
Cd	114			
In	115			105.514
Sn	118	97.368		
Sb	123	100.210		
Ba	135	95.966		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.524		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.234		
U	238	101.204		
Bi	209			102.499
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 13:35:30
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81907.5	2.0				ug/L	76456	Standard
	Be	9	33.3	37.7	**0.0081**	0.011	136.7	ug/L	20	Standard
	Al	27	3658.8	6.2	**0.0097**	0.001	9.1	ug/L	1307	Standard
	Sc	45	43395.4	0.6				ug/L	41174	Standard
	Ti	47	24.0	4.2	**-0.0151**	0.003	16.8	ug/L	27	Standard
	V	51	1486.9	6.2	**-0.0280**	0.012	41.3	ug/L	1434	Standard
	Cr	52	7626.6	0.2	**-0.0811**	0.008	9.6	ug/L	7733	Standard
	Cr	53	623.3	4.9	**0.1647**	0.029	17.3	ug/L	442	Standard
	Mn	55	758.4	6.6	**-0.0069**	0.006	85.9	ug/L	723	Standard
	Co	59	258.3	7.6	**0.0024**	0.003	111.1	ug/L	217	Standard
	Ni	60	313.7	6.6	**-0.0106**	0.010	91.1	ug/L	304	Standard
	Cu	65	185.7	9.2	**0.0117**	0.008	71.7	ug/L	181	Standard
	Zn	66	252.7	5.5	**0.0142**	0.012	81.1	ug/L	215	Standard
>	**Ge**	72	552319.3	0.7				ug/L	520809	Standard
	As	75	-27.0	147.4	**0.0246**	0.030	123.9	ug/L	-52	Standard
	Se	82	28.2	27.0	**0.0839**	0.058	69.1	ug/L	17	Standard
	Se-1	77	72.0	11.0	**0.1099**	0.092	83.3	ug/L	56	Standard
>	**Ga**	71	16.7	62.4				mg/L	25	Standard
	Rb	85	41.7	61.6				ug/L	28	Standard
	Y	89	471686.6	0.8				ug/L	447395	Standard
>	**Rh**	103	6.7	114.6				ug/L	15	Standard
	Mo	98	354.1	7.5	**0.0877**	0.008	9.3	ug/L	113	Standard
	Ag	107	160.0	3.9	**0.0084**	0.001	9.7	ug/L	108	Standard
	Cd	111	21.1	31.9	**0.0064**	0.003	43.8	mg/L	3	Standard
	Cd	114	42.3	49.2	**0.0071**	0.003	48.8	ug/L	20	Standard
>	**In**	115	656112.9	0.3				ug/L	625728	Standard
	Sn	118	1841.8	22.7	**0.1887**	0.062	32.7	ug/L	568	Standard
	Sb	123	1164.1	37.2	**0.1810**	0.080	44.0	ug/L	612	Standard
	Ba	135	49.7	23.3	**0.0039**	0.005	131.8	ug/L	21	Standard
	Ce	140	23.3	81.1				ug/L	245	Standard
>	**Tb**	159	980631.2	1.7				ug/L	950397	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	97.0	22.3	**0.0098**	0.002	24.1	ug/L	15	Standard
	Tl	205	98.3	10.6	**0.0022**	0.001	58.4	ug/L	13	Standard
	Pb	206	329.0	7.5	**0.0127**	0.004	31.8	ug/L	264	Standard
	Pb	207	298.7	13.9	**0.0104**	0.008	73.2	ug/L	222	Standard
	Pb	208	1210.7	3.3	**0.0078**	0.002	20.2	ug/L	959	Standard
	U	238	84.3	9.6	**0.0099**	0.001	9.3	ug/L	9	Standard
>	**Bi**	209	568472.1	0.5				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	38.3	32.8	**-0.0177**	0.014	79.8	mg/L	55	Standard
K	39	20.0	43.3	**-0.0585**	0.031	53.1	mg/L	28	Standard
Ca	43	10.0	50.0	**-1.5919**	0.429	27.0	mg/L	27	Standard
Fe	54	159.5	25.8	**0.0198**	0.030	153.3	mg/L	147	Standard
Fe	57	218.3	15.2	**-0.1678**	0.094	56.0	mg/L	268	Standard
> **Sc-1**	45	43395.4	0.6				mg/L	41174	Standard
Cl	35	88102.1	0.5				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	3323.7	4.5				ug/L	1950	Standard
P	31	24955.5	2.9				ug/L	21156	Standard
S	34	4405.6	3.7				ug/L	3419	Standard
Sr	88	81.7	3.5				ug/L	72	Standard
C	12	120.0	8.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	17	Standard
Dy	164	-1.1	49.5				mg/L	16	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	23.3	49.5				mg/L	7	Standard
I	127	13129.0	1.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.050	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.856
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.831
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606147001
Sample Date/Time: Friday, July 01, 2016 13:38:42
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81631.0	0.4				ug/L	76456	Standard
	Be	9	53.3	51.6	**0.0248**	0.023	93.4	ug/L	20	Standard
	Al	27	1267924.9	0.3	**6.9269**	0.012	0.2	ug/L	1307	Standard
	Sc	45	44398.3	2.2				ug/L	41174	Standard
	Ti	47	2584.6	3.5	**7.4850**	0.306	4.1	ug/L	27	Standard
	V	51	6589.9	3.8	**0.5661**	0.025	4.4	ug/L	1434	Standard
	Cr	52	17924.3	2.1	**1.1443**	0.040	3.5	ug/L	7733	Standard
	Cr	53	3320.4	0.9	**2.7174**	0.024	0.9	ug/L	442	Standard
	Mn	55	64462.5	1.4	**8.0226**	0.071	0.9	ug/L	723	Standard
	Co	59	2066.5	2.4	**0.2279**	0.005	2.1	ug/L	217	Standard
	Ni	60	3389.4	1.0	**1.4053**	0.013	0.9	ug/L	304	Standard
	Cu	65	36919.6	0.8	**17.1868**	0.112	0.7	ug/L	181	Standard
	Zn	66	100190.5	0.7	**77.8387**	0.507	0.7	ug/L	215	Standard
>	Ge	72	545904.9	0.6				ug/L	520809	Standard
	As	75	297.3	18.2	**0.2747**	0.041	14.8	ug/L	-52	Standard
	Se	82	57.3	13.9	**0.3062**	0.059	19.1	ug/L	17	Standard
	Se-1	77	123.0	8.6	**0.6885**	0.126	18.3	ug/L	56	Standard
>	Ga	71	431.7	8.5				mg/L	25	Standard
	Rb	85	29366.8	1.1				ug/L	28	Standard
	Y	89	475138.4	0.5				ug/L	447395	Standard
>	Rh	103	50.0	45.8				ug/L	15	Standard
	Mo	98	2283.8	2.0	**0.7046**	0.016	2.2	ug/L	113	Standard
	Ag	107	471.3	8.2	**0.0505**	0.006	10.9	ug/L	108	Standard
	Cd	111	442.4	4.4	**0.1831**	0.009	4.8	mg/L	3	Standard
	Cd	114	1113.8	8.0	**0.1885**	0.014	7.5	ug/L	20	Standard
>	In	115	648548.7	0.6				ug/L	625728	Standard
	Sn	118	6074.6	8.1	**0.8267**	0.078	9.5	ug/L	568	Standard
	Sb	123	3585.4	3.4	**0.6357**	0.026	4.1	ug/L	612	Standard
	Ba	135	28482.1	1.1	**12.6131**	0.063	0.5	ug/L	21	Standard
	Ce	140	9227.8	4.3				ug/L	245	Standard
>	Tb	159	980514.4	0.6				ug/L	950397	Standard
	Ho	165	175.0	22.7				ug/L	7	Standard
	Tl	203	154.0	7.9	**0.0159**	0.001	7.9	ug/L	15	Standard
	Tl	205	146.7	61.1	**0.0082**	0.011	135.5	ug/L	13	Standard
	Pb	206	300241.0	0.6	**51.5086**	0.588	1.1	ug/L	264	Standard
	Pb	207	251797.0	0.4	**47.5618**	0.476	1.0	ug/L	222	Standard
	Pb	208	1082895.4	0.4	**50.0819**	0.392	0.8	ug/L	959	Standard
	U	238	477.3	8.6	**0.0573**	0.005	9.4	ug/L	9	Standard
>	Bi	209	568731.4	0.7				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4449.0	1.5	**4.7618**	0.165	3.5	mg/L	55	Standard
K	39	216.7	12.7	**0.6389**	0.091	14.3	mg/L	28	Standard
Ca	43	100.0	13.2	**5.9773**	1.125	18.8	mg/L	27	Standard
Fe	54	785.4	6.3	**0.4720**	0.024	5.1	mg/L	147	Standard
Fe	57	430.0	12.3	**0.4211**	0.144	34.2	mg/L	268	Standard
> **Sc-1**	45	44398.3	2.2				mg/L	41174	Standard
Cl	35	84373.7	2.1				ug/L	69550	Standard
Kr	83	2.0	132.3				ug/L	1	Standard
Br	81	8569.1	5.7				ug/L	1950	Standard
P	31	27454.9	2.2				ug/L	21156	Standard
S	34	3758.8	6.0				ug/L	3419	Standard
Sr	88	151.7	5.0				ug/L	72	Standard
C	12	163.3	44.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	436.7	46.5				mg/L	17	Standard
Dy	164	239.6	2.7				mg/L	16	Standard
Ho-1	165	175.0	22.7				mg/L	7	Standard
Er	166	146.7	15.7				mg/L	7	Standard
I	127	165778.6	7.4				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		106.769	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		104.819	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.647
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.878
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606147101
Sample Date/Time: Friday, July 01, 2016 13:41:54
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	82165.6	1.5				ug/L	76456	Standard
	Be	9	25.0	60.0	**0.0010**	0.013	1235.0	ug/L	20	Standard
	Al	27	7420176.1	1.8	**40.3263**	0.745	1.8	ug/L	1307	Standard
	Sc	45	43403.8	1.8				ug/L	41174	Standard
	Ti	47	118.3	2.1	**0.2622**	0.007	2.8	ug/L	27	Standard
	V	51	2485.8	8.9	**0.0901**	0.026	28.6	ug/L	1434	Standard
	Cr	52	11852.6	4.6	**0.4290**	0.067	15.6	ug/L	7733	Standard
	Cr	53	3065.3	10.5	**2.4783**	0.300	12.1	ug/L	442	Standard
	Mn	55	13532.4	4.2	**1.6054**	0.074	4.6	ug/L	723	Standard
	Co	59	973.4	27.9	**0.0919**	0.034	37.1	ug/L	217	Standard
	Ni	60	2788.9	4.3	**1.1302**	0.057	5.1	ug/L	304	Standard
	Cu	65	167698.1	1.5	**78.3834**	1.378	1.8	ug/L	181	Standard
	Zn	66	18490.9	1.1	**14.2285**	0.192	1.3	ug/L	215	Standard
>	Ge	72	545541.7	0.2				ug/L	520809	Standard
	As	75	56.9	102.5	**0.0892**	0.045	50.6	ug/L	-52	Standard
	Se	82	46.0	7.1	**0.2215**	0.025	11.4	ug/L	17	Standard
	Se-1	77	165.0	10.0	**1.1579**	0.182	15.8	ug/L	56	Standard
>	Ga	71	40.0	45.1				mg/L	25	Standard
	Rb	85	1635.1	4.7				ug/L	28	Standard
	Y	89	467449.1	1.6				ug/L	447395	Standard
>	Rh	103	46.7	27.0				ug/L	15	Standard
	Mo	98	638.2	33.3	**0.1798**	0.068	38.0	ug/L	113	Standard
	Ag	107	803.4	8.9	**0.0950**	0.010	10.3	ug/L	108	Standard
	Cd	111	142.8	28.8	**0.0575**	0.017	29.9	mg/L	3	Standard
	Cd	114	382.8	34.4	**0.0647**	0.022	33.9	ug/L	20	Standard
>	In	115	648871.9	1.3				ug/L	625728	Standard
	Sn	118	1820.1	16.8	**0.1889**	0.050	26.3	ug/L	568	Standard
	Sb	123	517.0	31.6	**0.0630**	0.032	50.1	ug/L	612	Standard
	Ba	135	105021.4	1.0	**46.5367**	0.469	1.0	ug/L	21	Standard
	Ce	140	176.7	12.8				ug/L	245	Standard
>	Tb	159	974106.7	1.7				ug/L	950397	Standard
	Ho	165	20.0	43.3				ug/L	7	Standard
	Tl	203	182.7	61.2	**0.0196**	0.013	64.0	ug/L	15	Standard
	Tl	205	260.0	110.0	**0.0228**	0.036	157.4	ug/L	13	Standard
	Pb	206	1477.4	2.4	**0.2162**	0.008	3.6	ug/L	264	Standard
	Pb	207	1248.7	8.1	**0.1959**	0.021	10.5	ug/L	222	Standard
	Pb	208	5698.4	18.4	**0.2221**	0.051	22.9	ug/L	959	Standard
	U	238	669.4	46.7	**0.0825**	0.039	47.3	ug/L	9	Standard
>	Bi	209	555056.3	0.6				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	8267.3	1.5	**9.1027**	0.178	2.0	mg/L	55	Standard
K	39	178.3	20.3	**0.5189**	0.142	27.4	mg/L	28	Standard
Ca	43	265.0	15.0	**20.3615**	3.046	15.0	mg/L	27	Standard
Fe	54	255.7	20.5	**0.0914**	0.039	42.6	mg/L	147	Standard
Fe	57	411.7	6.1	**0.3970**	0.095	23.9	mg/L	268	Standard
> **Sc-1**	45	43403.8	1.8				mg/L	41174	Standard
Cl	35	91879.7	0.6				ug/L	69550	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	5647.7	9.0				ug/L	1950	Standard
P	31	26070.8	4.0				ug/L	21156	Standard
S	34	4028.9	4.5				ug/L	3419	Standard
Sr	88	183.3	6.3				ug/L	72	Standard
C	12	180.0	24.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	53.3	57.3				mg/L	17	Standard
Dy	164	38.6	26.6				mg/L	16	Standard
Ho-1	165	20.0	43.3				mg/L	7	Standard
Er	166	30.0	33.3				mg/L	7	Standard
I	127	15740.0	17.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.468	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.749	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.699
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.404
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606153601 WG574593-01
Sample Date/Time: Friday, July 01, 2016 13:45:05
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	105632.1	2.8				ug/L	76456	Standard
	Be	9	31.7	39.7	**0.0005**	0.008	1597.2	ug/L	20	Standard
	Al	27	9212844.4	2.9	**38.9423**	0.330	0.8	ug/L	1307	Standard
	Sc	45	37845.6	1.8				ug/L	41174	Standard
	Ti	47	303.7	8.6	**0.9123**	0.111	12.1	ug/L	27	Standard
	V	51	24245.6	11.6	**2.9541**	0.410	13.9	ug/L	1434	Standard
	Cr	52	16917.1	2.1	**1.2643**	0.091	7.2	ug/L	7733	Standard
	Cr	53	9354.6	13.4	**9.4775**	1.472	15.5	ug/L	442	Standard
	Mn	55	60166.6	2.3	**8.3838**	0.064	0.8	ug/L	723	Standard
	Co	59	59968.5	3.2	**8.3264**	0.059	0.7	ug/L	217	Standard
	Ni	60	11329.9	3.4	**5.6751**	0.056	1.0	ug/L	304	Standard
	Cu	65	10538.7	5.5	**5.4379**	0.239	4.4	ug/L	181	Standard
	Zn	66	77341.6	1.9	**67.2161**	0.503	0.7	ug/L	215	Standard
>	Ge	72	487884.6	2.6				ug/L	520809	Standard
	As	75	3262.4	6.3	**2.8666**	0.175	6.1	ug/L	-52	Standard
	Se	82	371.0	19.1	**3.0068**	0.587	19.5	ug/L	17	Standard
	Se-1	77	623.3	8.4	**7.1096**	0.803	11.3	ug/L	56	Standard
>	Ga	71	1885.1	4.1				mg/L	25	Standard
	Rb	85	131658.3	3.5				ug/L	28	Standard
	Y	89	431897.9	2.3				ug/L	447395	Standard
>	Rh	103	143.3	38.9				ug/L	15	Standard
	Mo	98	627591.1	3.5	**227.1784**	5.050	2.2	ug/L	113	Standard
	Ag	107	276.3	2.5	**0.0293**	0.001	4.0	ug/L	108	Standard
	Cd	111	-404.3	7.2	**-0.1947**	0.015	7.6	mg/L	3	Standard
	Cd	114	1007.4	4.4	**0.1935**	0.003	1.7	ug/L	20	Standard
>	In	115	571506.3	2.8				ug/L	625728	Standard
	Sn	118	2893.6	2.8	**0.4084**	0.024	5.8	ug/L	568	Standard
	Sb	123	6941.9	4.4	**1.4365**	0.025	1.7	ug/L	612	Standard
	Ba	135	39683.6	1.8	**19.9579**	0.305	1.5	ug/L	21	Standard
	Ce	140	421.7	17.2				ug/L	245	Standard
>	Tb	159	912620.2	2.1				ug/L	950397	Standard
	Ho	165	31.7	24.1				ug/L	7	Standard
	Tl	203	8399.3	2.5	**1.0755**	0.030	2.8	ug/L	15	Standard
	Tl	205	7106.7	3.1	**1.0155**	0.022	2.2	ug/L	13	Standard
	Pb	206	2580.9	3.9	**0.4804**	0.009	1.9	ug/L	264	Standard
	Pb	207	2297.2	1.5	**0.4679**	0.011	2.3	ug/L	222	Standard
	Pb	208	9454.2	3.4	**0.4694**	0.008	1.7	ug/L	959	Standard
	U	238	1115.7	2.4	**0.1590**	0.005	3.3	ug/L	9	Standard
>	Bi	209	480711.3	2.7				ug/L	552821	Standard

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Na	23	8.3	34.6	**27.1734**	9.738	35.8	mg/L	2	Standard
Mg	24	507921.7	2.6	**645.4329**	9.385	1.5	mg/L	55	Standard
K	39	415.0	4.8	**1.6014**	0.114	7.1	mg/L	28	Standard
Ca	43	481.7	12.6	**45.2243**	6.627	14.7	mg/L	27	Standard
Fe	54	127.9	17.8	**0.0101**	0.018	174.2	mg/L	147	Standard
Fe	57	770.0	11.3	**1.7671**	0.242	13.7	mg/L	268	Standard
Sc-1	45	37845.6	1.8				mg/L	41174	Standard
Cl	35	383189.3	2.3				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	30317.0	3.7				ug/L	1950	Standard
P	31	15528.0	3.6				ug/L	21156	Standard
S	34	3745.5	2.5				ug/L	3419	Standard
Sr	88	250.0	23.1				ug/L	72	Standard
C	12	176.7	14.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26862.7	37.9				mg/L	17	Standard
Dy	164	21.9	26.7				mg/L	16	Standard
Ho-1	165	31.7	24.1				mg/L	7	Standard
Er	166	30.0	66.7				mg/L	7	Standard
I	127	123380.9	8.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		138.161	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.678	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.335
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		86.956
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

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Method 6020 - Summary Report

Sample ID: L1606153601DP WG574593-04
Sample Date/Time: Friday, July 01, 2016 13:48:17
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	113476.7	0.3				ug/L	76456	Standard
	Be	9	31.7	39.7	**-0.0008**	0.008	933.9	ug/L	20	Standard
	Al	27	9155815.3	1.0	**36.0246**	0.289	0.8	ug/L	1307	Standard
	Sc	45	38106.2	3.0				ug/L	41174	Standard
	Ti	47	317.7	11.6	**0.9598**	0.126	13.2	ug/L	27	Standard
	V	51	23799.7	13.5	**2.9030**	0.438	15.1	ug/L	1434	Standard
	Cr	52	15774.9	0.6	**1.1182**	0.010	0.9	ug/L	7733	Standard
	Cr	53	7253.4	7.9	**7.2700**	0.659	9.1	ug/L	442	Standard
	Mn	55	54277.4	0.5	**7.5755**	0.086	1.1	ug/L	723	Standard
	Co	59	56802.6	1.1	**7.9092**	0.067	0.8	ug/L	217	Standard
	Ni	60	10522.3	1.7	**5.2767**	0.120	2.3	ug/L	304	Standard
	Cu	65	10358.5	2.3	**5.3602**	0.097	1.8	ug/L	181	Standard
	Zn	66	63839.2	1.1	**55.6043**	0.258	0.5	ug/L	215	Standard
>	Ge	72	486471.3	0.9				ug/L	520809	Standard
	As	75	3361.1	6.7	**2.9591**	0.174	5.9	ug/L	-52	Standard
	Se	82	440.0	19.1	**3.5994**	0.683	19.0	ug/L	17	Standard
	Se-1	77	548.0	6.3	**6.1810**	0.486	7.9	ug/L	56	Standard
>	Ga	71	1580.1	9.0				mg/L	25	Standard
	Rb	85	128497.6	0.7				ug/L	28	Standard
	Y	89	437852.1	1.2				ug/L	447395	Standard
>	Rh	103	195.0	13.3				ug/L	15	Standard
	Mo	98	610817.8	0.2	**219.3028**	1.490	0.7	ug/L	113	Standard
	Ag	107	270.0	5.4	**0.0280**	0.002	7.9	ug/L	108	Standard
	Cd	111	-435.5	5.5	**-0.2078**	0.012	5.8	mg/L	3	Standard
	Cd	114	1008.9	7.4	**0.1923**	0.015	7.6	ug/L	20	Standard
>	In	115	576209.6	0.5				ug/L	625728	Standard
	Sn	118	2962.0	1.1	**0.4156**	0.007	1.7	ug/L	568	Standard
	Sb	123	5993.6	0.1	**1.2257**	0.006	0.5	ug/L	612	Standard
	Ba	135	37997.3	1.1	**18.9491**	0.250	1.3	ug/L	21	Standard
	Ce	140	438.3	13.3				ug/L	245	Standard
>	Tb	159	912922.8	0.6				ug/L	950397	Standard
	Ho	165	23.3	44.6				ug/L	7	Standard
	Tl	203	7035.6	2.0	**0.8846**	0.019	2.1	ug/L	15	Standard
	Tl	205	6231.3	4.9	**0.8732**	0.041	4.7	ug/L	13	Standard
	Pb	206	2197.2	4.0	**0.3947**	0.019	4.9	ug/L	264	Standard
	Pb	207	1945.1	0.8	**0.3813**	0.005	1.2	ug/L	222	Standard
	Pb	208	7974.8	0.5	**0.3808**	0.004	1.1	ug/L	959	Standard
	U	238	1110.0	6.5	**0.1553**	0.010	6.5	ug/L	9	Standard
>	Bi	209	489368.4	0.9				ug/L	552821	Standard

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Na	23	1.7	173.2	**5.3506**	9.259	173.0	mg/L	2	Standard
Mg	24	497934.2	1.5	**628.6633**	12.777	2.0	mg/L	55	Standard
K	39	386.7	13.3	**1.4712**	0.210	14.3	mg/L	28	Standard
Ca	43	468.3	8.9	**43.5651**	4.343	10.0	mg/L	27	Standard
Fe	54	108.4	32.3	**-0.0071**	0.029	411.5	mg/L	147	Standard
Fe	57	688.3	12.0	**1.4795**	0.238	16.1	mg/L	268	Standard
> **Sc-1**	45	38106.2	3.0				mg/L	41174	Standard
Cl	35	369584.8	0.9				ug/L	69550	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	29598.9	3.8				ug/L	1950	Standard
P	31	15125.9	2.3				ug/L	21156	Standard
S	34	3780.5	5.9				ug/L	3419	Standard
Sr	88	230.0	13.6				ug/L	72	Standard
C	12	213.3	38.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30656.1	29.8				mg/L	17	Standard
Dy	164	16.0	70.4				mg/L	16	Standard
Ho-1	165	23.3	44.6				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	76869.6	2.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		148.421	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.407	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	92.086	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	88.522	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

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Method 6020 - Summary Report

Sample ID: L1606153601S WG574593-05
Sample Date/Time: Friday, July 01, 2016 13:51:28
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	114783.5	3.4				ug/L	76456	Standard
	Be	9	31472.7	2.0	**18.7219**	0.754	4.0	ug/L	20	Standard
	Al	27	8967809.3	2.2	**34.8925**	0.413	1.2	ug/L	1307	Standard
	Sc	45	36838.1	2.1				ug/L	41174	Standard
	Ti	47	293.0	5.4	**0.9041**	0.043	4.8	ug/L	27	Standard
	V	51	144707.0	17.5	**19.1390**	3.192	16.7	ug/L	1434	Standard
	Cr	52	181657.1	2.0	**23.7324**	0.270	1.1	ug/L	7733	Standard
	Cr	53	26979.0	1.6	**28.9363**	0.245	0.8	ug/L	442	Standard
	Mn	55	196630.4	2.3	**28.4601**	0.390	1.4	ug/L	723	Standard
	Co	59	229358.7	1.0	**32.8948**	0.071	0.2	ug/L	217	Standard
	Ni	60	50822.4	1.0	**26.7818**	0.048	0.2	ug/L	304	Standard
	Cu	65	50564.2	0.8	**27.1746**	0.164	0.6	ug/L	181	Standard
	Zn	66	34538.3	0.8	**30.8215**	0.391	1.3	ug/L	215	Standard
>	Ge	72	473620.3	1.0				ug/L	520809	Standard
	As	75	32972.2	0.9	**29.4152**	0.246	0.8	ug/L	-52	Standard
	Se	82	3843.3	1.0	**33.3303**	0.606	1.8	ug/L	17	Standard
	Se-1	77	2661.6	3.4	**33.5483**	0.893	2.7	ug/L	56	Standard
>	Ga	71	381.7	15.1				mg/L	25	Standard
	Rb	85	125348.3	2.7				ug/L	28	Standard
	Y	89	429677.9	2.4				ug/L	447395	Standard
>	Rh	103	226.7	13.3				ug/L	15	Standard
	Mo	98	605966.7	1.3	**219.9601**	1.216	0.6	ug/L	113	Standard
	Ag	107	143805.9	1.0	**21.9725**	0.186	0.8	ug/L	108	Standard
	Cd	111	47375.9	2.4	**22.5887**	0.138	0.6	mg/L	3	Standard
	Cd	114	117916.6	2.4	**22.7105**	0.229	1.0	ug/L	20	Standard
>	In	115	569946.5	1.8				ug/L	625728	Standard
	Sn	118	2151.8	16.9	**0.2836**	0.068	23.8	ug/L	568	Standard
	Sb	123	117947.9	1.3	**25.0246**	0.247	1.0	ug/L	612	Standard
	Ba	135	80315.6	0.5	**40.5194**	0.565	1.4	ug/L	21	Standard
	Ce	140	525.0	16.6				ug/L	245	Standard
>	Tb	159	909446.5	2.1				ug/L	950397	Standard
	Ho	165	18.3	56.8				ug/L	7	Standard
	Tl	203	188663.7	0.8	**24.0492**	0.050	0.2	ug/L	15	Standard
	Tl	205	172066.6	1.3	**24.6917**	0.238	1.0	ug/L	13	Standard
	Pb	206	123402.9	1.1	**24.9025**	0.136	0.5	ug/L	264	Standard
	Pb	207	107579.3	1.1	**23.9013**	0.073	0.3	ug/L	222	Standard
	Pb	208	446533.6	1.0	**24.2893**	0.091	0.4	ug/L	959	Standard
	U	238	179675.3	1.7	**25.5069**	0.325	1.3	ug/L	9	Standard
>	Bi	209	483038.3	0.9				ug/L	552821	Standard

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Na	23	13.3	21.7	**44.4001**	9.083	20.5	mg/L	2	Standard
Mg	24	482486.9	1.9	**629.9240**	1.410	0.2	mg/L	55	Standard
K	39	456.7	2.3	**1.8260**	0.024	1.3	mg/L	28	Standard
Ca	43	443.3	6.2	**42.6201**	3.595	8.4	mg/L	27	Standard
Fe	54	107.2	30.6	**-0.0052**	0.027	515.1	mg/L	147	Standard
Fe	57	646.7	6.6	**1.4187**	0.179	12.6	mg/L	268	Standard
> **Sc-1**	45	36838.1	2.1				mg/L	41174	Standard
Cl	35	363789.4	1.4				ug/L	69550	Standard
Kr	83	0.3	173.2				ug/L	1	Standard
Br	81	29438.6	3.1				ug/L	1950	Standard
P	31	15032.5	1.4				ug/L	21156	Standard
S	34	3710.5	3.9				ug/L	3419	Standard
Sr	88	215.0	4.7				ug/L	72	Standard
C	12	186.7	18.8				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	44900.2	29.0				mg/L	17	Standard
Dy	164	12.5	117.7				mg/L	16	Standard
Ho-1	165	18.3	56.8				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	7	Standard
I	127	80914.0	3.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		150.131	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.939	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.085
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.377
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	

Sample ID: L1606153601S WG574593-05
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Method 6020 - Summary Report

Sample ID: L1606153601SD WG574593-06
Sample Date/Time: Friday, July 01, 2016 13:54:40
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	112397.1	1.9				ug/L	76456	Standard
	Be	9	31070.2	1.4	**18.8667**	0.550	2.9	ug/L	20	Standard
	Al	27	8839135.1	2.6	**35.1153**	0.794	2.3	ug/L	1307	Standard
	Sc	45	36505.6	0.6				ug/L	41174	Standard
	Ti	47	313.3	8.2	**0.9879**	0.083	8.4	ug/L	27	Standard
	V	51	166809.7	7.9	**22.4386**	1.861	8.3	ug/L	1434	Standard
	Cr	52	176635.7	0.7	**23.3939**	0.040	0.2	ug/L	7733	Standard
	Cr	53	26448.1	1.1	**28.7705**	0.310	1.1	ug/L	442	Standard
	Mn	55	190612.1	1.7	**27.9819**	0.319	1.1	ug/L	723	Standard
	Co	59	229904.6	2.0	**33.4420**	0.439	1.3	ug/L	217	Standard
	Ni	60	50248.2	1.0	**26.8570**	0.085	0.3	ug/L	304	Standard
	Cu	65	50373.6	1.7	**27.4578**	0.363	1.3	ug/L	181	Standard
	Zn	66	32810.8	2.5	**29.6880**	0.646	2.2	ug/L	215	Standard
>	Ge	72	466958.0	0.7				ug/L	520809	Standard
	As	75	31818.9	1.7	**28.7902**	0.285	1.0	ug/L	-52	Standard
	Se	82	3739.0	3.2	**32.8806**	0.943	2.9	ug/L	17	Standard
	Se-1	77	2572.6	1.3	**32.8825**	0.665	2.0	ug/L	56	Standard
>	Ga	71	335.0	0.0				mg/L	25	Standard
	Rb	85	123842.4	1.0				ug/L	28	Standard
	Y	89	424204.0	1.6				ug/L	447395	Standard
>	Rh	103	250.0	19.1				ug/L	15	Standard
	Mo	98	596887.3	1.2	**220.8114**	1.891	0.9	ug/L	113	Standard
	Ag	107	140477.5	2.4	**21.8716**	0.278	1.3	ug/L	108	Standard
	Cd	111	46478.5	0.9	**22.5882**	0.134	0.6	mg/L	3	Standard
	Cd	114	114740.4	2.4	**22.5229**	0.416	1.8	ug/L	20	Standard
>	In	115	559219.9	1.1				ug/L	625728	Standard
	Sn	118	2036.8	20.6	**0.2701**	0.075	27.8	ug/L	568	Standard
	Sb	123	115612.8	1.8	**24.9963**	0.192	0.8	ug/L	612	Standard
	Ba	135	78486.8	0.7	**40.3510**	0.202	0.5	ug/L	21	Standard
	Ce	140	446.7	6.2				ug/L	245	Standard
>	Tb	159	894070.3	0.6				ug/L	950397	Standard
	Ho	165	23.3	24.7				ug/L	7	Standard
	Tl	203	185499.3	0.6	**23.8373**	0.171	0.7	ug/L	15	Standard
	Tl	205	169836.9	2.3	**24.5659**	0.283	1.2	ug/L	13	Standard
	Pb	206	121903.1	0.8	**24.7990**	0.171	0.7	ug/L	264	Standard
	Pb	207	105852.8	0.4	**23.7090**	0.262	1.1	ug/L	222	Standard
	Pb	208	438929.8	1.6	**24.0671**	0.200	0.8	ug/L	959	Standard
	U	238	177358.8	1.6	**25.3810**	0.202	0.8	ug/L	9	Standard
>	Bi	209	479179.3	1.2				ug/L	552821	Standard

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Na	23	6.7	86.6	**22.4621**	19.450	86.6	mg/L	2	Standard
Mg	24	471196.6	0.7	**620.7791**	4.974	0.8	mg/L	55	Standard
K	39	408.3	16.7	**1.6356**	0.302	18.5	mg/L	28	Standard
Ca	43	436.7	18.5	**42.2777**	8.047	19.0	mg/L	27	Standard
Fe	54	118.9	19.0	**0.0063**	0.019	307.7	mg/L	147	Standard
Fe	57	681.7	4.2	**1.5588**	0.115	7.4	mg/L	268	Standard
> **Sc-1**	45	36505.6	0.6				mg/L	41174	Standard
Cl	35	356982.4	1.5				ug/L	69550	Standard
Kr	83	1.3	86.6				ug/L	1	Standard
Br	81	28717.2	3.6				ug/L	1950	Standard
P	31	15301.1	0.8				ug/L	21156	Standard
S	34	3565.4	1.6				ug/L	3419	Standard
Sr	88	228.3	25.6				ug/L	72	Standard
C	12	156.7	38.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50532.6	17.8				mg/L	17	Standard
Dy	164	15.4	96.7				mg/L	16	Standard
Ho-1	165	23.3	24.7				mg/L	7	Standard
Er	166	26.7	78.1				mg/L	7	Standard
I	127	86335.9	6.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		147.009	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		89.660	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	89.371	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	86.679	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	

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Method 6020 - Summary Report

Sample ID: L1606106804
Sample Date/Time: Friday, July 01, 2016 13:57:51
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92136.1	2.7				ug/L	76456	Standard
	Be	9	31.7	32.9	**0.0036**	0.008	216.5	ug/L	20	Standard
	Al	27	859023.9	1.9	**4.1545**	0.040	1.0	ug/L	1307	Standard
	Sc	45	36834.7	2.5				ug/L	41174	Standard
	Ti	47	40.0	19.5	**0.0448**	0.025	54.9	ug/L	27	Standard
	V	51	5203.8	19.0	**0.4694**	0.132	28.1	ug/L	1434	Standard
	Cr	52	6735.2	1.8	**-0.0924**	0.015	16.5	ug/L	7733	Standard
	Cr	53	918.4	10.2	**0.5415**	0.104	19.3	ug/L	442	Standard
	Mn	55	2241.8	1.6	**0.2108**	0.003	1.6	ug/L	723	Standard
	Co	59	300.7	9.6	**0.0119**	0.004	33.8	ug/L	217	Standard
	Ni	60	672.3	1.0	**0.1885**	0.006	3.2	ug/L	304	Standard
	Cu	65	1685.8	29.1	**0.7955**	0.246	31.0	ug/L	181	Standard
	Zn	66	3230.4	18.8	**2.5967**	0.499	19.2	ug/L	215	Standard
>	**Ge**	72	494044.1	0.8				ug/L	520809	Standard
	As	75	465.2	37.5	**0.4417**	0.146	33.1	ug/L	-52	Standard
	Se	82	234.7	30.5	**1.8293**	0.582	31.8	ug/L	17	Standard
	Se-1	77	90.3	10.8	**0.4300**	0.128	29.8	ug/L	56	Standard
>	**Ga**	71	38.3	39.8				mg/L	25	Standard
	Rb	85	223.3	18.1				ug/L	28	Standard
	Y	89	421894.0	1.5				ug/L	447395	Standard
>	**Rh**	103	131.7	22.3				ug/L	15	Standard
	Mo	98	5006.3	9.4	**1.7140**	0.193	11.2	ug/L	113	Standard
	Ag	107	126.3	16.6	**0.0056**	0.003	50.1	ug/L	108	Standard
	Cd	111	16.1	25.5	**0.0049**	0.002	35.5	mg/L	3	Standard
	Cd	114	61.4	11.1	**0.0113**	0.001	10.9	ug/L	20	Standard
>	**In**	115	596688.0	1.6				ug/L	625728	Standard
	Sn	118	568.3	15.2	**0.0085**	0.015	181.1	ug/L	568	Standard
	Sb	123	246.2	18.9	**0.0163**	0.010	61.8	ug/L	612	Standard
	Ba	135	7350.5	3.5	**3.5247**	0.082	2.3	ug/L	21	Standard
	Ce	140	23.3	32.7				ug/L	245	Standard
>	**Tb**	159	916453.6	1.2				ug/L	950397	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	304.7	24.9	**0.0334**	0.008	23.6	ug/L	15	Standard
	Tl	205	111.7	6.8	**0.0044**	0.001	16.4	ug/L	13	Standard
	Pb	206	327.7	8.6	**0.0145**	0.004	27.3	ug/L	264	Standard
	Pb	207	301.0	9.8	**0.0128**	0.005	36.7	ug/L	222	Standard
	Pb	208	1200.4	8.2	**0.0093**	0.004	42.0	ug/L	959	Standard
	U	238	75.7	24.1	**0.0092**	0.002	23.9	ug/L	9	Standard
>	**Bi**	209	548664.2	1.8				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	2398.5	7.1	**3.0753**	0.279	9.1	mg/L	55	Standard
K	39	18.3	56.8	**-0.0529**	0.044	83.5	mg/L	28	Standard
Ca	43	20.0	43.3	**-0.4071**	0.939	230.7	mg/L	27	Standard
Fe	54	72.6	4.6	**-0.0352**	0.002	4.7	mg/L	147	Standard
Fe	57	226.7	6.4	**-0.0245**	0.066	267.2	mg/L	268	Standard
Sc-1	45	36834.7	2.5				mg/L	41174	Standard
Cl	35	83689.9	2.1				ug/L	69550	Standard
Kr	83	3.3	17.3				ug/L	1	Standard
Br	81	5874.5	1.4				ug/L	1950	Standard
P	31	8095.5	4.0				ug/L	21156	Standard
S	34	3318.7	0.5				ug/L	3419	Standard
Sr	88	98.3	10.6				ug/L	72	Standard
C	12	110.0	9.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	12785.7	29.7				mg/L	17	Standard
Dy	164	19.7	89.4				mg/L	16	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	43990.5	2.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		120.509	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		94.861	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.359
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.248
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606106805
Sample Date/Time: Friday, July 01, 2016 14:01:03
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	88670.5	2.3				ug/L	76456	Standard
	Be	9	28.3	53.9	**0.0021**	0.012	582.5	ug/L	20	Standard
	Al	27	846462.5	1.2	**4.2550**	0.126	3.0	ug/L	1307	Standard
	Sc	45	36754.5	1.7				ug/L	41174	Standard
	Ti	47	37.0	14.0	**0.0369**	0.018	47.7	ug/L	27	Standard
	V	51	2755.7	12.5	**0.1599**	0.048	29.8	ug/L	1434	Standard
	Cr	52	6950.6	2.2	**-0.0520**	0.020	37.7	ug/L	7733	Standard
	Cr	53	901.7	5.0	**0.5360**	0.035	6.6	ug/L	442	Standard
	Mn	55	2061.5	1.0	**0.1896**	0.005	2.5	ug/L	723	Standard
	Co	59	262.3	1.3	**0.0071**	0.000	6.4	ug/L	217	Standard
	Ni	60	603.3	3.0	**0.1577**	0.014	9.0	ug/L	304	Standard
	Cu	65	649.0	15.6	**0.2657**	0.052	19.6	ug/L	181	Standard
	Zn	66	1686.8	6.3	**1.2909**	0.094	7.3	ug/L	215	Standard
>	Ge	72	487470.5	1.6				ug/L	520809	Standard
	As	75	91.9	24.0	**0.1249**	0.020	16.4	ug/L	-52	Standard
	Se	82	68.6	9.5	**0.4538**	0.061	13.4	ug/L	17	Standard
	Se-1	77	88.7	15.6	**0.4255**	0.192	45.1	ug/L	56	Standard
>	Ga	71	20.0	25.0				mg/L	25	Standard
	Rb	85	151.7	6.9				ug/L	28	Standard
	Y	89	408691.1	1.5				ug/L	447395	Standard
>	Rh	103	55.0	47.2				ug/L	15	Standard
	Mo	98	2038.3	34.8	**0.7007**	0.261	37.3	ug/L	113	Standard
	Ag	107	89.7	17.4	**0.0005**	0.003	460.6	ug/L	108	Standard
	Cd	111	8.9	44.4	**0.0018**	0.002	101.9	mg/L	3	Standard
	Cd	114	22.8	93.4	**0.0043**	0.004	93.2	ug/L	20	Standard
>	In	115	583988.4	1.5				ug/L	625728	Standard
	Sn	118	641.7	21.4	**0.0228**	0.025	107.3	ug/L	568	Standard
	Sb	123	149.4	23.6	**-0.0027**	0.008	291.8	ug/L	612	Standard
	Ba	135	7693.6	5.0	**3.7701**	0.138	3.7	ug/L	21	Standard
	Ce	140	23.3	32.7				ug/L	245	Standard
>	Tb	159	893255.5	0.4				ug/L	950397	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	160.7	5.8	**0.0177**	0.001	6.5	ug/L	15	Standard
	Tl	205	106.7	47.9	**0.0040**	0.007	165.6	ug/L	13	Standard
	Pb	206	280.3	10.7	**0.0072**	0.005	74.5	ug/L	264	Standard
	Pb	207	240.3	4.9	**0.0020**	0.003	130.9	ug/L	222	Standard
	Pb	208	1064.0	7.7	**0.0038**	0.004	108.8	ug/L	959	Standard
	U	238	55.7	89.2	**0.0069**	0.006	93.0	ug/L	9	Standard
>	Bi	209	537449.2	0.6				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	2241.8	5.9	**2.8723**	0.129	4.5	mg/L	55	Standard
K	39	31.7	48.2	**0.0047**	0.065	1378.1	mg/L	28	Standard
Ca	43	28.3	53.9	**0.4489**	1.610	358.7	mg/L	27	Standard
Fe	54	77.8	24.1	**-0.0306**	0.015	50.4	mg/L	147	Standard
Fe	57	243.3	20.8	**0.0319**	0.163	509.9	mg/L	268	Standard
> **Sc-1**	45	36754.5	1.7				mg/L	41174	Standard
Cl	35	86917.3	0.6				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	5100.9	3.4				ug/L	1950	Standard
P	31	8162.2	1.3				ug/L	21156	Standard
S	34	3385.4	1.8				ug/L	3419	Standard
Sr	88	96.7	14.9				ug/L	72	Standard
C	12	130.0	13.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	4313.9	5.0				mg/L	17	Standard
Dy	164	12.7	43.5				mg/L	16	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	41831.0	1.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.976	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.599	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.329
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.219
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606106811
Sample Date/Time: Friday, July 01, 2016 14:04:14
Number of Replicates: 3
Autosampler Position: 346
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	87384.7	2.1				ug/L	76456	Standard
	Be	9	386.7	6.4	**0.2826**	0.024	8.6	ug/L	20	Standard
	Al	27	801461.1	1.1	**4.0865**	0.037	0.9	ug/L	1307	Standard
	Sc	45	38134.6	2.7				ug/L	41174	Standard
	Ti	47	4667.1	1.1	**15.1502**	0.207	1.4	ug/L	27	Standard
	V	51	48516.8	1.5	**6.0786**	0.102	1.7	ug/L	1434	Standard
	Cr	52	40220.3	0.9	**4.3195**	0.059	1.4	ug/L	7733	Standard
	Cr	53	4720.7	0.9	**4.5507**	0.057	1.3	ug/L	442	Standard
	Mn	55	311842.6	1.0	**43.7090**	0.370	0.8	ug/L	723	Standard
	Co	59	8423.7	2.0	**1.1400**	0.022	1.9	ug/L	217	Standard
	Ni	60	8146.2	0.4	**4.0222**	0.012	0.3	ug/L	304	Standard
	Cu	65	10805.5	1.3	**5.5573**	0.061	1.1	ug/L	181	Standard
	Zn	66	50531.5	0.7	**43.6829**	0.260	0.6	ug/L	215	Standard
>	Ge	72	489720.8	0.2				ug/L	520809	Standard
	As	75	655.4	1.6	**0.6098**	0.008	1.3	ug/L	-52	Standard
	Se	82	60.2	5.5	**0.3806**	0.029	7.6	ug/L	17	Standard
	Se-1	77	67.3	4.5	**0.1530**	0.036	23.8	ug/L	56	Standard
>	Ga	71	4829.1	0.8				mg/L	25	Standard
	Rb	85	40306.9	0.9				ug/L	28	Standard
	Y	89	441421.4	0.7				ug/L	447395	Standard
>	Rh	103	40.0	54.5				ug/L	15	Standard
	Mo	98	794.4	11.9	**0.2560**	0.030	11.9	ug/L	113	Standard
	Ag	107	205.0	13.7	**0.0176**	0.004	24.9	ug/L	108	Standard
	Cd	111	469.4	3.6	**0.2151**	0.008	3.7	mg/L	3	Standard
	Cd	114	1178.5	4.6	**0.2206**	0.012	5.5	ug/L	20	Standard
>	In	115	586618.1	1.1				ug/L	625728	Standard
	Sn	118	1050.0	35.8	**0.0894**	0.061	68.0	ug/L	568	Standard
	Sb	123	166.1	12.7	**0.0005**	0.004	734.3	ug/L	612	Standard
	Ba	135	56741.7	0.9	**27.8031**	0.108	0.4	ug/L	21	Standard
	Ce	140	116496.1	0.3				ug/L	245	Standard
>	Tb	159	902035.2	0.5				ug/L	950397	Standard
	Ho	165	2190.2	5.6				ug/L	7	Standard
	Tl	203	356.0	5.6	**0.0396**	0.002	5.7	ug/L	15	Standard
	Tl	205	270.0	10.3	**0.0247**	0.004	14.6	ug/L	13	Standard
	Pb	206	16366.5	1.5	**2.8988**	0.049	1.7	ug/L	264	Standard
	Pb	207	13229.8	1.5	**2.5731**	0.042	1.6	ug/L	222	Standard
	Pb	208	57216.2	0.2	**2.7252**	0.006	0.2	ug/L	959	Standard
	U	238	2067.8	1.8	**0.2608**	0.005	1.9	ug/L	9	Standard
>	Bi	209	543128.9	0.1				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	836.7	5.2	**0.9955**	0.059	5.9	mg/L	55	Standard
K	39	96.7	23.3	**0.2695**	0.095	35.1	mg/L	28	Standard
Ca	43	25.0	52.9	**-0.0121**	1.244	10273.4	mg/L	27	Standard
Fe	54	3385.4	5.7	**2.7677**	0.147	5.3	mg/L	147	Standard
Fe	57	1086.7	6.1	**2.8007**	0.187	6.7	mg/L	268	Standard
> **Sc-1**	45	38134.6	2.7				mg/L	41174	Standard
Cl	35	72343.0	2.0				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	2266.8	11.8				ug/L	1950	Standard
P	31	15112.5	3.0				ug/L	21156	Standard
S	34	3132.0	3.9				ug/L	3419	Standard
Sr	88	90.0	11.1				ug/L	72	Standard
C	12	160.0	39.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1193.4	7.9				mg/L	17	Standard
Dy	164	3446.2	2.4				mg/L	16	Standard
Ho-1	165	2190.2	5.6				mg/L	7	Standard
Er	166	2036.8	6.1				mg/L	7	Standard
I	127	34445.8	1.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.294	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.031	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.750
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.247
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606106813 ~~WG574840-01~~ WG573840-01
Sample Date/Time: Friday, July 01, 2016 14:07:25
Number of Replicates: 3
Autosampler Position: 347
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	85735.2	1.3				ug/L	76456	Standard
	Be	9	26.7	28.6	**0.0014**	0.006	443.3	ug/L	20	Standard
	Al	27	449795.7	0.8	**2.3331**	0.023	1.0	ug/L	1307	Standard
	Sc	45	35930.9	1.1				ug/L	41174	Standard
	Ti	47	472.3	1.7	**1.4707**	0.057	3.8	ug/L	27	Standard
	V	51	4534.5	3.6	**0.3927**	0.010	2.6	ug/L	1434	Standard
	Cr	52	9314.9	0.9	**0.2650**	0.027	10.0	ug/L	7733	Standard
	Cr	53	2433.5	4.4	**2.1645**	0.092	4.2	ug/L	442	Standard
	Mn	55	102294.5	0.4	**14.3920**	0.341	2.4	ug/L	723	Standard
	Co	59	3018.3	3.5	**0.3929**	0.007	1.8	ug/L	217	Standard
	Ni	60	5415.6	1.7	**2.6457**	0.041	1.6	ug/L	304	Standard
	Cu	65	743.0	9.7	**0.3169**	0.044	14.0	ug/L	181	Standard
	Zn	66	3480.1	1.7	**2.8660**	0.076	2.6	ug/L	215	Standard
>	Ge	72	485745.7	2.0				ug/L	520809	Standard
	As	75	242.8	9.7	**0.2563**	0.025	9.6	ug/L	-52	Standard
	Se	82	97.2	2.1	**0.6986**	0.030	4.2	ug/L	17	Standard
	Se-1	77	117.0	14.6	**0.7818**	0.201	25.7	ug/L	56	Standard
>	Ga	71	268.3	10.3				mg/L	25	Standard
	Rb	85	4108.9	5.5				ug/L	28	Standard
	Y	89	416309.3	1.5				ug/L	447395	Standard
>	Rh	103	45.0	50.9				ug/L	15	Standard
	Mo	98	680.6	19.4	**0.2163**	0.043	19.7	ug/L	113	Standard
	Ag	107	83.7	9.0	**-0.0004**	0.001	316.0	ug/L	108	Standard
	Cd	111	203.5	6.4	**0.0922**	0.005	5.5	mg/L	3	Standard
	Cd	114	545.9	14.8	**0.1025**	0.015	14.8	ug/L	20	Standard
>	In	115	585054.4	1.7				ug/L	625728	Standard
	Sn	118	836.7	33.0	**0.0543**	0.043	80.0	ug/L	568	Standard
	Sb	123	125.9	11.8	**-0.0077**	0.003	35.5	ug/L	612	Standard
	Ba	135	12781.1	0.9	**6.2667**	0.128	2.0	ug/L	21	Standard
	Ce	140	5152.5	0.8				ug/L	245	Standard
>	Tb	159	900548.7	1.5				ug/L	950397	Standard
	Ho	165	100.0	10.0				ug/L	7	Standard
	Tl	203	107.7	11.0	**0.0117**	0.001	10.8	ug/L	15	Standard
	Tl	205	76.7	10.0	**0.0002**	0.001	348.4	ug/L	13	Standard
	Pb	206	778.4	4.5	**0.0993**	0.008	7.9	ug/L	264	Standard
	Pb	207	661.0	3.8	**0.0876**	0.005	5.2	ug/L	222	Standard
	Pb	208	2799.8	2.1	**0.0904**	0.002	2.4	ug/L	959	Standard
	U	238	156.0	3.6	**0.0199**	0.000	2.4	ug/L	9	Standard
>	Bi	209	531551.0	1.5				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	8015.5	3.4	**10.6709**	0.401	3.8	mg/L	55	Standard
K	39	28.3	50.9	**-0.0070**	0.062	882.4	mg/L	28	Standard
Ca	43	31.7	36.5	**0.8382**	1.170	139.6	mg/L	27	Standard
Fe	54	628.6	3.1	**0.4660**	0.014	3.0	mg/L	147	Standard
Fe	57	371.7	8.1	**0.5046**	0.104	20.5	mg/L	268	Standard
> **Sc-1**	45	35930.9	1.1				mg/L	41174	Standard
Cl	35	72947.2	1.3				ug/L	69550	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	16705.9	1.9				ug/L	1950	Standard
P	31	9869.9	4.0				ug/L	21156	Standard
S	34	3002.0	2.0				ug/L	3419	Standard
Sr	88	73.3	38.8				ug/L	72	Standard
C	12	123.3	24.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	670.0	12.2				mg/L	17	Standard
Dy	164	162.7	37.8				mg/L	16	Standard
Ho-1	165	100.0	10.0				mg/L	7	Standard
Er	166	83.3	25.0				mg/L	7	Standard
I	127	64636.1	5.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.137	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.267	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.500
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.152
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
WG573840-01			

Sample ID: L1606106813 ~~WG574840-01~~
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 14:10:39
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	88849.8	2.1				ug/L	76456	Standard
	Be	9	66753.5	2.5	**51.2959**	0.926	1.8	ug/L	20	Standard
	Al	27	8854426.6	1.6	**44.5025**	0.510	1.1	ug/L	1307	Standard
	Sc	45	39063.7	3.7				ug/L	41174	Standard
	Ti	47	30764.2	0.5	**94.6692**	0.333	0.4	ug/L	27	Standard
	V	51	413476.1	0.1	**50.2774**	0.192	0.4	ug/L	1434	Standard
	Cr	52	400969.6	0.9	**48.7893**	0.334	0.7	ug/L	7733	Standard
	Cr	53	49330.2	1.0	**48.5611**	0.384	0.8	ug/L	442	Standard
	Mn	55	368164.8	0.7	**48.7020**	0.201	0.4	ug/L	723	Standard
	Co	59	403506.1	0.3	**52.8271**	0.036	0.1	ug/L	217	Standard
	Ni	60	101394.2	1.2	**48.8833**	0.523	1.1	ug/L	304	Standard
	Cu	65	100114.0	0.9	**49.1563**	0.410	0.8	ug/L	181	Standard
	Zn	66	60654.2	0.4	**49.4979**	0.106	0.2	ug/L	215	Standard
>	Ge	72	519017.5	0.3				ug/L	520809	Standard
	As	75	61466.0	0.5	**50.0055**	0.153	0.3	ug/L	-52	Standard
	Se	82	6464.5	2.4	**51.2180**	1.098	2.1	ug/L	17	Standard
	Se-1	77	4373.3	1.3	**50.6496**	0.533	1.1	ug/L	56	Standard
>	Ga	71	66.7	18.9				mg/L	25	Standard
	Rb	85	861.7	5.9				ug/L	28	Standard
	Y	89	449328.6	2.0				ug/L	447395	Standard
>	Rh	103	36.7	31.5				ug/L	15	Standard
	Mo	98	305460.5	0.7	**100.5610**	1.227	1.2	ug/L	113	Standard
	Ag	107	357889.2	0.5	**49.6167**	0.755	1.5	ug/L	108	Standard
	Cd	111	115251.7	0.3	**49.8541**	0.558	1.1	mg/L	3	Standard
	Cd	114	285891.9	1.9	**49.9459**	0.709	1.4	ug/L	20	Standard
>	In	115	628352.9	1.0				ug/L	625728	Standard
	Sn	118	322603.7	1.4	**49.8300**	0.182	0.4	ug/L	568	Standard
	Sb	123	256839.4	0.5	**49.4582**	0.316	0.6	ug/L	612	Standard
	Ba	135	105057.6	0.5	**48.0726**	0.299	0.6	ug/L	21	Standard
	Ce	140	361.7	34.4				ug/L	245	Standard
>	Tb	159	960077.3	1.9				ug/L	950397	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	452676.3	0.7	**49.9830**	0.213	0.4	ug/L	15	Standard
	Tl	205	410938.2	0.4	**51.0915**	0.351	0.7	ug/L	13	Standard
	Pb	206	286259.6	0.4	**50.0826**	0.130	0.3	ug/L	264	Standard
	Pb	207	259240.1	0.9	**49.9407**	0.356	0.7	ug/L	222	Standard
	Pb	208	1080903.3	0.1	**50.9831**	0.221	0.4	ug/L	959	Standard
	U	238	414937.8	0.7	**51.0249**	0.218	0.4	ug/L	9	Standard
>	Bi	209	557647.7	0.3				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4484.0	1.2	**5.4671**	0.257	4.7	mg/L	55	Standard
K	39	1023.4	3.3	**4.0066**	0.130	3.2	mg/L	28	Standard
Ca	43	43.3	53.3	**1.7517**	2.400	137.0	mg/L	27	Standard
Fe	54	6523.2	1.6	**5.2995**	0.275	5.2	mg/L	147	Standard
Fe	57	1890.1	7.4	**5.3143**	0.301	5.7	mg/L	268	Standard
Sc-1	45	39063.7	3.7				mg/L	41174	Standard
Cl	35	79213.9	1.2				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	2563.6	1.5				ug/L	1950	Standard
P	31	24057.4	1.2				ug/L	21156	Standard
S	34	3523.7	3.2				ug/L	3419	Standard
Sr	88	65.0	7.7				ug/L	72	Standard
C	12	140.0	57.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	940.0	34.1				mg/L	17	Standard
Dy	164	25.2	57.6				mg/L	16	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	30.0	88.2				mg/L	7	Standard
I	127	15756.5	3.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.592		
Al	27	89.005		
Sc	45			
Ti	47	94.669		
V	51	100.555		
Cr	52	97.579		
Cr	53			
Mn	55	97.404		
Co	59	105.654		
Ni	60	97.767		
Cu	65	98.313		
Zn	66	98.996		
Ge	72		99.656	
As	75	100.011		
Se	82	102.436		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	100.561		
Ag	107	99.233		
Cd	111	99.708		
Cd	114			
> In	115			100.420
Sn	118	99.660		
Sb	123	98.916		
Ba	135	96.145		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.966		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.966		
U	238	102.050		
> Bi	209			100.873
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 14:13:50
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88888.4	2.2				ug/L	76456	Standard
	Be	9	38.3	52.7	**0.0094**	0.015	161.5	ug/L	20	Standard
	Al	27	2825.3	17.3	**0.0040**	0.002	53.4	ug/L	1307	Standard
	Sc	45	39005.1	1.5				ug/L	41174	Standard
	Ti	47	28.0	19.9	**0.0028**	0.016	582.3	ug/L	27	Standard
	V	51	2415.4	18.1	**0.1010**	0.058	57.8	ug/L	1434	Standard
	Cr	52	6917.2	0.7	**-0.0998**	0.014	13.7	ug/L	7733	Standard
	Cr	53	555.0	5.9	**0.1417**	0.025	17.3	ug/L	442	Standard
	Mn	55	752.7	2.2	**-0.0001**	0.003	2090.7	ug/L	723	Standard
	Co	59	252.7	11.5	**0.0041**	0.003	85.1	ug/L	217	Standard
	Ni	60	429.7	6.2	**0.0575**	0.011	18.3	ug/L	304	Standard
	Cu	65	263.0	14.8	**0.0569**	0.017	30.5	ug/L	181	Standard
	Zn	66	279.3	0.5	**0.0518**	0.003	5.0	ug/L	215	Standard
>	**Ge**	72	511815.0	1.6				ug/L	520809	Standard
	As	75	-18.1	92.8	**0.0301**	0.014	46.4	ug/L	-52	Standard
	Se	82	24.7	15.0	**0.0723**	0.029	39.9	ug/L	17	Standard
	Se-1	77	58.0	10.8	**0.0062**	0.079	1288.4	ug/L	56	Standard
>	**Ga**	71	13.3	78.1				mg/L	25	Standard
	Rb	85	38.3	7.5				ug/L	28	Standard
	Y	89	444682.5	1.8				ug/L	447395	Standard
>	**Rh**	103	18.3	15.7				ug/L	15	Standard
	Mo	98	598.8	12.4	**0.1734**	0.026	14.8	ug/L	113	Standard
	Ag	107	140.0	4.0	**0.0066**	0.001	12.4	ug/L	108	Standard
	Cd	111	12.3	61.1	**0.0030**	0.003	109.1	mg/L	3	Standard
	Cd	114	49.0	43.7	**0.0086**	0.004	42.9	ug/L	20	Standard
>	**In**	115	628245.6	0.7				ug/L	625728	Standard
	Sn	118	1961.8	30.2	**0.2198**	0.093	42.5	ug/L	568	Standard
	Sb	123	904.2	34.2	**0.1408**	0.061	43.0	ug/L	612	Standard
	Ba	135	57.3	10.7	**0.0083**	0.003	31.6	ug/L	21	Standard
	Ce	140	128.3	30.3				ug/L	245	Standard
>	**Tb**	159	944365.6	0.9				ug/L	950397	Standard
	Ho	165	13.3	94.4				ug/L	7	Standard
	Tl	203	108.0	13.0	**0.0111**	0.001	13.5	ug/L	15	Standard
	Tl	205	96.7	15.8	**0.0022**	0.002	85.6	ug/L	13	Standard
	Pb	206	339.7	1.4	**0.0152**	0.001	5.3	ug/L	264	Standard
	Pb	207	305.3	7.3	**0.0122**	0.004	33.7	ug/L	222	Standard
	Pb	208	1308.0	3.7	**0.0129**	0.002	16.1	ug/L	959	Standard
	U	238	87.3	40.5	**0.0104**	0.004	41.2	ug/L	9	Standard
>	**Bi**	209	562720.5	0.3				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	75.0	23.1	**0.0324**	0.022	69.0	mg/L	55	Standard
K	39	33.3	45.8	**0.0031**	0.060	1894.0	mg/L	28	Standard
Ca	43	15.0	33.3	**-1.0175**	0.462	45.4	mg/L	27	Standard
Fe	54	165.7	9.2	**0.0385**	0.014	37.1	mg/L	147	Standard
Fe	57	250.0	12.0	**0.0061**	0.086	1418.1	mg/L	268	Standard
Sc-1	45	39005.1	1.5				mg/L	41174	Standard
Cl	35	79585.8	1.1				ug/L	69550	Standard
Kr	83	3.0	33.3				ug/L	1	Standard
Br	81	2136.8	1.9				ug/L	1950	Standard
P	31	23918.9	4.5				ug/L	21156	Standard
S	34	3433.7	5.0				ug/L	3419	Standard
Sr	88	81.7	12.7				ug/L	72	Standard
C	12	130.0	20.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	723.4	38.9				mg/L	17	Standard
Dy	164	12.1	100.4				mg/L	16	Standard
Ho-1	165	13.3	94.4				mg/L	7	Standard
Er	166	26.7	57.3				mg/L	7	Standard
I	127	11843.0	2.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.273	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.402
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.791
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

WG573840-04

Sample ID: L1606106815S ~~WG574840-04~~
Sample Date/Time: Friday, July 01, 2016 14:17:03
Number of Replicates: 3
Autosampler Position: 348
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83265.1	4.4				ug/L	76456	Standard
	Be	9	6339.7	3.7	5.1828	0.150	2.9	ug/L	20	Standard
	Al	27	349898.6	2.2	1.8682	0.063	3.4	ug/L	1307	Standard
	Sc	45	36113.0	0.7				ug/L	41174	Standard
	Ti	47	374.0	5.7	1.1636	0.064	5.5	ug/L	27	Standard
	V	51	40708.6	1.1	5.1868	0.031	0.6	ug/L	1434	Standard
	Cr	52	46718.3	0.7	5.3127	0.067	1.3	ug/L	7733	Standard
	Cr	53	6618.1	2.8	6.7048	0.239	3.6	ug/L	442	Standard
	Mn	55	114395.6	0.5	16.3321	0.067	0.4	ug/L	723	Standard
	Co	59	38195.1	1.8	5.3924	0.078	1.4	ug/L	217	Standard
	Ni	60	13663.5	1.3	7.0078	0.080	1.1	ug/L	304	Standard
	Cu	65	9944.3	1.7	5.2251	0.077	1.5	ug/L	181	Standard
	Zn	66	9492.0	1.6	8.2445	0.108	1.3	ug/L	215	Standard
>	Ge	72	478934.2	0.5				ug/L	520809	Standard
	As	75	6298.1	2.1	5.5931	0.137	2.4	ug/L	-52	Standard
	Se	82	745.3	1.6	6.2890	0.131	2.1	ug/L	17	Standard
	Se-1	77	565.0	3.4	6.5031	0.256	3.9	ug/L	56	Standard
>	Ga	71	210.0	14.9				mg/L	25	Standard
	Rb	85	3015.3	2.7				ug/L	28	Standard
	Y	89	406713.6	1.2				ug/L	447395	Standard
>	Rh	103	30.0	44.1				ug/L	15	Standard
	Mo	98	643.2	26.9	0.2086	0.062	29.9	ug/L	113	Standard
	Ag	107	33003.9	0.1	5.0128	0.031	0.6	ug/L	108	Standard
	Cd	111	11239.0	0.3	5.3366	0.046	0.9	mg/L	3	Standard
	Cd	114	27301.6	1.5	5.2380	0.071	1.4	ug/L	20	Standard
>	In	115	572178.3	0.7				ug/L	625728	Standard
	Sn	118	856.7	28.9	0.0614	0.042	68.6	ug/L	568	Standard
	Sb	123	23676.7	0.6	4.9767	0.063	1.3	ug/L	612	Standard
	Ba	135	19520.2	0.7	9.7948	0.108	1.1	ug/L	21	Standard
	Ce	140	4247.3	5.7				ug/L	245	Standard
>	Tb	159	879458.6	1.4				ug/L	950397	Standard
	Ho	165	76.7	30.1				ug/L	7	Standard
	Tl	203	41384.8	1.8	4.8673	0.052	1.1	ug/L	15	Standard
	Tl	205	37817.2	2.3	4.9998	0.080	1.6	ug/L	13	Standard
	Pb	206	27923.4	1.8	5.1651	0.060	1.2	ug/L	264	Standard
	Pb	207	24211.0	1.2	4.9273	0.030	0.6	ug/L	222	Standard
	Pb	208	101923.3	0.8	5.0783	0.055	1.1	ug/L	959	Standard
	U	238	37622.7	0.8	4.9287	0.050	1.0	ug/L	9	Standard
>	Bi	209	523442.8	0.7				ug/L	552821	Standard

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Na	23	1.7	173.2	**5.6795**	9.828	173.1	mg/L	2	Standard
Mg	24	6323.0	5.1	**8.3634**	0.482	5.8	mg/L	55	Standard
K	39	55.0	24.1	**0.1095**	0.059	54.3	mg/L	28	Standard
Ca	43	28.3	83.4	**0.4924**	2.471	501.8	mg/L	27	Standard
Fe	54	574.3	6.7	**0.4148**	0.038	9.1	mg/L	147	Standard
Fe	57	356.7	11.3	**0.4458**	0.147	32.9	mg/L	268	Standard
> **Sc-1**	45	36113.0	0.7				mg/L	41174	Standard
Cl	35	72434.1	0.7				ug/L	69550	Standard
Kr	83	2.0	0.0				ug/L	1	Standard
Br	81	13466.0	3.1				ug/L	1950	Standard
P	31	9684.8	1.1				ug/L	21156	Standard
S	34	3162.0	7.4				ug/L	3419	Standard
Sr	88	88.3	6.5				ug/L	72	Standard
C	12	126.7	19.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	493.3	11.2				mg/L	17	Standard
Dy	164	135.8	20.6				mg/L	16	Standard
Ho-1	165	76.7	30.1				mg/L	7	Standard
Er	166	86.7	40.5				mg/L	7	Standard
I	127	53586.4	4.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.906	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		91.960	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.442
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.686
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Sample ID: L1606106815S ~~WG574840-04~~
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Method 6020 - Summary Report

WG573840-05

Sample ID: L1606106817SD ~~WG574840-05~~
Sample Date/Time: Friday, July 01, 2016 14:20:15
Number of Replicates: 3
Autosampler Position: 349
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81106.5	1.7				ug/L	76456	Standard
	Be	9	6459.7	2.4	**5.4224**	0.225	4.2	ug/L	20	Standard
	Al	27	501960.4	2.3	**2.7550**	0.103	3.7	ug/L	1307	Standard
	Sc	45	36201.5	0.9				ug/L	41174	Standard
	Ti	47	1052.0	1.1	**3.4327**	0.017	0.5	ug/L	27	Standard
	V	51	46082.9	1.9	**5.9078**	0.087	1.5	ug/L	1434	Standard
	Cr	52	58550.9	1.6	**6.9166**	0.078	1.1	ug/L	7733	Standard
	Cr	53	8594.1	3.3	**8.8449**	0.268	3.0	ug/L	442	Standard
	Mn	55	145669.8	2.3	**20.8582**	0.361	1.7	ug/L	723	Standard
	Co	59	40340.0	2.3	**5.7063**	0.097	1.7	ug/L	217	Standard
	Ni	60	15750.9	2.0	**8.1157**	0.154	1.9	ug/L	304	Standard
	Cu	65	10601.7	1.3	**5.5848**	0.040	0.7	ug/L	181	Standard
	Zn	66	10298.5	1.1	**8.9757**	0.069	0.8	ug/L	215	Standard
>	Ge	72	478135.2	0.6				ug/L	520809	Standard
	As	75	6490.3	1.3	**5.7717**	0.072	1.2	ug/L	-52	Standard
	Se	82	783.8	3.6	**6.6313**	0.232	3.5	ug/L	17	Standard
	Se-1	77	575.7	8.4	**6.6484**	0.573	8.6	ug/L	56	Standard
>	Ga	71	653.3	4.4				mg/L	25	Standard
	Rb	85	7186.7	2.7				ug/L	28	Standard
	Y	89	409741.2	2.1				ug/L	447395	Standard
>	Rh	103	31.7	18.2				ug/L	15	Standard
	Mo	98	998.2	56.5	**0.3366**	0.205	60.9	ug/L	113	Standard
	Ag	107	33931.3	1.3	**5.1521**	0.034	0.7	ug/L	108	Standard
	Cd	111	11629.2	3.5	**5.5186**	0.109	2.0	mg/L	3	Standard
	Cd	114	28711.5	1.0	**5.5071**	0.084	1.5	ug/L	20	Standard
>	In	115	572419.1	1.9				ug/L	625728	Standard
	Sn	118	771.7	35.0	**0.0463**	0.043	93.9	ug/L	568	Standard
	Sb	123	22618.6	1.5	**4.7509**	0.051	1.1	ug/L	612	Standard
	Ba	135	24808.3	0.6	**12.4494**	0.172	1.4	ug/L	21	Standard
	Ce	140	9864.9	1.2				ug/L	245	Standard
>	Tb	159	882133.3	1.2				ug/L	950397	Standard
	Ho	165	175.0	13.1				ug/L	7	Standard
	Tl	203	43094.9	1.3	**5.0490**	0.012	0.2	ug/L	15	Standard
	Tl	205	38782.9	1.4	**5.1088**	0.109	2.1	ug/L	13	Standard
	Pb	206	28842.8	0.9	**5.3164**	0.076	1.4	ug/L	264	Standard
	Pb	207	24928.5	1.0	**5.0552**	0.065	1.3	ug/L	222	Standard
	Pb	208	104803.4	1.3	**5.2025**	0.040	0.8	ug/L	959	Standard
	U	238	38305.0	0.8	**4.9987**	0.028	0.6	ug/L	9	Standard
>	Bi	209	525482.1	1.1				ug/L	552821	Standard

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Na	23	3.3	173.2	**11.2046**	19.398	173.1	mg/L	2	Standard
Mg	24	8434.0	5.4	**11.1454**	0.594	5.3	mg/L	55	Standard
K	39	58.3	13.1	**0.1234**	0.036	28.8	mg/L	28	Standard
Ca	43	20.0	75.0	**-0.3837**	1.563	407.4	mg/L	27	Standard
Fe	54	968.4	3.8	**0.7651**	0.040	5.3	mg/L	147	Standard
Fe	57	503.3	13.7	**0.9549**	0.241	25.2	mg/L	268	Standard
> **Sc-1**	45	36201.5	0.9				mg/L	41174	Standard
Cl	35	71982.6	1.3				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	18638.1	5.1				ug/L	1950	Standard
P	31	10710.5	1.0				ug/L	21156	Standard
S	34	3345.4	0.8				ug/L	3419	Standard
Sr	88	73.3	27.6				ug/L	72	Standard
C	12	120.0	57.7				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	436.7	13.4				mg/L	17	Standard
Dy	164	280.4	13.3				mg/L	16	Standard
Ho-1	165	175.0	13.1				mg/L	7	Standard
Er	166	200.0	13.2				mg/L	7	Standard
I	127	66018.7	4.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.083	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		91.806	
As	75			
Se	82			
Se-1	77			
> Ga	71	WG573840-05		

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.481
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.055
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Sample ID: L1606106817SD ~~**WG574840-05**~~
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Method 6020 - Summary Report

Sample ID: L1606106502
Sample Date/Time: Friday, July 01, 2016 14:23:26
Number of Replicates: 3
Autosampler Position: 350
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80066.0	1.1				ug/L	76456	Standard
	Be	9	30.0	115.5	**0.0056**	0.029	520.4	ug/L	20	Standard
	Al	27	180778.3	4.1	**0.9982**	0.041	4.1	ug/L	1307	Standard
	Sc	45	36360.3	2.0				ug/L	41174	Standard
	Ti	47	27.3	18.4	**0.0052**	0.016	312.3	ug/L	27	Standard
	V	51	1588.1	11.5	**0.0081**	0.023	286.5	ug/L	1434	Standard
	Cr	52	81053.1	3.8	**9.7557**	0.368	3.8	ug/L	7733	Standard
	Cr	53	9971.6	2.0	**10.1419**	0.234	2.3	ug/L	442	Standard
	Mn	55	13954.4	0.7	**1.8714**	0.017	0.9	ug/L	723	Standard
	Co	59	649.0	8.3	**0.0612**	0.008	12.7	ug/L	217	Standard
	Ni	60	1447.4	0.9	**0.5934**	0.004	0.6	ug/L	304	Standard
	Cu	65	486.7	11.5	**0.1810**	0.028	15.4	ug/L	181	Standard
	Zn	66	1353.4	2.5	**1.0020**	0.034	3.4	ug/L	215	Standard
>	**Ge**	72	486676.1	0.5				ug/L	520809	Standard
	As	75	-22.0	245.7	**0.0260**	0.047	179.9	ug/L	-52	Standard
	Se	82	18.1	72.4	**0.0263**	0.110	418.7	ug/L	17	Standard
	Se-1	77	60.7	2.5	**0.0749**	0.022	28.9	ug/L	56	Standard
>	**Ga**	71	25.0	20.0				mg/L	25	Standard
	Rb	85	138.3	26.6				ug/L	28	Standard
	Y	89	406376.2	1.0				ug/L	447395	Standard
>	**Rh**	103	16.7	69.3				ug/L	15	Standard
	Mo	98	1770.7	17.5	**0.6016**	0.111	18.5	ug/L	113	Standard
	Ag	107	129.0	37.0	**0.0063**	0.007	112.2	ug/L	108	Standard
	Cd	111	16.9	116.6	**0.0055**	0.009	166.8	mg/L	3	Standard
	Cd	114	59.1	100.8	**0.0111**	0.011	100.7	ug/L	20	Standard
>	**In**	115	585828.3	0.2				ug/L	625728	Standard
	Sn	118	591.7	24.5	**0.0140**	0.024	173.1	ug/L	568	Standard
	Sb	123	173.5	26.1	**0.0021**	0.009	438.7	ug/L	612	Standard
	Ba	135	254.0	14.4	**0.1068**	0.018	16.8	ug/L	21	Standard
	Ce	140	36.7	55.1				ug/L	245	Standard
>	**Tb**	159	883738.0	0.6				ug/L	950397	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	137.0	50.5	**0.0151**	0.008	51.9	ug/L	15	Standard
	Tl	205	130.0	90.1	**0.0071**	0.015	211.0	ug/L	13	Standard
	Pb	206	304.3	19.3	**0.0122**	0.010	84.1	ug/L	264	Standard
	Pb	207	261.0	10.0	**0.0068**	0.005	70.4	ug/L	222	Standard
	Pb	208	1149.7	15.1	**0.0087**	0.008	92.0	ug/L	959	Standard
	U	238	112.0	113.8	**0.0141**	0.016	115.0	ug/L	9	Standard
>	**Bi**	209	530616.0	1.0				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	1146.7	22.2	**1.4533**	0.307	21.1	mg/L	55	Standard
K	39	28.3	44.4	**-0.0074**	0.057	769.4	mg/L	28	Standard
Ca	43	26.7	54.1	**0.3104**	1.522	490.2	mg/L	27	Standard
Fe	54	101.6	8.0	**-0.0086**	0.008	94.5	mg/L	147	Standard
Fe	57	255.0	17.0	**0.0854**	0.166	194.4	mg/L	268	Standard
> **Sc-1**	45	36360.3	2.0				mg/L	41174	Standard
Cl	35	73712.2	1.2				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	2090.1	10.3				ug/L	1950	Standard
P	31	7825.4	0.6				ug/L	21156	Standard
S	34	3022.0	4.6				ug/L	3419	Standard
Sr	88	71.7	8.1				ug/L	72	Standard
C	12	96.7	23.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1313.4	4.6				mg/L	17	Standard
Dy	164	22.1	25.6				mg/L	16	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	26.7	21.7				mg/L	7	Standard
I	127	28513.5	2.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.722	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.446	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.623
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.983
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606106503
Sample Date/Time: Friday, July 01, 2016 14:26:37
Number of Replicates: 3
Autosampler Position: 351
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79132.8	1.3				ug/L	76456	Standard
	Be	9	20.0	90.1	**-0.0027**	0.015	566.6	ug/L	20	Standard
	Al	27	183681.8	1.0	**1.0266**	0.021	2.0	ug/L	1307	Standard
	Sc	45	35984.4	2.9				ug/L	41174	Standard
	Ti	47	20.7	12.2	**-0.0167**	0.009	53.6	ug/L	27	Standard
	V	51	1554.3	4.0	**0.0034**	0.007	204.4	ug/L	1434	Standard
	Cr	52	22825.5	4.8	**2.0452**	0.152	7.4	ug/L	7733	Standard
	Cr	53	2823.6	3.2	**2.5679**	0.111	4.3	ug/L	442	Standard
	Mn	55	25588.9	0.9	**3.5097**	0.037	1.1	ug/L	723	Standard
	Co	59	286.3	4.8	**0.0105**	0.002	16.3	ug/L	217	Standard
	Ni	60	1267.4	3.9	**0.4993**	0.024	4.9	ug/L	304	Standard
	Cu	65	240.7	4.8	**0.0519**	0.005	9.1	ug/L	181	Standard
	Zn	66	1398.4	2.4	**1.0389**	0.016	1.6	ug/L	215	Standard
>	**Ge**	72	487565.1	1.1				ug/L	520809	Standard
	As	75	-30.6	81.1	**0.0187**	0.022	115.7	ug/L	-52	Standard
	Se	82	20.5	30.4	**0.0466**	0.051	110.3	ug/L	17	Standard
	Se-1	77	71.3	18.1	**0.2061**	0.156	75.5	ug/L	56	Standard
>	**Ga**	71	30.0	33.3				mg/L	25	Standard
	Rb	85	90.0	53.6				ug/L	28	Standard
	Y	89	411794.3	0.5				ug/L	447395	Standard
>	**Rh**	103	21.7	13.3				ug/L	15	Standard
	Mo	98	702.5	37.7	**0.2235**	0.093	41.6	ug/L	113	Standard
	Ag	107	100.7	6.4	**0.0021**	0.001	44.2	ug/L	108	Standard
	Cd	111	3.1	64.7	**-0.0009**	0.001	98.3	mg/L	3	Standard
	Cd	114	10.2	126.7	**0.0019**	0.002	125.3	ug/L	20	Standard
>	**In**	115	587395.6	0.4				ug/L	625728	Standard
	Sn	118	551.7	28.8	**0.0071**	0.026	370.3	ug/L	568	Standard
	Sb	123	119.5	11.5	**-0.0091**	0.003	31.3	ug/L	612	Standard
	Ba	135	603.3	5.0	**0.2775**	0.015	5.3	ug/L	21	Standard
	Ce	140	43.3	40.5				ug/L	245	Standard
>	**Tb**	159	891615.0	1.6				ug/L	950397	Standard
	Ho	165	15.0	66.7				ug/L	7	Standard
	Tl	203	80.7	10.3	**0.0085**	0.001	11.1	ug/L	15	Standard
	Tl	205	53.3	57.3	**-0.0028**	0.004	140.3	ug/L	13	Standard
	Pb	206	274.3	3.4	**0.0064**	0.002	26.4	ug/L	264	Standard
	Pb	207	227.0	9.3	**-0.0004**	0.004	980.7	ug/L	222	Standard
	Pb	208	977.7	5.7	**-0.0001**	0.003	2332.0	ug/L	959	Standard
	U	238	23.7	16.0	**0.0028**	0.000	17.0	ug/L	9	Standard
>	**Bi**	209	534397.5	0.8				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	1421.7	2.1	**1.8418**	0.090	4.9	mg/L	55	Standard
K	39	28.3	40.8	**-0.0067**	0.051	756.8	mg/L	28	Standard
Ca	43	21.7	35.3	**-0.2051**	0.778	379.2	mg/L	27	Standard
Fe	54	96.5	16.4	**-0.0124**	0.012	96.4	mg/L	147	Standard
Fe	57	246.7	7.7	**0.0625**	0.044	71.0	mg/L	268	Standard
> **Sc-1**	45	35984.4	2.9				mg/L	41174	Standard
Cl	35	75787.1	1.4				ug/L	69550	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	1940.1	11.4				ug/L	1950	Standard
P	31	7708.6	3.3				ug/L	21156	Standard
S	34	3283.7	7.0				ug/L	3419	Standard
Sr	88	81.7	3.5				ug/L	72	Standard
C	12	93.3	6.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	810.0	7.7				mg/L	17	Standard
Dy	164	19.4	51.7				mg/L	16	Standard
Ho-1	165	15.0	66.7				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	28069.3	3.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.501	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.617	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.874
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.667
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606106504
Sample Date/Time: Friday, July 01, 2016 14:29:49
Number of Replicates: 3
Autosampler Position: 352
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79397.5	1.7				ug/L	76456	Standard
	Be	9	16.7	45.8	**-0.0055**	0.007	119.4	ug/L	20	Standard
	Al	27	291025.7	1.9	**1.6271**	0.036	2.2	ug/L	1307	Standard
	Sc	45	36009.4	0.8				ug/L	41174	Standard
	Ti	47	26.7	15.2	**0.0019**	0.013	690.9	ug/L	27	Standard
	V	51	1704.2	12.5	**0.0204**	0.028	139.1	ug/L	1434	Standard
	Cr	52	30766.6	4.8	**3.0469**	0.189	6.2	ug/L	7733	Standard
	Cr	53	3653.8	5.4	**3.4005**	0.215	6.3	ug/L	442	Standard
	Mn	55	17036.6	2.3	**2.2748**	0.050	2.2	ug/L	723	Standard
	Co	59	958.7	6.2	**0.1027**	0.008	8.2	ug/L	217	Standard
	Ni	60	2008.1	1.5	**0.8687**	0.014	1.6	ug/L	304	Standard
	Cu	65	251.7	3.4	**0.0561**	0.005	9.3	ug/L	181	Standard
	Zn	66	1482.7	0.2	**1.0976**	0.010	0.9	ug/L	215	Standard
>	**Ge**	72	493269.0	0.6				ug/L	520809	Standard
	As	75	-44.8	49.5	**0.0068**	0.019	282.1	ug/L	-52	Standard
	Se	82	18.7	10.9	**0.0294**	0.017	58.4	ug/L	17	Standard
	Se-1	77	64.3	6.3	**0.1099**	0.049	45.0	ug/L	56	Standard
>	**Ga**	71	26.7	43.3				mg/L	25	Standard
	Rb	85	2356.8	1.6				ug/L	28	Standard
	Y	89	413880.0	0.1				ug/L	447395	Standard
>	**Rh**	103	25.0	0.0				ug/L	15	Standard
	Mo	98	624.4	36.8	**0.1955**	0.081	41.4	ug/L	113	Standard
	Ag	107	92.7	17.9	**0.0009**	0.003	292.7	ug/L	108	Standard
	Cd	111	11.5	37.2	**0.0030**	0.002	67.8	mg/L	3	Standard
	Cd	114	45.1	23.2	**0.0084**	0.002	22.0	ug/L	20	Standard
>	**In**	115	588539.3	1.1				ug/L	625728	Standard
	Sn	118	616.7	20.1	**0.0176**	0.020	114.5	ug/L	568	Standard
	Sb	123	351.6	3.8	**0.0386**	0.003	9.0	ug/L	612	Standard
	Ba	135	231.7	10.0	**0.0953**	0.011	11.7	ug/L	21	Standard
	Ce	140	43.3	88.1				ug/L	245	Standard
>	**Tb**	159	885756.3	0.8				ug/L	950397	Standard
	Ho	165	16.7	34.6				ug/L	7	Standard
	Tl	203	73.3	2.8	**0.0077**	0.000	3.3	ug/L	15	Standard
	Tl	205	65.0	13.3	**-0.0013**	0.001	87.3	ug/L	13	Standard
	Pb	206	322.7	5.3	**0.0151**	0.003	19.7	ug/L	264	Standard
	Pb	207	256.3	3.1	**0.0054**	0.001	26.7	ug/L	222	Standard
	Pb	208	1164.0	5.3	**0.0090**	0.003	33.0	ug/L	959	Standard
	U	238	19.0	34.5	**0.0022**	0.001	38.3	ug/L	9	Standard
>	**Bi**	209	534942.7	0.4				ug/L	552821	Standard

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Na	23	3.3	86.6	**11.3879**	9.859	86.6	mg/L	2	Standard
Mg	24	1060.0	6.8	**1.3559**	0.099	7.3	mg/L	55	Standard
K	39	55.0	32.8	**0.1095**	0.077	70.3	mg/L	28	Standard
Ca	43	21.7	48.0	**-0.2024**	1.077	531.9	mg/L	27	Standard
Fe	54	98.8	37.3	**-0.0103**	0.032	312.2	mg/L	147	Standard
Fe	57	268.3	7.1	**0.1387**	0.065	46.8	mg/L	268	Standard
> **Sc-1**	45	36009.4	0.8				mg/L	41174	Standard
Cl	35	77523.2	0.3				ug/L	69550	Standard
Kr	83	2.7	114.6				ug/L	1	Standard
Br	81	2113.5	9.3				ug/L	1950	Standard
P	31	7710.3	3.6				ug/L	21156	Standard
S	34	3393.7	3.0				ug/L	3419	Standard
Sr	88	65.0	23.1				ug/L	72	Standard
C	12	106.7	28.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	623.3	9.8				mg/L	17	Standard
Dy	164	15.7	70.9				mg/L	16	Standard
Ho-1	165	16.7	34.6				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	28194.6	4.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.848	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.712	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.057
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.766
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 14:33:02
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84479.9	0.6				ug/L	76456	Standard
	Be	9	65431.0	1.7	**52.8839**	1.234	2.3	ug/L	20	Standard
	Al	27	9107293.6	1.3	**48.1391**	0.761	1.6	ug/L	1307	Standard
	Sc	45	41221.0	1.1				ug/L	41174	Standard
	Ti	47	32532.9	2.1	**96.4064**	2.590	2.7	ug/L	27	Standard
	V	51	430170.6	0.9	**50.3648**	0.150	0.3	ug/L	1434	Standard
	Cr	52	419842.9	0.7	**49.1999**	0.629	1.3	ug/L	7733	Standard
	Cr	53	51666.3	1.8	**48.9792**	1.063	2.2	ug/L	442	Standard
	Mn	55	386049.1	1.6	**49.1731**	0.734	1.5	ug/L	723	Standard
	Co	59	420011.6	1.0	**52.9472**	0.520	1.0	ug/L	217	Standard
	Ni	60	107142.5	0.5	**49.7412**	0.431	0.9	ug/L	304	Standard
	Cu	65	106376.5	0.2	**50.2954**	0.371	0.7	ug/L	181	Standard
	Zn	66	63768.9	0.5	**50.1114**	0.441	0.9	ug/L	215	Standard
>	**Ge**	72	539029.9	0.6				ug/L	520809	Standard
	As	75	63720.4	0.2	**49.9158**	0.187	0.4	ug/L	-52	Standard
	Se	82	6616.1	1.4	**50.4720**	0.409	0.8	ug/L	17	Standard
	Se-1	77	4538.7	1.1	**50.6161**	0.744	1.5	ug/L	56	Standard
>	**Ga**	71	41.7	36.7				mg/L	25	Standard
	Rb	85	886.7	6.2				ug/L	28	Standard
	Y	89	466133.9	1.1				ug/L	447395	Standard
>	**Rh**	103	45.0	48.4				ug/L	15	Standard
	Mo	98	316079.0	1.2	**100.9623**	1.590	1.6	ug/L	113	Standard
	Ag	107	372581.7	1.1	**50.1169**	0.847	1.7	ug/L	108	Standard
	Cd	111	118352.7	0.1	**49.6717**	0.324	0.7	mg/L	3	Standard
	Cd	114	294028.3	2.4	**49.8404**	1.066	2.1	ug/L	20	Standard
>	**In**	115	647595.9	0.6				ug/L	625728	Standard
	Sn	118	333519.2	0.4	**49.9888**	0.512	1.0	ug/L	568	Standard
	Sb	123	262566.9	2.8	**49.0609**	1.554	3.2	ug/L	612	Standard
	Ba	135	108230.2	0.7	**48.0518**	0.424	0.9	ug/L	21	Standard
	Ce	140	185.0	15.0				ug/L	245	Standard
>	**Tb**	159	963986.1	0.6				ug/L	950397	Standard
	Ho	165	15.0	115.5				ug/L	7	Standard
	Tl	203	457975.8	1.0	**50.2126**	0.379	0.8	ug/L	15	Standard
	Tl	205	420042.8	0.3	**51.8564**	0.350	0.7	ug/L	13	Standard
	Pb	206	291174.6	0.8	**50.5849**	0.394	0.8	ug/L	264	Standard
	Pb	207	263877.7	0.4	**50.4775**	0.161	0.3	ug/L	222	Standard
	Pb	208	1113044.3	0.4	**52.1318**	0.466	0.9	ug/L	959	Standard
	U	238	419550.2	0.5	**51.2295**	0.115	0.2	ug/L	9	Standard
>	**Bi**	209	561599.8	0.5				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4695.7	3.2	**5.4185**	0.141	2.6	mg/L	55	Standard
K	39	1080.0	1.9	**4.0059**	0.102	2.5	mg/L	28	Standard
Ca	43	58.3	9.9	**2.8430**	0.540	19.0	mg/L	27	Standard
Fe	54	6681.6	1.6	**5.1353**	0.107	2.1	mg/L	147	Standard
Fe	57	1935.1	3.8	**5.1339**	0.159	3.1	mg/L	268	Standard
> **Sc-1**	45	41221.0	1.1				mg/L	41174	Standard
Cl	35	86136.9	2.1				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	2180.2	1.6				ug/L	1950	Standard
P	31	25733.5	2.6				ug/L	21156	Standard
S	34	4153.9	3.6				ug/L	3419	Standard
Sr	88	75.0	13.3				ug/L	72	Standard
C	12	106.7	28.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	720.0	29.7				mg/L	17	Standard
Dy	164	22.7	24.3				mg/L	16	Standard
Ho-1	165	15.0	115.5				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	15117.5	1.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	105.768		
Al	27	96.278		
Sc	45			
Ti	47	96.406		
V	51	100.730		
Cr	52	98.400		
Cr	53			
Mn	55	98.346		
Co	59	105.894		
Ni	60	99.482		
Cu	65	100.591		
Zn	66	100.223		
> Ge	72		103.499	
As	75	99.832		
Se	82	100.944		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	100.962		
Ag	107	100.234		
Cd	111	99.343		
Cd	114			
> In	115			103.495
Sn	118	99.978		
Sb	123	98.122		
Ba	135	96.104		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.425		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.264		
U	238	102.459		
> Bi	209			101.588
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 14:36:13
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84748.1	2.2				ug/L	76456	Standard
	Be	9	28.3	27.0	**0.0029**	0.006	204.3	ug/L	20	Standard
	Al	27	2800.3	34.3	**0.0045**	0.005	111.4	ug/L	1307	Standard
	Sc	45	41077.3	1.7				ug/L	41174	Standard
	Ti	47	26.0	26.6	**-0.0072**	0.021	288.8	ug/L	27	Standard
	V	51	1826.7	11.6	**0.0166**	0.026	154.1	ug/L	1434	Standard
	Cr	52	7089.7	2.6	**-0.1215**	0.019	15.7	ug/L	7733	Standard
	Cr	53	518.3	19.4	**0.0795**	0.095	119.0	ug/L	442	Standard
	Mn	55	744.0	2.7	**-0.0062**	0.002	40.3	ug/L	723	Standard
	Co	59	250.7	12.3	**0.0022**	0.004	175.9	ug/L	217	Standard
	Ni	60	366.0	4.1	**0.0177**	0.007	39.1	ug/L	304	Standard
	Cu	65	215.0	5.8	**0.0279**	0.006	21.4	ug/L	181	Standard
	Zn	66	258.3	5.8	**0.0239**	0.012	50.5	ug/L	215	Standard
>	**Ge**	72	537853.0	0.3				ug/L	520809	Standard
	As	75	-50.7	30.0	**0.0054**	0.012	222.4	ug/L	-52	Standard
	Se	82	23.4	28.3	**0.0526**	0.050	95.5	ug/L	17	Standard
	Se-1	77	56.3	13.3	**-0.0464**	0.086	185.9	ug/L	56	Standard
>	**Ga**	71	38.3	66.9				mg/L	25	Standard
	Rb	85	33.3	67.6				ug/L	28	Standard
	Y	89	471394.3	0.7				ug/L	447395	Standard
>	**Rh**	103	18.3	63.0				ug/L	15	Standard
	Mo	98	398.2	17.4	**0.1019**	0.023	22.4	ug/L	113	Standard
	Ag	107	141.3	16.6	**0.0060**	0.003	53.5	ug/L	108	Standard
	Cd	111	18.0	20.7	**0.0051**	0.002	31.3	mg/L	3	Standard
	Cd	114	51.0	12.7	**0.0086**	0.001	12.0	ug/L	20	Standard
>	**In**	115	655049.2	0.7				ug/L	625728	Standard
	Sn	118	1826.8	33.6	**0.1873**	0.093	49.6	ug/L	568	Standard
	Sb	123	1005.7	35.1	**0.1525**	0.066	43.6	ug/L	612	Standard
	Ba	135	50.7	11.6	**0.0043**	0.003	59.6	ug/L	21	Standard
	Ce	140	55.0	18.2				ug/L	245	Standard
>	**Tb**	159	963692.0	2.2				ug/L	950397	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	91.3	32.5	**0.0091**	0.003	36.2	ug/L	15	Standard
	Tl	205	100.0	20.0	**0.0024**	0.003	107.2	ug/L	13	Standard
	Pb	206	358.7	4.9	**0.0174**	0.003	18.6	ug/L	264	Standard
	Pb	207	299.3	9.7	**0.0101**	0.006	57.2	ug/L	222	Standard
	Pb	208	1241.0	6.1	**0.0088**	0.004	42.7	ug/L	959	Standard
	U	238	67.3	26.7	**0.0078**	0.002	28.5	ug/L	9	Standard
>	**Bi**	209	572676.0	1.1				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	58.3	27.6	**0.0080**	0.018	227.2	mg/L	55	Standard
K	39	31.7	24.1	**-0.0097**	0.028	287.6	mg/L	28	Standard
Ca	43	30.0	60.1	**0.2757**	1.623	588.8	mg/L	27	Standard
Fe	54	132.3	15.7	**0.0051**	0.015	299.1	mg/L	147	Standard
Fe	57	226.7	3.4	**-0.1060**	0.019	17.5	mg/L	268	Standard
> **Sc-1**	45	41077.3	1.7				mg/L	41174	Standard
Cl	35	85337.0	1.5				ug/L	69550	Standard
Kr	83	3.3	17.3				ug/L	1	Standard
Br	81	2146.8	7.1				ug/L	1950	Standard
P	31	24845.4	3.5				ug/L	21156	Standard
S	34	4015.5	0.7				ug/L	3419	Standard
Sr	88	58.3	27.6				ug/L	72	Standard
C	12	116.7	9.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	523.3	24.3				mg/L	17	Standard
Dy	164	6.0	187.1				mg/L	16	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	11185.8	0.6				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		103.273	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.686
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.592
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Friday, July 01, 2016 14:39:26
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82750.5	2.9				ug/L	76456	Standard
	Be	9	285.0	17.8	**0.2151**	0.039	18.0	ug/L	20	Standard
	Al	27	1818.4	16.8	**-0.0004**	0.002	418.1	ug/L	1307	Standard
	Sc	45	39031.9	2.5				ug/L	41174	Standard
	Ti	47	23.0	28.5	**-0.0130**	0.020	154.9	ug/L	27	Standard
	V	51	4531.3	0.6	**0.3599**	0.004	1.1	ug/L	1434	Standard
	Cr	52	13097.3	0.4	**0.6705**	0.008	1.2	ug/L	7733	Standard
	Cr	53	1321.7	4.4	**0.9081**	0.059	6.5	ug/L	442	Standard
	Mn	55	3958.5	1.2	**0.4284**	0.005	1.2	ug/L	723	Standard
	Co	59	3194.7	3.0	**0.3931**	0.014	3.5	ug/L	217	Standard
	Ni	60	3472.1	3.0	**1.5421**	0.046	3.0	ug/L	304	Standard
	Cu	65	1723.1	3.0	**0.7813**	0.023	3.0	ug/L	181	Standard
	Zn	66	8776.2	0.9	**7.0769**	0.052	0.7	ug/L	215	Standard
>	**Ge**	72	514072.5	0.3				ug/L	520809	Standard
	As	75	450.1	8.8	**0.4145**	0.032	7.7	ug/L	-52	Standard
	Se	82	70.4	7.3	**0.4383**	0.043	9.7	ug/L	17	Standard
	Se-1	77	94.3	4.8	**0.4334**	0.056	12.9	ug/L	56	Standard
>	**Ga**	71	21.7	35.3				mg/L	25	Standard
	Rb	85	21.7	53.3				ug/L	28	Standard
	Y	89	438183.2	1.3				ug/L	447395	Standard
>	**Rh**	103	16.7	105.4				ug/L	15	Standard
	Mo	98	167.4	18.5	**0.0314**	0.011	34.8	ug/L	113	Standard
	Ag	107	2856.9	3.2	**0.3846**	0.011	2.9	ug/L	108	Standard
	Cd	111	543.4	2.2	**0.2335**	0.007	3.2	mg/L	3	Standard
	Cd	114	1301.0	2.4	**0.2280**	0.003	1.3	ug/L	20	Standard
>	**In**	115	626288.8	1.2				ug/L	625728	Standard
	Sn	118	1146.7	25.4	**0.0941**	0.047	50.1	ug/L	568	Standard
	Sb	123	2055.0	1.9	**0.3637**	0.012	3.3	ug/L	612	Standard
	Ba	135	1475.7	2.5	**0.6597**	0.010	1.5	ug/L	21	Standard
	Ce	140	10.0	50.0				ug/L	245	Standard
>	**Tb**	159	937003.8	0.8				ug/L	950397	Standard
	Ho	165	13.3	94.4				ug/L	7	Standard
	Tl	203	742.4	3.9	**0.0813**	0.003	3.9	ug/L	15	Standard
	Tl	205	635.0	7.6	**0.0693**	0.006	9.0	ug/L	13	Standard
	Pb	206	1423.4	1.3	**0.2057**	0.004	1.8	ug/L	264	Standard
	Pb	207	1222.7	2.7	**0.1898**	0.007	3.5	ug/L	222	Standard
	Pb	208	5238.4	1.7	**0.1992**	0.005	2.7	ug/L	959	Standard
	U	238	3209.7	2.1	**0.3947**	0.010	2.6	ug/L	9	Standard
>	**Bi**	209	557268.2	0.5				ug/L	552821	Standard

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Na	23	1.7	173.2	**5.3145**	9.196	173.0	mg/L	2	Standard
Mg	24	45.0	11.1	**-0.0048**	0.005	106.0	mg/L	55	Standard
K	39	16.7	45.8	**-0.0643**	0.029	45.1	mg/L	28	Standard
Ca	43	28.3	40.8	**0.2822**	1.159	410.5	mg/L	27	Standard
Fe	54	125.5	27.9	**0.0049**	0.029	586.2	mg/L	147	Standard
Fe	57	236.7	18.2	**-0.0367**	0.142	386.3	mg/L	268	Standard
> **Sc-1**	45	39031.9	2.5				mg/L	41174	Standard
Cl	35	80966.5	1.6				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	2093.5	4.3				ug/L	1950	Standard
P	31	17104.7	1.6				ug/L	21156	Standard
S	34	3810.5	3.5				ug/L	3419	Standard
Sr	88	53.3	51.6				ug/L	72	Standard
C	12	146.7	52.1				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	223.3	40.6				mg/L	17	Standard
Dy	164	5.7	102.5				mg/L	16	Standard
Ho-1	165	13.3	94.4				mg/L	7	Standard
Er	166	20.0	100.0				mg/L	7	Standard
I	127	1610.1	16.8				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	107.542		
	Al	27			
	Sc	45			
	Ti	47			
	V	51	89.972		
	Cr	52	83.818		
	Cr	53			
	Mn	55	85.687		
	Co	59	98.272		
	Ni	60	96.381		
	Cu	65	97.667		
	Zn	66	113.230		
>	Ge	72		98.706	
	As	75	103.620		
	Se	82	109.583		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	96.144		
Cd	111	97.300		
Cd	114			
> In	115			100.090
Sn	118			
Sb	123	90.914		
Ba	135	87.967		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.600		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.596		
U	238	98.687		
> Bi	209			100.804
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
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Method 6020 - Summary Report

Sample ID: L1606136001
Sample Date/Time: Friday, July 01, 2016 15:11:12
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	102032.6	2.7				ug/L	76456	Standard
	Be	9	25.0	34.6	-0.0031	0.006	188.0	ug/L	20	Standard
	Al	27	55269386.4	1.6	242.0065	6.248	2.6	ug/L	1307	Standard
	Sc	45	42982.6	3.7				ug/L	41174	Standard
	Ti	47	671.0	5.7	1.9148	0.128	6.7	ug/L	27	Standard
	V	51	4267.5	6.4	0.3052	0.033	10.8	ug/L	1434	Standard
	Cr	52	10596.7	1.5	0.3014	0.025	8.3	ug/L	7733	Standard
	Cr	53	1925.1	6.6	1.4310	0.107	7.5	ug/L	442	Standard
	Mn	55	5430678.9	1.0	696.1378	12.327	1.8	ug/L	723	Standard
	Co	59	2218.2	2.4	0.2516	0.009	3.5	ug/L	217	Standard
	Ni	60	4312.3	3.2	1.8641	0.080	4.3	ug/L	304	Standard
	Cu	65	798.0	4.6	0.3054	0.016	5.3	ug/L	181	Standard
	Zn	66	2494.5	0.6	1.7957	0.026	1.4	ug/L	215	Standard
>	Ge	72	536693.6	0.8				ug/L	520809	Standard
	As	75	4266.7	1.8	3.3992	0.072	2.1	ug/L	-52	Standard
	Se	82	495.3	5.2	3.6793	0.225	6.1	ug/L	17	Standard
	Se-1	77	148.7	2.7	1.0032	0.054	5.4	ug/L	56	Standard
>	Ga	71	150.0	23.3				mg/L	25	Standard
	Rb	85	52107.8	0.6				ug/L	28	Standard
	Y	89	450964.8	1.0				ug/L	447395	Standard
>	Rh	103	411.7	6.2				ug/L	15	Standard
	Mo	98	1387.0	5.2	0.4385	0.030	6.9	ug/L	113	Standard
	Ag	107	200.3	32.4	0.0153	0.009	61.2	ug/L	108	Standard
	Cd	111	14.4	26.9	0.0039	0.002	40.7	mg/L	3	Standard
	Cd	114	17.5	189.3	0.0031	0.006	189.4	ug/L	20	Standard
>	In	115	620931.3	1.4				ug/L	625728	Standard
	Sn	118	1585.1	13.6	0.1643	0.037	22.3	ug/L	568	Standard
	Sb	123	1484.9	28.1	0.2566	0.085	33.0	ug/L	612	Standard
	Ba	135	185434.9	0.7	85.8822	0.643	0.7	ug/L	21	Standard
	Ce	140	220.0	14.2				ug/L	245	Standard
>	Tb	159	948217.7	1.1				ug/L	950397	Standard
	Ho	165	31.7	9.1				ug/L	7	Standard
	Tl	203	125.3	17.6	0.0138	0.003	19.7	ug/L	15	Standard
	Tl	205	88.3	14.2	0.0018	0.002	100.1	ug/L	13	Standard
	Pb	206	400.7	10.7	0.0298	0.009	29.3	ug/L	264	Standard
	Pb	207	353.0	2.8	0.0252	0.002	8.1	ug/L	222	Standard
	Pb	208	1381.0	1.8	0.0200	0.002	10.5	ug/L	959	Standard
	U	238	1004.0	3.9	0.1291	0.007	5.4	ug/L	9	Standard
>	Bi	209	532629.6	1.5				ug/L	552821	Standard

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Na	23	15.0	33.3	**42.5757**	12.711	29.9	mg/L	2	Standard
Mg	24	49159.6	0.3	**55.0024**	2.117	3.8	mg/L	55	Standard
K	39	1461.7	10.0	**5.2295**	0.334	6.4	mg/L	28	Standard
Ca	43	601.7	4.7	**50.0156**	4.072	8.1	mg/L	27	Standard
Fe	54	4574.4	1.8	**3.3398**	0.110	3.3	mg/L	147	Standard
Fe	57	1803.4	3.2	**4.5113**	0.320	7.1	mg/L	268	Standard
Sc-1	45	42982.6	3.7				mg/L	41174	Standard
Cl	35	94962.0	0.7				ug/L	69550	Standard
Kr	83	2.0	0.0				ug/L	1	Standard
Br	81	95694.6	1.2				ug/L	1950	Standard
P	31	33902.9	0.5				ug/L	21156	Standard
S	34	4128.9	1.2				ug/L	3419	Standard
Sr	88	1591.8	1.7				ug/L	72	Standard
C	12	436.7	25.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	510.0	42.5				mg/L	17	Standard
Dy	164	37.8	54.9				mg/L	16	Standard
Ho-1	165	31.7	9.1				mg/L	7	Standard
Er	166	46.7	32.7				mg/L	7	Standard
I	127	121671837.9	2.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		133.453	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.050	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.233
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.348
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606136002
Sample Date/Time: Friday, July 01, 2016 15:14:23
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85581.0	1.5				ug/L	76456	Standard
	Be	9	25.0	60.0	**0.0002**	0.012	7141.4	ug/L	20	Standard
	Al	27	55900.2	24.1	**0.2811**	0.067	23.9	ug/L	1307	Standard
	Sc	45	42536.3	1.1				ug/L	41174	Standard
	Ti	47	133.7	20.6	**0.3028**	0.078	25.8	ug/L	27	Standard
	V	51	2309.2	3.2	**0.0668**	0.010	14.4	ug/L	1434	Standard
	Cr	52	10748.5	0.6	**0.2852**	0.003	0.9	ug/L	7733	Standard
	Cr	53	1006.7	5.2	**0.5242**	0.053	10.1	ug/L	442	Standard
	Mn	55	5954.9	24.0	**0.6413**	0.175	27.3	ug/L	723	Standard
	Co	59	262.0	8.2	**0.0029**	0.003	90.0	ug/L	217	Standard
	Ni	60	497.3	9.2	**0.0733**	0.022	29.6	ug/L	304	Standard
	Cu	65	2911.9	5.2	**1.2738**	0.065	5.1	ug/L	181	Standard
	Zn	66	1381.4	5.9	**0.8847**	0.058	6.6	ug/L	215	Standard
>	**Ge**	72	551341.1	0.5				ug/L	520809	Standard
	As	75	-21.8	42.5	**0.0285**	0.007	24.8	ug/L	-52	Standard
	Se	82	22.1	22.3	**0.0391**	0.037	95.8	ug/L	17	Standard
	Se-1	77	66.7	24.4	**0.0515**	0.176	341.9	ug/L	56	Standard
>	**Ga**	71	61.7	33.8				mg/L	25	Standard
	Rb	85	408.3	7.2				ug/L	28	Standard
	Y	89	470361.2	0.7				ug/L	447395	Standard
>	**Rh**	103	16.7	45.8				ug/L	15	Standard
	Mo	98	156.0	25.9	**0.0252**	0.013	53.1	ug/L	113	Standard
	Ag	107	109.0	5.1	**0.0016**	0.001	52.8	ug/L	108	Standard
	Cd	111	14.4	21.7	**0.0036**	0.001	37.8	mg/L	3	Standard
	Cd	114	35.6	84.3	**0.0060**	0.005	83.9	ug/L	20	Standard
>	**In**	115	658802.4	1.3				ug/L	625728	Standard
	Sn	118	3085.3	1.9	**0.3711**	0.008	2.1	ug/L	568	Standard
	Sb	123	348.5	35.2	**0.0306**	0.023	76.5	ug/L	612	Standard
	Ba	135	1852.8	5.0	**0.7908**	0.032	4.1	ug/L	21	Standard
	Ce	140	210.0	16.5				ug/L	245	Standard
>	**Tb**	159	984012.0	1.0				ug/L	950397	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	41.3	6.1	**0.0037**	0.000	7.2	ug/L	15	Standard
	Tl	205	46.7	68.9	**-0.0041**	0.004	94.4	ug/L	13	Standard
	Pb	206	460.7	0.7	**0.0345**	0.001	2.0	ug/L	264	Standard
	Pb	207	404.0	4.8	**0.0295**	0.003	11.6	ug/L	222	Standard
	Pb	208	1690.4	3.1	**0.0292**	0.002	7.9	ug/L	959	Standard
	U	238	26.3	7.9	**0.0029**	0.000	8.7	ug/L	9	Standard
>	**Bi**	209	574438.2	0.4				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	250.0	12.5	**0.2227**	0.038	16.8	mg/L	55	Standard
K	39	21.7	48.0	**-0.0507**	0.039	76.8	mg/L	28	Standard
Ca	43	33.3	45.8	**0.4827**	1.350	279.7	mg/L	27	Standard
Fe	54	174.0	19.0	**0.0332**	0.024	72.4	mg/L	147	Standard
Fe	57	240.0	20.1	**-0.0912**	0.137	149.9	mg/L	268	Standard
> **Sc-1**	45	42536.3	1.1				mg/L	41174	Standard
Cl	35	95107.6	2.0				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	2680.2	5.4				ug/L	1950	Standard
P	31	27181.0	2.6				ug/L	21156	Standard
S	34	4080.5	2.6				ug/L	3419	Standard
Sr	88	60.0	8.3				ug/L	72	Standard
C	12	186.7	8.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	346.7	61.6				mg/L	17	Standard
Dy	164	25.7	79.6				mg/L	16	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	835274.3	37.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.935	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.862	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85	
Y	89	
> Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
> In	115	105.286
Sn	118	
Sb	123	
Ba	135	
Ce	140	
> Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
> Bi	209	103.910
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
> Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606140001
Sample Date/Time: Friday, July 01, 2016 15:17:35
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83445.8	0.6				ug/L	76456	Standard
	Be	9	45.0	29.4	**0.0170**	0.011	63.9	ug/L	20	Standard
	Al	27	7040110.3	1.1	**37.6724**	0.642	1.7	ug/L	1307	Standard
	Sc	45	41625.4	2.0				ug/L	41174	Standard
	Ti	47	4285.9	4.9	**12.7764**	0.570	4.5	ug/L	27	Standard
	V	51	7078.2	1.9	**0.6435**	0.022	3.4	ug/L	1434	Standard
	Cr	52	21057.0	0.1	**1.5759**	0.026	1.6	ug/L	7733	Standard
	Cr	53	3443.7	1.2	**2.9149**	0.056	1.9	ug/L	442	Standard
	Mn	55	883702.1	0.7	**114.0510**	1.835	1.6	ug/L	723	Standard
	Co	59	2499.5	0.8	**0.2896**	0.004	1.4	ug/L	217	Standard
	Ni	60	4161.2	2.0	**1.8082**	0.061	3.4	ug/L	304	Standard
	Cu	65	3327.7	0.9	**1.5204**	0.005	0.4	ug/L	181	Standard
	Zn	66	4188.9	1.5	**3.1626**	0.022	0.7	ug/L	215	Standard
>	Ge	72	532673.4	1.1				ug/L	520809	Standard
	As	75	1321.1	0.2	**1.0915**	0.014	1.3	ug/L	-52	Standard
	Se	82	41.1	15.2	**0.1918**	0.049	25.5	ug/L	17	Standard
	Se-1	77	114.0	7.6	**0.6197**	0.107	17.2	ug/L	56	Standard
>	Ga	71	1218.4	5.9				mg/L	25	Standard
	Rb	85	38403.6	2.5				ug/L	28	Standard
	Y	89	469727.3	1.0				ug/L	447395	Standard
>	Rh	103	41.7	25.0				ug/L	15	Standard
	Mo	98	855.3	9.6	**0.2517**	0.030	12.0	ug/L	113	Standard
	Ag	107	118.0	3.1	**0.0031**	0.000	8.0	ug/L	108	Standard
	Cd	111	168.9	5.8	**0.0690**	0.003	4.5	mg/L	3	Standard
	Cd	114	422.3	16.9	**0.0721**	0.011	15.8	ug/L	20	Standard
>	In	115	642729.5	1.7				ug/L	625728	Standard
	Sn	118	2336.8	13.7	**0.2695**	0.050	18.6	ug/L	568	Standard
	Sb	123	10092.5	4.2	**1.8672**	0.060	3.2	ug/L	612	Standard
	Ba	135	14880.6	0.5	**6.6421**	0.083	1.2	ug/L	21	Standard
	Ce	140	38117.9	1.2				ug/L	245	Standard
>	Tb	159	971949.7	2.4				ug/L	950397	Standard
	Ho	165	766.7	0.8				ug/L	7	Standard
	Tl	203	84.7	11.9	**0.0086**	0.001	13.1	ug/L	15	Standard
	Tl	205	65.0	26.6	**-0.0017**	0.002	121.5	ug/L	13	Standard
	Pb	206	5500.7	2.1	**0.9180**	0.006	0.6	ug/L	264	Standard
	Pb	207	4505.0	2.1	**0.8213**	0.015	1.9	ug/L	222	Standard
	Pb	208	19667.7	0.6	**0.8791**	0.020	2.3	ug/L	959	Standard
	U	238	150.0	6.0	**0.0182**	0.001	7.7	ug/L	9	Standard
>	Bi	209	558473.2	1.6				ug/L	552821	Standard

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Na	23	1.7	173.2	**4.9489**	8.563	173.0	mg/L	2	Standard
Mg	24	2895.3	5.1	**3.2866**	0.193	5.9	mg/L	55	Standard
K	39	586.7	6.5	**2.0948**	0.159	7.6	mg/L	28	Standard
Ca	43	126.7	13.9	**8.9443**	1.703	19.0	mg/L	27	Standard
Fe	54	1267.9	7.9	**0.8860**	0.097	10.9	mg/L	147	Standard
Fe	57	600.0	6.3	**1.0204**	0.129	12.6	mg/L	268	Standard
> **Sc-1**	45	41625.4	2.0				mg/L	41174	Standard
Cl	35	87177.5	2.1				ug/L	69550	Standard
Kr	83	2.0	173.2				ug/L	1	Standard
Br	81	7248.4	5.5				ug/L	1950	Standard
P	31	28932.6	1.2				ug/L	21156	Standard
S	34	4053.9	3.3				ug/L	3419	Standard
Sr	88	248.3	11.1				ug/L	72	Standard
C	12	190.0	13.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	326.7	32.7				mg/L	17	Standard
Dy	164	1103.7	6.9				mg/L	16	Standard
Ho-1	165	766.7	0.8				mg/L	7	Standard
Er	166	690.0	9.5				mg/L	7	Standard
I	127	358932.7	7.2				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		109.143	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		102.278	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.717
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.022
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606140002
Sample Date/Time: Friday, July 01, 2016 15:20:46
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83243.1	1.8				ug/L	76456	Standard
	Be	9	40.0	66.1	**0.0127**	0.021	164.7	ug/L	20	Standard
	Al	27	20806325.7	1.5	**111.6281**	1.089	1.0	ug/L	1307	Standard
	Sc	45	42705.1	1.7				ug/L	41174	Standard
	Ti	47	521.0	4.2	**1.4841**	0.067	4.5	ug/L	27	Standard
	V	51	3344.5	4.3	**0.2005**	0.017	8.4	ug/L	1434	Standard
	Cr	52	11575.8	0.5	**0.4337**	0.008	1.8	ug/L	7733	Standard
	Cr	53	3380.4	6.9	**2.8639**	0.226	7.9	ug/L	442	Standard
	Mn	55	948881.0	1.2	**122.8502**	1.452	1.2	ug/L	723	Standard
	Co	59	2088.1	1.4	**0.2379**	0.004	1.7	ug/L	217	Standard
	Ni	60	3829.2	1.0	**1.6570**	0.016	1.0	ug/L	304	Standard
	Cu	65	1020.7	3.6	**0.4165**	0.018	4.3	ug/L	181	Standard
	Zn	66	1711.1	3.0	**1.1897**	0.044	3.7	ug/L	215	Standard
>	Ge	72	530967.7	0.1				ug/L	520809	Standard
	As	75	120.6	26.2	**0.1410**	0.025	17.8	ug/L	-52	Standard
	Se	82	48.6	18.0	**0.2506**	0.068	27.3	ug/L	17	Standard
	Se-1	77	180.0	11.7	**1.3805**	0.238	17.3	ug/L	56	Standard
>	Ga	71	128.3	39.0				mg/L	25	Standard
	Rb	85	2536.9	2.3				ug/L	28	Standard
	Y	89	459396.3	1.3				ug/L	447395	Standard
>	Rh	103	68.3	16.9				ug/L	15	Standard
	Mo	98	164.7	11.0	**0.0301**	0.006	21.2	ug/L	113	Standard
	Ag	107	87.7	14.4	**-0.0008**	0.002	218.3	ug/L	108	Standard
	Cd	111	68.1	9.8	**0.0269**	0.003	10.0	mg/L	3	Standard
	Cd	114	155.0	26.9	**0.0270**	0.007	27.3	ug/L	20	Standard
>	In	115	631529.9	1.1				ug/L	625728	Standard
	Sn	118	1490.1	25.7	**0.1455**	0.061	42.2	ug/L	568	Standard
	Sb	123	888.6	10.6	**0.1367**	0.019	13.9	ug/L	612	Standard
	Ba	135	26458.7	0.5	**12.0331**	0.137	1.1	ug/L	21	Standard
	Ce	140	9911.6	1.3				ug/L	245	Standard
>	Tb	159	958775.7	0.7				ug/L	950397	Standard
	Ho	165	208.3	2.8				ug/L	7	Standard
	Tl	203	123.7	9.6	**0.0132**	0.001	9.6	ug/L	15	Standard
	Tl	205	103.3	42.3	**0.0034**	0.005	161.1	ug/L	13	Standard
	Pb	206	646.3	4.8	**0.0721**	0.004	5.3	ug/L	264	Standard
	Pb	207	521.7	7.3	**0.0568**	0.007	11.5	ug/L	222	Standard
	Pb	208	2324.1	2.2	**0.0641**	0.003	5.2	ug/L	959	Standard
	U	238	1352.7	2.4	**0.1701**	0.003	1.9	ug/L	9	Standard
>	Bi	209	544667.8	1.5				ug/L	552821	Standard

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Na	23	3.3	173.2	**9.5374**	16.511	173.1	mg/L	2	Standard
Mg	24	12897.2	1.9	**14.4668**	0.241	1.7	mg/L	55	Standard
K	39	143.3	40.4	**0.3966**	0.206	52.0	mg/L	28	Standard
Ca	43	550.0	11.0	**45.7421**	5.294	11.6	mg/L	27	Standard
Fe	54	409.1	1.1	**0.2106**	0.008	3.9	mg/L	147	Standard
Fe	57	643.3	9.1	**1.1039**	0.202	18.3	mg/L	268	Standard
> **Sc-1**	45	42705.1	1.7				mg/L	41174	Standard
Cl	35	94915.1	1.1				ug/L	69550	Standard
Kr	83	2.0	0.0				ug/L	1	Standard
Br	81	7108.3	0.6				ug/L	1950	Standard
P	31	28478.4	1.9				ug/L	21156	Standard
S	34	4015.5	4.7				ug/L	3419	Standard
Sr	88	310.0	10.1				ug/L	72	Standard
C	12	300.0	17.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	246.7	10.2				mg/L	17	Standard
Dy	164	399.0	15.6				mg/L	16	Standard
Ho-1	165	208.3	2.8				mg/L	7	Standard
Er	166	230.0	11.5				mg/L	7	Standard
I	127	149991.1	7.0				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		108.877	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.950	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.927	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.525	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606140003
Sample Date/Time: Friday, July 01, 2016 15:23:58
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82504.1	1.6				ug/L	76456	Standard
	Be	9	21.7	48.0	**-0.0018**	0.009	480.2	ug/L	20	Standard
	Al	27	13452706.7	0.5	**72.8294**	1.526	2.1	ug/L	1307	Standard
	Sc	45	41709.0	1.4				ug/L	41174	Standard
	Ti	47	2378.5	5.3	**7.0809**	0.376	5.3	ug/L	27	Standard
	V	51	7214.8	5.3	**0.6629**	0.045	6.8	ug/L	1434	Standard
	Cr	52	13978.1	0.6	**0.7263**	0.017	2.4	ug/L	7733	Standard
	Cr	53	7091.7	6.1	**6.4687**	0.376	5.8	ug/L	442	Standard
	Mn	55	62406.3	0.1	**7.9906**	0.075	0.9	ug/L	723	Standard
	Co	59	1446.4	2.2	**0.1559**	0.006	3.6	ug/L	217	Standard
	Ni	60	2083.8	4.2	**0.8328**	0.047	5.6	ug/L	304	Standard
	Cu	65	965.4	1.3	**0.3903**	0.010	2.5	ug/L	181	Standard
	Zn	66	2028.5	1.9	**1.4450**	0.043	3.0	ug/L	215	Standard
>	**Ge**	72	530627.2	0.9				ug/L	520809	Standard
	As	75	140.1	24.4	**0.1567**	0.028	17.9	ug/L	-52	Standard
	Se	82	39.3	18.1	**0.1786**	0.052	29.4	ug/L	17	Standard
	Se-1	77	316.3	5.9	**2.9476**	0.217	7.4	ug/L	56	Standard
>	**Ga**	71	366.7	8.0				mg/L	25	Standard
	Rb	85	8984.3	2.4				ug/L	28	Standard
	Y	89	458813.5	0.8				ug/L	447395	Standard
>	**Rh**	103	51.7	39.1				ug/L	15	Standard
	Mo	98	313.7	15.4	**0.0798**	0.016	20.1	ug/L	113	Standard
	Ag	107	93.7	11.2	**0.0002**	0.001	781.2	ug/L	108	Standard
	Cd	111	28.1	20.3	**0.0099**	0.002	24.9	mg/L	3	Standard
	Cd	114	65.8	57.7	**0.0116**	0.007	57.4	ug/L	20	Standard
>	**In**	115	625934.2	0.5				ug/L	625728	Standard
	Sn	118	1398.4	16.4	**0.1329**	0.035	26.4	ug/L	568	Standard
	Sb	123	422.7	21.1	**0.0480**	0.017	35.9	ug/L	612	Standard
	Ba	135	6793.5	0.6	**3.1038**	0.028	0.9	ug/L	21	Standard
	Ce	140	15908.3	1.9				ug/L	245	Standard
>	**Tb**	159	944178.7	1.1				ug/L	950397	Standard
	Ho	165	355.0	16.2				ug/L	7	Standard
	Tl	203	120.3	15.9	**0.0130**	0.002	16.8	ug/L	15	Standard
	Tl	205	111.7	23.0	**0.0046**	0.003	71.8	ug/L	13	Standard
	Pb	206	1028.4	3.3	**0.1425**	0.006	4.1	ug/L	264	Standard
	Pb	207	909.0	1.6	**0.1352**	0.003	2.4	ug/L	222	Standard
	Pb	208	3805.2	1.1	**0.1376**	0.002	1.8	ug/L	959	Standard
	U	238	790.4	10.0	**0.1003**	0.010	10.2	ug/L	9	Standard
>	**Bi**	209	538993.4	0.2				ug/L	552821	Standard

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Na	23	3.3	86.6	**9.8709**	8.546	86.6	mg/L	2	Standard
Mg	24	22061.0	0.3	**25.3844**	0.436	1.7	mg/L	55	Standard
K	39	113.3	9.2	**0.2976**	0.036	12.0	mg/L	28	Standard
Ca	43	235.0	16.1	**18.6613**	3.690	19.8	mg/L	27	Standard
Fe	54	444.8	12.4	**0.2457**	0.044	17.8	mg/L	147	Standard
Fe	57	475.0	1.1	**0.6368**	0.010	1.6	mg/L	268	Standard
Sc-1	45	41709.0	1.4				mg/L	41174	Standard
Cl	35	94012.8	1.3				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	5417.6	1.0				ug/L	1950	Standard
P	31	27702.0	0.2				ug/L	21156	Standard
S	34	3952.2	4.7				ug/L	3419	Standard
Sr	88	203.3	6.2				ug/L	72	Standard
C	12	180.0	5.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	206.7	46.0				mg/L	17	Standard
Dy	164	524.4	5.0				mg/L	16	Standard
Ho-1	165	355.0	16.2				mg/L	7	Standard
Er	166	326.7	23.8				mg/L	7	Standard
I	127	92501.9	4.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		107.911	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.885	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.033
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.499
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606140004
Sample Date/Time: Friday, July 01, 2016 15:27:09
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81751.7	2.2				ug/L	76456	Standard
	Be	9	135.0	7.4	**0.0930**	0.010	10.5	ug/L	20	Standard
	Al	27	16409591.9	0.7	**89.6714**	2.399	2.7	ug/L	1307	Standard
	Sc	45	43657.8	2.3				ug/L	41174	Standard
	Ti	47	15858.0	1.7	**48.2292**	0.843	1.7	ug/L	27	Standard
	V	51	24903.7	1.5	**2.8088**	0.058	2.1	ug/L	1434	Standard
	Cr	52	24554.9	2.0	**2.0436**	0.044	2.1	ug/L	7733	Standard
	Cr	53	8734.2	4.6	**8.1598**	0.352	4.3	ug/L	442	Standard
	Mn	55	321581.9	1.2	**42.0644**	0.335	0.8	ug/L	723	Standard
	Co	59	9091.1	1.5	**1.1485**	0.011	1.0	ug/L	217	Standard
	Ni	60	4968.8	2.8	**2.2237**	0.057	2.6	ug/L	304	Standard
	Cu	65	4956.5	2.1	**2.3370**	0.063	2.7	ug/L	181	Standard
	Zn	66	24116.8	0.6	**19.3591**	0.218	1.1	ug/L	215	Standard
>	Ge	72	524703.9	0.5				ug/L	520809	Standard
	As	75	614.6	10.2	**0.5395**	0.053	9.9	ug/L	-52	Standard
	Se	82	60.0	7.2	**0.3447**	0.037	10.6	ug/L	17	Standard
	Se-1	77	320.0	6.3	**3.0305**	0.221	7.3	ug/L	56	Standard
>	Ga	71	2358.5	3.8				mg/L	25	Standard
	Rb	85	29106.3	0.5				ug/L	28	Standard
	Y	89	488820.8	1.3				ug/L	447395	Standard
>	Rh	103	41.7	36.7				ug/L	15	Standard
	Mo	98	207.5	20.0	**0.0449**	0.014	31.5	ug/L	113	Standard
	Ag	107	157.7	11.6	**0.0091**	0.002	27.1	ug/L	108	Standard
	Cd	111	394.0	4.6	**0.1692**	0.008	4.7	mg/L	3	Standard
	Cd	114	994.3	3.1	**0.1748**	0.005	2.7	ug/L	20	Standard
>	In	115	624414.0	0.6				ug/L	625728	Standard
	Sn	118	1828.4	12.1	**0.2006**	0.036	17.9	ug/L	568	Standard
	Sb	123	719.7	13.7	**0.1059**	0.020	18.8	ug/L	612	Standard
	Ba	135	28855.8	0.8	**13.2740**	0.137	1.0	ug/L	21	Standard
	Ce	140	181035.3	1.7				ug/L	245	Standard
>	Tb	159	950705.2	0.6				ug/L	950397	Standard
	Ho	165	3198.7	2.4				ug/L	7	Standard
	Tl	203	267.3	11.5	**0.0298**	0.004	11.9	ug/L	15	Standard
	Tl	205	255.0	10.9	**0.0230**	0.004	15.5	ug/L	13	Standard
	Pb	206	5712.7	1.8	**0.9909**	0.019	1.9	ug/L	264	Standard
	Pb	207	4766.7	1.5	**0.9045**	0.014	1.5	ug/L	222	Standard
	Pb	208	20771.3	1.3	**0.9660**	0.013	1.3	ug/L	959	Standard
	U	238	597.3	5.0	**0.0757**	0.004	5.0	ug/L	9	Standard
>	Bi	209	539160.5	0.0				ug/L	552821	Standard

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Na	23	3.3	86.6	**9.3434**	8.093	86.6	mg/L	2	Standard
Mg	24	23045.8	1.2	**25.3403**	0.746	2.9	mg/L	55	Standard
K	39	200.0	16.4	**0.5941**	0.134	22.5	mg/L	28	Standard
Ca	43	263.3	19.5	**20.1662**	4.729	23.5	mg/L	27	Standard
Fe	54	2633.0	5.5	**1.8499**	0.135	7.3	mg/L	147	Standard
Fe	57	1085.0	6.4	**2.3396**	0.175	7.5	mg/L	268	Standard
Sc-1	45	43657.8	2.3				mg/L	41174	Standard
Cl	35	89531.9	3.2				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	8986.0	7.5				ug/L	1950	Standard
P	31	30121.6	2.2				ug/L	21156	Standard
S	34	4117.2	5.6				ug/L	3419	Standard
Sr	88	208.3	27.6				ug/L	72	Standard
C	12	203.3	12.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	336.7	30.9				mg/L	17	Standard
Dy	164	4587.9	2.0				mg/L	16	Standard
Ho-1	165	3198.7	2.4				mg/L	7	Standard
Er	166	3260.4	5.8				mg/L	7	Standard
I	127	86340.3	0.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		106.927	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.748	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.790
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.529
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606140005
Sample Date/Time: Friday, July 01, 2016 15:30:21
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81575.7	1.3				ug/L	76456	Standard
	Be	9	31.7	45.6	**0.0067**	0.012	182.8	ug/L	20	Standard
	Al	27	11361131.6	0.7	**62.2005**	1.160	1.9	ug/L	1307	Standard
	Sc	45	41289.5	1.9				ug/L	41174	Standard
	Ti	47	446.7	4.2	**1.2710**	0.064	5.1	ug/L	27	Standard
	V	51	6339.2	1.7	**0.5637**	0.005	0.9	ug/L	1434	Standard
	Cr	52	14053.8	0.9	**0.7478**	0.031	4.1	ug/L	7733	Standard
	Cr	53	3397.0	0.8	**2.9061**	0.060	2.1	ug/L	442	Standard
	Mn	55	91180.2	0.3	**11.8062**	0.126	1.1	ug/L	723	Standard
	Co	59	1636.1	3.3	**0.1817**	0.006	3.3	ug/L	217	Standard
	Ni	60	2420.2	3.0	**0.9998**	0.030	3.0	ug/L	304	Standard
	Cu	65	1115.7	0.8	**0.4664**	0.010	2.1	ug/L	181	Standard
	Zn	66	4102.9	4.8	**3.1313**	0.189	6.0	ug/L	215	Standard
>	**Ge**	72	526864.0	1.0				ug/L	520809	Standard
	As	75	209.1	23.9	**0.2126**	0.040	18.9	ug/L	-52	Standard
	Se	82	44.2	19.7	**0.2192**	0.067	30.8	ug/L	17	Standard
	Se-1	77	143.0	9.9	**0.9701**	0.178	18.4	ug/L	56	Standard
>	**Ga**	71	123.3	14.2				mg/L	25	Standard
	Rb	85	2268.5	7.3				ug/L	28	Standard
	Y	89	460843.6	0.6				ug/L	447395	Standard
>	**Rh**	103	38.3	7.5				ug/L	15	Standard
	Mo	98	138.6	17.2	**0.0223**	0.008	37.4	ug/L	113	Standard
	Ag	107	89.7	12.2	**-0.0003**	0.002	618.7	ug/L	108	Standard
	Cd	111	119.1	4.0	**0.0498**	0.002	3.9	mg/L	3	Standard
	Cd	114	332.6	23.3	**0.0590**	0.014	24.0	ug/L	20	Standard
>	**In**	115	620430.9	1.0				ug/L	625728	Standard
	Sn	118	1270.1	10.3	**0.1149**	0.022	19.3	ug/L	568	Standard
	Sb	123	506.5	10.9	**0.0652**	0.012	17.9	ug/L	612	Standard
	Ba	135	12723.7	1.4	**5.8806**	0.073	1.2	ug/L	21	Standard
	Ce	140	16098.5	0.3				ug/L	245	Standard
>	**Tb**	159	949690.5	1.0				ug/L	950397	Standard
	Ho	165	733.4	8.1				ug/L	7	Standard
	Tl	203	89.0	5.8	**0.0094**	0.001	6.1	ug/L	15	Standard
	Tl	205	71.7	4.0	**-0.0005**	0.000	65.6	ug/L	13	Standard
	Pb	206	791.4	4.4	**0.0994**	0.006	5.9	ug/L	264	Standard
	Pb	207	690.7	3.6	**0.0915**	0.005	5.0	ug/L	222	Standard
	Pb	208	2860.4	1.4	**0.0912**	0.002	1.7	ug/L	959	Standard
	U	238	438.0	6.5	**0.0554**	0.003	6.2	ug/L	9	Standard
>	**Bi**	209	539820.6	0.5				ug/L	552821	Standard

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Na	23	3.3	173.2	**9.8050**	16.974	173.1	mg/L	2	Standard
Mg	24	7792.0	1.0	**9.0186**	0.177	2.0	mg/L	55	Standard
K	39	263.3	14.7	**0.8766**	0.155	17.6	mg/L	28	Standard
Ca	43	330.0	19.8	**27.4186**	5.627	20.5	mg/L	27	Standard
Fe	54	735.5	15.2	**0.4767**	0.090	18.9	mg/L	147	Standard
Fe	57	581.7	10.7	**0.9796**	0.205	21.0	mg/L	268	Standard
> **Sc-1**	45	41289.5	1.9				mg/L	41174	Standard
Cl	35	92233.2	0.5				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	7218.4	8.8				ug/L	1950	Standard
P	31	25119.1	2.5				ug/L	21156	Standard
S	34	4015.5	4.2				ug/L	3419	Standard
Sr	88	198.3	12.9				ug/L	72	Standard
C	12	296.7	7.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	153.3	29.4				mg/L	17	Standard
Dy	164	946.6	5.7				mg/L	16	Standard
Ho-1	165	733.4	8.1				mg/L	7	Standard
Er	166	766.7	15.2				mg/L	7	Standard
I	127	70972.5	1.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.697	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.163	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.153
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.648
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606140009
Sample Date/Time: Friday, July 01, 2016 15:33:32
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81176.9	1.8				ug/L	76456	Standard
	Be	9	121.7	33.5	**0.0827**	0.035	42.4	ug/L	20	Standard
	Al	27	9588194.5	0.1	**52.7539**	0.999	1.9	ug/L	1307	Standard
	Sc	45	43500.7	0.9				ug/L	41174	Standard
	Ti	47	16231.4	1.0	**49.4700**	1.142	2.3	ug/L	27	Standard
	V	51	27177.8	1.2	**3.0895**	0.018	0.6	ug/L	1434	Standard
	Cr	52	30590.2	0.3	**2.7921**	0.043	1.5	ug/L	7733	Standard
	Cr	53	15214.3	3.9	**14.5584**	0.723	5.0	ug/L	442	Standard
	Mn	55	419736.2	0.6	**55.0489**	1.027	1.9	ug/L	723	Standard
	Co	59	9146.8	1.6	**1.1580**	0.019	1.6	ug/L	217	Standard
	Ni	60	5875.8	2.7	**2.6630**	0.065	2.4	ug/L	304	Standard
	Cu	65	6513.4	1.0	**3.1007**	0.066	2.1	ug/L	181	Standard
	Zn	66	26692.5	0.5	**21.4893**	0.375	1.7	ug/L	215	Standard
>	Ge	72	523713.8	1.4				ug/L	520809	Standard
	As	75	573.5	19.4	**0.5079**	0.095	18.7	ug/L	-52	Standard
	Se	82	88.9	5.9	**0.5739**	0.045	7.8	ug/L	17	Standard
	Se-1	77	673.7	3.9	**7.1522**	0.285	4.0	ug/L	56	Standard
>	Ga	71	2611.9	4.8				mg/L	25	Standard
	Rb	85	28024.2	1.3				ug/L	28	Standard
	Y	89	508019.1	1.4				ug/L	447395	Standard
>	Rh	103	75.0	11.5				ug/L	15	Standard
	Mo	98	440.1	11.3	**0.1259**	0.017	13.3	ug/L	113	Standard
	Ag	107	293.3	3.4	**0.0292**	0.001	4.2	ug/L	108	Standard
	Cd	111	123.6	12.9	**0.0529**	0.007	13.0	mg/L	3	Standard
	Cd	114	259.6	1.9	**0.0469**	0.001	2.3	ug/L	20	Standard
>	In	115	607695.5	0.5				ug/L	625728	Standard
	Sn	118	1815.1	15.8	**0.2060**	0.044	21.6	ug/L	568	Standard
	Sb	123	1181.5	5.3	**0.2017**	0.012	6.1	ug/L	612	Standard
	Ba	135	44851.3	1.2	**21.2102**	0.264	1.2	ug/L	21	Standard
	Ce	140	233746.2	1.6				ug/L	245	Standard
>	Tb	159	940005.0	0.9				ug/L	950397	Standard
	Ho	165	4862.4	3.3				ug/L	7	Standard
	Tl	203	294.3	3.6	**0.0336**	0.001	3.3	ug/L	15	Standard
	Tl	205	293.3	8.4	**0.0288**	0.003	10.7	ug/L	13	Standard
	Pb	206	14978.4	0.2	**2.7295**	0.019	0.7	ug/L	264	Standard
	Pb	207	12667.6	1.3	**2.5366**	0.044	1.7	ug/L	222	Standard
	Pb	208	54283.9	0.6	**2.6615**	0.029	1.1	ug/L	959	Standard
	U	238	853.7	3.9	**0.1108**	0.005	4.3	ug/L	9	Standard
>	Bi	209	527415.0	0.5				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	58944.5	2.4	**65.1233**	1.989	3.1	mg/L	55	Standard
K	39	308.3	15.9	**0.9880**	0.180	18.2	mg/L	28	Standard
Ca	43	298.3	31.7	**23.1691**	7.979	34.4	mg/L	27	Standard
Fe	54	3472.7	3.0	**2.4787**	0.071	2.9	mg/L	147	Standard
Fe	57	1280.1	3.7	**2.9195**	0.164	5.6	mg/L	268	Standard
> **Sc-1**	45	43500.7	0.9				mg/L	41174	Standard
Cl	35	88358.4	3.5				ug/L	69550	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	13829.7	7.0				ug/L	1950	Standard
P	31	28925.9	0.9				ug/L	21156	Standard
S	34	3962.2	5.0				ug/L	3419	Standard
Sr	88	261.7	17.1				ug/L	72	Standard
C	12	160.0	39.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	233.3	49.3				mg/L	17	Standard
Dy	164	7255.6	1.4				mg/L	16	Standard
Ho-1	165	4862.4	3.3				mg/L	7	Standard
Er	166	4654.0	5.4				mg/L	7	Standard
I	127	97026.7	3.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.175	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.558	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.118
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.404
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606140010
Sample Date/Time: Friday, July 01, 2016 15:36:43
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81063.0	2.2				ug/L	76456	Standard
	Be	9	45.0	40.1	0.0179	0.015	82.9	ug/L	20	Standard
	Al	27	11177331.1	2.6	61.5680	0.262	0.4	ug/L	1307	Standard
	Sc	45	42046.6	2.8				ug/L	41174	Standard
	Ti	47	3513.4	4.8	10.6195	0.508	4.8	ug/L	27	Standard
	V	51	6549.3	3.1	0.5923	0.026	4.4	ug/L	1434	Standard
	Cr	52	28159.1	0.6	2.4863	0.028	1.1	ug/L	7733	Standard
	Cr	53	13474.3	4.4	12.8172	0.601	4.7	ug/L	442	Standard
	Mn	55	64803.6	1.2	8.3962	0.117	1.4	ug/L	723	Standard
	Co	59	2906.3	2.0	0.3471	0.007	2.1	ug/L	217	Standard
	Ni	60	4725.7	1.8	2.1076	0.036	1.7	ug/L	304	Standard
	Cu	65	5144.9	0.4	2.4285	0.010	0.4	ug/L	181	Standard
	Zn	66	4108.2	1.9	3.1482	0.066	2.1	ug/L	215	Standard
>	Ge	72	524692.7	0.2				ug/L	520809	Standard
	As	75	145.9	6.5	0.1625	0.008	4.8	ug/L	-52	Standard
	Se	82	112.8	12.6	0.7595	0.112	14.8	ug/L	17	Standard
	Se-1	77	626.7	4.9	6.5924	0.373	5.7	ug/L	56	Standard
>	Ga	71	708.3	9.6				mg/L	25	Standard
	Rb	85	114385.2	1.8				ug/L	28	Standard
	Y	89	451161.9	0.3				ug/L	447395	Standard
>	Rh	103	126.7	19.5				ug/L	15	Standard
	Mo	98	337.8	3.9	0.0889	0.005	5.8	ug/L	113	Standard
	Ag	107	99.0	14.6	0.0011	0.002	190.6	ug/L	108	Standard
	Cd	111	210.4	3.4	0.0899	0.004	4.2	mg/L	3	Standard
	Cd	114	526.0	13.1	0.0932	0.013	13.7	ug/L	20	Standard
>	In	115	619724.1	0.7				ug/L	625728	Standard
	Sn	118	3008.6	5.9	0.3878	0.029	7.5	ug/L	568	Standard
	Sb	123	32833.7	1.0	6.3811	0.045	0.7	ug/L	612	Standard
	Ba	135	22694.3	1.2	10.5145	0.070	0.7	ug/L	21	Standard
	Ce	140	24100.8	3.3				ug/L	245	Standard
>	Tb	159	942819.0	1.4				ug/L	950397	Standard
	Ho	165	435.0	17.4				ug/L	7	Standard
	Tl	203	173.7	3.3	0.0194	0.001	3.9	ug/L	15	Standard
	Tl	205	150.0	13.3	0.0098	0.003	26.2	ug/L	13	Standard
	Pb	206	11753.6	0.5	2.1162	0.005	0.2	ug/L	264	Standard
	Pb	207	9878.9	1.2	1.9529	0.015	0.8	ug/L	222	Standard
	Pb	208	42950.0	0.3	2.0797	0.006	0.3	ug/L	959	Standard
	U	238	632.3	2.5	0.0814	0.002	2.7	ug/L	9	Standard
>	Bi	209	531366.5	0.5				ug/L	552821	Standard

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Na	23	3.3	173.2	**10.0447**	17.389	173.1	mg/L	2	Standard
Mg	24	54402.5	1.7	**62.2231**	2.757	4.4	mg/L	55	Standard
K	39	598.3	6.5	**2.1139**	0.085	4.0	mg/L	28	Standard
Ca	43	330.0	10.9	**26.8723**	2.438	9.1	mg/L	27	Standard
Fe	54	560.8	9.0	**0.3316**	0.032	9.6	mg/L	147	Standard
Fe	57	588.3	6.5	**0.9662**	0.103	10.6	mg/L	268	Standard
> **Sc-1**	45	42046.6	2.8				mg/L	41174	Standard
Cl	35	90806.6	0.2				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	18608.1	1.3				ug/L	1950	Standard
P	31	26292.8	1.7				ug/L	21156	Standard
S	34	4085.6	2.8				ug/L	3419	Standard
Sr	88	385.0	14.8				ug/L	72	Standard
C	12	186.7	30.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	136.7	27.7				mg/L	17	Standard
Dy	164	734.0	6.8				mg/L	16	Standard
Ho-1	165	435.0	17.4				mg/L	7	Standard
Er	166	403.3	10.0				mg/L	7	Standard
I	127	125158.4	2.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.026	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.746	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.041
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.119
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606144411
Sample Date/Time: Friday, July 01, 2016 15:39:55
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81448.4	1.6				ug/L	76456	Standard
	Be	9	11.7	65.5	**-0.0101**	0.006	63.9	ug/L	20	Standard
	Al	27	21525.3	7.9	**0.1077**	0.007	6.9	ug/L	1307	Standard
	Sc	45	43096.2	1.6				ug/L	41174	Standard
	Ti	47	91.7	3.5	**0.1831**	0.008	4.3	ug/L	27	Standard
	V	51	5715.4	7.0	**0.4625**	0.039	8.5	ug/L	1434	Standard
	Cr	52	72666.9	1.2	**7.5774**	0.036	0.5	ug/L	7733	Standard
	Cr	53	9179.5	6.4	**8.2203**	0.500	6.1	ug/L	442	Standard
	Mn	55	17987.3	2.4	**2.1587**	0.042	2.0	ug/L	723	Standard
	Co	59	1272.7	1.0	**0.1286**	0.001	0.4	ug/L	217	Standard
	Ni	60	1771.4	2.8	**0.6589**	0.022	3.3	ug/L	304	Standard
	Cu	65	890.7	4.0	**0.3410**	0.015	4.4	ug/L	181	Standard
	Zn	66	2169.2	1.7	**1.5037**	0.020	1.3	ug/L	215	Standard
>	**Ge**	72	547560.2	1.1				ug/L	520809	Standard
	As	75	-25.7	84.9	**0.0255**	0.017	64.8	ug/L	-52	Standard
	Se	82	30.2	19.3	**0.1012**	0.046	45.5	ug/L	17	Standard
	Se-1	77	82.7	3.0	**0.2352**	0.029	12.5	ug/L	56	Standard
>	**Ga**	71	61.7	16.9				mg/L	25	Standard
	Rb	85	225.0	18.2				ug/L	28	Standard
	Y	89	463078.5	0.6				ug/L	447395	Standard
>	**Rh**	103	16.7	34.6				ug/L	15	Standard
	Mo	98	9345.0	1.0	**2.9323**	0.025	0.9	ug/L	113	Standard
	Ag	107	88.3	4.7	**-0.0011**	0.001	50.3	ug/L	108	Standard
	Cd	111	4.7	106.3	**-0.0004**	0.002	489.8	mg/L	3	Standard
	Cd	114	53.3	48.8	**0.0090**	0.004	49.5	ug/L	20	Standard
>	**In**	115	654026.5	1.0				ug/L	625728	Standard
	Sn	118	6959.9	4.7	**0.9503**	0.045	4.8	ug/L	568	Standard
	Sb	123	309.2	21.8	**0.0236**	0.013	55.3	ug/L	612	Standard
	Ba	135	560.7	1.9	**0.2287**	0.006	2.5	ug/L	21	Standard
	Ce	140	275.0	28.4				ug/L	245	Standard
>	**Tb**	159	972057.0	0.8				ug/L	950397	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	71.3	7.7	**0.0070**	0.001	9.6	ug/L	15	Standard
	Tl	205	56.7	27.0	**-0.0028**	0.002	64.9	ug/L	13	Standard
	Pb	206	408.7	2.4	**0.0268**	0.002	8.8	ug/L	264	Standard
	Pb	207	323.7	7.4	**0.0155**	0.005	32.9	ug/L	222	Standard
	Pb	208	1481.0	2.8	**0.0207**	0.002	11.3	ug/L	959	Standard
	U	238	26.3	21.6	**0.0029**	0.001	22.8	ug/L	9	Standard
>	**Bi**	209	565291.9	1.0				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	118.3	31.7	**0.0714**	0.040	55.7	mg/L	55	Standard
K	39	33.3	8.7	**-0.0090**	0.012	135.9	mg/L	28	Standard
Ca	43	25.0	20.0	**-0.2843**	0.417	146.5	mg/L	27	Standard
Fe	54	653.3	3.0	**0.3905**	0.007	1.8	mg/L	147	Standard
Fe	57	318.3	7.9	**0.1302**	0.066	51.0	mg/L	268	Standard
> **Sc-1**	45	43096.2	1.6				mg/L	41174	Standard
Cl	35	93637.8	1.2				ug/L	69550	Standard
Kr	83	2.7	57.3				ug/L	1	Standard
Br	81	4000.5	7.9				ug/L	1950	Standard
P	31	25331.2	1.4				ug/L	21156	Standard
S	34	4190.6	5.7				ug/L	3419	Standard
Sr	88	63.3	25.4				ug/L	72	Standard
C	12	126.7	19.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	170.0	56.1				mg/L	17	Standard
Dy	164	16.0	67.7				mg/L	16	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	7	Standard
I	127	17883.9	8.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.530	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.136	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.523
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.256
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 15:43:08
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79848.2	1.4				ug/L	76456	Standard
	Be	9	61340.6	1.3	**52.4607**	1.344	2.6	ug/L	20	Standard
	Al	27	8840196.9	1.7	**49.4449**	1.243	2.5	ug/L	1307	Standard
	Sc	45	42292.3	2.5				ug/L	41174	Standard
	Ti	47	33237.8	0.4	**98.6642**	0.509	0.5	ug/L	27	Standard
	V	51	434298.1	1.3	**50.9427**	0.727	1.4	ug/L	1434	Standard
	Cr	52	424946.0	0.9	**49.8972**	0.200	0.4	ug/L	7733	Standard
	Cr	53	51918.8	0.3	**49.3069**	0.192	0.4	ug/L	442	Standard
	Mn	55	396032.4	2.3	**50.5349**	0.943	1.9	ug/L	723	Standard
	Co	59	408091.6	1.9	**51.5332**	0.754	1.5	ug/L	217	Standard
	Ni	60	107986.8	0.7	**50.2226**	0.157	0.3	ug/L	304	Standard
	Cu	65	107294.9	0.3	**50.8210**	0.440	0.9	ug/L	181	Standard
	Zn	66	64441.1	1.0	**50.7299**	0.295	0.6	ug/L	215	Standard
>	Ge	72	538072.4	0.6				ug/L	520809	Standard
	As	75	64224.3	0.8	**50.3990**	0.228	0.5	ug/L	-52	Standard
	Se	82	6653.0	0.9	**50.8468**	0.498	1.0	ug/L	17	Standard
	Se-1	77	4539.7	1.5	**50.7170**	0.744	1.5	ug/L	56	Standard
>	Ga	71	38.3	19.9				mg/L	25	Standard
	Rb	85	878.4	4.8				ug/L	28	Standard
	Y	89	464875.9	0.9				ug/L	447395	Standard
>	Rh	103	28.3	56.7				ug/L	15	Standard
	Mo	98	306641.4	1.5	**98.6937**	1.489	1.5	ug/L	113	Standard
	Ag	107	367901.9	1.4	**49.8620**	0.492	1.0	ug/L	108	Standard
	Cd	111	117489.0	1.1	**49.6867**	0.641	1.3	mg/L	3	Standard
	Cd	114	291631.0	1.7	**49.8103**	0.297	0.6	ug/L	20	Standard
>	In	115	642695.4	1.1				ug/L	625728	Standard
	Sn	118	325840.7	2.1	**49.2102**	1.100	2.2	ug/L	568	Standard
	Sb	123	265299.9	1.4	**49.9473**	0.644	1.3	ug/L	612	Standard
	Ba	135	109451.6	0.3	**48.9670**	0.439	0.9	ug/L	21	Standard
	Ce	140	91.7	17.5				ug/L	245	Standard
>	Tb	159	960139.4	0.5				ug/L	950397	Standard
	Ho	165	13.3	43.3				ug/L	7	Standard
	Tl	203	455308.6	0.4	**50.2176**	0.333	0.7	ug/L	15	Standard
	Tl	205	418174.0	0.6	**51.9308**	0.055	0.1	ug/L	13	Standard
	Pb	206	287949.4	0.0	**50.3217**	0.263	0.5	ug/L	264	Standard
	Pb	207	261570.9	0.7	**50.3350**	0.638	1.3	ug/L	222	Standard
	Pb	208	1088813.8	0.8	**51.2998**	0.701	1.4	ug/L	959	Standard
	U	238	413789.6	1.0	**50.8288**	0.805	1.6	ug/L	9	Standard
>	Bi	209	558286.7	0.5				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4697.4	5.9	**5.2790**	0.180	3.4	mg/L	55	Standard
K	39	1176.7	4.0	**4.2662**	0.289	6.8	mg/L	28	Standard
Ca	43	75.0	40.6	**4.2243**	2.811	66.5	mg/L	27	Standard
Fe	54	6836.4	1.2	**5.1227**	0.153	3.0	mg/L	147	Standard
Fe	57	1986.8	1.5	**5.1413**	0.153	3.0	mg/L	268	Standard
> **Sc-1**	45	42292.3	2.5				mg/L	41174	Standard
Cl	35	87844.6	1.1				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	2156.8	5.6				ug/L	1950	Standard
P	31	26853.8	2.9				ug/L	21156	Standard
S	34	4549.0	3.6				ug/L	3419	Standard
Sr	88	63.3	24.1				ug/L	72	Standard
C	12	106.7	10.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	173.3	43.3				mg/L	17	Standard
Dy	164	9.0	191.8				mg/L	16	Standard
Ho-1	165	13.3	43.3				mg/L	7	Standard
Er	166	20.0	100.0				mg/L	7	Standard
I	127	21254.9	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	104.921		
Al	27	98.890		
Sc	45			
Ti	47	98.664		
V	51	101.885		
Cr	52	99.794		
Cr	53			
Mn	55	101.070		
Co	59	103.066		
Ni	60	100.445		
Cu	65	101.642		
Zn	66	101.460		
> Ge	72		103.315	
As	75	100.798		
Se	82	101.694		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.694		
Ag	107	99.724		
Cd	111	99.373		
Cd	114			
> In	115			102.712
Sn	118	98.420		
Sb	123	99.895		
Ba	135	97.934		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.435		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.600		
U	238	101.658		
> Bi	209			100.989
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 15:46:19
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79389.1	1.5				ug/L	76456	Standard
	Be	9	21.7	58.1	**-0.0012**	0.011	924.7	ug/L	20	Standard
	Al	27	2653.6	26.5	**0.0047**	0.004	80.6	ug/L	1307	Standard
	Sc	45	42380.9	4.0				ug/L	41174	Standard
	Ti	47	29.7	33.8	**0.0025**	0.028	1148.4	ug/L	27	Standard
	V	51	1542.6	6.8	**-0.0189**	0.014	72.9	ug/L	1434	Standard
	Cr	52	7249.7	1.4	**-0.1121**	0.006	5.1	ug/L	7733	Standard
	Cr	53	556.7	17.0	**0.1098**	0.084	76.1	ug/L	442	Standard
	Mn	55	781.0	5.8	**-0.0026**	0.005	178.6	ug/L	723	Standard
	Co	59	230.7	5.2	**-0.0006**	0.001	192.9	ug/L	217	Standard
	Ni	60	287.0	3.3	**-0.0207**	0.003	16.9	ug/L	304	Standard
	Cu	65	178.0	9.4	**0.0094**	0.008	88.1	ug/L	181	Standard
	Zn	66	241.3	7.8	**0.0083**	0.014	168.4	ug/L	215	Standard
>	**Ge**	72	544000.0	1.1				ug/L	520809	Standard
	As	75	-38.4	128.5	**0.0152**	0.039	254.8	ug/L	-52	Standard
	Se	82	20.0	53.3	**0.0245**	0.079	323.1	ug/L	17	Standard
	Se-1	77	71.7	19.7	**0.1170**	0.150	127.9	ug/L	56	Standard
>	**Ga**	71	30.0	16.7				mg/L	25	Standard
	Rb	85	31.7	9.1				ug/L	28	Standard
	Y	89	461634.5	1.4				ug/L	447395	Standard
>	**Rh**	103	13.3	21.7				ug/L	15	Standard
	Mo	98	249.2	9.7	**0.0550**	0.007	12.4	ug/L	113	Standard
	Ag	107	132.3	12.7	**0.0048**	0.002	45.5	ug/L	108	Standard
	Cd	111	16.9	42.6	**0.0047**	0.003	63.4	mg/L	3	Standard
	Cd	114	56.7	84.7	**0.0095**	0.008	83.3	ug/L	20	Standard
>	**In**	115	653131.6	1.3				ug/L	625728	Standard
	Sn	118	1488.4	26.0	**0.1378**	0.060	43.6	ug/L	568	Standard
	Sb	123	795.3	31.1	**0.1141**	0.047	41.5	ug/L	612	Standard
	Ba	135	49.7	33.1	**0.0039**	0.007	180.6	ug/L	21	Standard
	Ce	140	41.7	13.9				ug/L	245	Standard
>	**Tb**	159	951623.8	1.5				ug/L	950397	Standard
	Ho	165	3.3	173.2				ug/L	7	Standard
	Tl	203	77.3	16.4	**0.0077**	0.001	17.6	ug/L	15	Standard
	Tl	205	83.3	27.7	**0.0005**	0.003	538.8	ug/L	13	Standard
	Pb	206	329.3	15.7	**0.0134**	0.008	63.3	ug/L	264	Standard
	Pb	207	295.3	8.1	**0.0104**	0.004	40.0	ug/L	222	Standard
	Pb	208	1227.0	6.3	**0.0091**	0.003	35.4	ug/L	959	Standard
	U	238	66.0	40.1	**0.0078**	0.003	40.9	ug/L	9	Standard
>	**Bi**	209	562277.6	0.8				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	61.7	16.9	**0.0099**	0.013	128.3	mg/L	55	Standard
K	39	20.0	25.0	**-0.0563**	0.020	35.8	mg/L	28	Standard
Ca	43	20.0	25.0	**-0.6925**	0.397	57.4	mg/L	27	Standard
Fe	54	164.3	3.0	**0.0265**	0.005	17.4	mg/L	147	Standard
Fe	57	226.7	11.3	**-0.1282**	0.057	44.8	mg/L	268	Standard
> **Sc-1**	45	42380.9	4.0				mg/L	41174	Standard
Cl	35	88109.5	1.2				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	2156.8	5.0				ug/L	1950	Standard
P	31	25852.0	1.3				ug/L	21156	Standard
S	34	4487.3	2.3				ug/L	3419	Standard
Sr	88	56.7	5.1				ug/L	72	Standard
C	12	96.7	39.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	113.3	10.2				mg/L	17	Standard
Dy	164	6.2	100.1				mg/L	16	Standard
Ho-1	165	3.3	173.2				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	15996.8	2.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.453	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.379
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.711
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606145201
Sample Date/Time: Friday, July 01, 2016 15:49:32
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	94816.0	3.6				ug/L	76456	Standard
	Be	9	25.0	40.0	**-0.0020**	0.007	332.6	ug/L	20	Standard
	Al	27	21072085.0	1.8	**99.2963**	2.302	2.3	ug/L	1307	Standard
	Sc	45	43716.3	1.4				ug/L	41174	Standard
	Ti	47	397.0	3.2	**1.1396**	0.053	4.7	ug/L	27	Standard
	V	51	4169.6	18.7	**0.3116**	0.101	32.4	ug/L	1434	Standard
	Cr	52	31233.8	0.8	**2.9091**	0.081	2.8	ug/L	7733	Standard
	Cr	53	20687.6	10.5	**20.1582**	2.403	11.9	ug/L	442	Standard
	Mn	55	2658788.2	0.4	**352.6307**	4.074	1.2	ug/L	723	Standard
	Co	59	29637.6	0.8	**3.8558**	0.023	0.6	ug/L	217	Standard
	Ni	60	6462.7	2.0	**2.9745**	0.037	1.3	ug/L	304	Standard
	Cu	65	861.0	3.9	**0.3497**	0.019	5.5	ug/L	181	Standard
	Zn	66	6645.5	1.6	**5.2668**	0.080	1.5	ug/L	215	Standard
>	Ge	72	518645.6	1.3				ug/L	520809	Standard
	As	75	3126.8	4.4	**2.5897**	0.143	5.5	ug/L	-52	Standard
	Se	82	664.6	4.5	**5.1588**	0.301	5.8	ug/L	17	Standard
	Se-1	77	930.7	11.1	**10.2587**	1.337	13.0	ug/L	56	Standard
>	Ga	71	203.3	20.9				mg/L	25	Standard
	Rb	85	1041748.9	1.1				ug/L	28	Standard
	Y	89	448254.4	0.8				ug/L	447395	Standard
>	Rh	103	201.7	17.6				ug/L	15	Standard
	Mo	98	637.0	2.3	**0.1927**	0.005	2.4	ug/L	113	Standard
	Ag	107	163.3	33.8	**0.0105**	0.008	72.2	ug/L	108	Standard
	Cd	111	106.6	9.0	**0.0453**	0.005	10.1	mg/L	3	Standard
	Cd	114	259.2	18.0	**0.0469**	0.009	19.3	ug/L	20	Standard
>	In	115	608292.3	1.4				ug/L	625728	Standard
	Sn	118	1770.1	23.1	**0.1984**	0.063	31.6	ug/L	568	Standard
	Sb	123	609.0	15.5	**0.0875**	0.018	20.6	ug/L	612	Standard
	Ba	135	570406.1	1.3	**269.6937**	1.874	0.7	ug/L	21	Standard
	Ce	140	4143.9	0.7				ug/L	245	Standard
>	Tb	159	943834.4	0.3				ug/L	950397	Standard
	Ho	165	73.3	37.6				ug/L	7	Standard
	Tl	203	318.3	4.1	**0.0368**	0.002	4.3	ug/L	15	Standard
	Tl	205	295.0	13.5	**0.0294**	0.005	17.1	ug/L	13	Standard
	Pb	206	463.0	0.4	**0.0429**	0.001	1.6	ug/L	264	Standard
	Pb	207	397.7	5.2	**0.0359**	0.005	12.9	ug/L	222	Standard
	Pb	208	1684.0	4.4	**0.0367**	0.004	11.5	ug/L	959	Standard
	U	238	1098.4	2.7	**0.1441**	0.005	3.4	ug/L	9	Standard
>	Bi	209	521779.5	0.6				ug/L	552821	Standard

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Na	23	1.7	173.2	**4.7590**	8.234	173.0	mg/L	2	Standard
Mg	24	80860.2	1.3	**88.9060**	0.128	0.1	mg/L	55	Standard
K	39	8253.9	2.9	**29.6886**	1.293	4.4	mg/L	28	Standard
Ca	43	198.3	3.9	**14.5226**	0.636	4.4	mg/L	27	Standard
Fe	54	1838.9	5.0	**1.2589**	0.053	4.2	mg/L	147	Standard
Fe	57	841.7	4.0	**1.6326**	0.120	7.3	mg/L	268	Standard
> **Sc-1**	45	43716.3	1.4				mg/L	41174	Standard
Cl	35	88622.4	0.4				ug/L	69550	Standard
Kr	83	1.0	0.0				ug/L	1	Standard
Br	81	138083.1	1.2				ug/L	1950	Standard
P	31	31377.5	0.7				ug/L	21156	Standard
S	34	4085.6	4.2				ug/L	3419	Standard
Sr	88	866.7	4.6				ug/L	72	Standard
C	12	386.7	12.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	150.0	63.6				mg/L	17	Standard
Dy	164	120.3	12.9				mg/L	16	Standard
Ho-1	165	73.3	37.6				mg/L	7	Standard
Er	166	63.3	9.1				mg/L	7	Standard
I	127	189740.0	7.5				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		124.014	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.585	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.214
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.385
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606145301
Sample Date/Time: Friday, July 01, 2016 15:52:44
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89907.9	3.9				ug/L	76456	Standard
	Be	9	211.7	15.2	**0.1412**	0.026	18.7	ug/L	20	Standard
	Al	27	42254036.6	2.1	**209.9919**	4.107	2.0	ug/L	1307	Standard
	Sc	45	48114.6	1.7				ug/L	41174	Standard
	Ti	47	742.0	6.1	**2.0824**	0.104	5.0	ug/L	27	Standard
	V	51	8101.4	4.4	**0.7396**	0.044	5.9	ug/L	1434	Standard
	Cr	52	57499.6	0.2	**5.7989**	0.111	1.9	ug/L	7733	Standard
	Cr	53	37860.6	3.1	**35.2327**	0.609	1.7	ug/L	442	Standard
	Mn	55	6394718.4	1.0	**803.9667**	4.505	0.6	ug/L	723	Standard
	Co	59	184000.3	2.5	**22.8310**	0.339	1.5	ug/L	217	Standard
	Ni	60	37990.6	1.7	**17.2738**	0.133	0.8	ug/L	304	Standard
	Cu	65	1519.1	2.8	**0.6345**	0.018	2.9	ug/L	181	Standard
	Zn	66	65750.7	0.3	**50.9054**	0.635	1.2	ug/L	215	Standard
>	**Ge**	72	547197.2	1.5				ug/L	520809	Standard
	As	75	6205.1	1.8	**4.8294**	0.085	1.7	ug/L	-52	Standard
	Se	82	411.3	4.6	**2.9717**	0.112	3.8	ug/L	17	Standard
	Se-1	77	1750.8	0.4	**18.8117**	0.357	1.9	ug/L	56	Standard
>	**Ga**	71	151.7	19.9				mg/L	25	Standard
	Rb	85	17248.1	1.6				ug/L	28	Standard
	Y	89	479799.4	2.3				ug/L	447395	Standard
>	**Rh**	103	326.7	3.2				ug/L	15	Standard
	Mo	98	555.5	3.1	**0.1551**	0.002	1.1	ug/L	113	Standard
	Ag	107	126.3	11.0	**0.0043**	0.002	53.3	ug/L	108	Standard
	Cd	111	138.7	16.3	**0.0566**	0.011	19.3	mg/L	3	Standard
	Cd	114	356.3	13.9	**0.0611**	0.010	15.7	ug/L	20	Standard
>	**In**	115	641727.3	2.7				ug/L	625728	Standard
	Sn	118	1815.1	14.3	**0.1914**	0.045	23.5	ug/L	568	Standard
	Sb	123	789.7	10.3	**0.1155**	0.018	15.5	ug/L	612	Standard
	Ba	135	2472744.3	1.1	**1108.6111**	20.421	1.8	ug/L	21	Standard
	Ce	140	34706.4	3.0				ug/L	245	Standard
>	**Tb**	159	985263.1	3.4				ug/L	950397	Standard
	Ho	165	401.7	6.3				ug/L	7	Standard
	Tl	203	117.7	8.7	**0.0126**	0.001	10.2	ug/L	15	Standard
	Tl	205	90.0	11.1	**0.0018**	0.001	56.0	ug/L	13	Standard
	Pb	206	577.0	6.7	**0.0602**	0.005	9.1	ug/L	264	Standard
	Pb	207	486.3	6.2	**0.0505**	0.006	11.6	ug/L	222	Standard
	Pb	208	2130.1	2.6	**0.0553**	0.003	5.9	ug/L	959	Standard
	U	238	158.7	10.2	**0.0198**	0.002	9.7	ug/L	9	Standard
>	**Bi**	209	541702.7	2.6				ug/L	552821	Standard

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Na	23	6.7	114.6	**17.2516**	19.854	115.1	mg/L	2	Standard
Mg	24	87429.9	0.9	**87.3596**	1.878	2.1	mg/L	55	Standard
K	39	405.0	18.3	**1.2003**	0.260	21.7	mg/L	28	Standard
Ca	43	375.0	6.7	**26.7244**	2.231	8.3	mg/L	27	Standard
Fe	54	4204.7	3.3	**2.7242**	0.135	5.0	mg/L	147	Standard
Fe	57	1598.4	2.6	**3.4000**	0.148	4.3	mg/L	268	Standard
> **Sc-1**	45	48114.6	1.7				mg/L	41174	Standard
Cl	35	91040.7	1.1				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	68651.9	2.9				ug/L	1950	Standard
P	31	44045.6	3.3				ug/L	21156	Standard
S	34	4263.9	3.9				ug/L	3419	Standard
Sr	88	1216.7	5.1				ug/L	72	Standard
C	12	740.0	12.4				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	150.0	40.6				mg/L	17	Standard
Dy	164	420.2	5.3				mg/L	16	Standard
Ho-1	165	401.7	6.3				mg/L	7	Standard
Er	166	413.3	49.7				mg/L	7	Standard
I	127	1073738.4	7.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.595	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.067	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.557	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.989	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606145303
Sample Date/Time: Friday, July 01, 2016 15:55:55
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	86373.8	1.1				ug/L	76456	Standard
	Be	9	46.7	12.4	**0.0170**	0.005	27.0	ug/L	20	Standard
	Al	27	14145040.2	0.8	**73.1395**	1.317	1.8	ug/L	1307	Standard
	Sc	45	47950.8	2.8				ug/L	41174	Standard
	Ti	47	645.7	4.6	**1.7427**	0.078	4.5	ug/L	27	Standard
	V	51	5119.6	16.2	**0.3758**	0.094	25.1	ug/L	1434	Standard
	Cr	52	15660.8	1.2	**0.8154**	0.028	3.4	ug/L	7733	Standard
	Cr	53	17461.7	5.9	**15.5162**	0.994	6.4	ug/L	442	Standard
	Mn	55	1851750.9	0.7	**225.4523**	0.893	0.4	ug/L	723	Standard
	Co	59	6079.9	0.1	**0.7024**	0.002	0.3	ug/L	217	Standard
	Ni	60	3414.1	2.2	**1.3640**	0.029	2.1	ug/L	304	Standard
	Cu	65	716.4	2.9	**0.2496**	0.010	3.9	ug/L	181	Standard
	Zn	66	5607.0	0.9	**4.0396**	0.027	0.7	ug/L	215	Standard
>	Ge	72	564834.0	0.3				ug/L	520809	Standard
	As	75	9187.6	1.4	**6.9075**	0.115	1.7	ug/L	-52	Standard
	Se	82	374.5	2.3	**2.6072**	0.072	2.8	ug/L	17	Standard
	Se-1	77	677.0	5.1	**6.6170**	0.347	5.3	ug/L	56	Standard
>	Ga	71	156.7	12.9				mg/L	25	Standard
	Rb	85	67336.0	0.8				ug/L	28	Standard
	Y	89	479624.4	2.5				ug/L	447395	Standard
>	Rh	103	165.0	24.1				ug/L	15	Standard
	Mo	98	376.6	7.3	**0.0951**	0.009	9.5	ug/L	113	Standard
	Ag	107	95.7	7.7	**-0.0001**	0.001	907.0	ug/L	108	Standard
	Cd	111	85.6	10.8	**0.0332**	0.004	11.6	mg/L	3	Standard
	Cd	114	251.0	20.4	**0.0421**	0.008	19.8	ug/L	20	Standard
>	In	115	654613.0	0.6				ug/L	625728	Standard
	Sn	118	2261.8	11.1	**0.2519**	0.039	15.5	ug/L	568	Standard
	Sb	123	469.5	25.9	**0.0532**	0.023	43.1	ug/L	612	Standard
	Ba	135	790046.7	0.9	**347.1125**	3.141	0.9	ug/L	21	Standard
	Ce	140	7066.6	1.9				ug/L	245	Standard
>	Tb	159	995476.8	2.0				ug/L	950397	Standard
	Ho	165	136.7	9.2				ug/L	7	Standard
	Tl	203	120.3	3.1	**0.0125**	0.000	3.4	ug/L	15	Standard
	Tl	205	115.0	19.9	**0.0045**	0.003	61.6	ug/L	13	Standard
	Pb	206	675.0	1.7	**0.0742**	0.002	2.8	ug/L	264	Standard
	Pb	207	573.0	0.8	**0.0642**	0.001	1.0	ug/L	222	Standard
	Pb	208	2423.1	1.0	**0.0659**	0.001	2.1	ug/L	959	Standard
	U	238	289.7	4.3	**0.0353**	0.002	5.0	ug/L	9	Standard
>	Bi	209	558695.9	0.8				ug/L	552821	Standard

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Na	23	5.0	100.0	**12.9192**	12.771	98.9	mg/L	2	Standard
Mg	24	36766.2	0.7	**36.8431**	1.290	3.5	mg/L	55	Standard
K	39	516.7	3.4	**1.5703**	0.055	3.5	mg/L	28	Standard
Ca	43	131.7	25.3	**7.7852**	2.329	29.9	mg/L	27	Standard
Fe	54	27742.4	0.7	**18.5905**	0.497	2.7	mg/L	147	Standard
Fe	57	7620.3	4.0	**19.3167**	1.147	5.9	mg/L	268	Standard
Sc-1	45	47950.8	2.8				mg/L	41174	Standard
Cl	35	87125.8	1.5				ug/L	69550	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	74331.9	2.0				ug/L	1950	Standard
P	31	38512.2	1.7				ug/L	21156	Standard
S	34	4447.3	3.4				ug/L	3419	Standard
Sr	88	553.3	7.8				ug/L	72	Standard
C	12	426.7	14.3				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	150.0	48.1				mg/L	17	Standard
Dy	164	179.8	21.5				mg/L	16	Standard
Ho-1	165	136.7	9.2				mg/L	7	Standard
Er	166	143.3	22.4				mg/L	7	Standard
I	127	215985.2	0.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		112.972	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		108.453	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.616
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.063
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606145303
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Method 6020 - Summary Report

Sample ID: L1606142701 WG574419-02
Sample Date/Time: Friday, July 01, 2016 15:59:07
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79441.0	0.3				ug/L	76456	Standard
	Be	9	21.7	96.1	**-0.0013**	0.018	1415.0	ug/L	20	Standard
	Al	27	10303389.4	2.0	**57.9147**	1.116	1.9	ug/L	1307	Standard
	Sc	45	40113.1	2.6				ug/L	41174	Standard
	Ti	47	184.0	9.4	**0.4748**	0.053	11.1	ug/L	27	Standard
	V	51	103393.4	0.6	**12.2581**	0.142	1.2	ug/L	1434	Standard
	Cr	52	60643.8	2.1	**6.4579**	0.232	3.6	ug/L	7733	Standard
	Cr	53	11869.6	1.2	**11.2148**	0.255	2.3	ug/L	442	Standard
	Mn	55	46538.0	1.1	**5.9867**	0.050	0.8	ug/L	723	Standard
	Co	59	37235.0	0.6	**4.7844**	0.072	1.5	ug/L	217	Standard
	Ni	60	30036.7	0.7	**14.1841**	0.259	1.8	ug/L	304	Standard
	Cu	65	12213.6	1.3	**5.8539**	0.146	2.5	ug/L	181	Standard
	Zn	66	33617.6	0.9	**26.9954**	0.533	2.0	ug/L	215	Standard
>	**Ge**	72	525941.0	1.1				ug/L	520809	Standard
	As	75	2649.6	1.8	**2.1706**	0.042	1.9	ug/L	-52	Standard
	Se	82	1059.1	1.9	**8.1767**	0.235	2.9	ug/L	17	Standard
	Se-1	77	280.3	4.4	**2.5625**	0.130	5.1	ug/L	56	Standard
>	**Ga**	71	101.7	18.6				mg/L	25	Standard
	Rb	85	18985.2	1.5				ug/L	28	Standard
	Y	89	446075.2	1.3				ug/L	447395	Standard
>	**Rh**	103	71.7	26.4				ug/L	15	Standard
	Mo	98	435588.8	0.8	**147.3741**	1.220	0.8	ug/L	113	Standard
	Ag	107	124.3	1.7	**0.0049**	0.000	10.0	ug/L	108	Standard
	Cd	111	-216.2	12.9	**-0.0985**	0.013	12.8	mg/L	3	Standard
	Cd	114	902.1	8.1	**0.1619**	0.011	7.0	ug/L	20	Standard
>	**In**	115	611441.0	1.1				ug/L	625728	Standard
	Sn	118	915.0	18.3	**0.0613**	0.027	44.2	ug/L	568	Standard
	Sb	123	652.5	5.8	**0.0955**	0.006	6.7	ug/L	612	Standard
	Ba	135	39982.7	1.2	**18.7899**	0.104	0.6	ug/L	21	Standard
	Ce	140	376.7	4.3				ug/L	245	Standard
>	**Tb**	159	929616.4	0.5				ug/L	950397	Standard
	Ho	165	33.3	48.2				ug/L	7	Standard
	Tl	203	136.7	9.3	**0.0150**	0.001	9.9	ug/L	15	Standard
	Tl	205	106.7	11.8	**0.0041**	0.002	39.6	ug/L	13	Standard
	Pb	206	1749.8	1.5	**0.2761**	0.005	1.9	ug/L	264	Standard
	Pb	207	1478.4	2.6	**0.2515**	0.008	3.1	ug/L	222	Standard
	Pb	208	6375.9	0.9	**0.2660**	0.002	0.9	ug/L	959	Standard
	U	238	161.7	12.3	**0.0205**	0.003	12.5	ug/L	9	Standard
>	**Bi**	209	534118.6	0.2				ug/L	552821	Standard

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Na	23	3.3	86.6	**10.0941**	8.741	86.6	mg/L	2	Standard
Mg	24	25695.1	1.2	**30.7602**	0.665	2.2	mg/L	55	Standard
K	39	365.0	11.7	**1.3075**	0.193	14.8	mg/L	28	Standard
Ca	43	230.0	14.3	**18.9742**	2.668	14.1	mg/L	27	Standard
Fe	54	302.2	7.9	**0.1442**	0.013	8.8	mg/L	147	Standard
Fe	57	455.0	18.2	**0.6271**	0.222	35.4	mg/L	268	Standard
> **Sc-1**	45	40113.1	2.6				mg/L	41174	Standard
Cl	35	98380.0	3.9				ug/L	69550	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	216720.0	3.3				ug/L	1950	Standard
P	31	13189.1	3.4				ug/L	21156	Standard
S	34	3895.5	7.2				ug/L	3419	Standard
Sr	88	283.3	22.8				ug/L	72	Standard
C	12	173.3	27.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	316.7	12.8				mg/L	17	Standard
Dy	164	233.8	13.8				mg/L	16	Standard
Ho-1	165	33.3	48.2				mg/L	7	Standard
Er	166	60.0	33.3				mg/L	7	Standard
I	127	62818.3	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.905	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.985	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606142701 WG574419-02
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	97.717	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.617	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mo 98 Upper, S, EEE	Mo	98	

Sample ID: L1606142701 WG574419-02
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Method 6020 - Summary Report

Sample ID: L1606142701DP WG574419-07
Sample Date/Time: Friday, July 01, 2016 16:02:18
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77749.0	1.6				ug/L	76456	Standard
	Be	9	6.7	43.3	**-0.0140**	0.002	17.3	ug/L	20	Standard
	Al	27	9817097.2	1.8	**56.3855**	0.837	1.5	ug/L	1307	Standard
	Sc	45	39810.6	1.5				ug/L	41174	Standard
	Ti	47	174.0	5.5	**0.4563**	0.027	5.9	ug/L	27	Standard
	V	51	99457.7	1.9	**12.0558**	0.214	1.8	ug/L	1434	Standard
	Cr	52	58802.6	0.7	**6.3951**	0.090	1.4	ug/L	7733	Standard
	Cr	53	11255.8	2.7	**10.8641**	0.366	3.4	ug/L	442	Standard
	Mn	55	43355.3	1.9	**5.6990**	0.079	1.4	ug/L	723	Standard
	Co	59	35792.9	1.2	**4.7027**	0.031	0.7	ug/L	217	Standard
	Ni	60	28593.6	0.6	**13.8042**	0.061	0.4	ug/L	304	Standard
	Cu	65	11425.0	1.5	**5.5962**	0.062	1.1	ug/L	181	Standard
	Zn	66	32386.6	1.1	**26.5937**	0.385	1.4	ug/L	215	Standard
>	Ge	72	514230.5	0.6				ug/L	520809	Standard
	As	75	2594.3	1.9	**2.1736**	0.050	2.3	ug/L	-52	Standard
	Se	82	1064.6	1.8	**8.4087**	0.182	2.2	ug/L	17	Standard
	Se-1	77	269.0	6.0	**2.5031**	0.207	8.3	ug/L	56	Standard
>	Ga	71	116.7	27.9				mg/L	25	Standard
	Rb	85	18095.8	1.8				ug/L	28	Standard
	Y	89	436440.0	0.3				ug/L	447395	Standard
>	Rh	103	98.3	34.6				ug/L	15	Standard
	Mo	98	417319.1	1.0	**143.2353**	2.296	1.6	ug/L	113	Standard
	Ag	107	105.3	7.0	**0.0024**	0.001	42.1	ug/L	108	Standard
	Cd	111	-221.7	8.5	**-0.1024**	0.009	8.7	mg/L	3	Standard
	Cd	114	915.2	5.7	**0.1667**	0.008	5.0	ug/L	20	Standard
>	In	115	602737.8	0.7				ug/L	625728	Standard
	Sn	118	925.0	27.3	**0.0648**	0.040	61.0	ug/L	568	Standard
	Sb	123	629.8	5.8	**0.0928**	0.007	7.1	ug/L	612	Standard
	Ba	135	37742.0	0.9	**17.9925**	0.177	1.0	ug/L	21	Standard
	Ce	140	530.0	15.0				ug/L	245	Standard
>	Tb	159	918022.5	0.6				ug/L	950397	Standard
	Ho	165	26.7	47.2				ug/L	7	Standard
	Tl	203	122.7	8.6	**0.0136**	0.001	8.7	ug/L	15	Standard
	Tl	205	120.0	23.2	**0.0061**	0.004	61.9	ug/L	13	Standard
	Pb	206	1673.8	3.7	**0.2676**	0.008	2.9	ug/L	264	Standard
	Pb	207	1385.7	3.3	**0.2377**	0.006	2.4	ug/L	222	Standard
	Pb	208	6038.1	1.4	**0.2546**	0.001	0.3	ug/L	959	Standard
	U	238	134.0	4.7	**0.0173**	0.001	3.8	ug/L	9	Standard
>	Bi	209	524841.4	1.3				ug/L	552821	Standard

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Na	23	3.3	86.6	**10.3333**	8.947	86.6	mg/L	2	Standard
Mg	24	24359.6	1.9	**29.3745**	0.694	2.4	mg/L	55	Standard
K	39	391.7	23.4	**1.4257**	0.389	27.3	mg/L	28	Standard
Ca	43	220.0	19.4	**18.2274**	4.000	21.9	mg/L	27	Standard
Fe	54	293.3	15.9	**0.1391**	0.037	26.9	mg/L	147	Standard
Fe	57	398.3	15.7	**0.4602**	0.182	39.6	mg/L	268	Standard
> **Sc-1**	45	39810.6	1.5				mg/L	41174	Standard
Cl	35	101579.4	0.9				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	218312.6	3.3				ug/L	1950	Standard
P	31	12735.4	2.4				ug/L	21156	Standard
S	34	3657.1	4.9				ug/L	3419	Standard
Sr	88	253.3	24.1				ug/L	72	Standard
C	12	143.3	20.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	270.0	11.1				mg/L	17	Standard
Dy	164	258.1	16.7				mg/L	16	Standard
Ho-1	165	26.7	47.2				mg/L	7	Standard
Er	166	40.0	25.0				mg/L	7	Standard
I	127	57368.4	1.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.691	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.737	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.326
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.939
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mo 98 Upper, S, EEE	Mo	98	

Sample ID: L1606142701DP WG574419-07
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Method 6020 - Summary Report

Sample ID: L1606128901
Sample Date/Time: Friday, July 01, 2016 16:05:30
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76109.2	3.3				ug/L	76456	Standard
	Be	9	26.7	10.8	**0.0041**	0.003	75.2	ug/L	20	Standard
	Al	27	2157263.5	1.2	**12.6549**	0.272	2.1	ug/L	1307	Standard
	Sc	45	39362.7	1.0				ug/L	41174	Standard
	Ti	47	31.0	25.6	**0.0115**	0.025	213.1	ug/L	27	Standard
	V	51	2160.8	9.2	**0.0669**	0.026	39.1	ug/L	1434	Standard
	Cr	52	18224.3	3.5	**1.3053**	0.079	6.0	ug/L	7733	Standard
	Cr	53	3937.2	3.2	**3.5166**	0.125	3.6	ug/L	442	Standard
	Mn	55	109531.5	1.1	**14.5084**	0.090	0.6	ug/L	723	Standard
	Co	59	3522.7	2.0	**0.4349**	0.006	1.3	ug/L	217	Standard
	Ni	60	12809.7	0.5	**6.0810**	0.080	1.3	ug/L	304	Standard
	Cu	65	624.3	3.1	**0.2348**	0.009	4.0	ug/L	181	Standard
	Zn	66	2829.3	0.5	**2.1516**	0.027	1.3	ug/L	215	Standard
>	**Ge**	72	515809.2	1.0				ug/L	520809	Standard
	As	75	48.3	6.2	**0.0847**	0.002	2.4	ug/L	-52	Standard
	Se	82	67.8	11.0	**0.4157**	0.062	15.0	ug/L	17	Standard
	Se-1	77	139.0	6.9	**0.9565**	0.097	10.1	ug/L	56	Standard
>	**Ga**	71	33.3	31.2				mg/L	25	Standard
	Rb	85	320.0	16.9				ug/L	28	Standard
	Y	89	425911.6	0.3				ug/L	447395	Standard
>	**Rh**	103	23.3	61.9				ug/L	15	Standard
	Mo	98	1200.8	19.7	**0.3848**	0.082	21.3	ug/L	113	Standard
	Ag	107	75.3	7.8	**-0.0021**	0.001	36.3	ug/L	108	Standard
	Cd	111	25.6	20.9	**0.0091**	0.002	26.3	mg/L	3	Standard
	Cd	114	59.2	25.8	**0.0107**	0.003	26.4	ug/L	20	Standard
>	**In**	115	608157.1	1.0				ug/L	625728	Standard
	Sn	118	525.0	20.9	**-0.0004**	0.017	4881.3	ug/L	568	Standard
	Sb	123	165.4	19.3	**-0.0007**	0.007	874.9	ug/L	612	Standard
	Ba	135	100056.7	1.7	**47.3091**	1.176	2.5	ug/L	21	Standard
	Ce	140	223.3	64.9				ug/L	245	Standard
>	**Tb**	159	910863.8	0.3				ug/L	950397	Standard
	Ho	165	15.0	57.7				ug/L	7	Standard
	Tl	203	83.0	10.7	**0.0087**	0.001	10.8	ug/L	15	Standard
	Tl	205	80.0	31.3	**0.0005**	0.003	626.9	ug/L	13	Standard
	Pb	206	270.7	3.7	**0.0052**	0.002	42.5	ug/L	264	Standard
	Pb	207	242.0	6.8	**0.0021**	0.003	162.6	ug/L	222	Standard
	Pb	208	1024.7	1.6	**0.0016**	0.001	40.9	ug/L	959	Standard
	U	238	10.0	43.6	**0.0010**	0.001	55.3	ug/L	9	Standard
>	**Bi**	209	540336.1	0.9				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4055.5	6.4	**4.8960**	0.330	6.7	mg/L	55	Standard
K	39	15.0	66.7	**-0.0710**	0.040	57.0	mg/L	28	Standard
Ca	43	48.3	26.0	**2.1421**	1.207	56.4	mg/L	27	Standard
Fe	54	63.5	15.9	**-0.0467**	0.009	18.5	mg/L	147	Standard
Fe	57	253.3	5.0	**0.0103**	0.042	410.2	mg/L	268	Standard
> **Sc-1**	45	39362.7	1.0				mg/L	41174	Standard
Cl	35	90744.3	1.5				ug/L	69550	Standard
Kr	83	2.0	0.0				ug/L	1	Standard
Br	81	11220.8	7.7				ug/L	1950	Standard
P	31	8672.5	2.6				ug/L	21156	Standard
S	34	4007.2	6.6				ug/L	3419	Standard
Sr	88	146.7	20.0				ug/L	72	Standard
C	12	96.7	36.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	436.7	13.4				mg/L	17	Standard
Dy	164	6.5	179.6				mg/L	16	Standard
Ho-1	165	15.0	57.7				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	40273.5	3.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.547	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.040	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.192
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.742
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606129003
Sample Date/Time: Friday, July 01, 2016 16:08:41
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74300.1	2.3				ug/L	76456	Standard
	Be	9	33.3	70.9	**0.0108**	0.022	200.3	ug/L	20	Standard
	Al	27	1109788.9	1.6	**6.6634**	0.204	3.1	ug/L	1307	Standard
	Sc	45	38913.3	2.4				ug/L	41174	Standard
	Ti	47	72.3	13.4	**0.1384**	0.027	19.6	ug/L	27	Standard
	V	51	1833.5	12.2	**0.0257**	0.030	115.0	ug/L	1434	Standard
	Cr	52	6791.5	6.8	**-0.1263**	0.061	48.5	ug/L	7733	Standard
	Cr	53	2288.5	7.5	**1.8597**	0.192	10.3	ug/L	442	Standard
	Mn	55	199243.2	0.7	**26.3506**	0.434	1.6	ug/L	723	Standard
	Co	59	3319.7	2.1	**0.4061**	0.014	3.4	ug/L	217	Standard
	Ni	60	1865.1	2.1	**0.7502**	0.017	2.3	ug/L	304	Standard
	Cu	65	304.7	2.9	**0.0760**	0.006	7.4	ug/L	181	Standard
	Zn	66	5878.8	1.2	**4.6424**	0.117	2.5	ug/L	215	Standard
>	Ge	72	518291.1	1.3				ug/L	520809	Standard
	As	75	792.5	2.6	**0.6902**	0.010	1.5	ug/L	-52	Standard
	Se	82	76.5	13.2	**0.4817**	0.073	15.2	ug/L	17	Standard
	Se-1	77	129.3	15.3	**0.8357**	0.233	27.9	ug/L	56	Standard
>	Ga	71	50.0	26.5				mg/L	25	Standard
	Rb	85	2285.2	6.7				ug/L	28	Standard
	Y	89	427107.4	1.7				ug/L	447395	Standard
>	Rh	103	36.7	56.8				ug/L	15	Standard
	Mo	98	394.1	11.3	**0.1099**	0.015	13.4	ug/L	113	Standard
	Ag	107	108.3	28.6	**0.0026**	0.004	163.3	ug/L	108	Standard
	Cd	111	66.5	18.4	**0.0273**	0.005	18.9	mg/L	3	Standard
	Cd	114	176.4	7.1	**0.0318**	0.002	6.8	ug/L	20	Standard
>	In	115	609166.7	1.0				ug/L	625728	Standard
	Sn	118	880.0	21.8	**0.0564**	0.032	56.6	ug/L	568	Standard
	Sb	123	119.8	10.9	**-0.0099**	0.003	28.1	ug/L	612	Standard
	Ba	135	34816.0	1.5	**16.4201**	0.118	0.7	ug/L	21	Standard
	Ce	140	1188.4	1.5				ug/L	245	Standard
>	Tb	159	905742.5	1.6				ug/L	950397	Standard
	Ho	165	23.3	32.7				ug/L	7	Standard
	Tl	203	105.7	16.3	**0.0112**	0.002	15.9	ug/L	15	Standard
	Tl	205	100.0	22.9	**0.0030**	0.003	94.5	ug/L	13	Standard
	Pb	206	323.0	3.6	**0.0143**	0.002	17.0	ug/L	264	Standard
	Pb	207	282.3	3.6	**0.0098**	0.001	12.1	ug/L	222	Standard
	Pb	208	1225.0	3.7	**0.0111**	0.002	20.3	ug/L	959	Standard
	U	238	27.3	27.5	**0.0032**	0.001	29.6	ug/L	9	Standard
>	Bi	209	543356.0	1.6				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4887.5	0.8	**5.9826**	0.111	1.8	mg/L	55	Standard
K	39	70.0	31.1	**0.1543**	0.094	61.0	mg/L	28	Standard
Ca	43	26.7	78.1	**0.1318**	2.068	1569.3	mg/L	27	Standard
Fe	54	2091.2	5.6	**1.6384**	0.138	8.4	mg/L	147	Standard
Fe	57	790.0	3.5	**1.7657**	0.122	6.9	mg/L	268	Standard
> **Sc-1**	45	38913.3	2.4				mg/L	41174	Standard
Cl	35	85357.9	2.8				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	12818.8	1.9				ug/L	1950	Standard
P	31	10578.7	2.6				ug/L	21156	Standard
S	34	4063.9	1.6				ug/L	3419	Standard
Sr	88	108.3	11.6				ug/L	72	Standard
C	12	110.0	32.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	27.0				mg/L	17	Standard
Dy	164	55.7	26.3				mg/L	16	Standard
Ho-1	165	23.3	32.7				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	7	Standard
I	127	94261.3	5.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.181	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.516	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.353
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.288
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129003
Report Date/Time: Friday, July 01, 2016 16:10:58
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 16:11:55
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78995.5	2.2				ug/L	76456	Standard
	Be	9	60502.3	2.1	**52.2922**	0.491	0.9	ug/L	20	Standard
	Al	27	8989002.2	0.8	**50.8245**	0.985	1.9	ug/L	1307	Standard
	Sc	45	42305.6	0.7				ug/L	41174	Standard
	Ti	47	34061.9	1.0	**98.6488**	1.546	1.6	ug/L	27	Standard
	V	51	436960.5	1.1	**50.0001**	0.513	1.0	ug/L	1434	Standard
	Cr	52	437865.8	0.9	**50.1688**	0.753	1.5	ug/L	7733	Standard
	Cr	53	53937.5	1.4	**49.9817**	0.858	1.7	ug/L	442	Standard
	Mn	55	399271.1	0.3	**49.7080**	0.463	0.9	ug/L	723	Standard
	Co	59	415402.7	0.9	**51.1776**	0.121	0.2	ug/L	217	Standard
	Ni	60	110781.9	0.5	**50.2680**	0.560	1.1	ug/L	304	Standard
	Cu	65	108848.6	0.7	**50.2966**	0.042	0.1	ug/L	181	Standard
	Zn	66	65152.1	0.8	**50.0366**	0.239	0.5	ug/L	215	Standard
>	**Ge**	72	551526.5	0.7				ug/L	520809	Standard
	As	75	65288.4	0.5	**49.9868**	0.536	1.1	ug/L	-52	Standard
	Se	82	6767.7	1.1	**50.4635**	0.866	1.7	ug/L	17	Standard
	Se-1	77	4643.0	1.4	**50.6038**	0.550	1.1	ug/L	56	Standard
>	**Ga**	71	51.7	27.9				mg/L	25	Standard
	Rb	85	896.7	7.7				ug/L	28	Standard
	Y	89	469245.9	0.9				ug/L	447395	Standard
>	**Rh**	103	30.0	50.0				ug/L	15	Standard
	Mo	98	315176.0	0.7	**100.1655**	0.835	0.8	ug/L	113	Standard
	Ag	107	372454.9	1.5	**49.8448**	0.674	1.4	ug/L	108	Standard
	Cd	111	120309.5	0.5	**50.2390**	0.275	0.5	mg/L	3	Standard
	Cd	114	296771.3	0.4	**50.0551**	0.319	0.6	ug/L	20	Standard
>	**In**	115	650857.3	0.3				ug/L	625728	Standard
	Sn	118	332008.2	0.6	**49.5103**	0.318	0.6	ug/L	568	Standard
	Sb	123	262896.6	1.7	**48.8713**	0.775	1.6	ug/L	612	Standard
	Ba	135	110171.1	0.5	**48.6680**	0.323	0.7	ug/L	21	Standard
	Ce	140	123.3	16.9				ug/L	245	Standard
>	**Tb**	159	962981.5	0.4				ug/L	950397	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	457474.5	0.7	**50.4943**	0.334	0.7	ug/L	15	Standard
	Tl	205	418439.6	0.8	**52.0062**	0.714	1.4	ug/L	13	Standard
	Pb	206	289168.5	1.0	**50.5726**	0.399	0.8	ug/L	264	Standard
	Pb	207	263060.3	0.2	**50.6591**	0.254	0.5	ug/L	222	Standard
	Pb	208	1106275.9	0.6	**52.1627**	0.606	1.2	ug/L	959	Standard
	U	238	414349.5	1.0	**50.9359**	0.727	1.4	ug/L	9	Standard
>	**Bi**	209	557861.1	0.5				ug/L	552821	Standard

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Na	23	1.7	173.2	**4.8874**	8.457	173.0	mg/L	2	Standard
Mg	24	4582.4	2.1	**5.1503**	0.148	2.9	mg/L	55	Standard
K	39	1161.7	7.3	**4.2028**	0.289	6.9	mg/L	28	Standard
Ca	43	63.3	9.1	**3.1474**	0.494	15.7	mg/L	27	Standard
Fe	54	6769.4	2.9	**5.0672**	0.121	2.4	mg/L	147	Standard
Fe	57	2078.5	6.0	**5.4119**	0.382	7.1	mg/L	268	Standard
> **Sc-1**	45	42305.6	0.7				mg/L	41174	Standard
Cl	35	87401.4	1.9				ug/L	69550	Standard
Kr	83	0.3	173.2				ug/L	1	Standard
Br	81	3040.3	9.5				ug/L	1950	Standard
P	31	27000.7	1.2				ug/L	21156	Standard
S	34	4354.0	2.5				ug/L	3419	Standard
Sr	88	48.3	31.6				ug/L	72	Standard
C	12	120.0	22.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	296.7	25.3				mg/L	17	Standard
Dy	164	9.4	107.0				mg/L	16	Standard
Ho-1	165	8.3	69.3				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	16158.6	6.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	104.584		
Al	27	101.649		
Sc	45			
Ti	47	98.649		
V	51	100.000		
Cr	52	100.338		
Cr	53			
Mn	55	99.416		
Co	59	102.355		
Ni	60	100.536		
Cu	65	100.593		
Zn	66	100.073		
> Ge	72		105.898	
As	75	99.974		
Se	82	100.927		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	100.165		
Ag	107	99.690		
Cd	111	100.478		
Cd	114			
In	115			104.016
Sn	118	99.021		
Sb	123	97.743		
Ba	135	97.336		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.989		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.325		
U	238	101.872		
Bi	209			100.912
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 16:15:06
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79089.3	2.9				ug/L	76456	Standard
	Be	9	15.0	57.7	**-0.0068**	0.008	113.4	ug/L	20	Standard
	Al	27	2235.2	13.9	**0.0024**	0.001	57.8	ug/L	1307	Standard
	Sc	45	43469.0	3.3				ug/L	41174	Standard
	Ti	47	28.3	17.4	**-0.0019**	0.015	796.4	ug/L	27	Standard
	V	51	1493.4	3.9	**-0.0261**	0.008	30.6	ug/L	1434	Standard
	Cr	52	7368.5	3.1	**-0.1054**	0.021	19.8	ug/L	7733	Standard
	Cr	53	613.3	6.6	**0.1595**	0.042	26.4	ug/L	442	Standard
	Mn	55	787.0	3.1	**-0.0026**	0.002	90.1	ug/L	723	Standard
	Co	59	245.7	12.9	**0.0010**	0.004	377.8	ug/L	217	Standard
	Ni	60	277.3	6.7	**-0.0262**	0.009	35.5	ug/L	304	Standard
	Cu	65	184.0	15.4	**0.0115**	0.013	111.3	ug/L	181	Standard
	Zn	66	259.7	4.8	**0.0209**	0.009	40.6	ug/L	215	Standard
>	**Ge**	72	548531.1	0.8				ug/L	520809	Standard
	As	75	-66.9	12.4	**-0.0063**	0.007	105.6	ug/L	-52	Standard
	Se	82	22.1	15.5	**0.0395**	0.025	62.6	ug/L	17	Standard
	Se-1	77	54.7	22.1	**-0.0780**	0.131	167.8	ug/L	56	Standard
>	**Ga**	71	23.3	75.3				mg/L	25	Standard
	Rb	85	18.3	56.8				ug/L	28	Standard
	Y	89	474502.6	0.9				ug/L	447395	Standard
>	**Rh**	103	10.0					ug/L	15	Standard
	Mo	98	353.6	10.5	**0.0864**	0.011	12.8	ug/L	113	Standard
	Ag	107	117.0	12.6	**0.0025**	0.002	78.3	ug/L	108	Standard
	Cd	111	11.4	37.7	**0.0023**	0.002	74.6	mg/L	3	Standard
	Cd	114	48.0	51.5	**0.0079**	0.004	50.7	ug/L	20	Standard
>	**In**	115	662932.4	0.6				ug/L	625728	Standard
	Sn	118	1505.1	27.3	**0.1367**	0.061	44.7	ug/L	568	Standard
	Sb	123	848.9	30.9	**0.1215**	0.049	40.0	ug/L	612	Standard
	Ba	135	79.0	17.7	**0.0163**	0.006	35.9	ug/L	21	Standard
	Ce	140	31.7	24.1				ug/L	245	Standard
>	**Tb**	159	977903.3	1.9				ug/L	950397	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	71.7	6.3	**0.0070**	0.000	7.1	ug/L	15	Standard
	Tl	205	66.7	28.4	**-0.0016**	0.002	147.5	ug/L	13	Standard
	Pb	206	325.0	5.7	**0.0119**	0.003	21.2	ug/L	264	Standard
	Pb	207	293.0	9.6	**0.0091**	0.005	50.3	ug/L	222	Standard
	Pb	208	1180.4	1.4	**0.0062**	0.001	14.3	ug/L	959	Standard
	U	238	63.3	11.6	**0.0074**	0.001	11.2	ug/L	9	Standard
>	**Bi**	209	570093.4	1.3				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	13.3	**-0.0123**	0.005	38.9	mg/L	55	Standard
K	39	35.0	14.3	**-0.0036**	0.022	615.4	mg/L	28	Standard
Ca	43	20.0	25.0	**-0.7333**	0.424	57.9	mg/L	27	Standard
Fe	54	187.6	24.1	**0.0414**	0.038	91.6	mg/L	147	Standard
Fe	57	236.7	10.0	**-0.1153**	0.063	54.7	mg/L	268	Standard
> **Sc-1**	45	43469.0	3.3				mg/L	41174	Standard
Cl	35	86433.8	0.2				ug/L	69550	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	2503.5	3.8				ug/L	1950	Standard
P	31	25746.9	1.4				ug/L	21156	Standard
S	34	4332.3	3.9				ug/L	3419	Standard
Sr	88	76.7	27.2				ug/L	72	Standard
C	12	100.0	65.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	203.3	49.3				mg/L	17	Standard
Dy	164	6.3	86.6				mg/L	16	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	12004.8	4.7				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		105.323	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.946
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.124
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBS H2 WG574521-03
Sample Date/Time: Friday, July 01, 2016 16:37:08
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79271.8	0.3				ug/L	76456	Standard
	Be	9	20.0	66.1	**-0.0027**	0.011	426.9	ug/L	20	Standard
	Al	27	18129.4	51.1	**0.0920**	0.053	57.1	ug/L	1307	Standard
	Sc	45	43671.2	1.7				ug/L	41174	Standard
	Ti	47	42.0	27.0	**0.0356**	0.031	88.1	ug/L	27	Standard
	V	51	1815.5	7.2	**0.0075**	0.013	168.1	ug/L	1434	Standard
	Cr	52	9893.9	1.4	**0.1721**	0.017	10.1	ug/L	7733	Standard
	Cr	53	775.0	10.2	**0.2997**	0.080	26.8	ug/L	442	Standard
	Mn	55	2337.2	54.3	**0.1861**	0.154	82.5	ug/L	723	Standard
	Co	59	338.7	60.7	**0.0117**	0.025	210.3	ug/L	217	Standard
	Ni	60	460.3	4.6	**0.0540**	0.007	13.4	ug/L	304	Standard
	Cu	65	246.0	5.3	**0.0385**	0.005	13.8	ug/L	181	Standard
	Zn	66	1190.0	1.7	**0.7267**	0.005	0.6	ug/L	215	Standard
>	**Ge**	72	557757.5	1.2				ug/L	520809	Standard
	As	75	-45.2	46.1	**0.0109**	0.016	146.4	ug/L	-52	Standard
	Se	82	21.5	16.2	**0.0326**	0.024	74.5	ug/L	17	Standard
	Se-1	77	60.7	14.0	**-0.0215**	0.097	452.0	ug/L	56	Standard
>	**Ga**	71	30.0	33.3				mg/L	25	Standard
	Rb	85	78.3	35.2				ug/L	28	Standard
	Y	89	482555.7	1.9				ug/L	447395	Standard
>	**Rh**	103	8.3	91.7				ug/L	15	Standard
	Mo	98	332.0	91.4	**0.0799**	0.095	118.5	ug/L	113	Standard
	Ag	107	123.7	31.0	**0.0035**	0.005	145.5	ug/L	108	Standard
	Cd	111	20.3	82.0	**0.0060**	0.007	114.1	mg/L	3	Standard
	Cd	114	52.4	144.8	**0.0087**	0.013	144.6	ug/L	20	Standard
>	**In**	115	660410.5	0.4				ug/L	625728	Standard
	Sn	118	1340.1	28.5	**0.1130**	0.056	49.2	ug/L	568	Standard
	Sb	123	501.3	30.5	**0.0581**	0.028	47.8	ug/L	612	Standard
	Ba	135	141.0	74.3	**0.0434**	0.045	104.7	ug/L	21	Standard
	Ce	140	65.0	13.3				ug/L	245	Standard
>	**Tb**	159	984326.5	0.5				ug/L	950397	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	36.3	87.4	**0.0032**	0.003	108.0	ug/L	15	Standard
	Tl	205	81.7	141.4	**0.0002**	0.014	6303.1	ug/L	13	Standard
	Pb	206	357.0	4.6	**0.0175**	0.003	15.4	ug/L	264	Standard
	Pb	207	301.0	13.7	**0.0108**	0.008	73.3	ug/L	222	Standard
	Pb	208	1410.0	25.6	**0.0170**	0.017	98.8	ug/L	959	Standard
	U	238	79.0	155.7	**0.0093**	0.015	160.0	ug/L	9	Standard
>	**Bi**	209	568547.7	0.3				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	83.3	70.3	**0.0311**	0.063	203.4	mg/L	55	Standard
K	39	26.7	47.2	**-0.0352**	0.044	125.3	mg/L	28	Standard
Ca	43	13.3	43.3	**-1.3140**	0.480	36.5	mg/L	27	Standard
Fe	54	179.3	22.8	**0.0338**	0.030	89.2	mg/L	147	Standard
Fe	57	248.3	6.5	**-0.0850**	0.036	42.0	mg/L	268	Standard
> **Sc-1**	45	43671.2	1.7				mg/L	41174	Standard
Cl	35	94694.4	1.8				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	2446.9	5.5				ug/L	1950	Standard
P	31	26514.9	2.3				ug/L	21156	Standard
S	34	4310.6	3.2				ug/L	3419	Standard
Sr	88	95.0	13.9				ug/L	72	Standard
C	12	123.3	28.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	223.3	40.1				mg/L	17	Standard
Dy	164	6.2	193.4				mg/L	16	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	20320.3	3.3				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		103.683	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		107.094	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.543
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.845
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: LCSS H2 WG574521-04
Sample Date/Time: Friday, July 01, 2016 16:40:19
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	78206.3	1.2				ug/L	76456	Standard
	Be	9	30357.1	1.3	**26.4935**	0.412	1.6	ug/L	20	Standard
	Al	27	14527.0	3.3	**0.0727**	0.002	2.4	ug/L	1307	Standard
	Sc	45	43500.7	0.4				ug/L	41174	Standard
	Ti	47	50.0	23.1	**0.0598**	0.033	54.4	ug/L	27	Standard
	V	51	219978.8	0.3	**24.9959**	0.252	1.0	ug/L	1434	Standard
	Cr	52	227773.4	1.1	**25.5491**	0.376	1.5	ug/L	7733	Standard
	Cr	53	27710.3	2.0	**25.3978**	0.708	2.8	ug/L	442	Standard
	Mn	55	209603.4	1.5	**25.9644**	0.258	1.0	ug/L	723	Standard
	Co	59	210851.5	1.3	**25.8831**	0.352	1.4	ug/L	217	Standard
	Ni	60	56751.8	1.2	**25.5968**	0.369	1.4	ug/L	304	Standard
	Cu	65	56217.4	1.4	**25.8605**	0.261	1.0	ug/L	181	Standard
	Zn	66	34071.3	0.3	**26.0003**	0.170	0.7	ug/L	215	Standard
>	Ge	72	553234.9	0.8				ug/L	520809	Standard
	As	75	33169.4	0.5	**25.3389**	0.170	0.7	ug/L	-52	Standard
	Se	82	3351.8	0.3	**24.8507**	0.232	0.9	ug/L	17	Standard
	Se-1	77	2368.9	3.2	**25.4071**	1.040	4.1	ug/L	56	Standard
>	Ga	71	33.3	31.2				mg/L	25	Standard
	Rb	85	63.3	32.9				ug/L	28	Standard
	Y	89	471256.9	0.9				ug/L	447395	Standard
>	Rh	103	23.3	75.3				ug/L	15	Standard
	Mo	98	151.2	23.7	**0.0237**	0.012	48.5	ug/L	113	Standard
	Ag	107	190870.7	0.3	**25.3271**	0.087	0.3	ug/L	108	Standard
	Cd	111	60282.1	0.5	**24.9635**	0.019	0.1	mg/L	3	Standard
	Cd	114	147909.0	1.0	**24.7417**	0.334	1.4	ug/L	20	Standard
>	In	115	656276.3	0.4				ug/L	625728	Standard
	Sn	118	1236.7	17.5	**0.0991**	0.033	33.0	ug/L	568	Standard
	Sb	123	139998.4	0.5	**25.7951**	0.218	0.8	ug/L	612	Standard
	Ba	135	55761.4	0.2	**24.4204**	0.141	0.6	ug/L	21	Standard
	Ce	140	101.7	7.5				ug/L	245	Standard
>	Tb	159	982894.1	0.9				ug/L	950397	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	233767.2	0.4	**25.3362**	0.353	1.4	ug/L	15	Standard
	Tl	205	211866.2	1.4	**25.8487**	0.316	1.2	ug/L	13	Standard
	Pb	206	151902.3	0.4	**26.0680**	0.572	2.2	ug/L	264	Standard
	Pb	207	132458.5	0.8	**25.0234**	0.298	1.2	ug/L	222	Standard
	Pb	208	562733.9	0.2	**26.0307**	0.442	1.7	ug/L	959	Standard
	U	238	206496.7	1.0	**24.9238**	0.246	1.0	ug/L	9	Standard
>	Bi	209	568206.0	1.8				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	58.3	26.2	**0.0044**	0.017	394.1	mg/L	55	Standard
K	39	25.0	20.0	**-0.0405**	0.018	44.5	mg/L	28	Standard
Ca	43	28.3	10.2	**-0.0167**	0.239	1431.0	mg/L	27	Standard
Fe	54	163.4	6.9	**0.0225**	0.008	36.3	mg/L	147	Standard
Fe	57	255.0	14.8	**-0.0621**	0.113	181.2	mg/L	268	Standard
Sc-1	45	43500.7	0.4				mg/L	41174	Standard
Cl	35	91778.5	1.5				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	5150.9	3.9				ug/L	1950	Standard
P	31	26144.2	2.1				ug/L	21156	Standard
S	34	4105.6	2.0				ug/L	3419	Standard
Sr	88	88.3	25.5				ug/L	72	Standard
C	12	90.0	19.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	216.7	38.7				mg/L	17	Standard
Dy	164	12.1	119.9				mg/L	16	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	26.7	86.6				mg/L	7	Standard
I	127	5989.5	2.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.290	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.226	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.882
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.783
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606144504 WG574521-01
Sample Date/Time: Friday, July 01, 2016 16:43:31
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82711.9	1.7				ug/L	76456	Standard
	Be	9	1393.4	1.7	**1.1308**	0.019	1.7	ug/L	20	Standard
	Al	27	12446064.6	0.4	**67.2063**	1.063	1.6	ug/L	1307	Standard
	Sc	45	49798.4	0.9				ug/L	41174	Standard
	Ti	47	3275.7	2.4	**9.3815**	0.258	2.8	ug/L	27	Standard
	V	51	187113.3	0.3	**21.2321**	0.189	0.9	ug/L	1434	Standard
	Cr	52	137212.2	0.9	**15.0050**	0.153	1.0	ug/L	7733	Standard
	Cr	53	16570.7	1.1	**15.0184**	0.113	0.8	ug/L	442	Standard
	Mn	55	3185070.4	0.3	**396.0143**	1.958	0.5	ug/L	723	Standard
	Co	59	91536.7	1.1	**11.2200**	0.101	0.9	ug/L	217	Standard
	Ni	60	45707.8	1.2	**20.5854**	0.156	0.8	ug/L	304	Standard
	Cu	65	23258.8	1.9	**10.6559**	0.153	1.4	ug/L	181	Standard
	Zn	66	46036.5	0.5	**35.1961**	0.406	1.2	ug/L	215	Standard
>	**Ge**	72	553218.9	0.6				ug/L	520809	Standard
	As	75	5739.6	2.8	**4.4216**	0.100	2.3	ug/L	-52	Standard
	Se	82	54.0	18.0	**0.2758**	0.072	26.2	ug/L	17	Standard
	Se-1	77	126.7	3.9	**0.7105**	0.061	8.6	ug/L	56	Standard
>	**Ga**	71	21134.7	1.1				mg/L	25	Standard
	Rb	85	212914.0	1.2				ug/L	28	Standard
	Y	89	733052.8	0.4				ug/L	447395	Standard
>	**Rh**	103	31.7	50.8				ug/L	15	Standard
	Mo	98	356.5	15.7	**0.0888**	0.017	19.2	ug/L	113	Standard
	Ag	107	670.0	12.8	**0.0764**	0.011	14.4	ug/L	108	Standard
	Cd	111	132.6	4.8	**0.0528**	0.002	4.3	mg/L	3	Standard
	Cd	114	355.4	28.0	**0.0597**	0.017	27.7	ug/L	20	Standard
>	**In**	115	653864.1	0.7				ug/L	625728	Standard
	Sn	118	1290.1	26.4	**0.1075**	0.050	46.3	ug/L	568	Standard
	Sb	123	594.8	48.0	**0.0762**	0.052	68.5	ug/L	612	Standard
	Ba	135	574692.3	0.9	**252.7729**	0.765	0.3	ug/L	21	Standard
	Ce	140	1393840.8	0.9				ug/L	245	Standard
>	**Tb**	159	1000230.3	1.3				ug/L	950397	Standard
	Ho	165	21410.1	1.0				ug/L	7	Standard
	Tl	203	1416.4	11.1	**0.1555**	0.018	11.5	ug/L	15	Standard
	Tl	205	1253.4	9.7	**0.1459**	0.016	10.8	ug/L	13	Standard
	Pb	206	71530.8	0.4	**12.4648**	0.067	0.5	ug/L	264	Standard
	Pb	207	58749.0	0.7	**11.2666**	0.094	0.8	ug/L	222	Standard
	Pb	208	258108.7	0.1	**12.1209**	0.070	0.6	ug/L	959	Standard
	U	238	3402.4	1.9	**0.4176**	0.009	2.1	ug/L	9	Standard
>	**Bi**	209	558413.2	0.5				ug/L	552821	Standard

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Na	23	1.7	173.2	**4.0919**	7.079	173.0	mg/L	2	Standard
Mg	24	115.0	19.0	**0.0509**	0.021	40.8	mg/L	55	Standard
K	39	340.0	8.9	**0.9470**	0.101	10.7	mg/L	28	Standard
Ca	43	83.3	24.2	**3.8084**	1.512	39.7	mg/L	27	Standard
Fe	54	19898.8	3.5	**12.8021**	0.403	3.1	mg/L	147	Standard
Fe	57	5240.9	4.1	**12.5122**	0.602	4.8	mg/L	268	Standard
> **Sc-1**	45	49798.4	0.9				mg/L	41174	Standard
Cl	35	83679.2	2.8				ug/L	69550	Standard
Kr	83	2.0	132.3				ug/L	1	Standard
Br	81	3150.3	10.3				ug/L	1950	Standard
P	31	25890.4	3.1				ug/L	21156	Standard
S	34	4145.6	3.5				ug/L	3419	Standard
Sr	88	115.0	15.1				ug/L	72	Standard
C	12	180.0	25.5				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	210.0	42.3				mg/L	17	Standard
Dy	164	35643.1	1.6				mg/L	16	Standard
Ho-1	165	21410.1	1.0				mg/L	7	Standard
Er	166	18878.4	2.2				mg/L	7	Standard
I	127	27002.4	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.183	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.223	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.497
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.012
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144505S WG574521-05
Sample Date/Time: Friday, July 01, 2016 16:46:42
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81052.9	2.1				ug/L	76456	Standard
	Be	9	30676.0	2.4	**25.8290**	0.259	1.0	ug/L	20	Standard
	Al	27	13294166.7	2.5	**73.2465**	1.294	1.8	ug/L	1307	Standard
	Sc	45	48179.8	2.6				ug/L	41174	Standard
	Ti	47	6953.9	1.9	**20.0934**	0.295	1.5	ug/L	27	Standard
	V	51	398485.1	1.1	**45.6308**	0.280	0.6	ug/L	1434	Standard
	Cr	52	346453.3	0.7	**39.5366**	0.280	0.7	ug/L	7733	Standard
	Cr	53	41902.9	1.3	**38.7788**	0.379	1.0	ug/L	442	Standard
	Mn	55	3061942.5	1.0	**382.3072**	4.386	1.1	ug/L	723	Standard
	Co	59	255934.9	0.7	**31.5572**	0.332	1.1	ug/L	217	Standard
	Ni	60	90655.7	0.5	**41.1541**	0.349	0.8	ug/L	304	Standard
	Cu	65	74619.0	0.4	**34.4964**	0.137	0.4	ug/L	181	Standard
	Zn	66	75694.3	0.6	**58.2286**	0.173	0.3	ug/L	215	Standard
>	Ge	72	550897.8	0.5				ug/L	520809	Standard
	As	75	34828.9	0.1	**26.7169**	0.137	0.5	ug/L	-52	Standard
	Se	82	2635.3	1.9	**19.5943**	0.381	1.9	ug/L	17	Standard
	Se-1	77	1869.4	1.0	**19.9893**	0.095	0.5	ug/L	56	Standard
>	Ga	71	20570.6	1.4				mg/L	25	Standard
	Rb	85	177643.7	0.9				ug/L	28	Standard
	Y	89	691746.1	1.0				ug/L	447395	Standard
>	Rh	103	35.0	37.8				ug/L	15	Standard
	Mo	98	1110.7	3.0	**0.3333**	0.010	3.0	ug/L	113	Standard
	Ag	107	178239.6	0.1	**24.1330**	0.242	1.0	ug/L	108	Standard
	Cd	111	58613.6	0.8	**24.7671**	0.188	0.8	mg/L	3	Standard
	Cd	114	143184.7	2.0	**24.4376**	0.381	1.6	ug/L	20	Standard
>	In	115	643190.5	1.0				ug/L	625728	Standard
	Sn	118	1398.4	22.6	**0.1275**	0.050	39.0	ug/L	568	Standard
	Sb	123	4282.3	1.0	**0.7725**	0.016	2.0	ug/L	612	Standard
	Ba	135	345608.0	0.5	**154.5433**	2.126	1.4	ug/L	21	Standard
	Ce	140	1299122.5	1.1				ug/L	245	Standard
>	Tb	159	990488.4	0.8				ug/L	950397	Standard
	Ho	165	18067.4	1.7				ug/L	7	Standard
	Tl	203	217125.4	0.9	**24.1291**	0.277	1.1	ug/L	15	Standard
	Tl	205	198577.9	0.6	**24.8432**	0.213	0.9	ug/L	13	Standard
	Pb	206	259935.7	1.5	**45.7680**	0.825	1.8	ug/L	264	Standard
	Pb	207	221787.2	1.0	**42.9961**	0.567	1.3	ug/L	222	Standard
	Pb	208	955436.3	0.5	**45.3507**	0.360	0.8	ug/L	959	Standard
	U	238	203540.4	0.9	**25.1914**	0.306	1.2	ug/L	9	Standard
>	Bi	209	554076.2	0.3				ug/L	552821	Standard

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Na	23	3.3	173.2	**8.7132**	15.083	173.1	mg/L	2	Standard
Mg	24	123.3	10.2	**0.0629**	0.011	18.2	mg/L	55	Standard
K	39	401.7	6.9	**1.1840**	0.057	4.8	mg/L	28	Standard
Ca	43	85.0	17.6	**4.1392**	1.063	25.7	mg/L	27	Standard
Fe	54	19135.8	0.4	**12.7297**	0.274	2.2	mg/L	147	Standard
Fe	57	5282.6	2.0	**13.0758**	0.572	4.4	mg/L	268	Standard
Sc-1	45	48179.8	2.6				mg/L	41174	Standard
Cl	35	81193.7	1.4				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	3463.7	11.3				ug/L	1950	Standard
P	31	25893.8	3.3				ug/L	21156	Standard
S	34	3793.8	6.6				ug/L	3419	Standard
Sr	88	98.3	7.8				ug/L	72	Standard
C	12	150.0	24.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	203.3	31.6				mg/L	17	Standard
Dy	164	30043.9	1.0				mg/L	16	Standard
Ho-1	165	18067.4	1.7				mg/L	7	Standard
Er	166	16368.8	2.5				mg/L	7	Standard
I	127	31820.1	1.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.013	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.777	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.791
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.227
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144506SD WG574521-06
Sample Date/Time: Friday, July 01, 2016 16:49:54
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80097.9	2.8				ug/L	76456	Standard
	Be	9	30038.1	2.5	25.6081	1.007	3.9	ug/L	20	Standard
	Al	27	25838350.2	1.3	144.1079	2.593	1.8	ug/L	1307	Standard
	Sc	45	47559.6	2.9				ug/L	41174	Standard
	Ti	47	6556.4	1.8	19.3875	0.685	3.5	ug/L	27	Standard
	V	51	371950.4	0.9	43.5770	0.897	2.1	ug/L	1434	Standard
	Cr	52	331664.7	2.0	38.7230	1.629	4.2	ug/L	7733	Standard
	Cr	53	41130.8	1.7	38.9560	1.095	2.8	ug/L	442	Standard
	Mn	55	3596932.1	1.0	459.6785	15.165	3.3	ug/L	723	Standard
	Co	59	263231.1	1.3	33.2200	1.092	3.3	ug/L	217	Standard
	Ni	60	95938.5	1.6	44.5917	1.721	3.9	ug/L	304	Standard
	Cu	65	74284.7	1.9	35.1502	1.281	3.6	ug/L	181	Standard
	Zn	66	76677.6	1.5	60.3810	2.186	3.6	ug/L	215	Standard
>	Ge	72	538522.8	2.5				ug/L	520809	Standard
	As	75	31096.8	1.3	24.4196	0.873	3.6	ug/L	-52	Standard
	Se	82	2411.7	1.1	18.3435	0.519	2.8	ug/L	17	Standard
	Se-1	77	1751.1	3.2	19.1315	0.710	3.7	ug/L	56	Standard
>	Ga	71	19424.1	1.9				mg/L	25	Standard
	Rb	85	183661.6	1.6				ug/L	28	Standard
	Y	89	704841.2	2.1				ug/L	447395	Standard
>	Rh	103	36.7	20.8				ug/L	15	Standard
	Mo	98	611.4	5.3	0.1763	0.010	5.6	ug/L	113	Standard
	Ag	107	174143.9	1.6	24.0046	0.280	1.2	ug/L	108	Standard
	Cd	111	57620.6	0.9	24.7920	0.490	2.0	mg/L	3	Standard
	Cd	114	139765.7	1.6	24.2901	0.536	2.2	ug/L	20	Standard
>	In	115	631733.1	1.1				ug/L	625728	Standard
	Sn	118	1106.7	20.2	0.0862	0.035	40.7	ug/L	568	Standard
	Sb	123	5971.0	2.3	1.1106	0.013	1.2	ug/L	612	Standard
	Ba	135	389506.4	0.2	177.3323	1.766	1.0	ug/L	21	Standard
	Ce	140	1279386.9	0.6				ug/L	245	Standard
>	Tb	159	976334.8	1.3				ug/L	950397	Standard
	Ho	165	21239.9	2.3				ug/L	7	Standard
	Tl	203	212476.8	0.4	24.3917	0.306	1.3	ug/L	15	Standard
	Tl	205	190802.6	2.3	24.6603	0.758	3.1	ug/L	13	Standard
	Pb	206	194049.7	0.6	35.2833	0.374	1.1	ug/L	264	Standard
	Pb	207	165998.7	0.6	33.2303	0.156	0.5	ug/L	222	Standard
	Pb	208	711047.9	1.1	34.8555	0.746	2.1	ug/L	959	Standard
	U	238	196776.4	1.6	25.1602	0.659	2.6	ug/L	9	Standard
>	Bi	209	536411.2	1.1				ug/L	552821	Standard

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Na	23	5.0	0.0	**12.9314**	0.378	2.9	mg/L	2	Standard
Mg	24	121.7	21.1	**0.0630**	0.027	42.3	mg/L	55	Standard
K	39	396.7	12.8	**1.1837**	0.137	11.6	mg/L	28	Standard
Ca	43	198.3	9.5	**13.1529**	1.459	11.1	mg/L	27	Standard
Fe	54	17265.4	3.0	**11.6302**	0.519	4.5	mg/L	147	Standard
Fe	57	5002.5	1.8	**12.5110**	0.483	3.9	mg/L	268	Standard
> **Sc-1**	45	47559.6	2.9				mg/L	41174	Standard
Cl	35	82047.6	0.3				ug/L	69550	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	2713.6	16.2				ug/L	1950	Standard
P	31	26575.0	0.8				ug/L	21156	Standard
S	34	4360.6	2.1				ug/L	3419	Standard
Sr	88	131.7	17.9				ug/L	72	Standard
C	12	140.0	31.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	120.0	25.0				mg/L	17	Standard
Dy	164	35523.7	1.8				mg/L	16	Standard
Ho-1	165	21239.9	2.3				mg/L	7	Standard
Er	166	19068.7	0.7				mg/L	7	Standard
I	127	21363.4	3.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.764	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.401	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.960	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.032	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606145101
Sample Date/Time: Friday, July 01, 2016 16:53:05
Number of Replicates: 3
Autosampler Position: 227
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77083.9	1.4				ug/L	76456	Standard
	Be	9	475.0	1.1	**0.4010**	0.005	1.3	ug/L	20	Standard
	Al	27	2237415.9	0.9	**12.9552**	0.241	1.9	ug/L	1307	Standard
	Sc	45	46143.5	0.6				ug/L	41174	Standard
	Ti	47	14229.3	1.3	**40.3569**	0.503	1.2	ug/L	27	Standard
	V	51	81926.5	1.2	**9.0305**	0.138	1.5	ug/L	1434	Standard
	Cr	52	71884.8	0.5	**7.2617**	0.092	1.3	ug/L	7733	Standard
	Cr	53	8222.2	3.8	**7.1184**	0.362	5.1	ug/L	442	Standard
	Mn	55	1326114.2	0.7	**162.1111**	1.014	0.6	ug/L	723	Standard
	Co	59	18265.0	0.3	**2.1786**	0.035	1.6	ug/L	217	Standard
	Ni	60	14421.9	1.4	**6.2826**	0.026	0.4	ug/L	304	Standard
	Cu	65	20275.6	1.0	**9.1261**	0.043	0.5	ug/L	181	Standard
	Zn	66	84084.7	0.5	**63.3707**	0.506	0.8	ug/L	215	Standard
>	Ge	72	562486.4	1.3				ug/L	520809	Standard
	As	75	12273.7	0.0	**9.2515**	0.118	1.3	ug/L	-52	Standard
	Se	82	80.8	6.1	**0.4662**	0.041	8.7	ug/L	17	Standard
	Se-1	77	117.0	7.4	**0.5834**	0.109	18.6	ug/L	56	Standard
>	Ga	71	7775.3	1.7				mg/L	25	Standard
	Rb	85	53367.2	1.6				ug/L	28	Standard
	Y	89	546880.1	0.9				ug/L	447395	Standard
>	Rh	103	25.0	34.6				ug/L	15	Standard
	Mo	98	1997.9	3.1	**0.5987**	0.021	3.5	ug/L	113	Standard
	Ag	107	409.7	7.2	**0.0409**	0.004	9.7	ug/L	108	Standard
	Cd	111	850.8	2.0	**0.3460**	0.009	2.5	mg/L	3	Standard
	Cd	114	2106.8	7.8	**0.3483**	0.025	7.1	ug/L	20	Standard
>	In	115	663939.9	0.6				ug/L	625728	Standard
	Sn	118	2050.1	14.8	**0.2160**	0.045	20.8	ug/L	568	Standard
	Sb	123	671.1	9.1	**0.0887**	0.011	12.6	ug/L	612	Standard
	Ba	135	107917.7	1.0	**46.7326**	0.441	0.9	ug/L	21	Standard
	Ce	140	627825.8	0.9				ug/L	245	Standard
>	Tb	159	987128.9	0.6				ug/L	950397	Standard
	Ho	165	5104.2	2.7				ug/L	7	Standard
	Tl	203	689.0	1.9	**0.0742**	0.001	1.8	ug/L	15	Standard
	Tl	205	618.3	5.7	**0.0660**	0.005	7.0	ug/L	13	Standard
	Pb	206	276291.1	0.7	**47.6167**	0.411	0.9	ug/L	264	Standard
	Pb	207	230628.0	0.7	**43.7624**	0.472	1.1	ug/L	222	Standard
	Pb	208	1006911.8	0.1	**46.7816**	0.251	0.5	ug/L	959	Standard
	U	238	4725.7	2.3	**0.5722**	0.012	2.1	ug/L	9	Standard
>	Bi	209	566085.1	0.4				ug/L	552821	Standard

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Na	23	8.3	124.9	**22.1583**	27.707	125.0	mg/L	2	Standard
Mg	24	85.0	11.8	**0.0284**	0.010	35.7	mg/L	55	Standard
K	39	100.0	15.0	**0.2109**	0.050	23.9	mg/L	28	Standard
Ca	43	75.0	6.7	**3.6275**	0.385	10.6	mg/L	27	Standard
Fe	54	8171.7	3.6	**5.6200**	0.239	4.3	mg/L	147	Standard
Fe	57	2388.5	3.0	**5.7441**	0.167	2.9	mg/L	268	Standard
> **Sc-1**	45	46143.5	0.6				mg/L	41174	Standard
Cl	35	81155.5	2.1				ug/L	69550	Standard
Kr	83	0.3	173.2				ug/L	1	Standard
Br	81	3463.7	7.7				ug/L	1950	Standard
P	31	25539.9	4.4				ug/L	21156	Standard
S	34	3917.2	3.0				ug/L	3419	Standard
Sr	88	76.7	18.8				ug/L	72	Standard
C	12	486.7	15.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	256.7	4.5				mg/L	17	Standard
Dy	164	8760.5	4.1				mg/L	16	Standard
Ho-1	165	5104.2	2.7				mg/L	7	Standard
Er	166	4777.4	5.8				mg/L	7	Standard
I	127	36602.6	6.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.822	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.002	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	106.107
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.399
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606145102
Sample Date/Time: Friday, July 01, 2016 16:56:17
Number of Replicates: 3
Autosampler Position: 228
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	78477.8	2.4				ug/L	76456	Standard
	Be	9	601.7	8.2	**0.5033**	0.031	6.2	ug/L	20	Standard
	Al	27	4781763.5	1.4	**27.2109**	0.622	2.3	ug/L	1307	Standard
	Sc	45	48186.5	2.1				ug/L	41174	Standard
	Ti	47	26915.6	1.4	**75.8086**	1.495	2.0	ug/L	27	Standard
	V	51	170171.2	0.3	**18.8187**	0.180	1.0	ug/L	1434	Standard
	Cr	52	138418.5	1.4	**14.7553**	0.301	2.0	ug/L	7733	Standard
	Cr	53	16907.8	0.5	**14.9504**	0.076	0.5	ug/L	442	Standard
	Mn	55	4385050.3	0.1	**532.0225**	4.124	0.8	ug/L	723	Standard
	Co	59	55284.7	0.4	**6.6001**	0.055	0.8	ug/L	217	Standard
	Ni	60	30764.2	0.1	**13.4670**	0.097	0.7	ug/L	304	Standard
	Cu	65	65698.5	1.0	**29.5008**	0.365	1.2	ug/L	181	Standard
	Zn	66	217089.2	0.9	**162.5825**	0.761	0.5	ug/L	215	Standard
>	Ge	72	566980.9	0.7				ug/L	520809	Standard
	As	75	11103.7	0.8	**8.3069**	0.047	0.6	ug/L	-52	Standard
	Se	82	132.6	4.8	**0.8380**	0.046	5.5	ug/L	17	Standard
	Se-1	77	150.3	12.7	**0.9313**	0.212	22.8	ug/L	56	Standard
>	Ga	71	15192.6	2.9				mg/L	25	Standard
	Rb	85	155948.5	0.6				ug/L	28	Standard
	Y	89	601495.0	1.4				ug/L	447395	Standard
>	Rh	103	23.3	32.7				ug/L	15	Standard
	Mo	98	5496.7	0.9	**1.6857**	0.006	0.4	ug/L	113	Standard
	Ag	107	775.4	2.6	**0.0887**	0.002	2.3	ug/L	108	Standard
	Cd	111	1034.2	3.3	**0.4202**	0.011	2.7	mg/L	3	Standard
	Cd	114	2656.7	6.0	**0.4384**	0.024	5.5	ug/L	20	Standard
>	In	115	665198.2	0.6				ug/L	625728	Standard
	Sn	118	1311.7	13.8	**0.1076**	0.028	25.7	ug/L	568	Standard
	Sb	123	507.6	23.3	**0.0588**	0.022	37.4	ug/L	612	Standard
	Ba	135	246404.5	0.4	**106.5243**	0.535	0.5	ug/L	21	Standard
	Ce	140	708985.8	1.9				ug/L	245	Standard
>	Tb	159	1000873.3	0.7				ug/L	950397	Standard
	Ho	165	8867.6	1.0				ug/L	7	Standard
	Tl	203	1805.8	2.5	**0.1960**	0.004	2.0	ug/L	15	Standard
	Tl	205	1731.8	4.2	**0.2027**	0.009	4.2	ug/L	13	Standard
	Pb	206	179680.5	0.2	**31.0013**	0.201	0.6	ug/L	264	Standard
	Pb	207	147967.3	0.2	**28.1058**	0.174	0.6	ug/L	222	Standard
	Pb	208	649286.1	0.4	**30.1982**	0.309	1.0	ug/L	959	Standard
	U	238	11590.8	1.2	**1.4062**	0.023	1.6	ug/L	9	Standard
>	Bi	209	565178.3	0.6				ug/L	552821	Standard

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Na	23	3.3	173.2	**8.3775**	14.502	173.1	mg/L	2	Standard
Mg	24	161.7	21.7	**0.1008**	0.032	31.7	mg/L	55	Standard
K	39	290.0	13.0	**0.8193**	0.124	15.2	mg/L	28	Standard
Ca	43	116.7	13.8	**6.5999**	1.152	17.5	mg/L	27	Standard
Fe	54	19162.0	2.8	**12.7406**	0.220	1.7	mg/L	147	Standard
Fe	57	5199.2	1.1	**12.8525**	0.447	3.5	mg/L	268	Standard
Sc-1	45	48186.5	2.1				mg/L	41174	Standard
Cl	35	81627.3	0.9				ug/L	69550	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	4627.4	6.5				ug/L	1950	Standard
P	31	26000.6	1.2				ug/L	21156	Standard
S	34	3977.2	4.8				ug/L	3419	Standard
Sr	88	111.7	18.6				ug/L	72	Standard
C	12	856.7	2.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	230.0	17.4				mg/L	17	Standard
Dy	164	14613.4	2.0				mg/L	16	Standard
Ho-1	165	8867.6	1.0				mg/L	7	Standard
Er	166	8085.5	6.9				mg/L	7	Standard
I	127	50293.4	2.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		102.645	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		108.865	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.308
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.235
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606145102PS WG575057-01
Sample Date/Time: Friday, July 01, 2016 16:59:28
Number of Replicates: 3
Autosampler Position: 229
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79385.8	1.3				ug/L	76456	Standard
	Be	9	66132.4	2.2	**56.8900**	1.804	3.2	ug/L	20	Standard
	Al	27	4677646.6	0.6	**26.3080**	0.258	1.0	ug/L	1307	Standard
	Sc	45	48036.1	2.2				ug/L	41174	Standard
	Ti	47	26404.3	1.4	**75.0881**	1.235	1.6	ug/L	27	Standard
	V	51	638356.3	0.3	**71.8329**	0.463	0.6	ug/L	1434	Standard
	Cr	52	595924.0	0.5	**67.3875**	0.498	0.7	ug/L	7733	Standard
	Cr	53	74037.1	1.4	**67.5313**	1.159	1.7	ug/L	442	Standard
	Mn	55	4772659.1	0.6	**584.6747**	1.033	0.2	ug/L	723	Standard
	Co	59	500476.8	0.3	**60.5691**	0.409	0.7	ug/L	217	Standard
	Ni	60	148905.8	0.4	**66.4112**	0.102	0.2	ug/L	304	Standard
	Cu	65	183049.8	0.4	**83.1281**	0.455	0.5	ug/L	181	Standard
	Zn	66	287669.1	1.1	**217.6035**	2.596	1.2	ug/L	215	Standard
>	Ge	72	561514.3	0.4				ug/L	520809	Standard
	As	75	82895.8	0.4	**62.3258**	0.436	0.7	ug/L	-52	Standard
	Se	82	7441.1	0.8	**54.5039**	0.359	0.7	ug/L	17	Standard
	Se-1	77	5169.2	1.0	**55.4015**	0.590	1.1	ug/L	56	Standard
>	Ga	71	15267.7	1.1				mg/L	25	Standard
	Rb	85	154189.3	2.6				ug/L	28	Standard
	Y	89	603447.9	0.9				ug/L	447395	Standard
>	Rh	103	43.3	24.0				ug/L	15	Standard
	Mo	98	5476.6	2.0	**1.7012**	0.041	2.4	ug/L	113	Standard
	Ag	107	391731.6	0.9	**51.9492**	0.634	1.2	ug/L	108	Standard
	Cd	111	129263.1	1.2	**53.4846**	0.463	0.9	mg/L	3	Standard
	Cd	114	313124.4	0.6	**52.3315**	0.333	0.6	ug/L	20	Standard
>	In	115	656847.0	0.4				ug/L	625728	Standard
	Sn	118	1576.8	23.5	**0.1493**	0.056	37.2	ug/L	568	Standard
	Sb	123	282627.6	1.8	**52.0619**	0.839	1.6	ug/L	612	Standard
	Ba	135	360531.0	1.0	**157.8560**	2.191	1.4	ug/L	21	Standard
	Ce	140	708239.5	1.1				ug/L	245	Standard
>	Tb	159	993751.4	0.6				ug/L	950397	Standard
	Ho	165	9054.4	1.6				ug/L	7	Standard
	Tl	203	489986.8	0.9	**53.0644**	0.590	1.1	ug/L	15	Standard
	Tl	205	443077.3	1.1	**54.0276**	0.463	0.9	ug/L	13	Standard
	Pb	206	490668.3	0.8	**84.2254**	0.742	0.9	ug/L	264	Standard
	Pb	207	417558.3	0.6	**78.9219**	0.638	0.8	ug/L	222	Standard
	Pb	208	1796810.4	0.6	**83.1513**	0.452	0.5	ug/L	959	Standard
	U	238	437485.4	0.2	**52.7644**	0.211	0.4	ug/L	9	Standard
>	Bi	209	568575.4	0.3				ug/L	552821	Standard

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Na	23	1.7	173.2	**4.3123**	7.460	173.0	mg/L	2	Standard
Mg	24	195.0	13.6	**0.1353**	0.029	21.4	mg/L	55	Standard
K	39	278.3	18.2	**0.7825**	0.157	20.1	mg/L	28	Standard
Ca	43	116.7	21.1	**6.6089**	1.697	25.7	mg/L	27	Standard
Fe	54	18988.9	2.1	**12.6650**	0.048	0.4	mg/L	147	Standard
Fe	57	5222.6	2.2	**12.9542**	0.402	3.1	mg/L	268	Standard
Sc-1	45	48036.1	2.2				mg/L	41174	Standard
Cl	35	79157.6	0.9				ug/L	69550	Standard
Kr	83	3.0	88.2				ug/L	1	Standard
Br	81	4567.4	7.8				ug/L	1950	Standard
P	31	25140.8	1.9				ug/L	21156	Standard
S	34	3993.9	5.1				ug/L	3419	Standard
Sr	88	141.7	14.7				ug/L	72	Standard
C	12	916.7	5.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	220.0	20.8				mg/L	17	Standard
Dy	164	14636.5	2.9				mg/L	16	Standard
Ho-1	165	9054.4	1.6				mg/L	7	Standard
Er	166	8719.2	6.2				mg/L	7	Standard
I	127	60985.9	3.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.832	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.816	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	104.973	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	102.850	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606145102SDL WG575057-02
Sample Date/Time: Friday, July 01, 2016 17:02:40
Number of Replicates: 3
Autosampler Position: 230
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72896.8	3.6				ug/L	76456	Standard
	Be	9	151.7	28.0	**0.1215**	0.035	28.7	ug/L	20	Standard
	Al	27	886084.1	1.1	**5.4244**	0.245	4.5	ug/L	1307	Standard
	Sc	45	40265.1	1.1				ug/L	41174	Standard
	Ti	47	4872.5	1.7	**14.8447**	0.431	2.9	ug/L	27	Standard
	V	51	31678.7	1.1	**3.6484**	0.093	2.5	ug/L	1434	Standard
	Cr	52	29443.9	1.3	**2.6645**	0.094	3.5	ug/L	7733	Standard
	Cr	53	3295.4	2.1	**2.8380**	0.099	3.5	ug/L	442	Standard
	Mn	55	811630.5	1.3	**106.9281**	2.799	2.6	ug/L	723	Standard
	Co	59	10016.3	0.5	**1.2757**	0.020	1.5	ug/L	217	Standard
	Ni	60	6049.9	1.8	**2.7576**	0.087	3.1	ug/L	304	Standard
	Cu	65	12638.9	1.7	**6.1089**	0.185	3.0	ug/L	181	Standard
	Zn	66	44343.1	2.3	**35.9528**	1.298	3.6	ug/L	215	Standard
>	Ge	72	521851.4	1.3				ug/L	520809	Standard
	As	75	2135.0	1.6	**1.7715**	0.050	2.8	ug/L	-52	Standard
	Se	82	32.7	15.9	**0.1321**	0.044	33.6	ug/L	17	Standard
	Se-1	77	80.0	15.4	**0.2505**	0.153	61.0	ug/L	56	Standard
>	Ga	71	2831.9	8.0				mg/L	25	Standard
	Rb	85	29441.9	2.0				ug/L	28	Standard
	Y	89	460347.3	0.7				ug/L	447395	Standard
>	Rh	103	23.3	44.6				ug/L	15	Standard
	Mo	98	1036.0	4.3	**0.3306**	0.018	5.5	ug/L	113	Standard
	Ag	107	240.3	7.9	**0.0218**	0.002	11.3	ug/L	108	Standard
	Cd	111	192.5	10.6	**0.0842**	0.009	10.8	mg/L	3	Standard
	Cd	114	501.8	24.8	**0.0913**	0.024	25.9	ug/L	20	Standard
>	In	115	604796.3	1.1				ug/L	625728	Standard
	Sn	118	678.3	14.5	**0.0250**	0.017	67.9	ug/L	568	Standard
	Sb	123	1577.0	34.7	**0.2828**	0.113	39.9	ug/L	612	Standard
	Ba	135	46358.8	0.3	**22.0307**	0.285	1.3	ug/L	21	Standard
	Ce	140	135977.5	1.1				ug/L	245	Standard
>	Tb	159	909731.4	0.9				ug/L	950397	Standard
	Ho	165	1651.8	7.4				ug/L	7	Standard
	Tl	203	404.7	3.9	**0.0462**	0.002	3.6	ug/L	15	Standard
	Tl	205	413.3	12.1	**0.0442**	0.006	14.3	ug/L	13	Standard
	Pb	206	34246.7	0.6	**6.2517**	0.027	0.4	ug/L	264	Standard
	Pb	207	28334.8	0.4	**5.6896**	0.033	0.6	ug/L	222	Standard
	Pb	208	122940.1	1.3	**6.0452**	0.111	1.8	ug/L	959	Standard
	U	238	2224.5	2.8	**0.2869**	0.007	2.3	ug/L	9	Standard
>	Bi	209	531198.7	0.5				ug/L	552821	Standard

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Na	23	1.7	173.2	**5.1506**	8.913	173.0	mg/L	2	Standard
Mg	24	81.7	18.7	**0.0373**	0.018	48.0	mg/L	55	Standard
K	39	76.7	26.4	**0.1697**	0.081	47.8	mg/L	28	Standard
Ca	43	40.0	25.0	**1.2573**	0.889	70.7	mg/L	27	Standard
Fe	54	3471.8	1.5	**2.6857**	0.073	2.7	mg/L	147	Standard
Fe	57	1143.4	4.3	**2.7898**	0.194	6.9	mg/L	268	Standard
> **Sc-1**	45	40265.1	1.1				mg/L	41174	Standard
Cl	35	70995.3	1.2				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	2253.5	3.8				ug/L	1950	Standard
P	31	10969.0	0.7				ug/L	21156	Standard
S	34	3750.5	0.4				ug/L	3419	Standard
Sr	88	80.0	12.5				ug/L	72	Standard
C	12	226.7	9.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	41.7				mg/L	17	Standard
Dy	164	2685.5	6.0				mg/L	16	Standard
Ho-1	165	1651.8	7.4				mg/L	7	Standard
Er	166	1560.1	5.1				mg/L	7	Standard
I	127	40504.1	2.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.345	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.200	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.655
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.089
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606145102SDL WG575057-02
Sample Date/Time: Friday, July 01, 2016 17:05:52
Number of Replicates: 3
Autosampler Position: 231
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70195.6	2.2				ug/L	76456	Standard
	Be	9	78.3	41.0	**0.0567**	0.033	57.8	ug/L	20	Standard
	Al	27	176403.2	5.8	**1.1130**	0.082	7.4	ug/L	1307	Standard
	Sc	45	38834.7	0.9				ug/L	41174	Standard
	Ti	47	931.7	5.0	**2.8080**	0.157	5.6	ug/L	27	Standard
	V	51	7219.8	2.6	**0.6896**	0.020	2.9	ug/L	1434	Standard
	Cr	52	9795.8	4.3	**0.2546**	0.049	19.3	ug/L	7733	Standard
	Cr	53	816.7	8.0	**0.4003**	0.064	16.0	ug/L	442	Standard
	Mn	55	156110.5	2.6	**20.7536**	0.477	2.3	ug/L	723	Standard
	Co	59	2209.5	13.5	**0.2622**	0.038	14.6	ug/L	217	Standard
	Ni	60	1399.1	2.2	**0.5287**	0.012	2.4	ug/L	304	Standard
	Cu	65	2640.2	2.1	**1.2343**	0.024	2.0	ug/L	181	Standard
	Zn	66	9656.7	1.3	**7.7908**	0.073	0.9	ug/L	215	Standard
>	**Ge**	72	514985.8	0.4				ug/L	520809	Standard
	As	75	413.0	1.8	**0.3835**	0.006	1.4	ug/L	-52	Standard
	Se	82	23.7	20.7	**0.0632**	0.039	61.2	ug/L	17	Standard
	Se-1	77	57.0	6.1	**-0.0104**	0.039	372.4	ug/L	56	Standard
>	**Ga**	71	518.3	3.7				mg/L	25	Standard
	Rb	85	5472.7	4.6				ug/L	28	Standard
	Y	89	432045.4	1.1				ug/L	447395	Standard
>	**Rh**	103	21.7	13.3				ug/L	15	Standard
	Mo	98	406.8	30.7	**0.1173**	0.043	37.1	ug/L	113	Standard
	Ag	107	155.3	56.4	**0.0098**	0.013	129.9	ug/L	108	Standard
	Cd	111	62.6	64.4	**0.0262**	0.018	70.2	mg/L	3	Standard
	Cd	114	167.6	61.4	**0.0309**	0.019	61.4	ug/L	20	Standard
>	**In**	115	596116.9	0.1				ug/L	625728	Standard
	Sn	118	588.3	26.0	**0.0117**	0.025	212.4	ug/L	568	Standard
	Sb	123	388.4	28.3	**0.0452**	0.022	49.6	ug/L	612	Standard
	Ba	135	8995.0	2.1	**4.3221**	0.097	2.2	ug/L	21	Standard
	Ce	140	24040.7	2.3				ug/L	245	Standard
>	**Tb**	159	895791.4	0.8				ug/L	950397	Standard
	Ho	165	243.3	11.3				ug/L	7	Standard
	Tl	203	146.7	64.0	**0.0163**	0.011	66.9	ug/L	15	Standard
	Tl	205	206.7	97.8	**0.0173**	0.026	152.8	ug/L	13	Standard
	Pb	206	6377.7	1.6	**1.1327**	0.021	1.9	ug/L	264	Standard
	Pb	207	5284.9	1.3	**1.0274**	0.015	1.5	ug/L	222	Standard
	Pb	208	23160.0	2.5	**1.1036**	0.032	2.9	ug/L	959	Standard
	U	238	525.7	30.5	**0.0678**	0.021	30.5	ug/L	9	Standard
>	**Bi**	209	529365.9	0.5				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	68.3	23.5	**0.0243**	0.019	79.3	mg/L	55	Standard
K	39	26.7	78.1	**-0.0227**	0.085	373.8	mg/L	28	Standard
Ca	43	28.3	36.7	**0.2726**	0.981	359.8	mg/L	27	Standard
Fe	54	762.6	6.6	**0.5352**	0.041	7.7	mg/L	147	Standard
Fe	57	421.7	1.8	**0.5696**	0.019	3.3	mg/L	268	Standard
> **Sc-1**	45	38834.7	0.9				mg/L	41174	Standard
Cl	35	69123.3	0.3				ug/L	69550	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	1883.5	2.0				ug/L	1950	Standard
P	31	7872.0	1.6				ug/L	21156	Standard
S	34	3360.4	5.9				ug/L	3419	Standard
Sr	88	80.0	32.5				ug/L	72	Standard
C	12	90.0	22.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	153.3	38.2				mg/L	17	Standard
Dy	164	420.7	27.3				mg/L	16	Standard
Ho-1	165	243.3	11.3				mg/L	7	Standard
Er	166	263.3	34.5				mg/L	7	Standard
I	127	37972.5	2.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.812	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.882	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.268
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.757
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 17:09:05
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74588.1	0.3				ug/L	76456	Standard
	Be	9	57897.1	2.0	**52.9977**	1.204	2.3	ug/L	20	Standard
	Al	27	8733198.2	1.7	**52.2835**	0.984	1.9	ug/L	1307	Standard
	Sc	45	42748.6	2.7				ug/L	41174	Standard
	Ti	47	34213.3	0.6	**98.3209**	0.421	0.4	ug/L	27	Standard
	V	51	442681.7	1.0	**50.2684**	0.638	1.3	ug/L	1434	Standard
	Cr	52	439186.0	0.4	**49.9273**	0.312	0.6	ug/L	7733	Standard
	Cr	53	53859.0	4.5	**49.5163**	2.076	4.2	ug/L	442	Standard
	Mn	55	408283.6	1.1	**50.4406**	0.633	1.3	ug/L	723	Standard
	Co	59	418347.3	1.1	**51.1465**	0.625	1.2	ug/L	217	Standard
	Ni	60	111527.3	0.5	**50.2172**	0.479	1.0	ug/L	304	Standard
	Cu	65	110380.0	1.0	**50.6153**	0.665	1.3	ug/L	181	Standard
	Zn	66	65800.9	0.7	**50.1493**	0.538	1.1	ug/L	215	Standard
>	Ge	72	555788.6	0.5				ug/L	520809	Standard
	As	75	65659.0	0.5	**49.8836**	0.337	0.7	ug/L	-52	Standard
	Se	82	6718.9	0.9	**49.7097**	0.395	0.8	ug/L	17	Standard
	Se-1	77	4636.4	0.7	**50.1376**	0.106	0.2	ug/L	56	Standard
>	Ga	71	43.3	35.3				mg/L	25	Standard
	Rb	85	1065.0	6.1				ug/L	28	Standard
	Y	89	468359.1	2.1				ug/L	447395	Standard
>	Rh	103	20.0	25.0				ug/L	15	Standard
	Mo	98	314455.9	1.0	**100.8766**	0.307	0.3	ug/L	113	Standard
	Ag	107	371694.7	0.4	**50.2132**	0.146	0.3	ug/L	108	Standard
	Cd	111	119048.0	0.9	**50.1804**	0.274	0.5	mg/L	3	Standard
	Cd	114	295369.7	1.4	**50.2861**	0.415	0.8	ug/L	20	Standard
>	In	115	644781.5	0.7				ug/L	625728	Standard
	Sn	118	326587.3	0.5	**49.1617**	0.446	0.9	ug/L	568	Standard
	Sb	123	269765.0	0.9	**50.6219**	0.112	0.2	ug/L	612	Standard
	Ba	135	109973.0	0.0	**49.0395**	0.330	0.7	ug/L	21	Standard
	Ce	140	1043.4	21.6				ug/L	245	Standard
>	Tb	159	966885.6	0.6				ug/L	950397	Standard
	Ho	165	16.7	45.8				ug/L	7	Standard
	Tl	203	449950.1	0.5	**50.5682**	0.198	0.4	ug/L	15	Standard
	Tl	205	409109.7	0.2	**51.7709**	0.214	0.4	ug/L	13	Standard
	Pb	206	284448.3	0.6	**50.6536**	0.284	0.6	ug/L	264	Standard
	Pb	207	258444.3	0.7	**50.6761**	0.292	0.6	ug/L	222	Standard
	Pb	208	1085344.7	0.3	**52.1064**	0.244	0.5	ug/L	959	Standard
	U	238	403930.8	0.4	**50.5574**	0.115	0.2	ug/L	9	Standard
>	Bi	209	547878.4	0.3				ug/L	552821	Standard

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Na	23	3.3	86.6	**9.4428**	8.174	86.6	mg/L	2	Standard
Mg	24	4510.7	2.8	**5.0184**	0.235	4.7	mg/L	55	Standard
K	39	1208.4	6.0	**4.3343**	0.305	7.0	mg/L	28	Standard
Ca	43	88.3	31.2	**5.2894**	2.418	45.7	mg/L	27	Standard
Fe	54	6821.5	2.8	**5.0554**	0.184	3.6	mg/L	147	Standard
Fe	57	2156.8	8.4	**5.5723**	0.370	6.6	mg/L	268	Standard
Sc-1	45	42748.6	2.7				mg/L	41174	Standard
Cl	35	80981.2	1.3				ug/L	69550	Standard
Kr	83	1.3	86.6				ug/L	1	Standard
Br	81	2280.2	6.1				ug/L	1950	Standard
P	31	25067.4	1.4				ug/L	21156	Standard
S	34	4143.9	4.2				ug/L	3419	Standard
Sr	88	66.7	51.1				ug/L	72	Standard
C	12	116.7	24.7				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	173.3	61.7				mg/L	17	Standard
Dy	164	15.5	97.9				mg/L	16	Standard
Ho-1	165	16.7	45.8				mg/L	7	Standard
Er	166	23.3	24.7				mg/L	7	Standard
I	127	10653.7	0.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	105.995		
Al	27	104.567		
Sc	45			
Ti	47	98.321		
V	51	100.537		
Cr	52	99.855		
Cr	53			
Mn	55	100.881		
Co	59	102.293		
Ni	60	100.434		
Cu	65	101.231		
Zn	66	100.299		
Ge	72		106.716	
As	75	99.767		
Se	82	99.419		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	100.877		
Ag	107	100.426		
Cd	111	100.361		
Cd	114			
In	115			103.045
Sn	118	98.323		
Sb	123	101.244		
Ba	135	98.079		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.136		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.213		
U	238	101.115		
Bi	209			99.106
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 17:12:17
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73740.8	2.8				ug/L	76456	Standard
	Be	9	30.0	16.7	**0.0079**	0.005	57.8	ug/L	20	Standard
	Al	27	2383.5	29.7	**0.0042**	0.004	92.9	ug/L	1307	Standard
	Sc	45	42364.1	1.1				ug/L	41174	Standard
	Ti	47	28.3	8.2	**-0.0020**	0.008	409.9	ug/L	27	Standard
	V	51	1463.8	6.3	**-0.0298**	0.010	33.6	ug/L	1434	Standard
	Cr	52	7082.7	1.2	**-0.1402**	0.009	6.6	ug/L	7733	Standard
	Cr	53	485.0	17.5	**0.0388**	0.087	223.5	ug/L	442	Standard
	Mn	55	856.7	6.3	**0.0059**	0.006	103.8	ug/L	723	Standard
	Co	59	239.7	17.2	**0.0002**	0.005	2435.9	ug/L	217	Standard
	Ni	60	264.7	3.4	**-0.0322**	0.006	18.2	ug/L	304	Standard
	Cu	65	171.0	2.0	**0.0054**	0.002	46.6	ug/L	181	Standard
	Zn	66	243.3	6.7	**0.0079**	0.011	133.5	ug/L	215	Standard
>	**Ge**	72	549483.2	1.7				ug/L	520809	Standard
	As	75	-74.2	16.4	**-0.0117**	0.009	74.0	ug/L	-52	Standard
	Se	82	18.9	27.4	**0.0161**	0.041	258.0	ug/L	17	Standard
	Se-1	77	51.3	15.1	**-0.1160**	0.081	69.5	ug/L	56	Standard
>	**Ga**	71	21.7	53.3				mg/L	25	Standard
	Rb	85	48.3	33.3				ug/L	28	Standard
	Y	89	469146.0	2.8				ug/L	447395	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	269.5	12.3	**0.0621**	0.010	15.8	ug/L	113	Standard
	Ag	107	131.3	8.8	**0.0048**	0.002	32.6	ug/L	108	Standard
	Cd	111	13.9	69.3	**0.0035**	0.004	115.1	mg/L	3	Standard
	Cd	114	67.3	28.0	**0.0114**	0.003	28.7	ug/L	20	Standard
>	**In**	115	647674.1	1.6				ug/L	625728	Standard
	Sn	118	1591.8	26.5	**0.1547**	0.062	40.2	ug/L	568	Standard
	Sb	123	1048.5	31.2	**0.1625**	0.061	37.8	ug/L	612	Standard
	Ba	135	62.3	27.9	**0.0097**	0.008	77.5	ug/L	21	Standard
	Ce	140	363.3	30.0				ug/L	245	Standard
>	**Tb**	159	949797.9	2.5				ug/L	950397	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	92.0	24.5	**0.0095**	0.002	24.5	ug/L	15	Standard
	Tl	205	60.0	22.0	**-0.0022**	0.002	85.3	ug/L	13	Standard
	Pb	206	340.0	6.2	**0.0166**	0.004	25.1	ug/L	264	Standard
	Pb	207	288.7	4.1	**0.0103**	0.002	15.3	ug/L	222	Standard
	Pb	208	1226.7	6.9	**0.0104**	0.004	37.3	ug/L	959	Standard
	U	238	77.0	45.5	**0.0093**	0.004	45.3	ug/L	9	Standard
>	**Bi**	209	550276.1	2.1				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	46.7	24.7	**-0.0073**	0.013	171.5	mg/L	55	Standard
K	39	21.7	48.0	**-0.0502**	0.039	78.2	mg/L	28	Standard
Ca	43	33.3	17.3	**0.4877**	0.477	97.9	mg/L	27	Standard
Fe	54	195.9	17.0	**0.0503**	0.024	47.6	mg/L	147	Standard
Fe	57	191.7	26.4	**-0.2314**	0.152	65.8	mg/L	268	Standard
> **Sc-1**	45	42364.1	1.1				mg/L	41174	Standard
Cl	35	80980.6	1.9				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	2003.5	11.5				ug/L	1950	Standard
P	31	23999.0	2.6				ug/L	21156	Standard
S	34	4252.3	5.6				ug/L	3419	Standard
Sr	88	71.7	21.3				ug/L	72	Standard
C	12	100.0	34.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	110.0	36.4				mg/L	17	Standard
Dy	164	16.5	70.8				mg/L	16	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	7548.5	1.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.506	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.507
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.540
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606145103
Sample Date/Time: Friday, July 01, 2016 17:18:25
Number of Replicates: 3
Autosampler Position: 232
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77464.3	3.3				ug/L	76456	Standard
	Be	9	561.7	8.9	**0.4749**	0.032	6.7	ug/L	20	Standard
	Al	27	1784965.6	1.0	**10.2905**	0.435	4.2	ug/L	1307	Standard
	Sc	45	46648.4	2.7				ug/L	41174	Standard
	Ti	47	18184.2	0.6	**50.8412**	0.521	1.0	ug/L	27	Standard
	V	51	103032.2	1.3	**11.2383**	0.206	1.8	ug/L	1434	Standard
	Cr	52	92595.8	0.6	**9.4776**	0.042	0.4	ug/L	7733	Standard
	Cr	53	11107.4	3.1	**9.6118**	0.373	3.9	ug/L	442	Standard
	Mn	55	2019437.5	1.0	**243.2931**	1.293	0.5	ug/L	723	Standard
	Co	59	22651.9	1.2	**2.6686**	0.043	1.6	ug/L	217	Standard
	Ni	60	16329.8	0.7	**7.0275**	0.020	0.3	ug/L	304	Standard
	Cu	65	24727.8	0.3	**10.9821**	0.036	0.3	ug/L	181	Standard
	Zn	66	127705.3	0.5	**94.9239**	0.754	0.8	ug/L	215	Standard
>	Ge	72	570830.0	0.6				ug/L	520809	Standard
	As	75	6011.6	0.9	**4.4881**	0.053	1.2	ug/L	-52	Standard
	Se	82	95.5	2.7	**0.5629**	0.016	2.8	ug/L	17	Standard
	Se-1	77	101.0	4.3	**0.3932**	0.042	10.6	ug/L	56	Standard
>	Ga	71	9259.5	1.6				mg/L	25	Standard
	Rb	85	72246.9	1.1				ug/L	28	Standard
	Y	89	547009.7	0.9				ug/L	447395	Standard
>	Rh	103	31.7	24.1				ug/L	15	Standard
	Mo	98	3914.2	0.5	**1.1794**	0.014	1.2	ug/L	113	Standard
	Ag	107	483.7	3.9	**0.0498**	0.002	4.8	ug/L	108	Standard
	Cd	111	987.4	2.0	**0.3964**	0.008	2.0	mg/L	3	Standard
	Cd	114	2496.5	1.3	**0.4073**	0.007	1.6	ug/L	20	Standard
>	In	115	673007.1	0.7				ug/L	625728	Standard
	Sn	118	1876.8	14.9	**0.1869**	0.040	21.4	ug/L	568	Standard
	Sb	123	1273.6	19.1	**0.1953**	0.043	22.1	ug/L	612	Standard
	Ba	135	110926.6	0.4	**47.3888**	0.135	0.3	ug/L	21	Standard
	Ce	140	529177.4	0.3				ug/L	245	Standard
>	Tb	159	1007132.0	0.8				ug/L	950397	Standard
	Ho	165	4118.9	3.9				ug/L	7	Standard
	Tl	203	1019.0	7.4	**0.1098**	0.008	7.6	ug/L	15	Standard
	Tl	205	931.7	3.7	**0.1041**	0.004	4.2	ug/L	13	Standard
	Pb	206	349755.5	0.5	**60.1201**	0.233	0.4	ug/L	264	Standard
	Pb	207	290008.2	0.8	**54.8870**	0.434	0.8	ug/L	222	Standard
	Pb	208	1256548.1	0.6	**58.2295**	0.582	1.0	ug/L	959	Standard
	U	238	5395.3	1.0	**0.6515**	0.003	0.5	ug/L	9	Standard
>	Bi	209	567672.3	0.6				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	71.7	26.4	**0.0141**	0.021	150.8	mg/L	55	Standard
K	39	116.7	6.5	**0.2640**	0.032	12.1	mg/L	28	Standard
Ca	43	40.0	33.1	**0.7666**	1.123	146.5	mg/L	27	Standard
Fe	54	10538.1	0.8	**7.1995**	0.244	3.4	mg/L	147	Standard
Fe	57	2908.6	5.3	**7.0806**	0.202	2.9	mg/L	268	Standard
> **Sc-1**	45	46648.4	2.7				mg/L	41174	Standard
Cl	35	80143.5	2.5				ug/L	69550	Standard
Kr	83	2.7	78.1				ug/L	1	Standard
Br	81	3830.5	4.5				ug/L	1950	Standard
P	31	23700.2	1.3				ug/L	21156	Standard
S	34	3720.5	5.4				ug/L	3419	Standard
Sr	88	83.3	28.4				ug/L	72	Standard
C	12	560.0	12.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	286.7	34.2				mg/L	17	Standard
Dy	164	6970.4	6.6				mg/L	16	Standard
Ho-1	165	4118.9	3.9				mg/L	7	Standard
Er	166	3853.8	3.6				mg/L	7	Standard
I	127	33669.0	1.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.319	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.604	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.556
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.686
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606145104
Sample Date/Time: Friday, July 01, 2016 17:22:04
Number of Replicates: 3
Autosampler Position: 233
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75591.5	2.3				ug/L	76456	Standard
	Be	9	436.7	14.5	**0.3755**	0.064	17.2	ug/L	20	Standard
	Al	27	7695752.7	1.5	**45.4726**	1.098	2.4	ug/L	1307	Standard
	Sc	45	44985.0	2.4				ug/L	41174	Standard
	Ti	47	18604.1	2.8	**52.8354**	1.232	2.3	ug/L	27	Standard
	V	51	86248.0	1.1	**9.5259**	0.091	1.0	ug/L	1434	Standard
	Cr	52	84116.5	1.2	**8.6708**	0.090	1.0	ug/L	7733	Standard
	Cr	53	9486.3	1.6	**8.2820**	0.108	1.3	ug/L	442	Standard
	Mn	55	1964825.3	2.7	**240.4380**	5.305	2.2	ug/L	723	Standard
	Co	59	30224.8	2.1	**3.6271**	0.056	1.5	ug/L	217	Standard
	Ni	60	18384.5	0.8	**8.0589**	0.068	0.8	ug/L	304	Standard
	Cu	65	28824.7	1.7	**13.0170**	0.152	1.2	ug/L	181	Standard
	Zn	66	125736.6	1.1	**94.9340**	0.526	0.6	ug/L	215	Standard
>	Ge	72	561947.7	0.6				ug/L	520809	Standard
	As	75	5595.8	2.2	**4.2465**	0.119	2.8	ug/L	-52	Standard
	Se	82	88.4	10.6	**0.5221**	0.073	13.9	ug/L	17	Standard
	Se-1	77	109.0	11.9	**0.4966**	0.134	27.0	ug/L	56	Standard
>	Ga	71	7550.2	3.3				mg/L	25	Standard
	Rb	85	65005.8	0.9				ug/L	28	Standard
	Y	89	541545.4	1.1				ug/L	447395	Standard
>	Rh	103	25.0	34.6				ug/L	15	Standard
	Mo	98	5215.9	1.9	**1.6229**	0.033	2.0	ug/L	113	Standard
	Ag	107	406.7	7.0	**0.0412**	0.004	9.1	ug/L	108	Standard
	Cd	111	829.8	3.4	**0.3418**	0.009	2.5	mg/L	3	Standard
	Cd	114	1989.6	6.7	**0.3333**	0.022	6.7	ug/L	20	Standard
>	In	115	655315.6	1.0				ug/L	625728	Standard
	Sn	118	1885.1	5.0	**0.1955**	0.016	8.1	ug/L	568	Standard
	Sb	123	963.7	16.2	**0.1445**	0.030	21.0	ug/L	612	Standard
	Ba	135	109632.3	1.8	**48.0987**	0.601	1.2	ug/L	21	Standard
	Ce	140	540393.1	1.7				ug/L	245	Standard
>	Tb	159	980324.3	0.6				ug/L	950397	Standard
	Ho	165	4750.7	4.0				ug/L	7	Standard
	Tl	203	1323.7	5.2	**0.1446**	0.008	5.6	ug/L	15	Standard
	Tl	205	1150.0	7.8	**0.1324**	0.010	7.6	ug/L	13	Standard
	Pb	206	276145.9	0.9	**48.0493**	0.456	0.9	ug/L	264	Standard
	Pb	207	230196.6	0.9	**44.1005**	0.476	1.1	ug/L	222	Standard
	Pb	208	1005008.2	0.4	**47.1436**	0.504	1.1	ug/L	959	Standard
	U	238	6299.6	1.7	**0.7703**	0.019	2.4	ug/L	9	Standard
>	Bi	209	560704.1	0.8				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	86.7	31.8	**0.0328**	0.031	93.1	mg/L	55	Standard
K	39	151.7	23.2	**0.4031**	0.135	33.6	mg/L	28	Standard
Ca	43	201.7	16.5	**14.3695**	3.198	22.3	mg/L	27	Standard
Fe	54	9525.1	4.7	**6.7386**	0.306	4.5	mg/L	147	Standard
Fe	57	2743.6	3.6	**6.9108**	0.154	2.2	mg/L	268	Standard
Sc-1	45	44985.0	2.4				mg/L	41174	Standard
Cl	35	83879.0	2.3				ug/L	69550	Standard
Kr	83	3.7	68.6				ug/L	1	Standard
Br	81	3460.4	7.8				ug/L	1950	Standard
P	31	24561.6	1.4				ug/L	21156	Standard
S	34	4369.0	1.4				ug/L	3419	Standard
Sr	88	116.7	25.8				ug/L	72	Standard
C	12	810.0	9.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	280.0	22.3				mg/L	17	Standard
Dy	164	8460.7	2.9				mg/L	16	Standard
Ho-1	165	4750.7	4.0				mg/L	7	Standard
Er	166	4977.5	6.3				mg/L	7	Standard
I	127	28665.4	1.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		98.870	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		107.899	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.729
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.426
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606145105
Sample Date/Time: Friday, July 01, 2016 17:25:16
Number of Replicates: 3
Autosampler Position: 234
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	76445.7	1.5				ug/L	76456	Standard
	Be	9	1478.4	3.1	**1.3014**	0.055	4.2	ug/L	20	Standard
	Al	27	1064223.2	1.9	**6.2082**	0.151	2.4	ug/L	1307	Standard
	Sc	45	47139.9	1.1				ug/L	41174	Standard
	Ti	47	53065.8	1.2	**150.6405**	1.848	1.2	ug/L	27	Standard
	V	51	112245.2	0.3	**12.4388**	0.221	1.8	ug/L	1434	Standard
	Cr	52	137183.3	1.2	**14.7291**	0.173	1.2	ug/L	7733	Standard
	Cr	53	16672.5	1.8	**14.8516**	0.459	3.1	ug/L	442	Standard
	Mn	55	332066.2	0.6	**40.4939**	0.573	1.4	ug/L	723	Standard
	Co	59	15191.9	1.6	**1.8061**	0.055	3.0	ug/L	217	Standard
	Ni	60	16308.4	0.5	**7.1212**	0.143	2.0	ug/L	304	Standard
	Cu	65	21255.2	1.0	**9.5654**	0.170	1.8	ug/L	181	Standard
	Zn	66	82188.0	0.4	**61.9044**	1.216	2.0	ug/L	215	Standard
>	Ge	72	562856.9	1.5				ug/L	520809	Standard
	As	75	14736.1	1.0	**11.0928**	0.282	2.5	ug/L	-52	Standard
	Se	82	116.4	6.1	**0.7268**	0.063	8.7	ug/L	17	Standard
	Se-1	77	132.3	7.3	**0.7485**	0.116	15.5	ug/L	56	Standard
>	Ga	71	12084.8	1.2				mg/L	25	Standard
	Rb	85	57895.4	0.4				ug/L	28	Standard
	Y	89	579341.1	3.7				ug/L	447395	Standard
>	Rh	103	25.0	52.9				ug/L	15	Standard
	Mo	98	3018.2	2.6	**0.9183**	0.011	1.2	ug/L	113	Standard
	Ag	107	450.3	2.5	**0.0464**	0.001	1.9	ug/L	108	Standard
	Cd	111	1161.6	1.5	**0.4742**	0.011	2.3	mg/L	3	Standard
	Cd	114	2894.3	3.4	**0.4797**	0.022	4.7	ug/L	20	Standard
>	In	115	662690.4	1.5				ug/L	625728	Standard
	Sn	118	2460.2	11.3	**0.2766**	0.040	14.4	ug/L	568	Standard
	Sb	123	1480.8	9.6	**0.2369**	0.027	11.6	ug/L	612	Standard
	Ba	135	103973.2	0.1	**45.1144**	0.613	1.4	ug/L	21	Standard
	Ce	140	278912.2	1.0				ug/L	245	Standard
>	Tb	159	988921.6	2.1				ug/L	950397	Standard
	Ho	165	6249.6	2.1				ug/L	7	Standard
	Tl	203	4793.4	0.3	**0.5229**	0.004	0.8	ug/L	15	Standard
	Tl	205	4507.3	1.9	**0.5447**	0.012	2.1	ug/L	13	Standard
	Pb	206	156846.0	1.0	**27.1285**	0.554	2.0	ug/L	264	Standard
	Pb	207	129940.5	0.3	**24.7412**	0.348	1.4	ug/L	222	Standard
	Pb	208	563558.5	1.1	**26.2711**	0.203	0.8	ug/L	959	Standard
	U	238	4562.4	2.7	**0.5547**	0.010	1.7	ug/L	9	Standard
>	Bi	209	563740.5	1.2				ug/L	552821	Standard

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Na	23	5.0	0.0	**13.0402**	0.148	1.1	mg/L	2	Standard
Mg	24	245.0	9.4	**0.1897**	0.021	11.0	mg/L	55	Standard
K	39	223.3	12.3	**0.6174**	0.098	15.9	mg/L	28	Standard
Ca	43	61.7	26.1	**2.4323**	1.213	49.9	mg/L	27	Standard
Fe	54	13777.8	1.0	**9.3394**	0.181	1.9	mg/L	147	Standard
Fe	57	3655.4	2.7	**9.0074**	0.309	3.4	mg/L	268	Standard
Sc-1	45	47139.9	1.1				mg/L	41174	Standard
Cl	35	79351.4	2.7				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	3307.0	6.7				ug/L	1950	Standard
P	31	25337.8	0.8				ug/L	21156	Standard
S	34	3845.5	8.8				ug/L	3419	Standard
Sr	88	98.3	15.5				ug/L	72	Standard
C	12	523.3	19.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	236.7	19.1				mg/L	17	Standard
Dy	164	9446.5	2.6				mg/L	16	Standard
Ho-1	165	6249.6	2.1				mg/L	7	Standard
Er	166	6261.3	4.0				mg/L	7	Standard
I	127	33405.2	4.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.987	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.073	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.907
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.975
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	

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Method 6020 - Summary Report

Sample ID: L1606145106 WG574521-02
Sample Date/Time: Friday, July 01, 2016 17:28:27
Number of Replicates: 3
Autosampler Position: 235
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77424.0	1.4				ug/L	76456	Standard
	Be	9	1420.1	5.3	**1.2334**	0.078	6.4	ug/L	20	Standard
	Al	27	3898597.3	2.1	**22.4779**	0.265	1.2	ug/L	1307	Standard
	Sc	45	51348.6	3.6				ug/L	41174	Standard
	Ti	47	30144.6	2.1	**85.8695**	0.856	1.0	ug/L	27	Standard
	V	51	531061.4	1.0	**59.8240**	0.037	0.1	ug/L	1434	Standard
	Cr	52	163422.1	1.8	**17.8054**	0.173	1.0	ug/L	7733	Standard
	Cr	53	19674.4	1.7	**17.6680**	0.130	0.7	ug/L	442	Standard
	Mn	55	2218244.0	2.3	**272.1177**	3.374	1.2	ug/L	723	Standard
	Co	59	32222.6	2.7	**3.8780**	0.063	1.6	ug/L	217	Standard
	Ni	60	47836.8	2.1	**21.2646**	0.223	1.0	ug/L	304	Standard
	Cu	65	112081.4	1.4	**50.9532**	0.215	0.4	ug/L	181	Standard
	Zn	66	110645.9	1.3	**83.7216**	0.252	0.3	ug/L	215	Standard
>	Ge	72	560589.7	1.1				ug/L	520809	Standard
	As	75	18364.3	1.7	**13.8646**	0.106	0.8	ug/L	-52	Standard
	Se	82	562.0	1.7	**4.0067**	0.091	2.3	ug/L	17	Standard
	Se-1	77	479.0	3.5	**4.5225**	0.226	5.0	ug/L	56	Standard
>	Ga	71	14325.1	2.5				mg/L	25	Standard
	Rb	85	53934.2	0.6				ug/L	28	Standard
	Y	89	962525.9	0.6				ug/L	447395	Standard
>	Rh	103	61.7	4.7				ug/L	15	Standard
	Mo	98	10152.0	1.8	**3.1844**	0.030	1.0	ug/L	113	Standard
	Ag	107	989.4	6.5	**0.1188**	0.009	7.5	ug/L	108	Standard
	Cd	111	5112.5	1.5	**2.1203**	0.021	1.0	mg/L	3	Standard
	Cd	114	12820.7	1.5	**2.1502**	0.050	2.3	ug/L	20	Standard
>	In	115	654652.2	1.1				ug/L	625728	Standard
	Sn	118	1108.4	23.7	**0.0806**	0.040	50.1	ug/L	568	Standard
	Sb	123	662.0	36.0	**0.0890**	0.045	50.9	ug/L	612	Standard
	Ba	135	290178.7	0.4	**127.4785**	1.030	0.8	ug/L	21	Standard
	Ce	140	1471841.9	0.9				ug/L	245	Standard
>	Tb	159	1014801.8	1.4				ug/L	950397	Standard
	Ho	165	35576.7	1.0				ug/L	7	Standard
	Tl	203	2282.2	3.2	**0.2479**	0.009	3.5	ug/L	15	Standard
	Tl	205	2125.1	5.8	**0.2510**	0.016	6.2	ug/L	13	Standard
	Pb	206	184986.8	1.0	**31.9104**	0.323	1.0	ug/L	264	Standard
	Pb	207	153794.0	1.0	**29.2069**	0.234	0.8	ug/L	222	Standard
	Pb	208	672139.8	1.3	**31.2540**	0.308	1.0	ug/L	959	Standard
	U	238	23718.9	1.7	**2.8769**	0.043	1.5	ug/L	9	Standard
>	Bi	209	565303.0	0.3				ug/L	552821	Standard

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Na	23	5.0	100.0	**12.1905**	12.475	102.3	mg/L	2	Standard
Mg	24	515.0	7.3	**0.4218**	0.020	4.8	mg/L	55	Standard
K	39	145.0	15.8	**0.3133**	0.055	17.6	mg/L	28	Standard
Ca	43	251.7	14.6	**15.9361**	3.051	19.1	mg/L	27	Standard
Fe	54	21541.2	1.4	**13.4547**	0.377	2.8	mg/L	147	Standard
Fe	57	6066.2	2.9	**14.1508**	0.552	3.9	mg/L	268	Standard
Sc-1	45	51348.6	3.6				mg/L	41174	Standard
Cl	35	83904.4	2.5				ug/L	69550	Standard
Kr	83	3.3	17.3				ug/L	1	Standard
Br	81	7455.2	1.0				ug/L	1950	Standard
P	31	24167.7	6.9				ug/L	21156	Standard
S	34	4078.9	4.5				ug/L	3419	Standard
Sr	88	178.3	24.5				ug/L	72	Standard
C	12	1733.4	9.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	446.7	14.4				mg/L	17	Standard
Dy	164	52369.2	4.0				mg/L	16	Standard
Ho-1	165	35576.7	1.0				mg/L	7	Standard
Er	166	35010.4	0.8				mg/L	7	Standard
I	127	69199.4	2.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.266	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.638	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145106 WG574521-02
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.623
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.258
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606145106 WG574521-02
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Method 6020 - Summary Report

Sample ID: L1606145107
Sample Date/Time: Friday, July 01, 2016 17:31:39
Number of Replicates: 3
Autosampler Position: 236
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77976.9	3.0				ug/L	76456	Standard
	Be	9	4238.9	1.2	**3.6947**	0.093	2.5	ug/L	20	Standard
	Al	27	6498898.5	1.0	**37.2377**	1.289	3.5	ug/L	1307	Standard
	Sc	45	49464.0	2.1				ug/L	41174	Standard
	Ti	47	128073.0	0.5	**363.1539**	6.490	1.8	ug/L	27	Standard
	V	51	349457.1	2.0	**39.0869**	1.161	3.0	ug/L	1434	Standard
	Cr	52	339178.2	1.4	**37.7839**	0.334	0.9	ug/L	7733	Standard
	Cr	53	41896.2	0.9	**37.8898**	0.902	2.4	ug/L	442	Standard
	Mn	55	1606512.7	1.3	**195.9725**	1.717	0.9	ug/L	723	Standard
	Co	59	54787.2	1.9	**6.5778**	0.027	0.4	ug/L	217	Standard
	Ni	60	49280.4	1.6	**21.7906**	0.290	1.3	ug/L	304	Standard
	Cu	65	58505.7	1.0	**26.4179**	0.486	1.8	ug/L	181	Standard
	Zn	66	199363.7	0.4	**150.1818**	2.763	1.8	ug/L	215	Standard
>	Ge	72	563783.0	2.2				ug/L	520809	Standard
	As	75	72841.2	1.2	**54.5595**	0.676	1.2	ug/L	-52	Standard
	Se	82	260.0	4.3	**1.7742**	0.048	2.7	ug/L	17	Standard
	Se-1	77	240.0	3.1	**1.9101**	0.113	5.9	ug/L	56	Standard
>	Ga	71	27433.2	2.3				mg/L	25	Standard
	Rb	85	214873.2	1.9				ug/L	28	Standard
	Y	89	688224.7	2.2				ug/L	447395	Standard
>	Rh	103	50.0	34.6				ug/L	15	Standard
	Mo	98	15750.9	1.3	**5.0545**	0.122	2.4	ug/L	113	Standard
	Ag	107	1137.7	4.6	**0.1417**	0.010	7.3	ug/L	108	Standard
	Cd	111	4595.8	1.9	**1.9447**	0.072	3.7	mg/L	3	Standard
	Cd	114	11753.0	1.4	**2.0112**	0.076	3.8	ug/L	20	Standard
>	In	115	641892.6	2.4				ug/L	625728	Standard
	Sn	118	2545.2	5.6	**0.3012**	0.016	5.3	ug/L	568	Standard
	Sb	123	1737.1	5.6	**0.2941**	0.021	7.1	ug/L	612	Standard
	Ba	135	236984.3	0.4	**106.2043**	2.197	2.1	ug/L	21	Standard
	Ce	140	773385.4	0.4				ug/L	245	Standard
>	Tb	159	984938.0	3.6				ug/L	950397	Standard
	Ho	165	16265.4	1.5				ug/L	7	Standard
	Tl	203	22667.3	0.8	**2.5566**	0.057	2.2	ug/L	15	Standard
	Tl	205	20584.0	2.7	**2.6047**	0.030	1.2	ug/L	13	Standard
	Pb	206	321586.0	1.4	**57.4914**	1.247	2.2	ug/L	264	Standard
	Pb	207	267373.6	0.8	**52.6407**	1.680	3.2	ug/L	222	Standard
	Pb	208	1175990.0	0.9	**56.6808**	1.299	2.3	ug/L	959	Standard
	U	238	16091.9	1.2	**2.0215**	0.038	1.9	ug/L	9	Standard
>	Bi	209	546013.7	3.1				ug/L	552821	Standard

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Na	23	3.3	173.2	**8.3896**	14.523	173.1	mg/L	2	Standard
Mg	24	313.3	12.2	**0.2450**	0.042	17.2	mg/L	55	Standard
K	39	578.3	4.1	**1.7142**	0.039	2.3	mg/L	28	Standard
Ca	43	190.0	22.5	**11.8882**	2.994	25.2	mg/L	27	Standard
Fe	54	47361.4	0.7	**30.8245**	0.629	2.0	mg/L	147	Standard
Fe	57	12388.4	2.6	**30.8824**	0.658	2.1	mg/L	268	Standard
Sc-1	45	49464.0	2.1				mg/L	41174	Standard
Cl	35	79796.9	1.5				ug/L	69550	Standard
Kr	83	1.0	173.2				ug/L	1	Standard
Br	81	3437.1	6.8				ug/L	1950	Standard
P	31	26398.0	3.4				ug/L	21156	Standard
S	34	4072.2	2.6				ug/L	3419	Standard
Sr	88	165.0	6.1				ug/L	72	Standard
C	12	630.0	4.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	340.0	26.1				mg/L	17	Standard
Dy	164	25210.3	0.7				mg/L	16	Standard
Ho-1	165	16265.4	1.5				mg/L	7	Standard
Er	166	15487.9	0.9				mg/L	7	Standard
I	127	25923.8	3.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.990	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.251	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.583	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.769	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606145108
Sample Date/Time: Friday, July 01, 2016 17:34:50
Number of Replicates: 3
Autosampler Position: 237
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	78296.8	0.6				ug/L	76456	Standard
	Be	9	5035.8	1.1	**4.3730**	0.045	1.0	ug/L	20	Standard
	Al	27	8296103.3	2.9	**47.3081**	1.104	2.3	ug/L	1307	Standard
	Sc	45	51448.9	3.1				ug/L	41174	Standard
	Ti	47	143723.1	0.7	**413.9468**	6.279	1.5	ug/L	27	Standard
	V	51	366509.9	0.1	**41.6481**	0.419	1.0	ug/L	1434	Standard
	Cr	52	544163.4	1.5	**62.1923**	1.314	2.1	ug/L	7733	Standard
	Cr	53	66433.7	1.1	**61.2720**	0.593	1.0	ug/L	442	Standard
	Mn	55	1841665.0	0.6	**228.2274**	2.393	1.0	ug/L	723	Standard
	Co	59	60732.8	1.2	**7.4113**	0.113	1.5	ug/L	217	Standard
	Ni	60	55300.1	1.5	**24.8624**	0.580	2.3	ug/L	304	Standard
	Cu	65	53837.8	1.0	**24.6886**	0.479	1.9	ug/L	181	Standard
	Zn	66	206840.0	0.6	**158.2701**	2.252	1.4	ug/L	215	Standard
>	Ge	72	554963.2	0.9				ug/L	520809	Standard
	As	75	66893.4	0.9	**50.8958**	0.201	0.4	ug/L	-52	Standard
	Se	82	248.2	6.5	**1.7168**	0.104	6.0	ug/L	17	Standard
	Se-1	77	241.0	3.2	**1.9609**	0.071	3.6	ug/L	56	Standard
>	Ga	71	28399.9	2.1				mg/L	25	Standard
	Rb	85	238607.6	1.1				ug/L	28	Standard
	Y	89	727081.9	1.3				ug/L	447395	Standard
>	Rh	103	48.3	48.9				ug/L	15	Standard
	Mo	98	16138.3	0.6	**5.1475**	0.088	1.7	ug/L	113	Standard
	Ag	107	1178.0	3.1	**0.1461**	0.006	4.0	ug/L	108	Standard
	Cd	111	4690.3	1.4	**1.9722**	0.048	2.4	mg/L	3	Standard
	Cd	114	11637.8	1.7	**1.9789**	0.055	2.8	ug/L	20	Standard
>	In	115	645732.9	1.1				ug/L	625728	Standard
	Sn	118	2240.2	14.5	**0.2530**	0.048	19.0	ug/L	568	Standard
	Sb	123	1441.2	4.7	**0.2365**	0.011	4.5	ug/L	612	Standard
	Ba	135	274841.1	0.7	**122.4109**	1.640	1.3	ug/L	21	Standard
	Ce	140	887134.9	0.7				ug/L	245	Standard
>	Tb	159	985869.5	0.8				ug/L	950397	Standard
	Ho	165	18397.8	1.0				ug/L	7	Standard
	Tl	203	22726.7	1.1	**2.5470**	0.017	0.7	ug/L	15	Standard
	Tl	205	20669.1	0.8	**2.5996**	0.009	0.3	ug/L	13	Standard
	Pb	206	304509.2	0.5	**54.0918**	0.193	0.4	ug/L	264	Standard
	Pb	207	255448.0	0.1	**49.9624**	0.361	0.7	ug/L	222	Standard
	Pb	208	1107233.4	0.4	**53.0246**	0.467	0.9	ug/L	959	Standard
	U	238	17326.6	1.5	**2.1631**	0.047	2.2	ug/L	9	Standard
>	Bi	209	549274.6	0.7				ug/L	552821	Standard

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Na	23	3.3	173.2	**8.1301**	14.073	173.1	mg/L	2	Standard
Mg	24	360.0	2.4	**0.2767**	0.016	5.7	mg/L	55	Standard
K	39	590.0	10.2	**1.6839**	0.234	13.9	mg/L	28	Standard
Ca	43	221.7	16.9	**13.7026**	2.998	21.9	mg/L	27	Standard
Fe	54	51880.7	2.5	**32.4850**	1.445	4.4	mg/L	147	Standard
Fe	57	13546.1	1.6	**32.5153**	0.491	1.5	mg/L	268	Standard
> **Sc-1**	45	51448.9	3.1				mg/L	41174	Standard
Cl	35	79311.7	1.5				ug/L	69550	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	2893.6	2.1				ug/L	1950	Standard
P	31	26569.9	1.7				ug/L	21156	Standard
S	34	4178.9	3.2				ug/L	3419	Standard
Sr	88	200.0	24.6				ug/L	72	Standard
C	12	570.0	12.7				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	283.3	10.2				mg/L	17	Standard
Dy	164	28615.4	0.7				mg/L	16	Standard
Ho-1	165	18397.8	1.0				mg/L	7	Standard
Er	166	17950.6	1.5				mg/L	7	Standard
I	127	24543.2	0.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.408	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.558	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.197	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.359	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606145109S WG574521-07
Sample Date/Time: Friday, July 01, 2016 17:38:02
Number of Replicates: 3
Autosampler Position: 238
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77300.2	4.1				ug/L	76456	Standard
	Be	9	31013.4	0.9	**27.4058**	0.869	3.2	ug/L	20	Standard
	Al	27	4089154.1	3.2	**23.6238**	0.470	2.0	ug/L	1307	Standard
	Sc	45	51686.4	2.6				ug/L	41174	Standard
	Ti	47	34757.2	1.7	**100.2574**	1.039	1.0	ug/L	27	Standard
	V	51	798652.3	3.3	**91.1648**	1.278	1.4	ug/L	1434	Standard
	Cr	52	383358.6	3.0	**43.6124**	0.316	0.7	ug/L	7733	Standard
	Cr	53	46656.8	2.4	**42.9982**	0.311	0.7	ug/L	442	Standard
	Mn	55	2313030.1	2.9	**287.2366**	2.286	0.8	ug/L	723	Standard
	Co	59	229099.5	3.1	**28.0933**	0.227	0.8	ug/L	217	Standard
	Ni	60	103411.0	3.4	**46.7113**	0.544	1.2	ug/L	304	Standard
	Cu	65	167787.3	3.4	**77.2413**	0.870	1.1	ug/L	181	Standard
	Zn	66	148653.6	2.3	**113.9303**	0.817	0.7	ug/L	215	Standard
>	Ge	72	553789.9	2.3				ug/L	520809	Standard
	As	75	50674.7	3.7	**38.6402**	0.614	1.6	ug/L	-52	Standard
	Se	82	4006.1	3.7	**29.6916**	0.620	2.1	ug/L	17	Standard
	Se-1	77	2822.3	6.3	**30.3505**	1.406	4.6	ug/L	56	Standard
>	Ga	71	15926.7	1.8				mg/L	25	Standard
	Rb	85	61213.5	2.5				ug/L	28	Standard
	Y	89	995780.9	3.8				ug/L	447395	Standard
>	Rh	103	80.0	39.0				ug/L	15	Standard
	Mo	98	11202.2	1.3	**3.5351**	0.100	2.8	ug/L	113	Standard
	Ag	107	172476.6	3.4	**23.0491**	0.075	0.3	ug/L	108	Standard
	Cd	111	62525.5	2.9	**26.0819**	0.217	0.8	mg/L	3	Standard
	Cd	114	155090.1	3.1	**26.1298**	0.108	0.4	ug/L	20	Standard
>	In	115	651612.6	3.5				ug/L	625728	Standard
	Sn	118	1198.4	14.3	**0.0953**	0.032	33.2	ug/L	568	Standard
	Sb	123	13746.3	2.5	**2.5212**	0.035	1.4	ug/L	612	Standard
	Ba	135	355128.0	2.7	**156.7604**	1.139	0.7	ug/L	21	Standard
	Ce	140	1618154.9	2.5				ug/L	245	Standard
>	Tb	159	1001149.2	2.4				ug/L	950397	Standard
	Ho	165	38079.5	2.2				ug/L	7	Standard
	Tl	203	217506.4	3.1	**24.1924**	0.167	0.7	ug/L	15	Standard
	Tl	205	199413.9	1.5	**24.9766**	0.301	1.2	ug/L	13	Standard
	Pb	206	340199.5	1.6	**59.9805**	0.583	1.0	ug/L	264	Standard
	Pb	207	287102.8	2.6	**55.7262**	0.520	0.9	ug/L	222	Standard
	Pb	208	1239148.8	1.7	**58.8977**	0.622	1.1	ug/L	959	Standard
	U	238	215333.8	2.0	**26.6800**	0.294	1.1	ug/L	9	Standard
>	Bi	209	553529.4	2.5				ug/L	552821	Standard

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Na	23	3.3	86.6	**8.0461**	6.964	86.6	mg/L	2	Standard
Mg	24	420.0	23.2	**0.3305**	0.090	27.3	mg/L	55	Standard
K	39	140.0	12.9	**0.2971**	0.061	20.5	mg/L	28	Standard
Ca	43	243.3	22.2	**15.1089**	3.441	22.8	mg/L	27	Standard
Fe	54	22645.6	2.0	**14.0499**	0.221	1.6	mg/L	147	Standard
Fe	57	6007.9	4.3	**13.9009**	0.509	3.7	mg/L	268	Standard
Sc-1	45	51686.4	2.6				mg/L	41174	Standard
Cl	35	80429.2	4.3				ug/L	69550	Standard
Kr	83	2.7	86.6				ug/L	1	Standard
Br	81	13772.9	3.0				ug/L	1950	Standard
P	31	24882.1	4.1				ug/L	21156	Standard
S	34	3928.8	5.2				ug/L	3419	Standard
Sr	88	231.7	13.2				ug/L	72	Standard
C	12	2016.8	5.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	526.7	13.7				mg/L	17	Standard
Dy	164	57272.5	3.0				mg/L	16	Standard
Ho-1	165	38079.5	2.2				mg/L	7	Standard
Er	166	36791.3	0.3				mg/L	7	Standard
I	127	68461.0	1.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.105	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.333	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.137
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.128
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1606145109S WG574521-07
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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606145110SD WG574521-08
Sample Date/Time: Friday, July 01, 2016 17:41:13
Number of Replicates: 3
Autosampler Position: 239
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75000.2	2.3				ug/L	76456	Standard
	Be	9	30976.6	1.7	**28.1959**	0.613	2.2	ug/L	20	Standard
	Al	27	3439220.2	1.5	**20.4763**	0.514	2.5	ug/L	1307	Standard
	Sc	45	50167.9	0.3				ug/L	41174	Standard
	Ti	47	20331.3	1.6	**60.1182**	0.386	0.6	ug/L	27	Standard
	V	51	735011.2	1.2	**86.0697**	0.811	0.9	ug/L	1434	Standard
	Cr	52	348065.1	1.5	**40.5590**	0.525	1.3	ug/L	7733	Standard
	Cr	53	41963.1	3.7	**39.6270**	0.656	1.7	ug/L	442	Standard
	Mn	55	2126490.8	1.0	**270.9327**	3.985	1.5	ug/L	723	Standard
	Co	59	224148.6	1.1	**28.2013**	0.328	1.2	ug/L	217	Standard
	Ni	60	97510.5	1.6	**45.1854**	0.391	0.9	ug/L	304	Standard
	Cu	65	159657.8	0.8	**75.4140**	0.961	1.3	ug/L	181	Standard
	Zn	66	122702.2	1.2	**96.4430**	0.853	0.9	ug/L	215	Standard
>	Ge	72	539893.8	2.0				ug/L	520809	Standard
	As	75	43731.6	1.5	**34.2188**	0.207	0.6	ug/L	-52	Standard
	Se	82	3851.1	1.9	**29.2807**	0.182	0.6	ug/L	17	Standard
	Se-1	77	2693.2	3.6	**29.7006**	0.473	1.6	ug/L	56	Standard
>	Ga	71	10877.2	4.3				mg/L	25	Standard
	Rb	85	26646.7	1.9				ug/L	28	Standard
	Y	89	984741.5	1.3				ug/L	447395	Standard
>	Rh	103	75.0	23.1				ug/L	15	Standard
	Mo	98	12396.0	1.1	**4.0096**	0.009	0.2	ug/L	113	Standard
	Ag	107	167394.8	1.6	**22.9251**	0.326	1.4	ug/L	108	Standard
	Cd	111	61689.6	0.9	**26.3685**	0.182	0.7	mg/L	3	Standard
	Cd	114	150249.5	3.1	**25.9377**	0.589	2.3	ug/L	20	Standard
>	In	115	635843.6	1.2				ug/L	625728	Standard
	Sn	118	1905.1	12.7	**0.2074**	0.041	19.5	ug/L	568	Standard
	Sb	123	35922.0	1.1	**6.8066**	0.045	0.7	ug/L	612	Standard
	Ba	135	328480.5	1.3	**148.5677**	0.342	0.2	ug/L	21	Standard
	Ce	140	1483643.4	1.0				ug/L	245	Standard
>	Tb	159	980223.1	1.4				ug/L	950397	Standard
	Ho	165	36555.7	1.5				ug/L	7	Standard
	Tl	203	214476.5	1.2	**24.1754**	0.120	0.5	ug/L	15	Standard
	Tl	205	195033.9	0.4	**24.7497**	0.108	0.4	ug/L	13	Standard
	Pb	206	331178.4	0.7	**59.1601**	0.433	0.7	ug/L	264	Standard
	Pb	207	281134.0	0.6	**55.2947**	0.155	0.3	ug/L	222	Standard
	Pb	208	1213063.3	0.7	**58.4179**	0.082	0.1	ug/L	959	Standard
	U	238	215012.5	0.4	**26.9929**	0.177	0.7	ug/L	9	Standard
>	Bi	209	546245.7	0.8				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	401.7	8.7	**0.3249**	0.034	10.5	mg/L	55	Standard
K	39	65.0	53.8	**0.0732**	0.110	149.7	mg/L	28	Standard
Ca	43	258.3	8.9	**16.8169**	1.773	10.5	mg/L	27	Standard
Fe	54	18860.0	1.9	**12.0398**	0.263	2.2	mg/L	147	Standard
Fe	57	5239.2	5.1	**12.4090**	0.703	5.7	mg/L	268	Standard
> **Sc-1**	45	50167.9	0.3				mg/L	41174	Standard
Cl	35	77473.7	3.0				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	7528.5	1.9				ug/L	1950	Standard
P	31	23025.8	3.4				ug/L	21156	Standard
S	34	3772.1	4.4				ug/L	3419	Standard
Sr	88	236.7	6.8				ug/L	72	Standard
C	12	2743.6	3.7				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	510.0	3.4				mg/L	17	Standard
Dy	164	54236.1	2.2				mg/L	16	Standard
Ho-1	165	36555.7	1.5				mg/L	7	Standard
Er	166	36333.5	1.9				mg/L	7	Standard
I	127	50945.5	2.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.096	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.664	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.617	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.811	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606145110SD WG574521-08
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Method 6020 - Summary Report

Sample ID: L1606144501
Sample Date/Time: Friday, July 01, 2016 17:44:25
Number of Replicates: 3
Autosampler Position: 240
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75614.9	1.3				ug/L	76456	Standard
	Be	9	616.7	9.4	**0.5370**	0.050	9.3	ug/L	20	Standard
	Al	27	13167988.3	1.5	**77.7749**	1.539	2.0	ug/L	1307	Standard
	Sc	45	44936.5	0.9				ug/L	41174	Standard
	Ti	47	2539.2	1.9	**7.5419**	0.159	2.1	ug/L	27	Standard
	V	51	86547.1	1.5	**10.1041**	0.180	1.8	ug/L	1434	Standard
	Cr	52	60907.8	0.8	**6.4000**	0.028	0.4	ug/L	7733	Standard
	Cr	53	7250.1	1.9	**6.6027**	0.158	2.4	ug/L	442	Standard
	Mn	55	1905061.9	1.8	**246.1332**	2.751	1.1	ug/L	723	Standard
	Co	59	36801.3	0.6	**4.6715**	0.060	1.3	ug/L	217	Standard
	Ni	60	21869.8	1.0	**10.1605**	0.108	1.1	ug/L	304	Standard
	Cu	65	17811.5	0.6	**8.4670**	0.104	1.2	ug/L	181	Standard
	Zn	66	27607.8	0.3	**21.8690**	0.071	0.3	ug/L	215	Standard
>	Ge	72	532269.5	0.7				ug/L	520809	Standard
	As	75	3673.7	1.1	**2.9570**	0.036	1.2	ug/L	-52	Standard
	Se	82	41.1	14.0	**0.1921**	0.043	22.6	ug/L	17	Standard
	Se-1	77	92.7	12.4	**0.3761**	0.133	35.3	ug/L	56	Standard
>	Ga	71	8445.7	4.3				mg/L	25	Standard
	Rb	85	79397.5	0.6				ug/L	28	Standard
	Y	89	617711.9	0.3				ug/L	447395	Standard
>	Rh	103	20.0	50.0				ug/L	15	Standard
	Mo	98	513.2	4.5	**0.1463**	0.008	5.2	ug/L	113	Standard
	Ag	107	411.0	5.4	**0.0445**	0.003	7.0	ug/L	108	Standard
	Cd	111	224.8	17.0	**0.0956**	0.017	17.3	mg/L	3	Standard
	Cd	114	528.5	15.3	**0.0930**	0.014	15.2	ug/L	20	Standard
>	In	115	623854.0	0.2				ug/L	625728	Standard
	Sn	118	1113.4	15.3	**0.0893**	0.027	30.1	ug/L	568	Standard
	Sb	123	402.5	19.7	**0.0444**	0.016	34.9	ug/L	612	Standard
	Ba	135	200643.8	0.9	**92.4876**	1.043	1.1	ug/L	21	Standard
	Ce	140	742147.0	0.8				ug/L	245	Standard
>	Tb	159	959744.7	0.8				ug/L	950397	Standard
	Ho	165	13928.1	1.6				ug/L	7	Standard
	Tl	203	447.0	8.8	**0.0505**	0.005	9.0	ug/L	15	Standard
	Tl	205	406.7	11.9	**0.0427**	0.006	14.6	ug/L	13	Standard
	Pb	206	40310.6	0.6	**7.2786**	0.040	0.5	ug/L	264	Standard
	Pb	207	33326.3	0.4	**6.6200**	0.027	0.4	ug/L	222	Standard
	Pb	208	145576.7	0.6	**7.0813**	0.040	0.6	ug/L	959	Standard
	U	238	2828.3	0.6	**0.3605**	0.002	0.6	ug/L	9	Standard
>	Bi	209	537569.5	0.1				ug/L	552821	Standard

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Na	23	3.3	86.6	**9.1104**	7.886	86.6	mg/L	2	Standard
Mg	24	76.7	7.5	**0.0219**	0.006	26.1	mg/L	55	Standard
K	39	218.3	9.5	**0.6363**	0.080	12.5	mg/L	28	Standard
Ca	43	151.7	22.0	**10.1772**	2.793	27.4	mg/L	27	Standard
Fe	54	7340.4	3.8	**5.1756**	0.204	3.9	mg/L	147	Standard
Fe	57	2196.8	7.0	**5.3817**	0.451	8.4	mg/L	268	Standard
Sc-1	45	44936.5	0.9				mg/L	41174	Standard
Cl	35	75625.0	1.8				ug/L	69550	Standard
Kr	83	2.3	89.2				ug/L	1	Standard
Br	81	2456.9	6.6				ug/L	1950	Standard
P	31	22234.7	4.3				ug/L	21156	Standard
S	34	3950.5	4.3				ug/L	3419	Standard
Sr	88	111.7	18.1				ug/L	72	Standard
C	12	203.3	42.4				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	103.3	36.6				mg/L	17	Standard
Dy	164	23311.5	2.8				mg/L	16	Standard
Ho-1	165	13928.1	1.6				mg/L	7	Standard
Er	166	12401.8	5.5				mg/L	7	Standard
I	127	16120.2	3.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		98.900	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.200	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.701
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.241
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606144502
Sample Date/Time: Friday, July 01, 2016 17:47:36
Number of Replicates: 3
Autosampler Position: 241
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80582.1	0.6				ug/L	76456	Standard
	Be	9	1050.0	6.5	**0.8699**	0.053	6.1	ug/L	20	Standard
	Al	27	10543226.3	2.9	**58.4275**	1.839	3.1	ug/L	1307	Standard
	Sc	45	50111.1	1.7				ug/L	41174	Standard
	Ti	47	7592.6	3.2	**21.5864**	0.745	3.5	ug/L	27	Standard
	V	51	232882.8	0.5	**26.1453**	0.088	0.3	ug/L	1434	Standard
	Cr	52	180590.6	0.7	**19.7971**	0.199	1.0	ug/L	7733	Standard
	Cr	53	21970.9	2.4	**19.7976**	0.515	2.6	ug/L	442	Standard
	Mn	55	4529682.0	0.5	**556.3104**	4.224	0.8	ug/L	723	Standard
	Co	59	72279.7	0.5	**8.7442**	0.060	0.7	ug/L	217	Standard
	Ni	60	42964.2	0.1	**19.1012**	0.022	0.1	ug/L	304	Standard
	Cu	65	47497.7	0.8	**21.5696**	0.226	1.0	ug/L	181	Standard
	Zn	66	105865.9	1.3	**80.1698**	1.221	1.5	ug/L	215	Standard
>	Ge	72	560104.1	0.3				ug/L	520809	Standard
	As	75	7808.3	0.8	**5.9264**	0.056	0.9	ug/L	-52	Standard
	Se	82	138.7	8.9	**0.8941**	0.089	9.9	ug/L	17	Standard
	Se-1	77	161.0	3.3	**1.0667**	0.061	5.7	ug/L	56	Standard
>	Ga	71	24149.2	0.8				mg/L	25	Standard
	Rb	85	233795.1	1.1				ug/L	28	Standard
	Y	89	725001.6	1.1				ug/L	447395	Standard
>	Rh	103	41.7	18.3				ug/L	15	Standard
	Mo	98	1317.7	5.6	**0.3993**	0.019	4.9	ug/L	113	Standard
	Ag	107	864.0	1.1	**0.1041**	0.002	2.4	ug/L	108	Standard
	Cd	111	1117.0	0.9	**0.4692**	0.009	1.8	mg/L	3	Standard
	Cd	114	2788.0	2.8	**0.4754**	0.015	3.1	ug/L	20	Standard
>	In	115	643922.1	1.0				ug/L	625728	Standard
	Sn	118	2010.1	12.1	**0.2191**	0.034	15.5	ug/L	568	Standard
	Sb	123	437.2	13.5	**0.0484**	0.010	21.4	ug/L	612	Standard
	Ba	135	1679042.7	0.5	**749.9950**	6.832	0.9	ug/L	21	Standard
	Ce	140	1471540.7	0.8				ug/L	245	Standard
>	Tb	159	984687.8	0.7				ug/L	950397	Standard
	Ho	165	20360.3	1.4				ug/L	7	Standard
	Tl	203	1212.7	2.5	**0.1370**	0.004	2.6	ug/L	15	Standard
	Tl	205	1158.4	9.0	**0.1384**	0.013	9.2	ug/L	13	Standard
	Pb	206	419173.3	0.5	**75.4515**	0.814	1.1	ug/L	264	Standard
	Pb	207	344138.4	0.6	**68.2056**	0.866	1.3	ug/L	222	Standard
	Pb	208	1506247.3	0.9	**73.0918**	0.807	1.1	ug/L	959	Standard
	U	238	5748.4	0.4	**0.7268**	0.007	1.0	ug/L	9	Standard
>	Bi	209	542199.4	0.6				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	146.7	3.9	**0.0806**	0.004	4.7	mg/L	55	Standard
K	39	706.7	5.1	**2.0968**	0.148	7.0	mg/L	28	Standard
Ca	43	91.7	22.0	**4.4031**	1.569	35.6	mg/L	27	Standard
Fe	54	24940.6	4.4	**15.9770**	0.842	5.3	mg/L	147	Standard
Fe	57	6641.5	3.9	**15.9699**	0.826	5.2	mg/L	268	Standard
> **Sc-1**	45	50111.1	1.7				mg/L	41174	Standard
Cl	35	76057.1	1.3				ug/L	69550	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	3847.2	5.3				ug/L	1950	Standard
P	31	23633.4	0.7				ug/L	21156	Standard
S	34	3662.1	4.5				ug/L	3419	Standard
Sr	88	171.7	11.8				ug/L	72	Standard
C	12	470.0	20.3				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	233.3	19.3				mg/L	17	Standard
Dy	164	34433.8	0.7				mg/L	16	Standard
Ho-1	165	20360.3	1.4				mg/L	7	Standard
Er	166	19082.0	1.0				mg/L	7	Standard
I	127	32727.0	1.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.397	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.545	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.908	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.079	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 17:50:49
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75660.1	1.1				ug/L	76456	Standard
	Be	9	60406.9	2.0	**54.5087**	0.731	1.3	ug/L	20	Standard
	Al	27	8901183.3	0.4	**52.5361**	0.439	0.8	ug/L	1307	Standard
	Sc	45	43571.0	4.5				ug/L	41174	Standard
	Ti	47	34622.5	2.0	**98.8044**	2.139	2.2	ug/L	27	Standard
	V	51	445398.2	1.1	**50.2213**	0.481	1.0	ug/L	1434	Standard
	Cr	52	446008.3	0.3	**50.3583**	0.638	1.3	ug/L	7733	Standard
	Cr	53	54342.3	1.8	**49.6105**	0.179	0.4	ug/L	442	Standard
	Mn	55	412872.1	1.4	**50.6530**	0.943	1.9	ug/L	723	Standard
	Co	59	423920.9	1.9	**51.4674**	1.144	2.2	ug/L	217	Standard
	Ni	60	112641.5	1.2	**50.3629**	0.567	1.1	ug/L	304	Standard
	Cu	65	112208.4	1.7	**51.0893**	0.402	0.8	ug/L	181	Standard
	Zn	66	66744.0	0.4	**50.5145**	0.608	1.2	ug/L	215	Standard
>	Ge	72	559742.9	1.5				ug/L	520809	Standard
	As	75	66794.1	0.6	**50.3914**	0.530	1.1	ug/L	-52	Standard
	Se	82	6873.9	1.4	**50.5047**	0.860	1.7	ug/L	17	Standard
	Se-1	77	4690.7	2.0	**50.3684**	0.411	0.8	ug/L	56	Standard
>	Ga	71	70.0	37.1				mg/L	25	Standard
	Rb	85	931.7	8.4				ug/L	28	Standard
	Y	89	472026.6	0.3				ug/L	447395	Standard
>	Rh	103	31.7	32.9				ug/L	15	Standard
	Mo	98	318819.4	0.9	**100.5497**	0.545	0.5	ug/L	113	Standard
	Ag	107	375898.4	1.4	**49.9218**	0.531	1.1	ug/L	108	Standard
	Cd	111	121191.8	0.6	**50.2220**	0.334	0.7	mg/L	3	Standard
	Cd	114	302196.5	1.8	**50.5816**	0.945	1.9	ug/L	20	Standard
>	In	115	655853.7	0.4				ug/L	625728	Standard
	Sn	118	335213.1	1.5	**49.6075**	0.708	1.4	ug/L	568	Standard
	Sb	123	270386.5	1.1	**49.8811**	0.362	0.7	ug/L	612	Standard
	Ba	135	111336.6	0.9	**48.8080**	0.417	0.9	ug/L	21	Standard
	Ce	140	1411.7	25.7				ug/L	245	Standard
>	Tb	159	970990.0	1.2				ug/L	950397	Standard
	Ho	165	26.7	71.0				ug/L	7	Standard
	Tl	203	450496.8	1.2	**50.6789**	0.648	1.3	ug/L	15	Standard
	Tl	205	413746.4	0.4	**52.4089**	0.448	0.9	ug/L	13	Standard
	Pb	206	283628.8	0.6	**50.5558**	0.102	0.2	ug/L	264	Standard
	Pb	207	257451.9	0.7	**50.5301**	0.341	0.7	ug/L	222	Standard
	Pb	208	1074344.6	0.3	**51.6273**	0.180	0.3	ug/L	959	Standard
	U	238	402853.9	0.7	**50.4710**	0.276	0.5	ug/L	9	Standard
>	Bi	209	547356.6	0.6				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	4665.7	4.0	**5.1012**	0.401	7.9	mg/L	55	Standard
K	39	1318.4	2.8	**4.6563**	0.350	7.5	mg/L	28	Standard
Ca	43	68.3	16.9	**3.4315**	1.098	32.0	mg/L	27	Standard
Fe	54	7100.4	2.7	**5.1707**	0.292	5.6	mg/L	147	Standard
Fe	57	2145.2	7.2	**5.4299**	0.465	8.6	mg/L	268	Standard
> **Sc-1**	45	43571.0	4.5				mg/L	41174	Standard
Cl	35	80089.1	0.5				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	2080.1	5.8				ug/L	1950	Standard
P	31	24411.3	2.1				ug/L	21156	Standard
S	34	4227.3	2.4				ug/L	3419	Standard
Sr	88	76.7	45.8				ug/L	72	Standard
C	12	110.0	45.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	56.7				mg/L	17	Standard
Dy	164	54.4	29.0				mg/L	16	Standard
Ho-1	165	26.7	71.0				mg/L	7	Standard
Er	166	46.7	24.7				mg/L	7	Standard
I	127	7775.3	3.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	109.017		
Al	27	105.072		
Sc	45			
Ti	47	98.804		
V	51	100.443		
Cr	52	100.717		
Cr	53			
Mn	55	101.306		
Co	59	102.935		
Ni	60	100.726		
Cu	65	102.179		
Zn	66	101.029		
> Ge	72		107.476	
As	75	100.783		
Se	82	101.009		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	100.550		
Ag	107	99.844		
Cd	111	100.444		
Cd	114			
> In	115			104.815
Sn	118	99.215		
Sb	123	99.762		
Ba	135	97.616		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.358		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.255		
U	238	100.942		
> Bi	209			99.012
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 17:54:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76125.8	1.7				ug/L	76456	Standard
	Be	9	28.3	40.8	**0.0054**	0.010	184.7	ug/L	20	Standard
	Al	27	3772.2	25.1	**0.0119**	0.005	45.3	ug/L	1307	Standard
	Sc	45	44115.8	1.5				ug/L	41174	Standard
	Ti	47	36.0	36.4	**0.0190**	0.038	200.0	ug/L	27	Standard
	V	51	1432.6	3.3	**-0.0355**	0.004	12.4	ug/L	1434	Standard
	Cr	52	7275.4	1.9	**-0.1286**	0.011	8.9	ug/L	7733	Standard
	Cr	53	543.3	3.8	**0.0861**	0.017	20.2	ug/L	442	Standard
	Mn	55	1260.1	9.4	**0.0544**	0.014	25.4	ug/L	723	Standard
	Co	59	264.3	9.7	**0.0028**	0.003	106.4	ug/L	217	Standard
	Ni	60	263.3	2.3	**-0.0344**	0.002	7.2	ug/L	304	Standard
	Cu	65	186.3	1.1	**0.0113**	0.000	4.4	ug/L	181	Standard
	Zn	66	283.0	3.7	**0.0359**	0.009	24.2	ug/L	215	Standard
>	**Ge**	72	556594.5	0.6				ug/L	520809	Standard
	As	75	-80.7	20.9	**-0.0160**	0.013	82.1	ug/L	-52	Standard
	Se	82	15.4	35.3	**-0.0124**	0.040	323.4	ug/L	17	Standard
	Se-1	77	60.3	15.0	**-0.0241**	0.101	419.2	ug/L	56	Standard
>	**Ga**	71	31.7	63.8				mg/L	25	Standard
	Rb	85	60.0					ug/L	28	Standard
	Y	89	477190.1	1.0				ug/L	447395	Standard
>	**Rh**	103	8.3	124.9				ug/L	15	Standard
	Mo	98	226.0	18.3	**0.0476**	0.013	27.7	ug/L	113	Standard
	Ag	107	150.7	15.9	**0.0072**	0.003	44.5	ug/L	108	Standard
	Cd	111	16.6	57.3	**0.0046**	0.004	86.9	mg/L	3	Standard
	Cd	114	59.8	49.5	**0.0101**	0.005	49.3	ug/L	20	Standard
>	**In**	115	653461.3	0.4				ug/L	625728	Standard
	Sn	118	1496.7	19.9	**0.1384**	0.044	31.8	ug/L	568	Standard
	Sb	123	746.4	28.2	**0.1046**	0.039	37.1	ug/L	612	Standard
	Ba	135	171.7	17.2	**0.0577**	0.013	22.8	ug/L	21	Standard
	Ce	140	668.3	13.8				ug/L	245	Standard
>	**Tb**	159	971042.5	0.5				ug/L	950397	Standard
	Ho	165	16.7	62.4				ug/L	7	Standard
	Tl	203	88.3	25.2	**0.0090**	0.002	27.2	ug/L	15	Standard
	Tl	205	80.0	16.5	**0.0002**	0.002	912.8	ug/L	13	Standard
	Pb	206	378.0	7.1	**0.0223**	0.005	20.2	ug/L	264	Standard
	Pb	207	334.0	19.5	**0.0182**	0.012	68.6	ug/L	222	Standard
	Pb	208	1457.7	7.9	**0.0204**	0.005	25.7	ug/L	959	Standard
	U	238	80.3	16.8	**0.0096**	0.002	17.0	ug/L	9	Standard
>	**Bi**	209	558602.1	0.7				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	60.0	25.0	**0.0053**	0.017	313.2	mg/L	55	Standard
K	39	28.3	44.4	**-0.0302**	0.044	144.5	mg/L	28	Standard
Ca	43	16.7	75.5	**-1.0452**	1.061	101.5	mg/L	27	Standard
Fe	54	162.7	23.0	**0.0200**	0.026	130.3	mg/L	147	Standard
Fe	57	228.3	8.3	**-0.1492**	0.054	36.5	mg/L	268	Standard
> **Sc-1**	45	44115.8	1.5				mg/L	41174	Standard
Cl	35	79992.6	1.1				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	2276.8	13.7				ug/L	1950	Standard
P	31	23509.9	2.2				ug/L	21156	Standard
S	34	4122.2	2.6				ug/L	3419	Standard
Sr	88	61.7	24.8				ug/L	72	Standard
C	12	93.3	16.4				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	60.0	16.7				mg/L	17	Standard
Dy	164	41.6	40.0				mg/L	16	Standard
Ho-1	165	16.7	62.4				mg/L	7	Standard
Er	166	36.7	83.3				mg/L	7	Standard
I	127	5142.5	3.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.871	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.432
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.046
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606144503
Sample Date/Time: Friday, July 01, 2016 17:57:14
Number of Replicates: 3
Autosampler Position: 242
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81064.6	1.5				ug/L	76456	Standard
	Be	9	923.4	4.6	0.7579	0.026	3.5	ug/L	20	Standard
	Al	27	9265006.3	1.5	51.0345	0.228	0.4	ug/L	1307	Standard
	Sc	45	49278.4	2.1				ug/L	41174	Standard
	Ti	47	6532.7	0.9	18.1480	0.376	2.1	ug/L	27	Standard
	V	51	196838.4	1.2	21.5756	0.486	2.3	ug/L	1434	Standard
	Cr	52	144221.5	0.4	15.2461	0.132	0.9	ug/L	7733	Standard
	Cr	53	17702.0	4.1	15.5134	0.839	5.4	ug/L	442	Standard
	Mn	55	4322666.6	0.8	519.0669	3.003	0.6	ug/L	723	Standard
	Co	59	73004.8	0.8	8.6351	0.046	0.5	ug/L	217	Standard
	Ni	60	37595.6	1.2	16.3200	0.066	0.4	ug/L	304	Standard
	Cu	65	29226.2	0.6	12.9475	0.087	0.7	ug/L	181	Standard
	Zn	66	73620.1	0.4	54.4550	0.675	1.2	ug/L	215	Standard
>	Ge	72	572863.4	1.2				ug/L	520809	Standard
	As	75	5889.9	1.0	4.3827	0.015	0.3	ug/L	-52	Standard
	Se	82	131.9	5.2	0.8223	0.038	4.7	ug/L	17	Standard
	Se-1	77	184.3	3.7	1.2757	0.064	5.0	ug/L	56	Standard
>	Ga	71	19340.7	1.8				mg/L	25	Standard
	Rb	85	221404.3	0.5				ug/L	28	Standard
	Y	89	706877.6	0.9				ug/L	447395	Standard
>	Rh	103	30.0	72.6				ug/L	15	Standard
	Mo	98	2018.2	3.9	0.6082	0.025	4.1	ug/L	113	Standard
	Ag	107	770.7	2.0	0.0888	0.002	2.2	ug/L	108	Standard
	Cd	111	2871.4	1.3	1.1792	0.015	1.3	mg/L	3	Standard
	Cd	114	6981.1	2.4	1.1603	0.029	2.5	ug/L	20	Standard
>	In	115	660500.6	0.1				ug/L	625728	Standard
	Sn	118	1633.4	19.7	0.1562	0.047	30.4	ug/L	568	Standard
	Sb	123	766.2	17.6	0.1067	0.025	23.2	ug/L	612	Standard
	Ba	135	509530.1	0.7	221.8605	1.691	0.8	ug/L	21	Standard
	Ce	140	1234713.5	0.5				ug/L	245	Standard
>	Tb	159	1007837.3	0.4				ug/L	950397	Standard
	Ho	165	17965.6	2.4				ug/L	7	Standard
	Tl	203	1067.0	3.3	0.1181	0.003	2.2	ug/L	15	Standard
	Tl	205	1001.7	2.4	0.1159	0.004	3.7	ug/L	13	Standard
	Pb	206	195840.9	0.6	34.5471	0.280	0.8	ug/L	264	Standard
	Pb	207	161774.1	0.6	31.4180	0.202	0.6	ug/L	222	Standard
	Pb	208	705256.5	0.4	33.5368	0.236	0.7	ug/L	959	Standard
	U	238	5486.7	0.6	0.6803	0.004	0.5	ug/L	9	Standard
>	Bi	209	552878.3	1.1				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	775.0	0.6	**0.6965**	0.018	2.6	mg/L	55	Standard
K	39	456.7	20.3	**1.3315**	0.288	21.7	mg/L	28	Standard
Ca	43	66.7	11.5	**2.6050**	0.520	20.0	mg/L	27	Standard
Fe	54	19066.0	1.2	**12.3984**	0.367	3.0	mg/L	147	Standard
Fe	57	5245.9	1.7	**12.6645**	0.072	0.6	mg/L	268	Standard
> **Sc-1**	45	49278.4	2.1				mg/L	41174	Standard
Cl	35	75533.8	1.8				ug/L	69550	Standard
Kr	83	1.7	124.9				ug/L	1	Standard
Br	81	12581.9	2.8				ug/L	1950	Standard
P	31	23234.5	1.4				ug/L	21156	Standard
S	34	3415.4	8.9				ug/L	3419	Standard
Sr	88	155.0	8.5				ug/L	72	Standard
C	12	606.7	24.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	183.3	45.4				mg/L	17	Standard
Dy	164	30531.0	0.8				mg/L	16	Standard
Ho-1	165	17965.6	2.4				mg/L	7	Standard
Er	166	16101.9	2.4				mg/L	7	Standard
I	127	47399.3	7.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.028	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.995	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	105.557
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.010
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144507
Sample Date/Time: Friday, July 01, 2016 18:00:25
Number of Replicates: 3
Autosampler Position: 243
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81719.8	0.5				ug/L	76456	Standard
	Be	9	1150.0	3.4	**0.9414**	0.038	4.0	ug/L	20	Standard
	Al	27	19122972.5	1.5	**104.5075**	1.996	1.9	ug/L	1307	Standard
	Sc	45	50161.3	3.1				ug/L	41174	Standard
	Ti	47	4290.6	1.9	**12.0513**	0.158	1.3	ug/L	27	Standard
	V	51	176002.8	1.5	**19.5347**	0.381	2.0	ug/L	1434	Standard
	Cr	52	202519.5	0.7	**22.1111**	0.164	0.7	ug/L	7733	Standard
	Cr	53	24688.4	0.5	**22.0962**	0.312	1.4	ug/L	442	Standard
	Mn	55	3882576.5	0.7	**472.5626**	1.691	0.4	ug/L	723	Standard
	Co	59	74015.0	0.7	**8.8755**	0.153	1.7	ug/L	217	Standard
	Ni	60	49898.7	0.5	**22.0097**	0.116	0.5	ug/L	304	Standard
	Cu	65	49732.2	0.6	**22.3872**	0.351	1.6	ug/L	181	Standard
	Zn	66	114291.8	0.2	**85.7937**	1.009	1.2	ug/L	215	Standard
>	Ge	72	565157.3	1.0				ug/L	520809	Standard
	As	75	14435.4	1.1	**10.8205**	0.032	0.3	ug/L	-52	Standard
	Se	82	92.4	6.7	**0.5475**	0.040	7.3	ug/L	17	Standard
	Se-1	77	153.7	16.6	**0.9738**	0.293	30.1	ug/L	56	Standard
>	Ga	71	20582.3	3.6				mg/L	25	Standard
	Rb	85	203311.7	0.8				ug/L	28	Standard
	Y	89	751032.3	1.4				ug/L	447395	Standard
>	Rh	103	46.7	44.6				ug/L	15	Standard
	Mo	98	590.9	4.0	**0.1610**	0.008	5.2	ug/L	113	Standard
	Ag	107	615.7	5.5	**0.0683**	0.004	5.9	ug/L	108	Standard
	Cd	111	2075.5	3.1	**0.8510**	0.024	2.8	mg/L	3	Standard
	Cd	114	5077.8	10.1	**0.8428**	0.077	9.1	ug/L	20	Standard
>	In	115	661094.1	1.5				ug/L	625728	Standard
	Sn	118	1358.4	19.5	**0.1160**	0.042	36.3	ug/L	568	Standard
	Sb	123	1552.9	6.2	**0.2509**	0.021	8.4	ug/L	612	Standard
	Ba	135	403285.7	0.6	**175.4541**	1.609	0.9	ug/L	21	Standard
	Ce	140	1308604.3	1.2				ug/L	245	Standard
>	Tb	159	1004791.8	1.1				ug/L	950397	Standard
	Ho	165	21420.1	0.2				ug/L	7	Standard
	Tl	203	1393.7	1.3	**0.1546**	0.002	1.2	ug/L	15	Standard
	Tl	205	1293.4	6.5	**0.1525**	0.010	6.7	ug/L	13	Standard
	Pb	206	576456.5	0.6	**101.8203**	0.799	0.8	ug/L	264	Standard
	Pb	207	487118.2	0.8	**94.7368**	0.502	0.5	ug/L	222	Standard
	Pb	208	2107804.8	0.1	**100.3728**	0.432	0.4	ug/L	959	Standard
	U	238	4448.0	2.0	**0.5517**	0.009	1.6	ug/L	9	Standard
>	Bi	209	552606.6	0.3				ug/L	552821	Standard

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Na	23	1.7	173.2	**3.9605**	6.851	173.0	mg/L	2	Standard
Mg	24	146.7	22.7	**0.0801**	0.030	37.5	mg/L	55	Standard
K	39	540.0	0.9	**1.5696**	0.061	3.9	mg/L	28	Standard
Ca	43	96.7	3.0	**4.7655**	0.419	8.8	mg/L	27	Standard
Fe	54	17314.9	1.0	**11.0515**	0.258	2.3	mg/L	147	Standard
Fe	57	4700.7	3.1	**11.0529**	0.214	1.9	mg/L	268	Standard
> **Sc-1**	45	50161.3	3.1				mg/L	41174	Standard
Cl	35	76662.1	1.5				ug/L	69550	Standard
Kr	83	3.0	57.7				ug/L	1	Standard
Br	81	3767.1	7.9				ug/L	1950	Standard
P	31	23611.7	2.9				ug/L	21156	Standard
S	34	3682.1	3.0				ug/L	3419	Standard
Sr	88	63.3	31.9				ug/L	72	Standard
C	12	343.3	8.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	210.0	26.5				mg/L	17	Standard
Dy	164	35453.0	4.2				mg/L	16	Standard
Ho-1	165	21420.1	0.2				mg/L	7	Standard
Er	166	19218.8	0.6				mg/L	7	Standard
I	127	28176.2	1.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.885	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.515	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	105.652	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.961	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Pb 206 Upper, S, EEE	Pb	206
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1606144508
Sample Date/Time: Friday, July 01, 2016 18:03:37
Number of Replicates: 3
Autosampler Position: 244
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80067.7	0.8				ug/L	76456	Standard
	Be	9	1216.7	3.5	**1.0182**	0.042	4.1	ug/L	20	Standard
	Al	27	26828418.5	2.0	**149.6306**	1.983	1.3	ug/L	1307	Standard
	Sc	45	50947.2	1.6				ug/L	41174	Standard
	Ti	47	5410.0	2.3	**15.2604**	0.406	2.7	ug/L	27	Standard
	V	51	186134.5	1.5	**20.7252**	0.259	1.2	ug/L	1434	Standard
	Cr	52	142957.3	0.4	**15.3665**	0.097	0.6	ug/L	7733	Standard
	Cr	53	17178.1	1.5	**15.2891**	0.249	1.6	ug/L	442	Standard
	Mn	55	4606939.6	1.4	**562.2720**	9.197	1.6	ug/L	723	Standard
	Co	59	80106.5	0.8	**9.6337**	0.111	1.2	ug/L	217	Standard
	Ni	60	49331.5	0.8	**21.8172**	0.266	1.2	ug/L	304	Standard
	Cu	65	27262.5	1.2	**12.2715**	0.190	1.6	ug/L	181	Standard
	Zn	66	50487.3	0.6	**37.8990**	0.363	1.0	ug/L	215	Standard
>	Ge	72	563626.3	0.4				ug/L	520809	Standard
	As	75	5127.9	0.4	**3.8833**	0.025	0.7	ug/L	-52	Standard
	Se	82	63.4	13.7	**0.3372**	0.065	19.3	ug/L	17	Standard
	Se-1	77	127.0	8.8	**0.6885**	0.125	18.2	ug/L	56	Standard
>	Ga	71	20874.4	1.1				mg/L	25	Standard
	Rb	85	200244.6	0.8				ug/L	28	Standard
	Y	89	753887.4	1.4				ug/L	447395	Standard
>	Rh	103	23.3	24.7				ug/L	15	Standard
	Mo	98	546.6	7.3	**0.1509**	0.014	9.6	ug/L	113	Standard
	Ag	107	629.3	8.8	**0.0718**	0.007	9.6	ug/L	108	Standard
	Cd	111	214.4	9.4	**0.0877**	0.009	10.1	mg/L	3	Standard
	Cd	114	474.4	3.2	**0.0805**	0.003	3.5	ug/L	20	Standard
>	In	115	647228.9	1.0				ug/L	625728	Standard
	Sn	118	1141.7	25.6	**0.0873**	0.044	50.2	ug/L	568	Standard
	Sb	123	347.3	21.7	**0.0313**	0.014	45.5	ug/L	612	Standard
	Ba	135	428959.8	0.0	**190.6168**	1.771	0.9	ug/L	21	Standard
	Ce	140	1454827.7	0.7				ug/L	245	Standard
>	Tb	159	993072.0	0.4				ug/L	950397	Standard
	Ho	165	23219.4	1.9				ug/L	7	Standard
	Tl	203	1106.7	1.7	**0.1248**	0.002	1.9	ug/L	15	Standard
	Tl	205	985.0	10.2	**0.1162**	0.014	11.7	ug/L	13	Standard
	Pb	206	63645.1	1.2	**11.4085**	0.083	0.7	ug/L	264	Standard
	Pb	207	52266.7	0.7	**10.3105**	0.095	0.9	ug/L	222	Standard
	Pb	208	232091.9	0.7	**11.2123**	0.155	1.4	ug/L	959	Standard
	U	238	4568.7	1.3	**0.5771**	0.011	1.9	ug/L	9	Standard
>	Bi	209	542669.3	0.8				ug/L	552821	Standard

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Na	23	1.7	173.2	**4.0478**	7.002	173.0	mg/L	2	Standard
Mg	24	115.0	7.5	**0.0484**	0.008	16.3	mg/L	55	Standard
K	39	411.7	8.1	**1.1441**	0.093	8.1	mg/L	28	Standard
Ca	43	256.7	13.7	**16.4263**	2.858	17.4	mg/L	27	Standard
Fe	54	19822.2	2.5	**12.4655**	0.367	2.9	mg/L	147	Standard
Fe	57	5277.6	3.2	**12.3025**	0.438	3.6	mg/L	268	Standard
> **Sc-1**	45	50947.2	1.6				mg/L	41174	Standard
Cl	35	80549.5	0.6				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	2766.9	10.3				ug/L	1950	Standard
P	31	24564.9	2.5				ug/L	21156	Standard
S	34	4093.9	1.0				ug/L	3419	Standard
Sr	88	131.7	11.6				ug/L	72	Standard
C	12	213.3	21.7				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	70.0	37.8				mg/L	17	Standard
Dy	164	39354.5	1.1				mg/L	16	Standard
Ho-1	165	23219.4	1.9				mg/L	7	Standard
Er	166	20997.9	3.9				mg/L	7	Standard
I	127	17520.1	0.9				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.724	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.221	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.436	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.164	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144509
Sample Date/Time: Friday, July 01, 2016 18:06:48
Number of Replicates: 3
Autosampler Position: 245
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79442.8	2.3				ug/L	76456	Standard
	Be	9	943.4	17.8	**0.7923**	0.154	19.4	ug/L	20	Standard
	Al	27	24668673.1	1.9	**138.6963**	2.466	1.8	ug/L	1307	Standard
	Sc	45	50062.6	1.9				ug/L	41174	Standard
	Ti	47	4807.4	4.3	**13.5672**	0.456	3.4	ug/L	27	Standard
	V	51	136414.7	0.2	**15.1594**	0.132	0.9	ug/L	1434	Standard
	Cr	52	121344.3	1.1	**12.9168**	0.132	1.0	ug/L	7733	Standard
	Cr	53	14567.0	3.2	**12.9202**	0.381	2.9	ug/L	442	Standard
	Mn	55	3584400.6	1.7	**438.0976**	8.663	2.0	ug/L	723	Standard
	Co	59	62786.5	0.8	**7.5554**	0.042	0.6	ug/L	217	Standard
	Ni	60	42141.2	1.3	**18.6419**	0.218	1.2	ug/L	304	Standard
	Cu	65	21722.6	0.6	**9.7770**	0.072	0.7	ug/L	181	Standard
	Zn	66	42178.0	0.8	**31.6788**	0.359	1.1	ug/L	215	Standard
>	Ge	72	562814.6	1.1				ug/L	520809	Standard
	As	75	3148.0	1.0	**2.4049**	0.028	1.2	ug/L	-52	Standard
	Se	82	55.8	21.4	**0.2824**	0.087	30.8	ug/L	17	Standard
	Se-1	77	111.3	15.0	**0.5195**	0.168	32.3	ug/L	56	Standard
>	Ga	71	17067.9	0.7				mg/L	25	Standard
	Rb	85	155458.5	0.3				ug/L	28	Standard
	Y	89	728811.9	0.2				ug/L	447395	Standard
>	Rh	103	40.0	21.7				ug/L	15	Standard
	Mo	98	532.8	6.7	**0.1442**	0.009	6.6	ug/L	113	Standard
	Ag	107	508.0	7.7	**0.0547**	0.005	9.0	ug/L	108	Standard
	Cd	111	168.7	12.8	**0.0676**	0.009	13.2	mg/L	3	Standard
	Cd	114	363.5	9.1	**0.0610**	0.006	10.1	ug/L	20	Standard
>	In	115	655174.8	1.1				ug/L	625728	Standard
	Sn	118	1111.7	18.9	**0.0808**	0.031	38.4	ug/L	568	Standard
	Sb	123	305.1	22.1	**0.0226**	0.012	54.1	ug/L	612	Standard
	Ba	135	334401.7	0.7	**146.7912**	1.362	0.9	ug/L	21	Standard
	Ce	140	1157016.3	1.7				ug/L	245	Standard
>	Tb	159	995793.1	2.4				ug/L	950397	Standard
	Ho	165	19706.1	2.6				ug/L	7	Standard
	Tl	203	788.7	4.8	**0.0883**	0.005	5.9	ug/L	15	Standard
	Tl	205	705.0	5.8	**0.0799**	0.004	5.3	ug/L	13	Standard
	Pb	206	52940.3	0.9	**9.4349**	0.070	0.7	ug/L	264	Standard
	Pb	207	43455.2	0.3	**8.5217**	0.073	0.9	ug/L	222	Standard
	Pb	208	192505.6	0.3	**9.2450**	0.110	1.2	ug/L	959	Standard
	U	238	3706.1	1.6	**0.4657**	0.006	1.4	ug/L	9	Standard
>	Bi	209	545400.8	1.1				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	125.0	18.3	**0.0601**	0.024	39.7	mg/L	55	Standard
K	39	280.0	4.7	**0.7524**	0.056	7.4	mg/L	28	Standard
Ca	43	271.7	13.1	**17.8657**	2.769	15.5	mg/L	27	Standard
Fe	54	13853.2	3.1	**8.8410**	0.431	4.9	mg/L	147	Standard
Fe	57	3842.2	1.2	**8.9061**	0.079	0.9	mg/L	268	Standard
> **Sc-1**	45	50062.6	1.9				mg/L	41174	Standard
Cl	35	80728.5	0.4				ug/L	69550	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	3187.0	4.9				ug/L	1950	Standard
P	31	24401.3	1.1				ug/L	21156	Standard
S	34	4165.6	2.7				ug/L	3419	Standard
Sr	88	115.0	7.5				ug/L	72	Standard
C	12	200.0	13.2				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	93.3	32.7				mg/L	17	Standard
Dy	164	33342.9	1.0				mg/L	16	Standard
Ho-1	165	19706.1	2.6				mg/L	7	Standard
Er	166	17443.4	2.1				mg/L	7	Standard
I	127	18624.8	0.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.907	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.065	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.706
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.658
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144510
Sample Date/Time: Friday, July 01, 2016 18:10:00
Number of Replicates: 3
Autosampler Position: 246
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79271.9	1.9				ug/L	76456	Standard
	Be	9	960.0	8.0	**0.8081**	0.079	9.8	ug/L	20	Standard
	Al	27	12161180.8	1.6	**68.5142**	1.144	1.7	ug/L	1307	Standard
	Sc	45	48484.1	1.3				ug/L	41174	Standard
	Ti	47	2552.9	3.2	**7.1191**	0.297	4.2	ug/L	27	Standard
	V	51	134266.7	0.5	**14.8155**	0.217	1.5	ug/L	1434	Standard
	Cr	52	132714.7	0.2	**14.1160**	0.211	1.5	ug/L	7733	Standard
	Cr	53	15915.0	2.5	**14.0541**	0.174	1.2	ug/L	442	Standard
	Mn	55	2692161.6	0.9	**326.7761**	3.297	1.0	ug/L	723	Standard
	Co	59	60946.7	0.7	**7.2843**	0.165	2.3	ug/L	217	Standard
	Ni	60	37036.2	0.7	**16.2553**	0.354	2.2	ug/L	304	Standard
	Cu	65	25813.0	0.6	**11.5528**	0.129	1.1	ug/L	181	Standard
	Zn	66	59196.1	0.9	**44.2314**	0.719	1.6	ug/L	215	Standard
>	Ge	72	566689.9	1.6				ug/L	520809	Standard
	As	75	6333.8	0.9	**4.7613**	0.105	2.2	ug/L	-52	Standard
	Se	82	64.1	11.3	**0.3404**	0.060	17.7	ug/L	17	Standard
	Se-1	77	129.7	6.6	**0.7103**	0.107	15.1	ug/L	56	Standard
>	Ga	71	16113.6	0.3				mg/L	25	Standard
	Rb	85	159279.6	1.1				ug/L	28	Standard
	Y	89	713422.0	1.5				ug/L	447395	Standard
>	Rh	103	25.0	60.0				ug/L	15	Standard
	Mo	98	950.0	4.7	**0.2755**	0.014	5.2	ug/L	113	Standard
	Ag	107	562.7	10.8	**0.0618**	0.008	12.5	ug/L	108	Standard
	Cd	111	481.0	9.3	**0.1967**	0.017	8.8	mg/L	3	Standard
	Cd	114	1249.3	10.0	**0.2089**	0.020	9.7	ug/L	20	Standard
>	In	115	656399.0	0.7				ug/L	625728	Standard
	Sn	118	1210.0	13.0	**0.0951**	0.024	25.2	ug/L	568	Standard
	Sb	123	969.1	5.8	**0.1450**	0.010	7.1	ug/L	612	Standard
	Ba	135	317720.7	1.4	**139.1962**	1.098	0.8	ug/L	21	Standard
	Ce	140	1155794.9	1.0				ug/L	245	Standard
>	Tb	159	984841.2	0.9				ug/L	950397	Standard
	Ho	165	19197.2	4.8				ug/L	7	Standard
	Tl	203	845.0	15.2	**0.0944**	0.014	15.2	ug/L	15	Standard
	Tl	205	828.4	29.5	**0.0953**	0.031	32.1	ug/L	13	Standard
	Pb	206	243494.3	0.6	**43.4500**	0.261	0.6	ug/L	264	Standard
	Pb	207	203498.1	0.4	**39.9806**	0.200	0.5	ug/L	222	Standard
	Pb	208	891072.1	0.5	**42.8651**	0.261	0.6	ug/L	959	Standard
	U	238	4045.9	6.6	**0.5073**	0.034	6.6	ug/L	9	Standard
>	Bi	209	546682.6	0.7				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	171.7	38.0	**0.1098**	0.063	57.3	mg/L	55	Standard
K	39	336.7	16.4	**0.9661**	0.187	19.4	mg/L	28	Standard
Ca	43	73.3	23.9	**3.2010**	1.330	41.6	mg/L	27	Standard
Fe	54	13407.2	1.8	**8.8316**	0.255	2.9	mg/L	147	Standard
Fe	57	3832.2	1.2	**9.1972**	0.235	2.6	mg/L	268	Standard
> **Sc-1**	45	48484.1	1.3				mg/L	41174	Standard
Cl	35	75838.8	2.7				ug/L	69550	Standard
Kr	83	1.3	86.6				ug/L	1	Standard
Br	81	3700.5	4.5				ug/L	1950	Standard
P	31	23035.9	5.5				ug/L	21156	Standard
S	34	3642.1	4.8				ug/L	3419	Standard
Sr	88	118.3	23.3				ug/L	72	Standard
C	12	246.7	10.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	110.0	39.6				mg/L	17	Standard
Dy	164	31661.9	4.0				mg/L	16	Standard
Ho-1	165	19197.2	4.8				mg/L	7	Standard
Er	166	17109.7	2.4				mg/L	7	Standard
I	127	24686.8	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.683	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.809	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	104.902	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.890	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144511
Sample Date/Time: Friday, July 01, 2016 18:13:11
Number of Replicates: 3
Autosampler Position: 247
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81056.3	1.5				ug/L	76456	Standard
	Be	9	1300.1	7.1	**1.0750**	0.063	5.9	ug/L	20	Standard
	Al	27	14087735.3	1.0	**77.6176**	0.555	0.7	ug/L	1307	Standard
	Sc	45	51079.3	2.3				ug/L	41174	Standard
	Ti	47	4050.2	1.8	**11.4166**	0.113	1.0	ug/L	27	Standard
	V	51	160903.7	0.9	**17.9135**	0.308	1.7	ug/L	1434	Standard
	Cr	52	157358.9	0.5	**17.0353**	0.148	0.9	ug/L	7733	Standard
	Cr	53	18739.9	2.5	**16.7418**	0.591	3.5	ug/L	442	Standard
	Mn	55	3983343.0	1.3	**486.7711**	7.837	1.6	ug/L	723	Standard
	Co	59	83282.3	0.9	**10.0291**	0.055	0.6	ug/L	217	Standard
	Ni	60	47596.6	1.1	**21.0730**	0.432	2.1	ug/L	304	Standard
	Cu	65	29877.1	1.6	**13.4740**	0.341	2.5	ug/L	181	Standard
	Zn	66	86877.7	1.2	**65.4276**	0.744	1.1	ug/L	215	Standard
>	Ge	72	562928.2	1.0				ug/L	520809	Standard
	As	75	5744.5	1.7	**4.3502**	0.061	1.4	ug/L	-52	Standard
	Se	82	56.4	20.2	**0.2867**	0.086	29.8	ug/L	17	Standard
	Se-1	77	130.3	3.1	**0.7263**	0.056	7.7	ug/L	56	Standard
>	Ga	71	21874.1	2.3				mg/L	25	Standard
	Rb	85	221462.0	1.4				ug/L	28	Standard
	Y	89	734796.1	0.6				ug/L	447395	Standard
>	Rh	103	31.7	24.1				ug/L	15	Standard
	Mo	98	474.5	3.0	**0.1270**	0.006	4.5	ug/L	113	Standard
	Ag	107	695.0	1.5	**0.0803**	0.002	2.7	ug/L	108	Standard
	Cd	111	1334.9	2.9	**0.5556**	0.015	2.7	mg/L	3	Standard
	Cd	114	3103.4	3.0	**0.5239**	0.011	2.1	ug/L	20	Standard
>	In	115	650267.1	1.0				ug/L	625728	Standard
	Sn	118	1253.4	12.9	**0.1031**	0.024	22.9	ug/L	568	Standard
	Sb	123	352.0	10.4	**0.0318**	0.006	20.1	ug/L	612	Standard
	Ba	135	635709.1	1.1	**281.1732**	3.369	1.2	ug/L	21	Standard
	Ce	140	1385894.9	1.0				ug/L	245	Standard
>	Tb	159	992786.2	1.1				ug/L	950397	Standard
	Ho	165	21371.7	1.6				ug/L	7	Standard
	Tl	203	1170.7	2.5	**0.1317**	0.002	1.8	ug/L	15	Standard
	Tl	205	1111.7	6.4	**0.1319**	0.009	7.1	ug/L	13	Standard
	Pb	206	547145.1	0.5	**98.1007**	0.480	0.5	ug/L	264	Standard
	Pb	207	460226.0	0.7	**90.8567**	0.149	0.2	ug/L	222	Standard
	Pb	208	1990544.8	1.0	**96.2154**	0.264	0.3	ug/L	959	Standard
	U	238	4825.8	2.0	**0.6077**	0.015	2.5	ug/L	9	Standard
>	Bi	209	544394.6	0.9				ug/L	552821	Standard

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Na	23	5.0	100.0	**11.9370**	12.019	100.7	mg/L	2	Standard
Mg	24	136.7	11.2	**0.0686**	0.016	23.2	mg/L	55	Standard
K	39	338.3	18.4	**0.9175**	0.216	23.5	mg/L	28	Standard
Ca	43	100.0	10.0	**4.8632**	0.562	11.6	mg/L	27	Standard
Fe	54	19768.1	3.7	**12.3944**	0.190	1.5	mg/L	147	Standard
Fe	57	5529.3	1.5	**12.8981**	0.490	3.8	mg/L	268	Standard
Sc-1	45	51079.3	2.3				mg/L	41174	Standard
Cl	35	74695.0	1.8				ug/L	69550	Standard
Kr	83	2.3	49.5				ug/L	1	Standard
Br	81	3833.8	5.0				ug/L	1950	Standard
P	31	23369.7	3.5				ug/L	21156	Standard
S	34	3573.8	8.7				ug/L	3419	Standard
Sr	88	135.0	7.4				ug/L	72	Standard
C	12	190.0	24.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	156.7	38.5				mg/L	17	Standard
Dy	164	36620.1	2.1				mg/L	16	Standard
Ho-1	165	21371.7	1.6				mg/L	7	Standard
Er	166	19966.5	1.7				mg/L	7	Standard
I	127	25928.9	6.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		106.017	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		108.087	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.922	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.476	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144512
Sample Date/Time: Friday, July 01, 2016 18:16:23
Number of Replicates: 3
Autosampler Position: 248
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80562.0	2.1				ug/L	76456	Standard
	Be	9	1056.7	6.8	**0.8755**	0.044	5.0	ug/L	20	Standard
	Al	27	20325479.9	1.3	**112.6812**	0.924	0.8	ug/L	1307	Standard
	Sc	45	51024.2	3.8				ug/L	41174	Standard
	Ti	47	4124.6	2.4	**11.6241**	0.214	1.8	ug/L	27	Standard
	V	51	179971.8	1.0	**20.0519**	0.111	0.6	ug/L	1434	Standard
	Cr	52	122094.3	0.7	**12.9955**	0.054	0.4	ug/L	7733	Standard
	Cr	53	14728.8	1.7	**13.0624**	0.219	1.7	ug/L	442	Standard
	Mn	55	2566086.0	1.4	**313.4230**	2.590	0.8	ug/L	723	Standard
	Co	59	71959.5	1.0	**8.6588**	0.038	0.4	ug/L	217	Standard
	Ni	60	44539.0	0.4	**19.7019**	0.201	1.0	ug/L	304	Standard
	Cu	65	25837.7	1.3	**11.6371**	0.150	1.3	ug/L	181	Standard
	Zn	66	46860.0	0.7	**35.1959**	0.095	0.3	ug/L	215	Standard
>	Ge	72	563090.4	0.6				ug/L	520809	Standard
	As	75	4748.6	0.5	**3.6029**	0.030	0.8	ug/L	-52	Standard
	Se	82	50.2	5.5	**0.2414**	0.021	8.8	ug/L	17	Standard
	Se-1	77	123.7	5.2	**0.6532**	0.062	9.5	ug/L	56	Standard
>	Ga	71	18362.8	1.6				mg/L	25	Standard
	Rb	85	168707.6	2.0				ug/L	28	Standard
	Y	89	736703.2	2.4				ug/L	447395	Standard
>	Rh	103	25.0	52.9				ug/L	15	Standard
	Mo	98	488.2	3.8	**0.1323**	0.005	4.0	ug/L	113	Standard
	Ag	107	511.0	3.1	**0.0560**	0.002	3.4	ug/L	108	Standard
	Cd	111	253.2	7.3	**0.1041**	0.008	7.3	mg/L	3	Standard
	Cd	114	604.4	7.2	**0.1026**	0.007	6.9	ug/L	20	Standard
>	In	115	646543.9	0.3				ug/L	625728	Standard
	Sn	118	893.4	21.7	**0.0501**	0.029	58.0	ug/L	568	Standard
	Sb	123	312.5	6.0	**0.0248**	0.004	14.8	ug/L	612	Standard
	Ba	135	248072.4	0.5	**110.3400**	0.769	0.7	ug/L	21	Standard
	Ce	140	1301357.0	1.2				ug/L	245	Standard
>	Tb	159	989062.4	0.6				ug/L	950397	Standard
	Ho	165	20744.2	1.0				ug/L	7	Standard
	Tl	203	836.4	5.3	**0.0943**	0.005	5.4	ug/L	15	Standard
	Tl	205	765.0	4.3	**0.0882**	0.004	4.8	ug/L	13	Standard
	Pb	206	112087.8	1.3	**20.1669**	0.259	1.3	ug/L	264	Standard
	Pb	207	94165.7	0.9	**18.6506**	0.174	0.9	ug/L	222	Standard
	Pb	208	412221.0	0.6	**19.9915**	0.120	0.6	ug/L	959	Standard
	U	238	4509.7	0.8	**0.5708**	0.005	0.8	ug/L	9	Standard
>	Bi	209	541556.4	0.0				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	148.3	8.5	**0.0799**	0.015	18.6	mg/L	55	Standard
K	39	408.3	5.1	**1.1318**	0.019	1.7	mg/L	28	Standard
Ca	43	105.0	12.6	**5.2550**	1.011	19.2	mg/L	27	Standard
Fe	54	15896.3	3.5	**9.9615**	0.123	1.2	mg/L	147	Standard
Fe	57	4270.6	7.1	**9.8107**	1.132	11.5	mg/L	268	Standard
> **Sc-1**	45	51024.2	3.8				mg/L	41174	Standard
Cl	35	77017.9	0.8				ug/L	69550	Standard
Kr	83	1.7	124.9				ug/L	1	Standard
Br	81	2873.6	4.9				ug/L	1950	Standard
P	31	23741.9	3.7				ug/L	21156	Standard
S	34	3792.1	2.1				ug/L	3419	Standard
Sr	88	118.3	26.8				ug/L	72	Standard
C	12	150.0	24.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	66.7	31.2				mg/L	17	Standard
Dy	164	35215.7	0.8				mg/L	16	Standard
Ho-1	165	20744.2	1.0				mg/L	7	Standard
Er	166	18591.4	0.2				mg/L	7	Standard
I	127	15219.3	3.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.371	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.118	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.327
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.962
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144512
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Method 6020 - Summary Report

Sample ID: L1606145101
Sample Date/Time: Friday, July 01, 2016 18:19:34
Number of Replicates: 3
Autosampler Position: 249
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70388.2	2.1				ug/L	76456	Standard
	Be	9	61.7	23.4	**0.0400**	0.014	34.9	ug/L	20	Standard
	Al	27	209415.6	0.4	**1.3190**	0.033	2.5	ug/L	1307	Standard
	Sc	45	39780.5	3.1				ug/L	41174	Standard
	Ti	47	1335.7	4.5	**4.0093**	0.186	4.6	ug/L	27	Standard
	V	51	9011.5	1.4	**0.8961**	0.016	1.8	ug/L	1434	Standard
	Cr	52	11942.0	0.5	**0.5043**	0.017	3.5	ug/L	7733	Standard
	Cr	53	965.0	9.9	**0.5365**	0.094	17.4	ug/L	442	Standard
	Mn	55	122738.2	0.8	**16.0893**	0.228	1.4	ug/L	723	Standard
	Co	59	1833.1	0.9	**0.2095**	0.004	1.9	ug/L	217	Standard
	Ni	60	1543.4	2.6	**0.5897**	0.025	4.3	ug/L	304	Standard
	Cu	65	2084.5	3.4	**0.9460**	0.041	4.4	ug/L	181	Standard
	Zn	66	9962.3	1.5	**7.9386**	0.062	0.8	ug/L	215	Standard
>	**Ge**	72	521595.8	0.8				ug/L	520809	Standard
	As	75	1195.1	0.9	**1.0118**	0.011	1.1	ug/L	-52	Standard
	Se	82	24.1	17.0	**0.0642**	0.032	49.3	ug/L	17	Standard
	Se-1	77	62.0	12.6	**0.0393**	0.087	222.5	ug/L	56	Standard
>	**Ga**	71	756.7	9.6				mg/L	25	Standard
	Rb	85	4860.8	2.7				ug/L	28	Standard
	Y	89	439023.6	1.3				ug/L	447395	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	289.5	25.4	**0.0755**	0.025	33.7	ug/L	113	Standard
	Ag	107	108.0	4.2	**0.0028**	0.001	24.8	ug/L	108	Standard
	Cd	111	86.5	15.6	**0.0367**	0.006	16.4	mg/L	3	Standard
	Cd	114	262.8	23.2	**0.0479**	0.011	23.5	ug/L	20	Standard
>	**In**	115	602493.1	0.2				ug/L	625728	Standard
	Sn	118	640.0	28.2	**0.0191**	0.029	153.5	ug/L	568	Standard
	Sb	123	159.0	14.4	**-0.0017**	0.005	267.5	ug/L	612	Standard
	Ba	135	10231.8	1.1	**4.8666**	0.057	1.2	ug/L	21	Standard
	Ce	140	59325.9	0.4				ug/L	245	Standard
>	**Tb**	159	901387.3	1.6				ug/L	950397	Standard
	Ho	165	468.3	19.0				ug/L	7	Standard
	Tl	203	67.3	15.2	**0.0072**	0.001	16.6	ug/L	15	Standard
	Tl	205	53.3	56.5	**-0.0027**	0.004	151.9	ug/L	13	Standard
	Pb	206	25545.5	0.9	**4.7304**	0.064	1.3	ug/L	264	Standard
	Pb	207	21325.3	0.3	**4.3424**	0.022	0.5	ug/L	222	Standard
	Pb	208	92265.3	0.3	**4.6006**	0.019	0.4	ug/L	959	Standard
	U	238	418.3	2.9	**0.0547**	0.002	3.4	ug/L	9	Standard
>	**Bi**	209	522518.3	0.5				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	45.0	0.0	**-0.0057**	0.002	29.9	mg/L	55	Standard
K	39	30.0	28.9	**-0.0116**	0.036	313.3	mg/L	28	Standard
Ca	43	28.3	50.9	**0.2419**	1.466	606.3	mg/L	27	Standard
Fe	54	830.6	5.4	**0.5751**	0.021	3.7	mg/L	147	Standard
Fe	57	475.0	3.8	**0.7085**	0.100	14.1	mg/L	268	Standard
> **Sc-1**	45	39780.5	3.1				mg/L	41174	Standard
Cl	35	69290.7	0.6				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	2023.5	4.8				ug/L	1950	Standard
P	31	8517.4	4.8				ug/L	21156	Standard
S	34	3302.0	4.3				ug/L	3419	Standard
Sr	88	81.7	7.1				ug/L	72	Standard
C	12	106.7	19.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	43.3				mg/L	17	Standard
Dy	164	723.4	6.0				mg/L	16	Standard
Ho-1	165	468.3	19.0				mg/L	7	Standard
Er	166	416.7	9.7				mg/L	7	Standard
I	127	33121.2	4.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.064	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.151	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.287
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.519
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606145102
Sample Date/Time: Friday, July 01, 2016 18:22:46
Number of Replicates: 3
Autosampler Position: 250
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	69181.0	2.1				ug/L	76456	Standard
	Be	9	58.3	32.5	**0.0378**	0.019	50.7	ug/L	20	Standard
	Al	27	441238.9	1.7	**2.8389**	0.059	2.1	ug/L	1307	Standard
	Sc	45	40783.2	1.8				ug/L	41174	Standard
	Ti	47	2459.5	1.5	**7.4205**	0.178	2.4	ug/L	27	Standard
	V	51	16925.1	1.2	**1.8483**	0.038	2.1	ug/L	1434	Standard
	Cr	52	18122.2	1.5	**1.2572**	0.011	0.8	ug/L	7733	Standard
	Cr	53	1788.4	11.0	**1.3411**	0.181	13.5	ug/L	442	Standard
	Mn	55	409161.8	0.6	**53.6291**	0.654	1.2	ug/L	723	Standard
	Co	59	5121.9	2.3	**0.6351**	0.012	1.9	ug/L	217	Standard
	Ni	60	3165.0	1.3	**1.3633**	0.033	2.4	ug/L	304	Standard
	Cu	65	6880.2	2.6	**3.2772**	0.073	2.2	ug/L	181	Standard
	Zn	66	23732.9	1.1	**19.0745**	0.015	0.1	ug/L	215	Standard
>	Ge	72	523960.3	1.1				ug/L	520809	Standard
	As	75	1016.3	2.7	**0.8637**	0.031	3.5	ug/L	-52	Standard
	Se	82	21.9	9.7	**0.0461**	0.018	39.0	ug/L	17	Standard
	Se-1	77	60.7	6.2	**0.0211**	0.052	244.3	ug/L	56	Standard
>	Ga	71	1423.4	6.3				mg/L	25	Standard
	Rb	85	14632.1	2.4				ug/L	28	Standard
	Y	89	450617.7	0.3				ug/L	447395	Standard
>	Rh	103	8.3	69.3				ug/L	15	Standard
	Mo	98	554.2	6.5	**0.1661**	0.012	7.3	ug/L	113	Standard
	Ag	107	138.0	6.6	**0.0071**	0.001	19.2	ug/L	108	Standard
	Cd	111	114.3	13.8	**0.0491**	0.007	14.2	mg/L	3	Standard
	Cd	114	241.5	19.5	**0.0440**	0.009	19.7	ug/L	20	Standard
>	In	115	603273.3	0.3				ug/L	625728	Standard
	Sn	118	566.7	21.3	**0.0071**	0.019	272.0	ug/L	568	Standard
	Sb	123	143.4	25.7	**-0.0049**	0.007	148.6	ug/L	612	Standard
	Ba	135	23042.5	1.3	**10.9682**	0.165	1.5	ug/L	21	Standard
	Ce	140	67983.9	1.1				ug/L	245	Standard
>	Tb	159	906786.3	1.4				ug/L	950397	Standard
	Ho	165	761.7	6.0				ug/L	7	Standard
	Tl	203	182.7	10.3	**0.0207**	0.002	11.4	ug/L	15	Standard
	Tl	205	140.0	10.7	**0.0088**	0.002	22.7	ug/L	13	Standard
	Pb	206	16671.2	1.2	**3.0640**	0.050	1.6	ug/L	264	Standard
	Pb	207	13875.7	1.0	**2.8020**	0.007	0.2	ug/L	222	Standard
	Pb	208	60739.5	0.7	**3.0044**	0.029	1.0	ug/L	959	Standard
	U	238	1048.7	0.5	**0.1370**	0.000	0.3	ug/L	9	Standard
>	Bi	209	523858.2	0.8				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	55.0		**0.0047**	0.001	24.2	mg/L	55	Standard
K	39	31.7	48.2	**-0.0079**	0.061	772.0	mg/L	28	Standard
Ca	43	26.7	92.5	**0.0138**	2.317	16826.1	mg/L	27	Standard
Fe	54	1768.8	1.5	**1.3016**	0.007	0.5	mg/L	147	Standard
Fe	57	735.0	6.2	**1.4753**	0.115	7.8	mg/L	268	Standard
> **Sc-1**	45	40783.2	1.8				mg/L	41174	Standard
Cl	35	69789.0	1.4				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	1950.1	1.4				ug/L	1950	Standard
P	31	8389.0	2.9				ug/L	21156	Standard
S	34	3198.7	3.3				ug/L	3419	Standard
Sr	88	73.3	17.2				ug/L	72	Standard
C	12	130.0	27.7				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	20.8				mg/L	17	Standard
Dy	164	1484.1	12.1				mg/L	16	Standard
Ho-1	165	761.7	6.0				mg/L	7	Standard
Er	166	820.0	8.5				mg/L	7	Standard
I	127	32808.8	1.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.485	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.605	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.411
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.761
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606145102PS WG575057-01
Sample Date/Time: Friday, July 01, 2016 18:25:57
Number of Replicates: 3
Autosampler Position: 251
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68702.1	2.1				ug/L	76456	Standard
	Be	9	54558.1	0.5	**54.2325**	1.076	2.0	ug/L	20	Standard
	Al	27	435359.5	0.4	**2.8209**	0.068	2.4	ug/L	1307	Standard
	Sc	45	39865.7	0.5				ug/L	41174	Standard
	Ti	47	2435.2	3.0	**7.3862**	0.145	2.0	ug/L	27	Standard
	V	51	420388.1	0.9	**50.9256**	0.275	0.5	ug/L	1434	Standard
	Cr	52	419034.6	1.2	**50.8325**	0.081	0.2	ug/L	7733	Standard
	Cr	53	51908.8	1.8	**50.9245**	0.712	1.4	ug/L	442	Standard
	Mn	55	776755.3	1.1	**102.4737**	0.893	0.9	ug/L	723	Standard
	Co	59	378685.6	0.4	**49.3890**	0.417	0.8	ug/L	217	Standard
	Ni	60	108298.4	0.9	**52.0251**	0.585	1.1	ug/L	304	Standard
	Cu	65	113206.4	0.7	**55.3835**	0.277	0.5	ug/L	181	Standard
	Zn	66	96400.4	0.9	**78.4751**	0.327	0.4	ug/L	215	Standard
>	Ge	72	521011.3	1.1				ug/L	520809	Standard
	As	75	67285.7	0.6	**54.5295**	0.414	0.8	ug/L	-52	Standard
	Se	82	7236.2	0.6	**57.1362**	0.906	1.6	ug/L	17	Standard
	Se-1	77	4996.5	1.7	**57.7421**	0.807	1.4	ug/L	56	Standard
>	Ga	71	1458.4	7.9				mg/L	25	Standard
	Rb	85	14268.4	1.9				ug/L	28	Standard
	Y	89	451572.6	1.0				ug/L	447395	Standard
>	Rh	103	11.7	65.5				ug/L	15	Standard
	Mo	98	552.6	6.3	**0.1658**	0.011	6.4	ug/L	113	Standard
	Ag	107	351874.8	0.5	**50.8757**	0.454	0.9	ug/L	108	Standard
	Cd	111	117424.6	1.2	**52.9718**	0.394	0.7	mg/L	3	Standard
	Cd	114	288020.9	0.5	**52.4815**	0.298	0.6	ug/L	20	Standard
>	In	115	602467.1	0.7				ug/L	625728	Standard
	Sn	118	795.0	18.9	**0.0440**	0.023	53.3	ug/L	568	Standard
	Sb	123	215335.2	6.0	**43.2556**	2.906	6.7	ug/L	612	Standard
	Ba	135	125031.8	0.4	**59.6735**	0.233	0.4	ug/L	21	Standard
	Ce	140	66756.7	0.9				ug/L	245	Standard
>	Tb	159	900882.6	0.1				ug/L	950397	Standard
	Ho	165	808.4	8.4				ug/L	7	Standard
	Tl	203	420669.9	0.3	**49.6255**	0.118	0.2	ug/L	15	Standard
	Tl	205	380791.1	1.2	**50.5823**	0.852	1.7	ug/L	13	Standard
	Pb	206	285006.3	0.5	**53.2753**	0.097	0.2	ug/L	264	Standard
	Pb	207	249618.4	0.3	**51.3775**	0.277	0.5	ug/L	222	Standard
	Pb	208	1065809.7	0.5	**53.7118**	0.481	0.9	ug/L	959	Standard
	U	238	362717.7	0.5	**47.6544**	0.373	0.8	ug/L	9	Standard
>	Bi	209	521960.5	0.5				ug/L	552821	Standard

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Na	23	3.3	173.2	**10.3171**	17.861	173.1	mg/L	2	Standard
Mg	24	45.0	11.1	**-0.0059**	0.006	106.3	mg/L	55	Standard
K	39	41.7	36.7	**0.0338**	0.061	179.3	mg/L	28	Standard
Ca	43	31.7	39.7	**0.5190**	1.184	228.2	mg/L	27	Standard
Fe	54	1881.8	1.4	**1.4253**	0.028	2.0	mg/L	147	Standard
Fe	57	691.7	14.6	**1.3919**	0.331	23.7	mg/L	268	Standard
> **Sc-1**	45	39865.7	0.5				mg/L	41174	Standard
Cl	35	69700.6	0.3				ug/L	69550	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	2040.1	6.7				ug/L	1950	Standard
P	31	8364.0	2.5				ug/L	21156	Standard
S	34	3095.3	6.1				ug/L	3419	Standard
Sr	88	78.3	13.3				ug/L	72	Standard
C	12	143.3	45.4				mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	76.7	27.2				mg/L	17	Standard
Dy	164	1201.3	2.6				mg/L	16	Standard
Ho-1	165	808.4	8.4				mg/L	7	Standard
Er	166	740.0	7.2				mg/L	7	Standard
I	127	33642.3	3.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.859	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.039	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.283
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.418
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 18:29:10
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	58021.1	45.4				ug/L	76456	Standard
	Be	9	6020.3	96.8	**8.3334**	6.673	80.1	ug/L	20	Standard
	Al	27	1011614.4	93.0	**9.3377**	7.369	78.9	ug/L	1307	Standard
	Sc	45	36951.3	31.6				ug/L	41174	Standard
	Ti	47	4070.2	92.8	**14.0397**	11.313	80.6	ug/L	27	Standard
	V	51	57472.3	77.9	**8.2250**	6.608	80.3	ug/L	1434	Standard
	Cr	52	54950.0	85.4	**6.7134**	5.707	85.0	ug/L	7733	Standard
	Cr	53	6442.1	89.3	**6.7802**	5.559	82.0	ug/L	442	Standard
	Mn	55	56604.6	81.4	**8.6926**	6.701	77.1	ug/L	723	Standard
	Co	59	53000.8	82.9	**8.1234**	6.317	77.8	ug/L	217	Standard
	Ni	60	12997.1	88.3	**6.9634**	5.472	78.6	ug/L	304	Standard
	Cu	65	12947.1	88.8	**7.1426**	5.586	78.2	ug/L	181	Standard
	Zn	66	7783.4	89.0	**6.9746**	5.495	78.8	ug/L	215	Standard
>	Ge	72	483616.6	27.5				ug/L	520809	Standard
	As	75	8453.5	94.9	**7.7122**	6.230	80.8	ug/L	-52	Standard
	Se	82	939.4	85.8	**8.3049**	6.310	76.0	ug/L	17	Standard
	Se-1	77	622.0	88.3	**7.4670**	6.184	82.8	ug/L	56	Standard
>	Ga	71	31.7	18.2				mg/L	25	Standard
	Rb	85	225.0	67.8				ug/L	28	Standard
	Y	89	466261.8	17.1				ug/L	447395	Standard
>	Rh	103	20.0	25.0				ug/L	15	Standard
	Mo	98	38601.8	81.6	**16.0710**	14.394	89.6	ug/L	113	Standard
	Ag	107	46584.8	78.1	**8.1335**	7.118	87.5	ug/L	108	Standard
	Cd	111	17137.6	87.9	**9.4386**	9.351	99.1	mg/L	3	Standard
	Cd	114	41205.7	85.8	**9.1450**	8.904	97.4	ug/L	20	Standard
>	In	115	568605.0	21.6				ug/L	625728	Standard
	Sn	118	45202.2	81.7	**8.7560**	8.318	95.0	ug/L	568	Standard
	Sb	123	37304.6	74.8	**8.9935**	7.626	84.8	ug/L	612	Standard
	Ba	135	15451.6	84.3	**8.9549**	8.599	96.0	ug/L	21	Standard
	Ce	140	933.4	35.7				ug/L	245	Standard
>	Tb	159	834241.1	25.5				ug/L	950397	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	59816.1	84.3	**8.9067**	8.400	94.3	ug/L	15	Standard
	Tl	205	54932.9	85.7	**9.2244**	8.777	95.1	ug/L	13	Standard
	Pb	206	36885.4	75.9	**8.5933**	7.372	85.8	ug/L	264	Standard
	Pb	207	34161.2	77.5	**8.7804**	7.649	87.1	ug/L	222	Standard
	Pb	208	153924.2	83.6	**9.7508**	9.146	93.8	ug/L	959	Standard
	U	238	54480.0	85.8	**9.0581**	8.618	95.1	ug/L	9	Standard
>	Bi	209	483651.3	25.0				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	588.3	82.1	**0.7880**	0.634	80.5	mg/L	55	Standard
K	39	178.3	67.8	**0.7306**	0.604	82.7	mg/L	28	Standard
Ca	43	45.0	40.1	**2.8887**	3.750	129.8	mg/L	27	Standard
Fe	54	989.8	78.7	**0.8883**	0.763	85.9	mg/L	147	Standard
Fe	57	551.7	36.3	**1.2806**	1.046	81.6	mg/L	268	Standard
> **Sc-1**	45	36951.3	31.6				mg/L	41174	Standard
Cl	35	32002.2	14.3				ug/L	69550	Standard
Kr	83	3.3	75.5				ug/L	1	Standard
Br	81	793.4	7.2				ug/L	1950	Standard
P	31	12486.0	48.7				ug/L	21156	Standard
S	34	1356.7	20.0				ug/L	3419	Standard
Sr	88	81.7	21.5				ug/L	72	Standard
C	12	106.7	35.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	246.7	83.3				mg/L	17	Standard
Dy	164	12.1	44.0				mg/L	16	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	26.7	86.6				mg/L	7	Standard
I	127	4540.7	35.1				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	16.667		
Al	27	18.675		
Sc	45			
Ti	47	14.040		
V	51	16.450		
Cr	52	13.427		
Cr	53			
Mn	55	17.385		
Co	59	16.247		
Ni	60	13.927		
Cu	65	14.285		
Zn	66	13.949		
> Ge	72		92.859	
As	75	15.424		
Se	82	16.610		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	16.071		
Ag	107	16.267		
Cd	111	18.877		
Cd	114			
In	115			90.871
Sn	118	17.512		
Sb	123	17.987		
Ba	135	17.910		
Ce	140			
Tb	159			
Ho	165			
Tl	203	17.813		
Tl	205			
Pb	206			
Pb	207			
Pb	208	19.502		
U	238	18.116		
Bi	209			87.488
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	
QC Std 6	Ti	47	

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QC Std 6	V	51
QC Std 6	Cr	52
QC Std 6	Mn	55
QC Std 6	Co	59
QC Std 6	Ni	60
QC Std 6	Cu	65
QC Std 6	Zn	66
QC Std 6	As	75
QC Std 6	Se	82
QC Std 6	Mo	98
QC Std 6	Ag	107
QC Std 6	Cd	111
QC Std 6	Sb	123
QC Std 6	Ba	135
QC Std 6	Tl	203
QC Std 6	Pb	208
QC Std 6	U	238

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 18:32:22
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73071.2	5.8				ug/L	76456	Standard
	Be	9	8.3	34.6	**-0.0120**	0.003	24.3	ug/L	20	Standard
	Al	27	2066.8	22.2	**0.0025**	0.003	126.6	ug/L	1307	Standard
	Sc	45	38902.0	12.0				ug/L	41174	Standard
	Ti	47	28.7	14.1	**0.0029**	0.006	212.7	ug/L	27	Standard
	V	51	892.2	10.9	**-0.0904**	0.007	8.2	ug/L	1434	Standard
	Cr	52	3594.8	10.0	**-0.5264**	0.046	8.8	ug/L	7733	Standard
	Cr	53	233.3	24.1	**-0.1899**	0.023	11.9	ug/L	442	Standard
	Mn	55	789.0	24.3	**0.0021**	0.023	1087.1	ug/L	723	Standard
	Co	59	303.0	15.4	**0.0101**	0.007	68.9	ug/L	217	Standard
	Ni	60	205.0	9.3	**-0.0541**	0.015	27.0	ug/L	304	Standard
	Cu	65	106.0	5.3	**-0.0215**	0.011	50.6	ug/L	181	Standard
	Zn	66	184.7	6.5	**-0.0287**	0.024	81.9	ug/L	215	Standard
>	Ge	72	527063.8	18.3				ug/L	520809	Standard
	As	75	45.7	91.0	**0.0818**	0.037	44.8	ug/L	-52	Standard
	Se	82	44.8	44.7	**0.2236**	0.160	71.7	ug/L	17	Standard
	Se-1	77	43.0	11.6	**-0.1831**	0.048	26.1	ug/L	56	Standard
>	Ga	71	36.7	7.9				mg/L	25	Standard
	Rb	85	58.3	40.5				ug/L	28	Standard
	Y	89	504597.8	24.2				ug/L	447395	Standard
>	Rh	103	18.3	83.3				ug/L	15	Standard
	Mo	98	262.6	10.7	**0.0552**	0.011	19.4	ug/L	113	Standard
	Ag	107	185.3	19.2	**0.0107**	0.005	48.4	ug/L	108	Standard
	Cd	111	28.5	36.7	**0.0089**	0.004	43.7	mg/L	3	Standard
	Cd	114	81.6	56.2	**0.0129**	0.006	47.4	ug/L	20	Standard
>	In	115	700695.8	22.4				ug/L	625728	Standard
	Sn	118	6341.5	38.7	**0.7820**	0.237	30.3	ug/L	568	Standard
	Sb	123	763.9	43.6	**0.0944**	0.040	42.0	ug/L	612	Standard
	Ba	135	62.7	16.0	**0.0082**	0.003	42.5	ug/L	21	Standard
	Ce	140	145.0	79.5				ug/L	245	Standard
>	Tb	159	1042763.2	15.4				ug/L	950397	Standard
	Ho	165	1.7	173.2				ug/L	7	Standard
	Tl	203	182.0	22.0	**0.0180**	0.002	11.1	ug/L	15	Standard
	Tl	205	148.3	9.7	**0.0076**	0.002	25.0	ug/L	13	Standard
	Pb	206	414.0	16.3	**0.0241**	0.004	18.3	ug/L	264	Standard
	Pb	207	348.0	9.0	**0.0172**	0.006	37.6	ug/L	222	Standard
	Pb	208	1430.4	10.4	**0.0153**	0.006	41.0	ug/L	959	Standard
	U	238	124.7	10.8	**0.0142**	0.002	12.8	ug/L	9	Standard
>	Bi	209	596038.7	14.4				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	26.7	65.8	**-0.0280**	0.021	73.8	mg/L	55	Standard
K	39	30.0	60.1	**-0.0132**	0.067	507.4	mg/L	28	Standard
Ca	43	28.3	10.2	**0.2774**	0.122	44.0	mg/L	27	Standard
Fe	54	104.6	43.7	**-0.0136**	0.033	242.5	mg/L	147	Standard
Fe	57	286.7	7.0	**0.1321**	0.048	36.6	mg/L	268	Standard
Sc-1	45	38902.0	12.0				mg/L	41174	Standard
Cl	35	29524.2	6.8				ug/L	69550	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	630.0	34.9				ug/L	1950	Standard
P	31	11456.4	38.3				ug/L	21156	Standard
S	34	1375.1	3.3				ug/L	3419	Standard
Sr	88	53.3	37.9				ug/L	72	Standard
C	12	66.7	48.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	77.5				mg/L	17	Standard
Dy	164	13.0	179.6				mg/L	16	Standard
Ho-1	165	1.7	173.2				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	7	Standard
I	127	2638.6	27.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.201	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	111.981
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	107.818
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Se	82	
QC Std 7	Sn	118	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606145102SDL WG575057-02
Sample Date/Time: Friday, July 01, 2016 18:35:35
Number of Replicates: 3
Autosampler Position: 252
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62174.0	2.2				ug/L	76456	Standard
	Be	9	20.0	25.0	**0.0022**	0.006	269.5	ug/L	20	Standard
	Al	27	84546.9	0.4	**0.5973**	0.011	1.9	ug/L	1307	Standard
	Sc	45	38149.7	3.1				ug/L	41174	Standard
	Ti	47	483.3	4.9	**1.4725**	0.081	5.5	ug/L	27	Standard
	V	51	4248.5	1.3	**0.3438**	0.006	1.8	ug/L	1434	Standard
	Cr	52	8109.2	1.0	**0.0820**	0.013	16.2	ug/L	7733	Standard
	Cr	53	496.7	23.7	**0.0992**	0.125	126.0	ug/L	442	Standard
	Mn	55	78567.9	0.9	**10.7900**	0.016	0.2	ug/L	723	Standard
	Co	59	1117.0	0.8	**0.1236**	0.000	0.1	ug/L	217	Standard
	Ni	60	775.4	3.9	**0.2391**	0.018	7.4	ug/L	304	Standard
	Cu	65	1369.4	4.4	**0.6302**	0.035	5.5	ug/L	181	Standard
	Zn	66	5157.9	1.7	**4.2377**	0.083	2.0	ug/L	215	Standard
>	**Ge**	72	496310.3	0.7				ug/L	520809	Standard
	As	75	145.9	13.8	**0.1691**	0.016	9.6	ug/L	-52	Standard
	Se	82	21.4	35.8	**0.0511**	0.064	125.1	ug/L	17	Standard
	Se-1	77	46.7	8.7	**-0.1116**	0.053	47.6	ug/L	56	Standard
>	**Ga**	71	255.0	16.8				mg/L	25	Standard
	Rb	85	2703.6	4.1				ug/L	28	Standard
	Y	89	417509.6	1.1				ug/L	447395	Standard
>	**Rh**	103	16.7	69.3				ug/L	15	Standard
	Mo	98	345.0	36.3	**0.1002**	0.045	45.1	ug/L	113	Standard
	Ag	107	125.3	22.2	**0.0061**	0.004	68.7	ug/L	108	Standard
	Cd	111	34.3	46.4	**0.0139**	0.008	54.2	mg/L	3	Standard
	Cd	114	42.7	17.1	**0.0082**	0.001	17.1	ug/L	20	Standard
>	**In**	115	575196.5	0.1				ug/L	625728	Standard
	Sn	118	706.7	42.9	**0.0352**	0.051	145.6	ug/L	568	Standard
	Sb	123	527.1	13.9	**0.0772**	0.015	20.0	ug/L	612	Standard
	Ba	135	4163.9	5.4	**2.0642**	0.113	5.5	ug/L	21	Standard
	Ce	140	7787.1	30.7				ug/L	245	Standard
>	**Tb**	159	864381.3	0.7				ug/L	950397	Standard
	Ho	165	85.0	63.6				ug/L	7	Standard
	Tl	203	83.3	41.3	**0.0096**	0.004	45.0	ug/L	15	Standard
	Tl	205	73.3	55.1	**0.0005**	0.006	1188.2	ug/L	13	Standard
	Pb	206	2545.5	9.1	**0.4551**	0.047	10.4	ug/L	264	Standard
	Pb	207	2088.8	9.3	**0.4046**	0.043	10.7	ug/L	222	Standard
	Pb	208	9232.8	9.4	**0.4395**	0.047	10.7	ug/L	959	Standard
	U	238	222.7	20.7	**0.0304**	0.006	21.2	ug/L	9	Standard
>	**Bi**	209	498353.7	0.7				ug/L	552821	Standard

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Na	23	1.7	173.2	**5.2196**	9.032	173.0	mg/L	2	Standard
Mg	24	50.0	30.0	**0.0033**	0.021	637.4	mg/L	55	Standard
K	39	31.7	32.9	**-0.0007**	0.041	5467.5	mg/L	28	Standard
Ca	43	28.3	50.9	**0.3254**	1.410	433.3	mg/L	27	Standard
Fe	54	321.0	6.6	**0.1731**	0.021	12.0	mg/L	147	Standard
Fe	57	343.3	20.8	**0.3318**	0.218	65.6	mg/L	268	Standard
> **Sc-1**	45	38149.7	3.1				mg/L	41174	Standard
Cl	35	66614.8	2.2				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	1683.4	14.0				ug/L	1950	Standard
P	31	6868.2	3.4				ug/L	21156	Standard
S	34	2993.6	2.7				ug/L	3419	Standard
Sr	88	78.3	16.1				ug/L	72	Standard
C	12	60.0					mg/L	163	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	190.0	34.5				mg/L	17	Standard
Dy	164	136.6	41.3				mg/L	16	Standard
Ho-1	165	85.0	63.6				mg/L	7	Standard
Er	166	140.0	70.3				mg/L	7	Standard
I	127	27162.7	3.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		81.320	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.296	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.924
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.147
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606145102SDL WG575057-02
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Method 6020 - Summary Report

Sample ID: L1606145103
Sample Date/Time: Friday, July 01, 2016 18:38:46
Number of Replicates: 3
Autosampler Position: 253
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63245.1	2.3				ug/L	76456	Standard
	Be	9	45.0	29.4	**0.0289**	0.015	52.5	ug/L	20	Standard
	Al	27	154217.6	1.4	**1.0792**	0.028	2.6	ug/L	1307	Standard
	Sc	45	38011.0	1.7				ug/L	41174	Standard
	Ti	47	1647.1	2.7	**5.2249**	0.166	3.2	ug/L	27	Standard
	V	51	10217.6	1.1	**1.1067**	0.009	0.8	ug/L	1434	Standard
	Cr	52	13566.7	1.7	**0.7914**	0.021	2.7	ug/L	7733	Standard
	Cr	53	1203.4	4.0	**0.8334**	0.047	5.6	ug/L	442	Standard
	Mn	55	179485.2	0.5	**24.7976**	0.092	0.4	ug/L	723	Standard
	Co	59	2042.5	2.9	**0.2506**	0.009	3.7	ug/L	217	Standard
	Ni	60	1701.1	1.2	**0.7078**	0.006	0.9	ug/L	304	Standard
	Cu	65	2602.9	0.6	**1.2654**	0.012	0.9	ug/L	181	Standard
	Zn	66	13566.1	2.3	**11.4481**	0.299	2.6	ug/L	215	Standard
>	Ge	72	495954.1	0.5				ug/L	520809	Standard
	As	75	526.1	8.4	**0.4926**	0.036	7.4	ug/L	-52	Standard
	Se	82	19.2	20.2	**0.0327**	0.031	96.0	ug/L	17	Standard
	Se-1	77	60.7	19.3	**0.0602**	0.141	233.6	ug/L	56	Standard
>	Ga	71	858.4	5.0				mg/L	25	Standard
	Rb	85	6271.3	6.6				ug/L	28	Standard
	Y	89	419752.0	1.1				ug/L	447395	Standard
>	Rh	103	16.7	45.8				ug/L	15	Standard
	Mo	98	384.6	7.0	**0.1144**	0.010	8.4	ug/L	113	Standard
	Ag	107	109.3	5.4	**0.0037**	0.001	23.4	ug/L	108	Standard
	Cd	111	94.6	7.9	**0.0424**	0.003	8.2	mg/L	3	Standard
	Cd	114	251.8	5.8	**0.0481**	0.003	5.6	ug/L	20	Standard
>	In	115	575203.1	0.2				ug/L	625728	Standard
	Sn	118	680.0	22.3	**0.0307**	0.025	82.8	ug/L	568	Standard
	Sb	123	333.6	22.9	**0.0365**	0.016	43.9	ug/L	612	Standard
	Ba	135	10023.6	1.9	**4.9942**	0.091	1.8	ug/L	21	Standard
	Ce	140	48280.1	1.0				ug/L	245	Standard
>	Tb	159	860542.4	0.9				ug/L	950397	Standard
	Ho	165	373.3	17.4				ug/L	7	Standard
	Tl	203	98.7	6.5	**0.0114**	0.001	7.5	ug/L	15	Standard
	Tl	205	111.7	22.1	**0.0057**	0.003	56.6	ug/L	13	Standard
	Pb	206	31345.7	1.0	**6.0875**	0.078	1.3	ug/L	264	Standard
	Pb	207	25979.9	0.2	**5.5497**	0.058	1.0	ug/L	222	Standard
	Pb	208	113055.9	0.8	**5.9143**	0.107	1.8	ug/L	959	Standard
	U	238	480.3	2.8	**0.0657**	0.001	2.2	ug/L	9	Standard
>	Bi	209	499251.2	1.0				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	46.7	6.2	**-0.0011**	0.005	417.9	mg/L	55	Standard
K	39	40.0	50.0	**0.0355**	0.084	236.7	mg/L	28	Standard
Ca	43	20.0	43.3	**-0.4832**	0.857	177.3	mg/L	27	Standard
Fe	54	979.0	3.0	**0.7328**	0.021	2.8	mg/L	147	Standard
Fe	57	456.7	4.4	**0.7168**	0.091	12.6	mg/L	268	Standard
Sc-1	45	38011.0	1.7				mg/L	41174	Standard
Cl	35	67610.5	0.8				ug/L	69550	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	1716.8	12.9				ug/L	1950	Standard
P	31	8008.8	5.2				ug/L	21156	Standard
S	34	2928.6	6.6				ug/L	3419	Standard
Sr	88	71.7	26.4				ug/L	72	Standard
C	12	106.7	54.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	68.6				mg/L	17	Standard
Dy	164	644.2	14.1				mg/L	16	Standard
Ho-1	165	373.3	17.4				mg/L	7	Standard
Er	166	400.0	22.2				mg/L	7	Standard
I	127	30482.3	1.3				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		82.721	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.228	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.925
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.310
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145104
Sample Date/Time: Friday, July 01, 2016 18:41:58
Number of Replicates: 3
Autosampler Position: 254
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63385.7	2.2				ug/L	76456	Standard
	Be	9	50.0	26.5	**0.0338**	0.013	38.3	ug/L	20	Standard
	Al	27	725235.3	1.5	**5.1021**	0.166	3.3	ug/L	1307	Standard
	Sc	45	39148.9	2.8				ug/L	41174	Standard
	Ti	47	1767.4	1.7	**5.5568**	0.163	2.9	ug/L	27	Standard
	V	51	9435.8	2.3	**0.9951**	0.038	3.8	ug/L	1434	Standard
	Cr	52	13141.4	0.9	**0.7193**	0.019	2.6	ug/L	7733	Standard
	Cr	53	1133.4	1.8	**0.7491**	0.025	3.3	ug/L	442	Standard
	Mn	55	184948.0	0.3	**25.3023**	0.378	1.5	ug/L	723	Standard
	Co	59	2891.6	3.9	**0.3629**	0.009	2.4	ug/L	217	Standard
	Ni	60	1981.8	1.1	**0.8399**	0.007	0.8	ug/L	304	Standard
	Cu	65	2972.3	0.4	**1.4404**	0.025	1.7	ug/L	181	Standard
	Zn	66	14124.9	1.1	**11.8061**	0.091	0.8	ug/L	215	Standard
>	**Ge**	72	500981.4	1.8				ug/L	520809	Standard
	As	75	525.3	4.0	**0.4878**	0.024	5.0	ug/L	-52	Standard
	Se	82	27.2	11.1	**0.0974**	0.029	29.5	ug/L	17	Standard
	Se-1	77	60.0	10.4	**0.0461**	0.088	191.5	ug/L	56	Standard
>	**Ga**	71	815.0	2.8				mg/L	25	Standard
	Rb	85	6224.6	2.3				ug/L	28	Standard
	Y	89	425374.4	1.5				ug/L	447395	Standard
>	**Rh**	103	25.0	40.0				ug/L	15	Standard
	Mo	98	520.6	8.2	**0.1605**	0.013	8.3	ug/L	113	Standard
	Ag	107	111.7	7.6	**0.0038**	0.001	37.5	ug/L	108	Standard
	Cd	111	92.7	8.2	**0.0408**	0.003	7.6	mg/L	3	Standard
	Cd	114	200.3	11.6	**0.0377**	0.005	12.6	ug/L	20	Standard
>	**In**	115	583569.6	1.1				ug/L	625728	Standard
	Sn	118	673.3	18.0	**0.0279**	0.019	69.1	ug/L	568	Standard
	Sb	123	316.8	22.4	**0.0319**	0.014	44.3	ug/L	612	Standard
	Ba	135	10430.3	1.6	**5.1226**	0.027	0.5	ug/L	21	Standard
	Ce	140	51980.7	2.3				ug/L	245	Standard
>	**Tb**	159	866344.8	1.0				ug/L	950397	Standard
	Ho	165	438.3	11.9				ug/L	7	Standard
	Tl	203	128.0	6.4	**0.0149**	0.001	5.7	ug/L	15	Standard
	Tl	205	108.3	13.3	**0.0051**	0.002	35.3	ug/L	13	Standard
	Pb	206	26433.4	1.2	**5.0710**	0.132	2.6	ug/L	264	Standard
	Pb	207	22121.5	0.6	**4.6673**	0.113	2.4	ug/L	222	Standard
	Pb	208	95760.1	0.8	**4.9468**	0.074	1.5	ug/L	959	Standard
	U	238	579.3	5.3	**0.0785**	0.005	6.6	ug/L	9	Standard
>	**Bi**	209	504799.5	1.9				ug/L	552821	Standard

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Na	23	1.7	173.2	**5.2809**	9.138	173.0	mg/L	2	Standard
Mg	24	46.7	27.0	**-0.0030**	0.014	461.6	mg/L	55	Standard
K	39	46.7	6.2	**0.0571**	0.014	24.3	mg/L	28	Standard
Ca	43	46.7	16.4	**2.0216**	0.845	41.8	mg/L	27	Standard
Fe	54	948.7	5.1	**0.6833**	0.021	3.0	mg/L	147	Standard
Fe	57	496.7	2.9	**0.8012**	0.035	4.4	mg/L	268	Standard
> **Sc-1**	45	39148.9	2.8				mg/L	41174	Standard
Cl	35	69866.8	2.4				ug/L	69550	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	1733.4	3.8				ug/L	1950	Standard
P	31	8088.8	1.5				ug/L	21156	Standard
S	34	3277.0	4.5				ug/L	3419	Standard
Sr	88	95.0	27.9				ug/L	72	Standard
C	12	93.3	49.5				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	17	Standard
Dy	164	709.7	12.9				mg/L	16	Standard
Ho-1	165	438.3	11.9				mg/L	7	Standard
Er	166	493.3	16.5				mg/L	7	Standard
I	127	31300.6	1.6				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		82.905	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.193	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.263
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.313
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145105
Sample Date/Time: Friday, July 01, 2016 18:45:09
Number of Replicates: 3
Autosampler Position: 255
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64614.2	2.4				ug/L	76456	Standard
	Be	9	185.0	11.8	**0.1761**	0.027	15.5	ug/L	20	Standard
	Al	27	102955.3	1.3	**0.7016**	0.016	2.3	ug/L	1307	Standard
	Sc	45	38894.9	1.6				ug/L	41174	Standard
	Ti	47	5095.2	2.9	**16.0563**	0.595	3.7	ug/L	27	Standard
	V	51	12093.5	2.4	**1.3198**	0.050	3.8	ug/L	1434	Standard
	Cr	52	18515.6	1.7	**1.3928**	0.062	4.4	ug/L	7733	Standard
	Cr	53	1865.1	14.6	**1.4862**	0.264	17.8	ug/L	442	Standard
	Mn	55	32921.4	0.8	**4.3867**	0.071	1.6	ug/L	723	Standard
	Co	59	1608.8	2.8	**0.1873**	0.008	4.3	ug/L	217	Standard
	Ni	60	1860.4	4.4	**0.7722**	0.043	5.6	ug/L	304	Standard
	Cu	65	2193.8	2.2	**1.0354**	0.028	2.7	ug/L	181	Standard
	Zn	66	9716.8	1.5	**8.0047**	0.192	2.4	ug/L	215	Standard
>	**Ge**	72	504722.0	1.0				ug/L	520809	Standard
	As	75	1470.5	3.8	**1.2746**	0.057	4.4	ug/L	-52	Standard
	Se	82	28.8	14.7	**0.1088**	0.036	32.9	ug/L	17	Standard
	Se-1	77	55.7	13.5	**-0.0132**	0.085	641.5	ug/L	56	Standard
>	**Ga**	71	1173.4	4.0				mg/L	25	Standard
	Rb	85	5657.7	5.6				ug/L	28	Standard
	Y	89	430091.6	2.7				ug/L	447395	Standard
>	**Rh**	103	10.0	100.0				ug/L	15	Standard
	Mo	98	330.9	6.7	**0.0921**	0.006	6.8	ug/L	113	Standard
	Ag	107	127.3	16.8	**0.0060**	0.003	57.0	ug/L	108	Standard
	Cd	111	132.1	1.6	**0.0585**	0.002	2.8	mg/L	3	Standard
	Cd	114	337.6	10.3	**0.0629**	0.007	11.3	ug/L	20	Standard
>	**In**	115	589920.6	1.4				ug/L	625728	Standard
	Sn	118	773.4	25.8	**0.0430**	0.031	72.7	ug/L	568	Standard
	Sb	123	374.2	12.0	**0.0430**	0.008	19.0	ug/L	612	Standard
	Ba	135	10208.8	2.5	**4.9590**	0.061	1.2	ug/L	21	Standard
	Ce	140	28101.1	3.0				ug/L	245	Standard
>	**Tb**	159	866375.5	1.2				ug/L	950397	Standard
	Ho	165	575.0	13.6				ug/L	7	Standard
	Tl	203	486.0	6.3	**0.0582**	0.003	5.7	ug/L	15	Standard
	Tl	205	386.7	8.6	**0.0431**	0.004	8.7	ug/L	13	Standard
	Pb	206	15320.4	2.2	**2.9057**	0.025	0.9	ug/L	264	Standard
	Pb	207	12702.3	2.1	**2.6467**	0.028	1.1	ug/L	222	Standard
	Pb	208	55482.0	1.8	**2.8316**	0.013	0.4	ug/L	959	Standard
	U	238	430.7	1.5	**0.0580**	0.000	0.2	ug/L	9	Standard
>	**Bi**	209	507193.8	1.5				ug/L	552821	Standard

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Na	23	1.7	173.2	**5.2063**	9.009	173.0	mg/L	2	Standard
Mg	24	56.7	27.0	**0.0097**	0.018	185.7	mg/L	55	Standard
K	39	65.0	33.5	**0.1320**	0.085	64.4	mg/L	28	Standard
Ca	43	21.7	13.3	**-0.3705**	0.255	68.8	mg/L	27	Standard
Fe	54	1363.7	6.4	**1.0335**	0.073	7.1	mg/L	147	Standard
Fe	57	556.7	6.9	**1.0056**	0.095	9.5	mg/L	268	Standard
> **Sc-1**	45	38894.9	1.6				mg/L	41174	Standard
Cl	35	69609.5	0.8				ug/L	69550	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	1780.1	1.7				ug/L	1950	Standard
P	31	8205.6	2.3				ug/L	21156	Standard
S	34	3335.4	2.7				ug/L	3419	Standard
Sr	88	61.7	20.4				ug/L	72	Standard
C	12	93.3	6.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	50.0				mg/L	17	Standard
Dy	164	880.2	8.3				mg/L	16	Standard
Ho-1	165	575.0	13.6				mg/L	7	Standard
Er	166	553.3	3.8				mg/L	7	Standard
I	127	31464.3	3.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		84.512	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.911	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.277
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.747
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606145105
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Method 6020 - Summary Report

Sample ID: L1606145106 WG574521-02
Sample Date/Time: Friday, July 01, 2016 18:48:21
Number of Replicates: 3
Autosampler Position: 256
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64025.1	3.2				ug/L	76456	Standard
	Be	9	150.0	10.0	**0.1401**	0.015	10.9	ug/L	20	Standard
	Al	27	373954.4	3.8	**2.6005**	0.138	5.3	ug/L	1307	Standard
	Sc	45	39992.7	0.8				ug/L	41174	Standard
	Ti	47	2911.6	0.9	**9.0743**	0.125	1.4	ug/L	27	Standard
	V	51	51458.1	1.3	**6.2169**	0.098	1.6	ug/L	1434	Standard
	Cr	52	21030.6	1.9	**1.6951**	0.060	3.5	ug/L	7733	Standard
	Cr	53	2078.5	6.6	**1.6910**	0.147	8.7	ug/L	442	Standard
	Mn	55	214722.6	3.4	**28.9695**	1.071	3.7	ug/L	723	Standard
	Co	59	3170.7	6.3	**0.3948**	0.028	7.2	ug/L	217	Standard
	Ni	60	4965.8	2.8	**2.2998**	0.080	3.5	ug/L	304	Standard
	Cu	65	11632.1	2.0	**5.7677**	0.126	2.2	ug/L	181	Standard
	Zn	66	12643.6	1.6	**10.3959**	0.197	1.9	ug/L	215	Standard
>	**Ge**	72	508214.5	0.5				ug/L	520809	Standard
	As	75	1760.7	0.9	**1.5067**	0.007	0.5	ug/L	-52	Standard
	Se	82	70.2	4.5	**0.4430**	0.026	5.8	ug/L	17	Standard
	Se-1	77	108.3	3.0	**0.6142**	0.044	7.2	ug/L	56	Standard
>	**Ga**	71	1403.4	6.8				mg/L	25	Standard
	Rb	85	5152.5	5.6				ug/L	28	Standard
	Y	89	465204.1	0.9				ug/L	447395	Standard
>	**Rh**	103	8.3	34.6				ug/L	15	Standard
	Mo	98	986.2	8.1	**0.3241**	0.024	7.4	ug/L	113	Standard
	Ag	107	197.7	29.4	**0.0165**	0.008	50.2	ug/L	108	Standard
	Cd	111	516.3	5.7	**0.2371**	0.011	4.7	mg/L	3	Standard
	Cd	114	1344.3	1.8	**0.2519**	0.006	2.5	ug/L	20	Standard
>	**In**	115	585874.6	1.3				ug/L	625728	Standard
	Sn	118	588.3	39.7	**0.0131**	0.038	286.1	ug/L	568	Standard
	Sb	123	350.0	28.7	**0.0385**	0.020	51.5	ug/L	612	Standard
	Ba	135	28617.3	1.6	**14.0306**	0.052	0.4	ug/L	21	Standard
	Ce	140	147578.6	1.0				ug/L	245	Standard
>	**Tb**	159	879044.3	0.3				ug/L	950397	Standard
	Ho	165	3460.4	5.6				ug/L	7	Standard
	Tl	203	284.7	28.0	**0.0338**	0.010	29.0	ug/L	15	Standard
	Tl	205	251.7	41.0	**0.0246**	0.014	57.8	ug/L	13	Standard
	Pb	206	17853.2	2.3	**3.3893**	0.091	2.7	ug/L	264	Standard
	Pb	207	14882.6	2.2	**3.1053**	0.081	2.6	ug/L	222	Standard
	Pb	208	65337.9	2.2	**3.3392**	0.088	2.6	ug/L	959	Standard
	U	238	2254.5	5.6	**0.3042**	0.018	6.0	ug/L	9	Standard
>	**Bi**	209	507833.7	0.4				ug/L	552821	Standard

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Na	23	1.7	173.2	**5.0936**	8.814	173.0	mg/L	2	Standard
Mg	24	113.3	21.8	**0.0760**	0.029	37.9	mg/L	55	Standard
K	39	38.3	27.2	**0.0199**	0.040	200.6	mg/L	28	Standard
Ca	43	53.3	27.1	**2.5349**	1.339	52.8	mg/L	27	Standard
Fe	54	2059.6	7.3	**1.5638**	0.117	7.5	mg/L	147	Standard
Fe	57	870.0	4.0	**1.9479**	0.099	5.1	mg/L	268	Standard
> **Sc-1**	45	39992.7	0.8				mg/L	41174	Standard
Cl	35	70901.6	2.0				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	2260.2	4.2				ug/L	1950	Standard
P	31	8212.2	3.0				ug/L	21156	Standard
S	34	3600.4	1.9				ug/L	3419	Standard
Sr	88	90.0	9.6				ug/L	72	Standard
C	12	176.7	19.9				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	40.0				mg/L	17	Standard
Dy	164	5100.9	5.6				mg/L	16	Standard
Ho-1	165	3460.4	5.6				mg/L	7	Standard
Er	166	3200.3	6.8				mg/L	7	Standard
I	127	34541.0	3.7				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		83.741	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.582	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.631
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.862
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606145107
Sample Date/Time: Friday, July 01, 2016 18:51:32
Number of Replicates: 3
Autosampler Position: 257
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64661.0	1.8				ug/L	76456	Standard
	Be	9	435.0	25.2	**0.4383**	0.108	24.7	ug/L	20	Standard
	Al	27	688124.2	2.3	**4.7442**	0.162	3.4	ug/L	1307	Standard
	Sc	45	39658.5	2.4				ug/L	41174	Standard
	Ti	47	13864.7	2.7	**43.2019**	1.047	2.4	ug/L	27	Standard
	V	51	37809.2	1.4	**4.4801**	0.052	1.2	ug/L	1434	Standard
	Cr	52	41323.6	2.8	**4.2278**	0.133	3.1	ug/L	7733	Standard
	Cr	53	4789.1	2.3	**4.4030**	0.102	2.3	ug/L	442	Standard
	Mn	55	173827.6	1.4	**23.2563**	0.280	1.2	ug/L	723	Standard
	Co	59	5908.8	1.9	**0.7552**	0.015	2.0	ug/L	217	Standard
	Ni	60	5550.3	1.2	**2.5679**	0.031	1.2	ug/L	304	Standard
	Cu	65	7217.7	3.4	**3.5237**	0.120	3.4	ug/L	181	Standard
	Zn	66	24798.3	1.6	**20.4085**	0.308	1.5	ug/L	215	Standard
>	**Ge**	72	512004.2	0.3				ug/L	520809	Standard
	As	75	8113.7	1.3	**6.7304**	0.082	1.2	ug/L	-52	Standard
	Se	82	47.8	17.9	**0.2581**	0.069	26.7	ug/L	17	Standard
	Se-1	77	78.3	7.5	**0.2474**	0.068	27.6	ug/L	56	Standard
>	**Ga**	71	2850.3	1.2				mg/L	25	Standard
	Rb	85	22646.9	3.8				ug/L	28	Standard
	Y	89	456860.0	1.6				ug/L	447395	Standard
>	**Rh**	103	15.0	57.7				ug/L	15	Standard
	Mo	98	1709.2	2.3	**0.5713**	0.010	1.8	ug/L	113	Standard
	Ag	107	176.7	8.5	**0.0131**	0.002	17.8	ug/L	108	Standard
	Cd	111	527.4	1.5	**0.2390**	0.005	2.0	mg/L	3	Standard
	Cd	114	1273.9	8.3	**0.2354**	0.018	7.7	ug/L	20	Standard
>	**In**	115	594063.6	0.5				ug/L	625728	Standard
	Sn	118	725.0	18.7	**0.0344**	0.022	63.4	ug/L	568	Standard
	Sb	123	399.2	21.2	**0.0476**	0.017	35.7	ug/L	612	Standard
	Ba	135	25921.5	1.4	**12.5319**	0.140	1.1	ug/L	21	Standard
	Ce	140	84609.0	2.8				ug/L	245	Standard
>	**Tb**	159	884122.7	1.5				ug/L	950397	Standard
	Ho	165	1811.8	3.2				ug/L	7	Standard
	Tl	203	2382.2	2.0	**0.2851**	0.004	1.5	ug/L	15	Standard
	Tl	205	2155.2	0.8	**0.2815**	0.002	0.8	ug/L	13	Standard
	Pb	206	34780.5	0.5	**6.5761**	0.037	0.6	ug/L	264	Standard
	Pb	207	29105.6	0.4	**6.0542**	0.048	0.8	ug/L	222	Standard
	Pb	208	126449.0	1.6	**6.4404**	0.086	1.3	ug/L	959	Standard
	U	238	1711.1	3.8	**0.2285**	0.010	4.3	ug/L	9	Standard
>	**Bi**	209	513045.7	0.5				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	66.7	21.7	**0.0208**	0.018	87.5	mg/L	55	Standard
K	39	66.7	33.8	**0.1333**	0.086	64.5	mg/L	28	Standard
Ca	43	33.3	8.7	**0.6944**	0.305	44.0	mg/L	27	Standard
Fe	54	5014.4	0.7	**3.9857**	0.129	3.2	mg/L	147	Standard
Fe	57	1586.7	5.6	**4.2576**	0.247	5.8	mg/L	268	Standard
> **Sc-1**	45	39658.5	2.4				mg/L	41174	Standard
Cl	35	72080.4	1.0				ug/L	69550	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	1970.1	9.5				ug/L	1950	Standard
P	31	8810.9	5.8				ug/L	21156	Standard
S	34	3717.1	6.6				ug/L	3419	Standard
Sr	88	71.7	22.4				ug/L	72	Standard
C	12	120.0	16.7				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	43.3	13.3				mg/L	17	Standard
Dy	164	2375.7	6.5				mg/L	16	Standard
Ho-1	165	1811.8	3.2				mg/L	7	Standard
Er	166	1693.4	3.3				mg/L	7	Standard
I	127	32022.1	0.2				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		84.573	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.309	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.940
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.805
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145108
Sample Date/Time: Friday, July 01, 2016 18:54:44
Number of Replicates: 3
Autosampler Position: 258
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65516.4	2.1				ug/L	76456	Standard
	Be	9	508.3	16.0	**0.5110**	0.092	17.9	ug/L	20	Standard
	Al	27	800380.4	1.8	**5.4489**	0.215	3.9	ug/L	1307	Standard
	Sc	45	41087.3	0.8				ug/L	41174	Standard
	Ti	47	14067.5	1.7	**43.1737**	0.244	0.6	ug/L	27	Standard
	V	51	35953.7	1.5	**4.1835**	0.016	0.4	ug/L	1434	Standard
	Cr	52	58594.1	1.0	**6.2897**	0.017	0.3	ug/L	7733	Standard
	Cr	53	6973.3	2.0	**6.4961**	0.144	2.2	ug/L	442	Standard
	Mn	55	180922.6	1.7	**23.8431**	0.175	0.7	ug/L	723	Standard
	Co	59	6047.5	0.4	**0.7616**	0.011	1.5	ug/L	217	Standard
	Ni	60	5785.8	2.5	**2.6404**	0.042	1.6	ug/L	304	Standard
	Cu	65	5630.4	0.4	**2.6905**	0.031	1.2	ug/L	181	Standard
	Zn	66	23391.7	1.5	**18.9480**	0.094	0.5	ug/L	215	Standard
>	**Ge**	72	519833.8	1.1				ug/L	520809	Standard
	As	75	6871.0	0.9	**5.6213**	0.013	0.2	ug/L	-52	Standard
	Se	82	36.9	12.8	**0.1662**	0.040	24.4	ug/L	17	Standard
	Se-1	77	75.7	12.8	**0.2017**	0.109	53.9	ug/L	56	Standard
>	**Ga**	71	2690.2	10.4				mg/L	25	Standard
	Rb	85	22987.4	0.8				ug/L	28	Standard
	Y	89	454979.6	1.6				ug/L	447395	Standard
>	**Rh**	103	13.3	78.1				ug/L	15	Standard
	Mo	98	1493.9	2.8	**0.4956**	0.012	2.5	ug/L	113	Standard
	Ag	107	175.0	7.7	**0.0128**	0.002	15.5	ug/L	108	Standard
	Cd	111	498.3	4.3	**0.2253**	0.011	4.8	mg/L	3	Standard
	Cd	114	1246.2	5.5	**0.2300**	0.012	5.2	ug/L	20	Standard
>	**In**	115	594885.0	1.0				ug/L	625728	Standard
	Sn	118	763.4	27.5	**0.0404**	0.033	82.5	ug/L	568	Standard
	Sb	123	358.6	20.7	**0.0392**	0.014	36.9	ug/L	612	Standard
	Ba	135	27274.9	0.9	**13.1693**	0.072	0.5	ug/L	21	Standard
	Ce	140	89319.2	2.1				ug/L	245	Standard
>	**Tb**	159	880456.6	1.2				ug/L	950397	Standard
	Ho	165	2008.5	5.9				ug/L	7	Standard
	Tl	203	2224.8	1.1	**0.2667**	0.002	0.9	ug/L	15	Standard
	Tl	205	2000.1	8.4	**0.2612**	0.026	9.8	ug/L	13	Standard
	Pb	206	30072.5	0.9	**5.6895**	0.126	2.2	ug/L	264	Standard
	Pb	207	25200.3	0.2	**5.2438**	0.069	1.3	ug/L	222	Standard
	Pb	208	108593.2	0.7	**5.5329**	0.068	1.2	ug/L	959	Standard
	U	238	1657.1	2.7	**0.2215**	0.003	1.4	ug/L	9	Standard
>	**Bi**	209	512295.4	1.3				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	71.7	51.4	**0.0236**	0.043	182.4	mg/L	55	Standard
K	39	88.3	14.2	**0.2082**	0.048	23.2	mg/L	28	Standard
Ca	43	35.0	42.9	**0.7276**	1.340	184.1	mg/L	27	Standard
Fe	54	5032.2	2.8	**3.8559**	0.118	3.1	mg/L	147	Standard
Fe	57	1495.1	12.3	**3.7984**	0.557	14.7	mg/L	268	Standard
> **Sc-1**	45	41087.3	0.8				mg/L	41174	Standard
Cl	35	70479.6	1.8				ug/L	69550	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	1836.8	12.0				ug/L	1950	Standard
P	31	8665.8	3.6				ug/L	21156	Standard
S	34	3460.4	4.7				ug/L	3419	Standard
Sr	88	80.0	18.8				ug/L	72	Standard
C	12	90.0	22.2				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	20.0				mg/L	17	Standard
Dy	164	2628.5	8.2				mg/L	16	Standard
Ho-1	165	2008.5	5.9				mg/L	7	Standard
Er	166	1706.8	7.3				mg/L	7	Standard
I	127	30609.2	2.0				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		85.692	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.813	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.071
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.669
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145109S WG574521-07
Sample Date/Time: Friday, July 01, 2016 18:57:55
Number of Replicates: 3
Autosampler Position: 259
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66169.2	2.4				ug/L	76456	Standard
	Be	9	2845.3	1.4	**2.9179**	0.070	2.4	ug/L	20	Standard
	Al	27	402052.1	1.7	**2.7039**	0.037	1.4	ug/L	1307	Standard
	Sc	45	40838.3	0.3				ug/L	41174	Standard
	Ti	47	3598.8	1.2	**10.9719**	0.146	1.3	ug/L	27	Standard
	V	51	79956.8	0.6	**9.5376**	0.034	0.4	ug/L	1434	Standard
	Cr	52	43849.7	0.5	**4.4576**	0.028	0.6	ug/L	7733	Standard
	Cr	53	4982.5	0.8	**4.5178**	0.059	1.3	ug/L	442	Standard
	Mn	55	232874.6	0.3	**30.6911**	0.183	0.6	ug/L	723	Standard
	Co	59	22573.1	0.9	**2.9200**	0.017	0.6	ug/L	217	Standard
	Ni	60	11202.5	1.2	**5.2509**	0.054	1.0	ug/L	304	Standard
	Cu	65	17763.4	0.2	**8.6391**	0.027	0.3	ug/L	181	Standard
	Zn	66	17798.8	0.5	**14.3610**	0.032	0.2	ug/L	215	Standard
>	**Ge**	72	520328.1	0.5				ug/L	520809	Standard
	As	75	5212.0	2.2	**4.2712**	0.111	2.6	ug/L	-52	Standard
	Se	82	460.7	3.7	**3.5240**	0.138	3.9	ug/L	17	Standard
	Se-1	77	349.3	2.1	**3.4060**	0.106	3.1	ug/L	56	Standard
>	**Ga**	71	1643.4	2.5				mg/L	25	Standard
	Rb	85	6298.0	3.7				ug/L	28	Standard
	Y	89	489232.3	1.4				ug/L	447395	Standard
>	**Rh**	103	18.3	15.7				ug/L	15	Standard
	Mo	98	1075.7	0.6	**0.3442**	0.006	1.8	ug/L	113	Standard
	Ag	107	17796.8	1.4	**2.5517**	0.014	0.5	ug/L	108	Standard
	Cd	111	6560.4	0.7	**2.9469**	0.016	0.6	mg/L	3	Standard
	Cd	114	16108.1	2.8	**2.9255**	0.113	3.9	ug/L	20	Standard
>	**In**	115	604614.2	1.1				ug/L	625728	Standard
	Sn	118	576.7	20.9	**0.0084**	0.019	221.8	ug/L	568	Standard
	Sb	123	1529.4	1.9	**0.2726**	0.009	3.4	ug/L	612	Standard
	Ba	135	36016.4	1.8	**17.1151**	0.222	1.3	ug/L	21	Standard
	Ce	140	166971.8	1.4				ug/L	245	Standard
>	**Tb**	159	893545.7	0.7				ug/L	950397	Standard
	Ho	165	3838.8	4.6				ug/L	7	Standard
	Tl	203	21813.4	0.5	**2.5793**	0.005	0.2	ug/L	15	Standard
	Tl	205	20096.7	2.1	**2.6671**	0.046	1.7	ug/L	13	Standard
	Pb	206	33592.2	0.8	**6.2573**	0.064	1.0	ug/L	264	Standard
	Pb	207	28855.8	0.9	**5.9141**	0.073	1.2	ug/L	222	Standard
	Pb	208	125010.5	0.5	**6.2737**	0.013	0.2	ug/L	959	Standard
	U	238	20841.0	0.6	**2.7450**	0.006	0.2	ug/L	9	Standard
>	**Bi**	209	520594.3	0.4				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	78.3	32.1	**0.0321**	0.030	93.3	mg/L	55	Standard
K	39	38.3	30.1	**0.0170**	0.045	263.0	mg/L	28	Standard
Ca	43	36.7	7.9	**0.9069**	0.276	30.5	mg/L	27	Standard
Fe	54	2344.4	2.1	**1.7548**	0.045	2.6	mg/L	147	Standard
Fe	57	823.4	10.1	**1.7471**	0.264	15.1	mg/L	268	Standard
Sc-1	45	40838.3	0.3				mg/L	41174	Standard
Cl	35	72934.5	2.0				ug/L	69550	Standard
Kr	83	1.0	0.0				ug/L	1	Standard
Br	81	2890.3	3.7				ug/L	1950	Standard
P	31	8855.9	3.2				ug/L	21156	Standard
S	34	3612.1	4.5				ug/L	3419	Standard
Sr	88	103.3	32.9				ug/L	72	Standard
C	12	236.7	17.1				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	20.8				mg/L	17	Standard
Dy	164	5672.6	5.0				mg/L	16	Standard
Ho-1	165	3838.8	4.6				mg/L	7	Standard
Er	166	3727.1	2.9				mg/L	7	Standard
I	127	35476.5	2.4				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		86.546	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.908	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.626
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.171
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: L1606145110SD WG574521-08
Sample Date/Time: Friday, July 01, 2016 19:01:07
Number of Replicates: 3
Autosampler Position: 260
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67019.7	4.1				ug/L	76456	Standard
	Be	9	2773.6	7.8	**2.8076**	0.211	7.5	ug/L	20	Standard
	Al	27	343053.6	0.5	**2.2782**	0.082	3.6	ug/L	1307	Standard
	Sc	45	40390.5	2.4				ug/L	41174	Standard
	Ti	47	2125.1	3.6	**6.3589**	0.289	4.5	ug/L	27	Standard
	V	51	73913.9	1.7	**8.6823**	0.187	2.2	ug/L	1434	Standard
	Cr	52	39647.8	1.1	**3.8723**	0.091	2.4	ug/L	7733	Standard
	Cr	53	4390.6	6.6	**3.8749**	0.313	8.1	ug/L	442	Standard
	Mn	55	211704.6	1.1	**27.5205**	0.540	2.0	ug/L	723	Standard
	Co	59	22138.2	1.1	**2.8248**	0.052	1.9	ug/L	217	Standard
	Ni	60	10229.1	2.4	**4.7164**	0.156	3.3	ug/L	304	Standard
	Cu	65	16797.3	0.8	**8.0558**	0.132	1.6	ug/L	181	Standard
	Zn	66	14601.7	0.9	**11.5899**	0.103	0.9	ug/L	215	Standard
>	Ge	72	527370.0	0.8				ug/L	520809	Standard
	As	75	4454.0	0.3	**3.6083**	0.041	1.1	ug/L	-52	Standard
	Se	82	433.6	3.6	**3.2627**	0.107	3.3	ug/L	17	Standard
	Se-1	77	342.3	4.4	**3.2706**	0.183	5.6	ug/L	56	Standard
>	Ga	71	1086.7	7.6				mg/L	25	Standard
	Rb	85	2715.2	5.0				ug/L	28	Standard
	Y	89	495479.9	0.9				ug/L	447395	Standard
>	Rh	103	16.7	45.8				ug/L	15	Standard
	Mo	98	1199.6	3.2	**0.3822**	0.017	4.5	ug/L	113	Standard
	Ag	107	16994.5	0.8	**2.4097**	0.040	1.7	ug/L	108	Standard
	Cd	111	6581.3	0.3	**2.9241**	0.026	0.9	mg/L	3	Standard
	Cd	114	16115.1	1.4	**2.8941**	0.037	1.3	ug/L	20	Standard
>	In	115	611286.5	1.2				ug/L	625728	Standard
	Sn	118	688.3	30.3	**0.0255**	0.034	134.7	ug/L	568	Standard
	Sb	123	3492.9	2.6	**0.6580**	0.010	1.5	ug/L	612	Standard
	Ba	135	33066.0	1.8	**15.5404**	0.233	1.5	ug/L	21	Standard
	Ce	140	153693.9	0.5				ug/L	245	Standard
>	Tb	159	899836.2	0.9				ug/L	950397	Standard
	Ho	165	3548.7	3.5				ug/L	7	Standard
	Tl	203	21026.9	1.7	**2.4700**	0.040	1.6	ug/L	15	Standard
	Tl	205	19092.0	1.1	**2.5170**	0.051	2.0	ug/L	13	Standard
	Pb	206	32793.8	0.3	**6.0676**	0.075	1.2	ug/L	264	Standard
	Pb	207	27703.0	0.3	**5.6387**	0.064	1.1	ug/L	222	Standard
	Pb	208	120754.5	1.4	**6.0193**	0.142	2.4	ug/L	959	Standard
	U	238	20391.4	0.6	**2.6683**	0.017	0.6	ug/L	9	Standard
>	Bi	209	524030.2	1.0				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	73.3	17.2	**0.0271**	0.015	54.1	mg/L	55	Standard
K	39	33.3	22.9	**-0.0010**	0.029	2803.3	mg/L	28	Standard
Ca	43	38.3	52.7	**1.0972**	1.891	172.3	mg/L	27	Standard
Fe	54	1833.3	6.8	**1.3677**	0.115	8.4	mg/L	147	Standard
Fe	57	725.0	5.5	**1.4696**	0.176	12.0	mg/L	268	Standard
> **Sc-1**	45	40390.5	2.4				mg/L	41174	Standard
Cl	35	74325.2	0.8				ug/L	69550	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	2540.2	14.3				ug/L	1950	Standard
P	31	8757.5	2.9				ug/L	21156	Standard
S	34	3718.8	1.1				ug/L	3419	Standard
Sr	88	85.0					ug/L	72	Standard
C	12	270.0	14.8				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	63.3	32.9				mg/L	17	Standard
Dy	164	5206.1	3.7				mg/L	16	Standard
Ho-1	165	3548.7	3.5				mg/L	7	Standard
Er	166	3510.4	5.0				mg/L	7	Standard
I	127	34255.4	2.5				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		87.658	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.260	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.692
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.792
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606145110SD WG574521-08
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Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Friday, July 01, 2016 19:04:19
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73296.1	8.8				ug/L	76456	Standard
	Be	9	3.3	86.6	**-0.0168**	0.003	15.9	ug/L	20	Standard
	Al	27	943.4	25.1	**-0.0045**	0.001	28.6	ug/L	1307	Standard
	Sc	45	42173.6	2.9				ug/L	41174	Standard
	Ti	47	21.7	46.5	**-0.0224**	0.026	115.7	ug/L	27	Standard
	V	51	784.0	11.8	**-0.1085**	0.008	7.8	ug/L	1434	Standard
	Cr	52	3455.1	8.0	**-0.5654**	0.042	7.4	ug/L	7733	Standard
	Cr	53	226.7	14.2	**-0.2044**	0.032	15.6	ug/L	442	Standard
	Mn	55	689.7	25.5	**-0.0155**	0.019	124.5	ug/L	723	Standard
	Co	59	203.0	2.5	**-0.0043**	0.002	53.5	ug/L	217	Standard
	Ni	60	207.7	13.9	**-0.0589**	0.005	8.9	ug/L	304	Standard
	Cu	65	99.0	11.2	**-0.0283**	0.002	6.7	ug/L	181	Standard
	Zn	66	182.3	13.6	**-0.0400**	0.008	19.1	ug/L	215	Standard
>	**Ge**	72	551871.4	10.1				ug/L	520809	Standard
	As	75	90.2	75.8	**0.1123**	0.046	40.9	ug/L	-52	Standard
	Se	82	68.2	54.7	**0.3731**	0.233	62.5	ug/L	17	Standard
	Se-1	77	38.3	14.4	**-0.2548**	0.102	40.0	ug/L	56	Standard
>	**Ga**	71	36.7	7.9				mg/L	25	Standard
	Rb	85	36.7	39.4				ug/L	28	Standard
	Y	89	441182.6	6.0				ug/L	447395	Standard
>	**Rh**	103	10.0	50.0				ug/L	15	Standard
	Mo	98	46.2	9.0	**-0.0083**	0.001	14.8	ug/L	113	Standard
	Ag	107	129.7	15.8	**0.0056**	0.002	35.3	ug/L	108	Standard
	Cd	111	10.6	19.3	**0.0023**	0.001	28.9	mg/L	3	Standard
	Cd	114	32.4	13.3	**0.0058**	0.001	9.2	ug/L	20	Standard
>	**In**	115	611252.6	5.3				ug/L	625728	Standard
	Sn	118	5131.0	39.9	**0.7226**	0.283	39.2	ug/L	568	Standard
	Sb	123	96.0	32.5	**-0.0149**	0.005	34.0	ug/L	612	Standard
	Ba	135	116.3	18.2	**0.0366**	0.007	20.0	ug/L	21	Standard
	Ce	140	506.7	18.4				ug/L	245	Standard
>	**Tb**	159	937034.7	2.8				ug/L	950397	Standard
	Ho	165	13.3	78.1				ug/L	7	Standard
	Tl	203	55.7	37.9	**0.0055**	0.002	44.3	ug/L	15	Standard
	Tl	205	48.3	15.8	**-0.0037**	0.001	24.8	ug/L	13	Standard
	Pb	206	388.7	9.1	**0.0251**	0.008	30.5	ug/L	264	Standard
	Pb	207	329.7	11.1	**0.0183**	0.008	44.7	ug/L	222	Standard
	Pb	208	1314.7	9.8	**0.0144**	0.005	32.0	ug/L	959	Standard
	U	238	44.3	33.9	**0.0053**	0.002	35.7	ug/L	9	Standard
>	**Bi**	209	551718.3	2.9				ug/L	552821	Standard

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Na	23	1.7	173.2	**4.9772**	8.612	173.0	mg/L	2	Standard
Mg	24	23.3	12.4	**-0.0336**	0.003	9.5	mg/L	55	Standard
K	39	23.3	12.4	**-0.0439**	0.009	21.3	mg/L	28	Standard
Ca	43	31.7	24.1	**0.3653**	0.722	197.6	mg/L	27	Standard
Fe	54	110.7	37.7	**-0.0145**	0.030	207.1	mg/L	147	Standard
Fe	57	338.3	3.4	**0.2110**	0.026	12.2	mg/L	268	Standard
> **Sc-1**	45	42173.6	2.9				mg/L	41174	Standard
Cl	35	30776.6	3.7				ug/L	69550	Standard
Kr	83	3.3	45.8				ug/L	1	Standard
Br	81	663.3	12.3				ug/L	1950	Standard
P	31	11284.4	27.3				ug/L	21156	Standard
S	34	1555.1	2.6				ug/L	3419	Standard
Sr	88	83.3	25.0				ug/L	72	Standard
C	12	73.3	15.7				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	44.4				mg/L	17	Standard
Dy	164	28.9	93.2				mg/L	16	Standard
Ho-1	165	13.3	78.1				mg/L	7	Standard
Er	166	23.3	65.5				mg/L	7	Standard
I	127	2166.8	15.3				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	-0.034		
	Al	27	-0.009		
	Sc	45			
	Ti	47	-0.022		
	V	51	-0.217		
	Cr	52	-1.131		
	Cr	53			
	Mn	55	-0.031		
	Co	59	-0.009		
	Ni	60	-0.118		
	Cu	65	-0.057		
	Zn	66	-0.080		
>	Ge	72		105.964	
	As	75	0.225		
	Se	82	0.746		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	-0.008		
Ag	107	0.011		
Cd	111	0.005		
Cd	114			
> In	115		97.687	
Sn	118	1.445		
Sb	123	-0.030		
Ba	135	0.073		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	0.011		
Tl	205			
Pb	206			
Pb	207			
Pb	208	0.029		
U	238	0.011		
> Bi	209		99.801	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	
QC Std 6	Ti	47	

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QC Std 6	V	51
QC Std 6	Cr	52
QC Std 6	Mn	55
QC Std 6	Co	59
QC Std 6	Ni	60
QC Std 6	Cu	65
QC Std 6	Zn	66
QC Std 6	As	75
QC Std 6	Se	82
QC Std 6	Mo	98
QC Std 6	Ag	107
QC Std 6	Cd	111
QC Std 6	Sb	123
QC Std 6	Ba	135
QC Std 6	Tl	203
QC Std 6	Pb	208
QC Std 6	U	238

Approved: July 02, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Friday, July 01, 2016 19:07:31
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63162.0	21.4				ug/L	76456	Standard
	Be	9	3.3	86.6	**-0.0166**	0.003	17.1	ug/L	20	Standard
	Al	27	735.0	20.4	**-0.0048**	0.002	36.2	ug/L	1307	Standard
	Sc	45	35650.7	12.8				ug/L	41174	Standard
	Ti	47	25.7	17.6	**-0.0049**	0.017	351.0	ug/L	27	Standard
	V	51	759.8	6.3	**-0.1049**	0.017	16.4	ug/L	1434	Standard
	Cr	52	3500.7	6.1	**-0.5352**	0.034	6.4	ug/L	7733	Standard
	Cr	53	196.7	21.6	**-0.2204**	0.047	21.1	ug/L	442	Standard
	Mn	55	654.0	15.9	**-0.0132**	0.024	180.8	ug/L	723	Standard
	Co	59	209.0	9.3	**-0.0019**	0.004	213.5	ug/L	217	Standard
	Ni	60	214.3	6.6	**-0.0494**	0.006	12.6	ug/L	304	Standard
	Cu	65	67.0	1.5	**-0.0410**	0.004	9.4	ug/L	181	Standard
	Zn	66	162.0	9.0	**-0.0461**	0.027	57.9	ug/L	215	Standard
>	**Ge**	72	520650.3	11.0				ug/L	520809	Standard
	As	75	34.9	127.0	**0.0765**	0.042	54.6	ug/L	-52	Standard
	Se	82	46.9	39.0	**0.2593**	0.198	76.5	ug/L	17	Standard
	Se-1	77	47.0	7.4	**-0.1317**	0.051	38.8	ug/L	56	Standard
>	**Ga**	71	33.3	37.7				mg/L	25	Standard
	Rb	85	20.0	0.0				ug/L	28	Standard
	Y	89	481329.7	5.0				ug/L	447395	Standard
>	**Rh**	103	10.0	50.0				ug/L	15	Standard
	Mo	98	40.1	16.4	**-0.0110**	0.002	22.0	ug/L	113	Standard
	Ag	107	85.7	14.5	**-0.0013**	0.001	114.3	ug/L	108	Standard
	Cd	111	7.3	15.9	**0.0008**	0.001	101.5	mg/L	3	Standard
	Cd	114	33.4	55.5	**0.0060**	0.004	67.7	ug/L	20	Standard
>	**In**	115	646206.1	11.6				ug/L	625728	Standard
	Sn	118	4905.8	30.1	**0.6479**	0.164	25.3	ug/L	568	Standard
	Sb	123	55.7	59.6	**-0.0232**	0.006	25.1	ug/L	612	Standard
	Ba	135	35.0	22.9	**-0.0022**	0.004	171.6	ug/L	21	Standard
	Ce	140	271.7	45.9				ug/L	245	Standard
>	**Tb**	159	974497.4	20.4				ug/L	950397	Standard
	Ho	165	18.3	41.7				ug/L	7	Standard
	Tl	203	26.0	40.2	**0.0024**	0.002	88.7	ug/L	15	Standard
	Tl	205	23.3	32.7	**-0.0066**	0.002	26.3	ug/L	13	Standard
	Pb	206	286.0	20.6	**0.0054**	0.003	50.2	ug/L	264	Standard
	Pb	207	250.0	14.9	**0.0018**	0.006	349.2	ug/L	222	Standard
	Pb	208	1018.7	14.9	**-0.0005**	0.007	1419.7	ug/L	959	Standard
	U	238	28.0	71.2	**0.0037**	0.004	102.7	ug/L	9	Standard
>	**Bi**	209	573676.7	25.6				ug/L	552821	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	33.3	31.2	**-0.0144**	0.017	121.3	mg/L	55	Standard
K	39	30.0	44.1	**-0.0003**	0.051	19938.3	mg/L	28	Standard
Ca	43	26.7	47.2	**0.2749**	0.978	355.7	mg/L	27	Standard
Fe	54	97.7	28.6	**-0.0085**	0.033	388.9	mg/L	147	Standard
Fe	57	278.3	18.1	**0.2066**	0.281	136.1	mg/L	268	Standard
> **Sc-1**	45	35650.7	12.8				mg/L	41174	Standard
Cl	35	30318.5	8.6				ug/L	69550	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	573.3	9.6				ug/L	1950	Standard
P	31	10907.3	13.1				ug/L	21156	Standard
S	34	1410.1	10.3				ug/L	3419	Standard
Sr	88	83.3	36.7				ug/L	72	Standard
C	12	66.7	60.6				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	90.0	38.5				mg/L	17	Standard
Dy	164	2.1	274.3				mg/L	16	Standard
Ho-1	165	18.3	41.7				mg/L	7	Standard
Er	166	26.7	21.7				mg/L	7	Standard
I	127	2056.8	3.8				mg/L	19499	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.969	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.273	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	103.773	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Se	82	
QC Std 7	Sn	118	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Friday, July 01, 2016 19:10:44
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61946.4	1.9				ug/L	76456	Standard
	Be	9	210.0	10.4	**0.2115**	0.020	9.6	ug/L	20	Standard
	Al	27	790.0	4.9	**-0.0045**	0.000	4.1	ug/L	1307	Standard
	Sc	45	40494.0	1.1				ug/L	41174	Standard
	Ti	47	28.3	17.8	**0.0022**	0.015	682.7	ug/L	27	Standard
	V	51	4636.0	0.9	**0.3641**	0.011	3.1	ug/L	1434	Standard
	Cr	52	14316.1	1.4	**0.7957**	0.001	0.1	ug/L	7733	Standard
	Cr	53	1240.1	3.8	**0.8075**	0.059	7.3	ug/L	442	Standard
	Mn	55	4264.3	2.5	**0.4605**	0.007	1.5	ug/L	723	Standard
	Co	59	3130.7	5.2	**0.3781**	0.017	4.5	ug/L	217	Standard
	Ni	60	3450.1	1.6	**1.5055**	0.006	0.4	ug/L	304	Standard
	Cu	65	1721.8	1.7	**0.7678**	0.026	3.4	ug/L	181	Standard
	Zn	66	8860.9	0.9	**7.0348**	0.045	0.6	ug/L	215	Standard
>	**Ge**	72	522095.7	1.4				ug/L	520809	Standard
	As	75	448.5	11.8	**0.4078**	0.044	10.9	ug/L	-52	Standard
	Se	82	67.9	14.5	**0.4100**	0.082	20.0	ug/L	17	Standard
	Se-1	77	86.0	19.1	**0.3190**	0.193	60.5	ug/L	56	Standard
>	**Ga**	71	40.0	37.5				mg/L	25	Standard
	Rb	85	30.0	28.9				ug/L	28	Standard
	Y	89	446341.0	1.0				ug/L	447395	Standard
>	**Rh**	103	11.7	65.5				ug/L	15	Standard
	Mo	98	31.0	24.0	**-0.0133**	0.003	19.1	ug/L	113	Standard
	Ag	107	2769.6	1.6	**0.3865**	0.006	1.6	ug/L	108	Standard
	Cd	111	511.0	7.5	**0.2275**	0.017	7.5	mg/L	3	Standard
	Cd	114	1362.0	6.3	**0.2474**	0.016	6.3	ug/L	20	Standard
>	**In**	115	604305.4	0.0				ug/L	625728	Standard
	Sn	118	1045.0	27.9	**0.0839**	0.047	56.0	ug/L	568	Standard
	Sb	123	1800.2	6.2	**0.3270**	0.022	6.8	ug/L	612	Standard
	Ba	135	1494.4	2.1	**0.6933**	0.015	2.2	ug/L	21	Standard
	Ce	140	240.0	28.9				ug/L	245	Standard
>	**Tb**	159	892072.4	1.2				ug/L	950397	Standard
	Ho	165	18.3	41.7				ug/L	7	Standard
	Tl	203	655.0	0.9	**0.0773**	0.001	1.2	ug/L	15	Standard
	Tl	205	608.3	6.1	**0.0719**	0.005	7.4	ug/L	13	Standard
	Pb	206	1282.4	3.9	**0.1986**	0.006	3.2	ug/L	264	Standard
	Pb	207	1103.0	2.6	**0.1835**	0.003	1.7	ug/L	222	Standard
	Pb	208	4828.3	0.4	**0.1978**	0.004	2.3	ug/L	959	Standard
	U	238	2919.9	3.2	**0.3875**	0.018	4.7	ug/L	9	Standard
>	**Bi**	209	516591.6	1.5				ug/L	552821	Standard

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Na	23	1.7	173.2	**5.0546**	8.746	173.0	mg/L	2	Standard
Mg	24	45.0	50.9	**-0.0067**	0.027	406.4	mg/L	55	Standard
K	39	28.3	71.3	**-0.0210**	0.078	373.7	mg/L	28	Standard
Ca	43	15.0	33.3	**-1.0703**	0.448	41.8	mg/L	27	Standard
Fe	54	120.9	25.4	**-0.0025**	0.024	952.7	mg/L	147	Standard
Fe	57	251.7	19.1	**-0.0185**	0.145	784.6	mg/L	268	Standard
> **Sc-1**	45	40494.0	1.1				mg/L	41174	Standard
Cl	35	72851.4	0.8				ug/L	69550	Standard
Kr	83	2.3	99.0				ug/L	1	Standard
Br	81	1900.1	5.1				ug/L	1950	Standard
P	31	14266.7	2.8				ug/L	21156	Standard
S	34	3213.7	2.6				ug/L	3419	Standard
Sr	88	90.0	16.7				ug/L	72	Standard
C	12	96.7	57.0				mg/L	163	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	50.0				mg/L	17	Standard
Dy	164	16.2	35.8				mg/L	16	Standard
Ho-1	165	18.3	41.7				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	1820.1	14.1				mg/L	19499	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	105.733		
	Al	27			
	Sc	45			
	Ti	47			
	V	51	91.026		
	Cr	52	99.459		
	Cr	53			
	Mn	55	92.107		
	Co	59	94.532		
	Ni	60	94.095		
	Cu	65	95.977		
	Zn	66	112.556		
>	Ge	72		100.247	
	As	75	101.941		
	Se	82	102.498		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	96.613		
Cd	111	94.773		
Cd	114			
> In	115			96.576
Sn	118			
Sb	123	81.741		
Ba	135	92.447		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	96.671		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.904		
U	238	96.884		
> Bi	209			93.446
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Wednesday, July 06, 2016 08:21:13

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1322	2024	0.699	
Mg	23.985	23.975	4499	2020	0.703	
Co	58.933	58.975	11698	2022	0.697	
In	114.904	114.925	22867	2028	0.681	
U	238.050	238.025	47456	2043	0.679	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	7.506
5.575	4.469
5.625	3.902
5.675	3.617
5.725	2.863
5.775	3.021
5.825	2.553
5.875	2.316
5.925	1.940
5.975	0.827
6.025	4.248
6.075	3.274
6.125	3.495
6.175	2.397
6.225	3.309
6.275	9.100
6.325	39.123
6.375	122.475
6.425	108.653
6.475	38.030
6.525	8.438
6.575	5.734
6.625	2.237
6.675	4.130
6.725	3.041
6.775	1.849
6.825	2.089

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6.875	1.604
6.925	1.546
6.975	1.019
7.025	1.680
7.075	1.373
7.125	1.509
7.175	0.253
7.225	2.144
7.275	3.742
7.325	4.451
7.375	14.816
7.425	136.931
7.475	70.711
7.525	81.441
7.575	136.931
7.625	70.711
7.675	63.888
7.725	136.931
7.775	81.441
7.825	0.000
7.875	106.863
7.925	91.287
7.975	149.071
8.025	94.786
8.075	94.786
8.125	69.722
8.175	91.287
8.225	71.261
8.275	149.071
8.325	94.786
8.375	69.722
8.425	83.853
8.475	91.287
22.525	55.902
22.575	66.667
22.625	43.241
22.675	34.247
22.725	34.468
22.775	17.538
22.825	28.037
22.875	26.503
22.925	31.944
22.975	34.035
23.025	38.640
23.075	42.482
23.125	22.745
23.175	17.030

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23.225	8.299
23.275	38.640
23.325	15.901
23.375	54.149
23.425	24.362
23.475	23.662
23.525	4.832
23.575	1.945
23.625	1.762
23.675	1.706
23.725	2.179
23.775	1.159
23.825	1.275
23.875	2.153
23.925	1.699
23.975	1.547
24.025	2.386
24.075	2.257
24.125	1.922
24.175	1.969
24.225	2.068
24.275	3.253
24.325	14.263
24.375	45.166
24.425	16.090
24.475	14.626
24.525	4.879
24.575	2.669
24.625	3.297
24.675	1.542
24.725	1.374
24.775	1.161
24.825	1.917
24.875	1.099
24.925	1.386
24.975	1.467
25.025	1.383
25.075	1.643
25.125	1.214
25.175	2.083
25.225	1.572
25.275	7.023
25.325	53.429
25.375	51.349
25.425	53.429
25.475	17.365
57.525	8.189

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57.575	5.482
57.625	1.288
57.675	3.060
57.725	2.372
57.775	3.546
57.825	3.557
57.875	0.921
57.925	1.535
57.975	2.136
58.025	1.988
58.075	2.269
58.125	1.198
58.175	2.819
58.225	1.616
58.275	11.771
58.325	55.902
58.375	50.000
58.425	33.756
58.475	10.537
58.525	1.691
58.575	3.576
58.625	2.704
58.675	2.648
58.725	2.851
58.775	2.040
58.825	2.525
58.875	1.600
58.925	1.367
58.975	1.255
59.025	1.984
59.075	0.805
59.125	1.290
59.175	2.562
59.225	1.649
59.275	23.116
59.325	64.359
59.375	149.071
59.425	44.605
59.475	17.497
59.525	17.371
59.575	9.220
59.625	5.948
59.675	4.790
59.725	1.831
59.775	1.473
59.825	2.719
59.875	2.952

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59.925	2.544
59.975	1.515
60.025	4.044
60.075	0.979
60.125	3.516
60.175	6.310
60.225	5.968
60.275	42.077
60.325	70.711
60.375	75.691
60.425	47.507
60.475	51.349
113.525	6.288
113.575	3.130
113.625	3.198
113.675	2.645
113.725	2.546
113.775	2.125
113.825	1.842
113.875	2.200
113.925	1.850
113.975	1.503
114.025	2.156
114.075	1.585
114.125	1.928
114.175	4.533
114.225	6.911
114.275	18.744
114.325	37.029
114.375	48.104
114.425	13.303
114.475	6.306
114.525	2.291
114.575	1.817
114.625	2.253
114.675	1.979
114.725	1.922
114.775	2.210
114.825	1.277
114.875	1.344
114.925	1.630
114.975	0.972
115.025	0.572
115.075	1.624
115.125	0.868
115.175	2.441
115.225	1.854

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115.275	5.953
115.325	30.901
115.375	61.237
115.425	59.266
115.475	15.759
115.525	11.392
115.575	9.132
115.625	8.051
115.675	3.987
115.725	6.967
115.775	3.133
115.825	4.834
115.875	2.873
115.925	2.983
115.975	3.736
116.025	2.700
116.075	2.834
116.125	4.969
116.175	5.942
116.225	7.717
116.275	28.287
116.325	58.630
116.375	22.822
116.425	67.748
116.475	37.268
236.525	
236.575	37.982
236.625	28.022
236.675	14.286
236.725	37.982
236.775	48.627
236.825	23.981
236.875	70.833
236.925	24.491
236.975	20.494
237.025	17.496
237.075	24.845
237.125	33.333
237.175	31.672
237.225	28.287
237.275	23.458
237.325	18.109
237.375	43.257
237.425	28.315
237.475	36.056
237.525	17.496
237.575	15.180

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237.625	5.747
237.675	2.292
237.725	2.524
237.775	2.139
237.825	1.921
237.875	1.117
237.925	1.502
237.975	1.060
238.025	0.360
238.075	1.407
238.125	0.752
238.175	1.378
238.225	1.386
238.275	0.645
238.325	2.690
238.375	2.608
238.425	2.380
238.475	12.679
238.525	20.738
238.575	36.422
238.625	37.611
238.675	26.517
238.725	10.002
238.775	24.499
238.825	17.876
238.875	26.770
238.925	25.620
238.975	15.408
239.025	16.767
239.075	18.744
239.125	33.378
239.175	26.504
239.225	37.982
239.275	41.406
239.325	24.686
239.375	10.756
239.425	28.748
239.475	26.770

Approved: July 07, 2016

SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 7/6/2016 8:26:00 AM
End Time: 7/6/2016 8:28:13 AM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 5151.01
        Obtained Intensity (Mg 23.985): 336885.79
        Obtained Intensity (In 114.904): 62602.53
        Obtained Intensity (U 238.05): 130540.54
        Obtained Intensity (Bkgd 220): 0.20
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.019 (=3575.29 / 184430.85)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.011 (=2032.07 / 184430.85)
```


Approved: July 07, 2016

SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 7/6/2016 8:26:00 AM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 5151.01
                Obtained Intensity (Mg 23.985): 336885.79
                Obtained Intensity (In 114.904): 62602.53
                Obtained Intensity (U 238.05): 130540.54
                Obtained Intensity (Bkgd 220): 0.20
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.019 (=3575.29 / 184430.85)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.011 (=2032.07 / 184430.85)
[Passed]  Optimum value(s): N/A

End Time: 7/6/2016 8:28:13 AM
```


Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Wednesday, July 06, 2016 09:04:52
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68501.2	1.5				ug/L		Standard
	Be	9	8.3	34.6				ug/L		Standard
	Al	27	1396.7	1.3				ug/L		Standard
	Sc	45	38814.7	3.0				ug/L		Standard
	Ti	47	35.7	18.2				ug/L		Standard
	V	51	1283.9	3.1				ug/L		Standard
	Cr	52	6502.7	0.5				ug/L		Standard
	Cr	53	491.7	16.7				ug/L		Standard
	Mn	55	840.7	3.2				ug/L		Standard
	Co	59	229.3	4.0				ug/L		Standard
	Ni	60	344.0	2.2				ug/L		Standard
	Cu	65	114.7	4.1				ug/L		Standard
	Zn	66	190.0	5.0				ug/L		Standard
>	**Ge**	72	409858.0	0.8				ug/L		Standard
	As	75	-22.4	191.8				ug/L		Standard
	Se	82	17.6	39.5				ug/L		Standard
	Se-1	77	49.7	13.7				ug/L		Standard
>	**Ga**	71	96.7	43.4				mg/L		Standard
	Rb	85	25.0	40.0				ug/L		Standard
	Y	89	376763.4	2.3				ug/L		Standard
>	**Rh**	103	20.0	0.0				ug/L		Standard
	Mo	98	51.1	11.8				ug/L		Standard
	Ag	107	76.3	9.8				ug/L		Standard
	Cd	111	5.9	58.3				mg/L		Standard
	Cd	114	18.3	38.1				ug/L		Standard
>	**In**	115	507260.6	2.6				ug/L		Standard
	Sn	118	683.3	6.6				ug/L		Standard
	Sb	123	446.3	31.9				ug/L		Standard
	Ba	135	28.0	28.6				ug/L		Standard
	Ce	140	33.3	45.8				ug/L		Standard
>	**Tb**	159	800802.7	2.0				ug/L		Standard
	Ho	165	10.0	86.6				ug/L		Standard
	Tl	203	13.0	26.6				ug/L		Standard
	Tl	205	13.3	43.3				ug/L		Standard
	Pb	206	226.0	4.2				ug/L		Standard
	Pb	207	204.3	0.3				ug/L		Standard
	Pb	208	851.7	6.8				ug/L		Standard
	U	238	13.0	63.0				ug/L		Standard
>	**Bi**	209	449044.0	1.5				ug/L		Standard

Sample ID: Blank
Report Date/Time: Wednesday, July 06, 2016 09:07:09
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Na	23	1.7	173.2	mg/L	Standard
Mg	24	58.3	9.9	mg/L	Standard
K	39	26.7	39.0	mg/L	Standard
Ca	43	20.0	66.1	mg/L	Standard
Fe	54	157.5	14.3	mg/L	Standard
Fe	57	266.7	9.2	mg/L	Standard
> **Sc-1**	45	38814.7	3.0	mg/L	Standard
Cl	35	57611.3	0.9	ug/L	Standard
Kr	83	2.0	50.0	ug/L	Standard
Br	81	1616.8	9.4	ug/L	Standard
P	31	19243.9	3.3	ug/L	Standard
S	34	3557.1	1.2	ug/L	Standard
Sr	88	65.0	20.4	ug/L	Standard
C	12	63.3	24.1	mg/L	Standard
N	14	0.0		mg/L	Standard
Hg	202	23.3	89.2	mg/L	Standard
Dy	164	12.7	43.5	mg/L	Standard
Ho-1	165	10.0	86.6	mg/L	Standard
Er	166	13.3	86.6	mg/L	Standard
I	127	9569.7	3.0	mg/L	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Wednesday, July 06, 2016 09:08:03
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69462.2	0.6				ug/L	68501	Standard
	Be	9	13.3	78.1				ug/L	8	Standard
	Al	27	1441.7	6.4				ug/L	1397	Standard
	Sc	45	39327.7	2.4				ug/L	38815	Standard
	Ti	47	37.3	15.2				ug/L	36	Standard
	V	51	1277.1	1.5				ug/L	1284	Standard
	Cr	52	6679.8	1.3				ug/L	6503	Standard
	Cr	53	478.3	7.9				ug/L	492	Standard
	Mn	55	811.7	3.1				ug/L	841	Standard
	Co	59	225.7	8.9				ug/L	229	Standard
	Ni	60	363.7	3.9				ug/L	344	Standard
	Cu	65	110.0	16.7				ug/L	115	Standard
	Zn	66	186.0	6.7				ug/L	190	Standard
>	**Ge**	72	427573.4	1.2				ug/L	409858	Standard
	As	75	-74.4	2.7				ug/L	-22	Standard
	Se	82	12.0	28.1				ug/L	18	Standard
	Se-1	77	50.7	10.9				ug/L	50	Standard
>	**Ga**	71	113.3	13.5				mg/L	97	Standard
	Rb	85	35.0	28.6				ug/L	25	Standard
	Y	89	359688.5	1.8				ug/L	376763	Standard
>	**Rh**	103	18.3	15.7				ug/L	20	Standard
	Mo	98	39.3	4.5				ug/L	51	Standard
	Ag	107	71.3	10.3				ug/L	76	Standard
	Cd	111	4.3	59.0				mg/L	6	Standard
	Cd	114	20.2	77.8				ug/L	18	Standard
>	**In**	115	495968.3	1.0				ug/L	507261	Standard
	Sn	118	615.0	19.2				ug/L	683	Standard
	Sb	123	280.4	35.1				ug/L	446	Standard
	Ba	135	25.7	17.6				ug/L	28	Standard
	Ce	140	23.3	68.9				ug/L	33	Standard
>	**Tb**	159	809139.9	1.5				ug/L	800803	Standard
	Ho	165	13.3	21.7				ug/L	10	Standard
	Tl	203	9.7	31.6				ug/L	13	Standard
	Tl	205	5.0	100.0				ug/L	13	Standard
	Pb	206	228.0	14.1				ug/L	226	Standard
	Pb	207	184.0	4.3				ug/L	204	Standard
	Pb	208	774.0	0.5				ug/L	852	Standard
	U	238	9.3	61.9				ug/L	13	Standard
>	**Bi**	209	461034.0	1.4				ug/L	449044	Standard

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	Na	23	0.0		mg/L	2	Standard
	Mg	24	38.3	7.5	mg/L	58	Standard
	K	39	38.3	30.1	mg/L	27	Standard
	Ca	43	35.0	37.8	mg/L	20	Standard
	Fe	54	132.7	18.5	mg/L	158	Standard
	Fe	57	250.0	9.2	mg/L	267	Standard
>	**Sc-1**	45	39327.7	2.4	mg/L	38815	Standard
	Cl	35	57177.7	0.6	ug/L	57611	Standard
	Kr	83	2.0	86.6	ug/L	2	Standard
	Br	81	1573.4	4.2	ug/L	1617	Standard
	P	31	19260.6	0.8	ug/L	19244	Standard
	S	34	3472.1	1.0	ug/L	3557	Standard
	Sr	88	65.0	38.5	ug/L	65	Standard
	C	12	76.7	30.1	mg/L	63	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	20.0	0.0	mg/L	23	Standard
	Dy	164	19.5	50.0	mg/L	13	Standard
	Ho-1	165	13.3	21.7	mg/L	10	Standard
	Er	166	10.0	100.0	mg/L	13	Standard
	I	127	9743.1	1.2	mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 1
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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Wednesday, July 06, 2016 09:11:15
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69986.3	1.7				ug/L	68501	Standard
	Be	9	28.3	20.4				ug/L	8	Standard
	Al	27	2175.2	56.8				ug/L	1397	Standard
	Sc	45	40447.3	0.7				ug/L	38815	Standard
	Ti	47	43.0	44.9				ug/L	36	Standard
	V	51	1366.5	10.5				ug/L	1284	Standard
	Cr	52	6767.8	1.5				ug/L	6503	Standard
	Cr	53	401.7	17.9				ug/L	492	Standard
	Mn	55	892.4	9.9				ug/L	841	Standard
	Co	59	269.0	32.5				ug/L	229	Standard
	Ni	60	348.3	2.9				ug/L	344	Standard
	Cu	65	106.0	18.0				ug/L	115	Standard
	Zn	66	164.7	5.2				ug/L	190	Standard
>	**Ge**	72	409754.2	1.2				ug/L	409858	Standard
	As	75	-50.4	62.0				ug/L	-22	Standard
	Se	82	10.7	41.8				ug/L	18	Standard
	Se-1	77	55.7	4.5				ug/L	50	Standard
>	**Ga**	71	90.0	14.7				mg/L	97	Standard
	Rb	85	25.0	40.0				ug/L	25	Standard
	Y	89	368884.0	1.8				ug/L	376763	Standard
>	**Rh**	103	28.3	36.7				ug/L	20	Standard
	Mo	98	70.2	78.1				ug/L	51	Standard
	Ag	107	171.7	101.6				ug/L	76	Standard
	Cd	111	21.6	125.9				mg/L	6	Standard
	Cd	114	62.7	126.2				ug/L	18	Standard
>	**In**	115	517968.4	0.2				ug/L	507261	Standard
	Sn	118	895.0	18.8				ug/L	683	Standard
	Sb	123	308.2	14.0				ug/L	446	Standard
	Ba	135	66.7	99.4				ug/L	28	Standard
	Ce	140	60.0	88.2				ug/L	33	Standard
>	**Tb**	159	835902.7	0.3				ug/L	800803	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	133.7	156.4				ug/L	13	Standard
	Tl	205	51.7	114.6				ug/L	13	Standard
	Pb	206	275.3	38.0				ug/L	226	Standard
	Pb	207	236.3	37.0				ug/L	204	Standard
	Pb	208	923.0	26.3				ug/L	852	Standard
	U	238	51.0	124.2				ug/L	13	Standard
>	**Bi**	209	464909.5	1.4				ug/L	449044	Standard

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Na	23	1.7	173.2	mg/L	2	Standard
Mg	24	33.3	31.2	mg/L	58	Standard
K	39	38.3	52.7	mg/L	27	Standard
Ca	43	18.3	87.7	mg/L	20	Standard
Fe	54	155.9	10.5	mg/L	158	Standard
Fe	57	213.3	22.5	mg/L	267	Standard
> **Sc-1**	45	40447.3	0.7	mg/L	38815	Standard
Cl	35	57383.8	0.6	ug/L	57611	Standard
Kr	83	4.0	25.0	ug/L	2	Standard
Br	81	1603.4	7.2	ug/L	1617	Standard
P	31	19110.4	2.4	ug/L	19244	Standard
S	34	3323.7	4.3	ug/L	3557	Standard
Sr	88	48.3	39.2	ug/L	65	Standard
C	12	66.7	56.8	mg/L	63	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	33.3	17.3	mg/L	23	Standard
Dy	164	19.5	53.7	mg/L	13	Standard
Ho-1	165	6.7	43.3	mg/L	10	Standard
Er	166	10.0	100.0	mg/L	13	Standard
I	127	9463.0	1.4	mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 2
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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Wednesday, July 06, 2016 09:14:26
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65866.4	4.4				ug/L	68501	Standard
	Be	9	43758.1	2.1	**50.0000**	2.126	4.3	ug/L	8	Standard
	Al	27	6851690.7	2.5	**50.0000**	1.133	2.3	ug/L	1397	Standard
	Sc	45	38365.2	3.2				ug/L	38815	Standard
	Ti	47	33502.0	1.0	**100.0000**	2.335	2.3	ug/L	36	Standard
	V	51	354123.4	1.5	**50.0000**	0.807	1.6	ug/L	1284	Standard
	Cr	52	353474.9	1.0	**50.0000**	1.058	2.1	ug/L	6503	Standard
	Cr	53	43696.3	2.4	**50.0000**	1.919	3.8	ug/L	492	Standard
	Mn	55	312268.8	0.3	**50.0000**	0.524	1.0	ug/L	841	Standard
	Co	59	306115.4	0.4	**50.0000**	0.635	1.3	ug/L	229	Standard
	Ni	60	84632.4	1.9	**50.0000**	1.629	3.3	ug/L	344	Standard
	Cu	65	84106.2	1.3	**50.0000**	1.315	2.6	ug/L	115	Standard
	Zn	66	50654.5	0.9	**50.0000**	1.152	2.3	ug/L	190	Standard
>	**Ge**	72	412166.9	1.4				ug/L	409858	Standard
	As	75	52045.3	0.4	**50.0000**	0.886	1.8	ug/L	-22	Standard
	Se	82	5394.9	1.2	**50.0000**	0.077	0.2	ug/L	18	Standard
	Se-1	77	3526.7	2.1	**50.0000**	1.755	3.5	ug/L	50	Standard
>	**Ga**	71	143.3	16.1				mg/L	97	Standard
	Rb	85	768.4	16.3				ug/L	25	Standard
	Y	89	372269.2	3.3				ug/L	376763	Standard
>	**Rh**	103	36.7	43.8				ug/L	20	Standard
	Mo	98	230812.3	1.4	**100.0000**	1.677	1.7	ug/L	51	Standard
	Ag	107	300268.2	0.5	**50.0000**	0.604	1.2	ug/L	76	Standard
	Cd	111	97215.6	1.2	**50.0000**	0.313	0.6	mg/L	6	Standard
	Cd	114	238532.4	1.1	**50.0000**	0.702	1.4	ug/L	18	Standard
>	**In**	115	495991.8	1.6				ug/L	507261	Standard
	Sn	118	265345.1	0.9	**50.0000**	0.957	1.9	ug/L	683	Standard
	Sb	123	201515.8	1.9	**50.0000**	0.380	0.8	ug/L	446	Standard
	Ba	135	92475.7	0.4	**50.0000**	0.633	1.3	ug/L	28	Standard
	Ce	140	98.3	15.5				ug/L	33	Standard
>	**Tb**	159	786281.1	2.6				ug/L	800803	Standard
	Ho	165	3.3	86.6				ug/L	10	Standard
	Tl	203	380657.7	0.9	**50.0000**	0.500	1.0	ug/L	13	Standard
	Tl	205	330146.0	2.3	**50.0000**	0.875	1.7	ug/L	13	Standard
	Pb	206	242582.5	0.3	**50.0000**	0.221	0.4	ug/L	226	Standard
	Pb	207	220711.3	0.8	**50.0000**	0.034	0.1	ug/L	204	Standard
	Pb	208	894041.3	0.2	**50.0000**	0.321	0.6	ug/L	852	Standard
	U	238	326852.4	1.0	**50.0000**	0.354	0.7	ug/L	13	Standard
>	**Bi**	209	440295.0	0.7				ug/L	449044	Standard

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Na	23	3.3	173.2	**5.0000**	16.319	326.4	mg/L	2	Standard
Mg	24	3670.4	2.3	**5.0000**	0.168	3.4	mg/L	58	Standard
K	39	1323.4	3.2	**5.0000**	0.149	3.0	mg/L	27	Standard
Ca	43	88.3	11.8	**5.0000**	0.808	16.2	mg/L	20	Standard
Fe	54	6179.3	2.3	**5.0000**	0.141	2.8	mg/L	158	Standard
Fe	57	1725.1	6.9	**5.0000**	0.273	5.5	mg/L	267	Standard
Sc-1	45	38365.2	3.2				mg/L	38815	Standard
Cl	35	58419.8	1.9				ug/L	57611	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	1690.1	3.1				ug/L	1617	Standard
P	31	20316.9	1.2				ug/L	19244	Standard
S	34	3730.5	4.5				ug/L	3557	Standard
Sr	88	81.7	19.7				ug/L	65	Standard
C	12	70.0	37.8				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	23	Standard
Dy	164	9.8	2.8				mg/L	13	Standard
Ho-1	165	3.3	86.6				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	17104.7	2.2				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 3
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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Wednesday, July 06, 2016 09:17:38
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66884.0	0.1				ug/L	68501	Standard
	Be	9	88224.6	3.2	**99.5740**	3.306	3.3	ug/L	8	Standard
	Al	27	13788828.6	0.3	**99.4964**	0.194	0.2	ug/L	1397	Standard
	Sc	45	39158.9	0.7				ug/L	38815	Standard
	Ti	47	68919.1	0.6	**201.5379**	1.843	0.9	ug/L	36	Standard
	V	51	719296.6	1.5	**100.2019**	0.102	0.1	ug/L	1284	Standard
	Cr	52	705385.2	0.5	**99.7044**	1.740	1.7	ug/L	6503	Standard
	Cr	53	87203.6	1.1	**99.4514**	2.654	2.7	ug/L	492	Standard
	Mn	55	615004.9	1.8	**98.6300**	0.309	0.3	ug/L	841	Standard
	Co	59	609072.6	1.8	**99.0923**	0.921	0.9	ug/L	229	Standard
	Ni	60	170911.2	0.3	**99.9152**	1.711	1.7	ug/L	344	Standard
	Cu	65	170582.3	0.9	**100.0576**	0.984	1.0	ug/L	115	Standard
	Zn	66	103031.8	1.2	**100.2529**	1.311	1.3	ug/L	190	Standard
>	**Ge**	72	417484.4	1.5				ug/L	409858	Standard
	As	75	105421.3	1.9	**99.9351**	0.523	0.5	ug/L	-22	Standard
	Se	82	10609.1	1.1	**98.5413**	0.717	0.7	ug/L	18	Standard
	Se-1	77	7041.6	1.7	**99.6311**	0.902	0.9	ug/L	50	Standard
>	**Ga**	71	120.0	22.0				mg/L	97	Standard
	Rb	85	1431.7	9.1				ug/L	25	Standard
	Y	89	347235.8	1.1				ug/L	376763	Standard
>	**Rh**	103	50.0	40.0				ug/L	20	Standard
	Mo	98	472903.2	1.9	**204.0734**	7.868	3.9	ug/L	51	Standard
	Ag	107	609290.7	0.4	**101.5465**	1.842	1.8	ug/L	76	Standard
	Cd	111	190186.3	0.3	**99.7182**	2.132	2.1	mg/L	6	Standard
	Cd	114	463334.3	1.9	**99.3479**	0.949	1.0	ug/L	18	Standard
>	**In**	115	487825.7	2.0				ug/L	507261	Standard
	Sn	118	532387.4	0.9	**101.0517**	2.398	2.4	ug/L	683	Standard
	Sb	123	428675.4	0.6	**103.9403**	2.689	2.6	ug/L	446	Standard
	Ba	135	183999.9	1.0	**100.5640**	1.058	1.1	ug/L	28	Standard
	Ce	140	121.7	24.8				ug/L	33	Standard
>	**Tb**	159	797848.9	1.9				ug/L	800803	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	758741.0	0.7	**98.4092**	0.290	0.3	ug/L	13	Standard
	Tl	205	656065.4	1.0	**98.2593**	1.296	1.3	ug/L	13	Standard
	Pb	206	490776.8	0.9	**99.1731**	1.193	1.2	ug/L	226	Standard
	Pb	207	444826.7	1.6	**98.9819**	1.805	1.8	ug/L	204	Standard
	Pb	208	1755326.8	0.8	**97.6712**	0.884	0.9	ug/L	852	Standard
	U	238	658871.7	1.7	**98.9710**	1.946	2.0	ug/L	13	Standard
>	**Bi**	209	452838.5	0.5				ug/L	449044	Standard

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Na	23	1.7	173.2	**0.1636**	15.495	9469.0	mg/L	2	Standard
Mg	24	7491.9	4.0	**10.0159**	0.397	4.0	mg/L	58	Standard
K	39	2466.9	4.5	**9.6061**	0.448	4.7	mg/L	27	Standard
Ca	43	150.0	8.8	**9.5397**	1.008	10.6	mg/L	20	Standard
Fe	54	11922.4	5.3	**9.7701**	0.472	4.8	mg/L	158	Standard
Fe	57	3127.0	4.3	**9.6894**	0.495	5.1	mg/L	267	Standard
> **Sc-1**	45	39158.9	0.7				mg/L	38815	Standard
Cl	35	56905.3	1.1				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1556.7	6.9				ug/L	1617	Standard
P	31	20498.9	2.2				ug/L	19244	Standard
S	34	3742.1	6.2				ug/L	3557	Standard
Sr	88	81.7	19.7				ug/L	65	Standard
C	12	83.3	18.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	23	Standard
Dy	164	6.0	87.0				mg/L	13	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	1631.8	7.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Wednesday, July 06, 2016 09:20:51
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	66356.7	1.4				ug/L	68501	Standard
	Be	9	43475.6	2.2	**49.4638**	0.458	0.9	ug/L	8	Standard
	Al	27	7054643.4	2.9	**51.3289**	1.450	2.8	ug/L	1397	Standard
	Sc	45	38495.5	1.3				ug/L	38815	Standard
	Ti	47	34184.5	1.1	**99.3657**	1.944	2.0	ug/L	36	Standard
	V	51	366676.1	1.6	**50.7082**	0.578	1.1	ug/L	1284	Standard
	Cr	52	360229.4	1.7	**50.1586**	1.359	2.7	ug/L	6503	Standard
	Cr	53	44777.8	2.1	**50.5577**	1.541	3.0	ug/L	492	Standard
	Mn	55	318282.5	2.3	**50.7079**	1.592	3.1	ug/L	841	Standard
	Co	59	313631.6	2.7	**50.7369**	1.677	3.3	ug/L	229	Standard
	Ni	60	85664.2	1.3	**49.7047**	1.124	2.3	ug/L	344	Standard
	Cu	65	85779.5	0.3	**50.0130**	0.649	1.3	ug/L	115	Standard
	Zn	66	52022.2	0.4	**50.2627**	0.310	0.6	ug/L	190	Standard
>	Ge	72	419951.3	1.0				ug/L	409858	Standard
	As	75	53198.3	0.4	**50.1862**	0.299	0.6	ug/L	-22	Standard
	Se	82	5468.0	1.7	**50.4702**	1.293	2.6	ug/L	18	Standard
	Se-1	77	3629.1	2.1	**50.6717**	0.631	1.2	ug/L	50	Standard
>	Ga	71	115.0	15.1				mg/L	97	Standard
	Rb	85	778.4	9.3				ug/L	25	Standard
	Y	89	357538.5	1.7				ug/L	376763	Standard
>	Rh	103	33.3	22.9				ug/L	20	Standard
	Mo	98	239539.0	1.4	**103.1272**	1.538	1.5	ug/L	51	Standard
	Ag	107	306299.6	0.9	**50.9387**	0.703	1.4	ug/L	76	Standard
	Cd	111	97069.3	1.3	**50.7873**	0.404	0.8	mg/L	6	Standard
	Cd	114	234626.7	1.1	**50.2178**	0.829	1.6	ug/L	18	Standard
>	In	115	488900.7	0.6				ug/L	507261	Standard
	Sn	118	263207.0	1.9	**49.7800**	1.006	2.0	ug/L	683	Standard
	Sb	123	214060.8	1.6	**51.7618**	0.833	1.6	ug/L	446	Standard
	Ba	135	93668.6	0.5	**51.0843**	0.522	1.0	ug/L	28	Standard
	Ce	140	71.7	24.5				ug/L	33	Standard
>	Tb	159	790633.0	1.4				ug/L	800803	Standard
	Ho	165	10.0	132.3				ug/L	10	Standard
	Tl	203	386612.8	0.6	**50.2968**	0.791	1.6	ug/L	13	Standard
	Tl	205	338341.7	1.7	**50.8334**	1.347	2.7	ug/L	13	Standard
	Pb	206	249116.9	0.4	**50.4726**	0.709	1.4	ug/L	226	Standard
	Pb	207	225878.3	0.4	**50.3950**	0.604	1.2	ug/L	204	Standard
	Pb	208	910277.1	0.9	**50.7865**	0.810	1.6	ug/L	852	Standard
	U	238	332181.4	0.8	**50.0553**	1.080	2.2	ug/L	13	Standard
>	Bi	209	451671.8	1.3				ug/L	449044	Standard

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Na	23	1.7	173.2	**0.4126**	15.927	3859.7	mg/L	2	Standard
Mg	24	3910.5	3.2	**5.3019**	0.233	4.4	mg/L	58	Standard
K	39	1270.1	5.5	**4.9629**	0.272	5.5	mg/L	27	Standard
Ca	43	80.0	22.5	**4.5990**	1.376	29.9	mg/L	20	Standard
Fe	54	6189.1	5.7	**5.1014**	0.233	4.6	mg/L	158	Standard
Fe	57	1740.1	3.2	**5.1884**	0.136	2.6	mg/L	267	Standard
Sc-1	45	38495.5	1.3				mg/L	38815	Standard
Cl	35	57189.1	1.2				ug/L	57611	Standard
Kr	83	3.0	57.7				ug/L	2	Standard
Br	81	1483.4	3.7				ug/L	1617	Standard
P	31	20629.0	2.5				ug/L	19244	Standard
S	34	3698.8	3.4				ug/L	3557	Standard
Sr	88	71.7	10.7				ug/L	65	Standard
C	12	63.3	18.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	6.0	94.2				mg/L	13	Standard
Ho-1	165	10.0	132.3				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	16258.7	1.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	98.928		
Al	27	102.658		
Sc	45			
Ti	47	99.366		
V	51	101.416		
Cr	52	100.317		
Cr	53			
Mn	55	101.416		
Co	59	101.474		
Ni	60	99.409		
Cu	65	100.026		
Zn	66	100.525		
Ge	72		102.463	
As	75	100.372		
Se	82	100.940		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	103.127		
Ag	107	101.877		
Cd	111	101.575		
Cd	114			
In	115		96.381	
Sn	118	99.560		
Sb	123	103.524		
Ba	135	102.169		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.594		
Tl	205			
Pb	206	100.945		
Pb	207	100.790		
Pb	208	101.573		
U	238	100.111		
Bi	209		100.585	
Na	23	8.253		
Mg	24	106.038		
K	39	99.259		
Ca	43	91.981		
Fe	54	102.028		
Fe	57	103.769		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Wednesday, July 06, 2016 09:24:04
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67100.0	2.8				ug/L	68501	Standard
	Be	9	23.3	44.6	**0.0459**	0.012	26.8	ug/L	8	Standard
	Al	27	2183.5	5.5	**0.0508**	0.001	1.9	ug/L	1397	Standard
	Sc	45	38350.2	1.8				ug/L	38815	Standard
	Ti	47	45.0	10.2	**0.1079**	0.013	11.8	ug/L	36	Standard
	V	51	1197.9	4.5	**0.0284**	0.009	33.2	ug/L	1284	Standard
	Cr	52	6091.2	0.6	**-0.0369**	0.012	32.3	ug/L	6503	Standard
	Cr	53	483.3	2.6	**0.1526**	0.017	11.3	ug/L	492	Standard
	Mn	55	1339.7	3.7	**0.1261**	0.010	8.2	ug/L	841	Standard
	Co	59	302.7	6.8	**0.0563**	0.004	6.7	ug/L	229	Standard
	Ni	60	363.3	5.5	**0.0617**	0.010	16.0	ug/L	344	Standard
	Cu	65	140.0	3.7	**0.0715**	0.003	4.8	ug/L	115	Standard
	Zn	66	330.3	4.9	**0.2188**	0.020	8.9	ug/L	190	Standard
>	**Ge**	72	404498.0	1.0				ug/L	409858	Standard
	As	75	-54.7	81.6	**0.0457**	0.043	94.2	ug/L	-22	Standard
	Se	82	15.5	9.6	**0.0976**	0.016	16.1	ug/L	18	Standard
	Se-1	77	49.7	14.8	**-0.0288**	0.101	349.5	ug/L	50	Standard
>	**Ga**	71	81.7	23.2				mg/L	97	Standard
	Rb	85	16.7	45.8				ug/L	25	Standard
	Y	89	369622.9	1.1				ug/L	376763	Standard
>	**Rh**	103	16.7	62.4				ug/L	20	Standard
	Mo	98	227.3	14.0	**0.1640**	0.015	8.9	ug/L	51	Standard
	Ag	107	151.0	33.0	**0.0469**	0.008	17.6	ug/L	76	Standard
	Cd	111	28.2	76.8	**0.0534**	0.011	20.6	mg/L	6	Standard
	Cd	114	78.0	111.0	**0.0533**	0.018	33.5	ug/L	18	Standard
>	**In**	115	517958.4	1.8				ug/L	507261	Standard
	Sn	118	1193.4	27.5	**0.1041**	0.062	59.9	ug/L	683	Standard
	Sb	123	1119.5	34.5	**0.2362**	0.092	38.9	ug/L	446	Standard
	Ba	135	62.7	17.1	**0.0481**	0.006	12.7	ug/L	28	Standard
	Ce	140	18.3	31.5				ug/L	33	Standard
>	**Tb**	159	802322.5	1.8				ug/L	800803	Standard
	Ho	165	5.0	100.0				ug/L	10	Standard
	Tl	203	124.7	67.7	**0.0496**	0.011	22.5	ug/L	13	Standard
	Tl	205	53.3	42.3	**0.0506**	0.003	6.9	ug/L	13	Standard
	Pb	206	298.0	8.1	**0.0563**	0.006	10.3	ug/L	226	Standard
	Pb	207	230.3	14.6	**0.0502**	0.008	15.3	ug/L	204	Standard
	Pb	208	1030.3	4.7	**0.0574**	0.003	4.4	ug/L	852	Standard
	U	238	66.0	13.5	**0.0525**	0.001	2.7	ug/L	13	Standard
>	**Bi**	209	452580.9	1.6				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	51.7	20.1	**0.0326**	0.015	47.2	mg/L	58	Standard
K	39	26.7	28.6	**-0.0338**	0.033	97.4	mg/L	27	Standard
Ca	43	25.0	34.6	**0.5702**	0.676	118.6	mg/L	20	Standard
Fe	54	150.9	33.4	**0.0073**	0.041	560.9	mg/L	158	Standard
Fe	57	226.7	20.0	**0.0891**	0.161	181.3	mg/L	267	Standard
> **Sc-1**	45	38350.2	1.8				mg/L	38815	Standard
Cl	35	56957.5	0.7				ug/L	57611	Standard
Kr	83	2.7	94.4				ug/L	2	Standard
Br	81	1566.7	7.6				ug/L	1617	Standard
P	31	19928.1	2.3				ug/L	19244	Standard
S	34	3602.1	6.0				ug/L	3557	Standard
Sr	88	55.0	15.7				ug/L	65	Standard
C	12	60.0	28.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	49.5				mg/L	23	Standard
Dy	164	13.0	89.8				mg/L	13	Standard
Ho-1	165	5.0	100.0				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	9436.3	0.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.692	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.109
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.788
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Tl	203	
QC Std 2	Na	23	

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QC Std 2	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Wednesday, July 06, 2016 09:27:17
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65417.6	1.3				ug/L	68501	Standard
	Be	9	186.7	5.6	**0.2348**	0.012	5.3	ug/L	8	Standard
	Al	27	2355.2	45.5	**0.0524**	0.008	14.6	ug/L	1397	Standard
	Sc	45	37294.2	0.1				ug/L	38815	Standard
	Ti	47	42.7	24.1	**0.0989**	0.031	31.6	ug/L	36	Standard
	V	51	3828.2	3.6	**0.3978**	0.022	5.6	ug/L	1284	Standard
	Cr	52	11586.1	1.6	**0.7432**	0.033	4.5	ug/L	6503	Standard
	Cr	53	1166.7	5.5	**0.9370**	0.082	8.8	ug/L	492	Standard
	Mn	55	3627.4	3.0	**0.4950**	0.021	4.2	ug/L	841	Standard
	Co	59	2526.2	0.4	**0.4225**	0.004	0.8	ug/L	229	Standard
	Ni	60	2915.6	1.9	**1.5740**	0.024	1.5	ug/L	344	Standard
	Cu	65	1393.7	0.1	**0.8162**	0.004	0.5	ug/L	115	Standard
	Zn	66	6625.1	1.8	**6.4340**	0.109	1.7	ug/L	190	Standard
>	**Ge**	72	411474.6	0.6				ug/L	409858	Standard
	As	75	332.4	3.7	**0.4184**	0.013	3.2	ug/L	-22	Standard
	Se	82	50.5	10.9	**0.4250**	0.052	12.2	ug/L	18	Standard
	Se-1	77	77.0	7.2	**0.3547**	0.078	22.0	ug/L	50	Standard
>	**Ga**	71	86.7	29.0				mg/L	97	Standard
	Rb	85	31.7	24.1				ug/L	25	Standard
	Y	89	346988.1	2.4				ug/L	376763	Standard
>	**Rh**	103	26.7	10.8				ug/L	20	Standard
	Mo	98	119.3	16.3	**0.1236**	0.010	7.7	ug/L	51	Standard
	Ag	107	2405.2	1.0	**0.4282**	0.008	1.8	ug/L	76	Standard
	Cd	111	441.8	10.7	**0.2737**	0.030	10.8	mg/L	6	Standard
	Cd	114	1119.1	2.0	**0.2799**	0.008	2.7	ug/L	18	Standard
>	**In**	115	482554.7	1.9				ug/L	507261	Standard
	Sn	118	655.0	25.2	**0.0153**	0.029	191.7	ug/L	683	Standard
	Sb	123	1858.9	4.6	**0.4351**	0.013	3.0	ug/L	446	Standard
	Ba	135	1308.4	0.6	**0.7386**	0.014	1.9	ug/L	28	Standard
	Ce	140	8.3	69.3				ug/L	33	Standard
>	**Tb**	159	783468.8	1.6				ug/L	800803	Standard
	Ho	165	15.0	66.7				ug/L	10	Standard
	Tl	203	676.0	5.5	**0.1197**	0.006	5.2	ug/L	13	Standard
	Tl	205	601.7	15.4	**0.1314**	0.015	11.6	ug/L	13	Standard
	Pb	206	1247.7	7.0	**0.2445**	0.022	8.9	ug/L	226	Standard
	Pb	207	1033.4	4.7	**0.2255**	0.015	6.5	ug/L	204	Standard
	Pb	208	4382.9	3.6	**0.2404**	0.013	5.4	ug/L	852	Standard
	U	238	2536.5	4.5	**0.4179**	0.023	5.6	ug/L	13	Standard
>	**Bi**	209	459865.4	1.7				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	50.0	10.0	**0.0321**	0.007	21.9	mg/L	58	Standard
K	39	20.0	50.0	**-0.0588**	0.042	70.7	mg/L	27	Standard
Ca	43	26.7	10.8	**0.7405**	0.217	29.3	mg/L	20	Standard
Fe	54	103.7	16.3	**-0.0299**	0.015	49.0	mg/L	158	Standard
Fe	57	241.7	33.6	**0.1616**	0.283	174.8	mg/L	267	Standard
> **Sc-1**	45	37294.2	0.1				mg/L	38815	Standard
Cl	35	54505.2	0.8				ug/L	57611	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1563.4	7.1				ug/L	1617	Standard
P	31	13631.1	2.5				ug/L	19244	Standard
S	34	3488.7	2.2				ug/L	3557	Standard
Sr	88	75.0	23.1				ug/L	65	Standard
C	12	66.7	56.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	23	Standard
Dy	164	6.2	193.4				mg/L	13	Standard
Ho-1	165	15.0	66.7				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	1130.0	12.6				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	117.422		
Al	27	5.237		
Sc	45			
Ti	47			
V	51	99.451		
Cr	52	92.904		
Cr	53			
Mn	55	98.996		
Co	59	105.620		
Ni	60	98.374		
Cu	65	102.028		
Zn	66	102.944		
> Ge	72		100.394	
As	75	104.589		
Se	82	106.246		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	107.059		
Cd	111	114.057		
Cd	114			
> In	115			95.130
Sn	118			
Sb	123	108.770		
Ba	135	98.481		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	149.655		
Tl	205			
Pb	206			
Pb	207			
Pb	208	120.192		
U	238	104.477		
> Bi	209			102.410
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	
QC Std 3	Tl	203	

Sample ID: QC Std 3
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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Wednesday, July 06, 2016 09:30:29
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61360.7	2.7				ug/L	68501	Standard
	Be	9	15.0	0.0	**0.0379**	0.000	1.3	ug/L	8	Standard
	Al	27	6080942.0	0.8	**47.8630**	0.940	2.0	ug/L	1397	Standard
	Sc	45	35434.7	2.4				ug/L	38815	Standard
	Ti	47	33819.4	1.1	**108.9282**	1.555	1.4	ug/L	36	Standard
	V	51	1377.9	9.8	**0.0677**	0.022	32.9	ug/L	1284	Standard
	Cr	52	5607.7	0.5	**-0.0525**	0.010	18.8	ug/L	6503	Standard
	Cr	53	2843.6	7.6	**3.1694**	0.297	9.4	ug/L	492	Standard
	Mn	55	2265.8	2.0	**0.3048**	0.005	1.6	ug/L	841	Standard
	Co	59	371.0	7.9	**0.0720**	0.005	7.5	ug/L	229	Standard
	Ni	60	730.4	5.2	**0.3134**	0.028	9.0	ug/L	344	Standard
	Cu	65	524.3	4.8	**0.3256**	0.018	5.6	ug/L	115	Standard
	Zn	66	828.7	1.3	**0.7759**	0.017	2.1	ug/L	190	Standard
>	**Ge**	72	378975.5	0.8				ug/L	409858	Standard
	As	75	-44.0	48.2	**0.0530**	0.022	41.2	ug/L	-22	Standard
	Se	82	14.2	49.4	**0.0934**	0.070	75.2	ug/L	18	Standard
	Se-1	77	280.7	4.8	**3.6481**	0.177	4.9	ug/L	50	Standard
>	**Ga**	71	138.3	17.8				mg/L	97	Standard
	Rb	85	721.7	0.8				ug/L	25	Standard
	Y	89	331853.6	3.0				ug/L	376763	Standard
>	**Rh**	103	13.3	21.7				ug/L	20	Standard
	Mo	98	199402.1	1.4	**89.6813**	1.424	1.6	ug/L	51	Standard
	Ag	107	208.0	7.5	**0.0592**	0.003	4.4	ug/L	76	Standard
	Cd	111	-165.0	5.5	**-0.0508**	0.005	10.6	mg/L	6	Standard
	Cd	114	386.9	16.9	**0.1238**	0.015	11.9	ug/L	18	Standard
>	**In**	115	468051.7	0.5				ug/L	507261	Standard
	Sn	118	676.7	22.2	**0.0239**	0.030	124.4	ug/L	683	Standard
	Sb	123	1910.7	40.1	**0.4622**	0.193	41.7	ug/L	446	Standard
	Ba	135	45.0	14.6	**0.0414**	0.004	8.9	ug/L	28	Standard
	Ce	140	46.7	22.3				ug/L	33	Standard
>	**Tb**	159	757530.1	1.7				ug/L	800803	Standard
	Ho	165	6.7	114.6				ug/L	10	Standard
	Tl	203	92.7	26.0	**0.0459**	0.003	6.8	ug/L	13	Standard
	Tl	205	90.0	49.4	**0.0566**	0.007	12.3	ug/L	13	Standard
	Pb	206	335.3	13.1	**0.0669**	0.009	14.2	ug/L	226	Standard
	Pb	207	277.7	7.6	**0.0636**	0.005	8.5	ug/L	204	Standard
	Pb	208	1135.7	5.8	**0.0662**	0.004	6.7	ug/L	852	Standard
	U	238	21.0	79.3	**0.0459**	0.003	5.8	ug/L	13	Standard
>	**Bi**	209	432940.1	1.1				ug/L	449044	Standard

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Na	23	3.3	86.6	**10.8562**	17.008	156.7	mg/L	2	Standard
Mg	24	8482.4	1.3	**12.5439**	0.150	1.2	mg/L	58	Standard
K	39	1155.0	6.5	**4.9086**	0.447	9.1	mg/L	27	Standard
Ca	43	233.3	21.1	**17.2901**	3.698	21.4	mg/L	20	Standard
Fe	54	13645.3	0.6	**12.3970**	0.377	3.0	mg/L	158	Standard
Fe	57	3633.8	2.3	**12.6445**	0.637	5.0	mg/L	267	Standard
Sc-1	45	35434.7	2.4				mg/L	38815	Standard
Cl	35	51675.3	0.7				ug/L	57611	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	1330.1	8.5				ug/L	1617	Standard
P	31	6708.2	2.1				ug/L	19244	Standard
S	34	3120.3	1.5				ug/L	3557	Standard
Sr	88	66.7	33.8				ug/L	65	Standard
C	12	96.7	26.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	66.1				mg/L	23	Standard
Dy	164	12.7	119.6				mg/L	13	Standard
Ho-1	165	6.7	114.6				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	5110.9	1.6				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27	0.957		
Sc	45			
Ti	47	108.928		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		92.465	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	89.681		
Ag	107			
Cd	111			
Cd	114			
In	115			92.270
Sn	118			
Sb	123			
Ba	135			
Ce	140			
Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
Bi	209			96.414
Na	23	86.849		
Mg	24	250.878		
K	39	98.171		
Ca	43	115.267		
Fe	54	99.176		
Fe	57	101.156		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Mn	55	
QC Std 4	Sb	123	

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QC Std 4	Tl	203
QC Std 4	Mg	24

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Wednesday, July 06, 2016 09:33:40
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64567.3	2.5				ug/L	68501	Standard
	Be	9	91125.1	3.2	**106.5212**	0.809	0.8	ug/L	8	Standard
	Al	27	5841463.6	2.0	**43.6871**	0.390	0.9	ug/L	1397	Standard
	Sc	45	37758.7	1.0				ug/L	38815	Standard
	Ti	47	31558.5	0.9	**93.8751**	2.819	3.0	ug/L	36	Standard
	V	51	722341.4	0.7	**102.3673**	1.700	1.7	ug/L	1284	Standard
	Cr	52	704068.9	1.5	**101.2574**	3.373	3.3	ug/L	6503	Standard
	Cr	53	89332.6	1.3	**103.6555**	3.522	3.4	ug/L	492	Standard
	Mn	55	628105.6	1.2	**102.4937**	2.947	2.9	ug/L	841	Standard
	Co	59	608757.5	0.2	**100.7586**	2.068	2.1	ug/L	229	Standard
	Ni	60	168811.6	0.8	**100.3826**	2.213	2.2	ug/L	344	Standard
	Cu	65	170633.5	1.2	**101.8171**	2.544	2.5	ug/L	115	Standard
	Zn	66	104159.9	1.6	**103.1127**	3.201	3.1	ug/L	190	Standard
>	**Ge**	72	410487.5	2.1				ug/L	409858	Standard
	As	75	106667.7	1.2	**102.8884**	3.381	3.3	ug/L	-22	Standard
	Se	82	10891.4	0.5	**102.9229**	2.705	2.6	ug/L	18	Standard
	Se-1	77	7297.8	0.3	**105.0915**	2.607	2.5	ug/L	50	Standard
>	**Ga**	71	166.7	16.5				mg/L	97	Standard
	Rb	85	588.3	10.8				ug/L	25	Standard
	Y	89	358285.2	0.9				ug/L	376763	Standard
>	**Rh**	103	51.7	34.0				ug/L	20	Standard
	Mo	98	193849.3	1.5	**83.7046**	1.699	2.0	ug/L	51	Standard
	Ag	107	512024.5	0.8	**85.3915**	2.560	3.0	ug/L	76	Standard
	Cd	111	192888.4	1.5	**101.1583**	0.926	0.9	mg/L	6	Standard
	Cd	114	469964.6	2.8	**100.8180**	2.635	2.6	ug/L	18	Standard
>	**In**	115	487630.1	2.2				ug/L	507261	Standard
	Sn	118	1078.4	11.5	**0.0947**	0.021	22.4	ug/L	683	Standard
	Sb	123	417338.3	2.0	**101.2012**	0.566	0.6	ug/L	446	Standard
	Ba	135	184015.1	1.0	**100.6250**	1.956	1.9	ug/L	28	Standard
	Ce	140	75.0	30.6				ug/L	33	Standard
>	**Tb**	159	776420.3	0.7				ug/L	800803	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	765644.3	1.1	**101.4362**	1.960	1.9	ug/L	13	Standard
	Tl	205	667667.3	1.5	**102.1249**	0.931	0.9	ug/L	13	Standard
	Pb	206	500852.9	0.2	**103.3724**	0.899	0.9	ug/L	226	Standard
	Pb	207	436808.9	0.8	**99.2777**	1.432	1.4	ug/L	204	Standard
	Pb	208	1811126.3	0.8	**102.9331**	1.386	1.3	ug/L	852	Standard
	U	238	659589.2	0.9	**101.1936**	1.228	1.2	ug/L	13	Standard
>	**Bi**	209	443371.5	0.9				ug/L	449044	Standard

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Na	23	3.3	86.6	**10.0106**	16.275	162.6	mg/L	2	Standard
Mg	24	7865.4	1.0	**10.9091**	0.136	1.2	mg/L	58	Standard
K	39	1000.0	5.3	**3.9554**	0.187	4.7	mg/L	27	Standard
Ca	43	148.3	19.5	**9.8082**	2.124	21.7	mg/L	20	Standard
Fe	54	12345.4	1.8	**10.5037**	0.262	2.5	mg/L	158	Standard
Fe	57	3278.7	4.2	**10.5976**	0.579	5.5	mg/L	267	Standard
Sc-1	45	37758.7	1.0				mg/L	38815	Standard
Cl	35	56009.4	2.9				ug/L	57611	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	1560.1	10.6				ug/L	1617	Standard
P	31	17989.0	3.4				ug/L	19244	Standard
S	34	3142.0	3.8				ug/L	3557	Standard
Sr	88	61.7	30.7				ug/L	65	Standard
C	12	113.3	28.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0					mg/L	23	Standard
Dy	164	16.2	33.1				mg/L	13	Standard
Ho-1	165	8.3	69.3				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	8464.0	3.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	106.521		
Al	27	0.874		
Sc	45			
Ti	47	93.875		
V	51	102.367		
Cr	52	101.257		
Cr	53			
Mn	55	102.494		
Co	59	100.759		
Ni	60	100.383		
Cu	65	101.817		
Zn	66	103.113		
Ge	72		100.154	
As	75	102.888		
Se	82	102.923		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	83.705		
Ag	107	85.392		
Cd	111	101.158		
Cd	114			
In	115		96.130	
Sn	118			
Sb	123	101.201		
Ba	135	100.625		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.436		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.933		
U	238	101.194		
Bi	209		98.737	
Na	23	80.085		
Mg	24	218.182		
K	39	79.108		
Ca	43	65.388		
Fe	54	84.030		
Fe	57	84.781		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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QC Std 5	K	39
QC Std 5	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 09:36:53
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	66505.7	2.0				ug/L	68501	Standard
	Be	9	44953.3	3.2	**51.0275**	0.926	1.8	ug/L	8	Standard
	Al	27	6996524.9	1.6	**50.7955**	0.749	1.5	ug/L	1397	Standard
	Sc	45	38022.7	1.7				ug/L	38815	Standard
	Ti	47	33782.0	1.4	**100.5626**	2.963	2.9	ug/L	36	Standard
	V	51	357671.8	0.9	**50.6587**	1.245	2.5	ug/L	1284	Standard
	Cr	52	354246.5	1.3	**50.5178**	1.460	2.9	ug/L	6503	Standard
	Cr	53	43226.6	2.1	**49.9696**	1.458	2.9	ug/L	492	Standard
	Mn	55	314552.6	0.4	**51.3140**	0.983	1.9	ug/L	841	Standard
	Co	59	307541.5	1.8	**50.9392**	1.094	2.1	ug/L	229	Standard
	Ni	60	84538.5	1.1	**50.2327**	1.339	2.7	ug/L	344	Standard
	Cu	65	84460.4	0.1	**50.4258**	0.835	1.7	ug/L	115	Standard
	Zn	66	51209.1	0.6	**50.6642**	0.504	1.0	ug/L	190	Standard
>	Ge	72	410145.3	1.6				ug/L	409858	Standard
	As	75	52298.5	0.3	**50.5211**	0.645	1.3	ug/L	-22	Standard
	Se	82	5387.6	0.7	**50.9166**	0.695	1.4	ug/L	18	Standard
	Se-1	77	3526.4	1.5	**50.4307**	1.547	3.1	ug/L	50	Standard
>	Ga	71	90.0	9.6				mg/L	97	Standard
	Rb	85	696.7	6.5				ug/L	25	Standard
	Y	89	365798.1	0.7				ug/L	376763	Standard
>	Rh	103	33.3	48.2				ug/L	20	Standard
	Mo	98	235366.3	0.5	**98.5044**	2.325	2.4	ug/L	51	Standard
	Ag	107	305020.7	0.3	**49.3129**	1.388	2.8	ug/L	76	Standard
	Cd	111	97013.5	1.7	**49.3321**	0.528	1.1	mg/L	6	Standard
	Cd	114	235858.1	1.3	**49.0627**	0.748	1.5	ug/L	18	Standard
>	In	115	503155.0	2.8				ug/L	507261	Standard
	Sn	118	267872.4	1.1	**49.2399**	0.827	1.7	ug/L	683	Standard
	Sb	123	217573.7	0.6	**51.1402**	1.098	2.1	ug/L	446	Standard
	Ba	135	92365.7	1.0	**48.9616**	0.896	1.8	ug/L	28	Standard
	Ce	140	65.0	48.0				ug/L	33	Standard
>	Tb	159	792588.9	2.6				ug/L	800803	Standard
	Ho	165	10.0					ug/L	10	Standard
	Tl	203	384594.0	0.3	**50.4727**	0.329	0.7	ug/L	13	Standard
	Tl	205	336187.3	0.9	**50.9472**	0.055	0.1	ug/L	13	Standard
	Pb	206	247875.6	0.9	**50.6606**	0.314	0.6	ug/L	226	Standard
	Pb	207	224269.3	0.7	**50.4752**	0.242	0.5	ug/L	204	Standard
	Pb	208	908021.7	0.7	**51.1061**	0.556	1.1	ug/L	852	Standard
	U	238	333822.0	1.2	**50.7390**	0.560	1.1	ug/L	13	Standard
>	Bi	209	447704.5	0.9				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	3780.5	3.8	**5.1881**	0.227	4.4	mg/L	58	Standard
K	39	1228.4	12.1	**4.8519**	0.530	10.9	mg/L	27	Standard
Ca	43	108.3	37.3	**6.7544**	2.939	43.5	mg/L	20	Standard
Fe	54	5918.1	5.4	**4.9348**	0.198	4.0	mg/L	158	Standard
Fe	57	1796.8	5.7	**5.4534**	0.272	5.0	mg/L	267	Standard
> **Sc-1**	45	38022.7	1.7				mg/L	38815	Standard
Cl	35	56907.4	1.6				ug/L	57611	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	1520.1	14.0				ug/L	1617	Standard
P	31	19652.7	3.0				ug/L	19244	Standard
S	34	3582.1	6.2				ug/L	3557	Standard
Sr	88	58.3	35.7				ug/L	65	Standard
C	12	83.3	48.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	2.5	222.5				mg/L	13	Standard
Ho-1	165	10.0					mg/L	10	Standard
Er	166	16.7	34.6				mg/L	13	Standard
I	127	16659.2	0.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	102.055		
Al	27	101.591		
Sc	45			
Ti	47	100.563		
V	51	101.317		
Cr	52	101.036		
Cr	53			
Mn	55	102.628		
Co	59	101.878		
Ni	60	100.465		
Cu	65	100.852		
Zn	66	101.328		
> Ge	72		100.070	
As	75	101.042		
Se	82	101.833		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.504		
Ag	107	98.626		
Cd	111	98.664		
Cd	114			
> In	115			99.191
Sn	118	98.480		
Sb	123	102.280		
Ba	135	97.923		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.945		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.212		
U	238	101.478		
> Bi	209			99.702
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 09:40:05
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66617.8	0.8				ug/L	68501	Standard
	Be	9	33.3	74.0	**0.0573**	0.028	48.9	ug/L	8	Standard
	Al	27	2161.8	25.3	**0.0507**	0.004	7.7	ug/L	1397	Standard
	Sc	45	38288.3	3.0				ug/L	38815	Standard
	Ti	47	35.7	16.4	**0.0742**	0.017	23.1	ug/L	36	Standard
	V	51	1261.9	1.4	**0.0280**	0.003	9.9	ug/L	1284	Standard
	Cr	52	6321.3	1.3	**-0.0523**	0.014	26.2	ug/L	6503	Standard
	Cr	53	518.3	8.0	**0.1616**	0.049	30.1	ug/L	492	Standard
	Mn	55	1281.1	5.7	**0.1051**	0.012	11.5	ug/L	841	Standard
	Co	59	281.7	13.9	**0.0503**	0.006	12.7	ug/L	229	Standard
	Ni	60	349.7	5.0	**0.0424**	0.011	25.7	ug/L	344	Standard
	Cu	65	134.3	2.3	**0.0637**	0.001	2.3	ug/L	115	Standard
	Zn	66	339.7	5.5	**0.2101**	0.019	9.0	ug/L	190	Standard
>	**Ge**	72	427105.9	0.4				ug/L	409858	Standard
	As	75	-33.1	67.2	**0.0683**	0.021	30.1	ug/L	-22	Standard
	Se	82	22.7	11.6	**0.1545**	0.025	15.9	ug/L	18	Standard
	Se-1	77	55.0	19.7	**0.0077**	0.152	1983.6	ug/L	50	Standard
>	**Ga**	71	78.3	13.3				mg/L	97	Standard
	Rb	85	18.3	103.3				ug/L	25	Standard
	Y	89	350460.3	0.9				ug/L	376763	Standard
>	**Rh**	103	20.0	50.0				ug/L	20	Standard
	Mo	98	275.0	5.1	**0.1892**	0.006	3.3	ug/L	51	Standard
	Ag	107	134.3	23.5	**0.0453**	0.005	11.8	ug/L	76	Standard
	Cd	111	12.2	37.2	**0.0457**	0.002	5.3	mg/L	6	Standard
	Cd	114	38.5	33.1	**0.0456**	0.003	6.2	ug/L	18	Standard
>	**In**	115	491789.1	1.5				ug/L	507261	Standard
	Sn	118	988.4	21.5	**0.0758**	0.037	48.9	ug/L	683	Standard
	Sb	123	1592.3	35.2	**0.3614**	0.130	35.9	ug/L	446	Standard
	Ba	135	53.3	21.9	**0.0447**	0.007	15.0	ug/L	28	Standard
	Ce	140	16.7	62.4				ug/L	33	Standard
>	**Tb**	159	781565.5	1.5				ug/L	800803	Standard
	Ho	165	10.0	100.0				ug/L	10	Standard
	Tl	203	98.7	20.5	**0.0461**	0.003	6.2	ug/L	13	Standard
	Tl	205	86.7	8.8	**0.0554**	0.001	2.4	ug/L	13	Standard
	Pb	206	292.7	16.7	**0.0548**	0.011	19.9	ug/L	226	Standard
	Pb	207	246.3	10.8	**0.0535**	0.007	12.6	ug/L	204	Standard
	Pb	208	1017.0	10.2	**0.0564**	0.007	11.9	ug/L	852	Standard
	U	238	61.7	31.6	**0.0519**	0.003	6.0	ug/L	13	Standard
>	**Bi**	209	455909.4	1.7				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	50.0	17.3	**0.0301**	0.010	32.4	mg/L	58	Standard
K	39	36.7	34.3	**0.0056**	0.047	830.8	mg/L	27	Standard
Ca	43	26.7	21.7	**0.6975**	0.476	68.2	mg/L	20	Standard
Fe	54	127.9	32.7	**-0.0110**	0.038	345.5	mg/L	158	Standard
Fe	57	243.3	9.7	**0.1461**	0.086	58.8	mg/L	267	Standard
Sc-1	45	38288.3	3.0				mg/L	38815	Standard
Cl	35	57568.5	0.3				ug/L	57611	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	1590.1	4.4				ug/L	1617	Standard
P	31	19429.1	3.6				ug/L	19244	Standard
S	34	3620.4	4.4				ug/L	3557	Standard
Sr	88	75.0	29.1				ug/L	65	Standard
C	12	53.3	65.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	23	Standard
Dy	164	3.2	186.4				mg/L	13	Standard
Ho-1	165	10.0	100.0				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	9119.4	0.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		104.208	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.950
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.529
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	
QC Std 7	Tl	203	

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Method 6020 - Summary Report

Sample ID: PBW M1 WG574195-02
Sample Date/Time: Wednesday, July 06, 2016 09:43:17
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67511.8	3.1				ug/L	68501	Standard
	Be	9	25.0	34.6	**0.0476**	0.010	21.9	ug/L	8	Standard
	Al	27	5334.3	10.5	**0.0732**	0.004	5.8	ug/L	1397	Standard
	Sc	45	39065.3	1.5				ug/L	38815	Standard
	Ti	47	49.7	15.4	**0.1167**	0.022	18.5	ug/L	36	Standard
	V	51	1253.3	6.8	**0.0300**	0.013	44.6	ug/L	1284	Standard
	Cr	52	6631.5	2.9	**0.0081**	0.037	458.1	ug/L	6503	Standard
	Cr	53	545.0	6.4	**0.2024**	0.035	17.4	ug/L	492	Standard
	Mn	55	1151.7	3.0	**0.0881**	0.004	4.1	ug/L	841	Standard
	Co	59	268.0	15.0	**0.0489**	0.006	13.0	ug/L	229	Standard
	Ni	60	392.3	2.3	**0.0709**	0.007	9.6	ug/L	344	Standard
	Cu	65	185.3	9.7	**0.0949**	0.010	10.2	ug/L	115	Standard
	Zn	66	1260.4	3.9	**1.1090**	0.058	5.3	ug/L	190	Standard
>	**Ge**	72	419416.9	1.1				ug/L	409858	Standard
	As	75	-28.0	41.9	**0.0725**	0.011	14.9	ug/L	-22	Standard
	Se	82	14.4	17.6	**0.0816**	0.025	30.3	ug/L	18	Standard
	Se-1	77	63.0	6.3	**0.1348**	0.050	36.9	ug/L	50	Standard
>	**Ga**	71	83.3	12.5				mg/L	97	Standard
	Rb	85	50.0	26.5				ug/L	25	Standard
	Y	89	366616.6	3.0				ug/L	376763	Standard
>	**Rh**	103	25.0	0.0				ug/L	20	Standard
	Mo	98	259.4	6.9	**0.1805**	0.007	3.8	ug/L	51	Standard
	Ag	107	900.4	144.5	**0.1721**	0.216	125.8	ug/L	76	Standard
	Cd	111	19.2	57.3	**0.0491**	0.005	11.1	mg/L	6	Standard
	Cd	114	41.4	108.1	**0.0459**	0.009	20.2	ug/L	18	Standard
>	**In**	115	500661.9	2.1				ug/L	507261	Standard
	Sn	118	693.3	21.9	**0.0183**	0.028	154.4	ug/L	683	Standard
	Sb	123	868.0	28.9	**0.1846**	0.059	31.7	ug/L	446	Standard
	Ba	135	81.7	11.6	**0.0592**	0.004	7.1	ug/L	28	Standard
	Ce	140	48.3	31.6				ug/L	33	Standard
>	**Tb**	159	787550.5	1.0				ug/L	800803	Standard
	Ho	165	1.7	173.2				ug/L	10	Standard
	Tl	203	87.3	46.5	**0.0445**	0.005	11.5	ug/L	13	Standard
	Tl	205	70.0	57.1	**0.0529**	0.006	11.1	ug/L	13	Standard
	Pb	206	294.0	2.6	**0.0548**	0.001	2.1	ug/L	226	Standard
	Pb	207	248.3	8.8	**0.0536**	0.004	8.3	ug/L	204	Standard
	Pb	208	1043.0	5.5	**0.0576**	0.003	5.1	ug/L	852	Standard
	U	238	64.3	49.6	**0.0522**	0.005	9.0	ug/L	13	Standard
>	**Bi**	209	457274.9	0.7				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	38.3	54.3	**0.0135**	0.029	211.6	mg/L	58	Standard
K	39	30.0	28.9	**-0.0233**	0.032	138.1	mg/L	27	Standard
Ca	43	26.7	28.6	**0.6510**	0.565	86.9	mg/L	20	Standard
Fe	54	144.3	12.0	**-0.0003**	0.012	4299.2	mg/L	158	Standard
Fe	57	236.7	16.4	**0.1078**	0.137	126.8	mg/L	267	Standard
> **Sc-1**	45	39065.3	1.5				mg/L	38815	Standard
Cl	35	56649.7	2.0				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1773.4	8.5				ug/L	1617	Standard
P	31	19510.9	3.7				ug/L	19244	Standard
S	34	3373.7	3.5				ug/L	3557	Standard
Sr	88	70.0	37.8				ug/L	65	Standard
C	12	56.7	79.6				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	-0.5	173.2				mg/L	13	Standard
Ho-1	165	1.7	173.2				mg/L	10	Standard
Er	166	10.0	173.2				mg/L	13	Standard
I	127	1906.8	8.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.556	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.332	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.699	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	101.833	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW M1 WG574195-02
Report Date/Time: Wednesday, July 06, 2016 09:45:34
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Method 6020 - Summary Report

Sample ID: LCSW M1 WG574195-03
Sample Date/Time: Wednesday, July 06, 2016 09:46:29
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68496.1	0.5				ug/L	68501	Standard
	Be	9	24005.7	1.0	**26.4702**	0.318	1.2	ug/L	8	Standard
	Al	27	5384.3	9.0	**0.0730**	0.004	4.9	ug/L	1397	Standard
	Sc	45	39459.6	0.3				ug/L	38815	Standard
	Ti	47	44.3	22.8	**0.0982**	0.029	29.9	ug/L	36	Standard
	V	51	191587.8	2.1	**25.8119**	0.349	1.4	ug/L	1284	Standard
	Cr	52	195533.7	0.9	**26.1567**	0.385	1.5	ug/L	6503	Standard
	Cr	53	23463.2	1.3	**25.6742**	0.534	2.1	ug/L	492	Standard
	Mn	55	166985.2	1.0	**25.9384**	0.101	0.4	ug/L	841	Standard
	Co	59	161701.1	1.7	**25.5536**	0.326	1.3	ug/L	229	Standard
	Ni	60	46464.5	0.6	**26.2616**	0.311	1.2	ug/L	344	Standard
	Cu	65	46697.9	0.8	**26.5916**	0.321	1.2	ug/L	115	Standard
	Zn	66	30683.7	0.6	**28.9142**	0.287	1.0	ug/L	190	Standard
>	Ge	72	429866.2	0.7				ug/L	409858	Standard
	As	75	28274.1	0.3	**26.1056**	0.217	0.8	ug/L	-22	Standard
	Se	82	2809.8	1.6	**25.3083**	0.494	2.0	ug/L	18	Standard
	Se-1	77	1919.8	1.7	**25.8234**	0.529	2.0	ug/L	50	Standard
>	Ga	71	70.0	14.3				mg/L	97	Standard
	Rb	85	66.7	28.4				ug/L	25	Standard
	Y	89	355323.3	0.9				ug/L	376763	Standard
>	Rh	103	16.7	17.3				ug/L	20	Standard
	Mo	98	139.0	24.6	**0.1292**	0.014	10.9	ug/L	51	Standard
	Ag	107	166696.7	0.8	**26.7524**	0.342	1.3	ug/L	76	Standard
	Cd	111	50998.1	0.5	**25.7594**	0.240	0.9	mg/L	6	Standard
	Cd	114	124785.9	0.5	**25.7810**	0.268	1.0	ug/L	18	Standard
>	In	115	506853.5	1.3				ug/L	507261	Standard
	Sn	118	908.4	17.6	**0.0558**	0.028	49.9	ug/L	683	Standard
	Sb	123	116535.5	0.8	**27.1742**	0.404	1.5	ug/L	446	Standard
	Ba	135	49242.6	0.4	**25.9131**	0.241	0.9	ug/L	28	Standard
	Ce	140	70.0	56.7				ug/L	33	Standard
>	Tb	159	811640.4	1.1				ug/L	800803	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	206095.2	0.4	**25.6991**	0.189	0.7	ug/L	13	Standard
	Tl	205	179392.4	0.6	**25.8371**	0.331	1.3	ug/L	13	Standard
	Pb	206	136480.6	0.7	**26.4857**	0.287	1.1	ug/L	226	Standard
	Pb	207	117386.7	1.1	**25.0888**	0.493	2.0	ug/L	204	Standard
	Pb	208	482062.4	0.4	**25.7636**	0.312	1.2	ug/L	852	Standard
	U	238	172135.6	0.5	**24.8666**	0.302	1.2	ug/L	13	Standard
>	Bi	209	471496.3	1.1				ug/L	449044	Standard

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Na	23	1.7	173.2	**0.1364**	15.448	11323.2	mg/L	2	Standard
Mg	24	50.0	43.6	**0.0282**	0.029	102.6	mg/L	58	Standard
K	39	30.0	33.3	**-0.0243**	0.039	160.8	mg/L	27	Standard
Ca	43	30.0	57.7	**0.8667**	1.233	142.3	mg/L	20	Standard
Fe	54	161.8	19.7	**0.0131**	0.027	202.7	mg/L	158	Standard
Fe	57	228.3	11.2	**0.0717**	0.085	118.9	mg/L	267	Standard
> **Sc-1**	45	39459.6	0.3				mg/L	38815	Standard
Cl	35	56892.0	1.3				ug/L	57611	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	1570.1	5.4				ug/L	1617	Standard
P	31	19504.2	1.8				ug/L	19244	Standard
S	34	3253.7	4.3				ug/L	3557	Standard
Sr	88	65.0	7.7				ug/L	65	Standard
C	12	66.7	45.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	137.8				mg/L	23	Standard
Dy	164	6.0	187.0				mg/L	13	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	973.4	5.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.993	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.882	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.920	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	105.000	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129411 WG574195-01
Sample Date/Time: Wednesday, July 06, 2016 09:49:40
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72468.0	2.9				ug/L	68501	Standard
	Be	9	838.4	11.5	**0.8913**	0.077	8.6	ug/L	8	Standard
	Al	27	24118733.2	0.5	**160.6931**	4.688	2.9	ug/L	1397	Standard
	Sc	45	45896.2	4.1				ug/L	38815	Standard
	Ti	47	6542.7	1.3	**19.5752**	0.441	2.3	ug/L	36	Standard
	V	51	189622.3	0.5	**26.9564**	0.349	1.3	ug/L	1284	Standard
	Cr	52	105498.7	1.5	**14.4822**	0.146	1.0	ug/L	6503	Standard
	Cr	53	12621.9	2.1	**14.3841**	0.164	1.1	ug/L	492	Standard
	Mn	55	8444960.4	0.5	**1388.7517**	15.304	1.1	ug/L	841	Standard
	Co	59	76520.1	1.2	**12.7587**	0.215	1.7	ug/L	229	Standard
	Ni	60	41268.1	1.0	**24.5928**	0.389	1.6	ug/L	344	Standard
	Cu	65	22723.7	0.6	**13.6423**	0.169	1.2	ug/L	115	Standard
	Zn	66	39079.3	1.2	**38.8816**	0.541	1.4	ug/L	190	Standard
>	**Ge**	72	407547.5	1.1				ug/L	409858	Standard
	As	75	6744.2	1.2	**6.6419**	0.070	1.0	ug/L	-22	Standard
	Se	82	53.4	3.9	**0.4571**	0.019	4.2	ug/L	18	Standard
	Se-1	77	106.0	7.7	**0.7900**	0.135	17.1	ug/L	50	Standard
>	**Ga**	71	14186.6	1.1				mg/L	97	Standard
	Rb	85	143686.7	2.5				ug/L	25	Standard
	Y	89	592181.2	0.9				ug/L	376763	Standard
>	**Rh**	103	50.0	34.6				ug/L	20	Standard
	Mo	98	1134.4	17.7	**0.5416**	0.081	14.9	ug/L	51	Standard
	Ag	107	444.0	11.5	**0.0942**	0.008	8.1	ug/L	76	Standard
	Cd	111	281.0	4.9	**0.1809**	0.006	3.1	mg/L	6	Standard
	Cd	114	665.5	15.8	**0.1745**	0.021	12.1	ug/L	18	Standard
>	**In**	115	507307.4	1.0				ug/L	507261	Standard
	Sn	118	603.3	23.2	**0.0003**	0.027	9117.7	ug/L	683	Standard
	Sb	123	1266.0	41.2	**0.2753**	0.124	44.9	ug/L	446	Standard
	Ba	135	622999.9	1.6	**327.3489**	4.840	1.5	ug/L	28	Standard
	Ce	140	1075128.4	1.0				ug/L	33	Standard
>	**Tb**	159	829871.9	0.8				ug/L	800803	Standard
	Ho	165	19584.3	1.4				ug/L	10	Standard
	Tl	203	1193.7	2.0	**0.1895**	0.005	2.8	ug/L	13	Standard
	Tl	205	1121.7	20.4	**0.2119**	0.035	16.3	ug/L	13	Standard
	Pb	206	53355.4	0.7	**10.8718**	0.172	1.6	ug/L	226	Standard
	Pb	207	43593.3	0.4	**9.7833**	0.118	1.2	ug/L	204	Standard
	Pb	208	186716.4	1.0	**10.4802**	0.205	2.0	ug/L	852	Standard
	U	238	6176.3	2.7	**0.9782**	0.035	3.6	ug/L	13	Standard
>	**Bi**	209	448991.8	1.5				ug/L	449044	Standard

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Na	23	8.3	69.3	**29.4738**	26.013	88.3	mg/L	2	Standard
Mg	24	170.0	5.9	**0.1564**	0.012	7.9	mg/L	58	Standard
K	39	311.7	6.7	**0.9085**	0.040	4.4	mg/L	27	Standard
Ca	43	735.0	13.0	**44.1374**	7.681	17.4	mg/L	20	Standard
Fe	54	16726.8	2.4	**11.7320**	0.498	4.2	mg/L	158	Standard
Fe	57	4742.4	1.4	**12.7487**	0.502	3.9	mg/L	267	Standard
Sc-1	45	45896.2	4.1				mg/L	38815	Standard
Cl	35	60129.7	0.7				ug/L	57611	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	2350.2	1.5				ug/L	1617	Standard
P	31	19891.4	3.5				ug/L	19244	Standard
S	34	3662.1	0.8				ug/L	3557	Standard
Sr	88	230.0	11.3				ug/L	65	Standard
C	12	83.3	18.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	62.5				mg/L	23	Standard
Dy	164	32118.6	3.8				mg/L	13	Standard
Ho-1	165	19584.3	1.4				mg/L	10	Standard
Er	166	17687.0	1.6				mg/L	13	Standard
I	127	33436.9	4.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		105.791	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.436	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.009
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.988
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129412S WG574195-04
Sample Date/Time: Wednesday, July 06, 2016 09:52:52
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71379.5	2.4				ug/L	68501	Standard
	Be	9	24005.7	2.5	**25.4053**	0.572	2.3	ug/L	8	Standard
	Al	27	24844186.7	1.3	**167.9938**	2.966	1.8	ug/L	1397	Standard
	Sc	45	44933.2	1.9				ug/L	38815	Standard
	Ti	47	8623.8	2.1	**25.2583**	0.810	3.2	ug/L	36	Standard
	V	51	337850.6	1.6	**47.1062**	1.004	2.1	ug/L	1284	Standard
	Cr	52	288250.4	0.4	**40.2878**	0.627	1.6	ug/L	6503	Standard
	Cr	53	35092.3	2.3	**39.8625**	1.183	3.0	ug/L	492	Standard
	Mn	55	4458345.0	1.2	**717.4502**	15.793	2.2	ug/L	841	Standard
	Co	59	218275.5	1.1	**35.6060**	0.740	2.1	ug/L	229	Standard
	Ni	60	81696.3	0.6	**47.7891**	0.713	1.5	ug/L	344	Standard
	Cu	65	61917.9	0.2	**36.3980**	0.465	1.3	ug/L	115	Standard
	Zn	66	66485.2	0.4	**64.8054**	0.538	0.8	ug/L	190	Standard
>	**Ge**	72	416485.7	1.2				ug/L	409858	Standard
	As	75	29163.0	0.5	**27.7871**	0.422	1.5	ug/L	-22	Standard
	Se	82	2062.4	4.0	**19.1665**	0.962	5.0	ug/L	18	Standard
	Se-1	77	1420.7	4.7	**19.5403**	0.802	4.1	ug/L	50	Standard
>	**Ga**	71	16622.5	3.9				mg/L	97	Standard
	Rb	85	157231.7	1.2				ug/L	25	Standard
	Y	89	556704.4	1.6				ug/L	376763	Standard
>	**Rh**	103	53.3	19.5				ug/L	20	Standard
	Mo	98	5295.4	1.7	**2.3233**	0.055	2.4	ug/L	51	Standard
	Ag	107	149191.9	0.4	**24.5321**	0.145	0.6	ug/L	76	Standard
	Cd	111	48845.6	0.7	**25.2776**	0.073	0.3	mg/L	6	Standard
	Cd	114	119846.2	1.3	**25.3672**	0.198	0.8	ug/L	18	Standard
>	**In**	115	494691.5	0.7				ug/L	507261	Standard
	Sn	118	601.7	29.0	**0.0027**	0.033	1216.4	ug/L	683	Standard
	Sb	123	4145.4	11.6	**0.9712**	0.122	12.5	ug/L	446	Standard
	Ba	135	534743.0	0.7	**288.1358**	0.094	0.0	ug/L	28	Standard
	Ce	140	1105320.7	0.5				ug/L	33	Standard
>	**Tb**	159	810154.6	1.3				ug/L	800803	Standard
	Ho	165	17460.1	1.2				ug/L	10	Standard
	Tl	203	187358.6	0.3	**24.9354**	0.231	0.9	ug/L	13	Standard
	Tl	205	164522.0	1.9	**25.2874**	0.349	1.4	ug/L	13	Standard
	Pb	206	172133.7	1.2	**35.6536**	0.610	1.7	ug/L	226	Standard
	Pb	207	147229.9	0.8	**33.5805**	0.218	0.6	ug/L	204	Standard
	Pb	208	622593.9	0.8	**35.5101**	0.117	0.3	ug/L	852	Standard
	U	238	167263.3	1.4	**25.7841**	0.204	0.8	ug/L	13	Standard
>	**Bi**	209	441779.8	1.0				ug/L	449044	Standard

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Na	23	6.7	114.6	**23.0095**	36.857	160.2	mg/L	2	Standard
Mg	24	140.0	25.0	**0.1259**	0.044	35.0	mg/L	58	Standard
K	39	343.3	8.8	**1.0395**	0.083	8.0	mg/L	27	Standard
Ca	43	513.3	4.8	**30.9870**	1.755	5.7	mg/L	20	Standard
Fe	54	16123.8	3.0	**11.5373**	0.198	1.7	mg/L	158	Standard
Fe	57	4545.7	4.6	**12.4590**	0.686	5.5	mg/L	267	Standard
Sc-1	45	44933.2	1.9				mg/L	38815	Standard
Cl	35	59329.3	1.7				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	2126.8	3.8				ug/L	1617	Standard
P	31	19344.0	2.4				ug/L	19244	Standard
S	34	3730.5	4.4				ug/L	3557	Standard
Sr	88	158.3	22.2				ug/L	65	Standard
C	12	136.7	23.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	65.5				mg/L	23	Standard
Dy	164	29079.7	2.5				mg/L	13	Standard
Ho-1	165	17460.1	1.2				mg/L	10	Standard
Er	166	15441.2	1.2				mg/L	13	Standard
I	127	29974.6	0.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.202	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.617	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.522
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.382
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129412S WG574195-04
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Method 6020 - Summary Report

Sample ID: L1606129413SD WG574195-05
Sample Date/Time: Wednesday, July 06, 2016 09:56:03
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72831.3	1.3				ug/L	68501	Standard
	Be	9	23353.0	2.6	**24.2164**	0.331	1.4	ug/L	8	Standard
	Al	27	26299464.7	0.5	**174.2675**	2.567	1.5	ug/L	1397	Standard
	Sc	45	46263.9	3.4				ug/L	38815	Standard
	Ti	47	9118.4	0.8	**26.3638**	0.080	0.3	ug/L	36	Standard
	V	51	363027.1	1.3	**49.9784**	0.413	0.8	ug/L	1284	Standard
	Cr	52	308874.7	0.7	**42.6748**	0.454	1.1	ug/L	6503	Standard
	Cr	53	37989.2	0.7	**42.6306**	0.345	0.8	ug/L	492	Standard
	Mn	55	3682118.5	0.5	**584.9336**	0.933	0.2	ug/L	841	Standard
	Co	59	209516.8	1.3	**33.7396**	0.279	0.8	ug/L	229	Standard
	Ni	60	82810.7	0.2	**47.8243**	0.234	0.5	ug/L	344	Standard
	Cu	65	66683.1	0.2	**38.7015**	0.257	0.7	ug/L	115	Standard
	Zn	66	72946.5	0.3	**70.2106**	0.380	0.5	ug/L	190	Standard
>	**Ge**	72	421818.9	0.5				ug/L	409858	Standard
	As	75	30008.5	1.5	**28.2255**	0.275	1.0	ug/L	-22	Standard
	Se	82	1989.7	3.1	**18.2473**	0.473	2.6	ug/L	18	Standard
	Se-1	77	1346.7	2.1	**18.2444**	0.457	2.5	ug/L	50	Standard
>	**Ga**	71	18431.2	0.1				mg/L	97	Standard
	Rb	85	169978.4	2.0				ug/L	25	Standard
	Y	89	579521.5	2.2				ug/L	376763	Standard
>	**Rh**	103	53.3	30.1				ug/L	20	Standard
	Mo	98	5343.2	0.9	**2.3481**	0.025	1.1	ug/L	51	Standard
	Ag	107	148415.0	0.2	**24.4547**	0.081	0.3	ug/L	76	Standard
	Cd	111	48146.0	0.3	**24.9682**	0.161	0.6	mg/L	6	Standard
	Cd	114	116774.8	0.1	**24.7701**	0.107	0.4	ug/L	18	Standard
>	**In**	115	493665.2	0.5				ug/L	507261	Standard
	Sn	118	630.0	13.5	**0.0081**	0.015	190.3	ug/L	683	Standard
	Sb	123	4401.6	9.3	**1.0338**	0.094	9.1	ug/L	446	Standard
	Ba	135	582527.1	0.9	**314.5430**	3.725	1.2	ug/L	28	Standard
	Ce	140	1171295.4	1.5				ug/L	33	Standard
>	**Tb**	159	825665.3	1.1				ug/L	800803	Standard
	Ho	165	18960.2	1.2				ug/L	10	Standard
	Tl	203	184321.0	0.4	**24.0012**	0.378	1.6	ug/L	13	Standard
	Tl	205	159170.0	0.3	**23.9407**	0.483	2.0	ug/L	13	Standard
	Pb	206	178149.6	0.4	**36.1008**	0.654	1.8	ug/L	226	Standard
	Pb	207	151969.3	0.3	**33.9143**	0.708	2.1	ug/L	204	Standard
	Pb	208	627878.2	0.8	**35.0419**	0.898	2.6	ug/L	852	Standard
	U	238	164029.8	0.8	**24.7449**	0.648	2.6	ug/L	13	Standard
>	**Bi**	209	451616.5	1.8				ug/L	449044	Standard

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	Na	23	8.3	124.9	**28.5858**	46.635	163.1	mg/L	2	Standard
	Mg	24	161.7	18.9	**0.1448**	0.030	20.8	mg/L	58	Standard
	K	39	418.3	11.1	**1.2557**	0.123	9.8	mg/L	27	Standard
	Ca	43	583.3	6.4	**34.3754**	3.109	9.0	mg/L	20	Standard
	Fe	54	18610.4	2.0	**12.9636**	0.665	5.1	mg/L	158	Standard
	Fe	57	4875.8	3.0	**13.0227**	0.874	6.7	mg/L	267	Standard
>	**Sc-1**	45	46263.9	3.4				mg/L	38815	Standard
	Cl	35	57891.1	0.8				ug/L	57611	Standard
	Kr	83	1.0	173.2				ug/L	2	Standard
	Br	81	3103.7	7.4				ug/L	1617	Standard
	P	31	19415.8	3.3				ug/L	19244	Standard
	S	34	3603.8	4.8				ug/L	3557	Standard
	Sr	88	181.7	16.8				ug/L	65	Standard
	C	12	60.0	28.9				mg/L	63	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	33.3	17.3				mg/L	23	Standard
	Dy	164	31854.1	2.7				mg/L	13	Standard
	Ho-1	165	18960.2	1.2				mg/L	10	Standard
	Er	166	17002.9	2.9				mg/L	13	Standard
	I	127	35720.4	1.8				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		106.321	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		102.918	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.320
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.573
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129401
Sample Date/Time: Wednesday, July 06, 2016 09:59:15
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73682.1	1.2				ug/L	68501	Standard
	Be	9	1030.0	8.5	**1.0739**	0.077	7.2	ug/L	8	Standard
	Al	27	13290595.5	0.8	**87.0650**	1.191	1.4	ug/L	1397	Standard
	Sc	45	47437.5	0.7				ug/L	38815	Standard
	Ti	47	4990.5	1.4	**14.2485**	0.251	1.8	ug/L	36	Standard
	V	51	180397.8	1.0	**24.4727**	0.141	0.6	ug/L	1284	Standard
	Cr	52	242660.8	0.5	**32.9279**	0.475	1.4	ug/L	6503	Standard
	Cr	53	29079.5	1.0	**32.1489**	0.248	0.8	ug/L	492	Standard
	Mn	55	7362758.4	0.8	**1156.1744**	19.675	1.7	ug/L	841	Standard
	Co	59	69098.9	0.5	**11.0023**	0.167	1.5	ug/L	229	Standard
	Ni	60	43958.4	1.4	**25.0166**	0.492	2.0	ug/L	344	Standard
	Cu	65	51089.3	0.3	**29.3027**	0.329	1.1	ug/L	115	Standard
	Zn	66	60489.8	1.0	**57.5198**	0.337	0.6	ug/L	190	Standard
>	**Ge**	72	426820.6	1.3				ug/L	409858	Standard
	As	75	8341.5	1.9	**7.8256**	0.054	0.7	ug/L	-22	Standard
	Se	82	77.1	12.2	**0.6491**	0.084	12.9	ug/L	18	Standard
	Se-1	77	127.7	6.7	**1.0210**	0.110	10.8	ug/L	50	Standard
>	**Ga**	71	17471.7	2.2				mg/L	97	Standard
	Rb	85	185880.1	1.5				ug/L	25	Standard
	Y	89	588549.2	2.5				ug/L	376763	Standard
>	**Rh**	103	25.0	60.0				ug/L	20	Standard
	Mo	98	4483.5	0.1	**1.8887**	0.016	0.8	ug/L	51	Standard
	Ag	107	655.0	0.7	**0.1257**	0.000	0.4	ug/L	76	Standard
	Cd	111	833.4	2.1	**0.4499**	0.012	2.6	mg/L	6	Standard
	Cd	114	2033.9	4.6	**0.4472**	0.021	4.6	ug/L	18	Standard
>	**In**	115	518979.9	0.9				ug/L	507261	Standard
	Sn	118	1725.1	20.0	**0.1976**	0.059	30.0	ug/L	683	Standard
	Sb	123	1001.7	29.8	**0.2076**	0.067	32.1	ug/L	446	Standard
	Ba	135	421477.8	0.1	**216.4902**	1.764	0.8	ug/L	28	Standard
	Ce	140	1169592.3	1.9				ug/L	33	Standard
>	**Tb**	159	854236.8	1.4				ug/L	800803	Standard
	Ho	165	18486.3	1.1				ug/L	10	Standard
	Tl	203	1043.0	4.2	**0.1644**	0.005	3.0	ug/L	13	Standard
	Tl	205	993.4	12.3	**0.1868**	0.019	10.0	ug/L	13	Standard
	Pb	206	165846.1	0.2	**32.4826**	0.323	1.0	ug/L	226	Standard
	Pb	207	137795.4	0.8	**29.7211**	0.399	1.3	ug/L	204	Standard
	Pb	208	592158.9	0.5	**31.9408**	0.508	1.6	ug/L	852	Standard
	U	238	3515.1	1.0	**0.5542**	0.000	0.1	ug/L	13	Standard
>	**Bi**	209	467184.8	1.1				ug/L	449044	Standard

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Na	23	1.7	173.2	**-1.2863**	12.984	1009.4	mg/L	2	Standard
Mg	24	115.0	8.7	**0.0890**	0.011	11.8	mg/L	58	Standard
K	39	420.0	15.6	**1.2278**	0.210	17.1	mg/L	27	Standard
Ca	43	98.3	20.5	**4.5711**	1.181	25.8	mg/L	20	Standard
Fe	54	19064.5	0.9	**12.9379**	0.207	1.6	mg/L	158	Standard
Fe	57	5190.9	2.0	**13.5281**	0.322	2.4	mg/L	267	Standard
> **Sc-1**	45	47437.5	0.7				mg/L	38815	Standard
Cl	35	56647.7	0.4				ug/L	57611	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	2906.9	8.5				ug/L	1617	Standard
P	31	18855.1	1.9				ug/L	19244	Standard
S	34	3488.7	1.5				ug/L	3557	Standard
Sr	88	103.3	19.6				ug/L	65	Standard
C	12	170.0	5.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	47.9				mg/L	23	Standard
Dy	164	30420.1	1.6				mg/L	13	Standard
Ho-1	165	18486.3	1.1				mg/L	10	Standard
Er	166	16812.7	3.4				mg/L	13	Standard
I	127	22007.7	6.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.563	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.139	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.310
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.040
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129402
Sample Date/Time: Wednesday, July 06, 2016 10:02:26
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69770.3	2.7				ug/L	68501	Standard
	Be	9	603.3	12.4	**0.6715**	0.072	10.7	ug/L	8	Standard
	Al	27	18634515.4	2.1	**128.9831**	5.673	4.4	ug/L	1397	Standard
	Sc	45	45031.9	3.1				ug/L	38815	Standard
	Ti	47	5305.3	0.3	**15.4010**	0.263	1.7	ug/L	36	Standard
	V	51	102823.9	0.6	**14.1200**	0.158	1.1	ug/L	1284	Standard
	Cr	52	80459.1	0.7	**10.4790**	0.093	0.9	ug/L	6503	Standard
	Cr	53	9304.5	2.4	**10.1728**	0.095	0.9	ug/L	492	Standard
	Mn	55	3002380.4	1.6	**479.2805**	14.394	3.0	ug/L	841	Standard
	Co	59	39944.9	0.5	**6.4682**	0.131	2.0	ug/L	229	Standard
	Ni	60	26855.8	0.6	**15.4770**	0.252	1.6	ug/L	344	Standard
	Cu	65	17773.8	1.6	**10.3533**	0.060	0.6	ug/L	115	Standard
	Zn	66	28972.0	0.7	**27.9482**	0.257	0.9	ug/L	190	Standard
>	**Ge**	72	419879.9	1.5				ug/L	409858	Standard
	As	75	3489.5	3.3	**3.3844**	0.075	2.2	ug/L	-22	Standard
	Se	82	43.4	3.4	**0.3496**	0.009	2.6	ug/L	18	Standard
	Se-1	77	96.7	5.7	**0.6121**	0.093	15.2	ug/L	50	Standard
>	**Ga**	71	10525.3	2.1				mg/L	97	Standard
	Rb	85	104171.9	0.6				ug/L	25	Standard
	Y	89	559755.6	0.0				ug/L	376763	Standard
>	**Rh**	103	46.7	16.4				ug/L	20	Standard
	Mo	98	1814.3	7.2	**0.8132**	0.063	7.8	ug/L	51	Standard
	Ag	107	490.3	42.0	**0.1008**	0.034	33.4	ug/L	76	Standard
	Cd	111	197.3	46.2	**0.1377**	0.047	33.9	mg/L	6	Standard
	Cd	114	447.4	33.4	**0.1284**	0.032	24.5	ug/L	18	Standard
>	**In**	115	514913.6	1.5				ug/L	507261	Standard
	Sn	118	656.7	28.2	**0.0082**	0.034	417.1	ug/L	683	Standard
	Sb	123	698.8	47.6	**0.1409**	0.079	55.9	ug/L	446	Standard
	Ba	135	312392.7	0.7	**161.7435**	2.379	1.5	ug/L	28	Standard
	Ce	140	864888.3	1.5				ug/L	33	Standard
>	**Tb**	159	822173.2	1.2				ug/L	800803	Standard
	Ho	165	15349.4	4.8				ug/L	10	Standard
	Tl	203	741.0	39.5	**0.1305**	0.038	29.3	ug/L	13	Standard
	Tl	205	868.4	47.2	**0.1743**	0.063	36.1	ug/L	13	Standard
	Pb	206	39366.1	0.3	**8.0469**	0.057	0.7	ug/L	226	Standard
	Pb	207	31988.4	0.9	**7.2028**	0.097	1.4	ug/L	204	Standard
	Pb	208	138578.0	1.0	**7.8042**	0.123	1.6	ug/L	852	Standard
	U	238	3824.8	11.0	**0.6240**	0.067	10.7	ug/L	13	Standard
>	**Bi**	209	447448.6	0.5				ug/L	449044	Standard

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Na	23	3.3	86.6	**6.6902**	13.409	200.4	mg/L	2	Standard
Mg	24	141.7	7.3	**0.1271**	0.013	10.6	mg/L	58	Standard
K	39	201.7	9.4	**0.5528**	0.084	15.2	mg/L	27	Standard
Ca	43	420.0	10.9	**25.0115**	2.030	8.1	mg/L	20	Standard
Fe	54	10150.0	4.1	**7.2017**	0.124	1.7	mg/L	158	Standard
Fe	57	2942.0	5.9	**7.8182**	0.761	9.7	mg/L	267	Standard
> **Sc-1**	45	45031.9	3.1				mg/L	38815	Standard
Cl	35	60466.4	1.3				ug/L	57611	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2043.5	15.4				ug/L	1617	Standard
P	31	20015.0	9.4				ug/L	19244	Standard
S	34	3783.8	2.4				ug/L	3557	Standard
Sr	88	133.3	23.8				ug/L	65	Standard
C	12	100.0	0.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	45.8				mg/L	23	Standard
Dy	164	25927.1	0.7				mg/L	13	Standard
Ho-1	165	15349.4	4.8				mg/L	10	Standard
Er	166	13699.5	2.6				mg/L	13	Standard
I	127	6994.9	3.2				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.853	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.445	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.509	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.645	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129402
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Method 6020 - Summary Report

Sample ID: L1606129402PS WG574825-01
Sample Date/Time: Wednesday, July 06, 2016 10:05:38
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68660.2	1.7				ug/L	68501	Standard
	Be	9	47238.5	1.5	**51.9624**	1.650	3.2	ug/L	8	Standard
	Al	27	17645053.8	2.0	**124.0488**	3.629	2.9	ug/L	1397	Standard
	Sc	45	44393.3	1.5				ug/L	38815	Standard
	Ti	47	5174.6	1.0	**14.5192**	0.263	1.8	ug/L	36	Standard
	V	51	480583.9	0.5	**64.3037**	0.719	1.1	ug/L	1284	Standard
	Cr	52	456632.8	0.9	**61.6831**	1.025	1.7	ug/L	6503	Standard
	Cr	53	55255.6	2.0	**60.4016**	1.686	2.8	ug/L	492	Standard
	Mn	55	3239150.0	0.5	**499.7629**	6.042	1.2	ug/L	841	Standard
	Co	59	358691.1	1.1	**56.0957**	0.252	0.4	ug/L	229	Standard
	Ni	60	116099.1	1.0	**65.1802**	1.162	1.8	ug/L	344	Standard
	Cu	65	107464.1	0.7	**60.5842**	0.821	1.4	ug/L	115	Standard
	Zn	66	84653.2	0.4	**79.1485**	0.728	0.9	ug/L	190	Standard
>	Ge	72	434325.4	0.8				ug/L	409858	Standard
	As	75	60813.5	1.2	**55.4628**	0.921	1.7	ug/L	-22	Standard
	Se	82	5759.0	0.5	**51.3914**	0.208	0.4	ug/L	18	Standard
	Se-1	77	3893.8	0.5	**52.6044**	0.696	1.3	ug/L	50	Standard
>	Ga	71	10653.7	2.6				mg/L	97	Standard
	Rb	85	102591.2	1.5				ug/L	25	Standard
	Y	89	535588.1	1.5				ug/L	376763	Standard
>	Rh	103	46.7	24.7				ug/L	20	Standard
	Mo	98	1766.5	0.3	**0.8230**	0.008	0.9	ug/L	51	Standard
	Ag	107	318491.4	0.7	**52.3682**	0.640	1.2	ug/L	76	Standard
	Cd	111	100179.3	1.3	**51.8239**	0.626	1.2	mg/L	6	Standard
	Cd	114	247094.5	1.7	**52.2845**	0.780	1.5	ug/L	18	Standard
>	In	115	494482.3	0.9				ug/L	507261	Standard
	Sn	118	673.3	10.2	**0.0160**	0.012	75.5	ug/L	683	Standard
	Sb	123	214161.7	2.5	**51.2081**	1.584	3.1	ug/L	446	Standard
	Ba	135	400257.7	1.2	**215.7761**	3.076	1.4	ug/L	28	Standard
	Ce	140	853144.8	1.8				ug/L	33	Standard
>	Tb	159	808923.6	1.5				ug/L	800803	Standard
	Ho	165	14924.0	2.3				ug/L	10	Standard
	Tl	203	396573.2	1.4	**51.2178**	0.222	0.4	ug/L	13	Standard
	Tl	205	350752.1	1.1	**52.3188**	1.052	2.0	ug/L	13	Standard
	Pb	206	298080.1	1.0	**59.9592**	0.559	0.9	ug/L	226	Standard
	Pb	207	257790.9	0.5	**57.1026**	0.285	0.5	ug/L	204	Standard
	Pb	208	1062037.4	0.6	**58.8278**	0.401	0.7	ug/L	852	Standard
	U	238	335964.8	1.0	**50.2574**	0.421	0.8	ug/L	13	Standard
>	Bi	209	454901.3	1.0				ug/L	449044	Standard

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Na	23	5.0	100.0	**14.9604**	23.882	159.6	mg/L	2	Standard
Mg	24	148.3	13.6	**0.1371**	0.022	16.1	mg/L	58	Standard
K	39	255.0	38.6	**0.7487**	0.347	46.4	mg/L	27	Standard
Ca	43	421.7	2.5	**25.5491**	1.057	4.1	mg/L	20	Standard
Fe	54	9962.2	2.1	**7.1713**	0.153	2.1	mg/L	158	Standard
Fe	57	2848.6	3.1	**7.6545**	0.361	4.7	mg/L	267	Standard
Sc-1	45	44393.3	1.5				mg/L	38815	Standard
Cl	35	58795.9	1.0				ug/L	57611	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	1830.1	7.2				ug/L	1617	Standard
P	31	18659.8	0.5				ug/L	19244	Standard
S	34	3737.1	4.2				ug/L	3557	Standard
Sr	88	115.0	30.4				ug/L	65	Standard
C	12	86.7	13.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	41.7				mg/L	23	Standard
Dy	164	24731.8	2.8				mg/L	13	Standard
Ho-1	165	14924.0	2.3				mg/L	10	Standard
Er	166	13766.3	3.2				mg/L	13	Standard
I	127	6604.8	6.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.232	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.970	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.481
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.304
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129402SDL WG574825-02
Sample Date/Time: Wednesday, July 06, 2016 10:08:49
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65026.0	3.7				ug/L	68501	Standard
	Be	9	160.0	24.8	**0.2043**	0.040	19.8	ug/L	8	Standard
	Al	27	3521178.9	2.2	**26.1792**	0.963	3.7	ug/L	1397	Standard
	Sc	45	38574.1	2.0				ug/L	38815	Standard
	Ti	47	1016.4	1.0	**3.0526**	0.023	0.8	ug/L	36	Standard
	V	51	20323.7	1.2	**2.7944**	0.038	1.4	ug/L	1284	Standard
	Cr	52	19540.6	0.6	**1.9556**	0.065	3.3	ug/L	6503	Standard
	Cr	53	1953.5	10.5	**1.9018**	0.277	14.6	ug/L	492	Standard
	Mn	55	573279.4	0.2	**95.2960**	1.841	1.9	ug/L	841	Standard
	Co	59	7720.3	0.6	**1.3072**	0.015	1.2	ug/L	229	Standard
	Ni	60	5511.0	2.5	**3.1857**	0.068	2.1	ug/L	344	Standard
	Cu	65	3651.8	1.5	**2.2072**	0.064	2.9	ug/L	115	Standard
	Zn	66	6637.1	2.1	**6.5869**	0.147	2.2	ug/L	190	Standard
>	**Ge**	72	402861.2	1.7				ug/L	409858	Standard
	As	75	691.5	2.6	**0.7775**	0.011	1.5	ug/L	-22	Standard
	Se	82	21.3	32.8	**0.1535**	0.066	42.9	ug/L	18	Standard
	Se-1	77	58.7	8.6	**0.1073**	0.064	60.1	ug/L	50	Standard
>	**Ga**	71	2141.8	0.8				mg/L	97	Standard
	Rb	85	19642.7	1.5				ug/L	25	Standard
	Y	89	375531.6	2.2				ug/L	376763	Standard
>	**Rh**	103	20.0	25.0				ug/L	20	Standard
	Mo	98	350.4	1.1	**0.2239**	0.002	0.8	ug/L	51	Standard
	Ag	107	155.0	19.2	**0.0492**	0.005	10.4	ug/L	76	Standard
	Cd	111	46.6	26.2	**0.0640**	0.006	10.1	mg/L	6	Standard
	Cd	114	89.6	22.2	**0.0567**	0.004	7.4	ug/L	18	Standard
>	**In**	115	483847.7	1.6				ug/L	507261	Standard
	Sn	118	325.0	39.3	**-0.0480**	0.024	49.2	ug/L	683	Standard
	Sb	123	1870.5	35.4	**0.4352**	0.156	35.8	ug/L	446	Standard
	Ba	135	60714.1	0.5	**33.4657**	0.378	1.1	ug/L	28	Standard
	Ce	140	169920.8	0.4				ug/L	33	Standard
>	**Tb**	159	785790.2	0.6				ug/L	800803	Standard
	Ho	165	2823.6	6.7				ug/L	10	Standard
	Tl	203	203.3	12.3	**0.0597**	0.003	5.2	ug/L	13	Standard
	Tl	205	190.0	19.0	**0.0710**	0.005	7.5	ug/L	13	Standard
	Pb	206	7878.7	2.0	**1.5878**	0.016	1.0	ug/L	226	Standard
	Pb	207	6443.7	2.0	**1.4326**	0.025	1.7	ug/L	204	Standard
	Pb	208	27612.9	1.6	**1.5367**	0.039	2.5	ug/L	852	Standard
	U	238	730.4	5.8	**0.1523**	0.006	4.1	ug/L	13	Standard
>	**Bi**	209	452878.1	1.1				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	53.3	10.8	**0.0342**	0.007	20.3	mg/L	58	Standard
K	39	65.0	7.7	**0.1187**	0.015	12.9	mg/L	27	Standard
Ca	43	121.7	4.7	**7.6311**	0.513	6.7	mg/L	20	Standard
Fe	54	2015.2	1.4	**1.5775**	0.034	2.2	mg/L	158	Standard
Fe	57	840.0	8.3	**2.1509**	0.284	13.2	mg/L	267	Standard
> **Sc-1**	45	38574.1	2.0				mg/L	38815	Standard
Cl	35	56866.5	2.1				ug/L	57611	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	1540.1	7.2				ug/L	1617	Standard
P	31	8800.9	1.2				ug/L	19244	Standard
S	34	3415.4	3.3				ug/L	3557	Standard
Sr	88	70.0	37.8				ug/L	65	Standard
C	12	73.3	70.0				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	4905.3	1.6				mg/L	13	Standard
Ho-1	165	2823.6	6.7				mg/L	10	Standard
Er	166	2620.2	5.0				mg/L	13	Standard
I	127	8869.3	4.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.927	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.293	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	95.384	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.854	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129402SDL WG574825-02
Sample Date/Time: Wednesday, July 06, 2016 10:12:01
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60917.3	3.2				ug/L	68501	Standard
	Be	9	58.3	17.8	**0.0915**	0.011	11.6	ug/L	8	Standard
	Al	27	711598.7	3.1	**5.6709**	0.047	0.8	ug/L	1397	Standard
	Sc	45	36463.8	0.9				ug/L	38815	Standard
	Ti	47	207.0	2.6	**0.6014**	0.017	2.9	ug/L	36	Standard
	V	51	5032.5	7.0	**0.5856**	0.052	8.8	ug/L	1284	Standard
	Cr	52	8230.6	1.6	**0.2866**	0.019	6.7	ug/L	6503	Standard
	Cr	53	590.0	23.4	**0.2839**	0.167	58.7	ug/L	492	Standard
	Mn	55	118569.1	0.5	**19.6884**	0.105	0.5	ug/L	841	Standard
	Co	59	1799.1	8.5	**0.3097**	0.026	8.5	ug/L	229	Standard
	Ni	60	1413.4	3.6	**0.7024**	0.034	4.8	ug/L	344	Standard
	Cu	65	858.0	6.8	**0.5099**	0.037	7.2	ug/L	115	Standard
	Zn	66	1996.8	2.1	**1.9081**	0.036	1.9	ug/L	190	Standard
>	**Ge**	72	401660.3	0.4				ug/L	409858	Standard
	As	75	114.2	19.3	**0.2113**	0.021	10.0	ug/L	-22	Standard
	Se	82	11.3	54.8	**0.0580**	0.060	102.6	ug/L	18	Standard
	Se-1	77	52.0	8.8	**0.0116**	0.068	586.4	ug/L	50	Standard
>	**Ga**	71	495.0	9.0				mg/L	97	Standard
	Rb	85	3982.2	2.1				ug/L	25	Standard
	Y	89	350852.9	1.4				ug/L	376763	Standard
>	**Rh**	103	28.3	44.4				ug/L	20	Standard
	Mo	98	175.0	23.0	**0.1481**	0.018	11.8	ug/L	51	Standard
	Ag	107	212.7	91.3	**0.0591**	0.033	55.5	ug/L	76	Standard
	Cd	111	67.0	127.8	**0.0750**	0.045	60.7	mg/L	6	Standard
	Cd	114	161.8	141.0	**0.0726**	0.050	68.4	ug/L	18	Standard
>	**In**	115	480384.8	0.4				ug/L	507261	Standard
	Sn	118	306.7	18.0	**-0.0510**	0.011	20.7	ug/L	683	Standard
	Sb	123	1358.2	24.6	**0.3141**	0.083	26.4	ug/L	446	Standard
	Ba	135	12314.7	3.9	**6.8485**	0.262	3.8	ug/L	28	Standard
	Ce	140	33590.6	4.0				ug/L	33	Standard
>	**Tb**	159	756520.4	0.6				ug/L	800803	Standard
	Ho	165	583.3	9.4				ug/L	10	Standard
	Tl	203	223.0	115.4	**0.0635**	0.035	54.9	ug/L	13	Standard
	Tl	205	126.7	112.0	**0.0623**	0.022	35.6	ug/L	13	Standard
	Pb	206	1869.8	9.6	**0.3893**	0.039	10.0	ug/L	226	Standard
	Pb	207	1543.1	13.1	**0.3564**	0.048	13.4	ug/L	204	Standard
	Pb	208	6514.6	6.8	**0.3774**	0.027	7.0	ug/L	852	Standard
	U	238	235.7	51.0	**0.0795**	0.019	23.8	ug/L	13	Standard
>	**Bi**	209	435034.5	0.5				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	61.7	44.7	**0.0504**	0.039	77.8	mg/L	58	Standard
K	39	35.0	14.3	**0.0067**	0.022	320.5	mg/L	27	Standard
Ca	43	48.3	68.9	**2.4797**	2.619	105.6	mg/L	20	Standard
Fe	54	394.3	9.9	**0.2309**	0.032	13.9	mg/L	158	Standard
Fe	57	383.3	10.0	**0.6861**	0.149	21.7	mg/L	267	Standard
> **Sc-1**	45	36463.8	0.9				mg/L	38815	Standard
Cl	35	57415.9	1.8				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1380.1	8.4				ug/L	1617	Standard
P	31	6508.1	3.2				ug/L	19244	Standard
S	34	3533.7	5.2				ug/L	3557	Standard
Sr	88	55.0	48.1				ug/L	65	Standard
C	12	73.3	75.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	78.1				mg/L	23	Standard
Dy	164	906.6	11.9				mg/L	13	Standard
Ho-1	165	583.3	9.4				mg/L	10	Standard
Er	166	490.0	5.4				mg/L	13	Standard
I	127	9633.1	1.7				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		88.929	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.000	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.702
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.880
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 10:15:14
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	66001.9	3.1				ug/L	68501	Standard
	Be	9	45061.9	1.7	**51.5669**	1.142	2.2	ug/L	8	Standard
	Al	27	7134699.3	2.4	**52.2005**	1.042	2.0	ug/L	1397	Standard
	Sc	45	40683.0	4.5				ug/L	38815	Standard
	Ti	47	36220.6	2.3	**104.8904**	2.700	2.6	ug/L	36	Standard
	V	51	373417.3	1.4	**51.4577**	1.129	2.2	ug/L	1284	Standard
	Cr	52	378042.0	1.7	**52.4836**	1.277	2.4	ug/L	6503	Standard
	Cr	53	45578.5	1.0	**51.2685**	0.474	0.9	ug/L	492	Standard
	Mn	55	329890.2	1.6	**52.3621**	1.192	2.3	ug/L	841	Standard
	Co	59	319170.0	1.3	**51.4393**	1.091	2.1	ug/L	229	Standard
	Ni	60	89955.3	1.3	**52.0068**	1.073	2.1	ug/L	344	Standard
	Cu	65	89397.0	1.4	**51.9298**	1.024	2.0	ug/L	115	Standard
	Zn	66	53744.8	1.2	**51.7403**	0.925	1.8	ug/L	190	Standard
>	Ge	72	421512.3	0.8				ug/L	409858	Standard
	As	75	55019.2	1.7	**51.7131**	1.248	2.4	ug/L	-22	Standard
	Se	82	5625.3	2.5	**51.7261**	1.382	2.7	ug/L	18	Standard
	Se-1	77	3720.1	1.2	**51.7754**	1.031	2.0	ug/L	50	Standard
>	Ga	71	106.7	14.3				mg/L	97	Standard
	Rb	85	821.7	3.6				ug/L	25	Standard
	Y	89	380274.8	0.7				ug/L	376763	Standard
>	Rh	103	36.7	20.8				ug/L	20	Standard
	Mo	98	245508.8	0.8	**98.7047**	0.609	0.6	ug/L	51	Standard
	Ag	107	315964.3	0.6	**49.0682**	0.371	0.8	ug/L	76	Standard
	Cd	111	102381.2	0.8	**50.0236**	0.282	0.6	mg/L	6	Standard
	Cd	114	253936.6	1.4	**50.7540**	0.965	1.9	ug/L	18	Standard
>	In	115	523570.5	1.4				ug/L	507261	Standard
	Sn	118	272308.6	0.5	**48.0899**	0.442	0.9	ug/L	683	Standard
	Sb	123	220790.6	1.2	**49.8541**	0.372	0.7	ug/L	446	Standard
	Ba	135	96752.3	1.8	**49.2687**	0.234	0.5	ug/L	28	Standard
	Ce	140	778.4	25.9				ug/L	33	Standard
>	Tb	159	803102.2	1.8				ug/L	800803	Standard
	Ho	165	21.7	58.1				ug/L	10	Standard
	Tl	203	391560.5	1.3	**50.8731**	0.347	0.7	ug/L	13	Standard
	Tl	205	343478.2	1.0	**51.5364**	0.693	1.3	ug/L	13	Standard
	Pb	206	249862.7	0.4	**50.5602**	0.390	0.8	ug/L	226	Standard
	Pb	207	226415.5	0.5	**50.4529**	0.494	1.0	ug/L	204	Standard
	Pb	208	934421.6	0.6	**52.0705**	0.743	1.4	ug/L	852	Standard
	U	238	338848.7	1.0	**50.9911**	0.566	1.1	ug/L	13	Standard
>	Bi	209	452206.8	1.0				ug/L	449044	Standard

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Na	23	1.7	173.2	**0.2847**	15.705	5516.7	mg/L	2	Standard
Mg	24	3878.8	2.1	**4.9818**	0.327	6.6	mg/L	58	Standard
K	39	1331.7	2.5	**4.9336**	0.350	7.1	mg/L	27	Standard
Ca	43	86.7	8.8	**4.7338**	0.396	8.4	mg/L	20	Standard
Fe	54	6551.9	2.8	**5.1174**	0.223	4.4	mg/L	158	Standard
Fe	57	1748.4	4.5	**4.9031**	0.224	4.6	mg/L	267	Standard
Sc-1	45	40683.0	4.5				mg/L	38815	Standard
Cl	35	64144.2	2.4				ug/L	57611	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1633.4	4.8				ug/L	1617	Standard
P	31	21161.4	1.7				ug/L	19244	Standard
S	34	4028.9	2.1				ug/L	3557	Standard
Sr	88	75.0	23.1				ug/L	65	Standard
C	12	90.0	38.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	43.3	35.3				mg/L	23	Standard
Dy	164	42.5	35.8				mg/L	13	Standard
Ho-1	165	21.7	58.1				mg/L	10	Standard
Er	166	16.7	34.6				mg/L	13	Standard
I	127	15686.5	2.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	103.134		
Al	27	104.401		
Sc	45			
Ti	47	104.890		
V	51	102.915		
Cr	52	104.967		
Cr	53			
Mn	55	104.724		
Co	59	102.879		
Ni	60	104.014		
Cu	65	103.860		
Zn	66	103.481		
Ge	72		102.843	
As	75	103.426		
Se	82	103.452		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.705		
Ag	107	98.136		
Cd	111	100.047		
Cd	114			
> In	115			103.215
Sn	118	96.180		
Sb	123	99.708		
Ba	135	98.537		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.746		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.141		
U	238	101.982		
> Bi	209			100.704
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 10:18:25
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66092.2	0.5				ug/L	68501	Standard
	Be	9	33.3	22.9	**0.0575**	0.009	15.0	ug/L	8	Standard
	Al	27	2433.5	28.1	**0.0528**	0.005	9.3	ug/L	1397	Standard
	Sc	45	39765.5	3.8				ug/L	38815	Standard
	Ti	47	34.7	8.8	**0.0699**	0.009	12.3	ug/L	36	Standard
	V	51	1342.2	6.2	**0.0363**	0.010	27.6	ug/L	1284	Standard
	Cr	52	6819.5	0.7	**0.0038**	0.011	298.6	ug/L	6503	Standard
	Cr	53	426.7	10.6	**0.0524**	0.052	99.9	ug/L	492	Standard
	Mn	55	1487.4	7.9	**0.1343**	0.019	14.5	ug/L	841	Standard
	Co	59	248.0	8.5	**0.0444**	0.004	8.0	ug/L	229	Standard
	Ni	60	317.3	4.3	**0.0213**	0.006	29.2	ug/L	344	Standard
	Cu	65	131.3	6.7	**0.0610**	0.005	8.1	ug/L	115	Standard
	Zn	66	348.0	9.0	**0.2133**	0.030	14.1	ug/L	190	Standard
>	**Ge**	72	433193.0	0.8				ug/L	409858	Standard
	As	75	-15.4	176.5	**0.0847**	0.025	29.3	ug/L	-22	Standard
	Se	82	17.5	29.8	**0.1051**	0.046	43.4	ug/L	18	Standard
	Se-1	77	52.7	18.6	**-0.0360**	0.128	356.8	ug/L	50	Standard
>	**Ga**	71	76.7	26.4				mg/L	97	Standard
	Rb	85	38.3	15.1				ug/L	25	Standard
	Y	89	375706.7	1.5				ug/L	376763	Standard
>	**Rh**	103	21.7	74.2				ug/L	20	Standard
	Mo	98	180.5	2.9	**0.1457**	0.001	1.0	ug/L	51	Standard
	Ag	107	119.3	33.3	**0.0420**	0.006	14.5	ug/L	76	Standard
	Cd	111	16.0	65.5	**0.0473**	0.005	10.9	mg/L	6	Standard
	Cd	114	58.8	46.0	**0.0494**	0.006	11.4	ug/L	18	Standard
>	**In**	115	511865.2	1.0				ug/L	507261	Standard
	Sn	118	851.7	20.2	**0.0442**	0.032	71.8	ug/L	683	Standard
	Sb	123	1054.3	34.6	**0.2237**	0.086	38.5	ug/L	446	Standard
	Ba	135	65.3	36.7	**0.0497**	0.012	24.6	ug/L	28	Standard
	Ce	140	343.3	20.8				ug/L	33	Standard
>	**Tb**	159	792368.1	0.6				ug/L	800803	Standard
	Ho	165	18.3	41.7				ug/L	10	Standard
	Tl	203	67.3	29.7	**0.0420**	0.003	6.2	ug/L	13	Standard
	Tl	205	51.7	72.6	**0.0502**	0.006	11.1	ug/L	13	Standard
	Pb	206	273.7	16.0	**0.0508**	0.009	17.0	ug/L	226	Standard
	Pb	207	243.0	7.5	**0.0525**	0.004	7.6	ug/L	204	Standard
	Pb	208	1024.7	7.7	**0.0566**	0.004	7.7	ug/L	852	Standard
	U	238	59.3	29.6	**0.0515**	0.003	5.1	ug/L	13	Standard
>	**Bi**	209	456938.6	1.0				ug/L	449044	Standard

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Na	23	1.7	173.2	**0.4914**	16.063	3268.8	mg/L	2	Standard
Mg	24	36.7	83.3	**0.0111**	0.043	384.8	mg/L	58	Standard
K	39	38.3	45.8	**0.0058**	0.064	1099.0	mg/L	27	Standard
Ca	43	33.3	52.7	**1.0606**	1.177	111.0	mg/L	20	Standard
Fe	54	149.4	25.3	**0.0028**	0.036	1300.5	mg/L	158	Standard
Fe	57	260.0	19.5	**0.1697**	0.163	96.1	mg/L	267	Standard
Sc-1	45	39765.5	3.8				mg/L	38815	Standard
Cl	35	61423.6	2.2				ug/L	57611	Standard
Kr	83	2.3	89.2				ug/L	2	Standard
Br	81	1656.8	1.9				ug/L	1617	Standard
P	31	19836.3	2.1				ug/L	19244	Standard
S	34	3835.5	3.2				ug/L	3557	Standard
Sr	88	55.0					ug/L	65	Standard
C	12	56.7	27.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	5.7	109.1				mg/L	13	Standard
Ho-1	165	18.3	41.7				mg/L	10	Standard
Er	166	20.0	86.6				mg/L	13	Standard
I	127	8767.5	0.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		105.693	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.908
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.758
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	
QC Std 7	Tl	203	

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Method 6020 - Summary Report

Sample ID: L1606129404
Sample Date/Time: Wednesday, July 06, 2016 10:21:39
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70980.9	1.6				ug/L	68501	Standard
	Be	9	941.7	5.0	**1.0213**	0.064	6.3	ug/L	8	Standard
	Al	27	15182692.6	1.8	**103.2556**	2.951	2.9	ug/L	1397	Standard
	Sc	45	45760.7	3.0				ug/L	38815	Standard
	Ti	47	5887.5	1.3	**16.7741**	0.207	1.2	ug/L	36	Standard
	V	51	191874.8	0.3	**25.9807**	0.495	1.9	ug/L	1284	Standard
	Cr	52	151639.7	0.5	**20.1776**	0.386	1.9	ug/L	6503	Standard
	Cr	53	18564.7	1.2	**20.3258**	0.407	2.0	ug/L	492	Standard
	Mn	55	4033113.1	0.2	**631.7956**	10.894	1.7	ug/L	841	Standard
	Co	59	68367.9	0.6	**10.8599**	0.118	1.1	ug/L	229	Standard
	Ni	60	42585.1	0.6	**24.1738**	0.459	1.9	ug/L	344	Standard
	Cu	65	33802.0	0.3	**19.3378**	0.287	1.5	ug/L	115	Standard
	Zn	66	65062.1	0.3	**61.7346**	0.851	1.4	ug/L	190	Standard
>	**Ge**	72	427844.3	1.7				ug/L	409858	Standard
	As	75	7611.4	0.2	**7.1339**	0.108	1.5	ug/L	-22	Standard
	Se	82	69.8	14.5	**0.5816**	0.088	15.2	ug/L	18	Standard
	Se-1	77	111.7	16.1	**0.7937**	0.244	30.7	ug/L	50	Standard
>	**Ga**	71	17678.6	1.8				mg/L	97	Standard
	Rb	85	180600.5	2.7				ug/L	25	Standard
	Y	89	603483.2	1.9				ug/L	376763	Standard
>	**Rh**	103	31.7	32.9				ug/L	20	Standard
	Mo	98	1109.1	5.0	**0.5244**	0.022	4.3	ug/L	51	Standard
	Ag	107	635.7	1.7	**0.1234**	0.001	1.2	ug/L	76	Standard
	Cd	111	1307.6	1.9	**0.6883**	0.013	1.9	mg/L	6	Standard
	Cd	114	3051.9	1.6	**0.6569**	0.010	1.6	ug/L	18	Standard
>	**In**	115	515076.3	0.5				ug/L	507261	Standard
	Sn	118	746.7	14.1	**0.0242**	0.019	77.4	ug/L	683	Standard
	Sb	123	1094.8	34.5	**0.2309**	0.086	37.3	ug/L	446	Standard
	Ba	135	326094.1	1.1	**168.7671**	2.405	1.4	ug/L	28	Standard
	Ce	140	1186847.0	1.3				ug/L	33	Standard
>	**Tb**	159	825489.7	1.2				ug/L	800803	Standard
	Ho	165	18656.5	3.3				ug/L	10	Standard
	Tl	203	872.0	1.0	**0.1461**	0.001	0.6	ug/L	13	Standard
	Tl	205	783.4	4.7	**0.1595**	0.006	3.6	ug/L	13	Standard
	Pb	206	246082.6	0.4	**49.5727**	0.064	0.1	ug/L	226	Standard
	Pb	207	207802.3	0.7	**46.0977**	0.241	0.5	ug/L	204	Standard
	Pb	208	892853.5	1.6	**49.5287**	0.671	1.4	ug/L	852	Standard
	U	238	3537.7	0.5	**0.5722**	0.004	0.7	ug/L	13	Standard
>	**Bi**	209	454213.0	0.3				ug/L	449044	Standard

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Na	23	1.7	173.2	**-0.8168**	13.797	1689.1	mg/L	2	Standard
Mg	24	141.7	12.4	**0.1247**	0.024	19.4	mg/L	58	Standard
K	39	438.3	2.4	**1.3406**	0.019	1.5	mg/L	27	Standard
Ca	43	261.7	16.7	**14.8449**	2.408	16.2	mg/L	20	Standard
Fe	54	19300.1	0.1	**13.5908**	0.404	3.0	mg/L	158	Standard
Fe	57	5104.2	4.4	**13.8164**	0.933	6.8	mg/L	267	Standard
> **Sc-1**	45	45760.7	3.0				mg/L	38815	Standard
Cl	35	60781.0	1.1				ug/L	57611	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	2653.6	2.2				ug/L	1617	Standard
P	31	19624.4	2.1				ug/L	19244	Standard
S	34	3567.1	3.8				ug/L	3557	Standard
Sr	88	95.0	13.9				ug/L	65	Standard
C	12	136.7	22.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	100.0	17.3				mg/L	23	Standard
Dy	164	32528.3	1.4				mg/L	13	Standard
Ho-1	165	18656.5	3.3				mg/L	10	Standard
Er	166	17363.3	1.1				mg/L	13	Standard
I	127	20472.2	3.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.620	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.388	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.541
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.151
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129405
Sample Date/Time: Wednesday, July 06, 2016 10:24:50
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68867.9	1.7				ug/L	68501	Standard
	Be	9	631.7	9.2	**0.7119**	0.067	9.4	ug/L	8	Standard
	Al	27	18119901.6	2.3	**126.9628**	0.897	0.7	ug/L	1397	Standard
	Sc	45	46202.0	1.4				ug/L	38815	Standard
	Ti	47	6581.8	1.2	**18.6554**	0.304	1.6	ug/L	36	Standard
	V	51	128283.2	1.6	**17.2275**	0.351	2.0	ug/L	1284	Standard
	Cr	52	95154.5	0.9	**12.2409**	0.037	0.3	ug/L	6503	Standard
	Cr	53	11357.6	3.5	**12.2012**	0.334	2.7	ug/L	492	Standard
	Mn	55	3063159.4	0.6	**477.2229**	6.179	1.3	ug/L	841	Standard
	Co	59	44098.7	0.3	**6.9692**	0.072	1.0	ug/L	229	Standard
	Ni	60	31534.8	0.9	**17.7609**	0.056	0.3	ug/L	344	Standard
	Cu	65	16659.5	1.2	**9.4718**	0.076	0.8	ug/L	115	Standard
	Zn	66	34055.9	1.4	**32.0827**	0.219	0.7	ug/L	190	Standard
>	**Ge**	72	430125.8	0.9				ug/L	409858	Standard
	As	75	4082.9	0.7	**3.8521**	0.034	0.9	ug/L	-22	Standard
	Se	82	46.9	20.6	**0.3716**	0.089	23.9	ug/L	18	Standard
	Se-1	77	94.3	6.8	**0.5461**	0.081	14.7	ug/L	50	Standard
>	**Ga**	71	12415.1	2.0				mg/L	97	Standard
	Rb	85	110669.4	0.7				ug/L	25	Standard
	Y	89	534317.2	1.1				ug/L	376763	Standard
>	**Rh**	103	28.3	20.4				ug/L	20	Standard
	Mo	98	6324.1	1.9	**2.7032**	0.069	2.5	ug/L	51	Standard
	Ag	107	374.3	9.7	**0.0832**	0.005	6.2	ug/L	76	Standard
	Cd	111	152.6	9.1	**0.1166**	0.008	6.6	mg/L	6	Standard
	Cd	114	371.0	12.0	**0.1141**	0.009	7.9	ug/L	18	Standard
>	**In**	115	505513.3	1.1				ug/L	507261	Standard
	Sn	118	583.3	10.5	**-0.0032**	0.010	309.7	ug/L	683	Standard
	Sb	123	794.6	40.7	**0.1651**	0.074	44.8	ug/L	446	Standard
	Ba	135	227039.1	0.3	**119.7363**	1.491	1.2	ug/L	28	Standard
	Ce	140	871470.1	0.3				ug/L	33	Standard
>	**Tb**	159	829470.2	0.6				ug/L	800803	Standard
	Ho	165	14672.1	2.6				ug/L	10	Standard
	Tl	203	639.7	8.1	**0.1153**	0.007	5.7	ug/L	13	Standard
	Tl	205	520.0	16.7	**0.1195**	0.013	10.6	ug/L	13	Standard
	Pb	206	39238.4	0.8	**7.8343**	0.052	0.7	ug/L	226	Standard
	Pb	207	31985.1	0.4	**7.0346**	0.037	0.5	ug/L	204	Standard
	Pb	208	135887.5	0.7	**7.4745**	0.031	0.4	ug/L	852	Standard
	U	238	3977.2	1.1	**0.6329**	0.006	1.0	ug/L	13	Standard
>	**Bi**	209	458083.0	0.3				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	258.3	7.8	**0.2554**	0.022	8.5	mg/L	58	Standard
K	39	331.7	6.3	**0.9690**	0.070	7.2	mg/L	27	Standard
Ca	43	426.7	10.5	**24.8165**	3.005	12.1	mg/L	20	Standard
Fe	54	13735.2	0.5	**9.5401**	0.174	1.8	mg/L	158	Standard
Fe	57	3647.1	3.0	**9.5698**	0.314	3.3	mg/L	267	Standard
> **Sc-1**	45	46202.0	1.4				mg/L	38815	Standard
Cl	35	61570.9	1.0				ug/L	57611	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	3077.0	3.1				ug/L	1617	Standard
P	31	19200.5	1.6				ug/L	19244	Standard
S	34	3863.8	5.2				ug/L	3557	Standard
Sr	88	136.7	36.8				ug/L	65	Standard
C	12	116.7	34.6				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	30.0	0.0				mg/L	23	Standard
Dy	164	25279.8	1.5				mg/L	13	Standard
Ho-1	165	14672.1	2.6				mg/L	10	Standard
Er	166	13549.4	4.5				mg/L	13	Standard
I	127	7708.6	5.5				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		100.535	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		104.945	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.656	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	102.013	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129406
Sample Date/Time: Wednesday, July 06, 2016 10:28:02
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73539.8	2.1				ug/L	68501	Standard
	Be	9	1236.7	9.5	**1.2875**	0.097	7.5	ug/L	8	Standard
	Al	27	19354398.4	0.5	**127.0365**	2.230	1.8	ug/L	1397	Standard
	Sc	45	49311.8	1.2				ug/L	38815	Standard
	Ti	47	6260.3	0.2	**17.8301**	0.279	1.6	ug/L	36	Standard
	V	51	197286.6	0.9	**26.7008**	0.334	1.3	ug/L	1284	Standard
	Cr	52	171609.2	1.4	**22.9421**	0.255	1.1	ug/L	6503	Standard
	Cr	53	21012.9	4.7	**23.0380**	0.738	3.2	ug/L	492	Standard
	Mn	55	5714579.9	0.8	**894.6958**	9.873	1.1	ug/L	841	Standard
	Co	59	85556.9	1.3	**13.5808**	0.106	0.8	ug/L	229	Standard
	Ni	60	55476.4	0.3	**31.5218**	0.503	1.6	ug/L	344	Standard
	Cu	65	46747.0	0.8	**26.7323**	0.179	0.7	ug/L	115	Standard
	Zn	66	113215.8	0.4	**107.4550**	1.729	1.6	ug/L	190	Standard
>	**Ge**	72	428063.9	1.5				ug/L	409858	Standard
	As	75	12392.8	0.8	**11.5468**	0.171	1.5	ug/L	-22	Standard
	Se	82	94.3	8.8	**0.8042**	0.088	10.9	ug/L	18	Standard
	Se-1	77	139.3	14.7	**1.1807**	0.309	26.2	ug/L	50	Standard
>	**Ga**	71	23456.5	4.0				mg/L	97	Standard
	Rb	85	264884.0	1.5				ug/L	25	Standard
	Y	89	662178.0	1.0				ug/L	376763	Standard
>	**Rh**	103	98.3	7.8				ug/L	20	Standard
	Mo	98	445.2	2.9	**0.2498**	0.006	2.6	ug/L	51	Standard
	Ag	107	3066.0	2.3	**0.4972**	0.011	2.2	ug/L	76	Standard
	Cd	111	1459.2	2.5	**0.7492**	0.021	2.8	mg/L	6	Standard
	Cd	114	3508.2	2.8	**0.7355**	0.025	3.4	ug/L	18	Standard
>	**In**	115	525518.1	1.1				ug/L	507261	Standard
	Sn	118	1388.4	7.6	**0.1349**	0.021	15.6	ug/L	683	Standard
	Sb	123	878.9	35.3	**0.1776**	0.071	39.9	ug/L	446	Standard
	Ba	135	561499.6	0.6	**284.8150**	1.354	0.5	ug/L	28	Standard
	Ce	140	1487894.8	1.2				ug/L	33	Standard
>	**Tb**	159	846767.6	0.8				ug/L	800803	Standard
	Ho	165	23945.6	0.4				ug/L	10	Standard
	Tl	203	1256.4	3.5	**0.1952**	0.004	2.0	ug/L	13	Standard
	Tl	205	1130.0	7.8	**0.2109**	0.017	8.2	ug/L	13	Standard
	Pb	206	1770271.4	0.4	**355.6542**	7.848	2.2	ug/L	226	Standard
	Pb	207	1435552.0	0.6	**317.5703**	6.461	2.0	ug/L	204	Standard
	Pb	208	6260085.1	0.5	**346.3567**	10.592	3.1	ug/L	852	Standard
	U	238	5247.9	0.1	**0.8260**	0.020	2.4	ug/L	13	Standard
>	**Bi**	209	455646.6	2.6				ug/L	449044	Standard

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Na	23	1.7	173.2	**-1.7220**	12.229	710.2	mg/L	2	Standard
Mg	24	143.3	14.5	**0.1144**	0.022	19.5	mg/L	58	Standard
K	39	646.7	10.5	**1.8867**	0.203	10.8	mg/L	27	Standard
Ca	43	151.7	18.2	**7.4176**	1.670	22.5	mg/L	20	Standard
Fe	54	24152.4	1.4	**15.7960**	0.407	2.6	mg/L	158	Standard
Fe	57	6299.6	1.7	**15.9098**	0.455	2.9	mg/L	267	Standard
Sc-1	45	49311.8	1.2				mg/L	38815	Standard
Cl	35	60605.6	1.3				ug/L	57611	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	4874.1	2.4				ug/L	1617	Standard
P	31	19729.5	1.9				ug/L	19244	Standard
S	34	3847.2	5.9				ug/L	3557	Standard
Sr	88	80.0	31.3				ug/L	65	Standard
C	12	223.3	22.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	213.3	30.5				mg/L	23	Standard
Dy	164	39817.0	0.8				mg/L	13	Standard
Ho-1	165	23945.6	0.4				mg/L	10	Standard
Er	166	21181.5	1.1				mg/L	13	Standard
I	127	37849.0	6.6				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		107.355	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		104.442	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.599
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.470
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135
Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1606129407
Sample Date/Time: Wednesday, July 06, 2016 10:31:13
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73692.1	0.5				ug/L	68501	Standard
	Be	9	1216.7	6.2	**1.2655**	0.077	6.1	ug/L	8	Standard
	Al	27	21068113.9	0.7	**137.9685**	1.604	1.2	ug/L	1397	Standard
	Sc	45	49278.3	1.2				ug/L	38815	Standard
	Ti	47	4630.0	0.5	**12.8504**	0.202	1.6	ug/L	36	Standard
	V	51	168296.1	0.8	**22.1871**	0.442	2.0	ug/L	1284	Standard
	Cr	52	162616.0	0.1	**21.1287**	0.300	1.4	ug/L	6503	Standard
	Cr	53	19561.0	0.9	**20.8821**	0.318	1.5	ug/L	492	Standard
	Mn	55	3012326.9	1.2	**459.8828**	11.572	2.5	ug/L	841	Standard
	Co	59	80823.4	1.3	**12.5119**	0.282	2.3	ug/L	229	Standard
	Ni	60	54628.0	0.8	**30.2569**	0.181	0.6	ug/L	344	Standard
	Cu	65	31768.6	1.0	**17.7106**	0.287	1.6	ug/L	115	Standard
	Zn	66	64232.9	0.7	**59.3902**	0.606	1.0	ug/L	190	Standard
>	**Ge**	72	439001.8	1.3				ug/L	409858	Standard
	As	75	4630.0	1.3	**4.2692**	0.074	1.7	ug/L	-22	Standard
	Se	82	59.1	11.4	**0.4718**	0.064	13.6	ug/L	18	Standard
	Se-1	77	133.3	9.3	**1.0503**	0.190	18.1	ug/L	50	Standard
>	**Ga**	71	23105.9	1.6				mg/L	97	Standard
	Rb	85	235088.1	0.5				ug/L	25	Standard
	Y	89	638379.7	2.1				ug/L	376763	Standard
>	**Rh**	103	48.3	41.8				ug/L	20	Standard
	Mo	98	407.1	1.2	**0.2423**	0.006	2.4	ug/L	51	Standard
	Ag	107	561.3	1.7	**0.1141**	0.003	2.7	ug/L	76	Standard
	Cd	111	296.3	10.1	**0.1906**	0.019	9.8	mg/L	6	Standard
	Cd	114	649.1	7.9	**0.1726**	0.010	5.7	ug/L	18	Standard
>	**In**	115	501705.0	2.5				ug/L	507261	Standard
	Sn	118	5997.9	0.4	**0.9982**	0.028	2.8	ug/L	683	Standard
	Sb	123	662.1	37.4	**0.1367**	0.062	45.2	ug/L	446	Standard
	Ba	135	404621.6	0.5	**215.0734**	5.716	2.7	ug/L	28	Standard
	Ce	140	1501488.9	0.3				ug/L	33	Standard
>	**Tb**	159	823762.5	0.4				ug/L	800803	Standard
	Ho	165	22473.3	1.8				ug/L	10	Standard
	Tl	203	1153.0	0.6	**0.1835**	0.001	0.6	ug/L	13	Standard
	Tl	205	1021.7	4.8	**0.1961**	0.007	3.7	ug/L	13	Standard
	Pb	206	79343.2	0.5	**16.0985**	0.167	1.0	ug/L	226	Standard
	Pb	207	65263.3	1.2	**14.5843**	0.286	2.0	ug/L	204	Standard
	Pb	208	280672.4	0.9	**15.6850**	0.240	1.5	ug/L	852	Standard
	U	238	4937.1	2.5	**0.7871**	0.022	2.8	ug/L	13	Standard
>	**Bi**	209	450912.1	0.7				ug/L	449044	Standard

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Na	23	3.3	86.6	**5.5830**	12.443	222.9	mg/L	2	Standard
Mg	24	130.0	37.1	**0.1007**	0.053	53.0	mg/L	58	Standard
K	39	498.3	2.5	**1.4228**	0.024	1.7	mg/L	27	Standard
Ca	43	138.3	7.5	**6.6525**	0.690	10.4	mg/L	20	Standard
Fe	54	23569.3	0.6	**15.4199**	0.090	0.6	mg/L	158	Standard
Fe	57	6081.2	2.7	**15.3422**	0.389	2.5	mg/L	267	Standard
Sc-1	45	49278.3	1.2				mg/L	38815	Standard
Cl	35	59773.0	1.9				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	2826.9	2.9				ug/L	1617	Standard
P	31	19067.0	1.9				ug/L	19244	Standard
S	34	3487.1	4.7				ug/L	3557	Standard
Sr	88	111.7	27.4				ug/L	65	Standard
C	12	113.3	45.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	60.0	57.7				mg/L	23	Standard
Dy	164	38647.6	1.9				mg/L	13	Standard
Ho-1	165	22473.3	1.8				mg/L	10	Standard
Er	166	20056.6	4.5				mg/L	13	Standard
I	127	13512.7	2.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		107.578	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		107.111	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.905	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.416	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129407
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Method 6020 - Summary Report

Sample ID: L1606129408
Sample Date/Time: Wednesday, July 06, 2016 10:34:25
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70959.1	1.3				ug/L	68501	Standard
	Be	9	756.7	4.3	**0.8243**	0.033	4.1	ug/L	8	Standard
	Al	27	14159270.0	0.8	**96.3094**	0.910	0.9	ug/L	1397	Standard
	Sc	45	47111.5	0.8				ug/L	38815	Standard
	Ti	47	6499.7	0.7	**18.2590**	0.454	2.5	ug/L	36	Standard
	V	51	134886.9	0.7	**17.9581**	0.352	2.0	ug/L	1284	Standard
	Cr	52	147858.4	1.3	**19.3579**	0.550	2.8	ug/L	6503	Standard
	Cr	53	17798.8	1.6	**19.1853**	0.468	2.4	ug/L	492	Standard
	Mn	55	2435019.9	0.3	**375.9486**	6.829	1.8	ug/L	841	Standard
	Co	59	48552.7	1.1	**7.6035**	0.118	1.6	ug/L	229	Standard
	Ni	60	34586.8	1.2	**19.3198**	0.357	1.8	ug/L	344	Standard
	Cu	65	24621.3	1.1	**13.8825**	0.410	3.0	ug/L	115	Standard
	Zn	66	46239.5	1.2	**43.2092**	0.491	1.1	ug/L	190	Standard
>	**Ge**	72	434087.5	2.1				ug/L	409858	Standard
	As	75	9868.8	1.7	**9.0890**	0.151	1.7	ug/L	-22	Standard
	Se	82	49.3	2.7	**0.3894**	0.021	5.3	ug/L	18	Standard
	Se-1	77	92.0	6.5	**0.5020**	0.065	12.9	ug/L	50	Standard
>	**Ga**	71	15012.4	1.7				mg/L	97	Standard
	Rb	85	152672.0	0.8				ug/L	25	Standard
	Y	89	553523.8	1.3				ug/L	376763	Standard
>	**Rh**	103	20.0	66.1				ug/L	20	Standard
	Mo	98	1703.3	1.9	**0.7619**	0.024	3.2	ug/L	51	Standard
	Ag	107	394.7	6.0	**0.0849**	0.003	3.2	ug/L	76	Standard
	Cd	111	290.6	2.3	**0.1825**	0.006	3.1	mg/L	6	Standard
	Cd	114	764.2	6.2	**0.1912**	0.008	4.3	ug/L	18	Standard
>	**In**	115	519157.2	1.7				ug/L	507261	Standard
	Sn	118	405.0	28.2	**-0.0378**	0.021	54.3	ug/L	683	Standard
	Sb	123	529.8	35.5	**0.1001**	0.042	42.3	ug/L	446	Standard
	Ba	135	216547.7	1.4	**111.2307**	3.352	3.0	ug/L	28	Standard
	Ce	140	1039615.1	0.1				ug/L	33	Standard
>	**Tb**	159	843551.3	0.3				ug/L	800803	Standard
	Ho	165	16031.8	1.8				ug/L	10	Standard
	Tl	203	744.0	1.1	**0.1266**	0.003	2.1	ug/L	13	Standard
	Tl	205	701.7	2.9	**0.1441**	0.002	1.3	ug/L	13	Standard
	Pb	206	53258.1	0.9	**10.4016**	0.208	2.0	ug/L	226	Standard
	Pb	207	43508.7	1.3	**9.3600**	0.237	2.5	ug/L	204	Standard
	Pb	208	187957.8	0.8	**10.1115**	0.165	1.6	ug/L	852	Standard
	U	238	3675.4	2.9	**0.5763**	0.023	4.0	ug/L	13	Standard
>	**Bi**	209	468453.7	1.8				ug/L	449044	Standard

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Na	23	1.7	173.2	**-1.2267**	13.087	1066.9	mg/L	2	Standard
Mg	24	125.0	26.2	**0.1012**	0.037	36.5	mg/L	58	Standard
K	39	365.0	11.9	**1.0569**	0.141	13.3	mg/L	27	Standard
Ca	43	155.0	27.9	**8.0246**	2.680	33.4	mg/L	20	Standard
Fe	54	15935.4	1.6	**10.8701**	0.219	2.0	mg/L	158	Standard
Fe	57	4223.9	3.5	**10.9607**	0.389	3.5	mg/L	267	Standard
Sc-1	45	47111.5	0.8				mg/L	38815	Standard
Cl	35	59515.3	1.4				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	3090.3	5.6				ug/L	1617	Standard
P	31	18973.5	2.2				ug/L	19244	Standard
S	34	3442.1	0.9				ug/L	3557	Standard
Sr	88	105.0	20.8				ug/L	65	Standard
C	12	116.7	9.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	60.0	44.1				mg/L	23	Standard
Dy	164	26399.3	4.0				mg/L	13	Standard
Ho-1	165	16031.8	1.8				mg/L	10	Standard
Er	166	14089.9	1.7				mg/L	13	Standard
I	127	8477.4	2.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.588	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.912	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.345
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.322
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129409
Sample Date/Time: Wednesday, July 06, 2016 10:37:37
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69708.4	2.7				ug/L	68501	Standard
	Be	9	870.0	2.0	**0.9619**	0.032	3.4	ug/L	8	Standard
	Al	27	19202159.7	1.2	**132.9728**	2.381	1.8	ug/L	1397	Standard
	Sc	45	46678.5	2.3				ug/L	38815	Standard
	Ti	47	6642.5	1.4	**19.0258**	0.085	0.4	ug/L	36	Standard
	V	51	160686.5	0.8	**21.8455**	0.248	1.1	ug/L	1284	Standard
	Cr	52	156704.6	1.0	**20.9936**	0.232	1.1	ug/L	6503	Standard
	Cr	53	18536.3	2.0	**20.3975**	0.180	0.9	ug/L	492	Standard
	Mn	55	3756081.6	0.3	**591.4032**	6.380	1.1	ug/L	841	Standard
	Co	59	59706.1	0.8	**9.5336**	0.097	1.0	ug/L	229	Standard
	Ni	60	39640.8	2.1	**22.6045**	0.292	1.3	ug/L	344	Standard
	Cu	65	29127.6	0.6	**16.7474**	0.180	1.1	ug/L	115	Standard
	Zn	66	54582.1	0.6	**52.0381**	0.301	0.6	ug/L	190	Standard
>	**Ge**	72	425619.0	1.1				ug/L	409858	Standard
	As	75	6984.3	0.1	**6.5874**	0.071	1.1	ug/L	-22	Standard
	Se	82	63.7	16.3	**0.5290**	0.094	17.8	ug/L	18	Standard
	Se-1	77	105.3	9.4	**0.7132**	0.123	17.2	ug/L	50	Standard
>	**Ga**	71	16687.5	1.5				mg/L	97	Standard
	Rb	85	168766.4	0.6				ug/L	25	Standard
	Y	89	597263.8	1.9				ug/L	376763	Standard
>	**Rh**	103	46.7	27.0				ug/L	20	Standard
	Mo	98	1999.8	2.4	**0.8916**	0.023	2.6	ug/L	51	Standard
	Ag	107	515.7	0.2	**0.1048**	0.000	0.4	ug/L	76	Standard
	Cd	111	596.6	3.7	**0.3367**	0.013	3.9	mg/L	6	Standard
	Cd	114	1494.2	1.8	**0.3419**	0.007	2.1	ug/L	18	Standard
>	**In**	115	512996.6	0.7				ug/L	507261	Standard
	Sn	118	1833.4	8.5	**0.2212**	0.030	13.8	ug/L	683	Standard
	Sb	123	606.4	28.4	**0.1195**	0.040	33.7	ug/L	446	Standard
	Ba	135	423500.0	0.9	**220.0532**	0.580	0.3	ug/L	28	Standard
	Ce	140	1120040.8	0.8				ug/L	33	Standard
>	**Tb**	159	826961.8	2.3				ug/L	800803	Standard
	Ho	165	18092.5	3.7				ug/L	10	Standard
	Tl	203	838.7	4.6	**0.1446**	0.005	3.8	ug/L	13	Standard
	Tl	205	770.0	5.6	**0.1605**	0.007	4.1	ug/L	13	Standard
	Pb	206	100483.1	0.8	**20.7696**	0.061	0.3	ug/L	226	Standard
	Pb	207	83275.9	1.1	**18.9560**	0.043	0.2	ug/L	204	Standard
	Pb	208	356830.1	0.7	**20.3142**	0.281	1.4	ug/L	852	Standard
	U	238	4663.1	1.9	**0.7589**	0.013	1.7	ug/L	13	Standard
>	**Bi**	209	442634.9	1.0				ug/L	449044	Standard

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Na	23	3.3	173.2	**6.1400**	25.847	421.0	mg/L	2	Standard
Mg	24	140.0	22.3	**0.1197**	0.038	31.7	mg/L	58	Standard
K	39	373.3	22.8	**1.0948**	0.271	24.8	mg/L	27	Standard
Ca	43	445.0	10.0	**25.6355**	2.557	10.0	mg/L	20	Standard
Fe	54	17573.1	2.3	**12.1156**	0.397	3.3	mg/L	158	Standard
Fe	57	4757.4	2.3	**12.5607**	0.567	4.5	mg/L	267	Standard
Sc-1	45	46678.5	2.3				mg/L	38815	Standard
Cl	35	62395.6	1.3				ug/L	57611	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	3323.7	5.8				ug/L	1617	Standard
P	31	20153.4	2.6				ug/L	19244	Standard
S	34	3810.5	2.1				ug/L	3557	Standard
Sr	88	126.7	20.3				ug/L	65	Standard
C	12	123.3	16.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	70.0	28.6				mg/L	23	Standard
Dy	164	30012.3	1.2				mg/L	13	Standard
Ho-1	165	18092.5	3.7				mg/L	10	Standard
Er	166	16609.1	2.2				mg/L	13	Standard
I	127	29072.9	4.6				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		101.762	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.845	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.131	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.573	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129410
Sample Date/Time: Wednesday, July 06, 2016 10:40:48
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69616.3	2.3				ug/L	68501	Standard
	Be	9	961.7	5.5	**1.0616**	0.034	3.2	ug/L	8	Standard
	Al	27	18281916.3	1.2	**126.7524**	1.430	1.1	ug/L	1397	Standard
	Sc	45	47290.4	1.8				ug/L	38815	Standard
	Ti	47	6362.0	1.3	**17.8782**	0.265	1.5	ug/L	36	Standard
	V	51	159242.7	1.1	**21.2363**	0.280	1.3	ug/L	1284	Standard
	Cr	52	141025.6	0.9	**18.4273**	0.214	1.2	ug/L	6503	Standard
	Cr	53	17441.7	0.8	**18.8006**	0.170	0.9	ug/L	492	Standard
	Mn	55	3246732.0	1.4	**501.5321**	8.138	1.6	ug/L	841	Standard
	Co	59	62555.9	1.5	**9.8001**	0.170	1.7	ug/L	229	Standard
	Ni	60	41094.7	0.2	**22.9958**	0.072	0.3	ug/L	344	Standard
	Cu	65	31150.3	1.3	**17.5726**	0.242	1.4	ug/L	115	Standard
	Zn	66	58549.2	0.6	**54.7724**	0.308	0.6	ug/L	190	Standard
>	**Ge**	72	433790.5	0.2				ug/L	409858	Standard
	As	75	9785.0	0.1	**9.0175**	0.026	0.3	ug/L	-22	Standard
	Se	82	60.3	4.9	**0.4878**	0.025	5.2	ug/L	18	Standard
	Se-1	77	120.7	9.5	**0.8965**	0.155	17.3	ug/L	50	Standard
>	**Ga**	71	18277.7	3.5				mg/L	97	Standard
	Rb	85	196232.6	0.8				ug/L	25	Standard
	Y	89	583639.1	0.9				ug/L	376763	Standard
>	**Rh**	103	36.7	55.1				ug/L	20	Standard
	Mo	98	443.5	1.6	**0.2589**	0.003	1.4	ug/L	51	Standard
	Ag	107	462.0	1.3	**0.0985**	0.001	1.0	ug/L	76	Standard
	Cd	111	685.9	3.7	**0.3915**	0.015	3.9	mg/L	6	Standard
	Cd	114	1702.1	8.7	**0.3949**	0.033	8.5	ug/L	18	Standard
>	**In**	115	497941.4	0.7				ug/L	507261	Standard
	Sn	118	670.0	12.0	**0.0147**	0.016	107.7	ug/L	683	Standard
	Sb	123	469.6	32.9	**0.0912**	0.037	40.3	ug/L	446	Standard
	Ba	135	410847.6	0.8	**219.9427**	2.300	1.0	ug/L	28	Standard
	Ce	140	1208330.0	0.4				ug/L	33	Standard
>	**Tb**	159	813546.8	1.1				ug/L	800803	Standard
	Ho	165	18953.5	2.7				ug/L	10	Standard
	Tl	203	963.0	4.3	**0.1584**	0.004	2.8	ug/L	13	Standard
	Tl	205	828.4	3.8	**0.1667**	0.005	2.9	ug/L	13	Standard
	Pb	206	92666.8	0.3	**18.7524**	0.223	1.2	ug/L	226	Standard
	Pb	207	77103.7	0.6	**17.1840**	0.253	1.5	ug/L	204	Standard
	Pb	208	327107.5	0.6	**18.2311**	0.267	1.5	ug/L	852	Standard
	U	238	4511.0	0.2	**0.7210**	0.005	0.7	ug/L	13	Standard
>	**Bi**	209	452130.4	0.9				ug/L	449044	Standard

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Na	23	3.3	86.6	**6.0368**	12.838	212.7	mg/L	2	Standard
Mg	24	135.0	3.7	**0.1117**	0.006	5.2	mg/L	58	Standard
K	39	476.7	12.4	**1.4188**	0.205	14.4	mg/L	27	Standard
Ca	43	226.7	17.8	**12.2322**	2.188	17.9	mg/L	20	Standard
Fe	54	18678.3	2.4	**12.7127**	0.243	1.9	mg/L	158	Standard
Fe	57	4979.2	4.0	**12.9867**	0.314	2.4	mg/L	267	Standard
Sc-1	45	47290.4	1.8				mg/L	38815	Standard
Cl	35	60490.5	1.5				ug/L	57611	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	4444.0	5.0				ug/L	1617	Standard
P	31	19914.7	1.5				ug/L	19244	Standard
S	34	3688.8	4.4				ug/L	3557	Standard
Sr	88	118.3	10.6				ug/L	65	Standard
C	12	103.3	39.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	63.3	39.7				mg/L	23	Standard
Dy	164	30943.8	4.0				mg/L	13	Standard
Ho-1	165	18953.5	2.7				mg/L	10	Standard
Er	166	16829.3	3.2				mg/L	13	Standard
I	127	10401.9	3.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		101.628	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		105.839	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.163	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.687	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129410
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Method 6020 - Summary Report

Sample ID: L1606129414
Sample Date/Time: Wednesday, July 06, 2016 10:44:00
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71637.3	1.7				ug/L	68501	Standard
	Be	9	1021.7	6.3	**1.0968**	0.085	7.8	ug/L	8	Standard
	Al	27	18055854.1	2.0	**121.6784**	4.280	3.5	ug/L	1397	Standard
	Sc	45	48614.6	2.4				ug/L	38815	Standard
	Ti	47	6128.9	2.4	**17.3770**	0.672	3.9	ug/L	36	Standard
	V	51	159400.6	0.8	**21.4446**	0.369	1.7	ug/L	1284	Standard
	Cr	52	144599.1	0.6	**19.0917**	0.345	1.8	ug/L	6503	Standard
	Cr	53	16966.2	3.0	**18.4464**	0.876	4.7	ug/L	492	Standard
	Mn	55	4530173.8	0.5	**705.9322**	10.338	1.5	ug/L	841	Standard
	Co	59	69310.2	0.1	**10.9526**	0.185	1.7	ug/L	229	Standard
	Ni	60	46644.7	1.0	**26.3537**	0.542	2.1	ug/L	344	Standard
	Cu	65	36918.3	0.5	**21.0110**	0.308	1.5	ug/L	115	Standard
	Zn	66	85868.7	1.1	**81.0791**	0.514	0.6	ug/L	190	Standard
>	**Ge**	72	430095.7	1.6				ug/L	409858	Standard
	As	75	8396.3	0.2	**7.8187**	0.112	1.4	ug/L	-22	Standard
	Se	82	71.3	12.7	**0.5922**	0.083	13.9	ug/L	18	Standard
	Se-1	77	110.7	2.3	**0.7729**	0.049	6.4	ug/L	50	Standard
>	**Ga**	71	17934.0	4.5				mg/L	97	Standard
	Rb	85	189570.3	0.9				ug/L	25	Standard
	Y	89	609959.0	0.6				ug/L	376763	Standard
>	**Rh**	103	83.3	6.9				ug/L	20	Standard
	Mo	98	442.0	4.5	**0.2506**	0.007	2.9	ug/L	51	Standard
	Ag	107	670.0	5.1	**0.1281**	0.008	6.4	ug/L	76	Standard
	Cd	111	1213.9	1.2	**0.6372**	0.021	3.3	mg/L	6	Standard
	Cd	114	2971.9	12.0	**0.6347**	0.055	8.7	ug/L	18	Standard
>	**In**	115	519347.8	2.9				ug/L	507261	Standard
	Sn	118	811.7	22.8	**0.0342**	0.029	83.8	ug/L	683	Standard
	Sb	123	508.7	27.5	**0.0950**	0.029	30.5	ug/L	446	Standard
	Ba	135	407137.2	1.3	**209.0293**	3.304	1.6	ug/L	28	Standard
	Ce	140	1173511.2	0.8				ug/L	33	Standard
>	**Tb**	159	846889.3	0.9				ug/L	800803	Standard
	Ho	165	19894.7	3.2				ug/L	10	Standard
	Tl	203	874.7	4.5	**0.1445**	0.005	3.4	ug/L	13	Standard
	Tl	205	866.7	11.7	**0.1697**	0.015	8.7	ug/L	13	Standard
	Pb	206	768270.5	1.0	**152.1393**	1.787	1.2	ug/L	226	Standard
	Pb	207	586001.6	0.8	**127.7835**	1.154	0.9	ug/L	204	Standard
	Pb	208	2574173.5	0.5	**140.3658**	0.873	0.6	ug/L	852	Standard
	U	238	4434.3	1.5	**0.6951**	0.010	1.4	ug/L	13	Standard
>	**Bi**	209	462087.8	0.2				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	150.0	6.7	**0.1237**	0.009	7.3	mg/L	58	Standard
K	39	496.7	13.7	**1.4403**	0.227	15.8	mg/L	27	Standard
Ca	43	398.3	15.5	**21.8095**	3.086	14.2	mg/L	20	Standard
Fe	54	17527.3	1.2	**11.5979**	0.308	2.7	mg/L	158	Standard
Fe	57	4700.7	2.8	**11.8845**	0.644	5.4	mg/L	267	Standard
> **Sc-1**	45	48614.6	2.4				mg/L	38815	Standard
Cl	35	61146.5	0.2				ug/L	57611	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	3377.0	5.9				ug/L	1617	Standard
P	31	19879.7	2.4				ug/L	19244	Standard
S	34	3838.8	2.6				ug/L	3557	Standard
Sr	88	200.0	11.5				ug/L	65	Standard
C	12	170.0	25.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	20.8				mg/L	23	Standard
Dy	164	32365.0	1.1				mg/L	13	Standard
Ho-1	165	19894.7	3.2				mg/L	10	Standard
Er	166	17843.8	2.1				mg/L	13	Standard
I	127	16912.8	4.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.578	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.938	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.383
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.905
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1606129415
Sample Date/Time: Wednesday, July 06, 2016 10:47:11
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69356.8	2.8				ug/L	68501	Standard
	Be	9	655.0	2.6	**0.7323**	0.009	1.2	ug/L	8	Standard
	Al	27	18722279.1	2.0	**130.2889**	1.214	0.9	ug/L	1397	Standard
	Sc	45	46070.0	2.2				ug/L	38815	Standard
	Ti	47	6073.9	1.6	**17.2616**	0.359	2.1	ug/L	36	Standard
	V	51	127231.3	0.8	**17.1322**	0.226	1.3	ug/L	1284	Standard
	Cr	52	102182.4	1.4	**13.2537**	0.247	1.9	ug/L	6503	Standard
	Cr	53	12315.0	1.3	**13.3055**	0.220	1.7	ug/L	492	Standard
	Mn	55	3021759.4	0.7	**472.0520**	3.826	0.8	ug/L	841	Standard
	Co	59	47565.2	1.0	**7.5376**	0.131	1.7	ug/L	229	Standard
	Ni	60	32362.9	1.1	**18.2823**	0.173	0.9	ug/L	344	Standard
	Cu	65	17677.0	0.6	**10.0795**	0.120	1.2	ug/L	115	Standard
	Zn	66	34602.8	0.5	**32.6930**	0.405	1.2	ug/L	190	Standard
>	**Ge**	72	428940.5	0.7				ug/L	409858	Standard
	As	75	3941.9	1.4	**3.7324**	0.045	1.2	ug/L	-22	Standard
	Se	82	46.5	7.4	**0.3694**	0.033	8.9	ug/L	18	Standard
	Se-1	77	100.3	7.0	**0.6338**	0.107	16.9	ug/L	50	Standard
>	**Ga**	71	13047.3	4.0				mg/L	97	Standard
	Rb	85	118624.5	2.9				ug/L	25	Standard
	Y	89	560951.0	2.5				ug/L	376763	Standard
>	**Rh**	103	48.3	6.0				ug/L	20	Standard
	Mo	98	828.1	2.5	**0.4116**	0.010	2.5	ug/L	51	Standard
	Ag	107	345.0	5.2	**0.0778**	0.003	3.9	ug/L	76	Standard
	Cd	111	144.7	12.8	**0.1116**	0.010	8.7	mg/L	6	Standard
	Cd	114	424.5	6.8	**0.1240**	0.007	5.5	ug/L	18	Standard
>	**In**	115	512359.1	1.3				ug/L	507261	Standard
	Sn	118	641.7	0.4	**0.0060**	0.002	32.8	ug/L	683	Standard
	Sb	123	464.7	24.6	**0.0871**	0.028	31.9	ug/L	446	Standard
	Ba	135	304537.9	0.9	**158.4527**	1.532	1.0	ug/L	28	Standard
	Ce	140	927061.5	1.4				ug/L	33	Standard
>	**Tb**	159	815658.1	0.5				ug/L	800803	Standard
	Ho	165	15122.5	1.3				ug/L	10	Standard
	Tl	203	665.3	5.7	**0.1217**	0.004	3.6	ug/L	13	Standard
	Tl	205	626.7	3.3	**0.1387**	0.004	2.8	ug/L	13	Standard
	Pb	206	41069.9	0.7	**8.5027**	0.083	1.0	ug/L	226	Standard
	Pb	207	33682.7	0.3	**7.6813**	0.070	0.9	ug/L	204	Standard
	Pb	208	146067.2	0.1	**8.3310**	0.095	1.1	ug/L	852	Standard
	U	238	3682.8	0.5	**0.6094**	0.005	0.7	ug/L	13	Standard
>	**Bi**	209	441819.7	1.2				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	121.7	9.5	**0.1005**	0.014	13.8	mg/L	58	Standard
K	39	275.0	20.0	**0.7805**	0.172	22.0	mg/L	27	Standard
Ca	43	448.3	8.4	**26.1815**	1.967	7.5	mg/L	20	Standard
Fe	54	13969.2	1.8	**9.7320**	0.102	1.0	mg/L	158	Standard
Fe	57	3810.5	1.6	**10.0601**	0.130	1.3	mg/L	267	Standard
Sc-1	45	46070.0	2.2				mg/L	38815	Standard
Cl	35	63382.3	0.4				ug/L	57611	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	2136.8	4.5				ug/L	1617	Standard
P	31	20200.1	2.8				ug/L	19244	Standard
S	34	3783.8	2.6				ug/L	3557	Standard
Sr	88	146.7	29.8				ug/L	65	Standard
C	12	96.7	11.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	43.3	35.3				mg/L	23	Standard
Dy	164	25849.2	4.7				mg/L	13	Standard
Ho-1	165	15122.5	1.3				mg/L	10	Standard
Er	166	13792.9	3.2				mg/L	13	Standard
I	127	16515.7	1.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		101.249	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		104.656	
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	101.005
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	98.391
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606138108
Sample Date/Time: Wednesday, July 06, 2016 10:50:23
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72486.3	0.9				ug/L	68501	Standard
	Be	9	1533.4	3.3	**1.6163**	0.062	3.8	ug/L	8	Standard
	Al	27	25400427.9	2.0	**169.1086**	4.148	2.5	ug/L	1397	Standard
	Sc	45	51156.2	0.2				ug/L	38815	Standard
	Ti	47	8899.9	0.5	**24.3466**	0.343	1.4	ug/L	36	Standard
	V	51	344234.9	1.1	**44.8316**	0.962	2.1	ug/L	1284	Standard
	Cr	52	232795.5	0.9	**30.1671**	0.645	2.1	ug/L	6503	Standard
	Cr	53	28976.0	1.1	**30.6491**	0.369	1.2	ug/L	492	Standard
	Mn	55	7977455.3	1.5	**1199.3630**	32.576	2.7	ug/L	841	Standard
	Co	59	107887.7	3.2	**16.4465**	0.723	4.4	ug/L	229	Standard
	Ni	60	66407.2	1.3	**36.2534**	0.900	2.5	ug/L	344	Standard
	Cu	65	42270.9	0.8	**23.2092**	0.454	2.0	ug/L	115	Standard
	Zn	66	75366.6	0.5	**68.6374**	1.149	1.7	ug/L	190	Standard
>	**Ge**	72	445840.4	1.3				ug/L	409858	Standard
	As	75	12308.2	0.8	**11.0147**	0.102	0.9	ug/L	-22	Standard
	Se	82	70.7	6.0	**0.5638**	0.038	6.8	ug/L	18	Standard
	Se-1	77	145.0	4.8	**1.1765**	0.081	6.9	ug/L	50	Standard
>	**Ga**	71	31280.6	2.9				mg/L	97	Standard
	Rb	85	327883.6	1.5				ug/L	25	Standard
	Y	89	719377.2	0.7				ug/L	376763	Standard
>	**Rh**	103	35.0	0.0				ug/L	20	Standard
	Mo	98	765.6	2.9	**0.3992**	0.010	2.6	ug/L	51	Standard
	Ag	107	679.3	4.1	**0.1354**	0.005	3.6	ug/L	76	Standard
	Cd	111	351.6	7.7	**0.2222**	0.013	5.9	mg/L	6	Standard
	Cd	114	823.2	4.8	**0.2125**	0.009	4.1	ug/L	18	Standard
>	**In**	115	491492.2	0.5				ug/L	507261	Standard
	Sn	118	440.0	20.8	**-0.0272**	0.017	62.7	ug/L	683	Standard
	Sb	123	423.3	31.3	**0.0814**	0.031	38.5	ug/L	446	Standard
	Ba	135	714828.5	0.3	**387.6768**	1.440	0.4	ug/L	28	Standard
	Ce	140	1832498.4	0.5				ug/L	33	Standard
>	**Tb**	159	823866.0	2.2				ug/L	800803	Standard
	Ho	165	29406.8	0.1				ug/L	10	Standard
	Tl	203	1665.8	2.3	**0.2517**	0.010	3.8	ug/L	13	Standard
	Tl	205	1446.7	2.9	**0.2613**	0.003	1.1	ug/L	13	Standard
	Pb	206	93784.4	0.6	**19.1491**	0.463	2.4	ug/L	226	Standard
	Pb	207	76969.3	0.3	**17.3077**	0.404	2.3	ug/L	204	Standard
	Pb	208	332050.1	0.7	**18.6735**	0.512	2.7	ug/L	852	Standard
	U	238	6413.7	2.1	**1.0160**	0.040	3.9	ug/L	13	Standard
>	**Bi**	209	448223.1	2.1				ug/L	449044	Standard

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Na	23	3.3	86.6	**5.0083**	11.943	238.5	mg/L	2	Standard
Mg	24	171.7	13.1	**0.1380**	0.023	17.0	mg/L	58	Standard
K	39	886.7	6.3	**2.5401**	0.168	6.6	mg/L	27	Standard
Ca	43	226.7	5.6	**11.2306**	0.672	6.0	mg/L	20	Standard
Fe	54	40072.0	2.9	**25.3299**	0.732	2.9	mg/L	158	Standard
Fe	57	9864.9	1.0	**24.3568**	0.264	1.1	mg/L	267	Standard
> **Sc-1**	45	51156.2	0.2				mg/L	38815	Standard
Cl	35	59691.4	1.9				ug/L	57611	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	3077.0	6.1				ug/L	1617	Standard
P	31	20130.0	0.4				ug/L	19244	Standard
S	34	3668.8	1.0				ug/L	3557	Standard
Sr	88	105.0	8.2				ug/L	65	Standard
C	12	73.3	15.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	66.7	45.8				mg/L	23	Standard
Dy	164	48237.7	1.2				mg/L	13	Standard
Ho-1	165	29406.8	0.1				mg/L	10	Standard
Er	166	25948.9	3.5				mg/L	13	Standard
I	127	15698.1	2.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.818	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.779	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.891
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.817
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606138108
Report Date/Time: Wednesday, July 06, 2016 10:52:40
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 10:53:36
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64259.4	3.3				ug/L	68501	Standard
	Be	9	43841.7	3.1	**51.5527**	2.497	4.8	ug/L	8	Standard
	Al	27	6953353.2	1.9	**52.2651**	1.444	2.8	ug/L	1397	Standard
	Sc	45	39743.7	0.4				ug/L	38815	Standard
	Ti	47	35704.4	1.0	**101.8805**	1.285	1.3	ug/L	36	Standard
	V	51	371494.8	0.5	**50.4382**	0.543	1.1	ug/L	1284	Standard
	Cr	52	375402.7	0.3	**51.3335**	0.715	1.4	ug/L	6503	Standard
	Cr	53	45456.4	2.6	**50.3879**	1.853	3.7	ug/L	492	Standard
	Mn	55	334501.2	2.2	**52.3232**	1.695	3.2	ug/L	841	Standard
	Co	59	318609.4	1.7	**50.6018**	1.412	2.8	ug/L	229	Standard
	Ni	60	90509.5	0.4	**51.5582**	0.574	1.1	ug/L	344	Standard
	Cu	65	90191.6	0.5	**51.6222**	0.305	0.6	ug/L	115	Standard
	Zn	66	54118.1	0.1	**51.3362**	0.581	1.1	ug/L	190	Standard
>	Ge	72	427773.7	1.1				ug/L	409858	Standard
	As	75	55742.6	0.4	**51.6238**	0.555	1.1	ug/L	-22	Standard
	Se	82	5706.7	1.4	**51.7084**	0.981	1.9	ug/L	18	Standard
	Se-1	77	3670.4	2.7	**50.3081**	1.140	2.3	ug/L	50	Standard
>	Ga	71	88.3	17.3				mg/L	97	Standard
	Rb	85	1076.7	35.5				ug/L	25	Standard
	Y	89	377618.5	2.9				ug/L	376763	Standard
>	Rh	103	46.7	32.7				ug/L	20	Standard
	Mo	98	243549.3	0.8	**100.3006**	1.362	1.4	ug/L	51	Standard
	Ag	107	315759.3	0.5	**50.2284**	0.464	0.9	ug/L	76	Standard
	Cd	111	100684.0	1.0	**50.3922**	0.736	1.5	mg/L	6	Standard
	Cd	114	247087.6	1.9	**50.5807**	0.776	1.5	ug/L	18	Standard
>	In	115	511123.8	0.7				ug/L	507261	Standard
	Sn	118	271706.3	0.8	**49.1505**	0.193	0.4	ug/L	683	Standard
	Sb	123	219531.9	1.2	**50.7744**	0.262	0.5	ug/L	446	Standard
	Ba	135	95238.1	0.7	**49.6818**	0.458	0.9	ug/L	28	Standard
	Ce	140	2296.9	75.4				ug/L	33	Standard
>	Tb	159	795428.0	0.9				ug/L	800803	Standard
	Ho	165	46.7	80.4				ug/L	10	Standard
	Tl	203	386058.6	0.7	**50.5931**	0.842	1.7	ug/L	13	Standard
	Tl	205	345836.6	1.9	**52.3425**	1.620	3.1	ug/L	13	Standard
	Pb	206	245468.8	0.5	**50.0966**	0.548	1.1	ug/L	226	Standard
	Pb	207	223245.4	0.8	**50.1748**	0.874	1.7	ug/L	204	Standard
	Pb	208	926108.0	0.5	**52.0498**	0.851	1.6	ug/L	852	Standard
	U	238	330446.1	0.9	**50.1569**	0.936	1.9	ug/L	13	Standard
>	Bi	209	448378.0	1.2				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	3747.1	4.1	**4.9169**	0.220	4.5	mg/L	58	Standard
K	39	1196.7	2.7	**4.5173**	0.126	2.8	mg/L	27	Standard
Ca	43	96.7	16.6	**5.5890**	1.145	20.5	mg/L	20	Standard
Fe	54	6243.1	4.3	**4.9840**	0.237	4.8	mg/L	158	Standard
Fe	57	1828.4	4.2	**5.2938**	0.264	5.0	mg/L	267	Standard
Sc-1	45	39743.7	0.4				mg/L	38815	Standard
Cl	35	62133.8	0.9				ug/L	57611	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1636.8	2.5				ug/L	1617	Standard
P	31	20235.2	4.1				ug/L	19244	Standard
S	34	3792.1	1.3				ug/L	3557	Standard
Sr	88	61.7	33.8				ug/L	65	Standard
C	12	60.0	66.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	23	Standard
Dy	164	54.9	100.7				mg/L	13	Standard
Ho-1	165	46.7	80.4				mg/L	10	Standard
Er	166	36.7	31.5				mg/L	13	Standard
I	127	14628.7	3.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	103.105		
Al	27	104.530		
Sc	45			
Ti	47	101.880		
V	51	100.876		
Cr	52	102.667		
Cr	53			
Mn	55	104.646		
Co	59	101.204		
Ni	60	103.116		
Cu	65	103.244		
Zn	66	102.672		
Ge	72		104.371	
As	75	103.248		
Se	82	103.417		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	100.301		
Ag	107	100.457		
Cd	111	100.784		
Cd	114			
In	115			100.762
Sn	118	98.301		
Sb	123	101.549		
Ba	135	99.364		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.186		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.100		
U	238	100.314		
Bi	209			99.852
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 11:42:31
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68099.4	1.8				ug/L	68501	Standard
	Be	9	8.3	34.6	**0.0287**	0.003	11.1	ug/L	8	Standard
	Al	27	14163.5	24.2	**0.1355**	0.025	18.2	ug/L	1397	Standard
	Sc	45	44045.6	0.7				ug/L	38815	Standard
	Ti	47	40.3	21.7	**0.0838**	0.025	29.8	ug/L	36	Standard
	V	51	1647.2	9.4	**0.0730**	0.019	26.1	ug/L	1284	Standard
	Cr	52	8280.6	0.3	**0.1828**	0.011	5.9	ug/L	6503	Standard
	Cr	53	536.7	3.8	**0.1623**	0.024	15.0	ug/L	492	Standard
	Mn	55	3121.3	36.4	**0.3770**	0.169	44.9	ug/L	841	Standard
	Co	59	314.3	17.6	**0.0538**	0.008	15.3	ug/L	229	Standard
	Ni	60	2758.9	10.6	**1.3694**	0.170	12.4	ug/L	344	Standard
	Cu	65	169.0	22.3	**0.0803**	0.020	25.2	ug/L	115	Standard
	Zn	66	390.3	4.0	**0.2459**	0.012	4.8	ug/L	190	Standard
>	**Ge**	72	441689.0	0.7				ug/L	409858	Standard
	As	75	-29.8	41.1	**0.0722**	0.011	15.1	ug/L	-22	Standard
	Se	82	23.9	27.0	**0.1591**	0.058	36.6	ug/L	18	Standard
	Se-1	77	59.0	5.1	**0.0362**	0.043	119.3	ug/L	50	Standard
>	**Ga**	71	210.0	2.4				mg/L	97	Standard
	Rb	85	41.7	42.1				ug/L	25	Standard
	Y	89	382520.5	1.2				ug/L	376763	Standard
>	**Rh**	103	40.0	12.5				ug/L	20	Standard
	Mo	98	49.0	35.4	**0.0912**	0.007	7.5	ug/L	51	Standard
	Ag	107	101.7	48.1	**0.0389**	0.007	19.3	ug/L	76	Standard
	Cd	111	8.6	82.2	**0.0436**	0.003	7.9	mg/L	6	Standard
	Cd	114	29.0	107.5	**0.0431**	0.006	14.4	ug/L	18	Standard
>	**In**	115	523091.2	1.5				ug/L	507261	Standard
	Sn	118	720.0	15.6	**0.0173**	0.018	105.5	ug/L	683	Standard
	Sb	123	259.1	31.9	**0.0381**	0.018	47.4	ug/L	446	Standard
	Ba	135	102.7	54.1	**0.0679**	0.028	41.1	ug/L	28	Standard
	Ce	140	168.3	80.9				ug/L	33	Standard
>	**Tb**	159	833236.8	0.4				ug/L	800803	Standard
	Ho	165	16.7	96.4				ug/L	10	Standard
	Tl	203	41.3	123.5	**0.0386**	0.006	16.8	ug/L	13	Standard
	Tl	205	26.7	94.4	**0.0464**	0.004	7.9	ug/L	13	Standard
	Pb	206	344.3	44.0	**0.0642**	0.030	46.5	ug/L	226	Standard
	Pb	207	291.7	32.9	**0.0626**	0.021	33.1	ug/L	204	Standard
	Pb	208	1108.0	29.9	**0.0606**	0.018	29.5	ug/L	852	Standard
	U	238	20.0	103.3	**0.0456**	0.003	6.7	ug/L	13	Standard
>	**Bi**	209	461326.7	1.1				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	55.0	39.6	**0.0272**	0.026	94.5	mg/L	58	Standard
K	39	20.0	66.1	**-0.0714**	0.047	66.1	mg/L	27	Standard
Ca	43	36.7	15.7	**1.0732**	0.378	35.3	mg/L	20	Standard
Fe	54	157.3	15.0	**-0.0043**	0.017	399.4	mg/L	158	Standard
Fe	57	200.0	21.8	**-0.0897**	0.131	146.0	mg/L	267	Standard
Sc-1	45	44045.6	0.7				mg/L	38815	Standard
Cl	35	61661.9	0.1				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1826.8	9.6				ug/L	1617	Standard
P	31	18439.5	1.1				ug/L	19244	Standard
S	34	3442.1	6.8				ug/L	3557	Standard
Sr	88	61.7	32.8				ug/L	65	Standard
C	12	60.0	33.3				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	20.0	0.0				mg/L	23	Standard
Dy	164	15.9	77.1				mg/L	13	Standard
Ho-1	165	16.7	96.4				mg/L	10	Standard
Er	166	16.7	91.7				mg/L	13	Standard
I	127	7533.5	4.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		107.766	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.121
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.735
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Ni	60	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 11:45:47
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64830.1	1.9				ug/L	68501	Standard
	Be	9	46499.6	1.1	**54.1704**	1.537	2.8	ug/L	8	Standard
	Al	27	7388448.8	0.7	**55.0275**	0.812	1.5	ug/L	1397	Standard
	Sc	45	44033.9	0.5				ug/L	38815	Standard
	Ti	47	39812.6	1.5	**107.6904**	3.488	3.2	ug/L	36	Standard
	V	51	400075.3	1.3	**51.4790**	0.650	1.3	ug/L	1284	Standard
	Cr	52	408299.6	1.0	**52.9448**	1.233	2.3	ug/L	6503	Standard
	Cr	53	50147.9	1.3	**52.6875**	0.621	1.2	ug/L	492	Standard
	Mn	55	360204.4	0.5	**53.3920**	0.801	1.5	ug/L	841	Standard
	Co	59	341155.0	0.4	**51.3459**	0.958	1.9	ug/L	229	Standard
	Ni	60	97475.9	0.6	**52.6264**	0.719	1.4	ug/L	344	Standard
	Cu	65	95563.8	0.6	**51.8385**	0.701	1.4	ug/L	115	Standard
	Zn	66	56825.4	0.6	**51.0848**	0.696	1.4	ug/L	190	Standard
>	Ge	72	451415.0	1.8				ug/L	409858	Standard
	As	75	58322.2	1.2	**51.1856**	0.404	0.8	ug/L	-22	Standard
	Se	82	5813.6	0.9	**49.9195**	0.668	1.3	ug/L	18	Standard
	Se-1	77	3959.5	0.2	**51.4577**	0.905	1.8	ug/L	50	Standard
>	Ga	71	216.7	13.1				mg/L	97	Standard
	Rb	85	860.0	6.2				ug/L	25	Standard
	Y	89	386323.2	0.5				ug/L	376763	Standard
>	Rh	103	43.3	33.3				ug/L	20	Standard
	Mo	98	258715.6	0.8	**102.9203**	0.336	0.3	ug/L	51	Standard
	Ag	107	334664.2	1.1	**51.4249**	0.335	0.7	ug/L	76	Standard
	Cd	111	105295.3	0.9	**50.9078**	0.378	0.7	mg/L	6	Standard
	Cd	114	257697.7	1.4	**50.9614**	0.474	0.9	ug/L	18	Standard
>	In	115	529086.9	0.5				ug/L	507261	Standard
	Sn	118	288808.4	1.0	**50.4733**	0.434	0.9	ug/L	683	Standard
	Sb	123	231526.0	1.7	**51.7299**	0.605	1.2	ug/L	446	Standard
	Ba	135	102698.6	0.9	**51.7546**	0.698	1.3	ug/L	28	Standard
	Ce	140	91.7	31.0				ug/L	33	Standard
>	Tb	159	843940.5	0.4				ug/L	800803	Standard
	Ho	165	13.3	86.6				ug/L	10	Standard
	Tl	203	410176.2	0.9	**51.5014**	0.241	0.5	ug/L	13	Standard
	Tl	205	368257.4	1.7	**53.4038**	1.508	2.8	ug/L	13	Standard
	Pb	206	259254.8	1.4	**50.6945**	0.235	0.5	ug/L	226	Standard
	Pb	207	235956.1	0.7	**50.8112**	0.400	0.8	ug/L	204	Standard
	Pb	208	952282.8	0.7	**51.2827**	0.741	1.4	ug/L	852	Standard
	U	238	350690.0	0.2	**51.0014**	0.550	1.1	ug/L	13	Standard
>	Bi	209	467938.8	1.3				ug/L	449044	Standard

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Na	23	5.0	100.0	**15.2758**	24.130	158.0	mg/L	2	Standard
Mg	24	4247.3	2.7	**5.0303**	0.122	2.4	mg/L	58	Standard
K	39	1463.4	3.7	**5.0009**	0.207	4.1	mg/L	27	Standard
Ca	43	111.7	2.6	**5.8810**	0.155	2.6	mg/L	20	Standard
Fe	54	6589.6	4.9	**4.7411**	0.215	4.5	mg/L	158	Standard
Fe	57	2028.5	2.5	**5.3009**	0.131	2.5	mg/L	267	Standard
Sc-1	45	44033.9	0.5				mg/L	38815	Standard
Cl	35	63287.2	0.5				ug/L	57611	Standard
Kr	83	1.7	124.9				ug/L	2	Standard
Br	81	1883.5	7.5				ug/L	1617	Standard
P	31	20448.8	4.2				ug/L	19244	Standard
S	34	4120.6	1.7				ug/L	3557	Standard
Sr	88	73.3	33.6				ug/L	65	Standard
C	12	53.3	28.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	23	Standard
Dy	164	16.5	68.3				mg/L	13	Standard
Ho-1	165	13.3	86.6				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	13826.3	1.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	108.341		
Al	27	110.055		
Sc	45			
Ti	47	107.690		
V	51	102.958		
Cr	52	105.890		
Cr	53			
Mn	55	106.784		
Co	59	102.692		
Ni	60	105.253		
Cu	65	103.677		
Zn	66	102.170		
Ge	72		110.139	
As	75	102.371		
Se	82	99.839		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	102.920		
Ag	107	102.850		
Cd	111	101.816		
Cd	114			
In	115		104.303	
Sn	118	100.947		
Sb	123	103.460		
Ba	135	103.509		
Ce	140			
Tb	159			
Ho	165			
Tl	203	103.003		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.565		
U	238	102.003		
Bi	209		104.208	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 11:48:58
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64903.7	1.0				ug/L	68501	Standard
	Be	9	28.3	36.7	**0.0525**	0.012	23.6	ug/L	8	Standard
	Al	27	7001.6	13.5	**0.0871**	0.007	7.5	ug/L	1397	Standard
	Sc	45	43998.8	0.7				ug/L	38815	Standard
	Ti	47	51.7	3.0	**0.1132**	0.004	3.4	ug/L	36	Standard
	V	51	1411.2	9.5	**0.0396**	0.017	43.4	ug/L	1284	Standard
	Cr	52	7190.0	0.5	**0.0233**	0.007	30.8	ug/L	6503	Standard
	Cr	53	545.0	0.9	**0.1637**	0.005	3.0	ug/L	492	Standard
	Mn	55	1551.1	1.7	**0.1364**	0.003	2.3	ug/L	841	Standard
	Co	59	297.0	6.7	**0.0506**	0.003	5.9	ug/L	229	Standard
	Ni	60	2058.1	4.1	**0.9665**	0.043	4.5	ug/L	344	Standard
	Cu	65	146.0	7.2	**0.0666**	0.006	8.5	ug/L	115	Standard
	Zn	66	251.0	6.0	**0.1147**	0.013	11.2	ug/L	190	Standard
>	**Ge**	72	447411.5	0.4				ug/L	409858	Standard
	As	75	-12.9	47.7	**0.0875**	0.005	6.3	ug/L	-22	Standard
	Se	82	22.1	36.9	**0.1400**	0.070	50.1	ug/L	18	Standard
	Se-1	77	60.7	5.0	**0.0480**	0.038	78.8	ug/L	50	Standard
>	**Ga**	71	171.7	25.4				mg/L	97	Standard
	Rb	85	20.0	50.0				ug/L	25	Standard
	Y	89	382893.6	1.7				ug/L	376763	Standard
>	**Rh**	103	40.0	21.7				ug/L	20	Standard
	Mo	98	207.8	17.4	**0.1541**	0.014	8.9	ug/L	51	Standard
	Ag	107	130.0	34.3	**0.0430**	0.007	15.5	ug/L	76	Standard
	Cd	111	19.9	46.2	**0.0490**	0.004	8.9	mg/L	6	Standard
	Cd	114	48.1	27.0	**0.0469**	0.003	5.5	ug/L	18	Standard
>	**In**	115	529271.7	1.2				ug/L	507261	Standard
	Sn	118	1003.4	25.2	**0.0659**	0.046	69.3	ug/L	683	Standard
	Sb	123	765.7	27.3	**0.1510**	0.048	31.7	ug/L	446	Standard
	Ba	135	54.0	26.7	**0.0429**	0.007	16.7	ug/L	28	Standard
	Ce	140	33.3	37.7				ug/L	33	Standard
>	**Tb**	159	837656.9	1.4				ug/L	800803	Standard
	Ho	165	1.7	173.2				ug/L	10	Standard
	Tl	203	93.0	31.8	**0.0452**	0.004	8.2	ug/L	13	Standard
	Tl	205	85.0	27.0	**0.0550**	0.003	6.0	ug/L	13	Standard
	Pb	206	283.0	15.5	**0.0520**	0.008	16.1	ug/L	226	Standard
	Pb	207	240.7	10.4	**0.0514**	0.005	10.1	ug/L	204	Standard
	Pb	208	1007.7	11.0	**0.0550**	0.006	10.5	ug/L	852	Standard
	U	238	64.0	46.2	**0.0520**	0.004	8.3	ug/L	13	Standard
>	**Bi**	209	461835.8	0.6				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	35.0	28.6	**0.0035**	0.012	350.5	mg/L	58	Standard
K	39	30.0	50.0	**-0.0366**	0.052	142.4	mg/L	27	Standard
Ca	43	35.0	14.3	**0.9689**	0.334	34.4	mg/L	20	Standard
Fe	54	151.0	6.9	**-0.0087**	0.008	88.1	mg/L	158	Standard
Fe	57	270.0	6.7	**0.1168**	0.048	40.8	mg/L	267	Standard
Sc-1	45	43998.8	0.7				mg/L	38815	Standard
Cl	35	62661.3	0.2				ug/L	57611	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1796.8	4.9				ug/L	1617	Standard
P	31	19843.0	5.4				ug/L	19244	Standard
S	34	3858.8	4.3				ug/L	3557	Standard
Sr	88	63.3	31.9				ug/L	65	Standard
C	12	43.3	26.6				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	16.7	69.3				mg/L	23	Standard
Dy	164	16.3	36.2				mg/L	13	Standard
Ho-1	165	1.7	173.2				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	9319.5	2.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		109.163	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.339
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.849
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Ni	60	
QC Std 7	Tl	203	

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Method 6020 - Summary Report

Sample ID: L1606129411 WG574195-01
Sample Date/Time: Wednesday, July 06, 2016 11:53:43
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58019.3	3.2				ug/L	68501	Standard
	Be	9	35.0	24.7	**0.0649**	0.011	16.2	ug/L	8	Standard
	Al	27	474743.5	2.2	**3.9838**	0.068	1.7	ug/L	1397	Standard
	Sc	45	39008.5	1.4				ug/L	38815	Standard
	Ti	47	164.3	9.1	**0.4624**	0.049	10.7	ug/L	36	Standard
	V	51	4968.3	2.7	**0.5626**	0.026	4.5	ug/L	1284	Standard
	Cr	52	7215.1	1.3	**0.1154**	0.011	9.7	ug/L	6503	Standard
	Cr	53	503.3	9.5	**0.1691**	0.060	35.2	ug/L	492	Standard
	Mn	55	185079.6	0.7	**30.1945**	0.512	1.7	ug/L	841	Standard
	Co	59	1774.1	4.3	**0.2998**	0.016	5.2	ug/L	229	Standard
	Ni	60	2550.5	1.9	**1.3643**	0.017	1.2	ug/L	344	Standard
	Cu	65	594.7	3.1	**0.3424**	0.014	4.1	ug/L	115	Standard
	Zn	66	2211.8	2.7	**2.0827**	0.051	2.4	ug/L	190	Standard
>	**Ge**	72	409552.4	1.1				ug/L	409858	Standard
	As	75	79.4	41.0	**0.1757**	0.032	18.3	ug/L	-22	Standard
	Se	82	16.9	22.9	**0.1092**	0.038	34.9	ug/L	18	Standard
	Se-1	77	59.7	21.2	**0.1093**	0.192	175.9	ug/L	50	Standard
>	**Ga**	71	408.3	11.4				mg/L	97	Standard
	Rb	85	2811.9	1.6				ug/L	25	Standard
	Y	89	360686.6	1.5				ug/L	376763	Standard
>	**Rh**	103	21.7	13.3				ug/L	20	Standard
	Mo	98	190.8	18.3	**0.1553**	0.015	9.7	ug/L	51	Standard
	Ag	107	81.7	25.2	**0.0370**	0.004	9.9	ug/L	76	Standard
	Cd	111	12.4	33.2	**0.0460**	0.002	4.9	mg/L	6	Standard
	Cd	114	39.8	47.8	**0.0461**	0.004	9.2	ug/L	18	Standard
>	**In**	115	479231.5	1.3				ug/L	507261	Standard
	Sn	118	381.7	13.8	**-0.0364**	0.009	25.3	ug/L	683	Standard
	Sb	123	1280.6	34.2	**0.2949**	0.105	35.5	ug/L	446	Standard
	Ba	135	12423.8	2.1	**6.9252**	0.057	0.8	ug/L	28	Standard
	Ce	140	21718.9	2.2				ug/L	33	Standard
>	**Tb**	159	765153.7	1.5				ug/L	800803	Standard
	Ho	165	430.0	4.2				ug/L	10	Standard
	Tl	203	43.7	44.5	**0.0392**	0.003	6.6	ug/L	13	Standard
	Tl	205	68.3	70.3	**0.0531**	0.007	14.0	ug/L	13	Standard
	Pb	206	1332.4	11.7	**0.2741**	0.033	11.9	ug/L	226	Standard
	Pb	207	1104.4	15.9	**0.2528**	0.040	16.0	ug/L	204	Standard
	Pb	208	4566.3	9.0	**0.2626**	0.024	9.0	ug/L	852	Standard
	U	238	135.0	22.4	**0.0636**	0.005	7.4	ug/L	13	Standard
>	**Bi**	209	438315.9	0.2				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	45.0	55.6	**0.0225**	0.035	153.4	mg/L	58	Standard
K	39	30.0	16.7	**-0.0230**	0.018	79.7	mg/L	27	Standard
Ca	43	43.3	37.1	**1.8646**	1.188	63.7	mg/L	20	Standard
Fe	54	366.2	11.4	**0.1848**	0.036	19.3	mg/L	158	Standard
Fe	57	350.0	13.6	**0.4863**	0.168	34.5	mg/L	267	Standard
> **Sc-1**	45	39008.5	1.4				mg/L	38815	Standard
Cl	35	57580.6	2.7				ug/L	57611	Standard
Kr	83	2.7	43.3				ug/L	2	Standard
Br	81	1560.1	16.4				ug/L	1617	Standard
P	31	6503.1	5.8				ug/L	19244	Standard
S	34	3723.8	4.7				ug/L	3557	Standard
Sr	88	90.0	16.7				ug/L	65	Standard
C	12	56.7	27.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	114.6				mg/L	23	Standard
Dy	164	602.9	11.8				mg/L	13	Standard
Ho-1	165	430.0	4.2				mg/L	10	Standard
Er	166	356.7	8.6				mg/L	13	Standard
I	127	9731.5	3.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		84.698	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.925	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.474
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.611
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129411 WG574195-01
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Method 6020 - Summary Report

Sample ID: L1606129412S WG574195-04
Sample Date/Time: Wednesday, July 06, 2016 11:56:54
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57445.4	3.1				ug/L	68501	Standard
	Be	9	450.0	8.9	**0.6107**	0.050	8.2	ug/L	8	Standard
	Al	27	489039.7	3.5	**4.1454**	0.215	5.2	ug/L	1397	Standard
	Sc	45	38891.5	1.7				ug/L	38815	Standard
	Ti	47	205.7	0.7	**0.5755**	0.003	0.5	ug/L	36	Standard
	V	51	7736.8	1.4	**0.9385**	0.011	1.2	ug/L	1284	Standard
	Cr	52	11112.1	4.1	**0.6564**	0.067	10.2	ug/L	6503	Standard
	Cr	53	923.4	3.3	**0.6419**	0.036	5.7	ug/L	492	Standard
	Mn	55	94357.0	1.7	**15.0987**	0.276	1.8	ug/L	841	Standard
	Co	59	4340.3	0.5	**0.7138**	0.006	0.8	ug/L	229	Standard
	Ni	60	3373.7	0.8	**1.8234**	0.010	0.6	ug/L	344	Standard
	Cu	65	1478.4	3.3	**0.8566**	0.027	3.1	ug/L	115	Standard
	Zn	66	2772.6	3.5	**2.5958**	0.102	3.9	ug/L	190	Standard
>	**Ge**	72	416194.8	0.3				ug/L	409858	Standard
	As	75	581.8	5.1	**0.6516**	0.029	4.4	ug/L	-22	Standard
	Se	82	62.8	11.0	**0.5338**	0.065	12.3	ug/L	18	Standard
	Se-1	77	71.3	3.2	**0.2612**	0.036	13.7	ug/L	50	Standard
>	**Ga**	71	405.0	5.7				mg/L	97	Standard
	Rb	85	3103.7	2.6				ug/L	25	Standard
	Y	89	356798.1	1.9				ug/L	376763	Standard
>	**Rh**	103	36.7	15.7				ug/L	20	Standard
	Mo	98	194.5	26.1	**0.1553**	0.021	13.8	ug/L	51	Standard
	Ag	107	3072.6	2.0	**0.5346**	0.010	1.9	ug/L	76	Standard
	Cd	111	1016.1	1.3	**0.5714**	0.009	1.6	mg/L	6	Standard
	Cd	114	2471.5	5.7	**0.5668**	0.031	5.5	ug/L	18	Standard
>	**In**	115	488176.1	0.5				ug/L	507261	Standard
	Sn	118	325.0	24.2	**-0.0484**	0.015	30.2	ug/L	683	Standard
	Sb	123	885.7	32.9	**0.1941**	0.070	36.2	ug/L	446	Standard
	Ba	135	10791.5	1.6	**5.9077**	0.080	1.4	ug/L	28	Standard
	Ce	140	21298.3	1.1				ug/L	33	Standard
>	**Tb**	159	768109.5	1.5				ug/L	800803	Standard
	Ho	165	291.7	8.1				ug/L	10	Standard
	Tl	203	3662.1	2.8	**0.5212**	0.015	2.9	ug/L	13	Standard
	Tl	205	3343.7	5.7	**0.5567**	0.029	5.1	ug/L	13	Standard
	Pb	206	3389.4	1.8	**0.6996**	0.014	2.0	ug/L	226	Standard
	Pb	207	2918.9	3.2	**0.6662**	0.023	3.5	ug/L	204	Standard
	Pb	208	12527.7	1.1	**0.7162**	0.009	1.3	ug/L	852	Standard
	U	238	3021.3	1.0	**0.5086**	0.005	1.0	ug/L	13	Standard
>	**Bi**	209	440798.1	0.3				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	70.3	**0.0184**	0.041	222.1	mg/L	58	Standard
K	39	41.7	45.4	**0.0247**	0.077	313.0	mg/L	27	Standard
Ca	43	33.3	31.2	**1.1341**	0.714	62.9	mg/L	20	Standard
Fe	54	394.1	7.9	**0.2092**	0.029	13.7	mg/L	158	Standard
Fe	57	353.3	16.3	**0.5014**	0.206	41.2	mg/L	267	Standard
Sc-1	45	38891.5	1.7				mg/L	38815	Standard
Cl	35	58025.6	2.4				ug/L	57611	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	1313.4	11.6				ug/L	1617	Standard
P	31	6468.0	2.6				ug/L	19244	Standard
S	34	3742.1	3.8				ug/L	3557	Standard
Sr	88	71.7	14.5				ug/L	65	Standard
C	12	23.3	24.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	124.9				mg/L	23	Standard
Dy	164	608.7	0.8				mg/L	13	Standard
Ho-1	165	291.7	8.1				mg/L	10	Standard
Er	166	306.7	8.2				mg/L	13	Standard
I	127	9468.0	2.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		83.860	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.546	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.238
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.164
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129413SD WG574195-05
Sample Date/Time: Wednesday, July 06, 2016 12:00:05
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56752.8	1.9				ug/L	68501	Standard
	Be	9	448.3	6.1	**0.6159**	0.040	6.5	ug/L	8	Standard
	Al	27	511667.1	1.4	**4.3864**	0.140	3.2	ug/L	1397	Standard
	Sc	45	38462.1	2.2				ug/L	38815	Standard
	Ti	47	206.3	7.1	**0.5882**	0.043	7.3	ug/L	36	Standard
	V	51	8013.4	0.7	**0.9972**	0.010	1.0	ug/L	1284	Standard
	Cr	52	11427.3	0.6	**0.7305**	0.007	0.9	ug/L	6503	Standard
	Cr	53	1048.4	8.9	**0.8067**	0.106	13.1	ug/L	492	Standard
	Mn	55	78050.9	0.3	**12.6966**	0.037	0.3	ug/L	841	Standard
	Co	59	4297.9	0.9	**0.7194**	0.005	0.7	ug/L	229	Standard
	Ni	60	3335.0	1.4	**1.8356**	0.029	1.6	ug/L	344	Standard
	Cu	65	1437.4	1.5	**0.8476**	0.012	1.4	ug/L	115	Standard
	Zn	66	2975.3	3.4	**2.8454**	0.097	3.4	ug/L	190	Standard
>	**Ge**	72	408909.0	0.3				ug/L	409858	Standard
	As	75	580.4	0.8	**0.6601**	0.006	0.8	ug/L	-22	Standard
	Se	82	59.9	9.3	**0.5172**	0.052	10.0	ug/L	18	Standard
	Se-1	77	83.7	8.4	**0.4588**	0.100	21.8	ug/L	50	Standard
>	**Ga**	71	438.3	8.7				mg/L	97	Standard
	Rb	85	3395.4	4.4				ug/L	25	Standard
	Y	89	352479.5	0.3				ug/L	376763	Standard
>	**Rh**	103	40.0	12.5				ug/L	20	Standard
	Mo	98	131.0	10.1	**0.1291**	0.006	4.7	ug/L	51	Standard
	Ag	107	2956.6	1.2	**0.5245**	0.006	1.1	ug/L	76	Standard
	Cd	111	1000.4	2.1	**0.5729**	0.006	1.1	mg/L	6	Standard
	Cd	114	2389.3	8.1	**0.5591**	0.050	9.0	ug/L	18	Standard
>	**In**	115	479271.2	1.6				ug/L	507261	Standard
	Sn	118	283.3	26.8	**-0.0552**	0.015	27.5	ug/L	683	Standard
	Sb	123	772.6	30.8	**0.1703**	0.059	34.7	ug/L	446	Standard
	Ba	135	11636.8	1.8	**6.4887**	0.171	2.6	ug/L	28	Standard
	Ce	140	22873.9	1.1				ug/L	33	Standard
>	**Tb**	159	762982.8	1.4				ug/L	800803	Standard
	Ho	165	351.7	3.0				ug/L	10	Standard
	Tl	203	3533.4	1.4	**0.5094**	0.008	1.6	ug/L	13	Standard
	Tl	205	3240.3	5.3	**0.5465**	0.026	4.8	ug/L	13	Standard
	Pb	206	3471.7	1.2	**0.7249**	0.002	0.3	ug/L	226	Standard
	Pb	207	2933.0	1.8	**0.6770**	0.010	1.4	ug/L	204	Standard
	Pb	208	12661.4	1.9	**0.7320**	0.010	1.4	ug/L	852	Standard
	U	238	3053.3	1.9	**0.5190**	0.011	2.2	ug/L	13	Standard
>	**Bi**	209	435840.4	0.9				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	50.0	17.3	**0.0299**	0.011	36.1	mg/L	58	Standard
K	39	56.7	31.0	**0.0855**	0.068	79.4	mg/L	27	Standard
Ca	43	58.3	21.6	**3.0174**	1.012	33.5	mg/L	20	Standard
Fe	54	355.6	17.8	**0.1811**	0.060	33.4	mg/L	158	Standard
Fe	57	335.0	21.7	**0.4491**	0.230	51.3	mg/L	267	Standard
Sc-1	45	38462.1	2.2				mg/L	38815	Standard
Cl	35	57937.9	1.3				ug/L	57611	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	1543.4	5.5				ug/L	1617	Standard
P	31	6171.3	2.7				ug/L	19244	Standard
S	34	3643.8	4.4				ug/L	3557	Standard
Sr	88	58.3	13.1				ug/L	65	Standard
C	12	30.0	33.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	23	Standard
Dy	164	619.5	6.4				mg/L	13	Standard
Ho-1	165	351.7	3.0				mg/L	10	Standard
Er	166	290.0	17.2				mg/L	13	Standard
I	127	9638.1	1.2				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		82.849	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.768	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.482
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.060
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129413SD WG574195-05
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Method 6020 - Summary Report

Sample ID: L1606129401
Sample Date/Time: Wednesday, July 06, 2016 12:03:17
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56856.6	3.5				ug/L	68501	Standard
	Be	9	21.7	48.0	**0.0483**	0.014	29.2	ug/L	8	Standard
	Al	27	253447.2	0.5	**2.1874**	0.075	3.4	ug/L	1397	Standard
	Sc	45	38660.9	1.6				ug/L	38815	Standard
	Ti	47	129.0	7.6	**0.3545**	0.029	8.3	ug/L	36	Standard
	V	51	4706.0	3.1	**0.5213**	0.027	5.2	ug/L	1284	Standard
	Cr	52	10002.3	1.0	**0.5122**	0.018	3.4	ug/L	6503	Standard
	Cr	53	778.4	3.5	**0.4845**	0.031	6.4	ug/L	492	Standard
	Mn	55	153072.8	1.4	**24.8062**	0.265	1.1	ug/L	841	Standard
	Co	59	1522.4	4.0	**0.2564**	0.008	3.2	ug/L	229	Standard
	Ni	60	2542.5	1.5	**1.3506**	0.013	0.9	ug/L	344	Standard
	Cu	65	1174.7	1.6	**0.6850**	0.006	0.8	ug/L	115	Standard
	Zn	66	2512.2	1.7	**2.3665**	0.048	2.0	ug/L	190	Standard
>	**Ge**	72	411973.4	1.0				ug/L	409858	Standard
	As	75	130.2	39.7	**0.2239**	0.050	22.2	ug/L	-22	Standard
	Se	82	17.1	59.3	**0.1098**	0.096	87.8	ug/L	18	Standard
	Se-1	77	59.0	1.7	**0.0935**	0.015	15.6	ug/L	50	Standard
>	**Ga**	71	395.0	12.7				mg/L	97	Standard
	Rb	85	3442.1	5.5				ug/L	25	Standard
	Y	89	354531.6	0.5				ug/L	376763	Standard
>	**Rh**	103	18.3	68.6				ug/L	20	Standard
	Mo	98	119.9	20.6	**0.1232**	0.011	8.9	ug/L	51	Standard
	Ag	107	69.3	12.1	**0.0346**	0.001	4.1	ug/L	76	Standard
	Cd	111	21.4	9.8	**0.0506**	0.001	2.0	mg/L	6	Standard
	Cd	114	57.3	13.3	**0.0496**	0.002	3.5	ug/L	18	Standard
>	**In**	115	488808.1	0.8				ug/L	507261	Standard
	Sn	118	286.7	31.3	**-0.0557**	0.017	30.8	ug/L	683	Standard
	Sb	123	646.7	31.9	**0.1363**	0.051	37.3	ug/L	446	Standard
	Ba	135	8374.3	0.1	**4.5823**	0.034	0.7	ug/L	28	Standard
	Ce	140	22243.0	1.7				ug/L	33	Standard
>	**Tb**	159	773372.9	1.1				ug/L	800803	Standard
	Ho	165	331.7	11.1				ug/L	10	Standard
	Tl	203	31.7	3.6	**0.0376**	0.000	0.5	ug/L	13	Standard
	Tl	205	13.3	43.3	**0.0446**	0.001	2.0	ug/L	13	Standard
	Pb	206	3214.7	0.3	**0.6685**	0.007	1.0	ug/L	226	Standard
	Pb	207	2629.9	4.6	**0.6047**	0.025	4.1	ug/L	204	Standard
	Pb	208	11610.4	0.6	**0.6689**	0.008	1.1	ug/L	852	Standard
	U	238	65.7	4.9	**0.0528**	0.000	0.8	ug/L	13	Standard
>	**Bi**	209	437427.3	0.7				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	29.0	**0.0205**	0.017	83.1	mg/L	58	Standard
K	39	40.0	50.0	**0.0176**	0.078	440.7	mg/L	27	Standard
Ca	43	40.0	25.0	**1.6363**	0.685	41.9	mg/L	20	Standard
Fe	54	384.1	18.3	**0.2031**	0.063	31.1	mg/L	158	Standard
Fe	57	356.7	5.7	**0.5190**	0.086	16.6	mg/L	267	Standard
> **Sc-1**	45	38660.9	1.6				mg/L	38815	Standard
Cl	35	57370.4	1.2				ug/L	57611	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1486.7	8.8				ug/L	1617	Standard
P	31	6338.0	0.8				ug/L	19244	Standard
S	34	3500.4	1.6				ug/L	3557	Standard
Sr	88	70.0	24.7				ug/L	65	Standard
C	12	20.0	50.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	69.3				mg/L	23	Standard
Dy	164	573.9	11.5				mg/L	13	Standard
Ho-1	165	331.7	11.1				mg/L	10	Standard
Er	166	266.7	19.2				mg/L	13	Standard
I	127	9404.6	2.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		83.001	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.516	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.362
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.413
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129401
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Method 6020 - Summary Report

Sample ID: L1606129402
Sample Date/Time: Wednesday, July 06, 2016 12:06:28
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	55727.4	2.9				ug/L	68501	Standard
	Be	9	26.7	71.0	**0.0554**	0.025	45.6	ug/L	8	Standard
	Al	27	355208.9	0.6	**3.1116**	0.073	2.4	ug/L	1397	Standard
	Sc	45	38490.5	1.6				ug/L	38815	Standard
	Ti	47	137.0	7.2	**0.3805**	0.026	6.8	ug/L	36	Standard
	V	51	3181.2	2.4	**0.3083**	0.013	4.2	ug/L	1284	Standard
	Cr	52	7046.6	1.5	**0.0910**	0.007	8.1	ug/L	6503	Standard
	Cr	53	445.0	7.9	**0.1007**	0.038	37.9	ug/L	492	Standard
	Mn	55	62149.5	0.5	**10.0758**	0.126	1.3	ug/L	841	Standard
	Co	59	990.7	3.1	**0.1698**	0.006	3.6	ug/L	229	Standard
	Ni	60	2008.5	3.0	**1.0412**	0.045	4.3	ug/L	344	Standard
	Cu	65	501.7	4.6	**0.2868**	0.015	5.3	ug/L	115	Standard
	Zn	66	1399.4	3.9	**1.2760**	0.045	3.5	ug/L	190	Standard
>	Ge	72	409521.5	0.8				ug/L	409858	Standard
	As	75	12.5	172.1	**0.1110**	0.021	18.8	ug/L	-22	Standard
	Se	82	10.5	43.9	**0.0481**	0.043	89.6	ug/L	18	Standard
	Se-1	77	56.3	5.4	**0.0596**	0.039	65.9	ug/L	50	Standard
>	Ga	71	276.7	15.4				mg/L	97	Standard
	Rb	85	1983.5	4.3				ug/L	25	Standard
	Y	89	351546.8	1.0				ug/L	376763	Standard
>	Rh	103	28.3	66.8				ug/L	20	Standard
	Mo	98	63.3	18.4	**0.0992**	0.005	4.9	ug/L	51	Standard
	Ag	107	73.0	2.4	**0.0354**	0.000	0.5	ug/L	76	Standard
	Cd	111	9.5	59.4	**0.0444**	0.003	6.7	mg/L	6	Standard
	Cd	114	7.7	41.1	**0.0390**	0.001	1.7	ug/L	18	Standard
>	In	115	480900.1	0.8				ug/L	507261	Standard
	Sn	118	273.3	30.7	**-0.0575**	0.016	27.5	ug/L	683	Standard
	Sb	123	545.0	29.4	**0.1135**	0.038	33.9	ug/L	446	Standard
	Ba	135	6151.2	0.6	**3.4251**	0.011	0.3	ug/L	28	Standard
	Ce	140	16228.7	3.1				ug/L	33	Standard
>	Tb	159	762988.8	1.0				ug/L	800803	Standard
	Ho	165	260.0	5.8				ug/L	10	Standard
	Tl	203	21.0	21.8	**0.0362**	0.001	1.7	ug/L	13	Standard
	Tl	205	16.7	45.8	**0.0451**	0.001	2.6	ug/L	13	Standard
	Pb	206	954.4	5.5	**0.1966**	0.011	5.6	ug/L	226	Standard
	Pb	207	774.4	6.6	**0.1781**	0.012	6.6	ug/L	204	Standard
	Pb	208	3303.8	1.1	**0.1913**	0.002	1.1	ug/L	852	Standard
	U	238	67.3	16.4	**0.0531**	0.002	3.2	ug/L	13	Standard
>	Bi	209	435406.8	0.0				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	60.0	30.0	**0.0438**	0.026	59.2	mg/L	58	Standard
K	39	53.3	19.5	**0.0725**	0.042	57.3	mg/L	27	Standard
Ca	43	35.0	86.9	**1.2893**	2.236	173.4	mg/L	20	Standard
Fe	54	235.9	19.0	**0.0786**	0.036	45.3	mg/L	158	Standard
Fe	57	275.0	6.6	**0.2477**	0.053	21.5	mg/L	267	Standard
> **Sc-1**	45	38490.5	1.6				mg/L	38815	Standard
Cl	35	56979.6	1.6				ug/L	57611	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	1446.7	8.9				ug/L	1617	Standard
P	31	6057.9	4.7				ug/L	19244	Standard
S	34	3533.7	1.3				ug/L	3557	Standard
Sr	88	60.0	38.2				ug/L	65	Standard
C	12	53.3	47.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	49.5				mg/L	23	Standard
Dy	164	461.8	9.9				mg/L	13	Standard
Ho-1	165	260.0	5.8				mg/L	10	Standard
Er	166	240.0	15.0				mg/L	13	Standard
I	127	9427.9	1.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		81.352	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.918	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.803
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.963
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129402PS WG574825-01
Sample Date/Time: Wednesday, July 06, 2016 12:09:40
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	54790.6	1.6				ug/L	68501	Standard
	Be	9	39210.7	2.1	**54.0276**	0.299	0.6	ug/L	8	Standard
	Al	27	349919.9	1.2	**3.1165**	0.040	1.3	ug/L	1397	Standard
	Sc	45	38071.1	1.5				ug/L	38815	Standard
	Ti	47	139.3	7.7	**0.3905**	0.032	8.3	ug/L	36	Standard
	V	51	357198.1	0.5	**51.0105**	0.499	1.0	ug/L	1284	Standard
	Cr	52	374242.3	0.6	**53.8691**	0.605	1.1	ug/L	6503	Standard
	Cr	53	44929.9	1.3	**52.3904**	0.872	1.7	ug/L	492	Standard
	Mn	55	385613.1	1.2	**63.4541**	1.113	1.8	ug/L	841	Standard
	Co	59	296804.1	1.8	**49.5762**	1.152	2.3	ug/L	229	Standard
	Ni	60	90550.8	1.5	**54.2626**	1.046	1.9	ug/L	344	Standard
	Cu	65	89722.9	0.9	**54.0167**	0.809	1.5	ug/L	115	Standard
	Zn	66	60871.4	1.6	**60.7556**	1.323	2.2	ug/L	190	Standard
>	Ge	72	406696.1	0.6				ug/L	409858	Standard
	As	75	57014.1	0.8	**55.5263**	0.338	0.6	ug/L	-22	Standard
	Se	82	6157.5	2.0	**58.6840**	0.934	1.6	ug/L	18	Standard
	Se-1	77	4118.6	1.0	**59.5136**	0.313	0.5	ug/L	50	Standard
>	Ga	71	278.3	7.5				mg/L	97	Standard
	Rb	85	2040.1	11.2				ug/L	25	Standard
	Y	89	353428.2	1.1				ug/L	376763	Standard
>	Rh	103	26.7	57.3				ug/L	20	Standard
	Mo	98	64.1	32.2	**0.0994**	0.009	9.5	ug/L	51	Standard
	Ag	107	307132.7	0.5	**51.4044**	1.091	2.1	ug/L	76	Standard
	Cd	111	102209.5	1.3	**53.8173**	1.067	2.0	mg/L	6	Standard
	Cd	114	247369.8	2.7	**53.2740**	1.402	2.6	ug/L	18	Standard
>	In	115	485872.2	1.6				ug/L	507261	Standard
	Sn	118	406.7	28.8	**-0.0323**	0.024	73.6	ug/L	683	Standard
	Sb	123	165974.2	9.4	**40.3528**	3.311	8.2	ug/L	446	Standard
	Ba	135	100406.3	1.0	**55.1115**	1.426	2.6	ug/L	28	Standard
	Ce	140	17148.0	2.3				ug/L	33	Standard
>	Tb	159	762062.0	1.0				ug/L	800803	Standard
	Ho	165	298.3	11.2				ug/L	10	Standard
	Tl	203	380011.9	0.5	**51.1742**	0.679	1.3	ug/L	13	Standard
	Tl	205	332491.0	1.8	**51.7103**	1.465	2.8	ug/L	13	Standard
	Pb	206	244455.9	0.3	**51.2687**	0.650	1.3	ug/L	226	Standard
	Pb	207	213518.0	0.6	**49.3099**	0.355	0.7	ug/L	204	Standard
	Pb	208	895635.4	1.1	**51.7280**	1.052	2.0	ug/L	852	Standard
	U	238	304258.0	0.7	**47.4576**	0.682	1.4	ug/L	13	Standard
>	Bi	209	436323.4	1.0				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	46.7	43.3	**0.0262**	0.029	109.0	mg/L	58	Standard
K	39	21.7	48.0	**-0.0536**	0.043	80.3	mg/L	27	Standard
Ca	43	38.3	19.9	**1.5703**	0.606	38.6	mg/L	20	Standard
Fe	54	229.0	24.0	**0.0748**	0.044	58.9	mg/L	158	Standard
Fe	57	328.3	26.3	**0.4430**	0.310	69.9	mg/L	267	Standard
Sc-1	45	38071.1	1.5				mg/L	38815	Standard
Cl	35	57080.7	0.6				ug/L	57611	Standard
Kr	83	3.3	17.3				ug/L	2	Standard
Br	81	1353.4	3.7				ug/L	1617	Standard
P	31	6239.6	1.0				ug/L	19244	Standard
S	34	3545.4	3.4				ug/L	3557	Standard
Sr	88	58.3	17.8				ug/L	65	Standard
C	12	43.3	13.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	23	Standard
Dy	164	519.0	13.5				mg/L	13	Standard
Ho-1	165	298.3	11.2				mg/L	10	Standard
Er	166	230.0	13.0				mg/L	13	Standard
I	127	8790.9	2.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		79.985	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.229	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.784
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.167
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129402SDL WG574825-02
Sample Date/Time: Wednesday, July 06, 2016 12:12:51
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 250
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54700.3	2.3				ug/L	68501	Standard
	Be	9	28.3	40.8	**0.0584**	0.015	26.5	ug/L	8	Standard
	Al	27	73412.6	3.4	**0.6828**	0.029	4.2	ug/L	1397	Standard
	Sc	45	38520.6	1.2				ug/L	38815	Standard
	Ti	47	44.0	15.9	**0.1062**	0.021	20.1	ug/L	36	Standard
	V	51	1855.2	4.9	**0.1254**	0.011	9.1	ug/L	1284	Standard
	Cr	52	5931.8	1.1	**-0.0525**	0.011	20.6	ug/L	6503	Standard
	Cr	53	220.0	6.0	**-0.1563**	0.014	8.9	ug/L	492	Standard
	Mn	55	13278.8	8.4	**2.1236**	0.179	8.4	ug/L	841	Standard
	Co	59	439.0	11.4	**0.0798**	0.008	10.1	ug/L	229	Standard
	Ni	60	1383.1	2.0	**0.6854**	0.014	2.0	ug/L	344	Standard
	Cu	65	176.0	2.8	**0.0942**	0.002	2.6	ug/L	115	Standard
	Zn	66	955.7	4.6	**0.8559**	0.041	4.8	ug/L	190	Standard
>	**Ge**	72	400899.4	0.7				ug/L	409858	Standard
	As	75	-14.9	238.7	**0.0840**	0.035	42.1	ug/L	-22	Standard
	Se	82	23.4	28.9	**0.1750**	0.064	36.6	ug/L	18	Standard
	Se-1	77	53.3	4.7	**0.0331**	0.043	130.4	ug/L	50	Standard
>	**Ga**	71	101.7	12.4				mg/L	97	Standard
	Rb	85	461.7	6.2				ug/L	25	Standard
	Y	89	350361.9	1.6				ug/L	376763	Standard
>	**Rh**	103	28.3	10.2				ug/L	20	Standard
	Mo	98	91.5	56.2	**0.1114**	0.022	20.1	ug/L	51	Standard
	Ag	107	144.0	18.7	**0.0473**	0.004	9.4	ug/L	76	Standard
	Cd	111	29.2	12.8	**0.0548**	0.002	3.7	mg/L	6	Standard
	Cd	114	54.0	33.8	**0.0490**	0.004	7.9	ug/L	18	Standard
>	**In**	115	483201.8	0.5				ug/L	507261	Standard
	Sn	118	223.3	32.2	**-0.0673**	0.014	20.4	ug/L	683	Standard
	Sb	123	4340.8	19.8	**1.0427**	0.214	20.6	ug/L	446	Standard
	Ba	135	1163.7	5.0	**0.6576**	0.030	4.6	ug/L	28	Standard
	Ce	140	1280.1	25.4				ug/L	33	Standard
>	**Tb**	159	755371.6	0.4				ug/L	800803	Standard
	Ho	165	23.3	12.4				ug/L	10	Standard
	Tl	203	202.3	18.7	**0.0608**	0.005	8.5	ug/L	13	Standard
	Tl	205	188.3	38.1	**0.0720**	0.011	15.7	ug/L	13	Standard
	Pb	206	349.7	10.7	**0.0698**	0.008	11.6	ug/L	226	Standard
	Pb	207	301.0	10.7	**0.0689**	0.008	11.1	ug/L	204	Standard
	Pb	208	1311.7	14.2	**0.0763**	0.011	14.4	ug/L	852	Standard
	U	238	138.3	31.6	**0.0643**	0.007	10.7	ug/L	13	Standard
>	**Bi**	209	433563.8	0.3				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	40.0	12.5	**0.0162**	0.007	41.8	mg/L	58	Standard
K	39	35.0	14.3	**-0.0012**	0.021	1708.5	mg/L	27	Standard
Ca	43	16.7	17.3	**-0.0559**	0.217	388.7	mg/L	20	Standard
Fe	54	72.9	24.0	**-0.0586**	0.015	26.1	mg/L	158	Standard
Fe	57	255.0	9.0	**0.1794**	0.069	38.3	mg/L	267	Standard
Sc-1	45	38520.6	1.2				mg/L	38815	Standard
Cl	35	57567.2	1.3				ug/L	57611	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	1493.4	3.9				ug/L	1617	Standard
P	31	5902.8	2.7				ug/L	19244	Standard
S	34	3515.4	7.2				ug/L	3557	Standard
Sr	88	65.0	35.3				ug/L	65	Standard
C	12	53.3	54.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	64.4				mg/L	23	Standard
Dy	164	39.0	76.2				mg/L	13	Standard
Ho-1	165	23.3	12.4				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	9352.9	2.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		79.853	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.814	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.257
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.553
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129402SDL WG574825-02
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Method 6020 - Summary Report

Sample ID: L1606129404
Sample Date/Time: Wednesday, July 06, 2016 12:16:03
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55356.0	2.8				ug/L	68501	Standard
	Be	9	35.0	37.8	**0.0670**	0.017	26.0	ug/L	8	Standard
	Al	27	288380.7	1.7	**2.5498**	0.086	3.4	ug/L	1397	Standard
	Sc	45	37910.7	1.6				ug/L	38815	Standard
	Ti	47	133.3	4.5	**0.3737**	0.020	5.3	ug/L	36	Standard
	V	51	4846.3	0.6	**0.5519**	0.007	1.3	ug/L	1284	Standard
	Cr	52	8450.0	0.8	**0.3072**	0.012	4.0	ug/L	6503	Standard
	Cr	53	633.3	6.4	**0.3281**	0.051	15.4	ug/L	492	Standard
	Mn	55	81458.4	0.3	**13.3665**	0.080	0.6	ug/L	841	Standard
	Co	59	1490.1	4.7	**0.2551**	0.012	4.9	ug/L	229	Standard
	Ni	60	1995.8	2.9	**1.0452**	0.038	3.7	ug/L	344	Standard
	Cu	65	792.0	2.3	**0.4650**	0.011	2.4	ug/L	115	Standard
	Zn	66	2804.3	1.6	**2.6986**	0.046	1.7	ug/L	190	Standard
>	**Ge**	72	405530.8	0.5				ug/L	409858	Standard
	As	75	91.8	10.5	**0.1884**	0.009	4.8	ug/L	-22	Standard
	Se	82	14.0	22.9	**0.0821**	0.030	36.5	ug/L	18	Standard
	Se-1	77	50.3	22.2	**-0.0198**	0.167	845.0	ug/L	50	Standard
>	**Ga**	71	443.3	8.8				mg/L	97	Standard
	Rb	85	3478.7	3.6				ug/L	25	Standard
	Y	89	346530.8	2.1				ug/L	376763	Standard
>	**Rh**	103	21.7	53.3				ug/L	20	Standard
	Mo	98	38.5	9.1	**0.0883**	0.002	1.9	ug/L	51	Standard
	Ag	107	90.7	4.5	**0.0384**	0.001	1.4	ug/L	76	Standard
	Cd	111	32.2	12.9	**0.0564**	0.002	3.6	mg/L	6	Standard
	Cd	114	56.3	46.1	**0.0496**	0.006	11.3	ug/L	18	Standard
>	**In**	115	482585.2	1.1				ug/L	507261	Standard
	Sn	118	261.7	29.4	**-0.0598**	0.015	24.8	ug/L	683	Standard
	Sb	123	1752.1	30.8	**0.4084**	0.130	31.8	ug/L	446	Standard
	Ba	135	6403.0	2.4	**3.5521**	0.068	1.9	ug/L	28	Standard
	Ce	140	22207.9	2.6				ug/L	33	Standard
>	**Tb**	159	747679.0	1.3				ug/L	800803	Standard
	Ho	165	328.3	8.4				ug/L	10	Standard
	Tl	203	70.0	40.8	**0.0429**	0.004	9.2	ug/L	13	Standard
	Tl	205	61.7	32.8	**0.0523**	0.003	6.2	ug/L	13	Standard
	Pb	206	4676.4	2.0	**0.9892**	0.018	1.8	ug/L	226	Standard
	Pb	207	3935.8	4.2	**0.9193**	0.033	3.6	ug/L	204	Standard
	Pb	208	16777.7	1.0	**0.9813**	0.004	0.4	ug/L	852	Standard
	U	238	97.3	10.3	**0.0580**	0.002	2.7	ug/L	13	Standard
>	**Bi**	209	430847.5	0.8				ug/L	449044	Standard

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Na	23	3.3	86.6	**9.9759**	16.247	162.9	mg/L	2	Standard
Mg	24	53.3	21.7	**0.0357**	0.017	47.3	mg/L	58	Standard
K	39	38.3	19.9	**0.0150**	0.034	224.3	mg/L	27	Standard
Ca	43	21.7	48.0	**0.3274**	0.754	230.2	mg/L	20	Standard
Fe	54	375.8	5.4	**0.2018**	0.014	7.1	mg/L	158	Standard
Fe	57	395.0	11.0	**0.6746**	0.165	24.5	mg/L	267	Standard
> **Sc-1**	45	37910.7	1.6				mg/L	38815	Standard
Cl	35	57027.1	0.7				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1433.4	12.3				ug/L	1617	Standard
P	31	6096.2	1.4				ug/L	19244	Standard
S	34	3193.7	7.5				ug/L	3557	Standard
Sr	88	73.3	17.2				ug/L	65	Standard
C	12	46.7	32.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	120.2				mg/L	23	Standard
Dy	164	569.8	11.8				mg/L	13	Standard
Ho-1	165	328.3	8.4				mg/L	10	Standard
Er	166	283.3	8.2				mg/L	13	Standard
I	127	9558.0	0.2				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		80.810	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.944	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.136
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.948
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129404
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Method 6020 - Summary Report

Sample ID: L1606129405
Sample Date/Time: Wednesday, July 06, 2016 12:19:14
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55280.7	2.4				ug/L	68501	Standard
	Be	9	28.3	56.7	**0.0578**	0.021	36.8	ug/L	8	Standard
	Al	27	345100.5	2.3	**3.0477**	0.083	2.7	ug/L	1397	Standard
	Sc	45	37553.2	2.4				ug/L	38815	Standard
	Ti	47	159.0	8.7	**0.4458**	0.044	9.9	ug/L	36	Standard
	V	51	3623.9	1.5	**0.3706**	0.009	2.5	ug/L	1284	Standard
	Cr	52	7451.5	0.4	**0.1485**	0.012	7.7	ug/L	6503	Standard
	Cr	53	463.3	5.0	**0.1216**	0.030	25.1	ug/L	492	Standard
	Mn	55	63417.4	0.9	**10.2694**	0.142	1.4	ug/L	841	Standard
	Co	59	1040.7	2.7	**0.1779**	0.005	2.9	ug/L	229	Standard
	Ni	60	1672.4	3.0	**0.8389**	0.023	2.8	ug/L	344	Standard
	Cu	65	436.3	8.4	**0.2473**	0.022	8.9	ug/L	115	Standard
	Zn	66	3256.0	1.8	**3.1159**	0.080	2.6	ug/L	190	Standard
>	**Ge**	72	410064.5	0.7				ug/L	409858	Standard
	As	75	32.7	78.6	**0.1303**	0.025	18.8	ug/L	-22	Standard
	Se	82	12.7	55.9	**0.0690**	0.066	96.2	ug/L	18	Standard
	Se-1	77	48.3	10.4	**-0.0572**	0.076	132.7	ug/L	50	Standard
>	**Ga**	71	286.7	11.6				mg/L	97	Standard
	Rb	85	2041.8	2.1				ug/L	25	Standard
	Y	89	353144.0	1.9				ug/L	376763	Standard
>	**Rh**	103	23.3	24.7				ug/L	20	Standard
	Mo	98	117.0	7.9	**0.1233**	0.004	3.6	ug/L	51	Standard
	Ag	107	97.3	22.3	**0.0397**	0.004	9.1	ug/L	76	Standard
	Cd	111	7.7	46.1	**0.0435**	0.002	4.3	mg/L	6	Standard
	Cd	114	27.9	69.2	**0.0435**	0.004	9.8	ug/L	18	Standard
>	**In**	115	475836.3	0.7				ug/L	507261	Standard
	Sn	118	265.0	46.3	**-0.0586**	0.024	40.3	ug/L	683	Standard
	Sb	123	1332.7	26.2	**0.3107**	0.086	27.6	ug/L	446	Standard
	Ba	135	4395.0	1.0	**2.4776**	0.020	0.8	ug/L	28	Standard
	Ce	140	16080.2	3.1				ug/L	33	Standard
>	**Tb**	159	747297.9	2.3				ug/L	800803	Standard
	Ho	165	211.7	8.9				ug/L	10	Standard
	Tl	203	56.3	21.2	**0.0410**	0.002	3.8	ug/L	13	Standard
	Tl	205	50.0	52.9	**0.0503**	0.004	8.1	ug/L	13	Standard
	Pb	206	931.0	1.2	**0.1925**	0.004	1.9	ug/L	226	Standard
	Pb	207	757.7	5.6	**0.1750**	0.009	5.0	ug/L	204	Standard
	Pb	208	3295.8	1.2	**0.1916**	0.001	0.7	ug/L	852	Standard
	U	238	95.3	30.7	**0.0575**	0.004	7.8	ug/L	13	Standard
>	**Bi**	209	433596.0	0.9				ug/L	449044	Standard

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Na	23	1.7	173.2	**0.4926**	16.065	3261.2	mg/L	2	Standard
Mg	24	33.3	8.7	**0.0082**	0.003	35.8	mg/L	58	Standard
K	39	46.7	16.4	**0.0504**	0.031	60.9	mg/L	27	Standard
Ca	43	40.0	21.7	**1.7196**	0.586	34.1	mg/L	20	Standard
Fe	54	261.0	22.4	**0.1060**	0.053	49.9	mg/L	158	Standard
Fe	57	340.0	11.5	**0.4952**	0.122	24.6	mg/L	267	Standard
> **Sc-1**	45	37553.2	2.4				mg/L	38815	Standard
Cl	35	58030.3	1.0				ug/L	57611	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	1506.7	7.7				ug/L	1617	Standard
P	31	5954.5	2.4				ug/L	19244	Standard
S	34	3350.4	3.7				ug/L	3557	Standard
Sr	88	71.7	35.8				ug/L	65	Standard
C	12	60.0	16.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	65.5				mg/L	23	Standard
Dy	164	405.5	13.8				mg/L	13	Standard
Ho-1	165	211.7	8.9				mg/L	10	Standard
Er	166	233.3	23.6				mg/L	13	Standard
I	127	8981.0	4.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		80.700	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.050	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.805
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.560
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129406
Sample Date/Time: Wednesday, July 06, 2016 12:22:25
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54210.2	3.2				ug/L	68501	Standard
	Be	9	31.7	55.5	**0.0640**	0.026	39.9	ug/L	8	Standard
	Al	27	346229.8	1.0	**3.1189**	0.121	3.9	ug/L	1397	Standard
	Sc	45	38104.5	1.7				ug/L	38815	Standard
	Ti	47	141.3	13.3	**0.3972**	0.060	15.0	ug/L	36	Standard
	V	51	4813.8	1.8	**0.5459**	0.016	2.9	ug/L	1284	Standard
	Cr	52	8692.8	0.7	**0.3404**	0.024	6.9	ug/L	6503	Standard
	Cr	53	671.7	4.2	**0.3715**	0.031	8.3	ug/L	492	Standard
	Mn	55	113579.2	2.1	**18.6402**	0.592	3.2	ug/L	841	Standard
	Co	59	1764.8	1.1	**0.3005**	0.003	0.9	ug/L	229	Standard
	Ni	60	2134.8	3.7	**1.1263**	0.050	4.4	ug/L	344	Standard
	Cu	65	981.4	6.5	**0.5779**	0.032	5.5	ug/L	115	Standard
	Zn	66	4410.6	3.1	**4.3008**	0.155	3.6	ug/L	190	Standard
>	**Ge**	72	406370.9	1.1				ug/L	409858	Standard
	As	75	172.2	15.0	**0.2662**	0.024	9.0	ug/L	-22	Standard
	Se	82	14.0	50.3	**0.0817**	0.066	80.7	ug/L	18	Standard
	Se-1	77	54.7	22.6	**0.0405**	0.173	426.3	ug/L	50	Standard
>	**Ga**	71	473.3	14.3				mg/L	97	Standard
	Rb	85	4915.8	3.7				ug/L	25	Standard
	Y	89	347860.3	1.6				ug/L	376763	Standard
>	**Rh**	103	15.0	33.3				ug/L	20	Standard
	Mo	98	31.2	15.5	**0.0853**	0.002	2.6	ug/L	51	Standard
	Ag	107	124.7	3.2	**0.0442**	0.001	2.0	ug/L	76	Standard
	Cd	111	28.3	20.6	**0.0545**	0.003	6.0	mg/L	6	Standard
	Cd	114	49.9	18.0	**0.0482**	0.002	3.9	ug/L	18	Standard
>	**In**	115	479551.2	1.0				ug/L	507261	Standard
	Sn	118	253.3	47.1	**-0.0610**	0.024	38.7	ug/L	683	Standard
	Sb	123	1266.8	28.3	**0.2922**	0.090	30.7	ug/L	446	Standard
	Ba	135	10588.4	1.5	**5.9016**	0.132	2.2	ug/L	28	Standard
	Ce	140	27012.4	1.1				ug/L	33	Standard
>	**Tb**	159	753343.1	0.8				ug/L	800803	Standard
	Ho	165	453.3	2.3				ug/L	10	Standard
	Tl	203	43.0	12.9	**0.0392**	0.001	2.2	ug/L	13	Standard
	Tl	205	45.0	50.9	**0.0496**	0.003	7.1	ug/L	13	Standard
	Pb	206	32257.3	1.7	**6.8313**	0.126	1.8	ug/L	226	Standard
	Pb	207	26033.3	0.6	**6.0737**	0.104	1.7	ug/L	204	Standard
	Pb	208	113526.9	0.9	**6.6251**	0.168	2.5	ug/L	852	Standard
	U	238	100.0	9.2	**0.0584**	0.002	2.7	ug/L	13	Standard
>	**Bi**	209	431894.1	1.7				ug/L	449044	Standard

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Na	23	1.7	173.2	**0.3340**	15.790	4727.5	mg/L	2	Standard
Mg	24	41.7	36.7	**0.0192**	0.021	111.2	mg/L	58	Standard
K	39	50.0	55.7	**0.0600**	0.110	182.6	mg/L	27	Standard
Ca	43	43.3	46.6	**1.9169**	1.459	76.1	mg/L	20	Standard
Fe	54	447.4	10.1	**0.2615**	0.041	15.9	mg/L	158	Standard
Fe	57	348.3	8.4	**0.5065**	0.084	16.5	mg/L	267	Standard
> **Sc-1**	45	38104.5	1.7				mg/L	38815	Standard
Cl	35	57337.6	1.4				ug/L	57611	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	1443.4	10.1				ug/L	1617	Standard
P	31	6067.9	5.1				ug/L	19244	Standard
S	34	3453.7	2.9				ug/L	3557	Standard
Sr	88	78.3	18.4				ug/L	65	Standard
C	12	26.7	21.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	23	Standard
Dy	164	696.9	13.4				mg/L	13	Standard
Ho-1	165	453.3	2.3				mg/L	10	Standard
Er	166	413.3	7.4				mg/L	13	Standard
I	127	9544.7	1.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		79.138	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.149	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.537
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.181
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 12:25:38
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	57713.1	1.9				ug/L	68501	Standard
	Be	9	40562.6	2.7	**53.0591**	0.703	1.3	ug/L	8	Standard
	Al	27	6854351.8	1.5	**57.3384**	0.709	1.2	ug/L	1397	Standard
	Sc	45	42252.2	1.6				ug/L	38815	Standard
	Ti	47	37981.5	0.7	**106.4757**	1.580	1.5	ug/L	36	Standard
	V	51	384974.2	1.1	**51.3482**	0.405	0.8	ug/L	1284	Standard
	Cr	52	390659.1	1.7	**52.4957**	0.804	1.5	ug/L	6503	Standard
	Cr	53	48342.0	1.8	**52.6513**	1.045	2.0	ug/L	492	Standard
	Mn	55	343119.1	1.5	**52.7154**	0.588	1.1	ug/L	841	Standard
	Co	59	321661.9	1.7	**50.1749**	0.347	0.7	ug/L	229	Standard
	Ni	60	94210.3	1.1	**52.7236**	0.659	1.3	ug/L	344	Standard
	Cu	65	93051.5	1.1	**52.3212**	0.523	1.0	ug/L	115	Standard
	Zn	66	55785.5	1.2	**51.9842**	0.406	0.8	ug/L	190	Standard
>	Ge	72	435468.8	1.8				ug/L	409858	Standard
	As	75	56447.7	0.8	**51.3598**	0.923	1.8	ug/L	-22	Standard
	Se	82	5642.5	0.7	**50.2241**	0.550	1.1	ug/L	18	Standard
	Se-1	77	3846.2	0.6	**51.8162**	0.606	1.2	ug/L	50	Standard
>	Ga	71	93.3	34.0				mg/L	97	Standard
	Rb	85	855.0	10.7				ug/L	25	Standard
	Y	89	372043.3	1.8				ug/L	376763	Standard
>	Rh	103	28.3	44.4				ug/L	20	Standard
	Mo	98	247417.0	1.8	**100.6981**	2.037	2.0	ug/L	51	Standard
	Ag	107	322886.9	0.5	**50.7596**	0.429	0.8	ug/L	76	Standard
	Cd	111	103380.1	1.6	**51.1323**	0.753	1.5	mg/L	6	Standard
	Cd	114	249642.6	2.1	**50.5060**	0.965	1.9	ug/L	18	Standard
>	In	115	517180.3	0.5				ug/L	507261	Standard
	Sn	118	281599.6	1.0	**50.3463**	0.451	0.9	ug/L	683	Standard
	Sb	123	224090.9	2.0	**51.2237**	1.019	2.0	ug/L	446	Standard
	Ba	135	98293.2	0.9	**50.6730**	0.371	0.7	ug/L	28	Standard
	Ce	140	388.3	61.7				ug/L	33	Standard
>	Tb	159	803119.0	1.6				ug/L	800803	Standard
	Ho	165	13.3	78.1				ug/L	10	Standard
	Tl	203	393332.7	0.4	**51.3833**	0.224	0.4	ug/L	13	Standard
	Tl	205	344323.2	2.3	**51.9430**	1.227	2.4	ug/L	13	Standard
	Pb	206	250518.2	1.0	**50.9688**	0.598	1.2	ug/L	226	Standard
	Pb	207	226786.0	0.6	**50.8099**	0.417	0.8	ug/L	204	Standard
	Pb	208	934502.9	1.1	**52.3560**	0.613	1.2	ug/L	852	Standard
	U	238	332727.2	0.8	**50.3434**	0.503	1.0	ug/L	13	Standard
>	Bi	209	449742.2	0.2				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	3997.2	1.2	**4.9337**	0.066	1.3	mg/L	58	Standard
K	39	1391.7	1.8	**4.9566**	0.172	3.5	mg/L	27	Standard
Ca	43	85.0	20.4	**4.3924**	1.093	24.9	mg/L	20	Standard
Fe	54	6751.6	4.8	**5.0714**	0.234	4.6	mg/L	158	Standard
Fe	57	1835.1	3.3	**4.9621**	0.274	5.5	mg/L	267	Standard
> **Sc-1**	45	42252.2	1.6				mg/L	38815	Standard
Cl	35	66109.3	1.9				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1836.8	15.6				ug/L	1617	Standard
P	31	20357.0	3.6				ug/L	19244	Standard
S	34	4018.9	2.4				ug/L	3557	Standard
Sr	88	78.3	7.4				ug/L	65	Standard
C	12	56.7	27.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	63.0				mg/L	23	Standard
Dy	164	15.4	100.9				mg/L	13	Standard
Ho-1	165	13.3	78.1				mg/L	10	Standard
Er	166	26.7	86.6				mg/L	13	Standard
I	127	12523.5	3.0				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	106.118		
	Al	27	114.677		
	Sc	45			
	Ti	47	106.476		
	V	51	102.696		
	Cr	52	104.991		
	Cr	53			
	Mn	55	105.431		
	Co	59	100.350		
	Ni	60	105.447		
	Cu	65	104.642		
	Zn	66	103.968		
>	Ge	72		106.249	
	As	75	102.720		
	Se	82	100.448		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	100.698		
Ag	107	101.519		
Cd	111	102.265		
Cd	114			
In	115		101.956	
Sn	118	100.693		
Sb	123	102.447		
Ba	135	101.346		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.767		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.712		
U	238	100.687		
Bi	209		100.156	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 12:28:50
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58365.5	1.3				ug/L	68501	Standard
	Be	9	20.0	66.1	**0.0452**	0.017	37.0	ug/L	8	Standard
	Al	27	3228.7	16.1	**0.0617**	0.004	6.5	ug/L	1397	Standard
	Sc	45	41531.9	1.8				ug/L	38815	Standard
	Ti	47	37.0	11.8	**0.0760**	0.013	16.9	ug/L	36	Standard
	V	51	1351.4	2.0	**0.0367**	0.005	12.3	ug/L	1284	Standard
	Cr	52	7169.4	2.1	**0.0470**	0.012	26.2	ug/L	6503	Standard
	Cr	53	401.7	8.5	**0.0227**	0.041	182.3	ug/L	492	Standard
	Mn	55	1129.0	3.0	**0.0779**	0.004	5.1	ug/L	841	Standard
	Co	59	288.7	8.3	**0.0505**	0.003	6.6	ug/L	229	Standard
	Ni	60	1071.7	1.9	**0.4440**	0.010	2.2	ug/L	344	Standard
	Cu	65	122.7	12.6	**0.0557**	0.008	14.8	ug/L	115	Standard
	Zn	66	225.0	0.4	**0.0968**	0.003	2.8	ug/L	190	Standard
>	**Ge**	72	435313.2	0.9				ug/L	409858	Standard
	As	75	-55.3	38.4	**0.0486**	0.019	39.7	ug/L	-22	Standard
	Se	82	13.9	51.6	**0.0725**	0.064	88.6	ug/L	18	Standard
	Se-1	77	56.0	26.4	**0.0064**	0.200	3125.0	ug/L	50	Standard
>	**Ga**	71	55.0	27.3				mg/L	97	Standard
	Rb	85	13.3	43.3				ug/L	25	Standard
	Y	89	378425.9	0.5				ug/L	376763	Standard
>	**Rh**	103	18.3	110.2				ug/L	20	Standard
	Mo	98	181.0	20.1	**0.1454**	0.014	9.6	ug/L	51	Standard
	Ag	107	120.0	21.0	**0.0420**	0.004	9.1	ug/L	76	Standard
	Cd	111	18.7	38.4	**0.0486**	0.003	7.1	mg/L	6	Standard
	Cd	114	41.8	72.4	**0.0458**	0.006	13.2	ug/L	18	Standard
>	**In**	115	514592.2	1.2				ug/L	507261	Standard
	Sn	118	928.4	24.2	**0.0574**	0.043	74.2	ug/L	683	Standard
	Sb	123	912.7	31.3	**0.1899**	0.068	35.7	ug/L	446	Standard
	Ba	135	47.7	19.0	**0.0404**	0.004	10.9	ug/L	28	Standard
	Ce	140	65.0	13.3				ug/L	33	Standard
>	**Tb**	159	797771.6	1.0				ug/L	800803	Standard
	Ho	165	6.7	114.6				ug/L	10	Standard
	Tl	203	79.0	26.2	**0.0436**	0.003	6.0	ug/L	13	Standard
	Tl	205	80.0	16.5	**0.0546**	0.002	3.6	ug/L	13	Standard
	Pb	206	267.3	21.0	**0.0502**	0.011	21.9	ug/L	226	Standard
	Pb	207	232.0	12.4	**0.0508**	0.006	12.0	ug/L	204	Standard
	Pb	208	975.0	8.5	**0.0546**	0.004	7.8	ug/L	852	Standard
	U	238	65.3	37.9	**0.0525**	0.004	7.0	ug/L	13	Standard
>	**Bi**	209	450418.1	0.7				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	17.6	**0.0166**	0.011	63.9	mg/L	58	Standard
K	39	35.0	37.8	**-0.0108**	0.052	481.1	mg/L	27	Standard
Ca	43	45.0	58.8	**1.7629**	1.770	100.4	mg/L	20	Standard
Fe	54	129.3	20.6	**-0.0188**	0.022	116.1	mg/L	158	Standard
Fe	57	218.3	7.4	**0.0034**	0.059	1711.1	mg/L	267	Standard
Sc-1	45	41531.9	1.8				mg/L	38815	Standard
Cl	35	65165.8	0.5				ug/L	57611	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	1780.1	4.4				ug/L	1617	Standard
P	31	19916.4	1.9				ug/L	19244	Standard
S	34	3963.9	7.0				ug/L	3557	Standard
Sr	88	71.7	8.1				ug/L	65	Standard
C	12	43.3	81.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	23	Standard
Dy	164	19.0	51.3				mg/L	13	Standard
Ho-1	165	6.7	114.6				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	8842.6	1.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.211	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	101.445
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.306
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Tl	203	

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Method 6020 - Summary Report

Sample ID: L1606129407
Sample Date/Time: Wednesday, July 06, 2016 12:32:02
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54571.5	2.9				ug/L	68501	Standard
	Be	9	46.7	32.7	**0.0837**	0.019	23.3	ug/L	8	Standard
	Al	27	387342.3	1.0	**3.4619**	0.131	3.8	ug/L	1397	Standard
	Sc	45	37803.8	0.7				ug/L	38815	Standard
	Ti	47	113.3	7.3	**0.3159**	0.024	7.5	ug/L	36	Standard
	V	51	4062.2	2.2	**0.4437**	0.011	2.4	ug/L	1284	Standard
	Cr	52	8232.2	2.9	**0.2844**	0.031	10.8	ug/L	6503	Standard
	Cr	53	635.0	7.2	**0.3355**	0.052	15.5	ug/L	492	Standard
	Mn	55	59198.8	1.4	**9.7624**	0.126	1.3	ug/L	841	Standard
	Co	59	1666.4	3.6	**0.2867**	0.010	3.5	ug/L	229	Standard
	Ni	60	2062.8	3.2	**1.0951**	0.044	4.0	ug/L	344	Standard
	Cu	65	728.7	9.0	**0.4300**	0.038	8.9	ug/L	115	Standard
	Zn	66	2828.3	2.6	**2.7445**	0.082	3.0	ug/L	190	Standard
>	**Ge**	72	402452.6	0.5				ug/L	409858	Standard
	As	75	60.0	38.6	**0.1578**	0.023	14.3	ug/L	-22	Standard
	Se	82	13.7	6.1	**0.0805**	0.008	9.4	ug/L	18	Standard
	Se-1	77	48.3	10.6	**-0.0442**	0.075	170.0	ug/L	50	Standard
>	**Ga**	71	525.0	16.3				mg/L	97	Standard
	Rb	85	4585.7	1.5				ug/L	25	Standard
	Y	89	348985.7	1.6				ug/L	376763	Standard
>	**Rh**	103	23.3	12.4				ug/L	20	Standard
	Mo	98	114.4	13.2	**0.1222**	0.007	5.6	ug/L	51	Standard
	Ag	107	90.7	24.0	**0.0386**	0.004	10.0	ug/L	76	Standard
	Cd	111	16.4	22.8	**0.0482**	0.002	4.3	mg/L	6	Standard
	Cd	114	48.9	72.6	**0.0482**	0.008	16.5	ug/L	18	Standard
>	**In**	115	474745.8	0.8				ug/L	507261	Standard
	Sn	118	475.0	40.2	**-0.0173**	0.037	215.3	ug/L	683	Standard
	Sb	123	1751.0	31.8	**0.4164**	0.141	33.8	ug/L	446	Standard
	Ba	135	7868.7	1.7	**4.4335**	0.060	1.3	ug/L	28	Standard
	Ce	140	27979.1	1.8				ug/L	33	Standard
>	**Tb**	159	753238.8	1.1				ug/L	800803	Standard
	Ho	165	351.7	20.6				ug/L	10	Standard
	Tl	203	62.3	20.9	**0.0418**	0.002	4.3	ug/L	13	Standard
	Tl	205	43.3	37.1	**0.0493**	0.003	5.1	ug/L	13	Standard
	Pb	206	1664.1	6.4	**0.3491**	0.020	5.6	ug/L	226	Standard
	Pb	207	1361.1	5.1	**0.3171**	0.016	5.0	ug/L	204	Standard
	Pb	208	5716.1	0.9	**0.3342**	0.003	0.9	ug/L	852	Standard
	U	238	108.3	8.3	**0.0597**	0.002	2.6	ug/L	13	Standard
>	**Bi**	209	431049.9	0.9				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	40.0	57.3	**0.0174**	0.032	185.7	mg/L	58	Standard
K	39	36.7	43.8	**0.0080**	0.065	811.5	mg/L	27	Standard
Ca	43	28.3	44.4	**0.8400**	0.949	113.0	mg/L	20	Standard
Fe	54	487.1	6.7	**0.2984**	0.026	8.7	mg/L	158	Standard
Fe	57	365.0	6.8	**0.5742**	0.091	15.9	mg/L	267	Standard
> **Sc-1**	45	37803.8	0.7				mg/L	38815	Standard
Cl	35	58008.8	0.8				ug/L	57611	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	1390.1	5.6				ug/L	1617	Standard
P	31	6723.2	3.1				ug/L	19244	Standard
S	34	3855.5	4.2				ug/L	3557	Standard
Sr	88	63.3	4.6				ug/L	65	Standard
C	12	33.3	34.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	604.3	2.5				mg/L	13	Standard
Ho-1	165	351.7	20.6				mg/L	10	Standard
Er	166	396.7	19.3				mg/L	13	Standard
I	127	8490.7	2.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		79.665	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.193	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.590
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.993
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129408
Sample Date/Time: Wednesday, July 06, 2016 12:35:14
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53967.6	2.0				ug/L	68501	Standard
	Be	9	36.7	90.8	**0.0713**	0.048	67.1	ug/L	8	Standard
	Al	27	260417.3	3.5	**2.3639**	0.101	4.3	ug/L	1397	Standard
	Sc	45	38027.7	2.1				ug/L	38815	Standard
	Ti	47	160.0	7.6	**0.4572**	0.036	7.8	ug/L	36	Standard
	V	51	3667.6	1.6	**0.3863**	0.010	2.7	ug/L	1284	Standard
	Cr	52	8066.5	2.2	**0.2591**	0.022	8.5	ug/L	6503	Standard
	Cr	53	521.7	6.4	**0.2007**	0.041	20.4	ug/L	492	Standard
	Mn	55	48587.5	1.9	**7.9901**	0.137	1.7	ug/L	841	Standard
	Co	59	1120.0	7.7	**0.1944**	0.014	7.2	ug/L	229	Standard
	Ni	60	1576.1	3.3	**0.7989**	0.035	4.4	ug/L	344	Standard
	Cu	65	583.7	2.0	**0.3417**	0.008	2.4	ug/L	115	Standard
	Zn	66	2526.5	2.7	**2.4378**	0.065	2.7	ug/L	190	Standard
>	**Ge**	72	402701.4	0.4				ug/L	409858	Standard
	As	75	163.7	17.4	**0.2597**	0.028	10.9	ug/L	-22	Standard
	Se	82	19.0	37.8	**0.1322**	0.070	52.7	ug/L	18	Standard
	Se-1	77	47.7	2.4	**-0.0545**	0.015	27.3	ug/L	50	Standard
>	**Ga**	71	363.3	5.2				mg/L	97	Standard
	Rb	85	2791.9	5.5				ug/L	25	Standard
	Y	89	350903.9	1.1				ug/L	376763	Standard
>	**Rh**	103	21.7	13.3				ug/L	20	Standard
	Mo	98	87.0	11.7	**0.1099**	0.004	4.0	ug/L	51	Standard
	Ag	107	79.7	1.9	**0.0367**	0.000	0.7	ug/L	76	Standard
	Cd	111	10.8	33.4	**0.0452**	0.002	4.3	mg/L	6	Standard
	Cd	114	19.7	33.6	**0.0417**	0.001	3.5	ug/L	18	Standard
>	**In**	115	476250.4	0.2				ug/L	507261	Standard
	Sn	118	320.0	28.2	**-0.0479**	0.017	36.3	ug/L	683	Standard
	Sb	123	1247.0	34.2	**0.2892**	0.105	36.5	ug/L	446	Standard
	Ba	135	4132.6	3.6	**2.3285**	0.078	3.3	ug/L	28	Standard
	Ce	140	19167.1	2.8				ug/L	33	Standard
>	**Tb**	159	745961.4	1.0				ug/L	800803	Standard
	Ho	165	288.3	7.0				ug/L	10	Standard
	Tl	203	28.0	25.0	**0.0372**	0.001	2.6	ug/L	13	Standard
	Tl	205	36.7	61.5	**0.0483**	0.004	7.4	ug/L	13	Standard
	Pb	206	1164.0	3.0	**0.2435**	0.008	3.2	ug/L	226	Standard
	Pb	207	928.4	2.8	**0.2163**	0.006	2.9	ug/L	204	Standard
	Pb	208	4144.6	2.1	**0.2428**	0.005	2.2	ug/L	852	Standard
	U	238	88.7	22.2	**0.0566**	0.003	5.5	ug/L	13	Standard
>	**Bi**	209	430308.6	0.2				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	30.0	60.1	**0.0029**	0.024	833.5	mg/L	58	Standard
K	39	36.7	51.6	**0.0083**	0.079	949.7	mg/L	27	Standard
Ca	43	36.7	15.7	**1.4456**	0.439	30.4	mg/L	20	Standard
Fe	54	322.3	20.3	**0.1558**	0.060	38.7	mg/L	158	Standard
Fe	57	341.7	9.5	**0.4863**	0.100	20.6	mg/L	267	Standard
> **Sc-1**	45	38027.7	2.1				mg/L	38815	Standard
Cl	35	58256.5	1.5				ug/L	57611	Standard
Kr	83	3.7	31.5				ug/L	2	Standard
Br	81	1490.1	7.9				ug/L	1617	Standard
P	31	6151.2	2.7				ug/L	19244	Standard
S	34	3462.1	4.7				ug/L	3557	Standard
Sr	88	65.0	7.7				ug/L	65	Standard
C	12	56.7	66.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	107.9				mg/L	23	Standard
Dy	164	456.8	15.1				mg/L	13	Standard
Ho-1	165	288.3	7.0				mg/L	10	Standard
Er	166	276.7	11.0				mg/L	13	Standard
I	127	8354.0	1.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		78.784	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.254	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.887
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.828
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129408
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Method 6020 - Summary Report

Sample ID: L1606129409
Sample Date/Time: Wednesday, July 06, 2016 12:38:25
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54002.8	2.0				ug/L	68501	Standard
	Be	9	26.7	39.0	**0.0569**	0.015	26.3	ug/L	8	Standard
	Al	27	355774.4	1.8	**3.2137**	0.037	1.2	ug/L	1397	Standard
	Sc	45	37870.6	1.0				ug/L	38815	Standard
	Ti	47	155.3	6.4	**0.4407**	0.029	6.6	ug/L	36	Standard
	V	51	4291.3	2.7	**0.4733**	0.016	3.5	ug/L	1284	Standard
	Cr	52	8425.7	1.8	**0.3059**	0.026	8.4	ug/L	6503	Standard
	Cr	53	601.7	11.3	**0.2919**	0.080	27.6	ug/L	492	Standard
	Mn	55	74360.1	1.5	**12.2164**	0.218	1.8	ug/L	841	Standard
	Co	59	1332.1	3.0	**0.2290**	0.007	2.9	ug/L	229	Standard
	Ni	60	1608.8	1.4	**0.8136**	0.011	1.4	ug/L	344	Standard
	Cu	65	689.0	4.4	**0.4036**	0.018	4.4	ug/L	115	Standard
	Zn	66	2706.2	1.2	**2.6054**	0.035	1.3	ug/L	190	Standard
>	**Ge**	72	404779.3	0.2				ug/L	409858	Standard
	As	75	99.4	24.9	**0.1959**	0.024	12.2	ug/L	-22	Standard
	Se	82	14.7	23.1	**0.0894**	0.032	36.3	ug/L	18	Standard
	Se-1	77	47.3	8.8	**-0.0630**	0.060	95.1	ug/L	50	Standard
>	**Ga**	71	375.0	6.7				mg/L	97	Standard
	Rb	85	3093.6	2.9				ug/L	25	Standard
	Y	89	349363.7	0.6				ug/L	376763	Standard
>	**Rh**	103	21.7	74.2				ug/L	20	Standard
	Mo	98	73.5	9.1	**0.1039**	0.003	3.1	ug/L	51	Standard
	Ag	107	87.0	23.9	**0.0379**	0.004	9.8	ug/L	76	Standard
	Cd	111	24.2	46.8	**0.0523**	0.006	11.9	mg/L	6	Standard
	Cd	114	44.8	59.1	**0.0472**	0.006	12.5	ug/L	18	Standard
>	**In**	115	478695.7	1.2				ug/L	507261	Standard
	Sn	118	316.7	14.6	**-0.0487**	0.010	19.9	ug/L	683	Standard
	Sb	123	1033.1	29.1	**0.2353**	0.077	32.6	ug/L	446	Standard
	Ba	135	8158.2	1.0	**4.5590**	0.096	2.1	ug/L	28	Standard
	Ce	140	20727.5	4.7				ug/L	33	Standard
>	**Tb**	159	748176.5	0.9				ug/L	800803	Standard
	Ho	165	301.7	5.3				ug/L	10	Standard
	Tl	203	38.0	43.8	**0.0385**	0.002	5.8	ug/L	13	Standard
	Tl	205	25.0	20.0	**0.0464**	0.001	1.7	ug/L	13	Standard
	Pb	206	1980.1	3.6	**0.4139**	0.012	3.0	ug/L	226	Standard
	Pb	207	1697.4	4.2	**0.3935**	0.015	3.7	ug/L	204	Standard
	Pb	208	7219.0	0.8	**0.4197**	0.000	0.1	ug/L	852	Standard
	U	238	87.3	10.6	**0.0563**	0.002	2.8	ug/L	13	Standard
>	**Bi**	209	433469.7	0.7				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	35.0	37.8	**0.0103**	0.019	181.6	mg/L	58	Standard
K	39	28.3	62.0	**-0.0265**	0.071	267.8	mg/L	27	Standard
Ca	43	43.3	6.7	**1.9512**	0.183	9.4	mg/L	20	Standard
Fe	54	372.4	10.3	**0.1991**	0.030	15.0	mg/L	158	Standard
Fe	57	348.3	14.7	**0.5158**	0.189	36.6	mg/L	267	Standard
> **Sc-1**	45	37870.6	1.0				mg/L	38815	Standard
Cl	35	57598.0	1.7				ug/L	57611	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1430.1	3.7				ug/L	1617	Standard
P	31	6121.2	3.1				ug/L	19244	Standard
S	34	3705.5	5.3				ug/L	3557	Standard
Sr	88	80.0	6.3				ug/L	65	Standard
C	12	30.0	57.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	23	Standard
Dy	164	487.1	10.2				mg/L	13	Standard
Ho-1	165	301.7	5.3				mg/L	10	Standard
Er	166	270.0	39.0				mg/L	13	Standard
I	127	8914.3	2.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		78.835	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.761	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.369
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.532
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129410
Sample Date/Time: Wednesday, July 06, 2016 12:41:37
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52887.2	1.8				ug/L	68501	Standard
	Be	9	35.0	49.5	**0.0693**	0.024	35.3	ug/L	8	Standard
	Al	27	340518.6	2.3	**3.1422**	0.100	3.2	ug/L	1397	Standard
	Sc	45	37329.3	1.2				ug/L	38815	Standard
	Ti	47	155.7	8.7	**0.4476**	0.042	9.3	ug/L	36	Standard
	V	51	4098.4	2.5	**0.4530**	0.016	3.5	ug/L	1284	Standard
	Cr	52	8107.5	2.5	**0.2742**	0.033	12.0	ug/L	6503	Standard
	Cr	53	540.0	14.7	**0.2273**	0.096	42.4	ug/L	492	Standard
	Mn	55	64857.5	0.9	**10.7783**	0.125	1.2	ug/L	841	Standard
	Co	59	1397.1	3.7	**0.2429**	0.009	3.7	ug/L	229	Standard
	Ni	60	1640.4	2.0	**0.8452**	0.018	2.1	ug/L	344	Standard
	Cu	65	730.0	2.4	**0.4339**	0.009	2.1	ug/L	115	Standard
	Zn	66	2844.9	1.6	**2.7808**	0.051	1.8	ug/L	190	Standard
>	**Ge**	72	399739.8	0.3				ug/L	409858	Standard
	As	75	150.8	4.3	**0.2480**	0.007	2.7	ug/L	-22	Standard
	Se	82	16.8	16.3	**0.1118**	0.027	24.2	ug/L	18	Standard
	Se-1	77	46.7	10.8	**-0.0641**	0.075	117.7	ug/L	50	Standard
>	**Ga**	71	411.7	9.7				mg/L	97	Standard
	Rb	85	3715.5	3.6				ug/L	25	Standard
	Y	89	349263.3	1.1				ug/L	376763	Standard
>	**Rh**	103	33.3	45.8				ug/L	20	Standard
	Mo	98	68.3	41.2	**0.1017**	0.012	12.2	ug/L	51	Standard
	Ag	107	125.7	38.0	**0.0445**	0.008	18.3	ug/L	76	Standard
	Cd	111	35.2	63.7	**0.0582**	0.012	20.7	mg/L	6	Standard
	Cd	114	65.6	64.7	**0.0517**	0.009	18.0	ug/L	18	Standard
>	**In**	115	476516.9	0.8				ug/L	507261	Standard
	Sn	118	290.0	40.4	**-0.0538**	0.023	42.0	ug/L	683	Standard
	Sb	123	913.9	33.0	**0.2061**	0.074	35.7	ug/L	446	Standard
	Ba	135	7815.7	1.2	**4.3874**	0.031	0.7	ug/L	28	Standard
	Ce	140	22171.2	2.0				ug/L	33	Standard
>	**Tb**	159	745014.1	0.6				ug/L	800803	Standard
	Ho	165	338.3	7.0				ug/L	10	Standard
	Tl	203	93.0	73.2	**0.0459**	0.009	19.9	ug/L	13	Standard
	Tl	205	58.3	9.9	**0.0517**	0.001	1.6	ug/L	13	Standard
	Pb	206	1839.8	0.9	**0.3856**	0.008	2.0	ug/L	226	Standard
	Pb	207	1528.7	1.0	**0.3554**	0.002	0.6	ug/L	204	Standard
	Pb	208	6653.9	1.0	**0.3880**	0.007	1.7	ug/L	852	Standard
	U	238	118.7	34.7	**0.0613**	0.006	10.4	ug/L	13	Standard
>	**Bi**	209	432197.8	1.2				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	33.3	22.9	**0.0085**	0.010	120.9	mg/L	58	Standard
K	39	45.0	19.2	**0.0446**	0.035	78.7	mg/L	27	Standard
Ca	43	16.7	62.4	**-0.0167**	0.785	4697.8	mg/L	20	Standard
Fe	54	374.1	9.5	**0.2053**	0.029	14.4	mg/L	158	Standard
Fe	57	340.0	19.9	**0.5012**	0.223	44.4	mg/L	267	Standard
Sc-1	45	37329.3	1.2				mg/L	38815	Standard
Cl	35	57528.4	1.2				ug/L	57611	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	1460.1	4.3				ug/L	1617	Standard
P	31	6161.3	2.2				ug/L	19244	Standard
S	34	3503.7	2.5				ug/L	3557	Standard
Sr	88	90.0	29.4				ug/L	65	Standard
C	12	40.0	25.0				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	26.7	78.1				mg/L	23	Standard
Dy	164	527.1	16.0				mg/L	13	Standard
Ho-1	165	338.3	7.0				mg/L	10	Standard
Er	166	270.0	7.4				mg/L	13	Standard
I	127	8217.2	2.1				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		77.206	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.531	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.939
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.248
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129414
Sample Date/Time: Wednesday, July 06, 2016 12:44:48
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53690.0	2.0				ug/L	68501	Standard
	Be	9	20.0	0.0	**0.0476**	0.001	1.2	ug/L	8	Standard
	Al	27	331712.6	1.9	**3.0171**	0.105	3.5	ug/L	1397	Standard
	Sc	45	37394.4	2.5				ug/L	38815	Standard
	Ti	47	127.3	9.9	**0.3586**	0.037	10.3	ug/L	36	Standard
	V	51	4142.5	1.3	**0.4557**	0.010	2.3	ug/L	1284	Standard
	Cr	52	8322.6	1.1	**0.2984**	0.018	6.0	ug/L	6503	Standard
	Cr	53	555.0	4.1	**0.2408**	0.025	10.2	ug/L	492	Standard
	Mn	55	93280.6	0.9	**15.4453**	0.177	1.1	ug/L	841	Standard
	Co	59	1455.1	2.3	**0.2512**	0.006	2.5	ug/L	229	Standard
	Ni	60	1657.4	3.5	**0.8492**	0.031	3.6	ug/L	344	Standard
	Cu	65	862.0	3.3	**0.5115**	0.017	3.4	ug/L	115	Standard
	Zn	66	3313.7	0.9	**3.2364**	0.043	1.3	ug/L	190	Standard
>	**Ge**	72	402275.0	0.4				ug/L	409858	Standard
	As	75	118.9	36.8	**0.2157**	0.043	19.9	ug/L	-22	Standard
	Se	82	16.6	28.2	**0.1090**	0.045	41.5	ug/L	18	Standard
	Se-1	77	47.7	6.4	**-0.0538**	0.042	78.2	ug/L	50	Standard
>	**Ga**	71	391.7	11.4				mg/L	97	Standard
	Rb	85	3747.1	3.7				ug/L	25	Standard
	Y	89	345576.8	1.0				ug/L	376763	Standard
>	**Rh**	103	18.3	15.7				ug/L	20	Standard
	Mo	98	44.0	23.2	**0.0909**	0.005	5.1	ug/L	51	Standard
	Ag	107	79.0	5.5	**0.0365**	0.001	1.8	ug/L	76	Standard
	Cd	111	24.2	10.4	**0.0523**	0.001	2.6	mg/L	6	Standard
	Cd	114	73.2	46.7	**0.0534**	0.008	14.1	ug/L	18	Standard
>	**In**	115	478607.8	0.7				ug/L	507261	Standard
	Sn	118	251.7	25.3	**-0.0613**	0.013	20.5	ug/L	683	Standard
	Sb	123	792.2	33.5	**0.1757**	0.067	37.9	ug/L	446	Standard
	Ba	135	7870.7	0.5	**4.3991**	0.031	0.7	ug/L	28	Standard
	Ce	140	22131.2	0.9				ug/L	33	Standard
>	**Tb**	159	749864.4	0.1				ug/L	800803	Standard
	Ho	165	340.0	10.2				ug/L	10	Standard
	Tl	203	23.0	32.8	**0.0365**	0.001	2.8	ug/L	13	Standard
	Tl	205	30.0	33.3	**0.0472**	0.002	3.3	ug/L	13	Standard
	Pb	206	14608.4	1.3	**3.0830**	0.023	0.8	ug/L	226	Standard
	Pb	207	10978.6	2.2	**2.5535**	0.043	1.7	ug/L	204	Standard
	Pb	208	49268.3	1.0	**2.8669**	0.016	0.5	ug/L	852	Standard
	U	238	88.0	5.0	**0.0564**	0.001	1.1	ug/L	13	Standard
>	**Bi**	209	433017.9	0.5				ug/L	449044	Standard

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Na	23	1.7	173.2	**0.9237**	16.812	1820.0	mg/L	2	Standard
Mg	24	31.7	18.2	**0.0060**	0.007	118.5	mg/L	58	Standard
K	39	35.0	14.3	**0.0034**	0.024	720.1	mg/L	27	Standard
Ca	43	16.7	17.3	**-0.0157**	0.252	1610.8	mg/L	20	Standard
Fe	54	313.9	9.8	**0.1522**	0.020	13.3	mg/L	158	Standard
Fe	57	301.7	18.8	**0.3670**	0.187	50.9	mg/L	267	Standard
Sc-1	45	37394.4	2.5				mg/L	38815	Standard
Cl	35	58101.9	0.6				ug/L	57611	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	1443.4	4.6				ug/L	1617	Standard
P	31	6066.2	5.4				ug/L	19244	Standard
S	34	3347.0	3.0				ug/L	3557	Standard
Sr	88	83.3	40.8				ug/L	65	Standard
C	12	43.3	53.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	23	Standard
Dy	164	599.9	19.0				mg/L	13	Standard
Ho-1	165	340.0	10.2				mg/L	10	Standard
Er	166	350.0	10.3				mg/L	13	Standard
I	127	8285.6	5.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		78.378	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.150	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.351
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.431
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129415
Sample Date/Time: Wednesday, July 06, 2016 12:47:59
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54170.0	2.0				ug/L	68501	Standard
	Be	9	26.7	28.6	**0.0565**	0.010	17.6	ug/L	8	Standard
	Al	27	359573.2	2.4	**3.2386**	0.111	3.4	ug/L	1397	Standard
	Sc	45	37168.9	1.3				ug/L	38815	Standard
	Ti	47	145.3	6.2	**0.4119**	0.030	7.3	ug/L	36	Standard
	V	51	3535.1	1.8	**0.3660**	0.006	1.5	ug/L	1284	Standard
	Cr	52	7574.2	1.6	**0.1840**	0.024	12.9	ug/L	6503	Standard
	Cr	53	406.7	13.5	**0.0634**	0.069	108.4	ug/L	492	Standard
	Mn	55	61648.2	0.7	**10.1421**	0.149	1.5	ug/L	841	Standard
	Co	59	1089.0	4.5	**0.1888**	0.009	4.8	ug/L	229	Standard
	Ni	60	1346.1	2.3	**0.6575**	0.025	3.8	ug/L	344	Standard
	Cu	65	439.0	4.3	**0.2531**	0.013	5.1	ug/L	115	Standard
	Zn	66	2221.8	1.3	**2.1252**	0.014	0.7	ug/L	190	Standard
>	**Ge**	72	403591.8	0.7				ug/L	409858	Standard
	As	75	37.7	18.1	**0.1358**	0.007	4.9	ug/L	-22	Standard
	Se	82	20.1	10.3	**0.1419**	0.020	14.4	ug/L	18	Standard
	Se-1	77	48.7	17.5	**-0.0418**	0.121	288.3	ug/L	50	Standard
>	**Ga**	71	316.7	12.9				mg/L	97	Standard
	Rb	85	2226.8	3.0				ug/L	25	Standard
	Y	89	347784.9	1.1				ug/L	376763	Standard
>	**Rh**	103	25.0	40.0				ug/L	20	Standard
	Mo	98	33.3	21.8	**0.0862**	0.003	3.7	ug/L	51	Standard
	Ag	107	67.7	8.5	**0.0347**	0.001	2.9	ug/L	76	Standard
	Cd	111	6.3	51.4	**0.0427**	0.002	4.0	mg/L	6	Standard
	Cd	114	12.7	48.1	**0.0402**	0.001	3.4	ug/L	18	Standard
>	**In**	115	476216.8	0.5				ug/L	507261	Standard
	Sn	118	271.7	24.0	**-0.0573**	0.013	21.9	ug/L	683	Standard
	Sb	123	683.1	27.9	**0.1492**	0.047	31.4	ug/L	446	Standard
	Ba	135	5862.1	0.1	**3.2969**	0.020	0.6	ug/L	28	Standard
	Ce	140	16595.8	3.6				ug/L	33	Standard
>	**Tb**	159	744111.5	0.7				ug/L	800803	Standard
	Ho	165	248.3	13.1				ug/L	10	Standard
	Tl	203	19.0	9.1	**0.0359**	0.000	0.7	ug/L	13	Standard
	Tl	205	11.7	49.5	**0.0444**	0.001	2.1	ug/L	13	Standard
	Pb	206	921.0	2.0	**0.1925**	0.005	2.6	ug/L	226	Standard
	Pb	207	774.4	3.3	**0.1808**	0.005	2.9	ug/L	204	Standard
	Pb	208	3329.1	2.3	**0.1956**	0.005	2.8	ug/L	852	Standard
	U	238	55.0	25.0	**0.0513**	0.002	4.2	ug/L	13	Standard
>	**Bi**	209	429010.4	0.8				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	17.6	**0.0229**	0.010	45.8	mg/L	58	Standard
K	39	45.0	22.2	**0.0459**	0.044	95.9	mg/L	27	Standard
Ca	43	35.0	42.9	**1.3865**	1.153	83.2	mg/L	20	Standard
Fe	54	281.0	14.5	**0.1257**	0.038	30.3	mg/L	158	Standard
Fe	57	395.0	5.8	**0.7009**	0.097	13.9	mg/L	267	Standard
> **Sc-1**	45	37168.9	1.3				mg/L	38815	Standard
Cl	35	58603.8	1.1				ug/L	57611	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	1436.7	1.8				ug/L	1617	Standard
P	31	7160.1	19.7				ug/L	19244	Standard
S	34	3277.0	5.3				ug/L	3557	Standard
Sr	88	80.0	6.3				ug/L	65	Standard
C	12	33.3	75.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	124.9				mg/L	23	Standard
Dy	164	447.9	36.2				mg/L	13	Standard
Ho-1	165	248.3	13.1				mg/L	10	Standard
Er	166	253.3	24.1				mg/L	13	Standard
I	127	8542.4	2.3				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		79.079	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.471	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.880
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.539
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606138108
Sample Date/Time: Wednesday, July 06, 2016 12:51:11
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54233.6	3.5				ug/L	68501	Standard
	Be	9	30.0	28.9	**0.0612**	0.012	19.1	ug/L	8	Standard
	Al	27	458746.7	1.0	**4.1197**	0.165	4.0	ug/L	1397	Standard
	Sc	45	38214.8	1.8				ug/L	38815	Standard
	Ti	47	191.7	8.8	**0.5499**	0.046	8.4	ug/L	36	Standard
	V	51	7374.6	0.8	**0.9167**	0.006	0.6	ug/L	1284	Standard
	Cr	52	9768.5	2.0	**0.5031**	0.030	6.0	ug/L	6503	Standard
	Cr	53	703.3	8.3	**0.4117**	0.068	16.6	ug/L	492	Standard
	Mn	55	157025.5	0.1	**25.8971**	0.172	0.7	ug/L	841	Standard
	Co	59	2139.2	2.3	**0.3643**	0.008	2.2	ug/L	229	Standard
	Ni	60	2664.9	2.1	**1.4510**	0.037	2.6	ug/L	344	Standard
	Cu	65	1293.7	2.7	**0.7692**	0.019	2.5	ug/L	115	Standard
	Zn	66	3107.0	2.1	**3.0074**	0.079	2.6	ug/L	190	Standard
>	**Ge**	72	404886.3	0.7				ug/L	409858	Standard
	As	75	199.8	21.5	**0.2941**	0.043	14.5	ug/L	-22	Standard
	Se	82	16.0	51.6	**0.1025**	0.080	78.0	ug/L	18	Standard
	Se-1	77	49.0	14.3	**-0.0383**	0.106	277.2	ug/L	50	Standard
>	**Ga**	71	690.0	10.9				mg/L	97	Standard
	Rb	85	6126.2	5.8				ug/L	25	Standard
	Y	89	355822.1	1.8				ug/L	376763	Standard
>	**Rh**	103	20.0	75.0				ug/L	20	Standard
	Mo	98	37.1	35.1	**0.0878**	0.006	6.6	ug/L	51	Standard
	Ag	107	81.3	8.2	**0.0368**	0.001	2.8	ug/L	76	Standard
	Cd	111	8.9	29.5	**0.0441**	0.001	3.2	mg/L	6	Standard
	Cd	114	16.7	60.7	**0.0410**	0.002	5.4	ug/L	18	Standard
>	**In**	115	480767.7	0.8				ug/L	507261	Standard
	Sn	118	248.3	36.1	**-0.0621**	0.018	28.5	ug/L	683	Standard
	Sb	123	730.9	30.4	**0.1597**	0.056	35.0	ug/L	446	Standard
	Ba	135	13856.3	0.6	**7.6978**	0.013	0.2	ug/L	28	Standard
	Ce	140	35568.4	3.3				ug/L	33	Standard
>	**Tb**	159	750147.1	0.9				ug/L	800803	Standard
	Ho	165	496.7	9.5				ug/L	10	Standard
	Tl	203	43.3	7.4	**0.0392**	0.000	1.2	ug/L	13	Standard
	Tl	205	26.7	39.0	**0.0467**	0.002	3.5	ug/L	13	Standard
	Pb	206	1867.1	1.5	**0.3894**	0.009	2.2	ug/L	226	Standard
	Pb	207	1558.4	1.6	**0.3606**	0.008	2.1	ug/L	204	Standard
	Pb	208	6678.9	0.9	**0.3876**	0.004	1.2	ug/L	852	Standard
	U	238	113.7	2.7	**0.0604**	0.001	0.9	ug/L	13	Standard
>	**Bi**	209	434266.7	0.7				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	60.4	**0.0193**	0.035	182.4	mg/L	58	Standard
K	39	61.7	36.6	**0.1070**	0.087	81.4	mg/L	27	Standard
Ca	43	36.7	15.7	**1.4281**	0.401	28.0	mg/L	20	Standard
Fe	54	769.2	13.0	**0.5330**	0.076	14.2	mg/L	158	Standard
Fe	57	460.0	10.4	**0.8848**	0.183	20.7	mg/L	267	Standard
> **Sc-1**	45	38214.8	1.8				mg/L	38815	Standard
Cl	35	57334.9	0.4				ug/L	57611	Standard
Kr	83	3.0	145.3				ug/L	2	Standard
Br	81	1536.7	5.0				ug/L	1617	Standard
P	31	6094.6	1.6				ug/L	19244	Standard
S	34	3535.4	4.0				ug/L	3557	Standard
Sr	88	58.3	64.3				ug/L	65	Standard
C	12	26.7	21.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	896.4	9.8				mg/L	13	Standard
Ho-1	165	496.7	9.5				mg/L	10	Standard
Er	166	563.3	10.1				mg/L	13	Standard
I	127	8010.5	1.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		79.172	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.787	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.777
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.709
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 12:54:23
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	56752.8	1.7				ug/L	68501	Standard
	Be	9	41092.3	2.3	**54.6692**	1.162	2.1	ug/L	8	Standard
	Al	27	6751186.4	2.0	**57.4251**	0.440	0.8	ug/L	1397	Standard
	Sc	45	42482.8	2.4				ug/L	38815	Standard
	Ti	47	37579.6	2.3	**105.5354**	1.586	1.5	ug/L	36	Standard
	V	51	382333.4	1.2	**51.0931**	0.241	0.5	ug/L	1284	Standard
	Cr	52	391883.4	2.2	**52.7636**	0.793	1.5	ug/L	6503	Standard
	Cr	53	47835.4	0.2	**52.1976**	0.572	1.1	ug/L	492	Standard
	Mn	55	344317.1	1.3	**53.0012**	0.174	0.3	ug/L	841	Standard
	Co	59	325311.2	1.3	**50.8445**	0.267	0.5	ug/L	229	Standard
	Ni	60	93170.6	1.4	**52.2381**	0.359	0.7	ug/L	344	Standard
	Cu	65	92504.9	1.5	**52.1124**	0.483	0.9	ug/L	115	Standard
	Zn	66	55580.4	0.5	**51.8949**	0.362	0.7	ug/L	190	Standard
>	Ge	72	434601.8	1.2				ug/L	409858	Standard
	As	75	56578.8	0.7	**51.5738**	0.350	0.7	ug/L	-22	Standard
	Se	82	5647.5	1.8	**50.3603**	0.378	0.7	ug/L	18	Standard
	Se-1	77	3845.5	1.2	**51.9136**	1.176	2.3	ug/L	50	Standard
>	Ga	71	88.3	22.9				mg/L	97	Standard
	Rb	85	756.7	12.0				ug/L	25	Standard
	Y	89	367973.7	1.4				ug/L	376763	Standard
>	Rh	103	40.0	12.5				ug/L	20	Standard
	Mo	98	247770.2	0.4	**100.8550**	1.105	1.1	ug/L	51	Standard
	Ag	107	318642.7	1.1	**50.1013**	0.860	1.7	ug/L	76	Standard
	Cd	111	102680.4	0.6	**50.7935**	0.304	0.6	mg/L	6	Standard
	Cd	114	251457.4	1.9	**50.8827**	1.163	2.3	ug/L	18	Standard
>	In	115	517125.0	0.9				ug/L	507261	Standard
	Sn	118	279794.8	0.3	**50.0313**	0.520	1.0	ug/L	683	Standard
	Sb	123	221090.7	1.6	**50.5448**	0.872	1.7	ug/L	446	Standard
	Ba	135	98648.8	0.3	**50.8641**	0.342	0.7	ug/L	28	Standard
	Ce	140	283.3	6.7				ug/L	33	Standard
>	Tb	159	800642.8	0.2				ug/L	800803	Standard
	Ho	165	20.0	50.0				ug/L	10	Standard
	Tl	203	393462.9	0.9	**51.5261**	0.198	0.4	ug/L	13	Standard
	Tl	205	343273.5	0.6	**51.9120**	0.122	0.2	ug/L	13	Standard
	Pb	206	248406.7	0.2	**50.6641**	0.317	0.6	ug/L	226	Standard
	Pb	207	226320.8	0.2	**50.8305**	0.138	0.3	ug/L	204	Standard
	Pb	208	939047.0	1.1	**52.7397**	0.483	0.9	ug/L	852	Standard
	U	238	332825.8	0.4	**50.4825**	0.314	0.6	ug/L	13	Standard
>	Bi	209	448636.6	0.5				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	3842.2	4.2	**4.7135**	0.114	2.4	mg/L	58	Standard
K	39	1238.4	8.3	**4.3703**	0.386	8.8	mg/L	27	Standard
Ca	43	76.7	29.4	**3.8418**	1.628	42.4	mg/L	20	Standard
Fe	54	6532.7	3.0	**4.8761**	0.107	2.2	mg/L	158	Standard
Fe	57	1771.8	2.6	**4.7386**	0.249	5.3	mg/L	267	Standard
> **Sc-1**	45	42482.8	2.4				mg/L	38815	Standard
Cl	35	66120.0	1.5				ug/L	57611	Standard
Kr	83	2.7	43.3				ug/L	2	Standard
Br	81	1616.8	14.2				ug/L	1617	Standard
P	31	20527.2	2.3				ug/L	19244	Standard
S	34	4075.5	3.0				ug/L	3557	Standard
Sr	88	65.0	23.1				ug/L	65	Standard
C	12	66.7	37.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	20.0				mg/L	23	Standard
Dy	164	-0.5	0.0				mg/L	13	Standard
Ho-1	165	20.0	50.0				mg/L	10	Standard
Er	166	10.0					mg/L	13	Standard
I	127	11891.3	1.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	109.338		
Al	27	114.850		
Sc	45			
Ti	47	105.535		
V	51	102.186		
Cr	52	105.527		
Cr	53			
Mn	55	106.002		
Co	59	101.689		
Ni	60	104.476		
Cu	65	104.225		
Zn	66	103.790		
> Ge	72		106.037	
As	75	103.148		
Se	82	100.721		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	100.855		
Ag	107	100.203		
Cd	111	101.587		
Cd	114			
In	115		101.945	
Sn	118	100.063		
Sb	123	101.090		
Ba	135	101.728		
Ce	140			
Tb	159			
Ho	165			
Tl	203	103.052		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.479		
U	238	100.965		
Bi	209		99.909	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 12:57:35
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58173.1	0.9				ug/L	68501	Standard
	Be	9	16.7	62.4	**0.0411**	0.014	33.0	ug/L	8	Standard
	Al	27	2846.9	23.0	**0.0586**	0.005	8.9	ug/L	1397	Standard
	Sc	45	41419.9	4.2				ug/L	38815	Standard
	Ti	47	45.3	22.5	**0.1003**	0.029	28.7	ug/L	36	Standard
	V	51	1392.0	8.0	**0.0435**	0.015	35.5	ug/L	1284	Standard
	Cr	52	7010.6	2.2	**0.0324**	0.022	67.0	ug/L	6503	Standard
	Cr	53	413.3	1.4	**0.0386**	0.005	13.3	ug/L	492	Standard
	Mn	55	993.7	2.9	**0.0582**	0.005	8.5	ug/L	841	Standard
	Co	59	252.0	16.8	**0.0451**	0.007	14.5	ug/L	229	Standard
	Ni	60	638.3	0.7	**0.2033**	0.004	1.9	ug/L	344	Standard
	Cu	65	123.0	9.2	**0.0564**	0.006	11.0	ug/L	115	Standard
	Zn	66	222.3	5.3	**0.0958**	0.010	10.6	ug/L	190	Standard
>	**Ge**	72	432136.6	0.4				ug/L	409858	Standard
	As	75	-22.5	131.6	**0.0783**	0.027	34.6	ug/L	-22	Standard
	Se	82	22.9	5.7	**0.1545**	0.012	7.9	ug/L	18	Standard
	Se-1	77	53.3	16.9	**-0.0242**	0.125	515.8	ug/L	50	Standard
>	**Ga**	71	58.3	19.8				mg/L	97	Standard
	Rb	85	23.3	65.5				ug/L	25	Standard
	Y	89	371942.5	1.8				ug/L	376763	Standard
>	**Rh**	103	21.7	13.3				ug/L	20	Standard
	Mo	98	175.2	11.7	**0.1433**	0.007	5.1	ug/L	51	Standard
	Ag	107	108.7	20.6	**0.0403**	0.003	8.6	ug/L	76	Standard
	Cd	111	12.7	69.7	**0.0457**	0.004	9.6	mg/L	6	Standard
	Cd	114	61.2	41.0	**0.0498**	0.005	9.9	ug/L	18	Standard
>	**In**	115	513109.5	2.2				ug/L	507261	Standard
	Sn	118	888.4	17.9	**0.0506**	0.031	60.4	ug/L	683	Standard
	Sb	123	783.2	29.8	**0.1604**	0.056	34.6	ug/L	446	Standard
	Ba	135	35.7	15.4	**0.0343**	0.003	7.8	ug/L	28	Standard
	Ce	140	75.0	35.3				ug/L	33	Standard
>	**Tb**	159	797797.7	0.9				ug/L	800803	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	62.3	30.4	**0.0414**	0.002	5.9	ug/L	13	Standard
	Tl	205	41.7	38.6	**0.0488**	0.002	4.9	ug/L	13	Standard
	Pb	206	251.3	8.2	**0.0468**	0.004	8.7	ug/L	226	Standard
	Pb	207	237.7	5.0	**0.0519**	0.002	4.4	ug/L	204	Standard
	Pb	208	934.0	13.6	**0.0521**	0.007	13.0	ug/L	852	Standard
	U	238	57.0	50.8	**0.0512**	0.004	8.5	ug/L	13	Standard
>	**Bi**	209	452413.7	0.8				ug/L	449044	Standard

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Na	23	1.7	173.2	**-0.1481**	14.955	10096.3	mg/L	2	Standard
Mg	24	30.0	28.9	**-0.0002**	0.012	6433.4	mg/L	58	Standard
K	39	30.0	60.1	**-0.0297**	0.069	231.4	mg/L	27	Standard
Ca	43	23.3	12.4	**0.3104**	0.162	52.3	mg/L	20	Standard
Fe	54	169.0	5.8	**0.0125**	0.011	84.9	mg/L	158	Standard
Fe	57	230.0	13.6	**0.0408**	0.089	218.6	mg/L	267	Standard
Sc-1	45	41419.9	4.2				mg/L	38815	Standard
Cl	35	64416.7	1.6				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1666.8	5.1				ug/L	1617	Standard
P	31	19791.3	3.6				ug/L	19244	Standard
S	34	3802.1	3.9				ug/L	3557	Standard
Sr	88	75.0	6.7				ug/L	65	Standard
C	12	36.7	41.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	32.7				mg/L	23	Standard
Dy	164	6.0	100.4				mg/L	13	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	8088.8	1.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		105.436	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.153
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.750
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Tl	203	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606131306
Sample Date/Time: Wednesday, July 06, 2016 13:04:40
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57723.1	2.8				ug/L	68501	Standard
	Be	9	53.3	37.9	**0.0891**	0.026	29.2	ug/L	8	Standard
	Al	27	180289.7	0.5	**1.5427**	0.041	2.7	ug/L	1397	Standard
	Sc	45	41478.4	1.2				ug/L	38815	Standard
	Ti	47	1970.8	0.7	**5.6501**	0.108	1.9	ug/L	36	Standard
	V	51	47130.6	0.5	**6.3329**	0.078	1.2	ug/L	1284	Standard
	Cr	52	13127.7	2.7	**0.9112**	0.063	6.9	ug/L	6503	Standard
	Cr	53	2163.5	13.1	**2.0244**	0.352	17.4	ug/L	492	Standard
	Mn	55	24005.0	1.8	**3.6998**	0.025	0.7	ug/L	841	Standard
	Co	59	2263.2	1.0	**0.3682**	0.006	1.6	ug/L	229	Standard
	Ni	60	2942.3	2.6	**1.5389**	0.037	2.4	ug/L	344	Standard
	Cu	65	2666.9	0.5	**1.5278**	0.021	1.4	ug/L	115	Standard
	Zn	66	24175.6	1.3	**23.0819**	0.110	0.5	ug/L	190	Standard
>	**Ge**	72	423851.7	1.6				ug/L	409858	Standard
	As	75	21610.2	1.6	**20.2585**	0.239	1.2	ug/L	-22	Standard
	Se	82	171.9	10.5	**1.5230**	0.183	12.0	ug/L	18	Standard
	Se-1	77	168.3	8.9	**1.6075**	0.250	15.6	ug/L	50	Standard
>	**Ga**	71	1233.4	11.2				mg/L	97	Standard
	Rb	85	18406.2	1.8				ug/L	25	Standard
	Y	89	373385.9	1.9				ug/L	376763	Standard
>	**Rh**	103	136.7	32.0				ug/L	20	Standard
	Mo	98	197428.1	1.3	**83.4331**	0.661	0.8	ug/L	51	Standard
	Ag	107	113.3	9.7	**0.0416**	0.002	4.6	ug/L	76	Standard
	Cd	111	101.4	12.4	**0.0914**	0.006	6.8	mg/L	6	Standard
	Cd	114	1017.6	7.1	**0.2510**	0.016	6.4	ug/L	18	Standard
>	**In**	115	498128.4	0.6				ug/L	507261	Standard
	Sn	118	2950.3	4.8	**0.4389**	0.029	6.6	ug/L	683	Standard
	Sb	123	1594.2	12.3	**0.3583**	0.049	13.6	ug/L	446	Standard
	Ba	135	34883.1	0.8	**18.6813**	0.138	0.7	ug/L	28	Standard
	Ce	140	16956.2	2.0				ug/L	33	Standard
>	**Tb**	159	784060.2	1.2				ug/L	800803	Standard
	Ho	165	340.0	7.4				ug/L	10	Standard
	Tl	203	172.0	8.2	**0.0569**	0.002	3.1	ug/L	13	Standard
	Tl	205	160.0	9.4	**0.0679**	0.003	3.7	ug/L	13	Standard
	Pb	206	2934.0	0.9	**0.6227**	0.008	1.3	ug/L	226	Standard
	Pb	207	2315.2	1.5	**0.5435**	0.010	1.9	ug/L	204	Standard
	Pb	208	10260.4	1.0	**0.6036**	0.005	0.8	ug/L	852	Standard
	U	238	3112.7	1.7	**0.5366**	0.008	1.5	ug/L	13	Standard
>	**Bi**	209	428381.7	0.9				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	60549.1	1.3	**76.6878**	1.707	2.2	mg/L	58	Standard
K	39	128.3	2.2	**0.3369**	0.012	3.7	mg/L	27	Standard
Ca	43	146.7	19.4	**8.6910**	1.829	21.0	mg/L	20	Standard
Fe	54	590.3	17.9	**0.3427**	0.087	25.3	mg/L	158	Standard
Fe	57	436.7	7.4	**0.6872**	0.100	14.6	mg/L	267	Standard
> **Sc-1**	45	41478.4	1.2				mg/L	38815	Standard
Cl	35	63464.0	2.9				ug/L	57611	Standard
Kr	83	1.0	173.2				ug/L	2	Standard
Br	81	29495.4	4.8				ug/L	1617	Standard
P	31	22338.1	1.2				ug/L	19244	Standard
S	34	3658.8	8.4				ug/L	3557	Standard
Sr	88	95.0	19.0				ug/L	65	Standard
C	12	90.0	48.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	0.0				mg/L	23	Standard
Dy	164	578.4	10.6				mg/L	13	Standard
Ho-1	165	340.0	7.4				mg/L	10	Standard
Er	166	243.3	12.6				mg/L	13	Standard
I	127	234795.7	5.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		84.266	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.414	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.200
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.399
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606131307
Sample Date/Time: Wednesday, July 06, 2016 13:07:52
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58787.2	3.0				ug/L	68501	Standard
	Be	9	21.7	35.3	**0.0472**	0.010	20.4	ug/L	8	Standard
	Al	27	32170.8	2.3	**0.2994**	0.014	4.7	ug/L	1397	Standard
	Sc	45	40791.5	1.3				ug/L	38815	Standard
	Ti	47	455.7	9.2	**1.3061**	0.131	10.0	ug/L	36	Standard
	V	51	30069.6	2.2	**4.0535**	0.114	2.8	ug/L	1284	Standard
	Cr	52	9306.9	0.9	**0.3948**	0.031	7.9	ug/L	6503	Standard
	Cr	53	2293.5	7.2	**2.2101**	0.212	9.6	ug/L	492	Standard
	Mn	55	3385.7	0.8	**0.4479**	0.008	1.7	ug/L	841	Standard
	Co	59	676.3	3.4	**0.1156**	0.005	4.5	ug/L	229	Standard
	Ni	60	1130.4	2.9	**0.5044**	0.018	3.5	ug/L	344	Standard
	Cu	65	1215.0	4.0	**0.6996**	0.013	1.9	ug/L	115	Standard
	Zn	66	1554.4	4.0	**1.4018**	0.069	4.9	ug/L	190	Standard
>	**Ge**	72	417314.7	2.2				ug/L	409858	Standard
	As	75	14441.7	1.3	**13.7878**	0.455	3.3	ug/L	-22	Standard
	Se	82	149.1	1.8	**1.3351**	0.052	3.9	ug/L	18	Standard
	Se-1	77	180.3	7.9	**1.8165**	0.258	14.2	ug/L	50	Standard
>	**Ga**	71	601.7	10.6				mg/L	97	Standard
	Rb	85	5239.2	1.8				ug/L	25	Standard
	Y	89	358062.8	2.2				ug/L	376763	Standard
>	**Rh**	103	165.0	16.0				ug/L	20	Standard
	Mo	98	206408.8	1.4	**88.5714**	1.056	1.2	ug/L	51	Standard
	Ag	107	79.3	17.8	**0.0362**	0.002	6.4	ug/L	76	Standard
	Cd	111	-128.2	9.7	**-0.0275**	0.007	27.1	mg/L	6	Standard
	Cd	114	441.2	1.2	**0.1314**	0.002	1.5	ug/L	18	Standard
>	**In**	115	490588.1	1.5				ug/L	507261	Standard
	Sn	118	950.0	9.6	**0.0693**	0.017	24.1	ug/L	683	Standard
	Sb	123	1528.0	9.2	**0.3484**	0.039	11.2	ug/L	446	Standard
	Ba	135	7029.0	1.2	**3.8355**	0.097	2.5	ug/L	28	Standard
	Ce	140	2000.1	10.1				ug/L	33	Standard
>	**Tb**	159	781482.7	1.4				ug/L	800803	Standard
	Ho	165	31.7	39.7				ug/L	10	Standard
	Tl	203	103.7	18.0	**0.0476**	0.003	5.7	ug/L	13	Standard
	Tl	205	90.0	9.6	**0.0568**	0.001	1.9	ug/L	13	Standard
	Pb	206	490.7	1.2	**0.1012**	0.001	1.4	ug/L	226	Standard
	Pb	207	398.0	8.8	**0.0930**	0.010	10.2	ug/L	204	Standard
	Pb	208	1670.4	2.7	**0.0987**	0.002	1.8	ug/L	852	Standard
	U	238	2792.6	0.6	**0.4878**	0.013	2.7	ug/L	13	Standard
>	**Bi**	209	426654.8	2.3				ug/L	449044	Standard

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Na	23	1.7	173.2	**-0.1322**	14.983	11333.2	mg/L	2	Standard
Mg	24	62671.0	0.6	**80.7120**	1.324	1.6	mg/L	58	Standard
K	39	93.3	12.4	**0.2122**	0.044	20.7	mg/L	27	Standard
Ca	43	48.3	26.0	**2.0631**	0.852	41.3	mg/L	20	Standard
Fe	54	193.6	22.1	**0.0342**	0.035	102.9	mg/L	158	Standard
Fe	57	265.0	14.7	**0.1630**	0.116	71.3	mg/L	267	Standard
> **Sc-1**	45	40791.5	1.3				mg/L	38815	Standard
Cl	35	64717.9	0.6				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	26954.1	8.2				ug/L	1617	Standard
P	31	21436.8	2.7				ug/L	19244	Standard
S	34	3510.4	3.2				ug/L	3557	Standard
Sr	88	73.3	30.7				ug/L	65	Standard
C	12	60.0	33.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	44.6				mg/L	23	Standard
Dy	164	34.8	81.9				mg/L	13	Standard
Ho-1	165	31.7	39.7				mg/L	10	Standard
Er	166	40.0	25.0				mg/L	13	Standard
I	127	224703.9	3.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		85.819	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.819	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.713
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.014
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606131307
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Method 6020 - Summary Report

Sample ID: L1606131308
Sample Date/Time: Wednesday, July 06, 2016 13:11:03
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	98735.9	3.3				ug/L	68501	Standard
	Be	9	58.3	13.1	**0.0640**	0.004	6.9	ug/L	8	Standard
	Al	27	51788511.2	2.3	**253.1524**	3.815	1.5	ug/L	1397	Standard
	Sc	45	41498.4	1.6				ug/L	38815	Standard
	Ti	47	3931.8	1.1	**11.5935**	0.069	0.6	ug/L	36	Standard
	V	51	21071.2	0.6	**2.8272**	0.045	1.6	ug/L	1284	Standard
	Cr	52	24687.4	1.3	**2.6256**	0.034	1.3	ug/L	6503	Standard
	Cr	53	2983.6	1.1	**3.0340**	0.005	0.2	ug/L	492	Standard
	Mn	55	1699805.7	0.4	**275.7234**	3.638	1.3	ug/L	841	Standard
	Co	59	8628.5	0.7	**1.4243**	0.010	0.7	ug/L	229	Standard
	Ni	60	7274.1	0.7	**4.1465**	0.043	1.0	ug/L	344	Standard
	Cu	65	4390.6	0.8	**2.5899**	0.030	1.2	ug/L	115	Standard
	Zn	66	25222.0	1.8	**24.7202**	0.623	2.5	ug/L	190	Standard
>	Ge	72	413063.1	1.0				ug/L	409858	Standard
	As	75	638.5	11.5	**0.7099**	0.068	9.6	ug/L	-22	Standard
	Se	82	163.0	16.8	**1.4794**	0.255	17.2	ug/L	18	Standard
	Se-1	77	91.7	9.4	**0.5625**	0.134	23.8	ug/L	50	Standard
>	Ga	71	2932.0	4.6				mg/L	97	Standard
	Rb	85	15868.3	1.8				ug/L	25	Standard
	Y	89	380333.5	1.6				ug/L	376763	Standard
>	Rh	103	393.3	8.5				ug/L	20	Standard
	Mo	98	89251.1	1.2	**38.3286**	0.514	1.3	ug/L	51	Standard
	Ag	107	106.3	8.5	**0.0407**	0.001	3.4	ug/L	76	Standard
	Cd	111	94.4	11.3	**0.0885**	0.005	6.1	mg/L	6	Standard
	Cd	114	588.6	13.1	**0.1629**	0.017	10.6	ug/L	18	Standard
>	In	115	490708.4	0.7				ug/L	507261	Standard
	Sn	118	1108.4	12.3	**0.0991**	0.025	25.0	ug/L	683	Standard
	Sb	123	526.3	24.2	**0.1063**	0.030	28.1	ug/L	446	Standard
	Ba	135	56034.1	1.2	**30.4523**	0.347	1.1	ug/L	28	Standard
	Ce	140	32763.7	1.0				ug/L	33	Standard
>	Tb	159	795920.7	1.3				ug/L	800803	Standard
	Ho	165	1490.1	6.0				ug/L	10	Standard
	Tl	203	1153.0	2.9	**0.1924**	0.005	2.8	ug/L	13	Standard
	Tl	205	1041.7	17.1	**0.2084**	0.028	13.6	ug/L	13	Standard
	Pb	206	9848.9	2.0	**2.1134**	0.031	1.5	ug/L	226	Standard
	Pb	207	8248.6	1.8	**1.9517**	0.020	1.0	ug/L	204	Standard
	Pb	208	34195.5	0.8	**2.0245**	0.016	0.8	ug/L	852	Standard
	U	238	19291.3	1.0	**3.1243**	0.008	0.3	ug/L	13	Standard
>	Bi	209	425624.2	1.2				ug/L	449044	Standard

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Na	23	11.7	24.7	**50.8395**	15.486	30.5	mg/L	2	Standard
Mg	24	70599.2	2.2	**89.3675**	1.571	1.8	mg/L	58	Standard
K	39	696.7	9.4	**2.4576**	0.269	10.9	mg/L	27	Standard
Ca	43	1303.4	8.1	**87.3396**	5.961	6.8	mg/L	20	Standard
Fe	54	3302.4	5.0	**2.4661**	0.145	5.9	mg/L	158	Standard
Fe	57	1820.1	6.9	**5.0122**	0.320	6.4	mg/L	267	Standard
> **Sc-1**	45	41498.4	1.6				mg/L	38815	Standard
Cl	35	155745.8	0.9				ug/L	57611	Standard
Kr	83	2.3	107.9				ug/L	2	Standard
Br	81	21044.6	6.1				ug/L	1617	Standard
P	31	23146.0	0.9				ug/L	19244	Standard
S	34	3535.4	4.1				ug/L	3557	Standard
Sr	88	1208.4	2.4				ug/L	65	Standard
C	12	123.3	49.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	86.6				mg/L	23	Standard
Dy	164	2373.5	4.1				mg/L	13	Standard
Ho-1	165	1490.1	6.0				mg/L	10	Standard
Er	166	1113.4	3.4				mg/L	13	Standard
I	127	189431.0	7.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		144.137	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.782	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.737
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.785
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606131309
Sample Date/Time: Wednesday, July 06, 2016 13:14:15
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	112009.2	1.2				ug/L	68501	Standard
	Be	9	11.7	89.2	**0.0273**	0.007	25.8	ug/L	8	Standard
	Al	27	60416903.1	0.9	**260.2685**	0.699	0.3	ug/L	1397	Standard
	Sc	45	40617.7	2.9				ug/L	38815	Standard
	Ti	47	233.7	12.0	**0.6551**	0.079	12.0	ug/L	36	Standard
	V	51	2902.2	5.1	**0.2606**	0.020	7.8	ug/L	1284	Standard
	Cr	52	10576.4	0.2	**0.5745**	0.006	1.0	ug/L	6503	Standard
	Cr	53	935.0	8.0	**0.6514**	0.081	12.4	ug/L	492	Standard
	Mn	55	366630.7	1.4	**58.7416**	0.775	1.3	ug/L	841	Standard
	Co	59	1672.1	6.1	**0.2774**	0.017	6.1	ug/L	229	Standard
	Ni	60	5612.4	2.4	**3.1269**	0.078	2.5	ug/L	344	Standard
	Cu	65	3260.7	3.2	**1.8987**	0.055	2.9	ug/L	115	Standard
	Zn	66	2963.3	1.2	**2.7722**	0.047	1.7	ug/L	190	Standard
>	**Ge**	72	417618.5	0.4				ug/L	409858	Standard
	As	75	338.7	3.7	**0.4195**	0.011	2.6	ug/L	-22	Standard
	Se	82	165.1	4.0	**1.4829**	0.064	4.3	ug/L	18	Standard
	Se-1	77	92.0	7.5	**0.5522**	0.098	17.7	ug/L	50	Standard
>	**Ga**	71	76.7	32.2				mg/L	97	Standard
	Rb	85	9524.7	2.8				ug/L	25	Standard
	Y	89	362464.7	1.2				ug/L	376763	Standard
>	**Rh**	103	398.3	9.4				ug/L	20	Standard
	Mo	98	52319.0	0.7	**22.4021**	0.342	1.5	ug/L	51	Standard
	Ag	107	111.0	7.0	**0.0414**	0.001	2.8	ug/L	76	Standard
	Cd	111	66.3	40.6	**0.0737**	0.014	18.5	mg/L	6	Standard
	Cd	114	308.8	11.5	**0.1029**	0.008	7.4	ug/L	18	Standard
>	**In**	115	492839.5	0.9				ug/L	507261	Standard
	Sn	118	665.0	17.0	**0.0148**	0.020	136.3	ug/L	683	Standard
	Sb	123	764.7	12.4	**0.1630**	0.021	13.0	ug/L	446	Standard
	Ba	135	9741.8	0.6	**5.2844**	0.019	0.4	ug/L	28	Standard
	Ce	140	305.0	27.4				ug/L	33	Standard
>	**Tb**	159	798779.4	1.0				ug/L	800803	Standard
	Ho	165	31.7	39.7				ug/L	10	Standard
	Tl	203	781.0	0.8	**0.1406**	0.001	0.7	ug/L	13	Standard
	Tl	205	756.7	10.9	**0.1626**	0.013	8.1	ug/L	13	Standard
	Pb	206	357.0	22.6	**0.0724**	0.017	23.9	ug/L	226	Standard
	Pb	207	331.7	30.7	**0.0771**	0.024	31.2	ug/L	204	Standard
	Pb	208	1314.7	25.2	**0.0776**	0.020	25.3	ug/L	852	Standard
	U	238	20801.9	1.6	**3.3517**	0.050	1.5	ug/L	13	Standard
>	**Bi**	209	427402.4	0.1				ug/L	449044	Standard

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Na	23	13.3	114.6	**62.0110**	82.574	133.2	mg/L	2	Standard
Mg	24	78283.4	0.8	**101.3167**	3.674	3.6	mg/L	58	Standard
K	39	796.7	7.0	**2.8989**	0.304	10.5	mg/L	27	Standard
Ca	43	1360.1	8.5	**93.1611**	5.461	5.9	mg/L	20	Standard
Fe	54	138.6	19.3	**-0.0090**	0.023	257.3	mg/L	158	Standard
Fe	57	1113.4	5.6	**2.8774**	0.101	3.5	mg/L	267	Standard
Sc-1	45	40617.7	2.9				mg/L	38815	Standard
Cl	35	174591.6	1.3				ug/L	57611	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	22737.1	1.6				ug/L	1617	Standard
P	31	22062.7	1.2				ug/L	19244	Standard
S	34	3545.4	4.9				ug/L	3557	Standard
Sr	88	1375.1	2.5				ug/L	65	Standard
C	12	143.3	17.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	23	Standard
Dy	164	35.1	42.2				mg/L	13	Standard
Ho-1	165	31.7	39.7				mg/L	10	Standard
Er	166	33.3	75.5				mg/L	13	Standard
I	127	145904.3	2.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		163.514	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.893	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.157
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.181
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606131310
Sample Date/Time: Wednesday, July 06, 2016 13:17:26
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	106268.1	1.4				ug/L	68501	Standard
	Be	9	63.3	38.9	**0.0644**	0.017	26.8	ug/L	8	Standard
	Al	27	52095911.6	1.1	**236.5686**	3.641	1.5	ug/L	1397	Standard
	Sc	45	39504.8	2.4				ug/L	38815	Standard
	Ti	47	3313.4	1.4	**9.7590**	0.120	1.2	ug/L	36	Standard
	V	51	18247.3	0.4	**2.4270**	0.009	0.4	ug/L	1284	Standard
	Cr	52	21880.5	1.2	**2.2188**	0.034	1.6	ug/L	6503	Standard
	Cr	53	2420.2	1.3	**2.3803**	0.041	1.7	ug/L	492	Standard
	Mn	55	1489117.7	1.3	**241.3594**	3.092	1.3	ug/L	841	Standard
	Co	59	7567.6	1.7	**1.2490**	0.022	1.8	ug/L	229	Standard
	Ni	60	6846.2	2.0	**3.8905**	0.085	2.2	ug/L	344	Standard
	Cu	65	3759.5	2.6	**2.2142**	0.059	2.6	ug/L	115	Standard
	Zn	66	21879.1	1.2	**21.4117**	0.233	1.1	ug/L	190	Standard
>	**Ge**	72	413331.3	0.2				ug/L	409858	Standard
	As	75	501.1	13.5	**0.5781**	0.064	11.1	ug/L	-22	Standard
	Se	82	133.9	9.5	**1.2055**	0.119	9.9	ug/L	18	Standard
	Se-1	77	81.7	12.7	**0.4168**	0.148	35.4	ug/L	50	Standard
>	**Ga**	71	2415.2	7.5				mg/L	97	Standard
	Rb	85	13447.6	2.0				ug/L	25	Standard
	Y	89	375082.1	2.0				ug/L	376763	Standard
>	**Rh**	103	300.0	16.9				ug/L	20	Standard
	Mo	98	77032.6	1.1	**32.9500**	0.312	0.9	ug/L	51	Standard
	Ag	107	104.0	8.3	**0.0403**	0.001	3.4	ug/L	76	Standard
	Cd	111	84.0	6.5	**0.0830**	0.003	3.8	mg/L	6	Standard
	Cd	114	521.9	11.1	**0.1480**	0.011	7.6	ug/L	18	Standard
>	**In**	115	492807.2	0.8				ug/L	507261	Standard
	Sn	118	923.4	10.2	**0.0635**	0.017	26.7	ug/L	683	Standard
	Sb	123	509.4	21.5	**0.1018**	0.026	25.1	ug/L	446	Standard
	Ba	135	49536.5	1.3	**26.8113**	0.563	2.1	ug/L	28	Standard
	Ce	140	27353.0	2.7				ug/L	33	Standard
>	**Tb**	159	798757.9	0.8				ug/L	800803	Standard
	Ho	165	1208.4	4.8				ug/L	10	Standard
	Tl	203	1080.7	2.6	**0.1803**	0.004	2.2	ug/L	13	Standard
	Tl	205	941.7	9.1	**0.1904**	0.013	7.0	ug/L	13	Standard
	Pb	206	8916.3	0.4	**1.8863**	0.006	0.3	ug/L	226	Standard
	Pb	207	7376.8	1.2	**1.7210**	0.025	1.4	ug/L	204	Standard
	Pb	208	30608.2	0.4	**1.7869**	0.009	0.5	ug/L	852	Standard
	U	238	18463.6	1.5	**2.9510**	0.048	1.6	ug/L	13	Standard
>	**Bi**	209	431634.5	0.2				ug/L	449044	Standard

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Na	23	13.3	57.3	**62.5936**	41.262	65.9	mg/L	2	Standard
Mg	24	69025.2	2.0	**91.8053**	2.126	2.3	mg/L	58	Standard
K	39	646.7	2.5	**2.3927**	0.113	4.7	mg/L	27	Standard
Ca	43	1190.0	3.7	**83.7533**	1.325	1.6	mg/L	20	Standard
Fe	54	2913.4	1.1	**2.2771**	0.083	3.6	mg/L	158	Standard
Fe	57	1741.8	2.1	**5.0459**	0.132	2.6	mg/L	267	Standard
> **Sc-1**	45	39504.8	2.4				mg/L	38815	Standard
Cl	35	159194.6	0.7				ug/L	57611	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	17703.7	0.6				ug/L	1617	Standard
P	31	21099.7	2.5				ug/L	19244	Standard
S	34	3588.8	1.7				ug/L	3557	Standard
Sr	88	1331.7	11.3				ug/L	65	Standard
C	12	116.7	9.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	43.3	13.3				mg/L	23	Standard
Dy	164	2016.1	16.6				mg/L	13	Standard
Ho-1	165	1208.4	4.8				mg/L	10	Standard
Er	166	920.0	8.6				mg/L	13	Standard
I	127	174842.2	7.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		155.133	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.847	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	97.151	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.123	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606131311
Sample Date/Time: Wednesday, July 06, 2016 13:20:37
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	118945.1	1.5				ug/L	68501	Standard
	Be	9	20.0	75.0	**0.0321**	0.009	29.1	ug/L	8	Standard
	Al	27	59847300.9	2.0	**242.8152**	6.040	2.5	ug/L	1397	Standard
	Sc	45	40133.1	1.7				ug/L	38815	Standard
	Ti	47	250.0	3.8	**0.7024**	0.019	2.7	ug/L	36	Standard
	V	51	2763.5	2.9	**0.2410**	0.007	2.7	ug/L	1284	Standard
	Cr	52	10665.1	1.1	**0.5862**	0.006	1.1	ug/L	6503	Standard
	Cr	53	901.7	5.9	**0.6125**	0.051	8.3	ug/L	492	Standard
	Mn	55	321677.0	3.2	**51.4864**	0.989	1.9	ug/L	841	Standard
	Co	59	1652.1	4.6	**0.2739**	0.009	3.4	ug/L	229	Standard
	Ni	60	5762.4	1.4	**3.2127**	0.047	1.5	ug/L	344	Standard
	Cu	65	3074.6	2.7	**1.7884**	0.032	1.8	ug/L	115	Standard
	Zn	66	2723.6	3.0	**2.5374**	0.093	3.7	ug/L	190	Standard
>	**Ge**	72	417885.3	1.3				ug/L	409858	Standard
	As	75	346.6	6.8	**0.4267**	0.019	4.6	ug/L	-22	Standard
	Se	82	150.0	1.7	**1.3415**	0.014	1.1	ug/L	18	Standard
	Se-1	77	80.3	7.3	**0.3848**	0.073	18.9	ug/L	50	Standard
>	**Ga**	71	56.7	25.5				mg/L	97	Standard
	Rb	85	9339.5	2.6				ug/L	25	Standard
	Y	89	365791.3	0.7				ug/L	376763	Standard
>	**Rh**	103	375.0	15.0				ug/L	20	Standard
	Mo	98	48799.1	2.4	**20.6077**	0.295	1.4	ug/L	51	Standard
	Ag	107	106.3	18.5	**0.0404**	0.003	7.0	ug/L	76	Standard
	Cd	111	51.0	31.1	**0.0653**	0.008	11.7	mg/L	6	Standard
	Cd	114	304.0	25.3	**0.1009**	0.016	15.7	ug/L	18	Standard
>	**In**	115	499809.1	2.0				ug/L	507261	Standard
	Sn	118	658.3	6.1	**0.0119**	0.005	43.2	ug/L	683	Standard
	Sb	123	517.5	16.7	**0.1024**	0.023	22.2	ug/L	446	Standard
	Ba	135	9295.5	1.5	**4.9733**	0.035	0.7	ug/L	28	Standard
	Ce	140	326.7	10.2				ug/L	33	Standard
>	**Tb**	159	803773.3	0.9				ug/L	800803	Standard
	Ho	165	38.3	66.9				ug/L	10	Standard
	Tl	203	761.0	2.1	**0.1360**	0.001	1.0	ug/L	13	Standard
	Tl	205	746.7	8.7	**0.1588**	0.009	5.9	ug/L	13	Standard
	Pb	206	396.3	12.6	**0.0792**	0.010	12.4	ug/L	226	Standard
	Pb	207	324.7	4.8	**0.0741**	0.003	4.6	ug/L	204	Standard
	Pb	208	1389.7	4.7	**0.0805**	0.003	3.8	ug/L	852	Standard
	U	238	20230.2	0.9	**3.2026**	0.028	0.9	ug/L	13	Standard
>	**Bi**	209	435285.7	0.8				ug/L	449044	Standard

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Na	23	8.3	69.3	**35.2289**	30.621	86.9	mg/L	2	Standard
Mg	24	76150.9	0.8	**99.6881**	0.997	1.0	mg/L	58	Standard
K	39	673.3	8.3	**2.4572**	0.258	10.5	mg/L	27	Standard
Ca	43	1470.1	6.0	**102.1100**	5.109	5.0	mg/L	20	Standard
Fe	54	163.6	6.0	**0.0122**	0.008	61.6	mg/L	158	Standard
Fe	57	1090.0	8.3	**2.8493**	0.334	11.7	mg/L	267	Standard
> **Sc-1**	45	40133.1	1.7				mg/L	38815	Standard
Cl	35	175348.2	1.1				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	22723.7	4.9				ug/L	1617	Standard
P	31	22189.6	0.9				ug/L	19244	Standard
S	34	3623.8	1.4				ug/L	3557	Standard
Sr	88	1358.4	7.2				ug/L	65	Standard
C	12	133.3	38.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	49.5				mg/L	23	Standard
Dy	164	55.7	38.2				mg/L	13	Standard
Ho-1	165	38.3	66.9				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	135084.6	1.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		173.640	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.959	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.531	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.936	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606131312
Sample Date/Time: Wednesday, July 06, 2016 13:23:49
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74687.0	2.1				ug/L	68501	Standard
	Be	9	21.7	58.1	**0.0412**	0.012	30.1	ug/L	8	Standard
	Al	27	121226.9	4.1	**0.8180**	0.021	2.6	ug/L	1397	Standard
	Sc	45	46195.4	5.0				ug/L	38815	Standard
	Ti	47	1765.8	3.6	**5.0716**	0.166	3.3	ug/L	36	Standard
	V	51	952242.6	1.1	**131.0501**	0.792	0.6	ug/L	1284	Standard
	Cr	52	25163.5	1.1	**2.6112**	0.016	0.6	ug/L	6503	Standard
	Cr	53	3345.4	2.9	**3.3642**	0.111	3.3	ug/L	492	Standard
	Mn	55	22524.4	1.1	**3.4752**	0.031	0.9	ug/L	841	Standard
	Co	59	1867.8	4.0	**0.3055**	0.010	3.4	ug/L	229	Standard
	Ni	60	2889.9	0.3	**1.5131**	0.005	0.3	ug/L	344	Standard
	Cu	65	15427.2	0.5	**8.9242**	0.052	0.6	ug/L	115	Standard
	Zn	66	2837.6	3.0	**2.6163**	0.082	3.1	ug/L	190	Standard
>	**Ge**	72	422725.3	0.6				ug/L	409858	Standard
	As	75	83342.9	0.8	**78.0495**	0.213	0.3	ug/L	-22	Standard
	Se	82	1406.5	2.7	**12.8586**	0.427	3.3	ug/L	18	Standard
	Se-1	77	976.4	1.2	**12.9889**	0.247	1.9	ug/L	50	Standard
>	**Ga**	71	7822.0	4.1				mg/L	97	Standard
	Rb	85	9009.3	3.0				ug/L	25	Standard
	Y	89	365311.7	1.0				ug/L	376763	Standard
>	**Rh**	103	25.0	103.9				ug/L	20	Standard
	Mo	98	102838.5	0.2	**43.0255**	0.171	0.4	ug/L	51	Standard
	Ag	107	207.7	3.4	**0.0566**	0.001	2.0	ug/L	76	Standard
	Cd	111	-42.9	18.2	**0.0176**	0.004	22.6	mg/L	6	Standard
	Cd	114	287.6	3.5	**0.0971**	0.002	2.3	ug/L	18	Standard
>	**In**	115	503572.6	0.2				ug/L	507261	Standard
	Sn	118	1271.7	5.8	**0.1239**	0.014	11.4	ug/L	683	Standard
	Sb	123	6992.3	1.3	**1.6218**	0.024	1.5	ug/L	446	Standard
	Ba	135	6974.3	1.1	**3.7072**	0.039	1.0	ug/L	28	Standard
	Ce	140	9868.2	2.8				ug/L	33	Standard
>	**Tb**	159	803443.7	0.1				ug/L	800803	Standard
	Ho	165	190.0	16.4				ug/L	10	Standard
	Tl	203	56.3	5.7	**0.0407**	0.000	1.1	ug/L	13	Standard
	Tl	205	45.0	48.4	**0.0493**	0.003	6.6	ug/L	13	Standard
	Pb	206	1400.1	2.2	**0.2825**	0.008	2.8	ug/L	226	Standard
	Pb	207	1130.4	1.0	**0.2536**	0.002	0.8	ug/L	204	Standard
	Pb	208	4754.6	0.4	**0.2680**	0.003	1.1	ug/L	852	Standard
	U	238	139.3	1.5	**0.0638**	0.000	0.3	ug/L	13	Standard
>	**Bi**	209	447272.3	0.8				ug/L	449044	Standard

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Na	23	1.7	173.2	**-1.5275**	12.566	822.6	mg/L	2	Standard
Mg	24	80273.8	0.4	**91.4367**	4.664	5.1	mg/L	58	Standard
K	39	151.7	22.0	**0.3638**	0.088	24.1	mg/L	27	Standard
Ca	43	53.3	28.6	**2.0171**	1.102	54.7	mg/L	20	Standard
Fe	54	330.9	19.8	**0.1145**	0.058	50.5	mg/L	158	Standard
Fe	57	306.7	7.4	**0.1824**	0.050	27.7	mg/L	267	Standard
> **Sc-1**	45	46195.4	5.0				mg/L	38815	Standard
Cl	35	70691.9	1.4				ug/L	57611	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	6874.9	2.4				ug/L	1617	Standard
P	31	43087.9	1.6				ug/L	19244	Standard
S	34	3130.3	1.7				ug/L	3557	Standard
Sr	88	113.3	11.1				ug/L	65	Standard
C	12	116.7	38.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	20.0				mg/L	23	Standard
Dy	164	362.7	17.1				mg/L	13	Standard
Ho-1	165	190.0	16.4				mg/L	10	Standard
Er	166	153.3	7.5				mg/L	13	Standard
I	127	18636.5	0.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.030	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.139	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.273
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.605
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Upper, S, EEE	V	51	

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Method 6020 - Summary Report

Sample ID: L1606131313
Sample Date/Time: Wednesday, July 06, 2016 13:27:00
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74881.2	0.3				ug/L	68501	Standard
	Be	9	18.3	56.8	**0.0379**	0.010	27.6	ug/L	8	Standard
	Al	27	15759.9	6.9	**0.1366**	0.007	5.1	ug/L	1397	Standard
	Sc	45	44047.3	0.7				ug/L	38815	Standard
	Ti	47	750.4	1.3	**2.1655**	0.009	0.4	ug/L	36	Standard
	V	51	807233.0	1.0	**112.4283**	1.823	1.6	ug/L	1284	Standard
	Cr	52	22355.5	1.3	**2.2538**	0.026	1.1	ug/L	6503	Standard
	Cr	53	2878.6	7.2	**2.8773**	0.265	9.2	ug/L	492	Standard
	Mn	55	2539.5	0.9	**0.3116**	0.003	1.1	ug/L	841	Standard
	Co	59	1098.0	3.2	**0.1840**	0.005	2.8	ug/L	229	Standard
	Ni	60	2191.8	3.9	**1.1252**	0.061	5.4	ug/L	344	Standard
	Cu	65	13147.4	0.4	**7.6957**	0.046	0.6	ug/L	115	Standard
	Zn	66	1622.1	3.7	**1.4659**	0.055	3.8	ug/L	190	Standard
>	**Ge**	72	417667.4	0.9				ug/L	409858	Standard
	As	75	65646.2	1.0	**62.2459**	0.908	1.5	ug/L	-22	Standard
	Se	82	1281.5	2.7	**11.8523**	0.347	2.9	ug/L	18	Standard
	Se-1	77	877.4	3.0	**11.7424**	0.290	2.5	ug/L	50	Standard
>	**Ga**	71	7043.3	2.2				mg/L	97	Standard
	Rb	85	6473.1	4.8				ug/L	25	Standard
	Y	89	361539.6	1.0				ug/L	376763	Standard
>	**Rh**	103	35.0	28.6				ug/L	20	Standard
	Mo	98	91857.5	1.2	**38.8302**	0.319	0.8	ug/L	51	Standard
	Ag	107	120.0	5.2	**0.0427**	0.001	2.5	ug/L	76	Standard
	Cd	111	-68.2	22.5	**0.0044**	0.008	181.8	mg/L	6	Standard
	Cd	114	168.6	5.8	**0.0727**	0.002	2.6	ug/L	18	Standard
>	**In**	115	498500.3	1.2				ug/L	507261	Standard
	Sn	118	985.0	10.5	**0.0729**	0.018	24.8	ug/L	683	Standard
	Sb	123	5971.7	3.5	**1.3968**	0.062	4.5	ug/L	446	Standard
	Ba	135	5602.4	1.3	**3.0115**	0.051	1.7	ug/L	28	Standard
	Ce	140	348.3	13.0				ug/L	33	Standard
>	**Tb**	159	797835.4	0.2				ug/L	800803	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	31.3	7.4	**0.0375**	0.000	0.8	ug/L	13	Standard
	Tl	205	36.7	34.3	**0.0482**	0.002	4.0	ug/L	13	Standard
	Pb	206	352.7	5.6	**0.0690**	0.004	5.6	ug/L	226	Standard
	Pb	207	319.7	1.3	**0.0718**	0.001	1.6	ug/L	204	Standard
	Pb	208	1334.7	4.5	**0.0761**	0.004	4.8	ug/L	852	Standard
	U	238	71.3	19.4	**0.0536**	0.002	4.0	ug/L	13	Standard
>	**Bi**	209	442170.6	0.3				ug/L	449044	Standard

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Na	23	1.7	173.2	**-0.8330**	13.769	1652.9	mg/L	2	Standard
Mg	24	73682.1	1.9	**87.8782**	2.088	2.4	mg/L	58	Standard
K	39	131.7	28.8	**0.3201**	0.130	40.5	mg/L	27	Standard
Ca	43	48.3	39.2	**1.8220**	1.221	67.0	mg/L	20	Standard
Fe	54	173.2	27.4	**0.0076**	0.035	465.1	mg/L	158	Standard
Fe	57	268.3	19.1	**0.1117**	0.154	137.8	mg/L	267	Standard
> **Sc-1**	45	44047.3	0.7				mg/L	38815	Standard
Cl	35	68623.1	1.0				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	6154.6	8.4				ug/L	1617	Standard
P	31	39404.5	1.6				ug/L	19244	Standard
S	34	3313.7	8.1				ug/L	3557	Standard
Sr	88	98.3	14.7				ug/L	65	Standard
C	12	103.3	59.1				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	93.3	27.0				mg/L	23	Standard
Dy	164	16.0	73.0				mg/L	13	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	16884.4	1.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.314	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.905	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.273
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.469
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Upper, S, EEE	V	51	

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Method 6020 - Summary Report

Sample ID: L1606131314
Sample Date/Time: Wednesday, July 06, 2016 13:30:12
Number of Replicates: 3
Autosampler Position: 346
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75656.9	2.8				ug/L	68501	Standard
	Be	9	15.0	33.3	**0.0345**	0.005	15.6	ug/L	8	Standard
	Al	27	14080.0	14.5	**0.1247**	0.011	8.5	ug/L	1397	Standard
	Sc	45	41217.7	1.6				ug/L	38815	Standard
	Ti	47	52.3	16.0	**0.1193**	0.023	19.3	ug/L	36	Standard
	V	51	1921.9	1.9	**0.1137**	0.005	4.1	ug/L	1284	Standard
	Cr	52	10025.0	1.0	**0.4416**	0.001	0.3	ug/L	6503	Standard
	Cr	53	720.0	11.6	**0.3743**	0.092	24.7	ug/L	492	Standard
	Mn	55	2755.6	1.7	**0.3296**	0.011	3.2	ug/L	841	Standard
	Co	59	220.0	2.7	**0.0399**	0.001	3.1	ug/L	229	Standard
	Ni	60	727.0	7.2	**0.2514**	0.026	10.3	ug/L	344	Standard
	Cu	65	392.3	0.5	**0.2081**	0.003	1.5	ug/L	115	Standard
	Zn	66	1867.1	2.7	**1.6357**	0.048	2.9	ug/L	190	Standard
>	**Ge**	72	434092.3	1.0				ug/L	409858	Standard
	As	75	-44.4	23.2	**0.0584**	0.009	16.0	ug/L	-22	Standard
	Se	82	16.6	20.7	**0.0974**	0.032	32.9	ug/L	18	Standard
	Se-1	77	53.7	22.5	**-0.0223**	0.171	769.3	ug/L	50	Standard
>	**Ga**	71	60.0					mg/L	97	Standard
	Rb	85	51.7	20.1				ug/L	25	Standard
	Y	89	374010.2	1.0				ug/L	376763	Standard
>	**Rh**	103	26.7	39.0				ug/L	20	Standard
	Mo	98	123.9	8.7	**0.1214**	0.005	3.7	ug/L	51	Standard
	Ag	107	66.0	4.0	**0.0334**	0.000	1.2	ug/L	76	Standard
	Cd	111	8.1	26.0	**0.0433**	0.001	2.4	mg/L	6	Standard
	Cd	114	20.3	63.2	**0.0414**	0.003	6.3	ug/L	18	Standard
>	**In**	115	522826.6	0.6				ug/L	507261	Standard
	Sn	118	671.7	15.4	**0.0090**	0.019	209.6	ug/L	683	Standard
	Sb	123	373.8	29.8	**0.0643**	0.026	39.9	ug/L	446	Standard
	Ba	135	367.3	10.7	**0.2030**	0.020	10.1	ug/L	28	Standard
	Ce	140	70.0	24.7				ug/L	33	Standard
>	**Tb**	159	816297.7	0.4				ug/L	800803	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	12.7	43.5	**0.0349**	0.001	2.0	ug/L	13	Standard
	Tl	205	10.0	86.6	**0.0440**	0.001	2.8	ug/L	13	Standard
	Pb	206	293.7	4.0	**0.0530**	0.003	4.9	ug/L	226	Standard
	Pb	207	253.3	4.7	**0.0531**	0.003	5.5	ug/L	204	Standard
	Pb	208	1091.0	0.9	**0.0584**	0.000	0.3	ug/L	852	Standard
	U	238	6.3	39.7	**0.0435**	0.000	0.8	ug/L	13	Standard
>	**Bi**	209	471129.2	0.7				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	81.7	9.4	**0.0659**	0.011	17.4	mg/L	58	Standard
K	39	40.0	33.1	**0.0087**	0.051	587.7	mg/L	27	Standard
Ca	43	40.0	33.1	**1.4722**	0.959	65.1	mg/L	20	Standard
Fe	54	165.4	13.6	**0.0102**	0.017	169.3	mg/L	158	Standard
Fe	57	263.3	9.6	**0.1498**	0.077	51.2	mg/L	267	Standard
> **Sc-1**	45	41217.7	1.6				mg/L	38815	Standard
Cl	35	74398.3	2.1				ug/L	57611	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	1870.1	8.9				ug/L	1617	Standard
P	31	20320.3	3.0				ug/L	19244	Standard
S	34	3478.7	2.9				ug/L	3557	Standard
Sr	88	58.3	13.1				ug/L	65	Standard
C	12	96.7	26.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	50.0				mg/L	23	Standard
Dy	164	9.4	186.5				mg/L	13	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	11277.5	2.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.446	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.913	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.069
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.918
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 13:33:25
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71032.9	3.2				ug/L	68501	Standard
	Be	9	49644.6	3.8	**52.7590**	0.376	0.7	ug/L	8	Standard
	Al	27	7276045.0	3.6	**49.4520**	0.759	1.5	ug/L	1397	Standard
	Sc	45	40617.7	1.7				ug/L	38815	Standard
	Ti	47	36592.1	1.5	**104.2643**	1.312	1.3	ug/L	36	Standard
	V	51	380028.6	1.4	**51.5285**	0.926	1.8	ug/L	1284	Standard
	Cr	52	378060.1	1.4	**51.6245**	0.410	0.8	ug/L	6503	Standard
	Cr	53	45820.9	0.9	**50.7151**	0.800	1.6	ug/L	492	Standard
	Mn	55	335783.4	1.7	**52.4367**	0.457	0.9	ug/L	841	Standard
	Co	59	330610.2	0.8	**52.4262**	0.501	1.0	ug/L	229	Standard
	Ni	60	89641.1	1.9	**50.9842**	0.470	0.9	ug/L	344	Standard
	Cu	65	88949.4	1.9	**50.8351**	0.479	0.9	ug/L	115	Standard
	Zn	66	54236.6	1.5	**51.3717**	0.389	0.8	ug/L	190	Standard
>	**Ge**	72	428368.8	1.0				ug/L	409858	Standard
	As	75	55183.0	1.9	**51.0293**	0.514	1.0	ug/L	-22	Standard
	Se	82	5609.7	2.2	**50.7497**	0.648	1.3	ug/L	18	Standard
	Se-1	77	3726.5	0.8	**51.0205**	0.660	1.3	ug/L	50	Standard
>	**Ga**	71	75.0	26.7				mg/L	97	Standard
	Rb	85	798.4	0.7				ug/L	25	Standard
	Y	89	365913.3	1.8				ug/L	376763	Standard
>	**Rh**	103	31.7	45.6				ug/L	20	Standard
	Mo	98	252415.2	0.3	**103.5648**	0.413	0.4	ug/L	51	Standard
	Ag	107	322419.8	1.3	**51.0968**	0.426	0.8	ug/L	76	Standard
	Cd	111	102425.7	0.7	**51.0729**	0.119	0.2	mg/L	6	Standard
	Cd	114	248750.6	1.3	**50.7350**	0.434	0.9	ug/L	18	Standard
>	**In**	115	512998.2	0.5				ug/L	507261	Standard
	Sn	118	281858.1	1.8	**50.8022**	0.706	1.4	ug/L	683	Standard
	Sb	123	224590.4	2.0	**51.7546**	0.851	1.6	ug/L	446	Standard
	Ba	135	96967.3	0.4	**50.3975**	0.124	0.2	ug/L	28	Standard
	Ce	140	76.7	22.9				ug/L	33	Standard
>	**Tb**	159	807610.1	1.2				ug/L	800803	Standard
	Ho	165	13.3	108.3				ug/L	10	Standard
	Tl	203	402371.9	0.7	**51.2061**	0.338	0.7	ug/L	13	Standard
	Tl	205	361232.2	0.6	**53.0904**	0.997	1.9	ug/L	13	Standard
	Pb	206	258336.1	0.4	**51.2021**	0.466	0.9	ug/L	226	Standard
	Pb	207	236173.9	1.0	**51.5463**	0.597	1.2	ug/L	204	Standard
	Pb	208	955448.1	0.9	**52.1465**	0.509	1.0	ug/L	852	Standard
	U	238	353176.6	0.8	**52.0549**	0.397	0.8	ug/L	13	Standard
>	**Bi**	209	461695.2	1.3				ug/L	449044	Standard

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Na	23	1.7	173.2	**-0.0060**	15.20	254926.2	mg/L	2	Standard
Mg	24	3982.2	7.2	**5.1131**	0.347	6.8	mg/L	58	Standard
K	39	1251.7	4.8	**4.6283**	0.271	5.8	mg/L	27	Standard
Ca	43	98.3	10.6	**5.5607**	0.773	13.9	mg/L	20	Standard
Fe	54	6182.6	4.1	**4.8281**	0.276	5.7	mg/L	158	Standard
Fe	57	1796.8	8.3	**5.0597**	0.384	7.6	mg/L	267	Standard
> **Sc-1**	45	40617.7	1.7				mg/L	38815	Standard
Cl	35	71016.7	1.7				ug/L	57611	Standard
Kr	83	1.7	124.9				ug/L	2	Standard
Br	81	1816.8	11.3				ug/L	1617	Standard
P	31	20987.9	2.4				ug/L	19244	Standard
S	34	3898.8	3.0				ug/L	3557	Standard
Sr	88	63.3	88.7				ug/L	65	Standard
C	12	73.3	20.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	23	Standard
Dy	164	12.5	122.8				mg/L	13	Standard
Ho-1	165	13.3	108.3				mg/L	10	Standard
Er	166	16.7	69.3				mg/L	13	Standard
I	127	9928.3	0.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	105.518		
Al	27	98.904		
Sc	45			
Ti	47	104.264		
V	51	103.057		
Cr	52	103.249		
Cr	53			
Mn	55	104.873		
Co	59	104.852		
Ni	60	101.968		
Cu	65	101.670		
Zn	66	102.743		
> Ge	72		104.516	
As	75	102.059		
Se	82	101.499		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	103.565		
Ag	107	102.194		
Cd	111	102.146		
Cd	114			
In	115			101.131
Sn	118	101.604		
Sb	123	103.509		
Ba	135	100.795		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.412		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.293		
U	238	104.110		
Bi	209			102.817
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 13:36:36
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70170.6	3.6				ug/L	68501	Standard
	Be	9	20.0	66.1	**0.0408**	0.014	34.6	ug/L	8	Standard
	Al	27	4097.2	22.8	**0.0631**	0.005	8.6	ug/L	1397	Standard
	Sc	45	40888.4	1.6				ug/L	38815	Standard
	Ti	47	36.7	15.0	**0.0775**	0.016	20.6	ug/L	36	Standard
	V	51	1298.2	6.1	**0.0337**	0.009	26.1	ug/L	1284	Standard
	Cr	52	6730.8	1.5	**0.0096**	0.023	239.8	ug/L	6503	Standard
	Cr	53	421.7	5.3	**0.0558**	0.029	51.7	ug/L	492	Standard
	Mn	55	951.7	0.7	**0.0542**	0.001	2.6	ug/L	841	Standard
	Co	59	222.3	4.9	**0.0410**	0.001	3.3	ug/L	229	Standard
	Ni	60	546.3	4.0	**0.1564**	0.009	5.7	ug/L	344	Standard
	Cu	65	169.3	14.7	**0.0843**	0.015	17.4	ug/L	115	Standard
	Zn	66	237.0	4.9	**0.1134**	0.013	11.2	ug/L	190	Standard
>	**Ge**	72	425017.2	1.2				ug/L	409858	Standard
	As	75	-56.5	37.0	**0.0462**	0.020	43.5	ug/L	-22	Standard
	Se	82	18.8	28.9	**0.1200**	0.050	41.3	ug/L	18	Standard
	Se-1	77	56.7	22.1	**0.0358**	0.184	513.5	ug/L	50	Standard
>	**Ga**	71	38.3	32.8				mg/L	97	Standard
	Rb	85	21.7	58.1				ug/L	25	Standard
	Y	89	373106.6	0.9				ug/L	376763	Standard
>	**Rh**	103	11.7	24.7				ug/L	20	Standard
	Mo	98	207.2	6.5	**0.1549**	0.006	3.9	ug/L	51	Standard
	Ag	107	99.7	6.4	**0.0386**	0.001	2.3	ug/L	76	Standard
	Cd	111	12.3	44.5	**0.0454**	0.003	5.9	mg/L	6	Standard
	Cd	114	43.6	27.2	**0.0461**	0.002	5.3	ug/L	18	Standard
>	**In**	115	523036.2	0.7				ug/L	507261	Standard
	Sn	118	858.4	20.1	**0.0421**	0.032	74.9	ug/L	683	Standard
	Sb	123	696.7	34.3	**0.1374**	0.055	40.1	ug/L	446	Standard
	Ba	135	33.3	29.6	**0.0327**	0.005	15.2	ug/L	28	Standard
	Ce	140	15.0	100.0				ug/L	33	Standard
>	**Tb**	159	811648.4	1.8				ug/L	800803	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	53.3	18.0	**0.0400**	0.001	3.2	ug/L	13	Standard
	Tl	205	50.0	43.6	**0.0498**	0.003	6.2	ug/L	13	Standard
	Pb	206	260.0	8.8	**0.0469**	0.005	10.7	ug/L	226	Standard
	Pb	207	224.7	4.5	**0.0473**	0.002	3.4	ug/L	204	Standard
	Pb	208	928.0	6.1	**0.0501**	0.003	6.3	ug/L	852	Standard
	U	238	46.7	34.8	**0.0494**	0.002	5.0	ug/L	13	Standard
>	**Bi**	209	467536.0	1.3				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	68.3	33.0	**0.0494**	0.029	58.3	mg/L	58	Standard
K	39	21.7	74.2	**-0.0604**	0.059	97.8	mg/L	27	Standard
Ca	43	16.7	34.6	**-0.1281**	0.396	308.9	mg/L	20	Standard
Fe	54	142.5	13.4	**-0.0070**	0.016	223.0	mg/L	158	Standard
Fe	57	210.0	13.3	**-0.0128**	0.088	687.9	mg/L	267	Standard
Sc-1	45	40888.4	1.6				mg/L	38815	Standard
Cl	35	70304.7	0.6				ug/L	57611	Standard
Kr	83	3.0	57.7				ug/L	2	Standard
Br	81	1736.8	5.0				ug/L	1617	Standard
P	31	20357.0	2.1				ug/L	19244	Standard
S	34	3848.8	1.9				ug/L	3557	Standard
Sr	88	75.0	40.6				ug/L	65	Standard
C	12	76.7	19.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	89.2				mg/L	23	Standard
Dy	164	6.5	179.6				mg/L	13	Standard
Ho-1	165	8.3	91.7				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	8040.5	0.6				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.699	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.110
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.118
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Tl	203	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBS M3 WG574881-02
Sample Date/Time: Wednesday, July 06, 2016 13:40:17
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68772.5	2.8				ug/L	68501	Standard
	Be	9	26.7	57.3	**0.0485**	0.016	33.3	ug/L	8	Standard
	Al	27	26492.7	43.2	**0.2195**	0.074	33.7	ug/L	1397	Standard
	Sc	45	40814.9	1.9				ug/L	38815	Standard
	Ti	47	68.7	38.8	**0.1678**	0.076	45.2	ug/L	36	Standard
	V	51	1431.9	6.0	**0.0505**	0.012	23.3	ug/L	1284	Standard
	Cr	52	8678.2	2.2	**0.2724**	0.025	9.3	ug/L	6503	Standard
	Cr	53	668.3	1.7	**0.3270**	0.012	3.7	ug/L	492	Standard
	Mn	55	1096.7	5.7	**0.0756**	0.010	12.7	ug/L	841	Standard
	Co	59	218.7	2.3	**0.0401**	0.001	2.1	ug/L	229	Standard
	Ni	60	676.7	1.4	**0.2282**	0.006	2.5	ug/L	344	Standard
	Cu	65	164.7	17.5	**0.0808**	0.016	20.4	ug/L	115	Standard
	Zn	66	1225.4	4.5	**1.0496**	0.052	5.0	ug/L	190	Standard
>	**Ge**	72	428471.9	0.1				ug/L	409858	Standard
	As	75	-34.2	102.1	**0.0673**	0.032	47.9	ug/L	-22	Standard
	Se	82	14.4	31.5	**0.0792**	0.041	51.8	ug/L	18	Standard
	Se-1	77	60.7	4.8	**0.0838**	0.040	47.3	ug/L	50	Standard
>	**Ga**	71	43.3	17.6				mg/L	97	Standard
	Rb	85	50.0	36.1				ug/L	25	Standard
	Y	89	374156.8	0.0				ug/L	376763	Standard
>	**Rh**	103	23.3	32.7				ug/L	20	Standard
	Mo	98	104.8	6.5	**0.1142**	0.003	2.3	ug/L	51	Standard
	Ag	107	77.3	10.5	**0.0353**	0.001	3.5	ug/L	76	Standard
	Cd	111	15.8	51.6	**0.0472**	0.004	8.5	mg/L	6	Standard
	Cd	114	30.5	128.3	**0.0435**	0.008	18.1	ug/L	18	Standard
>	**In**	115	517117.7	0.3				ug/L	507261	Standard
	Sn	118	726.7	15.9	**0.0202**	0.021	104.7	ug/L	683	Standard
	Sb	123	449.3	32.2	**0.0824**	0.033	40.5	ug/L	446	Standard
	Ba	135	85.3	19.1	**0.0597**	0.008	13.9	ug/L	28	Standard
	Ce	140	66.7	18.9				ug/L	33	Standard
>	**Tb**	159	816139.1	1.5				ug/L	800803	Standard
	Ho	165	13.3	57.3				ug/L	10	Standard
	Tl	203	45.0	46.2	**0.0391**	0.003	6.8	ug/L	13	Standard
	Tl	205	38.3	7.5	**0.0482**	0.000	0.8	ug/L	13	Standard
	Pb	206	268.0	2.2	**0.0490**	0.001	2.8	ug/L	226	Standard
	Pb	207	225.0	13.5	**0.0479**	0.007	14.2	ug/L	204	Standard
	Pb	208	928.3	1.6	**0.0506**	0.000	0.9	ug/L	852	Standard
	U	238	21.7	42.9	**0.0458**	0.001	3.0	ug/L	13	Standard
>	**Bi**	209	462790.3	1.0				ug/L	449044	Standard

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Na	23	3.3	173.2	**8.7117**	30.301	347.8	mg/L	2	Standard
Mg	24	56.7	44.4	**0.0345**	0.033	94.3	mg/L	58	Standard
K	39	21.7	74.2	**-0.0592**	0.062	105.0	mg/L	27	Standard
Ca	43	21.7	26.6	**0.2183**	0.387	177.5	mg/L	20	Standard
Fe	54	122.4	12.5	**-0.0227**	0.013	56.3	mg/L	158	Standard
Fe	57	196.7	8.2	**-0.0536**	0.057	106.8	mg/L	267	Standard
> **Sc-1**	45	40814.9	1.9				mg/L	38815	Standard
Cl	35	70365.0	0.8				ug/L	57611	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	1806.8	3.1				ug/L	1617	Standard
P	31	20176.8	1.0				ug/L	19244	Standard
S	34	3830.5	2.6				ug/L	3557	Standard
Sr	88	81.7	30.2				ug/L	65	Standard
C	12	63.3	48.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	23	Standard
Dy	164	9.2	114.0				mg/L	13	Standard
Ho-1	165	13.3	57.3				mg/L	10	Standard
Er	166	16.7	91.7				mg/L	13	Standard
I	127	13672.8	1.9				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		100.396	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		104.542	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: PBS M3 WG574881-02
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.943
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.061
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBS M3 WG574881-02
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Method 6020 - Summary Report

Sample ID: LCSS M3 WG574881-03
Sample Date/Time: Wednesday, July 06, 2016 13:43:29
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68990.1	1.8				ug/L	68501	Standard
	Be	9	24376.3	2.4	**26.6849**	0.365	1.4	ug/L	8	Standard
	Al	27	11726.2	9.6	**0.1171**	0.008	6.9	ug/L	1397	Standard
	Sc	45	40908.5	1.7				ug/L	38815	Standard
	Ti	47	51.0	12.2	**0.1170**	0.017	14.3	ug/L	36	Standard
	V	51	192004.5	0.9	**25.8862**	0.288	1.1	ug/L	1284	Standard
	Cr	52	196880.6	0.7	**26.3586**	0.223	0.8	ug/L	6503	Standard
	Cr	53	23802.0	3.1	**26.0705**	1.067	4.1	ug/L	492	Standard
	Mn	55	172021.4	0.9	**26.7397**	0.133	0.5	ug/L	841	Standard
	Co	59	167427.5	2.0	**26.4724**	0.266	1.0	ug/L	229	Standard
	Ni	60	46631.0	1.6	**26.3691**	0.164	0.6	ug/L	344	Standard
	Cu	65	46298.6	0.5	**26.3794**	0.223	0.8	ug/L	115	Standard
	Zn	66	28692.8	0.8	**27.0456**	0.053	0.2	ug/L	190	Standard
>	**Ge**	72	429617.8	1.0				ug/L	409858	Standard
	As	75	28228.4	0.8	**26.0779**	0.089	0.3	ug/L	-22	Standard
	Se	82	2890.3	2.2	**26.0545**	0.832	3.2	ug/L	18	Standard
	Se-1	77	1885.8	3.0	**25.3705**	0.938	3.7	ug/L	50	Standard
>	**Ga**	71	55.0	24.1				mg/L	97	Standard
	Rb	85	66.7	51.1				ug/L	25	Standard
	Y	89	370054.8	1.0				ug/L	376763	Standard
>	**Rh**	103	15.0	57.7				ug/L	20	Standard
	Mo	98	60.8	28.4	**0.0961**	0.007	7.2	ug/L	51	Standard
	Ag	107	164778.6	1.2	**25.7565**	0.385	1.5	ug/L	76	Standard
	Cd	111	52128.6	0.9	**25.6456**	0.390	1.5	mg/L	6	Standard
	Cd	114	126625.7	0.7	**25.4800**	0.270	1.1	ug/L	18	Standard
>	**In**	115	520385.2	0.7				ug/L	507261	Standard
	Sn	118	611.7	22.6	**-0.0013**	0.024	1875.5	ug/L	683	Standard
	Sb	123	117175.1	0.7	**26.6109**	0.351	1.3	ug/L	446	Standard
	Ba	135	49858.9	0.6	**25.5546**	0.293	1.1	ug/L	28	Standard
	Ce	140	111.7	40.6				ug/L	33	Standard
>	**Tb**	159	817750.1	0.7				ug/L	800803	Standard
	Ho	165	13.3	57.3				ug/L	10	Standard
	Tl	203	204537.7	0.5	**25.7502**	0.134	0.5	ug/L	13	Standard
	Tl	205	183705.4	1.0	**26.7105**	0.250	0.9	ug/L	13	Standard
	Pb	206	134972.9	1.2	**26.4449**	0.332	1.3	ug/L	226	Standard
	Pb	207	117902.7	1.0	**25.4395**	0.259	1.0	ug/L	204	Standard
	Pb	208	484818.2	0.4	**26.1594**	0.107	0.4	ug/L	852	Standard
	U	238	173966.7	0.5	**25.3714**	0.152	0.6	ug/L	13	Standard
>	**Bi**	209	466979.8	0.1				ug/L	449044	Standard

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Na	23	1.7	173.2	**-0.2919**	14.706	5037.9	mg/L	2	Standard
Mg	24	43.3	59.2	**0.0177**	0.034	191.1	mg/L	58	Standard
K	39	26.7	47.2	**-0.0406**	0.049	121.2	mg/L	27	Standard
Ca	43	23.3	81.1	**0.3327**	1.302	391.4	mg/L	20	Standard
Fe	54	183.2	34.4	**0.0249**	0.048	191.5	mg/L	158	Standard
Fe	57	246.7	15.2	**0.1047**	0.132	126.6	mg/L	267	Standard
Sc-1	45	40908.5	1.7				mg/L	38815	Standard
Cl	35	71227.7	0.6				ug/L	57611	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	1863.4	2.7				ug/L	1617	Standard
P	31	21552.1	8.9				ug/L	19244	Standard
S	34	3725.5	3.2				ug/L	3557	Standard
Sr	88	56.7	20.4				ug/L	65	Standard
C	12	63.3	65.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	23	Standard
Dy	164	16.2	126.5				mg/L	13	Standard
Ho-1	165	13.3	57.3				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	3618.8	4.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		100.714	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		104.821	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.587
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.994
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSS M3 WG574881-03
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Method 6020 - Summary Report

Sample ID: L1606153303 WG574881-01
Sample Date/Time: Wednesday, July 06, 2016 13:46:40
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71784.8	3.3				ug/L	68501	Standard
	Be	9	791.7	9.0	**0.8524**	0.078	9.2	ug/L	8	Standard
	Al	27	9689691.6	1.4	**65.1923**	1.739	2.7	ug/L	1397	Standard
	Sc	45	46471.2	2.1				ug/L	38815	Standard
	Ti	47	6104.2	0.6	**17.2565**	0.240	1.4	ug/L	36	Standard
	V	51	142596.3	1.0	**19.1176**	0.362	1.9	ug/L	1284	Standard
	Cr	52	105517.2	0.7	**13.6401**	0.218	1.6	ug/L	6503	Standard
	Cr	53	12873.8	0.5	**13.8523**	0.056	0.4	ug/L	492	Standard
	Mn	55	2385498.8	0.3	**370.6799**	2.478	0.7	ug/L	841	Standard
	Co	59	48892.4	1.4	**7.7061**	0.041	0.5	ug/L	229	Standard
	Ni	60	30595.9	0.8	**17.1852**	0.278	1.6	ug/L	344	Standard
	Cu	65	20807.6	0.9	**11.8042**	0.131	1.1	ug/L	115	Standard
	Zn	66	37430.8	0.4	**35.1878**	0.440	1.3	ug/L	190	Standard
>	**Ge**	72	431211.0	0.9				ug/L	409858	Standard
	As	75	4224.0	0.7	**3.9722**	0.059	1.5	ug/L	-22	Standard
	Se	82	51.8	22.7	**0.4155**	0.110	26.5	ug/L	18	Standard
	Se-1	77	104.0		**0.6766**	0.012	1.8	ug/L	50	Standard
>	**Ga**	71	14602.0	2.0				mg/L	97	Standard
	Rb	85	144001.5	3.2				ug/L	25	Standard
	Y	89	554219.3	0.4				ug/L	376763	Standard
>	**Rh**	103	38.3	37.7				ug/L	20	Standard
	Mo	98	491.5	7.3	**0.2735**	0.016	5.9	ug/L	51	Standard
	Ag	107	436.7	7.8	**0.0924**	0.006	6.2	ug/L	76	Standard
	Cd	111	251.4	8.5	**0.1649**	0.011	6.9	mg/L	6	Standard
	Cd	114	651.7	7.7	**0.1704**	0.010	6.0	ug/L	18	Standard
>	**In**	115	512072.0	0.7				ug/L	507261	Standard
	Sn	118	560.0	17.6	**-0.0088**	0.018	202.0	ug/L	683	Standard
	Sb	123	551.5	29.4	**0.1068**	0.037	34.4	ug/L	446	Standard
	Ba	135	204633.9	0.3	**106.5325**	0.500	0.5	ug/L	28	Standard
	Ce	140	1043824.3	0.6				ug/L	33	Standard
>	**Tb**	159	829436.7	0.5				ug/L	800803	Standard
	Ho	165	16388.9	2.6				ug/L	10	Standard
	Tl	203	873.4	3.5	**0.1439**	0.003	2.4	ug/L	13	Standard
	Tl	205	835.0	6.8	**0.1645**	0.007	4.5	ug/L	13	Standard
	Pb	206	174627.9	0.8	**34.4509**	0.503	1.5	ug/L	226	Standard
	Pb	207	146187.5	0.8	**31.7593**	0.420	1.3	ug/L	204	Standard
	Pb	208	624158.0	1.4	**33.9102**	0.683	2.0	ug/L	852	Standard
	U	238	4147.6	4.4	**0.6507**	0.030	4.6	ug/L	13	Standard
>	**Bi**	209	463820.1	0.7				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	135.0	12.8	**0.1146**	0.022	19.4	mg/L	58	Standard
K	39	315.0	4.2	**0.9068**	0.031	3.4	mg/L	27	Standard
Ca	43	76.7	22.9	**3.3661**	0.968	28.8	mg/L	20	Standard
Fe	54	15252.4	1.7	**10.5440**	0.100	0.9	mg/L	158	Standard
Fe	57	4027.2	4.2	**10.5813**	0.706	6.7	mg/L	267	Standard
Sc-1	45	46471.2	2.1				mg/L	38815	Standard
Cl	35	67899.1	0.4				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	3187.0	8.5				ug/L	1617	Standard
P	31	19424.1	0.8				ug/L	19244	Standard
S	34	3938.8	4.5				ug/L	3557	Standard
Sr	88	103.3	18.3				ug/L	65	Standard
C	12	96.7	33.3				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	66.7	22.9				mg/L	23	Standard
Dy	164	27319.0	2.3				mg/L	13	Standard
Ho-1	165	16388.9	2.6				mg/L	10	Standard
Er	166	14617.0	1.4				mg/L	13	Standard
I	127	15192.6	2.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.793	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.210	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.949
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.291
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606153303 WG574881-01
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Method 6020 - Summary Report

Sample ID: L1606153303S WG574881-04
Sample Date/Time: Wednesday, July 06, 2016 13:49:51
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	71635.7	2.1				ug/L	68501	Standard
	Be	9	24508.1	0.6	**25.8454**	0.409	1.6	ug/L	8	Standard
	Al	27	8935502.9	3.1	**60.2062**	0.708	1.2	ug/L	1397	Standard
	Sc	45	46611.6	1.6				ug/L	38815	Standard
	Ti	47	7709.0	2.2	**21.4214**	0.368	1.7	ug/L	36	Standard
	V	51	320903.9	2.5	**42.4517**	1.035	2.4	ug/L	1284	Standard
	Cr	52	282285.7	1.5	**37.3800**	0.540	1.4	ug/L	6503	Standard
	Cr	53	34678.0	2.7	**37.3607**	1.069	2.9	ug/L	492	Standard
	Mn	55	2822174.7	1.6	**430.9768**	6.120	1.4	ug/L	841	Standard
	Co	59	210055.8	0.7	**32.5207**	0.190	0.6	ug/L	229	Standard
	Ni	60	74054.9	1.2	**41.0920**	0.339	0.8	ug/L	344	Standard
	Cu	65	61255.9	1.3	**34.1760**	0.431	1.3	ug/L	115	Standard
	Zn	66	61088.9	0.6	**56.5039**	0.401	0.7	ug/L	190	Standard
>	Ge	72	438770.2	0.5				ug/L	409858	Standard
	As	75	29378.1	1.7	**26.5713**	0.390	1.5	ug/L	-22	Standard
	Se	82	2240.3	0.6	**19.7570**	0.095	0.5	ug/L	18	Standard
	Se-1	77	1512.1	2.0	**19.7511**	0.299	1.5	ug/L	50	Standard
>	Ga	71	14647.1	3.0				mg/L	97	Standard
	Rb	85	135624.3	1.0				ug/L	25	Standard
	Y	89	555533.5	1.1				ug/L	376763	Standard
>	Rh	103	46.7	65.5				ug/L	20	Standard
	Mo	98	390.1	7.1	**0.2288**	0.011	5.0	ug/L	51	Standard
	Ag	107	155710.4	1.2	**24.2735**	0.361	1.5	ug/L	76	Standard
	Cd	111	51031.4	0.2	**25.0372**	0.235	0.9	mg/L	6	Standard
	Cd	114	122987.6	0.6	**24.6803**	0.081	0.3	ug/L	18	Standard
>	In	115	521819.8	0.7				ug/L	507261	Standard
	Sn	118	673.3	13.7	**0.0095**	0.017	174.9	ug/L	683	Standard
	Sb	123	4402.7	3.1	**0.9775**	0.034	3.5	ug/L	446	Standard
	Ba	135	235513.0	0.9	**120.3159**	1.166	1.0	ug/L	28	Standard
	Ce	140	908964.0	1.9				ug/L	33	Standard
>	Tb	159	835671.6	1.8				ug/L	800803	Standard
	Ho	165	15187.6	2.1				ug/L	10	Standard
	Tl	203	194649.0	0.4	**24.6275**	0.265	1.1	ug/L	13	Standard
	Tl	205	174462.0	0.6	**25.4936**	0.299	1.2	ug/L	13	Standard
	Pb	206	271068.0	0.8	**53.3729**	0.261	0.5	ug/L	226	Standard
	Pb	207	231576.7	0.5	**50.2120**	0.216	0.4	ug/L	204	Standard
	Pb	208	974786.8	0.9	**52.8532**	0.298	0.6	ug/L	852	Standard
	U	238	172945.8	1.1	**25.3460**	0.283	1.1	ug/L	13	Standard
>	Bi	209	464715.4	0.8				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	140.0	24.7	**0.1199**	0.042	35.0	mg/L	58	Standard
K	39	246.7	28.8	**0.6783**	0.242	35.7	mg/L	27	Standard
Ca	43	106.7	28.6	**5.2041**	1.969	37.8	mg/L	20	Standard
Fe	54	13845.9	5.5	**9.5323**	0.545	5.7	mg/L	158	Standard
Fe	57	3610.4	7.4	**9.3762**	0.715	7.6	mg/L	267	Standard
Sc-1	45	46611.6	1.6				mg/L	38815	Standard
Cl	35	67005.2	1.4				ug/L	57611	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2923.6	6.4				ug/L	1617	Standard
P	31	20552.3	2.8				ug/L	19244	Standard
S	34	3690.4	4.4				ug/L	3557	Standard
Sr	88	98.3	37.5				ug/L	65	Standard
C	12	156.7	30.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	63.3	48.2				mg/L	23	Standard
Dy	164	25034.1	3.0				mg/L	13	Standard
Ho-1	165	15187.6	2.1				mg/L	10	Standard
Er	166	13729.6	2.1				mg/L	13	Standard
I	127	15666.4	3.6				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.576	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.054	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606153303S WG574881-04
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.870
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.490
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606153303S WG574881-04
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Method 6020 - Summary Report

Sample ID: L1606153304SD WG574881-05
Sample Date/Time: Wednesday, July 06, 2016 13:53:03
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70716.4	3.2				ug/L	68501	Standard
	Be	9	24144.2	3.0	**25.7886**	0.154	0.6	ug/L	8	Standard
	Al	27	7663846.1	3.2	**52.3201**	0.024	0.0	ug/L	1397	Standard
	Sc	45	45911.1	1.9				ug/L	38815	Standard
	Ti	47	7610.9	2.1	**21.3112**	0.418	2.0	ug/L	36	Standard
	V	51	300171.5	0.6	**40.0063**	0.532	1.3	ug/L	1284	Standard
	Cr	52	273409.5	0.7	**36.4591**	0.295	0.8	ug/L	6503	Standard
	Cr	53	33261.5	0.8	**36.0945**	0.455	1.3	ug/L	492	Standard
	Mn	55	1970137.4	0.8	**303.1298**	1.288	0.4	ug/L	841	Standard
	Co	59	199356.3	0.9	**31.0997**	0.116	0.4	ug/L	229	Standard
	Ni	60	69404.3	1.6	**38.7962**	0.444	1.1	ug/L	344	Standard
	Cu	65	58317.0	0.6	**32.7842**	0.142	0.4	ug/L	115	Standard
	Zn	66	56590.2	1.5	**52.7315**	0.372	0.7	ug/L	190	Standard
>	**Ge**	72	435454.2	0.9				ug/L	409858	Standard
	As	75	28521.3	0.6	**25.9959**	0.102	0.4	ug/L	-22	Standard
	Se	82	2258.1	0.6	**20.0673**	0.180	0.9	ug/L	18	Standard
	Se-1	77	1570.7	5.6	**20.7187**	1.401	6.8	ug/L	50	Standard
>	**Ga**	71	13471.0	2.5				mg/L	97	Standard
	Rb	85	126714.4	1.6				ug/L	25	Standard
	Y	89	546387.0	2.7				ug/L	376763	Standard
>	**Rh**	103	26.7	28.6				ug/L	20	Standard
	Mo	98	406.5	7.2	**0.2358**	0.011	4.8	ug/L	51	Standard
	Ag	107	157043.0	0.6	**24.5389**	0.267	1.1	ug/L	76	Standard
	Cd	111	50615.0	0.7	**24.8953**	0.579	2.3	mg/L	6	Standard
	Cd	114	122865.8	1.8	**24.7200**	0.777	3.1	ug/L	18	Standard
>	**In**	115	520626.2	1.6				ug/L	507261	Standard
	Sn	118	831.7	9.5	**0.0379**	0.012	32.9	ug/L	683	Standard
	Sb	123	5047.0	1.4	**1.1262**	0.007	0.6	ug/L	446	Standard
	Ba	135	215146.1	0.2	**110.1816**	1.809	1.6	ug/L	28	Standard
	Ce	140	844813.7	0.2				ug/L	33	Standard
>	**Tb**	159	836023.1	1.3				ug/L	800803	Standard
	Ho	165	14603.7	1.6				ug/L	10	Standard
	Tl	203	192463.7	0.7	**24.2350**	0.335	1.4	ug/L	13	Standard
	Tl	205	170559.7	1.0	**24.8059**	0.448	1.8	ug/L	13	Standard
	Pb	206	218685.4	1.3	**42.8560**	0.907	2.1	ug/L	226	Standard
	Pb	207	186119.5	0.7	**40.1644**	0.622	1.5	ug/L	204	Standard
	Pb	208	790383.4	0.9	**42.6511**	0.562	1.3	ug/L	852	Standard
	U	238	169425.8	1.3	**24.7144**	0.534	2.2	ug/L	13	Standard
>	**Bi**	209	466956.4	0.8				ug/L	449044	Standard

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Na	23	8.3	34.6	**29.4785**	12.738	43.2	mg/L	2	Standard
Mg	24	111.7	38.1	**0.0901**	0.052	57.2	mg/L	58	Standard
K	39	305.0	19.9	**0.8870**	0.210	23.7	mg/L	27	Standard
Ca	43	85.0	36.7	**3.9473**	1.895	48.0	mg/L	20	Standard
Fe	54	12091.5	0.9	**8.4377**	0.104	1.2	mg/L	158	Standard
Fe	57	3287.0	5.2	**8.6117**	0.314	3.6	mg/L	267	Standard
> **Sc-1**	45	45911.1	1.9				mg/L	38815	Standard
Cl	35	66770.8	1.3				ug/L	57611	Standard
Kr	83	3.7	31.5				ug/L	2	Standard
Br	81	2370.2	6.7				ug/L	1617	Standard
P	31	19586.0	2.8				ug/L	19244	Standard
S	34	3682.1	1.9				ug/L	3557	Standard
Sr	88	90.0	16.7				ug/L	65	Standard
C	12	103.3	36.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	145.3				mg/L	23	Standard
Dy	164	24871.6	1.2				mg/L	13	Standard
Ho-1	165	14603.7	1.6				mg/L	10	Standard
Er	166	13219.1	1.9				mg/L	13	Standard
I	127	16539.0	1.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.234	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.245	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	102.635
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.989
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606153304SD WG574881-05
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Method 6020 - Summary Report

Sample ID: L1606148801
Sample Date/Time: Wednesday, July 06, 2016 13:56:14
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73357.2	0.4				ug/L	68501	Standard
	Be	9	1408.4	5.6	**1.4686**	0.086	5.9	ug/L	8	Standard
	Al	27	4909182.8	0.1	**32.3215**	0.095	0.3	ug/L	1397	Standard
	Sc	45	49124.5	1.0				ug/L	38815	Standard
	Ti	47	14209.0	0.8	**39.1648**	0.336	0.9	ug/L	36	Standard
	V	51	261146.3	1.2	**34.2175**	0.380	1.1	ug/L	1284	Standard
	Cr	52	189098.4	0.5	**24.5084**	0.136	0.6	ug/L	6503	Standard
	Cr	53	22658.6	1.5	**24.0508**	0.402	1.7	ug/L	492	Standard
	Mn	55	11231230.2	1.1	**1700.4825**	20.100	1.2	ug/L	841	Standard
	Co	59	183788.7	1.1	**28.2069**	0.325	1.2	ug/L	229	Standard
	Ni	60	45196.3	0.8	**24.7984**	0.212	0.9	ug/L	344	Standard
	Cu	65	36381.0	0.5	**20.1154**	0.113	0.6	ug/L	115	Standard
	Zn	66	87683.0	0.2	**80.4422**	0.249	0.3	ug/L	190	Standard
>	Ge	72	442627.6	0.1				ug/L	409858	Standard
	As	75	15335.5	1.0	**13.7975**	0.156	1.1	ug/L	-22	Standard
	Se	82	128.8	8.6	**1.0772**	0.098	9.1	ug/L	18	Standard
	Se-1	77	152.7	9.5	**1.2940**	0.197	15.2	ug/L	50	Standard
>	Ga	71	28750.6	0.9				mg/L	97	Standard
	Rb	85	247795.0	1.2				ug/L	25	Standard
	Y	89	608680.2	2.0				ug/L	376763	Standard
>	Rh	103	46.7	32.7				ug/L	20	Standard
	Mo	98	4400.7	0.8	**1.8278**	0.010	0.6	ug/L	51	Standard
	Ag	107	658.3	6.4	**0.1246**	0.007	5.4	ug/L	76	Standard
	Cd	111	633.7	3.7	**0.3467**	0.011	3.1	mg/L	6	Standard
	Cd	114	1538.9	7.7	**0.3426**	0.022	6.5	ug/L	18	Standard
>	In	115	527046.7	0.4				ug/L	507261	Standard
	Sn	118	666.7	18.6	**0.0071**	0.022	303.7	ug/L	683	Standard
	Sb	123	511.6	32.6	**0.0943**	0.037	39.3	ug/L	446	Standard
	Ba	135	351130.5	0.5	**177.5923**	1.124	0.6	ug/L	28	Standard
	Ce	140	1219612.4	0.4				ug/L	33	Standard
>	Tb	159	850998.1	0.7				ug/L	800803	Standard
	Ho	165	20655.7	1.1				ug/L	10	Standard
	Tl	203	2286.5	1.5	**0.3205**	0.003	0.8	ug/L	13	Standard
	Tl	205	2111.8	1.5	**0.3488**	0.003	0.9	ug/L	13	Standard
	Pb	206	198517.4	0.6	**38.8584**	0.398	1.0	ug/L	226	Standard
	Pb	207	163761.6	0.7	**35.3001**	0.431	1.2	ug/L	204	Standard
	Pb	208	697965.4	0.2	**37.6228**	0.271	0.7	ug/L	852	Standard
	U	238	11299.5	1.2	**1.6862**	0.031	1.8	ug/L	13	Standard
>	Bi	209	467460.9	0.8				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	858.4	12.6	**0.8792**	0.107	12.1	mg/L	58	Standard
K	39	243.3	19.1	**0.6247**	0.147	23.5	mg/L	27	Standard
Ca	43	75.0	11.5	**3.0298**	0.465	15.4	mg/L	20	Standard
Fe	54	51419.1	3.0	**33.8886**	1.056	3.1	mg/L	158	Standard
Fe	57	12892.1	0.9	**33.3949**	0.427	1.3	mg/L	267	Standard
Sc-1	45	49124.5	1.0				mg/L	38815	Standard
Cl	35	64920.1	0.4				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	4657.4	5.5				ug/L	1617	Standard
P	31	21221.5	1.2				ug/L	19244	Standard
S	34	3662.1	1.3				ug/L	3557	Standard
Sr	88	81.7	24.7				ug/L	65	Standard
C	12	186.7	15.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	110.0	32.8				mg/L	23	Standard
Dy	164	33674.7	0.9				mg/L	13	Standard
Ho-1	165	20655.7	1.1				mg/L	10	Standard
Er	166	18397.8	1.0				mg/L	13	Standard
I	127	43973.7	2.2				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		107.089	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		107.995	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.901
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.101
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606148802
Sample Date/Time: Wednesday, July 06, 2016 13:59:26
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72174.9	2.1				ug/L	68501	Standard
	Be	9	1363.4	2.0	**1.4452**	0.016	1.1	ug/L	8	Standard
	Al	27	5016443.5	2.2	**33.5756**	0.975	2.9	ug/L	1397	Standard
	Sc	45	49604.4	2.2				ug/L	38815	Standard
	Ti	47	13329.2	0.7	**36.5911**	0.221	0.6	ug/L	36	Standard
	V	51	271044.6	1.6	**35.3787**	0.645	1.8	ug/L	1284	Standard
	Cr	52	198790.4	1.2	**25.7054**	0.289	1.1	ug/L	6503	Standard
	Cr	53	24150.9	1.3	**25.5582**	0.352	1.4	ug/L	492	Standard
	Mn	55	11513450.8	0.6	**1736.2656**	13.109	0.8	ug/L	841	Standard
	Co	59	196653.4	1.0	**30.0609**	0.361	1.2	ug/L	229	Standard
	Ni	60	45854.3	1.1	**25.0607**	0.284	1.1	ug/L	344	Standard
	Cu	65	39818.3	0.9	**21.9288**	0.143	0.7	ug/L	115	Standard
	Zn	66	95918.7	0.5	**87.6568**	0.438	0.5	ug/L	190	Standard
>	Ge	72	444401.8	0.3				ug/L	409858	Standard
	As	75	16440.4	0.6	**14.7259**	0.127	0.9	ug/L	-22	Standard
	Se	82	139.3	7.0	**1.1645**	0.084	7.2	ug/L	18	Standard
	Se-1	77	176.7	9.1	**1.6071**	0.214	13.3	ug/L	50	Standard
>	Ga	71	29804.3	1.7				mg/L	97	Standard
	Rb	85	250326.1	0.9				ug/L	25	Standard
	Y	89	612201.9	0.7				ug/L	376763	Standard
>	Rh	103	30.0	16.7				ug/L	20	Standard
	Mo	98	4155.8	2.6	**1.7430**	0.057	3.3	ug/L	51	Standard
	Ag	107	726.0	6.2	**0.1359**	0.006	4.5	ug/L	76	Standard
	Cd	111	824.8	3.0	**0.4424**	0.009	2.1	mg/L	6	Standard
	Cd	114	1869.7	3.7	**0.4111**	0.011	2.6	ug/L	18	Standard
>	In	115	523048.0	0.9				ug/L	507261	Standard
	Sn	118	761.7	20.6	**0.0247**	0.027	107.5	ug/L	683	Standard
	Sb	123	582.5	17.5	**0.1112**	0.022	19.6	ug/L	446	Standard
	Ba	135	359493.1	0.4	**183.2153**	0.988	0.5	ug/L	28	Standard
	Ce	140	1224075.1	1.2				ug/L	33	Standard
>	Tb	159	837617.0	0.4				ug/L	800803	Standard
	Ho	165	19946.5	2.5				ug/L	10	Standard
	Tl	203	2243.5	3.6	**0.3187**	0.011	3.4	ug/L	13	Standard
	Tl	205	1978.5	3.9	**0.3331**	0.011	3.2	ug/L	13	Standard
	Pb	206	201103.2	0.9	**39.8610**	0.478	1.2	ug/L	226	Standard
	Pb	207	165612.9	0.9	**36.1489**	0.408	1.1	ug/L	204	Standard
	Pb	208	712328.8	0.4	**38.8804**	0.069	0.2	ug/L	852	Standard
	U	238	11780.6	2.0	**1.7777**	0.038	2.2	ug/L	13	Standard
>	Bi	209	461635.2	0.6				ug/L	449044	Standard

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Na	23	3.3	86.6	**5.6198**	12.473	221.9	mg/L	2	Standard
Mg	24	811.7	6.0	**0.8224**	0.066	8.0	mg/L	58	Standard
K	39	266.7	3.9	**0.6899**	0.024	3.5	mg/L	27	Standard
Ca	43	78.3	20.5	**3.1770**	0.895	28.2	mg/L	20	Standard
Fe	54	51703.8	1.6	**33.7475**	0.264	0.8	mg/L	158	Standard
Fe	57	13155.7	2.5	**33.7514**	0.118	0.3	mg/L	267	Standard
> **Sc-1**	45	49604.4	2.2				mg/L	38815	Standard
Cl	35	64079.3	2.1				ug/L	57611	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	4820.8	8.0				ug/L	1617	Standard
P	31	20555.6	1.7				ug/L	19244	Standard
S	34	3685.4	3.7				ug/L	3557	Standard
Sr	88	80.0	12.5				ug/L	65	Standard
C	12	210.0	12.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	143.3	29.0				mg/L	23	Standard
Dy	164	33047.7	1.8				mg/L	13	Standard
Ho-1	165	19946.5	2.5				mg/L	10	Standard
Er	166	18027.4	2.6				mg/L	13	Standard
I	127	49079.4	3.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.363	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.428	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606148802
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.112
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.804
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606148802
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Method 6020 - Summary Report

Sample ID: L1606148802PS WG575023-01
Sample Date/Time: Wednesday, July 06, 2016 14:03:18
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70967.5	1.3				ug/L	68501	Standard
	Be	9	50019.1	1.4	**53.2137**	0.442	0.8	ug/L	8	Standard
	Al	27	4943736.8	2.2	**33.6473**	0.870	2.6	ug/L	1397	Standard
	Sc	45	49438.9	1.5				ug/L	38815	Standard
	Ti	47	13311.2	1.7	**36.5309**	0.490	1.3	ug/L	36	Standard
	V	51	666714.3	1.8	**87.2147**	1.927	2.2	ug/L	1284	Standard
	Cr	52	595393.9	0.7	**78.8320**	0.260	0.3	ug/L	6503	Standard
	Cr	53	73718.9	1.6	**78.8501**	0.957	1.2	ug/L	492	Standard
	Mn	55	11846150.9	0.6	**1786.0047**	17.199	1.0	ug/L	841	Standard
	Co	59	539486.4	0.6	**82.4367**	0.844	1.0	ug/L	229	Standard
	Ni	60	141497.6	0.4	**77.6414**	0.318	0.4	ug/L	344	Standard
	Cu	65	136279.5	1.3	**75.0688**	1.236	1.6	ug/L	115	Standard
	Zn	66	155918.3	1.5	**142.5288**	2.656	1.9	ug/L	190	Standard
>	**Ge**	72	444516.8	0.4				ug/L	409858	Standard
	As	75	76484.3	0.4	**68.1297**	0.511	0.7	ug/L	-22	Standard
	Se	82	6120.7	0.4	**53.3679**	0.273	0.5	ug/L	18	Standard
	Se-1	77	4216.9	2.2	**55.7069**	1.453	2.6	ug/L	50	Standard
>	**Ga**	71	29956.3	2.2				mg/L	97	Standard
	Rb	85	245433.6	0.4				ug/L	25	Standard
	Y	89	607565.5	0.4				ug/L	376763	Standard
>	**Rh**	103	43.3	13.3				ug/L	20	Standard
	Mo	98	4207.7	1.7	**1.7539**	0.024	1.4	ug/L	51	Standard
	Ag	107	334603.0	0.3	**51.7151**	0.283	0.5	ug/L	76	Standard
	Cd	111	107468.9	0.8	**52.2597**	0.482	0.9	mg/L	6	Standard
	Cd	114	260778.0	1.3	**51.8721**	0.850	1.6	ug/L	18	Standard
>	**In**	115	526034.8	0.3				ug/L	507261	Standard
	Sn	118	906.7	9.2	**0.0497**	0.015	30.6	ug/L	683	Standard
	Sb	123	228637.4	2.2	**51.3808**	0.943	1.8	ug/L	446	Standard
	Ba	135	461661.6	0.5	**233.9378**	0.796	0.3	ug/L	28	Standard
	Ce	140	1241223.1	0.6				ug/L	33	Standard
>	**Tb**	159	845221.1	0.7				ug/L	800803	Standard
	Ho	165	19689.5	2.4				ug/L	10	Standard
	Tl	203	418679.3	0.7	**52.5517**	0.300	0.6	ug/L	13	Standard
	Tl	205	374864.0	0.5	**54.3340**	0.313	0.6	ug/L	13	Standard
	Pb	206	469240.7	0.1	**91.7326**	0.118	0.1	ug/L	226	Standard
	Pb	207	401720.1	1.0	**86.4784**	0.812	0.9	ug/L	204	Standard
	Pb	208	1685835.2	0.3	**90.7511**	0.393	0.4	ug/L	852	Standard
	U	238	363435.6	0.6	**52.8339**	0.348	0.7	ug/L	13	Standard
>	**Bi**	209	468069.6	0.1				ug/L	449044	Standard

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Na	23	3.3	173.2	**5.7365**	25.148	438.4	mg/L	2	Standard
Mg	24	811.7	3.2	**0.8244**	0.021	2.6	mg/L	58	Standard
K	39	260.0	10.0	**0.6728**	0.094	14.0	mg/L	27	Standard
Ca	43	73.3	27.6	**2.9214**	1.221	41.8	mg/L	20	Standard
Fe	54	53337.6	2.0	**34.9297**	0.220	0.6	mg/L	158	Standard
Fe	57	13099.0	0.8	**33.7266**	0.746	2.2	mg/L	267	Standard
Sc-1	45	49438.9	1.5				mg/L	38815	Standard
Cl	35	63709.7	1.4				ug/L	57611	Standard
Kr	83	4.0	25.0				ug/L	2	Standard
Br	81	4744.1	1.6				ug/L	1617	Standard
P	31	20497.2	1.0				ug/L	19244	Standard
S	34	3630.4	3.0				ug/L	3557	Standard
Sr	88	100.0	39.1				ug/L	65	Standard
C	12	173.3	31.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	150.0	26.7				mg/L	23	Standard
Dy	164	33116.1	1.2				mg/L	13	Standard
Ho-1	165	19689.5	2.4				mg/L	10	Standard
Er	166	17226.5	1.3				mg/L	13	Standard
I	127	48460.8	5.1				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.600	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.456	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.701
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.237
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606148802SDL WG575023-02
Sample Date/Time: Wednesday, July 06, 2016 14:06:30
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63548.1	3.0				ug/L	68501	Standard
	Be	9	288.3	10.6	**0.3615**	0.028	7.7	ug/L	8	Standard
	Al	27	982443.2	1.9	**7.5000**	0.333	4.4	ug/L	1397	Standard
	Sc	45	40199.9	2.0				ug/L	38815	Standard
	Ti	47	2527.5	2.7	**7.3731**	0.269	3.6	ug/L	36	Standard
	V	51	51751.0	0.8	**7.0830**	0.038	0.5	ug/L	1284	Standard
	Cr	52	41542.9	0.5	**4.9988**	0.076	1.5	ug/L	6503	Standard
	Cr	53	4679.1	3.2	**4.9436**	0.129	2.6	ug/L	492	Standard
	Mn	55	2192799.4	0.8	**352.2976**	2.787	0.8	ug/L	841	Standard
	Co	59	37114.1	0.7	**6.0504**	0.107	1.8	ug/L	229	Standard
	Ni	60	9289.5	1.4	**5.2864**	0.076	1.4	ug/L	344	Standard
	Cu	65	8027.8	0.9	**4.7012**	0.083	1.8	ug/L	115	Standard
	Zn	66	20879.4	1.1	**20.2468**	0.335	1.7	ug/L	190	Standard
>	Ge	72	417056.1	1.1				ug/L	409858	Standard
	As	75	3262.2	0.9	**3.1917**	0.033	1.0	ug/L	-22	Standard
	Se	82	44.0	21.0	**0.3588**	0.090	25.1	ug/L	18	Standard
	Se-1	77	65.0	4.1	**0.1687**	0.036	21.3	ug/L	50	Standard
>	Ga	71	5822.8	3.2				mg/L	97	Standard
	Rb	85	47444.2	2.6				ug/L	25	Standard
	Y	89	396491.1	1.0				ug/L	376763	Standard
>	Rh	103	18.3	15.7				ug/L	20	Standard
	Mo	98	797.0	2.4	**0.4100**	0.007	1.6	ug/L	51	Standard
	Ag	107	247.7	14.2	**0.0638**	0.006	9.4	ug/L	76	Standard
	Cd	111	188.8	16.4	**0.1369**	0.016	12.0	mg/L	6	Standard
	Cd	114	455.1	14.7	**0.1335**	0.014	10.7	ug/L	18	Standard
>	In	115	495215.4	0.6				ug/L	507261	Standard
	Sn	118	306.7	21.2	**-0.0527**	0.012	22.6	ug/L	683	Standard
	Sb	123	1584.6	32.4	**0.3576**	0.121	33.8	ug/L	446	Standard
	Ba	135	69337.3	0.6	**37.3369**	0.445	1.2	ug/L	28	Standard
	Ce	140	240398.8	0.7				ug/L	33	Standard
>	Tb	159	781869.4	2.0				ug/L	800803	Standard
	Ho	165	3793.8	3.7				ug/L	10	Standard
	Tl	203	541.0	11.5	**0.1045**	0.008	7.3	ug/L	13	Standard
	Tl	205	446.7	1.7	**0.1104**	0.001	1.2	ug/L	13	Standard
	Pb	206	39320.3	1.2	**8.0618**	0.009	0.1	ug/L	226	Standard
	Pb	207	32613.1	1.3	**7.3654**	0.019	0.3	ug/L	204	Standard
	Pb	208	139704.5	0.1	**7.8917**	0.091	1.1	ug/L	852	Standard
	U	238	2243.8	4.7	**0.3846**	0.014	3.7	ug/L	13	Standard
>	Bi	209	446092.5	1.1				ug/L	449044	Standard

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Na	23	1.7	173.2	**-0.0852**	15.064	17690.3	mg/L	2	Standard
Mg	24	178.3	16.4	**0.1952**	0.042	21.4	mg/L	58	Standard
K	39	71.7	21.3	**0.1333**	0.054	40.3	mg/L	27	Standard
Ca	43	21.7	35.3	**0.2417**	0.521	215.7	mg/L	20	Standard
Fe	54	9922.9	1.2	**7.9026**	0.239	3.0	mg/L	158	Standard
Fe	57	2586.9	3.4	**7.6807**	0.443	5.8	mg/L	267	Standard
> **Sc-1**	45	40199.9	2.0				mg/L	38815	Standard
Cl	35	59757.0	1.6				ug/L	57611	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2373.5	8.5				ug/L	1617	Standard
P	31	8939.3	3.6				ug/L	19244	Standard
S	34	3305.4	5.9				ug/L	3557	Standard
Sr	88	70.0	12.4				ug/L	65	Standard
C	12	83.3	30.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	66.1				mg/L	23	Standard
Dy	164	6234.0	6.6				mg/L	13	Standard
Ho-1	165	3793.8	3.7				mg/L	10	Standard
Er	166	3353.7	1.4				mg/L	13	Standard
I	127	17223.1	2.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.769	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.756	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.625
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.343
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606148802SDL WG575023-02
Sample Date/Time: Wednesday, July 06, 2016 14:09:41
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61153.3	3.7				ug/L	68501	Standard
	Be	9	65.0	42.8	**0.1004**	0.036	36.0	ug/L	8	Standard
	Al	27	208272.0	1.9	**1.6804**	0.091	5.4	ug/L	1397	Standard
	Sc	45	38433.7	1.9				ug/L	38815	Standard
	Ti	47	530.0	5.2	**1.5456**	0.076	4.9	ug/L	36	Standard
	V	51	11816.6	2.0	**1.5294**	0.026	1.7	ug/L	1284	Standard
	Cr	52	12533.2	2.1	**0.8813**	0.029	3.3	ug/L	6503	Standard
	Cr	53	1153.4	3.5	**0.9224**	0.056	6.1	ug/L	492	Standard
	Mn	55	487303.2	1.1	**79.3278**	0.956	1.2	ug/L	841	Standard
	Co	59	8144.2	1.6	**1.3507**	0.025	1.8	ug/L	229	Standard
	Ni	60	2325.5	3.0	**1.2243**	0.032	2.6	ug/L	344	Standard
	Cu	65	1801.8	1.3	**1.0597**	0.011	1.0	ug/L	115	Standard
	Zn	66	5046.8	1.1	**4.8774**	0.028	0.6	ug/L	190	Standard
>	**Ge**	72	411214.4	0.8				ug/L	409858	Standard
	As	75	641.0	4.9	**0.7152**	0.032	4.5	ug/L	-22	Standard
	Se	82	22.5	31.9	**0.1611**	0.067	41.8	ug/L	18	Standard
	Se-1	77	60.7	21.2	**0.1202**	0.192	160.1	ug/L	50	Standard
>	**Ga**	71	1250.1	4.5				mg/L	97	Standard
	Rb	85	10276.8	2.8				ug/L	25	Standard
	Y	89	358834.8	1.2				ug/L	376763	Standard
>	**Rh**	103	21.7	93.3				ug/L	20	Standard
	Mo	98	214.8	13.2	**0.1640**	0.012	7.2	ug/L	51	Standard
	Ag	107	100.7	16.5	**0.0398**	0.003	6.9	ug/L	76	Standard
	Cd	111	42.6	17.8	**0.0617**	0.004	6.7	mg/L	6	Standard
	Cd	114	96.9	24.7	**0.0581**	0.005	9.0	ug/L	18	Standard
>	**In**	115	488527.0	0.6				ug/L	507261	Standard
	Sn	118	241.7	24.7	**-0.0643**	0.011	17.6	ug/L	683	Standard
	Sb	123	892.5	39.9	**0.1955**	0.086	43.8	ug/L	446	Standard
	Ba	135	14870.6	2.2	**8.1290**	0.162	2.0	ug/L	28	Standard
	Ce	140	51485.7	0.7				ug/L	33	Standard
>	**Tb**	159	761353.5	0.5				ug/L	800803	Standard
	Ho	165	790.0	5.5				ug/L	10	Standard
	Tl	203	118.7	1.9	**0.0491**	0.000	0.6	ug/L	13	Standard
	Tl	205	93.3	16.4	**0.0569**	0.002	4.2	ug/L	13	Standard
	Pb	206	8500.1	0.7	**1.7547**	0.014	0.8	ug/L	226	Standard
	Pb	207	6935.9	1.5	**1.5792**	0.031	2.0	ug/L	204	Standard
	Pb	208	29923.0	0.5	**1.7048**	0.006	0.3	ug/L	852	Standard
	U	238	485.7	4.5	**0.1173**	0.004	3.1	ug/L	13	Standard
>	**Bi**	209	442277.7	0.5				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	60.0	8.3	**0.0437**	0.008	18.1	mg/L	58	Standard
K	39	36.7	20.8	**0.0061**	0.033	544.1	mg/L	27	Standard
Ca	43	10.0	50.0	**-0.5414**	0.370	68.3	mg/L	20	Standard
Fe	54	2058.4	6.6	**1.6217**	0.147	9.0	mg/L	158	Standard
Fe	57	700.0	4.7	**1.6862**	0.138	8.2	mg/L	267	Standard
> **Sc-1**	45	38433.7	1.9				mg/L	38815	Standard
Cl	35	58499.4	1.0				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1713.4	5.1				ug/L	1617	Standard
P	31	6586.4	1.7				ug/L	19244	Standard
S	34	3485.4	1.6				ug/L	3557	Standard
Sr	88	75.0	29.1				ug/L	65	Standard
C	12	86.7	54.5				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	23	Standard
Dy	164	1243.5	11.8				mg/L	13	Standard
Ho-1	165	790.0	5.5				mg/L	10	Standard
Er	166	693.3	5.5				mg/L	13	Standard
I	127	12079.8	0.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.273	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.331	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.307
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.493
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606148802SDL WG575023-02
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 14:12:54
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63738.8	1.7				ug/L	68501	Standard
	Be	9	45163.9	1.6	**53.5049**	1.125	2.1	ug/L	8	Standard
	Al	27	7084192.1	1.1	**53.6599**	0.327	0.6	ug/L	1397	Standard
	Sc	45	42454.4	2.4				ug/L	38815	Standard
	Ti	47	37910.4	1.3	**105.6465**	0.728	0.7	ug/L	36	Standard
	V	51	387318.4	1.9	**51.3574**	0.599	1.2	ug/L	1284	Standard
	Cr	52	391741.5	0.8	**52.3323**	0.346	0.7	ug/L	6503	Standard
	Cr	53	47810.3	0.9	**51.7616**	0.626	1.2	ug/L	492	Standard
	Mn	55	346050.2	2.0	**52.8532**	0.639	1.2	ug/L	841	Standard
	Co	59	335311.7	0.2	**52.0055**	0.542	1.0	ug/L	229	Standard
	Ni	60	93758.6	1.2	**52.1631**	0.630	1.2	ug/L	344	Standard
	Cu	65	93201.8	0.3	**52.1020**	0.486	0.9	ug/L	115	Standard
	Zn	66	55967.5	1.2	**51.8489**	0.246	0.5	ug/L	190	Standard
>	**Ge**	72	437984.2	0.8				ug/L	409858	Standard
	As	75	56734.5	0.8	**51.3146**	0.032	0.1	ug/L	-22	Standard
	Se	82	5730.9	1.4	**50.7103**	0.310	0.6	ug/L	18	Standard
	Se-1	77	3929.8	1.6	**52.6431**	0.552	1.0	ug/L	50	Standard
>	**Ga**	71	86.7	40.5				mg/L	97	Standard
	Rb	85	845.0	5.4				ug/L	25	Standard
	Y	89	374490.1	0.9				ug/L	376763	Standard
>	**Rh**	103	40.0	45.1				ug/L	20	Standard
	Mo	98	255896.5	1.3	**102.3860**	1.426	1.4	ug/L	51	Standard
	Ag	107	327414.9	0.7	**50.6019**	0.494	1.0	ug/L	76	Standard
	Cd	111	104466.1	0.8	**50.7976**	0.478	0.9	mg/L	6	Standard
	Cd	114	256849.9	0.9	**51.0868**	0.503	1.0	ug/L	18	Standard
>	**In**	115	526066.0	0.3				ug/L	507261	Standard
	Sn	118	288924.0	1.2	**50.7835**	0.489	1.0	ug/L	683	Standard
	Sb	123	230814.7	0.8	**51.8699**	0.499	1.0	ug/L	446	Standard
	Ba	135	99108.1	0.2	**50.2309**	0.251	0.5	ug/L	28	Standard
	Ce	140	848.4	30.5				ug/L	33	Standard
>	**Tb**	159	811893.2	1.1				ug/L	800803	Standard
	Ho	165	20.0	25.0				ug/L	10	Standard
	Tl	203	398961.7	0.3	**51.0576**	0.167	0.3	ug/L	13	Standard
	Tl	205	353593.5	0.8	**52.2552**	0.467	0.9	ug/L	13	Standard
	Pb	206	253241.8	0.6	**50.4734**	0.317	0.6	ug/L	226	Standard
	Pb	207	230608.0	0.3	**50.6138**	0.209	0.4	ug/L	204	Standard
	Pb	208	952060.4	0.8	**52.2535**	0.454	0.9	ug/L	852	Standard
	U	238	344272.4	0.3	**51.0286**	0.202	0.4	ug/L	13	Standard
>	**Bi**	209	459089.4	0.1				ug/L	449044	Standard

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Na	23	1.7	173.2	**-0.5144**	14.321	2783.9	mg/L	2	Standard
Mg	24	3913.8	1.8	**4.8089**	0.175	3.6	mg/L	58	Standard
K	39	1278.4	11.0	**4.5125**	0.420	9.3	mg/L	27	Standard
Ca	43	80.0	27.2	**4.0653**	1.588	39.1	mg/L	20	Standard
Fe	54	6825.0	1.6	**5.1062**	0.211	4.1	mg/L	158	Standard
Fe	57	1940.1	4.8	**5.2575**	0.365	6.9	mg/L	267	Standard
Sc-1	45	42454.4	2.4				mg/L	38815	Standard
Cl	35	68210.5	0.3				ug/L	57611	Standard
Kr	83	3.0	100.0				ug/L	2	Standard
Br	81	1940.1	4.2				ug/L	1617	Standard
P	31	20874.4	2.4				ug/L	19244	Standard
S	34	4085.6	5.9				ug/L	3557	Standard
Sr	88	61.7	20.4				ug/L	65	Standard
C	12	33.3	45.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	45.8				mg/L	23	Standard
Dy	164	35.5	65.8				mg/L	13	Standard
Ho-1	165	20.0	25.0				mg/L	10	Standard
Er	166	23.3	89.2				mg/L	13	Standard
I	127	9708.1	1.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	107.010		
Al	27	107.320		
Sc	45			
Ti	47	105.646		
V	51	102.715		
Cr	52	104.665		
Cr	53			
Mn	55	105.706		
Co	59	104.011		
Ni	60	104.326		
Cu	65	104.204		
Zn	66	103.698		
Ge	72		106.862	
As	75	102.629		
Se	82	101.421		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	102.386		
Ag	107	101.204		
Cd	111	101.595		
Cd	114			
In	115			103.707
Sn	118	101.567		
Sb	123	103.740		
Ba	135	100.462		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.115		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.507		
U	238	102.057		
Bi	209			102.237
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 14:16:06
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64190.7	0.9				ug/L	68501	Standard
	Be	9	26.7	65.8	**0.0509**	0.021	40.7	ug/L	8	Standard
	Al	27	2635.2	25.2	**0.0549**	0.005	9.3	ug/L	1397	Standard
	Sc	45	41592.0	2.0				ug/L	38815	Standard
	Ti	47	36.7	15.0	**0.0752**	0.016	21.4	ug/L	36	Standard
	V	51	1268.1	2.4	**0.0258**	0.006	23.1	ug/L	1284	Standard
	Cr	52	6579.4	1.7	**-0.0325**	0.005	16.6	ug/L	6503	Standard
	Cr	53	420.0	13.4	**0.0428**	0.057	133.5	ug/L	492	Standard
	Mn	55	1455.1	37.2	**0.1289**	0.086	66.7	ug/L	841	Standard
	Co	59	261.3	5.7	**0.0463**	0.003	5.8	ug/L	229	Standard
	Ni	60	441.3	5.5	**0.0905**	0.016	18.0	ug/L	344	Standard
	Cu	65	137.0	7.6	**0.0639**	0.007	10.5	ug/L	115	Standard
	Zn	66	238.0	11.0	**0.1094**	0.027	24.7	ug/L	190	Standard
>	**Ge**	72	434760.5	1.1				ug/L	409858	Standard
	As	75	-27.5	109.6	**0.0740**	0.027	36.9	ug/L	-22	Standard
	Se	82	16.6	21.2	**0.0970**	0.033	34.0	ug/L	18	Standard
	Se-1	77	54.7	20.1	**-0.0094**	0.159	1680.0	ug/L	50	Standard
>	**Ga**	71	66.7	31.2				mg/L	97	Standard
	Rb	85	81.7	12.7				ug/L	25	Standard
	Y	89	378186.4	2.2				ug/L	376763	Standard
>	**Rh**	103	20.0	50.0				ug/L	20	Standard
	Mo	98	153.7	3.6	**0.1334**	0.003	2.2	ug/L	51	Standard
	Ag	107	127.3	10.2	**0.0429**	0.002	5.0	ug/L	76	Standard
	Cd	111	17.1	59.0	**0.0478**	0.005	10.5	mg/L	6	Standard
	Cd	114	45.6	53.1	**0.0465**	0.005	10.6	ug/L	18	Standard
>	**In**	115	522609.3	1.2				ug/L	507261	Standard
	Sn	118	908.4	22.2	**0.0513**	0.037	72.9	ug/L	683	Standard
	Sb	123	878.6	35.9	**0.1790**	0.073	41.1	ug/L	446	Standard
	Ba	135	58.0	51.9	**0.0454**	0.016	34.5	ug/L	28	Standard
	Ce	140	331.7	19.9				ug/L	33	Standard
>	**Tb**	159	810828.6	0.2				ug/L	800803	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	80.0	40.2	**0.0435**	0.004	9.5	ug/L	13	Standard
	Tl	205	55.0	47.2	**0.0506**	0.004	7.6	ug/L	13	Standard
	Pb	206	272.3	12.8	**0.0499**	0.007	14.3	ug/L	226	Standard
	Pb	207	234.3	3.4	**0.0500**	0.002	3.4	ug/L	204	Standard
	Pb	208	1043.0	5.0	**0.0570**	0.003	5.6	ug/L	852	Standard
	U	238	68.3	34.1	**0.0527**	0.003	6.5	ug/L	13	Standard
>	**Bi**	209	461986.5	0.9				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	56.7	25.5	**0.0334**	0.019	57.4	mg/L	58	Standard
K	39	33.3	22.9	**-0.0174**	0.031	176.3	mg/L	27	Standard
Ca	43	15.0	57.7	**-0.2614**	0.582	222.6	mg/L	20	Standard
Fe	54	152.4	21.9	**-0.0009**	0.028	3226.3	mg/L	158	Standard
Fe	57	235.0	9.3	**0.0532**	0.054	101.4	mg/L	267	Standard
Sc-1	45	41592.0	2.0				mg/L	38815	Standard
Cl	35	67828.8	1.6				ug/L	57611	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1916.8	3.7				ug/L	1617	Standard
P	31	20525.6	1.1				ug/L	19244	Standard
S	34	3962.2	2.2				ug/L	3557	Standard
Sr	88	60.0	30.0				ug/L	65	Standard
C	12	70.0	65.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	49.5				mg/L	23	Standard
Dy	164	19.5	52.5				mg/L	13	Standard
Ho-1	165	8.3	69.3				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	7308.4	3.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.076	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.026
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.882
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Tl	203	

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Method 6020 - Summary Report

Sample ID: L1606148803
Sample Date/Time: Wednesday, July 06, 2016 14:20:24
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68964.9	1.0				ug/L	68501	Standard
	Be	9	1430.1	4.1	**1.5844**	0.061	3.9	ug/L	8	Standard
	Al	27	4479340.7	0.7	**31.3738**	0.508	1.6	ug/L	1397	Standard
	Sc	45	50281.6	1.3				ug/L	38815	Standard
	Ti	47	12786.1	2.2	**35.4002**	0.626	1.8	ug/L	36	Standard
	V	51	245283.9	0.7	**32.2795**	0.259	0.8	ug/L	1284	Standard
	Cr	52	185195.4	1.3	**24.0973**	0.220	0.9	ug/L	6503	Standard
	Cr	53	22409.9	1.6	**23.8925**	0.264	1.1	ug/L	492	Standard
	Mn	55	13045244.9	0.7	**1984.2182**	4.943	0.2	ug/L	841	Standard
	Co	59	203887.4	1.0	**31.4350**	0.326	1.0	ug/L	229	Standard
	Ni	60	45030.8	0.2	**24.8217**	0.122	0.5	ug/L	344	Standard
	Cu	65	36415.4	1.0	**20.2279**	0.287	1.4	ug/L	115	Standard
	Zn	66	89164.3	0.6	**82.1810**	0.549	0.7	ug/L	190	Standard
>	**Ge**	72	440601.3	0.6				ug/L	409858	Standard
	As	75	13472.2	0.2	**12.1886**	0.074	0.6	ug/L	-22	Standard
	Se	82	159.2	6.3	**1.3506**	0.096	7.1	ug/L	18	Standard
	Se-1	77	180.7	12.1	**1.6818**	0.299	17.8	ug/L	50	Standard
>	**Ga**	71	27493.3	2.0				mg/L	97	Standard
	Rb	85	255486.1	0.8				ug/L	25	Standard
	Y	89	620644.7	1.4				ug/L	376763	Standard
>	**Rh**	103	36.7	41.7				ug/L	20	Standard
	Mo	98	4260.2	4.6	**1.7838**	0.088	4.9	ug/L	51	Standard
	Ag	107	692.3	11.4	**0.1306**	0.012	9.5	ug/L	76	Standard
	Cd	111	567.0	10.9	**0.3164**	0.032	10.0	mg/L	6	Standard
	Cd	114	1370.0	2.6	**0.3110**	0.006	1.8	ug/L	18	Standard
>	**In**	115	523416.4	1.0				ug/L	507261	Standard
	Sn	118	871.7	16.6	**0.0442**	0.026	57.7	ug/L	683	Standard
	Sb	123	1006.4	24.1	**0.2069**	0.054	26.1	ug/L	446	Standard
	Ba	135	368283.0	0.9	**187.5586**	0.267	0.1	ug/L	28	Standard
	Ce	140	1316437.2	1.5				ug/L	33	Standard
>	**Tb**	159	838738.9	0.8				ug/L	800803	Standard
	Ho	165	20597.3	3.2				ug/L	10	Standard
	Tl	203	2287.2	4.0	**0.3245**	0.009	2.9	ug/L	13	Standard
	Tl	205	2041.8	8.7	**0.3428**	0.028	8.2	ug/L	13	Standard
	Pb	206	194756.4	0.4	**38.6453**	0.250	0.6	ug/L	226	Standard
	Pb	207	160861.5	1.1	**35.1512**	0.495	1.4	ug/L	204	Standard
	Pb	208	691666.3	0.4	**37.7954**	0.298	0.8	ug/L	852	Standard
	U	238	13502.7	0.9	**2.0337**	0.035	1.7	ug/L	13	Standard
>	**Bi**	209	461132.8	1.0				ug/L	449044	Standard

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Na	23	1.7	173.2	**-1.7326**	12.211	704.7	mg/L	2	Standard
Mg	24	543.3	3.7	**0.5297**	0.028	5.3	mg/L	58	Standard
K	39	225.0	27.8	**0.5493**	0.186	33.8	mg/L	27	Standard
Ca	43	70.0	56.7	**2.6354**	2.167	82.2	mg/L	20	Standard
Fe	54	48868.5	1.4	**31.4625**	0.788	2.5	mg/L	158	Standard
Fe	57	12516.8	1.7	**31.6469**	0.919	2.9	mg/L	267	Standard
> **Sc-1**	45	50281.6	1.3				mg/L	38815	Standard
Cl	35	64480.9	1.3				ug/L	57611	Standard
Kr	83	0.0					ug/L	2	Standard
Br	81	5207.6	4.9				ug/L	1617	Standard
P	31	20347.0	4.2				ug/L	19244	Standard
S	34	3723.8	2.7				ug/L	3557	Standard
Sr	88	93.3	25.3				ug/L	65	Standard
C	12	180.0	25.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	126.7	24.1				mg/L	23	Standard
Dy	164	34149.5	0.7				mg/L	13	Standard
Ho-1	165	20597.3	3.2				mg/L	10	Standard
Er	166	18180.9	3.1				mg/L	13	Standard
I	127	51178.1	4.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.677	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.501	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.185
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.692
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606148804
Sample Date/Time: Wednesday, July 06, 2016 14:23:36
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70455.2	2.5				ug/L	68501	Standard
	Be	9	1626.8	3.8	**1.7617**	0.027	1.5	ug/L	8	Standard
	Al	27	7885247.8	2.0	**54.0384**	0.819	1.5	ug/L	1397	Standard
	Sc	45	53661.5	0.5				ug/L	38815	Standard
	Ti	47	11445.7	1.5	**31.6092**	0.269	0.9	ug/L	36	Standard
	V	51	210519.3	1.1	**27.6148**	0.047	0.2	ug/L	1284	Standard
	Cr	52	229151.0	1.1	**29.9626**	0.113	0.4	ug/L	6503	Standard
	Cr	53	28164.5	1.2	**30.0635**	0.512	1.7	ug/L	492	Standard
	Mn	55	5437614.7	1.0	**824.9869**	1.318	0.2	ug/L	841	Standard
	Co	59	122777.2	1.3	**18.8851**	0.187	1.0	ug/L	229	Standard
	Ni	60	93939.7	0.8	**51.8238**	0.133	0.3	ug/L	344	Standard
	Cu	65	81336.1	1.0	**45.0835**	0.163	0.4	ug/L	115	Standard
	Zn	66	135372.5	1.5	**124.5154**	0.758	0.6	ug/L	190	Standard
>	**Ge**	72	441688.5	1.0				ug/L	409858	Standard
	As	75	11413.4	2.1	**10.3148**	0.117	1.1	ug/L	-22	Standard
	Se	82	92.0	7.7	**0.7569**	0.057	7.6	ug/L	18	Standard
	Se-1	77	150.3	6.9	**1.2665**	0.131	10.4	ug/L	50	Standard
>	**Ga**	71	36022.8	0.3				mg/L	97	Standard
	Rb	85	260976.9	1.1				ug/L	25	Standard
	Y	89	737452.6	1.5				ug/L	376763	Standard
>	**Rh**	103	23.3	32.7				ug/L	20	Standard
	Mo	98	2377.3	0.4	**1.0254**	0.007	0.7	ug/L	51	Standard
	Ag	107	577.7	3.2	**0.1127**	0.003	2.7	ug/L	76	Standard
	Cd	111	456.4	3.3	**0.2619**	0.006	2.3	mg/L	6	Standard
	Cd	114	1138.8	4.7	**0.2645**	0.009	3.5	ug/L	18	Standard
>	**In**	115	524213.1	0.7				ug/L	507261	Standard
	Sn	118	543.3	24.0	**-0.0140**	0.023	166.6	ug/L	683	Standard
	Sb	123	503.1	37.6	**0.0932**	0.043	46.3	ug/L	446	Standard
	Ba	135	536592.0	1.6	**272.8382**	2.586	0.9	ug/L	28	Standard
	Ce	140	1270636.3	1.2				ug/L	33	Standard
>	**Tb**	159	849609.4	0.3				ug/L	800803	Standard
	Ho	165	27800.5	1.7				ug/L	10	Standard
	Tl	203	1988.8	1.5	**0.2853**	0.004	1.5	ug/L	13	Standard
	Tl	205	1725.1	5.5	**0.2949**	0.014	4.8	ug/L	13	Standard
	Pb	206	129785.5	0.5	**25.6264**	0.046	0.2	ug/L	226	Standard
	Pb	207	107864.6	0.4	**23.4549**	0.043	0.2	ug/L	204	Standard
	Pb	208	464868.0	0.1	**25.2790**	0.193	0.8	ug/L	852	Standard
	U	238	12298.7	1.6	**1.8471**	0.019	1.0	ug/L	13	Standard
>	**Bi**	209	463372.4	0.6				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	698.3	14.5	**0.6452**	0.096	14.8	mg/L	58	Standard
K	39	333.3	20.4	**0.8199**	0.200	24.4	mg/L	27	Standard
Ca	43	106.7	16.5	**4.3315**	0.899	20.8	mg/L	20	Standard
Fe	54	57795.6	2.6	**34.8751**	1.045	3.0	mg/L	158	Standard
Fe	57	14308.4	2.2	**33.9418**	0.935	2.8	mg/L	267	Standard
> **Sc-1**	45	53661.5	0.5				mg/L	38815	Standard
Cl	35	64031.0	0.5				ug/L	57611	Standard
Kr	83	1.7	124.9				ug/L	2	Standard
Br	81	4340.6	6.3				ug/L	1617	Standard
P	31	20407.1	0.3				ug/L	19244	Standard
S	34	3852.2	0.9				ug/L	3557	Standard
Sr	88	138.3	14.6				ug/L	65	Standard
C	12	113.3	18.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	130.0	40.7				mg/L	23	Standard
Dy	164	46817.8	1.5				mg/L	13	Standard
Ho-1	165	27800.5	1.7				mg/L	10	Standard
Er	166	24663.4	1.1				mg/L	13	Standard
I	127	21059.6	1.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.852	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.766	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.342
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.191
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606153301
Sample Date/Time: Wednesday, July 06, 2016 14:26:47
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68147.9	1.7				ug/L	68501	Standard
	Be	9	771.7	9.4	**0.8747**	0.088	10.0	ug/L	8	Standard
	Al	27	12416267.7	1.3	**87.9634**	2.577	2.9	ug/L	1397	Standard
	Sc	45	47710.0	1.2				ug/L	38815	Standard
	Ti	47	7376.1	1.1	**20.2551**	0.367	1.8	ug/L	36	Standard
	V	51	162623.9	0.2	**21.1879**	0.259	1.2	ug/L	1284	Standard
	Cr	52	163391.7	0.9	**20.9810**	0.252	1.2	ug/L	6503	Standard
	Cr	53	20403.7	2.8	**21.5523**	0.880	4.1	ug/L	492	Standard
	Mn	55	2250867.1	1.6	**339.6230**	1.651	0.5	ug/L	841	Standard
	Co	59	55901.3	1.7	**8.5555**	0.031	0.4	ug/L	229	Standard
	Ni	60	36823.0	1.7	**20.1135**	0.523	2.6	ug/L	344	Standard
	Cu	65	25825.3	0.5	**14.2313**	0.219	1.5	ug/L	115	Standard
	Zn	66	93990.6	0.8	**85.9661**	0.695	0.8	ug/L	190	Standard
>	Ge	72	444050.8	1.4				ug/L	409858	Standard
	As	75	4736.3	1.7	**4.3159**	0.012	0.3	ug/L	-22	Standard
	Se	82	75.0	10.7	**0.6032**	0.062	10.3	ug/L	18	Standard
	Se-1	77	104.3	17.3	**0.6382**	0.227	35.6	ug/L	50	Standard
>	Ga	71	16657.5	2.6				mg/L	97	Standard
	Rb	85	168562.8	2.3				ug/L	25	Standard
	Y	89	576458.9	1.1				ug/L	376763	Standard
>	Rh	103	53.3	23.6				ug/L	20	Standard
	Mo	98	1965.0	3.3	**0.8634**	0.018	2.1	ug/L	51	Standard
	Ag	107	631.3	4.3	**0.1214**	0.003	2.5	ug/L	76	Standard
	Cd	111	1012.4	2.3	**0.5352**	0.005	1.0	mg/L	6	Standard
	Cd	114	2475.0	2.2	**0.5334**	0.017	3.1	ug/L	18	Standard
>	In	115	521855.9	1.3				ug/L	507261	Standard
	Sn	118	2306.8	5.0	**0.2998**	0.026	8.7	ug/L	683	Standard
	Sb	123	509.0	29.8	**0.0952**	0.035	37.2	ug/L	446	Standard
	Ba	135	490095.6	1.4	**250.3317**	0.859	0.3	ug/L	28	Standard
	Ce	140	1104772.4	2.2				ug/L	33	Standard
>	Tb	159	830689.6	0.7				ug/L	800803	Standard
	Ho	165	16939.5	1.9				ug/L	10	Standard
	Tl	203	806.0	2.3	**0.1371**	0.003	2.2	ug/L	13	Standard
	Tl	205	756.7	4.5	**0.1550**	0.005	3.1	ug/L	13	Standard
	Pb	206	256607.5	1.0	**51.4795**	1.086	2.1	ug/L	226	Standard
	Pb	207	212619.8	0.6	**46.9700**	0.785	1.7	ug/L	204	Standard
	Pb	208	921038.1	0.5	**50.8782**	0.603	1.2	ug/L	852	Standard
	U	238	4276.6	4.5	**0.6802**	0.035	5.1	ug/L	13	Standard
>	Bi	209	456168.6	1.1				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	461.7	6.3	**0.4703**	0.034	7.2	mg/L	58	Standard
K	39	460.0	2.2	**1.3504**	0.049	3.6	mg/L	27	Standard
Ca	43	195.0	13.6	**10.2687**	1.651	16.1	mg/L	20	Standard
Fe	54	17929.3	3.8	**12.0874**	0.347	2.9	mg/L	158	Standard
Fe	57	4672.4	2.6	**12.0353**	0.317	2.6	mg/L	267	Standard
> **Sc-1**	45	47710.0	1.2				mg/L	38815	Standard
Cl	35	66407.9	0.5				ug/L	57611	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	5230.9	3.6				ug/L	1617	Standard
P	31	20996.2	0.8				ug/L	19244	Standard
S	34	3925.5	4.1				ug/L	3557	Standard
Sr	88	201.7	18.6				ug/L	65	Standard
C	12	120.0	0.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	70.0	28.6				mg/L	23	Standard
Dy	164	27810.2	4.4				mg/L	13	Standard
Ho-1	165	16939.5	1.9				mg/L	10	Standard
Er	166	15100.9	0.7				mg/L	13	Standard
I	127	13139.0	1.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.484	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.343	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	102.877
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.587
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606153302
Sample Date/Time: Wednesday, July 06, 2016 14:29:58
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	69505.8	1.9				ug/L	68501	Standard
	Be	9	856.7	3.2	**0.9501**	0.043	4.5	ug/L	8	Standard
	Al	27	18425399.3	2.6	**127.9163**	0.913	0.7	ug/L	1397	Standard
	Sc	45	48345.3	1.0				ug/L	38815	Standard
	Ti	47	8361.0	2.5	**23.2865**	0.575	2.5	ug/L	36	Standard
	V	51	163202.5	0.9	**21.5655**	0.254	1.2	ug/L	1284	Standard
	Cr	52	141504.8	1.1	**18.3140**	0.301	1.6	ug/L	6503	Standard
	Cr	53	17246.5	1.5	**18.4104**	0.344	1.9	ug/L	492	Standard
	Mn	55	3248037.2	1.4	**497.1143**	9.755	2.0	ug/L	841	Standard
	Co	59	64929.8	0.9	**10.0780**	0.141	1.4	ug/L	229	Standard
	Ni	60	40681.2	0.4	**22.5514**	0.203	0.9	ug/L	344	Standard
	Cu	65	26231.7	0.4	**14.6587**	0.056	0.4	ug/L	115	Standard
	Zn	66	59371.1	1.2	**55.0294**	0.757	1.4	ug/L	190	Standard
>	Ge	72	437841.6	0.5				ug/L	409858	Standard
	As	75	3819.1	1.3	**3.5477**	0.051	1.4	ug/L	-22	Standard
	Se	82	63.2	15.3	**0.5090**	0.087	17.2	ug/L	18	Standard
	Se-1	77	114.7	10.2	**0.7996**	0.156	19.5	ug/L	50	Standard
>	Ga	71	17126.3	2.1				mg/L	97	Standard
	Rb	85	174436.8	1.0				ug/L	25	Standard
	Y	89	589810.1	1.2				ug/L	376763	Standard
>	Rh	103	46.7	22.3				ug/L	20	Standard
	Mo	98	807.3	1.4	**0.3999**	0.004	1.0	ug/L	51	Standard
	Ag	107	589.0	14.0	**0.1156**	0.013	10.8	ug/L	76	Standard
	Cd	111	588.8	3.3	**0.3304**	0.006	2.0	mg/L	6	Standard
	Cd	114	1476.5	2.1	**0.3360**	0.010	2.9	ug/L	18	Standard
>	In	115	517084.2	1.2				ug/L	507261	Standard
	Sn	118	753.4	15.5	**0.0248**	0.019	78.5	ug/L	683	Standard
	Sb	123	464.2	27.6	**0.0856**	0.028	33.1	ug/L	446	Standard
	Ba	135	439401.4	0.4	**226.5278**	2.065	0.9	ug/L	28	Standard
	Ce	140	1185543.6	1.0				ug/L	33	Standard
>	Tb	159	826809.9	1.0				ug/L	800803	Standard
	Ho	165	18733.2	1.7				ug/L	10	Standard
	Tl	203	866.7	5.6	**0.1458**	0.007	4.6	ug/L	13	Standard
	Tl	205	758.4	2.7	**0.1562**	0.003	2.2	ug/L	13	Standard
	Pb	206	95906.3	1.6	**19.3933**	0.272	1.4	ug/L	226	Standard
	Pb	207	79499.0	1.3	**17.7046**	0.235	1.3	ug/L	204	Standard
	Pb	208	341366.3	0.2	**19.0116**	0.119	0.6	ug/L	852	Standard
	U	238	4789.8	2.5	**0.7624**	0.020	2.6	ug/L	13	Standard
>	Bi	209	452435.1	0.4				ug/L	449044	Standard

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Na	23	1.7	173.2	**-1.5685**	12.495	796.6	mg/L	2	Standard
Mg	24	160.0	16.5	**0.1354**	0.027	19.9	mg/L	58	Standard
K	39	441.7	8.0	**1.2712**	0.100	7.8	mg/L	27	Standard
Ca	43	336.7	4.5	**18.3838**	0.917	5.0	mg/L	20	Standard
Fe	54	18193.1	1.4	**12.1065**	0.180	1.5	mg/L	158	Standard
Fe	57	5070.8	1.9	**12.9392**	0.314	2.4	mg/L	267	Standard
> **Sc-1**	45	48345.3	1.0				mg/L	38815	Standard
Cl	35	67048.7	0.3				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	3283.7	4.1				ug/L	1617	Standard
P	31	21121.4	2.3				ug/L	19244	Standard
S	34	4137.2	5.8				ug/L	3557	Standard
Sr	88	201.7	17.9				ug/L	65	Standard
C	12	140.0	25.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	15.7				mg/L	23	Standard
Dy	164	31095.7	1.2				mg/L	13	Standard
Ho-1	165	18733.2	1.7				mg/L	10	Standard
Er	166	16796.0	2.1				mg/L	13	Standard
I	127	12917.2	2.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.467	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.828	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.937
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.755
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606153302
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Method 6020 - Summary Report

Sample ID: L1606164301
Sample Date/Time: Wednesday, July 06, 2016 14:33:10
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69428.8	2.6				ug/L	68501	Standard
	Be	9	1636.8	2.5	**1.7991**	0.043	2.4	ug/L	8	Standard
	Al	27	39500793.5	2.5	**274.5277**	1.455	0.5	ug/L	1397	Standard
	Sc	45	53986.0	1.4				ug/L	38815	Standard
	Ti	47	691754.6	0.6	**2204.8276**	20.610	0.9	ug/L	36	Standard
	V	51	699452.5	0.9	**106.2143**	1.985	1.9	ug/L	1284	Standard
	Cr	52	809923.1	0.9	**124.9852**	1.160	0.9	ug/L	6503	Standard
	Cr	53	99527.5	0.8	**123.7822**	1.570	1.3	ug/L	492	Standard
	Mn	55	8147594.7	0.9	**1425.4572**	14.550	1.0	ug/L	841	Standard
	Co	59	124493.7	1.1	**22.0821**	0.488	2.2	ug/L	229	Standard
	Ni	60	113209.8	1.5	**72.0728**	0.756	1.0	ug/L	344	Standard
	Cu	65	118972.0	1.6	**76.0424**	0.278	0.4	ug/L	115	Standard
	Zn	66	977529.9	1.7	**1037.5458**	5.451	0.5	ug/L	190	Standard
>	**Ge**	72	383077.6	1.4				ug/L	409858	Standard
	As	75	7978.6	0.8	**8.3342**	0.070	0.8	ug/L	-22	Standard
	Se	82	147.2	5.6	**1.4400**	0.093	6.5	ug/L	18	Standard
	Se-1	77	136.0	10.2	**1.3561**	0.241	17.8	ug/L	50	Standard
>	**Ga**	71	64701.3	2.8				mg/L	97	Standard
	Rb	85	943143.2	0.2				ug/L	25	Standard
	Y	89	702387.7	2.1				ug/L	376763	Standard
>	**Rh**	103	1626.8	7.8				ug/L	20	Standard
	Mo	98	7031.4	1.4	**3.3995**	0.013	0.4	ug/L	51	Standard
	Ag	107	4514.3	1.1	**0.8488**	0.018	2.1	ug/L	76	Standard
	Cd	111	293.3	7.2	**0.2082**	0.014	6.7	mg/L	6	Standard
	Cd	114	505.6	12.8	**0.1562**	0.013	8.4	ug/L	18	Standard
>	**In**	115	444413.1	1.7				ug/L	507261	Standard
	Sn	118	9111.1	1.5	**1.7898**	0.024	1.4	ug/L	683	Standard
	Sb	123	891.2	18.5	**0.2170**	0.046	21.2	ug/L	446	Standard
	Ba	135	515064.5	1.4	**308.9390**	0.851	0.3	ug/L	28	Standard
	Ce	140	1739811.5	1.9				ug/L	33	Standard
>	**Tb**	159	758128.4	1.9				ug/L	800803	Standard
	Ho	165	26984.0	3.1				ug/L	10	Standard
	Tl	203	51.3	14.6	**0.0413**	0.001	2.8	ug/L	13	Standard
	Tl	205	46.7	37.6	**0.0509**	0.003	6.1	ug/L	13	Standard
	Pb	206	99318.1	0.4	**24.0923**	0.176	0.7	ug/L	226	Standard
	Pb	207	82369.3	0.9	**22.0041**	0.206	0.9	ug/L	204	Standard
	Pb	208	340801.2	1.0	**22.7675**	0.282	1.2	ug/L	852	Standard
	U	238	15059.5	0.6	**2.7573**	0.009	0.3	ug/L	13	Standard
>	**Bi**	209	377183.0	0.9				ug/L	449044	Standard

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Na	23	78.3	22.4	**298.4994**	69.283	23.2	mg/L	2	Standard
Mg	24	3415.4	0.4	**3.2866**	0.036	1.1	mg/L	58	Standard
K	39	4233.9	1.4	**11.9963**	0.339	2.8	mg/L	27	Standard
Ca	43	11469.3	1.3	**598.6185**	13.178	2.2	mg/L	20	Standard
Fe	54	41027.6	1.7	**24.5701**	0.110	0.4	mg/L	158	Standard
Fe	57	17586.9	0.5	**41.6189**	0.442	1.1	mg/L	267	Standard
> **Sc-1**	45	53986.0	1.4				mg/L	38815	Standard
Cl	35	87387.3	0.7				ug/L	57611	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	6948.3	7.7				ug/L	1617	Standard
P	31	19342.3	1.6				ug/L	19244	Standard
S	34	3842.2	3.5				ug/L	3557	Standard
Sr	88	6896.6	5.2				ug/L	65	Standard
C	12	66.7	52.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	78.1				mg/L	23	Standard
Dy	164	39507.9	2.2				mg/L	13	Standard
Ho-1	165	26984.0	3.1				mg/L	10	Standard
Er	166	26867.1	2.1				mg/L	13	Standard
I	127	8078.8	2.6				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.354	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.466	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		87.610
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		83.997
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ti 47 Upper, S, EEE	Ti	47	
V 51 Upper, S, EEE	V	51	

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Cr 52 Upper, S, EEE	Cr	52
Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606164302
Sample Date/Time: Wednesday, July 06, 2016 14:36:21
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68074.3	3.1				ug/L	68501	Standard
	Be	9	1676.8	1.0	**1.8798**	0.070	3.7	ug/L	8	Standard
	Al	27	36487885.7	1.0	**258.8300**	9.964	3.8	ug/L	1397	Standard
	Sc	45	54253.7	2.1				ug/L	38815	Standard
	Ti	47	713173.1	0.2	**2239.9907**	37.989	1.7	ug/L	36	Standard
	V	51	784062.8	1.0	**117.3418**	2.757	2.3	ug/L	1284	Standard
	Cr	52	1058816.2	0.3	**161.2792**	2.118	1.3	ug/L	6503	Standard
	Cr	53	128302.6	1.0	**157.3675**	3.831	2.4	ug/L	492	Standard
	Mn	55	9336934.6	1.6	**1610.0137**	50.338	3.1	ug/L	841	Standard
	Co	59	128111.4	1.0	**22.3925**	0.580	2.6	ug/L	229	Standard
	Ni	60	125551.8	1.3	**78.7899**	1.983	2.5	ug/L	344	Standard
	Cu	65	139849.8	0.4	**88.0931**	1.328	1.5	ug/L	115	Standard
	Zn	66	1090011.4	0.8	**1140.1019**	9.125	0.8	ug/L	190	Standard
>	Ge	72	388774.8	1.6				ug/L	409858	Standard
	As	75	7748.3	0.5	**7.9803**	0.149	1.9	ug/L	-22	Standard
	Se	82	129.2	7.5	**1.2374**	0.092	7.5	ug/L	18	Standard
	Se-1	77	141.7	10.4	**1.4093**	0.214	15.2	ug/L	50	Standard
>	Ga	71	64269.4	0.9				mg/L	97	Standard
	Rb	85	903484.1	1.4				ug/L	25	Standard
	Y	89	691327.0	0.5				ug/L	376763	Standard
>	Rh	103	1586.7	6.2				ug/L	20	Standard
	Mo	98	9576.0	1.4	**4.5403**	0.058	1.3	ug/L	51	Standard
	Ag	107	4941.8	1.4	**0.9141**	0.012	1.3	ug/L	76	Standard
	Cd	111	288.9	5.1	**0.2032**	0.008	4.0	mg/L	6	Standard
	Cd	114	581.5	10.2	**0.1723**	0.014	8.0	ug/L	18	Standard
>	In	115	450717.4	0.1				ug/L	507261	Standard
	Sn	118	12807.1	1.6	**2.5230**	0.040	1.6	ug/L	683	Standard
	Sb	123	677.8	18.9	**0.1575**	0.034	21.4	ug/L	446	Standard
	Ba	135	495414.8	0.4	**292.9882**	1.099	0.4	ug/L	28	Standard
	Ce	140	1637103.7	0.8				ug/L	33	Standard
>	Tb	159	767161.8	1.6				ug/L	800803	Standard
	Ho	165	25913.8	1.5				ug/L	10	Standard
	Tl	203	48.0	24.0	**0.0407**	0.002	4.4	ug/L	13	Standard
	Tl	205	53.3	28.6	**0.0520**	0.003	5.2	ug/L	13	Standard
	Pb	206	78980.0	0.3	**18.8920**	0.060	0.3	ug/L	226	Standard
	Pb	207	65462.4	0.2	**17.2450**	0.059	0.3	ug/L	204	Standard
	Pb	208	274937.4	1.0	**18.1124**	0.167	0.9	ug/L	852	Standard
	U	238	14384.5	2.0	**2.5996**	0.049	1.9	ug/L	13	Standard
>	Bi	209	382475.3	0.1				ug/L	449044	Standard

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Na	23	78.3	13.3	**296.5126**	36.423	12.3	mg/L	2	Standard
Mg	24	3305.4	5.9	**3.1653**	0.224	7.1	mg/L	58	Standard
K	39	4055.5	3.2	**11.4256**	0.339	3.0	mg/L	27	Standard
Ca	43	11172.5	2.0	**580.2218**	13.558	2.3	mg/L	20	Standard
Fe	54	41719.4	1.1	**24.8710**	0.620	2.5	mg/L	158	Standard
Fe	57	17573.5	0.4	**41.3869**	0.919	2.2	mg/L	267	Standard
Sc-1	45	54253.7	2.1				mg/L	38815	Standard
Cl	35	87803.0	1.0				ug/L	57611	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	6821.5	3.6				ug/L	1617	Standard
P	31	19047.0	1.8				ug/L	19244	Standard
S	34	3895.5	3.5				ug/L	3557	Standard
Sr	88	6293.0	3.0				ug/L	65	Standard
C	12	76.7	30.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	137.8				mg/L	23	Standard
Dy	164	38633.3	1.4				mg/L	13	Standard
Ho-1	165	25913.8	1.5				mg/L	10	Standard
Er	166	26426.4	1.5				mg/L	13	Standard
I	127	8060.5	1.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.377	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.856	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	88.853	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	85.175	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ti 47 Upper, S, EEE	Ti	47	
V 51 Upper, S, EEE	V	51	

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Cr 52 Upper, S, EEE	Cr	52
Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606168701
Sample Date/Time: Wednesday, July 06, 2016 14:39:33
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65198.3	0.3				ug/L	68501	Standard
	Be	9	1203.4	5.3	**1.4124**	0.070	5.0	ug/L	8	Standard
	Al	27	8002436.2	0.7	**59.2503**	0.304	0.5	ug/L	1397	Standard
	Sc	45	54516.2	1.1				ug/L	38815	Standard
	Ti	47	4355.0	3.4	**11.9055**	0.476	4.0	ug/L	36	Standard
	V	51	172515.9	1.4	**22.4049**	0.478	2.1	ug/L	1284	Standard
	Cr	52	187973.8	0.1	**24.1888**	0.362	1.5	ug/L	6503	Standard
	Cr	53	22812.2	3.1	**24.0476**	0.569	2.4	ug/L	492	Standard
	Mn	55	702950.0	1.2	**105.6433**	2.666	2.5	ug/L	841	Standard
	Co	59	51718.1	1.6	**7.8896**	0.229	2.9	ug/L	229	Standard
	Ni	60	55454.0	0.9	**30.2604**	0.655	2.2	ug/L	344	Standard
	Cu	65	88613.7	0.9	**48.6862**	0.625	1.3	ug/L	115	Standard
	Zn	66	118159.3	0.7	**107.7164**	1.479	1.4	ug/L	190	Standard
>	**Ge**	72	445650.1	1.4				ug/L	409858	Standard
	As	75	4148.8	2.4	**3.7802**	0.107	2.8	ug/L	-22	Standard
	Se	82	64.4	6.6	**0.5094**	0.043	8.5	ug/L	18	Standard
	Se-1	77	139.3	4.1	**1.1025**	0.091	8.3	ug/L	50	Standard
>	**Ga**	71	24242.7	5.2				mg/L	97	Standard
	Rb	85	141026.7	1.5				ug/L	25	Standard
	Y	89	763474.6	0.4				ug/L	376763	Standard
>	**Rh**	103	46.7	48.3				ug/L	20	Standard
	Mo	98	184.5	10.6	**0.1457**	0.007	4.9	ug/L	51	Standard
	Ag	107	1242.4	5.7	**0.2161**	0.011	5.3	ug/L	76	Standard
	Cd	111	699.4	2.5	**0.3810**	0.006	1.5	mg/L	6	Standard
	Cd	114	1744.0	5.9	**0.3858**	0.018	4.5	ug/L	18	Standard
>	**In**	115	523267.4	0.9				ug/L	507261	Standard
	Sn	118	786.7	19.9	**0.0294**	0.029	98.1	ug/L	683	Standard
	Sb	123	369.0	28.6	**0.0632**	0.025	38.8	ug/L	446	Standard
	Ba	135	302502.8	1.1	**154.1018**	0.436	0.3	ug/L	28	Standard
	Ce	140	1768629.8	1.3				ug/L	33	Standard
>	**Tb**	159	852268.4	0.8				ug/L	800803	Standard
	Ho	165	30797.9	0.5				ug/L	10	Standard
	Tl	203	1307.4	0.4	**0.2006**	0.001	0.5	ug/L	13	Standard
	Tl	205	1103.4	7.1	**0.2055**	0.011	5.5	ug/L	13	Standard
	Pb	206	198522.1	0.7	**39.5866**	0.197	0.5	ug/L	226	Standard
	Pb	207	158834.2	0.5	**34.8785**	0.060	0.2	ug/L	204	Standard
	Pb	208	698105.2	0.3	**38.3353**	0.192	0.5	ug/L	852	Standard
	U	238	7948.1	2.5	**1.2203**	0.026	2.1	ug/L	13	Standard
>	**Bi**	209	458856.3	0.6				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	120.0	16.7	**0.0774**	0.020	26.2	mg/L	58	Standard
K	39	231.7	10.9	**0.5161**	0.076	14.8	mg/L	27	Standard
Ca	43	146.7	7.1	**6.3201**	0.584	9.2	mg/L	20	Standard
Fe	54	26063.7	2.4	**15.4120**	0.269	1.7	mg/L	158	Standard
Fe	57	6638.1	2.2	**15.1289**	0.287	1.9	mg/L	267	Standard
> **Sc-1**	45	54516.2	1.1				mg/L	38815	Standard
Cl	35	64574.7	2.3				ug/L	57611	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	2150.2	3.8				ug/L	1617	Standard
P	31	19699.5	1.2				ug/L	19244	Standard
S	34	3850.5	8.7				ug/L	3557	Standard
Sr	88	93.3	41.6				ug/L	65	Standard
C	12	103.3	24.4				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	120.0	22.0				mg/L	23	Standard
Dy	164	49394.7	1.6				mg/L	13	Standard
Ho-1	165	30797.9	0.5				mg/L	10	Standard
Er	166	29024.5	3.2				mg/L	13	Standard
I	127	21525.3	2.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.178	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.733	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.156
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.185
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129601
Sample Date/Time: Wednesday, July 06, 2016 14:42:44
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	56620.6	2.4				ug/L	68501	Standard
	Be	9	20.0	50.0	**0.0459**	0.013	27.6	ug/L	8	Standard
	Al	27	5728922.0	1.3	**48.8606**	0.848	1.7	ug/L	1397	Standard
	Sc	45	39332.7	0.5				ug/L	38815	Standard
	Ti	47	250.7	40.1	**0.7210**	0.296	41.0	ug/L	36	Standard
	V	51	5583.3	1.1	**0.6527**	0.007	1.1	ug/L	1284	Standard
	Cr	52	6924.9	7.8	**0.0771**	0.083	107.9	ug/L	6503	Standard
	Cr	53	828.4	12.4	**0.5513**	0.117	21.2	ug/L	492	Standard
	Mn	55	39639.9	5.7	**6.4122**	0.323	5.0	ug/L	841	Standard
	Co	59	636.3	9.7	**0.1113**	0.009	8.5	ug/L	229	Standard
	Ni	60	1640.1	10.3	**0.8248**	0.105	12.8	ug/L	344	Standard
	Cu	65	1729.4	1.9	**1.0246**	0.025	2.4	ug/L	115	Standard
	Zn	66	1474.4	4.9	**1.3554**	0.062	4.5	ug/L	190	Standard
>	Ge	72	408109.4	0.7				ug/L	409858	Standard
	As	75	1683.3	3.0	**1.7299**	0.056	3.2	ug/L	-22	Standard
	Se	82	50.4	6.7	**0.4278**	0.029	6.7	ug/L	18	Standard
	Se-1	77	99.0	13.7	**0.6840**	0.188	27.4	ug/L	50	Standard
>	Ga	71	166.7	27.7				mg/L	97	Standard
	Rb	85	7700.3	2.6				ug/L	25	Standard
	Y	89	351613.9	1.8				ug/L	376763	Standard
>	Rh	103	36.7	20.8				ug/L	20	Standard
	Mo	98	1713.4	1.7	**0.8237**	0.007	0.8	ug/L	51	Standard
	Ag	107	91.7	52.6	**0.0387**	0.008	21.3	ug/L	76	Standard
	Cd	111	14.1	4.0	**0.0469**	0.000	0.7	mg/L	6	Standard
	Cd	114	55.2	43.3	**0.0495**	0.005	10.8	ug/L	18	Standard
>	In	115	479114.4	0.9				ug/L	507261	Standard
	Sn	118	240.0	21.1	**-0.0637**	0.009	14.8	ug/L	683	Standard
	Sb	123	897.3	23.2	**0.2010**	0.050	25.0	ug/L	446	Standard
	Ba	135	36392.7	1.3	**20.2618**	0.198	1.0	ug/L	28	Standard
	Ce	140	1328.4	93.1				ug/L	33	Standard
>	Tb	159	753581.0	0.7				ug/L	800803	Standard
	Ho	165	46.7	83.2				ug/L	10	Standard
	Tl	203	318.0	7.7	**0.0770**	0.004	4.6	ug/L	13	Standard
	Tl	205	243.3	7.2	**0.0811**	0.003	3.7	ug/L	13	Standard
	Pb	206	459.0	35.8	**0.0943**	0.036	37.7	ug/L	226	Standard
	Pb	207	393.0	33.0	**0.0916**	0.031	33.8	ug/L	204	Standard
	Pb	208	1558.0	19.6	**0.0919**	0.018	20.0	ug/L	852	Standard
	U	238	568.7	6.1	**0.1330**	0.006	4.4	ug/L	13	Standard
>	Bi	209	427650.1	0.7				ug/L	449044	Standard

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Na	23	3.3	173.2	**9.1076**	30.987	340.2	mg/L	2	Standard
Mg	24	7790.3	1.4	**10.3704**	0.153	1.5	mg/L	58	Standard
K	39	265.0	21.3	**0.9004**	0.219	24.3	mg/L	27	Standard
Ca	43	261.7	8.0	**17.5007**	1.426	8.2	mg/L	20	Standard
Fe	54	72.7	37.5	**-0.0601**	0.023	38.1	mg/L	158	Standard
Fe	57	375.0	6.1	**0.5580**	0.070	12.6	mg/L	267	Standard
> **Sc-1**	45	39332.7	0.5				mg/L	38815	Standard
Cl	35	70004.8	3.9				ug/L	57611	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	3617.1	4.1				ug/L	1617	Standard
P	31	6836.5	0.9				ug/L	19244	Standard
S	34	3590.4	5.8				ug/L	3557	Standard
Sr	88	210.0	23.0				ug/L	65	Standard
C	12	153.3	24.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	65.5				mg/L	23	Standard
Dy	164	54.4	85.8				mg/L	13	Standard
Ho-1	165	46.7	83.2				mg/L	10	Standard
Er	166	46.7	24.7				mg/L	13	Standard
I	127	20814.3	4.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		82.656	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.573	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.451
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.236
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606131308
Sample Date/Time: Wednesday, July 06, 2016 14:45:56
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60497.3	3.0				ug/L	68501	Standard
	Be	9	15.0	88.2	**0.0379**	0.016	41.5	ug/L	8	Standard
	Al	27	5083469.3	2.6	**40.5780**	0.231	0.6	ug/L	1397	Standard
	Sc	45	38739.5	1.9				ug/L	38815	Standard
	Ti	47	412.0	7.8	**1.1968**	0.101	8.4	ug/L	36	Standard
	V	51	3464.8	0.7	**0.3471**	0.005	1.4	ug/L	1284	Standard
	Cr	52	8692.2	1.2	**0.3263**	0.023	7.2	ug/L	6503	Standard
	Cr	53	598.3	7.3	**0.2774**	0.047	17.0	ug/L	492	Standard
	Mn	55	171328.2	0.3	**27.8533**	0.134	0.5	ug/L	841	Standard
	Co	59	1006.4	6.9	**0.1718**	0.011	6.3	ug/L	229	Standard
	Ni	60	1056.4	6.2	**0.4705**	0.035	7.3	ug/L	344	Standard
	Cu	65	541.3	4.5	**0.3095**	0.017	5.4	ug/L	115	Standard
	Zn	66	3408.4	0.5	**3.2604**	0.045	1.4	ug/L	190	Standard
>	**Ge**	72	410842.2	0.8				ug/L	409858	Standard
	As	75	28.9	66.4	**0.1266**	0.018	14.5	ug/L	-22	Standard
	Se	82	24.9	24.0	**0.1836**	0.054	29.6	ug/L	18	Standard
	Se-1	77	64.7	7.6	**0.1778**	0.069	38.8	ug/L	50	Standard
>	**Ga**	71	391.7	10.7				mg/L	97	Standard
	Rb	85	1593.4	5.4				ug/L	25	Standard
	Y	89	352039.8	1.1				ug/L	376763	Standard
>	**Rh**	103	45.0	11.1				ug/L	20	Standard
	Mo	98	8222.6	1.1	**3.6505**	0.031	0.8	ug/L	51	Standard
	Ag	107	73.7	8.2	**0.0355**	0.001	2.8	ug/L	76	Standard
	Cd	111	17.4	50.3	**0.0486**	0.005	9.5	mg/L	6	Standard
	Cd	114	57.8	14.9	**0.0499**	0.002	3.7	ug/L	18	Standard
>	**In**	115	483224.8	0.3				ug/L	507261	Standard
	Sn	118	266.7	2.9	**-0.0590**	0.002	2.7	ug/L	683	Standard
	Sb	123	167.3	27.5	**0.0206**	0.011	54.5	ug/L	446	Standard
	Ba	135	5694.1	2.5	**3.1566**	0.082	2.6	ug/L	28	Standard
	Ce	140	3217.0	6.3				ug/L	33	Standard
>	**Tb**	159	754978.3	0.8				ug/L	800803	Standard
	Ho	165	158.3	9.6				ug/L	10	Standard
	Tl	203	120.0	0.8	**0.0497**	0.000	0.2	ug/L	13	Standard
	Tl	205	133.3	11.5	**0.0636**	0.002	3.9	ug/L	13	Standard
	Pb	206	1150.0	3.7	**0.2410**	0.009	3.5	ug/L	226	Standard
	Pb	207	967.0	3.1	**0.2258**	0.007	3.2	ug/L	204	Standard
	Pb	208	4211.2	0.6	**0.2471**	0.000	0.1	ug/L	852	Standard
	U	238	1898.1	1.9	**0.3431**	0.007	2.1	ug/L	13	Standard
>	**Bi**	209	429522.8	0.4				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	7080.0	1.9	**9.5693**	0.314	3.3	mg/L	58	Standard
K	39	105.0	14.3	**0.2779**	0.063	22.6	mg/L	27	Standard
Ca	43	131.7	17.9	**8.2986**	1.559	18.8	mg/L	20	Standard
Fe	54	415.2	7.8	**0.2279**	0.024	10.7	mg/L	158	Standard
Fe	57	483.3	3.2	**0.9402**	0.043	4.5	mg/L	267	Standard
> **Sc-1**	45	38739.5	1.9				mg/L	38815	Standard
Cl	35	77637.7	0.8				ug/L	57611	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	3303.7	2.7				ug/L	1617	Standard
P	31	7910.4	3.8				ug/L	19244	Standard
S	34	3723.8	0.9				ug/L	3557	Standard
Sr	88	186.7	14.8				ug/L	65	Standard
C	12	56.7	27.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	23	Standard
Dy	164	224.4	22.2				mg/L	13	Standard
Ho-1	165	158.3	9.6				mg/L	10	Standard
Er	166	116.7	17.8				mg/L	13	Standard
I	127	29163.1	5.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.316	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.240	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.262
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.653
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606131310
Sample Date/Time: Wednesday, July 06, 2016 14:49:07
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60284.7	0.7				ug/L	68501	Standard
	Be	9	16.7	96.4	**0.0402**	0.020	49.5	ug/L	8	Standard
	Al	27	4773931.6	0.4	**38.2412**	0.333	0.9	ug/L	1397	Standard
	Sc	45	38686.0	1.6				ug/L	38815	Standard
	Ti	47	382.3	5.5	**1.1093**	0.058	5.3	ug/L	36	Standard
	V	51	3331.3	3.4	**0.3285**	0.015	4.5	ug/L	1284	Standard
	Cr	52	8364.3	1.3	**0.2800**	0.022	8.0	ug/L	6503	Standard
	Cr	53	436.7	3.5	**0.0900**	0.018	19.6	ug/L	492	Standard
	Mn	55	151915.9	1.7	**24.7109**	0.509	2.1	ug/L	841	Standard
	Co	59	908.4	1.9	**0.1558**	0.002	1.3	ug/L	229	Standard
	Ni	60	1009.0	5.0	**0.4432**	0.034	7.7	ug/L	344	Standard
	Cu	65	498.0	5.2	**0.2839**	0.017	6.0	ug/L	115	Standard
	Zn	66	2894.9	3.3	**2.7552**	0.112	4.1	ug/L	190	Standard
>	**Ge**	72	410454.1	0.7				ug/L	409858	Standard
	As	75	10.9	361.4	**0.1096**	0.038	35.0	ug/L	-22	Standard
	Se	82	22.6	41.6	**0.1626**	0.091	55.7	ug/L	18	Standard
	Se-1	77	58.3	4.0	**0.0868**	0.029	33.7	ug/L	50	Standard
>	**Ga**	71	321.7	15.6				mg/L	97	Standard
	Rb	85	1441.7	6.2				ug/L	25	Standard
	Y	89	347697.6	0.5				ug/L	376763	Standard
>	**Rh**	103	43.3	24.0				ug/L	20	Standard
	Mo	98	7063.4	0.4	**3.1412**	0.026	0.8	ug/L	51	Standard
	Ag	107	62.7	8.8	**0.0336**	0.001	3.0	ug/L	76	Standard
	Cd	111	6.0	35.2	**0.0425**	0.001	2.6	mg/L	6	Standard
	Cd	114	70.1	22.4	**0.0525**	0.003	6.5	ug/L	18	Standard
>	**In**	115	484013.8	1.0				ug/L	507261	Standard
	Sn	118	245.0	7.4	**-0.0632**	0.004	5.8	ug/L	683	Standard
	Sb	123	172.0	39.0	**0.0218**	0.017	77.0	ug/L	446	Standard
	Ba	135	5035.5	0.9	**2.7890**	0.049	1.7	ug/L	28	Standard
	Ce	140	2850.3	7.9				ug/L	33	Standard
>	**Tb**	159	754149.8	0.6				ug/L	800803	Standard
	Ho	165	116.7	32.5				ug/L	10	Standard
	Tl	203	121.3	6.4	**0.0500**	0.001	2.3	ug/L	13	Standard
	Tl	205	91.7	20.7	**0.0570**	0.003	5.2	ug/L	13	Standard
	Pb	206	1035.0	3.4	**0.2170**	0.007	3.5	ug/L	226	Standard
	Pb	207	864.7	5.6	**0.2022**	0.012	5.7	ug/L	204	Standard
	Pb	208	3790.9	3.4	**0.2229**	0.007	3.1	ug/L	852	Standard
	U	238	1786.8	0.6	**0.3261**	0.002	0.6	ug/L	13	Standard
>	**Bi**	209	428583.4	0.4				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	6726.5	2.4	**9.0996**	0.200	2.2	mg/L	58	Standard
K	39	83.3	19.3	**0.1919**	0.067	34.9	mg/L	27	Standard
Ca	43	153.3	10.5	**9.9211**	1.276	12.9	mg/L	20	Standard
Fe	54	335.5	13.4	**0.1612**	0.033	20.7	mg/L	158	Standard
Fe	57	411.7	5.1	**0.7028**	0.090	12.8	mg/L	267	Standard
> **Sc-1**	45	38686.0	1.6				mg/L	38815	Standard
Cl	35	78795.0	1.3				ug/L	57611	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	3103.7	2.3				ug/L	1617	Standard
P	31	7433.5	0.4				ug/L	19244	Standard
S	34	3570.4	2.2				ug/L	3557	Standard
Sr	88	160.0	21.9				ug/L	65	Standard
C	12	53.3	28.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	23	Standard
Dy	164	257.9	19.0				mg/L	13	Standard
Ho-1	165	116.7	32.5				mg/L	10	Standard
Er	166	113.3	41.7				mg/L	13	Standard
I	127	27441.5	5.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.005	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.145	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.417
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.444
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 14:52:20
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60043.8	2.8				ug/L	68501	Standard
	Be	9	43534.1	0.6	**54.7667**	1.524	2.8	ug/L	8	Standard
	Al	27	6869395.1	1.4	**55.2466**	1.005	1.8	ug/L	1397	Standard
	Sc	45	41879.5	0.9				ug/L	38815	Standard
	Ti	47	38239.2	2.0	**105.8766**	2.401	2.3	ug/L	36	Standard
	V	51	382889.2	1.6	**50.4416**	0.931	1.8	ug/L	1284	Standard
	Cr	52	391303.2	1.4	**51.9269**	0.799	1.5	ug/L	6503	Standard
	Cr	53	47750.1	2.0	**51.3561**	1.104	2.1	ug/L	492	Standard
	Mn	55	349156.6	1.1	**52.9861**	0.731	1.4	ug/L	841	Standard
	Co	59	328642.6	1.2	**50.6387**	0.762	1.5	ug/L	229	Standard
	Ni	60	93736.4	1.3	**51.8094**	0.651	1.3	ug/L	344	Standard
	Cu	65	92724.5	1.0	**51.4957**	0.451	0.9	ug/L	115	Standard
	Zn	66	55630.9	0.6	**51.2018**	0.296	0.6	ug/L	190	Standard
>	**Ge**	72	440847.9	0.3				ug/L	409858	Standard
	As	75	56533.3	0.5	**50.8018**	0.319	0.6	ug/L	-22	Standard
	Se	82	5695.8	1.1	**50.0727**	0.446	0.9	ug/L	18	Standard
	Se-1	77	3910.2	3.6	**52.0362**	2.090	4.0	ug/L	50	Standard
>	**Ga**	71	91.7	64.6				mg/L	97	Standard
	Rb	85	1126.7	27.5				ug/L	25	Standard
	Y	89	379803.2	0.9				ug/L	376763	Standard
>	**Rh**	103	20.0	50.0				ug/L	20	Standard
	Mo	98	249542.6	0.2	**100.9076**	1.379	1.4	ug/L	51	Standard
	Ag	107	319216.6	1.3	**49.8601**	0.930	1.9	ug/L	76	Standard
	Cd	111	103382.2	1.9	**50.8051**	1.171	2.3	mg/L	6	Standard
	Cd	114	253145.9	2.3	**50.8792**	0.856	1.7	ug/L	18	Standard
>	**In**	115	520581.4	1.3				ug/L	507261	Standard
	Sn	118	282841.0	1.7	**50.2425**	1.007	2.0	ug/L	683	Standard
	Sb	123	225633.6	2.0	**51.2453**	1.238	2.4	ug/L	446	Standard
	Ba	135	97427.9	0.9	**49.9049**	0.789	1.6	ug/L	28	Standard
	Ce	140	1405.1	39.8				ug/L	33	Standard
>	**Tb**	159	796311.9	0.5				ug/L	800803	Standard
	Ho	165	20.0	75.0				ug/L	10	Standard
	Tl	203	391045.0	0.3	**50.8324**	0.261	0.5	ug/L	13	Standard
	Tl	205	349650.5	1.2	**52.4891**	0.998	1.9	ug/L	13	Standard
	Pb	206	248507.1	0.9	**50.3121**	0.815	1.6	ug/L	226	Standard
	Pb	207	225788.4	1.2	**50.3393**	0.932	1.9	ug/L	204	Standard
	Pb	208	942000.4	0.7	**52.5165**	0.637	1.2	ug/L	852	Standard
	U	238	335311.4	0.3	**50.4845**	0.512	1.0	ug/L	13	Standard
>	**Bi**	209	451983.7	0.7				ug/L	449044	Standard

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Na	23	1.7	173.2	**-0.3266**	14.646	4484.3	mg/L	2	Standard
Mg	24	3847.2	3.9	**4.7894**	0.192	4.0	mg/L	58	Standard
K	39	1318.4	11.8	**4.7296**	0.581	12.3	mg/L	27	Standard
Ca	43	100.0	13.2	**5.4608**	0.861	15.8	mg/L	20	Standard
Fe	54	6717.0	2.9	**5.0904**	0.124	2.4	mg/L	158	Standard
Fe	57	1981.8	8.3	**5.4666**	0.546	10.0	mg/L	267	Standard
Sc-1	45	41879.5	0.9				mg/L	38815	Standard
Cl	35	72953.3	2.7				ug/L	57611	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	1906.8	5.6				ug/L	1617	Standard
P	31	20882.7	2.6				ug/L	19244	Standard
S	34	4390.6	2.4				ug/L	3557	Standard
Sr	88	61.7	44.7				ug/L	65	Standard
C	12	83.3	50.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	23	Standard
Dy	164	35.5	69.8				mg/L	13	Standard
Ho-1	165	20.0	75.0				mg/L	10	Standard
Er	166	23.3	137.8				mg/L	13	Standard
I	127	9009.4	6.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	109.533		
Al	27	110.493		
Sc	45			
Ti	47	105.877		
V	51	100.883		
Cr	52	103.854		
Cr	53			
Mn	55	105.972		
Co	59	101.277		
Ni	60	103.619		
Cu	65	102.991		
Zn	66	102.404		
Ge	72		107.561	
As	75	101.604		
Se	82	100.145		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	100.908		
Ag	107	99.720		
Cd	111	101.610		
Cd	114			
In	115		102.626	
Sn	118	100.485		
Sb	123	102.491		
Ba	135	99.810		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.665		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.033		
U	238	100.969		
Bi	209		100.655	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 14:55:31
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60231.2	2.6				ug/L	68501	Standard
	Be	9	25.0	72.1	**0.0504**	0.022	42.9	ug/L	8	Standard
	Al	27	19713.1	109.9	**0.1901**	0.168	88.3	ug/L	1397	Standard
	Sc	45	42006.5	3.8				ug/L	38815	Standard
	Ti	47	224.3	111.3	**0.5966**	0.692	116.0	ug/L	36	Standard
	V	51	1431.0	15.4	**0.0464**	0.029	61.7	ug/L	1284	Standard
	Cr	52	7221.1	7.9	**0.0495**	0.073	147.8	ug/L	6503	Standard
	Cr	53	473.3	16.7	**0.0985**	0.084	84.9	ug/L	492	Standard
	Mn	55	3357.1	60.7	**0.4180**	0.310	74.1	ug/L	841	Standard
	Co	59	281.3	22.2	**0.0492**	0.010	19.4	ug/L	229	Standard
	Ni	60	409.3	34.9	**0.0709**	0.079	111.3	ug/L	344	Standard
	Cu	65	212.7	66.8	**0.1056**	0.079	74.7	ug/L	115	Standard
	Zn	66	585.0	81.2	**0.4294**	0.438	102.1	ug/L	190	Standard
>	**Ge**	72	437279.0	0.5				ug/L	409858	Standard
	As	75	-8.2	295.3	**0.0914**	0.022	23.9	ug/L	-22	Standard
	Se	82	22.9	23.0	**0.1520**	0.046	30.1	ug/L	18	Standard
	Se-1	77	50.7	10.1	**-0.0694**	0.069	99.2	ug/L	50	Standard
>	**Ga**	71	63.3	37.3				mg/L	97	Standard
	Rb	85	270.0	77.0				ug/L	25	Standard
	Y	89	377259.1	0.6				ug/L	376763	Standard
>	**Rh**	103	11.7	89.2				ug/L	20	Standard
	Mo	98	200.5	13.9	**0.1523**	0.011	7.1	ug/L	51	Standard
	Ag	107	134.3	29.4	**0.0440**	0.006	13.7	ug/L	76	Standard
	Cd	111	21.9	94.6	**0.0501**	0.010	20.1	mg/L	6	Standard
	Cd	114	56.4	104.5	**0.0486**	0.012	24.1	ug/L	18	Standard
>	**In**	115	521770.5	0.7				ug/L	507261	Standard
	Sn	118	940.0	16.5	**0.0570**	0.029	50.1	ug/L	683	Standard
	Sb	123	649.8	29.0	**0.1271**	0.044	34.3	ug/L	446	Standard
	Ba	135	254.7	83.5	**0.1453**	0.107	73.9	ug/L	28	Standard
	Ce	140	905.0	72.4				ug/L	33	Standard
>	**Tb**	159	799280.8	1.7				ug/L	800803	Standard
	Ho	165	16.7	91.7				ug/L	10	Standard
	Tl	203	96.7	77.0	**0.0458**	0.010	21.1	ug/L	13	Standard
	Tl	205	83.3	39.0	**0.0549**	0.005	8.9	ug/L	13	Standard
	Pb	206	346.3	28.6	**0.0653**	0.020	30.9	ug/L	226	Standard
	Pb	207	300.0	24.3	**0.0650**	0.016	25.2	ug/L	204	Standard
	Pb	208	1153.4	25.6	**0.0636**	0.017	26.2	ug/L	852	Standard
	U	238	71.7	52.3	**0.0533**	0.006	10.6	ug/L	13	Standard
>	**Bi**	209	457657.2	0.6				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	30.2	**0.0135**	0.015	107.6	mg/L	58	Standard
K	39	38.3	32.8	**-0.0006**	0.046	8155.2	mg/L	27	Standard
Ca	43	23.3	101.3	**0.2596**	1.533	590.5	mg/L	20	Standard
Fe	54	159.4	14.2	**0.0035**	0.021	599.5	mg/L	158	Standard
Fe	57	215.0	16.8	**-0.0121**	0.133	1100.9	mg/L	267	Standard
> **Sc-1**	45	42006.5	3.8				mg/L	38815	Standard
Cl	35	71083.7	1.4				ug/L	57611	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	1720.1	9.7				ug/L	1617	Standard
P	31	20742.5	3.1				ug/L	19244	Standard
S	34	4203.9	4.9				ug/L	3557	Standard
Sr	88	78.3	19.5				ug/L	65	Standard
C	12	50.0	40.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	23	Standard
Dy	164	45.5	74.5				mg/L	13	Standard
Ho-1	165	16.7	91.7				mg/L	10	Standard
Er	166	23.3	107.9				mg/L	13	Standard
I	127	6801.5	1.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.690	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.860
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.918
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Ti	47	
QC Std 7	Mn	55	
QC Std 7	Tl	203	

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Method 6020 - Summary Report

Sample ID: L1606090708
Sample Date/Time: Wednesday, July 06, 2016 15:07:31
Number of Replicates: 3
Autosampler Position: 349
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56123.9	4.1				ug/L	68501	Standard
	Be	9	6.7	173.2	**0.0286**	0.016	55.2	ug/L	8	Standard
	Al	27	66942.6	2.6	**0.6112**	0.031	5.0	ug/L	1397	Standard
	Sc	45	36869.8	1.5				ug/L	38815	Standard
	Ti	47	31.0	25.2	**0.0658**	0.025	37.8	ug/L	36	Standard
	V	51	1339.2	5.0	**0.0485**	0.012	24.6	ug/L	1284	Standard
	Cr	52	5285.6	3.9	**-0.1571**	0.018	11.6	ug/L	6503	Standard
	Cr	53	546.7	13.8	**0.2255**	0.079	34.9	ug/L	492	Standard
	Mn	55	1303.4	5.1	**0.1198**	0.014	11.8	ug/L	841	Standard
	Co	59	203.3	12.1	**0.0396**	0.004	10.4	ug/L	229	Standard
	Ni	60	359.0	4.4	**0.0588**	0.010	17.7	ug/L	344	Standard
	Cu	65	113.3	13.5	**0.0553**	0.010	18.4	ug/L	115	Standard
	Zn	66	768.7	2.8	**0.6582**	0.025	3.8	ug/L	190	Standard
>	**Ge**	72	405192.6	1.5				ug/L	409858	Standard
	As	75	4918.3	2.2	**4.8977**	0.034	0.7	ug/L	-22	Standard
	Se	82	13.5	76.0	**0.0775**	0.096	124.3	ug/L	18	Standard
	Se-1	77	71.0	7.5	**0.2844**	0.084	29.4	ug/L	50	Standard
>	**Ga**	71	28.3	10.2				mg/L	97	Standard
	Rb	85	61.7	32.8				ug/L	25	Standard
	Y	89	345042.0	1.8				ug/L	376763	Standard
>	**Rh**	103	21.7	53.3				ug/L	20	Standard
	Mo	98	142.5	28.0	**0.1346**	0.017	12.8	ug/L	51	Standard
	Ag	107	76.3	5.5	**0.0362**	0.001	2.1	ug/L	76	Standard
	Cd	111	6.7	54.8	**0.0430**	0.002	4.7	mg/L	6	Standard
	Cd	114	12.5	52.3	**0.0401**	0.001	3.5	ug/L	18	Standard
>	**In**	115	474459.0	1.3				ug/L	507261	Standard
	Sn	118	216.7	17.9	**-0.0677**	0.008	11.7	ug/L	683	Standard
	Sb	123	745.2	27.2	**0.1651**	0.049	29.8	ug/L	446	Standard
	Ba	135	790.0	3.4	**0.4596**	0.016	3.5	ug/L	28	Standard
	Ce	140	65.0	78.1				ug/L	33	Standard
>	**Tb**	159	739678.8	0.7				ug/L	800803	Standard
	Ho	165	6.7	114.6				ug/L	10	Standard
	Tl	203	93.0	10.3	**0.0460**	0.001	2.8	ug/L	13	Standard
	Tl	205	83.3	39.0	**0.0557**	0.005	9.2	ug/L	13	Standard
	Pb	206	252.3	10.6	**0.0497**	0.006	11.9	ug/L	226	Standard
	Pb	207	211.7	8.9	**0.0486**	0.005	9.5	ug/L	204	Standard
	Pb	208	860.0	6.9	**0.0505**	0.003	6.7	ug/L	852	Standard
	U	238	14.7	30.7	**0.0449**	0.001	1.6	ug/L	13	Standard
>	**Bi**	209	429750.5	0.4				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	3003.6	1.6	**4.2430**	0.057	1.3	mg/L	58	Standard
K	39	36.7	43.8	**0.0119**	0.066	559.7	mg/L	27	Standard
Ca	43	21.7	35.3	**0.3805**	0.578	151.8	mg/L	20	Standard
Fe	54	55.9	13.9	**-0.0709**	0.008	10.7	mg/L	158	Standard
Fe	57	308.3	16.4	**0.4073**	0.188	46.1	mg/L	267	Standard
> **Sc-1**	45	36869.8	1.5				mg/L	38815	Standard
Cl	35	66431.3	1.6				ug/L	57611	Standard
Kr	83	2.7	43.3				ug/L	2	Standard
Br	81	2016.8	5.6				ug/L	1617	Standard
P	31	6839.9	2.1				ug/L	19244	Standard
S	34	4038.9	3.4				ug/L	3557	Standard
Sr	88	80.0	32.5				ug/L	65	Standard
C	12	53.3	28.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	25.0				mg/L	23	Standard
Dy	164	12.5	45.3				mg/L	13	Standard
Ho-1	165	6.7	114.6				mg/L	10	Standard
Er	166	16.7	91.7				mg/L	13	Standard
I	127	15781.6	6.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		81.931	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.862	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.534
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.703
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606090708
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Method 6020 - Summary Report

Sample ID: L1606090710
Sample Date/Time: Wednesday, July 06, 2016 15:10:42
Number of Replicates: 3
Autosampler Position: 350
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55767.5	3.1				ug/L	68501	Standard
	Be	9	15.0	33.3	**0.0396**	0.006	15.5	ug/L	8	Standard
	Al	27	57067.4	4.0	**0.5293**	0.032	6.0	ug/L	1397	Standard
	Sc	45	37737.0	2.8				ug/L	38815	Standard
	Ti	47	27.0	11.1	**0.0534**	0.009	16.5	ug/L	36	Standard
	V	51	1378.9	8.7	**0.0540**	0.019	35.6	ug/L	1284	Standard
	Cr	52	5384.0	1.6	**-0.1434**	0.011	7.6	ug/L	6503	Standard
	Cr	53	555.0	6.5	**0.2351**	0.036	15.1	ug/L	492	Standard
	Mn	55	1200.4	3.4	**0.1025**	0.009	8.7	ug/L	841	Standard
	Co	59	202.3	5.0	**0.0394**	0.001	3.3	ug/L	229	Standard
	Ni	60	349.3	8.9	**0.0527**	0.019	35.2	ug/L	344	Standard
	Cu	65	113.0	24.1	**0.0551**	0.017	31.4	ug/L	115	Standard
	Zn	66	816.4	3.2	**0.7051**	0.033	4.7	ug/L	190	Standard
>	**Ge**	72	405693.9	1.3				ug/L	409858	Standard
	As	75	4000.4	1.6	**3.9982**	0.091	2.3	ug/L	-22	Standard
	Se	82	17.3	50.2	**0.1136**	0.082	71.8	ug/L	18	Standard
	Se-1	77	68.7	10.9	**0.2488**	0.115	46.4	ug/L	50	Standard
>	**Ga**	71	28.3	36.7				mg/L	97	Standard
	Rb	85	40.0	45.1				ug/L	25	Standard
	Y	89	346549.0	3.0				ug/L	376763	Standard
>	**Rh**	103	16.7	17.3				ug/L	20	Standard
	Mo	98	97.7	27.5	**0.1145**	0.012	10.9	ug/L	51	Standard
	Ag	107	72.7	8.4	**0.0354**	0.001	3.2	ug/L	76	Standard
	Cd	111	4.8	40.9	**0.0420**	0.001	2.6	mg/L	6	Standard
	Cd	114	2.8	127.9	**0.0380**	0.001	2.1	ug/L	18	Standard
>	**In**	115	479824.6	1.7				ug/L	507261	Standard
	Sn	118	205.0	16.0	**-0.0705**	0.007	9.5	ug/L	683	Standard
	Sb	123	434.3	26.7	**0.0870**	0.030	34.6	ug/L	446	Standard
	Ba	135	658.3	5.7	**0.3813**	0.014	3.8	ug/L	28	Standard
	Ce	140	16.7	62.4				ug/L	33	Standard
>	**Tb**	159	748992.8	2.4				ug/L	800803	Standard
	Ho	165	5.0	100.0				ug/L	10	Standard
	Tl	203	71.3	13.3	**0.0431**	0.001	3.4	ug/L	13	Standard
	Tl	205	60.0	65.1	**0.0521**	0.006	12.2	ug/L	13	Standard
	Pb	206	267.3	9.0	**0.0528**	0.006	11.2	ug/L	226	Standard
	Pb	207	234.3	3.4	**0.0538**	0.003	5.1	ug/L	204	Standard
	Pb	208	992.7	7.2	**0.0582**	0.004	7.5	ug/L	852	Standard
	U	238	5.7	53.9	**0.0435**	0.000	1.1	ug/L	13	Standard
>	**Bi**	209	430634.6	1.8				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	2340.2	3.7	**3.2200**	0.031	1.0	mg/L	58	Standard
K	39	35.0	37.8	**0.0008**	0.051	6246.2	mg/L	27	Standard
Ca	43	15.0	33.3	**-0.1583**	0.367	231.7	mg/L	20	Standard
Fe	54	62.8	31.4	**-0.0660**	0.018	27.6	mg/L	158	Standard
Fe	57	236.7	3.2	**0.1352**	0.041	30.0	mg/L	267	Standard
> **Sc-1**	45	37737.0	2.8				mg/L	38815	Standard
Cl	35	66671.0	0.2				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	2100.1	1.6				ug/L	1617	Standard
P	31	6753.2	3.3				ug/L	19244	Standard
S	34	4090.6	7.3				ug/L	3557	Standard
Sr	88	83.3	12.5				ug/L	65	Standard
C	12	30.0	33.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	23	Standard
Dy	164	12.7	119.6				mg/L	13	Standard
Ho-1	165	5.0	100.0				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	15177.6	3.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		81.411	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.984	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.591
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.900
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606090711
Sample Date/Time: Wednesday, July 06, 2016 15:13:54
Number of Replicates: 3
Autosampler Position: 351
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54814.1	3.8				ug/L	68501	Standard
	Be	9	16.7	62.4	**0.0422**	0.014	32.8	ug/L	8	Standard
	Al	27	52699.8	1.6	**0.4995**	0.024	4.8	ug/L	1397	Standard
	Sc	45	38356.9	3.4				ug/L	38815	Standard
	Ti	47	29.7	14.0	**0.0612**	0.013	21.0	ug/L	36	Standard
	V	51	1298.7	4.2	**0.0417**	0.008	18.1	ug/L	1284	Standard
	Cr	52	5448.0	3.0	**-0.1368**	0.021	15.5	ug/L	6503	Standard
	Cr	53	526.7	9.4	**0.1996**	0.054	27.2	ug/L	492	Standard
	Mn	55	966.0	3.4	**0.0631**	0.005	7.8	ug/L	841	Standard
	Co	59	192.7	2.3	**0.0376**	0.001	2.1	ug/L	229	Standard
	Ni	60	332.3	7.6	**0.0417**	0.014	33.8	ug/L	344	Standard
	Cu	65	107.0	4.9	**0.0511**	0.004	7.0	ug/L	115	Standard
	Zn	66	673.7	5.7	**0.5595**	0.037	6.6	ug/L	190	Standard
>	**Ge**	72	407073.7	0.6				ug/L	409858	Standard
	As	75	3936.4	1.8	**3.9222**	0.063	1.6	ug/L	-22	Standard
	Se	82	12.1	66.2	**0.0641**	0.076	118.6	ug/L	18	Standard
	Se-1	77	60.7	18.2	**0.1275**	0.157	123.2	ug/L	50	Standard
>	**Ga**	71	41.7	50.0				mg/L	97	Standard
	Rb	85	40.0	45.1				ug/L	25	Standard
	Y	89	345252.8	0.9				ug/L	376763	Standard
>	**Rh**	103	20.0	25.0				ug/L	20	Standard
	Mo	98	101.1	24.4	**0.1158**	0.011	9.9	ug/L	51	Standard
	Ag	107	60.3	15.9	**0.0333**	0.002	5.0	ug/L	76	Standard
	Cd	111	2.5	44.5	**0.0407**	0.001	1.5	mg/L	6	Standard
	Cd	114	12.2	59.9	**0.0400**	0.002	4.1	ug/L	18	Standard
>	**In**	115	481188.3	1.3				ug/L	507261	Standard
	Sn	118	168.3	9.5	**-0.0777**	0.003	4.4	ug/L	683	Standard
	Sb	123	324.9	34.4	**0.0597**	0.028	47.6	ug/L	446	Standard
	Ba	135	608.7	5.5	**0.3529**	0.019	5.4	ug/L	28	Standard
	Ce	140	8.3	34.6				ug/L	33	Standard
>	**Tb**	159	745199.8	0.8				ug/L	800803	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	72.3	21.5	**0.0432**	0.002	5.0	ug/L	13	Standard
	Tl	205	55.0	39.6	**0.0512**	0.003	6.8	ug/L	13	Standard
	Pb	206	221.3	7.7	**0.0430**	0.004	9.0	ug/L	226	Standard
	Pb	207	189.0	5.0	**0.0431**	0.002	5.7	ug/L	204	Standard
	Pb	208	789.3	5.2	**0.0462**	0.003	5.7	ug/L	852	Standard
	U	238	4.3	81.0	**0.0433**	0.001	1.3	ug/L	13	Standard
>	**Bi**	209	431209.2	0.7				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	2360.2	3.7	**3.2002**	0.221	6.9	mg/L	58	Standard
K	39	20.0	86.6	**-0.0601**	0.072	120.5	mg/L	27	Standard
Ca	43	25.0	20.0	**0.5647**	0.390	69.0	mg/L	20	Standard
Fe	54	59.1	42.1	**-0.0702**	0.021	30.3	mg/L	158	Standard
Fe	57	290.0	10.5	**0.3038**	0.121	40.0	mg/L	267	Standard
> **Sc-1**	45	38356.9	3.4				mg/L	38815	Standard
Cl	35	66762.1	1.2				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1850.1	7.8				ug/L	1617	Standard
P	31	6509.7	3.4				ug/L	19244	Standard
S	34	3905.5	1.3				ug/L	3557	Standard
Sr	88	58.3	4.9				ug/L	65	Standard
C	12	43.3	70.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	23	Standard
Dy	164	6.5	179.6				mg/L	13	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	14775.5	3.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		80.019	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.321	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.860
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.028
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606090712
Sample Date/Time: Wednesday, July 06, 2016 15:17:05
Number of Replicates: 3
Autosampler Position: 352
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59136.9	1.9				ug/L	68501	Standard
	Be	9	100.0	0.0	**0.1471**	0.002	1.6	ug/L	8	Standard
	Al	27	3735465.7	0.2	**30.5168**	0.591	1.9	ug/L	1397	Standard
	Sc	45	39907.5	1.6				ug/L	38815	Standard
	Ti	47	188106.0	1.6	**592.5898**	9.341	1.6	ug/L	36	Standard
	V	51	727880.7	2.1	**109.2334**	0.828	0.8	ug/L	1284	Standard
	Cr	52	2147459.5	0.6	**329.0918**	4.735	1.4	ug/L	6503	Standard
	Cr	53	294234.5	0.7	**362.5456**	7.204	2.0	ug/L	492	Standard
	Mn	55	136764.2	1.0	**23.5558**	0.108	0.5	ug/L	841	Standard
	Co	59	7595.9	0.5	**1.3368**	0.018	1.4	ug/L	229	Standard
	Ni	60	30975.0	0.9	**19.3783**	0.287	1.5	ug/L	344	Standard
	Cu	65	63388.3	1.8	**40.0459**	0.878	2.2	ug/L	115	Standard
	Zn	66	366901.8	1.0	**384.8805**	2.395	0.6	ug/L	190	Standard
>	Ge	72	387555.3	1.4				ug/L	409858	Standard
	As	75	11510.2	1.9	**11.8429**	0.269	2.3	ug/L	-22	Standard
	Se	82	113.3	57.4	**1.0824**	0.654	60.4	ug/L	18	Standard
	Se-1	77	1337.7	1.3	**19.7866**	0.288	1.5	ug/L	50	Standard
>	Ga	71	3715.5	1.3				mg/L	97	Standard
	Rb	85	24456.4	1.2				ug/L	25	Standard
	Y	89	367766.8	1.0				ug/L	376763	Standard
>	Rh	103	636.7	41.6				ug/L	20	Standard
	Mo	98	20218.7	0.2	**9.5016**	0.081	0.9	ug/L	51	Standard
	Ag	107	1395.4	2.2	**0.2746**	0.007	2.5	ug/L	76	Standard
	Cd	111	15436.6	1.1	**8.7889**	0.145	1.6	mg/L	6	Standard
	Cd	114	36990.0	1.0	**8.6137**	0.136	1.6	ug/L	18	Standard
>	In	115	450987.5	0.7				ug/L	507261	Standard
	Sn	118	123207.3	0.8	**25.2064**	0.206	0.8	ug/L	683	Standard
	Sb	123	4061.0	3.4	**1.0445**	0.031	3.0	ug/L	446	Standard
	Ba	135	211456.5	1.1	**124.9888**	0.973	0.8	ug/L	28	Standard
	Ce	140	95684.5	0.7				ug/L	33	Standard
>	Tb	159	728548.4	1.4				ug/L	800803	Standard
	Ho	165	2620.2	2.6				ug/L	10	Standard
	Tl	203	268.7	6.6	**0.0756**	0.003	4.2	ug/L	13	Standard
	Tl	205	228.3	5.1	**0.0840**	0.002	2.8	ug/L	13	Standard
	Pb	206	246609.4	0.5	**60.3899**	0.539	0.9	ug/L	226	Standard
	Pb	207	209210.9	0.8	**56.4141**	0.211	0.4	ug/L	204	Standard
	Pb	208	889009.1	1.9	**59.9416**	0.514	0.9	ug/L	852	Standard
	U	238	12374.1	0.4	**2.2942**	0.018	0.8	ug/L	13	Standard
>	Bi	209	373680.6	1.1				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	627460.5	0.3	**826.3355**	10.138	1.2	mg/L	58	Standard
K	39	891.7	12.4	**3.3152**	0.420	12.7	mg/L	27	Standard
Ca	43	85.0	25.6	**4.7327**	1.524	32.2	mg/L	20	Standard
Fe	54	2238.8	0.7	**1.7027**	0.033	1.9	mg/L	158	Standard
Fe	57	931.7	3.2	**2.3514**	0.086	3.7	mg/L	267	Standard
Sc-1	45	39907.5	1.6				mg/L	38815	Standard
Cl	35	105249.6	0.7				ug/L	57611	Standard
Kr	83	3.3	45.8				ug/L	2	Standard
Br	81	33069.4	2.9				ug/L	1617	Standard
P	31	23598.4	1.5				ug/L	19244	Standard
S	34	3327.0	1.9				ug/L	3557	Standard
Sr	88	1011.7	3.7				ug/L	65	Standard
C	12	380.0	11.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1216.7	6.6				mg/L	23	Standard
Dy	164	3819.8	3.9				mg/L	13	Standard
Ho-1	165	2620.2	2.6				mg/L	10	Standard
Er	166	2590.2	4.1				mg/L	13	Standard
I	127	159962.4	8.6				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		86.330	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		94.558	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	88.906	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	83.217	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
V 51 Upper, S, EEE	V	51	
Cr 52 Upper, S, EEE	Cr	52	

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Cr 53 Upper, S, EEE	Cr	53
Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606090713
Sample Date/Time: Wednesday, July 06, 2016 15:20:17
Number of Replicates: 3
Autosampler Position: 353
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62142.2	2.7				ug/L	68501	Standard
	Be	9	75.0	11.5	**0.1107**	0.012	10.9	ug/L	8	Standard
	Al	27	3038140.7	0.5	**23.6329**	0.622	2.6	ug/L	1397	Standard
	Sc	45	40017.8	2.7				ug/L	38815	Standard
	Ti	47	163885.9	0.8	**513.6032**	3.518	0.7	ug/L	36	Standard
	V	51	602537.0	0.8	**89.9411**	0.844	0.9	ug/L	1284	Standard
	Cr	52	1965909.2	0.6	**299.6143**	3.300	1.1	ug/L	6503	Standard
	Cr	53	263656.0	0.8	**323.1168**	4.959	1.5	ug/L	492	Standard
	Mn	55	23201.4	1.5	**3.8959**	0.074	1.9	ug/L	841	Standard
	Co	59	4269.3	1.9	**0.7498**	0.008	1.1	ug/L	229	Standard
	Ni	60	23944.9	1.0	**14.8649**	0.057	0.4	ug/L	344	Standard
	Cu	65	10740.1	1.4	**6.7382**	0.053	0.8	ug/L	115	Standard
	Zn	66	144279.7	1.0	**150.4939**	0.640	0.4	ug/L	190	Standard
>	**Ge**	72	389560.3	0.8				ug/L	409858	Standard
	As	75	11554.1	2.0	**11.8265**	0.285	2.4	ug/L	-22	Standard
	Se	82	21.7	113.6	**0.1655**	0.247	149.4	ug/L	18	Standard
	Se-1	77	1182.7	5.8	**17.3115**	1.052	6.1	ug/L	50	Standard
>	**Ga**	71	2596.9	4.5				mg/L	97	Standard
	Rb	85	17209.8	0.9				ug/L	25	Standard
	Y	89	365815.6	1.4				ug/L	376763	Standard
>	**Rh**	103	1266.7	9.5				ug/L	20	Standard
	Mo	98	37661.3	0.8	**17.4867**	0.129	0.7	ug/L	51	Standard
	Ag	107	1201.4	1.7	**0.2377**	0.003	1.5	ug/L	76	Standard
	Cd	111	8334.2	0.6	**4.7227**	0.028	0.6	mg/L	6	Standard
	Cd	114	20677.6	2.4	**4.7904**	0.113	2.4	ug/L	18	Standard
>	**In**	115	454857.0	0.1				ug/L	507261	Standard
	Sn	118	108567.6	1.5	**22.0081**	0.314	1.4	ug/L	683	Standard
	Sb	123	8996.4	2.4	**2.3188**	0.059	2.5	ug/L	446	Standard
	Ba	135	159685.7	0.2	**93.5896**	0.278	0.3	ug/L	28	Standard
	Ce	140	50972.3	0.2				ug/L	33	Standard
>	**Tb**	159	740846.9	0.5				ug/L	800803	Standard
	Ho	165	1838.4	7.4				ug/L	10	Standard
	Tl	203	115.0	7.4	**0.0513**	0.001	2.8	ug/L	13	Standard
	Tl	205	115.0	11.5	**0.0632**	0.002	3.6	ug/L	13	Standard
	Pb	206	61112.0	0.3	**14.8501**	0.069	0.5	ug/L	226	Standard
	Pb	207	52034.5	0.1	**13.9261**	0.103	0.7	ug/L	204	Standard
	Pb	208	219213.3	1.2	**14.6715**	0.162	1.1	ug/L	852	Standard
	U	238	13518.0	1.2	**2.4841**	0.046	1.9	ug/L	13	Standard
>	**Bi**	209	376481.4	0.7				ug/L	449044	Standard

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Na	23	1.7	173.2	**-0.2091**	14.850	7100.1	mg/L	2	Standard
Mg	24	652049.2	1.0	**856.5114**	15.399	1.8	mg/L	58	Standard
K	39	871.7	10.5	**3.2293**	0.355	11.0	mg/L	27	Standard
Ca	43	33.3	17.3	**1.0753**	0.417	38.8	mg/L	20	Standard
Fe	54	940.9	10.2	**0.6444**	0.085	13.1	mg/L	158	Standard
Fe	57	590.0	8.3	**1.2381**	0.210	16.9	mg/L	267	Standard
Sc-1	45	40017.8	2.7				mg/L	38815	Standard
Cl	35	107621.5	0.7				ug/L	57611	Standard
Kr	83	1.3	173.2				ug/L	2	Standard
Br	81	33026.0	3.0				ug/L	1617	Standard
P	31	22977.4	2.0				ug/L	19244	Standard
S	34	3573.8	1.9				ug/L	3557	Standard
Sr	88	981.7	8.2				ug/L	65	Standard
C	12	476.7	10.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	473.3	11.6				mg/L	23	Standard
Dy	164	2439.4	1.3				mg/L	13	Standard
Ho-1	165	1838.4	7.4				mg/L	10	Standard
Er	166	1896.8	12.1				mg/L	13	Standard
I	127	172276.0	5.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.717	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.048	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.669
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		83.841
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	

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Zn 66 Upper, S, EEE	Zn	66

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Method 6020 - Summary Report

Sample ID: L1606102602
Sample Date/Time: Wednesday, July 06, 2016 15:23:28
Number of Replicates: 3
Autosampler Position: 354
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59909.9	2.1				ug/L	68501	Standard
	Be	9	50.0	20.0	**0.0823**	0.012	14.0	ug/L	8	Standard
	Al	27	4054931.1	0.6	**32.6975**	0.624	1.9	ug/L	1397	Standard
	Sc	45	38943.3	1.5				ug/L	38815	Standard
	Ti	47	155.7	35.2	**0.4319**	0.159	36.8	ug/L	36	Standard
	V	51	1895.1	102.8	**0.1241**	0.276	222.3	ug/L	1284	Standard
	Cr	52	788614.2	0.5	**112.8373**	0.952	0.8	ug/L	6503	Standard
	Cr	53	99272.7	3.0	**114.5378**	3.777	3.3	ug/L	492	Standard
	Mn	55	467403.8	1.8	**75.7860**	1.140	1.5	ug/L	841	Standard
	Co	59	46321.0	0.9	**7.6267**	0.075	1.0	ug/L	229	Standard
	Ni	60	543017.8	1.4	**321.3449**	4.568	1.4	ug/L	344	Standard
	Cu	65	30865.4	1.3	**18.2968**	0.119	0.7	ug/L	115	Standard
	Zn	66	4929.8	3.6	**4.7423**	0.151	3.2	ug/L	190	Standard
>	**Ge**	72	412808.8	0.6				ug/L	409858	Standard
	As	75	190.7	12.5	**0.2816**	0.024	8.4	ug/L	-22	Standard
	Se	82	121.8	12.3	**1.0936**	0.147	13.4	ug/L	18	Standard
	Se-1	77	250.0	5.6	**2.8454**	0.195	6.9	ug/L	50	Standard
>	**Ga**	71	66.7	37.0				mg/L	97	Standard
	Rb	85	911.7	9.3				ug/L	25	Standard
	Y	89	356017.5	0.3				ug/L	376763	Standard
>	**Rh**	103	295.0	2.9				ug/L	20	Standard
	Mo	98	2507.9	2.1	**1.1659**	0.032	2.8	ug/L	51	Standard
	Ag	107	115.3	4.1	**0.0426**	0.001	2.3	ug/L	76	Standard
	Cd	111	280.0	2.5	**0.1878**	0.004	2.0	mg/L	6	Standard
	Cd	114	681.9	2.0	**0.1853**	0.004	2.4	ug/L	18	Standard
>	**In**	115	482113.9	1.0				ug/L	507261	Standard
	Sn	118	426.7	9.5	**-0.0281**	0.007	24.6	ug/L	683	Standard
	Sb	123	379.3	24.4	**0.0725**	0.022	30.2	ug/L	446	Standard
	Ba	135	7036.6	1.4	**3.9062**	0.063	1.6	ug/L	28	Standard
	Ce	140	5290.9	3.8				ug/L	33	Standard
>	**Tb**	159	759964.6	0.4				ug/L	800803	Standard
	Ho	165	306.7	9.6				ug/L	10	Standard
	Tl	203	71.3	11.7	**0.0430**	0.001	2.7	ug/L	13	Standard
	Tl	205	78.3	13.3	**0.0547**	0.002	3.2	ug/L	13	Standard
	Pb	206	322.0	17.6	**0.0637**	0.013	19.6	ug/L	226	Standard
	Pb	207	276.0	19.8	**0.0629**	0.013	21.1	ug/L	204	Standard
	Pb	208	1167.0	11.9	**0.0676**	0.009	12.7	ug/L	852	Standard
	U	238	240.0	4.2	**0.0801**	0.002	2.4	ug/L	13	Standard
>	**Bi**	209	435576.2	0.8				ug/L	449044	Standard

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Na	23	1.7	173.2	**0.3081**	15.746	5110.4	mg/L	2	Standard
Mg	24	9246.2	5.3	**12.4378**	0.612	4.9	mg/L	58	Standard
K	39	103.3	36.6	**0.2687**	0.151	56.1	mg/L	27	Standard
Ca	43	96.7	10.8	**5.7243**	0.667	11.7	mg/L	20	Standard
Fe	54	584.2	1.4	**0.3673**	0.013	3.7	mg/L	158	Standard
Fe	57	408.3	5.7	**0.6812**	0.058	8.4	mg/L	267	Standard
> **Sc-1**	45	38943.3	1.5				mg/L	38815	Standard
Cl	35	65179.9	1.4				ug/L	57611	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	17183.1	2.9				ug/L	1617	Standard
P	31	7878.7	4.8				ug/L	19244	Standard
S	34	3810.5	4.5				ug/L	3557	Standard
Sr	88	171.7	24.8				ug/L	65	Standard
C	12	30.0	57.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	23	Standard
Dy	164	473.7	16.7				mg/L	13	Standard
Ho-1	165	306.7	9.6				mg/L	10	Standard
Er	166	270.0	23.1				mg/L	13	Standard
I	127	24579.9	4.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		87.458	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.720	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.043
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.001
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	
Ni 60 Upper, S, EEE	Ni	60	

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Method 6020 - Summary Report

Sample ID: L1606102602
Sample Date/Time: Wednesday, July 06, 2016 15:27:52
Number of Replicates: 3
Autosampler Position: 354
Sample Description: 200
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59652.3	3.2				ug/L	68501	Standard
	Be	9	20.0	90.1	**0.0451**	0.023	51.8	ug/L	8	Standard
	Al	27	418604.7	3.4	**3.4231**	0.167	4.9	ug/L	1397	Standard
	Sc	45	38361.8	1.8				ug/L	38815	Standard
	Ti	47	48.0	17.1	**0.1155**	0.025	21.3	ug/L	36	Standard
	V	51	1557.5	16.7	**0.0776**	0.037	47.4	ug/L	1284	Standard
	Cr	52	69895.5	5.2	**9.2442**	0.610	6.6	ug/L	6503	Standard
	Cr	53	8322.3	4.2	**9.3078**	0.491	5.3	ug/L	492	Standard
	Mn	55	46163.3	3.7	**7.4663**	0.256	3.4	ug/L	841	Standard
	Co	59	4716.7	3.2	**0.7886**	0.025	3.2	ug/L	229	Standard
	Ni	60	53355.9	3.6	**31.7146**	0.955	3.0	ug/L	344	Standard
	Cu	65	2976.0	1.8	**1.7684**	0.046	2.6	ug/L	115	Standard
	Zn	66	1005.0	2.7	**0.8857**	0.031	3.5	ug/L	190	Standard
>	**Ge**	72	409101.3	0.8				ug/L	409858	Standard
	As	75	-25.1	69.7	**0.0745**	0.017	23.1	ug/L	-22	Standard
	Se	82	28.0	12.9	**0.2140**	0.032	15.1	ug/L	18	Standard
	Se-1	77	74.7	8.1	**0.3270**	0.081	24.7	ug/L	50	Standard
>	**Ga**	71	36.7	55.1				mg/L	97	Standard
	Rb	85	145.0	21.0				ug/L	25	Standard
	Y	89	351461.6	1.1				ug/L	376763	Standard
>	**Rh**	103	78.3	24.2				ug/L	20	Standard
	Mo	98	270.6	12.5	**0.1889**	0.015	7.9	ug/L	51	Standard
	Ag	107	67.0	25.1	**0.0343**	0.003	8.3	ug/L	76	Standard
	Cd	111	22.5	15.3	**0.0512**	0.002	3.6	mg/L	6	Standard
	Cd	114	64.7	40.1	**0.0513**	0.006	11.0	ug/L	18	Standard
>	**In**	115	485128.4	0.5				ug/L	507261	Standard
	Sn	118	258.3	11.7	**-0.0608**	0.006	9.1	ug/L	683	Standard
	Sb	123	528.0	32.4	**0.1083**	0.042	38.5	ug/L	446	Standard
	Ba	135	657.0	3.1	**0.3767**	0.010	2.6	ug/L	28	Standard
	Ce	140	241.7	34.1				ug/L	33	Standard
>	**Tb**	159	760299.8	0.9				ug/L	800803	Standard
	Ho	165	15.0	0.0				ug/L	10	Standard
	Tl	203	60.0	11.7	**0.0413**	0.001	2.2	ug/L	13	Standard
	Tl	205	45.0	19.2	**0.0494**	0.001	2.7	ug/L	13	Standard
	Pb	206	227.7	7.2	**0.0431**	0.003	8.1	ug/L	226	Standard
	Pb	207	180.3	9.6	**0.0401**	0.004	9.9	ug/L	204	Standard
	Pb	208	797.0	7.7	**0.0455**	0.003	7.5	ug/L	852	Standard
	U	238	16.7	30.2	**0.0452**	0.001	1.7	ug/L	13	Standard
>	**Bi**	209	441832.6	0.2				ug/L	449044	Standard

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Na	23	1.7	173.2	**0.3058**	15.741	5148.3	mg/L	2	Standard
Mg	24	908.4	5.6	**1.2054**	0.048	4.0	mg/L	58	Standard
K	39	36.7	39.4	**0.0054**	0.056	1043.3	mg/L	27	Standard
Ca	43	40.0	12.5	**1.6623**	0.322	19.4	mg/L	20	Standard
Fe	54	67.9	4.4	**-0.0627**	0.002	2.4	mg/L	158	Standard
Fe	57	248.3	12.1	**0.1622**	0.117	72.3	mg/L	267	Standard
Sc-1	45	38361.8	1.8				mg/L	38815	Standard
Cl	35	69584.8	2.6				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	3120.3	5.7				ug/L	1617	Standard
P	31	6753.2	0.8				ug/L	19244	Standard
S	34	3768.8	1.3				ug/L	3557	Standard
Sr	88	76.7	7.5				ug/L	65	Standard
C	12	16.7	124.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	78.1				mg/L	23	Standard
Dy	164	39.0	0.0				mg/L	13	Standard
Ho-1	165	15.0	0.0				mg/L	10	Standard
Er	166	20.0	0.0				mg/L	13	Standard
I	127	14281.7	3.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		87.082	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.815	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.637
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.394
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606102602
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 15:31:05
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	62510.4	1.5				ug/L	68501	Standard
	Be	9	45265.9	1.1	**54.6732**	0.331	0.6	ug/L	8	Standard
	Al	27	7101979.2	2.0	**54.8496**	0.969	1.8	ug/L	1397	Standard
	Sc	45	42855.5	1.1				ug/L	38815	Standard
	Ti	47	38254.6	0.4	**105.6282**	1.379	1.3	ug/L	36	Standard
	V	51	389890.4	0.9	**51.2225**	0.409	0.8	ug/L	1284	Standard
	Cr	52	394953.7	1.4	**52.2714**	0.664	1.3	ug/L	6503	Standard
	Cr	53	49295.1	1.9	**52.8778**	0.470	0.9	ug/L	492	Standard
	Mn	55	355133.0	1.5	**53.7409**	0.198	0.4	ug/L	841	Standard
	Co	59	338270.8	0.6	**51.9779**	0.514	1.0	ug/L	229	Standard
	Ni	60	95167.3	1.8	**52.4560**	0.799	1.5	ug/L	344	Standard
	Cu	65	94410.2	0.3	**52.2916**	0.811	1.6	ug/L	115	Standard
	Zn	66	56526.3	1.3	**51.8812**	0.251	0.5	ug/L	190	Standard
>	Ge	72	442099.8	1.5				ug/L	409858	Standard
	As	75	57168.4	1.7	**51.2247**	0.117	0.2	ug/L	-22	Standard
	Se	82	5880.4	1.8	**51.5509**	0.555	1.1	ug/L	18	Standard
	Se-1	77	3935.5	1.6	**52.2257**	0.689	1.3	ug/L	50	Standard
>	Ga	71	56.7	35.7				mg/L	97	Standard
	Rb	85	830.0	10.6				ug/L	25	Standard
	Y	89	383309.8	0.5				ug/L	376763	Standard
>	Rh	103	65.0	13.3				ug/L	20	Standard
	Mo	98	258034.7	0.3	**102.2558**	0.442	0.4	ug/L	51	Standard
	Ag	107	328084.2	0.8	**50.2200**	0.076	0.2	ug/L	76	Standard
	Cd	111	104954.0	1.1	**50.5459**	0.249	0.5	mg/L	6	Standard
	Cd	114	257205.6	1.2	**50.6685**	0.423	0.8	ug/L	18	Standard
>	In	115	531139.6	0.6				ug/L	507261	Standard
	Sn	118	287869.1	1.0	**50.1137**	0.324	0.6	ug/L	683	Standard
	Sb	123	226343.7	0.7	**50.3782**	0.153	0.3	ug/L	446	Standard
	Ba	135	98602.1	0.7	**49.4969**	0.088	0.2	ug/L	28	Standard
	Ce	140	105.0	29.0				ug/L	33	Standard
>	Tb	159	805440.7	1.6				ug/L	800803	Standard
	Ho	165	15.0	57.7				ug/L	10	Standard
	Tl	203	401097.9	1.2	**51.3040**	0.273	0.5	ug/L	13	Standard
	Tl	205	355854.2	1.4	**52.5682**	1.130	2.1	ug/L	13	Standard
	Pb	206	254786.8	0.7	**50.7595**	0.728	1.4	ug/L	226	Standard
	Pb	207	230315.6	0.2	**50.5265**	0.425	0.8	ug/L	204	Standard
	Pb	208	963927.7	0.8	**52.8789**	0.356	0.7	ug/L	852	Standard
	U	238	345757.3	0.5	**51.2253**	0.548	1.1	ug/L	13	Standard
>	Bi	209	459318.8	0.8				ug/L	449044	Standard

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Na	23	3.3	86.6	**7.7717**	14.337	184.5	mg/L	2	Standard
Mg	24	3975.5	6.9	**4.8346**	0.283	5.8	mg/L	58	Standard
K	39	1343.4	5.6	**4.7102**	0.312	6.6	mg/L	27	Standard
Ca	43	80.0	12.5	**3.9950**	0.686	17.2	mg/L	20	Standard
Fe	54	6635.7	2.5	**4.9103**	0.105	2.1	mg/L	158	Standard
Fe	57	1878.4	2.2	**5.0116**	0.137	2.7	mg/L	267	Standard
Sc-1	45	42855.5	1.1				mg/L	38815	Standard
Cl	35	74232.2	2.7				ug/L	57611	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	2200.2	12.5				ug/L	1617	Standard
P	31	22027.7	0.8				ug/L	19244	Standard
S	34	4434.0	2.1				ug/L	3557	Standard
Sr	88	70.0	43.4				ug/L	65	Standard
C	12	53.3	60.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	107.9				mg/L	23	Standard
Dy	164	6.3	86.9				mg/L	13	Standard
Ho-1	165	15.0	57.7				mg/L	10	Standard
Er	166	6.7	173.2				mg/L	13	Standard
I	127	13556.1	3.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	109.346		
Al	27	109.699		
Sc	45			
Ti	47	105.628		
V	51	102.445		
Cr	52	104.543		
Cr	53			
Mn	55	107.482		
Co	59	103.956		
Ni	60	104.912		
Cu	65	104.583		
Zn	66	103.762		
Ge	72		107.867	
As	75	102.449		
Se	82	103.102		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	102.256		
Ag	107	100.440		
Cd	111	101.092		
Cd	114			
> In	115			104.707
Sn	118	100.227		
Sb	123	100.756		
Ba	135	98.994		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	102.608		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.758		
U	238	102.451		
> Bi	209			102.288
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 15:34:17
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61561.6	3.3				ug/L	68501	Standard
	Be	9	28.3	10.2	**0.0542**	0.003	6.0	ug/L	8	Standard
	Al	27	2803.6	30.9	**0.0569**	0.006	11.2	ug/L	1397	Standard
	Sc	45	42046.6	2.5				ug/L	38815	Standard
	Ti	47	62.0	4.3	**0.1464**	0.006	4.0	ug/L	36	Standard
	V	51	1620.5	26.0	**0.0735**	0.059	79.9	ug/L	1284	Standard
	Cr	52	6965.3	2.5	**0.0210**	0.012	56.9	ug/L	6503	Standard
	Cr	53	605.0	6.6	**0.2469**	0.038	15.2	ug/L	492	Standard
	Mn	55	1194.1	59.5	**0.0889**	0.112	125.6	ug/L	841	Standard
	Co	59	316.0	35.1	**0.0550**	0.018	32.3	ug/L	229	Standard
	Ni	60	524.0	11.7	**0.1368**	0.031	22.5	ug/L	344	Standard
	Cu	65	203.7	7.4	**0.1015**	0.007	7.2	ug/L	115	Standard
	Zn	66	198.3	8.9	**0.0722**	0.015	21.3	ug/L	190	Standard
>	**Ge**	72	434423.2	1.3				ug/L	409858	Standard
	As	75	6.5	179.2	**0.1047**	0.011	10.1	ug/L	-22	Standard
	Se	82	30.2	4.2	**0.2183**	0.008	3.5	ug/L	18	Standard
	Se-1	77	61.7	3.4	**0.0858**	0.019	22.0	ug/L	50	Standard
>	**Ga**	71	23.3	53.9				mg/L	97	Standard
	Rb	85	55.0	18.2				ug/L	25	Standard
	Y	89	380097.4	1.2				ug/L	376763	Standard
>	**Rh**	103	41.7	66.1				ug/L	20	Standard
	Mo	98	226.8	44.6	**0.1626**	0.040	24.7	ug/L	51	Standard
	Ag	107	177.7	32.6	**0.0506**	0.009	17.4	ug/L	76	Standard
	Cd	111	18.4	27.8	**0.0483**	0.002	5.1	mg/L	6	Standard
	Cd	114	45.5	94.0	**0.0464**	0.008	18.1	ug/L	18	Standard
>	**In**	115	523505.1	2.0				ug/L	507261	Standard
	Sn	118	850.0	23.5	**0.0404**	0.035	87.4	ug/L	683	Standard
	Sb	123	632.5	33.7	**0.1228**	0.049	39.7	ug/L	446	Standard
	Ba	135	56.0	36.1	**0.0443**	0.011	23.8	ug/L	28	Standard
	Ce	140	53.3	43.3				ug/L	33	Standard
>	**Tb**	159	800127.8	1.0				ug/L	800803	Standard
	Ho	165	13.3	43.3				ug/L	10	Standard
	Tl	203	113.3	28.9	**0.0477**	0.004	8.6	ug/L	13	Standard
	Tl	205	96.7	62.4	**0.0567**	0.009	15.5	ug/L	13	Standard
	Pb	206	352.3	41.0	**0.0657**	0.028	43.1	ug/L	226	Standard
	Pb	207	330.3	42.9	**0.0709**	0.031	43.2	ug/L	204	Standard
	Pb	208	1337.7	38.2	**0.0729**	0.028	37.8	ug/L	852	Standard
	U	238	139.0	62.6	**0.0630**	0.013	20.1	ug/L	13	Standard
>	**Bi**	209	462113.9	1.9				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	215.0	89.1	**0.2268**	0.230	101.4	mg/L	58	Standard
K	39	25.0	20.0	**-0.0496**	0.020	40.1	mg/L	27	Standard
Ca	43	25.0	69.3	**0.3967**	1.159	292.2	mg/L	20	Standard
Fe	54	166.1	29.4	**0.0075**	0.034	454.2	mg/L	158	Standard
Fe	57	271.7	18.9	**0.1597**	0.163	102.1	mg/L	267	Standard
> **Sc-1**	45	42046.6	2.5				mg/L	38815	Standard
Cl	35	72320.2	1.4				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1920.1	8.2				ug/L	1617	Standard
P	31	21066.3	3.1				ug/L	19244	Standard
S	34	4195.6	5.6				ug/L	3557	Standard
Sr	88	68.3	11.2				ug/L	65	Standard
C	12	40.0	25.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	23	Standard
Dy	164	9.5	107.6				mg/L	13	Standard
Ho-1	165	13.3	43.3				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	10325.2	3.1				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.994	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.202
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.911
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Se	82	
QC Std 7	Tl	203	

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Method 6020 - Summary Report

Sample ID: PBS M4 WG574306-02
Sample Date/Time: Wednesday, July 06, 2016 15:50:33
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60321.5	1.7				ug/L	68501	Standard
	Be	9	10.0	50.0	**0.0319**	0.006	19.1	ug/L	8	Standard
	Al	27	4340.6	5.6	**0.0698**	0.002	2.5	ug/L	1397	Standard
	Sc	45	39145.5	1.2				ug/L	38815	Standard
	Ti	47	32.0	13.6	**0.0648**	0.013	19.6	ug/L	36	Standard
	V	51	1399.3	2.8	**0.0491**	0.007	14.5	ug/L	1284	Standard
	Cr	52	6817.5	0.4	**0.0288**	0.009	30.6	ug/L	6503	Standard
	Cr	53	396.7	5.8	**0.0309**	0.026	84.0	ug/L	492	Standard
	Mn	55	677.0	5.0	**0.0117**	0.006	54.9	ug/L	841	Standard
	Co	59	186.7	9.5	**0.0355**	0.003	8.2	ug/L	229	Standard
	Ni	60	465.3	4.8	**0.1119**	0.014	12.9	ug/L	344	Standard
	Cu	65	161.3	5.2	**0.0804**	0.006	7.2	ug/L	115	Standard
	Zn	66	946.4	3.1	**0.7988**	0.024	3.0	ug/L	190	Standard
>	**Ge**	72	421846.3	1.0				ug/L	409858	Standard
	As	75	-69.8	37.3	**0.0336**	0.024	70.9	ug/L	-22	Standard
	Se	82	12.6	46.4	**0.0646**	0.055	84.5	ug/L	18	Standard
	Se-1	77	60.0	12.6	**0.0881**	0.111	126.1	ug/L	50	Standard
>	**Ga**	71	30.0	16.7				mg/L	97	Standard
	Rb	85	28.3	88.8				ug/L	25	Standard
	Y	89	365994.3	0.0				ug/L	376763	Standard
>	**Rh**	103	16.7	34.6				ug/L	20	Standard
	Mo	98	75.8	22.7	**0.1031**	0.007	6.8	ug/L	51	Standard
	Ag	107	68.0	16.4	**0.0340**	0.002	5.1	ug/L	76	Standard
	Cd	111	6.5	46.8	**0.0427**	0.002	3.6	mg/L	6	Standard
	Cd	114	7.1	121.2	**0.0388**	0.002	4.6	ug/L	18	Standard
>	**In**	115	505408.1	0.5				ug/L	507261	Standard
	Sn	118	480.0	14.7	**-0.0221**	0.013	57.1	ug/L	683	Standard
	Sb	123	394.1	24.4	**0.0718**	0.022	30.9	ug/L	446	Standard
	Ba	135	54.0	8.5	**0.0442**	0.002	5.3	ug/L	28	Standard
	Ce	140	33.3	34.6				ug/L	33	Standard
>	**Tb**	159	771411.9	1.2				ug/L	800803	Standard
	Ho	165	6.7	114.6				ug/L	10	Standard
	Tl	203	7.7	41.9	**0.0343**	0.000	1.2	ug/L	13	Standard
	Tl	205	5.0	100.0	**0.0433**	0.001	1.7	ug/L	13	Standard
	Pb	206	241.3	5.2	**0.0451**	0.002	5.2	ug/L	226	Standard
	Pb	207	212.7	12.1	**0.0466**	0.006	12.9	ug/L	204	Standard
	Pb	208	890.0	2.3	**0.0499**	0.001	2.7	ug/L	852	Standard
	U	238	5.0	0.0	**0.0434**	0.000	0.0	ug/L	13	Standard
>	**Bi**	209	449902.0	0.5				ug/L	449044	Standard

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Na	23	1.7	173.2	**0.3470**	15.813	4556.7	mg/L	2	Standard
Mg	24	53.3	14.3	**0.0332**	0.009	28.5	mg/L	58	Standard
K	39	23.3	24.7	**-0.0497**	0.022	44.0	mg/L	27	Standard
Ca	43	35.0	14.3	**1.2473**	0.369	29.6	mg/L	20	Standard
Fe	54	97.6	24.1	**-0.0391**	0.021	52.6	mg/L	158	Standard
Fe	57	258.3	21.3	**0.1767**	0.178	100.7	mg/L	267	Standard
> **Sc-1**	45	39145.5	1.2				mg/L	38815	Standard
Cl	35	72061.6	0.7				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	2043.5	4.9				ug/L	1617	Standard
P	31	12745.4	1.4				ug/L	19244	Standard
S	34	4235.6	4.4				ug/L	3557	Standard
Sr	88	66.7	48.2				ug/L	65	Standard
C	12	56.7	79.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	23	Standard
Dy	164	19.4	90.2				mg/L	13	Standard
Ho-1	165	6.7	114.6				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	6898.2	1.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.059	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.925	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.635	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.191	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBS M4 WG574306-02
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Method 6020 - Summary Report

Sample ID: LCSS M4 WG574306-03
Sample Date/Time: Wednesday, July 06, 2016 15:53:45
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61943.1	2.3				ug/L	68501	Standard
	Be	9	22788.8	2.5	**27.7900**	0.695	2.5	ug/L	8	Standard
	Al	27	9251.2	3.3	**0.1071**	0.002	1.6	ug/L	1397	Standard
	Sc	45	42504.5	0.8				ug/L	38815	Standard
	Ti	47	40.7	16.4	**0.0847**	0.019	22.5	ug/L	36	Standard
	V	51	197378.2	0.5	**25.8881**	0.107	0.4	ug/L	1284	Standard
	Cr	52	203716.1	0.7	**26.5392**	0.082	0.3	ug/L	6503	Standard
	Cr	53	24791.9	0.3	**26.4178**	0.193	0.7	ug/L	492	Standard
	Mn	55	180941.1	1.4	**27.3648**	0.262	1.0	ug/L	841	Standard
	Co	59	170099.0	1.8	**26.1669**	0.414	1.6	ug/L	229	Standard
	Ni	60	48290.2	1.5	**26.5688**	0.339	1.3	ug/L	344	Standard
	Cu	65	47767.2	0.9	**26.4765**	0.075	0.3	ug/L	115	Standard
	Zn	66	29860.1	0.4	**27.3841**	0.124	0.5	ug/L	190	Standard
>	**Ge**	72	441594.3	0.7				ug/L	409858	Standard
	As	75	28851.8	0.7	**25.9316**	0.203	0.8	ug/L	-22	Standard
	Se	82	2909.4	1.3	**25.5079**	0.168	0.7	ug/L	18	Standard
	Se-1	77	1983.1	1.3	**25.9713**	0.453	1.7	ug/L	50	Standard
>	**Ga**	71	40.0	25.0				mg/L	97	Standard
	Rb	85	45.0	22.2				ug/L	25	Standard
	Y	89	378682.1	0.2				ug/L	376763	Standard
>	**Rh**	103	58.3	17.8				ug/L	20	Standard
	Mo	98	80.9	10.8	**0.1038**	0.003	3.3	ug/L	51	Standard
	Ag	107	168208.2	0.7	**25.9425**	0.038	0.1	ug/L	76	Standard
	Cd	111	52395.3	0.4	**25.4346**	0.241	0.9	mg/L	6	Standard
	Cd	114	129575.9	0.9	**25.7262**	0.071	0.3	ug/L	18	Standard
>	**In**	115	527384.1	0.8				ug/L	507261	Standard
	Sn	118	595.0	11.9	**-0.0055**	0.012	224.7	ug/L	683	Standard
	Sb	123	110230.2	2.2	**24.6989**	0.538	2.2	ug/L	446	Standard
	Ba	135	50026.8	0.7	**25.2997**	0.128	0.5	ug/L	28	Standard
	Ce	140	40.0	25.0				ug/L	33	Standard
>	**Tb**	159	818911.5	0.3				ug/L	800803	Standard
	Ho	165	18.3	41.7				ug/L	10	Standard
	Tl	203	202774.2	0.8	**25.6253**	0.275	1.1	ug/L	13	Standard
	Tl	205	180453.3	0.7	**26.3379**	0.254	1.0	ug/L	13	Standard
	Pb	206	132149.2	1.1	**25.9889**	0.213	0.8	ug/L	226	Standard
	Pb	207	115159.0	0.9	**24.9410**	0.164	0.7	ug/L	204	Standard
	Pb	208	485832.8	0.3	**26.3134**	0.103	0.4	ug/L	852	Standard
	U	238	171207.5	0.5	**25.0637**	0.032	0.1	ug/L	13	Standard
>	**Bi**	209	465221.6	0.3				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	73.3	19.7	**0.0522**	0.017	32.6	mg/L	58	Standard
K	39	20.0	43.3	**-0.0690**	0.032	46.1	mg/L	27	Standard
Ca	43	20.0	0.0	**0.0504**	0.011	22.1	mg/L	20	Standard
Fe	54	135.8	35.4	**-0.0166**	0.036	215.7	mg/L	158	Standard
Fe	57	223.3	9.0	**0.0024**	0.060	2457.7	mg/L	267	Standard
> **Sc-1**	45	42504.5	0.8				mg/L	38815	Standard
Cl	35	74399.6	2.0				ug/L	57611	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1826.8	5.9				ug/L	1617	Standard
P	31	21475.2	2.0				ug/L	19244	Standard
S	34	3890.5	2.7				ug/L	3557	Standard
Sr	88	60.0	28.9				ug/L	65	Standard
C	12	73.3	7.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	89.2				mg/L	23	Standard
Dy	164	19.2	54.6				mg/L	13	Standard
Ho-1	165	18.3	41.7				mg/L	10	Standard
Er	166	16.7	69.3				mg/L	13	Standard
I	127	986.7	12.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.426	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.743	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.967
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.603
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129701
Sample Date/Time: Wednesday, July 06, 2016 15:56:56
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63174.8	1.0				ug/L	68501	Standard
	Be	9	473.3	11.9	**0.5854**	0.073	12.4	ug/L	8	Standard
	Al	27	12963863.6	1.0	**99.0412**	1.266	1.3	ug/L	1397	Standard
	Sc	45	46787.1	1.7				ug/L	38815	Standard
	Ti	47	2854.9	1.5	**7.7964**	0.128	1.6	ug/L	36	Standard
	V	51	64534.0	0.8	**8.2932**	0.120	1.4	ug/L	1284	Standard
	Cr	52	48530.6	0.9	**5.5538**	0.041	0.7	ug/L	6503	Standard
	Cr	53	5602.7	1.4	**5.5927**	0.038	0.7	ug/L	492	Standard
	Mn	55	1656218.8	1.2	**249.0852**	4.524	1.8	ug/L	841	Standard
	Co	59	22515.4	0.2	**3.4383**	0.034	1.0	ug/L	229	Standard
	Ni	60	14536.6	0.7	**7.8173**	0.023	0.3	ug/L	344	Standard
	Cu	65	15589.0	1.3	**8.5559**	0.041	0.5	ug/L	115	Standard
	Zn	66	14797.9	0.3	**13.3947**	0.133	1.0	ug/L	190	Standard
>	**Ge**	72	445500.3	0.9				ug/L	409858	Standard
	As	75	1680.8	1.7	**1.5905**	0.019	1.2	ug/L	-22	Standard
	Se	82	44.1	2.8	**0.3324**	0.009	2.6	ug/L	18	Standard
	Se-1	77	86.7	6.8	**0.3989**	0.076	19.1	ug/L	50	Standard
>	**Ga**	71	5177.6	2.2				mg/L	97	Standard
	Rb	85	61377.4	2.5				ug/L	25	Standard
	Y	89	546818.1	1.0				ug/L	376763	Standard
>	**Rh**	103	41.7	27.7				ug/L	20	Standard
	Mo	98	385.0	8.4	**0.2247**	0.014	6.4	ug/L	51	Standard
	Ag	107	262.3	9.1	**0.0634**	0.004	6.3	ug/L	76	Standard
	Cd	111	147.3	2.4	**0.1106**	0.002	2.1	mg/L	6	Standard
	Cd	114	389.3	18.3	**0.1143**	0.014	12.0	ug/L	18	Standard
>	**In**	115	529068.3	1.1				ug/L	507261	Standard
	Sn	118	523.3	19.7	**-0.0183**	0.019	102.0	ug/L	683	Standard
	Sb	123	1234.0	36.4	**0.2562**	0.103	40.2	ug/L	446	Standard
	Ba	135	251951.3	0.7	**126.9549**	1.383	1.1	ug/L	28	Standard
	Ce	140	741746.7	2.0				ug/L	33	Standard
>	**Tb**	159	829704.7	1.4				ug/L	800803	Standard
	Ho	165	14426.9	0.8				ug/L	10	Standard
	Tl	203	395.0	2.9	**0.0846**	0.002	2.0	ug/L	13	Standard
	Tl	205	333.3	8.8	**0.0924**	0.004	4.1	ug/L	13	Standard
	Pb	206	37568.5	0.8	**7.5872**	0.046	0.6	ug/L	226	Standard
	Pb	207	30719.8	0.7	**6.8349**	0.128	1.9	ug/L	204	Standard
	Pb	208	133956.4	0.3	**7.4538**	0.109	1.5	ug/L	852	Standard
	U	238	2766.3	1.8	**0.4579**	0.009	1.9	ug/L	13	Standard
>	**Bi**	209	452887.3	1.3				ug/L	449044	Standard

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Na	23	5.0	100.0	**13.8021**	22.785	165.1	mg/L	2	Standard
Mg	24	116.7	20.3	**0.0930**	0.029	30.7	mg/L	58	Standard
K	39	146.7	20.0	**0.3435**	0.099	28.9	mg/L	27	Standard
Ca	43	471.7	5.0	**27.1766**	1.103	4.1	mg/L	20	Standard
Fe	54	4043.0	2.7	**2.6886**	0.120	4.5	mg/L	158	Standard
Fe	57	1505.1	10.2	**3.5022**	0.490	14.0	mg/L	267	Standard
> **Sc-1**	45	46787.1	1.7				mg/L	38815	Standard
Cl	35	75827.3	1.6				ug/L	57611	Standard
Kr	83	3.3	69.3				ug/L	2	Standard
Br	81	2300.2	6.3				ug/L	1617	Standard
P	31	21613.7	1.2				ug/L	19244	Standard
S	34	4237.3	7.4				ug/L	3557	Standard
Sr	88	135.0	22.2				ug/L	65	Standard
C	12	83.3	6.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	36.7				mg/L	23	Standard
Dy	164	23454.8	2.1				mg/L	13	Standard
Ho-1	165	14426.9	0.8				mg/L	10	Standard
Er	166	12475.1	2.4				mg/L	13	Standard
I	127	30869.8	6.1				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.224	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.696	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.299
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.856
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129702
Sample Date/Time: Wednesday, July 06, 2016 16:00:08
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	62448.5	2.1				ug/L	68501	Standard
	Be	9	608.3	3.9	**0.7548**	0.029	3.8	ug/L	8	Standard
	Al	27	6425419.7	0.6	**49.6924**	1.257	2.5	ug/L	1397	Standard
	Sc	45	46516.3	2.2				ug/L	38815	Standard
	Ti	47	2114.1	0.3	**5.7561**	0.071	1.2	ug/L	36	Standard
	V	51	99038.6	0.2	**12.7815**	0.178	1.4	ug/L	1284	Standard
	Cr	52	73702.5	0.2	**8.9021**	0.153	1.7	ug/L	6503	Standard
	Cr	53	8640.8	2.1	**8.8356**	0.138	1.6	ug/L	492	Standard
	Mn	55	3399995.6	0.6	**510.5494**	9.401	1.8	ug/L	841	Standard
	Co	59	39995.4	1.5	**6.0929**	0.144	2.4	ug/L	229	Standard
	Ni	60	19123.7	0.6	**10.3160**	0.152	1.5	ug/L	344	Standard
	Cu	65	22636.2	1.2	**12.4080**	0.116	0.9	ug/L	115	Standard
	Zn	66	34261.7	0.2	**31.1072**	0.396	1.3	ug/L	190	Standard
>	Ge	72	446311.5	1.4				ug/L	409858	Standard
	As	75	5487.0	1.7	**4.9603**	0.106	2.1	ug/L	-22	Standard
	Se	82	64.7	18.6	**0.5105**	0.101	19.7	ug/L	18	Standard
	Se-1	77	119.3	10.5	**0.8342**	0.188	22.6	ug/L	50	Standard
>	Ga	71	6746.5	3.9				mg/L	97	Standard
	Rb	85	67168.6	2.7				ug/L	25	Standard
	Y	89	576416.9	0.8				ug/L	376763	Standard
>	Rh	103	25.0	40.0				ug/L	20	Standard
	Mo	98	316.3	8.4	**0.1968**	0.010	5.1	ug/L	51	Standard
	Ag	107	622.3	4.9	**0.1183**	0.004	3.3	ug/L	76	Standard
	Cd	111	1170.1	2.9	**0.6028**	0.021	3.6	mg/L	6	Standard
	Cd	114	2831.4	7.2	**0.5947**	0.035	5.8	ug/L	18	Standard
>	In	115	530969.0	0.9				ug/L	507261	Standard
	Sn	118	826.7	11.4	**0.0343**	0.017	50.9	ug/L	683	Standard
	Sb	123	887.8	24.2	**0.1772**	0.047	26.5	ug/L	446	Standard
	Ba	135	307580.0	0.5	**154.4232**	1.212	0.8	ug/L	28	Standard
	Ce	140	898326.7	0.8				ug/L	33	Standard
>	Tb	159	824712.1	0.3				ug/L	800803	Standard
	Ho	165	16273.7	1.2				ug/L	10	Standard
	Tl	203	381.3	11.6	**0.0815**	0.006	6.8	ug/L	13	Standard
	Tl	205	301.7	12.4	**0.0866**	0.006	6.5	ug/L	13	Standard
	Pb	206	268899.5	0.4	**52.9720**	0.278	0.5	ug/L	226	Standard
	Pb	207	225053.4	0.2	**48.8212**	0.186	0.4	ug/L	204	Standard
	Pb	208	970125.3	0.5	**52.6267**	0.336	0.6	ug/L	852	Standard
	U	238	2932.0	0.9	**0.4718**	0.005	1.0	ug/L	13	Standard
>	Bi	209	464484.9	0.4				ug/L	449044	Standard

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Na	23	1.7	173.2	**-1.0199**	13.445	1318.3	mg/L	2	Standard
Mg	24	86.7	23.3	**0.0599**	0.025	41.5	mg/L	58	Standard
K	39	201.7	8.7	**0.5298**	0.070	13.2	mg/L	27	Standard
Ca	43	88.3	40.9	**4.1135**	2.328	56.6	mg/L	20	Standard
Fe	54	6704.1	3.0	**4.5654**	0.231	5.1	mg/L	158	Standard
Fe	57	1951.8	5.0	**4.7665**	0.192	4.0	mg/L	267	Standard
> **Sc-1**	45	46516.3	2.2				mg/L	38815	Standard
Cl	35	72128.6	1.7				ug/L	57611	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	3473.7	2.6				ug/L	1617	Standard
P	31	21530.3	0.6				ug/L	19244	Standard
S	34	4282.3	1.4				ug/L	3557	Standard
Sr	88	103.3	19.6				ug/L	65	Standard
C	12	130.0	30.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	86.7	24.0				mg/L	23	Standard
Dy	164	26856.5	1.1				mg/L	13	Standard
Ho-1	165	16273.7	1.2				mg/L	10	Standard
Er	166	14303.4	1.1				mg/L	13	Standard
I	127	19058.7	4.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.164	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.894	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.674
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.439
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129702
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Method 6020 - Summary Report

Sample ID: L1606129703
Sample Date/Time: Wednesday, July 06, 2016 16:03:19
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64073.5	1.5				ug/L	68501	Standard
	Be	9	488.3	11.8	**0.5945**	0.065	10.9	ug/L	8	Standard
	Al	27	15365624.4	1.2	**115.7621**	3.069	2.7	ug/L	1397	Standard
	Sc	45	47029.6	3.1				ug/L	38815	Standard
	Ti	47	3571.8	3.3	**9.7737**	0.346	3.5	ug/L	36	Standard
	V	51	87368.0	0.8	**11.2921**	0.054	0.5	ug/L	1284	Standard
	Cr	52	51636.8	0.5	**5.9777**	0.036	0.6	ug/L	6503	Standard
	Cr	53	5932.8	2.8	**5.9551**	0.175	2.9	ug/L	492	Standard
	Mn	55	2674680.4	0.3	**402.7958**	2.485	0.6	ug/L	841	Standard
	Co	59	24903.4	0.4	**3.8070**	0.028	0.7	ug/L	229	Standard
	Ni	60	15225.3	1.5	**8.2054**	0.092	1.1	ug/L	344	Standard
	Cu	65	11942.7	0.4	**6.5600**	0.017	0.3	ug/L	115	Standard
	Zn	66	18930.8	1.4	**17.1883**	0.221	1.3	ug/L	190	Standard
>	**Ge**	72	444933.7	0.4				ug/L	409858	Standard
	As	75	2651.5	1.9	**2.4550**	0.037	1.5	ug/L	-22	Standard
	Se	82	42.3	10.6	**0.3172**	0.041	12.8	ug/L	18	Standard
	Se-1	77	92.3	10.9	**0.4762**	0.134	28.1	ug/L	50	Standard
>	**Ga**	71	5626.0	1.8				mg/L	97	Standard
	Rb	85	70065.0	0.9				ug/L	25	Standard
	Y	89	547830.0	0.7				ug/L	376763	Standard
>	**Rh**	103	41.7	66.1				ug/L	20	Standard
	Mo	98	346.8	7.1	**0.2100**	0.010	4.9	ug/L	51	Standard
	Ag	107	260.7	7.0	**0.0633**	0.003	4.6	ug/L	76	Standard
	Cd	111	151.1	5.0	**0.1127**	0.004	3.5	mg/L	6	Standard
	Cd	114	305.5	8.0	**0.0980**	0.005	4.8	ug/L	18	Standard
>	**In**	115	526795.7	0.4				ug/L	507261	Standard
	Sn	118	728.4	17.9	**0.0180**	0.023	126.5	ug/L	683	Standard
	Sb	123	456.1	40.3	**0.0819**	0.041	49.8	ug/L	446	Standard
	Ba	135	321937.8	0.9	**162.9100**	2.079	1.3	ug/L	28	Standard
	Ce	140	745612.3	0.4				ug/L	33	Standard
>	**Tb**	159	836768.9	0.5				ug/L	800803	Standard
	Ho	165	13641.1	0.6				ug/L	10	Standard
	Tl	203	454.0	2.2	**0.0918**	0.001	1.6	ug/L	13	Standard
	Tl	205	421.7	1.8	**0.1052**	0.001	0.8	ug/L	13	Standard
	Pb	206	37397.8	1.0	**7.5039**	0.094	1.3	ug/L	226	Standard
	Pb	207	30975.0	1.9	**6.8467**	0.160	2.3	ug/L	204	Standard
	Pb	208	134337.6	0.8	**7.4262**	0.090	1.2	ug/L	852	Standard
	U	238	3398.4	2.4	**0.5496**	0.015	2.7	ug/L	13	Standard
>	**Bi**	209	455822.4	0.5				ug/L	449044	Standard

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Na	23	3.3	173.2	**5.7906**	25.242	435.9	mg/L	2	Standard
Mg	24	116.7	6.5	**0.0919**	0.005	5.1	mg/L	58	Standard
K	39	116.7	13.8	**0.2413**	0.042	17.4	mg/L	27	Standard
Ca	43	616.7	11.5	**35.8509**	5.371	15.0	mg/L	20	Standard
Fe	54	6215.4	1.8	**4.1752**	0.098	2.3	mg/L	158	Standard
Fe	57	2093.5	3.0	**5.1002**	0.085	1.7	mg/L	267	Standard
> **Sc-1**	45	47029.6	3.1				mg/L	38815	Standard
Cl	35	76435.7	0.6				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	2476.9	7.5				ug/L	1617	Standard
P	31	21748.9	2.3				ug/L	19244	Standard
S	34	4344.0	5.1				ug/L	3557	Standard
Sr	88	190.0	16.0				ug/L	65	Standard
C	12	80.0	50.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	24.7				mg/L	23	Standard
Dy	164	22508.9	3.2				mg/L	13	Standard
Ho-1	165	13641.1	0.6				mg/L	10	Standard
Er	166	11941.4	2.7				mg/L	13	Standard
I	127	22788.8	3.6				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.536	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.558	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.851
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.510
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129704
Sample Date/Time: Wednesday, July 06, 2016 16:06:31
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63111.2	1.9				ug/L	68501	Standard
	Be	9	405.0	3.3	**0.5041**	0.025	4.9	ug/L	8	Standard
	Al	27	14440748.1	0.6	**110.4469**	1.680	1.5	ug/L	1397	Standard
	Sc	45	46800.5	2.4				ug/L	38815	Standard
	Ti	47	3445.7	2.3	**9.4186**	0.270	2.9	ug/L	36	Standard
	V	51	92403.7	0.4	**11.9391**	0.031	0.3	ug/L	1284	Standard
	Cr	52	56856.5	0.5	**6.6687**	0.062	0.9	ug/L	6503	Standard
	Cr	53	6406.4	1.9	**6.4568**	0.128	2.0	ug/L	492	Standard
	Mn	55	2848070.2	1.3	**428.4666**	4.579	1.1	ug/L	841	Standard
	Co	59	25663.7	0.9	**3.9191**	0.042	1.1	ug/L	229	Standard
	Ni	60	17112.0	0.7	**9.2328**	0.115	1.2	ug/L	344	Standard
	Cu	65	13470.0	0.7	**7.3933**	0.074	1.0	ug/L	115	Standard
	Zn	66	18281.4	1.3	**16.5792**	0.322	1.9	ug/L	190	Standard
>	**Ge**	72	445391.0	0.7				ug/L	409858	Standard
	As	75	2839.7	2.5	**2.6195**	0.053	2.0	ug/L	-22	Standard
	Se	82	42.5	11.2	**0.3192**	0.042	13.2	ug/L	18	Standard
	Se-1	77	89.7	5.6	**0.4395**	0.071	16.1	ug/L	50	Standard
>	**Ga**	71	6004.5	4.9				mg/L	97	Standard
	Rb	85	64888.7	1.6				ug/L	25	Standard
	Y	89	547330.6	1.7				ug/L	376763	Standard
>	**Rh**	103	36.7	34.3				ug/L	20	Standard
	Mo	98	863.5	1.4	**0.4161**	0.007	1.6	ug/L	51	Standard
	Ag	107	246.7	2.8	**0.0611**	0.001	2.1	ug/L	76	Standard
	Cd	111	146.5	7.6	**0.1104**	0.005	4.9	mg/L	6	Standard
	Cd	114	392.6	2.3	**0.1152**	0.003	2.4	ug/L	18	Standard
>	**In**	115	527277.1	1.4				ug/L	507261	Standard
	Sn	118	525.0	11.9	**-0.0179**	0.010	53.9	ug/L	683	Standard
	Sb	123	402.9	30.5	**0.0700**	0.028	39.4	ug/L	446	Standard
	Ba	135	399609.8	0.2	**202.0498**	3.263	1.6	ug/L	28	Standard
	Ce	140	769293.1	0.4				ug/L	33	Standard
>	**Tb**	159	836566.5	0.5				ug/L	800803	Standard
	Ho	165	13921.4	3.2				ug/L	10	Standard
	Tl	203	408.0	3.2	**0.0858**	0.002	2.1	ug/L	13	Standard
	Tl	205	323.3	16.7	**0.0906**	0.008	9.2	ug/L	13	Standard
	Pb	206	37067.0	0.2	**7.4216**	0.029	0.4	ug/L	226	Standard
	Pb	207	30343.0	0.2	**6.6925**	0.054	0.8	ug/L	204	Standard
	Pb	208	133022.6	0.7	**7.3378**	0.057	0.8	ug/L	852	Standard
	U	238	3191.3	1.0	**0.5176**	0.003	0.5	ug/L	13	Standard
>	**Bi**	209	456789.9	0.6				ug/L	449044	Standard

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Na	23	3.3	86.6	**6.3700**	13.132	206.2	mg/L	2	Standard
Mg	24	128.3	14.8	**0.1061**	0.025	23.5	mg/L	58	Standard
K	39	143.3	10.7	**0.3315**	0.041	12.4	mg/L	27	Standard
Ca	43	511.7	6.9	**29.5725**	1.591	5.4	mg/L	20	Standard
Fe	54	6320.5	3.8	**4.2715**	0.264	6.2	mg/L	158	Standard
Fe	57	2060.1	4.0	**5.0347**	0.146	2.9	mg/L	267	Standard
Sc-1	45	46800.5	2.4				mg/L	38815	Standard
Cl	35	76096.0	1.2				ug/L	57611	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	2130.2	8.0				ug/L	1617	Standard
P	31	21824.0	1.6				ug/L	19244	Standard
S	34	4499.0	2.5				ug/L	3557	Standard
Sr	88	190.0	22.5				ug/L	65	Standard
C	12	116.7	13.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	34.3				mg/L	23	Standard
Dy	164	23701.7	2.6				mg/L	13	Standard
Ho-1	165	13921.4	3.2				mg/L	10	Standard
Er	166	12548.5	3.2				mg/L	13	Standard
I	127	21098.0	2.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		92.132	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		108.670	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.946
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.725
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129705
Sample Date/Time: Wednesday, July 06, 2016 16:09:42
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62980.8	4.4				ug/L	68501	Standard
	Be	9	241.7	15.3	**0.3086**	0.039	12.6	ug/L	8	Standard
	Al	27	8184375.2	3.0	**62.7980**	3.036	4.8	ug/L	1397	Standard
	Sc	45	45461.4	1.7				ug/L	38815	Standard
	Ti	47	2327.2	1.1	**6.2933**	0.241	3.8	ug/L	36	Standard
	V	51	39700.9	1.0	**4.9997**	0.179	3.6	ug/L	1284	Standard
	Cr	52	37108.7	1.5	**3.9823**	0.167	4.2	ug/L	6503	Standard
	Cr	53	4053.9	1.9	**3.8931**	0.198	5.1	ug/L	492	Standard
	Mn	55	1570873.5	1.2	**234.1318**	8.981	3.8	ug/L	841	Standard
	Co	59	16607.1	2.1	**2.5154**	0.122	4.9	ug/L	229	Standard
	Ni	60	11198.5	1.8	**5.9319**	0.267	4.5	ug/L	344	Standard
	Cu	65	5955.8	0.8	**3.2313**	0.106	3.3	ug/L	115	Standard
	Zn	66	12788.4	0.9	**11.4529**	0.260	2.3	ug/L	190	Standard
>	**Ge**	72	449788.7	2.7				ug/L	409858	Standard
	As	75	1755.0	2.5	**1.6418**	0.024	1.5	ug/L	-22	Standard
	Se	82	35.2	7.0	**0.2524**	0.026	10.5	ug/L	18	Standard
	Se-1	77	82.3	13.7	**0.3325**	0.167	50.3	ug/L	50	Standard
>	**Ga**	71	3890.5	2.5				mg/L	97	Standard
	Rb	85	35301.1	1.9				ug/L	25	Standard
	Y	89	468000.1	2.2				ug/L	376763	Standard
>	**Rh**	103	28.3	27.0				ug/L	20	Standard
	Mo	98	787.1	2.4	**0.3831**	0.014	3.6	ug/L	51	Standard
	Ag	107	180.0	4.3	**0.0506**	0.001	1.2	ug/L	76	Standard
	Cd	111	90.5	11.3	**0.0829**	0.005	5.4	mg/L	6	Standard
	Cd	114	247.4	18.0	**0.0862**	0.010	11.5	ug/L	18	Standard
>	**In**	115	531650.1	2.4				ug/L	507261	Standard
	Sn	118	468.3	13.2	**-0.0284**	0.012	41.2	ug/L	683	Standard
	Sb	123	293.4	31.1	**0.0451**	0.021	46.7	ug/L	446	Standard
	Ba	135	101024.0	0.5	**50.6871**	1.476	2.9	ug/L	28	Standard
	Ce	140	396222.3	2.3				ug/L	33	Standard
>	**Tb**	159	820450.8	2.1				ug/L	800803	Standard
	Ho	165	7663.6	3.4				ug/L	10	Standard
	Tl	203	202.0	8.6	**0.0593**	0.002	3.7	ug/L	13	Standard
	Tl	205	163.3	23.4	**0.0667**	0.005	7.8	ug/L	13	Standard
	Pb	206	15664.1	0.4	**3.1305**	0.070	2.2	ug/L	226	Standard
	Pb	207	13014.6	1.2	**2.8667**	0.073	2.6	ug/L	204	Standard
	Pb	208	56294.6	0.6	**3.1020**	0.075	2.4	ug/L	852	Standard
	U	238	1239.1	1.5	**0.2268**	0.001	0.7	ug/L	13	Standard
>	**Bi**	209	457425.1	1.9				ug/L	449044	Standard

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Na	23	5.0	0.0	**14.5008**	0.406	2.8	mg/L	2	Standard
Mg	24	86.7	3.3	**0.0619**	0.005	8.0	mg/L	58	Standard
K	39	118.3	10.6	**0.2605**	0.036	13.8	mg/L	27	Standard
Ca	43	278.3	10.5	**15.9906**	1.553	9.7	mg/L	20	Standard
Fe	54	4712.4	4.0	**3.2496**	0.185	5.7	mg/L	158	Standard
Fe	57	1498.4	9.3	**3.5981**	0.364	10.1	mg/L	267	Standard
Sc-1	45	45461.4	1.7				mg/L	38815	Standard
Cl	35	74689.7	1.1				ug/L	57611	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	2046.8	4.4				ug/L	1617	Standard
P	31	21545.3	1.7				ug/L	19244	Standard
S	34	4452.3	4.6				ug/L	3557	Standard
Sr	88	106.7	7.2				ug/L	65	Standard
C	12	86.7	6.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	17.3				mg/L	23	Standard
Dy	164	12824.6	3.4				mg/L	13	Standard
Ho-1	165	7663.6	3.4				mg/L	10	Standard
Er	166	6424.7	4.2				mg/L	13	Standard
I	127	6124.6	5.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		91.941	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		109.743	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.808
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.866
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606129706
Sample Date/Time: Wednesday, July 06, 2016 16:13:18
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64657.7	2.5				ug/L	68501	Standard
	Be	9	596.7	3.8	**0.7167**	0.043	6.1	ug/L	8	Standard
	Al	27	18962129.8	1.5	**141.5551**	2.522	1.8	ug/L	1397	Standard
	Sc	45	48390.5	1.6				ug/L	38815	Standard
	Ti	47	5454.0	2.9	**14.7696**	0.651	4.4	ug/L	36	Standard
	V	51	114915.0	1.1	**14.7253**	0.322	2.2	ug/L	1284	Standard
	Cr	52	97543.3	1.1	**11.9723**	0.286	2.4	ug/L	6503	Standard
	Cr	53	11629.5	1.9	**11.9313**	0.316	2.7	ug/L	492	Standard
	Mn	55	2838609.2	0.2	**422.5630**	7.353	1.7	ug/L	841	Standard
	Co	59	46821.9	1.5	**7.0698**	0.102	1.4	ug/L	229	Standard
	Ni	60	31539.5	0.9	**16.9679**	0.340	2.0	ug/L	344	Standard
	Cu	65	17669.0	0.7	**9.6004**	0.216	2.2	ug/L	115	Standard
	Zn	66	32520.2	0.6	**29.2655**	0.447	1.5	ug/L	190	Standard
>	**Ge**	72	450193.7	1.6				ug/L	409858	Standard
	As	75	3232.5	2.7	**2.9388**	0.110	3.7	ug/L	-22	Standard
	Se	82	40.5	15.8	**0.2979**	0.061	20.4	ug/L	18	Standard
	Se-1	77	106.0	12.3	**0.6444**	0.195	30.3	ug/L	50	Standard
>	**Ga**	71	12046.5	0.5				mg/L	97	Standard
	Rb	85	121075.3	2.3				ug/L	25	Standard
	Y	89	581582.5	1.1				ug/L	376763	Standard
>	**Rh**	103	45.0	40.1				ug/L	20	Standard
	Mo	98	459.1	2.0	**0.2547**	0.001	0.5	ug/L	51	Standard
	Ag	107	359.0	2.9	**0.0785**	0.001	1.1	ug/L	76	Standard
	Cd	111	176.8	9.6	**0.1252**	0.009	7.3	mg/L	6	Standard
	Cd	114	436.3	8.6	**0.1240**	0.008	6.8	ug/L	18	Standard
>	**In**	115	527081.5	1.5				ug/L	507261	Standard
	Sn	118	510.0	17.0	**-0.0203**	0.016	79.6	ug/L	683	Standard
	Sb	123	349.7	39.3	**0.0582**	0.031	53.2	ug/L	446	Standard
	Ba	135	303281.6	0.5	**153.4065**	2.551	1.7	ug/L	28	Standard
	Ce	140	891716.1	1.3				ug/L	33	Standard
>	**Tb**	159	842437.6	1.7				ug/L	800803	Standard
	Ho	165	15568.0	0.8				ug/L	10	Standard
	Tl	203	681.3	6.5	**0.1212**	0.007	5.6	ug/L	13	Standard
	Tl	205	580.0	11.6	**0.1289**	0.011	8.5	ug/L	13	Standard
	Pb	206	40420.2	0.2	**8.1176**	0.115	1.4	ug/L	226	Standard
	Pb	207	33350.0	1.0	**7.3771**	0.048	0.7	ug/L	204	Standard
	Pb	208	144996.6	0.8	**8.0229**	0.180	2.2	ug/L	852	Standard
	U	238	3286.4	1.0	**0.5332**	0.008	1.6	ug/L	13	Standard
>	**Bi**	209	455484.6	1.5				ug/L	449044	Standard

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Na	23	6.7	43.3	**20.4143**	12.774	62.6	mg/L	2	Standard
Mg	24	121.7	22.6	**0.0937**	0.029	31.3	mg/L	58	Standard
K	39	271.7	9.4	**0.7277**	0.094	13.0	mg/L	27	Standard
Ca	43	496.7	3.1	**27.7114**	1.278	4.6	mg/L	20	Standard
Fe	54	12166.7	5.7	**8.0532**	0.562	7.0	mg/L	158	Standard
Fe	57	3530.4	5.6	**8.7932**	0.532	6.0	mg/L	267	Standard
Sc-1	45	48390.5	1.6				mg/L	38815	Standard
Cl	35	75046.1	0.8				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	2516.9	8.4				ug/L	1617	Standard
P	31	22914.0	1.9				ug/L	19244	Standard
S	34	4679.1	4.3				ug/L	3557	Standard
Sr	88	175.0	11.4				ug/L	65	Standard
C	12	103.3	11.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	61.9				mg/L	23	Standard
Dy	164	26276.7	2.8				mg/L	13	Standard
Ho-1	165	15568.0	0.8				mg/L	10	Standard
Er	166	14557.0	1.8				mg/L	13	Standard
I	127	10100.0	3.2				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		94.389	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		109.841	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.907
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.434
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129706PS WG574306-03
Sample Date/Time: Wednesday, July 06, 2016 16:16:29
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65638.6	1.3				ug/L	68501	Standard
	Be	9	47235.2	3.7	**54.3206**	1.379	2.5	ug/L	8	Standard
	Al	27	18835675.6	1.4	**138.4866**	2.016	1.5	ug/L	1397	Standard
	Sc	45	49333.5	1.1				ug/L	38815	Standard
	Ti	47	5414.0	2.5	**14.5933**	0.391	2.7	ug/L	36	Standard
	V	51	522594.2	1.1	**67.1805**	0.866	1.3	ug/L	1284	Standard
	Cr	52	505801.0	1.2	**65.6951**	0.946	1.4	ug/L	6503	Standard
	Cr	53	61240.2	0.9	**64.3307**	0.679	1.1	ug/L	492	Standard
	Mn	55	3170347.7	0.4	**469.8912**	2.616	0.6	ug/L	841	Standard
	Co	59	390409.0	1.3	**58.6580**	0.869	1.5	ug/L	229	Standard
	Ni	60	128704.0	1.0	**69.4198**	0.572	0.8	ug/L	344	Standard
	Cu	65	114667.3	0.7	**62.1001**	0.353	0.6	ug/L	115	Standard
	Zn	66	90999.1	0.5	**81.7384**	0.460	0.6	ug/L	190	Standard
>	Ge	72	452095.1	0.2				ug/L	409858	Standard
	As	75	63497.9	0.5	**55.6305**	0.152	0.3	ug/L	-22	Standard
	Se	82	6044.8	0.4	**51.8208**	0.084	0.2	ug/L	18	Standard
	Se-1	77	4081.5	2.1	**52.9750**	1.154	2.2	ug/L	50	Standard
>	Ga	71	12565.2	1.9				mg/L	97	Standard
	Rb	85	120846.7	0.6				ug/L	25	Standard
	Y	89	582495.4	1.4				ug/L	376763	Standard
>	Rh	103	46.7	6.2				ug/L	20	Standard
	Mo	98	465.3	6.4	**0.2542**	0.012	4.5	ug/L	51	Standard
	Ag	107	334602.4	0.8	**50.7827**	0.439	0.9	ug/L	76	Standard
	Cd	111	107601.5	0.9	**51.3814**	0.550	1.1	mg/L	6	Standard
	Cd	114	265146.9	0.4	**51.7884**	0.150	0.3	ug/L	18	Standard
>	In	115	535693.2	0.2				ug/L	507261	Standard
	Sn	118	681.7	4.0	**0.0078**	0.005	61.1	ug/L	683	Standard
	Sb	123	227133.0	2.2	**50.1244**	1.130	2.3	ug/L	446	Standard
	Ba	135	404136.5	0.0	**201.0985**	0.320	0.2	ug/L	28	Standard
	Ce	140	893510.7	1.3				ug/L	33	Standard
>	Tb	159	845372.4	0.6				ug/L	800803	Standard
	Ho	165	15911.7	2.3				ug/L	10	Standard
	Tl	203	408287.9	0.2	**51.8952**	0.240	0.5	ug/L	13	Standard
	Tl	205	364142.3	0.8	**53.4457**	0.113	0.2	ug/L	13	Standard
	Pb	206	300773.2	1.0	**59.5377**	0.256	0.4	ug/L	226	Standard
	Pb	207	260929.3	0.7	**56.8780**	0.098	0.2	ug/L	204	Standard
	Pb	208	1108705.4	0.8	**60.4375**	0.635	1.1	ug/L	852	Standard
	U	238	349519.1	1.2	**51.4517**	0.353	0.7	ug/L	13	Standard
>	Bi	209	462240.9	0.6				ug/L	449044	Standard

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Na	23	5.0	173.2	**12.6704**	37.158	293.3	mg/L	2	Standard
Mg	24	160.0	0.0	**0.1321**	0.002	1.4	mg/L	58	Standard
K	39	288.3	24.0	**0.7615**	0.209	27.5	mg/L	27	Standard
Ca	43	518.3	15.0	**28.3825**	4.388	15.5	mg/L	20	Standard
Fe	54	12155.2	2.2	**7.8853**	0.184	2.3	mg/L	158	Standard
Fe	57	3485.4	4.5	**8.4918**	0.357	4.2	mg/L	267	Standard
> **Sc-1**	45	49333.5	1.1				mg/L	38815	Standard
Cl	35	74319.2	1.8				ug/L	57611	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	2610.2	11.1				ug/L	1617	Standard
P	31	22970.8	4.6				ug/L	19244	Standard
S	34	4464.0	3.1				ug/L	3557	Standard
Sr	88	186.7	5.6				ug/L	65	Standard
C	12	90.0	0.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	57.3				mg/L	23	Standard
Dy	164	26019.7	0.4				mg/L	13	Standard
Ho-1	165	15911.7	2.3				mg/L	10	Standard
Er	166	14136.6	1.7				mg/L	13	Standard
I	127	10356.9	0.8				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		95.821	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		110.305	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	105.605
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.939
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129706SDL WG574306-04
Sample Date/Time: Wednesday, July 06, 2016 16:19:40
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59394.6	4.0				ug/L	68501	Standard
	Be	9	136.7	15.2	**0.1928**	0.021	11.0	ug/L	8	Standard
	Al	27	3625047.6	2.3	**29.4976**	0.752	2.5	ug/L	1397	Standard
	Sc	45	41548.6	2.0				ug/L	38815	Standard
	Ti	47	1013.7	1.7	**2.8782**	0.035	1.2	ug/L	36	Standard
	V	51	22627.7	0.9	**2.9504**	0.021	0.7	ug/L	1284	Standard
	Cr	52	22779.8	0.8	**2.2518**	0.032	1.4	ug/L	6503	Standard
	Cr	53	2320.2	8.0	**2.1856**	0.208	9.5	ug/L	492	Standard
	Mn	55	561370.1	1.9	**88.2489**	1.740	2.0	ug/L	841	Standard
	Co	59	8994.3	1.2	**1.4399**	0.020	1.4	ug/L	229	Standard
	Ni	60	6379.0	0.4	**3.5032**	0.010	0.3	ug/L	344	Standard
	Cu	65	3582.1	2.8	**2.0468**	0.068	3.3	ug/L	115	Standard
	Zn	66	7592.9	3.0	**7.1367**	0.210	2.9	ug/L	190	Standard
>	**Ge**	72	425871.9	0.5				ug/L	409858	Standard
	As	75	602.1	4.6	**0.6579**	0.027	4.1	ug/L	-22	Standard
	Se	82	22.0	4.8	**0.1488**	0.010	7.0	ug/L	18	Standard
	Se-1	77	64.7	19.5	**0.1443**	0.172	119.0	ug/L	50	Standard
>	**Ga**	71	2455.2	8.8				mg/L	97	Standard
	Rb	85	23403.1	1.2				ug/L	25	Standard
	Y	89	404683.9	1.4				ug/L	376763	Standard
>	**Rh**	103	18.3	83.3				ug/L	20	Standard
	Mo	98	98.4	1.8	**0.1127**	0.001	0.7	ug/L	51	Standard
	Ag	107	188.3	8.0	**0.0536**	0.003	4.8	ug/L	76	Standard
	Cd	111	50.1	14.7	**0.0649**	0.004	5.9	mg/L	6	Standard
	Cd	114	129.9	32.1	**0.0644**	0.009	13.3	ug/L	18	Standard
>	**In**	115	502656.9	0.5				ug/L	507261	Standard
	Sn	118	251.7	4.1	**-0.0637**	0.002	2.7	ug/L	683	Standard
	Sb	123	1461.3	35.9	**0.3234**	0.124	38.2	ug/L	446	Standard
	Ba	135	59210.5	0.9	**31.4134**	0.327	1.0	ug/L	28	Standard
	Ce	140	176180.2	1.5				ug/L	33	Standard
>	**Tb**	159	789797.5	0.7				ug/L	800803	Standard
	Ho	165	3095.3	2.0				ug/L	10	Standard
	Tl	203	197.3	15.5	**0.0592**	0.004	6.7	ug/L	13	Standard
	Tl	205	206.7	20.6	**0.0739**	0.007	8.8	ug/L	13	Standard
	Pb	206	8175.2	1.2	**1.6680**	0.016	1.0	ug/L	226	Standard
	Pb	207	6752.8	0.9	**1.5198**	0.017	1.1	ug/L	204	Standard
	Pb	208	29344.5	0.8	**1.6527**	0.018	1.1	ug/L	852	Standard
	U	238	683.3	7.1	**0.1464**	0.007	4.8	ug/L	13	Standard
>	**Bi**	209	447412.8	0.4				ug/L	449044	Standard

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Na	23	3.3	173.2	**8.0243**	29.110	362.8	mg/L	2	Standard
Mg	24	58.3	51.7	**0.0354**	0.038	106.4	mg/L	58	Standard
K	39	88.3	23.6	**0.1879**	0.082	43.7	mg/L	27	Standard
Ca	43	123.3	25.7	**7.1346**	2.357	33.0	mg/L	20	Standard
Fe	54	2352.8	8.6	**1.7214**	0.183	10.7	mg/L	158	Standard
Fe	57	870.0	5.7	**2.0416**	0.207	10.1	mg/L	267	Standard
> **Sc-1**	45	41548.6	2.0				mg/L	38815	Standard
Cl	35	69353.0	0.5				ug/L	57611	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	1813.4	2.8				ug/L	1617	Standard
P	31	9801.5	0.5				ug/L	19244	Standard
S	34	4442.3	5.0				ug/L	3557	Standard
Sr	88	86.7	17.6				ug/L	65	Standard
C	12	30.0	66.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	23	Standard
Dy	164	5101.7	4.2				mg/L	13	Standard
Ho-1	165	3095.3	2.0				mg/L	10	Standard
Er	166	2906.9	10.0				mg/L	13	Standard
I	127	9299.5	6.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		86.706	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.907	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		99.092
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		99.637
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 16:22:53
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60746.5	0.9				ug/L	68501	Standard
	Be	9	45232.5	3.1	**56.2087**	1.203	2.1	ug/L	8	Standard
	Al	27	7025646.2	1.4	**55.8398**	1.243	2.2	ug/L	1397	Standard
	Sc	45	43885.1	1.6				ug/L	38815	Standard
	Ti	47	39346.4	1.8	**105.0322**	1.452	1.4	ug/L	36	Standard
	V	51	399771.6	1.8	**50.7770**	0.685	1.3	ug/L	1284	Standard
	Cr	52	408680.4	1.5	**52.2946**	0.501	1.0	ug/L	6503	Standard
	Cr	53	49651.2	1.7	**51.4861**	0.632	1.2	ug/L	492	Standard
	Mn	55	365429.9	1.0	**53.4684**	0.344	0.6	ug/L	841	Standard
	Co	59	342619.4	1.5	**50.8981**	0.508	1.0	ug/L	229	Standard
	Ni	60	97635.3	1.3	**52.0312**	0.392	0.8	ug/L	344	Standard
	Cu	65	96633.6	1.5	**51.7429**	0.498	1.0	ug/L	115	Standard
	Zn	66	58073.1	0.4	**51.5362**	0.092	0.2	ug/L	190	Standard
>	**Ge**	72	457224.4	0.5				ug/L	409858	Standard
	As	75	58758.4	1.3	**50.9081**	0.396	0.8	ug/L	-22	Standard
	Se	82	5908.8	1.4	**50.0836**	0.538	1.1	ug/L	18	Standard
	Se-1	77	4046.2	1.7	**51.9099**	0.667	1.3	ug/L	50	Standard
>	**Ga**	71	71.7	35.8				mg/L	97	Standard
	Rb	85	925.0	5.2				ug/L	25	Standard
	Y	89	386855.1	1.1				ug/L	376763	Standard
>	**Rh**	103	26.7	39.0				ug/L	20	Standard
	Mo	98	260548.6	1.7	**101.5059**	1.231	1.2	ug/L	51	Standard
	Ag	107	333857.6	0.8	**50.2422**	0.230	0.5	ug/L	76	Standard
	Cd	111	106896.1	1.3	**50.6138**	0.586	1.2	mg/L	6	Standard
	Cd	114	261895.3	0.9	**50.7223**	0.238	0.5	ug/L	18	Standard
>	**In**	115	540248.5	0.5				ug/L	507261	Standard
	Sn	118	287622.8	1.0	**49.2241**	0.242	0.5	ug/L	683	Standard
	Sb	123	234354.1	0.2	**51.2826**	0.225	0.4	ug/L	446	Standard
	Ba	135	100660.9	0.4	**49.6785**	0.054	0.1	ug/L	28	Standard
	Ce	140	903.4	31.1				ug/L	33	Standard
>	**Tb**	159	825556.3	1.2				ug/L	800803	Standard
	Ho	165	15.0	66.7				ug/L	10	Standard
	Tl	203	403211.3	0.9	**51.3846**	0.184	0.4	ug/L	13	Standard
	Tl	205	358156.0	1.6	**52.7071**	0.732	1.4	ug/L	13	Standard
	Pb	206	253695.6	0.3	**50.3526**	0.142	0.3	ug/L	226	Standard
	Pb	207	230829.7	0.2	**50.4514**	0.278	0.6	ug/L	204	Standard
	Pb	208	973141.8	0.3	**53.1876**	0.234	0.4	ug/L	852	Standard
	U	238	345863.7	0.5	**51.0501**	0.177	0.3	ug/L	13	Standard
>	**Bi**	209	461018.5	0.6				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	3902.2	4.8	**4.6351**	0.229	4.9	mg/L	58	Standard
K	39	1138.4	5.1	**3.8705**	0.145	3.7	mg/L	27	Standard
Ca	43	88.3	21.4	**4.4183**	1.316	29.8	mg/L	20	Standard
Fe	54	6708.1	2.0	**4.8466**	0.111	2.3	mg/L	158	Standard
Fe	57	1900.1	10.0	**4.9466**	0.629	12.7	mg/L	267	Standard
Sc-1	45	43885.1	1.6				mg/L	38815	Standard
Cl	35	75193.5	0.6				ug/L	57611	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	2086.8	6.4				ug/L	1617	Standard
P	31	23875.5	3.4				ug/L	19244	Standard
S	34	4587.4	2.6				ug/L	3557	Standard
Sr	88	76.7	13.6				ug/L	65	Standard
C	12	56.7	66.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	15.5	75.3				mg/L	13	Standard
Ho-1	165	15.0	66.7				mg/L	10	Standard
Er	166	23.3	65.5				mg/L	13	Standard
I	127	11913.0	0.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	112.417		
Al	27	111.680		
Sc	45			
Ti	47	105.032		
V	51	101.554		
Cr	52	104.589		
Cr	53			
Mn	55	106.937		
Co	59	101.796		
Ni	60	104.062		
Cu	65	103.486		
Zn	66	103.072		
Ge	72		111.557	
As	75	101.816		
Se	82	100.167		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	101.506		
Ag	107	100.484		
Cd	111	101.228		
Cd	114			
> In	115			106.503
Sn	118	98.448		
Sb	123	102.565		
Ba	135	99.357		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	102.769		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.375		
U	238	102.100		
> Bi	209			102.667
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 16:26:05
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59652.3	2.7				ug/L	68501	Standard
	Be	9	23.3	32.7	**0.0490**	0.010	20.4	ug/L	8	Standard
	Al	27	2736.9	29.7	**0.0571**	0.006	10.5	ug/L	1397	Standard
	Sc	45	42310.7	3.3				ug/L	38815	Standard
	Ti	47	47.7	12.8	**0.1017**	0.018	17.3	ug/L	36	Standard
	V	51	1321.9	6.0	**0.0271**	0.012	43.3	ug/L	1284	Standard
	Cr	52	7227.1	0.7	**0.0231**	0.007	30.2	ug/L	6503	Standard
	Cr	53	390.0	9.0	**-0.0040**	0.039	981.7	ug/L	492	Standard
	Mn	55	829.7	10.8	**0.0277**	0.014	49.4	ug/L	841	Standard
	Co	59	226.7	8.5	**0.0397**	0.003	7.1	ug/L	229	Standard
	Ni	60	355.7	6.2	**0.0355**	0.010	29.2	ug/L	344	Standard
	Cu	65	127.3	6.1	**0.0561**	0.005	8.3	ug/L	115	Standard
	Zn	66	147.3	6.4	**0.0198**	0.007	37.3	ug/L	190	Standard
>	**Ge**	72	449813.6	0.9				ug/L	409858	Standard
	As	75	-43.7	96.3	**0.0603**	0.037	61.7	ug/L	-22	Standard
	Se	82	20.9	21.2	**0.1285**	0.037	28.5	ug/L	18	Standard
	Se-1	77	65.3	19.3	**0.1056**	0.167	158.4	ug/L	50	Standard
>	**Ga**	71	53.3	32.9				mg/L	97	Standard
	Rb	85	36.7	31.5				ug/L	25	Standard
	Y	89	387520.9	1.9				ug/L	376763	Standard
>	**Rh**	103	31.7	36.5				ug/L	20	Standard
	Mo	98	158.1	15.1	**0.1336**	0.009	6.9	ug/L	51	Standard
	Ag	107	129.3	17.4	**0.0427**	0.003	7.9	ug/L	76	Standard
	Cd	111	12.7	34.3	**0.0454**	0.002	4.6	mg/L	6	Standard
	Cd	114	30.1	98.8	**0.0432**	0.006	13.3	ug/L	18	Standard
>	**In**	115	535496.2	0.5				ug/L	507261	Standard
	Sn	118	930.0	12.9	**0.0509**	0.021	42.1	ug/L	683	Standard
	Sb	123	953.8	32.5	**0.1905**	0.069	36.3	ug/L	446	Standard
	Ba	135	46.3	44.9	**0.0388**	0.010	26.4	ug/L	28	Standard
	Ce	140	301.7	26.9				ug/L	33	Standard
>	**Tb**	159	813211.4	0.3				ug/L	800803	Standard
	Ho	165	10.0	86.6				ug/L	10	Standard
	Tl	203	60.0	30.9	**0.0409**	0.002	5.7	ug/L	13	Standard
	Tl	205	63.3	19.9	**0.0518**	0.002	3.6	ug/L	13	Standard
	Pb	206	249.0	7.2	**0.0449**	0.004	8.0	ug/L	226	Standard
	Pb	207	210.3	18.0	**0.0445**	0.008	18.6	ug/L	204	Standard
	Pb	208	921.7	7.5	**0.0500**	0.004	7.6	ug/L	852	Standard
	U	238	50.7	31.7	**0.0500**	0.002	4.7	ug/L	13	Standard
>	**Bi**	209	465283.4	0.2				ug/L	449044	Standard

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Na	23	1.7	173.2	**-0.1598**	14.935	9348.2	mg/L	2	Standard
Mg	24	43.3	63.5	**0.0158**	0.036	224.9	mg/L	58	Standard
K	39	35.0	28.6	**-0.0142**	0.035	248.6	mg/L	27	Standard
Ca	43	31.7	39.7	**0.8179**	0.767	93.7	mg/L	20	Standard
Fe	54	157.8	13.1	**0.0007**	0.012	1779.7	mg/L	158	Standard
Fe	57	258.3	17.6	**0.1106**	0.114	103.0	mg/L	267	Standard
> **Sc-1**	45	42310.7	3.3				mg/L	38815	Standard
Cl	35	73706.2	0.7				ug/L	57611	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	1970.1	7.7				ug/L	1617	Standard
P	31	23151.0	1.4				ug/L	19244	Standard
S	34	4444.0	2.1				ug/L	3557	Standard
Sr	88	86.7	14.5				ug/L	65	Standard
C	12	40.0	25.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	9.5	105.0				mg/L	13	Standard
Ho-1	165	10.0	86.6				mg/L	10	Standard
Er	166	10.0					mg/L	13	Standard
I	127	9379.6	1.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.749	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.566
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.616
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Tl	203	

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Method 6020 - Summary Report

Sample ID: L1606129707 WG574306-01
Sample Date/Time: Wednesday, July 06, 2016 16:29:17
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62286.1	0.5				ug/L	68501	Standard
	Be	9	590.0	8.1	**0.7344**	0.059	8.0	ug/L	8	Standard
	Al	27	5802855.8	2.1	**44.9798**	0.730	1.6	ug/L	1397	Standard
	Sc	45	47460.9	0.8				ug/L	38815	Standard
	Ti	47	2622.6	0.7	**6.9832**	0.015	0.2	ug/L	36	Standard
	V	51	118742.6	1.7	**14.9984**	0.176	1.2	ug/L	1284	Standard
	Cr	52	68916.1	1.6	**8.0526**	0.088	1.1	ug/L	6503	Standard
	Cr	53	7815.4	3.9	**7.7623**	0.350	4.5	ug/L	492	Standard
	Mn	55	3441228.5	0.4	**504.9305**	4.973	1.0	ug/L	841	Standard
	Co	59	38475.8	1.4	**5.7274**	0.052	0.9	ug/L	229	Standard
	Ni	60	19435.1	0.7	**10.2433**	0.008	0.1	ug/L	344	Standard
	Cu	65	70101.8	0.8	**37.5778**	0.219	0.6	ug/L	115	Standard
	Zn	66	89509.6	0.3	**79.5911**	0.747	0.9	ug/L	190	Standard
>	**Ge**	72	456693.8	0.8				ug/L	409858	Standard
	As	75	4972.9	0.2	**4.4043**	0.033	0.8	ug/L	-22	Standard
	Se	82	91.2	4.0	**0.7235**	0.025	3.5	ug/L	18	Standard
	Se-1	77	143.3	10.9	**1.1097**	0.212	19.1	ug/L	50	Standard
>	**Ga**	71	7243.4	0.8				mg/L	97	Standard
	Rb	85	78332.0	0.4				ug/L	25	Standard
	Y	89	577179.6	1.5				ug/L	376763	Standard
>	**Rh**	103	28.3	71.3				ug/L	20	Standard
	Mo	98	515.5	2.9	**0.2739**	0.006	2.0	ug/L	51	Standard
	Ag	107	799.7	1.9	**0.1444**	0.002	1.1	ug/L	76	Standard
	Cd	111	871.4	1.4	**0.4552**	0.009	2.0	mg/L	6	Standard
	Cd	114	2093.9	5.3	**0.4460**	0.018	4.1	ug/L	18	Standard
>	**In**	115	535671.5	0.9				ug/L	507261	Standard
	Sn	118	976.7	8.8	**0.0588**	0.014	23.2	ug/L	683	Standard
	Sb	123	802.4	23.2	**0.1566**	0.040	25.4	ug/L	446	Standard
	Ba	135	402037.3	0.8	**200.0633**	0.694	0.3	ug/L	28	Standard
	Ce	140	877863.7	0.2				ug/L	33	Standard
>	**Tb**	159	837773.6	0.3				ug/L	800803	Standard
	Ho	165	15416.2	0.4				ug/L	10	Standard
	Tl	203	410.0	8.3	**0.0849**	0.004	5.1	ug/L	13	Standard
	Tl	205	346.7	13.4	**0.0929**	0.007	7.3	ug/L	13	Standard
	Pb	206	205127.3	1.0	**40.2103**	0.531	1.3	ug/L	226	Standard
	Pb	207	170744.1	1.2	**36.8573**	0.439	1.2	ug/L	204	Standard
	Pb	208	743612.6	0.6	**40.1400**	0.046	0.1	ug/L	852	Standard
	U	238	2929.6	1.6	**0.4694**	0.010	2.0	ug/L	13	Standard
>	**Bi**	209	466785.1	0.7				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	75.0	43.7	**0.0448**	0.037	81.9	mg/L	58	Standard
K	39	176.7	14.5	**0.4343**	0.086	19.8	mg/L	27	Standard
Ca	43	93.3	17.2	**4.2717**	0.936	21.9	mg/L	20	Standard
Fe	54	7751.6	1.4	**5.1861**	0.045	0.9	mg/L	158	Standard
Fe	57	2096.8	4.7	**5.0575**	0.302	6.0	mg/L	267	Standard
> **Sc-1**	45	47460.9	0.8				mg/L	38815	Standard
Cl	35	71723.4	0.6				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	3453.7	11.2				ug/L	1617	Standard
P	31	22111.1	2.8				ug/L	19244	Standard
S	34	4340.6	3.7				ug/L	3557	Standard
Sr	88	108.3	18.7				ug/L	65	Standard
C	12	240.0	42.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	80.0	66.1				mg/L	23	Standard
Dy	164	25701.8	3.3				mg/L	13	Standard
Ho-1	165	15416.2	0.4				mg/L	10	Standard
Er	166	14290.1	3.2				mg/L	13	Standard
I	127	14562.0	5.1				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.927	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.427	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.601
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.951
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129708S WG574306-04
Sample Date/Time: Wednesday, July 06, 2016 16:32:29
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65139.8	3.2				ug/L	68501	Standard
	Be	9	23027.5	2.6	**26.7153**	1.021	3.8	ug/L	8	Standard
	Al	27	19735456.9	0.7	**146.2945**	4.400	3.0	ug/L	1397	Standard
	Sc	45	50831.8	1.5				ug/L	38815	Standard
	Ti	47	7097.0	1.6	**19.2848**	0.355	1.8	ug/L	36	Standard
	V	51	396965.1	2.0	**51.3808**	0.553	1.1	ug/L	1284	Standard
	Cr	52	346805.3	1.3	**45.0983**	0.535	1.2	ug/L	6503	Standard
	Cr	53	42561.4	1.9	**44.9217**	0.536	1.2	ug/L	492	Standard
	Mn	55	6042160.1	0.9	**902.5000**	12.755	1.4	ug/L	841	Standard
	Co	59	253173.7	1.6	**38.3278**	0.245	0.6	ug/L	229	Standard
	Ni	60	99179.6	0.7	**53.8687**	0.256	0.5	ug/L	344	Standard
	Cu	65	82472.5	0.7	**45.0035**	0.499	1.1	ug/L	115	Standard
	Zn	66	93214.5	0.6	**84.3712**	0.399	0.5	ug/L	190	Standard
>	**Ge**	72	448680.5	1.0				ug/L	409858	Standard
	As	75	30784.9	0.5	**27.2279**	0.215	0.8	ug/L	-22	Standard
	Se	82	2057.5	0.8	**17.7407**	0.303	1.7	ug/L	18	Standard
	Se-1	77	1452.1	0.9	**18.5033**	0.080	0.4	ug/L	50	Standard
>	**Ga**	71	22316.4	1.0				mg/L	97	Standard
	Rb	85	222447.8	1.1				ug/L	25	Standard
	Y	89	643588.6	0.9				ug/L	376763	Standard
>	**Rh**	103	50.0	60.8				ug/L	20	Standard
	Mo	98	517.5	2.0	**0.2780**	0.005	1.8	ug/L	51	Standard
	Ag	107	156492.7	0.3	**24.1422**	0.180	0.7	ug/L	76	Standard
	Cd	111	51764.0	0.6	**25.1322**	0.102	0.4	mg/L	6	Standard
	Cd	114	125131.9	1.0	**24.8510**	0.352	1.4	ug/L	18	Standard
>	**In**	115	527283.7	0.4				ug/L	507261	Standard
	Sn	118	791.7	15.9	**0.0290**	0.022	74.9	ug/L	683	Standard
	Sb	123	3550.1	4.8	**0.7758**	0.036	4.7	ug/L	446	Standard
	Ba	135	543933.7	1.1	**274.9734**	2.917	1.1	ug/L	28	Standard
	Ce	140	1333014.6	0.2				ug/L	33	Standard
>	**Tb**	159	846765.5	0.7				ug/L	800803	Standard
	Ho	165	21213.2	1.0				ug/L	10	Standard
	Tl	203	192947.1	0.4	**24.8377**	0.074	0.3	ug/L	13	Standard
	Tl	205	170482.1	0.3	**25.3468**	0.072	0.3	ug/L	13	Standard
	Pb	206	246709.2	1.1	**49.4262**	0.596	1.2	ug/L	226	Standard
	Pb	207	210661.0	1.7	**46.4760**	0.864	1.9	ug/L	204	Standard
	Pb	208	904086.0	0.3	**49.8775**	0.217	0.4	ug/L	852	Standard
	U	238	170509.8	1.1	**25.4257**	0.301	1.2	ug/L	13	Standard
>	**Bi**	209	456722.4	0.1				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	125.0	14.4	**0.0910**	0.020	22.1	mg/L	58	Standard
K	39	506.7	4.1	**1.4005**	0.060	4.3	mg/L	27	Standard
Ca	43	278.3	16.7	**14.1761**	2.506	17.7	mg/L	20	Standard
Fe	54	22365.1	4.7	**14.1739**	0.605	4.3	mg/L	158	Standard
Fe	57	5997.9	3.3	**14.6419**	0.543	3.7	mg/L	267	Standard
> **Sc-1**	45	50831.8	1.5				mg/L	38815	Standard
Cl	35	71146.0	0.3				ug/L	57611	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	2550.2	3.4				ug/L	1617	Standard
P	31	21758.9	0.6				ug/L	19244	Standard
S	34	4350.6	3.0				ug/L	3557	Standard
Sr	88	115.0	13.0				ug/L	65	Standard
C	12	76.7	19.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	60.0	72.6				mg/L	23	Standard
Dy	164	36109.1	2.3				mg/L	13	Standard
Ho-1	165	21213.2	1.0				mg/L	10	Standard
Er	166	19612.7	2.0				mg/L	13	Standard
I	127	14929.0	5.1				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.093	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.472	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.947
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.710
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129709SD WG574306-05
Sample Date/Time: Wednesday, July 06, 2016 16:35:40
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62165.6	0.8				ug/L	68501	Standard
	Be	9	22977.4	1.3	**27.9141**	0.157	0.6	ug/L	8	Standard
	Al	27	5977445.6	0.9	**46.4267**	0.626	1.3	ug/L	1397	Standard
	Sc	45	46502.9	1.1				ug/L	38815	Standard
	Ti	47	4422.6	1.5	**11.7578**	0.201	1.7	ug/L	36	Standard
	V	51	293762.5	0.4	**37.1989**	0.125	0.3	ug/L	1284	Standard
	Cr	52	242440.6	0.2	**30.5796**	0.135	0.4	ug/L	6503	Standard
	Cr	53	29553.8	1.4	**30.4146**	0.403	1.3	ug/L	492	Standard
	Mn	55	1745341.1	1.0	**255.2154**	2.554	1.0	ug/L	841	Standard
	Co	59	200410.1	0.8	**29.7146**	0.215	0.7	ug/L	229	Standard
	Ni	60	64660.7	0.2	**34.3358**	0.159	0.5	ug/L	344	Standard
	Cu	65	77163.7	1.0	**41.2321**	0.418	1.0	ug/L	115	Standard
	Zn	66	63624.0	0.3	**56.3574**	0.253	0.4	ug/L	190	Standard
>	**Ge**	72	458159.9	0.2				ug/L	409858	Standard
	As	75	34584.2	0.5	**29.9440**	0.087	0.3	ug/L	-22	Standard
	Se	82	2480.9	2.2	**20.9556**	0.422	2.0	ug/L	18	Standard
	Se-1	77	1708.8	1.4	**21.4388**	0.252	1.2	ug/L	50	Standard
>	**Ga**	71	6708.2	4.2				mg/L	97	Standard
	Rb	85	76939.9	2.2				ug/L	25	Standard
	Y	89	570101.8	2.0				ug/L	376763	Standard
>	**Rh**	103	36.7	51.6				ug/L	20	Standard
	Mo	98	447.6	4.3	**0.2470**	0.005	2.1	ug/L	51	Standard
	Ag	107	160361.2	0.4	**24.3127**	0.260	1.1	ug/L	76	Standard
	Cd	111	52812.1	0.4	**25.1997**	0.264	1.0	mg/L	6	Standard
	Cd	114	128280.5	1.6	**25.0410**	0.737	2.9	ug/L	18	Standard
>	**In**	115	536567.6	1.4				ug/L	507261	Standard
	Sn	118	1265.1	9.3	**0.1086**	0.023	21.5	ug/L	683	Standard
	Sb	123	19496.0	0.7	**4.2771**	0.044	1.0	ug/L	446	Standard
	Ba	135	268259.3	0.0	**133.2908**	1.869	1.4	ug/L	28	Standard
	Ce	140	797112.1	1.2				ug/L	33	Standard
>	**Tb**	159	844790.9	0.3				ug/L	800803	Standard
	Ho	165	14488.6	0.9				ug/L	10	Standard
	Tl	203	189672.5	0.4	**23.9754**	0.103	0.4	ug/L	13	Standard
	Tl	205	168670.4	1.0	**24.6251**	0.301	1.2	ug/L	13	Standard
	Pb	206	211717.6	0.5	**41.6489**	0.491	1.2	ug/L	226	Standard
	Pb	207	180603.7	0.8	**39.1231**	0.361	0.9	ug/L	204	Standard
	Pb	208	773838.1	0.2	**41.9198**	0.337	0.8	ug/L	852	Standard
	U	238	167844.2	0.7	**24.5765**	0.189	0.8	ug/L	13	Standard
>	**Bi**	209	465149.6	0.7				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	81.7	7.1	**0.0539**	0.007	12.4	mg/L	58	Standard
K	39	186.7	7.7	**0.4794**	0.049	10.3	mg/L	27	Standard
Ca	43	85.0	17.6	**3.8866**	0.950	24.4	mg/L	20	Standard
Fe	54	6828.4	0.4	**4.6510**	0.070	1.5	mg/L	158	Standard
Fe	57	1968.5	1.7	**4.8161**	0.074	1.5	mg/L	267	Standard
> **Sc-1**	45	46502.9	1.1				mg/L	38815	Standard
Cl	35	69530.5	0.8				ug/L	57611	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	2346.8	1.8				ug/L	1617	Standard
P	31	22379.9	1.8				ug/L	19244	Standard
S	34	4130.6	6.2				ug/L	3557	Standard
Sr	88	100.0	13.2				ug/L	65	Standard
C	12	93.3	22.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	53.9				mg/L	23	Standard
Dy	164	23262.7	2.3				mg/L	13	Standard
Ho-1	165	14488.6	0.9				mg/L	10	Standard
Er	166	13002.2	3.7				mg/L	13	Standard
I	127	6032.9	1.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.751	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.785	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.778
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.587
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129710
Sample Date/Time: Wednesday, July 06, 2016 16:38:52
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61658.5	1.1				ug/L	68501	Standard
	Be	9	316.7	10.7	**0.4069**	0.038	9.5	ug/L	8	Standard
	Al	27	11438871.0	0.8	**89.5399**	0.292	0.3	ug/L	1397	Standard
	Sc	45	47305.4	2.4				ug/L	38815	Standard
	Ti	47	2888.9	1.5	**7.7475**	0.158	2.0	ug/L	36	Standard
	V	51	65037.6	1.0	**8.2058**	0.107	1.3	ug/L	1284	Standard
	Cr	52	41695.6	0.6	**4.5400**	0.052	1.1	ug/L	6503	Standard
	Cr	53	4632.4	3.3	**4.4625**	0.170	3.8	ug/L	492	Standard
	Mn	55	3373933.1	1.4	**498.3465**	6.643	1.3	ug/L	841	Standard
	Co	59	22272.7	1.1	**3.3401**	0.042	1.2	ug/L	229	Standard
	Ni	60	13505.0	1.3	**7.1185**	0.133	1.9	ug/L	344	Standard
	Cu	65	8779.5	1.7	**4.7263**	0.092	1.9	ug/L	115	Standard
	Zn	66	14455.2	1.4	**12.8447**	0.245	1.9	ug/L	190	Standard
>	**Ge**	72	453660.4	0.7				ug/L	409858	Standard
	As	75	2368.1	1.0	**2.1628**	0.015	0.7	ug/L	-22	Standard
	Se	82	36.2	24.0	**0.2586**	0.077	29.7	ug/L	18	Standard
	Se-1	77	83.0	13.0	**0.3306**	0.149	44.9	ug/L	50	Standard
>	**Ga**	71	4710.7	2.3				mg/L	97	Standard
	Rb	85	48778.4	1.7				ug/L	25	Standard
	Y	89	519310.4	2.7				ug/L	376763	Standard
>	**Rh**	103	20.0	25.0				ug/L	20	Standard
	Mo	98	355.6	6.9	**0.2104**	0.009	4.3	ug/L	51	Standard
	Ag	107	213.0	13.9	**0.0552**	0.004	7.9	ug/L	76	Standard
	Cd	111	153.3	5.2	**0.1121**	0.004	3.3	mg/L	6	Standard
	Cd	114	308.2	15.1	**0.0972**	0.009	9.1	ug/L	18	Standard
>	**In**	115	538651.6	0.3				ug/L	507261	Standard
	Sn	118	1185.0	5.3	**0.0938**	0.011	12.2	ug/L	683	Standard
	Sb	123	504.2	33.5	**0.0904**	0.037	41.4	ug/L	446	Standard
	Ba	135	168151.0	0.7	**83.2208**	0.364	0.4	ug/L	28	Standard
	Ce	140	555700.4	0.4				ug/L	33	Standard
>	**Tb**	159	826502.3	1.1				ug/L	800803	Standard
	Ho	165	10727.1	1.4				ug/L	10	Standard
	Tl	203	298.3	5.8	**0.0715**	0.002	3.3	ug/L	13	Standard
	Tl	205	258.3	24.5	**0.0806**	0.009	11.5	ug/L	13	Standard
	Pb	206	25876.7	1.2	**5.1492**	0.086	1.7	ug/L	226	Standard
	Pb	207	21503.6	1.1	**4.7143**	0.066	1.4	ug/L	204	Standard
	Pb	208	94054.5	0.9	**5.1574**	0.064	1.2	ug/L	852	Standard
	U	238	2598.9	1.6	**0.4272**	0.008	1.8	ug/L	13	Standard
>	**Bi**	209	459527.8	0.4				ug/L	449044	Standard

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Na	23	1.7	173.2	**-1.1163**	13.278	1189.5	mg/L	2	Standard
Mg	24	101.7	15.0	**0.0744**	0.014	19.5	mg/L	58	Standard
K	39	90.0	28.9	**0.1540**	0.093	60.5	mg/L	27	Standard
Ca	43	258.3	9.5	**14.1618**	1.744	12.3	mg/L	20	Standard
Fe	54	5464.4	2.8	**3.6325**	0.017	0.5	mg/L	158	Standard
Fe	57	1618.4	2.2	**3.7627**	0.073	1.9	mg/L	267	Standard
> **Sc-1**	45	47305.4	2.4				mg/L	38815	Standard
Cl	35	72933.2	1.9				ug/L	57611	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	2110.1	3.1				ug/L	1617	Standard
P	31	21301.6	3.6				ug/L	19244	Standard
S	34	4172.2	7.4				ug/L	3557	Standard
Sr	88	111.7	9.3				ug/L	65	Standard
C	12	113.3	51.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	43.3				mg/L	23	Standard
Dy	164	17720.6	1.8				mg/L	13	Standard
Ho-1	165	10727.1	1.4				mg/L	10	Standard
Er	166	9609.7	2.4				mg/L	13	Standard
I	127	5551.0	2.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.011	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.687	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.188
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.335
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606129711
Sample Date/Time: Wednesday, July 06, 2016 16:42:03
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61509.7	3.8				ug/L	68501	Standard
	Be	9	421.7	11.9	**0.5360**	0.044	8.3	ug/L	8	Standard
	Al	27	10093377.0	0.1	**79.2770**	2.936	3.7	ug/L	1397	Standard
	Sc	45	47273.6	1.6				ug/L	38815	Standard
	Ti	47	2244.8	4.6	**5.9961**	0.328	5.5	ug/L	36	Standard
	V	51	64690.3	3.2	**8.1339**	0.229	2.8	ug/L	1284	Standard
	Cr	52	41467.0	1.1	**4.4925**	0.049	1.1	ug/L	6503	Standard
	Cr	53	4380.6	4.0	**4.1841**	0.234	5.6	ug/L	492	Standard
	Mn	55	1967568.3	1.0	**289.6495**	0.452	0.2	ug/L	841	Standard
	Co	59	21596.7	2.2	**3.2283**	0.050	1.5	ug/L	229	Standard
	Ni	60	13599.1	0.4	**7.1457**	0.060	0.8	ug/L	344	Standard
	Cu	65	11548.7	0.5	**6.2013**	0.045	0.7	ug/L	115	Standard
	Zn	66	32738.0	1.3	**29.1384**	0.231	0.8	ug/L	190	Standard
>	**Ge**	72	455117.1	1.2				ug/L	409858	Standard
	As	75	1894.3	1.2	**1.7445**	0.001	0.1	ug/L	-22	Standard
	Se	82	34.2	19.1	**0.2399**	0.054	22.3	ug/L	18	Standard
	Se-1	77	89.7	7.9	**0.4132**	0.082	19.9	ug/L	50	Standard
>	**Ga**	71	4574.0	4.3				mg/L	97	Standard
	Rb	85	42773.6	1.6				ug/L	25	Standard
	Y	89	524642.6	2.0				ug/L	376763	Standard
>	**Rh**	103	38.3	41.9				ug/L	20	Standard
	Mo	98	280.4	4.0	**0.1822**	0.004	2.2	ug/L	51	Standard
	Ag	107	290.0	6.2	**0.0673**	0.003	3.9	ug/L	76	Standard
	Cd	111	303.1	4.7	**0.1849**	0.008	4.1	mg/L	6	Standard
	Cd	114	713.7	10.5	**0.1775**	0.016	8.7	ug/L	18	Standard
>	**In**	115	532671.1	0.6				ug/L	507261	Standard
	Sn	118	545.0	4.2	**-0.0153**	0.004	24.1	ug/L	683	Standard
	Sb	123	363.0	29.1	**0.0603**	0.024	39.6	ug/L	446	Standard
	Ba	135	135054.2	0.2	**67.5967**	0.490	0.7	ug/L	28	Standard
	Ce	140	604058.3	1.0				ug/L	33	Standard
>	**Tb**	159	835508.5	0.3				ug/L	800803	Standard
	Ho	165	11549.4	3.1				ug/L	10	Standard
	Tl	203	238.3	7.6	**0.0638**	0.002	3.4	ug/L	13	Standard
	Tl	205	201.7	7.6	**0.0723**	0.002	3.1	ug/L	13	Standard
	Pb	206	26825.1	0.3	**5.3397**	0.042	0.8	ug/L	226	Standard
	Pb	207	22029.7	1.2	**4.8311**	0.044	0.9	ug/L	204	Standard
	Pb	208	95852.2	1.1	**5.2576**	0.032	0.6	ug/L	852	Standard
	U	238	1621.4	2.0	**0.2826**	0.005	1.9	ug/L	13	Standard
>	**Bi**	209	459368.4	0.5				ug/L	449044	Standard

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Na	23	3.3	173.2	**5.9880**	25.583	427.2	mg/L	2	Standard
Mg	24	116.7	6.5	**0.0913**	0.008	8.9	mg/L	58	Standard
K	39	153.3	5.0	**0.3603**	0.032	8.8	mg/L	27	Standard
Ca	43	206.7	11.4	**11.0522**	1.238	11.2	mg/L	20	Standard
Fe	54	4403.2	3.1	**2.9074**	0.141	4.9	mg/L	158	Standard
Fe	57	1453.4	5.7	**3.3122**	0.223	6.7	mg/L	267	Standard
> **Sc-1**	45	47273.6	1.6				mg/L	38815	Standard
Cl	35	73026.9	1.1				ug/L	57611	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	2326.8	3.5				ug/L	1617	Standard
P	31	21620.4	3.9				ug/L	19244	Standard
S	34	4283.9	3.4				ug/L	3557	Standard
Sr	88	91.7	25.2				ug/L	65	Standard
C	12	113.3	22.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	43.3	74.2				mg/L	23	Standard
Dy	164	18872.5	1.8				mg/L	13	Standard
Ho-1	165	11549.4	3.1				mg/L	10	Standard
Er	166	10086.7	2.7				mg/L	13	Standard
I	127	5506.0	1.1				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.794	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.043	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.009
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.299
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606129712
Sample Date/Time: Wednesday, July 06, 2016 16:45:15
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62284.5	2.8				ug/L	68501	Standard
	Be	9	626.7	11.2	**0.7777**	0.063	8.1	ug/L	8	Standard
	Al	27	11858606.3	0.2	**91.9349**	2.408	2.6	ug/L	1397	Standard
	Sc	45	48037.8	3.3				ug/L	38815	Standard
	Ti	47	2357.2	0.2	**6.3474**	0.073	1.2	ug/L	36	Standard
	V	51	114692.2	1.3	**14.6525**	0.138	0.9	ug/L	1284	Standard
	Cr	52	59864.0	0.2	**6.9640**	0.100	1.4	ug/L	6503	Standard
	Cr	53	6913.2	4.7	**6.8996**	0.276	4.0	ug/L	492	Standard
	Mn	55	2523368.3	1.4	**374.5058**	1.280	0.3	ug/L	841	Standard
	Co	59	39749.1	0.9	**5.9856**	0.007	0.1	ug/L	229	Standard
	Ni	60	20932.8	0.7	**11.1753**	0.077	0.7	ug/L	344	Standard
	Cu	65	16367.5	0.7	**8.8658**	0.064	0.7	ug/L	115	Standard
	Zn	66	22188.6	1.2	**19.8731**	0.049	0.2	ug/L	190	Standard
>	**Ge**	72	451446.6	1.0				ug/L	409858	Standard
	As	75	4917.0	1.1	**4.4055**	0.055	1.3	ug/L	-22	Standard
	Se	82	53.2	6.3	**0.4054**	0.024	6.0	ug/L	18	Standard
	Se-1	77	117.0	9.6	**0.7828**	0.135	17.2	ug/L	50	Standard
>	**Ga**	71	7840.4	2.3				mg/L	97	Standard
	Rb	85	81734.9	2.0				ug/L	25	Standard
	Y	89	590877.9	1.6				ug/L	376763	Standard
>	**Rh**	103	21.7	74.2				ug/L	20	Standard
	Mo	98	218.0	6.9	**0.1585**	0.006	3.5	ug/L	51	Standard
	Ag	107	377.3	2.6	**0.0813**	0.001	1.8	ug/L	76	Standard
	Cd	111	204.3	7.9	**0.1384**	0.008	5.9	mg/L	6	Standard
	Cd	114	447.0	7.9	**0.1260**	0.007	5.6	ug/L	18	Standard
>	**In**	115	527105.5	0.6				ug/L	507261	Standard
	Sn	118	735.0	14.8	**0.0192**	0.020	103.9	ug/L	683	Standard
	Sb	123	336.6	35.8	**0.0552**	0.027	49.6	ug/L	446	Standard
	Ba	135	247544.5	0.6	**125.1941**	1.145	0.9	ug/L	28	Standard
	Ce	140	1027087.5	0.1				ug/L	33	Standard
>	**Tb**	159	835383.6	1.9				ug/L	800803	Standard
	Ho	165	16989.5	1.8				ug/L	10	Standard
	Tl	203	540.3	4.1	**0.1026**	0.003	2.8	ug/L	13	Standard
	Tl	205	516.7	13.6	**0.1190**	0.010	8.4	ug/L	13	Standard
	Pb	206	50080.3	1.0	**10.0053**	0.065	0.7	ug/L	226	Standard
	Pb	207	41332.3	1.0	**9.0954**	0.067	0.7	ug/L	204	Standard
	Pb	208	181531.5	0.5	**9.9907**	0.076	0.8	ug/L	852	Standard
	U	238	3604.8	1.5	**0.5780**	0.011	1.8	ug/L	13	Standard
>	**Bi**	209	457841.6	0.5				ug/L	449044	Standard

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Na	23	1.7	173.2	**-1.4320**	12.732	889.1	mg/L	2	Standard
Mg	24	88.3	18.2	**0.0586**	0.020	33.9	mg/L	58	Standard
K	39	208.3	5.5	**0.5297**	0.044	8.2	mg/L	27	Standard
Ca	43	198.3	3.9	**10.3900**	0.688	6.6	mg/L	20	Standard
Fe	54	10183.2	1.4	**6.7705**	0.172	2.5	mg/L	158	Standard
Fe	57	2888.6	4.0	**7.1262**	0.052	0.7	mg/L	267	Standard
Sc-1	45	48037.8	3.3				mg/L	38815	Standard
Cl	35	71743.5	1.2				ug/L	57611	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	2346.8	1.7				ug/L	1617	Standard
P	31	22069.4	3.2				ug/L	19244	Standard
S	34	4567.4	1.3				ug/L	3557	Standard
Sr	88	123.3	24.8				ug/L	65	Standard
C	12	66.7	56.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	53.3	21.7				mg/L	23	Standard
Dy	164	28481.1	1.9				mg/L	13	Standard
Ho-1	165	16989.5	1.8				mg/L	10	Standard
Er	166	15664.8	7.4				mg/L	13	Standard
I	127	16987.9	6.1				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		90.925	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		110.147	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.912
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.959
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129713
Sample Date/Time: Wednesday, July 06, 2016 16:48:26
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62081.9	1.3				ug/L	68501	Standard
	Be	9	588.3	10.8	**0.7344**	0.072	9.8	ug/L	8	Standard
	Al	27	6441179.9	0.6	**50.0948**	0.588	1.2	ug/L	1397	Standard
	Sc	45	46996.1	0.3				ug/L	38815	Standard
	Ti	47	4702.4	3.0	**12.5186**	0.330	2.6	ug/L	36	Standard
	V	51	126562.6	0.7	**15.9663**	0.222	1.4	ug/L	1284	Standard
	Cr	52	86983.0	1.8	**10.3879**	0.247	2.4	ug/L	6503	Standard
	Cr	53	10093.4	2.8	**10.1257**	0.297	2.9	ug/L	492	Standard
	Mn	55	2761878.1	1.1	**404.4912**	8.928	2.2	ug/L	841	Standard
	Co	59	32009.4	1.1	**4.7569**	0.065	1.4	ug/L	229	Standard
	Ni	60	18023.4	1.2	**9.4702**	0.190	2.0	ug/L	344	Standard
	Cu	65	36669.7	2.1	**19.6142**	0.495	2.5	ug/L	115	Standard
	Zn	66	64542.2	1.0	**57.2489**	0.809	1.4	ug/L	190	Standard
>	**Ge**	72	457586.6	1.3				ug/L	409858	Standard
	As	75	5767.8	0.7	**5.0828**	0.039	0.8	ug/L	-22	Standard
	Se	82	73.1	7.8	**0.5680**	0.044	7.8	ug/L	18	Standard
	Se-1	77	124.7	9.4	**0.8629**	0.154	17.9	ug/L	50	Standard
>	**Ga**	71	6903.2	3.8				mg/L	97	Standard
	Rb	85	75785.8	2.6				ug/L	25	Standard
	Y	89	556387.3	2.0				ug/L	376763	Standard
>	**Rh**	103	41.7	18.3				ug/L	20	Standard
	Mo	98	811.4	4.0	**0.3881**	0.011	2.9	ug/L	51	Standard
	Ag	107	1541.1	3.9	**0.2555**	0.010	4.0	ug/L	76	Standard
	Cd	111	1561.6	1.3	**0.7799**	0.014	1.8	mg/L	6	Standard
	Cd	114	3866.0	5.7	**0.7876**	0.050	6.4	ug/L	18	Standard
>	**In**	115	539012.8	1.0				ug/L	507261	Standard
	Sn	118	1225.0	9.7	**0.1005**	0.021	20.4	ug/L	683	Standard
	Sb	123	611.7	14.4	**0.1138**	0.019	16.8	ug/L	446	Standard
	Ba	135	285012.1	0.7	**140.9593**	1.156	0.8	ug/L	28	Standard
	Ce	140	825628.1	1.9				ug/L	33	Standard
>	**Tb**	159	838546.8	0.7				ug/L	800803	Standard
	Ho	165	13836.3	2.6				ug/L	10	Standard
	Tl	203	403.0	17.3	**0.0841**	0.008	9.8	ug/L	13	Standard
	Tl	205	401.7	15.2	**0.1009**	0.008	8.4	ug/L	13	Standard
	Pb	206	251264.0	0.4	**49.3384**	0.673	1.4	ug/L	226	Standard
	Pb	207	212218.9	0.6	**45.8892**	0.707	1.5	ug/L	204	Standard
	Pb	208	913725.3	0.8	**49.4054**	0.501	1.0	ug/L	852	Standard
	U	238	2752.6	2.3	**0.4442**	0.005	1.2	ug/L	13	Standard
>	**Bi**	209	466022.1	1.0				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	115.0	15.7	**0.0903**	0.020	22.6	mg/L	58	Standard
K	39	278.3	12.6	**0.7745**	0.115	14.8	mg/L	27	Standard
Ca	43	168.3	19.8	**8.8314**	1.980	22.4	mg/L	20	Standard
Fe	54	7282.0	1.6	**4.9140**	0.076	1.6	mg/L	158	Standard
Fe	57	2116.8	11.8	**5.1693**	0.700	13.5	mg/L	267	Standard
> **Sc-1**	45	46996.1	0.3				mg/L	38815	Standard
Cl	35	71568.0	0.9				ug/L	57611	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	3147.0	7.8				ug/L	1617	Standard
P	31	22919.0	2.6				ug/L	19244	Standard
S	34	4474.0	1.6				ug/L	3557	Standard
Sr	88	126.7	22.4				ug/L	65	Standard
C	12	176.7	13.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	760.0	23.3				mg/L	23	Standard
Dy	164	23022.3	1.6				mg/L	13	Standard
Ho-1	165	13836.3	2.6				mg/L	10	Standard
Er	166	12234.9	4.5				mg/L	13	Standard
I	127	16075.2	5.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.629	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.645	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	106.260
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.781
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129714
Sample Date/Time: Wednesday, July 06, 2016 16:51:37
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64485.3	1.7				ug/L	68501	Standard
	Be	9	643.3	12.9	**0.7736**	0.109	14.1	ug/L	8	Standard
	Al	27	16270383.4	0.8	**121.7751**	1.183	1.0	ug/L	1397	Standard
	Sc	45	49480.7	0.7				ug/L	38815	Standard
	Ti	47	7625.3	2.0	**20.4654**	0.223	1.1	ug/L	36	Standard
	V	51	152406.4	1.4	**19.3979**	0.334	1.7	ug/L	1284	Standard
	Cr	52	112572.0	1.3	**13.8245**	0.074	0.5	ug/L	6503	Standard
	Cr	53	13571.1	1.6	**13.8632**	0.302	2.2	ug/L	492	Standard
	Mn	55	3345367.4	0.6	**493.5133**	5.656	1.1	ug/L	841	Standard
	Co	59	51653.3	1.9	**7.7286**	0.128	1.7	ug/L	229	Standard
	Ni	60	34920.2	0.7	**18.6317**	0.182	1.0	ug/L	344	Standard
	Cu	65	19504.5	1.4	**10.5020**	0.112	1.1	ug/L	115	Standard
	Zn	66	37327.3	0.6	**33.3035**	0.247	0.7	ug/L	190	Standard
>	**Ge**	72	454248.1	0.9				ug/L	409858	Standard
	As	75	5161.1	0.9	**4.5913**	0.045	1.0	ug/L	-22	Standard
	Se	82	41.2	27.1	**0.3007**	0.097	32.2	ug/L	18	Standard
	Se-1	77	113.0	5.3	**0.7222**	0.092	12.7	ug/L	50	Standard
>	**Ga**	71	14894.0	0.4				mg/L	97	Standard
	Rb	85	120504.0	0.8				ug/L	25	Standard
	Y	89	585057.3	0.9				ug/L	376763	Standard
>	**Rh**	103	31.7	32.9				ug/L	20	Standard
	Mo	98	934.2	6.2	**0.4430**	0.022	5.1	ug/L	51	Standard
	Ag	107	442.7	30.5	**0.0912**	0.021	23.1	ug/L	76	Standard
	Cd	111	177.9	31.7	**0.1254**	0.028	22.0	mg/L	6	Standard
	Cd	114	466.6	45.4	**0.1297**	0.042	32.6	ug/L	18	Standard
>	**In**	115	528910.4	1.0				ug/L	507261	Standard
	Sn	118	500.0	36.8	**-0.0224**	0.033	146.1	ug/L	683	Standard
	Sb	123	298.8	51.6	**0.0464**	0.035	74.6	ug/L	446	Standard
	Ba	135	213503.8	0.4	**107.6130**	0.595	0.6	ug/L	28	Standard
	Ce	140	982054.3	1.4				ug/L	33	Standard
>	**Tb**	159	834048.4	0.7				ug/L	800803	Standard
	Ho	165	16108.6	2.7				ug/L	10	Standard
	Tl	203	791.0	23.1	**0.1346**	0.024	17.7	ug/L	13	Standard
	Tl	205	631.7	12.1	**0.1359**	0.012	8.6	ug/L	13	Standard
	Pb	206	43066.1	0.7	**8.5804**	0.077	0.9	ug/L	226	Standard
	Pb	207	35289.1	1.2	**7.7451**	0.149	1.9	ug/L	204	Standard
	Pb	208	154795.7	0.5	**8.4963**	0.061	0.7	ug/L	852	Standard
	U	238	3394.7	2.0	**0.5454**	0.012	2.2	ug/L	13	Standard
>	**Bi**	209	459082.4	0.7				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	123.3	22.3	**0.0927**	0.029	31.6	mg/L	58	Standard
K	39	355.0	20.7	**0.9694**	0.239	24.7	mg/L	27	Standard
Ca	43	303.3	12.6	**16.0400**	2.304	14.4	mg/L	20	Standard
Fe	54	17039.6	2.1	**11.0689**	0.263	2.4	mg/L	158	Standard
Fe	57	4547.3	1.5	**11.2525**	0.203	1.8	mg/L	267	Standard
Sc-1	45	49480.7	0.7				mg/L	38815	Standard
Cl	35	71902.9	0.6				ug/L	57611	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	2206.8	5.3				ug/L	1617	Standard
P	31	21572.0	0.5				ug/L	19244	Standard
S	34	4592.4	3.0				ug/L	3557	Standard
Sr	88	108.3	17.5				ug/L	65	Standard
C	12	53.3	28.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	78.1				mg/L	23	Standard
Dy	164	26618.0	1.8				mg/L	13	Standard
Ho-1	165	16108.6	2.7				mg/L	10	Standard
Er	166	14123.2	0.7				mg/L	13	Standard
I	127	4255.6	6.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.137	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.831	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.268
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.236
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129715
Sample Date/Time: Wednesday, July 06, 2016 16:54:49
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62682.8	1.8				ug/L	68501	Standard
	Be	9	538.3	13.5	**0.6670**	0.078	11.7	ug/L	8	Standard
	Al	27	8483295.7	2.3	**65.3309**	1.261	1.9	ug/L	1397	Standard
	Sc	45	48000.9	1.9				ug/L	38815	Standard
	Ti	47	2220.8	1.9	**5.8672**	0.116	2.0	ug/L	36	Standard
	V	51	95825.1	1.7	**11.9905**	0.267	2.2	ug/L	1284	Standard
	Cr	52	53975.7	1.5	**6.0545**	0.065	1.1	ug/L	6503	Standard
	Cr	53	6017.9	2.1	**5.8357**	0.149	2.6	ug/L	492	Standard
	Mn	55	1814367.2	1.0	**264.2710**	0.941	0.4	ug/L	841	Standard
	Co	59	32503.5	1.0	**4.8051**	0.055	1.1	ug/L	229	Standard
	Ni	60	18362.5	1.6	**9.5997**	0.169	1.8	ug/L	344	Standard
	Cu	65	21373.4	0.6	**11.3667**	0.082	0.7	ug/L	115	Standard
	Zn	66	29953.3	1.6	**26.3688**	0.448	1.7	ug/L	190	Standard
>	**Ge**	72	459957.3	0.6				ug/L	409858	Standard
	As	75	3998.2	0.8	**3.5358**	0.038	1.1	ug/L	-22	Standard
	Se	82	59.0	6.1	**0.4460**	0.030	6.7	ug/L	18	Standard
	Se-1	77	107.7	2.3	**0.6343**	0.031	4.9	ug/L	50	Standard
>	**Ga**	71	6808.2	1.8				mg/L	97	Standard
	Rb	85	56838.1	3.0				ug/L	25	Standard
	Y	89	574047.0	2.1				ug/L	376763	Standard
>	**Rh**	103	26.7	10.8				ug/L	20	Standard
	Mo	98	310.7	1.4	**0.1928**	0.003	1.7	ug/L	51	Standard
	Ag	107	486.0	4.2	**0.0964**	0.004	4.0	ug/L	76	Standard
	Cd	111	347.1	4.1	**0.2040**	0.007	3.5	mg/L	6	Standard
	Cd	114	922.3	3.8	**0.2163**	0.008	3.8	ug/L	18	Standard
>	**In**	115	538984.3	1.4				ug/L	507261	Standard
	Sn	118	660.0	8.6	**0.0033**	0.008	248.6	ug/L	683	Standard
	Sb	123	305.2	20.5	**0.0465**	0.013	27.9	ug/L	446	Standard
	Ba	135	215332.4	0.7	**106.5103**	0.948	0.9	ug/L	28	Standard
	Ce	140	882731.2	1.5				ug/L	33	Standard
>	**Tb**	159	841647.7	1.0				ug/L	800803	Standard
	Ho	165	15134.2	4.0				ug/L	10	Standard
	Tl	203	293.0	7.2	**0.0705**	0.003	4.2	ug/L	13	Standard
	Tl	205	273.3	21.4	**0.0825**	0.009	10.8	ug/L	13	Standard
	Pb	206	60251.9	1.3	**11.8850**	0.195	1.6	ug/L	226	Standard
	Pb	207	49982.3	0.2	**10.8591**	0.117	1.1	ug/L	204	Standard
	Pb	208	217106.5	0.8	**11.7955**	0.057	0.5	ug/L	852	Standard
	U	238	2425.2	0.7	**0.3982**	0.003	0.8	ug/L	13	Standard
>	**Bi**	209	463776.3	0.9				ug/L	449044	Standard

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Na	23	1.7	173.2	**-1.4158**	12.760	901.2	mg/L	2	Standard
Mg	24	95.0	27.9	**0.0656**	0.028	43.3	mg/L	58	Standard
K	39	300.0	6.0	**0.8260**	0.072	8.7	mg/L	27	Standard
Ca	43	156.7	22.4	**7.9262**	2.009	25.4	mg/L	20	Standard
Fe	54	6886.5	4.2	**4.5396**	0.113	2.5	mg/L	158	Standard
Fe	57	2083.5	2.4	**4.9568**	0.163	3.3	mg/L	267	Standard
Sc-1	45	48000.9	1.9				mg/L	38815	Standard
Cl	35	71939.7	0.8				ug/L	57611	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	2656.9	9.5				ug/L	1617	Standard
P	31	21992.6	2.8				ug/L	19244	Standard
S	34	4395.6	4.3				ug/L	3557	Standard
Sr	88	90.0	11.1				ug/L	65	Standard
C	12	133.3	15.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	53.3	57.3				mg/L	23	Standard
Dy	164	26288.0	3.3				mg/L	13	Standard
Ho-1	165	15134.2	4.0				mg/L	10	Standard
Er	166	13973.1	2.6				mg/L	13	Standard
I	127	9231.2	7.2				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.506	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		112.224	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.254
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.281
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129716
Sample Date/Time: Wednesday, July 06, 2016 16:58:00
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63096.1	1.7				ug/L	68501	Standard
	Be	9	386.7	6.4	**0.4820**	0.030	6.2	ug/L	8	Standard
	Al	27	12937858.5	0.6	**98.9797**	1.758	1.8	ug/L	1397	Standard
	Sc	45	48714.9	0.8				ug/L	38815	Standard
	Ti	47	5477.7	1.0	**14.5444**	0.163	1.1	ug/L	36	Standard
	V	51	88820.6	0.9	**11.1277**	0.088	0.8	ug/L	1284	Standard
	Cr	52	76178.4	0.5	**8.9516**	0.065	0.7	ug/L	6503	Standard
	Cr	53	8680.8	4.0	**8.6226**	0.356	4.1	ug/L	492	Standard
	Mn	55	1630364.2	1.5	**237.9886**	2.912	1.2	ug/L	841	Standard
	Co	59	33074.4	1.8	**4.9001**	0.076	1.6	ug/L	229	Standard
	Ni	60	24834.7	1.6	**13.0681**	0.216	1.7	ug/L	344	Standard
	Cu	65	11549.7	0.5	**6.1498**	0.016	0.3	ug/L	115	Standard
	Zn	66	25965.9	1.2	**22.8939**	0.212	0.9	ug/L	190	Standard
>	**Ge**	72	458933.8	0.3				ug/L	409858	Standard
	As	75	2635.7	3.3	**2.3695**	0.072	3.1	ug/L	-22	Standard
	Se	82	39.0	10.2	**0.2785**	0.034	12.2	ug/L	18	Standard
	Se-1	77	99.7	9.1	**0.5334**	0.114	21.4	ug/L	50	Standard
>	**Ga**	71	9593.0	4.0				mg/L	97	Standard
	Rb	85	78841.3	0.9				ug/L	25	Standard
	Y	89	536495.1	0.8				ug/L	376763	Standard
>	**Rh**	103	36.7	28.4				ug/L	20	Standard
	Mo	98	2152.4	3.2	**0.9206**	0.036	3.9	ug/L	51	Standard
	Ag	107	274.7	3.4	**0.0650**	0.002	3.0	ug/L	76	Standard
	Cd	111	138.7	8.4	**0.1059**	0.005	5.2	mg/L	6	Standard
	Cd	114	352.4	1.6	**0.1064**	0.001	1.1	ug/L	18	Standard
>	**In**	115	533377.1	1.3				ug/L	507261	Standard
	Sn	118	720.0	12.1	**0.0149**	0.014	92.3	ug/L	683	Standard
	Sb	123	207.4	30.5	**0.0257**	0.014	55.5	ug/L	446	Standard
	Ba	135	126797.7	0.9	**63.3864**	1.016	1.6	ug/L	28	Standard
	Ce	140	703196.5	0.5				ug/L	33	Standard
>	**Tb**	159	828490.0	1.1				ug/L	800803	Standard
	Ho	165	12056.5	2.6				ug/L	10	Standard
	Tl	203	401.7	6.8	**0.0849**	0.003	3.6	ug/L	13	Standard
	Tl	205	353.3	15.1	**0.0948**	0.007	7.8	ug/L	13	Standard
	Pb	206	26317.8	0.7	**5.2595**	0.080	1.5	ug/L	226	Standard
	Pb	207	21590.4	0.4	**4.7535**	0.039	0.8	ug/L	204	Standard
	Pb	208	95620.4	0.7	**5.2655**	0.020	0.4	ug/L	852	Standard
	U	238	2673.9	0.9	**0.4400**	0.007	1.5	ug/L	13	Standard
>	**Bi**	209	457582.5	0.9				ug/L	449044	Standard

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Na	23	1.7	173.2	**-1.6111**	12.421	771.0	mg/L	2	Standard
Mg	24	158.3	9.6	**0.1325**	0.017	12.8	mg/L	58	Standard
K	39	220.0	19.4	**0.5570**	0.137	24.5	mg/L	27	Standard
Ca	43	283.3	9.1	**15.1368**	1.384	9.1	mg/L	20	Standard
Fe	54	9746.1	3.5	**6.3807**	0.257	4.0	mg/L	158	Standard
Fe	57	2695.2	3.4	**6.5045**	0.279	4.3	mg/L	267	Standard
> **Sc-1**	45	48714.9	0.8				mg/L	38815	Standard
Cl	35	72318.2	1.6				ug/L	57611	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	2336.8	8.3				ug/L	1617	Standard
P	31	22189.6	1.5				ug/L	19244	Standard
S	34	4620.7	2.9				ug/L	3557	Standard
Sr	88	90.0	33.8				ug/L	65	Standard
C	12	106.7	32.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	23	Standard
Dy	164	20294.5	0.9				mg/L	13	Standard
Ho-1	165	12056.5	2.6				mg/L	10	Standard
Er	166	10990.7	3.8				mg/L	13	Standard
I	127	4535.7	3.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.110	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.974	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.149
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.901
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 17:01:13
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60376.8	2.6				ug/L	68501	Standard
	Be	9	44512.0	1.5	**55.6704**	0.695	1.2	ug/L	8	Standard
	Al	27	7120483.4	2.5	**56.9325**	0.062	0.1	ug/L	1397	Standard
	Sc	45	43315.2	1.8				ug/L	38815	Standard
	Ti	47	39751.1	0.4	**106.1099**	0.782	0.7	ug/L	36	Standard
	V	51	401647.2	0.6	**51.0142**	0.378	0.7	ug/L	1284	Standard
	Cr	52	408076.6	1.9	**52.2101**	0.647	1.2	ug/L	6503	Standard
	Cr	53	50005.7	0.6	**51.8569**	0.658	1.3	ug/L	492	Standard
	Mn	55	369517.4	2.0	**54.0603**	0.738	1.4	ug/L	841	Standard
	Co	59	348277.1	0.6	**51.7368**	0.391	0.8	ug/L	229	Standard
	Ni	60	97436.0	1.6	**51.9218**	0.797	1.5	ug/L	344	Standard
	Cu	65	95915.0	1.3	**51.3579**	0.881	1.7	ug/L	115	Standard
	Zn	66	57969.4	1.5	**51.4363**	0.236	0.5	ug/L	190	Standard
>	Ge	72	457275.6	1.0				ug/L	409858	Standard
	As	75	58788.3	2.0	**50.9283**	0.742	1.5	ug/L	-22	Standard
	Se	82	5911.7	2.9	**50.0997**	1.103	2.2	ug/L	18	Standard
	Se-1	77	4074.2	1.9	**52.2687**	0.612	1.2	ug/L	50	Standard
>	Ga	71	96.7	23.3				mg/L	97	Standard
	Rb	85	1058.4	6.9				ug/L	25	Standard
	Y	89	392635.2	2.0				ug/L	376763	Standard
>	Rh	103	21.7	48.0				ug/L	20	Standard
	Mo	98	260641.0	0.5	**102.7583**	1.540	1.5	ug/L	51	Standard
	Ag	107	333266.2	0.9	**50.7538**	0.981	1.9	ug/L	76	Standard
	Cd	111	106013.6	0.7	**50.7968**	0.877	1.7	mg/L	6	Standard
	Cd	114	258297.0	0.9	**50.6190**	0.162	0.3	ug/L	18	Standard
>	In	115	533927.7	1.1				ug/L	507261	Standard
	Sn	118	285746.1	0.7	**49.4885**	0.793	1.6	ug/L	683	Standard
	Sb	123	232642.5	0.9	**51.5176**	1.036	2.0	ug/L	446	Standard
	Ba	135	100593.6	1.7	**50.2427**	1.379	2.7	ug/L	28	Standard
	Ce	140	2383.6	81.0				ug/L	33	Standard
>	Tb	159	816962.9	1.4				ug/L	800803	Standard
	Ho	165	35.0	93.7				ug/L	10	Standard
	Tl	203	397625.7	0.5	**51.1513**	0.555	1.1	ug/L	13	Standard
	Tl	205	354455.7	1.9	**52.6519**	0.879	1.7	ug/L	13	Standard
	Pb	206	250509.7	0.6	**50.1879**	0.498	1.0	ug/L	226	Standard
	Pb	207	228549.6	0.8	**50.4213**	0.378	0.7	ug/L	204	Standard
	Pb	208	952303.1	0.4	**52.5370**	0.233	0.4	ug/L	852	Standard
	U	238	343600.4	0.5	**51.1931**	0.467	0.9	ug/L	13	Standard
>	Bi	209	456734.7	0.7				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	3950.5	6.0	**4.7562**	0.311	6.5	mg/L	58	Standard
K	39	1280.1	6.4	**4.4296**	0.249	5.6	mg/L	27	Standard
Ca	43	98.3	12.8	**5.1241**	0.729	14.2	mg/L	20	Standard
Fe	54	7039.2	1.9	**5.1600**	0.075	1.5	mg/L	158	Standard
Fe	57	2025.1	7.5	**5.3968**	0.562	10.4	mg/L	267	Standard
> **Sc-1**	45	43315.2	1.8				mg/L	38815	Standard
Cl	35	73434.9	1.8				ug/L	57611	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	2060.1	7.2				ug/L	1617	Standard
P	31	23247.8	2.5				ug/L	19244	Standard
S	34	4565.7	3.9				ug/L	3557	Standard
Sr	88	55.0	15.7				ug/L	65	Standard
C	12	40.0	86.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	23	Standard
Dy	164	91.3	86.7				mg/L	13	Standard
Ho-1	165	35.0	93.7				mg/L	10	Standard
Er	166	43.3	81.0				mg/L	13	Standard
I	127	11119.1	0.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	111.341		
Al	27	113.865		
Sc	45			
Ti	47	106.110		
V	51	102.028		
Cr	52	104.420		
Cr	53			
Mn	55	108.121		
Co	59	103.474		
Ni	60	103.844		
Cu	65	102.716		
Zn	66	102.873		
> Ge	72		111.569	
As	75	101.857		
Se	82	100.199		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	102.758		
Ag	107	101.508		
Cd	111	101.594		
Cd	114			
In	115		105.257	
Sn	118	98.977		
Sb	123	103.035		
Ba	135	100.485		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.303		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.074		
U	238	102.386		
Bi	209		101.713	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 17:04:25
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60135.8	3.0				ug/L	68501	Standard
	Be	9	20.0	25.0	**0.0445**	0.006	13.7	ug/L	8	Standard
	Al	27	4068.9	40.2	**0.0675**	0.012	17.8	ug/L	1397	Standard
	Sc	45	43684.6	2.9				ug/L	38815	Standard
	Ti	47	31.7	9.6	**0.0570**	0.008	13.6	ug/L	36	Standard
	V	51	1454.7	5.9	**0.0417**	0.010	22.9	ug/L	1284	Standard
	Cr	52	7266.7	1.7	**0.0155**	0.022	144.6	ug/L	6503	Standard
	Cr	53	398.3	22.0	**-0.0005**	0.095	18388.9	ug/L	492	Standard
	Mn	55	872.4	17.7	**0.0322**	0.022	68.2	ug/L	841	Standard
	Co	59	220.0	3.6	**0.0383**	0.001	2.7	ug/L	229	Standard
	Ni	60	339.7	0.6	**0.0243**	0.001	6.1	ug/L	344	Standard
	Cu	65	116.7	6.9	**0.0494**	0.004	7.9	ug/L	115	Standard
	Zn	66	152.0	6.7	**0.0221**	0.008	36.6	ug/L	190	Standard
>	**Ge**	72	455933.5	0.8				ug/L	409858	Standard
	As	75	-68.9	29.1	**0.0392**	0.017	43.5	ug/L	-22	Standard
	Se	82	11.7	48.5	**0.0481**	0.049	101.1	ug/L	18	Standard
	Se-1	77	57.3	9.9	**-0.0102**	0.078	766.6	ug/L	50	Standard
>	**Ga**	71	33.3	17.3				mg/L	97	Standard
	Rb	85	41.7	45.4				ug/L	25	Standard
	Y	89	385104.6	1.0				ug/L	376763	Standard
>	**Rh**	103	13.3	57.3				ug/L	20	Standard
	Mo	98	140.6	2.9	**0.1263**	0.002	1.2	ug/L	51	Standard
	Ag	107	97.3	14.0	**0.0377**	0.002	5.3	ug/L	76	Standard
	Cd	111	6.4	55.2	**0.0424**	0.002	4.0	mg/L	6	Standard
	Cd	114	30.5	14.6	**0.0433**	0.001	2.0	ug/L	18	Standard
>	**In**	115	540459.8	0.5				ug/L	507261	Standard
	Sn	118	913.4	16.4	**0.0466**	0.027	57.0	ug/L	683	Standard
	Sb	123	642.8	37.4	**0.1205**	0.053	44.1	ug/L	446	Standard
	Ba	135	50.3	16.5	**0.0406**	0.004	9.8	ug/L	28	Standard
	Ce	140	301.7	26.9				ug/L	33	Standard
>	**Tb**	159	814839.3	0.6				ug/L	800803	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	55.3	13.6	**0.0404**	0.001	2.2	ug/L	13	Standard
	Tl	205	38.3	19.9	**0.0482**	0.001	2.3	ug/L	13	Standard
	Pb	206	233.0	9.0	**0.0423**	0.004	9.3	ug/L	226	Standard
	Pb	207	226.7	5.1	**0.0486**	0.003	5.8	ug/L	204	Standard
	Pb	208	902.7	4.3	**0.0495**	0.002	4.5	ug/L	852	Standard
	U	238	45.7	27.4	**0.0494**	0.002	3.8	ug/L	13	Standard
>	**Bi**	209	459869.9	1.0				ug/L	449044	Standard

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Na	23	3.3	86.6	**7.0995**	13.754	193.7	mg/L	2	Standard
Mg	24	40.0	25.0	**0.0098**	0.012	121.3	mg/L	58	Standard
K	39	30.0	28.9	**-0.0361**	0.028	77.7	mg/L	27	Standard
Ca	43	23.3	65.5	**0.2490**	1.044	419.1	mg/L	20	Standard
Fe	54	149.1	34.9	**-0.0096**	0.037	384.5	mg/L	158	Standard
Fe	57	258.3	22.4	**0.0918**	0.196	213.6	mg/L	267	Standard
> **Sc-1**	45	43684.6	2.9				mg/L	38815	Standard
Cl	35	72508.4	1.4				ug/L	57611	Standard
Kr	83	3.3	45.8				ug/L	2	Standard
Br	81	1963.5	7.1				ug/L	1617	Standard
P	31	22001.0	3.1				ug/L	19244	Standard
S	34	4517.3	1.1				ug/L	3557	Standard
Sr	88	58.3	4.9				ug/L	65	Standard
C	12	60.0	60.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	86.6				mg/L	23	Standard
Dy	164	-0.6	86.6				mg/L	13	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	13.3	86.6				mg/L	13	Standard
I	127	8687.5	0.4				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		111.242	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.545
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.411
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Tl	203	

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Method 6020 - Summary Report

Sample ID: L1606129717
Sample Date/Time: Wednesday, July 06, 2016 17:07:37
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60512.3	2.0				ug/L	68501	Standard
	Be	9	250.0	13.9	**0.3317**	0.048	14.5	ug/L	8	Standard
	Al	27	9127879.8	0.8	**72.8313**	1.774	2.4	ug/L	1397	Standard
	Sc	45	47044.6	2.2				ug/L	38815	Standard
	Ti	47	2194.2	2.3	**5.8566**	0.188	3.2	ug/L	36	Standard
	V	51	44194.1	1.4	**5.5087**	0.044	0.8	ug/L	1284	Standard
	Cr	52	31815.4	1.1	**3.2274**	0.004	0.1	ug/L	6503	Standard
	Cr	53	3368.7	1.5	**3.1179**	0.053	1.7	ug/L	492	Standard
	Mn	55	1436494.1	1.3	**211.3511**	2.993	1.4	ug/L	841	Standard
	Co	59	14124.2	0.5	**2.1125**	0.030	1.4	ug/L	229	Standard
	Ni	60	10017.3	2.5	**5.2188**	0.093	1.8	ug/L	344	Standard
	Cu	65	5555.4	1.2	**2.9746**	0.020	0.7	ug/L	115	Standard
	Zn	66	12515.5	1.3	**11.0639**	0.068	0.6	ug/L	190	Standard
>	**Ge**	72	455331.3	1.0				ug/L	409858	Standard
	As	75	1273.2	2.2	**1.2046**	0.032	2.7	ug/L	-22	Standard
	Se	82	33.8	7.8	**0.2365**	0.025	10.6	ug/L	18	Standard
	Se-1	77	77.0	7.9	**0.2473**	0.074	30.1	ug/L	50	Standard
>	**Ga**	71	3477.1	5.3				mg/L	97	Standard
	Rb	85	29470.3	4.4				ug/L	25	Standard
	Y	89	504672.2	1.8				ug/L	376763	Standard
>	**Rh**	103	21.7	48.0				ug/L	20	Standard
	Mo	98	162.5	13.2	**0.1360**	0.008	6.2	ug/L	51	Standard
	Ag	107	184.7	11.1	**0.0514**	0.003	5.6	ug/L	76	Standard
	Cd	111	116.7	0.9	**0.0956**	0.000	0.2	mg/L	6	Standard
	Cd	114	300.7	13.5	**0.0966**	0.007	7.7	ug/L	18	Standard
>	**In**	115	530453.6	1.0				ug/L	507261	Standard
	Sn	118	595.0	16.1	**-0.0061**	0.017	280.1	ug/L	683	Standard
	Sb	123	364.2	29.0	**0.0609**	0.024	39.6	ug/L	446	Standard
	Ba	135	104851.9	0.7	**52.7028**	0.330	0.6	ug/L	28	Standard
	Ce	140	465635.4	0.9				ug/L	33	Standard
>	**Tb**	159	824090.2	0.7				ug/L	800803	Standard
	Ho	165	9299.5	0.7				ug/L	10	Standard
	Tl	203	170.7	6.7	**0.0554**	0.002	2.8	ug/L	13	Standard
	Tl	205	143.3	10.7	**0.0639**	0.002	3.6	ug/L	13	Standard
	Pb	206	18810.3	1.3	**3.7880**	0.037	1.0	ug/L	226	Standard
	Pb	207	15556.0	1.1	**3.4522**	0.034	1.0	ug/L	204	Standard
	Pb	208	67949.4	0.5	**3.7721**	0.028	0.8	ug/L	852	Standard
	U	238	1726.8	1.0	**0.3013**	0.003	0.8	ug/L	13	Standard
>	**Bi**	209	453909.1	0.3				ug/L	449044	Standard

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Na	23	3.3	86.6	**6.4032**	13.152	205.4	mg/L	2	Standard
Mg	24	106.7	21.1	**0.0812**	0.028	34.1	mg/L	58	Standard
K	39	105.0	8.2	**0.2040**	0.036	17.4	mg/L	27	Standard
Ca	43	343.3	12.4	**19.3079**	2.257	11.7	mg/L	20	Standard
Fe	54	2967.9	3.2	**1.9306**	0.096	5.0	mg/L	158	Standard
Fe	57	1078.4	0.5	**2.2974**	0.071	3.1	mg/L	267	Standard
> **Sc-1**	45	47044.6	2.2				mg/L	38815	Standard
Cl	35	74756.6	0.2				ug/L	57611	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	2176.8	7.6				ug/L	1617	Standard
P	31	21623.8	0.7				ug/L	19244	Standard
S	34	4430.6	2.9				ug/L	3557	Standard
Sr	88	118.3	10.6				ug/L	65	Standard
C	12	80.0	12.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	100.0				mg/L	23	Standard
Dy	164	15003.4	3.0				mg/L	13	Standard
Ho-1	165	9299.5	0.7				mg/L	10	Standard
Er	166	8652.5	3.3				mg/L	13	Standard
I	127	4919.1	6.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.338	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.095	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.572
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.083
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606129718
Sample Date/Time: Wednesday, July 06, 2016 17:10:49
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61002.6	0.7				ug/L	68501	Standard
	Be	9	386.7	8.4	**0.4980**	0.044	8.7	ug/L	8	Standard
	Al	27	11064224.1	1.9	**87.5342**	1.217	1.4	ug/L	1397	Standard
	Sc	45	47497.7	2.4				ug/L	38815	Standard
	Ti	47	2700.2	0.1	**7.2287**	0.073	1.0	ug/L	36	Standard
	V	51	75721.1	0.9	**9.5634**	0.159	1.7	ug/L	1284	Standard
	Cr	52	48504.5	0.5	**5.4244**	0.053	1.0	ug/L	6503	Standard
	Cr	53	5401.0	0.6	**5.2639**	0.061	1.2	ug/L	492	Standard
	Mn	55	2606946.8	1.3	**384.5071**	8.038	2.1	ug/L	841	Standard
	Co	59	24500.5	0.6	**3.6683**	0.045	1.2	ug/L	229	Standard
	Ni	60	16206.3	0.4	**8.5606**	0.051	0.6	ug/L	344	Standard
	Cu	65	11319.2	0.3	**6.0884**	0.078	1.3	ug/L	115	Standard
	Zn	66	16272.4	0.9	**14.4512**	0.062	0.4	ug/L	190	Standard
>	**Ge**	72	454337.4	1.0				ug/L	409858	Standard
	As	75	3766.5	1.0	**3.3768**	0.043	1.3	ug/L	-22	Standard
	Se	82	38.2	18.9	**0.2748**	0.058	21.2	ug/L	18	Standard
	Se-1	77	92.7	8.1	**0.4557**	0.110	24.0	ug/L	50	Standard
>	**Ga**	71	5367.6	4.1				mg/L	97	Standard
	Rb	85	50199.7	1.5				ug/L	25	Standard
	Y	89	528757.6	1.4				ug/L	376763	Standard
>	**Rh**	103	41.7	30.2				ug/L	20	Standard
	Mo	98	628.2	4.9	**0.3208**	0.014	4.2	ug/L	51	Standard
	Ag	107	249.3	11.6	**0.0613**	0.005	7.6	ug/L	76	Standard
	Cd	111	202.2	4.6	**0.1368**	0.004	2.9	mg/L	6	Standard
	Cd	114	542.1	7.4	**0.1443**	0.007	5.1	ug/L	18	Standard
>	**In**	115	530184.6	0.5				ug/L	507261	Standard
	Sn	118	480.0	21.8	**-0.0261**	0.019	71.3	ug/L	683	Standard
	Sb	123	306.2	37.7	**0.0480**	0.026	54.3	ug/L	446	Standard
	Ba	135	151848.5	0.9	**76.3535**	0.309	0.4	ug/L	28	Standard
	Ce	140	632673.3	1.1				ug/L	33	Standard
>	**Tb**	159	826901.6	0.1				ug/L	800803	Standard
	Ho	165	11909.7	2.7				ug/L	10	Standard
	Tl	203	275.7	6.5	**0.0692**	0.002	3.3	ug/L	13	Standard
	Tl	205	261.7	21.3	**0.0818**	0.008	10.1	ug/L	13	Standard
	Pb	206	30210.1	0.2	**6.1134**	0.033	0.5	ug/L	226	Standard
	Pb	207	25026.0	0.9	**5.5792**	0.065	1.2	ug/L	204	Standard
	Pb	208	109142.1	0.7	**6.0856**	0.048	0.8	ug/L	852	Standard
	U	238	2218.8	3.0	**0.3764**	0.010	2.5	ug/L	13	Standard
>	**Bi**	209	451902.1	0.3				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	85.0	21.2	**0.0555**	0.018	32.7	mg/L	58	Standard
K	39	141.7	2.0	**0.3200**	0.021	6.5	mg/L	27	Standard
Ca	43	346.7	12.0	**19.2981**	2.044	10.6	mg/L	20	Standard
Fe	54	6583.4	6.0	**4.3806**	0.177	4.0	mg/L	158	Standard
Fe	57	2040.1	4.5	**4.9012**	0.343	7.0	mg/L	267	Standard
> **Sc-1**	45	47497.7	2.4				mg/L	38815	Standard
Cl	35	74496.0	0.9				ug/L	57611	Standard
Kr	83	1.7	124.9				ug/L	2	Standard
Br	81	2060.1	5.8				ug/L	1617	Standard
P	31	21615.4	2.3				ug/L	19244	Standard
S	34	4407.3	3.3				ug/L	3557	Standard
Sr	88	146.7	22.2				ug/L	65	Standard
C	12	80.0	12.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	43.3	74.2				mg/L	23	Standard
Dy	164	20267.7	1.2				mg/L	13	Standard
Ho-1	165	11909.7	2.7				mg/L	10	Standard
Er	166	10853.9	1.7				mg/L	13	Standard
I	127	5491.0	3.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.053	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.852	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.519
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.637
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606129719
Sample Date/Time: Wednesday, July 06, 2016 17:14:00
Number of Replicates: 3
Autosampler Position: 227
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63665.1	0.4				ug/L	68501	Standard
	Be	9	740.0	0.7	**0.8967**	0.007	0.8	ug/L	8	Standard
	Al	27	10091474.2	0.2	**76.5080**	0.424	0.6	ug/L	1397	Standard
	Sc	45	49554.3	2.7				ug/L	38815	Standard
	Ti	47	4880.5	4.1	**13.0100**	0.620	4.8	ug/L	36	Standard
	V	51	140318.8	0.3	**17.7350**	0.174	1.0	ug/L	1284	Standard
	Cr	52	211034.0	1.3	**26.5622**	0.505	1.9	ug/L	6503	Standard
	Cr	53	25681.8	2.5	**26.4393**	0.783	3.0	ug/L	492	Standard
	Mn	55	2842033.0	1.3	**416.5880**	2.843	0.7	ug/L	841	Standard
	Co	59	55629.6	1.1	**8.2712**	0.092	1.1	ug/L	229	Standard
	Ni	60	34092.3	1.7	**18.0725**	0.426	2.4	ug/L	344	Standard
	Cu	65	61233.5	0.2	**32.7936**	0.273	0.8	ug/L	115	Standard
	Zn	66	88786.7	1.0	**78.8718**	0.401	0.5	ug/L	190	Standard
>	**Ge**	72	457106.3	0.6				ug/L	409858	Standard
	As	75	6665.3	1.7	**5.8642**	0.105	1.8	ug/L	-22	Standard
	Se	82	74.8	1.4	**0.5833**	0.008	1.4	ug/L	18	Standard
	Se-1	77	116.0	23.7	**0.7520**	0.363	48.2	ug/L	50	Standard
>	**Ga**	71	14478.6	1.2				mg/L	97	Standard
	Rb	85	153343.8	1.1				ug/L	25	Standard
	Y	89	584906.0	1.5				ug/L	376763	Standard
>	**Rh**	103	63.3	50.1				ug/L	20	Standard
	Mo	98	921.9	3.1	**0.4300**	0.010	2.3	ug/L	51	Standard
	Ag	107	1490.7	1.6	**0.2471**	0.003	1.4	ug/L	76	Standard
	Cd	111	12899.8	1.4	**6.1352**	0.119	1.9	mg/L	6	Standard
	Cd	114	31602.1	1.1	**6.1457**	0.066	1.1	ug/L	18	Standard
>	**In**	115	540935.6	0.6				ug/L	507261	Standard
	Sn	118	2395.2	5.4	**0.3002**	0.022	7.2	ug/L	683	Standard
	Sb	123	506.3	17.8	**0.0902**	0.019	21.2	ug/L	446	Standard
	Ba	135	402882.8	0.3	**198.5336**	0.517	0.3	ug/L	28	Standard
	Ce	140	1001355.4	1.2				ug/L	33	Standard
>	**Tb**	159	839605.9	0.3				ug/L	800803	Standard
	Ho	165	16278.7	1.4				ug/L	10	Standard
	Tl	203	762.4	2.3	**0.1303**	0.002	1.9	ug/L	13	Standard
	Tl	205	646.7	4.5	**0.1375**	0.004	3.0	ug/L	13	Standard
	Pb	206	722382.1	0.3	**143.1625**	0.699	0.5	ug/L	226	Standard
	Pb	207	605458.0	1.1	**132.1283**	1.402	1.1	ug/L	204	Standard
	Pb	208	2619914.0	0.5	**142.9705**	0.450	0.3	ug/L	852	Standard
	U	238	3167.0	3.3	**0.5090**	0.016	3.1	ug/L	13	Standard
>	**Bi**	209	461727.1	0.2				ug/L	449044	Standard

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Na	23	3.3	173.2	**5.7695**	25.205	436.9	mg/L	2	Standard
Mg	24	183.3	8.3	**0.1563**	0.019	12.4	mg/L	58	Standard
K	39	323.3	6.4	**0.8694**	0.091	10.5	mg/L	27	Standard
Ca	43	148.3	18.6	**7.1496**	1.328	18.6	mg/L	20	Standard
Fe	54	14825.9	2.7	**9.6082**	0.482	5.0	mg/L	158	Standard
Fe	57	4082.2	1.4	**10.0200**	0.287	2.9	mg/L	267	Standard
Sc-1	45	49554.3	2.7				mg/L	38815	Standard
Cl	35	70608.8	1.1				ug/L	57611	Standard
Kr	83	0.0					ug/L	2	Standard
Br	81	5050.8	4.7				ug/L	1617	Standard
P	31	22351.5	1.7				ug/L	19244	Standard
S	34	4362.3	8.2				ug/L	3557	Standard
Sr	88	115.0	13.0				ug/L	65	Standard
C	12	230.0	28.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	176.7	31.2				mg/L	23	Standard
Dy	164	26663.3	1.8				mg/L	13	Standard
Ho-1	165	16278.7	1.4				mg/L	10	Standard
Er	166	14503.6	3.7				mg/L	13	Standard
I	127	13963.1	5.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		92.940	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		111.528	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.639
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.824
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	
Pb 206 Upper, S, EEE	Pb	206	

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Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1606129720
Sample Date/Time: Wednesday, July 06, 2016 17:17:12
Number of Replicates: 3
Autosampler Position: 228
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62043.4	0.8				ug/L	68501	Standard
	Be	9	535.0	5.2	**0.6704**	0.036	5.4	ug/L	8	Standard
	Al	27	16466441.8	1.0	**128.0760**	0.413	0.3	ug/L	1397	Standard
	Sc	45	47537.8	1.8				ug/L	38815	Standard
	Ti	47	3601.8	1.1	**9.7028**	0.127	1.3	ug/L	36	Standard
	V	51	114496.1	0.8	**14.6114**	0.083	0.6	ug/L	1284	Standard
	Cr	52	66045.0	1.4	**7.7705**	0.194	2.5	ug/L	6503	Standard
	Cr	53	7416.8	1.1	**7.4262**	0.092	1.2	ug/L	492	Standard
	Mn	55	2745613.9	0.3	**407.0973**	4.419	1.1	ug/L	841	Standard
	Co	59	34784.6	1.7	**5.2334**	0.108	2.1	ug/L	229	Standard
	Ni	60	22063.1	1.1	**11.7754**	0.232	2.0	ug/L	344	Standard
	Cu	65	16897.4	1.0	**9.1435**	0.112	1.2	ug/L	115	Standard
	Zn	66	22892.0	2.0	**20.4833**	0.194	0.9	ug/L	190	Standard
>	**Ge**	72	451935.2	1.0				ug/L	409858	Standard
	As	75	3957.0	1.3	**3.5607**	0.038	1.1	ug/L	-22	Standard
	Se	82	48.3	15.3	**0.3639**	0.066	18.3	ug/L	18	Standard
	Se-1	77	89.0	3.9	**0.4130**	0.038	9.3	ug/L	50	Standard
>	**Ga**	71	8247.2	1.1				mg/L	97	Standard
	Rb	85	77169.4	1.5				ug/L	25	Standard
	Y	89	561968.7	0.4				ug/L	376763	Standard
>	**Rh**	103	36.7	41.7				ug/L	20	Standard
	Mo	98	835.4	2.8	**0.4040**	0.010	2.5	ug/L	51	Standard
	Ag	107	320.7	6.4	**0.0724**	0.003	3.8	ug/L	76	Standard
	Cd	111	190.8	4.2	**0.1316**	0.003	2.5	mg/L	6	Standard
	Cd	114	457.1	0.9	**0.1278**	0.000	0.1	ug/L	18	Standard
>	**In**	115	528583.4	0.8				ug/L	507261	Standard
	Sn	118	668.3	6.0	**0.0070**	0.006	88.1	ug/L	683	Standard
	Sb	123	238.4	30.1	**0.0330**	0.016	49.2	ug/L	446	Standard
	Ba	135	413766.5	1.3	**208.6575**	1.840	0.9	ug/L	28	Standard
	Ce	140	816123.1	1.5				ug/L	33	Standard
>	**Tb**	159	818775.6	1.8				ug/L	800803	Standard
	Ho	165	14605.4	0.2				ug/L	10	Standard
	Tl	203	529.0	5.3	**0.1022**	0.004	3.5	ug/L	13	Standard
	Tl	205	483.3	6.3	**0.1152**	0.005	4.0	ug/L	13	Standard
	Pb	206	38689.3	1.6	**7.8483**	0.117	1.5	ug/L	226	Standard
	Pb	207	31946.0	0.6	**7.1384**	0.036	0.5	ug/L	204	Standard
	Pb	208	139239.2	0.4	**7.7816**	0.049	0.6	ug/L	852	Standard
	U	238	4116.2	1.0	**0.6633**	0.006	1.0	ug/L	13	Standard
>	**Bi**	209	450865.9	0.2				ug/L	449044	Standard

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Na	23	5.0	100.0	**13.6788**	22.396	163.7	mg/L	2	Standard
Mg	24	173.3	26.8	**0.1527**	0.048	31.1	mg/L	58	Standard
K	39	153.3	13.6	**0.3567**	0.061	17.0	mg/L	27	Standard
Ca	43	540.0	15.4	**30.7921**	4.937	16.0	mg/L	20	Standard
Fe	54	8837.8	2.1	**5.9199**	0.065	1.1	mg/L	158	Standard
Fe	57	2686.9	4.2	**6.6633**	0.423	6.3	mg/L	267	Standard
> **Sc-1**	45	47537.8	1.8				mg/L	38815	Standard
Cl	35	73158.9	1.0				ug/L	57611	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	2540.2	9.3				ug/L	1617	Standard
P	31	21500.3	3.4				ug/L	19244	Standard
S	34	4425.6	2.7				ug/L	3557	Standard
Sr	88	181.7	13.6				ug/L	65	Standard
C	12	100.0	34.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	78.1				mg/L	23	Standard
Dy	164	25202.4	7.2				mg/L	13	Standard
Ho-1	165	14605.4	0.2				mg/L	10	Standard
Er	166	13145.7	4.6				mg/L	13	Standard
I	127	7560.2	2.6				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.573	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.266	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.204
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.406
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129701
Sample Date/Time: Wednesday, July 06, 2016 17:20:23
Number of Replicates: 3
Autosampler Position: 229
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54705.3	3.3				ug/L	68501	Standard
	Be	9	20.0	75.0	**0.0471**	0.021	44.9	ug/L	8	Standard
	Al	27	254394.6	0.7	**2.2805**	0.089	3.9	ug/L	1397	Standard
	Sc	45	38919.9	0.3				ug/L	38815	Standard
	Ti	47	76.0	1.3	**0.1928**	0.003	1.6	ug/L	36	Standard
	V	51	2687.0	2.1	**0.2280**	0.008	3.3	ug/L	1284	Standard
	Cr	52	6953.6	2.9	**0.0509**	0.028	55.7	ug/L	6503	Standard
	Cr	53	256.7	13.0	**-0.1269**	0.038	29.7	ug/L	492	Standard
	Mn	55	32697.3	3.6	**5.1146**	0.183	3.6	ug/L	841	Standard
	Co	59	591.3	9.7	**0.1010**	0.009	9.1	ug/L	229	Standard
	Ni	60	630.7	6.1	**0.2088**	0.022	10.6	ug/L	344	Standard
	Cu	65	421.7	12.1	**0.2323**	0.030	12.8	ug/L	115	Standard
	Zn	66	1478.1	4.0	**1.3158**	0.058	4.4	ug/L	190	Standard
>	**Ge**	72	420563.3	0.1				ug/L	409858	Standard
	As	75	-15.5	83.8	**0.0843**	0.012	14.5	ug/L	-22	Standard
	Se	82	13.0	43.8	**0.0690**	0.053	76.4	ug/L	18	Standard
	Se-1	77	54.7	13.5	**0.0147**	0.104	707.4	ug/L	50	Standard
>	**Ga**	71	123.3	20.8				mg/L	97	Standard
	Rb	85	1151.7	4.4				ug/L	25	Standard
	Y	89	361203.1	0.5				ug/L	376763	Standard
>	**Rh**	103	13.3	43.3				ug/L	20	Standard
	Mo	98	68.7	38.7	**0.1009**	0.011	11.2	ug/L	51	Standard
	Ag	107	80.0	25.1	**0.0363**	0.003	9.1	ug/L	76	Standard
	Cd	111	10.5	68.1	**0.0448**	0.004	8.3	mg/L	6	Standard
	Cd	114	35.2	40.1	**0.0449**	0.003	6.7	ug/L	18	Standard
>	**In**	115	492416.3	0.6				ug/L	507261	Standard
	Sn	118	241.7	18.8	**-0.0646**	0.009	13.4	ug/L	683	Standard
	Sb	123	498.9	38.1	**0.0993**	0.045	45.6	ug/L	446	Standard
	Ba	135	4886.5	2.1	**2.6610**	0.070	2.6	ug/L	28	Standard
	Ce	140	13354.2	3.4				ug/L	33	Standard
>	**Tb**	159	765708.7	0.7				ug/L	800803	Standard
	Ho	165	263.3	11.6				ug/L	10	Standard
	Tl	203	36.7	55.6	**0.0383**	0.003	7.2	ug/L	13	Standard
	Tl	205	40.0	33.1	**0.0487**	0.002	4.2	ug/L	13	Standard
	Pb	206	956.0	8.3	**0.1957**	0.017	8.7	ug/L	226	Standard
	Pb	207	823.4	8.4	**0.1883**	0.016	8.8	ug/L	204	Standard
	Pb	208	3454.8	7.4	**0.1989**	0.016	8.0	ug/L	852	Standard
	U	238	55.3	15.2	**0.0512**	0.001	2.6	ug/L	13	Standard
>	**Bi**	209	438088.3	0.6				ug/L	449044	Standard

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Na	23	1.7	173.2	**0.2882**	15.711	5451.7	mg/L	2	Standard
Mg	24	71.7	16.1	**0.0584**	0.016	26.8	mg/L	58	Standard
K	39	21.7	35.3	**-0.0557**	0.030	54.0	mg/L	27	Standard
Ca	43	33.3	60.6	**1.1412**	1.472	128.9	mg/L	20	Standard
Fe	54	127.5	9.8	**-0.0137**	0.011	78.4	mg/L	158	Standard
Fe	57	326.7	25.5	**0.4101**	0.278	67.8	mg/L	267	Standard
> **Sc-1**	45	38919.9	0.3				mg/L	38815	Standard
Cl	35	69819.9	1.7				ug/L	57611	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	1756.8	7.7				ug/L	1617	Standard
P	31	7073.3	2.3				ug/L	19244	Standard
S	34	4202.2	2.7				ug/L	3557	Standard
Sr	88	83.3	15.1				ug/L	65	Standard
C	12	36.7	31.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	25.0				mg/L	23	Standard
Dy	164	443.9	18.5				mg/L	13	Standard
Ho-1	165	263.3	11.6				mg/L	10	Standard
Er	166	266.7	18.5				mg/L	13	Standard
I	127	7595.2	3.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		79.860	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.612	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.074
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.560
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129702
Sample Date/Time: Wednesday, July 06, 2016 17:23:34
Number of Replicates: 3
Autosampler Position: 230
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	53813.8	3.3				ug/L	68501	Standard
	Be	9	20.0	25.0	**0.0474**	0.006	12.9	ug/L	8	Standard
	Al	27	123757.2	3.7	**1.1460**	0.073	6.3	ug/L	1397	Standard
	Sc	45	40009.4	1.7				ug/L	38815	Standard
	Ti	47	75.7	14.5	**0.1929**	0.030	15.3	ug/L	36	Standard
	V	51	3286.9	6.1	**0.3136**	0.023	7.3	ug/L	1284	Standard
	Cr	52	7502.9	1.7	**0.1350**	0.010	7.1	ug/L	6503	Standard
	Cr	53	293.3	39.6	**-0.0841**	0.129	153.1	ug/L	492	Standard
	Mn	55	65790.6	3.2	**10.4491**	0.229	2.2	ug/L	841	Standard
	Co	59	905.0	7.8	**0.1525**	0.011	7.0	ug/L	229	Standard
	Ni	60	746.0	5.8	**0.2783**	0.022	7.9	ug/L	344	Standard
	Cu	65	536.7	2.7	**0.3011**	0.007	2.5	ug/L	115	Standard
	Zn	66	1996.5	2.1	**1.8285**	0.039	2.1	ug/L	190	Standard
>	Ge	72	418080.4	1.1				ug/L	409858	Standard
	As	75	56.1	91.8	**0.1516**	0.048	31.6	ug/L	-22	Standard
	Se	82	15.2	60.8	**0.0892**	0.084	94.3	ug/L	18	Standard
	Se-1	77	55.0	22.3	**0.0229**	0.166	724.1	ug/L	50	Standard
>	Ga	71	163.3	29.4				mg/L	97	Standard
	Rb	85	1311.7	19.5				ug/L	25	Standard
	Y	89	361563.3	0.7				ug/L	376763	Standard
>	Rh	103	16.7	62.4				ug/L	20	Standard
	Mo	98	51.7	65.1	**0.0937**	0.014	15.4	ug/L	51	Standard
	Ag	107	124.7	52.2	**0.0437**	0.011	24.6	ug/L	76	Standard
	Cd	111	51.5	87.7	**0.0662**	0.024	35.5	mg/L	6	Standard
	Cd	114	122.3	87.7	**0.0634**	0.023	36.0	ug/L	18	Standard
>	In	115	491187.9	0.1				ug/L	507261	Standard
	Sn	118	286.7	14.1	**-0.0560**	0.008	13.6	ug/L	683	Standard
	Sb	123	388.5	44.1	**0.0731**	0.041	56.3	ug/L	446	Standard
	Ba	135	5842.1	6.6	**3.1859**	0.208	6.5	ug/L	28	Standard
	Ce	140	16594.1	7.9				ug/L	33	Standard
>	Tb	159	754328.2	0.4				ug/L	800803	Standard
	Ho	165	276.7	4.2				ug/L	10	Standard
	Tl	203	81.0	143.3	**0.0443**	0.016	35.4	ug/L	13	Standard
	Tl	205	25.0	121.7	**0.0464**	0.005	10.2	ug/L	13	Standard
	Pb	206	4919.1	2.0	**1.0313**	0.021	2.0	ug/L	226	Standard
	Pb	207	4164.2	1.0	**0.9640**	0.011	1.1	ug/L	204	Standard
	Pb	208	17566.3	0.6	**1.0181**	0.006	0.6	ug/L	852	Standard
	U	238	66.0	41.2	**0.0529**	0.004	8.1	ug/L	13	Standard
>	Bi	209	434793.9	0.1				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	30.0	44.1	**0.0012**	0.018	1479.1	mg/L	58	Standard
K	39	31.7	48.2	**-0.0200**	0.057	286.5	mg/L	27	Standard
Ca	43	21.7	13.3	**0.2504**	0.197	78.6	mg/L	20	Standard
Fe	54	164.3	5.3	**0.0132**	0.007	50.9	mg/L	158	Standard
Fe	57	281.7	17.2	**0.2361**	0.173	73.2	mg/L	267	Standard
> **Sc-1**	45	40009.4	1.7				mg/L	38815	Standard
Cl	35	68860.1	0.4				ug/L	57611	Standard
Kr	83	3.7	68.6				ug/L	2	Standard
Br	81	1723.4	1.5				ug/L	1617	Standard
P	31	6801.5	2.1				ug/L	19244	Standard
S	34	4285.6	1.1				ug/L	3557	Standard
Sr	88	58.3	13.1				ug/L	65	Standard
C	12	50.0	20.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	65.5				mg/L	23	Standard
Dy	164	521.0	31.1				mg/L	13	Standard
Ho-1	165	276.7	4.2				mg/L	10	Standard
Er	166	256.7	18.0				mg/L	13	Standard
I	127	7405.1	2.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		78.559	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.006	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.831
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.827
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129703
Sample Date/Time: Wednesday, July 06, 2016 17:26:46
Number of Replicates: 3
Autosampler Position: 231
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52977.6	3.9				ug/L	68501	Standard
	Be	9	23.3	53.9	**0.0523**	0.017	32.0	ug/L	8	Standard
	Al	27	286352.9	1.9	**2.6464**	0.144	5.4	ug/L	1397	Standard
	Sc	45	39770.5	0.9				ug/L	38815	Standard
	Ti	47	84.7	11.6	**0.2173**	0.027	12.6	ug/L	36	Standard
	V	51	2934.4	1.9	**0.2613**	0.009	3.4	ug/L	1284	Standard
	Cr	52	6753.2	1.5	**0.0203**	0.012	59.4	ug/L	6503	Standard
	Cr	53	273.3	5.3	**-0.1087**	0.015	14.0	ug/L	492	Standard
	Mn	55	51194.3	0.4	**8.0434**	0.033	0.4	ug/L	841	Standard
	Co	59	633.0	5.9	**0.1075**	0.006	5.9	ug/L	229	Standard
	Ni	60	612.3	1.2	**0.1973**	0.007	3.6	ug/L	344	Standard
	Cu	65	360.0	4.6	**0.1959**	0.011	5.8	ug/L	115	Standard
	Zn	66	1592.1	2.9	**1.4225**	0.048	3.4	ug/L	190	Standard
>	**Ge**	72	421549.0	0.8				ug/L	409858	Standard
	As	75	16.0	110.0	**0.1138**	0.016	14.5	ug/L	-22	Standard
	Se	82	20.4	24.4	**0.1361**	0.045	33.3	ug/L	18	Standard
	Se-1	77	48.7	33.0	**-0.0726**	0.223	307.4	ug/L	50	Standard
>	**Ga**	71	180.0	2.8				mg/L	97	Standard
	Rb	85	1370.1	4.2				ug/L	25	Standard
	Y	89	356859.6	1.9				ug/L	376763	Standard
>	**Rh**	103	16.7	34.6				ug/L	20	Standard
	Mo	98	41.0	28.5	**0.0892**	0.005	5.8	ug/L	51	Standard
	Ag	107	61.7	14.2	**0.0333**	0.001	4.3	ug/L	76	Standard
	Cd	111	7.9	65.9	**0.0435**	0.003	6.2	mg/L	6	Standard
	Cd	114	13.8	66.1	**0.0403**	0.002	4.8	ug/L	18	Standard
>	**In**	115	489951.3	1.2				ug/L	507261	Standard
	Sn	118	230.0	17.0	**-0.0666**	0.007	10.4	ug/L	683	Standard
	Sb	123	297.8	34.1	**0.0515**	0.024	47.0	ug/L	446	Standard
	Ba	135	6056.2	1.2	**3.3108**	0.061	1.8	ug/L	28	Standard
	Ce	140	13239.1	4.5				ug/L	33	Standard
>	**Tb**	159	754124.2	0.9				ug/L	800803	Standard
	Ho	165	233.3	12.2				ug/L	10	Standard
	Tl	203	23.3	23.6	**0.0365**	0.001	2.0	ug/L	13	Standard
	Tl	205	23.3	32.7	**0.0462**	0.001	2.6	ug/L	13	Standard
	Pb	206	897.0	2.3	**0.1837**	0.002	1.3	ug/L	226	Standard
	Pb	207	712.0	3.3	**0.1630**	0.005	3.0	ug/L	204	Standard
	Pb	208	3193.5	2.8	**0.1841**	0.007	3.7	ug/L	852	Standard
	U	238	62.0	10.6	**0.0523**	0.001	2.0	ug/L	13	Standard
>	**Bi**	209	437276.0	1.1				ug/L	449044	Standard

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Na	23	1.7	173.2	**0.0658**	15.326	23301.0	mg/L	2	Standard
Mg	24	45.0	33.3	**0.0212**	0.020	96.0	mg/L	58	Standard
K	39	33.3	37.7	**-0.0122**	0.049	398.1	mg/L	27	Standard
Ca	43	31.7	71.2	**0.9607**	1.582	164.7	mg/L	20	Standard
Fe	54	142.5	25.0	**-0.0039**	0.028	714.0	mg/L	158	Standard
Fe	57	326.7	9.8	**0.3869**	0.106	27.4	mg/L	267	Standard
> **Sc-1**	45	39770.5	0.9				mg/L	38815	Standard
Cl	35	68774.4	1.1				ug/L	57611	Standard
Kr	83	3.7	56.8				ug/L	2	Standard
Br	81	1646.8	11.9				ug/L	1617	Standard
P	31	7296.8	6.4				ug/L	19244	Standard
S	34	4085.6	2.8				ug/L	3557	Standard
Sr	88	73.3	43.8				ug/L	65	Standard
C	12	40.0	25.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	23	Standard
Dy	164	359.6	15.9				mg/L	13	Standard
Ho-1	165	233.3	12.2				mg/L	10	Standard
Er	166	216.7	41.6				mg/L	13	Standard
I	127	7513.5	3.2				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		77.338	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.852	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.588
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.379
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129704
Sample Date/Time: Wednesday, July 06, 2016 17:29:57
Number of Replicates: 3
Autosampler Position: 232
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53208.3	2.9				ug/L	68501	Standard
	Be	9	20.0	43.3	**0.0481**	0.013	26.7	ug/L	8	Standard
	Al	27	267589.1	1.1	**2.4624**	0.062	2.5	ug/L	1397	Standard
	Sc	45	38983.4	0.9				ug/L	38815	Standard
	Ti	47	86.3	13.4	**0.2222**	0.033	14.9	ug/L	36	Standard
	V	51	2971.7	1.5	**0.2666**	0.009	3.5	ug/L	1284	Standard
	Cr	52	6861.9	1.4	**0.0360**	0.021	57.2	ug/L	6503	Standard
	Cr	53	280.0	12.5	**-0.1010**	0.040	39.2	ug/L	492	Standard
	Mn	55	53663.9	0.6	**8.4379**	0.069	0.8	ug/L	841	Standard
	Co	59	633.0	1.9	**0.1075**	0.003	2.4	ug/L	229	Standard
	Ni	60	604.7	3.8	**0.1930**	0.015	7.6	ug/L	344	Standard
	Cu	65	1370.7	3.8	**0.7831**	0.024	3.0	ug/L	115	Standard
	Zn	66	1720.1	1.0	**1.5462**	0.005	0.3	ug/L	190	Standard
>	**Ge**	72	421463.7	0.8				ug/L	409858	Standard
	As	75	0.2	24746.5	**0.0992**	0.037	37.7	ug/L	-22	Standard
	Se	82	13.7	9.8	**0.0749**	0.012	16.5	ug/L	18	Standard
	Se-1	77	47.7	15.2	**-0.0857**	0.103	120.6	ug/L	50	Standard
>	**Ga**	71	165.0	10.9				mg/L	97	Standard
	Rb	85	1178.4	10.0				ug/L	25	Standard
	Y	89	361176.9	2.0				ug/L	376763	Standard
>	**Rh**	103	31.7	32.9				ug/L	20	Standard
	Mo	98	43.7	31.8	**0.0901**	0.006	6.7	ug/L	51	Standard
	Ag	107	67.7	0.9	**0.0342**	0.000	0.2	ug/L	76	Standard
	Cd	111	7.6	42.4	**0.0433**	0.002	3.8	mg/L	6	Standard
	Cd	114	24.9	40.0	**0.0426**	0.002	4.8	ug/L	18	Standard
>	**In**	115	496890.3	0.8				ug/L	507261	Standard
	Sn	118	191.7	25.7	**-0.0744**	0.009	12.2	ug/L	683	Standard
	Sb	123	273.9	35.3	**0.0449**	0.023	52.2	ug/L	446	Standard
	Ba	135	7247.4	1.8	**3.9038**	0.095	2.4	ug/L	28	Standard
	Ce	140	13307.5	2.3				ug/L	33	Standard
>	**Tb**	159	749231.7	0.8				ug/L	800803	Standard
	Ho	165	201.7	18.6				ug/L	10	Standard
	Tl	203	6.7	22.9	**0.0342**	0.000	0.6	ug/L	13	Standard
	Tl	205	10.0	50.0	**0.0441**	0.001	1.8	ug/L	13	Standard
	Pb	206	890.4	2.0	**0.1845**	0.003	1.6	ug/L	226	Standard
	Pb	207	785.4	5.0	**0.1821**	0.008	4.6	ug/L	204	Standard
	Pb	208	3319.8	2.1	**0.1937**	0.005	2.5	ug/L	852	Standard
	U	238	55.0	18.5	**0.0513**	0.002	3.1	ug/L	13	Standard
>	**Bi**	209	432108.8	0.5				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	30.0	28.9	**0.0020**	0.011	565.0	mg/L	58	Standard
K	39	33.3	8.7	**-0.0095**	0.013	132.2	mg/L	27	Standard
Ca	43	43.3	33.3	**1.8622**	1.056	56.7	mg/L	20	Standard
Fe	54	149.2	13.7	**0.0041**	0.017	410.4	mg/L	158	Standard
Fe	57	290.0	7.5	**0.2863**	0.075	26.2	mg/L	267	Standard
Sc-1	45	38983.4	0.9				mg/L	38815	Standard
Cl	35	68125.5	1.5				ug/L	57611	Standard
Kr	83	3.3	69.3				ug/L	2	Standard
Br	81	1650.1	13.3				ug/L	1617	Standard
P	31	6829.9	0.8				ug/L	19244	Standard
S	34	3992.2	2.3				ug/L	3557	Standard
Sr	88	71.7	49.0				ug/L	65	Standard
C	12	33.3	34.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	24.7				mg/L	23	Standard
Dy	164	349.8	7.3				mg/L	13	Standard
Ho-1	165	201.7	18.6				mg/L	10	Standard
Er	166	213.3	15.1				mg/L	13	Standard
I	127	7331.8	5.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		77.675	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.832	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.956
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.229
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129705
Sample Date/Time: Wednesday, July 06, 2016 17:33:09
Number of Replicates: 3
Autosampler Position: 233
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52218.3	4.1				ug/L	68501	Standard
	Be	9	18.3	78.7	**0.0455**	0.020	42.9	ug/L	8	Standard
	Al	27	149022.9	2.3	**1.4135**	0.067	4.7	ug/L	1397	Standard
	Sc	45	38976.7	1.1				ug/L	38815	Standard
	Ti	47	70.7	9.6	**0.1786**	0.020	11.0	ug/L	36	Standard
	V	51	2061.2	2.6	**0.1432**	0.008	5.3	ug/L	1284	Standard
	Cr	52	6495.4	1.3	**-0.0080**	0.014	176.0	ug/L	6503	Standard
	Cr	53	245.0	15.4	**-0.1382**	0.044	31.6	ug/L	492	Standard
	Mn	55	28846.8	1.0	**4.5310**	0.050	1.1	ug/L	841	Standard
	Co	59	501.0	2.5	**0.0869**	0.002	2.6	ug/L	229	Standard
	Ni	60	539.7	1.9	**0.1579**	0.005	3.3	ug/L	344	Standard
	Cu	65	193.7	9.7	**0.1002**	0.011	10.8	ug/L	115	Standard
	Zn	66	1393.1	2.6	**1.2423**	0.034	2.7	ug/L	190	Standard
>	**Ge**	72	417845.3	0.3				ug/L	409858	Standard
	As	75	-2.6	310.6	**0.0964**	0.008	8.0	ug/L	-22	Standard
	Se	82	19.2	21.8	**0.1273**	0.039	30.3	ug/L	18	Standard
	Se-1	77	49.7	23.3	**-0.0512**	0.167	325.4	ug/L	50	Standard
>	**Ga**	71	116.7	28.5				mg/L	97	Standard
	Rb	85	655.0	8.8				ug/L	25	Standard
	Y	89	354001.3	0.9				ug/L	376763	Standard
>	**Rh**	103	11.7	137.8				ug/L	20	Standard
	Mo	98	34.3	48.2	**0.0864**	0.007	8.2	ug/L	51	Standard
	Ag	107	63.0	11.4	**0.0336**	0.001	3.7	ug/L	76	Standard
	Cd	111	4.3	26.6	**0.0416**	0.001	1.4	mg/L	6	Standard
	Cd	114	13.3	81.4	**0.0402**	0.002	5.8	ug/L	18	Standard
>	**In**	115	485890.6	0.5				ug/L	507261	Standard
	Sn	118	188.3	10.1	**-0.0742**	0.003	4.6	ug/L	683	Standard
	Sb	123	256.5	30.4	**0.0420**	0.019	44.8	ug/L	446	Standard
	Ba	135	1863.4	2.6	**1.0379**	0.025	2.4	ug/L	28	Standard
	Ce	140	6439.7	6.3				ug/L	33	Standard
>	**Tb**	159	741477.9	1.2				ug/L	800803	Standard
	Ho	165	126.7	14.9				ug/L	10	Standard
	Tl	203	7.7	27.2	**0.0344**	0.000	0.8	ug/L	13	Standard
	Tl	205	3.3	173.2	**0.0431**	0.001	2.1	ug/L	13	Standard
	Pb	206	453.0	6.6	**0.0915**	0.006	6.3	ug/L	226	Standard
	Pb	207	371.3	12.6	**0.0852**	0.011	13.3	ug/L	204	Standard
	Pb	208	1656.7	2.1	**0.0963**	0.003	2.6	ug/L	852	Standard
	U	238	22.0	35.5	**0.0461**	0.001	2.6	ug/L	13	Standard
>	**Bi**	209	433929.8	0.5				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	40.0	25.0	**0.0157**	0.014	90.0	mg/L	58	Standard
K	39	31.7	24.1	**-0.0163**	0.029	176.8	mg/L	27	Standard
Ca	43	23.3	44.6	**0.4103**	0.749	182.7	mg/L	20	Standard
Fe	54	135.9	5.4	**-0.0069**	0.007	104.0	mg/L	158	Standard
Fe	57	293.3	12.9	**0.2967**	0.118	39.6	mg/L	267	Standard
> **Sc-1**	45	38976.7	1.1				mg/L	38815	Standard
Cl	35	68355.2	0.1				ug/L	57611	Standard
Kr	83	3.0	115.5				ug/L	2	Standard
Br	81	1733.4	2.8				ug/L	1617	Standard
P	31	6756.5	5.8				ug/L	19244	Standard
S	34	3932.2	2.4				ug/L	3557	Standard
Sr	88	61.7	12.4				ug/L	65	Standard
C	12	33.3	69.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	65.5				mg/L	23	Standard
Dy	164	212.0	14.5				mg/L	13	Standard
Ho-1	165	126.7	14.9				mg/L	10	Standard
Er	166	96.7	15.8				mg/L	13	Standard
I	127	7300.1	1.1				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		76.230	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.949	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.787
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.634
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129706
Sample Date/Time: Wednesday, July 06, 2016 17:36:20
Number of Replicates: 3
Autosampler Position: 234
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53041.1	3.6				ug/L	68501	Standard
	Be	9	13.3	114.6	**0.0381**	0.021	54.7	ug/L	8	Standard
	Al	27	347063.6	1.2	**3.1948**	0.126	4.0	ug/L	1397	Standard
	Sc	45	38433.7	1.1				ug/L	38815	Standard
	Ti	47	110.7	14.1	**0.2971**	0.045	15.1	ug/L	36	Standard
	V	51	3417.2	1.2	**0.3346**	0.008	2.5	ug/L	1284	Standard
	Cr	52	7571.6	1.1	**0.1508**	0.016	10.6	ug/L	6503	Standard
	Cr	53	368.3	9.6	**0.0050**	0.042	843.9	ug/L	492	Standard
	Mn	55	57046.2	0.1	**9.1002**	0.105	1.2	ug/L	841	Standard
	Co	59	1016.0	2.9	**0.1715**	0.006	3.6	ug/L	229	Standard
	Ni	60	913.4	2.1	**0.3792**	0.012	3.3	ug/L	344	Standard
	Cu	65	438.0	0.8	**0.2447**	0.003	1.1	ug/L	115	Standard
	Zn	66	2260.5	1.5	**2.0975**	0.023	1.1	ug/L	190	Standard
>	**Ge**	72	415785.3	1.3				ug/L	409858	Standard
	As	75	14.0	101.9	**0.1122**	0.013	12.0	ug/L	-22	Standard
	Se	82	15.4	23.0	**0.0925**	0.032	34.2	ug/L	18	Standard
	Se-1	77	54.3	4.3	**0.0192**	0.043	224.5	ug/L	50	Standard
>	**Ga**	71	248.3	18.2				mg/L	97	Standard
	Rb	85	2065.1	7.2				ug/L	25	Standard
	Y	89	358556.5	0.8				ug/L	376763	Standard
>	**Rh**	103	25.0	34.6				ug/L	20	Standard
	Mo	98	36.2	30.2	**0.0870**	0.005	5.4	ug/L	51	Standard
	Ag	107	65.3	10.2	**0.0339**	0.001	2.9	ug/L	76	Standard
	Cd	111	7.9	21.9	**0.0435**	0.001	2.0	mg/L	6	Standard
	Cd	114	31.5	18.6	**0.0440**	0.001	2.8	ug/L	18	Standard
>	**In**	115	493442.8	1.0				ug/L	507261	Standard
	Sn	118	191.7	8.0	**-0.0741**	0.003	3.6	ug/L	683	Standard
	Sb	123	249.1	35.2	**0.0392**	0.020	52.2	ug/L	446	Standard
	Ba	135	5603.4	2.9	**3.0428**	0.102	3.3	ug/L	28	Standard
	Ce	140	15599.7	2.1				ug/L	33	Standard
>	**Tb**	159	754515.5	0.5				ug/L	800803	Standard
	Ho	165	246.7	8.4				ug/L	10	Standard
	Tl	203	18.0	50.9	**0.0358**	0.001	3.5	ug/L	13	Standard
	Tl	205	16.7	34.6	**0.0451**	0.001	2.0	ug/L	13	Standard
	Pb	206	895.7	5.4	**0.1853**	0.010	5.5	ug/L	226	Standard
	Pb	207	758.4	5.5	**0.1754**	0.010	5.5	ug/L	204	Standard
	Pb	208	3314.1	2.3	**0.1929**	0.004	2.3	ug/L	852	Standard
	U	238	57.0	6.1	**0.0516**	0.001	1.0	ug/L	13	Standard
>	**Bi**	209	433029.8	0.1				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	38.3	45.8	**0.0139**	0.024	170.6	mg/L	58	Standard
K	39	25.0	34.6	**-0.0412**	0.035	84.9	mg/L	27	Standard
Ca	43	23.3	24.7	**0.4358**	0.423	97.0	mg/L	20	Standard
Fe	54	232.5	14.5	**0.0765**	0.031	40.0	mg/L	158	Standard
Fe	57	305.0	15.6	**0.3518**	0.173	49.1	mg/L	267	Standard
> **Sc-1**	45	38433.7	1.1				mg/L	38815	Standard
Cl	35	68301.6	0.8				ug/L	57611	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	1563.4	12.6				ug/L	1617	Standard
P	31	6891.6	2.4				ug/L	19244	Standard
S	34	4058.9	3.0				ug/L	3557	Standard
Sr	88	76.7	22.9				ug/L	65	Standard
C	12	50.0	87.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	43.3				mg/L	23	Standard
Dy	164	429.6	3.2				mg/L	13	Standard
Ho-1	165	246.7	8.4				mg/L	10	Standard
Er	166	216.7	43.9				mg/L	13	Standard
I	127	6868.2	5.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		77.431	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.446	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.276
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.434
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 17:39:34
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	56184.0	1.5				ug/L	68501	Standard
	Be	9	42193.7	3.3	**56.7110**	2.227	3.9	ug/L	8	Standard
	Al	27	6758921.7	1.6	**58.0837**	1.381	2.4	ug/L	1397	Standard
	Sc	45	43373.7	1.8				ug/L	38815	Standard
	Ti	47	38978.7	1.6	**104.3602**	2.100	2.0	ug/L	36	Standard
	V	51	395536.0	0.9	**50.3846**	0.381	0.8	ug/L	1284	Standard
	Cr	52	403664.8	1.3	**51.7924**	0.179	0.3	ug/L	6503	Standard
	Cr	53	49393.7	0.7	**51.3707**	0.694	1.4	ug/L	492	Standard
	Mn	55	360638.8	1.5	**52.9155**	0.083	0.2	ug/L	841	Standard
	Co	59	340505.3	2.0	**50.7269**	0.441	0.9	ug/L	229	Standard
	Ni	60	97629.2	1.0	**52.1793**	0.372	0.7	ug/L	344	Standard
	Cu	65	97262.5	1.2	**52.2313**	0.507	1.0	ug/L	115	Standard
	Zn	66	57699.0	0.4	**51.3545**	0.692	1.3	ug/L	190	Standard
>	Ge	72	455947.2	1.7				ug/L	409858	Standard
	As	75	58327.6	1.2	**50.6820**	0.482	1.0	ug/L	-22	Standard
	Se	82	5895.0	1.3	**50.1103**	0.397	0.8	ug/L	18	Standard
	Se-1	77	4006.5	1.7	**51.5470**	0.957	1.9	ug/L	50	Standard
>	Ga	71	46.7	6.2				mg/L	97	Standard
	Rb	85	828.4	2.7				ug/L	25	Standard
	Y	89	382174.2	1.8				ug/L	376763	Standard
>	Rh	103	36.7	43.8				ug/L	20	Standard
	Mo	98	258222.6	0.8	**102.3410**	1.203	1.2	ug/L	51	Standard
	Ag	107	329212.7	1.1	**50.4028**	1.029	2.0	ug/L	76	Standard
	Cd	111	104910.2	1.3	**50.5299**	0.587	1.2	mg/L	6	Standard
	Cd	114	258679.1	1.2	**50.9671**	0.928	1.8	ug/L	18	Standard
>	In	115	531108.2	1.0				ug/L	507261	Standard
	Sn	118	291168.3	1.7	**50.6915**	0.534	1.1	ug/L	683	Standard
	Sb	123	228289.4	1.3	**50.8183**	0.854	1.7	ug/L	446	Standard
	Ba	135	99147.7	1.1	**49.7738**	0.251	0.5	ug/L	28	Standard
	Ce	140	468.3	31.0				ug/L	33	Standard
>	Tb	159	796348.2	1.9				ug/L	800803	Standard
	Ho	165	15.0	0.0				ug/L	10	Standard
	Tl	203	393824.6	0.3	**51.5142**	0.264	0.5	ug/L	13	Standard
	Tl	205	351893.0	1.0	**53.1532**	0.636	1.2	ug/L	13	Standard
	Pb	206	246206.3	0.6	**50.1555**	0.275	0.5	ug/L	226	Standard
	Pb	207	224054.8	0.7	**50.2623**	0.350	0.7	ug/L	204	Standard
	Pb	208	951155.7	0.9	**53.3579**	0.526	1.0	ug/L	852	Standard
	U	238	334629.8	1.0	**50.6959**	0.518	1.0	ug/L	13	Standard
>	Bi	209	449162.8	0.3				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	3925.5	6.4	**4.7180**	0.298	6.3	mg/L	58	Standard
K	39	1286.7	7.2	**4.4497**	0.350	7.9	mg/L	27	Standard
Ca	43	105.0	20.8	**5.5423**	1.295	23.4	mg/L	20	Standard
Fe	54	6872.9	4.1	**5.0279**	0.184	3.7	mg/L	158	Standard
Fe	57	2058.5	4.5	**5.4851**	0.346	6.3	mg/L	267	Standard
Sc-1	45	43373.7	1.8				mg/L	38815	Standard
Cl	35	75336.2	1.2				ug/L	57611	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	1873.4	7.7				ug/L	1617	Standard
P	31	23039.2	2.9				ug/L	19244	Standard
S	34	4664.1	1.7				ug/L	3557	Standard
Sr	88	71.7	10.7				ug/L	65	Standard
C	12	43.3	26.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	57.7				mg/L	23	Standard
Dy	164	19.4	52.9				mg/L	13	Standard
Ho-1	165	15.0	0.0				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	9819.8	2.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	113.422		
Al	27	116.167		
Sc	45			
Ti	47	104.360		
V	51	100.769		
Cr	52	103.585		
Cr	53			
Mn	55	105.831		
Co	59	101.454		
Ni	60	104.359		
Cu	65	104.463		
Zn	66	102.709		
Ge	72		111.245	
As	75	101.364		
Se	82	100.221		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	102.341		
Ag	107	100.806		
Cd	111	101.060		
Cd	114			
In	115		104.701	
Sn	118	101.383		
Sb	123	101.637		
Ba	135	99.548		
Ce	140			
Tb	159			
Ho	165			
Tl	203	103.028		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.716		
U	238	101.392		
Bi	209		100.026	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 17:42:45
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56496.8	1.6				ug/L	68501	Standard
	Be	9	30.0	33.3	**0.0595**	0.013	22.5	ug/L	8	Standard
	Al	27	2731.9	35.8	**0.0583**	0.008	13.6	ug/L	1397	Standard
	Sc	45	43056.1	0.8				ug/L	38815	Standard
	Ti	47	37.3	11.2	**0.0731**	0.011	14.7	ug/L	36	Standard
	V	51	1366.4	11.2	**0.0320**	0.018	57.7	ug/L	1284	Standard
	Cr	52	7206.4	0.8	**0.0165**	0.004	24.9	ug/L	6503	Standard
	Cr	53	368.3	21.1	**-0.0286**	0.083	288.7	ug/L	492	Standard
	Mn	55	773.7	9.9	**0.0188**	0.010	55.7	ug/L	841	Standard
	Co	59	257.7	14.0	**0.0442**	0.005	11.6	ug/L	229	Standard
	Ni	60	301.3	5.7	**0.0053**	0.008	154.5	ug/L	344	Standard
	Cu	65	113.7	8.1	**0.0484**	0.005	10.4	ug/L	115	Standard
	Zn	66	152.3	7.9	**0.0237**	0.010	43.4	ug/L	190	Standard
>	**Ge**	72	451631.1	0.7				ug/L	409858	Standard
	As	75	-25.4	107.4	**0.0766**	0.024	31.2	ug/L	-22	Standard
	Se	82	21.4	50.9	**0.1323**	0.094	70.7	ug/L	18	Standard
	Se-1	77	52.0	6.9	**-0.0734**	0.052	71.2	ug/L	50	Standard
>	**Ga**	71	55.0	55.3				mg/L	97	Standard
	Rb	85	26.7	71.0				ug/L	25	Standard
	Y	89	391397.9	1.1				ug/L	376763	Standard
>	**Rh**	103	21.7	26.6				ug/L	20	Standard
	Mo	98	187.7	19.7	**0.1465**	0.015	10.1	ug/L	51	Standard
	Ag	107	145.3	17.2	**0.0455**	0.004	8.7	ug/L	76	Standard
	Cd	111	26.0	68.7	**0.0520**	0.009	16.8	mg/L	6	Standard
	Cd	114	76.7	36.2	**0.0526**	0.006	10.6	ug/L	18	Standard
>	**In**	115	527013.5	0.4				ug/L	507261	Standard
	Sn	118	870.0	8.1	**0.0429**	0.012	27.7	ug/L	683	Standard
	Sb	123	613.8	28.1	**0.1173**	0.038	32.6	ug/L	446	Standard
	Ba	135	45.3	19.0	**0.0387**	0.004	11.5	ug/L	28	Standard
	Ce	140	195.0	30.8				ug/L	33	Standard
>	**Tb**	159	800215.4	0.9				ug/L	800803	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	88.7	35.2	**0.0448**	0.004	8.8	ug/L	13	Standard
	Tl	205	81.7	78.7	**0.0547**	0.009	17.3	ug/L	13	Standard
	Pb	206	256.3	10.8	**0.0475**	0.005	10.8	ug/L	226	Standard
	Pb	207	223.0	12.5	**0.0483**	0.006	11.9	ug/L	204	Standard
	Pb	208	989.0	13.1	**0.0548**	0.007	12.3	ug/L	852	Standard
	U	238	68.3	61.3	**0.0528**	0.006	11.7	ug/L	13	Standard
>	**Bi**	209	454884.7	0.8				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	63.3	37.3	**0.0388**	0.028	72.5	mg/L	58	Standard
K	39	23.3	44.6	**-0.0579**	0.038	65.5	mg/L	27	Standard
Ca	43	15.0	66.7	**-0.2912**	0.662	227.5	mg/L	20	Standard
Fe	54	129.2	8.0	**-0.0227**	0.007	31.7	mg/L	158	Standard
Fe	57	245.0	9.4	**0.0588**	0.063	107.5	mg/L	267	Standard
Sc-1	45	43056.1	0.8				mg/L	38815	Standard
Cl	35	74182.5	1.6				ug/L	57611	Standard
Kr	83	3.7	41.7				ug/L	2	Standard
Br	81	2006.8	7.6				ug/L	1617	Standard
P	31	22273.0	1.7				ug/L	19244	Standard
S	34	4494.0	2.4				ug/L	3557	Standard
Sr	88	88.3	14.2				ug/L	65	Standard
C	12	43.3	35.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	16.2	74.0				mg/L	13	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	10.0	173.2				mg/L	13	Standard
I	127	7897.1	3.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		110.192	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.894
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.301
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Tl	203	

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Method 6020 - Summary Report

Sample ID: L1606129706PS WG574306-03
Sample Date/Time: Wednesday, July 06, 2016 17:45:59
Number of Replicates: 3
Autosampler Position: 235
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	52061.0	2.5				ug/L	68501	Standard
	Be	9	39322.6	1.8	**57.0313**	0.436	0.8	ug/L	8	Standard
	Al	27	346882.7	0.8	**3.2506**	0.058	1.8	ug/L	1397	Standard
	Sc	45	38510.6	2.1				ug/L	38815	Standard
	Ti	47	121.3	8.1	**0.3306**	0.030	9.1	ug/L	36	Standard
	V	51	352822.0	0.3	**49.5734**	0.278	0.6	ug/L	1284	Standard
	Cr	52	363360.0	0.0	**51.4224**	0.353	0.7	ug/L	6503	Standard
	Cr	53	45331.1	2.6	**52.0070**	1.381	2.7	ug/L	492	Standard
	Mn	55	374762.9	0.5	**60.6733**	0.366	0.6	ug/L	841	Standard
	Co	59	297322.9	0.4	**48.8649**	0.481	1.0	ug/L	229	Standard
	Ni	60	88030.0	0.4	**51.8970**	0.116	0.2	ug/L	344	Standard
	Cu	65	89235.3	0.1	**52.8603**	0.282	0.5	ug/L	115	Standard
	Zn	66	60863.7	0.8	**59.7714**	0.851	1.4	ug/L	190	Standard
>	Ge	72	413319.4	0.6				ug/L	409858	Standard
	As	75	56179.5	0.5	**53.8413**	0.457	0.8	ug/L	-22	Standard
	Se	82	6037.9	1.1	**56.6258**	0.899	1.6	ug/L	18	Standard
	Se-1	77	4065.5	1.4	**57.7863**	0.843	1.5	ug/L	50	Standard
>	Ga	71	251.7	12.0				mg/L	97	Standard
	Rb	85	2095.1	9.1				ug/L	25	Standard
	Y	89	352123.4	1.2				ug/L	376763	Standard
>	Rh	103	28.3	20.4				ug/L	20	Standard
	Mo	98	95.7	30.9	**0.1128**	0.013	11.3	ug/L	51	Standard
	Ag	107	302025.2	0.4	**50.3381**	0.232	0.5	ug/L	76	Standard
	Cd	111	100050.8	1.2	**52.4626**	0.368	0.7	mg/L	6	Standard
	Cd	114	244946.2	1.7	**52.5392**	0.964	1.8	ug/L	18	Standard
>	In	115	487818.7	0.7				ug/L	507261	Standard
	Sn	118	375.0	20.8	**-0.0389**	0.014	36.6	ug/L	683	Standard
	Sb	123	169126.9	9.0	**40.9955**	3.876	9.5	ug/L	446	Standard
	Ba	135	96142.1	0.9	**52.5481**	0.525	1.0	ug/L	28	Standard
	Ce	140	16108.6	1.5				ug/L	33	Standard
>	Tb	159	748604.8	0.6				ug/L	800803	Standard
	Ho	165	316.7	22.1				ug/L	10	Standard
	Tl	203	370203.1	1.1	**50.1188**	0.294	0.6	ug/L	13	Standard
	Tl	205	328523.9	1.5	**51.3627**	0.905	1.8	ug/L	13	Standard
	Pb	206	239461.5	0.5	**50.4918**	0.662	1.3	ug/L	226	Standard
	Pb	207	209364.6	0.7	**48.6110**	0.316	0.6	ug/L	204	Standard
	Pb	208	876451.2	0.8	**50.8881**	0.419	0.8	ug/L	852	Standard
	U	238	298587.8	0.7	**46.8254**	0.729	1.6	ug/L	13	Standard
>	Bi	209	433980.1	0.9				ug/L	449044	Standard

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Na	23	1.7	173.2	**0.5802**	16.217	2794.9	mg/L	2	Standard
Mg	24	35.0	51.5	**0.0091**	0.024	262.2	mg/L	58	Standard
K	39	45.0	33.3	**0.0382**	0.056	148.0	mg/L	27	Standard
Ca	43	38.3	30.1	**1.5431**	0.889	57.6	mg/L	20	Standard
Fe	54	291.6	10.8	**0.1255**	0.022	17.4	mg/L	158	Standard
Fe	57	300.0	13.2	**0.3303**	0.113	34.2	mg/L	267	Standard
> **Sc-1**	45	38510.6	2.1				mg/L	38815	Standard
Cl	35	65285.7	1.5				ug/L	57611	Standard
Kr	83	4.0	25.0				ug/L	2	Standard
Br	81	1633.4	20.9				ug/L	1617	Standard
P	31	7273.4	2.6				ug/L	19244	Standard
S	34	4210.6	2.8				ug/L	3557	Standard
Sr	88	91.7	25.8				ug/L	65	Standard
C	12	33.3	69.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	23	Standard
Dy	164	472.9	17.3				mg/L	13	Standard
Ho-1	165	316.7	22.1				mg/L	10	Standard
Er	166	286.7	16.5				mg/L	13	Standard
I	127	6766.5	5.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		76.000	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.845	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.167
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.645
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129706SDL WG574306-04
Sample Date/Time: Wednesday, July 06, 2016 17:49:10
Number of Replicates: 3
Autosampler Position: 236
Sample Description: 250
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51079.4	3.4				ug/L	68501	Standard
	Be	9	31.7	39.7	**0.0660**	0.017	25.9	ug/L	8	Standard
	Al	27	69767.0	1.7	**0.6945**	0.024	3.4	ug/L	1397	Standard
	Sc	45	38154.7	3.2				ug/L	38815	Standard
	Ti	47	41.3	10.1	**0.0953**	0.013	13.3	ug/L	36	Standard
	V	51	1741.8	2.9	**0.1034**	0.007	6.6	ug/L	1284	Standard
	Cr	52	5536.7	1.4	**-0.1292**	0.008	6.3	ug/L	6503	Standard
	Cr	53	206.7	14.8	**-0.1774**	0.037	20.7	ug/L	492	Standard
	Mn	55	11490.7	2.8	**1.7831**	0.047	2.7	ug/L	841	Standard
	Co	59	425.0	3.3	**0.0759**	0.002	2.7	ug/L	229	Standard
	Ni	60	431.7	6.7	**0.0997**	0.016	16.5	ug/L	344	Standard
	Cu	65	174.3	11.2	**0.0909**	0.011	12.5	ug/L	115	Standard
	Zn	66	890.4	7.9	**0.7699**	0.066	8.6	ug/L	190	Standard
>	**Ge**	72	409835.0	0.5				ug/L	409858	Standard
	As	75	-30.4	24.5	**0.0696**	0.007	10.1	ug/L	-22	Standard
	Se	82	18.9	10.9	**0.1272**	0.019	14.6	ug/L	18	Standard
	Se-1	77	53.0	16.8	**0.0104**	0.126	1205.9	ug/L	50	Standard
>	**Ga**	71	66.7	45.8				mg/L	97	Standard
	Rb	85	433.3	9.3				ug/L	25	Standard
	Y	89	346927.3	1.3				ug/L	376763	Standard
>	**Rh**	103	11.7	49.5				ug/L	20	Standard
	Mo	98	94.2	43.0	**0.1127**	0.017	15.4	ug/L	51	Standard
	Ag	107	153.7	12.9	**0.0491**	0.003	7.1	ug/L	76	Standard
	Cd	111	33.5	14.8	**0.0572**	0.002	4.3	mg/L	6	Standard
	Cd	114	58.8	25.2	**0.0502**	0.003	6.3	ug/L	18	Standard
>	**In**	115	479890.1	1.0				ug/L	507261	Standard
	Sn	118	170.0	10.6	**-0.0773**	0.003	4.3	ug/L	683	Standard
	Sb	123	3081.4	22.4	**0.7379**	0.163	22.1	ug/L	446	Standard
	Ba	135	1088.4	1.0	**0.6203**	0.005	0.8	ug/L	28	Standard
	Ce	140	1321.7	27.0				ug/L	33	Standard
>	**Tb**	159	738085.9	0.9				ug/L	800803	Standard
	Ho	165	26.7	39.0				ug/L	10	Standard
	Tl	203	221.3	14.1	**0.0633**	0.004	6.7	ug/L	13	Standard
	Tl	205	156.7	43.3	**0.0670**	0.011	15.8	ug/L	13	Standard
	Pb	206	350.0	3.9	**0.0698**	0.003	4.2	ug/L	226	Standard
	Pb	207	313.7	4.7	**0.0718**	0.003	4.7	ug/L	204	Standard
	Pb	208	1331.7	5.9	**0.0774**	0.005	6.0	ug/L	852	Standard
	U	238	140.0	38.9	**0.0646**	0.009	13.3	ug/L	13	Standard
>	**Bi**	209	433783.9	0.1				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	40.0	12.5	**0.0167**	0.006	38.2	mg/L	58	Standard
K	39	35.0	14.3	**0.0005**	0.024	5012.0	mg/L	27	Standard
Ca	43	15.0	120.2	**-0.1387**	1.386	999.3	mg/L	20	Standard
Fe	54	70.8	18.4	**-0.0600**	0.010	17.1	mg/L	158	Standard
Fe	57	256.7	14.4	**0.1917**	0.099	51.9	mg/L	267	Standard
Sc-1	45	38154.7	3.2				mg/L	38815	Standard
Cl	35	65026.6	1.2				ug/L	57611	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1630.1	9.5				ug/L	1617	Standard
P	31	6834.9	2.7				ug/L	19244	Standard
S	34	4033.9	3.6				ug/L	3557	Standard
Sr	88	63.3	4.6				ug/L	65	Standard
C	12	43.3	48.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	25.0				mg/L	23	Standard
Dy	164	60.9	17.6				mg/L	13	Standard
Ho-1	165	26.7	39.0				mg/L	10	Standard
Er	166	50.0	40.0				mg/L	13	Standard
I	127	7083.3	2.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		74.567	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.994	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.604
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.602
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129706SDL WG574306-04
Report Date/Time: Wednesday, July 06, 2016 17:51:27
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Method 6020 - Summary Report

Sample ID: L1606129707 WG574306-01
Sample Date/Time: Wednesday, July 06, 2016 17:52:22
Number of Replicates: 3
Autosampler Position: 237
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51248.2	2.7				ug/L	68501	Standard
	Be	9	23.3	89.2	**0.0533**	0.030	56.3	ug/L	8	Standard
	Al	27	111147.5	7.0	**1.0806**	0.044	4.1	ug/L	1397	Standard
	Sc	45	38983.5	3.6				ug/L	38815	Standard
	Ti	47	82.7	39.8	**0.2157**	0.100	46.2	ug/L	36	Standard
	V	51	3332.5	0.9	**0.3229**	0.010	3.0	ug/L	1284	Standard
	Cr	52	6723.5	1.3	**0.0297**	0.023	76.2	ug/L	6503	Standard
	Cr	53	306.7	17.6	**-0.0659**	0.063	95.1	ug/L	492	Standard
	Mn	55	63863.7	1.1	**10.2010**	0.042	0.4	ug/L	841	Standard
	Co	59	882.0	4.7	**0.1496**	0.008	5.0	ug/L	229	Standard
	Ni	60	685.7	6.3	**0.2455**	0.028	11.5	ug/L	344	Standard
	Cu	65	1373.7	4.0	**0.7963**	0.041	5.1	ug/L	115	Standard
	Zn	66	3122.3	2.6	**2.9407**	0.042	1.4	ug/L	190	Standard
>	**Ge**	72	415681.5	1.2				ug/L	409858	Standard
	As	75	58.1	52.9	**0.1541**	0.029	18.8	ug/L	-22	Standard
	Se	82	16.9	11.8	**0.1058**	0.017	15.9	ug/L	18	Standard
	Se-1	77	56.7	10.3	**0.0523**	0.082	156.6	ug/L	50	Standard
>	**Ga**	71	146.7	7.9				mg/L	97	Standard
	Rb	85	1408.4	7.1				ug/L	25	Standard
	Y	89	353972.1	0.5				ug/L	376763	Standard
>	**Rh**	103	18.3	41.7				ug/L	20	Standard
	Mo	98	33.9	22.9	**0.0862**	0.004	4.1	ug/L	51	Standard
	Ag	107	107.3	11.7	**0.0409**	0.002	4.7	ug/L	76	Standard
	Cd	111	26.3	31.1	**0.0531**	0.004	7.8	mg/L	6	Standard
	Cd	114	65.6	39.2	**0.0514**	0.005	10.4	ug/L	18	Standard
>	**In**	115	488687.7	1.4				ug/L	507261	Standard
	Sn	118	226.7	19.0	**-0.0671**	0.008	12.4	ug/L	683	Standard
	Sb	123	1265.3	27.9	**0.2867**	0.089	31.2	ug/L	446	Standard
	Ba	135	7176.7	1.4	**3.9306**	0.084	2.1	ug/L	28	Standard
	Ce	140	15084.2	4.7				ug/L	33	Standard
>	**Tb**	159	743253.1	1.0				ug/L	800803	Standard
	Ho	165	210.0	6.3				ug/L	10	Standard
	Tl	203	75.0	26.3	**0.0436**	0.003	6.2	ug/L	13	Standard
	Tl	205	78.3	16.1	**0.0549**	0.002	3.7	ug/L	13	Standard
	Pb	206	3721.1	3.6	**0.7888**	0.029	3.7	ug/L	226	Standard
	Pb	207	3091.0	2.2	**0.7241**	0.015	2.1	ug/L	204	Standard
	Pb	208	13585.7	0.7	**0.7971**	0.007	0.9	ug/L	852	Standard
	U	238	98.0	3.7	**0.0581**	0.001	0.9	ug/L	13	Standard
>	**Bi**	209	429509.1	0.3				ug/L	449044	Standard

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Na	23	1.7	173.2	**0.6077**	16.264	2676.3	mg/L	2	Standard
Mg	24	46.7	16.4	**0.0248**	0.013	50.9	mg/L	58	Standard
K	39	26.7	78.1	**-0.0373**	0.078	209.9	mg/L	27	Standard
Ca	43	31.7	50.8	**0.9958**	1.079	108.3	mg/L	20	Standard
Fe	54	169.2	19.3	**0.0214**	0.030	140.6	mg/L	158	Standard
Fe	57	311.7	19.4	**0.3547**	0.164	46.2	mg/L	267	Standard
> **Sc-1**	45	38983.5	3.6				mg/L	38815	Standard
Cl	35	65585.6	0.8				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1850.1	11.7				ug/L	1617	Standard
P	31	6584.8	4.1				ug/L	19244	Standard
S	34	3993.9	4.2				ug/L	3557	Standard
Sr	88	60.0	38.2				ug/L	65	Standard
C	12	63.3	50.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	23	Standard
Dy	164	407.2	18.9				mg/L	13	Standard
Ho-1	165	210.0	6.3				mg/L	10	Standard
Er	166	266.7	14.2				mg/L	13	Standard
I	127	6713.2	3.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		74.814	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.421	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.339
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.650
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129708S WG574306-04
Sample Date/Time: Wednesday, July 06, 2016 17:55:33
Number of Replicates: 3
Autosampler Position: 238
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51191.4	2.1				ug/L	68501	Standard
	Be	9	456.7	14.9	**0.6931**	0.104	14.9	ug/L	8	Standard
	Al	27	368531.9	1.3	**3.5098**	0.114	3.2	ug/L	1397	Standard
	Sc	45	38654.3	2.0				ug/L	38815	Standard
	Ti	47	150.0	13.3	**0.4155**	0.059	14.1	ug/L	36	Standard
	V	51	8279.9	2.7	**1.0233**	0.024	2.3	ug/L	1284	Standard
	Cr	52	11886.0	0.7	**0.7800**	0.019	2.4	ug/L	6503	Standard
	Cr	53	971.7	9.1	**0.7058**	0.100	14.2	ug/L	492	Standard
	Mn	55	116648.0	0.9	**18.8323**	0.300	1.6	ug/L	841	Standard
	Co	59	4758.4	1.0	**0.7880**	0.011	1.5	ug/L	229	Standard
	Ni	60	2198.5	3.1	**1.1434**	0.051	4.4	ug/L	344	Standard
	Cu	65	1677.8	2.9	**0.9813**	0.022	2.2	ug/L	115	Standard
	Zn	66	3428.7	2.7	**3.2624**	0.100	3.1	ug/L	190	Standard
>	**Ge**	72	413053.1	0.8				ug/L	409858	Standard
	As	75	557.0	5.7	**0.6320**	0.027	4.2	ug/L	-22	Standard
	Se	82	59.8	8.9	**0.5102**	0.047	9.1	ug/L	18	Standard
	Se-1	77	79.3	14.3	**0.3834**	0.155	40.3	ug/L	50	Standard
>	**Ga**	71	475.0	14.8				mg/L	97	Standard
	Rb	85	4023.9	0.7				ug/L	25	Standard
	Y	89	354538.7	1.1				ug/L	376763	Standard
>	**Rh**	103	16.7	34.6				ug/L	20	Standard
	Mo	98	38.8	30.7	**0.0883**	0.005	6.1	ug/L	51	Standard
	Ag	107	3068.3	0.7	**0.5322**	0.005	1.0	ug/L	76	Standard
	Cd	111	1011.0	4.4	**0.5671**	0.029	5.1	mg/L	6	Standard
	Cd	114	2379.9	1.4	**0.5454**	0.011	2.0	ug/L	18	Standard
>	**In**	115	489876.3	1.6				ug/L	507261	Standard
	Sn	118	198.3	31.3	**-0.0724**	0.012	17.2	ug/L	683	Standard
	Sb	123	1135.1	32.9	**0.2543**	0.093	36.6	ug/L	446	Standard
	Ba	135	10341.9	0.8	**5.6440**	0.127	2.3	ug/L	28	Standard
	Ce	140	25015.6	2.1				ug/L	33	Standard
>	**Tb**	159	748391.4	0.7				ug/L	800803	Standard
	Ho	165	353.3	14.3				ug/L	10	Standard
	Tl	203	3619.4	1.4	**0.5242**	0.010	1.8	ug/L	13	Standard
	Tl	205	3225.3	2.9	**0.5476**	0.017	3.2	ug/L	13	Standard
	Pb	206	4699.4	4.3	**0.9890**	0.036	3.7	ug/L	226	Standard
	Pb	207	3997.5	2.3	**0.9292**	0.017	1.9	ug/L	204	Standard
	Pb	208	17494.3	1.6	**1.0181**	0.011	1.1	ug/L	852	Standard
	U	238	3047.3	0.6	**0.5211**	0.002	0.4	ug/L	13	Standard
>	**Bi**	209	432971.0	0.6				ug/L	449044	Standard

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Na	23	1.7	173.2	**0.4512**	15.993	3544.3	mg/L	2	Standard
Mg	24	48.3	39.2	**0.0276**	0.027	96.6	mg/L	58	Standard
K	39	61.7	41.6	**0.1038**	0.097	93.7	mg/L	27	Standard
Ca	43	36.7	15.7	**1.3979**	0.400	28.6	mg/L	20	Standard
Fe	54	485.5	18.9	**0.2870**	0.069	23.9	mg/L	158	Standard
Fe	57	386.7	11.0	**0.6194**	0.147	23.7	mg/L	267	Standard
> **Sc-1**	45	38654.3	2.0				mg/L	38815	Standard
Cl	35	66229.1	0.6				ug/L	57611	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	1640.1	1.1				ug/L	1617	Standard
P	31	7413.5	5.4				ug/L	19244	Standard
S	34	4038.9	0.8				ug/L	3557	Standard
Sr	88	83.3	9.2				ug/L	65	Standard
C	12	26.7	21.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	99.0				mg/L	23	Standard
Dy	164	691.3	10.8				mg/L	13	Standard
Ho-1	165	353.3	14.3				mg/L	10	Standard
Er	166	390.0	13.6				mg/L	13	Standard
I	127	6844.9	3.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		74.731	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.780	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85	
Y	89	
> Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
> In	115	96.573
Sn	118	
Sb	123	
Ba	135	
Ce	140	
> Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
> Bi	209	96.421
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
> Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 07, 2016

Method 6020 - Summary Report

Sample ID: L1606129709SD WG574306-05
Sample Date/Time: Wednesday, July 06, 2016 17:58:44
Number of Replicates: 3
Autosampler Position: 239
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50474.0	3.7				ug/L	68501	Standard
	Be	9	410.0	12.7	**0.6334**	0.085	13.4	ug/L	8	Standard
	Al	27	110523.8	4.2	**1.0928**	0.068	6.2	ug/L	1397	Standard
	Sc	45	38594.1	2.2				ug/L	38815	Standard
	Ti	47	104.0	5.4	**0.2765**	0.018	6.6	ug/L	36	Standard
	V	51	6697.0	1.6	**0.7904**	0.016	2.1	ug/L	1284	Standard
	Cr	52	9874.2	1.2	**0.4752**	0.026	5.4	ug/L	6503	Standard
	Cr	53	716.7	5.9	**0.4021**	0.047	11.6	ug/L	492	Standard
	Mn	55	32613.7	2.7	**5.1415**	0.174	3.4	ug/L	841	Standard
	Co	59	3776.8	1.7	**0.6201**	0.014	2.3	ug/L	229	Standard
	Ni	60	1462.1	1.1	**0.6984**	0.005	0.8	ug/L	344	Standard
	Cu	65	1586.7	1.5	**0.9177**	0.017	1.8	ug/L	115	Standard
	Zn	66	2979.0	1.6	**2.7891**	0.060	2.2	ug/L	190	Standard
>	**Ge**	72	417395.3	0.7				ug/L	409858	Standard
	As	75	608.0	6.0	**0.6750**	0.037	5.5	ug/L	-22	Standard
	Se	82	67.3	11.2	**0.5741**	0.074	12.9	ug/L	18	Standard
	Se-1	77	82.7	9.8	**0.4197**	0.112	26.7	ug/L	50	Standard
>	**Ga**	71	180.0	12.1				mg/L	97	Standard
	Rb	85	1421.7	5.1				ug/L	25	Standard
	Y	89	354281.1	1.0				ug/L	376763	Standard
>	**Rh**	103	13.3	43.3				ug/L	20	Standard
	Mo	98	40.9	50.3	**0.0891**	0.009	9.8	ug/L	51	Standard
	Ag	107	3037.6	5.9	**0.5279**	0.026	4.9	ug/L	76	Standard
	Cd	111	1061.0	6.0	**0.5939**	0.029	4.8	mg/L	6	Standard
	Cd	114	2592.4	5.7	**0.5917**	0.027	4.6	ug/L	18	Standard
>	**In**	115	488883.1	0.9				ug/L	507261	Standard
	Sn	118	291.7	30.7	**-0.0549**	0.017	30.3	ug/L	683	Standard
	Sb	123	1181.2	24.2	**0.2650**	0.067	25.2	ug/L	446	Standard
	Ba	135	5083.9	4.4	**2.7871**	0.107	3.8	ug/L	28	Standard
	Ce	140	14129.9	2.8				ug/L	33	Standard
>	**Tb**	159	743713.8	1.2				ug/L	800803	Standard
	Ho	165	243.3	11.3				ug/L	10	Standard
	Tl	203	3550.1	4.9	**0.5153**	0.021	4.0	ug/L	13	Standard
	Tl	205	3118.7	2.7	**0.5315**	0.016	3.1	ug/L	13	Standard
	Pb	206	4004.2	1.4	**0.8433**	0.006	0.7	ug/L	226	Standard
	Pb	207	3411.7	1.3	**0.7940**	0.016	2.0	ug/L	204	Standard
	Pb	208	14769.9	0.5	**0.8607**	0.008	0.9	ug/L	852	Standard
	U	238	2870.9	1.4	**0.4941**	0.010	2.0	ug/L	13	Standard
>	**Bi**	209	432422.4	0.8				ug/L	449044	Standard

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Na	23	1.7	173.2	**0.5319**	16.133	3033.1	mg/L	2	Standard
Mg	24	38.3	19.9	**0.0138**	0.010	71.2	mg/L	58	Standard
K	39	35.0	57.1	**-0.0026**	0.077	2940.7	mg/L	27	Standard
Ca	43	30.0	50.0	**0.9064**	1.056	116.5	mg/L	20	Standard
Fe	54	176.0	9.1	**0.0280**	0.015	53.5	mg/L	158	Standard
Fe	57	306.7	10.5	**0.3522**	0.110	31.3	mg/L	267	Standard
> **Sc-1**	45	38594.1	2.2				mg/L	38815	Standard
Cl	35	65870.2	1.0				ug/L	57611	Standard
Kr	83	3.7	41.7				ug/L	2	Standard
Br	81	1676.8	6.4				ug/L	1617	Standard
P	31	6811.5	4.4				ug/L	19244	Standard
S	34	3892.2	5.0				ug/L	3557	Standard
Sr	88	63.3	35.6				ug/L	65	Standard
C	12	40.0	43.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	23	Standard
Dy	164	400.9	15.7				mg/L	13	Standard
Ho-1	165	243.3	11.3				mg/L	10	Standard
Er	166	190.0	32.0				mg/L	13	Standard
I	127	6444.7	3.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		73.683	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.839	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129709SD WG574306-05
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.377
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.298
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129709SD WG574306-05
Report Date/Time: Wednesday, July 06, 2016 18:01:01
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Method 6020 - Summary Report

Sample ID: L1606129710
Sample Date/Time: Wednesday, July 06, 2016 18:01:56
Number of Replicates: 3
Autosampler Position: 240
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50694.8	5.0				ug/L	68501	Standard
	Be	9	23.3	44.6	**0.0544**	0.017	30.4	ug/L	8	Standard
	Al	27	211106.2	2.8	**2.0456**	0.049	2.4	ug/L	1397	Standard
	Sc	45	38264.9	1.5				ug/L	38815	Standard
	Ti	47	83.7	9.1	**0.2178**	0.022	10.1	ug/L	36	Standard
	V	51	2417.0	1.9	**0.1944**	0.007	3.8	ug/L	1284	Standard
	Cr	52	6348.3	0.6	**-0.0247**	0.006	22.6	ug/L	6503	Standard
	Cr	53	258.3	17.5	**-0.1216**	0.053	43.2	ug/L	492	Standard
	Mn	55	63628.7	0.8	**10.1580**	0.084	0.8	ug/L	841	Standard
	Co	59	574.3	2.6	**0.0993**	0.002	2.3	ug/L	229	Standard
	Ni	60	527.7	5.4	**0.1523**	0.016	10.8	ug/L	344	Standard
	Cu	65	252.3	5.2	**0.1353**	0.008	6.0	ug/L	115	Standard
	Zn	66	1691.8	2.2	**1.5409**	0.039	2.5	ug/L	190	Standard
>	**Ge**	72	415881.7	0.3				ug/L	409858	Standard
	As	75	-24.7	122.3	**0.0754**	0.029	38.2	ug/L	-22	Standard
	Se	82	17.5	32.4	**0.1117**	0.053	47.4	ug/L	18	Standard
	Se-1	77	56.7	18.9	**0.0522**	0.155	295.9	ug/L	50	Standard
>	**Ga**	71	123.3	10.2				mg/L	97	Standard
	Rb	85	903.4	10.2				ug/L	25	Standard
	Y	89	349426.8	0.6				ug/L	376763	Standard
>	**Rh**	103	15.0	57.7				ug/L	20	Standard
	Mo	98	37.0	15.6	**0.0875**	0.002	2.8	ug/L	51	Standard
	Ag	107	85.3	14.5	**0.0373**	0.002	5.5	ug/L	76	Standard
	Cd	111	9.9	46.2	**0.0446**	0.002	5.4	mg/L	6	Standard
	Cd	114	20.2	56.9	**0.0417**	0.002	5.9	ug/L	18	Standard
>	**In**	115	488396.8	0.4				ug/L	507261	Standard
	Sn	118	241.7	16.7	**-0.0643**	0.008	11.8	ug/L	683	Standard
	Sb	123	676.4	23.5	**0.1434**	0.038	26.8	ug/L	446	Standard
	Ba	135	3064.6	1.1	**1.6882**	0.015	0.9	ug/L	28	Standard
	Ce	140	9409.6	3.5				ug/L	33	Standard
>	**Tb**	159	744362.4	1.0				ug/L	800803	Standard
	Ho	165	175.0	9.9				ug/L	10	Standard
	Tl	203	42.7	34.8	**0.0392**	0.002	5.1	ug/L	13	Standard
	Tl	205	30.0	33.3	**0.0473**	0.002	3.3	ug/L	13	Standard
	Pb	206	661.3	6.5	**0.1366**	0.008	6.0	ug/L	226	Standard
	Pb	207	567.7	4.1	**0.1319**	0.005	3.6	ug/L	204	Standard
	Pb	208	2453.4	2.1	**0.1438**	0.002	1.6	ug/L	852	Standard
	U	238	68.7	7.3	**0.0535**	0.001	1.6	ug/L	13	Standard
>	**Bi**	209	430131.5	0.6				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	65.0	33.5	**0.0511**	0.031	60.0	mg/L	58	Standard
K	39	28.3	27.0	**-0.0270**	0.032	120.1	mg/L	27	Standard
Ca	43	20.0	75.0	**0.2066**	1.119	541.6	mg/L	20	Standard
Fe	54	127.8	19.6	**-0.0119**	0.020	165.0	mg/L	158	Standard
Fe	57	263.3	4.4	**0.2137**	0.033	15.5	mg/L	267	Standard
> **Sc-1**	45	38264.9	1.5				mg/L	38815	Standard
Cl	35	65564.9	1.1				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1613.4	6.0				ug/L	1617	Standard
P	31	6929.9	2.6				ug/L	19244	Standard
S	34	3928.8	1.5				ug/L	3557	Standard
Sr	88	76.7	22.9				ug/L	65	Standard
C	12	36.7	15.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	23	Standard
Dy	164	234.6	36.6				mg/L	13	Standard
Ho-1	165	175.0	9.9				mg/L	10	Standard
Er	166	183.3	35.1				mg/L	13	Standard
I	127	6321.3	1.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		74.006	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.470	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.281
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.788
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129711
Sample Date/Time: Wednesday, July 06, 2016 18:05:07
Number of Replicates: 3
Autosampler Position: 241
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50754.9	2.2				ug/L	68501	Standard
	Be	9	15.0	33.3	**0.0419**	0.008	18.8	ug/L	8	Standard
	Al	27	183332.5	0.4	**1.7784**	0.046	2.6	ug/L	1397	Standard
	Sc	45	37919.1	1.8				ug/L	38815	Standard
	Ti	47	69.7	10.1	**0.1784**	0.021	11.6	ug/L	36	Standard
	V	51	2453.4	3.6	**0.2024**	0.014	6.8	ug/L	1284	Standard
	Cr	52	6402.0	1.2	**-0.0091**	0.014	151.7	ug/L	6503	Standard
	Cr	53	266.7	6.6	**-0.1094**	0.021	19.0	ug/L	492	Standard
	Mn	55	36825.0	0.9	**5.8894**	0.074	1.2	ug/L	841	Standard
	Co	59	582.3	7.8	**0.1014**	0.008	7.6	ug/L	229	Standard
	Ni	60	536.3	5.0	**0.1602**	0.017	10.5	ug/L	344	Standard
	Cu	65	306.7	13.1	**0.1689**	0.024	14.4	ug/L	115	Standard
	Zn	66	2348.8	3.0	**2.2031**	0.076	3.5	ug/L	190	Standard
>	**Ge**	72	412357.7	0.3				ug/L	409858	Standard
	As	75	-25.4	36.6	**0.0746**	0.009	11.8	ug/L	-22	Standard
	Se	82	13.4	35.5	**0.0744**	0.045	60.1	ug/L	18	Standard
	Se-1	77	51.3	15.7	**-0.0182**	0.115	632.7	ug/L	50	Standard
>	**Ga**	71	115.0	30.1				mg/L	97	Standard
	Rb	85	766.7	3.1				ug/L	25	Standard
	Y	89	352987.1	1.9				ug/L	376763	Standard
>	**Rh**	103	11.7	49.5				ug/L	20	Standard
	Mo	98	33.6	40.7	**0.0860**	0.006	6.8	ug/L	51	Standard
	Ag	107	103.0	24.8	**0.0402**	0.004	10.5	ug/L	76	Standard
	Cd	111	15.3	49.9	**0.0474**	0.004	8.3	mg/L	6	Standard
	Cd	114	50.3	53.6	**0.0481**	0.006	11.9	ug/L	18	Standard
>	**In**	115	488095.7	0.6				ug/L	507261	Standard
	Sn	118	175.0	20.6	**-0.0769**	0.007	8.8	ug/L	683	Standard
	Sb	123	600.2	31.8	**0.1249**	0.045	36.4	ug/L	446	Standard
	Ba	135	2511.9	2.3	**1.3873**	0.023	1.6	ug/L	28	Standard
	Ce	140	10036.7	3.1				ug/L	33	Standard
>	**Tb**	159	743862.7	0.4				ug/L	800803	Standard
	Ho	165	233.3	12.2				ug/L	10	Standard
	Tl	203	53.3	68.4	**0.0405**	0.005	12.1	ug/L	13	Standard
	Tl	205	48.3	110.6	**0.0501**	0.008	16.7	ug/L	13	Standard
	Pb	206	710.4	11.0	**0.1459**	0.016	11.2	ug/L	226	Standard
	Pb	207	563.0	9.3	**0.1298**	0.012	9.0	ug/L	204	Standard
	Pb	208	2506.1	5.9	**0.1457**	0.008	5.7	ug/L	852	Standard
	U	238	57.0	28.2	**0.0516**	0.002	4.8	ug/L	13	Standard
>	**Bi**	209	433560.5	0.7				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	36.7	15.7	**0.0124**	0.007	59.7	mg/L	58	Standard
K	39	40.0	25.0	**0.0209**	0.038	181.0	mg/L	27	Standard
Ca	43	31.7	24.1	**1.0837**	0.598	55.2	mg/L	20	Standard
Fe	54	129.3	10.3	**-0.0095**	0.010	101.4	mg/L	158	Standard
Fe	57	325.0	11.6	**0.4318**	0.109	25.3	mg/L	267	Standard
> **Sc-1**	45	37919.1	1.8				mg/L	38815	Standard
Cl	35	65636.5	0.4				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1646.8	7.3				ug/L	1617	Standard
P	31	6866.6	2.8				ug/L	19244	Standard
S	34	4128.9	4.7				ug/L	3557	Standard
Sr	88	71.7	35.8				ug/L	65	Standard
C	12	33.3	17.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	23	Standard
Dy	164	276.8	15.7				mg/L	13	Standard
Ho-1	165	233.3	12.2				mg/L	10	Standard
Er	166	206.7	34.0				mg/L	13	Standard
I	127	6129.6	0.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		74.093	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.610	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.222
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.552
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129712
Sample Date/Time: Wednesday, July 06, 2016 18:08:18
Number of Replicates: 3
Autosampler Position: 242
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50335.2	2.7				ug/L	68501	Standard
	Be	9	18.3	15.7	**0.0470**	0.005	10.6	ug/L	8	Standard
	Al	27	215415.6	1.0	**2.1004**	0.037	1.7	ug/L	1397	Standard
	Sc	45	38381.9	1.8				ug/L	38815	Standard
	Ti	47	60.3	5.3	**0.1507**	0.008	5.4	ug/L	36	Standard
	V	51	3357.9	2.5	**0.3301**	0.014	4.2	ug/L	1284	Standard
	Cr	52	6864.9	1.2	**0.0575**	0.017	30.3	ug/L	6503	Standard
	Cr	53	286.7	22.8	**-0.0866**	0.075	86.1	ug/L	492	Standard
	Mn	55	47490.3	1.4	**7.6213**	0.154	2.0	ug/L	841	Standard
	Co	59	909.0	0.9	**0.1552**	0.001	0.4	ug/L	229	Standard
	Ni	60	721.0	3.8	**0.2695**	0.016	5.9	ug/L	344	Standard
	Cu	65	403.0	1.3	**0.2260**	0.005	2.4	ug/L	115	Standard
	Zn	66	1975.8	1.6	**1.8347**	0.040	2.2	ug/L	190	Standard
>	**Ge**	72	412470.3	1.0				ug/L	409858	Standard
	As	75	31.9	13.5	**0.1295**	0.004	3.3	ug/L	-22	Standard
	Se	82	17.4	8.7	**0.1126**	0.015	13.5	ug/L	18	Standard
	Se-1	77	45.0	25.6	**-0.1084**	0.173	159.5	ug/L	50	Standard
>	**Ga**	71	148.3	15.9				mg/L	97	Standard
	Rb	85	1413.4	1.1				ug/L	25	Standard
	Y	89	355079.6	1.3				ug/L	376763	Standard
>	**Rh**	103	21.7	35.3				ug/L	20	Standard
	Mo	98	20.8	25.7	**0.0806**	0.002	2.8	ug/L	51	Standard
	Ag	107	73.0	9.6	**0.0354**	0.001	3.2	ug/L	76	Standard
	Cd	111	6.6	8.6	**0.0429**	0.000	0.7	mg/L	6	Standard
	Cd	114	20.9	33.3	**0.0419**	0.002	3.6	ug/L	18	Standard
>	**In**	115	483721.6	0.7				ug/L	507261	Standard
	Sn	118	213.3	19.9	**-0.0693**	0.008	11.5	ug/L	683	Standard
	Sb	123	539.2	27.8	**0.1113**	0.036	32.3	ug/L	446	Standard
	Ba	135	4478.0	0.8	**2.4832**	0.009	0.3	ug/L	28	Standard
	Ce	140	17977.3	3.2				ug/L	33	Standard
>	**Tb**	159	746978.8	0.4				ug/L	800803	Standard
	Ho	165	251.7	13.5				ug/L	10	Standard
	Tl	203	17.3	17.6	**0.0357**	0.000	1.2	ug/L	13	Standard
	Tl	205	23.3	61.9	**0.0462**	0.002	5.0	ug/L	13	Standard
	Pb	206	1045.0	1.4	**0.2194**	0.003	1.4	ug/L	226	Standard
	Pb	207	882.0	2.6	**0.2066**	0.005	2.6	ug/L	204	Standard
	Pb	208	3909.9	0.4	**0.2303**	0.000	0.1	ug/L	852	Standard
	U	238	73.3	9.1	**0.0543**	0.001	2.0	ug/L	13	Standard
>	**Bi**	209	427989.3	0.3				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	30.2	**0.0188**	0.018	96.0	mg/L	58	Standard
K	39	33.3	70.9	**-0.0063**	0.098	1546.5	mg/L	27	Standard
Ca	43	15.0	66.7	**-0.1831**	0.717	391.6	mg/L	20	Standard
Fe	54	209.2	17.9	**0.0570**	0.033	57.1	mg/L	158	Standard
Fe	57	285.0	7.6	**0.2853**	0.087	30.4	mg/L	267	Standard
> **Sc-1**	45	38381.9	1.8				mg/L	38815	Standard
Cl	35	64770.8	1.6				ug/L	57611	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	1600.1	5.6				ug/L	1617	Standard
P	31	6721.5	5.0				ug/L	19244	Standard
S	34	3827.2	4.3				ug/L	3557	Standard
Sr	88	76.7	13.6				ug/L	65	Standard
C	12	23.3	24.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	23	Standard
Dy	164	426.8	9.3				mg/L	13	Standard
Ho-1	165	251.7	13.5				mg/L	10	Standard
Er	166	276.7	32.6				mg/L	13	Standard
I	127	6603.1	2.1				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		73.481	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.637	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.360
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.311
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129712
Report Date/Time: Wednesday, July 06, 2016 18:10:35
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Method 6020 - Summary Report

Sample ID: L1606129713
Sample Date/Time: Wednesday, July 06, 2016 18:11:30
Number of Replicates: 3
Autosampler Position: 243
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49761.6	2.9				ug/L	68501	Standard
	Be	9	16.7	17.3	**0.0447**	0.004	8.0	ug/L	8	Standard
	Al	27	115065.3	0.5	**1.1513**	0.034	2.9	ug/L	1397	Standard
	Sc	45	37810.5	0.3				ug/L	38815	Standard
	Ti	47	105.3	4.9	**0.2866**	0.015	5.4	ug/L	36	Standard
	V	51	3530.3	1.5	**0.3586**	0.009	2.5	ug/L	1284	Standard
	Cr	52	7133.3	2.4	**0.1049**	0.027	25.4	ug/L	6503	Standard
	Cr	53	420.0	21.7	**0.0724**	0.107	148.4	ug/L	492	Standard
	Mn	55	50677.6	0.5	**8.2081**	0.064	0.8	ug/L	841	Standard
	Co	59	768.4	0.7	**0.1331**	0.001	0.7	ug/L	229	Standard
	Ni	60	628.0	4.0	**0.2175**	0.015	6.7	ug/L	344	Standard
	Cu	65	765.7	2.5	**0.4451**	0.010	2.2	ug/L	115	Standard
	Zn	66	3143.0	1.5	**3.0116**	0.058	1.9	ug/L	190	Standard
>	**Ge**	72	409013.8	0.4				ug/L	409858	Standard
	As	75	56.6	69.8	**0.1536**	0.038	24.9	ug/L	-22	Standard
	Se	82	14.1	32.3	**0.0827**	0.043	52.2	ug/L	18	Standard
	Se-1	77	48.7	8.3	**-0.0506**	0.061	121.0	ug/L	50	Standard
>	**Ga**	71	178.3	9.0				mg/L	97	Standard
	Rb	85	1400.1	8.4				ug/L	25	Standard
	Y	89	346257.1	1.1				ug/L	376763	Standard
>	**Rh**	103	21.7	13.3				ug/L	20	Standard
	Mo	98	39.5	18.5	**0.0886**	0.003	3.5	ug/L	51	Standard
	Ag	107	102.3	20.3	**0.0402**	0.004	8.7	ug/L	76	Standard
	Cd	111	61.3	15.2	**0.0716**	0.005	7.0	mg/L	6	Standard
	Cd	114	112.7	18.4	**0.0616**	0.004	7.2	ug/L	18	Standard
>	**In**	115	485884.7	0.3				ug/L	507261	Standard
	Sn	118	211.7	20.1	**-0.0697**	0.008	11.5	ug/L	683	Standard
	Sb	123	494.9	23.2	**0.1000**	0.028	27.5	ug/L	446	Standard
	Ba	135	5100.2	1.4	**2.8135**	0.039	1.4	ug/L	28	Standard
	Ce	140	13969.8	3.7				ug/L	33	Standard
>	**Tb**	159	740578.5	1.6				ug/L	800803	Standard
	Ho	165	228.3	7.0				ug/L	10	Standard
	Tl	203	33.3	49.9	**0.0379**	0.002	6.1	ug/L	13	Standard
	Tl	205	23.3	81.1	**0.0462**	0.003	6.5	ug/L	13	Standard
	Pb	206	4522.7	3.0	**0.9547**	0.035	3.7	ug/L	226	Standard
	Pb	207	3741.1	1.9	**0.8721**	0.023	2.7	ug/L	204	Standard
	Pb	208	16474.8	2.1	**0.9616**	0.028	2.9	ug/L	852	Standard
	U	238	62.0	21.8	**0.0524**	0.002	4.1	ug/L	13	Standard
>	**Bi**	209	431770.2	0.8				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	55.0	9.1	**0.0381**	0.007	18.2	mg/L	58	Standard
K	39	51.7	14.8	**0.0696**	0.031	44.3	mg/L	27	Standard
Ca	43	35.0	14.3	**1.3352**	0.372	27.8	mg/L	20	Standard
Fe	54	132.7	26.7	**-0.0061**	0.031	500.8	mg/L	158	Standard
Fe	57	271.7	4.6	**0.2533**	0.046	18.1	mg/L	267	Standard
> **Sc-1**	45	37810.5	0.3				mg/L	38815	Standard
Cl	35	65102.2	0.6				ug/L	57611	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1543.4	1.0				ug/L	1617	Standard
P	31	6598.1	0.9				ug/L	19244	Standard
S	34	3738.8	4.5				ug/L	3557	Standard
Sr	88	60.0	28.9				ug/L	65	Standard
C	12	40.0	43.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	23	Standard
Dy	164	348.0	17.2				mg/L	13	Standard
Ho-1	165	228.3	7.0				mg/L	10	Standard
Er	166	180.0	41.9				mg/L	13	Standard
I	127	6603.1	2.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		72.643	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.794	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.786
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.153
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129714
Sample Date/Time: Wednesday, July 06, 2016 18:14:41
Number of Replicates: 3
Autosampler Position: 244
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50039.2	2.4				ug/L	68501	Standard
	Be	9	13.3	94.4	**0.0397**	0.019	48.8	ug/L	8	Standard
	Al	27	298991.3	0.5	**2.9188**	0.070	2.4	ug/L	1397	Standard
	Sc	45	38122.9	0.7				ug/L	38815	Standard
	Ti	47	166.7	6.2	**0.4716**	0.032	6.7	ug/L	36	Standard
	V	51	3977.0	4.8	**0.4242**	0.024	5.7	ug/L	1284	Standard
	Cr	52	7631.6	1.3	**0.1818**	0.022	12.3	ug/L	6503	Standard
	Cr	53	421.7	6.1	**0.0761**	0.031	40.8	ug/L	492	Standard
	Mn	55	62384.2	1.3	**10.1648**	0.070	0.7	ug/L	841	Standard
	Co	59	1085.4	5.6	**0.1864**	0.009	4.9	ug/L	229	Standard
	Ni	60	966.4	3.8	**0.4220**	0.026	6.2	ug/L	344	Standard
	Cu	65	440.0	5.6	**0.2511**	0.013	5.2	ug/L	115	Standard
	Zn	66	2042.1	4.2	**1.9247**	0.087	4.5	ug/L	190	Standard
>	**Ge**	72	407467.1	0.7				ug/L	409858	Standard
	As	75	39.9	63.0	**0.1377**	0.025	17.9	ug/L	-22	Standard
	Se	82	20.6	24.9	**0.1454**	0.050	34.3	ug/L	18	Standard
	Se-1	77	51.0	9.8	**-0.0143**	0.068	476.2	ug/L	50	Standard
>	**Ga**	71	275.0	4.8				mg/L	97	Standard
	Rb	85	2116.8	7.7				ug/L	25	Standard
	Y	89	347005.1	2.4				ug/L	376763	Standard
>	**Rh**	103	13.3	21.7				ug/L	20	Standard
	Mo	98	39.7	31.0	**0.0889**	0.005	5.9	ug/L	51	Standard
	Ag	107	79.3	14.1	**0.0365**	0.002	5.0	ug/L	76	Standard
	Cd	111	3.3	35.1	**0.0411**	0.001	1.5	mg/L	6	Standard
	Cd	114	13.4	19.7	**0.0403**	0.001	1.4	ug/L	18	Standard
>	**In**	115	481126.5	1.0				ug/L	507261	Standard
	Sn	118	183.3	26.9	**-0.0748**	0.009	12.4	ug/L	683	Standard
	Sb	123	489.1	28.0	**0.0996**	0.033	32.8	ug/L	446	Standard
	Ba	135	3839.5	1.3	**2.1428**	0.020	0.9	ug/L	28	Standard
	Ce	140	17111.3	4.6				ug/L	33	Standard
>	**Tb**	159	731912.0	0.9				ug/L	800803	Standard
	Ho	165	248.3	22.6				ug/L	10	Standard
	Tl	203	18.0	20.0	**0.0358**	0.000	1.3	ug/L	13	Standard
	Tl	205	36.7	92.8	**0.0483**	0.005	10.9	ug/L	13	Standard
	Pb	206	988.0	8.2	**0.2061**	0.015	7.2	ug/L	226	Standard
	Pb	207	789.4	4.2	**0.1839**	0.006	3.4	ug/L	204	Standard
	Pb	208	3493.2	5.0	**0.2047**	0.008	3.9	ug/L	852	Standard
	U	238	71.0	33.8	**0.0538**	0.004	6.8	ug/L	13	Standard
>	**Bi**	209	429968.6	1.1				ug/L	449044	Standard

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Na	23	1.7	173.2	**0.3994**	15.904	3981.5	mg/L	2	Standard
Mg	24	36.7	56.8	**0.0121**	0.028	234.3	mg/L	58	Standard
K	39	36.7	7.9	**0.0069**	0.011	154.1	mg/L	27	Standard
Ca	43	26.7	47.2	**0.6938**	0.919	132.4	mg/L	20	Standard
Fe	54	318.9	15.1	**0.1514**	0.039	25.9	mg/L	158	Standard
Fe	57	351.7	13.5	**0.5176**	0.156	30.2	mg/L	267	Standard
> **Sc-1**	45	38122.9	0.7				mg/L	38815	Standard
Cl	35	64778.2	1.0				ug/L	57611	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	1553.4	14.8				ug/L	1617	Standard
P	31	6536.4	3.0				ug/L	19244	Standard
S	34	3808.8	6.3				ug/L	3557	Standard
Sr	88	81.7	40.8				ug/L	65	Standard
C	12	40.0	90.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	398.3	4.1				mg/L	13	Standard
Ho-1	165	248.3	22.6				mg/L	10	Standard
Er	166	313.3	13.3				mg/L	13	Standard
I	127	6079.6	3.3				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		73.049	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.417	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.848
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.752
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 18:17:55
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	54024.5	1.3				ug/L	68501	Standard
	Be	9	40169.9	2.9	**56.1283**	0.922	1.6	ug/L	8	Standard
	Al	27	6551308.5	0.6	**58.5425**	0.397	0.7	ug/L	1397	Standard
	Sc	45	42979.2	3.3				ug/L	38815	Standard
	Ti	47	38471.8	2.2	**105.7272**	1.558	1.5	ug/L	36	Standard
	V	51	387365.7	0.3	**50.6573**	0.316	0.6	ug/L	1284	Standard
	Cr	52	393336.6	1.6	**51.8098**	0.574	1.1	ug/L	6503	Standard
	Cr	53	48883.7	0.9	**52.1960**	0.426	0.8	ug/L	492	Standard
	Mn	55	351248.3	1.5	**52.9139**	0.978	1.8	ug/L	841	Standard
	Co	59	330751.7	0.9	**50.5900**	0.617	1.2	ug/L	229	Standard
	Ni	60	94988.8	0.8	**52.1212**	0.782	1.5	ug/L	344	Standard
	Cu	65	94496.8	0.9	**52.0968**	0.601	1.2	ug/L	115	Standard
	Zn	66	56465.0	1.0	**51.5913**	0.693	1.3	ug/L	190	Standard
>	Ge	72	444111.1	0.9				ug/L	409858	Standard
	As	75	56881.0	0.2	**50.7406**	0.409	0.8	ug/L	-22	Standard
	Se	82	5659.7	1.3	**49.3953**	1.039	2.1	ug/L	18	Standard
	Se-1	77	3934.8	1.9	**51.9754**	0.965	1.9	ug/L	50	Standard
>	Ga	71	63.3	12.1				mg/L	97	Standard
	Rb	85	791.7	16.0				ug/L	25	Standard
	Y	89	378356.6	1.6				ug/L	376763	Standard
>	Rh	103	31.7	9.1				ug/L	20	Standard
	Mo	98	250588.8	1.2	**101.8789**	1.315	1.3	ug/L	51	Standard
	Ag	107	320660.5	1.6	**50.3603**	1.102	2.2	ug/L	76	Standard
	Cd	111	103525.7	0.4	**51.1518**	0.364	0.7	mg/L	6	Standard
	Cd	114	252584.7	0.9	**51.0493**	0.583	1.1	ug/L	18	Standard
>	In	115	517728.7	0.8				ug/L	507261	Standard
	Sn	118	283510.6	2.4	**50.6309**	0.871	1.7	ug/L	683	Standard
	Sb	123	222186.6	0.8	**50.7357**	0.494	1.0	ug/L	446	Standard
	Ba	135	97423.9	1.0	**50.1717**	0.147	0.3	ug/L	28	Standard
	Ce	140	245.0	5.4				ug/L	33	Standard
>	Tb	159	787196.4	1.1				ug/L	800803	Standard
	Ho	165	13.3	57.3				ug/L	10	Standard
	Tl	203	390883.9	0.5	**51.3380**	0.249	0.5	ug/L	13	Standard
	Tl	205	344356.0	0.7	**52.2281**	0.549	1.1	ug/L	13	Standard
	Pb	206	242793.9	0.2	**49.6623**	0.143	0.3	ug/L	226	Standard
	Pb	207	219389.0	1.0	**49.4158**	0.332	0.7	ug/L	204	Standard
	Pb	208	936979.2	0.8	**52.7777**	0.597	1.1	ug/L	852	Standard
	U	238	329537.5	0.4	**50.1290**	0.317	0.6	ug/L	13	Standard
>	Bi	209	447337.3	0.3				ug/L	449044	Standard

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Na	23	1.7	173.2	**-0.2714**	14.742	5432.3	mg/L	2	Standard
Mg	24	3770.5	0.9	**4.5762**	0.194	4.2	mg/L	58	Standard
K	39	1251.7	8.8	**4.3649**	0.370	8.5	mg/L	27	Standard
Ca	43	105.0	26.5	**5.6632**	2.047	36.2	mg/L	20	Standard
Fe	54	6656.7	3.8	**4.9191**	0.344	7.0	mg/L	158	Standard
Fe	57	1763.4	5.5	**4.6571**	0.458	9.8	mg/L	267	Standard
> **Sc-1**	45	42979.2	3.3				mg/L	38815	Standard
Cl	35	73216.5	0.1				ug/L	57611	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	1880.1	6.8				ug/L	1617	Standard
P	31	22333.1	1.9				ug/L	19244	Standard
S	34	4467.3	1.5				ug/L	3557	Standard
Sr	88	61.7	20.4				ug/L	65	Standard
C	12	36.7	56.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	86.6				mg/L	23	Standard
Dy	164	9.4	3.0				mg/L	13	Standard
Ho-1	165	13.3	57.3				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	9071.0	1.0				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	112.257		
	Al	27	117.085		
	Sc	45			
	Ti	47	105.727		
	V	51	101.315		
	Cr	52	103.620		
	Cr	53			
	Mn	55	105.828		
	Co	59	101.180		
	Ni	60	104.242		
	Cu	65	104.194		
	Zn	66	103.183		
>	Ge	72		108.357	
	As	75	101.481		
	Se	82	98.791		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.879		
Ag	107	100.721		
Cd	111	102.304		
Cd	114			
In	115		102.064	
Sn	118	101.262		
Sb	123	101.471		
Ba	135	100.343		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.676		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.555		
U	238	100.258		
Bi	209		99.620	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 18:21:06
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53853.9	2.1				ug/L	68501	Standard
	Be	9	15.0	33.3	**0.0404**	0.007	16.8	ug/L	8	Standard
	Al	27	1768.4	11.1	**0.0509**	0.002	3.4	ug/L	1397	Standard
	Sc	45	40911.9	2.8				ug/L	38815	Standard
	Ti	47	37.3	10.1	**0.0755**	0.011	15.1	ug/L	36	Standard
	V	51	1313.5	5.0	**0.0293**	0.011	37.3	ug/L	1284	Standard
	Cr	52	7003.6	1.7	**0.0114**	0.018	158.3	ug/L	6503	Standard
	Cr	53	368.3	10.2	**-0.0194**	0.043	223.1	ug/L	492	Standard
	Mn	55	702.7	6.6	**0.0108**	0.006	59.0	ug/L	841	Standard
	Co	59	223.7	10.0	**0.0399**	0.004	9.9	ug/L	229	Standard
	Ni	60	302.0	2.3	**0.0095**	0.002	20.4	ug/L	344	Standard
	Cu	65	109.0	1.8	**0.0472**	0.001	3.1	ug/L	115	Standard
	Zn	66	139.3	9.0	**0.0149**	0.010	66.2	ug/L	190	Standard
>	**Ge**	72	441370.6	1.5				ug/L	409858	Standard
	As	75	-46.1	48.3	**0.0575**	0.020	35.0	ug/L	-22	Standard
	Se	82	9.6	47.9	**0.0324**	0.039	121.7	ug/L	18	Standard
	Se-1	77	57.0	0.0	**0.0098**	0.011	116.4	ug/L	50	Standard
>	**Ga**	71	38.3	27.2				mg/L	97	Standard
	Rb	85	30.0	28.9				ug/L	25	Standard
	Y	89	377601.0	1.0				ug/L	376763	Standard
>	**Rh**	103	20.0	25.0				ug/L	20	Standard
	Mo	98	144.9	13.3	**0.1298**	0.007	5.7	ug/L	51	Standard
	Ag	107	94.0	11.1	**0.0377**	0.002	4.1	ug/L	76	Standard
	Cd	111	11.7	44.9	**0.0451**	0.003	5.7	mg/L	6	Standard
	Cd	114	44.2	78.5	**0.0462**	0.007	15.0	ug/L	18	Standard
>	**In**	115	523143.8	0.8				ug/L	507261	Standard
	Sn	118	836.7	10.2	**0.0382**	0.016	41.2	ug/L	683	Standard
	Sb	123	689.1	33.4	**0.1356**	0.053	39.0	ug/L	446	Standard
	Ba	135	32.0	12.5	**0.0321**	0.002	6.4	ug/L	28	Standard
	Ce	140	78.3	25.8				ug/L	33	Standard
>	**Tb**	159	783160.6	1.3				ug/L	800803	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	56.7	8.9	**0.0407**	0.001	1.5	ug/L	13	Standard
	Tl	205	43.3	33.3	**0.0491**	0.002	4.4	ug/L	13	Standard
	Pb	206	250.3	3.1	**0.0469**	0.002	3.3	ug/L	226	Standard
	Pb	207	202.3	12.0	**0.0442**	0.005	11.8	ug/L	204	Standard
	Pb	208	864.7	5.7	**0.0485**	0.003	5.2	ug/L	852	Standard
	U	238	41.7	42.1	**0.0489**	0.003	5.4	ug/L	13	Standard
>	**Bi**	209	449825.1	0.5				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	45.0	44.4	**0.0195**	0.025	130.1	mg/L	58	Standard
K	39	28.3	20.4	**-0.0342**	0.025	73.9	mg/L	27	Standard
Ca	43	18.3	68.6	**0.0010**	0.903	88278.4	mg/L	20	Standard
Fe	54	179.1	16.9	**0.0223**	0.027	118.7	mg/L	158	Standard
Fe	57	268.3	2.2	**0.1727**	0.043	24.9	mg/L	267	Standard
> **Sc-1**	45	40911.9	2.8				mg/L	38815	Standard
Cl	35	71267.2	1.2				ug/L	57611	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1836.8	5.5				ug/L	1617	Standard
P	31	21515.3	2.4				ug/L	19244	Standard
S	34	4337.3	1.0				ug/L	3557	Standard
Sr	88	85.0	17.6				ug/L	65	Standard
C	12	46.7	61.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	23	Standard
Dy	164	19.4	88.0				mg/L	13	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	7335.1	3.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.689	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.131
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.174
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Tl	203	

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Method 6020 - Summary Report

Sample ID: L1606129715
Sample Date/Time: Wednesday, July 06, 2016 18:24:19
Number of Replicates: 3
Autosampler Position: 245
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51096.1	3.4				ug/L	68501	Standard
	Be	9	26.7	39.0	**0.0592**	0.016	27.6	ug/L	8	Standard
	Al	27	148208.1	1.5	**1.4356**	0.057	3.9	ug/L	1397	Standard
	Sc	45	37817.2	2.3				ug/L	38815	Standard
	Ti	47	67.3	15.5	**0.1741**	0.030	17.0	ug/L	36	Standard
	V	51	2738.4	3.5	**0.2479**	0.012	4.9	ug/L	1284	Standard
	Cr	52	5883.1	4.0	**-0.0725**	0.032	44.2	ug/L	6503	Standard
	Cr	53	275.0	16.2	**-0.0957**	0.050	51.8	ug/L	492	Standard
	Mn	55	31313.0	0.6	**5.0634**	0.058	1.2	ug/L	841	Standard
	Co	59	696.0	7.5	**0.1217**	0.009	7.3	ug/L	229	Standard
	Ni	60	595.3	3.5	**0.2000**	0.014	7.1	ug/L	344	Standard
	Cu	65	462.0	6.3	**0.2649**	0.019	7.3	ug/L	115	Standard
	Zn	66	1771.8	2.4	**1.6578**	0.039	2.4	ug/L	190	Standard
>	**Ge**	72	406781.1	0.8				ug/L	409858	Standard
	As	75	-2.5	307.1	**0.0964**	0.008	7.9	ug/L	-22	Standard
	Se	82	14.4	23.6	**0.0856**	0.032	37.8	ug/L	18	Standard
	Se-1	77	49.7	10.1	**-0.0320**	0.077	241.4	ug/L	50	Standard
>	**Ga**	71	133.3	15.2				mg/L	97	Standard
	Rb	85	1070.0	12.2				ug/L	25	Standard
	Y	89	342977.7	1.9				ug/L	376763	Standard
>	**Rh**	103	10.0	86.6				ug/L	20	Standard
	Mo	98	69.0	6.1	**0.1021**	0.002	1.8	ug/L	51	Standard
	Ag	107	75.0	15.1	**0.0359**	0.002	5.1	ug/L	76	Standard
	Cd	111	10.5	22.1	**0.0450**	0.001	2.9	mg/L	6	Standard
	Cd	114	30.6	59.6	**0.0441**	0.004	9.2	ug/L	18	Standard
>	**In**	115	475398.0	0.9				ug/L	507261	Standard
	Sn	118	288.3	20.8	**-0.0540**	0.011	20.7	ug/L	683	Standard
	Sb	123	904.8	33.4	**0.2044**	0.074	36.3	ug/L	446	Standard
	Ba	135	3854.2	0.5	**2.1767**	0.015	0.7	ug/L	28	Standard
	Ce	140	14745.5	3.6				ug/L	33	Standard
>	**Tb**	159	732486.7	1.4				ug/L	800803	Standard
	Ho	165	231.7	6.6				ug/L	10	Standard
	Tl	203	26.3	32.7	**0.0370**	0.001	3.2	ug/L	13	Standard
	Tl	205	26.7	75.8	**0.0468**	0.003	6.8	ug/L	13	Standard
	Pb	206	1241.1	6.3	**0.2624**	0.017	6.3	ug/L	226	Standard
	Pb	207	1051.0	1.6	**0.2474**	0.003	1.0	ug/L	204	Standard
	Pb	208	4456.3	3.3	**0.2635**	0.008	2.9	ug/L	852	Standard
	U	238	51.3	13.8	**0.0508**	0.001	2.1	ug/L	13	Standard
>	**Bi**	209	426274.4	0.6				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	38.3	37.7	**0.0152**	0.021	140.9	mg/L	58	Standard
K	39	41.7	42.1	**0.0281**	0.069	245.2	mg/L	27	Standard
Ca	43	38.3	27.2	**1.5938**	0.839	52.6	mg/L	20	Standard
Fe	54	157.6	18.0	**0.0155**	0.027	174.3	mg/L	158	Standard
Fe	57	308.3	20.9	**0.3760**	0.197	52.3	mg/L	267	Standard
> **Sc-1**	45	37817.2	2.3				mg/L	38815	Standard
Cl	35	64603.4	0.9				ug/L	57611	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1573.4	6.8				ug/L	1617	Standard
P	31	6883.2	4.2				ug/L	19244	Standard
S	34	4027.2	3.2				ug/L	3557	Standard
Sr	88	95.0	13.9				ug/L	65	Standard
C	12	16.7	69.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	23	Standard
Dy	164	343.9	15.8				mg/L	13	Standard
Ho-1	165	231.7	6.6				mg/L	10	Standard
Er	166	266.7	12.1				mg/L	13	Standard
I	127	5834.5	3.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		74.592	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.249	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.719
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.929
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129716
Sample Date/Time: Wednesday, July 06, 2016 18:27:31
Number of Replicates: 3
Autosampler Position: 246
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49923.8	3.3				ug/L	68501	Standard
	Be	9	18.3	56.8	**0.0475**	0.017	35.4	ug/L	8	Standard
	Al	27	230733.6	0.6	**2.2666**	0.081	3.6	ug/L	1397	Standard
	Sc	45	37661.8	1.0				ug/L	38815	Standard
	Ti	47	113.7	12.5	**0.3124**	0.041	13.3	ug/L	36	Standard
	V	51	2650.5	1.4	**0.2344**	0.006	2.6	ug/L	1284	Standard
	Cr	52	6503.1	1.7	**0.0160**	0.013	79.2	ug/L	6503	Standard
	Cr	53	336.7	7.6	**-0.0240**	0.029	120.3	ug/L	492	Standard
	Mn	55	28933.6	2.8	**4.6595**	0.134	2.9	ug/L	841	Standard
	Co	59	727.0	2.8	**0.1266**	0.004	3.0	ug/L	229	Standard
	Ni	60	734.0	4.0	**0.2822**	0.019	6.7	ug/L	344	Standard
	Cu	65	281.7	2.1	**0.1559**	0.003	2.0	ug/L	115	Standard
	Zn	66	1718.8	0.7	**1.6006**	0.010	0.6	ug/L	190	Standard
>	**Ge**	72	407782.6	0.3				ug/L	409858	Standard
	As	75	29.7	102.1	**0.1278**	0.030	23.1	ug/L	-22	Standard
	Se	82	15.2	18.7	**0.0932**	0.027	29.3	ug/L	18	Standard
	Se-1	77	49.3	15.5	**-0.0391**	0.109	279.2	ug/L	50	Standard
>	**Ga**	71	208.3	25.2				mg/L	97	Standard
	Rb	85	1360.1	2.6				ug/L	25	Standard
	Y	89	349773.2	1.1				ug/L	376763	Standard
>	**Rh**	103	13.3	21.7				ug/L	20	Standard
	Mo	98	77.6	13.8	**0.1054**	0.005	4.4	ug/L	51	Standard
	Ag	107	74.3	11.2	**0.0356**	0.001	3.8	ug/L	76	Standard
	Cd	111	4.9	41.3	**0.0419**	0.001	2.5	mg/L	6	Standard
	Cd	114	14.6	85.5	**0.0405**	0.003	6.7	ug/L	18	Standard
>	**In**	115	482015.0	1.1				ug/L	507261	Standard
	Sn	118	201.7	20.8	**-0.0713**	0.008	11.8	ug/L	683	Standard
	Sb	123	673.6	33.4	**0.1453**	0.057	39.1	ug/L	446	Standard
	Ba	135	2231.8	3.5	**1.2502**	0.051	4.1	ug/L	28	Standard
	Ce	140	11809.6	4.9				ug/L	33	Standard
>	**Tb**	159	735033.6	0.2				ug/L	800803	Standard
	Ho	165	191.7	30.5				ug/L	10	Standard
	Tl	203	24.3	43.6	**0.0367**	0.001	4.0	ug/L	13	Standard
	Tl	205	21.7	35.3	**0.0460**	0.001	2.7	ug/L	13	Standard
	Pb	206	652.0	1.7	**0.1367**	0.003	2.2	ug/L	226	Standard
	Pb	207	554.0	8.6	**0.1306**	0.011	8.3	ug/L	204	Standard
	Pb	208	2402.7	3.9	**0.1429**	0.006	4.1	ug/L	852	Standard
	U	238	57.7	18.7	**0.0519**	0.002	3.4	ug/L	13	Standard
>	**Bi**	209	424036.1	0.4				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	46.7	22.3	**0.0268**	0.015	55.3	mg/L	58	Standard
K	39	35.0	37.8	**0.0023**	0.056	2456.1	mg/L	27	Standard
Ca	43	26.7	57.3	**0.7245**	1.158	159.8	mg/L	20	Standard
Fe	54	184.2	20.5	**0.0385**	0.032	82.0	mg/L	158	Standard
Fe	57	346.7	0.8	**0.5155**	0.007	1.4	mg/L	267	Standard
> **Sc-1**	45	37661.8	1.0				mg/L	38815	Standard
Cl	35	64539.9	1.7				ug/L	57611	Standard
Kr	83	2.3	99.0				ug/L	2	Standard
Br	81	1656.8	7.8				ug/L	1617	Standard
P	31	6881.6	2.3				ug/L	19244	Standard
S	34	4020.5	2.0				ug/L	3557	Standard
Sr	88	70.0	18.9				ug/L	65	Standard
C	12	23.3	24.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	23	Standard
Dy	164	317.2	20.1				mg/L	13	Standard
Ho-1	165	191.7	30.5				mg/L	10	Standard
Er	166	196.7	29.8				mg/L	13	Standard
I	127	5742.8	1.8				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		72.880	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.494	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.023
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.431
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606129716
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Method 6020 - Summary Report

Sample ID: L1606129717
Sample Date/Time: Wednesday, July 06, 2016 18:30:42
Number of Replicates: 3
Autosampler Position: 247
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49927.2	4.0				ug/L	68501	Standard
	Be	9	6.7	86.6	**0.0295**	0.009	29.5	ug/L	8	Standard
	Al	27	176079.0	1.1	**1.7381**	0.061	3.5	ug/L	1397	Standard
	Sc	45	37752.0	1.9				ug/L	38815	Standard
	Ti	47	66.7	17.6	**0.1708**	0.035	20.7	ug/L	36	Standard
	V	51	2034.0	1.8	**0.1449**	0.004	2.4	ug/L	1284	Standard
	Cr	52	5892.5	3.0	**-0.0777**	0.022	28.4	ug/L	6503	Standard
	Cr	53	233.3	5.4	**-0.1465**	0.014	9.9	ug/L	492	Standard
	Mn	55	27870.3	0.4	**4.4613**	0.044	1.0	ug/L	841	Standard
	Co	59	460.7	4.3	**0.0818**	0.004	4.5	ug/L	229	Standard
	Ni	60	475.3	4.0	**0.1257**	0.013	10.3	ug/L	344	Standard
	Cu	65	199.0	7.8	**0.1056**	0.009	8.7	ug/L	115	Standard
	Zn	66	1356.7	2.9	**1.2325**	0.031	2.5	ug/L	190	Standard
>	**Ge**	72	409883.6	0.6				ug/L	409858	Standard
	As	75	-13.7	138.1	**0.0856**	0.018	21.4	ug/L	-22	Standard
	Se	82	18.9	14.6	**0.1275**	0.025	19.9	ug/L	18	Standard
	Se-1	77	45.7	12.6	**-0.0955**	0.087	91.6	ug/L	50	Standard
>	**Ga**	71	91.7	39.5				mg/L	97	Standard
	Rb	85	566.7	12.2				ug/L	25	Standard
	Y	89	345220.3	0.5				ug/L	376763	Standard
>	**Rh**	103	25.0	40.0				ug/L	20	Standard
	Mo	98	35.3	42.3	**0.0869**	0.007	7.5	ug/L	51	Standard
	Ag	107	78.7	26.0	**0.0364**	0.003	9.5	ug/L	76	Standard
	Cd	111	6.3	97.1	**0.0427**	0.003	7.6	mg/L	6	Standard
	Cd	114	16.3	120.1	**0.0409**	0.004	10.4	ug/L	18	Standard
>	**In**	115	482875.6	0.6				ug/L	507261	Standard
	Sn	118	201.7	24.1	**-0.0714**	0.009	13.1	ug/L	683	Standard
	Sb	123	493.0	35.1	**0.1003**	0.042	42.1	ug/L	446	Standard
	Ba	135	2040.1	1.5	**1.1419**	0.022	1.9	ug/L	28	Standard
	Ce	140	8042.1	7.0				ug/L	33	Standard
>	**Tb**	159	739223.8	0.5				ug/L	800803	Standard
	Ho	165	156.7	24.8				ug/L	10	Standard
	Tl	203	24.3	80.8	**0.0367**	0.003	7.4	ug/L	13	Standard
	Tl	205	16.7	124.9	**0.0452**	0.003	7.3	ug/L	13	Standard
	Pb	206	573.0	3.0	**0.1186**	0.004	3.5	ug/L	226	Standard
	Pb	207	492.3	5.0	**0.1149**	0.006	5.4	ug/L	204	Standard
	Pb	208	2010.1	6.7	**0.1185**	0.008	7.0	ug/L	852	Standard
	U	238	45.0	35.3	**0.0498**	0.003	5.1	ug/L	13	Standard
>	**Bi**	209	427779.3	0.6				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	52.0	**0.0221**	0.031	142.3	mg/L	58	Standard
K	39	25.0	52.9	**-0.0397**	0.053	132.2	mg/L	27	Standard
Ca	43	40.0	33.1	**1.7146**	0.988	57.6	mg/L	20	Standard
Fe	54	87.6	38.5	**-0.0445**	0.030	67.3	mg/L	158	Standard
Fe	57	243.3	8.3	**0.1569**	0.062	39.5	mg/L	267	Standard
> **Sc-1**	45	37752.0	1.9				mg/L	38815	Standard
Cl	35	64779.5	1.0				ug/L	57611	Standard
Kr	83	1.0	173.2				ug/L	2	Standard
Br	81	1533.4	1.5				ug/L	1617	Standard
P	31	7010.0	1.3				ug/L	19244	Standard
S	34	4125.6	2.1				ug/L	3557	Standard
Sr	88	75.0	41.6				ug/L	65	Standard
C	12	30.0	57.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	23	Standard
Dy	164	253.9	13.7				mg/L	13	Standard
Ho-1	165	156.7	24.8				mg/L	10	Standard
Er	166	126.7	27.7				mg/L	13	Standard
I	127	5844.5	1.1				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		72.885	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.006	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.193
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.264
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129718
Sample Date/Time: Wednesday, July 06, 2016 18:33:53
Number of Replicates: 3
Autosampler Position: 248
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49219.9	3.6				ug/L	68501	Standard
	Be	9	21.7	48.0	**0.0524**	0.015	29.0	ug/L	8	Standard
	Al	27	198461.6	1.9	**1.9826**	0.097	4.9	ug/L	1397	Standard
	Sc	45	37516.4	1.7				ug/L	38815	Standard
	Ti	47	71.3	2.1	**0.1863**	0.005	2.7	ug/L	36	Standard
	V	51	2505.0	3.4	**0.2146**	0.013	6.0	ug/L	1284	Standard
	Cr	52	6002.2	1.2	**-0.0548**	0.018	32.5	ug/L	6503	Standard
	Cr	53	295.0	2.9	**-0.0719**	0.012	17.2	ug/L	492	Standard
	Mn	55	48746.3	0.9	**7.9365**	0.123	1.6	ug/L	841	Standard
	Co	59	629.0	5.7	**0.1105**	0.005	4.7	ug/L	229	Standard
	Ni	60	634.3	3.6	**0.2235**	0.015	6.7	ug/L	344	Standard
	Cu	65	303.3	2.5	**0.1694**	0.006	3.6	ug/L	115	Standard
	Zn	66	1702.4	1.3	**1.5886**	0.017	1.1	ug/L	190	Standard
>	**Ge**	72	406757.2	0.8				ug/L	409858	Standard
	As	75	26.9	60.5	**0.1251**	0.016	12.8	ug/L	-22	Standard
	Se	82	15.2	34.0	**0.0937**	0.050	53.0	ug/L	18	Standard
	Se-1	77	48.0	21.8	**-0.0562**	0.155	275.7	ug/L	50	Standard
>	**Ga**	71	121.7	29.7				mg/L	97	Standard
	Rb	85	888.4	3.7				ug/L	25	Standard
	Y	89	349047.3	1.9				ug/L	376763	Standard
>	**Rh**	103	21.7	26.6				ug/L	20	Standard
	Mo	98	40.6	35.4	**0.0894**	0.006	7.0	ug/L	51	Standard
	Ag	107	68.3	1.7	**0.0347**	0.000	0.5	ug/L	76	Standard
	Cd	111	7.6	27.3	**0.0434**	0.001	2.6	mg/L	6	Standard
	Cd	114	11.2	115.1	**0.0398**	0.003	7.0	ug/L	18	Standard
>	**In**	115	477932.0	0.3				ug/L	507261	Standard
	Sn	118	205.0	16.0	**-0.0704**	0.006	9.0	ug/L	683	Standard
	Sb	123	472.3	24.8	**0.0965**	0.029	29.8	ug/L	446	Standard
	Ba	135	2835.6	3.8	**1.5971**	0.059	3.7	ug/L	28	Standard
	Ce	140	10725.5	3.5				ug/L	33	Standard
>	**Tb**	159	732266.0	0.3				ug/L	800803	Standard
	Ho	165	195.0	10.3				ug/L	10	Standard
	Tl	203	22.7	26.6	**0.0365**	0.001	2.3	ug/L	13	Standard
	Tl	205	18.3	31.5	**0.0455**	0.001	2.0	ug/L	13	Standard
	Pb	206	728.7	6.0	**0.1531**	0.010	6.5	ug/L	226	Standard
	Pb	207	589.7	3.5	**0.1389**	0.005	3.8	ug/L	204	Standard
	Pb	208	2571.8	4.1	**0.1528**	0.006	4.0	ug/L	852	Standard
	U	238	45.7	19.9	**0.0499**	0.001	3.0	ug/L	13	Standard
>	**Bi**	209	424407.0	0.4				ug/L	449044	Standard

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Na	23	1.7	173.2	**0.5085**	16.093	3164.5	mg/L	2	Standard
Mg	24	58.3	32.5	**0.0436**	0.028	64.4	mg/L	58	Standard
K	39	28.3	10.2	**-0.0249**	0.013	52.9	mg/L	27	Standard
Ca	43	46.7	16.4	**2.2408**	0.637	28.4	mg/L	20	Standard
Fe	54	164.4	5.2	**0.0222**	0.006	27.5	mg/L	158	Standard
Fe	57	271.7	12.0	**0.2595**	0.099	38.0	mg/L	267	Standard
> **Sc-1**	45	37516.4	1.7				mg/L	38815	Standard
Cl	35	64231.2	0.9				ug/L	57611	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	1653.4	10.1				ug/L	1617	Standard
P	31	6803.2	2.7				ug/L	19244	Standard
S	34	4030.5	4.2				ug/L	3557	Standard
Sr	88	73.3	20.8				ug/L	65	Standard
C	12	36.7	83.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	23	Standard
Dy	164	291.2	29.4				mg/L	13	Standard
Ho-1	165	195.0	10.3				mg/L	10	Standard
Er	166	183.3	13.7				mg/L	13	Standard
I	127	5851.1	1.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		71.853	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.243	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.218
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.513
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129719
Sample Date/Time: Wednesday, July 06, 2016 18:37:05
Number of Replicates: 3
Autosampler Position: 249
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49597.7	1.7				ug/L	68501	Standard
	Be	9	20.0	50.0	**0.0498**	0.015	29.6	ug/L	8	Standard
	Al	27	178365.5	1.1	**1.7702**	0.019	1.1	ug/L	1397	Standard
	Sc	45	38361.8	1.5				ug/L	38815	Standard
	Ti	47	106.3	3.9	**0.2933**	0.013	4.4	ug/L	36	Standard
	V	51	3584.6	1.2	**0.3723**	0.006	1.7	ug/L	1284	Standard
	Cr	52	8956.0	2.3	**0.3854**	0.023	6.0	ug/L	6503	Standard
	Cr	53	613.3	13.7	**0.3062**	0.095	31.0	ug/L	492	Standard
	Mn	55	52415.2	1.1	**8.5929**	0.076	0.9	ug/L	841	Standard
	Co	59	1118.7	2.1	**0.1934**	0.005	2.8	ug/L	229	Standard
	Ni	60	857.4	3.9	**0.3605**	0.017	4.8	ug/L	344	Standard
	Cu	65	1218.0	1.7	**0.7246**	0.017	2.4	ug/L	115	Standard
	Zn	66	2914.9	3.0	**2.8183**	0.075	2.7	ug/L	190	Standard
>	**Ge**	72	404299.3	0.7				ug/L	409858	Standard
	As	75	83.7	20.3	**0.1808**	0.017	9.4	ug/L	-22	Standard
	Se	82	20.3	22.4	**0.1438**	0.044	30.9	ug/L	18	Standard
	Se-1	77	47.7	20.2	**-0.0567**	0.146	256.9	ug/L	50	Standard
>	**Ga**	71	268.3	13.5				mg/L	97	Standard
	Rb	85	2543.5	5.6				ug/L	25	Standard
	Y	89	349884.6	1.8				ug/L	376763	Standard
>	**Rh**	103	15.0	57.7				ug/L	20	Standard
	Mo	98	40.2	17.9	**0.0892**	0.003	3.4	ug/L	51	Standard
	Ag	107	86.0	9.5	**0.0377**	0.001	3.4	ug/L	76	Standard
	Cd	111	242.6	4.4	**0.1687**	0.007	3.9	mg/L	6	Standard
	Cd	114	556.3	15.0	**0.1587**	0.018	11.6	ug/L	18	Standard
>	**In**	115	479494.0	0.9				ug/L	507261	Standard
	Sn	118	201.7	12.5	**-0.0711**	0.005	7.3	ug/L	683	Standard
	Sb	123	449.3	33.4	**0.0905**	0.037	41.0	ug/L	446	Standard
	Ba	135	7131.3	1.5	**3.9802**	0.073	1.8	ug/L	28	Standard
	Ce	140	17274.8	3.3				ug/L	33	Standard
>	**Tb**	159	731573.9	0.5				ug/L	800803	Standard
	Ho	165	271.7	13.3				ug/L	10	Standard
	Tl	203	22.0	4.5	**0.0364**	0.000	0.4	ug/L	13	Standard
	Tl	205	21.7	26.6	**0.0460**	0.001	2.0	ug/L	13	Standard
	Pb	206	12640.9	1.7	**2.7274**	0.067	2.5	ug/L	226	Standard
	Pb	207	10629.1	0.7	**2.5278**	0.032	1.3	ug/L	204	Standard
	Pb	208	45996.3	0.4	**2.7365**	0.011	0.4	ug/L	852	Standard
	U	238	52.7	14.3	**0.0511**	0.001	2.2	ug/L	13	Standard
>	**Bi**	209	423536.2	0.7				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	30.0	16.7	**0.0028**	0.007	265.9	mg/L	58	Standard
K	39	33.3	60.6	**-0.0076**	0.080	1062.8	mg/L	27	Standard
Ca	43	35.0	24.7	**1.2944**	0.612	47.3	mg/L	20	Standard
Fe	54	275.8	22.7	**0.1135**	0.054	47.1	mg/L	158	Standard
Fe	57	321.7	11.9	**0.4080**	0.116	28.3	mg/L	267	Standard
Sc-1	45	38361.8	1.5				mg/L	38815	Standard
Cl	35	63609.3	1.6				ug/L	57611	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1613.4	3.4				ug/L	1617	Standard
P	31	6818.2	1.7				ug/L	19244	Standard
S	34	3835.5	3.1				ug/L	3557	Standard
Sr	88	88.3	18.2				ug/L	65	Standard
C	12	43.3	13.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	23	Standard
Dy	164	365.0	17.7				mg/L	13	Standard
Ho-1	165	271.7	13.3				mg/L	10	Standard
Er	166	243.3	16.6				mg/L	13	Standard
I	127	5821.1	6.6				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		72.404	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.644	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.526
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.320
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129720
Sample Date/Time: Wednesday, July 06, 2016 18:40:16
Number of Replicates: 3
Autosampler Position: 250
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49808.5	3.5				ug/L	68501	Standard
	Be	9	18.3	31.5	**0.0471**	0.008	16.3	ug/L	8	Standard
	Al	27	322343.2	1.3	**3.1588**	0.066	2.1	ug/L	1397	Standard
	Sc	45	38503.9	1.9				ug/L	38815	Standard
	Ti	47	85.7	8.8	**0.2272**	0.020	8.8	ug/L	36	Standard
	V	51	3356.6	1.5	**0.3328**	0.012	3.6	ug/L	1284	Standard
	Cr	52	6512.4	1.2	**0.0124**	0.010	83.1	ug/L	6503	Standard
	Cr	53	368.3	14.5	**0.0105**	0.058	554.5	ug/L	492	Standard
	Mn	55	54600.9	0.9	**8.8309**	0.108	1.2	ug/L	841	Standard
	Co	59	857.4	4.2	**0.1475**	0.006	4.2	ug/L	229	Standard
	Ni	60	713.4	0.7	**0.2676**	0.004	1.6	ug/L	344	Standard
	Cu	65	474.0	6.3	**0.2699**	0.018	6.8	ug/L	115	Standard
	Zn	66	1859.8	2.3	**1.7316**	0.052	3.0	ug/L	190	Standard
>	**Ge**	72	409950.0	1.0				ug/L	409858	Standard
	As	75	28.0	87.6	**0.1258**	0.023	18.6	ug/L	-22	Standard
	Se	82	16.9	34.9	**0.1084**	0.055	50.7	ug/L	18	Standard
	Se-1	77	47.3	10.8	**-0.0712**	0.082	115.0	ug/L	50	Standard
>	**Ga**	71	210.0	13.3				mg/L	97	Standard
	Rb	85	1438.4	5.3				ug/L	25	Standard
	Y	89	348052.6	1.2				ug/L	376763	Standard
>	**Rh**	103	11.7	24.7				ug/L	20	Standard
	Mo	98	34.6	40.8	**0.0867**	0.006	7.3	ug/L	51	Standard
	Ag	107	66.7	5.7	**0.0343**	0.001	2.1	ug/L	76	Standard
	Cd	111	11.6	17.9	**0.0455**	0.001	2.5	mg/L	6	Standard
	Cd	114	40.9	25.9	**0.0462**	0.002	5.2	ug/L	18	Standard
>	**In**	115	482584.0	1.5				ug/L	507261	Standard
	Sn	118	216.7	34.6	**-0.0684**	0.015	21.8	ug/L	683	Standard
	Sb	123	404.8	28.3	**0.0791**	0.029	37.1	ug/L	446	Standard
	Ba	135	8081.8	0.6	**4.4800**	0.057	1.3	ug/L	28	Standard
	Ce	140	15314.4	4.4				ug/L	33	Standard
>	**Tb**	159	724958.7	0.5				ug/L	800803	Standard
	Ho	165	230.0	12.1				ug/L	10	Standard
	Tl	203	18.3	34.6	**0.0359**	0.001	2.4	ug/L	13	Standard
	Tl	205	25.0	34.6	**0.0465**	0.001	2.9	ug/L	13	Standard
	Pb	206	948.7	3.6	**0.1994**	0.007	3.4	ug/L	226	Standard
	Pb	207	786.0	2.5	**0.1846**	0.005	2.6	ug/L	204	Standard
	Pb	208	3433.5	2.8	**0.2028**	0.005	2.5	ug/L	852	Standard
	U	238	79.0	5.1	**0.0552**	0.001	1.1	ug/L	13	Standard
>	**Bi**	209	426681.8	0.3				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	35.0	37.8	**0.0096**	0.019	193.4	mg/L	58	Standard
K	39	35.0	37.8	**-0.0016**	0.051	3125.7	mg/L	27	Standard
Ca	43	36.7	43.8	**1.3977**	1.125	80.5	mg/L	20	Standard
Fe	54	200.7	14.4	**0.0489**	0.022	45.4	mg/L	158	Standard
Fe	57	295.0	12.2	**0.3148**	0.117	37.0	mg/L	267	Standard
Sc-1	45	38503.9	1.9				mg/L	38815	Standard
Cl	35	64110.0	0.9				ug/L	57611	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1486.7	6.9				ug/L	1617	Standard
P	31	6881.6	0.9				ug/L	19244	Standard
S	34	3978.9	4.5				ug/L	3557	Standard
Sr	88	86.7	27.3				ug/L	65	Standard
C	12	50.0	60.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	23	Standard
Dy	164	457.7	22.7				mg/L	13	Standard
Ho-1	165	230.0	12.1				mg/L	10	Standard
Er	166	256.7	25.9				mg/L	13	Standard
I	127	5424.3	2.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		72.712	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.022	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.135
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.020
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606145201
Sample Date/Time: Wednesday, July 06, 2016 18:43:28
Number of Replicates: 3
Autosampler Position: 251
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49942.2	2.4				ug/L	68501	Standard
	Be	9	13.3	21.7	**0.0396**	0.004	10.5	ug/L	8	Standard
	Al	27	301632.8	0.2	**2.9500**	0.071	2.4	ug/L	1397	Standard
	Sc	45	37337.6	0.6				ug/L	38815	Standard
	Ti	47	30.0	25.2	**0.0620**	0.022	36.3	ug/L	36	Standard
	V	51	1297.4	5.0	**0.0413**	0.011	25.7	ug/L	1284	Standard
	Cr	52	5952.5	2.6	**-0.0642**	0.028	43.2	ug/L	6503	Standard
	Cr	53	440.0	7.1	**0.0973**	0.038	38.6	ug/L	492	Standard
	Mn	55	44039.2	0.4	**7.1434**	0.022	0.3	ug/L	841	Standard
	Co	59	640.3	1.6	**0.1122**	0.002	1.7	ug/L	229	Standard
	Ni	60	375.0	10.2	**0.0671**	0.024	35.3	ug/L	344	Standard
	Cu	65	91.7	13.2	**0.0417**	0.007	16.5	ug/L	115	Standard
	Zn	66	1720.1	1.2	**1.6022**	0.016	1.0	ug/L	190	Standard
>	**Ge**	72	407710.2	0.7				ug/L	409858	Standard
	As	75	-3.9	410.5	**0.0951**	0.015	16.3	ug/L	-22	Standard
	Se	82	21.0	19.7	**0.1485**	0.041	27.6	ug/L	18	Standard
	Se-1	77	56.0	7.1	**0.0584**	0.054	92.0	ug/L	50	Standard
>	**Ga**	71	38.3	15.1				mg/L	97	Standard
	Rb	85	16589.1	3.8				ug/L	25	Standard
	Y	89	346930.8	1.5				ug/L	376763	Standard
>	**Rh**	103	26.7	75.8				ug/L	20	Standard
	Mo	98	27.0	22.1	**0.0835**	0.003	3.3	ug/L	51	Standard
	Ag	107	65.0	10.1	**0.0342**	0.001	3.1	ug/L	76	Standard
	Cd	111	5.9	60.9	**0.0426**	0.002	4.5	mg/L	6	Standard
	Cd	114	14.7	56.1	**0.0406**	0.002	4.5	ug/L	18	Standard
>	**In**	115	476390.2	0.6				ug/L	507261	Standard
	Sn	118	196.7	16.1	**-0.0718**	0.006	8.8	ug/L	683	Standard
	Sb	123	314.0	20.5	**0.0577**	0.016	28.4	ug/L	446	Standard
	Ba	135	9508.6	1.0	**5.3362**	0.084	1.6	ug/L	28	Standard
	Ce	140	66.7	30.3				ug/L	33	Standard
>	**Tb**	159	730152.5	1.3				ug/L	800803	Standard
	Ho	165	15.0	57.7				ug/L	10	Standard
	Tl	203	59.7	25.7	**0.0416**	0.002	5.1	ug/L	13	Standard
	Tl	205	63.3	40.5	**0.0527**	0.004	7.8	ug/L	13	Standard
	Pb	206	213.0	1.4	**0.0419**	0.001	1.5	ug/L	226	Standard
	Pb	207	186.7	5.2	**0.0433**	0.002	5.4	ug/L	204	Standard
	Pb	208	800.0	4.8	**0.0476**	0.002	4.7	ug/L	852	Standard
	U	238	11.0	32.8	**0.0444**	0.001	1.3	ug/L	13	Standard
>	**Bi**	209	424235.5	0.1				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	1208.4	11.8	**1.6626**	0.203	12.2	mg/L	58	Standard
K	39	188.3	4.1	**0.6388**	0.037	5.7	mg/L	27	Standard
Ca	43	23.3	32.7	**0.4852**	0.572	117.8	mg/L	20	Standard
Fe	54	82.1	2.7	**-0.0488**	0.002	3.8	mg/L	158	Standard
Fe	57	270.0	10.3	**0.2595**	0.101	38.9	mg/L	267	Standard
> **Sc-1**	45	37337.6	0.6				mg/L	38815	Standard
Cl	35	64590.7	1.0				ug/L	57611	Standard
Kr	83	2.0	132.3				ug/L	2	Standard
Br	81	3110.3	5.6				ug/L	1617	Standard
P	31	6779.9	4.1				ug/L	19244	Standard
S	34	3923.8	3.9				ug/L	3557	Standard
Sr	88	75.0	17.6				ug/L	65	Standard
C	12	33.3	62.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	23	Standard
Dy	164	22.5	71.0				mg/L	13	Standard
Ho-1	165	15.0	57.7				mg/L	10	Standard
Er	166	16.7	91.7				mg/L	13	Standard
I	127	9886.6	5.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		72.907	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.476	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85	
Y	89	
> Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
> In	115	93.914
Sn	118	
Sb	123	
Ba	135	
Ce	140	
> Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
> Bi	209	94.475
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
> Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606145301
Sample Date/Time: Wednesday, July 06, 2016 18:46:39
Number of Replicates: 3
Autosampler Position: 252
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49236.5	1.5				ug/L	68501	Standard
	Be	9	10.0	50.0	**0.0348**	0.008	21.9	ug/L	8	Standard
	Al	27	563111.7	0.5	**5.5538**	0.103	1.8	ug/L	1397	Standard
	Sc	45	37698.5	2.4				ug/L	38815	Standard
	Ti	47	34.3	24.8	**0.0744**	0.025	33.3	ug/L	36	Standard
	V	51	1482.7	2.4	**0.0667**	0.006	9.1	ug/L	1284	Standard
	Cr	52	6641.8	2.5	**0.0318**	0.030	94.7	ug/L	6503	Standard
	Cr	53	711.7	9.4	**0.4118**	0.079	19.3	ug/L	492	Standard
	Mn	55	100193.2	1.3	**16.2941**	0.290	1.8	ug/L	841	Standard
	Co	59	2670.6	2.7	**0.4482**	0.011	2.6	ug/L	229	Standard
	Ni	60	847.0	5.6	**0.3476**	0.029	8.5	ug/L	344	Standard
	Cu	65	98.3	6.5	**0.0455**	0.004	9.1	ug/L	115	Standard
	Zn	66	2172.5	1.8	**2.0427**	0.029	1.4	ug/L	190	Standard
>	**Ge**	72	409724.8	0.7				ug/L	409858	Standard
	As	75	27.9	65.5	**0.1259**	0.018	14.1	ug/L	-22	Standard
	Se	82	13.4	6.0	**0.0753**	0.008	11.1	ug/L	18	Standard
	Se-1	77	77.7	0.7	**0.3694**	0.016	4.2	ug/L	50	Standard
>	**Ga**	71	48.3	26.0				mg/L	97	Standard
	Rb	85	333.3	17.9				ug/L	25	Standard
	Y	89	346517.9	0.9				ug/L	376763	Standard
>	**Rh**	103	30.0	16.7				ug/L	20	Standard
	Mo	98	26.6	22.6	**0.0831**	0.003	3.1	ug/L	51	Standard
	Ag	107	75.3	9.3	**0.0358**	0.001	3.4	ug/L	76	Standard
	Cd	111	9.9	79.8	**0.0446**	0.004	9.4	mg/L	6	Standard
	Cd	114	11.8	57.5	**0.0399**	0.001	3.7	ug/L	18	Standard
>	**In**	115	483775.2	0.4				ug/L	507261	Standard
	Sn	118	181.7	20.8	**-0.0753**	0.007	9.4	ug/L	683	Standard
	Sb	123	311.7	20.4	**0.0558**	0.015	27.5	ug/L	446	Standard
	Ba	135	38280.0	1.1	**21.1061**	0.144	0.7	ug/L	28	Standard
	Ce	140	506.7	16.0				ug/L	33	Standard
>	**Tb**	159	726142.8	1.1				ug/L	800803	Standard
	Ho	165	6.7	86.6				ug/L	10	Standard
	Tl	203	87.3	10.6	**0.0454**	0.001	2.7	ug/L	13	Standard
	Tl	205	61.7	12.4	**0.0524**	0.001	2.4	ug/L	13	Standard
	Pb	206	228.3	5.6	**0.0453**	0.003	6.1	ug/L	226	Standard
	Pb	207	166.7	4.4	**0.0385**	0.002	3.9	ug/L	204	Standard
	Pb	208	789.0	2.6	**0.0470**	0.001	3.1	ug/L	852	Standard
	U	238	3.0	0.0	**0.0431**	0.000	0.0	ug/L	13	Standard
>	**Bi**	209	423989.3	0.6				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	1283.4	3.1	**1.7513**	0.066	3.8	mg/L	58	Standard
K	39	31.7	36.5	**-0.0116**	0.049	419.3	mg/L	27	Standard
Ca	43	35.0	49.5	**1.3299**	1.268	95.4	mg/L	20	Standard
Fe	54	124.2	10.3	**-0.0133**	0.009	68.8	mg/L	158	Standard
Fe	57	296.7	5.1	**0.3432**	0.074	21.6	mg/L	267	Standard
Sc-1	45	37698.5	2.4				mg/L	38815	Standard
Cl	35	64298.8	0.9				ug/L	57611	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	2353.5	6.6				ug/L	1617	Standard
P	31	7038.3	3.1				ug/L	19244	Standard
S	34	3735.5	4.2				ug/L	3557	Standard
Sr	88	108.3	21.8				ug/L	65	Standard
C	12	20.0	132.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	23	Standard
Dy	164	15.7	34.1				mg/L	13	Standard
Ho-1	165	6.7	86.6				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	25099.2	7.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		71.877	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.967	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.370
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.420
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 18:49:52
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52878.8	1.7				ug/L	68501	Standard
	Be	9	38918.3	1.6	**55.5825**	1.619	2.9	ug/L	8	Standard
	Al	27	6450514.7	0.4	**58.8972**	0.887	1.5	ug/L	1397	Standard
	Sc	45	41904.5	0.1				ug/L	38815	Standard
	Ti	47	37711.9	1.5	**103.7687**	1.613	1.6	ug/L	36	Standard
	V	51	378872.4	1.5	**49.6055**	1.127	2.3	ug/L	1284	Standard
	Cr	52	391857.7	0.8	**51.6770**	0.688	1.3	ug/L	6503	Standard
	Cr	53	48258.4	3.2	**51.5823**	1.577	3.1	ug/L	492	Standard
	Mn	55	349488.5	0.5	**52.7116**	0.800	1.5	ug/L	841	Standard
	Co	59	325919.6	1.0	**49.9129**	0.956	1.9	ug/L	229	Standard
	Ni	60	93953.1	0.7	**51.6102**	0.592	1.1	ug/L	344	Standard
	Cu	65	93092.5	0.7	**51.3818**	0.426	0.8	ug/L	115	Standard
	Zn	66	55991.6	1.2	**51.2143**	0.257	0.5	ug/L	190	Standard
>	**Ge**	72	443597.8	1.1				ug/L	409858	Standard
	As	75	56348.9	1.0	**50.3269**	0.784	1.6	ug/L	-22	Standard
	Se	82	5647.5	1.0	**49.3431**	0.684	1.4	ug/L	18	Standard
	Se-1	77	3836.5	3.0	**50.7225**	1.760	3.5	ug/L	50	Standard
>	**Ga**	71	73.3	37.6				mg/L	97	Standard
	Rb	85	758.4	7.1				ug/L	25	Standard
	Y	89	378699.5	0.9				ug/L	376763	Standard
>	**Rh**	103	25.0	34.6				ug/L	20	Standard
	Mo	98	248808.2	0.6	**100.1033**	1.976	2.0	ug/L	51	Standard
	Ag	107	315179.5	0.6	**48.9768**	0.482	1.0	ug/L	76	Standard
	Cd	111	102466.1	0.8	**50.0968**	0.522	1.0	mg/L	6	Standard
	Cd	114	249854.1	0.9	**49.9651**	0.245	0.5	ug/L	18	Standard
>	**In**	115	523251.4	1.3				ug/L	507261	Standard
	Sn	118	278121.1	0.6	**49.1520**	0.859	1.7	ug/L	683	Standard
	Sb	123	219592.2	1.7	**49.6144**	0.799	1.6	ug/L	446	Standard
	Ba	135	96411.8	0.1	**49.1334**	0.712	1.4	ug/L	28	Standard
	Ce	140	196.7	54.3				ug/L	33	Standard
>	**Tb**	159	777653.8	1.1				ug/L	800803	Standard
	Ho	165	5.0	100.0				ug/L	10	Standard
	Tl	203	386233.1	0.9	**50.7844**	0.429	0.8	ug/L	13	Standard
	Tl	205	341495.9	1.1	**51.8522**	0.626	1.2	ug/L	13	Standard
	Pb	206	240491.9	0.2	**49.2471**	0.244	0.5	ug/L	226	Standard
	Pb	207	217886.1	0.3	**49.1333**	0.157	0.3	ug/L	204	Standard
	Pb	208	926190.9	0.5	**52.2285**	0.416	0.8	ug/L	852	Standard
	U	238	325513.2	0.6	**49.5735**	0.460	0.9	ug/L	13	Standard
>	**Bi**	209	446834.5	0.4				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	3653.8	1.5	**4.5438**	0.069	1.5	mg/L	58	Standard
K	39	1298.4	0.6	**4.6524**	0.027	0.6	mg/L	27	Standard
Ca	43	101.7	11.4	**5.5715**	0.778	14.0	mg/L	20	Standard
Fe	54	6427.7	3.3	**4.8634**	0.168	3.5	mg/L	158	Standard
Fe	57	1803.4	4.2	**4.9080**	0.240	4.9	mg/L	267	Standard
> **Sc-1**	45	41904.5	0.1				mg/L	38815	Standard
Cl	35	72444.1	0.6				ug/L	57611	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1936.8	7.3				ug/L	1617	Standard
P	31	22136.2	2.7				ug/L	19244	Standard
S	34	4570.7	1.6				ug/L	3557	Standard
Sr	88	60.0	8.3				ug/L	65	Standard
C	12	56.7	27.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	40.0				mg/L	23	Standard
Dy	164	19.4	92.4				mg/L	13	Standard
Ho-1	165	5.0	100.0				mg/L	10	Standard
Er	166	13.3	173.2				mg/L	13	Standard
I	127	8907.6	4.2				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	111.165		
	Al	27	117.794		
	Sc	45			
	Ti	47	103.769		
	V	51	99.211		
	Cr	52	103.354		
	Cr	53			
	Mn	55	105.423		
	Co	59	99.826		
	Ni	60	103.220		
	Cu	65	102.764		
	Zn	66	102.429		
>	Ge	72		108.232	
	As	75	100.654		
	Se	82	98.686		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	100.103		
Ag	107	97.954		
Cd	111	100.194		
Cd	114			
In	115		103.152	
Sn	118	98.304		
Sb	123	99.229		
Ba	135	98.267		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.569		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.457		
U	238	99.147		
Bi	209		99.508	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 18:53:04
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53059.4	1.6				ug/L	68501	Standard
	Be	9	26.7	71.0	**0.0575**	0.027	47.3	ug/L	8	Standard
	Al	27	2088.5	29.0	**0.0540**	0.005	9.8	ug/L	1397	Standard
	Sc	45	42618.2	0.4				ug/L	38815	Standard
	Ti	47	37.3	8.2	**0.0766**	0.009	12.0	ug/L	36	Standard
	V	51	1299.1	5.0	**0.0291**	0.009	31.1	ug/L	1284	Standard
	Cr	52	6942.9	2.8	**0.0128**	0.010	76.9	ug/L	6503	Standard
	Cr	53	380.0	9.5	**-0.0026**	0.042	1611.2	ug/L	492	Standard
	Mn	55	723.4	5.7	**0.0151**	0.007	43.4	ug/L	841	Standard
	Co	59	245.0	10.0	**0.0436**	0.003	7.4	ug/L	229	Standard
	Ni	60	278.7	11.0	**-0.0020**	0.014	725.8	ug/L	344	Standard
	Cu	65	100.3	5.7	**0.0429**	0.002	5.4	ug/L	115	Standard
	Zn	66	141.0	3.8	**0.0179**	0.003	17.3	ug/L	190	Standard
>	**Ge**	72	436796.5	1.7				ug/L	409858	Standard
	As	75	-37.4	66.6	**0.0652**	0.022	33.9	ug/L	-22	Standard
	Se	82	18.8	25.6	**0.1159**	0.045	39.0	ug/L	18	Standard
	Se-1	77	56.0	6.2	**0.0042**	0.048	1131.8	ug/L	50	Standard
>	**Ga**	71	40.0	33.1				mg/L	97	Standard
	Rb	85	26.7	21.7				ug/L	25	Standard
	Y	89	376465.2	1.4				ug/L	376763	Standard
>	**Rh**	103	13.3	57.3				ug/L	20	Standard
	Mo	98	184.3	20.1	**0.1468**	0.015	10.1	ug/L	51	Standard
	Ag	107	117.3	17.5	**0.0416**	0.003	7.7	ug/L	76	Standard
	Cd	111	17.7	40.5	**0.0481**	0.004	7.3	mg/L	6	Standard
	Cd	114	55.7	53.6	**0.0487**	0.006	12.4	ug/L	18	Standard
>	**In**	115	515275.6	0.4				ug/L	507261	Standard
	Sn	118	845.0	18.4	**0.0419**	0.028	67.9	ug/L	683	Standard
	Sb	123	650.4	23.7	**0.1290**	0.036	27.9	ug/L	446	Standard
	Ba	135	44.7	20.1	**0.0388**	0.005	11.8	ug/L	28	Standard
	Ce	140	48.3	23.9				ug/L	33	Standard
>	**Tb**	159	772663.9	0.8				ug/L	800803	Standard
	Ho	165	1.7	173.2				ug/L	10	Standard
	Tl	203	68.7	35.0	**0.0424**	0.003	7.6	ug/L	13	Standard
	Tl	205	53.3	19.5	**0.0507**	0.002	3.2	ug/L	13	Standard
	Pb	206	240.3	15.2	**0.0454**	0.008	16.8	ug/L	226	Standard
	Pb	207	202.0	9.9	**0.0447**	0.004	10.0	ug/L	204	Standard
	Pb	208	909.3	5.6	**0.0516**	0.003	6.0	ug/L	852	Standard
	U	238	47.7	45.2	**0.0499**	0.003	6.7	ug/L	13	Standard
>	**Bi**	209	445177.1	0.5				ug/L	449044	Standard

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Na	23	1.7	173.2	**-0.5415**	14.274	2635.8	mg/L	2	Standard
Mg	24	30.0	28.9	**-0.0014**	0.011	783.2	mg/L	58	Standard
K	39	25.0	34.6	**-0.0511**	0.031	61.4	mg/L	27	Standard
Ca	43	30.0	33.3	**0.7081**	0.656	92.7	mg/L	20	Standard
Fe	54	142.5	14.4	**-0.0116**	0.015	132.3	mg/L	158	Standard
Fe	57	271.7	19.7	**0.1479**	0.162	109.7	mg/L	267	Standard
> **Sc-1**	45	42618.2	0.4				mg/L	38815	Standard
Cl	35	70856.0	1.2				ug/L	57611	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	1870.1	16.2				ug/L	1617	Standard
P	31	21663.8	0.6				ug/L	19244	Standard
S	34	4233.9	6.1				ug/L	3557	Standard
Sr	88	65.0	23.1				ug/L	65	Standard
C	12	56.7	44.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	33.3				mg/L	23	Standard
Dy	164	4.9	129.2				mg/L	13	Standard
Ho-1	165	1.7	173.2				mg/L	10	Standard
Er	166	36.7	41.7				mg/L	13	Standard
I	127	6878.2	1.9				mg/L	9570	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		106.573	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.580	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.139	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Tl	203	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606145303
Sample Date/Time: Wednesday, July 06, 2016 18:56:16
Number of Replicates: 3
Autosampler Position: 253
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50022.5	3.7				ug/L	68501	Standard
	Be	9	18.3	41.7	**0.0469**	0.011	22.7	ug/L	8	Standard
	Al	27	192424.3	1.2	**1.8923**	0.056	3.0	ug/L	1397	Standard
	Sc	45	37018.5	2.6				ug/L	38815	Standard
	Ti	47	106.3	105.8	**0.2939**	0.339	115.2	ug/L	36	Standard
	V	51	1360.1	13.7	**0.0532**	0.028	52.4	ug/L	1284	Standard
	Cr	52	5062.5	2.5	**-0.1831**	0.020	10.7	ug/L	6503	Standard
	Cr	53	318.3	8.9	**-0.0399**	0.031	78.4	ug/L	492	Standard
	Mn	55	28813.0	2.0	**4.7119**	0.100	2.1	ug/L	841	Standard
	Co	59	362.0	33.1	**0.0668**	0.021	30.8	ug/L	229	Standard
	Ni	60	329.0	9.1	**0.0425**	0.018	43.4	ug/L	344	Standard
	Cu	65	104.7	14.9	**0.0506**	0.010	19.4	ug/L	115	Standard
	Zn	66	1040.4	1.6	**0.9400**	0.022	2.3	ug/L	190	Standard
>	**Ge**	72	401656.7	0.7				ug/L	409858	Standard
	As	75	102.1	29.0	**0.1995**	0.030	14.9	ug/L	-22	Standard
	Se	82	22.0	21.0	**0.1618**	0.046	28.3	ug/L	18	Standard
	Se-1	77	58.0	7.9	**0.1003**	0.062	62.1	ug/L	50	Standard
>	**Ga**	71	36.7	7.9				mg/L	97	Standard
	Rb	85	1030.0	7.3				ug/L	25	Standard
	Y	89	344398.5	0.4				ug/L	376763	Standard
>	**Rh**	103	16.7	45.8				ug/L	20	Standard
	Mo	98	141.0	55.3	**0.1337**	0.034	25.4	ug/L	51	Standard
	Ag	107	118.7	35.0	**0.0433**	0.007	15.9	ug/L	76	Standard
	Cd	111	15.5	16.2	**0.0477**	0.001	2.7	mg/L	6	Standard
	Cd	114	35.3	65.1	**0.0451**	0.005	11.0	ug/L	18	Standard
>	**In**	115	476321.1	1.0				ug/L	507261	Standard
	Sn	118	363.3	12.5	**-0.0394**	0.009	22.9	ug/L	683	Standard
	Sb	123	965.8	23.1	**0.2197**	0.057	26.1	ug/L	446	Standard
	Ba	135	12744.7	0.5	**7.1481**	0.108	1.5	ug/L	28	Standard
	Ce	140	156.7	18.7				ug/L	33	Standard
>	**Tb**	159	727969.7	0.5				ug/L	800803	Standard
	Ho	165	10.0	132.3				ug/L	10	Standard
	Tl	203	101.7	19.3	**0.0475**	0.003	5.7	ug/L	13	Standard
	Tl	205	131.7	61.7	**0.0637**	0.013	20.4	ug/L	13	Standard
	Pb	206	310.7	47.9	**0.0633**	0.032	50.8	ug/L	226	Standard
	Pb	207	272.7	44.1	**0.0640**	0.029	44.6	ug/L	204	Standard
	Pb	208	1044.7	27.1	**0.0624**	0.017	26.8	ug/L	852	Standard
	U	238	87.0	107.3	**0.0566**	0.015	26.5	ug/L	13	Standard
>	**Bi**	209	422240.6	0.2				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	511.7	4.4	**0.6878**	0.013	1.9	mg/L	58	Standard
K	39	38.3	54.3	**0.0182**	0.086	471.7	mg/L	27	Standard
Ca	43	26.7	54.1	**0.7577**	1.106	145.9	mg/L	20	Standard
Fe	54	417.6	4.7	**0.2468**	0.027	10.9	mg/L	158	Standard
Fe	57	390.0	22.4	**0.6933**	0.341	49.2	mg/L	267	Standard
> **Sc-1**	45	37018.5	2.6				mg/L	38815	Standard
Cl	35	62864.2	1.3				ug/L	57611	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	2226.8	14.5				ug/L	1617	Standard
P	31	7123.3	3.9				ug/L	19244	Standard
S	34	4055.5	5.8				ug/L	3557	Standard
Sr	88	70.0	18.9				ug/L	65	Standard
C	12	20.0	86.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	34.6				mg/L	23	Standard
Dy	164	19.4	1.4				mg/L	13	Standard
Ho-1	165	10.0	132.3				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	8815.9	10.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		73.024	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.999	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.901
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.031
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129601
Sample Date/Time: Wednesday, July 06, 2016 18:59:28
Number of Replicates: 3
Autosampler Position: 254
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54200.1	1.0				ug/L	68501	Standard
	Be	9	18.3	41.7	**0.0451**	0.011	24.0	ug/L	8	Standard
	Al	27	5857472.0	1.8	**52.1721**	0.567	1.1	ug/L	1397	Standard
	Sc	45	41752.5	1.3				ug/L	38815	Standard
	Ti	47	188.3	12.3	**0.4941**	0.065	13.1	ug/L	36	Standard
	V	51	5597.3	1.8	**0.5958**	0.017	2.9	ug/L	1284	Standard
	Cr	52	10278.8	4.1	**0.4558**	0.064	14.0	ug/L	6503	Standard
	Cr	53	1303.4	22.2	**0.9965**	0.321	32.2	ug/L	492	Standard
	Mn	55	40819.6	0.2	**6.1131**	0.025	0.4	ug/L	841	Standard
	Co	59	685.3	1.4	**0.1111**	0.002	1.7	ug/L	229	Standard
	Ni	60	1914.1	2.2	**0.9041**	0.028	3.1	ug/L	344	Standard
	Cu	65	1543.4	2.5	**0.8445**	0.017	2.0	ug/L	115	Standard
	Zn	66	2332.2	1.7	**2.0391**	0.041	2.0	ug/L	190	Standard
>	**Ge**	72	440615.0	0.5				ug/L	409858	Standard
	As	75	1763.0	4.5	**1.6810**	0.077	4.6	ug/L	-22	Standard
	Se	82	71.3	8.5	**0.5761**	0.052	9.1	ug/L	18	Standard
	Se-1	77	95.7	7.1	**0.5337**	0.098	18.4	ug/L	50	Standard
>	**Ga**	71	226.7	25.4				mg/L	97	Standard
	Rb	85	8287.3	3.3				ug/L	25	Standard
	Y	89	371654.7	0.3				ug/L	376763	Standard
>	**Rh**	103	51.7	11.2				ug/L	20	Standard
	Mo	98	2079.3	2.8	**0.9217**	0.019	2.1	ug/L	51	Standard
	Ag	107	84.3	10.7	**0.0364**	0.001	3.8	ug/L	76	Standard
	Cd	111	17.6	21.2	**0.0481**	0.002	3.9	mg/L	6	Standard
	Cd	114	47.7	27.6	**0.0471**	0.003	5.8	ug/L	18	Standard
>	**In**	115	514374.2	0.8				ug/L	507261	Standard
	Sn	118	583.3	13.2	**-0.0050**	0.014	280.1	ug/L	683	Standard
	Sb	123	620.8	8.9	**0.1224**	0.013	11.0	ug/L	446	Standard
	Ba	135	37233.0	0.6	**19.3102**	0.212	1.1	ug/L	28	Standard
	Ce	140	788.4	3.0				ug/L	33	Standard
>	**Tb**	159	776406.0	1.3				ug/L	800803	Standard
	Ho	165	36.7	7.9				ug/L	10	Standard
	Tl	203	275.0	8.4	**0.0703**	0.003	4.3	ug/L	13	Standard
	Tl	205	258.3	22.0	**0.0827**	0.009	10.8	ug/L	13	Standard
	Pb	206	392.7	8.6	**0.0783**	0.007	8.7	ug/L	226	Standard
	Pb	207	321.0	5.6	**0.0730**	0.004	5.5	ug/L	204	Standard
	Pb	208	1419.7	2.7	**0.0820**	0.002	2.4	ug/L	852	Standard
	U	238	725.7	4.2	**0.1557**	0.005	2.9	ug/L	13	Standard
>	**Bi**	209	436491.8	0.4				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	7728.6	0.1	**9.6904**	0.119	1.2	mg/L	58	Standard
K	39	243.3	9.5	**0.7593**	0.074	9.7	mg/L	27	Standard
Ca	43	238.3	12.8	**14.8303**	1.960	13.2	mg/L	20	Standard
Fe	54	205.9	12.2	**0.0401**	0.020	50.5	mg/L	158	Standard
Fe	57	403.3	6.4	**0.5753**	0.093	16.2	mg/L	267	Standard
> **Sc-1**	45	41752.5	1.3				mg/L	38815	Standard
Cl	35	80815.0	2.6				ug/L	57611	Standard
Kr	83	2.3	89.2				ug/L	2	Standard
Br	81	8709.2	1.9				ug/L	1617	Standard
P	31	20899.4	2.9				ug/L	19244	Standard
S	34	3923.8	3.6				ug/L	3557	Standard
Sr	88	181.7	25.6				ug/L	65	Standard
C	12	66.7	37.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	52.9				mg/L	23	Standard
Dy	164	54.4	29.0				mg/L	13	Standard
Ho-1	165	36.7	7.9				mg/L	10	Standard
Er	166	46.7	24.7				mg/L	13	Standard
I	127	22747.1	6.9				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		79.123	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.504	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.402	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.205	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606145303
Sample Date/Time: Wednesday, July 06, 2016 19:02:39
Number of Replicates: 3
Autosampler Position: 255
Sample Description: 500
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54932.8	2.5				ug/L	68501	Standard
	Be	9	16.7	34.6	**0.0423**	0.008	18.4	ug/L	8	Standard
	Al	27	25593.4	8.7	**0.2596**	0.014	5.4	ug/L	1397	Standard
	Sc	45	41463.3	1.5				ug/L	38815	Standard
	Ti	47	35.0	2.9	**0.0701**	0.002	3.4	ug/L	36	Standard
	V	51	1967.8	3.8	**0.1185**	0.012	9.8	ug/L	1284	Standard
	Cr	52	9177.1	2.0	**0.3186**	0.035	11.0	ug/L	6503	Standard
	Cr	53	426.7	14.0	**0.0491**	0.069	141.4	ug/L	492	Standard
	Mn	55	3966.2	3.7	**0.5132**	0.026	5.1	ug/L	841	Standard
	Co	59	221.7	8.5	**0.0400**	0.003	8.1	ug/L	229	Standard
	Ni	60	278.7	5.0	**-0.0017**	0.009	557.7	ug/L	344	Standard
	Cu	65	121.7	21.6	**0.0551**	0.015	27.9	ug/L	115	Standard
	Zn	66	1492.4	2.4	**1.2770**	0.032	2.5	ug/L	190	Standard
>	**Ge**	72	436481.1	0.9				ug/L	409858	Standard
	As	75	-38.2	37.5	**0.0644**	0.013	19.7	ug/L	-22	Standard
	Se	82	15.9	48.3	**0.0903**	0.069	75.9	ug/L	18	Standard
	Se-1	77	53.0	21.4	**-0.0353**	0.160	454.4	ug/L	50	Standard
>	**Ga**	71	30.0	16.7				mg/L	97	Standard
	Rb	85	160.0	13.6				ug/L	25	Standard
	Y	89	379621.3	1.9				ug/L	376763	Standard
>	**Rh**	103	13.3	21.7				ug/L	20	Standard
	Mo	98	41.5	24.0	**0.0884**	0.004	4.4	ug/L	51	Standard
	Ag	107	87.7	27.9	**0.0369**	0.004	10.1	ug/L	76	Standard
	Cd	111	10.3	66.1	**0.0444**	0.003	7.4	mg/L	6	Standard
	Cd	114	24.7	126.4	**0.0423**	0.006	14.8	ug/L	18	Standard
>	**In**	115	515985.1	0.9				ug/L	507261	Standard
	Sn	118	508.3	20.2	**-0.0188**	0.019	100.1	ug/L	683	Standard
	Sb	123	235.4	13.7	**0.0336**	0.008	23.5	ug/L	446	Standard
	Ba	135	1419.4	6.6	**0.7487**	0.042	5.6	ug/L	28	Standard
	Ce	140	46.7	22.3				ug/L	33	Standard
>	**Tb**	159	782731.4	0.8				ug/L	800803	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	38.7	73.8	**0.0384**	0.004	9.8	ug/L	13	Standard
	Tl	205	28.3	36.7	**0.0469**	0.002	3.4	ug/L	13	Standard
	Pb	206	226.7	4.3	**0.0426**	0.002	4.3	ug/L	226	Standard
	Pb	207	202.3	12.6	**0.0447**	0.006	12.5	ug/L	204	Standard
	Pb	208	847.0	1.7	**0.0480**	0.001	1.3	ug/L	852	Standard
	U	238	34.3	65.1	**0.0479**	0.003	7.1	ug/L	13	Standard
>	**Bi**	209	445218.2	0.4				ug/L	449044	Standard

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Na	23	1.7	173.2	**-0.2487**	14.781	5944.3	mg/L	2	Standard
Mg	24	75.0	13.3	**0.0566**	0.012	20.7	mg/L	58	Standard
K	39	33.3	67.6	**-0.0172**	0.085	496.8	mg/L	27	Standard
Ca	43	20.0	50.0	**0.0907**	0.700	772.0	mg/L	20	Standard
Fe	54	202.2	8.8	**0.0382**	0.013	33.1	mg/L	158	Standard
Fe	57	280.0	17.0	**0.1987**	0.161	81.0	mg/L	267	Standard
> **Sc-1**	45	41463.3	1.5				mg/L	38815	Standard
Cl	35	79616.6	0.3				ug/L	57611	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	1973.5	13.7				ug/L	1617	Standard
P	31	20081.6	2.2				ug/L	19244	Standard
S	34	4032.2	1.1				ug/L	3557	Standard
Sr	88	75.0	13.3				ug/L	65	Standard
C	12	33.3	17.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	107.9				mg/L	23	Standard
Dy	164	3.0	200.7				mg/L	13	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	6319.7	6.4				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		80.192	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.496	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.720	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.148	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Wednesday, July 06, 2016 19:05:51
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	49574.4	3.4				ug/L	68501	Standard
	Be	9	8.3	91.7	**0.0319**	0.012	36.0	ug/L	8	Standard
	Al	27	5564328.9	0.3	**54.2268**	1.817	3.4	ug/L	1397	Standard
	Sc	45	35692.0	2.4				ug/L	38815	Standard
	Ti	47	36104.0	1.5	**112.1954**	1.361	1.2	ug/L	36	Standard
	V	51	1644.2	9.1	**0.0998**	0.025	24.6	ug/L	1284	Standard
	Cr	52	5783.1	2.0	**-0.0569**	0.013	23.5	ug/L	6503	Standard
	Cr	53	3715.5	10.2	**4.1060**	0.499	12.2	ug/L	492	Standard
	Mn	55	2312.2	2.1	**0.2987**	0.012	4.0	ug/L	841	Standard
	Co	59	338.3	2.8	**0.0640**	0.002	2.4	ug/L	229	Standard
	Ni	60	699.0	3.7	**0.2774**	0.021	7.6	ug/L	344	Standard
	Cu	65	516.7	2.9	**0.3089**	0.012	4.0	ug/L	115	Standard
	Zn	66	966.4	1.2	**0.8872**	0.018	2.1	ug/L	190	Standard
>	Ge	72	392789.0	1.2				ug/L	409858	Standard
	As	75	8.9	378.2	**0.1077**	0.034	31.7	ug/L	-22	Standard
	Se	82	9.6	1.0	**0.0433**	0.001	1.2	ug/L	18	Standard
	Se-1	77	298.3	4.0	**3.7633**	0.228	6.0	ug/L	50	Standard
>	Ga	71	140.0	3.6				mg/L	97	Standard
	Rb	85	681.7	11.0				ug/L	25	Standard
	Y	89	328443.5	0.8				ug/L	376763	Standard
>	Rh	103	10.0	50.0				ug/L	20	Standard
	Mo	98	206890.0	0.3	**95.0894**	0.233	0.2	ug/L	51	Standard
	Ag	107	198.0	5.6	**0.0582**	0.002	3.5	ug/L	76	Standard
	Cd	111	-148.1	17.9	**-0.0433**	0.015	34.5	mg/L	6	Standard
	Cd	114	374.7	10.7	**0.1229**	0.009	7.4	ug/L	18	Standard
>	In	115	457975.9	0.3				ug/L	507261	Standard
	Sn	118	506.7	15.7	**-0.0076**	0.016	214.4	ug/L	683	Standard
	Sb	123	654.2	44.4	**0.1485**	0.075	50.3	ug/L	446	Standard
	Ba	135	41.7	8.4	**0.0400**	0.002	5.2	ug/L	28	Standard
	Ce	140	56.7	18.4				ug/L	33	Standard
>	Tb	159	724034.0	1.2				ug/L	800803	Standard
	Ho	165	1.7	173.2				ug/L	10	Standard
	Tl	203	61.0	16.4	**0.0420**	0.001	3.4	ug/L	13	Standard
	Tl	205	80.0	22.5	**0.0557**	0.003	5.3	ug/L	13	Standard
	Pb	206	274.7	5.6	**0.0570**	0.003	6.1	ug/L	226	Standard
	Pb	207	244.0	2.6	**0.0586**	0.002	2.6	ug/L	204	Standard
	Pb	208	992.0	1.0	**0.0608**	0.000	0.8	ug/L	852	Standard
	U	238	3.3	17.3	**0.0432**	0.000	0.2	ug/L	13	Standard
>	Bi	209	411885.0	0.3				ug/L	449044	Standard

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Na	23	3.3	86.6	**10.9828**	17.131	156.0	mg/L	2	Standard
Mg	24	8128.8	1.7	**11.9344**	0.323	2.7	mg/L	58	Standard
K	39	1198.4	13.9	**5.0665**	0.841	16.6	mg/L	27	Standard
Ca	43	223.3	20.8	**16.4476**	4.028	24.5	mg/L	20	Standard
Fe	54	13775.4	2.0	**12.4240**	0.399	3.2	mg/L	158	Standard
Fe	57	3787.1	3.0	**13.1073**	0.728	5.6	mg/L	267	Standard
Sc-1	45	35692.0	2.4				mg/L	38815	Standard
Cl	35	64987.8	1.8				ug/L	57611	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1570.1	6.7				ug/L	1617	Standard
P	31	7198.4	1.3				ug/L	19244	Standard
S	34	3923.8	4.6				ug/L	3557	Standard
Sr	88	86.7	29.6				ug/L	65	Standard
C	12	60.0	28.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	124.9				mg/L	23	Standard
Dy	164	9.8	99.2				mg/L	13	Standard
Ho-1	165	1.7	173.2				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	1970.1	5.0				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27	1.085		
Sc	45			
Ti	47	112.195		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.835	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	95.089		
Ag	107			
Cd	111			
Cd	114			
In	115			90.284
Sn	118			
Sb	123			
Ba	135			
Ce	140			
Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
Bi	209			91.725
Na	23	87.862		
Mg	24	238.688		
K	39	101.331		
Ca	43	109.651		
Fe	54	99.392		
Fe	57	104.859		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Mn	55	
QC Std 4	Tl	203	

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QC Std 4	Mg	24

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Wednesday, July 06, 2016 19:09:02
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53800.4	2.4				ug/L	68501	Standard
	Be	9	80136.4	0.3	**112.4788**	2.820	2.5	ug/L	8	Standard
	Al	27	5345078.2	1.5	**47.9732**	0.520	1.1	ug/L	1397	Standard
	Sc	45	40047.9	2.3				ug/L	38815	Standard
	Ti	47	33763.2	0.9	**96.4504**	1.307	1.4	ug/L	36	Standard
	V	51	728137.8	0.7	**99.1068**	0.604	0.6	ug/L	1284	Standard
	Cr	52	735138.4	0.1	**101.5294**	0.486	0.5	ug/L	6503	Standard
	Cr	53	93405.4	1.5	**104.0804**	2.037	2.0	ug/L	492	Standard
	Mn	55	670391.6	0.5	**105.0574**	0.041	0.0	ug/L	841	Standard
	Co	59	625211.3	0.7	**99.3861**	0.375	0.4	ug/L	229	Standard
	Ni	60	177152.0	0.7	**101.1772**	1.070	1.1	ug/L	344	Standard
	Cu	65	176839.4	0.8	**101.3457**	1.271	1.3	ug/L	115	Standard
	Zn	66	108752.9	0.7	**103.3905**	1.002	1.0	ug/L	190	Standard
>	**Ge**	72	427279.4	0.5				ug/L	409858	Standard
	As	75	110602.5	0.2	**102.4449**	0.341	0.3	ug/L	-22	Standard
	Se	82	10923.0	1.3	**99.1236**	0.756	0.8	ug/L	18	Standard
	Se-1	77	7617.9	1.9	**105.3511**	1.540	1.5	ug/L	50	Standard
>	**Ga**	71	150.0	20.3				mg/L	97	Standard
	Rb	85	640.0	9.0				ug/L	25	Standard
	Y	89	365147.7	0.6				ug/L	376763	Standard
>	**Rh**	103	38.3	27.2				ug/L	20	Standard
	Mo	98	200476.5	0.5	**83.7342**	0.804	1.0	ug/L	51	Standard
	Ag	107	373410.5	4.9	**60.2577**	3.748	6.2	ug/L	76	Standard
	Cd	111	196845.2	0.6	**99.8684**	1.157	1.2	mg/L	6	Standard
	Cd	114	474901.6	0.3	**98.5610**	1.581	1.6	ug/L	18	Standard
>	**In**	115	504053.2	1.4				ug/L	507261	Standard
	Sn	118	878.4	8.3	**0.0514**	0.013	25.9	ug/L	683	Standard
	Sb	123	423194.9	2.3	**99.2653**	0.897	0.9	ug/L	446	Standard
	Ba	135	184944.3	0.6	**97.8210**	0.904	0.9	ug/L	28	Standard
	Ce	140	98.3	26.1				ug/L	33	Standard
>	**Tb**	159	781877.2	0.7				ug/L	800803	Standard
	Ho	165	3.3	86.6				ug/L	10	Standard
	Tl	203	756201.8	0.3	**101.0466**	0.150	0.1	ug/L	13	Standard
	Tl	205	668626.3	1.4	**103.1658**	1.578	1.5	ug/L	13	Standard
	Pb	206	486910.7	0.4	**101.3655**	0.440	0.4	ug/L	226	Standard
	Pb	207	424759.6	0.9	**97.3740**	1.059	1.1	ug/L	204	Standard
	Pb	208	1806310.1	0.5	**103.5475**	0.667	0.6	ug/L	852	Standard
	U	238	638520.7	0.1	**98.8114**	0.143	0.1	ug/L	13	Standard
>	**Bi**	209	439542.4	0.2				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	7566.9	1.1	**9.8964**	0.338	3.4	mg/L	58	Standard
K	39	965.0	7.5	**3.5840**	0.202	5.6	mg/L	27	Standard
Ca	43	173.3	4.4	**10.9529**	0.788	7.2	mg/L	20	Standard
Fe	54	13008.8	3.3	**10.4391**	0.487	4.7	mg/L	158	Standard
Fe	57	3495.4	1.2	**10.6564**	0.312	2.9	mg/L	267	Standard
Sc-1	45	40047.9	2.3				mg/L	38815	Standard
Cl	35	68148.9	1.5				ug/L	57611	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	1856.8	10.6				ug/L	1617	Standard
P	31	18643.1	3.8				ug/L	19244	Standard
S	34	3855.5	1.5				ug/L	3557	Standard
Sr	88	75.0	11.5				ug/L	65	Standard
C	12	76.7	32.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	78.1				mg/L	23	Standard
Dy	164	12.5	45.0				mg/L	13	Standard
Ho-1	165	3.3	86.6				mg/L	10	Standard
Er	166	16.7	34.6				mg/L	13	Standard
I	127	2608.6	3.1				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	112.479		
Al	27	0.959		
Sc	45			
Ti	47	96.450		
V	51	99.107		
Cr	52	101.529		
Cr	53			
Mn	55	105.057		
Co	59	99.386		
Ni	60	101.177		
Cu	65	101.346		
Zn	66	103.390		
Ge	72		104.251	
As	75	102.445		
Se	82	99.124		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	83.734		
Ag	107	60.258		
Cd	111	99.868		
Cd	114			
In	115		99.368	
Sn	118			
Sb	123	99.265		
Ba	135	97.821		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.047		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.548		
U	238	98.811		
Bi	209		97.884	
Na	23	-70.261		
Mg	24	197.928		
K	39	71.680		
Ca	43	73.019		
Fe	54	83.513		
Fe	57	85.251		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Ag	107	
QC Std 5	Na	23	

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QC Std 5	Mg	24
QC Std 5	K	39
QC Std 5	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, July 06, 2016 19:12:15
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56160.6	1.8				ug/L	68501	Standard
	Be	9	40845.0	2.6	**54.9047**	0.516	0.9	ug/L	8	Standard
	Al	27	6551970.4	1.3	**56.3392**	1.670	3.0	ug/L	1397	Standard
	Sc	45	41572.0	1.7				ug/L	38815	Standard
	Ti	47	36365.9	0.5	**103.4324**	2.154	2.1	ug/L	36	Standard
	V	51	373639.8	1.0	**50.5673**	1.295	2.6	ug/L	1284	Standard
	Cr	52	379248.9	0.8	**51.6976**	1.271	2.5	ug/L	6503	Standard
	Cr	53	46753.7	2.6	**51.6544**	1.526	3.0	ug/L	492	Standard
	Mn	55	339745.6	0.4	**52.9632**	1.088	2.1	ug/L	841	Standard
	Co	59	324073.7	1.0	**51.2920**	0.893	1.7	ug/L	229	Standard
	Ni	60	90518.2	0.2	**51.3924**	0.862	1.7	ug/L	344	Standard
	Cu	65	89968.0	0.9	**51.3303**	1.278	2.5	ug/L	115	Standard
	Zn	66	54219.2	0.3	**51.2630**	0.968	1.9	ug/L	190	Standard
>	**Ge**	72	429235.1	1.6				ug/L	409858	Standard
	As	75	54773.7	0.3	**50.5602**	0.755	1.5	ug/L	-22	Standard
	Se	82	5564.8	1.1	**50.2523**	0.837	1.7	ug/L	18	Standard
	Se-1	77	3822.5	2.6	**52.2437**	1.024	2.0	ug/L	50	Standard
>	**Ga**	71	50.0	43.6				mg/L	97	Standard
	Rb	85	710.0	7.8				ug/L	25	Standard
	Y	89	370978.9	2.7				ug/L	376763	Standard
>	**Rh**	103	28.3	27.0				ug/L	20	Standard
	Mo	98	248182.1	1.3	**102.1495**	2.550	2.5	ug/L	51	Standard
	Ag	107	315228.1	1.3	**50.1230**	1.611	3.2	ug/L	76	Standard
	Cd	111	101311.6	0.8	**50.6817**	1.416	2.8	mg/L	6	Standard
	Cd	114	244330.1	1.0	**49.9947**	1.328	2.7	ug/L	18	Standard
>	**In**	115	511526.4	1.9				ug/L	507261	Standard
	Sn	118	274865.9	1.0	**49.7021**	1.424	2.9	ug/L	683	Standard
	Sb	123	227715.3	0.9	**52.6442**	1.349	2.6	ug/L	446	Standard
	Ba	135	94984.1	0.2	**49.5208**	0.934	1.9	ug/L	28	Standard
	Ce	140	70.0	32.7				ug/L	33	Standard
>	**Tb**	159	779844.1	2.6				ug/L	800803	Standard
	Ho	165	8.3	124.9				ug/L	10	Standard
	Tl	203	387182.7	1.1	**51.2437**	1.689	3.3	ug/L	13	Standard
	Tl	205	339494.8	2.7	**51.8947**	2.431	4.7	ug/L	13	Standard
	Pb	206	244515.0	0.9	**50.3913**	1.162	2.3	ug/L	226	Standard
	Pb	207	222226.5	0.3	**50.4333**	1.116	2.2	ug/L	204	Standard
	Pb	208	917872.5	1.1	**52.0981**	1.678	3.2	ug/L	852	Standard
	U	238	329693.9	0.7	**50.5295**	1.103	2.2	ug/L	13	Standard
>	**Bi**	209	444129.6	2.2				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	3783.8	2.4	**4.7446**	0.059	1.2	mg/L	58	Standard
K	39	1246.7	9.1	**4.5032**	0.493	10.9	mg/L	27	Standard
Ca	43	88.3	21.4	**4.7358**	1.393	29.4	mg/L	20	Standard
Fe	54	6374.5	1.5	**4.8625**	0.107	2.2	mg/L	158	Standard
Fe	57	1813.4	8.2	**4.9797**	0.369	7.4	mg/L	267	Standard
Sc-1	45	41572.0	1.7				mg/L	38815	Standard
Cl	35	68583.5	0.6				ug/L	57611	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1763.4	8.9				ug/L	1617	Standard
P	31	20635.7	1.1				ug/L	19244	Standard
S	34	4107.2	3.8				ug/L	3557	Standard
Sr	88	65.0	23.1				ug/L	65	Standard
C	12	40.0	66.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	99.0				mg/L	23	Standard
Dy	164	2.4	243.1				mg/L	13	Standard
Ho-1	165	8.3	124.9				mg/L	10	Standard
Er	166	20.0	0.0				mg/L	13	Standard
I	127	7728.6	2.5				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	109.809		
Al	27	112.678		
Sc	45			
Ti	47	103.432		
V	51	101.135		
Cr	52	103.395		
Cr	53			
Mn	55	105.926		
Co	59	102.584		
Ni	60	102.785		
Cu	65	102.661		
Zn	66	102.526		
Ge	72		104.728	
As	75	101.120		
Se	82	100.505		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	102.150		
Ag	107	100.246		
Cd	111	101.363		
Cd	114			
In	115		100.841	
Sn	118	99.404		
Sb	123	105.288		
Ba	135	99.042		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.487		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.196		
U	238	101.059		
Bi	209		98.906	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, July 06, 2016 19:15:26
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54942.8	0.8				ug/L	68501	Standard
	Be	9	45.0	58.8	**0.0811**	0.036	44.1	ug/L	8	Standard
	Al	27	2566.9	14.5	**0.0576**	0.003	5.7	ug/L	1397	Standard
	Sc	45	40367.0	1.9				ug/L	38815	Standard
	Ti	47	43.7	19.1	**0.0971**	0.023	23.6	ug/L	36	Standard
	V	51	1287.9	1.2	**0.0318**	0.001	4.5	ug/L	1284	Standard
	Cr	52	6591.1	1.2	**-0.0129**	0.006	47.5	ug/L	6503	Standard
	Cr	53	453.3	8.3	**0.0900**	0.045	50.2	ug/L	492	Standard
	Mn	55	728.4	5.6	**0.0186**	0.006	32.9	ug/L	841	Standard
	Co	59	301.7	1.7	**0.0536**	0.001	2.0	ug/L	229	Standard
	Ni	60	268.7	8.4	**-0.0036**	0.014	384.2	ug/L	344	Standard
	Cu	65	137.7	7.5	**0.0658**	0.006	8.9	ug/L	115	Standard
	Zn	66	149.7	3.3	**0.0294**	0.004	14.0	ug/L	190	Standard
>	**Ge**	72	426278.5	0.7				ug/L	409858	Standard
	As	75	-60.6	31.8	**0.0426**	0.018	42.7	ug/L	-22	Standard
	Se	82	12.3	13.8	**0.0602**	0.015	25.5	ug/L	18	Standard
	Se-1	77	61.3	12.3	**0.0978**	0.110	112.6	ug/L	50	Standard
>	**Ga**	71	30.0	76.4				mg/L	97	Standard
	Rb	85	28.3	81.5				ug/L	25	Standard
	Y	89	363777.1	0.9				ug/L	376763	Standard
>	**Rh**	103	21.7	35.3				ug/L	20	Standard
	Mo	98	237.6	7.5	**0.1704**	0.006	3.3	ug/L	51	Standard
	Ag	107	180.0	7.3	**0.0521**	0.002	3.0	ug/L	76	Standard
	Cd	111	26.5	12.9	**0.0528**	0.002	2.9	mg/L	6	Standard
	Cd	114	73.9	24.0	**0.0526**	0.003	6.3	ug/L	18	Standard
>	**In**	115	505090.7	2.8				ug/L	507261	Standard
	Sn	118	850.0	27.6	**0.0452**	0.040	87.7	ug/L	683	Standard
	Sb	123	1365.7	35.3	**0.2977**	0.106	35.6	ug/L	446	Standard
	Ba	135	52.7	11.0	**0.0436**	0.003	8.0	ug/L	28	Standard
	Ce	140	15.0	33.3				ug/L	33	Standard
>	**Tb**	159	772979.8	1.0				ug/L	800803	Standard
	Ho	165	13.3	21.7				ug/L	10	Standard
	Tl	203	117.7	17.4	**0.0490**	0.003	5.3	ug/L	13	Standard
	Tl	205	106.7	25.8	**0.0589**	0.004	7.1	ug/L	13	Standard
	Pb	206	279.7	3.0	**0.0539**	0.002	4.1	ug/L	226	Standard
	Pb	207	242.7	5.0	**0.0543**	0.002	3.8	ug/L	204	Standard
	Pb	208	992.3	1.7	**0.0567**	0.001	1.3	ug/L	852	Standard
	U	238	100.3	19.8	**0.0580**	0.003	5.0	ug/L	13	Standard
>	**Bi**	209	441868.4	1.5				ug/L	449044	Standard

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Na	23	1.7	173.2	**-0.2018**	14.862	7363.8	mg/L	2	Standard
Mg	24	58.3	21.6	**0.0377**	0.017	45.5	mg/L	58	Standard
K	39	43.3	17.6	**0.0241**	0.028	114.8	mg/L	27	Standard
Ca	43	16.7	45.8	**-0.1077**	0.555	515.1	mg/L	20	Standard
Fe	54	119.4	36.2	**-0.0244**	0.033	134.8	mg/L	158	Standard
Fe	57	231.7	10.2	**0.0663**	0.086	129.4	mg/L	267	Standard
> **Sc-1**	45	40367.0	1.9				mg/L	38815	Standard
Cl	35	68330.4	0.6				ug/L	57611	Standard
Kr	83	1.0	173.2				ug/L	2	Standard
Br	81	1713.4	13.1				ug/L	1617	Standard
P	31	20178.4	0.4				ug/L	19244	Standard
S	34	4103.9	3.9				ug/L	3557	Standard
Sr	88	90.0	25.5				ug/L	65	Standard
C	12	50.0	52.9				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	10.0					mg/L	23	Standard
Dy	164	3.3	173.2				mg/L	13	Standard
Ho-1	165	13.3	21.7				mg/L	10	Standard
Er	166	0.0					mg/L	13	Standard
I	127	6669.8	2.1				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.006	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.572
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.402
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	
QC Std 7	Tl	203	

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Wednesday, July 06, 2016 19:18:39
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	54098.1	3.3				ug/L	68501	Standard
	Be	9	163.3	29.7	**0.2472**	0.068	27.4	ug/L	8	Standard
	Al	27	1381.7	7.5	**0.0474**	0.001	1.4	ug/L	1397	Standard
	Sc	45	39292.6	1.5				ug/L	38815	Standard
	Ti	47	34.0	18.4	**0.0714**	0.018	24.9	ug/L	36	Standard
	V	51	3870.1	3.3	**0.3951**	0.013	3.3	ug/L	1284	Standard
	Cr	52	12230.6	2.3	**0.8091**	0.053	6.6	ug/L	6503	Standard
	Cr	53	1161.7	5.5	**0.9103**	0.080	8.8	ug/L	492	Standard
	Mn	55	3706.1	1.4	**0.4983**	0.003	0.6	ug/L	841	Standard
	Co	59	2545.5	1.1	**0.4192**	0.008	2.0	ug/L	229	Standard
	Ni	60	2951.0	3.0	**1.5680**	0.059	3.8	ug/L	344	Standard
	Cu	65	1450.1	4.3	**0.8366**	0.044	5.2	ug/L	115	Standard
	Zn	66	6995.9	1.6	**6.6934**	0.141	2.1	ug/L	190	Standard
>	Ge	72	417981.6	0.9				ug/L	409858	Standard
	As	75	357.8	10.2	**0.4371**	0.031	7.2	ug/L	-22	Standard
	Se	82	58.2	14.0	**0.4880**	0.071	14.6	ug/L	18	Standard
	Se-1	77	83.3	10.3	**0.4273**	0.117	27.3	ug/L	50	Standard
>	Ga	71	23.3	12.4				mg/L	97	Standard
	Rb	85	20.0	25.0				ug/L	25	Standard
	Y	89	356946.8	2.1				ug/L	376763	Standard
>	Rh	103	18.3	56.8				ug/L	20	Standard
	Mo	98	97.8	17.1	**0.1129**	0.007	6.1	ug/L	51	Standard
	Ag	107	2415.2	3.0	**0.4182**	0.014	3.2	ug/L	76	Standard
	Cd	111	473.5	8.0	**0.2829**	0.018	6.5	mg/L	6	Standard
	Cd	114	1005.4	9.2	**0.2490**	0.020	8.2	ug/L	18	Standard
>	In	115	496796.7	0.5				ug/L	507261	Standard
	Sn	118	420.0	26.1	**-0.0318**	0.020	63.4	ug/L	683	Standard
	Sb	123	1980.8	7.1	**0.4511**	0.032	7.0	ug/L	446	Standard
	Ba	135	1323.4	2.0	**0.7257**	0.012	1.7	ug/L	28	Standard
	Ce	140	11.7	49.5				ug/L	33	Standard
>	Tb	159	765291.8	0.8				ug/L	800803	Standard
	Ho	165	0.0					ug/L	10	Standard
	Tl	203	599.7	3.3	**0.1133**	0.003	2.3	ug/L	13	Standard
	Tl	205	568.3	2.8	**0.1301**	0.002	1.9	ug/L	13	Standard
	Pb	206	1184.7	1.2	**0.2423**	0.003	1.1	ug/L	226	Standard
	Pb	207	965.7	3.9	**0.2200**	0.009	4.0	ug/L	204	Standard
	Pb	208	4239.9	0.9	**0.2428**	0.002	0.9	ug/L	852	Standard
	U	238	2448.2	1.2	**0.4208**	0.005	1.2	ug/L	13	Standard
>	Bi	209	440163.0	0.1				ug/L	449044	Standard

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Na	23	0.0		**-8.7826**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	38.6	**0.0174**	0.022	123.7	mg/L	58	Standard
K	39	18.3	31.5	**-0.0697**	0.023	32.5	mg/L	27	Standard
Ca	43	33.3	8.7	**1.1191**	0.237	21.2	mg/L	20	Standard
Fe	54	95.2	14.9	**-0.0415**	0.012	28.6	mg/L	158	Standard
Fe	57	223.3	9.0	**0.0577**	0.056	96.4	mg/L	267	Standard
Sc-1	45	39292.6	1.5				mg/L	38815	Standard
Cl	35	66674.4	1.3				ug/L	57611	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	1723.4	3.8				ug/L	1617	Standard
P	31	15454.6	10.5				ug/L	19244	Standard
S	34	4087.2	4.8				ug/L	3557	Standard
Sr	88	58.3	17.8				ug/L	65	Standard
C	12	66.7	17.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	23	Standard
Dy	164	12.9	48.2				mg/L	13	Standard
Ho-1	165	0.0					mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	761.7	2.7				mg/L	9570	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	123.590		
Al	27			
Sc	45			
Ti	47			
V	51	98.765		
Cr	52	101.142		
Cr	53			
Mn	55	99.663		
Co	59	104.792		
Ni	60	97.997		
Cu	65	104.570		
Zn	66	107.094		
Ge	72		101.982	
As	75	109.275		
Se	82	122.008		
Se-1	77			
Ga	71			

Sample ID: QC Std 8
Report Date/Time: Wednesday, July 06, 2016 19:20:56
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Approved: July 07, 2016

Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	104.554		
Cd	111	117.890		
Cd	114			
> In	115			97.937
Sn	118			
Sb	123	112.777		
Ba	135	96.767		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	141.665		
Tl	205			
Pb	206			
Pb	207			
Pb	208	121.398		
U	238	105.196		
> Bi	209			98.022
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 8	Tl	203	

Sample ID: QC Std 8
Report Date/Time: Wednesday, July 06, 2016 19:20:56
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Approved: July 07, 2016

2.3.3 Metals CVAA Data (Mercury)

2.3.3.1 Summary Data

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061452-01	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18CPTMW12SW-062416	**Prep Method:**	7470A	**Prep Date:**	06/28/2016 13:03
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	07/01/2016 13:34
Workgroup #:	WG574982	**Analyst:**	AMA	**Run Date:**	07/01/2016 14:38
Collect Date:	06/24/2016 07:50	**Dilution:**	1	**File ID:**	M7.070116.143807
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061452
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.3.2 QC Summary

Example Cold Vapor Mercury Calculations
Hydra AA Mercury Analyzer / CETAC M-7600 Quick Trace Mercury Analyzer

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and five standards.

2.0 Calculating the concentration (C) of an element in water using data from run log and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to Volume (mL)	40
Vi = Aliquot Volume (mL)	40
D = Manual dilution factor, if required (10X = 10)	1
Cx = Concentration of element in ppb (ug/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Ws} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to volume (mL)	40
Ws = Aliquot weight (g)	0.6
D = Manual dilution factor	1
Cx = Concentration of element in ug/kg	6.67

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

1 Cx = Concentration calculated as received (wet basis)	6.67
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	8.33

8.33 ug/kg = 0.00833 mg/kg

TCLP Non-Volatile

Analyst(s): AMA
Date: 06/27/2016
Filter Lot #: 94 816030
Microbac SOP: TCLP01 Rev #: 12

Analyst / Date		Analyst / Date	
AMA 6/27/16		AMA 6/28/16	
Time On	Temp On °C	Time Off	Temp Off °C
1509	24.2	0810	22.4

Agitator Speed 30 ± 2 rpm ☑

Jug #	Sample #	Tests	Method	Fluid #	Matrix *	% Solid	Pretest pH Initial	Pretest pH Final	Int. Wt. (g)	Fluid Vol. (mL)	Final extract pH
D	06-1396-02	ME	1311	F1-182	S	100	10.84	2.57	100.79	2015	5.26
D	-06	ME	↓	↓	↓	↓	7.98	2.00	100.45	2009	5.08
13	-08	ME, ~~Hero~~ AMA 6/27 SV	↓	↓	↓	↓	7.34	2.06	100.35	2007	5.19
D	06-1398-01	ME	1311	F2-380	S	100	12.74	12.56	25.40	508	12.60
NA	FIBK1	ME, SV	1311	F1-182	NA	NA	NA	NA	100.0	100.0	4.92
NA	F2 Blk	ME	1311	F2-380	↓	↓	↓	↓	↓	↓	2.84

AMA 06/28/2016

*Matrix Code: (S = solid, sand, soil or sludge) (P = paint) (O = organic) (W = water or aqueous waste)
D = Disposable plastic jug
TCLP Pretest weight will be 5.0 g (± 0.1) unless otherwise noted.
Temperature shall be maintained at 23° ± 2 for 18 ± 2 hours unless otherwise noted.

Comments: NA

Peer Review By: [signature]

Microbac Laboratories Inc.
Metals Digest Log

Workgroup: WG574502
Analyst: ERP
Spike Analyst: ERP
Method: 7470A
Run Date: 06/28/2016 13:03
Hotblock Start Temp: 95.4 @ 09:50
Hotblock End Temp: 95.5 @ 11:50
Instrument: HB6

SOP: ME404 Revison 17
Spike Solution: STD76858
Spike Witness: VC
HNO3 Lot #: COA18905
40 & 50 ML. DIGESTION TU COA18987
KMnO4 1:1 Lot #: RGT37128
H2SO4 Lot #: COA18359
K2S2O8 1:1 Lot #: RGT37142
Mercury Water ICV Lot #: STD76860
HG H2O STDS 10PPM Lot #: STD76866

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Spike Amount	Due Date
1	WG574502-03	BLANK	1	40 mL	40 mL		
2	WG574277-01	FBLK1	17	4 mL	40 mL		
3	WG574277-02	FBLK2	17	4 mL	40 mL		
4	WG574502-04	LCS	1	40 mL	40 mL	4 mL	
5	L16061396-02	SAMP	17	4 mL	40 mL		07/01/16
6	L16061396-06	SAMP	17	4 mL	40 mL		07/01/16
7	L16061396-08	SAMP	17	4 mL	40 mL		07/01/16
8	WG574502-01	REF	17	4 mL	40 mL		
9	L16061398-01	SAMP	17	4 mL	40 mL		07/01/16
10	WG574502-02	REF	2	40 mL	40 mL		
11	L16061419-01	SAMP	2	40 mL	40 mL		07/05/16
12	L16061419-02	SAMP	2	40 mL	40 mL		07/05/16
13	L16061419-03	SAMP	2	40 mL	40 mL		07/05/16
14	L16061419-04	SAMP	2	40 mL	40 mL		07/05/16
15	L16061426-01	SAMP	2	40 mL	40 mL		07/01/16
16	L16061426-03	SAMP	2	40 mL	40 mL		07/01/16
17	L16061452-01	SAMP	1	40 mL	40 mL		07/08/16
18	L16061453-01	SAMP	1	40 mL	40 mL		07/08/16
19	L16061453-03	SAMP	1	40 mL	40 mL		07/08/16
20	L16061458-02	SAMP	1	40 mL	40 mL		07/05/16
21	L16061468-01	SAMP	2	40 mL	40 mL		07/01/16
22	WG574502-05	MS	1	4 mL	40 mL	4 mL	
23	WG574502-06	MSD	1	4 mL	40 mL	4 mL	
24	WG574502-07	DUP	1	40 mL	40 mL		

Analyst: Erin Potter

Reviewer: Vicki Collins

* All calibration and check standards are prepared and digested with sample batch following the procedures in section 7.0 of SOP ME404/ME405.

HB_DIG - Modified 07/26/2012
PDF ID: 4828616
Report generated: 06/28/2016 14:58

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 070116C.CSV
Analyst1: AMA Analyst2: N/A
Method: 7470A/245.1 SOP: ME404 Rev: 17
Maintenance Log ID:

Calibration Std: STD76866 ICV Std: STD76860 Post Spike: STD76866
ICSA: N/A ICSAB: N/A Int. Std:
CCV: LLCCV: Tuning Sol :
Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 574982

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	M7.070116.132206	WG575077-01	Calibration Point		1		07/01/16 13:22
2	M7.070116.132437	WG575077-02	Calibration Point		1		07/01/16 13:24
3	M7.070116.132709	WG575077-03	Calibration Point		1		07/01/16 13:27
4	M7.070116.132941	WG575077-04	Calibration Point		1		07/01/16 13:29
5	M7.070116.133215	WG575077-05	Calibration Point		1		07/01/16 13:32
6	M7.070116.133448	WG575077-06	Calibration Point		1		07/01/16 13:34
7	M7.070116.133722	WG575077-07	Initial Calibration Verification		1		07/01/16 13:37
8	M7.070116.133953	WG575077-08	Initial Calib Blank		1		07/01/16 13:39
9	M7.070116.134226	WG575077-09	CCV		1		07/01/16 13:42
10	M7.070116.134457	WG575077-10	CCB		1		07/01/16 13:44
11	M7.070116.134727	WG574502-03	Method/Prep Blank	40/40	1		07/01/16 13:47
12	M7.070116.134959	WG574502-04	Laboratory Control S	40/40	1		07/01/16 13:49
13	M7.070116.135230	WG574277-01	Fluid Blank 1		1		07/01/16 13:52
14	M7.070116.135502	WG574277-02	Fluid Blank 2		1		07/01/16 13:55
15	M7.070116.135734	L16061396-02	062316-FA	4/40	1		07/01/16 13:57
16	M7.070116.140006	WG574982-01	Post Digestion Spike		1	L16061396-02	07/01/16 14:00
17	M7.070116.140238	L16061396-06	062316-BA	4/40	1		07/01/16 14:02
18	M7.070116.140511	L16061396-08	062316-WWC	4/40	1		07/01/16 14:05
19	M7.070116.140744	WG574502-01	Reference Sample	4/40	1	L16061398-01	07/01/16 14:07
20	M7.070116.141018	WG574502-05	Matrix Spike	4/40	1	L16061398-01	07/01/16 14:10
21	M7.070116.141250	WG575077-11	CCV		1		07/01/16 14:12
22	M7.070116.141521	WG575077-12	CCB		1		07/01/16 14:15
23	M7.070116.141755	WG574502-06	Matrix Spike Duplica	4/40	1	L16061398-01	07/01/16 14:17
24	M7.070116.142029	WG574502-02	Reference Sample	40/40	1	L16061419-01	07/01/16 14:20
25	M7.070116.142259	WG574502-07	Duplicate	40/40	1	L16061419-01	07/01/16 14:22
26	M7.070116.142530	L16061419-02	WEST RETENTION POND	40/40	1		07/01/16 14:25
27	M7.070116.142801	L16061419-03	OUTFALL 001	40/40	1		07/01/16 14:28
28	M7.070116.143032	L16061419-04	CATCH BASIN 29	40/40	1		07/01/16 14:30
29	M7.070116.143303	L16061426-01	16F1590-01	40/40	1		07/01/16 14:33
30	M7.070116.143535	L16061426-03	16F1590-03	40/40	1		07/01/16 14:35
31	M7.070116.143807	L16061452-01	18CPTMW12SW-062416	40/40	1		07/01/16 14:38
32	M7.070116.144039	WG574982-02	Post Digestion Spike		1	L16061452-01	07/01/16 14:40
33	M7.070116.144311	WG575077-13	CCV		1		07/01/16 14:43
34	M7.070116.144542	WG575077-14	CCB		1		07/01/16 14:45

Page: 1 Approved: July 05, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 070116C.CSV

Analyst1: AMA Analyst2: N/A

Method: 7470A/245.1 SOP: ME404 Rev: 17

Maintenance Log ID:

Calibration Std: STD76866 ICV Std: STD76860 Post Spike: STD76866

ICSA: N/A ICSAB: N/A Int. Std:

CCV: LLCCV: Tuning Sol :

Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 574982

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	M7.070116.144815	L16061453-01	MW2-062416	40/40	1		07/01/16 14:48
36	M7.070116.145048	L16061453-03	18CPTMW01SW-062416	40/40	1		07/01/16 14:50
37	M7.070116.145321	L16061458-02	SCF-WL01-062416	40/40	1		07/01/16 14:53
38	M7.070116.145554	L16061468-01	H6F0605-01	40/40	1		07/01/16 14:55
39	M7.070116.145827	WG575077-15	CCV		1		07/01/16 14:58
40	M7.070116.150057	WG575077-16	CCB		1		07/01/16 15:00

Page: 2 Approved: July 05, 2016

Microbac Laboratories Inc.

Data Checklist

Date: 01-JUL-2016
Analyst: AMA
Analyst: NA
Method: 7470A/245.1
Instrument: CVAA1
Curve Workgroup: 575077
Runlog ID: 76088
Analytical Workgroups: 574982

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	1426, 1452, 1453, 1458
Client Forms	X
Level X	
Level 3	1458
Level 4	1452, 1453
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	AMA
Secondary Reviewer	BKT
Comments	

Primary Reviewer:
05-JUL-2016
Alexandra M. Alfred

Secondary Reviewer:
05-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-05-2016 12:48:21

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 7470A

AAB#: WG574982

Login Number: L16061452

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW12SW-062416	01	06/24/16					06/28/2016	4.2	28		07/01/16	7.3	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4837378
Report generated 07/01/2016 16:59

METHOD BLANK SUMMARY

Login Number: L16061452
Blank File ID: M7.070116.134727
Prep Date: 06/28/16 13:03
Analyzed Date: 07/01/16 13:47
Analyst: AMA

Work Group: WG574982
Blank Sample ID: WG574502-03
Instrument ID: CVAA1
Method: 7470A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG574502-04	M7.070116.134959	07/01/16 13:49	01
DUP	WG574502-07	M7.070116.142259	07/01/16 14:22	01
18CPTMW12SW-062416	L16061452-01	M7.070116.143807	07/01/16 14:38	01

Report Name: BLANK_SUMMARY
PDF File ID: 4837379
Report generated 07/01/2016 16:59

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061452 Prep Date: 06/28/16 13:03 Sample ID: WG574502-03
Instrument ID: CVAA1 Run Date: 07/01/16 13:47 Prep Method: 7470A
File ID: M7.070116.134727 Analyst: AMA Method: 7470A
Workgroup (AAB#): WG574982 Matrix: Water Units: mg/L
Contract #: Cal ID: CVAA1-01-JUL-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Mercury	0.000100	0.000400	0.000100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4837380
01-JUL-2016 16:59

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061452 Run Date: 07/01/2016 Sample ID: WG574502-04
Instrument ID: CVAA1 Run Time: 13:49 Prep Method: 7470A
File ID: M7.070116.134959 Analyst: AMA Method: 7470A
Workgroup (AAB#): WG574982 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76858 Cal ID: CVAA1-01-JUL-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Mercury	0.00400	0.00386	96.5	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4837381
Report generated: 07/01/2016 16:59

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061452 Cal ID: CVAA1 - Worknum: WG574982
Instrument ID: CVAA1 Contract #: Method: 7470A
Parent ID: WG574502-01 File ID: M7.070116.140744 Dil: 1 Matrix: WATER
Sample ID: WG574502-05 MS File ID: M7.070116.141018 Dil: 1 Units: mg/L
Sample ID: WG574502-06 MSD File ID: M7.070116.141755 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Mercury	ND	0.0400	0.0416	104	0.0400	0.0414	103	0.530	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4837382
Report generated 07/01/2016 16:59

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061452 **Worknum:** WG574982
Instrument ID: CVAA1 **Method:** 7470A
Post Spike ID: WG574982-02 **File ID:** M7.070116.144039 **Dil:** 1 **Units:** ug/L
Sample ID: L16061452-01 **File ID:** M7.070116.143807 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MERCURY	0.959		0	U	1	95.9	85 - 115	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4837377
Report generated: 07/01/2016 16:59

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061452
Analytical Method: 7470A
ICAL Worknum: WG575077

Workgroup (AAB#): WG574982
Instrument ID: CVAA1
Initial Calibration Date: 07/01/2016 13:34

Analyte	WG575077-01		WG575077-02		WG575077-03		WG575077-04		WG575077-05		WG575077-06	
	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT
Mercury	0	15.62	0.200	2292	1.00	11940	2.00	23310	5.00	58060	10.0	111600

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4837383
Report generated 07/01/2016 16:59

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061452
Analytical Method: 7470A
ICAL Worknum: WG575077

Workgroup (AAB#): WG574982
Instrument ID: CVAA1
Initial Calibration Date: 07/01/2016 13:34

Analyte	R	Q
Mercury	1.000	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4837383
Report generated 07/01/2016 16:59

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061452
Instrument ID: CVAA1
File ID: M7.070116.133953
Workgroup (AAB#): WG574982
Matrix: WATER

Run Date: 07/01/2016
Run Time: 13:39
Analyst: AMA
Cal ID: CVAA1 - 01-JUL-16

Sample ID: WG575077-08
Method: 7470A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
MERCURY	.1	.4	.1	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4837385
Report generated 07/01/2016 16:59

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061452
Run Date: 07/01/2016
Sample ID: WG575077-10
Instrument ID: CVAA1
Run Time: 13:44
Method: 7470A
File ID: M7.070116.134457
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG574982
Cal ID: CVAA1 - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837387
Report generated 07/01/2016 16:59

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061452
Run Date: 07/01/2016
Sample ID: WG575077-12
Instrument ID: CVAA1
Run Time: 14:15
Method: 7470A
File ID: M7.070116.141521
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG574982
Cal ID: CVAA1 - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837387
Report generated 07/01/2016 16:59

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061452
Run Date: 07/01/2016
Sample ID: WG575077-14
Instrument ID: CVAA1
Run Time: 14:45
Method: 7470A
File ID: M7.070116.144542
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG574982
Cal ID: CVAA1 - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837387
Report generated 07/01/2016 16:59

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061452 Run Date: 07/01/2016 Sample ID: WG575077-07
Instrument ID: CVAA1 Run Time: 13:37 Method: 7470A
File ID: M7.070116.133722 Analyst: AMA Units: ug/L
Workgroup (AAB#): WG574982 Cal ID: CVAA1 - 01-JUL-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Mercury		2	1.96	97.9	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4837384
Report generated 07/01/2016 16:59

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 07/01/2016
Sample ID: WG575077-09
Instrument ID: CVAA1
Run Time: 13:42
Method: 7470A
File ID: M7.070116.134226
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG574982
Cal ID: CVAA1 - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00206	mg/L	103	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837386
Report generated 07/01/2016 16:59

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 07/01/2016
Sample ID: WG575077-11
Instrument ID: CVAA1
Run Time: 14:12
Method: 7470A
File ID: M7.070116.141250
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG574982
Cal ID: CVAA1 - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00209	mg/L	104	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837386
Report generated 07/01/2016 16:59

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061452
Run Date: 07/01/2016
Sample ID: WG575077-13
Instrument ID: CVAA1
Run Time: 14:43
Method: 7470A
File ID: M7.070116.144311
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG574982
Cal ID: CVAA1 - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00212	mg/L	106	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837386
Report generated 07/01/2016 16:59

2.3.3.3 Raw Data

PDM CVAA1 245.1/7470/7471

Report Generated By CETAC QuickTrace
Analyst: VOA
Worksheet file: C:\Program Files (x86)\QuickTrace\Worksheets\070116C.wsz
Date Started: 7/1/2016 1:19:02 PM
Comment:

Results

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
Standard #0					STD	07/01/16 01:22:06 pm	0.0000	16	76.67		1.00
Replicates	25.0	14.3	24.0	-0.8							
Standard #1 (0.2 ug/L)					STD	07/01/16 01:24:37 pm	0.2000	2292	0.69		1.00
Replicates	2291.5	2270.6	2299.3	2307.6							
Standard #2 (1.0 ug/L)					STD	07/01/16 01:27:09 pm	1.0000	11940	0.20		1.00
Replicates	11904.3	11950.5	11948.2	11958.5							
Standard #3 (2.0 ug/L)					STD	07/01/16 01:29:41 pm	2.0000	23309	0.14		1.00
Replicates	23265.2	23303.1	23326.1	23340.4							
Standard #4 (5.0 ug/L)					STD	07/01/16 01:32:15 pm	5.0000	58060	0.11		1.00
Replicates	57964.6	58090.8	58095.6	58091.0							
Standard #5 (10.0 ug/L)					STD	07/01/16 01:34:48 pm	10.0000	111631	0.05		1.00
Replicates	111556.2	111686.9	111638.9	111643.0							

Calibration

Equation: A = 615.011 + 11184.540C
R2: 0.99959
SEE: 975.2013
Flags:

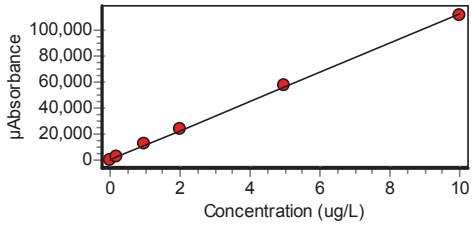

ICV					ICV	07/01/16 01:37:22 pm	1.9580	22511	0.10		1.00
Replicates	22520.8	22530.1	22512.9	22479.6							
% Recovery	97.88										

Approved: July 05, 2016
Alexandra M. Alpred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
ICB					ICB	07/01/16 01:39:53 pm	-0.0571	-24	28.76		1.00
Replicates	-27.0	-31.7	-18.7	-17.4							
CCV					CCV	07/01/16 01:42:26 pm	2.0620	23677	0.25		1.00
Replicates	23729.3	23710.7	23669.3	23596.8							
% Recovery	103.10										
CCB					CCB	07/01/16 01:44:57 pm	-0.0566	-18	121.41		1.00
Replicates	-13.5	10.7	-40.3	-30.3							
WG574502-03					MB	07/01/16 01:47:27 pm	-0.0515	40	23.51		1.00
Replicates	26.7	45.3	47.3	39.0							
WG574502-04					LCS	07/01/16 01:49:59 pm	3.8580	43770	0.67		1.00
Replicates	43396.9	43695.1	43906.3	44083.5							
% Recovery	96.46										
WG574277-01					UNK	07/01/16 01:52:30 pm	-0.0530	23	80.67		1.00
Replicates	37.4	16.0	-0.2	37.1							
WG574277-02					UNK	07/01/16 01:55:02 pm	-0.0524	29	43.97		1.00
Replicates	39.7	19.6	39.1	16.0							
L1606139602					UNK	07/01/16 01:57:34 pm	-0.0514	40	36.40		1.00
Replicates	19.7	40.4	52.1	49.4							
WG574982-01					SPK	07/01/16 02:00:06 pm	0.9742	11512	0.37		1.00
Replicates	11460.7	11500.7	11521.7	11563.0							
% Recovery	102.56										
L1606139606					UNK	07/01/16 02:02:38 pm	-0.0522	32	20.10		1.00
Replicates	24.8	28.1	34.4	38.9							
L1606139608					UNK	07/01/16 02:05:11 pm	0.2547	3464	0.72		1.00
Replicates	3427.4	3481.1	3478.1	3470.2							
L1606139801					UNK	07/01/16 02:07:44 pm	-0.0553	-3	376.08		1.00
Replicates	-11.6	10.6	-12.6	1.7							

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Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
WG574502-05					UNK	07/01/16 02:10:18 pm	4.1590	47133	0.22		1.00
Replicates	46975.9	47179.6	47188.1	47189.3							
CCV					CCV	07/01/16 02:12:50 pm	2.0890	23977	0.28		1.00
Replicates	23885.5	23974.1	24007.9	24039.7							
% Recovery	104.44										
CCB					CCB	07/01/16 02:15:21 pm	-0.0561	-12	35.78		1.00
Replicates	-16.6	-8.6	-8.4	-15.6							
WG574502-06					UNK	07/01/16 02:17:55 pm	4.1370	46884	0.28		1.00
Replicates	46695.5	46902.6	46957.4	46981.1							
L1606141901					UNK	07/01/16 02:20:29 pm	-0.0498	58	36.93		1.00
Replicates	37.2	67.7	83.7	44.0							
WG574502-07					UNK	07/01/16 02:22:59 pm	-0.0446	116	6.83		1.00
Replicates	117.4	104.8	122.9	119.6							
L1606141902					UNK	07/01/16 02:25:30 pm	-0.0510	44	33.00		1.00
Replicates	55.9	55.3	24.7	42.0							
L1606141903					UNK	07/01/16 02:28:01 pm	-0.0532	21	81.88		1.00
Replicates	21.6	17.6	1.1	42.1							
L1606141904					UNK	07/01/16 02:30:32 pm	-0.0507	48	39.49		1.00
Replicates	63.6	62.9	43.4	23.4							
L1606142601					UNK	07/01/16 02:33:03 pm	-0.0169	426	3.64		1.00
Replicates	422.5	428.3	408.1	445.6							
L1606142603					UNK	07/01/16 02:35:35 pm	-0.0323	254	5.48		1.00
Replicates	249.8	235.9	262.6	266.7							
L1606145201					UNK	07/01/16 02:38:07 pm	-0.0528	24	23.67		1.00
Replicates	16.8	23.7	30.7	25.5							

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Alexandra M. Alpred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
WG574982-02					SPK	07/01/16 02:40:39 pm	0.9588	11339	0.96		1.00
Replicates	11197.8	11311.9	11398.6	11446.6							
% Recovery	101.16										
CCV					CCV	07/01/16 02:43:11 pm	2.1190	24317	0.31		1.00
Replicates	24219.6	24301.8	24391.9	24355.9							
% Recovery	105.96										
CCB					CCB	07/01/16 02:45:42 pm	-0.0580	-34	47.09		1.00
Replicates	-47.2	-21.0	-19.0	-47.6							
L1606145301					UNK	07/01/16 02:48:15 pm	-0.0395	174	3.79		1.00
Replicates	176.2	178.3	163.8	175.8							
L1606145303					UNK	07/01/16 02:50:48 pm	-0.0496	60	26.85		1.00
Replicates	47.1	56.2	83.4	53.1							
L1606145802					UNK	07/01/16 02:53:21 pm	0.4068	5165	0.57		1.00
Replicates	5122.4	5168.9	5180.7	5188.4							
L1606146801					UNK	07/01/16 02:55:54 pm	-0.0429	135	11.20		1.00
Replicates	138.9	154.2	125.7	120.4							
CCV					CCV	07/01/16 02:58:27 pm	2.1490	24649	0.13		1.00
Replicates	24603.7	24655.7	24682.5	24655.0							
% Recovery	107.44										
CCB					CCB	07/01/16 03:00:57 pm	-0.0556	-6	123.17		1.00
Replicates	-7.5	-8.8	-14.0	4.7							

Approved: July 05, 2016

Alexandra M. Alpred

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
July 19, 2016

---

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BNB - Brandi N. Bentley
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJQ - Cameron J. Quick
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
CV - Carl Volkman
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
EMW - ERIC M. WILKEN
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
HDC - HANAH D. COE
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LJH - Lacey J. Hendershot
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
NPH - Natalie P. Hart
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RNP - RICK N. PETTY
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
July 19, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
July 19, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Debra Richmann
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD	pH:	
Project Name/Location:	Longhorn		
Project Number:	60274185.0013BH 1824 MR10		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Total Metals	1,4 - DIOXANE	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 18/24	18CPTmw12SW-062416			6/24/16	0750		✓	W	7	✓	✓	✓	✓					
	18CPTmw12DW-062416			6/24/16	0855		✓	W	2				✓					
	MW7-062416			6/24/16	0955		✓	W	6	✓	✓		✓					
	Trip Blank			6/24/16			✓	W	2	✓								

Comments: **STANDARD TAT**

Relinquished by: (Signature) Scott Beesinger	Date 6/24/16	Time 1530	R	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	R (S		Time	Remarks:

Microbac OVD
Received: 06/25/2016 10:39
By: BRENDA GREENWALT
221000087727

Brenda Greenwalt

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061452
Account: 2551
Project: 2551.096
Samples: 4
Due Date: 08-JUL-2016

Samplenum	Container ID	Products
L16061452-01	766908	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-JUN-2016 11:44	CLS		
2	ANALYZ	V1	ORG4	27-JUN-2016 16:45	JST	CLS	
3	STORE	ORG4	A1	11-JUL-2016 07:33	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-JUN-2016 11:44	CLS		
2	ANALYZ	V1	ORG4	27-JUN-2016 16:45	JST	CLS	
3	STORE	ORG4	A1	11-JUL-2016 07:33	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-JUN-2016 11:44	CLS		
2	ANALYZ	V1	ORG4	27-JUN-2016 16:45	JST	CLS	
3	STORE	ORG4	A1	11-JUL-2016 07:33	CLS	AWE	

Samplenum	Container ID	Products
L16061452-01	766909	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-JUN-2016 11:44	CLS		
2	PREP	W1	EXT	27-JUN-2016 16:13	CPD	CLS	
3	DISP	EXT	DISP	28-JUN-2016 15:00	BJO	BJO	
4	ANALYZ*	EXT	SEMI	30-JUN-2016 09:48	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		27-JUN-2016 11:44	CLS		

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061452-01	766910	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-JUN-2016 11:44	CLS		
2	ANALYZ	W1	SEM	01-JUL-2016 10:24	JWR	CLS	
3	STORE	SEM	A1	05-JUL-2016 13:46	BRG	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061452
Account: 2551
Project: 2551.096
Samples: 4
Due Date: 08-JUL-2016

Samplenum	Container ID	Products
L16061452-01	766911	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-JUN-2016 11:44	CLS		
2	PREP	W1	DIG	27-JUN-2016 12:37	ERP	CLS	
3	STORE	DIG	A1	29-JUN-2016 14:52	CLS	ERP	
4	ANALYZ*	DIG	METALS	30-JUN-2016 14:56	JYH	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061452-02	766912	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-JUN-2016 11:44	CLS		
2	PREP	W1	EXT	27-JUN-2016 16:13	CPD	CLS	
3	DISP	EXT	DISP	28-JUN-2016 15:00	BJO	BJO	
4	ANALYZ*	EXT	SEMI	30-JUN-2016 09:48	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		27-JUN-2016 11:44	CLS		

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061452
Account: 2551
Project: 2551.096
Samples: 4
Due Date: 08-JUL-2016

Samplenum	Container ID	Products
L16061452-03	766913	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-JUN-2016 11:44	CLS		
2	ANALYZ	V1	ORG4	27-JUN-2016 16:45	JST	CLS	
3	STORE	ORG4	A1	11-JUL-2016 07:33	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-JUN-2016 11:44	CLS		
2	ANALYZ	V1	ORG4	27-JUN-2016 16:45	JST	CLS	
3	STORE	ORG4	A1	11-JUL-2016 07:33	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-JUN-2016 11:44	CLS		
2	ANALYZ	V1	ORG4	27-JUN-2016 16:45	JST	CLS	
3	STORE	ORG4	A1	11-JUL-2016 07:33	CLS	AWE	

Samplenum	Container ID	Products
L16061452-03	766914	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-JUN-2016 11:44	CLS		
2	PREP	W1	EXT	27-JUN-2016 16:13	CPD	CLS	
3	DISP	EXT	DISP	28-JUN-2016 15:00	BJO	BJO	
4	ANALYZ*	EXT	SEMI	30-JUN-2016 09:48	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		27-JUN-2016 11:44	CLS		

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061452-03	766915	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-JUN-2016 11:44	CLS		
2	ANALYZ	W1	SEM	01-JUL-2016 10:24	JWR	CLS	
3	STORE	SEM	A1	05-JUL-2016 13:46	BRG	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061452
Account: 2551
Project: 2551.096
Samples: 4
Due Date: 08-JUL-2016

Samplenum	Container ID	Products
L16061452-04	766916	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-JUN-2016 11:44	CLS		
2	ANALYZ	V1	ORG4	27-JUN-2016 16:45	JST	CLS	
3	STORE	ORG4	A1	11-JUL-2016 07:33	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-JUN-2016 11:44	CLS		
2	ANALYZ	V1	ORG4	27-JUN-2016 16:45	JST	CLS	
3	STORE	ORG4	A1	11-JUL-2016 07:33	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16061593

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Michelle Taylor – Client Services Specialist
(740) 373-4071
Michelle.Taylor@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on July 13 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00113719	H	3.0		J2317164859	X
0019185	H	3.0		J2317164840	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	NA
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	NA

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18WW25(3.5-4)(270616)	L16061593-01	06/27/2016 13:35	06/29/2016 09:34
18WW25(9.5-10)270616	L16061593-02	06/27/2016 14:12	06/29/2016 09:34
18WW25(14.5-15)270616	L16061593-03	06/27/2016 14:45	06/29/2016 09:34
18WW25(19.5-20)270616	L16061593-04	06/27/2016 15:50	06/29/2016 09:34
18WW25(22-22.5)270616	L16061593-05	06/27/2016 16:12	06/29/2016 09:34
18WW25(22-22.5)270616 DUP	L16061593-06	06/27/2016 16:12	06/29/2016 09:34

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16061593
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.1 Narratives

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061593
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG574993, WG575227	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-13 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Wade DeLong	Wade DeLong	Chemist I	2016-07-13 14:47:01

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061593
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG574993, WG575227	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-13 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				3
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061593
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG574993, WG575227	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-13 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061593
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG574993, WG575227	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-13 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			2
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?		X			1
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061593
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG574993, WG575227	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-13 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061593
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG574993, WG575227	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-13 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. Internal Standard 1,4-Dichlorobenzene-d4 was above the upper control limit in the initial analysis of Sample 05.

2. Dichlorodifluoromethane was above the upper control limit in the Alternate Source standard WG573367-11 analyzed 06/21/2016 on HPMS9.

3. Naphthalene was detected above the DL in the Method Blank WG575227-01 analyzed 07/06/2016 on HPMS9.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061593
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575409	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-11 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-07-11 13:33:23

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061593
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575409	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-11 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061593
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575409	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-11 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061593
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575409	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-11 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061593
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575409	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-11 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061593
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575409	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-11 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061593
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG574798	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-07-01 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2016-07-01 14:14:16

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061593
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG574798	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-07-01 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?			X		
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?			X		
Were sample detection limits reported for all analytes not detected?			X		
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?			X		
Were blanks analyzed at the appropriate frequency?			X		
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?			X		
Were blank concentrations < MQL?			X		
Laboratory control samples (LCS):			X		
Were all COCs included in the LCS?			X		

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061593
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG574798	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-07-01 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?			X		
Were LCSs analyzed at the required frequency?			X		
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?			X		
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?			X		
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?			X		
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?			X		
Are unadjusted MQLs and DCSs included in the laboratory data package?			X		
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?			X		
Were percent RSDs or correlation coefficient criteria met?			X		

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061593
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG574798	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-07-01 00:00:00		

Was the number of standards recommended in the method used for all analytes?			X		
Were all points generated between the lowest and highest standard used to calculate the curve?			X		
Are ICAL data available for all instruments used?			X		
Has the initial calibration curve been verified using an appropriate second source standard?			X		
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061593
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG574798	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-07-01 00:00:00		

Was a MDL study performed for each reported analyte?			X		
Is the MDL either adjusted or supported by the analysis of DCSs?			X		
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?			X		
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061593
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG574798	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-07-01 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18WW25(3.5-4)(270616)	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	07/01/2016 14:23
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	06/21/2016 13:42
Workgroup #:	WG574993	**Analyst:**	ADC	**Run Date:**	07/01/2016 22:05
Collect Date:	06/27/2016 13:35	**Dilution:**	1	**File ID:**	9M975227
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.6	U	23.2	11.6	5.80
Benzene	71-43-2	1.16	U	5.80	1.16	0.580
Bromobenzene	108-86-1	1.16	U	5.80	1.16	0.580
Bromochloromethane	74-97-5	2.32	U	5.80	2.32	1.16
Bromodichloromethane	75-27-4	1.16	U	5.80	1.16	0.580
Bromoform	75-25-2	1.16	U	5.80	1.16	0.580
Bromomethane	74-83-9	2.32	U	5.80	2.32	1.16
2-Butanone	78-93-3	5.80	U	11.6	5.80	2.90
n-Butylbenzene	104-51-8	1.16	U	5.80	1.16	0.580
sec-Butylbenzene	135-98-8	1.16	U	5.80	1.16	0.580
tert-Butylbenzene	98-06-6	1.16	U	5.80	1.16	0.580
Carbon disulfide	75-15-0	1.16	U	5.80	1.16	0.580
Carbon tetrachloride	56-23-5	1.16	U	5.80	1.16	0.580
Chlorobenzene	108-90-7	1.16	U	5.80	1.16	0.580
Chlorodibromomethane	124-48-1	1.16	U	5.80	1.16	0.580
Chloroethane	75-00-3	2.32	U	5.80	2.32	1.16
Chloroform	67-66-3	1.16	U	5.80	1.16	0.580
Chloromethane	74-87-3	4.64	U	11.6	4.64	2.32
2-Chlorotoluene	95-49-8	1.16	U	5.80	1.16	0.580
4-Chlorotoluene	106-43-4	1.16	U	5.80	1.16	0.580
1,2-Dibromo-3-chloropropane	96-12-8	4.64	U	11.6	4.64	2.32
1,2-Dibromoethane	106-93-4	1.16	U	5.80	1.16	0.580
Dibromomethane	74-95-3	1.16	U	5.80	1.16	0.580
1,2-Dichlorobenzene	95-50-1	1.16	U	5.80	1.16	0.580
1,3-Dichlorobenzene	541-73-1	1.16	U	5.80	1.16	0.580
1,4-Dichlorobenzene	106-46-7	1.16	U	5.80	1.16	0.580
Dichlorodifluoromethane	75-71-8	2.32	U	5.80	2.32	1.16
1,1-Dichloroethane	75-34-3	2.32	U	5.80	2.32	1.16
1,2-Dichloroethane	107-06-2	1.16	U	5.80	1.16	0.580
1,1-Dichloroethene	75-35-4	1.16	U	5.80	1.16	0.580
cis-1,2-Dichloroethene	156-59-2	1.16	U	5.80	1.16	0.580
trans-1,2-Dichloroethene	156-60-5	1.16	U	5.80	1.16	0.580

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.16	U	5.80	1.16	0.580
1,3-Dichloropropane	142-28-9	1.16	U	5.80	1.16	0.580
2,2-Dichloropropane	594-20-7	1.16	U	5.80	1.16	0.580
cis-1,3-Dichloropropene	10061-01-5	1.16	U	5.80	1.16	0.580
trans-1,3-Dichloropropene	10061-02-6	1.16	U	5.80	1.16	0.580
1,1-Dichloropropene	563-58-6	1.16	U	5.80	1.16	0.580
Ethylbenzene	100-41-4	1.16	U	5.80	1.16	0.580
2-Hexanone	591-78-6	5.80	U	11.6	5.80	2.90
Hexachlorobutadiene	87-68-3	1.16	U	5.80	1.16	0.580
Isopropylbenzene	98-82-8	1.16	U	5.80	1.16	0.580
p-Isopropyltoluene	99-87-6	1.16	U	5.80	1.16	0.580
4-Methyl-2-pentanone	108-10-1	5.80	U	11.6	5.80	2.90
Methylene chloride	75-09-2	2.32	U	5.80	2.32	1.16
n-Propylbenzene	103-65-1	1.16	U	5.80	1.16	0.580
Styrene	100-42-5	1.16	U	5.80	1.16	0.580
1,1,1,2-Tetrachloroethane	630-20-6	1.16	U	5.80	1.16	0.580
1,1,2,2-Tetrachloroethane	79-34-5	1.16	U	5.80	1.16	0.580
Tetrachloroethene	127-18-4	1.16	U	5.80	1.16	0.580
Toluene	108-88-3	1.16	U	5.80	1.16	0.580
1,2,3-Trichlorobenzene	87-61-6	1.16	U	5.80	1.16	0.580
1,2,4-Trichlorobenzene	120-82-1	1.16	U	5.80	1.16	0.580
1,1,1-Trichloroethane	71-55-6	1.16	U	5.80	1.16	0.580
1,1,2-Trichloroethane	79-00-5	1.16	U	5.80	1.16	0.580
Trichloroethene	79-01-6	1.16	U	5.80	1.16	0.580
Trichlorofluoromethane	75-69-4	2.32	U	5.80	2.32	1.16
1,2,3-Trichloropropane	96-18-4	2.32	U	5.80	2.32	1.16
1,2,4-Trimethylbenzene	95-63-6	1.16	U	5.80	1.16	0.580
1,3,5-Trimethylbenzene	108-67-8	1.16	U	5.80	1.16	0.580
Vinyl chloride	75-01-4	2.32	U	5.80	2.32	1.16
o-Xylene	95-47-6	1.16	U	5.80	1.16	0.580
m-,p-Xylene	179601-23-1	1.16	U	5.80	1.16	0.580

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.6	80	120	
1,2-Dichloroethane-d4	88.6	80	120	
Toluene-d8	100	85	115	
4-Bromofluorobenzene	102	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18WW25(3.5-4)(270616)	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	07/05/2016 15:33
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	06/21/2016 13:42
Workgroup #:	WG575227	**Analyst:**	ADC	**Run Date:**	07/06/2016 18:11
Collect Date:	06/27/2016 13:35	**Dilution:**	1	**File ID:**	9M975257
Sample Tag:	02	**Units:**	ug/kg	**Percent Solid:**	85.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Naphthalene	91-20-3	0.612	J	5.99	1.20	0.599

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.2	80	120	
1,2-Dichloroethane-d4	90.6	80	120	
Toluene-d8	100	85	115	
4-Bromofluorobenzene	102	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW25(3.5-4)(270616)	**Prep Method:**	6850	**Prep Date:**	07/06/2016 16:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575409	**Analyst:**	JWR	**Run Date:**	07/07/2016 14:53
Collect Date:	06/27/2016 13:35	**Dilution:**	1	**File ID:**	1LM.LM35648
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.28	U	4.57	2.28	1.14

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18WW25(9.5-10)270616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	07/01/2016 14:27
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	06/21/2016 13:42
Workgroup #:	WG574993	**Analyst:**	ADC	**Run Date:**	07/01/2016 22:35
Collect Date:	06/27/2016 14:12	**Dilution:**	1	**File ID:**	9M975228
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	77.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.6	U	25.3	12.6	6.32
Benzene	71-43-2	1.26	U	6.32	1.26	0.632
Bromobenzene	108-86-1	1.26	U	6.32	1.26	0.632
Bromochloromethane	74-97-5	2.52	U	6.32	2.52	1.26
Bromodichloromethane	75-27-4	1.26	U	6.32	1.26	0.632
Bromoform	75-25-2	1.26	U	6.32	1.26	0.632
Bromomethane	74-83-9	2.52	U	6.32	2.52	1.26
2-Butanone	78-93-3	6.32	U	12.6	6.32	3.16
n-Butylbenzene	104-51-8	1.26	U	6.32	1.26	0.632
sec-Butylbenzene	135-98-8	1.26	U	6.32	1.26	0.632
tert-Butylbenzene	98-06-6	1.26	U	6.32	1.26	0.632
Carbon disulfide	75-15-0	1.26	U	6.32	1.26	0.632
Carbon tetrachloride	56-23-5	1.26	U	6.32	1.26	0.632
Chlorobenzene	108-90-7	1.26	U	6.32	1.26	0.632
Chlorodibromomethane	124-48-1	1.26	U	6.32	1.26	0.632
Chloroethane	75-00-3	2.52	U	6.32	2.52	1.26
Chloroform	67-66-3	1.26	U	6.32	1.26	0.632
Chloromethane	74-87-3	5.06	U	12.6	5.06	2.53
2-Chlorotoluene	95-49-8	1.26	U	6.32	1.26	0.632
4-Chlorotoluene	106-43-4	1.26	U	6.32	1.26	0.632
1,2-Dibromo-3-chloropropane	96-12-8	5.06	U	12.6	5.06	2.53
1,2-Dibromoethane	106-93-4	1.26	U	6.32	1.26	0.632
Dibromomethane	74-95-3	1.26	U	6.32	1.26	0.632
1,2-Dichlorobenzene	95-50-1	1.26	U	6.32	1.26	0.632
1,3-Dichlorobenzene	541-73-1	1.26	U	6.32	1.26	0.632
1,4-Dichlorobenzene	106-46-7	1.26	U	6.32	1.26	0.632
Dichlorodifluoromethane	75-71-8	2.52	U	6.32	2.52	1.26
1,1-Dichloroethane	75-34-3	2.52	U	6.32	2.52	1.26
1,2-Dichloroethane	107-06-2	1.26	U	6.32	1.26	0.632
1,1-Dichloroethene	75-35-4	1.26	U	6.32	1.26	0.632
cis-1,2-Dichloroethene	156-59-2	1.26	U	6.32	1.26	0.632

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.26	U	6.32	1.26	0.632
1,2-Dichloropropane	78-87-5	1.26	U	6.32	1.26	0.632
1,3-Dichloropropane	142-28-9	1.26	U	6.32	1.26	0.632
2,2-Dichloropropane	594-20-7	1.26	U	6.32	1.26	0.632
cis-1,3-Dichloropropene	10061-01-5	1.26	U	6.32	1.26	0.632
trans-1,3-Dichloropropene	10061-02-6	1.26	U	6.32	1.26	0.632
1,1-Dichloropropene	563-58-6	1.26	U	6.32	1.26	0.632
Ethylbenzene	100-41-4	1.26	U	6.32	1.26	0.632
2-Hexanone	591-78-6	6.32	U	12.6	6.32	3.16
Hexachlorobutadiene	87-68-3	1.26	U	6.32	1.26	0.632
Isopropylbenzene	98-82-8	1.26	U	6.32	1.26	0.632
p-Isopropyltoluene	99-87-6	1.26	U	6.32	1.26	0.632
4-Methyl-2-pentanone	108-10-1	6.32	U	12.6	6.32	3.16
Methylene chloride	75-09-2	2.52	U	6.32	2.52	1.26
n-Propylbenzene	103-65-1	1.26	U	6.32	1.26	0.632
Styrene	100-42-5	1.26	U	6.32	1.26	0.632
1,1,1,2-Tetrachloroethane	630-20-6	1.26	U	6.32	1.26	0.632
1,1,2,2-Tetrachloroethane	79-34-5	1.26	U	6.32	1.26	0.632
Tetrachloroethene	127-18-4	1.26	U	6.32	1.26	0.632
Toluene	108-88-3	1.26	U	6.32	1.26	0.632
1,2,3-Trichlorobenzene	87-61-6	1.26	U	6.32	1.26	0.632
1,2,4-Trichlorobenzene	120-82-1	1.26	U	6.32	1.26	0.632
1,1,1-Trichloroethane	71-55-6	1.26	U	6.32	1.26	0.632
1,1,2-Trichloroethane	79-00-5	1.26	U	6.32	1.26	0.632
Trichloroethene	79-01-6	1.26	U	6.32	1.26	0.632
Trichlorofluoromethane	75-69-4	2.52	U	6.32	2.52	1.26
1,2,3-Trichloropropane	96-18-4	2.52	U	6.32	2.52	1.26
1,2,4-Trimethylbenzene	95-63-6	1.26	U	6.32	1.26	0.632
1,3,5-Trimethylbenzene	108-67-8	1.26	U	6.32	1.26	0.632
Vinyl chloride	75-01-4	2.52	U	6.32	2.52	1.26
o-Xylene	95-47-6	1.26	U	6.32	1.26	0.632
m-,p-Xylene	179601-23-1	1.26	U	6.32	1.26	0.632

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	90.9	80	120	
1,2-Dichloroethane-d4	89.8	80	120	
Toluene-d8	98.7	85	115	
4-Bromofluorobenzene	102	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18WW25(9.5-10)270616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	07/05/2016 15:34
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	06/21/2016 13:42
Workgroup #:	WG575227	**Analyst:**	ADC	**Run Date:**	07/06/2016 18:41
Collect Date:	06/27/2016 14:12	**Dilution:**	1	**File ID:**	9M975258
Sample Tag:	02	**Units:**	ug/kg	**Percent Solid:**	77.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Naphthalene	91-20-3	1.24	U	6.18	1.24	0.618

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.5	80	120	
1,2-Dichloroethane-d4	87.4	80	120	
Toluene-d8	98.3	85	115	
4-Bromofluorobenzene	102	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW25(9.5-10)270616	**Prep Method:**	6850	**Prep Date:**	07/06/2016 16:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575409	**Analyst:**	JWR	**Run Date:**	07/07/2016 15:12
Collect Date:	06/27/2016 14:12	**Dilution:**	1	**File ID:**	1LM.LM35649
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	77.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.52	U	5.05	2.52	1.26

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18WW25(14.5-15)270616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	07/01/2016 14:28
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	06/21/2016 13:42
Workgroup #:	WG574993	**Analyst:**	ADC	**Run Date:**	07/01/2016 23:06
Collect Date:	06/27/2016 14:45	**Dilution:**	1	**File ID:**	9M975229
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.5	J	24.9	12.5	6.24
Benzene	71-43-2	1.25	U	6.24	1.25	0.624
Bromobenzene	108-86-1	1.25	U	6.24	1.25	0.624
Bromochloromethane	74-97-5	2.50	U	6.24	2.50	1.25
Bromodichloromethane	75-27-4	1.25	U	6.24	1.25	0.624
Bromoform	75-25-2	1.25	U	6.24	1.25	0.624
Bromomethane	74-83-9	2.50	U	6.24	2.50	1.25
2-Butanone	78-93-3	6.24	U	12.5	6.24	3.12
n-Butylbenzene	104-51-8	1.25	U	6.24	1.25	0.624
sec-Butylbenzene	135-98-8	1.25	U	6.24	1.25	0.624
tert-Butylbenzene	98-06-6	1.25	U	6.24	1.25	0.624
Carbon disulfide	75-15-0	1.25	U	6.24	1.25	0.624
Carbon tetrachloride	56-23-5	1.25	U	6.24	1.25	0.624
Chlorobenzene	108-90-7	1.25	U	6.24	1.25	0.624
Chlorodibromomethane	124-48-1	1.25	U	6.24	1.25	0.624
Chloroethane	75-00-3	2.50	U	6.24	2.50	1.25
Chloroform	67-66-3	1.25	U	6.24	1.25	0.624
Chloromethane	74-87-3	4.98	U	12.5	4.98	2.49
2-Chlorotoluene	95-49-8	1.25	U	6.24	1.25	0.624
4-Chlorotoluene	106-43-4	1.25	U	6.24	1.25	0.624
1,2-Dibromo-3-chloropropane	96-12-8	4.98	U	12.5	4.98	2.49
1,2-Dibromoethane	106-93-4	1.25	U	6.24	1.25	0.624
Dibromomethane	74-95-3	1.25	U	6.24	1.25	0.624
1,2-Dichlorobenzene	95-50-1	1.25	U	6.24	1.25	0.624
1,3-Dichlorobenzene	541-73-1	1.25	U	6.24	1.25	0.624
1,4-Dichlorobenzene	106-46-7	1.25	U	6.24	1.25	0.624
Dichlorodifluoromethane	75-71-8	2.50	U	6.24	2.50	1.25
1,1-Dichloroethane	75-34-3	2.50	U	6.24	2.50	1.25
1,2-Dichloroethane	107-06-2	1.25	U	6.24	1.25	0.624
1,1-Dichloroethene	75-35-4	1.25	U	6.24	1.25	0.624
cis-1,2-Dichloroethene	156-59-2	1.25	U	6.24	1.25	0.624

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.25	U	6.24	1.25	0.624
1,2-Dichloropropane	78-87-5	1.25	U	6.24	1.25	0.624
1,3-Dichloropropane	142-28-9	1.25	U	6.24	1.25	0.624
2,2-Dichloropropane	594-20-7	1.25	U	6.24	1.25	0.624
cis-1,3-Dichloropropene	10061-01-5	1.25	U	6.24	1.25	0.624
trans-1,3-Dichloropropene	10061-02-6	1.25	U	6.24	1.25	0.624
1,1-Dichloropropene	563-58-6	1.25	U	6.24	1.25	0.624
Ethylbenzene	100-41-4	1.25	U	6.24	1.25	0.624
2-Hexanone	591-78-6	6.24	U	12.5	6.24	3.12
Hexachlorobutadiene	87-68-3	1.25	U	6.24	1.25	0.624
Isopropylbenzene	98-82-8	1.25	U	6.24	1.25	0.624
p-Isopropyltoluene	99-87-6	1.25	U	6.24	1.25	0.624
4-Methyl-2-pentanone	108-10-1	6.24	U	12.5	6.24	3.12
Methylene chloride	75-09-2	2.50	U	6.24	2.50	1.25
n-Propylbenzene	103-65-1	1.25	U	6.24	1.25	0.624
Styrene	100-42-5	1.25	U	6.24	1.25	0.624
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	6.24	1.25	0.624
1,1,2,2-Tetrachloroethane	79-34-5	1.25	U	6.24	1.25	0.624
Tetrachloroethene	127-18-4	1.25	U	6.24	1.25	0.624
Toluene	108-88-3	1.25	U	6.24	1.25	0.624
1,2,3-Trichlorobenzene	87-61-6	1.25	U	6.24	1.25	0.624
1,2,4-Trichlorobenzene	120-82-1	1.25	U	6.24	1.25	0.624
1,1,1-Trichloroethane	71-55-6	1.25	U	6.24	1.25	0.624
1,1,2-Trichloroethane	79-00-5	1.25	U	6.24	1.25	0.624
Trichloroethene	79-01-6	1.25	U	6.24	1.25	0.624
Trichlorofluoromethane	75-69-4	2.50	U	6.24	2.50	1.25
1,2,3-Trichloropropane	96-18-4	2.50	U	6.24	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	6.24	1.25	0.624
1,3,5-Trimethylbenzene	108-67-8	1.25	U	6.24	1.25	0.624
Vinyl chloride	75-01-4	2.50	U	6.24	2.50	1.25
o-Xylene	95-47-6	1.25	U	6.24	1.25	0.624
m-,p-Xylene	179601-23-1	1.25	U	6.24	1.25	0.624

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.9	80	120	
1,2-Dichloroethane-d4	87.5	80	120	
Toluene-d8	99.1	85	115	
4-Bromofluorobenzene	98.4	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18WW25(14.5-15)270616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	07/05/2016 15:34
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	06/21/2016 13:42
Workgroup #:	WG575227	**Analyst:**	ADC	**Run Date:**	07/06/2016 19:11
Collect Date:	06/27/2016 14:45	**Dilution:**	1	**File ID:**	9M975259
Sample Tag:	02	**Units:**	ug/kg	**Percent Solid:**	81.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Naphthalene	91-20-3	1.17	U	5.87	1.17	0.587

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.0	80	120	
1,2-Dichloroethane-d4	89.5	80	120	
Toluene-d8	100	85	115	
4-Bromofluorobenzene	102	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW25(14.5-15)270616	**Prep Method:**	6850	**Prep Date:**	07/06/2016 16:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575409	**Analyst:**	JWR	**Run Date:**	07/07/2016 15:31
Collect Date:	06/27/2016 14:45	**Dilution:**	1	**File ID:**	1LM.LM35650
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.40	U	4.81	2.40	1.20

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18WW25(19.5-20)270616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	07/05/2016 15:35
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	06/21/2016 13:42
Workgroup #:	WG575227	**Analyst:**	ADC	**Run Date:**	07/06/2016 19:42
Collect Date:	06/27/2016 15:50	**Dilution:**	1	**File ID:**	9M975260
Sample Tag:	02	**Units:**	ug/kg	**Percent Solid:**	79.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Naphthalene	91-20-3	1.31	U	6.55	1.31	0.655

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.9	80	120	
1,2-Dichloroethane-d4	91.7	80	120	
Toluene-d8	100	85	115	
4-Bromofluorobenzene	105	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18WW25(19.5-20)270616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	07/01/2016 14:30
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	06/21/2016 13:42
Workgroup #:	WG574993	**Analyst:**	ADC	**Run Date:**	07/01/2016 23:36
Collect Date:	06/27/2016 15:50	**Dilution:**	1	**File ID:**	9M975230
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	15.7	J	24.5	12.2	6.12
Benzene	71-43-2	1.22	U	6.12	1.22	0.612
Bromobenzene	108-86-1	1.22	U	6.12	1.22	0.612
Bromochloromethane	74-97-5	2.44	U	6.12	2.44	1.22
Bromodichloromethane	75-27-4	1.22	U	6.12	1.22	0.612
Bromoform	75-25-2	1.22	U	6.12	1.22	0.612
Bromomethane	74-83-9	2.44	U	6.12	2.44	1.22
2-Butanone	78-93-3	6.12	U	12.2	6.12	3.06
n-Butylbenzene	104-51-8	1.22	U	6.12	1.22	0.612
sec-Butylbenzene	135-98-8	1.22	U	6.12	1.22	0.612
tert-Butylbenzene	98-06-6	1.22	U	6.12	1.22	0.612
Carbon disulfide	75-15-0	1.22	U	6.12	1.22	0.612
Carbon tetrachloride	56-23-5	1.22	U	6.12	1.22	0.612
Chlorobenzene	108-90-7	1.22	U	6.12	1.22	0.612
Chlorodibromomethane	124-48-1	1.22	U	6.12	1.22	0.612
Chloroethane	75-00-3	2.44	U	6.12	2.44	1.22
Chloroform	67-66-3	1.22	U	6.12	1.22	0.612
Chloromethane	74-87-3	4.90	U	12.2	4.90	2.45
2-Chlorotoluene	95-49-8	1.22	U	6.12	1.22	0.612
4-Chlorotoluene	106-43-4	1.22	U	6.12	1.22	0.612
1,2-Dibromo-3-chloropropane	96-12-8	4.90	U	12.2	4.90	2.45
1,2-Dibromoethane	106-93-4	1.22	U	6.12	1.22	0.612
Dibromomethane	74-95-3	1.22	U	6.12	1.22	0.612
1,2-Dichlorobenzene	95-50-1	1.22	U	6.12	1.22	0.612
1,3-Dichlorobenzene	541-73-1	1.22	U	6.12	1.22	0.612
1,4-Dichlorobenzene	106-46-7	1.22	U	6.12	1.22	0.612
Dichlorodifluoromethane	75-71-8	2.44	U	6.12	2.44	1.22
1,1-Dichloroethane	75-34-3	2.44	U	6.12	2.44	1.22
1,2-Dichloroethane	107-06-2	1.22	U	6.12	1.22	0.612
1,1-Dichloroethene	75-35-4	1.22	U	6.12	1.22	0.612
cis-1,2-Dichloroethene	156-59-2	1.22	U	6.12	1.22	0.612

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Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.22	U	6.12	1.22	0.612
1,2-Dichloropropane	78-87-5	1.22	U	6.12	1.22	0.612
1,3-Dichloropropane	142-28-9	1.22	U	6.12	1.22	0.612
2,2-Dichloropropane	594-20-7	1.22	U	6.12	1.22	0.612
cis-1,3-Dichloropropene	10061-01-5	1.22	U	6.12	1.22	0.612
trans-1,3-Dichloropropene	10061-02-6	1.22	U	6.12	1.22	0.612
1,1-Dichloropropene	563-58-6	1.22	U	6.12	1.22	0.612
Ethylbenzene	100-41-4	1.22	U	6.12	1.22	0.612
2-Hexanone	591-78-6	6.12	U	12.2	6.12	3.06
Hexachlorobutadiene	87-68-3	1.22	U	6.12	1.22	0.612
Isopropylbenzene	98-82-8	1.22	U	6.12	1.22	0.612
p-Isopropyltoluene	99-87-6	1.22	U	6.12	1.22	0.612
4-Methyl-2-pentanone	108-10-1	6.12	U	12.2	6.12	3.06
Methylene chloride	75-09-2	2.44	U	6.12	2.44	1.22
n-Propylbenzene	103-65-1	1.22	U	6.12	1.22	0.612
Styrene	100-42-5	1.22	U	6.12	1.22	0.612
1,1,1,2-Tetrachloroethane	630-20-6	1.22	U	6.12	1.22	0.612
1,1,2,2-Tetrachloroethane	79-34-5	1.22	U	6.12	1.22	0.612
Tetrachloroethene	127-18-4	1.22	U	6.12	1.22	0.612
Toluene	108-88-3	1.22	U	6.12	1.22	0.612
1,2,3-Trichlorobenzene	87-61-6	1.22	U	6.12	1.22	0.612
1,2,4-Trichlorobenzene	120-82-1	1.22	U	6.12	1.22	0.612
1,1,1-Trichloroethane	71-55-6	1.22	U	6.12	1.22	0.612
1,1,2-Trichloroethane	79-00-5	1.22	U	6.12	1.22	0.612
Trichloroethene	79-01-6	1.22	U	6.12	1.22	0.612
Trichlorofluoromethane	75-69-4	2.44	U	6.12	2.44	1.22
1,2,3-Trichloropropane	96-18-4	2.44	U	6.12	2.44	1.22
1,2,4-Trimethylbenzene	95-63-6	1.22	U	6.12	1.22	0.612
1,3,5-Trimethylbenzene	108-67-8	1.22	U	6.12	1.22	0.612
Vinyl chloride	75-01-4	2.44	U	6.12	2.44	1.22
o-Xylene	95-47-6	1.22	U	6.12	1.22	0.612
m-,p-Xylene	179601-23-1	1.22	U	6.12	1.22	0.612

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.7	80	120	
1,2-Dichloroethane-d4	88.0	80	120	
Toluene-d8	99.9	85	115	
4-Bromofluorobenzene	105	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW25(19.5-20)270616	**Prep Method:**	6850	**Prep Date:**	07/06/2016 16:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575409	**Analyst:**	JWR	**Run Date:**	07/07/2016 15:50
Collect Date:	06/27/2016 15:50	**Dilution:**	1	**File ID:**	1LM.LM35651
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.46	U	4.93	2.46	1.23

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18WW25(22-22.5)270616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	07/05/2016 15:35
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	06/21/2016 13:42
Workgroup #:	WG575227	**Analyst:**	ADC	**Run Date:**	07/06/2016 20:12
Collect Date:	06/27/2016 16:12	**Dilution:**	1	**File ID:**	9M975261
Sample Tag:	02	**Units:**	ug/kg	**Percent Solid:**	81.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Naphthalene	91-20-3	1.23	U	6.14	1.23	0.614

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.3	80	120	
1,2-Dichloroethane-d4	89.6	80	120	
Toluene-d8	99.8	85	115	
4-Bromofluorobenzene	105	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18WW25(22-22.5)270616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	07/01/2016 14:31
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	06/21/2016 13:42
Workgroup #:	WG574993	**Analyst:**	ADC	**Run Date:**	07/02/2016 00:06
Collect Date:	06/27/2016 16:12	**Dilution:**	1	**File ID:**	9M975231
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	18.8	J	24.0	12.0	6.01
Benzene	71-43-2	1.20	U	6.01	1.20	0.601
Bromobenzene	108-86-1	1.20	U	6.01	1.20	0.601
Bromochloromethane	74-97-5	2.40	U	6.01	2.40	1.20
Bromodichloromethane	75-27-4	1.20	U	6.01	1.20	0.601
Bromoform	75-25-2	1.20	U	6.01	1.20	0.601
Bromomethane	74-83-9	2.40	U	6.01	2.40	1.20
2-Butanone	78-93-3	6.00	U	12.0	6.00	3.00
n-Butylbenzene	104-51-8	1.20	U	6.01	1.20	0.601
sec-Butylbenzene	135-98-8	1.20	U	6.01	1.20	0.601
tert-Butylbenzene	98-06-6	1.20	U	6.01	1.20	0.601
Carbon disulfide	75-15-0	1.20	U	6.01	1.20	0.601
Carbon tetrachloride	56-23-5	1.20	U	6.01	1.20	0.601
Chlorobenzene	108-90-7	1.20	U	6.01	1.20	0.601
Chlorodibromomethane	124-48-1	1.20	U	6.01	1.20	0.601
Chloroethane	75-00-3	2.40	U	6.01	2.40	1.20
Chloroform	67-66-3	1.20	U	6.01	1.20	0.601
Chloromethane	74-87-3	4.80	U	12.0	4.80	2.40
2-Chlorotoluene	95-49-8	1.20	U	6.01	1.20	0.601
4-Chlorotoluene	106-43-4	1.20	U	6.01	1.20	0.601
1,2-Dibromo-3-chloropropane	96-12-8	4.80	U	12.0	4.80	2.40
1,2-Dibromoethane	106-93-4	1.20	U	6.01	1.20	0.601
Dibromomethane	74-95-3	1.20	U	6.01	1.20	0.601
1,2-Dichlorobenzene	95-50-1	1.20	U	6.01	1.20	0.601
1,3-Dichlorobenzene	541-73-1	1.20	U	6.01	1.20	0.601
1,4-Dichlorobenzene	106-46-7	1.20	U	6.01	1.20	0.601
Dichlorodifluoromethane	75-71-8	2.40	U	6.01	2.40	1.20
1,1-Dichloroethane	75-34-3	2.40	U	6.01	2.40	1.20
1,2-Dichloroethane	107-06-2	1.20	U	6.01	1.20	0.601
1,1-Dichloroethene	75-35-4	1.20	U	6.01	1.20	0.601
cis-1,2-Dichloroethene	156-59-2	1.20	U	6.01	1.20	0.601

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.20	U	6.01	1.20	0.601
1,2-Dichloropropane	78-87-5	1.20	U	6.01	1.20	0.601
1,3-Dichloropropane	142-28-9	1.20	U	6.01	1.20	0.601
2,2-Dichloropropane	594-20-7	1.20	U	6.01	1.20	0.601
cis-1,3-Dichloropropene	10061-01-5	1.20	U	6.01	1.20	0.601
trans-1,3-Dichloropropene	10061-02-6	1.20	U	6.01	1.20	0.601
1,1-Dichloropropene	563-58-6	1.20	U	6.01	1.20	0.601
Ethylbenzene	100-41-4	1.20	U	6.01	1.20	0.601
2-Hexanone	591-78-6	6.00	U	12.0	6.00	3.00
Hexachlorobutadiene	87-68-3	1.20	U	6.01	1.20	0.601
Isopropylbenzene	98-82-8	1.20	U	6.01	1.20	0.601
p-Isopropyltoluene	99-87-6	1.20	U	6.01	1.20	0.601
4-Methyl-2-pentanone	108-10-1	6.00	U	12.0	6.00	3.00
Methylene chloride	75-09-2	2.40	U	6.01	2.40	1.20
n-Propylbenzene	103-65-1	1.20	U	6.01	1.20	0.601
Styrene	100-42-5	1.20	U	6.01	1.20	0.601
1,1,1,2-Tetrachloroethane	630-20-6	1.20	U	6.01	1.20	0.601
1,1,2,2-Tetrachloroethane	79-34-5	1.20	U	6.01	1.20	0.601
Tetrachloroethene	127-18-4	1.20	U	6.01	1.20	0.601
Toluene	108-88-3	1.20	U	6.01	1.20	0.601
1,2,3-Trichlorobenzene	87-61-6	1.20	U	6.01	1.20	0.601
1,2,4-Trichlorobenzene	120-82-1	1.20	U	6.01	1.20	0.601
1,1,1-Trichloroethane	71-55-6	1.20	U	6.01	1.20	0.601
1,1,2-Trichloroethane	79-00-5	1.20	U	6.01	1.20	0.601
Trichloroethene	79-01-6	1.20	U	6.01	1.20	0.601
Trichlorofluoromethane	75-69-4	2.40	U	6.01	2.40	1.20
1,2,3-Trichloropropane	96-18-4	2.40	U	6.01	2.40	1.20
1,2,4-Trimethylbenzene	95-63-6	1.20	U	6.01	1.20	0.601
1,3,5-Trimethylbenzene	108-67-8	1.20	U	6.01	1.20	0.601
Vinyl chloride	75-01-4	2.40	U	6.01	2.40	1.20
o-Xylene	95-47-6	1.20	U	6.01	1.20	0.601
m-,p-Xylene	179601-23-1	1.20	U	6.01	1.20	0.601

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.2	80	120	
1,2-Dichloroethane-d4	89.5	80	120	
Toluene-d8	101	85	115	
4-Bromofluorobenzene	106	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW25(22-22.5)270616	**Prep Method:**	6850	**Prep Date:**	07/06/2016 16:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575409	**Analyst:**	JWR	**Run Date:**	07/07/2016 16:09
Collect Date:	06/27/2016 16:12	**Dilution:**	1	**File ID:**	1LM.LM35652
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.38	U	4.76	2.38	1.19

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18WW25(22-22.5)270616 DUP	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	07/05/2016 15:36
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	06/21/2016 13:42
Workgroup #:	WG575227	**Analyst:**	ADC	**Run Date:**	07/06/2016 20:42
Collect Date:	06/27/2016 16:12	**Dilution:**	1	**File ID:**	9M975262
Sample Tag:	02	**Units:**	ug/kg	**Percent Solid:**	83.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Naphthalene	91-20-3	1.17	U	5.87	1.17	0.587

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.7	80	120	
1,2-Dichloroethane-d4	92.3	80	120	
Toluene-d8	98.1	85	115	
4-Bromofluorobenzene	99.7	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18WW25(22-22.5)270616 DUP	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	07/01/2016 14:33
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	06/21/2016 13:42
Workgroup #:	WG574993	**Analyst:**	ADC	**Run Date:**	07/02/2016 00:37
Collect Date:	06/27/2016 16:12	**Dilution:**	1	**File ID:**	9M975232
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	15.9	J	23.1	11.5	5.77
Benzene	71-43-2	1.15	U	5.77	1.15	0.577
Bromobenzene	108-86-1	1.15	U	5.77	1.15	0.577
Bromochloromethane	74-97-5	2.30	U	5.77	2.30	1.15
Bromodichloromethane	75-27-4	1.15	U	5.77	1.15	0.577
Bromoform	75-25-2	1.15	U	5.77	1.15	0.577
Bromomethane	74-83-9	2.30	U	5.77	2.30	1.15
2-Butanone	78-93-3	5.76	U	11.5	5.76	2.88
n-Butylbenzene	104-51-8	1.15	U	5.77	1.15	0.577
sec-Butylbenzene	135-98-8	1.15	U	5.77	1.15	0.577
tert-Butylbenzene	98-06-6	1.15	U	5.77	1.15	0.577
Carbon disulfide	75-15-0	1.15	U	5.77	1.15	0.577
Carbon tetrachloride	56-23-5	1.15	U	5.77	1.15	0.577
Chlorobenzene	108-90-7	1.15	U	5.77	1.15	0.577
Chlorodibromomethane	124-48-1	1.15	U	5.77	1.15	0.577
Chloroethane	75-00-3	2.30	U	5.77	2.30	1.15
Chloroform	67-66-3	1.15	U	5.77	1.15	0.577
Chloromethane	74-87-3	4.62	U	11.5	4.62	2.31
2-Chlorotoluene	95-49-8	1.15	U	5.77	1.15	0.577
4-Chlorotoluene	106-43-4	1.15	U	5.77	1.15	0.577
1,2-Dibromo-3-chloropropane	96-12-8	4.62	U	11.5	4.62	2.31
1,2-Dibromoethane	106-93-4	1.15	U	5.77	1.15	0.577
Dibromomethane	74-95-3	1.15	U	5.77	1.15	0.577
1,2-Dichlorobenzene	95-50-1	1.15	U	5.77	1.15	0.577
1,3-Dichlorobenzene	541-73-1	1.15	U	5.77	1.15	0.577
1,4-Dichlorobenzene	106-46-7	1.15	U	5.77	1.15	0.577
Dichlorodifluoromethane	75-71-8	2.30	U	5.77	2.30	1.15
1,1-Dichloroethane	75-34-3	2.30	U	5.77	2.30	1.15
1,2-Dichloroethane	107-06-2	1.15	U	5.77	1.15	0.577
1,1-Dichloroethene	75-35-4	1.15	U	5.77	1.15	0.577

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.15	U	5.77	1.15	0.577
trans-1,2-Dichloroethene	156-60-5	1.15	U	5.77	1.15	0.577
1,2-Dichloropropane	78-87-5	1.15	U	5.77	1.15	0.577
1,3-Dichloropropane	142-28-9	1.15	U	5.77	1.15	0.577
2,2-Dichloropropane	594-20-7	1.15	U	5.77	1.15	0.577
cis-1,3-Dichloropropene	10061-01-5	1.15	U	5.77	1.15	0.577
trans-1,3-Dichloropropene	10061-02-6	1.15	U	5.77	1.15	0.577
1,1-Dichloropropene	563-58-6	1.15	U	5.77	1.15	0.577
Ethylbenzene	100-41-4	1.15	U	5.77	1.15	0.577
2-Hexanone	591-78-6	5.76	U	11.5	5.76	2.88
Hexachlorobutadiene	87-68-3	1.15	U	5.77	1.15	0.577
Isopropylbenzene	98-82-8	1.15	U	5.77	1.15	0.577
p-Isopropyltoluene	99-87-6	1.15	U	5.77	1.15	0.577
4-Methyl-2-pentanone	108-10-1	5.76	U	11.5	5.76	2.88
Methylene chloride	75-09-2	2.30	U	5.77	2.30	1.15
n-Propylbenzene	103-65-1	1.15	U	5.77	1.15	0.577
Styrene	100-42-5	1.15	U	5.77	1.15	0.577
1,1,1,2-Tetrachloroethane	630-20-6	1.15	U	5.77	1.15	0.577
1,1,2,2-Tetrachloroethane	79-34-5	1.15	U	5.77	1.15	0.577
Tetrachloroethene	127-18-4	1.15	U	5.77	1.15	0.577
Toluene	108-88-3	1.15	U	5.77	1.15	0.577
1,2,3-Trichlorobenzene	87-61-6	1.15	U	5.77	1.15	0.577
1,2,4-Trichlorobenzene	120-82-1	1.15	U	5.77	1.15	0.577
1,1,1-Trichloroethane	71-55-6	1.15	U	5.77	1.15	0.577
1,1,2-Trichloroethane	79-00-5	1.15	U	5.77	1.15	0.577
Trichloroethene	79-01-6	1.15	U	5.77	1.15	0.577
Trichlorofluoromethane	75-69-4	2.30	U	5.77	2.30	1.15
1,2,3-Trichloropropane	96-18-4	2.30	U	5.77	2.30	1.15
1,2,4-Trimethylbenzene	95-63-6	1.15	U	5.77	1.15	0.577
1,3,5-Trimethylbenzene	108-67-8	1.15	U	5.77	1.15	0.577
Vinyl chloride	75-01-4	2.30	U	5.77	2.30	1.15
o-Xylene	95-47-6	1.15	U	5.77	1.15	0.577
m-,p-Xylene	179601-23-1	1.15	U	5.77	1.15	0.577

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.8	80	120	
1,2-Dichloroethane-d4	88.6	80	120	
Toluene-d8	104	85	115	
4-Bromofluorobenzene	109	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW25(22-22.5)270616 DUP	**Prep Method:**	6850	**Prep Date:**	07/06/2016 16:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575409	**Analyst:**	JWR	**Run Date:**	07/07/2016 16:28
Collect Date:	06/27/2016 16:12	**Dilution:**	1	**File ID:**	1LM.LM35653
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.36	U	4.70	2.36	1.18

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

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Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Sample #: L16061593-01 **Client ID:** 18WW25(3.5-4)(270616) **Matrix:** Soil **Collect Date:** 06/27/2016 13:35

Analyte	Result	Units	Qualifier
Percent Solids	85.7	weight %	

Sample #: L16061593-02 **Client ID:** 18WW25(9.5-10)270616 **Matrix:** Soil **Collect Date:** 06/27/2016 14:12

Analyte	Result	Units	Qualifier
Percent Solids	77.1	weight %	

Sample #: L16061593-03 **Client ID:** 18WW25(14.5-15)270616 **Matrix:** Soil **Collect Date:** 06/27/2016 14:45

Analyte	Result	Units	Qualifier
Percent Solids	81.1	weight %	

Sample #: L16061593-04 **Client ID:** 18WW25(19.5-20)270616 **Matrix:** Soil **Collect Date:** 06/27/2016 15:50

Analyte	Result	Units	Qualifier
Percent Solids	79.2	weight %	

Sample #: L16061593-05 **Client ID:** 18WW25(22-22.5)270616 **Matrix:** Soil **Collect Date:** 06/27/2016 16:12

Analyte	Result	Units	Qualifier
Percent Solids	81.9	weight %	

Sample #: L16061593-06 **Client ID:** 18WW25(22-22.5)270616 DUP **Matrix:** Soil **Collect Date:** 06/27/2016 16:12

Analyte	Result	Units	Qualifier
Percent Solids	83.0	weight %	

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18WW25(3.5-4)(270616)	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	07/01/2016 14:23
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	06/21/2016 13:42
Workgroup #:	WG574993	**Analyst:**	ADC	**Run Date:**	07/01/2016 22:05
Collect Date:	06/27/2016 13:35	**Dilution:**	1	**File ID:**	9M975227
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.6	U	23.2	11.6	5.80
Benzene	71-43-2	1.16	U	5.80	1.16	0.580
Bromobenzene	108-86-1	1.16	U	5.80	1.16	0.580
Bromochloromethane	74-97-5	2.32	U	5.80	2.32	1.16
Bromodichloromethane	75-27-4	1.16	U	5.80	1.16	0.580
Bromoform	75-25-2	1.16	U	5.80	1.16	0.580
Bromomethane	74-83-9	2.32	U	5.80	2.32	1.16
2-Butanone	78-93-3	5.80	U	11.6	5.80	2.90
n-Butylbenzene	104-51-8	1.16	U	5.80	1.16	0.580
sec-Butylbenzene	135-98-8	1.16	U	5.80	1.16	0.580
tert-Butylbenzene	98-06-6	1.16	U	5.80	1.16	0.580
Carbon disulfide	75-15-0	1.16	U	5.80	1.16	0.580
Carbon tetrachloride	56-23-5	1.16	U	5.80	1.16	0.580
Chlorobenzene	108-90-7	1.16	U	5.80	1.16	0.580
Chlorodibromomethane	124-48-1	1.16	U	5.80	1.16	0.580
Chloroethane	75-00-3	2.32	U	5.80	2.32	1.16
Chloroform	67-66-3	1.16	U	5.80	1.16	0.580
Chloromethane	74-87-3	4.64	U	11.6	4.64	2.32
2-Chlorotoluene	95-49-8	1.16	U	5.80	1.16	0.580
4-Chlorotoluene	106-43-4	1.16	U	5.80	1.16	0.580
1,2-Dibromo-3-chloropropane	96-12-8	4.64	U	11.6	4.64	2.32
1,2-Dibromoethane	106-93-4	1.16	U	5.80	1.16	0.580
Dibromomethane	74-95-3	1.16	U	5.80	1.16	0.580
1,2-Dichlorobenzene	95-50-1	1.16	U	5.80	1.16	0.580
1,3-Dichlorobenzene	541-73-1	1.16	U	5.80	1.16	0.580
1,4-Dichlorobenzene	106-46-7	1.16	U	5.80	1.16	0.580
Dichlorodifluoromethane	75-71-8	2.32	U	5.80	2.32	1.16
1,1-Dichloroethane	75-34-3	2.32	U	5.80	2.32	1.16
1,2-Dichloroethane	107-06-2	1.16	U	5.80	1.16	0.580
1,1-Dichloroethene	75-35-4	1.16	U	5.80	1.16	0.580
cis-1,2-Dichloroethene	156-59-2	1.16	U	5.80	1.16	0.580
trans-1,2-Dichloroethene	156-60-5	1.16	U	5.80	1.16	0.580

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Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.16	U	5.80	1.16	0.580
1,3-Dichloropropane	142-28-9	1.16	U	5.80	1.16	0.580
2,2-Dichloropropane	594-20-7	1.16	U	5.80	1.16	0.580
cis-1,3-Dichloropropene	10061-01-5	1.16	U	5.80	1.16	0.580
trans-1,3-Dichloropropene	10061-02-6	1.16	U	5.80	1.16	0.580
1,1-Dichloropropene	563-58-6	1.16	U	5.80	1.16	0.580
Ethylbenzene	100-41-4	1.16	U	5.80	1.16	0.580
2-Hexanone	591-78-6	5.80	U	11.6	5.80	2.90
Hexachlorobutadiene	87-68-3	1.16	U	5.80	1.16	0.580
Isopropylbenzene	98-82-8	1.16	U	5.80	1.16	0.580
p-Isopropyltoluene	99-87-6	1.16	U	5.80	1.16	0.580
4-Methyl-2-pentanone	108-10-1	5.80	U	11.6	5.80	2.90
Methylene chloride	75-09-2	2.32	U	5.80	2.32	1.16
n-Propylbenzene	103-65-1	1.16	U	5.80	1.16	0.580
Styrene	100-42-5	1.16	U	5.80	1.16	0.580
1,1,1,2-Tetrachloroethane	630-20-6	1.16	U	5.80	1.16	0.580
1,1,2,2-Tetrachloroethane	79-34-5	1.16	U	5.80	1.16	0.580
Tetrachloroethene	127-18-4	1.16	U	5.80	1.16	0.580
Toluene	108-88-3	1.16	U	5.80	1.16	0.580
1,2,3-Trichlorobenzene	87-61-6	1.16	U	5.80	1.16	0.580
1,2,4-Trichlorobenzene	120-82-1	1.16	U	5.80	1.16	0.580
1,1,1-Trichloroethane	71-55-6	1.16	U	5.80	1.16	0.580
1,1,2-Trichloroethane	79-00-5	1.16	U	5.80	1.16	0.580
Trichloroethene	79-01-6	1.16	U	5.80	1.16	0.580
Trichlorofluoromethane	75-69-4	2.32	U	5.80	2.32	1.16
1,2,3-Trichloropropane	96-18-4	2.32	U	5.80	2.32	1.16
1,2,4-Trimethylbenzene	95-63-6	1.16	U	5.80	1.16	0.580
1,3,5-Trimethylbenzene	108-67-8	1.16	U	5.80	1.16	0.580
Vinyl chloride	75-01-4	2.32	U	5.80	2.32	1.16
o-Xylene	95-47-6	1.16	U	5.80	1.16	0.580
m-,p-Xylene	179601-23-1	1.16	U	5.80	1.16	0.580

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.6	80	120	
1,2-Dichloroethane-d4	88.6	80	120	
Toluene-d8	100	85	115	
4-Bromofluorobenzene	102	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #:	L16061593
Lab Project #:	2551.096
Project Name:	Longhorn Army Ammunition
Lab Contact:	Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18WW25(3.5-4)(270616)	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	07/05/2016 15:33
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	06/21/2016 13:42
Workgroup #:	WG575227	**Analyst:**	ADC	**Run Date:**	07/06/2016 18:11
Collect Date:	06/27/2016 13:35	**Dilution:**	1	**File ID:**	9M975257
Sample Tag:	02	**Units:**	ug/kg	**Percent Solid:**	85.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Naphthalene	91-20-3	0.612	J	5.99	1.20	0.599

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.2	80	120	
1,2-Dichloroethane-d4	90.6	80	120	
Toluene-d8	100	85	115	
4-Bromofluorobenzene	102	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18WW25(9.5-10)270616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	07/05/2016 15:34
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	06/21/2016 13:42
Workgroup #:	WG575227	**Analyst:**	ADC	**Run Date:**	07/06/2016 18:41
Collect Date:	06/27/2016 14:12	**Dilution:**	1	**File ID:**	9M975258
Sample Tag:	02	**Units:**	ug/kg	**Percent Solid:**	77.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Naphthalene	91-20-3	1.24	U	6.18	1.24	0.618

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.5	80	120	
1,2-Dichloroethane-d4	87.4	80	120	
Toluene-d8	98.3	85	115	
4-Bromofluorobenzene	102	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18WW25(9.5-10)270616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	07/01/2016 14:27
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	06/21/2016 13:42
Workgroup #:	WG574993	**Analyst:**	ADC	**Run Date:**	07/01/2016 22:35
Collect Date:	06/27/2016 14:12	**Dilution:**	1	**File ID:**	9M975228
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	77.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.6	U	25.3	12.6	6.32
Benzene	71-43-2	1.26	U	6.32	1.26	0.632
Bromobenzene	108-86-1	1.26	U	6.32	1.26	0.632
Bromochloromethane	74-97-5	2.52	U	6.32	2.52	1.26
Bromodichloromethane	75-27-4	1.26	U	6.32	1.26	0.632
Bromoform	75-25-2	1.26	U	6.32	1.26	0.632
Bromomethane	74-83-9	2.52	U	6.32	2.52	1.26
2-Butanone	78-93-3	6.32	U	12.6	6.32	3.16
n-Butylbenzene	104-51-8	1.26	U	6.32	1.26	0.632
sec-Butylbenzene	135-98-8	1.26	U	6.32	1.26	0.632
tert-Butylbenzene	98-06-6	1.26	U	6.32	1.26	0.632
Carbon disulfide	75-15-0	1.26	U	6.32	1.26	0.632
Carbon tetrachloride	56-23-5	1.26	U	6.32	1.26	0.632
Chlorobenzene	108-90-7	1.26	U	6.32	1.26	0.632
Chlorodibromomethane	124-48-1	1.26	U	6.32	1.26	0.632
Chloroethane	75-00-3	2.52	U	6.32	2.52	1.26
Chloroform	67-66-3	1.26	U	6.32	1.26	0.632
Chloromethane	74-87-3	5.06	U	12.6	5.06	2.53
2-Chlorotoluene	95-49-8	1.26	U	6.32	1.26	0.632
4-Chlorotoluene	106-43-4	1.26	U	6.32	1.26	0.632
1,2-Dibromo-3-chloropropane	96-12-8	5.06	U	12.6	5.06	2.53
1,2-Dibromoethane	106-93-4	1.26	U	6.32	1.26	0.632
Dibromomethane	74-95-3	1.26	U	6.32	1.26	0.632
1,2-Dichlorobenzene	95-50-1	1.26	U	6.32	1.26	0.632
1,3-Dichlorobenzene	541-73-1	1.26	U	6.32	1.26	0.632
1,4-Dichlorobenzene	106-46-7	1.26	U	6.32	1.26	0.632
Dichlorodifluoromethane	75-71-8	2.52	U	6.32	2.52	1.26
1,1-Dichloroethane	75-34-3	2.52	U	6.32	2.52	1.26
1,2-Dichloroethane	107-06-2	1.26	U	6.32	1.26	0.632
1,1-Dichloroethene	75-35-4	1.26	U	6.32	1.26	0.632
cis-1,2-Dichloroethene	156-59-2	1.26	U	6.32	1.26	0.632

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.26	U	6.32	1.26	0.632
1,2-Dichloropropane	78-87-5	1.26	U	6.32	1.26	0.632
1,3-Dichloropropane	142-28-9	1.26	U	6.32	1.26	0.632
2,2-Dichloropropane	594-20-7	1.26	U	6.32	1.26	0.632
cis-1,3-Dichloropropene	10061-01-5	1.26	U	6.32	1.26	0.632
trans-1,3-Dichloropropene	10061-02-6	1.26	U	6.32	1.26	0.632
1,1-Dichloropropene	563-58-6	1.26	U	6.32	1.26	0.632
Ethylbenzene	100-41-4	1.26	U	6.32	1.26	0.632
2-Hexanone	591-78-6	6.32	U	12.6	6.32	3.16
Hexachlorobutadiene	87-68-3	1.26	U	6.32	1.26	0.632
Isopropylbenzene	98-82-8	1.26	U	6.32	1.26	0.632
p-Isopropyltoluene	99-87-6	1.26	U	6.32	1.26	0.632
4-Methyl-2-pentanone	108-10-1	6.32	U	12.6	6.32	3.16
Methylene chloride	75-09-2	2.52	U	6.32	2.52	1.26
n-Propylbenzene	103-65-1	1.26	U	6.32	1.26	0.632
Styrene	100-42-5	1.26	U	6.32	1.26	0.632
1,1,1,2-Tetrachloroethane	630-20-6	1.26	U	6.32	1.26	0.632
1,1,2,2-Tetrachloroethane	79-34-5	1.26	U	6.32	1.26	0.632
Tetrachloroethene	127-18-4	1.26	U	6.32	1.26	0.632
Toluene	108-88-3	1.26	U	6.32	1.26	0.632
1,2,3-Trichlorobenzene	87-61-6	1.26	U	6.32	1.26	0.632
1,2,4-Trichlorobenzene	120-82-1	1.26	U	6.32	1.26	0.632
1,1,1-Trichloroethane	71-55-6	1.26	U	6.32	1.26	0.632
1,1,2-Trichloroethane	79-00-5	1.26	U	6.32	1.26	0.632
Trichloroethene	79-01-6	1.26	U	6.32	1.26	0.632
Trichlorofluoromethane	75-69-4	2.52	U	6.32	2.52	1.26
1,2,3-Trichloropropane	96-18-4	2.52	U	6.32	2.52	1.26
1,2,4-Trimethylbenzene	95-63-6	1.26	U	6.32	1.26	0.632
1,3,5-Trimethylbenzene	108-67-8	1.26	U	6.32	1.26	0.632
Vinyl chloride	75-01-4	2.52	U	6.32	2.52	1.26
o-Xylene	95-47-6	1.26	U	6.32	1.26	0.632
m-,p-Xylene	179601-23-1	1.26	U	6.32	1.26	0.632

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	90.9	80	120	
1,2-Dichloroethane-d4	89.8	80	120	
Toluene-d8	98.7	85	115	
4-Bromofluorobenzene	102	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18WW25(14.5-15)270616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	07/05/2016 15:34
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	06/21/2016 13:42
Workgroup #:	WG575227	**Analyst:**	ADC	**Run Date:**	07/06/2016 19:11
Collect Date:	06/27/2016 14:45	**Dilution:**	1	**File ID:**	9M975259
Sample Tag:	02	**Units:**	ug/kg	**Percent Solid:**	81.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Naphthalene	91-20-3	1.17	U	5.87	1.17	0.587

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.0	80	120	
1,2-Dichloroethane-d4	89.5	80	120	
Toluene-d8	100	85	115	
4-Bromofluorobenzene	102	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
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Certificate of Analysis

Sample #:	L16061593-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18WW25(14.5-15)270616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	07/01/2016 14:28
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	06/21/2016 13:42
Workgroup #:	WG574993	**Analyst:**	ADC	**Run Date:**	07/01/2016 23:06
Collect Date:	06/27/2016 14:45	**Dilution:**	1	**File ID:**	9M975229
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.5	J	24.9	12.5	6.24
Benzene	71-43-2	1.25	U	6.24	1.25	0.624
Bromobenzene	108-86-1	1.25	U	6.24	1.25	0.624
Bromochloromethane	74-97-5	2.50	U	6.24	2.50	1.25
Bromodichloromethane	75-27-4	1.25	U	6.24	1.25	0.624
Bromoform	75-25-2	1.25	U	6.24	1.25	0.624
Bromomethane	74-83-9	2.50	U	6.24	2.50	1.25
2-Butanone	78-93-3	6.24	U	12.5	6.24	3.12
n-Butylbenzene	104-51-8	1.25	U	6.24	1.25	0.624
sec-Butylbenzene	135-98-8	1.25	U	6.24	1.25	0.624
tert-Butylbenzene	98-06-6	1.25	U	6.24	1.25	0.624
Carbon disulfide	75-15-0	1.25	U	6.24	1.25	0.624
Carbon tetrachloride	56-23-5	1.25	U	6.24	1.25	0.624
Chlorobenzene	108-90-7	1.25	U	6.24	1.25	0.624
Chlorodibromomethane	124-48-1	1.25	U	6.24	1.25	0.624
Chloroethane	75-00-3	2.50	U	6.24	2.50	1.25
Chloroform	67-66-3	1.25	U	6.24	1.25	0.624
Chloromethane	74-87-3	4.98	U	12.5	4.98	2.49
2-Chlorotoluene	95-49-8	1.25	U	6.24	1.25	0.624
4-Chlorotoluene	106-43-4	1.25	U	6.24	1.25	0.624
1,2-Dibromo-3-chloropropane	96-12-8	4.98	U	12.5	4.98	2.49
1,2-Dibromoethane	106-93-4	1.25	U	6.24	1.25	0.624
Dibromomethane	74-95-3	1.25	U	6.24	1.25	0.624
1,2-Dichlorobenzene	95-50-1	1.25	U	6.24	1.25	0.624
1,3-Dichlorobenzene	541-73-1	1.25	U	6.24	1.25	0.624
1,4-Dichlorobenzene	106-46-7	1.25	U	6.24	1.25	0.624
Dichlorodifluoromethane	75-71-8	2.50	U	6.24	2.50	1.25
1,1-Dichloroethane	75-34-3	2.50	U	6.24	2.50	1.25
1,2-Dichloroethane	107-06-2	1.25	U	6.24	1.25	0.624
1,1-Dichloroethene	75-35-4	1.25	U	6.24	1.25	0.624
cis-1,2-Dichloroethene	156-59-2	1.25	U	6.24	1.25	0.624

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Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.25	U	6.24	1.25	0.624
1,2-Dichloropropane	78-87-5	1.25	U	6.24	1.25	0.624
1,3-Dichloropropane	142-28-9	1.25	U	6.24	1.25	0.624
2,2-Dichloropropane	594-20-7	1.25	U	6.24	1.25	0.624
cis-1,3-Dichloropropene	10061-01-5	1.25	U	6.24	1.25	0.624
trans-1,3-Dichloropropene	10061-02-6	1.25	U	6.24	1.25	0.624
1,1-Dichloropropene	563-58-6	1.25	U	6.24	1.25	0.624
Ethylbenzene	100-41-4	1.25	U	6.24	1.25	0.624
2-Hexanone	591-78-6	6.24	U	12.5	6.24	3.12
Hexachlorobutadiene	87-68-3	1.25	U	6.24	1.25	0.624
Isopropylbenzene	98-82-8	1.25	U	6.24	1.25	0.624
p-Isopropyltoluene	99-87-6	1.25	U	6.24	1.25	0.624
4-Methyl-2-pentanone	108-10-1	6.24	U	12.5	6.24	3.12
Methylene chloride	75-09-2	2.50	U	6.24	2.50	1.25
n-Propylbenzene	103-65-1	1.25	U	6.24	1.25	0.624
Styrene	100-42-5	1.25	U	6.24	1.25	0.624
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	6.24	1.25	0.624
1,1,2,2-Tetrachloroethane	79-34-5	1.25	U	6.24	1.25	0.624
Tetrachloroethene	127-18-4	1.25	U	6.24	1.25	0.624
Toluene	108-88-3	1.25	U	6.24	1.25	0.624
1,2,3-Trichlorobenzene	87-61-6	1.25	U	6.24	1.25	0.624
1,2,4-Trichlorobenzene	120-82-1	1.25	U	6.24	1.25	0.624
1,1,1-Trichloroethane	71-55-6	1.25	U	6.24	1.25	0.624
1,1,2-Trichloroethane	79-00-5	1.25	U	6.24	1.25	0.624
Trichloroethene	79-01-6	1.25	U	6.24	1.25	0.624
Trichlorofluoromethane	75-69-4	2.50	U	6.24	2.50	1.25
1,2,3-Trichloropropane	96-18-4	2.50	U	6.24	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	6.24	1.25	0.624
1,3,5-Trimethylbenzene	108-67-8	1.25	U	6.24	1.25	0.624
Vinyl chloride	75-01-4	2.50	U	6.24	2.50	1.25
o-Xylene	95-47-6	1.25	U	6.24	1.25	0.624
m-,p-Xylene	179601-23-1	1.25	U	6.24	1.25	0.624

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.9	80	120	
1,2-Dichloroethane-d4	87.5	80	120	
Toluene-d8	99.1	85	115	
4-Bromofluorobenzene	98.4	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
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Certificate of Analysis

Sample #:	L16061593-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18WW25(19.5-20)270616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	07/01/2016 14:30
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	06/21/2016 13:42
Workgroup #:	WG574993	**Analyst:**	ADC	**Run Date:**	07/01/2016 23:36
Collect Date:	06/27/2016 15:50	**Dilution:**	1	**File ID:**	9M975230
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	15.7	J	24.5	12.2	6.12
Benzene	71-43-2	1.22	U	6.12	1.22	0.612
Bromobenzene	108-86-1	1.22	U	6.12	1.22	0.612
Bromochloromethane	74-97-5	2.44	U	6.12	2.44	1.22
Bromodichloromethane	75-27-4	1.22	U	6.12	1.22	0.612
Bromoform	75-25-2	1.22	U	6.12	1.22	0.612
Bromomethane	74-83-9	2.44	U	6.12	2.44	1.22
2-Butanone	78-93-3	6.12	U	12.2	6.12	3.06
n-Butylbenzene	104-51-8	1.22	U	6.12	1.22	0.612
sec-Butylbenzene	135-98-8	1.22	U	6.12	1.22	0.612
tert-Butylbenzene	98-06-6	1.22	U	6.12	1.22	0.612
Carbon disulfide	75-15-0	1.22	U	6.12	1.22	0.612
Carbon tetrachloride	56-23-5	1.22	U	6.12	1.22	0.612
Chlorobenzene	108-90-7	1.22	U	6.12	1.22	0.612
Chlorodibromomethane	124-48-1	1.22	U	6.12	1.22	0.612
Chloroethane	75-00-3	2.44	U	6.12	2.44	1.22
Chloroform	67-66-3	1.22	U	6.12	1.22	0.612
Chloromethane	74-87-3	4.90	U	12.2	4.90	2.45
2-Chlorotoluene	95-49-8	1.22	U	6.12	1.22	0.612
4-Chlorotoluene	106-43-4	1.22	U	6.12	1.22	0.612
1,2-Dibromo-3-chloropropane	96-12-8	4.90	U	12.2	4.90	2.45
1,2-Dibromoethane	106-93-4	1.22	U	6.12	1.22	0.612
Dibromomethane	74-95-3	1.22	U	6.12	1.22	0.612
1,2-Dichlorobenzene	95-50-1	1.22	U	6.12	1.22	0.612
1,3-Dichlorobenzene	541-73-1	1.22	U	6.12	1.22	0.612
1,4-Dichlorobenzene	106-46-7	1.22	U	6.12	1.22	0.612
Dichlorodifluoromethane	75-71-8	2.44	U	6.12	2.44	1.22
1,1-Dichloroethane	75-34-3	2.44	U	6.12	2.44	1.22
1,2-Dichloroethane	107-06-2	1.22	U	6.12	1.22	0.612
1,1-Dichloroethene	75-35-4	1.22	U	6.12	1.22	0.612
cis-1,2-Dichloroethene	156-59-2	1.22	U	6.12	1.22	0.612

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Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.22	U	6.12	1.22	0.612
1,2-Dichloropropane	78-87-5	1.22	U	6.12	1.22	0.612
1,3-Dichloropropane	142-28-9	1.22	U	6.12	1.22	0.612
2,2-Dichloropropane	594-20-7	1.22	U	6.12	1.22	0.612
cis-1,3-Dichloropropene	10061-01-5	1.22	U	6.12	1.22	0.612
trans-1,3-Dichloropropene	10061-02-6	1.22	U	6.12	1.22	0.612
1,1-Dichloropropene	563-58-6	1.22	U	6.12	1.22	0.612
Ethylbenzene	100-41-4	1.22	U	6.12	1.22	0.612
2-Hexanone	591-78-6	6.12	U	12.2	6.12	3.06
Hexachlorobutadiene	87-68-3	1.22	U	6.12	1.22	0.612
Isopropylbenzene	98-82-8	1.22	U	6.12	1.22	0.612
p-Isopropyltoluene	99-87-6	1.22	U	6.12	1.22	0.612
4-Methyl-2-pentanone	108-10-1	6.12	U	12.2	6.12	3.06
Methylene chloride	75-09-2	2.44	U	6.12	2.44	1.22
n-Propylbenzene	103-65-1	1.22	U	6.12	1.22	0.612
Styrene	100-42-5	1.22	U	6.12	1.22	0.612
1,1,1,2-Tetrachloroethane	630-20-6	1.22	U	6.12	1.22	0.612
1,1,2,2-Tetrachloroethane	79-34-5	1.22	U	6.12	1.22	0.612
Tetrachloroethene	127-18-4	1.22	U	6.12	1.22	0.612
Toluene	108-88-3	1.22	U	6.12	1.22	0.612
1,2,3-Trichlorobenzene	87-61-6	1.22	U	6.12	1.22	0.612
1,2,4-Trichlorobenzene	120-82-1	1.22	U	6.12	1.22	0.612
1,1,1-Trichloroethane	71-55-6	1.22	U	6.12	1.22	0.612
1,1,2-Trichloroethane	79-00-5	1.22	U	6.12	1.22	0.612
Trichloroethene	79-01-6	1.22	U	6.12	1.22	0.612
Trichlorofluoromethane	75-69-4	2.44	U	6.12	2.44	1.22
1,2,3-Trichloropropane	96-18-4	2.44	U	6.12	2.44	1.22
1,2,4-Trimethylbenzene	95-63-6	1.22	U	6.12	1.22	0.612
1,3,5-Trimethylbenzene	108-67-8	1.22	U	6.12	1.22	0.612
Vinyl chloride	75-01-4	2.44	U	6.12	2.44	1.22
o-Xylene	95-47-6	1.22	U	6.12	1.22	0.612
m-,p-Xylene	179601-23-1	1.22	U	6.12	1.22	0.612

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.7	80	120	
1,2-Dichloroethane-d4	88.0	80	120	
Toluene-d8	99.9	85	115	
4-Bromofluorobenzene	105	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18WW25(19.5-20)270616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	07/05/2016 15:35
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	06/21/2016 13:42
Workgroup #:	WG575227	**Analyst:**	ADC	**Run Date:**	07/06/2016 19:42
Collect Date:	06/27/2016 15:50	**Dilution:**	1	**File ID:**	9M975260
Sample Tag:	02	**Units:**	ug/kg	**Percent Solid:**	79.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Naphthalene	91-20-3	1.31	U	6.55	1.31	0.655

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.9	80	120	
1,2-Dichloroethane-d4	91.7	80	120	
Toluene-d8	100	85	115	
4-Bromofluorobenzene	105	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18WW25(22-22.5)270616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	07/05/2016 15:35
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	06/21/2016 13:42
Workgroup #:	WG575227	**Analyst:**	ADC	**Run Date:**	07/06/2016 20:12
Collect Date:	06/27/2016 16:12	**Dilution:**	1	**File ID:**	9M975261
Sample Tag:	02	**Units:**	ug/kg	**Percent Solid:**	81.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Naphthalene	91-20-3	1.23	U	6.14	1.23	0.614

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.3	80	120	
1,2-Dichloroethane-d4	89.6	80	120	
Toluene-d8	99.8	85	115	
4-Bromofluorobenzene	105	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18WW25(22-22.5)270616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	07/01/2016 14:31
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	06/21/2016 13:42
Workgroup #:	WG574993	**Analyst:**	ADC	**Run Date:**	07/02/2016 00:06
Collect Date:	06/27/2016 16:12	**Dilution:**	1	**File ID:**	9M975231
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	18.8	J	24.0	12.0	6.01
Benzene	71-43-2	1.20	U	6.01	1.20	0.601
Bromobenzene	108-86-1	1.20	U	6.01	1.20	0.601
Bromochloromethane	74-97-5	2.40	U	6.01	2.40	1.20
Bromodichloromethane	75-27-4	1.20	U	6.01	1.20	0.601
Bromoform	75-25-2	1.20	U	6.01	1.20	0.601
Bromomethane	74-83-9	2.40	U	6.01	2.40	1.20
2-Butanone	78-93-3	6.00	U	12.0	6.00	3.00
n-Butylbenzene	104-51-8	1.20	U	6.01	1.20	0.601
sec-Butylbenzene	135-98-8	1.20	U	6.01	1.20	0.601
tert-Butylbenzene	98-06-6	1.20	U	6.01	1.20	0.601
Carbon disulfide	75-15-0	1.20	U	6.01	1.20	0.601
Carbon tetrachloride	56-23-5	1.20	U	6.01	1.20	0.601
Chlorobenzene	108-90-7	1.20	U	6.01	1.20	0.601
Chlorodibromomethane	124-48-1	1.20	U	6.01	1.20	0.601
Chloroethane	75-00-3	2.40	U	6.01	2.40	1.20
Chloroform	67-66-3	1.20	U	6.01	1.20	0.601
Chloromethane	74-87-3	4.80	U	12.0	4.80	2.40
2-Chlorotoluene	95-49-8	1.20	U	6.01	1.20	0.601
4-Chlorotoluene	106-43-4	1.20	U	6.01	1.20	0.601
1,2-Dibromo-3-chloropropane	96-12-8	4.80	U	12.0	4.80	2.40
1,2-Dibromoethane	106-93-4	1.20	U	6.01	1.20	0.601
Dibromomethane	74-95-3	1.20	U	6.01	1.20	0.601
1,2-Dichlorobenzene	95-50-1	1.20	U	6.01	1.20	0.601
1,3-Dichlorobenzene	541-73-1	1.20	U	6.01	1.20	0.601
1,4-Dichlorobenzene	106-46-7	1.20	U	6.01	1.20	0.601
Dichlorodifluoromethane	75-71-8	2.40	U	6.01	2.40	1.20
1,1-Dichloroethane	75-34-3	2.40	U	6.01	2.40	1.20
1,2-Dichloroethane	107-06-2	1.20	U	6.01	1.20	0.601
1,1-Dichloroethene	75-35-4	1.20	U	6.01	1.20	0.601
cis-1,2-Dichloroethene	156-59-2	1.20	U	6.01	1.20	0.601

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Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.20	U	6.01	1.20	0.601
1,2-Dichloropropane	78-87-5	1.20	U	6.01	1.20	0.601
1,3-Dichloropropane	142-28-9	1.20	U	6.01	1.20	0.601
2,2-Dichloropropane	594-20-7	1.20	U	6.01	1.20	0.601
cis-1,3-Dichloropropene	10061-01-5	1.20	U	6.01	1.20	0.601
trans-1,3-Dichloropropene	10061-02-6	1.20	U	6.01	1.20	0.601
1,1-Dichloropropene	563-58-6	1.20	U	6.01	1.20	0.601
Ethylbenzene	100-41-4	1.20	U	6.01	1.20	0.601
2-Hexanone	591-78-6	6.00	U	12.0	6.00	3.00
Hexachlorobutadiene	87-68-3	1.20	U	6.01	1.20	0.601
Isopropylbenzene	98-82-8	1.20	U	6.01	1.20	0.601
p-Isopropyltoluene	99-87-6	1.20	U	6.01	1.20	0.601
4-Methyl-2-pentanone	108-10-1	6.00	U	12.0	6.00	3.00
Methylene chloride	75-09-2	2.40	U	6.01	2.40	1.20
n-Propylbenzene	103-65-1	1.20	U	6.01	1.20	0.601
Styrene	100-42-5	1.20	U	6.01	1.20	0.601
1,1,1,2-Tetrachloroethane	630-20-6	1.20	U	6.01	1.20	0.601
1,1,2,2-Tetrachloroethane	79-34-5	1.20	U	6.01	1.20	0.601
Tetrachloroethene	127-18-4	1.20	U	6.01	1.20	0.601
Toluene	108-88-3	1.20	U	6.01	1.20	0.601
1,2,3-Trichlorobenzene	87-61-6	1.20	U	6.01	1.20	0.601
1,2,4-Trichlorobenzene	120-82-1	1.20	U	6.01	1.20	0.601
1,1,1-Trichloroethane	71-55-6	1.20	U	6.01	1.20	0.601
1,1,2-Trichloroethane	79-00-5	1.20	U	6.01	1.20	0.601
Trichloroethene	79-01-6	1.20	U	6.01	1.20	0.601
Trichlorofluoromethane	75-69-4	2.40	U	6.01	2.40	1.20
1,2,3-Trichloropropane	96-18-4	2.40	U	6.01	2.40	1.20
1,2,4-Trimethylbenzene	95-63-6	1.20	U	6.01	1.20	0.601
1,3,5-Trimethylbenzene	108-67-8	1.20	U	6.01	1.20	0.601
Vinyl chloride	75-01-4	2.40	U	6.01	2.40	1.20
o-Xylene	95-47-6	1.20	U	6.01	1.20	0.601
m-,p-Xylene	179601-23-1	1.20	U	6.01	1.20	0.601

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.2	80	120	
1,2-Dichloroethane-d4	89.5	80	120	
Toluene-d8	101	85	115	
4-Bromofluorobenzene	106	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18WW25(22-22.5)270616 DUP	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	07/01/2016 14:33
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	06/21/2016 13:42
Workgroup #:	WG574993	**Analyst:**	ADC	**Run Date:**	07/02/2016 00:37
Collect Date:	06/27/2016 16:12	**Dilution:**	1	**File ID:**	9M975232
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	15.9	J	23.1	11.5	5.77
Benzene	71-43-2	1.15	U	5.77	1.15	0.577
Bromobenzene	108-86-1	1.15	U	5.77	1.15	0.577
Bromochloromethane	74-97-5	2.30	U	5.77	2.30	1.15
Bromodichloromethane	75-27-4	1.15	U	5.77	1.15	0.577
Bromoform	75-25-2	1.15	U	5.77	1.15	0.577
Bromomethane	74-83-9	2.30	U	5.77	2.30	1.15
2-Butanone	78-93-3	5.76	U	11.5	5.76	2.88
n-Butylbenzene	104-51-8	1.15	U	5.77	1.15	0.577
sec-Butylbenzene	135-98-8	1.15	U	5.77	1.15	0.577
tert-Butylbenzene	98-06-6	1.15	U	5.77	1.15	0.577
Carbon disulfide	75-15-0	1.15	U	5.77	1.15	0.577
Carbon tetrachloride	56-23-5	1.15	U	5.77	1.15	0.577
Chlorobenzene	108-90-7	1.15	U	5.77	1.15	0.577
Chlorodibromomethane	124-48-1	1.15	U	5.77	1.15	0.577
Chloroethane	75-00-3	2.30	U	5.77	2.30	1.15
Chloroform	67-66-3	1.15	U	5.77	1.15	0.577
Chloromethane	74-87-3	4.62	U	11.5	4.62	2.31
2-Chlorotoluene	95-49-8	1.15	U	5.77	1.15	0.577
4-Chlorotoluene	106-43-4	1.15	U	5.77	1.15	0.577
1,2-Dibromo-3-chloropropane	96-12-8	4.62	U	11.5	4.62	2.31
1,2-Dibromoethane	106-93-4	1.15	U	5.77	1.15	0.577
Dibromomethane	74-95-3	1.15	U	5.77	1.15	0.577
1,2-Dichlorobenzene	95-50-1	1.15	U	5.77	1.15	0.577
1,3-Dichlorobenzene	541-73-1	1.15	U	5.77	1.15	0.577
1,4-Dichlorobenzene	106-46-7	1.15	U	5.77	1.15	0.577
Dichlorodifluoromethane	75-71-8	2.30	U	5.77	2.30	1.15
1,1-Dichloroethane	75-34-3	2.30	U	5.77	2.30	1.15
1,2-Dichloroethane	107-06-2	1.15	U	5.77	1.15	0.577
1,1-Dichloroethene	75-35-4	1.15	U	5.77	1.15	0.577

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.15	U	5.77	1.15	0.577
trans-1,2-Dichloroethene	156-60-5	1.15	U	5.77	1.15	0.577
1,2-Dichloropropane	78-87-5	1.15	U	5.77	1.15	0.577
1,3-Dichloropropane	142-28-9	1.15	U	5.77	1.15	0.577
2,2-Dichloropropane	594-20-7	1.15	U	5.77	1.15	0.577
cis-1,3-Dichloropropene	10061-01-5	1.15	U	5.77	1.15	0.577
trans-1,3-Dichloropropene	10061-02-6	1.15	U	5.77	1.15	0.577
1,1-Dichloropropene	563-58-6	1.15	U	5.77	1.15	0.577
Ethylbenzene	100-41-4	1.15	U	5.77	1.15	0.577
2-Hexanone	591-78-6	5.76	U	11.5	5.76	2.88
Hexachlorobutadiene	87-68-3	1.15	U	5.77	1.15	0.577
Isopropylbenzene	98-82-8	1.15	U	5.77	1.15	0.577
p-Isopropyltoluene	99-87-6	1.15	U	5.77	1.15	0.577
4-Methyl-2-pentanone	108-10-1	5.76	U	11.5	5.76	2.88
Methylene chloride	75-09-2	2.30	U	5.77	2.30	1.15
n-Propylbenzene	103-65-1	1.15	U	5.77	1.15	0.577
Styrene	100-42-5	1.15	U	5.77	1.15	0.577
1,1,1,2-Tetrachloroethane	630-20-6	1.15	U	5.77	1.15	0.577
1,1,2,2-Tetrachloroethane	79-34-5	1.15	U	5.77	1.15	0.577
Tetrachloroethene	127-18-4	1.15	U	5.77	1.15	0.577
Toluene	108-88-3	1.15	U	5.77	1.15	0.577
1,2,3-Trichlorobenzene	87-61-6	1.15	U	5.77	1.15	0.577
1,2,4-Trichlorobenzene	120-82-1	1.15	U	5.77	1.15	0.577
1,1,1-Trichloroethane	71-55-6	1.15	U	5.77	1.15	0.577
1,1,2-Trichloroethane	79-00-5	1.15	U	5.77	1.15	0.577
Trichloroethene	79-01-6	1.15	U	5.77	1.15	0.577
Trichlorofluoromethane	75-69-4	2.30	U	5.77	2.30	1.15
1,2,3-Trichloropropane	96-18-4	2.30	U	5.77	2.30	1.15
1,2,4-Trimethylbenzene	95-63-6	1.15	U	5.77	1.15	0.577
1,3,5-Trimethylbenzene	108-67-8	1.15	U	5.77	1.15	0.577
Vinyl chloride	75-01-4	2.30	U	5.77	2.30	1.15
o-Xylene	95-47-6	1.15	U	5.77	1.15	0.577
m-,p-Xylene	179601-23-1	1.15	U	5.77	1.15	0.577

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.8	80	120	
1,2-Dichloroethane-d4	88.6	80	120	
Toluene-d8	104	85	115	
4-Bromofluorobenzene	109	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18WW25(22-22.5)270616 DUP	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	07/05/2016 15:36
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	06/21/2016 13:42
Workgroup #:	WG575227	**Analyst:**	ADC	**Run Date:**	07/06/2016 20:42
Collect Date:	06/27/2016 16:12	**Dilution:**	1	**File ID:**	9M975262
Sample Tag:	02	**Units:**	ug/kg	**Percent Solid:**	83.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Naphthalene	91-20-3	1.17	U	5.87	1.17	0.587

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.7	80	120	
1,2-Dichloroethane-d4	92.3	80	120	
Toluene-d8	98.1	85	115	
4-Bromofluorobenzene	99.7	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.
VOA Preparation/Preservation/Extraction Log

Batch #: WG575025 Analyst: ADC

Method: 5030B/5030C/5035 Run Date: 07/01/2016 14:23

Product: 8260

SAMPLE #	Fraction	Collected	Preserved	PCT-S	Tare Wt	Total Wt	Sample Wt	Water	MeOH	Vt	Comments
L16061593-01	A	06/27/16 13:35	07/01/16 14:23	85.7			5.03	5		5	
L16061593-02	A	06/27/16 14:12	07/01/16 14:27	77.1			5.13	5		5	
L16061593-03	A	06/27/16 14:45	07/01/16 14:28	81.1			4.94	5		5	
L16061593-04	A	06/27/16 15:50	07/01/16 14:30	79.2			5.16	5		5	
L16061593-05	A	06/27/16 16:12	07/01/16 14:31	81.9			5.08	5		5	
L16061593-06	A	06/27/16 16:12	07/01/16 14:33	83.0			5.22	5		5	
L16061634-01	A	06/29/16 15:15	07/01/16 14:34	38.9			4.98	5		5	
WG575025-01	A		07/01/16 14:24	85.7			5.03	5		5	
WG575025-02	A		07/01/16 14:25	85.7			5.04	5		5	
WG575025-03	A		07/01/16 14:26	85.7			5.01	5		5	

Comments:
1 = improperly sealed cap
2 = preserved out of hold
3 = effervesced
4 = preserved with NaHSO4
5 = preserved by freezing
6 = preserved in field

Analyst: Cathy Carter

VOA_EXT - Modified 05/22/2008
PDF ID: 4836874
Report generated: 07/01/2016 14:35

Microbac

Microbac Laboratories Inc.
VOA Preparation/Preservation/Extraction Log

Batch #: WG575216
Analyst: AWE
Method: 5030B/5030C/5035
Run Date: 07/05/2016 15:33
Product: 826-BETX
Purge and trap methanol COA18846
Purified Lab Sand Lot # COA18552

SAMPLE #	Fraction	Collected	Preserved	PCT-S	Tare Wt	Total Wt	Sample Wt	Water	MeOH	Vt	Comments
L16061593-01	A	06/27/16 13:35	07/05/16 15:33	85.7			4.87	5		5	
L16061593-02	A	06/27/16 14:12	07/05/16 15:34	77.1			5.25	5		5	
L16061593-03	A	06/27/16 14:45	07/05/16 15:34	81.1			5.25	5		5	
L16061593-04	A	06/27/16 15:50	07/05/16 15:35	79.2			4.82	5		5	
L16061593-05	A	06/27/16 16:12	07/05/16 15:35	81.9			4.97	5		5	
L16061593-06	A	06/27/16 16:12	07/05/16 15:36	83.0			5.13	5		5	
L16061634-01	A	06/29/16 15:15	07/05/16 15:37	38.9			4.51	5		5	
WG575216-01	A		07/05/16 16:36	83.0			5.13	5		5	
WG575216-02	A		07/05/16 17:06	83.0			5.02	5		5	
WG575216-03	A		07/05/16 17:07	83.0			4.89	5		5	

Comments:
1 = improperly sealed cap
2 = preserved out of hold
3 = effervesced
4 = preserved with NaHSO4
5 = preserved by freezing
6 = preserved in field

Analyst: Andrew Baeg

VOA_EXT - Modified 05/22/2008
PDF ID: 4839587
Report generated: 07/05/2016 17:17

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 012516
Analyst1: ADC Analyst2: NA
Method: 8260B/8260C SOP: MSV01(-C) Rev: 23 (2)
Method: 5030B/5030C/5035 SOP: PAT01 Rev: 18
Method: 624 SOP: MSV10 Rev: 12
Maintenance Log ID:

Internal Standard: STD74414 Surrogate Standard: STD74126
CCV: STD74488 LCS: STD74459 MS/MSD: STD74459

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG555000 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M972470	WG555000-01 BFB 50ng A9	NA	7	1	STD74202	01/25/16 10:27
9M972471	RINSE	NA	7	1		01/25/16 10:52
9M972472	WG555000-02 5ug/Kg STD A9	NA	7	1	STD74406	01/25/16 11:22
9M972473	WG555000-03 20ug/Kg STD A9	NA	7	1	STD74406	01/25/16 11:52
9M972474	WG555000-04 50ug/Kg STD A9	NA	7	1	STD74406	01/25/16 12:23
9M972475	WG555000-05 100ug/Kg STD A9	NA	7	1	STD74406	01/25/16 12:53
9M972476	WG555000-06 200ug/Kg STD A9	NA	7	1	STD74406	01/25/16 13:23
9M972477	WG555000-07 300ug/Kg STD A9	NA	7	1	STD74406	01/25/16 13:54
9M972478	WG555000-08 400ug/Kg STD A9	NA	7	1	STD74406	01/25/16 14:25
9M972479	WG555000-09 500ug/Kg STD A9	NA	7	1	STD74406	01/25/16 14:56
9M972480	RINSE	NA	7	1		01/25/16 15:26
9M972481	WG555000-10 100ug/Kg ICV A9	NA	7	1	STD74461	01/25/16 15:56
9M972482	RINSE	NA	7	1		01/25/16 16:28

Approved: January 29, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 062116
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD76704 Surrogate Standard: STD76703
CCV: STD76781 LCS: STD76624 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG573559, WG5783367 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M974885	WG573367-01 BFB 50ng 8260	NA	7	1	STD76496	06/21/16 06:43
9M974887	WG573367-02 STD 0.5ug/L 8260	NA	7	1	STD76405	06/21/16 07:39
9M974888	WG573367-03 1.0ug/L 8260	NA	7	1	STD76405	06/21/16 08:10
9M974889	WG573367-04 2.0ug/L 8260	NA	7	1	STD76405	06/21/16 08:40
9M974890	WG573367-05 5.0ug/L 8260	NA	7	1	STD76405	06/21/16 09:10
9M974891	WG573367-06 20.0ug/L 8260	NA	7	1	STD76405	06/21/16 09:40
9M974892	WG573367-07 50.0ug/L 8260	NA	7	1	STD76405	06/21/16 10:11
9M974893	WG573367-08 100.0ug/L 8260	NA	7	1	STD76405	06/21/16 10:41
9M974894	WG573367-09 200.0ug/L 8260	NA	7	1	STD76405	06/21/16 11:11
9M974895	WG573367-10 300.0ug/L 8260	NA	7	1	STD76405	06/21/16 11:41
9M974896	RINSE	NA	7	1		06/21/16 12:11
9M974897	RINSE	NA	7	1	STD76624	06/21/16 12:42
9M974898	WG573367-02 0.5ug/L 8260	NA	7	1	STD76624	06/21/16 13:12
9M974899	WG573367-03 1.0ug/L 8260	NA	7	1	STD76624	06/21/16 13:42
9M974900	WG573367-11 50.0ug/L 8260	NA	7	1	STD76624	06/21/16 14:12
9M974901	WG573558-01 50ng BFB	NA	7	1	STD76496	06/21/16 14:38
9M974902	WG573558-02 50ug/kg CCV	NA	7	1	STD76715	06/21/16 15:04
9M974903	WG573367-11 50.0ug/L 8260	NA	7	1		06/21/16 15:35
9M974904	RINSE	NA	7	1		06/21/16 16:04
9M974905	WG573559-01 BLK 8260	NA	7	1		06/21/16 16:35
9M974906	WG573559-02 20ug/L LCS 8260	NA	7	1	STD76744	06/21/16 17:06
9M974907	L16060661-02 A MS 826-SPE	NA	7	1	STD76744	06/21/16 17:36
9M974908	L16060661-03 A MSD 826-SPE	NA	7	1	STD76744	06/21/16 18:06
9M974909	L16060656-01 B 826-BETX	NA	7	1		06/21/16 18:36
9M974910	L16060669-05 A 826-VAP2 0.00G	NA	7	1		06/21/16 19:06

Approved: June 24, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 070116
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD76704 Surrogate Standard: STD76703
CCV: STD76781 LCS: STD76624 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG574993, WG574994

Comments: L16061362-04, -10, 1458-01 require dilution analysis for naphthalene.

L16061593s requrie reanalysis for Naphthalene carry over.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M975213	WG574992-01 50ng BFB	NA	7	1	STD76715	07/01/16 14:53
9M975215	WG574992-02 50ug/kg CCV	NA	7	1	STD76781	07/01/16 15:50
9M975216	WGXXXXXX-01 100ug/kg A9FOO	NA	7	1	STDXXXXX	07/01/16 16:29
9M975217	WG574993-01 BLANK 8260	NA	7	1		07/01/16 17:00
9M975218	WG574994-01 EXTBLK 07/01 8260	NA	7	50		07/01/16 17:30
9M975219	WG574994-02 20ug/Kg EXTLCS 07/01 826	NA	7	50		07/01/16 18:01
9M975220	WG574993-02 20ug/Kg LCS 8260	NA	7	1	STD76744	07/01/16 18:32
9M975221	L16061362-08 B 826-SPE	NA	7	1		07/01/16 19:03
9M975222	L16061362-04 C 1000X 826-SPE	NA	7	500		07/01/16 19:33
9M975223	L16061362-10 C 1000X 826-SPE	NA	7	500		07/01/16 20:04
9M975224	L16061458-01 A 200X 826-SPE 5.17g	NA	7	100		07/01/16 20:34
9M975225	WG574929-01 L16061625-01 A 2000X 5.14	NA	7	1000		07/01/16 21:04
9M975226	L16061634-01 A 826-BETX 4.98g	NA	7	1		07/01/16 21:34
9M975227	WG575025-01 L16061593-01 A 826-SPE 5.	NA	7	1		07/01/16 22:05
9M975228	L16061593-02 A 826-SPE 5.13g	NA	7	1		07/01/16 22:35
9M975229	L16061593-03 A 826-SPE 4.94g	NA	7	1		07/01/16 23:06
9M975230	L16061593-04 A 826-SPE 5.16g	NA	7	1		07/01/16 23:36
9M975231	L16061593-05 A 826-SPE 5.08g	NA	7	1		07/02/16 00:06
9M975232	L16061593-06 A 826-SPE 5.22g	NA	7	1		07/02/16 00:37
9M975233	WG575025-02 MS 8260 5.04g	NA	7	1	STD76744	07/02/16 01:07
9M975234	WG575025-03 MSD 8260 5.04g	NA	7	1	STD76744	07/02/16 01:37
9M975235	WG574929-02 MS 8260 5.09g	NA	7	1000		07/02/16 02:07
9M975236	WG574929-03 MSD 8260 5.10g	NA	7	1000		07/02/16 02:37
9M975237	RINSE	NA	7	1		07/02/16 03:08
9M975238	RINSE	NA	7	1		07/02/16 03:38

Comments

Seq.	Rerun	Dil.	Reason	Analytes
27	X	20000	Over Calibration Range	TOL
File ID: 9M975225				
	L16061625-01			
13	X		Surrogate standard failure	

Approved: July 12, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS9	Dataset:	070116		
Analyst1:	ADC	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	23
Method:	624	SOP:	MSV10	Rev:	14
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:					

Internal Standard: STD76704 Surrogate Standard: STD76703

CCV: STD76781 LCS: STD76624 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG574993, WG574994

Comments: L16061362-04, -10, 1458-01 require dilution analysis for naphthalene.

L16061593s requrie reanalysis for Naphthalene carry over.

Comments

Seq.	Rerun	Dil.	Reason	Analytes
File ID: 9M975226				
L16061634-01				

Approved: July 12, 2016

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 070616
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD76704 Surrogate Standard: STD76703
CCV: STD76781 LCS: STD76624 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG575227, WG575228

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M975249	WG575226-01 BFB 50ng 8260	NA	7	1	STD76496	07/06/16 13:53
9M975250	WG575226-02 50ug/Kg CCV 8260	NA	7	1	STD76496	07/06/16 14:19
9M975251	WGXXXXXX-01 100ug/KgA9CCV 8260	NA	7	1	STDXXXXX	07/06/16 15:09
9M975252	WG575227-01 BLK 8260	NA	7	1		07/06/16 15:40
9M975253	WG575228-01 EXTBLK 8260	NA	7	50		07/06/16 16:10
9M975254	WG575228-02 EXTLCS 20ug/kg 8260	NA	7	50		07/06/16 16:41
9M975255	WG575227-02 LCS 20ug/kg 8260	NA	7	1	STD76744	07/06/16 17:11
9M975256	L16061634-01 A 826-BETX 4.51g	NA	7	1		07/06/16 17:41
9M975257	L16061593-01 A 826-SPE 4.87g	NA	7	1		07/06/16 18:11
9M975258	L16061593-02 A 826-SPE 5.25g	NA	7	1		07/06/16 18:41
9M975259	L16061593-03 A 826-SPE 5.25g	NA	7	1		07/06/16 19:11
9M975260	L16061593-04 A 826-SPE 4.82g	NA	7	1		07/06/16 19:42
9M975261	L16061593-05 A 826-SPE 4.97g	NA	7	1		07/06/16 20:12
9M975262	WG575216-01 L16061593-06 A 826-SPE 5.	NA	7	1		07/06/16 20:42
9M975263	L16061362-04 C 20,000X 826-SPE	NA	7	10000		07/06/16 21:12
9M975264	L16061362-10 C 20,000X 826-SPE	NA	7	10000		07/06/16 21:42
9M975265	L16061458-01 C 2,000X 826-SPE	NA	7	1000		07/06/16 22:13
9M975266	L16061625-01 C 20,000X 826-SPE	NA	7	10000		07/06/16 22:43
9M975267	WG575216-02 A MS 826-SPE	NA	7	1	STD76744	07/06/16 23:13
9M975268	WG575216-03 A MSD 826-SPE	NA	7	1	STD76744	07/06/16 23:44
9M975269	CCV	NA	7	1	STD76744	07/07/16 00:14
9M975270	RINSE	NA	7	1	STD76744	07/07/16 00:45
9M975271	RINSE	NA	7	1		07/07/16 16:02
9M975272	SCREEN 049-02 100X	NA	7	1		07/07/16 16:33
9M975273	SCREEN 187-01 100X	NA	7	1		07/07/16 17:04
9M975274	RINSE	NA	7	1		07/07/16 17:34
9M975275	RINSE	NA	7	1		07/07/16 18:04
9M975276	RINSE	NA	7	1		07/07/16 18:34

Approved: July 12, 2016

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Microbac Laboratories Inc.

Data Checklist

Date: 25-JAN-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 72995
Analytical Workgroups: WG555000

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
28-JAN-2016

Secondary Reviewer:
29-JAN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JAN-29-2016 16:00:23

Microbac Laboratories Inc.

Data Checklist

Date: 21-JUN-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: WG573367
Runlog ID: 75892
Analytical Workgroups: WG573559

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
23-JUN-2016

Secondary Reviewer:
24-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-24-2016 13:01:08

Microbac Laboratories Inc.

Data Checklist

Date: 01-JUL-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 76245
Analytical Workgroups: WG574993, WG574994

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
12-JUL-2016

Secondary Reviewer:
12-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-12-2016 15:44:22

Microbac Laboratories Inc.

Data Checklist

Date: 06-JUL-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 76261
Analytical Workgroups: WG575227, WG575228

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
12-JUL-2016

Secondary Reviewer:
12-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-12-2016 16:43:22

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG574993

Login Number: L16061593

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW25(3.5-4)(270616)	01	06/27/16					07/01/2016	4	14		07/01/16	4.4	14	
18WW25(9.5-10)270616	02	06/27/16					07/01/2016	4	14		07/01/16	4.3	14	
18WW25(14.5-15)270616	03	06/27/16					07/01/2016	4	14		07/01/16	4.3	14	
18WW25(19.5-20)270616	04	06/27/16					07/01/2016	3.9	14		07/01/16	4.3	14	
18WW25(22-22.5)270616	05	06/27/16					07/01/2016	3.9	14		07/02/16	4.3	14	
18WW25(22-22.5)270616 DU	06	06/27/16					07/01/2016	3.9	14		07/02/16	4.4	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4850424
Report generated 07/13/2016 10:45

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG575227

Login Number: L16061593

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW25(3.5-4)(270616)	01	06/27/16					07/05/2016	8.1	14		07/06/16	9.2	14	
18WW25(9.5-10)270616	02	06/27/16					07/05/2016	8.1	14		07/06/16	9.2	14	
18WW25(14.5-15)270616	03	06/27/16					07/05/2016	8	14		07/06/16	9.2	14	
18WW25(19.5-20)270616	04	06/27/16					07/05/2016	8	14		07/06/16	9.2	14	
18WW25(22-22.5)270616	05	06/27/16					07/05/2016	8	14		07/06/16	9.2	14	
18WW25(22-22.5)270616 DU	06	06/27/16					07/05/2016	8	14		07/06/16	9.2	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4850424
Report generated 07/13/2016 10:45

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061593
Instrument Id: HPMS9
Workgroup (AAB#): WG575227

Method: 8260
CAL ID: HPMS9-21-JUN-16
Matrix: Soil

Sample Number	Dilution	Tag	1	2	3	4
L16061593-01	1.00	02	90.6	93.2	102	100
L16061593-02	1.00	02	87.4	91.5	102	98.3
L16061593-03	1.00	02	89.5	95.0	102	100
L16061593-04	1.00	02	91.7	94.9	105	100
L16061593-05	1.00	02	89.6	94.3	105	99.8
L16061593-06	1.00	02	92.3	94.7	99.7	98.1
WG575227-01	1.00	01	91.1	92.7	102	98.9
WG575227-02	1.00	01	90.9	98.1	103	101

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	80	-	120
2 - Dibromofluoromethane	80	-	120
3 - 4-Bromofluorobenzene	85	-	120
4 - Toluene-d8	85	-	115

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4850432
Report generated: 07/13/2016 10:46

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061593
Instrument Id: HPMS9
Workgroup (AAB#): WG574993

Method: 8260
CAL ID: HPMS9-21-JUN-16
Matrix: Soil

Sample Number	Dilution	Tag	1	2	3	4
L16061593-01	1.00	01	88.6	92.6	102	100
L16061593-02	1.00	01	89.8	90.9	102	98.7
L16061593-03	1.00	01	87.5	91.9	98.4	99.1
L16061593-04	1.00	01	88.0	91.7	105	99.9
L16061593-05	1.00	01	89.5	91.2	106	101
L16061593-06	1.00	01	88.6	93.8	109	104
WG574993-01	1.00	01	92.3	96.8	102	99.8
WG574993-02	1.00	01	92.8	96.9	99.1	99.1

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	80	-	120
2 - Dibromofluoromethane	80	-	120
3 - 4-Bromofluorobenzene	85	-	120
4 - Toluene-d8	85	-	115

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4850432
Report generated: 07/13/2016 10:46

METHOD BLANK SUMMARY

Login Number: L16061593
Blank File ID: 9M975217
Prep Date: 07/01/16 17:00
Analyzed Date: 07/01/16 17:00
Analyst: ADC

Work Group: WG574993
Blank Sample ID: WG574993-01
Instrument ID: HPMS9
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG574993-02	9M975220	07/01/16 18:32	01
18WW25(3.5-4)(270616)	L16061593-01	9M975227	07/01/16 22:05	01
18WW25(9.5-10)270616	L16061593-02	9M975228	07/01/16 22:35	01
18WW25(14.5-15)270616	L16061593-03	9M975229	07/01/16 23:06	01
18WW25(19.5-20)270616	L16061593-04	9M975230	07/01/16 23:36	01
18WW25(22-22.5)270616	L16061593-05	9M975231	07/02/16 00:06	01
18WW25(22-22.5)270616 DUP	L16061593-06	9M975232	07/02/16 00:37	01

Report Name: BLANK_SUMMARY
PDF File ID: 4850425
Report generated 07/13/2016 10:45

METHOD BLANK SUMMARY

Login Number: L16061593
Blank File ID: 9M975252
Prep Date: 07/06/16 15:40
Analyzed Date: 07/06/16 15:40
Analyst: ADC

Work Group: WG575227
Blank Sample ID: WG575227-01
Instrument ID: HPMS9
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG575227-02	9M975255	07/06/16 17:11	01
18WW25(3.5-4)(270616)	L16061593-01	9M975257	07/06/16 18:11	02
18WW25(9.5-10)270616	L16061593-02	9M975258	07/06/16 18:41	02
18WW25(14.5-15)270616	L16061593-03	9M975259	07/06/16 19:11	02
18WW25(19.5-20)270616	L16061593-04	9M975260	07/06/16 19:42	02
18WW25(22-22.5)270616	L16061593-05	9M975261	07/06/16 20:12	02
18WW25(22-22.5)270616 DUP	L16061593-06	9M975262	07/06/16 20:42	02

Report Name: BLANK_SUMMARY
PDF File ID: 4850425
Report generated 07/13/2016 10:45

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16061593 Prep Date: 07/01/16 17:00 Sample ID: WG574993-01
Instrument ID: HPMS9 Run Date: 07/01/16 17:00 Prep Method: 5030B/5030C/503
File ID: 9M975217 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG574993 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-21-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	5.00	20.0	5.00	1	U
Benzene	0.500	5.00	0.500	1	U
Bromobenzene	0.500	5.00	0.500	1	U
Bromochloromethane	1.00	5.00	1.00	1	U
Bromodichloromethane	0.500	5.00	0.500	1	U
Bromoform	0.500	5.00	0.500	1	U
Bromomethane	1.00	5.00	1.00	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.500	5.00	0.500	1	U
sec-Butylbenzene	0.500	5.00	0.500	1	U
tert-Butylbenzene	0.500	5.00	0.500	1	U
Carbon disulfide	0.500	5.00	0.500	1	U
Carbon tetrachloride	0.500	5.00	0.500	1	U
Chlorobenzene	0.500	5.00	0.500	1	U
Chlorodibromomethane	0.500	5.00	0.500	1	U
Chloroethane	1.00	5.00	1.00	1	U
Chloroform	0.500	5.00	0.500	1	U
Chloromethane	2.00	10.0	2.00	1	U
2-Chlorotoluene	0.500	5.00	0.500	1	U
4-Chlorotoluene	0.500	5.00	0.500	1	U
1,2-Dibromo-3-chloropropane	2.00	10.0	2.00	1	U
1,2-Dibromoethane	0.500	5.00	0.500	1	U
Dibromomethane	0.500	5.00	0.500	1	U
1,2-Dichlorobenzene	0.500	5.00	0.500	1	U
1,3-Dichlorobenzene	0.500	5.00	0.500	1	U
1,4-Dichlorobenzene	0.500	5.00	0.500	1	U
Dichlorodifluoromethane	1.00	5.00	1.00	1	U
1,1-Dichloroethane	1.00	5.00	1.00	1	U
1,2-Dichloroethane	0.500	5.00	0.500	1	U
1,1-Dichloroethene	0.500	5.00	0.500	1	U
cis-1,2-Dichloroethene	0.500	5.00	0.500	1	U
trans-1,2-Dichloroethene	0.500	5.00	0.500	1	U
1,2-Dichloropropane	0.500	5.00	0.500	1	U
1,3-Dichloropropane	0.500	5.00	0.500	1	U
2,2-Dichloropropane	0.500	5.00	0.500	1	U
cis-1,3-Dichloropropene	0.500	5.00	0.500	1	U
trans-1,3-Dichloropropene	0.500	5.00	0.500	1	U
1,1-Dichloropropene	0.500	5.00	0.500	1	U
Ethylbenzene	0.500	5.00	0.500	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.500	5.00	0.500	1	U
Isopropylbenzene	0.500	5.00	0.500	1	U

Report Name:BLANK
PDF ID: 4850426
13-JUL-2016 10:45

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16061593 Prep Date: 07/01/16 17:00 Sample ID: WG574993-01
Instrument ID: HPMS9 Run Date: 07/01/16 17:00 Prep Method: 5030B/5030C/503
File ID: 9M975217 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG574993 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-21-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.500	5.00	0.500	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	1.00	5.00	1.00	1	U
n-Propylbenzene	0.500	5.00	0.500	1	U
Styrene	0.500	5.00	0.500	1	U
1,1,1,2-Tetrachloroethane	0.500	5.00	0.500	1	U
1,1,2,2-Tetrachloroethane	0.500	5.00	0.500	1	U
Tetrachloroethene	0.500	5.00	0.500	1	U
Toluene	0.500	5.00	0.500	1	U
1,2,3-Trichlorobenzene	0.500	5.00	0.500	1	U
1,2,4-Trichlorobenzene	0.500	5.00	0.500	1	U
1,1,1-Trichloroethane	0.500	5.00	0.500	1	U
1,1,2-Trichloroethane	0.500	5.00	0.500	1	U
Trichloroethene	0.500	5.00	0.500	1	U
Trichlorofluoromethane	1.00	5.00	1.00	1	U
1,2,3-Trichloropropane	1.00	5.00	1.00	1	U
1,2,4-Trimethylbenzene	0.500	5.00	0.500	1	U
1,3,5-Trimethylbenzene	0.500	5.00	0.500	1	U
Vinyl chloride	1.00	5.00	1.00	1	U
o-Xylene	0.500	5.00	0.500	1	U
m-,p-Xylene	0.500	5.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	96.8	80 - 120	PASS
1,2-Dichloroethane-d4	92.3	80 - 120	PASS
Toluene-d8	99.8	85 - 115	PASS
4-Bromofluorobenzene	102	85 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4850426
13-JUL-2016 10:45

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16061593 Prep Date: 07/06/16 15:40 Sample ID: WG575227-01
Instrument ID: HPMS9 Run Date: 07/06/16 15:40 Prep Method: 5030B/5030C/503
File ID: 9M975252 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG575227 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-21-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Naphthalene	0.500	5.00	0.599	1	J

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	92.7	80 - 120	PASS
1,2-Dichloroethane-d4	91.1	80 - 120	PASS
Toluene-d8	98.9	85 - 115	PASS
4-Bromofluorobenzene	102	85 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4850426
13-JUL-2016 10:45

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061593 | Run Date: 07/01/2016 | Sample ID: WG574993-02
Instrument ID: HPMS9 | Run Time: 18:32 | Prep Method: 5030B/5030C/503
File ID: 9M975220 | Analyst: ADC | Method: 8260B
Workgroup (AAB#): WG574993 | Matrix: Soil | Units: ug/kg
QC Key: DOD4 | Lot#: STD76744 | Cal ID: HPMS9-21-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	19.2	96.0	20 - 160	
Benzene	20.0	18.1	90.5	75 - 125	
Bromobenzene	20.0	18.6	93.2	65 - 120	
Bromochloromethane	20.0	18.3	91.5	70 - 125	
Bromodichloromethane	20.0	17.8	88.9	70 - 130	
Bromoform	20.0	17.7	88.6	55 - 135	
Bromomethane	20.0	19.5	97.6	30 - 160	
2-Butanone	20.0	19.1	95.3	30 - 160	
n-Butylbenzene	20.0	17.6	87.8	65 - 140	
sec-Butylbenzene	20.0	18.9	94.5	65 - 130	
tert-Butylbenzene	20.0	20.2	101	65 - 130	
Carbon disulfide	20.0	17.4	86.9	45 - 160	
Carbon tetrachloride	20.0	17.0	84.8	65 - 135	
Chlorobenzene	20.0	19.6	98.1	75 - 125	
Chlorodibromomethane	20.0	18.5	92.6	65 - 130	
Chloroethane	20.0	20.3	102	40 - 155	
Chloroform	20.0	18.6	92.8	70 - 125	
Chloromethane	20.0	15.8	78.8	50 - 130	
2-Chlorotoluene	20.0	19.1	95.7	70 - 130	
4-Chlorotoluene	20.0	19.4	97.0	75 - 125	
1,2-Dibromo-3-chloropropane	20.0	17.7	88.3	40 - 135	
1,2-Dibromoethane	20.0	18.1	90.6	70 - 125	
Dibromomethane	20.0	18.5	92.6	75 - 130	
1,2-Dichlorobenzene	20.0	18.8	94.0	75 - 120	
1,3-Dichlorobenzene	20.0	18.3	91.3	70 - 125	
1,4-Dichlorobenzene	20.0	18.4	92.0	70 - 125	
Dichlorodifluoromethane	20.0	14.4	72.0	35 - 135	
1,1-Dichloroethane	20.0	17.5	87.6	75 - 125	
1,2-Dichloroethane	20.0	18.8	93.9	70 - 135	
1,1-Dichloroethene	20.0	15.6	77.8	65 - 135	
cis-1,2-Dichloroethene	20.0	18.4	92.1	65 - 125	
trans-1,2-Dichloroethene	20.0	17.3	86.7	65 - 135	
1,2-Dichloropropane	20.0	19.3	96.6	70 - 120	
1,3-Dichloropropane	20.0	20.1	100	75 - 125	
2,2-Dichloropropane	20.0	17.5	87.7	65 - 135	
cis-1,3-Dichloropropene	20.0	19.6	98.1	70 - 125	
trans-1,3-Dichloropropene	20.0	18.5	92.7	65 - 125	
1,1-Dichloropropene	20.0	17.4	87.1	70 - 135	
Ethylbenzene	20.0	19.1	95.4	75 - 125	
2-Hexanone	20.0	19.0	95.1	45 - 145	
Hexachlorobutadiene	20.0	18.5	92.5	55 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4850427
Report generated: 07/13/2016 10:45

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061593 | Run Date: 07/01/2016 | Sample ID: WG574993-02
Instrument ID: HPMS9 | Run Time: 18:32 | Prep Method: 5030B/5030C/503
File ID: 9M975220 | Analyst: ADC | Method: 8260B
Workgroup (AAB#): WG574993 | Matrix: Soil | Units: ug/kg
QC Key: DOD4 | Lot#: STD76744 | Cal ID: HPMS9-21-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	19.5	97.3	75 - 130	
p-Isopropyltoluene	20.0	19.0	94.8	75 - 135	
4-Methyl-2-pentanone	20.0	20.2	101	45 - 145	
Methylene chloride	20.0	17.4	86.9	55 - 140	
n-Propylbenzene	20.0	19.1	95.6	65 - 135	
Styrene	20.0	19.3	96.3	75 - 125	
1,1,1,2-Tetrachloroethane	20.0	19.5	97.5	75 - 125	
1,1,2,2-Tetrachloroethane	20.0	17.6	87.8	55 - 130	
Tetrachloroethene	20.0	18.0	89.8	65 - 140	
Toluene	20.0	18.7	93.3	70 - 125	
1,2,3-Trichlorobenzene	20.0	18.9	94.5	60 - 135	
1,2,4-Trichlorobenzene	20.0	18.2	91.2	65 - 130	
1,1,1-Trichloroethane	20.0	17.9	89.7	70 - 135	
1,1,2-Trichloroethane	20.0	19.5	97.3	60 - 125	
Trichloroethene	20.0	19.0	95.0	75 - 125	
Trichlorofluoromethane	20.0	18.9	94.3	25 - 185	
1,2,3-Trichloropropane	20.0	19.5	97.7	65 - 130	
1,2,4-Trimethylbenzene	20.0	19.2	96.1	65 - 135	
1,3,5-Trimethylbenzene	20.0	19.8	98.8	65 - 135	
Vinyl chloride	20.0	19.8	99.0	60 - 125	
o-Xylene	20.0	19.5	97.6	75 - 125	
m-,p-Xylene	40.0	38.4	96.0	80 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	96.9	80 - 120	PASS
1,2-Dichloroethane-d4	92.8	80 - 120	PASS
Toluene-d8	99.1	85 - 115	PASS
4-Bromofluorobenzene	99.1	85 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4850427
Report generated: 07/13/2016 10:45

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061593 Run Date: 07/06/2016 Sample ID: WG575227-02
Instrument ID: HPMS9 Run Time: 17:11 Prep Method: 5030B/5030C/503
File ID: 9M975255 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG575227 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD76744 Cal ID: HPMS9-21-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Naphthalene	20.0	18.7	93.6	40 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	98.1	80 - 120	PASS
1,2-Dichloroethane-d4	90.9	80 - 120	PASS
Toluene-d8	101	85 - 115	PASS
4-Bromofluorobenzene	103	85 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4850427
Report generated: 07/13/2016 10:45

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061593
Instrument: HPMS9
Analyst: FJB
Workgroup: WG555000

Tune ID: WG555000-01
Run Date: 01/25/2016
Run Time: 10:27
File ID: 9M972470
Cal ID: HPMS9 - 25-JAN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	23.0	10289	PASS
75.0	95.0	30.0	60.0	49.3	22030	PASS
95.0	95.0	100	100	100	44728	PASS
96.0	95.0	5.00	9.00	6.98	3122	PASS
173	174	0	2.00	0.381	160	PASS
174	95.0	50.0	100	93.9	41989	PASS
175	174	5.00	9.00	6.62	2778	PASS
176	174	95.0	101	95.6	40133	PASS
177	176	5.00	9.00	6.39	2564	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG555000-02	STD-S	01	01/25/2016 11:22	
WG555000-03	STD-S	01	01/25/2016 11:52	
WG555000-04	STD-S	01	01/25/2016 12:23	
WG555000-05	STD-CCV-S	01	01/25/2016 12:53	
WG555000-06	STD-S	01	01/25/2016 13:23	
WG555000-07	STD-S	01	01/25/2016 13:54	
WG555000-08	STD-S	01	01/25/2016 14:25	
WG555000-09	STD-S	01	01/25/2016 14:56	
WG555000-10	SSCV-S	01	01/25/2016 15:56	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4850429
Report generated 07/13/2016 10:46

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061593
Instrument: HPMS9
Analyst: ADC
Workgroup: WG573367

Tune ID: WG573367-01
Run Date: 06/21/2016
Run Time: 06:43
File ID: 9M974885
Cal ID: HPMS9 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.4	7829	PASS
75.0	95.0	30.0	60.0	46.0	17648	PASS
95.0	95.0	100	100	100	38392	PASS
96.0	95.0	5.00	9.00	6.76	2596	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	89.8	34464	PASS
175	174	5.00	9.00	7.38	2544	PASS
176	174	95.0	101	95.5	32922	PASS
177	176	5.00	9.00	6.30	2073	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573367-04	STD-S	01	06/21/2016 08:40	
WG573367-05	STD-S	01	06/21/2016 09:10	
WG573367-06	STD-S	01	06/21/2016 09:40	
WG573367-07	STD-CCV-S	01	06/21/2016 10:11	
WG573367-08	STD-S	01	06/21/2016 10:41	
WG573367-09	STD-S	01	06/21/2016 11:11	
WG573367-10	STD-S	01	06/21/2016 11:41	
WG573367-02	STD-S	01	06/21/2016 13:12	
WG573367-03	STD-S	01	06/21/2016 13:42	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4850429
Report generated 07/13/2016 10:46

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061593
Instrument: HPMS9
Analyst: ADC
Workgroup: WG573558

Tune ID: WG573558-01
Run Date: 06/21/2016
Run Time: 14:38
File ID: 9M974901
Cal ID: HPMS9 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	18.4	4617	PASS
75.0	95.0	30.0	60.0	44.8	11214	PASS
95.0	95.0	100	100	100	25029	PASS
96.0	95.0	5.00	9.00	6.96	1743	PASS
173	174	0	2.00	0.481	112	PASS
174	95.0	50.0	100	93.1	23302	PASS
175	174	5.00	9.00	7.77	1810	PASS
176	174	95.0	101	98.8	23026	PASS
177	176	5.00	9.00	6.34	1460	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573367-11	SSCV-S	01	06/21/2016 15:35	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4850429
Report generated 07/13/2016 10:46

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061593
Instrument: HPMS9
Analyst: ADC
Workgroup: WG574992

Tune ID: WG574992-01
Run Date: 07/01/2016
Run Time: 14:53
File ID: 9M975213
Cal ID: HPMS9 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.2	4799	PASS
75.0	95.0	30.0	60.0	42.3	10593	PASS
95.0	95.0	100	100	100	25036	PASS
96.0	95.0	5.00	9.00	6.92	1733	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	92.2	23080	PASS
175	174	5.00	9.00	7.88	1818	PASS
176	174	95.0	101	98.6	22757	PASS
177	176	5.00	9.00	6.91	1572	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG574992-02	CCV-S	01	07/01/2016 15:50	
WG574993-01	BLANK	01	07/01/2016 17:00	
WG574993-02	LCS	01	07/01/2016 18:32	
L16061593-01	18WW25(3.5-4)(270616)	01	07/01/2016 22:05	
L16061593-02	18WW25(9.5-10)270616	01	07/01/2016 22:35	
L16061593-03	18WW25(14.5-15)270616	01	07/01/2016 23:06	
L16061593-04	18WW25(19.5-20)270616	01	07/01/2016 23:36	
L16061593-05	18WW25(22-22.5)270616	01	07/02/2016 00:06	
L16061593-06	18WW25(22-22.5)270616 DUP	01	07/02/2016 00:37	
WG575025-02	MS	01	07/02/2016 01:07	
WG575025-03	MSD	01	07/02/2016 01:37	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4850429
Report generated 07/13/2016 10:46

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061593
Instrument: HPMS9
Analyst: ADC
Workgroup: WG575226

Tune ID: WG575226-01
Run Date: 07/06/2016
Run Time: 13:53
File ID: 9M975249
Cal ID: HPMS9 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.9	4982	PASS
75.0	95.0	30.0	60.0	45.2	11346	PASS
95.0	95.0	100	100	100	25093	PASS
96.0	95.0	5.00	9.00	6.84	1717	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	83.3	20901	PASS
175	174	5.00	9.00	7.50	1567	PASS
176	174	95.0	101	96.8	20228	PASS
177	176	5.00	9.00	7.25	1467	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG575226-02	CCV-S	01	07/06/2016 14:19	
WG575227-01	BLANK	01	07/06/2016 15:40	
WG575227-02	LCS	01	07/06/2016 17:11	
L16061593-01	18WW25(3.5-4)(270616)	02	07/06/2016 18:11	
L16061593-02	18WW25(9.5-10)270616	02	07/06/2016 18:41	
L16061593-03	18WW25(14.5-15)270616	02	07/06/2016 19:11	
L16061593-04	18WW25(19.5-20)270616	02	07/06/2016 19:42	
L16061593-05	18WW25(22-22.5)270616	02	07/06/2016 20:12	
L16061593-06	18WW25(22-22.5)270616 DUP	02	07/06/2016 20:42	
WG575216-02	MS	01	07/06/2016 23:13	
WG575216-03	MSD	01	07/06/2016 23:44	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4850429
Report generated 07/13/2016 10:46

Calibration Table Report
Method: A9FOO_SL.M
Title: FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Calibration: Wed Jan 27 09:49:02 2016
Curve: WG555000
Calibration Files

Compound	5 9M972472.D	20 9M972473.D	50 9M972474.D	100 9M972475.D	200 9M972476.D	300 9M972477.D	400 9M972478.D	500 9M972479.D	Avg	%RSD	R^2 Linear
Fluorobenzene	ISTD										
Acetonitrile		0.053	0.046	0.048	0.052	0.046	0.052	0.054	0.050	6.657	
3-Chloro-1-propene	0.498	0.524	0.450	0.519	0.514	0.434	0.507	0.503	0.494	6.719	
2-Chloro-1,3-butadiene	0.534	0.576	0.519	0.592	0.585	0.509	0.593	0.584	0.561	6.202	
Ethyl Acetate		0.333	0.313	0.339	0.338	0.300	0.341	0.344	0.330	5.124	
Methacrylonitrile	0.102	0.109	0.101	0.112	0.110	0.096	0.112	0.112	0.107	5.912	
Isobutyl Alcohol	0.014	0.018	0.018	0.021	0.024	0.021	0.025	0.025	0.021	18.016	0.993
1-Butanol		0.010	0.013	0.015	0.017	0.015	0.018	0.018	0.015	17.838	0.992
Methyl methacrylate	0.236	0.246	0.231	0.265	0.265	0.231	0.271	0.269	0.252	7.005	
2-Nitropropane	0.069	0.073	0.074	0.083	0.089	0.079	0.093	0.095	0.082	12.090	
Chlorobenzene-d5	ISTD										
Cyclohexanone		0.020	0.022	0.025	0.028	0.023	0.027	0.028	0.025	12.963	
1,4-Dichlorobenzene-d4	ISTD										

Wed Jan 27 10:01:56 2016

Calibration Table Report
Method: 8260S.M
Title: 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Calibration: Thu Jun 23 11:41:07 2016
Curve: WG573367
Calibration Files

Compound	0.5 9M974898.D	1 9M974899.D	2 9M974889.D	5 9M974890.D	20 9M974891.D	50 9M974892.D	100 9M974893.D	200 9M974894.D	300 9M974895.D	Avg	%RSD	R^2 Linear	Quadratic
Fluorobenzene	ISTD												
Dichlorodifluoromethane		0.339	0.342	0.348	0.395	0.433	0.437	0.422	0.418	0.392	10.820		
Chloromethane		0.456	0.357	0.338	0.343	0.350	0.308	0.296	0.322	0.346	14.160		
Vinyl Chloride		0.263	0.229	0.244	0.254	0.251	0.256	0.233	0.215	0.243	6.619		
1,3-Butadiene		0.116	0.126	0.124	0.125	0.118	0.128	0.113	0.113	0.120	5.065		
Bromomethane		0.280	0.210	0.207	0.193	0.212	0.216	0.216	0.224	0.220	11.802		
Chloroethane			0.189	0.191	0.185	0.209	0.208	0.205	0.211	0.200	5.552		
Trichlorofluoromethane		0.396	0.441	0.446	0.428	0.481	0.477	0.463	0.476	0.451	6.508		
Diethyl ether		0.231	0.240	0.251	0.217	0.245	0.248		0.257	0.241	5.676		
Isoprene			0.310	0.306	0.280	0.332	0.328	0.326	0.344	0.318	6.653		
Acrolein			0.018	0.018	0.016	0.018	0.018		0.022	0.018	10.142		
1,1,2-Trichloro-1,2,2-Trifluoroe			0.252	0.261	0.254	0.289	0.283	0.275	0.282	0.271	5.557		
Acetone				0.173	0.093	0.097	0.095	0.090	0.096	0.107	30.178	0.998	
1,1-Dichloroethene			0.413	0.423	0.399	0.458	0.448	0.438	0.453	0.433	5.060		
Tert-Butyl Alcohol			0.040	0.044	0.044	0.043	0.048		0.046	0.044	6.223		
Dimethyl Sulfide		0.164	0.165	0.185	0.154	0.188	0.193	0.192	0.206	0.181	9.781		
Iodomethane			0.103	0.126	0.134	0.175	0.180	0.184	0.193	0.157	22.244	0.997	
Methyl acetate			0.252	0.268	0.231	0.256	0.258	0.251	0.269	0.255	5.068		
Methylene Chloride				0.350	0.256	0.288	0.291	0.282	0.290	0.293	10.653		
Carbon Disulfide			0.866	0.827	0.726	0.829	0.830	0.807	0.843	0.818	5.443		
Acrylonitrile		0.109	0.111	0.117	0.115	0.126	0.128			0.118	6.461		
Methyl Tert Butyl Ether		0.677	0.729	0.735	0.699	0.780	0.798	0.777	0.804	0.750	6.256		
trans-1,2-Dichloroethene		0.366	0.399	0.414	0.387	0.437	0.438	0.420	0.434	0.412	6.348		
n-Hexane			0.516	0.447	0.406	0.470	0.469	0.453	0.457	0.460	7.184		
Diisopropyl ether		0.920	0.957	0.992	0.839	0.957	0.970		0.995	0.947	5.702		
Vinyl Acetate			0.495	0.468	0.479	0.522	0.519	0.544	0.550	0.511	6.124		
1,1-Dichloroethane		0.478	0.524	0.499	0.476	0.542	0.542	0.523	0.538	0.515	5.326		
Ethyl-Tert-Butyl ether		0.852	0.888	0.920	0.782	0.895	0.912		0.944	0.885	6.074		
2-Butanone				0.145	0.131	0.147	0.149	0.146	0.157	0.146	5.841		
Propionitrile		0.035	0.043	0.044	0.045	0.046	0.048		0.050	0.044	10.947		
2,2-Dichloropropane			0.372	0.371	0.349	0.399	0.402	0.388	0.401	0.383	5.215		
cis-1,2-Dichloroethene		0.280	0.287	0.287	0.275	0.311	0.312	0.301	0.311	0.296	5.149		
Chloroform		0.385	0.437	0.438	0.418	0.469	0.476	0.458	0.472	0.444	7.047		
1-Bromopropane			0.039	0.042	0.041	0.050	0.050	0.049	0.052	0.046	11.753		
Bromochloromethane		0.153	0.198	0.194	0.182	0.206	0.207	0.205	0.210	0.194	9.828		
Tetrahydrofuran			0.099	0.103	0.094	0.101	0.101		0.105	0.101	3.609		
Dibromofluoromethane		0.289	0.275	0.284	0.246	0.278	0.278	0.280		0.276	5.036		
1,1,1-Trichloroethane		0.373	0.395	0.403	0.372	0.417	0.420	0.407	0.423	0.401	4.990		
Cyclohexane		0.478	0.502	0.511	0.452	0.532	0.524	0.517	0.541	0.507	5.801		
1,1-Dichloropropene		0.332	0.353	0.343	0.328	0.364	0.363	0.352	0.361	0.349	3.976		
Tert-Amyl-Methyl ether		0.689	0.708	0.727	0.630	0.709	0.722		0.749	0.705	5.386		
Carbon Tetrachloride			0.3749	0.37574	0.35309	0.40878	0.40616	0.39732	0.40862	0.38923	5.55363		
1,2-Dichloroethane-d4		0.33195	0.29139	0.29111	0.25703	0.2939	0.29222	0.29417		0.29311	7.39624		
Heptane										0	0		
1,2-Dichloroethane		0.34436	0.33876	0.36123	0.34008	0.38126	0.38481	0.37439	0.38535	0.36378	5.59181		
Benzene		1.07224	1.13377	1.05846	0.9693	1.08465	1.07771	1.03359	1.04146	1.0589	4.48311		
Trichloroethene		0.31928	0.29512	0.30471	0.2881	0.31791	0.32498	0.31144	0.31985	0.31017	4.22344		
Methylcyclohexane		0.42704	0.41507	0.43483	0.39249	0.46037	0.45431	0.4467	0.46212	0.43662	5.56678		
1,2-Dichloropropane		0.25678	0.27372	0.28809	0.27174	0.30223	0.31096	0.3001	0.31145	0.28938	6.97669		
1,4-Dioxane			0.00337	0.00437	0.00442	0.00453	0.00518		0.00464	0.00442	13.3782		
Bromodichloromethane			0.32434	0.32752	0.31999	0.36525	0.37358	0.36625	0.38117	0.35116	7.42468		
Dibromomethane		0.15645	0.17405	0.17269	0.17806	0.19634	0.19781	0.19213	0.19743	0.18312	8.26792		
2-Chloroethyl Vinyl Ether			0.12071	0.14517	0.14497	0.17988	0.18129	0.18513	0.19969	0.16526	17.2056	0.997	
4-Methyl-2-Pentanone				0.09743	0.10271	0.12382	0.12551	0.12886	0.14029	0.11977	13.6843		
cis-1,3-Dichloropropene			0.3745	0.39678	0.37991	0.4361	0.45034	0.43468	0.45326	0.41794	7.98856		
Dimethyl Disulfide			0.35608	0.36562	0.37386	0.46166	0.48845	0.49307	0.52325	0.43743	16.0208	0.997	
Chlorobenzene-d5	ISTD												
Toluene-d8		1.45693	1.2883	1.28298	1.06891	1.22158	1.19037	1.15966		1.23839	9.87591		
Toluene		1.40211	1.55481	1.47597	1.32428	1.47281	1.4504	1.3588	1.36824	1.42593	5.34381		
Ethyl Methacrylate				0.34755	0.34928	0.42417	0.43488	0.4274	0.45731	0.40676	11.4703		
trans-1,3-Dichloropropene			0.41005	0.46067	0.45733	0.52301	0.52154	0.49951	0.51752	0.48424	8.85031		
1,1,2-Trichloroethane		0.26161	0.27414	0.29258	0.28096	0.31882	0.31562	0.30073	0.31398	0.29481	7.18222		
2-Hexanone				0.20149	0.2324	0.28011	0.28638	0.28907	0.31324	0.26712	15.5814	0.998	
1,3-Dichloropropane		0.47331	0.46904	0.49449	0.46681	0.5194	0.51429	0.49355	0.51225	0.49289	4.31834		
Tetrachloroethene		0.29136	0.29905	0.31415	0.2861	0.32232	0.31622	0.30251	0.30766	0.30492	4.11398		
Dibromochloromethane			0.35573	0.35162	0.35727	0.41205	0.41811	0.40477	0.42512	0.38924	8.41824		
1,2-Dibromoethane				0.30956	0.30616	0.34347	0.34581	0.33274	0.34932	0.33118	5.71384		
1-Chlorohexane		0.4127	0.4407	0.43365	0.40013	0.47672	0.46984	0.45352	0.47047	0.44472	6.33029		
Chlorobenzene		1.01916	1.06603	1.0277	0.93832	1.0597	1.04243	0.98033	0.98572	1.01492	4.32253		
1,1,1,2-Tetrachloroethane			0.34704	0.35517	0.33199	0.38396	0.38756	0.36926	0.38075	0.3651	5.7489		
Ethylbenzene		0.51465	0.54323	0.54915	0.49908	0.56451	0.56365	0.53191	0.53525	0.53768	4.22741		
m-,p-Xylene	0.75209	0.67404	0.6825	0.66681	0.60746	0.68216	0.66973	0.62558	0.61753	0.66421	6.60655		
o-Xylene		0.64089	0.63241	0.65125	0.58358	0.66892	0.66982	0.64256	0.65493	0.64304	4.25846		
Styrene		1.02161	1.03238	1.03785	0.98822	1.14647	1.14649	1.09743	1.11428	1.07309	5.659		
Bromoform			0.23161	0.23621	0.24496	0.28755	0.29096	0.29353		0.26414	11.1512		
Isopropylbenzene		1.75832	1.62544	1.65461	1.51259	1.71304	1.69482	1.62051	1.62292	1.65028	4.51285		
1,4-Dichlorobenzene-d4	ISTD												
1,1,2,2-Tetrachloroethane		0.70517	0.7804	0.7795	0.75645	0.85695	0.8484	0.83803	0.88273	0.80596	7.45735		
p-Bromofluorobenzene				1.00205	0.84147	0.93135	0.90821	0.882		0.91302	6.56414		
1,2,3-Trichloropropane			0.22604	0.22658	0.2362	0.26799	0.26399	0.25718	0.27147	0.24992	7.90956		

trans-1,4-Dichloro-2-Butene		0.18699	0.22612	0.22122	0.2623	0.27201	0.27474		0.24056	14.4985	
n-Propylbenzene	3.81675	3.95	3.66116	3.31196	3.75581	3.62931	3.34107	3.32263	3.59859	6.84951	
Bromobenzene	0.89537	0.85897	0.86404	0.80168	0.91366	0.89727	0.83709	0.87565	0.86797	4.17683	
1,3,5-Trimethylbenzene			2.90208	2.53851	2.86856	2.81679	2.64592	2.62575	2.73293	5.44938	
2-Chlorotoluene		2.24795	2.24412	2.0107	2.26462	2.29685	2.08265	2.07913	2.17515	5.23148	
4-Chlorotoluene	2.33756	2.35228	2.20645	2.07443	2.32372	2.18675	2.0805	2.09682	2.20731	5.35775	
a-Methylstyrene			1.17912	1.08406	1.33993	1.33898	1.32155	1.35138	1.26917	8.75665	
tert-Butylbenzene			0.585	0.54978	0.62703	0.61414	0.58098	0.58606	0.5905	4.6019	
1,2,4-Trimethylbenzene	3.14164	4.10231	3.24302	2.54829	2.88271	2.85769	2.67958	2.61271	3.00849	16.7819	0.998
sec-Butylbenzene	4.0489	3.68258	3.65692	3.27009	3.72373	3.61008	3.39941	3.29503	3.58584	7.2066	
p-Isopropyltoluene			3.00165	2.7423	3.09267	3.06877	2.88302	2.76036	2.9248	5.22798	
1,3-Dichlorobenzene	1.87081	1.72334	1.66067	1.52132	1.70093	1.71811	1.61919	1.60823	1.67782	6.15039	
1,4-Dichlorobenzene	2.10654	1.75821	1.6939	1.50453	1.69485	1.70843	1.62457	1.60823	1.71241	10.3501	
n-Butylbenzene	3.09454	2.7309	2.62614	2.43848	2.72682	2.74857	2.58033	2.43918	2.67312	7.87389	
1,2-Dichlorobenzene	1.82146	1.58935	1.52586	1.41033	1.63044	1.66278	1.59512	1.58325	1.60233	7.29945	
1,2-Dibromo-3-Chloropropane		0.16774	0.16871	0.18383	0.22331	0.25116	0.23507	0.22849	0.20833	16.3925	0.998
1,2,4-Trichlorobenzene		1.23546	1.0965	1.04214	1.2028	1.30092	1.20333	1.10126	1.16892	7.8157	
Hexachlorobutadiene	0.71055	0.6241	0.52889	0.53037	0.59467	0.62114	0.57777	0.55668	0.59302	10.1105	
Naphthalene		3.10088	2.84483	2.78855	3.22343	3.56162	3.09221	2.76033	3.05312	9.36481	
1,2,3-Trichlorobenzene		1.17958	1.07987	1.02021	1.17108	1.3118	1.17706	1.06884	1.14406	8.46944	

Thu Jun 23 11:58:08 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061593 Run Date: 06/21/2016 Sample ID: WG573367-11
Instrument ID: HPMS9 Run Time: 15:35 Method: 8260B
File ID: 9M974903 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG573367 Cal ID: HPMS9 - 21-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	52.5	ug/kg	0.467	5.00	20	
1,1-Dichloroethene	CCC	50.0	52.9	ug/kg	0.458	5.70	20	
1,2-Dichloropropane	CCC	50.0	54.7	ug/kg	0.317	9.40	20	
Ethylbenzene	CCC	50.0	56.1	ug/kg	0.603	12.2	20	
Toluene	CCC	50.0	54.0	ug/kg	1.54	8.10	20	
Vinyl Chloride	CCC	50.0	55.1	ug/kg	0.268	10.2	20	
Bromoform	SPCC	50.0	48.5	ug/kg	0.257	2.90	20	
Chlorobenzene	SPCC	50.0	54.9	ug/kg	1.11	9.70	20	
Chloromethane	SPCC	50.0	52.7	ug/kg	0.365	5.50	20	
1,1-Dichloroethane	SPCC	50.0	51.3	ug/kg	0.529	2.60	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	51.2	ug/kg	0.826	2.50	20	
Acetone		50.0	52.5	ug/kg	0.103	5.10	20	
Benzene		50.0	52.2	ug/kg	1.11	4.40	20	
Bromobenzene		50.0	52.4	ug/kg	0.909	4.70	20	
Bromochloromethane		50.0	51.2	ug/kg	0.199	2.40	20	
Bromodichloromethane		50.0	51.3	ug/kg	0.361	2.70	20	
Bromomethane		50.0	57.1	ug/kg	0.251	14.3	20	
2-Butanone		50.0	52.1	ug/kg	0.152	4.10	20	
n-Butylbenzene		50.0	54.9	ug/kg	2.93	9.70	20	
sec-Butylbenzene		50.0	56.6	ug/kg	4.06	13.2	20	
tert-Butylbenzene		50.0	58.4	ug/kg	0.689	16.7	20	
Carbon Disulfide		50.0	58.1	ug/kg	0.951	16.2	20	
Carbon Tetrachloride		50.0	53.4	ug/kg	0.416	6.90	20	
Dibromochloromethane		50.0	51.3	ug/kg	0.400	2.60	20	
Chloroethane		50.0	58.4	ug/kg	0.233	16.8	20	
2-Chlorotoluene		50.0	56.3	ug/kg	2.45	12.5	20	
4-Chlorotoluene		50.0	55.3	ug/kg	2.44	10.5	20	
1,2-Dibromo-3-Chloropropane		50.0	48.9	ug/kg	0.224	2.10	20	
1,2-Dibromoethane		50.0	50.5	ug/kg	0.335	1.10	20	
Dibromomethane		50.0	49.7	ug/kg	0.182	0.700	20	
1,2-Dichlorobenzene		50.0	53.0	ug/kg	1.70	6.00	20	
1,3-Dichlorobenzene		50.0	53.3	ug/kg	1.79	6.60	20	
1,4-Dichlorobenzene		50.0	53.2	ug/kg	1.82	6.50	20	
Dichlorodifluoromethane		50.0	64.2	ug/kg	0.503	28.4	20	*
1,2-Dichloroethane		50.0	51.3	ug/kg	0.373	2.60	20	
cis-1,2-Dichloroethene		50.0	54.3	ug/kg	0.321	8.60	20	
trans-1,2-Dichloroethene		50.0	55.3	ug/kg	0.456	10.7	20	
1,3-Dichloropropane		50.0	54.8	ug/kg	0.540	9.50	20	
2,2-Dichloropropane		50.0	56.5	ug/kg	0.433	13.1	20	
cis-1,3-Dichloropropene		50.0	57.0	ug/kg	0.476	13.9	20	
trans-1,3-Dichloropropene		50.0	53.6	ug/kg	0.519	7.20	20	
1,1-Dichloropropene		50.0	53.8	ug/kg	0.376	7.70	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4850428
Report generated 07/13/2016 10:45

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061593 Run Date: 06/21/2016 Sample ID: WG573367-11
Instrument ID: HPMS9 Run Time: 15:35 Method: 8260B
File ID: 9M974903 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG573367 Cal ID: HPMS9 - 21-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	50.0	ug/kg	0.288	0.100	20	
Hexachlorobutadiene		50.0	58.3	ug/kg	0.691	16.5	20	
Isopropylbenzene		50.0	56.4	ug/kg	1.86	12.9	20	
p-Isopropyltoluene		50.0	56.6	ug/kg	3.31	13.1	20	
4-Methyl-2-Pentanone		50.0	54.1	ug/kg	0.130	8.30	20	
Methylene Chloride		50.0	48.9	ug/kg	0.286	2.20	20	
Naphthalene		50.0	48.8	ug/kg	2.98	2.40	20	
n-Propylbenzene		50.0	57.0	ug/kg	4.10	14.0	20	
Styrene		50.0	55.0	ug/kg	1.18	10.0	20	
1,1,1,2-Tetrachloroethane		50.0	53.1	ug/kg	0.388	6.30	20	
Tetrachloroethene		50.0	55.0	ug/kg	0.336	10.0	20	
1,2,3-Trichlorobenzene		50.0	55.1	ug/kg	1.26	10.2	20	
1,2,4-Trichlorobenzene		50.0	56.6	ug/kg	1.32	13.3	20	
1,1,1-Trichloroethane		50.0	54.1	ug/kg	0.434	8.20	20	
1,1,2-Trichloroethane		50.0	52.6	ug/kg	0.310	5.30	20	
Trichloroethene		50.0	54.9	ug/kg	0.341	9.90	20	
Trichlorofluoromethane		50.0	57.4	ug/kg	0.518	14.9	20	
1,2,3-Trichloropropane		50.0	51.7	ug/kg	0.259	3.50	20	
1,2,4-Trimethylbenzene		50.0	56.9	ug/kg	3.08	13.8	20	
1,3,5-Trimethylbenzene		50.0	58.0	ug/kg	3.17	16.1	20	
o-Xylene		50.0	56.1	ug/kg	0.721	12.1	20	
m-,p-Xylene		100	110	ug/kg	0.729	9.70	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4850428
Report generated 07/13/2016 10:45

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061593 Run Date: 07/01/2016 Sample ID: WG574992-02
Instrument ID: HPMS9 Run Time: 15:50 Method: 8260B
File ID: 9M975215 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG574993 Cal ID: HPMS9 - 21-JUN-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	53.2	ug/kg	0.472	6.31	20	
1,1-Dichloroethene	CCC	50.0	51.9	ug/kg	0.450	3.82	20	
1,2-Dichloropropane	CCC	50.0	51.7	ug/kg	0.299	3.42	20	
Ethylbenzene	CCC	50.0	53.3	ug/kg	0.573	6.60	20	
Toluene	CCC	50.0	51.5	ug/kg	1.47	2.97	20	
Vinyl Chloride	CCC	50.0	58.8	ug/kg	0.286	17.6	20	
Bromoform	SPCC	50.0	57.8	ug/kg	0.306	15.7	20	
Chlorobenzene	SPCC	50.0	52.9	ug/kg	1.07	5.89	20	
Chloromethane	SPCC	50.0	53.0	ug/kg	0.367	6.00	20	
1,1-Dichloroethane	SPCC	50.0	51.9	ug/kg	0.535	3.76	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	53.6	ug/kg	0.864	7.21	20	
Xylenes		150	157	ug/kg	0.688	4.94	20	
Acetone		50.0	45.4	ug/kg	0.0898	9.22	20	
Benzene		50.0	51.2	ug/kg	1.08	2.43	20	
Bromobenzene		50.0	53.7	ug/kg	0.932	7.41	20	
Bromochloromethane		50.0	53.2	ug/kg	0.207	6.46	20	
Bromodichloromethane		50.0	51.9	ug/kg	0.364	3.76	20	
Bromomethane		50.0	54.1	ug/kg	0.238	8.26	20	
2-Butanone		50.0	47.6	ug/kg	0.139	4.88	20	
n-Butylbenzene		50.0	52.3	ug/kg	2.79	4.56	20	
sec-Butylbenzene		50.0	52.2	ug/kg	3.74	4.33	20	
tert-Butylbenzene		50.0	53.7	ug/kg	0.634	7.34	20	
Carbon Disulfide		50.0	54.2	ug/kg	0.888	8.48	20	
Carbon Tetrachloride		50.0	52.5	ug/kg	0.409	5.02	20	
Dibromochloromethane		50.0	54.2	ug/kg	0.422	8.31	20	
Chloroethane		50.0	53.5	ug/kg	0.214	6.97	20	
2-Chlorotoluene		50.0	53.7	ug/kg	2.34	7.45	20	
4-Chlorotoluene		50.0	51.4	ug/kg	2.27	2.77	20	
1,2-Dibromo-3-Chloropropane		50.0	50.2	ug/kg	0.230	0.430	20	
1,2-Dibromoethane		50.0	52.4	ug/kg	0.347	4.74	20	
Dibromomethane		50.0	54.9	ug/kg	0.201	9.74	20	
1,2-Dichlorobenzene		50.0	52.5	ug/kg	1.68	5.09	20	
1,3-Dichlorobenzene		50.0	52.4	ug/kg	1.76	4.74	20	
1,4-Dichlorobenzene		50.0	52.0	ug/kg	1.78	4.09	20	
Dichlorodifluoromethane		50.0	55.0	ug/kg	0.431	9.95	20	
1,2-Dichloroethane		50.0	51.8	ug/kg	0.377	3.67	20	
cis-1,2-Dichloroethene		50.0	52.5	ug/kg	0.310	4.98	20	
trans-1,2-Dichloroethene		50.0	52.6	ug/kg	0.433	5.20	20	
1,3-Dichloropropane		50.0	52.5	ug/kg	0.518	5.03	20	
2,2-Dichloropropane		50.0	52.7	ug/kg	0.404	5.33	20	
cis-1,3-Dichloropropene		50.0	52.1	ug/kg	0.435	4.13	20	
trans-1,3-Dichloropropene		50.0	53.2	ug/kg	0.516	6.46	20	

CCV - Modified 03/05/2008
PDF File ID: 4850430
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Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061593 Run Date: 07/01/2016 Sample ID: WG574992-02
Instrument ID: HPMS9 Run Time: 15:50 Method: 8260B
File ID: 9M975215 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG574993 Cal ID: HPMS9 - 21-JUN-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	52.8	ug/kg	0.369	5.58	20	
2-Hexanone		50.0	44.7	ug/kg	0.256	10.6	20	
Hexachlorobutadiene		50.0	53.9	ug/kg	0.639	7.73	20	
Isopropylbenzene		50.0	52.9	ug/kg	1.75	5.84	20	
p-Isopropyltoluene		50.0	54.2	ug/kg	3.17	8.46	20	
4-Methyl-2-Pentanone		50.0	48.9	ug/kg	0.117	2.11	20	
Methylene Chloride		50.0	49.1	ug/kg	0.287	1.86	20	
n-Propylbenzene		50.0	52.3	ug/kg	3.77	4.65	20	
Styrene		50.0	54.1	ug/kg	1.16	8.15	20	
1,1,1,2-Tetrachloroethane		50.0	54.6	ug/kg	0.399	9.14	20	
Tetrachloroethene		50.0	54.2	ug/kg	0.331	8.40	20	
1,2,3-Trichlorobenzene		50.0	54.9	ug/kg	1.26	9.79	20	
1,2,4-Trichlorobenzene		50.0	55.2	ug/kg	1.29	10.4	20	
1,1,1-Trichloroethane		50.0	52.9	ug/kg	0.424	5.73	20	
1,1,2-Trichloroethane		50.0	54.5	ug/kg	0.321	8.97	20	
Trichloroethene		50.0	53.9	ug/kg	0.334	7.78	20	
Trichlorofluoromethane		50.0	54.0	ug/kg	0.487	7.98	20	
1,2,3-Trichloropropane		50.0	54.3	ug/kg	0.272	8.64	20	
1,2,4-Trimethylbenzene		50.0	55.5	ug/kg	3.00	10.9	20	
1,3,5-Trimethylbenzene		50.0	53.7	ug/kg	2.94	7.47	20	
o-Xylene		50.0	53.1	ug/kg	0.683	6.21	20	
m-,p-Xylene		100	104	ug/kg	0.693	4.30	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4850430
Report generated 07/13/2016 10:46

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061593 Run Date: 07/06/2016 Sample ID: WG575226-02
Instrument ID: HPMS9 Run Time: 14:19 Method: 8260B
File ID: 9M975250 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG575227 Cal ID: HPMS9 - 21-JUN-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	53.9	ug/kg	0.479	7.85	20	
1,1-Dichloroethene	CCC	50.0	53.4	ug/kg	0.462	6.79	20	
1,2-Dichloropropane	CCC	50.0	52.6	ug/kg	0.305	5.23	20	
Ethylbenzene	CCC	50.0	52.6	ug/kg	0.566	5.25	20	
Toluene	CCC	50.0	51.9	ug/kg	1.48	3.72	20	
Vinyl Chloride	CCC	50.0	58.2	ug/kg	0.283	16.4	20	
Bromoform	SPCC	50.0	54.4	ug/kg	0.287	8.77	20	
Chlorobenzene	SPCC	50.0	51.7	ug/kg	1.05	3.34	20	
Chloromethane	SPCC	50.0	42.3	ug/kg	0.293	15.4	20	
1,1-Dichloroethane	SPCC	50.0	53.1	ug/kg	0.547	6.14	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	50.8	ug/kg	0.819	1.61	20	
Naphthalene		50.0	51.0	ug/kg	3.11	1.99	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4850430
Report generated 07/13/2016 10:46

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061593
Instrument ID: HPMS9
Workgroup (AAB#): WG574993

ICAL CCV Number: WG573367-07
CAL ID: HPMS9 - 21-JUN-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG573367-07	NA	NA	247695	491380	632115
Upper Limit	NA	NA	495390	982760	1264230
Lower Limit	NA	NA	123848	245690	316058
L16061593-01	1.00	01	205370	403772	520871
L16061593-02	1.00	01	227995	449565	573846
L16061593-03	1.00	01	254536	493393	630912
L16061593-04	1.00	01	207760	432778	560755
L16061593-05	1.00	01	122503	257213	337440
L16061593-06	1.00	01	193331	416519	550975
WG574993-01	1.00	01	220505	425232	545183
WG574993-02	1.00	01	223983	428113	543112

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4850431
Report generated 07/13/2016 10:46

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061593
Instrument ID: HPMS9
Workgroup (AAB#): WG575227

ICAL CCV Number: WG573367-07
CAL ID: HPMS9 - 21-JUN-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG573367-07	NA	NA	247695	491380	632115
Upper Limit	NA	NA	495390	982760	1264230
Lower Limit	NA	NA	123848	245690	316058
L16061593-01	1.00	02	202761	398128	515477
L16061593-02	1.00	02	268816	534761	686475
L16061593-03	1.00	02	224968	441467	568089
L16061593-04	1.00	02	234590	485161	625495
L16061593-05	1.00	02	234109	498016	647644
L16061593-06	1.00	02	251481	491919	629455
WG575227-01	1.00	01	213050	416755	535820
WG575227-02	1.00	01	271776	529498	680246

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4850431
Report generated 07/13/2016 10:46

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061593
Instrument ID: HPMS9
Workgroup (AAB#): WG574993

ICAL CCV Number: WG573367-07
CAL ID: HPMS9-21-JUN-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG573367-07	NA	NA	17.69	14.68	10.81
Upper Limit	NA	NA	18.19	15.18	11.31
Lower Limit	NA	NA	17.19	14.18	10.31
L16061593-01	1.00	01	17.7	14.68	10.81
L16061593-02	1.00	01	17.71	14.68	10.8
L16061593-03	1.00	01	17.71	14.68	10.8
L16061593-04	1.00	01	17.7	14.68	10.81
L16061593-05	1.00	01	17.71	14.68	10.81
L16061593-06	1.00	01	17.71	14.68	10.81
WG574993-01	1.00	01	17.71	14.68	10.81
WG574993-02	1.00	01	17.71	14.68	10.81

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4850433
Report generated: 07/13/2016 10:46

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061593
Instrument ID: HPMS9
Workgroup (AAB#): WG575227

ICAL CCV Number: WG573367-07
CAL ID: HPMS9 - 21-JUN-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG573367-07	NA	NA	17.69	14.68	10.81
Upper Limit	NA	NA	18.19	15.18	11.31
Lower Limit	NA	NA	17.19	14.18	10.31
L16061593-01	1.00	02	17.7	14.67	10.81
L16061593-02	1.00	02	17.7	14.68	10.8
L16061593-03	1.00	02	17.7	14.68	10.81
L16061593-04	1.00	02	17.69	14.68	10.8
L16061593-05	1.00	02	17.7	14.67	10.8
L16061593-06	1.00	02	17.7	14.67	10.8
WG575227-01	1.00	01	17.7	14.68	10.81
WG575227-02	1.00	01	17.7	14.68	10.8

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4850433
Report generated: 07/13/2016 10:46

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975227.D Vial: 15
Acq On : 1 Jul 2016 22:05 Operator: ADC
Sample : WG575025-01 L16061593-01 A 826-SPE 5.03g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 11:01:24 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.81	96	520871	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.68	117	403772	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.70	152	205370	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.77	111	132935	46.2841 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 92.56%		
43) 1,2-Dichloroethane-d4	10.40	65	135335	44.3218 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 88.64%		
58) Toluene-d8	12.78	98	501436	50.1409 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 100.28%		
79) p-Bromofluorobenzene	16.18	95	190423	50.7778 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 101.56%		

Target Compounds					Qvalue
13) Acetone	6.37	43	2105	Below Cal	80
19) Methylene Chloride	7.37	84	1617	0.5303 ug/kg	94
36) Tetrahydrofuran	9.75	42	2226	2.1261 ug/kg#	54
56) Dimethyl Disulfide	12.78	94	13513	3.7543 ug/kg#	29
84) 1,3,5-Trimethylbenzene	16.45	105	7241	0.6451 ug/kg#	65
99) Naphthalene	20.75	128	57240	4.5644 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M975227.D 8260S.M Tue Jul 12 11:01:24 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975227.D Vial: 15
Acq On : 1 Jul 2016 22:05 Operator: ADC
Sample : WG575025-01 L16061593-01 A 826-SPE 5.03g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 11:01 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

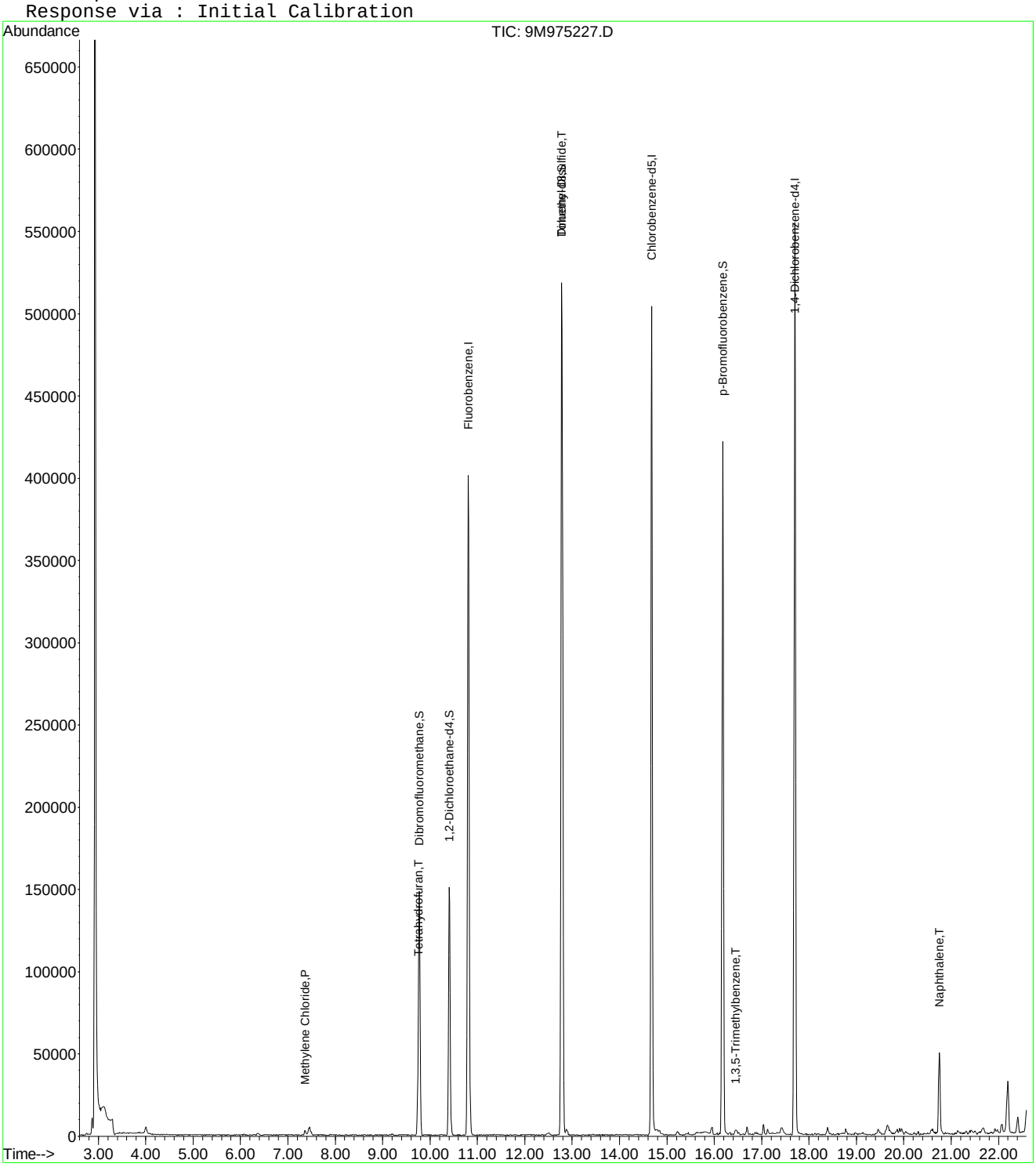

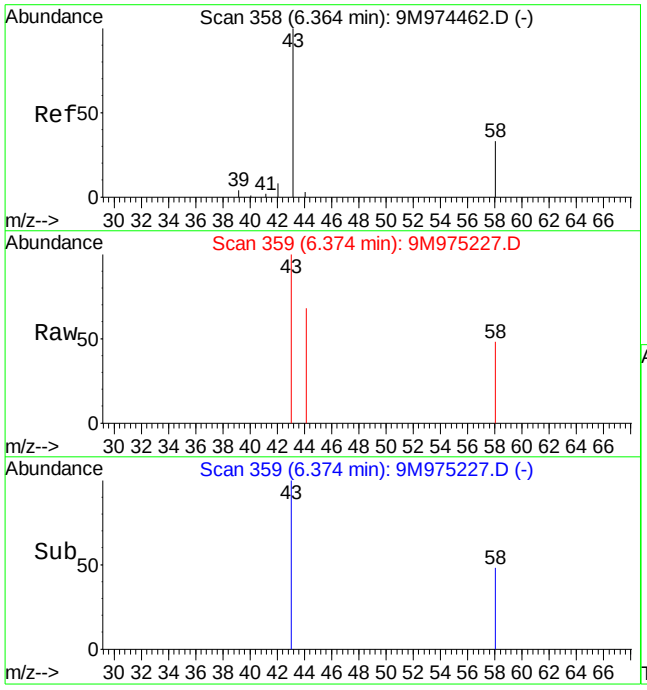

#13
Acetone
Concen: Below Cal
RT: 6.37 min Scan# 359
Delta R.T. 0.01 min
Lab File: 9M975227.D
Acq: 1 Jul 2016 22:05

Tgt Ion: 43 Resp: 2105

Ion	Ratio	Lower	Upper
43	100		
58	21.9	19.9	46.3

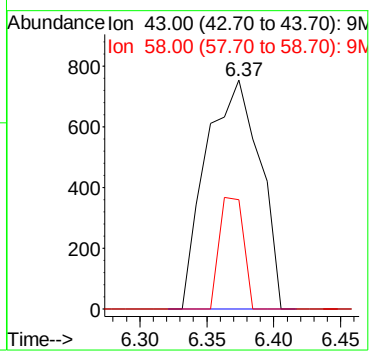

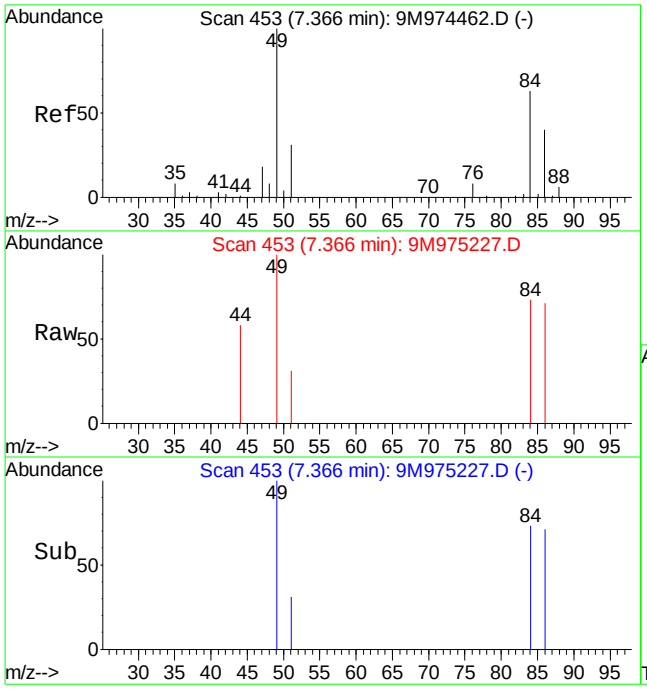

#19
Methylene Chloride
Concen: 0.53 ug/kg
RT: 7.37 min Scan# 453
Delta R.T. 0.00 min
Lab File: 9M975227.D
Acq: 1 Jul 2016 22:05

Tgt Ion: 84 Resp: 1617

Ion	Ratio	Lower	Upper
84	100		
49	147.4	93.2	217.4

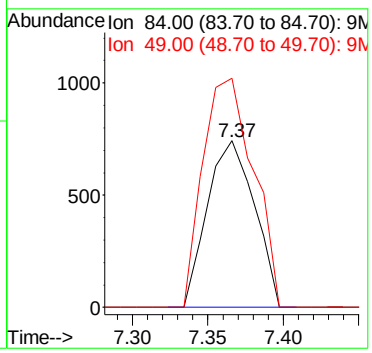

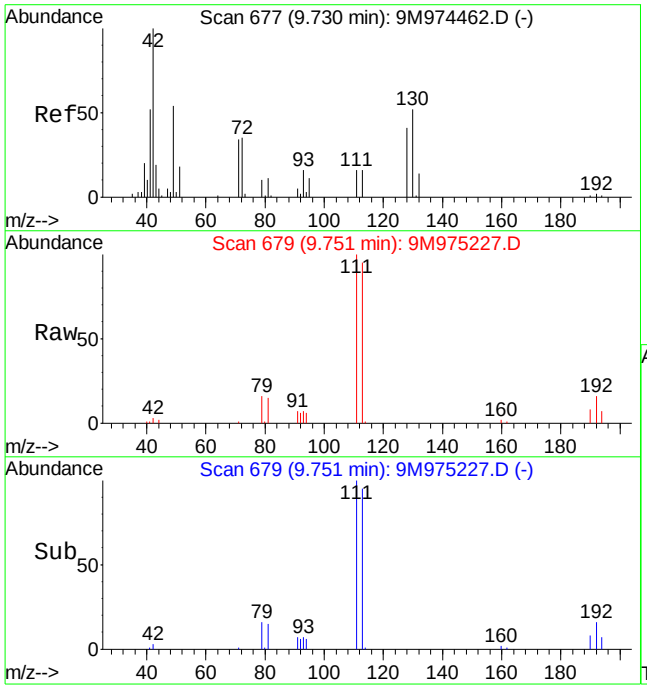

#36
Tetrahydrofuran
Concen: 2.13 ug/kg
RT: 9.75 min Scan# 679
Delta R.T. 0.01 min
Lab File: 9M975227.D
Acq: 1 Jul 2016 22:05

Tgt Ion: 42 Resp: 2226

Ion	Ratio	Lower	Upper
42	100		
72	0.0	21.8	50.8#
71	17.8	20.7	48.3#

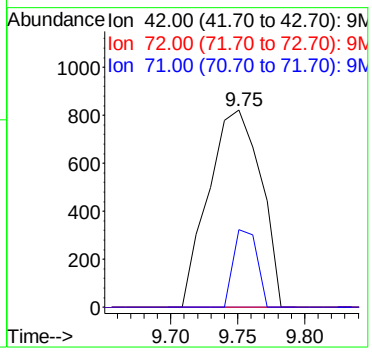

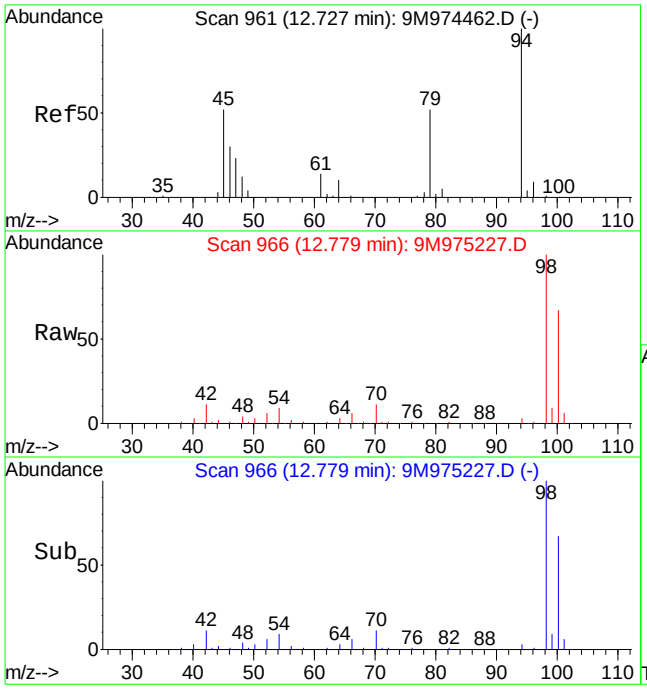

#56
Dimethyl Disulfide
Concen: 3.75 ug/kg
RT: 12.78 min Scan# 966
Delta R.T. 0.06 min
Lab File: 9M975227.D
Acq: 1 Jul 2016 22:05

Tgt Ion: 94 Resp: 13513

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.5	66.5#

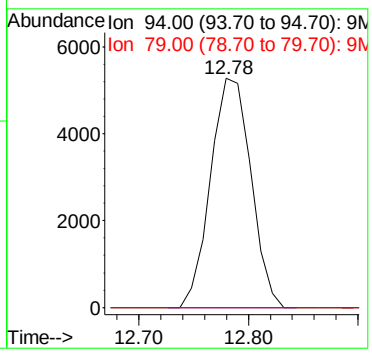

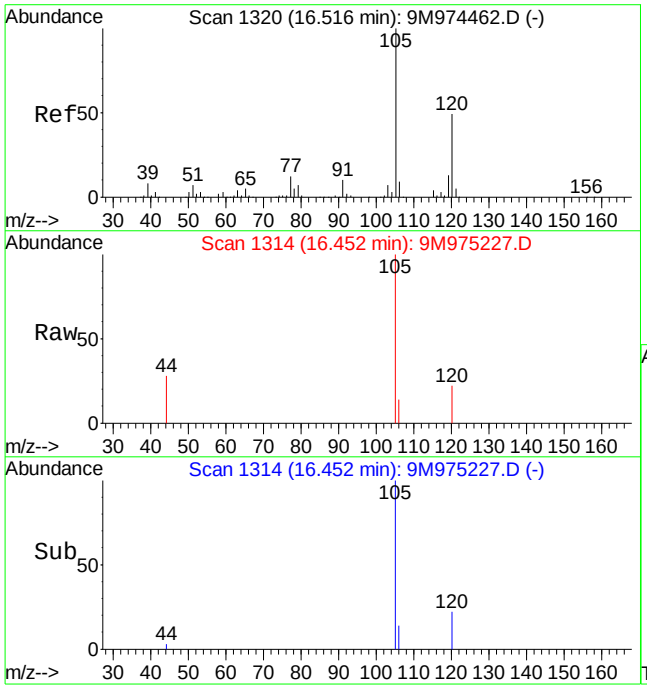

#84
1,3,5-Trimethylbenzene
Concen: 0.65 ug/kg
RT: 16.45 min Scan# 1314
Delta R.T. -0.07 min
Lab File: 9M975227.D
Acq: 1 Jul 2016 22:05

Tgt Ion:105 Resp: 7241

Ion	Ratio	Lower	Upper
105	100		
120	25.9	30.0	70.0#

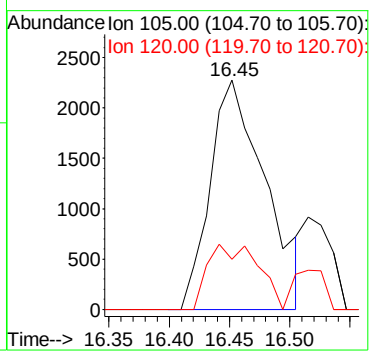

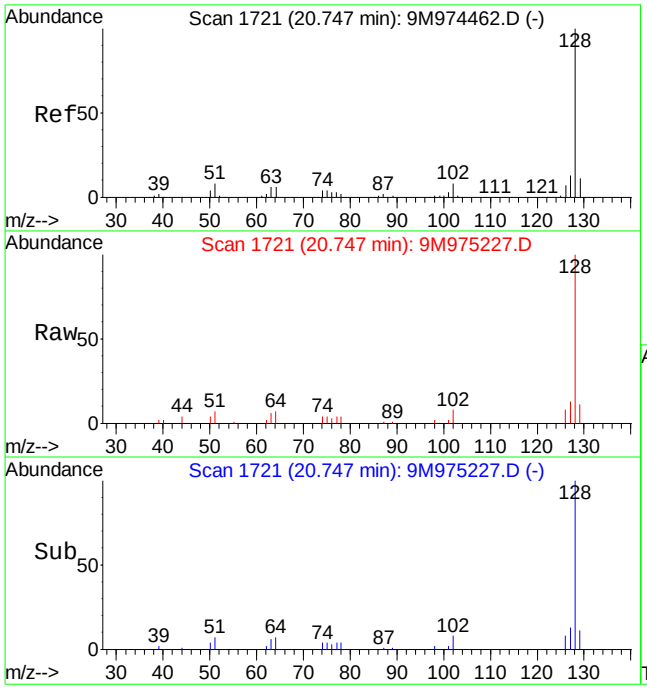

#99
Naphthalene
Concen: 4.56 ug/kg
RT: 20.75 min Scan# 1721
Delta R.T. 0.00 min
Lab File: 9M975227.D
Acq: 1 Jul 2016 22:05

Tgt Ion:128 Resp: 57240

Ion	Ratio	Lower	Upper
128	100		
127	12.3	7.6	17.8

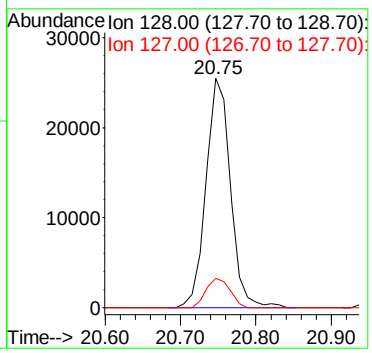

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975257.D Vial: 10
Acq On : 6 Jul 2016 18:11 Operator: ADC
Sample : L16061593-01 A 826-SPE 4.87g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 15:03:08 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.81	96	515477	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.67	117	398128	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.70	152	202761	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.76	111	132426	46.5894 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.18%		
43) 1,2-Dichloroethane-d4	10.40	65	136951	45.3204 ug/kg	-0.02
Spiked Amount 50.000	Range 80 - 120		Recovery = 90.64%		
58) Toluene-d8	12.78	98	494687	50.1672 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 100.34%		
79) p-Bromofluorobenzene	16.18	95	189350	51.1414 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.28%		

Target Compounds

					Qvalue
13) Acetone	6.36	43	2912	Below Cal #	66
19) Methylene Chloride	7.36	84	4213	1.3961 ug/kg	96
36) Tetrahydrofuran	9.73	42	1737	1.6764 ug/kg#	62
56) Dimethyl Disulfide	12.78	94	12826	3.6492 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.03	105	10882	0.4515 ug/kg	88
99) Naphthalene	20.76	128	6326	0.5109 ug/kg#	86

(#) = qualifier out of range (m) = manual integration
9M975257.D 8260S.M Tue Jul 12 15:03:08 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975257.D Vial: 10
Acq On : 6 Jul 2016 18:11 Operator: ADC
Sample : L16061593-01 A 826-SPE 4.87g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 15:03 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

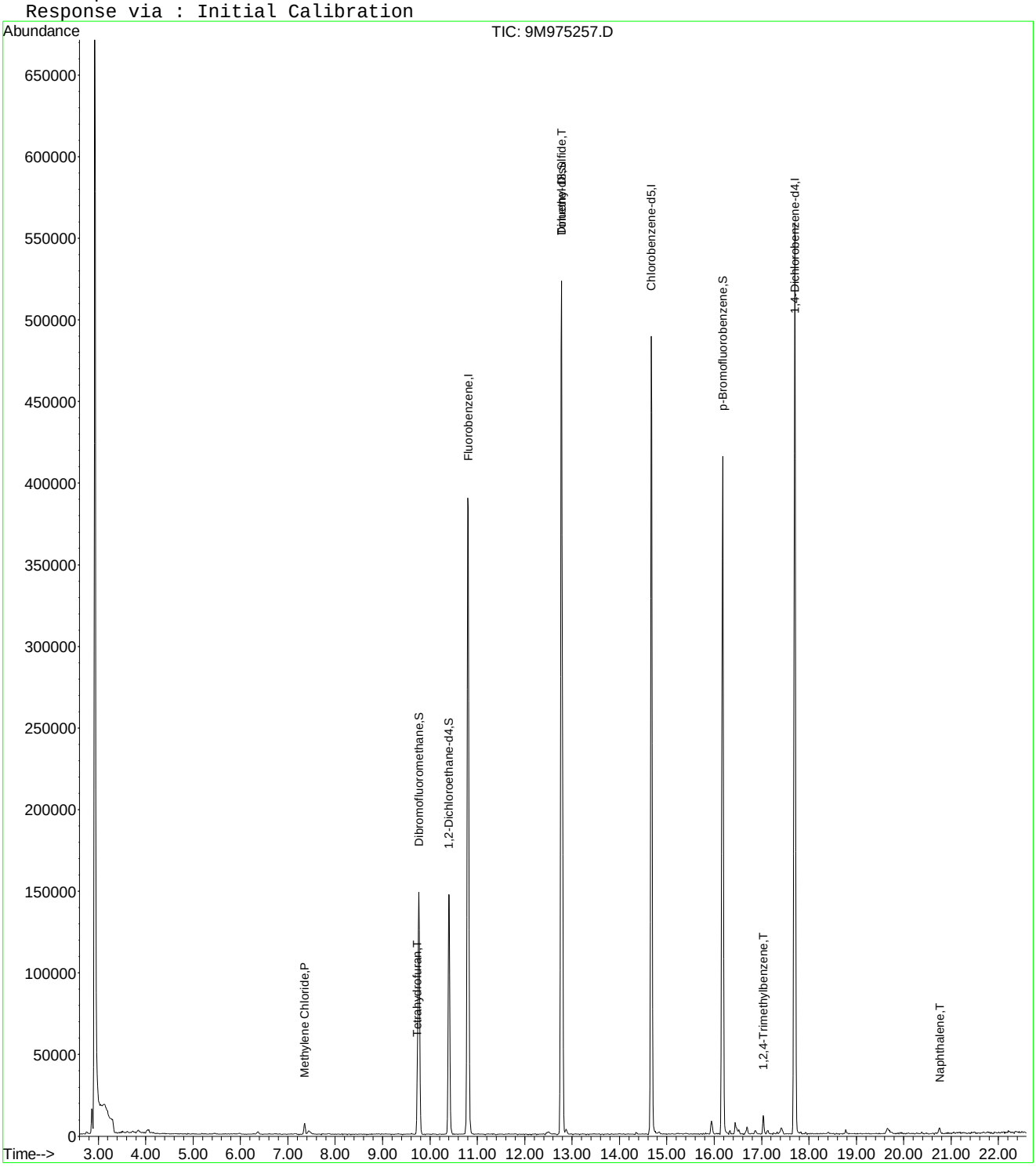

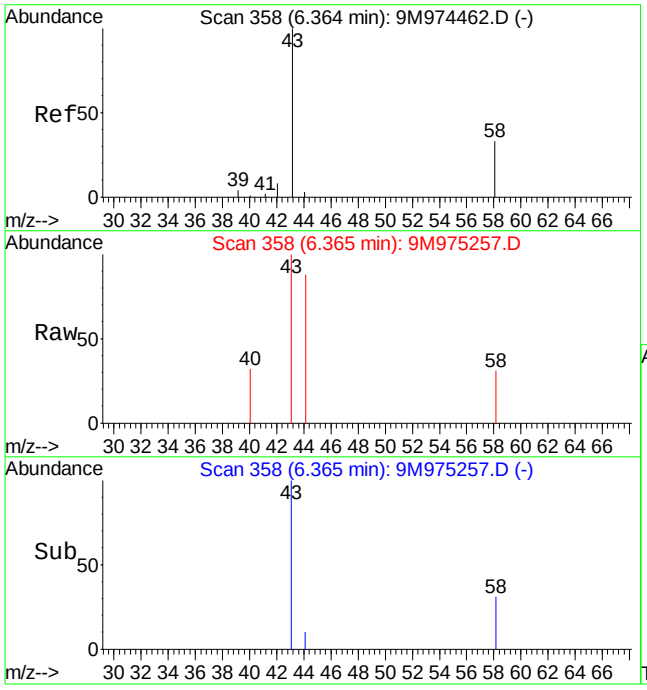

#13
Acetone
Concen: Below Cal
RT: 6.36 min Scan# 358
Delta R.T. 0.00 min
Lab File: 9M975257.D
Acq: 6 Jul 2016 18:11

Tgt Ion: 43 Resp: 2912

Ion	Ratio	Lower	Upper
43	100		
58	14.0	19.9	46.3#

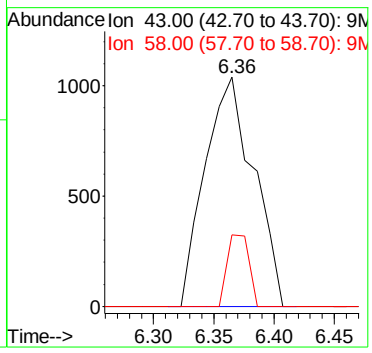

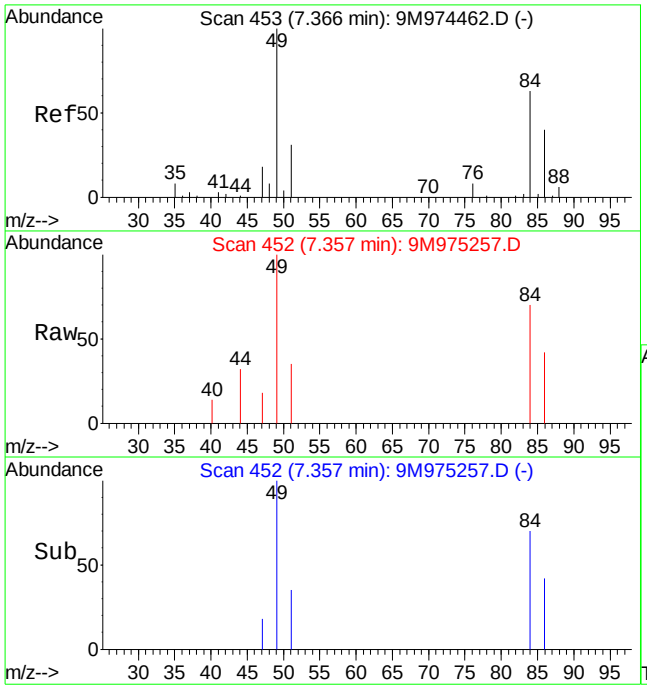

#19
Methylene Chloride
Concen: 1.40 ug/kg
RT: 7.36 min Scan# 452
Delta R.T. -0.01 min
Lab File: 9M975257.D
Acq: 6 Jul 2016 18:11

Tgt Ion: 84 Resp: 4213

Ion	Ratio	Lower	Upper
84	100		
49	149.8	93.2	217.4

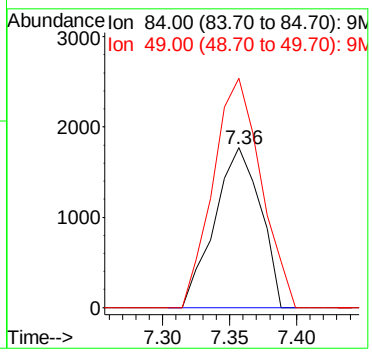

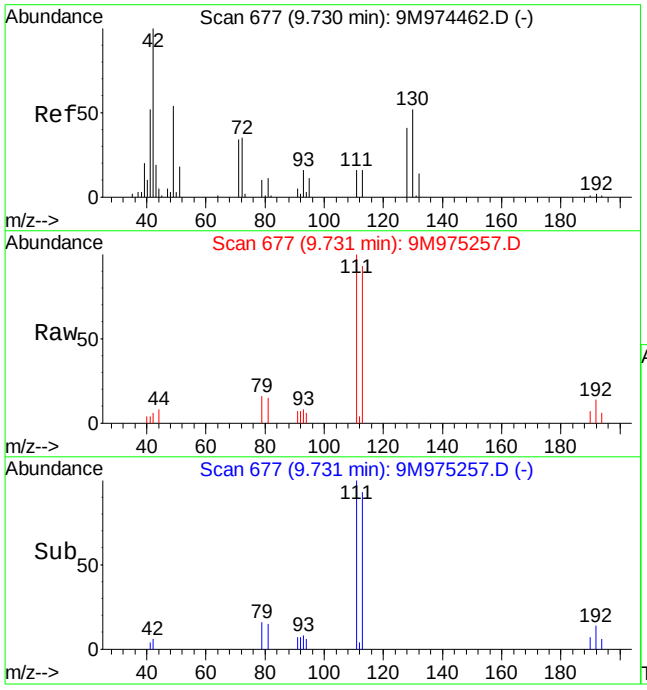

#36
Tetrahydrofuran
Concen: 1.68 ug/kg
RT: 9.73 min Scan# 677
Delta R.T. -0.01 min
Lab File: 9M975257.D
Acq: 6 Jul 2016 18:11

Tgt Ion: 42 Resp: 1737

Ion	Ratio	Lower	Upper
42	100		
72	13.6	21.8	50.8#
71	12.7	20.7	48.3#

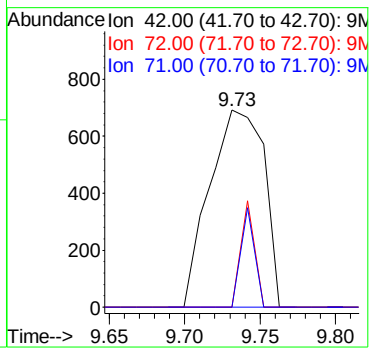

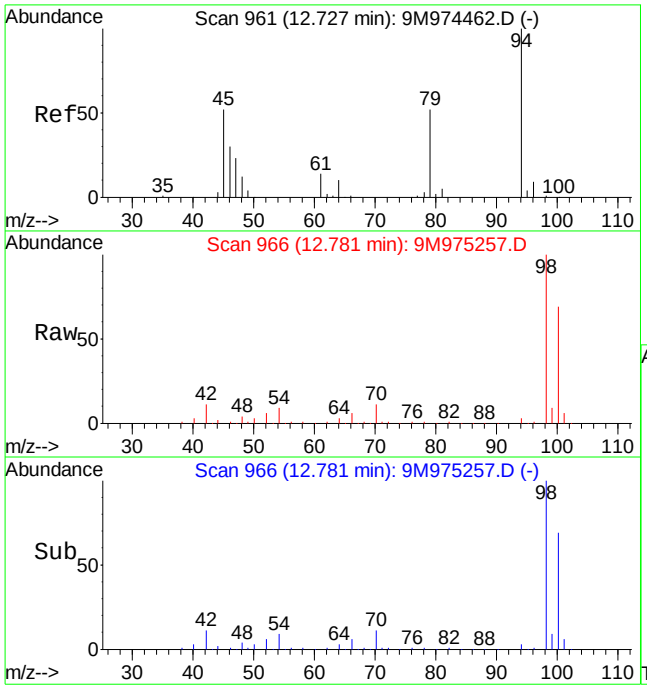

#56
Dimethyl Disulfide
Concen: 3.65 ug/kg
RT: 12.78 min Scan# 966
Delta R.T. 0.06 min
Lab File: 9M975257.D
Acq: 6 Jul 2016 18:11

Tgt Ion: 94 Resp: 12826

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.5	66.5#

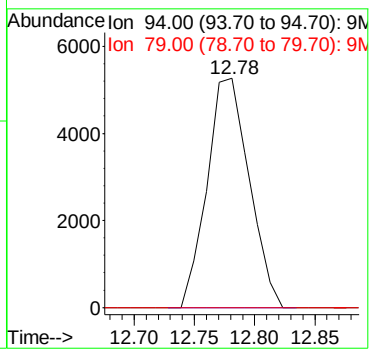

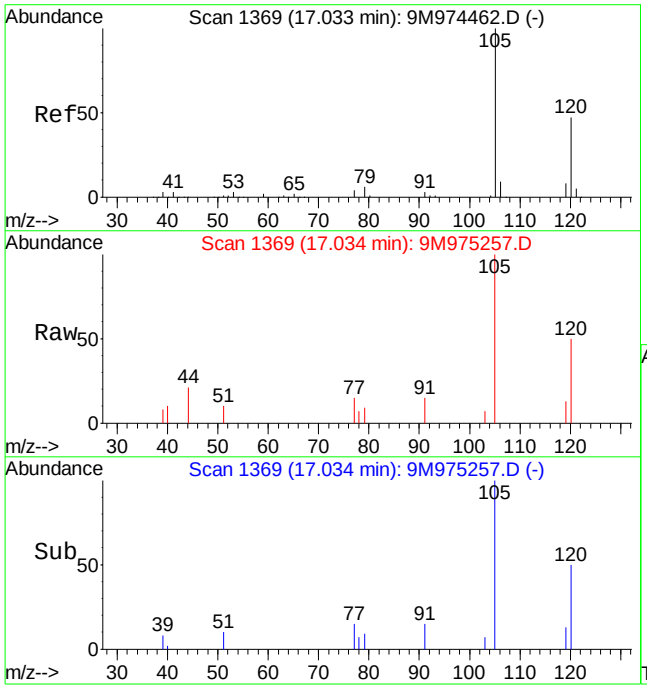

#89
1,2,4-Trimethylbenzene
Concen: 0.45 ug/kg
RT: 17.03 min Scan# 1369
Delta R.T. -0.01 min
Lab File: 9M975257.D
Acq: 6 Jul 2016 18:11

Tgt Ion:105 Resp: 10882

Ion	Ratio	Lower	Upper
105	100		
120	47.2	33.4	78.0

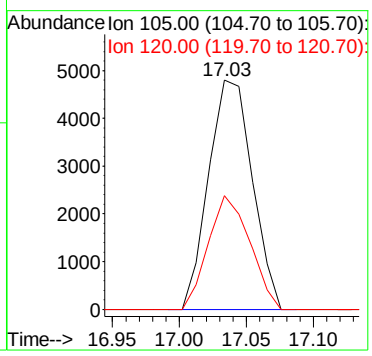

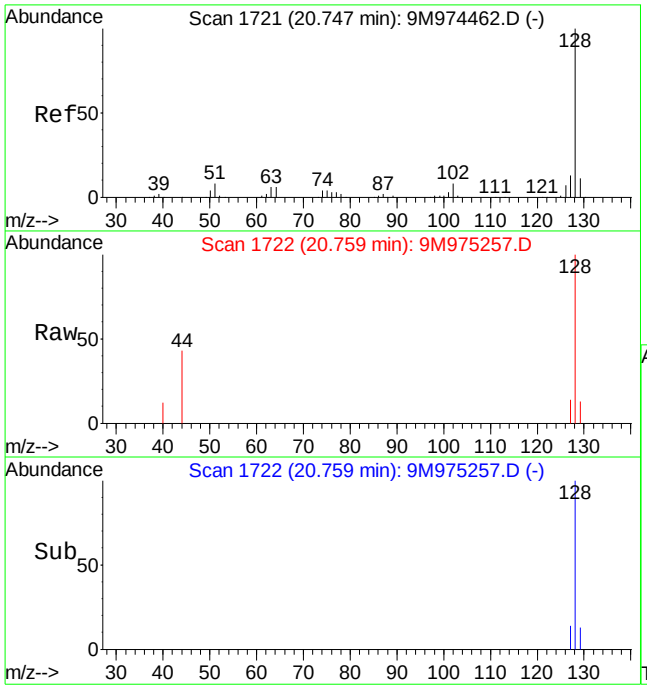

#99
Naphthalene
Concen: 0.51 ug/kg
RT: 20.76 min Scan# 1722
Delta R.T. 0.01 min
Lab File: 9M975257.D
Acq: 6 Jul 2016 18:11

Tgt Ion:128 Resp: 6326

Ion	Ratio	Lower	Upper
128	100		
127	7.0	7.6	17.8#

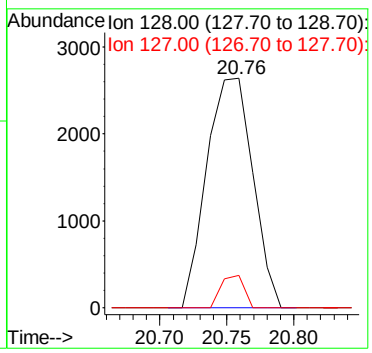

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975228.D Vial: 16
Acq On : 1 Jul 2016 22:35 Operator: ADC
Sample : L16061593-02 A 826-SPE 5.13g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 11:01:25 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.80	96	573846	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.68	117	449565	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.71	152	227995	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.77	111	143864	45.4653 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 90.94%		
43) 1,2-Dichloroethane-d4	10.40	65	151053	44.9026 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 89.80%		
58) Toluene-d8	12.79	98	549526	49.3524 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.70%		
79) p-Bromofluorobenzene	16.18	95	213000	51.1618 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.32%		

Target Compounds					Qvalue
13) Acetone	6.37	43	6560	2.6481 ug/kg	95
19) Methylene Chloride	7.38	84	1361	0.4051 ug/kg	85
36) Tetrahydrofuran	9.75	42	1791	1.5527 ug/kg#	39
56) Dimethyl Disulfide	12.78	94	14762	3.7327 ug/kg#	29
99) Naphthalene	20.75	128	36217	2.6014 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975228.D Vial: 16
Acq On : 1 Jul 2016 22:35 Operator: ADC
Sample : L16061593-02 A 826-SPE 5.13g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 11:01 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

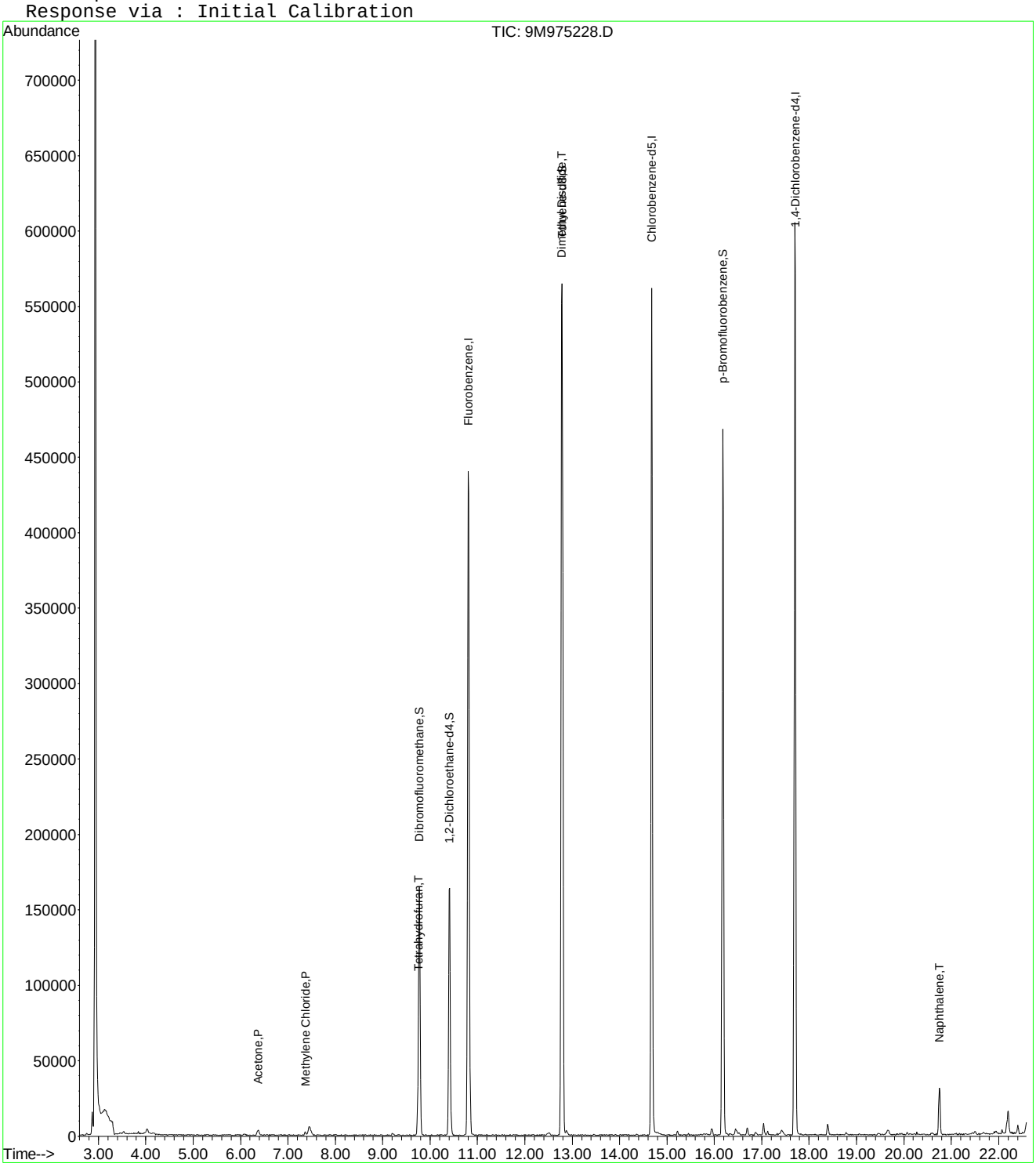

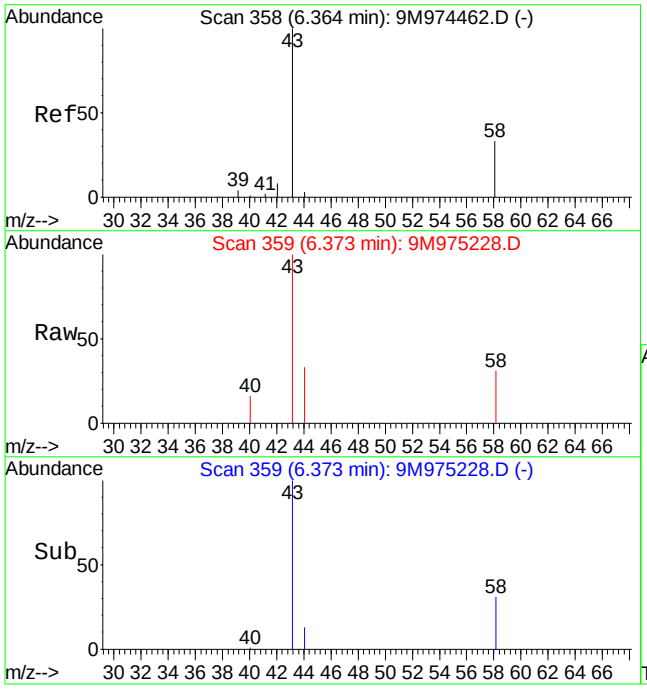

#13
Acetone
Concen: 2.65 ug/kg
RT: 6.37 min Scan# 359
Delta R.T. 0.01 min
Lab File: 9M975228.D
Acq: 1 Jul 2016 22:35

Tgt Ion: 43 Resp: 6560

Ion	Ratio	Lower	Upper
43	100		
58	30.4	19.9	46.3

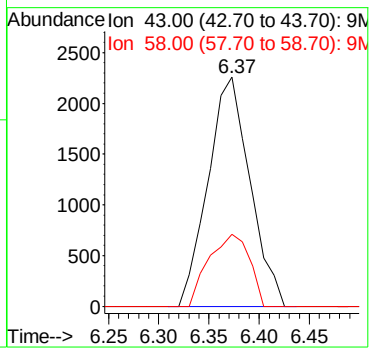

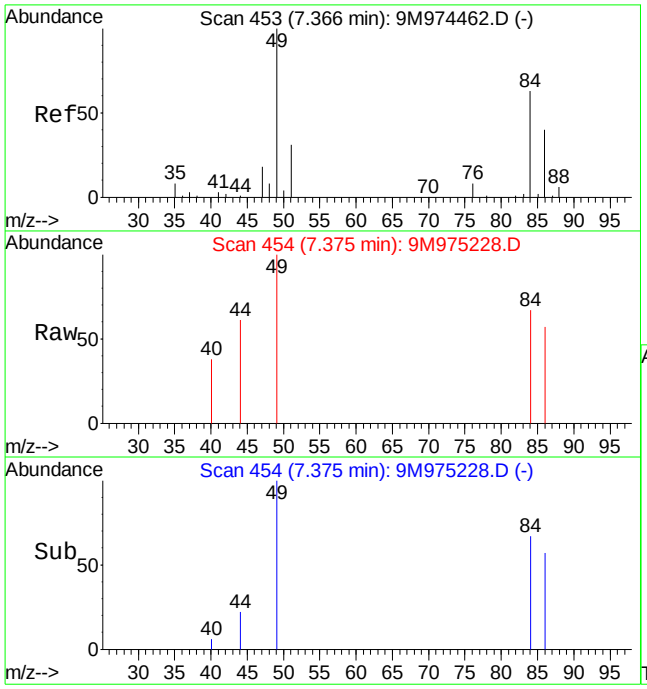

#19
Methylene Chloride
Concen: 0.41 ug/kg
RT: 7.38 min Scan# 454
Delta R.T. 0.01 min
Lab File: 9M975228.D
Acq: 1 Jul 2016 22:35

Tgt Ion: 84 Resp: 1361

Ion	Ratio	Lower	Upper
84	100		
49	174.9	93.2	217.4

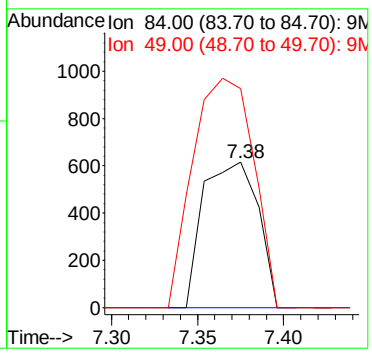

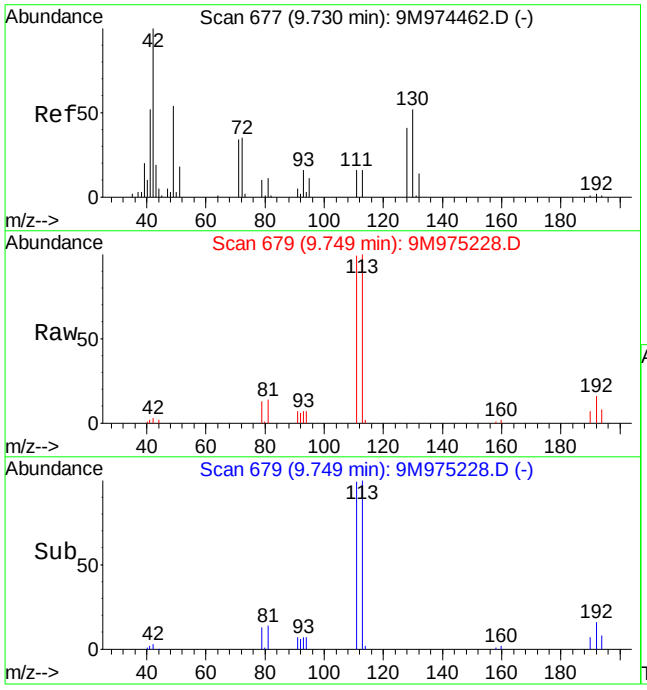

#36
Tetrahydrofuran
Concen: 1.55 ug/kg
RT: 9.75 min Scan# 679
Delta R.T. 0.01 min
Lab File: 9M975228.D
Acq: 1 Jul 2016 22:35

Tgt Ion: 42 Resp: 1791

Ion	Ratio	Lower	Upper
42	100		
72	0.0	21.8	50.8#
71	0.0	20.7	48.3#

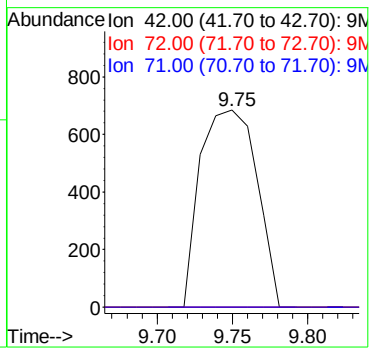

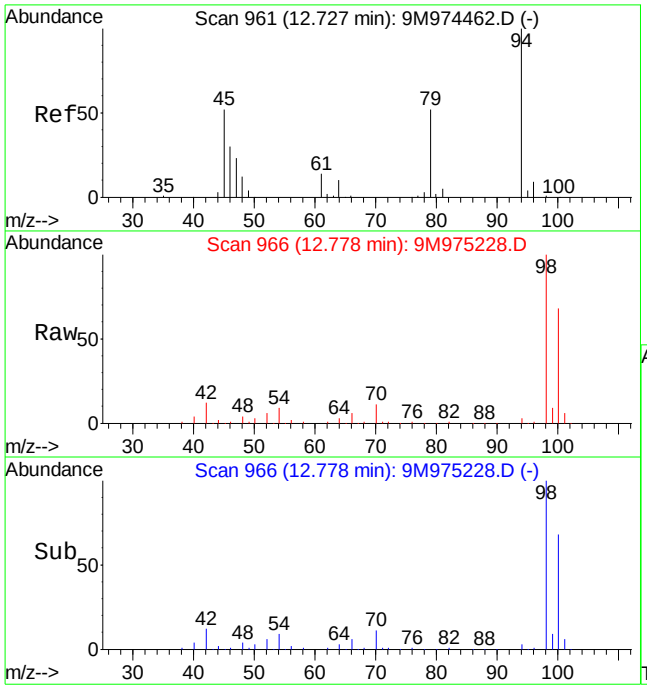

#56
Dimethyl Disulfide
Concen: 3.73 ug/kg
RT: 12.78 min Scan# 966
Delta R.T. 0.05 min
Lab File: 9M975228.D
Acq: 1 Jul 2016 22:35

Tgt Ion: 94 Resp: 14762

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.5	66.5#

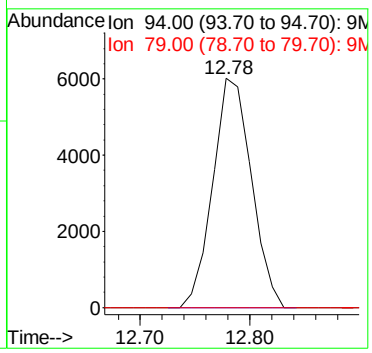

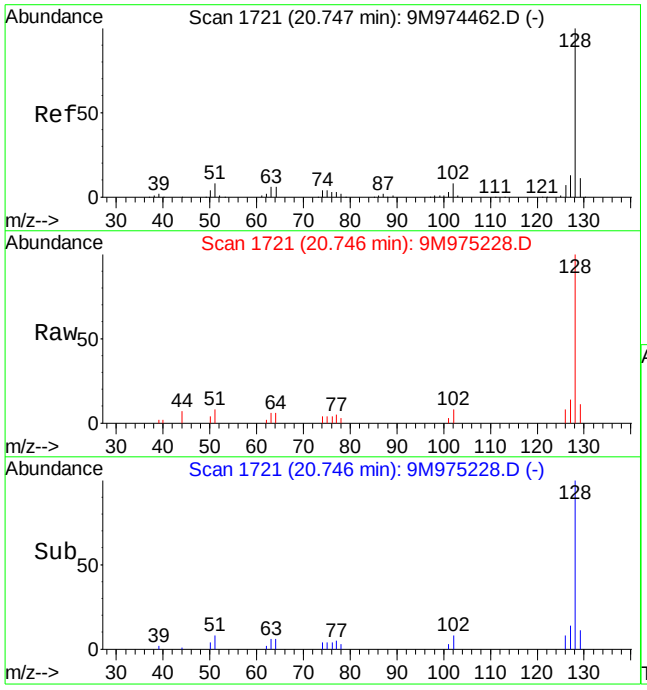

#99
Naphthalene
Concen: 2.60 ug/kg
RT: 20.75 min Scan# 1721
Delta R.T. 0.00 min
Lab File: 9M975228.D
Acq: 1 Jul 2016 22:35

Tgt Ion:128 Resp: 36217

Ion	Ratio	Lower	Upper
128	100		
127	12.9	7.6	17.8

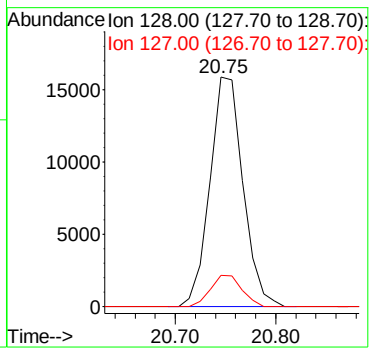

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975258.D Vial: 11
Acq On : 6 Jul 2016 18:41 Operator: ADC
Sample : L16061593-02 A 826-SPE 5.25g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 15:03:09 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.80	96	686475	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.68	117	534761	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.70	152	268816	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.76	111	173231	45.7640 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 91.52%		
43) 1,2-Dichloroethane-d4	10.40	65	175799	43.6847 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 87.36%		
58) Toluene-d8	12.78	98	650969	49.1488 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.30%		
79) p-Bromofluorobenzene	16.18	95	251338	51.2029 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.40%		

Target Compounds

					Qvalue
13) Acetone	6.35	43	6533	1.6036 ug/kg	88
19) Methylene Chloride	7.35	84	5818	1.4477 ug/kg	92
36) Tetrahydrofuran	9.73	42	2308	1.6726 ug/kg#	39
56) Dimethyl Disulfide	12.78	94	18020	3.7847 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M975258.D 8260S.M Tue Jul 12 15:03:09 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975258.D Vial: 11
Acq On : 6 Jul 2016 18:41 Operator: ADC
Sample : L16061593-02 A 826-SPE 5.25g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 15:03 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

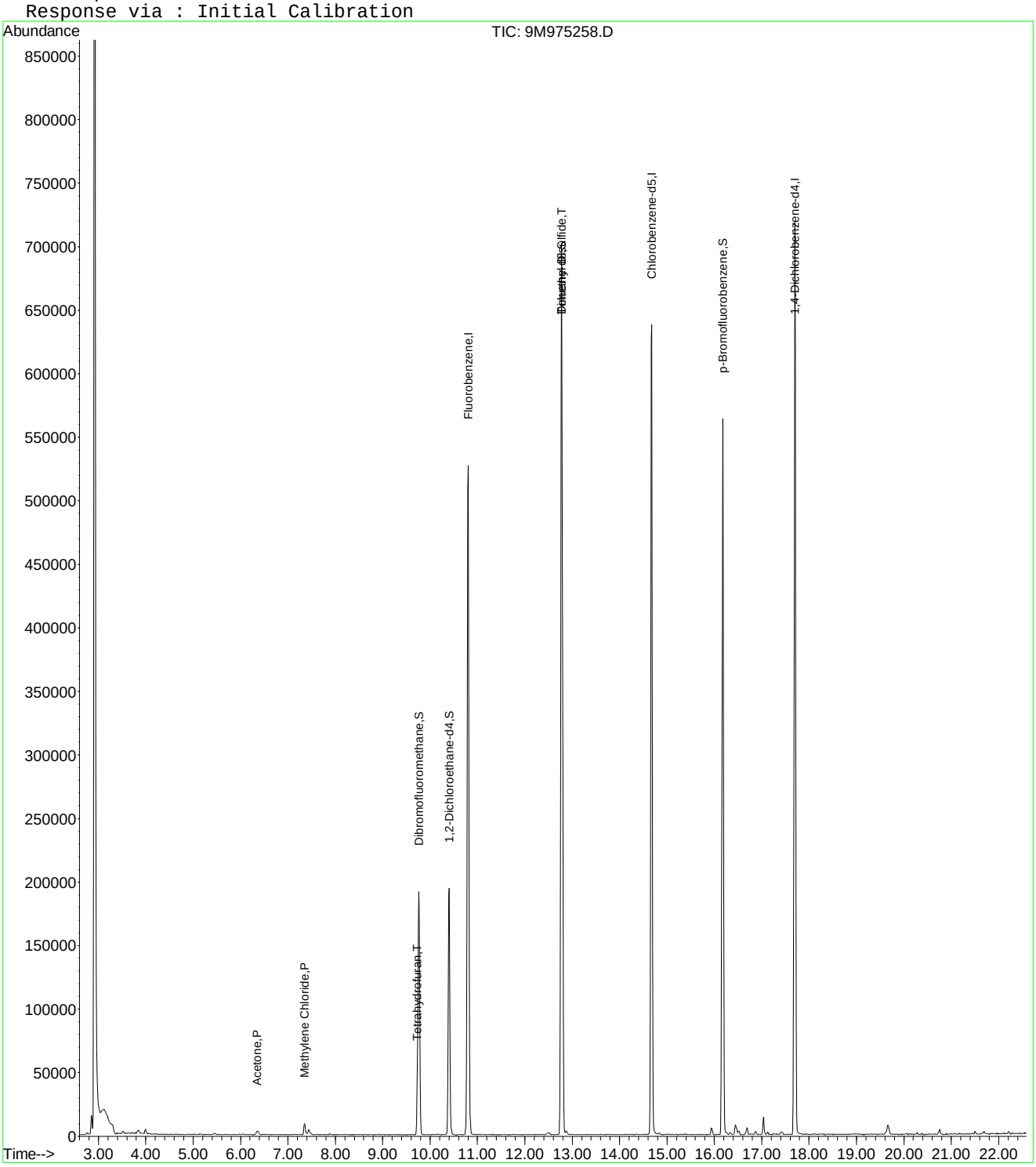

9M975258.D 8260S.M Tue Jul 12 15:03:09 2016 Page 2

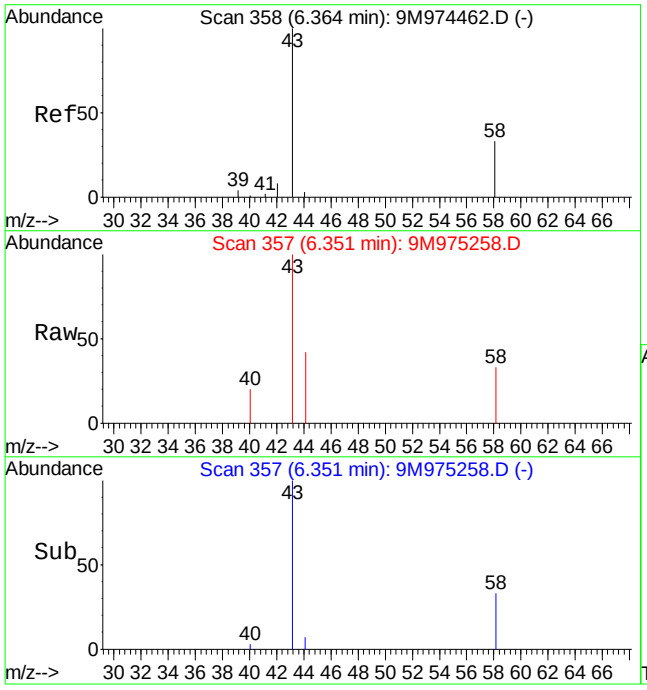

#13
Acetone
Concen: 1.60 ug/kg
RT: 6.35 min Scan# 357
Delta R.T. -0.01 min
Lab File: 9M975258.D
Acq: 6 Jul 2016 18:41

Tgt Ion: 43 Resp: 6533

Ion	Ratio	Lower	Upper
43	100		
58	26.6	19.9	46.3

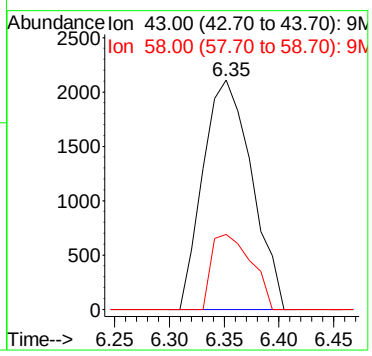

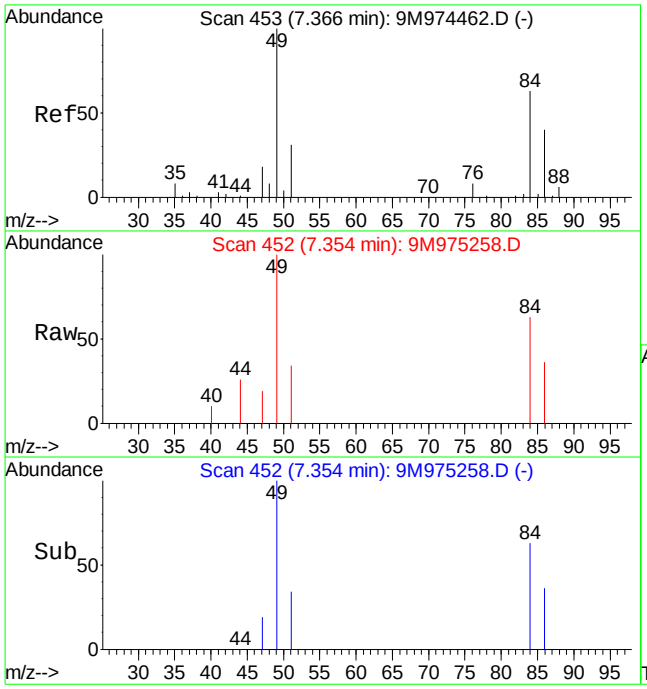

#19
Methylene Chloride
Concen: 1.45 ug/kg
RT: 7.35 min Scan# 452
Delta R.T. -0.01 min
Lab File: 9M975258.D
Acq: 6 Jul 2016 18:41

Tgt Ion: 84 Resp: 5818

Ion	Ratio	Lower	Upper
84	100		
49	145.2	93.2	217.4

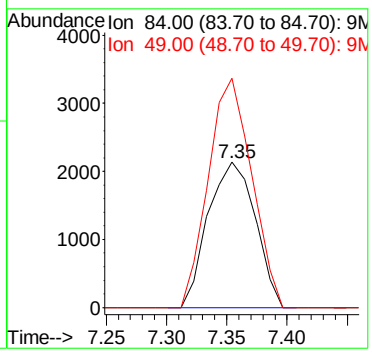

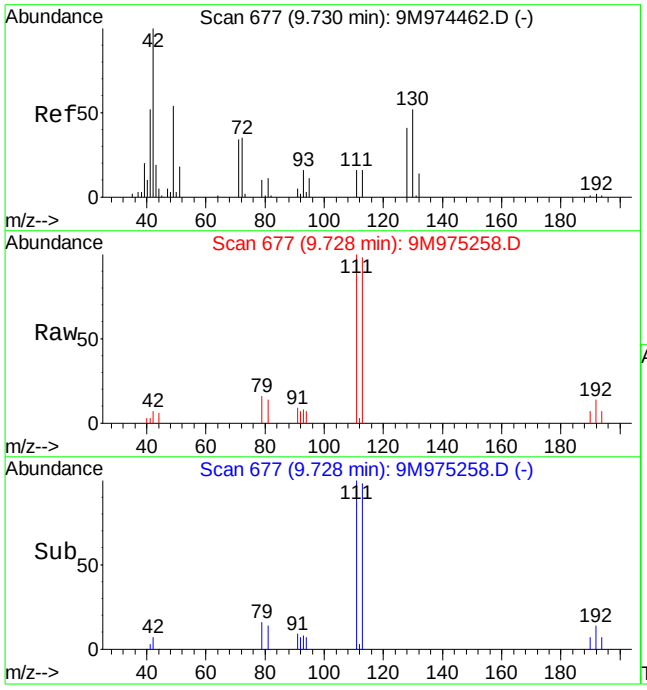

#36
Tetrahydrofuran
Concen: 1.67 ug/kg
RT: 9.73 min Scan# 677
Delta R.T. -0.01 min
Lab File: 9M975258.D
Acq: 6 Jul 2016 18:41

Tgt Ion: 42 Resp: 2308

Ion	Ratio	Lower	Upper
42	100		
72	0.0	21.8	50.8#
71	0.0	20.7	48.3#

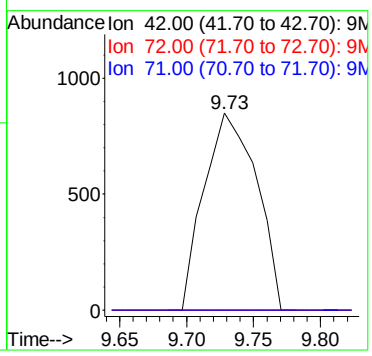

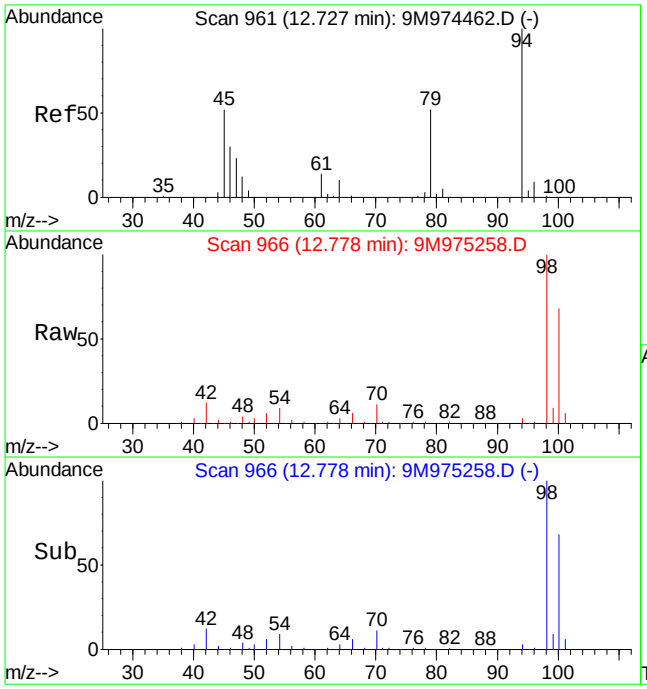

#56
Dimethyl Disulfide
Concen: 3.78 ug/kg
RT: 12.78 min Scan# 966
Delta R.T. 0.05 min
Lab File: 9M975258.D
Acq: 6 Jul 2016 18:41

Tgt Ion: 94 Resp: 18020

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.5	66.5#

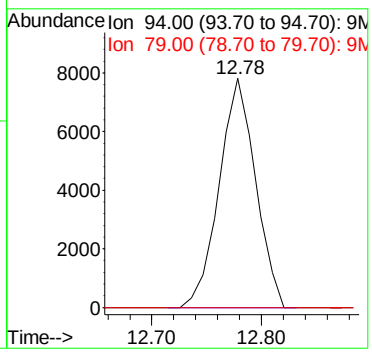

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975229.D Vial: 17
Acq On : 1 Jul 2016 23:06 Operator: ADC
Sample : L16061593-03 A 826-SPE 4.94g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 11:01:26 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.80	96	630912	50.00 ug/kg	-0.01
57) Chlorobenzene-d5	14.68	117	493393	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.71	152	254536	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.77	111	159829	45.9420 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 91.88%		
43) 1,2-Dichloroethane-d4	10.40	65	161748	43.7329 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 87.46%		
58) Toluene-d8	12.79	98	605739	49.5684 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.14%		
79) p-Bromofluorobenzene	16.18	95	228704	49.2058 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 98.42%		

Target Compounds

					Qvalue
13) Acetone	6.37	43	14771	9.1831 ug/kg	85
19) Methylene Chloride	7.36	84	1854	0.5020 ug/kg	96
29) 2-Butanone	9.00	43	819	0.4446 ug/kg#	55
36) Tetrahydrofuran	9.74	42	1762	1.3894 ug/kg#	61
56) Dimethyl Disulfide	12.79	94	16149	3.7199 ug/kg#	29
84) 1,3,5-Trimethylbenzene	16.45	105	9307	0.6690 ug/kg#	62
99) Naphthalene	20.74	128	27806	1.7890 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M975229.D 8260S.M Tue Jul 12 11:01:27 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975229.D Vial: 17
Acq On : 1 Jul 2016 23:06 Operator: ADC
Sample : L16061593-03 A 826-SPE 4.94g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 11:01 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

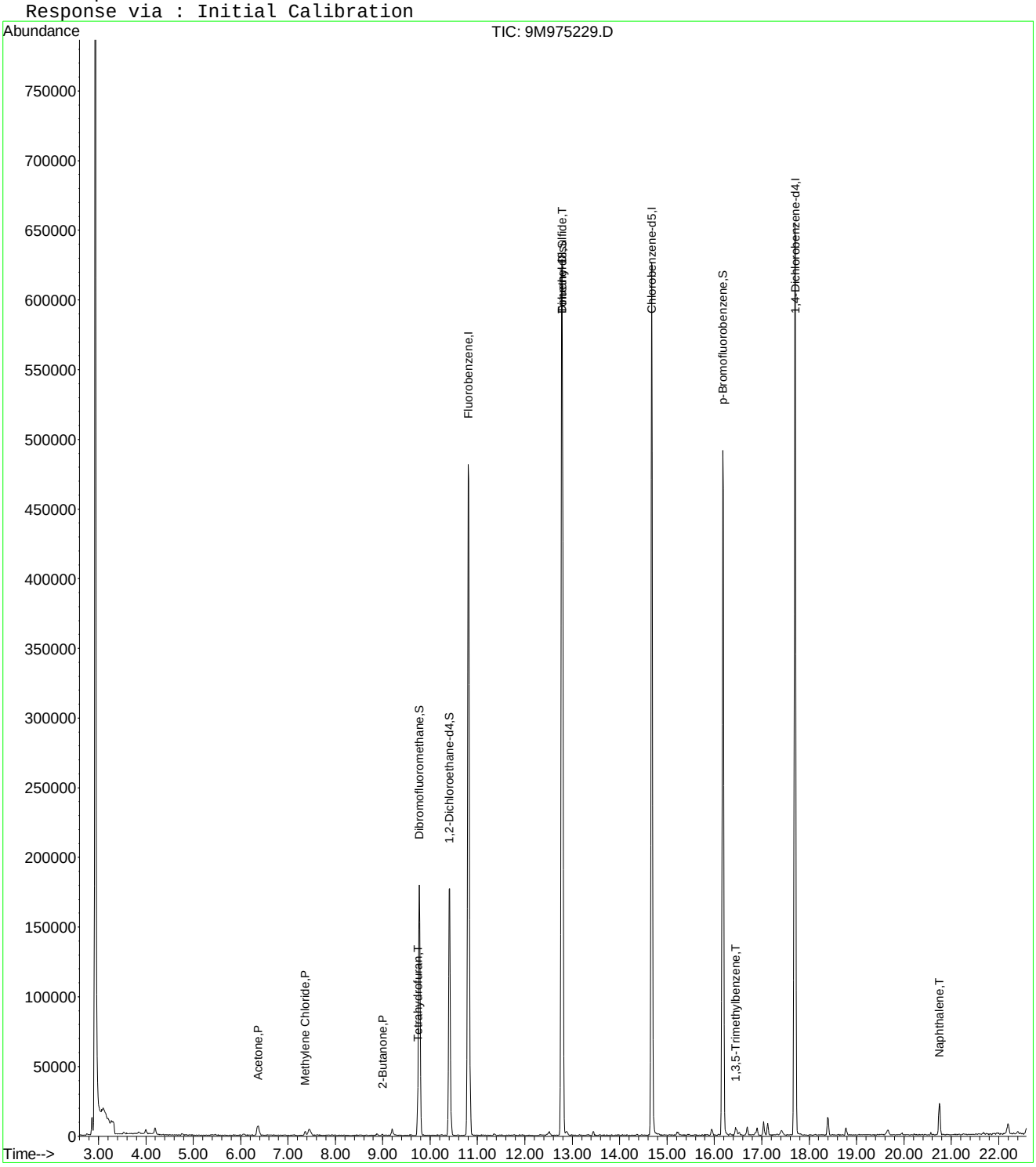

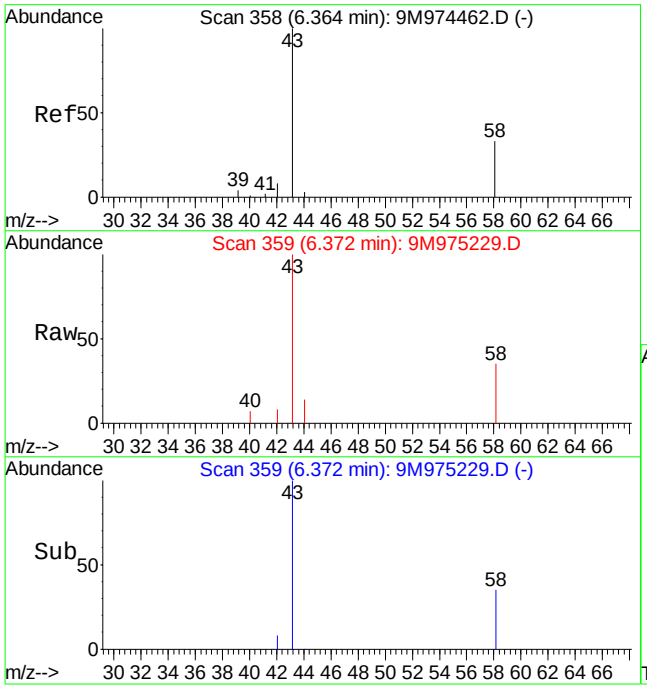

#13
Acetone
Concen: 9.18 ug/kg
RT: 6.37 min Scan# 359
Delta R.T. 0.01 min
Lab File: 9M975229.D
Acq: 1 Jul 2016 23:06

Tgt Ion: 43 Resp: 14771

Ion	Ratio	Lower	Upper
43	100		
58	41.4	19.9	46.3

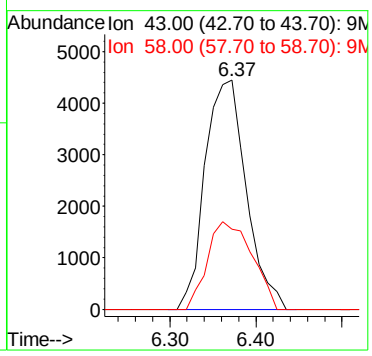

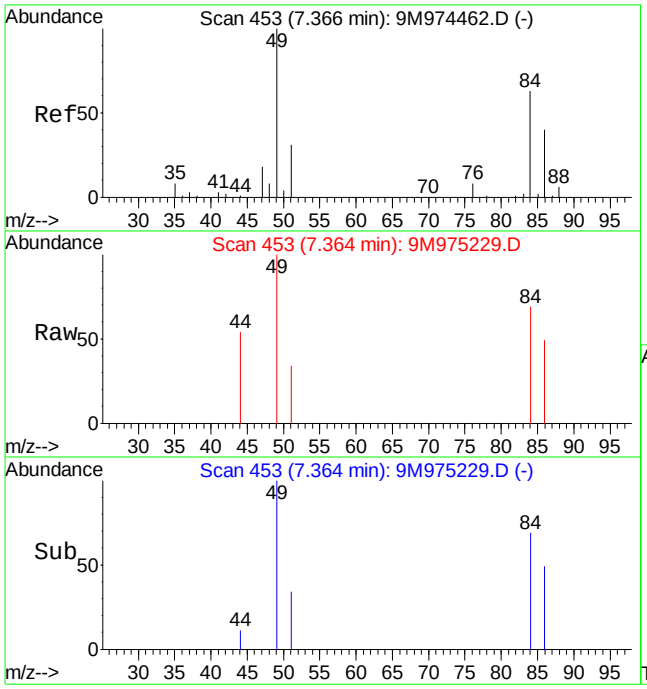

#19
Methylene Chloride
Concen: 0.50 ug/kg
RT: 7.36 min Scan# 453
Delta R.T. 0.00 min
Lab File: 9M975229.D
Acq: 1 Jul 2016 23:06

Tgt Ion: 84 Resp: 1854

Ion	Ratio	Lower	Upper
84	100		
49	150.6	93.2	217.4

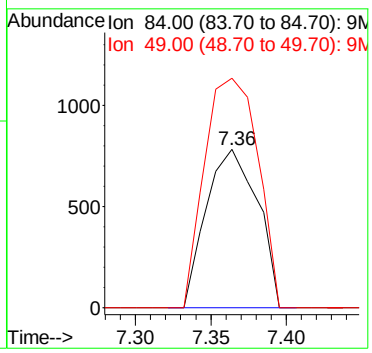

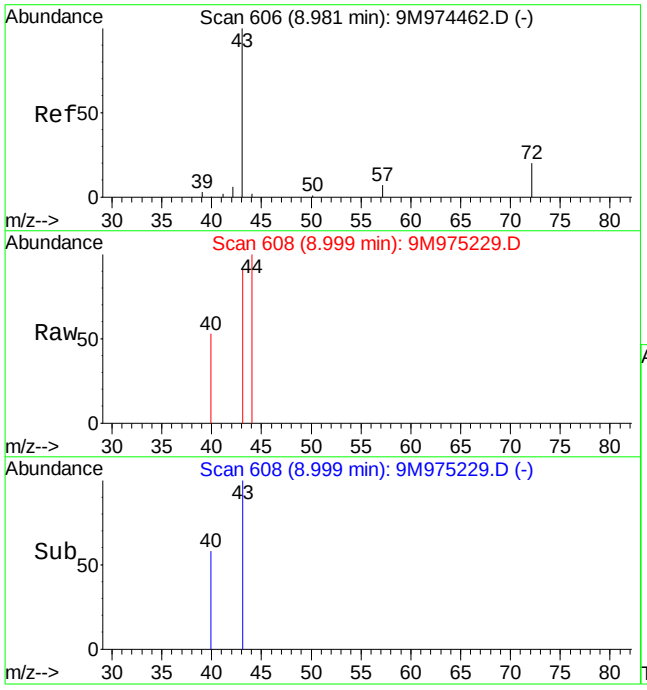

#29
2-Butanone
Concen: 0.44 ug/kg
RT: 9.00 min Scan# 608
Delta R.T. 0.01 min
Lab File: 9M975229.D
Acq: 1 Jul 2016 23:06

Tgt Ion: 43 Resp: 819

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.5	29.3#

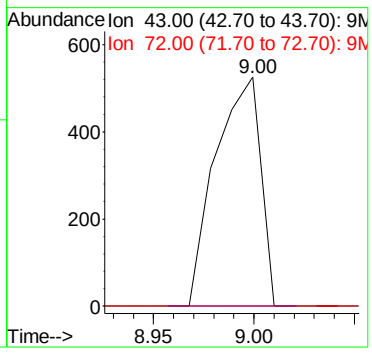

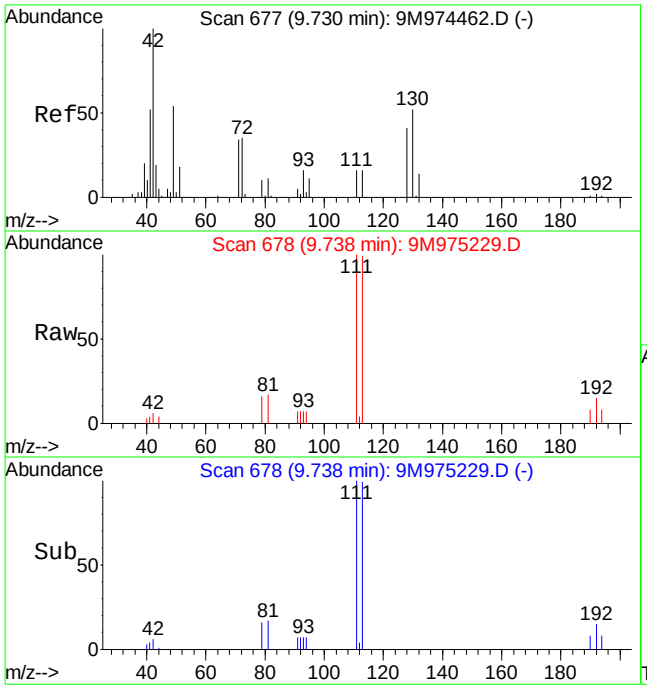

#36
Tetrahydrofuran
Concen: 1.39 ug/kg
RT: 9.74 min Scan# 678
Delta R.T. 0.00 min
Lab File: 9M975229.D
Acq: 1 Jul 2016 23:06

Tgt Ion: 42 Resp: 1762

Ion	Ratio	Lower	Upper
42	100		
72	24.5	21.8	50.8
71	0.0	20.7	48.3#

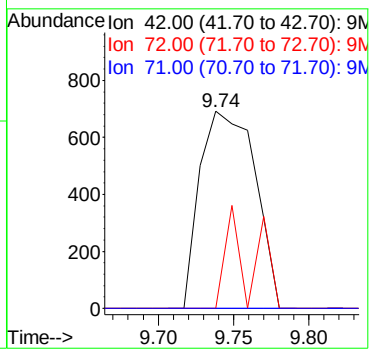

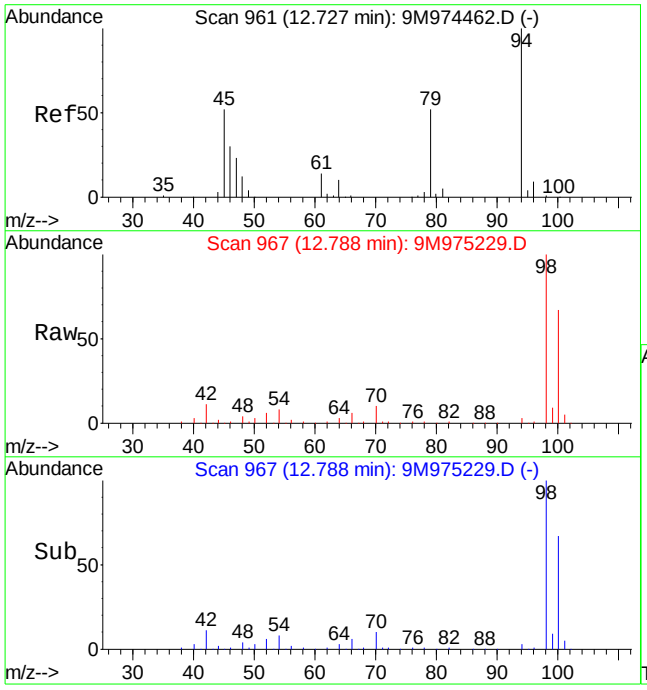

#56
Dimethyl Disulfide
Concen: 3.72 ug/kg
RT: 12.79 min Scan# 967
Delta R.T. 0.06 min
Lab File: 9M975229.D
Acq: 1 Jul 2016 23:06

Tgt Ion: 94 Resp: 16149

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.5	66.5#

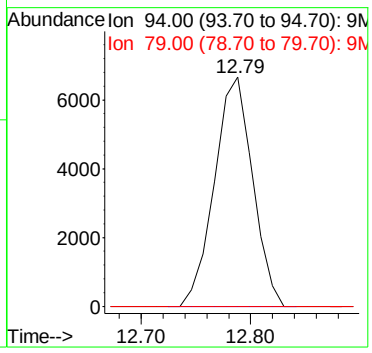

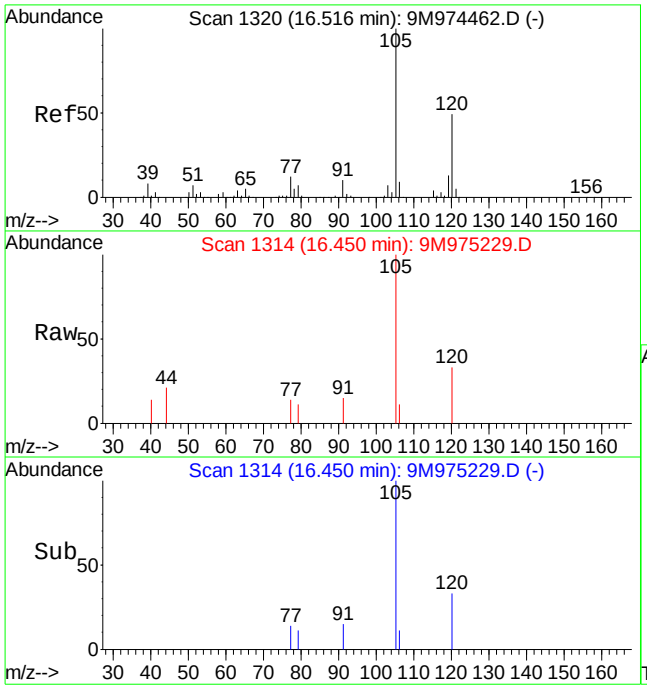

#84
1,3,5-Trimethylbenzene
Concen: 0.67 ug/kg
RT: 16.45 min Scan# 1314
Delta R.T. -0.07 min
Lab File: 9M975229.D
Acq: 1 Jul 2016 23:06

Tgt Ion:105 Resp: 9307

Ion	Ratio	Lower	Upper
105	100		
120	23.9	30.0	70.0#

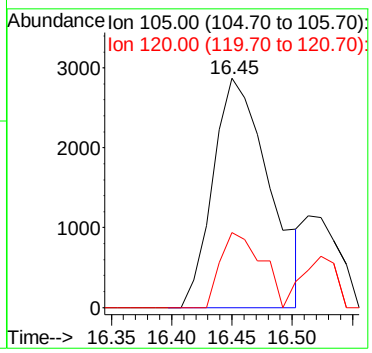

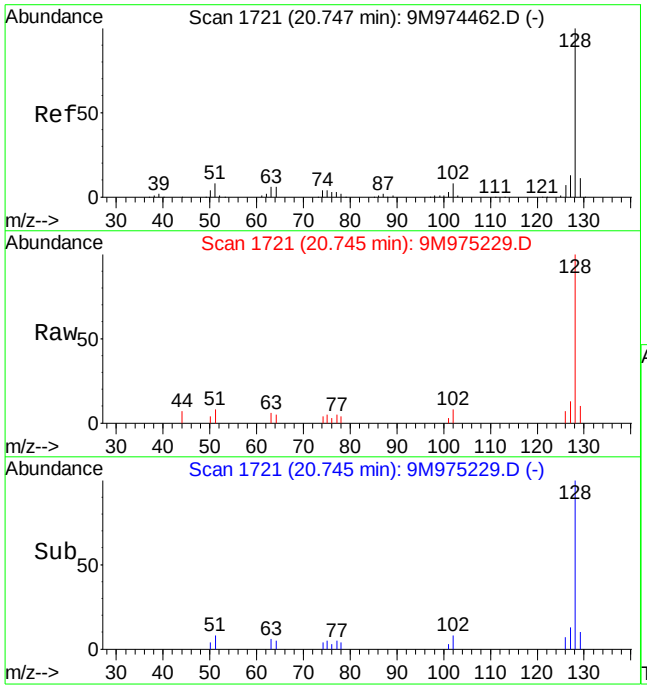

#99
Naphthalene
Concen: 1.79 ug/kg
RT: 20.74 min Scan# 1721
Delta R.T. 0.00 min
Lab File: 9M975229.D
Acq: 1 Jul 2016 23:06

Tgt Ion:128 Resp: 27806

Ion	Ratio	Lower	Upper
128	100		
127	12.9	7.6	17.8

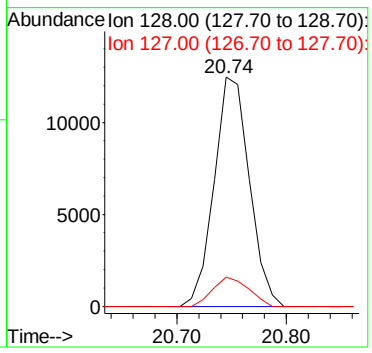

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975259.D Vial: 12
Acq On : 6 Jul 2016 19:11 Operator: ADC
Sample : L16061593-03 A 826-SPE 5.25g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 15:03:10 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.81	96	568089	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.68	117	441467	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.70	152	224968	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.76	111	148720	47.4762 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.96%		
43) 1,2-Dichloroethane-d4	10.41	65	149070	44.7622 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 89.52%		
58) Toluene-d8	12.78	98	546667	49.9962 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 100.00%		
79) p-Bromofluorobenzene	16.18	95	209979	51.1148 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.22%		

Target Compounds					Qvalue
13) Acetone	6.35	43	9979	5.9942 ug/kg	93
19) Methylene Chloride	7.36	84	4800	1.4433 ug/kg	94
36) Tetrahydrofuran	9.74	42	1633	1.4301 ug/kg#	49
56) Dimethyl Disulfide	12.78	94	13932	3.6138 ug/kg#	29
84) 1,3,5-Trimethylbenzene	16.45	105	7694	0.6257 ug/kg	73

(#) = qualifier out of range (m) = manual integration
9M975259.D 8260S.M Tue Jul 12 15:03:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975259.D Vial: 12
Acq On : 6 Jul 2016 19:11 Operator: ADC
Sample : L16061593-03 A 826-SPE 5.25g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 15:03 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

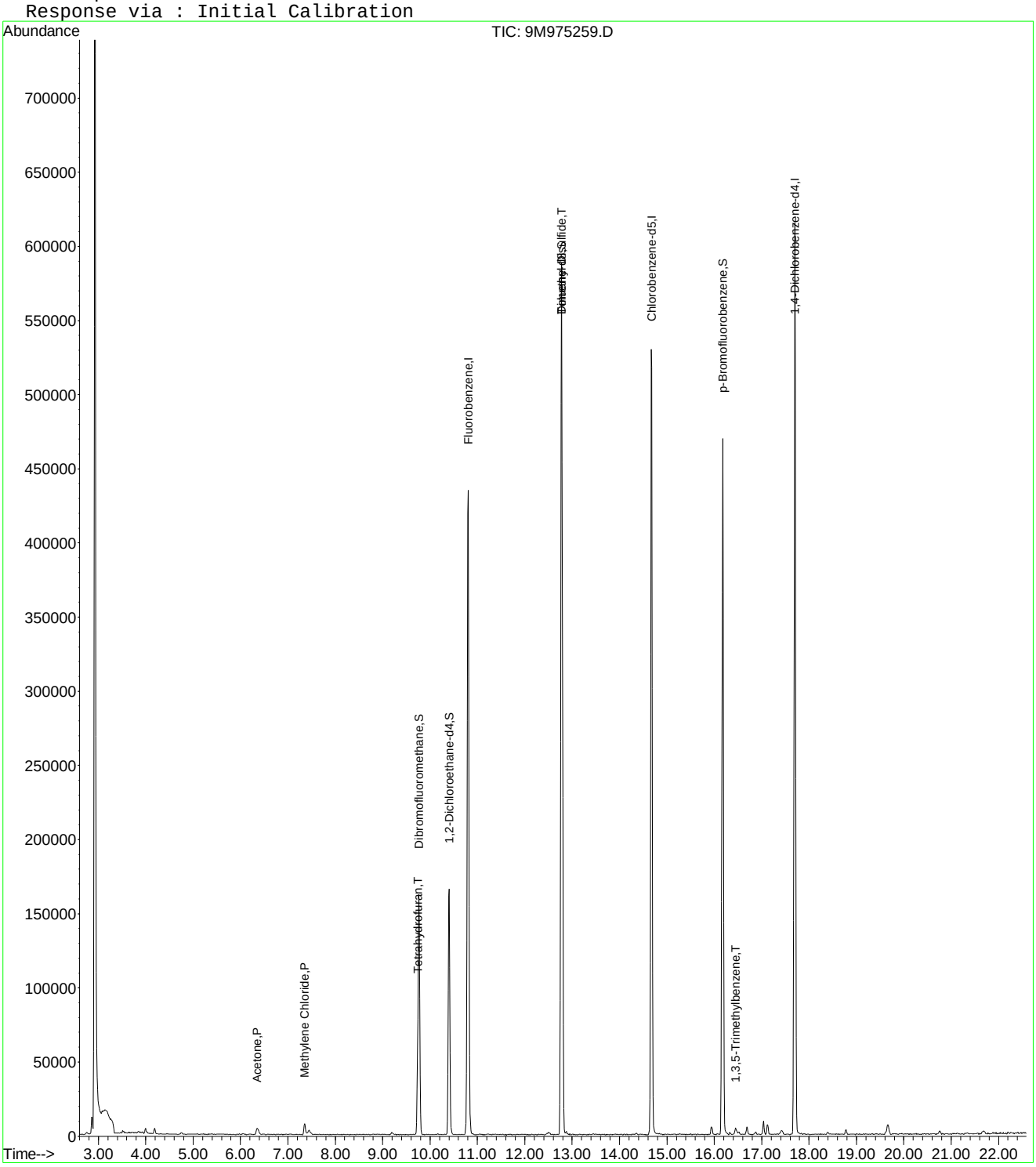

9M975259.D 8260S.M Tue Jul 12 15:03:10 2016 Page 2

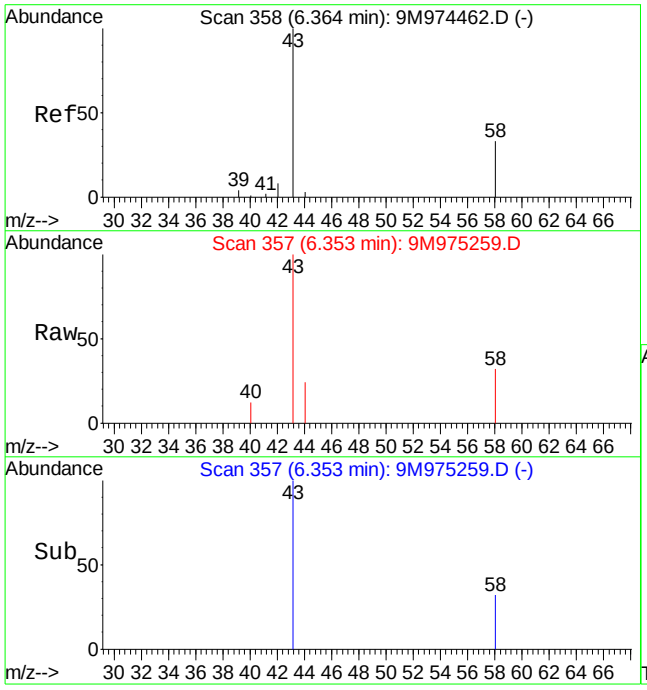

#13
Acetone
Concen: 5.99 ug/kg
RT: 6.35 min Scan# 357
Delta R.T. -0.01 min
Lab File: 9M975259.D
Acq: 6 Jul 2016 19:11

Tgt Ion: 43 Resp: 9979

Ion	Ratio	Lower	Upper
43	100		
58	37.2	19.9	46.3

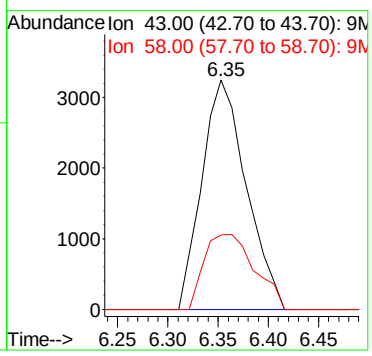

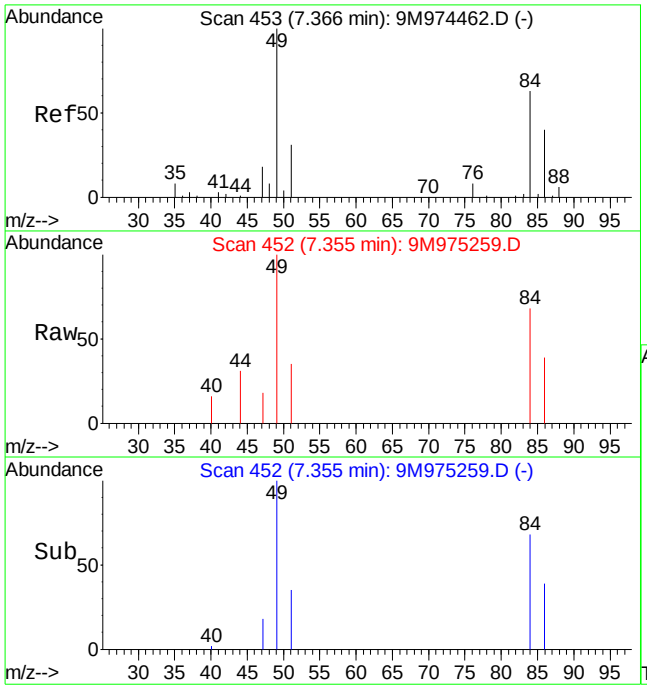

#19
Methylene Chloride
Concen: 1.44 ug/kg
RT: 7.36 min Scan# 452
Delta R.T. -0.01 min
Lab File: 9M975259.D
Acq: 6 Jul 2016 19:11

Tgt Ion: 84 Resp: 4800

Ion	Ratio	Lower	Upper
84	100		
49	147.1	93.2	217.4

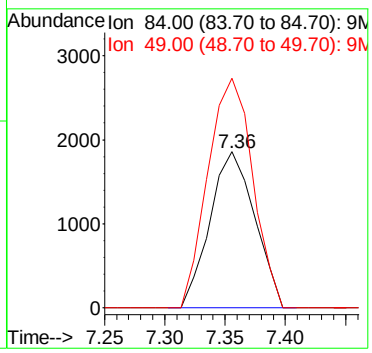

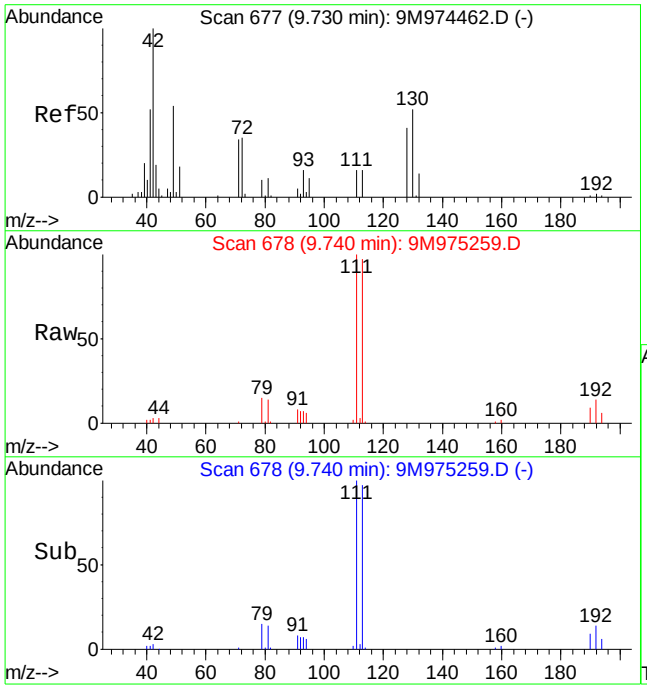

#36
Tetrahydrofuran
Concen: 1.43 ug/kg
RT: 9.74 min Scan# 678
Delta R.T. 0.00 min
Lab File: 9M975259.D
Acq: 6 Jul 2016 19:11

Tgt Ion: 42 Resp: 1633

Ion	Ratio	Lower	Upper
42	100		
72	0.0	21.8	50.8#
71	11.7	20.7	48.3#

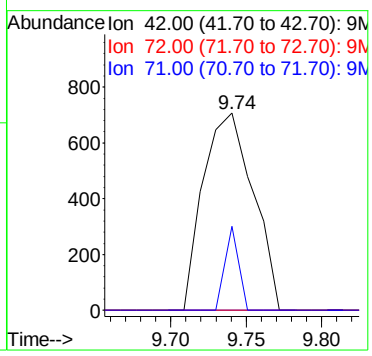

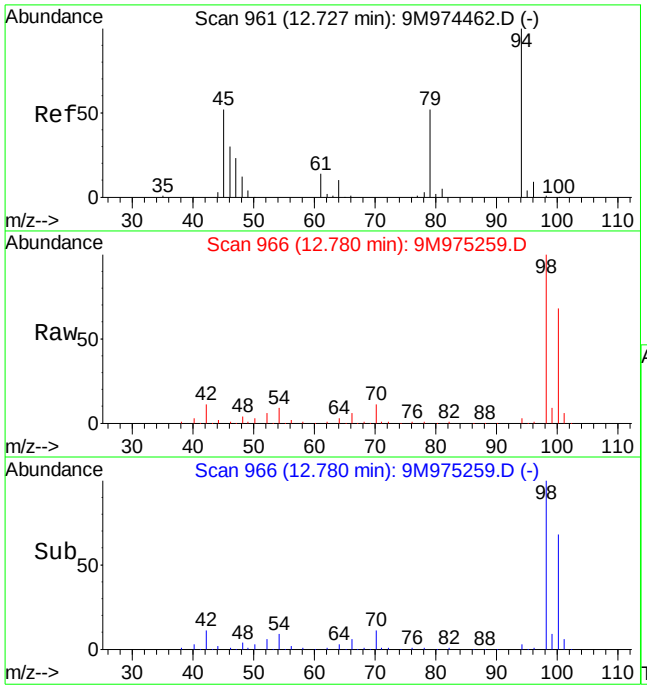

#56
Dimethyl Disulfide
Concen: 3.61 ug/kg
RT: 12.78 min Scan# 966
Delta R.T. 0.06 min
Lab File: 9M975259.D
Acq: 6 Jul 2016 19:11

Tgt Ion: 94 Resp: 13932

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.5	66.5#

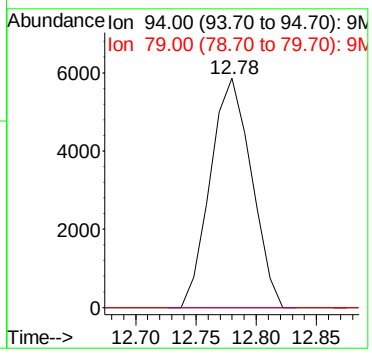

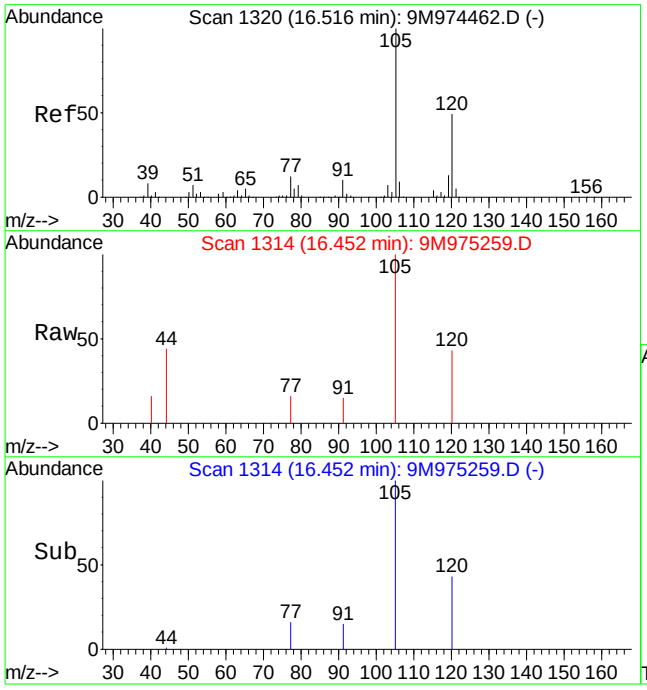

#84
1,3,5-Trimethylbenzene
Concen: 0.63 ug/kg
RT: 16.45 min Scan# 1314
Delta R.T. -0.07 min
Lab File: 9M975259.D
Acq: 6 Jul 2016 19:11

Tgt Ion:105 Resp: 7694

Ion	Ratio	Lower	Upper
105	100		
120	31.6	30.0	70.0

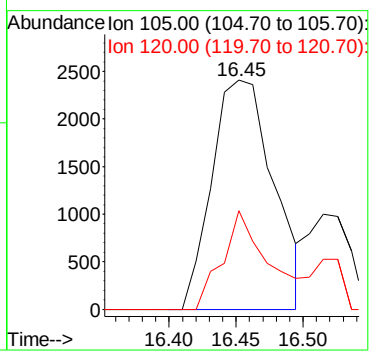

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975230.D Vial: 18
Acq On : 1 Jul 2016 23:36 Operator: ADC
Sample : L16061593-04 A 826-SPE 5.16g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 11:01:27 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.81	96	560755	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.68	117	432778	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.70	152	207760	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.77	111	141761	45.8466 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 91.70%		
43) 1,2-Dichloroethane-d4	10.40	65	144605	43.9894 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 87.98%		
58) Toluene-d8	12.79	98	535395	49.9484 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.90%		
79) p-Bromofluorobenzene	16.18	95	200046	52.7302 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 105.46%		

Target Compounds					Qvalue
13) Acetone	6.36	43	16862	12.8148 ug/kg	83
19) Methylene Chloride	7.38	84	1359	0.4140 ug/kg	72
20) Carbon Disulfide	7.41	76	4529	0.4934 ug/kg#	74
29) 2-Butanone	9.00	43	2496	1.5246 ug/kg#	55
36) Tetrahydrofuran	9.75	42	2061	1.8285 ug/kg#	50
56) Dimethyl Disulfide	12.79	94	14712	3.7833 ug/kg#	29
84) 1,3,5-Trimethylbenzene	16.45	105	7779	0.6850 ug/kg#	68
99) Naphthalene	20.75	128	19213	1.5145 ug/kg	95

(#) = qualifier out of range (m) = manual integration
9M975230.D 8260S.M Tue Jul 12 11:01:28 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975230.D Vial: 18
Acq On : 1 Jul 2016 23:36 Operator: ADC
Sample : L16061593-04 A 826-SPE 5.16g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 11:01 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

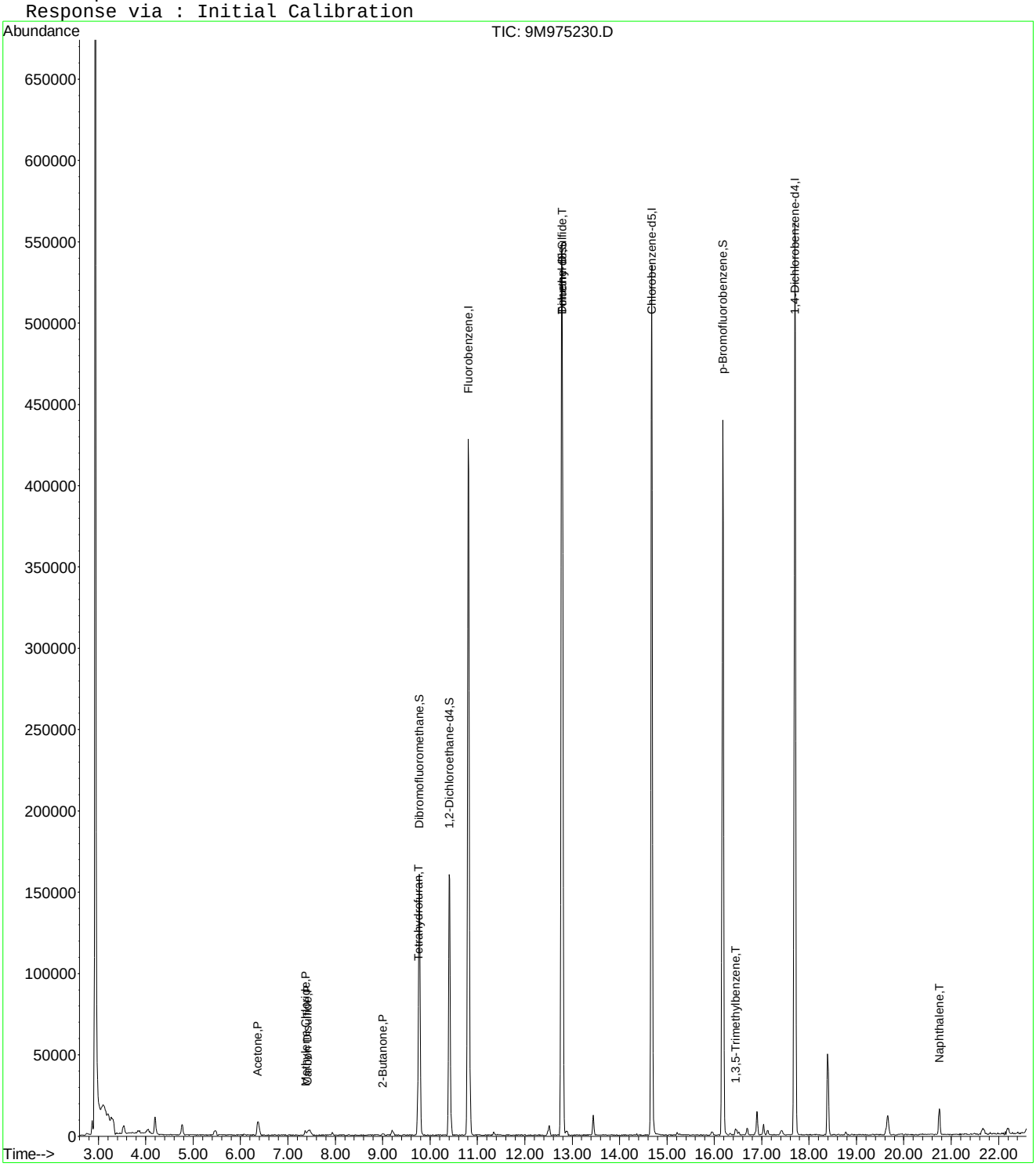

9M975230.D 8260S.M Tue Jul 12 11:01:28 2016 Page 2

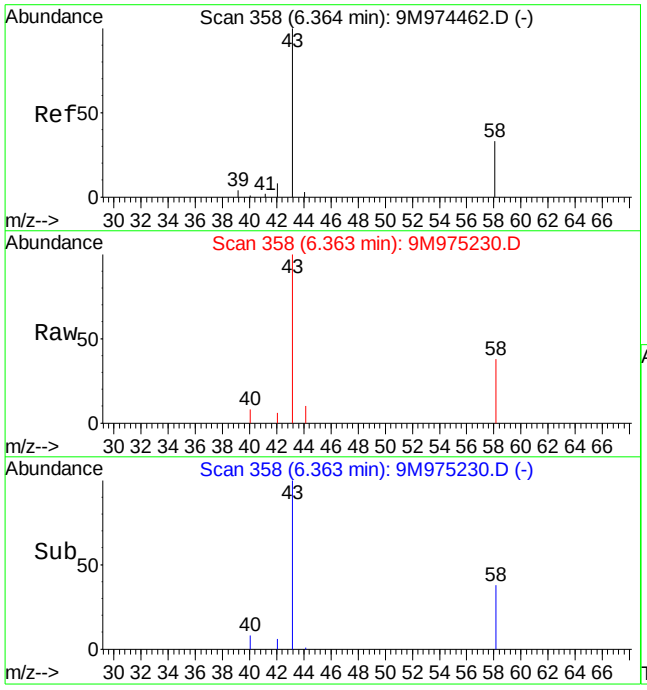

#13
Acetone
Concen: 12.81 ug/kg
RT: 6.36 min Scan# 358
Delta R.T. 0.00 min
Lab File: 9M975230.D
Acq: 1 Jul 2016 23:36

Tgt Ion: 43 Resp: 16862

Ion	Ratio	Lower	Upper
43	100		
58	42.7	19.9	46.3

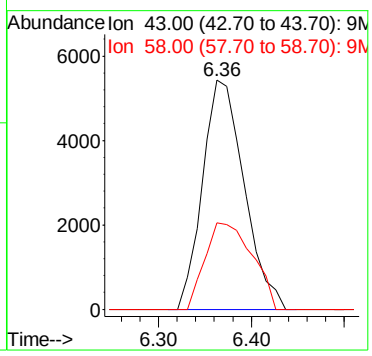

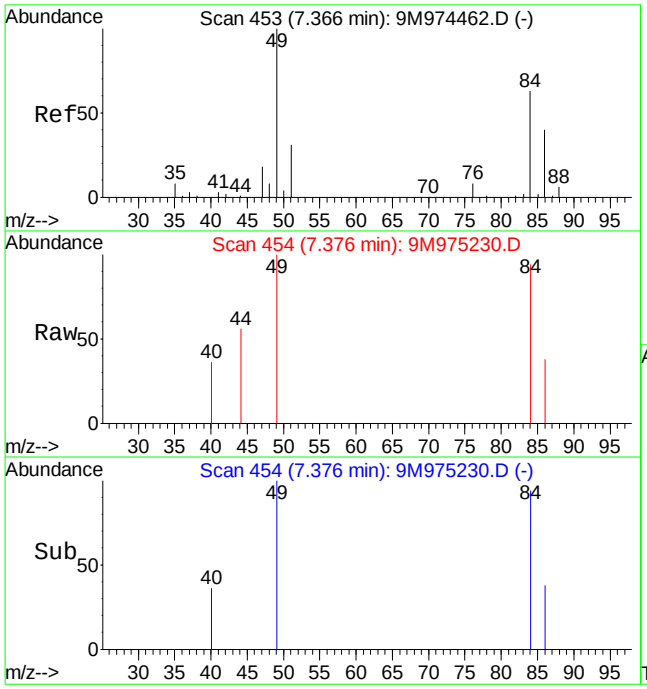

#19
Methylene Chloride
Concen: 0.41 ug/kg
RT: 7.38 min Scan# 454
Delta R.T. 0.01 min
Lab File: 9M975230.D
Acq: 1 Jul 2016 23:36

Tgt Ion: 84 Resp: 1359

Ion	Ratio	Lower	Upper
84	100		
49	192.2	93.2	217.4

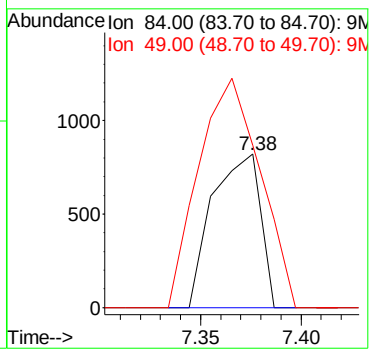

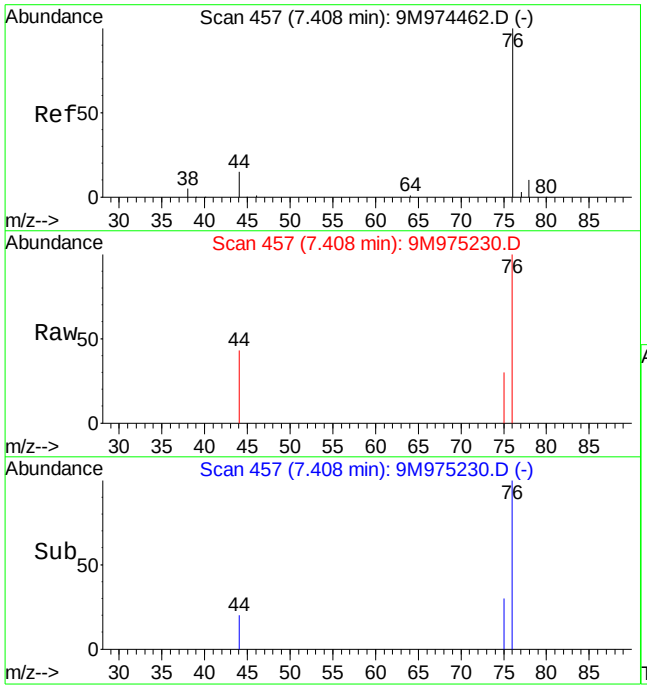

#20
Carbon Disulfide
Concen: 0.49 ug/kg
RT: 7.41 min Scan# 457
Delta R.T. -0.01 min
Lab File: 9M975230.D
Acq: 1 Jul 2016 23:36

Tgt Ion: 76 Resp: 4529

Ion	Ratio	Lower	Upper
76	100		
78	0.0	5.6	13.0#

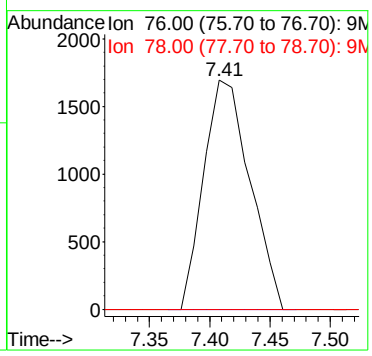

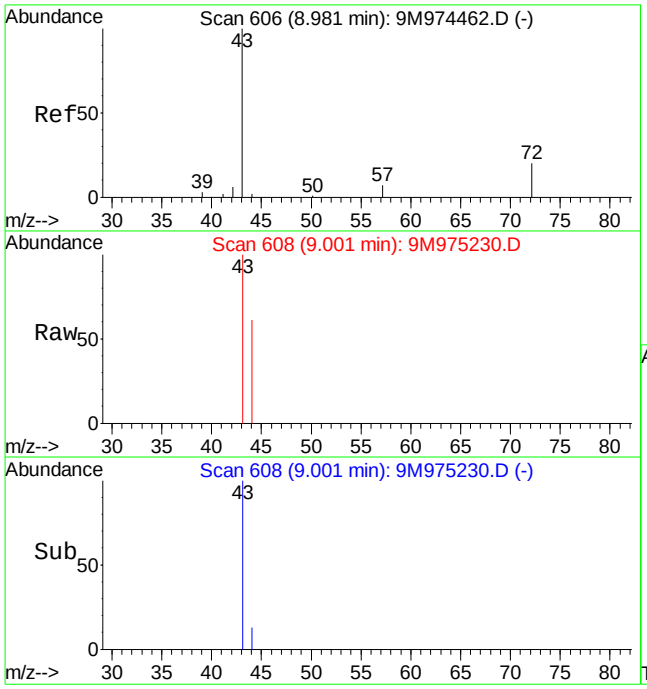

#29
2-Butanone
Concen: 1.52 ug/kg
RT: 9.00 min Scan# 608
Delta R.T. 0.01 min
Lab File: 9M975230.D
Acq: 1 Jul 2016 23:36

Tgt Ion: 43 Resp: 2496

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.5	29.3#

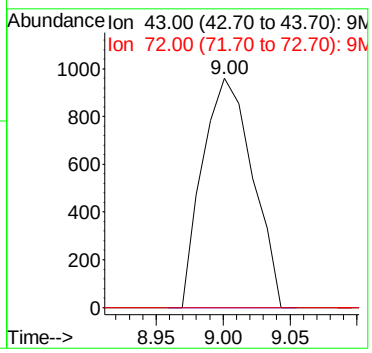

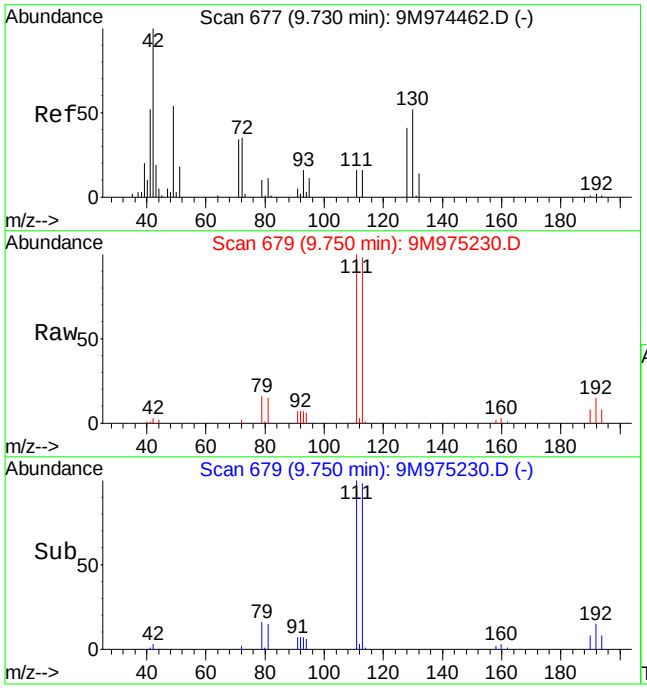

#36
Tetrahydrofuran
Concen: 1.83 ug/kg
RT: 9.75 min Scan# 679
Delta R.T. 0.01 min
Lab File: 9M975230.D
Acq: 1 Jul 2016 23:36

Tgt Ion: 42 Resp: 2061

Ion	Ratio	Lower	Upper
42	100		
72	12.2	21.8	50.8#
71	0.0	20.7	48.3#

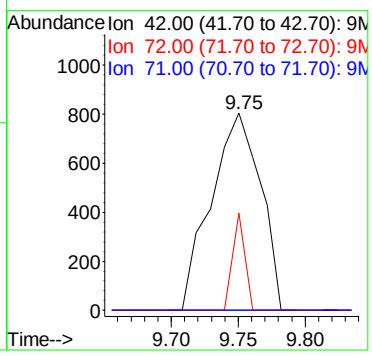

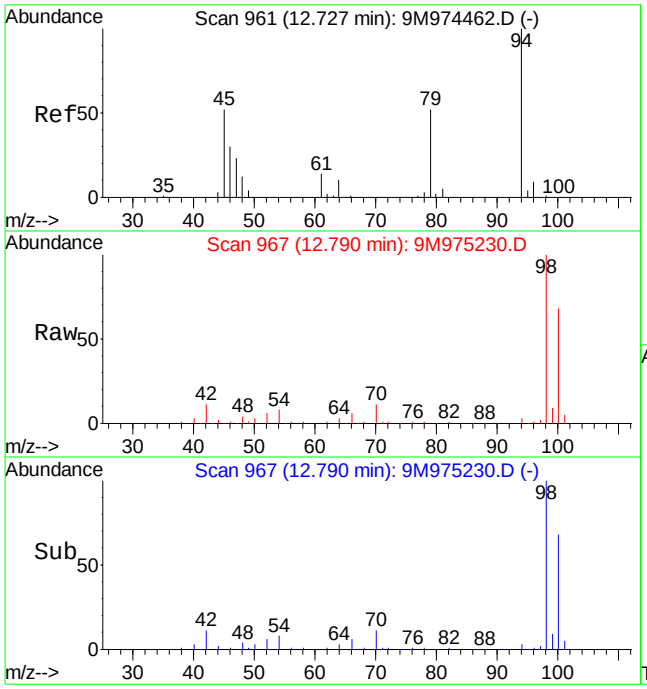

#56
Dimethyl Disulfide
Concen: 3.78 ug/kg
RT: 12.79 min Scan# 967
Delta R.T. 0.07 min
Lab File: 9M975230.D
Acq: 1 Jul 2016 23:36

Tgt Ion: 94 Resp: 14712

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.5	66.5#

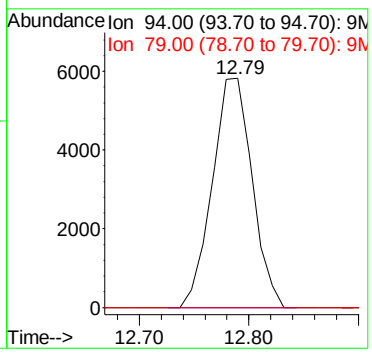

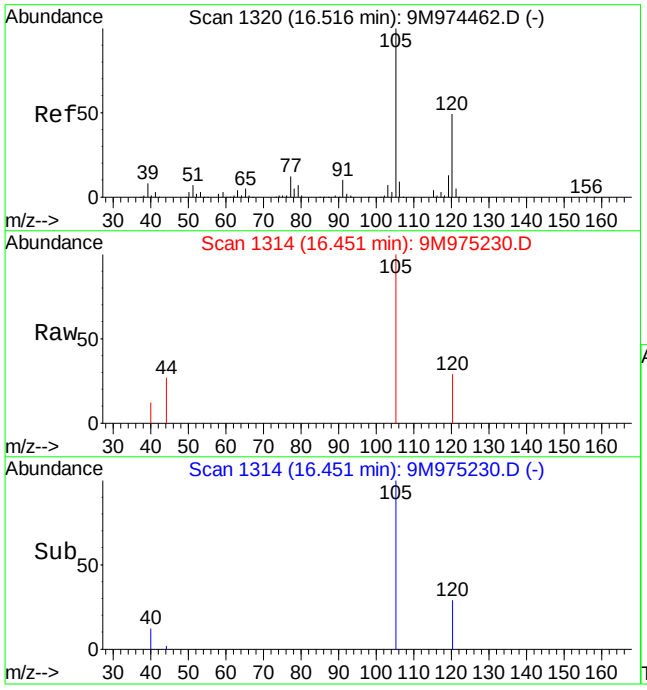

#84
1,3,5-Trimethylbenzene
Concen: 0.69 ug/kg
RT: 16.45 min Scan# 1314
Delta R.T. -0.07 min
Lab File: 9M975230.D
Acq: 1 Jul 2016 23:36

Tgt Ion:105 Resp: 7779

Ion	Ratio	Lower	Upper
105	100		
120	28.0	30.0	70.0#

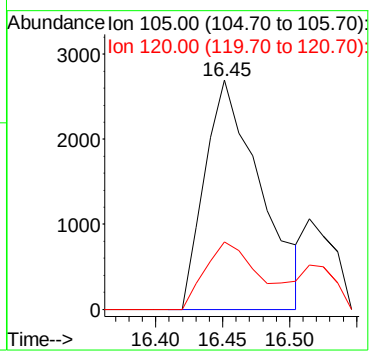

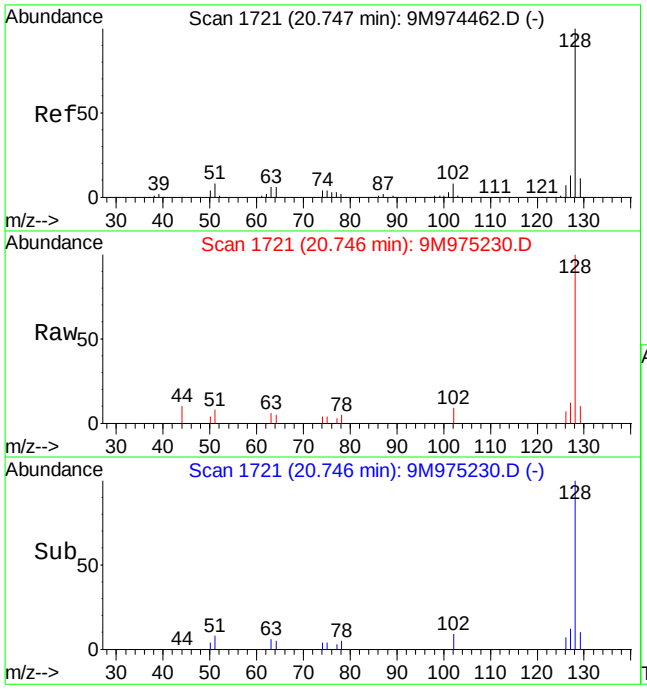

#99
Naphthalene
Concen: 1.51 ug/kg
RT: 20.75 min Scan# 1721
Delta R.T. 0.00 min
Lab File: 9M975230.D
Acq: 1 Jul 2016 23:36

Tgt Ion:128 Resp: 19213

Ion	Ratio	Lower	Upper
128	100		
127	10.8	7.6	17.8

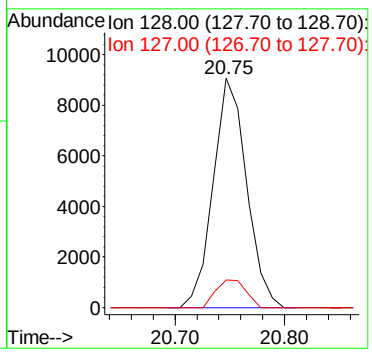

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975260.D Vial: 13
Acq On : 6 Jul 2016 19:42 Operator: ADC
Sample : L16061593-04 A 826-SPE 4.82g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 15:03:11 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.80	96	625495	50.00 ug/kg	-0.01
57) Chlorobenzene-d5	14.68	117	485161	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.69	152	234590	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.76	111	163651	47.4480 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.90%		
43) 1,2-Dichloroethane-d4	10.40	65	168130	45.8521 ug/kg	-0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 91.70%		
58) Toluene-d8	12.78	98	603085	50.1886 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 100.38%		
79) p-Bromofluorobenzene	16.18	95	225859	52.7254 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 105.46%		

Target Compounds

					Qvalue
13) Acetone	6.35	43	15371	9.8169 ug/kg	84
19) Methylene Chloride	7.35	84	4967	1.3565 ug/kg	99
20) Carbon Disulfide	7.40	76	5154	0.5034 ug/kg#	74
29) 2-Butanone	8.98	43	2362	1.2934 ug/kg#	55
36) Tetrahydrofuran	9.74	42	1869	1.4865 ug/kg#	49
56) Dimethyl Disulfide	12.78	94	16254	3.7585 ug/kg#	29
84) 1,3,5-Trimethylbenzene	16.45	105	8451	0.6591 ug/kg#	69

(#) = qualifier out of range (m) = manual integration
9M975260.D 8260S.M Tue Jul 12 15:03:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975260.D Vial: 13
Acq On : 6 Jul 2016 19:42 Operator: ADC
Sample : L16061593-04 A 826-SPE 4.82g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 15:03 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

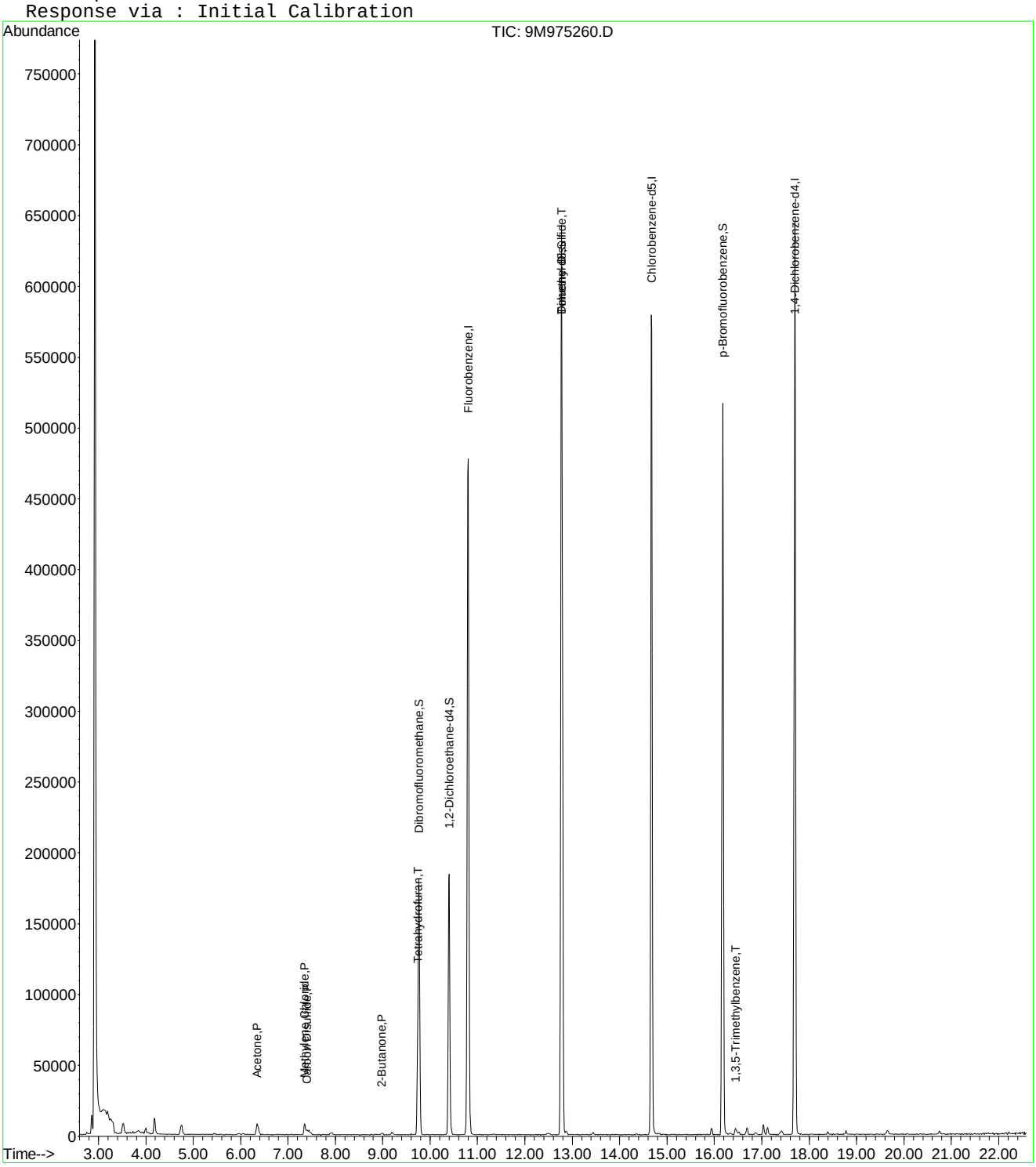

9M975260.D 8260S.M Tue Jul 12 15:03:12 2016 Page 2

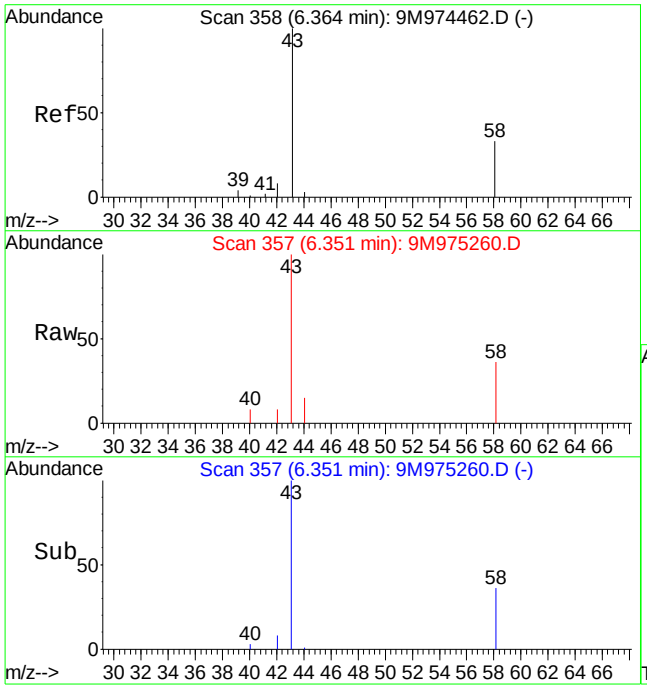

#13
Acetone
Concen: 9.82 ug/kg
RT: 6.35 min Scan# 357
Delta R.T. -0.01 min
Lab File: 9M975260.D
Acq: 6 Jul 2016 19:42

Tgt Ion: 43 Resp: 15371

Ion	Ratio	Lower	Upper
43	100		
58	42.2	19.9	46.3

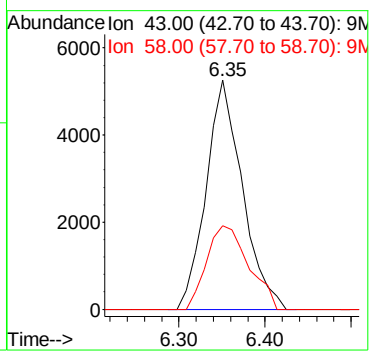

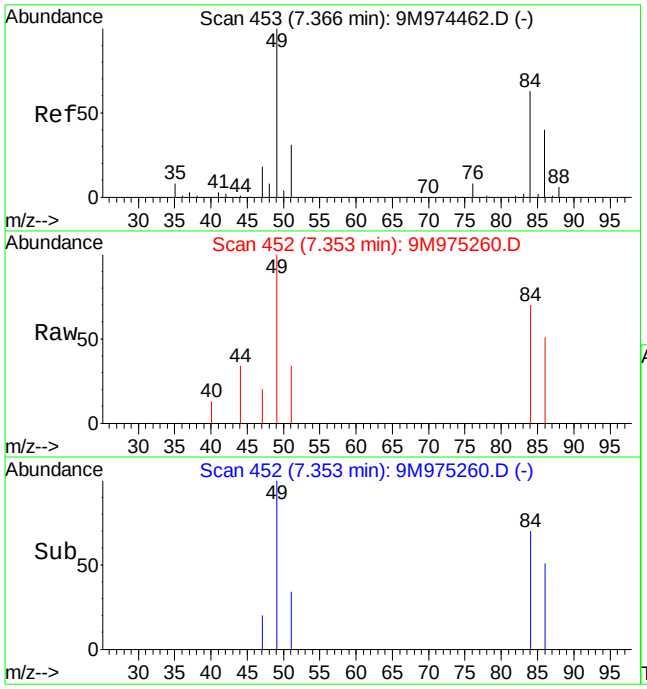

#19
Methylene Chloride
Concen: 1.36 ug/kg
RT: 7.35 min Scan# 452
Delta R.T. -0.01 min
Lab File: 9M975260.D
Acq: 6 Jul 2016 19:42

Tgt Ion: 84 Resp: 4967

Ion	Ratio	Lower	Upper
84	100		
49	154.0	93.2	217.4

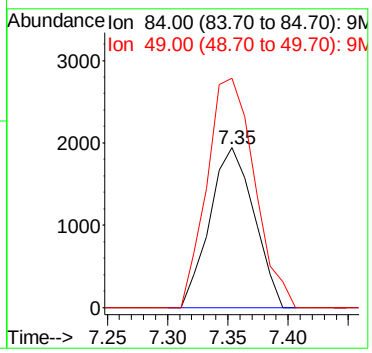

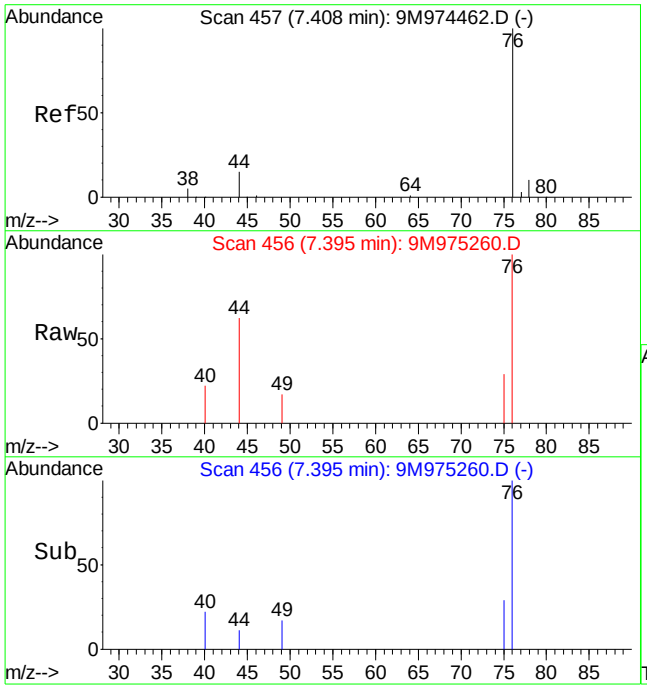

#20
Carbon Disulfide
Concen: 0.50 ug/kg
RT: 7.40 min Scan# 456
Delta R.T. -0.02 min
Lab File: 9M975260.D
Acq: 6 Jul 2016 19:42

Tgt Ion: 76 Resp: 5154

Ion	Ratio	Lower	Upper
76	100		
78	0.0	5.6	13.0#

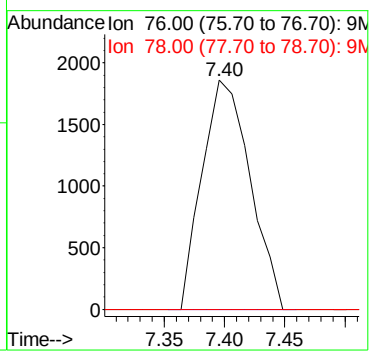

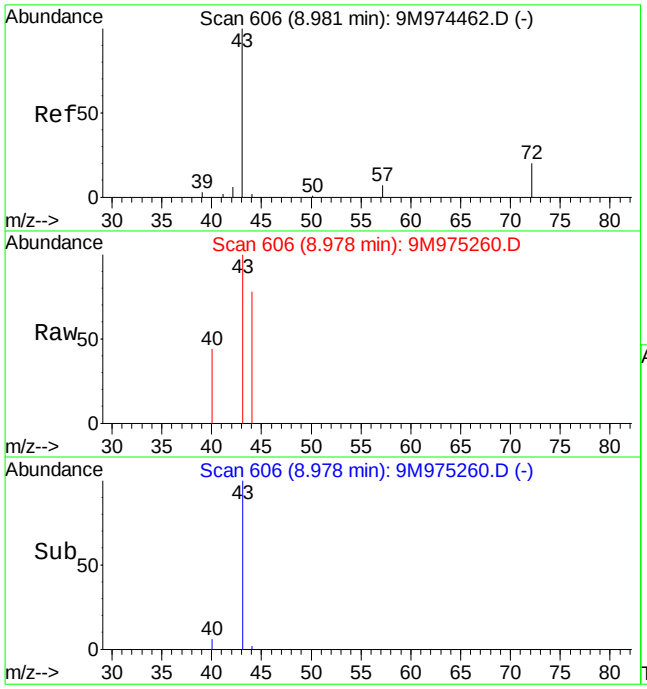

#29
2-Butanone
Concen: 1.29 ug/kg
RT: 8.98 min Scan# 606
Delta R.T. -0.01 min
Lab File: 9M975260.D
Acq: 6 Jul 2016 19:42

Tgt Ion: 43 Resp: 2362

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.5	29.3#

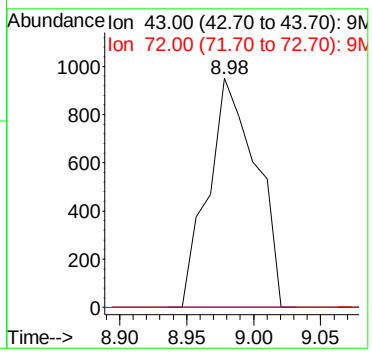

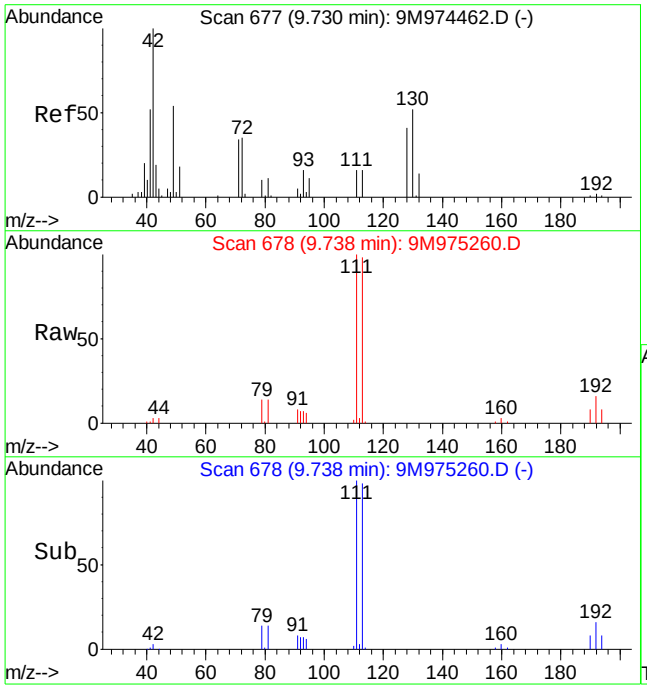

#36
Tetrahydrofuran
Concen: 1.49 ug/kg
RT: 9.74 min Scan# 678
Delta R.T. 0.00 min
Lab File: 9M975260.D
Acq: 6 Jul 2016 19:42

Tgt Ion: 42 Resp: 1869

Ion	Ratio	Lower	Upper
42	100		
72	11.4	21.8	50.8#
71	0.0	20.7	48.3#

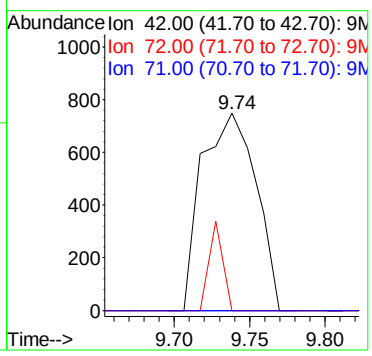

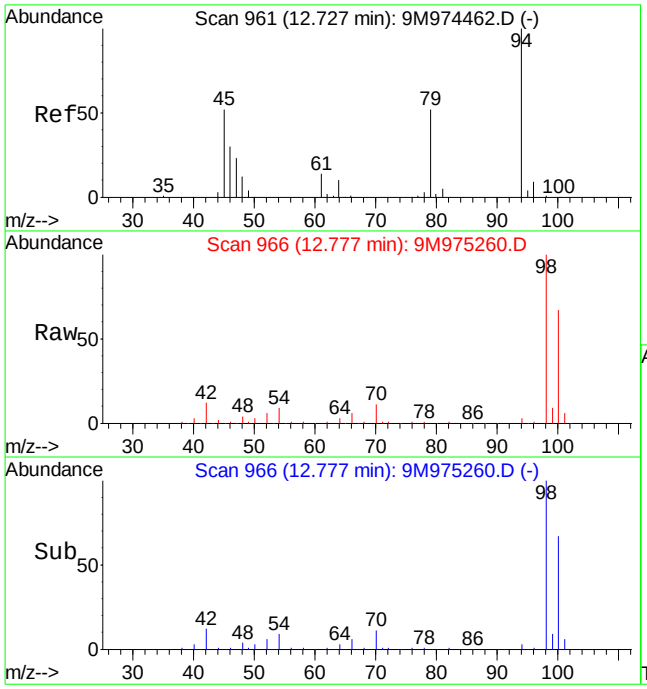

#56
Dimethyl Disulfide
Concen: 3.76 ug/kg
RT: 12.78 min Scan# 966
Delta R.T. 0.05 min
Lab File: 9M975260.D
Acq: 6 Jul 2016 19:42

Tgt Ion: 94 Resp: 16254

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.5	66.5#

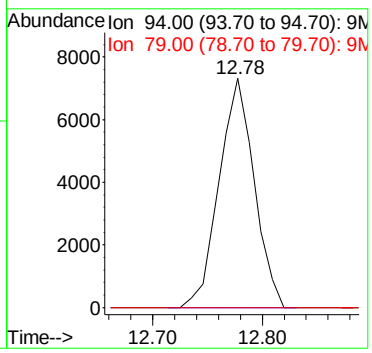

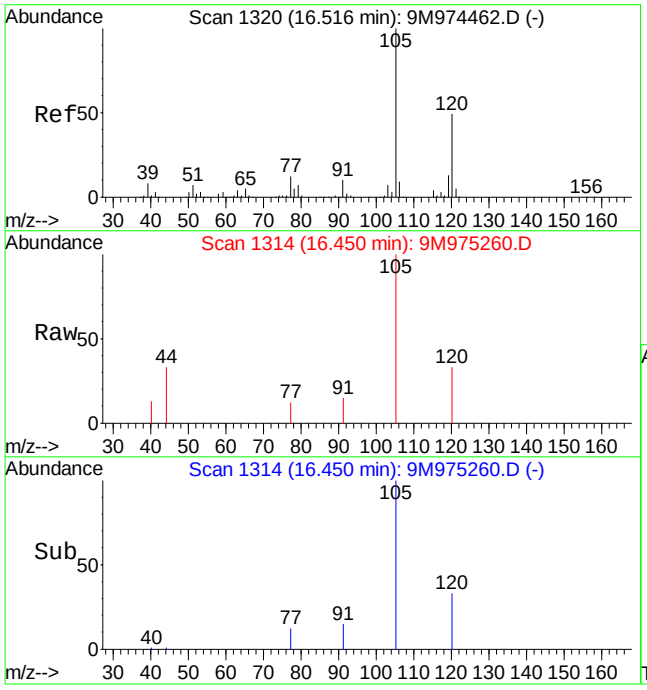

#84
1,3,5-Trimethylbenzene
Concen: 0.66 ug/kg
RT: 16.45 min Scan# 1314
Delta R.T. -0.07 min
Lab File: 9M975260.D
Acq: 6 Jul 2016 19:42

Tgt Ion:105 Resp: 8451

Ion	Ratio	Lower	Upper
105	100		
120	28.4	30.0	70.0#

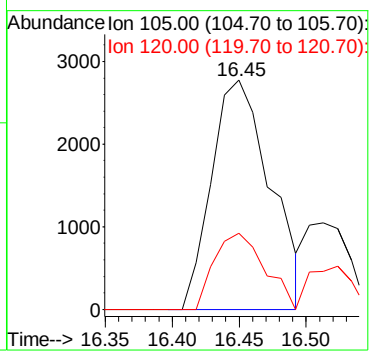

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975231.D Vial: 19
Acq On : 2 Jul 2016 00:06 Operator: ADC
Sample : L16061593-05 A 826-SPE 5.08g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 11:01:29 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.81	96	337440	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.68	117	257213	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.71	152	122503	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.77	111	84881	45.6181 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 91.24%		
43) 1,2-Dichloroethane-d4	10.41	65	88544	44.7611 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 89.52%		
58) Toluene-d8	12.79	98	322532	50.6282 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.26%		
79) p-Bromofluorobenzene	16.18	95	118165	52.8243 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 105.64%		

Target Compounds

					Qvalue
13) Acetone	6.36	43	11876	15.6099 ug/kg	90
19) Methylene Chloride	7.36	84	1946	0.9851 ug/kg	85
29) 2-Butanone	8.99	43	1545	1.5682 ug/kg#	55
36) Tetrahydrofuran	9.75	42	1159	1.7088 ug/kg#	39
56) Dimethyl Disulfide	12.79	94	8606	3.7108 ug/kg#	29
84) 1,3,5-Trimethylbenzene	16.45	105	3442	0.5140 ug/kg#	37
89) 1,2,4-Trimethylbenzene	17.04	105	3156	Below Cal	89
99) Naphthalene	20.76	128	16768	2.2416 ug/kg	96

(#) = qualifier out of range (m) = manual integration
9M975231.D 8260S.M Tue Jul 12 11:01:29 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975231.D Vial: 19
Acq On : 2 Jul 2016 00:06 Operator: ADC
Sample : L16061593-05 A 826-SPE 5.08g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 11:01 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

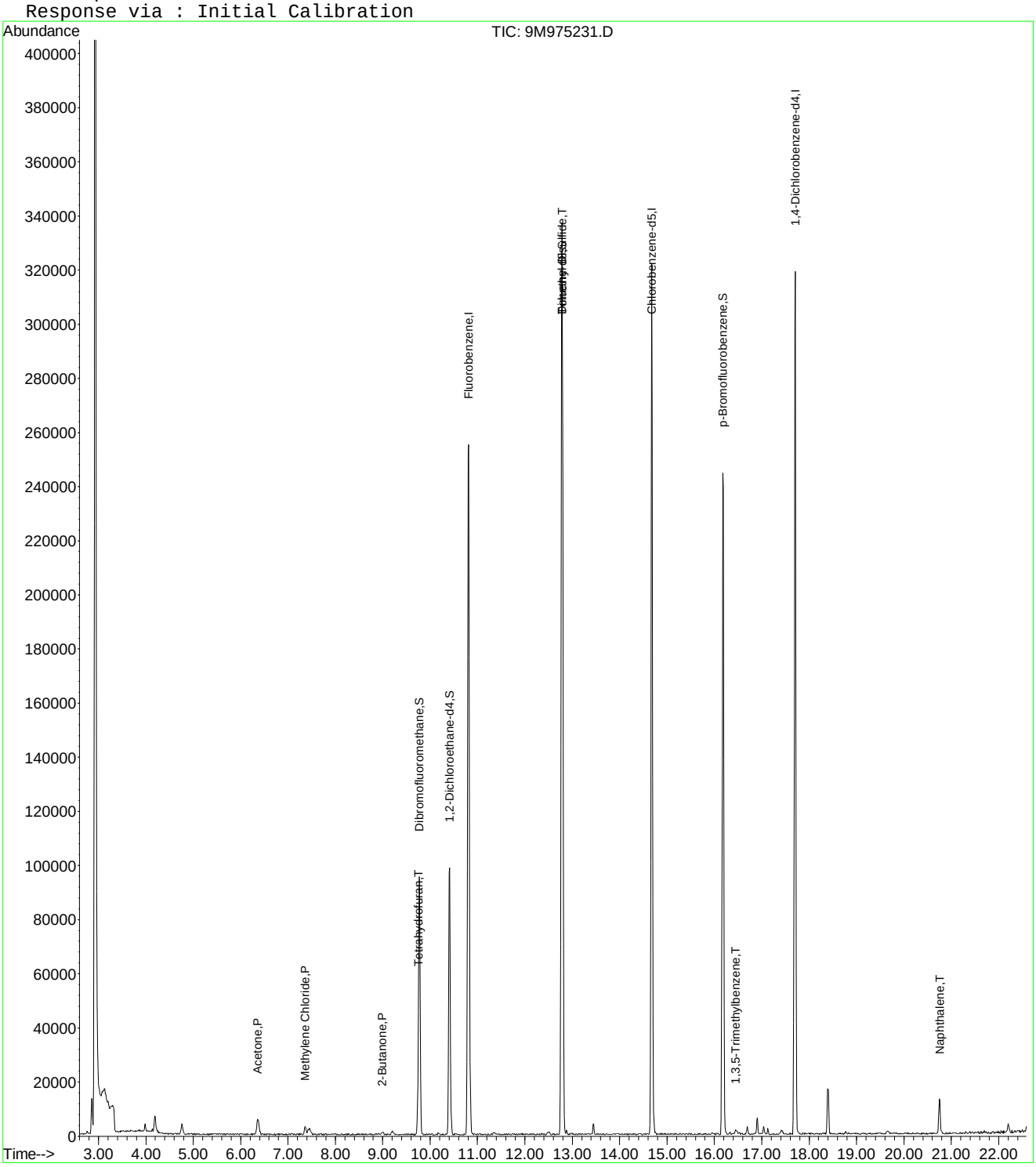

9M975231.D 8260S.M Tue Jul 12 11:01:29 2016 Page 2

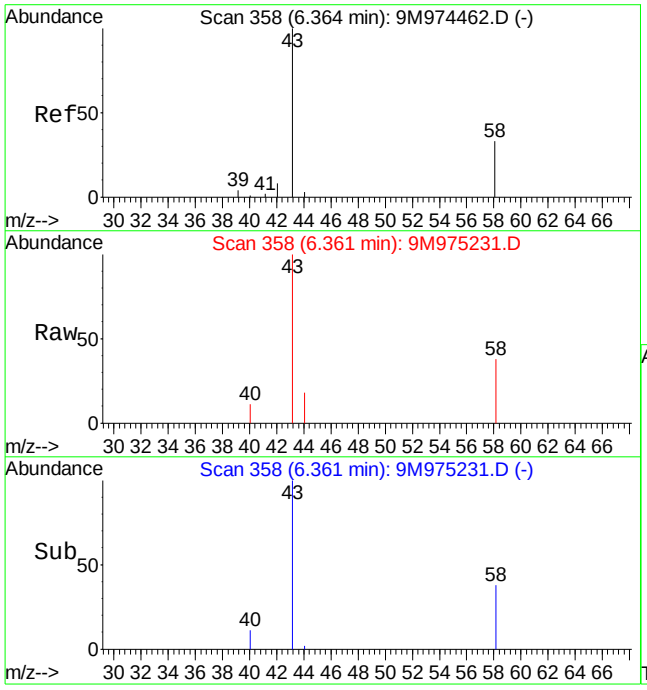

#13
Acetone
Concen: 15.61 ug/kg
RT: 6.36 min Scan# 358
Delta R.T. 0.00 min
Lab File: 9M975231.D
Acq: 2 Jul 2016 00:06

Tgt Ion: 43 Resp: 11876

Ion	Ratio	Lower	Upper
43	100		
58	38.5	19.9	46.3

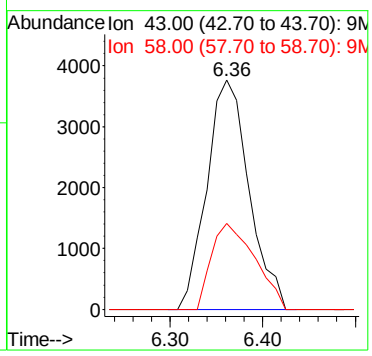

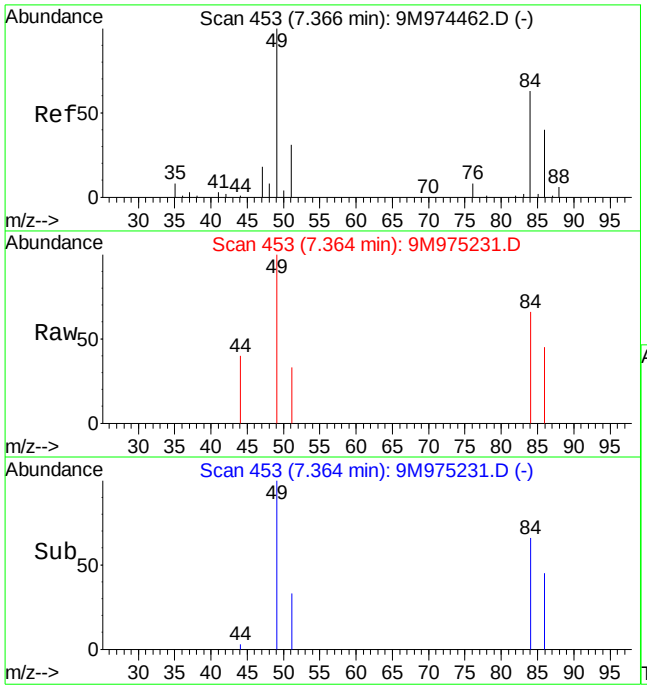

#19
Methylene Chloride
Concen: 0.99 ug/kg
RT: 7.36 min Scan# 453
Delta R.T. 0.00 min
Lab File: 9M975231.D
Acq: 2 Jul 2016 00:06

Tgt Ion: 84 Resp: 1946

Ion	Ratio	Lower	Upper
84	100		
49	175.4	93.2	217.4

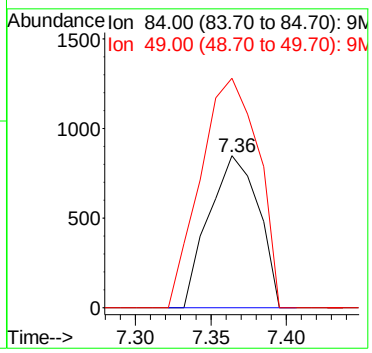

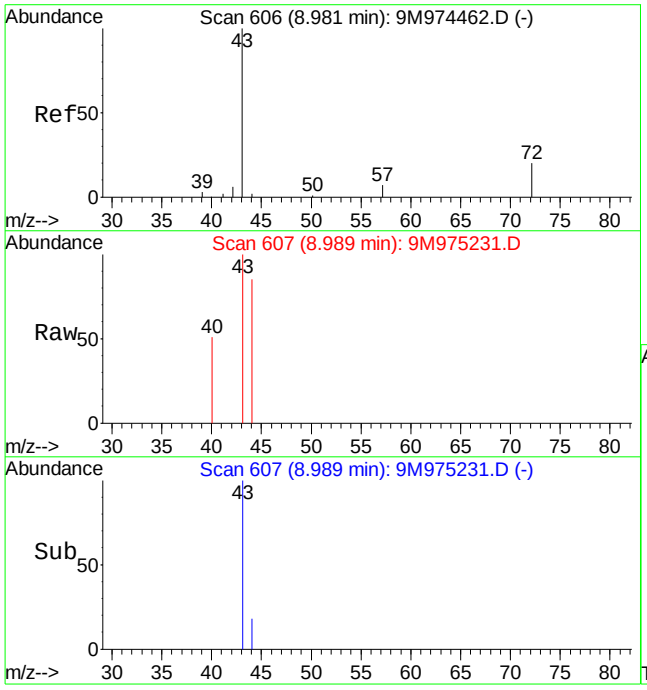

#29
2-Butanone
Concen: 1.57 ug/kg
RT: 8.99 min Scan# 607
Delta R.T. 0.00 min
Lab File: 9M975231.D
Acq: 2 Jul 2016 00:06

Tgt Ion: 43 Resp: 1545

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.5	29.3#

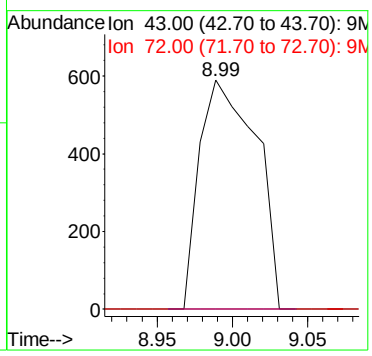

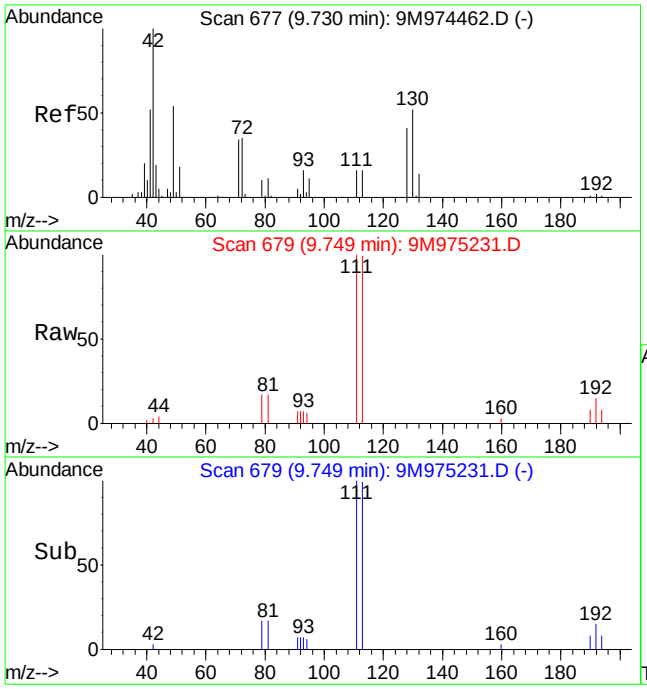

#36
Tetrahydrofuran
Concen: 1.71 ug/kg
RT: 9.75 min Scan# 679
Delta R.T. 0.01 min
Lab File: 9M975231.D
Acq: 2 Jul 2016 00:06

Tgt Ion: 42 Resp: 1159

Ion	Ratio	Lower	Upper
42	100		
72	0.0	21.8	50.8#
71	0.0	20.7	48.3#

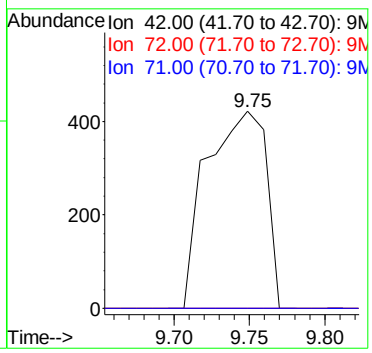

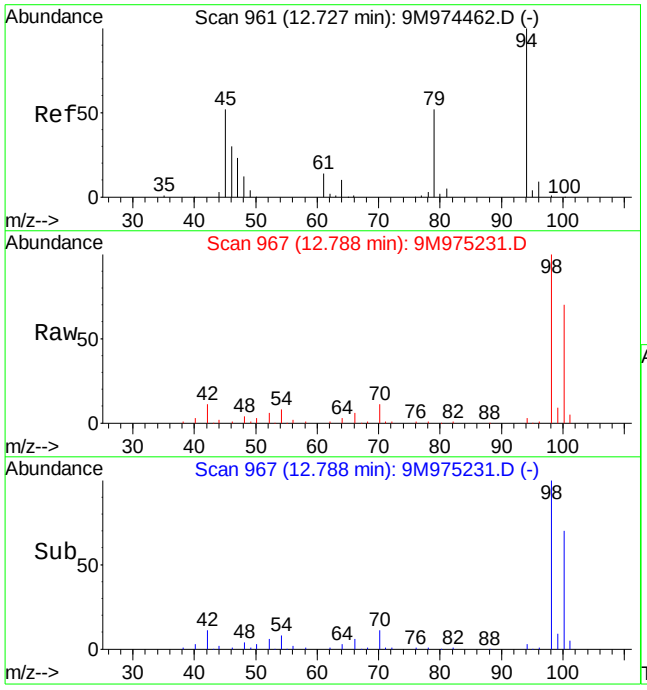

#56
Dimethyl Disulfide
Concen: 3.71 ug/kg
RT: 12.79 min Scan# 967
Delta R.T. 0.06 min
Lab File: 9M975231.D
Acq: 2 Jul 2016 00:06

Tgt Ion: 94 Resp: 8606

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.5	66.5#

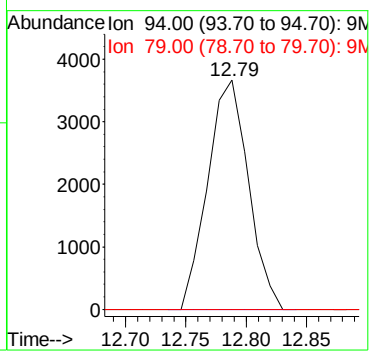

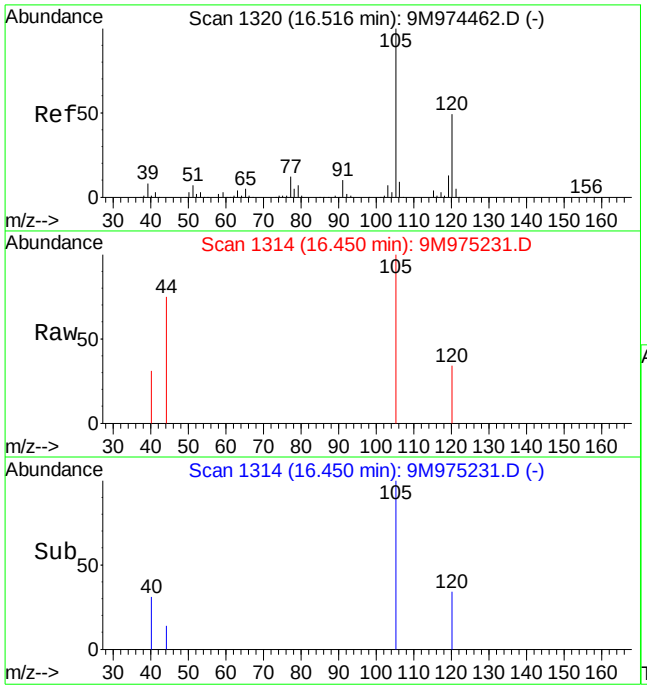

#84
1,3,5-Trimethylbenzene
Concen: 0.51 ug/kg
RT: 16.45 min Scan# 1314
Delta R.T. -0.07 min
Lab File: 9M975231.D
Acq: 2 Jul 2016 00:06

Tgt Ion:105 Resp: 3442

Ion	Ratio	Lower	Upper
105	100		
120	6.4	30.0	70.0#

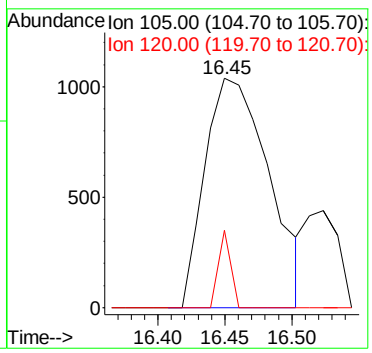

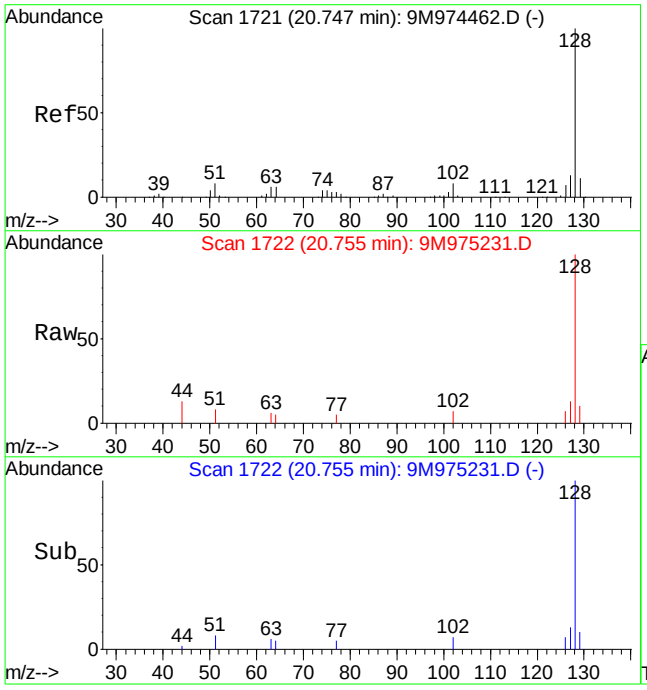

#99
Naphthalene
Concen: 2.24 ug/kg
RT: 20.76 min Scan# 1722
Delta R.T. 0.01 min
Lab File: 9M975231.D
Acq: 2 Jul 2016 00:06

Tgt Ion:128 Resp: 16768

Ion	Ratio	Lower	Upper
128	100		
127	11.2	7.6	17.8

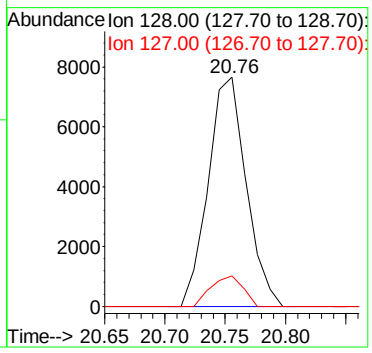

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975261.D Vial: 14
Acq On : 6 Jul 2016 20:12 Operator: ADC
Sample : L16061593-05 A 826-SPE 4.97g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 15:03:12 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.80	96	647644	50.00 ug/kg	-0.01
57) Chlorobenzene-d5	14.67	117	498016	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.70	152	234109	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.76	111	168456	47.1708 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.34%		
43) 1,2-Dichloroethane-d4	10.39	65	170162	44.8192 ug/kg	-0.02
Spiked Amount 50.000	Range 80 - 120		Recovery = 89.64%		
58) Toluene-d8	12.78	98	615486	49.8985 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.80%		
79) p-Bromofluorobenzene	16.18	95	223718	52.3329 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 104.66%		

Target Compounds

					Qvalue
13) Acetone	6.35	43	27054	19.1982 ug/kg	81
19) Methylene Chloride	7.34	84	6083	1.6044 ug/kg	96
29) 2-Butanone	8.98	43	4944	2.6147 ug/kg#	81
36) Tetrahydrofuran	9.74	42	2300	1.7668 ug/kg#	62
56) Dimethyl Disulfide	12.78	94	16248	3.6696 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M975261.D 8260S.M Tue Jul 12 15:03:13 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975261.D Vial: 14
Acq On : 6 Jul 2016 20:12 Operator: ADC
Sample : L16061593-05 A 826-SPE 4.97g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 15:03 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

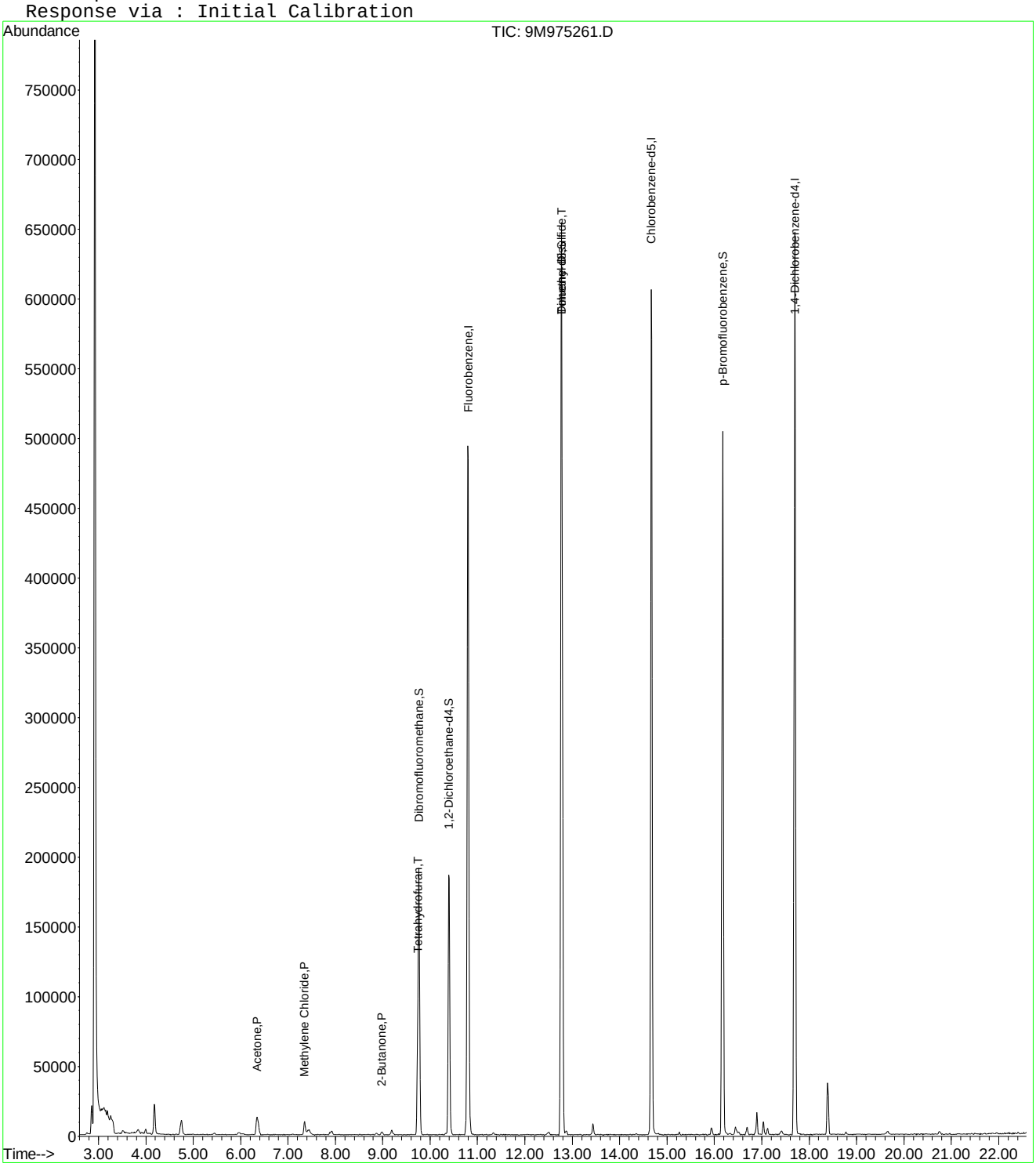

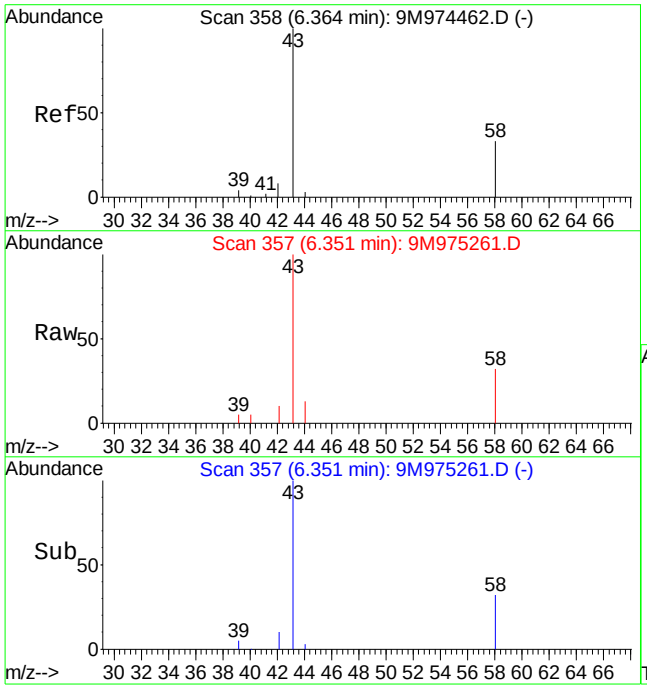

#13
Acetone
Concen: 19.20 ug/kg
RT: 6.35 min Scan# 357
Delta R.T. -0.01 min
Lab File: 9M975261.D
Acq: 6 Jul 2016 20:12

Tgt Ion: 43 Resp: 27054

Ion	Ratio	Lower	Upper
43	100		
58	44.1	19.9	46.3

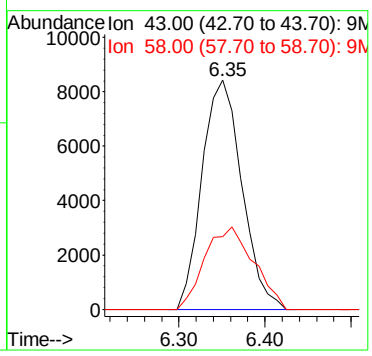

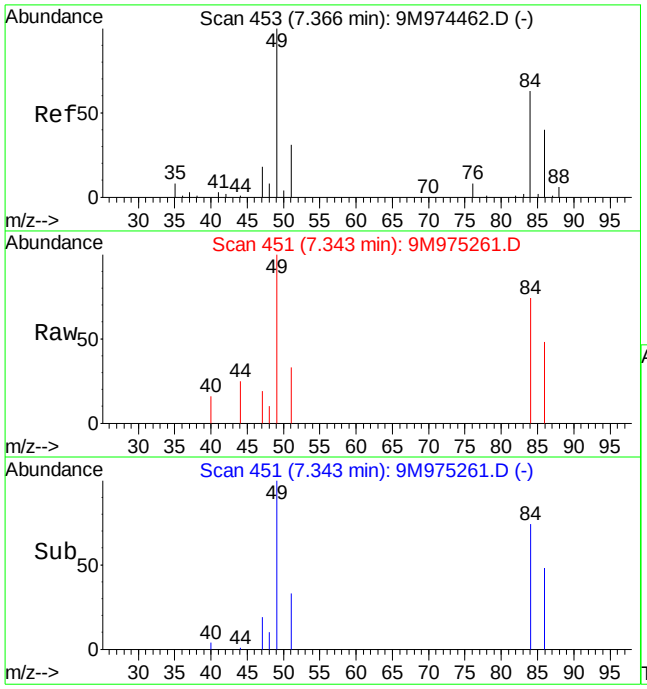

#19
Methylene Chloride
Concen: 1.60 ug/kg
RT: 7.34 min Scan# 451
Delta R.T. -0.02 min
Lab File: 9M975261.D
Acq: 6 Jul 2016 20:12

Tgt Ion: 84 Resp: 6083

Ion	Ratio	Lower	Upper
84	100		
49	160.4	93.2	217.4

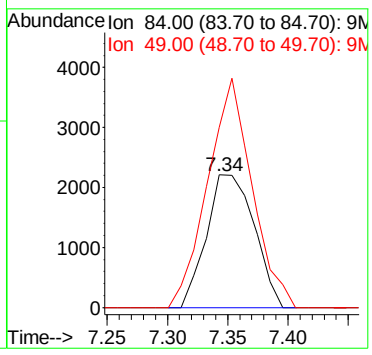

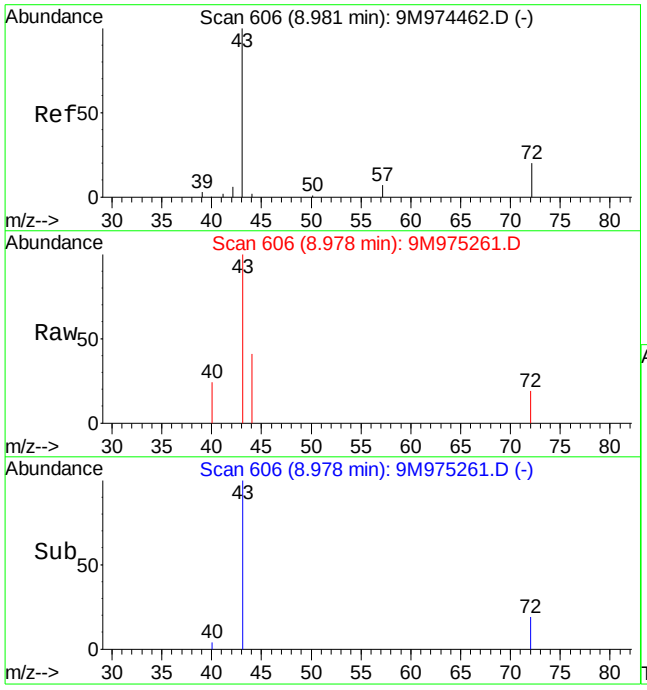

#29
2-Butanone
Concen: 2.61 ug/kg
RT: 8.98 min Scan# 606
Delta R.T. -0.01 min
Lab File: 9M975261.D
Acq: 6 Jul 2016 20:12

Tgt Ion: 43 Resp: 4944

Ion	Ratio	Lower	Upper
43	100		
72	11.9	12.5	29.3#

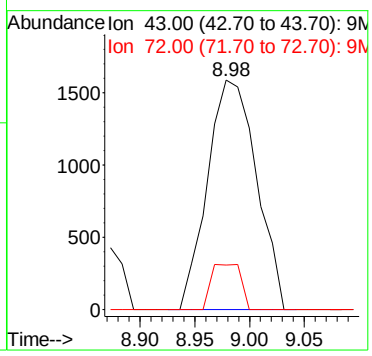

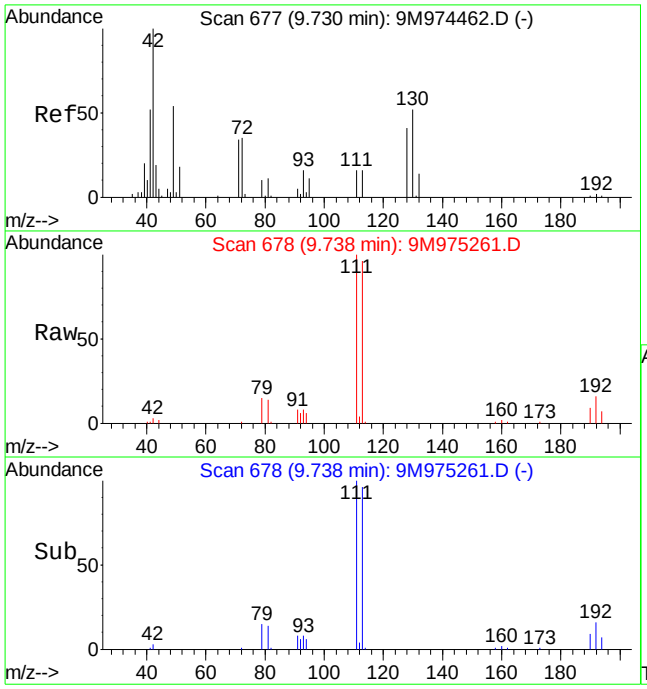

#36
Tetrahydrofuran
Concen: 1.77 ug/kg
RT: 9.74 min Scan# 678
Delta R.T. 0.00 min
Lab File: 9M975261.D
Acq: 6 Jul 2016 20:12

Tgt Ion: 42 Resp: 2300

Ion	Ratio	Lower	Upper
42	100		
72	17.7	21.8	50.8#
71	8.3	20.7	48.3#

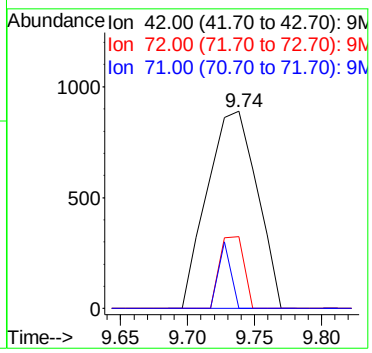

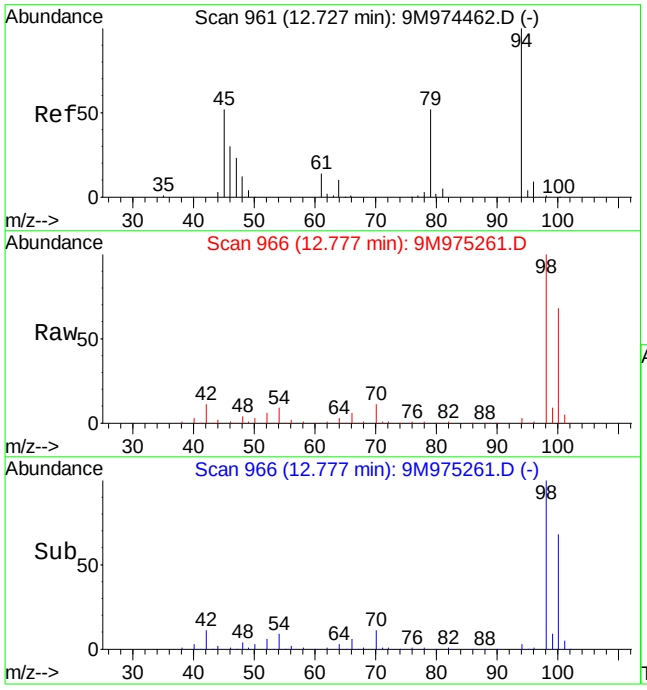

#56
Dimethyl Disulfide
Concen: 3.67 ug/kg
RT: 12.78 min Scan# 966
Delta R.T. 0.05 min
Lab File: 9M975261.D
Acq: 6 Jul 2016 20:12

Tgt Ion: 94 Resp: 16248

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.5	66.5#

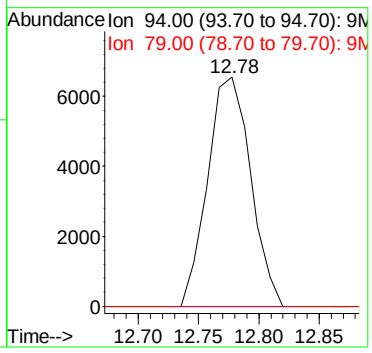

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975232.D Vial: 20
Acq On : 2 Jul 2016 00:37 Operator: ADC
Sample : L16061593-06 A 826-SPE 5.22g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 11:01:30 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.81	96	550975	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.68	117	416519	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.71	152	193331	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.77	111	142475	46.8954 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.80%		
43) 1,2-Dichloroethane-d4	10.41	65	143059	44.2916 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 88.58%		
58) Toluene-d8	12.79	98	534254	51.7876 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 103.58%		
79) p-Bromofluorobenzene	16.17	95	191681	54.2962 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 108.60%		

Target Compounds

					Qvalue
13) Acetone	6.37	43	17566	13.8029 ug/kg	81
19) Methylene Chloride	7.37	84	1923	0.5962 ug/kg	97
29) 2-Butanone	9.00	43	2741	1.7040 ug/kg#	55
36) Tetrahydrofuran	9.75	42	1761	1.5901 ug/kg#	39
56) Dimethyl Disulfide	12.79	94	13876	3.6791 ug/kg#	29
99) Naphthalene	20.75	128	13531	1.1462 ug/kg	94

(#) = qualifier out of range (m) = manual integration
9M975232.D 8260S.M Tue Jul 12 11:01:30 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975232.D Vial: 20
Acq On : 2 Jul 2016 00:37 Operator: ADC
Sample : L16061593-06 A 826-SPE 5.22g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 11:01 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

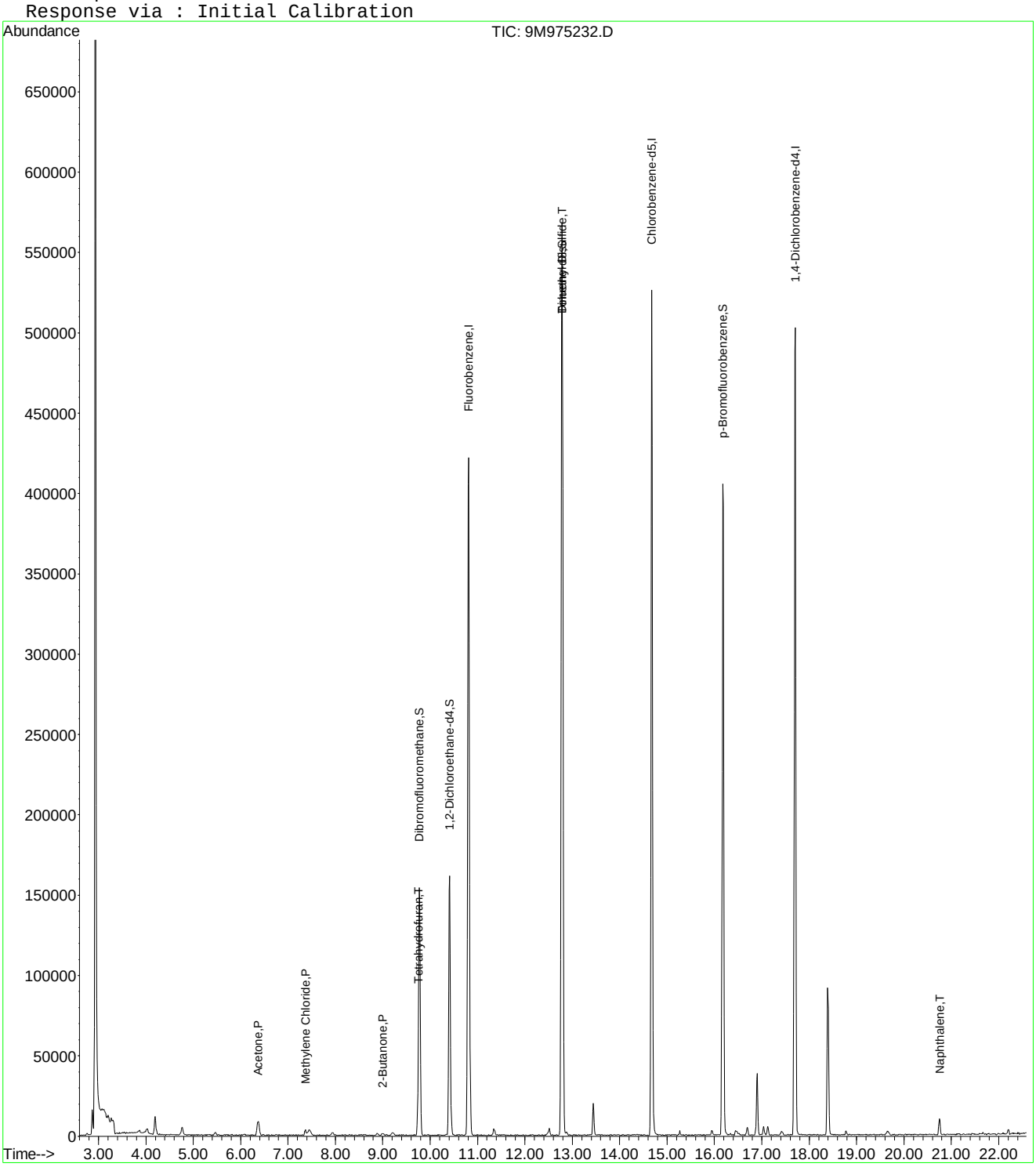

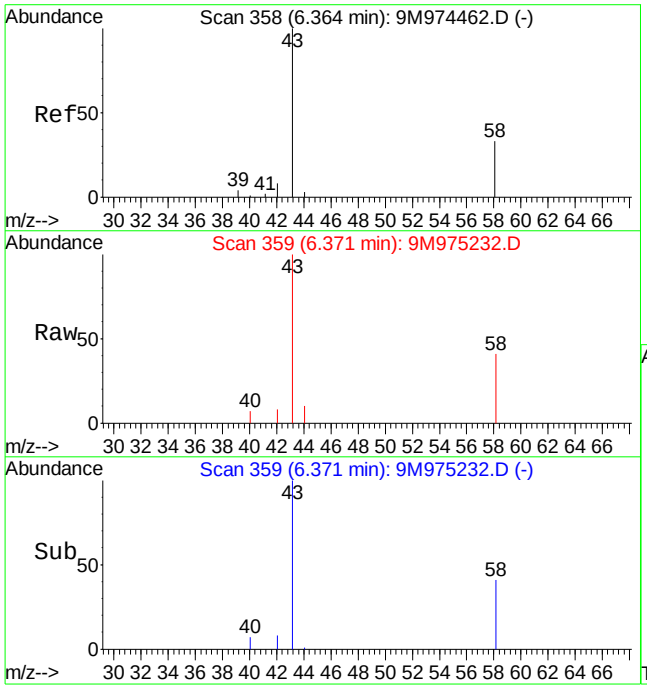

#13
Acetone
Concen: 13.80 ug/kg
RT: 6.37 min Scan# 359
Delta R.T. 0.01 min
Lab File: 9M975232.D
Acq: 2 Jul 2016 00:37

Tgt Ion: 43 Resp: 17566

Ion	Ratio	Lower	Upper
43	100		
58	43.6	19.9	46.3

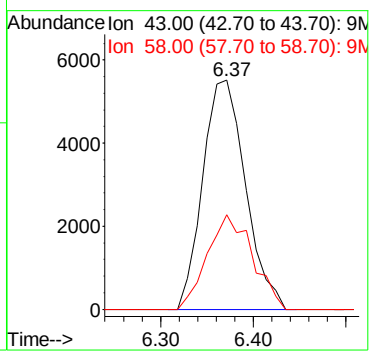

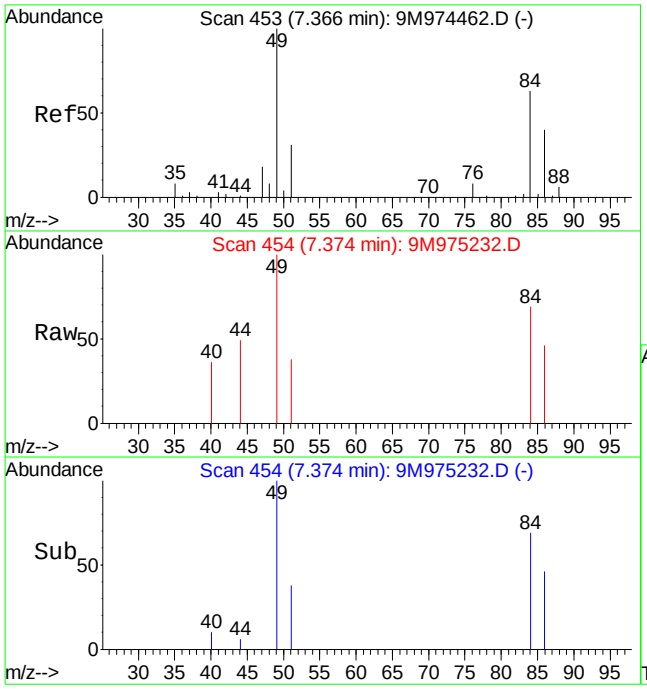

#19
Methylene Chloride
Concen: 0.60 ug/kg
RT: 7.37 min Scan# 454
Delta R.T. 0.01 min
Lab File: 9M975232.D
Acq: 2 Jul 2016 00:37

Tgt Ion: 84 Resp: 1923

Ion	Ratio	Lower	Upper
84	100		
49	159.2	93.2	217.4

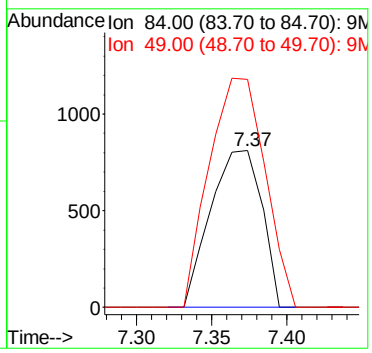

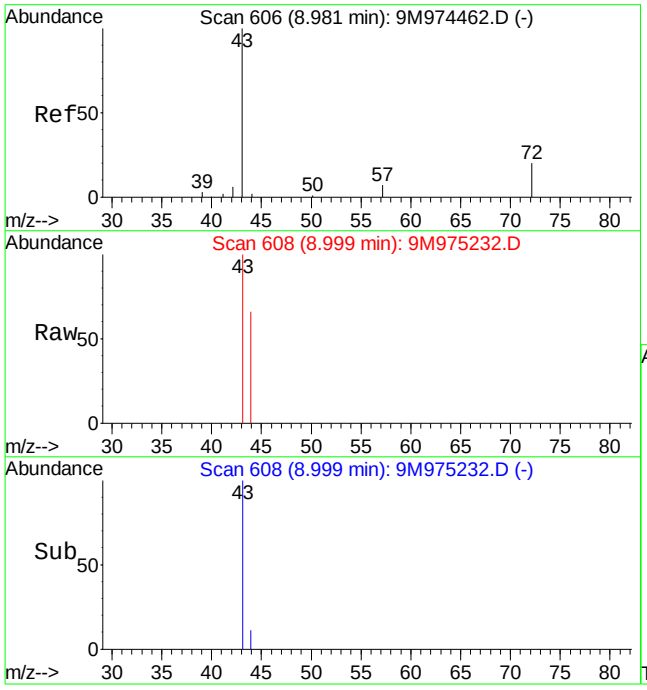

#29
2-Butanone
Concen: 1.70 ug/kg
RT: 9.00 min Scan# 608
Delta R.T. 0.01 min
Lab File: 9M975232.D
Acq: 2 Jul 2016 00:37

Tgt Ion: 43 Resp: 2741

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.5	29.3#

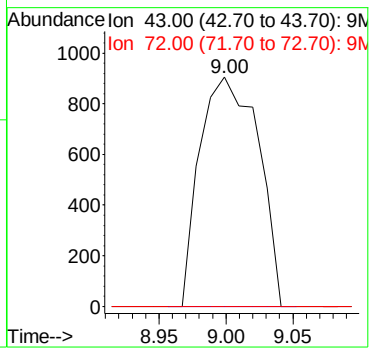

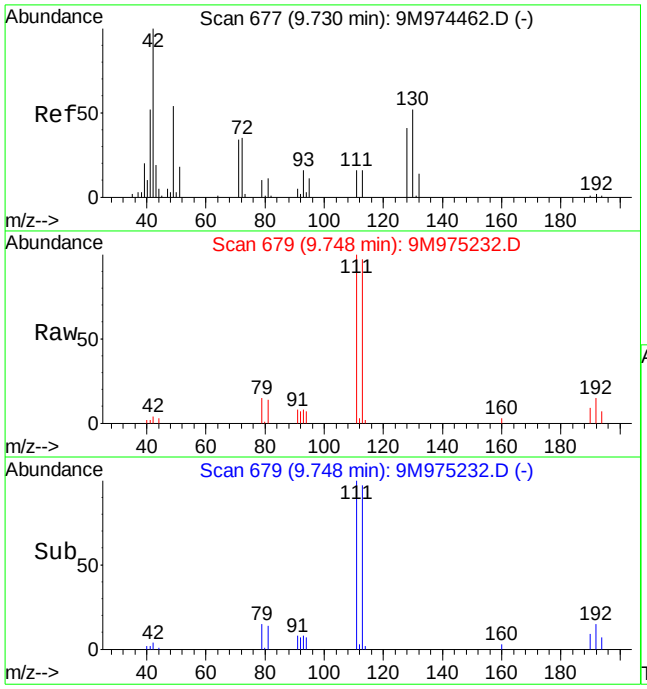

#36
Tetrahydrofuran
Concen: 1.59 ug/kg
RT: 9.75 min Scan# 679
Delta R.T. 0.01 min
Lab File: 9M975232.D
Acq: 2 Jul 2016 00:37

Tgt Ion: 42 Resp: 1761

Ion	Ratio	Lower	Upper
42	100		
72	0.0	21.8	50.8#
71	0.0	20.7	48.3#

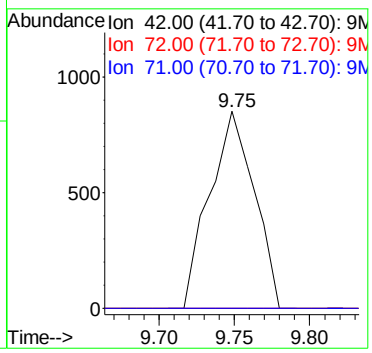

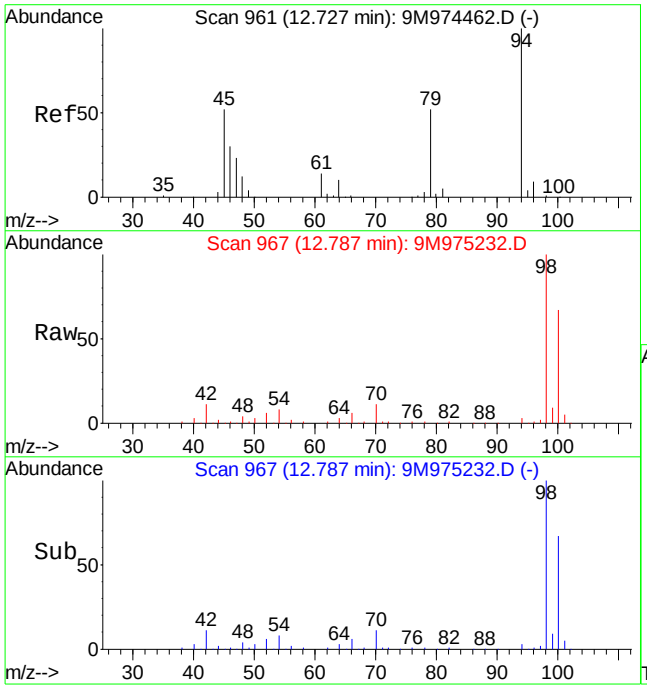

#56
Dimethyl Disulfide
Concen: 3.68 ug/kg
RT: 12.79 min Scan# 967
Delta R.T. 0.06 min
Lab File: 9M975232.D
Acq: 2 Jul 2016 00:37

Tgt Ion: 94 Resp: 13876

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.5	66.5#

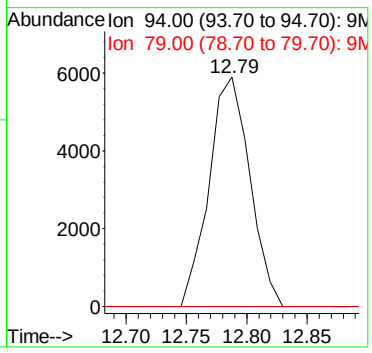

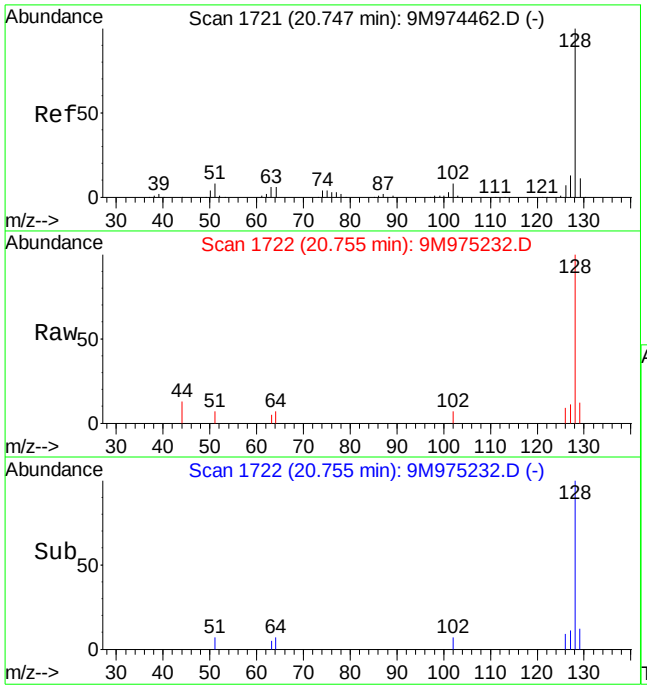

#99
Naphthalene
Concen: 1.15 ug/kg
RT: 20.75 min Scan# 1722
Delta R.T. 0.01 min
Lab File: 9M975232.D
Acq: 2 Jul 2016 00:37

Tgt Ion:128 Resp: 13531

Ion	Ratio	Lower	Upper
128	100		
127	10.3	7.6	17.8

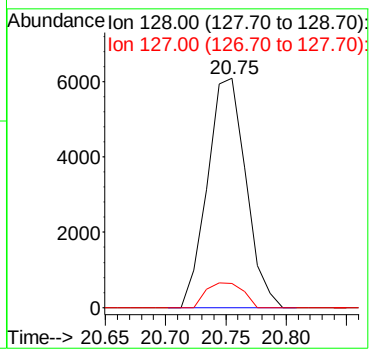

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975262.D Vial: 15
Acq On : 6 Jul 2016 20:42 Operator: ADC
Sample : WG575216-01 L16061593-06 A 826-SPE 5.13g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 15:03:13 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.80	96	629455	50.00 ug/kg	-0.02
57) Chlorobenzene-d5	14.67	117	491919	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.70	152	251481	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.76	111	164418	47.3705 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.74%		
43) 1,2-Dichloroethane-d4	10.40	65	170205	46.1260 ug/kg	-0.02
Spiked Amount 50.000	Range 80 - 120		Recovery = 92.26%		
58) Toluene-d8	12.78	98	597395	49.0321 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.06%		
79) p-Bromofluorobenzene	16.18	95	228851	49.8356 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 99.68%		

Target Compounds

					Qvalue
13) Acetone	6.35	43	20343	14.0411 ug/kg	85
19) Methylene Chloride	7.36	84	4236	1.1496 ug/kg	97
29) 2-Butanone	8.99	43	2991	1.6275 ug/kg#	55
36) Tetrahydrofuran	9.72	42	1824	1.4416 ug/kg#	58
56) Dimethyl Disulfide	12.78	94	16240	3.7401 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M975262.D 8260S.M Tue Jul 12 15:03:14 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975262.D Vial: 15
Acq On : 6 Jul 2016 20:42 Operator: ADC
Sample : WG575216-01 L16061593-06 A 826-SPE 5.13g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 15:03 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

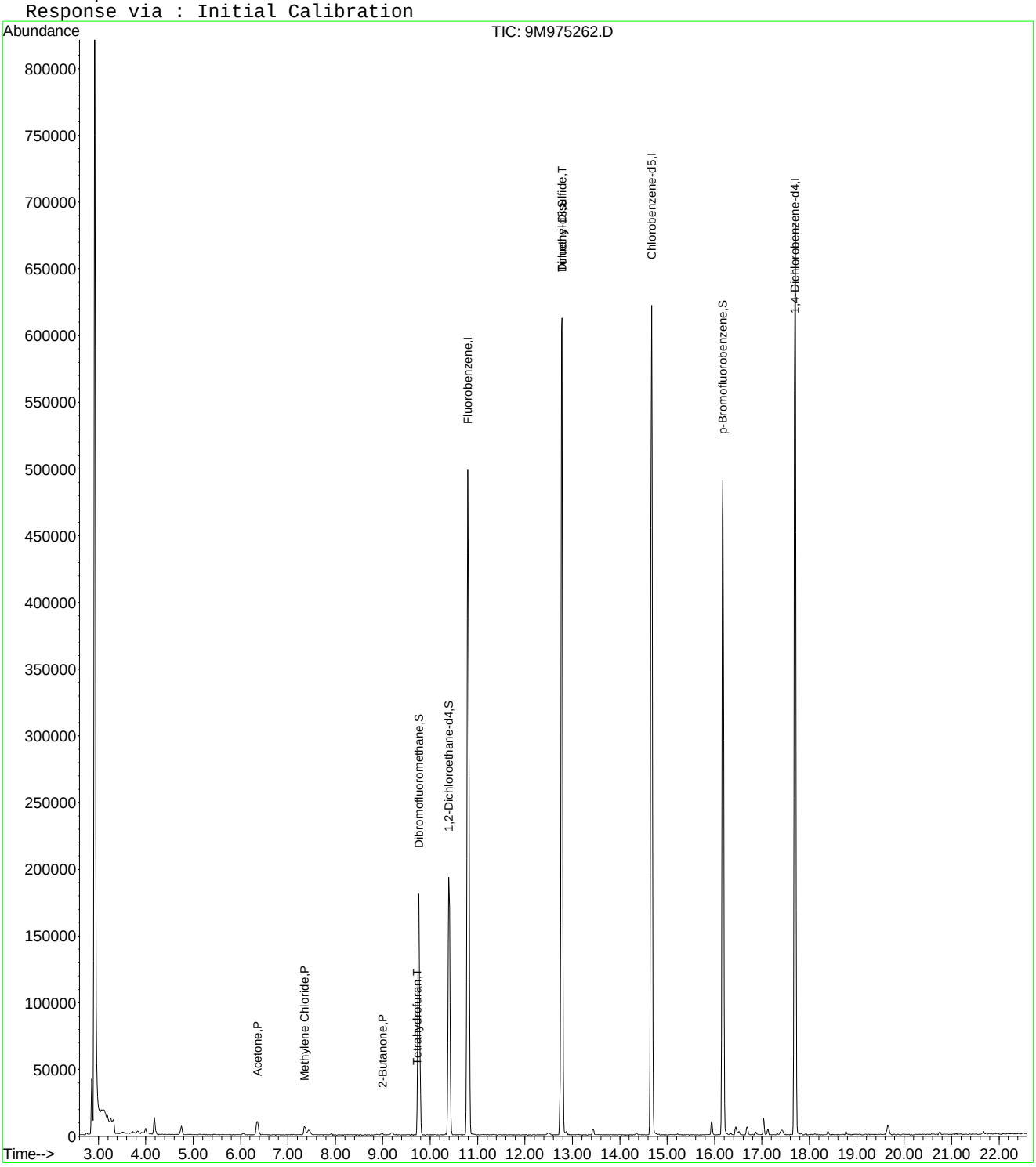

9M975262.D 8260S.M Tue Jul 12 15:03:14 2016 Page 2

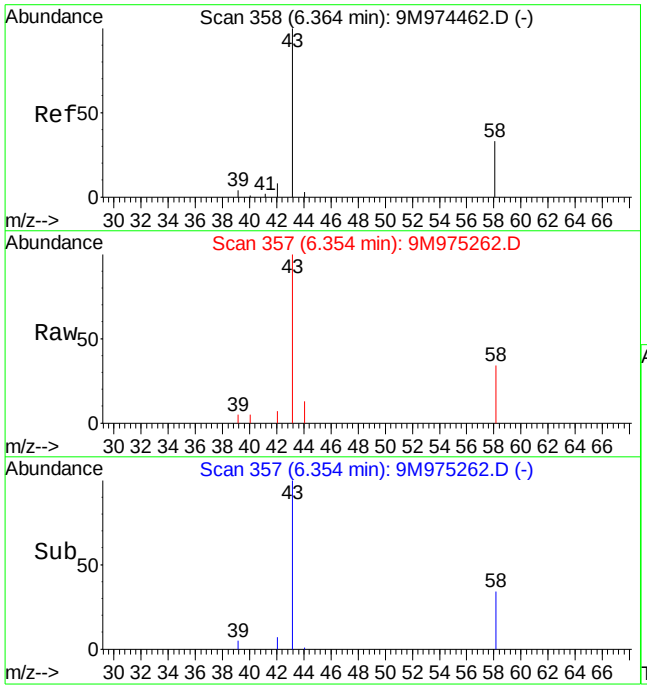

#13
Acetone
Concen: 14.04 ug/kg
RT: 6.35 min Scan# 357
Delta R.T. -0.01 min
Lab File: 9M975262.D
Acq: 6 Jul 2016 20:42

Tgt Ion: 43 Resp: 20343

Ion	Ratio	Lower	Upper
43	100		
58	41.4	19.9	46.3

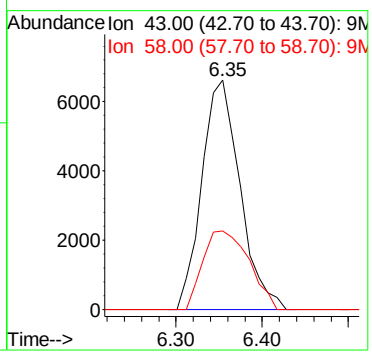

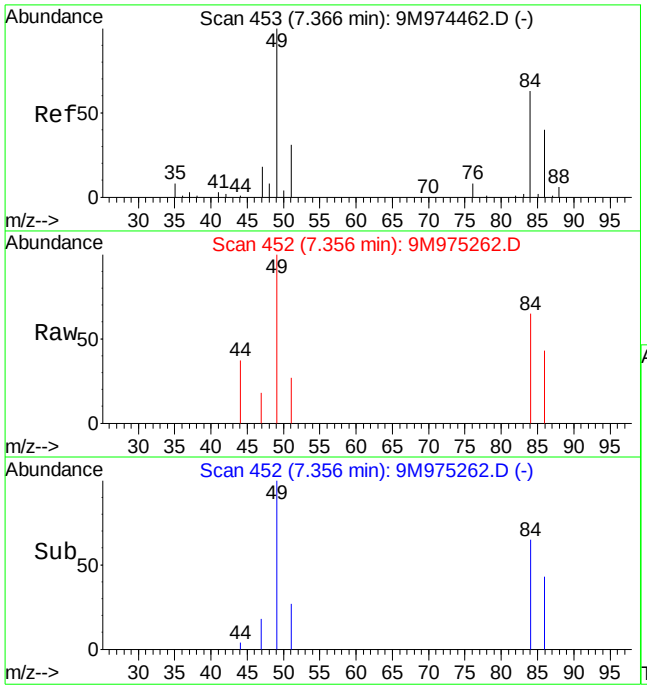

#19
Methylene Chloride
Concen: 1.15 ug/kg
RT: 7.36 min Scan# 452
Delta R.T. -0.01 min
Lab File: 9M975262.D
Acq: 6 Jul 2016 20:42

Tgt Ion: 84 Resp: 4236

Ion	Ratio	Lower	Upper
84	100		
49	158.8	93.2	217.4

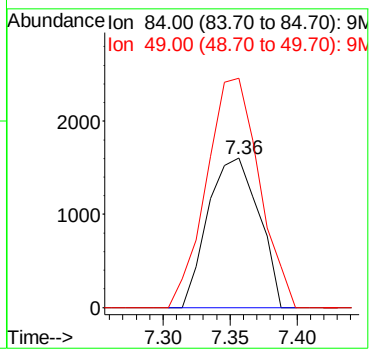

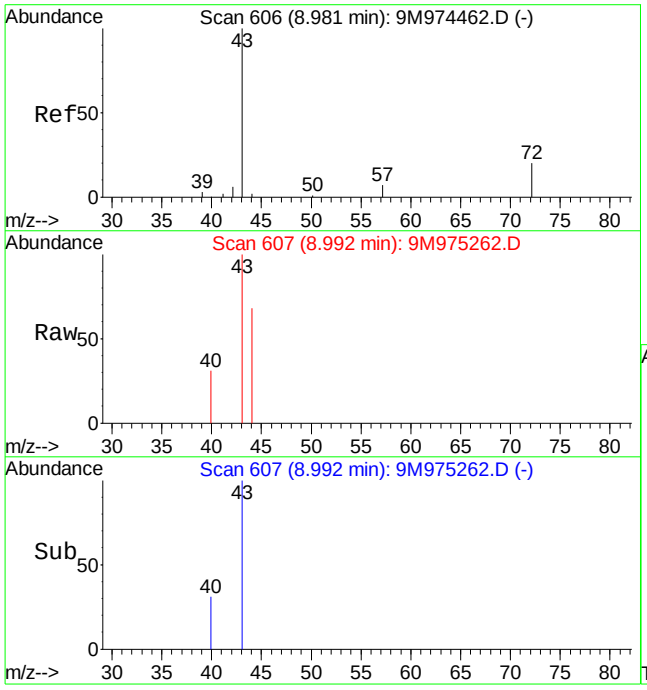

#29
2-Butanone
Concen: 1.63 ug/kg
RT: 8.99 min Scan# 607
Delta R.T. 0.00 min
Lab File: 9M975262.D
Acq: 6 Jul 2016 20:42

Tgt Ion: 43 Resp: 2991

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.5	29.3#

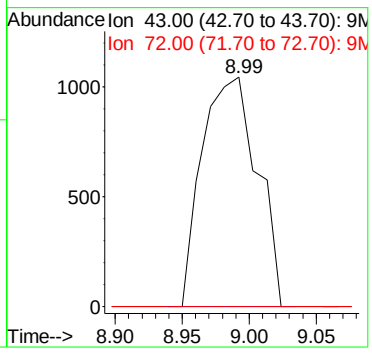

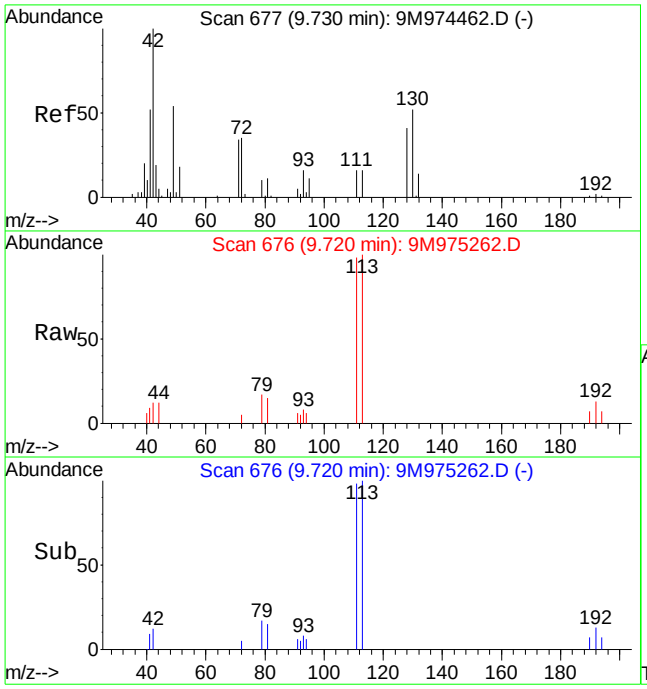

#36
Tetrahydrofuran
Concen: 1.44 ug/kg
RT: 9.72 min Scan# 676
Delta R.T. -0.02 min
Lab File: 9M975262.D
Acq: 6 Jul 2016 20:42

Tgt Ion: 42 Resp: 1824

Ion	Ratio	Lower	Upper
42	100		
72	10.6	21.8	50.8#
71	11.3	20.7	48.3#

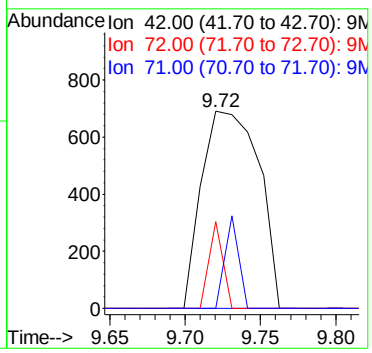

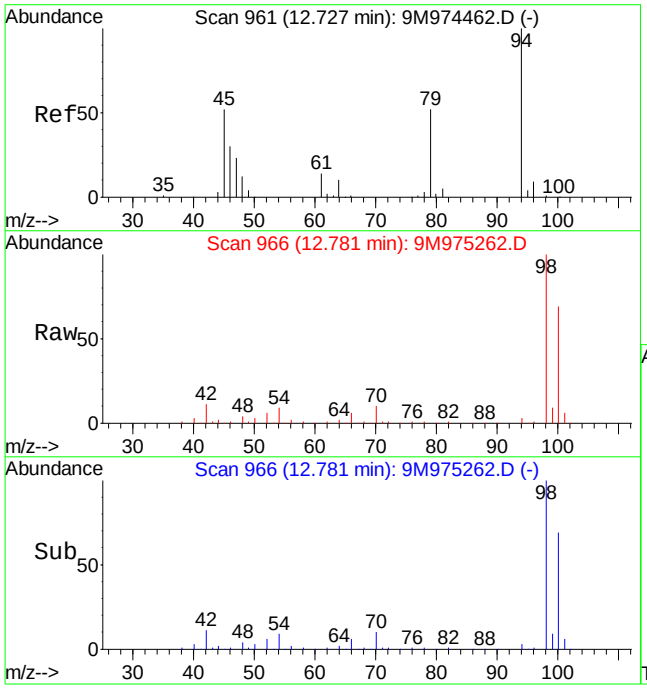

#56
Dimethyl Disulfide
Concen: 3.74 ug/kg
RT: 12.78 min Scan# 966
Delta R.T. 0.06 min
Lab File: 9M975262.D
Acq: 6 Jul 2016 20:42

Tgt Ion: 94 Resp: 16240

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.5	66.5#

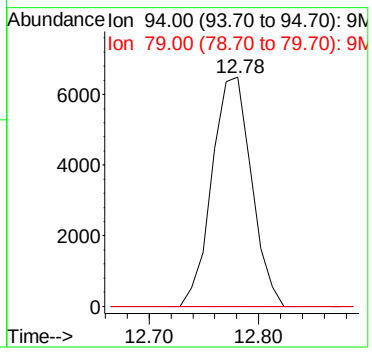

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972472.D Vial: 3
Acq On : 25 Jan 2016 11:22 Operator: FJB
Sample : WG555000-02 5ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:05 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	367739	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	266763	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.77	152	148882	50.00 ug/kg	0.01

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	1974	5.3580 ug/kg#	1
3) 3-Chloro-1-propene	7.23	41	18322	5.0468 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	19639	4.7564 ug/kg	98
5) Ethyl Acetate	9.24	43	12755	5.2595 ug/kg	91
6) Methacrylonitrile	9.40	67	3744	4.7691 ug/kg	95
7) Isobutyl Alcohol	9.42	43	1055	12.9700 ug/kg#	62
8) 1-Butanol	10.36	56	203	11.8711 ug/kg#	26
9) Methyl methacrylate	11.56	41	8689	4.6908 ug/kg	95
10) 2-Nitropropane	11.90	43	2531	4.2058 ug/kg	96

(#) = qualifier out of range (m) = manual integration
9M972472.D A9FOO_SL.M Wed Jan 27 11:22:42 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972472.D Vial: 3
Acq On : 25 Jan 2016 11:22 Operator: FJB
Sample : WG555000-02 5ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

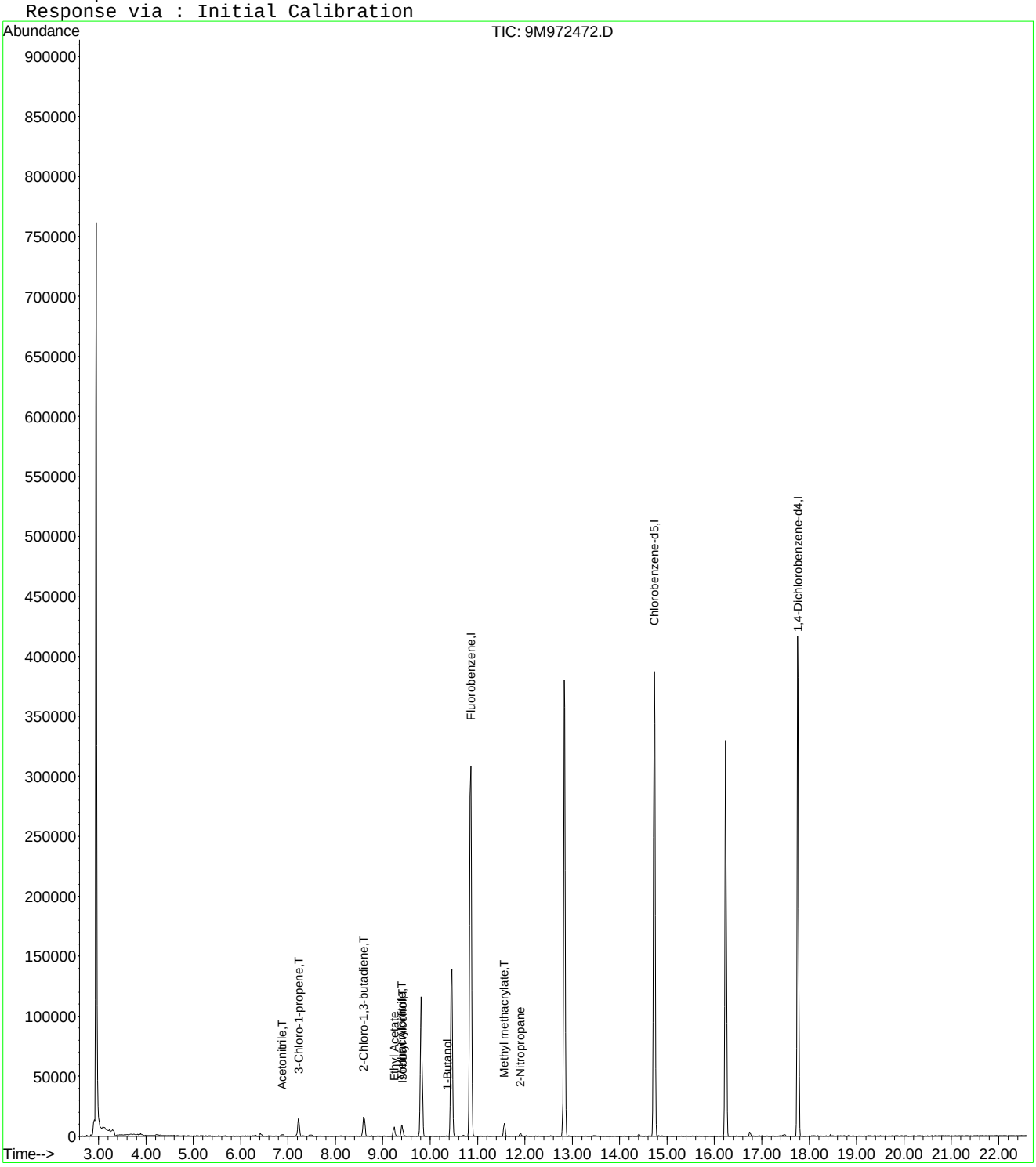

9M972472.D A9FOO_SL.M Wed Jan 27 11:22:42 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972473.D Vial: 4
Acq On : 25 Jan 2016 11:52 Operator: FJB
Sample : WG555000-03 20ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:05 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	359691	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	265773	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	149223	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	7669	21.2815 ug/kg#	77
3) 3-Chloro-1-propene	7.23	41	75360	21.2224 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	82865	20.5181 ug/kg	100
5) Ethyl Acetate	9.23	43	47912	20.1986 ug/kg	97
6) Methacrylonitrile	9.40	67	15740	20.4980 ug/kg	98
7) Isobutyl Alcohol	9.42	43	5287	37.9280 ug/kg	95
8) 1-Butanol	10.35	56	1509	22.3153 ug/kg#	81
9) Methyl methacrylate	11.56	41	35437	19.5588 ug/kg	98
10) 2-Nitropropane	11.90	43	10433	17.7247 ug/kg	98
12) Cyclohexanone	16.01	55	2157	16.3929 ug/kg#	86

(#) = qualifier out of range (m) = manual integration
9M972473.D A9FOO_SL.M Wed Jan 27 11:22:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972473.D Vial: 4
Acq On : 25 Jan 2016 11:52 Operator: FJB
Sample : WG555000-03 20ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

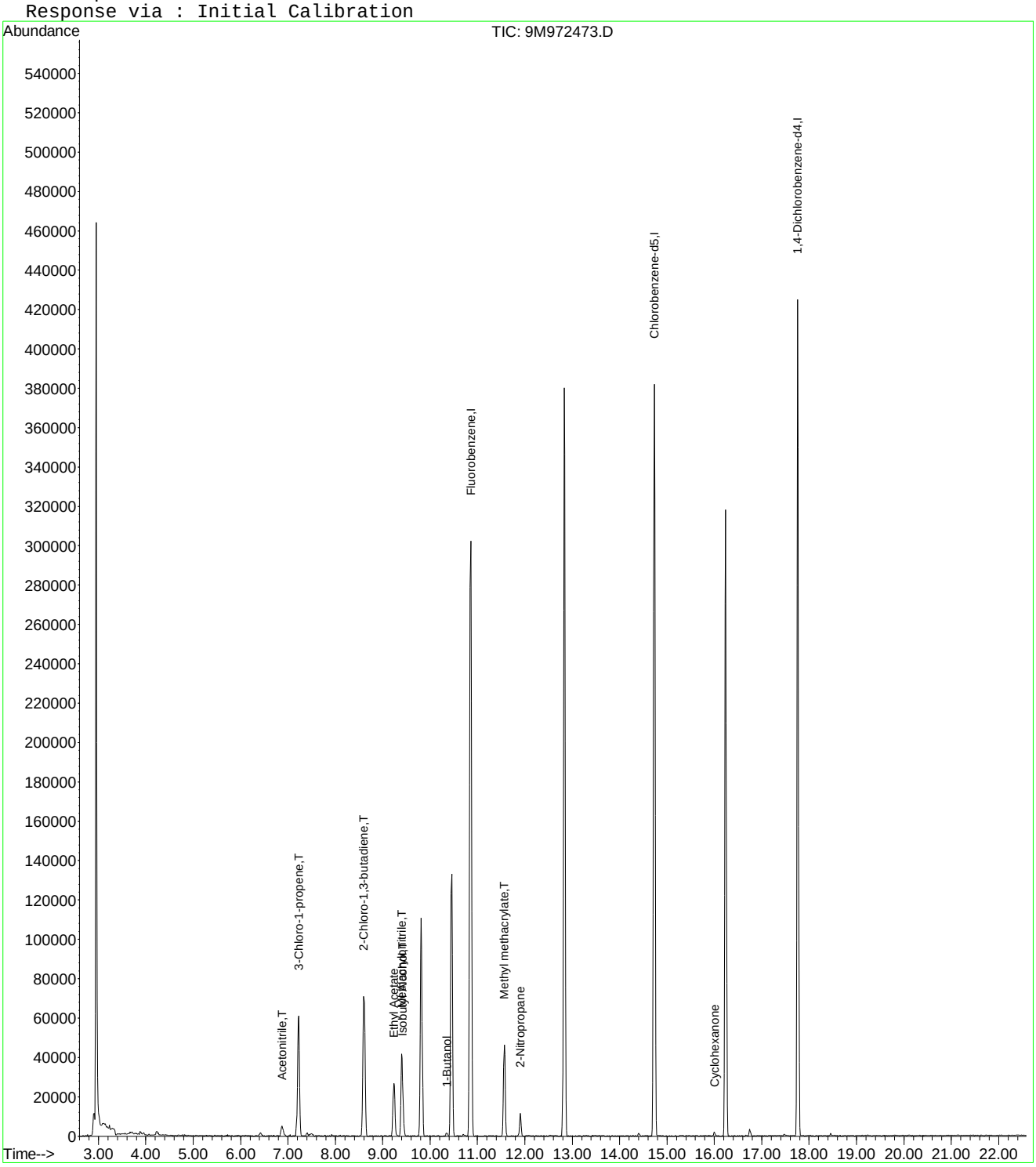

9M972473.D A9FOO_SL.M Wed Jan 27 11:22:46 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972474.D Vial: 5
Acq On : 25 Jan 2016 12:23 Operator: FJB
Sample : WG555000-04 50ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:06 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	356886	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	259679	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	147334	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	16583	46.3795 ug/kg#	94
3) 3-Chloro-1-propene	7.23	41	160601	45.5828 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.61	53	185316	46.2464 ug/kg	99
5) Ethyl Acetate	9.23	43	111538	47.3915 ug/kg	99
6) Methacrylonitrile	9.40	67	36081	47.3572 ug/kg	99
7) Isobutyl Alcohol	9.42	43	12624	81.5447 ug/kg	95
8) 1-Butanol	10.35	56	4707	48.0983 ug/kg#	50
9) Methyl methacrylate	11.56	41	82406	45.8400 ug/kg	99
10) 2-Nitropropane	11.90	43	26302	45.0359 ug/kg	97
12) Cyclohexanone	16.01	55	5625	43.7525 ug/kg	93

(#) = qualifier out of range (m) = manual integration
9M972474.D A9FOO_SL.M Wed Jan 27 11:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972474.D Vial: 5
Acq On : 25 Jan 2016 12:23 Operator: FJB
Sample : WG555000-04 50ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

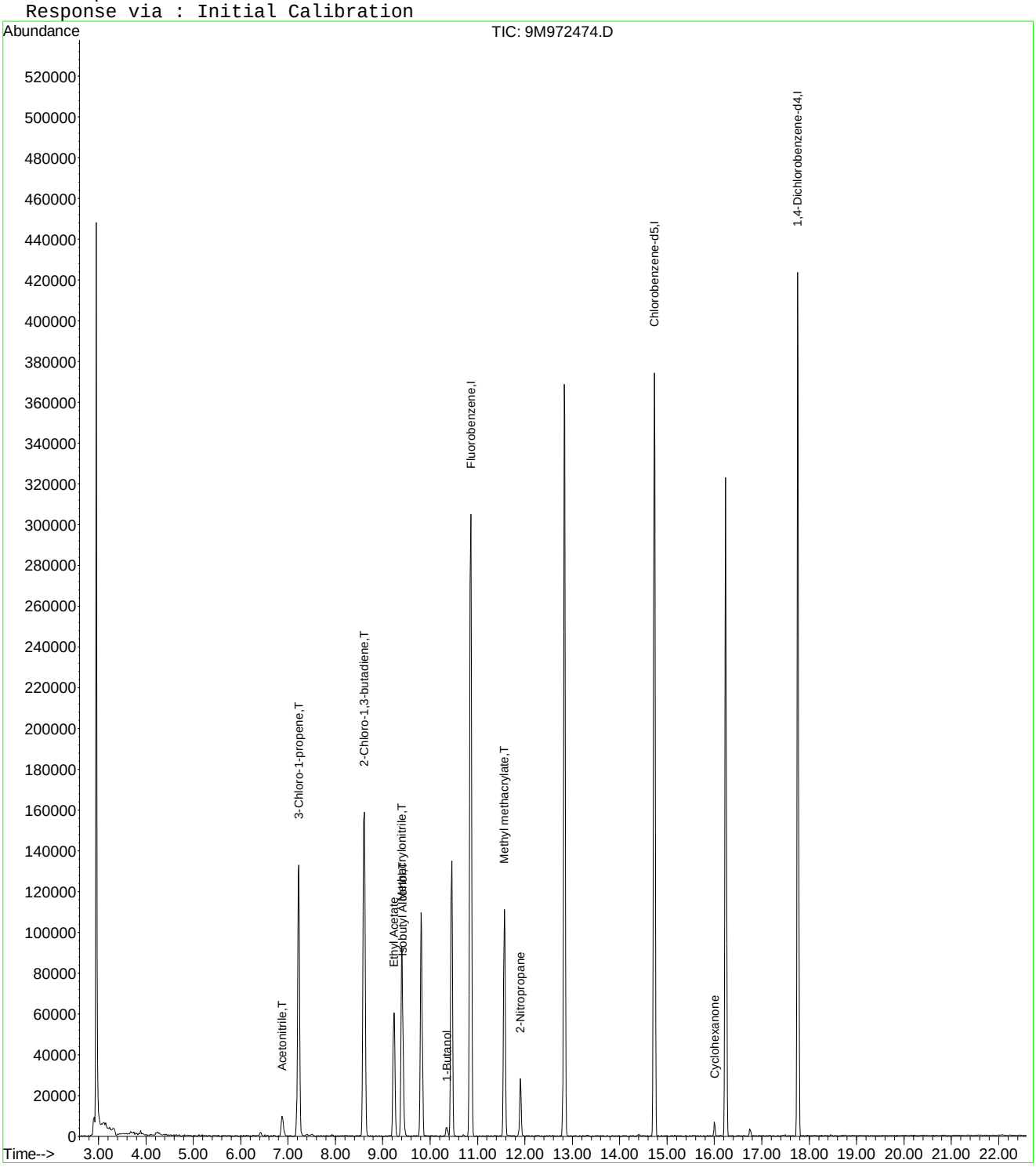

9M972474.D A9FOO_SL.M Wed Jan 27 11:22:51 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972475.D Vial: 6
Acq On : 25 Jan 2016 12:53 Operator: FJB
Sample : WG555000-05 100ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:06 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	394669	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	285851	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	161505	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	37767	95.5151	ug/kg#	100
3) 3-Chloro-1-propene	7.23	41	409870	105.1952	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.61	53	467514	105.5010	ug/kg	100
5) Ethyl Acetate	9.23	43	267513	102.7824	ug/kg	100
6) Methacrylonitrile	9.40	67	88054	104.5088	ug/kg	100
7) Isobutyl Alcohol	9.42	43	33721	187.1766	ug/kg	100
8) 1-Butanol	10.36	56	11671	95.0627	ug/kg	100
9) Methyl methacrylate	11.56	41	209503	105.3834	ug/kg	100
10) 2-Nitropropane	11.90	43	65435	101.3157	ug/kg	100
12) Cyclohexanone	16.01	55	14062	99.3630	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972475.D A9FOO_SL.M Wed Jan 27 11:22:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972475.D Vial: 6
Acq On : 25 Jan 2016 12:53 Operator: FJB
Sample : WG555000-05 100ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

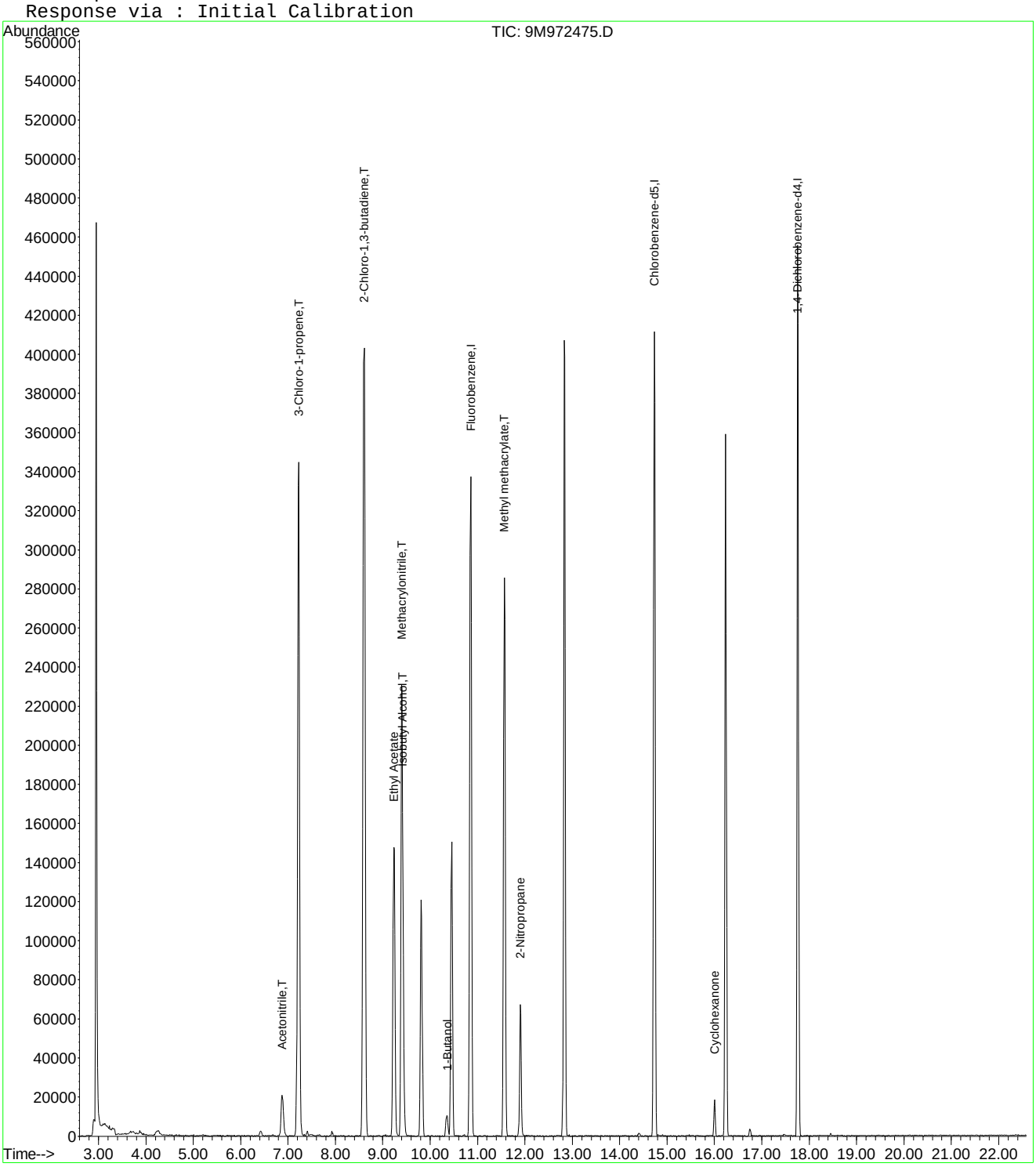

9M972475.D A9FOO_SL.M Wed Jan 27 11:22:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972476.D Vial: 7
Acq On : 25 Jan 2016 13:23 Operator: FJB
Sample : WG555000-06 200ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 09:51:10 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	361792	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	264283	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	150478	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.87	41	75099	207.1896	ug/kg#	94
3) 3-Chloro-1-propene	7.22	41	743262	208.0969	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	846271	208.3269	ug/kg	100
5) Ethyl Acetate	9.23	43	489855	205.3125	ug/kg	100
6) Methacrylonitrile	9.40	67	159879	206.9995	ug/kg	100
7) Isobutyl Alcohol	9.42	43	68551	406.6640	ug/kg	99
8) 1-Butanol	10.35	56	24111	201.3375	ug/kg	97
9) Methyl methacrylate	11.57	41	382820	210.0636	ug/kg	99
10) 2-Nitropropane	11.90	43	129000	217.8866	ug/kg	95
12) Cyclohexanone	16.00	55	30065	229.7785	ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972476.D A9FOO_SL.M Wed Jan 27 09:51:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972476.D Vial: 7
Acq On : 25 Jan 2016 13:23 Operator: FJB
Sample : WG555000-06 200ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 9:51 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

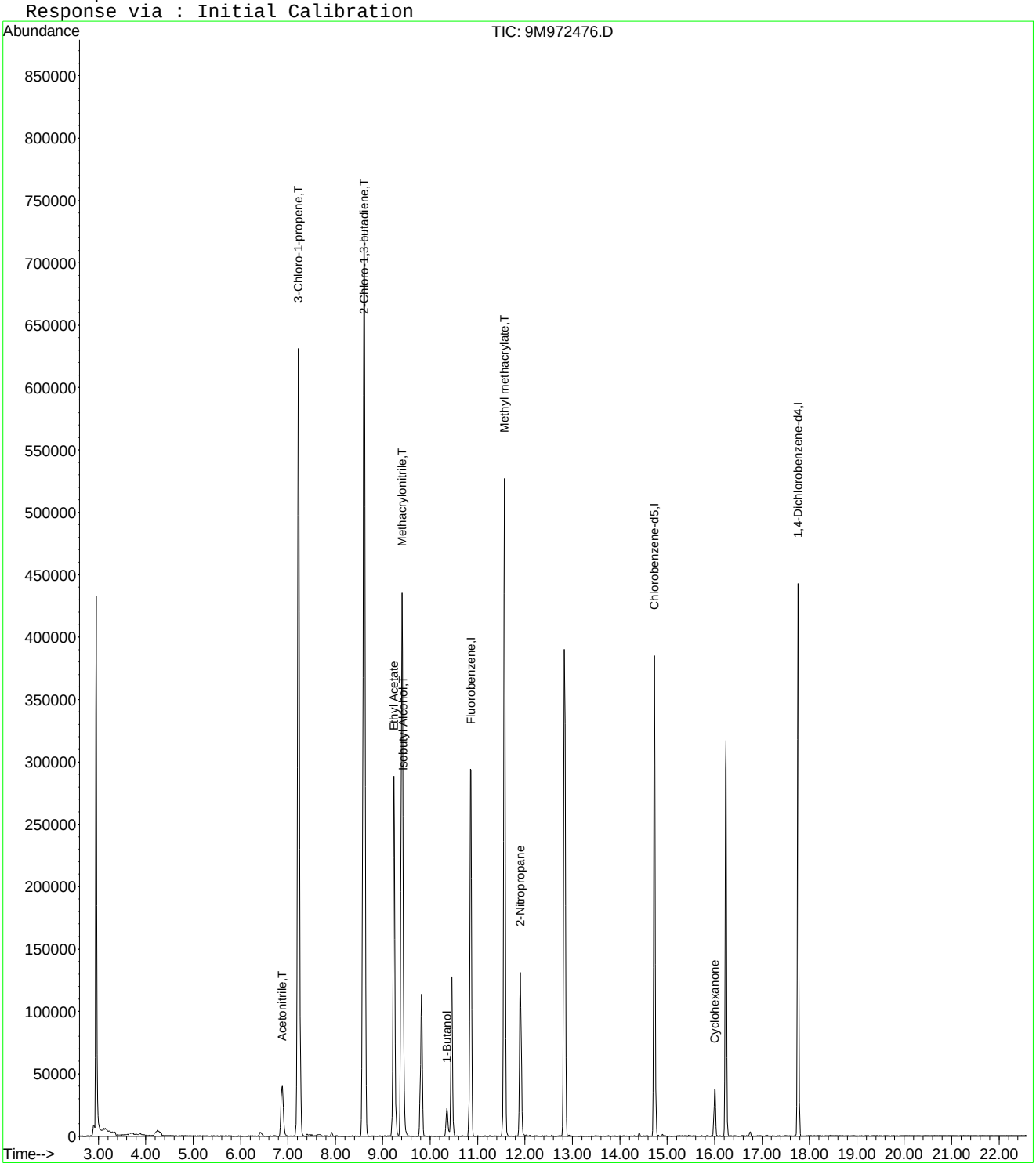

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972477.D Vial: 8
Acq On : 25 Jan 2016 13:54 Operator: FJB
Sample : WG555000-07 300ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:07 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.85	96	362779	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	265659	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	153468	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	99618	274.0870	ug/kg#	97
3) 3-Chloro-1-propene	7.22	41	944879	263.8255	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	1107217	271.8226	ug/kg	99
5) Ethyl Acetate	9.24	43	652386	272.6900	ug/kg	99
6) Methacrylonitrile	9.40	67	208153	268.7679	ug/kg	98
7) Isobutyl Alcohol	9.43	43	89707	528.6093	ug/kg#	99
8) 1-Butanol	10.35	56	31640	260.3131	ug/kg	98
9) Methyl methacrylate	11.57	41	502506	274.9883	ug/kg	98
10) 2-Nitropropane	11.90	43	172692	290.8907	ug/kg	95
12) Cyclohexanone	16.00	55	36951	280.9436	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972477.D A9FOO_SL.M Wed Jan 27 11:23:05 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972477.D Vial: 8
Acq On : 25 Jan 2016 13:54 Operator: FJB
Sample : WG555000-07 300ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

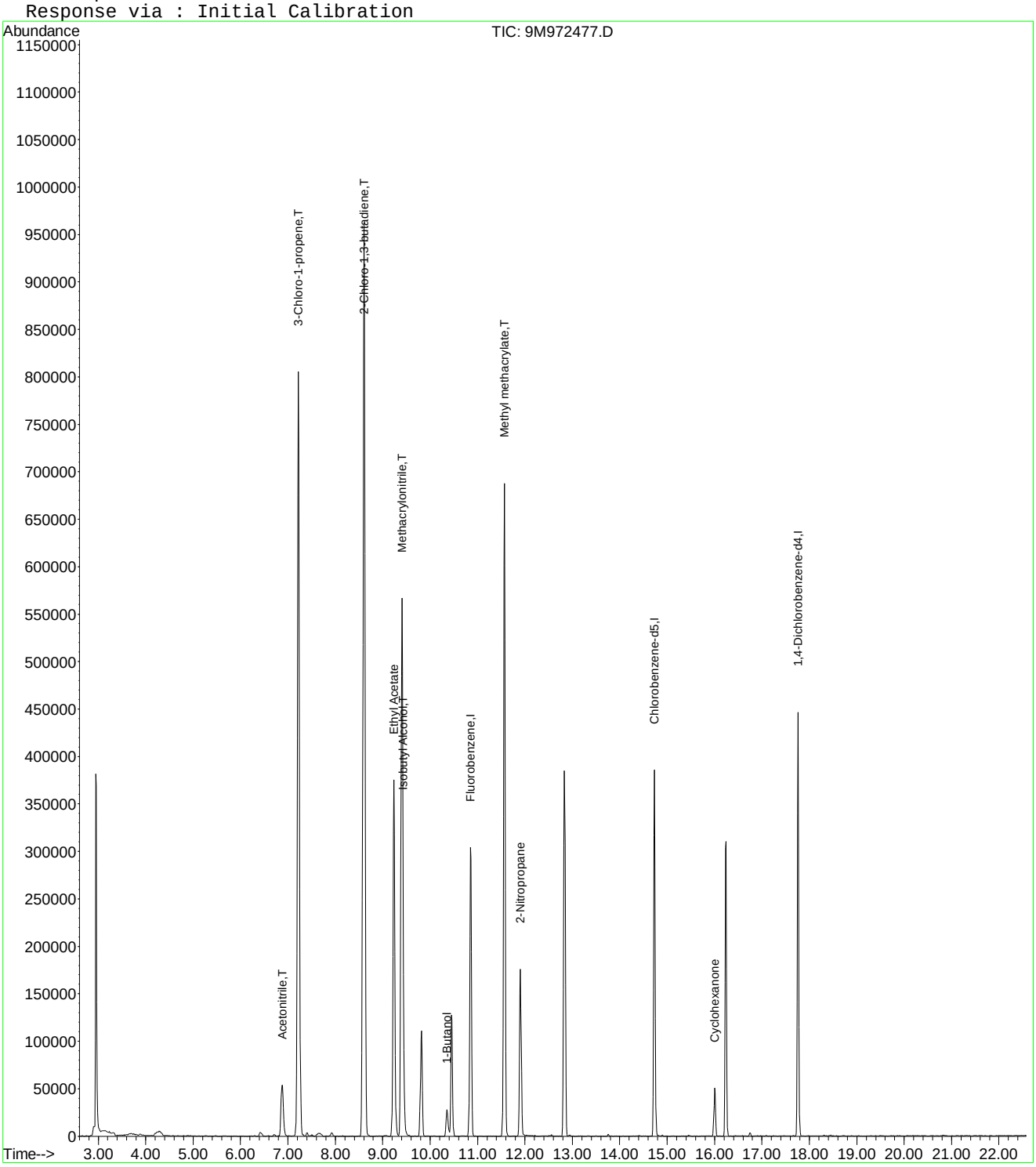

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972478.D Vial: 9
Acq On : 25 Jan 2016 14:25 Operator: FJB
Sample : WG555000-08 400ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 09:51:10 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	359343	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	261674	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	149058	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.89	41	148074	411.3034	ug/kg#	96
3) 3-Chloro-1-propene	7.22	41	1457717	410.9100	ug/kg	99
4) 2-Chloro-1,3-butadiene	8.61	53	1703971	422.3261	ug/kg	100
5) Ethyl Acetate	9.23	43	980479	413.7480	ug/kg	100
6) Methacrylonitrile	9.40	67	321602	419.2243	ug/kg	99
7) Isobutyl Alcohol	9.43	43	142361	842.7355	ug/kg#	98
8) 1-Butanol	10.36	56	51732	422.9922	ug/kg	99
9) Methyl methacrylate	11.56	41	779879	430.8570	ug/kg	98
10) 2-Nitropropane	11.90	43	267565	455.0088	ug/kg	96
12) Cyclohexanone	16.01	55	56623	437.0688	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972478.D A9FOO_SL.M Wed Jan 27 09:51:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972478.D Vial: 9
Acq On : 25 Jan 2016 14:25 Operator: FJB
Sample : WG555000-08 400ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 9:51 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

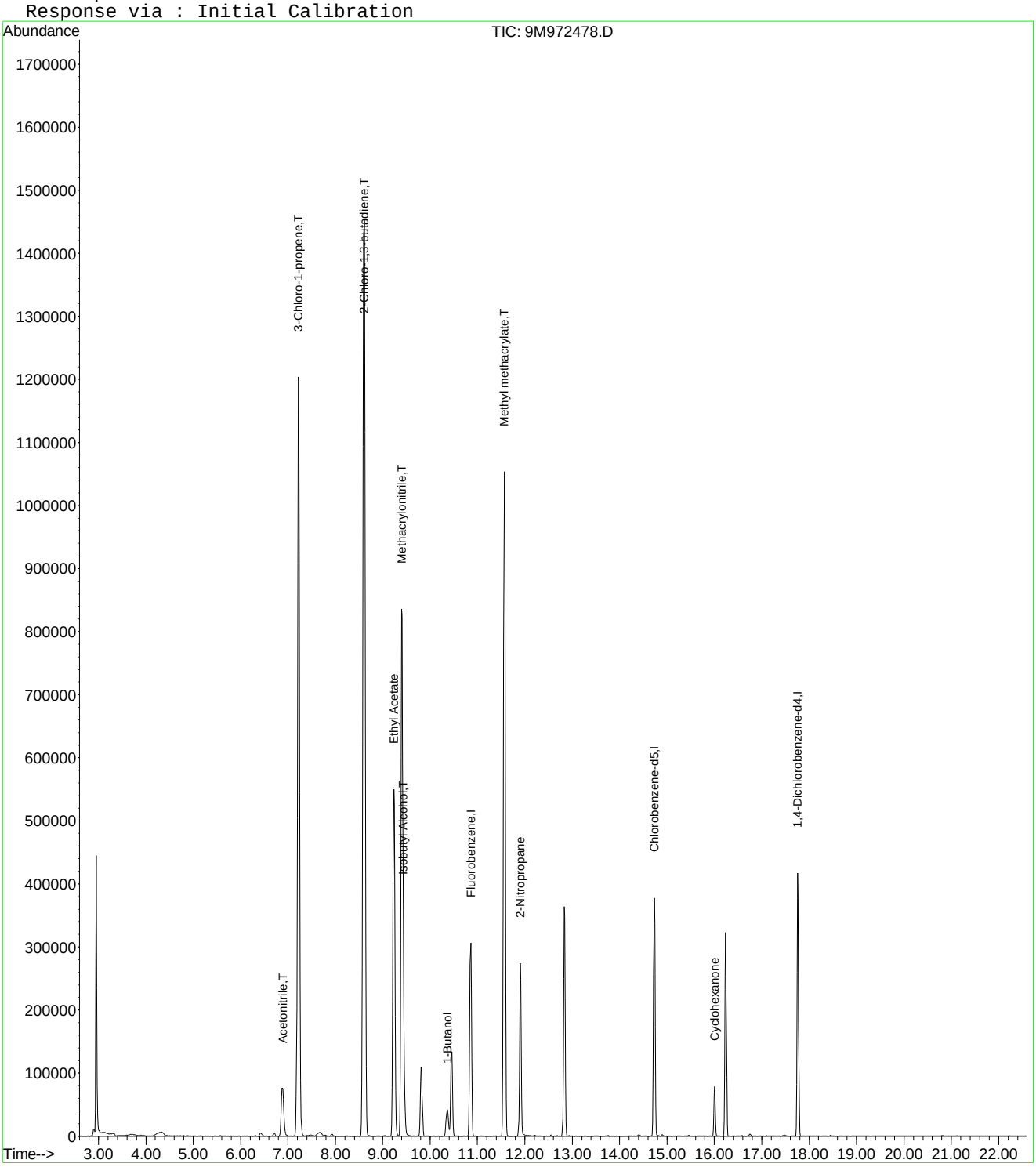

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972479.D Vial: 10
Acq On : 25 Jan 2016 14:56 Operator: FJB
Sample : WG555000-09 500ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:08 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	364474	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	266311	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	151707	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	196334	537.6773	ug/kg#	94
3) 3-Chloro-1-propene	7.22	41	1832802	509.3680	ug/kg	99
4) 2-Chloro-1,3-butadiene	8.60	53	2126710	519.6807	ug/kg	100
5) Ethyl Acetate	9.23	43	1255294	522.2587	ug/kg	100
6) Methacrylonitrile	9.40	67	408537	525.0513	ug/kg	100
7) Isobutyl Alcohol	9.43	43	180610	1052.3719	ug/kg	98
8) 1-Butanol	10.36	56	64789	519.8809	ug/kg	97
9) Methyl methacrylate	11.56	41	981460	534.5904	ug/kg	100
10) 2-Nitropropane	11.90	43	346571	581.0659	ug/kg	97
12) Cyclohexanone	16.01	55	74733	566.8143	ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972479.D A9FOO_SL.M Wed Jan 27 11:30:29 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972479.D Vial: 10
Acq On : 25 Jan 2016 14:56 Operator: FJB
Sample : WG555000-09 500ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

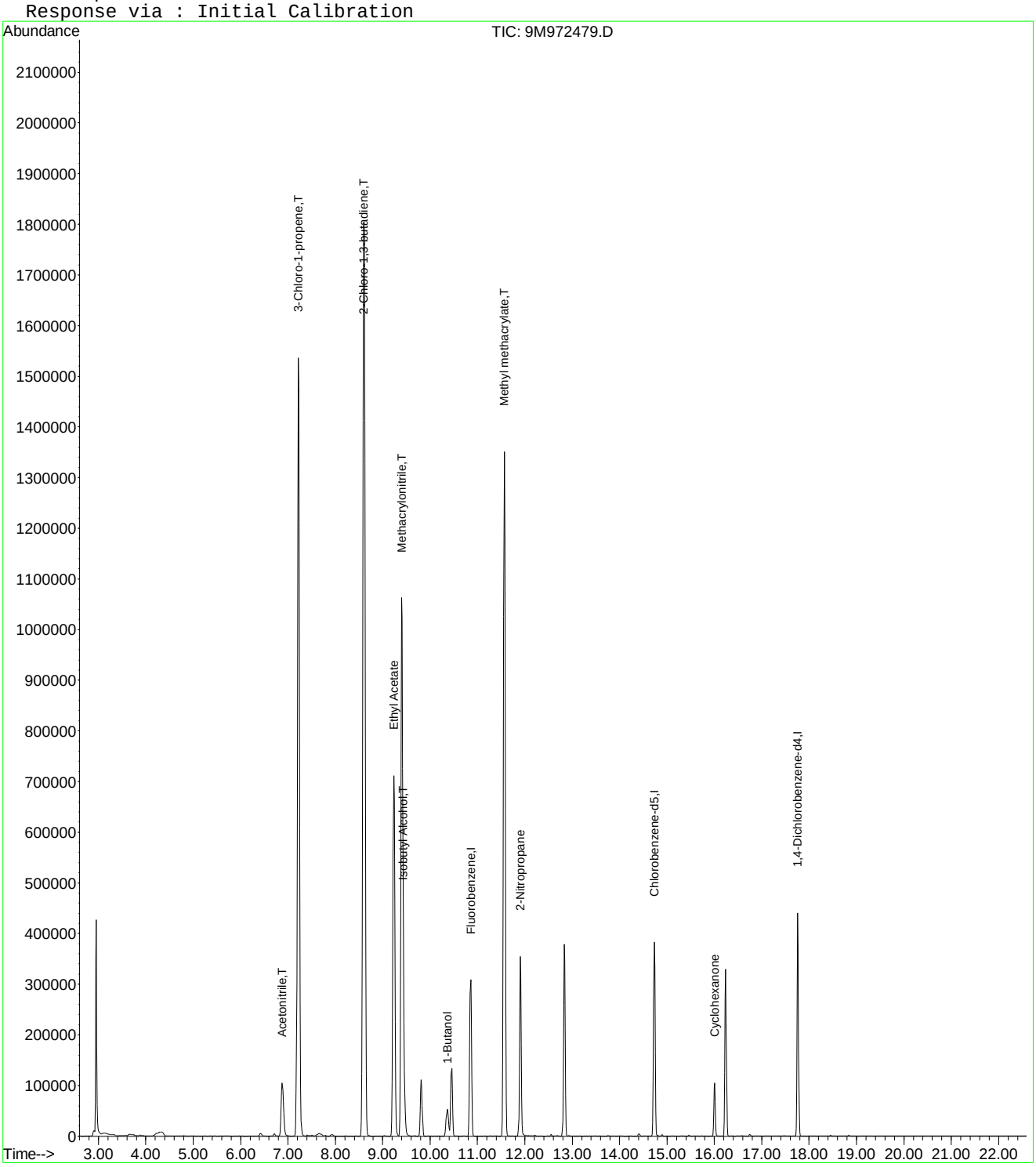

9M972479.D A9FOO_SL.M Wed Jan 27 11:30:29 2016 Page 2

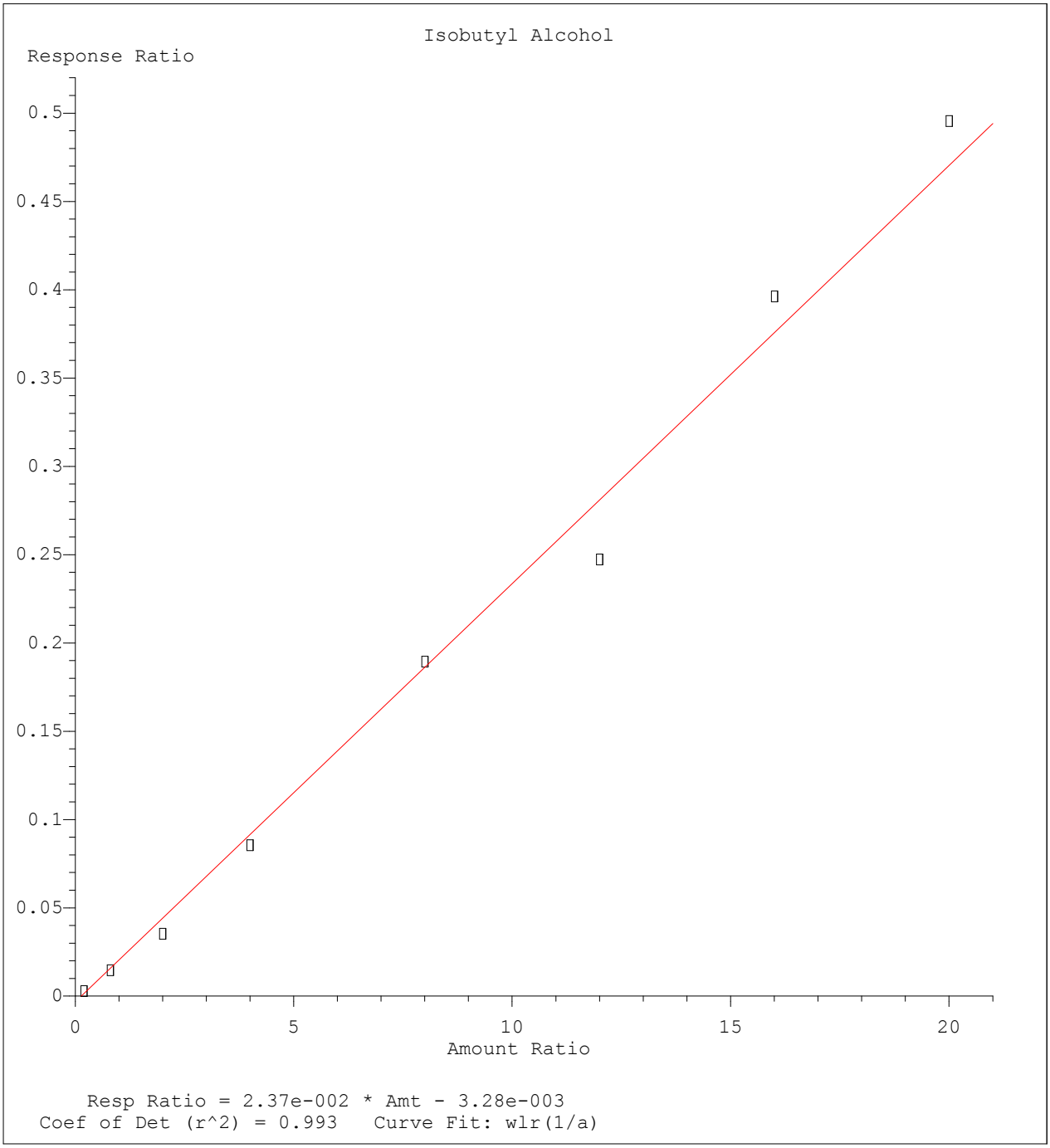

Method Name: C:\MSDCHEM\1\METHODS\A9FOO_SL.M
Calibration Table Last Updated: Wed Jan 27 09:49:02 2016

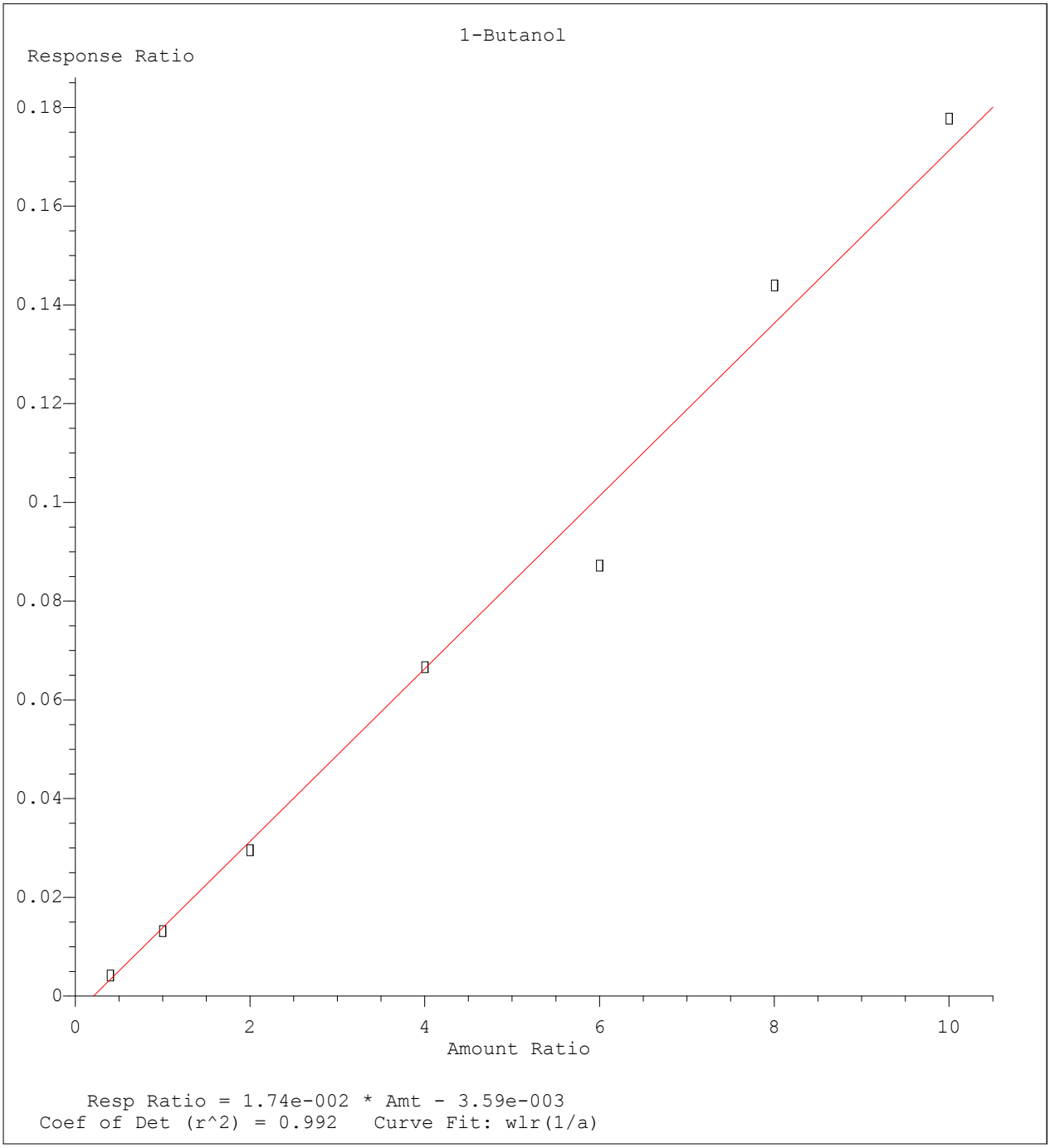

Method Name: C:\MSDCHEM\1\METHODS\A9FOO_SL.M
Calibration Table Last Updated: Wed Jan 27 09:49:02 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:09 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	394765	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	285754	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	159586	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	40054	101.2745 ug/kg#	100
3) 3-Chloro-1-propene	7.22	41	402890	103.3786 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	572568	129.1764 ug/kg	99
5) Ethyl Acetate	9.23	43	275962	106.0028 ug/kg	99
6) Methacrylonitrile	9.40	67	90289	107.1354 ug/kg	96
7) Isobutyl Alcohol	9.42	43	34031	188.7895 ug/kg	99
8) 1-Butanol	10.35	56	12038	97.7072 ug/kg	97
9) Methyl methacrylate	11.56	41	219363	110.3163 ug/kg	100
10) 2-Nitropropane	11.90	43	69288	107.2554 ug/kg	93
12) Cyclohexanone	16.01	55	14203	100.3934 ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972481.D A9FOO_SL.M Wed Jan 27 11:15:09 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

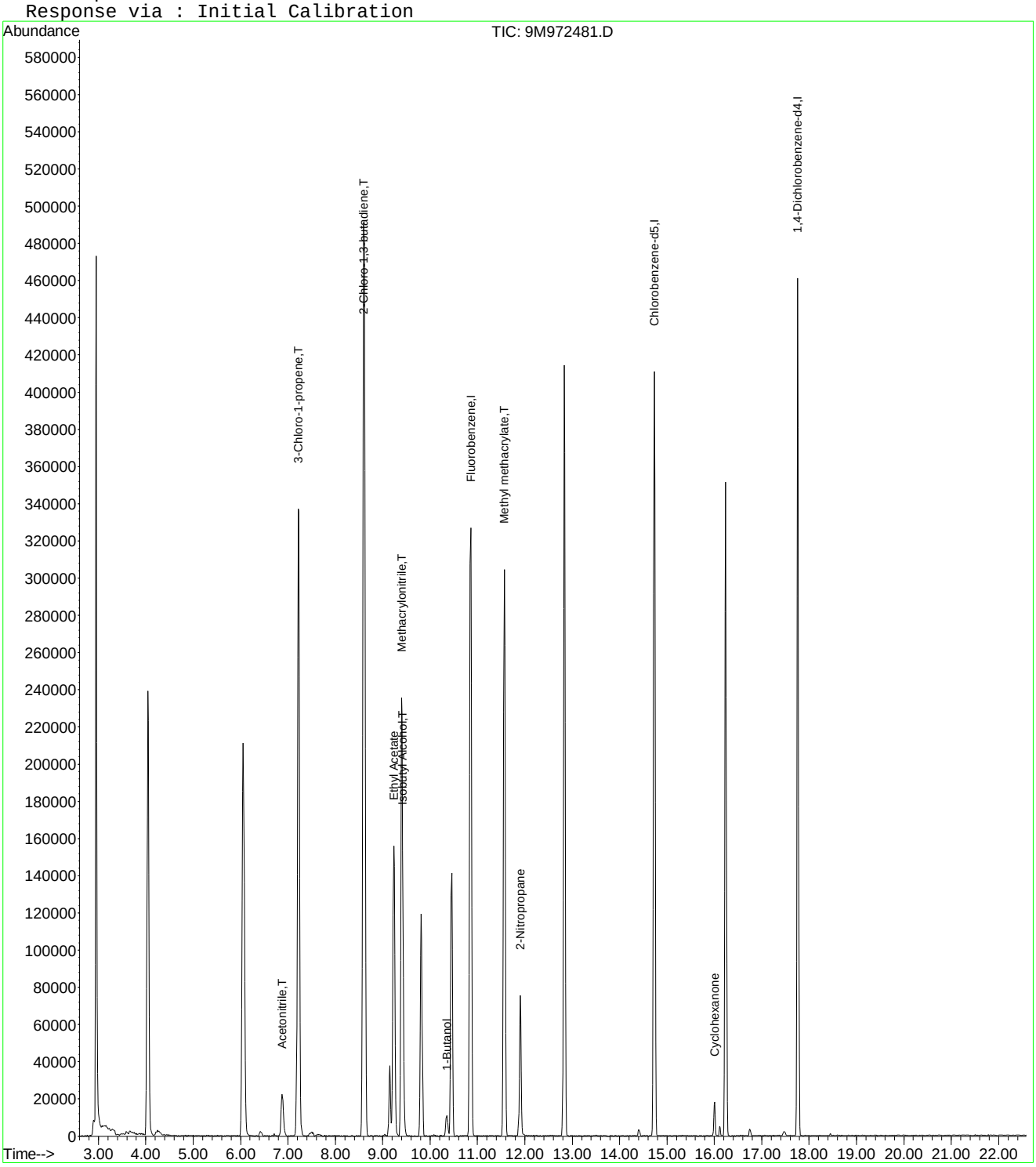

9M972481.D A9FOO_SL.M Wed Jan 27 11:15:09 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	101.2745	-1.3	106	0.00
3	T	3-Chloro-1-propene	100.0000	103.3786	-3.4	98	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	129.1764	-29.2	122	0.00
5		Ethyl Acetate	100.0000	106.0028	-6.0	103	0.00
6	T	Methacrylonitrile	100.0000	107.1354	-7.1	103	0.00
7	T	Isobutyl Alcohol	200.0000	188.7895	5.6	101	0.00
8		1-Butanol	100.0000	97.7072	2.3	103	0.00
9	T	Methyl methacrylate	100.0000	110.3163	-10.3	105	0.00
10		2-Nitropropane	100.0000	107.2554	-7.3	106	0.00
11	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
12		Cyclohexanone	100.0000	100.3934	-0.4	101	0.00
13	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	99	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972481.D A9FOO_SL.M Wed Jan 27 11:32:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974889.D Vial: 4
Acq On : 21 Jun 2016 8:40 Operator: ADC
Sample : WG573367-04 2.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:44:44 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.80	96	698795	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.68	117	540791	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.70	152	268867	50.00 ug/kg	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.77	111	7681	1.9934 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	3.98%#	
43) 1,2-Dichloroethane-d4	10.40	65	8145	1.9883 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	3.98%#	
58) Toluene-d8	12.79	98	27868	2.0806 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	4.16%#	
79) p-Bromofluorobenzene	16.18	95	11958	2.4356 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	4.88%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.26	85	9565	1.7469 ug/kg	96
3) Chloromethane	3.72	50	9979	2.0623 ug/kg	93
4) Vinyl Chloride	3.96	62	6403	1.8844 ug/kg	95
5) 1,3-Butadiene	4.01	54	3508	2.0879 ug/kg	84
6) Bromomethane	4.85	94	5879	1.9137 ug/kg	97
7) Chloroethane	5.01	64	5270	1.8886 ug/kg	84
8) Trichlorofluoromethane	5.50	101	12323	1.9543 ug/kg#	92
9) Diethyl ether	6.02	59	83903	24.8751 ug/kg	99
10) Isoprene	6.06	67	8672	1.9505 ug/kg	98
11) Acrolein	6.26	56	3147	12.4474 ug/kg	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	7035	1.8594 ug/kg	99
13) Acetone	6.36	43	8274	2.8711 ug/kg	86
14) 1,1-Dichloroethene	6.58	61	11530	1.9052 ug/kg	98
15) Tert-Butyl Alcohol	6.69	59	27926	45.2732 ug/kg	98
16) Dimethyl Sulfide	6.84	62	4613	1.8265 ug/kg	99
17) Iodomethane	7.10	142	2884	2.5668 ug/kg	81
18) Methyl acetate	7.11	43	7046	1.9768 ug/kg#	84
19) Methylene Chloride	7.36	84	8456	2.0671 ug/kg	90
20) Carbon Disulfide	7.41	76	24208	2.1165 ug/kg	99
21) Acrylonitrile	7.55	53	19451	11.8230 ug/kg	94
22) Methyl Tert Butyl Ether	7.58	73	20381	1.9449 ug/kg	96
23) trans-1,2-Dichloroethene	7.82	61	11149	1.9373 ug/kg	94
24) n-Hexane	7.89	57	14436	2.2458 ug/kg	97
25) Diisopropyl ether	8.23	45	334451	25.2643 ug/kg	99
26) Vinyl Acetate	8.40	43	13845	1.9381 ug/kg	91
27) 1,1-Dichloroethane	8.43	63	14641	2.0326 ug/kg	96
28) Ethyl-Tert-Butyl ether	8.80	59	310140	25.0822 ug/kg	99
29) 2-Butanone	8.99	43	3677	1.8023 ug/kg#	68
30) Propionitrile	9.10	54	14862	24.0566 ug/kg	90
31) 2,2-Dichloropropane	9.20	77	10406	1.9436 ug/kg	94
32) cis-1,2-Dichloroethene	9.27	96	8020	1.9415 ug/kg	88
33) Chloroform	9.47	83	12219	1.9683 ug/kg	96
34) 1-Bromopropane	9.62	122	1080	1.6744 ug/kg	94
35) Bromochloromethane	9.72	130	5541	2.0390 ug/kg	89
36) Tetrahydrofuran	9.74	42	34602	24.6345 ug/kg	99
38) 1,1,1-Trichloroethane	10.01	97	11031	1.9671 ug/kg	97
39) Cyclohexane	10.03	56	14031	1.9790 ug/kg	93
40) 1,1-Dichloropropene	10.20	75	9872	2.0222 ug/kg	99
41) Tert-Amyl-Methyl ether	10.31	73	247437	25.1178 ug/kg	99
42) Carbon Tetrachloride	10.35	117	10479	1.9263 ug/kg	98

(#) = qualifier out of range (m) = manual integration
9M974889.D 8260S.M Thu Jun 23 11:44:45 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974889.D Vial: 4
Acq On : 21 Jun 2016 8:40 Operator: ADC
Sample : WG573367-04 2.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:44:44 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.53	62	9469	1.8625 ug/kg	96
46)	Benzene	10.56	78	31691	2.1414 ug/kg	98
47)	Trichloroethene	11.31	130	8249	1.9029 ug/kg	93
48)	Methylcyclohexane	11.38	83	11602	1.9013 ug/kg	99
49)	1,2-Dichloropropane	11.53	63	7651	1.8918 ug/kg	95
50)	1,4-Dioxane	11.83	88	2353	38.0985 ug/kg	97
51)	Bromodichloromethane	11.83	83	9066	1.8473 ug/kg#	94
52)	Dibromomethane	11.92	174	4865	1.9009 ug/kg	97
53)	2-Chloroethyl Vinyl Ether	12.12	63	3374	2.4722 ug/kg	86
54)	4-Methyl-2-Pentanone	12.16	58	2496	1.4911 ug/kg#	71
55)	cis-1,3-Dichloropropene	12.46	75	10468	1.7921 ug/kg	94
56)	Dimethyl Disulfide	12.73	94	9953	2.5953 ug/kg	99
59)	Toluene	12.88	91	33633	2.1808 ug/kg	99
60)	Ethyl Methacrylate	12.98	69	7147	1.6245 ug/kg	89
61)	trans-1,3-Dichloropropene	13.05	75	8870	1.6936 ug/kg	98
62)	1,1,2-Trichloroethane	13.27	97	5930	1.8598 ug/kg	86
63)	2-Hexanone	13.21	43	4156	3.7368 ug/kg#	74
64)	1,3-Dichloropropane	13.58	76	10146	1.9032 ug/kg	97
65)	Tetrachloroethene	13.70	164	6469	1.9615 ug/kg	95
66)	Dibromochloromethane	13.97	129	7695	1.8278 ug/kg	96
67)	1,2-Dibromoethane	14.22	107	6501	1.8149 ug/kg	94
68)	1-Chlorohexane	14.31	91	9533	1.9819 ug/kg	97
69)	Chlorobenzene	14.73	112	23060	2.1007 ug/kg	78
70)	1,1,1,2-Tetrachloroethane	14.76	131	7507	1.9010 ug/kg	97
71)	Ethylbenzene	14.75	106	11751	2.0207 ug/kg	95
72)	m-,p-Xylene	14.84	106	29527	4.1101 ug/kg	99
73)	o-Xylene	15.41	106	13680	1.9669 ug/kg	98
74)	Styrene	15.45	104	22332	1.9241 ug/kg	98
75)	Bromoform	15.94	173	5010	1.7537 ug/kg	91
76)	Isopropylbenzene	15.83	105	35161	1.9699 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.05	83	8393	1.9366 ug/kg	98
80)	1,2,3-Trichloropropane	16.24	110	2431	1.8089 ug/kg#	12
81)	trans-1,4-Dichloro-2-Buten	16.28	53	2011	1.5546 ug/kg#	1
82)	n-Propylbenzene	16.33	91	42481	2.1953 ug/kg	100
83)	Bromobenzene	16.47	156	9238	1.9793 ug/kg	55
84)	1,3,5-Trimethylbenzene	16.52	105	34571	2.3524 ug/kg	97
85)	2-Chlorotoluene	16.61	91	24176	2.0669 ug/kg	88
86)	4-Chlorotoluene	16.66	91	25298	2.1313 ug/kg	82
87)	a-Methylstyrene	16.93	118	12736	1.8661 ug/kg	79
88)	tert-Butylbenzene	16.99	134	6448	2.0307 ug/kg	92
89)	1,2,4-Trimethylbenzene	17.04	105	44119	2.5124 ug/kg	94
90)	sec-Butylbenzene	17.25	105	39605	2.0540 ug/kg	97
91)	p-Isopropyltoluene	17.41	119	32589	2.0721 ug/kg	98
92)	1,3-Dichlorobenzene	17.61	146	18534	2.0543 ug/kg	97
93)	1,4-Dichlorobenzene	17.74	146	18909	2.0535 ug/kg	77
94)	n-Butylbenzene	17.94	91	29370	2.0432 ug/kg	99
95)	1,2-Dichlorobenzene	18.23	146	17093	1.9838 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.24	157	1804	2.4022 ug/kg	93
97)	1,2,4-Trichlorobenzene	20.38	180	13287	2.1139 ug/kg	100
98)	Hexachlorobutadiene	20.52	225	6712	2.1048 ug/kg	93
99)	Naphthalene	20.75	128	33349	2.0313 ug/kg	97
100)	1,2,3-Trichlorobenzene	21.05	180	12686	2.0621 ug/kg	96

(#) = qualifier out of range (m) = manual integration
9M974889.D 8260S.M Thu Jun 23 11:44:45 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974889.D Vial: 4
Acq On : 21 Jun 2016 8:40 Operator: ADC
Sample : WG573367-04 2.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:44 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

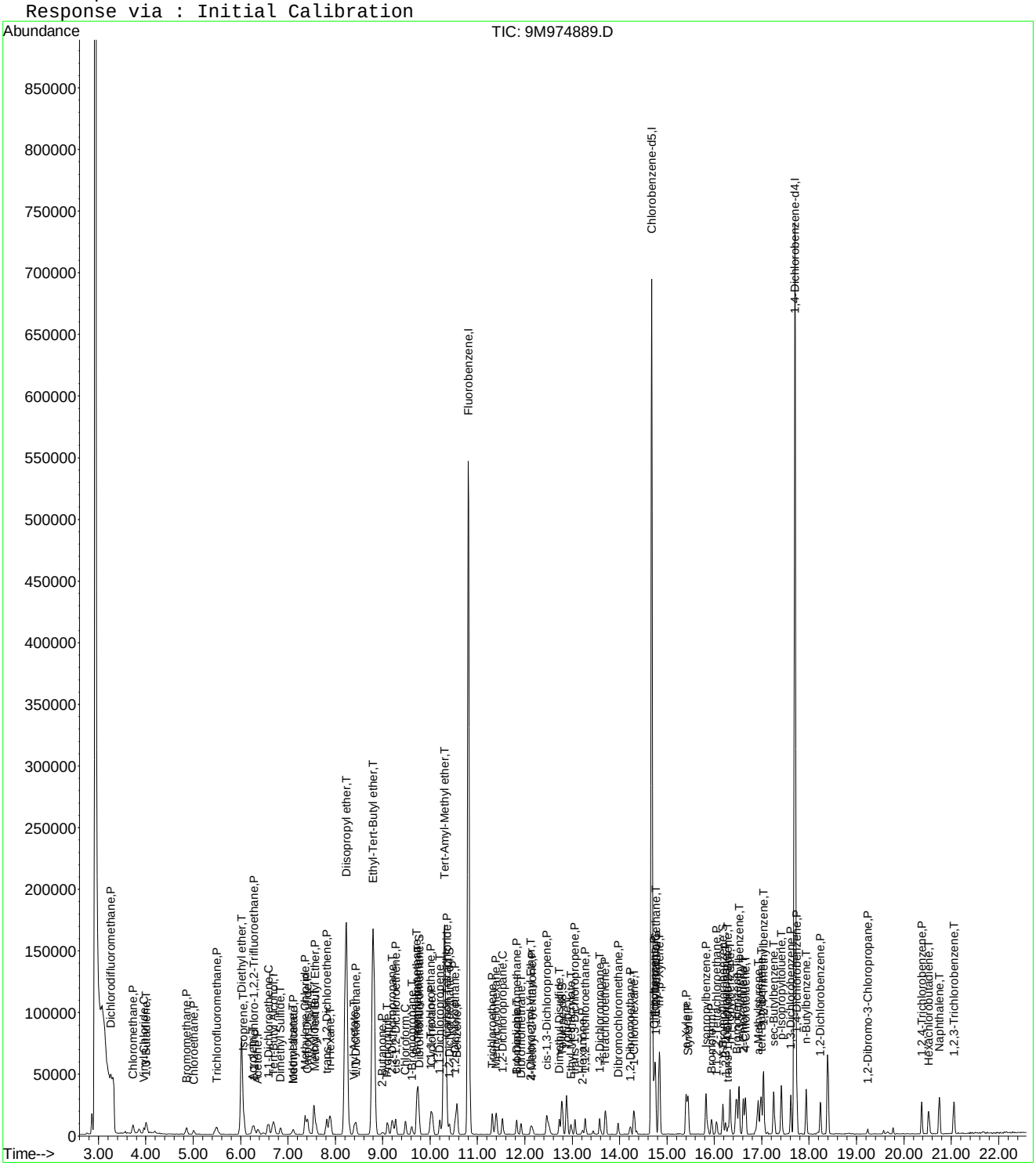

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\062116\9M974889.D Vial: 4
Acq On : 21 Jun 2016 8:40 Operator: ADC
Sample : WG573367-04 2.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	2.0000	1.7469	12.7	100	0.00
3	P	Chloromethane	2.0000	2.0623	-3.1	100	0.00
4	C	Vinyl Chloride	2.0000	1.8844	5.8	100	0.00
5	T	1,3-Butadiene	2.0000	2.0879	-4.4	100	0.01
6	P	Bromomethane	2.0000	1.9137	4.3	100	0.00
7	P	Chloroethane	2.0000	1.8886	5.6	100	0.00
8	P	Trichlorofluoromethane	2.0000	1.9543	2.3	100	0.00
9	T	Diethyl ether	25.0000	24.8751	0.5	100	0.00
10	T	Isoprene	2.0000	1.9505	2.5	100	0.00
11	T	Acrolein	12.5000	12.4474	0.4	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.8594	7.0	100	0.00
13	P	Acetone	-1.0000	2.8711	0.0	0	0.00
14	C	1,1-Dichloroethene	2.0000	1.9052	4.7	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	45.2732	9.5	100	0.00
16	T	Dimethyl Sulfide	2.0000	1.8265	8.7	100	0.00
17	T	Iodomethane	2.0000	2.5668	-28.3#	100	0.00
18	P	Methyl acetate	2.0000	1.9768	1.2	100	0.00
19	P	Methylene Chloride	-1.0000	2.0671	0.0	100	0.00
20	P	Carbon Disulfide	2.0000	2.1165	-5.8	100	0.00
21	T	Acrylonitrile	12.5000	11.8230	5.4	100	0.00
22	P	Methyl Tert Butyl Ether	2.0000	1.9450	2.8	100	0.00
23	P	trans-1,2-Dichloroethene	2.0000	1.9373	3.1	100	0.00
24	T	n-Hexane	2.0000	2.2458	-12.3	100	0.00
25	T	Diisopropyl ether	25.0000	25.2643	-1.1	100	0.00
26	T	Vinyl Acetate	2.0000	1.9381	3.1	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.0326	-1.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	25.0822	-0.3	100	0.00
29	P	2-Butanone	-1.0000	1.8023	0.0	100	0.00
30	T	Propionitrile	25.0000	24.0566	3.8	100	0.00
31	T	2,2-Dichloropropane	2.0000	1.9436	2.8	100	0.00
32	P	cis-1,2-Dichloroethene	2.0000	1.9415	2.9	100	0.00
33	C	Chloroform	2.0000	1.9683	1.6	100	0.00
34	T	1-Bromopropane	2.0000	1.6744	16.3	100	0.00
35	T	Bromochloromethane	2.0000	2.0390	-2.0	100	0.00
36	T	Tetrahydrofuran	25.0000	24.6345	1.5	100	0.00
37	S	Dibromofluoromethane	2.0000	1.9934	0.3	100	0.00
38	P	1,1,1-Trichloroethane	2.0000	1.9671	1.6	100	0.00
39	P	Cyclohexane	2.0000	1.9790	1.0	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0222	-1.1	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	25.1179	-0.5	100	0.00
42	P	Carbon Tetrachloride	2.0000	1.9263	3.7	100	0.00
43	S	1,2-Dichloroethane-d4	2.0000	1.9883	0.6	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	2.0000	1.8624	6.9	100	0.00
46	P	Benzene	2.0000	2.1414	-7.1	100	0.00
47	P	Trichloroethene	2.0000	1.9029	4.9	100	0.00
48	P	Methylcyclohexane	2.0000	1.9013	4.9	100	0.00
49	C	1,2-Dichloropropane	2.0000	1.8918	5.4	100	0.00
50	T	1,4-Dioxane	50.0000	38.0985	23.8	100	0.01
51	P	Bromodichloromethane	2.0000	1.8473	7.6	100	0.00
52	T	Dibromomethane	2.0000	1.9009	5.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	2.4722	-23.6	100	0.00
54	P	4-Methyl-2-Pentanone	-1.0000	1.4911	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\062116\9M974889.D Vial: 4
Acq On : 21 Jun 2016 8:40 Operator: ADC
Sample : WG573367-04 2.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	2.0000	1.7921	10.4	100	0.00
56	T	Dimethyl Disulfide	2.0000	2.5953	-29.8#	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	2.0000	2.0806	-4.0	100	0.00
59	C	Toluene	2.0000	2.1808	-9.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	1.6245	0.0	100	0.00
61	P	trans-1,3-Dichloropropene	2.0000	1.6936	15.3	100	0.00
62	P	1,1,2-Trichloroethane	2.0000	1.8598	7.0	100	0.00
63	P	2-Hexanone	-1.0000	3.7368	0.0	0	0.00
64	T	1,3-Dichloropropane	2.0000	1.9032	4.8	100	0.00
65	P	Tetrachloroethene	2.0000	1.9615	1.9	100	0.00
66	P	Dibromochloromethane	2.0000	1.8278	8.6	100	0.00
67	P	1,2-Dibromoethane	-1.0000	1.8149	0.0	100	0.00
68	T	1-Chlorohexane	2.0000	1.9819	0.9	100	0.00
69	P	Chlorobenzene	2.0000	2.1007	-5.0	100	0.00
70	T	1,1,1,2-Tetrachloroethane	2.0000	1.9010	4.9	100	0.00
71	C	Ethylbenzene	2.0000	2.0207	-1.0	100	0.00
72	P	m-,p-Xylene	4.0000	4.1101	-2.8	100	0.00
73	P	o-Xylene	2.0000	1.9669	1.7	100	0.00
74	P	Styrene	2.0000	1.9241	3.8	100	0.00
75	P	Bromoform	2.0000	1.7537	12.3	100	0.00
76	P	Isopropylbenzene	2.0000	1.9699	1.5	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	2.0000	1.9366	3.2	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	2.4356	0.0	100	0.00
80	T	1,2,3-Trichloropropane	2.0000	1.8089	9.6	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	2.0000	1.5546	22.3	100	0.00
82	T	n-Propylbenzene	2.0000	2.1953	-9.8	100	0.00
83	T	Bromobenzene	2.0000	1.9793	1.0	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	2.3524	0.0	100	0.00
85	T	2-Chlorotoluene	2.0000	2.0669	-3.3	100	0.00
86	T	4-Chlorotoluene	2.0000	2.1313	-6.6	100	0.00
87	T	a-Methylstyrene	-1.0000	1.8661	0.0	100	0.00
88	T	tert-Butylbenzene	-1.0000	2.0307	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	2.0000	2.5124	-25.6#	100	0.00
90	T	sec-Butylbenzene	2.0000	2.0540	-2.7	100	0.00
91	T	p-Isopropyltoluene	-1.0000	2.0721	0.0	100	0.00
92	P	1,3-Dichlorobenzene	2.0000	2.0543	-2.7	100	0.00
93	P	1,4-Dichlorobenzene	2.0000	2.0535	-2.7	100	0.00
94	T	n-Butylbenzene	2.0000	2.0432	-2.2	100	0.00
95	P	1,2-Dichlorobenzene	2.0000	1.9838	0.8	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	2.0000	2.4022	-20.1	100	0.00
97	P	1,2,4-Trichlorobenzene	2.0000	2.1139	-5.7	100	0.00
98	T	Hexachlorobutadiene	2.0000	2.1048	-5.2	100	0.00
99	T	Naphthalene	2.0000	2.0313	-1.6	100	0.00
100	T	1,2,3-Trichlorobenzene	2.0000	2.0621	-3.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M974889.D 8260S.M Thu Jun 23 11:44:50 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974890.D Vial: 5
Acq On : 21 Jun 2016 9:10 Operator: ADC
Sample : WG573367-05 5.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:44:56 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.81	96	621273	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.68	117	476649	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.70	152	238102	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.77	111	17624	5.1445 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 10.28%#		
43) 1,2-Dichloroethane-d4	10.41	65	18086	4.9659 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 9.94%#		
58) Toluene-d8	12.78	98	61153	5.1800 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 10.36%#		
79) p-Bromofluorobenzene	16.18	95	23859	5.4876 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 10.98%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.26	85	21594	4.4359 ug/kg	94
3) Chloromethane	3.73	50	21011	4.8841 ug/kg	100
4) Vinyl Chloride	3.97	62	15168	5.0209 ug/kg	97
5) 1,3-Butadiene	4.01	54	7691	5.1488 ug/kg	92
6) Bromomethane	4.85	94	12872	4.7128 ug/kg	98
7) Chloroethane	5.01	64	11880	4.7886 ug/kg	97
8) Trichlorofluoromethane	5.50	101	27736	4.9475 ug/kg	98
9) Diethyl ether	6.02	59	155909	51.9907 ug/kg	99
10) Isoprene	6.07	67	19009	4.8090 ug/kg	97
11) Acrolein	6.26	56	5495	24.4465 ug/kg	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	16184	4.8112 ug/kg	98
13) Acetone	6.36	43	10776	5.8737 ug/kg	89
14) 1,1-Dichloroethene	6.58	61	26296	4.8872 ug/kg	99
15) Tert-Butyl Alcohol	6.69	59	54206	98.8432 ug/kg	99
16) Dimethyl Sulfide	6.85	62	11473	5.1096 ug/kg	92
17) Iodomethane	7.10	142	7827	4.8250 ug/kg	98
18) Methyl acetate	7.11	43	16629	5.2474 ug/kg	94
19) Methylene Chloride	7.36	84	21775	5.9871 ug/kg	100
20) Carbon Disulfide	7.41	76	51399	5.0546 ug/kg	99
21) Acrylonitrile	7.54	53	36378	24.8710 ug/kg	95
22) Methyl Tert Butyl Ether	7.58	73	45644	4.8993 ug/kg	99
23) trans-1,2-Dichloroethene	7.82	61	25704	5.0237 ug/kg	99
24) n-Hexane	7.88	57	27791	4.8630 ug/kg	98
25) Diisopropyl ether	8.23	45	616305	52.3646 ug/kg	99
26) Vinyl Acetate	8.40	43	29104	4.5826 ug/kg	97
27) 1,1-Dichloroethane	8.43	63	31023	4.8444 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.80	59	571355	51.9733 ug/kg	100
29) 2-Butanone	8.99	43	9007	4.9657 ug/kg	91
30) Propionitrile	9.10	54	27041	49.2319 ug/kg	93
31) 2,2-Dichloropropane	9.21	77	23048	4.8421 ug/kg	99
32) cis-1,2-Dichloroethene	9.27	96	17825	4.8536 ug/kg	87
33) Chloroform	9.49	83	27202	4.9285 ug/kg	96
34) 1-Bromopropane	9.61	122	2601	4.5356 ug/kg	97
35) Bromochloromethane	9.72	130	12068	4.9950 ug/kg	98
36) Tetrahydrofuran	9.74	42	63725	51.0293 ug/kg	99
38) 1,1,1-Trichloroethane	10.01	97	25048	5.0241 ug/kg	98
39) Cyclohexane	10.03	56	31744	5.0361 ug/kg	99
40) 1,1-Dichloropropene	10.20	75	21297	4.9068 ug/kg	99
41) Tert-Amyl-Methyl ether	10.31	73	451913	51.5988 ug/kg	99
42) Carbon Tetrachloride	10.35	117	23344	4.8268 ug/kg	98

(#) = qualifier out of range (m) = manual integration
9M974890.D 8260S.M Thu Jun 23 11:44:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974890.D Vial: 5
Acq On : 21 Jun 2016 9:10 Operator: ADC
Sample : WG573367-05 5.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:44:56 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.53	62	22442	4.9649	ug/kg	97
46)	Benzene	10.56	78	65759	4.9979	ug/kg	99
47)	Trichloroethene	11.31	130	18931	4.9120	ug/kg	97
48)	Methylcyclohexane	11.40	83	27015	4.9796	ug/kg	99
49)	1,2-Dichloropropane	11.52	63	17898	4.9776	ug/kg	96
50)	1,4-Dioxane	11.83	88	5432	98.9266	ug/kg	88
51)	Bromodichloromethane	11.83	83	20348	4.6634	ug/kg	96
52)	Dibromomethane	11.92	174	10729	4.7153	ug/kg	98
53)	2-Chloroethyl Vinyl Ether	12.12	63	9019	5.0039	ug/kg	99
54)	4-Methyl-2-Pentanone	12.16	58	6053	4.0673	ug/kg	95
55)	cis-1,3-Dichloropropene	12.46	75	24651	4.7469	ug/kg	98
56)	Dimethyl Disulfide	12.73	94	22715	4.8062	ug/kg	99
59)	Toluene	12.88	91	70352	5.1755	ug/kg	100
60)	Ethyl Methacrylate	12.98	69	16566	4.2721	ug/kg	97
61)	trans-1,3-Dichloropropene	13.06	75	21958	4.7567	ug/kg	98
62)	1,1,2-Trichloroethane	13.27	97	13946	4.9623	ug/kg	99
63)	2-Hexanone	13.21	43	9604	5.7931	ug/kg#	76
64)	1,3-Dichloropropane	13.58	76	23570	5.0162	ug/kg	99
65)	Tetrachloroethene	13.70	164	14974	5.1513	ug/kg	95
66)	Dibromochloromethane	13.97	129	16760	4.5168	ug/kg	99
67)	1,2-Dibromoethane	14.22	107	14755	4.6736	ug/kg	98
68)	1-Chlorohexane	14.30	91	20670	4.8756	ug/kg	98
69)	Chlorobenzene	14.73	112	48985	5.0629	ug/kg	92
70)	1,1,1,2-Tetrachloroethane	14.76	131	16929	4.8639	ug/kg	98
71)	Ethylbenzene	14.75	106	26175	5.1066	ug/kg	93
72)	m-,p-Xylene	14.84	106	63567	10.0392	ug/kg	100
73)	o-Xylene	15.41	106	31042	5.0638	ug/kg	98
74)	Styrene	15.44	104	49469	4.8358	ug/kg	98
75)	Bromoform	15.94	173	11259	4.4714	ug/kg	99
76)	Isopropylbenzene	15.83	105	78867	5.0131	ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.05	83	18560	4.8359	ug/kg	97
80)	1,2,3-Trichloropropane	16.24	110	5395	4.5331	ug/kg	94
81)	trans-1,4-Dichloro-2-Buten	16.28	53	5384	4.6998	ug/kg	87
82)	n-Propylbenzene	16.33	91	87173	5.0869	ug/kg	100
83)	Bromobenzene	16.47	156	20573	4.9774	ug/kg	70
84)	1,3,5-Trimethylbenzene	16.52	105	69099	5.3095	ug/kg	99
85)	2-Chlorotoluene	16.61	91	53433	5.1586	ug/kg	100
86)	4-Chlorotoluene	16.65	91	52536	4.9980	ug/kg	98
87)	a-Methylstyrene	16.93	118	28075	4.6452	ug/kg	97
88)	tert-Butylbenzene	16.99	134	13929	4.9535	ug/kg	84
89)	1,2,4-Trimethylbenzene	17.04	105	77217	5.5025	ug/kg	98
90)	sec-Butylbenzene	17.25	105	87072	5.0991	ug/kg	99
91)	p-Isopropyltoluene	17.41	119	71470	5.1314	ug/kg	98
92)	1,3-Dichlorobenzene	17.61	146	39541	4.9489	ug/kg	99
93)	1,4-Dichlorobenzene	17.74	146	40332	4.9460	ug/kg	92
94)	n-Butylbenzene	17.94	91	62529	4.9121	ug/kg	98
95)	1,2-Dichlorobenzene	18.23	146	36331	4.7614	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.24	157	4017	4.5753	ug/kg	99
97)	1,2,4-Trichlorobenzene	20.38	180	26108	4.6903	ug/kg	99
98)	Hexachlorobutadiene	20.52	225	12593	4.4593	ug/kg	99
99)	Naphthalene	20.75	128	67736	4.6589	ug/kg	98
100)	1,2,3-Trichlorobenzene	21.06	180	25712	4.7195	ug/kg	98

(#) = qualifier out of range (m) = manual integration
9M974890.D 8260S.M Thu Jun 23 11:44:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974890.D Vial: 5
Acq On : 21 Jun 2016 9:10 Operator: ADC
Sample : WG573367-05 5.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:44 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

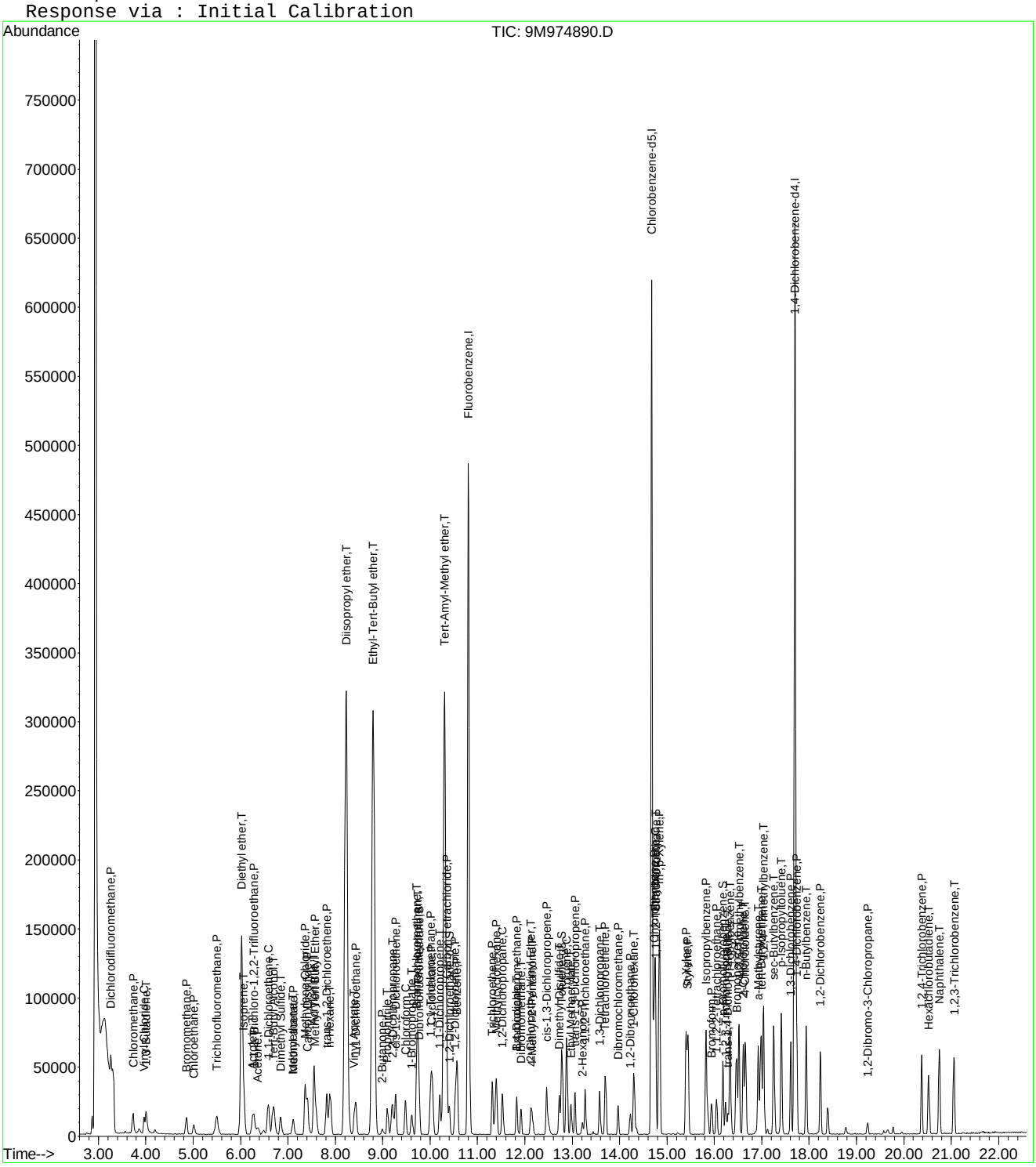

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\062116\9M974890.D Vial: 5
Acq On : 21 Jun 2016 9:10 Operator: ADC
Sample : WG573367-05 5.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	5.0000	4.4359	11.3	100	0.00
3	P	Chloromethane	5.0000	4.8841	2.3	100	0.00
4	C	Vinyl Chloride	5.0000	5.0209	-0.4	100	0.01
5	T	1,3-Butadiene	5.0000	5.1488	-3.0	100	0.01
6	P	Bromomethane	5.0000	4.7127	5.7	100	0.00
7	P	Chloroethane	5.0000	4.7886	4.2	100	0.00
8	P	Trichlorofluoromethane	5.0000	4.9475	1.0	100	0.00
9	T	Diethyl ether	50.0000	51.9907	-4.0	100	0.00
10	T	Isoprene	5.0000	4.8090	3.8	100	0.00
11	T	Acrolein	25.0000	24.4465	2.2	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.8112	3.8	100	0.00
13	P	Acetone	5.0000	5.8737	-17.5	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.8872	2.3	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	98.8432	1.2	100	0.00
16	T	Dimethyl Sulfide	5.0000	5.1096	-2.2	100	0.00
17	T	Iodomethane	5.0000	4.8250	3.5	100	0.00
18	P	Methyl acetate	5.0000	5.2474	-4.9	100	0.00
19	P	Methylene Chloride	5.0000	5.9871	-19.7	100	0.00
20	P	Carbon Disulfide	5.0000	5.0546	-1.1	100	0.00
21	T	Acrylonitrile	25.0000	24.8710	0.5	100	0.00
22	P	Methyl Tert Butyl Ether	5.0000	4.8993	2.0	100	0.00
23	P	trans-1,2-Dichloroethene	5.0000	5.0237	-0.5	100	0.00
24	T	n-Hexane	5.0000	4.8630	2.7	100	0.00
25	T	Diisopropyl ether	50.0000	52.3646	-4.7	100	0.00
26	T	Vinyl Acetate	5.0000	4.5826	8.3	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.8444	3.1	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	51.9733	-3.9	100	0.00
29	P	2-Butanone	5.0000	4.9657	0.7	100	0.00
30	T	Propionitrile	50.0000	49.2319	1.5	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.8421	3.2	100	0.00
32	P	cis-1,2-Dichloroethene	5.0000	4.8536	2.9	100	0.00
33	C	Chloroform	5.0000	4.9285	1.4	100	0.00
34	T	1-Bromopropane	5.0000	4.5356	9.3	100	0.00
35	T	Bromochloromethane	5.0000	4.9950	0.1	100	0.00
36	T	Tetrahydrofuran	50.0000	51.0294	-2.1	100	0.00
37	S	Dibromofluoromethane	5.0000	5.1445	-2.9	100	0.00
38	P	1,1,1-Trichloroethane	5.0000	5.0241	-0.5	100	0.00
39	P	Cyclohexane	5.0000	5.0361	-0.7	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.9069	1.9	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	51.5988	-3.2	100	0.00
42	P	Carbon Tetrachloride	5.0000	4.8268	3.5	100	0.00
43	S	1,2-Dichloroethane-d4	5.0000	4.9659	0.7	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	5.0000	4.9649	0.7	100	0.00
46	P	Benzene	5.0000	4.9979	0.0	100	0.00
47	P	Trichloroethene	5.0000	4.9120	1.8	100	0.00
48	P	Methylcyclohexane	5.0000	4.9796	0.4	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.9776	0.4	100	0.00
50	T	1,4-Dioxane	100.0000	98.9266	1.1	100	0.01
51	P	Bromodichloromethane	5.0000	4.6634	6.7	100	0.00
52	T	Dibromomethane	5.0000	4.7153	5.7	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	5.0039	-0.1	100	0.00
54	P	4-Methyl-2-Pentanone	5.0000	4.0673	18.7	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\062116\9M974890.D Vial: 5
Acq On : 21 Jun 2016 9:10 Operator: ADC
Sample : WG573367-05 5.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	5.0000	4.7469	5.1	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.8062	3.9	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	5.0000	5.1800	-3.6	100	0.00
59	C	Toluene	5.0000	5.1755	-3.5	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.2721	14.6	100	0.00
61	P	trans-1,3-Dichloropropene	5.0000	4.7567	4.9	100	0.00
62	P	1,1,2-Trichloroethane	5.0000	4.9623	0.8	100	0.00
63	P	2-Hexanone	5.0000	5.7931	-15.9	100	0.00
64	T	1,3-Dichloropropane	5.0000	5.0162	-0.3	100	0.00
65	P	Tetrachloroethene	5.0000	5.1513	-3.0	100	0.00
66	P	Dibromochloromethane	5.0000	4.5168	9.7	100	0.00
67	P	1,2-Dibromoethane	5.0000	4.6736	6.5	100	0.00
68	T	1-Chlorohexane	5.0000	4.8756	2.5	100	0.00
69	P	Chlorobenzene	5.0000	5.0629	-1.3	100	0.00
70	T	1,1,1,2-Tetrachloroethane	5.0000	4.8639	2.7	100	0.00
71	C	Ethylbenzene	5.0000	5.1067	-2.1	100	0.00
72	P	m-,p-Xylene	10.0000	10.0392	-0.4	100	0.00
73	P	o-Xylene	5.0000	5.0639	-1.3	100	0.00
74	P	Styrene	5.0000	4.8358	3.3	100	0.00
75	P	Bromoform	5.0000	4.4714	10.6	100	0.00
76	P	Isopropylbenzene	5.0000	5.0131	-0.3	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	5.0000	4.8359	3.3	100	0.00
79	S	p-Bromofluorobenzene	5.0000	5.4876	-9.8	100	0.00
80	T	1,2,3-Trichloropropane	5.0000	4.5331	9.3	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	5.0000	4.6998	6.0	100	0.00
82	T	n-Propylbenzene	5.0000	5.0869	-1.7	100	0.00
83	T	Bromobenzene	5.0000	4.9774	0.5	100	0.00
84	T	1,3,5-Trimethylbenzene	5.0000	5.3095	-6.2	100	0.00
85	T	2-Chlorotoluene	5.0000	5.1586	-3.2	100	0.00
86	T	4-Chlorotoluene	5.0000	4.9980	0.0	100	0.00
87	T	a-Methylstyrene	5.0000	4.6452	7.1	100	0.00
88	T	tert-Butylbenzene	5.0000	4.9535	0.9	100	0.00
89	T	1,2,4-Trimethylbenzene	5.0000	5.5025	-10.0	100	0.00
90	T	sec-Butylbenzene	5.0000	5.0991	-2.0	100	0.00
91	T	p-Isopropyltoluene	5.0000	5.1314	-2.6	100	0.00
92	P	1,3-Dichlorobenzene	5.0000	4.9489	1.0	100	0.00
93	P	1,4-Dichlorobenzene	5.0000	4.9460	1.1	100	0.00
94	T	n-Butylbenzene	5.0000	4.9121	1.8	100	0.00
95	P	1,2-Dichlorobenzene	5.0000	4.7614	4.8	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	5.0000	4.5753	8.5	100	0.00
97	P	1,2,4-Trichlorobenzene	5.0000	4.6903	6.2	100	0.00
98	T	Hexachlorobutadiene	5.0000	4.4593	10.8	100	0.00
99	T	Naphthalene	5.0000	4.6589	6.8	100	0.00
100	T	1,2,3-Trichlorobenzene	5.0000	4.7195	5.6	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M974890.D 8260S.M Thu Jun 23 11:45:23 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974891.D Vial: 6
Acq On : 21 Jun 2016 9:40 Operator: ADC
Sample : WG573367-06 20.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:45:59 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.81	96	590655	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.68	117	460341	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.70	152	233395	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.77	111	58138	17.8505 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 35.70%#		
43) 1,2-Dichloroethane-d4	10.41	65	60726	17.5379 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 35.08%#		
58) Toluene-d8	12.79	98	196826	17.2630 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 34.52%#		
79) p-Bromofluorobenzene	16.17	95	78558	18.4328 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 36.86%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.26	85	93369	20.1745 ug/kg	99
3) Chloromethane	3.73	50	81137	19.8385 ug/kg	99
4) Vinyl Chloride	3.96	62	60060	20.9114 ug/kg	99
5) 1,3-Butadiene	4.02	54	29519	20.7861 ug/kg	97
6) Bromomethane	4.86	94	45650	17.5800 ug/kg	99
7) Chloroethane	5.01	64	43610	18.4897 ug/kg	97
8) Trichlorofluoromethane	5.50	101	101184	18.9847 ug/kg	100
9) Diethyl ether	6.02	59	204689	71.7955 ug/kg	100
10) Isoprene	6.06	67	66149	17.6022 ug/kg	98
11) Acrolein	6.25	56	7538	35.2739 ug/kg	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	60066	18.7821 ug/kg	99
13) Acetone	6.37	43	22042	16.7681 ug/kg	97
14) 1,1-Dichloroethene	6.58	61	94365	18.4472 ug/kg	99
15) Tert-Butyl Alcohol	6.70	59	83479	160.1126 ug/kg	99
16) Dimethyl Sulfide	6.85	62	36494	17.0954 ug/kg	99
17) Iodomethane	7.10	142	31744	15.7933 ug/kg	97
18) Methyl acetate	7.11	43	54481	18.0832 ug/kg	99
19) Methylene Chloride	7.36	84	60433	17.4776 ug/kg	98
20) Carbon Disulfide	7.42	76	171470	17.7364 ug/kg	99
21) Acrylonitrile	7.55	53	54272	39.0282 ug/kg	98
22) Methyl Tert Butyl Ether	7.57	73	165234	18.6551 ug/kg	100
23) trans-1,2-Dichloroethene	7.82	61	91351	18.7796 ug/kg	99
24) n-Hexane	7.89	57	95831	17.6381 ug/kg	99
25) Diisopropyl ether	8.23	45	792514	70.8268 ug/kg	100
26) Vinyl Acetate	8.40	43	113140	18.7380 ug/kg	99
27) 1,1-Dichloroethane	8.44	63	112562	18.4883 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.80	59	738827	70.6913 ug/kg	99
29) 2-Butanone	8.99	43	30960	17.9535 ug/kg	99
30) Propionitrile	9.10	54	42151	80.7198 ug/kg	94
31) 2,2-Dichloropropane	9.21	77	82383	18.2048 ug/kg	100
32) cis-1,2-Dichloroethene	9.27	96	64966	18.6068 ug/kg	97
33) Chloroform	9.48	83	98839	18.8360 ug/kg	99
34) 1-Bromopropane	9.62	122	9725	17.8376 ug/kg	97
35) Bromochloromethane	9.72	130	43061	18.7469 ug/kg	100
36) Tetrahydrofuran	9.74	42	88969	74.9372 ug/kg	98
38) 1,1,1-Trichloroethane	10.01	97	87852	18.5347 ug/kg	98
39) Cyclohexane	10.04	56	106891	17.8369 ug/kg	98
40) 1,1-Dichloropropene	10.20	75	77485	18.7780 ug/kg	99
41) Tert-Amyl-Methyl ether	10.31	73	595220	71.4844 ug/kg	100
42) Carbon Tetrachloride	10.35	117	83422	18.1430 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M974891.D 8260S.M Thu Jun 23 11:45:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974891.D Vial: 6
Acq On : 21 Jun 2016 9:40 Operator: ADC
Sample : WG573367-06 20.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:45:59 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.53	62	80349	18.6972 ug/kg	99
46)	Benzene	10.57	78	229008	18.3077 ug/kg	100
47)	Trichloroethene	11.32	130	68066	18.5764 ug/kg	99
48)	Methylcyclohexane	11.39	83	92731	17.9788 ug/kg	99
49)	1,2-Dichloropropane	11.53	63	64201	18.7804 ug/kg	99
50)	1,4-Dioxane	11.83	88	8361	160.1622 ug/kg	92
51)	Bromodichloromethane	11.83	83	75602	18.2250 ug/kg	97
52)	Dibromomethane	11.92	174	42069	19.4474 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.12	63	34251	16.3630 ug/kg	96
54)	4-Methyl-2-Pentanone	12.15	58	24267	17.1515 ug/kg	98
55)	cis-1,3-Dichloropropene	12.46	75	89759	18.1802 ug/kg	98
56)	Dimethyl Disulfide	12.72	94	88330	15.9981 ug/kg	97
59)	Toluene	12.88	91	243848	18.5743 ug/kg	100
60)	Ethyl Methacrylate	12.98	69	64315	17.1735 ug/kg	99
61)	trans-1,3-Dichloropropene	13.06	75	84211	18.8888 ug/kg	99
62)	1,1,2-Trichloroethane	13.27	97	51735	19.0607 ug/kg	99
63)	2-Hexanone	13.21	43	42794	17.8054 ug/kg#	76
64)	1,3-Dichloropropane	13.58	76	85957	18.9417 ug/kg	99
65)	Tetrachloroethene	13.71	164	52681	18.7653 ug/kg	99
66)	Dibromochloromethane	13.97	129	65787	18.3576 ug/kg	99
67)	1,2-Dibromoethane	14.22	107	56375	18.4892 ug/kg	98
68)	1-Chlorohexane	14.31	91	73679	17.9949 ug/kg	100
69)	Chlorobenzene	14.73	112	172779	18.4905 ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.76	131	61132	18.1862 ug/kg	99
71)	Ethylbenzene	14.75	106	91898	18.5641 ug/kg	99
72)	m-,p-Xylene	14.84	106	223710	36.5823 ug/kg	99
73)	o-Xylene	15.40	106	107458	18.1505 ug/kg	100
74)	Styrene	15.45	104	181967	18.4182 ug/kg	99
75)	Bromoform	15.94	173	45106	18.5479 ug/kg	98
76)	Isopropylbenzene	15.83	105	278522	18.3312 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.05	83	70621	18.7716 ug/kg	99
80)	1,2,3-Trichloropropane	16.24	110	22051	18.9018 ug/kg	98
81)	trans-1,4-Dichloro-2-Buten	16.28	53	20653	18.3921 ug/kg	89
82)	n-Propylbenzene	16.33	91	309198	18.4070 ug/kg	99
83)	Bromobenzene	16.47	156	74843	18.4725 ug/kg	98
84)	1,3,5-Trimethylbenzene	16.52	105	236990	18.5772 ug/kg	100
85)	2-Chlorotoluene	16.61	91	187715	18.4879 ug/kg	90
86)	4-Chlorotoluene	16.66	91	193665	18.7960 ug/kg	90
87)	a-Methylstyrene	16.92	118	101206	17.0830 ug/kg	99
88)	tert-Butylbenzene	16.99	134	51326	18.6208 ug/kg	91
89)	1,2,4-Trimethylbenzene	17.04	105	237903	18.4739 ug/kg	99
90)	sec-Butylbenzene	17.25	105	305289	18.2389 ug/kg	100
91)	p-Isopropyltoluene	17.41	119	256016	18.7521 ug/kg	100
92)	1,3-Dichlorobenzene	17.61	146	142027	18.1344 ug/kg	100
93)	1,4-Dichlorobenzene	17.75	146	140460	17.5721 ug/kg	97
94)	n-Butylbenzene	17.94	91	227652	18.2445 ug/kg	99
95)	1,2-Dichlorobenzene	18.24	146	131666	17.6036 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.23	157	17162	16.6928 ug/kg	100
97)	1,2,4-Trichlorobenzene	20.37	180	97292	17.8309 ug/kg	99
98)	Hexachlorobutadiene	20.52	225	49514	17.8869 ug/kg	97
99)	Naphthalene	20.74	128	260333	18.2668 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.06	180	95245	17.8349 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M974891.D 8260S.M Thu Jun 23 11:45:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974891.D Vial: 6
Acq On : 21 Jun 2016 9:40 Operator: ADC
Sample : WG573367-06 20.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:45 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

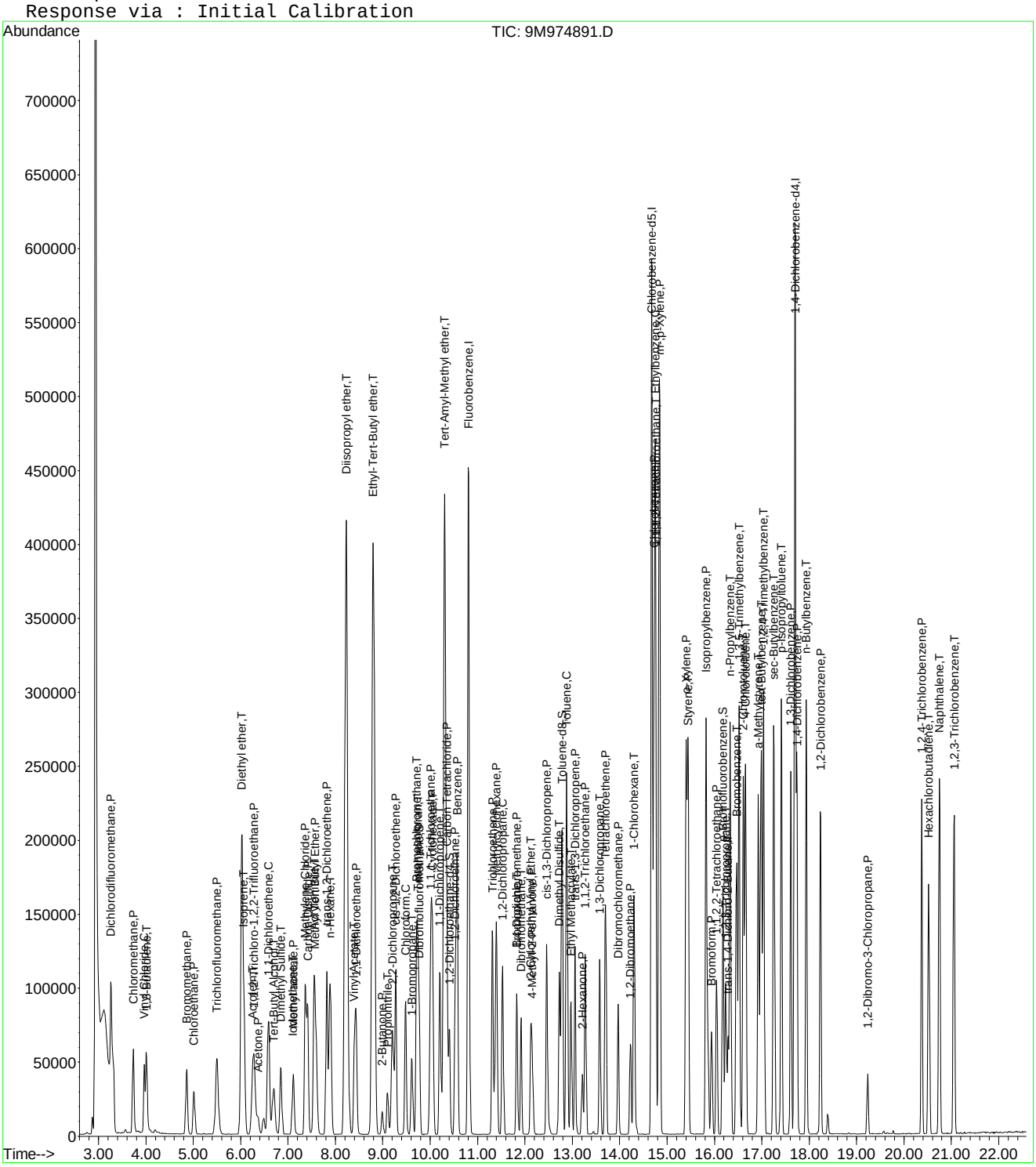

9M974891.D 8260S.M Thu Jun 23 11:45:59 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974892.D Vial: 7
Acq On : 21 Jun 2016 10:11 Operator: ADC
Sample : WG573367-07 50.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:45:59 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.81	96	632115	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.68	117	491380	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.69	152	247695	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.77	111	175579	50.3732 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.74%		
43) 1,2-Dichloroethane-d4	10.41	65	185776	50.1339 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.26%		
58) Toluene-d8	12.79	98	600260	49.3213 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.64%		
79) p-Bromofluorobenzene	16.17	95	230691	51.0041 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.00%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.26	85	273524	55.2248 ug/kg	99
3) Chloromethane	3.73	50	221213	50.5403 ug/kg	99
4) Vinyl Chloride	3.95	62	158497	51.5652 ug/kg	98
5) 1,3-Butadiene	4.00	54	74622	49.0995 ug/kg	99
6) Bromomethane	4.85	94	134074	48.2458 ug/kg	98
7) Chloroethane	5.01	64	132141	52.3504 ug/kg	98
8) Trichlorofluoromethane	5.49	101	303998	53.2967 ug/kg	100
9) Diethyl ether	6.02	59	309933	101.5800 ug/kg	99
10) Isoprene	6.06	67	210138	52.2498 ug/kg	99
11) Acrolein	6.27	56	11165	48.8196 ug/kg	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	182514	53.3274 ug/kg	100
13) Acetone	6.36	43	61551	49.5261 ug/kg	99
14) 1,1-Dichloroethene	6.58	61	289291	52.8435 ug/kg	99
15) Tert-Butyl Alcohol	6.69	59	108422	194.3137 ug/kg	98
16) Dimethyl Sulfide	6.85	62	118656	51.9379 ug/kg	100
17) Iodomethane	7.10	142	110747	48.1705 ug/kg	99
18) Methyl acetate	7.11	43	162073	50.2665 ug/kg	99
19) Methylene Chloride	7.36	84	181770	49.1212 ug/kg	99
20) Carbon Disulfide	7.42	76	523970	50.6433 ug/kg	99
21) Acrylonitrile	7.55	53	79795	53.6186 ug/kg	99
22) Methyl Tert Butyl Ether	7.57	73	492858	51.9945 ug/kg	99
23) trans-1,2-Dichloroethene	7.82	61	276271	53.0696 ug/kg	100
24) n-Hexane	7.89	57	297208	51.1144 ug/kg	99
25) Diisopropyl ether	8.23	45	1210421	101.0800 ug/kg	99
26) Vinyl Acetate	8.40	43	329902	51.0541 ug/kg	100
27) 1,1-Dichloroethane	8.44	63	342901	52.6273 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.80	59	1131450	101.1571 ug/kg	100
29) 2-Butanone	8.99	43	93230	50.5175 ug/kg	99
30) Propionitrile	9.09	54	58188	104.1223 ug/kg	96
31) 2,2-Dichloropropane	9.21	77	252442	52.1251 ug/kg	100
32) cis-1,2-Dichloroethene	9.27	96	196762	52.6580 ug/kg	96
33) Chloroform	9.48	83	296653	52.8260 ug/kg	100
34) 1-Bromopropane	9.62	122	31487	53.9653 ug/kg	100
35) Bromochloromethane	9.72	130	130048	52.9037 ug/kg	98
36) Tetrahydrofuran	9.74	42	128206	100.9032 ug/kg	100
38) 1,1,1-Trichloroethane	10.01	97	263724	51.9902 ug/kg	99
39) Cyclohexane	10.04	56	336264	52.4321 ug/kg	99
40) 1,1-Dichloropropene	10.20	75	230105	52.1070 ug/kg	100
41) Tert-Amyl-Methyl ether	10.31	73	896061	100.5562 ug/kg	99
42) Carbon Tetrachloride	10.35	117	258397	52.5115 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974892.D Vial: 7
Acq On : 21 Jun 2016 10:11 Operator: ADC
Sample : WG573367-07 50.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:45:59 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.53	62	241003	52.4032	ug/kg	100
46)	Benzene	10.57	78	685623	51.2160	ug/kg	100
47)	Trichloroethene	11.32	130	200958	51.2477	ug/kg	98
48)	Methylcyclohexane	11.39	83	291009	52.7205	ug/kg	99
49)	1,2-Dichloropropane	11.53	63	191043	52.2194	ug/kg	99
50)	1,4-Dioxane	11.82	88	11453	205.0024	ug/kg	92
51)	Bromodichloromethane	11.83	83	230883	52.0072	ug/kg	98
52)	Dibromomethane	11.92	174	124109	53.6092	ug/kg	98
53)	2-Chloroethyl Vinyl Ether	12.12	63	113706	48.2140	ug/kg	100
54)	4-Methyl-2-Pentanone	12.15	58	78270	51.6914	ug/kg	98
55)	cis-1,3-Dichloropropene	12.46	75	275664	52.1722	ug/kg	99
56)	Dimethyl Disulfide	12.72	94	291823	46.9155	ug/kg	100
59)	Toluene	12.88	91	723708	51.6438	ug/kg	100
60)	Ethyl Methacrylate	12.98	69	208429	52.1396	ug/kg	98
61)	trans-1,3-Dichloropropene	13.06	75	256999	54.0043	ug/kg	99
62)	1,1,2-Trichloroethane	13.27	97	156664	54.0737	ug/kg	99
63)	2-Hexanone	13.21	43	137640	48.6802	ug/kg	98
64)	1,3-Dichloropropane	13.58	76	255225	52.6893	ug/kg	99
65)	Tetrachloroethene	13.70	164	158383	52.8533	ug/kg	100
66)	Dibromochloromethane	13.97	129	202472	52.9300	ug/kg	100
67)	1,2-Dibromoethane	14.22	107	168773	51.8556	ug/kg	99
68)	1-Chlorohexane	14.31	91	234253	53.5987	ug/kg	99
69)	Chlorobenzene	14.73	112	520717	52.2060	ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.76	131	188670	52.5823	ug/kg	99
71)	Ethylbenzene	14.75	106	277388	52.4950	ug/kg	100
72)	m-,p-Xylene	14.84	106	670401	102.7027	ug/kg	99
73)	o-Xylene	15.40	106	328692	52.0117	ug/kg	99
74)	Styrene	15.44	104	563352	53.4190	ug/kg	99
75)	Bromoform	15.94	173	141296	54.4318	ug/kg	99
76)	Isopropylbenzene	15.83	105	841754	51.9015	ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.05	83	212261	53.1633	ug/kg	100
80)	1,2,3-Trichloropropane	16.24	110	66381	53.6159	ug/kg	99
81)	trans-1,4-Dichloro-2-Buten	16.28	53	64970	54.5173	ug/kg	92
82)	n-Propylbenzene	16.33	91	930296	52.1845	ug/kg	100
83)	Bromobenzene	16.47	156	226308	52.6319	ug/kg	96
84)	1,3,5-Trimethylbenzene	16.52	105	710529	52.4814	ug/kg	99
85)	2-Chlorotoluene	16.61	91	560935	52.0567	ug/kg	100
86)	4-Chlorotoluene	16.66	91	575574	52.6369	ug/kg	99
87)	a-Methylstyrene	16.92	118	331895	52.7878	ug/kg	100
88)	tert-Butylbenzene	16.99	134	155311	53.0929	ug/kg	96
89)	1,2,4-Trimethylbenzene	17.04	105	714034	53.2517	ug/kg	99
90)	sec-Butylbenzene	17.25	105	922349	51.9226	ug/kg	100
91)	p-Isopropyltoluene	17.41	119	766039	52.8698	ug/kg	100
92)	1,3-Dichlorobenzene	17.61	146	421311	50.6884	ug/kg	100
93)	1,4-Dichlorobenzene	17.75	146	419805	49.4873	ug/kg	99
94)	n-Butylbenzene	17.94	91	675419	51.0044	ug/kg	100
95)	1,2-Dichlorobenzene	18.24	146	403851	50.8772	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.23	157	55314	48.7254	ug/kg	99
97)	1,2,4-Trichlorobenzene	20.37	180	297928	51.4494	ug/kg	100
98)	Hexachlorobutadiene	20.52	225	147297	50.1391	ug/kg	98
99)	Naphthalene	20.74	128	798428	52.7891	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.06	180	290071	51.1808	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M974892.D 8260S.M Thu Jun 23 11:46:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974892.D Vial: 7
Acq On : 21 Jun 2016 10:11 Operator: ADC
Sample : WG573367-07 50.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:46 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

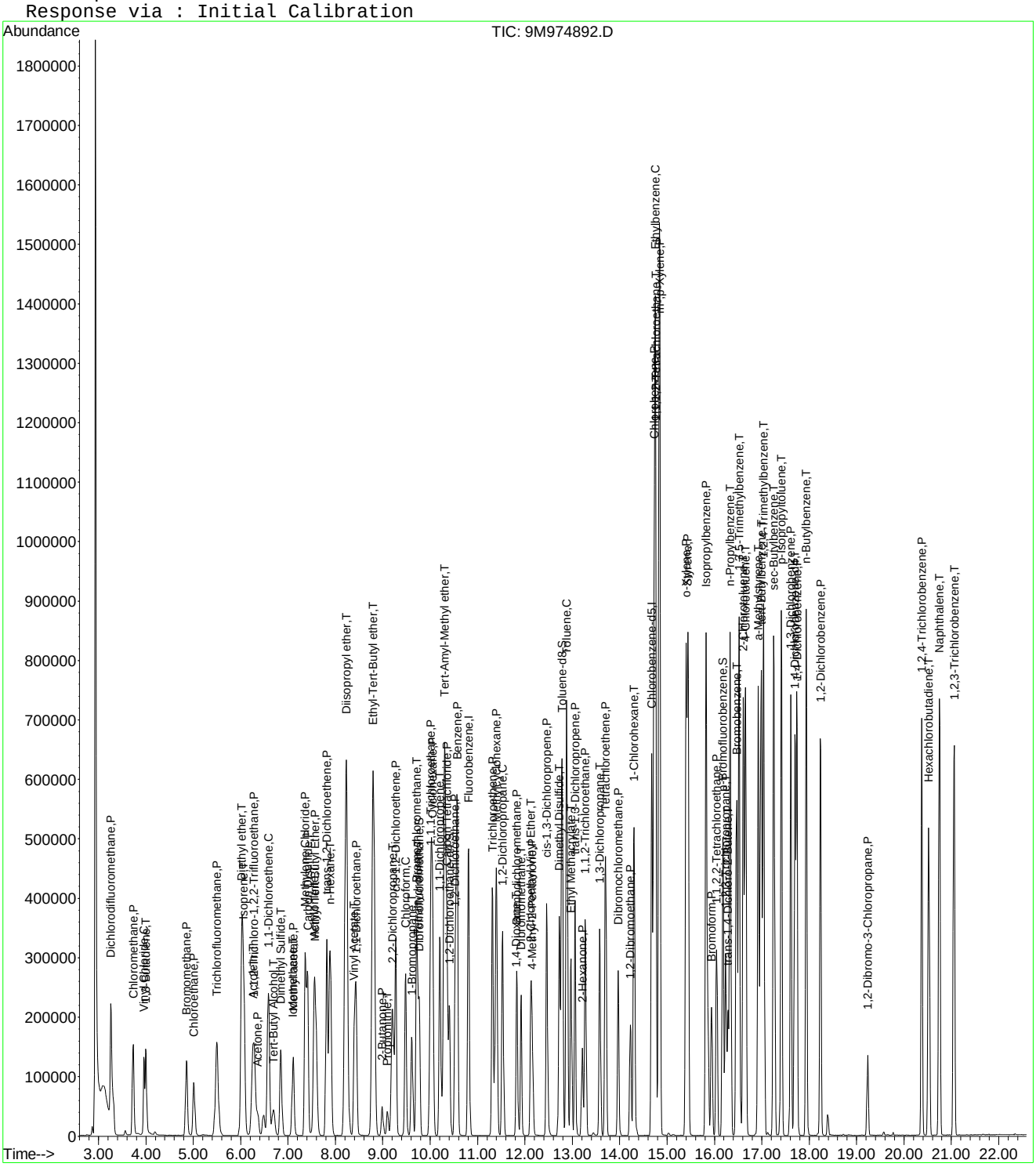

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974893.D Vial: 8
Acq On : 21 Jun 2016 10:41 Operator: ADC
Sample : WG573367-08 100.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:46:00 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.81	96	567049	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.68	117	449590	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.70	152	232425	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.77	111	315279	100.8318 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 201.66%#		
43) 1,2-Dichloroethane-d4	10.41	65	331408	99.6966 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 199.40%#		
58) Toluene-d8	12.78	98	1070358	96.1225 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 192.24%#		
79) p-Bromofluorobenzene	16.18	95	422182	99.4738 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 198.94%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.26	85	495794	111.5874 ug/kg	99
3) Chloromethane	3.73	50	349124	88.9165 ug/kg	99
4) Vinyl Chloride	3.96	62	290501	105.3559 ug/kg	99
5) 1,3-Butadiene	4.00	54	145280	106.5593 ug/kg	99
6) Bromomethane	4.85	94	244835	98.2119 ug/kg	98
7) Chloroethane	5.01	64	235983	104.2171 ug/kg	100
8) Trichlorofluoromethane	5.50	101	541027	105.7363 ug/kg	100
9) Diethyl ether	6.03	59	563106	205.7341 ug/kg	99
10) Isoprene	6.06	67	372164	103.1550 ug/kg	100
11) Acrolein	6.26	56	20075	97.8513 ug/kg	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.27	101	320916	104.5252 ug/kg	100
13) Acetone	6.36	43	107667	99.9811 ug/kg	100
14) 1,1-Dichloroethene	6.59	61	508007	103.4432 ug/kg	100
15) Tert-Butyl Alcohol	6.70	59	216860	433.2524 ug/kg	97
16) Dimethyl Sulfide	6.85	62	219012	106.8656 ug/kg	99
17) Iodomethane	7.10	142	204532	97.6186 ug/kg	100
18) Methyl acetate	7.11	43	292767	101.2198 ug/kg	99
19) Methylene Chloride	7.37	84	329734	99.3312 ug/kg	99
20) Carbon Disulfide	7.41	76	941617	101.4532 ug/kg	99
21) Acrylonitrile	7.55	53	144601	108.3146 ug/kg	100
22) Methyl Tert Butyl Ether	7.57	73	904919	106.4195 ug/kg	99
23) trans-1,2-Dichloroethene	7.81	61	496558	106.3301 ug/kg	99
24) n-Hexane	7.88	57	532368	102.0635 ug/kg	99
25) Diisopropyl ether	8.23	45	2200423	204.8379 ug/kg	100
26) Vinyl Acetate	8.40	43	589100	101.6272 ug/kg	100
27) 1,1-Dichloroethane	8.43	63	615113	105.2379 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.80	59	2069657	206.2694 ug/kg	99
29) 2-Butanone	8.99	43	169138	102.1651 ug/kg	99
30) Propionitrile	9.10	54	108744	216.9157 ug/kg	96
31) 2,2-Dichloropropane	9.20	77	455772	104.9079 ug/kg	99
32) cis-1,2-Dichloroethene	9.28	96	354045	105.6227 ug/kg	98
33) Chloroform	9.48	83	539671	107.1282 ug/kg	99
34) 1-Bromopropane	9.61	122	56852	108.6187 ug/kg	99
35) Bromochloromethane	9.72	130	235267	106.6888 ug/kg	100
36) Tetrahydrofuran	9.74	42	229441	201.2997 ug/kg	99
38) 1,1,1-Trichloroethane	10.01	97	475952	104.5949 ug/kg	99
39) Cyclohexane	10.04	56	594668	103.3635 ug/kg	99
40) 1,1-Dichloropropene	10.20	75	411294	103.8241 ug/kg	100
41) Tert-Amyl-Methyl ether	10.31	73	1637917	204.8985 ug/kg	100
42) Carbon Tetrachloride	10.35	117	460621	104.3485 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974893.D Vial: 8
Acq On : 21 Jun 2016 10:41 Operator: ADC
Sample : WG573367-08 100.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:46:00 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.52	62	436407	105.7797 ug/kg	100
46)	Benzene	10.56	78	1222234	101.7771 ug/kg	100
47)	Trichloroethene	11.31	130	368556	104.7727 ug/kg	100
48)	Methylcyclohexane	11.40	83	515230	104.0519 ug/kg	99
49)	1,2-Dichloropropane	11.52	63	352659	107.4561 ug/kg	99
50)	1,4-Dioxane	11.82	88	23489	468.6835 ug/kg	93
51)	Bromodichloromethane	11.83	83	423673	106.3843 ug/kg	99
52)	Dibromomethane	11.91	174	224341	108.0240 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.13	63	205602	95.9539 ug/kg	98
54)	4-Methyl-2-Pentanone	12.15	58	142343	104.7935 ug/kg	99
55)	cis-1,3-Dichloropropene	12.46	75	510732	107.7526 ug/kg	99
56)	Dimethyl Disulfide	12.73	94	553945	97.9530 ug/kg	100
59)	Toluene	12.89	91	1304172	101.7164 ug/kg	100
60)	Ethyl Methacrylate	12.97	69	391036	106.9122 ug/kg	100
61)	trans-1,3-Dichloropropene	13.05	75	468960	107.7044 ug/kg	100
62)	1,1,2-Trichloroethane	13.28	97	283799	107.0604 ug/kg	100
63)	2-Hexanone	13.21	43	257503	96.9590 ug/kg	99
64)	1,3-Dichloropropane	13.58	76	462439	104.3409 ug/kg	100
65)	Tetrachloroethene	13.70	164	284337	103.7045 ug/kg	100
66)	Dibromochloromethane	13.97	129	375957	107.4177 ug/kg	99
67)	1,2-Dibromoethane	14.23	107	310949	104.4198 ug/kg	99
68)	1-Chlorohexane	14.30	91	422470	105.6491 ug/kg	100
69)	Chlorobenzene	14.72	112	937334	102.7103 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.75	131	348489	106.1516 ug/kg	98
71)	Ethylbenzene	14.75	106	506825	104.8309 ug/kg	98
72)	m-,p-Xylene	14.84	106	1204416	201.6622 ug/kg	99
73)	o-Xylene	15.41	106	602285	104.1633 ug/kg	100
74)	Styrene	15.44	104	1030900	106.8399 ug/kg	99
75)	Bromoform	15.95	173	261629	110.1564 ug/kg	99
76)	Isopropylbenzene	15.83	105	1523946	102.6987 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.05	83	394380	105.2668 ug/kg	100
80)	1,2,3-Trichloropropane	16.24	110	122714	105.6279 ug/kg	98
81)	trans-1,4-Dichloro-2-Buten	16.28	53	126445	113.0727 ug/kg	98
82)	n-Propylbenzene	16.34	91	1687085	100.8537 ug/kg	100
83)	Bromobenzene	16.47	156	417098	103.3766 ug/kg	99
84)	1,3,5-Trimethylbenzene	16.52	105	1309383	103.0682 ug/kg	99
85)	2-Chlorotoluene	16.61	91	1067693	105.5953 ug/kg	99
86)	4-Chlorotoluene	16.65	91	1016513	99.0686 ug/kg	99
87)	a-Methylstyrene	16.93	118	622423	105.5001 ug/kg	97
88)	tert-Butylbenzene	16.99	134	285485	104.0045 ug/kg	89
89)	1,2,4-Trimethylbenzene	17.04	105	1328397	106.1194 ug/kg	99
90)	sec-Butylbenzene	17.25	105	1678148	100.6760 ug/kg	99
91)	p-Isopropyltoluene	17.41	119	1426517	104.9224 ug/kg	99
92)	1,3-Dichlorobenzene	17.61	146	798662	102.4008 ug/kg	99
93)	1,4-Dichlorobenzene	17.74	146	794162	99.7676 ug/kg	99
94)	n-Butylbenzene	17.94	91	1277673	102.8225 ug/kg	100
95)	1,2-Dichlorobenzene	18.24	146	772945	103.7731 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.24	157	116750	108.3919 ug/kg	98
97)	1,2,4-Trichlorobenzene	20.38	180	604733	111.2929 ug/kg	100
98)	Hexachlorobutadiene	20.53	225	288735	104.7409 ug/kg	99
99)	Naphthalene	20.75	128	1655620	116.6551 ug/kg	99
100)	1,2,3-Trichlorobenzene	21.05	180	609790	114.6614 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M974893.D 8260S.M Thu Jun 23 11:46:01 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974893.D Vial: 8
Acq On : 21 Jun 2016 10:41 Operator: ADC
Sample : WG573367-08 100.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:46 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

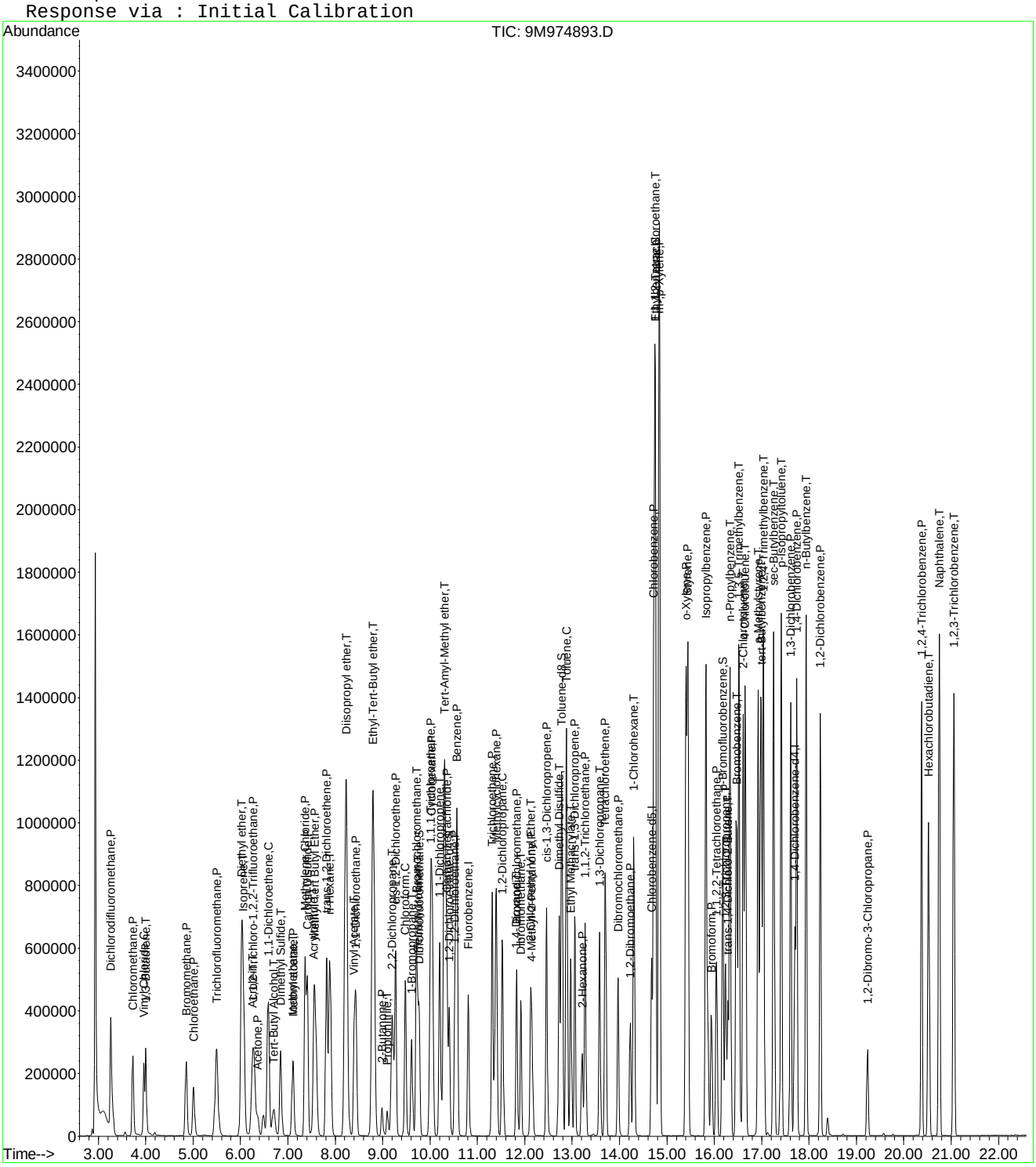

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974894.D Vial: 9
Acq On : 21 Jun 2016 11:11 Operator: ADC
Sample : WG573367-09 200.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:46:01 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.80	96	610597	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.68	117	491665	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.70	152	265337	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.77	111	684909	203.4236 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 406.84%#		
43) 1,2-Dichloroethane-d4	10.40	65	718489	200.7259 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 401.46%#		
58) Toluene-d8	12.78	98	2280659	187.2852 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 374.58%#		
79) p-Bromofluorobenzene	16.18	95	936105	193.2051 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 386.42%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.26	85	1031784	215.6595 ug/kg	99
3) Chloromethane	3.72	50	722519	170.8904 ug/kg	99
4) Vinyl Chloride	3.96	62	569236	191.7209 ug/kg	99
5) 1,3-Butadiene	4.00	54	276326	188.2231 ug/kg	98
6) Bromomethane	4.85	94	527130	196.3696 ug/kg	98
7) Chloroethane	5.00	64	501677	205.7540 ug/kg	99
8) Trichlorofluoromethane	5.50	101	1131983	205.4522 ug/kg	100
10) Isoprene	6.06	67	797406	205.2585 ug/kg	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.27	101	671497	203.1139 ug/kg	99
13) Acetone	6.36	43	219180	192.2122 ug/kg	99
14) 1,1-Dichloroethene	6.58	61	1069581	202.2609 ug/kg	100
15) Tert-Butyl Alcohol	6.70	59	458	0.8498 ug/kg#	61
16) Dimethyl Sulfide	6.85	62	467706	211.9379 ug/kg	100
17) Iodomethane	7.10	142	448716	197.3666 ug/kg	98
18) Methyl acetate	7.11	43	612825	196.7641 ug/kg	98
19) Methylene Chloride	7.36	84	687948	192.4614 ug/kg	98
20) Carbon Disulfide	7.41	76	1972057	197.3226 ug/kg	99
21) Acrylonitrile	7.57	53	19717	13.7158 ug/kg#	30
22) Methyl Tert Butyl Ether	7.58	73	1897414	207.2237 ug/kg	100
23) trans-1,2-Dichloroethene	7.81	61	1025217	203.8769 ug/kg	99
24) n-Hexane	7.88	57	1107338	197.1536 ug/kg	100
26) Vinyl Acetate	8.40	43	1328908	212.9030 ug/kg	99
27) 1,1-Dichloroethane	8.43	63	1277025	202.9003 ug/kg	99
29) 2-Butanone	8.99	43	356521	199.9920 ug/kg	98
31) 2,2-Dichloropropane	9.20	77	946895	202.4083 ug/kg	100
32) cis-1,2-Dichloroethene	9.27	96	736042	203.9234 ug/kg	98
33) Chloroform	9.48	83	1117634	206.0346 ug/kg	100
34) 1-Bromopropane	9.61	122	119775	212.5158 ug/kg	98
35) Bromochloromethane	9.72	130	500178	210.6436 ug/kg	99
36) Tetrahydrofuran	9.75	42	2858	2.3286 ug/kg#	76
38) 1,1,1-Trichloroethane	10.01	97	994732	203.0108 ug/kg	100
39) Cyclohexane	10.03	56	1262759	203.8352 ug/kg	100
40) 1,1-Dichloropropene	10.20	75	858618	201.2852 ug/kg	100
42) Carbon Tetrachloride	10.35	117	970419	204.1587 ug/kg	99
45) 1,2-Dichloroethane	10.53	62	914402	205.8324 ug/kg	99
46) Benzene	10.56	78	2524423	195.2198 ug/kg	99
47) Trichloroethene	11.31	130	760661	200.8177 ug/kg	99
48) Methylcyclohexane	11.40	83	1091006	204.6171 ug/kg	99
49) 1,2-Dichloropropane	11.52	63	732964	207.4077 ug/kg	100
50) 1,4-Dioxane	11.83	88	916	16.9737 ug/kg#	10

(#) = qualifier out of range (m) = manual integration
9M974894.D 8260S.M Thu Jun 23 11:46:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974894.D Vial: 9
Acq On : 21 Jun 2016 11:11 Operator: ADC
Sample : WG573367-09 200.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:46:01 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
51)	Bromodichloromethane	11.83	83	894531	208.5970 ug/kg	99
52)	Dibromomethane	11.92	174	469253	209.8383 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.12	63	452158	194.7090 ug/kg	99
54)	4-Methyl-2-Pentanone	12.15	58	314728	215.1789 ug/kg	99
55)	cis-1,3-Dichloropropene	12.46	75	1061668	208.0125 ug/kg	100
56)	Dimethyl Disulfide	12.73	94	1204264	196.5533 ug/kg	100
59)	Toluene	12.88	91	2672298	190.5848 ug/kg	99
60)	Ethyl Methacrylate	12.97	69	840546	210.1451 ug/kg	100
61)	trans-1,3-Dichloropropene	13.06	75	982367	206.3092 ug/kg	100
62)	1,1,2-Trichloroethane	13.27	97	591430	204.0181 ug/kg	99
63)	2-Hexanone	13.21	43	568503	193.2273 ug/kg	99
64)	1,3-Dichloropropane	13.58	76	970641	200.2655 ug/kg	99
65)	Tetrachloroethene	13.71	164	594933	198.4173 ug/kg	100
66)	Dibromochloromethane	13.97	129	796041	207.9796 ug/kg	99
67)	1,2-Dibromoethane	14.22	107	654383	200.9431 ug/kg	99
68)	1-Chlorohexane	14.31	91	891919	203.9588 ug/kg	100
69)	Chlorobenzene	14.73	112	1927980	193.1833 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.75	131	726205	202.2758 ug/kg	99
71)	Ethylbenzene	14.75	106	1046081	197.8535 ug/kg	96
72)	m-,p-Xylene	14.84	106	2460606	376.7363 ug/kg	98
73)	o-Xylene	15.41	106	1263689	199.8482 ug/kg	99
74)	Styrene	15.44	104	2158266	204.5358 ug/kg	98
75)	Bromoform	15.94	173	577279	222.2578 ug/kg	99
76)	Isopropylbenzene	15.83	105	3186997	196.3922 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.05	83	889445	207.9603 ug/kg	100
80)	1,2,3-Trichloropropane	16.24	110	272953	205.8057 ug/kg	99
81)	trans-1,4-Dichloro-2-Buten	16.28	53	291596	228.4139 ug/kg	99
82)	n-Propylbenzene	16.33	91	3546042	185.6880 ug/kg	98
83)	Bromobenzene	16.47	156	888445	192.8855 ug/kg	98
84)	1,3,5-Trimethylbenzene	16.52	105	2808244	193.6324 ug/kg	99
85)	2-Chlorotoluene	16.61	91	2210421	191.4954 ug/kg	99
86)	4-Chlorotoluene	16.65	91	2208130	188.5093 ug/kg	100
87)	a-Methylstyrene	16.93	118	1402628	208.2547 ug/kg	99
88)	tert-Butylbenzene	16.99	134	616621	196.7761 ug/kg	95
89)	1,2,4-Trimethylbenzene	17.04	105	2843963	199.4920 ug/kg	99
90)	sec-Butylbenzene	17.25	105	3607956	189.6017 ug/kg	99
91)	p-Isopropyltoluene	17.41	119	3059889	197.1434 ug/kg	99
92)	1,3-Dichlorobenzene	17.61	146	1718529	193.0112 ug/kg	98
93)	1,4-Dichlorobenzene	17.74	146	1724231	189.7410 ug/kg	100
94)	n-Butylbenzene	17.94	91	2738624	193.0572 ug/kg	100
95)	1,2-Dichlorobenzene	18.23	146	1692978	199.1006 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.24	157	249489	202.0540 ug/kg	99
97)	1,2,4-Trichlorobenzene	20.38	180	1277147	205.8873 ug/kg	100
98)	Hexachlorobutadiene	20.52	225	613219	194.8577 ug/kg	99
99)	Naphthalene	20.75	128	3281916	202.5608 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.05	180	1249266	205.7676 ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M974894.D 8260S.M Thu Jun 23 11:46:01 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974894.D Vial: 9
Acq On : 21 Jun 2016 11:11 Operator: ADC
Sample : WG573367-09 200.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:46 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

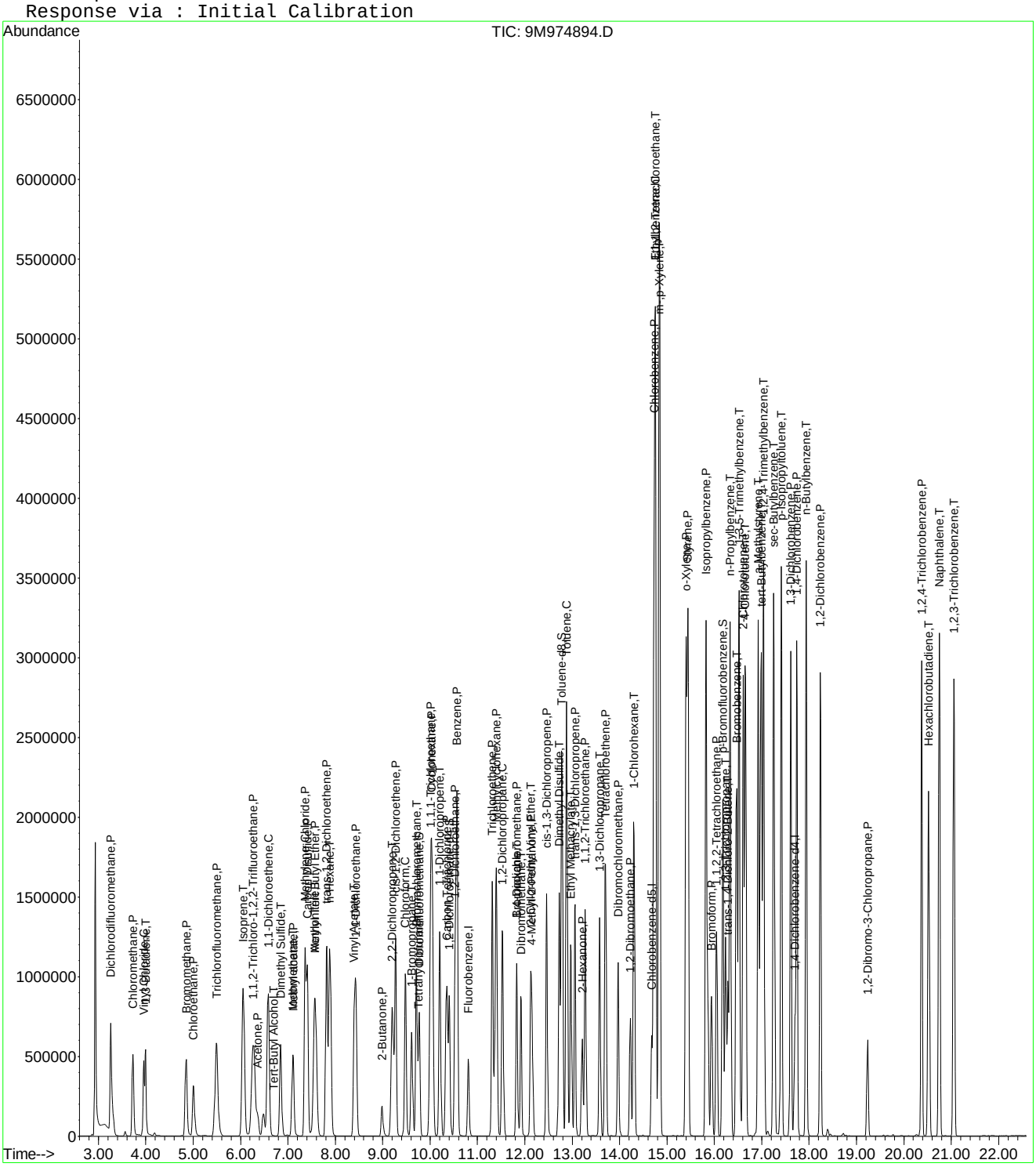

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974895.D Vial: 10
Acq On : 21 Jun 2016 11:41 Operator: ADC
Sample : WG573367-10 300.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:46:02 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.80	96	693797	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.68	117	559670	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.70	152	298130	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.77	111	1181794	308.9103 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 617.82%#		
43) 1,2-Dichloroethane-d4	10.40	65	1229242	302.2337 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 604.46%#		
58) Toluene-d8	12.78	98	3841067	277.0973 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 554.20%#		
79) p-Bromofluorobenzene	16.18	95	1607970	295.3684 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 590.74%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.25	85	1739842	320.0456 ug/kg	99
3) Chloromethane	3.72	50	1339104	278.7436 ug/kg	100
4) Vinyl Chloride	3.95	62	895419	265.4152 ug/kg	98
5) 1,3-Butadiene	3.99	54	468611	280.9222 ug/kg	99
6) Bromomethane	4.83	94	931511	305.3984 ug/kg	97
7) Chloroethane	4.99	64	877300	316.6609 ug/kg	99
8) Trichlorofluoromethane	5.49	101	1982960	316.7431 ug/kg	99
9) Diethyl ether	6.01	59	1070715	319.7261 ug/kg	99
10) Isoprene	6.05	67	1430224	324.0022 ug/kg	99
11) Acrolein	6.26	56	44791	178.4391 ug/kg	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.27	101	1173829	312.4803 ug/kg	100
13) Acetone	6.36	43	399677	310.6388 ug/kg	99
14) 1,1-Dichloroethene	6.57	61	1883747	313.5039 ug/kg	100
15) Tert-Butyl Alcohol	6.72	59	386083	630.4205 ug/kg	98
16) Dimethyl Sulfide	6.84	62	856086	341.4094 ug/kg	99
17) Iodomethane	7.10	142	804719	310.6594 ug/kg	98
18) Methyl acetate	7.11	43	1121778	316.9849 ug/kg	99
19) Methylene Chloride	7.36	84	1207066	297.1949 ug/kg	98
20) Carbon Disulfide	7.41	76	3508953	308.9990 ug/kg	99
21) Acrylonitrile	7.54	53	294097	180.0505 ug/kg	96
22) Methyl Tert Butyl Ether	7.56	73	3346311	321.6369 ug/kg	99
23) trans-1,2-Dichloroethene	7.81	61	1807803	316.3920 ug/kg	100
24) n-Hexane	7.88	57	1902899	298.1691 ug/kg	100
25) Diisopropyl ether	8.23	45	4140592	315.0321 ug/kg	99
26) Vinyl Acetate	8.40	43	2288653	322.6926 ug/kg	99
27) 1,1-Dichloroethane	8.43	63	2239146	313.1036 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.80	59	3931567	320.2509 ug/kg	99
29) 2-Butanone	8.99	43	654603	323.1675 ug/kg	98
30) Propionitrile	9.09	54	207822	338.8172 ug/kg	97
31) 2,2-Dichloropropane	9.20	77	1667883	313.7720 ug/kg	99
32) cis-1,2-Dichloroethene	9.27	96	1295080	315.7791 ug/kg	98
33) Chloroform	9.47	83	1966436	319.0382 ug/kg	99
34) 1-Bromopropane	9.61	122	218198	340.7203 ug/kg	100
35) Bromochloromethane	9.71	130	874757	324.2152 ug/kg	99
36) Tetrahydrofuran	9.74	42	435853	312.5361 ug/kg	100
38) 1,1,1-Trichloroethane	10.01	97	1760733	316.2488 ug/kg	100
39) Cyclohexane	10.03	56	2254003	320.2104 ug/kg	100
40) 1,1-Dichloropropene	10.20	75	1500982	309.6774 ug/kg	99
41) Tert-Amyl-Methyl ether	10.31	73	3117109	318.7037 ug/kg	99
42) Carbon Tetrachloride	10.35	117	1700997	314.9447 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974895.D Vial: 10
Acq On : 21 Jun 2016 11:41 Operator: ADC
Sample : WG573367-10 300.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:46:02 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.53	62	1604123	317.7872 ug/kg	99
46)	Benzene	10.56	78	4335362	295.0593 ug/kg	98
47)	Trichloroethene	11.31	130	1331484	309.3634 ug/kg	99
48)	Methylcyclohexane	11.40	83	1923698	317.5220 ug/kg	99
49)	1,2-Dichloropropane	11.52	63	1296486	322.8734 ug/kg	100
50)	1,4-Dioxane	11.82	88	38669	630.6178 ug/kg	93
51)	Bromodichloromethane	11.83	83	1586708	325.6356 ug/kg	99
52)	Dibromomethane	11.92	174	821863	323.4442 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.12	63	831260	314.2841 ug/kg	99
54)	4-Methyl-2-Pentanone	12.16	58	583990	351.3921 ug/kg	98
55)	cis-1,3-Dichloropropene	12.46	75	1886838	325.3550 ug/kg	100
56)	Dimethyl Disulfide	12.73	94	2178193	312.1786 ug/kg	98
59)	Toluene	12.88	91	4594585	287.8637 ug/kg	99
60)	Ethyl Methacrylate	12.97	69	1535644	337.2762 ug/kg	99
61)	trans-1,3-Dichloropropene	13.06	75	1737856	320.6239 ug/kg	100
62)	1,1,2-Trichloroethane	13.27	97	1054336	319.5080 ug/kg	100
63)	2-Hexanone	13.21	43	1051880	312.5351 ug/kg	98
64)	1,3-Dichloropropane	13.58	76	1720156	311.7832 ug/kg	100
65)	Tetrachloroethene	13.71	164	1033137	302.6960 ug/kg	100
66)	Dibromochloromethane	13.97	129	1427553	327.6534 ug/kg	99
67)	1,2-Dibromoethane	14.22	107	1173037	316.4391 ug/kg	100
68)	1-Chlorohexane	14.31	91	1579844	317.3720 ug/kg	99
69)	Chlorobenzene	14.73	112	3310074	291.3680 ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.76	131	1278554	312.8535 ug/kg	99
71)	Ethylbenzene	14.75	106	1797388	298.6466 ug/kg	94
72)	m-,p-Xylene	14.84	106	4147365	557.8339 ug/kg	95
73)	o-Xylene	15.41	106	2199283	305.5473 ug/kg	98
74)	Styrene	15.44	104	3741782	311.5158 ug/kg	97
75)	Bromoform	15.94	173	1055744	357.0814 ug/kg	99
76)	Isopropylbenzene	15.83	105	5449808	295.0265 ug/kg	97
78)	1,1,2,2-Tetrachloroethane	16.05	83	1579015	328.5790 ug/kg	99
80)	1,2,3-Trichloropropane	16.24	110	485595	325.8635 ug/kg	98
81)	trans-1,4-Dichloro-2-Buten	16.28	53	522975	364.5979 ug/kg	99
82)	n-Propylbenzene	16.33	91	5943461	276.9948 ug/kg	97
83)	Bromobenzene	16.47	156	1566350	302.6564 ug/kg	96
84)	1,3,5-Trimethylbenzene	16.52	105	4696882	288.2338 ug/kg	97
85)	2-Chlorotoluene	16.61	91	3719113	286.7575 ug/kg	88
86)	4-Chlorotoluene	16.66	91	3750741	284.9820 ug/kg	90
87)	a-Methylstyrene	16.93	118	2417321	319.4322 ug/kg	97
88)	tert-Butylbenzene	16.99	134	1048333	297.7456 ug/kg	95
89)	1,2,4-Trimethylbenzene	17.04	105	4673567	292.0256 ug/kg	98
90)	sec-Butylbenzene	17.25	105	5894090	275.6702 ug/kg	97
91)	p-Isopropyltoluene	17.41	119	4937681	283.1338 ug/kg	98
92)	1,3-Dichlorobenzene	17.61	146	2876768	287.5561 ug/kg	98
93)	1,4-Dichlorobenzene	17.74	146	2876761	281.7485 ug/kg	100
94)	n-Butylbenzene	17.94	91	4363156	273.7452 ug/kg	99
95)	1,2-Dichlorobenzene	18.24	146	2832093	296.4292 ug/kg	98
96)	1,2-Dibromo-3-Chloropropan	19.24	157	408721	294.1585 ug/kg	99
97)	1,2,4-Trichlorobenzene	20.38	180	1969915	282.6365 ug/kg	99
98)	Hexachlorobutadiene	20.52	225	995776	281.6149 ug/kg	99
99)	Naphthalene	20.75	128	4937627	271.2304 ug/kg	97
100)	1,2,3-Trichlorobenzene	21.06	180	1911925	280.2754 ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M974895.D 8260S.M Thu Jun 23 11:46:02 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974895.D Vial: 10
Acq On : 21 Jun 2016 11:41 Operator: ADC
Sample : WG573367-10 300.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:46 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

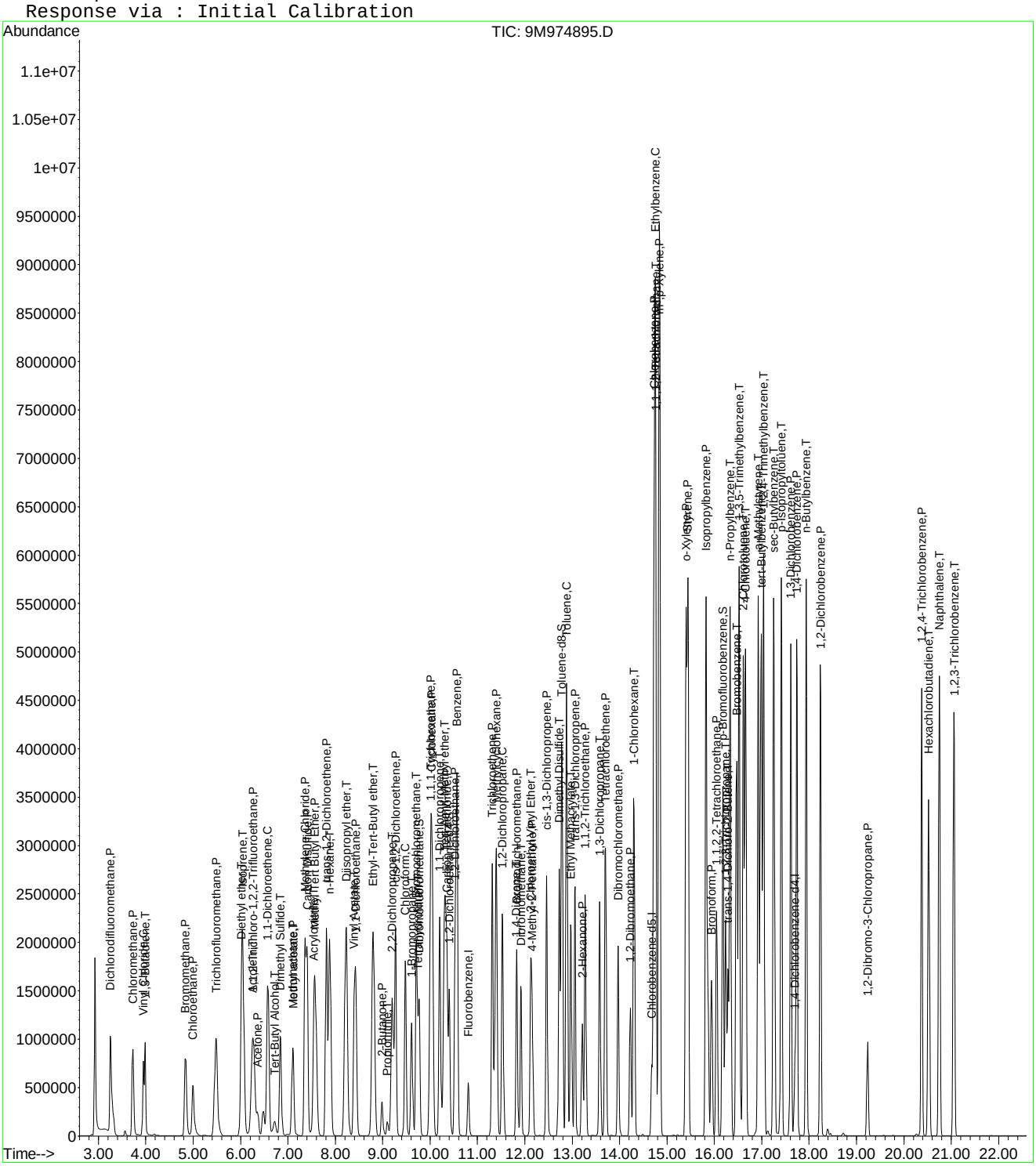

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974898.D Vial: 13
Acq On : 21 Jun 2016 13:12 Operator: ADC
Sample : WG573367-02 0.5ug/L 8260 Inst : hpms9
Misc : 7,1 STD76624 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:41:23 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.80	96	586697	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.68	117	460054	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.70	152	227703	50.00 ug/kg	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.77	111	214	0.0661 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.14%#	
43) 1,2-Dichloroethane-d4	10.41	65	605	0.1759 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.36%#	
58) Toluene-d8	12.79	98	4626	0.4060 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.82%#	
79) p-Bromofluorobenzene	16.18	95	4337	1.0431 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	2.08%#	

Target Compounds					Qvalue
3) Chloromethane	3.72	50	2941	0.7239 ug/kg	95
4) Vinyl Chloride	3.96	62	1189	0.4168 ug/kg#	44
5) 1,3-Butadiene	4.01	54	778	0.5515 ug/kg#	24
6) Bromomethane	4.85	94	1530	0.5932 ug/kg	83
13) Acetone	6.37	43	6464	2.4223 ug/kg	99
17) Iodomethane	7.10	142	384	1.6411 ug/kg#	36
19) Methylene Chloride	7.36	84	2629	0.7655 ug/kg	91
20) Carbon Disulfide	7.42	76	6195	0.6451 ug/kg#	74
22) Methyl Tert Butyl Ether	7.59	73	3560	0.4046 ug/kg#	59
24) n-Hexane	7.88	57	3726	0.6904 ug/kg	90
26) Vinyl Acetate	8.41	43	2777	0.4630 ug/kg#	76
27) 1,1-Dichloroethane	8.43	63	2500	0.4134 ug/kg#	51
33) Chloroform	9.47	83	2340	0.4489 ug/kg	89
36) Tetrahydrofuran	9.74	42	2452	2.0792 ug/kg#	84
46) Benzene	10.57	78	6833	0.5499 ug/kg#	86
47) Trichloroethene	11.31	130	1860	0.5111 ug/kg	92
48) Methylcyclohexane	11.40	83	2058	0.4017 ug/kg	86
56) Dimethyl Disulfide	12.72	94	1910	1.5069 ug/kg	87
59) Toluene	12.88	91	14706	1.1209 ug/kg	100
63) 2-Hexanone	13.22	43	244	2.5565 ug/kg#	30
64) 1,3-Dichloropropane	13.58	76	1917	0.4227 ug/kg	84
66) Dibromochloromethane	13.97	129	1490	0.4160 ug/kg	84
67) 1,2-Dibromoethane	14.22	107	1237	0.4059 ug/kg	89
68) 1-Chlorohexane	14.31	91	1976	0.4829 ug/kg	98
69) Chlorobenzene	14.73	112	5450	0.5836 ug/kg	99
70) 1,1,1,2-Tetrachloroethane	14.76	131	1437	0.4278 ug/kg	82
71) Ethylbenzene	14.75	106	2661	0.5379 ug/kg	90
72) m-,p-Xylene	14.84	106	6920	1.1323 ug/kg	93
73) o-Xylene	15.41	106	3517	0.5944 ug/kg	94
74) Styrene	15.45	104	5558	0.5629 ug/kg	96
76) Isopropylbenzene	15.83	105	9278	0.6110 ug/kg	98
78) 1,1,2,2-Tetrachloroethane	16.05	83	1839	0.5010 ug/kg#	77
82) n-Propylbenzene	16.33	91	14509	0.8853 ug/kg	99
83) Bromobenzene	16.47	156	2506	0.6340 ug/kg#	28
84) 1,3,5-Trimethylbenzene	16.52	105	14129	1.1352 ug/kg	95
85) 2-Chlorotoluene	16.61	91	6101	0.6159 ug/kg	96
86) 4-Chlorotoluene	16.66	91	7260	0.7222 ug/kg	85
87) a-Methylstyrene	16.92	118	2947	0.5099 ug/kg	98
88) tert-Butylbenzene	16.98	134	1564	0.5816 ug/kg	90
89) 1,2,4-Trimethylbenzene	17.04	105	29563	1.8729 ug/kg	89

(#) = qualifier out of range (m) = manual integration
9M974898.D 8260S.M Thu Jun 23 11:41:24 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974898.D Vial: 13
Acq On : 21 Jun 2016 13:12 Operator: ADC
Sample : WG573367-02 0.5ug/L 8260 Inst : hpms9
Misc : 7,1 STD76624 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:41:23 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
90)	sec-Butylbenzene	17.25	105	12082	0.7399 ug/kg	97
91)	p-Isopropyltoluene	17.41	119	10627	0.7978 ug/kg	95
92)	1,3-Dichlorobenzene	17.61	146	6148	0.8046 ug/kg	92
93)	1,4-Dichlorobenzene	17.74	146	6472	0.8299 ug/kg	85
94)	n-Butylbenzene	17.94	91	9656	0.7932 ug/kg	93
95)	1,2-Dichlorobenzene	18.23	146	5287	0.7245 ug/kg	98
97)	1,2,4-Trichlorobenzene	20.38	180	7212	1.3548 ug/kg	93
98)	Hexachlorobutadiene	20.52	225	2755	1.0201 ug/kg	85
99)	Naphthalene	20.75	128	20254	1.4567 ug/kg	97
100)	1,2,3-Trichlorobenzene	21.06	180	7874	1.5113 ug/kg	92

(#) = qualifier out of range (m) = manual integration
9M974898.D 8260S.M Thu Jun 23 11:41:24 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974898.D Vial: 13
Acq On : 21 Jun 2016 13:12 Operator: ADC
Sample : WG573367-02 0.5ug/L 8260 Inst : hpms9
Misc : 7,1 STD76624 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:41 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

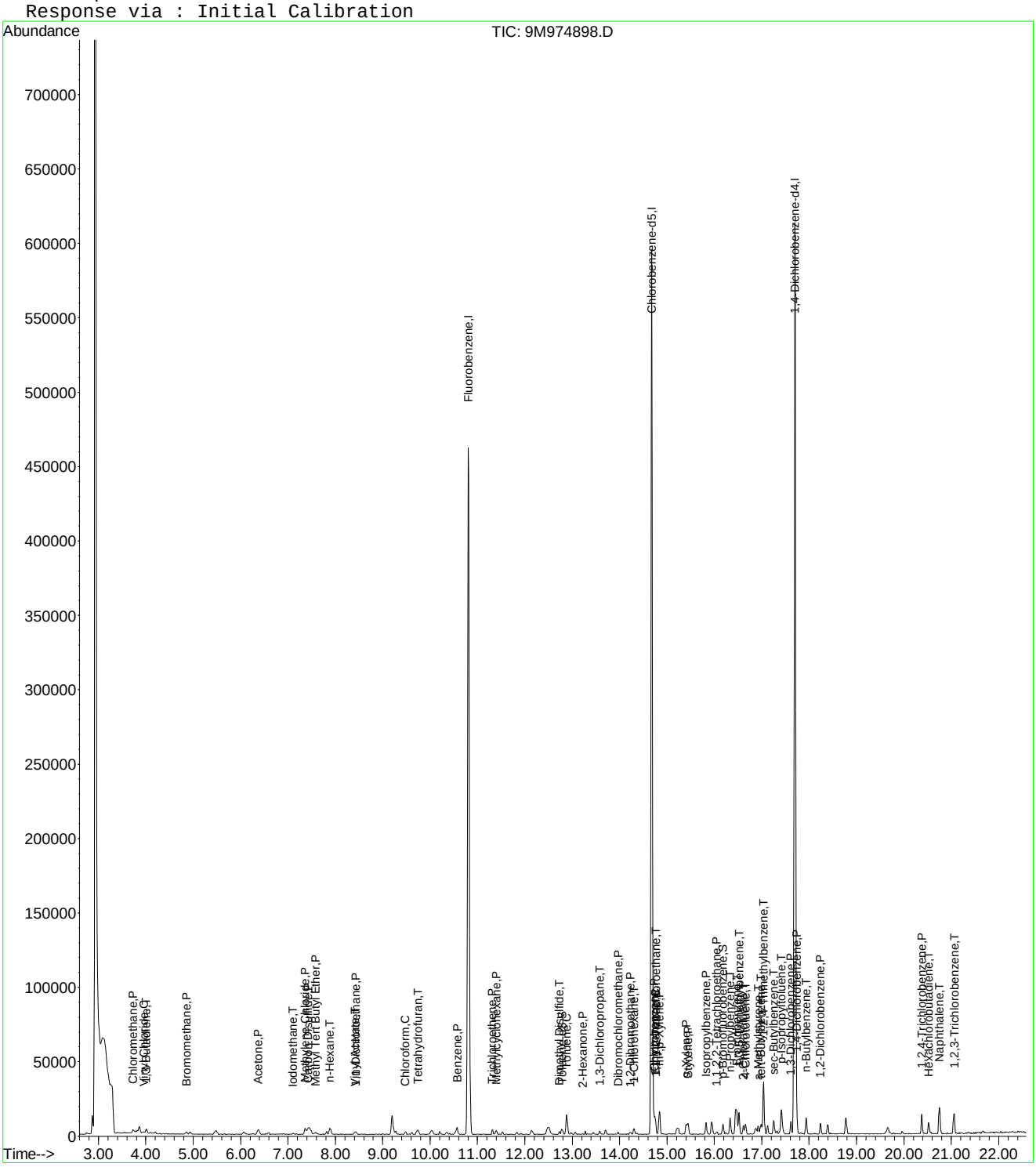

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\062116\9M974898.D Vial: 13
Acq On : 21 Jun 2016 13:12 Operator: ADC
Sample : WG573367-02 0.5ug/L 8260 Inst : hpms9
Misc : 7,1 STD76624 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	0.3198	0.0	100	0.01
3	P	Chloromethane	-1.0000	0.7239	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.4168	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	0.5515	0.0	100	0.01
6	P	Bromomethane	-1.0000	0.5932	0.0	100	0.00
7	P	Chloroethane	-1.0000	0.0824	0.0	100	0.00
8	P	Trichlorofluoromethane	-1.0000	0.3593	0.0	100	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.02#
10	T	Isoprene	-1.0000	0.3496	0.0	100	0.01
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.27#
12	P	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.1284	0.0	100	-0.02
13	P	Acetone	-1.0000	2.4223	0.0	100	0.01
14	C	1,1-Dichloroethene	-1.0000	0.3379	0.0	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.70#
16	T	Dimethyl Sulfide	-1.0000	0.0948	0.0	100	0.00
17	T	Iodomethane	-1.0000	1.6411	0.0	100	0.00
18	P	Methyl acetate	-1.0000	0.3769	0.0	100	0.00
19	P	Methylene Chloride	-1.0000	0.7655	0.0	100	0.00
20	P	Carbon Disulfide	-1.0000	0.6451	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.55#
22	P	Methyl Tert Butyl Ether	-1.0000	0.4046	0.0	100	0.01
23	P	trans-1,2-Dichloroethene	-1.0000	0.3808	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.6904	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.23#
26	T	Vinyl Acetate	-1.0000	0.4630	0.0	100	0.01
27	P	1,1-Dichloroethane	-1.0000	0.4134	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.80#
29	P	2-Butanone	-1.0000	0.2925	0.0	100	0.01
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.09#
31	T	2,2-Dichloropropane	-1.0000	0.3898	0.0	100	0.00
32	P	cis-1,2-Dichloroethene	-1.0000	0.3792	0.0	100	0.01
33	C	Chloroform	-1.0000	0.4489	0.0	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.62#
35	T	Bromochloromethane	-1.0000	0.3581	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	2.0792	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0661	0.0	100	0.00
38	P	1,1,1-Trichloroethane	-1.0000	0.3449	0.0	100	0.00
39	P	Cyclohexane	-1.0000	0.3765	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.3848	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.31#
42	P	Carbon Tetrachloride	-1.0000	0.3199	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.1759	0.0	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	-1.0000	0.3341	0.0	100	0.00
46	P	Benzene	-1.0000	0.5499	0.0	100	0.00
47	P	Trichloroethene	-1.0000	0.5111	0.0	100	0.00
48	P	Methylcyclohexane	-1.0000	0.4017	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.3637	0.0	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.82#
51	P	Bromodichloromethane	-1.0000	0.3548	0.0	100	0.00
52	T	Dibromomethane	-1.0000	0.3560	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.0000	0.0	0	-12.12#
54	P	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.15#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\062116\9M974898.D Vial: 13
Acq On : 21 Jun 2016 13:12 Operator: ADC
Sample : WG573367-02 0.5ug/L 8260 Inst : hpms9
Misc : 7,1 STD76624 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	-1.0000	0.3897	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.5069	0.0	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.4060	0.0	100	0.00
59	C	Toluene	-1.0000	1.1209	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2298	0.0	100	0.00
61	P	trans-1,3-Dichloropropene	-1.0000	0.3670	0.0	100	0.00
62	P	1,1,2-Trichloroethane	-1.0000	0.3521	0.0	100	0.00
63	P	2-Hexanone	-1.0000	2.5565	0.0	100	0.01
64	T	1,3-Dichloropropane	-1.0000	0.4227	0.0	100	0.00
65	P	Tetrachloroethene	-1.0000	0.3657	0.0	100	0.00
66	P	Dibromochloromethane	-1.0000	0.4160	0.0	100	0.00
67	P	1,2-Dibromoethane	-1.0000	0.4059	0.0	100	0.00
68	T	1-Chlorohexane	-1.0000	0.4829	0.0	100	0.00
69	P	Chlorobenzene	-1.0000	0.5836	0.0	100	0.00
70	T	1,1,1,2-Tetrachloroethane	-1.0000	0.4278	0.0	100	0.00
71	C	Ethylbenzene	-1.0000	0.5379	0.0	100	0.00
72	P	m-,p-Xylene	1.0000	1.1323	-13.2	100	0.00
73	P	o-Xylene	-1.0000	0.5944	0.0	100	0.00
74	P	Styrene	-1.0000	0.5629	0.0	100	0.00
75	P	Bromoform	-1.0000	0.3897	0.0	100	0.00
76	P	Isopropylbenzene	-1.0000	0.6110	0.0	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	-0.01
78	P	1,1,2,2-Tetrachloroethane	-1.0000	0.5010	0.0	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	1.0431	0.0	100	0.00
80	T	1,2,3-Trichloropropane	-1.0000	0.3409	0.0	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.28#
82	T	n-Propylbenzene	-1.0000	0.8853	0.0	100	0.00
83	T	Bromobenzene	-1.0000	0.6340	0.0	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	1.1352	0.0	100	0.00
85	T	2-Chlorotoluene	-1.0000	0.6159	0.0	100	0.00
86	T	4-Chlorotoluene	-1.0000	0.7222	0.0	100	0.00
87	T	a-Methylstyrene	-1.0000	0.5099	0.0	100	0.00
88	T	tert-Butylbenzene	-1.0000	0.5816	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	-1.0000	1.8729	0.0	100	0.00
90	T	sec-Butylbenzene	-1.0000	0.7399	0.0	100	0.00
91	T	p-Isopropyltoluene	-1.0000	0.7978	0.0	100	0.00
92	P	1,3-Dichlorobenzene	-1.0000	0.8046	0.0	100	0.00
93	P	1,4-Dichlorobenzene	-1.0000	0.8299	0.0	100	-0.01
94	T	n-Butylbenzene	-1.0000	0.7932	0.0	100	0.00
95	P	1,2-Dichlorobenzene	-1.0000	0.7245	0.0	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.23#
97	P	1,2,4-Trichlorobenzene	-1.0000	1.3548	0.0	100	0.00
98	T	Hexachlorobutadiene	-1.0000	1.0201	0.0	100	0.00
99	T	Naphthalene	-1.0000	1.4567	0.0	100	0.00
100	T	1,2,3-Trichlorobenzene	-1.0000	1.5113	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M974898.D 8260S.M Thu Jun 23 11:41:45 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974899.D Vial: 14
Acq On : 21 Jun 2016 13:42 Operator: ADC
Sample : WG573367-03 1.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76624 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:43:46 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.81	96	572074	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.68	117	448752	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.70	152	222925	50.00 ug/kg	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.77	111	3309	1.0490 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	2.10%#	
43) 1,2-Dichloroethane-d4	10.41	65	3798	1.1325 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	2.26%#	
58) Toluene-d8	12.78	98	13076	1.1765 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	2.36%#	
79) p-Bromofluorobenzene	16.18	95	6600	1.6214 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	3.24%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.26	85	3878	0.8651 ug/kg#	68
3) Chloromethane	3.74	50	5215	1.3165 ug/kg	98
4) Vinyl Chloride	3.96	62	3004	1.0799 ug/kg	91
5) 1,3-Butadiene	4.00	54	1323	0.9619 ug/kg#	56
6) Bromomethane	4.86	94	3206	1.2747 ug/kg	86
7) Chloroethane	5.01	64	1710	0.7486 ug/kg#	45
8) Trichlorofluoromethane	5.50	101	4531	0.8777 ug/kg#	95
9) Diethyl ether	6.02	59	13220	4.7876 ug/kg	97
10) Isoprene	6.07	67	3144	0.8638 ug/kg	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.27	101	2423	0.7823 ug/kg	88
14) 1,1-Dichloroethene	6.59	61	4356	0.8792 ug/kg	99
15) Tert-Butyl Alcohol	6.69	59	5098	10.0955 ug/kg#	79
16) Dimethyl Sulfide	6.85	62	1871	0.9049 ug/kg	79
17) Iodomethane	7.11	142	1442	2.1385 ug/kg#	36
18) Methyl acetate	7.12	43	2603	0.8920 ug/kg#	64
19) Methylene Chloride	7.37	84	3632	1.0845 ug/kg	99
20) Carbon Disulfide	7.41	76	10620	1.1342 ug/kg	99
21) Acrylonitrile	7.55	53	3125	2.3202 ug/kg	97
22) Methyl Tert Butyl Ether	7.57	73	7743	0.9026 ug/kg	87
23) trans-1,2-Dichloroethene	7.81	61	4188	0.8889 ug/kg	91
24) n-Hexane	7.89	57	4708	0.8947 ug/kg	95
25) Diisopropyl ether	8.23	45	52654	4.8585 ug/kg	98
26) Vinyl Acetate	8.40	43	4674	0.7992 ug/kg#	76
27) 1,1-Dichloroethane	8.43	63	5468	0.9273 ug/kg#	81
28) Ethyl-Tert-Butyl ether	8.80	59	48750	4.8159 ug/kg	99
29) 2-Butanone	8.99	43	1791	1.0723 ug/kg#	55
30) Propionitrile	9.10	54	1995	3.9445 ug/kg#	58
31) 2,2-Dichloropropane	9.19	77	3656	0.8341 ug/kg	77
32) cis-1,2-Dichloroethene	9.28	96	3201	0.9466 ug/kg	77
33) Chloroform	9.48	83	4406	0.8669 ug/kg	89
35) Bromochloromethane	9.71	130	1747	0.7853 ug/kg	83
36) Tetrahydrofuran	9.74	42	8069	7.0171 ug/kg	94
38) 1,1,1-Trichloroethane	10.01	97	4269	0.9299 ug/kg	100
39) Cyclohexane	10.04	56	5471	0.9426 ug/kg	92
40) 1,1-Dichloropropene	10.21	75	3795	0.9496 ug/kg	83
41) Tert-Amyl-Methyl ether	10.31	73	39410	4.8868 ug/kg	98
42) Carbon Tetrachloride	10.35	117	3850	0.8645 ug/kg#	91
45) 1,2-Dichloroethane	10.52	62	3940	0.9466 ug/kg	81
46) Benzene	10.56	78	12268	1.0126 ug/kg	96
47) Trichloroethene	11.31	130	3653	1.0293 ug/kg	89

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974899.D Vial: 14
Acq On : 21 Jun 2016 13:42 Operator: ADC
Sample : WG573367-03 1.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76624 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:43:46 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
48)	Methylcyclohexane	11.39	83	4886	0.9781 ug/kg	99
49)	1,2-Dichloropropane	11.53	63	2938	0.8874 ug/kg	85
51)	Bromodichloromethane	11.83	83	3411	0.8490 ug/kg#	92
52)	Dibromomethane	11.93	174	1790	0.8543 ug/kg	95
53)	2-Chloroethyl Vinyl Ether	12.12	63	1247	1.7801 ug/kg#	48
54)	4-Methyl-2-Pentanone	12.16	58	732	0.5342 ug/kg#	38
55)	cis-1,3-Dichloropropene	12.46	75	3889	0.8133 ug/kg#	75
56)	Dimethyl Disulfide	12.72	94	3570	1.8026 ug/kg	97
59)	Toluene	12.89	91	12584	0.9833 ug/kg	99
60)	Ethyl Methacrylate	12.98	69	2086	0.5714 ug/kg#	56
61)	trans-1,3-Dichloropropene	13.07	75	3556	0.8182 ug/kg	86
62)	1,1,2-Trichloroethane	13.28	97	2348	0.8874 ug/kg	96
63)	2-Hexanone	13.21	43	1380	2.9763 ug/kg#	27
64)	1,3-Dichloropropane	13.58	76	4248	0.9603 ug/kg	95
65)	Tetrachloroethene	13.70	164	2615	0.9555 ug/kg	92
66)	Dibromochloromethane	13.97	129	3037	0.8693 ug/kg	94
67)	1,2-Dibromoethane	14.23	107	2404	0.8088 ug/kg	94
68)	1-Chlorohexane	14.30	91	3704	0.9280 ug/kg	99
69)	Chlorobenzene	14.72	112	9147	1.0042 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.75	131	2708	0.8264 ug/kg	82
71)	Ethylbenzene	14.74	106	4619	0.9572 ug/kg	86
72)	m-,p-Xylene	14.84	106	12099	2.0296 ug/kg	97
73)	o-Xylene	15.41	106	5752	0.9966 ug/kg	95
74)	Styrene	15.44	104	9169	0.9520 ug/kg	100
75)	Bromoform	15.94	173	1839	0.7757 ug/kg	83
76)	Isopropylbenzene	15.83	105	15781	1.0655 ug/kg	98
78)	1,1,2,2-Tetrachloroethane	16.04	83	3144	0.8749 ug/kg#	90
80)	1,2,3-Trichloropropane	16.24	110	929	0.8337 ug/kg#	1
81)	trans-1,4-Dichloro-2-Buten	16.28	53	761	0.7095 ug/kg#	1
82)	n-Propylbenzene	16.33	91	17017	1.0606 ug/kg	96
83)	Bromobenzene	16.47	156	3992	1.0316 ug/kg	70
84)	1,3,5-Trimethylbenzene	16.52	105	12950	1.0628 ug/kg	97
85)	2-Chlorotoluene	16.61	91	11345	1.1698 ug/kg	99
86)	4-Chlorotoluene	16.65	91	10422	1.0590 ug/kg	99
87)	a-Methylstyrene	16.93	118	5046	0.8917 ug/kg	95
88)	tert-Butylbenzene	16.98	134	3100	1.1775 ug/kg	87
89)	1,2,4-Trimethylbenzene	17.03	105	14007	0.6225 ug/kg	95
90)	sec-Butylbenzene	17.26	105	18052	1.1291 ug/kg	97
91)	p-Isopropyltoluene	17.41	119	15149	1.1617 ug/kg	96
92)	1,3-Dichlorobenzene	17.61	146	8341	1.1150 ug/kg	99
93)	1,4-Dichlorobenzene	17.74	146	9392	1.2302 ug/kg	88
94)	n-Butylbenzene	17.94	91	13797	1.1577 ug/kg	94
95)	1,2-Dichlorobenzene	18.24	146	8121	1.1368 ug/kg	97
96)	1,2-Dibromo-3-Chloropropan	19.23	157	747	1.6839 ug/kg	76
97)	1,2,4-Trichlorobenzene	20.38	180	7995	1.5341 ug/kg	94
98)	Hexachlorobutadiene	20.53	225	3168	1.1982 ug/kg	93
99)	Naphthalene	20.75	128	20590	1.5126 ug/kg	99
100)	1,2,3-Trichlorobenzene	21.05	180	8358	1.6386 ug/kg	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974899.D Vial: 14
Acq On : 21 Jun 2016 13:42 Operator: ADC
Sample : WG573367-03 1.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76624 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:43 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

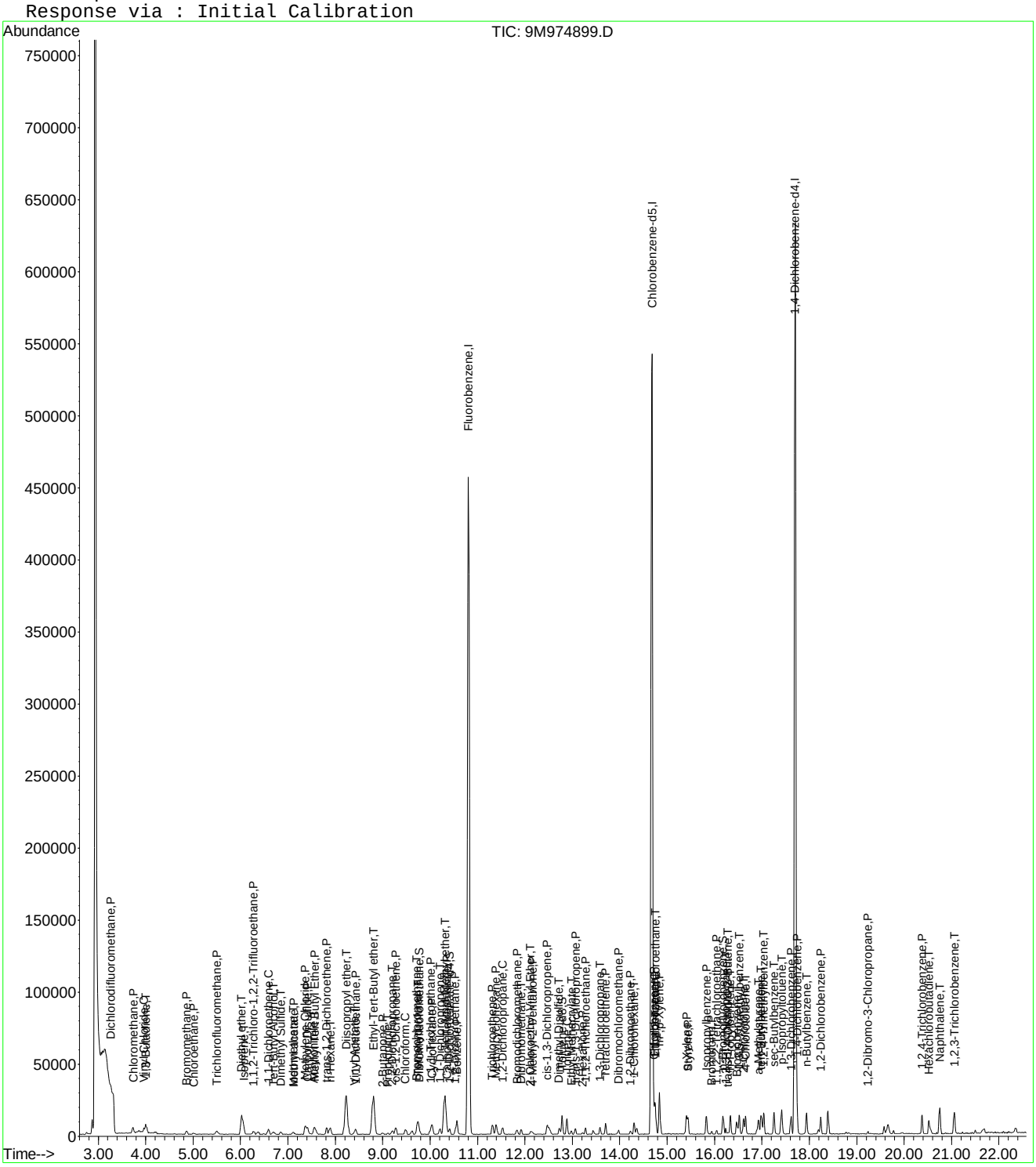

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\062116\9M974899.D Vial: 14
Acq On : 21 Jun 2016 13:42 Operator: ADC
Sample : WG573367-03 1.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76624 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	1.0000	0.8651	13.5	100	0.00
3	P	Chloromethane	1.0000	1.3165	-31.7#	100	0.00
4	C	Vinyl Chloride	1.0000	1.0799	-8.0	100	0.00
5	T	1,3-Butadiene	1.0000	0.9619	3.8	100	0.00
6	P	Bromomethane	1.0000	1.2747	-27.5#	100	0.00
7	P	Chloroethane	-1.0000	0.7486	0.0	0	0.00
8	P	Trichlorofluoromethane	1.0000	0.8777	12.2	100	0.00
9	T	Diethyl ether	5.0000	4.7876	4.2	100	0.00
10	T	Isoprene	-1.0000	0.8638	0.0	100	0.00
11	T	Acrolein	2.5000	0.0000	100.0#	0	-6.27#
12	P	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.7823	0.0	100	0.00
13	P	Acetone	-1.0000	0.0187	0.0	100	0.00
14	C	1,1-Dichloroethene	-1.0000	0.8792	0.0	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	10.0955	0.0	100	0.00
16	T	Dimethyl Sulfide	1.0000	0.9049	9.5	100	0.00
17	T	Iodomethane	-1.0000	2.1385	0.0	100	0.00
18	P	Methyl acetate	-1.0000	0.8920	0.0	100	0.01
19	P	Methylene Chloride	-1.0000	1.0845	0.0	100	0.00
20	P	Carbon Disulfide	-1.0000	1.1342	0.0	100	0.00
21	T	Acrylonitrile	2.5000	2.3203	7.2	100	0.00
22	P	Methyl Tert Butyl Ether	1.0000	0.9026	9.7	100	0.00
23	P	trans-1,2-Dichloroethene	1.0000	0.8889	11.1	100	0.00
24	T	n-Hexane	-1.0000	0.8947	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	4.8585	2.8	100	0.00
26	T	Vinyl Acetate	-1.0000	0.7992	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	0.9273	7.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.8159	3.7	100	0.00
29	P	2-Butanone	-1.0000	1.0723	0.0	100	0.00
30	T	Propionitrile	5.0000	3.9446	21.1	100	0.00
31	T	2,2-Dichloropropane	-1.0000	0.8341	0.0	100	-0.02
32	P	cis-1,2-Dichloroethene	1.0000	0.9466	5.3	100	0.00
33	C	Chloroform	1.0000	0.8669	13.3	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.62#
35	T	Bromochloromethane	1.0000	0.7853	21.5	100	0.00
36	T	Tetrahydrofuran	-1.0000	7.0171	0.0	100	0.00
37	S	Dibromofluoromethane	1.0000	1.0490	-4.9	100	0.00
38	P	1,1,1-Trichloroethane	1.0000	0.9299	7.0	100	0.00
39	P	Cyclohexane	1.0000	0.9426	5.7	100	0.00
40	T	1,1-Dichloropropene	1.0000	0.9496	5.0	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	4.8868	2.3	100	0.00
42	P	Carbon Tetrachloride	-1.0000	0.8645	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.1325	-13.3	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	1.0000	0.9466	5.3	100	0.00
46	P	Benzene	1.0000	1.0126	-1.3	100	0.00
47	P	Trichloroethene	1.0000	1.0294	-2.9	100	0.00
48	P	Methylcyclohexane	1.0000	0.9781	2.2	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.8873	11.3	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.82#
51	P	Bromodichloromethane	-1.0000	0.8490	0.0	100	0.00
52	T	Dibromomethane	1.0000	0.8543	14.6	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	1.7801	0.0	100	0.00
54	P	4-Methyl-2-Pentanone	-1.0000	0.5342	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\062116\9M974899.D Vial: 14
Acq On : 21 Jun 2016 13:42 Operator: ADC
Sample : WG573367-03 1.0ug/L 8260 Inst : hpms9
Misc : 7,1 STD76624 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	-1.0000	0.8133	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.8026	0.0	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	1.1765	-17.6	100	0.00
59	C	Toluene	1.0000	0.9833	1.7	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.5714	0.0	100	0.00
61	P	trans-1,3-Dichloropropene	-1.0000	0.8182	0.0	100	0.00
62	P	1,1,2-Trichloroethane	1.0000	0.8874	11.3	100	0.00
63	P	2-Hexanone	-1.0000	2.9763	0.0	0	0.00
64	T	1,3-Dichloropropane	1.0000	0.9603	4.0	100	0.00
65	P	Tetrachloroethene	1.0000	0.9555	4.4	100	0.00
66	P	Dibromochloromethane	-1.0000	0.8693	0.0	100	0.00
67	P	1,2-Dibromoethane	-1.0000	0.8088	0.0	100	0.00
68	T	1-Chlorohexane	1.0000	0.9280	7.2	100	0.00
69	P	Chlorobenzene	1.0000	1.0042	-0.4	100	0.00
70	T	1,1,1,2-Tetrachloroethane	-1.0000	0.8264	0.0	100	0.00
71	C	Ethylbenzene	1.0000	0.9572	4.3	100	0.00
72	P	m-,p-Xylene	2.0000	2.0296	-1.5	100	0.00
73	P	o-Xylene	1.0000	0.9967	0.3	100	0.00
74	P	Styrene	1.0000	0.9520	4.8	100	0.00
75	P	Bromoform	-1.0000	0.7757	0.0	100	0.00
76	P	Isopropylbenzene	1.0000	1.0655	-6.5	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	1.0000	0.8750	12.5	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	1.6214	0.0	100	0.00
80	T	1,2,3-Trichloropropane	-1.0000	0.8337	0.0	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.7095	0.0	0	0.00
82	T	n-Propylbenzene	1.0000	1.0606	-6.1	100	0.00
83	T	Bromobenzene	1.0000	1.0316	-3.2	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	1.0628	0.0	100	0.00
85	T	2-Chlorotoluene	-1.0000	1.1698	0.0	100	0.00
86	T	4-Chlorotoluene	1.0000	1.0590	-5.9	100	0.00
87	T	a-Methylstyrene	-1.0000	0.8917	0.0	100	0.00
88	T	tert-Butylbenzene	-1.0000	1.1775	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	1.0000	0.6225	37.7#	100	0.00
90	T	sec-Butylbenzene	1.0000	1.1291	-12.9	100	0.00
91	T	p-Isopropyltoluene	-1.0000	1.1617	0.0	100	0.00
92	P	1,3-Dichlorobenzene	1.0000	1.1150	-11.5	100	0.00
93	P	1,4-Dichlorobenzene	1.0000	1.2302	-23.0	100	0.00
94	T	n-Butylbenzene	1.0000	1.1577	-15.8	100	0.00
95	P	1,2-Dichlorobenzene	1.0000	1.1368	-13.7	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	1.6839	0.0	100	0.00
97	P	1,2,4-Trichlorobenzene	-1.0000	1.5341	0.0	0	0.00
98	T	Hexachlorobutadiene	1.0000	1.1982	-19.8	100	0.00
99	T	Naphthalene	-1.0000	1.5126	0.0	100	0.00
100	T	1,2,3-Trichlorobenzene	-1.0000	1.6386	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M974899.D 8260S.M Thu Jun 23 11:43:48 2016 Page 2

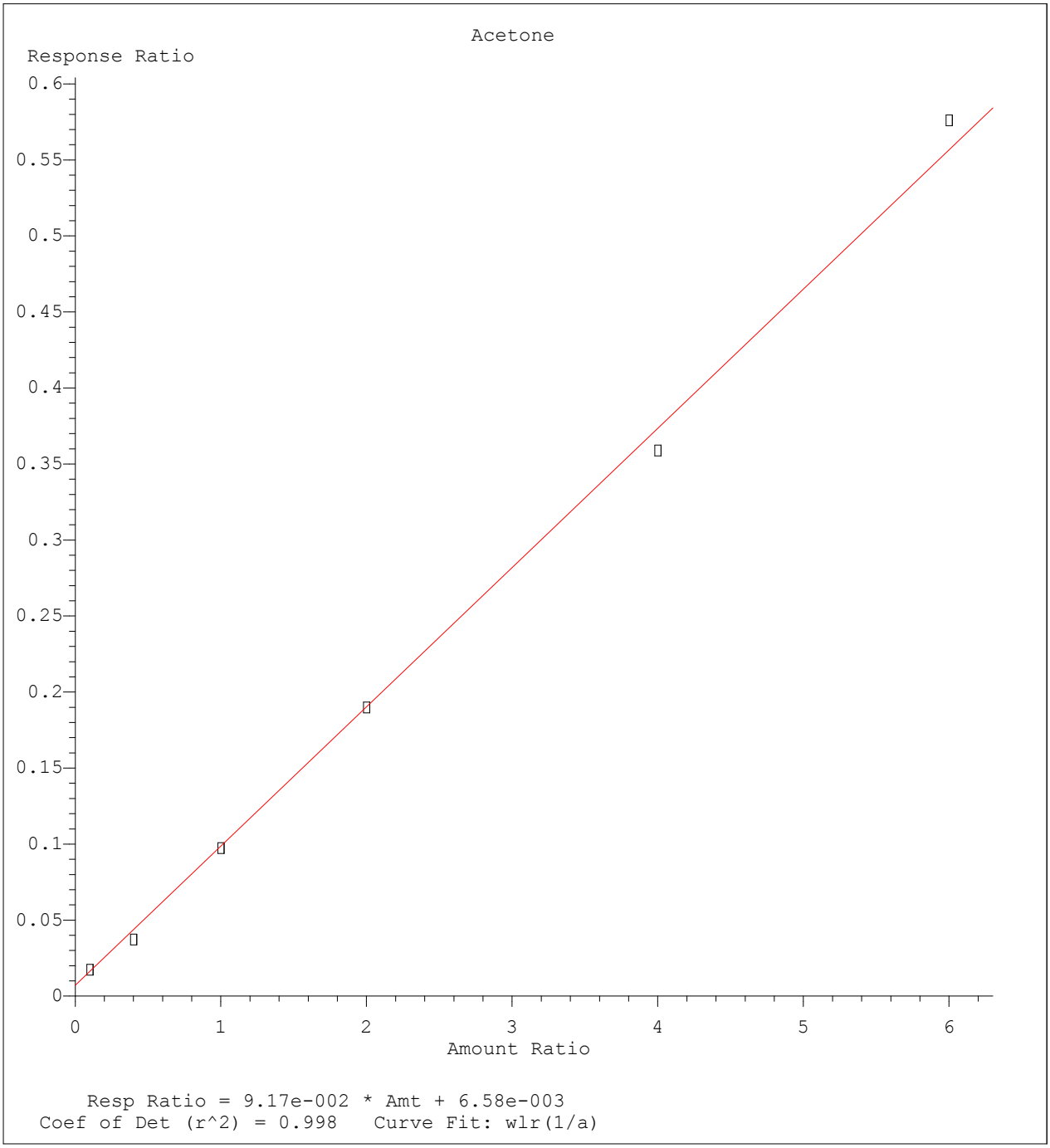

Method Name: C:\MSDCHEM\1\METHODS\8260S.M
Calibration Table Last Updated: Thu Jun 23 11:41:07 2016

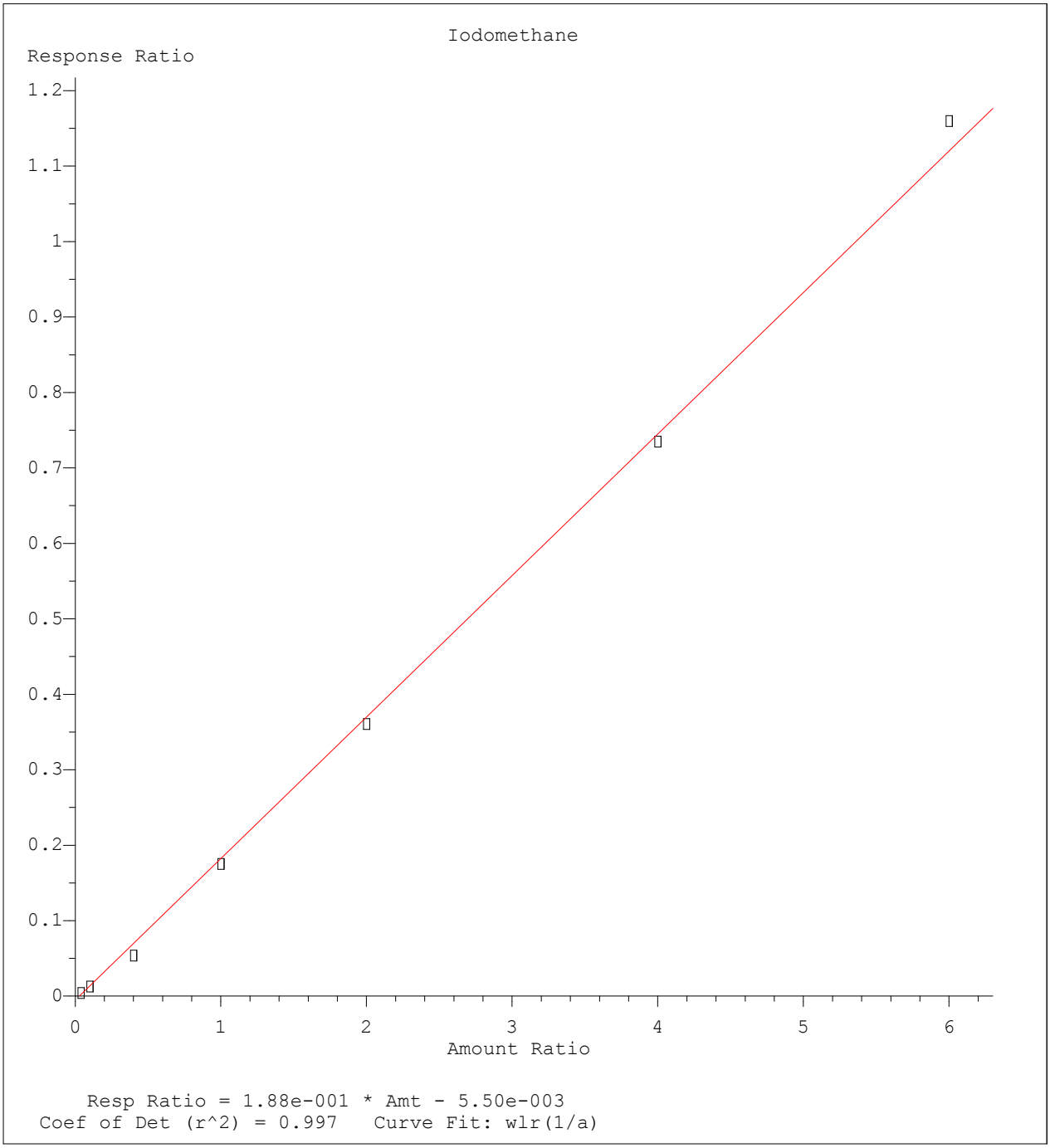

Method Name: C:\MSDCHEM\1\METHODS\8260S.M
Calibration Table Last Updated: Thu Jun 23 11:41:07 2016

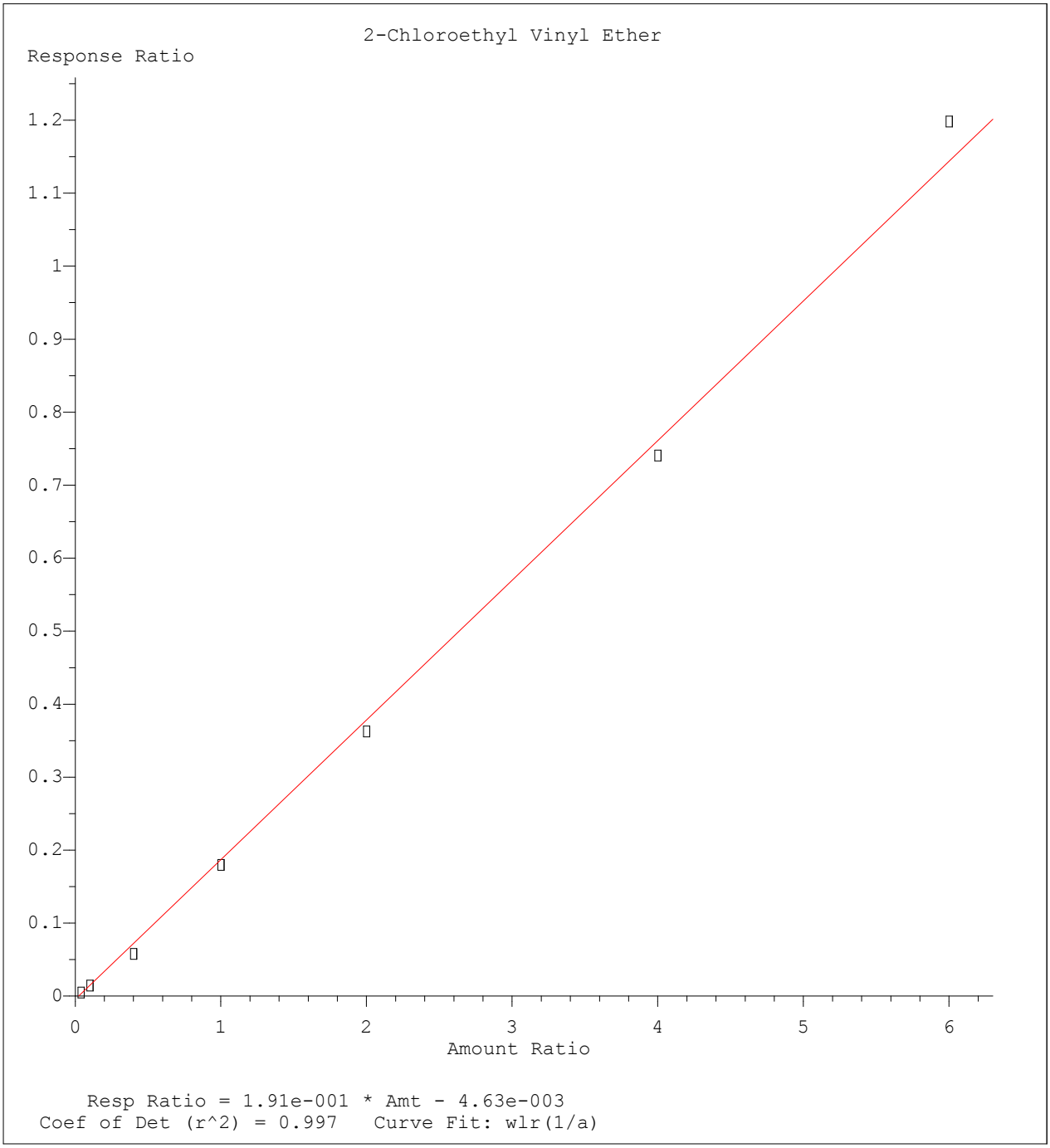

Method Name: C:\MSDCHEM\1\METHODS\8260S.M
Calibration Table Last Updated: Thu Jun 23 11:41:07 2016

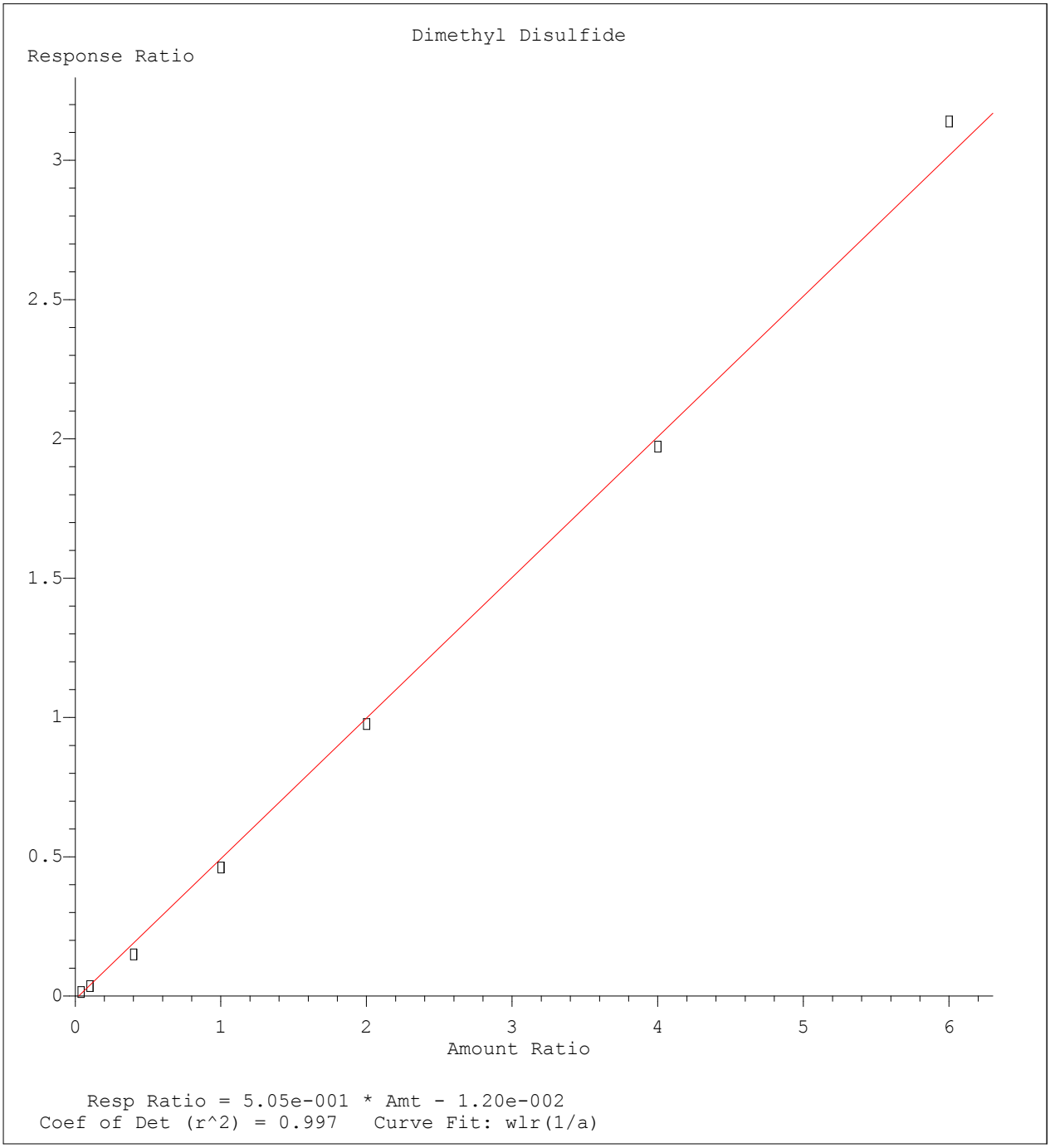

Method Name: C:\MSDCHEM\1\METHODS\8260S.M
Calibration Table Last Updated: Thu Jun 23 11:41:07 2016

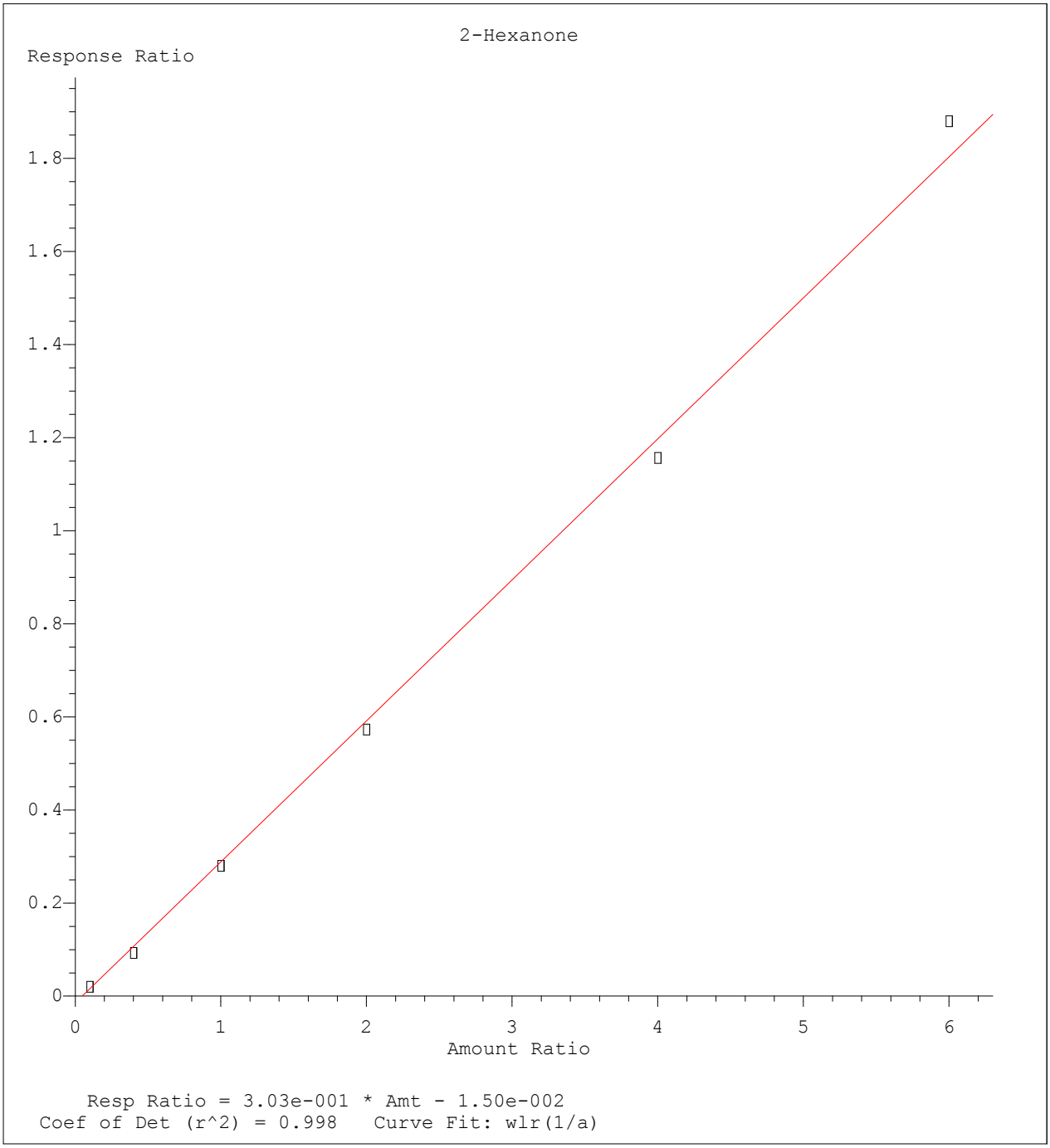

Method Name: C:\MSDCHEM\1\METHODS\8260S.M
Calibration Table Last Updated: Thu Jun 23 11:41:07 2016

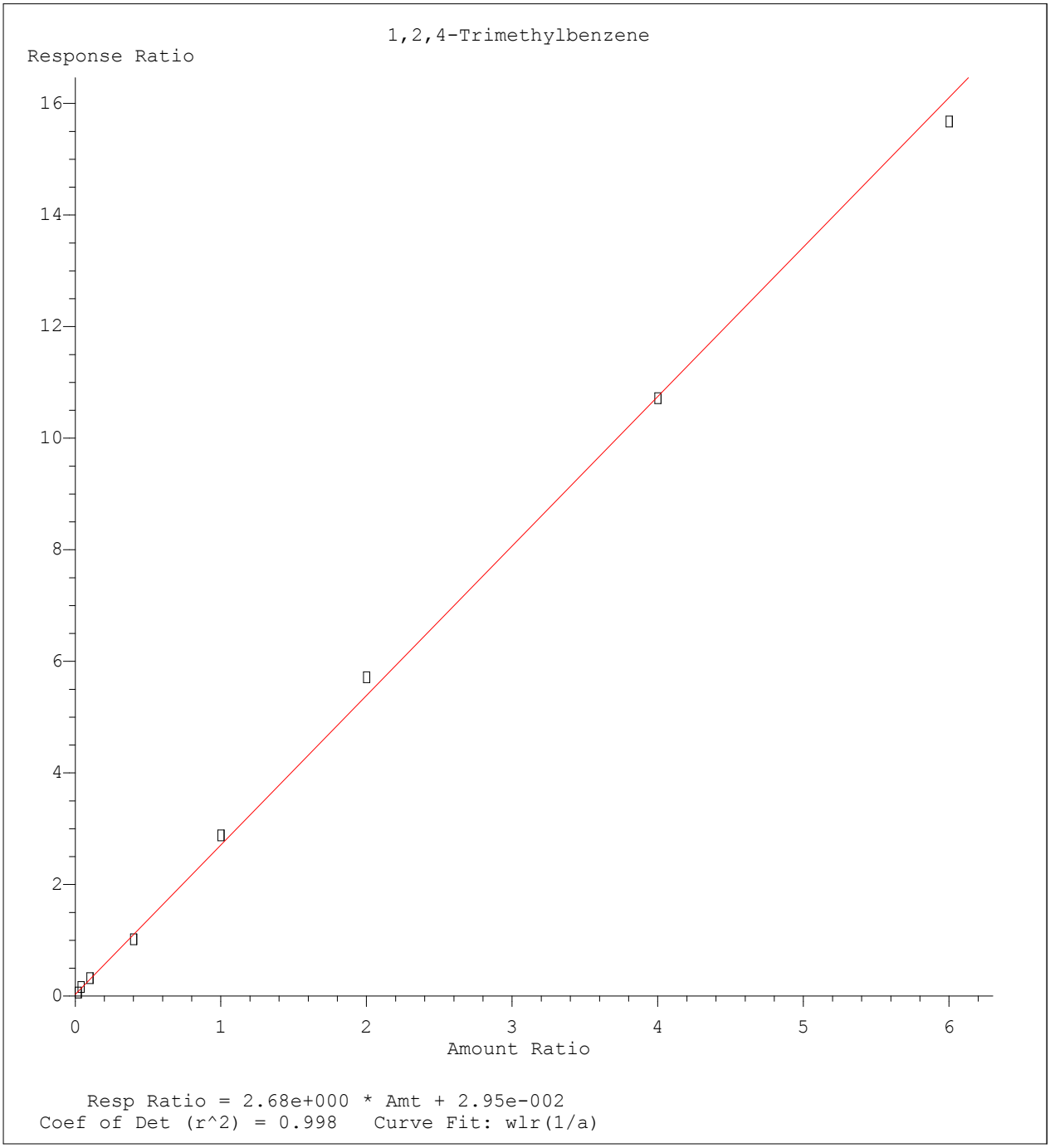

Method Name: C:\MSDCHEM\1\METHODS\8260S.M
Calibration Table Last Updated: Thu Jun 23 11:41:07 2016

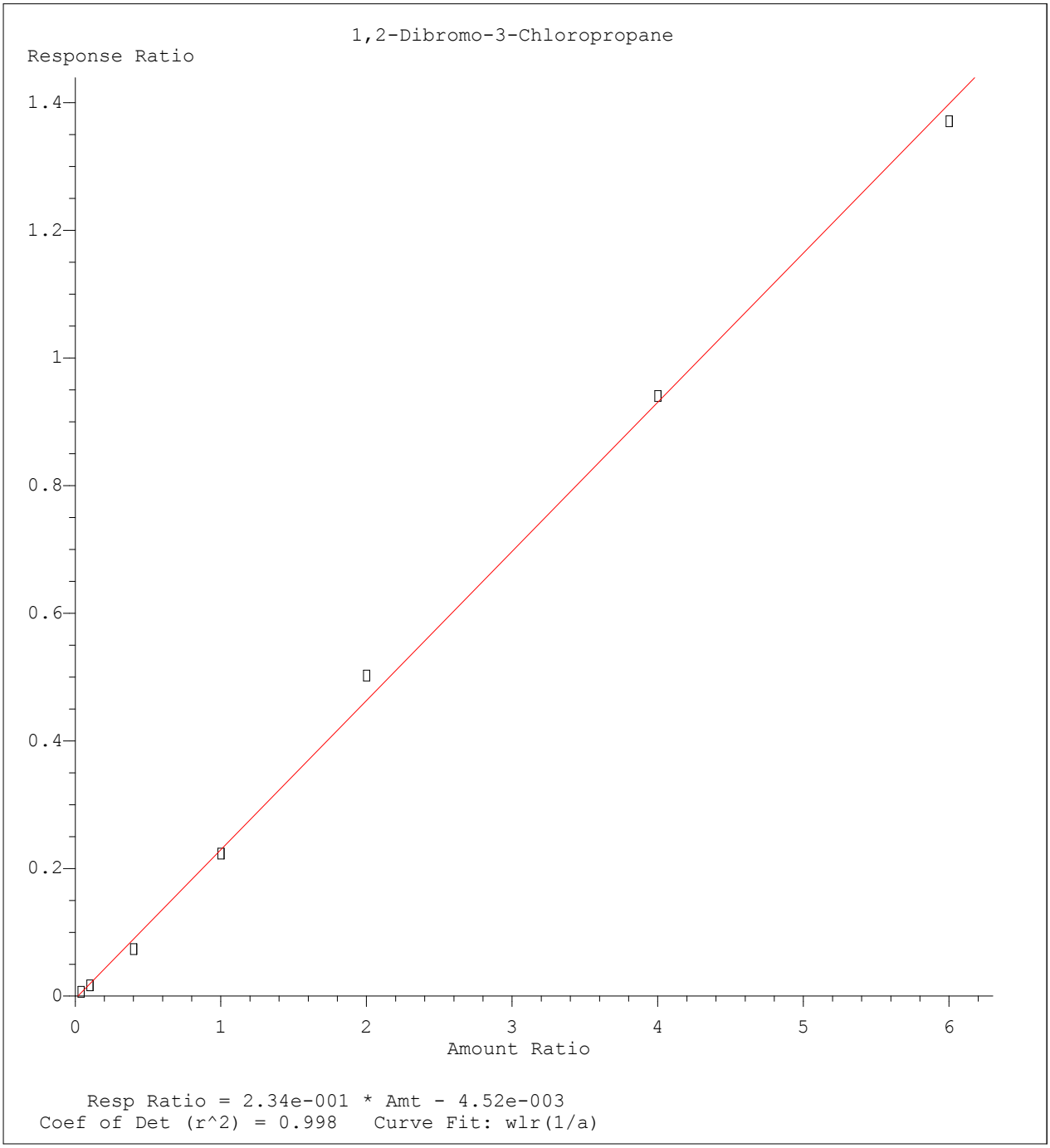

Method Name: C:\MSDCHEM\1\METHODS\8260S.M
Calibration Table Last Updated: Thu Jun 23 11:41:07 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974903.D Vial: 18
Acq On : 21 Jun 2016 15:35 Operator: ADC
Sample : WG573367-11 50.0ug/L 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:46:06 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.81	96	679207	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.68	117	526666	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.70	152	267813	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.77	111	187113	49.9603 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.92%		
43) 1,2-Dichloroethane-d4	10.40	65	187716	47.1451 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.30%		
58) Toluene-d8	12.78	98	664453	50.9380 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.88%		
79) p-Bromofluorobenzene	16.18	95	252283	51.5879 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 103.18%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.25	85	341770	64.2194 ug/kg	100
3) Chloromethane	3.72	50	247991	52.7299 ug/kg	99
4) Vinyl Chloride	3.95	62	181911	55.0793 ug/kg	99
5) 1,3-Butadiene	3.99	54	72765	44.5581 ug/kg	98
6) Bromomethane	4.83	94	170650	57.1499 ug/kg	96
7) Chloroethane	4.99	64	158342	58.3811 ug/kg	99
8) Trichlorofluoromethane	5.48	101	352079	57.4465 ug/kg	99
9) Diethyl ether	6.01	59	340042	103.7211 ug/kg	99
10) Isoprene	6.05	67	324065	74.9905 ug/kg	98
11) Acrolein	6.26	56	36698	149.3385 ug/kg	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.27	101	221823	60.3191 ug/kg	100
13) Acetone	6.36	43	69891	52.5413 ug/kg	99
14) 1,1-Dichloroethene	6.57	61	310986	52.8678 ug/kg	99
15) Tert-Butyl Alcohol	6.71	59	111546	186.0518 ug/kg	99
16) Dimethyl Sulfide	6.85	62	272626	111.0595 ug/kg	98
17) Iodomethane	7.10	142	221586	88.4342 ug/kg	100
18) Methyl acetate	7.11	43	165521	47.7766 ug/kg	99
19) Methylene Chloride	7.35	84	194460	48.9070 ug/kg	99
20) Carbon Disulfide	7.41	76	646138	58.1213 ug/kg	100
21) Acrylonitrile	7.54	53	88536	55.3674 ug/kg	100
22) Methyl Tert Butyl Ether	7.57	73	551963	54.1926 ug/kg	100
23) trans-1,2-Dichloroethene	7.81	61	309479	55.3268 ug/kg	100
24) n-Hexane	7.88	57	379646	60.7653 ug/kg	99
25) Diisopropyl ether	8.23	45	1366177	106.1768 ug/kg	99
26) Vinyl Acetate	8.40	43	450901	64.9412 ug/kg	99
27) 1,1-Dichloroethane	8.43	63	359230	51.3108 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.80	59	1186704	98.7410 ug/kg	99
29) 2-Butanone	8.99	43	103236	52.0608 ug/kg	98
30) Propionitrile	9.10	54	60637	100.9815 ug/kg	95
31) 2,2-Dichloropropane	9.20	77	294233	56.5419 ug/kg	99
32) cis-1,2-Dichloroethene	9.28	96	217936	54.2808 ug/kg	99
33) Chloroform	9.48	83	316916	52.5215 ug/kg	99
34) 1-Bromopropane	9.61	122	51441	82.0516 ug/kg	98
35) Bromochloromethane	9.71	130	135230	51.1976 ug/kg	97
36) Tetrahydrofuran	9.74	42	122537	89.7548 ug/kg	98
38) 1,1,1-Trichloroethane	10.01	97	294905	54.1063 ug/kg	100
39) Cyclohexane	10.04	56	433626	62.9255 ug/kg	99
40) 1,1-Dichloropropene	10.20	75	255481	53.8422 ug/kg	99
41) Tert-Amyl-Methyl ether	10.31	73	986369	103.0160 ug/kg	99
42) Carbon Tetrachloride	10.35	117	282579	53.4442 ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M974903.D 8260S.M Thu Jun 23 11:46:06 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974903.D Vial: 18
Acq On : 21 Jun 2016 15:35 Operator: ADC
Sample : WG573367-11 50.0ug/L 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:46:06 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.52	62	253409	51.2804 ug/kg	99
46)	Benzene	10.56	78	750805	52.1965 ug/kg	99
47)	Trichloroethene	11.31	130	231517	54.9473 ug/kg	99
48)	Methylcyclohexane	11.40	83	379618	64.0050 ug/kg	99
49)	1,2-Dichloropropane	11.52	63	214956	54.6820 ug/kg	100
50)	1,4-Dioxane	11.82	88	10832	180.4439 ug/kg	89
51)	Bromodichloromethane	11.83	83	244839	51.3270 ug/kg	99
52)	Dibromomethane	11.92	174	123563	49.6728 ug/kg	100
53)	2-Chloroethyl Vinyl Ether	12.12	63	130503	51.4171 ug/kg	98
54)	4-Methyl-2-Pentanone	12.15	58	88065	54.1278 ug/kg	97
55)	cis-1,3-Dichloropropene	12.46	75	323333	56.9512 ug/kg	99
56)	Dimethyl Disulfide	12.73	94	368559	54.9362 ug/kg	99
59)	Toluene	12.88	91	811591	54.0349 ug/kg	100
60)	Ethyl Methacrylate	12.97	69	248788	58.0659 ug/kg	99
61)	trans-1,3-Dichloropropene	13.06	75	273281	53.5782 ug/kg	99
62)	1,1,2-Trichloroethane	13.27	97	163462	52.6400 ug/kg	99
63)	2-Hexanone	13.21	43	151650	49.9727 ug/kg	100
64)	1,3-Dichloropropane	13.58	76	284325	54.7642 ug/kg	99
65)	Tetrachloroethene	13.71	164	176711	55.0185 ug/kg	99
66)	Dibromochloromethane	13.97	129	210428	51.3243 ug/kg	100
67)	1,2-Dibromoethane	14.22	107	176287	50.5354 ug/kg	100
68)	1-Chlorohexane	14.30	91	297204	63.4462 ug/kg	99
69)	Chlorobenzene	14.73	112	586485	54.8603 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.75	131	204311	53.1264 ug/kg	99
71)	Ethylbenzene	14.75	106	317585	56.0754 ug/kg	99
72)	m-,p-Xylene	14.84	106	767410	109.6874 ug/kg	100
73)	o-Xylene	15.41	106	379776	56.0688 ug/kg	99
74)	Styrene	15.44	104	621629	54.9958 ug/kg	99
75)	Bromoform	15.94	173	135071	48.5476 ug/kg	99
76)	Isopropylbenzene	15.83	105	980978	56.4333 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.05	83	221183	51.2365 ug/kg	100
80)	1,2,3-Trichloropropane	16.24	110	69270	51.7465 ug/kg	96
81)	trans-1,4-Dichloro-2-Buten	16.28	53	69808	54.1767 ug/kg	95
82)	n-Propylbenzene	16.34	91	1098772	57.0051 ug/kg	100
83)	Bromobenzene	16.47	156	243476	52.3710 ug/kg	99
84)	1,3,5-Trimethylbenzene	16.53	105	849739	58.0490 ug/kg	100
85)	2-Chlorotoluene	16.61	91	655601	56.2716 ug/kg	99
86)	4-Chlorotoluene	16.65	91	653346	55.2609 ug/kg	99
87)	a-Methylstyrene	16.93	118	461434	67.8778 ug/kg	99
88)	tert-Butylbenzene	16.99	134	184562	58.3529 ug/kg	94
89)	1,2,4-Trimethylbenzene	17.04	105	824462	56.9057 ug/kg	99
90)	sec-Butylbenzene	17.25	105	1087121	56.6011 ug/kg	100
91)	p-Isopropyltoluene	17.41	119	886229	56.5703 ug/kg	100
92)	1,3-Dichlorobenzene	17.61	146	479076	53.3085 ug/kg	99
93)	1,4-Dichlorobenzene	17.74	146	488311	53.2388 ug/kg	98
94)	n-Butylbenzene	17.94	91	785427	54.8562 ug/kg	100
95)	1,2-Dichlorobenzene	18.23	146	454977	53.0123 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.24	157	60069	48.9349 ug/kg	97
97)	1,2,4-Trichlorobenzene	20.38	180	354628	56.6406 ug/kg	99
98)	Hexachlorobutadiene	20.52	225	185099	58.2736 ug/kg	100
99)	Naphthalene	20.75	128	798279	48.8145 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.06	180	337729	55.1133 ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M974903.D 8260S.M Thu Jun 23 11:46:06 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062116\9M974903.D Vial: 18
Acq On : 21 Jun 2016 15:35 Operator: ADC
Sample : WG573367-11 50.0ug/L 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 11:46 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

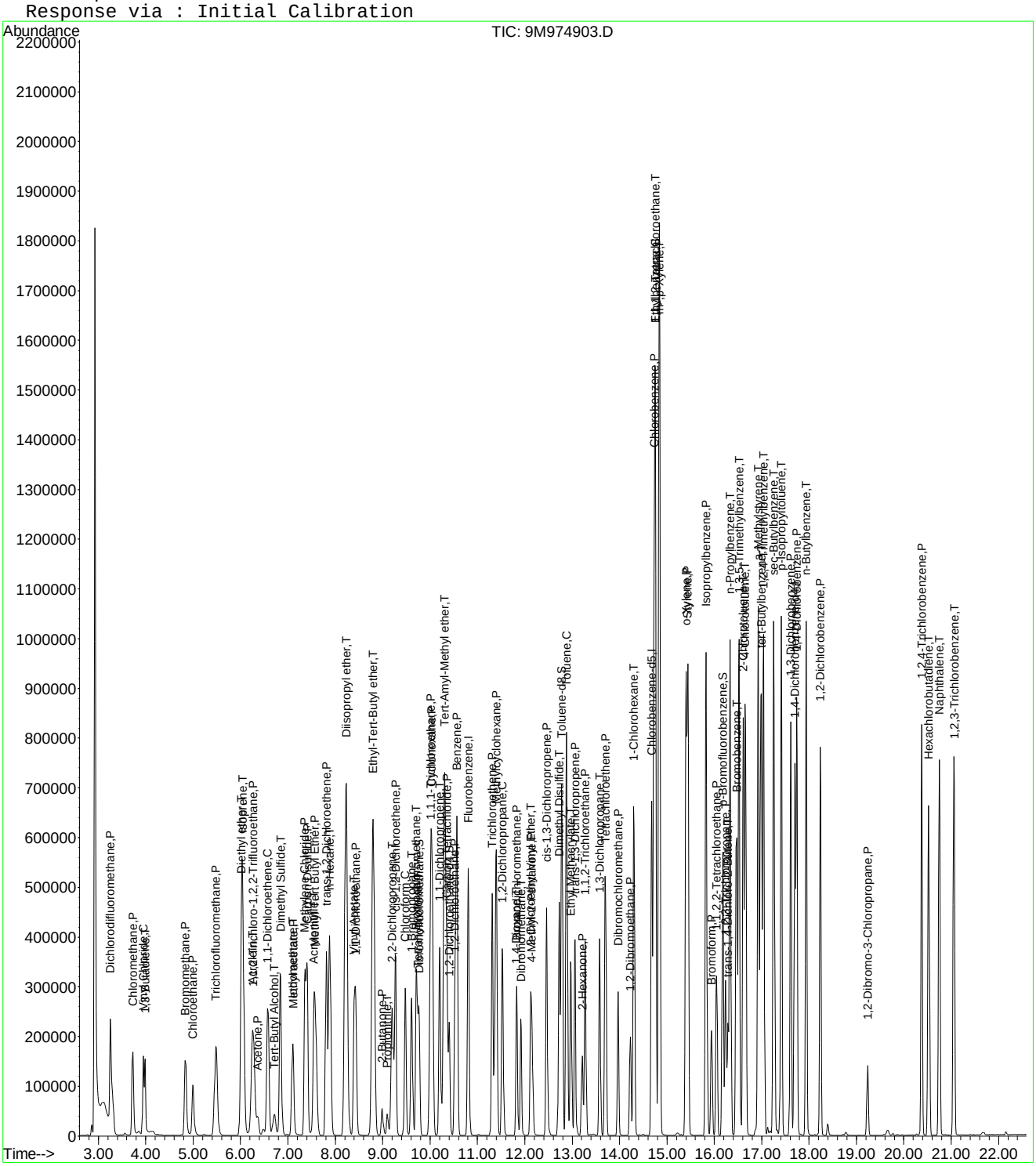

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\062116\9M974903.D Vial: 18
Acq On : 21 Jun 2016 15:35 Operator: ADC
Sample : WG573367-11 50.0ug/L 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	107	0.00
2	P	Dichlorodifluoromethane	50.0000	64.2194	-28.4#	125	0.00
3	P	Chloromethane	50.0000	52.7299	-5.5	112	0.00
4	C	Vinyl Chloride	50.0000	55.0793	-10.2	115	0.00
5	T	1,3-Butadiene	50.0000	44.5581	10.9	98	0.00
6	P	Bromomethane	50.0000	57.1499	-14.3	127	-0.02
7	P	Chloroethane	50.0000	58.3811	-16.8	120	-0.02
8	P	Trichlorofluoromethane	50.0000	57.4465	-14.9	116	-0.02
9	T	Diethyl ether	100.0000	103.7211	-3.7	110	0.00
10	T	Isoprene	50.0000	74.9905	-50.0#	154	-0.02
11	T	Acrolein	50.0000	149.3385	-198.7#	329	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	60.3191	-20.6	122	0.00
13	P	Acetone	50.0000	52.5413	-5.1	114	0.00
14	C	1,1-Dichloroethene	50.0000	52.8678	-5.7	107	0.00
15	T	Tert-Butyl Alcohol	200.0000	186.0518	7.0	103	0.01
16	T	Dimethyl Sulfide	50.0000	111.0595	-122.1#	230	0.00
17	T	Iodomethane	50.0000	88.4342	-76.9#	200	0.00
18	P	Methyl acetate	50.0000	47.7766	4.4	102	0.00
19	P	Methylene Chloride	50.0000	48.9070	2.2	107	0.00
20	P	Carbon Disulfide	50.0000	58.1213	-16.2	123	0.00
21	T	Acrylonitrile	50.0000	55.3674	-10.7	111	0.00
22	P	Methyl Tert Butyl Ether	50.0000	54.1926	-8.4	112	0.00
23	P	trans-1,2-Dichloroethene	50.0000	55.3268	-10.7	112	0.00
24	T	n-Hexane	50.0000	60.7653	-21.5	128	0.00
25	T	Diisopropyl ether	100.0000	106.1768	-6.2	113	0.00
26	T	Vinyl Acetate	50.0000	64.9412	-29.9#	137	0.00
27	P	1,1-Dichloroethane	50.0000	51.3108	-2.6	105	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.7409	1.3	105	0.00
29	P	2-Butanone	50.0000	52.0608	-4.1	111	0.00
30	T	Propionitrile	100.0000	100.9815	-1.0	104	0.00
31	T	2,2-Dichloropropane	50.0000	56.5419	-13.1	117	0.00
32	P	cis-1,2-Dichloroethene	50.0000	54.2808	-8.6	111	0.00
33	C	Chloroform	50.0000	52.5215	-5.0	107	0.00
34	T	1-Bromopropane	50.0000	82.0516	-64.1#	163	0.00
35	T	Bromochloromethane	50.0000	51.1976	-2.4	104	0.00
36	T	Tetrahydrofuran	100.0000	89.7548	10.2	96	0.00
37	S	Dibromofluoromethane	50.0000	49.9603	0.1	107	0.00
38	P	1,1,1-Trichloroethane	50.0000	54.1063	-8.2	112	0.00
39	P	Cyclohexane	50.0000	62.9255	-25.9#	129	0.00
40	T	1,1-Dichloropropene	50.0000	53.8422	-7.7	111	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	103.0160	-3.0	110	0.00
42	P	Carbon Tetrachloride	50.0000	53.4442	-6.9	109	0.00
43	S	1,2-Dichloroethane-d4	50.0000	47.1452	5.7	101	0.00
44		Heptane	-1.0000	0.0000	0.0	104	0.00
45	P	1,2-Dichloroethane	50.0000	51.2804	-2.6	105	0.00
46	P	Benzene	50.0000	52.1965	-4.4	110	0.00
47	P	Trichloroethene	50.0000	54.9473	-9.9	115	0.00
48	P	Methylcyclohexane	50.0000	64.0050	-28.0#	130	0.00
49	C	1,2-Dichloropropane	50.0000	54.6820	-9.4	113	0.00
50	T	1,4-Dioxane	200.0000	180.4439	9.8	95	0.00
51	P	Bromodichloromethane	50.0000	51.3270	-2.7	106	0.00
52	T	Dibromomethane	50.0000	49.6728	0.7	100	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	51.4171	-2.8	115	0.00
54	P	4-Methyl-2-Pentanone	50.0000	54.1278	-8.3	113	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\062116\9M974903.D Vial: 18
Acq On : 21 Jun 2016 15:35 Operator: ADC
Sample : WG573367-11 50.0ug/L 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	56.9512	-13.9	117	0.00
56	T	Dimethyl Disulfide	50.0000	54.9363	-9.9	126	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	107	0.00
58	S	Toluene-d8	50.0000	50.9380	-1.9	111	0.00
59	C	Toluene	50.0000	54.0349	-8.1	112	0.00
60	T	Ethyl Methacrylate	50.0000	58.0659	-16.1	119	0.00
61	P	trans-1,3-Dichloropropene	50.0000	53.5782	-7.2	106	0.00
62	P	1,1,2-Trichloroethane	50.0000	52.6401	-5.3	104	0.00
63	P	2-Hexanone	50.0000	49.9727	0.1	110	0.00
64	T	1,3-Dichloropropane	50.0000	54.7642	-9.5	111	0.00
65	P	Tetrachloroethene	50.0000	55.0185	-10.0	112	0.00
66	P	Dibromochloromethane	50.0000	51.3243	-2.6	104	0.00
67	P	1,2-Dibromoethane	50.0000	50.5354	-1.1	104	0.00
68	T	1-Chlorohexane	50.0000	63.4462	-26.9#	127	0.00
69	P	Chlorobenzene	50.0000	54.8603	-9.7	113	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	53.1264	-6.3	108	0.00
71	C	Ethylbenzene	50.0000	56.0754	-12.2	114	0.00
72	P	m-,p-Xylene	100.0000	109.6874	-9.7	114	0.00
73	P	o-Xylene	50.0000	56.0688	-12.1	116	0.00
74	P	Styrene	50.0000	54.9958	-10.0	110	0.00
75	P	Bromoform	50.0000	48.5476	2.9	96	0.00
76	P	Isopropylbenzene	50.0000	56.4333	-12.9	117	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	108	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	51.2365	-2.5	104	0.00
79	S	p-Bromofluorobenzene	50.0000	51.5879	-3.2	109	0.00
80	T	1,2,3-Trichloropropane	50.0000	51.7465	-3.5	104	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	54.1767	-8.4	107	0.00
82	T	n-Propylbenzene	50.0000	57.0051	-14.0	118	0.00
83	T	Bromobenzene	50.0000	52.3710	-4.7	108	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	58.0490	-16.1	120	0.00
85	T	2-Chlorotoluene	50.0000	56.2716	-12.5	117	0.00
86	T	4-Chlorotoluene	50.0000	55.2609	-10.5	114	0.00
87	T	a-Methylstyrene	50.0000	67.8778	-35.8#	139	0.00
88	T	tert-Butylbenzene	50.0000	58.3529	-16.7	119	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	56.9057	-13.8	115	0.00
90	T	sec-Butylbenzene	50.0000	56.6011	-13.2	118	0.00
91	T	p-Isopropyltoluene	50.0000	56.5703	-13.1	116	0.00
92	P	1,3-Dichlorobenzene	50.0000	53.3085	-6.6	114	0.00
93	P	1,4-Dichlorobenzene	50.0000	53.2388	-6.5	116	0.00
94	T	n-Butylbenzene	50.0000	54.8562	-9.7	116	0.00
95	P	1,2-Dichlorobenzene	50.0000	53.0123	-6.0	113	0.00
96	P	1,2-Dibromo-3-Chloropropane	50.0000	48.9349	2.1	109	0.00
97	P	1,2,4-Trichlorobenzene	50.0000	56.6406	-13.3	119	0.00
98	T	Hexachlorobutadiene	50.0000	58.2736	-16.5	126	0.00
99	T	Naphthalene	50.0000	48.8145	2.4	100	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	55.1133	-10.2	116	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M974903.D 8260S.M Thu Jun 23 11:49:51 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975215.D Vial: 4
Acq On : 1 Jul 2016 15:50 Operator: ADC
Sample : WG574992-02 50ug/kg CCV Inst : hpms9
Misc : 7,1 STD76781 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 16:27:46 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.81	96	557847	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.68	117	441275	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.70	152	228800	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.77	111	150420	48.9005 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.80%		
43) 1,2-Dichloroethane-d4	10.41	65	150613	46.0559 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 92.12%		
58) Toluene-d8	12.78	98	541311	49.5279 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.06%		
79) p-Bromofluorobenzene	16.18	95	213091	51.0036 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.00%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.26	85	240296	54.9751 ug/kg	100
3) Chloromethane	3.73	50	204715	52.9978 ug/kg	98
4) Vinyl Chloride	3.96	62	159467	58.7878 ug/kg	99
5) 1,3-Butadiene	4.01	54	87356	65.1304 ug/kg	98
6) Bromomethane	4.86	94	132756	54.1315 ug/kg	96
7) Chloroethane	5.01	64	119138	53.4828 ug/kg	99
8) Trichlorofluoromethane	5.49	101	271778	53.9914 ug/kg	100
9) Diethyl ether	6.02	59	278470	103.4189 ug/kg	98
10) Isoprene	6.06	67	198356	55.8865 ug/kg	99
11) Acrolein	6.26	56	24819	122.9705 ug/kg	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.27	101	163934	54.2755 ug/kg	99
13) Acetone	6.36	43	50088	45.3887 ug/kg	98
14) 1,1-Dichloroethene	6.59	61	250803	51.9123 ug/kg	100
15) Tert-Butyl Alcohol	6.69	59	99898	202.8728 ug/kg	97
16) Dimethyl Sulfide	6.85	62	104289	51.7266 ug/kg	97
17) Iodomethane	7.10	142	84107	41.6581 ug/kg	99
18) Methyl acetate	7.11	43	134285	47.1929 ug/kg	98
19) Methylene Chloride	7.37	84	160248	49.0705 ug/kg	96
20) Carbon Disulfide	7.41	76	495233	54.2383 ug/kg	100
21) Acrylonitrile	7.55	53	72237	55.0023 ug/kg	98
22) Methyl Tert Butyl Ether	7.57	73	436454	52.1741 ug/kg	98
23) trans-1,2-Dichloroethene	7.81	61	241654	52.6000 ug/kg	99
24) n-Hexane	7.88	57	279859	54.5385 ug/kg	99
25) Diisopropyl ether	8.22	45	1072221	101.4598 ug/kg	99
26) Vinyl Acetate	8.40	43	347325	60.9063 ug/kg	99
27) 1,1-Dichloroethane	8.43	63	298320	51.8806 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.80	59	1022967	103.6343 ug/kg	99
29) 2-Butanone	8.99	43	77456	47.5578 ug/kg	99
30) Propionitrile	9.10	54	52712	106.8810 ug/kg	94
31) 2,2-Dichloropropane	9.20	77	225085	52.6638 ug/kg	100
32) cis-1,2-Dichloroethene	9.28	96	173098	52.4924 ug/kg	97
33) Chloroform	9.48	83	263431	53.1554 ug/kg	100
34) 1-Bromopropane	9.61	122	29499	57.2891 ug/kg	98
35) Bromochloromethane	9.71	130	115471	53.2275 ug/kg	96
36) Tetrahydrofuran	9.74	42	114936	102.5023 ug/kg	99
38) 1,1,1-Trichloroethane	10.01	97	236656	52.8652 ug/kg	98
39) Cyclohexane	10.04	56	309399	54.6660 ug/kg	98
40) 1,1-Dichloropropene	10.21	75	205728	52.7892 ug/kg	99
41) Tert-Amyl-Methyl ether	10.30	73	822156	104.5458 ug/kg	100
42) Carbon Tetrachloride	10.35	117	228023	52.5082 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975215.D Vial: 4
Acq On : 1 Jul 2016 15:50 Operator: ADC
Sample : WG574992-02 50ug/kg CCV Inst : hpms9
Misc : 7,1 STD76781 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 16:27:46 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.52	62	210388	51.8367	ug/kg	99
46)	Benzene	10.56	78	605077	51.2167	ug/kg	99
47)	Trichloroethene	11.31	130	186488	53.8891	ug/kg	99
48)	Methylcyclohexane	11.40	83	275224	56.4990	ug/kg	98
49)	1,2-Dichloropropane	11.52	63	166953	51.7102	ug/kg	98
50)	1,4-Dioxane	11.82	88	11071	224.5471	ug/kg	89
51)	Bromodichloromethane	11.83	83	203250	51.8779	ug/kg	99
52)	Dibromomethane	11.92	174	112103	54.8699	ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.13	63	88983	42.8912	ug/kg	99
54)	4-Methyl-2-Pentanone	12.15	58	65404	48.9450	ug/kg	98
55)	cis-1,3-Dichloropropene	12.46	75	242768	52.0633	ug/kg	99
56)	Dimethyl Disulfide	12.73	94	270176	49.1600	ug/kg	100
59)	Toluene	12.89	91	647913	51.4849	ug/kg	99
60)	Ethyl Methacrylate	12.97	69	191054	53.2199	ug/kg	99
61)	trans-1,3-Dichloropropene	13.07	75	227478	53.2285	ug/kg	99
62)	1,1,2-Trichloroethane	13.28	97	141763	54.4864	ug/kg	100
63)	2-Hexanone	13.21	43	112925	44.6873	ug/kg	100
64)	1,3-Dichloropropane	13.58	76	228452	52.5173	ug/kg	97
65)	Tetrachloroethene	13.70	164	145863	54.2022	ug/kg	99
66)	Dibromochloromethane	13.97	129	186038	54.1560	ug/kg	100
67)	1,2-Dibromoethane	14.23	107	153071	52.3714	ug/kg	99
68)	1-Chlorohexane	14.30	91	218768	55.7392	ug/kg	99
69)	Chlorobenzene	14.72	112	474235	52.9445	ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.75	131	175836	54.5698	ug/kg	99
71)	Ethylbenzene	14.75	106	252923	53.2999	ug/kg	99
72)	m-,p-Xylene	14.84	106	611411	104.3010	ug/kg	100
73)	o-Xylene	15.41	106	301391	53.1068	ug/kg	100
74)	Styrene	15.44	104	512102	54.0730	ug/kg	99
75)	Bromoform	15.95	173	134855	57.8493	ug/kg	99
76)	Isopropylbenzene	15.83	105	770742	52.9190	ug/kg	98
78)	1,1,2,2-Tetrachloroethane	16.05	83	197698	53.6050	ug/kg	100
80)	1,2,3-Trichloropropane	16.24	110	62124	54.3214	ug/kg	99
81)	trans-1,4-Dichloro-2-Buten	16.28	53	59244	53.8180	ug/kg	89
82)	n-Propylbenzene	16.34	91	861644	52.3250	ug/kg	99
83)	Bromobenzene	16.47	156	213309	53.7056	ug/kg	97
84)	1,3,5-Trimethylbenzene	16.53	105	671975	53.7326	ug/kg	99
85)	2-Chlorotoluene	16.61	91	534754	53.7253	ug/kg	99
86)	4-Chlorotoluene	16.65	91	519022	51.3849	ug/kg	100
87)	a-Methylstyrene	16.93	118	318653	54.8671	ug/kg	99
88)	tert-Butylbenzene	16.99	134	145021	53.6694	ug/kg	90
89)	1,2,4-Trimethylbenzene	17.04	105	686739	55.4683	ug/kg	100
90)	sec-Butylbenzene	17.25	105	855951	52.1641	ug/kg	99
91)	p-Isopropyltoluene	17.41	119	725793	54.2289	ug/kg	100
92)	1,3-Dichlorobenzene	17.61	146	402068	52.3681	ug/kg	100
93)	1,4-Dichlorobenzene	17.74	146	407827	52.0455	ug/kg	98
94)	n-Butylbenzene	17.94	91	639476	52.2781	ug/kg	99
95)	1,2-Dichlorobenzene	18.24	146	385288	52.5471	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.24	157	52688	50.2149	ug/kg	97
97)	1,2,4-Trichlorobenzene	20.38	180	295235	55.1948	ug/kg	100
98)	Hexachlorobutadiene	20.53	225	146172	53.8651	ug/kg	98
99)	Naphthalene	20.75	128	786858	56.3204	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.05	180	287375	54.8925	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975215.D Vial: 4
Acq On : 1 Jul 2016 15:50 Operator: ADC
Sample : WG574992-02 50ug/kg CCV Inst : hpms9
Misc : 7,1 STD76781 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 16:27 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

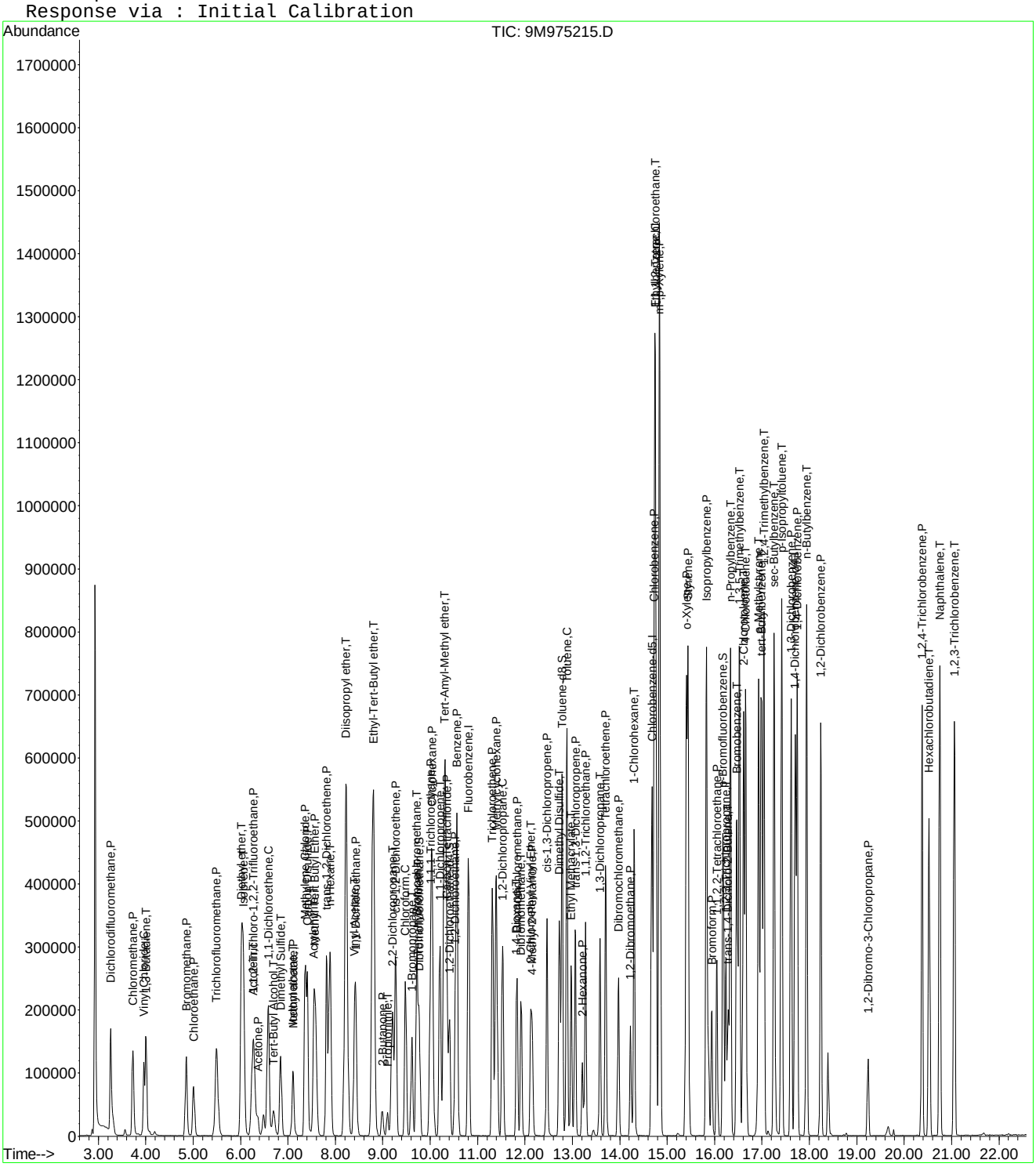

9M975215.D 8260S.M Fri Jul 01 16:27:46 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\070116\9M975215.D Vial: 4
Acq On : 1 Jul 2016 15:50 Operator: ADC
Sample : WG574992-02 50ug/kg CCV Inst : hpms9
Misc : 7,1 STD76781 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	88	0.00
2	P	Dichlorodifluoromethane	0.3918	0.4308	-10.0	88	0.00
3	P	Chloromethane	0.3462	0.3670	-6.0	93	0.00
4	C	Vinyl Chloride	0.2431	0.2859	-17.6	101	0.00
5	T	1,3-Butadiene	0.1202	0.1566	-30.3#	117	0.01
6	P	Bromomethane	0.2198	0.2380	-8.3	99	0.00
7	P	Chloroethane	0.1997	0.2136	-7.0	90	0.00
8	P	Trichlorofluoromethane	0.4512	0.4872	-8.0	89	0.00
9	T	Diethyl ether	0.2413	0.2496	-3.4	90	0.00
10	T	Isoprene	0.3181	0.3556	-11.8	94	0.00
11	T	Acrolein	0.0181	0.0445	-145.9#	222#	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	0.2707	0.2939	-8.6	90	0.00
13	P	Acetone	0.1075	0.0898#	16.5	81	0.00
14	C	1,1-Dichloroethene	0.4330	0.4496	-3.8	87	0.00
15	T	Tert-Butyl Alcohol	0.0441	0.0448	-1.4	92	0.00
16	T	Dimethyl Sulfide	0.1807	0.1870	-3.5	88	0.00
17	T	Iodomethane	0.1566	0.1508	3.7	76	0.00
18	P	Methyl acetate	0.2550	0.2407	5.6	83	0.00
19	P	Methylene Chloride	0.2927	0.2873	1.9	88	0.00
20	P	Carbon Disulfide	0.8184	0.8878	-8.5	95	0.00
21	T	Acrylonitrile	0.1177	0.1295	-10.0	91	0.00
22	P	Methyl Tert Butyl Ether	0.7498	0.7824	-4.3	89	0.00
23	P	trans-1,2-Dichloroethene	0.4118	0.4332	-5.2	87	0.00
24	T	n-Hexane	0.4599	0.5017	-9.1	94	0.00
25	T	Diisopropyl ether	0.9472	0.9610	-1.5	89	0.00
26	T	Vinyl Acetate	0.5111	0.6226	-21.8	105	0.00
27	P	1,1-Dichloroethane	0.5154	0.5348	-3.8	87	0.00
28	T	Ethyl-Tert-Butyl ether	0.8847	0.9169	-3.6	90	0.00
29	P	2-Butanone	0.1460	0.1389	4.9	83	0.00
30	T	Propionitrile	0.0442	0.0473	-6.9	91	0.00
31	T	2,2-Dichloropropane	0.3831	0.4035	-5.3	89	0.00
32	P	cis-1,2-Dichloroethene	0.2956	0.3103	-5.0	88	0.00
33	C	Chloroform	0.4442	0.4722	-6.3	89	0.00
34	T	1-Bromopropane	0.0461	0.0529	-14.6	94	0.00
35	T	Bromochloromethane	0.1944	0.2070	-6.5	89	0.00
36	T	Tetrahydrofuran	0.1005	0.1030	-2.5	90	0.00
37	S	Dibromofluoromethane	0.2757	0.2696	2.2	86	0.00
38	P	1,1,1-Trichloroethane	0.4012	0.4242	-5.7	90	0.00
39	P	Cyclohexane	0.5073	0.5546	-9.3	92	0.00
40	T	1,1-Dichloropropene	0.3493	0.3688	-5.6	89	0.00
41	T	Tert-Amyl-Methyl ether	0.7049	0.7369	-4.5	92	0.00
42	P	Carbon Tetrachloride	0.3892	0.4088	-5.0	88	0.00
43	S	1,2-Dichloroethane-d4	0.2931	0.2700	7.9	81	0.00
44		Heptane	0.0000	0.0000	0.0	88	0.00
45	P	1,2-Dichloroethane	0.3638	0.3771	-3.7	87	0.00
46	P	Benzene	1.0589	1.0847	-2.4	88	0.00
47	P	Trichloroethene	0.3102	0.3343	-7.8	93	0.00
48	P	Methylcyclohexane	0.4366	0.4934	-13.0	95	0.00
49	C	1,2-Dichloropropane	0.2894	0.2993	-3.4	87	0.00
50	T	1,4-Dioxane	0.0044	0.0050	-12.2	97	0.00
51	P	Bromodichloromethane	0.3512	0.3644	-3.8	88	0.00
52	T	Dibromomethane	0.1831	0.2010	-9.7	90	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1653	0.1595	3.5	78	0.00
54	P	4-Methyl-2-Pentanone	0.1198	0.1172	2.1	84	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\070116\9M975215.D Vial: 4
Acq On : 1 Jul 2016 15:50 Operator: ADC
Sample : WG574992-02 50ug/kg CCV Inst : hpms9
Misc : 7,1 STD76781 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	0.4179	0.4352	-4.1	88	0.00
56	T	Dimethyl Disulfide	0.4374	0.4843	-10.7	93	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	90	0.00
58	S	Toluene-d8	1.2384	1.2267	0.9	90	0.00
59	C	Toluene	1.4259	1.4683	-3.0	90	0.00
60	T	Ethyl Methacrylate	0.4068	0.4330	-6.4	92	0.00
61	P	trans-1,3-Dichloropropene	0.4842	0.5155	-6.5	89	0.00
62	P	1,1,2-Trichloroethane	0.2948	0.3213	-9.0	90	0.00
63	P	2-Hexanone	0.2671	0.2559	4.2	82	0.00
64	T	1,3-Dichloropropane	0.4929	0.5177	-5.0	90	0.00
65	P	Tetrachloroethene	0.3049	0.3306	-8.4	92	0.00
66	P	Dibromochloromethane	0.3892	0.4216	-8.3	92	0.00
67	P	1,2-Dibromoethane	0.3312	0.3469	-4.7	91	0.00
68	T	1-Chlorohexane	0.4447	0.4958	-11.5	93	0.00
69	P	Chlorobenzene	1.0149	1.0747	-5.9	91	0.00
70	T	1,1,1,2-Tetrachloroethane	0.3651	0.3985	-9.1	93	0.00
71	C	Ethylbenzene	0.5377	0.5732	-6.6	91	0.00
72	P	m-,p-Xylene	0.6642	0.6928	-4.3	91	0.00
73	P	o-Xylene	0.6430	0.6830	-6.2	92	0.00
74	P	Styrene	1.0731	1.1605	-8.1	91	0.00
75	P	Bromoform	0.2641	0.3056	-15.7	95	0.00
76	P	Isopropylbenzene	1.6503	1.7466	-5.8	92	0.00
77	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	92	0.00
78	P	1,1,2,2-Tetrachloroethane	0.8060	0.8641	-7.2	93	0.00
79	S	p-Bromofluorobenzene	0.9130	0.9313	-2.0	92	0.00
80	T	1,2,3-Trichloropropane	0.2499	0.2715	-8.6	94	0.00
81	T	trans-1,4-Dichloro-2-Butene	0.2406	0.2589	-7.6	91	0.00
82	T	n-Propylbenzene	3.5986	3.7659	-4.7	93	0.00
83	T	Bromobenzene	0.8680	0.9323	-7.4	94	0.00
84	T	1,3,5-Trimethylbenzene	2.7329	2.9369	-7.5	95	0.00
85	T	2-Chlorotoluene	2.1751	2.3372	-7.5	95	0.00
86	T	4-Chlorotoluene	2.2073	2.2685	-2.8	90	0.00
87	T	a-Methylstyrene	1.2692	1.3927	-9.7	96	0.00
88	T	tert-Butylbenzene	0.5905	0.6338	-7.3	93	0.00
89	T	1,2,4-Trimethylbenzene	3.0085	3.0015	0.2	96	0.00
90	T	sec-Butylbenzene	3.5858	3.7410	-4.3	93	0.00
91	T	p-Isopropyltoluene	2.9248	3.1722	-8.5	95	0.00
92	P	1,3-Dichlorobenzene	1.6778	1.7573	-4.7	95	0.00
93	P	1,4-Dichlorobenzene	1.7124	1.7825	-4.1	97	0.00
94	T	n-Butylbenzene	2.6731	2.7949	-4.6	95	0.00
95	P	1,2-Dichlorobenzene	1.6023	1.6840	-5.1	95	0.00
96	P	1,2-Dibromo-3-Chloropropane	0.2083	0.2303	-10.5	95	0.00
97	P	1,2,4-Trichlorobenzene	1.1689	1.2904	-10.4	99	0.00
98	T	Hexachlorobutadiene	0.5930	0.6389	-7.7	99	0.00
99	T	Naphthalene	3.0531	3.4391	-12.6	99	0.00
100	T	1,2,3-Trichlorobenzene	1.1441	1.2560	-9.8	99	0.00

(#) = Out of Range SPCC's out = 1 CCC's out = 0
9M975215.D 8260S.M Fri Jul 01 16:27:53 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\070116\9M975215.D Vial: 4
Acq On : 1 Jul 2016 15:50 Operator: ADC
Sample : WG574992-02 50ug/kg CCV Inst : hpms9
Misc : 7,1 STD76781 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	88	0.00
2	P	Dichlorodifluoromethane	50.0000	54.9751	-10.0	88	0.00
3	P	Chloromethane	50.0000	52.9978	-6.0	93	0.00
4	C	Vinyl Chloride	50.0000	58.7878	-17.6	101	0.00
5	T	1,3-Butadiene	50.0000	65.1304	-30.3#	117	0.01
6	P	Bromomethane	50.0000	54.1315	-8.3	99	0.00
7	P	Chloroethane	50.0000	53.4828	-7.0	90	0.00
8	P	Trichlorofluoromethane	50.0000	53.9914	-8.0	89	0.00
9	T	Diethyl ether	100.0000	103.4189	-3.4	90	0.00
10	T	Isoprene	50.0000	55.8865	-11.8	94	0.00
11	T	Acrolein	50.0000	122.9705	-145.9#	222	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	54.2755	-8.6	90	0.00
13	P	Acetone	50.0000	45.3887	9.2	81	0.00
14	C	1,1-Dichloroethene	50.0000	51.9123	-3.8	87	0.00
15	T	Tert-Butyl Alcohol	200.0000	202.8728	-1.4	92	0.00
16	T	Dimethyl Sulfide	50.0000	51.7266	-3.5	88	0.00
17	T	Iodomethane	50.0000	41.6581	16.7	76	0.00
18	P	Methyl acetate	50.0000	47.1929	5.6	83	0.00
19	P	Methylene Chloride	50.0000	49.0705	1.9	88	0.00
20	P	Carbon Disulfide	50.0000	54.2383	-8.5	95	0.00
21	T	Acrylonitrile	50.0000	55.0023	-10.0	91	0.00
22	P	Methyl Tert Butyl Ether	50.0000	52.1741	-4.3	89	0.00
23	P	trans-1,2-Dichloroethene	50.0000	52.6000	-5.2	87	0.00
24	T	n-Hexane	50.0000	54.5385	-9.1	94	0.00
25	T	Diisopropyl ether	100.0000	101.4598	-1.5	89	0.00
26	T	Vinyl Acetate	50.0000	60.9063	-21.8	105	0.00
27	P	1,1-Dichloroethane	50.0000	51.8806	-3.8	87	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	103.6343	-3.6	90	0.00
29	P	2-Butanone	50.0000	47.5578	4.9	83	0.00
30	T	Propionitrile	100.0000	106.8811	-6.9	91	0.00
31	T	2,2-Dichloropropane	50.0000	52.6638	-5.3	89	0.00
32	P	cis-1,2-Dichloroethene	50.0000	52.4924	-5.0	88	0.00
33	C	Chloroform	50.0000	53.1554	-6.3	89	0.00
34	T	1-Bromopropane	50.0000	57.2891	-14.6	94	0.00
35	T	Bromochloromethane	50.0000	53.2275	-6.5	89	0.00
36	T	Tetrahydrofuran	100.0000	102.5023	-2.5	90	0.00
37	S	Dibromofluoromethane	50.0000	48.9005	2.2	86	0.00
38	P	1,1,1-Trichloroethane	50.0000	52.8652	-5.7	90	0.00
39	P	Cyclohexane	50.0000	54.6660	-9.3	92	0.00
40	T	1,1-Dichloropropene	50.0000	52.7892	-5.6	89	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	104.5458	-4.5	92	0.00
42	P	Carbon Tetrachloride	50.0000	52.5082	-5.0	88	0.00
43	S	1,2-Dichloroethane-d4	50.0000	46.0559	7.9	81	0.00
44		Heptane	-1.0000	0.0000	0.0	88	0.00
45	P	1,2-Dichloroethane	50.0000	51.8367	-3.7	87	0.00
46	P	Benzene	50.0000	51.2167	-2.4	88	0.00
47	P	Trichloroethene	50.0000	53.8891	-7.8	93	0.00
48	P	Methylcyclohexane	50.0000	56.4990	-13.0	95	0.00
49	C	1,2-Dichloropropane	50.0000	51.7102	-3.4	87	0.00
50	T	1,4-Dioxane	200.0000	224.5471	-12.3	97	0.00
51	P	Bromodichloromethane	50.0000	51.8779	-3.8	88	0.00
52	T	Dibromomethane	50.0000	54.8699	-9.7	90	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	42.8912	14.2	78	0.00
54	P	4-Methyl-2-Pentanone	50.0000	48.9450	2.1	84	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\070116\9M975215.D Vial: 4
Acq On : 1 Jul 2016 15:50 Operator: ADC
Sample : WG574992-02 50ug/kg CCV Inst : hpms9
Misc : 7,1 STD76781 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	52.0633	-4.1	88	0.00
56	T	Dimethyl Disulfide	50.0000	49.1600	1.7	93	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	90	0.00
58	S	Toluene-d8	50.0000	49.5279	0.9	90	0.00
59	C	Toluene	50.0000	51.4849	-3.0	90	0.00
60	T	Ethyl Methacrylate	50.0000	53.2199	-6.4	92	0.00
61	P	trans-1,3-Dichloropropene	50.0000	53.2285	-6.5	89	0.00
62	P	1,1,2-Trichloroethane	50.0000	54.4864	-9.0	90	0.00
63	P	2-Hexanone	50.0000	44.6873	10.6	82	0.00
64	T	1,3-Dichloropropane	50.0000	52.5173	-5.0	90	0.00
65	P	Tetrachloroethene	50.0000	54.2022	-8.4	92	0.00
66	P	Dibromochloromethane	50.0000	54.1560	-8.3	92	0.00
67	P	1,2-Dibromoethane	50.0000	52.3714	-4.7	91	0.00
68	T	1-Chlorohexane	50.0000	55.7392	-11.5	93	0.00
69	P	Chlorobenzene	50.0000	52.9445	-5.9	91	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	54.5698	-9.1	93	0.00
71	C	Ethylbenzene	50.0000	53.3000	-6.6	91	0.00
72	P	m-,p-Xylene	100.0000	104.3010	-4.3	91	0.00
73	P	o-Xylene	50.0000	53.1068	-6.2	92	0.00
74	P	Styrene	50.0000	54.0731	-8.1	91	0.00
75	P	Bromoform	50.0000	57.8493	-15.7	95	0.00
76	P	Isopropylbenzene	50.0000	52.9190	-5.8	92	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	92	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	53.6050	-7.2	93	0.00
79	S	p-Bromofluorobenzene	50.0000	51.0036	-2.0	92	0.00
80	T	1,2,3-Trichloropropane	50.0000	54.3214	-8.6	94	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	53.8180	-7.6	91	0.00
82	T	n-Propylbenzene	50.0000	52.3250	-4.7	93	0.00
83	T	Bromobenzene	50.0000	53.7056	-7.4	94	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	53.7326	-7.5	95	0.00
85	T	2-Chlorotoluene	50.0000	53.7253	-7.5	95	0.00
86	T	4-Chlorotoluene	50.0000	51.3849	-2.8	90	0.00
87	T	a-Methylstyrene	50.0000	54.8671	-9.7	96	0.00
88	T	tert-Butylbenzene	50.0000	53.6694	-7.3	93	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	55.4683	-10.9	96	0.00
90	T	sec-Butylbenzene	50.0000	52.1641	-4.3	93	0.00
91	T	p-Isopropyltoluene	50.0000	54.2289	-8.5	95	0.00
92	P	1,3-Dichlorobenzene	50.0000	52.3681	-4.7	95	0.00
93	P	1,4-Dichlorobenzene	50.0000	52.0455	-4.1	97	0.00
94	T	n-Butylbenzene	50.0000	52.2781	-4.6	95	0.00
95	P	1,2-Dichlorobenzene	50.0000	52.5471	-5.1	95	0.00
96	P	1,2-Dibromo-3-Chloropropane	50.0000	50.2149	-0.4	95	0.00
97	P	1,2,4-Trichlorobenzene	50.0000	55.1948	-10.4	99	0.00
98	T	Hexachlorobutadiene	50.0000	53.8652	-7.7	99	0.00
99	T	Naphthalene	50.0000	56.3204	-12.6	99	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	54.8925	-9.8	99	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M975215.D 8260S.M Fri Jul 01 16:27:52 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975250.D Vial: 3
Acq On : 6 Jul 2016 14:19 Operator: ADC
Sample : WG575226-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD76496 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 06 16:43:18 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.80	96	679984	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.68	117	538735	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.71	152	265507	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.76	111	180366	48.1038 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.20%		
43) 1,2-Dichloroethane-d4	10.40	65	183187	45.9551 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 91.92%		
58) Toluene-d8	12.78	98	638348	47.8404 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 95.68%		
79) p-Bromofluorobenzene	16.18	95	253873	52.3639 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 104.72%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.25	85	290556	54.5338 ug/kg	99
3) Chloromethane	3.71	50	199052	42.2757 ug/kg	100
4) Vinyl Chloride	3.95	62	192426	58.1965 ug/kg	99
5) 1,3-Butadiene	3.99	54	128178	78.4008 ug/kg	98
6) Bromomethane	4.83	94	162640	54.4051 ug/kg	98
7) Chloroethane	4.99	64	148277	54.6077 ug/kg	99
8) Trichlorofluoromethane	5.48	101	345946	56.3813 ug/kg	100
9) Diethyl ether	6.00	59	334670	101.9658 ug/kg	98
10) Isoprene	6.05	67	243254	56.2261 ug/kg	99
11) Acrolein	6.25	56	27549	111.9796 ug/kg	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	205704	55.8720 ug/kg	99
13) Acetone	6.35	43	62799	46.7881 ug/kg	99
14) 1,1-Dichloroethene	6.56	61	314436	53.3933 ug/kg	99
15) Tert-Butyl Alcohol	6.68	59	112658	187.6919 ug/kg	98
16) Dimethyl Sulfide	6.83	62	129478	52.6851 ug/kg	98
17) Iodomethane	7.09	142	106084	43.0547 ug/kg	100
18) Methyl acetate	7.10	43	166677	48.0553 ug/kg	99
19) Methylene Chloride	7.35	84	195543	49.1232 ug/kg	97
20) Carbon Disulfide	7.40	76	617978	55.5247 ug/kg	100
21) Acrylonitrile	7.53	53	85510	53.4139 ug/kg	99
22) Methyl Tert Butyl Ether	7.55	73	532465	52.2185 ug/kg	99
23) trans-1,2-Dichloroethene	7.80	61	300588	53.6760 ug/kg	99
24) n-Hexane	7.87	57	331260	52.9602 ug/kg	97
25) Diisopropyl ether	8.22	45	1309806	101.6794 ug/kg	99
26) Vinyl Acetate	8.39	43	398539	57.3342 ug/kg	99
27) 1,1-Dichloroethane	8.42	63	371978	53.0709 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.79	59	1236872	102.7976 ug/kg	99
29) 2-Butanone	8.98	43	97243	48.9826 ug/kg	98
30) Propionitrile	9.08	54	61133	101.6912 ug/kg	95
31) 2,2-Dichloropropane	9.19	77	285658	54.8313 ug/kg	100
32) cis-1,2-Dichloroethene	9.26	96	213432	53.0982 ug/kg	97
33) Chloroform	9.46	83	325752	53.9242 ug/kg	100
34) 1-Bromopropane	9.60	122	37426	59.6286 ug/kg	98
35) Bromochloromethane	9.71	130	140662	53.1932 ug/kg	97
36) Tetrahydrofuran	9.73	42	133583	97.7339 ug/kg	98
38) 1,1,1-Trichloroethane	10.00	97	296910	54.4119 ug/kg	99
39) Cyclohexane	10.03	56	378179	54.8166 ug/kg	98
40) 1,1-Dichloropropene	10.19	75	256643	54.0253 ug/kg	99
41) Tert-Amyl-Methyl ether	10.30	73	990799	103.3605 ug/kg	99
42) Carbon Tetrachloride	10.34	117	284330	53.7140 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M975250.D 8260S.M Wed Jul 06 16:43:19 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975250.D Vial: 3
Acq On : 6 Jul 2016 14:19 Operator: ADC
Sample : WG575226-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD76496 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 06 16:43:18 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.52	62	256914	51.9302	ug/kg	99
46)	Benzene	10.56	78	745444	51.7646	ug/kg	99
47)	Trichloroethene	11.31	130	232866	55.2043	ug/kg	100
48)	Methylcyclohexane	11.39	83	332366	55.9741	ug/kg	97
49)	1,2-Dichloropropane	11.52	63	207076	52.6172	ug/kg	99
50)	1,4-Dioxane	11.82	88	10358	172.3507	ug/kg	98
51)	Bromodichloromethane	11.82	83	250948	52.5475	ug/kg	98
52)	Dibromomethane	11.91	174	135943	54.5872	ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.11	63	111976	44.2402	ug/kg	98
54)	4-Methyl-2-Pentanone	12.14	58	84862	52.0995	ug/kg	98
55)	cis-1,3-Dichloropropene	12.46	75	299889	52.7615	ug/kg	99
56)	Dimethyl Disulfide	12.73	94	337863	50.4031	ug/kg	100
59)	Toluene	12.88	91	796769	51.8597	ug/kg	100
60)	Ethyl Methacrylate	12.97	69	231094	52.7279	ug/kg	98
61)	trans-1,3-Dichloropropene	13.05	75	272537	52.2353	ug/kg	99
62)	1,1,2-Trichloroethane	13.27	97	165850	52.2126	ug/kg	100
63)	2-Hexanone	13.21	43	143793	46.5024	ug/kg	99
64)	1,3-Dichloropropane	13.58	76	272305	51.2740	ug/kg	96
65)	Tetrachloroethene	13.70	164	179471	54.6261	ug/kg	99
66)	Dibromochloromethane	13.97	129	219978	52.4516	ug/kg	100
67)	1,2-Dibromoethane	14.22	107	183797	51.5079	ug/kg	99
68)	1-Chlorohexane	14.30	91	267143	55.7513	ug/kg	98
69)	Chlorobenzene	14.72	112	565037	51.6699	ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.75	131	207439	52.7314	ug/kg	99
71)	Ethylbenzene	14.75	106	304881	52.6263	ug/kg	100
72)	m-,p-Xylene	14.84	106	734266	102.5989	ug/kg	99
73)	o-Xylene	15.41	106	358303	51.7136	ug/kg	100
74)	Styrene	15.44	104	605283	52.3500	ug/kg	99
75)	Bromoform	15.94	173	154783	54.3862	ug/kg	99
76)	Isopropylbenzene	15.83	105	922274	51.8677	ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.05	83	217435	50.8057	ug/kg	100
80)	1,2,3-Trichloropropane	16.24	110	71887	54.1679	ug/kg	97
81)	trans-1,4-Dichloro-2-Buten	16.28	53	72267	56.5722	ug/kg	97
82)	n-Propylbenzene	16.33	91	1013124	53.0181	ug/kg	99
83)	Bromobenzene	16.47	156	248277	53.8676	ug/kg	96
84)	1,3,5-Trimethylbenzene	16.52	105	787600	54.2714	ug/kg	99
85)	2-Chlorotoluene	16.61	91	618132	53.5163	ug/kg	99
86)	4-Chlorotoluene	16.65	91	619061	52.8158	ug/kg	99
87)	a-Methylstyrene	16.93	118	378250	56.1246	ug/kg	99
88)	tert-Butylbenzene	16.99	134	169300	53.9924	ug/kg	96
89)	1,2,4-Trimethylbenzene	17.04	105	790278	55.0018	ug/kg	99
90)	sec-Butylbenzene	17.25	105	999304	52.4808	ug/kg	99
91)	p-Isopropyltoluene	17.41	119	836522	53.8612	ug/kg	99
92)	1,3-Dichlorobenzene	17.61	146	463762	52.0526	ug/kg	100
93)	1,4-Dichlorobenzene	17.75	146	461448	50.7470	ug/kg	100
94)	n-Butylbenzene	17.94	91	732832	51.6274	ug/kg	99
95)	1,2-Dichlorobenzene	18.24	146	438736	51.5640	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.24	157	58272	47.9041	ug/kg	99
97)	1,2,4-Trichlorobenzene	20.38	180	324122	52.2179	ug/kg	99
98)	Hexachlorobutadiene	20.53	225	162395	51.5699	ug/kg	97
99)	Naphthalene	20.76	128	826716	50.9925	ug/kg	99
100)	1,2,3-Trichlorobenzene	21.06	180	309034	50.8686	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975250.D Vial: 3
Acq On : 6 Jul 2016 14:19 Operator: ADC
Sample : WG575226-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD76496 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 6 16:43 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

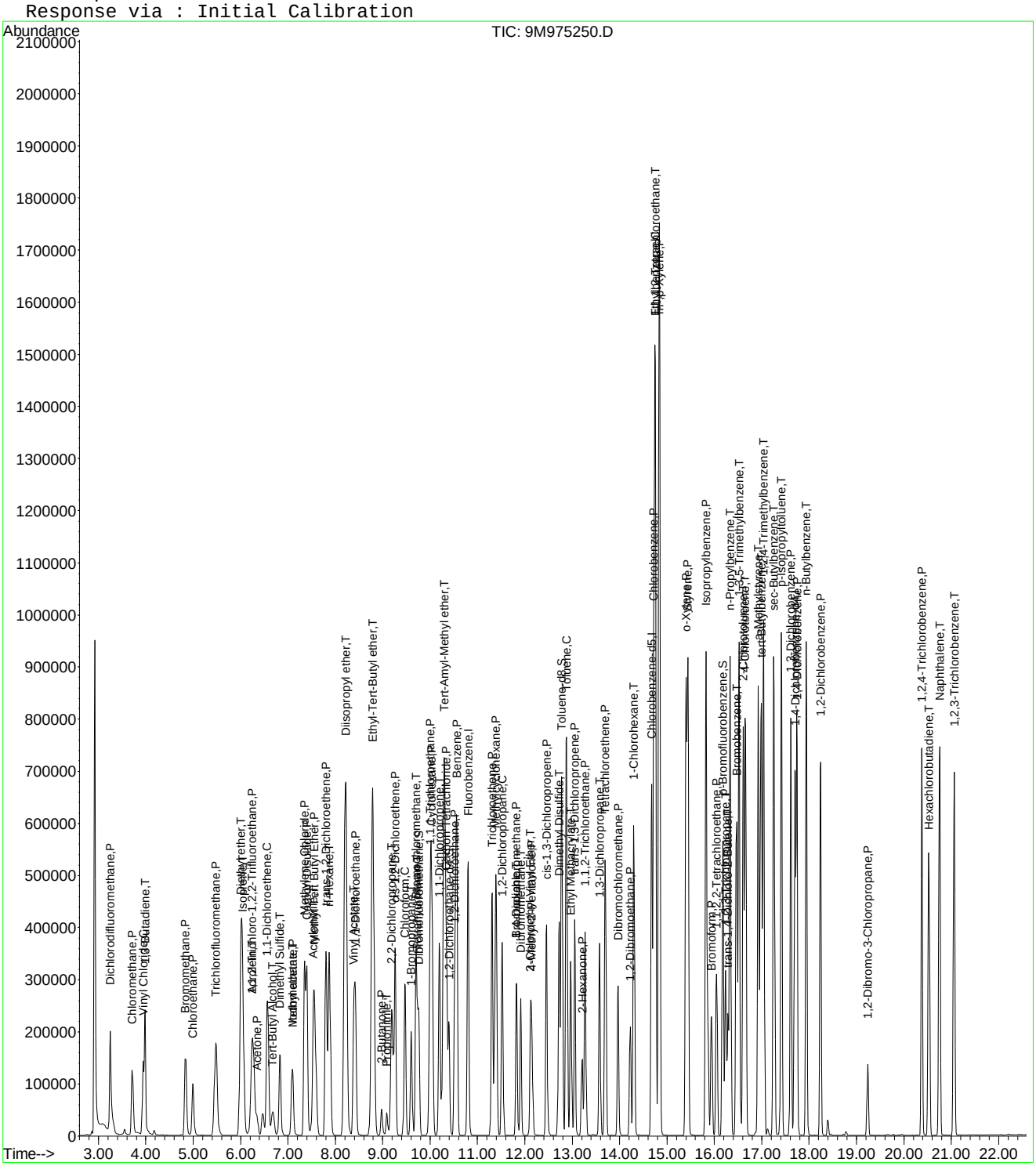

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\070616\9M975250.D Vial: 3
Acq On : 6 Jul 2016 14:19 Operator: ADC
Sample : WG575226-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD76496 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	108	0.00
2	P	Dichlorodifluoromethane	0.3918	0.4273	-9.1	106	0.00
3	P	Chloromethane	0.3462	0.2927	15.4	90	-0.02
4	C	Vinyl Chloride	0.2431	0.2830	-16.4	121	0.00
5	T	1,3-Butadiene	0.1202	0.1885	-56.8#	172	0.00
6	P	Bromomethane	0.2198	0.2392	-8.8	121	-0.02
7	P	Chloroethane	0.1997	0.2181	-9.2	112	-0.02
8	P	Trichlorofluoromethane	0.4512	0.5088	-12.8	114	-0.02
9	T	Diethyl ether	0.2413	0.2461	-2.0	108	-0.02
10	T	Isoprene	0.3181	0.3577	-12.5	116	-0.02
11	T	Acrolein	0.0181	0.0405	-123.9#	247#	-0.02
12	P	1,1,2-Trichloro-1,2,2-Trifl	0.2707	0.3025	-11.7	113	-0.03
13	P	Acetone	0.1075	0.0924#	14.1	102	0.00
14	C	1,1-Dichloroethene	0.4330	0.4624	-6.8	109	-0.02
15	T	Tert-Butyl Alcohol	0.0441	0.0414	6.2	104	-0.02
16	T	Dimethyl Sulfide	0.1807	0.1904	-5.4	109	-0.02
17	T	Iodomethane	0.1566	0.1560	0.4	96	-0.02
18	P	Methyl acetate	0.2550	0.2451	3.9	103	0.00
19	P	Methylene Chloride	0.2927	0.2876	1.8	108	0.00
20	P	Carbon Disulfide	0.8184	0.9088	-11.0	118	-0.02
21	T	Acrylonitrile	0.1177	0.1258	-6.8	107	-0.02
22	P	Methyl Tert Butyl Ether	0.7498	0.7831	-4.4	108	-0.02
23	P	trans-1,2-Dichloroethene	0.4118	0.4421	-7.4	109	-0.02
24	T	n-Hexane	0.4599	0.4872	-5.9	111	-0.02
25	T	Diisopropyl ether	0.9472	0.9631	-1.7	108	0.00
26	T	Vinyl Acetate	0.5111	0.5861	-14.7	121	0.00
27	P	1,1-Dichloroethane	0.5154	0.5470	-6.1	108	0.00
28	T	Ethyl-Tert-Butyl ether	0.8847	0.9095	-2.8	109	0.00
29	P	2-Butanone	0.1460	0.1430	2.0	104	0.00
30	T	Propionitrile	0.0442	0.0449	-1.7	105	0.00
31	T	2,2-Dichloropropane	0.3831	0.4201	-9.7	113	-0.02
32	P	cis-1,2-Dichloroethene	0.2956	0.3139	-6.2	108	0.00
33	C	Chloroform	0.4442	0.4791	-7.8	110	-0.02
34	T	1-Bromopropane	0.0461	0.0550	-19.3	119	-0.02
35	T	Bromochloromethane	0.1944	0.2069	-6.4	108	0.00
36	T	Tetrahydrofuran	0.1005	0.0982	2.3	104	0.00
37	S	Dibromofluoromethane	0.2757	0.2652	3.8	103	0.00
38	P	1,1,1-Trichloroethane	0.4012	0.4366	-8.8	113	0.00
39	P	Cyclohexane	0.5073	0.5562	-9.6	112	0.00
40	T	1,1-Dichloropropene	0.3493	0.3774	-8.1	112	-0.02
41	T	Tert-Amyl-Methyl ether	0.7049	0.7286	-3.4	111	0.00
42	P	Carbon Tetrachloride	0.3892	0.4181	-7.4	110	0.00
43	S	1,2-Dichloroethane-d4	0.2931	0.2694	8.1	99	0.00
44		Heptane	0.0000	0.0000	0.0	108	0.00
45	P	1,2-Dichloroethane	0.3638	0.3778	-3.9	107	0.00
46	P	Benzene	1.0589	1.0963	-3.5	109	0.00
47	P	Trichloroethene	0.3102	0.3425	-10.4	116	0.00
48	P	Methylcyclohexane	0.4366	0.4888	-11.9	114	0.00
49	C	1,2-Dichloropropane	0.2894	0.3045	-5.2	108	0.00
50	T	1,4-Dioxane	0.0044	0.0038	13.8	90	0.00
51	P	Bromodichloromethane	0.3512	0.3690	-5.1	109	0.00
52	T	Dibromomethane	0.1831	0.1999	-9.2	110	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1653	0.1647	0.4	98	0.00
54	P	4-Methyl-2-Pentanone	0.1198	0.1248	-4.2	108	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\070616\9M975250.D Vial: 3
Acq On : 6 Jul 2016 14:19 Operator: ADC
Sample : WG575226-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD76496 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	0.4179	0.4410	-5.5	109	0.00
56	T	Dimethyl Disulfide	0.4374	0.4969	-13.6	116	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	110	0.00
58	S	Toluene-d8	1.2384	1.1849	4.3	106	0.00
59	C	Toluene	1.4259	1.4790	-3.7	110	0.00
60	T	Ethyl Methacrylate	0.4068	0.4290	-5.5	111	0.00
61	P	trans-1,3-Dichloropropene	0.4842	0.5059	-4.5	106	0.00
62	P	1,1,2-Trichloroethane	0.2948	0.3079	-4.4	106	0.00
63	P	2-Hexanone	0.2671	0.2669	0.1	104	0.00
64	T	1,3-Dichloropropane	0.4929	0.5054	-2.5	107	0.00
65	P	Tetrachloroethene	0.3049	0.3331	-9.3	113	0.00
66	P	Dibromochloromethane	0.3892	0.4083	-4.9	109	0.00
67	P	1,2-Dibromoethane	0.3312	0.3412	-3.0	109	0.00
68	T	1-Chlorohexane	0.4447	0.4959	-11.5	114	0.00
69	P	Chlorobenzene	1.0149	1.0488	-3.3	109	0.00
70	T	1,1,1,2-Tetrachloroethane	0.3651	0.3851	-5.5	110	0.00
71	C	Ethylbenzene	0.5377	0.5659	-5.3	110	0.00
72	P	m-,p-Xylene	0.6642	0.6815	-2.6	110	0.00
73	P	o-Xylene	0.6430	0.6651	-3.4	109	0.00
74	P	Styrene	1.0731	1.1235	-4.7	107	0.00
75	P	Bromoform	0.2641	0.2873	-8.8	110	0.00
76	P	Isopropylbenzene	1.6503	1.7119	-3.7	110	0.00
77	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	107	0.00
78	P	1,1,2,2-Tetrachloroethane	0.8060	0.8189	-1.6	102	0.00
79	S	p-Bromofluorobenzene	0.9130	0.9562	-4.7	110	0.00
80	T	1,2,3-Trichloropropane	0.2499	0.2707	-8.3	108	0.00
81	T	trans-1,4-Dichloro-2-Butene	0.2406	0.2722	-13.1	111	0.00
82	T	n-Propylbenzene	3.5986	3.8158	-6.0	109	0.00
83	T	Bromobenzene	0.8680	0.9351	-7.7	110	0.00
84	T	1,3,5-Trimethylbenzene	2.7329	2.9664	-8.5	111	0.00
85	T	2-Chlorotoluene	2.1751	2.3281	-7.0	110	0.00
86	T	4-Chlorotoluene	2.2073	2.3316	-5.6	108	0.00
87	T	a-Methylstyrene	1.2692	1.4246	-12.2	114	0.00
88	T	tert-Butylbenzene	0.5905	0.6377	-8.0	109	0.00
89	T	1,2,4-Trimethylbenzene	3.0085	2.9765	1.1	111	0.00
90	T	sec-Butylbenzene	3.5858	3.7638	-5.0	108	0.00
91	T	p-Isopropyltoluene	2.9248	3.1507	-7.7	109	0.00
92	P	1,3-Dichlorobenzene	1.6778	1.7467	-4.1	110	0.00
93	P	1,4-Dichlorobenzene	1.7124	1.7380	-1.5	110	0.00
94	T	n-Butylbenzene	2.6731	2.7601	-3.3	109	0.00
95	P	1,2-Dichlorobenzene	1.6023	1.6525	-3.1	109	0.00
96	P	1,2-Dibromo-3-Chloropropane	0.2083	0.2195	-5.3	105	0.00
97	P	1,2,4-Trichlorobenzene	1.1689	1.2208	-4.4	109	0.00
98	T	Hexachlorobutadiene	0.5930	0.6116	-3.1	110	0.01
99	T	Naphthalene	3.0531	3.1137	-2.0	104	0.01
100	T	1,2,3-Trichlorobenzene	1.1441	1.1639	-1.7	107	0.00

(#) = Out of Range SPCC's out = 1 CCC's out = 0
9M975250.D 8260S.M Wed Jul 06 16:43:23 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\070616\9M975250.D Vial: 3
Acq On : 6 Jul 2016 14:19 Operator: ADC
Sample : WG575226-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD76496 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	108	0.00
2	P	Dichlorodifluoromethane	50.0000	54.5338	-9.1	106	0.00
3	P	Chloromethane	50.0000	42.2757	15.4	90	-0.02
4	C	Vinyl Chloride	50.0000	58.1965	-16.4	121	0.00
5	T	1,3-Butadiene	50.0000	78.4008	-56.8#	172	0.00
6	P	Bromomethane	50.0000	54.4051	-8.8	121	-0.02
7	P	Chloroethane	50.0000	54.6077	-9.2	112	-0.02
8	P	Trichlorofluoromethane	50.0000	56.3813	-12.8	114	-0.02
9	T	Diethyl ether	100.0000	101.9659	-2.0	108	-0.02
10	T	Isoprene	50.0000	56.2261	-12.5	116	-0.02
11	T	Acrolein	50.0000	111.9796	-124.0#	247	-0.02
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	55.8720	-11.7	113	-0.03
13	P	Acetone	50.0000	46.7881	6.4	102	0.00
14	C	1,1-Dichloroethene	50.0000	53.3933	-6.8	109	-0.02
15	T	Tert-Butyl Alcohol	200.0000	187.6919	6.2	104	-0.02
16	T	Dimethyl Sulfide	50.0000	52.6851	-5.4	109	-0.02
17	T	Iodomethane	50.0000	43.0547	13.9	96	-0.02
18	P	Methyl acetate	50.0000	48.0553	3.9	103	0.00
19	P	Methylene Chloride	50.0000	49.1232	1.8	108	0.00
20	P	Carbon Disulfide	50.0000	55.5247	-11.0	118	-0.02
21	T	Acrylonitrile	50.0000	53.4139	-6.8	107	-0.02
22	P	Methyl Tert Butyl Ether	50.0000	52.2185	-4.4	108	-0.02
23	P	trans-1,2-Dichloroethene	50.0000	53.6760	-7.4	109	-0.02
24	T	n-Hexane	50.0000	52.9602	-5.9	111	-0.02
25	T	Diisopropyl ether	100.0000	101.6794	-1.7	108	0.00
26	T	Vinyl Acetate	50.0000	57.3342	-14.7	121	0.00
27	P	1,1-Dichloroethane	50.0000	53.0709	-6.1	108	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	102.7976	-2.8	109	0.00
29	P	2-Butanone	50.0000	48.9826	2.0	104	0.00
30	T	Propionitrile	100.0000	101.6912	-1.7	105	0.00
31	T	2,2-Dichloropropane	50.0000	54.8313	-9.7	113	-0.02
32	P	cis-1,2-Dichloroethene	50.0000	53.0982	-6.2	108	0.00
33	C	Chloroform	50.0000	53.9242	-7.8	110	-0.02
34	T	1-Bromopropane	50.0000	59.6286	-19.3	119	-0.02
35	T	Bromochloromethane	50.0000	53.1932	-6.4	108	0.00
36	T	Tetrahydrofuran	100.0000	97.7339	2.3	104	0.00
37	S	Dibromofluoromethane	50.0000	48.1038	3.8	103	0.00
38	P	1,1,1-Trichloroethane	50.0000	54.4119	-8.8	113	0.00
39	P	Cyclohexane	50.0000	54.8166	-9.6	112	0.00
40	T	1,1-Dichloropropene	50.0000	54.0253	-8.1	112	-0.02
41	T	Tert-Amyl-Methyl ether	100.0000	103.3605	-3.4	111	0.00
42	P	Carbon Tetrachloride	50.0000	53.7140	-7.4	110	0.00
43	S	1,2-Dichloroethane-d4	50.0000	45.9551	8.1	99	0.00
44		Heptane	-1.0000	0.0000	0.0	108	0.00
45	P	1,2-Dichloroethane	50.0000	51.9302	-3.9	107	0.00
46	P	Benzene	50.0000	51.7646	-3.5	109	0.00
47	P	Trichloroethene	50.0000	55.2043	-10.4	116	0.00
48	P	Methylcyclohexane	50.0000	55.9741	-11.9	114	0.00
49	C	1,2-Dichloropropane	50.0000	52.6172	-5.2	108	0.00
50	T	1,4-Dioxane	200.0000	172.3507	13.8	90	0.00
51	P	Bromodichloromethane	50.0000	52.5475	-5.1	109	0.00
52	T	Dibromomethane	50.0000	54.5872	-9.2	110	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	44.2403	11.5	98	0.00
54	P	4-Methyl-2-Pentanone	50.0000	52.0995	-4.2	108	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\070616\9M975250.D Vial: 3
Acq On : 6 Jul 2016 14:19 Operator: ADC
Sample : WG575226-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD76496 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	52.7615	-5.5	109	0.00
56	T	Dimethyl Disulfide	50.0000	50.4031	-0.8	116	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	110	0.00
58	S	Toluene-d8	50.0000	47.8404	4.3	106	0.00
59	C	Toluene	50.0000	51.8597	-3.7	110	0.00
60	T	Ethyl Methacrylate	50.0000	52.7279	-5.5	111	0.00
61	P	trans-1,3-Dichloropropene	50.0000	52.2353	-4.5	106	0.00
62	P	1,1,2-Trichloroethane	50.0000	52.2126	-4.4	106	0.00
63	P	2-Hexanone	50.0000	46.5024	7.0	104	0.00
64	T	1,3-Dichloropropane	50.0000	51.2740	-2.5	107	0.00
65	P	Tetrachloroethene	50.0000	54.6261	-9.3	113	0.00
66	P	Dibromochloromethane	50.0000	52.4516	-4.9	109	0.00
67	P	1,2-Dibromoethane	50.0000	51.5079	-3.0	109	0.00
68	T	1-Chlorohexane	50.0000	55.7513	-11.5	114	0.00
69	P	Chlorobenzene	50.0000	51.6699	-3.3	109	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	52.7314	-5.5	110	0.00
71	C	Ethylbenzene	50.0000	52.6263	-5.3	110	0.00
72	P	m-,p-Xylene	100.0000	102.5990	-2.6	110	0.00
73	P	o-Xylene	50.0000	51.7136	-3.4	109	0.00
74	P	Styrene	50.0000	52.3500	-4.7	107	0.00
75	P	Bromoform	50.0000	54.3862	-8.8	110	0.00
76	P	Isopropylbenzene	50.0000	51.8676	-3.7	110	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	107	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	50.8057	-1.6	102	0.00
79	S	p-Bromofluorobenzene	50.0000	52.3639	-4.7	110	0.00
80	T	1,2,3-Trichloropropane	50.0000	54.1679	-8.3	108	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	56.5722	-13.1	111	0.00
82	T	n-Propylbenzene	50.0000	53.0181	-6.0	109	0.00
83	T	Bromobenzene	50.0000	53.8676	-7.7	110	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	54.2713	-8.5	111	0.00
85	T	2-Chlorotoluene	50.0000	53.5163	-7.0	110	0.00
86	T	4-Chlorotoluene	50.0000	52.8158	-5.6	108	0.00
87	T	a-Methylstyrene	50.0000	56.1246	-12.2	114	0.00
88	T	tert-Butylbenzene	50.0000	53.9924	-8.0	109	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	55.0018	-10.0	111	0.00
90	T	sec-Butylbenzene	50.0000	52.4808	-5.0	108	0.00
91	T	p-Isopropyltoluene	50.0000	53.8612	-7.7	109	0.00
92	P	1,3-Dichlorobenzene	50.0000	52.0526	-4.1	110	0.00
93	P	1,4-Dichlorobenzene	50.0000	50.7470	-1.5	110	0.00
94	T	n-Butylbenzene	50.0000	51.6274	-3.3	109	0.00
95	P	1,2-Dichlorobenzene	50.0000	51.5640	-3.1	109	0.00
96	P	1,2-Dibromo-3-Chloropropane	50.0000	47.9041	4.2	105	0.00
97	P	1,2,4-Trichlorobenzene	50.0000	52.2179	-4.4	109	0.00
98	T	Hexachlorobutadiene	50.0000	51.5699	-3.1	110	0.01
99	T	Naphthalene	50.0000	50.9925	-2.0	104	0.01
100	T	1,2,3-Trichlorobenzene	50.0000	50.8686	-1.7	107	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M975250.D 8260S.M Wed Jul 06 16:43:22 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\1\DATA\062116\9M974885.D          Vial: 1
Acq On    : 21 Jun 2016   6:43                        Operator: ADC
Sample    : WG573367-01 BFB 50ng 8260                 Inst    : hpms9
Misc      : 7,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 06/21/16  HPMS9
```

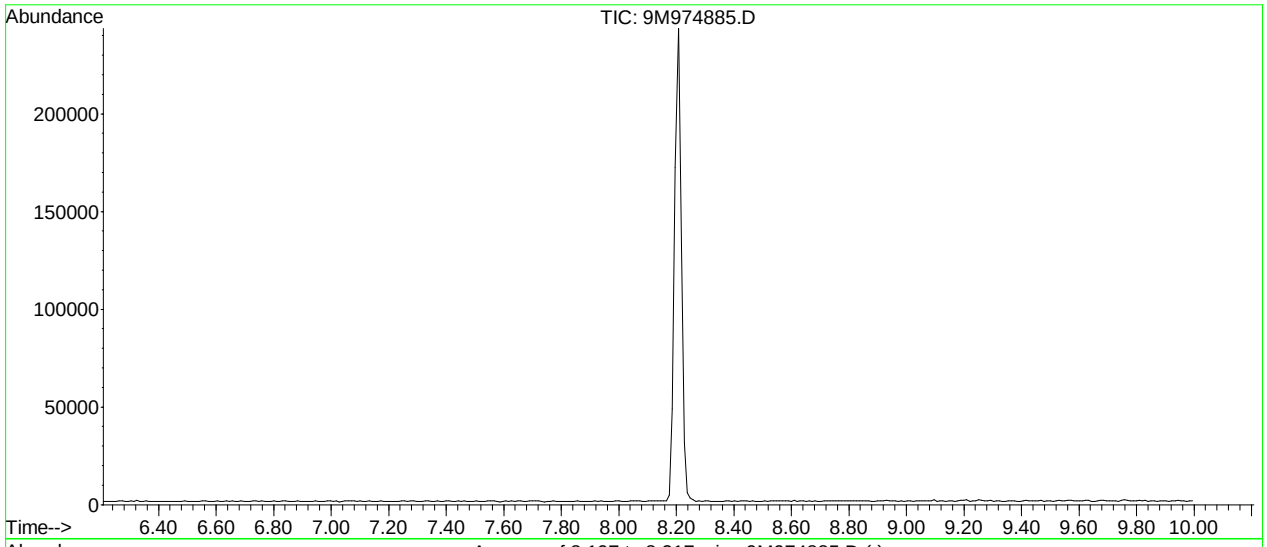

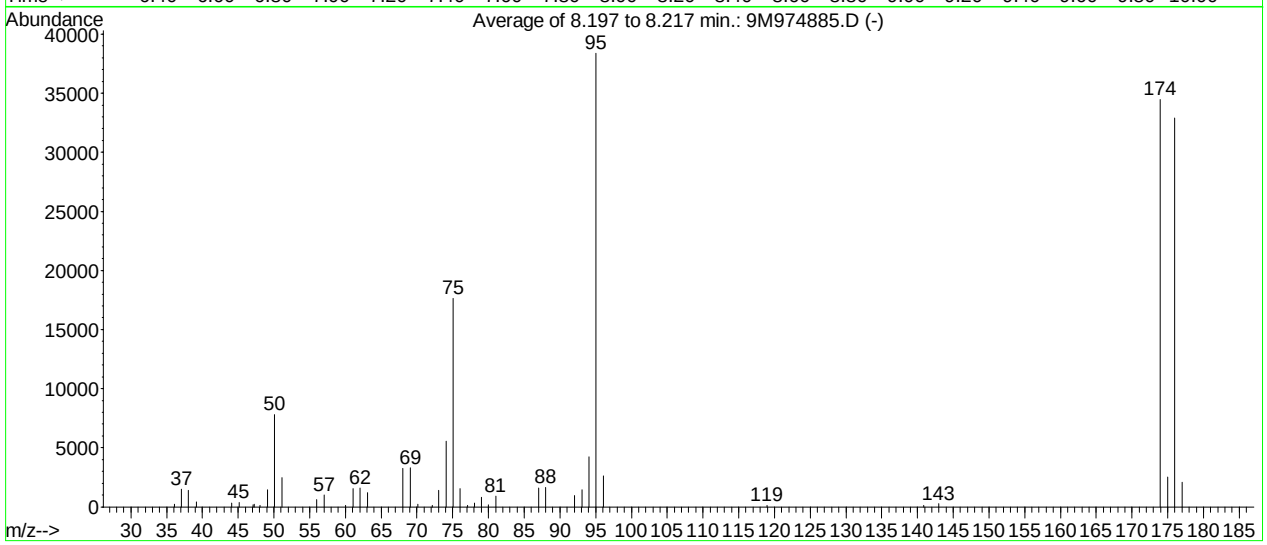

AutoFind: Scans 301, 302, 303; Background Corrected with Scan 296

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.4	7829	PASS
75	95	30	60	46.0	17648	PASS
95	95	100	100	100.0	38392	PASS
96	95	5	9	6.8	2596	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	89.8	34464	PASS
175	174	5	9	7.4	2544	PASS
176	174	95	101	95.5	32922	PASS
177	176	5	9	6.3	2073	PASS

9M974885.D 8260S.M Thu Jun 23 11:48:01 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\070116\9M975213.D          Vial: 2
Acq On    :  1 Jul 2016  14:53                       Operator: ADC
Sample    : WG574992-01 50ng BFB                     Inst    : hpms9
Misc      : 7,1 STD76715                             Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 06/21/16  HPMS9
```

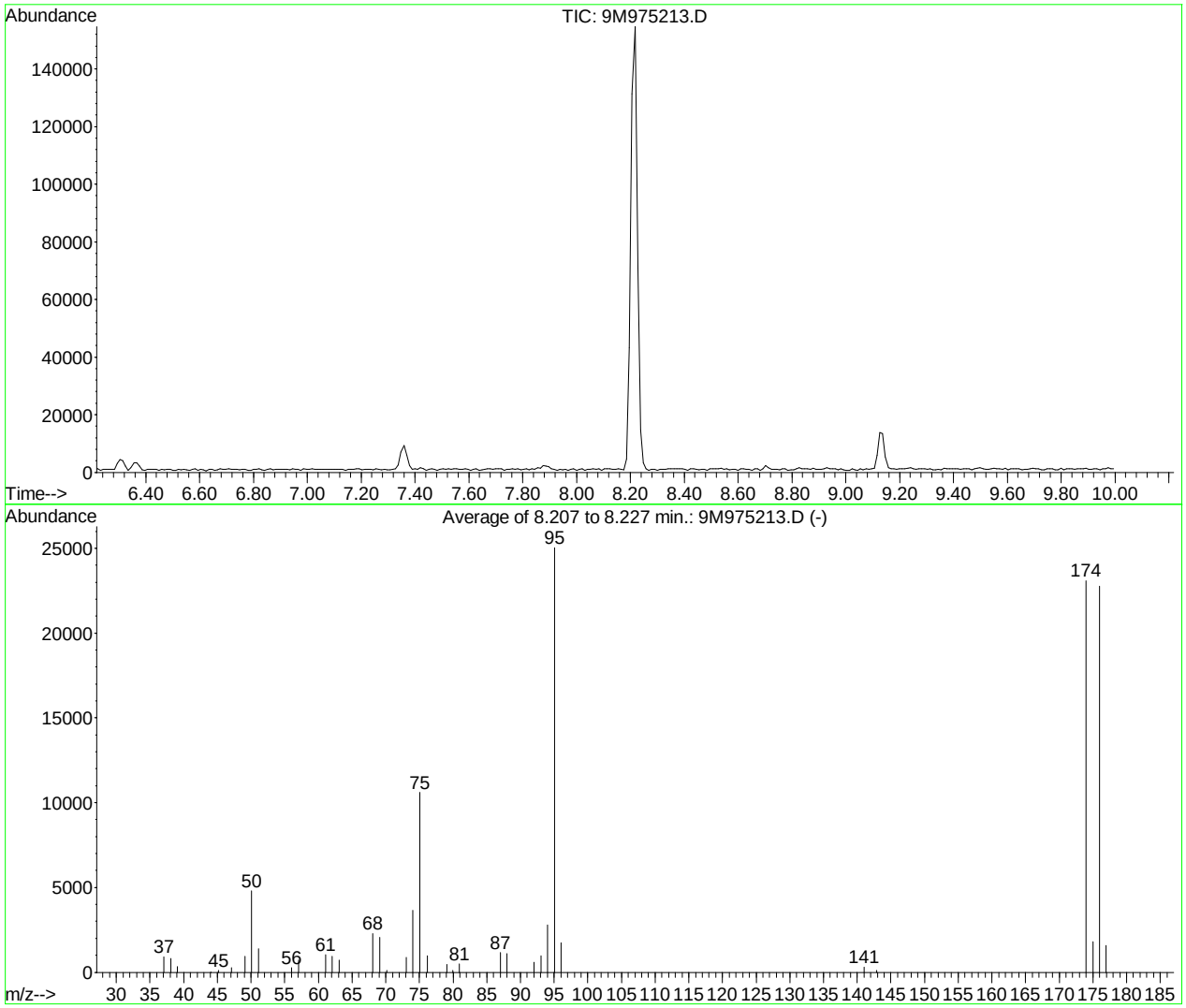

AutoFind: Scans 302, 303, 304; Background Corrected with Scan 297

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.2	4799	PASS
75	95	30	60	42.3	10593	PASS
95	95	100	100	100.0	25036	PASS
96	95	5	9	6.9	1733	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	92.2	23080	PASS
175	174	5	9	7.9	1818	PASS
176	174	95	101	98.6	22757	PASS
177	176	5	9	6.9	1572	PASS

9M975213.D 8260S.M Fri Jul 01 16:28:00 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\070616\9M975249.D          Vial: 2
Acq On    :  6 Jul 2016  13:53                        Operator: ADC
Sample    : WG575226-01 BFB 50ng 8260                 Inst    : hpms9
Misc      : 7,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 06/21/16  HPMS9
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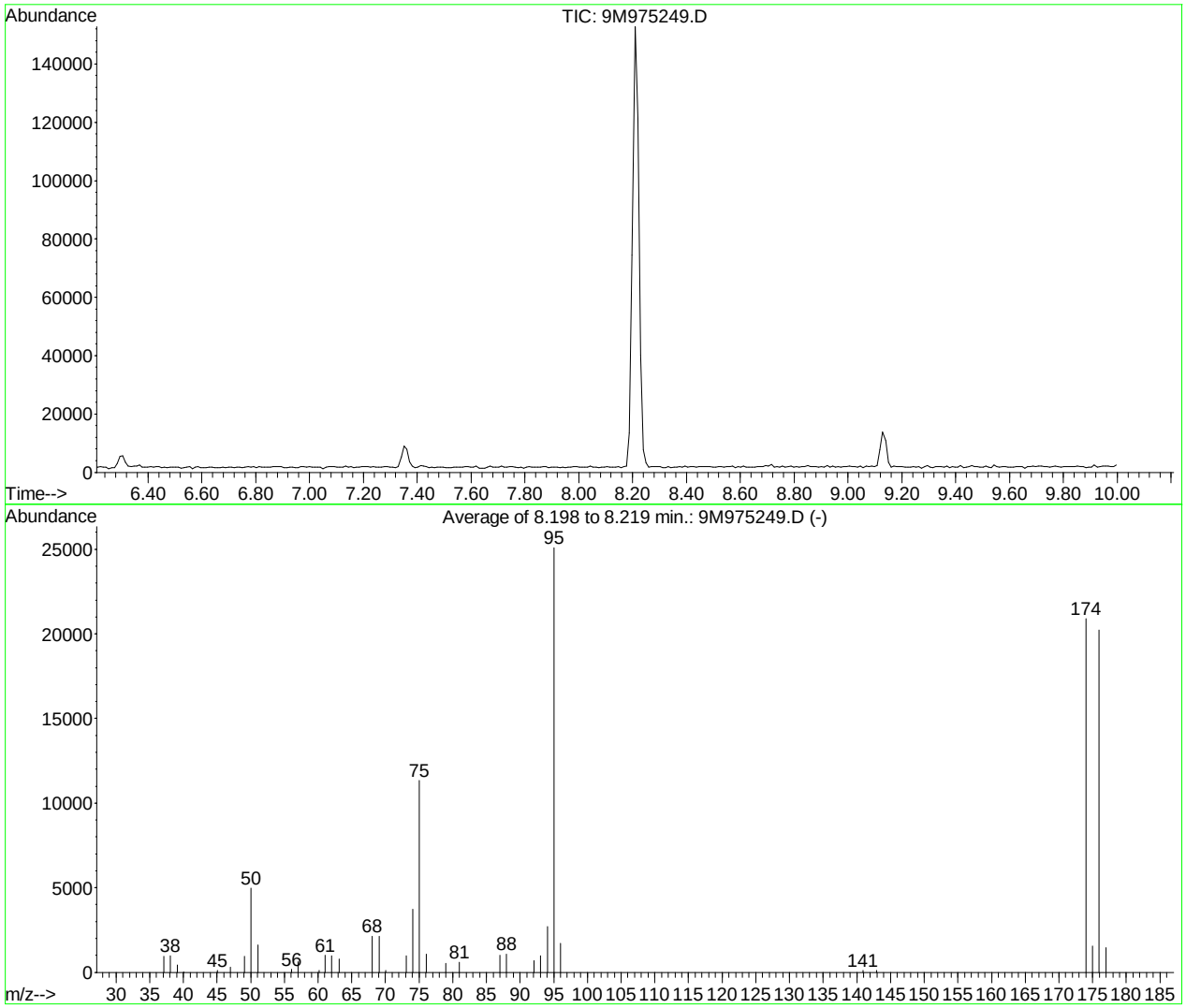

AutoFind: Scans 301, 302, 303; Background Corrected with Scan 296

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.9	4982	PASS
75	95	30	60	45.2	11346	PASS
95	95	100	100	100.0	25093	PASS
96	95	5	9	6.8	1717	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	83.3	20901	PASS
175	174	5	9	7.5	1567	PASS
176	174	95	101	96.8	20228	PASS
177	176	5	9	7.3	1467	PASS

9M975249.D 8260S.M Wed Jul 06 16:43:05 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975217.D Vial: 5
Acq On : 1 Jul 2016 17:00 Operator: ADC
Sample : WG574993-01 BLANK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 11:01:07 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.81	96	545183	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.68	117	425232	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.71	152	220505	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.77	111	145570	48.4231 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.84%		
43) 1,2-Dichloroethane-d4	10.41	65	147496	46.1504 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 92.30%		
58) Toluene-d8	12.79	98	525378	49.8837 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.76%		
79) p-Bromofluorobenzene	16.18	95	205708	51.0887 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.18%		

Target Compounds					Qvalue
13) Acetone	6.36	43	2917	Below Cal #	75
19) Methylene Chloride	7.36	84	1626	0.5095 ug/kg	94
36) Tetrahydrofuran	9.75	42	1678	1.5312 ug/kg#	49
56) Dimethyl Disulfide	12.78	94	13744	3.6817 ug/kg#	29
99) Naphthalene	20.76	128	11222	0.8334 ug/kg	98

(#) = qualifier out of range (m) = manual integration
9M975217.D 8260S.M Tue Jul 12 11:01:07 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975217.D Vial: 5
Acq On : 1 Jul 2016 17:00 Operator: ADC
Sample : WG574993-01 BLANK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 11:01 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

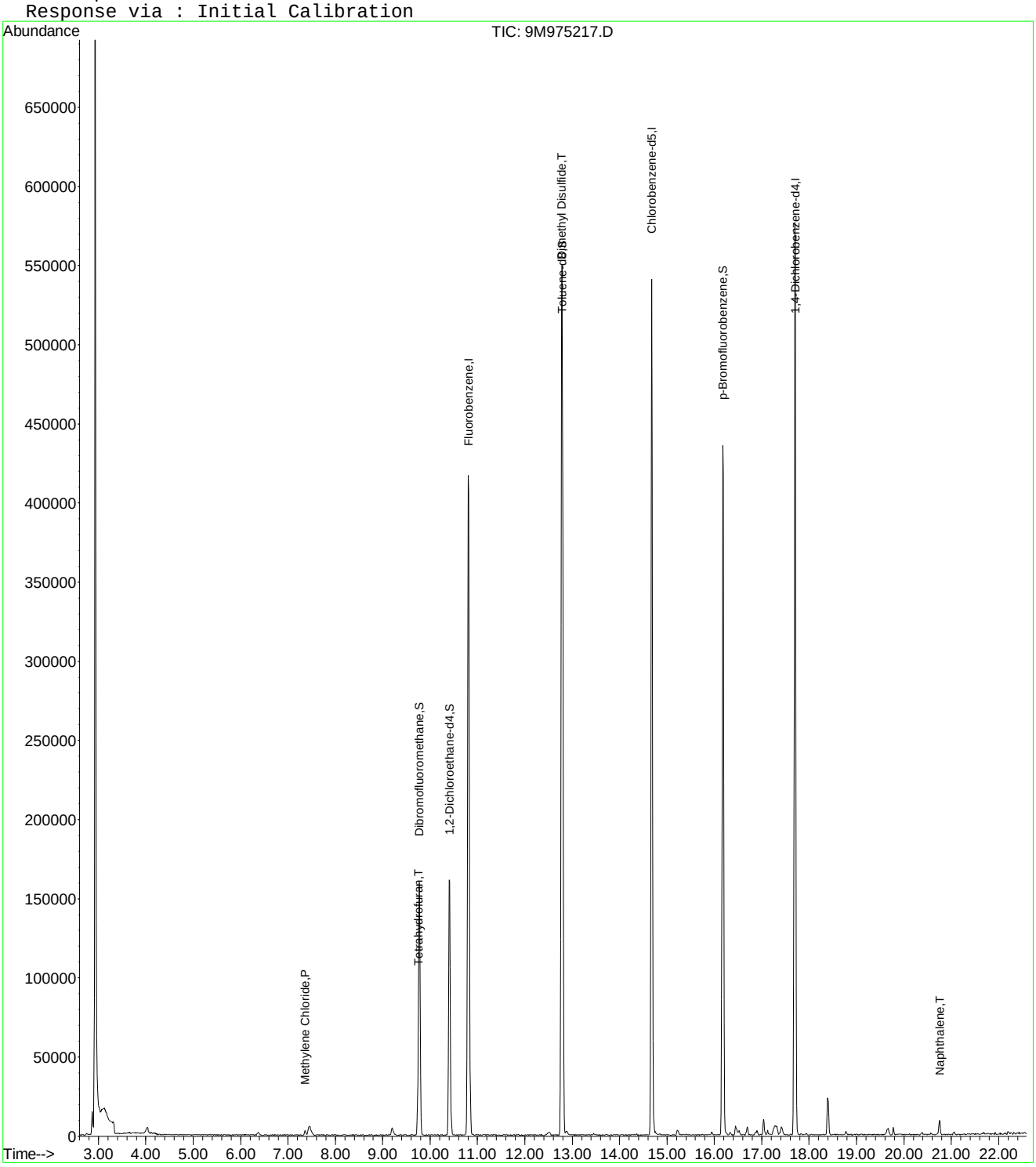

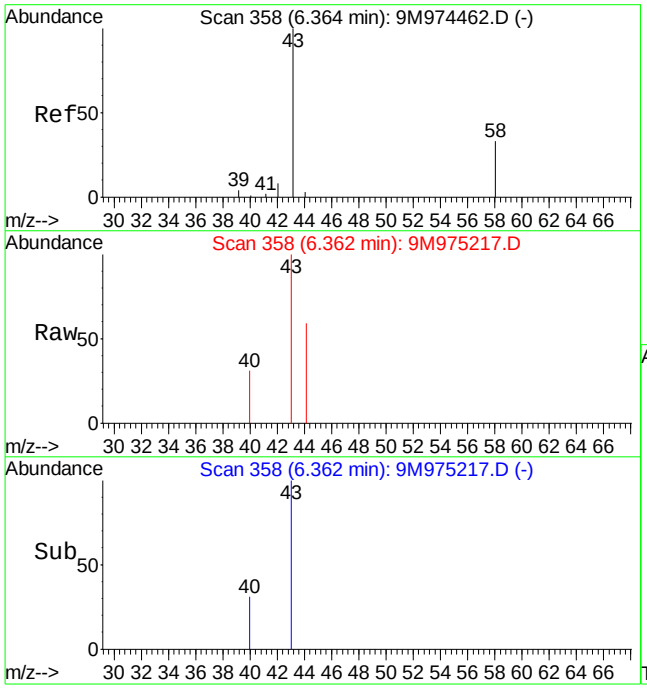

#13
Acetone
Concen: Below Cal
RT: 6.36 min Scan# 358
Delta R.T. 0.00 min
Lab File: 9M975217.D
Acq: 1 Jul 2016 17:00

Tgt Ion: 43 Resp: 2917

Ion	Ratio	Lower	Upper
43	100		
58	19.2	19.9	46.3#

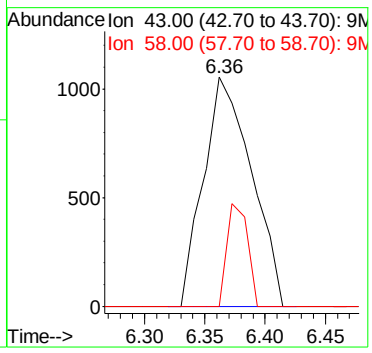

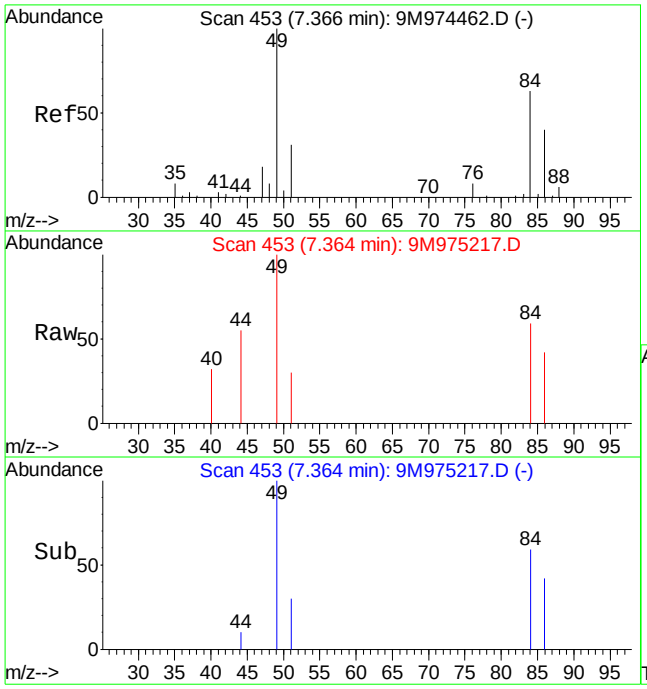

#19
Methylene Chloride
Concen: 0.51 ug/kg
RT: 7.36 min Scan# 453
Delta R.T. 0.00 min
Lab File: 9M975217.D
Acq: 1 Jul 2016 17:00

Tgt Ion: 84 Resp: 1626

Ion	Ratio	Lower	Upper
84	100		
49	148.1	93.2	217.4

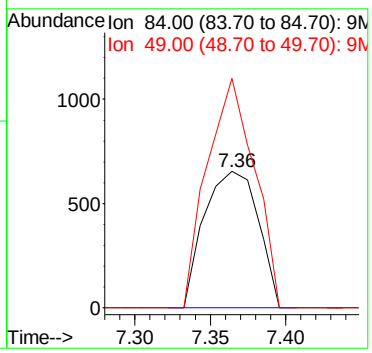

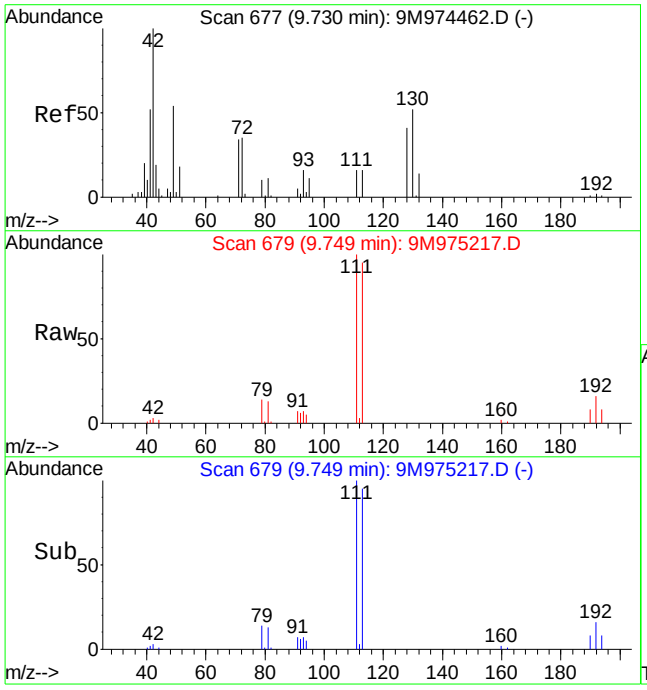

#36
Tetrahydrofuran
Concen: 1.53 ug/kg
RT: 9.75 min Scan# 679
Delta R.T. 0.01 min
Lab File: 9M975217.D
Acq: 1 Jul 2016 17:00

Tgt Ion: 42 Resp: 1678

Ion	Ratio	Lower	Upper
42	100		
72	0.0	21.8	50.8#
71	11.6	20.7	48.3#

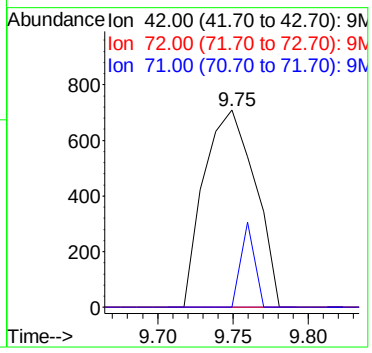

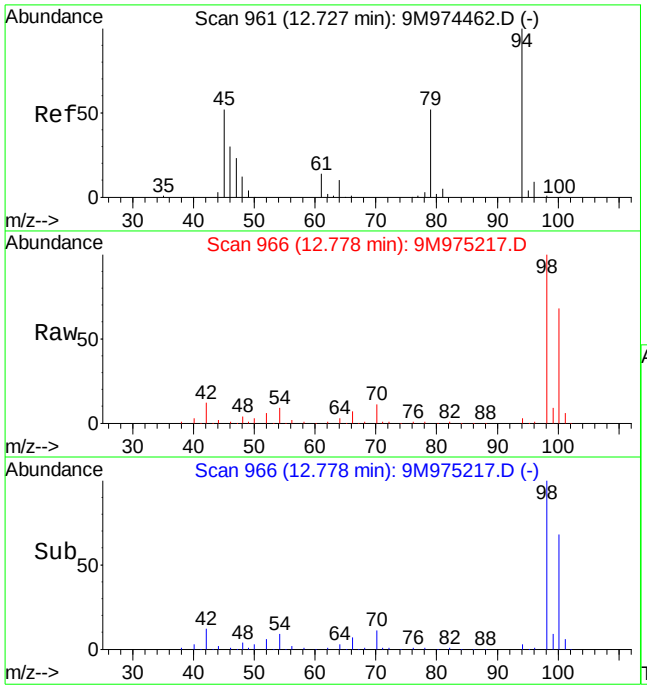

#56
Dimethyl Disulfide
Concen: 3.68 ug/kg
RT: 12.78 min Scan# 966
Delta R.T. 0.05 min
Lab File: 9M975217.D
Acq: 1 Jul 2016 17:00

Tgt Ion: 94 Resp: 13744

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.5	66.5#

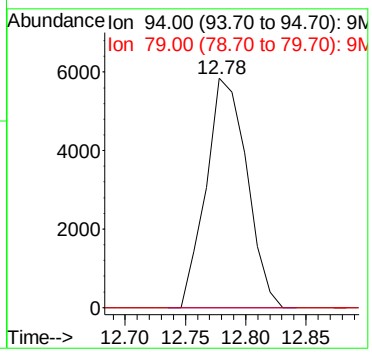

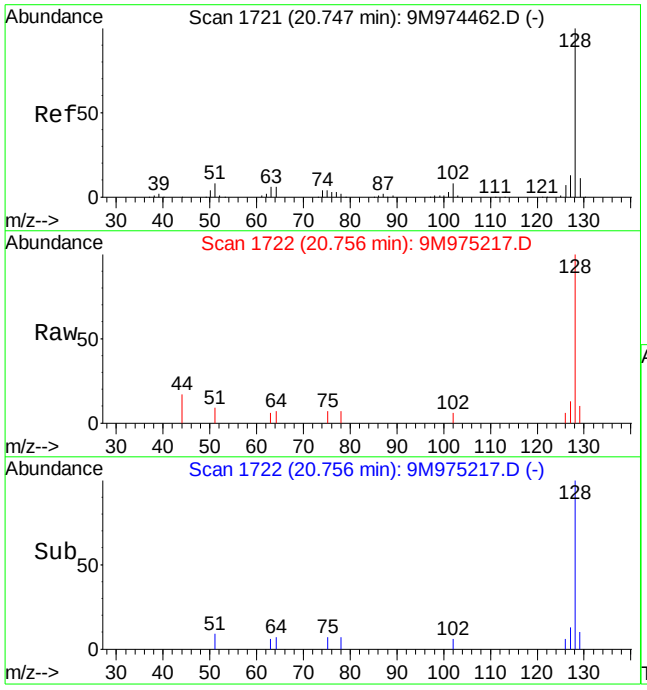

#99
Naphthalene
Concen: 0.83 ug/kg
RT: 20.76 min Scan# 1722
Delta R.T. 0.01 min
Lab File: 9M975217.D
Acq: 1 Jul 2016 17:00

Tgt Ion:128 Resp: 11222

Ion	Ratio	Lower	Upper
128	100		
127	12.0	7.6	17.8

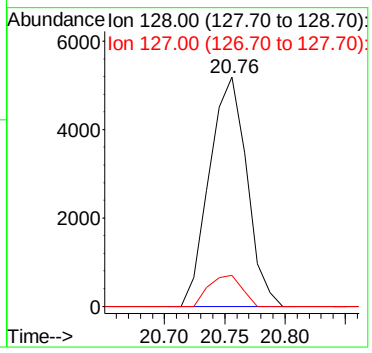

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975252.D Vial: 5
Acq On : 6 Jul 2016 15:40 Operator: ADC
Sample : WG575227-01 BLK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 15:03:02 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.81	96	535820	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.68	117	416755	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.70	152	213050	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.76	111	137016	46.3741 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 92.74%		
43) 1,2-Dichloroethane-d4	10.40	65	143029	45.5348 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 91.06%		
58) Toluene-d8	12.78	98	510273	49.4350 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.86%		
79) p-Bromofluorobenzene	16.18	95	198005	50.8963 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 101.80%		

Target Compounds					Qvalue
19) Methylene Chloride	7.35	84	1731	0.5518 ug/kg	96
36) Tetrahydrofuran	9.73	42	1932	1.7938 ug/kg#	75
56) Dimethyl Disulfide	12.78	94	13765	3.7292 ug/kg#	29
84) 1,3,5-Trimethylbenzene	16.45	105	7986	0.6858 ug/kg	72
99) Naphthalene	20.76	128	7791	0.5989 ug/kg	88

(#) = qualifier out of range (m) = manual integration
9M975252.D 8260S.M Tue Jul 12 15:03:03 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975252.D Vial: 5
Acq On : 6 Jul 2016 15:40 Operator: ADC
Sample : WG575227-01 BLK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 12 15:03 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

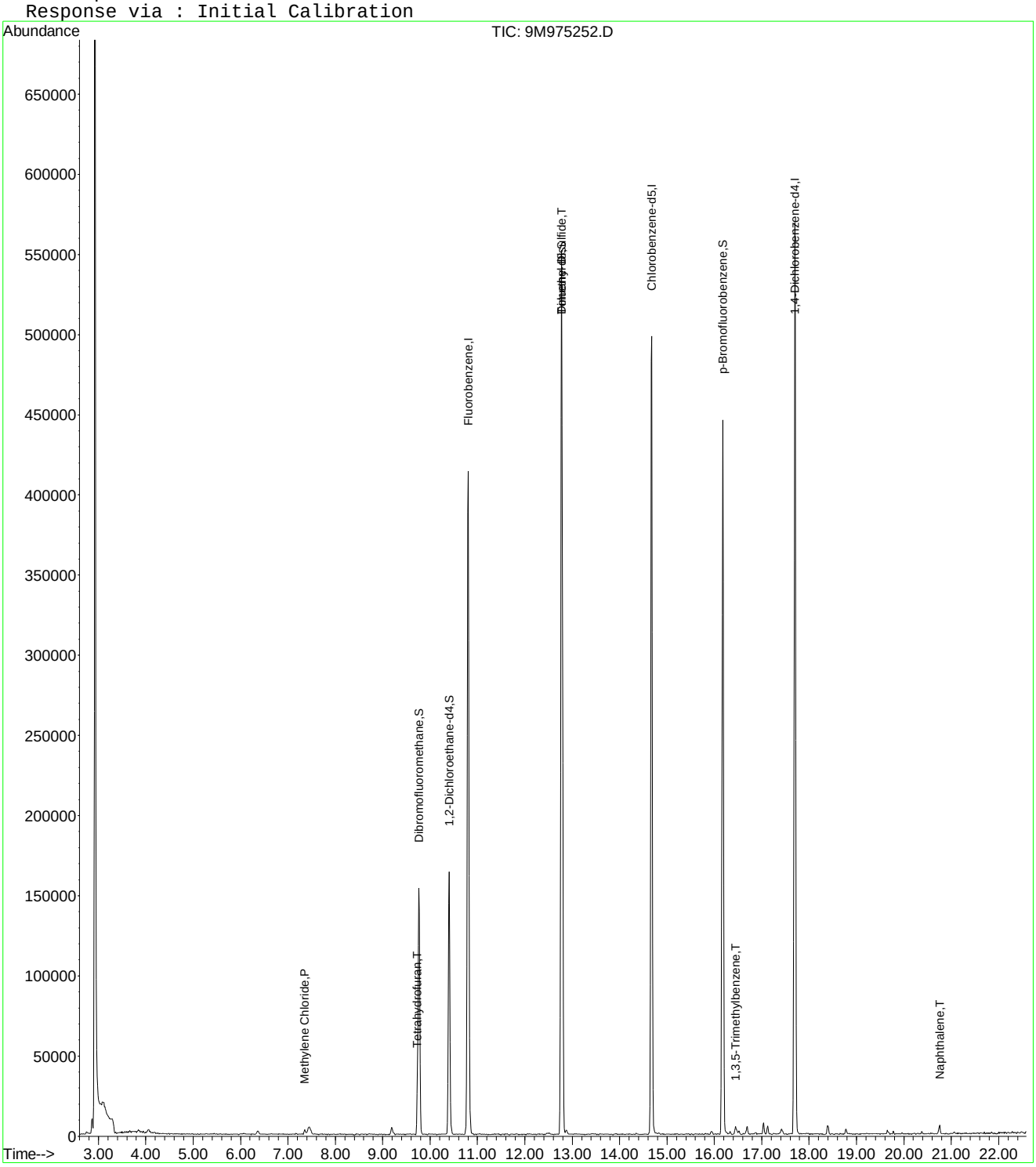

9M975252.D 8260S.M Tue Jul 12 15:03:03 2016 Page 2

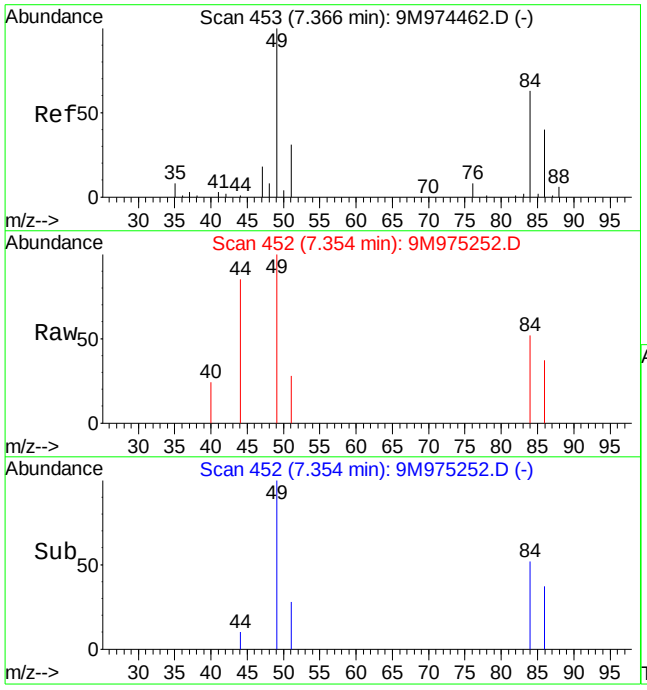

#19
Methylene Chloride
Concen: 0.55 ug/kg
RT: 7.35 min Scan# 452
Delta R.T. -0.01 min
Lab File: 9M975252.D
Acq: 6 Jul 2016 15:40

Tgt Ion: 84 Resp: 1731

Ion	Ratio	Lower	Upper
84	100		
49	160.8	93.2	217.4

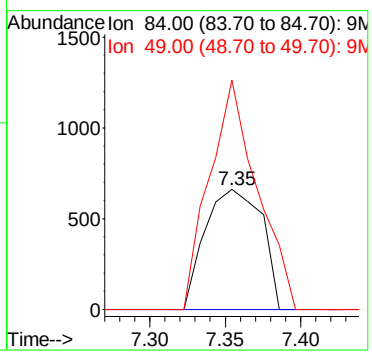

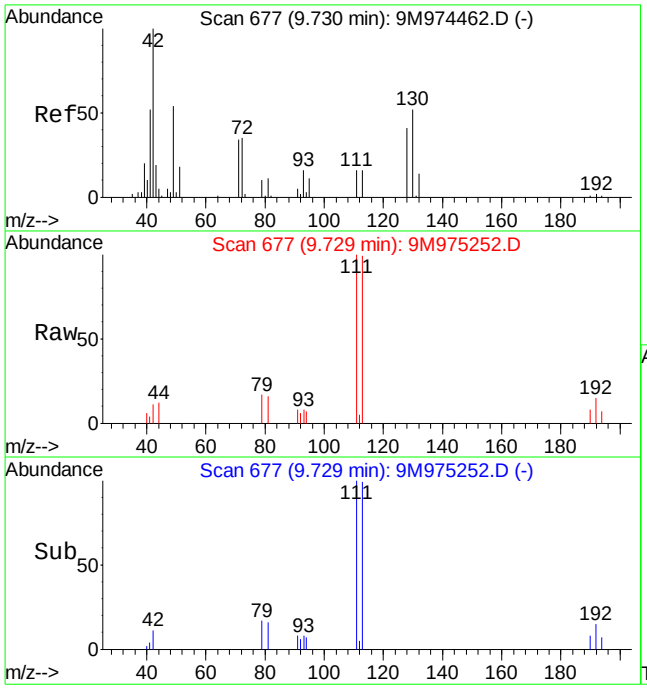

#36
Tetrahydrofuran
Concen: 1.79 ug/kg
RT: 9.73 min Scan# 677
Delta R.T. -0.01 min
Lab File: 9M975252.D
Acq: 6 Jul 2016 15:40

Tgt Ion: 42 Resp: 1932

Ion	Ratio	Lower	Upper
42	100		
72	21.1	21.8	50.8#
71	20.2	20.7	48.3#

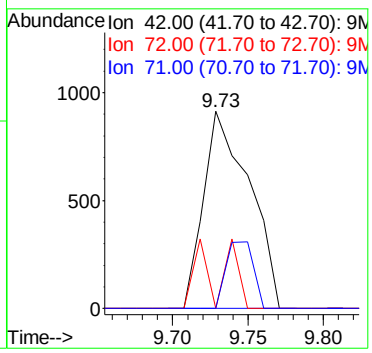

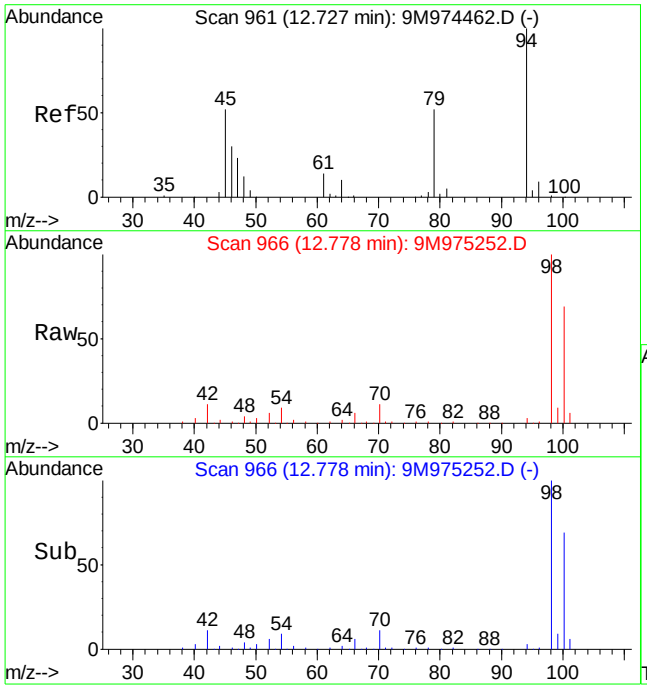

#56
Dimethyl Disulfide
Concen: 3.73 ug/kg
RT: 12.78 min Scan# 966
Delta R.T. 0.05 min
Lab File: 9M975252.D
Acq: 6 Jul 2016 15:40

Tgt Ion: 94 Resp: 13765

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.5	66.5#

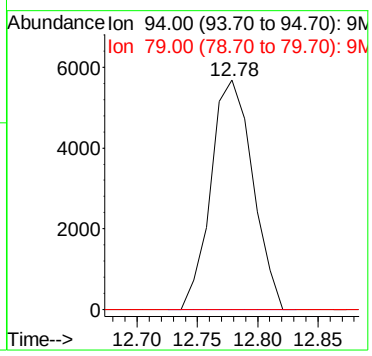

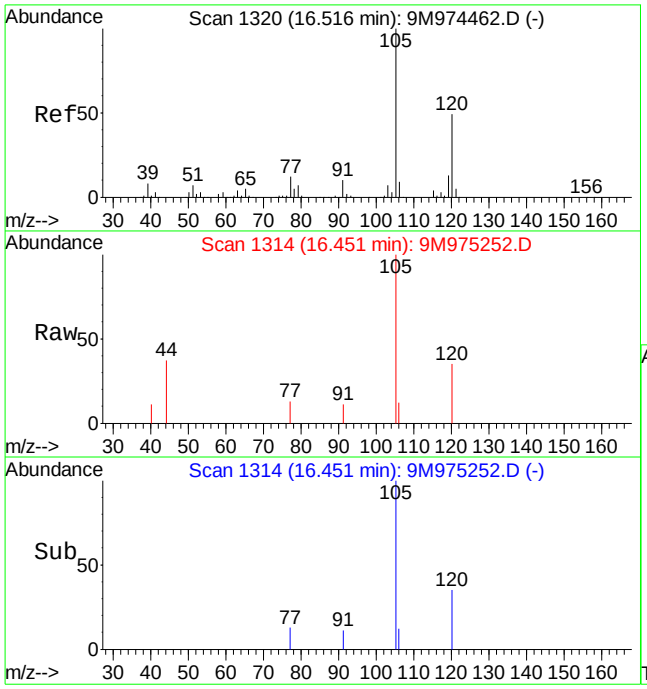

#84
1,3,5-Trimethylbenzene
Concen: 0.69 ug/kg
RT: 16.45 min Scan# 1314
Delta R.T. -0.07 min
Lab File: 9M975252.D
Acq: 6 Jul 2016 15:40

Tgt Ion:105 Resp: 7986

Ion	Ratio	Lower	Upper
105	100		
120	30.8	30.0	70.0

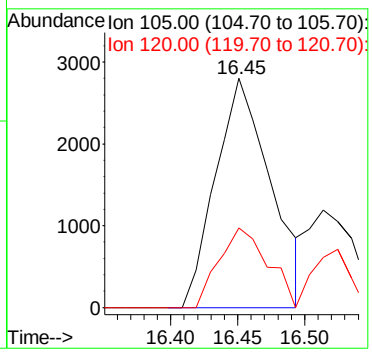

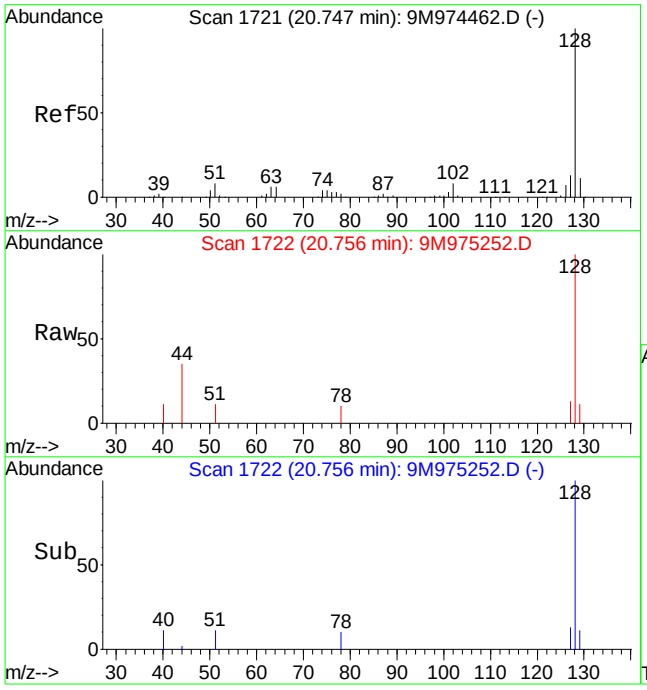

#99
Naphthalene
Concen: 0.60 ug/kg
RT: 20.76 min Scan# 1722
Delta R.T. 0.01 min
Lab File: 9M975252.D
Acq: 6 Jul 2016 15:40

Tgt Ion:128 Resp: 7791

Ion	Ratio	Lower	Upper
128	100		
127	7.9	7.6	17.8

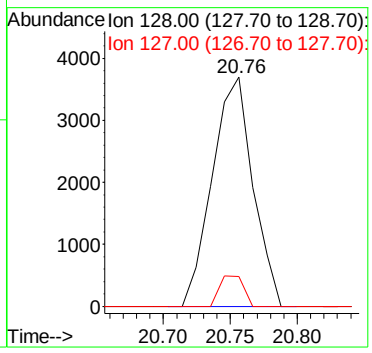

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975220.D Vial: 8
Acq On : 1 Jul 2016 18:32 Operator: ADC
Sample : WG574993-02 20ug/Kg LCS 8260 Inst : hpms9
Misc : 7,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 05 15:02:41 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.81	96	543112	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.68	117	428113	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.71	152	223983	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.77	111	145169	48.4739 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.94%		
43) 1,2-Dichloroethane-d4	10.40	65	147710	46.3936 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 92.78%		
58) Toluene-d8	12.78	98	525201	49.5313 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.06%		
79) p-Bromofluorobenzene	16.18	95	202720	49.5648 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 99.12%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.26	85	61261	14.3956 ug/kg	99
3) Chloromethane	3.72	50	59297	15.7676 ug/kg	98
4) Vinyl Chloride	3.96	62	52280	19.7960 ug/kg	100
5) 1,3-Butadiene	4.00	54	22270	17.0544 ug/kg	95
6) Bromomethane	4.85	94	46625	19.5272 ug/kg	97
7) Chloroethane	5.00	64	44092	20.3305 ug/kg	98
8) Trichlorofluoromethane	5.50	101	92426	18.8595 ug/kg	100
9) Diethyl ether	6.02	59	250189	95.4367 ug/kg	98
10) Isoprene	6.06	67	76080	22.0170 ug/kg	97
11) Acrolein	6.26	56	41537	211.3866 ug/kg	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.27	101	58831	20.0063 ug/kg	98
13) Acetone	6.37	43	22694	19.2049 ug/kg	100
14) 1,1-Dichloroethene	6.58	61	73236	15.5700 ug/kg	100
15) Tert-Butyl Alcohol	6.71	59	100709	210.0685 ug/kg	99
16) Dimethyl Sulfide	6.85	62	73246	37.3151 ug/kg	96
17) Iodomethane	7.10	142	42087	22.1240 ug/kg	100
18) Methyl acetate	7.11	43	53956	19.4767 ug/kg	98
19) Methylene Chloride	7.36	84	55246	17.3762 ug/kg	96
20) Carbon Disulfide	7.41	76	154539	17.3844 ug/kg	100
21) Acrylonitrile	7.54	53	25751	20.1391 ug/kg	99
22) Methyl Tert Butyl Ether	7.58	73	165682	20.3431 ug/kg	97
23) trans-1,2-Dichloroethene	7.82	61	77599	17.3490 ug/kg	99
24) n-Hexane	7.88	57	87414	17.4973 ug/kg	97
25) Diisopropyl ether	8.23	45	1019225	99.0616 ug/kg	99
26) Vinyl Acetate	8.40	43	104054	18.7418 ug/kg	99
27) 1,1-Dichloroethane	8.43	63	98036	17.5119 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.80	59	897901	93.4321 ug/kg	99
29) 2-Butanone	8.99	43	30216	19.0559 ug/kg	99
30) Propionitrile	9.10	54	48343	100.6817 ug/kg	94
31) 2,2-Dichloropropane	9.20	77	72980	17.5386 ug/kg	100
32) cis-1,2-Dichloroethene	9.28	96	59106	18.4103 ug/kg	99
33) Chloroform	9.49	83	89543	18.5583 ug/kg	99
34) 1-Bromopropane	9.61	122	13617	27.1626 ug/kg	96
35) Bromochloromethane	9.72	130	38664	18.3061 ug/kg	95
36) Tetrahydrofuran	9.74	42	99211	90.8789 ug/kg	99
38) 1,1,1-Trichloroethane	10.01	97	78199	17.9424 ug/kg	99
39) Cyclohexane	10.05	56	110382	20.0319 ug/kg	99
40) 1,1-Dichloropropene	10.20	75	66090	17.4186 ug/kg	100
41) Tert-Amyl-Methyl ether	10.31	73	773817	101.0686 ug/kg	99
42) Carbon Tetrachloride	10.35	117	71694	16.9573 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975220.D Vial: 8
Acq On : 1 Jul 2016 18:32 Operator: ADC
Sample : WG574993-02 20ug/Kg LCS 8260 Inst : hpms9
Misc : 7,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 05 15:02:41 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.53	62	74189	18.7751 ug/kg	98
46)	Benzene	10.56	78	208166	18.0983 ug/kg	99
47)	Trichloroethene	11.31	130	63988	18.9922 ug/kg	99
48)	Methylcyclohexane	11.40	83	97228	20.5008 ug/kg	99
49)	1,2-Dichloropropane	11.53	63	60744	19.3246 ug/kg	98
50)	1,4-Dioxane	11.83	88	10578	220.3687 ug/kg	97
51)	Bromodichloromethane	11.83	83	67844	17.7865 ug/kg	99
52)	Dibromomethane	11.92	174	36858	18.5300 ug/kg	96
53)	2-Chloroethyl Vinyl Ether	12.12	63	34215	17.6720 ug/kg	99
54)	4-Methyl-2-Pentanone	12.16	58	26311	20.2240 ug/kg	98
55)	cis-1,3-Dichloropropene	12.46	75	89060	19.6177 ug/kg	99
56)	Dimethyl Disulfide	12.73	94	108396	20.9547 ug/kg	96
59)	Toluene	12.88	91	227780	18.6565 ug/kg	99
60)	Ethyl Methacrylate	12.98	69	71508	20.5316 ug/kg	99
61)	trans-1,3-Dichloropropene	13.06	75	76866	18.5392 ug/kg	100
62)	1,1,2-Trichloroethane	13.27	97	49123	19.4608 ug/kg	99
63)	2-Hexanone	13.21	43	42935	19.0142 ug/kg#	79
64)	1,3-Dichloropropane	13.58	76	84818	20.0977 ug/kg	97
65)	Tetrachloroethene	13.71	164	46907	17.9664 ug/kg	97
66)	Dibromochloromethane	13.97	129	61753	18.5291 ug/kg	99
67)	1,2-Dibromoethane	14.22	107	51383	18.1206 ug/kg	98
68)	1-Chlorohexane	14.31	91	78417	20.5939 ug/kg	98
69)	Chlorobenzene	14.73	112	170450	19.6144 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.76	131	60960	19.5003 ug/kg	98
71)	Ethylbenzene	14.75	106	87804	19.0723 ug/kg	99
72)	m-,p-Xylene	14.84	106	218311	38.3868 ug/kg	100
73)	o-Xylene	15.41	106	107481	19.5210 ug/kg	99
74)	Styrene	15.45	104	176941	19.2577 ug/kg	99
75)	Bromoform	15.94	173	40086	17.7245 ug/kg	99
76)	Isopropylbenzene	15.83	105	274951	19.4585 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.05	83	63374	17.5532 ug/kg	98
80)	1,2,3-Trichloropropane	16.24	110	21873	19.5371 ug/kg	80
81)	trans-1,4-Dichloro-2-Buten	16.28	53	18692	17.3452 ug/kg	97
82)	n-Propylbenzene	16.33	91	308373	19.1293 ug/kg	100
83)	Bromobenzene	16.47	156	72482	18.6415 ug/kg	96
84)	1,3,5-Trimethylbenzene	16.52	105	241875	19.7568 ug/kg	99
85)	2-Chlorotoluene	16.61	91	186411	19.1310 ug/kg	100
86)	4-Chlorotoluene	16.66	91	191809	19.3981 ug/kg	99
87)	a-Methylstyrene	16.93	118	128373	22.5792 ug/kg	99
88)	tert-Butylbenzene	16.99	134	53523	20.2338 ug/kg	93
89)	1,2,4-Trimethylbenzene	17.04	105	237286	19.2219 ug/kg	99
90)	sec-Butylbenzene	17.25	105	303538	18.8963 ug/kg	99
91)	p-Isopropyltoluene	17.41	119	248339	18.9541 ug/kg	99
92)	1,3-Dichlorobenzene	17.61	146	137226	18.2576 ug/kg	100
93)	1,4-Dichlorobenzene	17.75	146	141152	18.4007 ug/kg	100
94)	n-Butylbenzene	17.94	91	210352	17.5664 ug/kg	99
95)	1,2-Dichlorobenzene	18.24	146	134978	18.8047 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.24	157	17485	17.6620 ug/kg	100
97)	1,2,4-Trichlorobenzene	20.38	180	95490	18.2360 ug/kg	98
98)	Hexachlorobutadiene	20.52	225	49144	18.4993 ug/kg	97
99)	Naphthalene	20.75	128	264693	19.3532 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.06	180	96818	18.8913 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975220.D Vial: 8
Acq On : 1 Jul 2016 18:32 Operator: ADC
Sample : WG574993-02 20ug/Kg LCS 8260 Inst : hpms9
Misc : 7,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 5 15:02 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

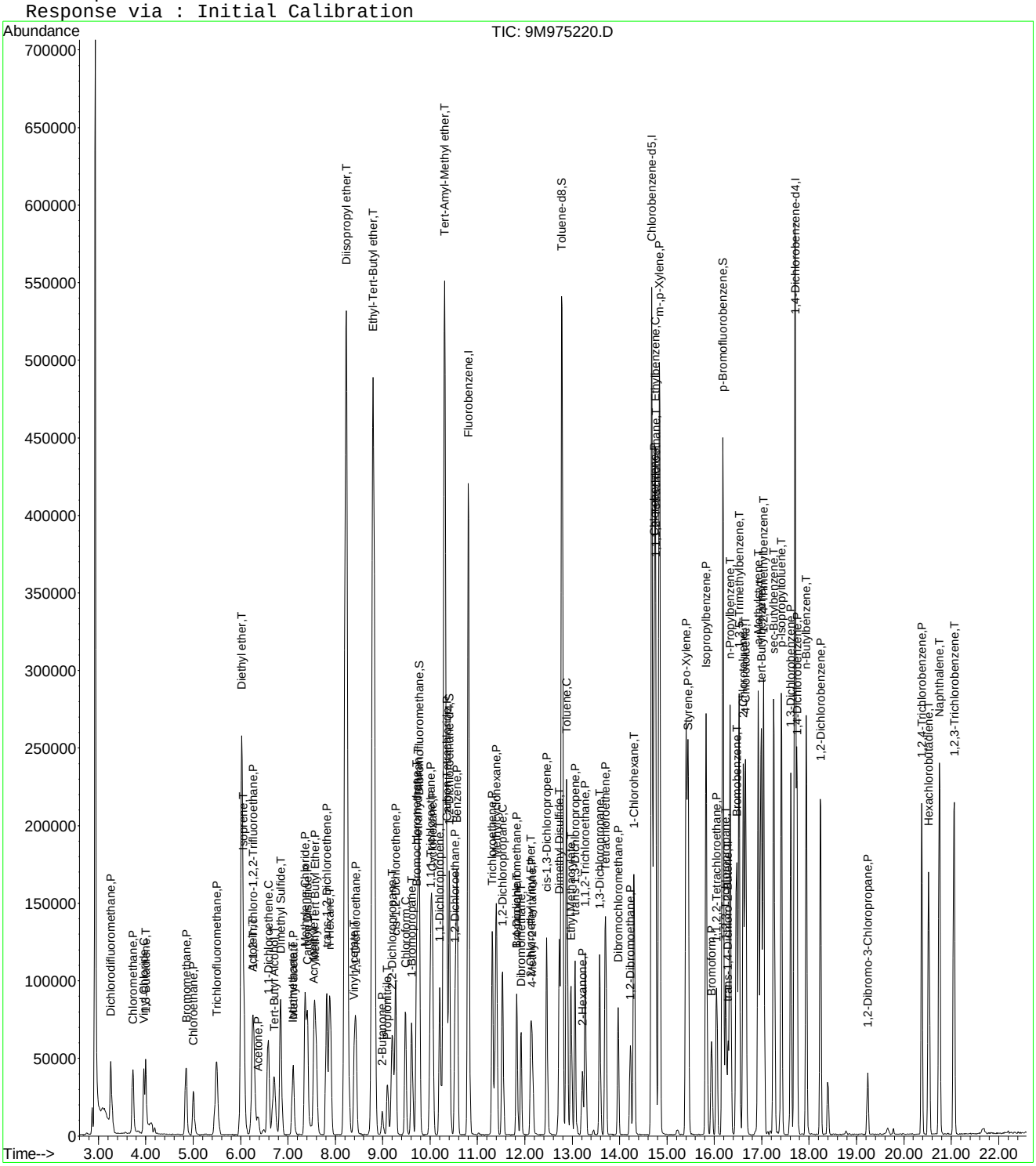

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975255.D Vial: 8
Acq On : 6 Jul 2016 17:11 Operator: ADC
Sample : WG575227-02 LCS 20ug/kg 8260 Inst : hpms9
Misc : 7,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 08 09:59:24 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.80	96	680246	50.00 ug/kg	-0.01
57) Chlorobenzene-d5	14.68	117	529498	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.70	152	271776	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.76	111	184035	49.0634 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.12%		
43) 1,2-Dichloroethane-d4	10.40	65	181307	45.4660 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 90.94%		
58) Toluene-d8	12.78	98	659460	50.2848 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 100.56%		
79) p-Bromofluorobenzene	16.18	95	256626	51.7108 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 103.42%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.25	85	6524	1.2240 ug/kg#	84
3) Chloromethane	3.71	50	25568	5.4282 ug/kg	95
4) Vinyl Chloride	3.93	62	25451	7.6943 ug/kg	96
5) 1,3-Butadiene	3.98	54	21092	12.8961 ug/kg	96
6) Bromomethane	4.83	94	41435	13.8552 ug/kg	96
7) Chloroethane	4.99	64	36617	13.4802 ug/kg	99
8) Trichlorofluoromethane	5.47	101	87021	14.1770 ug/kg	99
9) Diethyl ether	6.00	59	311280	94.8030 ug/kg	98
10) Isoprene	6.04	67	74125	17.1268 ug/kg	98
11) Acrolein	6.25	56	52286	212.4472 ug/kg	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	63942	17.3608 ug/kg	99
13) Acetone	6.35	43	23625	15.3566 ug/kg	99
14) 1,1-Dichloroethene	6.56	61	56471	9.5854 ug/kg	99
15) Tert-Butyl Alcohol	6.69	59	107365	178.8047 ug/kg	100
16) Dimethyl Sulfide	6.83	62	75725	30.8009 ug/kg	96
17) Iodomethane	7.09	142	36140	15.6291 ug/kg	96
18) Methyl acetate	7.10	43	64335	18.5415 ug/kg	99
19) Methylene Chloride	7.35	84	57732	14.4975 ug/kg	94
20) Carbon Disulfide	7.40	76	141915	12.7460 ug/kg	100
21) Acrylonitrile	7.53	53	30202	18.8584 ug/kg	98
22) Methyl Tert Butyl Ether	7.55	73	189710	18.5976 ug/kg	98
23) trans-1,2-Dichloroethene	7.80	61	80635	14.3934 ug/kg	100
24) n-Hexane	7.87	57	91334	14.5964 ug/kg	99
25) Diisopropyl ether	8.21	45	1280226	99.3449 ug/kg	99
26) Vinyl Acetate	8.39	43	115016	16.5399 ug/kg	100
27) 1,1-Dichloroethane	8.42	63	107008	15.2612 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.79	59	1118539	92.9271 ug/kg	99
29) 2-Butanone	8.98	43	35798	18.0250 ug/kg	98
30) Propionitrile	9.08	54	55512	92.3054 ug/kg	96
31) 2,2-Dichloropropane	9.19	77	86027	16.5063 ug/kg	98
32) cis-1,2-Dichloroethene	9.26	96	68484	17.0311 ug/kg	97
33) Chloroform	9.47	83	106201	17.5735 ug/kg	98
34) 1-Bromopropane	9.61	122	14919	23.7604 ug/kg	97
35) Bromochloromethane	9.71	130	44656	16.8808 ug/kg	95
36) Tetrahydrofuran	9.73	42	119838	87.6438 ug/kg	98
38) 1,1,1-Trichloroethane	10.00	97	91251	16.7163 ug/kg	98
39) Cyclohexane	10.03	56	122520	17.7523 ug/kg	98
40) 1,1-Dichloropropene	10.19	75	75112	15.8056 ug/kg	99
41) Tert-Amyl-Methyl ether	10.30	73	968847	101.0315 ug/kg	99
42) Carbon Tetrachloride	10.34	117	84533	15.9633 ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M975255.D 8260S.M Fri Jul 08 09:59:25 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975255.D Vial: 8
Acq On : 6 Jul 2016 17:11 Operator: ADC
Sample : WG575227-02 LCS 20ug/kg 8260 Inst : hpms9
Misc : 7,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 08 09:59:24 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.52	62	85470	17.2695	ug/kg	99
46)	Benzene	10.56	78	238730	16.5713	ug/kg	99
47)	Trichloroethene	11.31	130	78876	18.6915	ug/kg	98
48)	Methylcyclohexane	11.38	83	118556	19.9585	ug/kg	98
49)	1,2-Dichloropropane	11.52	63	74189	18.8439	ug/kg	100
50)	1,4-Dioxane	11.81	88	10623	176.6920	ug/kg	94
51)	Bromodichloromethane	11.82	83	89529	18.7398	ug/kg	99
52)	Dibromomethane	11.91	174	44803	17.9835	ug/kg	98
53)	2-Chloroethyl Vinyl Ether	12.11	63	41568	17.1780	ug/kg	98
54)	4-Methyl-2-Pentanone	12.14	58	31650	19.4235	ug/kg	98
55)	cis-1,3-Dichloropropene	12.46	75	112902	19.8560	ug/kg	99
56)	Dimethyl Disulfide	12.72	94	138705	21.3827	ug/kg	95
59)	Toluene	12.87	91	281776	18.6600	ug/kg	99
60)	Ethyl Methacrylate	12.97	69	89886	20.8668	ug/kg	99
61)	trans-1,3-Dichloropropene	13.05	75	100837	19.6639	ug/kg	99
62)	1,1,2-Trichloroethane	13.27	97	63429	20.3169	ug/kg	100
63)	2-Hexanone	13.21	43	51365	18.4728	ug/kg	98
64)	1,3-Dichloropropane	13.58	76	107161	20.5300	ug/kg	96
65)	Tetrachloroethene	13.70	164	61881	19.1635	ug/kg	99
66)	Dibromochloromethane	13.97	129	80168	19.4487	ug/kg	99
67)	1,2-Dibromoethane	14.22	107	65351	18.6337	ug/kg	96
68)	1-Chlorohexane	14.30	91	102895	21.8482	ug/kg	98
69)	Chlorobenzene	14.72	112	218148	20.2966	ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.75	131	78943	20.4175	ug/kg	99
71)	Ethylbenzene	14.75	106	115050	20.2055	ug/kg	99
72)	m-,p-Xylene	14.84	106	282554	40.1700	ug/kg	100
73)	o-Xylene	15.41	106	140651	20.6542	ug/kg	100
74)	Styrene	15.44	104	231438	20.3659	ug/kg	98
75)	Bromoform	15.93	173	53859	19.2546	ug/kg	99
76)	Isopropylbenzene	15.83	105	363110	20.7771	ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.05	83	86356	19.7125	ug/kg	99
80)	1,2,3-Trichloropropane	16.24	110	27502	20.2451	ug/kg	84
81)	trans-1,4-Dichloro-2-Buten	16.28	53	24891	19.0358	ug/kg	98
82)	n-Propylbenzene	16.33	91	411322	21.0285	ug/kg	100
83)	Bromobenzene	16.47	156	93866	19.8959	ug/kg	99
84)	1,3,5-Trimethylbenzene	16.52	105	321093	21.6153	ug/kg	99
85)	2-Chlorotoluene	16.61	91	249294	21.0854	ug/kg	100
86)	4-Chlorotoluene	16.65	91	249163	20.7672	ug/kg	99
87)	a-Methylstyrene	16.92	118	167474	24.2765	ug/kg	100
88)	tert-Butylbenzene	16.99	134	68571	21.3639	ug/kg	98
89)	1,2,4-Trimethylbenzene	17.04	105	314908	21.0754	ug/kg	100
90)	sec-Butylbenzene	17.25	105	407096	20.8864	ug/kg	100
91)	p-Isopropyltoluene	17.41	119	335827	21.1241	ug/kg	99
92)	1,3-Dichlorobenzene	17.61	146	186297	20.4276	ug/kg	99
93)	1,4-Dichlorobenzene	17.74	146	187434	20.1373	ug/kg	99
94)	n-Butylbenzene	17.94	91	289212	19.9047	ug/kg	100
95)	1,2-Dichlorobenzene	18.24	146	178099	20.4489	ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.24	157	21942	18.2334	ug/kg	98
97)	1,2,4-Trichlorobenzene	20.38	180	130223	20.4957	ug/kg	98
98)	Hexachlorobutadiene	20.52	225	67271	20.8697	ug/kg	99
99)	Naphthalene	20.76	128	310804	18.7284	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.06	180	124157	19.9655	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975255.D Vial: 8
Acq On : 6 Jul 2016 17:11 Operator: ADC
Sample : WG575227-02 LCS 20ug/kg 8260 Inst : hpms9
Misc : 7,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 8 9:59 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

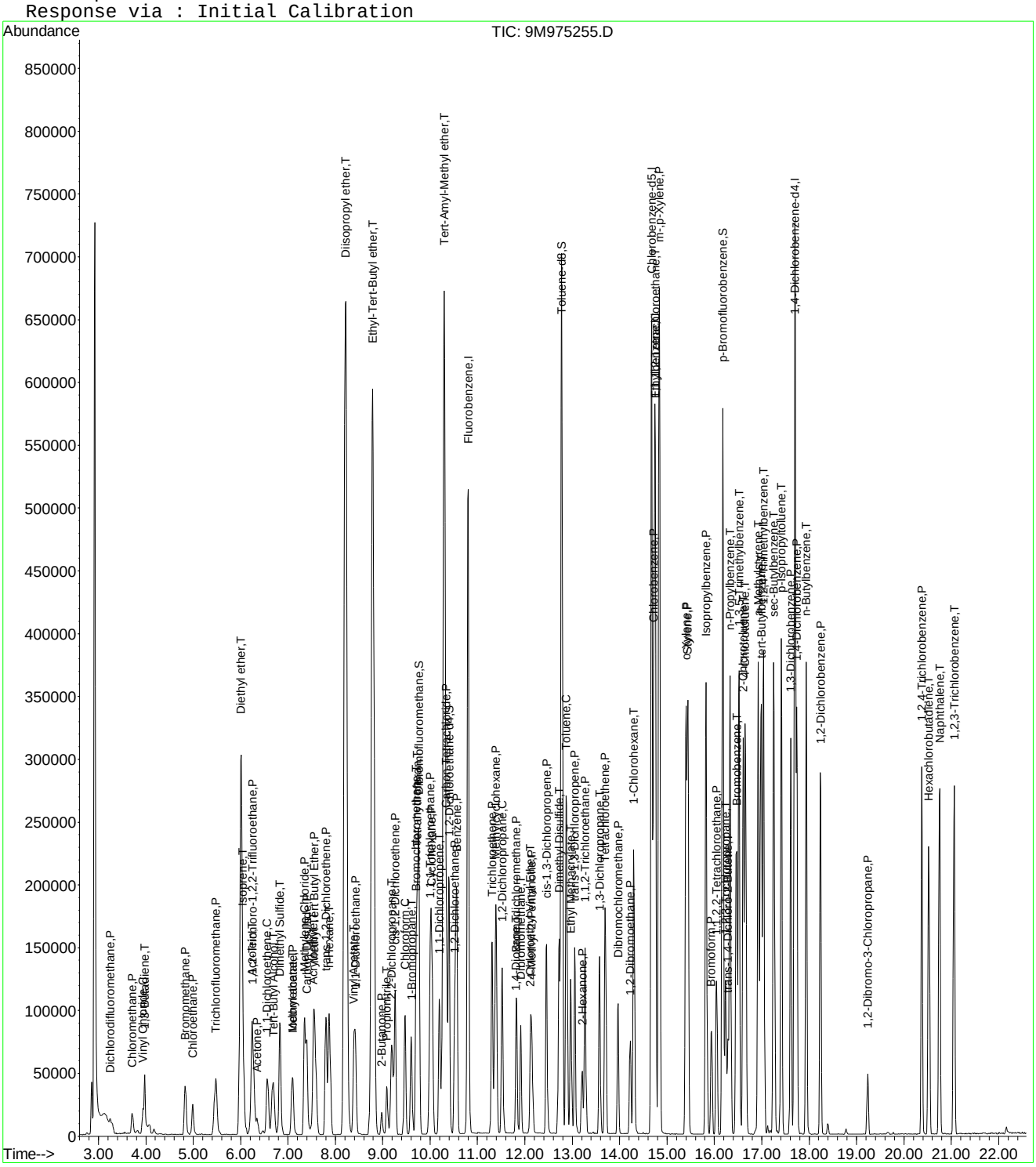

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975233.D Vial: 21
Acq On : 2 Jul 2016 1:07 Operator: ADC
Sample : WG575025-02 MS 8260 5.04g Inst : hpms9
Misc : 7,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 05 15:02:51 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.81	96	574751	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.68	117	448551	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.70	152	229173	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.77	111	150641	47.5320 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.06%		
43) 1,2-Dichloroethane-d4	10.41	65	150939	44.7981 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 89.60%		
58) Toluene-d8	12.79	98	563318	50.7054 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.42%		
79) p-Bromofluorobenzene	16.17	95	212747	50.8384 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 101.68%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.26	85	62605	13.9016 ug/kg	97
3) Chloromethane	3.73	50	64785	16.2786 ug/kg	99
4) Vinyl Chloride	3.97	62	59214	21.1873 ug/kg	99
6) Bromomethane	4.85	94	48835	19.3269 ug/kg	97
7) Chloroethane	5.01	64	44732	19.4902 ug/kg	99
8) Trichlorofluoromethane	5.50	101	97938	18.8841 ug/kg	99
10) Isoprene	6.07	67	76349	20.8785 ug/kg	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	62891	20.2097 ug/kg	97
13) Acetone	6.36	43	21955	17.2488 ug/kg	97
14) 1,1-Dichloroethene	6.58	61	86593	17.3963 ug/kg	100
16) Dimethyl Sulfide	6.85	62	61881	29.7898 ug/kg	95
17) Iodomethane	7.10	142	23323	12.2840 ug/kg	99
18) Methyl acetate	7.11	43	39480	13.4667 ug/kg	98
19) Methylene Chloride	7.36	84	63036	18.7349 ug/kg	92
20) Carbon Disulfide	7.42	76	112065	11.9125 ug/kg	100
21) Acrylonitrile	7.55	53	22757	16.8179 ug/kg	100
22) Methyl Tert Butyl Ether	7.57	73	165081	19.1536 ug/kg	97
23) trans-1,2-Dichloroethene	7.82	61	88243	18.6426 ug/kg	99
24) n-Hexane	7.89	57	96567	18.2654 ug/kg	97
27) 1,1-Dichloroethane	8.43	63	110489	18.6499 ug/kg	99
29) 2-Butanone	8.99	43	25582	15.2453 ug/kg	99
31) 2,2-Dichloropropane	9.21	77	77931	17.6975 ug/kg	100
32) cis-1,2-Dichloroethene	9.27	96	67691	19.9237 ug/kg	94
33) Chloroform	9.48	83	102484	20.0711 ug/kg	100
34) 1-Bromopropane	9.61	122	15945	30.0555 ug/kg	97
35) Bromochloromethane	9.72	130	42793	19.1457 ug/kg	95
36) Tetrahydrofuran	9.75	42	1872	1.6204 ug/kg#	68
38) 1,1,1-Trichloroethane	10.01	97	91163	19.7654 ug/kg	98
39) Cyclohexane	10.04	56	113575	19.4767 ug/kg	99
40) 1,1-Dichloropropene	10.20	75	73832	18.3879 ug/kg	99
42) Carbon Tetrachloride	10.35	117	84456	18.8762 ug/kg	99
45) 1,2-Dichloroethane	10.53	62	80038	19.1403 ug/kg	98
46) Benzene	10.57	78	235344	19.3348 ug/kg	98
47) Trichloroethene	11.31	130	70157	19.6769 ug/kg	97
48) Methylcyclohexane	11.39	83	101439	20.2113 ug/kg	99
49) 1,2-Dichloropropane	11.53	63	68926	20.7205 ug/kg	100
51) Bromodichloromethane	11.83	83	77210	19.1276 ug/kg	98
52) Dibromomethane	11.92	174	40628	19.3009 ug/kg	97
53) 2-Chloroethyl Vinyl Ether	12.12	63	31880	15.7043 ug/kg	97
54) 4-Methyl-2-Pentanone	12.15	58	24405	17.7263 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M975233.D 8260S.M Tue Jul 05 15:02:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975233.D Vial: 21
Acq On : 2 Jul 2016 1:07 Operator: ADC
Sample : WG575025-02 MS 8260 5.04g Inst : hpms9
Misc : 7,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 05 15:02:51 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
55)	cis-1,3-Dichloropropene	12.46	75	91747	19.0971	ug/kg	98
56)	Dimethyl Disulfide	12.72	94	103685	19.0544	ug/kg	94
59)	Toluene	12.88	91	246631	19.2801	ug/kg	100
60)	Ethyl Methacrylate	12.98	69	24269	6.6507	ug/kg	99
61)	trans-1,3-Dichloropropene	13.06	75	76978	17.7202	ug/kg	100
62)	1,1,2-Trichloroethane	13.27	97	53226	20.1255	ug/kg	100
63)	2-Hexanone	13.21	43	35108	15.3816	ug/kg#	72
64)	1,3-Dichloropropane	13.58	76	89989	20.3514	ug/kg	97
65)	Tetrachloroethene	13.71	164	51264	18.7405	ug/kg	98
66)	Dibromochloromethane	13.97	129	66138	18.9406	ug/kg	99
67)	1,2-Dibromoethane	14.22	107	54819	18.4514	ug/kg	99
68)	1-Chlorohexane	14.31	91	66924	16.7748	ug/kg	99
69)	Chlorobenzene	14.73	112	170780	18.7569	ug/kg	98
70)	1,1,1,2-Tetrachloroethane	14.76	131	65732	20.0687	ug/kg	98
71)	Ethylbenzene	14.75	106	87535	18.1475	ug/kg	100
72)	m-,p-Xylene	14.85	106	214223	35.9517	ug/kg	99
73)	o-Xylene	15.40	106	108276	18.7694	ug/kg	99
74)	Styrene	15.45	104	152017	15.7912	ug/kg	97
75)	Bromoform	15.94	173	41051	17.3242	ug/kg	99
76)	Isopropylbenzene	15.83	105	265357	17.9238	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.05	83	66434	17.9840	ug/kg	98
80)	1,2,3-Trichloropropane	16.24	110	22632	19.7573	ug/kg#	27
81)	trans-1,4-Dichloro-2-Buten	16.29	53	14477	13.1297	ug/kg#	1
82)	n-Propylbenzene	16.33	91	278893	16.9088	ug/kg	99
83)	Bromobenzene	16.47	156	69529	17.4771	ug/kg	81
84)	1,3,5-Trimethylbenzene	16.52	105	226043	18.0455	ug/kg	99
85)	2-Chlorotoluene	16.61	91	168110	16.8621	ug/kg	90
86)	4-Chlorotoluene	16.66	91	173550	17.1541	ug/kg	89
87)	a-Methylstyrene	16.92	118	96216	16.5399	ug/kg	98
88)	tert-Butylbenzene	16.99	134	49059	18.1262	ug/kg	90
89)	1,2,4-Trimethylbenzene	17.04	105	216998	17.1219	ug/kg	100
90)	sec-Butylbenzene	17.25	105	272263	16.5655	ug/kg	100
91)	p-Isopropyltoluene	17.41	119	212594	15.8585	ug/kg	100
92)	1,3-Dichlorobenzene	17.61	146	123236	16.0250	ug/kg	98
93)	1,4-Dichlorobenzene	17.75	146	121730	15.5095	ug/kg	100
94)	n-Butylbenzene	17.94	91	171905	14.0306	ug/kg	100
95)	1,2-Dichlorobenzene	18.24	146	119877	16.3227	ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.24	157	16823	16.6662	ug/kg	97
97)	1,2,4-Trichlorobenzene	20.37	180	75964	14.1785	ug/kg	99
98)	Hexachlorobutadiene	20.52	225	37757	13.8910	ug/kg	98
99)	Naphthalene	20.75	128	212967	15.2186	ug/kg	99
100)	1,2,3-Trichlorobenzene	21.06	180	73441	14.0054	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975233.D Vial: 21
Acq On : 2 Jul 2016 1:07 Operator: ADC
Sample : WG575025-02 MS 8260 5.04g Inst : hpms9
Misc : 7,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 5 15:02 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

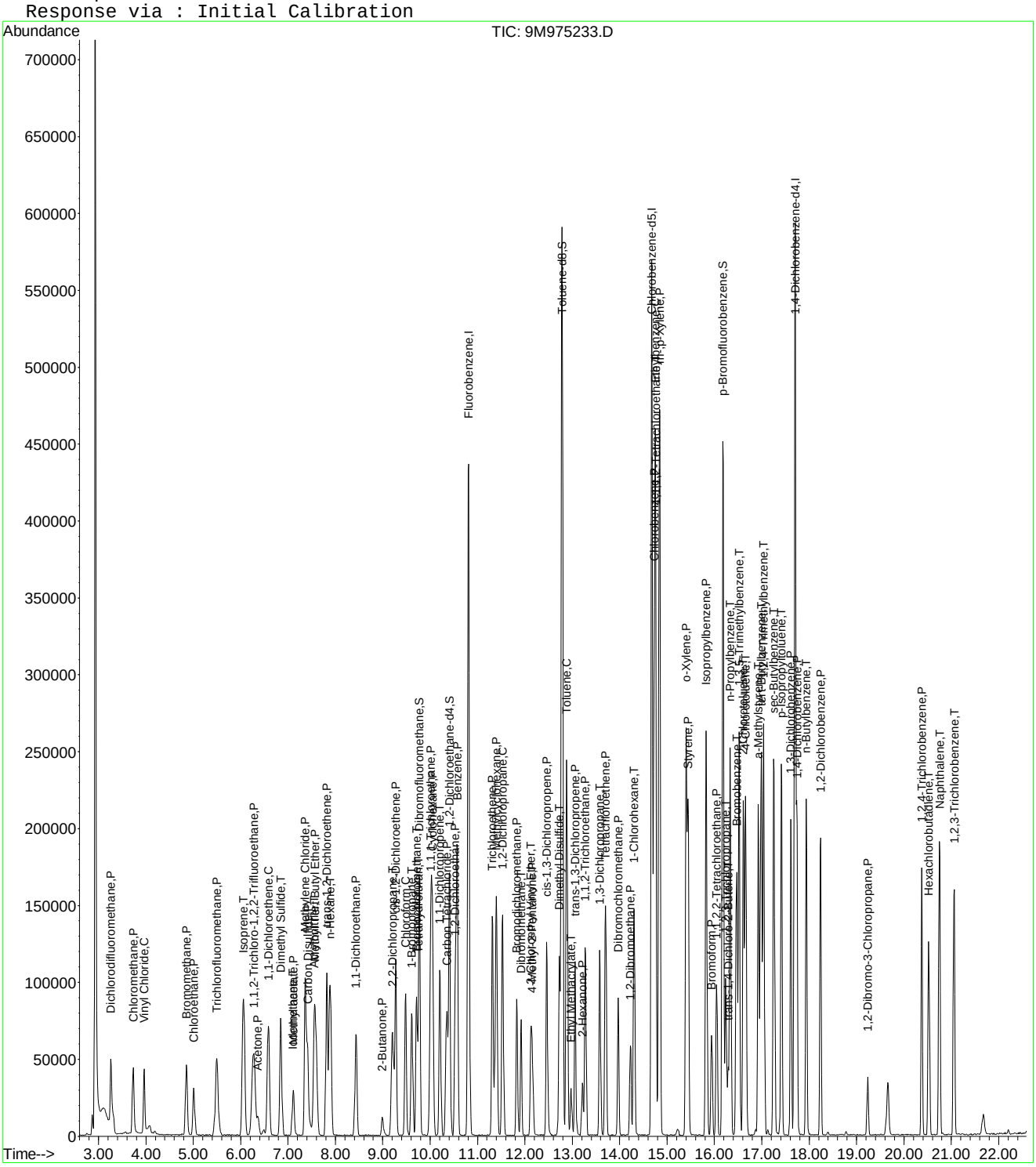

9M975233.D 8260S.M Tue Jul 05 15:02:51 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975267.D Vial: 20
Acq On : 6 Jul 2016 23:13 Operator: ADC
Sample : WG575216-02 A MS 826-SPE Inst : hpms9
Misc : 7,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 08 09:59:34 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.79	96	635404	50.00 ug/kg	-0.02
57) Chlorobenzene-d5	14.67	117	498239	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.70	152	236363	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.76	111	170959	48.7938 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.58%		
43) 1,2-Dichloroethane-d4	10.39	65	168777	45.3107 ug/kg	-0.02
Spiked Amount 50.000	Range 80 - 120		Recovery = 90.62%		
58) Toluene-d8	12.78	98	624884	50.6377 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.28%		
79) p-Bromofluorobenzene	16.18	95	230076	53.3069 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 106.62%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.25	85	5889	1.1828 ug/kg#	76
3) Chloromethane	3.71	50	22001	5.0005 ug/kg	95
4) Vinyl Chloride	3.95	62	27179	8.7966 ug/kg	97
6) Bromomethane	4.84	94	41207	14.7514 ug/kg	98
7) Chloroethane	5.00	64	35933	14.1619 ug/kg	97
8) Trichlorofluoromethane	5.48	101	85033	14.8308 ug/kg	99
10) Isoprene	6.05	67	47188	11.6723 ug/kg	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	61605	17.9067 ug/kg	99
13) Acetone	6.35	43	36434	27.6894 ug/kg	93
14) 1,1-Dichloroethene	6.57	61	56868	10.3341 ug/kg	98
16) Dimethyl Sulfide	6.84	62	69001	30.0466 ug/kg	94
17) Iodomethane	7.09	142	16859	8.5395 ug/kg	94
18) Methyl acetate	7.10	43	48169	14.8622 ug/kg	99
19) Methylene Chloride	7.35	84	56328	15.1432 ug/kg	96
20) Carbon Disulfide	7.40	76	135709	13.0488 ug/kg	99
21) Acrylonitrile	7.53	53	26830	17.9352 ug/kg	96
22) Methyl Tert Butyl Ether	7.55	73	180330	18.9256 ug/kg	98
23) trans-1,2-Dichloroethene	7.80	61	76283	14.5776 ug/kg	98
24) n-Hexane	7.87	57	83112	14.2198 ug/kg	98
27) 1,1-Dichloroethane	8.42	63	105622	16.1266 ug/kg	99
29) 2-Butanone	8.98	43	33607	18.1160 ug/kg	99
31) 2,2-Dichloropropane	9.19	77	79442	16.3185 ug/kg	98
32) cis-1,2-Dichloroethene	9.26	96	65424	17.4183 ug/kg	98
33) Chloroform	9.47	83	108427	19.2080 ug/kg	98
34) 1-Bromopropane	9.61	122	15925	27.1525 ug/kg	97
35) Bromochloromethane	9.71	130	43800	17.7257 ug/kg	95
36) Tetrahydrofuran	9.74	42	2084	1.6317 ug/kg#	74
38) 1,1,1-Trichloroethane	10.00	97	90491	17.7469 ug/kg	97
39) Cyclohexane	10.02	56	115495	17.9154 ug/kg	99
40) 1,1-Dichloropropene	10.19	75	70818	15.9537 ug/kg	99
42) Carbon Tetrachloride	10.34	117	76127	15.3905 ug/kg	99
45) 1,2-Dichloroethane	10.52	62	85067	18.4010 ug/kg	97
46) Benzene	10.55	78	232241	17.2586 ug/kg	99
47) Trichloroethene	11.30	130	75302	19.1039 ug/kg	98
48) Methylcyclohexane	11.38	83	106435	19.1824 ug/kg	96
49) 1,2-Dichloropropane	11.52	63	72766	19.7868 ug/kg	98
51) Bromodichloromethane	11.82	83	84321	18.8953 ug/kg	99
52) Dibromomethane	11.91	174	42974	18.4667 ug/kg	99
53) 2-Chloroethyl Vinyl Ether	12.11	63	22867	10.6143 ug/kg	98
54) 4-Methyl-2-Pentanone	12.14	58	27427	18.0197 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975267.D Vial: 20
Acq On : 6 Jul 2016 23:13 Operator: ADC
Sample : WG575216-02 A MS 826-SPE Inst : hpms9
Misc : 7,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 08 09:59:34 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
55)	cis-1,3-Dichloropropene	12.45	75	100442	18.9113	ug/kg	100
56)	Dimethyl Disulfide	12.71	94	119586	19.8276	ug/kg	94
59)	Toluene	12.87	91	271812	19.1295	ug/kg	100
60)	Ethyl Methacrylate	12.97	69	77197	19.0454	ug/kg	99
61)	trans-1,3-Dichloropropene	13.05	75	86454	17.9168	ug/kg	99
62)	1,1,2-Trichloroethane	13.26	97	60029	20.4342	ug/kg	99
63)	2-Hexanone	13.21	43	43831	16.9822	ug/kg	98
64)	1,3-Dichloropropane	13.57	76	100777	20.5183	ug/kg	96
65)	Tetrachloroethene	13.70	164	56971	18.7498	ug/kg	99
66)	Dibromochloromethane	13.96	129	73319	18.9031	ug/kg	97
67)	1,2-Dibromoethane	14.22	107	62360	18.8964	ug/kg	96
68)	1-Chlorohexane	14.30	91	87324	19.7053	ug/kg	100
69)	Chlorobenzene	14.72	112	199361	19.7124	ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.75	131	74971	20.6068	ug/kg	100
71)	Ethylbenzene	14.75	106	106200	19.8214	ug/kg	97
72)	m-,p-Xylene	14.84	106	262217	39.6176	ug/kg	98
73)	o-Xylene	15.40	106	129117	20.1500	ug/kg	99
74)	Styrene	15.44	104	172606	16.1418	ug/kg	97
75)	Bromoform	15.93	173	47197	17.9315	ug/kg	98
76)	Isopropylbenzene	15.83	105	333207	20.2623	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.04	83	74101	19.4493	ug/kg	100
80)	1,2,3-Trichloropropane	16.24	110	24555	20.7839	ug/kg#	38
81)	trans-1,4-Dichloro-2-Buten	16.28	53	14626	12.8613	ug/kg#	1
82)	n-Propylbenzene	16.33	91	358964	21.1013	ug/kg	100
83)	Bromobenzene	16.46	156	82757	20.1694	ug/kg	99
84)	1,3,5-Trimethylbenzene	16.51	105	277734	21.4976	ug/kg	100
85)	2-Chlorotoluene	16.61	91	226191	21.9977	ug/kg	99
86)	4-Chlorotoluene	16.65	91	197220	18.9007	ug/kg	99
87)	a-Methylstyrene	16.93	118	97632	16.2728	ug/kg	99
88)	tert-Butylbenzene	16.98	134	63255	22.6604	ug/kg	91
89)	1,2,4-Trimethylbenzene	17.03	105	268705	20.6672	ug/kg	99
90)	sec-Butylbenzene	17.25	105	345446	20.3788	ug/kg	99
91)	p-Isopropyltoluene	17.41	119	277191	20.0481	ug/kg	100
92)	1,3-Dichlorobenzene	17.61	146	142088	17.9144	ug/kg	99
93)	1,4-Dichlorobenzene	17.74	146	144715	17.8771	ug/kg	100
94)	n-Butylbenzene	17.94	91	219769	17.3916	ug/kg	99
95)	1,2-Dichlorobenzene	18.23	146	133927	17.6810	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.24	157	16402	15.8077	ug/kg	99
97)	1,2,4-Trichlorobenzene	20.38	180	60704	10.9856	ug/kg	99
98)	Hexachlorobutadiene	20.52	225	42576	15.1875	ug/kg	99
99)	Naphthalene	20.75	128	157384	10.9045	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.06	180	54426	10.0634	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M975267.D 8260S.M Fri Jul 08 09:59:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975267.D Vial: 20
Acq On : 6 Jul 2016 23:13 Operator: ADC
Sample : WG575216-02 A MS 826-SPE Inst : hpms9
Misc : 7,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 8 9:59 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

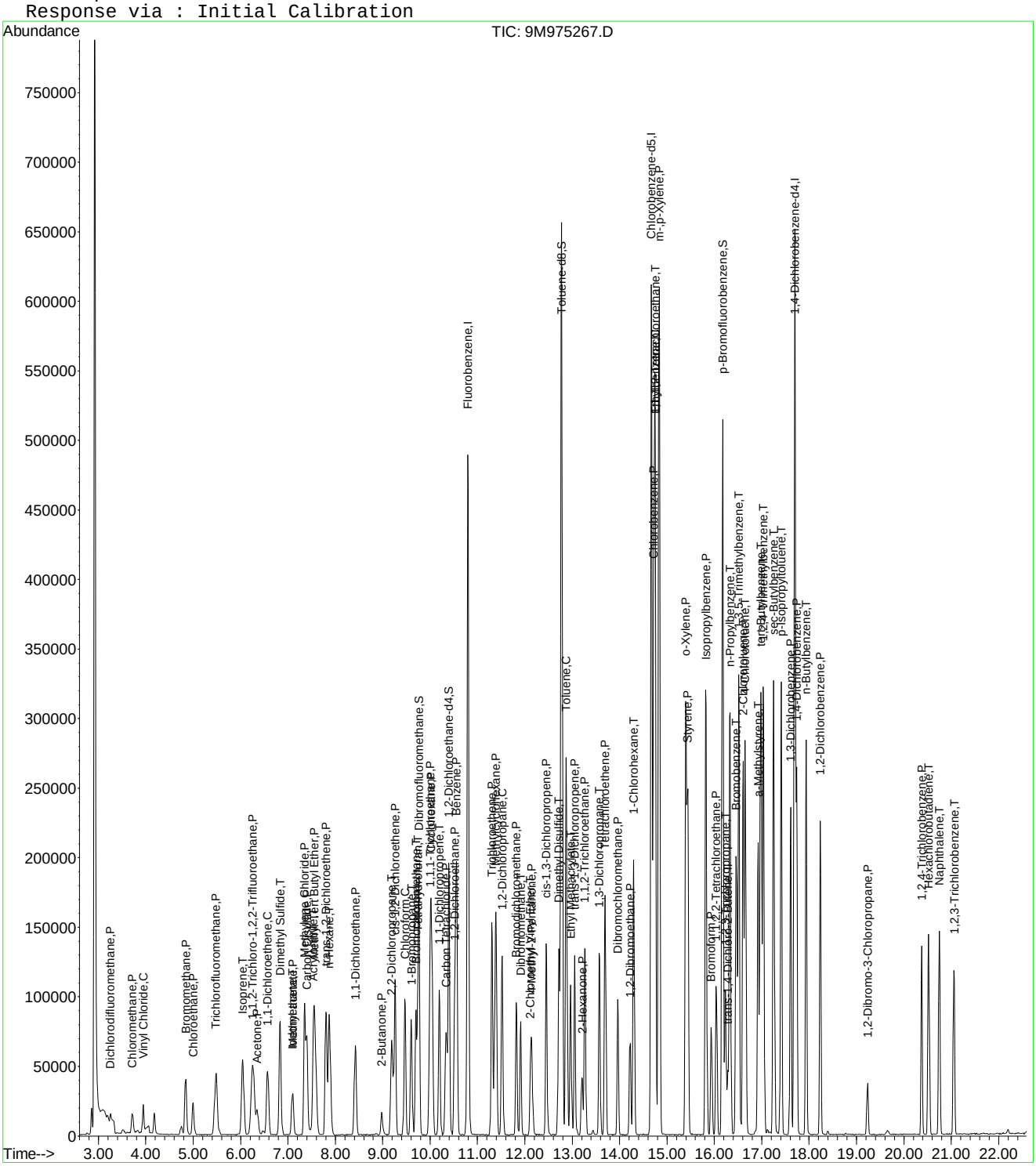

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975234.D Vial: 22
Acq On : 2 Jul 2016 1:37 Operator: ADC
Sample : WG575025-03 MSD 8260 5.04g Inst : hpms9
Misc : 7,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 05 15:02:51 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.81	96	512853	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.68	117	393759	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.71	152	200160	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.77	111	134329	47.5007 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.00%		
43) 1,2-Dichloroethane-d4	10.40	65	136852	45.5194 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 91.04%		
58) Toluene-d8	12.79	98	496564	50.9163 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.84%		
79) p-Bromofluorobenzene	16.18	95	188890	51.6801 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 103.36%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.26	85	59026	14.6888 ug/kg	98
3) Chloromethane	3.73	50	60753	17.1079 ug/kg	99
4) Vinyl Chloride	3.97	62	55645	22.3134 ug/kg	100
6) Bromomethane	4.85	94	40283	17.8665 ug/kg	96
7) Chloroethane	5.01	64	41104	20.0710 ug/kg	98
8) Trichlorofluoromethane	5.50	101	91926	19.8642 ug/kg	98
10) Isoprene	6.06	67	70416	21.5802 ug/kg	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.27	101	58588	21.0992 ug/kg	100
13) Acetone	6.37	43	18729	16.3325 ug/kg	100
14) 1,1-Dichloroethene	6.58	61	71448	16.0861 ug/kg	97
16) Dimethyl Sulfide	6.85	62	48635	26.2390 ug/kg	97
17) Iodomethane	7.11	142	24180	14.0350 ug/kg	100
18) Methyl acetate	7.11	43	32230	12.3206 ug/kg	98
19) Methylene Chloride	7.36	84	51408	17.1230 ug/kg	96
20) Carbon Disulfide	7.42	76	112743	13.4310 ug/kg	99
21) Acrylonitrile	7.55	53	18525	15.3427 ug/kg	97
22) Methyl Tert Butyl Ether	7.57	73	145685	18.9432 ug/kg	96
23) trans-1,2-Dichloroethene	7.82	61	71258	16.8713 ug/kg	99
24) n-Hexane	7.89	57	83863	17.7769 ug/kg	97
27) 1,1-Dichloroethane	8.44	63	90571	17.1330 ug/kg	99
29) 2-Butanone	8.99	43	20049	13.3900 ug/kg	95
31) 2,2-Dichloropropane	9.21	77	68181	17.3521 ug/kg	99
32) cis-1,2-Dichloroethene	9.27	96	53206	17.5504 ug/kg	96
33) Chloroform	9.48	83	81653	17.9215 ug/kg	99
34) 1-Bromopropane	9.62	122	12025	25.4022 ug/kg	95
35) Bromochloromethane	9.72	130	34548	17.3224 ug/kg	94
36) Tetrahydrofuran	9.75	42	1814	1.7597 ug/kg#	59
38) 1,1,1-Trichloroethane	10.01	97	73616	17.8874 ug/kg	99
39) Cyclohexane	10.04	56	93658	17.9997 ug/kg	97
40) 1,1-Dichloropropene	10.21	75	56266	15.7043 ug/kg	99
42) Carbon Tetrachloride	10.35	117	66420	16.6368 ug/kg	99
45) 1,2-Dichloroethane	10.53	62	64937	17.4033 ug/kg	98
46) Benzene	10.57	78	181537	16.7143 ug/kg	99
47) Trichloroethene	11.32	130	52200	16.4075 ug/kg	97
48) Methylcyclohexane	11.39	83	80336	17.9385 ug/kg	98
49) 1,2-Dichloropropane	11.53	63	53172	17.9138 ug/kg	99
51) Bromodichloromethane	11.83	83	60378	16.7631 ug/kg	98
52) Dibromomethane	11.92	174	33029	17.5847 ug/kg	96
53) 2-Chloroethyl Vinyl Ether	12.12	63	25931	14.4226 ug/kg	98
54) 4-Methyl-2-Pentanone	12.15	58	18861	15.3529 ug/kg	95

(#) = qualifier out of range (m) = manual integration
9M975234.D 8260S.M Tue Jul 05 15:02:52 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975234.D Vial: 22
Acq On : 2 Jul 2016 1:37 Operator: ADC
Sample : WG575025-03 MSD 8260 5.04g Inst : hpms9
Misc : 7,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 05 15:02:51 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
55)	cis-1,3-Dichloropropene	12.46	75	60771	14.1762	ug/kg	97
56)	Dimethyl Disulfide	12.72	94	79370	16.5148	ug/kg	90
59)	Toluene	12.88	91	171515	15.2737	ug/kg	99
60)	Ethyl Methacrylate	12.98	69	6748	2.1065	ug/kg#	82
61)	trans-1,3-Dichloropropene	13.06	75	52394	13.7393	ug/kg	99
62)	1,1,2-Trichloroethane	13.27	97	42231	18.1901	ug/kg	99
63)	2-Hexanone	13.21	43	22244	11.7887	ug/kg#	66
64)	1,3-Dichloropropane	13.58	76	71189	18.3400	ug/kg	95
65)	Tetrachloroethene	13.71	164	33155	13.8070	ug/kg	100
66)	Dibromochloromethane	13.97	129	50541	16.4880	ug/kg	99
67)	1,2-Dibromoethane	14.22	107	41013	15.7254	ug/kg	99
68)	1-Chlorohexane	14.31	91	37782	10.7880	ug/kg	96
69)	Chlorobenzene	14.73	112	111575	13.9596	ug/kg	98
70)	1,1,1,2-Tetrachloroethane	14.76	131	46443	16.1526	ug/kg	97
71)	Ethylbenzene	14.75	106	52655	12.4353	ug/kg	99
72)	m-,p-Xylene	14.85	106	126658	24.2140	ug/kg	99
73)	o-Xylene	15.41	106	63740	12.5867	ug/kg	95
74)	Styrene	15.45	104	81660	9.6630	ug/kg	93
75)	Bromoform	15.94	173	31628	15.2048	ug/kg	99
76)	Isopropylbenzene	15.83	105	143738	11.0599	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.05	83	52669	16.3244	ug/kg	99
80)	1,2,3-Trichloropropane	16.24	110	18193	18.1842	ug/kg#	40
81)	trans-1,4-Dichloro-2-Buten	16.28	53	8615	8.9458	ug/kg#	1
82)	n-Propylbenzene	16.33	91	137185	9.5229	ug/kg	99
83)	Bromobenzene	16.47	156	43347	12.4752	ug/kg	83
84)	1,3,5-Trimethylbenzene	16.52	105	112672	10.2986	ug/kg	99
85)	2-Chlorotoluene	16.61	91	91589	10.5183	ug/kg	89
86)	4-Chlorotoluene	16.66	91	76556	8.6638	ug/kg	98
87)	a-Methylstyrene	16.92	118	46916	9.2341	ug/kg	98
88)	tert-Butylbenzene	16.99	134	24602	10.4075	ug/kg	91
89)	1,2,4-Trimethylbenzene	17.04	105	116495	10.3122	ug/kg	99
90)	sec-Butylbenzene	17.25	105	123664	8.6148	ug/kg	100
91)	p-Isopropyltoluene	17.42	119	85541	7.3059	ug/kg	100
92)	1,3-Dichlorobenzene	17.61	146	66436	9.8912	ug/kg	99
93)	1,4-Dichlorobenzene	17.75	146	65945	9.6198	ug/kg	96
94)	n-Butylbenzene	17.94	91	62447	5.8356	ug/kg	98
95)	1,2-Dichlorobenzene	18.24	146	69873	10.8931	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.24	157	13172	15.0408	ug/kg	99
97)	1,2,4-Trichlorobenzene	20.38	180	38667	8.2632	ug/kg	99
98)	Hexachlorobutadiene	20.52	225	12116	5.1037	ug/kg	96
99)	Naphthalene	20.76	128	141274	11.5587	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.06	180	40342	8.8085	ug/kg	98

(#) = qualifier out of range (m) = manual integration
9M975234.D 8260S.M Tue Jul 05 15:02:52 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070116\9M975234.D Vial: 22
Acq On : 2 Jul 2016 1:37 Operator: ADC
Sample : WG575025-03 MSD 8260 5.04g Inst : hpms9
Misc : 7,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 5 15:02 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

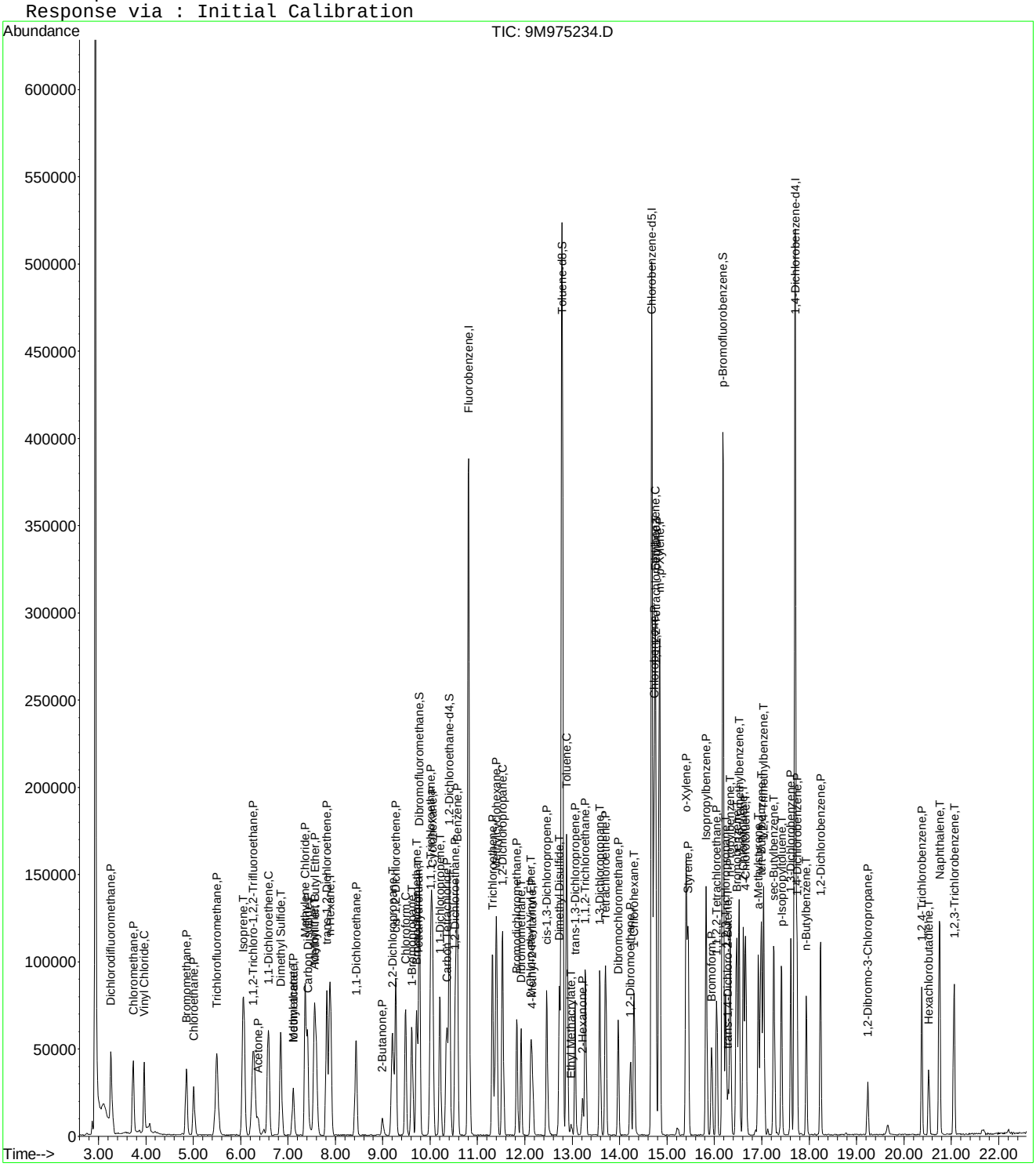

9M975234.D 8260S.M Tue Jul 05 15:02:52 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975268.D Vial: 21
Acq On : 6 Jul 2016 23:44 Operator: ADC
Sample : WG575216-03 A MSD 826-SPE Inst : hpms9
Misc : 7,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 08 09:59:34 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.80	96	578229	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.67	117	440272	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.70	152	216039	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.76	111	152110	47.7069 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.42%		
43) 1,2-Dichloroethane-d4	10.40	65	152914	45.1113 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 90.22%		
58) Toluene-d8	12.78	98	561398	51.4828 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 102.96%		
79) p-Bromofluorobenzene	16.18	95	207628	52.6315 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 105.26%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.25	85	5124	1.1310 ug/kg#	78
3) Chloromethane	3.71	50	18626	4.6520 ug/kg	96
4) Vinyl Chloride	3.96	62	31050	11.0432 ug/kg	96
6) Bromomethane	4.84	94	33727	13.2675 ug/kg	96
7) Chloroethane	5.00	64	28691	12.4258 ug/kg	98
8) Trichlorofluoromethane	5.49	101	69571	13.3338 ug/kg	99
10) Isoprene	6.05	67	48505	13.1845 ug/kg	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	50615	16.1670 ug/kg	98
13) Acetone	6.35	43	32411	26.9870 ug/kg	91
14) 1,1-Dichloroethene	6.57	61	48306	9.6462 ug/kg	97
16) Dimethyl Sulfide	6.84	62	56552	27.0607 ug/kg	95
17) Iodomethane	7.09	142	17619	9.5893 ug/kg	99
18) Methyl acetate	7.10	43	40328	13.6732 ug/kg	96
19) Methylene Chloride	7.35	84	48564	14.3469 ug/kg	95
20) Carbon Disulfide	7.40	76	109385	11.5577 ug/kg	100
21) Acrylonitrile	7.54	53	21623	15.8837 ug/kg	97
22) Methyl Tert Butyl Ether	7.56	73	149522	17.2440 ug/kg	97
23) trans-1,2-Dichloroethene	7.81	61	66926	14.0541 ug/kg	99
24) n-Hexane	7.87	57	74379	13.9839 ug/kg	98
27) 1,1-Dichloroethane	8.42	63	91071	15.2798 ug/kg	99
29) 2-Butanone	8.98	43	26645	15.7833 ug/kg	98
31) 2,2-Dichloropropane	9.20	77	71678	16.1796 ug/kg	99
32) cis-1,2-Dichloroethene	9.26	96	57893	16.9373 ug/kg	94
33) Chloroform	9.46	83	92815	18.0681 ug/kg	99
34) 1-Bromopropane	9.60	122	13489	25.2732 ug/kg	95
35) Bromochloromethane	9.71	130	37508	16.6802 ug/kg	96
36) Tetrahydrofuran	9.74	42	1728	1.4867 ug/kg#	49
38) 1,1,1-Trichloroethane	10.00	97	77721	16.7497 ug/kg	98
39) Cyclohexane	10.03	56	94190	16.0553 ug/kg	97
40) 1,1-Dichloropropene	10.19	75	62860	15.5611 ug/kg	99
42) Carbon Tetrachloride	10.34	117	69284	15.3920 ug/kg	99
45) 1,2-Dichloroethane	10.52	62	71522	17.0009 ug/kg	98
46) Benzene	10.56	78	200278	16.3550 ug/kg	99
47) Trichloroethene	11.31	130	64320	17.9313 ug/kg	99
48) Methylcyclohexane	11.38	83	90560	17.9352 ug/kg	98
49) 1,2-Dichloropropane	11.52	63	61561	18.3951 ug/kg	99
51) Bromodichloromethane	11.82	83	71886	17.7016 ug/kg	98
52) Dibromomethane	11.91	174	37867	17.8811 ug/kg	95
53) 2-Chloroethyl Vinyl Ether	12.11	63	17085	8.9313 ug/kg	100
54) 4-Methyl-2-Pentanone	12.14	58	22283	16.0877 ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M975268.D 8260S.M Fri Jul 08 09:59:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975268.D Vial: 21
Acq On : 6 Jul 2016 23:44 Operator: ADC
Sample : WG575216-03 A MSD 826-SPE Inst : hpms9
Misc : 7,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 08 09:59:34 2016 Quant Results File: 8260S.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration
DataAcq Meth : 8260S

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
55)	cis-1,3-Dichloropropene	12.45	75	85914	17.7754	ug/kg	99
56)	Dimethyl Disulfide	12.73	94	95659	17.5720	ug/kg	91
59)	Toluene	12.87	91	231807	18.4620	ug/kg	100
60)	Ethyl Methacrylate	12.97	69	61455	17.1579	ug/kg	99
61)	trans-1,3-Dichloropropene	13.05	75	72761	17.0644	ug/kg	98
62)	1,1,2-Trichloroethane	13.27	97	52061	20.0552	ug/kg	99
63)	2-Hexanone	13.21	43	35511	15.7754	ug/kg#	74
64)	1,3-Dichloropropane	13.58	76	86096	19.8371	ug/kg	96
65)	Tetrachloroethene	13.70	164	48195	17.9499	ug/kg	99
66)	Dibromochloromethane	13.96	129	61333	17.8948	ug/kg	96
67)	1,2-Dibromoethane	14.22	107	52431	17.9795	ug/kg	98
68)	1-Chlorohexane	14.30	91	70475	17.9970	ug/kg	99
69)	Chlorobenzene	14.72	112	167714	18.7666	ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.75	131	64410	20.0349	ug/kg	99
71)	Ethylbenzene	14.75	106	90254	19.0631	ug/kg	99
72)	m-,p-Xylene	14.84	106	215002	36.7609	ug/kg	100
73)	o-Xylene	15.39	106	106037	18.7269	ug/kg	98
74)	Styrene	15.44	104	143949	15.2343	ug/kg	97
75)	Bromoform	15.93	173	39729	17.0815	ug/kg	98
76)	Isopropylbenzene	15.83	105	278098	19.1377	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.04	83	63380	18.2003	ug/kg	99
80)	1,2,3-Trichloropropane	16.24	110	21574	19.9786	ug/kg#	42
81)	trans-1,4-Dichloro-2-Buten	16.28	53	12245	11.7805	ug/kg#	1
82)	n-Propylbenzene	16.33	91	296917	19.0959	ug/kg	100
83)	Bromobenzene	16.47	156	68775	18.3386	ug/kg	97
84)	1,3,5-Trimethylbenzene	16.51	105	226640	19.1931	ug/kg	100
85)	2-Chlorotoluene	16.61	91	185559	19.7438	ug/kg	100
86)	4-Chlorotoluene	16.65	91	165696	17.3734	ug/kg	100
87)	a-Methylstyrene	16.93	118	73355	13.3767	ug/kg	98
88)	tert-Butylbenzene	16.99	134	51963	20.3664	ug/kg	91
89)	1,2,4-Trimethylbenzene	17.03	105	220210	18.4738	ug/kg	99
90)	sec-Butylbenzene	17.25	105	293422	18.9382	ug/kg	100
91)	p-Isopropyltoluene	17.41	119	234809	18.5805	ug/kg	100
92)	1,3-Dichlorobenzene	17.61	146	116868	16.1208	ug/kg	98
93)	1,4-Dichlorobenzene	17.74	146	120670	16.3091	ug/kg	98
94)	n-Butylbenzene	17.94	91	186755	16.1693	ug/kg	99
95)	1,2-Dichlorobenzene	18.23	146	111061	16.0416	ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.24	157	14844	15.6615	ug/kg	98
97)	1,2,4-Trichlorobenzene	20.38	180	54570	10.8046	ug/kg	99
98)	Hexachlorobutadiene	20.52	225	40084	15.6437	ug/kg	96
99)	Naphthalene	20.75	128	139415	10.5682	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.06	180	50233	10.1619	ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\070616\9M975268.D Vial: 21
Acq On : 6 Jul 2016 23:44 Operator: ADC
Sample : WG575216-03 A MSD 826-SPE Inst : hpms9
Misc : 7,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 8 9:59 2016 Quant Results File: 8260S.RES

Method : C:\MSDCHEM\1\METHODS\8260S.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 06/21/16 HPMS9
Last Update : Thu Jun 23 11:41:07 2016
Response via : Initial Calibration

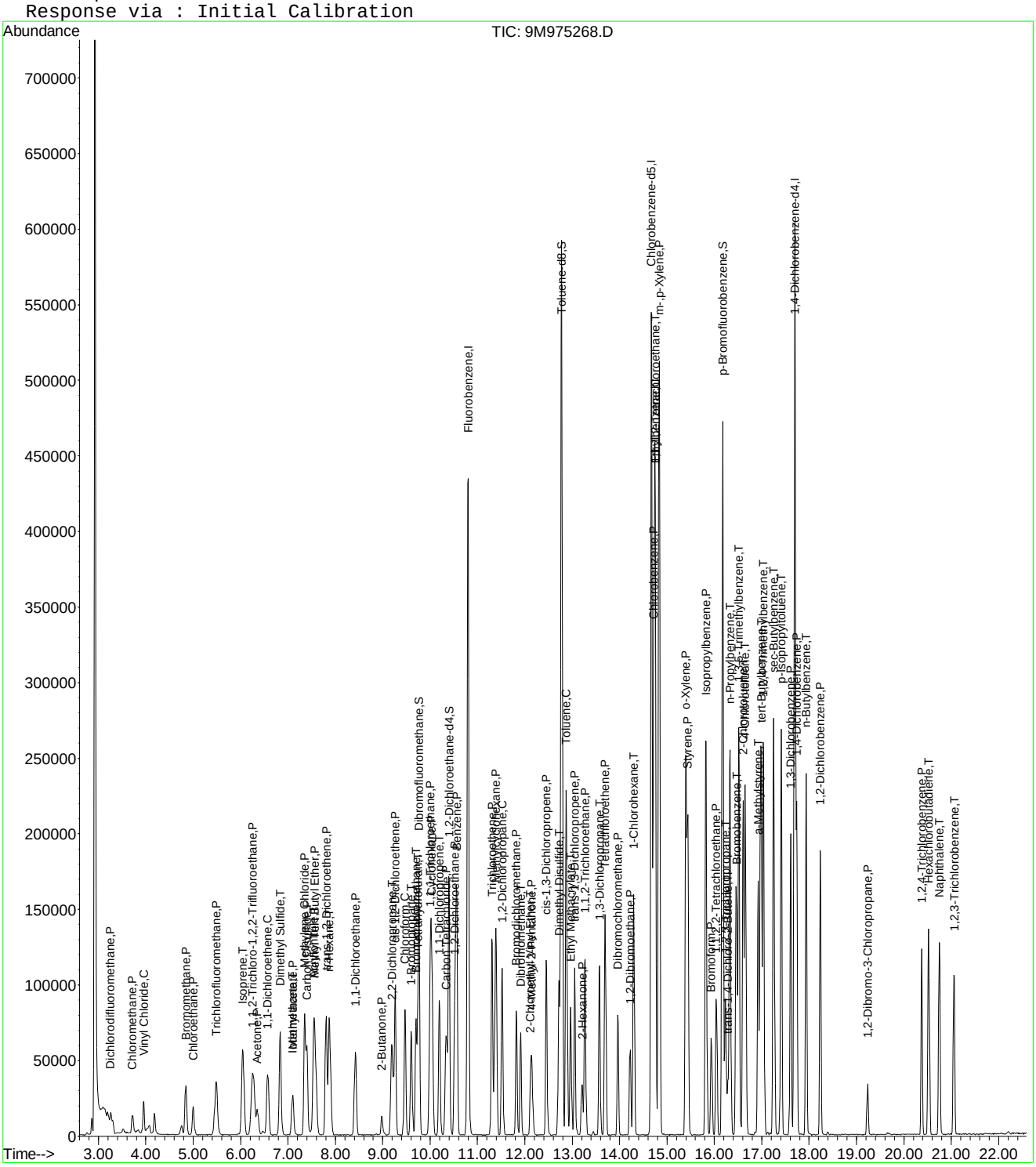

9M975268.D 8260S.M Fri Jul 08 09:59:35 2016 Page 3

2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW25(3.5-4)(270616)	**Prep Method:**	6850	**Prep Date:**	07/06/2016 16:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575409	**Analyst:**	JWR	**Run Date:**	07/07/2016 14:53
Collect Date:	06/27/2016 13:35	**Dilution:**	1	**File ID:**	1LM.LM35648
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.28	U	4.57	2.28	1.14

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW25(9.5-10)270616	**Prep Method:**	6850	**Prep Date:**	07/06/2016 16:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575409	**Analyst:**	JWR	**Run Date:**	07/07/2016 15:12
Collect Date:	06/27/2016 14:12	**Dilution:**	1	**File ID:**	1LM.LM35649
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	77.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.52	U	5.05	2.52	1.26

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW25(14.5-15)270616	**Prep Method:**	6850	**Prep Date:**	07/06/2016 16:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575409	**Analyst:**	JWR	**Run Date:**	07/07/2016 15:31
Collect Date:	06/27/2016 14:45	**Dilution:**	1	**File ID:**	1LM.LM35650
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.40	U	4.81	2.40	1.20

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW25(19.5-20)270616	**Prep Method:**	6850	**Prep Date:**	07/06/2016 16:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575409	**Analyst:**	JWR	**Run Date:**	07/07/2016 15:50
Collect Date:	06/27/2016 15:50	**Dilution:**	1	**File ID:**	1LM.LM35651
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.46	U	4.93	2.46	1.23

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW25(22-22.5)270616	**Prep Method:**	6850	**Prep Date:**	07/06/2016 16:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575409	**Analyst:**	JWR	**Run Date:**	07/07/2016 16:09
Collect Date:	06/27/2016 16:12	**Dilution:**	1	**File ID:**	1LM.LM35652
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.38	U	4.76	2.38	1.19

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061593-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW25(22-22.5)270616 DUP	**Prep Method:**	6850	**Prep Date:**	07/06/2016 16:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575409	**Analyst:**	JWR	**Run Date:**	07/07/2016 16:28
Collect Date:	06/27/2016 16:12	**Dilution:**	1	**File ID:**	1LM.LM35653
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.36	U	4.70	2.36	1.18

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061593
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

MICROBAC

Semivolatile Sample Extract Log

Parameter: Perchlorate
SOP #: HPLC 06
Analyst: JWR
Spike/Surrogate analyst: JWR
Surrogate #: NA
Spike # A: STD75513
Ext Solvent: DI-H_2O
Ext Solvent: NA
Ext Disk: NA

Matrix: Soils
Rev #: 08
Date/Time Extracted: 07/06/16/1600
Witness: WTD

Spike # B: NA
Lot #: NA
Lot #: NA
Lot #: NA

Extraction Work Group: WG575388
Analytical Work Group: WG575409
Run ID: R4656253

Pipetter(s): Eppendorf #403
Analytical Balance ID: BAL017
Reagent: Tubes Lot #: RGT34011
Reagent: Sand Lot #: COA18813
Other: IS Lot #: COA13071

Color Code
T = Transparent
C = Colored
O = Opaque

	Sample ID	Test Code	pH	Initial Wt / Vol	JWR ~~Surrogate~~ Amount IS	Amount Spike	Final Volume	Extract Color	Comments
1	WG575388-01	6850		5.005g	0.250ml	1.0ml	.50ml		MCT (10,000 µs) (2 µg/kg)
2	WG575388-02	↓		5.020g	↓	NA	↓		Blank
3	WG575388-03	↓		5.014g	↓	1.0ml	↓		LCS (2 µg/kg)
4	WG575388-04	↓		5.010g	↓	1.0ml	↓		LCS2 (2 µg/kg)
5	L16061593-01	↓		5.107g	↓	NA	↓		
6	-02	↓		5.139g	↓	NA	↓		
7	-03	↓		5.128g	↓	NA	↓		
8	-04	↓		5.120g	↓	NA	↓		
9	-05	↓		5.131g	↓	NA	↓		
10	-06	↓		5.122g	↓	NA	↓		
11	L16070002-01	↓		5.009g	↓	0.5ml	↓		LOD (1 µg/kg)
12	L16070004-01	↓		5.006g	↓	1.0ml	↓		LOQ (2 µg/kg)
13	-10	↓		5.014g	↓	1.0ml	↓		LOQ (2 µg/kg)
14									
15									
16									
17									
18									
19									
20					JWR 07/06/16				
21									
22									
23									
24									

Reviewed by: Wade T. Do 7-6-16

Analytical WG 575409 (soils)

Perchlorate Conductivity Check

(perchlorate1)

Conductivity Probe Calibration Check: 1435 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG575388-01 MCT	9,990.	
-02 Blank	0.86	
-03 LCS	1.62	
-04 LCS2	1.73	
L16061593-01	18.71	
-02	14.97	
-03	8.76	
-04	8.97	
-05	9.87	
-06	9.37	
L16070002-01 LOD	1.33	
L16070004-01 LOQ	1.44	
-10 LOQ	1.54	

Analyst: John Richards

Date/Time: 07/07/16 / 1500

DCN#119521

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

Page: 1 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

Page: 2 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 070716_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG575409 (soils)

Internal STD: STD18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35641	WG575499-01 CCB	1	1		07/07/16 12:41
2	1LM.LM35642	WG575499-02 CCV (1.0ug/L)	1	1	STD75510	07/07/16 13:00
3	1LM.LM35643	WG575409-05 MRL (2.0ug/kg)	7	1	STD75510	07/07/16 13:19
4	1LM.LM35644	WG575409-01 MCT (2.0ug/kg)	7	1	STD75512	07/07/16 13:38
5	1LM.LM35645	WG575409-02 BLANK	7	1		07/07/16 13:56
6	1LM.LM35646	WG575409-03 LCS (2.0ug/kg)	7	1	STD75512	07/07/16 14:15
7	1LM.LM35647	WG575409-04 LCS2 (2.0ug/kg)	7	1	STD75512	07/07/16 14:34
8	1LM.LM35648	L16061593-01	7	1		07/07/16 14:53
9	1LM.LM35649	L16061593-02	7	1		07/07/16 15:12
10	1LM.LM35650	L16061593-03	7	1		07/07/16 15:31
11	1LM.LM35651	L16061593-04	7	1		07/07/16 15:50
12	1LM.LM35652	L16061593-05	7	1		07/07/16 16:09
13	1LM.LM35653	L16061593-06	7	1		07/07/16 16:28
14	1LM.LM35654	WG575499-03 CCV (1.0ug/L)	1	1	STD75510	07/07/16 16:47
15	1LM.LM35655	WG575409-06 MRL (2.0ug/kg)	7	1	STD75510	07/07/16 17:06
16	1LM.LM35656	WG575499-04 CCB	1	1		07/07/16 17:25
17	1LM.LM35657	L16070002-01 LOD (1.0ug/kg)	7	1	STD75512	07/07/16 17:44
18	1LM.LM35658	L16070004-01 LOQ (2.0ug/kg)	7	1	STD75512	07/07/16 18:03
19	1LM.LM35659	L16070004-10 LOQ (2.0ug/kg)	7	1	STD75512	07/07/16 18:22
20	1LM.LM35660	WG575499-05 CCV (1.0ug/L)	1	1	STD75510	07/07/16 18:40
21	1LM.LM35661	WG575409-07 MRL (2.0ug/kg)	7	1	STD75510	07/07/16 18:59
22	1LM.LM35662	WG575499-06 CCB	1	1		07/07/16 19:18

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 08-JUL-16

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
04-MAY-2016
John Richards

Secondary Reviewer:
05-MAY-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 07-JUL-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 76185
Analytical Workgroups: L16061593 L16070002(LOD), 0004(LOQ) SOILS

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MES

Primary Reviewer: 08-JUL-2016 John Richards

Secondary Reviewer: 08-JUL-2016 Mary Shilling

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-08-2016 14:10:21

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG575409

Login Number: L16061593

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW25(3.5-4)(270616)	01	06/27/16					07/06/2016	9.1	28		07/07/16	1	28	
18WW25(9.5-10)270616	02	06/27/16					07/06/2016	9.1	28		07/07/16	1	28	
18WW25(14.5-15)270616	03	06/27/16					07/06/2016	9.1	28		07/07/16	1	28	
18WW25(19.5-20)270616	04	06/27/16					07/06/2016	9	28		07/07/16	1	28	
18WW25(22-22.5)270616	05	06/27/16					07/06/2016	9	28		07/07/16	1	28	
18WW25(22-22.5)270616 DU	06	06/27/16					07/06/2016	9	28		07/07/16	1	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4845230
Report generated 07/08/2016 16:21

METHOD BLANK SUMMARY

Login Number: L16061593
Blank File ID: 1LM.LM35645
Prep Date: 07/06/16 16:00
Analyzed Date: 07/07/16 13:56
Analyst: JWR

Work Group: WG575409
Blank Sample ID: WG575409-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG575409-05	1LM.LM35643	07/07/16 13:19	01
MCT	WG575409-01	1LM.LM35644	07/07/16 13:38	01
LCS	WG575409-03	1LM.LM35646	07/07/16 14:15	01
LCS2	WG575409-04	1LM.LM35647	07/07/16 14:34	01
18WW25(3.5-4)(270616)	L16061593-01	1LM.LM35648	07/07/16 14:53	01
18WW25(9.5-10)270616	L16061593-02	1LM.LM35649	07/07/16 15:12	01
18WW25(14.5-15)270616	L16061593-03	1LM.LM35650	07/07/16 15:31	01
18WW25(19.5-20)270616	L16061593-04	1LM.LM35651	07/07/16 15:50	01
18WW25(22-22.5)270616	L16061593-05	1LM.LM35652	07/07/16 16:09	01
18WW25(22-22.5)270616 DUP	L16061593-06	1LM.LM35653	07/07/16 16:28	01
QCMRL	WG575409-06	1LM.LM35655	07/07/16 17:06	01
QCMRL	WG575409-07	1LM.LM35661	07/07/16 18:59	01

Report Name: BLANK_SUMMARY
PDF File ID: 4845231
Report generated 07/08/2016 16:21

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061593 Prep Date: 07/06/16 16:00 Sample ID: WG575409-02
Instrument ID: LCMS1 Run Date: 07/07/16 13:56 Prep Method: 6850
File ID: 1LM.LM35645 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575409 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.996	3.98	0.996	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4845232
08-JUL-2016 16:21

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061593 Analyst: JWR Prep Method: 6850
Instrument ID: LCMS1 Matrix: Soil Method: 6850
Workgroup (AAB#): WG575409 Units: ug/kg
QC Key: DOD4 Lot #: STD75512

Sample ID: WG575409-03 LCS File ID: 1LM.LM35646 Run Date: 07/07/2016 14:15
Sample ID: WG575409-04 LCS2 File ID: 1LM.LM35647 Run Date: 07/07/2016 14:34

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Perchlorate	1.99	2.12	107	2.00	2.11	106	0.864	80 - 120	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4845233
Report generated: 07/08/2016 16:21

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061593
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4845298
Report generated 07/08/2016 16:21

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061593

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4845298
Report generated 07/08/2016 16:21

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061593

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4845298
Report generated 07/08/2016 16:21

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061593

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008

PDF File ID: 4845298

Report generated 07/08/2016 16:21

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061593 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4845299
Report generated 07/08/2016 16:21

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061593
Run Date: 07/07/2016
Sample ID: WG575499-01
Instrument ID: LCMS1
Run Time: 12:41
Method: 6850
File ID: 1LM.LM35641
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG575409
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4845236
Report generated 07/08/2016 16:22

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061593
Run Date: 07/07/2016
Sample ID: WG575499-04
Instrument ID: LCMS1
Run Time: 17:25
Method: 6850
File ID: 1LM.LM35656
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG575409
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4845236
Report generated 07/08/2016 16:22

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061593
Run Date: 07/07/2016
Sample ID: WG575499-06
Instrument ID: LCMS1
Run Time: 19:18
Method: 6850
File ID: 1LM.LM35662
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG575409
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4845236
Report generated 07/08/2016 16:22

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061593
Run Date: 07/07/2016
Sample ID: WG575499-02
Instrument ID: LCMS1
Run Time: 13:00
Method: 6850
File ID: 1LM.LM35642
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG575409
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.981	ug/kg	1.66	1.90	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4845235
Report generated 07/08/2016 16:21

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061593
Run Date: 07/07/2016
Sample ID: WG575499-03
Instrument ID: LCMS1
Run Time: 16:47
Method: 6850
File ID: 1LM.LM35654
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG575409
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/kg	1.75	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4845235
Report generated 07/08/2016 16:21

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061593
Run Date: 07/07/2016
Sample ID: WG575499-05
Instrument ID: LCMS1
Run Time: 18:40
Method: 6850
File ID: 1LM.LM35660
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG575409
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.992	ug/kg	1.68	0.800	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4845235
Report generated 07/08/2016 16:21

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061593 Run Date: 07/07/2016 Sample ID: WG575409-05

Instrument ID: LCMS1 Run Time: 13:19 Prep Method: 6850

File ID: 1LM.LM35643 Analyst: JWR Method: 6850

Workgroup (AAB#): WG575409 Matrix: Soil Units: ug/kg

Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.94	97.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4845234
Report generated 07/08/2016 16:21

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061593 Run Date: 07/07/2016 Sample ID: WG575409-06

Instrument ID: LCMS1 Run Time: 17:06 Prep Method: 6850

File ID: 1LM.LM35655 Analyst: JWR Method: 6850

Workgroup (AAB#): WG575409 Matrix: Soil Units: ug/kg

Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.03	102	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4845234
Report generated 07/08/2016 16:21

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061593 Run Date: 07/07/2016 Sample ID: WG575409-07

Instrument ID: LCMS1 Run Time: 18:59 Prep Method: 6850

File ID: 1LM.LM35661 Analyst: JWR Method: 6850

Workgroup (AAB#): WG575409 Matrix: Soil Units: ug/kg

Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.97	98.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4845234
Report generated 07/08/2016 16:21

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16061593
Instrument ID: LCMS1
Workgroup (AAB#): WG575409

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16061593-01	1.00	01	425000
L16061593-02	1.00	01	421000
L16061593-03	1.00	01	428000
L16061593-04	1.00	01	424000
L16061593-05	1.00	01	433000
L16061593-06	1.00	01	442000
WG575409-02	1.00	01	414000
WG575409-03	1.00	01	407000
WG575409-04	1.00	01	411000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4845237
Report generated 07/08/2016 16:22

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**	6850	**Samplenum:**	L16061593-01
Instrument:	LCMS1	**Prep Date:**	07/06/2016 16:00	**File ID:**	1LM.LM35648
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG575409	**Analysis Date:**	07/07/2016 14:53	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**	6850	**Samplenum:**	L16061593-02
Instrument:	LCMS1	**Prep Date:**	07/06/2016 16:00	**File ID:**	1LM.LM35649
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG575409	**Analysis Date:**	07/07/2016 15:12	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**	6850	**Samplenum:**	L16061593-03
Instrument:	LCMS1	**Prep Date:**	07/06/2016 16:00	**File ID:**	1LM.LM35650
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG575409	**Analysis Date:**	07/07/2016 15:31	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**	6850	**Samplenum:**	L16061593-04
Instrument:	LCMS1	**Prep Date:**	07/06/2016 16:00	**File ID:**	1LM.LM35651
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG575409	**Analysis Date:**	07/07/2016 15:50	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**	6850	**Samplenum:**	L16061593-05
Instrument:	LCMS1	**Prep Date:**	07/06/2016 16:00	**File ID:**	1LM.LM35652
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG575409	**Analysis Date:**	07/07/2016 16:09	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	391	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**	6850	**Samplenum:**	L16061593-06
Instrument:	LCMS1	**Prep Date:**	07/06/2016 16:00	**File ID:**	1LM.LM35653
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG575409	**Analysis Date:**	07/07/2016 16:28	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	137	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575409	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575409	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575409	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575409	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575409	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575409	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575409	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575409	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**	6850	**Samplenum:**	WG575409-01
Instrument:	LCMS1	**Prep Date:**	07/06/2016 16:00	**File ID:**	1LM.LM35644
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG575409	**Analysis Date:**	07/07/2016 13:38	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	27300	10100	2.70	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**	6850	**Samplenum:**	WG575409-02
Instrument:	LCMS1	**Prep Date:**	07/06/2016 16:00	**File ID:**	1LM.LM35645
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG575409	**Analysis Date:**	07/07/2016 13:56	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**	6850	**Samplenum:**	WG575409-03
Instrument:	LCMS1	**Prep Date:**	07/06/2016 16:00	**File ID:**	1LM.LM35646
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG575409	**Analysis Date:**	07/07/2016 14:15	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	29600	10600	2.79	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**	6850	**Samplenum:**	WG575409-04
Instrument:	LCMS1	**Prep Date:**	07/06/2016 16:00	**File ID:**	1LM.LM35647
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG575409	**Analysis Date:**	07/07/2016 14:34	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	29700	10600	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**	6850	**Samplenum:**	WG575409-05
Instrument:	LCMS1	**Prep Date:**	07/06/2016 16:00	**File ID:**	1LM.LM35643
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG575409	**Analysis Date:**	07/07/2016 13:19	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	27800	9840	2.83	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**	6850	**Samplenum:**	WG575409-06
Instrument:	LCMS1	**Prep Date:**	07/06/2016 16:00	**File ID:**	1LM.LM35655
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG575409	**Analysis Date:**	07/07/2016 17:06	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	31600	11100	2.85	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**	6850	**Samplenum:**	WG575409-07
Instrument:	LCMS1	**Prep Date:**	07/06/2016 16:00	**File ID:**	1LM.LM35661
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG575409	**Analysis Date:**	07/07/2016 18:59	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	31500	10700	2.94	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**		**Samplenum:**	WG575499-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35641
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575409	**Analysis Date:**	07/07/2016 12:41	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	326	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**		**Samplenum:**	WG575499-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35642
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575409	**Analysis Date:**	07/07/2016 13:00	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	138000	48700	2.83	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**		**Samplenum:**	WG575499-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35654
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575409	**Analysis Date:**	07/07/2016 16:47	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	160000	55900	2.86	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**		**Samplenum:**	WG575499-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35656
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575409	**Analysis Date:**	07/07/2016 17:25	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**		**Samplenum:**	WG575499-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35660
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575409	**Analysis Date:**	07/07/2016 18:40	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	161000	55700	2.89	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061593	**Prep Method:**		**Samplenum:**	WG575499-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35662
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575409	**Analysis Date:**	07/07/2016 19:18	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

2.2.1.3 Sample Data

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Data File	LM35648.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	7/7/2016 2:53:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061593-01	**Injection Vial**	8.00
Data File	LM35648.wiff	**Injection Volume**	10.00
Acquisition Date	7/7/2016 2:53:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	L16061593-01	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.250e+05	9.69	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.69(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

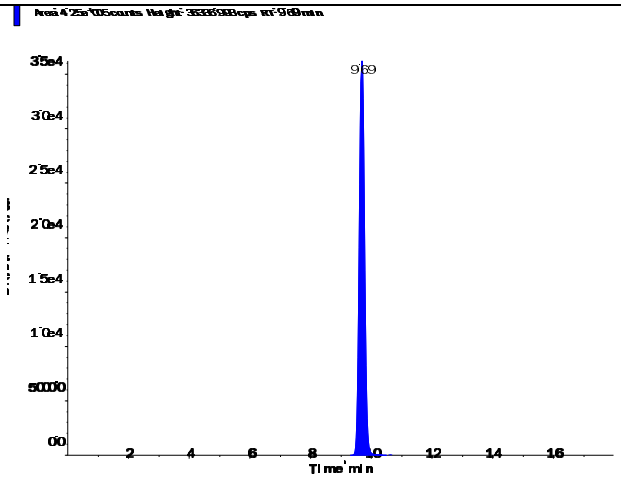

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

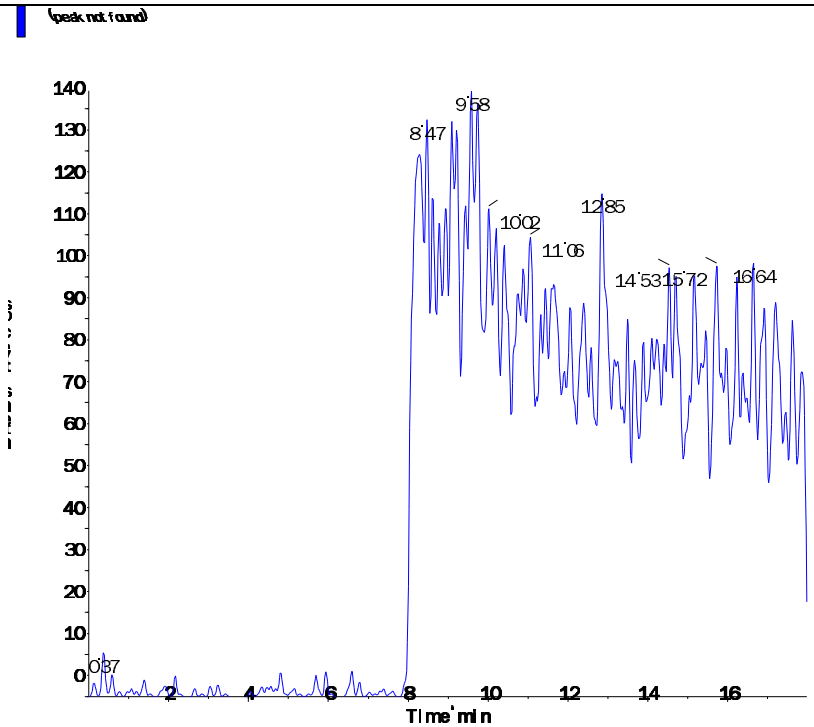

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

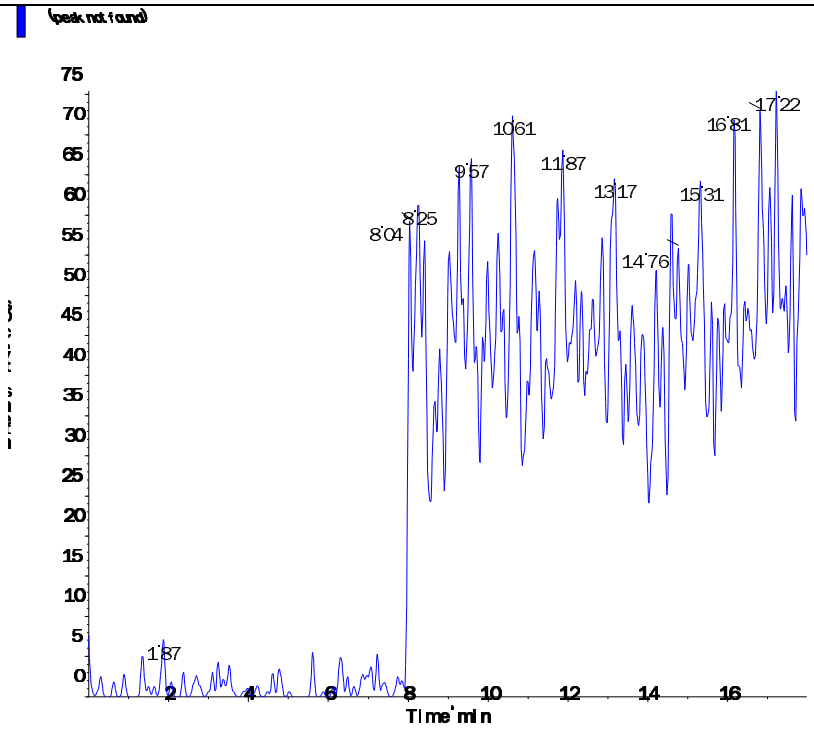

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Data File	LM35649.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	7/7/2016 3:12:47 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061593-02	**Injection Vial**	9.00
Data File	LM35649.wiff	**Injection Volume**	10.00
Acquisition Date	7/7/2016 3:12:47 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	L16061593-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.210e+05	9.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.70(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

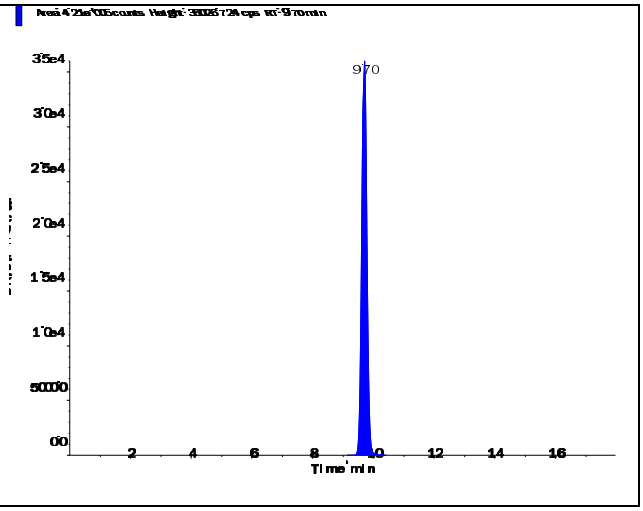

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

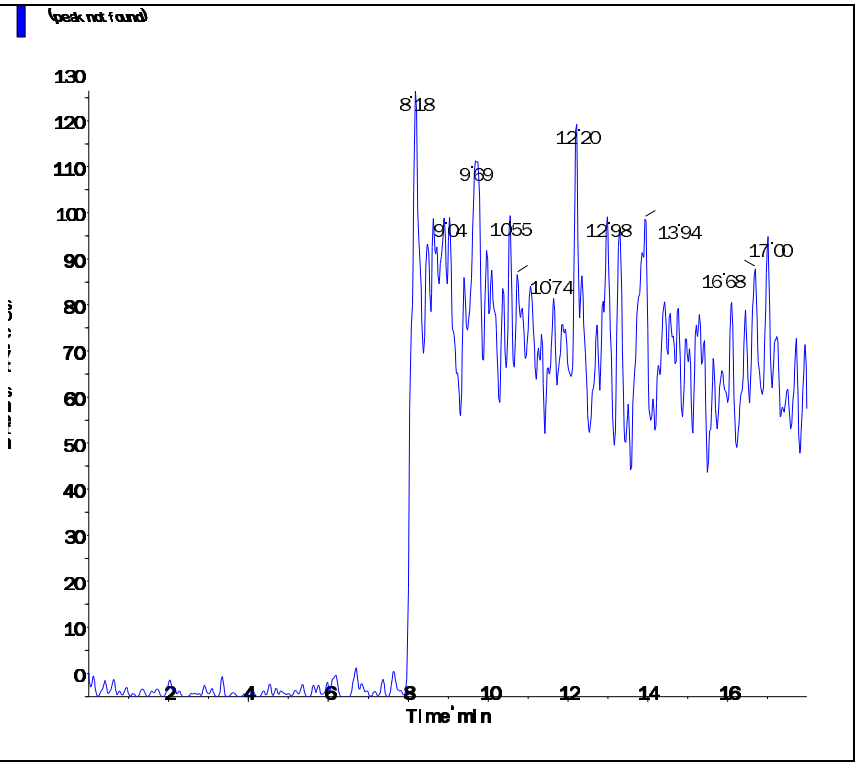

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

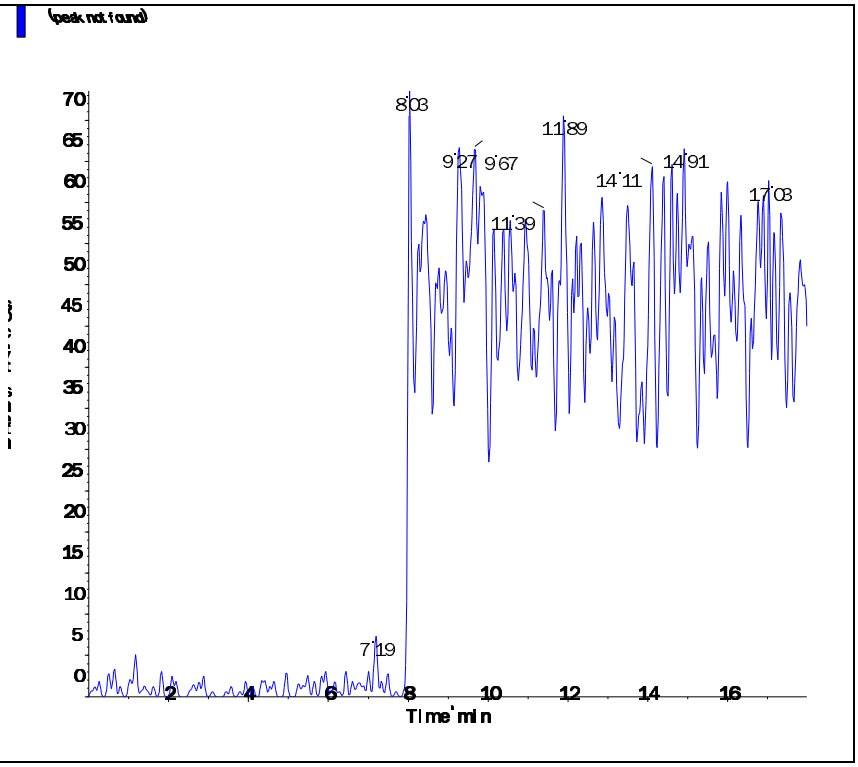

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Data File	LM35650.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	7/7/2016 3:31:41 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061593-03	**Injection Vial**	10.00
Data File	LM35650.wiff	**Injection Volume**	10.00
Acquisition Date	7/7/2016 3:31:41 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	L16061593-03	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.280e+05	9.71	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.71(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

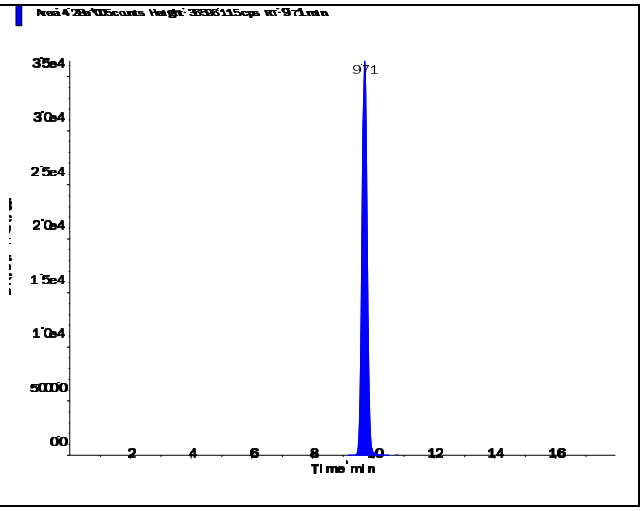

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

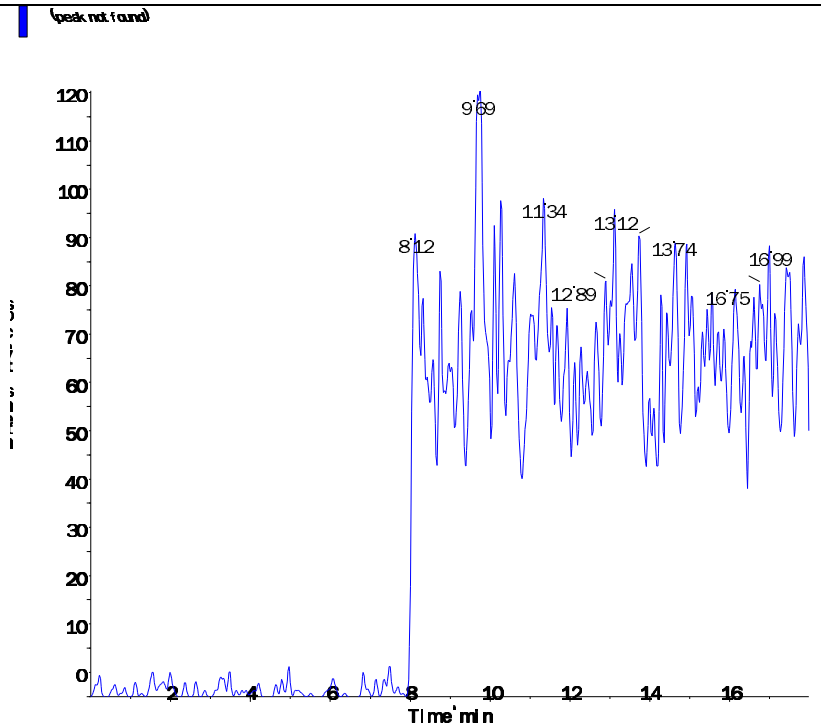

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

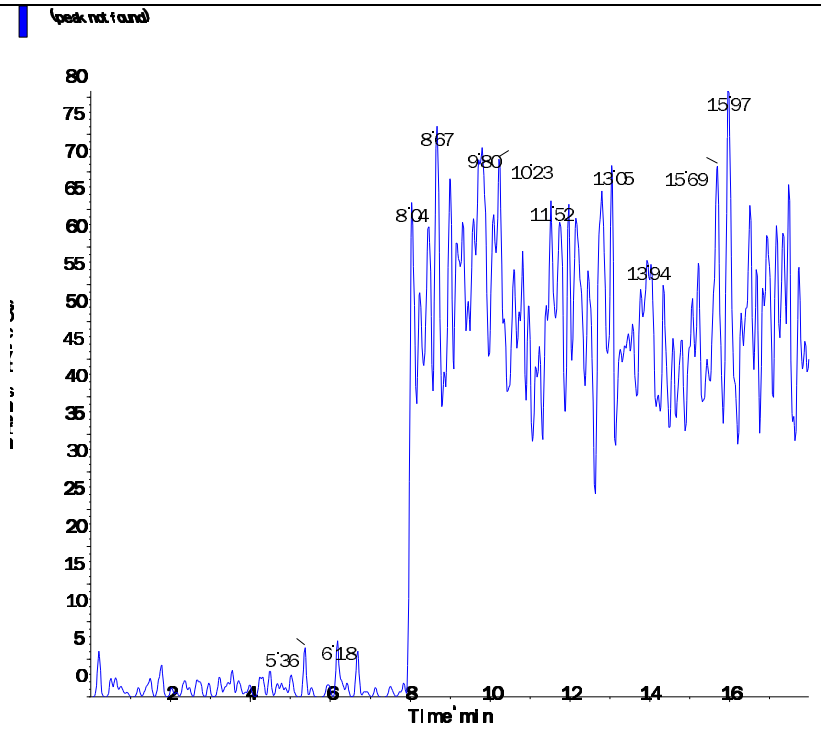

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Data File	LM35651.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	7/7/2016 3:50:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061593-04	**Injection Vial**	11.00
Data File	LM35651.wiff	**Injection Volume**	10.00
Acquisition Date	7/7/2016 3:50:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	L16061593-04	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.240e+05	9.71	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.71(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

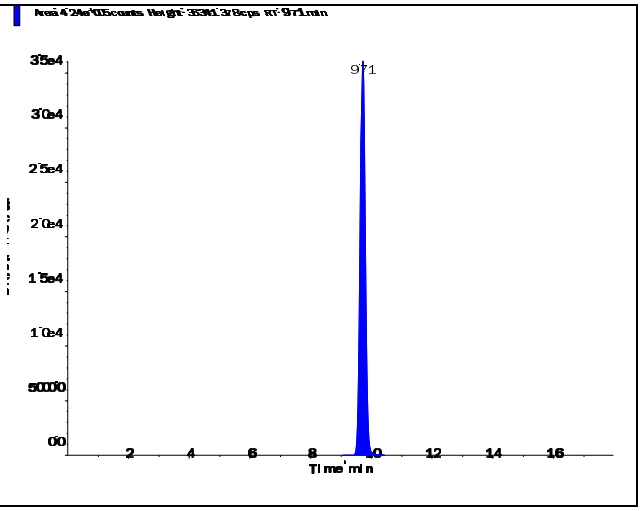

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Printed: 7/8/2016 11:02 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

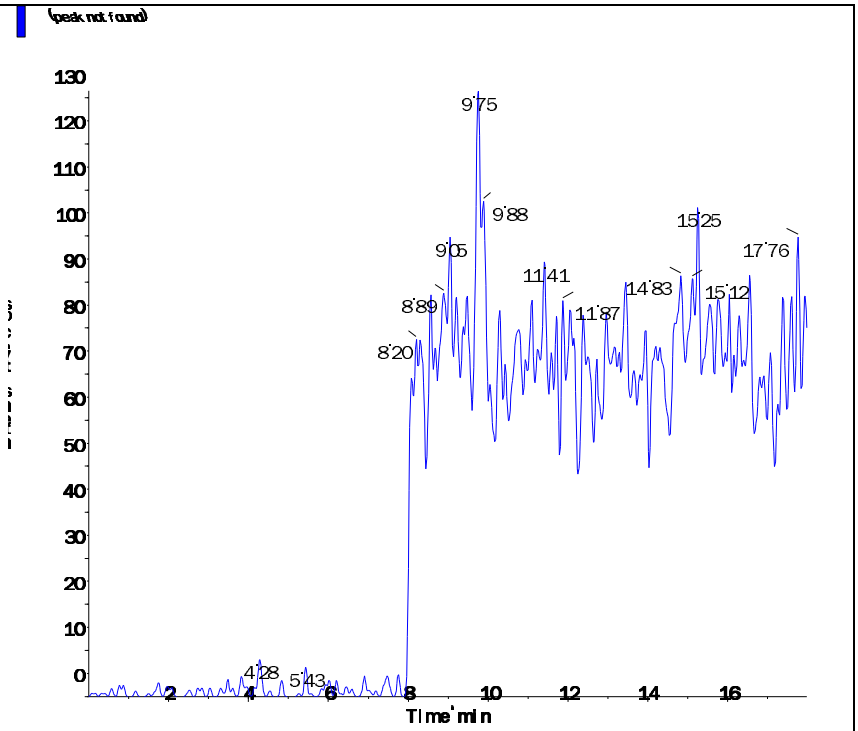

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

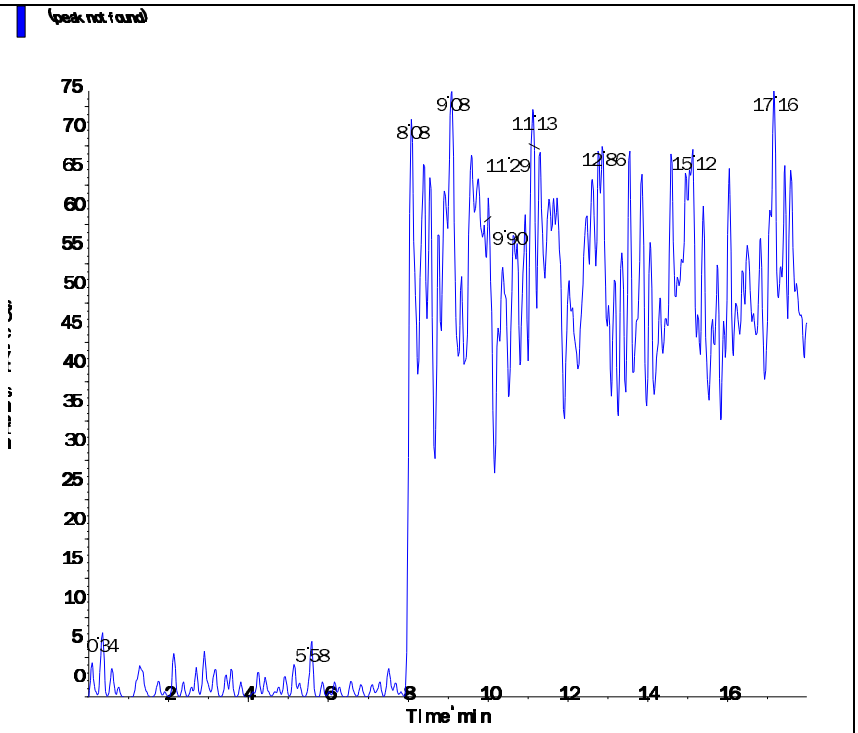

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Printed: 7/8/2016 11:02 AM

Data File	LM35652.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	7/7/2016 4:09:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061593-05	**Injection Vial**	12.00
Data File	LM35652.wiff	**Injection Volume**	10.00
Acquisition Date	7/7/2016 4:09:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	L16061593-05	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.330e+05	9.71	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	3.910e+02	9.69	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.71(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

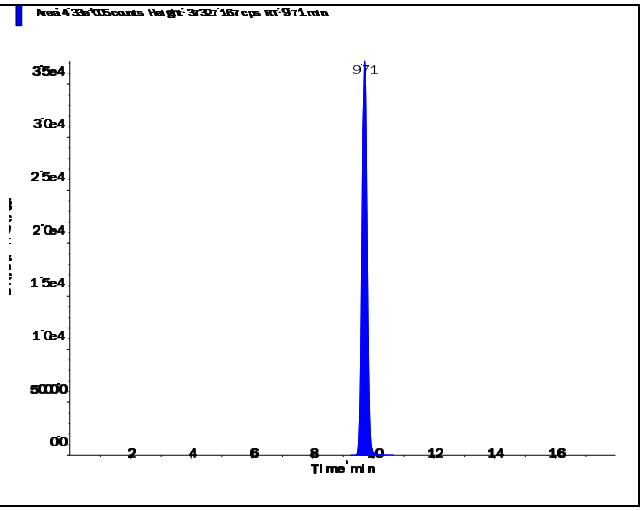

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

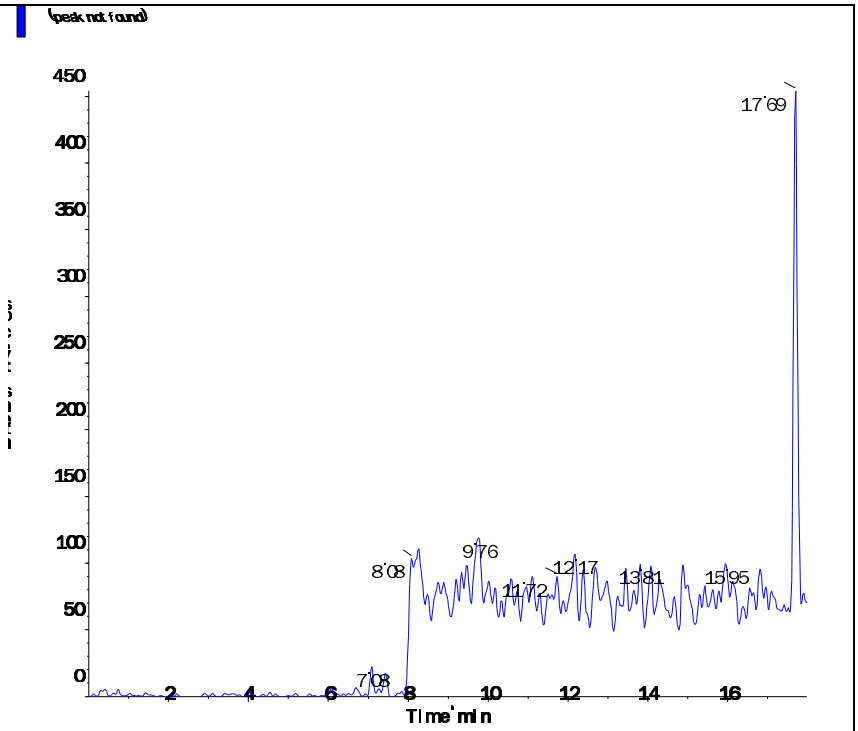

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.69 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

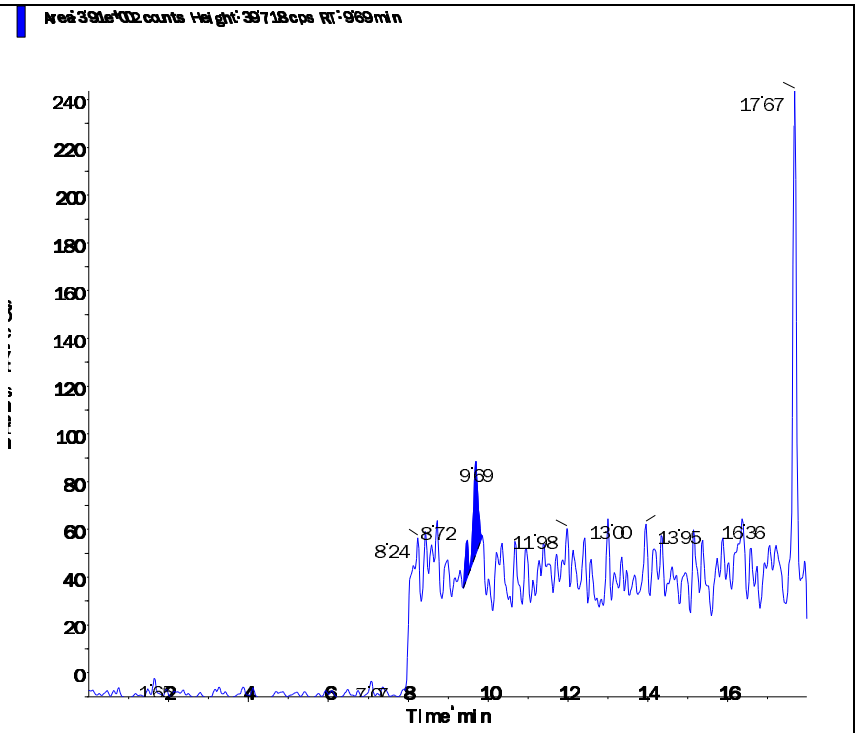

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Printed: 7/8/2016 11:03 AM

Data File	LM35653.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	7/7/2016 4:28:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061593-06	**Injection Vial**	13.00
Data File	LM35653.wiff	**Injection Volume**	10.00
Acquisition Date	7/7/2016 4:28:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	L16061593-06	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.420e+05	9.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	1.370e+02	9.75	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.70(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

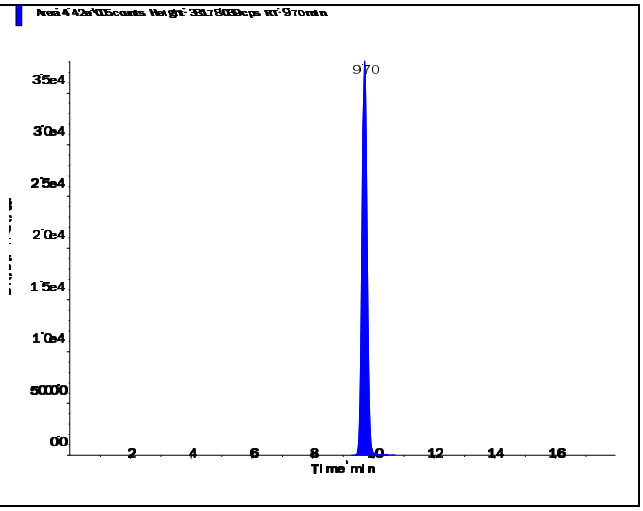

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	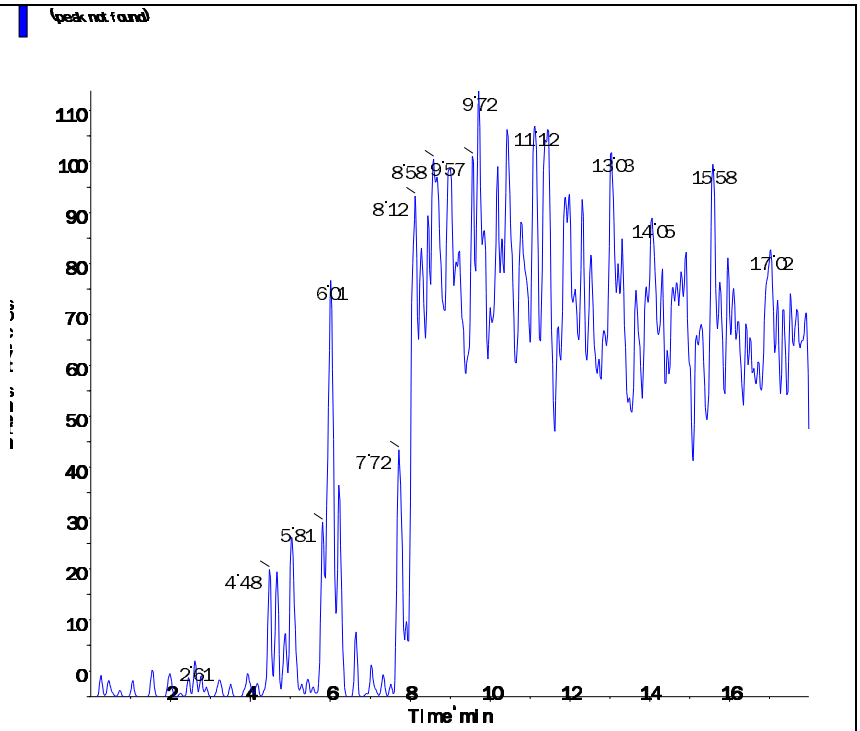
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.75 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	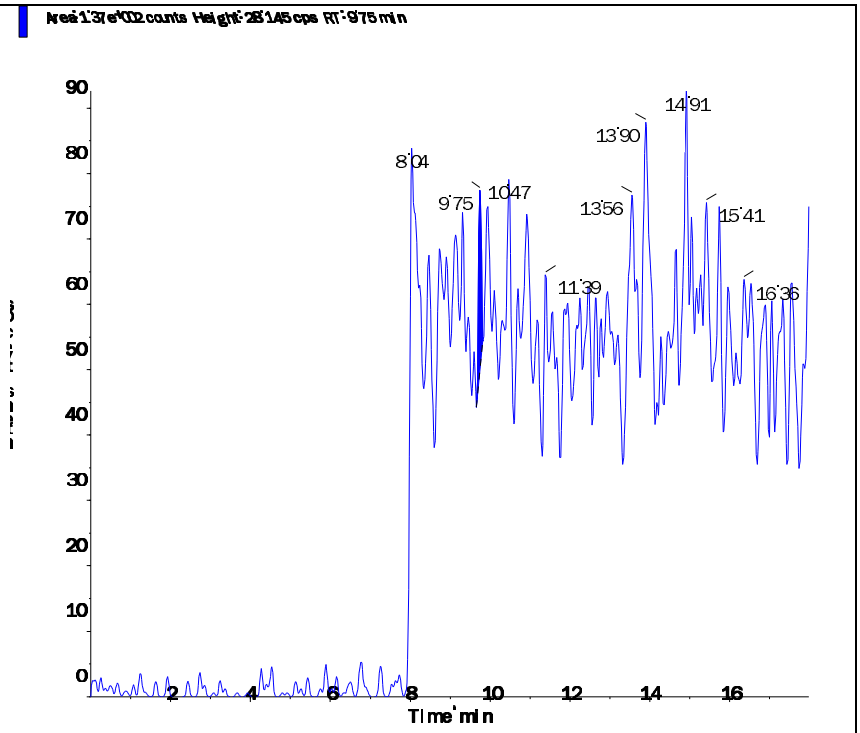

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2.2.1.4 Standards Data

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Data File	LM34686.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

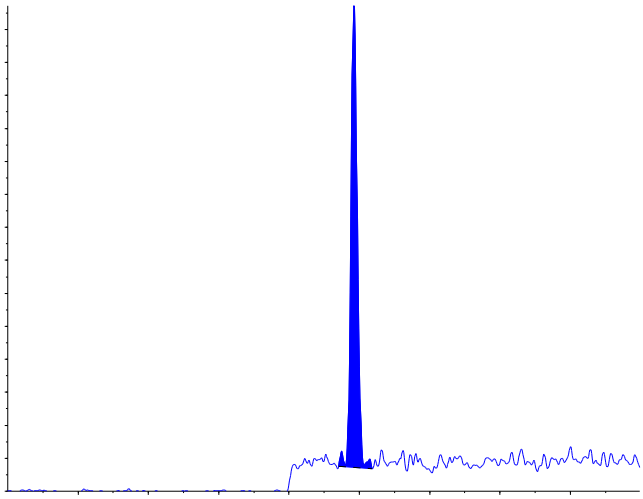

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

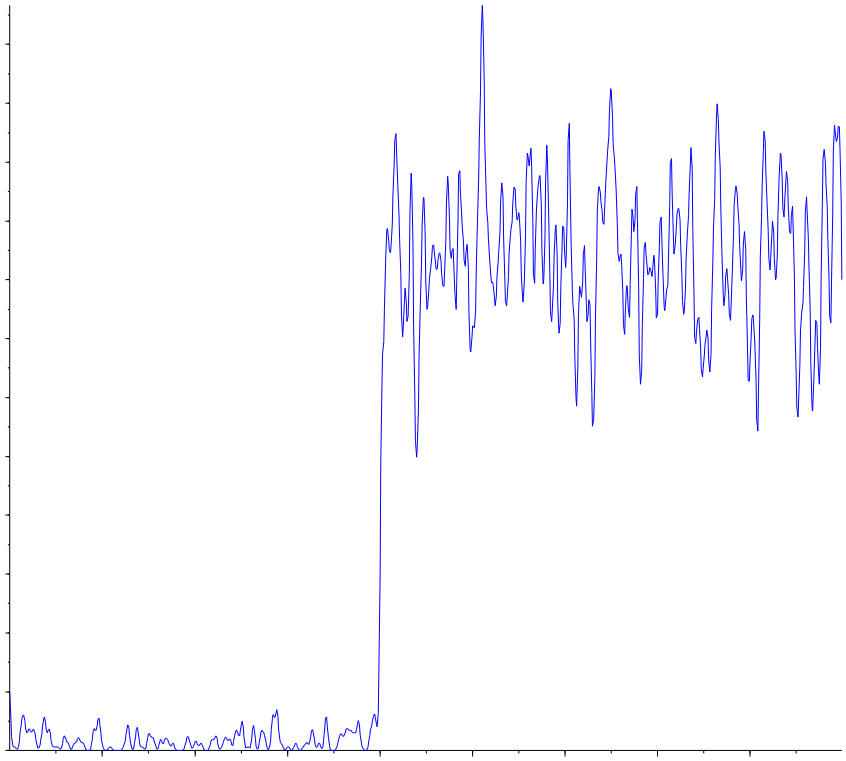

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

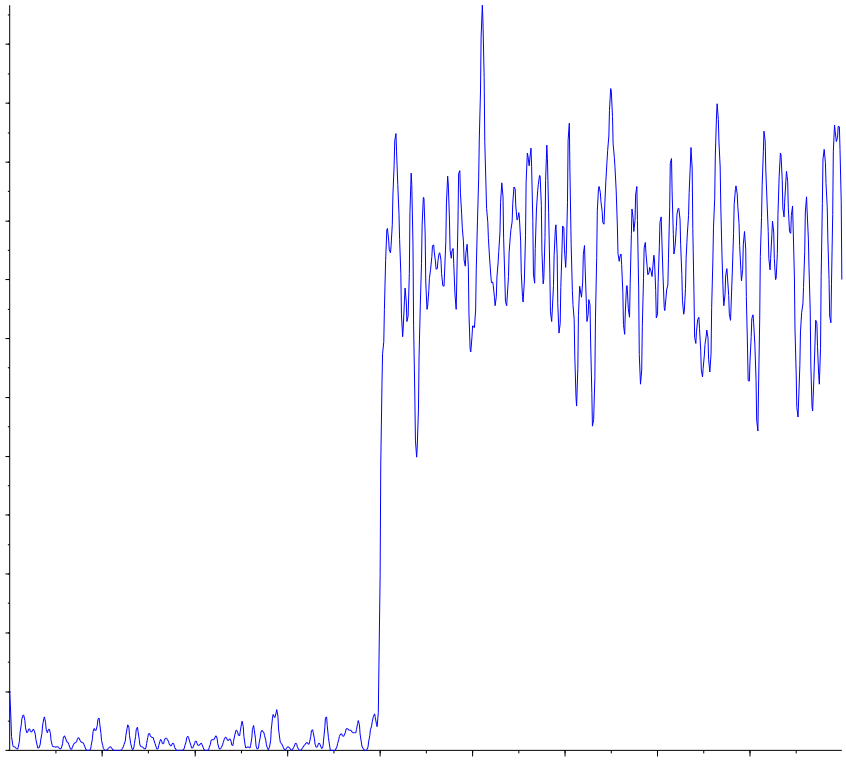

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Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

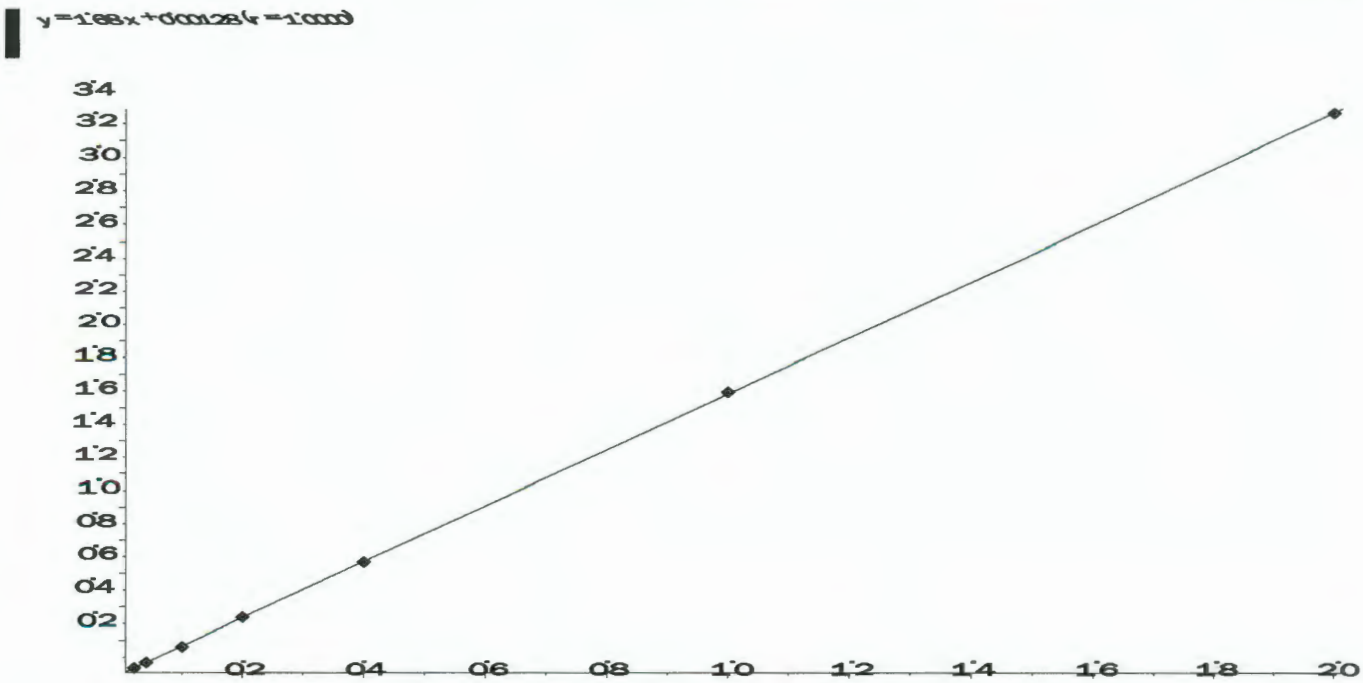

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Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

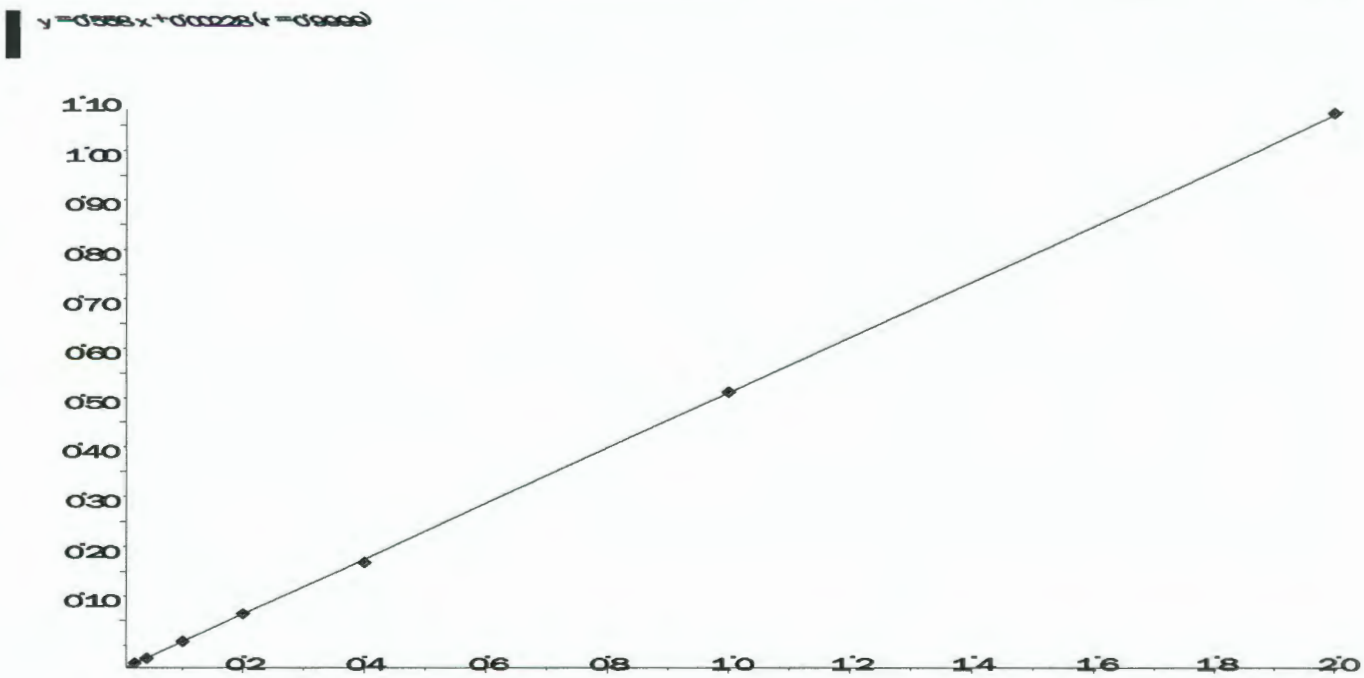

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Data File	LM34687.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

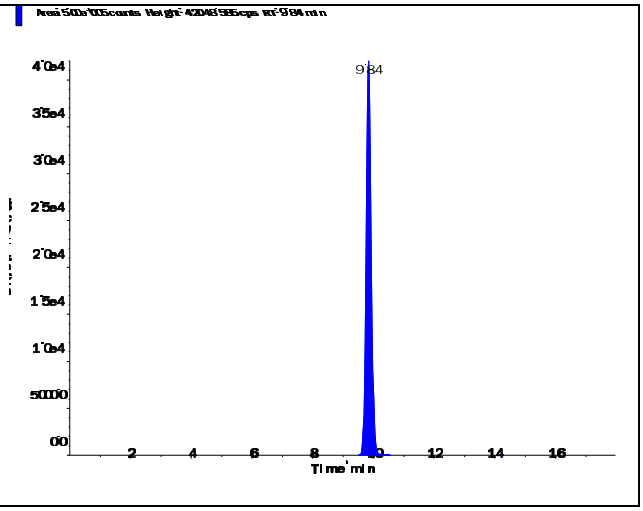

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.103 ng/ml
Area Ratio:	0.036
Sample Type:	(Standard)

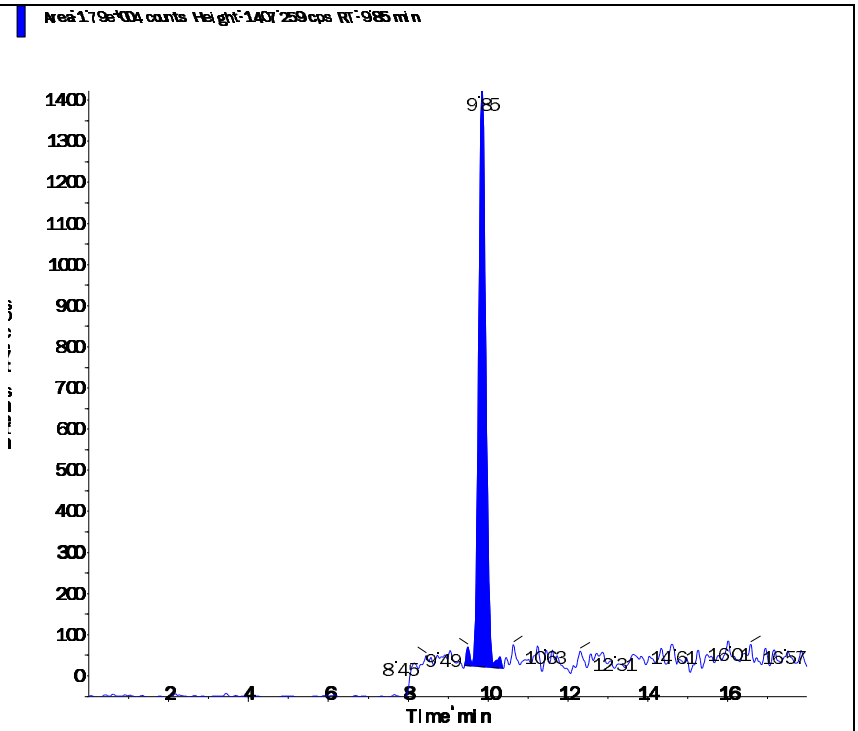

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.104 ng/ml
Area Ratio:	0.014
Sample Type:	(Standard)

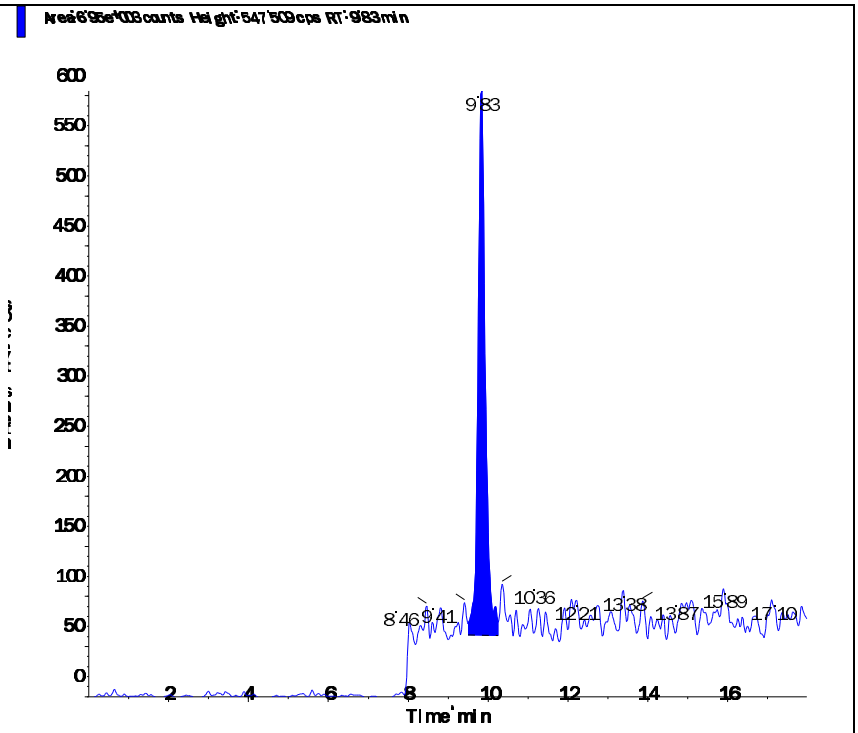

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Data File	LM34688.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

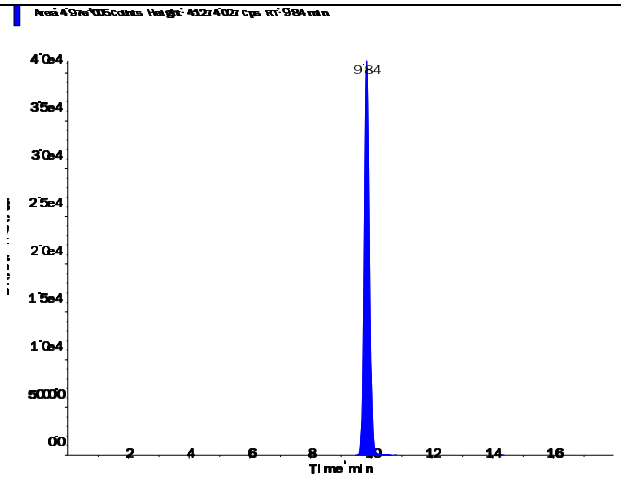

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

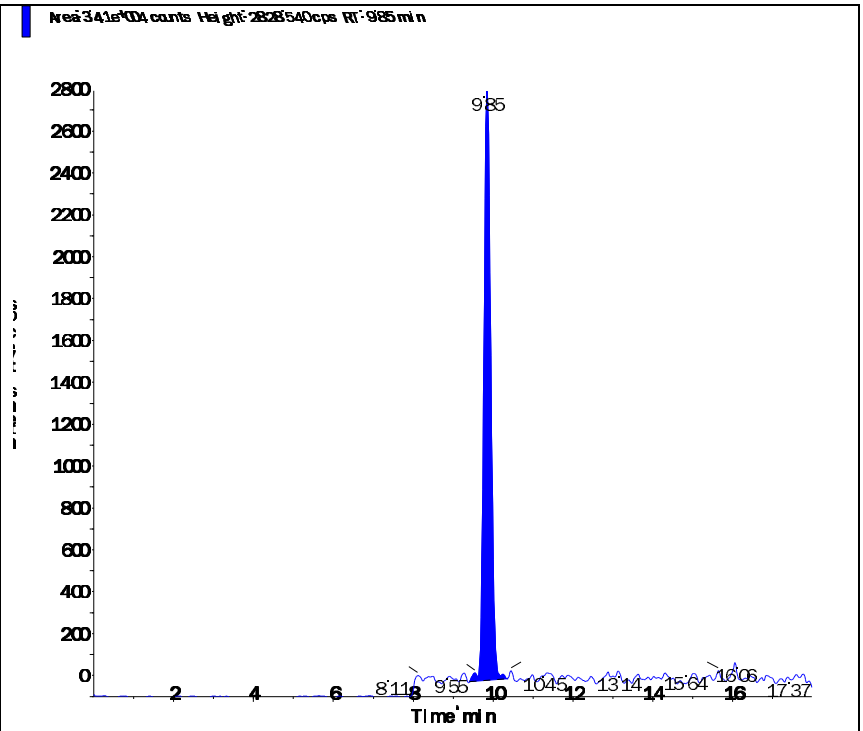

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

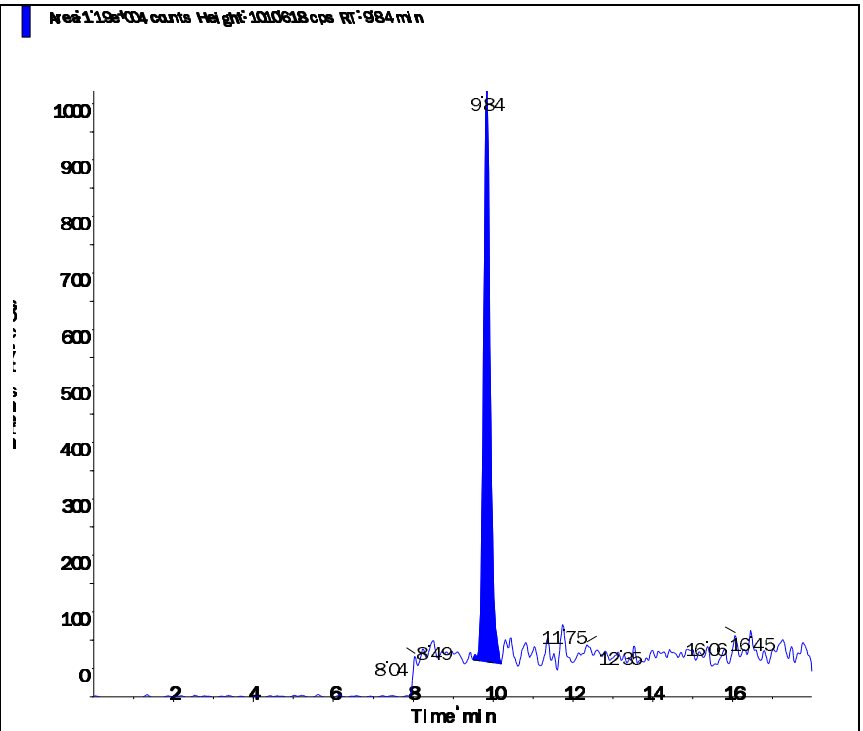

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Data File	LM34689.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

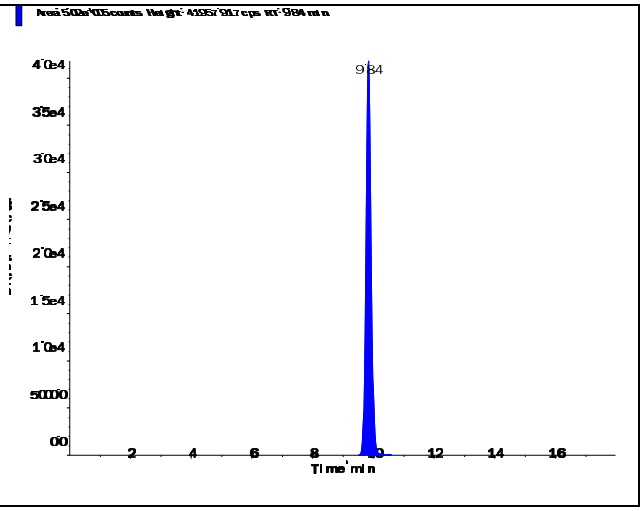

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.483 ng/ml
Area Ratio:	0.164
Sample Type:	(Standard)

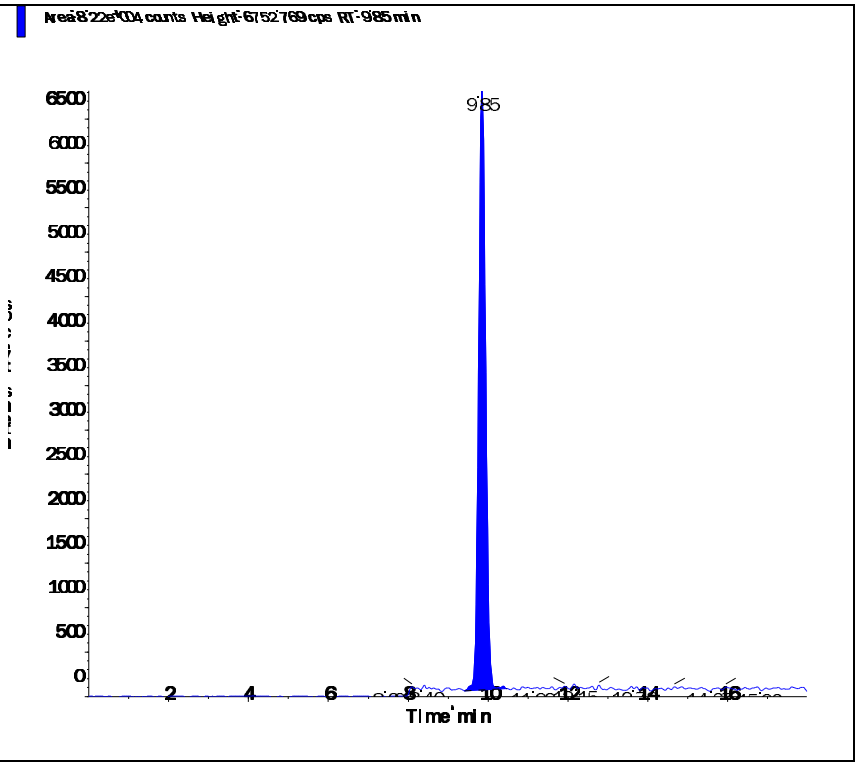

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.503 ng/ml
Area Ratio:	0.058
Sample Type:	(Standard)

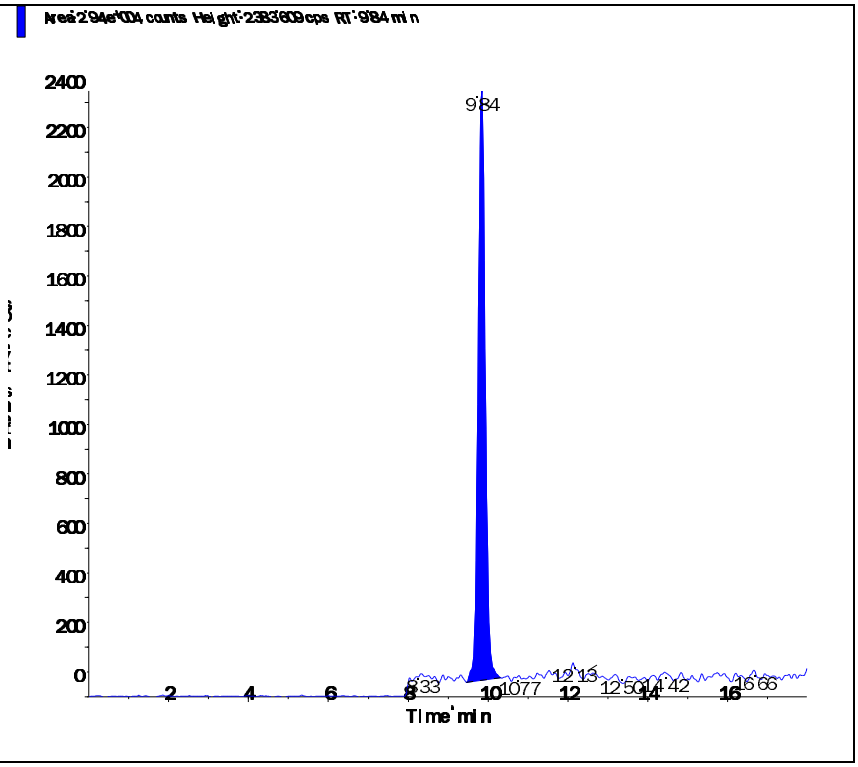

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Data File	LM34690.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

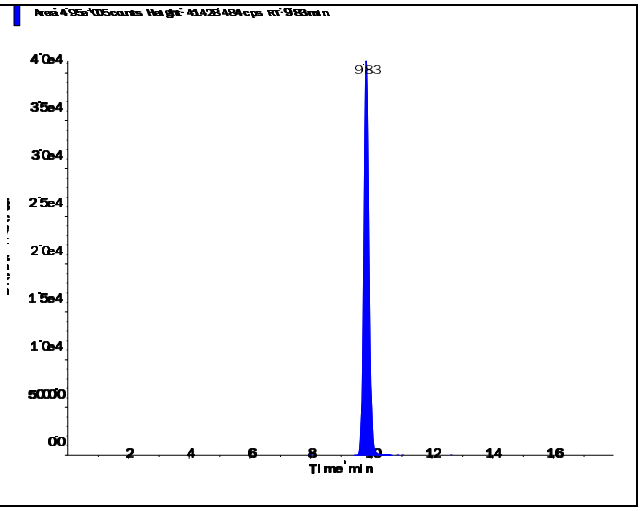

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

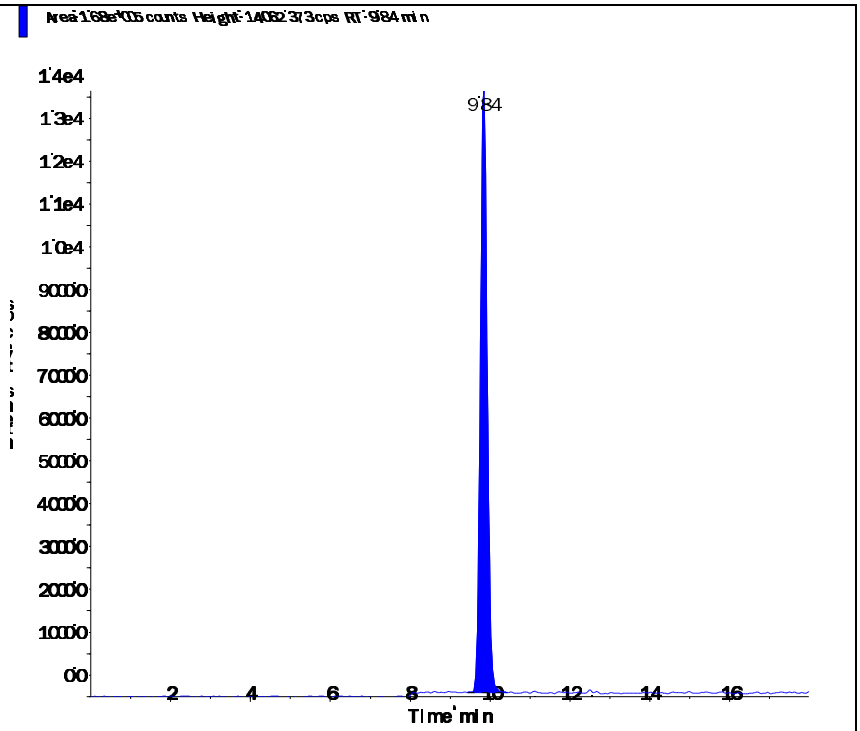

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

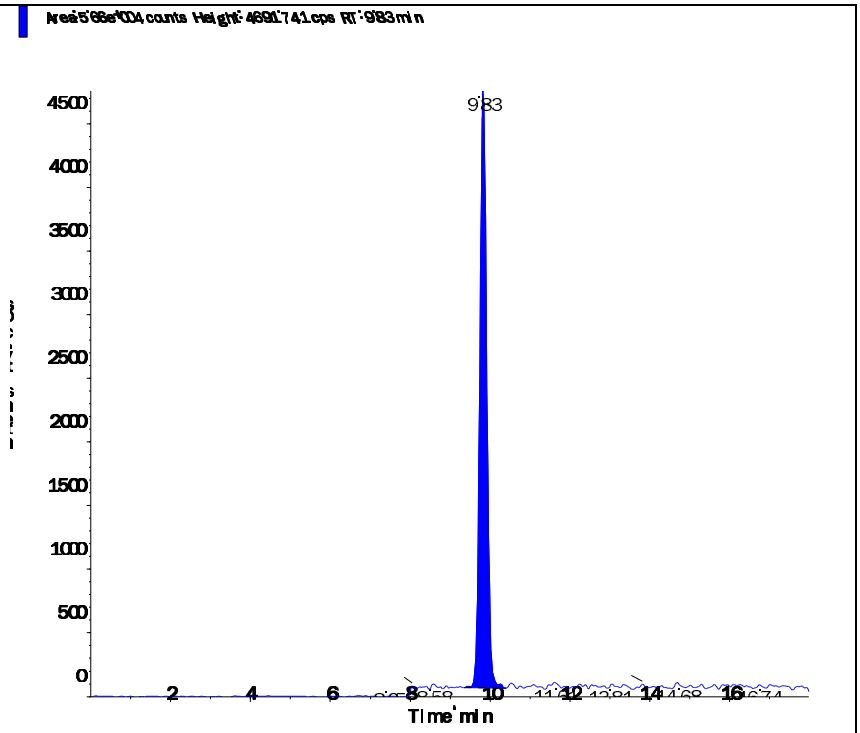

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Printed: 7/8/2016 10:58 AM

Data File	LM34691.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

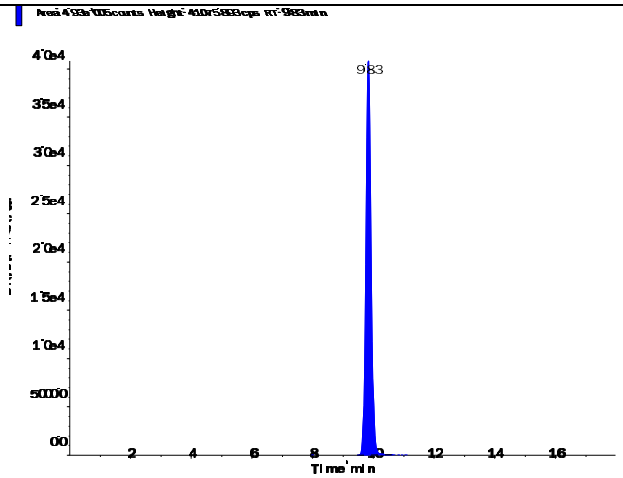

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.99 ng/ml
Area Ratio:	0.669
Sample Type:	(Standard)

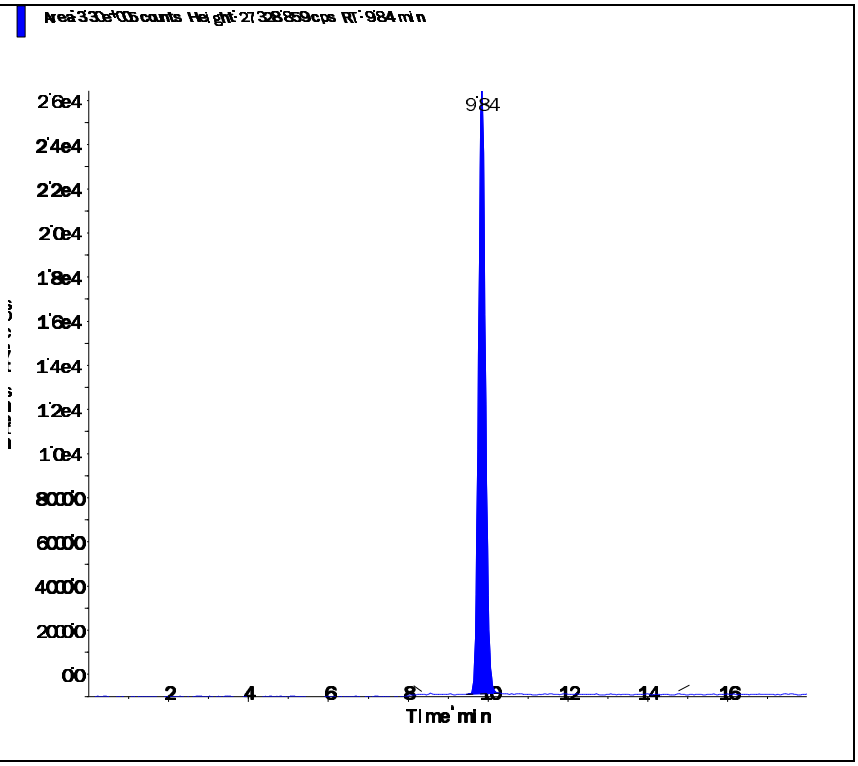

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.94 ng/ml
Area Ratio:	0.219
Sample Type:	(Standard)

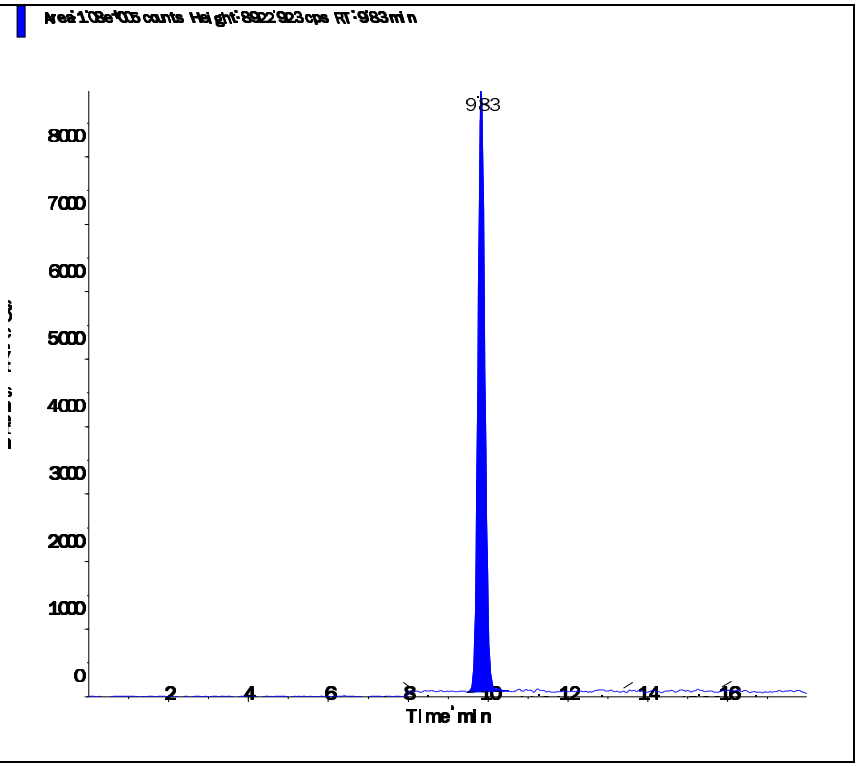

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Data File	LM34692.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

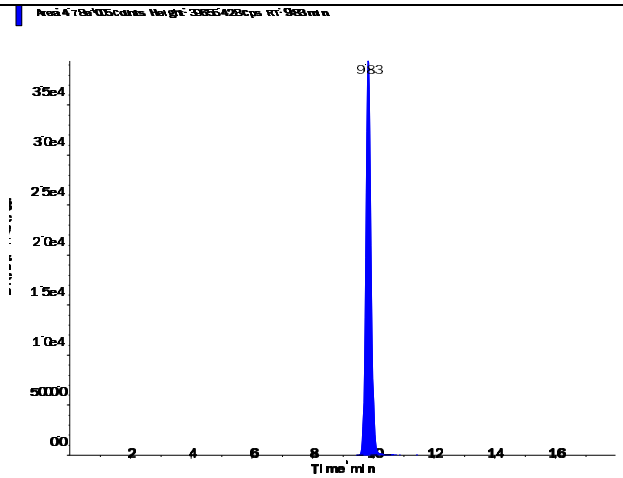

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

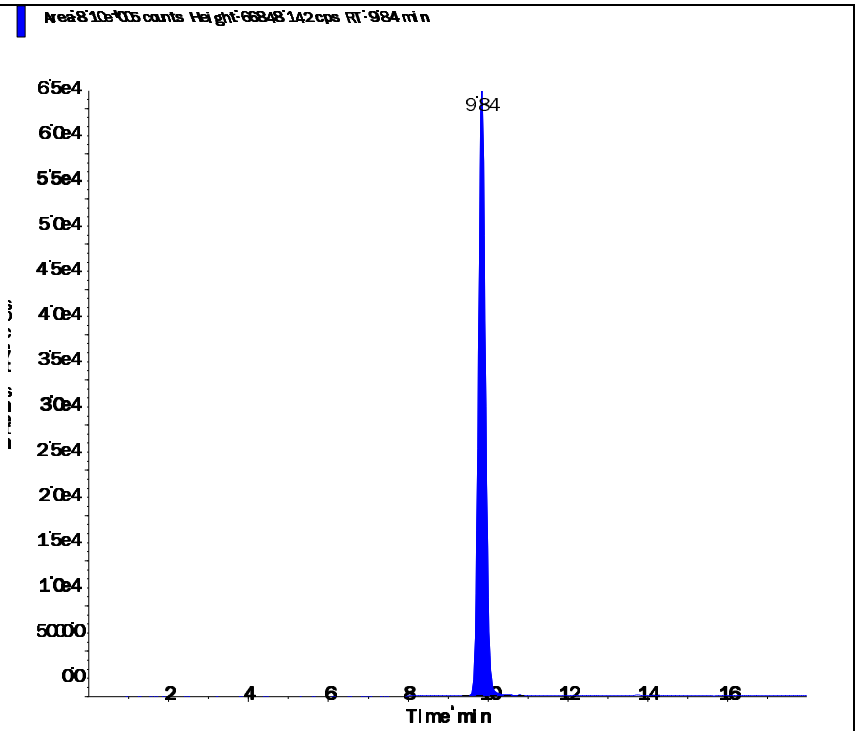

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

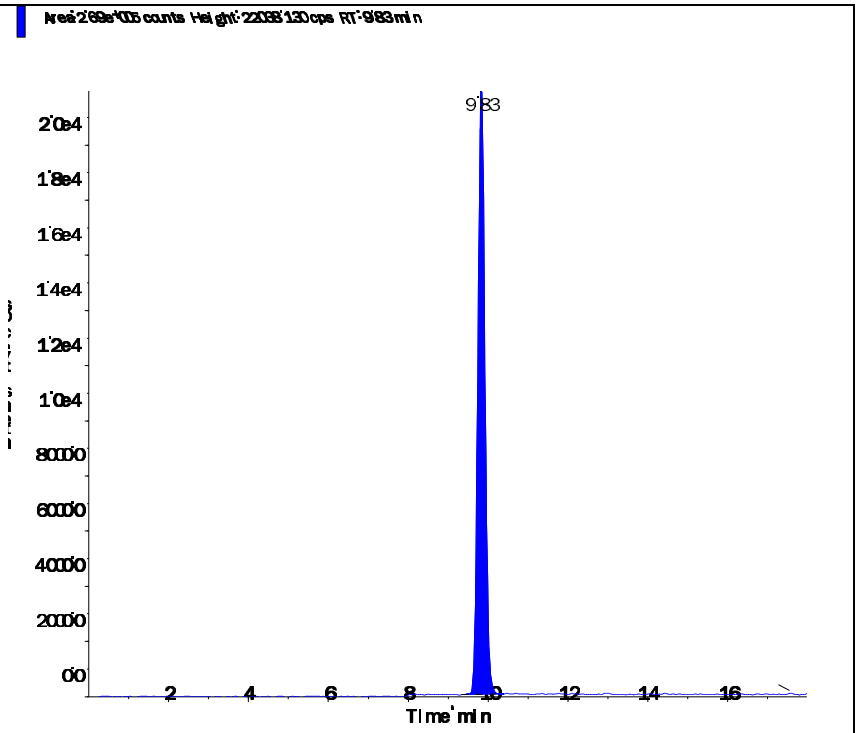

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Data File	LM34693.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

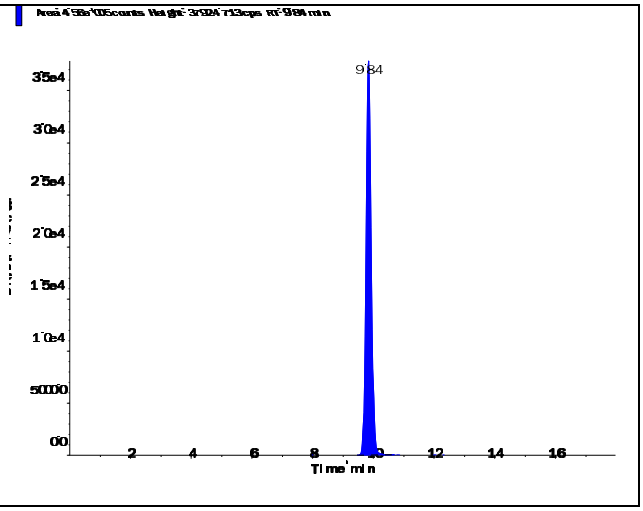

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	9.99 ng/ml
Area Ratio:	3.36
Sample Type:	(Standard)

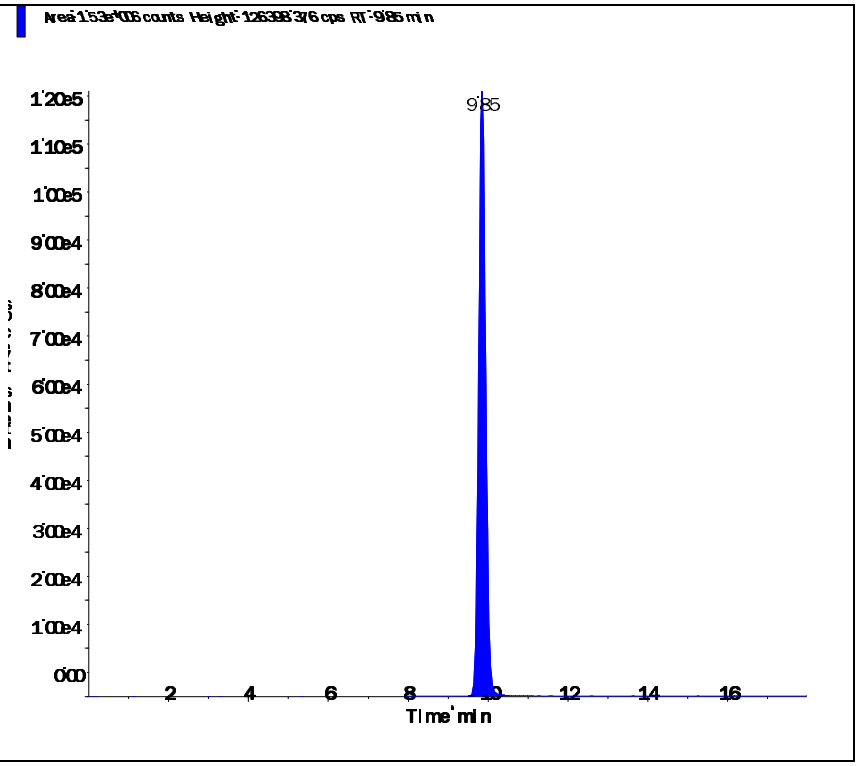

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	10.00 ng/ml
Area Ratio:	1.122
Sample Type:	(Standard)

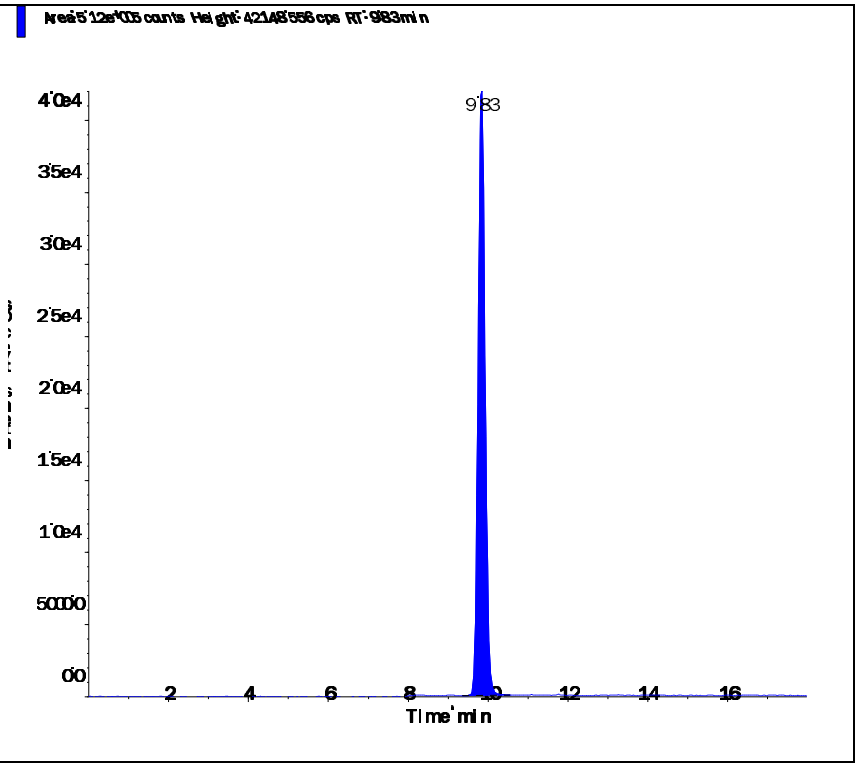

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Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

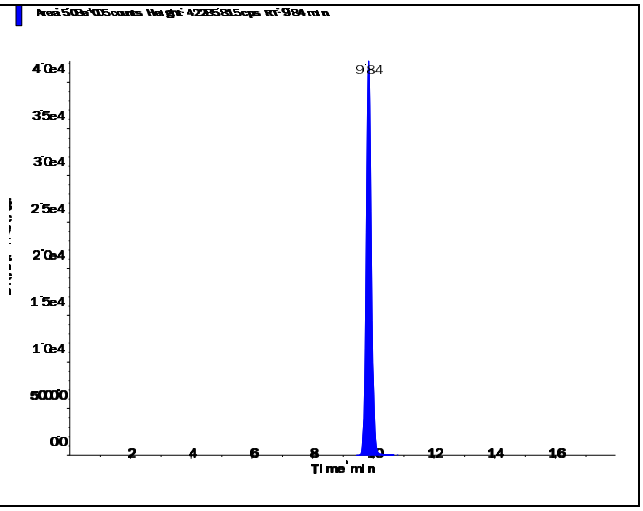

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.332
Sample Type:	(Quality Control)

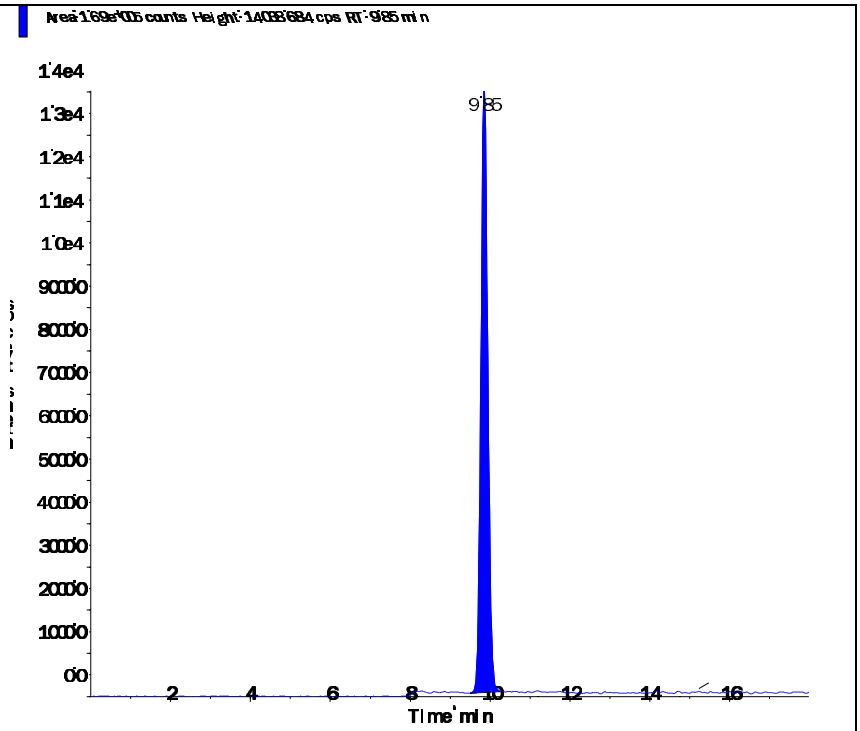

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

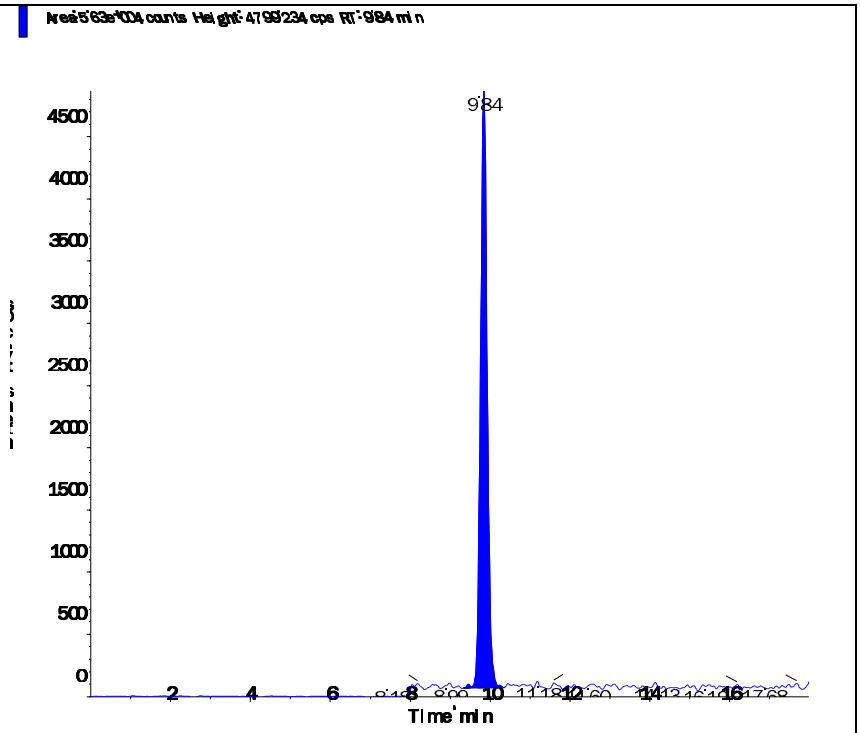

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Data File	LM35642.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	7/7/2016 1:00:15 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575499-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35642.wiff	**Injection Volume**	10.00
Acquisition Date	7/7/2016 1:00:15 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	WG575499-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.160e+05	9.50	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.380e+05	9.51	1.00	0.981
Perchlorate conf	4.870e+04	9.50	1.00	1.03

O18LP (Internal Standard)

RT (Exp. RT): 9.50(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

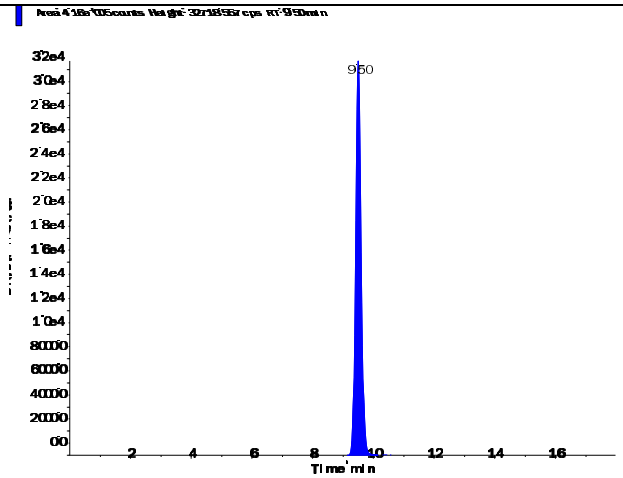

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.51 (9.84) min
Calculated conc:	0.981 ng/ml
Area Ratio:	0.331
Sample Type:	(Quality Control)

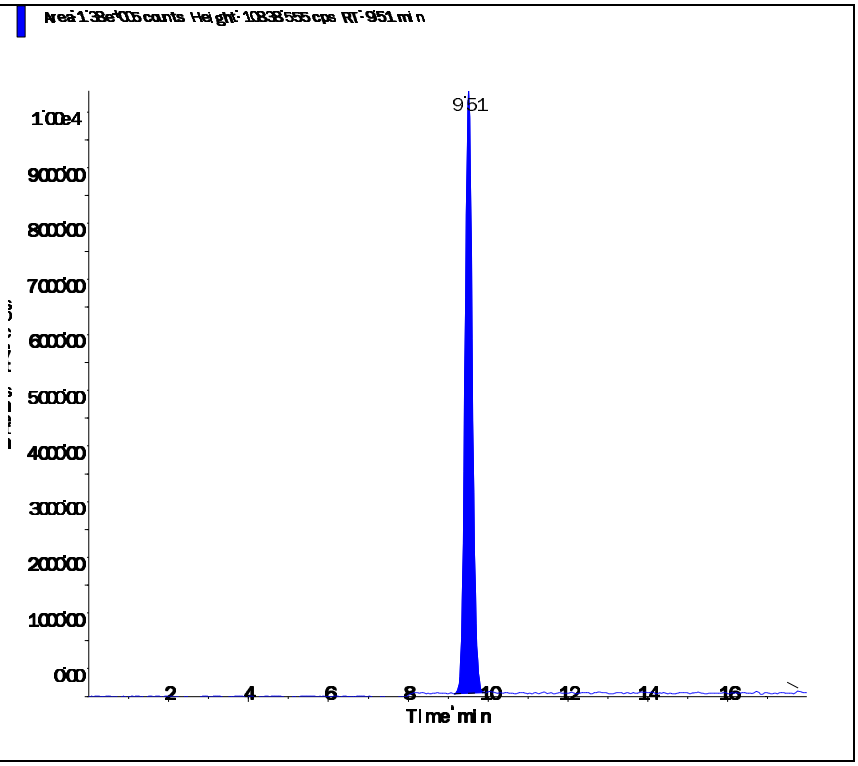

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.50 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.117
Sample Type:	(Quality Control)

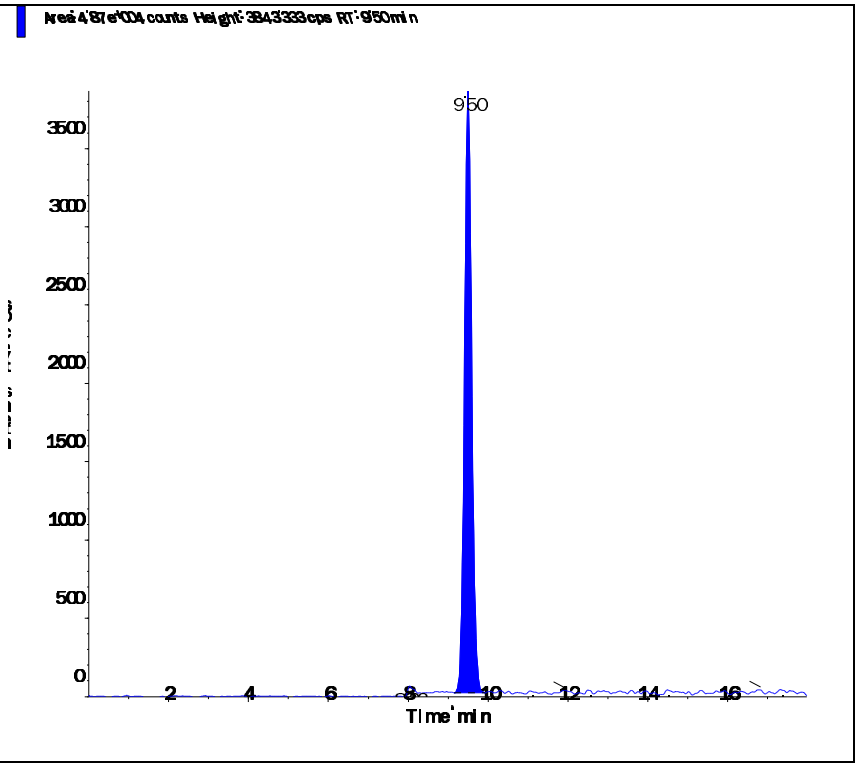

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Data File	LM35654.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	7/7/2016 4:47:23 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575499-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35654.wiff	**Injection Volume**	10.00
Acquisition Date	7/7/2016 4:47:23 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	WG575499-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.580e+05	9.50	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.600e+05	9.51	1.00	1.03
Perchlorate conf	5.590e+04	9.50	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 9.50(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

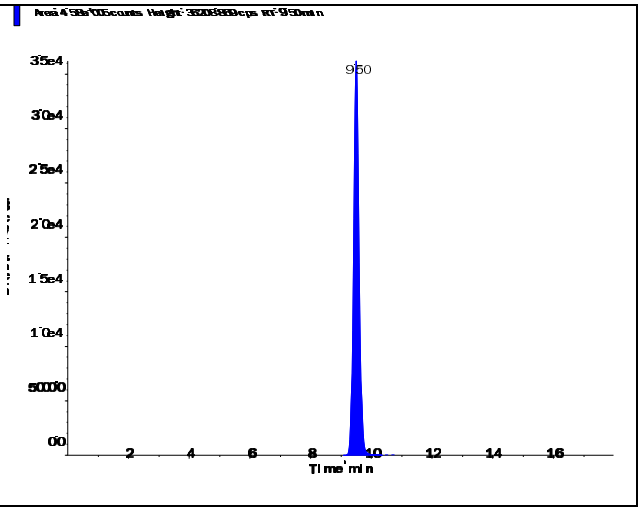

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.51 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.349
Sample Type:	(Quality Control)

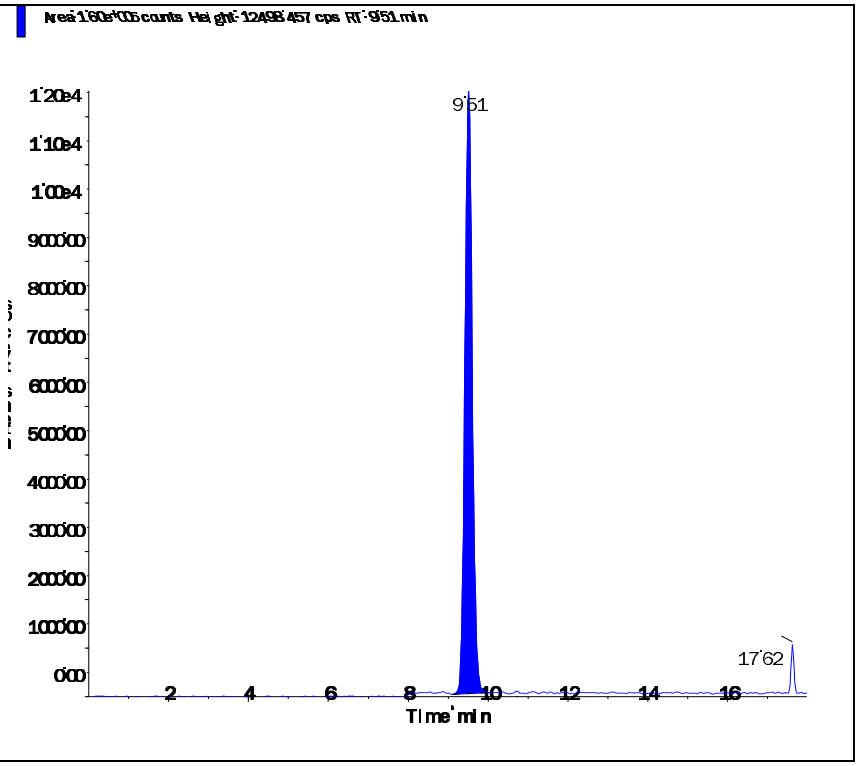

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.50 (9.84) min
Calculated conc:	1.07 ng/ml
Area Ratio:	0.122
Sample Type:	(Quality Control)

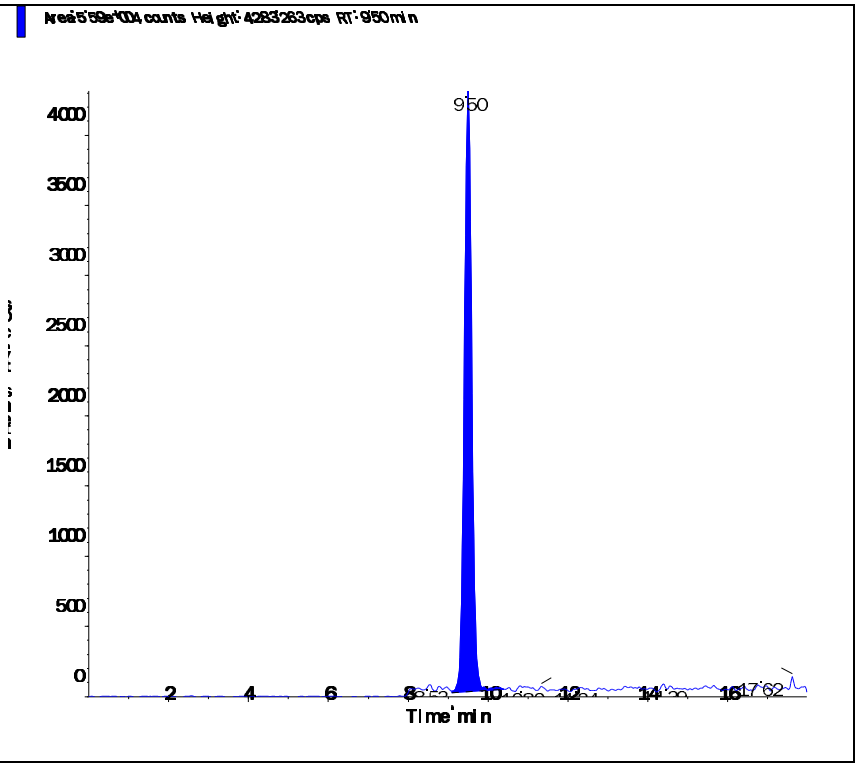

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Data File	LM35660.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	7/7/2016 6:40:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575499-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35660.wiff	**Injection Volume**	10.00
Acquisition Date	7/7/2016 6:40:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	WG575499-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.810e+05	9.50	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.610e+05	9.51	1.00	0.992
Perchlorate conf	5.570e+04	9.50	1.00	1.02

O18LP (Internal Standard)

RT (Exp. RT): 9.50(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

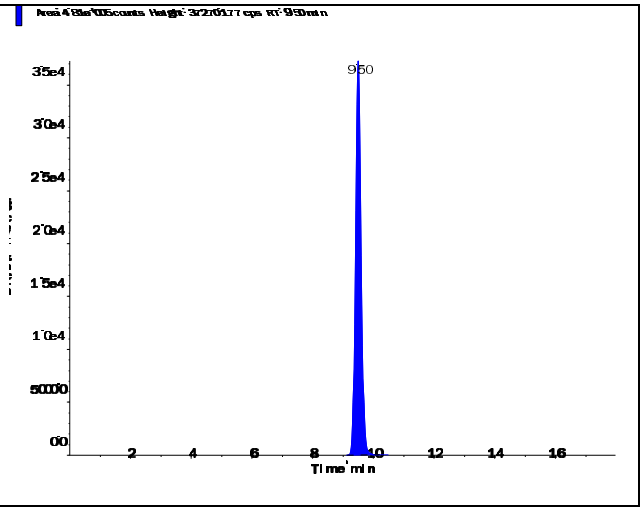

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.51 (9.84) min
Calculated conc:	0.992 ng/ml
Area Ratio:	0.335
Sample Type:	(Quality Control)

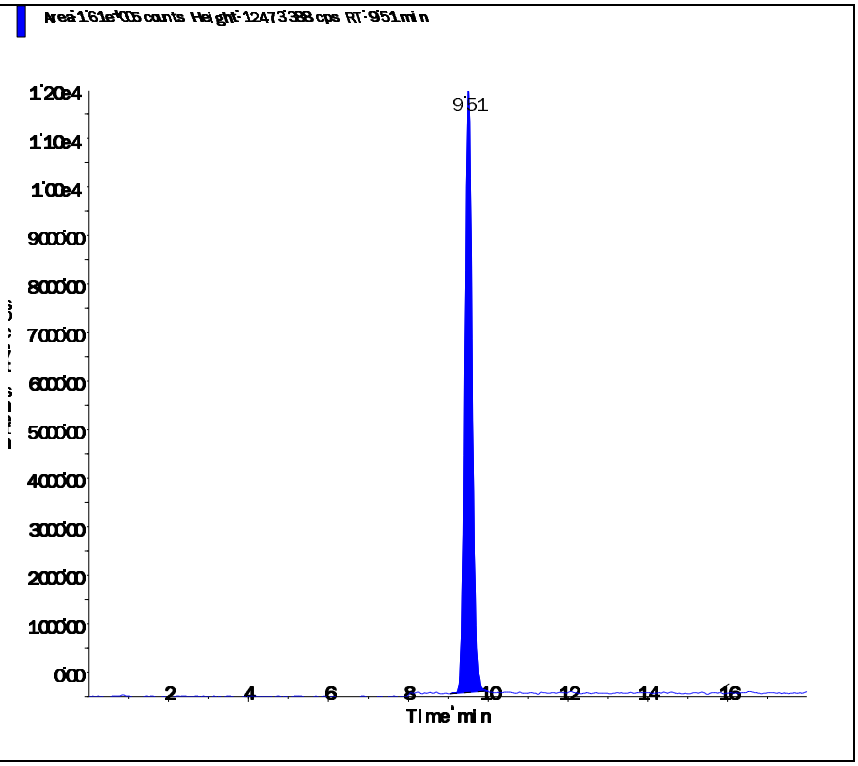

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.50 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.116
Sample Type:	(Quality Control)

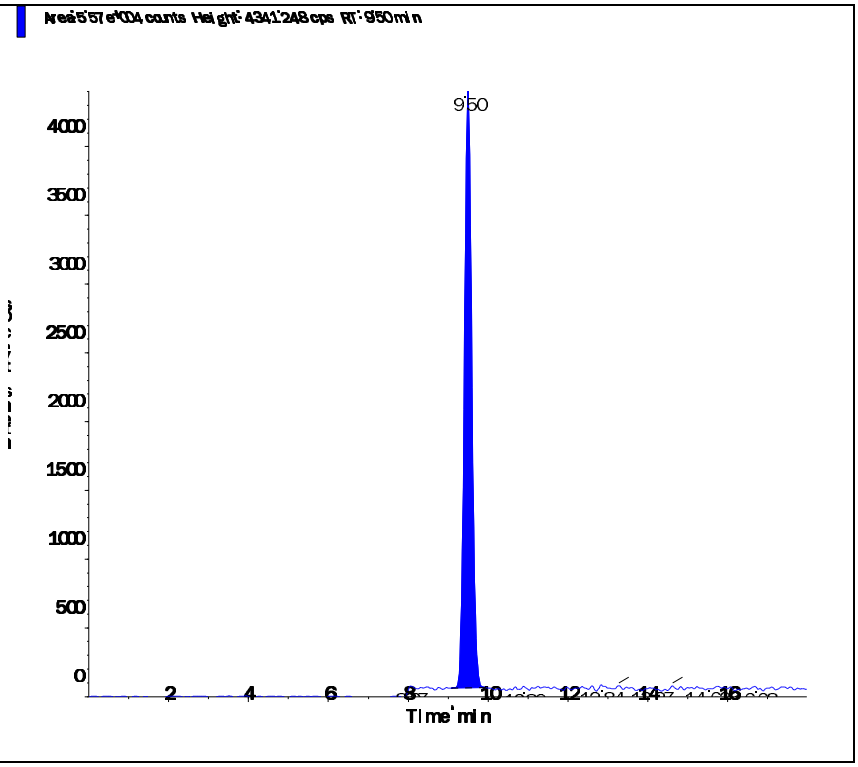

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Data File	LM35643.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	7/7/2016 1:19:10 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575409-05 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM35643.wiff	**Injection Volume**	10.00
Acquisition Date	7/7/2016 1:19:10 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	WG575409-05	**Dilution Factor**	1.00
Sample Comment	7,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.180e+05	9.53	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.780e+04	9.54	N/A	0.194
Perchlorate conf	9.840e+03	9.54	N/A	0.191

O18LP (Internal Standard)

RT (Exp. RT): 9.53(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

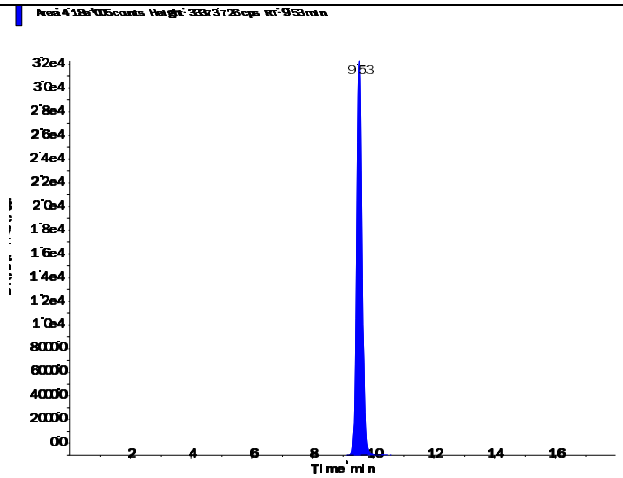

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.54 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.066
Sample Type:	(Unknown)

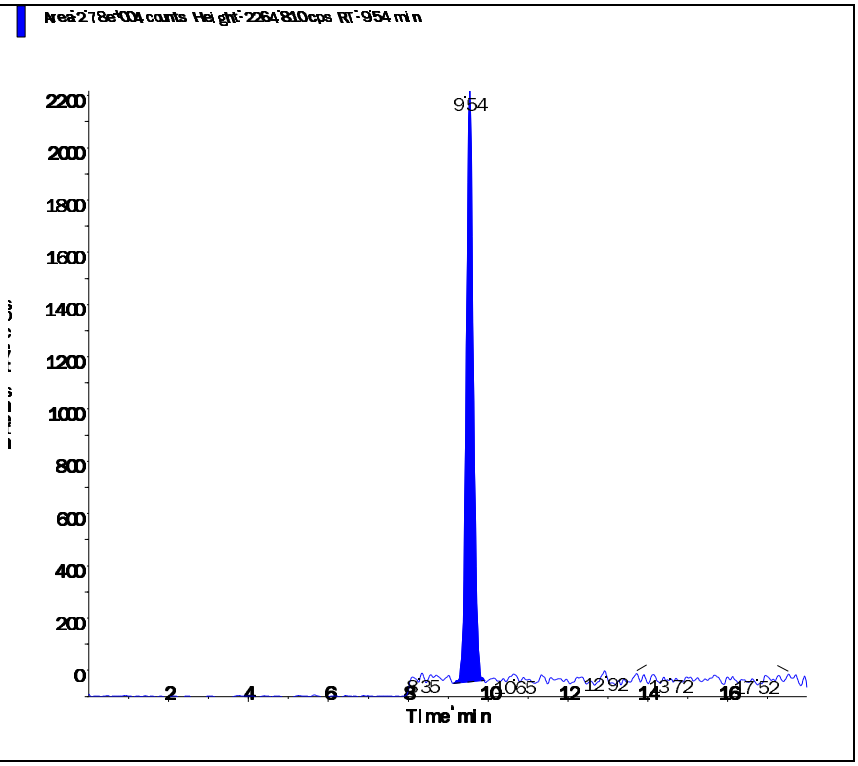

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.54 (9.84) min
Calculated conc:	0.191 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

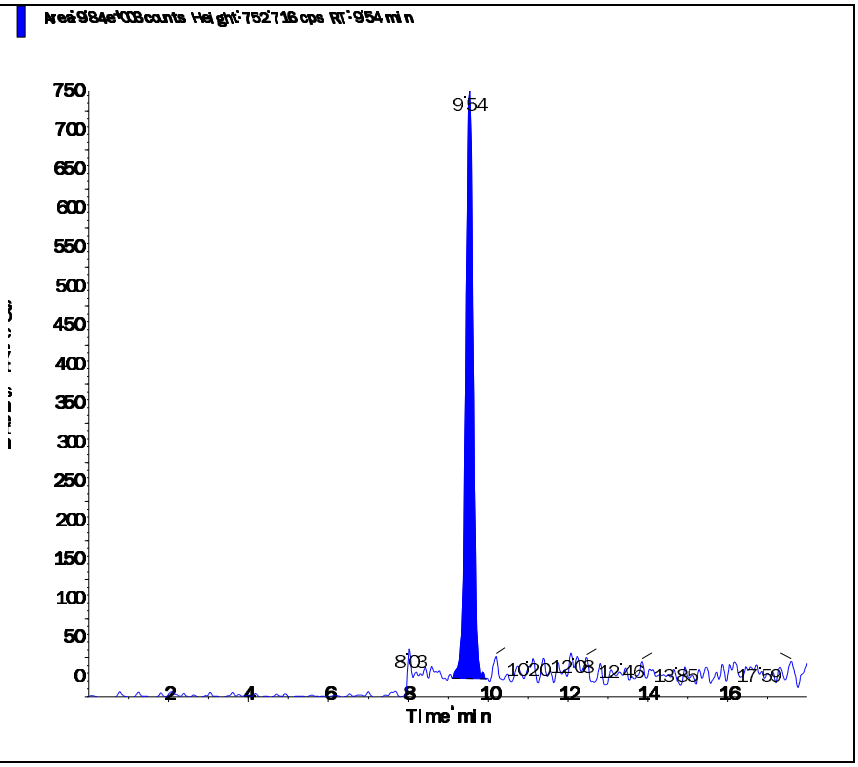

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Created with Analyst Reporter
Printed: 7/8/2016 11:03 AM

Data File	LM35655.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	7/7/2016 5:06:19 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575409-06 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM35655.wiff	**Injection Volume**	10.00
Acquisition Date	7/7/2016 5:06:19 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	WG575409-06	**Dilution Factor**	1.00
Sample Comment	7,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.540e+05	9.53	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.160e+04	9.54	N/A	0.203
Perchlorate conf	1.110e+04	9.52	N/A	0.199

O18LP (Internal Standard)

RT (Exp. RT): 9.53(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

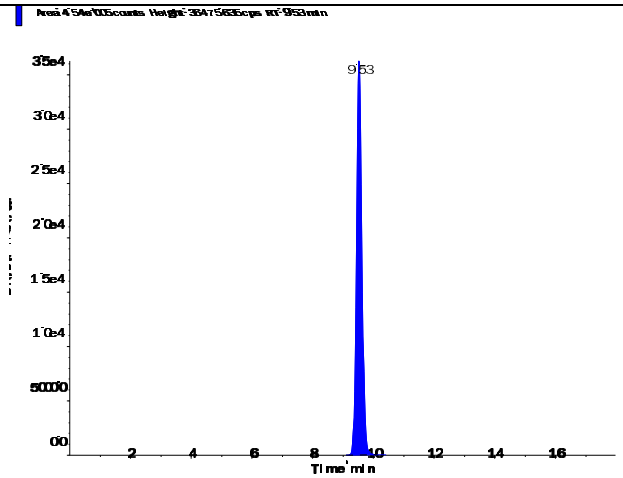

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Printed: 7/8/2016 11:03 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.54 (9.84) min
Calculated conc:	0.203 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

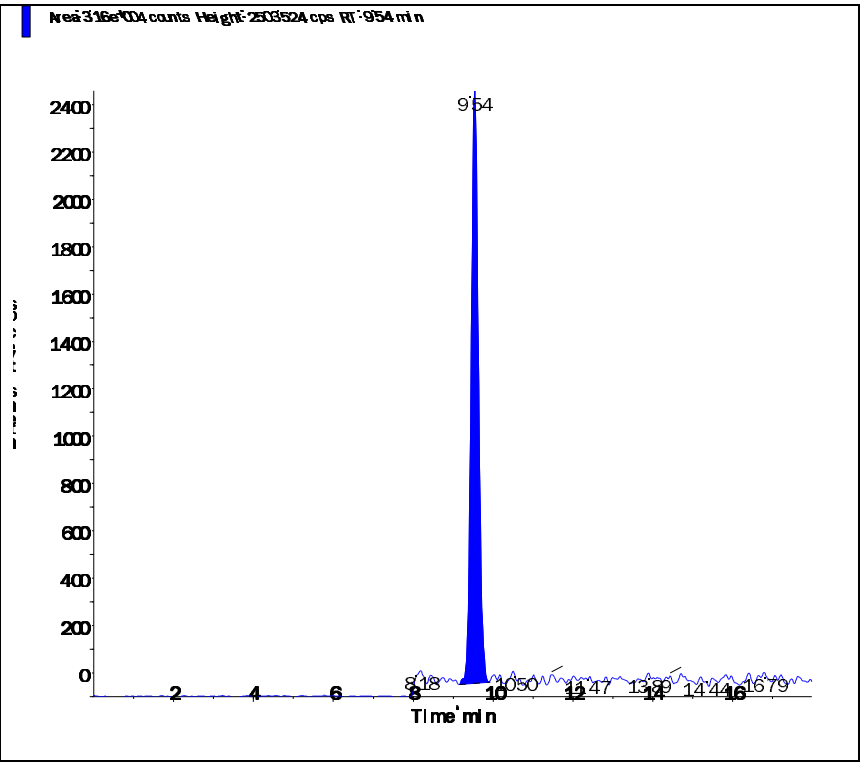

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.52 (9.84) min
Calculated conc:	0.199 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

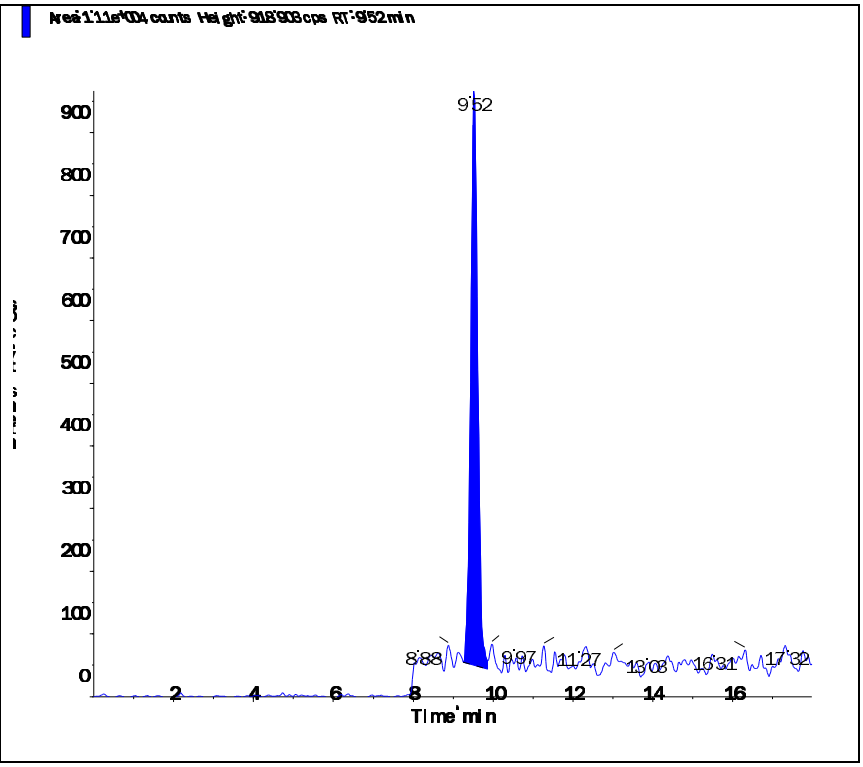

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Created with Analyst Reporter
Printed: 7/8/2016 11:05 AM

Data File	LM35661.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	7/7/2016 6:59:55 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575409-07 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM35661.wiff	**Injection Volume**	10.00
Acquisition Date	7/7/2016 6:59:55 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	WG575409-07	**Dilution Factor**	1.00
Sample Comment	7,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.660e+05	9.53	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.150e+04	9.54	N/A	0.197
Perchlorate conf	1.070e+04	9.52	N/A	0.185

O18LP (Internal Standard)

RT (Exp. RT): 9.53(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

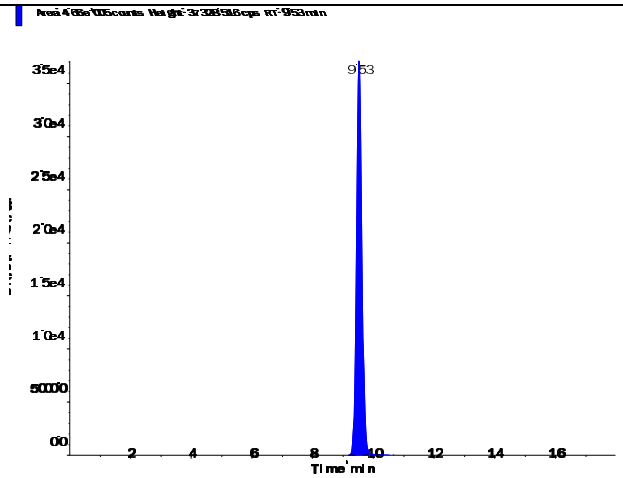

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Printed: 7/8/2016 11:05 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.54 (9.84) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.068
Sample Type:	(Unknown)

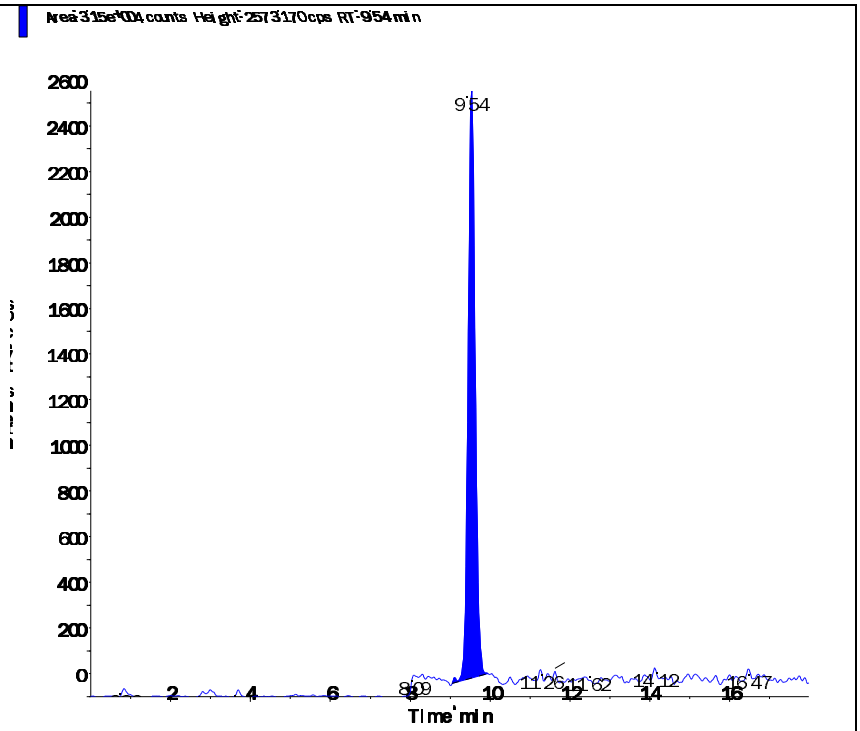

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.52 (9.84) min
Calculated conc:	0.185 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

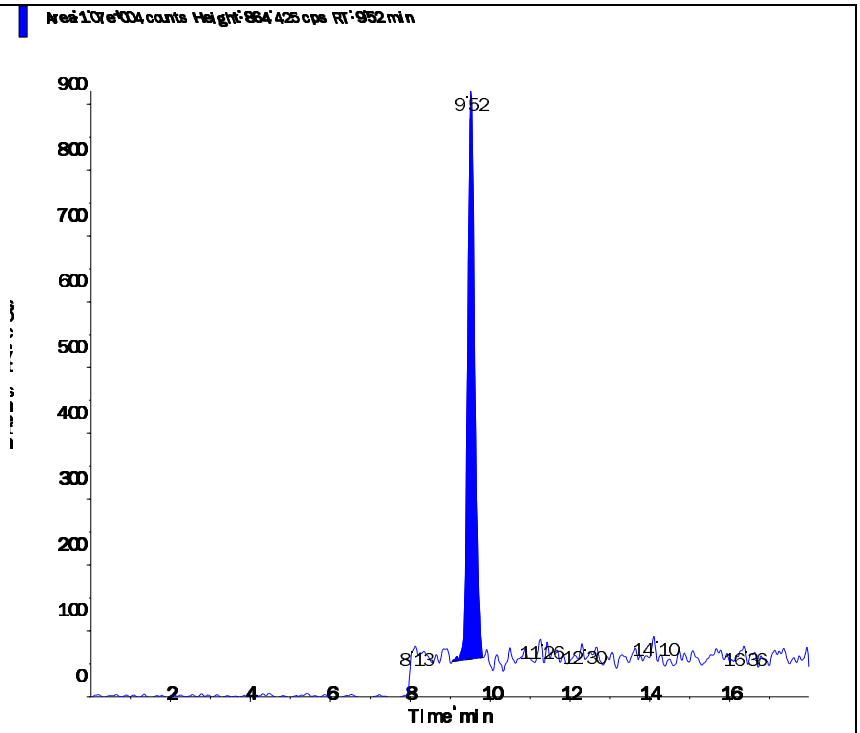

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Created with Analyst Reporter
Printed: 7/8/2016 10:59 AM

Data File	LM35641.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	7/7/2016 12:41:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575499-01 CCB	**Injection Vial**	1.00
Data File	LM35641.wiff	**Injection Volume**	10.00
Acquisition Date	7/7/2016 12:41:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	WG575499-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.070e+05	9.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	3.260e+02	9.63	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.70(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

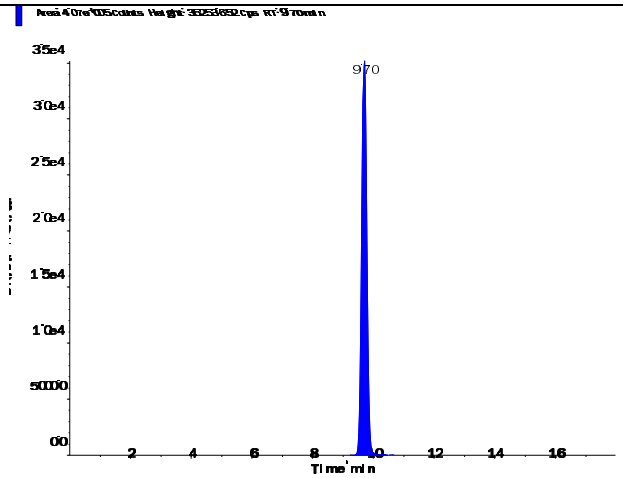

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

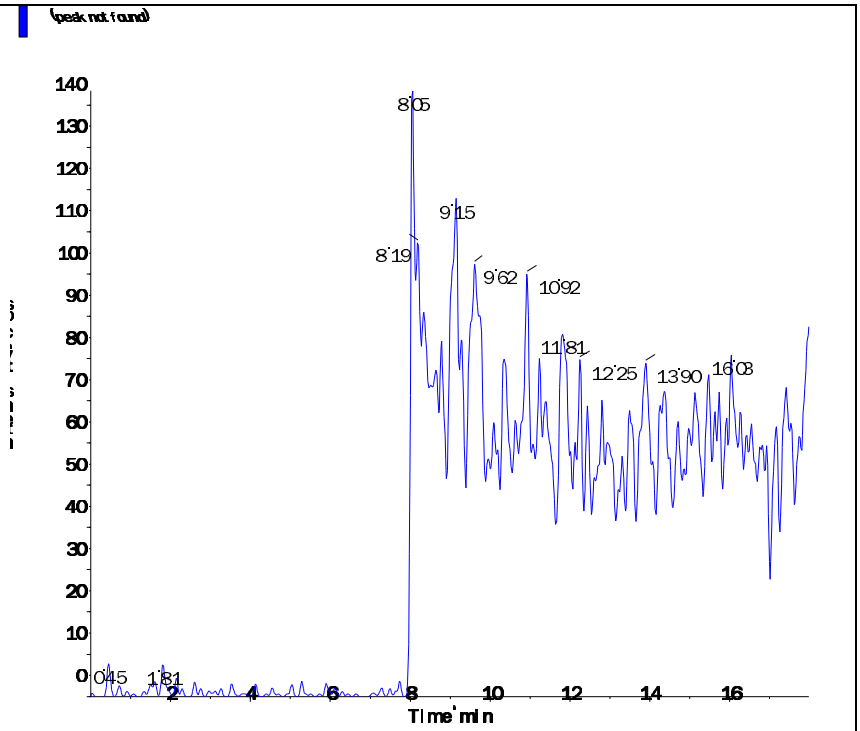

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

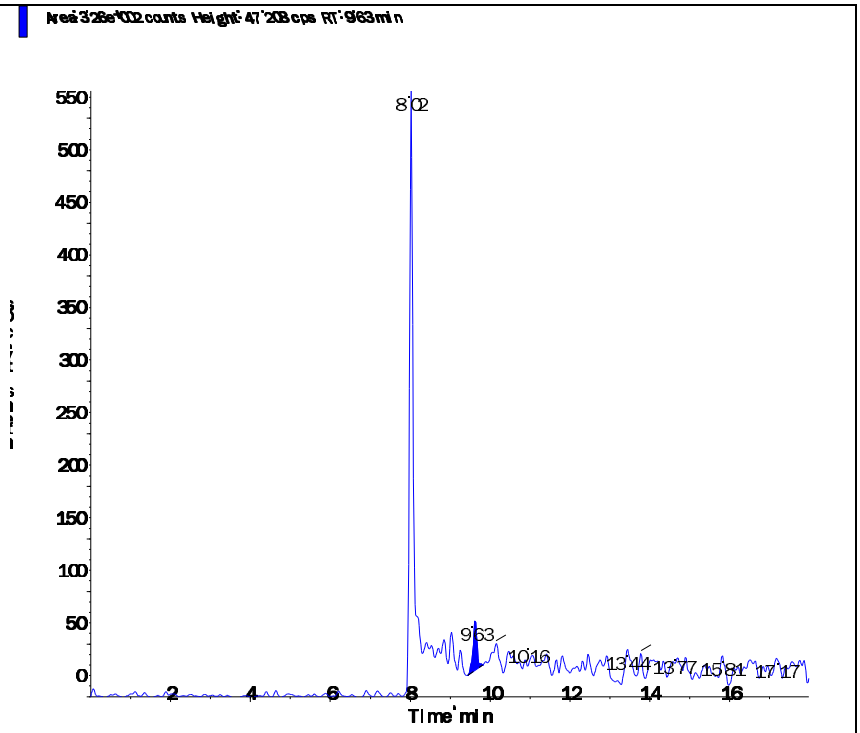

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Printed: 7/8/2016 11:03 AM

Data File	LM35656.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	7/7/2016 5:25:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575499-04 CCB	**Injection Vial**	1.00
Data File	LM35656.wiff	**Injection Volume**	10.00
Acquisition Date	7/7/2016 5:25:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	WG575499-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.420e+05	9.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.70(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

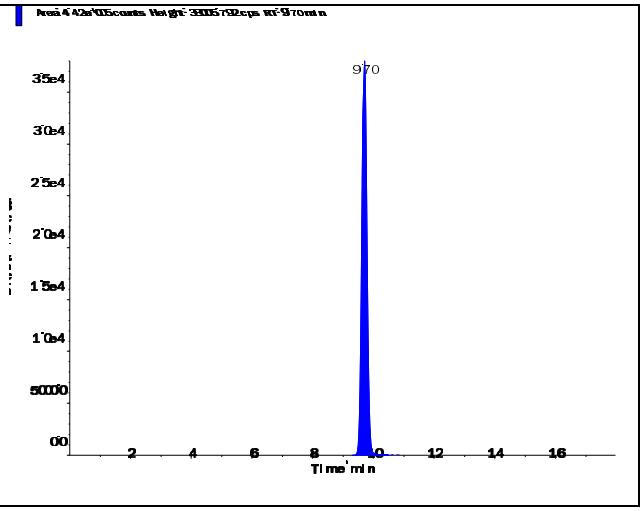

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

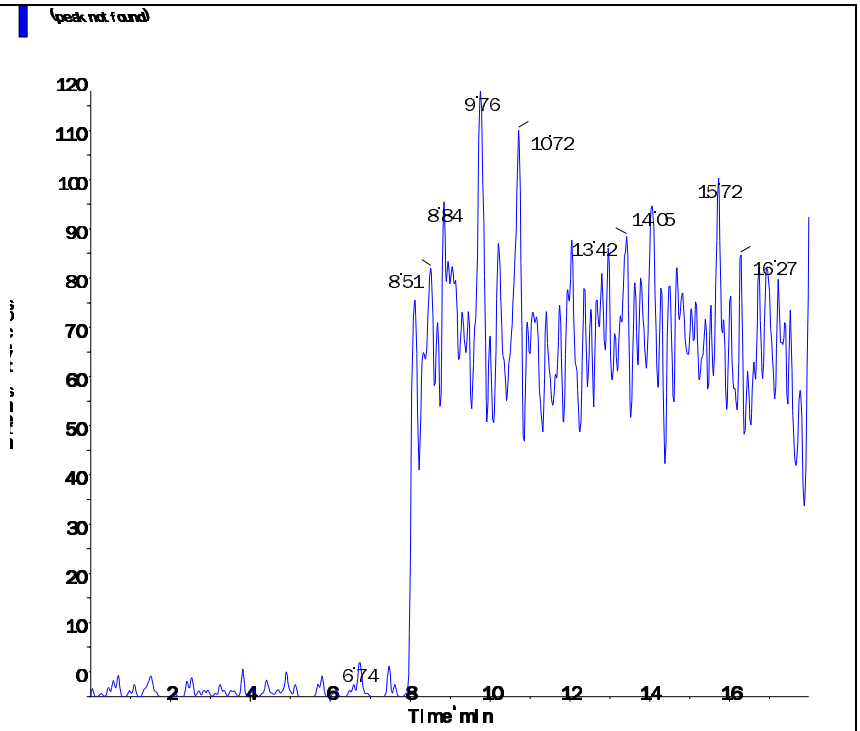

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

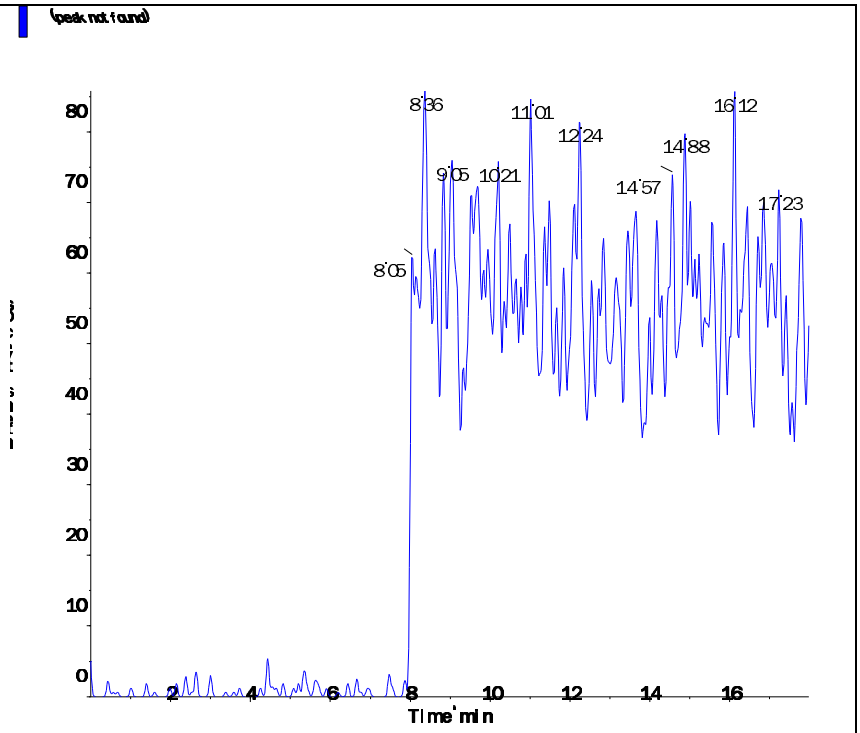

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Created with Analyst Reporter
Printed: 7/8/2016 11:06 AM

Data File	LM35662.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	7/7/2016 7:18:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575499-06 CCB	**Injection Vial**	1.00
Data File	LM35662.wiff	**Injection Volume**	10.00
Acquisition Date	7/7/2016 7:18:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	WG575499-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.720e+05	9.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.70(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

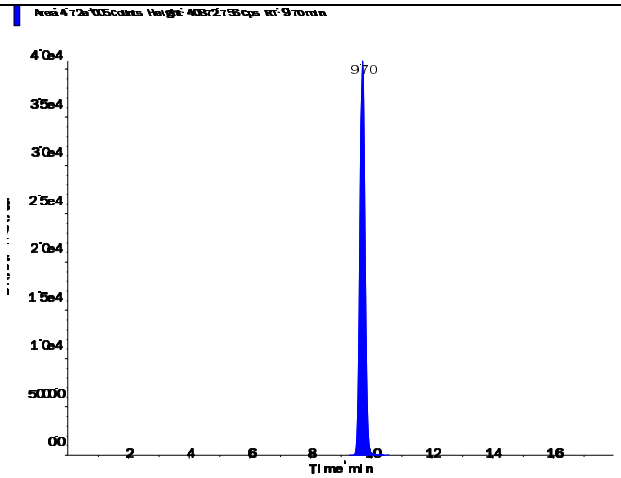

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

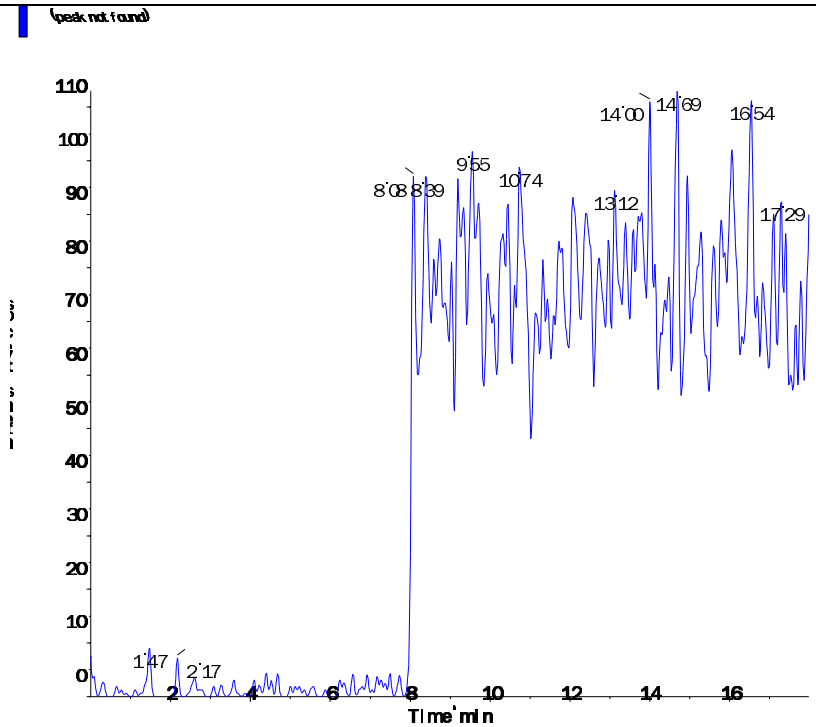

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

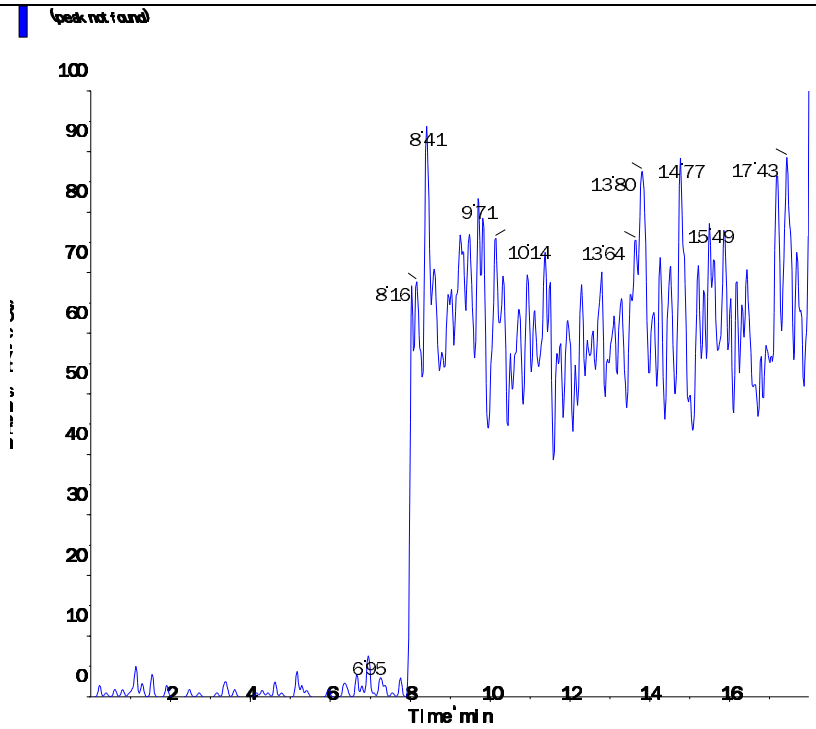

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Created with Analyst Reporter
Printed: 7/8/2016 11:00 AM

Data File	LM35644.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	7/7/2016 1:38:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575409-01 MCT (2.0ug/kg)	**Injection Vial**	4.00
Data File	LM35644.wiff	**Injection Volume**	10.00
Acquisition Date	7/7/2016 1:38:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	WG575409-01	**Dilution Factor**	1.00
Sample Comment	7,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.970e+05	9.05	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.730e+04	9.06	N/A	0.201
Perchlorate conf	1.010e+04	9.03	N/A	0.207

O18LP (Internal Standard)

RT (Exp. RT): 9.05(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

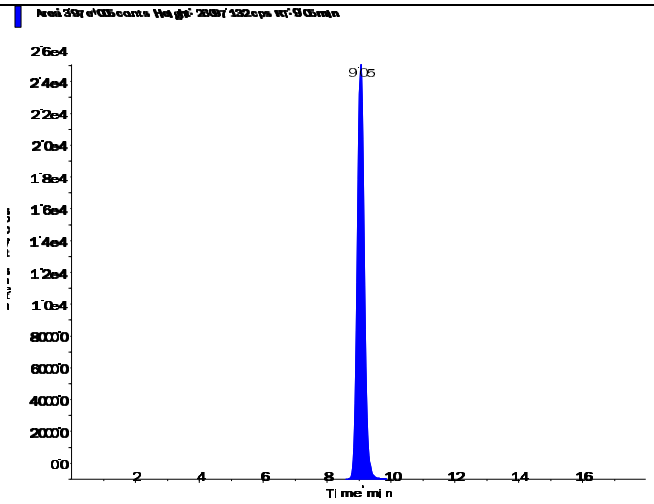

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Printed: 7/8/2016 11:00 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.06 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

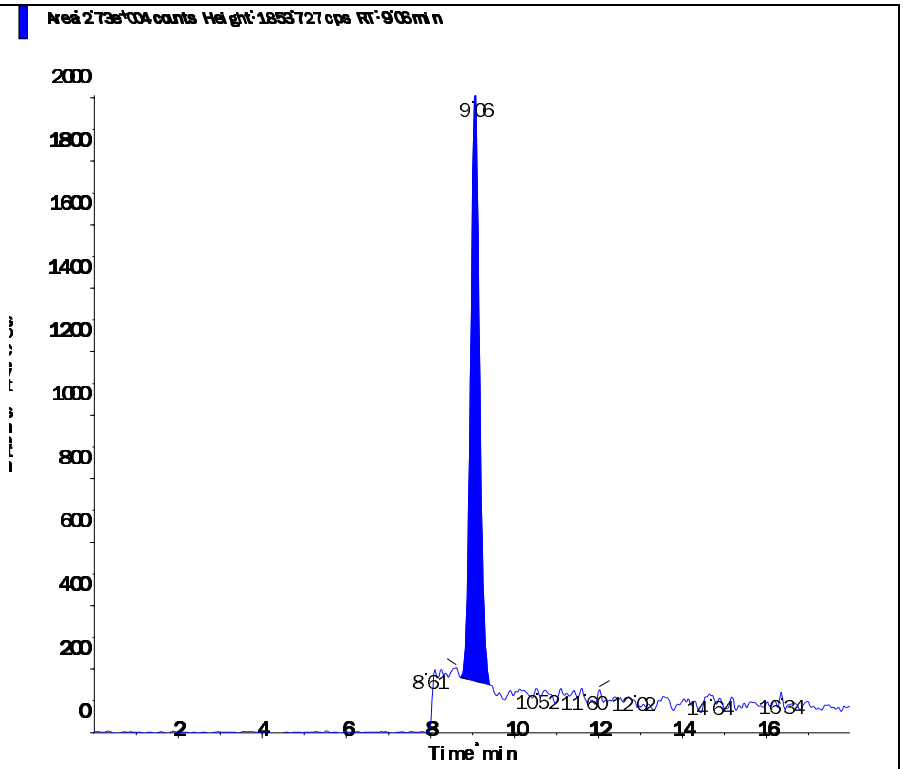

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.03 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

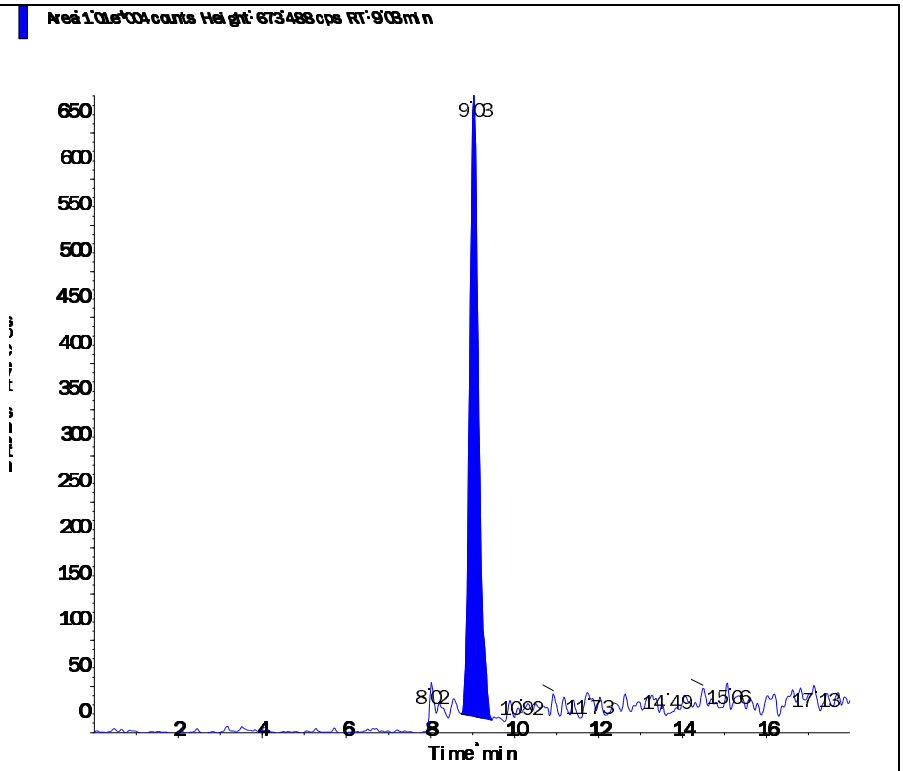

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Printing Time: 2:11:06 PM
Printing Date: Thursday, July 07, 2016

Sample Name: "WG575409-01 MCT (2.0ug/kg)" Sample ID: "WG575409-01" File: "LM35644.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "7,1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.222 ug/L
Acq. Date:	7/7/2016
Acq. Time:	1:38:03 PM
Modified:	No
Proc. Algorithm:	Analyst Classic
Bunching Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Exp. Width:	0.20
Exp. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Valley
Retention Time:	9.06 min
Area:	3.01e+004 counts
Height:	1918.027 cps
Start Time:	8.708 min
End Time:	9.498 min

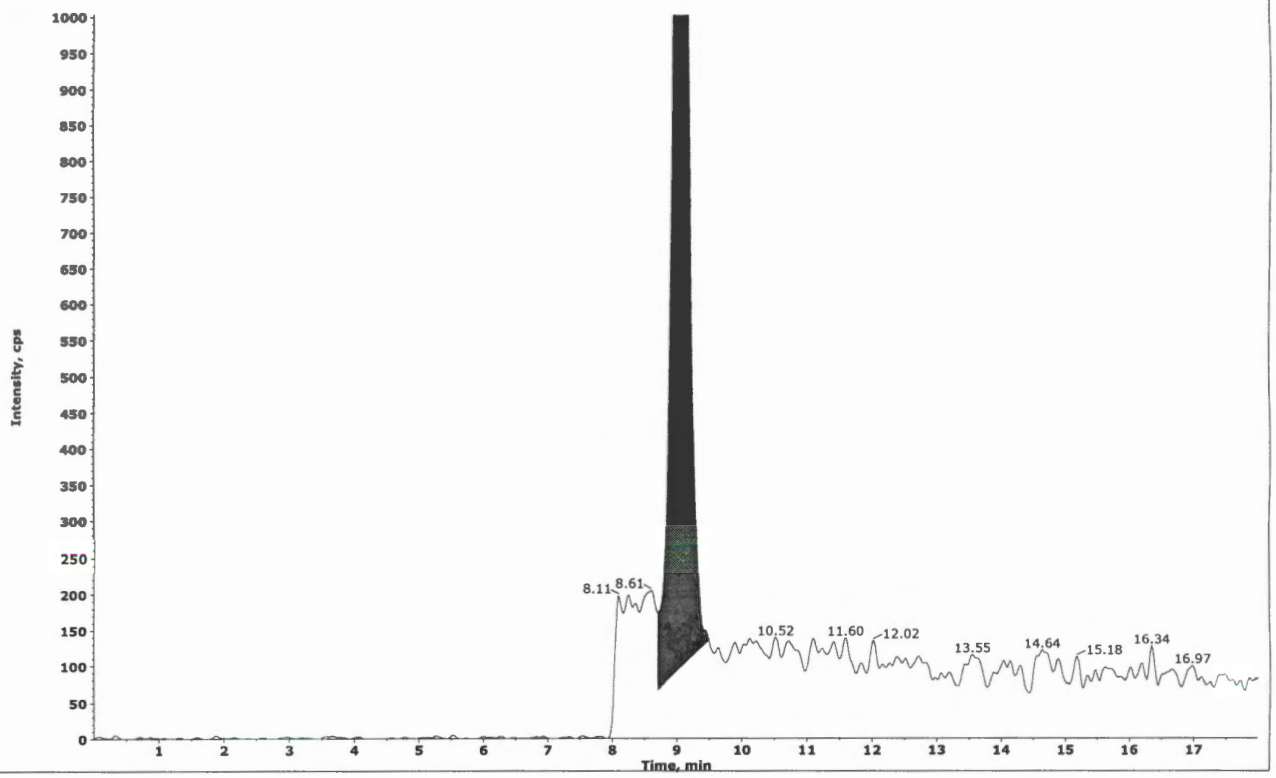

Collected by: N/A
Electronic Signature: no
Operator: lcms1

Printing Time: 2:12:23 PM
Printing Date: Thursday, July 07, 2016

Sample Name: "WG575409-01 MCT (2.0ug/kg)" Sample ID: "WG575409-01" File: "LM35644.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "7,1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.201 ug/L
Acq. Date:	7/7/2016
Acq. Time:	1:38:03 PM
Modified:	Yes
Proc. Algorithm:	Analyst Classic
Smoothing Factor:	1
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Sep. Width:	0.20
Sep. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Base To Base
Retention Time:	9.06 min
Area:	2.73e+004 counts
Height:	1853.727 cps
Start Time:	8.708 min
End Time:	9.417 min

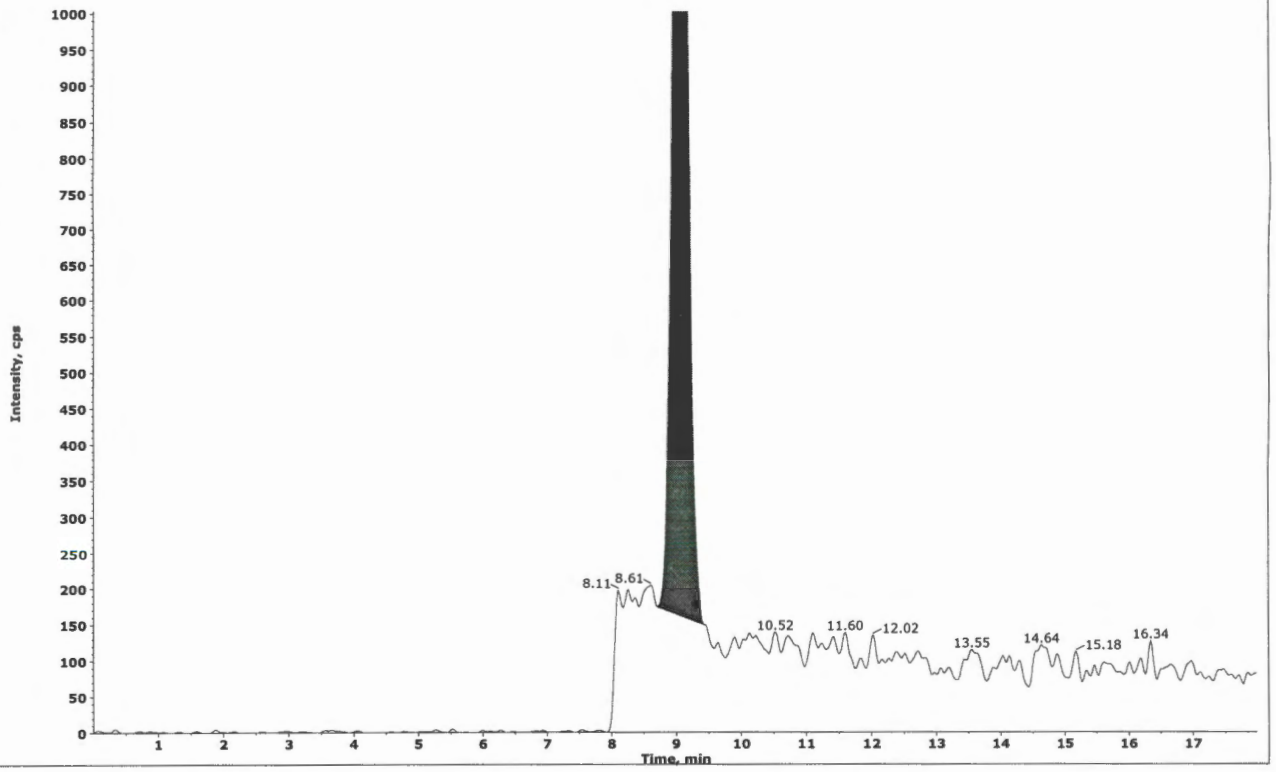

#4
JWR 07/07/16
7.8.16

Collected by: N/A
Electronic Signature: no
Operator: lcmsl

2.2.1.5 Raw QC Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 11:00 AM

Data File	LM35645.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	7/7/2016 1:56:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575409-02 BLANK	**Injection Vial**	5.00
Data File	LM35645.wiff	**Injection Volume**	10.00
Acquisition Date	7/7/2016 1:56:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	WG575409-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.140e+05	9.71	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.71(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

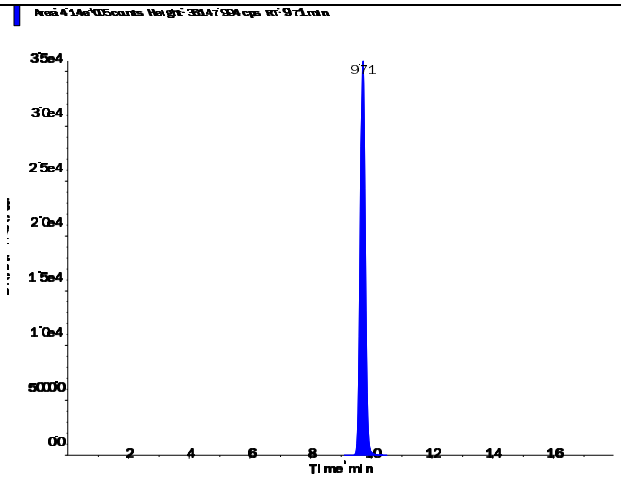

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 11:00 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	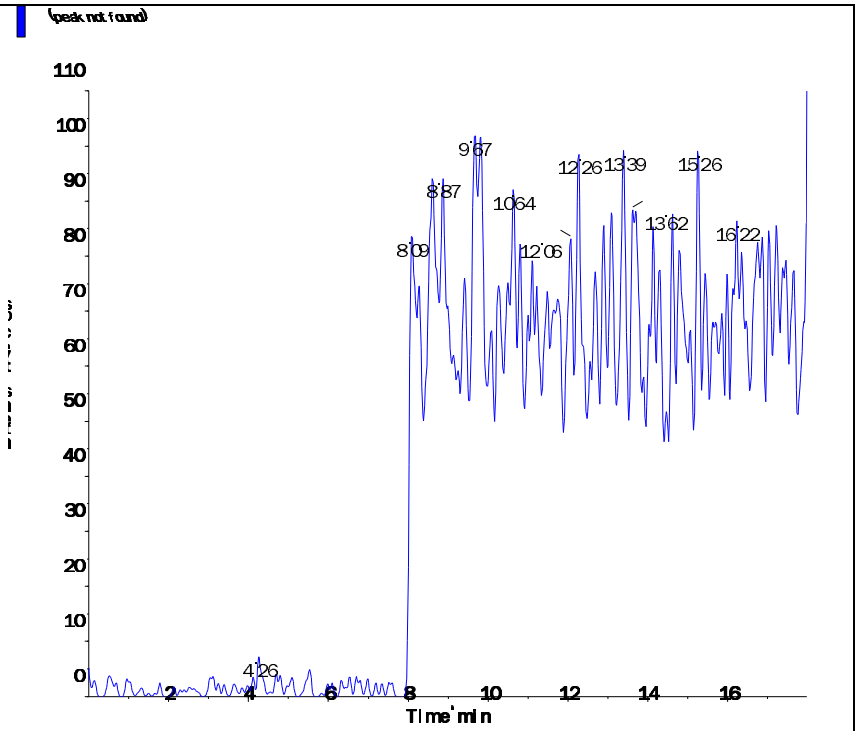
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	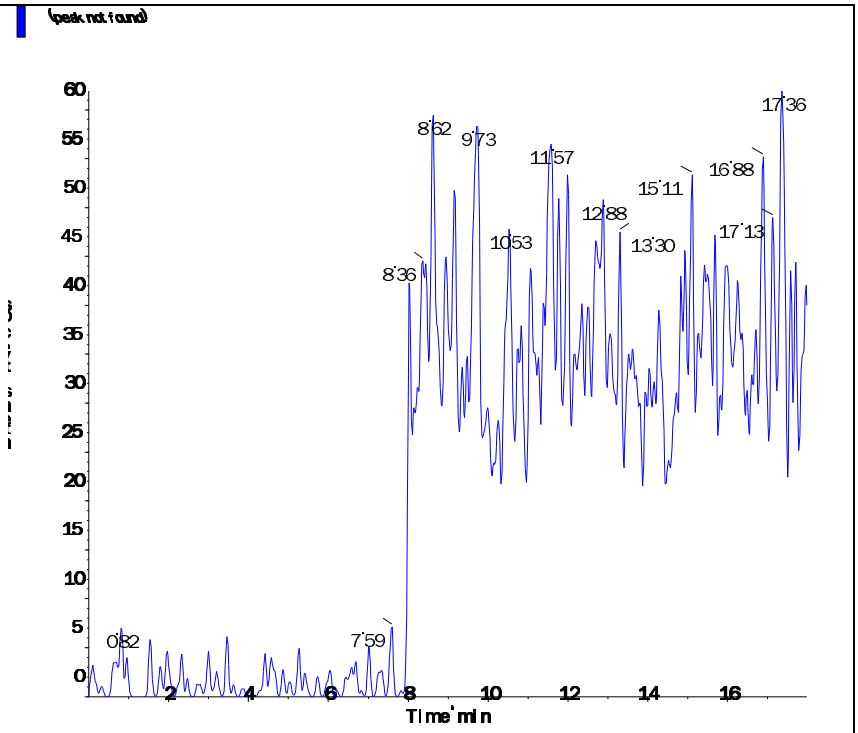

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 11:00 AM

Data File	LM35646.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	7/7/2016 2:15:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575409-03 LCS (2.0ug/kg)	**Injection Vial**	6.00
Data File	LM35646.wiff	**Injection Volume**	10.00
Acquisition Date	7/7/2016 2:15:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	WG575409-03	**Dilution Factor**	1.00
Sample Comment	7,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.070e+05	9.71	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.960e+04	9.72	N/A	0.213
Perchlorate conf	1.060e+04	9.71	N/A	0.213

O18LP (Internal Standard)

RT (Exp. RT): 9.71(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

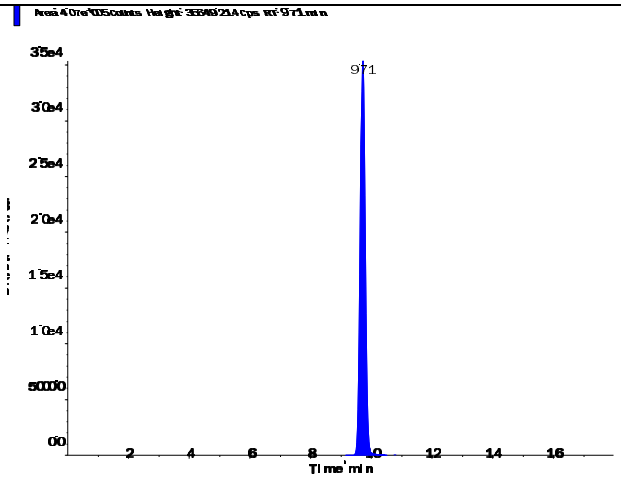

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.72 (9.84) min
Calculated conc:	0.213 ng/ml
Area Ratio:	0.073
Sample Type:	(Unknown)

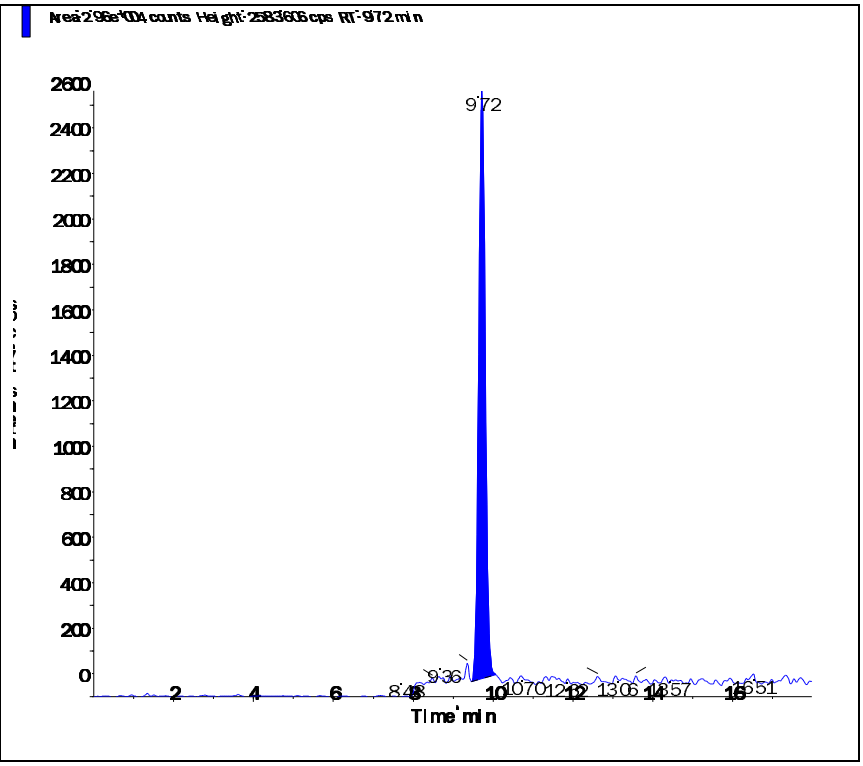

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.71 (9.84) min
Calculated conc:	0.213 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

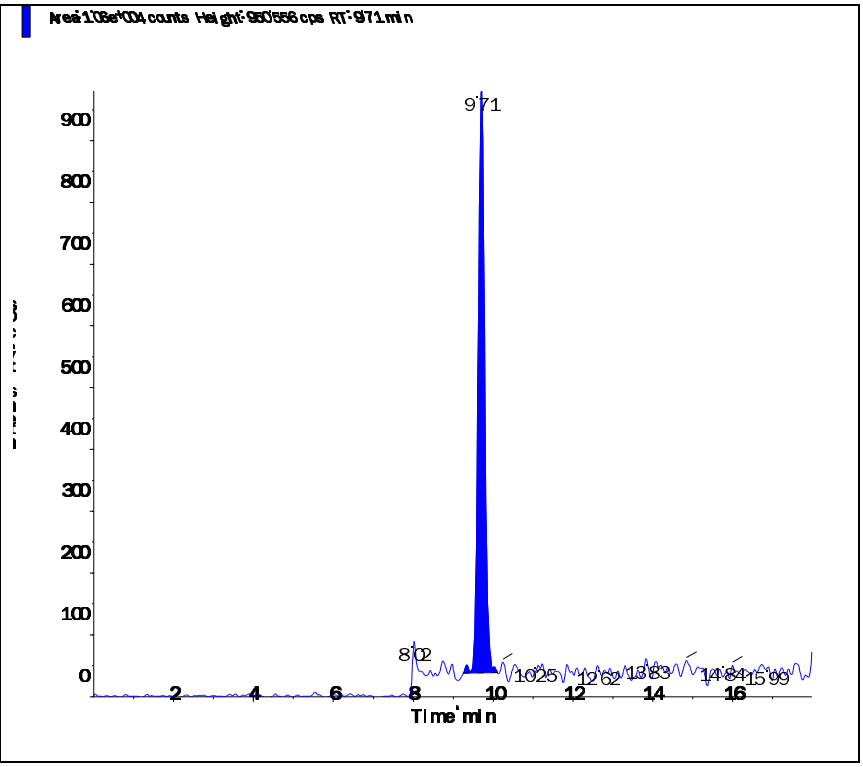

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/8/2016 11:01 AM

Data File	LM35647.wiff	**Result Table**	070716_JWR.rdb
Acquisition Date	7/7/2016 2:34:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575409-04 LCS2 (2.0ug/kg)	**Injection Vial**	7.00
Data File	LM35647.wiff	**Injection Volume**	10.00
Acquisition Date	7/7/2016 2:34:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070716_JWR.rdb
Sample ID	WG575409-04	**Dilution Factor**	1.00
Sample Comment	7,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.110e+05	9.72	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.970e+04	9.73	N/A	0.211
Perchlorate conf	1.060e+04	9.72	N/A	0.211

O18LP (Internal Standard)

RT (Exp. RT): 9.72(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

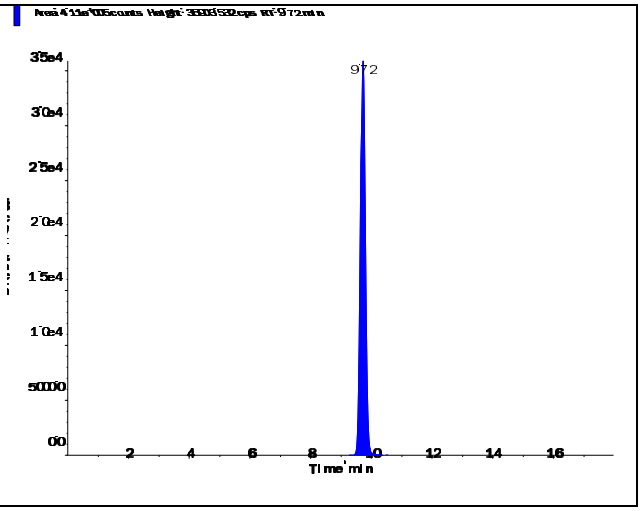

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.73 (9.84) min
Calculated conc:	0.211 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

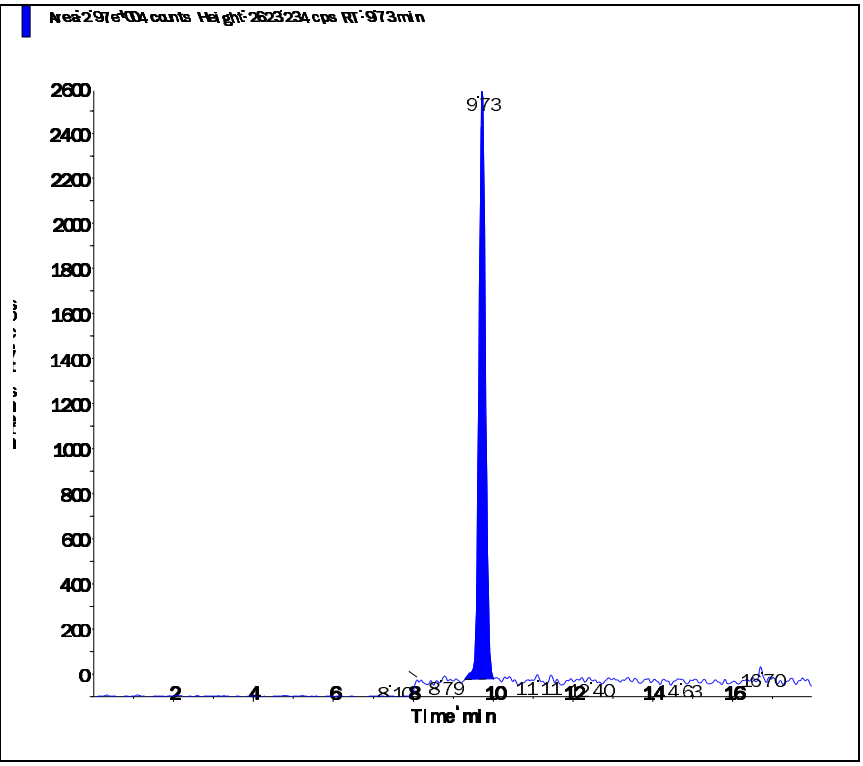

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.72 (9.84) min
Calculated conc:	0.211 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

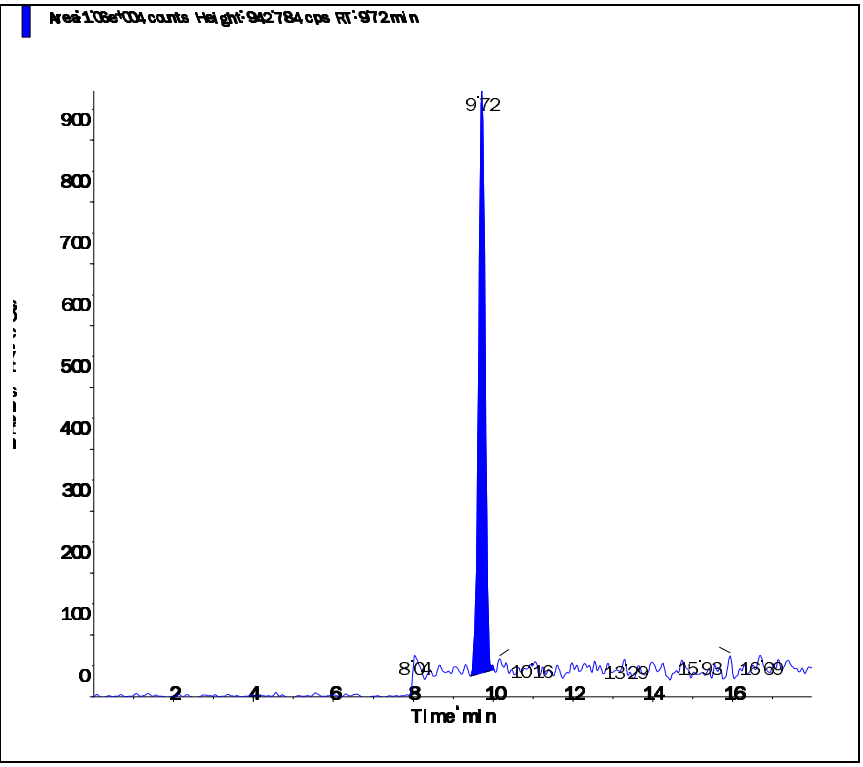

s.dataFile Page 2 of 2

2.3 General Chemistry Data

2.3.1 Percent Solids Data

2.3.1.1 Raw Data

Example Percent Solids Calculations

1.0 Calculating the percent solids of a sample.

$$\%Solids = \frac{WT3 - WT1}{WT2 - WT1} \times F$$

Where:	
WT1 = Weight, in grams, of the empty container	1.30 g
WT2 = Weight, in grams, of the container and wet sample	21.274 g
WT3 = Weight, in grams, of the container and dried sample	5.21 g
F = Factor to get units as percent weight	100
%Solids = Percent solids present in sample.	19.58%

2.0 Calculating the percent moisture of a sample.

% Moisture = 100 - % Solids from 1.0 calculation

Microbac Laboratories Inc.

PERCENT SOLIDS

Workgroup (AAB#): WG574798 Analyst: ERP ADT(on): 06/30/2016 12:43
Method: D2216-90 Instrument: BAL017 ADT(off): 07/01/2016 06:57
SOP: K0003 Rev: 14

SAMPLE NUMBER	EMPTY PAN WT 1	WET WT 2	DRY WT 3A	DRY WT 3B	DRY WT 3C	PERCENT SOLID	PERCENT MOISTURE
L16061593-01	1.283	28.403	24.526			85.70	
L16061593-02	1.295	24.102	18.868			77.05	
L16061593-03	1.281	24.482	20.108			81.15	
L16061593-04	1.282	20.429	16.439			79.16	
L16061593-05	1.28	27.07	22.408			81.92	
L16061593-06	1.273	25.979	21.789			83.04	
L16061626-01	1.277	6.877	4.773			62.43	
L16061634-01	1.288	12.426	5.625			38.94	
L16061641-01	1.285	25.236	20.61			80.69	
L16061641-02	1.288	28.819	24.063			82.72	
L16061641-03	1.277	21.135	18.014			84.28	
L16061641-04	1.283	27.691	23.693			84.86	
L16061641-05	1.277	45.645	37.65			81.98	
L16061643-01	1.275	23.547	23.406			99.37	
L16061643-02	1.285	21.634	21.476			99.22	
WG574798-01	1.273	25.979	21.789			83.04	16.96
WG574798-02	1.279	24.457	20.501			82.93	17.07

Analyst: Erin Potter

PERCENT_SOLIDS - Modified 04/24/2008
PDF ID: 4834375
Report generated: 07/01/2016 06:59

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
July 13, 2016

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BNB - Brandi N. Bentley
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJQ - Cameron J. Quick
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
CV - Carl Volkman
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
EMW - ERIC M. WILKEN
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
HDC - Hanah D. Coe
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LJH - Lacey J. Hendershot
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
NPH - Natalie P. Hart
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
July 13, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
July 13, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

COC No. A 49367

158 Starlite Drive
Marietta, OH 45750

MICROBAC®

CHAIN-OF-CUSTODY RECORD

Phone: 740-373-4071
Toll Free: 800-373-4071

Company Name: AECOM

Project Contact: LINDA RAABE | Contact Phone #: 210-296-2000

Turn Around Requirements: STANDARD | Location: LHAAP 18/24

Project ID: 60274185

Sampler (print): Holly McCuistion | Signature: [signature]

Program: ☐ CWA ☐ RCRA ☐ DOD ☐ AFCEE ☐ Other _____

Sample I.D. No.	Comp	Grab	Date	Time	Matrix*	NUMBER OF CONTAINERS	Hold	PERCHLORATE	VOCs-8260	TOTAL # (LAB USE)	ADDITIONAL REQUIREMENTS
18WW25(3.5-4)270616		X	06/27/16	13:35	SOIL	2		X	X		
18WW25(9.5-10)270616		X	06/27/16	14:12	SOIL	2		X	X		
18WW25(14.5-15)270616		X	06/27/16	14:45	SOIL	2		X	X		
18WW25(19.5-20)270616		X	06/27/16	15:50	SOIL	2		X	X		
18WW25(22-22.5)270616		X	06/27/16	16:12	SOIL	2		X	X		
18WW25(22-22.5)270616 DUP		X	06/27/16	16:12	SOIL	2		X	X		

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	6/27/16	1500			
Relinquished by: (Signature)	Date	Time	Received by: (Signature)		

Microbac OVD
Received: 06/29/2016 09:34
By: BRENDA GREENWALT 221000087809
Brenda Greenwalt

Remarks:

*Water (W), Soil (S), Solid Waste (SD), Unknown (X)

Page _____ of _____

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061593
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 08-JUL-2016

Samplenum	Container ID	Products
L16061593-01	768001	8260

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	A1	29-JUN-2016 15:36	CLS		
2	ANALYZ	A1	ORG4	30-JUN-2016 14:55	JST	CLS	
3	STORE	ORG4	A1	13-JUL-2016 07:27	CLS	AWE	

Samplenum	Container ID	Products
L16061593-01	768002	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-JUN-2016 15:36	CLS		
2	ANALYZ	W1	SEM	06-JUL-2016 15:05	JWR	BRG	
3	STORE	SEM	A1	11-JUL-2016 11:21	CLS	JWR	

Samplenum	Container ID	Products
L16061593-02	768003	8260

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	A1	29-JUN-2016 15:36	CLS		
2	ANALYZ	A1	ORG4	30-JUN-2016 14:55	JST	CLS	
3	STORE	ORG4	A1	13-JUL-2016 07:28	CLS	AWE	

Samplenum	Container ID	Products
L16061593-02	768004	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-JUN-2016 15:36	CLS		
2	ANALYZ	W1	SEM	06-JUL-2016 15:05	JWR	BRG	
3	STORE	SEM	A1	11-JUL-2016 11:22	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061593
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 08-JUL-2016

Samplenum	Container ID	Products
L16061593-03	768005	8260

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	A1	29-JUN-2016 15:36	CLS		
2	ANALYZ	A1	ORG4	30-JUN-2016 14:55	JST	CLS	
3	STORE	ORG4	A1	13-JUL-2016 07:28	CLS	AWE	

Samplenum	Container ID	Products
L16061593-03	768006	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-JUN-2016 15:36	CLS		
2	ANALYZ	W1	SEM	06-JUL-2016 15:05	JWR	BRG	
3	STORE	SEM	A1	11-JUL-2016 11:22	CLS	JWR	

Samplenum	Container ID	Products
L16061593-04	768007	8260

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	A1	29-JUN-2016 15:36	CLS		
2	ANALYZ	A1	ORG4	30-JUN-2016 14:55	JST	CLS	
3	STORE	ORG4	A1	13-JUL-2016 07:27	CLS	AWE	

Samplenum	Container ID	Products
L16061593-04	768008	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-JUN-2016 15:36	CLS		
2	ANALYZ	W1	SEM	06-JUL-2016 15:05	JWR	BRG	
3	STORE	SEM	A1	11-JUL-2016 11:22	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061593
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 08-JUL-2016

Samplenum	Container ID	Products
L16061593-05	768009	8260

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	A1	29-JUN-2016 15:36	CLS		
2	ANALYZ	A1	ORG4	30-JUN-2016 14:55	JST	CLS	
3	STORE	ORG4	A1	13-JUL-2016 07:27	CLS	AWE	

Samplenum	Container ID	Products
L16061593-05	768010	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-JUN-2016 15:36	CLS		
2	ANALYZ	W1	SEM	06-JUL-2016 15:05	JWR	BRG	
3	STORE	SEM	A1	11-JUL-2016 11:22	CLS	JWR	

Samplenum	Container ID	Products
L16061593-06	768011	8260

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	A1	29-JUN-2016 15:36	CLS		
2	ANALYZ	A1	ORG4	30-JUN-2016 14:55	JST	CLS	
3	STORE	ORG4	A1	13-JUL-2016 07:27	CLS	AWE	

Samplenum	Container ID	Products
L16061593-06	768012	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-JUN-2016 15:36	CLS		
2	ANALYZ	W1	SEM	06-JUL-2016 15:06	JWR	BRG	
3	STORE	SEM	A1	11-JUL-2016 11:22	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16061648

Kayla Teague
AECOM Technical Services, Inc.
1950 N Stemmons FWY
Dallas, TX 75207

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Michelle Taylor – Client Services Specialist
(740) 373-4071
Michelle.Taylor@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on July 20 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00113794	I	3.0		J2317164831	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18WW25-062916	L16061648-01	06/29/2016 08:05	06/30/2016 09:36
18WW25F-062916	L16061648-02	06/29/2016 08:05	06/30/2016 09:36
TRIP BLANK	L16061648-03	06/29/2016 00:01	06/30/2016 09:36

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16061648
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG575666	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-12 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Wade DeLong	Wade DeLong	Chemist I	2016-07-12 16:44:42

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG575666	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-12 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG575666	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-12 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG575666	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-12 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG575666	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-12 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG575666	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-12 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. Bromomethane was below the lower control limit, Carbon Tetrachloride and Trichlorofluoromethane were above the upper control limit in the CCV WG575663-02 analyzed 07/08/2016 on HPMS6. Chloromethane was below the lower control limit in the Alternate Source standard WG574723-12 analyzed 06/30/2016 on HPMS6.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG574706	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-12 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-07-12 12:30:52

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG574706	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-12 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG574706	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-12 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG574706	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-12 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG574706	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-12 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG574706	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-07-12 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575005	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Wade DeLong	Wade DeLong	Chemist I	2016-07-06 18:44:41

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575005	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575005	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575005	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575005	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG575005	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-07-06 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG574940	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-20 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-07-20 13:58:08

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG574940	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-20 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?		X			ER#2
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG574940	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-20 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG574940	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-20 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			ER#1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG574940	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-20 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG574940	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-20 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - The low level initial calibration verification analyzed on 01-JUL-2016 at 14:37 yielded a noncompliant recovery for iron. All batch QA/QC and client sample were reanalyzed on a later calibration for iron.

ER#2 - Client sample 02 required dilution analysis in order to obtain results for calcium and iron within the calibration range.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG575246	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-20 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-07-20 13:55:25

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG575246	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-20 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?		X			ER#2
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?		X			ER#1
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG575246	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-20 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG575246	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-20 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG575246	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-20 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG575246	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-20 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - The method blank analyzed on 07-JUL-2016 at 10:22 yielded a result for antimony of 0.00115 mg/L which exceeded the LOD. All QA/QC and client sample 02 were reanalyzed for antimony later on 07-JUL-2016 with a compliant method blank.

ER#2 - Client sample 02 required dilution analysis in order to obtain results for barium and manganese within the calibration range.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG575094	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-20 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-07-20 13:54:46

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG575094	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-20 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG575094	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-20 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG575094	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-20 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG575094	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-20 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061648
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG575094	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-20 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061648-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18WW25-062916	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG575666	**Analyst:**	TMB	**Run Date:**	07/08/2016 22:36
Collect Date:	06/29/2016 08:05	**Dilution:**	1	**File ID:**	6M140525
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	2.89	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.450	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	97.9	85	120	
4-Bromofluorobenzene	95.7	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061648-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18WW25-062916	**Prep Method:**	3520C	**Prep Date:**	06/30/2016 16:00
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG575045	**Analyst:**	MES	**Run Date:**	07/05/2016 21:39
Collect Date:	06/29/2016 08:05	**Dilution:**	1	**File ID:**	15M18735
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	35.6	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061648-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW25-062916	**Prep Method:**	6850	**Prep Date:**	07/01/2016 13:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575005	**Analyst:**	JWR	**Run Date:**	07/02/2016 02:01
Collect Date:	06/29/2016 08:05	**Dilution:**	1	**File ID:**	1LM.LM35600
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061648-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW25F-062916	**Prep Method:**	3015	**Prep Date:**	07/01/2016 10:16
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	07/01/2016 14:26
Workgroup #:	WG574995	**Analyst:**	JYH	**Run Date:**	07/01/2016 16:01
Collect Date:	06/29/2016 08:05	**Dilution:**	1	**File ID:**	T3.070116.160122
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.120	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Magnesium, Total	7439-95-4	19.6		1.00	0.500	0.250
Potassium, Total	7440-09-7	2.44		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	44.0		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061648-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW25F-062916	**Prep Method:**	3015	**Prep Date:**	07/01/2016 10:16
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	07/19/2016 09:10
Workgroup #:	WG574995	**Analyst:**	JYH	**Run Date:**	07/19/2016 10:06
Collect Date:	06/29/2016 08:05	**Dilution:**	20	**File ID:**	T3.071916.100624
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	19.6		4.00	2.00	1.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061648-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW25F-062916	**Prep Method:**	3015	**Prep Date:**	07/01/2016 10:16
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	07/14/2016 12:14
Workgroup #:	WG574995	**Analyst:**	JYH	**Run Date:**	07/14/2016 17:54
Collect Date:	06/29/2016 08:05	**Dilution:**	20	**File ID:**	T3.071416.175404
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	32.0		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061648-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW25F-062916	**Prep Method:**	3015	**Prep Date:**	07/06/2016 08:44
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/07/2016 09:57
Workgroup #:	WG575345	**Analyst:**	JYH	**Run Date:**	07/07/2016 10:29
Collect Date:	06/29/2016 08:05	**Dilution:**	1	**File ID:**	NI.070716.102920
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Arsenic, Total	7440-38-2	0.00243		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00200	U	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.0135		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00200	U	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.00596	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061648-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW25F-062916	**Prep Method:**	3015	**Prep Date:**	07/06/2016 08:44
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/07/2016 09:57
Workgroup #:	WG575345	**Analyst:**	JYH	**Run Date:**	07/07/2016 15:10
Collect Date:	06/29/2016 08:05	**Dilution:**	1	**File ID:**	NI.070716.151016
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061648-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW25F-062916	**Prep Method:**	3015	**Prep Date:**	07/06/2016 08:44
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/07/2016 09:57
Workgroup #:	WG575345	**Analyst:**	JYH	**Run Date:**	07/07/2016 13:03
Collect Date:	06/29/2016 08:05	**Dilution:**	50	**File ID:**	NI.070716.130338
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.391		0.300	0.150	0.0750
Manganese, Total	7439-96-5	5.29		0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061648-02	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18WW25F-062916	**Prep Method:**	7470A	**Prep Date:**	07/05/2016 07:18
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	07/07/2016 13:11
Workgroup #:	WG575509	**Analyst:**	PDM	**Run Date:**	07/07/2016 13:54
Collect Date:	06/29/2016 08:05	**Dilution:**	1	**File ID:**	M7.070716.135434
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061648-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG575666	**Analyst:**	TMB	**Run Date:**	07/08/2016 22:03
Collect Date:	06/29/2016 00:01	**Dilution:**	1	**File ID:**	6M140524
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	108	85	115	
1,2-Dichloroethane-d4	105	70	120	
Toluene-d8	97.4	85	120	
4-Bromofluorobenzene	95.3	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061648-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18WW25-062916	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG575666	**Analyst:**	TMB	**Run Date:**	07/08/2016 22:36
Collect Date:	06/29/2016 08:05	**Dilution:**	1	**File ID:**	6M140525
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	2.89	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.450	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	97.9	85	120	
4-Bromofluorobenzene	95.7	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061648-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/30/2016 16:53
Workgroup #:	WG575666	**Analyst:**	TMB	**Run Date:**	07/08/2016 22:03
Collect Date:	06/29/2016 00:01	**Dilution:**	1	**File ID:**	6M140524
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	108	85	115	
1,2-Dichloroethane-d4	105	70	120	
Toluene-d8	97.4	85	120	
4-Bromofluorobenzene	95.3	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 042416
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75498 Surrogate Standard: STD75498
CCV: STD75791 LCS: STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG566155

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M138749	RINSE	NA	1	1		04/24/16 16:05
6M138750	WG566155-01 50ng BFB 826-A9	NA	1	1	STD75485	04/24/16 16:33
6M138751	WG566155-02 5ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 16:59
6M138752	WG566155-03 20ug/L STD 826-A	NA	1	1	STD75791	04/24/16 17:31
6M138753	WG566155-04 50ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 18:03
6M138754	WG566155-05 100ug/L STD 826-A	NA	1	1	STD75791	04/24/16 18:36
6M138755	WG566155-06 200ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 19:08
6M138756	WG566155-07 300ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 19:40
6M138757	WG566155-08 400ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 20:12
6M138758	WG566155-09 500ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 20:44
6M138759	RINSE	NA	1	1		04/24/16 21:16
6M138760	RINSE	NA	1	1		04/24/16 21:49
6M138761	WG566155-10 100ug/L ALT SRC	NA	1	1	STD75801	04/24/16 22:21
6M138762	RINSE	NA	1	1		04/24/16 22:53
6M138763	RINSE	NA	1	1		04/24/16 23:25

Approved: April 29, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 063016
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53798

Internal Standard: STD76854 Surrogate Standard: STD76854
CCV: STD76892 LCS: STD76744 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG574723

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M140313	WG574723-01 50ng BFB STD 8260	NA	1	1	STD76496	06/30/16 11:36
6M140314	WG574723-02 0.3ug/L STD 8260	NA	1	1	STD76892	06/30/16 12:03
6M140315	WG574723-03 0.4ug/L STD 8260	NA	1	1	STD76892	06/30/16 12:35
6M140316	WG574723-04 1ug/L STD 8260	NA	1	1	STD76892	06/30/16 13:08
6M140317	WG574723-05 2ug/L STD 8260	NA	1	1	STD76892	06/30/16 13:40
6M140318	WG574723-06 5ug/L STD 8260	NA	1	1	STD76892	06/30/16 14:12
6M140319	WG574723-07 20ug/L STD 8260	NA	1	1	STD76892	06/30/16 14:44
6M140320	WG574723-08 50ug/L STD 8260	NA	1	1	STD76892	06/30/16 15:16
6M140321	WG574723-09 100ug/L STD 8260	NA	1	1	STD76892	06/30/16 15:48
6M140322	WG574723-10 200ug/L STD 8260	NA	1	1	STD76892	06/30/16 16:21
6M140323	WG574723-11 300ug/L STD 8260	NA	1	1	STD76892	06/30/16 16:53
6M140324	RINSE	NA	1	1		06/30/16 17:27
6M140325	RINSE	NA	1	1		06/30/16 17:59
6M140326	WG574723-12 50ug/L ALT SRC STD 8260	NA	1	1	STD76744	06/30/16 18:31
6M140327	RINSE	NA	1	1		06/30/16 19:04

Approved: July 07, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 070816
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Method: 624 SOP: MSV10 Rev: 14
Maintenance Log ID: 53808

Internal Standard: STD76854 Surrogate Standard: STD76854
CCV: STD76892 LCS: STD77015 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG575666

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M140506	WG575663-01 50ng BFB STD 8260	NA	1	1	STD77013	07/08/16 11:42
6M140507	WG575663-02 50ug/L CCV STD 8260	NA	1	1	STD76892	07/08/16 12:09
6M140508	WG575663-02 50ug/L CCV STD 8260	NA	1	1	STD76892	07/08/16 12:44
6M140509	WG575663-01 50ng BFB STD 8260	NA	1	1	STD77013	07/08/16 14:07
6M140510	WG575663-02 50ug/L CCV STD 8260	NA	1	1	STD76892	07/08/16 14:33
6M140511	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76943	07/08/16 15:06
6M140512	WG575666-01 VBLK0708 BLANK STD 826	NA	1	1		07/08/16 15:38
6M140513	L16061458-02 B 826-SPE	NA	1	1		07/08/16 16:11
6M140514	WG575666-02 20ug/L LCS STD 8260	NA	1	1	STD77015	07/08/16 16:43
6M140515	WG575666-03 20ug/L LCS2 STD 8260	NA	1	1	STD77015	07/08/16 17:15
6M140516	L16070079-09 B 5X 826-SPE D1	<2	1	5		07/08/16 17:47
6M140517	L16061337-01 A 826-REF-BLK	<2	1	1		07/08/16 18:18
6M140518	L16061337-02 A 826-REF-BLK	<2	1	1		07/08/16 18:51
6M140519	L16061337-03 A 826-REF-BLK	<2	1	1		07/08/16 19:23
6M140520	L16061337-04 B 826-REF-BLK	<2	1	1		07/08/16 19:55
6M140521	L16061337-05 A 826-REF-BLK	<2	1	1		07/08/16 20:27
6M140522	L16061537-02 A TB 826-SPE	<2	1	1		07/08/16 20:59
6M140523	L16061572-05 A TB 8260	<2	1	1		07/08/16 21:31
6M140524	L16061648-03 A TB 826-LOW	<2	1	1		07/08/16 22:03
6M140525	L16061648-01 A 826-LOW	<2	1	1		07/08/16 22:36
6M140526	L16061537-01 A 200X 826-SPE	<2	1	200		07/08/16 23:08
6M140527	L16061572-04 A 8260	<2	1	1		07/08/16 23:40
6M140528	L16061572-03 A 100X 8260	<2	1	100		07/09/16 00:12
6M140529	L16061572-02 A 250X 8260	<2	1	250		07/09/16 00:44
6M140530	L16061572-01 A 2500X 8260	<2	1	2500		07/09/16 01:16
6M140531	L16070295-01 A 826-BETX	<2	1	1		07/09/16 01:48
6M140532	RINSE	NA	1	1		07/09/16 02:20
6M140533	WG575666-04 VBLK0708 BLANK STD 624	NA	2	1		07/09/16 02:53
6M140534	L16070239-04 A 624-SPE1	<2	2	1		07/09/16 03:25
6M140535	L16070239-06 A 624-SPE	<2	2	1		07/09/16 03:57
6M140536	L16070239-07 A 624-SPE1	<2	2	1		07/09/16 04:29
6M140537	L16070185-01 B 25X 624-SPE D1	<2	2	25		07/09/16 05:01
6M140538	L16070185-02 B 10X 624-SPE D1	<2	2	10		07/09/16 05:33
6M140539	CCV	NA	1	1		07/09/16 06:05

Approved: July 12, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 070816
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Method: 624 SOP: MSV10 Rev: 14
Maintenance Log ID: 53808

Internal Standard: STD76854 Surrogate Standard: STD76854
CCV: STD76892 LCS: STD77015 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG575666

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M140540	RINSE	NA	1	1		07/09/16 06:37
6M140541	RINSE	NA	1	1		07/09/16 07:09

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 6M140507				
	Bromomethane was low, DNR.			
3	X			
File ID: 6M140508				
	VC was high, DNR. Increased the voltage by 10.			
6				
File ID: 6M140511				
	Not needed. DNR.			
23	X	2500	Over Calibration Range	CB
File ID: 6M140528				
25	X	50	Analyzed too dilute	
File ID: 6M140530				
30	X	50	Over Calibration Range	TCFM
File ID: 6M140535				

Approved: July 12, 2016

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Microbac Laboratories Inc.

Data Checklist

Date: 24-APR-2016
Analyst: JDS
Analyst: NA
Method: 8260B/624
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 74754
Analytical Workgroups: WG566155

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
27-APR-2016
Tiffany Bailey

Secondary Reviewer:
29-APR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: APR-29-2016 12:29:57

Microbac Laboratories Inc.

Data Checklist

Date: 30-JUN-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 76082
Analytical Workgroups: WG574723

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
01-JUL-2016
Tiffany Bailey

Secondary Reviewer:
07-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-07-2016 13:59:59

Microbac Laboratories Inc.

Data Checklist

Date: 08-JUL-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 76220
Analytical Workgroups: WG575666

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
11-JUL-2016
Tiffany Bailey

Secondary Reviewer:
12-JUL-2016
Wadei Dg

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-12-2016 12:12:09

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG575666

Login Number: L16061648

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW25-062916	01	06/29/16					07/08/2016	9.6	14		07/08/16	9.6	14	
TRIP BLANK	03	06/29/16					07/08/2016	9.9	14		07/08/16	9.9	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4847492
Report generated 07/12/2016 12:23

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061648
Instrument Id: HPMS6
Workgroup (AAB#): WG575666

Method: 8260
CAL ID: HPMS6-30-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16061648-01	1.00	01	103	106	95.7	97.9
L16061648-03	1.00	01	105	108	95.3	97.4
WG575666-01	1.00	01	103	105	98.4	97.6
WG575666-02	1.00	01	103	106	92.8	97.6
WG575666-03	1.00	01	102	104	94.3	98.9
WG575666-04	1.00	01	104	106	95.4	96.3

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4847498
Report generated: 07/12/2016 12:24

METHOD BLANK SUMMARY

Login Number: L16061648
Blank File ID: 6M140512
Prep Date: 07/08/16 15:38
Analyzed Date: 07/08/16 15:38
Analyst: TMB

Work Group: WG575666
Blank Sample ID: WG575666-01
Instrument ID: HPMS6
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG575666-02	6M140514	07/08/16 16:43	01
LCS2	WG575666-03	6M140515	07/08/16 17:15	01
TRIP BLANK	L16061648-03	6M140524	07/08/16 22:03	01
18WW25-062916	L16061648-01	6M140525	07/08/16 22:36	01

Report Name: BLANK_SUMMARY
PDF File ID: 4849698
Report generated 07/12/2016 12:23

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16061648 Prep Date: 07/08/16 15:38 Sample ID: WG575666-01
Instrument ID: HPMS6 Run Date: 07/08/16 15:38 Prep Method: 5030B/5030C/503
File ID: 6M140512 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG575666 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS6-30-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 4847493
12-JUL-2016 12:23

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061648 Prep Date: 07/08/16 15:38 Sample ID: WG575666-01
Instrument ID: HPMS6 Run Date: 07/08/16 15:38 Prep Method: 5030B/5030C/503
File ID: 6M140512 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG575666 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS6-30-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	105	85 - 115	PASS
1,2-Dichloroethane-d4	103	70 - 120	PASS
Toluene-d8	97.6	85 - 120	PASS
4-Bromofluorobenzene	98.4	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4847493
12-JUL-2016 12:23

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061648 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS6 Matrix: Water Method: 8260B
Workgroup (AAB#): WG575666 Units: ug/L
QC Key: DOD4 Lot #: STD76972

Sample ID: WG575666-02 LCS File ID: 6M140514 Run Date: 07/08/2016 16:43
Sample ID: WG575666-03 LCS2 File ID: 6M140515 Run Date: 07/08/2016 17:15

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	21.9	110	20.0	22.0	110	0.530	80 - 130	30	
1,1,1-Trichloroethane	20.0	22.4	112	20.0	22.4	112	0.0699	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	20.4	102	20.0	21.0	105	2.93	65 - 130	30	
1,1,2-Trichloroethane	20.0	20.8	104	20.0	20.9	105	0.284	75 - 125	30	
1,1-Dichloroethane	20.0	20.3	102	20.0	20.3	101	0.191	70 - 135	30	
1,1-Dichloroethene	20.0	20.9	104	20.0	20.9	105	0.338	70 - 130	30	
1,1-Dichloropropene	20.0	20.7	103	20.0	20.7	104	0.0957	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	20.6	103	20.0	20.5	102	0.670	55 - 140	30	
1,2,3-Trichloropropane	20.0	21.2	106	20.0	21.2	106	0.146	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	20.8	104	20.0	20.8	104	0.162	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	20.0	100	20.0	20.5	103	2.45	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	23.0	115	20.0	22.7	114	1.23	50 - 130	30	
1,2-Dibromoethane	20.0	20.9	105	20.0	21.0	105	0.412	80 - 120	30	
1,2-Dichlorobenzene	20.0	20.8	104	20.0	21.2	106	1.64	70 - 120	30	
1,2-Dichloroethane	20.0	22.6	113	20.0	22.4	112	0.665	70 - 130	30	
1,2-Dichloropropane	20.0	21.4	107	20.0	21.4	107	0.167	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	20.1	101	20.0	20.5	102	1.59	75 - 130	30	
1,3-Dichlorobenzene	20.0	20.1	101	20.0	20.8	104	3.12	75 - 125	30	
1,3-Dichloropropane	20.0	21.3	106	20.0	21.4	107	0.622	75 - 125	30	
1,4-Dichlorobenzene	20.0	20.5	102	20.0	20.7	104	1.24	75 - 125	30	
2,2-Dichloropropane	20.0	20.8	104	20.0	22.3	112	7.20	70 - 135	30	
2-Butanone	20.0	22.3	112	20.0	22.0	110	1.42	30 - 150	30	
2-Chlorotoluene	20.0	20.2	101	20.0	19.1	95.7	5.59	75 - 125	30	
2-Hexanone	20.0	19.5	97.3	20.0	19.6	98.0	0.774	55 - 130	30	
4-Chlorotoluene	20.0	19.2	96.0	20.0	21.4	107	11.0	75 - 130	30	
4-Methyl-2-pentanone	20.0	19.9	99.3	20.0	20.4	102	2.54	60 - 135	30	
Acetone	20.0	23.3	116	20.0	22.6	113	2.76	40 - 140	30	
Benzene	20.0	21.0	105	20.0	21.0	105	0.115	80 - 120	30	
Bromobenzene	20.0	19.6	98.2	20.0	20.0	99.9	1.70	75 - 125	30	
Bromochloromethane	20.0	22.0	110	20.0	21.7	108	1.58	65 - 130	30	
Bromodichloromethane	20.0	22.5	113	20.0	22.3	112	0.857	75 - 120	30	
Bromoform	20.0	20.7	103	20.0	20.8	104	0.680	70 - 130	30	
Bromomethane	20.0	16.3	81.3	20.0	16.2	81.1	0.160	30 - 145	30	
Carbon disulfide	20.0	18.0	90.0	20.0	17.7	88.7	1.47	35 - 160	30	
Carbon tetrachloride	20.0	24.2	121	20.0	24.1	121	0.211	65 - 140	30	
Chlorobenzene	20.0	21.0	105	20.0	21.3	107	1.66	80 - 120	30	
Chloroethane	20.0	23.9	120	20.0	23.1	115	3.56	60 - 135	30	
Chloroform	20.0	21.3	107	20.0	21.3	106	0.212	65 - 135	30	
Chloromethane	20.0	18.3	91.4	20.0	18.5	92.3	0.984	40 - 125	30	
cis-1,2-Dichloroethene	20.0	21.6	108	20.0	21.7	109	0.645	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4847494
Report generated: 07/12/2016 12:23

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061648 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS6 Matrix: Water Method: 8260B
Workgroup (AAB#): WG575666 Units: ug/L
QC Key: DOD4 Lot #: STD76972

Sample ID: WG575666-02 LCS File ID: 6M140514 Run Date: 07/08/2016 16:43
Sample ID: WG575666-03 LCS2 File ID: 6M140515 Run Date: 07/08/2016 17:15

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	23.2	116	20.0	23.3	116	0.361	70 - 130	30	
Chlorodibromomethane	20.0	21.8	109	20.0	22.3	112	2.37	60 - 135	30	
Dibromomethane	20.0	21.5	108	20.0	21.8	109	1.26	75 - 125	30	
Dichlorodifluoromethane	20.0	24.4	122	20.0	24.5	122	0.176	30 - 155	30	
Ethylbenzene	20.0	20.8	104	20.0	21.3	106	2.32	75 - 125	30	
Hexachlorobutadiene	20.0	21.2	106	20.0	21.3	107	0.755	50 - 140	30	
Isopropylbenzene	20.0	21.3	106	20.0	21.6	108	1.54	75 - 125	30	
m-,p-Xylene	40.0	42.5	106	40.0	42.9	107	0.921	75 - 130	30	
Methylene chloride	20.0	20.6	103	20.0	20.9	105	1.50	55 - 140	30	
n-Butylbenzene	20.0	20.1	101	20.0	20.5	103	2.15	70 - 135	30	
n-Propylbenzene	20.0	20.4	102	20.0	21.0	105	2.86	70 - 130	30	
Naphthalene	20.0	19.3	96.3	20.0	18.9	94.5	1.90	55 - 140	30	
o-Xylene	20.0	22.1	110	20.0	21.9	110	0.620	80 - 120	30	
p-Isopropyltoluene	20.0	20.2	101	20.0	20.6	103	2.09	75 - 130	30	
sec-Butylbenzene	20.0	20.3	101	20.0	20.7	104	2.32	70 - 125	30	
Styrene	20.0	21.5	108	20.0	21.7	109	0.816	65 - 135	30	
tert-Butylbenzene	20.0	20.7	103	20.0	21.1	105	2.13	70 - 130	30	
Tetrachloroethene	20.0	20.7	103	20.0	20.8	104	0.544	45 - 150	30	
Toluene	20.0	20.2	101	20.0	20.3	102	0.859	75 - 120	30	
trans-1,2-Dichloroethene	20.0	21.3	107	20.0	21.4	107	0.223	60 - 140	30	
trans-1,3-Dichloropropene	20.0	20.6	103	20.0	21.5	108	4.43	55 - 140	30	
Trichloroethene	20.0	21.9	110	20.0	21.3	106	2.87	70 - 125	30	
Trichlorofluoromethane	20.0	23.7	118	20.0	26.9	134	12.7	60 - 145	30	
Vinyl chloride	20.0	24.9	125	20.0	24.4	122	1.94	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	103	102	70 - 120	PASS
Dibromofluoromethane	106	104	85 - 115	PASS
4-Bromofluorobenzene	92.8	94.3	75 - 120	PASS
Toluene-d8	97.6	98.9	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4847494
Report generated: 07/12/2016 12:23

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061648
Instrument: HPMS6
Analyst: JDS
Workgroup: WG566155

Tune ID: WG566155-01
Run Date: 04/24/2016
Run Time: 16:33
File ID: 6M138750
Cal ID: HPMS6 - 24-APR-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.5	10010	PASS
75.0	95.0	30.0	60.0	52.0	23152	PASS
95.0	95.0	100	100	100	44552	PASS
96.0	95.0	5.00	9.00	6.92	3085	PASS
173	174	0	2.00	0.346	113	PASS
174	95.0	50.0	100	73.2	32632	PASS
175	174	5.00	9.00	7.16	2336	PASS
176	174	95.0	101	99.2	32384	PASS
177	176	5.00	9.00	6.95	2251	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG566155-02	STD	01	04/24/2016 16:59	
WG566155-03	STD	01	04/24/2016 17:31	
WG566155-04	STD	01	04/24/2016 18:03	
WG566155-05	STD-CCV	01	04/24/2016 18:36	
WG566155-06	STD	01	04/24/2016 19:08	
WG566155-07	STD	01	04/24/2016 19:40	
WG566155-08	STD	01	04/24/2016 20:12	
WG566155-09	STD	01	04/24/2016 20:44	
WG566155-10	SSCV	01	04/24/2016 22:21	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4847496
Report generated 07/12/2016 12:24

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061648
Instrument: HPMS6
Analyst: TMB
Workgroup: WG574723

Tune ID: WG574723-01
Run Date: 06/30/2016
Run Time: 11:36
File ID: 6M140313
Cal ID: HPMS6 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.0	8707	PASS
75.0	95.0	30.0	60.0	49.7	19699	PASS
95.0	95.0	100	100	100	39664	PASS
96.0	95.0	5.00	9.00	6.69	2652	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	73.8	29282	PASS
175	174	5.00	9.00	7.28	2131	PASS
176	174	95.0	101	99.6	29157	PASS
177	176	5.00	9.00	6.75	1969	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG574723-02	STD	01	06/30/2016 12:03	
WG574723-03	STD	01	06/30/2016 12:35	
WG574723-04	STD	01	06/30/2016 13:08	
WG574723-05	STD	01	06/30/2016 13:40	
WG574723-06	STD	01	06/30/2016 14:12	
WG574723-07	STD	01	06/30/2016 14:44	
WG574723-08	STD-CCV	01	06/30/2016 15:16	
WG574723-09	STD	01	06/30/2016 15:48	
WG574723-10	STD	01	06/30/2016 16:21	
WG574723-11	STD	01	06/30/2016 16:53	
WG574723-12	SSCV	01	06/30/2016 18:31	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4847496
Report generated 07/12/2016 12:24

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061648
Instrument: HPMS6
Analyst: TMB
Workgroup: WG575663

Tune ID: WG575663-01
Run Date: 07/08/2016
Run Time: 14:07
File ID: 6M140509
Cal ID: HPMS6 - 30-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	23.5	10048	PASS
75.0	95.0	30.0	60.0	51.9	22171	PASS
95.0	95.0	100	100	100	42754	PASS
96.0	95.0	5.00	9.00	7.04	3011	PASS
173	174	0	2.00	0.432	140	PASS
174	95.0	50.0	100	75.7	32386	PASS
175	174	5.00	9.00	7.01	2270	PASS
176	174	95.0	101	98.9	32032	PASS
177	176	5.00	9.00	6.75	2162	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG575663-02	CCV	01	07/08/2016 14:33	
WG575666-01	BLANK	01	07/08/2016 15:38	
WG575666-02	LCS	01	07/08/2016 16:43	
WG575666-03	LCS2	01	07/08/2016 17:15	
L16061648-03	TRIP BLANK	01	07/08/2016 22:03	
L16061648-01	18WW25-062916	01	07/08/2016 22:36	
WG575666-04	BLANK2	01	07/09/2016 02:53	*

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4847496
Report generated 07/12/2016 12:24

Calibration Table Report
Method: A9FOOWT.M
Title: A9-FOO Water - IC: 042416 - HPMS6
Last Calibration: Wed Apr 27 16:03:33 2016
Curve: WG566155
Calibration Files

	Compound	5 6M138751.D	20 6M138752.D	50 6M138753.D	100 6M138754.D	200 6M138755.D	300 6M138756.D	400 6M138757.D	500 6M138758.D	Avg	%RSD
I	Fluorobenzene	ISTD									
T	Acetonitrile	0.036	0.037	0.039	0.038	0.038	0.038	0.038	0.036	0.037	2.606
T	3-Chloro-1-propene	0.567	0.621	0.656	0.672	0.635	0.622	0.617	0.603	0.624	5.157
T	2-Chloro-1,3-butadiene	0.415	0.507	0.558	0.590	0.558	0.553	0.556	0.548	0.535	10.001
T	Ethyl Acetate	0.229	0.259	0.279	0.281	0.277	0.272	0.279	0.268	0.268	6.419
T	Methacrylonitrile	0.071	0.089	0.099	0.099	0.097	0.095	0.096	0.093	0.092	9.852
T	Isobutyl Alcohol		0.008	0.008	0.007	0.007	0.008	0.010	0.010	0.009	13.654
T	1-Butanol									0.000	0.000
T	Methyl methacrylate	0.159	0.200	0.231	0.244	0.244	0.241	0.246	0.236	0.225	13.591
T	2-Nitropropane			0.079	0.082	0.085	0.085	0.088	0.084	0.084	3.643
I	Chlorobenzene-d5	ISTD									
I	1,4-Dichlorobenzene-d4	ISTD									
T	Cyclohexanone			0.026	0.027	0.032	0.034	0.035	0.033	0.031	12.127

Wed Apr 27 16:05:59 2016

Calibration Table Report
Method: 8260WTR.M
Title: 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Calibration: Fri Jul 01 09:28:30 2016
Curve: WG574723
Calibration Files

	Compound	0.3 6M140314.D	0.4 6M140315.D	1 6M140316.D	2 6M140317.D	5 6M140318.D	20 6M140319.D	50 6M140320.D	100 6M140321.D	200 6M140322.D	300 6M140323.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.401	0.398	0.362	0.449	0.438	0.462	0.444	0.391	0.418	8.327		
P	Chloromethane			0.564	0.519	0.446	0.512	0.463	0.436	0.411	0.381	0.467	13.089		
C	Vinyl Chloride		0.237	0.280	0.277	0.251	0.252	0.260	0.267	0.257	0.225	0.256	6.911		
T	1,3-Butadiene					0.175	0.204	0.154	0.154	0.147	0.132	0.161	15.792	0.991	
T	Bromomethane			0.179	0.184	0.166	0.178	0.161	0.164	0.170	0.160	0.170	5.344		
T	Chloroethane			0.158	0.158	0.155	0.170	0.162	0.163	0.168	0.162	0.162	3.146		
T	Trichlorofluoromethane		0.448	0.383	0.389	0.372	0.394	0.373	0.402	0.383	0.374	0.391	6.074		
T	Diethyl ether			0.240	0.244	0.238	0.231	0.237	0.234		0.190	0.231	7.911		
T	Isoprene					0.332	0.374	0.357	0.358	0.361	0.310	0.349	6.639		
T	Acrolein				0.039	0.038	0.038	0.038	0.039		0.039	0.038	1.589		
T	1,1,2-Trichloro-1,2,2-Trifluoroe			0.245	0.246	0.231	0.246	0.239	0.249	0.248	0.242	0.243	2.486		
T	Acetone					0.086	0.083	0.080	0.078	0.078	0.075	0.080	4.861		
C	1,1-Dichloroethene		0.475	0.488	0.483	0.447	0.475	0.469	0.477	0.473	0.459	0.472	2.614		
T	Tert-Butyl Alcohol			0.023	0.024	0.024	0.024	0.024	0.026		0.028	0.024	7.165		
T	Dimethyl Sulfide					0.197	0.217	0.208	0.206	0.206	0.201	0.206	3.230		
T	Iodomethane			0.076	0.076	0.099	0.149	0.180	0.188	0.180	0.164	0.139	34.268	0.996	
T	Methyl acetate					0.218	0.224	0.214	0.217	0.211	0.216	0.217	2.077		
T	Methylene Chloride			0.310	0.299	0.265	0.271	0.261	0.263	0.254	0.240	0.271	8.561		
T	Carbon Disulfide			0.926	0.900	0.839	0.925	0.868	0.856	0.834	0.768	0.864	6.148		
T	Acrylonitrile			0.090	0.096	0.098	0.098	0.102	0.104		0.108	0.099	5.795		
T	Methyl Tert Butyl Ether			0.716	0.725	0.704	0.737	0.716	0.729	0.714	0.694	0.717	1.916		
T	trans-1,2-Dichloroethene		0.263	0.254	0.262	0.245	0.253	0.250	0.255	0.251	0.241	0.253	2.748		
T	n-Hexane					0.432	0.456	0.424	0.426	0.424	0.412	0.429	3.449		
T	Diisopropyl ether			1.208	1.209	1.172	1.157	1.153	1.123		1.058	1.154	4.538		
T	Vinyl Acetate					0.458	0.448	0.486	0.493	0.523	0.482	0.482	5.502		
P	1,1-Dichloroethane		0.561	0.556	0.569	0.531	0.553	0.540	0.544	0.533	0.509	0.544	3.330		
T	Ethyl-Tert-Butyl ether			0.953	0.955	0.939	0.931	0.928	0.916		0.878	0.929	2.832		
T	2-Butanone					0.118	0.124	0.125	0.127	0.123	0.118	0.123	3.167		
T	Propionitrile			0.032	0.033	0.033	0.033	0.034	0.035		0.032	0.033	3.279		
T	2,2-Dichloropropane		0.396	0.421	0.439	0.414	0.411	0.401	0.411	0.407	0.393	0.410	3.381		
T	cis-1,2-Dichloroethene		0.295	0.285	0.269	0.267	0.280	0.277	0.280	0.274	0.262	0.277	3.558		
C	Chloroform	0.615	0.457	0.478	0.484	0.466	0.487	0.476	0.482	0.474	0.454	0.487	9.510		
T	1-Bromopropane			0.024	0.033	0.038	0.044	0.045	0.044	0.045	0.043	0.039	19.340	1.000	
T	Bromochloromethane		0.141	0.141	0.148	0.149	0.155	0.153	0.155	0.152	0.145	0.149	3.658		
T	Tetrahydrofuran			0.104	0.087	0.084	0.081	0.081	0.083		0.078	0.086	9.999		
S	Dibromofluoromethane				0.254	0.258	0.262	0.257	0.250	0.249	0.245	0.254	2.416		
T	1,1,1-Trichloroethane		0.395	0.436	0.430	0.412	0.430	0.430	0.438	0.432	0.414	0.424	3.334		
T	Cyclohexane			0.589	0.567	0.521	0.577	0.543	0.550	0.543	0.524	0.552	4.390		
T	1,1-Dichloropropene			0.377	0.376	0.356	0.370	0.367	0.375	0.373	0.362	0.370	2.060		
T	Tert-Amyl-Methyl ether			0.710	0.726	0.713	0.703	0.708	0.705		0.671	0.705	2.388		
T	Carbon Tetrachloride		0.271	0.305	0.33	0.33	0.37	0.377	0.39	0.391	0.371	0.3484	11.955		
S	1,2-Dichloroethane-d4				0.33	0.331	0.333	0.318	0.316	0.31	0.304	0.3202	3.5321		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.391	0.394	0.406	0.375	0.399	0.393	0.397	0.39	0.373	0.3907	2.7505		
T	Benzene		1.155	1.094	1.109	1.038	1.052	1.035	1.03	0.983	0.89	1.043	7.3599		
T	Trichloroethene		0.277	0.267	0.265	0.253	0.263	0.256	0.255	0.246	0.234	0.2574	4.9066		
T	Methylcyclohexane					0.396	0.428	0.4	0.409	0.404	0.387	0.404	3.4238		
C	1,2-Dichloropropane		0.311	0.293	0.305	0.293	0.306	0.302	0.305	0.3	0.288	0.3004	2.5217		
T	1,4-Dioxane					0.002	0.002	0.002	0.002		0.002	0.002	6.9968		
T	Bromodichloromethane		0.323	0.353	0.365	0.351	0.371	0.375	0.386	0.378	0.359	0.3624	5.1801		
T	Dibromomethane		0.125	0.137	0.148	0.143	0.153	0.151	0.156	0.151	0.145	0.1453	6.6336		
T	2-Chloroethyl Vinyl Ether				0.138	0.135	0.158	0.161	0.16	0.155	0.146	0.1506	7.0765		
T	4-Methyl-2-Pentanone					0.085	0.094	0.095	0.098	0.096	0.089	0.0927	5.3799		
T	cis-1,3-Dichloropropene		0.415	0.394	0.426	0.409	0.431	0.433	0.443	0.433	0.404	0.4208	3.888		
T	Dimethyl Disulfide					0.199	0.239	0.242	0.246	0.245	0.233	0.2342	7.589		
I	Chlorobenzene-d5	ISTD													
S	Toluene-d8				1.304	1.297	1.272	1.226	1.166	1.162	1.19	1.2311	4.9151		
C	Toluene		1.699	1.583	1.601	1.454	1.503	1.467	1.44	1.369	1.294	1.49	8.2924		
T	Ethyl Methacrylate			0.37	0.406	0.396	0.455	0.443	0.443	0.439	0.44	0.4239	6.9571		
T	Paraldehyde											0	0		
T	trans-1,3-Dichloropropene			0.49	0.514	0.506	0.547	0.548	0.551	0.543	0.539	0.5298	4.3368		
T	1,1,2-Trichloroethane		0.262	0.278	0.282	0.27	0.285	0.28	0.281	0.274	0.269	0.2757	2.687		
T	2-Hexanone					0.237	0.266	0.269	0.271	0.267	0.261	0.2618	4.9035		
T	1,3-Dichloropropane		0.55	0.526	0.539	0.51	0.52	0.519	0.517	0.503	0.493	0.5197	3.397		
T	Tetrachloroethene		0.362	0.364	0.373	0.351	0.354	0.353	0.352	0.344	0.343	0.3551	2.7537		
T	Dibromochloromethane		0.278	0.3	0.318	0.322	0.353	0.36	0.37	0.36	0.352	0.3348	9.4942		
T	1,2-Dibromoethane		0.238	0.259	0.265	0.259	0.277	0.274	0.281	0.274	0.268	0.2662	4.8464		
T	1-Chlorohexane		0.507	0.497	0.506	0.475	0.52	0.501	0.495	0.488	0.474	0.4959	3.0436		
P	Chlorobenzene		1.087	1.01	1.026	0.933	0.963	0.947	0.932	0.878	0.824	0.9556	8.2302		
T	1,1,1,2-Tetrachloroethane		0.327	0.335	0.343	0.328	0.352	0.354	0.356	0.342	0.323	0.34	3.6316		
C	Ethylbenzene		0.509	0.503	0.522	0.5	0.517	0.508	0.509	0.481	0.452	0.5002	4.2933		
T	m-,p-Xylene		0.651	0.636	0.652	0.606	0.626	0.612	0.603	0.553	0.501	0.6045	8.1404		
T	o-Xylene			0.61	0.633	0.59	0.625	0.619	0.618	0.585	0.544	0.6029	4.778		
T	Styrene		0.992	0.978	1.025	0.988	1.072	1.065	1.072	1.013	0.924	1.0143	4.9363		
P	Bromoform			0.172	0.184	0.183	0.215	0.22	0.234	0.231	0.222	0.2076	11.743		
T	Isopropylbenzene		1.684	1.642	1.648	1.582	1.619	1.599	1.602	1.477	1.304	1.5731	7.3897		
I	1,4-Dichlorobenzene-d4	ISTD													
P	1,1,2,2-Tetrachloroethane		0.542	0.561	0.589	0.589	0.619	0.616	0.651	0.654	0.639	0.6067	6.4625		
S	p-Bromofluorobenzene				1.007	1.02	1.012	0.972	0.933	0.96	0.949	0.9791	3.484		

T	1,2,3-Trichloropropane		0.131	0.176	0.189	0.19	0.187	0.19	0.191	0.185	0.1799	11.385
T	trans-1,4-Dichloro-2-Butene		0.158	0.209	0.218	0.244	0.244	0.253	0.256	0.254	0.2294	14.64
T	n-Propylbenzene	4.147	3.945	3.827	3.612	3.693	3.558	3.522	3.223	2.802	3.5921	11.066
T	Bromobenzene	0.822	0.753	0.776	0.753	0.761	0.736	0.737	0.723	0.695	0.7506	4.7215
T	1,3,5-Trimethylbenzene	2.687	2.633	2.638	2.51	2.587	2.52	2.523	2.394	2.166	2.5177	6.2882
T	2-Chlorotoluene	2.919	2.675	2.482	2.32	2.324	2.405	2.382	2.249	2.107	2.4293	9.9295
T	4-Chlorotoluene	2.561	2.355	2.535	2.399	2.452	2.211	2.223	2.179	1.93	2.316	8.6649
T	a-Methylstyrene				1.171	1.369	1.303	1.3	1.265	1.19	1.2663	5.9075
T	tert-Butylbenzene		0.522	0.53	0.496	0.527	0.502	0.507	0.492	0.47	0.5058	3.9858
T	1,2,4-Trimethylbenzene		2.731	2.759	2.607	2.688	2.607	2.616	2.454	2.207	2.5836	6.9171
T	sec-Butylbenzene		3.3	3.29	3.02	3.128	3.02	3.014	2.818	2.521	3.0139	8.4375
T	p-Isopropyltoluene		2.762	2.734	2.57	2.677	2.59	2.601	2.425	2.188	2.5685	7.2625
T	1,3-Dichlorobenzene	1.666	1.555	1.538	1.459	1.494	1.448	1.455	1.387	1.293	1.4773	7.1422
T	1,4-Dichlorobenzene	1.73	1.6	1.574	1.462	1.495	1.451	1.46	1.383	1.287	1.4936	8.6114
T	n-Butylbenzene		2.725	2.645	2.516	2.61	2.545	2.566	2.387	2.156	2.5188	7.0194
T	1,2-Dichlorobenzene	1.544	1.461	1.436	1.375	1.404	1.371	1.382	1.297	1.212	1.387	6.8449
T	1,2-Dibromo-3-Chloropropane			0.093	0.097	0.122	0.122	0.134	0.134	0.13	0.1188	14.398
T	1,2,4-Trichlorobenzene	1.156	0.963	0.98	0.936	0.999	0.975	0.988	0.944	0.882	0.9804	7.5963
T	Hexachlorobutadiene	0.47	0.405	0.413	0.39	0.407	0.402	0.408	0.395	0.377	0.4076	6.3393
T	Naphthalene	1.978	1.873	1.94	1.955	2.174	2.126	2.159	2.015	1.813	2.0036	6.3217
T	1,2,3-Trichlorobenzene	0.987	0.959	0.905	0.88	0.936	0.904	0.915	0.87	0.813	0.9078	5.6179

Fri Jul 01 14:48:52 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061648 Run Date: 06/30/2016 Sample ID: WG574723-12
Instrument ID: HPMS6 Run Time: 18:31 Method: 8260B
File ID: 6M140326 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG574723 Cal ID: HPMS6 - 30-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.9	ug/L	0.467	4.30	20	
1,1-Dichloroethene	CCC	50.0	44.2	ug/L	0.417	11.7	20	
1,2-Dichloropropane	CCC	50.0	52.0	ug/L	0.313	4.10	20	
Ethylbenzene	CCC	50.0	51.7	ug/L	0.517	3.40	20	
Toluene	CCC	50.0	50.2	ug/L	1.50	0.400	20	
Vinyl Chloride	CCC	50.0	46.1	ug/L	0.237	7.70	20	
Bromoform	SPCC	50.0	49.4	ug/L	0.205	1.20	20	
Chlorobenzene	SPCC	50.0	51.0	ug/L	0.974	1.90	20	
Chloromethane	SPCC	50.0	39.1	ug/L	0.365	21.7	20	*
1,1-Dichloroethane	SPCC	50.0	46.5	ug/L	0.506	7.10	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	55.5	ug/L	0.673	11.0	20	
Acetone		50.0	46.9	ug/L	0.0752	6.10	20	
Benzene		50.0	48.8	ug/L	1.02	2.40	20	
Bromobenzene		50.0	50.7	ug/L	0.761	1.40	20	
Bromochloromethane		50.0	48.9	ug/L	0.145	2.20	20	
Bromodichloromethane		50.0	51.3	ug/L	0.372	2.60	20	
Bromomethane		50.0	48.4	ug/L	0.165	3.20	20	
2-Butanone		50.0	50.7	ug/L	0.124	1.50	20	
n-Butylbenzene		50.0	51.3	ug/L	2.59	2.70	20	
sec-Butylbenzene		50.0	52.6	ug/L	3.17	5.10	20	
tert-Butylbenzene		50.0	53.2	ug/L	0.538	6.40	20	
Carbon Disulfide		50.0	43.6	ug/L	0.755	12.7	20	
Carbon Tetrachloride		50.0	51.4	ug/L	0.358	2.90	20	
Dibromochloromethane		50.0	53.8	ug/L	0.360	7.60	20	
Chloroethane		50.0	51.7	ug/L	0.168	3.50	20	
2-Chlorotoluene		50.0	52.8	ug/L	2.57	5.70	20	
4-Chlorotoluene		50.0	50.9	ug/L	2.36	1.80	20	
1,2-Dibromo-3-Chloropropane		50.0	55.7	ug/L	0.132	11.3	20	
1,2-Dibromoethane		50.0	52.4	ug/L	0.279	4.90	20	
Dibromomethane		50.0	49.0	ug/L	0.142	2.00	20	
1,2-Dichlorobenzene		50.0	52.5	ug/L	1.46	4.90	20	
1,3-Dichlorobenzene		50.0	51.3	ug/L	1.52	2.60	20	
1,4-Dichlorobenzene		50.0	51.8	ug/L	1.55	3.60	20	
Dichlorodifluoromethane		50.0	40.7	ug/L	0.340	18.6	20	
1,2-Dichloroethane		50.0	49.4	ug/L	0.386	1.20	20	
cis-1,2-Dichloroethene		50.0	49.8	ug/L	0.275	0.500	20	
trans-1,2-Dichloroethene		50.0	47.1	ug/L	0.238	5.90	20	
1,3-Dichloropropane		50.0	53.2	ug/L	0.553	6.30	20	
2,2-Dichloropropane		50.0	50.7	ug/L	0.416	1.40	20	
cis-1,3-Dichloropropene		50.0	56.3	ug/L	0.474	12.6	20	
trans-1,3-Dichloropropene		50.0	53.4	ug/L	0.565	6.70	20	
1,1-Dichloropropene		50.0	48.1	ug/L	0.356	3.80	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4847495
Report generated 07/12/2016 12:23

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061648 Run Date: 06/30/2016 Sample ID: WG574723-12
Instrument ID: HPMS6 Run Time: 18:31 Method: 8260B
File ID: 6M140326 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG574723 Cal ID: HPMS6 - 30-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	49.7	ug/L	0.260	0.600	20	
Hexachlorobutadiene		50.0	52.6	ug/L	0.429	5.20	20	
Isopropylbenzene		50.0	51.7	ug/L	1.63	3.30	20	
p-Isopropyltoluene		50.0	51.7	ug/L	2.65	3.40	20	
4-Methyl-2-Pentanone		50.0	50.7	ug/L	0.0939	1.40	20	
Methylene Chloride		50.0	46.6	ug/L	0.252	6.80	20	
Naphthalene		50.0	49.3	ug/L	1.98	1.40	20	
n-Propylbenzene		50.0	53.7	ug/L	3.86	7.40	20	
Styrene		50.0	52.9	ug/L	1.07	5.90	20	
1,1,1,2-Tetrachloroethane		50.0	52.6	ug/L	0.358	5.20	20	
Tetrachloroethene		50.0	48.7	ug/L	0.346	2.50	20	
1,2,3-Trichlorobenzene		50.0	51.1	ug/L	0.928	2.20	20	
1,2,4-Trichlorobenzene		50.0	51.4	ug/L	1.01	2.90	20	
1,1,1-Trichloroethane		50.0	49.4	ug/L	0.419	1.20	20	
1,1,2-Trichloroethane		50.0	52.1	ug/L	0.287	4.10	20	
Trichloroethene		50.0	49.0	ug/L	0.252	2.10	20	
Trichlorofluoromethane		50.0	47.1	ug/L	0.368	5.70	20	
1,2,3-Trichloropropane		50.0	54.9	ug/L	0.197	9.80	20	
1,2,4-Trimethylbenzene		50.0	51.6	ug/L	2.66	3.10	20	
1,3,5-Trimethylbenzene		50.0	52.6	ug/L	2.65	5.10	20	
o-Xylene		50.0	53.4	ug/L	0.644	6.80	20	
m-,p-Xylene		100	104	ug/L	0.627	3.70	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4847495
Report generated 07/12/2016 12:23

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648 Run Date: 07/08/2016 Sample ID: WG575663-02
Instrument ID: HPMS6 Run Time: 14:33 Method: 8260B
File ID: 6M140510 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG575666 Cal ID: HPMS6 - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	51.7	ug/L	0.504	3.35	20	
1,1-Dichloroethene	CCC	50.0	53.7	ug/L	0.507	7.37	20	
1,2-Dichloropropane	CCC	50.0	49.9	ug/L	0.300	0.259	20	
Ethylbenzene	CCC	50.0	51.0	ug/L	0.510	1.95	20	
Toluene	CCC	50.0	49.0	ug/L	1.46	2.09	20	
Vinyl Chloride	CCC	50.0	57.2	ug/L	0.293	14.3	20	
Bromoform	SPCC	50.0	49.9	ug/L	0.207	0.250	20	
Chlorobenzene	SPCC	50.0	49.3	ug/L	0.942	1.44	20	
Chloromethane	SPCC	50.0	48.5	ug/L	0.453	2.98	20	
1,1-Dichloroethane	SPCC	50.0	51.1	ug/L	0.556	2.12	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	46.5	ug/L	0.564	7.01	20	
Xylenes		150	152	ug/L	0.610	1.08	20	
Acetone		50.0	46.4	ug/L	0.0743	7.29	20	
Benzene		50.0	50.2	ug/L	1.05	0.366	20	
Bromobenzene		50.0	47.6	ug/L	0.714	4.81	20	
Bromochloromethane		50.0	52.6	ug/L	0.156	5.22	20	
Bromodichloromethane		50.0	53.4	ug/L	0.387	6.75	20	
Bromomethane		50.0	39.5	ug/L	0.135	20.9	20	*
2-Butanone		50.0	45.3	ug/L	0.111	9.37	20	
n-Butylbenzene		50.0	50.9	ug/L	2.57	1.87	20	
sec-Butylbenzene		50.0	49.7	ug/L	2.99	0.631	20	
tert-Butylbenzene		50.0	49.4	ug/L	0.500	1.22	20	
Carbon Disulfide		50.0	50.8	ug/L	0.879	1.63	20	
Carbon Tetrachloride		50.0	61.0	ug/L	0.425	22.0	20	*
Dibromochloromethane		50.0	52.5	ug/L	0.351	4.92	20	
Chloroethane		50.0	52.5	ug/L	0.170	4.95	20	
2-Chlorotoluene		50.0	45.1	ug/L	2.19	9.72	20	
4-Chlorotoluene		50.0	50.0	ug/L	2.32	0.0246	20	
1,2-Dibromo-3-Chloropropane		50.0	47.3	ug/L	0.112	5.43	20	
1,2-Dibromoethane		50.0	47.5	ug/L	0.253	5.05	20	
Dibromomethane		50.0	51.5	ug/L	0.150	2.99	20	
1,2-Dichlorobenzene		50.0	47.6	ug/L	1.32	4.74	20	
1,3-Dichlorobenzene		50.0	48.6	ug/L	1.44	2.83	20	
1,4-Dichlorobenzene		50.0	47.9	ug/L	1.43	4.27	20	
Dichlorodifluoromethane		50.0	59.6	ug/L	0.498	19.2	20	
1,2-Dichloroethane		50.0	50.8	ug/L	0.397	1.61	20	
cis-1,2-Dichloroethene		50.0	51.9	ug/L	0.287	3.86	20	
trans-1,2-Dichloroethene		50.0	52.3	ug/L	0.264	4.65	20	
1,3-Dichloropropane		50.0	45.3	ug/L	0.471	9.37	20	
2,2-Dichloropropane		50.0	56.3	ug/L	0.462	12.7	20	
cis-1,3-Dichloropropene		50.0	51.4	ug/L	0.433	2.85	20	
trans-1,3-Dichloropropene		50.0	49.8	ug/L	0.528	0.392	20	

CCV - Modified 03/05/2008
PDF File ID: 4847497
Report generated 07/12/2016 12:24

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648 Run Date: 07/08/2016 Sample ID: WG575663-02
Instrument ID: HPMS6 Run Time: 14:33 Method: 8260B
File ID: 6M140510 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG575666 Cal ID: HPMS6 - 30-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	52.0	ug/L	0.385	4.10	20	
2-Hexanone		50.0	40.7	ug/L	0.213	18.6	20	
Hexachlorobutadiene		50.0	50.3	ug/L	0.410	0.510	20	
Isopropylbenzene		50.0	50.7	ug/L	1.59	1.34	20	
p-Isopropyltoluene		50.0	50.5	ug/L	2.59	0.908	20	
4-Methyl-2-Pentanone		50.0	42.0	ug/L	0.0779	16.0	20	
Methylene Chloride		50.0	49.7	ug/L	0.269	0.674	20	
Naphthalene		50.0	45.9	ug/L	1.84	8.10	20	
n-Propylbenzene		50.0	49.1	ug/L	3.52	1.88	20	
Styrene		50.0	51.2	ug/L	1.04	2.30	20	
1,1,1,2-Tetrachloroethane		50.0	52.7	ug/L	0.359	5.50	20	
Tetrachloroethene		50.0	51.1	ug/L	0.363	2.26	20	
1,2,3-Trichlorobenzene		50.0	47.6	ug/L	0.864	4.87	20	
1,2,4-Trichlorobenzene		50.0	48.6	ug/L	0.952	2.89	20	
1,1,1-Trichloroethane		50.0	55.0	ug/L	0.467	9.99	20	
1,1,2-Trichloroethane		50.0	47.4	ug/L	0.262	5.14	20	
Trichloroethene		50.0	50.4	ug/L	0.259	0.736	20	
Trichlorofluoromethane		50.0	66.9	ug/L	0.523	33.8	20	*
1,2,3-Trichloropropane		50.0	45.2	ug/L	0.163	9.52	20	
1,2,4-Trimethylbenzene		50.0	49.6	ug/L	2.56	0.892	20	
1,3,5-Trimethylbenzene		50.0	49.2	ug/L	2.48	1.67	20	
o-Xylene		50.0	50.5	ug/L	0.609	0.984	20	
m-,p-Xylene		100	101	ug/L	0.611	1.12	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4847497
Report generated 07/12/2016 12:24

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061648
Instrument ID: HPMS6
Workgroup (AAB#): WG575666

ICAL CCV Number: WG574723-08
CAL ID: HPMS6-30-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG574723-08	NA	NA	264882	476977	665194
Upper Limit	NA	NA	529764	953954	1330388
Lower Limit	NA	NA	132441	238489	332597
L16061648-01	1.00	01	256077	477680	655419
L16061648-03	1.00	01	261095	489553	659607
WG575666-01	1.00	01	272771	521746	711313
WG575666-02	1.00	01	301291	519319	691171
WG575666-03	1.00	01	301252	524392	710086

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4849699
Report generated 07/12/2016 12:24

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061648
Instrument ID: HPMS6
Workgroup (AAB#): WG575666

ICAL CCV Number: WG574723-08
CAL ID: HPMS6-30-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG574723-08	NA	NA	18.81	15.25	10.77
Upper Limit	NA	NA	19.31	15.75	11.27
Lower Limit	NA	NA	18.31	14.75	10.27
L16061648-01	1.00	01	18.81	15.25	10.77
L16061648-03	1.00	01	18.8	15.25	10.77
WG575666-01	1.00	01	18.81	15.25	10.77
WG575666-02	1.00	01	18.81	15.25	10.76
WG575666-03	1.00	01	18.8	15.25	10.76

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4849700
Report generated: 07/12/2016 12:24

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070816\6M140525.D Vial: 17
Acq On : 8 Jul 2016 22:36 Operator: TMB
Sample : L16061648-01 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 11 08:41:58 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	655419	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	477680	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	256077	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	176543	26.5496 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.20%		
43) 1,2-Dichloroethane-d4	10.31	65	217003	25.8512 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.40%		
58) Toluene-d8	13.04	98	575809	24.4792 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.92%		
80) p-Bromofluorobenzene	17.02	95	240005	23.9313 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.72%		
Target Compounds					Qvalue
3) Chloromethane	3.36	50	1844	0.1507 ug/L #	64
13) Acetone	5.90	43	6066	2.8888 ug/L	93
29) 2-Butanone	8.72	43	435	0.1353 ug/L #	57
33) Chloroform	9.26	83	5751	0.4501 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M140525.D 8260WTR.M Mon Jul 11 08:42:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070816\6M140525.D Vial: 17
Acq On : 8 Jul 2016 22:36 Operator: TMB
Sample : L16061648-01 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 11 8:41 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

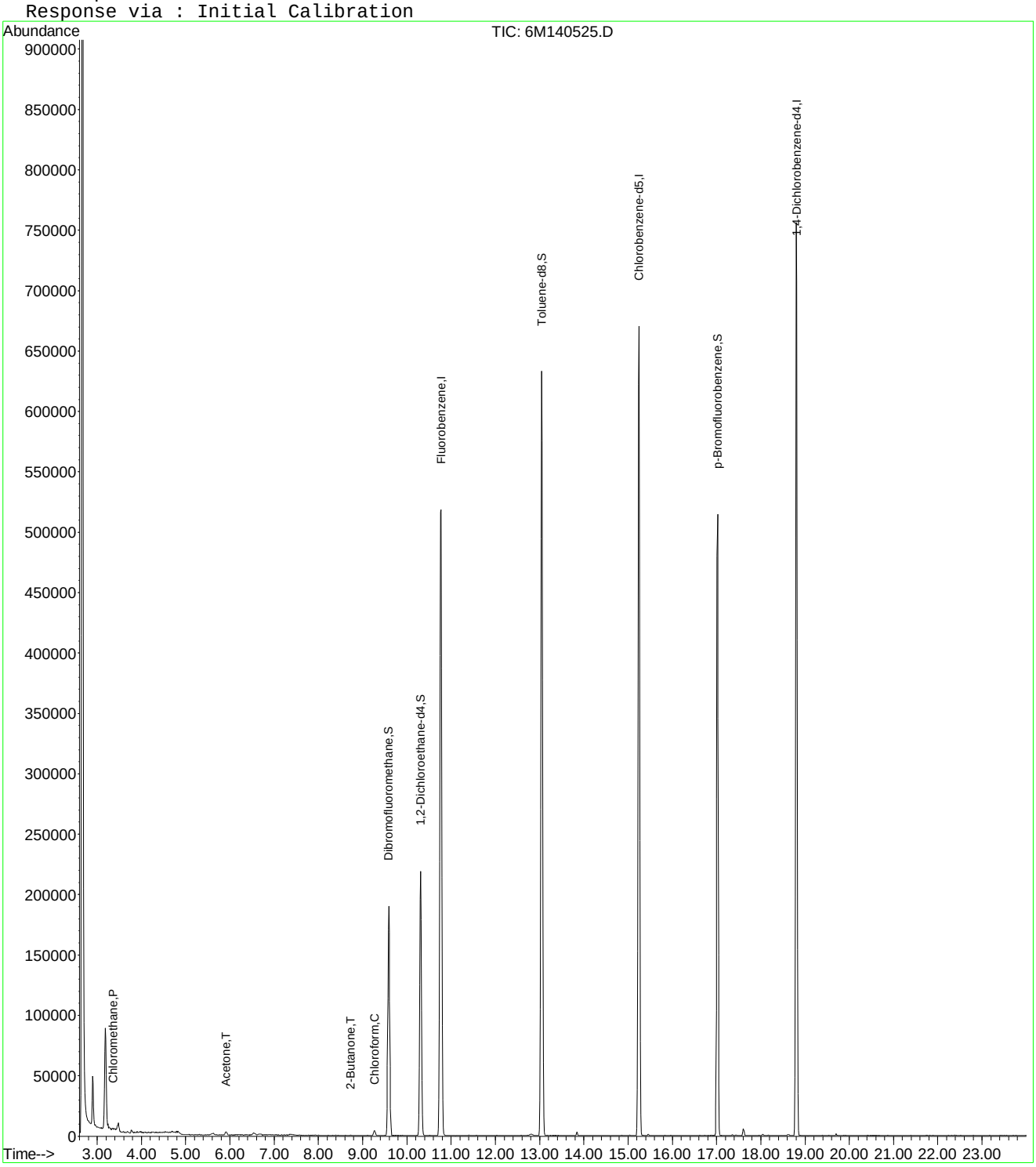

6M140525.D 8260WTR.M Mon Jul 11 08:42:02 2016 Page 2

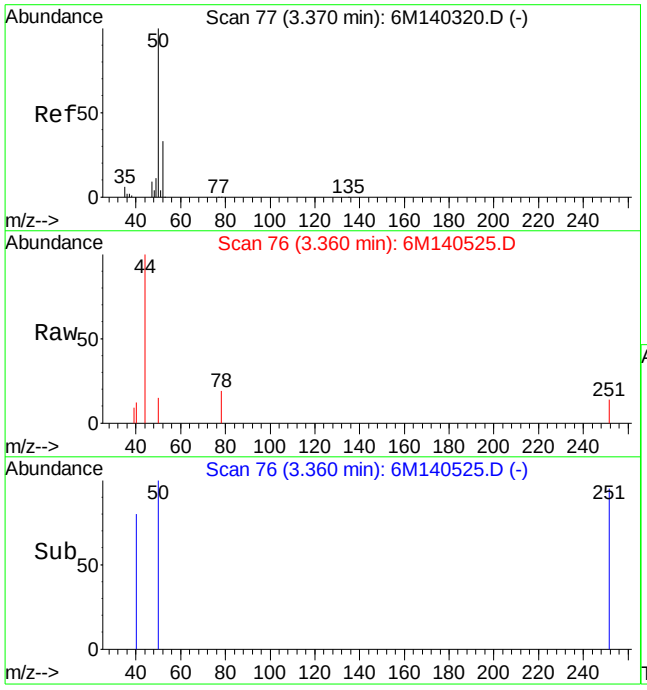

#3
Chloromethane
Concen: 0.15 ug/L
RT: 3.36 min Scan# 76
Delta R.T. -0.00 min
Lab File: 6M140525.D
Acq: 8 Jul 2016 22:36

Tgt Ion: 50 Resp: 1844

Ion	Ratio	Lower	Upper
50	100		
52	12.7	19.8	46.2#

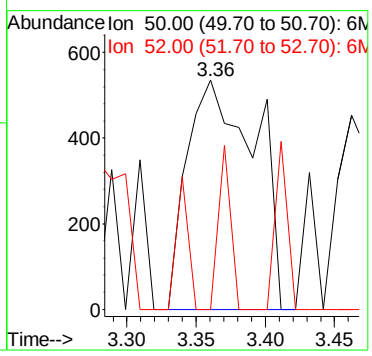

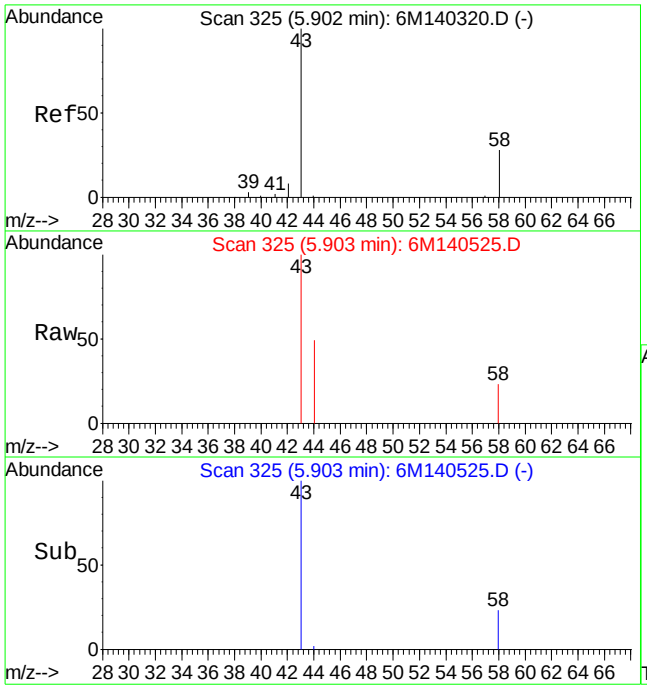

#13
Acetone
Concen: 2.89 ug/L
RT: 5.90 min Scan# 325
Delta R.T. -0.00 min
Lab File: 6M140525.D
Acq: 8 Jul 2016 22:36

Tgt Ion: 43 Resp: 6066

Ion	Ratio	Lower	Upper
43	100		
58	23.8	16.4	38.2

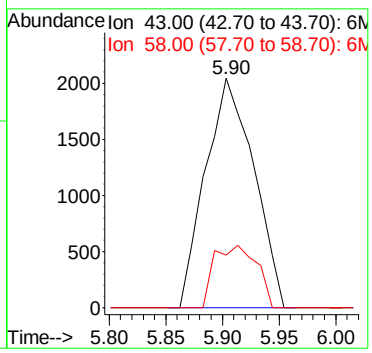

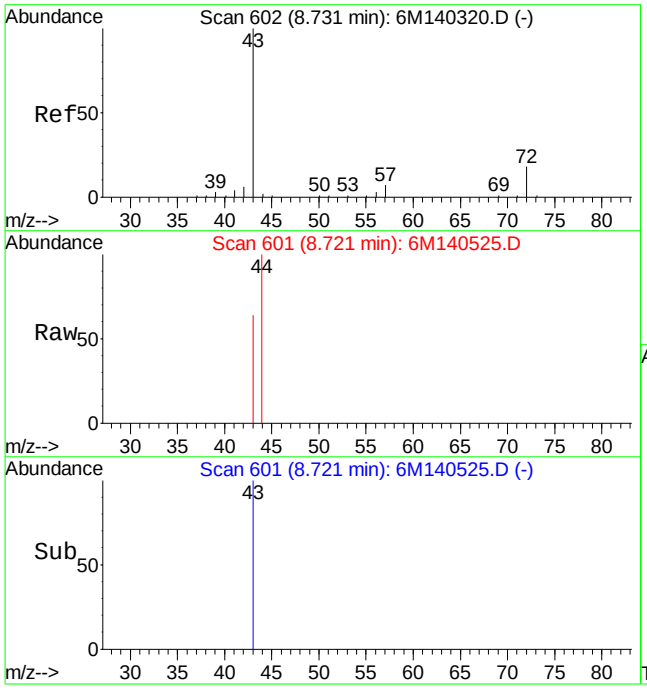

#29
2-Butanone
Concen: 0.14 ug/L
RT: 8.72 min Scan# 601
Delta R.T. -0.01 min
Lab File: 6M140525.D
Acq: 8 Jul 2016 22:36

Tgt Ion: 43 Resp: 435

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.9	27.9#

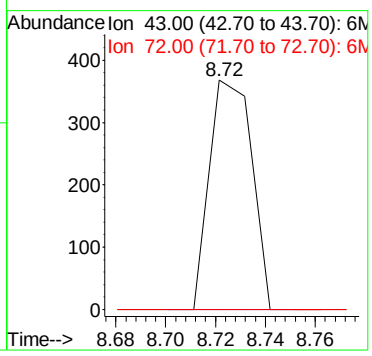

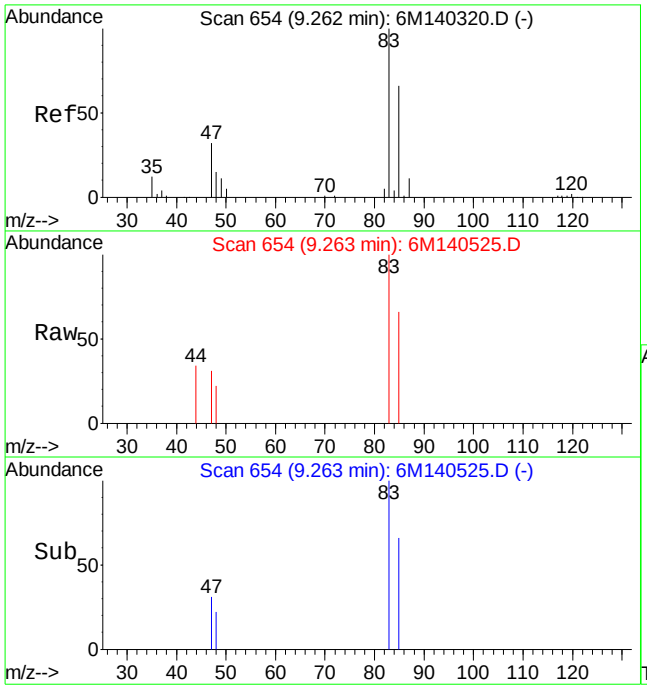

#33
Chloroform
Concen: 0.45 ug/L
RT: 9.26 min Scan# 654
Delta R.T. -0.00 min
Lab File: 6M140525.D
Acq: 8 Jul 2016 22:36

Tgt Ion: 83 Resp: 5751

Ion	Ratio	Lower	Upper
83	100		
85	63.8	39.0	91.0
47	29.0	18.5	43.1

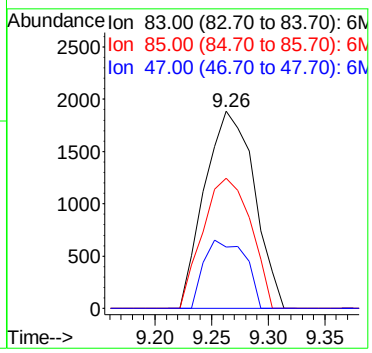

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070816\6M140524.D Vial: 16
Acq On : 8 Jul 2016 22:03 Operator: TMB
Sample : L16061648-03 A TB 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 11 08:41:51 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	659607	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	489553	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	261095	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.58	111	180287	26.9405 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.76%		
43) 1,2-Dichloroethane-d4	10.31	65	220729	26.1281 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 104.52%		
58) Toluene-d8	13.04	98	587157	24.3563 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.44%		
80) p-Bromofluorobenzene	17.02	95	243660	23.8288 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.32%		
Target Compounds					Qvalue
3) Chloromethane	3.35	50	2690	0.2185 ug/L #	54
13) Acetone	5.90	43	1981	0.9374 ug/L #	48
36) Tetrahydrofuran	9.56	42	4321	1.9150 ug/L #	63

(#) = qualifier out of range (m) = manual integration
6M140524.D 8260WTR.M Mon Jul 11 08:41:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070816\6M140524.D Vial: 16
Acq On : 8 Jul 2016 22:03 Operator: TMB
Sample : L16061648-03 A TB 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 11 8:41 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

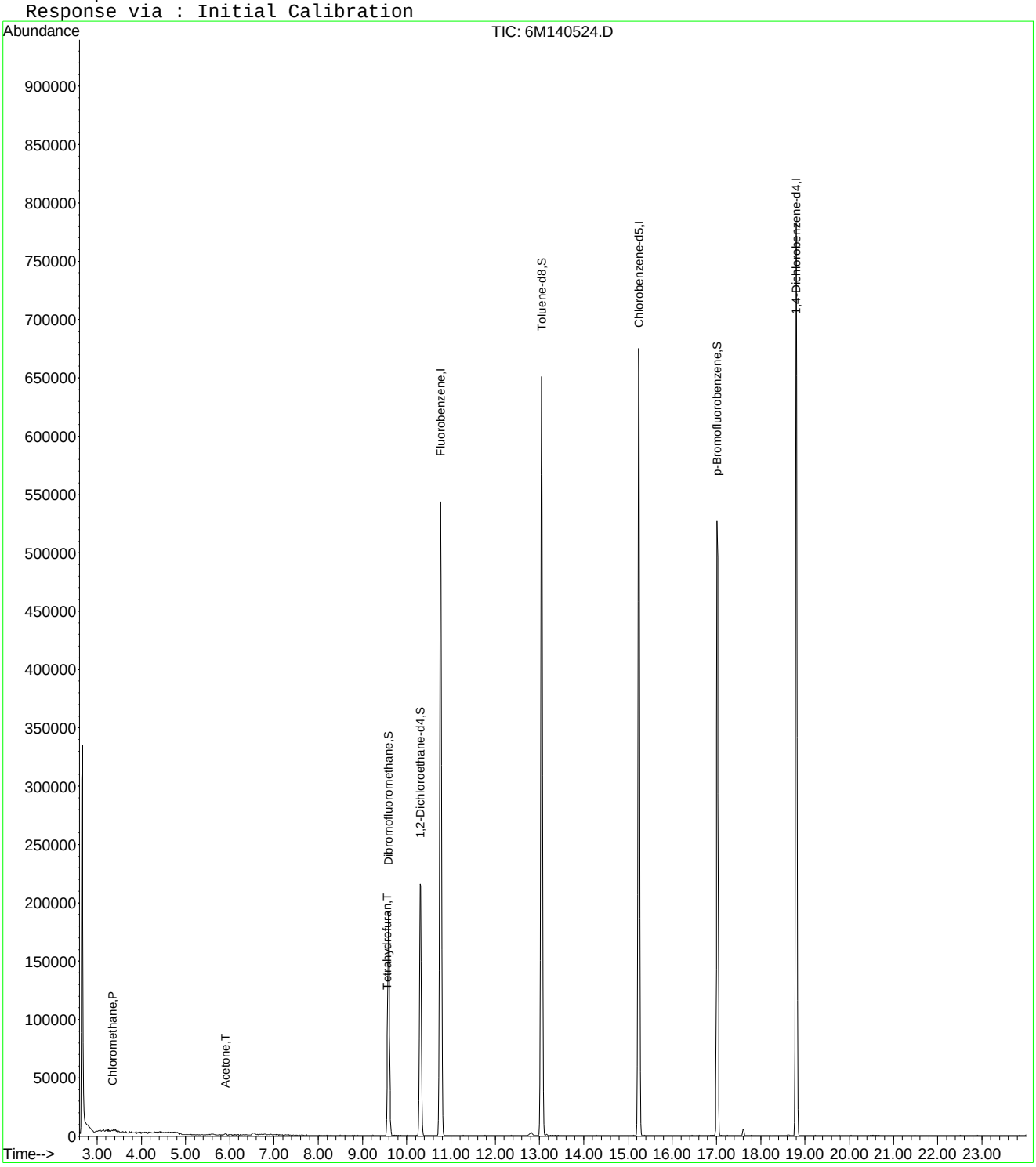

6M140524.D 8260WTR.M Mon Jul 11 08:41:55 2016 Page 2

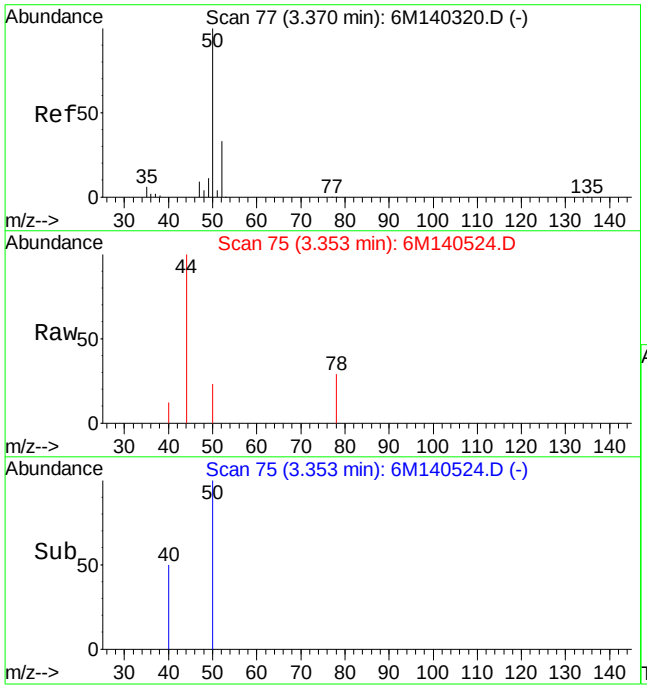

#3
Chloromethane
Concen: 0.22 ug/L
RT: 3.35 min Scan# 75
Delta R.T. -0.01 min
Lab File: 6M140524.D
Acq: 8 Jul 2016 22:03

Tgt Ion: 50 Resp: 2690

Ion	Ratio	Lower	Upper
50	100		
52	7.2	19.8	46.2#

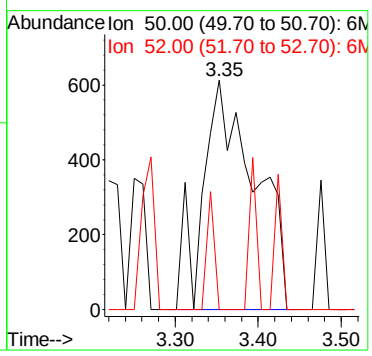

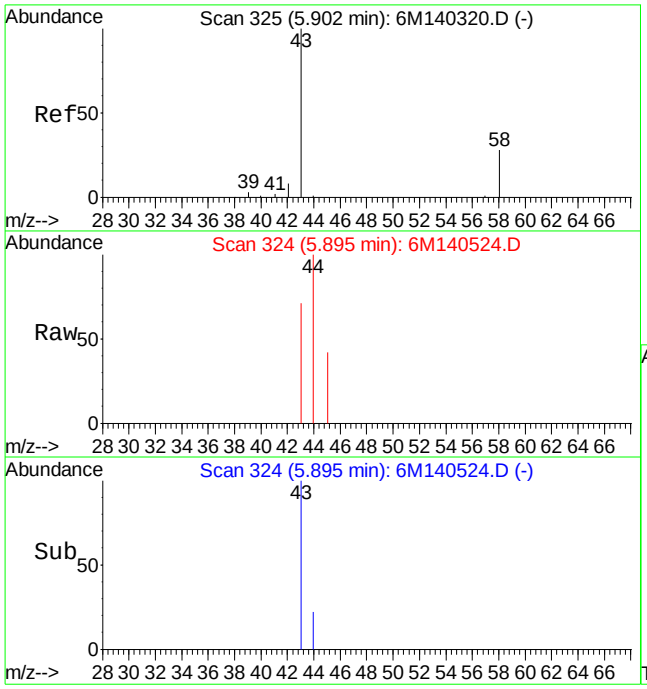

#13
Acetone
Concen: 0.94 ug/L
RT: 5.90 min Scan# 324
Delta R.T. -0.01 min
Lab File: 6M140524.D
Acq: 8 Jul 2016 22:03

Tgt Ion: 43 Resp: 1981

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

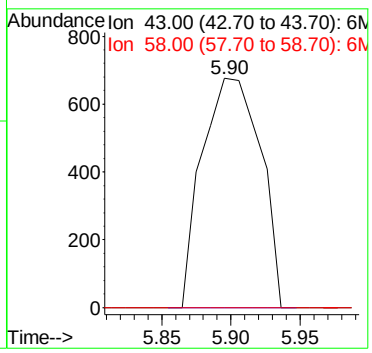

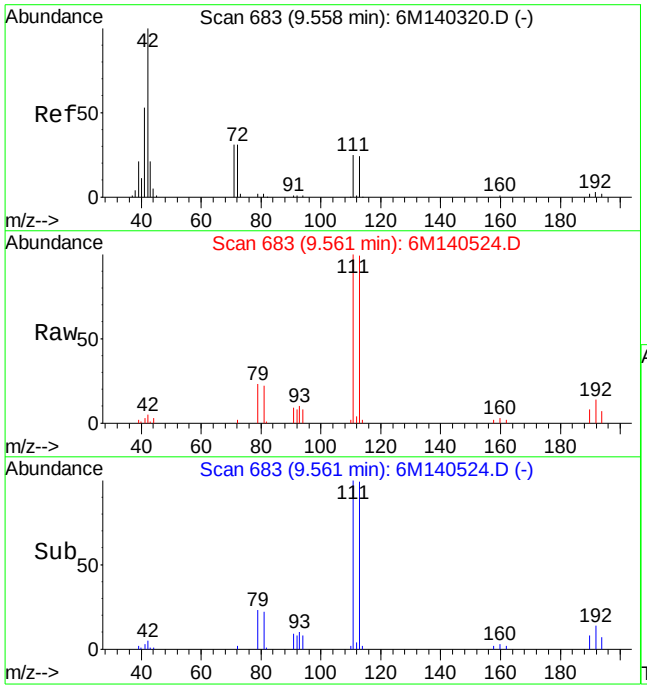

#36
Tetrahydrofuran
Concen: 1.92 ug/L
RT: 9.56 min Scan# 683
Delta R.T. 0.00 min
Lab File: 6M140524.D
Acq: 8 Jul 2016 22:03

Tgt Ion: 42 Resp: 4321

Ion	Ratio	Lower	Upper
42	100		
72	15.8	20.8	48.4#
71	10.0	19.9	46.5#

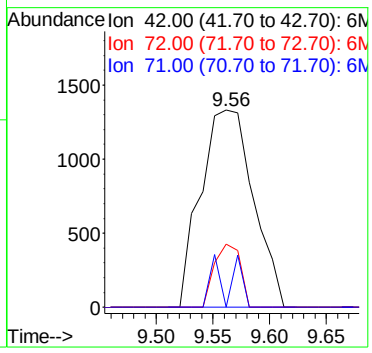

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:46 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	611118	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	473080	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	253718	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.40	111	173671	27.7488 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.00%		
43) 1,2-Dichloroethane-d4	11.12	65	203570	26.8000 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.20%		
58) Toluene-d8	13.86	98	554047	26.0139 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.04%		
80) p-Bromofluorobenzene	17.85	95	229998	27.1525 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 108.60%		

Target Compounds					Qvalue
13) Acetone	6.67	43	1325	0.6992 ug/L #	46
20) Carbon Disulfide	7.54	76	18747	0.9622 ug/L #	39
29) 2-Butanone	9.31	43	1188	0.4247 ug/L #	1
36) Tetrahydrofuran	10.36	42	2769	1.5196 ug/L #	58
60) Ethyl Methacrylate	13.87	69	899	0.1270 ug/L #	1

(#) = qualifier out of range (m) = manual integration
6M138751.D 8260WTR.M Mon Apr 25 09:22:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

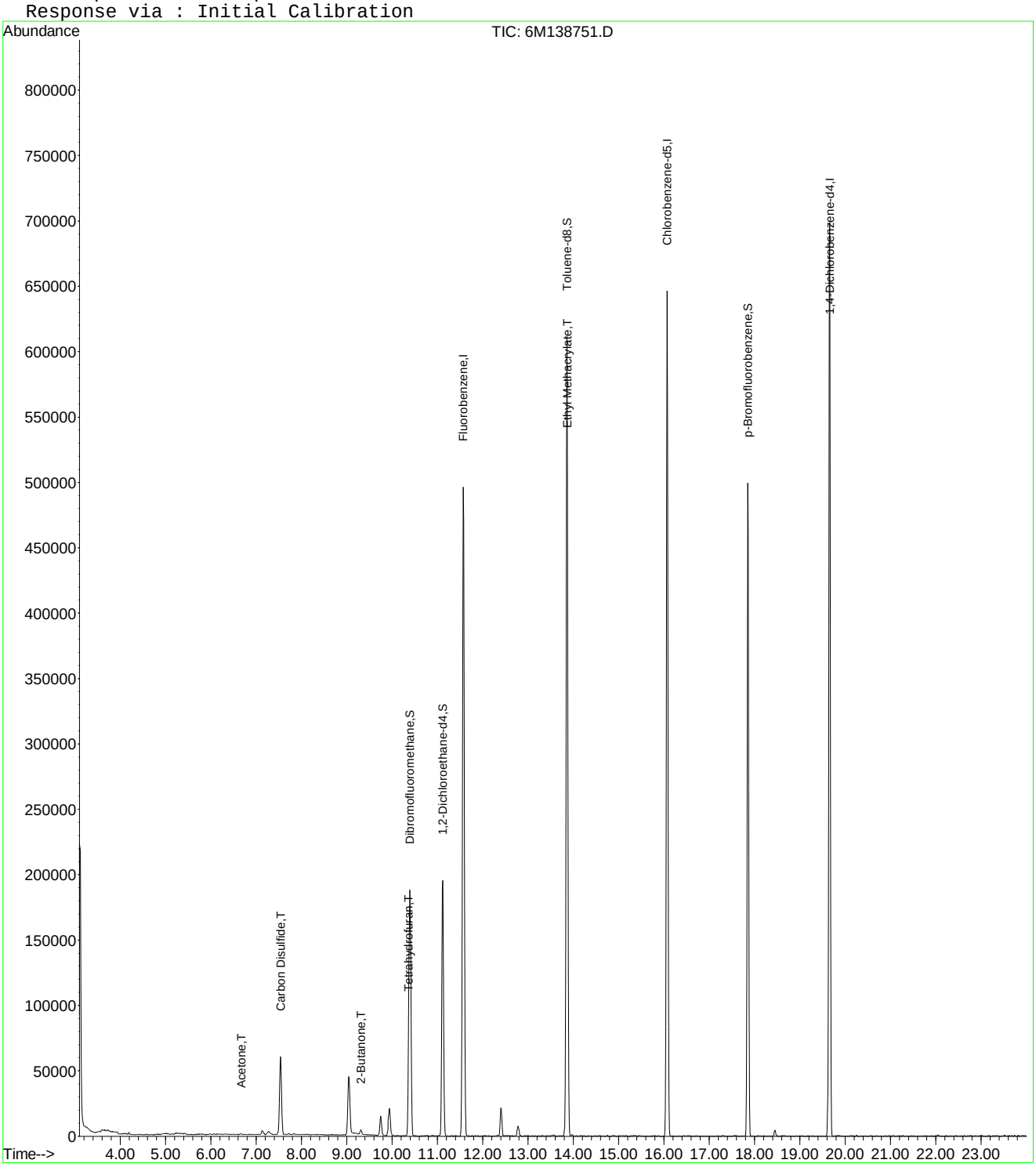

6M138751.D 8260WTR.M Mon Apr 25 09:22:46 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:52 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	611118	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	473080	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	253718	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.13	41	4366	3.7209 ug/L	76
3) 3-Chloro-1-propene	7.54	41	69268	4.2301 ug/L	92
4) 2-Chloro-1,3-butadiene	9.04	53	50753	3.6002 ug/L	85
5) Ethyl Acetate	9.75	43	28042	4.3499 ug/L #	90
6) Methacrylonitrile	9.94	67	8721	3.5173 ug/L #	55
7) Isobutyl Alcohol	9.94	43	1233	3.4767 ug/L #	85
9) Methyl methacrylate	12.40	41	19474	3.0338 ug/L	79
10) 2-Nitropropane	12.78	43	7076	3.7392 ug/L	93
13) Cyclohexanone	17.57	55	447	0.5159 ug/L #	25

(#) = qualifier out of range (m) = manual integration
6M138751.D A9FOOWT.M Mon Apr 25 15:45:52 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

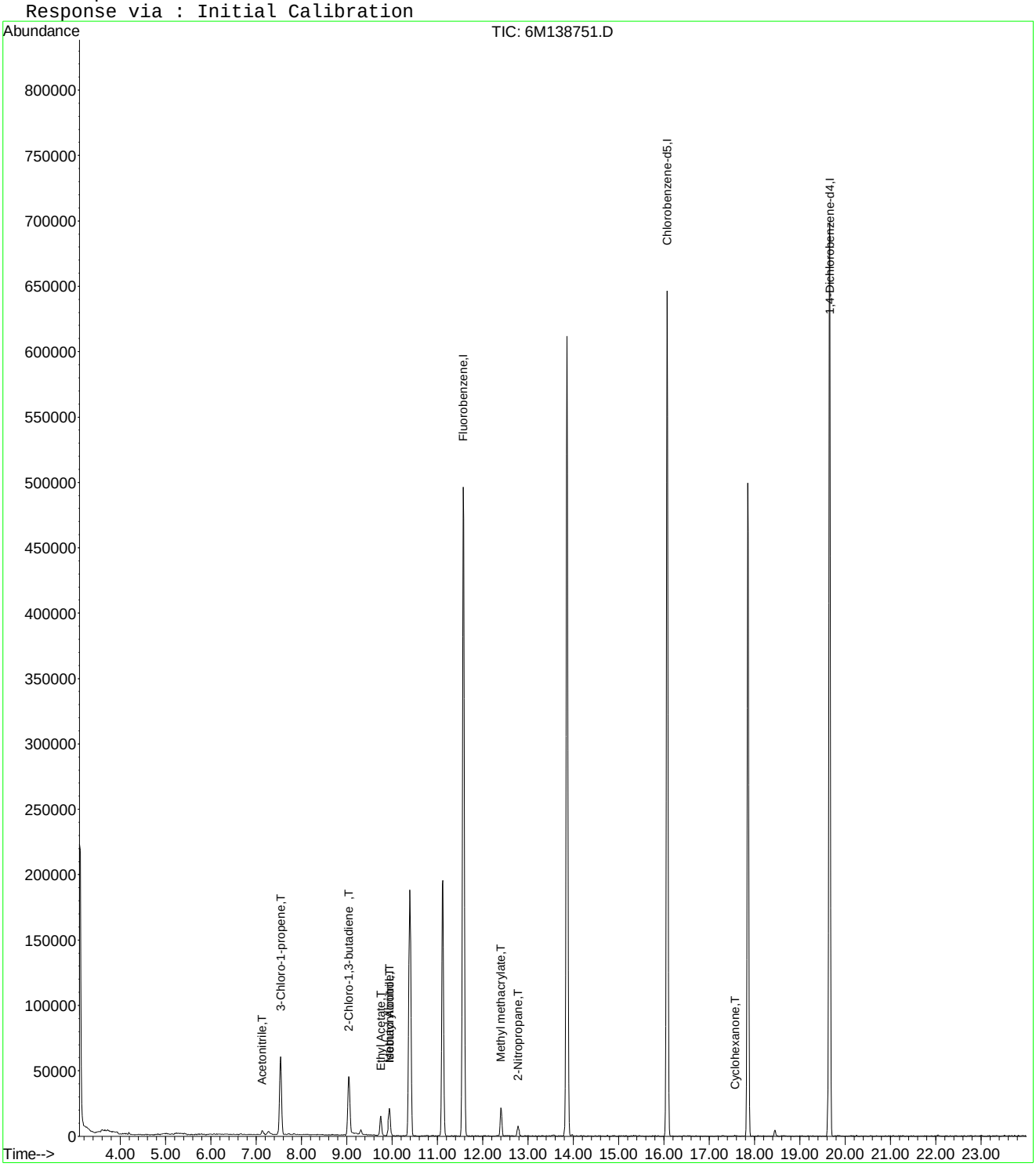

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:56 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	611118	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	473080	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	253718	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.13	41	4366	4.7698 ug/L	76
3) 3-Chloro-1-propene	7.54	41	69268	4.5408 ug/L	92
4) 2-Chloro-1,3-butadiene	9.04	53	50753	3.8775 ug/L	85
5) Ethyl Acetate	9.75	43	28042	4.2792 ug/L #	90
6) Methacrylonitrile	9.94	67	8721	3.8601 ug/L #	55
7) Isobutyl Alcohol	9.94	43	1233	5.9076 ug/L #	85
9) Methyl methacrylate	12.40	41	19474	3.5356 ug/L	79
10) 2-Nitropropane	12.78	43	7076	3.4543 ug/L	93
13) Cyclohexanone	17.57	55	447	1.4133 ug/L #	25

(#) = qualifier out of range (m) = manual integration
6M138751.D A9FOOWT.M Wed Apr 27 16:04:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

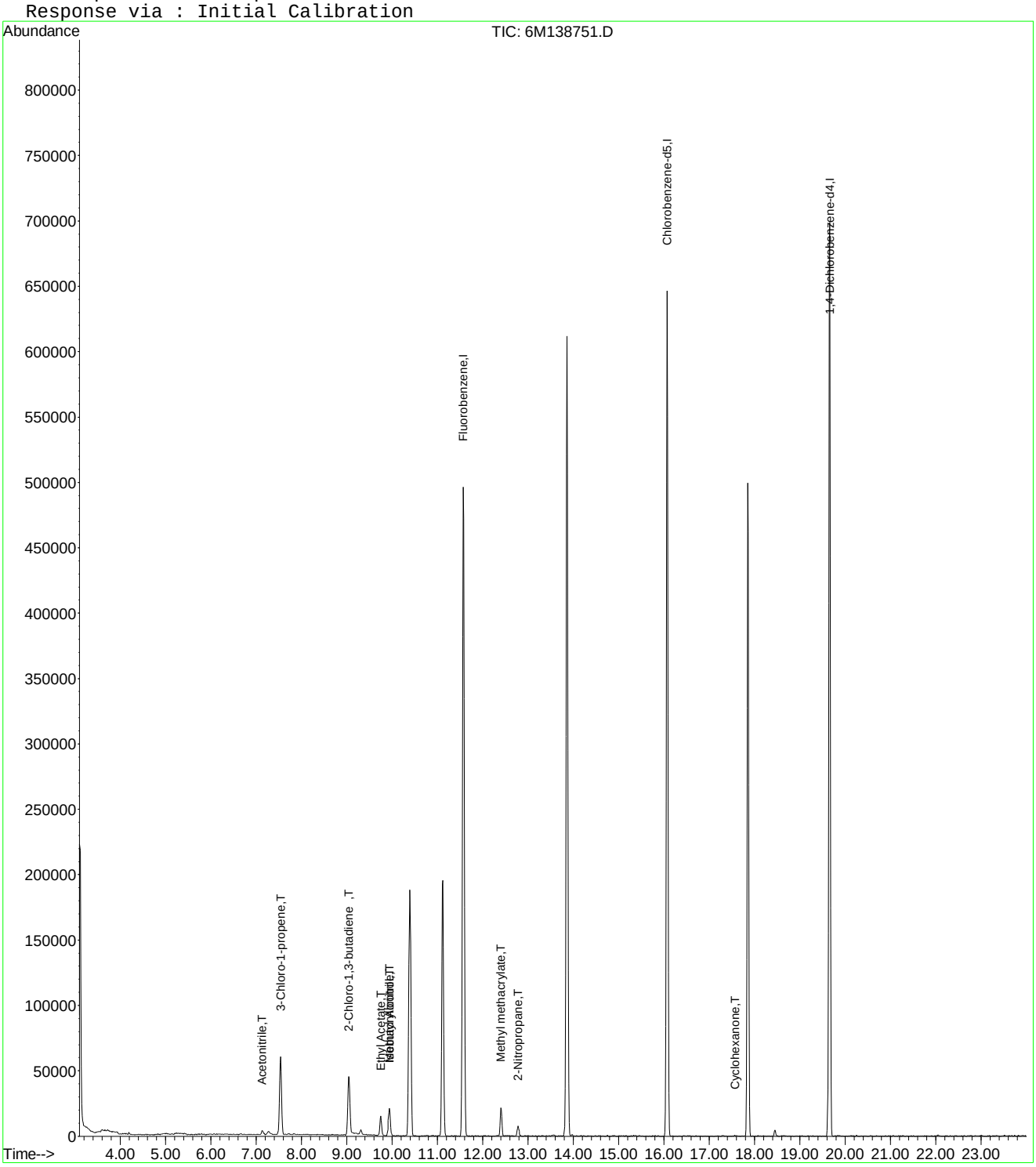

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	5.0000	4.7698	4.6	100	0.00
3	T	3-Chloro-1-propene	5.0000	4.5408	9.2	100	0.00
4	T	2-Chloro-1,3-butadiene	5.0000	3.8775	22.5	100	0.00
5	T	Ethyl Acetate	5.0000	4.2792	14.4	100	0.00
6	T	Methacrylonitrile	5.0000	3.8601	22.8	100	0.00
7	T	Isobutyl Alcohol	-1.0000	5.9076	0.0	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.99#
9	T	Methyl methacrylate	5.0000	3.5356	29.3	100	0.00
10	T	2-Nitropropane	-1.0000	3.4543	0.0	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	1.4133	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138751.D A9FOOWT.M Wed Apr 27 16:04:12 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:48 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	599043	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	463005	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	248475	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	171577	27.9669 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.88%		
43) 1,2-Dichloroethane-d4	11.12	65	207390	27.8532 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.40%		
58) Toluene-d8	13.86	98	547786	26.2796 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.12%		
80) p-Bromofluorobenzene	17.85	95	228171	27.5052 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 110.04%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	2739	1.4745 ug/L #	59
20) Carbon Disulfide	7.54	76	81493	4.2668 ug/L #	36
27) 1,1-Dichloroethane	9.05	63	3411	0.2688 ug/L #	42
29) 2-Butanone	9.31	43	3879	1.4148 ug/L #	1
36) Tetrahydrofuran	10.37	42	3350	1.8754 ug/L #	62
60) Ethyl Methacrylate	13.86	69	1183	0.1708 ug/L #	27

(#) = qualifier out of range (m) = manual integration
6M138752.D 8260WTR.M Mon Apr 25 09:22:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

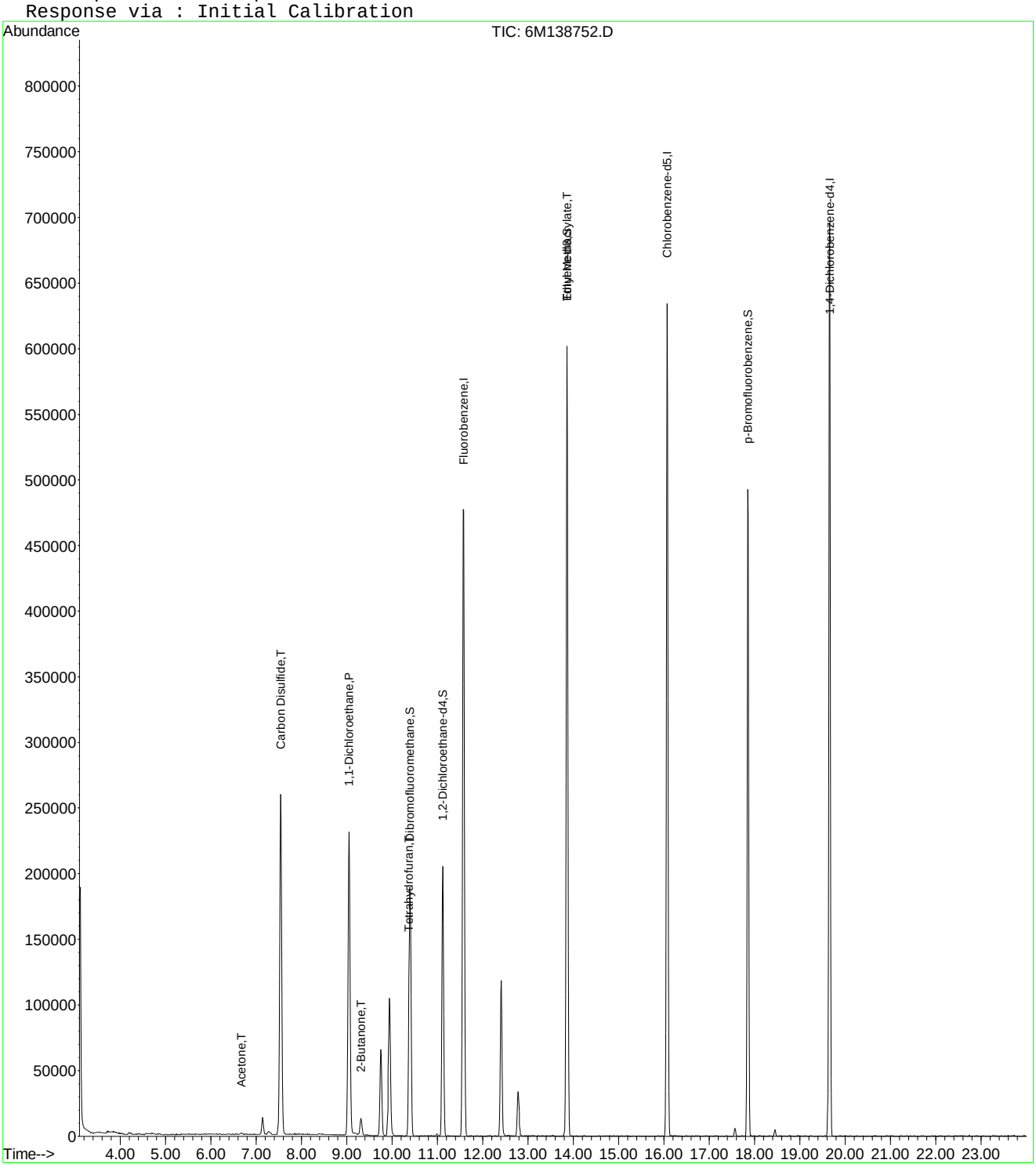

6M138752.D 8260WTR.M Mon Apr 25 09:22:48 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:54 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	599043	25.00 ug/L	-0.02
11) Chlorobenzene-d5	16.07	117	463005	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	248475	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	17741	15.4242 ug/L	95
3) 3-Chloro-1-propene	7.54	41	297686	18.5457 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	242962	17.5823 ug/L	84
5) Ethyl Acetate	9.75	43	124111	19.6403 ug/L	93
6) Methacrylonitrile	9.93	67	42708	17.5719 ug/L #	59
7) Isobutyl Alcohol	9.95	43	7968	22.9203 ug/L #	85
8) 1-Butanol	10.98	41	982	6.5662 ug/L #	52
9) Methyl methacrylate	12.41	41	95824	15.2291 ug/L	81
10) 2-Nitropropane	12.78	43	34207	18.4403 ug/L	92
13) Cyclohexanone	17.57	55	4053	4.7763 ug/L	81

(#) = qualifier out of range (m) = manual integration
6M138752.D A9FOOWT.M Mon Apr 25 15:45:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

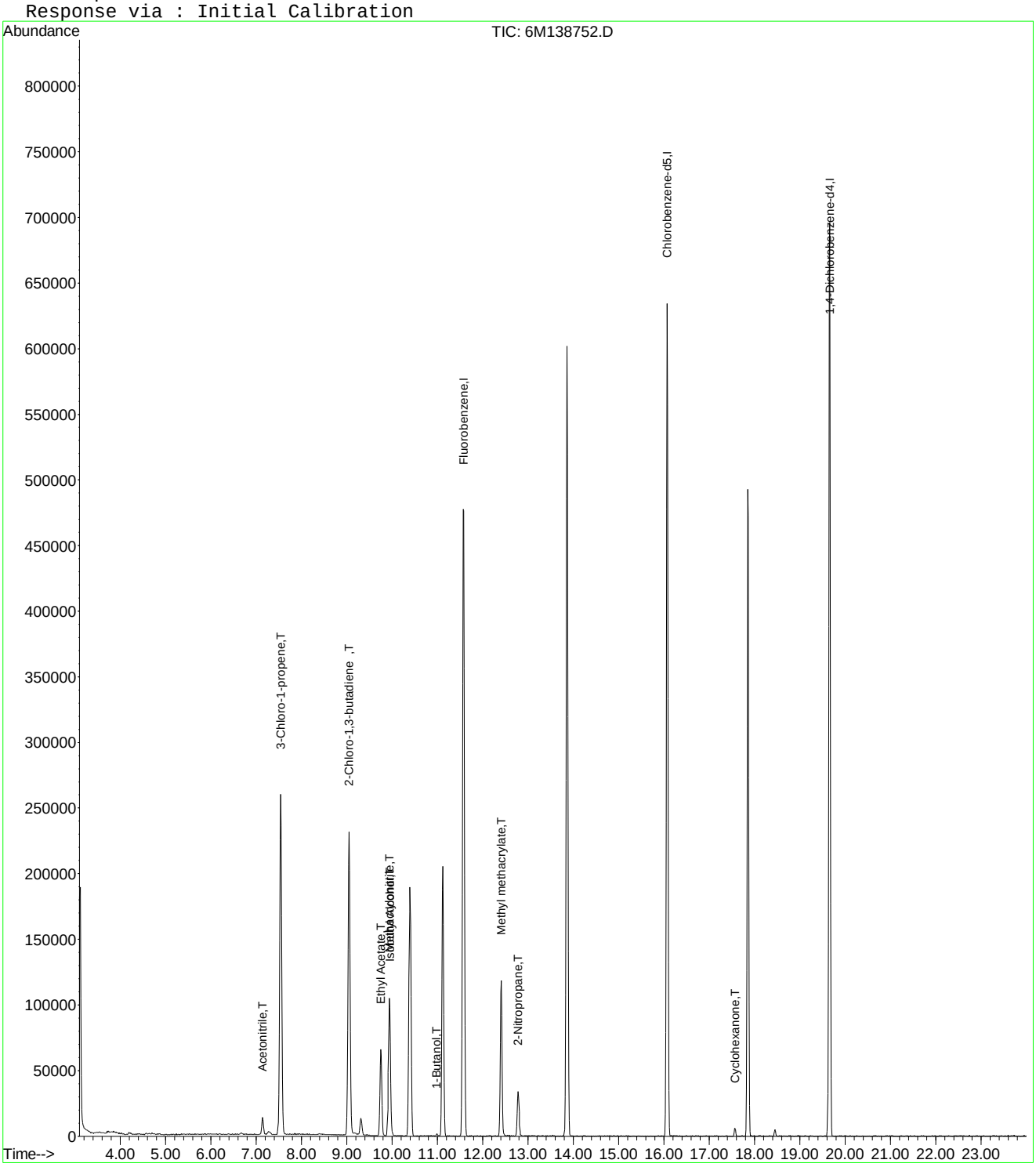

6M138752.D A9FOOWT.M Mon Apr 25 15:45:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:58 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	599043	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	463005	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	248475	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	17741	19.7725 ug/L	95
3) 3-Chloro-1-propene	7.54	41	297686	19.9080 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	242962	18.9362 ug/L	84
5) Ethyl Acetate	9.75	43	124111	19.3209 ug/L	93
6) Methacrylonitrile	9.93	67	42708	19.2846 ug/L #	59
7) Isobutyl Alcohol	9.95	43	7968	38.9462 ug/L #	85
9) Methyl methacrylate	12.41	41	95824	17.7480 ug/L	81
10) 2-Nitropropane	12.78	43	34207	17.0355 ug/L	92
13) Cyclohexanone	17.57	55	4053	13.0852 ug/L	81

(#) = qualifier out of range (m) = manual integration
6M138752.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

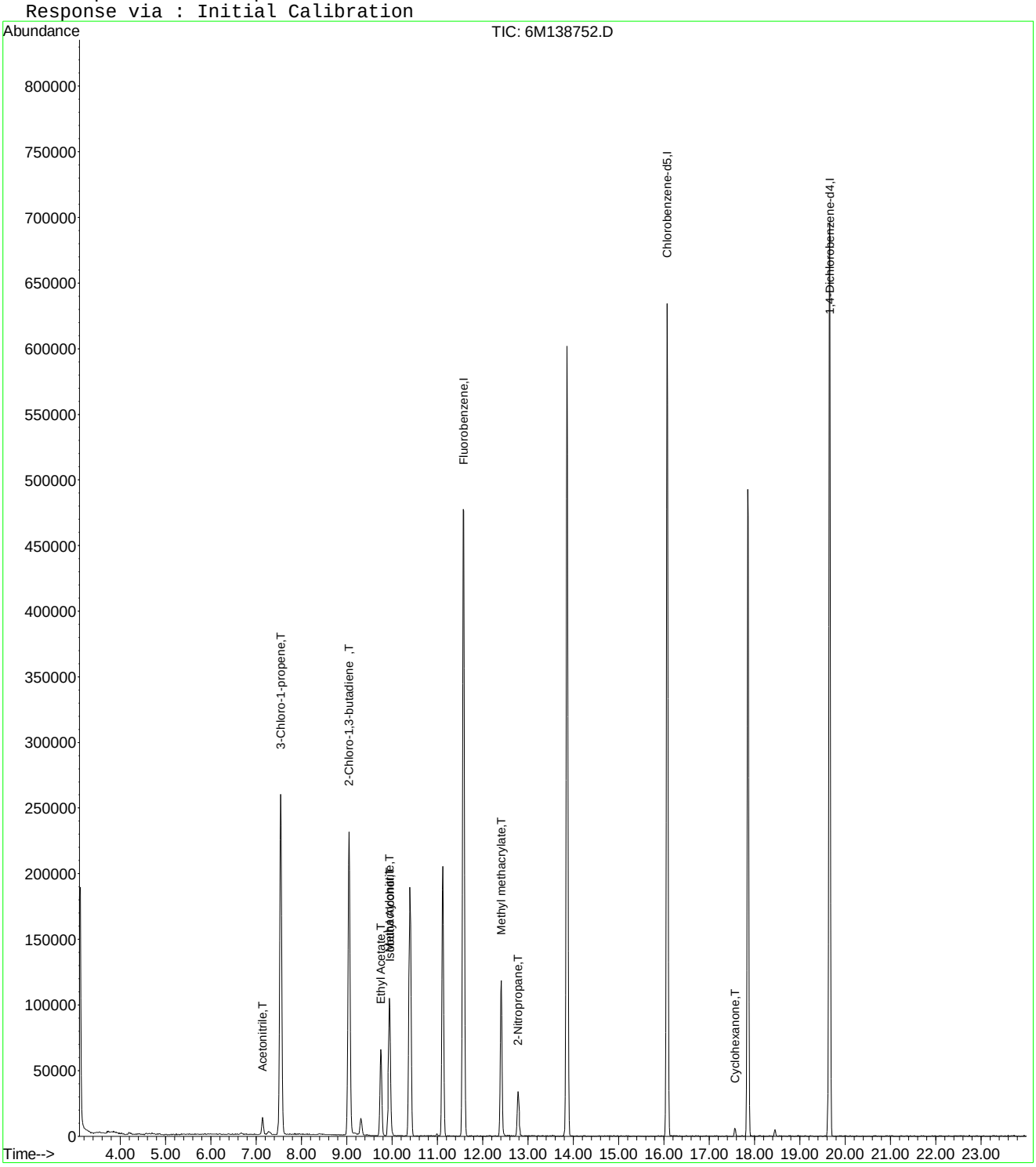

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	19.7724	1.1	100	0.00
3	T	3-Chloro-1-propene	20.0000	19.9080	0.5	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	18.9362	5.3	100	0.00
5	T	Ethyl Acetate	20.0000	19.3209	3.4	100	0.00
6	T	Methacrylonitrile	20.0000	19.2846	3.6	100	0.00
7	T	Isobutyl Alcohol	40.0000	38.9462	2.6	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	20.0000	17.7480	11.3	100	0.00
10	T	2-Nitropropane	-1.0000	17.0355	0.0	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	13.0852	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138752.D A9FOOWT.M Wed Apr 27 16:04:26 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:48 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	604736	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	468574	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	254472	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.40	111	172256	27.8132 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.24%		
43) 1,2-Dichloroethane-d4	11.12	65	208744	27.7711 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.08%		
58) Toluene-d8	13.86	98	553191	26.2235 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.88%		
80) p-Bromofluorobenzene	17.85	95	239542	28.1954 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 112.80%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	3732	1.9901 ug/L #	57
20) Carbon Disulfide	7.54	76	220780	11.4508 ug/L #	36
26) Vinyl Acetate	9.04	43	2704	0.2791 ug/L #	8
27) 1,1-Dichloroethane	9.05	63	9803	0.7652 ug/L #	42
28) Ethyl-Tert-Butyl ether	9.31	59	152978	7.3579 ug/L #	39
29) 2-Butanone	9.53	43	660	0.2385 ug/L #	52
36) Tetrahydrofuran	10.37	42	3746	2.0774 ug/L #	62
60) Ethyl Methacrylate	13.86	69	1423	0.2030 ug/L #	9

(#) = qualifier out of range (m) = manual integration
6M138753.D 8260WTR.M Mon Apr 25 09:22:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

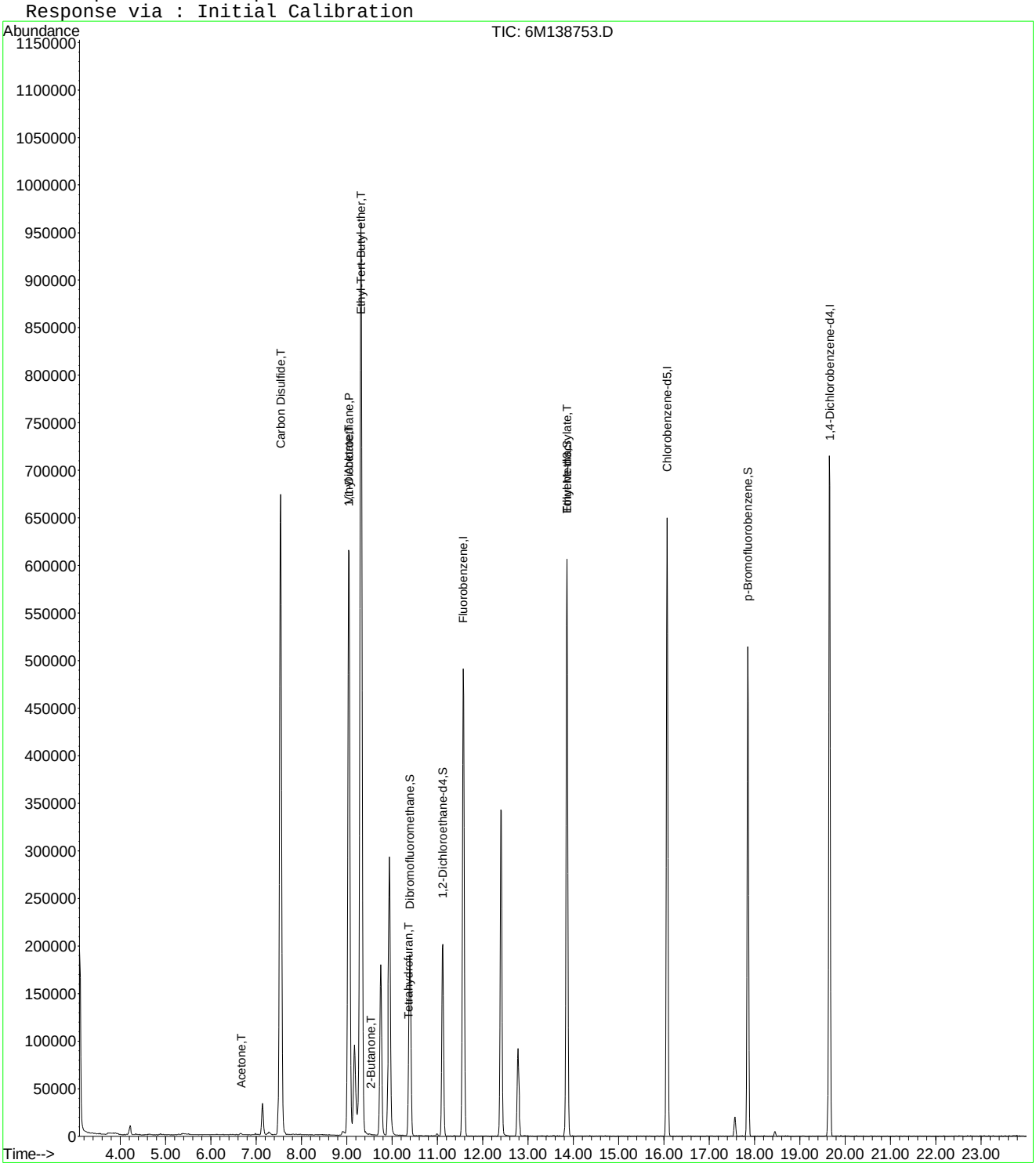

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:55 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	604736	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	468574	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	254472	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	46802	40.3072 ug/L	94
3) 3-Chloro-1-propene	7.54	41	793114	48.9454 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	674471	48.3496 ug/L	83
5) Ethyl Acetate	9.75	43	336975	52.8234 ug/L	93
6) Methacrylonitrile	9.94	67	119267	48.6097 ug/L #	62
7) Isobutyl Alcohol	9.95	43	20135	57.3741 ug/L #	99
8) 1-Butanol	10.98	41	1474	9.7632 ug/L	77
9) Methyl methacrylate	12.40	41	279157	43.9482 ug/L	81
10) 2-Nitropropane	12.79	43	95327	50.9052 ug/L	94
13) Cyclohexanone	17.56	55	13241	15.2363 ug/L	91

(#) = qualifier out of range (m) = manual integration
6M138753.D A9FOOWT.M Mon Apr 25 15:45:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

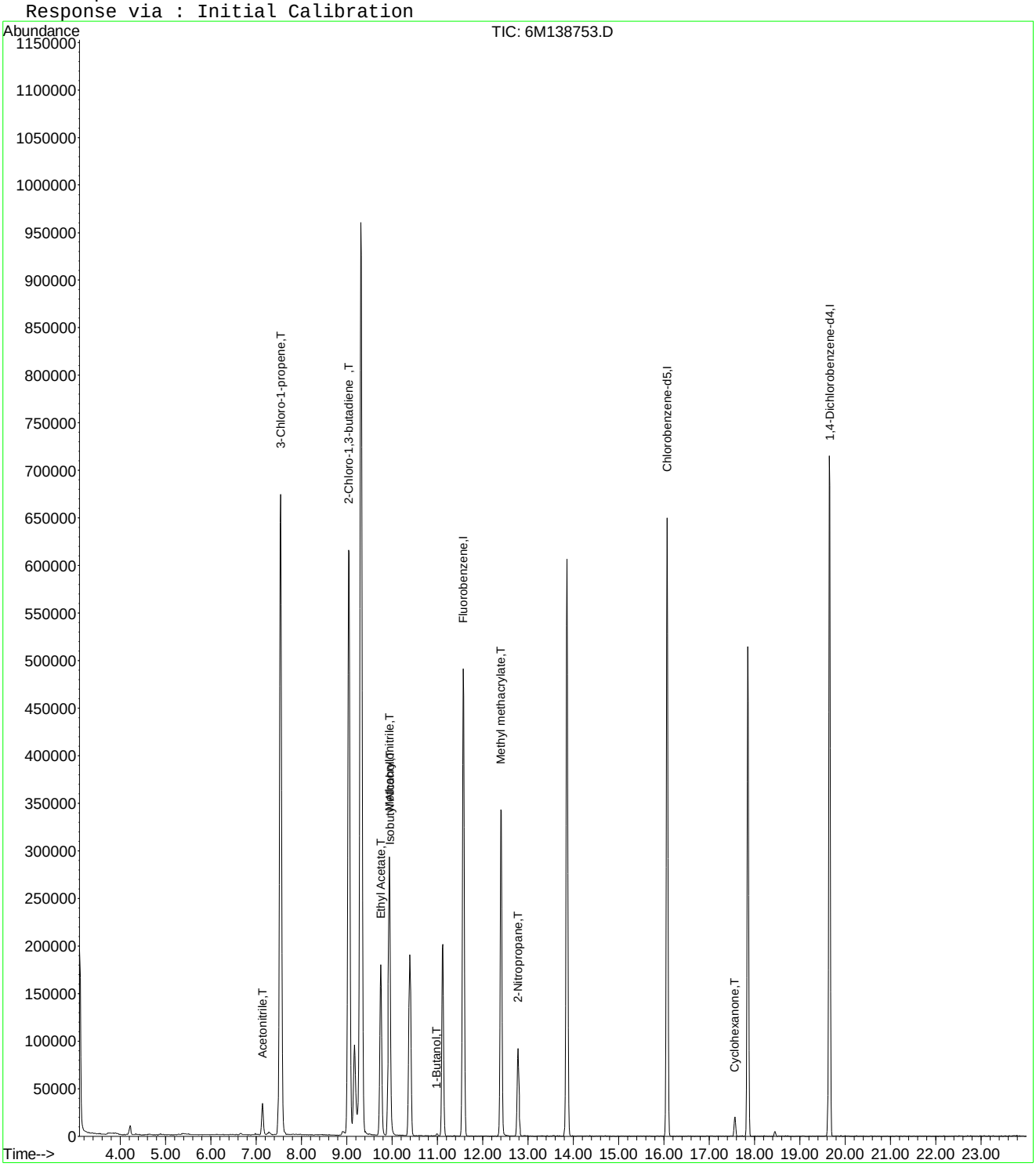

6M138753.D A9FOOWT.M Mon Apr 25 15:45:57 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:59 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	604736	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	468574	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	254472	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	46802	51.6701 ug/L	94
3) 3-Chloro-1-propene	7.54	41	793114	52.5409 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	674471	52.0726 ug/L	83
5) Ethyl Acetate	9.75	43	336975	51.9646 ug/L	93
6) Methacrylonitrile	9.94	67	119267	53.3476 ug/L #	62
7) Isobutyl Alcohol	9.95	43	20135	97.4900 ug/L #	99
9) Methyl methacrylate	12.40	41	279157	51.2171 ug/L	81
10) 2-Nitropropane	12.79	43	95327	47.0270 ug/L	94
13) Cyclohexanone	17.56	55	13241	41.7415 ug/L	91

(#) = qualifier out of range (m) = manual integration
6M138753.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

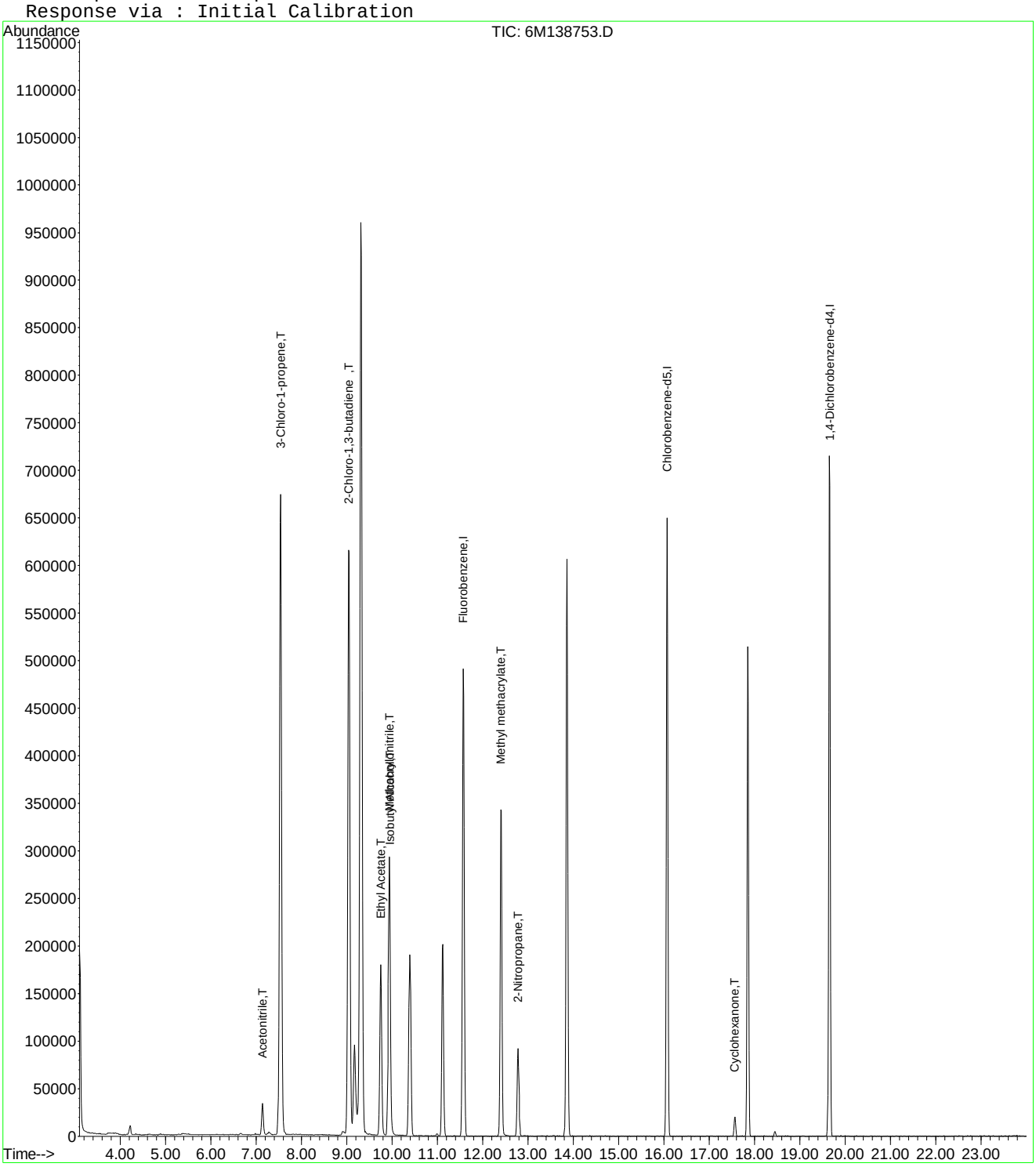

6M138753.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	51.6701	-3.3	100	0.00
3	T	3-Chloro-1-propene	50.0000	52.5409	-5.1	100	0.00
4	T	2-Chloro-1,3-butadiene	50.0000	52.0726	-4.1	100	0.00
5	T	Ethyl Acetate	50.0000	51.9646	-3.9	100	0.00
6	T	Methacrylonitrile	50.0000	53.3476	-6.7	100	0.00
7	T	Isobutyl Alcohol	100.0000	97.4900	2.5	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	50.0000	51.2171	-2.4	100	0.00
10	T	2-Nitropropane	50.0000	47.0270	5.9	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	50.0000	41.7415	16.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138753.D A9FOOWT.M Wed Apr 27 16:04:38 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:49 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	599121	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	467316	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	255798	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	169577	27.6373 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.56%		
43) 1,2-Dichloroethane-d4	11.12	65	210119	28.2161 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.88%		
58) Toluene-d8	13.86	98	550953	26.1877 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.76%		
80) p-Bromofluorobenzene	17.85	95	239480	28.0420 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 112.16%		

Target Compounds					Qvalue
13) Acetone	6.66	43	6960	3.7463 ug/L	82
16) Dimethyl Sulfide	7.15	62	732	0.1448 ug/L #	1
18) Methyl acetate	7.53	43	1419	0.2750 ug/L #	1
22) Methyl Tert Butyl Ether	7.96	73	2141	0.1320 ug/L #	72
27) 1,1-Dichloroethane	9.05	63	20725	1.6328 ug/L #	42
28) Ethyl-Tert-Butyl ether	9.31	59	76666	3.7220 ug/L #	39
29) 2-Butanone	9.53	43	1176	0.4289 ug/L #	52
34) 1-Bromopropane	10.00	122	702	0.6817 ug/L #	1
36) Tetrahydrofuran	10.35	42	4425	2.4769 ug/L #	60
48) Methylcyclohexane	12.41	83	1461	0.1681 ug/L #	1
60) Ethyl Methacrylate	13.87	69	1083	0.1549 ug/L #	1
79) 1,1,2,2-Tetrachloroethane	17.57	83	1910	0.3066 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138754.D 8260WTR.M Mon Apr 25 09:22:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

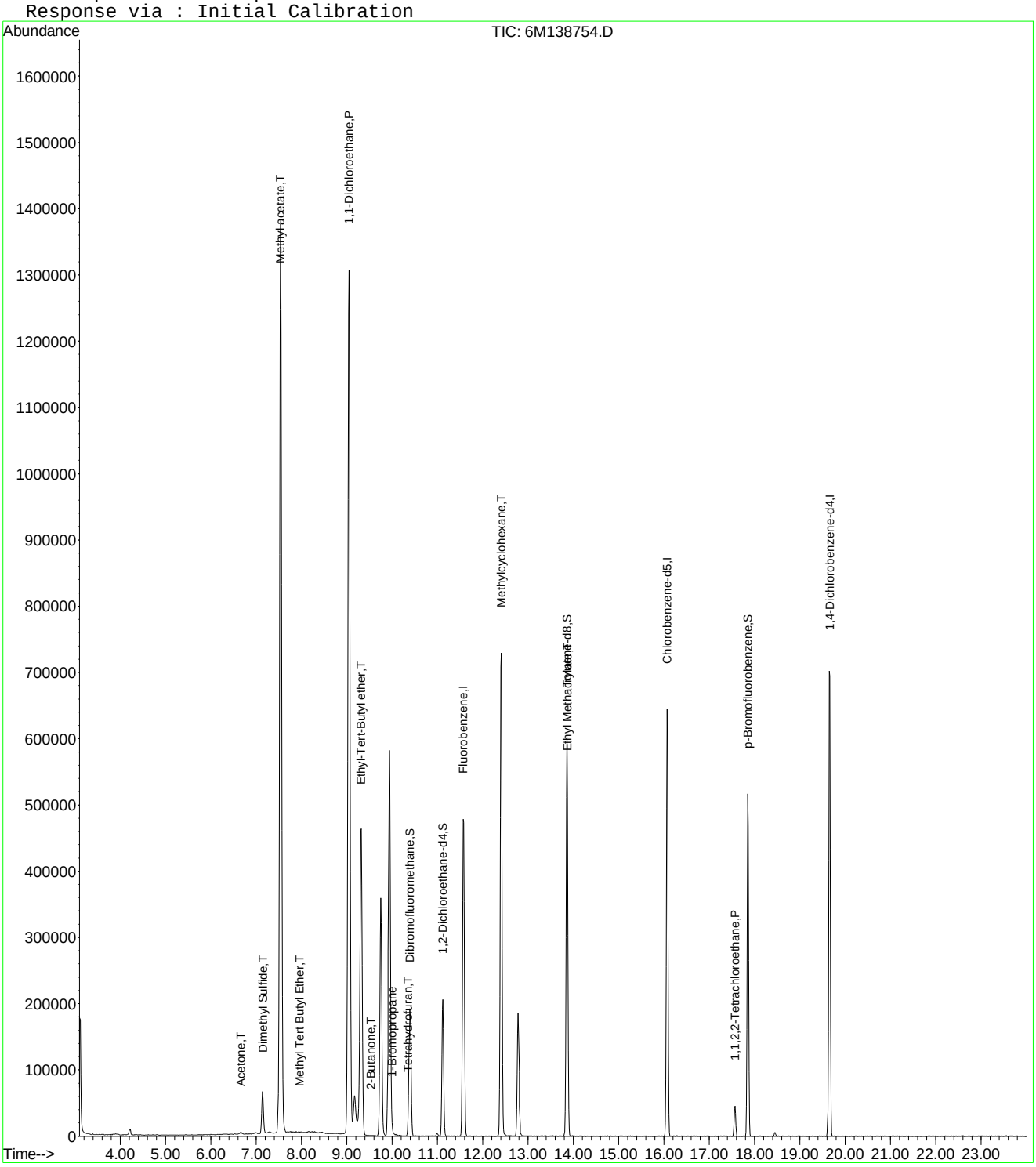

6M138754.D 8260WTR.M Mon Apr 25 09:22:50 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:57 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	599121	25.00	ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	467316	25.00	ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	255798	25.00	ug/L	-0.02

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	90880	79.0019	ug/L	95
3) 3-Chloro-1-propene	7.54	41	1610716	100.3335	ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	1413663	102.2884	ug/L	83
5) Ethyl Acetate	9.75	43	673221	106.5217	ug/L	93
6) Methacrylonitrile	9.94	67	237219	97.5895	ug/L #	62
7) Isobutyl Alcohol	9.95	43	33897	97.4937	ug/L #	85
8) 1-Butanol	11.00	41	2978	19.9099	ug/L #	64
9) Methyl methacrylate	12.41	41	585839	93.0942	ug/L	80
10) 2-Nitropropane	12.78	43	197598	106.5074	ug/L	97
13) Cyclohexanone	17.57	55	27547	31.5338	ug/L	88

(#) = qualifier out of range (m) = manual integration
6M138754.D A9FOOWT.M Mon Apr 25 15:45:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

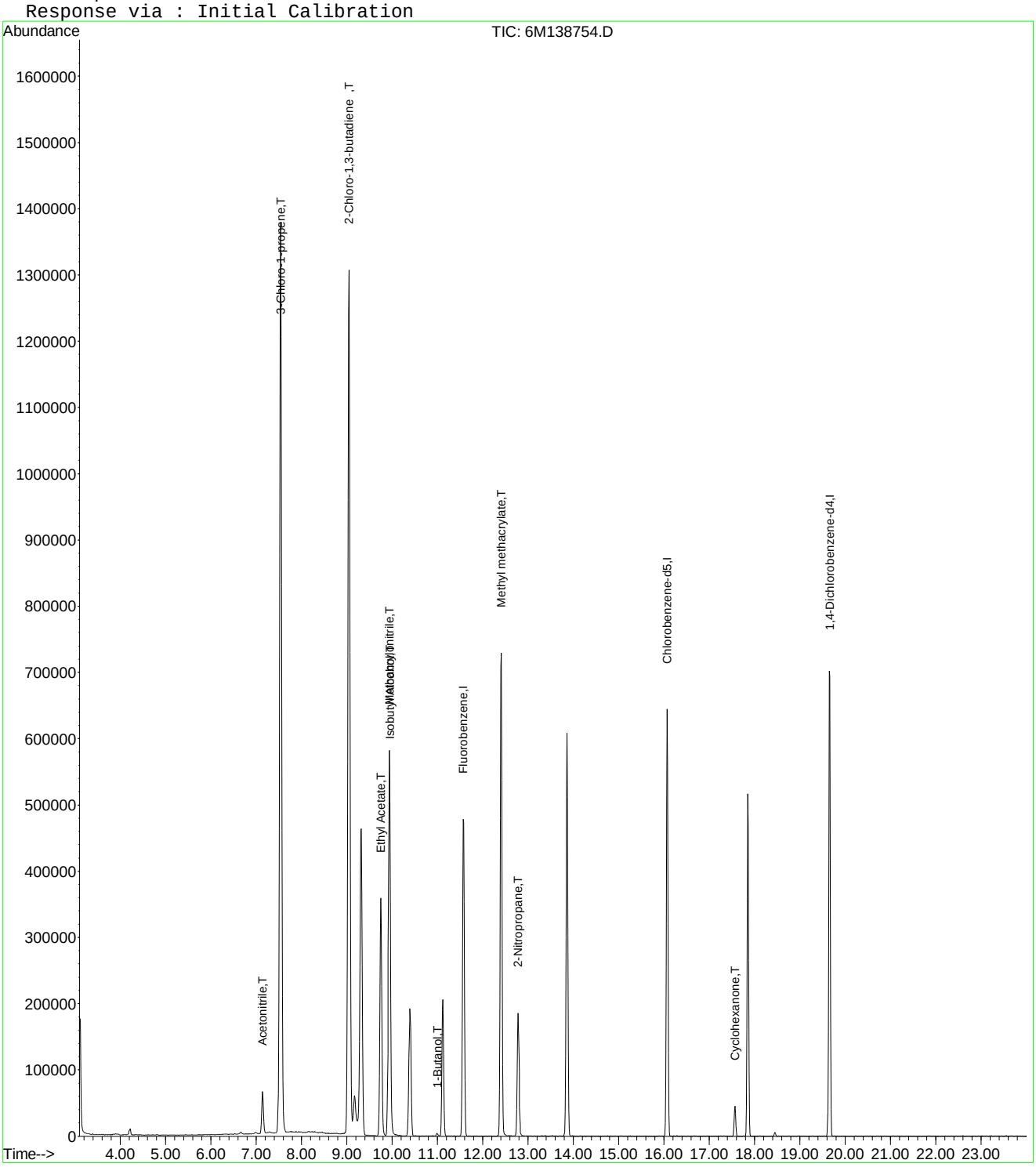

6M138754.D A9FOOWT.M Mon Apr 25 15:45:58 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:59 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	599121	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	467316	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	255798	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	90880	101.2731 ug/L	95
3) 3-Chloro-1-propene	7.54	41	1610716	107.7041 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	1413663	110.1648 ug/L	83
5) Ethyl Acetate	9.75	43	673221	104.7898 ug/L	93
6) Methacrylonitrile	9.94	67	237219	107.1014 ug/L #	62
7) Isobutyl Alcohol	9.95	43	33897	165.6613 ug/L #	85
9) Methyl methacrylate	12.41	41	585839	108.4917 ug/L	80
10) 2-Nitropropane	12.78	43	197598	98.3932 ug/L	97
13) Cyclohexanone	17.57	55	27547	86.3902 ug/L	88

(#) = qualifier out of range (m) = manual integration
6M138754.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

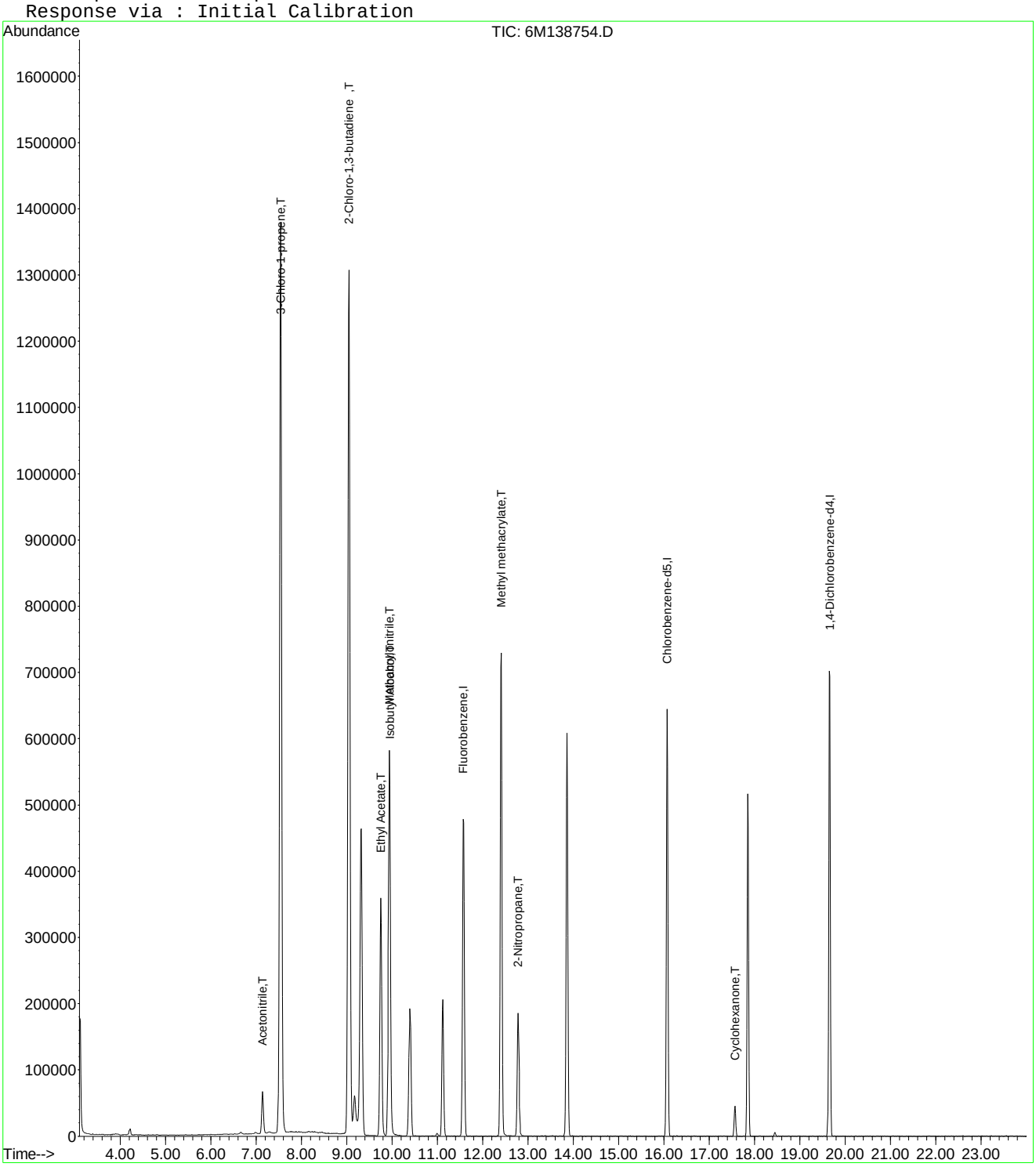

6M138754.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:50 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	607157	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	473187	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	259046	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.40	111	172341	27.7160 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.88%		
43) 1,2-Dichloroethane-d4	11.12	65	211249	27.9923 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.96%		
58) Toluene-d8	13.86	98	552831	25.9510 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.80%		
80) p-Bromofluorobenzene	17.85	95	247709	28.6419 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 114.56%		

Target Compounds

					Qvalue
9) Diethyl ether	6.31	59	653	0.1225 ug/L #	12
13) Acetone	6.66	43	9406	4.9959 ug/L #	64
15) Tert-Butyl Alcohol	6.98	59	449	0.8301 ug/L #	1
16) Dimethyl Sulfide	7.16	62	680	0.1328 ug/L #	1
22) Methyl Tert Butyl Ether	7.96	73	3926	0.2388 ug/L	83
24) n-Hexane	8.30	57	1777	0.2040 ug/L	87
27) 1,1-Dichloroethane	9.05	63	41640	3.2372 ug/L #	47
28) Ethyl-Tert-Butyl ether	9.31	59	272648	13.0615 ug/L #	38
29) 2-Butanone	9.51	43	2992	1.0767 ug/L #	67
30) Propionitrile	9.93	54	258	0.3232 ug/L #	57
34) 1-Bromopropane	9.99	122	1417	1.3579 ug/L #	1
36) Tetrahydrofuran	10.37	42	4839	2.6728 ug/L #	62
48) Methylcyclohexane	12.40	83	2976	0.3378 ug/L #	1
60) Ethyl Methacrylate	13.87	69	1202	0.1698 ug/L #	1
79) 1,1,2,2-Tetrachloroethane	17.57	83	5192	0.8231 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138755.D 8260WTR.M Mon Apr 25 09:22:50 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

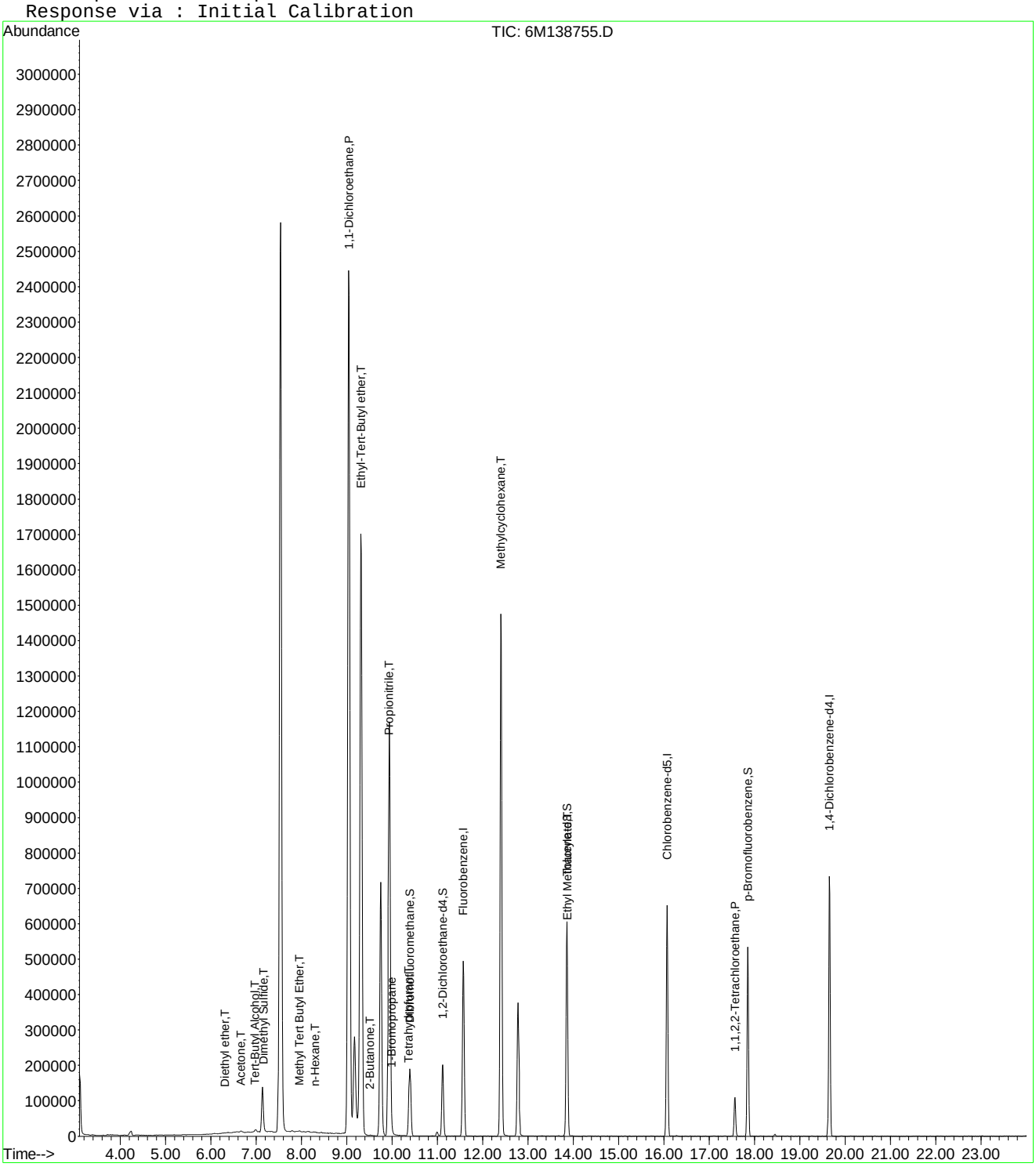

6M138755.D 8260WTR.M Mon Apr 25 09:22:50 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:58 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	607157	25.00	ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	473187	25.00	ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.65	152	259046	25.00	ug/L	-0.03

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	183628	157.5150	ug/L	93
3) 3-Chloro-1-propene	7.54	41	3085939	189.6828	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	2709180	193.4336	ug/L	83
5) Ethyl Acetate	9.75	43	1346541	210.2391	ug/L	94
6) Methacrylonitrile	9.94	67	471538	191.4186	ug/L #	64
7) Isobutyl Alcohol	9.95	43	72755	206.4864	ug/L #	92
8) 1-Butanol	10.99	41	8815	58.1542	ug/L #	64
9) Methyl methacrylate	12.40	41	1186381	186.0295	ug/L	80
10) 2-Nitropropane	12.79	43	410702	218.4428	ug/L	99
13) Cyclohexanone	17.57	55	67080	75.8254	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138755.D A9FOOWT.M Mon Apr 25 15:45:58 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

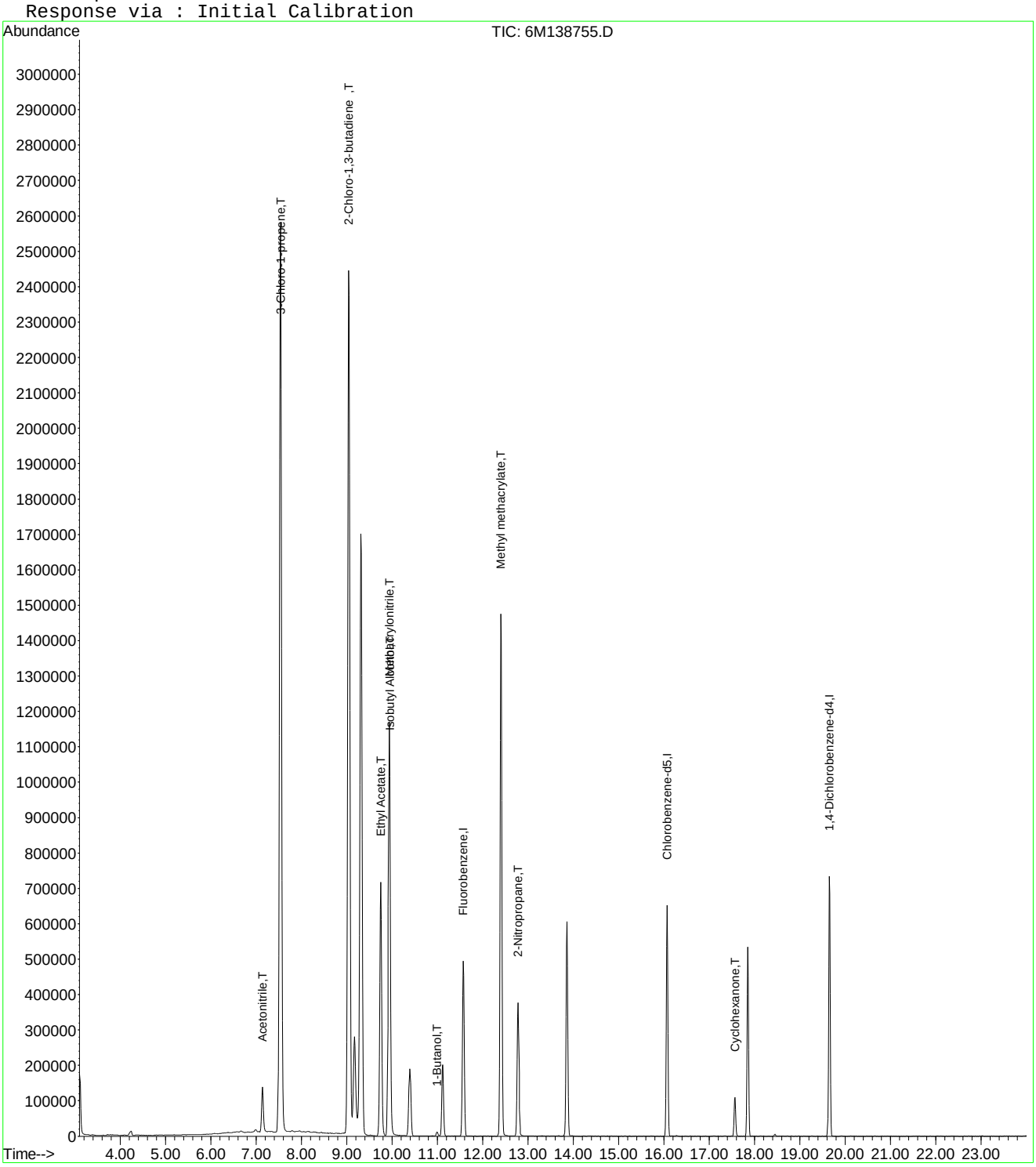

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	607157	25.00	ug/L	0.00
11) Chlorobenzene-d5	16.07	117	473187	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.65	152	259046	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	183628	201.9195	ug/L	93
3) 3-Chloro-1-propene	7.54	41	3085939	203.6170	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	2709180	208.3284	ug/L	83
5) Ethyl Acetate	9.75	43	1346541	206.8209	ug/L	94
6) Methacrylonitrile	9.94	67	471538	210.0757	ug/L #	64
7) Isobutyl Alcohol	9.95	43	72755	350.8618	ug/L #	92
9) Methyl methacrylate	12.40	41	1186381	216.7982	ug/L	80
10) 2-Nitropropane	12.79	43	410702	201.8008	ug/L	99
13) Cyclohexanone	17.57	55	67080	207.7320	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138755.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

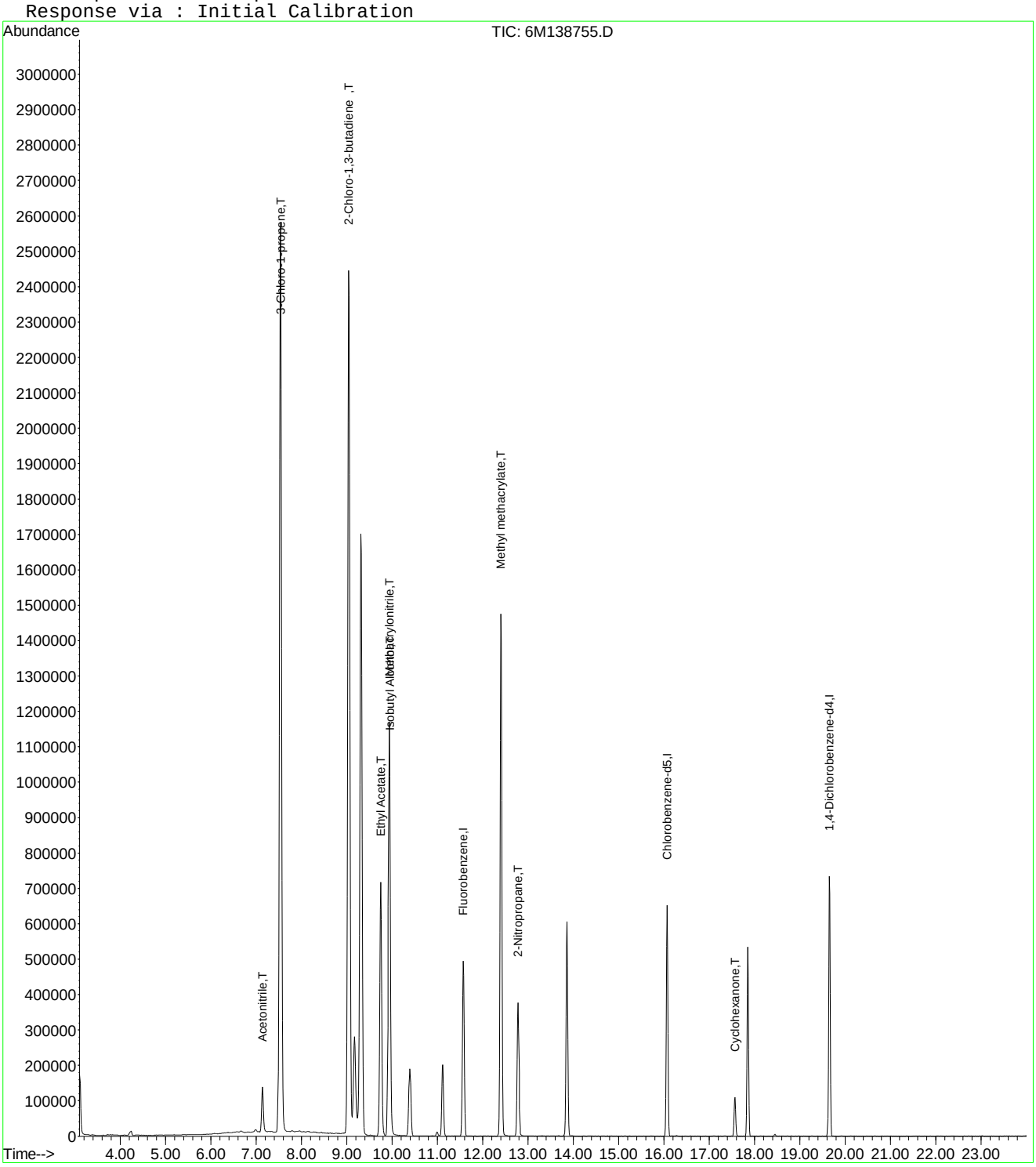

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:50 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	602356	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	472685	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	264650	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	169983	27.5546 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.20%		
43) 1,2-Dichloroethane-d4	11.12	65	207199	27.6745 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 110.68%		
58) Toluene-d8	13.86	98	553023	25.9875 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.96%		
80) p-Bromofluorobenzene	17.85	95	247939	28.0615 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 112.24%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	13666	7.3164 ug/L #	77
15) Tert-Butyl Alcohol	7.06	59	467	0.8703 ug/L #	59
16) Dimethyl Sulfide	7.14	62	668	0.1315 ug/L #	1
18) Methyl acetate	7.54	43	3262	0.6289 ug/L #	1
22) Methyl Tert Butyl Ether	7.97	73	10591	0.6492 ug/L #	53
24) n-Hexane	8.28	57	3576	0.4138 ug/L #	56
27) 1,1-Dichloroethane	9.04	63	60743	4.7600 ug/L #	48
28) Ethyl-Tert-Butyl ether	9.31	59	155796	7.5231 ug/L #	39
29) 2-Butanone	9.52	43	4002	1.4516 ug/L	97
30) Propionitrile	9.95	54	1113	1.4052 ug/L #	1
34) 1-Bromopropane	9.99	122	1450	1.4006 ug/L #	1
36) Tetrahydrofuran	10.36	42	4902	2.7292 ug/L #	61
48) Methylcyclohexane	12.41	83	4626	0.5293 ug/L #	1
60) Ethyl Methacrylate	13.88	69	1599	0.2261 ug/L #	1
72) Ethylbenzene	16.28	106	1349	0.1427 ug/L	56
73) m-,p-Xylene	16.28	106	1349	0.1203 ug/L	81
79) 1,1,2,2-Tetrachloroethane	17.57	83	8744	1.3569 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138756.D 8260WTR.M Mon Apr 25 09:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

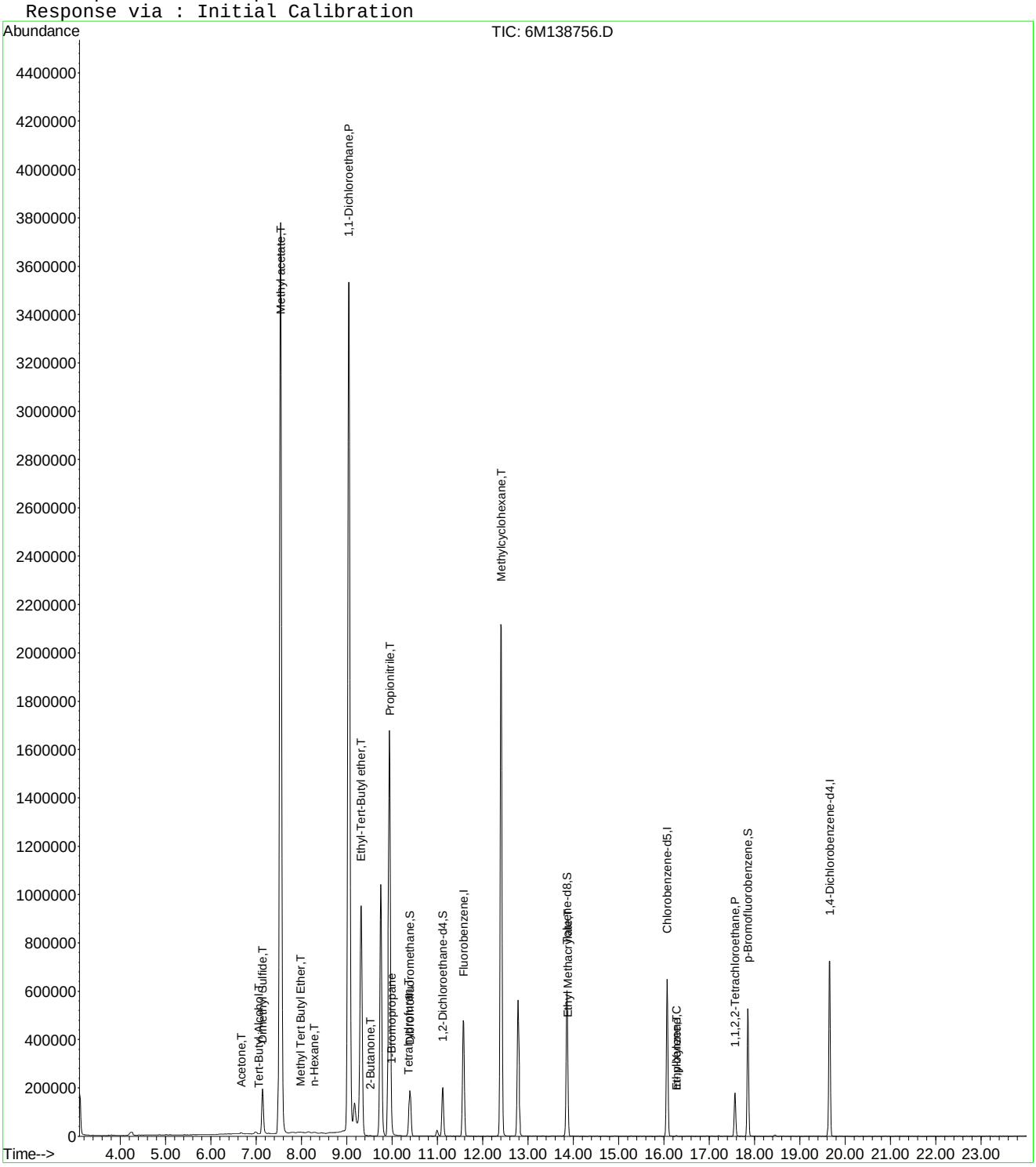

6M138756.D 8260WTR.M Mon Apr 25 09:22:51 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:59 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	602356	25.00 ug/L	-0.02
11) Chlorobenzene-d5	16.07	117	472685	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	264650	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	273003	236.0468 ug/L	93
3) 3-Chloro-1-propene	7.54	41	4493022	278.3729 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	3994938	287.5093 ug/L	83
5) Ethyl Acetate	9.75	43	1967613	309.6573 ug/L	94
6) Methacrylonitrile	9.94	67	686612	280.9484 ug/L #	63
7) Isobutyl Alcohol	9.95	43	121480	347.5212 ug/L #	90
8) 1-Butanol	10.99	41	18116	120.4672 ug/L	69
9) Methyl methacrylate	12.40	41	1742413	275.3954 ug/L	81
10) 2-Nitropropane	12.78	43	613081	328.6824 ug/L	99
13) Cyclohexanone	17.57	55	106618	117.9661 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138756.D A9FOOWT.M Mon Apr 25 15:45:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

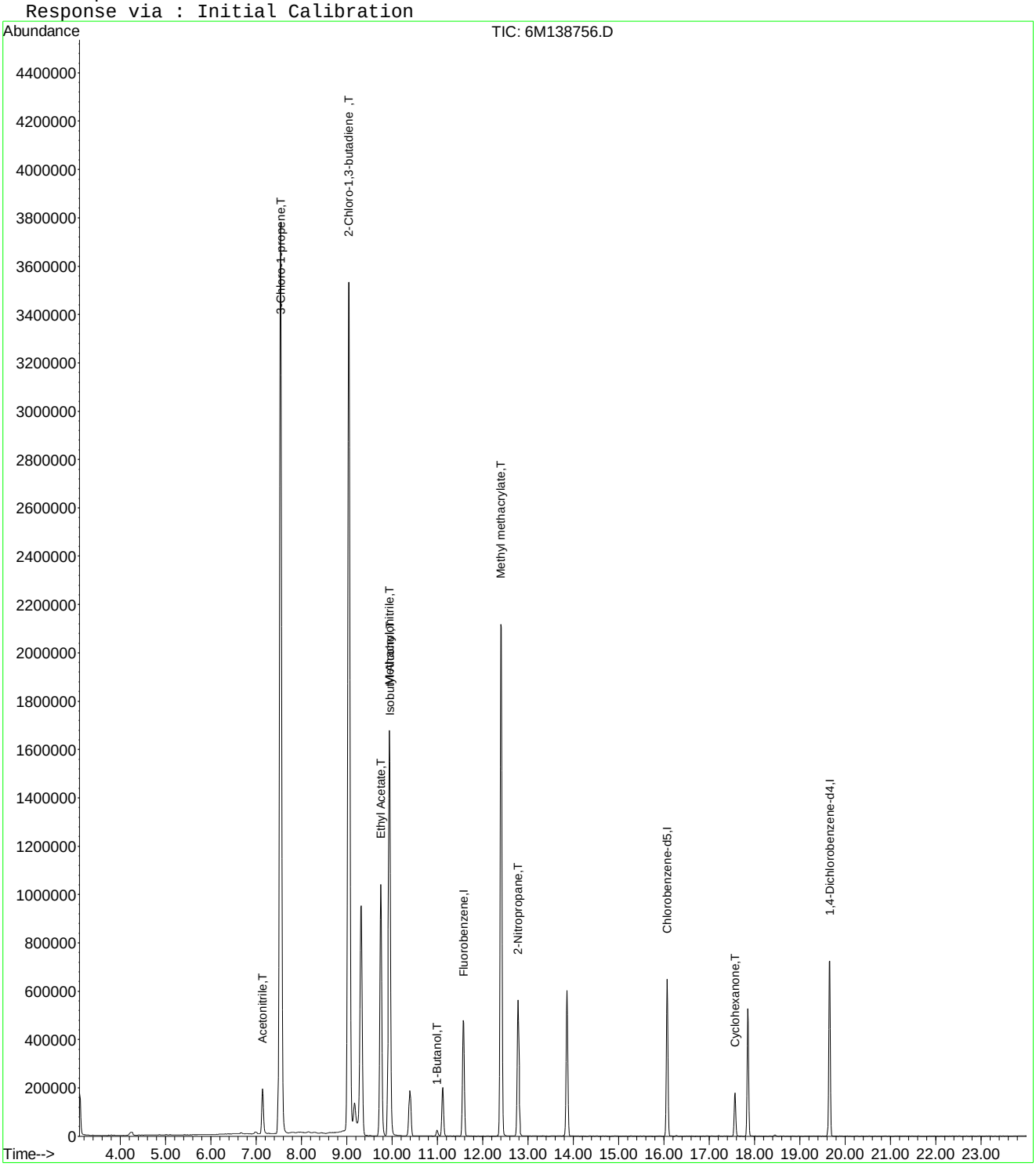

6M138756.D A9FOOWT.M Mon Apr 25 15:45:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.58	96	602356	25.00	ug/L	0.01
11) Chlorobenzene-d5	16.07	117	472685	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	264650	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	273003	302.5900	ug/L	93
3) 3-Chloro-1-propene	7.54	41	4493022	298.8224	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	3994938	309.6481	ug/L	83
5) Ethyl Acetate	9.75	43	1967613	304.6228	ug/L	94
6) Methacrylonitrile	9.94	67	686612	308.3318	ug/L #	63
7) Isobutyl Alcohol	9.95	43	121480	590.5081	ug/L #	90
9) Methyl methacrylate	12.40	41	1742413	320.9449	ug/L	81
10) 2-Nitropropane	12.78	43	613081	303.6419	ug/L	99
13) Cyclohexanone	17.57	55	106618	323.1811	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138756.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

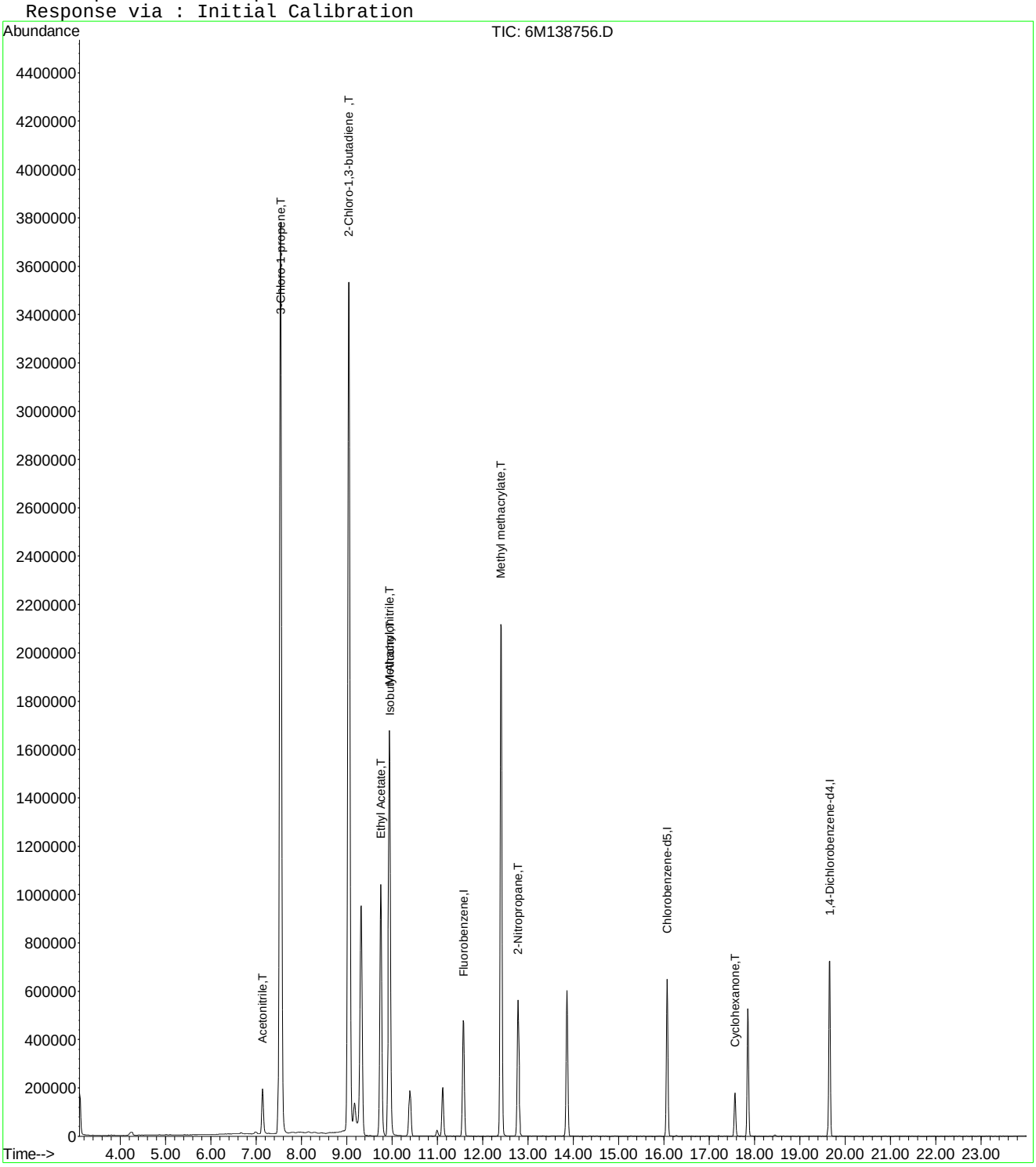

6M138756.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:51 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602625	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.08	117	475117	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	264739	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	170708	27.6598 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.64%		
43) 1,2-Dichloroethane-d4	11.11	65	208757	27.8702 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.48%		
58) Toluene-d8	13.86	98	554316	25.9150 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.64%		
80) p-Bromofluorobenzene	17.85	95	246698	27.9116 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 111.64%		

Target Compounds

					Qvalue
13) Acetone	6.66	43	14063	7.5256 ug/L	99
15) Tert-Butyl Alcohol	7.05	59	807	1.5033 ug/L #	59
16) Dimethyl Sulfide	7.16	62	1034	0.2034 ug/L #	1
18) Methyl acetate	7.48	43	1103	0.2125 ug/L #	60
19) Methylene Chloride	7.73	84	1123	0.1699 ug/L #	40
22) Methyl Tert Butyl Ether	7.97	73	18318	1.1224 ug/L #	53
24) n-Hexane	8.28	57	5609	0.6488 ug/L	75
27) 1,1-Dichloroethane	9.04	63	82912	6.4943 ug/L #	48
28) Ethyl-Tert-Butyl ether	9.32	59	139043	6.7111 ug/L #	38
29) 2-Butanone	9.53	43	4129	1.4970 ug/L	86
30) Propionitrile	9.72	54	202	0.2549 ug/L #	1
34) 1-Bromopropane	9.99	122	1978	1.9098 ug/L #	1
36) Tetrahydrofuran	10.37	42	5444	3.0296 ug/L #	63
48) Methylcyclohexane	12.40	83	6593	0.7540 ug/L #	1
60) Ethyl Methacrylate	13.85	69	1165	0.1639 ug/L #	1
73) m-,p-Xylene	16.28	106	1795	0.1593 ug/L	72
79) 1,1,2,2-Tetrachloroethane	17.57	83	12875	1.9973 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138757.D 8260WTR.M Mon Apr 25 09:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

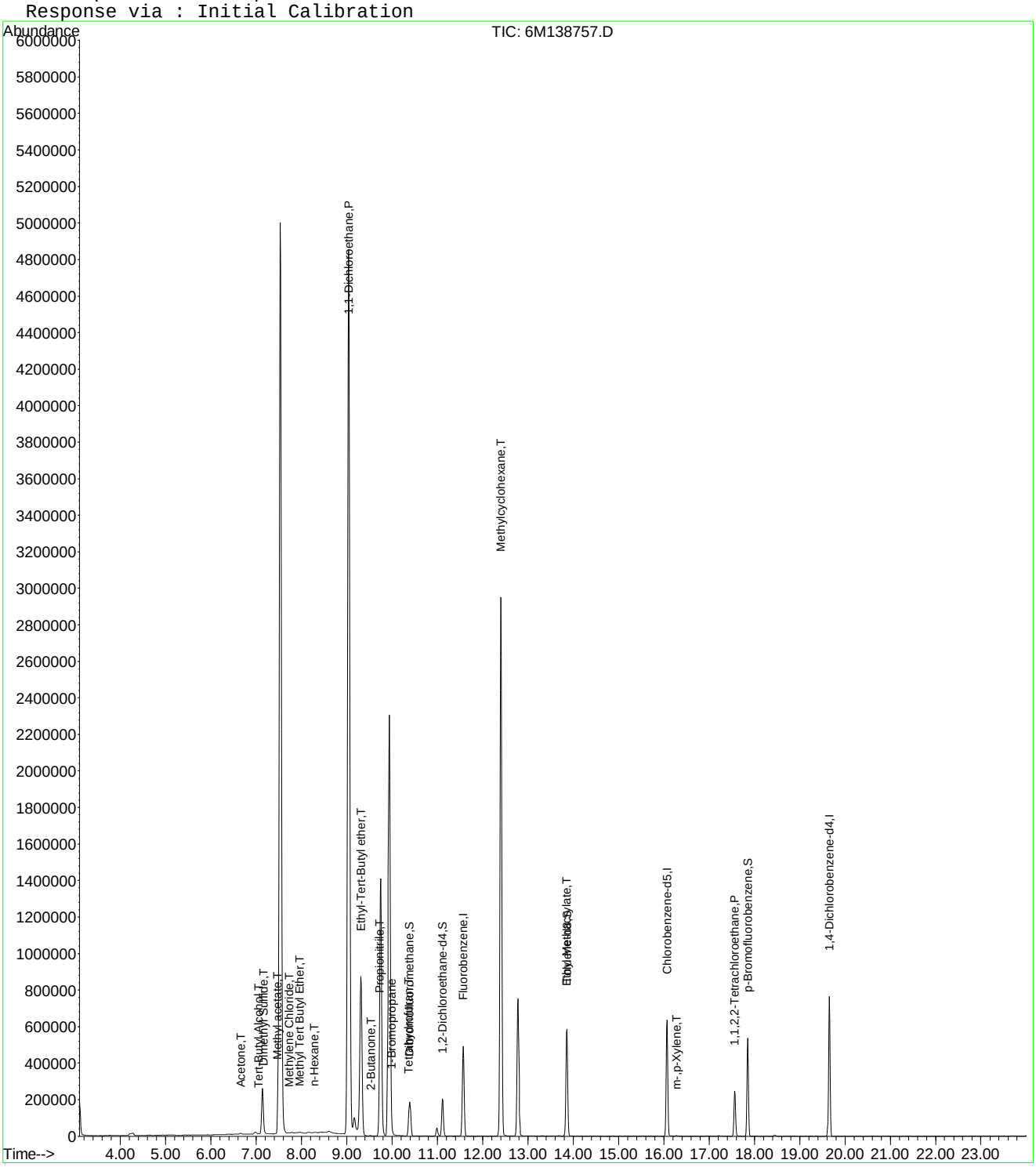

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602625	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.08	117	475117	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.65	152	264739	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	368012	318.0524 ug/L	93
3) 3-Chloro-1-propene	7.53	41	5948883	368.4088 ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	5359203	385.5211 ug/L	83
5) Ethyl Acetate	9.76	43	2690267	423.1975 ug/L	94
6) Methacrylonitrile	9.94	67	929265	380.0675 ug/L #	62
7) Isobutyl Alcohol	9.95	43	192560	550.6158 ug/L #	89
8) 1-Butanol	10.99	41	29815	198.1744 ug/L	75
9) Methyl methacrylate	12.40	41	2375132	375.2316 ug/L	81
10) 2-Nitropropane	12.79	43	849210	455.0717 ug/L	98
13) Cyclohexanone	17.57	55	149420	165.2683 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138757.D A9FOOWT.M Mon Apr 25 15:46:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

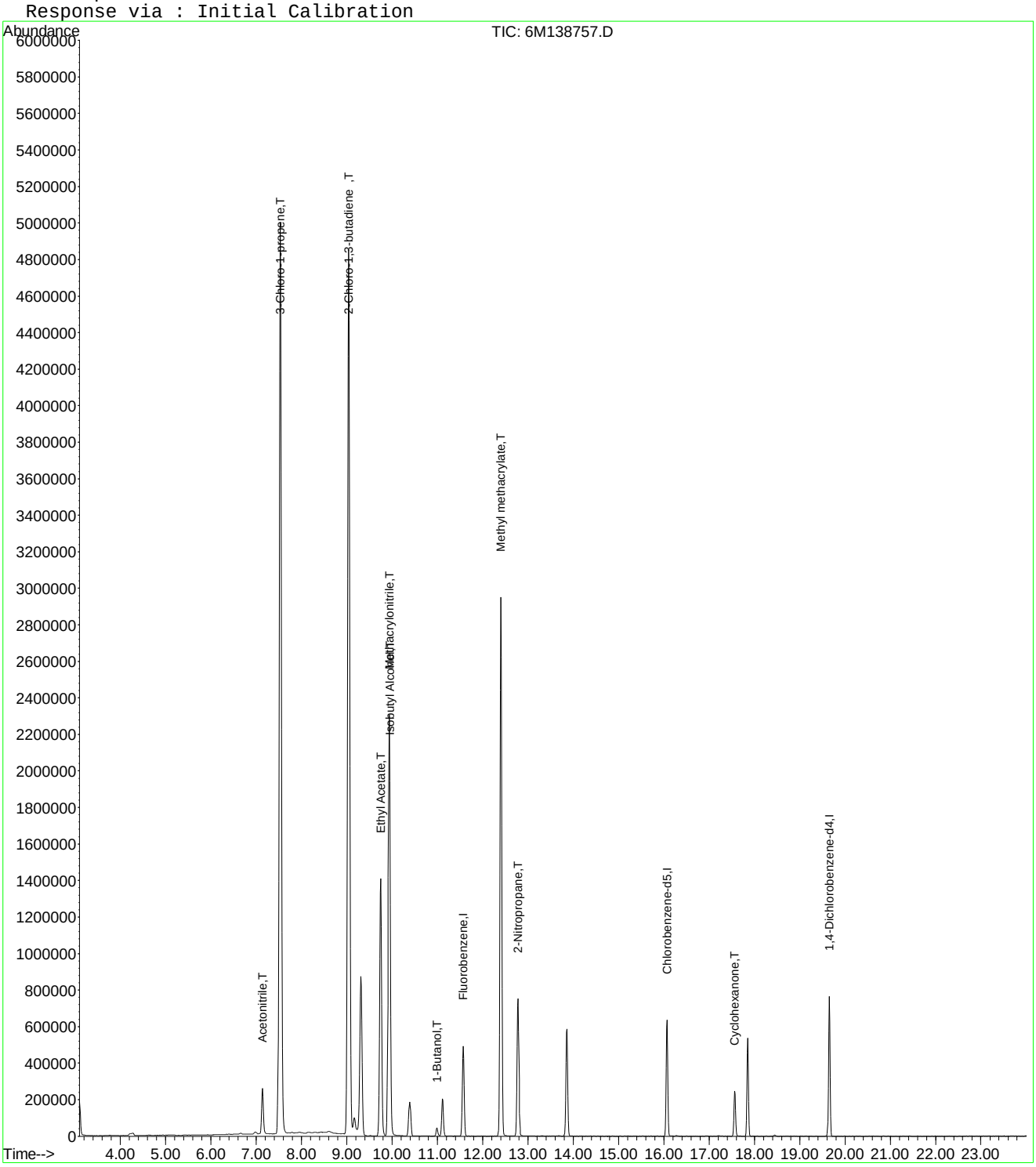

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:01 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602625	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.08	117	475117	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.65	152	264739	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	368012	407.7137 ug/L	93
3) 3-Chloro-1-propene	7.53	41	5948883	395.4723 ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	5359203	415.2070 ug/L	83
5) Ethyl Acetate	9.76	43	2690267	416.3170 ug/L	94
6) Methacrylonitrile	9.94	67	929265	417.1119 ug/L #	62
7) Isobutyl Alcohol	9.95	43	192560	935.6065 ug/L #	89
9) Methyl methacrylate	12.40	41	2375132	437.2937 ug/L	81
10) 2-Nitropropane	12.79	43	849210	420.4022 ug/L	98
13) Cyclohexanone	17.57	55	149420	452.7705 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138757.D A9FOOWT.M Wed Apr 27 16:05:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

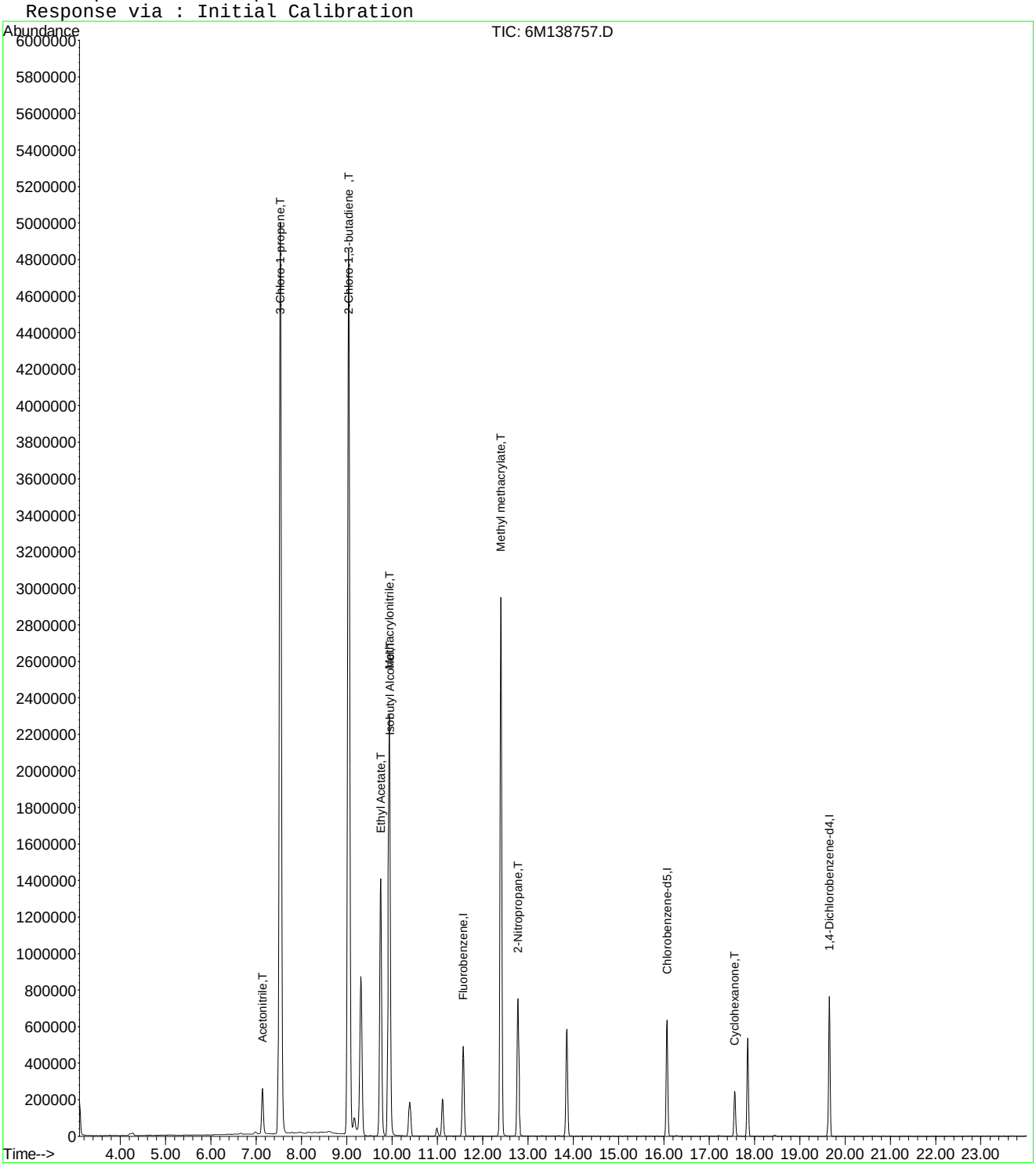

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:52 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	616486	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	485048	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	268890	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.39	111	175239	27.7556 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.04%		
43) 1,2-Dichloroethane-d4	11.12	65	210644	27.4898 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 109.96%		
58) Toluene-d8	13.86	98	563297	25.7957 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.20%		
80) p-Bromofluorobenzene	17.85	95	249406	27.7824 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 111.12%		

Target Compounds					Qvalue
13) Acetone	6.67	43	15233	7.9684 ug/L	89
15) Tert-Butyl Alcohol	7.06	59	370	0.6737 ug/L #	59
18) Methyl acetate	7.46	43	1079	0.2032 ug/L #	34
19) Methylene Chloride	7.73	84	1471	0.2176 ug/L	66
20) Carbon Disulfide	7.78	76	2765	0.1407 ug/L #	74
22) Methyl Tert Butyl Ether	7.96	73	25284	1.5144 ug/L #	53
24) n-Hexane	8.28	57	5266	0.5954 ug/L	97
27) 1,1-Dichloroethane	9.05	63	105121	8.0488 ug/L #	48
28) Ethyl-Tert-Butyl ether	9.31	59	124099	5.8551 ug/L #	39
29) 2-Butanone	9.52	43	4475	1.5860 ug/L #	72
30) Propionitrile	9.71	54	473	0.5835 ug/L #	1
34) 1-Bromopropane	10.00	122	2117	1.9980 ug/L #	1
36) Tetrahydrofuran	10.36	42	5652	3.0747 ug/L #	54
48) Methylcyclohexane	12.40	83	8011	0.8956 ug/L #	1
59) Toluene	13.98	91	3373	0.1249 ug/L	84
60) Ethyl Methacrylate	13.87	69	1585	0.2184 ug/L #	1
73) m-,p-Xylene	16.28	106	2521	0.2191 ug/L	79
79) 1,1,2,2-Tetrachloroethane	17.57	83	14350	2.1917 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138758.D 8260WTR.M Mon Apr 25 09:22:52 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

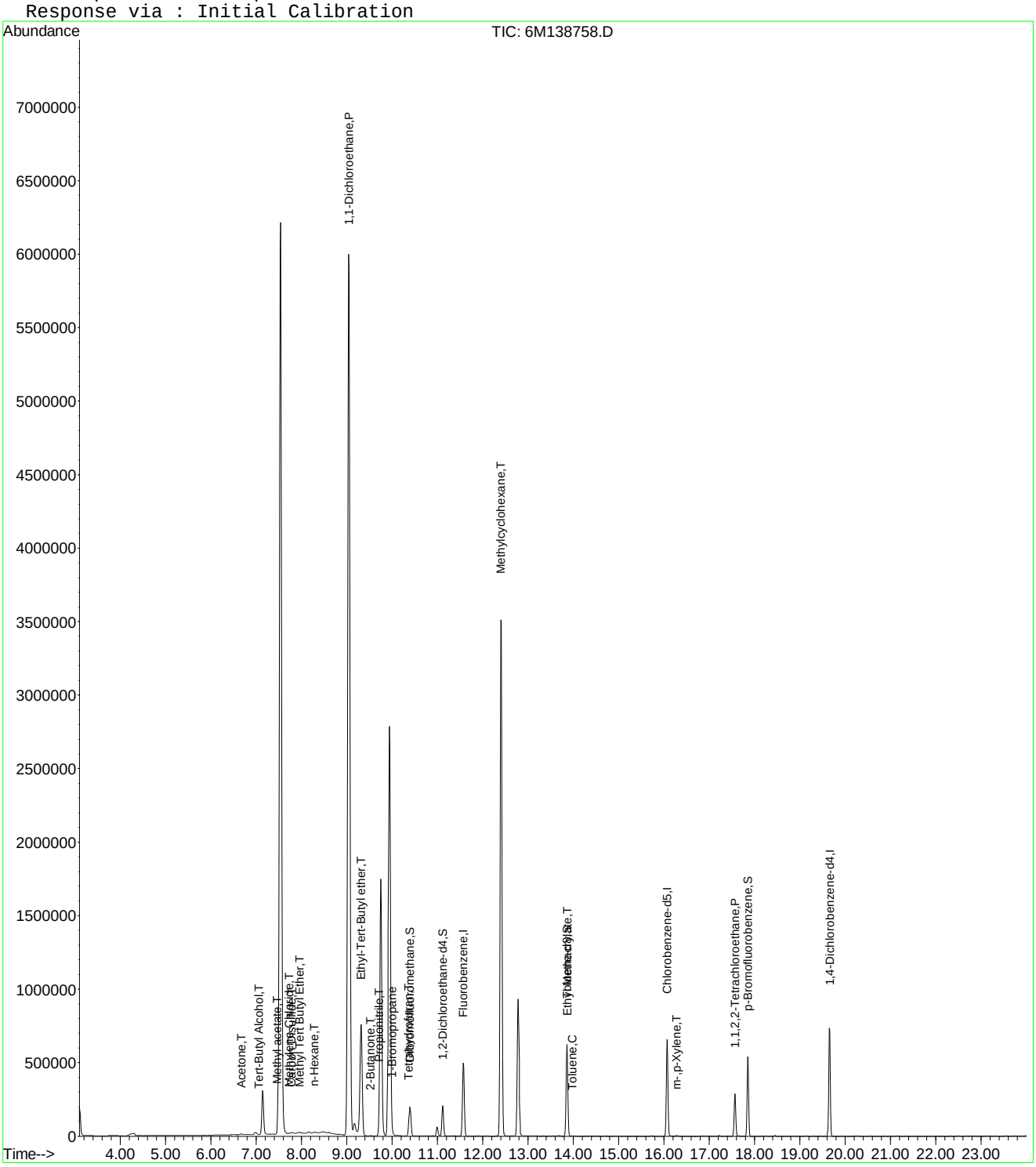

6M138758.D 8260WTR.M Mon Apr 25 09:22:52 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	616486	25.00	ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	485048	25.00	ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	268890	25.00	ug/L	-0.02

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	449583	379.8136	ug/L	92
3) 3-Chloro-1-propene	7.54	41	7430577	449.8223	ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	6752476	474.8265	ug/L	84
5) Ethyl Acetate	9.75	43	3307403	508.5794	ug/L	94
6) Methacrylonitrile	9.94	67	1145073	457.8027	ug/L #	63
7) Isobutyl Alcohol	9.95	43	251034	701.6799	ug/L #	90
8) 1-Butanol	10.99	41	42236	274.4224	ug/L	75
9) Methyl methacrylate	12.40	41	2914815	450.1389	ug/L	81
10) 2-Nitropropane	12.78	43	1036720	543.0629	ug/L	99
13) Cyclohexanone	17.57	55	176545	192.2558	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138758.D A9FOOWT.M Mon Apr 25 15:46:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

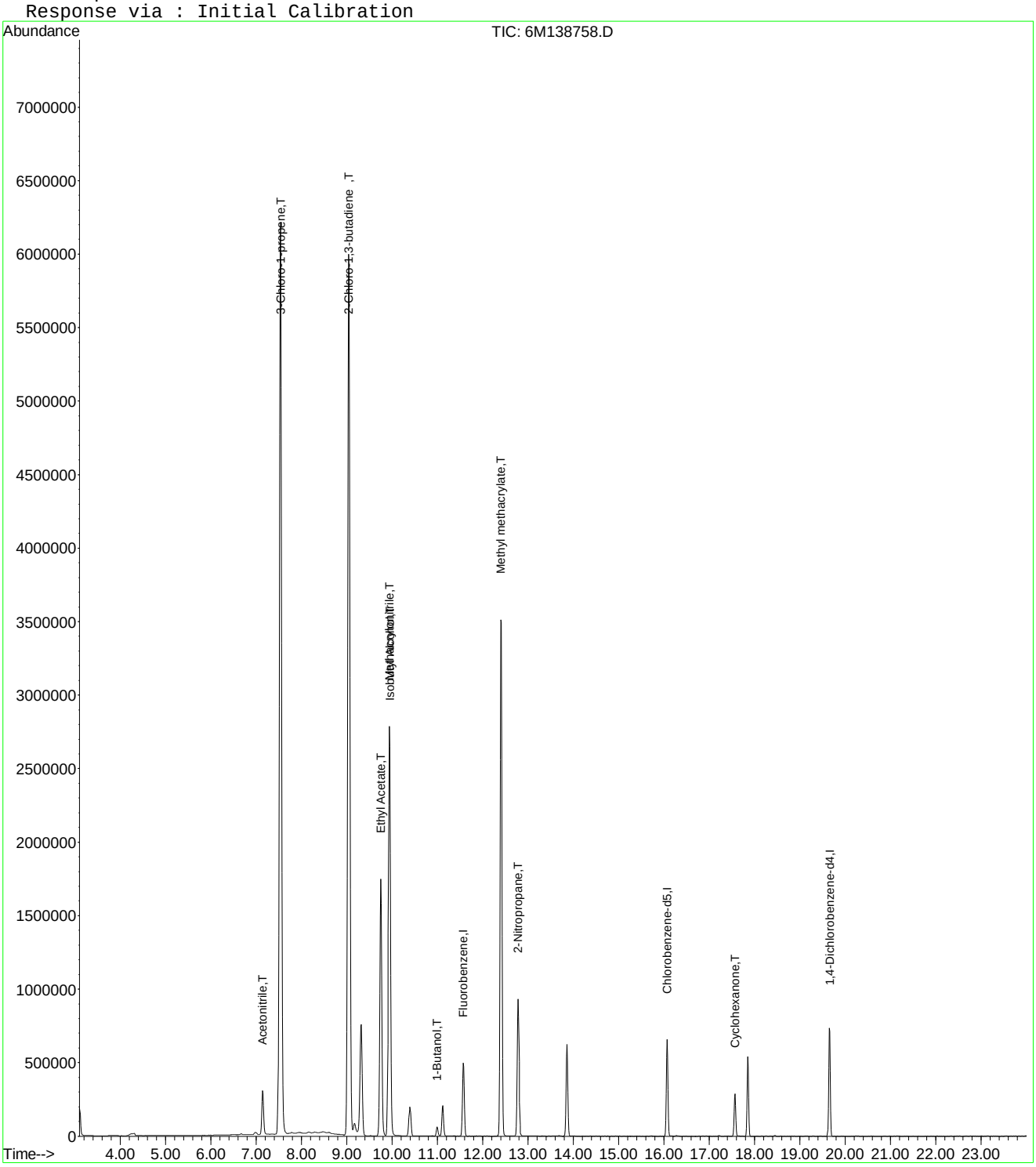

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:01 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	616486	25.00	ug/L	0.00
11) Chlorobenzene-d5	16.07	117	485048	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	268890	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	449583	486.8858	ug/L	92
3) 3-Chloro-1-propene	7.54	41	7430577	482.8665	ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	6752476	511.3891	ug/L	84
5) Ethyl Acetate	9.75	43	3307403	500.3107	ug/L	94
6) Methacrylonitrile	9.94	67	1145073	502.4237	ug/L #	63
7) Isobutyl Alcohol	9.95	43	251034	1192.2947	ug/L #	90
9) Methyl methacrylate	12.40	41	2914815	524.5904	ug/L	81
10) 2-Nitropropane	12.78	43	1036720	501.6898	ug/L	99
13) Cyclohexanone	17.57	55	176545	526.7057	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138758.D A9FOOWT.M Wed Apr 27 16:05:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

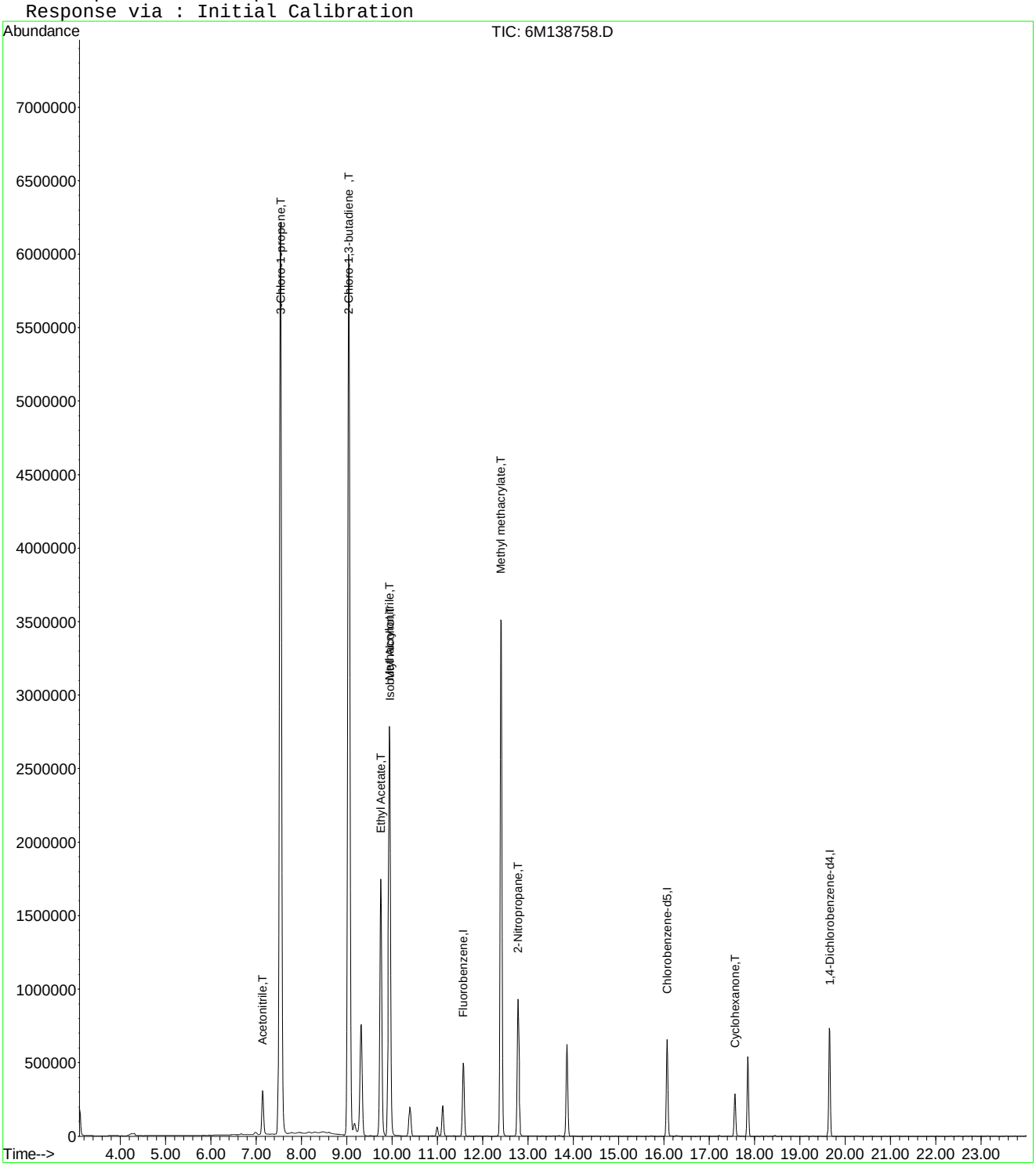

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:54 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602884	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	471639	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	256885	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.40	111	171708	27.8099 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.24%		
43) 1,2-Dichloroethane-d4	11.12	65	210067	28.0330 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.12%		
58) Toluene-d8	13.86	98	553825	26.0829 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.32%		
80) p-Bromofluorobenzene	17.85	95	243088	28.3441 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 113.36%		

Target Compounds					Qvalue
5) 1,3-Butadiene	4.21	54	367749	92.2302 ug/L	88
9) Diethyl ether	6.30	59	700386	132.3612 ug/L	92
13) Acetone	6.67	43	6570	3.5143 ug/L	81
16) Dimethyl Sulfide	7.14	62	2726	0.5361 ug/L #	1
20) Carbon Disulfide	7.54	76	432674	22.5096 ug/L #	36
22) Methyl Tert Butyl Ether	7.97	73	2916	0.1786 ug/L #	53
26) Vinyl Acetate	9.05	43	5230	0.5414 ug/L #	1
27) 1,1-Dichloroethane	9.04	63	22472	1.7594 ug/L #	42
28) Ethyl-Tert-Butyl ether	9.32	59	4063	0.1960 ug/L #	35
29) 2-Butanone	9.52	43	6076	2.2019 ug/L #	66
30) Propionitrile	9.64	54	91341	115.2239 ug/L	96
36) Tetrahydrofuran	10.36	42	4030	2.2418 ug/L #	52
39) Cyclohexane	10.69	56	2387	0.2138 ug/L	79
48) Methylcyclohexane	12.40	83	1353	0.1547 ug/L #	1
50) 1,4-Dioxane	12.73	88	9231	177.0935 ug/L	71
60) Ethyl Methacrylate	13.86	69	1222	0.1732 ug/L #	1
79) 1,1,2,2-Tetrachloroethane	17.57	83	1146	0.1832 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138761.D 8260WTR.M Mon Apr 25 09:22:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

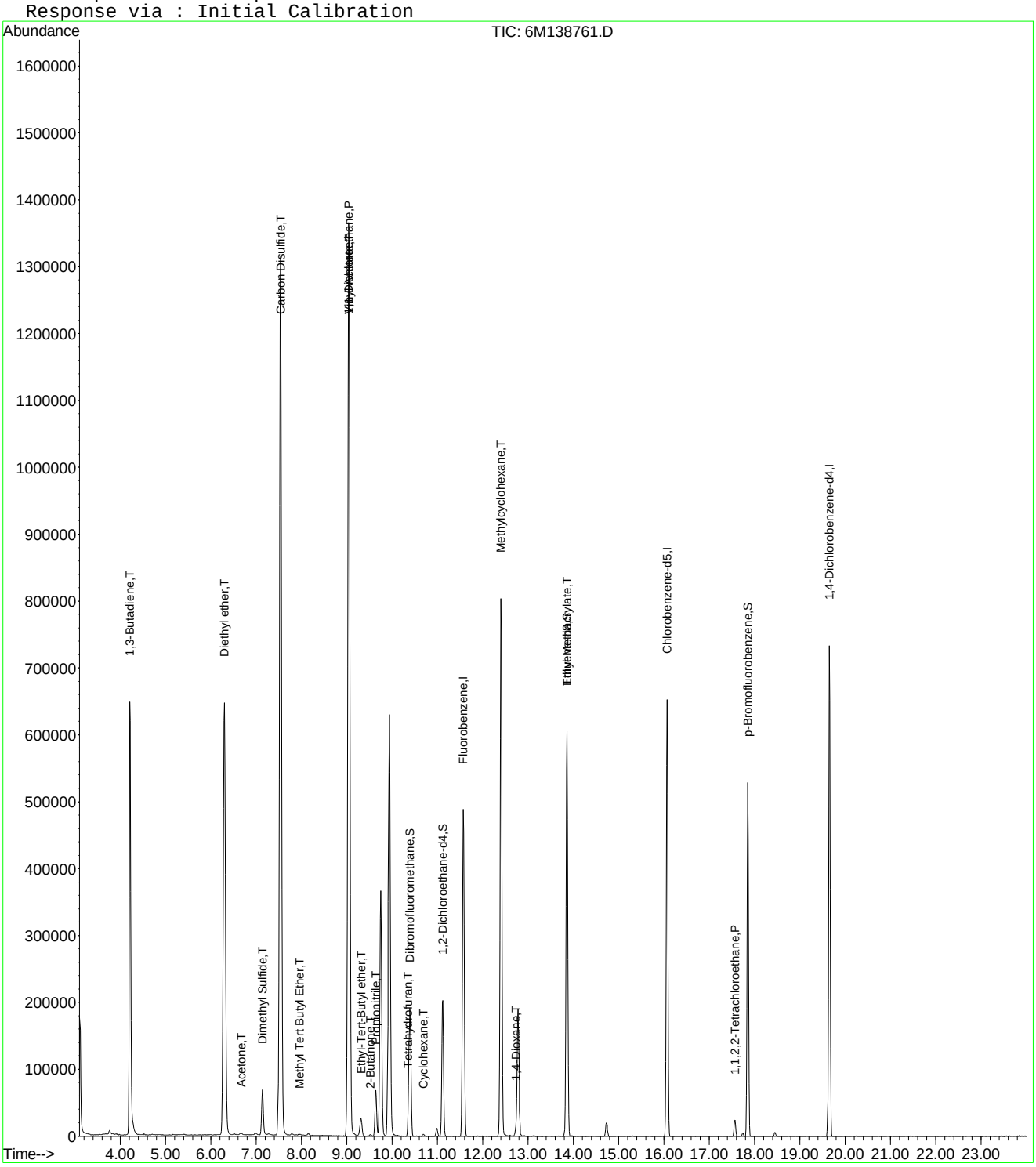

6M138761.D 8260WTR.M Mon Apr 25 09:22:54 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46:01 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602884	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	471639	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.65	152	256885	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	96564	83.4191 ug/L	96
3) 3-Chloro-1-propene	7.54	41	1552115	96.0797 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	1512761	108.7756 ug/L	83
5) Ethyl Acetate	9.75	43	691566	108.7414 ug/L	93
6) Methacrylonitrile	9.94	67	252030	103.0355 ug/L #	63
7) Isobutyl Alcohol	9.95	43	51165	146.2409 ug/L #	93
8) 1-Butanol	10.99	41	7584	50.3877 ug/L	72
9) Methyl methacrylate	12.40	41	635574	100.3670 ug/L	81
10) 2-Nitropropane	12.79	43	211020	113.0321 ug/L	98
13) Cyclohexanone	17.57	55	15491	17.6579 ug/L	85

(#) = qualifier out of range (m) = manual integration
6M138761.D A9FOOWT.M Mon Apr 25 15:46:02 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

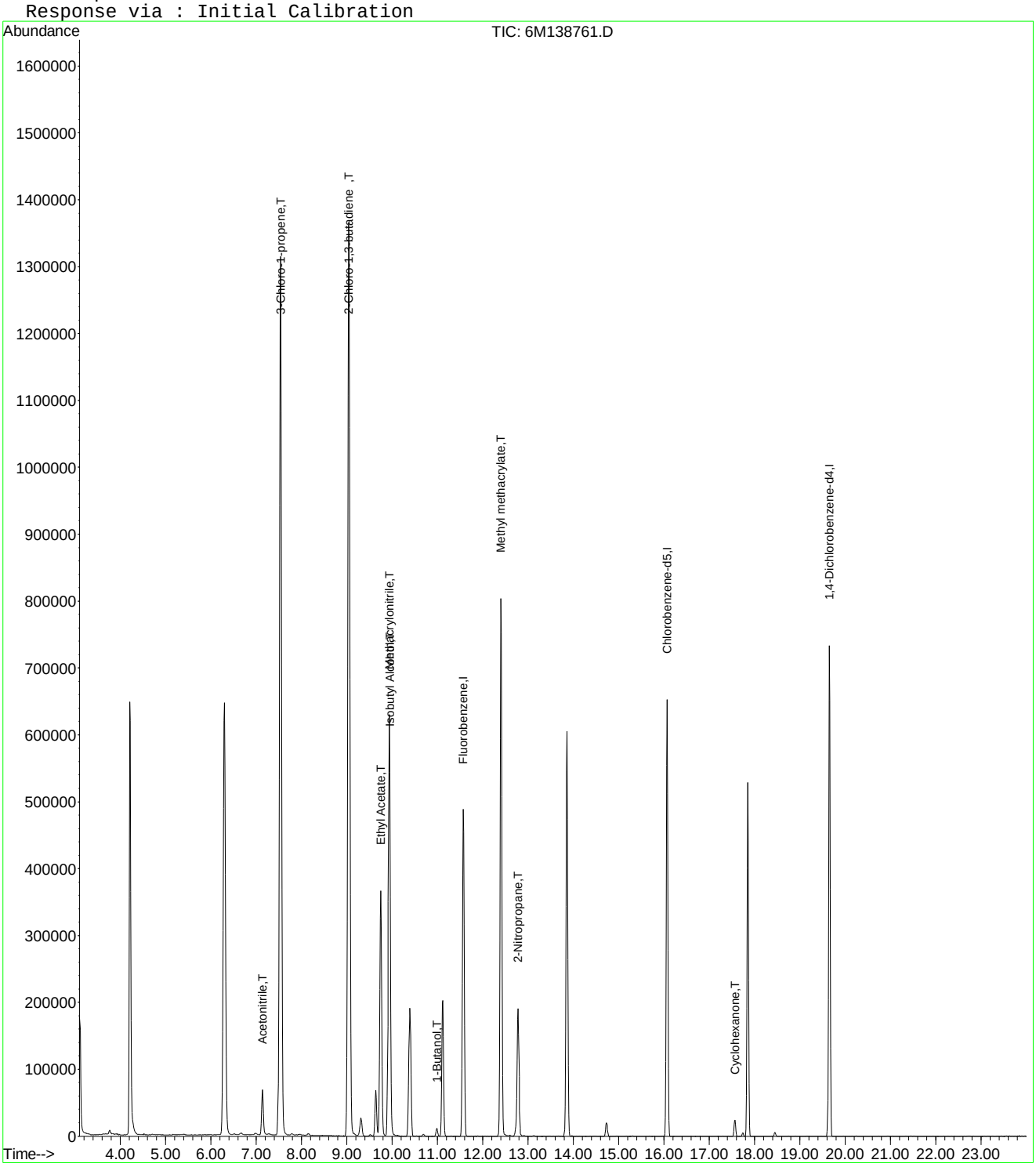

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:02 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	602884	25.00	ug/L	0.00
11) Chlorobenzene-d5	16.07	117	471639	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.65	152	256885	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	96564	106.9355	ug/L	96
3) 3-Chloro-1-propene	7.54	41	1552115	103.1378	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	1512761	117.1516	ug/L	83
5) Ethyl Acetate	9.75	43	691566	106.9734	ug/L	93
6) Methacrylonitrile	9.94	67	252030	113.0781	ug/L #	63
7) Isobutyl Alcohol	9.95	43	51165	248.4926	ug/L #	93
9) Methyl methacrylate	12.40	41	635574	116.9674	ug/L	81
10) 2-Nitropropane	12.79	43	211020	104.4208	ug/L	98
13) Cyclohexanone	17.57	55	15491	48.3758	ug/L	85

(#) = qualifier out of range (m) = manual integration
6M138761.D A9FOOWT.M Wed Apr 27 16:05:02 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

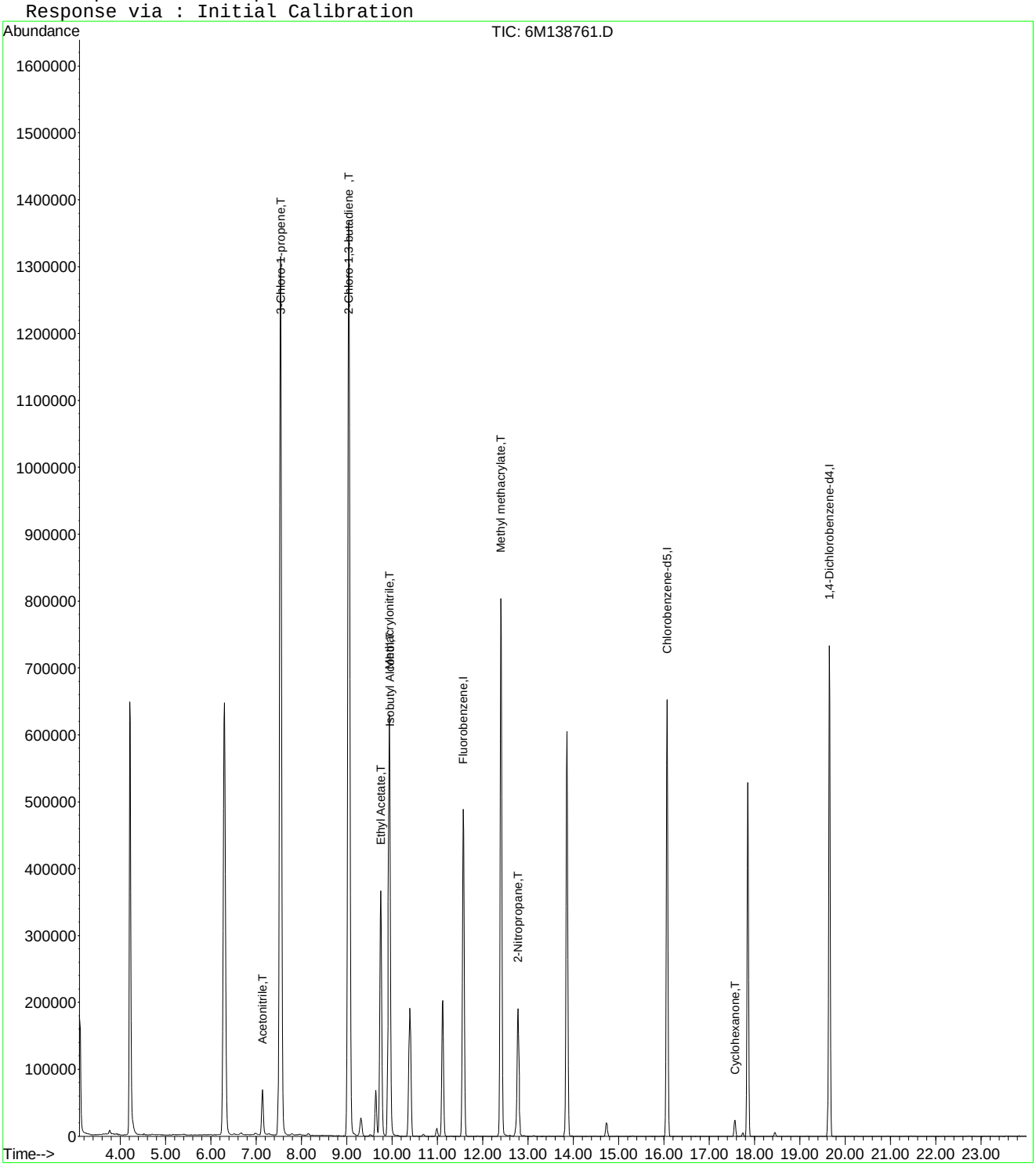

6M138761.D A9FOOWT.M Wed Apr 27 16:05:02 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	101	0.00
2	T	Acetonitrile	100.0000	106.9355	-6.9	106	0.00
3	T	3-Chloro-1-propene	100.0000	103.1378	-3.1	96	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	117.1516	-17.2	107	0.00
5	T	Ethyl Acetate	100.0000	106.9734	-7.0	103	0.00
6	T	Methacrylonitrile	100.0000	113.0781	-13.1	106	0.00
7	T	Isobutyl Alcohol	200.0000	248.4926	-24.2	151	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	100.0000	116.9674	-17.0	108	0.00
10	T	2-Nitropropane	100.0000	104.4208	-4.4	107	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	101	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	100.0000	48.3758	51.6	56	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138761.D A9FOOWT.M Wed Apr 27 16:05:40 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140314.D Vial: 2
Acq On : 30 Jun 2016 12:03 Operator: TMB
Sample : WG574723-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:20:28 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	782166	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	545154	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	278489	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	4426	0.5577 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	2.24%#	
43) 1,2-Dichloroethane-d4	10.31	65	6633	0.6621 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	2.64%#	
58) Toluene-d8	13.04	98	14915	0.5556 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.24%#	
80) p-Bromofluorobenzene	17.02	95	6529	0.5986 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.40%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	7859	0.6011 ug/L #	80
3) Chloromethane	3.36	50	10543	0.7222 ug/L	88
4) Vinyl Chloride	3.57	62	6524	0.8138 ug/L	85
5) 1,3-Butadiene	3.62	54	5236	Below Cal #	53
6) Bromomethane	4.39	94	2681	0.5033 ug/L	75
7) Chloroethane	4.55	64	2218	0.4379 ug/L #	74
8) Trichlorofluoromethane	5.01	101	7455	0.6097 ug/L #	89
10) Isoprene	5.58	67	5099	0.4673 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.81	101	3458	0.4546 ug/L	87
13) Acetone	5.90	43	5483	2.1880 ug/L	88
14) 1,1-Dichloroethene	6.11	61	8367	0.5669 ug/L	89
16) Dimethyl Sulfide	6.39	62	2618	0.4067 ug/L	92
17) Iodomethane	6.65	142	580	1.0028 ug/L #	32
18) Methyl acetate	6.68	43	2212	0.3262 ug/L #	66
19) Methylene Chloride	6.95	84	4491	0.5306 ug/L	87
20) Carbon Disulfide	6.97	76	28617	1.0581 ug/L	97
22) Methyl Tert Butyl Ether	7.17	73	6219	0.2772 ug/L #	56
23) trans-1,2-Dichloroethene	7.42	96	5255	0.6648 ug/L	83
24) n-Hexane	7.50	57	14948	1.1142 ug/L	95
26) Vinyl Acetate	8.09	43	2544	0.1688 ug/L #	78
27) 1,1-Dichloroethane	8.10	63	6467	0.3800 ug/L	91
29) 2-Butanone	8.74	43	738	0.1924 ug/L #	57
31) 2,2-Dichloropropane	8.96	77	4273	0.3328 ug/L	92
32) cis-1,2-Dichloroethene	9.04	96	4541	0.5248 ug/L	70
33) Chloroform	9.26	83	5775	0.3788 ug/L	94
35) Bromochloromethane	9.52	130	2012	0.4327 ug/L	92
36) Tetrahydrofuran	9.55	42	2953	1.1037 ug/L #	55
38) 1,1,1-Trichloroethane	9.86	97	4483	0.3377 ug/L	92
39) Cyclohexane	9.87	56	8253	0.4779 ug/L	90
40) 1,1-Dichloropropene	10.08	75	6696	0.5791 ug/L	91
42) Carbon Tetrachloride	10.23	117	3257	0.2988 ug/L #	92
45) 1,2-Dichloroethane	10.45	62	5310	0.4344 ug/L #	89
46) Benzene	10.48	78	15173	0.4650 ug/L	96
47) Trichloroethene	11.35	130	5387	0.6690 ug/L	99
48) Methylcyclohexane	11.43	83	7364	0.5825 ug/L	88
49) 1,2-Dichloropropane	11.58	63	3158	0.3361 ug/L	79
51) Bromodichloromethane	11.94	83	4017	0.3543 ug/L	95
52) Dibromomethane	12.03	93	2564	0.5639 ug/L	85
53) 2-Chloroethyl Vinyl Ether	12.31	63	1255	0.2664 ug/L #	41
55) cis-1,3-Dichloropropene	12.69	75	6354	0.4827 ug/L	93

(#) = qualifier out of range (m) = manual integration
6M140314.D 8260WTR.M Fri Jul 01 14:20:31 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140314.D Vial: 2
Acq On : 30 Jun 2016 12:03 Operator: TMB
Sample : WG574723-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:20:28 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
56)	Dimethyl Disulfide	12.96	79	2244	0.3062 ug/L #	47
59)	Toluene	13.16	91	16171	0.4977 ug/L	100
60)	Ethyl Methacrylate	13.33	69	2168	0.2345 ug/L	77
62)	trans-1,3-Dichloropropene	13.39	75	6685	0.5786 ug/L	82
63)	1,1,2-Trichloroethane	13.62	97	2098	0.3489 ug/L	91
64)	2-Hexanone	13.58	43	1202	0.2105 ug/L #	54
65)	1,3-Dichloropropane	13.99	76	4378	0.3863 ug/L	85
66)	Tetrachloroethene	14.10	166	4661	0.6020 ug/L	99
67)	Dibromochloromethane	14.41	129	2599	0.3560 ug/L	98
68)	1,2-Dibromoethane	14.71	107	3093	0.5329 ug/L	98
69)	1-Chlorohexane	14.85	91	5951	0.5504 ug/L	88
70)	Chlorobenzene	15.30	112	13354	0.6409 ug/L	99
71)	1,1,1,2-Tetrachloroethane	15.35	131	2310	0.3116 ug/L	94
72)	Ethylbenzene	15.35	106	5305	0.4864 ug/L	85
73)	m-,p-Xylene	15.45	106	13647	1.0353 ug/L	91
74)	o-Xylene	16.11	106	5438	0.4136 ug/L	85
75)	Styrene	16.16	104	10471	0.4734 ug/L	91
76)	Bromoform	16.71	173	1433	0.3165 ug/L #	50
77)	Isopropylbenzene	16.63	105	15560	0.4536 ug/L	92
79)	1,1,2,2-Tetrachloroethane	16.88	83	1987	0.2940 ug/L	77
81)	1,2,3-Trichloropropane	17.10	110	241	0.1203 ug/L #	1
82)	trans-1,4-Dichloro-2-Buten	17.19	53	903	0.3534 ug/L	88
83)	n-Propylbenzene	17.22	91	21456	0.5362 ug/L #	94
84)	Bromobenzene	17.34	156	5484	0.6559 ug/L	92
85)	1,3,5-Trimethylbenzene	17.44	105	12453	0.4440 ug/L	96
86)	2-Chlorotoluene	17.52	91	13840	0.5114 ug/L	95
87)	4-Chlorotoluene	17.59	91	17422	0.6753 ug/L	95
88)	a-Methylstyrene	17.92	118	6165	0.4370 ug/L	93
89)	tert-Butylbenzene	17.98	134	2101	0.3729 ug/L #	24
90)	1,2,4-Trimethylbenzene	18.05	105	13753	0.4779 ug/L	100
91)	sec-Butylbenzene	18.30	105	18042	0.5374 ug/L	92
92)	p-Isopropyltoluene	18.51	119	14633	0.5114 ug/L	94
93)	1,3-Dichlorobenzene	18.70	146	11689	0.7103 ug/L	99
94)	1,4-Dichlorobenzene	18.85	146	12500	0.7513 ug/L	97
95)	n-Butylbenzene	19.12	91	17799	0.6344 ug/L	93
96)	1,2-Dichlorobenzene	19.43	146	9545	0.6178 ug/L	96
97)	1,2-Dibromo-3-Chloropropan	20.62	75	229	0.1730 ug/L #	1
98)	1,2,4-Trichlorobenzene	21.96	180	8749	0.8011 ug/L	91
99)	Hexachlorobutadiene	22.15	225	2944	0.6484 ug/L	95
100)	Naphthalene	22.39	128	14249	0.6384 ug/L	95
101)	1,2,3-Trichlorobenzene	22.76	180	7092	0.7013 ug/L	96

(#) = qualifier out of range (m) = manual integration
6M140314.D 8260WTR.M Fri Jul 01 14:20:32 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140314.D Vial: 2
Acq On : 30 Jun 2016 12:03 Operator: TMB
Sample : WG574723-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:20 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

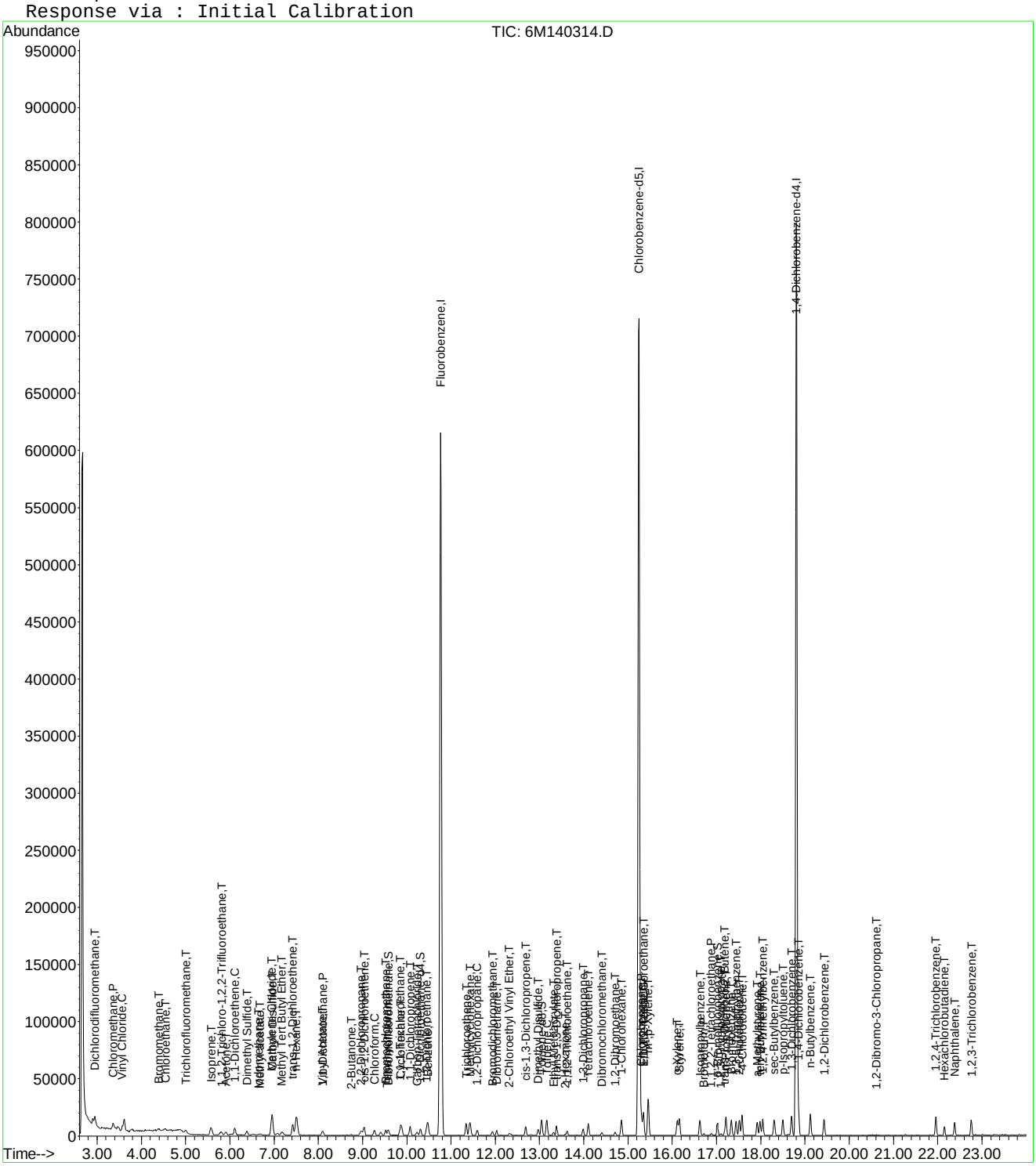

6M140314.D 8260WTR.M Fri Jul 01 14:20:34 2016 Page 3

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140314.D Vial: 2
Acq On : 30 Jun 2016 12:03 Operator: TMB
Sample : WG574723-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.6011	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.7222	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.8138	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	-1.9896	0.0	0	0.03
6	T	Bromomethane	-1.0000	0.5033	0.0	100	0.02
7	T	Chloroethane	-1.0000	0.4379	0.0	100	0.02
8	T	Trichlorofluoromethane	-1.0000	0.6097	0.0	100	0.00
9	T	Diethyl ether	-1.0000	0.0280	0.0	100	0.00
10	T	Isoprene	-1.0000	0.4673	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-5.79#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.4546	0.0	100	0.03
13	T	Acetone	-1.0000	2.1880	0.0	100	0.00
14	C	1,1-Dichloroethene	-1.0000	0.5669	0.0	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.29#
16	T	Dimethyl Sulfide	-1.0000	0.4067	0.0	100	0.00
17	T	Iodomethane	-1.0000	1.0028	0.0	0	0.01
18	T	Methyl acetate	-1.0000	0.3262	0.0	100	-0.01
19	T	Methylene Chloride	-1.0000	0.5306	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	1.0581	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.15#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2772	0.0	100	-0.01
23	T	trans-1,2-Dichloroethene	-1.0000	0.6648	0.0	100	0.00
24	T	n-Hexane	-1.0000	1.1142	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-7.90#
26	T	Vinyl Acetate	-1.0000	0.1688	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.3800	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.53#
29	T	2-Butanone	-1.0000	0.1924	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.86#
31	T	2,2-Dichloropropane	-1.0000	0.3328	0.0	100	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.5248	0.0	100	0.00
33	C	Chloroform	0.3000	0.3788	-26.3#	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.41#
35	T	Bromochloromethane	-1.0000	0.4327	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	1.1037	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.5577	0.0	100	0.00
38	T	1,1,1-Trichloroethane	-1.0000	0.3377	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.4779	0.0	100	-0.01
40	T	1,1-Dichloropropene	-1.0000	0.5791	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0293	0.0	100	-0.13
42	T	Carbon Tetrachloride	-1.0000	0.2988	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.6621	0.0	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-10.21#
45	T	1,2-Dichloroethane	-1.0000	0.4344	0.0	100	0.00
46	T	Benzene	-1.0000	0.4650	0.0	100	0.00
47	T	Trichloroethene	-1.0000	0.6690	0.0	100	0.00
48	T	Methylcyclohexane	-1.0000	0.5825	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.3361	0.0	100	-0.01
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.94#
51	T	Bromodichloromethane	-1.0000	0.3543	0.0	100	0.00
52	T	Dibromomethane	-1.0000	0.5639	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2664	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0645	0.0	100	0.00

(#) = Out of Range

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140314.D Vial: 2
Acq On : 30 Jun 2016 12:03 Operator: TMB
Sample : WG574723-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.4827	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.3062	0.0	100	-0.01
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.5556	0.0	100	0.00
59	C	Toluene	-1.0000	0.4977	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2345	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	-1.0000	0.5786	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.3489	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.2105	0.0	100	0.00
65	T	1,3-Dichloropropane	-1.0000	0.3863	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.6020	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.3560	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.5329	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.5504	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.6409	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.3116	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.4864	0.0	100	0.00
73	T	m-,p-Xylene	-1.0000	1.0353	0.0	100	-0.01
74	T	o-Xylene	-1.0000	0.4136	0.0	100	-0.01
75	T	Styrene	-1.0000	0.4734	0.0	100	0.00
76	P	Bromoform	-1.0000	0.3165	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.4536	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	-0.01
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2940	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5986	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.1203	0.0	100	-0.01
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.3534	0.0	100	0.00
83	T	n-Propylbenzene	-1.0000	0.5362	0.0	100	0.00
84	T	Bromobenzene	-1.0000	0.6559	0.0	0	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.4440	0.0	100	-0.01
86	T	2-Chlorotoluene	-1.0000	0.5114	0.0	79	-0.01
87	T	4-Chlorotoluene	-1.0000	0.6753	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.4370	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3729	0.0	100	-0.01
90	T	1,2,4-Trimethylbenzene	-1.0000	0.4779	0.0	100	-0.01
91	T	sec-Butylbenzene	-1.0000	0.5374	0.0	100	-0.01
92	T	p-Isopropyltoluene	-1.0000	0.5114	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.7103	0.0	100	0.00
94	T	1,4-Dichlorobenzene	-1.0000	0.7513	0.0	0	0.00
95	T	n-Butylbenzene	-1.0000	0.6344	0.0	100	0.00
96	T	1,2-Dichlorobenzene	-1.0000	0.6178	0.0	0	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.1730	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	-1.0000	0.8011	0.0	100	-0.01
99	T	Hexachlorobutadiene	-1.0000	0.6484	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.6384	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	-1.0000	0.7013	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1
6M140314.D 8260WTR.M Fri Jul 01 14:34:29 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140315.D Vial: 3
Acq On : 30 Jun 2016 12:35 Operator: TMB
Sample : WG574723-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:20:36 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	711040	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	496934	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	254758	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	13.04	98	1118	0.0457 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.20%#	
80) p-Bromofluorobenzene	17.01	95	723	0.0725 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	4029	0.3390 ug/L #	64
3) Chloromethane	3.37	50	7908	0.5959 ug/L	82
4) Vinyl Chloride	3.56	62	2700	0.3705 ug/L	78
5) 1,3-Butadiene	3.62	54	3035	Below Cal #	51
6) Bromomethane	4.39	94	1885	0.3892 ug/L	95
7) Chloroethane	4.55	64	1384	0.3006 ug/L #	43
8) Trichlorofluoromethane	5.00	101	5096	0.4585 ug/L #	91
10) Isoprene	5.57	67	4197	0.4231 ug/L	86
12) 1,1,2-Trichloro-1,2,2-Trif	5.82	101	2196	0.3176 ug/L	83
13) Acetone	5.90	43	1650	0.7243 ug/L #	48
14) 1,1-Dichloroethene	6.11	61	5407	0.4030 ug/L	90
16) Dimethyl Sulfide	6.38	62	2288	0.3910 ug/L	87
18) Methyl acetate	6.69	43	1819	0.2951 ug/L #	66
19) Methylene Chloride	6.93	84	3320	0.4315 ug/L	82
20) Carbon Disulfide	6.97	76	11427	0.4648 ug/L	99
22) Methyl Tert Butyl Ether	7.18	73	8255	0.4048 ug/L #	75
23) trans-1,2-Dichloroethene	7.42	96	2988	0.4158 ug/L	82
24) n-Hexane	7.51	57	5670	0.4649 ug/L	92
26) Vinyl Acetate	8.09	43	2906	0.2121 ug/L #	78
27) 1,1-Dichloroethane	8.10	63	6380	0.4124 ug/L	89
29) 2-Butanone	8.74	43	1046	0.3000 ug/L #	57
31) 2,2-Dichloropropane	8.95	77	4509	0.3863 ug/L	96
32) cis-1,2-Dichloroethene	9.03	96	3353	0.4263 ug/L	94
33) Chloroform	9.27	83	5194	0.3747 ug/L	99
35) Bromochloromethane	9.53	130	1601	0.3788 ug/L	83
36) Tetrahydrofuran	9.56	42	3379	1.3892 ug/L #	67
38) 1,1,1-Trichloroethane	9.87	97	4496	0.3726 ug/L	93
39) Cyclohexane	9.89	56	6498	0.4139 ug/L	94
40) 1,1-Dichloropropene	10.08	75	4389	0.4176 ug/L	94
42) Carbon Tetrachloride	10.24	117	3081	0.3110 ug/L #	88
45) 1,2-Dichloroethane	10.45	62	4443	0.3998 ug/L #	81
46) Benzene	10.48	78	13145	0.4431 ug/L	97
47) Trichloroethene	11.34	130	3154	0.4309 ug/L	93
48) Methylcyclohexane	11.42	83	4969	0.4324 ug/L	87
49) 1,2-Dichloropropane	11.59	63	3543	0.4147 ug/L	87
51) Bromodichloromethane	11.93	83	3676	0.3566 ug/L	92
52) Dibromomethane	12.03	93	1420	0.3436 ug/L	100
53) 2-Chloroethyl Vinyl Ether	12.31	63	1186	0.2769 ug/L #	41
54) 4-Methyl-2-Pentanone	12.35	58	422	0.1601 ug/L #	38
55) cis-1,3-Dichloropropene	12.67	75	4716	0.3941 ug/L	96

(#) = qualifier out of range (m) = manual integration
6M140315.D 8260WTR.M Fri Jul 01 14:20:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140315.D Vial: 3
Acq On : 30 Jun 2016 12:35 Operator: TMB
Sample : WG574723-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:20:36 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
56)	Dimethyl Disulfide	12.97	79	1919	0.2881 ug/L #	68
59)	Toluene	13.16	91	13506	0.4560 ug/L	97
60)	Ethyl Methacrylate	13.32	69	2728	0.3238 ug/L	91
62)	trans-1,3-Dichloropropene	13.39	75	3780	0.3589 ug/L	86
63)	1,1,2-Trichloroethane	13.63	97	2086	0.3806 ug/L	93
64)	2-Hexanone	13.58	43	1538	0.2955 ug/L	72
65)	1,3-Dichloropropane	13.98	76	4376	0.4236 ug/L	95
66)	Tetrachloroethene	14.10	166	2876	0.4075 ug/L	95
67)	Dibromochloromethane	14.41	129	2210	0.3321 ug/L	93
68)	1,2-Dibromoethane	14.72	107	1896	0.3584 ug/L	87
69)	1-Chlorohexane	14.86	91	4030	0.4089 ug/L	91
70)	Chlorobenzene	15.30	112	8640	0.4549 ug/L	96
71)	1,1,1,2-Tetrachloroethane	15.35	131	2601	0.3848 ug/L	92
72)	Ethylbenzene	15.35	106	4049	0.4073 ug/L	76
73)	m-,p-Xylene	15.45	106	10358	0.8620 ug/L	87
74)	o-Xylene	16.10	106	5184	0.4326 ug/L	96
75)	Styrene	16.16	104	7888	0.3912 ug/L	83
76)	Bromoform	16.72	173	1146	0.2777 ug/L #	68
77)	Isopropylbenzene	16.62	105	13388	0.4282 ug/L	97
79)	1,1,2,2-Tetrachloroethane	16.88	83	2211	0.3576 ug/L	95
81)	1,2,3-Trichloropropane	17.11	110	427	0.2329 ug/L #	1
83)	n-Propylbenzene	17.22	91	16903	0.4618 ug/L #	94
84)	Bromobenzene	17.34	156	3349	0.4379 ug/L	93
85)	1,3,5-Trimethylbenzene	17.44	105	10954	0.4269 ug/L	99
86)	2-Chlorotoluene	17.51	91	11900	0.4807 ug/L	93
87)	4-Chlorotoluene	17.57	91	10437	0.4422 ug/L	94
88)	a-Methylstyrene	17.92	118	4645	0.3600 ug/L	98
89)	tert-Butylbenzene	17.98	134	2361	0.4580 ug/L	87
90)	1,2,4-Trimethylbenzene	18.04	105	11026	0.4188 ug/L	95
91)	sec-Butylbenzene	18.31	105	13954	0.4543 ug/L	95
92)	p-Isopropyltoluene	18.50	119	11850	0.4527 ug/L	94
93)	1,3-Dichlorobenzene	18.70	146	6789	0.4510 ug/L	100
94)	1,4-Dichlorobenzene	18.85	146	7052	0.4633 ug/L	99
95)	n-Butylbenzene	19.12	91	11908	0.4639 ug/L	90
96)	1,2-Dichlorobenzene	19.42	146	6295	0.4454 ug/L	99
97)	1,2-Dibromo-3-Chloropropan	20.62	75	204	0.1685 ug/L #	1
98)	1,2,4-Trichlorobenzene	21.96	180	4710	0.4715 ug/L	93
99)	Hexachlorobutadiene	22.15	225	1916	0.4613 ug/L	98
100)	Naphthalene	22.38	128	8061	0.3948 ug/L	90
101)	1,2,3-Trichlorobenzene	22.75	180	4023	0.4349 ug/L	96

(#) = qualifier out of range (m) = manual integration
6M140315.D 8260WTR.M Fri Jul 01 14:20:54 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140315.D Vial: 3
Acq On : 30 Jun 2016 12:35 Operator: TMB
Sample : WG574723-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:20 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

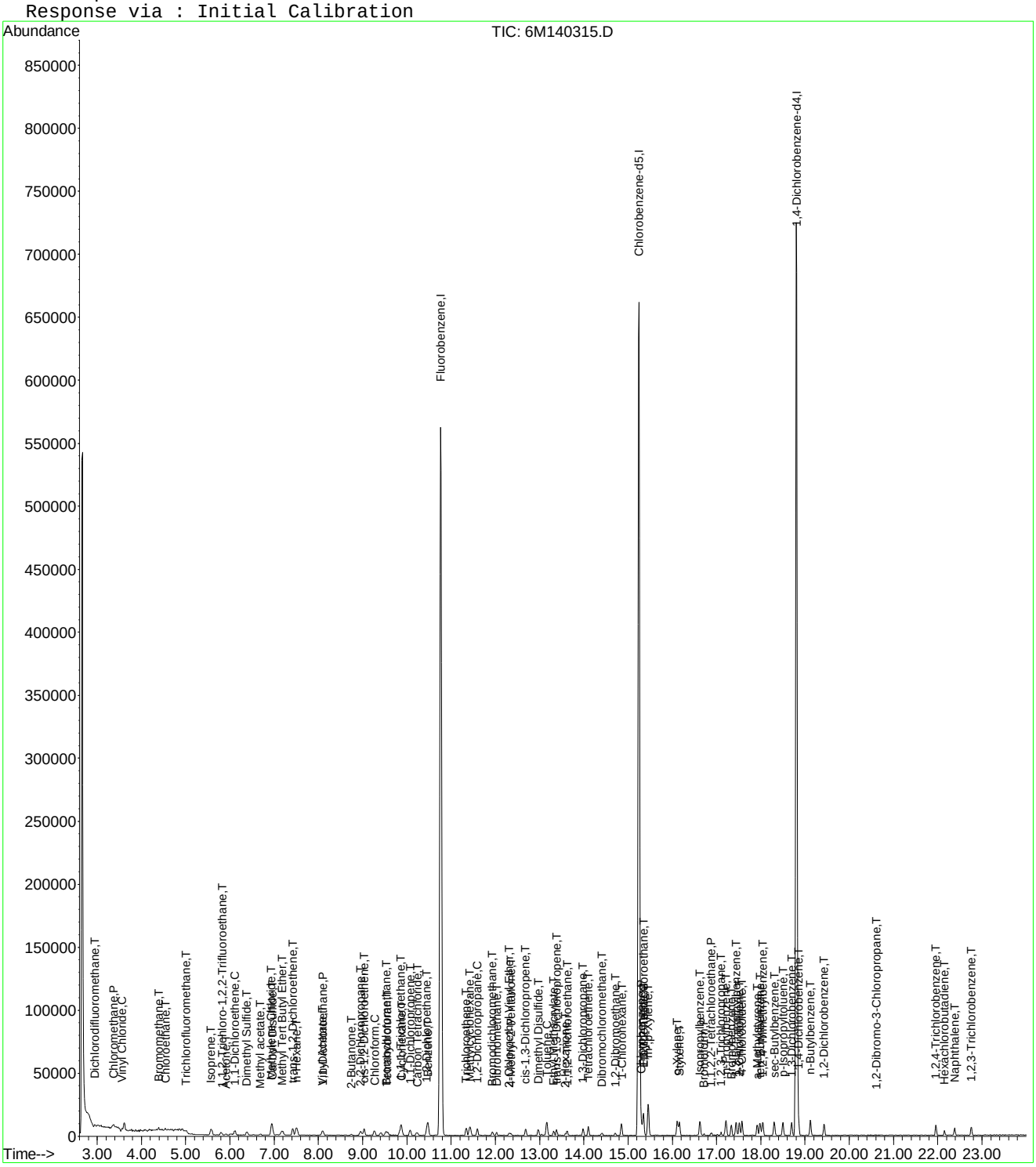

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140315.D Vial: 3
Acq On : 30 Jun 2016 12:35 Operator: TMB
Sample : WG574723-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.3390	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.5959	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.3705	7.4	100	0.00
5	T	1,3-Butadiene	-1.0000	-2.4246	0.0	0	0.03
6	T	Bromomethane	-1.0000	0.3892	0.0	100	0.02
7	T	Chloroethane	-1.0000	0.3006	0.0	100	0.02
8	T	Trichlorofluoromethane	0.4000	0.4585	-14.6	100	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.55#
10	T	Isoprene	-1.0000	0.4231	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-5.79#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3176	0.0	100	0.04
13	T	Acetone	-1.0000	0.7243	0.0	100	0.00
14	C	1,1-Dichloroethene	0.4000	0.4030	-0.7	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.29#
16	T	Dimethyl Sulfide	-1.0000	0.3910	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.64#
18	T	Methyl acetate	-1.0000	0.2951	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4315	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4648	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.15#
22	T	Methyl Tert Butyl Ether	-1.0000	0.4048	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.4158	-4.0	100	0.00
24	T	n-Hexane	-1.0000	0.4649	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-7.90#
26	T	Vinyl Acetate	-1.0000	0.2121	0.0	100	0.00
27	P	1,1-Dichloroethane	0.4000	0.4124	-3.1	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.53#
29	T	2-Butanone	-1.0000	0.3000	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.86#
31	T	2,2-Dichloropropane	0.4000	0.3863	3.4	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.4263	-6.6	100	0.00
33	C	Chloroform	0.4000	0.3747	6.3	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.41#
35	T	Bromochloromethane	0.4000	0.3787	5.3	100	0.00
36	T	Tetrahydrofuran	-1.0000	1.3892	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.59#
38	T	1,1,1-Trichloroethane	0.4000	0.3726	6.9	100	0.02
39	T	Cyclohexane	-1.0000	0.4139	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4176	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	0.4000	0.3110	22.3#	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-10.21#
45	T	1,2-Dichloroethane	0.4000	0.3998	0.1	100	0.00
46	T	Benzene	0.4000	0.4431	-10.8	100	0.00
47	T	Trichloroethene	0.4000	0.4309	-7.7	100	0.00
48	T	Methylcyclohexane	-1.0000	0.4324	0.0	100	-0.01
49	C	1,2-Dichloropropane	0.4000	0.4147	-3.7	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.94#
51	T	Bromodichloromethane	0.4000	0.3566	10.8	100	0.00
52	T	Dibromomethane	0.4000	0.3436	14.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2769	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.1601	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140315.D Vial: 3
Acq On : 30 Jun 2016 12:35 Operator: TMB
Sample : WG574723-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3941	1.5	100	-0.01
56	T	Dimethyl Disulfide	-1.0000	0.2881	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0457	0.0	100	0.00
59	C	Toluene	0.4000	0.4560	-14.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3238	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.16#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3589	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.3806	4.9	100	0.00
64	T	2-Hexanone	-1.0000	0.2955	0.0	100	0.00
65	T	1,3-Dichloropropane	0.4000	0.4236	-5.9	100	-0.01
66	T	Tetrachloroethene	0.4000	0.4075	-1.9	100	0.00
67	T	Dibromochloromethane	0.4000	0.3321	17.0	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.3584	10.4	100	0.00
69	T	1-Chlorohexane	0.4000	0.4089	-2.2	100	0.00
70	P	Chlorobenzene	0.4000	0.4549	-13.7	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3848	3.8	100	0.00
72	C	Ethylbenzene	0.4000	0.4073	-1.8	100	0.00
73	T	m-,p-Xylene	0.8000	0.8620	-7.8	100	-0.01
74	T	o-Xylene	-1.0000	0.4326	0.0	100	-0.01
75	T	Styrene	0.4000	0.3912	2.2	100	0.00
76	P	Bromoform	-1.0000	0.2777	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.4282	-7.0	100	-0.01
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.3576	10.6	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0725	0.0	100	-0.01
81	T	1,2,3-Trichloropropane	-1.0000	0.2329	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.1005	0.0	100	0.00
83	T	n-Propylbenzene	0.4000	0.4618	-15.4	100	0.00
84	T	Bromobenzene	0.4000	0.4379	-9.5	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.4270	-6.7	100	-0.01
86	T	2-Chlorotoluene	0.4000	0.4807	-20.2#	100	-0.01
87	T	4-Chlorotoluene	0.4000	0.4422	-10.6	100	-0.01
88	T	a-Methylstyrene	-1.0000	0.3600	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.4580	0.0	100	-0.01
90	T	1,2,4-Trimethylbenzene	-1.0000	0.4188	0.0	100	-0.01
91	T	sec-Butylbenzene	-1.0000	0.4543	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4527	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.4510	-12.7	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.4633	-15.8	100	0.00
95	T	n-Butylbenzene	-1.0000	0.4639	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.4454	-11.4	100	-0.01
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.1685	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	0.4000	0.4714	-17.9	100	-0.01
99	T	Hexachlorobutadiene	0.4000	0.4613	-15.3	100	0.00
100	T	Naphthalene	0.4000	0.3948	1.3	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.4349	-8.7	100	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140315.D 8260WTR.M Fri Jul 01 14:35:02 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140316.D Vial: 4
Acq On : 30 Jun 2016 13:08 Operator: TMB
Sample : WG574723-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:20:58 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	687429	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	485381	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	251587	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	3444	0.4938 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.96%#	
43) 1,2-Dichloroethane-d4	10.31	65	4418	0.5018 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	2.00%#	
58) Toluene-d8	13.04	98	12734	0.5328 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.12%#	
80) p-Bromofluorobenzene	17.01	95	5390	0.5470 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.20%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	11016	0.9586 ug/L #	84
3) Chloromethane	3.37	50	15509	1.2088 ug/L	95
4) Vinyl Chloride	3.56	62	7694	1.0920 ug/L	94
5) 1,3-Butadiene	3.62	54	7756	Below Cal #	68
6) Bromomethane	4.39	94	4929	1.0528 ug/L	86
7) Chloroethane	4.53	64	4342	0.9753 ug/L	93
8) Trichlorofluoromethane	5.01	101	10531	0.9800 ug/L	96
9) Diethyl ether	5.55	59	32999	5.2047 ug/L	95
10) Isoprene	5.57	67	9716	1.0131 ug/L	99
11) Acrolein	5.79	56	2538	2.4066 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	6731	1.0068 ug/L	91
13) Acetone	5.90	43	3178	1.4430 ug/L #	76
14) 1,1-Dichloroethene	6.12	61	13411	1.0339 ug/L	87
15) Tert-Butyl Alcohol	6.25	59	6206	9.2151 ug/L #	84
16) Dimethyl Sulfide	6.38	62	5231	0.9246 ug/L	96
17) Iodomethane	6.65	142	2100	1.3352 ug/L	82
18) Methyl acetate	6.69	43	5561	0.9331 ug/L #	66
19) Methylene Chloride	6.94	84	8529	1.1466 ug/L	84
20) Carbon Disulfide	6.97	76	25467	1.0714 ug/L	99
21) Acrylonitrile	7.16	53	6206	2.2695 ug/L	94
22) Methyl Tert Butyl Ether	7.18	73	19700	0.9991 ug/L	95
23) trans-1,2-Dichloroethene	7.42	96	6984	1.0053 ug/L	82
24) n-Hexane	7.51	57	13051	1.1069 ug/L	96
25) Diisopropyl ether	7.90	45	166032	5.2317 ug/L	96
26) Vinyl Acetate	8.09	43	9104	0.6872 ug/L #	78
27) 1,1-Dichloroethane	8.10	63	15277	1.0213 ug/L	96
28) Ethyl-Tert-Butyl ether	8.53	59	131034	5.1323 ug/L	97
29) 2-Butanone	8.73	43	3268	0.9693 ug/L #	57
30) Propionitrile	8.85	54	4333	4.7359 ug/L	96
31) 2,2-Dichloropropane	8.95	77	11579	1.0261 ug/L	100
32) cis-1,2-Dichloroethene	9.03	96	7838	1.0307 ug/L	88
33) Chloroform	9.26	83	13154	0.9816 ug/L	99
34) 1-Bromopropane	9.41	122	659	1.0190 ug/L	80
35) Bromochloromethane	9.52	130	3868	0.9465 ug/L	100
36) Tetrahydrofuran	9.55	42	14306	6.0837 ug/L	89
38) 1,1,1-Trichloroethane	9.84	97	11995	1.0282 ug/L	99
39) Cyclohexane	9.89	56	16203	1.0675 ug/L	92
40) 1,1-Dichloropropene	10.08	75	10372	1.0207 ug/L	98
41) Tert-Amyl-Methyl ether	10.22	73	97548	5.0317 ug/L	97
42) Carbon Tetrachloride	10.22	117	8394	0.8763 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M140316.D 8260WTR.M Fri Jul 01 14:21:13 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140316.D Vial: 4
Acq On : 30 Jun 2016 13:08 Operator: TMB
Sample : WG574723-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:20:58 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	10834	1.0084 ug/L #	94
46)	Benzene	10.48	78	30089	1.0492 ug/L	98
47)	Trichloroethene	11.35	130	7344	1.0378 ug/L	95
48)	Methylcyclohexane	11.43	83	11566	1.0410 ug/L	92
49)	1,2-Dichloropropane	11.59	63	8057	0.9755 ug/L	94
51)	Bromodichloromethane	11.93	83	9704	0.9738 ug/L	95
52)	Dibromomethane	12.02	93	3754	0.9395 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.31	63	3750	0.9056 ug/L	89
54)	4-Methyl-2-Pentanone	12.35	58	1943	0.7624 ug/L #	38
55)	cis-1,3-Dichloropropene	12.68	75	10823	0.9354 ug/L	99
56)	Dimethyl Disulfide	12.97	79	5005	0.7771 ug/L	92
59)	Toluene	13.16	91	30726	1.0622 ug/L	99
60)	Ethyl Methacrylate	13.32	69	7189	0.8735 ug/L	94
62)	trans-1,3-Dichloropropene	13.39	75	9521	0.9256 ug/L	92
63)	1,1,2-Trichloroethane	13.63	97	5389	1.0066 ug/L	99
64)	2-Hexanone	13.58	43	4641	0.9130 ug/L	84
65)	1,3-Dichloropropane	13.99	76	10212	1.0121 ug/L	95
66)	Tetrachloroethene	14.10	166	7069	1.0254 ug/L	90
67)	Dibromochloromethane	14.41	129	5818	0.8951 ug/L	98
68)	1,2-Dibromoethane	14.71	107	5034	0.9742 ug/L	100
69)	1-Chlorohexane	14.85	91	9657	1.0031 ug/L	86
70)	Chlorobenzene	15.30	112	19612	1.0571 ug/L	95
71)	1,1,1,2-Tetrachloroethane	15.35	131	6511	0.9863 ug/L	95
72)	Ethylbenzene	15.35	106	9761	1.0051 ug/L	83
73)	m-,p-Xylene	15.45	106	24695	2.1041 ug/L	92
74)	o-Xylene	16.11	106	11834	1.0110 ug/L	92
75)	Styrene	16.16	104	18993	0.9644 ug/L	88
76)	Bromoform	16.72	173	3330	0.8262 ug/L #	88
77)	Isopropylbenzene	16.61	105	31878	1.0438 ug/L	96
79)	1,1,2,2-Tetrachloroethane	16.88	83	5647	0.9248 ug/L	93
81)	1,2,3-Trichloropropane	17.11	110	1314	0.7259 ug/L #	16
82)	trans-1,4-Dichloro-2-Buten	17.18	53	1593	0.6900 ug/L	82
83)	n-Propylbenzene	17.22	91	39699	1.0982 ug/L	95
84)	Bromobenzene	17.34	156	7581	1.0037 ug/L	87
85)	1,3,5-Trimethylbenzene	17.44	105	26502	1.0460 ug/L	94
86)	2-Chlorotoluene	17.51	91	26919	1.1011 ug/L	97
87)	4-Chlorotoluene	17.58	91	23704	1.0170 ug/L	96
88)	a-Methylstyrene	17.92	118	11597	0.9100 ug/L	97
89)	tert-Butylbenzene	17.98	134	5253	1.0319 ug/L	63
90)	1,2,4-Trimethylbenzene	18.04	105	27482	1.0570 ug/L	95
91)	sec-Butylbenzene	18.30	105	33207	1.0949 ug/L	94
92)	p-Isopropyltoluene	18.50	119	27800	1.0755 ug/L	94
93)	1,3-Dichlorobenzene	18.70	146	15649	1.0526 ug/L	95
94)	1,4-Dichlorobenzene	18.85	146	16097	1.0710 ug/L #	64
95)	n-Butylbenzene	19.12	91	27428	1.0821 ug/L	93
96)	1,2-Dichlorobenzene	19.43	146	14706	1.0536 ug/L	98
97)	1,2-Dibromo-3-Chloropropan	20.62	75	1058	0.8847 ug/L	65
98)	1,2,4-Trichlorobenzene	21.97	180	9695	0.9827 ug/L	98
99)	Hexachlorobutadiene	22.15	225	4079	0.9944 ug/L	93
100)	Naphthalene	22.38	128	18851	0.9349 ug/L	92
101)	1,2,3-Trichlorobenzene	22.75	180	9647	1.0560 ug/L	93

(#) = qualifier out of range (m) = manual integration
6M140316.D 8260WTR.M Fri Jul 01 14:21:14 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140316.D Vial: 4
Acq On : 30 Jun 2016 13:08 Operator: TMB
Sample : WG574723-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:21 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

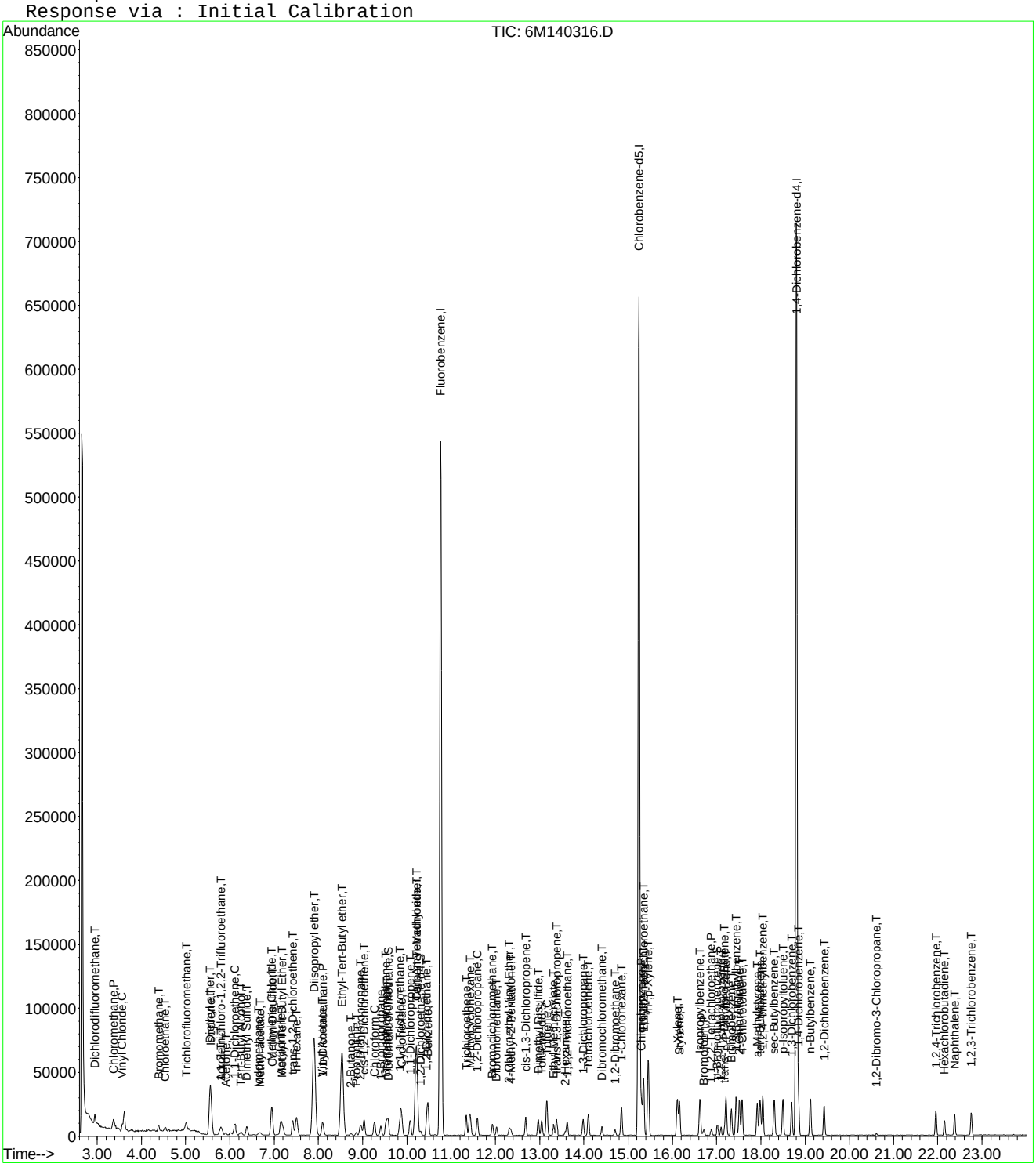

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140316.D Vial: 4
Acq On : 30 Jun 2016 13:08 Operator: TMB
Sample : WG574723-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9586	4.1	100	0.00
3	P	Chloromethane	1.0000	1.2088	-20.9#	100	0.00
4	C	Vinyl Chloride	1.0000	1.0920	-9.2	100	0.00
5	T	1,3-Butadiene	-1.0000	-1.1669	0.0	0	0.03
6	T	Bromomethane	1.0000	1.0528	-5.3	100	0.02
7	T	Chloroethane	1.0000	0.9753	2.5	100	0.00
8	T	Trichlorofluoromethane	1.0000	0.9800	2.0	100	0.02
9	T	Diethyl ether	5.0000	5.2047	-4.1	100	0.00
10	T	Isoprene	-1.0000	1.0131	0.0	100	0.00
11	T	Acrolein	-1.0000	2.4066	0.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0068	-0.7	100	0.00
13	T	Acetone	-1.0000	1.4430	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	1.0338	-3.4	100	0.02
15	T	Tert-Butyl Alcohol	10.0000	9.2151	7.8	100	-0.04
16	T	Dimethyl Sulfide	-1.0000	0.9246	0.0	100	0.00
17	T	Iodomethane	1.0000	1.3352	-33.5#	100	0.00
18	T	Methyl acetate	-1.0000	0.9331	0.0	100	0.00
19	T	Methylene Chloride	1.0000	1.1466	-14.7	100	0.00
20	T	Carbon Disulfide	1.0000	1.0714	-7.1	100	0.00
21	T	Acrylonitrile	2.5000	2.2695	9.2	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9991	0.1	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	1.0053	-0.5	100	0.00
24	T	n-Hexane	-1.0000	1.1069	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	5.2317	-4.6	100	0.00
26	T	Vinyl Acetate	-1.0000	0.6872	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0213	-2.1	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	5.1323	-2.6	100	0.00
29	T	2-Butanone	-1.0000	0.9693	0.0	100	0.00
30	T	Propionitrile	5.0000	4.7359	5.3	100	0.00
31	T	2,2-Dichloropropane	1.0000	1.0261	-2.6	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	1.0307	-3.1	100	0.00
33	C	Chloroform	1.0000	0.9816	1.8	100	0.00
34		1-Bromopropane	1.0000	1.0190	-1.9	100	0.00
35	T	Bromochloromethane	1.0000	0.9465	5.3	100	0.00
36	T	Tetrahydrofuran	5.0000	6.0837	-21.7#	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.4938	0.0	100	0.00
38	T	1,1,1-Trichloroethane	1.0000	1.0282	-2.8	100	0.00
39	T	Cyclohexane	1.0000	1.0675	-6.8	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0207	-2.1	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	5.0317	-0.6	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.8763	12.4	100	-0.01
43	S	1,2-Dichloroethane-d4	-1.0000	0.5018	0.0	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	-0.01
45	T	1,2-Dichloroethane	1.0000	1.0084	-0.8	100	0.00
46	T	Benzene	1.0000	1.0492	-4.9	100	0.00
47	T	Trichloroethene	1.0000	1.0378	-3.8	100	0.00
48	T	Methylcyclohexane	-1.0000	1.0410	0.0	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.9756	2.4	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.94#
51	T	Bromodichloromethane	1.0000	0.9738	2.6	100	0.00
52	T	Dibromomethane	1.0000	0.9395	6.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.9056	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.7624	0.0	100	0.00

(#) = Out of Range

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140316.D Vial: 4
Acq On : 30 Jun 2016 13:08 Operator: TMB
Sample : WG574723-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9355	6.5	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.7771	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.5328	0.0	100	0.00
59	C	Toluene	1.0000	1.0621	-6.2	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.8735	12.7	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	1.0000	0.9256	7.4	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	1.0066	-0.7	100	0.00
64	T	2-Hexanone	-1.0000	0.9130	0.0	100	0.00
65	T	1,3-Dichloropropane	1.0000	1.0121	-1.2	100	0.00
66	T	Tetrachloroethene	1.0000	1.0254	-2.5	100	0.00
67	T	Dibromochloromethane	1.0000	0.8951	10.5	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.9742	2.6	100	0.00
69	T	1-Chlorohexane	1.0000	1.0031	-0.3	100	0.00
70	P	Chlorobenzene	1.0000	1.0571	-5.7	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.9863	1.4	100	0.00
72	C	Ethylbenzene	1.0000	1.0051	-0.5	100	0.00
73	T	m-,p-Xylene	2.0000	2.1041	-5.2	100	-0.01
74	T	o-Xylene	1.0000	1.0110	-1.1	100	0.00
75	T	Styrene	1.0000	0.9645	3.6	100	0.00
76	P	Bromoform	1.0000	0.8262	17.4	100	0.00
77	T	Isopropylbenzene	1.0000	1.0438	-4.4	100	-0.01
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	0.9248	7.5	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5470	0.0	100	-0.01
81	T	1,2,3-Trichloropropane	1.0000	0.7259	27.4#	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	1.0000	0.6900	31.0#	100	0.00
83	T	n-Propylbenzene	1.0000	1.0982	-9.8	100	0.00
84	T	Bromobenzene	1.0000	1.0037	-0.4	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	1.0460	-4.6	100	-0.01
86	T	2-Chlorotoluene	1.0000	1.1011	-10.1	100	-0.01
87	T	4-Chlorotoluene	1.0000	1.0171	-1.7	100	0.00
88	T	a-Methylstyrene	-1.0000	0.9100	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	1.0319	-3.2	100	-0.01
90	T	1,2,4-Trimethylbenzene	1.0000	1.0570	-5.7	100	-0.01
91	T	sec-Butylbenzene	1.0000	1.0949	-9.5	100	-0.01
92	T	p-Isopropyltoluene	1.0000	1.0755	-7.6	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0526	-5.3	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	1.0710	-7.1	100	0.00
95	T	n-Butylbenzene	1.0000	1.0821	-8.2	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0536	-5.4	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.8847	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	1.0000	0.9827	1.7	100	0.00
99	T	Hexachlorobutadiene	1.0000	0.9944	0.6	100	0.00
100	T	Naphthalene	1.0000	0.9349	6.5	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	1.0560	-5.6	100	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140316.D 8260WTR.M Fri Jul 01 14:35:27 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140317.D Vial: 5
Acq On : 30 Jun 2016 13:40 Operator: TMB
Sample : WG574723-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:18 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	681288	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	479716	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	253621	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	6933	1.0030 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	4.00%#	
43) 1,2-Dichloroethane-d4	10.32	65	9000	1.0314 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	4.12%#	
58) Toluene-d8	13.04	98	25015	1.0589 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.24%#	
80) p-Bromofluorobenzene	17.02	95	10214	1.0283 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	21693	1.9048 ug/L	92
3) Chloromethane	3.37	50	28294	2.2252 ug/L	99
4) Vinyl Chloride	3.57	62	15095	2.1618 ug/L	90
5) 1,3-Butadiene	3.61	54	14228	0.5548 ug/L	81
6) Bromomethane	4.39	94	10021	2.1597 ug/L	92
7) Chloroethane	4.54	64	8637	1.9576 ug/L	99
8) Trichlorofluoromethane	5.01	101	21198	1.9905 ug/L	99
9) Diethyl ether	5.55	59	166163	26.4440 ug/L	96
10) Isoprene	5.58	67	20113	2.1161 ug/L	98
11) Acrolein	5.79	56	13232	12.6601 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.80	101	13403	2.0228 ug/L	98
13) Acetone	5.90	43	5431	2.4882 ug/L	86
14) 1,1-Dichloroethene	6.11	61	26310	2.0465 ug/L	95
15) Tert-Butyl Alcohol	6.25	59	32448	48.6151 ug/L	96
16) Dimethyl Sulfide	6.39	62	10884	1.9412 ug/L	92
17) Iodomethane	6.64	142	4160	1.7736 ug/L	99
18) Methyl acetate	6.68	43	11835	2.0038 ug/L #	83
19) Methylene Chloride	6.94	84	16307	2.2119 ug/L	88
20) Carbon Disulfide	6.96	76	49030	2.0813 ug/L	98
21) Acrylonitrile	7.14	53	32708	12.0688 ug/L	93
22) Methyl Tert Butyl Ether	7.17	73	39510	2.0219 ug/L	98
23) trans-1,2-Dichloroethene	7.43	96	14262	2.0714 ug/L	91
24) n-Hexane	7.51	57	25227	2.1588 ug/L	95
25) Diisopropyl ether	7.90	45	823711	26.1894 ug/L	97
26) Vinyl Acetate	8.09	43	22167	1.6883 ug/L	93
27) 1,1-Dichloroethane	8.10	63	31011	2.0919 ug/L	96
28) Ethyl-Tert-Butyl ether	8.53	59	650758	25.7185 ug/L	98
29) 2-Butanone	8.72	43	6560	1.9633 ug/L #	79
30) Propionitrile	8.86	54	22752	25.0916 ug/L	98
31) 2,2-Dichloropropane	8.95	77	23903	2.1372 ug/L	100
32) cis-1,2-Dichloroethene	9.03	96	14680	1.9478 ug/L	78
33) Chloroform	9.27	83	26391	1.9872 ug/L	98
34) 1-Bromopropane	9.42	122	1777	1.9534 ug/L	97
35) Bromochloromethane	9.52	130	8058	1.9896 ug/L	93
36) Tetrahydrofuran	9.55	42	58983	25.3089 ug/L	92
38) 1,1,1-Trichloroethane	9.86	97	23448	2.0280 ug/L	99
39) Cyclohexane	9.88	56	30890	2.0535 ug/L	95
40) 1,1-Dichloropropene	10.08	75	20511	2.0367 ug/L	98
41) Tert-Amyl-Methyl ether	10.22	73	494429	25.7332 ug/L	97
42) Carbon Tetrachloride	10.23	117	18006	1.8966 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140317.D 8260WTR.M Fri Jul 01 14:21:21 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140317.D Vial: 5
Acq On : 30 Jun 2016 13:40 Operator: TMB
Sample : WG574723-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:18 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	22120	2.0774 ug/L	98
46)	Benzene	10.48	78	60457	2.1271 ug/L	100
47)	Trichloroethene	11.35	130	14433	2.0579 ug/L	92
48)	Methylcyclohexane	11.43	83	23167	2.1040 ug/L	93
49)	1,2-Dichloropropane	11.59	63	16607	2.0289 ug/L	96
50)	1,4-Dioxane	11.94	88	2503	45.1726 ug/L	97
51)	Bromodichloromethane	11.93	83	19917	2.0166 ug/L	98
52)	Dibromomethane	12.02	93	8051	2.0330 ug/L	95
53)	2-Chloroethyl Vinyl Ether	12.31	63	7544	1.8383 ug/L	94
54)	4-Methyl-2-Pentanone	12.35	58	4674	1.8506 ug/L	83
55)	cis-1,3-Dichloropropene	12.69	75	23212	2.0243 ug/L	98
56)	Dimethyl Disulfide	12.97	79	10618	1.6635 ug/L	98
59)	Toluene	13.16	91	61452	2.1494 ug/L	98
60)	Ethyl Methacrylate	13.32	69	15594	1.9171 ug/L	93
62)	trans-1,3-Dichloropropene	13.38	75	19722	1.9399 ug/L	94
63)	1,1,2-Trichloroethane	13.63	97	10814	2.0438 ug/L	96
64)	2-Hexanone	13.59	43	9516	1.8942 ug/L	94
65)	1,3-Dichloropropane	13.98	76	20700	2.0758 ug/L	97
66)	Tetrachloroethene	14.11	166	14321	2.1019 ug/L	97
67)	Dibromochloromethane	14.41	129	12204	1.8998 ug/L	99
68)	1,2-Dibromoethane	14.71	107	10178	1.9929 ug/L	98
69)	1-Chlorohexane	14.85	91	19403	2.0392 ug/L	87
70)	Chlorobenzene	15.30	112	39367	2.1469 ug/L	81
71)	1,1,1,2-Tetrachloroethane	15.35	131	13145	2.0147 ug/L	96
72)	Ethylbenzene	15.35	106	20014	2.0853 ug/L	88
73)	m-,p-Xylene	15.45	106	50059	4.3155 ug/L	94
74)	o-Xylene	16.11	106	24284	2.0991 ug/L	92
75)	Styrene	16.16	104	39349	2.0217 ug/L	93
76)	Bromoform	16.71	173	7051	1.7700 ug/L	91
77)	Isopropylbenzene	16.62	105	63245	2.0952 ug/L	97
79)	1,1,2,2-Tetrachloroethane	16.87	83	11943	1.9403 ug/L	99
81)	1,2,3-Trichloropropane	17.11	110	3577	1.9601 ug/L	70
82)	trans-1,4-Dichloro-2-Buten	17.18	53	4235	1.8198 ug/L	92
83)	n-Propylbenzene	17.22	91	77640	2.1306 ug/L	97
84)	Bromobenzene	17.34	156	15737	2.0668 ug/L	90
85)	1,3,5-Trimethylbenzene	17.45	105	53524	2.0955 ug/L	96
86)	2-Chlorotoluene	17.52	91	50361	2.0435 ug/L	96
87)	4-Chlorotoluene	17.58	91	51425	2.1888 ug/L	96
88)	a-Methylstyrene	17.91	118	23705	1.8452 ug/L	90
89)	tert-Butylbenzene	17.99	134	10746	2.0941 ug/L	69
90)	1,2,4-Trimethylbenzene	18.05	105	55973	2.1356 ug/L	97
91)	sec-Butylbenzene	18.30	105	66761	2.1835 ug/L	94
92)	p-Isopropyltoluene	18.50	119	55466	2.1287 ug/L	97
93)	1,3-Dichlorobenzene	18.70	146	31212	2.0827 ug/L	98
94)	1,4-Dichlorobenzene	18.85	146	31934	2.1076 ug/L	79
95)	n-Butylbenzene	19.12	91	53671	2.1004 ug/L	95
96)	1,2-Dichlorobenzene	19.44	146	29144	2.0713 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	20.61	75	1880	1.5595 ug/L	96
98)	1,2,4-Trichlorobenzene	21.96	180	19883	1.9991 ug/L	99
99)	Hexachlorobutadiene	22.15	225	8377	2.0258 ug/L	98
100)	Naphthalene	22.38	128	39370	1.9369 ug/L	98
101)	1,2,3-Trichlorobenzene	22.75	180	18357	1.9933 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140317.D 8260WTR.M Fri Jul 01 14:21:22 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140317.D Vial: 5
Acq On : 30 Jun 2016 13:40 Operator: TMB
Sample : WG574723-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:21 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

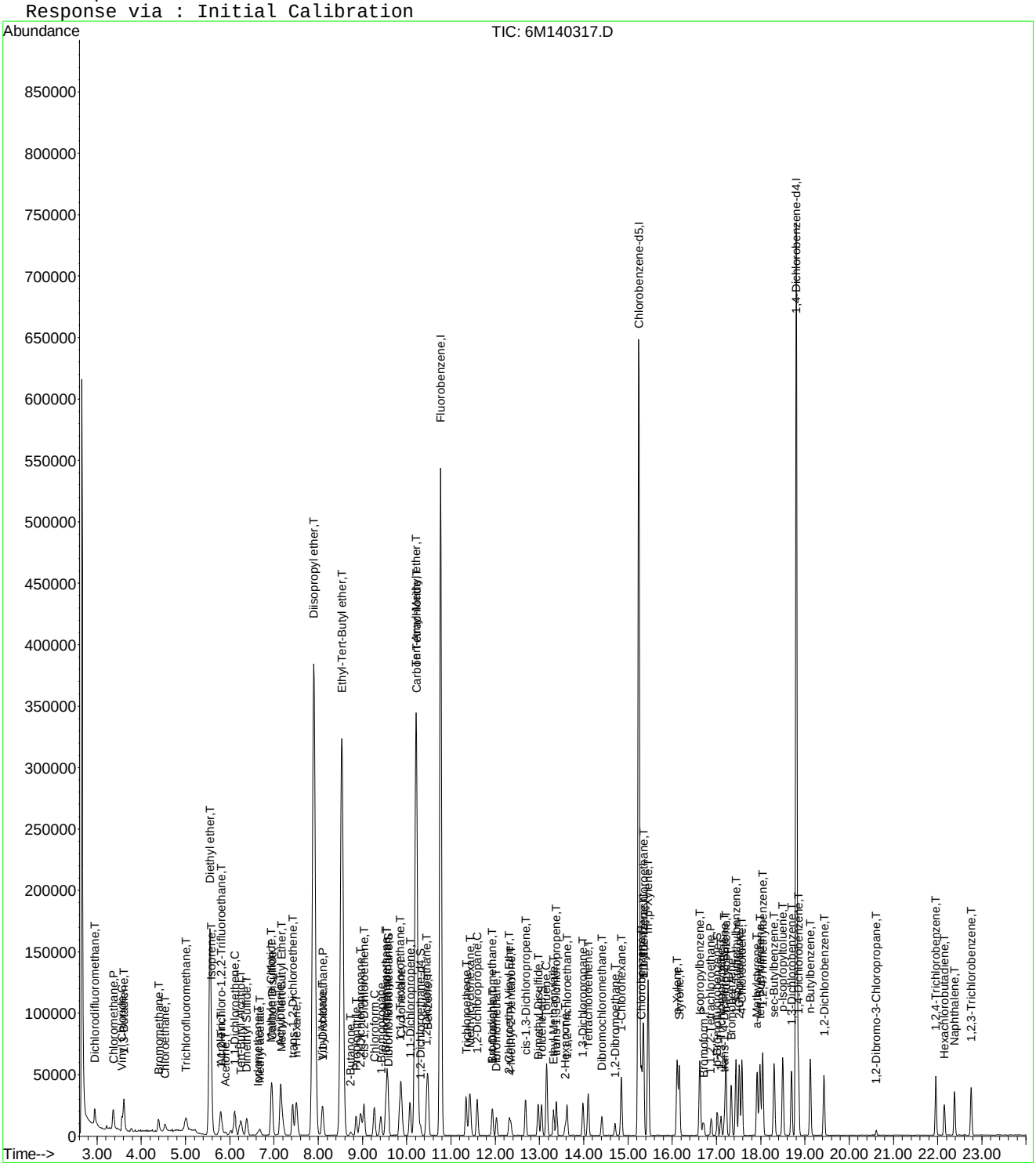

6M140317.D 8260WTR.M Fri Jul 01 14:21:24 2016 Page 3

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140317.D Vial: 5
Acq On : 30 Jun 2016 13:40 Operator: TMB
Sample : WG574723-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.9048	4.8	100	0.01
3	P	Chloromethane	2.0000	2.2252	-11.3	100	0.01
4	C	Vinyl Chloride	2.0000	2.1618	-8.1	100	0.01
5	T	1,3-Butadiene	-1.0000	0.5548	0.0	0	0.02
6	T	Bromomethane	2.0000	2.1597	-8.0	100	0.02
7	T	Chloroethane	2.0000	1.9576	2.1	100	0.01
8	T	Trichlorofluoromethane	2.0000	1.9905	0.5	100	0.01
9	T	Diethyl ether	25.0000	26.4441	-5.8	100	0.00
10	T	Isoprene	-1.0000	2.1161	0.0	100	0.01
11	T	Acrolein	12.5000	12.6601	-1.3	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	2.0228	-1.1	100	0.02
13	T	Acetone	-1.0000	2.4882	0.0	100	0.00
14	C	1,1-Dichloroethene	2.0000	2.0465	-2.3	100	0.01
15	T	Tert-Butyl Alcohol	50.0000	48.6152	2.8	100	-0.04
16	T	Dimethyl Sulfide	-1.0000	1.9412	0.0	100	0.00
17	T	Iodomethane	2.0000	1.7736	11.3	100	0.00
18	T	Methyl acetate	-1.0000	2.0038	0.0	100	0.00
19	T	Methylene Chloride	2.0000	2.2119	-10.6	100	0.00
20	T	Carbon Disulfide	2.0000	2.0813	-4.1	100	0.00
21	T	Acrylonitrile	12.5000	12.0688	3.4	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	2.0219	-1.1	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	2.0714	-3.6	100	0.01
24	T	n-Hexane	-1.0000	2.1588	0.0	100	0.01
25	T	Diisopropyl ether	25.0000	26.1894	-4.8	100	0.00
26	T	Vinyl Acetate	-1.0000	1.6883	0.0	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.0919	-4.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	25.7185	-2.9	100	0.00
29	T	2-Butanone	-1.0000	1.9633	0.0	100	0.00
30	T	Propionitrile	25.0000	25.0916	-0.4	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1372	-6.9	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	1.9478	2.6	100	0.00
33	C	Chloroform	2.0000	1.9872	0.6	100	0.00
34		1-Bromopropane	2.0000	1.9534	2.3	100	0.01
35	T	Bromochloromethane	2.0000	1.9896	0.5	100	0.00
36	T	Tetrahydrofuran	25.0000	25.3089	-1.2	100	0.00
37	S	Dibromofluoromethane	1.0000	1.0030	-0.3	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	2.0280	-1.4	100	0.01
39	T	Cyclohexane	2.0000	2.0535	-2.7	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0367	-1.8	100	0.01
41	T	Tert-Amyl-Methyl ether	25.0000	25.7333	-2.9	100	0.00
42	T	Carbon Tetrachloride	2.0000	1.8966	5.2	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0314	-3.1	100	0.01
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	T	1,2-Dichloroethane	2.0000	2.0774	-3.9	100	0.00
46	T	Benzene	2.0000	2.1271	-6.4	100	0.00
47	T	Trichloroethene	2.0000	2.0579	-2.9	100	0.01
48	T	Methylcyclohexane	-1.0000	2.1040	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0289	-1.4	100	0.00
50	T	1,4-Dioxane	-1.0000	45.1726	0.0	100	0.00
51	T	Bromodichloromethane	2.0000	2.0166	-0.8	100	0.00
52	T	Dibromomethane	2.0000	2.0330	-1.6	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	1.8383	8.1	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.8506	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140317.D Vial: 5
Acq On : 30 Jun 2016 13:40 Operator: TMB
Sample : WG574723-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	2.0243	-1.2	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.6635	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	1.0589	-5.9	100	0.00
59	C	Toluene	2.0000	2.1494	-7.5	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.9171	4.1	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	2.0000	1.9399	3.0	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	2.0438	-2.2	100	0.00
64	T	2-Hexanone	-1.0000	1.8942	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.0758	-3.8	100	0.00
66	T	Tetrachloroethene	2.0000	2.1019	-5.1	100	0.00
67	T	Dibromochloromethane	2.0000	1.8998	5.0	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.9929	0.4	100	0.00
69	T	1-Chlorohexane	2.0000	2.0392	-2.0	100	0.00
70	P	Chlorobenzene	2.0000	2.1469	-7.3	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	2.0147	-0.7	100	0.00
72	C	Ethylbenzene	2.0000	2.0853	-4.3	100	0.00
73	T	m-,p-Xylene	4.0000	4.3156	-7.9	100	0.00
74	T	o-Xylene	2.0000	2.0991	-5.0	100	0.00
75	T	Styrene	2.0000	2.0217	-1.1	100	0.00
76	P	Bromoform	2.0000	1.7700	11.5	100	0.00
77	T	Isopropylbenzene	2.0000	2.0952	-4.8	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	1.9403	3.0	100	0.00
80	S	p-Bromofluorobenzene	1.0000	1.0283	-2.8	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	1.9601	2.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	1.8198	9.0	100	0.00
83	T	n-Propylbenzene	2.0000	2.1306	-6.5	100	0.00
84	T	Bromobenzene	2.0000	2.0668	-3.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.0955	-4.8	100	0.00
86	T	2-Chlorotoluene	2.0000	2.0435	-2.2	100	0.00
87	T	4-Chlorotoluene	2.0000	2.1888	-9.4	100	0.00
88	T	a-Methylstyrene	-1.0000	1.8452	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	2.0941	-4.7	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.1356	-6.8	100	0.00
91	T	sec-Butylbenzene	2.0000	2.1835	-9.2	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.1287	-6.4	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.0827	-4.1	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.1076	-5.4	100	0.00
95	T	n-Butylbenzene	2.0000	2.1004	-5.0	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0713	-3.6	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.5595	22.0#	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	1.9991	0.0	100	0.00
99	T	Hexachlorobutadiene	2.0000	2.0258	-1.3	100	0.00
100	T	Naphthalene	2.0000	1.9369	3.2	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9933	0.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140317.D 8260WTR.M Fri Jul 01 14:35:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140318.D Vial: 6
Acq On : 30 Jun 2016 14:12 Operator: TMB
Sample : WG574723-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:25 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	665911	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	475530	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	251113	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	17208	2.5471 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 10.20%#		
43) 1,2-Dichloroethane-d4	10.32	65	22015	2.5813 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 10.32%#		
58) Toluene-d8	13.04	98	61675	2.6338 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 10.52%#		
80) p-Bromofluorobenzene	17.01	95	25621	2.6052 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 10.44%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	48247	4.3342 ug/L	98
3) Chloromethane	3.37	50	59455	4.7839 ug/L	98
4) Vinyl Chloride	3.57	62	33485	4.9063 ug/L	98
5) 1,3-Butadiene	3.60	54	23338	3.0943 ug/L	87
6) Bromomethane	4.39	94	22163	4.8867 ug/L	97
7) Chloroethane	4.54	64	20579	4.7720 ug/L	97
8) Trichlorofluoromethane	5.02	101	49493	4.7547 ug/L	100
9) Diethyl ether	5.55	59	316870	51.5928 ug/L	96
10) Isoprene	5.58	67	44245	4.7626 ug/L	95
11) Acrolein	5.79	56	25354	24.8183 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	5.80	101	30711	4.7419 ug/L	96
13) Acetone	5.90	43	11460	5.3716 ug/L	98
14) 1,1-Dichloroethene	6.11	61	59549	4.7390 ug/L	93
15) Tert-Butyl Alcohol	6.26	59	62697	96.1048 ug/L	99
16) Dimethyl Sulfide	6.39	62	26287	4.7966 ug/L	98
17) Iodomethane	6.65	142	13226	3.7502 ug/L	97
18) Methyl acetate	6.69	43	29044	5.0309 ug/L	94
19) Methylene Chloride	6.95	84	35243	4.8909 ug/L	87
20) Carbon Disulfide	6.97	76	111679	4.8502 ug/L	99
21) Acrylonitrile	7.15	53	65252	24.6331 ug/L	96
22) Methyl Tert Butyl Ether	7.18	73	93809	4.9114 ug/L	100
23) trans-1,2-Dichloroethene	7.43	96	32653	4.8519 ug/L	90
24) n-Hexane	7.51	57	57537	5.0375 ug/L	99
25) Diisopropyl ether	7.91	45	1560840	50.7720 ug/L	98
26) Vinyl Acetate	8.09	43	61001	4.7533 ug/L	96
27) 1,1-Dichloroethane	8.10	63	70715	4.8804 ug/L	99
28) Ethyl-Tert-Butyl ether	8.53	59	1249973	50.5407 ug/L	98
29) 2-Butanone	8.73	43	15743	4.8205 ug/L	90
30) Propionitrile	8.86	54	44610	50.3332 ug/L	100
31) 2,2-Dichloropropane	8.96	77	55177	5.0475 ug/L	100
32) cis-1,2-Dichloroethene	9.03	96	35623	4.8356 ug/L	87
33) Chloroform	9.26	83	62050	4.7802 ug/L	99
34) 1-Bromopropane	9.42	122	5012	4.7391 ug/L	100
35) Bromochloromethane	9.52	130	19897	5.0261 ug/L	99
36) Tetrahydrofuran	9.56	42	111306	48.8630 ug/L	94
38) 1,1,1-Trichloroethane	9.86	97	54902	4.8581 ug/L	98
39) Cyclohexane	9.88	56	69439	4.7228 ug/L	96
40) 1,1-Dichloropropene	10.08	75	47385	4.8139 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	949512	50.5598 ug/L	97
42) Carbon Tetrachloride	10.23	117	43932	4.7343 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140318.D 8260WTR.M Fri Jul 01 14:21:29 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140318.D Vial: 6
Acq On : 30 Jun 2016 14:12 Operator: TMB
Sample : WG574723-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:25 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	49969	4.8012 ug/L	99
46)	Benzene	10.48	78	138207	4.9748 ug/L	98
47)	Trichloroethene	11.35	130	33708	4.9171 ug/L	90
48)	Methylcyclohexane	11.43	83	52733	4.8997 ug/L	94
49)	1,2-Dichloropropane	11.59	63	39044	4.8802 ug/L	100
50)	1,4-Dioxane	11.94	88	4972	91.8036 ug/L	77
51)	Bromodichloromethane	11.93	83	46783	4.8462 ug/L	100
52)	Dibromomethane	12.02	93	19034	4.9173 ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.31	63	18004	4.4884 ug/L	97
54)	4-Methyl-2-Pentanone	12.35	58	11300	4.5774 ug/L	94
55)	cis-1,3-Dichloropropene	12.69	75	54408	4.8545 ug/L	99
56)	Dimethyl Disulfide	12.97	79	26532	4.2526 ug/L	100
59)	Toluene	13.15	91	138309	4.8802 ug/L	99
60)	Ethyl Methacrylate	13.32	69	37662	4.6708 ug/L	95
62)	trans-1,3-Dichloropropene	13.39	75	48146	4.7775 ug/L	95
63)	1,1,2-Trichloroethane	13.62	97	25707	4.9014 ug/L	99
64)	2-Hexanone	13.58	43	22497	4.5176 ug/L	99
65)	1,3-Dichloropropane	13.99	76	48531	4.9096 ug/L	95
66)	Tetrachloroethene	14.10	166	33388	4.9436 ug/L	96
67)	Dibromochloromethane	14.41	129	30609	4.8067 ug/L	100
68)	1,2-Dibromoethane	14.71	107	24604	4.8600 ug/L	99
69)	1-Chlorohexane	14.85	91	45159	4.7879 ug/L	91
70)	Chlorobenzene	15.30	112	88763	4.8834 ug/L	87
71)	1,1,1,2-Tetrachloroethane	15.35	131	31237	4.8298 ug/L	97
72)	Ethylbenzene	15.35	106	47581	5.0011 ug/L	93
73)	m-,p-Xylene	15.45	106	115328	10.0299 ug/L	93
74)	o-Xylene	16.11	106	56158	4.8969 ug/L	90
75)	Styrene	16.16	104	93922	4.8681 ug/L	93
76)	Bromoform	16.71	173	17414	4.4099 ug/L	98
77)	Isopropylbenzene	16.62	105	150490	5.0295 ug/L	96
79)	1,1,2,2-Tetrachloroethane	16.88	83	29598	4.8565 ug/L	100
81)	1,2,3-Trichloropropane	17.11	110	9483	5.2483 ug/L	91
82)	trans-1,4-Dichloro-2-Buten	17.18	53	10928	4.7426 ug/L	99
83)	n-Propylbenzene	17.22	91	181410	5.0279 ug/L	97
84)	Bromobenzene	17.34	156	37810	5.0153 ug/L	91
85)	1,3,5-Trimethylbenzene	17.44	105	126034	4.9837 ug/L	97
86)	2-Chlorotoluene	17.52	91	116508	4.7747 ug/L	100
87)	4-Chlorotoluene	17.58	91	120486	5.1793 ug/L	93
88)	a-Methylstyrene	17.92	118	58815	4.6239 ug/L	99
89)	tert-Butylbenzene	17.98	134	24935	4.9076 ug/L	64
90)	1,2,4-Trimethylbenzene	18.05	105	130919	5.0449 ug/L	98
91)	sec-Butylbenzene	18.30	105	151691	5.0108 ug/L	98
92)	p-Isopropyltoluene	18.50	119	129076	5.0032 ug/L	96
93)	1,3-Dichlorobenzene	18.70	146	73279	4.9385 ug/L	97
94)	1,4-Dichlorobenzene	18.85	146	73402	4.8928 ug/L	89
95)	n-Butylbenzene	19.12	91	126335	4.9935 ug/L	96
96)	1,2-Dichlorobenzene	19.43	146	69034	4.9553 ug/L	95
97)	1,2-Dibromo-3-Chloropropan	20.61	75	4890	4.0969 ug/L	84
98)	1,2,4-Trichlorobenzene	21.96	180	46999	4.7727 ug/L	99
99)	Hexachlorobutadiene	22.15	225	19578	4.7818 ug/L	97
100)	Naphthalene	22.39	128	98169	4.8780 ug/L	99
101)	1,2,3-Trichlorobenzene	22.75	180	44211	4.8487 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140318.D Vial: 6
Acq On : 30 Jun 2016 14:12 Operator: TMB
Sample : WG574723-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:21 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

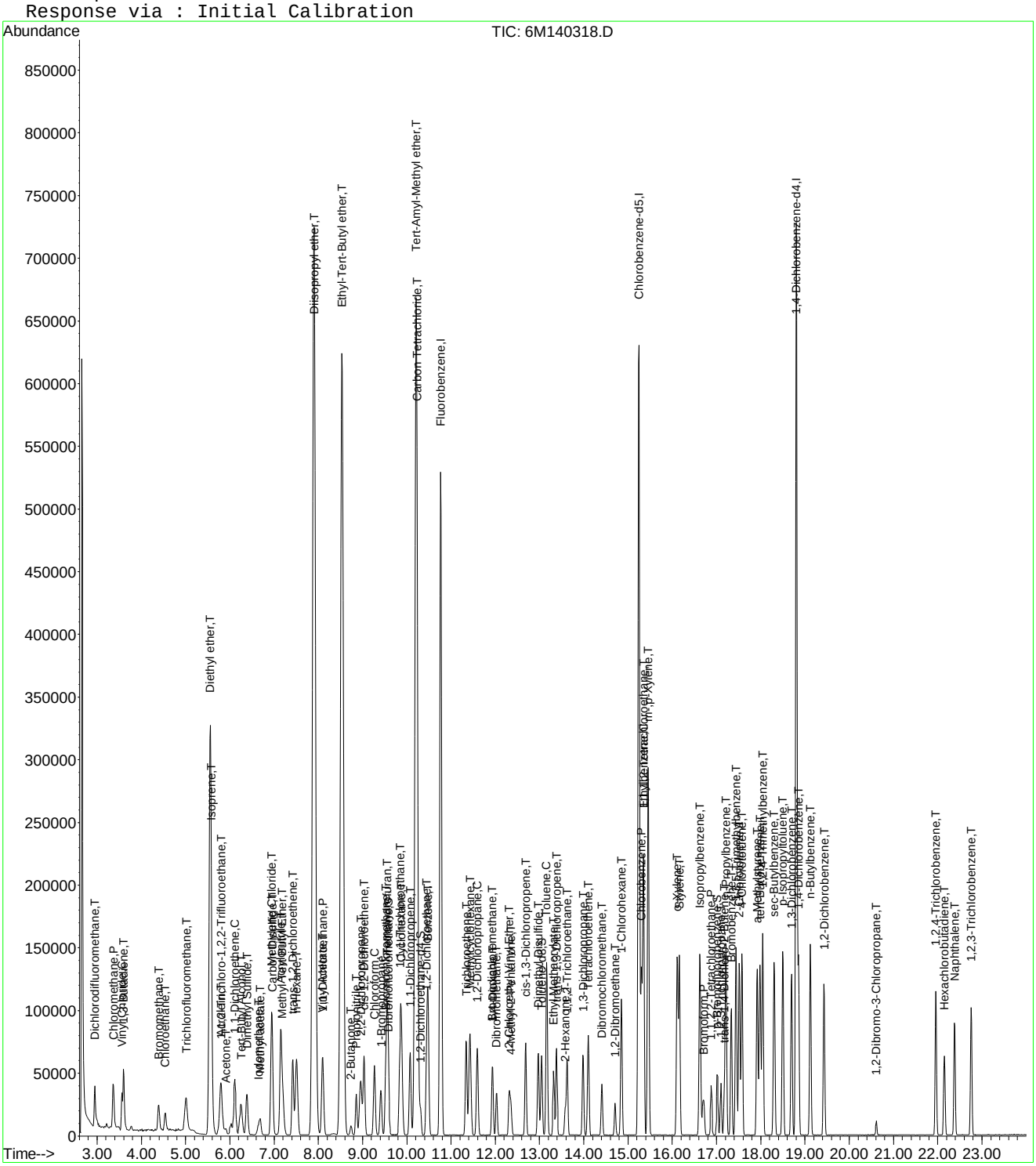

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140318.D Vial: 6
Acq On : 30 Jun 2016 14:12 Operator: TMB
Sample : WG574723-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.3342	13.3	100	0.00
3	P	Chloromethane	5.0000	4.7839	4.3	100	0.00
4	C	Vinyl Chloride	5.0000	4.9063	1.9	100	0.00
5	T	1,3-Butadiene	5.0000	3.0943	38.1#	100	0.00
6	T	Bromomethane	5.0000	4.8868	2.3	100	0.02
7	T	Chloroethane	5.0000	4.7720	4.6	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.7547	4.9	100	0.02
9	T	Diethyl ether	50.0000	51.5928	-3.2	100	0.00
10	T	Isoprene	5.0000	4.7626	4.7	100	0.00
11	T	Acrolein	25.0000	24.8183	0.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.7420	5.2	100	0.02
13	T	Acetone	5.0000	5.3716	-7.4	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.7390	5.2	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	96.1048	3.9	100	-0.03
16	T	Dimethyl Sulfide	5.0000	4.7966	4.1	100	0.00
17	T	Iodomethane	5.0000	3.7502	25.0#	100	0.01
18	T	Methyl acetate	5.0000	5.0309	-0.6	100	0.00
19	T	Methylene Chloride	5.0000	4.8909	2.2	100	0.00
20	T	Carbon Disulfide	5.0000	4.8502	3.0	100	0.00
21	T	Acrylonitrile	25.0000	24.6331	1.5	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.9113	1.8	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.8519	3.0	100	0.00
24	T	n-Hexane	5.0000	5.0375	-0.7	100	0.00
25	T	Diisopropyl ether	50.0000	50.7719	-1.5	100	0.00
26	T	Vinyl Acetate	5.0000	4.7533	4.9	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.8804	2.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	50.5407	-1.1	100	0.00
29	T	2-Butanone	5.0000	4.8205	3.6	100	0.00
30	T	Propionitrile	50.0000	50.3332	-0.7	100	0.00
31	T	2,2-Dichloropropane	5.0000	5.0475	-0.9	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.8356	3.3	100	0.00
33	C	Chloroform	5.0000	4.7802	4.4	100	0.00
34		1-Bromopropane	5.0000	4.7391	5.2	100	0.01
35	T	Bromochloromethane	5.0000	5.0261	-0.5	100	0.00
36	T	Tetrahydrofuran	50.0000	48.8630	2.3	100	0.00
37	S	Dibromofluoromethane	2.5000	2.5471	-1.9	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.8581	2.8	100	0.00
39	T	Cyclohexane	5.0000	4.7228	5.5	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.8139	3.7	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	50.5598	-1.1	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.7344	5.3	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.5813	-3.3	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	T	1,2-Dichloroethane	5.0000	4.8012	4.0	100	0.00
46	T	Benzene	5.0000	4.9748	0.5	100	0.00
47	T	Trichloroethene	5.0000	4.9171	1.7	100	0.00
48	T	Methylcyclohexane	5.0000	4.8997	2.0	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.8802	2.4	100	0.00
50	T	1,4-Dioxane	100.0000	91.8036	8.2	100	0.00
51	T	Bromodichloromethane	5.0000	4.8463	3.1	100	0.00
52	T	Dibromomethane	5.0000	4.9173	1.7	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.4884	10.2	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.5774	8.5	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140318.D Vial: 6
Acq On : 30 Jun 2016 14:12 Operator: TMB
Sample : WG574723-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.8545	2.9	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.2526	14.9	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.6338	-5.4	100	0.00
59	C	Toluene	5.0000	4.8802	2.4	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.6708	6.6	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	5.0000	4.7775	4.4	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.9014	2.0	100	0.00
64	T	2-Hexanone	5.0000	4.5176	9.6	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.9096	1.8	100	0.00
66	T	Tetrachloroethene	5.0000	4.9436	1.1	100	0.00
67	T	Dibromochloromethane	5.0000	4.8067	3.9	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.8600	2.8	100	0.00
69	T	1-Chlorohexane	5.0000	4.7880	4.2	100	0.00
70	P	Chlorobenzene	5.0000	4.8834	2.3	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.8298	3.4	100	0.00
72	C	Ethylbenzene	5.0000	5.0011	-0.0	100	0.00
73	T	m-,p-Xylene	10.0000	10.0299	-0.3	100	-0.01
74	T	o-Xylene	5.0000	4.8970	2.1	100	-0.01
75	T	Styrene	5.0000	4.8681	2.6	100	0.00
76	P	Bromoform	5.0000	4.4099	11.8	100	0.00
77	T	Isopropylbenzene	5.0000	5.0295	-0.6	100	-0.01
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	-0.01
79	P	1,1,2,2-Tetrachloroethane	5.0000	4.8565	2.9	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.6052	-4.2	100	-0.01
81	T	1,2,3-Trichloropropane	5.0000	5.2483	-5.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.7426	5.1	100	0.00
83	T	n-Propylbenzene	5.0000	5.0279	-0.6	100	0.00
84	T	Bromobenzene	5.0000	5.0153	-0.3	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	4.9837	0.3	100	-0.01
86	T	2-Chlorotoluene	5.0000	4.7747	4.5	100	-0.01
87	T	4-Chlorotoluene	5.0000	5.1794	-3.6	100	-0.01
88	T	a-Methylstyrene	5.0000	4.6239	7.5	100	0.00
89	T	tert-Butylbenzene	5.0000	4.9076	1.8	100	-0.01
90	T	1,2,4-Trimethylbenzene	5.0000	5.0449	-0.9	100	-0.01
91	T	sec-Butylbenzene	5.0000	5.0108	-0.2	100	-0.01
92	T	p-Isopropyltoluene	5.0000	5.0032	-0.1	100	-0.01
93	T	1,3-Dichlorobenzene	5.0000	4.9385	1.2	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	4.8928	2.1	100	0.00
95	T	n-Butylbenzene	5.0000	4.9935	0.1	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	4.9553	0.9	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	4.0969	18.1	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.7727	4.5	100	-0.01
99	T	Hexachlorobutadiene	5.0000	4.7818	4.4	100	0.00
100	T	Naphthalene	5.0000	4.8780	2.4	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.8487	3.0	100	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140318.D 8260WTR.M Fri Jul 01 14:36:23 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140319.D Vial: 7
Acq On : 30 Jun 2016 14:44 Operator: TMB
Sample : WG574723-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:33 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	668919	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	478690	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	258443	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	70098	10.3290 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 41.32%#		
43) 1,2-Dichloroethane-d4	10.31	65	89020	10.3908 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 41.56%#		
58) Toluene-d8	13.04	98	243575	10.3332 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 41.32%#		
80) p-Bromofluorobenzene	17.01	95	104612	10.3355 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 41.36%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	240030	21.4659 ug/L	100
3) Chloromethane	3.37	50	274164	21.9607 ug/L	99
4) Vinyl Chloride	3.56	62	134656	19.6412 ug/L	99
5) 1,3-Butadiene	3.60	54	109113	26.0590 ug/L	94
6) Bromomethane	4.39	94	95323	20.9234 ug/L	99
7) Chloroethane	4.54	64	90881	20.9793 ug/L	97
8) Trichlorofluoromethane	5.00	101	210753	20.1557 ug/L	99
9) Diethyl ether	5.55	59	494080	80.0844 ug/L	96
10) Isoprene	5.58	67	199958	21.4269 ug/L	96
11) Acrolein	5.79	56	40308	39.2789 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	131653	20.2365 ug/L	96
13) Acetone	5.89	43	44542	20.7841 ug/L	99
14) 1,1-Dichloroethene	6.11	61	254255	20.1429 ug/L	95
15) Tert-Butyl Alcohol	6.25	59	101804	155.3480 ug/L	98
16) Dimethyl Sulfide	6.39	62	115970	21.0658 ug/L	96
17) Iodomethane	6.65	142	79774	18.0326 ug/L	94
18) Methyl acetate	6.69	43	119945	20.6831 ug/L	98
19) Methylene Chloride	6.93	84	145226	20.0632 ug/L	90
20) Carbon Disulfide	6.97	76	495098	21.4053 ug/L	100
21) Acrylonitrile	7.15	53	104807	39.3874 ug/L	95
22) Methyl Tert Butyl Ether	7.18	73	394607	20.5667 ug/L	100
23) trans-1,2-Dichloroethene	7.42	96	135387	20.0268 ug/L	87
24) n-Hexane	7.51	57	243963	21.2635 ug/L	99
25) Diisopropyl ether	7.89	45	2475744	80.1704 ug/L	98
26) Vinyl Acetate	8.09	43	239974	18.6153 ug/L	97
27) 1,1-Dichloroethane	8.10	63	295851	20.3263 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	1992124	80.1862 ug/L	98
29) 2-Butanone	8.73	43	66102	20.1493 ug/L	96
30) Propionitrile	8.85	54	71515	80.3272 ug/L	99
31) 2,2-Dichloropropane	8.96	77	220142	20.0476 ug/L	98
32) cis-1,2-Dichloroethene	9.03	96	149673	20.2260 ug/L	73
33) Chloroform	9.26	83	260745	19.9968 ug/L	99
34) 1-Bromopropane	9.42	122	23773	20.6056 ug/L	99
35) Bromochloromethane	9.52	130	82689	20.7938 ug/L	100
36) Tetrahydrofuran	9.56	42	173501	75.8239 ug/L	94
38) 1,1,1-Trichloroethane	9.86	97	230314	20.2881 ug/L	98
39) Cyclohexane	9.88	56	309021	20.9230 ug/L	96
40) 1,1-Dichloropropene	10.08	75	198240	20.0489 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	1504867	79.7712 ug/L	98
42) Carbon Tetrachloride	10.23	117	197807	21.2209 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140319.D 8260WTR.M Fri Jul 01 14:21:37 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140319.D Vial: 7
Acq On : 30 Jun 2016 14:44 Operator: TMB
Sample : WG574723-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:33 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	213475	20.4192 ug/L	98
46)	Benzene	10.48	78	563224	20.1824 ug/L	97
47)	Trichloroethene	11.35	130	140565	20.4123 ug/L	91
48)	Methylcyclohexane	11.43	83	229029	21.1847 ug/L	95
49)	1,2-Dichloropropane	11.59	63	163803	20.3822 ug/L	99
50)	1,4-Dioxane	11.94	88	8245	151.5521 ug/L	87
51)	Bromodichloromethane	11.94	83	198529	20.4731 ug/L	99
52)	Dibromomethane	12.02	93	81976	21.0826 ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.31	63	84440	20.9563 ug/L	100
54)	4-Methyl-2-Pentanone	12.35	58	50113	20.2084 ug/L	98
55)	cis-1,3-Dichloropropene	12.68	75	230873	20.5069 ug/L	99
56)	Dimethyl Disulfide	12.97	79	127875	20.4039 ug/L	99
59)	Toluene	13.15	91	575595	20.1756 ug/L	100
60)	Ethyl Methacrylate	13.32	69	174096	21.4487 ug/L	95
62)	trans-1,3-Dichloropropene	13.39	75	209635	20.6648 ug/L	96
63)	1,1,2-Trichloroethane	13.62	97	109279	20.6980 ug/L	99
64)	2-Hexanone	13.58	43	101714	20.2903 ug/L	96
65)	1,3-Dichloropropane	13.99	76	199227	20.0217 ug/L	94
66)	Tetrachloroethene	14.10	166	135754	19.9678 ug/L	93
67)	Dibromochloromethane	14.41	129	135289	21.1051 ug/L	100
68)	1,2-Dibromoethane	14.71	107	105892	20.7786 ug/L	100
69)	1-Chlorohexane	14.85	91	199253	20.9862 ug/L	90
70)	Chlorobenzene	15.30	112	368915	20.1622 ug/L	92
71)	1,1,1,2-Tetrachloroethane	15.35	131	134691	20.6882 ug/L	97
72)	Ethylbenzene	15.35	106	198149	20.6895 ug/L	94
73)	m-,p-Xylene	15.45	106	479614	41.4358 ug/L	94
74)	o-Xylene	16.10	106	239170	20.7178 ug/L	94
75)	Styrene	16.16	104	410666	21.1448 ug/L	94
76)	Bromoform	16.71	173	82284	20.7000 ug/L	97
77)	Isopropylbenzene	16.62	105	620142	20.5887 ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.88	83	128022	20.4105 ug/L	99
81)	1,2,3-Trichloropropane	17.11	110	39329	21.1491 ug/L	80
82)	trans-1,4-Dichloro-2-Buten	17.18	53	50449	21.2733 ug/L	99
83)	n-Propylbenzene	17.22	91	763535	20.5616 ug/L	97
84)	Bromobenzene	17.34	156	157241	20.2655 ug/L	90
85)	1,3,5-Trimethylbenzene	17.44	105	534922	20.5522 ug/L	97
86)	2-Chlorotoluene	17.52	91	480540	19.1348 ug/L	100
87)	4-Chlorotoluene	17.58	91	506904	21.1723 ug/L	93
88)	a-Methylstyrene	17.92	118	283013	21.6190 ug/L	99
89)	tert-Butylbenzene	17.98	134	108977	20.8400 ug/L	73
90)	1,2,4-Trimethylbenzene	18.04	105	555658	20.8047 ug/L	98
91)	sec-Butylbenzene	18.30	105	646673	20.7557 ug/L	97
92)	p-Isopropyltoluene	18.50	119	553560	20.8482 ug/L	98
93)	1,3-Dichlorobenzene	18.70	146	308829	20.2225 ug/L	96
94)	1,4-Dichlorobenzene	18.85	146	309174	20.0243 ug/L	95
95)	n-Butylbenzene	19.12	91	539602	20.7232 ug/L	96
96)	1,2-Dichlorobenzene	19.43	146	290193	20.2396 ug/L	95
97)	1,2-Dibromo-3-Chloropropan	20.61	75	25172	20.4911 ug/L	84
98)	1,2,4-Trichlorobenzene	21.96	180	206634	20.3883 ug/L	99
99)	Hexachlorobutadiene	22.15	225	84200	19.9820 ug/L	100
100)	Naphthalene	22.38	128	449397	21.6970 ug/L	99
101)	1,2,3-Trichlorobenzene	22.75	180	193555	20.6254 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140319.D 8260WTR.M Fri Jul 01 14:21:38 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140319.D Vial: 7
Acq On : 30 Jun 2016 14:44 Operator: TMB
Sample : WG574723-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:21 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

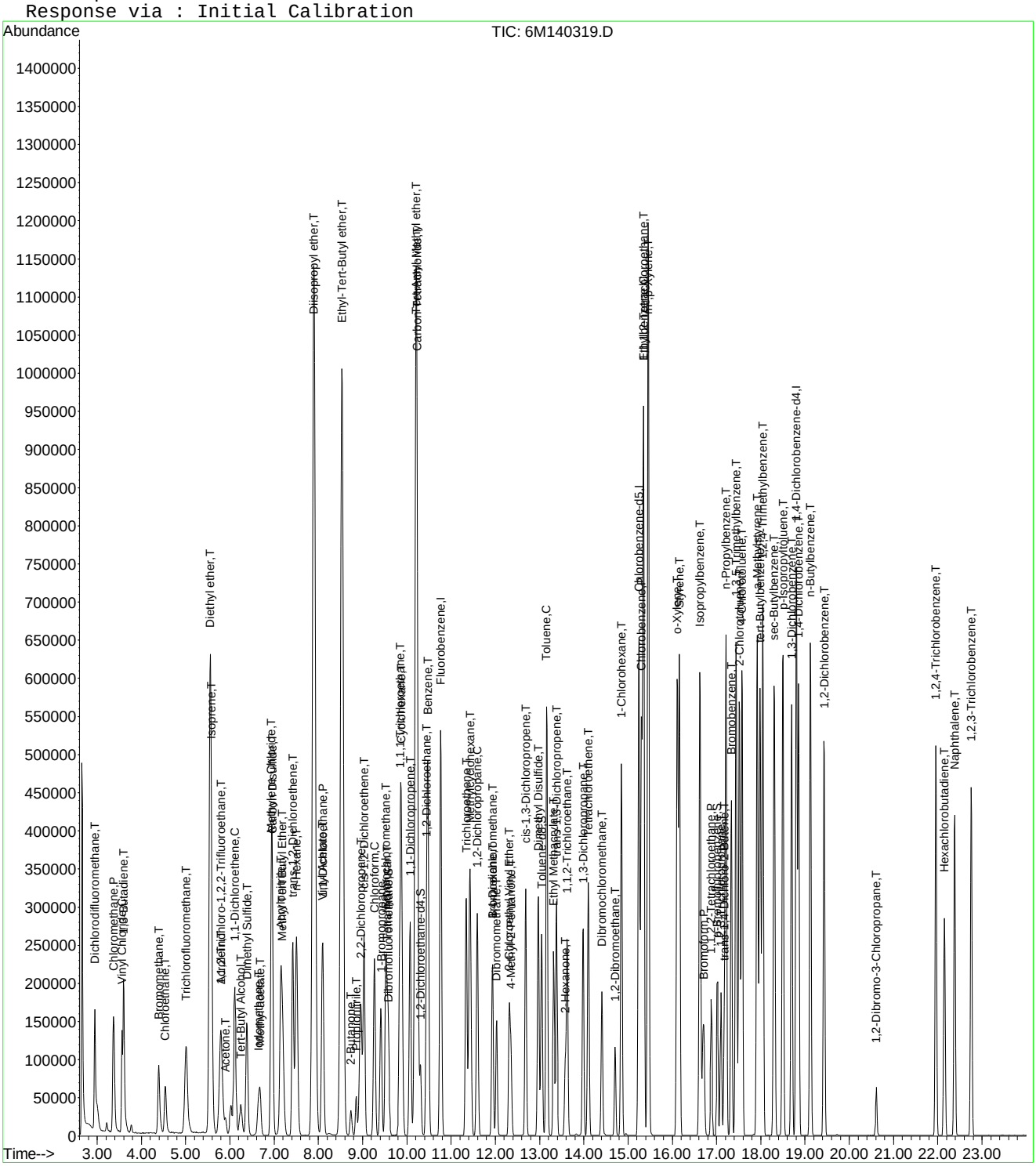

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140320.D Vial: 8
Acq On : 30 Jun 2016 15:16 Operator: TMB
Sample : WG574723-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:42 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	665194	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	476977	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	264882	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	171183	25.3652 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.48%		
43) 1,2-Dichloroethane-d4	10.31	65	211795	24.8600 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.44%		
58) Toluene-d8	13.04	98	584965	24.9051 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.64%		
80) p-Bromofluorobenzene	17.02	95	257496	24.8219 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.28%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	582153	52.3535 ug/L	99
3) Chloromethane	3.37	50	615809	49.6030 ug/L	100
4) Vinyl Chloride	3.56	62	346419	50.8123 ug/L	99
5) 1,3-Butadiene	3.59	54	204917	52.0480 ug/L	96
6) Bromomethane	4.39	94	214126	47.2638 ug/L	99
7) Chloroethane	4.53	64	215766	50.0871 ug/L	96
8) Trichlorofluoromethane	5.00	101	495602	47.6630 ug/L	100
9) Diethyl ether	5.56	59	630517	102.7715 ug/L	96
10) Isoprene	5.58	67	475494	51.2378 ug/L	96
11) Acrolein	5.79	56	50160	49.1531 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.80	101	318041	49.1602 ug/L	97
13) Acetone	5.90	43	105863	49.6741 ug/L	100
14) 1,1-Dichloroethene	6.11	61	623813	49.6972 ug/L	94
15) Tert-Butyl Alcohol	6.26	59	129177	198.2217 ug/L	99
16) Dimethyl Sulfide	6.39	62	276319	50.4741 ug/L	95
17) Iodomethane	6.65	142	239373	52.6044 ug/L	93
18) Methyl acetate	6.69	43	285035	49.4262 ug/L	98
19) Methylene Chloride	6.94	84	347634	48.2950 ug/L	88
20) Carbon Disulfide	6.96	76	1155252	50.2265 ug/L	100
21) Acrylonitrile	7.15	53	135608	51.2481 ug/L	98
22) Methyl Tert Butyl Ether	7.18	73	953213	49.9591 ug/L	100
23) trans-1,2-Dichloroethene	7.42	96	333111	49.5507 ug/L	89
24) n-Hexane	7.51	57	564061	49.4381 ug/L	98
25) Diisopropyl ether	7.90	45	3068443	99.9198 ug/L	98
26) Vinyl Acetate	8.09	43	646413	50.4243 ug/L	98
27) 1,1-Dichloroethane	8.10	63	718876	49.6666 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	2470202	99.9864 ug/L	98
29) 2-Butanone	8.73	43	166904	51.1609 ug/L	95
30) Propionitrile	8.85	54	90037	101.6978 ug/L	100
31) 2,2-Dichloropropane	8.96	77	533000	48.8104 ug/L	100
32) cis-1,2-Dichloroethene	9.03	96	368400	50.0623 ug/L	73
33) Chloroform	9.26	83	633467	48.8534 ug/L	99
34) 1-Bromopropane	9.42	122	59330	50.9944 ug/L	99
35) Bromochloromethane	9.52	130	203288	51.4071 ug/L	99
36) Tetrahydrofuran	9.56	42	216772	95.2648 ug/L	94
38) 1,1,1-Trichloroethane	9.85	97	572724	50.7331 ug/L	99
39) Cyclohexane	9.87	56	723056	49.2305 ug/L	96
40) 1,1-Dichloropropene	10.08	75	488493	49.6802 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	1883625	100.4078 ug/L	98
42) Carbon Tetrachloride	10.23	117	502186	54.1766 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140320.D 8260WTR.M Fri Jul 01 14:21:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140320.D Vial: 8
Acq On : 30 Jun 2016 15:16 Operator: TMB
Sample : WG574723-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:42 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	522936	50.2998 ug/L	99
46)	Benzene	10.48	78	1376892	49.6154 ug/L	97
47)	Trichloroethene	11.35	130	341168	49.8206 ug/L	91
48)	Methylcyclohexane	11.43	83	532584	49.5388 ug/L	95
49)	1,2-Dichloropropane	11.59	63	402187	50.3249 ug/L	99
50)	1,4-Dioxane	11.94	88	11316	209.1652 ug/L	91
51)	Bromodichloromethane	11.94	83	499306	51.7788 ug/L	99
52)	Dibromomethane	12.03	93	200679	51.8998 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.32	63	214371	53.5004 ug/L	99
54)	4-Methyl-2-Pentanone	12.35	58	126993	51.4974 ug/L	97
55)	cis-1,3-Dichloropropene	12.68	75	576590	51.5014 ug/L	99
56)	Dimethyl Disulfide	12.97	79	322099	51.6823 ug/L	98
59)	Toluene	13.15	91	1399906	49.2452 ug/L	99
60)	Ethyl Methacrylate	13.32	69	422208	52.2030 ug/L	95
62)	trans-1,3-Dichloropropene	13.39	75	522454	51.6858 ug/L	96
63)	1,1,2-Trichloroethane	13.63	97	267159	50.7830 ug/L	98
64)	2-Hexanone	13.58	43	256820	51.4155 ug/L	96
65)	1,3-Dichloropropane	13.99	76	494920	49.9167 ug/L	94
66)	Tetrachloroethene	14.10	166	336402	49.6585 ug/L	94
67)	Dibromochloromethane	14.41	129	343402	53.7632 ug/L	100
68)	1,2-Dibromoethane	14.70	107	261585	51.5137 ug/L	100
69)	1-Chlorohexane	14.85	91	477655	50.4894 ug/L	92
70)	Chlorobenzene	15.30	112	903124	49.5353 ug/L	93
71)	1,1,1,2-Tetrachloroethane	15.35	131	337691	52.0547 ug/L	98
72)	Ethylbenzene	15.35	106	484831	50.8048 ug/L	94
73)	m-,p-Xylene	15.46	106	1167250	101.2056 ug/L	95
74)	o-Xylene	16.11	106	590057	51.2966 ug/L	94
75)	Styrene	16.15	104	1015963	52.4987 ug/L	92
76)	Bromoform	16.72	173	210299	53.0943 ug/L	98
77)	Isopropylbenzene	16.62	105	1525364	50.8239 ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.88	83	326482	50.7855 ug/L	100
81)	1,2,3-Trichloropropane	17.10	110	98816	51.8463 ug/L	83
82)	trans-1,4-Dichloro-2-Buten	17.18	53	129320	53.2061 ug/L	97
83)	n-Propylbenzene	17.22	91	1885010	49.5285 ug/L	98
84)	Bromobenzene	17.34	156	390005	49.0426 ug/L	89
85)	1,3,5-Trimethylbenzene	17.44	105	1335066	50.0475 ug/L	97
86)	2-Chlorotoluene	17.52	91	1274044	49.4983 ug/L	96
87)	4-Chlorotoluene	17.58	91	1171374	47.7365 ug/L	96
88)	a-Methylstyrene	17.92	118	690404	51.4571 ug/L	95
89)	tert-Butylbenzene	17.98	134	265842	49.6018 ug/L	70
90)	1,2,4-Trimethylbenzene	18.04	105	1381292	50.4604 ug/L	98
91)	sec-Butylbenzene	18.31	105	1599719	50.0966 ug/L	98
92)	p-Isopropyltoluene	18.50	119	1372031	50.4173 ug/L	98
93)	1,3-Dichlorobenzene	18.70	146	767298	49.0222 ug/L	95
94)	1,4-Dichlorobenzene	18.85	146	768779	48.5813 ug/L	95
95)	n-Butylbenzene	19.12	91	1348420	50.5266 ug/L	97
96)	1,2-Dichlorobenzene	19.43	146	726470	49.4362 ug/L	95
97)	1,2-Dibromo-3-Chloropropan	20.62	75	64455	51.1937 ug/L	86
98)	1,2,4-Trichlorobenzene	21.97	180	516677	49.7405 ug/L	99
99)	Hexachlorobutadiene	22.16	225	213166	49.3581 ug/L	100
100)	Naphthalene	22.38	128	1126213	53.0520 ug/L	100
101)	1,2,3-Trichlorobenzene	22.76	180	479054	49.8076 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140320.D 8260WTR.M Fri Jul 01 14:21:46 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140320.D Vial: 8
Acq On : 30 Jun 2016 15:16 Operator: TMB
Sample : WG574723-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:21 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

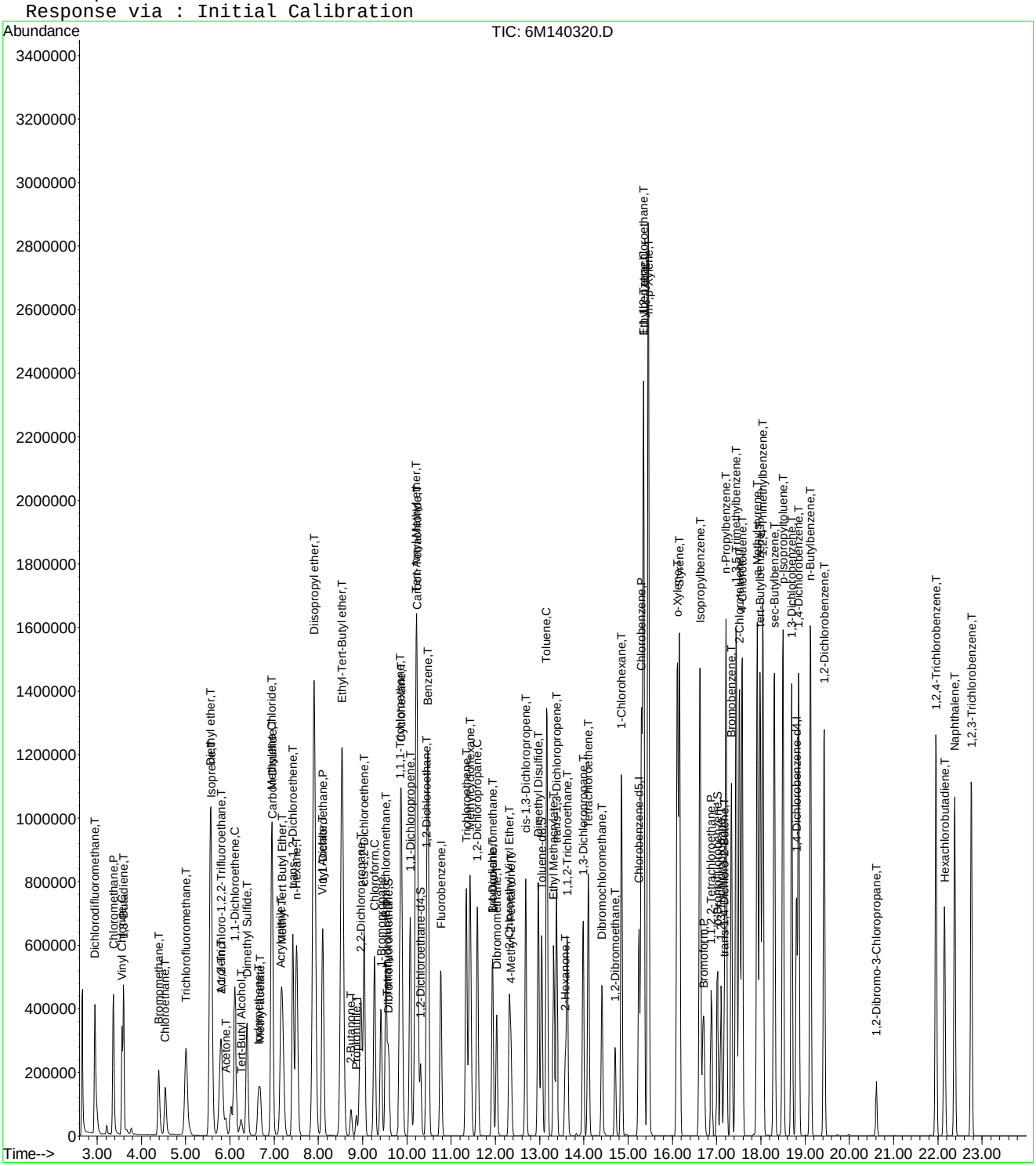

6M140320.D 8260WTR.M Fri Jul 01 14:21:49 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140321.D Vial: 9
Acq On : 30 Jun 2016 15:48 Operator: TMB
Sample : WG574723-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:51 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	646485	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	471613	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	268377	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	322733	49.2052 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 196.84%#		
43) 1,2-Dichloroethane-d4	10.31	65	408267	49.3082 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 197.24%#		
58) Toluene-d8	13.04	98	1099687	47.3521 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 189.40%#		
80) p-Bromofluorobenzene	17.02	95	500608	47.6287 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 190.52%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	1195098	110.5865 ug/L	100
3) Chloromethane	3.37	50	1126306	93.3487 ug/L	100
4) Vinyl Chloride	3.56	62	690730	104.2475 ug/L	100
5) 1,3-Butadiene	3.59	54	397047	106.9364 ug/L	97
6) Bromomethane	4.38	94	423232	96.1231 ug/L	100
7) Chloroethane	4.53	64	421078	100.5763 ug/L	96
8) Trichlorofluoromethane	5.00	101	1039911	102.9045 ug/L	99
9) Diethyl ether	5.56	59	1210825	203.0707 ug/L	96
10) Isoprene	5.57	67	926995	102.7810 ug/L	96
11) Acrolein	5.79	56	100610	101.4435 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	644973	102.5798 ug/L	97
13) Acetone	5.90	43	202374	97.7080 ug/L	98
14) 1,1-Dichloroethene	6.11	61	1233915	101.1469 ug/L	94
15) Tert-Butyl Alcohol	6.26	59	264298	417.3014 ug/L	98
16) Dimethyl Sulfide	6.39	62	533770	100.3234 ug/L	95
17) Iodomethane	6.65	142	485581	108.8245 ug/L	92
18) Methyl acetate	6.69	43	562111	100.2930 ug/L	98
19) Methylene Chloride	6.94	84	680086	97.2151 ug/L	90
20) Carbon Disulfide	6.96	76	2214357	99.0589 ug/L	100
21) Acrylonitrile	7.15	53	269273	104.7069 ug/L	97
22) Methyl Tert Butyl Ether	7.18	73	1885141	101.6619 ug/L	99
23) trans-1,2-Dichloroethene	7.42	96	659412	100.9269 ug/L	89
24) n-Hexane	7.51	57	1100352	99.2333 ug/L	97
25) Diisopropyl ether	7.90	45	5806079	194.5388 ug/L	99
26) Vinyl Acetate	8.09	43	1275603	102.3848 ug/L	98
27) 1,1-Dichloroethane	8.10	63	1407131	100.0311 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	4736533	197.2691 ug/L	99
29) 2-Butanone	8.73	43	329619	103.9617 ug/L	96
30) Propionitrile	8.85	54	180672	209.9768 ug/L	99
31) 2,2-Dichloropropane	8.96	77	1063724	100.2315 ug/L	99
32) cis-1,2-Dichloroethene	9.03	96	723748	101.1973 ug/L	73
33) Chloroform	9.26	83	1245839	98.8604 ug/L	99
34) 1-Bromopropane	9.42	122	114449	100.7473 ug/L	100
35) Bromochloromethane	9.52	130	399705	104.0018 ug/L	100
36) Tetrahydrofuran	9.56	42	431461	195.1016 ug/L	95
38) 1,1,1-Trichloroethane	9.85	97	1132312	103.2053 ug/L	98
39) Cyclohexane	9.87	56	1422141	99.6310 ug/L	96
40) 1,1-Dichloropropene	10.08	75	970489	101.5559 ug/L	98
41) Tert-Amyl-Methyl ether	10.22	73	3648605	200.1197 ug/L	98
42) Carbon Tetrachloride	10.23	117	1008047	111.8968 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140321.D 8260WTR.M Fri Jul 01 14:21:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140321.D Vial: 9
Acq On : 30 Jun 2016 15:48 Operator: TMB
Sample : WG574723-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:51 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	1026377	101.5814 ug/L	99
46)	Benzene	10.48	78	2663898	98.7698 ug/L	96
47)	Trichloroethene	11.35	130	659415	99.0807 ug/L	89
48)	Methylcyclohexane	11.43	83	1057163	101.1788 ug/L	95
49)	1,2-Dichloropropane	11.59	63	787420	101.3798 ug/L	97
50)	1,4-Dioxane	11.94	88	22910	435.7239 ug/L	83
51)	Bromodichloromethane	11.94	83	998026	106.4921 ug/L	100
52)	Dibromomethane	12.03	93	402229	107.0352 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.32	63	414426	106.4211 ug/L	99
54)	4-Methyl-2-Pentanone	12.35	58	253505	105.7748 ug/L	99
55)	cis-1,3-Dichloropropene	12.68	75	1145435	105.2719 ug/L	99
56)	Dimethyl Disulfide	12.97	79	637376	105.2297 ug/L	98
59)	Toluene	13.16	91	2716275	96.6387 ug/L	99
60)	Ethyl Methacrylate	13.32	69	835175	104.4378 ug/L	95
62)	trans-1,3-Dichloropropene	13.39	75	1039244	103.9807 ug/L	96
63)	1,1,2-Trichloroethane	13.63	97	530894	102.0629 ug/L	98
64)	2-Hexanone	13.58	43	511940	103.6564 ug/L	98
65)	1,3-Dichloropropane	13.99	76	975019	99.4570 ug/L	94
66)	Tetrachloroethene	14.10	166	663843	99.1087 ug/L	93
67)	Dibromochloromethane	14.41	129	698275	110.5657 ug/L	100
68)	1,2-Dibromoethane	14.70	107	530245	105.6082 ug/L	100
69)	1-Chlorohexane	14.86	91	934249	99.8757 ug/L	91
70)	Chlorobenzene	15.30	112	1757753	97.5073 ug/L	90
71)	1,1,1,2-Tetrachloroethane	15.35	131	672232	104.8024 ug/L	97
72)	Ethylbenzene	15.35	106	960737	101.8195 ug/L	96
73)	m-,p-Xylene	15.46	106	2273350	199.3511 ug/L	96
74)	o-Xylene	16.11	106	1166695	102.5802 ug/L	94
75)	Styrene	16.15	104	2021937	105.6696 ug/L	91
76)	Bromoform	16.72	173	442224	112.9184 ug/L	98
77)	Isopropylbenzene	16.62	105	3022582	101.8554 ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.88	83	699051	107.3240 ug/L	100
81)	1,2,3-Trichloropropane	17.10	110	204344	105.8180 ug/L	81
82)	trans-1,4-Dichloro-2-Buten	17.18	53	271253	110.1481 ug/L	96
83)	n-Propylbenzene	17.22	91	3780776	98.0459 ug/L	98
84)	Bromobenzene	17.34	156	791175	98.1936 ug/L	89
85)	1,3,5-Trimethylbenzene	17.44	105	2708977	100.2286 ug/L	97
86)	2-Chlorotoluene	17.52	91	2557008	98.0494 ug/L	97
87)	4-Chlorotoluene	17.58	91	2386130	95.9746 ug/L	97
88)	a-Methylstyrene	17.92	118	1396050	102.6951 ug/L	95
89)	tert-Butylbenzene	17.99	134	544776	100.3227 ug/L	72
90)	1,2,4-Trimethylbenzene	18.04	105	2808112	101.2481 ug/L	99
91)	sec-Butylbenzene	18.31	105	3235910	100.0157 ug/L	98
92)	p-Isopropyltoluene	18.50	119	2792332	101.2720 ug/L	98
93)	1,3-Dichlorobenzene	18.70	146	1561532	98.4661 ug/L	94
94)	1,4-Dichlorobenzene	18.86	146	1567098	97.7396 ug/L	94
95)	n-Butylbenzene	19.12	91	2754111	101.8553 ug/L	97
96)	1,2-Dichlorobenzene	19.43	146	1483394	99.6302 ug/L	93
97)	1,2-Dibromo-3-Chloropropan	20.62	75	143837	112.7555 ug/L	86
98)	1,2,4-Trichlorobenzene	21.97	180	1060844	100.7975 ug/L	98
99)	Hexachlorobutadiene	22.15	225	438054	100.1094 ug/L	100
100)	Naphthalene	22.38	128	2317282	107.7376 ug/L	99
101)	1,2,3-Trichlorobenzene	22.76	180	982434	100.8141 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M140321.D 8260WTR.M Fri Jul 01 14:21:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140321.D Vial: 9
Acq On : 30 Jun 2016 15:48 Operator: TMB
Sample : WG574723-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:21 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

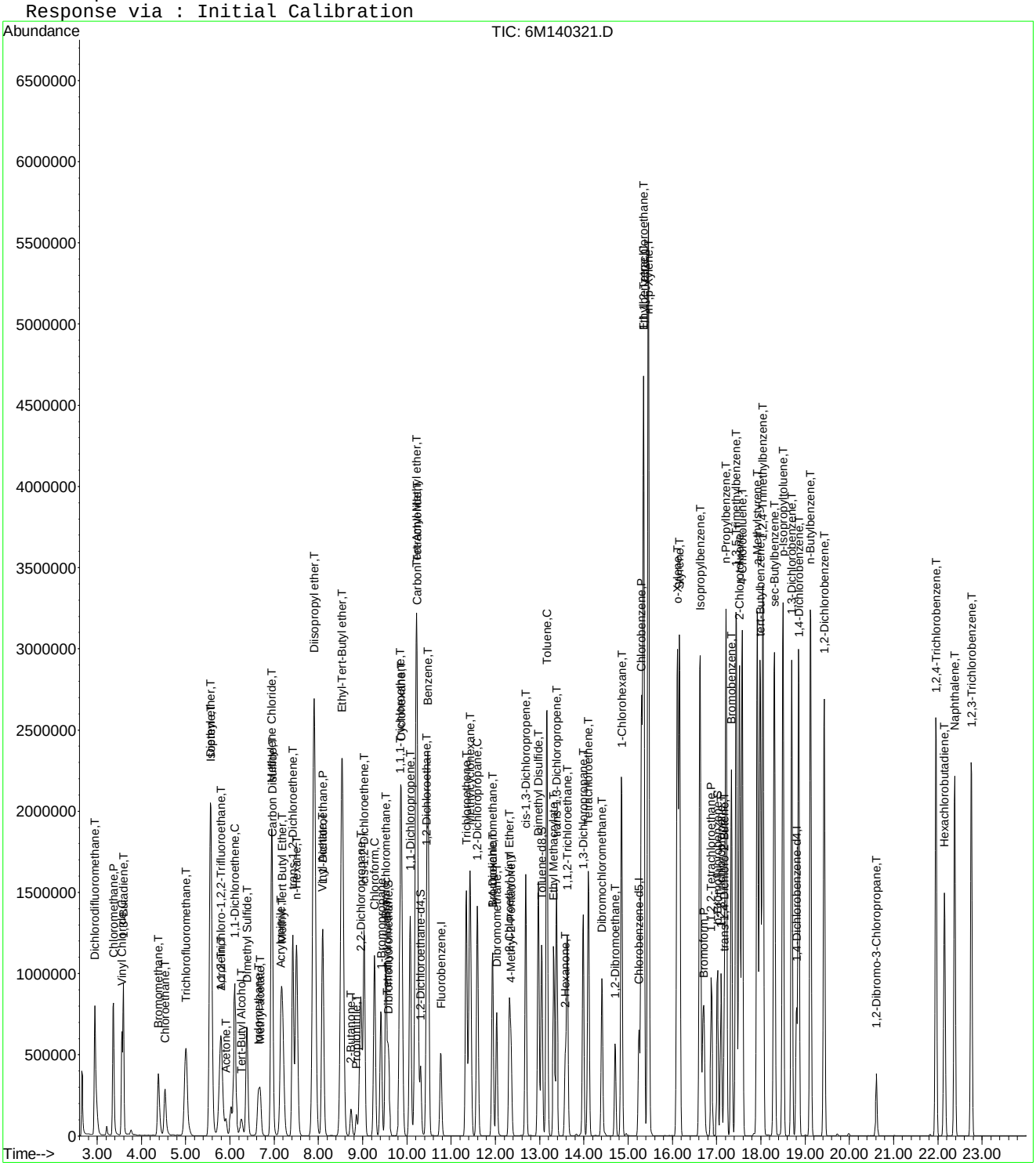

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140322.D Vial: 10
Acq On : 30 Jun 2016 16:21 Operator: TMB
Sample : WG574723-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:59 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	674210	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	486785	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	271900	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	671839	98.2191 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 392.88%#		
43) 1,2-Dichloroethane-d4	10.31	65	835948	96.8094 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 387.24%#		
58) Toluene-d8	13.04	98	2262915	94.4033 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 377.60%#		
80) p-Bromofluorobenzene	17.02	95	1044558	98.0934 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 392.36%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	2392226	212.2580 ug/L	100
3) Chloromethane	3.37	50	2218722	176.3266 ug/L	100
4) Vinyl Chloride	3.56	62	1383750	200.2527 ug/L	99
5) 1,3-Butadiene	3.59	54	790286	206.9928 ug/L	97
6) Bromomethane	4.38	94	916596	199.6138 ug/L	100
7) Chloroethane	4.53	64	905382	207.3615 ug/L	96
8) Trichlorofluoromethane	5.00	101	2065931	196.0277 ug/L	99
10) Isoprene	5.57	67	1944884	206.7723 ug/L	96
11) Acrolein	5.78	56	1541	1.4899 ug/L	69
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	1336247	203.7841 ug/L	97
13) Acetone	5.90	43	421648	195.2041 ug/L	99
14) 1,1-Dichloroethene	6.11	61	2551648	200.5632 ug/L	94
15) Tert-Butyl Alcohol	6.28	59	3198	4.8417 ug/L #	57
16) Dimethyl Sulfide	6.38	62	1109294	199.9208 ug/L	95
17) Iodomethane	6.65	142	972879	208.2422 ug/L	92
18) Methyl acetate	6.69	43	1135963	194.3462 ug/L	99
19) Methylene Chloride	6.94	84	1372201	188.0837 ug/L	89
20) Carbon Disulfide	6.96	76	4495945	192.8546 ug/L	99
21) Acrylonitrile	7.18	53	44700	16.6668 ug/L #	33
22) Methyl Tert Butyl Ether	7.18	73	3851369	199.1557 ug/L	99
23) trans-1,2-Dichloroethene	7.42	96	1353415	198.6299 ug/L	88
24) n-Hexane	7.51	57	2284673	197.5664 ug/L	97
26) Vinyl Acetate	8.09	43	2820141	217.0472 ug/L	98
27) 1,1-Dichloroethane	8.10	63	2873257	195.8566 ug/L	99
28) Ethyl-Tert-Butyl ether	8.56	59	6764	0.2701 ug/L #	47
29) 2-Butanone	8.73	43	664492	200.9620 ug/L	97
30) Propionitrile	8.74	54	1576	1.7563 ug/L #	81
31) 2,2-Dichloropropane	8.96	77	2196313	198.4415 ug/L	98
32) cis-1,2-Dichloroethene	9.03	96	1477699	198.1211 ug/L	88
33) Chloroform	9.26	83	2557143	194.5712 ug/L	99
34) 1-Bromopropane	9.41	122	241562	203.4107 ug/L	99
35) Bromochloromethane	9.52	130	819022	204.3432 ug/L	99
36) Tetrahydrofuran	9.56	42	4224	1.8315 ug/L #	75
38) 1,1,1-Trichloroethane	9.85	97	2330454	203.6760 ug/L	98
39) Cyclohexane	9.87	56	2930205	196.8399 ug/L	96
40) 1,1-Dichloropropene	10.08	75	2009314	201.6162 ug/L	98
42) Carbon Tetrachloride	10.23	117	2106944	224.2607 ug/L	99
45) 1,2-Dichloroethane	10.45	62	2101049	199.3915 ug/L	99
46) Benzene	10.48	78	5301493	188.4813 ug/L	94
47) Trichloroethene	11.34	130	1327069	191.1997 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M140322.D 8260WTR.M Fri Jul 01 14:22:03 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140322.D Vial: 10
Acq On : 30 Jun 2016 16:21 Operator: TMB
Sample : WG574723-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:21:59 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
48)	Methylcyclohexane	11.43	83	2178870	199.9595 ug/L	95
49)	1,2-Dichloropropane	11.59	63	1619228	199.9016 ug/L	98
50)	1,4-Dioxane	11.93	88	2818	51.3914 ug/L #	14
51)	Bromodichloromethane	11.94	83	2039115	208.6317 ug/L	99
52)	Dibromomethane	12.03	93	816650	208.3783 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.31	63	836577	205.9918 ug/L	100
54)	4-Methyl-2-Pentanone	12.35	58	515506	206.2494 ug/L	98
55)	cis-1,3-Dichloropropene	12.68	75	2333363	205.6305 ug/L	99
56)	Dimethyl Disulfide	12.97	79	1322167	209.3111 ug/L	97
59)	Toluene	13.16	91	5329560	183.7033 ug/L	98
60)	Ethyl Methacrylate	13.32	69	1710374	207.2144 ug/L	96
62)	trans-1,3-Dichloropropene	13.39	75	2115027	205.0216 ug/L	96
63)	1,1,2-Trichloroethane	13.63	97	1065320	198.4215 ug/L	98
64)	2-Hexanone	13.58	43	1038924	203.8025 ug/L	98
65)	1,3-Dichloropropane	13.99	76	1956962	193.3985 ug/L	94
66)	Tetrachloroethene	14.11	166	1338320	193.5775 ug/L	92
67)	Dibromochloromethane	14.41	129	1402954	215.2216 ug/L	99
68)	1,2-Dibromoethane	14.70	107	1067268	205.9412 ug/L	100
69)	1-Chlorohexane	14.86	91	1899241	196.7097 ug/L	91
70)	Chlorobenzene	15.31	112	3420251	183.8172 ug/L	87
71)	1,1,1,2-Tetrachloroethane	15.35	131	1330581	200.9750 ug/L	97
72)	Ethylbenzene	15.35	106	1873240	192.3394 ug/L	99
73)	m-,p-Xylene	15.46	106	4310843	366.2377 ug/L	95
74)	o-Xylene	16.11	106	2276447	193.9154 ug/L	96
75)	Styrene	16.16	104	3942983	199.6439 ug/L	88
76)	Bromoform	16.72	173	900340	222.7294 ug/L	97
77)	Isopropylbenzene	16.62	105	5752842	187.8178 ug/L	100
79)	1,1,2,2-Tetrachloroethane	16.88	83	1421698	215.4425 ug/L	100
81)	1,2,3-Trichloropropane	17.10	110	415115	212.1790 ug/L	84
82)	trans-1,4-Dichloro-2-Buten	17.19	53	555836	222.7847 ug/L	92
83)	n-Propylbenzene	17.22	91	7011461	179.4705 ug/L	99
84)	Bromobenzene	17.34	156	1573131	192.7133 ug/L	88
85)	1,3,5-Trimethylbenzene	17.45	105	5208297	190.2034 ug/L	98
86)	2-Chlorotoluene	17.52	91	4893039	185.1943 ug/L	96
87)	4-Chlorotoluene	17.58	91	4739568	188.1643 ug/L	97
88)	a-Methylstyrene	17.92	118	2750894	199.7372 ug/L	94
89)	tert-Butylbenzene	17.99	134	1070344	194.5543 ug/L	74
90)	1,2,4-Trimethylbenzene	18.05	105	5338361	189.9838 ug/L	98
91)	sec-Butylbenzene	18.31	105	6128752	186.9735 ug/L	99
92)	p-Isopropyltoluene	18.50	119	5274399	188.8129 ug/L	100
93)	1,3-Dichlorobenzene	18.70	146	3017581	187.8153 ug/L	92
94)	1,4-Dichlorobenzene	18.86	146	3009321	185.2589 ug/L	92
95)	n-Butylbenzene	19.13	91	5193206	189.5718 ug/L	98
96)	1,2-Dichlorobenzene	19.43	146	2821487	187.0461 ug/L	91
97)	1,2-Dibromo-3-Chloropropan	20.62	75	291664	225.6764 ug/L	84
98)	1,2,4-Trichlorobenzene	21.96	180	2052522	192.4961 ug/L	98
99)	Hexachlorobutadiene	22.16	225	860118	194.0178 ug/L	100
100)	Naphthalene	22.38	128	4383238	201.1498 ug/L	99
101)	1,2,3-Trichlorobenzene	22.76	180	1893203	191.7570 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M140322.D 8260WTR.M Fri Jul 01 14:22:03 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140322.D Vial: 10
Acq On : 30 Jun 2016 16:21 Operator: TMB
Sample : WG574723-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:22 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

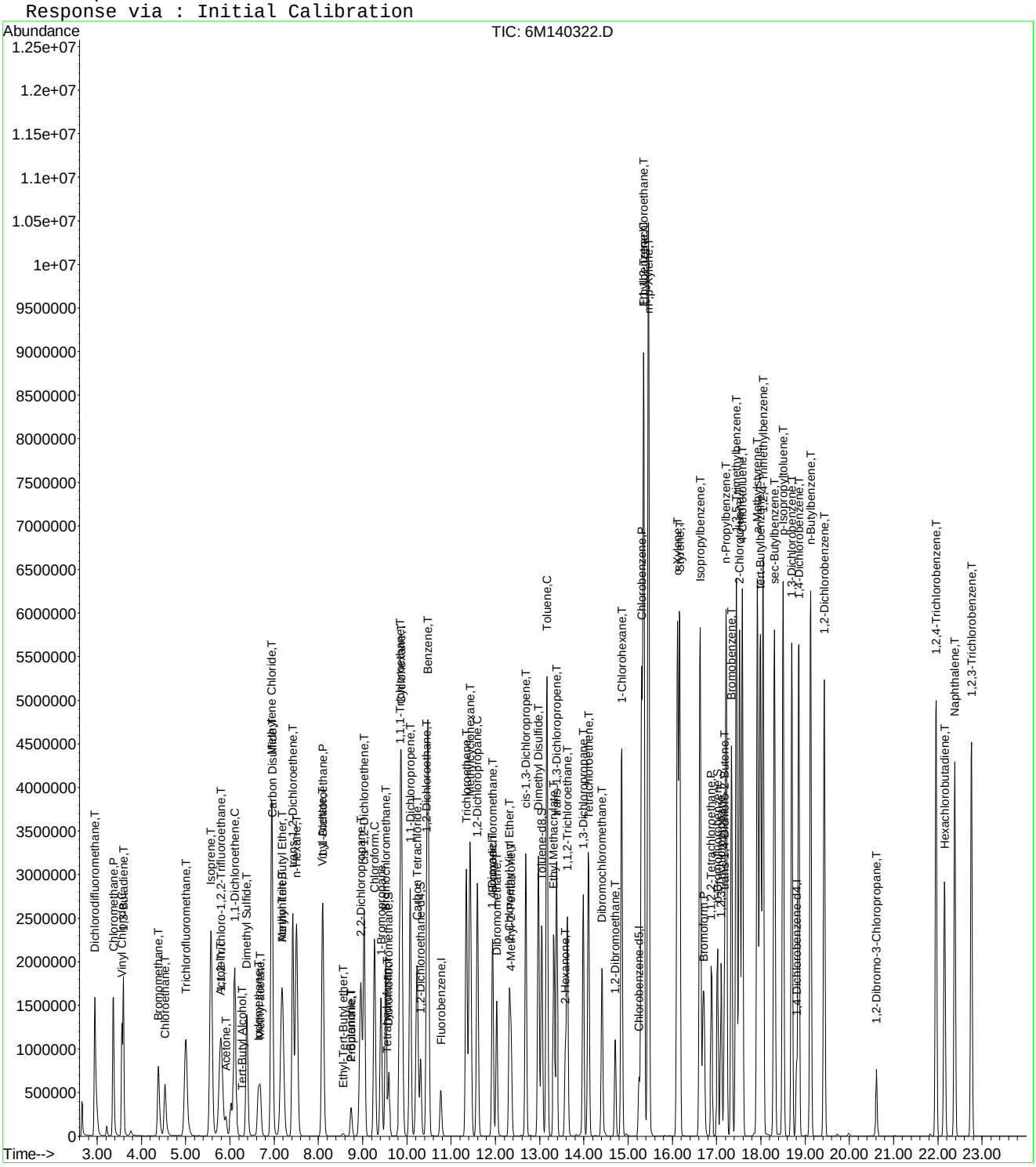

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140323.D Vial: 11
Acq On : 30 Jun 2016 16:53 Operator: TMB
Sample : WG574723-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:22:07 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	768752	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	513418	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	277427	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	1128188	144.6508 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 578.60%#		
43) 1,2-Dichloroethane-d4	10.31	65	1400537	142.2465 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 569.00%#		
58) Toluene-d8	13.04	98	3666921	145.0395 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 580.16%#		
80) p-Bromofluorobenzene	17.03	95	1580313	145.4490 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 581.80%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.94	85	3603130	280.3824 ug/L	99
3) Chloromethane	3.36	50	3514669	244.9674 ug/L	99
4) Vinyl Chloride	3.56	62	2074164	263.2526 ug/L	98
5) 1,3-Butadiene	3.59	54	1213545	279.8694 ug/L	97
6) Bromomethane	4.37	94	1474577	281.6365 ug/L	100
7) Chloroethane	4.53	64	1490836	299.4574 ug/L	96
8) Trichlorofluoromethane	5.00	101	3451196	287.1972 ug/L	99
9) Diethyl ether	5.55	59	1755505	247.5940 ug/L	97
10) Isoprene	5.57	67	2862617	266.9137 ug/L	94
11) Acrolein	5.79	56	179556	152.2492 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	5.78	101	2228863	298.1095 ug/L	97
13) Acetone	5.91	43	694471	281.9693 ug/L	98
14) 1,1-Dichloroethene	6.10	61	4231203	291.6778 ug/L	94
15) Tert-Butyl Alcohol	6.29	59	515078	683.9134 ug/L	92
16) Dimethyl Sulfide	6.39	62	1850710	292.5220 ug/L	96
17) Iodomethane	6.64	142	1511597	283.4374 ug/L	92
18) Methyl acetate	6.69	43	1992359	298.9430 ug/L	99
19) Methylene Chloride	6.94	84	2215285	266.3004 ug/L	89
20) Carbon Disulfide	6.96	76	7083320	266.4739 ug/L	98
21) Acrylonitrile	7.15	53	497546	162.7001 ug/L	96
22) Methyl Tert Butyl Ether	7.18	73	6401984	290.3361 ug/L	98
23) trans-1,2-Dichloroethene	7.42	96	2224367	286.3050 ug/L	87
24) n-Hexane	7.50	57	3799046	288.1194 ug/L	96
25) Diisopropyl ether	7.90	45	9759184	274.9849 ug/L	99
26) Vinyl Acetate	8.09	43	4448993	300.2991 ug/L	99
27) 1,1-Dichloroethane	8.10	63	4699381	280.9398 ug/L	99
28) Ethyl-Tert-Butyl ether	8.53	59	8098177	283.6338 ug/L	99
29) 2-Butanone	8.73	43	1086721	288.2380 ug/L	98
30) Propionitrile	8.86	54	298217	291.4641 ug/L	98
31) 2,2-Dichloropropane	8.95	77	3622985	287.0872 ug/L	98
32) cis-1,2-Dichloroethene	9.03	96	2417494	284.2622 ug/L	71
33) Chloroform	9.26	83	4185224	279.2874 ug/L	99
34) 1-Bromopropane	9.41	122	399109	294.5307 ug/L	100
35) Bromochloromethane	9.52	130	1339573	293.1163 ug/L	99
36) Tetrahydrofuran	9.56	42	723977	275.3063 ug/L	96
38) 1,1,1-Trichloroethane	9.85	97	3817009	292.5710 ug/L	97
39) Cyclohexane	9.88	56	4836948	284.9676 ug/L	96
40) 1,1-Dichloropropene	10.07	75	3335607	293.5361 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	6187488	285.3971 ug/L	98
42) Carbon Tetrachloride	10.23	117	3426898	319.8971 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140323.D 8260WTR.M Fri Jul 01 14:22:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140323.D Vial: 11
Acq On : 30 Jun 2016 16:53 Operator: TMB
Sample : WG574723-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:22:07 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	3436626	286.0301 ug/L	99
46)	Benzene	10.48	78	8206846	255.8911 ug/L	92
47)	Trichloroethene	11.34	130	2157856	272.6623 ug/L	85
48)	Methylcyclohexane	11.43	83	3572510	287.5366 ug/L	94
49)	1,2-Dichloropropane	11.59	63	2654885	287.4504 ug/L	98
50)	1,4-Dioxane	11.94	88	37500	599.7769 ug/L	90
51)	Bromodichloromethane	11.93	83	3309122	296.9343 ug/L	99
52)	Dibromomethane	12.02	93	1336996	299.1959 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.31	63	1349189	291.3572 ug/L	100
54)	4-Methyl-2-Pentanone	12.35	58	816641	286.5491 ug/L	98
55)	cis-1,3-Dichloropropene	12.69	75	3726475	288.0131 ug/L	98
56)	Dimethyl Disulfide	12.97	79	2153813	299.0355 ug/L	97
59)	Toluene	13.16	91	7972275	260.5398 ug/L	94
60)	Ethyl Methacrylate	13.32	69	2708040	311.0642 ug/L	96
62)	trans-1,3-Dichloropropene	13.39	75	3319850	305.1184 ug/L	96
63)	1,1,2-Trichloroethane	13.62	97	1658699	292.9155 ug/L	98
64)	2-Hexanone	13.58	43	1609874	299.4219 ug/L	99
65)	1,3-Dichloropropane	13.99	76	3035134	284.3902 ug/L	93
66)	Tetrachloroethene	14.10	166	2112313	289.6805 ug/L	90
67)	Dibromochloromethane	14.41	129	2168054	315.3397 ug/L	99
68)	1,2-Dibromoethane	14.71	107	1650327	301.9297 ug/L	99
69)	1-Chlorohexane	14.85	91	2920904	286.8330 ug/L	90
70)	Chlorobenzene	15.30	112	5078928	258.8012 ug/L	85
71)	1,1,1,2-Tetrachloroethane	15.35	131	1989897	284.9688 ug/L	97
72)	Ethylbenzene	15.35	106	2784005	271.0260 ug/L	89
73)	m-,p-Xylene	15.46	106	6169523	496.9567 ug/L	82
74)	o-Xylene	16.12	106	3353804	270.8685 ug/L	99
75)	Styrene	16.16	104	5692194	273.2606 ug/L	85
76)	Bromoform	16.71	173	1364903	320.1393 ug/L	96
77)	Isopropylbenzene	16.63	105	8032217	248.6314 ug/L	97
79)	1,1,2,2-Tetrachloroethane	16.88	83	2127089	315.9149 ug/L	100
81)	1,2,3-Trichloropropane	17.11	110	617415	309.2940 ug/L	88
82)	trans-1,4-Dichloro-2-Buten	17.18	53	846450	332.5067 ug/L	93
83)	n-Propylbenzene	17.22	91	9328034	234.0103 ug/L	95
84)	Bromobenzene	17.34	156	2312758	277.6754 ug/L	88
85)	1,3,5-Trimethylbenzene	17.45	105	7210752	258.0855 ug/L	99
86)	2-Chlorotoluene	17.53	91	7014220	260.1890 ug/L	97
87)	4-Chlorotoluene	17.59	91	6424073	249.9594 ug/L	98
88)	a-Methylstyrene	17.92	118	3960625	281.8443 ug/L	93
89)	tert-Butylbenzene	18.00	134	1565290	278.8513 ug/L	79
90)	1,2,4-Trimethylbenzene	18.06	105	7348747	256.3200 ug/L	97
91)	sec-Butylbenzene	18.31	105	8392860	250.9449 ug/L	98
92)	p-Isopropyltoluene	18.51	119	7284847	255.5874 ug/L	97
93)	1,3-Dichlorobenzene	18.70	146	4306096	262.6735 ug/L	90
94)	1,4-Dichlorobenzene	18.85	146	4284929	258.5323 ug/L	90
95)	n-Butylbenzene	19.12	91	7177388	256.7823 ug/L	99
96)	1,2-Dichlorobenzene	19.44	146	4035185	262.1770 ug/L	90
97)	1,2-Dibromo-3-Chloropropan	20.61	75	433780	328.9526 ug/L	84
98)	1,2,4-Trichlorobenzene	21.97	180	2937231	269.9807 ug/L	97
99)	Hexachlorobutadiene	22.15	225	1256182	277.7132 ug/L	99
100)	Naphthalene	22.39	128	6036194	271.4865 ug/L	97
101)	1,2,3-Trichlorobenzene	22.76	180	2707781	268.7993 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M140323.D 8260WTR.M Fri Jul 01 14:22:11 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140323.D Vial: 11
Acq On : 30 Jun 2016 16:53 Operator: TMB
Sample : WG574723-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:22 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

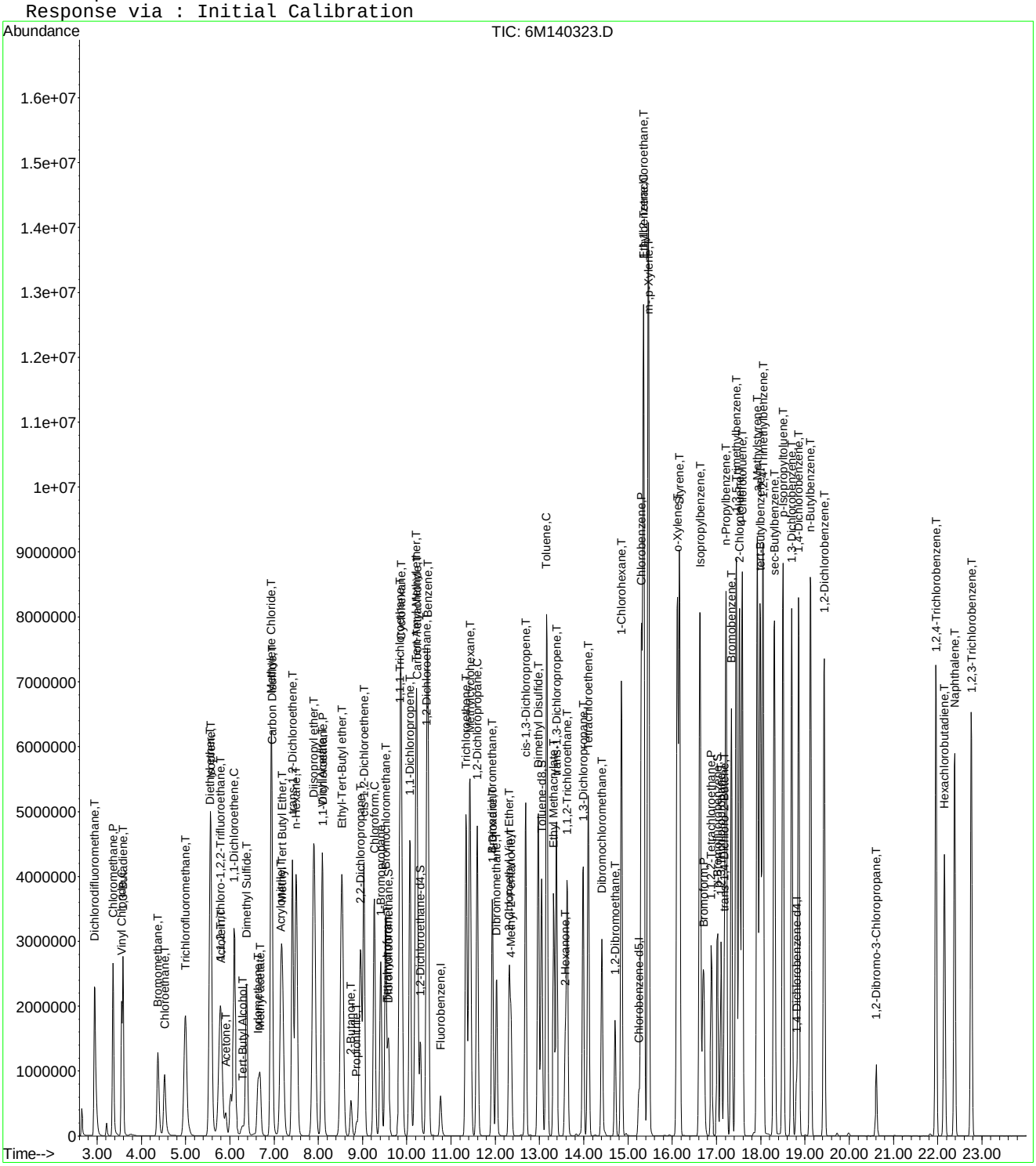

6M140323.D 8260WTR.M Fri Jul 01 14:22:13 2016 Page 3

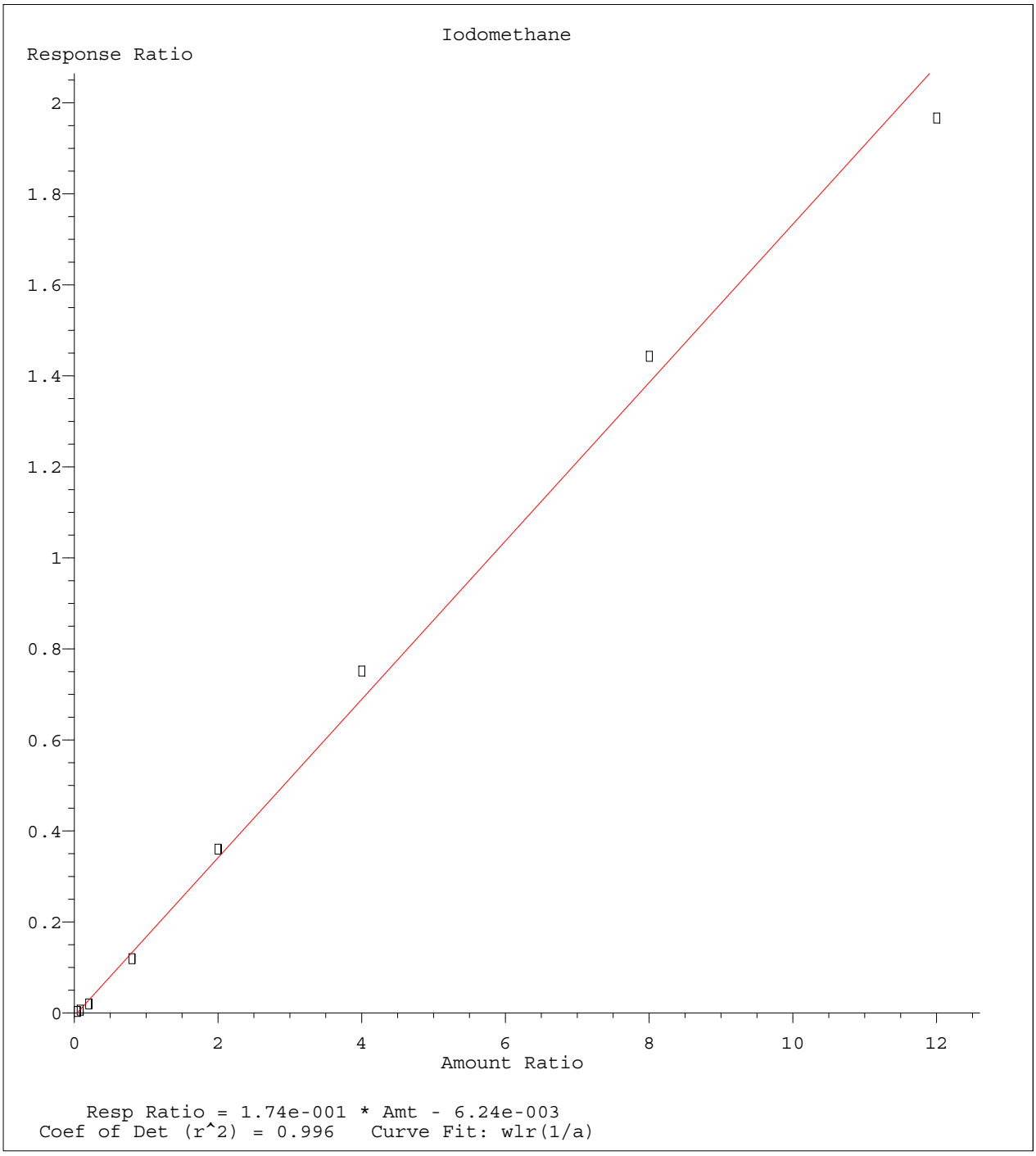

Method Name: K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M
Calibration Table Last Updated: Fri Jul 01 09:28:30 2016

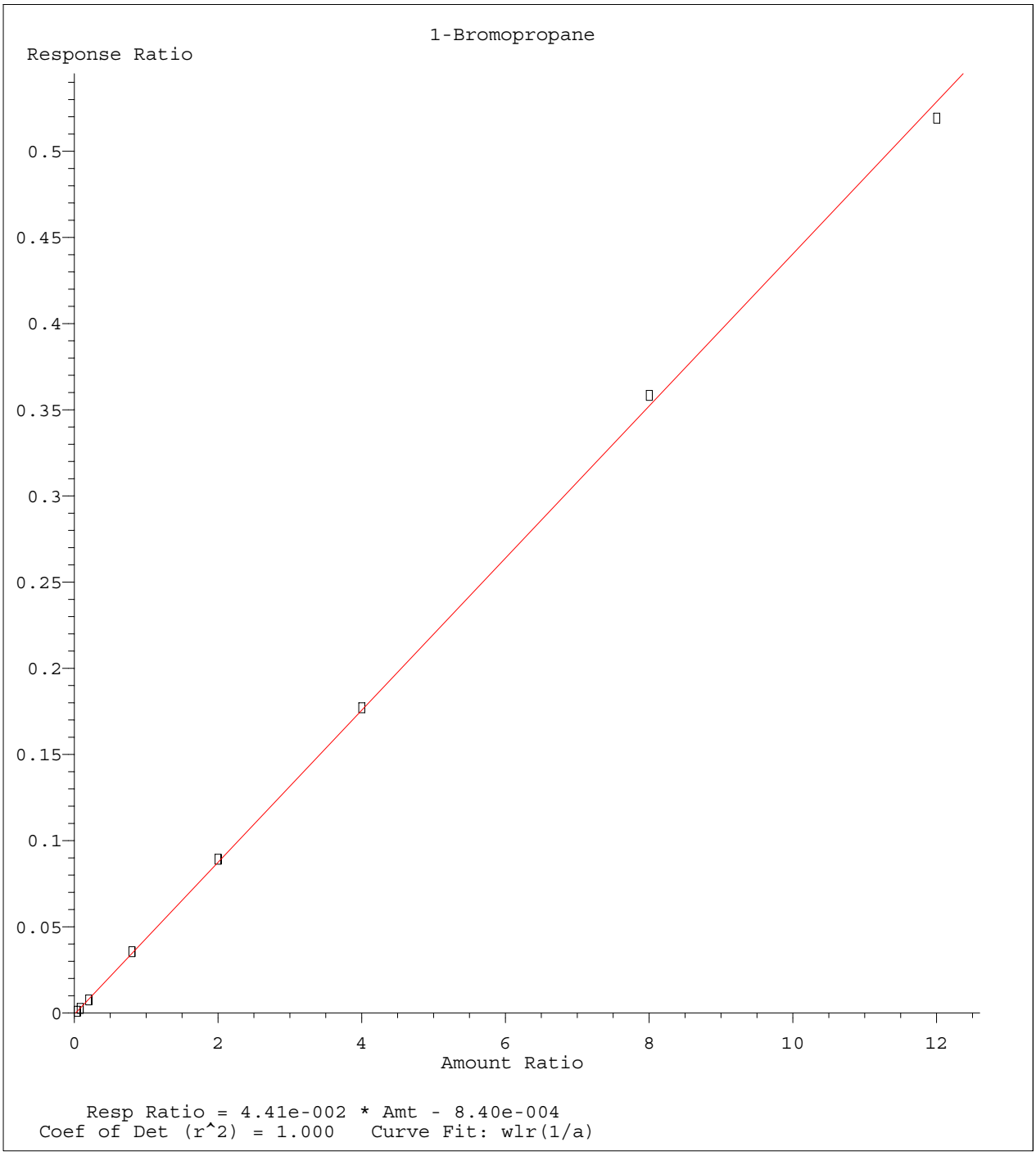

Method Name: K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M
Calibration Table Last Updated: Fri Jul 01 09:28:30 2016

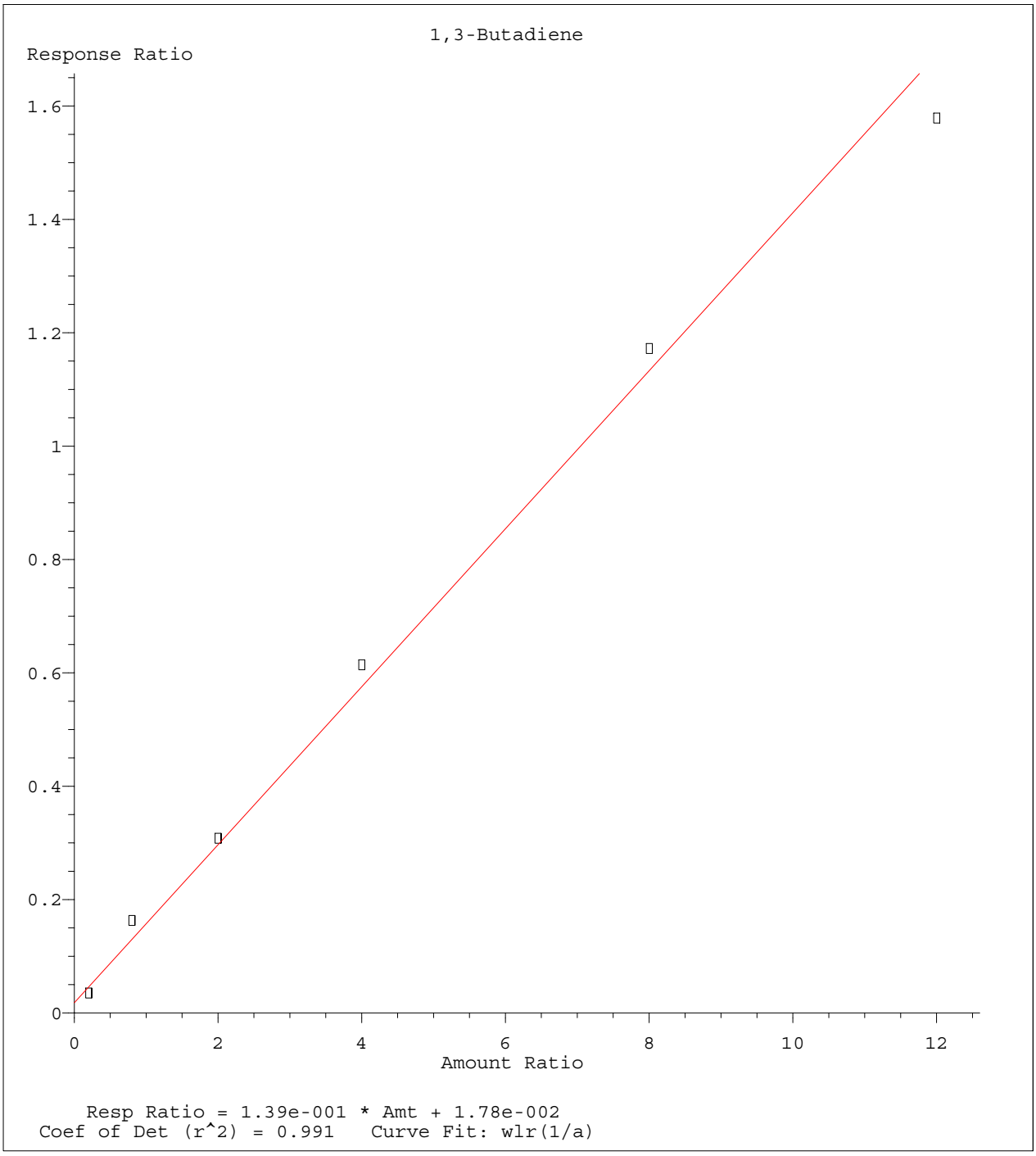

Method Name: K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M
Calibration Table Last Updated: Fri Jul 01 09:28:30 2016

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140326.D Vial: 14
Acq On : 30 Jun 2016 18:31 Operator: TMB
Sample : WG574723-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:22:31 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	713701	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	500221	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	261664	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	181470	25.0619 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.24%		
43) 1,2-Dichloroethane-d4	10.31	65	220889	24.1652 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.68%		
58) Toluene-d8	13.04	98	608395	24.6990 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.80%		
80) p-Bromofluorobenzene	17.02	95	256905	25.0695 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.28%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	485701	40.7108 ug/L	100
3) Chloromethane	3.37	50	521316	39.1377 ug/L	100
4) Vinyl Chloride	3.55	62	337528	46.1434 ug/L	100
5) 1,3-Butadiene	3.60	54	155736	35.9374 ug/L	97
6) Bromomethane	4.37	94	235295	48.4066 ug/L	100
7) Chloroethane	4.52	64	239156	51.7436 ug/L	97
8) Trichlorofluoromethane	4.99	101	525851	47.1350 ug/L	100
9) Diethyl ether	5.56	59	680169	103.3296 ug/L	97
10) Isoprene	5.57	67	555397	55.7803 ug/L	96
11) Acrolein	5.79	56	131596	120.1899 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	5.78	101	356202	51.3167 ug/L	97
13) Acetone	5.91	43	107340	46.9439 ug/L	98
14) 1,1-Dichloroethene	6.11	61	594692	44.1572 ug/L	95
15) Tert-Butyl Alcohol	6.28	59	140341	200.7163 ug/L	98
16) Dimethyl Sulfide	6.38	62	515949	87.8409 ug/L	96
17) Iodomethane	6.64	142	294876	60.2646 ug/L	92
18) Methyl acetate	6.69	43	338698	54.7398 ug/L	99
19) Methylene Chloride	6.93	84	359823	46.5909 ug/L	90
20) Carbon Disulfide	6.95	76	1077126	43.6470 ug/L	100
21) Acrylonitrile	7.15	53	146978	51.7699 ug/L	100
22) Methyl Tert Butyl Ether	7.18	73	1049922	51.2877 ug/L	100
23) trans-1,2-Dichloroethene	7.41	96	339388	47.0532 ug/L	88
24) n-Hexane	7.51	57	547762	44.7466 ug/L	97
25) Diisopropyl ether	7.90	45	3459050	104.9838 ug/L	98
26) Vinyl Acetate	8.09	43	697771	50.7312 ug/L	98
27) 1,1-Dichloroethane	8.10	63	721539	46.4625 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	2578321	97.2697 ug/L	98
29) 2-Butanone	8.73	43	177594	50.7378 ug/L	96
30) Propionitrile	8.85	54	95623	100.6665 ug/L	96
31) 2,2-Dichloropropane	8.96	77	593953	50.6955 ug/L	99
32) cis-1,2-Dichloroethene	9.03	96	392808	49.7512 ug/L	72
33) Chloroform	9.26	83	665890	47.8636 ug/L	100
34) 1-Bromopropane	9.41	122	83509	66.7495 ug/L	100
35) Bromochloromethane	9.52	130	207412	48.8852 ug/L	100
36) Tetrahydrofuran	9.56	42	224799	92.0780 ug/L	95
38) 1,1,1-Trichloroethane	9.85	97	598191	49.3876 ug/L	99
39) Cyclohexane	9.88	56	748359	47.4902 ug/L	96
40) 1,1-Dichloropropene	10.08	75	507584	48.1132 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	2097011	104.1851 ug/L	98
42) Carbon Tetrachloride	10.23	117	511641	51.4451 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140326.D 8260WTR.M Fri Jul 01 14:22:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140326.D Vial: 14
Acq On : 30 Jun 2016 18:31 Operator: TMB
Sample : WG574723-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 01 14:22:31 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	551012	49.3981 ug/L	98
46)	Benzene	10.48	78	1452601	48.7860 ug/L	97
47)	Trichloroethene	11.35	130	359806	48.9712 ug/L	90
48)	Methylcyclohexane	11.43	83	563704	48.8698 ug/L	95
49)	1,2-Dichloropropane	11.59	63	446228	52.0408 ug/L	99
50)	1,4-Dioxane	11.94	88	11529	198.6187 ug/L	84
51)	Bromodichloromethane	11.94	83	530754	51.2992 ug/L	100
52)	Dibromomethane	12.03	93	203238	48.9892 ug/L	100
53)	2-Chloroethyl Vinyl Ether	12.32	63	227435	52.9030 ug/L	100
54)	4-Methyl-2-Pentanone	12.35	58	134103	50.6846 ug/L	98
55)	cis-1,3-Dichloropropene	12.68	75	676117	56.2867 ug/L	100
56)	Dimethyl Disulfide	12.97	79	359470	53.7585 ug/L	98
59)	Toluene	13.15	91	1496307	50.1905 ug/L	99
60)	Ethyl Methacrylate	13.32	69	454272	53.5575 ug/L	96
62)	trans-1,3-Dichloropropene	13.39	75	565632	53.3572 ug/L	96
63)	1,1,2-Trichloroethane	13.63	97	287265	52.0675 ug/L	98
64)	2-Hexanone	13.58	43	260461	49.7214 ug/L	97
65)	1,3-Dichloropropane	13.99	76	552828	53.1662 ug/L	94
66)	Tetrachloroethene	14.10	166	346278	48.7411 ug/L	93
67)	Dibromochloromethane	14.41	129	360309	53.7889 ug/L	99
68)	1,2-Dibromoethane	14.71	107	279233	52.4339 ug/L	100
69)	1-Chlorohexane	14.85	91	508330	51.2350 ug/L	92
70)	Chlorobenzene	15.30	112	974362	50.9593 ug/L	92
71)	1,1,1,2-Tetrachloroethane	15.35	131	357715	52.5791 ug/L	98
72)	Ethylbenzene	15.35	106	517345	51.6928 ug/L	93
73)	m-,p-Xylene	15.46	106	1254856	103.7457 ug/L	95
74)	o-Xylene	16.11	106	643998	53.3844 ug/L	94
75)	Styrene	16.16	104	1074202	52.9288 ug/L	92
76)	Bromoform	16.72	173	205149	49.3874 ug/L	98
77)	Isopropylbenzene	16.62	105	1626117	51.6632 ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.88	83	352344	55.4825 ug/L	100
81)	1,2,3-Trichloropropane	17.10	110	103329	54.8809 ug/L	79
82)	trans-1,4-Dichloro-2-Buten	17.18	53	121642	50.6626 ug/L	96
83)	n-Propylbenzene	17.22	91	2019179	53.7062 ug/L	98
84)	Bromobenzene	17.34	156	398353	50.7084 ug/L	89
85)	1,3,5-Trimethylbenzene	17.44	105	1384872	52.5530 ug/L	97
86)	2-Chlorotoluene	17.52	91	1343673	52.8455 ug/L	96
87)	4-Chlorotoluene	17.58	91	1234147	50.9132 ug/L	97
88)	a-Methylstyrene	17.92	118	769488	58.0567 ug/L	95
89)	tert-Butylbenzene	17.98	134	281622	53.1924 ug/L	73
90)	1,2,4-Trimethylbenzene	18.04	105	1394233	51.5596 ug/L	98
91)	sec-Butylbenzene	18.30	105	1658086	52.5630 ug/L	97
92)	p-Isopropyltoluene	18.50	119	1389218	51.6766 ug/L	98
93)	1,3-Dichlorobenzene	18.70	146	793356	51.3104 ug/L	95
94)	1,4-Dichlorobenzene	18.85	146	809665	51.7942 ug/L	94
95)	n-Butylbenzene	19.12	91	1353617	51.3451 ug/L	96
96)	1,2-Dichlorobenzene	19.43	146	761556	52.4611 ug/L	94
97)	1,2-Dibromo-3-Chloropropan	20.62	75	69221	55.6553 ug/L	83
98)	1,2,4-Trichlorobenzene	21.97	180	527905	51.4464 ug/L	99
99)	Hexachlorobutadiene	22.15	225	224309	52.5770 ug/L	99
100)	Naphthalene	22.38	128	1033625	49.2893 ug/L	100
101)	1,2,3-Trichlorobenzene	22.76	180	485666	51.1160 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M140326.D 8260WTR.M Fri Jul 01 14:22:36 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140326.D Vial: 14
Acq On : 30 Jun 2016 18:31 Operator: TMB
Sample : WG574723-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 1 14:22 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

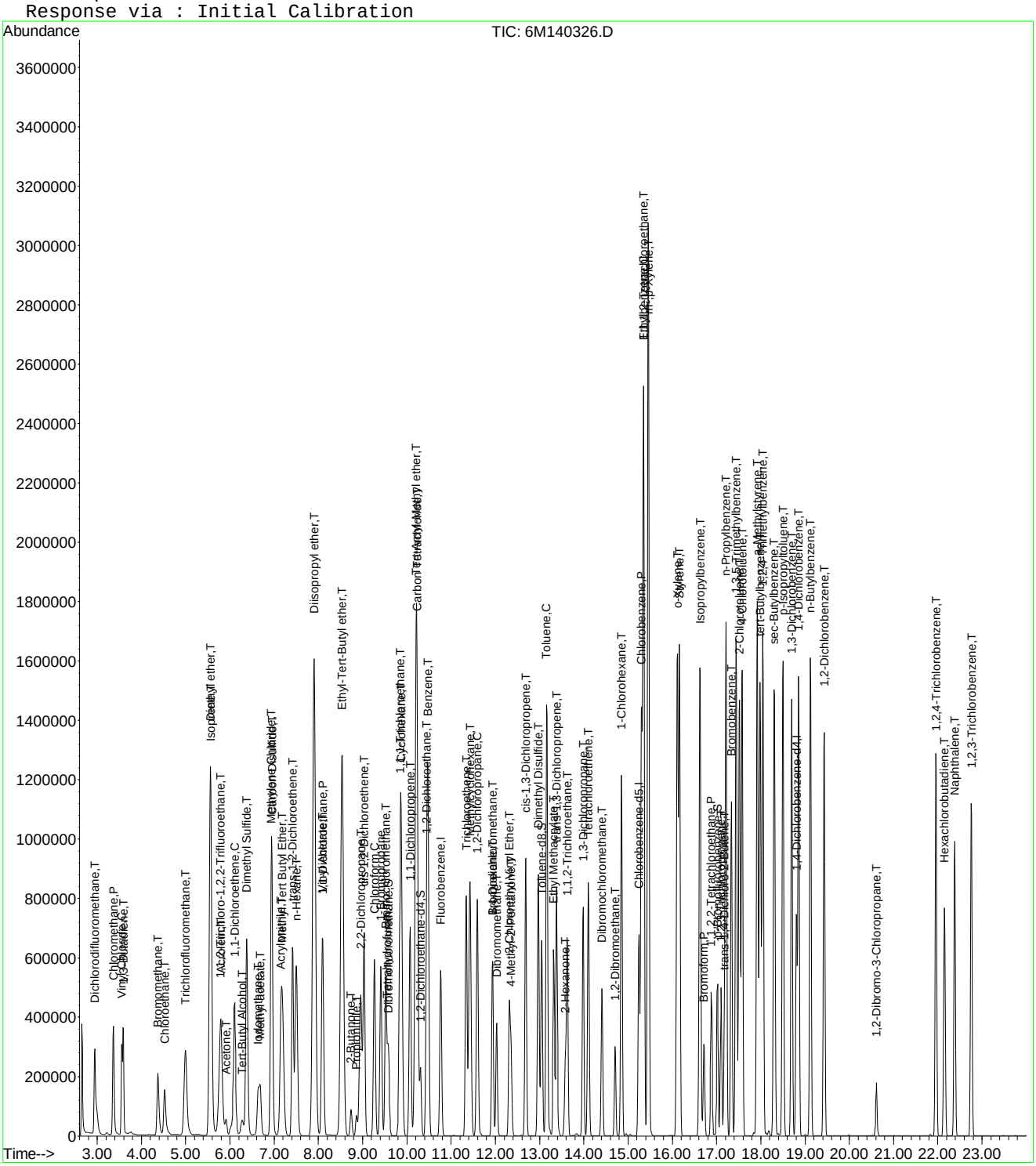

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140326.D Vial: 14
Acq On : 30 Jun 2016 18:31 Operator: TMB
Sample : WG574723-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	107	0.00
2	T	Dichlorodifluoromethane	50.0000	40.7108	18.6	83	0.00
3	P	Chloromethane	50.0000	39.1377	21.7#	85	0.00
4	C	Vinyl Chloride	50.0000	46.1434	7.7	97	0.00
5	T	1,3-Butadiene	50.0000	35.9374	28.1#	76	0.00
6	T	Bromomethane	50.0000	48.4066	3.2	110	0.00
7	T	Chloroethane	50.0000	51.7436	-3.5	111	0.00
8	T	Trichlorofluoromethane	50.0000	47.1350	5.7	106	0.00
9	T	Diethyl ether	100.0000	103.3296	-3.3	108	0.00
10	T	Isoprene	50.0000	55.7803	-11.6	117	0.00
11	T	Acrolein	50.0000	120.1899	-140.4#	262	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	51.3167	-2.6	112	0.00
13	T	Acetone	50.0000	46.9439	6.1	101	0.00
14	C	1,1-Dichloroethene	50.0000	44.1572	11.7	95	0.00
15	T	Tert-Butyl Alcohol	200.0000	200.7163	-0.4	109	-0.01
16	T	Dimethyl Sulfide	50.0000	87.8409	-75.7#	187	0.00
17	T	Iodomethane	50.0000	60.2646	-20.5#	123	0.00
18	T	Methyl acetate	50.0000	54.7398	-9.5	119	0.00
19	T	Methylene Chloride	50.0000	46.5909	6.8	104	0.00
20	T	Carbon Disulfide	50.0000	43.6470	12.7	93	0.00
21	T	Acrylonitrile	50.0000	51.7698	-3.5	108	0.00
22	T	Methyl Tert Butyl Ether	50.0000	51.2877	-2.6	110	0.00
23	T	trans-1,2-Dichloroethene	50.0000	47.0532	5.9	102	0.00
24	T	n-Hexane	50.0000	44.7466	10.5	97	0.00
25	T	Diisopropyl ether	100.0000	104.9838	-5.0	113	0.00
26	T	Vinyl Acetate	50.0000	50.7312	-1.5	108	0.00
27	P	1,1-Dichloroethane	50.0000	46.4625	7.1	100	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	97.2697	2.7	104	0.00
29	T	2-Butanone	50.0000	50.7378	-1.5	106	0.00
30	T	Propionitrile	100.0000	100.6665	-0.7	106	0.00
31	T	2,2-Dichloropropane	50.0000	50.6955	-1.4	111	0.00
32	T	cis-1,2-Dichloroethene	50.0000	49.7512	0.5	107	0.00
33	C	Chloroform	50.0000	47.8636	4.3	105	0.00
34		1-Bromopropane	50.0000	66.7495	-33.5#	141	0.00
35	T	Bromochloromethane	50.0000	48.8852	2.2	102	0.00
36	T	Tetrahydrofuran	100.0000	92.0780	7.9	104	0.00
37	S	Dibromofluoromethane	25.0000	25.0619	-0.2	106	0.00
38	T	1,1,1-Trichloroethane	50.0000	49.3876	1.2	104	0.00
39	T	Cyclohexane	50.0000	47.4902	5.0	103	0.00
40	T	1,1-Dichloropropene	50.0000	48.1132	3.8	104	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	104.1851	-4.2	111	0.00
42	T	Carbon Tetrachloride	50.0000	51.4451	-2.9	102	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.1652	3.3	104	0.00
44		Heptane	-1.0000	0.0000	0.0	111	0.00
45	T	1,2-Dichloroethane	50.0000	49.3981	1.2	105	0.00
46	T	Benzene	50.0000	48.7860	2.4	105	0.00
47	T	Trichloroethene	50.0000	48.9712	2.1	105	0.00
48	T	Methylcyclohexane	50.0000	48.8698	2.3	106	0.00
49	C	1,2-Dichloropropane	50.0000	52.0408	-4.1	111	0.00
50	T	1,4-Dioxane	200.0000	198.6187	0.7	102	0.00
51	T	Bromodichloromethane	50.0000	51.2992	-2.6	106	0.00
52	T	Dibromomethane	50.0000	48.9892	2.0	101	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	52.9030	-5.8	106	0.00
54	T	4-Methyl-2-Pentanone	50.0000	50.6846	-1.4	106	0.00

(#) = Out of Range

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140326.D Vial: 14
Acq On : 30 Jun 2016 18:31 Operator: TMB
Sample : WG574723-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	56.2867	-12.6	117	0.00
56	T	Dimethyl Disulfide	50.0000	53.7585	-7.5	112	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	105	0.00
58	S	Toluene-d8	25.0000	24.6990	1.2	104	0.00
59	C	Toluene	50.0000	50.1905	-0.4	107	0.00
60	T	Ethyl Methacrylate	50.0000	53.5575	-7.1	108	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	107	0.00
62	T	trans-1,3-Dichloropropene	50.0000	53.3572	-6.7	108	0.00
63	T	1,1,2-Trichloroethane	50.0000	52.0675	-4.1	108	0.00
64	T	2-Hexanone	50.0000	49.7214	0.6	101	0.00
65	T	1,3-Dichloropropane	50.0000	53.1662	-6.3	112	0.00
66	T	Tetrachloroethene	50.0000	48.7411	2.5	103	0.00
67	T	Dibromochloromethane	50.0000	53.7889	-7.6	105	0.00
68	T	1,2-Dibromoethane	50.0000	52.4339	-4.9	107	0.00
69	T	1-Chlorohexane	50.0000	51.2350	-2.5	106	0.00
70	P	Chlorobenzene	50.0000	50.9593	-1.9	108	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	52.5791	-5.2	106	0.00
72	C	Ethylbenzene	50.0000	51.6928	-3.4	107	0.00
73	T	m-,p-Xylene	100.0000	103.7457	-3.7	108	0.00
74	T	o-Xylene	50.0000	53.3844	-6.8	109	0.00
75	T	Styrene	50.0000	52.9288	-5.9	106	0.00
76	P	Bromoform	50.0000	49.3873	1.2	98	0.00
77	T	Isopropylbenzene	50.0000	51.6632	-3.3	107	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	99	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	55.4825	-11.0	108	0.00
80	S	p-Bromofluorobenzene	25.0000	25.0695	-0.3	100	0.00
81	T	1,2,3-Trichloropropane	50.0000	54.8809	-9.8	105	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	50.6626	-1.3	94	0.00
83	T	n-Propylbenzene	50.0000	53.7062	-7.4	107	0.00
84	T	Bromobenzene	50.0000	50.7084	-1.4	102	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	52.5530	-5.1	104	-0.01
86	T	2-Chlorotoluene	50.0000	52.8455	-5.7	105	0.00
87	T	4-Chlorotoluene	50.0000	50.9132	-1.8	105	0.00
88	T	a-Methylstyrene	50.0000	58.0567	-16.1	111	0.00
89	T	tert-Butylbenzene	50.0000	53.1924	-6.4	106	-0.01
90	T	1,2,4-Trimethylbenzene	50.0000	51.5596	-3.1	101	-0.01
91	T	sec-Butylbenzene	50.0000	52.5630	-5.1	104	-0.01
92	T	p-Isopropyltoluene	50.0000	51.6766	-3.4	101	0.00
93	T	1,3-Dichlorobenzene	50.0000	51.3104	-2.6	103	0.00
94	T	1,4-Dichlorobenzene	50.0000	51.7942	-3.6	105	0.00
95	T	n-Butylbenzene	50.0000	51.3451	-2.7	100	0.00
96	T	1,2-Dichlorobenzene	50.0000	52.4611	-4.9	105	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	55.6553	-11.3	107	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	51.4464	-2.9	102	0.00
99	T	Hexachlorobutadiene	50.0000	52.5770	-5.2	105	0.00
100	T	Naphthalene	50.0000	49.2893	1.4	92	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	51.1160	-2.2	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140326.D 8260WTR.M Fri Jul 01 14:37:39 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070816\6M140510.D Vial: 2
Acq On : 8 Jul 2016 14:33 Operator: TMB
Sample : WG575663-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 08 17:03:40 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	773147	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	570941	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	322831	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	204069	26.0160 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.08%		
43) 1,2-Dichloroethane-d4	10.32	65	240996	24.3378 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.36%		
58) Toluene-d8	13.04	98	692750	24.6400 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.56%		
80) p-Bromofluorobenzene	17.02	95	301494	23.8462 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.40%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	770372	59.6068 ug/L	99
3) Chloromethane	3.36	50	700003	48.5119 ug/L	99
4) Vinyl Chloride	3.57	62	452968	57.1638 ug/L	100
5) 1,3-Butadiene	3.60	54	305260	67.6072 ug/L	96
6) Bromomethane	4.38	94	208181	39.5355 ug/L	100
7) Chloroethane	4.54	64	262741	52.4756 ug/L	91
8) Trichlorofluoromethane	5.01	101	808323	66.8836 ug/L	100
9) Diethyl ether	5.55	59	667883	93.6618 ug/L	95
10) Isoprene	5.57	67	553120	51.2804 ug/L	93
11) Acrolein	5.79	56	50279	42.3902 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	422989	56.2530 ug/L	97
13) Acetone	5.89	43	114818	46.3534 ug/L	97
14) 1,1-Dichloroethene	6.11	61	783215	53.6840 ug/L	93
15) Tert-Butyl Alcohol	6.25	59	125694	165.9460 ug/L	95
16) Dimethyl Sulfide	6.38	62	301279	47.3493 ug/L	91
17) Iodomethane	6.64	142	264020	49.9652 ug/L	90
18) Methyl acetate	6.68	43	317699	47.3981 ug/L	97
19) Methylene Chloride	6.94	84	415495	49.6629 ug/L	88
20) Carbon Disulfide	6.96	76	1358422	50.8132 ug/L	100
21) Acrylonitrile	7.15	53	142034	46.1818 ug/L	98
22) Methyl Tert Butyl Ether	7.18	73	1027442	46.3306 ug/L	99
23) trans-1,2-Dichloroethene	7.42	96	408867	52.3273 ug/L	89
24) n-Hexane	7.51	57	707895	53.3815 ug/L	95
25) Diisopropyl ether	7.90	45	3537772	99.1173 ug/L	98
26) Vinyl Acetate	8.09	43	807593	54.2012 ug/L	97
27) 1,1-Dichloroethane	8.10	63	858958	51.0586 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	2694157	93.8248 ug/L	98
29) 2-Butanone	8.73	43	171823	45.3146 ug/L	94
30) Propionitrile	8.86	54	92132	89.5339 ug/L	97
31) 2,2-Dichloropropane	8.96	77	714921	56.3287 ug/L	98
32) cis-1,2-Dichloroethene	9.03	96	444155	51.9293 ug/L	71
33) Chloroform	9.26	83	778807	51.6757 ug/L	99
34) 1-Bromopropane	9.42	122	70242	51.9346 ug/L	99
35) Bromochloromethane	9.52	130	241819	52.6124 ug/L	100
36) Tetrahydrofuran	9.55	42	215022	81.3015 ug/L	93
38) 1,1,1-Trichloroethane	9.86	97	721596	54.9954 ug/L	99
39) Cyclohexane	9.88	56	845573	49.5335 ug/L	95
40) 1,1-Dichloropropene	10.08	75	594847	52.0494 ug/L	95
41) Tert-Amyl-Methyl ether	10.21	73	1990807	91.3037 ug/L	97
42) Carbon Tetrachloride	10.23	117	657218	61.0018 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140510.D 8260WTR.M Fri Jul 08 17:03:44 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070816\6M140510.D Vial: 2
Acq On : 8 Jul 2016 14:33 Operator: TMB
Sample : WG575663-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 08 17:03:40 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	613904	50.8047 ug/L	98
46)	Benzene	10.48	78	1618649	50.1829 ug/L	95
47)	Trichloroethene	11.34	130	400893	50.3681 ug/L	88
48)	Methylcyclohexane	11.43	83	631459	50.5346 ug/L	94
49)	1,2-Dichloropropane	11.59	63	463234	49.8703 ug/L	95
50)	1,4-Dioxane	11.93	88	11571	184.0151 ug/L	91
51)	Bromodichloromethane	11.93	83	598231	53.3753 ug/L	99
52)	Dibromomethane	12.02	93	231422	51.4937 ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.31	63	205339	44.0909 ug/L	99
54)	4-Methyl-2-Pentanone	12.35	58	120394	42.0046 ug/L	98
55)	cis-1,3-Dichloropropene	12.69	75	669154	51.4238 ug/L	98
56)	Dimethyl Disulfide	12.96	79	342028	47.2172 ug/L	99
59)	Toluene	13.16	91	1665801	48.9547 ug/L	100
60)	Ethyl Methacrylate	13.32	69	421360	43.5239 ug/L	92
62)	trans-1,3-Dichloropropene	13.39	75	602605	49.8038 ug/L	95
63)	1,1,2-Trichloroethane	13.62	97	298687	47.4320 ug/L	99
64)	2-Hexanone	13.58	43	243428	40.7138 ug/L	94
65)	1,3-Dichloropropane	13.98	76	537808	45.3152 ug/L	90
66)	Tetrachloroethene	14.10	166	414619	51.1317 ug/L	92
67)	Dibromochloromethane	14.41	129	401069	52.4575 ug/L	99
68)	1,2-Dibromoethane	14.71	107	288555	47.4727 ug/L	99
69)	1-Chlorohexane	14.85	91	554059	48.9269 ug/L	90
70)	Chlorobenzene	15.30	112	1075430	49.2783 ug/L	92
71)	1,1,1,2-Tetrachloroethane	15.35	131	409599	52.7479 ug/L	97
72)	Ethylbenzene	15.35	106	582308	50.9769 ug/L	95
73)	m-,p-Xylene	15.45	106	1396057	101.1230 ug/L	94
74)	o-Xylene	16.11	106	695221	50.4921 ug/L	93
75)	Styrene	16.16	104	1184880	51.1507 ug/L	92
76)	Bromoform	16.71	173	236465	49.8751 ug/L	98
77)	Isopropylbenzene	16.62	105	1820330	50.6699 ug/L	99
79)	1,1,2,2-Tetrachloroethane	16.88	83	364272	46.4926 ug/L	99
81)	1,2,3-Trichloropropane	17.11	110	105090	45.2407 ug/L	92
82)	trans-1,4-Dichloro-2-Buten	17.18	53	139738	47.1723 ug/L	98
83)	n-Propylbenzene	17.22	91	2275716	49.0610 ug/L	98
84)	Bromobenzene	17.34	156	461277	47.5929 ug/L	91
85)	1,3,5-Trimethylbenzene	17.44	105	1598480	49.1659 ug/L	97
86)	2-Chlorotoluene	17.52	91	1415997	45.1383 ug/L	97
87)	4-Chlorotoluene	17.58	91	1495699	50.0123 ug/L	96
88)	a-Methylstyrene	17.92	118	778163	47.5871 ug/L	100
89)	tert-Butylbenzene	17.99	134	322632	49.3923 ug/L	71
90)	1,2,4-Trimethylbenzene	18.05	105	1653238	49.5539 ug/L	98
91)	sec-Butylbenzene	18.30	105	1933646	49.6843 ug/L	98
92)	p-Isopropyltoluene	18.50	119	1673420	50.4542 ug/L	98
93)	1,3-Dichlorobenzene	18.70	146	926818	48.5848 ug/L	95
94)	1,4-Dichlorobenzene	18.85	146	923117	47.8632 ug/L	95
95)	n-Butylbenzene	19.12	91	1656779	50.9374 ug/L	97
96)	1,2-Dichlorobenzene	19.42	146	853074	47.6312 ug/L	95
97)	1,2-Dibromo-3-Chloropropan	20.61	75	72560	47.2862 ug/L	87
98)	1,2,4-Trichlorobenzene	21.96	180	614705	48.5551 ug/L	99
99)	Hexachlorobutadiene	22.15	225	264523	50.2552 ug/L	99
100)	Naphthalene	22.38	128	1188841	45.9497 ug/L	100
101)	1,2,3-Trichlorobenzene	22.75	180	557592	47.5669 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140510.D 8260WTR.M Fri Jul 08 17:03:45 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070816\6M140510.D Vial: 2
Acq On : 8 Jul 2016 14:33 Operator: TMB
Sample : WG575663-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 8 17:03 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

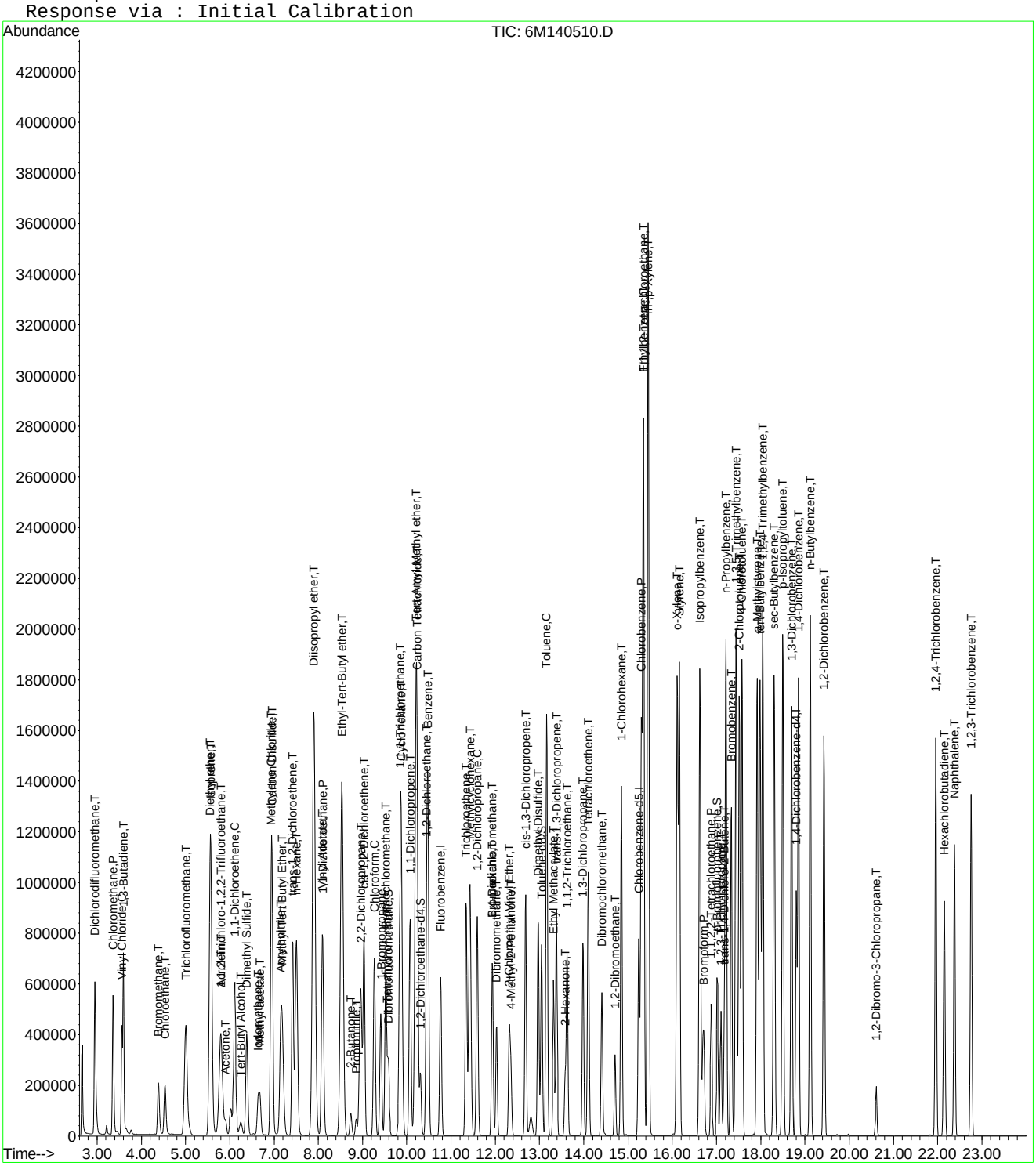

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070816\6M140510.D Vial: 2
Acq On : 8 Jul 2016 14:33 Operator: TMB
Sample : WG575663-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	116	0.00
2	T	Dichlorodifluoromethane	0.4179	0.4982	-19.2	132	0.01
3	P	Chloromethane	0.4666	0.4527	3.0	114	0.00
4	C	Vinyl Chloride	0.2562	0.2929	-14.3	131	0.01
5	T	1,3-Butadiene	0.1608	0.1974	-22.8#	149	0.01
6	T	Bromomethane	0.1703	0.1346	20.9#	97	0.01
7	T	Chloroethane	0.1619	0.1699	-5.0	122	0.01
8	T	Trichlorofluoromethane	0.3908	0.5228	-33.8#	163	0.01
9	T	Diethyl ether	0.2306	0.2160	6.3	106	0.00
10	T	Isoprene	0.3488	0.3577	-2.6	116	0.00
11	T	Acrolein	0.0384	0.0325	15.2	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2431	0.2736	-12.5	133	0.01
13	T	Acetone	0.0801	0.0742	7.3	108	-0.01
14	C	1,1-Dichloroethene	0.4718	0.5065	-7.4	126	0.01
15	T	Tert-Butyl Alcohol	0.0245	0.0203	17.0	97	-0.04
16	T	Dimethyl Sulfide	0.2057	0.1948	5.3	109	0.00
17	T	Iodomethane	0.1391	0.1707	-22.7#	110	0.00
18	T	Methyl acetate	0.2167	0.2055	5.2	111	-0.01
19	T	Methylene Chloride	0.2705	0.2687	0.7	120	0.00
20	T	Carbon Disulfide	0.8644	0.8785	-1.6	118	0.00
21	T	Acrylonitrile	0.0994	0.0919	7.6	105	0.00
22	T	Methyl Tert Butyl Ether	0.7171	0.6644	7.3	108	0.00
23	T	trans-1,2-Dichloroethene	0.2527	0.2644	-4.7	123	0.00
24	T	n-Hexane	0.4288	0.4578	-6.8	125	0.01
25	T	Diisopropyl ether	1.1541	1.1440	0.9	115	0.00
26	T	Vinyl Acetate	0.4818	0.5223	-8.4	125	0.00
27	P	1,1-Dichloroethane	0.5440	0.5555	-2.1	119	0.00
28	T	Ethyl-Tert-Butyl ether	0.9285	0.8712	6.2	109	0.00
29	T	2-Butanone	0.1226	0.1111	9.4	103	0.00
30	T	Propionitrile	0.0333	0.0298	10.5	102	0.00
31	T	2,2-Dichloropropane	0.4104	0.4623	-12.7	134	0.01
32	T	cis-1,2-Dichloroethene	0.2766	0.2872	-3.9	121	0.00
33	C	Chloroform	0.4873	0.5037	-3.4	123	0.00
34		1-Bromopropane	0.0394	0.0454	-15.2	118	0.01
35	T	Bromochloromethane	0.1486	0.1564	-5.2	119	0.00
36	T	Tetrahydrofuran	0.0855	0.0695	18.7	99	-0.01
37	S	Dibromofluoromethane	0.2536	0.2640	-4.1	119	0.00
38	T	1,1,1-Trichloroethane	0.4243	0.4667	-10.0	126	0.01
39	T	Cyclohexane	0.5520	0.5468	0.9	117	0.00
40	T	1,1-Dichloropropene	0.3695	0.3847	-4.1	122	0.01
41	T	Tert-Amyl-Methyl ether	0.7050	0.6437	8.7	106	0.00
42	T	Carbon Tetrachloride	0.3484	0.4250	-22.0#	131	0.00
43	S	1,2-Dichloroethane-d4	0.3202	0.3117	2.6	114	0.01
44		Heptane	0.0000	0.0000	0.0	108	0.00
45	T	1,2-Dichloroethane	0.3907	0.3970	-1.6	117	0.00
46	T	Benzene	1.0430	1.0468	-0.4	118	0.00
47	T	Trichloroethene	0.2574	0.2593	-0.7	118	0.00
48	T	Methylcyclohexane	0.4041	0.4084	-1.1	119	0.00
49	C	1,2-Dichloropropane	0.3004	0.2996	0.3	115	0.00
50	T	1,4-Dioxane	0.0020	0.0019	7.9	102	-0.01
51	T	Bromodichloromethane	0.3624	0.3869	-6.7	120	0.00
52	T	Dibromomethane	0.1453	0.1497	-3.0	115	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1506	0.1328	11.8	96	0.00
54	T	4-Methyl-2-Pentanone	0.0927	0.0779	16.0	95	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070816\6M140510.D Vial: 2
Acq On : 8 Jul 2016 14:33 Operator: TMB
Sample : WG575663-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4208	0.4328	-2.8	116	0.00
56	T	Dimethyl Disulfide	0.2342	0.2212	5.6	106	-0.01
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	120	0.00
58	S	Toluene-d8	1.2311	1.2133	1.4	118	0.00
59	C	Toluene	1.4900	1.4588	2.1	119	0.00
60	T	Ethyl Methacrylate	0.4239	0.3690	13.0	100	0.00
61		Paraldehyde	0.0000	0.0000	0.0	121	0.00
62	T	trans-1,3-Dichloropropene	0.5298	0.5277	0.4	115	0.00
63	T	1,1,2-Trichloroethane	0.2757	0.2616	5.1	112	0.00
64	T	2-Hexanone	0.2618	0.2132	18.6	95	0.00
65	T	1,3-Dichloropropane	0.5197	0.4710	9.4	109	-0.01
66	T	Tetrachloroethene	0.3551	0.3631	-2.3	123	0.00
67	T	Dibromochloromethane	0.3348	0.3512	-4.9	117	0.00
68	T	1,2-Dibromoethane	0.2662	0.2527	5.1	110	0.00
69	T	1-Chlorohexane	0.4959	0.4852	2.1	116	0.00
70	P	Chlorobenzene	0.9556	0.9418	1.4	119	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3400	0.3587	-5.5	121	0.00
72	C	Ethylbenzene	0.5002	0.5100	-2.0	120	0.00
73	T	m-,p-Xylene	0.6045	0.6113	-1.1	120	-0.01
74	T	o-Xylene	0.6029	0.6088	-1.0	118	-0.01
75	T	Styrene	1.0143	1.0377	-2.3	117	0.00
76	P	Bromoform	0.2076	0.2071	0.3	112	0.00
77	T	Isopropylbenzene	1.5731	1.5942	-1.3	119	-0.01
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	122	-0.01
79	P	1,1,2,2-Tetrachloroethane	0.6068	0.5642	7.0	112	0.00
80	S	p-Bromofluorobenzene	0.9791	0.9339	4.6	117	-0.01
81	T	1,2,3-Trichloropropane	0.1799	0.1628	9.5	106	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.2294	0.2164	5.7	108	0.00
83	T	n-Propylbenzene	3.5921	3.5246	1.9	121	0.00
84	T	Bromobenzene	0.7506	0.7144	4.8	118	0.00
85	T	1,3,5-Trimethylbenzene	2.5177	2.4757	1.7	120	-0.01
86	T	2-Chlorotoluene	2.4293	2.1931	9.7	111	-0.01
87	T	4-Chlorotoluene	2.3160	2.3165	-0.0	128	-0.01
88	T	a-Methylstyrene	1.2663	1.2052	4.8	113	0.00
89	T	tert-Butylbenzene	0.5058	0.4997	1.2	121	-0.01
90	T	1,2,4-Trimethylbenzene	2.5836	2.5605	0.9	120	-0.01
91	T	sec-Butylbenzene	3.0139	2.9948	0.6	121	-0.01
92	T	p-Isopropyltoluene	2.5685	2.5918	-0.9	122	-0.01
93	T	1,3-Dichlorobenzene	1.4773	1.4354	2.8	121	0.00
94	T	1,4-Dichlorobenzene	1.4935	1.4297	4.3	120	0.00
95	T	n-Butylbenzene	2.5188	2.5660	-1.9	123	0.00
96	T	1,2-Dichlorobenzene	1.3869	1.3212	4.7	117	-0.01
97	T	1,2-Dibromo-3-Chloropropane	0.1188	0.1124	5.4	113	0.00
98	T	1,2,4-Trichlorobenzene	0.9804	0.9520	2.9	119	-0.01
99	T	Hexachlorobutadiene	0.4076	0.4097	-0.5	124	0.00
100	T	Naphthalene	2.0036	1.8413	8.1	106	-0.01
101	T	1,2,3-Trichlorobenzene	0.9078	0.8636	4.9	116	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140510.D 8260WTR.M Fri Jul 08 17:04:35 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070816\6M140510.D Vial: 2
Acq On : 8 Jul 2016 14:33 Operator: TMB
Sample : WG575663-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	116	0.00
2	T	Dichlorodifluoromethane	50.0000	59.6068	-19.2	132	0.01
3	P	Chloromethane	50.0000	48.5119	3.0	114	0.00
4	C	Vinyl Chloride	50.0000	57.1638	-14.3	131	0.01
5	T	1,3-Butadiene	50.0000	67.6072	-35.2#	149	0.01
6	T	Bromomethane	50.0000	39.5355	20.9#	97	0.01
7	T	Chloroethane	50.0000	52.4756	-5.0	122	0.01
8	T	Trichlorofluoromethane	50.0000	66.8836	-33.8#	163	0.01
9	T	Diethyl ether	100.0000	93.6618	6.3	106	0.00
10	T	Isoprene	50.0000	51.2804	-2.6	116	0.00
11	T	Acrolein	50.0000	42.3903	15.2	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	56.2530	-12.5	133	0.01
13	T	Acetone	50.0000	46.3534	7.3	108	-0.01
14	C	1,1-Dichloroethene	50.0000	53.6840	-7.4	126	0.01
15	T	Tert-Butyl Alcohol	200.0000	165.9460	17.0	97	-0.04
16	T	Dimethyl Sulfide	50.0000	47.3493	5.3	109	0.00
17	T	Iodomethane	50.0000	49.9652	0.1	110	0.00
18	T	Methyl acetate	50.0000	47.3981	5.2	111	-0.01
19	T	Methylene Chloride	50.0000	49.6629	0.7	120	0.00
20	T	Carbon Disulfide	50.0000	50.8132	-1.6	118	0.00
21	T	Acrylonitrile	50.0000	46.1818	7.6	105	0.00
22	T	Methyl Tert Butyl Ether	50.0000	46.3306	7.3	108	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.3274	-4.7	123	0.00
24	T	n-Hexane	50.0000	53.3815	-6.8	125	0.01
25	T	Diisopropyl ether	100.0000	99.1173	0.9	115	0.00
26	T	Vinyl Acetate	50.0000	54.2012	-8.4	125	0.00
27	P	1,1-Dichloroethane	50.0000	51.0586	-2.1	119	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	93.8248	6.2	109	0.00
29	T	2-Butanone	50.0000	45.3147	9.4	103	0.00
30	T	Propionitrile	100.0000	89.5339	10.5	102	0.00
31	T	2,2-Dichloropropane	50.0000	56.3287	-12.7	134	0.01
32	T	cis-1,2-Dichloroethene	50.0000	51.9293	-3.9	121	0.00
33	C	Chloroform	50.0000	51.6757	-3.4	123	0.00
34		1-Bromopropane	50.0000	51.9346	-3.9	118	0.01
35	T	Bromochloromethane	50.0000	52.6124	-5.2	119	0.00
36	T	Tetrahydrofuran	100.0000	81.3015	18.7	99	-0.01
37	S	Dibromofluoromethane	25.0000	26.0160	-4.1	119	0.00
38	T	1,1,1-Trichloroethane	50.0000	54.9954	-10.0	126	0.01
39	T	Cyclohexane	50.0000	49.5335	0.9	117	0.00
40	T	1,1-Dichloropropene	50.0000	52.0495	-4.1	122	0.01
41	T	Tert-Amyl-Methyl ether	100.0000	91.3037	8.7	106	0.00
42	T	Carbon Tetrachloride	50.0000	61.0018	-22.0#	131	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.3378	2.6	114	0.01
44		Heptane	-1.0000	0.0000	0.0	108	0.00
45	T	1,2-Dichloroethane	50.0000	50.8047	-1.6	117	0.00
46	T	Benzene	50.0000	50.1829	-0.4	118	0.00
47	T	Trichloroethene	50.0000	50.3681	-0.7	118	0.00
48	T	Methylcyclohexane	50.0000	50.5346	-1.1	119	0.00
49	C	1,2-Dichloropropane	50.0000	49.8703	0.3	115	0.00
50	T	1,4-Dioxane	200.0000	184.0151	8.0	102	-0.01
51	T	Bromodichloromethane	50.0000	53.3753	-6.8	120	0.00
52	T	Dibromomethane	50.0000	51.4937	-3.0	115	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	44.0909	11.8	96	0.00
54	T	4-Methyl-2-Pentanone	50.0000	42.0046	16.0	95	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070816\6M140510.D Vial: 2
Acq On : 8 Jul 2016 14:33 Operator: TMB
Sample : WG575663-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76892 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	51.4238	-2.8	116	0.00
56	T	Dimethyl Disulfide	50.0000	47.2173	5.6	106	-0.01
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	120	0.00
58	S	Toluene-d8	25.0000	24.6400	1.4	118	0.00
59	C	Toluene	50.0000	48.9547	2.1	119	0.00
60	T	Ethyl Methacrylate	50.0000	43.5239	13.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	121	0.00
62	T	trans-1,3-Dichloropropene	50.0000	49.8038	0.4	115	0.00
63	T	1,1,2-Trichloroethane	50.0000	47.4320	5.1	112	0.00
64	T	2-Hexanone	50.0000	40.7138	18.6	95	0.00
65	T	1,3-Dichloropropane	50.0000	45.3152	9.4	109	-0.01
66	T	Tetrachloroethene	50.0000	51.1317	-2.3	123	0.00
67	T	Dibromochloromethane	50.0000	52.4575	-4.9	117	0.00
68	T	1,2-Dibromoethane	50.0000	47.4727	5.1	110	0.00
69	T	1-Chlorohexane	50.0000	48.9269	2.1	116	0.00
70	P	Chlorobenzene	50.0000	49.2784	1.4	119	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	52.7479	-5.5	121	0.00
72	C	Ethylbenzene	50.0000	50.9769	-2.0	120	0.00
73	T	m-,p-Xylene	100.0000	101.1230	-1.1	120	-0.01
74	T	o-Xylene	50.0000	50.4921	-1.0	118	-0.01
75	T	Styrene	50.0000	51.1507	-2.3	117	0.00
76	P	Bromoform	50.0000	49.8751	0.2	112	0.00
77	T	Isopropylbenzene	50.0000	50.6700	-1.3	119	-0.01
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	122	-0.01
79	P	1,1,2,2-Tetrachloroethane	50.0000	46.4926	7.0	112	0.00
80	S	p-Bromofluorobenzene	25.0000	23.8462	4.6	117	-0.01
81	T	1,2,3-Trichloropropane	50.0000	45.2407	9.5	106	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	47.1723	5.7	108	0.00
83	T	n-Propylbenzene	50.0000	49.0610	1.9	121	0.00
84	T	Bromobenzene	50.0000	47.5929	4.8	118	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	49.1659	1.7	120	-0.01
86	T	2-Chlorotoluene	50.0000	45.1383	9.7	111	-0.01
87	T	4-Chlorotoluene	50.0000	50.0123	-0.0	128	-0.01
88	T	a-Methylstyrene	50.0000	47.5871	4.8	113	0.00
89	T	tert-Butylbenzene	50.0000	49.3923	1.2	121	-0.01
90	T	1,2,4-Trimethylbenzene	50.0000	49.5539	0.9	120	-0.01
91	T	sec-Butylbenzene	50.0000	49.6843	0.6	121	-0.01
92	T	p-Isopropyltoluene	50.0000	50.4542	-0.9	122	-0.01
93	T	1,3-Dichlorobenzene	50.0000	48.5848	2.8	121	0.00
94	T	1,4-Dichlorobenzene	50.0000	47.8632	4.3	120	0.00
95	T	n-Butylbenzene	50.0000	50.9374	-1.9	123	0.00
96	T	1,2-Dichlorobenzene	50.0000	47.6312	4.7	117	-0.01
97	T	1,2-Dibromo-3-Chloropropane	50.0000	47.2862	5.4	113	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	48.5551	2.9	119	-0.01
99	T	Hexachlorobutadiene	50.0000	50.2552	-0.5	124	0.00
100	T	Naphthalene	50.0000	45.9497	8.1	106	-0.01
101	T	1,2,3-Trichlorobenzene	50.0000	47.5669	4.9	116	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140510.D 8260WTR.M Fri Jul 08 17:04:39 2016 Page 2

2.1.1.5 Raw QC Data

BFB

Data File : C:\MSDCHEM\1\DATA\042416\6M138750.D Vial: 1
Acq On : 24 Apr 2016 16:33 Operator: JDS
Sample : WG566155-01 50ng BFB 826-A9 Inst : HPMS6
Misc : 1,1 STD75485 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title : SOP: OVL MSV01

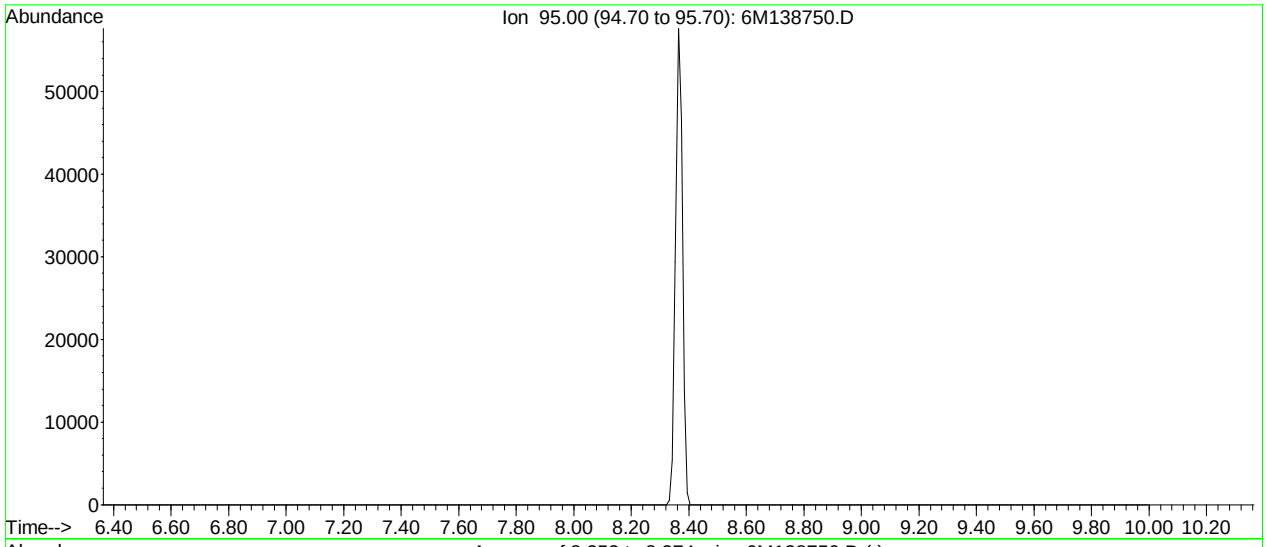

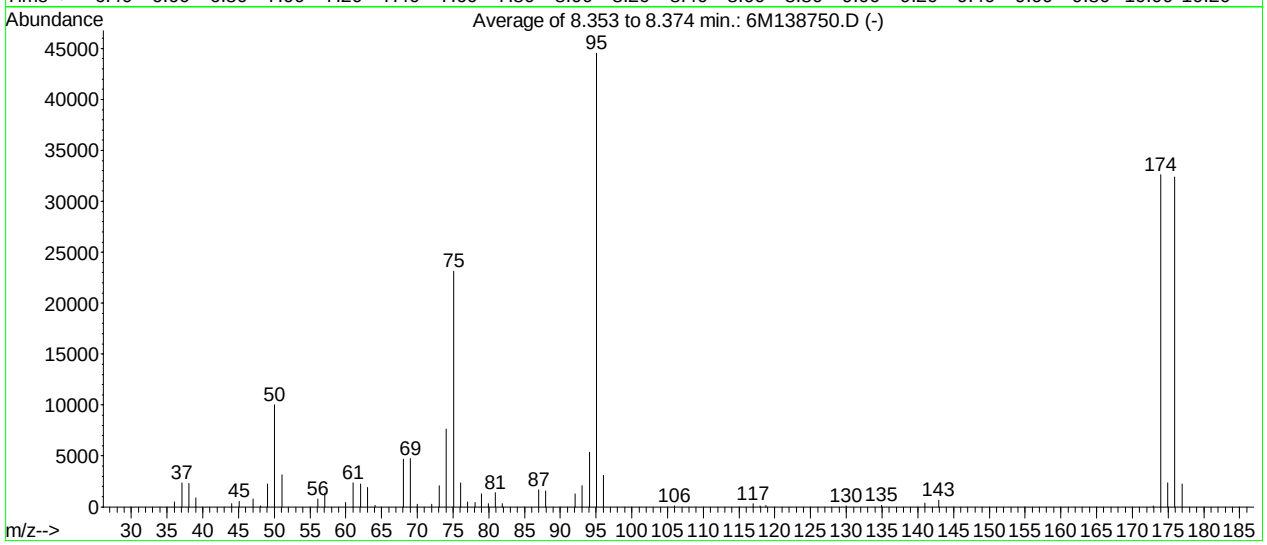

AutoFind: Scans 320, 321, 322; Background Corrected with Scan 315

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.5	10010	PASS
75	95	30	60	52.0	23152	PASS
95	95	100	100	100.0	44552	PASS
96	95	5	9	6.9	3085	PASS
173	174	0.00	2	0.3	113	PASS
174	95	50	100	73.2	32632	PASS
175	174	5	9	7.2	2336	PASS
176	174	95	101	99.2	32384	PASS
177	176	5	9	7.0	2251	PASS

6M138750.D BFB.M Mon Apr 25 09:21:54 2016

BFB

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\063016\6M140313.D Vial: 1
Acq On : 30 Jun 2016 11:36 Operator: TMB
Sample : WG574723-01 50ng BFB STD 8260 Inst : HPMS6
Misc : 1,1 STD76496 Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6

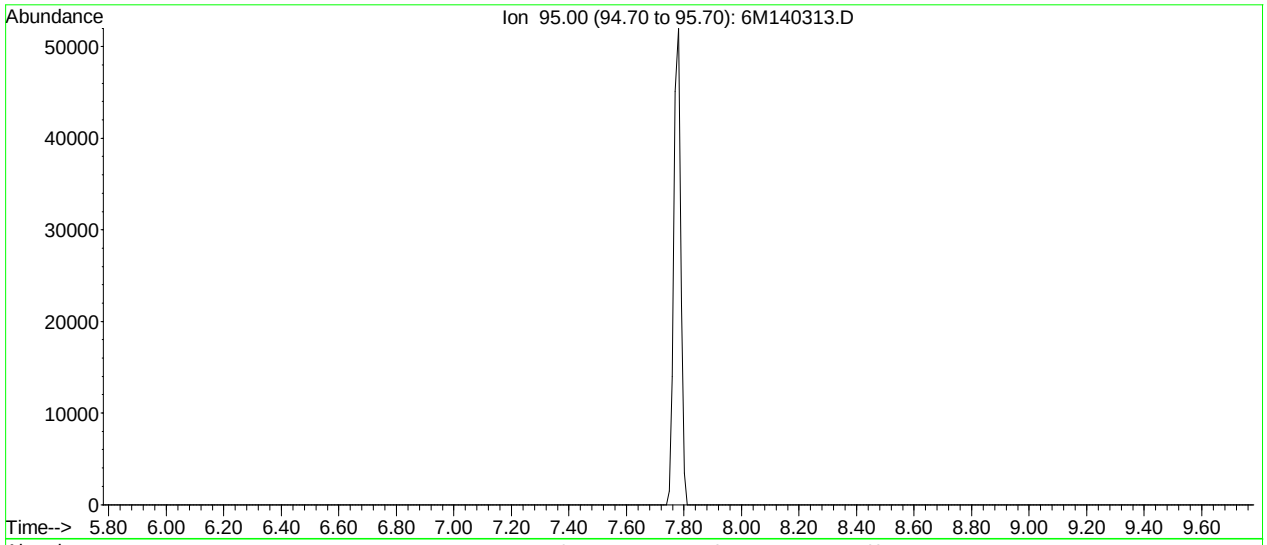

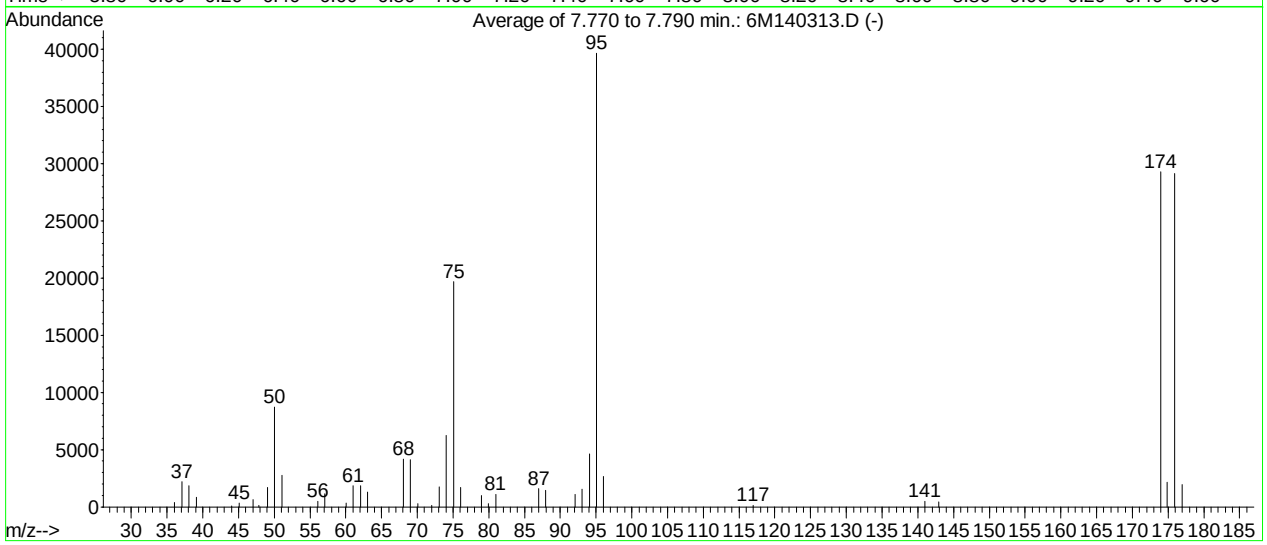

AutoFind: Scans 263, 264, 265; Background Corrected with Scan 258

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.0	8707	PASS
75	95	30	60	49.7	19699	PASS
95	95	100	100	100.0	39664	PASS
96	95	5	9	6.7	2652	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	73.8	29282	PASS
175	174	5	9	7.3	2131	PASS
176	174	95	101	99.6	29157	PASS
177	176	5	9	6.8	1969	PASS

6M140313.D 8260WTR.M Fri Jul 01 14:33:49 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070816\6M140509.D Vial: 1
Acq On    :  8 Jul 2016  14:07                        Operator: TMB
Sample    : WG575663-01 50ng BFB STD 8260             Inst    : HPMS6
Misc      : 1,1 STD77013                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title     : 8260B/624_WATER SOP:MSV01  06-30-16 - HPMS6
```

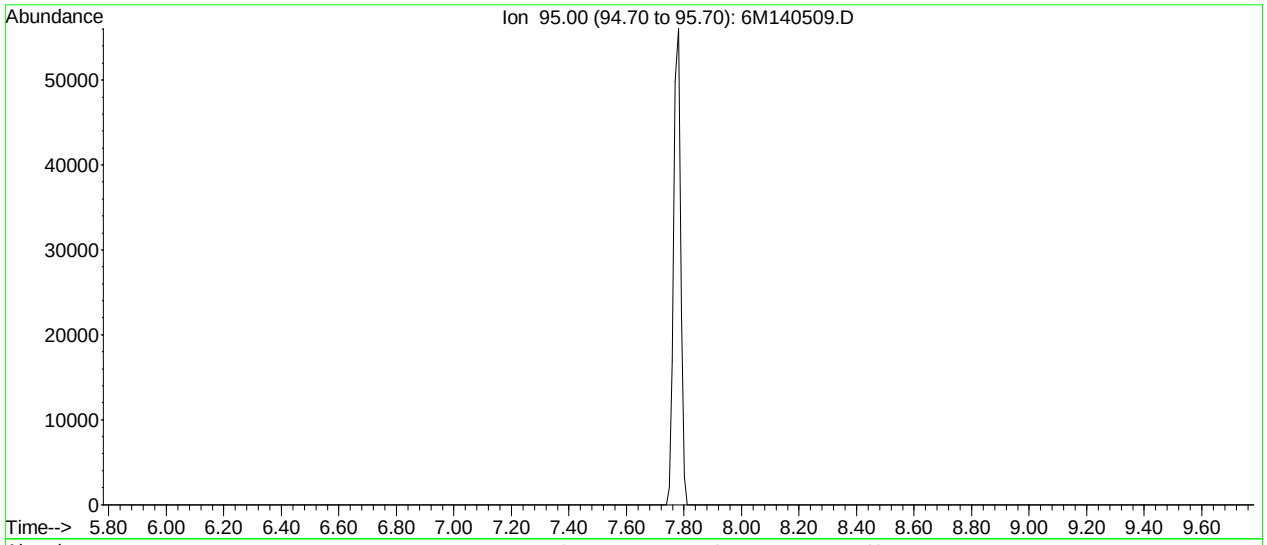

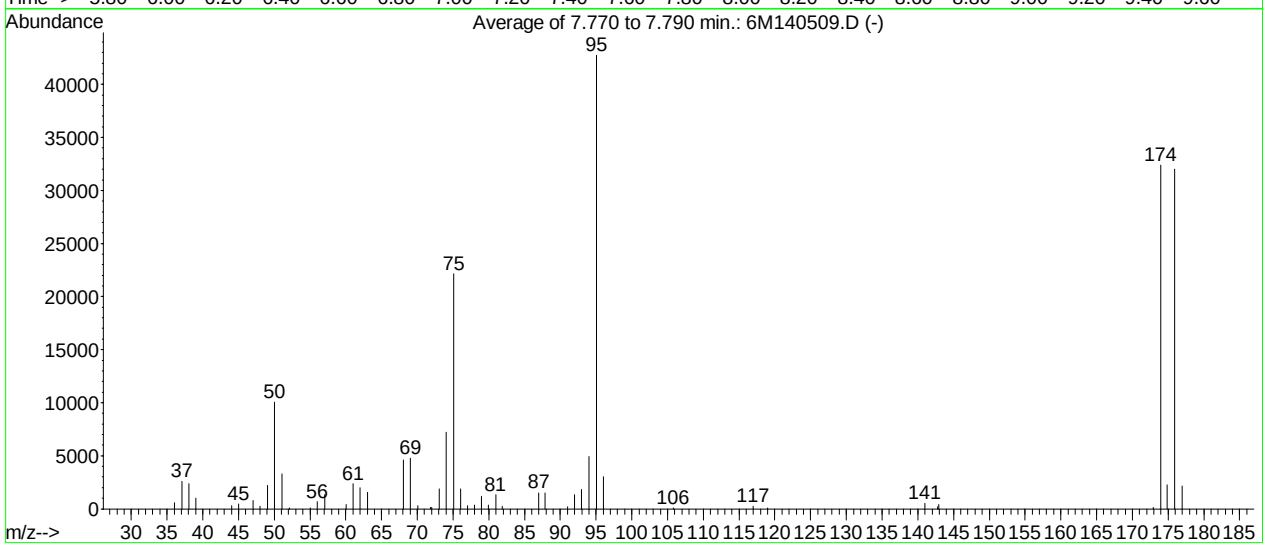

AutoFind: Scans 263, 264, 265; Background Corrected with Scan 258

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	23.5	10048	PASS
75	95	30	60	51.9	22171	PASS
95	95	100	100	100.0	42754	PASS
96	95	5	9	7.0	3011	PASS
173	174	0.00	2	0.4	140	PASS
174	95	50	100	75.7	32386	PASS
175	174	5	9	7.0	2270	PASS
176	174	95	101	98.9	32032	PASS
177	176	5	9	6.7	2162	PASS

6M140509.D 8260WTR.M Fri Jul 08 17:03:05 2016

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070816\6M140512.D Vial: 4
Acq On : 8 Jul 2016 15:38 Operator: TMB
Sample : WG575666-01 VBLK0708 BLANK STD 8260 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 11 08:40:30 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	711313	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	521746	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	272771	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	189175	26.2137 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.84%		
43) 1,2-Dichloroethane-d4	10.31	65	234808	25.7742 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.08%		
58) Toluene-d8	13.04	98	626601	24.3887 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.56%		
80) p-Bromofluorobenzene	17.02	95	262750	24.5958 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.40%		

Target Compounds					Qvalue
3) Chloromethane	3.37	50	1868	0.1407 ug/L	84
13) Acetone	5.89	43	1187	0.5209 ug/L #	48
29) 2-Butanone	8.99	43	4339	1.2438 ug/L #	57
36) Tetrahydrofuran	9.57	42	2490	1.0233 ug/L #	49

(#) = qualifier out of range (m) = manual integration
6M140512.D 8260WTR.M Mon Jul 11 08:40:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070816\6M140512.D Vial: 4
Acq On : 8 Jul 2016 15:38 Operator: TMB
Sample : WG575666-01 VBLK0708 BLANK STD 8260 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 11 8:40 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

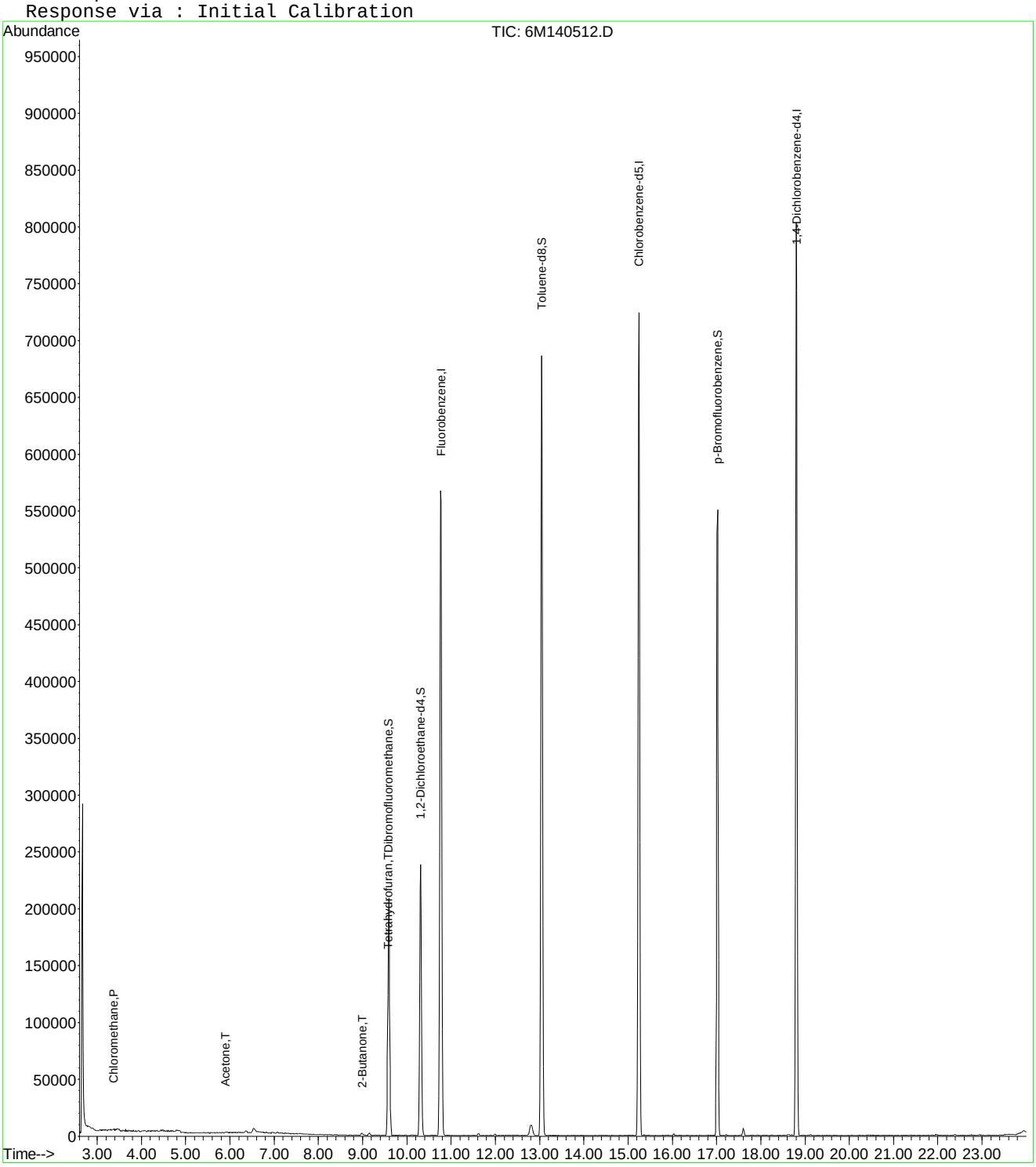

6M140512.D 8260WTR.M Mon Jul 11 08:40:33 2016 Page 2

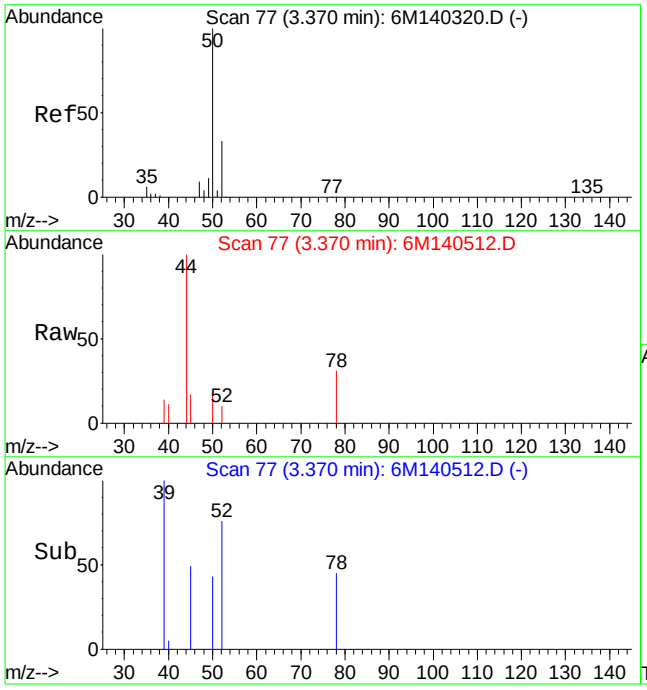

#3
Chloromethane
Concen: 0.14 ug/L
RT: 3.37 min Scan# 77
Delta R.T. 0.01 min
Lab File: 6M140512.D
Acq: 8 Jul 2016 15:38

Tgt Ion: 50 Resp: 1868

Ion	Ratio	Lower	Upper
50	100		
52	42.2	19.8	46.2

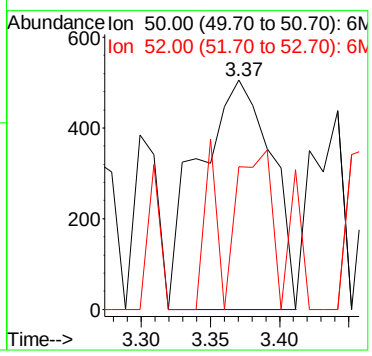

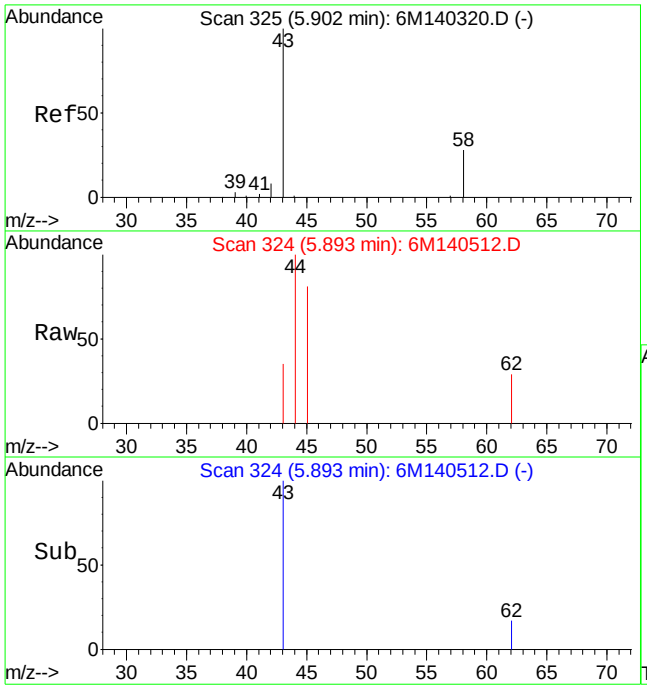

#13
Acetone
Concen: 0.52 ug/L
RT: 5.89 min Scan# 324
Delta R.T. -0.01 min
Lab File: 6M140512.D
Acq: 8 Jul 2016 15:38

Tgt Ion: 43 Resp: 1187

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

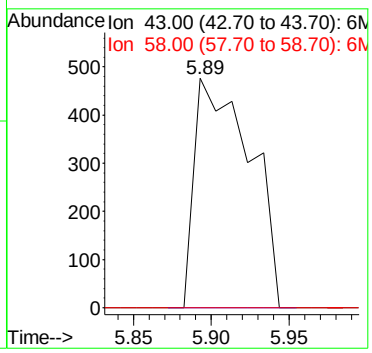

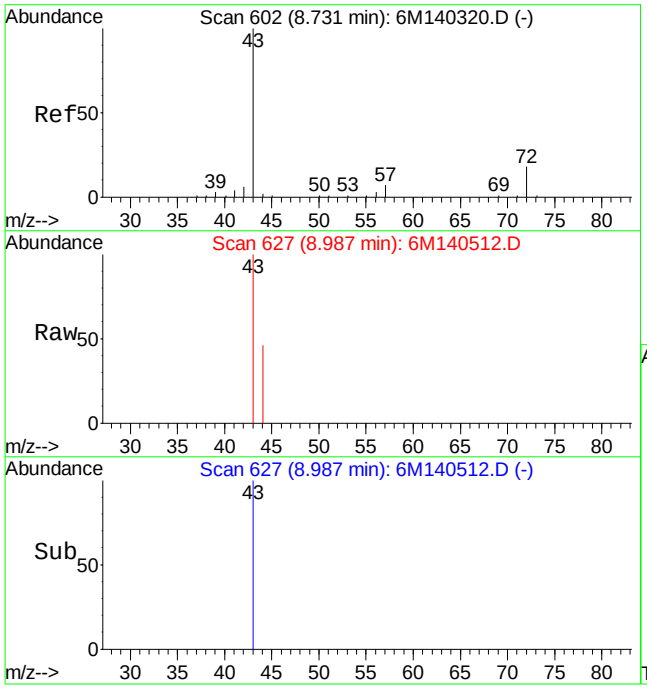

#29
2-Butanone
Concen: 1.24 ug/L
RT: 8.99 min Scan# 627
Delta R.T. 0.25 min
Lab File: 6M140512.D
Acq: 8 Jul 2016 15:38

Tgt Ion: 43 Resp: 4339

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.9	27.9#

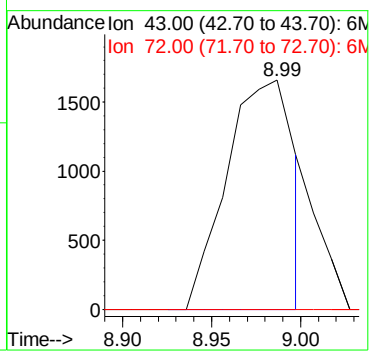

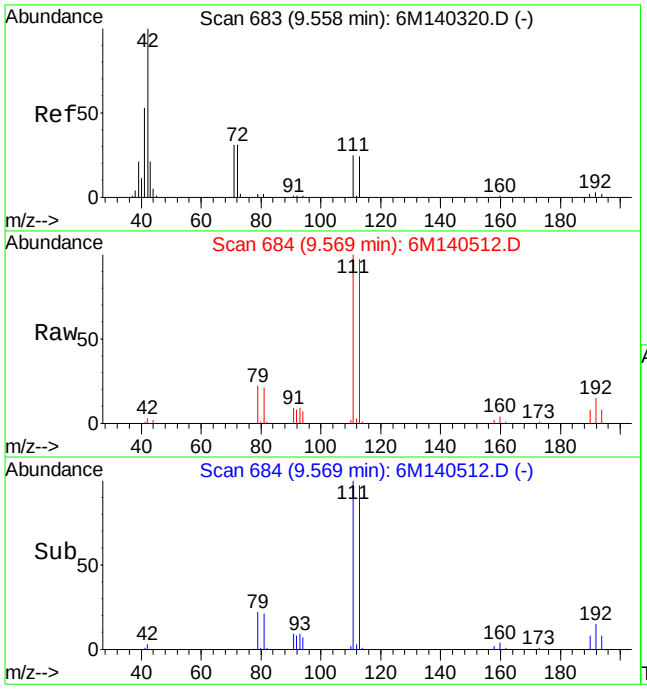

#36
Tetrahydrofuran
Concen: 1.02 ug/L
RT: 9.57 min Scan# 684
Delta R.T. 0.01 min
Lab File: 6M140512.D
Acq: 8 Jul 2016 15:38

Tgt Ion: 42 Resp: 2490

Ion	Ratio	Lower	Upper
42	100		
72	9.5	20.8	48.4#
71	0.0	19.9	46.5#

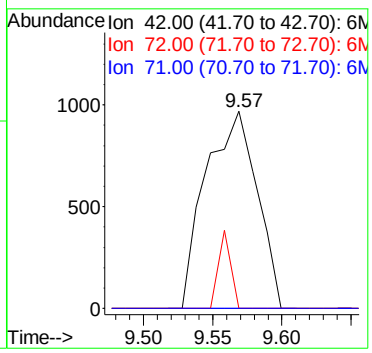

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070816\6M140533.D Vial: 25
Acq On : 9 Jul 2016 2:53 Operator: TMB
Sample : WG575666-04 VBLK0708 BLANK STD 624 Inst : HPMS6
Misc : 2,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 11 08:43:02 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.77	96	635698	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	479157	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	254778	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	171143	26.5359 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.16%		
43) 1,2-Dichloroethane-d4	10.31	65	211466	25.9731 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.88%		
58) Toluene-d8	13.04	98	568287	24.0850 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.32%		
80) p-Bromofluorobenzene	17.02	95	237949	23.8473 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.40%		
Target Compounds					Qvalue
13) Acetone	5.90	43	436	0.2141 ug/L #	48
36) Tetrahydrofuran	9.56	42	2511	1.1547 ug/L #	55
60) Ethyl Methacrylate	13.07	69	1194	0.1470 ug/L #	7
70) Chlorobenzene	15.30	112	4501	0.2458 ug/L	76

(#) = qualifier out of range (m) = manual integration
6M140533.D 8260WTR.M Mon Jul 11 08:43:06 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070816\6M140533.D Vial: 25
Acq On : 9 Jul 2016 2:53 Operator: TMB
Sample : WG575666-04 VBLK0708 BLANK STD 624 Inst : HPMS6
Misc : 2,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 11 8:42 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

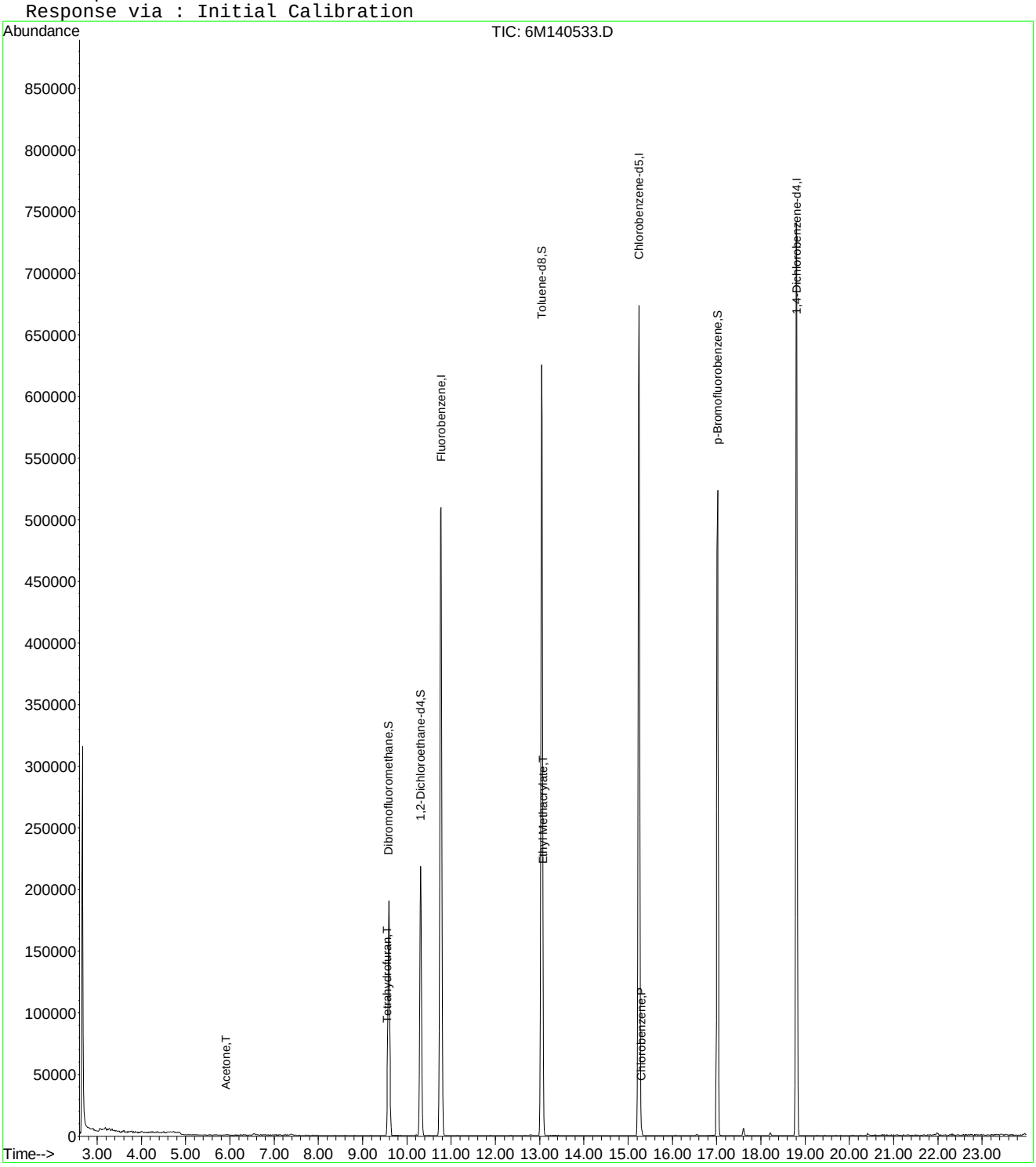

6M140533.D 8260WTR.M Mon Jul 11 08:43:06 2016 Page 2

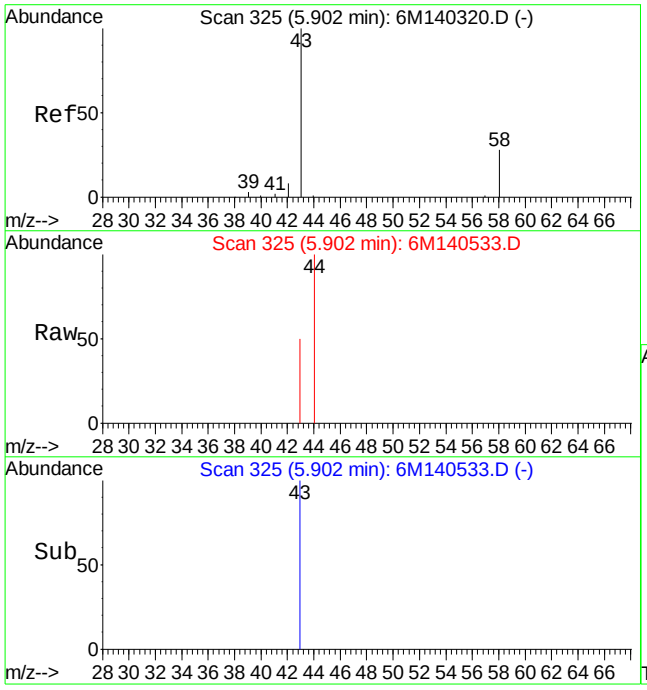

#13
Acetone
Concen: 0.21 ug/L
RT: 5.90 min Scan# 325
Delta R.T. -0.00 min
Lab File: 6M140533.D
Acq: 9 Jul 2016 2:53

Tgt Ion: 43 Resp: 436

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

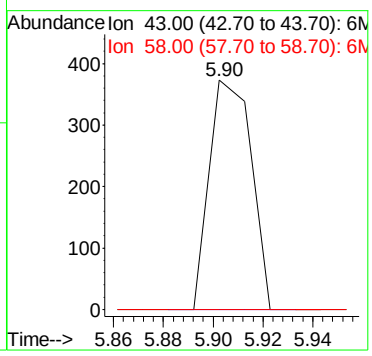

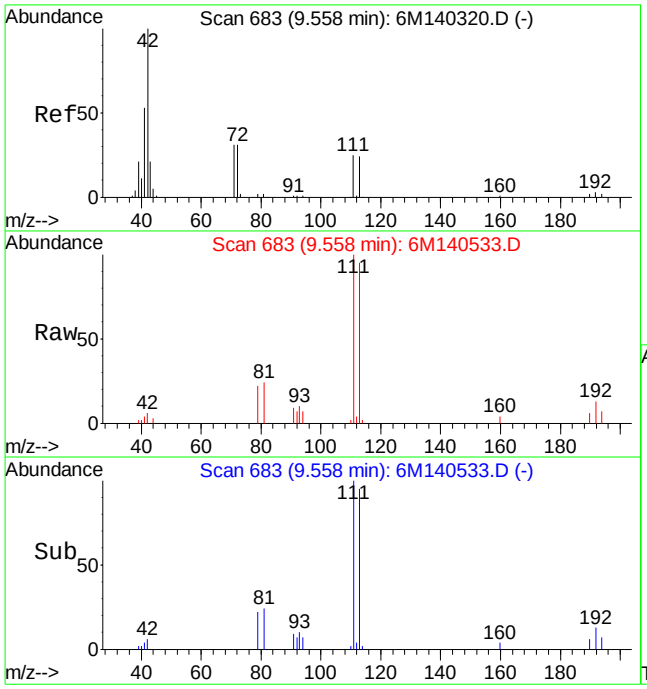

#36
Tetrahydrofuran
Concen: 1.15 ug/L
RT: 9.56 min Scan# 683
Delta R.T. -0.00 min
Lab File: 6M140533.D
Acq: 9 Jul 2016 2:53

Tgt Ion: 42 Resp: 2511

Ion	Ratio	Lower	Upper
42	100		
72	15.7	20.8	48.4#
71	0.0	19.9	46.5#

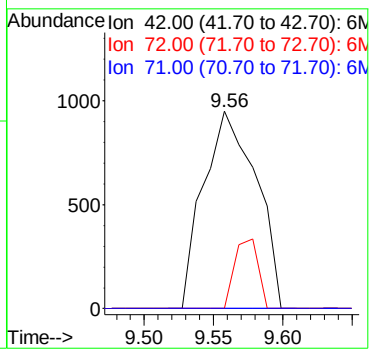

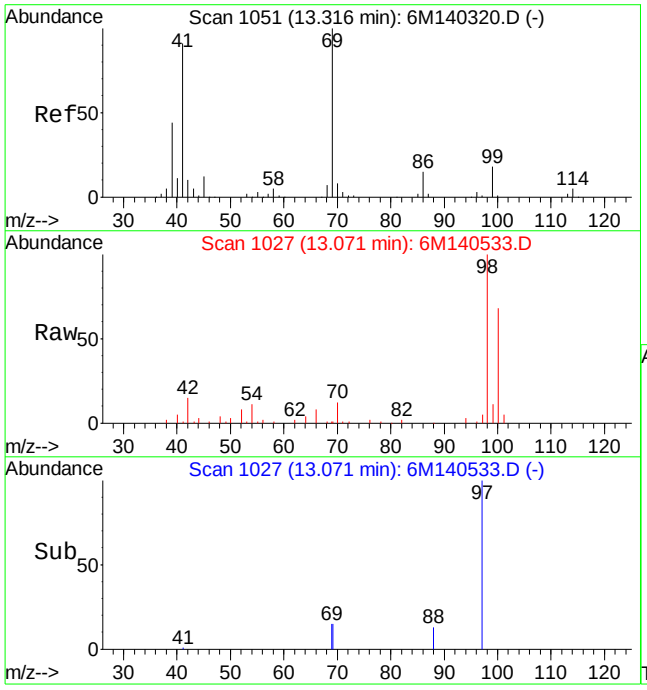

#60
Ethyl Methacrylate
Concen: 0.15 ug/L
RT: 13.07 min Scan# 1027
Delta R.T. -0.25 min
Lab File: 6M140533.D
Acq: 9 Jul 2016 2:53

Tgt Ion: 69 Resp: 1194

Ion	Ratio	Lower	Upper
69	100		
41	0.0	51.4	120.0#

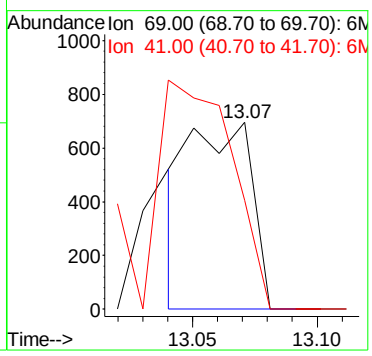

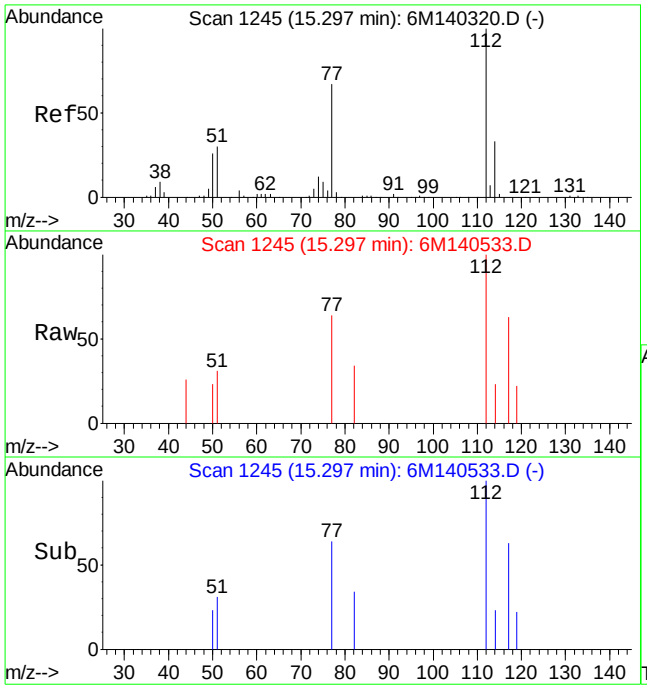

#70
Chlorobenzene
Concen: 0.25 ug/L
RT: 15.30 min Scan# 1245
Delta R.T. -0.00 min
Lab File: 6M140533.D
Acq: 9 Jul 2016 2:53

Tgt Ion:112 Resp: 4501

Ion	Ratio	Lower	Upper
112	100		
77	56.5	46.1	107.7

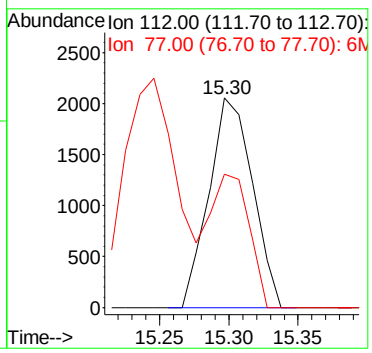

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070816\6M140514.D Vial: 6
Acq On : 8 Jul 2016 16:43 Operator: TMB
Sample : WG575666-02 20ug/L LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD77015 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 11 08:19:58 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	691171	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	519319	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.81	152	301291	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.59	111	185729	26.4862 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 105.96%		
43) 1,2-Dichloroethane-d4	10.31	65	228630	25.8274 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.32%		
58) Toluene-d8	13.04	98	623750	24.3911 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.56%		
80) p-Bromofluorobenzene	17.01	95	273780	23.2024 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.80%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	282180	24.4229 ug/L	99
3) Chloromethane	3.36	50	235853	18.2838 ug/L	98
4) Vinyl Chloride	3.56	62	176506	24.9167 ug/L	99
5) 1,3-Butadiene	3.59	54	105400	24.1541 ug/L	96
6) Bromomethane	4.38	94	76497	16.2505 ug/L	99
7) Chloroethane	4.53	64	106978	23.9001 ug/L	92
8) Trichlorofluoromethane	5.00	101	255871	23.6828 ug/L	99
9) Diethyl ether	5.55	59	676623	106.1416 ug/L	95
10) Isoprene	5.57	67	221391	22.9598 ug/L	93
11) Acrolein	5.79	56	109964	103.7066 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	5.79	101	152627	22.7052 ug/L	98
13) Acetone	5.90	43	51544	23.2770 ug/L	95
14) 1,1-Dichloroethene	6.11	61	272113	20.8636 ug/L	91
15) Tert-Butyl Alcohol	6.26	59	136627	201.7741 ug/L	96
16) Dimethyl Sulfide	6.38	62	208098	36.5838 ug/L	91
17) Iodomethane	6.64	142	113958	24.5877 ug/L	88
18) Methyl acetate	6.69	43	127176	21.2240 ug/L	97
19) Methylene Chloride	6.93	84	154246	20.6232 ug/L	84
20) Carbon Disulfide	6.95	76	430256	18.0030 ug/L	99
21) Acrylonitrile	7.15	53	59378	21.5964 ug/L	98
22) Methyl Tert Butyl Ether	7.18	73	418118	21.0905 ug/L	100
23) trans-1,2-Dichloroethene	7.41	96	149048	21.3378 ug/L	87
24) n-Hexane	7.51	57	211938	17.8775 ug/L	94
25) Diisopropyl ether	7.90	45	3511344	110.0448 ug/L	98
26) Vinyl Acetate	8.09	43	288664	21.6713 ug/L	96
27) 1,1-Dichloroethane	8.10	63	305811	20.3342 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	2699010	105.1419 ug/L	95
29) 2-Butanone	8.73	43	75598	22.3020 ug/L	95
30) Propionitrile	8.85	54	97035	105.4828 ug/L	98
31) 2,2-Dichloropropane	8.96	77	235567	20.7617 ug/L	98
32) cis-1,2-Dichloroethene	9.03	96	165146	21.5984 ug/L	71
33) Chloroform	9.26	83	287284	21.3228 ug/L	99
34) 1-Bromopropane	9.42	122	34866	29.0480 ug/L	99
35) Bromochloromethane	9.52	130	90569	22.0421 ug/L	98
36) Tetrahydrofuran	9.56	42	226553	95.8213 ug/L	93
38) 1,1,1-Trichloroethane	9.85	97	262241	22.3568 ug/L	98
39) Cyclohexane	9.87	56	301672	19.7679 ug/L	93
40) 1,1-Dichloropropene	10.08	75	211287	20.6805 ug/L	94
41) Tert-Amyl-Methyl ether	10.21	73	2044634	104.8942 ug/L	97
42) Carbon Tetrachloride	10.23	117	233000	24.1917 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140514.D 8260WTR.M Mon Jul 11 08:20:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070816\6M140514.D Vial: 6
Acq On : 8 Jul 2016 16:43 Operator: TMB
Sample : WG575666-02 20ug/L LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD77015 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 11 08:19:58 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	243658	22.5559 ug/L	97
46)	Benzene	10.48	78	605480	20.9981 ug/L	96
47)	Trichloroethene	11.35	130	155872	21.9064 ug/L	86
48)	Methylcyclohexane	11.43	83	223088	19.9709 ug/L	93
49)	1,2-Dichloropropane	11.59	63	177368	21.3596 ug/L	94
50)	1,4-Dioxane	11.94	88	11242	199.9875 ug/L	72
51)	Bromodichloromethane	11.94	83	225496	22.5054 ug/L	100
52)	Dibromomethane	12.03	93	86488	21.5269 ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.32	63	83403	20.0325 ug/L	97
54)	4-Methyl-2-Pentanone	12.35	58	50911	19.8692 ug/L	99
55)	cis-1,3-Dichloropropene	12.68	75	269915	23.2029 ug/L	98
56)	Dimethyl Disulfide	12.97	79	138187	21.3394 ug/L	99
59)	Toluene	13.15	91	623873	20.1570 ug/L	100
60)	Ethyl Methacrylate	13.32	69	174912	19.8633 ug/L	90
62)	trans-1,3-Dichloropropene	13.39	75	226505	20.5809 ug/L	96
63)	1,1,2-Trichloroethane	13.63	97	119372	20.8408 ug/L	98
64)	2-Hexanone	13.58	43	105799	19.4541 ug/L	94
65)	1,3-Dichloropropane	13.99	76	229529	21.2623 ug/L	90
66)	Tetrachloroethene	14.10	166	152416	20.6647 ug/L	93
67)	Dibromochloromethane	14.41	129	151651	21.8067 ug/L	99
68)	1,2-Dibromoethane	14.70	107	115730	20.9324 ug/L	99
69)	1-Chlorohexane	14.85	91	201305	19.5435 ug/L	87
70)	Chlorobenzene	15.30	112	416538	20.9839 ug/L	92
71)	1,1,1,2-Tetrachloroethane	15.35	131	154838	21.9220 ug/L	97
72)	Ethylbenzene	15.35	106	216158	20.8041 ug/L	92
73)	m-,p-Xylene	15.45	106	533847	42.5129 ug/L	94
74)	o-Xylene	16.11	106	276291	22.0610 ug/L	94
75)	Styrene	16.15	104	453714	21.5336 ug/L	92
76)	Bromoform	16.72	173	89125	20.6668 ug/L	98
77)	Isopropylbenzene	16.62	105	695896	21.2962 ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.88	83	149136	20.3953 ug/L	100
81)	1,2,3-Trichloropropane	17.10	110	46031	21.2328 ug/L	88
82)	trans-1,4-Dichloro-2-Buten	17.18	53	50859	18.3963 ug/L	95
83)	n-Propylbenzene	17.22	91	882550	20.3867 ug/L	97
84)	Bromobenzene	17.34	156	177656	19.6404 ug/L	92
85)	1,3,5-Trimethylbenzene	17.44	105	610877	20.1326 ug/L	96
86)	2-Chlorotoluene	17.52	91	592740	20.2459 ug/L	96
87)	4-Chlorotoluene	17.57	91	535947	19.2019 ug/L	95
88)	a-Methylstyrene	17.92	118	333071	21.8245 ug/L	96
89)	tert-Butylbenzene	17.98	134	125896	20.6515 ug/L	73
90)	1,2,4-Trimethylbenzene	18.04	105	624171	20.0464 ug/L	98
91)	sec-Butylbenzene	18.31	105	735950	20.2619 ug/L	97
92)	p-Isopropyltoluene	18.50	119	624051	20.1605 ug/L	98
93)	1,3-Dichlorobenzene	18.70	146	358350	20.1281 ug/L	94
94)	1,4-Dichlorobenzene	18.85	146	368259	20.4591 ug/L	94
95)	n-Butylbenzene	19.12	91	610300	20.1050 ug/L	96
96)	1,2-Dichlorobenzene	19.43	146	348275	20.8361 ug/L	96
97)	1,2-Dibromo-3-Chloropropan	20.62	75	32971	23.0228 ug/L	84
98)	1,2,4-Trichlorobenzene	21.96	180	245514	20.7794 ug/L	99
99)	Hexachlorobutadiene	22.15	225	104059	21.1829 ug/L	99
100)	Naphthalene	22.38	128	464900	19.2534 ug/L	99
101)	1,2,3-Trichlorobenzene	22.75	180	225716	20.6319 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M140514.D 8260WTR.M Mon Jul 11 08:20:01 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070816\6M140514.D Vial: 6
Acq On : 8 Jul 2016 16:43 Operator: TMB
Sample : WG575666-02 20ug/L LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD77015 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 11 8:19 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

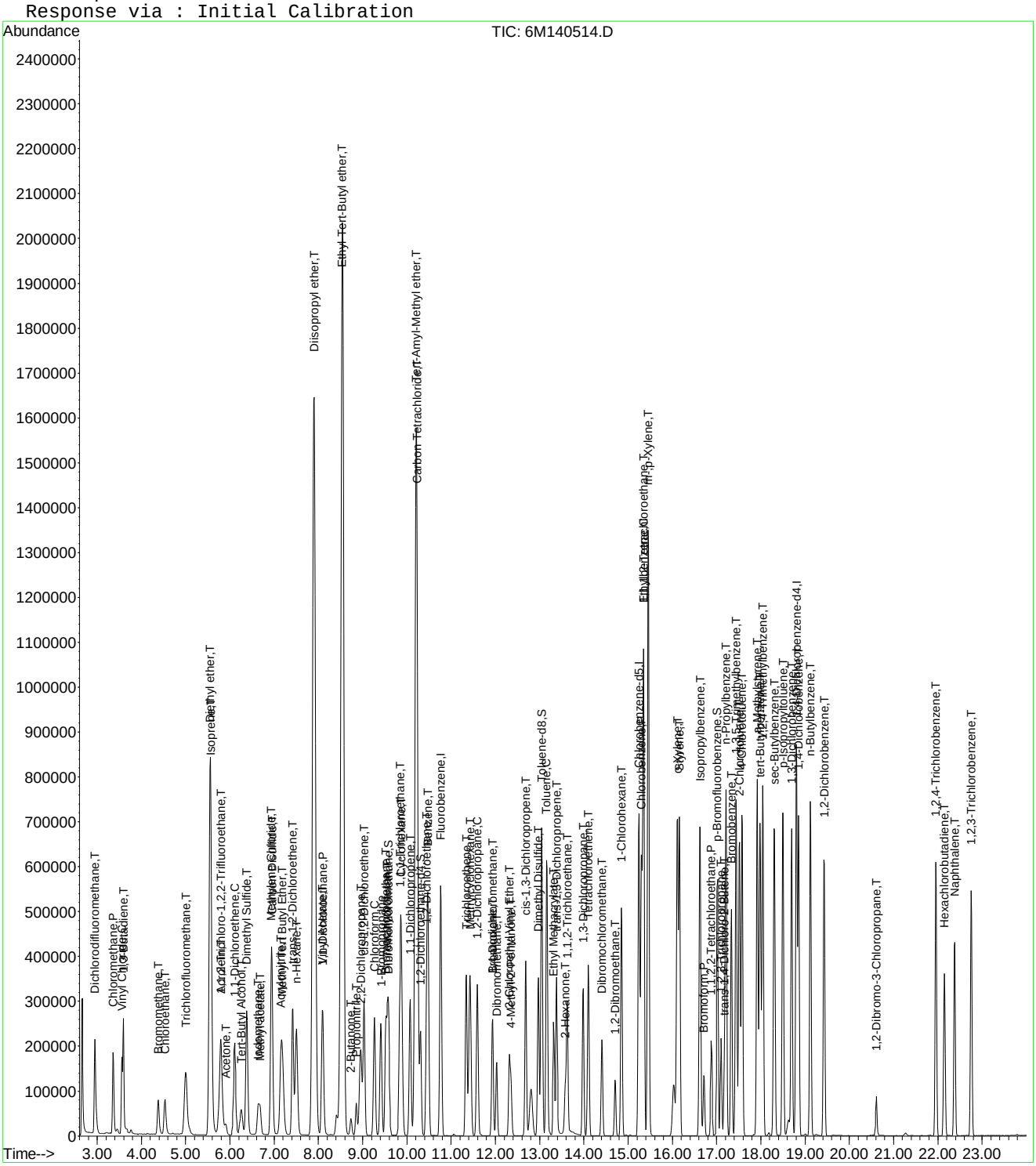

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070816\6M140515.D Vial: 7
Acq On : 8 Jul 2016 17:15 Operator: TMB
Sample : WG575666-03 20ug/L LCS2 STD 8260 Inst : HPMS6
Misc : 1,1 STD77015 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 11 08:20:05 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.76	96	710086	25.00 ug/L	0.00
57) Chlorobenzene-d5	15.25	117	524392	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	18.80	152	301252	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.59	111	187912	26.0837 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.32%		
43) 1,2-Dichloroethane-d4	10.32	65	231327	25.4360 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.76%		
58) Toluene-d8	13.04	98	638179	24.7140 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.84%		
80) p-Bromofluorobenzene	17.01	95	278149	23.5757 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.32%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	2.95	85	290412	24.4659 ug/L	99
3) Chloromethane	3.36	50	244703	18.4645 ug/L	99
4) Vinyl Chloride	3.56	62	177852	24.4379 ug/L	99
5) 1,3-Butadiene	3.60	54	105006	23.3262 ug/L	97
6) Bromomethane	4.38	94	78465	16.2246 ug/L	99
7) Chloroethane	4.53	64	106060	23.0639 ug/L	91
8) Trichlorofluoromethane	4.99	101	298560	26.8978 ug/L	99
9) Diethyl ether	5.56	59	693475	105.8874 ug/L	94
10) Isoprene	5.57	67	225595	22.7726 ug/L	92
11) Acrolein	5.79	56	116699	107.1267 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	5.78	101	158567	22.9605 ug/L	97
13) Acetone	5.90	43	51512	22.6429 ug/L	97
14) 1,1-Dichloroethene	6.11	61	280506	20.9342 ug/L	92
15) Tert-Butyl Alcohol	6.26	59	141090	202.8148 ug/L	97
16) Dimethyl Sulfide	6.38	62	208436	35.6671 ug/L	91
17) Iodomethane	6.64	142	121308	25.4439 ug/L	88
18) Methyl acetate	6.69	43	131251	21.3206 ug/L	96
19) Methylene Chloride	6.94	84	160862	20.9349 ug/L	87
20) Carbon Disulfide	6.96	76	435576	17.7401 ug/L	99
21) Acrylonitrile	7.15	53	60644	21.4693 ug/L	97
22) Methyl Tert Butyl Ether	7.18	73	428674	21.0469 ug/L	99
23) trans-1,2-Dichloroethene	7.43	96	153469	21.3855 ug/L	87
24) n-Hexane	7.51	57	229909	18.8768 ug/L	94
25) Diisopropyl ether	7.91	45	3622227	110.4960 ug/L	98
26) Vinyl Acetate	8.09	43	355791	25.9994 ug/L	96
27) 1,1-Dichloroethane	8.10	63	313579	20.2953 ug/L	100
28) Ethyl-Tert-Butyl ether	8.53	59	2614057	99.1199 ug/L	98
29) 2-Butanone	8.73	43	76575	21.9885 ug/L	92
30) Propionitrile	8.85	54	100974	106.8409 ug/L	97
31) 2,2-Dichloropropane	8.96	77	260090	22.3124 ug/L	98
32) cis-1,2-Dichloroethene	9.03	96	170763	21.7382 ug/L	70
33) Chloroform	9.26	83	294520	21.2776 ug/L	99
34) 1-Bromopropane	9.41	122	36240	29.3828 ug/L	97
35) Bromochloromethane	9.52	130	91586	21.6959 ug/L	98
36) Tetrahydrofuran	9.56	42	232832	95.8538 ug/L	92
38) 1,1,1-Trichloroethane	9.86	97	269606	22.3724 ug/L	97
39) Cyclohexane	9.88	56	308049	19.6480 ug/L	94
40) 1,1-Dichloropropene	10.08	75	217277	20.7003 ug/L	94
41) Tert-Amyl-Methyl ether	10.21	73	2107708	105.2497 ug/L	97
42) Carbon Tetrachloride	10.23	117	238872	24.1407 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140515.D 8260WTR.M Mon Jul 11 08:20:08 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070816\6M140515.D Vial: 7
Acq On : 8 Jul 2016 17:15 Operator: TMB
Sample : WG575666-03 20ug/L LCS2 STD 8260 Inst : HPMS6
Misc : 1,1 STD77015 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 11 08:20:05 2016 Quant Results File: 8260WTR.RES

Quant Method : K:\ORGANICS\V...\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.45	62	248667	22.4064 ug/L	98
46)	Benzene	10.48	78	621333	20.9739 ug/L	96
47)	Trichloroethene	11.35	130	155606	21.2865 ug/L	87
48)	Methylcyclohexane	11.43	83	232945	20.2978 ug/L	93
49)	1,2-Dichloropropane	11.59	63	182527	21.3954 ug/L	94
50)	1,4-Dioxane	11.94	88	11855	205.2747 ug/L	76
51)	Bromodichloromethane	11.94	83	229689	22.3133 ug/L	100
52)	Dibromomethane	12.02	93	89986	21.8010 ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.31	63	84186	19.6820 ug/L	99
54)	4-Methyl-2-Pentanone	12.35	58	53648	20.3797 ug/L	96
55)	cis-1,3-Dichloropropene	12.68	75	278305	23.2868 ug/L	97
56)	Dimethyl Disulfide	12.97	79	141115	21.2111 ug/L	100
59)	Toluene	13.15	91	635405	20.3309 ug/L	100
60)	Ethyl Methacrylate	13.32	69	180518	20.3016 ug/L	90
62)	trans-1,3-Dichloropropene	13.39	75	239074	21.5128 ug/L	95
63)	1,1,2-Trichloroethane	13.62	97	120881	20.9001 ug/L	98
64)	2-Hexanone	13.58	43	107663	19.6053 ug/L	93
65)	1,3-Dichloropropane	13.99	76	233218	21.3951 ug/L	90
66)	Tetrachloroethene	14.10	166	154745	20.7775 ug/L	93
67)	Dibromochloromethane	14.41	129	156810	22.3304 ug/L	100
68)	1,2-Dibromoethane	14.71	107	117343	21.0188 ug/L	99
69)	1-Chlorohexane	14.85	91	206867	19.8892 ug/L	88
70)	Chlorobenzene	15.30	112	427633	21.3344 ug/L	93
71)	1,1,1,2-Tetrachloroethane	15.35	131	157181	22.0385 ug/L	97
72)	Ethylbenzene	15.35	106	223394	21.2925 ug/L	93
73)	m-,p-Xylene	15.45	106	544049	42.9062 ug/L	92
74)	o-Xylene	16.11	106	277265	21.9246 ug/L	92
75)	Styrene	16.16	104	461900	21.7100 ug/L	92
76)	Bromoform	16.71	173	90610	20.8079 ug/L	98
77)	Isopropylbenzene	16.62	105	713633	21.6277 ug/L	98
79)	1,1,2,2-Tetrachloroethane	16.88	83	153557	21.0026 ug/L	100
81)	1,2,3-Trichloropropane	17.11	110	45958	21.2019 ug/L	85
82)	trans-1,4-Dichloro-2-Buten	17.18	53	51545	18.6468 ug/L	97
83)	n-Propylbenzene	17.22	91	908048	20.9784 ug/L	97
84)	Bromobenzene	17.34	156	180684	19.9777 ug/L	91
85)	1,3,5-Trimethylbenzene	17.44	105	620586	20.4552 ug/L	98
86)	2-Chlorotoluene	17.51	91	560423	19.1445 ug/L	99
87)	4-Chlorotoluene	17.58	91	598057	21.4299 ug/L	93
88)	a-Methylstyrene	17.92	118	335658	21.9969 ug/L	100
89)	tert-Butylbenzene	17.98	134	128596	21.0972 ug/L	72
90)	1,2,4-Trimethylbenzene	18.05	105	639567	20.5435 ug/L	98
91)	sec-Butylbenzene	18.30	105	753105	20.7368 ug/L	98
92)	p-Isopropyltoluene	18.49	119	637175	20.5872 ug/L	98
93)	1,3-Dichlorobenzene	18.70	146	369644	20.7651 ug/L	96
94)	1,4-Dichlorobenzene	18.85	146	372823	20.7154 ug/L	94
95)	n-Butylbenzene	19.12	91	623457	20.5411 ug/L	96
96)	1,2-Dichlorobenzene	19.43	146	353999	21.1813 ug/L	95
97)	1,2-Dibromo-3-Chloropropan	20.61	75	32565	22.7423 ug/L	84
98)	1,2,4-Trichlorobenzene	21.96	180	245881	20.8132 ug/L	98
99)	Hexachlorobutadiene	22.15	225	104834	21.3435 ug/L	99
100)	Naphthalene	22.39	128	456081	18.8906 ug/L	99
101)	1,2,3-Trichlorobenzene	22.75	180	224180	20.4942 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\070816\6M140515.D Vial: 7
Acq On : 8 Jul 2016 17:15 Operator: TMB
Sample : WG575666-03 20ug/L LCS2 STD 8260 Inst : HPMS6
Misc : 1,1 STD77015 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jul 11 8:19 2016 Quant Results File: 8260WTR.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-30-16 - HPMS6
Last Update : Fri Jul 01 09:28:30 2016
Response via : Initial Calibration

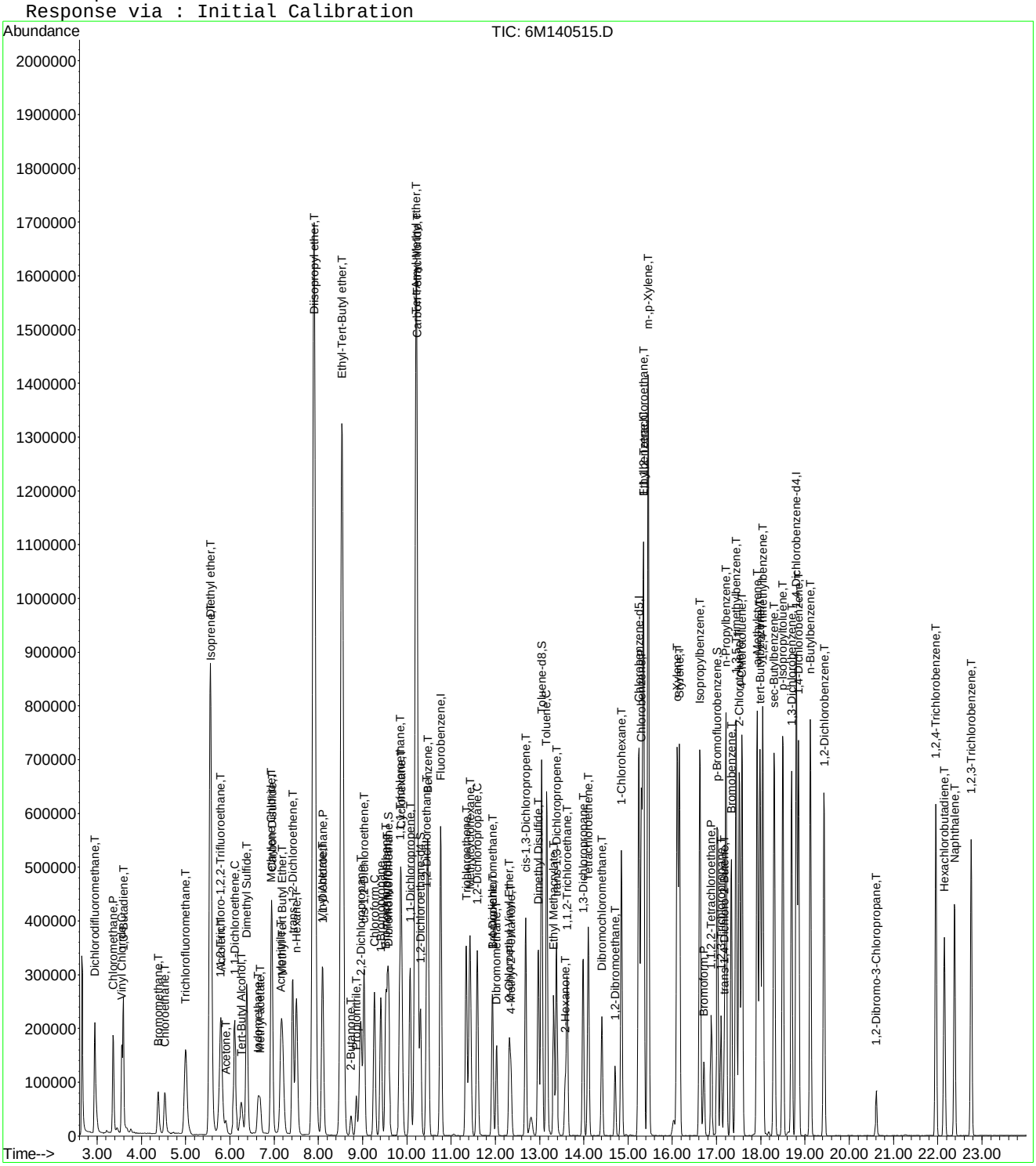

2.2 Semivolatiles Data

2.2.1 Semivolatiles GC/MS Data (Dioxane)

2.2.1.1 Summary Data

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061648-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18WW25-062916	**Prep Method:**	3520C	**Prep Date:**	06/30/2016 16:00
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG575045	**Analyst:**	MES	**Run Date:**	07/05/2016 21:39
Collect Date:	06/29/2016 08:05	**Dilution:**	1	**File ID:**	15M18735
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	35.6	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.2.1.2 QC Summary Data

Example 8270 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:

	Example
Ax = Area of the characteristic ion for the compound being measured:	1261197
Cis = Concentration of the specific internal standard (ug/mL)	40
Ais = Area of the characteristic ion of the specific internal standard	608044
Cx = Concentration of the compound in the standard being measured (ug/mL)	50
RF = Calculated Response Factor	**1.65935**

2.0 Calculating the concentration (C) of a compound in water using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Vi)]

where:

	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Vi = Initial volume of sample extracted from prep log (mL)	1021
Cx = Concentration of the compound in the sample being measured (ug/mL)	0.016947
Cx = Concentration of the compound in the sample being measured (ug/L)	**16.947**

3.0 Calculating the concentration (C) of a compound in soil using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Wi)]

where:

	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Wi = Initial weight of sample extracted (g) from prep log	30
Cx = Concentration of the compound in the sample being measured (ug/g)	0.576763
Cx = Concentration of the compound in the sample being measured (ug/kg)	**576.7627**

Dry weight correction:

Percent solids (PCT_S)	50
Cd = (Cx) (100)/PCT_S	**1153.525** ug/kg

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve plot

b = intercept from curve plot

Step 2: Calculate y from Quantitation Report

y = 16790/784838 = 0.02139

Step 3: Solve for x

x = (y - b)/m = [(0.02139 -(- 0.0435)]/ 0.0783 = 0.829

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.829) = 20.72 ug/L

Example Spreadsheet Calculation:

Slope from curve, m:	0.0783	
Intercept from curve, b:	-0.0435	
Area of analyte, Ax:	16790	
Area of Internal Standard , Ais:	784484	
Concentration of IS, Cis	25.00	ug/L
Response Ratio (y) :	0.021403	
Amount Ratio:	0.828897	
Concentration (Cx):	20.72241	ug/L

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**0.0259**	
Value of B from plot:	**0.0596**	
Value of C from plot:	**-0.0165**	
Area of analyte from quantitation report:	**203233**	
Area of IS from quantiation report:	**1425653**	
Response ratio, y:	**0.142554**	
C - y:	**-0.15905**	
Root 1 - Computed amount ratio , X1:	**-3.88278**	
Root 2 - Computed amount ratio , X2:	**1.581623**	use this solution
Concentration of IS, Cis:	**40.00**	
Concentration of analyte, Cx:	**63.26**	ug/L

Microbac Laboratories Inc.
Continuous Sample Extract Log

Workgroup: WG574706
Analyst: CPD
Spike Analyst: CPD
Method: 3520C
Run Date: 06/30/2016 16:00
SOP: EXB01 Revison 20
Spike Witness: JDH
Surr Solution: STD76628

TIME ON: 16:45 OFF: 10:25 ON: _____ OFF: _____

CH2CL2 Lot #: COA18982
Sodium Sulfate Lot #: COA18814
10N NaOH Lot #: RGT37076
1:1 H2SO4 Lot #: RGT36755

	SAMPLE #	Type	Reference	Prod	pH	Init Amnt	Surr Amnt	Spike Amnt	Spike Sol	Final Vol	Color
1	L16061227-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
2	L16061560-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
3	L16061648-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
4	WG574706-01	BLANK		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
5	WG574706-02	LCS		827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD75256	1 mL	Transparent
6	WG574706-03	LCS2		827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD75256	1 mL	Transparent

Due to insufficient sample volume, this preparation batch failed to include the method prescribed MS and MSD.

L16061227-01	RE-EXT OUT OF HOLD
WG574706-02	TURBO VAP 1 CELL CELL 5
WG574706-03	TURBO VAP 1 CELL CELL 6

Analyst: Rebecca Davis

Reviewer: Justin Hesson

EXTRACT - Modified 01/23/2009
PDF ID: 4837079
Report generated: 07/01/2016 15:12

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062116
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573365

Internal STD: STD76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: STD74214 MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18455	BAKEOUT	1	1		06/21/16 08:46
2	15M18456	WG573501-01 5PPM DFTPP STD	1	1	STD75016	06/21/16 09:05
3	15M18457	WG573501-01 5PPM DFTPP STD	1	1	STD75016	06/21/16 09:34
4	15M18458	WG573501-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 09:52
5	15M18459	WG573501-03 10 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 10:27
6	15M18460	WG573501-04 7.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 10:49
7	15M18461	WG573501-05 2.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:12
8	15M18462	WG573501-06 1 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:34
9	15M18463	WG573501-07 0.4 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:57
10	15M18464	WG573501-08 5PPM 1,4-DIOXANE ALT SRC	1	1	STD74214	06/21/16 12:20
11	15M18465	WG572806-01 BLANK 6/15	1	1		06/21/16 12:54
12	15M18466	WG572806-02 LCS 6/15	1	1		06/21/16 13:17
13	15M18467	WG572806-03 LCSDUP 6/15	1	1		06/21/16 13:40
14	15M18468	WG573008-01 BLANK 6/17	7	1	SOIL	06/21/16 14:03
15	15M18469	WG573008-02 LCS 6/17	7	1	SOIL	06/21/16 14:26
16	15M18470	WG573008-03 LCSDUP 6/17	7	1	SOIL	06/21/16 14:48
17	15M18471	L16060730-01	1	1		06/21/16 15:11
18	15M18472	L16060730-02	1	1		06/21/16 15:34
19	15M18473	L16060854-01	1	1		06/21/16 15:57
20	15M18474	L16060730-03	1	1		06/21/16 16:19
21	15M18475	L16060756-04 827-DIOX	1	1		06/21/16 16:46
22	15M18476	L16060822-01	1	1		06/21/16 17:08
23	15M18477	L16060822-03	1	1		06/21/16 17:31
24	15M18478	L16060822-04	1	1		06/21/16 17:54
25	15M18479	L16060822-05	1	1		06/21/16 18:17
26	15M18480	L16060823-01	1	1		06/21/16 18:40
27	15M18481	L16060823-03	1	1		06/21/16 19:02
28	15M18482	L16060823-04	1	1		06/21/16 19:25
29	15M18483	L16060809-03 827-DIOX	1	1		06/21/16 19:48
30	15M18484	L16060854-01 2X	1	2		06/21/16 20:10
31	15M18485	BAKEOUT	1	1		06/21/16 20:33
32	15M18486	BAKEOUT	1	1		06/21/16 20:55
33	15M18487	BAKEOUT	1	1		06/21/16 21:18

Page: 1 Approved: 22-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062116

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573365

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD: STD74214

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
	WG573501-01 5PPM DFTPP STD rerun DFTPP, pentachlorophenol tailing >2.			
14				
	WG573008-01 BLANK 6/17 DNR-not needed.			
15				
	WG573008-02 LCS DNR-not needed.			
16				
	WG573008-03 LCSDUP DNR-not needed.			
19	X	2	Over Calibration Range	
	L16060854-01			

Page: 2 Approved: 22-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 070516
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574772,WG575045,WG575070

Internal STD: STD76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: MS/MSD STD:

Comments: File 15M18715 does not exist.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18708	BAKEOUT	1	1		07/05/16 10:31
2	15M18709	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 10:51
3	15M18710	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 11:11
4	15M18711	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 11:33
5	15M18712	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 12:30
6	15M18713	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 12:47
7	15M18714	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 14:14
8	15M18716	WG575159-01 5PPM DFTPP STD	1	1	STD75016	07/05/16 14:33
9	15M18717	WG575159-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	07/05/16 14:51
10	15M18718	WG574706-01 BLANK 6/30	1	1		07/05/16 15:14
11	15M18719	WG574706-02 LCS 6/30	1	1		07/05/16 15:38
12	15M18720	WG574706-03 LCSDUP 6/30	1	1		07/05/16 16:01
13	15M18721	WG574873-01 BLANK 7/1	7	1	SOIL	07/05/16 16:23
14	15M18722	WG574873-02 LCS 7/1	7	1	SOIL	07/05/16 16:45
15	15M18723	WG574873-03 LCSDUP 7/1	7	1	SOIL	07/05/16 17:07
16	15M18724	L16061290-02 5X 827-DIOX	1	5		07/05/16 17:29
17	15M18725	L16061289-01 10X 827-DIOX	1	10		07/05/16 17:52
18	15M18726	L16061227-01 RE 827-DIOX	1	10		07/05/16 18:15
19	15M18727	L16061290-06 827-DIOX	1	1		07/05/16 18:37
20	15M18728	L16061345-08 827-DIOX	1	1		07/05/16 19:00
21	15M18729	L16061345-04 REF 827-DIOX	1	1		07/05/16 19:23
22	15M18730	L16061345-05 MS 827-DIOX	1	1		07/05/16 19:45
23	15M18731	L16061345-06 MSD 827-DIOX	1	1		07/05/16 20:08
24	15M18732	L16061345-03 RE 827-DIOX	7	1	SOIL	07/05/16 20:31
25	15M18733	L16061345-01 RE 827-DIOX	7	1	SOIL	07/05/16 20:54
26	15M18734	L16061560-01 827-DIOX	1	1		07/05/16 21:16
27	15M18735	L16061648-01 827-DIOX	1	1		07/05/16 21:39
28	15M18736	L16061452-01 827-DIOX	1	1		07/05/16 22:02
29	15M18737	L16061452-02 827-DIOX	1	1		07/05/16 22:24
30	15M18738	L16061452-03 827-DIOX	1	1		07/05/16 22:46
31	15M18739	L16061453-01 827-DIOX	1	1		07/05/16 23:09
32	15M18740	L16061453-02 827-DIOX	1	1		07/05/16 23:32
33	15M18741	L16061453-03 827-DIOX	1	1		07/05/16 23:54

Page: 1 Approved: 11-JUL-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 070516
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574772,WG575045,WG575070

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	15M18742	L16061450-04 827-DIOX	1	1		07/06/16 00:17
35	15M18743	L16061450-05 827-DIOX	1	1		07/06/16 00:39
36	15M18744	BAKEOUT	1	1		07/06/16 01:02
37	15M18745	BAKEOUT	1	1		07/06/16 01:25
38	15M18746	BAKEOUT	1	1		07/06/16 01:47
39	15M18747	BAKEOUT	1	1		07/06/16 02:10
40	15M18748	BAKEOUT	1	1		07/06/16 02:32
41	15M18749	BAKEOUT	1	1		07/06/16 02:55
42	15M18750	BAKEOUT	1	1		07/06/16 03:17
43	15M18751	BAKEOUT	1	1		07/06/16 03:40
44	15M18752	BAKEOUT	1	1		07/06/16 04:03

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
	Rerun DFTPP, ion ratio fails.			
3				
	Rerun DFTPP, ion ratio fails. Performed a quicktune.			
4				
	Rerun DFTPP, ion ratio fails. Changed the liner.			
5				
	Rerun DFTPP, ion ratio fails. Retuned.			
6				
	Rerun DFTPP, PCP tailing >2.			
7				
	Rerun DFTPP, PCP tailing >2. Clipping the column.			
13				
	WG574873-01 BLANK 7/1 surrogate is low.			
17				
	L16061289-01 10X 827-DIOX confirms high surrogate recovery; DNR. Surrogate is high due to SMI. Sample is not being re-extracted.			
18				
	L16061227-01 RE 827-DIOX surrogate recovery is good; does not confirm original extraction.			
21	X	20	Over Calibration Range	
	L16061345-04 REF			
22				
	L16061345-05 MS 827-DIOX DNR-sample is spiked for 827-SPE-DIOX			

Page: 2 Approved: 11-JUL-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 070516

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574772,WG575045,WG575070

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
23				
	L16061345-06 MSD 827-DIOX DNR-sample is spiked for 827-SPE-DIOX			
24				
	L16061345-03 RE 827-DIOX confirms low surrogate recovery.			
25				
	L16061345-01 RE 827-DIOX confirms low surrogate recovery.			
26	X	5	Over Calibration Range	
	L16061560-01 827-DIOX			
30	X	2	Over Calibration Range	
	L16061452-03 827-DIOX			
31	X	10	Surrogate standard failure	
	L16061453-01 surrogate high due to SMI. Not re-extracting.			

Page: 3 Approved: 11-JUL-16

Microbac Laboratories Inc.

Data Checklist

Date: 21-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75850
Analytical Workgroups: L16060730, 060756, 060809, 060822, 060823, 060854

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 22-JUN-2016

Secondary Reviewer: 22-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-22-2016 16:00:51

Microbac Laboratories Inc.

Data Checklist

Date: 05-JUL-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 76120
Analytical Workgroups: L16061345, 061227, 1560, 1648, 1290, 1450, 1452, 1453

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 06-JUL-2016

Secondary Reviewer: 11-JUL-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUL-11-2016 11:01:30

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8270D

AAB#: WG575045

Login Number: L16061648

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW25-062916	01	06/29/16					06/30/2016	1.3	7		07/05/16	5.2	40	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4840600
Report generated 07/06/2016 11:12

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061648
Instrument Id: HPMS15
Workgroup (AAB#): WG575045

Method: 827-DIOXANE
CAL ID: HPMS15-21-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1
L16061648-01	1.00	01	35.6
WG574706-01	1.00	01	28.3
WG574706-02	1.00	01	29.8
WG574706-03	1.00	01	35.9

Surrogates	Surrogate Limits		
1 - 1,4-Dioxane-d8	20	-	129

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4840608
Report generated: 07/06/2016 11:12

METHOD BLANK SUMMARY

Login Number: L16061648
Blank File ID: 15M18718
Prep Date: 06/30/16 16:00
Analyzed Date: 07/05/16 15:14
Analyst: MES

Work Group: WG575045
Blank Sample ID: WG574706-01
Instrument ID: HPMS15
Method: 8270D

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG574706-02	15M18719	07/05/16 15:38	01
LCS2	WG574706-03	15M18720	07/05/16 16:01	01
18WW25-062916	L16061648-01	15M18735	07/05/16 21:39	01

Report Name: BLANK_SUMMARY
PDF File ID: 4848504
Report generated 07/12/2016 08:30

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061648 Prep Date: 06/30/16 16:00 Sample ID: WG574706-01
Instrument ID: HPMS15 Run Date: 07/05/16 15:14 Prep Method: 3520C
File ID: 15M18718 Analyst: MES Method: 8270D
Workgroup (AAB#): WG575045 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS15-21-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
1,4-Dioxane	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	28.3	20 - 129	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4840601
06-JUL-2016 11:12

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061648 Analyst: MES Prep Method: 3520C
Instrument ID: HPMS15 Matrix: Water Method: 8270D
Workgroup (AAB#): WG575045 Units: ug/L
QC Key: DOD4 Lot #: STD75256

Sample ID: WG574706-02 LCS File ID: 15M18719 Run Date: 07/05/2016 15:38
Sample ID: WG574706-03 LCS2 File ID: 15M18720 Run Date: 07/05/2016 16:01

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,4-Dioxane	5.00	1.55	31.0	5.00	2.07	41.3	28.5	30 - 104	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,4-Dioxane-d8	29.8	35.9	20 - 129	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4840602
Report generated: 07/06/2016 11:12

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16061648
Instrument: HPMS15
Analyst: MES
Workgroup: WG573501

Tune ID: WG573501-01
Run Date: 06/21/2016
Run Time: 09:34
File ID: 15M18457
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	38.8	34488	PASS
68.0	69.0	0	2.00	1.36	500	PASS
69.0	198	0	100	41.4	36833	PASS
70.0	69.0	0	2.00	0.467	172	PASS
127	198	40.0	60.0	51.9	46131	PASS
197	198	0	1.00	0	0	PASS
198	198	100	100	100	88880	PASS
199	198	5.00	9.00	6.66	5918	PASS
275	198	10.0	30.0	24.9	22090	PASS
365	198	1.00	100	2.65	2358	PASS
441	443	0.0100	100	75.7	9586	PASS
442	198	40.0	100	73.4	65261	PASS
443	442	17.0	23.0	19.4	12659	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573501-02	STD-CCV	01	06/21/2016 09:52	
WG573501-03	STD	01	06/21/2016 10:27	
WG573501-04	STD	01	06/21/2016 10:49	
WG573501-05	STD	01	06/21/2016 11:12	
WG573501-06	STD	01	06/21/2016 11:34	
WG573501-07	STD	01	06/21/2016 11:57	
WG573501-08	SSCV	01	06/21/2016 12:20	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4840605
Report generated 07/06/2016 11:12

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16061648
Instrument: HPMS15
Analyst: MES
Workgroup: WG575159

Tune ID: WG575159-01
Run Date: 07/05/2016
Run Time: 14:33
File ID: 15M18716
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	46.2	37745	PASS
68.0	69.0	0	2.00	1.95	734	PASS
69.0	198	0	100	46.2	37667	PASS
70.0	69.0	0	2.00	0.337	127	PASS
127	198	40.0	60.0	57.5	46941	PASS
197	198	0	1.00	0.380	310	PASS
198	198	100	100	100	81613	PASS
199	198	5.00	9.00	7.55	6162	PASS
275	198	10.0	30.0	24.6	20072	PASS
365	198	1.00	100	2.93	2392	PASS
441	443	0.0100	100	70.8	8479	PASS
442	198	40.0	100	73.3	59805	PASS
443	442	17.0	23.0	20.0	11980	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG575159-02	CCV	01	07/05/2016 14:51	
WG574706-01	BLANK	01	07/05/2016 15:14	
WG574706-02	LCS	01	07/05/2016 15:38	
WG574706-03	LCS2	01	07/05/2016 16:01	
L16061648-01	18WW25-062916	01	07/05/2016 21:39	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4840605
Report generated 07/06/2016 11:12

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061648
Analytical Method: 8270D
ICAL Workgroup: WG573501

Instrument ID: HPMS15
Initial Calibration Date: 21-JUN-16 11:57
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
1,4-Dioxane		0.3060	2.56		

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4840603
Report generated 07/06/2016 11:12

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061648

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 21-JUN-16 11:57

Column ID: F

Analyte	WG573501-02			WG573501-03			WG573501-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	5.00	60883.0000	0.3073	10.0	138820.000	0.3164	7.50	103182.000	0.3106

INT_CAL - Modified 03/06/2008
PDF File ID: 4840603
Report generated 07/06/2016 11:12

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061648

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 21-JUN-16 11:57

Column ID: F

Analyte	WG573501-05			WG573501-06			WG573501-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	2.50	26333.0000	0.2969	1.00	13250.0000	0.2966	0.400	5650.00000	0.3081

INT_CAL - Modified 03/06/2008
PDF File ID: 4840603
Report generated 07/06/2016 11:12

Calibration Table Report
Method: DIOXANE_D8.M
Title: OVD MSS01 SIM 1,4-dioxane ICAL 062116
Last Calibration: Tue Jun 21 12:51:17 2016
Curve:WG573501
Calibration Files

Compound	10 15M18459.D	7.5 15M18460.D	5 15M18458.D	2.5 15M18461.D	1 15M18462.D	0.4 15M18463.D	Avg	%RSD
1,4-Dichlorobenzene-d4	ISTD							
1,4-Dioxane	0.316	0.311	0.307	0.297	0.297	0.308	0.306	2.558
1,4-Dioxane-d8	0.426	0.418	0.417	0.402	0.395		0.411	3.044
Nitrobenzene-d5	1.202	1.173	1.128	1.002	0.927	0.906	1.056	12.163
2-Fluorobiphenyl	2.735	2.736	2.691	2.621	2.563	2.651	2.666	2.548
p-Terphenyl-d14	2.793	2.774	2.622	2.460	2.367	2.405	2.570	7.266

Wed Jun 22 12:17:33 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061648 Run Date: 06/21/2016 Sample ID: WG573501-08
Instrument ID: HPMS15 Run Time: 12:20 Method: 8270D
File ID: 15M18464 Analyst: MES QC Key: DOD4
ICal Workgroup: WG573501 Cal ID: HPMS15 - 21-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
1,4-Dioxane		5000	5050	ug/L	0.309	0.900	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4840604
Report generated 07/06/2016 11:12

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/05/2016
Sample ID: WG575159-02
Instrument ID: HPMS15
Run Time: 14:51
Method: 8270D
File ID: 15M18717
Analyst: MES
QC Key: DOD4
Workgroup (AAB#): WG575045
Cal ID: HPMS15 - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,4-Dioxane		5000	5230	ug/L	0.320	4.63	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4840606
Report generated 07/06/2016 11:12

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061648
Instrument ID: HPMS15
Workgroup (AAB#): WG575045

ICAL CCV Number: WG573501-02
CAL ID: HPMS15 - 21-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG573501-02	NA	NA	39637
Upper Limit	NA	NA	79274
Lower Limit	NA	NA	19819
L16061648-01	1.00	01	33697
WG574706-01	1.00	01	36576
WG574706-02	1.00	01	36960
WG574706-03	1.00	01	37076

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4840607
Report generated 07/06/2016 11:12

2.2.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18735.D
Acq On : 5 Jul 2016 21:39
Operator : MES
Sample : L16061648-01 827-DIOX
Misc : 1,1
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Jul 06 08:13:22 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.867	152	33697	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.778	96	24661	1.7786	ug/L	0.00
Spiked Amount 5.000			Recovery	=	35.60%	
4) Nitrobenzene-d5	7.372	82	3895	0.1094	ug/L	0.00
Spiked Amount 5.000			Recovery	=	2.20%	
5) 2-Fluorobiphenyl	8.853	172	263	0.0029	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.081	244	949	0.0110	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.20%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18735.D
Acq On : 5 Jul 2016 21:39
Operator : MES
Sample : L16061648-01 827-DIOX
Misc : 1,1
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Jul 06 08:13:22 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

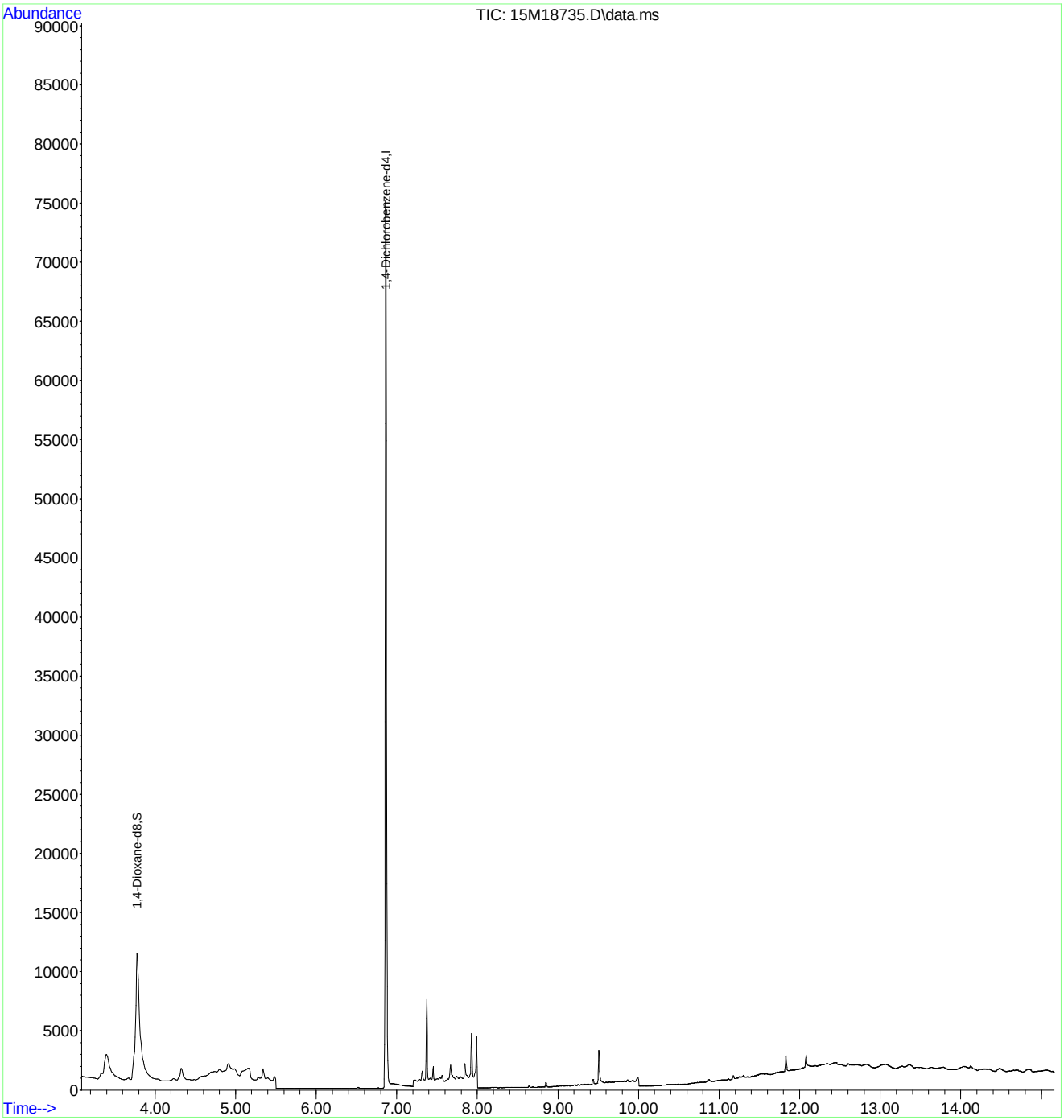

2.2.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 22 08:04:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	39637	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.827	96	82573	5.0627 ug/L	0.00
Spiked Amount 5.000			Recovery	= 101.20%	
4) Nitrobenzene-d5	7.431	82	223381	5.3353 ug/L	0.00
Spiked Amount 5.000			Recovery	= 106.80%	
5) 2-Fluorobiphenyl	8.922	172	533101	5.0444 ug/L	0.00
Spiked Amount 5.000			Recovery	= 100.80%	
6) p-Terphenyl-d14	12.184	244	519544	5.1003 ug/L	0.00
Spiked Amount 5.000			Recovery	= 102.00%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.862	58	60883	5.0202 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 21 10:23:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	60	0.00
2	1,4-Dioxane	0.325	0.307	5.5	57	-0.03
3 S	1,4-Dioxane-d8	0.419	0.417	0.5	60	-0.04
4 S	Nitrobenzene-d5	0.904	1.128	-24.8	69	0.00
5 S	2-Fluorobiphenyl	2.613	2.691	-3.0	63	0.00
6 S	p-Terphenyl-d14	2.562	2.622	-2.3	61	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 21 10:23:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	60	0.00
2	1,4-Dioxane	5.000	4.721	5.6	57	-0.03
3 S	1,4-Dioxane-d8	5.000	4.979	0.4	60	-0.04
4 S	Nitrobenzene-d5	5.000	5.474	-9.5	69	0.00
5 S	2-Fluorobiphenyl	5.000	5.150	-3.0	63	0.00
6 S	p-Terphenyl-d14	5.000	5.115	-2.3	61	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 22 08:04:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

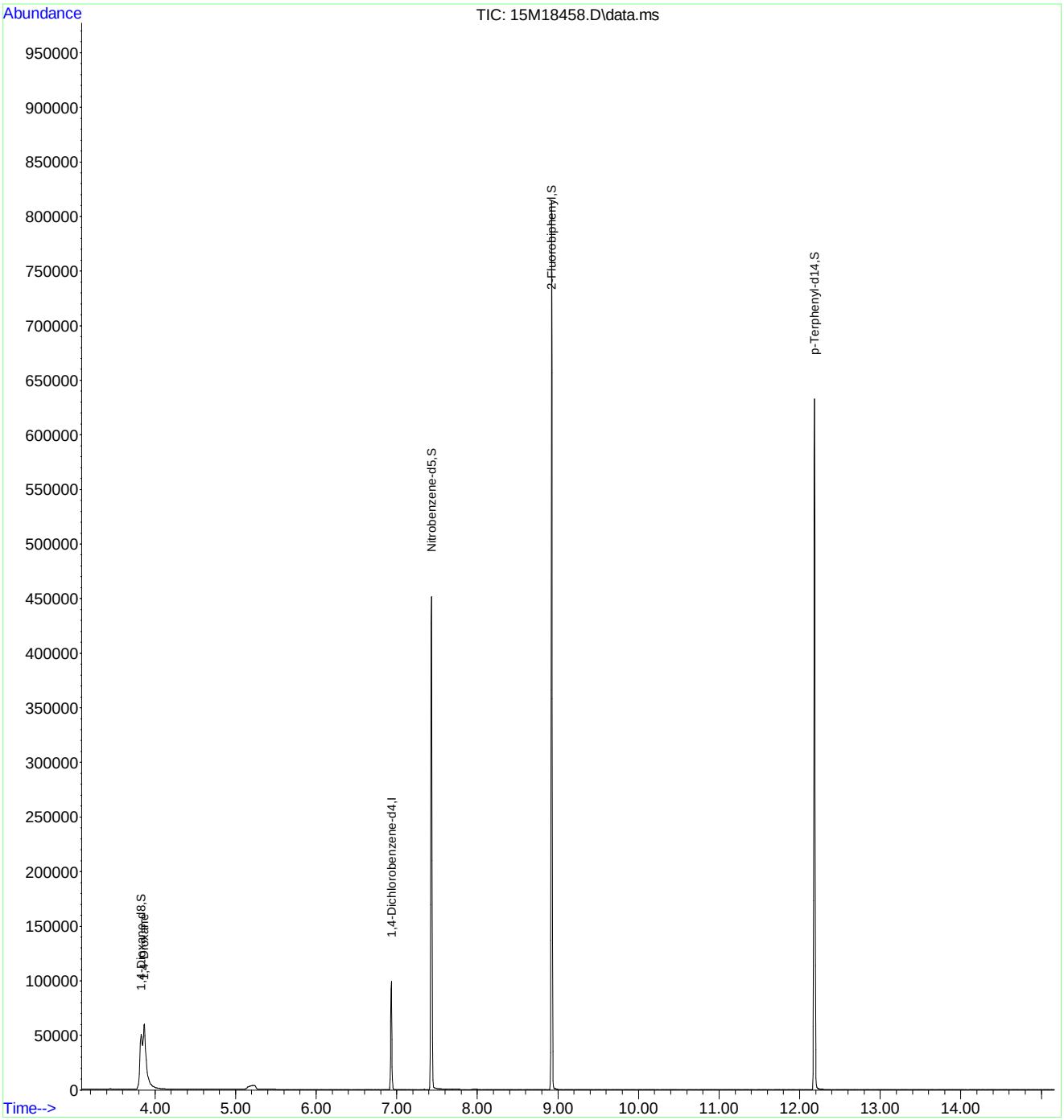

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18459.D
Acq On : 21 Jun 2016 10:27
Operator : MES
Sample : WG573501-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 22 08:04:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	43874	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	186767	10.3452	ug/L	0.00
Spiked Amount 5.000			Recovery = 207.00%			
4) Nitrobenzene-d5	7.431	82	527549	11.3834	ug/L	0.00
Spiked Amount 5.000			Recovery = 227.60%			
5) 2-Fluorobiphenyl	8.926	172	1199799	10.2565	ug/L	0.00
Spiked Amount 5.000			Recovery = 205.20%			
6) p-Terphenyl-d14	12.240	244	1225328	10.8672	ug/L	0.06
Spiked Amount 5.000			Recovery = 217.40%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	138820	10.3412	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18459.D
Acq On : 21 Jun 2016 10:27
Operator : MES
Sample : WG573501-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 22 08:04:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

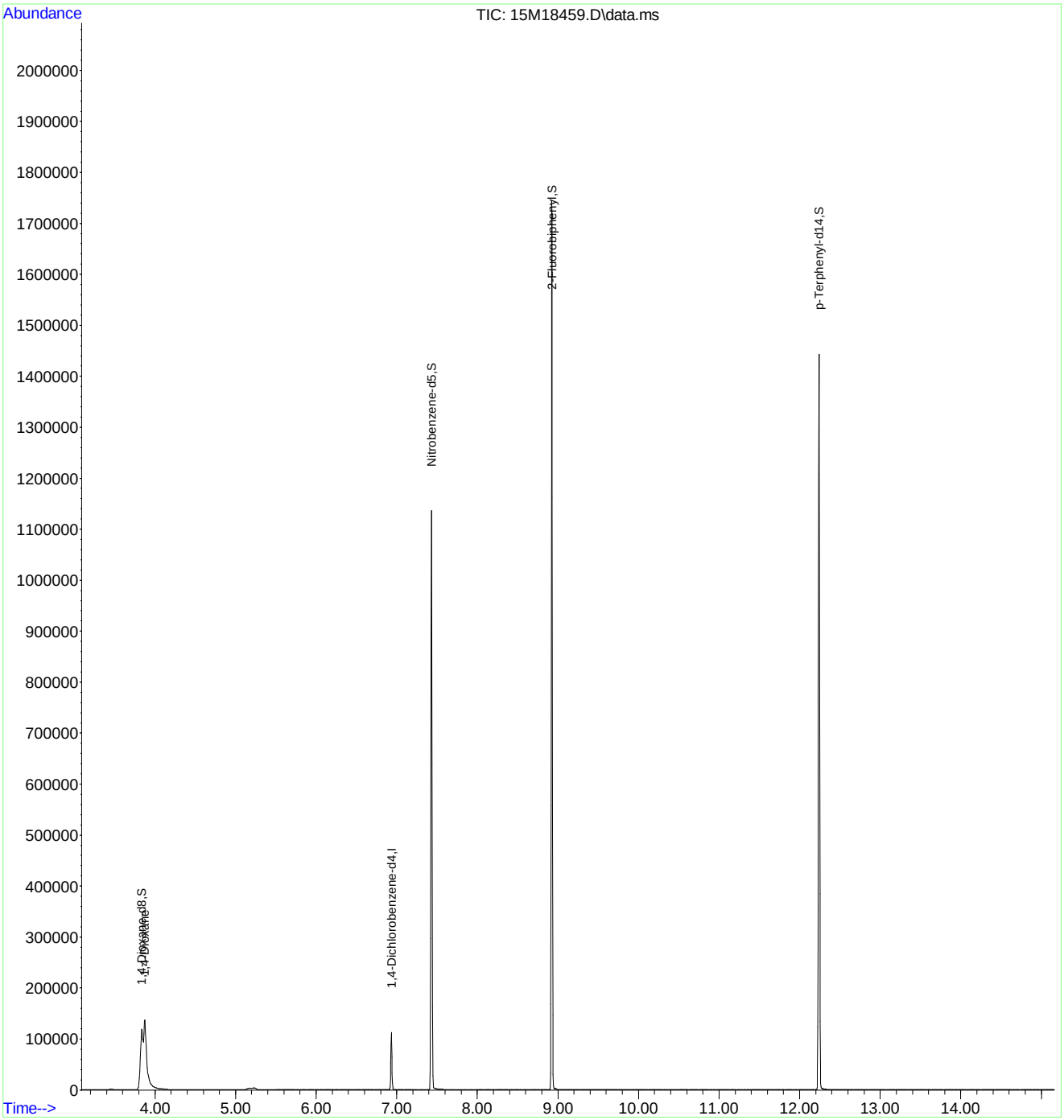

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18460.D
Acq On : 21 Jun 2016 10:49
Operator : MES
Sample : WG573501-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 22 08:04:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	44299	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.834	96	138833	7.6163 ug/L	0.00
Spiked Amount 5.000			Recovery	= 152.40%	
4) Nitrobenzene-d5	7.431	82	389810	8.3306 ug/L	0.00
Spiked Amount 5.000			Recovery	= 166.60%	
5) 2-Fluorobiphenyl	8.923	172	909050	7.6965 ug/L	0.00
Spiked Amount 5.000			Recovery	= 154.00%	
6) p-Terphenyl-d14	12.203	244	921380	8.0931 ug/L	0.02
Spiked Amount 5.000			Recovery	= 161.80%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.876	58	103182	7.6127 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18460.D
Acq On : 21 Jun 2016 10:49
Operator : MES
Sample : WG573501-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 22 08:04:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

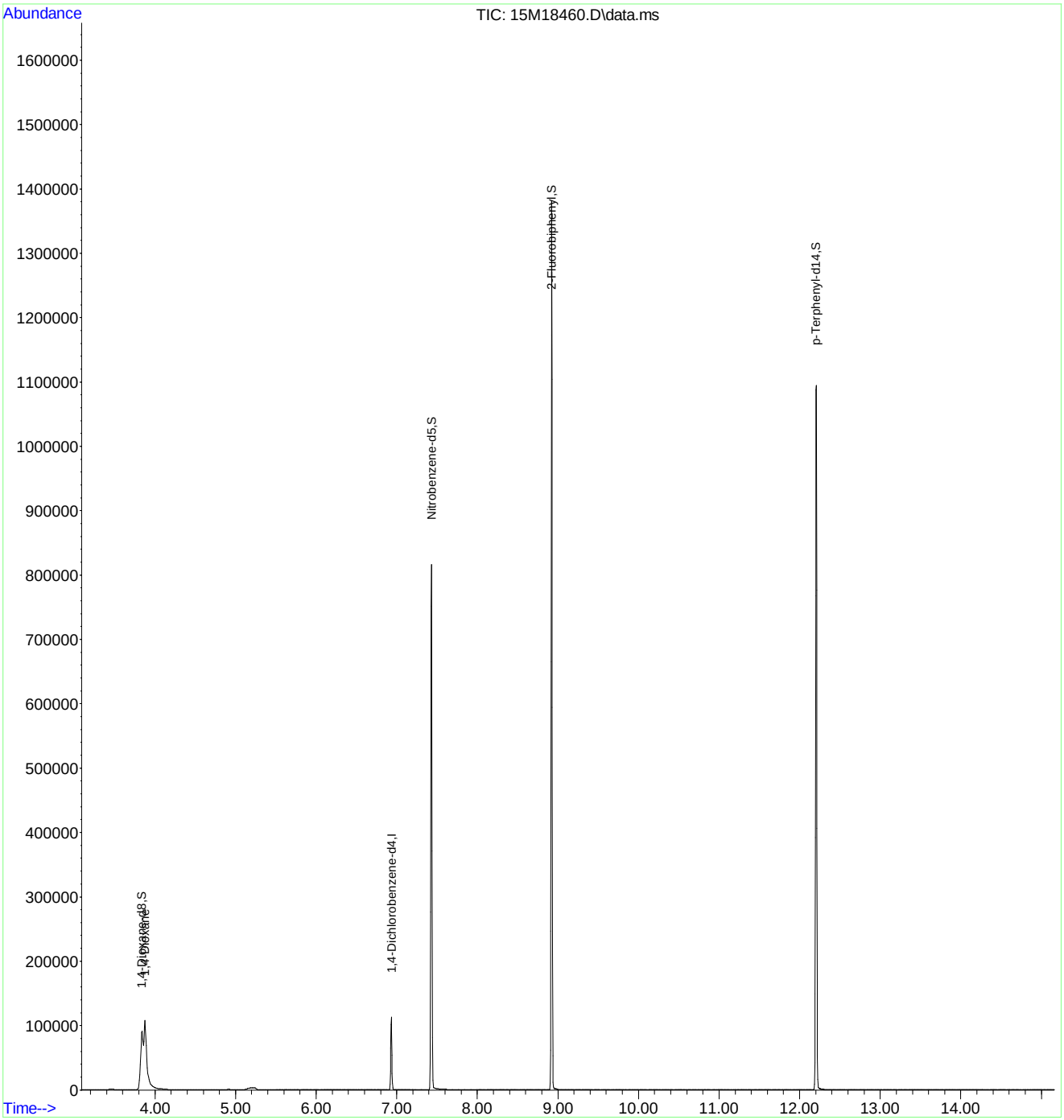

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18461.D
Acq On : 21 Jun 2016 11:12
Operator : MES
Sample : WG573501-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 22 08:04:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	35478	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.827	96	35630	2.4406	ug/L	0.00
Spiked Amount 5.000			Recovery = 48.80%			
4) Nitrobenzene-d5	7.431	82	88869	2.3714	ug/L	0.00
Spiked Amount 5.000			Recovery = 47.40%			
5) 2-Fluorobiphenyl	8.923	172	232500	2.4579	ug/L	0.00
Spiked Amount 5.000			Recovery = 49.20%			
6) p-Terphenyl-d14	12.199	244	218191	2.3930	ug/L	0.02
Spiked Amount 5.000			Recovery = 47.80%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.862	58	26333	2.4259	ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18461.D
Acq On : 21 Jun 2016 11:12
Operator : MES
Sample : WG573501-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 22 08:04:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

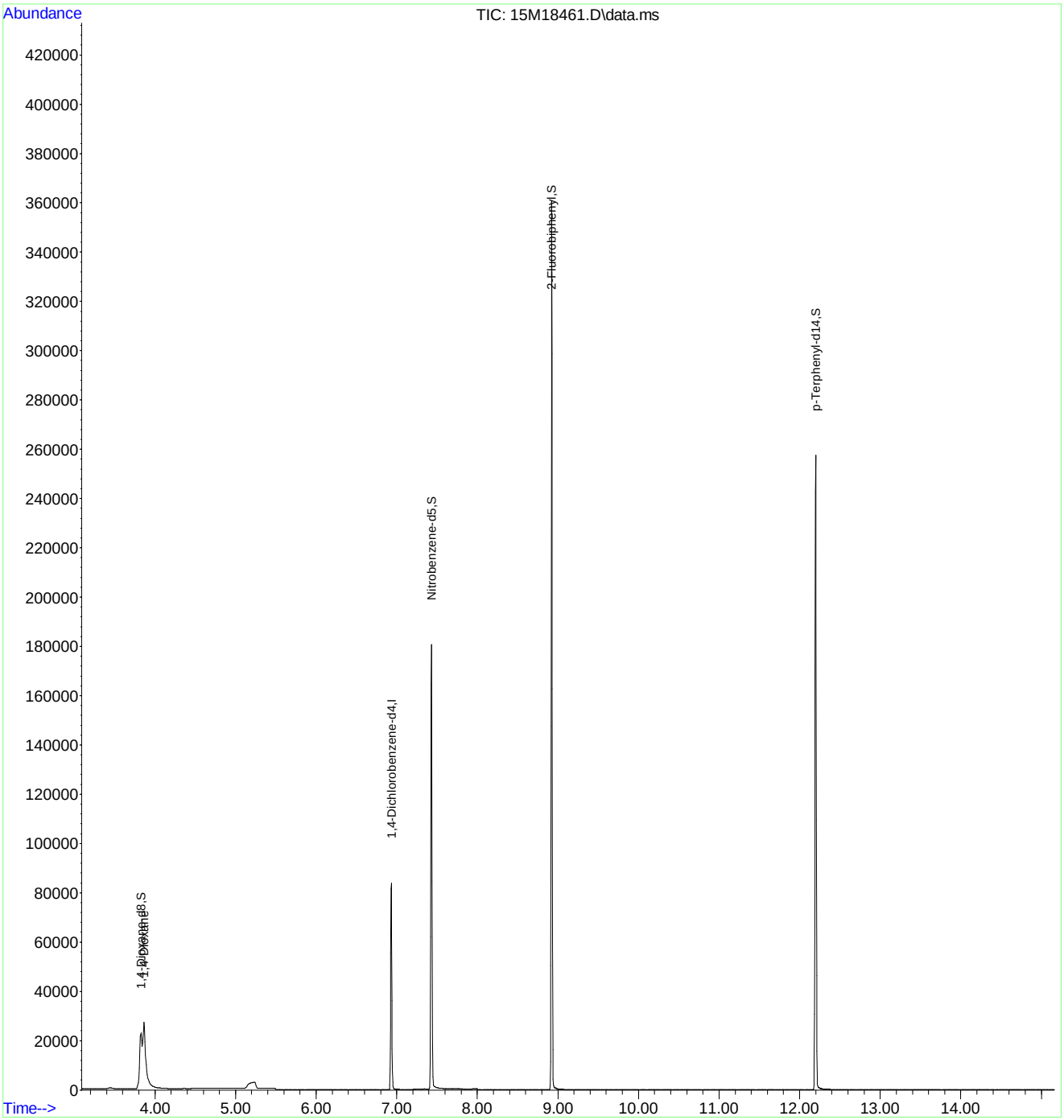

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18462.D
Acq On : 21 Jun 2016 11:34
Operator : MES
Sample : WG573501-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 22 08:04:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	44672	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.841	96	17660	0.9607	ug/L	0.01
Spiked Amount 5.000			Recovery	=	19.20%	
4) Nitrobenzene-d5	7.431	82	41409	0.8776	ug/L	0.00
Spiked Amount 5.000			Recovery	=	17.60%	
5) 2-Fluorobiphenyl	8.922	172	114491	0.9612	ug/L	0.00
Spiked Amount 5.000			Recovery	=	19.20%	
6) p-Terphenyl-d14	12.203	244	105713	0.9208	ug/L	0.02
Spiked Amount 5.000			Recovery	=	18.40%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.876	58	13250	0.9694	ug/L	82

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18462.D
Acq On : 21 Jun 2016 11:34
Operator : MES
Sample : WG573501-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 22 08:04:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

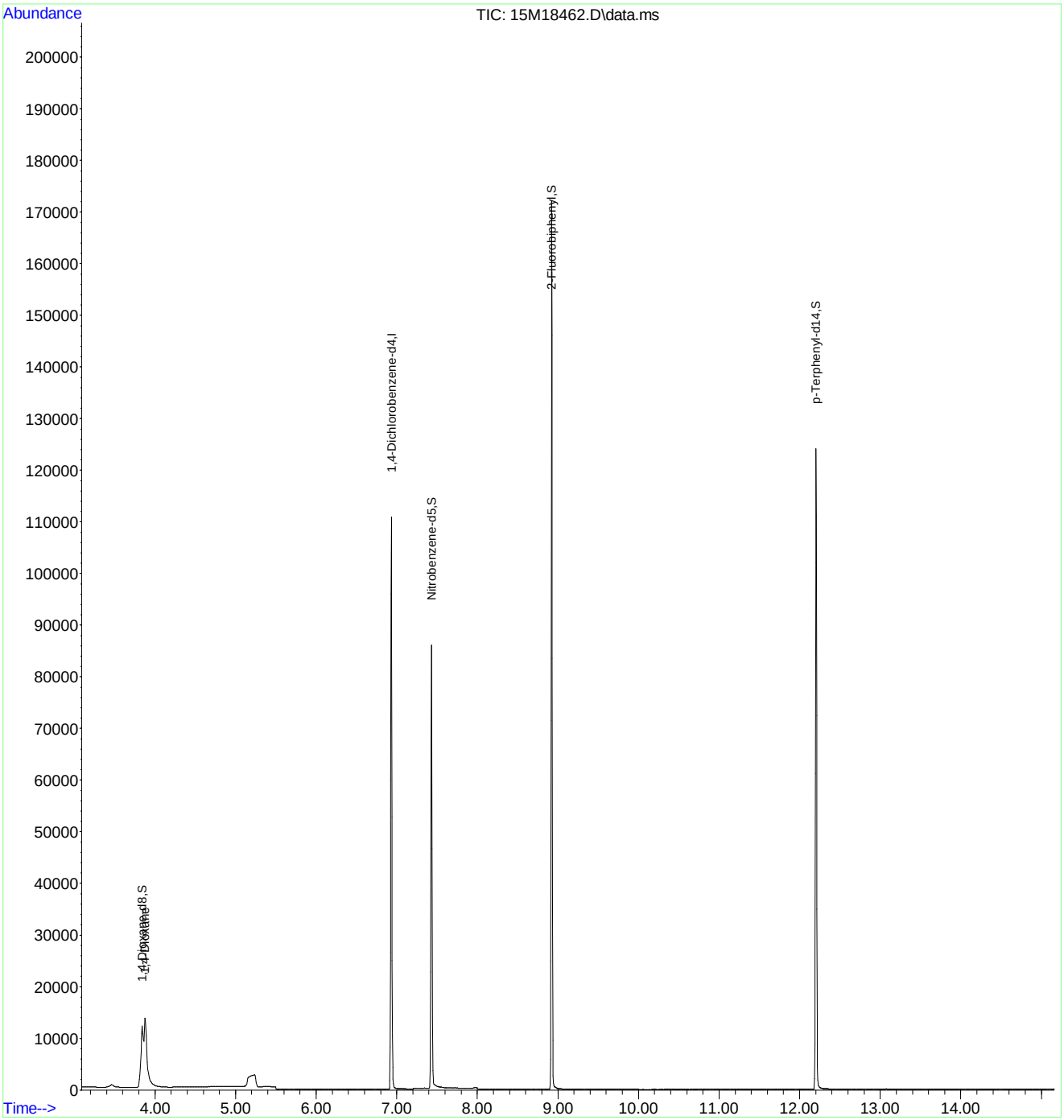

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18463.D
Acq On : 21 Jun 2016 11:57
Operator : MES
Sample : WG573501-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 22 08:04:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	45840	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.841	96	7629	0.4045	ug/L	0.01
Spiked Amount 5.000			Recovery	=	8.00%	
4) Nitrobenzene-d5	7.431	82	16604	0.3429	ug/L	0.00
Spiked Amount 5.000			Recovery	=	6.80%	
5) 2-Fluorobiphenyl	8.923	172	48617	0.3978	ug/L	0.00
Spiked Amount 5.000			Recovery	=	8.00%	
6) p-Terphenyl-d14	12.210	244	44097	0.3743	ug/L	0.03
Spiked Amount 5.000			Recovery	=	7.40%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.876	58	5650	0.4028	ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18463.D
Acq On : 21 Jun 2016 11:57
Operator : MES
Sample : WG573501-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 22 08:04:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

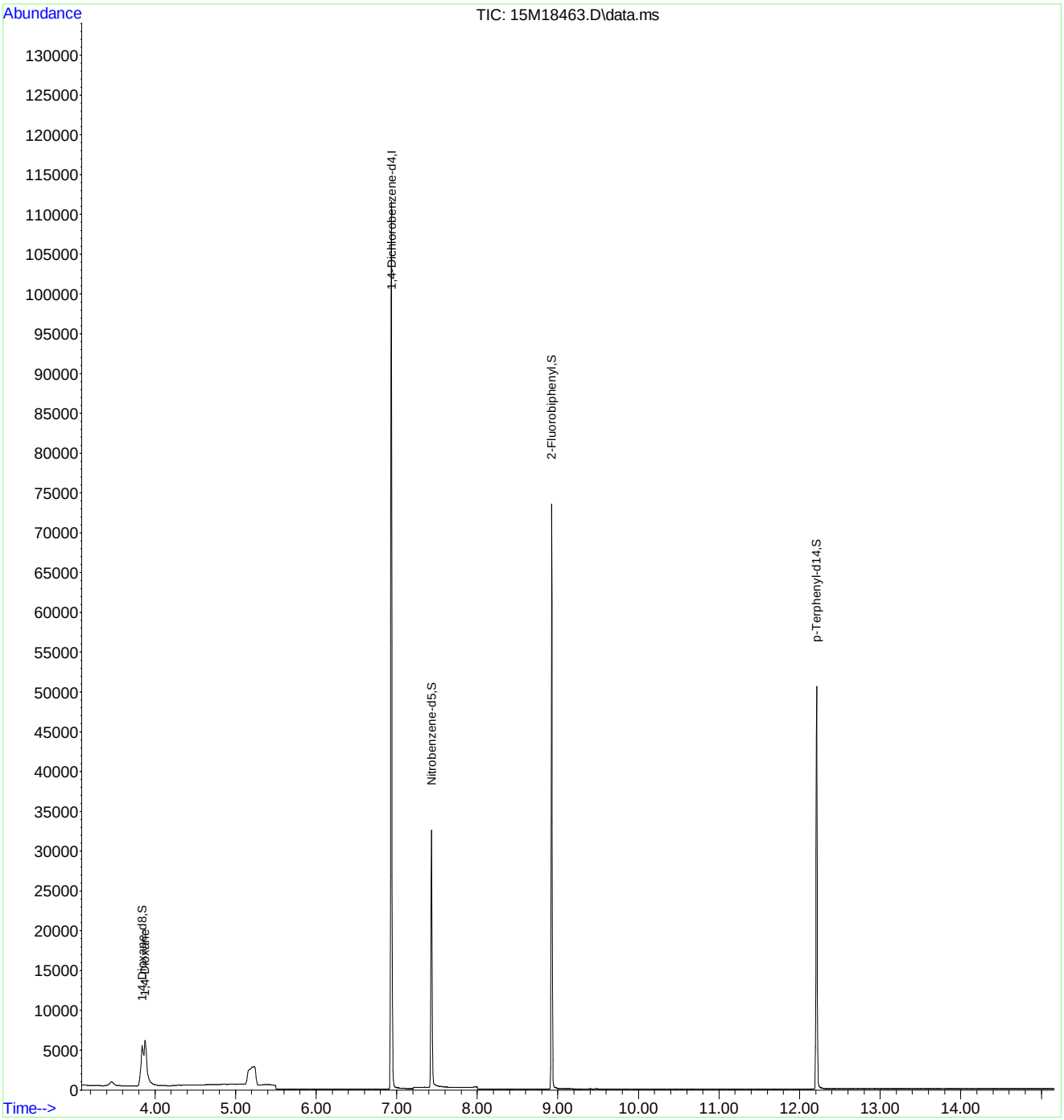

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	41944	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.792	96	22	0.0013	ug/L	-0.04
Spiked Amount 5.000			Recovery	=	0.00%	
4) Nitrobenzene-d5	7.436	82	56	0.0013	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
5) 2-Fluorobiphenyl	8.926	172	23	0.0002	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.214	244	128	0.0012	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	64750	5.0454	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	106	0.00
2	1,4-Dioxane	5.000	5.045	-0.9	106	0.00
3 S	1,4-Dioxane-d8	5.000	0.001	100.0#	0	-0.04
4 S	Nitrobenzene-d5	5.000	0.001	100.0#	0	0.00
5 S	2-Fluorobiphenyl	5.000	0.000	100.0#	0	0.00
6 S	p-Terphenyl-d14	5.000	0.001	100.0#	0	0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

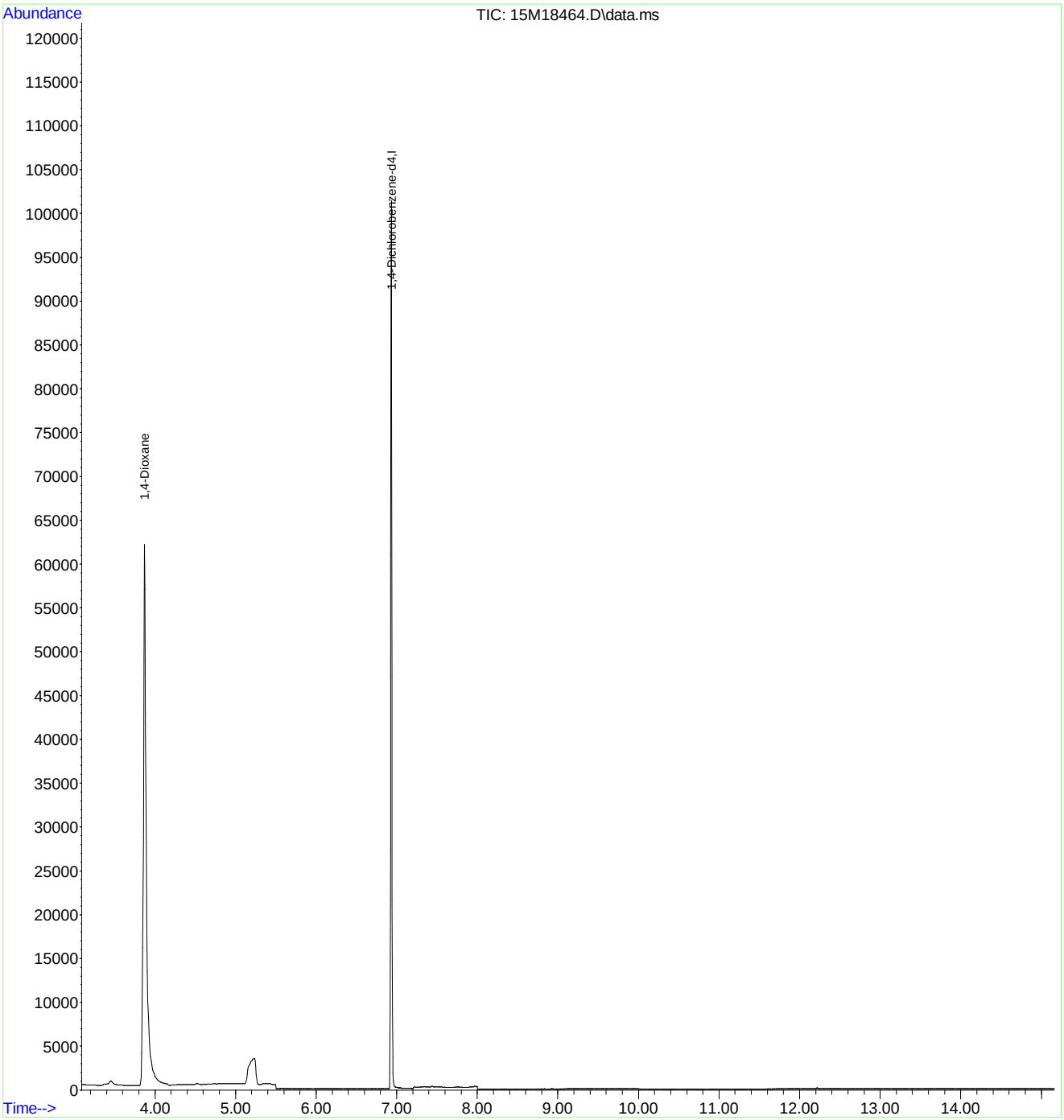

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18717.D
Acq On : 5 Jul 2016 14:51
Operator : MES
Sample : WG575159-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 05 15:07:06 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.867	152	50685	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.778	96	100564	4.8218 ug/L	0.00
Spiked Amount 5.000			Recovery	= 96.40%	
4) Nitrobenzene-d5	7.367	82	310249	5.7949 ug/L	0.00
Spiked Amount 5.000			Recovery	= 115.80%	
5) 2-Fluorobiphenyl	8.853	172	677739	5.0151 ug/L	0.00
Spiked Amount 5.000			Recovery	= 100.40%	
6) p-Terphenyl-d14	12.122	244	688752	5.2876 ug/L	0.03
Spiked Amount 5.000			Recovery	= 105.80%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.813	58	81128	5.2314 ug/L	78

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Continuing Calibration Area and RT check

Instrument: HPMS15
Initial cal date: 06/21/16
CCV date: 07/05/16
CCV Filename: 15M18717

1,4-Dichlorobenzene-d4

	Amount	RT
InitCal	39637	6.93
CCV	50685	6.87

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18717.D
Acq On : 5 Jul 2016 14:51
Operator : MES
Sample : WG575159-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 05 15:07:06 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	128	0.00
2	1,4-Dioxane	5.000	5.231	-4.6	133	0.00
3 S	1,4-Dioxane-d8	5.000	4.822	3.6	122	0.00
4 S	Nitrobenzene-d5	5.000	5.795	-15.9	139	0.00
5 S	2-Fluorobiphenyl	5.000	5.015	-0.3	127	0.00
6 S	p-Terphenyl-d14	5.000	5.288	-5.8	133	0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18717.D
Acq On : 5 Jul 2016 14:51
Operator : MES
Sample : WG575159-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jul 05 15:07:06 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

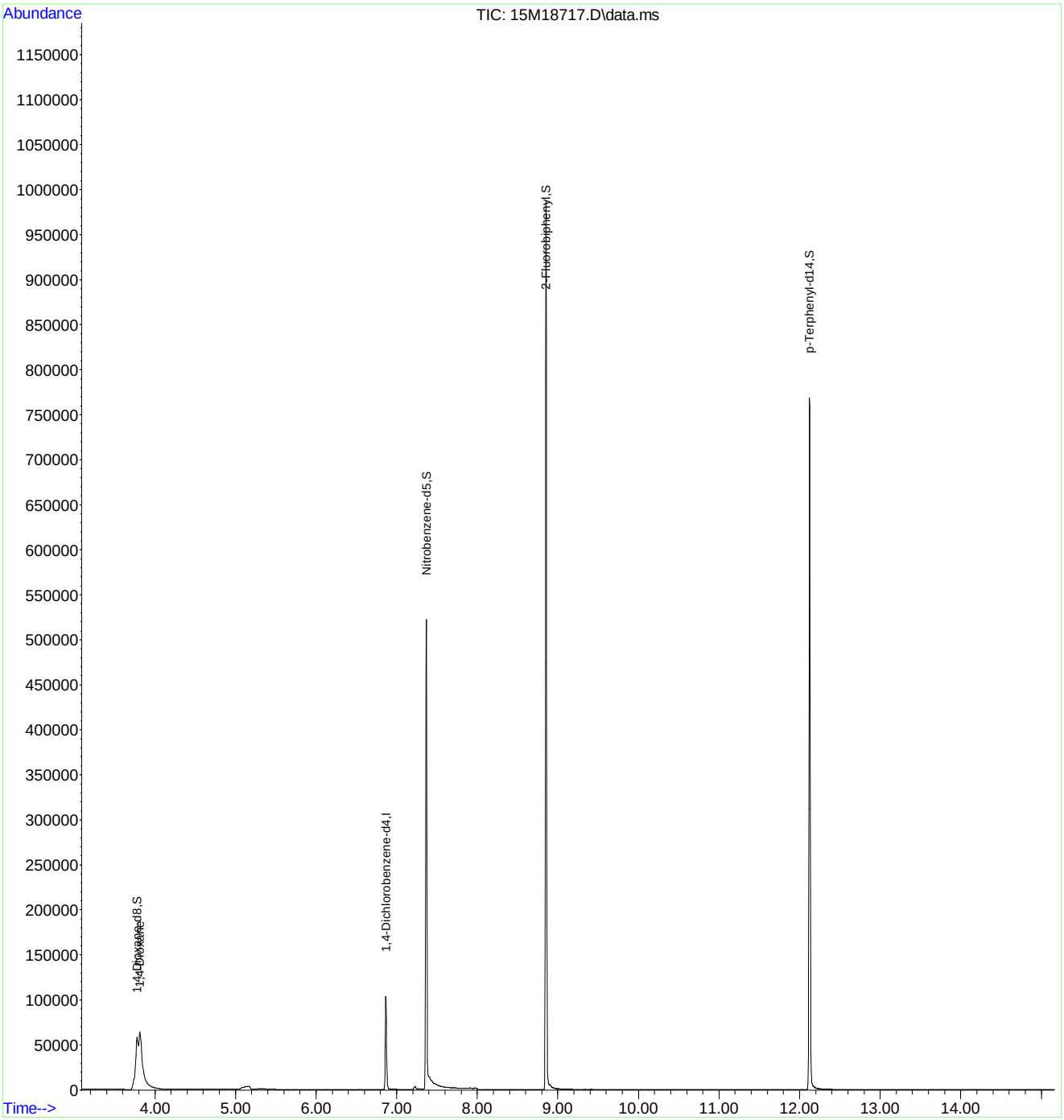

2.2.1.5 Raw QC Data

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

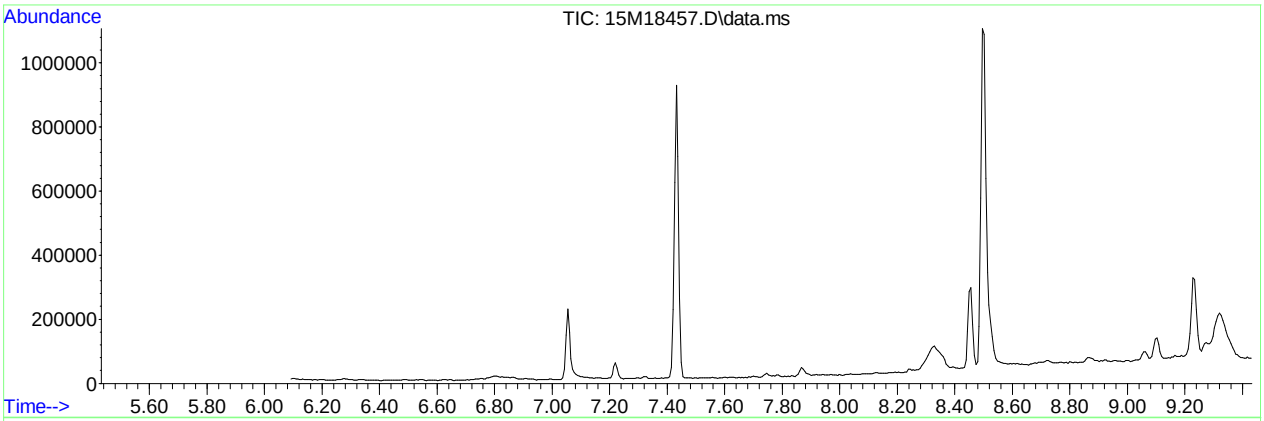

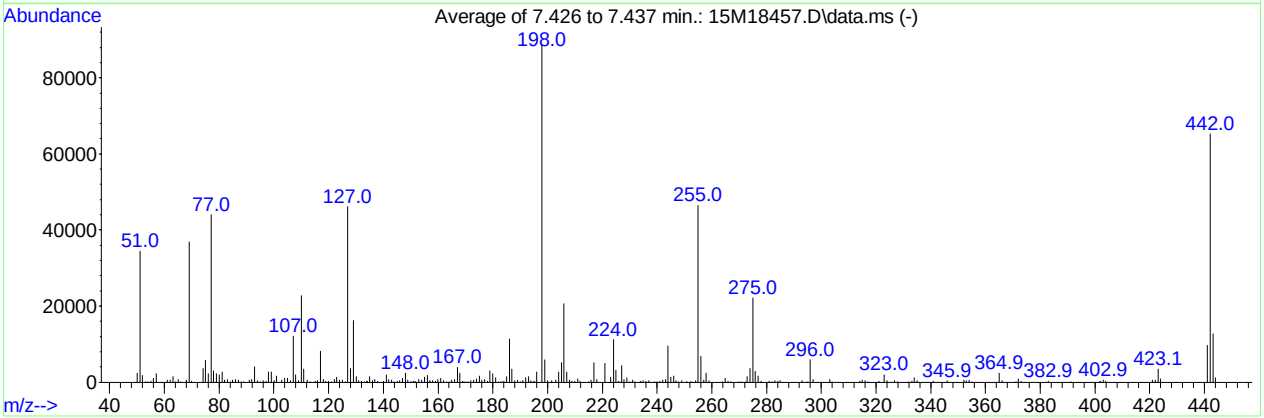

AutoFind: Scans 234, 235, 236; Background Corrected with Scan 228

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	38.8	34488	PASS
68	69	0.00	2	1.4	500	PASS
69	198	0.00	100	41.4	36833	PASS
70	69	0.00	2	0.5	172	PASS
127	198	40	60	51.9	46131	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	88880	PASS
199	198	5	9	6.7	5918	PASS
275	198	10	30	24.9	22090	PASS
365	198	1	100	2.7	2358	PASS
441	443	0.01	100	75.7	9586	PASS
442	198	40	100	73.4	65261	PASS
443	442	17	23	19.4	12659	PASS

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

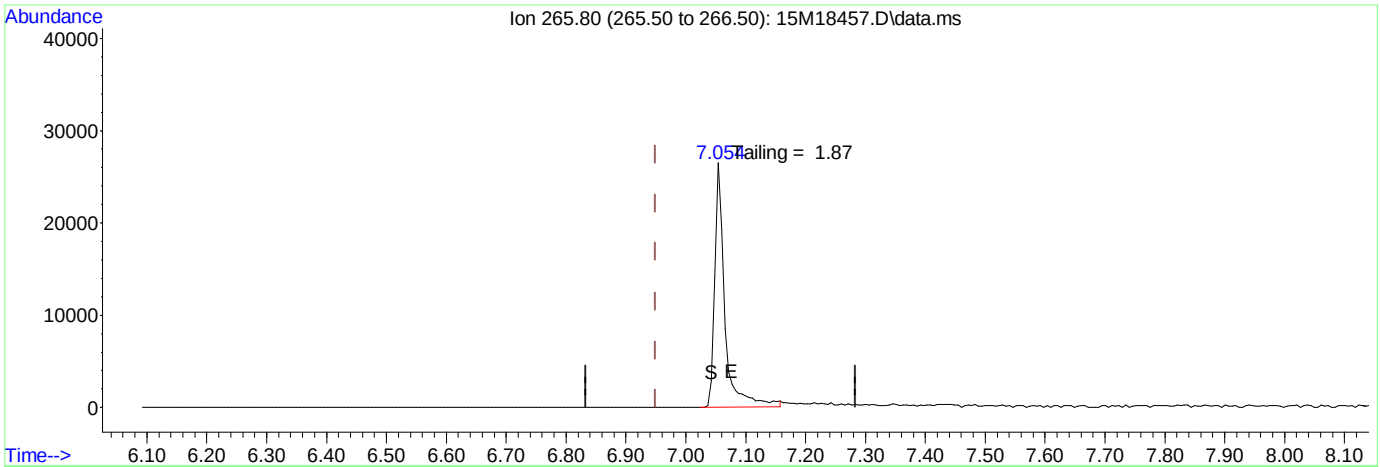

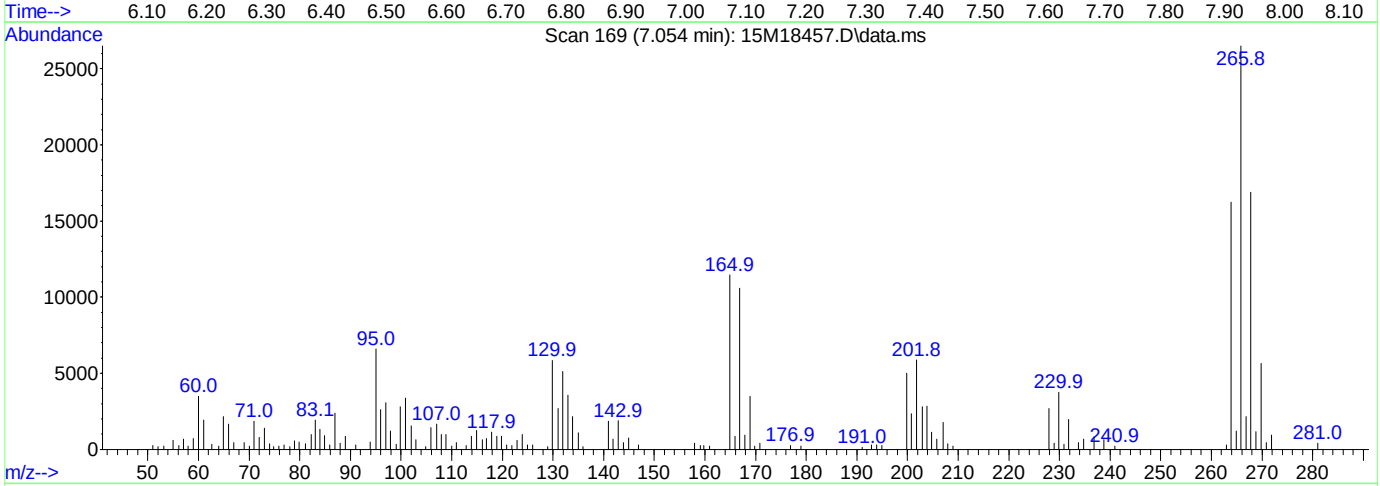

TIC: 15M18457.D\data.ms

(1) Pentachlorophenol

7.054min (+ 0.105) 0.00 ug/ml

response 30738

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

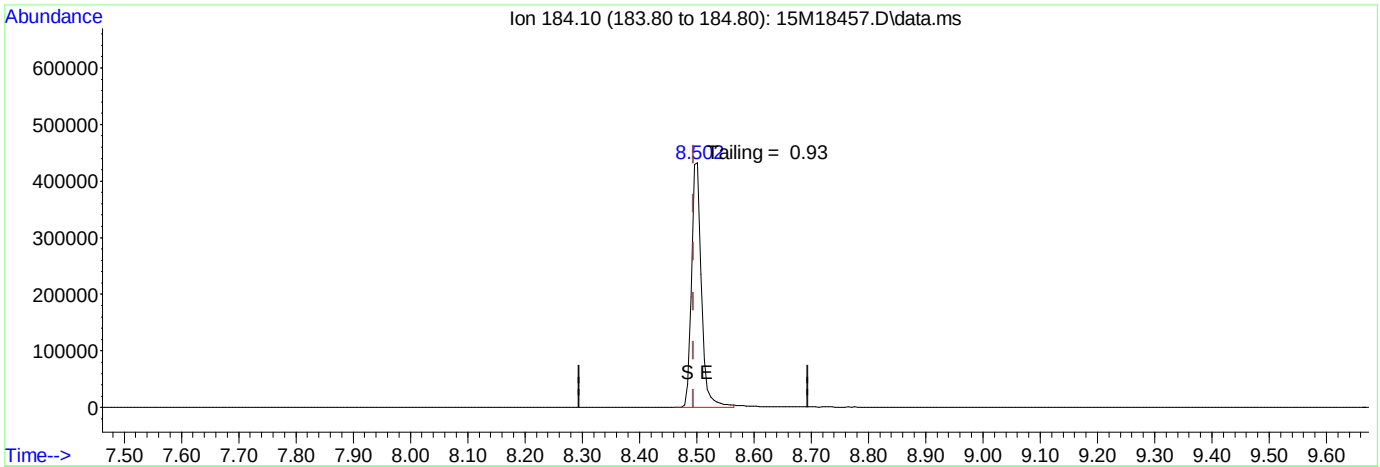

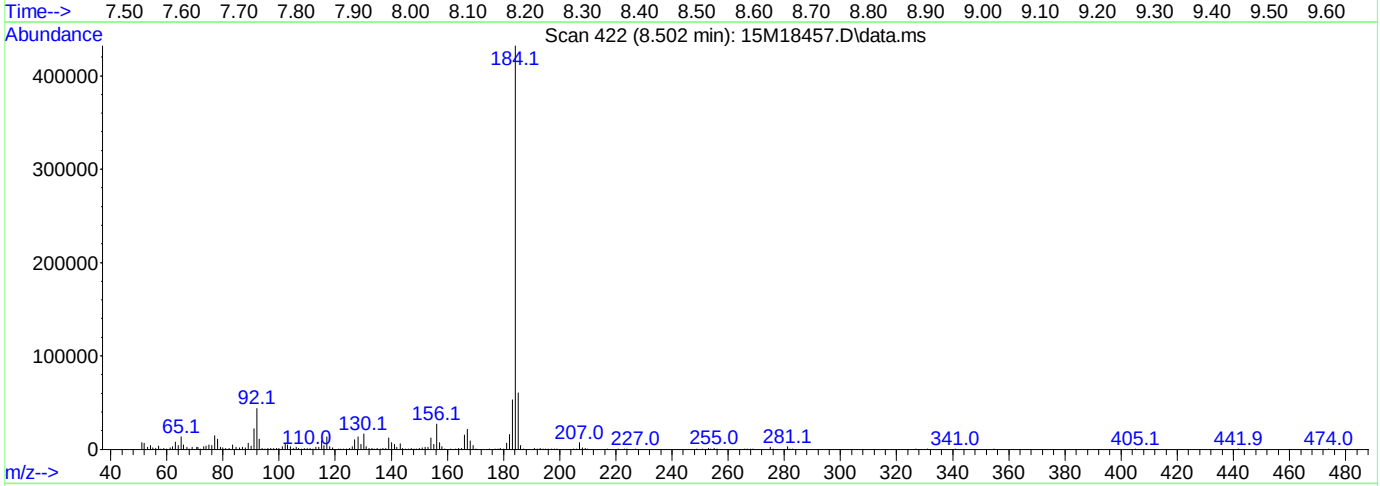

(2) Benzidine

8.502min (+ 0.008) 0.00 ug/ml

response 532770

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

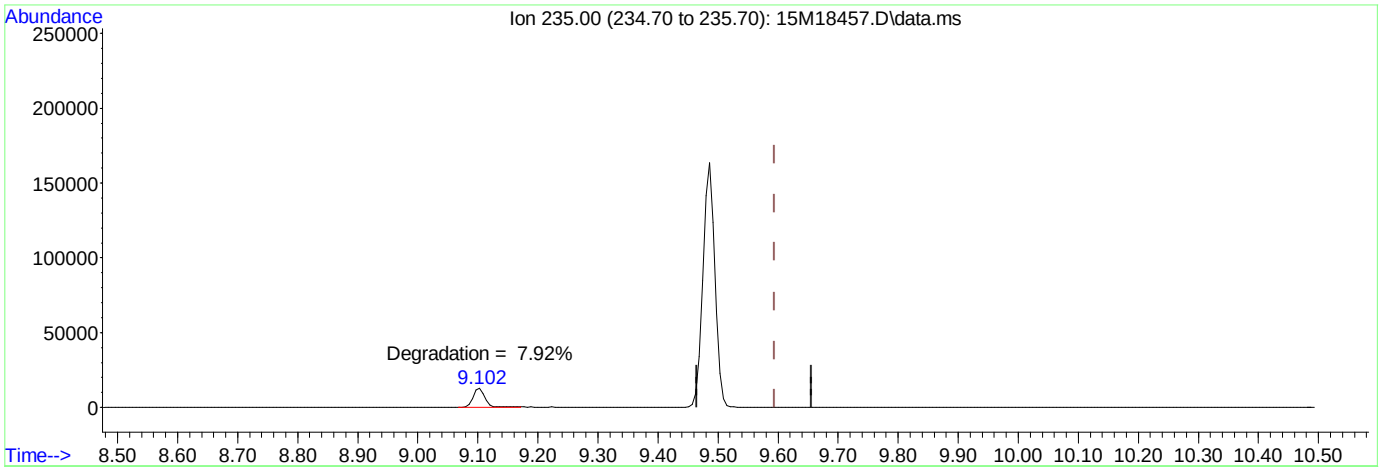

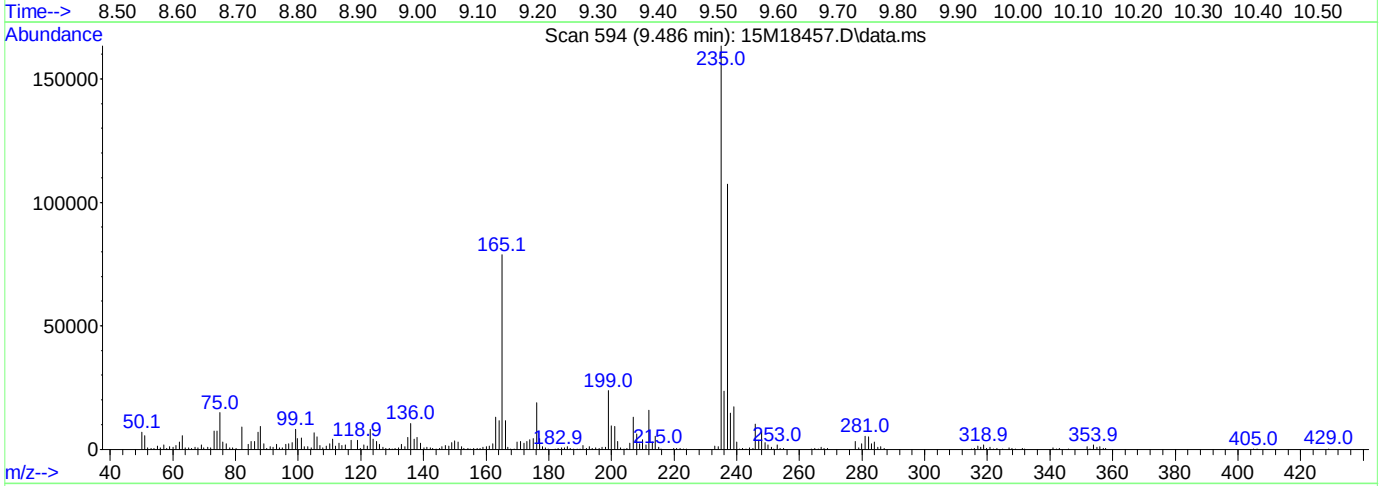

TIC: 15M18457.D\data.ms

(3) DDT

9.486min (-0.108) 0.00 ug/ml

response 180187

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18716.D
Acq On : 5 Jul 2016 14:33
Operator : MES
Sample : WG575159-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

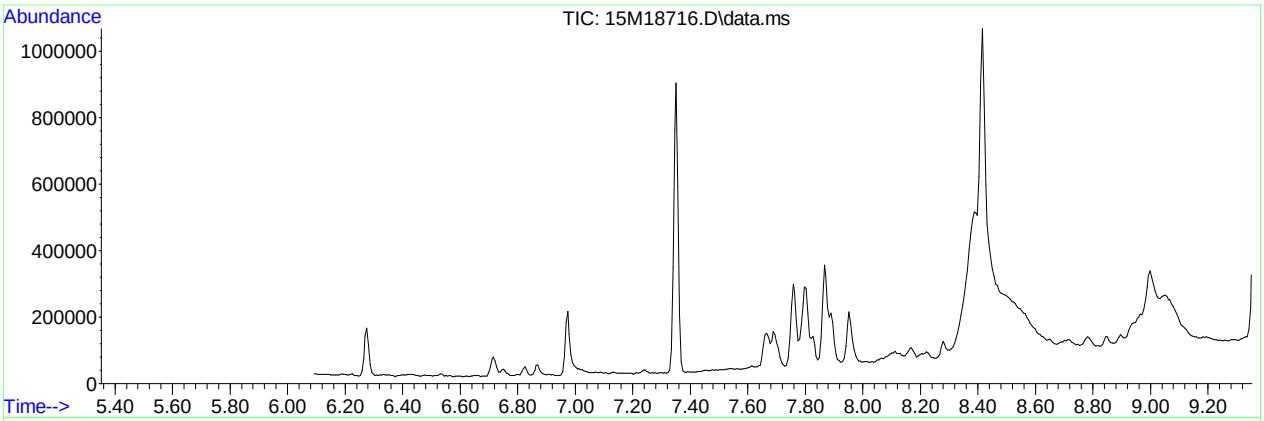

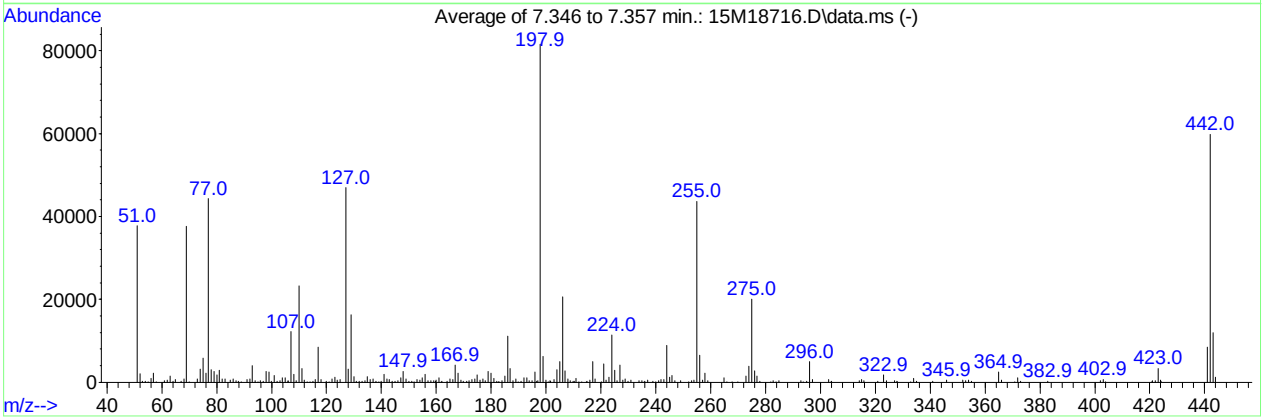

AutoFind: Scans 220, 221, 222; Background Corrected with Scan 214

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	46.2	37745	PASS
68	69	0.00	2	1.9	734	PASS
69	198	0.00	100	46.2	37667	PASS
70	69	0.00	2	0.3	127	PASS
127	198	40	60	57.5	46941	PASS
197	198	0.00	1	0.4	310	PASS
198	198	100	100	100.0	81613	PASS
199	198	5	9	7.6	6162	PASS
275	198	10	30	24.6	20072	PASS
365	198	1	100	2.9	2392	PASS
441	443	0.01	100	70.8	8479	PASS
442	198	40	100	73.3	59805	PASS
443	442	17	23	20.0	11980	PASS

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18716.D
Acq On : 5 Jul 2016 14:33
Operator : MES
Sample : WG575159-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 05 14:45:10 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

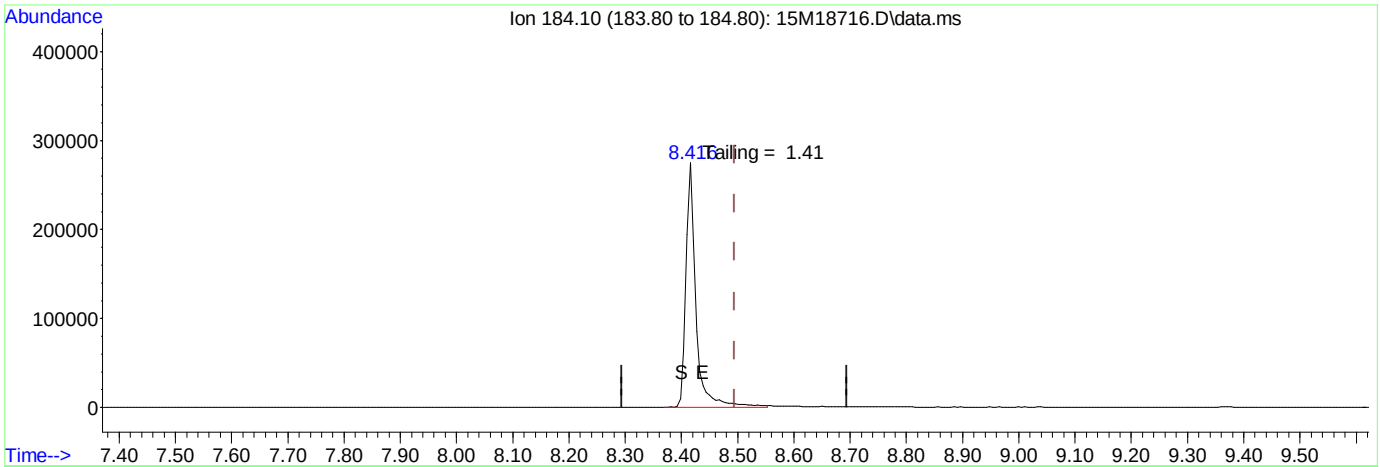

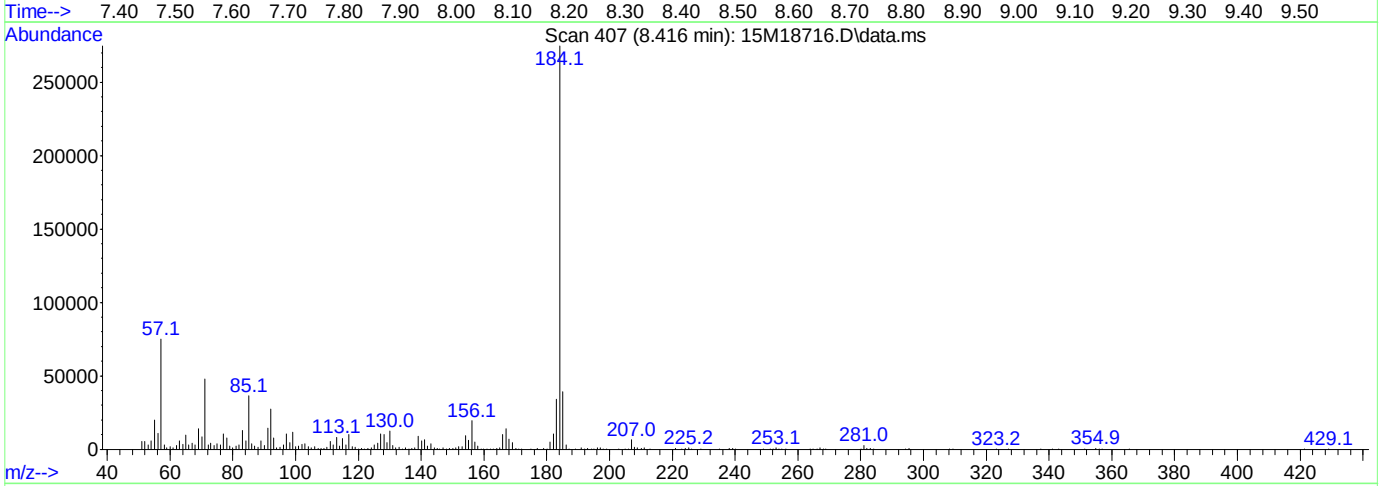

TIC: 15M18716.D\data.ms

(2) Benzidine

8.416min (-0.078) 0.00 ug/ml

response 340801

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18716.D
Acq On : 5 Jul 2016 14:33
Operator : MES
Sample : WG575159-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 05 14:45:10 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

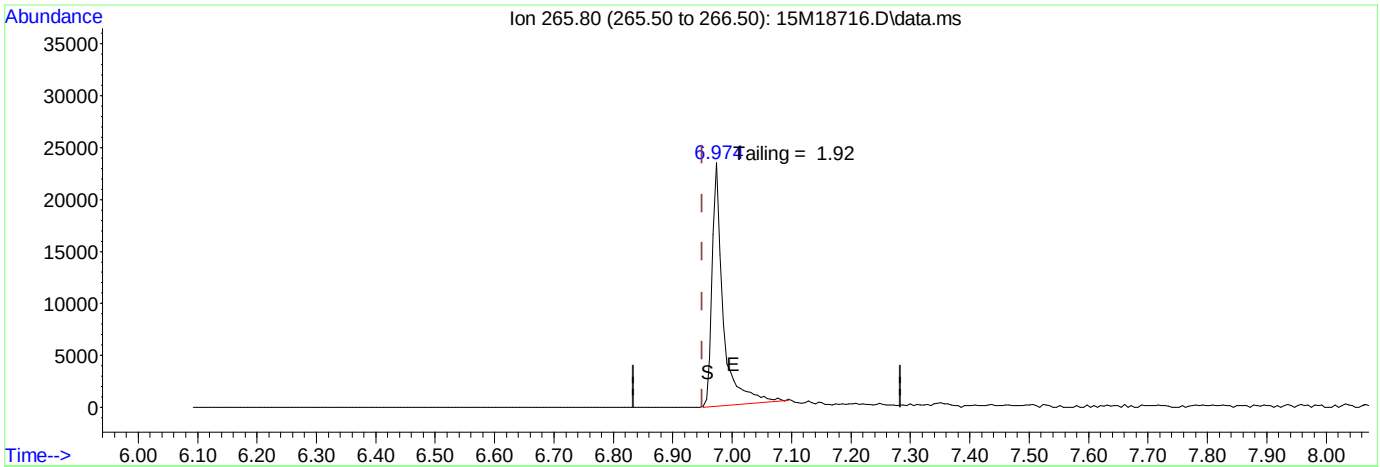

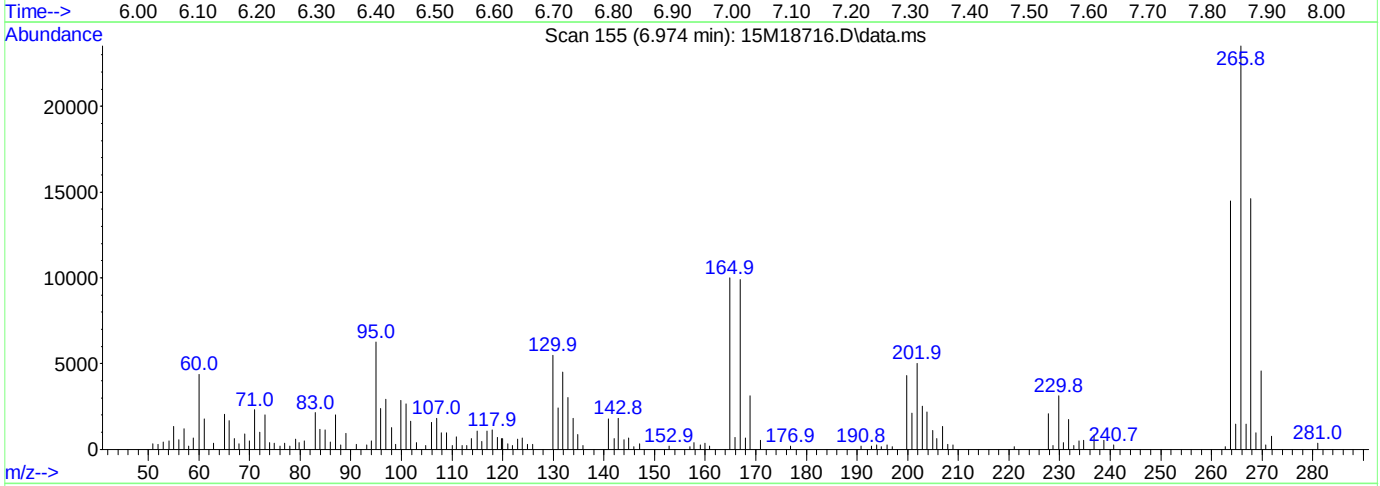

TIC: 15M18716.D\data.ms

(1) Pentachlorophenol

6.974min (+ 0.025) 0.00 ug/ml

response 32364

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18716.D
Acq On : 5 Jul 2016 14:33
Operator : MES
Sample : WG575159-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jul 05 14:45:10 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

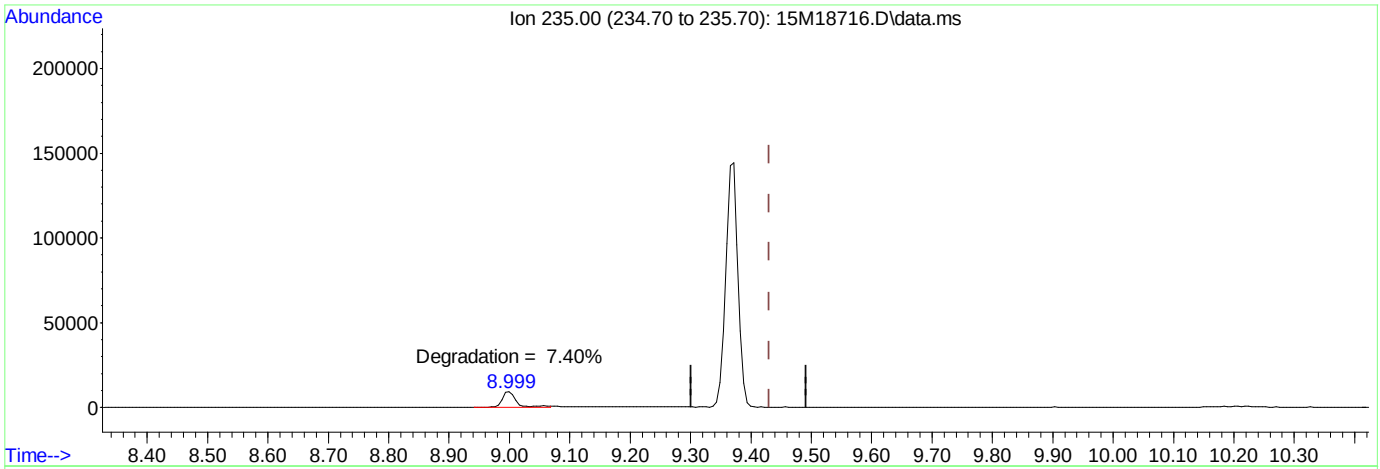

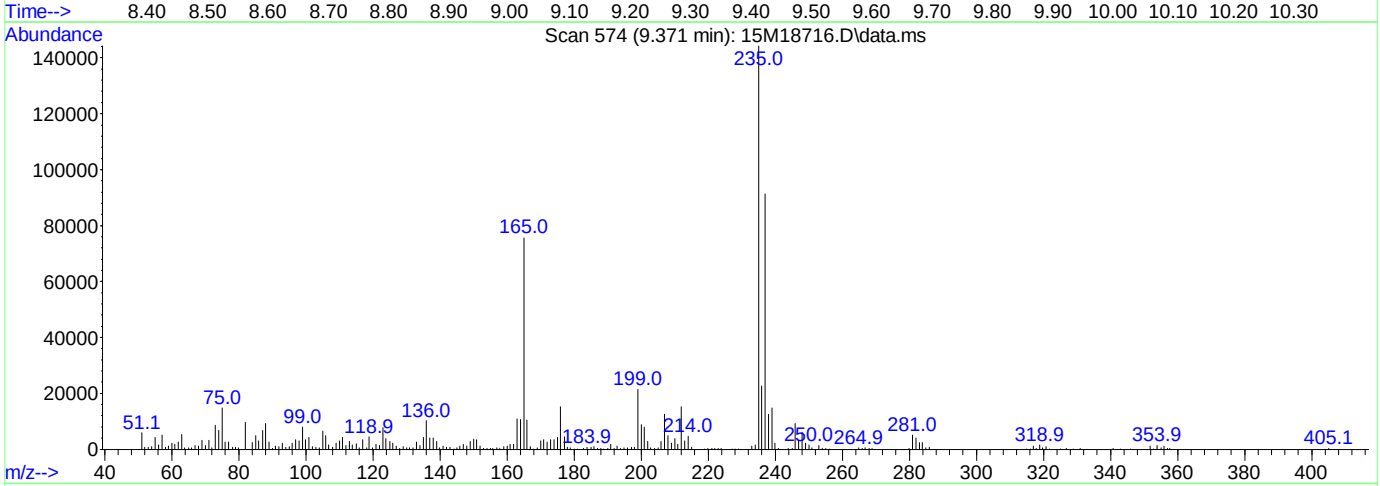

(3) DDT

9.371min (-0.059) 0.00 ug/ml

response 208755

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18718.D
Acq On : 5 Jul 2016 15:14
Operator : MES
Sample : WG574706-01 BLANK 6/30
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jul 05 16:37:18 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.867	152	36576	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.785	96	21271	1.4133	ug/L	0.00
Spiked Amount 5.000			Recovery	=	28.20%	
4) Nitrobenzene-d5	7.372	82	1968	0.0509	ug/L	0.00
Spiked Amount 5.000			Recovery	=	1.00%	
5) 2-Fluorobiphenyl	8.853	172	65	0.0007	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.114	244	1088	0.0116	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.20%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18718.D
Acq On : 5 Jul 2016 15:14
Operator : MES
Sample : WG574706-01 BLANK 6/30
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jul 05 16:37:18 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

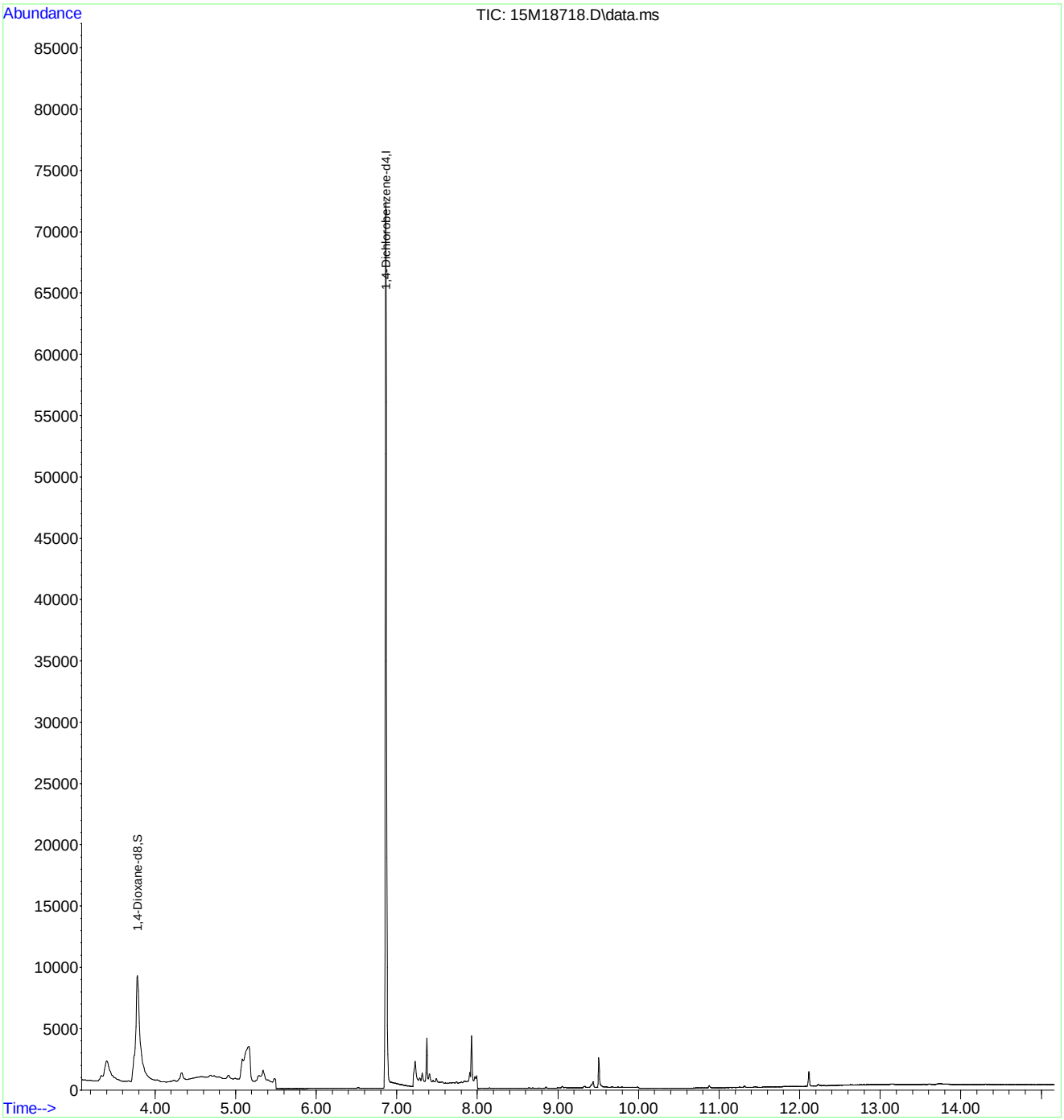

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18719.D
Acq On : 5 Jul 2016 15:38
Operator : MES
Sample : WG574706-02 LCS 6/30
Misc : 1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jul 05 16:37:21 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.867	152	36960	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.778	96	22635	1.4883	ug/L	0.00
Spiked Amount 5.000			Recovery	=	29.80%	
4) Nitrobenzene-d5	7.372	82	1139	0.0292	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.60%	
5) 2-Fluorobiphenyl	8.853	172	78	0.0008	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.122	244	1819	0.0192	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.40%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.813	58	17552	1.5521	ug/L	77

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18719.D
Acq On : 5 Jul 2016 15:38
Operator : MES
Sample : WG574706-02 LCS 6/30
Misc : 1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jul 05 16:37:21 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

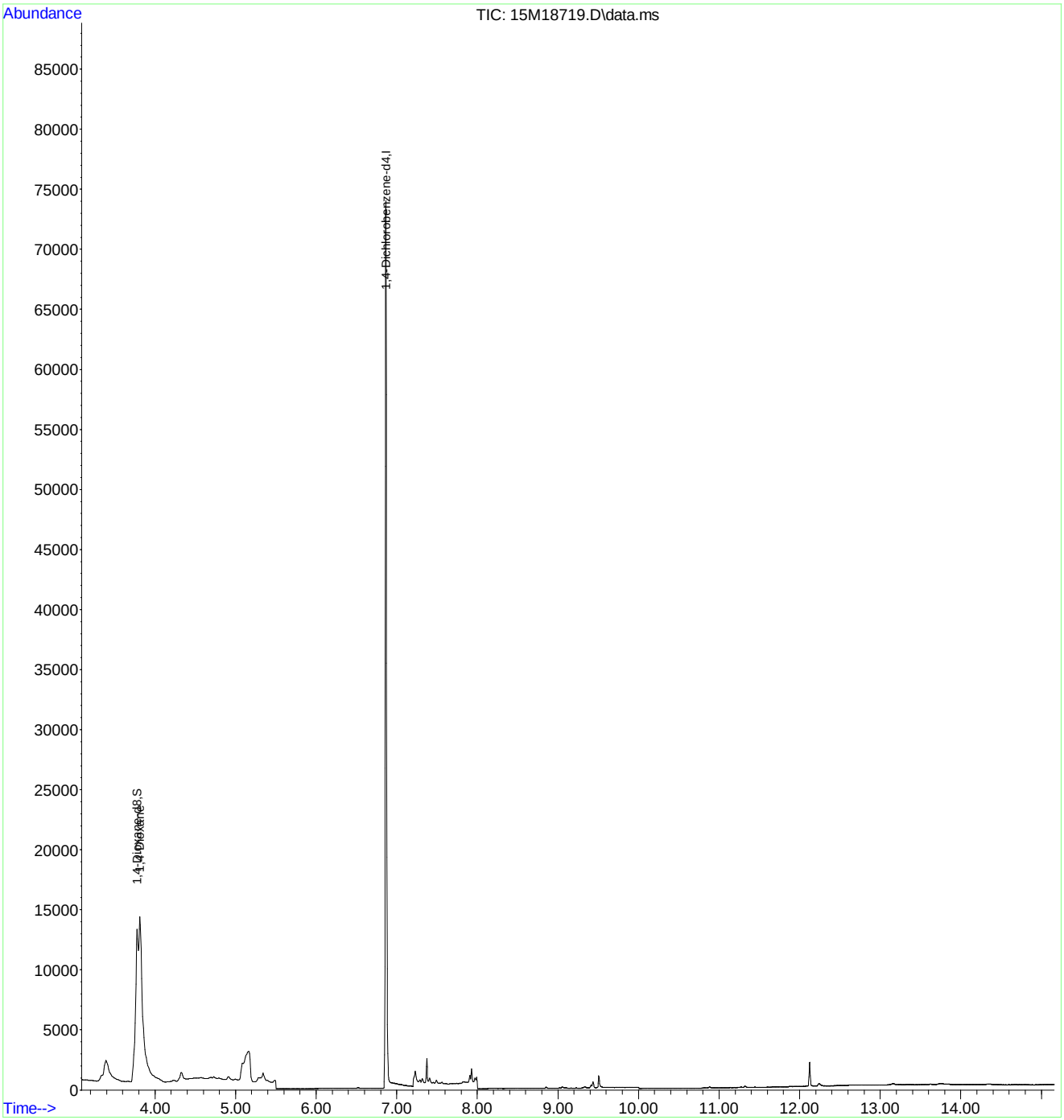

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18720.D
Acq On : 5 Jul 2016 16:01
Operator : MES
Sample : WG574706-03 LCSDUP 6/30
Misc : 1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jul 05 16:37:24 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.866	152	37076	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.777	96	27386	1.7951	ug/L	0.00
Spiked Amount 5.000			Recovery	=	36.00%	
4) Nitrobenzene-d5	7.371	82	1899	0.0485	ug/L	0.00
Spiked Amount 5.000			Recovery	=	1.00%	
5) 2-Fluorobiphenyl	8.852	172	144	0.0015	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.129	244	334	0.0035	ug/L	0.04
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.813	58	23450	2.0672	ug/L	78

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\070516\
Data File : 15M18720.D
Acq On : 5 Jul 2016 16:01
Operator : MES
Sample : WG574706-03 LCSDUP 6/30
Misc : 1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jul 05 16:37:24 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Wed Jun 29 13:01:19 2016
Response via : Initial Calibration

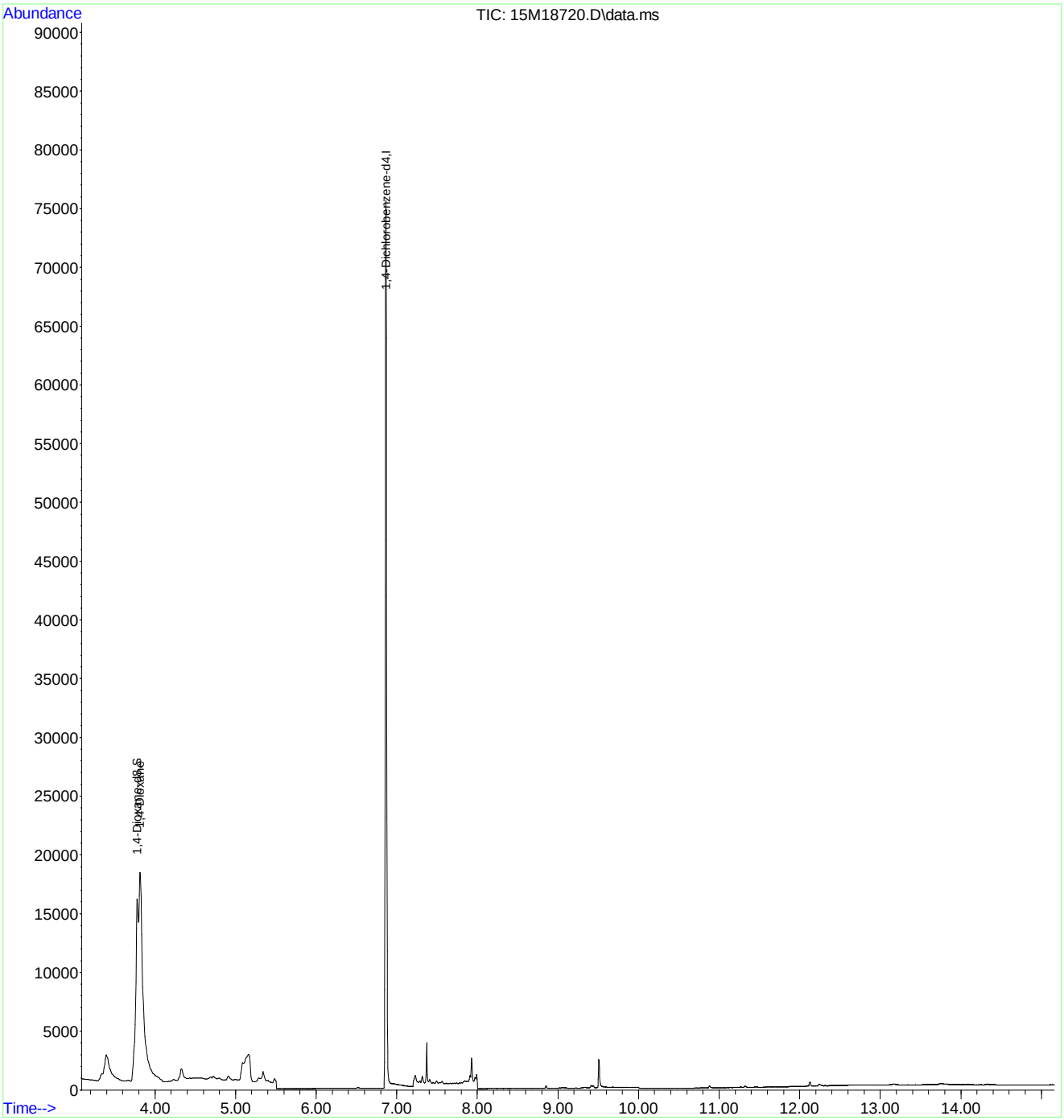

2.2 General Chromatography Data

2.2.2 6850 LC/MS Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061648-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW25-062916	**Prep Method:**	6850	**Prep Date:**	07/01/2016 13:30
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG575005	**Analyst:**	JWR	**Run Date:**	07/02/2016 02:01
Collect Date:	06/29/2016 08:05	**Dilution:**	1	**File ID:**	1LM.LM35600
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.2.2.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1415 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG575005-01 MCT	10,020.	
-02 Blank	0.31	
-03 LCS	0.44	
-04 LCS2	0.41	
L16070001-01 LOD	0.38	
L16070003-01 LOQ	0.43	
-09 LOQ	0.45	
L16061289-01	6,210.	
-02	147.9	
-03	105.2	
-05	1,381.	
L16061290-01	594.	
-02	1,157.	
-04	219.	
-05	172.8	
-06	826.	
L16061452-01	1,890.	
-03	1,179.	
L16061453-01	2,610.	
-02	1,188.	
-03	1,101.	
L16061559-01	3,040.	
-02	3,140.	
L16061648-01	669.	

Analyst: John Richards

Date/Time: 07/01/16 19:50

DCN#119454

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

Page: 1 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

Page: 2 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 070116_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG575005 (waters)

Internal STD: STD18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments: Samples L16061289(-01,-02), L16061290-05 and L16061452-03 were analyzed at dilutions based on their historical results.
Samples L16061290-04 and L16061453-01 had inconsistent historical results. These samples were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35568	WG575015-01 CCB	1	1		07/01/16 15:55
2	1LM.LM35569	WG575015-02 CCV (1.0ug/L)	1	1	STD75510	07/01/16 16:14
3	1LM.LM35570	WG575005-05 MRL (0.2ug/L)	1	1	STD75510	07/01/16 16:33
4	1LM.LM35571	WG575005-01 MCT (0.2ug/L)	1	1	STD75512	07/01/16 16:52
5	1LM.LM35572	WG575005-02 BLANK	1	1		07/01/16 17:11
6	1LM.LM35573	WG575005-03 LCS (0.2ug/L)	1	1	STD75512	07/01/16 17:30
7	1LM.LM35574	WG575005-04 LCS2 (0.2ug/L)	1	1	STD75512	07/01/16 17:49
8	1LM.LM35575	L16070001-01 LOD (0.1ug/L)	1	1	STD75512	07/01/16 18:08
9	1LM.LM35576	L16070003-01 LOQ (0.2ug/L)	1	1	STD75512	07/01/16 18:27
10	1LM.LM35577	L16070003-09 LOQ (0.2ug/L)	1	1	STD75512	07/01/16 18:46
11	1LM.LM35578	L16061289-01 (10,000x)	1	10000		07/01/16 19:05
12	1LM.LM35579	L16061289-02 (100x)	1	100		07/01/16 19:24
13	1LM.LM35580	L16061289-03	1	1		07/01/16 19:43
14	1LM.LM35581	WG575015-03 CCV (1.0ug/L)	1	1	STD75510	07/01/16 20:02
15	1LM.LM35582	WG575005-06 MRL (0.2ug/L)	1	1	STD75510	07/01/16 20:21
16	1LM.LM35583	WG575015-04 CCB	1	1		07/01/16 20:39
17	1LM.LM35584	L16061289-05	1	1		07/01/16 20:58
18	1LM.LM35585	L16061290-01	1	1		07/01/16 21:17
19	1LM.LM35586	L16061290-02	1	1		07/01/16 21:36
20	1LM.LM35587	L16061290-04 (500x)	1	500		07/01/16 21:55
21	1LM.LM35588	L16061290-05 (10,000x) (NR)	1	10000		07/01/16 22:14
22	1LM.LM35589	L16061290-06	1	1		07/01/16 22:33
23	1LM.LM35590	L16061452-01	1	1		07/01/16 22:52
24	1LM.LM35591	L16061452-03 (10,000x)	1	10000		07/01/16 23:11
25	1LM.LM35592	L16061453-01 (10x)	1	10		07/01/16 23:30
26	1LM.LM35593	L16061453-02	1	1		07/01/16 23:49
27	1LM.LM35594	WG575015-05 CCV (1.0ug/L)	1	1	STD75510	07/02/16 00:08
28	1LM.LM35595	WG575005-07 MRL (0.2ug/L)	1	1	STD75510	07/02/16 00:27
29	1LM.LM35596	WG575015-06 CCB	1	1		07/02/16 00:46
30	1LM.LM35597	L16061453-03	1	1		07/02/16 01:05
31	1LM.LM35598	L16061559-01	1	1		07/02/16 01:23
32	1LM.LM35599	L16061559-02	1	1		07/02/16 01:42

Page: 1 Approved: 06-JUL-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 070116_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG575005 (waters)

Internal STD: STD18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 NA

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
33	1LM.LM35600	L16061648-01	1	1		07/02/16 02:01
34	1LM.LM35601	WG575015-07 CCV (1.0ug/L)	1	1	STD75510	07/02/16 02:20
35	1LM.LM35602	WG575005-08 MRL (0.2ug/L)	1	1	STD75510	07/02/16 02:39
36	1LM.LM35603	WG575015-08 CCB	1	1		07/02/16 02:58

Comments

Seq.	Rerun	Dil.	Reason	Analytes
21	X	1000	Analyzed too dilute	
	L16061290-05 (10,000x) (NR) : This sample did not conform to its historical results and was analyzed too dilute at 10,000x dilution. This sample will be ungrouped from this analytical batch and reanalyzed at a 1000x dilution on another day.			

Page: 2 Approved: 06-JUL-16

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 04-MAY-2016 John Richards

Secondary Reviewer: 05-MAY-2016 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 01-JUL-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 76123
Analytical Workgroups: L16061289,1290,1452,1453,1559,1648 L16070001(LOD), 0003(LOQ)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 06-JUL-2016 John Richards

Secondary Reviewer: 06-JUL-2016 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-06-2016 14:48:43

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG575005

Login Number: L16061648

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW25-062916	01	06/29/16					07/01/2016	2.2	28		07/02/16	.5	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4841067
Report generated 07/07/2016 09:05

METHOD BLANK SUMMARY

Login Number: L16061648
Blank File ID: 1LM.LM35572
Prep Date: 07/01/16 13:30
Analyzed Date: 07/01/16 17:11
Analyst: JWR

Work Group: WG575005
Blank Sample ID: WG575005-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG575005-05	1LM.LM35570	07/01/16 16:33	01
MCT	WG575005-01	1LM.LM35571	07/01/16 16:52	01
LCS	WG575005-03	1LM.LM35573	07/01/16 17:30	01
LCS2	WG575005-04	1LM.LM35574	07/01/16 17:49	01
QCMRL	WG575005-06	1LM.LM35582	07/01/16 20:21	01
QCMRL	WG575005-07	1LM.LM35595	07/02/16 00:27	01
18WW25-062916	L16061648-01	1LM.LM35600	07/02/16 02:01	01
QCMRL	WG575005-08	1LM.LM35602	07/02/16 02:39	01

Report Name: BLANK_SUMMARY
PDF File ID: 4841068
Report generated 07/07/2016 09:05

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061648 Prep Date: 07/01/16 13:30 Sample ID: WG575005-02
Instrument ID: LCMS1 Run Date: 07/01/16 17:11 Prep Method: 6850
File ID: 1LM.LM35572 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575005 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4841069
07-JUL-2016 09:05

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061648 Analyst: JWR Prep Method: 6850
Instrument ID: LCMS1 Matrix: Water Method: 6850
Workgroup (AAB#): WG575005 Units: ug/L
QC Key: DOD4 Lot #: STD75512

Sample ID: WG575005-03 LCS File ID: 1LM.LM35573 Run Date: 07/01/2016 17:30
Sample ID: WG575005-04 LCS2 File ID: 1LM.LM35574 Run Date: 07/01/2016 17:49

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Perchlorate	0.200	0.201	101	0.200	0.211	106	4.85	80 - 120	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4841070
Report generated: 07/07/2016 09:05

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061648
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4841532
Report generated 07/07/2016 09:05

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061648

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4841532
Report generated 07/07/2016 09:05

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061648

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4841532
Report generated 07/07/2016 09:05

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061648

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008

PDF File ID: 4841532

Report generated 07/07/2016 09:05

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061648 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4841533
Report generated 07/07/2016 09:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/01/2016
Sample ID: WG575015-01
Instrument ID: LCMS1
Run Time: 15:55
Method: 6850
File ID: 1LM.LM35568
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4841073
Report generated 07/07/2016 09:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/01/2016
Sample ID: WG575015-04
Instrument ID: LCMS1
Run Time: 20:39
Method: 6850
File ID: 1LM.LM35583
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4841073
Report generated 07/07/2016 09:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/02/2016
Sample ID: WG575015-06
Instrument ID: LCMS1
Run Time: 00:46
Method: 6850
File ID: 1LM.LM35596
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4841073
Report generated 07/07/2016 09:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/02/2016
Sample ID: WG575015-08
Instrument ID: LCMS1
Run Time: 02:58
Method: 6850
File ID: 1LM.LM35603
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4841073
Report generated 07/07/2016 09:05

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/01/2016
Sample ID: WG575015-02
Instrument ID: LCMS1
Run Time: 16:14
Method: 6850
File ID: 1LM.LM35569
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.73	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4841072
Report generated 07/07/2016 09:05

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/01/2016
Sample ID: WG575015-03
Instrument ID: LCMS1
Run Time: 20:02
Method: 6850
File ID: 1LM.LM35581
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.72	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4841072
Report generated 07/07/2016 09:05

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/02/2016
Sample ID: WG575015-05
Instrument ID: LCMS1
Run Time: 00:08
Method: 6850
File ID: 1LM.LM35594
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.74	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4841072
Report generated 07/07/2016 09:05

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/02/2016
Sample ID: WG575015-07
Instrument ID: LCMS1
Run Time: 02:20
Method: 6850
File ID: 1LM.LM35601
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG575005
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.71	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4841072
Report generated 07/07/2016 09:05

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061648 Run Date: 07/01/2016 Sample ID: WG575005-05
Instrument ID: LCMS1 Run Time: 16:33 Prep Method: 6850
File ID: 1LM.LM35570 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575005 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.207	104	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4841071
Report generated 07/07/2016 09:05

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061648 Run Date: 07/01/2016 Sample ID: WG575005-06
Instrument ID: LCMS1 Run Time: 20:21 Prep Method: 6850
File ID: 1LM.LM35582 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575005 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4841071
Report generated 07/07/2016 09:05

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061648 Run Date: 07/02/2016 Sample ID: WG575005-07
Instrument ID: LCMS1 Run Time: 00:27 Prep Method: 6850
File ID: 1LM.LM35595 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575005 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.207	104	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4841071
Report generated 07/07/2016 09:05

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061648 Run Date: 07/02/2016 Sample ID: WG575005-08
Instrument ID: LCMS1 Run Time: 02:39 Prep Method: 6850
File ID: 1LM.LM35602 Analyst: JWR Method: 6850
Workgroup (AAB#): WG575005 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.209	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4841071
Report generated 07/07/2016 09:05

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16061648
Instrument ID: LCMS1
Workgroup (AAB#): WG575005

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16061648-01	1.00	01	369000
WG575005-02	1.00	01	451000
WG575005-03	1.00	01	451000
WG575005-04	1.00	01	450000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4841074
Report generated 07/07/2016 09:05

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**	6850	**Samplenum:**	L16061648-01
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35600
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 02:01	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	3310	1370	2.42	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**	6850	**Samplenum:**	WG575005-01
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35571
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 16:52	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	30200	9940	3.04	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**	6850	**Samplenum:**	WG575005-02
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35572
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 17:11	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**	6850	**Samplenum:**	WG575005-03
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35573
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 17:30	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	31100	11300	2.75	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**	6850	**Samplenum:**	WG575005-04
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35574
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 17:49	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32500	11800	2.75	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**	6850	**Samplenum:**	WG575005-05
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35570
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 16:33	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	33000	11700	2.82	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**	6850	**Samplenum:**	WG575005-06
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35582
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 20:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32800	11400	2.88	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**	6850	**Samplenum:**	WG575005-07
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35595
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 00:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35700	12900	2.77	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**	6850	**Samplenum:**	WG575005-08
Instrument:	LCMS1	**Prep Date:**	07/01/2016 13:30	**File ID:**	1LM.LM35602
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 02:39	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36500	12300	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**		**Samplenum:**	WG575015-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35568
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 15:55	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**		**Samplenum:**	WG575015-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35569
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 16:14	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	163000	56900	2.86	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**		**Samplenum:**	WG575015-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35581
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 20:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	167000	58000	2.88	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**		**Samplenum:**	WG575015-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35583
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/01/2016 20:39	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**		**Samplenum:**	WG575015-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35594
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 00:08	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	175000	57200	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**		**Samplenum:**	WG575015-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35596
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 00:46	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**		**Samplenum:**	WG575015-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35601
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 02:20	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	175000	58500	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061648	**Prep Method:**		**Samplenum:**	WG575015-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35603
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG575005	**Analysis Date:**	07/02/2016 02:58	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

2.2.2.3 Sample Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:36 PM

Data File	LM35600.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 2:01:51 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061648-01	**Injection Vial**	27.00
Data File	LM35600.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 2:01:51 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	L16061648-01	**Dilution Factor**	1.00
Sample Comment	1,1 (screened)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.690e+05	9.32	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.310e+03	9.35	N/A	0.0229
Perchlorate conf	1.370e+03	9.34	N/A	0.0128

O18LP (Internal Standard)

RT (Exp. RT): 9.32(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

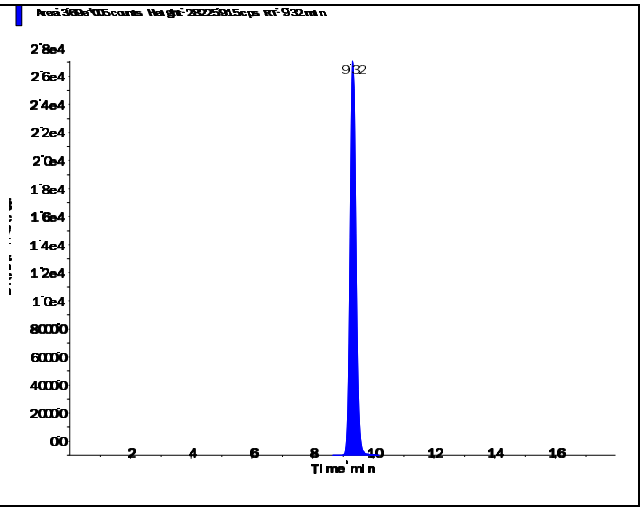

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:36 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	0.0229 ng/ml
Area Ratio:	0.009
Sample Type:	(Unknown)

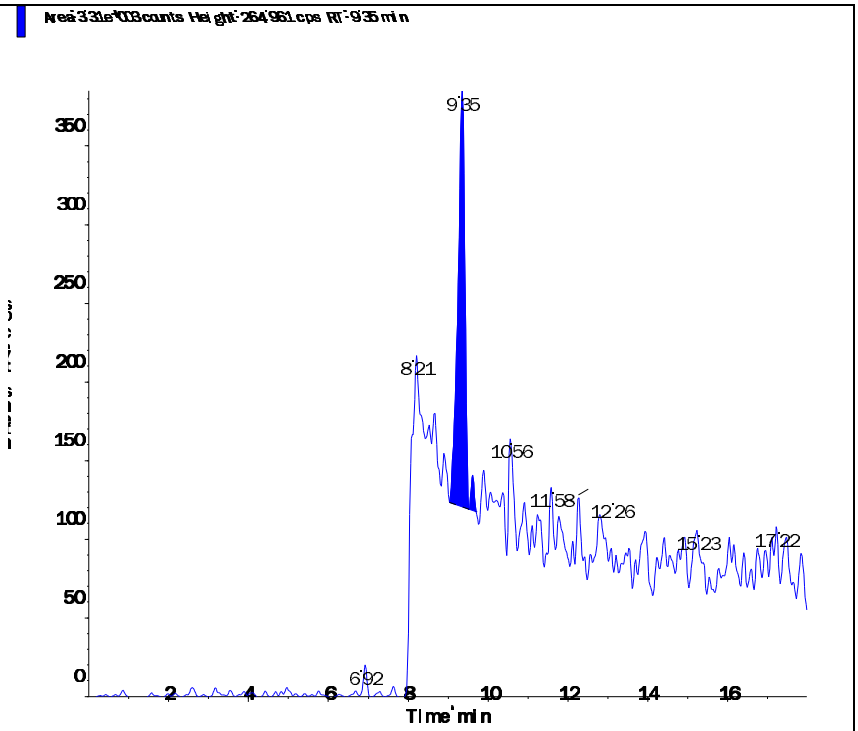

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.34 (9.84) min
Calculated conc:	0.0128 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)

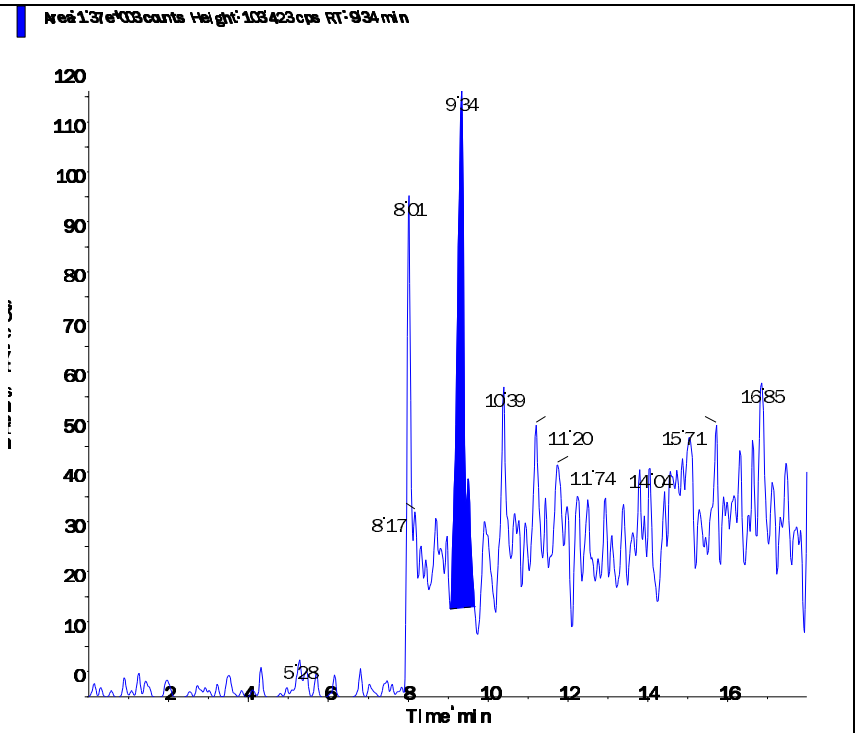

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2.2.2.4 Standards Data

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Data File	LM34686.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

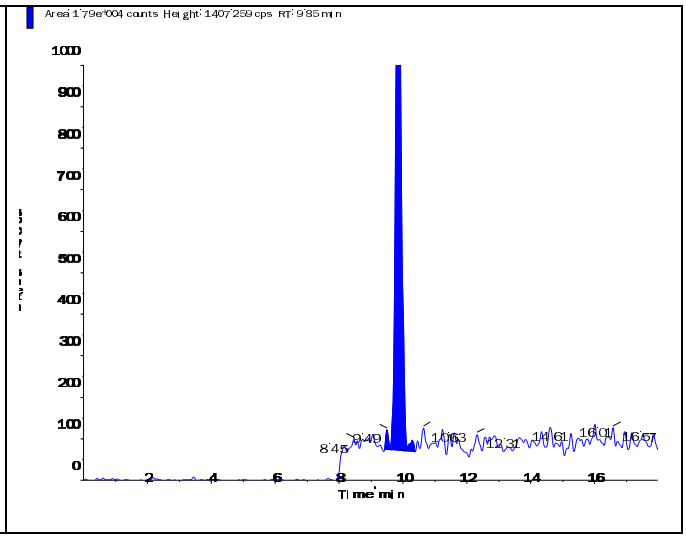

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

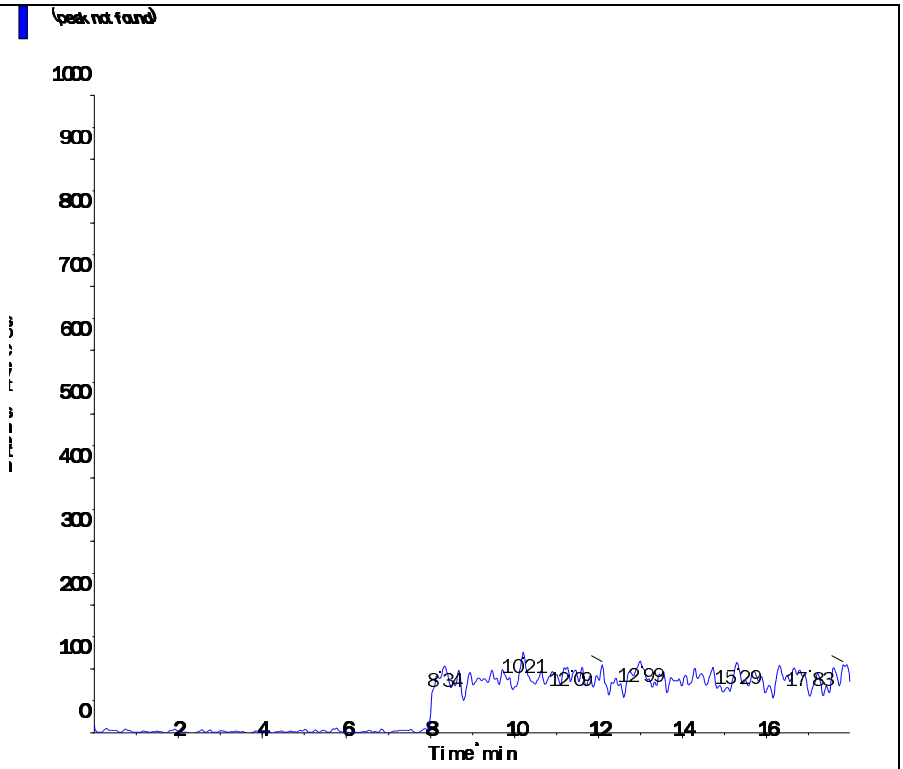

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

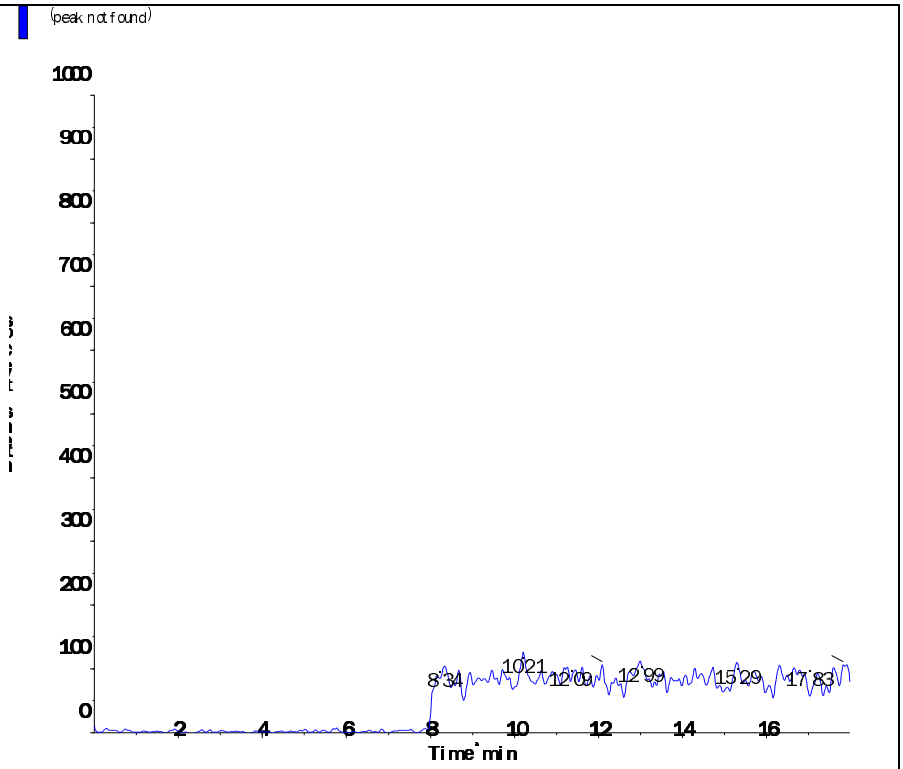

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Created with Analyst Reporter
Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

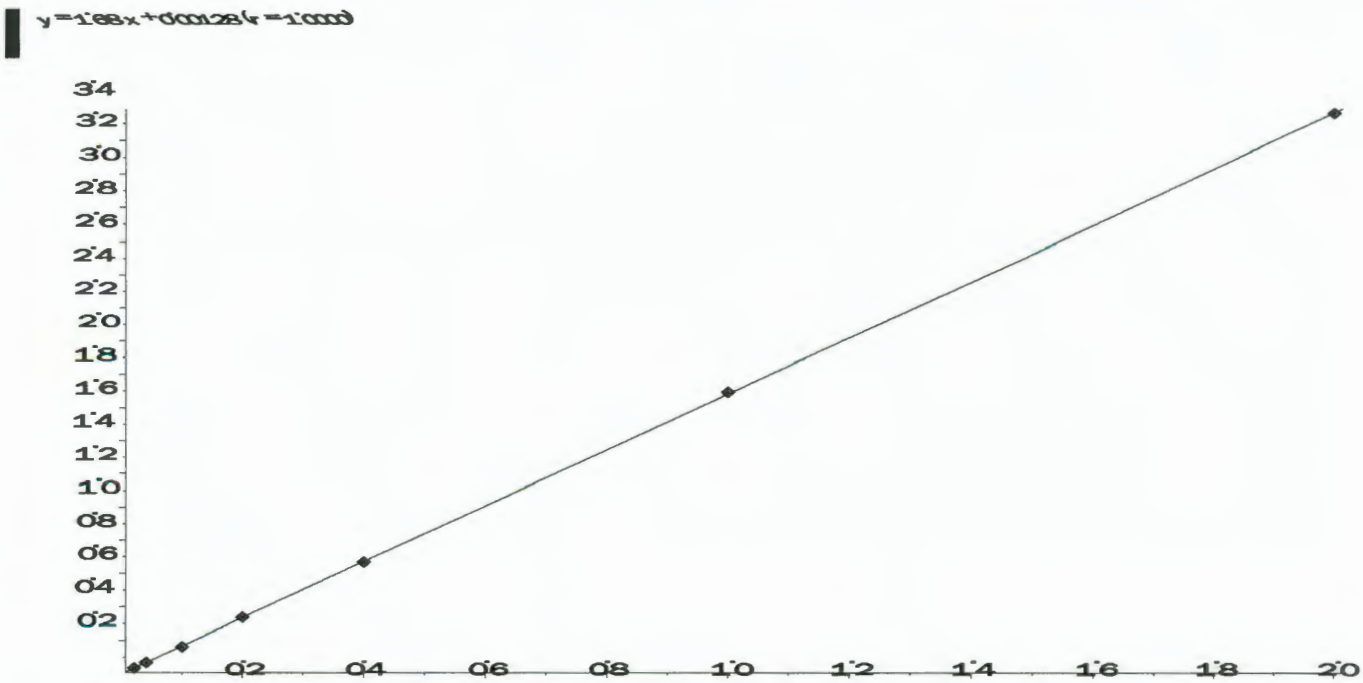

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Created with Analyst Reporter
Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

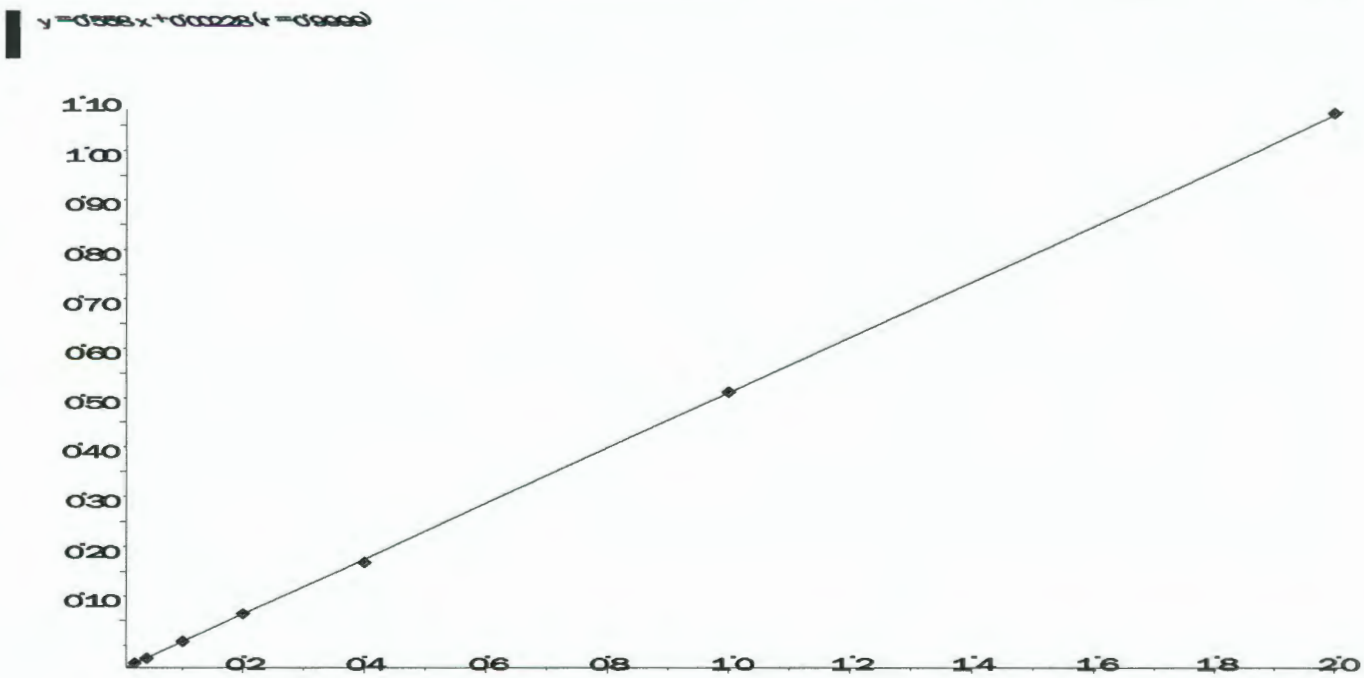

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Data File	LM34687.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

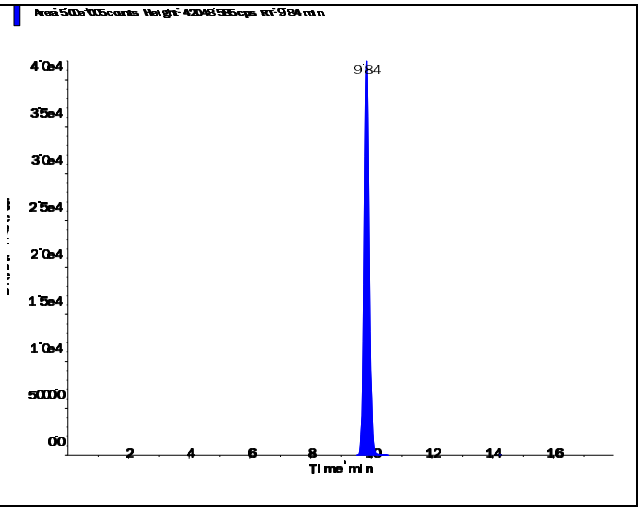

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.103 ng/ml
Area Ratio:	0.036
Sample Type:	(Standard)

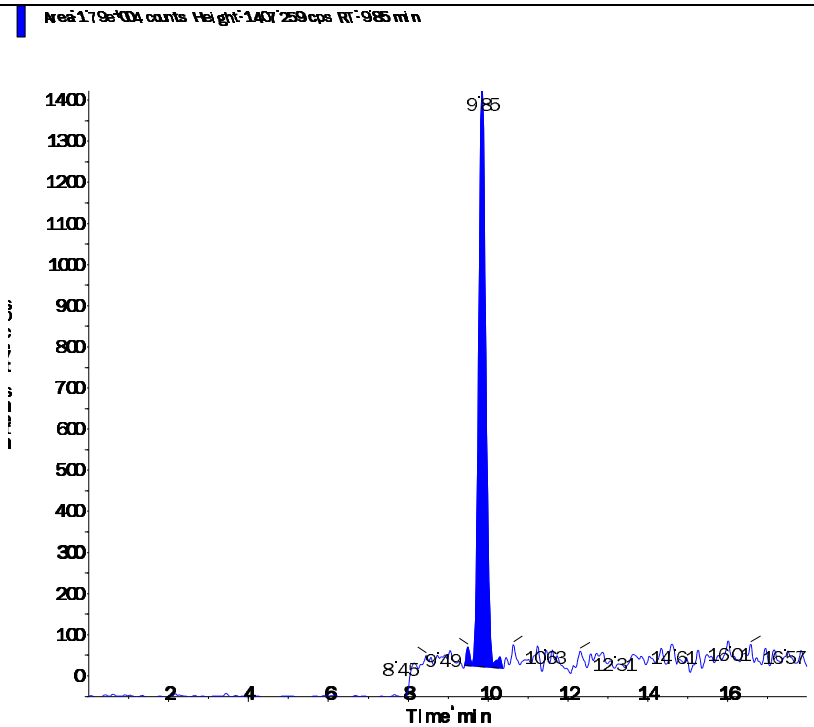

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.104 ng/ml
Area Ratio:	0.014
Sample Type:	(Standard)

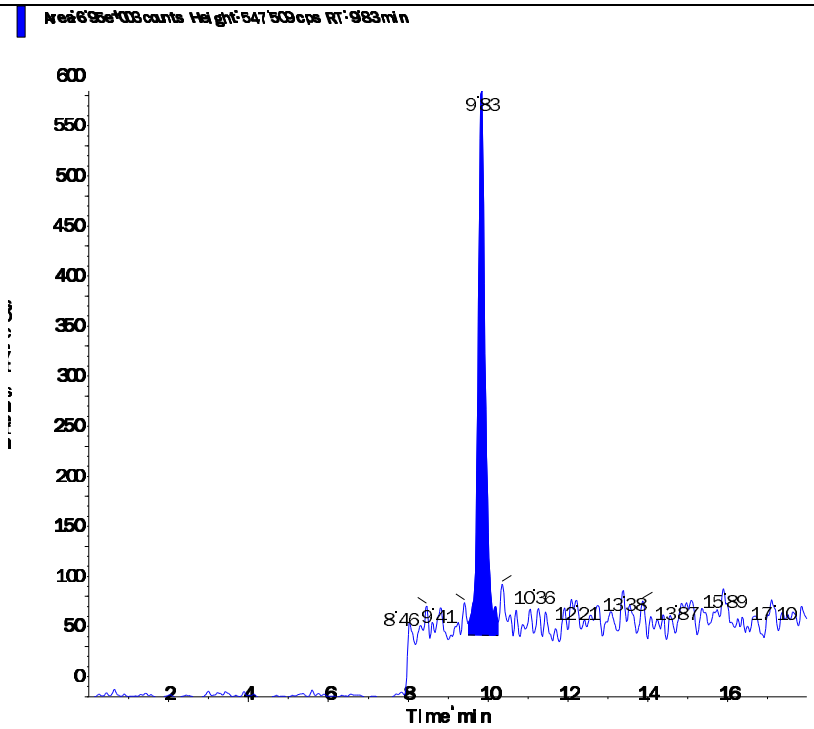

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Data File	LM34688.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

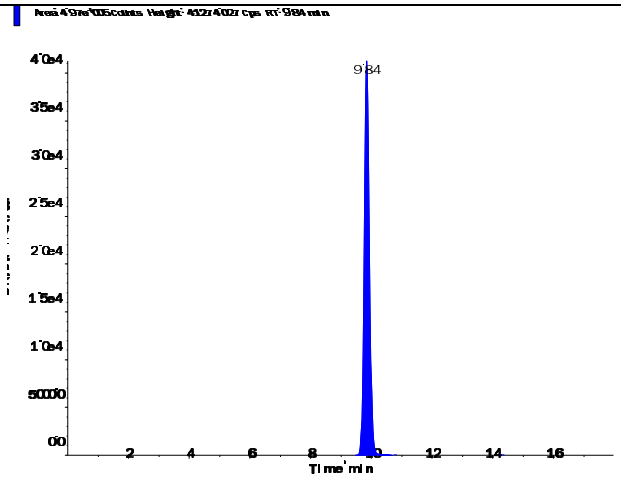

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

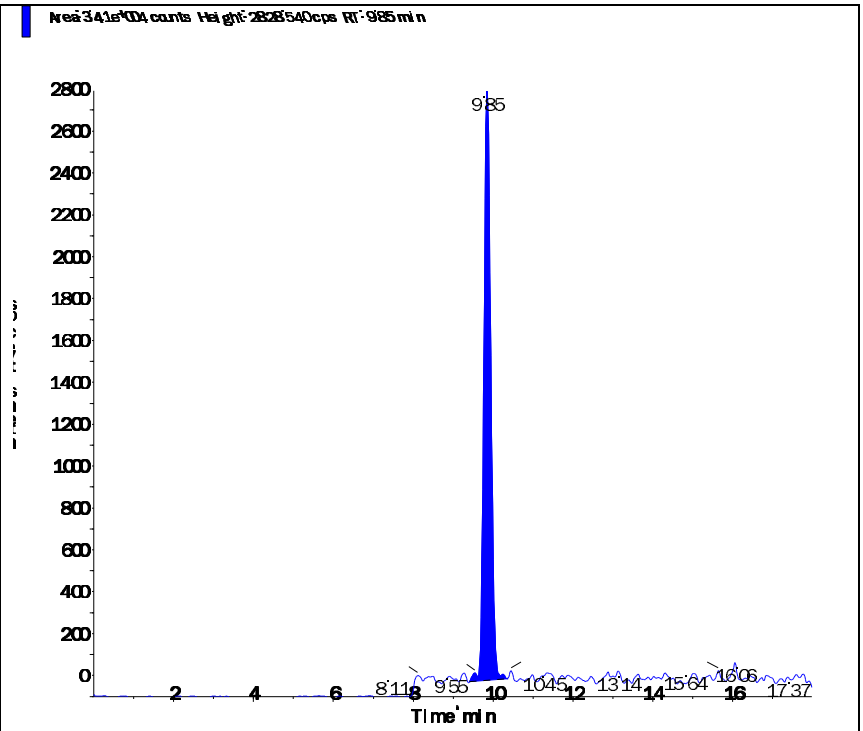

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

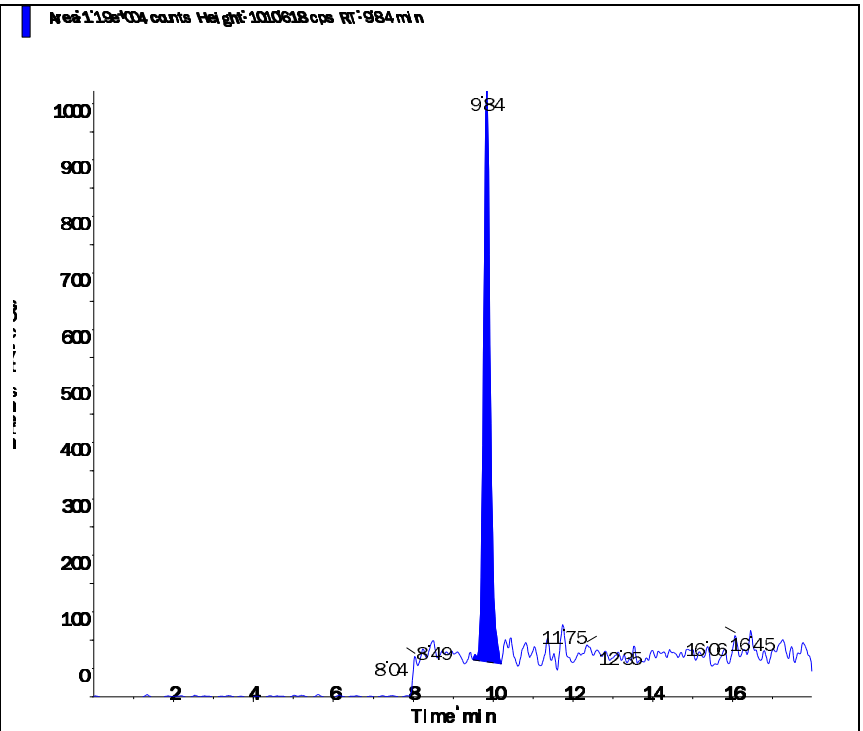

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Data File	LM34689.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

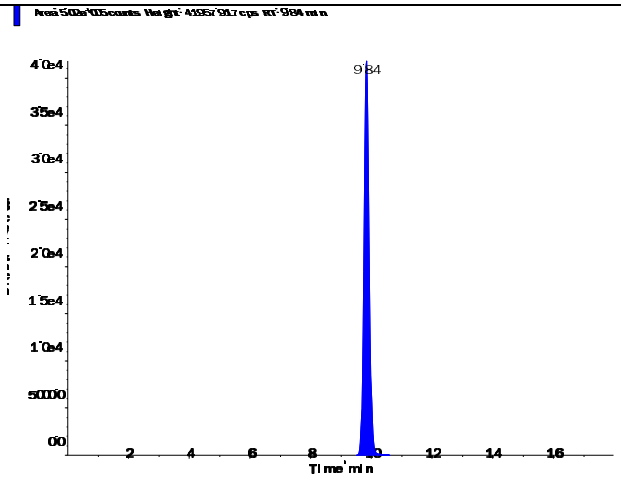

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 0.483 ng/ml Area Ratio: 0.164 Sample Type: (Standard)	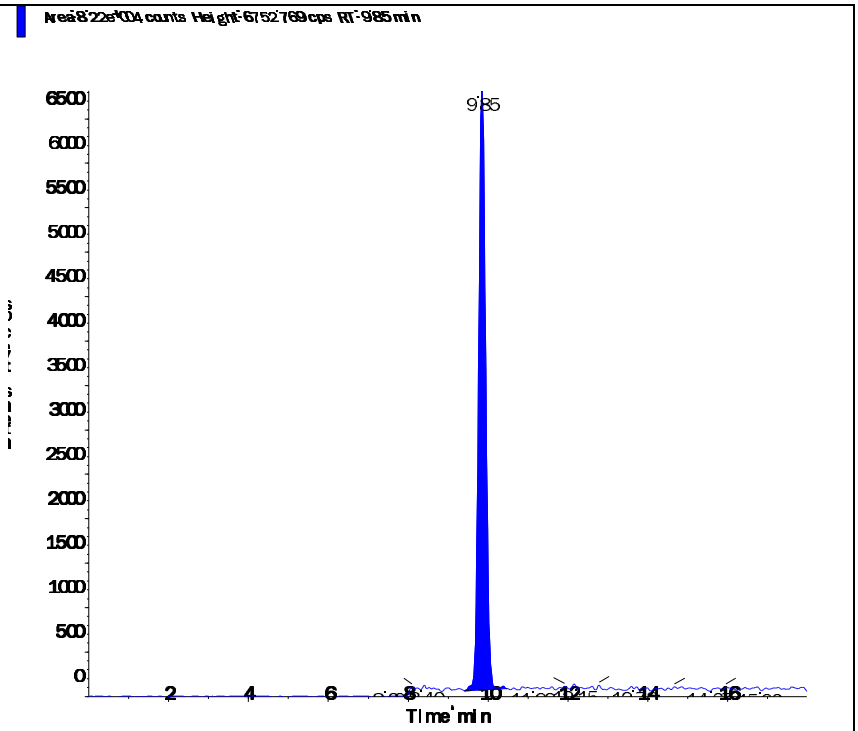
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 0.503 ng/ml Area Ratio: 0.058 Sample Type: (Standard)	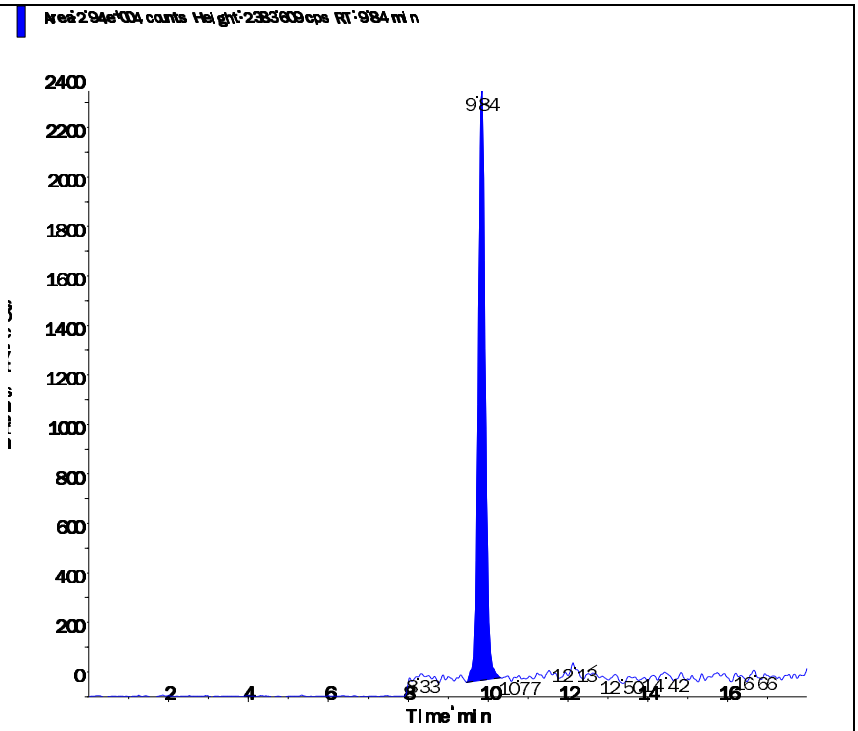

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Data File	LM34690.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

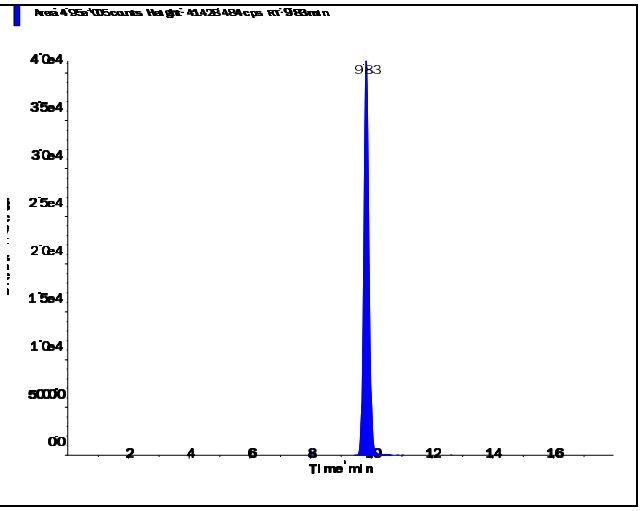

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

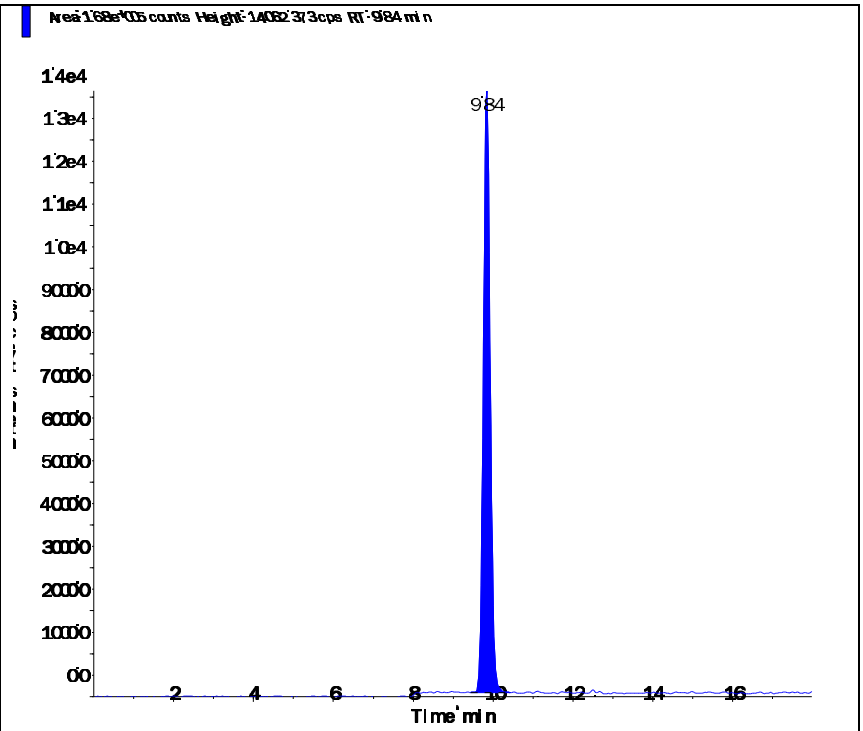

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

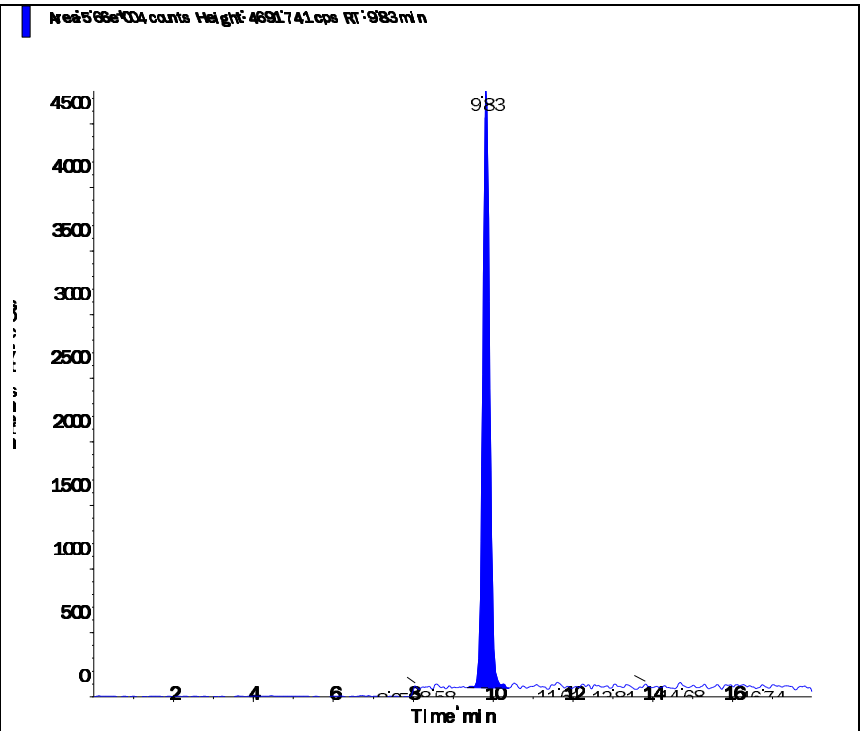

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Data File	LM34691.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

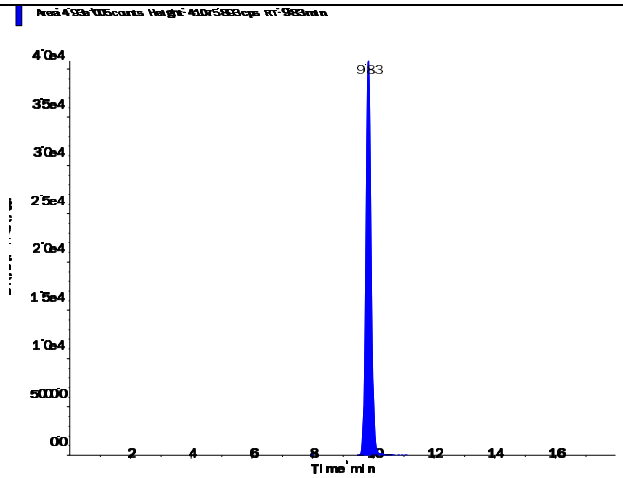

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.99 ng/ml
Area Ratio:	0.669
Sample Type:	(Standard)

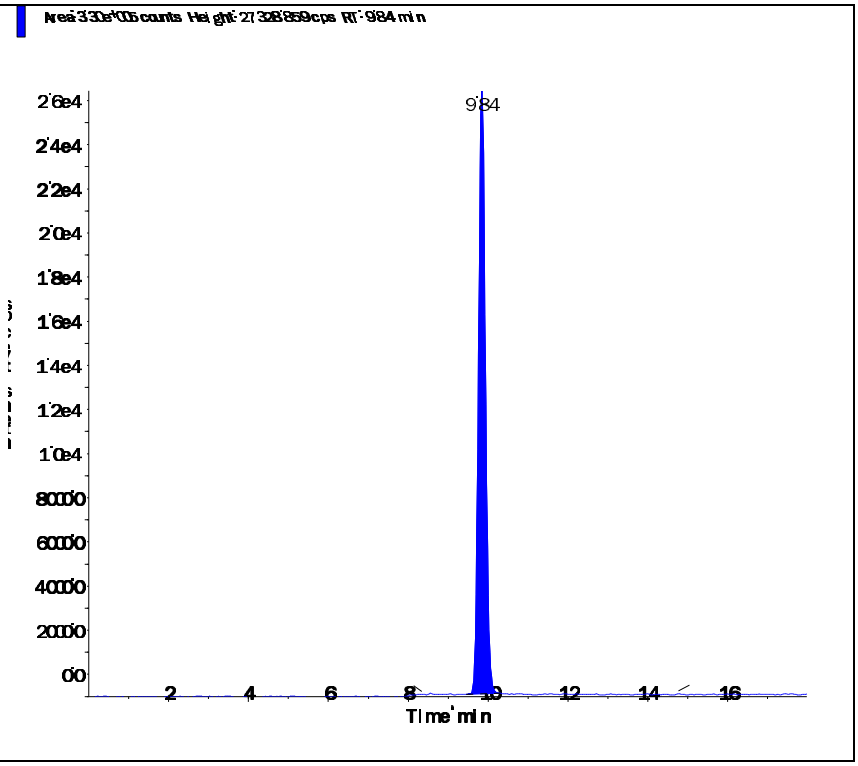

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.94 ng/ml
Area Ratio:	0.219
Sample Type:	(Standard)

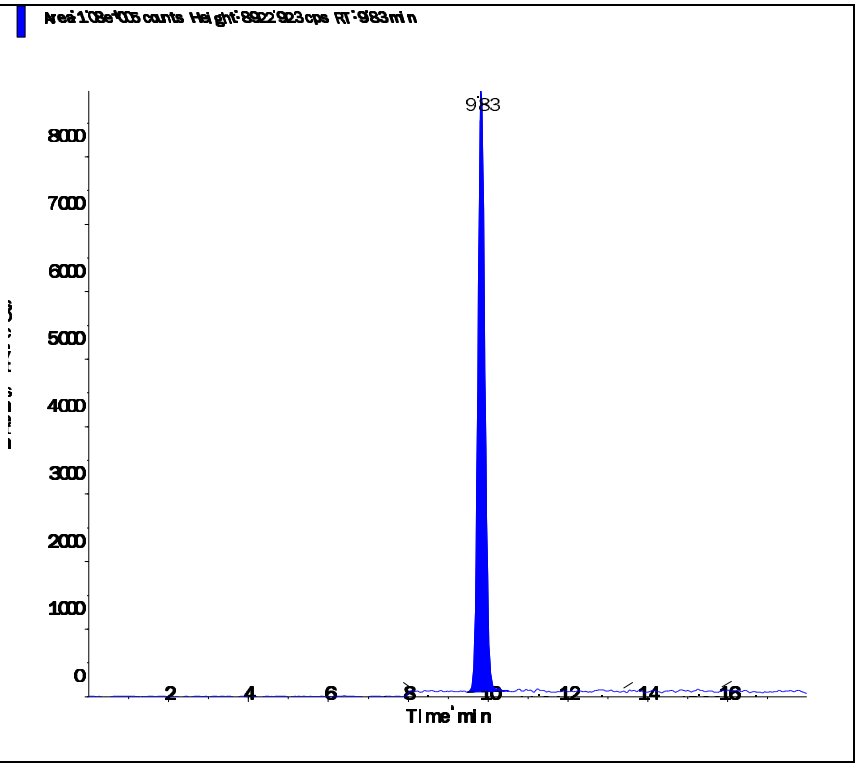

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Data File	LM34692.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

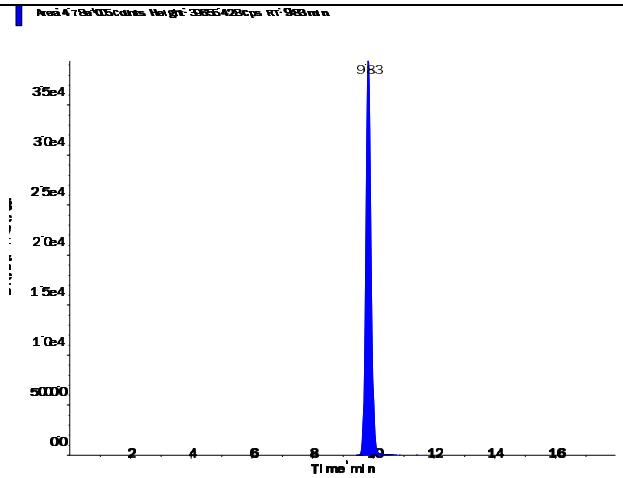

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Printed: 7/6/2016 10:55 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

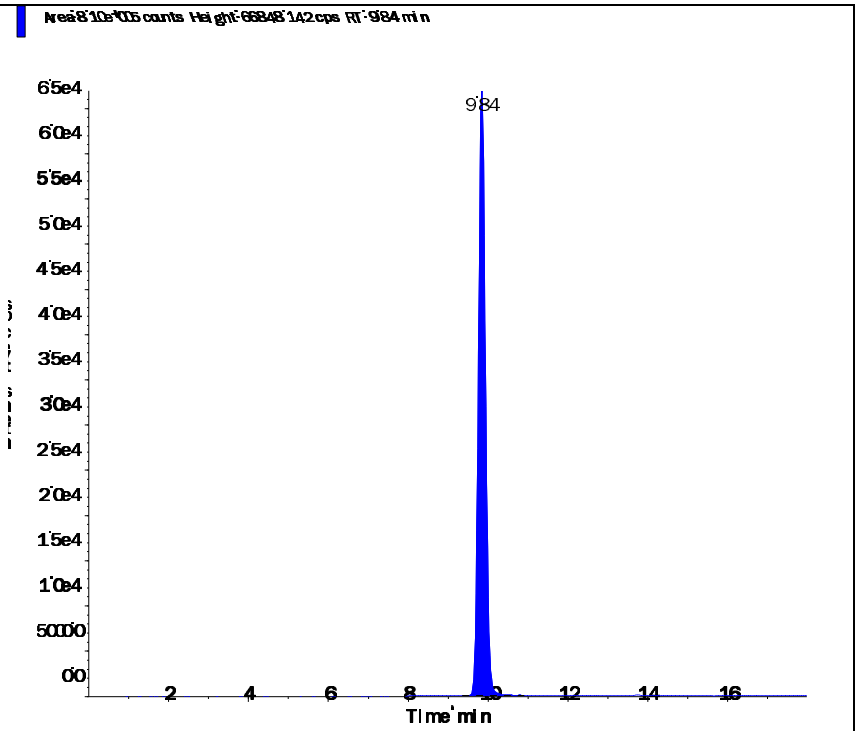

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

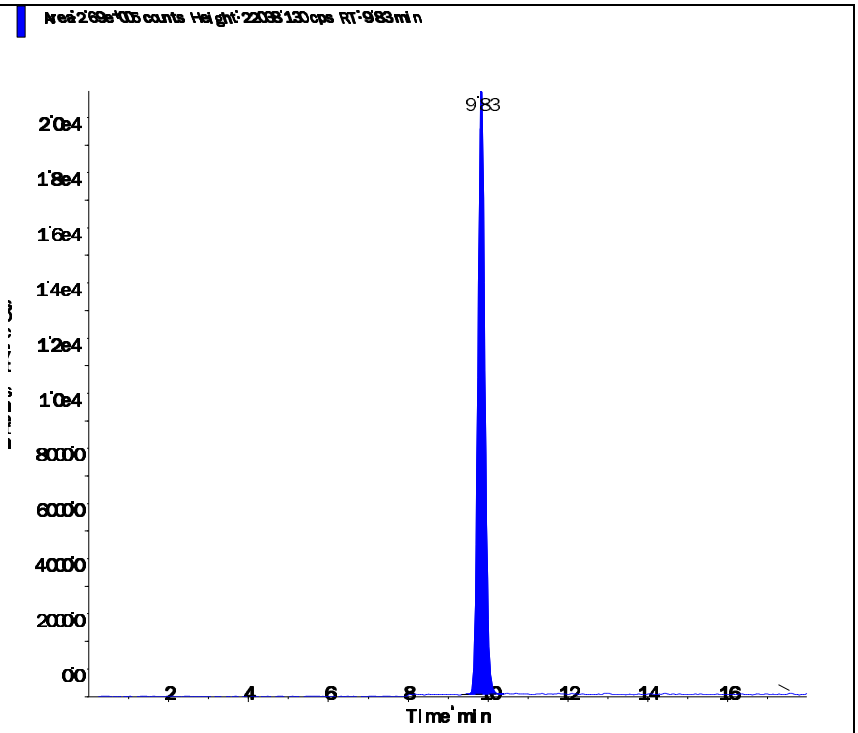

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Created with Analyst Reporter
Printed: 7/6/2016 10:56 AM

Data File	LM34693.wiff	**Result Table**	070516_JWR.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	070516_JWR.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

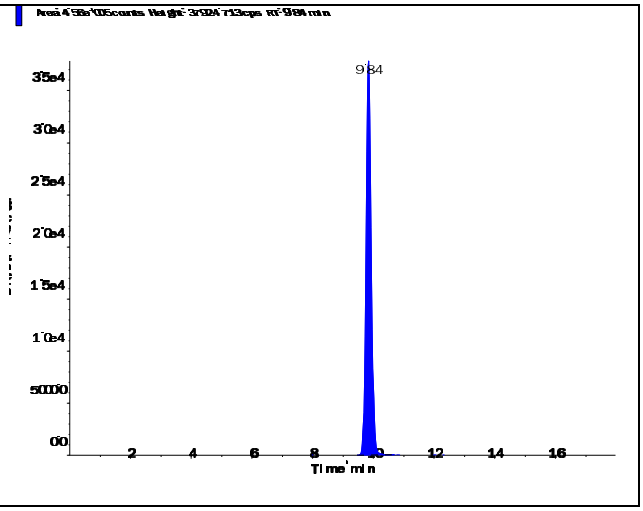

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Created with Analyst Reporter
Printed: 7/6/2016 10:56 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 9.99 ng/ml Area Ratio: 3.36 Sample Type: (Standard)	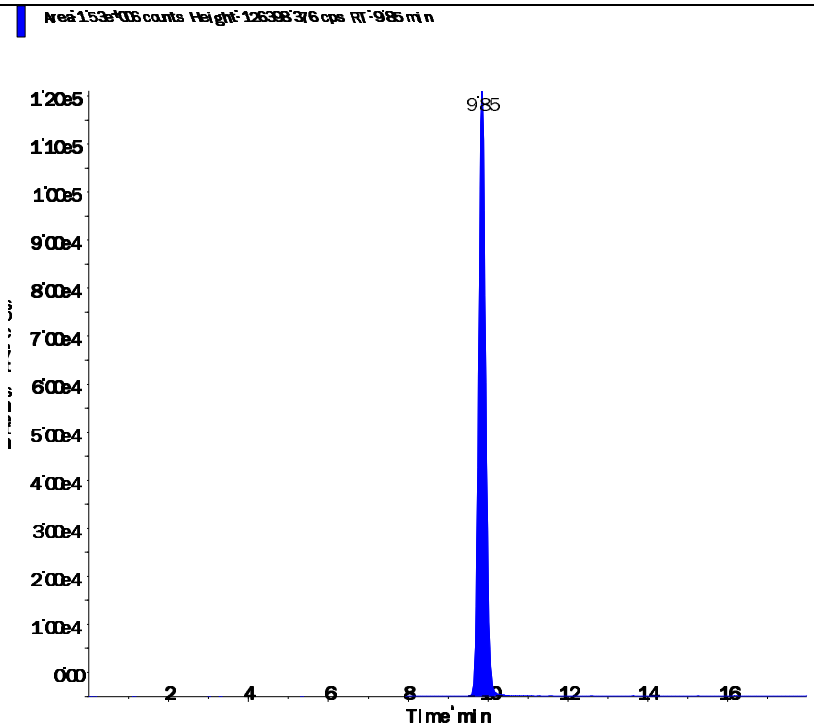
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 10.00 ng/ml Area Ratio: 1.122 Sample Type: (Standard)	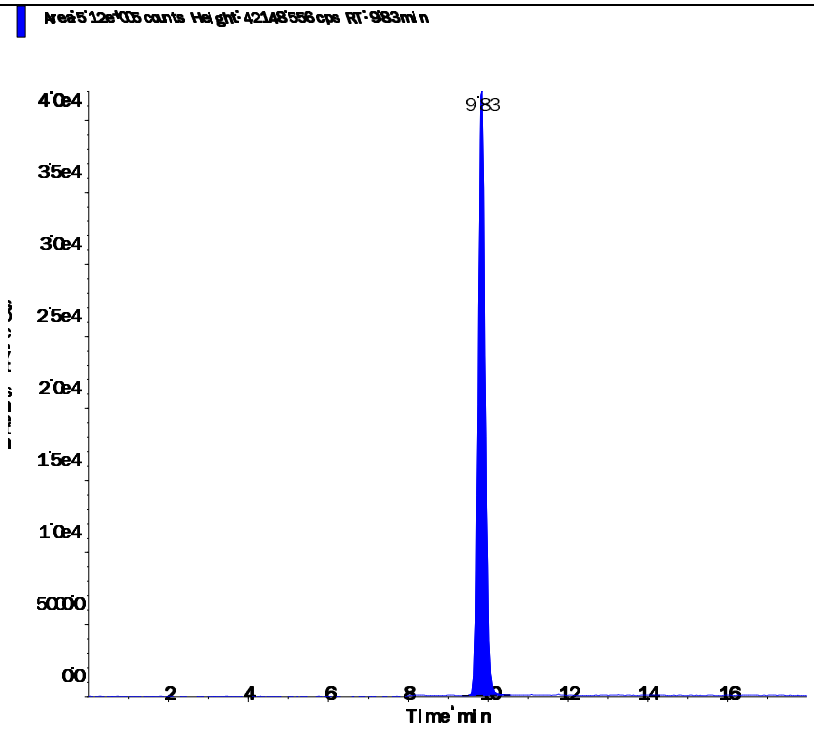

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Printed: 5/4/2016 1:23 PM

Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

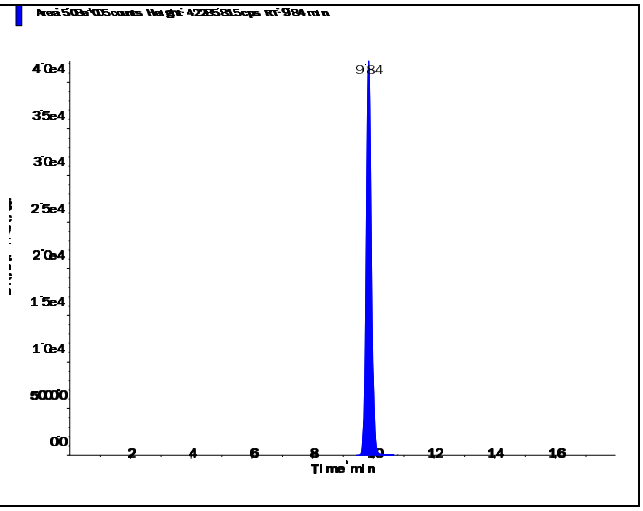

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.332
Sample Type:	(Quality Control)

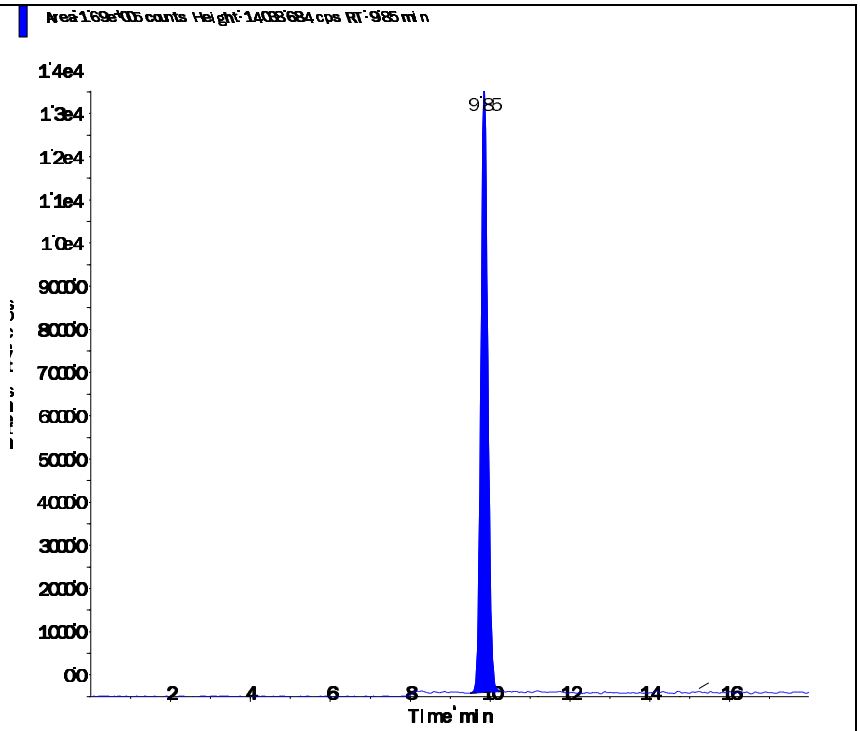

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

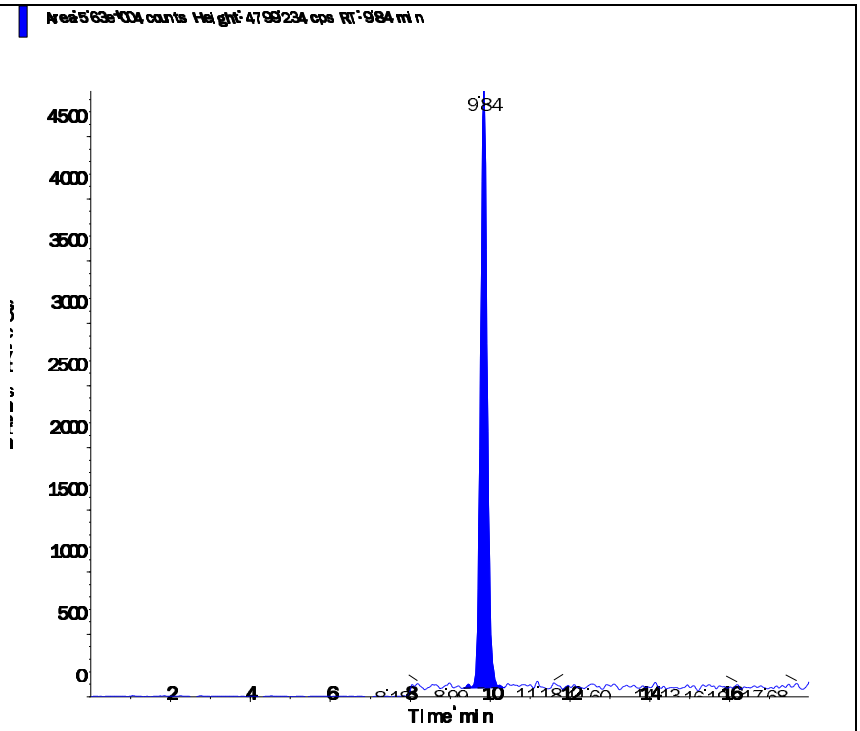

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Data File	LM35569.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 4:14:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35569.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 4:14:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.720e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.630e+05	9.40	1.00	1.03
Perchlorate conf	5.690e+04	9.38	1.00	1.06

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

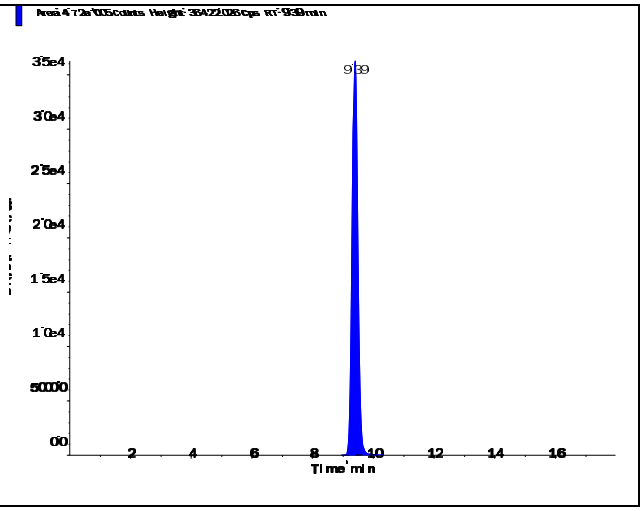

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.346
Sample Type:	(Quality Control)

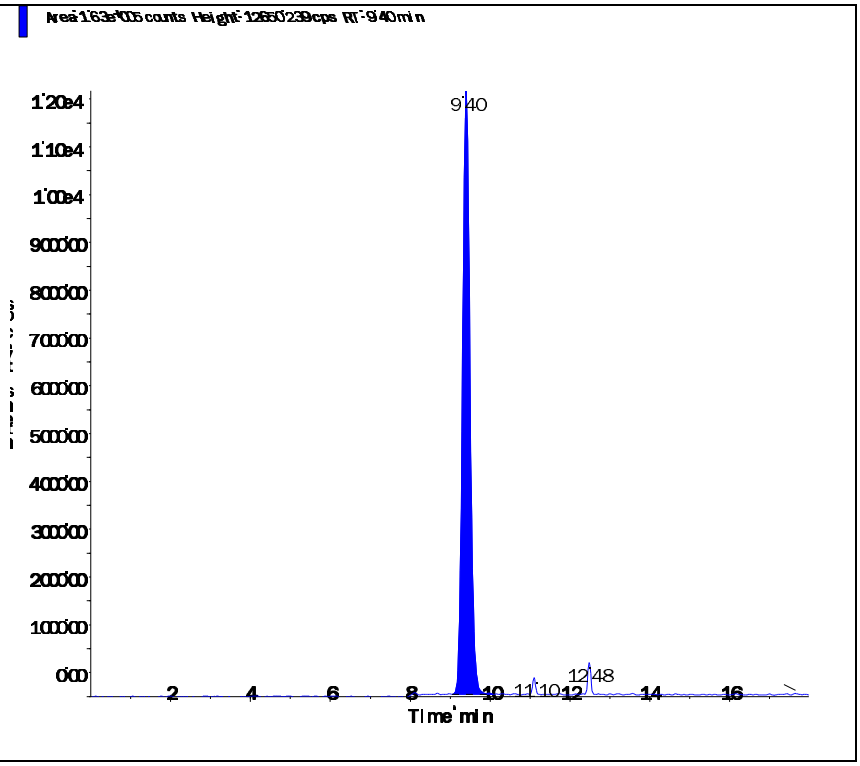

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.12
Sample Type:	(Quality Control)

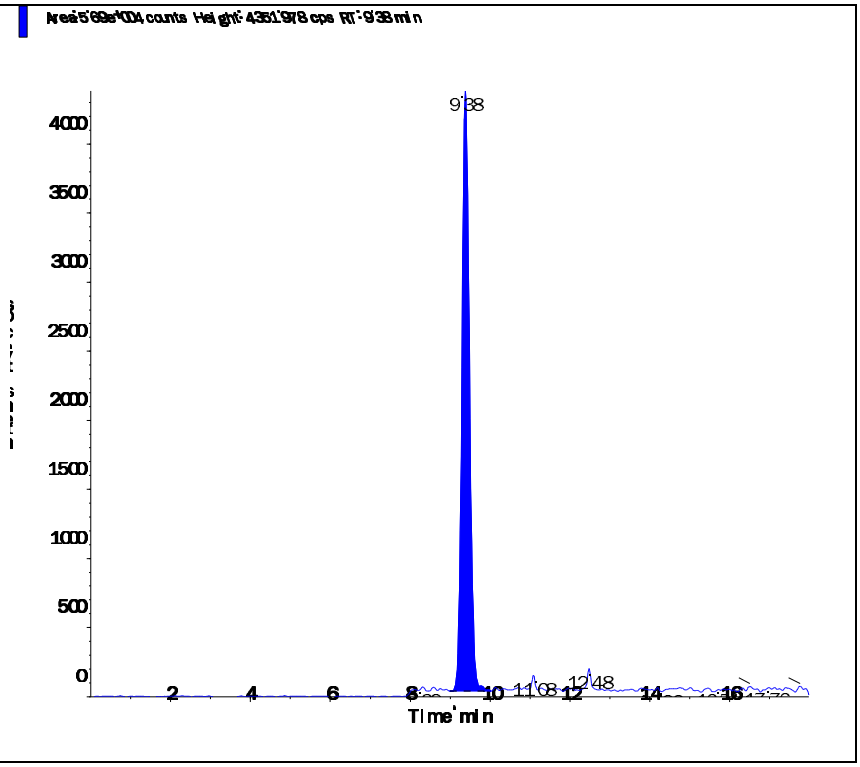

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Printed: 7/5/2016 12:30 PM

Data File	LM35581.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 8:02:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35581.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 8:02:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.870e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.670e+05	9.40	1.00	1.02
Perchlorate conf	5.800e+04	9.39	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

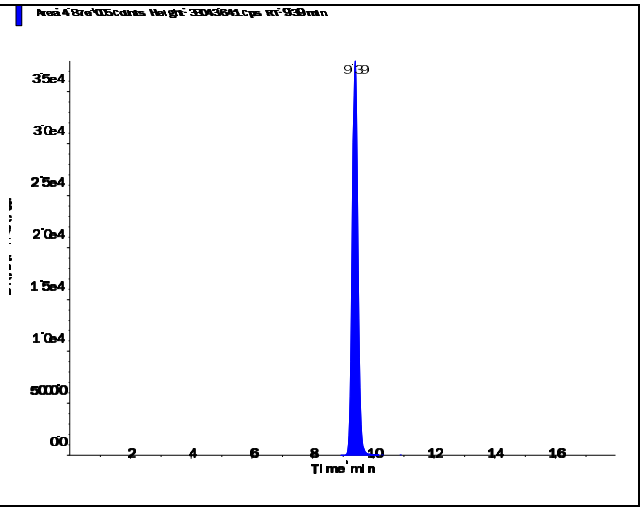

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.343
Sample Type:	(Quality Control)

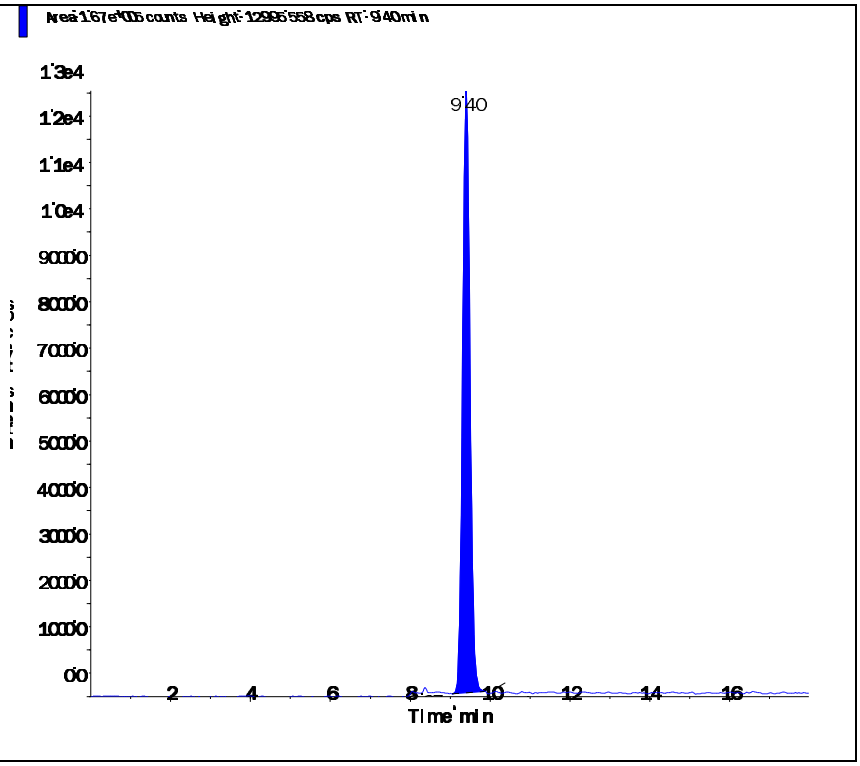

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

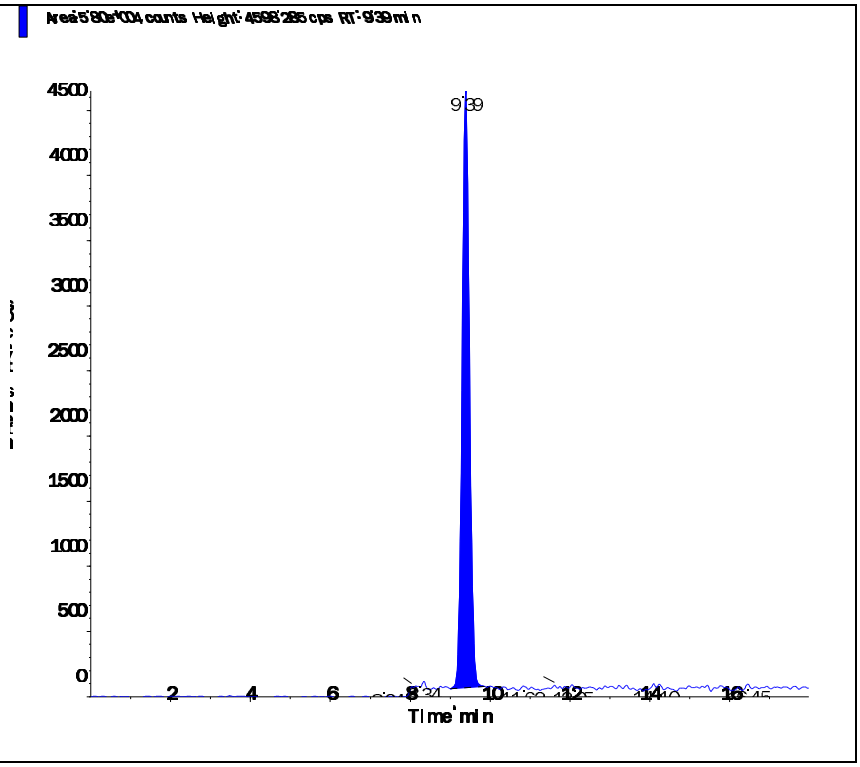

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Data File	LM35594.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 12:08:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35594.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 12:08:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.040e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.750e+05	9.40	1.00	1.03
Perchlorate conf	5.720e+04	9.39	1.00	0.997

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

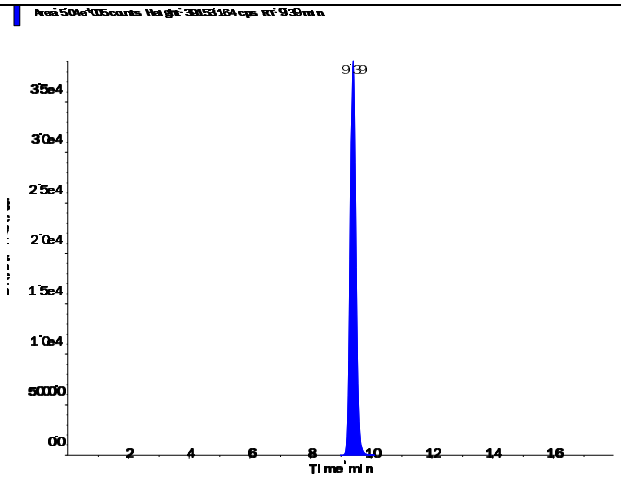

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.348
Sample Type:	(Quality Control)

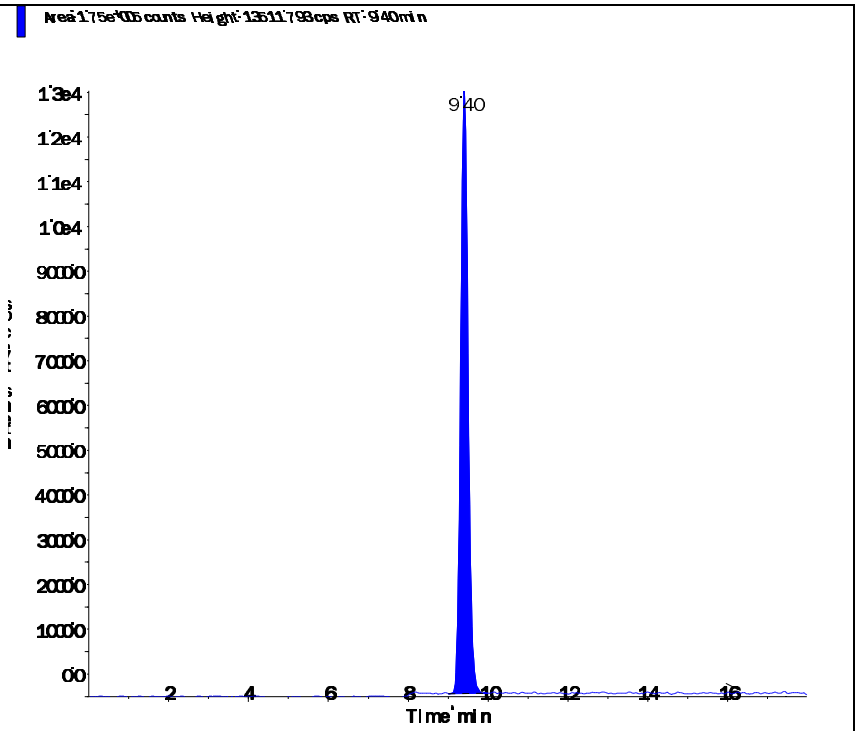

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	0.997 ng/ml
Area Ratio:	0.114
Sample Type:	(Quality Control)

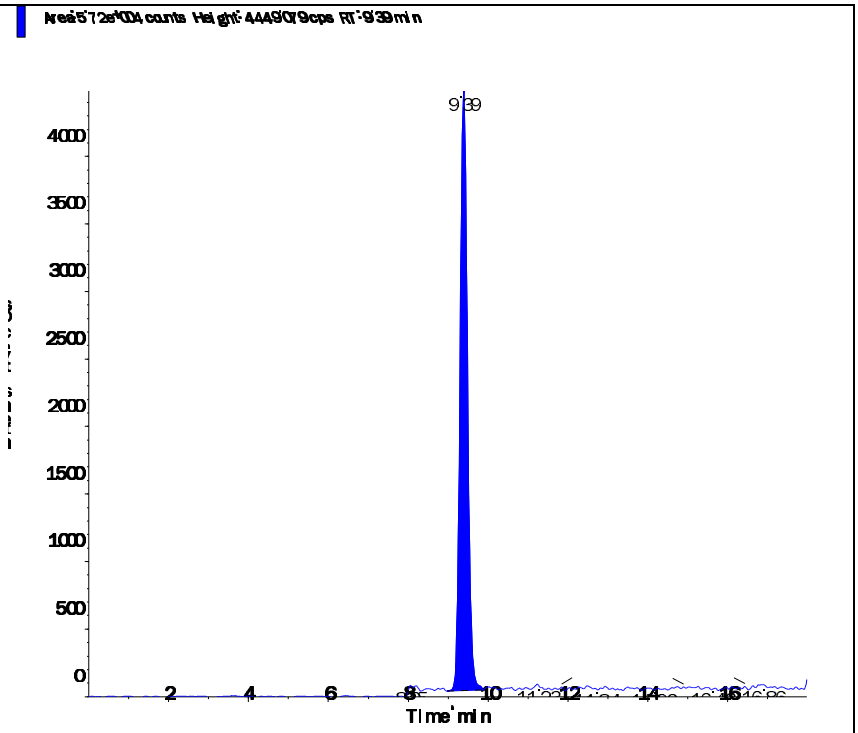

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Data File	LM35601.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 2:20:47 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35601.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 2:20:47 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.120e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.750e+05	9.40	1.00	1.01
Perchlorate conf	5.850e+04	9.38	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

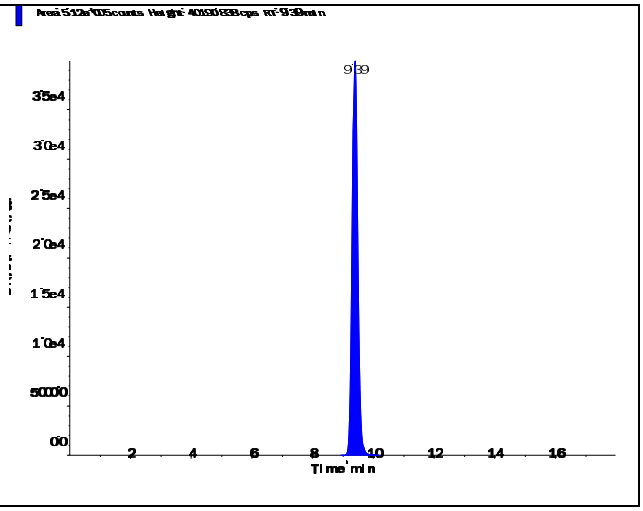

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Printed: 7/5/2016 12:36 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.341
Sample Type:	(Quality Control)

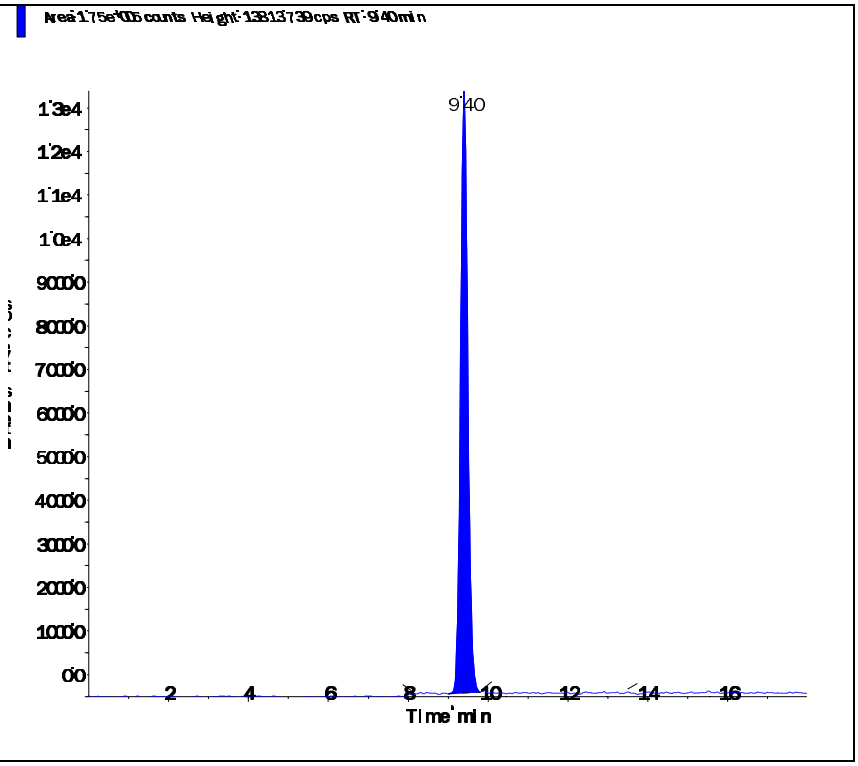

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Quality Control)

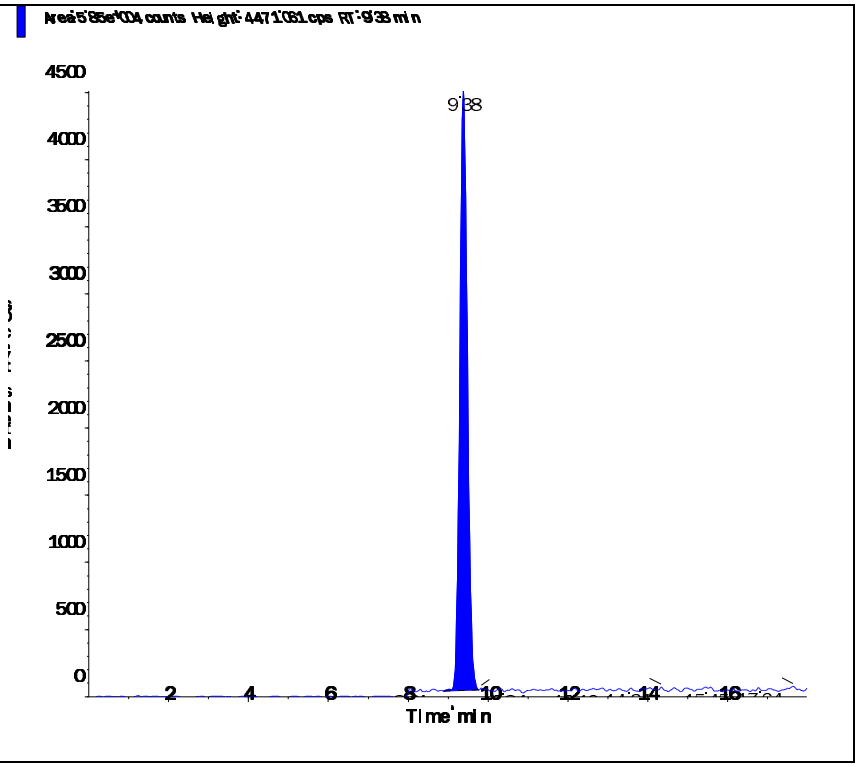

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Data File	LM35570.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 4:33:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-05 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35570.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 4:33:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.660e+05	9.44	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+04	9.44	N/A	0.207
Perchlorate conf	1.170e+04	9.44	N/A	0.204

O18LP (Internal Standard)

RT (Exp. RT): 9.44(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

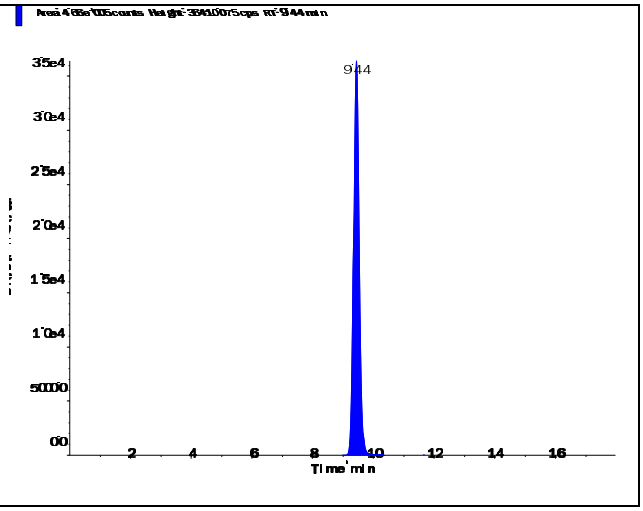

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

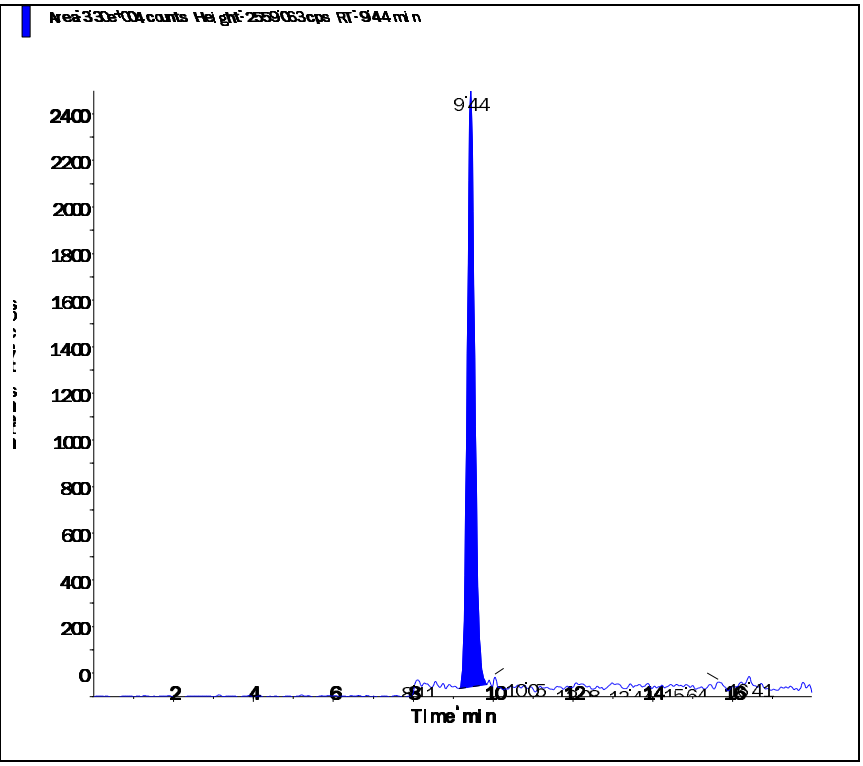

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	0.204 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

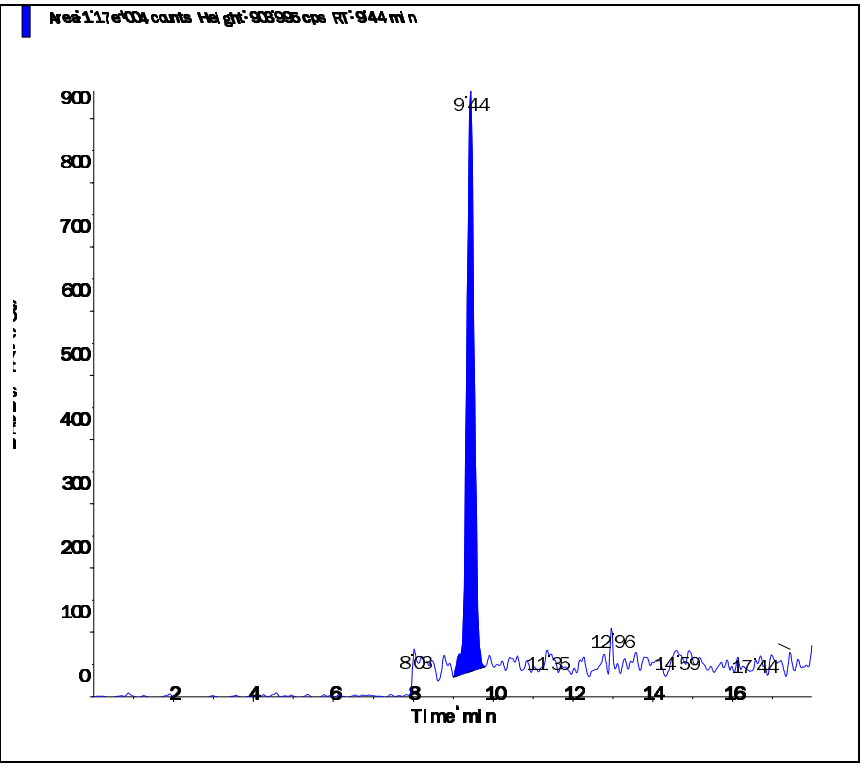

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Printed: 7/5/2016 12:30 PM

Data File	LM35582.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 8:21:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-06 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35582.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 8:21:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.650e+05	9.43	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.280e+04	9.44	N/A	0.206
Perchlorate conf	1.140e+04	9.43	N/A	0.20

O18LP (Internal Standard)

RT (Exp. RT): 9.43(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

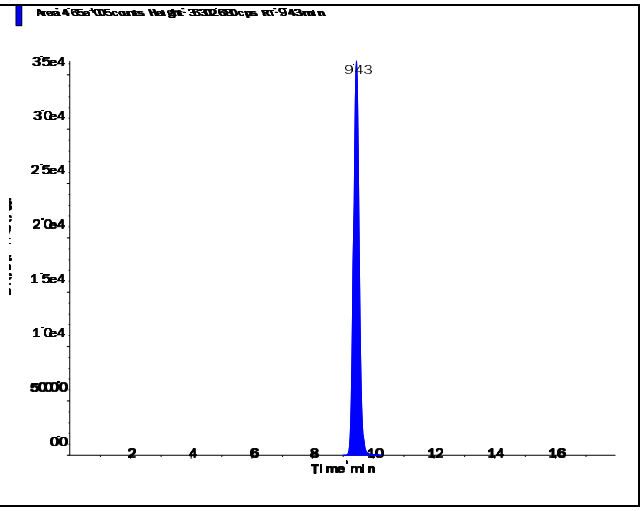

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

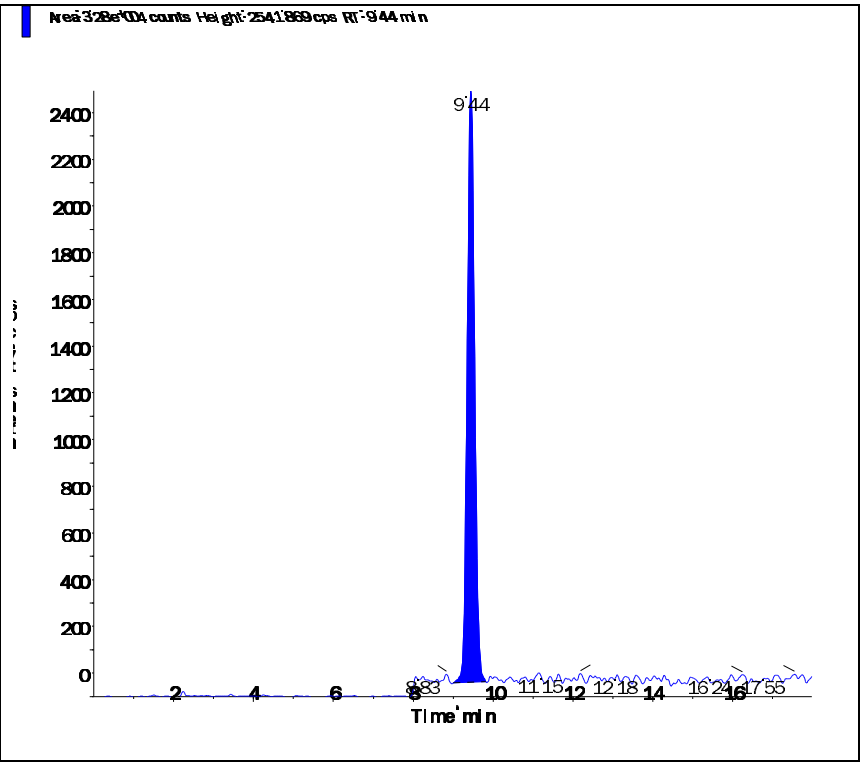

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.43 (9.84) min
Calculated conc:	0.20 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

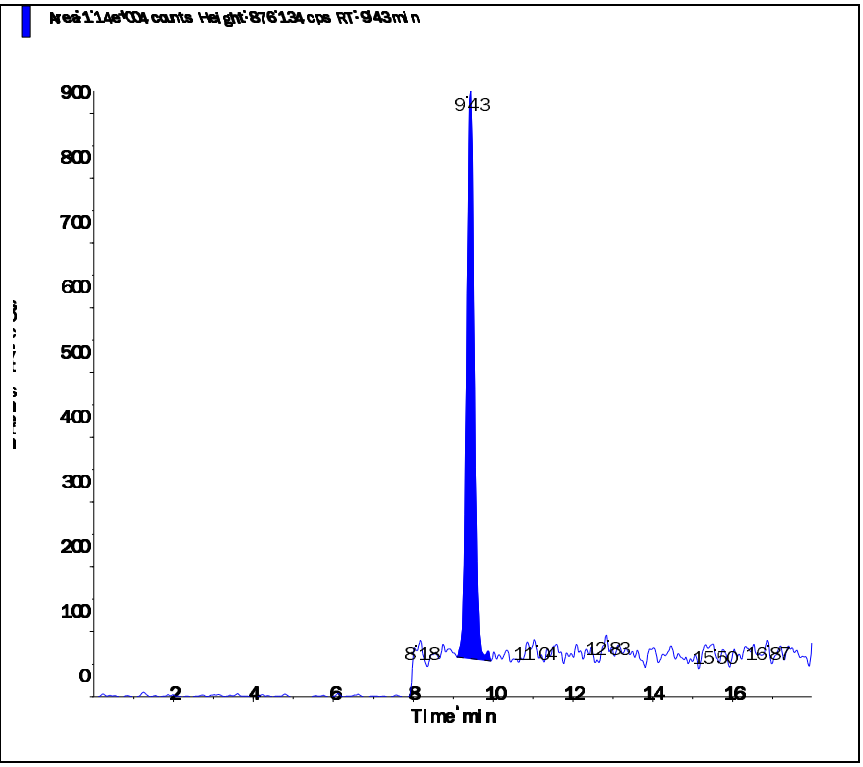

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Printed: 7/5/2016 12:34 PM

Data File	LM35595.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 12:27:11 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35595.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 12:27:11 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.040e+05	9.43	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.570e+04	9.45	N/A	0.207
Perchlorate conf	1.290e+04	9.44	N/A	0.21

O18LP (Internal Standard)

RT (Exp. RT): 9.43(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

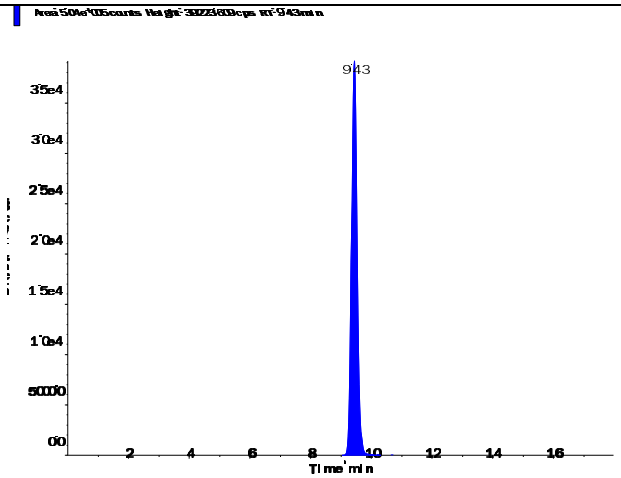

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.45 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

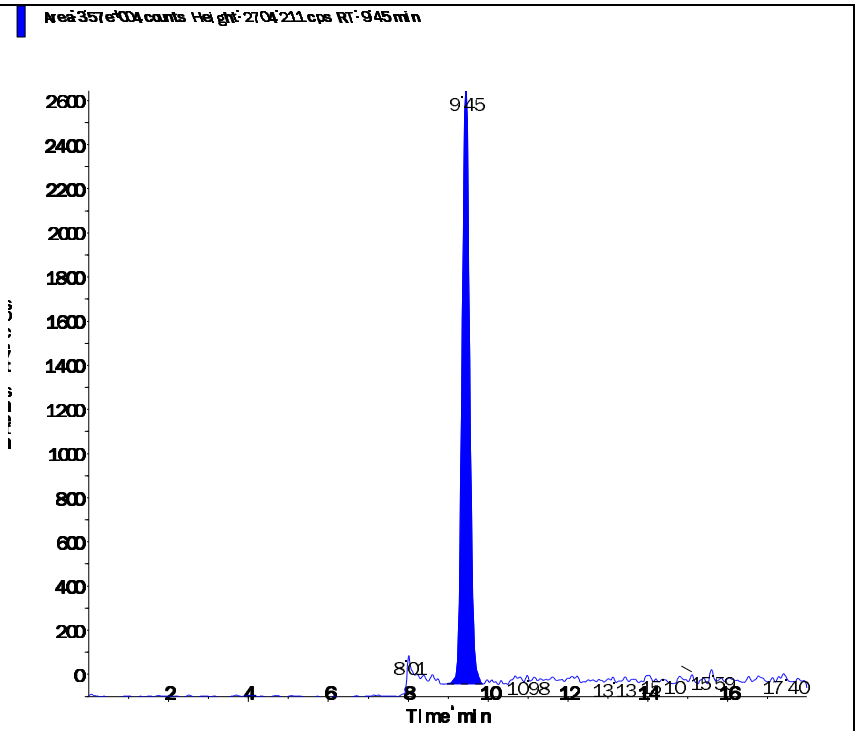

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

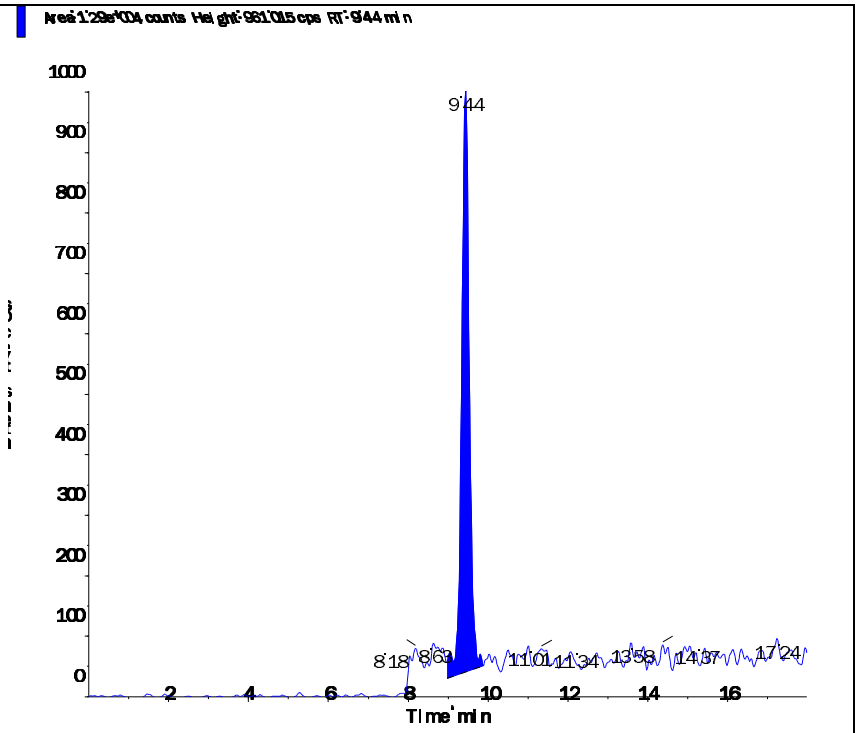

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Data File	LM35602.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 2:39:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-08 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35602.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 2:39:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.43	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.650e+04	9.44	N/A	0.209
Perchlorate conf	1.230e+04	9.42	N/A	0.196

O18LP (Internal Standard)

RT (Exp. RT): 9.43(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

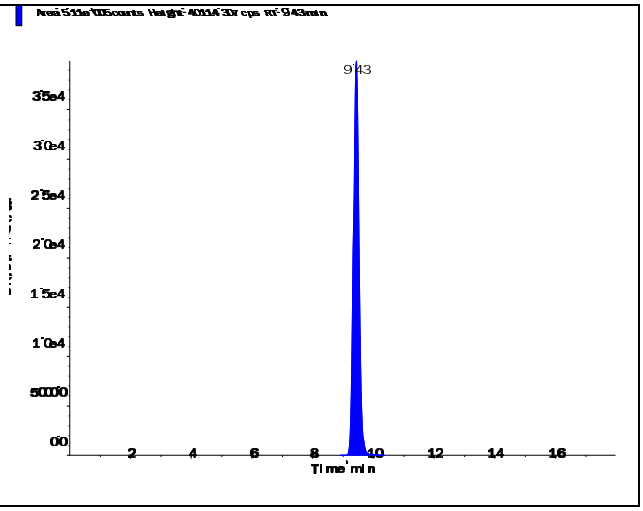

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	0.209 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

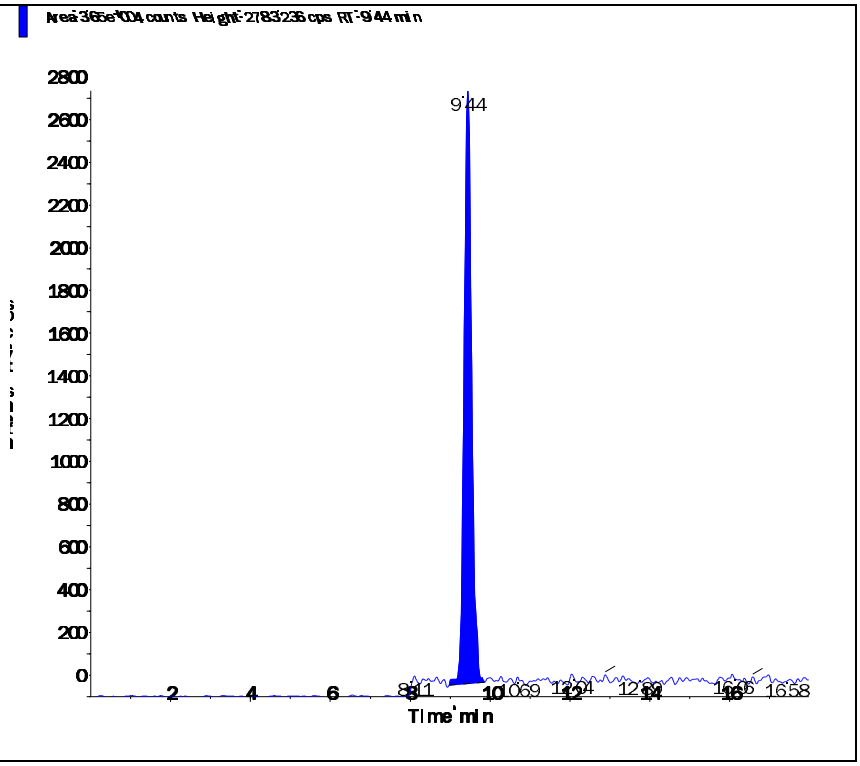

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.42 (9.84) min
Calculated conc:	0.196 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

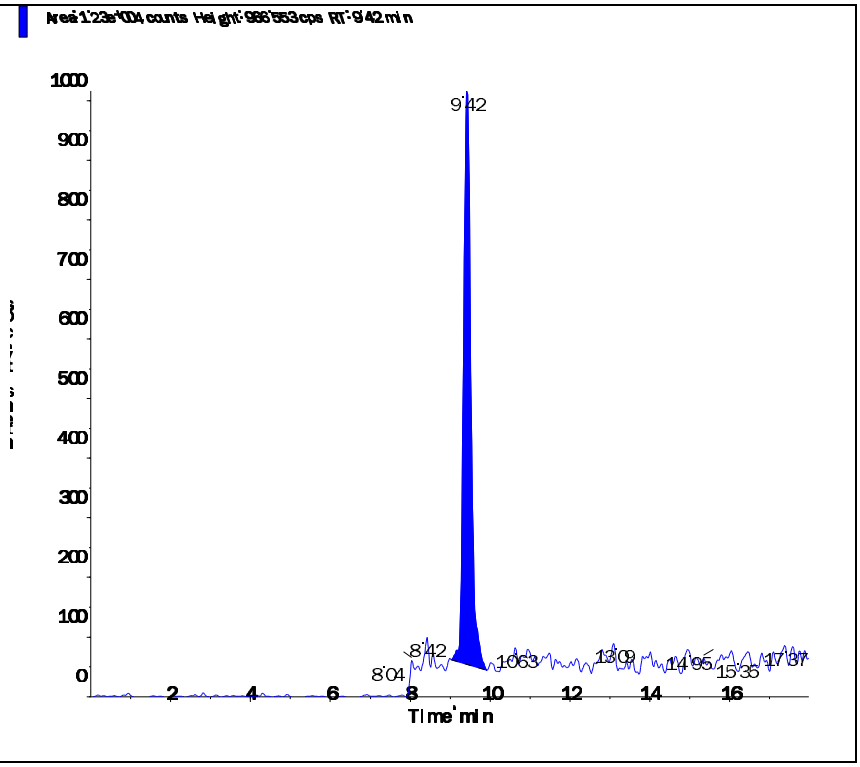

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Data File	LM35568.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 3:55:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-01 CCB	**Injection Vial**	1.00
Data File	LM35568.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 3:55:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.500e+05	9.68	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.68(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

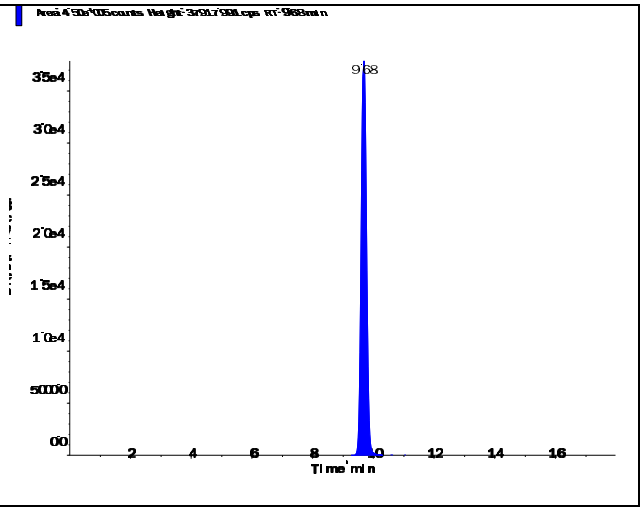

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

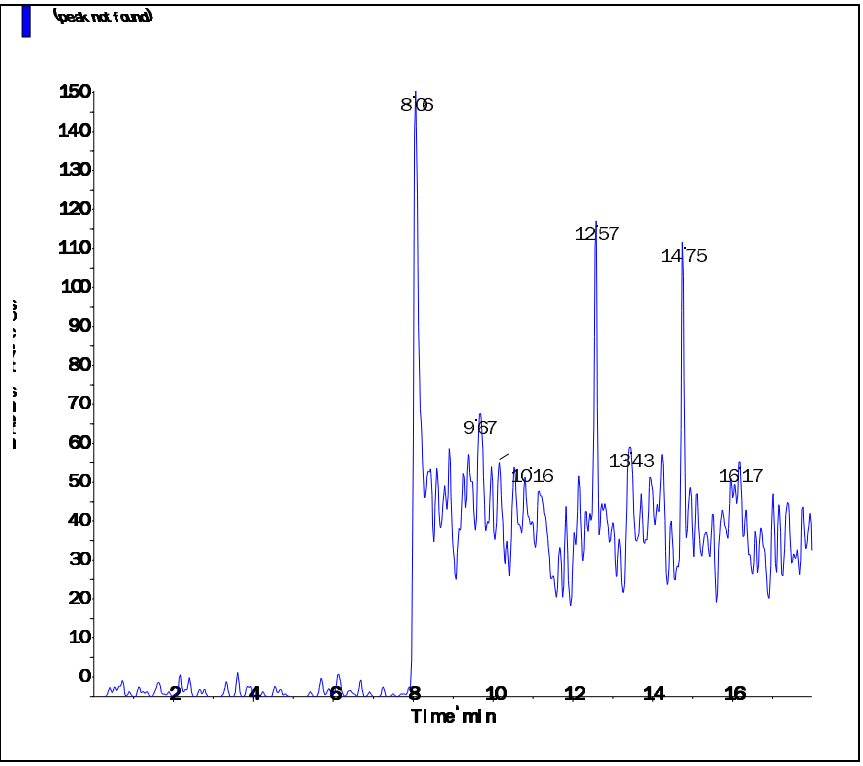

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

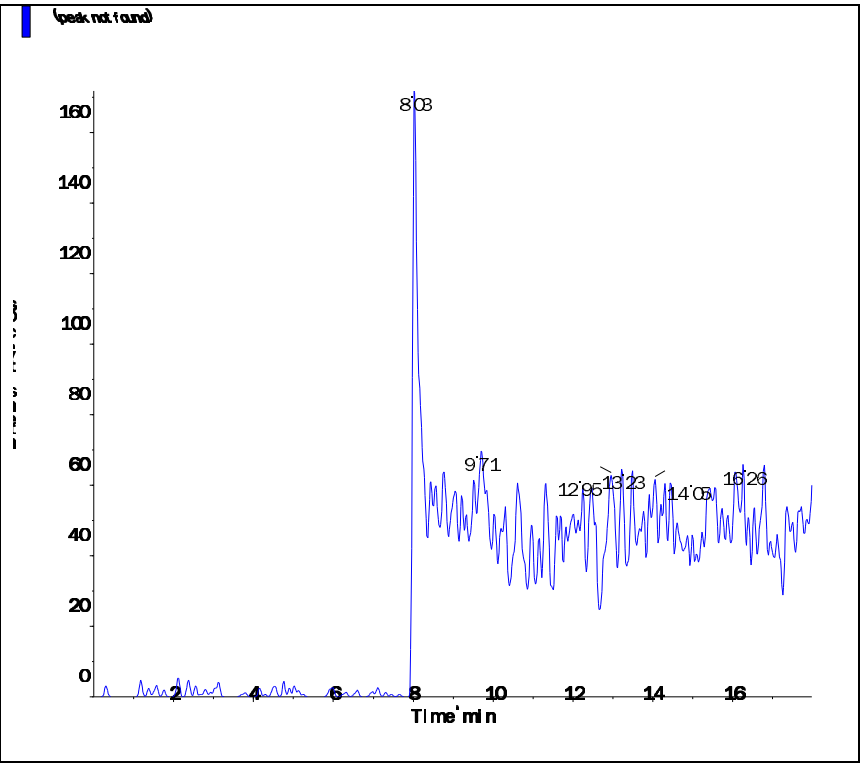

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Data File	LM35583.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 8:39:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-04 CCB	**Injection Vial**	1.00
Data File	LM35583.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 8:39:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

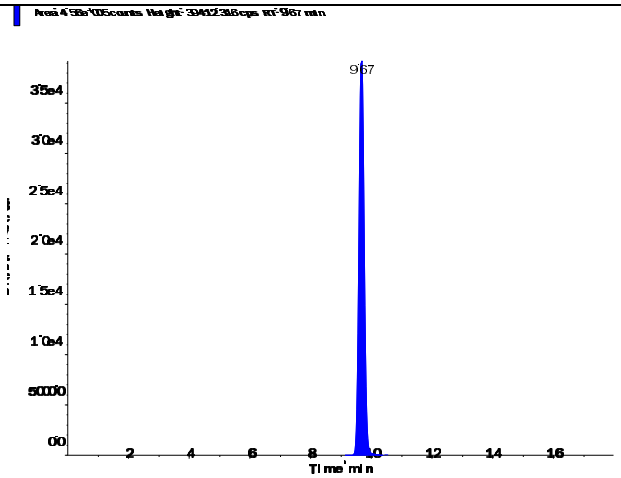

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

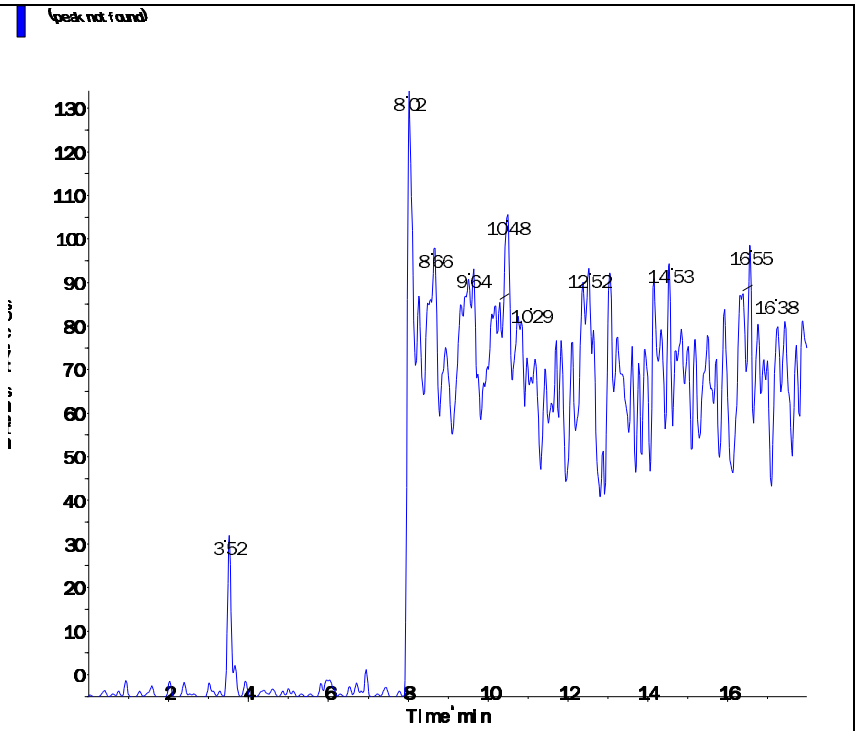

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

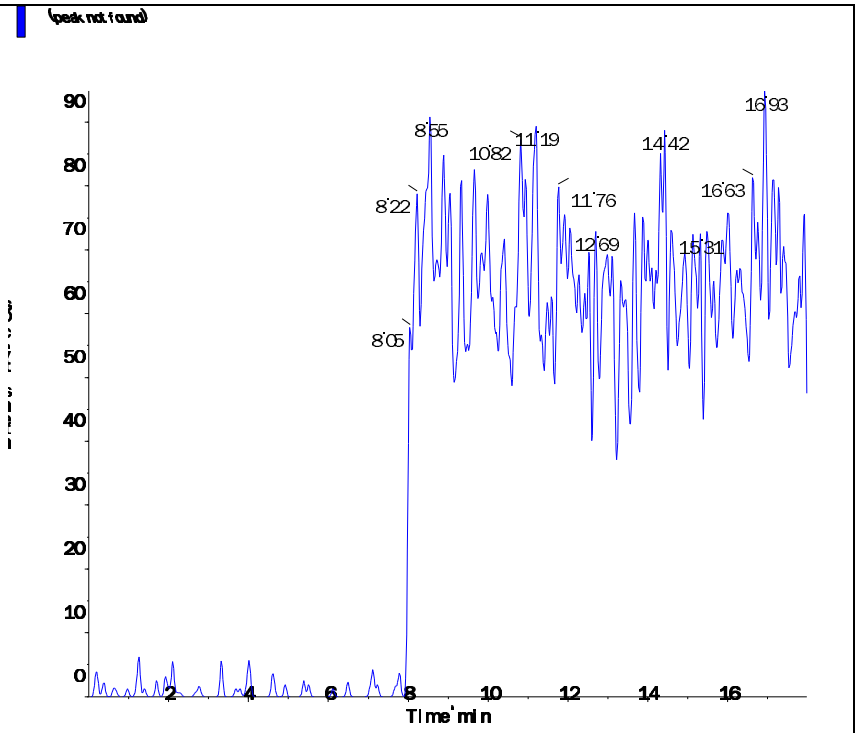

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Data File	LM35596.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 12:46:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-06 CCB	**Injection Vial**	1.00
Data File	LM35596.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 12:46:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.120e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

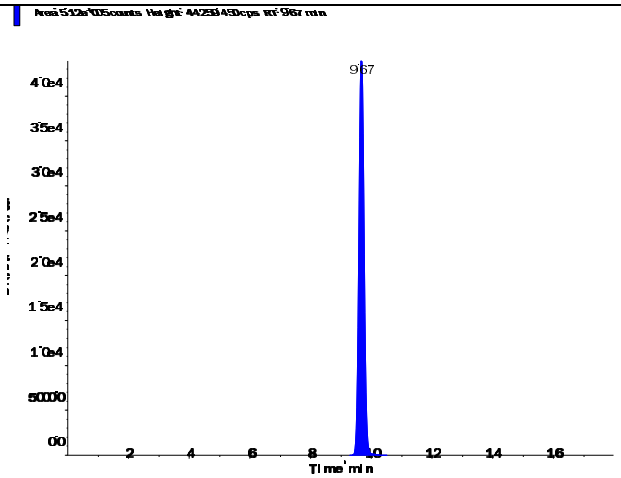

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

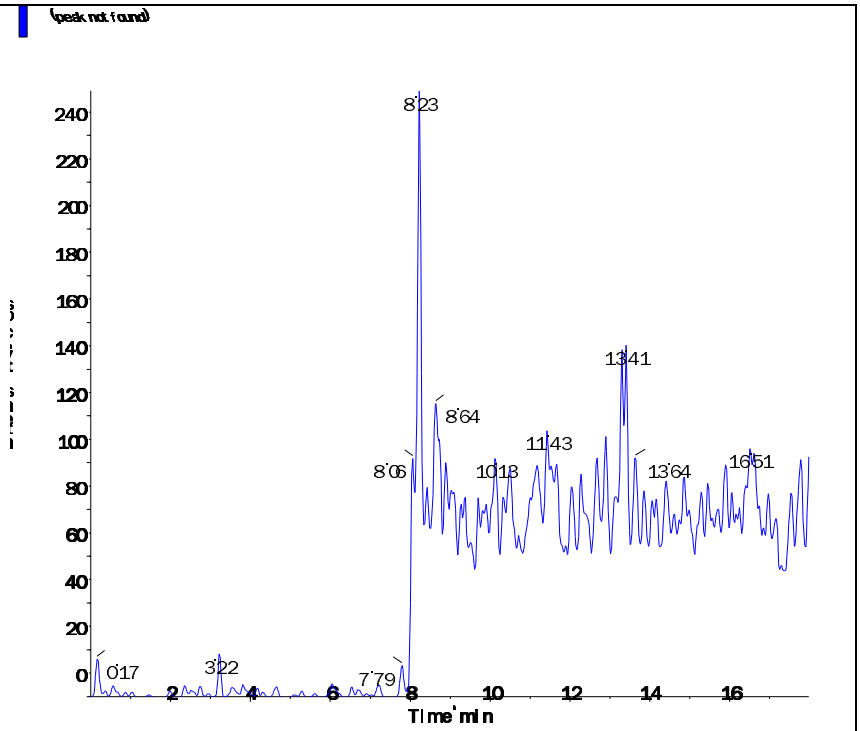

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

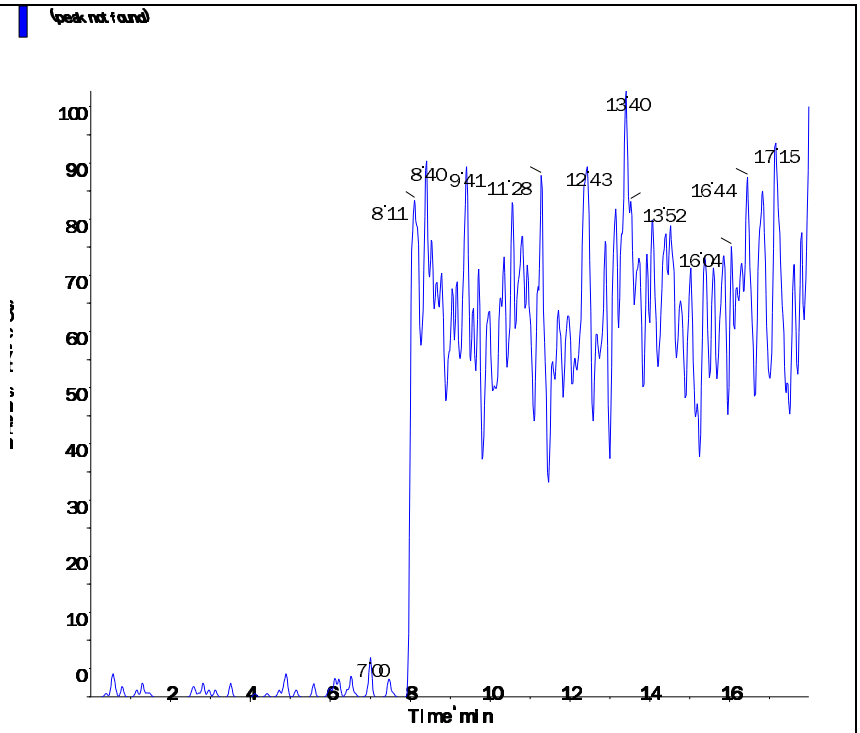

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Data File	LM35603.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/2/2016 2:58:39 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575015-08 CCB	**Injection Vial**	1.00
Data File	LM35603.wiff	**Injection Volume**	10.00
Acquisition Date	7/2/2016 2:58:39 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575015-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.250e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

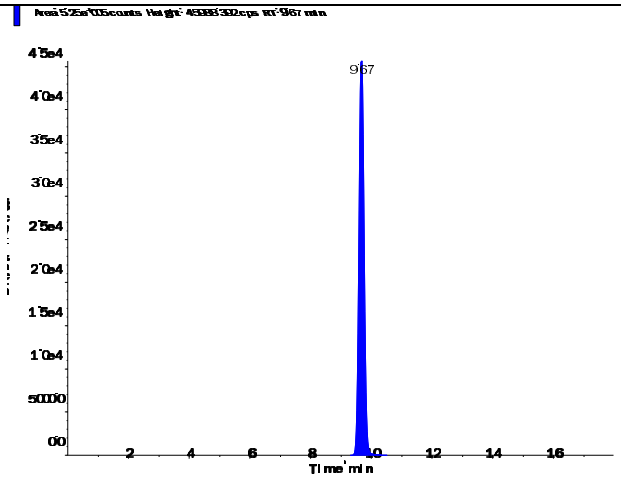

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

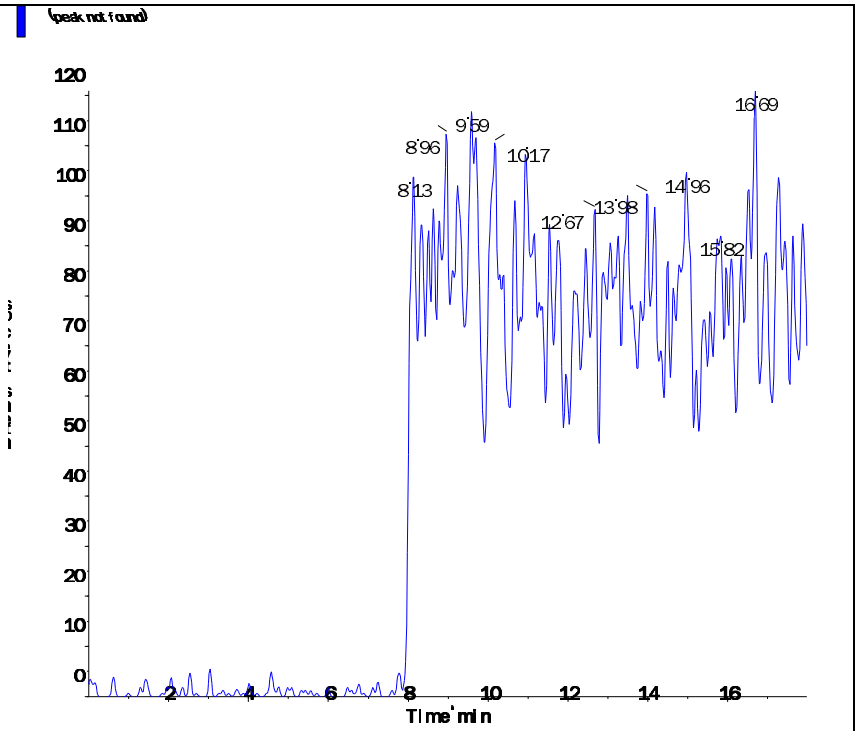

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

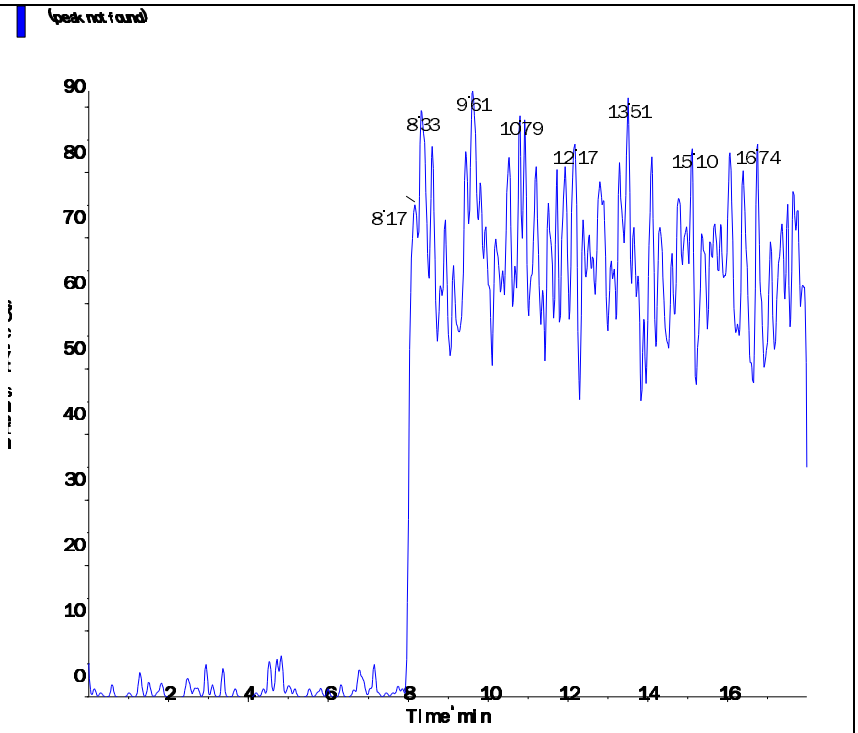

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Data File	LM35571.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 4:52:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM35571.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 4:52:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.330e+05	9.04	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.020e+04	9.05	N/A	0.204
Perchlorate conf	9.940e+03	9.05	N/A	0.185

O18LP (Internal Standard)

RT (Exp. RT): 9.04(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

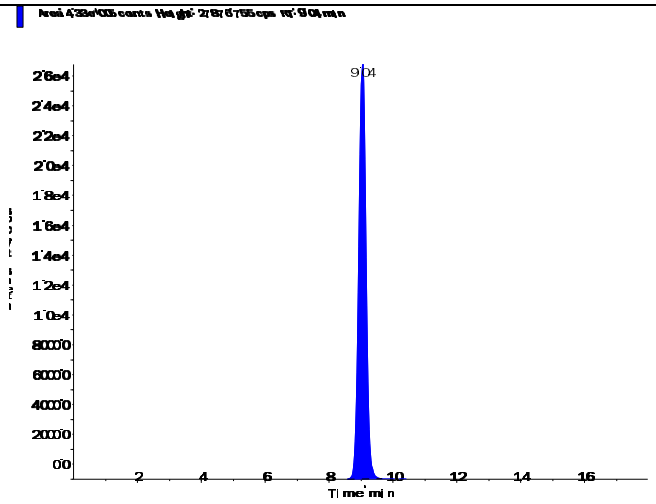

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.05 (9.84) min
Calculated conc:	0.204 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

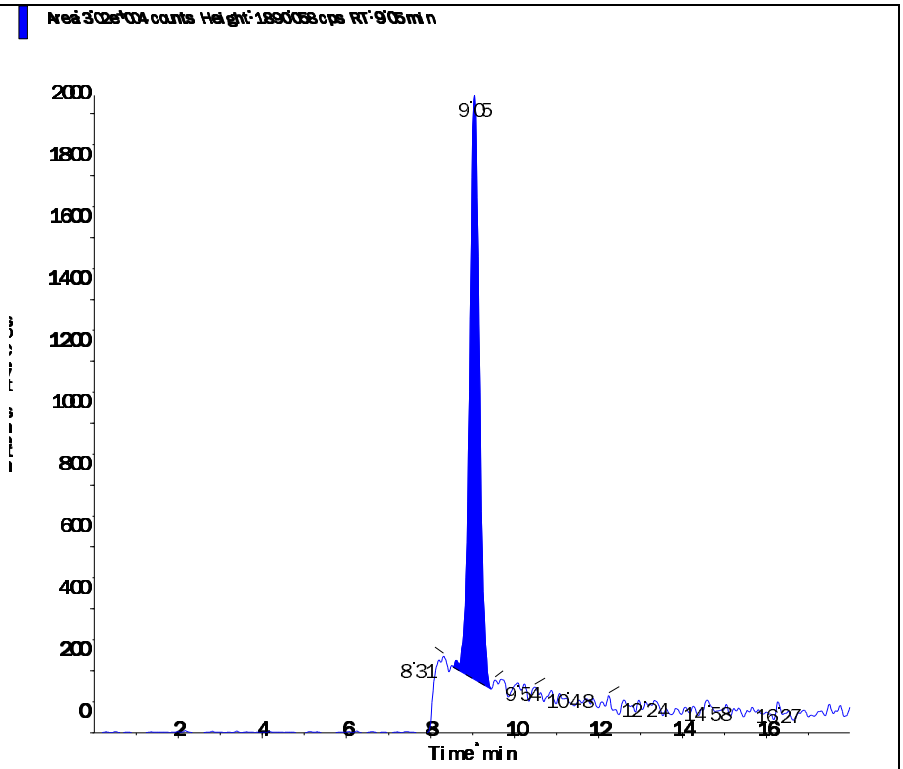

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.05 (9.84) min
Calculated conc:	0.185 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

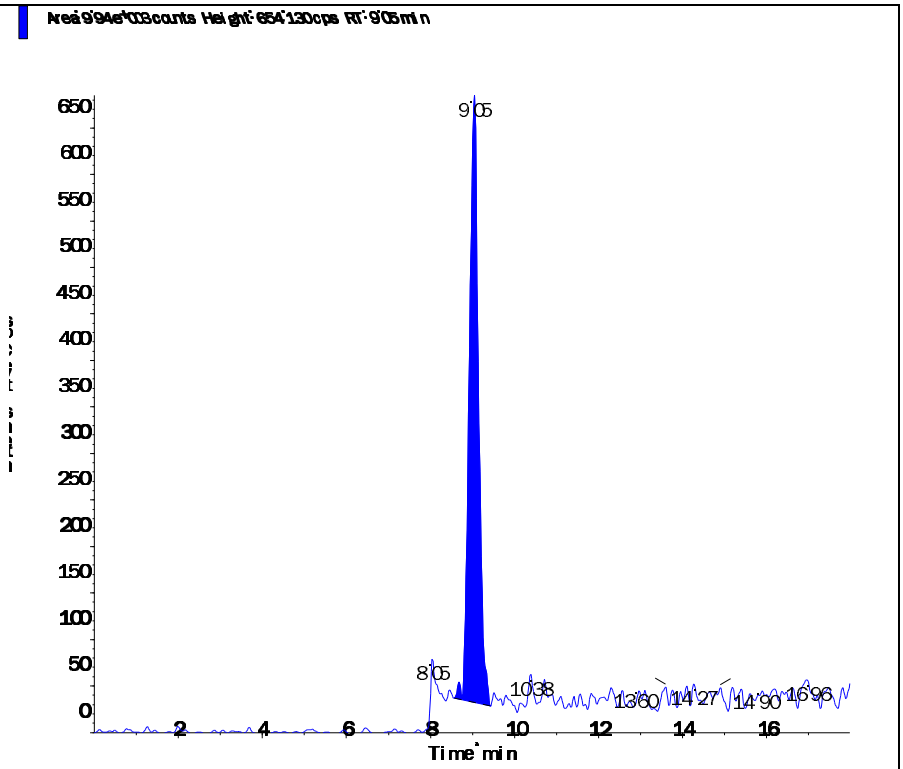

Printing Time: 6:47:51 PM
Printing Date: Friday, July 01, 2016

Sample Name: "WG575005-01 MCT (0.2ug/L)" Sample ID: "WG575005-01" File: "LM35571.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.231 ug/L
Acq. Date:	7/1/2016
Acq. Time:	4:52:43 PM
Modified:	No
Proc. Algorithm:	Analyst Classic
Bunching Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Exp. Width:	0.20
Exp. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Valley
Retention Time:	9.05 min
Area:	3.42e+004 counts
Height:	1959.447 cps
Start Time:	8.566 min
End Time:	9.457 min

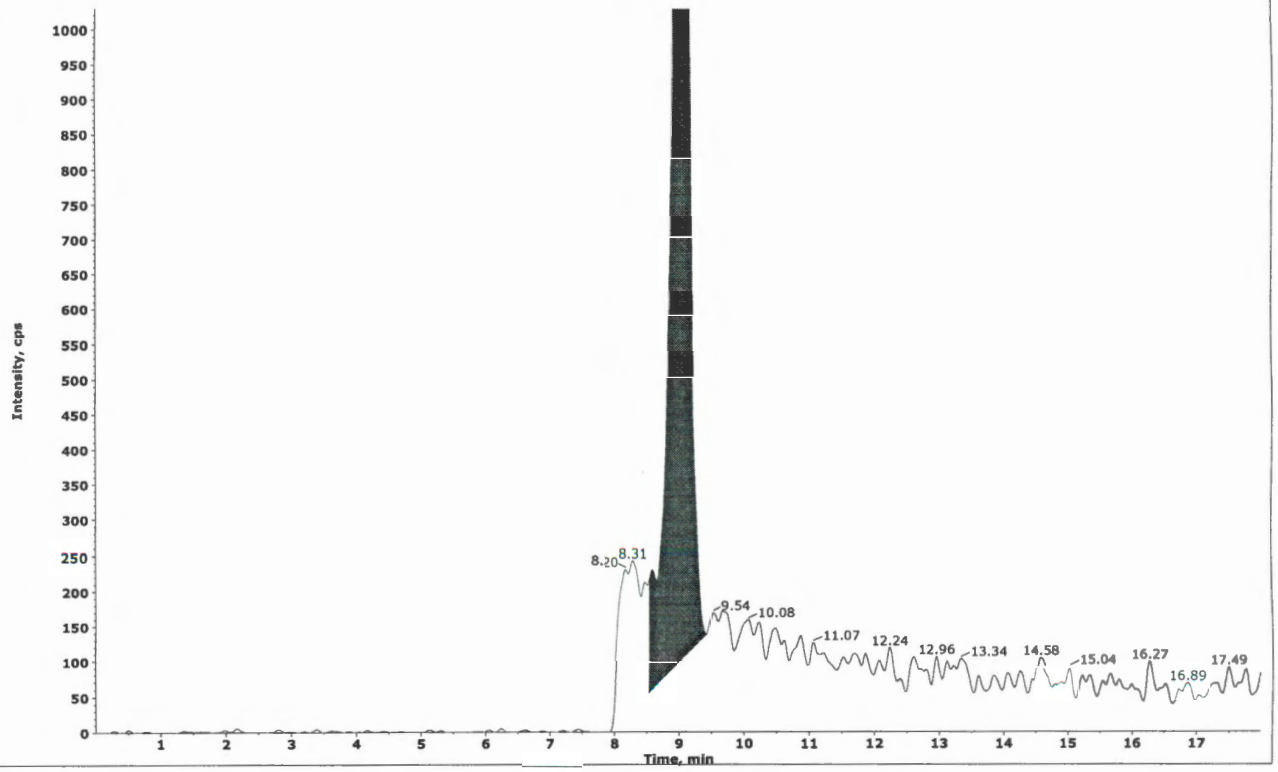

Collected by: N/A
Electronic Signature: no
Operator: lcms1

Printing Time: 6:51:20 PM
Printing Date: Friday, July 01, 2016

Sample Name: "WG575005-01 HCT (0.2ug/L)" Sample ID: "WG575005-01" File: "LM35571.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.204 ug/L
Acq. Date:	7/1/2016
Acq. Time:	4:52:43 PM
Modified:	Yes
Proc. Algorithm:	Analyst Classic
Smoothing Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Exp. Width:	0.20
Exp. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Manual
Retention Time:	9.05 min
Area:	3.02e+004 counts
Height:	1890.058 cps
Start Time:	8.546 min
End Time:	9.437 min

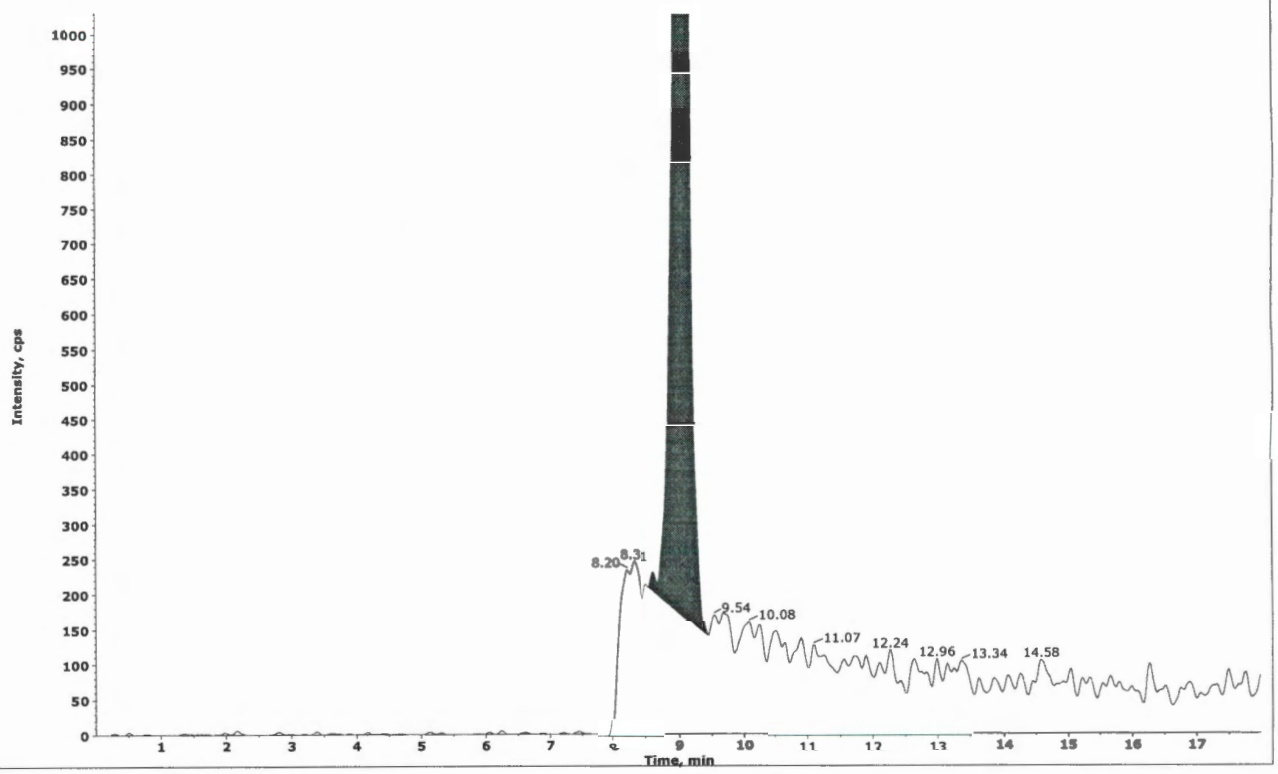

#4
JWR/07/01/16

✓ WED
7-6-16

Collected by: N/A
Electronic Signature: no
Operator: lcms1

2.2.2.5 Raw QC Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:27 PM

Data File	LM35572.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 5:11:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-02 BLANK	**Injection Vial**	5.00
Data File	LM35572.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 5:11:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.510e+05	9.58	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.58(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

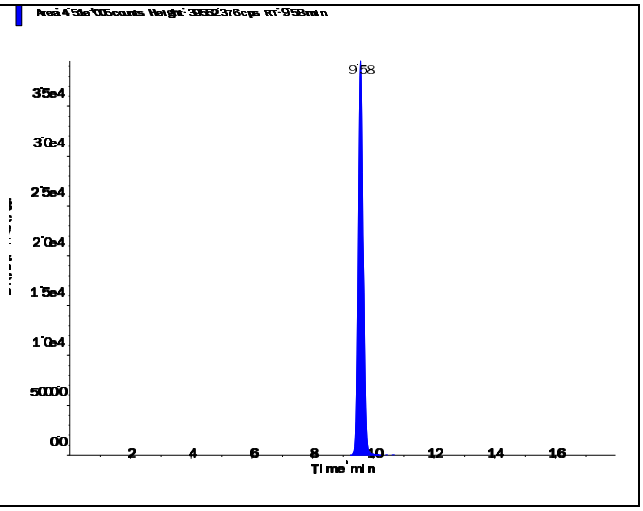

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:27 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

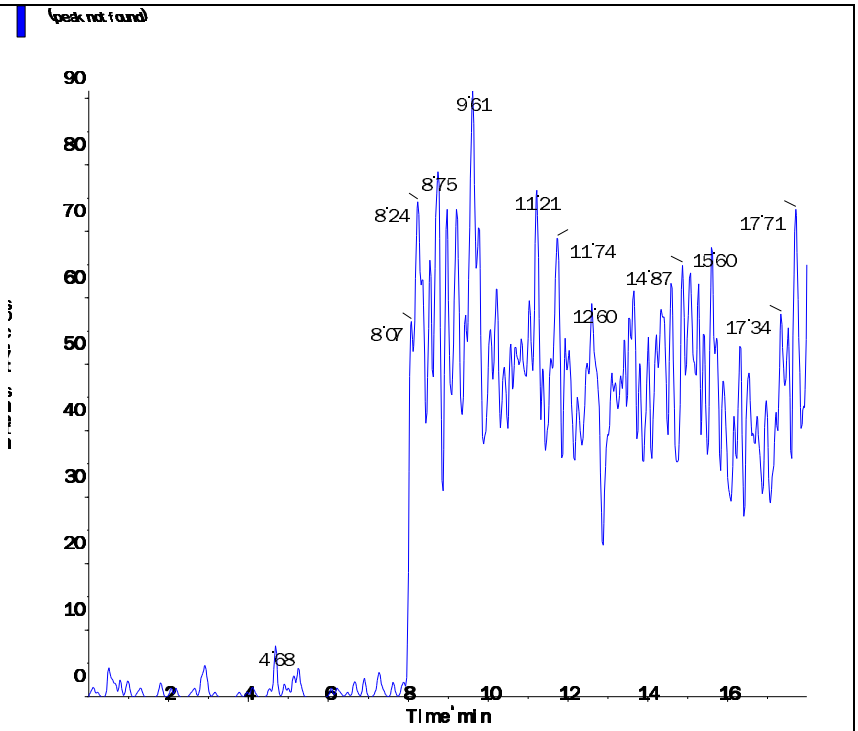

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

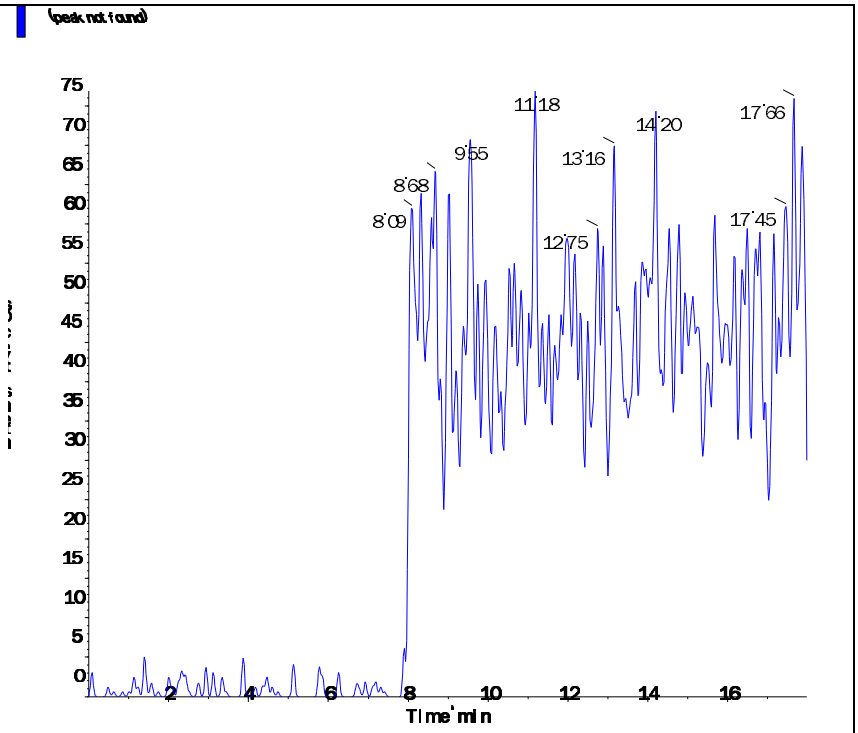

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:27 PM

Data File	LM35573.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 5:30:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM35573.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 5:30:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.510e+05	9.60	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.110e+04	9.61	N/A	0.201
Perchlorate conf	1.130e+04	9.60	N/A	0.204

O18LP (Internal Standard)

RT (Exp. RT): 9.60(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

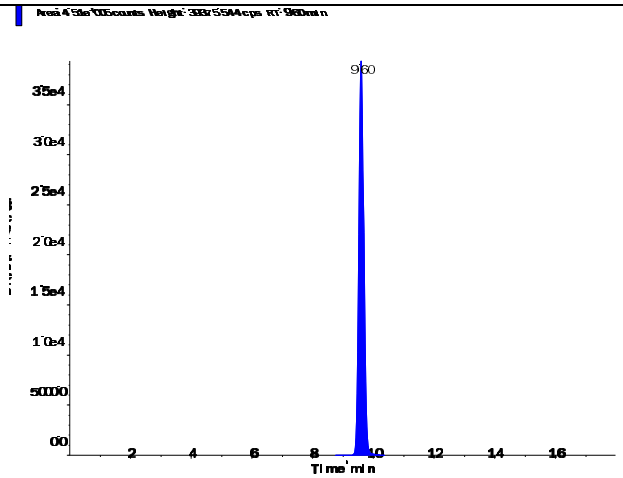

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:27 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.61 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

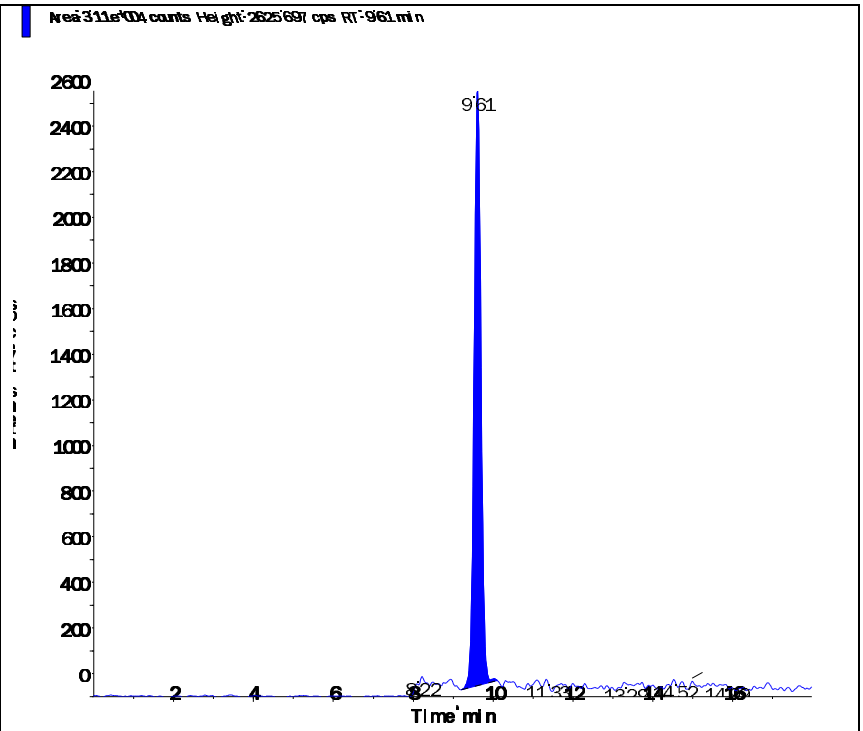

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.60 (9.84) min
Calculated conc:	0.204 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

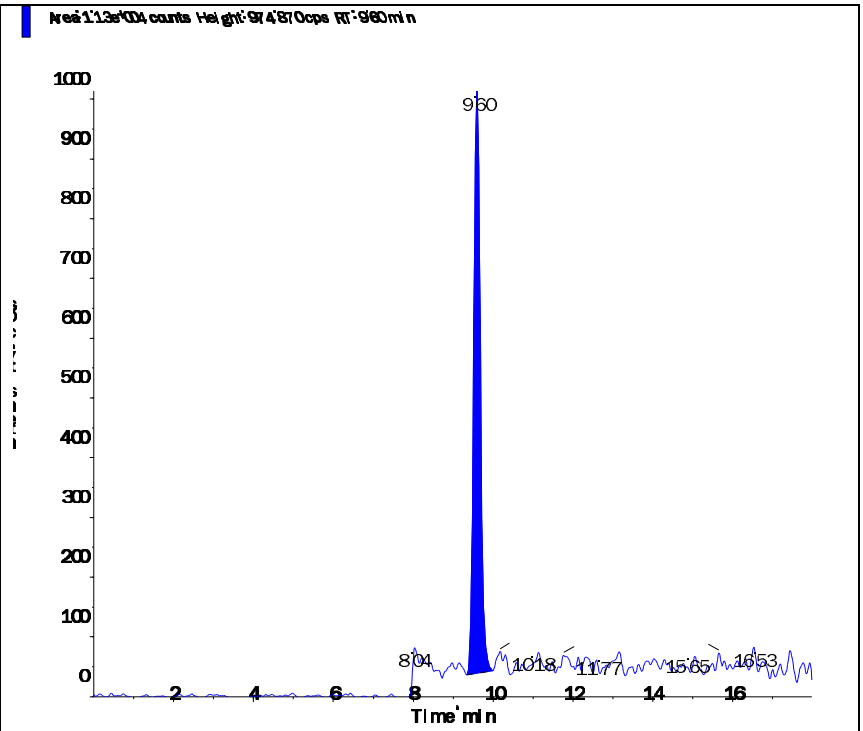

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:28 PM

Data File	LM35574.wiff	**Result Table**	070116_JWR.rdb
Acquisition Date	7/1/2016 5:49:31 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG575005-04 LCS2 (0.2ug/L)	**Injection Vial**	7.00
Data File	LM35574.wiff	**Injection Volume**	10.00
Acquisition Date	7/1/2016 5:49:31 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	070116_JWR.rdb
Sample ID	WG575005-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.500e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.250e+04	9.66	N/A	0.211
Perchlorate conf	1.180e+04	9.65	N/A	0.214

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

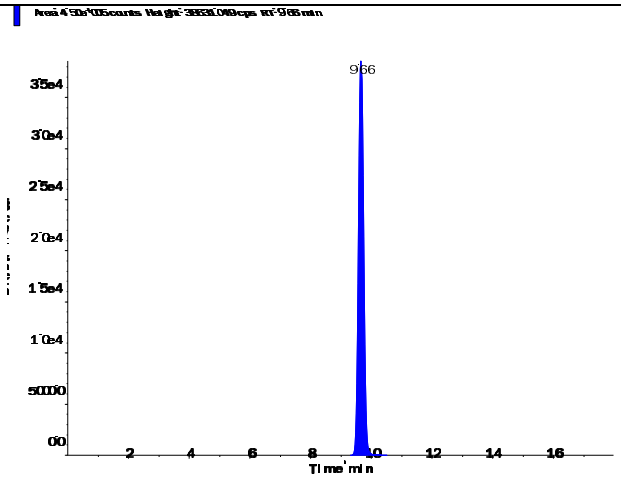

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 7/5/2016 12:28 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.211 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

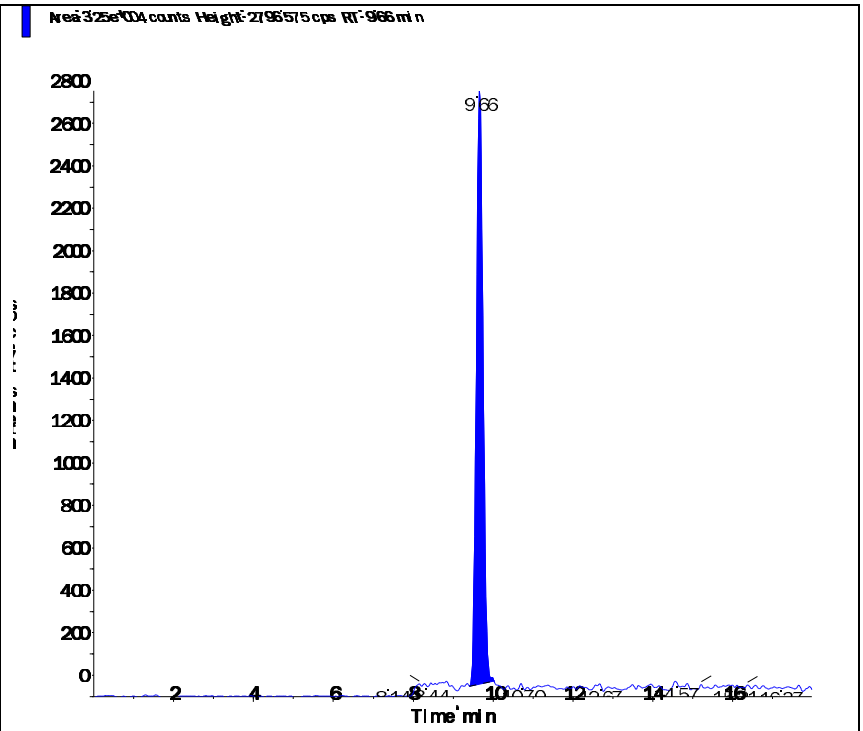

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.65 (9.84) min
Calculated conc:	0.214 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

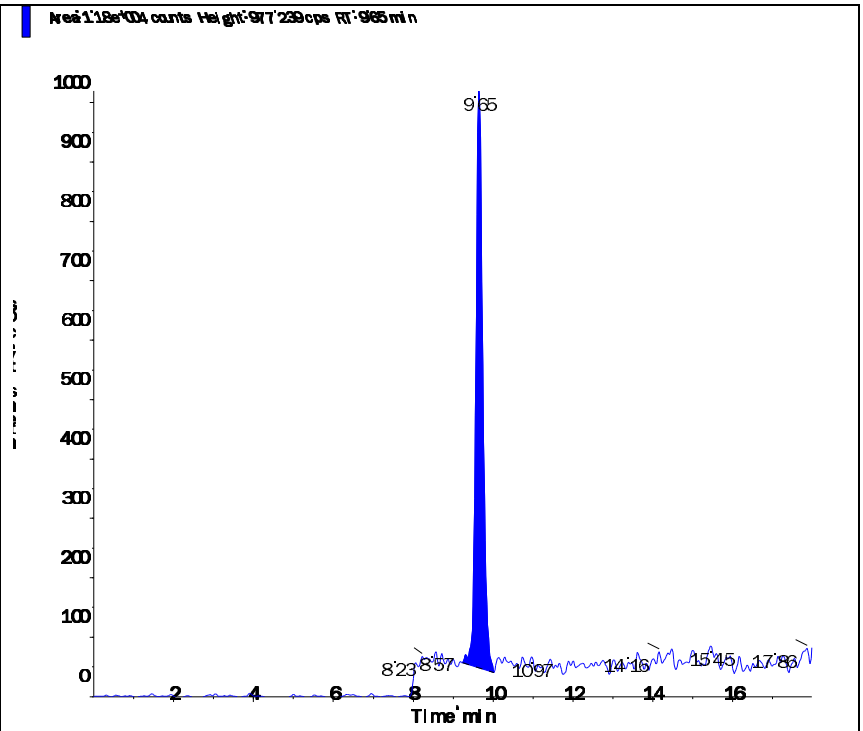

s.dataFile Page 2 of 2

2.3 Metals Data

2.3.1 Metals I C P Data

2.3.1.1 Summary Data

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061648-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW25F-062916	**Prep Method:**	3015	**Prep Date:**	07/01/2016 10:16
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	07/01/2016 14:26
Workgroup #:	WG574995	**Analyst:**	JYH	**Run Date:**	07/01/2016 16:01
Collect Date:	06/29/2016 08:05	**Dilution:**	1	**File ID:**	T3.070116.160122
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.120	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Magnesium, Total	7439-95-4	19.6		1.00	0.500	0.250
Potassium, Total	7440-09-7	2.44		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	44.0		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061648-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW25F-062916	**Prep Method:**	3015	**Prep Date:**	07/01/2016 10:16
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	07/19/2016 09:10
Workgroup #:	WG574995	**Analyst:**	JYH	**Run Date:**	07/19/2016 10:06
Collect Date:	06/29/2016 08:05	**Dilution:**	20	**File ID:**	T3.071916.100624
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	19.6		4.00	2.00	1.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061648-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW25F-062916	**Prep Method:**	3015	**Prep Date:**	07/01/2016 10:16
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	07/14/2016 12:14
Workgroup #:	WG574995	**Analyst:**	JYH	**Run Date:**	07/14/2016 17:54
Collect Date:	06/29/2016 08:05	**Dilution:**	20	**File ID:**	T3.071416.175404
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	32.0		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.3.1.2 QC Summary Data

Example 6010 Calculations
Thermo Scientific iCAP

1.0 Initial Calibration (ICAL) Parameters
For a multi-point calibration, the system performs linear regression from data consisting of a blank and four standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG574940
Analyst: REK
Spike Analyst: REK
Run Date: 07/01/2016 10:16
Method: 3015
Balance: BAL019
Instrument: MW-4
Instrument Start: 07/01/2016 10:21

SOP: ME407 Revison 19
Spike Solution: STD76576
Spike Witness: ERP
HNO3 Lot #: COA18905
40 & 50 ML. DIGESTION TU COA18987
HCL Lot #: COA19029
ICP Filters- fisher-Lot# RGT35619

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG574940-02	BLANK	1	40 mL	50 mL	206.327 g	206.31 g		
2	WG574809-01	FBLK1	17	5 mL	50 mL	202.973 g	202.948 g		
3	WG574940-03	LCS	1	40 mL	50 mL	209.614 g	209.589 g	5 mL	
4	L16061591-01	SAMP	17	5 mL	50 mL	205.685 g	205.671 g		07/07/16
5	WG574940-01	REF	17	5 mL	50 mL	206.394 g	206.373 g		
6	L16061591-02	SAMP	17	5 mL	50 mL	206.394 g	206.373 g		07/07/16
7	L16061591-03	SAMP	17	5 mL	50 mL	206.995 g	206.97 g		07/07/16
8	L16061642-01	SAMP	1	40 mL	50 mL	204.415 g	204.384 g		07/05/16
9	L16061642-02	SAMP	1	40 mL	50 mL	207.198 g	207.176 g		07/05/16
10	L16061648-02	SAMP	1	40 mL	50 mL	206.216 g	206.178 g		07/11/16
11	L16061652-36	SAMP	1	40 mL	50 mL	206.704 g	206.68 g		07/14/16
12	L16061652-38	SAMP	1	40 mL	50 mL	205.348 g	205.327 g		07/14/16
13	L16061660-01	SAMP	1	40 mL	50 mL	205.583 g	205.555 g		07/06/16
14	L16061660-02	SAMP	1	40 mL	50 mL	208.072 g	208.043 g		07/06/16
15	L16061660-03	SAMP	1	40 mL	50 mL	204.075 g	204.048 g		07/06/16
16	L16061660-04	SAMP	1	40 mL	50 mL	208.683 g	208.636 g		07/06/16
17	L16061660-05	SAMP	1	40 mL	50 mL	205.099 g	205.082 g		07/06/16
18	L16061660-06	SAMP	1	40 mL	50 mL	209.69 g	209.659 g		07/06/16
19	L16061660-07	SAMP	1	40 mL	50 mL	206.846 g	206.809 g		07/06/16
20	L16061660-08	SAMP	1	40 mL	50 mL	206.253 g	206.215 g		07/06/16
21	WG574940-04	MS	1	5 mL	50 mL	212.286 g	212.266 g	5 mL	
22	WG574940-05	MSD	1	5 mL	50 mL	210.673 g	210.644 g	5 mL	

L16061642-01	FILTERED DIGESTATE
L16061642-02	FILTERED DIGESTATE

Analyst: _____

Reviewer: _____

MW_DIG - Modified 09/30/2009
PDF ID: 4836155
Report generated: 07/01/2016 11:45

MICROBAC®

TCLP Non-Volatile

Analyst(s): AMA, CPD, BNB
Date: 6/30/16
Filter Lot #: 94860030
Microbac SOP: TCLP01 Rev #: 12

Analyst / Date		Analyst / Date	
AMA	6/30/16	CPD	7/1/16
Time On	Temp On °C	Time Off	Temp Off °C
1529	23.4	0818	22.1

Agitator Speed 30 ± 2 rpm ☑

Jug #	Sample #	Tests	Method	Fluid #	Matrix *	% Solid	Pretest pH Initial	Pretest pH Final	Int. Wt. (g)	Fluid Vol. (mL)	Final extract pH
G-8	6-1591-01	ME, SV	1311	F2-380	S	100	8.81	6.61	50.47	1009	6.24
G-10	-02						8.78	6.70	50.77	1015	6.32
G15	-03						8.59	5.70	50.30	1006	5.00
NA	FBLK 2	ME, SV	1311	F2-380	NA	NA	NA	NA	100	100	2.85

BNB 06/30/16

*Matrix Code: (S = solid, sand, soil or sludge) (P = paint) (O = organic) (W = water or aqueous waste)
D = Disposable plastic jug
TCLP Pretest weight will be 5.0 g (± 0.1) unless otherwise noted.
Temperature shall be maintained at 23° ± 2 for 18 ± 2 hours unless otherwise noted.

Comments: NA

Peer Review By: [signature]

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 070116T3.1R.TXT

Analyst1: JYH Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76882 ICSAB: STD76834 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 574995,574645

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.070116.141024	WG575089-01	Calibration Point		1		07/01/16 14:10
2	T3.070116.141423	WG575089-02	Calibration Point		1		07/01/16 14:14
3	T3.070116.141823	WG575089-03	Calibration Point		1		07/01/16 14:18
4	T3.070116.142222	WG575089-04	Calibration Point		1		07/01/16 14:22
5	T3.070116.142600	WG575089-05	Calibration Point		1		07/01/16 14:26
6	T3.070116.142937	WG575089-06	Initial Calibration Verification		1		07/01/16 14:29
7	T3.070116.143317	WG575089-07	Initial Calib Blank		1		07/01/16 14:33
8	T3.070116.143717	WG575089-08	Low Level Initial Calibration V		1		07/01/16 14:37
9	T3.070116.144112	WG575089-09	Interference Check		1		07/01/16 14:41
10	T3.070116.144503	WG575089-10	Interference Check		1		07/01/16 14:45
11	T3.070116.144846	WG575089-11	CCV		1		07/01/16 14:48
12	T3.070116.145226	WG575089-12	CCB		1		07/01/16 14:52
13	T3.070116.151527	WG574940-02	Method/Prep Blank	40/50	1		07/01/16 15:15
14	T3.070116.151926	WG574940-03	Laboratory Control S	40/50	1		07/01/16 15:19
15	T3.070116.152307	WG574809-01	Fluid Blank 1		1		07/01/16 15:23
16	T3.070116.152705	L16061591-01	062316-11	5/50	1		07/01/16 15:27
17	T3.070116.153102	WG574940-01	Reference Sample		1	L16061591-02	07/01/16 15:31
18	T3.070116.153500	WG574940-04	Matrix Spike	5/50	1	L16061591-02	07/01/16 15:35
19	T3.070116.153839	WG574940-05	Matrix Spike Duplica	5/50	1	L16061591-02	07/01/16 15:38
20	T3.070116.154219	L16061591-03	062316-13	5/50	1		07/01/16 15:42
21	T3.070116.154612	L16061642-01	FQC-WW03-W0001	40/50	1		07/01/16 15:46
22	T3.070116.155002	WG575089-13	CCV		1		07/01/16 15:50
23	T3.070116.155341	WG575089-14	CCB		1		07/01/16 15:53
24	T3.070116.155739	L16061642-02	FQC-WW04-W0002	40/50	1		07/01/16 15:57
25	T3.070116.160122	L16061648-02	18WW25F-062916	40/50	1		07/01/16 16:01
26	T3.070116.160514	L16061652-36	ORG-S01-322-14	40/50	1		07/01/16 16:05
27	T3.070116.160910	L16061652-38	ORG-S02-322-14	40/50	1		07/01/16 16:09
28	T3.070116.161308	L16061660-01	11002-D01-WQ-W0002	40/50	1		07/01/16 16:13
29	T3.070116.161708	L16061660-02	11002-D18-WQ-W0036	40/50	1		07/01/16 16:17
30	T3.070116.162104	L16061660-03	11101-G001-WQ-W0036	40/50	1		07/01/16 16:21
31	T3.070116.162503	L16061660-04	11101-G041-WQ-W0088	40/50	1		07/01/16 16:25
32	T3.070116.162901	L16061660-05	11101-G080-WQ-W0132	40/50	1		07/01/16 16:29
33	T3.070116.163301	L16061660-06	11101-G121-WQ-W0228	40/50	1		07/01/16 16:33
34	T3.070116.163658	WG575089-15	CCV		1		07/01/16 16:36

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Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 070116T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76882 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574995,574645

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.070116.164037	WG575089-16	CCB		1		07/01/16 16:40
36	T3.070116.164435	L16061660-07	11101-G132-WQ-W0280	40/50	1		07/01/16 16:44
37	T3.070116.164835	L16061660-08	11101-G144-WQ-W324	40/50	1		07/01/16 16:48
38	T3.070116.165233	WG574995-01	Post Digestion Spike		1	L16061660-08	07/01/16 16:52
39	T3.070116.165614	WG574995-02	Serial Dilution		5	L16061660-08	07/01/16 16:56
40	T3.070116.170012	WG574995-02	Serial Dilution		25	L16061660-08	07/01/16 17:00
41	T3.070116.170408	L16061452-01	18CPTMW12SW-062416		20		07/01/16 17:04
42	T3.070116.170805	L16061453-01	MW2-062416		20		07/01/16 17:08
43	T3.070116.171200	L16061453-03	18CPTMW01SW-062416		20		07/01/16 17:12
44	T3.070116.171556	WG575089-17	CCV		1		07/01/16 17:15
45	T3.070116.171934	WG575089-18	CCB		1		07/01/16 17:19
46	T3.070116.172333	WG574597-07	Method/Prep Blank	40/50	1		07/01/16 17:23
47	T3.070116.172731	WG574597-08	Laboratory Control S	40/50	1		07/01/16 17:27
48	T3.070116.173113	WG574597-06	Reference Sample		1	L16061496-01	07/01/16 17:31
49	T3.070116.173453	WG574597-09	Matrix Spike	5/50	1	L16061496-01	07/01/16 17:34
50	T3.070116.173832	WG574597-10	Matrix Spike Duplica	5/50	1	L16061496-01	07/01/16 17:38
51	T3.070116.174211	L16061458-02	SCF-WL01-062416	40/50	1		07/01/16 17:42
52	T3.070116.174605	WG574645-03	Post Digestion Spike		1	L16061458-02	07/01/16 17:46
53	T3.070116.174944	WG574645-04	Serial Dilution		5	L16061458-02	07/01/16 17:49
54	T3.070116.175330	WG574645-04	Serial Dilution		25	L16061458-02	07/01/16 17:53
55	T3.070116.175728	WG575089-19	CCV		1		07/01/16 17:57
56	T3.070116.180106	WG575089-20	CCB		1		07/01/16 18:01
57	T3.070116.180504	WG575089-21	Interference Check		1		07/01/16 18:05
58	T3.070116.180855	WG575089-22	Interference Check		1		07/01/16 18:08
59	T3.070116.181238	WG575089-23	CCV		1		07/01/16 18:12
60	T3.070116.181617	WG575089-24	CCB		1		07/01/16 18:16
61	T3.070116.182016	WG575089-25	Low Level Continuing Calibra		1		07/01/16 18:20

Comments

Seq.	Rerun	Dil.	Reason	Analytes
51			Wrong sample label. JYH	

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 071416T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD77091 ICV Std: STD77090 Post Spike: STD75838
ICSA: STD76882 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD77089 LLCCV: STD77092 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 576082,576110

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.071416.115859	WG576454-01	Calibration Point		1		07/14/16 11:58
2	T3.071416.120258	WG576454-02	Calibration Point		1		07/14/16 12:02
3	T3.071416.120656	WG576454-03	Calibration Point		1		07/14/16 12:06
4	T3.071416.121043	WG576454-04	Calibration Point		1		07/14/16 12:10
5	T3.071416.121419	WG576454-05	Calibration Point		1		07/14/16 12:14
6	T3.071416.121756	WG576454-06	Initial Calibration Verification		1		07/14/16 12:17
7	T3.071416.122133	WG576454-07	Initial Calib Blank		1		07/14/16 12:21
8	T3.071416.122530	WG576454-08	Low Level Initial Calibration V		1		07/14/16 12:25
9	T3.071416.122922	WG576454-09	Low Level Initial Calibration V		1		07/14/16 12:29
10	T3.071416.123313	WG576454-10	Interference Check		1		07/14/16 12:33
11	T3.071416.123702	WG576454-11	Interference Check		1		07/14/16 12:37
12	T3.071416.124032	WG576454-12	CCV		1		07/14/16 12:40
13	T3.071416.124410	WG576454-13	CCB		1		07/14/16 12:44
14	T3.071416.124809	WG575851-02	Method/Prep Blank	40/50	1		07/14/16 12:48
15	T3.071416.125537	WG575851-03	Laboratory Control S	40/50	1		07/14/16 12:55
16	T3.071416.125915	L16070001-01	MDL-1	40/50	1		07/14/16 12:59
17	T3.071416.130312	L16070003-01	LOQ-1	40/50	1		07/14/16 13:03
18	T3.071416.130705	L16070003-09	LOQ-9	40/50	1		07/14/16 13:07
19	T3.071416.131101	WG576454-14	CCV		1		07/14/16 13:11
20	T3.071416.131436	WG576454-15	CCB		1		07/14/16 13:14
21	T3.071416.131836	WG575851-01	Reference Sample		1	L16070291-01	07/14/16 13:18
22	T3.071416.132229	WG575851-04	Matrix Spike	40/50	1	L16070291-01	07/14/16 13:22
23	T3.071416.132606	WG575851-05	Matrix Spike Duplica	40/50	1	L16070291-01	07/14/16 13:26
24	T3.071416.132943	L16070376-01	1260-B01-WQ-W0002	40/50	1		07/14/16 13:29
25	T3.071416.133339	L16070376-02	1261-F01-WQ-W0012	40/50	1		07/14/16 13:33
26	T3.071416.133736	L16070376-03	5334-B02-WQ-W0008	40/50	1		07/14/16 13:37
27	T3.071416.134133	L16070201-03	T1363	40/50	1		07/14/16 13:41
28	T3.071416.134523	WG576082-01	Post Digestion Spike		1	L16070201-03	07/14/16 13:45
29	T3.071416.134907	WG576082-02	Serial Dilution		5	L16070201-03	07/14/16 13:49
30	T3.071416.135252	WG576082-02	Serial Dilution		25	L16070201-03	07/14/16 13:52
31	T3.071416.135643	WG576454-16	CCV		1		07/14/16 13:56
32	T3.071416.140020	WG576454-17	CCB		1		07/14/16 14:00
33	T3.071416.140419	WG576011-02	Method/Prep Blank	40/50	1		07/14/16 14:04
34	T3.071416.140817	WG576011-03	Laboratory Control S	40/50	1		07/14/16 14:08

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Kim H. Rhoden

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 071416T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD77091 ICV Std: STD77090 Post Spike: STD75838
ICSA: STD76882 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD77089 LLCCV: STD77092 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 576082,576110

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.071416.141154	WG575805-01	Fluid Blank 1		1		07/14/16 14:11
36	T3.071416.141552	WG575805-02	Fluid Blank 2		1		07/14/16 14:15
37	T3.071416.141949	WG576011-01	Reference Sample		1	L16070397-01	07/14/16 14:19
38	T3.071416.142344	WG576011-04	Matrix Spike	5/50	1	L16070397-01	07/14/16 14:23
39	T3.071416.142721	WG576011-05	Matrix Spike Duplica	5/50	1	L16070397-01	07/14/16 14:27
40	T3.071416.143058	L16070347-01	TANK 001/INTERIOR	5/50	1		07/14/16 14:30
41	T3.071416.143452	WG576110-01	Post Digestion Spike		1	L16070347-01	07/14/16 14:34
42	T3.071416.143828	WG576110-02	Serial Dilution		5	L16070347-01	07/14/16 14:38
43	T3.071416.144225	WG576454-18	CCV		1		07/14/16 14:42
44	T3.071416.144601	WG576454-19	CCB		1		07/14/16 14:46
45	T3.071416.145001	L16070397-02	S6G0190-02	5/50	1		07/14/16 14:50
46	T3.071416.145355	L16070404-01	18502-G05-WQ-W0025	40/50	1		07/14/16 14:53
47	T3.071416.145752	L16070404-02	18502-G10-WQ-W0049	40/50	1		07/14/16 14:57
48	T3.071416.150148	L16070404-03	19124-G02-WQ-W7	40/50	1		07/14/16 15:01
49	T3.071416.150547	WG576454-20	CCV		1		07/14/16 15:05
50	T3.071416.150924	WG576454-21	CCB		1		07/14/16 15:09
51	T3.071416.151324	L16070238-01	WT-WL-02	5/50	1		07/14/16 15:13
52	T3.071416.151714	L16070340-01	DYNEGY	5/50	1		07/14/16 15:17
53	T3.071416.152107	L16070451-01	59-10-1.02 W1	40/50	1		07/14/16 15:21
54	T3.071416.152459	L16070451-02	59-10-1.02 S1	40/50	1		07/14/16 15:24
55	T3.071416.152852	L16070452-01	1804-105 W1	40/50	1		07/14/16 15:28
56	T3.071416.153244	L16070452-02	1804-105-A W1/S1	40/50	1		07/14/16 15:32
57	T3.071416.153637	L16070453-01	15-13-22 S1	40/50	1		07/14/16 15:36
58	T3.071416.154033	L16070453-02	2212-112 S1	40/50	1		07/14/16 15:40
59	T3.071416.154416	L16070453-03	2212-112 W1	40/50	1		07/14/16 15:44
60	T3.071416.154810	L16070453-04	2212-112 S2	40/50	1		07/14/16 15:48
61	T3.071416.155155	WG576454-22	CCV		1		07/14/16 15:51
62	T3.071416.155532	WG576454-23	CCB		1		07/14/16 15:55
63	T3.071416.155931	L16070453-05	2212-112 P1	40/50	1		07/14/16 15:59
64	T3.071416.160324	L16070454-01	1802-138 W1	40/50	1		07/14/16 16:03
65	T3.071416.160716	L16070201-01	T1360	40/50	2		07/14/16 16:07
66	T3.071416.161109	L16070201-02	T1362	40/50	2		07/14/16 16:11
67	T3.071416.161502	L16070201-04	T1365	40/50	2		07/14/16 16:15
68	T3.071416.161853	L16070249-03	25034-S		1		07/14/16 16:18

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Kim H. Rhoden

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 071416T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD77091 ICV Std: STD77090 Post Spike: STD75838
ICSA: STD76882 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD77089 LLCCV: STD77092 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 576082,576110

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.071416.162238	WG576454-24	CCV		1		07/14/16 16:22
70	T3.071416.162613	WG576454-25	CCB		1		07/14/16 16:26
71	T3.071416.163012	L16070291-02	MOR9 MW2	40/50	1		07/14/16 16:30
72	T3.071416.163355	L16070291-03	MOR9 MW3	40/50	1		07/14/16 16:33
73	T3.071416.163748	L16070291-04	MOR9 MW4	40/50	1		07/14/16 16:37
74	T3.071416.164139	L16070380-01	2208-127 W1	40/50	1		07/14/16 16:41
75	T3.071416.164530	L16070380-02	15-13-12 W1	40/50	1		07/14/16 16:45
76	T3.071416.164921	L16070380-03	15-13-12 W1	40/50	1		07/14/16 16:49
77	T3.071416.165314	L16070380-04	15-13-23.2 W1	40/50	1		07/14/16 16:53
78	T3.071416.165709	L16070381-01	WATER	40/50	1		07/14/16 16:57
79	T3.071416.170107	WG576454-26	CCV		1		07/14/16 17:01
80	T3.071416.170443	WG576454-27	CCB		1		07/14/16 17:04
81	T3.071416.170841	WG574636-02	Method/Prep Blank	40/50	1		07/14/16 17:08
82	T3.071416.171237	WG574636-03	Laboratory Control S	40/50	1		07/14/16 17:12
83	T3.071416.171614	WG574636-01	Reference Sample		1	L16061455-02	07/14/16 17:16
84	T3.071416.172007	WG574636-04	Matrix Spike	40/50	1	L16061455-02	07/14/16 17:20
85	T3.071416.172342	WG574636-05	Matrix Spike Duplica	40/50	1	L16061455-02	07/14/16 17:23
86	T3.071416.172719	L16061452-01	18CPTMW12SW-062416	40/50	1		07/14/16 17:27
87	T3.071416.173113	L16061453-01	MW2-062416	40/50	5		07/14/16 17:31
88	T3.071416.173506	L16061453-03	18CPTMW01SW-062416	40/50	10		07/14/16 17:35
89	T3.071416.173901	WG574839-03	Post Digestion Spike		10	L16061453-03	07/14/16 17:39
90	T3.071416.174238	WG574839-04	Serial Dilution		50	L16061453-03	07/14/16 17:42
91	T3.071416.174637	WG576454-28	CCV		1		07/14/16 17:46
92	T3.071416.175004	WG576454-29	CCB		1		07/14/16 17:50
93	T3.071416.175404	L16061648-02	18WW25F-062916	40/50	20		07/14/16 17:54
94	T3.071416.175800	WG576454-30	CCV		1		07/14/16 17:58
95	T3.071416.180136	WG576454-31	CCB		1		07/14/16 18:01
96	T3.071416.180534	WG576454-32	Low Level Continuing Calibra		1		07/14/16 18:05
97	T3.071416.180927	WG576454-33	Low Level Continuing Calibra		1		07/14/16 18:09
98	T3.071416.181316	WG575642-07	Method/Prep Blank	40/50	1		07/14/16 18:13
99	T3.071416.181713	WG575642-08	Laboratory Control S	40/50	1		07/14/16 18:17
100	T3.071416.182051	WG575642-06	Reference Sample		1	L16070227-07	07/14/16 18:20
101	T3.071416.182445	WG575642-09	Matrix Spike	40/50	1	L16070227-07	07/14/16 18:24
102	T3.071416.182823	WG575642-10	Matrix Spike Duplica	40/50	1	L16070227-07	07/14/16 18:28

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Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 071416T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD77091 ICV Std: STD77090 Post Spike: STD75838
ICSA: STD76882 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD77089 LLCCV: STD77092 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 576082,576110

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T3.071416.183200	L16070184-02	LH18/24-SP650-6376-GRAB	40/50	1		07/14/16 18:32
104	T3.071416.183551	WG576077-03	Post Digestion Spike		1	L16070184-02	07/14/16 18:35
105	T3.071416.183929	WG576077-04	Serial Dilution		5	L16070184-02	07/14/16 18:39
106	T3.071416.184322	WG576077-04	Serial Dilution		25	L16070184-02	07/14/16 18:43
107	T3.071416.184717	WG576454-34	CCV		1		07/14/16 18:47
108	T3.071416.185053	WG576454-35	CCB		1		07/14/16 18:50
109	T3.071416.185451	L16070209-01	T6F1104-05	40/50	1		07/14/16 18:54
110	T3.071416.185846	L16070209-02	T6F1104-06	40/50	1		07/14/16 18:58
111	T3.071416.190239	L16070209-03	T6F1104-07	40/50	1		07/14/16 19:02
112	T3.071416.190634	WG576454-36	CCV		1		07/14/16 19:06
113	T3.071416.191010	WG576454-37	CCB		1		07/14/16 19:10
114	T3.071416.191407	WG576454-38	Low Level Continuing Calibra		1		07/14/16 19:14
115	T3.071416.191801	WG576227-02	Method/Prep Blank	40/50	1		07/14/16 19:18
116	T3.071416.192158	WG576227-03	Laboratory Control S	40/50	1		07/14/16 19:21
117	T3.071416.192535	WG576038-02	Fluid Blank 1		1		07/14/16 19:25
118	T3.071416.192933	WG576038-01	Fluid Blank 2		1		07/14/16 19:29
119	T3.071416.193330	WG576227-04	Filter Blank		1		07/14/16 19:33
120	T3.071416.193729	L16070449-01	VTR 850	5/50	1		07/14/16 19:37
121	T3.071416.194121	WG576493-01	Post Digestion Spike		1	L16070449-01	07/14/16 19:41
122	T3.071416.194458	WG576493-02	Serial Dilution		5	L16070449-01	07/14/16 19:44
123	T3.071416.194853	WG576493-02	Serial Dilution		25	L16070449-01	07/14/16 19:48
124	T3.071416.195249	WG576454-39	CCV		1		07/14/16 19:52
125	T3.071416.195625	WG576454-40	CCB		1		07/14/16 19:56
126	T3.071416.200022	WG576227-01	Reference Sample		1	L16070521-01	07/14/16 20:00
127	T3.071416.200403	WG576227-05	Matrix Spike	40/50	1	L16070521-01	07/14/16 20:04
128	T3.071416.200739	WG576227-06	Matrix Spike Duplica	40/50	1	L16070521-01	07/14/16 20:07
129	T3.071416.201104	L16070348-01	350067872000_W1_070820	40/50	1		07/14/16 20:11
130	T3.071416.201454	L16070348-02	350067872000_W1_070820	40/50	1		07/14/16 20:14
131	T3.071416.201844	L16070447-01	REVAN FINES/EXP\#4888	5/50	1		07/14/16 20:18
132	T3.071416.202236	L16070464-01	SAPA 20 BAGS	5/50	1		07/14/16 20:22
133	T3.071416.202631	L16070465-01	ALAN 22 BAGS	5/50	1		07/14/16 20:26
134	T3.071416.203026	L16070466-01	380 SALTCAKE SCREW 10	5/50	1		07/14/16 20:30
135	T3.071416.203424	L16070468-01	URV	5/50	1		07/14/16 20:34
136	T3.071416.203822	WG576454-41	CCV		1		07/14/16 20:38

Page: 4 Approved: July 14, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 071416T3.1R.TXT

Analyst1: JYH Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD77091 ICV Std: STD77090 Post Spike: STD75838

ICSA: STD76882 ICSAB: STD76834 Int. Std: RGT31668

CCV: STD77089 LLCCV: STD77092 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 576082,576110

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	T3.071416.204158	WG576454-42	CCB		1		07/14/16 20:41
138	T3.071416.204555	L16070474-01	LH18/24-SP650-6378-GRAB	40/50	1		07/14/16 20:45
139	T3.071416.204944	L16070474-02	LH18/24-SP650-6378-COMP	40/50	1		07/14/16 20:49
140	T3.071416.205335	L16070485-01	60500-SSP0045-SSP0045	5/50	1		07/14/16 20:53
141	T3.071416.205723	L16070487-01	13837-SSP0552	5/50	1		07/14/16 20:57
142	T3.071416.210115	L16070519-01	2016PRE-42230BROOKSRD	40/50	1		07/14/16 21:01
143	T3.071416.210507	L16070519-02	2016PRE-2616BEACHDR	40/50	1		07/14/16 21:05
144	T3.071416.210859	L16070524-01	59-8-2.02 W1	40/50	1		07/14/16 21:08
145	T3.071416.211252	WG576454-43	CCV		1		07/14/16 21:12
146	T3.071416.211629	WG576454-44	CCB		1		07/14/16 21:16
147	T3.071416.212025	WG576454-45	Low Level Continuing Calibra		1		07/14/16 21:20

Page: 5 Approved: July 14, 2016

Kim H. Rhoden

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 071916T3.1R.TXT

Analyst1: JYH Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD77091 ICV Std: STD77090 Post Spike: STD75838

ICSA: STD76882 ICSAB: STD76834 Int. Std: RGT31668

CCV: STD77089 LLCCV: STD77092 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 574995,576859

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.071916.085545	WG577035-01	Calibration Point		1		07/19/16 08:55
2	T3.071916.085938	WG577035-02	Calibration Point		1		07/19/16 08:59
3	T3.071916.090331	WG577035-03	Calibration Point		1		07/19/16 09:03
4	T3.071916.090724	WG577035-04	Calibration Point		1		07/19/16 09:07
5	T3.071916.091057	WG577035-05	Calibration Point		1		07/19/16 09:10
6	T3.071916.091417	WG577035-06	Initial Calibration Verification		1		07/19/16 09:14
7	T3.071916.091750	WG577035-07	Initial Calib Blank		1		07/19/16 09:17
8	T3.071916.092143	WG577035-08	Low Level Initial Calibration V		1		07/19/16 09:21
9	T3.071916.092533	WG577035-09	Low Level Initial Calibration V		1		07/19/16 09:25
10	T3.071916.092920	WG577035-10	Interference Check		1		07/19/16 09:29
11	T3.071916.093304	WG577035-11	Interference Check		1		07/19/16 09:33
12	T3.071916.093641	WG577035-12	CCV		1		07/19/16 09:36
13	T3.071916.094014	WG577035-13	CCB		1		07/19/16 09:40
14	T3.071916.094407	WG574940-02	Method/Prep Blank	40/50	1		07/19/16 09:44
15	T3.071916.095150	WG574940-03	Laboratory Control S	40/50	1		07/19/16 09:51
16	T3.071916.095524	WG574940-01	Reference Sample		1	L16061591-02	07/19/16 09:55
17	T3.071916.095917	WG574940-04	Matrix Spike	5/50	1	L16061591-02	07/19/16 09:59
18	T3.071916.100249	WG574940-05	Matrix Spike Duplica	5/50	1	L16061591-02	07/19/16 10:02
19	T3.071916.100624	L16061648-02	18WW25F-062916	40/50	20		07/19/16 10:06
20	T3.071916.101016	WG574995-03	Post Digestion Spike		20	L16061648-02	07/19/16 10:10
21	T3.071916.101349	WG574995-04	Serial Dilution		100	L16061648-02	07/19/16 10:13
22	T3.071916.101743	WG577035-14	CCV		1		07/19/16 10:17
23	T3.071916.102115	WG577035-15	CCB		1		07/19/16 10:21
24	T3.071916.102510	WG577035-16	Low Level Continuing Calibra		1		07/19/16 10:25
25	T3.071916.102900	WG577035-17	Low Level Continuing Calibra		1		07/19/16 10:29
26	T3.071916.103249	WG576596-02	Method/Prep Blank	40/50	1		07/19/16 10:32
27	T3.071916.103642	WG576596-03	Laboratory Control S	40/50	1		07/19/16 10:36
28	T3.071916.104016	WG576479-01	Fluid Blank 1		1		07/19/16 10:40
29	T3.071916.104409	L16070558-01	FTSL-MW570-021Q		100	WG576596-01	07/19/16 10:44
30	T3.071916.104803	WG576596-04	Matrix Spike	40/50	100	L16070558-01	07/19/16 10:48
31	T3.071916.105155	WG576596-05	Matrix Spike Duplica	40/50	100	L16070558-01	07/19/16 10:51
32	T3.071916.105549	L16070605-05	16932-BV01-070716-ER	40/50	1		07/19/16 10:55
33	T3.071916.105942	WG576859-01	Post Digestion Spike		1	L16070605-05	07/19/16 10:59
34	T3.071916.110316	WG576859-02	Serial Dilution		5	L16070605-05	07/19/16 11:03

Page: 1 Approved: July 19, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 071916T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD77091 ICV Std: STD77090 Post Spike: STD75838
ICSA: STD76882 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD77089 LLCCV: STD77092 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574995,576859

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.071916.110709	WG576859-02	Serial Dilution		25	L16070605-05	07/19/16 11:07
36	T3.071916.111104	WG577035-18	CCV		1		07/19/16 11:11
37	T3.071916.111437	WG577035-19	CCB		1		07/19/16 11:14
38	T3.071916.111831	L16070562-02	16F2425-02	5/50	2		07/19/16 11:18
39	T3.071916.112223	+1 PPM CR	+1 PPM CR		2		07/19/16 11:22
40	T3.071916.112616	+1.5 PPM CR	+1.5 PPM CR		2		07/19/16 11:26
41	T3.071916.113009	+2 PPM CR	+2 PPM CR		2		07/19/16 11:30
42	T3.071916.113402	L16070611-01	16G1299-01	40/50	1		07/19/16 11:34
43	T3.071916.113752	L16070647-01	IWWT-SUMP	1/50	1		07/19/16 11:37
44	T3.071916.114143	L16070627-01	GH9-SPRING	40/50	100		07/19/16 11:41
45	T3.071916.114536	L16070627-02	GH9-SALT DRYER	40/50	100		07/19/16 11:45
46	T3.071916.114928	L16070627-03	GH9-BRINE TANK	40/50	100		07/19/16 11:49
47	T3.071916.115320	WG577035-20	CCV		1		07/19/16 11:53
48	T3.071916.115653	WG577035-21	CCB		1		07/19/16 11:56
49	T3.071916.120046	WG576736-01	Method/Prep Blank		1		07/19/16 12:00
50	T3.071916.120437	WG576736-02	Laboratory Control S		1		07/19/16 12:04
51	T3.071916.120824	WG576736-03	Laboratory Control S		1		07/19/16 12:08
52	T3.071916.121211	L16070681-41	16752-WP01-WP005		1		07/19/16 12:12
53	T3.071916.121602	L16070681-42	16752-WP01-WP006		1		07/19/16 12:16
54	T3.071916.121944	L16070681-43	16752-WP01-WP007		1		07/19/16 12:19
55	T3.071916.122331	L16070681-44	16752-WP01-WP008		1		07/19/16 12:23
56	T3.071916.122720	L16070681-45	16752-WP01-WP009		1		07/19/16 12:27
57	T3.071916.123108	L16070681-46	16752-WP01-WP010		1		07/19/16 12:31
58	T3.071916.123500	WG577035-22	CCV		1		07/19/16 12:35
59	T3.071916.123833	WG577035-23	CCB		1		07/19/16 12:38
60	T3.071916.124225	L16070681-47	16752-WP01-WP011		1		07/19/16 12:42
61	T3.071916.124612	L16070681-48	16752-WP01-WP012		1		07/19/16 12:46
62	T3.071916.125003	WG576964-01	Post Digestion Spike		1	L16070681-48	07/19/16 12:50
63	T3.071916.125335	WG576964-02	Serial Dilution		5	L16070681-48	07/19/16 12:53
64	T3.071916.125727	WG577035-24	CCV		1		07/19/16 12:57
65	T3.071916.130059	WG577035-25	CCB		1		07/19/16 13:00

Page: 2 Approved: July 19, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 01-JUL-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 575089
Runlog ID: 76090
Analytical Workgroups: 574995,574645

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1458
Level 4	1642,1648,1660
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	BKT
Comments	

Primary Reviewer:
06-JUL-2016

Secondary Reviewer:
06-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-06-2016 15:24:52

Microbac Laboratories Inc.

Data Checklist

Date: 14-JUL-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 576454
Runlog ID: 76318
Analytical Workgroups: 576082,576110

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	
Level 4	0001,376,404
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer: Secondary Reviewer: 14-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-14-2016 15:54:24

Microbac Laboratories Inc.

Data Checklist

Date: 19-JUL-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 577035
Runlog ID: 76393
Analytical Workgroups: 574995,576859

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	
Level 4	1648,558,605
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer: Secondary Reviewer: 19-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-19-2016 16:00:34

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010C

AAB#: WG574995

Login Number: L16061648

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW25F-062916	02	06/29/16					07/01/2016	2.1	180		07/01/16	2.3	180	
18WW25F-062916	02	06/29/16					07/01/2016	2.1	180		07/14/16	15.4	180	
18WW25F-062916	02	06/29/16					07/01/2016	2.1	180		07/19/16	20.1	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4837629
Report generated 07/19/2016 14:42

METHOD BLANK SUMMARY

Login Number: L16061648
Blank File ID: T3.070116.151527
Prep Date: 07/01/16 10:16
Analyzed Date: 07/01/16 15:15
Analyst: JYH

Work Group: WG574995
Blank Sample ID: WG574940-02
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG574940-03	T3.070116.151926	07/01/16 15:19	01
18WW25F-062916	L16061648-02	T3.070116.160122	07/01/16 16:01	01
18WW25F-062916	L16061648-02	T3.071416.175404	07/14/16 17:54	DL01
LCS	WG574940-03	T3.071916.095150	07/19/16 09:51	02
18WW25F-062916	L16061648-02	T3.071916.100624	07/19/16 10:06	DL02

Report Name: BLANK_SUMMARY
PDF File ID: 4837630
Report generated 07/19/2016 14:42

METHOD BLANK SUMMARY

Login Number: L16061648
Blank File ID: T3.071916.094407
Prep Date: 07/01/16 10:16
Analyzed Date: 07/19/16 09:44
Analyst: JYH

Work Group: WG574995
Blank Sample ID: WG574940-02
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG574940-03	T3.070116.151926	07/01/16 15:19	01
18WW25F-062916	L16061648-02	T3.070116.160122	07/01/16 16:01	01
18WW25F-062916	L16061648-02	T3.071416.175404	07/14/16 17:54	DL01
LCS	WG574940-03	T3.071916.095150	07/19/16 09:51	02
18WW25F-062916	L16061648-02	T3.071916.100624	07/19/16 10:06	DL02

Report Name: BLANK_SUMMARY
PDF File ID: 4837630
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061648 Prep Date: 07/01/16 10:16 Sample ID: WG574940-02
Instrument ID: ICP-THERMO3 Run Date: 07/01/16 15:15 Prep Method: 3015
File ID: T3.070116.151527 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG574995 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-01-JUL-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Aluminum, Total	0.0500	0.200	0.0500	1	U
Beryllium, Total	0.00500	0.0200	0.00500	1	U
Calcium, Total	0.125	0.500	0.125	1	U
Magnesium, Total	0.250	1.00	0.250	1	U
Potassium, Total	0.500	2.00	0.500	1	U
Selenium, Total	0.00500	0.0200	0.00549	1	J
Sodium, Total	0.250	1.00	0.250	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4837631
19-JUL-2016 15:11

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061648 Prep Date: 07/01/16 10:16 Sample ID: WG574940-02
Instrument ID: ICP-THERMO3 Run Date: 07/19/16 09:44 Prep Method: 3015
File ID: T3.071916.094407 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG574995 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-19-JUL-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Iron, Total	0.0500	0.200	0.0500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4837631
19-JUL-2016 15:11

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061648 Run Date: 07/01/2016 Sample ID: WG574940-03
Instrument ID: ICP-THERMO3 Run Time: 15:19 Prep Method: 3015
File ID: T3.070116.151926 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG574995 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76576 Cal ID: ICP-TH-01-JUL-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Aluminum, Total	6.25	5.91	94.5	80 - 120	
Beryllium, Total	0.0313	0.0292	93.4	80 - 120	
Calcium, Total	6.25	6.11	97.7	80 - 120	
Magnesium, Total	6.25	5.95	95.3	80 - 120	
Potassium, Total	31.3	29.6	94.7	80 - 120	
Selenium, Total	0.250	0.225	89.9	80 - 120	
Sodium, Total	31.3	30.2	96.6	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4837632
Report generated: 07/19/2016 15:11

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061648 Run Date: 07/19/2016 Sample ID: WG574940-03
Instrument ID: ICP-THERMO3 Run Time: 09:51 Prep Method: 3015
File ID: T3.071916.095150 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG574995 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76576 Cal ID: ICP-TH-19-JUL-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Iron, Total	2.50	2.52	101	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4837632
Report generated: 07/19/2016 15:11

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061648 Cal ID: ICP-THERMO3 - Worknum: WG574995
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG574940-01 File ID: T3.070116.153102 Dil: 1 Matrix: WATER
Sample ID: WG574940-04 MS File ID: T3.070116.153500 Dil: 1 Units: mg/L
Sample ID: WG574940-05 MSD File ID: T3.070116.153839 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Aluminum	ND	50.0	47.7	95.4	50.0	48.0	96.0	0.656	80 - 120	20	
Beryllium	ND	0.250	0.235	94.0	0.250	0.235	94.2	0.128	80 - 120	20	
Calcium	1940	50.0	2020	156	50.0	2040	198	1.03	80 - 120	20	*
Magnesium	23.0	50.0	69.5	93.0	50.0	70.1	94.2	0.879	80 - 120	20	
Potassium	ND	250	243	97.0	250	246	98.4	1.46	80 - 120	20	
Selenium	ND	2.00	1.85	92.6	2.00	1.87	93.4	0.882	80 - 120	20	
Sodium	24.0	250	267	97.3	250	268	97.6	0.336	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4837633
Report generated 07/19/2016 15:11

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061648 Cal ID: ICP-THERMO3 - Worknum: WG574995
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG574940-01 File ID: T3.071916.095524 Dil: 1 Matrix: WATER
Sample ID: WG574940-04 MS File ID: T3.071916.095917 Dil: 1 Units: mg/L
Sample ID: WG574940-05 MSD File ID: T3.071916.100249 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Iron	ND	20.0	19.3	96.6	20.0	19.7	98.6	2.06	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4837633
Report generated 07/19/2016 15:11

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16061648 **Worknum:** WG574995
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG574995-02 **File ID:** T3.070116.165614 **Dil:** 5 **Units:** ug/L
Sample: L16061660-08 **File ID:** T3.070116.164835 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	35.6		40.0		12.30	E
Beryllium	0.0700	X	0.500		614.00	
Calcium	531		612		15.20	E
Iron	124		51.6		58.20	E
Magnesium	75.3		157		108.00	E
Potassium	263		916		249.00	E
Selenium	ND	U	21.1		548.00	
Sodium	249		341		37.10	E

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4837627
07/19/2016 14:42

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16061648 **Worknum:** WG574995
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG574995-04 **File ID:** T3.071916.101349 **Dil:** 100 **Units:** ug/L
Sample: L16061648-02 **File ID:** T3.071916.100624 **Dil:** 20

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	ND	U	ND	U		
Beryllium	ND	U	ND	U		
Calcium	25700		24500		4.63	
Iron	15700		13600		13.50	E
Magnesium	13100		12400		5.27	
Potassium	4130		8260		100.00	E
Selenium	79.2		ND	U		
Sodium	35600		33800		5.06	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4837627
07/19/2016 14:42

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061648 **Worknum:** WG574995
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG574995-01 **File ID:** T3.070116.165233 **Dil:** 1 **Units:** ug/L
Sample ID: L16061660-08 **File ID:** T3.070116.164835 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	4750		0	U	5000	95.0	75 - 125	
BERYLLIUM	23.4		0	U	25	93.6	75 - 125	
CALCIUM	5270		531		5000	95.8	75 - 125	
IRON	2060		124	F	2000	97.5	75 - 125	
MAGNESIUM	4970		0	U	5000	99.4	75 - 125	
POTASSIUM	23800		0	U	25000	95.2	75 - 125	
SELENIUM	176		0	U	200	87.9	75 - 125	
SODIUM	23800		249	F	25000	94.4	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4837628
Report generated: 07/19/2016 14:42

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061648 **Worknum:** WG574995
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG574995-03 **File ID:** T3.071916.101016 **Dil:** 20 **Units:** ug/L
Sample ID: L16061648-02 **File ID:** T3.071916.100624 **Dil:** 20 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	4710		0	U	5000	94.2	75 - 125	
BERYLLIUM	23.2		0	U	25	92.8	75 - 125	
CALCIUM	5950		1290		5000	93.4	75 - 125	
IRON	2660		783		2000	94.0	75 - 125	
MAGNESIUM	5510		654	F	5000	97.2	75 - 125	
POTASSIUM	23700		0	U	25000	94.7	75 - 125	
SELENIUM	198		0	U	200	99.2	75 - 125	
SODIUM	24900		1780		25000	92.3	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4837628
Report generated: 07/19/2016 14:42

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061648	Workgroup (AAB#):	WG574995
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG575089	Initial Calibration Date:	01-JUL-2016 14:26

	WG575089-01		WG575089-02		WG575089-03		WG575089-04		WG575089-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000690	.1	0.00148	.2	0.00223	10	0.0867	20	0.173	.999937	
BERYLLIUM	0	0.000670	.0005	0.00113	.001	0.00150	.05	0.0507	.1	0.100	.999962	
CALCIUM	0	0.000270	.1	0.00440	.2	0.00923	10	0.484	20	0.966	.999927	
IRON	0	0.000170	.04	0.000100	.08	0.00108	4	0.0901	8	0.181	.998048	
MAGNESIUM	0	-0.000640	NA	NA	.2	0.00158	10	0.0877	20	0.179	.999173	
POTASSIUM	0	-0.0239	.5	0.0103	1	0.0271	50	3.12	100	6.29	.999831	
SELENIUM	0	-0.000450	NA	NA	.008	-0.000430	.4	0.00650	.8	0.0135	.998399	
SODIUM	0	-0.0619	.5	0.0198	1	0.0961	50	10.0	100	20.3	.99999	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4837636
Report generated: 19-JUL-2016 14:42

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061648	Workgroup (AAB#):	WG574995
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG576454	Initial Calibration Date:	14-JUL-2016 12:14

	WG576454-01		WG576454-02		WG576454-03		WG576454-04		WG576454-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000730	.1	0.00145	.2	0.00229	10	0.0875	20	0.176	.999953	
BERYLLIUM	0	0.000470	.0005	0.000870	.001	0.00149	.05	0.0553	.1	0.110	.999925	
CALCIUM	0	0.00307	.1	0.00539	.2	0.0101	10	0.447	20	0.906	.999805	
IRON	0	-0.000210	.04	0.0000300	.08	0.000830	4	0.0895	8	0.178	.999221	
MAGNESIUM	0	-0.000220	NA	NA	.2	0.00130	10	0.0877	20	0.174	.999966	
POTASSIUM	0	-0.0139	.5	0.0110	1	0.0388	50	3.64	100	7.33	.99994	
SELENIUM	0	-0.000340	NA	NA	.008	-0.000300	.4	0.00698	.8	0.0142	.998889	
SODIUM	0	-0.0611	.5	0.0269	1	0.0997	50	9.63	100	19.5	.999971	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4837636
Report generated: 19-JUL-2016 14:42

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	**L16061648**	Workgroup (AAB#):	**WG574995**
Analytical Method:	**6010C**	Instrument ID:	**ICP-THERMO3**
ICAL Worknum:	**WG577035**	Initial Calibration Date:	**19-JUL-2016 09:10**

	WG577035-01		WG577035-02		WG577035-03		WG577035-04		WG577035-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
CALCIUM	0	0.00344	.1	0.00496	.2	0.00868	10	0.460	20	0.942	.999231	
IRON	0	0.0000300	.04	0.000330	.08	0.00127	4	0.0889	8	0.180	.999496	
SELENIUM	0	-0.000390	NA	NA	.008	-0.000240	.4	0.00715	.8	0.0148	.999773	
SODIUM	0	0.00899	.5	0.0812	1	0.153	50	9.47	100	19.2	.999962	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4837636
Report generated: 19-JUL-2016 14:42

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061648
Run Date: 07/01/2016
Sample ID: WG575089-07
Instrument ID: ICP-THERMO3
Run Time: 14:33
Method: 6010C
File ID: T3.070116.143317
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574995
Cal ID: ICP-THERI - 01-JUL-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	.004	U
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4837638
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061648
Run Date: 07/14/2016
Sample ID: WG576454-07
Instrument ID: ICP-THERMO3
Run Time: 12:21
Method: 6010C
File ID: T3.071416.122133
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574995
Cal ID: ICP-THERI - 14-JUL-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	.004	U
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4837638
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061648
Run Date: 07/19/2016
Sample ID: WG577035-07
Instrument ID: ICP-THERMO3
Run Time: 09:17
Method: 6010C
File ID: T3.071916.091750
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574995
Cal ID: ICP-THERI - 19-JUL-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	.004	U
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4837638
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/01/2016
Sample ID: WG575089-12
Instrument ID: ICP-THERMO3
Run Time: 14:52
Method: 6010C
File ID: T3.070116.145226
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837641
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/01/2016
Sample ID: WG575089-14
Instrument ID: ICP-THERMO3
Run Time: 15:53
Method: 6010C
File ID: T3.070116.155341
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837641
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Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/01/2016
Sample ID: WG575089-16
Instrument ID: ICP-THERMO3
Run Time: 16:40
Method: 6010C
File ID: T3.070116.164037
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	-0.00419	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837641
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/01/2016
Sample ID: WG575089-18
Instrument ID: ICP-THERMO3
Run Time: 17:19
Method: 6010C
File ID: T3.070116.171934
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837641
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/01/2016
Sample ID: WG575089-20
Instrument ID: ICP-THERMO3
Run Time: 18:01
Method: 6010C
File ID: T3.070116.180106
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	-0.0502	F
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4837641
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Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/01/2016
Sample ID: WG575089-24
Instrument ID: ICP-THERMO3
Run Time: 18:16
Method: 6010C
File ID: T3.070116.181617
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 01-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/14/2016
Sample ID: WG576454-13
Instrument ID: ICP-THERMO3
Run Time: 12:44
Method: 6010C
File ID: T3.071416.124410
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 14-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/14/2016
Sample ID: WG576454-29
Instrument ID: ICP-THERMO3
Run Time: 17:50
Method: 6010C
File ID: T3.071416.175004
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 14-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	-0.00589	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/14/2016
Sample ID: WG576454-31
Instrument ID: ICP-THERMO3
Run Time: 18:01
Method: 6010C
File ID: T3.071416.180136
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 14-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/19/2016
Sample ID: WG577035-13
Instrument ID: ICP-THERMO3
Run Time: 09:40
Method: 6010C
File ID: T3.071916.094014
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 19-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/19/2016
Sample ID: WG577035-15
Instrument ID: ICP-THERMO3
Run Time: 10:21
Method: 6010C
File ID: T3.071916.102115
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 19-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
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INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061648
Run Date: 07/01/2016
Sample ID: WG575089-06
Instrument ID: ICP-THERMO3
Run Time: 14:29
Method: 6010C
File ID: T3.070116.142937
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 01-JUL-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	10.1	101	90 - 110	
Beryllium		.05	0.0499	99.8	90 - 110	
Calcium		10	9.96	99.6	90 - 110	
Iron		4	4.05	101	90 - 110	
Magnesium		10	10.3	103	90 - 110	
Potassium		50	49.2	98.3	90 - 110	
Selenium		.4	0.403	101	90 - 110	
Sodium		50	49.5	98.9	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4837637
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061648
Run Date: 07/19/2016
Sample ID: WG577035-06
Instrument ID: ICP-THERMO3
Run Time: 09:14
Method: 6010C
File ID: T3.071916.091417
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 19-JUL-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	9.89	98.9	90 - 110	
Beryllium		.05	0.0502	100	90 - 110	
Calcium		10	9.85	98.5	90 - 110	
Iron		4	4.00	100	90 - 110	
Magnesium		10	10.1	101	90 - 110	
Potassium		50	50.6	101	90 - 110	
Selenium		.4	0.403	101	90 - 110	
Sodium		50	50.2	100	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4837637
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061648
Run Date: 07/14/2016
Sample ID: WG576454-06
Instrument ID: ICP-THERMO3
Run Time: 12:17
Method: 6010C
File ID: T3.071416.121756
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 14-JUL-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	9.90	99.0	90 - 110	
Beryllium		.05	0.0501	100	90 - 110	
Calcium		10	9.84	98.4	90 - 110	
Iron		4	3.96	99.0	90 - 110	
Magnesium		10	9.78	97.8	90 - 110	
Potassium		50	49.7	99.3	90 - 110	
Selenium		.4	0.405	101	90 - 110	
Sodium		50	49.4	98.8	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4837637
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/01/2016
Sample ID: WG575089-11
Instrument ID: ICP-THERMO3
Run Time: 14:48
Method: 6010C
File ID: T3.070116.144846
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.88	mg/L	98.8	90 - 110		
Beryllium		0.0500	0.0492	mg/L	98.4	90 - 110		
Calcium		10.0	9.78	mg/L	97.8	90 - 110		
Iron		4.00	3.99	mg/L	99.9	90 - 110		
Magnesium		10.0	10.0	mg/L	100	90 - 110		
Potassium		50.0	49.0	mg/L	98.1	90 - 110		
Selenium		0.400	0.399	mg/L	99.8	90 - 110		
Sodium		50.0	48.9	mg/L	97.8	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/01/2016
Sample ID: WG575089-13
Instrument ID: ICP-THERMO3
Run Time: 15:50
Method: 6010C
File ID: T3.070116.155002
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.65	mg/L	96.5	90 - 110		
Beryllium		0.0500	0.0482	mg/L	96.4	90 - 110		
Calcium		10.0	9.58	mg/L	95.8	90 - 110		
Iron		4.00	3.90	mg/L	97.6	90 - 110		
Magnesium		10.0	9.80	mg/L	98.0	90 - 110		
Potassium		50.0	48.2	mg/L	96.4	90 - 110		
Selenium		0.400	0.389	mg/L	97.3	90 - 110		
Sodium		50.0	48.0	mg/L	95.9	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/01/2016
Sample ID: WG575089-15
Instrument ID: ICP-THERMO3
Run Time: 16:36
Method: 6010C
File ID: T3.070116.163658
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.63	mg/L	96.3	90 - 110		
Beryllium		0.0500	0.0479	mg/L	95.9	90 - 110		
Calcium		10.0	9.56	mg/L	95.6	90 - 110		
Iron		4.00	3.91	mg/L	97.8	90 - 110		
Magnesium		10.0	9.78	mg/L	97.8	90 - 110		
Potassium		50.0	48.1	mg/L	96.2	90 - 110		
Selenium		0.400	0.386	mg/L	96.6	90 - 110		
Sodium		50.0	48.0	mg/L	96.1	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/01/2016
Sample ID: WG575089-17
Instrument ID: ICP-THERMO3
Run Time: 17:15
Method: 6010C
File ID: T3.070116.171556
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.55	mg/L	95.5	90 - 110		
Beryllium		0.0500	0.0472	mg/L	94.4	90 - 110		
Calcium		10.0	9.45	mg/L	94.5	90 - 110		
Iron		4.00	3.86	mg/L	96.4	90 - 110		
Magnesium		10.0	9.63	mg/L	96.3	90 - 110		
Potassium		50.0	47.8	mg/L	95.6	90 - 110		
Selenium		0.400	0.385	mg/L	96.3	90 - 110		
Sodium		50.0	47.9	mg/L	95.8	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/01/2016
Sample ID: WG575089-19
Instrument ID: ICP-THERMO3
Run Time: 17:57
Method: 6010C
File ID: T3.070116.175728
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.3	mg/L	103	90 - 110		
Beryllium		0.0500	0.0509	mg/L	102	90 - 110		
Calcium		10.0	10.3	mg/L	103	90 - 110		
Iron		4.00	4.22	mg/L	106	90 - 110		
Magnesium		10.0	10.5	mg/L	105	90 - 110		
Potassium		50.0	51.7	mg/L	103	90 - 110		
Selenium		0.400	0.395	mg/L	98.8	90 - 110		
Sodium		50.0	51.5	mg/L	103	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/01/2016
Sample ID: WG575089-23
Instrument ID: ICP-THERMO3
Run Time: 18:12
Method: 6010C
File ID: T3.070116.181238
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.40	mg/L	94.0	90 - 110		
Beryllium		0.0500	0.0466	mg/L	93.2	90 - 110		
Calcium		10.0	9.30	mg/L	93.0	90 - 110		
Iron		4.00	3.80	mg/L	95.0	90 - 110		
Magnesium		10.0	9.47	mg/L	94.7	90 - 110		
Potassium		50.0	47.0	mg/L	94.0	90 - 110		
Selenium		0.400	0.378	mg/L	94.4	90 - 110		
Sodium		50.0	46.4	mg/L	92.8	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/14/2016
Sample ID: WG576454-12
Instrument ID: ICP-THERMO3
Run Time: 12:40
Method: 6010C
File ID: T3.071416.124032
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 14-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.89	mg/L	98.9	90 - 110		
Beryllium		0.0500	0.0498	mg/L	99.6	90 - 110		
Calcium		10.0	9.93	mg/L	99.3	90 - 110		
Iron		4.00	3.97	mg/L	99.2	90 - 110		
Magnesium		10.0	9.98	mg/L	99.8	90 - 110		
Potassium		50.0	49.9	mg/L	99.7	90 - 110		
Selenium		0.400	0.406	mg/L	101	90 - 110		
Sodium		50.0	49.5	mg/L	99.0	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/14/2016
Sample ID: WG576454-28
Instrument ID: ICP-THERMO3
Run Time: 17:46
Method: 6010C
File ID: T3.071416.174637
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 14-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.91	mg/L	99.1	90 - 110		
Beryllium		0.0500	0.0488	mg/L	97.7	90 - 110		
Calcium		10.0	10.1	mg/L	101	90 - 110		
Iron		4.00	4.04	mg/L	101	90 - 110		
Magnesium		10.0	9.93	mg/L	99.3	90 - 110		
Potassium		50.0	50.8	mg/L	102	90 - 110		
Selenium		0.400	0.409	mg/L	102	90 - 110		
Sodium		50.0	51.1	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/14/2016
Sample ID: WG576454-30
Instrument ID: ICP-THERMO3
Run Time: 17:58
Method: 6010C
File ID: T3.071416.175800
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 14-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.68	mg/L	96.8	90 - 110		
Beryllium		0.0500	0.0475	mg/L	94.9	90 - 110		
Calcium		10.0	9.86	mg/L	98.6	90 - 110		
Iron		4.00	3.90	mg/L	97.5	90 - 110		
Magnesium		10.0	9.68	mg/L	96.8	90 - 110		
Potassium		50.0	49.6	mg/L	99.2	90 - 110		
Selenium		0.400	0.403	mg/L	101	90 - 110		
Sodium		50.0	49.9	mg/L	99.7	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/19/2016
Sample ID: WG577035-12
Instrument ID: ICP-THERMO3
Run Time: 09:36
Method: 6010C
File ID: T3.071916.093641
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 19-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.80	mg/L	98.0	90 - 110		
Beryllium		0.0500	0.0500	mg/L	100	90 - 110		
Calcium		10.0	9.86	mg/L	98.6	90 - 110		
Iron		4.00	3.97	mg/L	99.3	90 - 110		
Magnesium		10.0	9.98	mg/L	99.8	90 - 110		
Potassium		50.0	50.4	mg/L	101	90 - 110		
Selenium		0.400	0.399	mg/L	99.8	90 - 110		
Sodium		50.0	50.1	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837640
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/19/2016
Sample ID: WG577035-14
Instrument ID: ICP-THERMO3
Run Time: 10:17
Method: 6010C
File ID: T3.071916.101743
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 19-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.90	mg/L	99.0	90 - 110		
Beryllium		0.0500	0.0501	mg/L	100	90 - 110		
Calcium		10.0	9.88	mg/L	98.8	90 - 110		
Iron		4.00	4.03	mg/L	101	90 - 110		
Magnesium		10.0	10.1	mg/L	101	90 - 110		
Potassium		50.0	50.3	mg/L	101	90 - 110		
Selenium		0.400	0.404	mg/L	101	90 - 110		
Sodium		50.0	49.9	mg/L	99.8	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4837640
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061648
Run Date: 07/01/2016
Sample ID: WG575089-08
Instrument ID: ICP-THERMO3
Run Time: 14:37
Method: 6010C
File ID: T3.070116.143717
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.172	mg/L	108	70 - 130		
Beryllium		0.00160	0.00162	mg/L	101	70 - 130		
Calcium		0.400	0.403	mg/L	101	70 - 130		
Iron		0.0800	0.0301	mg/L	37.6	70 - 130		*
Magnesium		0.400	0.460	mg/L	115	70 - 130		
Potassium		0.800	0.889	mg/L	111	70 - 130		
Selenium		0.0160	0.0130	mg/L	81.2	70 - 130		
Sodium		0.400	0.419	mg/L	105	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4837642
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061648
Run Date: 07/01/2016
Sample ID: WG575089-25
Instrument ID: ICP-THERMO3
Run Time: 18:20
Method: 6010C
File ID: T3.070116.182016
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 01-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.156	mg/L	97.7	70 - 130		
Beryllium		0.00160	0.00153	mg/L	95.6	70 - 130		
Calcium		0.400	0.432	mg/L	108	70 - 130		
Iron		0.0800	0.0622	mg/L	77.8	70 - 130		
Magnesium		0.400	0.392	mg/L	98.1	70 - 130		
Potassium		0.800	1.04	mg/L	130	70 - 130		
Selenium		0.0160	0.0122	mg/L	76.3	70 - 130		
Sodium		0.400	0.409	mg/L	102	70 - 130		

* Exceeds LIMITS Criteria

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LOW LEVEL CALIBRATION VERIFICATION

00691544

Login Number: L16061648
Run Date: 07/14/2016
Sample ID: WG576454-08
Instrument ID: ICP-THERMO3
Run Time: 12:25
Method: 6010C
File ID: T3.071416.122530
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 14-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Calcium		0.400	0.383	mg/L	95.7	70 - 130		
Iron		0.0800	0.0902	mg/L	113	70 - 130		
Magnesium		0.400	0.334	mg/L	83.6	70 - 130		
Selenium		0.0160	0.0166	mg/L	104	70 - 130		
Sodium		0.400	0.430	mg/L	108	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4837642
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061648
Run Date: 07/14/2016
Sample ID: WG576454-32
Instrument ID: ICP-THERMO3
Run Time: 18:05
Method: 6010C
File ID: T3.071416.180534
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 14-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Calcium		0.400	0.343	mg/L	85.7	70 - 130		
Iron		0.0800	0.0818	mg/L	102	70 - 130		
Magnesium		0.400	0.418	mg/L	104	70 - 130		
Selenium		0.0160	0.0124	mg/L	77.4	70 - 130		
Sodium		0.400	0.472	mg/L	118	70 - 130		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061648
Run Date: 07/19/2016
Sample ID: WG577035-09
Instrument ID: ICP-THERMO3
Run Time: 09:25
Method: 6010C
File ID: T3.071916.092533
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 19-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		0.160	0.118	mg/L	74.0	70 - 130		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061648
Run Date: 07/19/2016
Sample ID: WG577035-17
Instrument ID: ICP-THERMO3
Run Time: 10:29
Method: 6010C
File ID: T3.071916.102900
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574995
Cal ID: ICP-TH - 19-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Iron		0.160	0.141	mg/L	88.4	70 - 130		

* Exceeds LIMITS Criteria

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PDF File ID: 4837642
Report generated 07/19/2016 14:42

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061648
Instrument ID: ICP-THERMO3
Sol. A : WG575089-09 **File ID:** T3.070116.144112
Sol. AB : WG575089-10 **File ID:** T3.070116.144503

Workgroup (AAB#): WG574995
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	249	99.6	250	252	101	
Beryllium	NS	-0.0000200	NS	0.250	0.228	91.2	
Calcium	250	232	92.8	250	235	94.0	
Iron	100	93.3	93.3	100	93.5	93.5	
Magnesium	250	236	94.4	250	237	94.8	
Potassium	NS	0.143	NS	5.00	5.14	103	
Selenium	NS	-0.00179	NS	0.250	0.233	93.2	
Sodium	NS	0.0257	NS	5.00	5.01	100	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

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Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061648
Instrument ID: ICP-THERMO3
Sol. A : WG575089-21 **File ID:** T3.070116.180504
Sol. AB : WG575089-22 **File ID:** T3.070116.180855

Workgroup (AAB#): WG574995
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	239	95.6	250	246	98.4	
Beryllium	NS	0.0000100	NS	0.250	0.222	88.8	
Calcium	250	222	88.8	250	227	90.8	
Iron	100	89.9	89.9	100	90.6	90.6	
Magnesium	250	228	91.2	250	230	92.0	
Potassium	NS	0.166	NS	5.00	4.93	98.6	
Selenium	NS	-0.00286	NS	0.250	0.230	92.0	
Sodium	NS	0.0137	NS	5.00	4.87	97.4	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
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Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061648
Instrument ID: ICP-THERMO3
Sol. A : WG576454-10 **File ID:** T3.071416.123313
Sol. AB : WG576454-11 **File ID:** T3.071416.123702

Workgroup (AAB#): WG574995
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	268	107	250	266	106	
Beryllium	NS	-0.0000100	NS	0.250	0.246	98.4	
Calcium	250	251	100	250	249	99.6	
Iron	100	99.1	99.1	100	96.8	96.8	
Magnesium	250	255	102	250	249	99.6	
Potassium	NS	-0.0266	NS	5.00	5.17	103	
Selenium	NS	0.00789	NS	0.250	0.259	104	
Sodium	NS	0.0552	NS	5.00	5.32	106	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

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Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061648
Instrument ID: ICP-THERMO3
Sol. A : WG577035-10 **File ID:** T3.071916.092920
Sol. AB : WG577035-11 **File ID:** T3.071916.093304

Workgroup (AAB#): WG574995
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	269	108	250	264	106	
Beryllium	NS	-0.0000500	NS	0.250	0.247	98.8	
Calcium	250	250	100	250	247	98.8	
Iron	100	100	100	100	97.6	97.6	
Magnesium	250	259	104	250	252	101	
Potassium	NS	0.0519	NS	5.00	5.31	106	
Selenium	NS	0.00626	NS	0.250	0.258	103	
Sodium	NS	0.0313	NS	5.00	5.31	106	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061648 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	AG	AL	AS	B	BA
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000410	0	0	0
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0.0115	0	-0.0000800
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0.000260	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	-0.000289	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	-0.0000490	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.0000120	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0.0000300	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061648 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	BE	CA	CD	CO	CR
ALUMINUM	308.20	0	0	0	-0.000820	0
ANTIMONY	206.80	0	0	0	0	0.0200
ARSENIC	189.00	0	0	0	0	-0.00190
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0.00343	0
CADMIUM	228.80	0	0	0	-0.00390	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	-0.000200
COPPER	224.70	0	0	0	0.0000770	-0.00100
IRON	261.10	0	0	0	0	-0.00100
LEAD	220.30	0	0	0	-0.0000130	-0.000132
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.0000500
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	-0.000860	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0.00000500	0	0	0
THALLIUM	190.80	0	0	0	0.00240	0.000276
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	-0.00480
ZINC	206.20	0	0	0	0	-0.00180
ZIRCONIUM	339.10	0	0	0	0	0

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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061648 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	CU	FE	K	LI	MG
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000560	0	0	0
ARSENIC	189.00	0	-0.0000500	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0.000300	0	0	0
CADMIUM	228.80	0	-0.0000190	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000500	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0.00160	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0.000609	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.00000300
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0.0000420	0	0	0
PHOSPHORUS	214.90	-0.323	0.000900	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000270	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000400	0	0	0
VANADIUM	292.40	0	0.00000700	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	-0.0000300	0	0	0

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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061648 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	MN	MO	NA	NI	P
ALUMINUM	308.20	0	0.0163	0	0	0
ANTIMONY	206.80	0	-0.00310	0	-0.00350	0
ARSENIC	189.00	0	0.00120	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	-0.00190	0	0	0
CADMIUM	228.80	0	0.0000320	0	-0.000770	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0.000360	0	0	0	0
COBALT	228.60	0	-0.00200	0	0.000100	0
COPPER	224.70	0	0.00160	0	-0.0123	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	-0.00210	0	0.000110	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	-0.00290	-0.0230	0	0	0
MANGANESE	257.60	0	0.0000300	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0.00710	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0.000600	0.000580	0	0	0
SILICON	212.40	0	0.0187	0	0	0
SILVER	328.00	0	-0.0000430	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0.00100	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000153	0	0	0
VANADIUM	292.40	-0.000200	-0.00830	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061648 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	PB	SB	SE	SI	SN
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0	0	0	-0.0220
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0.00440	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061648 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	SR	TI	TL	V	ZN
ALUMINUM	308.20	0	0	0	0.0950	0
ANTIMONY	206.80	0	0.00110	0	-0.00360	0
ARSENIC	189.00	0	0	0	0.000107	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	-0.00000700	0	0.000990	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0.000102	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000550	0	0	0
COBALT	228.60	0	0.00210	0	0.0000200	0
COPPER	224.70	0	0.000269	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	-0.000126	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	-0.00290	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	-0.000110	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	-0.00100	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000720	0	-0.000260	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.000800	0	-0.00490	0
TIN	189.90	0	-0.00190	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0.000820	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4837635
Report generated: 07/19/2016 14:42

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061648 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	ZR
ALUMINUM	308.20	0
ANTIMONY	206.80	0
ARSENIC	189.00	0
BARIUM	455.40	0
BERYLLIUM	313.10	0
BORON	249.60	0
CADMIUM	228.80	0
CALCIUM	422.60	0
CHROMIUM	267.70	0
COBALT	228.60	0
COPPER	224.70	0
IRON	261.10	0
LEAD	220.30	0
LITHIUM	670.70	0
MAGNESIUM	279.00	0
MANGANESE	257.60	0
MOLYBDENUM	202.00	0
NICKEL	231.60	0
PHOSPHORUS	214.90	0
POTASSIUM	766.40	0
SELENIUM	196.00	0
SILICON	212.40	0
SILVER	328.00	0
SODIUM	589.50	0
STRONTIUM	407.70	0
THALLIUM	190.80	0
TIN	189.90	0
TITANIUM	337.20	0
VANADIUM	292.40	0
ZINC	206.20	0
ZIRCONIUM	339.10	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4837635
Report generated: 07/19/2016 14:42

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16061648 **Date:** 04/29/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	900.0
Antimony	20.00	45.0
Arsenic	10.00	45.0
Barium	10.00	45.0
Beryllium	10.00	1.8
Boron	20.00	45.0
Cadmium	20.00	4.5
Calcium	5.00	270.0
Chromium	20.00	36.0
Cobalt	20.00	45.0
Copper	20.00	180.0
Iron	5.00	720.0
Lead	20.00	225.0
Lithium	5.00	36.0
Magnesium	5.00	900.0
Manganese	10.00	36.0
Molybdenum	20.00	27.0
Nickel	20.00	90.0
Phosphorus	20.00	180.0
Potassium	5.00	450.0
Selenium	20.00	90.0
Silicon	20.00	36.0
Silver	10.00	9.0
Sodium	5.00	270.0
Strontium	5.00	9.0
Thallium	20.00	18.0
Tin	20.00	45.0
Titanium	5.00	36.0
Vanadium	20.00	27.0
Zinc	20.00	45.0
Zirconium	10.00	45.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4837634
Report generated: 07/19/2016 14:42

2.3.1.3 Raw Data

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	-0.000211	0.049006	0.000000	1.000000
Al 308.215 {109}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	0.000691	0.008531	0.000000	1.000000
As 189.042 {478}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	-0.000020	0.025181	0.000000	1.000000
B 249.678 {135}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	-0.000029	0.024023	0.000000	1.000000
Ba 455.403 { 74}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	0.064121	2.304090	0.000000	1.000000
Be 313.107 {108}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	0.000670	0.978990	0.000000	1.000000
Ca 422.673 { 80}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	0.000276	0.048350	0.000000	1.000000
Cd 228.802 {447}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	-0.000101	0.594987	0.000000	1.000000
Co 228.616 {447}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	-0.000165	0.376738	0.000000	1.000000
Cr 267.716 {126}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	0.000293	0.062216	0.000000	1.000000
Cu 224.700 {450}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	0.000052	0.132790	0.000000	1.000000
Fe 261.187 {129}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	0.000169	0.022439	0.000000	1.000000
K 766.490 { 44}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	-0.023890	0.063074	0.000000	1.000000
Li 670.784 { 50}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	-0.010484	1.799060	0.000000	1.000000
Mg 279.079 {121}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	-0.000638	0.008983	0.000000	1.000000
Mn 257.610 {131}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	0.000116	0.286099	0.000000	1.000000
Mo 202.030 {467}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	-0.000035	0.191045	0.000000	1.000000
Na 589.592 { 57}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	-0.061913	0.202991	0.000000	1.000000
Ni 231.604 {446}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	-0.000907	0.140228	0.000000	1.000000
P 214.914 {457}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	-0.000138	0.014309	0.000000	1.000000
Pb 220.353 {453}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	-0.001137	0.065670	0.000000	1.000000
Sb 206.833 {463}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	0.000279	0.031384	0.000000	1.000000
Se 196.090 {472}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	-0.000451	0.017377	0.000000	1.000000
Si 212.412 {459}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	0.000807	0.039766	0.000000	1.000000
Sn 189.989 {477}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	0.000003	0.073670	0.000000	1.000000
Sr 407.771 { 83}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	0.003330	3.771166	0.000000	1.000000
Ti 337.280 {100}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	-0.002585	0.125302	0.000000	1.000000
Tl 190.856 {477}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	-0.000342	0.029934	0.000000	1.000000
V 292.402 {115}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	-0.000024	0.072795	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	0.000089	0.440835	0.000000	1.000000
Zr 339.198 { 99}	7/1/2016 15:14:09	7/1/2016 14:29:31	Linear	1/Conc	-0.005935	0.057032	0.000000	1.000000

Approved: July 02, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.998329	0.000007	0.002558	0.008526	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999937	0.000006	0.010132	0.033775	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999899	0.000001	0.003343	0.011144	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999908	0.000002	0.003098	0.010326	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999959	0.000133	0.001195	0.003982	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999962	0.000003	0.000103	0.000343	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999927	0.000037	0.047071	0.156905	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999878	0.000003	0.000285	0.000950	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999995	0.000002	0.000432	0.001440	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999757	0.000004	0.001279	0.004262	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999886	0.000006	0.001441	0.004805	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.998048	0.000036	0.032402	0.108007	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999831	0.000367	0.128717	0.429056	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999979	0.000116	0.004190	0.013968	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999173	0.000036	0.091375	0.304585	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999918	0.000012	0.002998	0.009993	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999993	0.000004	0.000453	0.001510	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999990	0.000287	0.034439	0.114796	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999937	0.000005	0.001234	0.004112	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999990	0.000004	0.007517	0.025056	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999989	0.000001	0.003832	0.012772	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999792	0.000005	0.004716	0.015721	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.998399	0.000004	0.007031	0.023438	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999791	0.000026	0.002557	0.008522	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999978	0.000003	0.000934	0.003115	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999998	0.000049	0.000500	0.001666	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999767	0.000017	0.008123	0.027076	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999657	0.000004	0.003301	0.011002	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999995	0.000001	0.001059	0.003530	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999996	0.000008	0.000211	0.000705	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.971571	0.000088	0.039978	0.133260	OK.	1.000000	0.000000	1	0

Approved: July 02, 2016

Sample Name: S0 Acquired: 7/1/2016 14:10:24 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v992) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00021**	**.00069**	**-.00002**	**-.00003**	**.06412**	**.00067**	**.00027**
Stddev	.00005	.00005	.00008	.00004	.00221	.00011	.00128
%RSD	22.064	7.0769	375.18	134.51	3.4475	16.922	466.07
#1	-.00022	.00075	-.00001	.00000	.06210	.00057	-.00110
#2	-.00016	.00065	.00005	-.00007	.06379	.00065	.00048
#3	-.00025	.00067	-.00010	-.00002	.06648	.00079	.00144

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00010**	**-.00016**	**.00029**	**.00005**	**.00017**	**-.02390**	**-.01049**
Stddev	.00019	.00013	.00003	.00007	.00110	.00656	.00352
%RSD	193.88	80.512	9.9708	137.05	649.45	27.456	33.601
#1	-.00032	-.00008	.00031	-.00003	.00005	-.01676	-.01386
#2	-.00002	-.00032	.00026	.00007	-.00087	-.02967	-.00683
#3	.00004	-.00010	.00031	.00011	.00133	-.02527	-.01076

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00064**	**.00012**	**-.00003**	**-.06191**	**-.00091**	**-.00014**	**-.00114**
Stddev	.00086	.00039	.00010	.00410	.00018	.00005	.00009
%RSD	134.20	336.78	295.60	6.6163	20.301	37.417	8.2037
#1	-.00042	.00024	-.00004	-.06555	-.00106	-.00010	-.00121
#2	-.00158	-.00032	.00007	-.06271	-.00070	-.00011	-.00117
#3	.00009	.00043	-.00014	-.05747	-.00096	-.00020	-.00103

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00028**	**-.00045**	**.00081**	**.00000**	**.00333**	**-.00259**	**-.00034**
Stddev	.00002	.00016	.00002	.00004	.00065	.00035	.00005
%RSD	6.0741	35.124	2.2393	1539.7	19.409	13.397	14.461
#1	.00029	-.00062	.00079	-.00004	.00367	-.00263	-.00035
#2	.00029	-.00042	.00083	.00000	.00374	-.00222	-.00029
#3	.00026	-.00031	.00080	.00004	.00258	-.00290	-.00039

Approved: July 02, 2016

Sample Name: S0 Acquired: 7/1/2016 14:10:24 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v992) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	-.00002	.00009	-.00593
Stddev	.00007	.00003	.00191
%RSD	293.90	34.881	32.106
#1	-.00001	.00007	-.00812
#2	-.00010	.00012	-.00504
#3	.00004	.00007	-.00464
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9206.1	55597.	2489.2
Stddev	28.9	156.	12.6
%RSD	.31350	.28045	.50612
#1	9180.0	55687.	2476.9
#2	9237.1	55687.	2488.5
#3	9201.1	55417.	2502.1

Approved: July 02, 2016

Sample Name: S1 Acquired: 7/1/2016 14:14:23 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v992) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00014	.00148	.07947	.00113	.00440	.00011	.00040
Stddev	.00012	.00003	.00174	.00009	.00197	.00006	.00011
%RSD	85.909	2.2356	2.1848	7.9212	44.791	57.259	27.040
#1	-.00008	.00144	.08081	.00121	.00666	.00013	.00039
#2	-.00028	.00150	.07751	.00103	.00310	.00004	.00051
#3	-.00007	.00149	.08008	.00114	.00343	.00016	.00030

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00064	.00044	.00010	.01028	.00153	.00147	.01979
Stddev	.00005	.00012	.00031	.00719	.00070	.00007	.00420
%RSD	7.1400	27.078	310.39	69.922	45.634	4.5243	21.230
#1	.00060	.00056	-.00001	.01771	.00157	.00139	.02461
#2	.00064	.00042	-.00014	.00977	.00221	.00152	.01685
#3	.00069	.00032	.00044	.00336	.00081	.00149	.01793

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00034	.00100	-.00089	.00052	.00236	.00061	.03400
Stddev	.00002	.00009	.00004	.00006	.00004	.00001	.00143
%RSD	4.8315	8.8150	4.8162	11.367	1.7470	1.7594	4.2181
#1	-.00033	.00109	-.00084	.00055	.00240	.00061	.03449
#2	-.00036	.00092	-.00091	.00045	.00237	.00060	.03239
#3	-.00033	.00100	-.00092	.00055	.00232	.00062	.03513

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00132	.00053	.00368	-.00590
Stddev	.00071	.00004	.00004	.00228
%RSD	54.069	7.7869	1.1941	38.701
#1	-.00195	.00054	.00371	-.00517
#2	-.00054	.00057	.00363	-.00846
#3	-.00148	.00048	.00370	-.00407

Approved: July 02, 2016

Sample Name: S1 Acquired: 7/1/2016 14:14:23 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v992) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9142.5**	**55312.**	**2479.4**
Stddev	28.4	181.	16.4
%RSD	.31064	.32795	.66023
#1	9175.1	55410.	2466.2
#2	9123.0	55103.	2474.3
#3	9129.4	55423.	2497.7

Approved: July 02, 2016

Sample Name: S2 Acquired: 7/1/2016 14:18:23 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v992) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00003**	**.00223**	**.00012**	**.00013**	**.09965**	**.00150**	**.00923**
Stddev	.00011	.00004	.00004	.00004	.00151	.00003	.00130
%RSD	354.81	1.8080	36.958	30.926	1.5174	2.2215	14.068
#1	.00005	.00222	.00011	.00012	.10048	.00152	.00934
#2	.00013	.00227	.00008	.00010	.09791	.00152	.00789
#3	-.00009	.00219	.00016	.00018	.10057	.00146	.01048

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00032**	**.00105**	**.00084**	**.00107**	**.00108**	**.02705**	**.02046**
Stddev	.00013	.00020	.00004	.00014	.00039	.01275	.00387
%RSD	41.949	18.908	4.7312	13.435	36.241	47.123	18.940
#1	.00045	.00109	.00087	.00100	.00064	.04019	.02160
#2	.00033	.00123	.00080	.00124	.00140	.02624	.01614
#3	.00018	.00083	.00084	.00098	.00121	.01473	.02363

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00158**	**.00252**	**.00297**	**.09614**	**.00039**	**.00202**	**-.00059**
Stddev	.00038	.00063	.00020	.00414	.00009	.00011	.00023
%RSD	23.777	25.086	6.7130	4.3069	21.996	5.4864	38.340
#1	.00120	.00260	.00314	.09671	.00048	.00211	-.00046
#2	.00195	.00186	.00303	.09174	.00036	.00206	-.00085
#3	.00160	.00311	.00275	.09996	.00032	.00190	-.00046

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00075**	**-.00043**	**.00394**	**.00116**	**.06413**	**-.00100**	**-.00020**
Stddev	.00007	.00008	.00033	.00014	.00242	.00110	.00002
%RSD	9.4602	19.552	8.4986	11.683	3.7716	110.64	9.7378
#1	.00075	-.00048	.00416	.00123	.06519	.00009	-.00021
#2	.00068	-.00046	.00410	.00125	.06136	-.00211	-.00018
#3	.00082	-.00033	.00356	.00101	.06583	-.00097	-.00021

Approved: July 02, 2016

Sample Name: S2 Acquired: 7/1/2016 14:18:23 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v992) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00111	.00700	-.00632
Stddev	.00004	.00051	.00211
%RSD	3.8503	7.3383	33.395
#1	.00114	.00736	-.00585
#2	.00106	.00724	-.00448
#3	.00111	.00641	-.00863
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9097.9	54960.	2456.6
Stddev	11.3	266.	25.7
%RSD	.12463	.48386	1.0468
#1	9086.6	54846.	2486.2
#2	9109.3	55264.	2443.3
#3	9097.9	54770.	2440.2

Approved: July 02, 2016

Sample Name: S3 Acquired: 7/1/2016 14:22:22 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v992) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.02065**	**.08668**	**.00986**	**.01183**	**2.3657**	**.05074**	**.48405**	**.03225**
Stddev	.00000	.00016	.00013	.00005	.0084	.00029	.00198	.00035
%RSD	.01645	.18191	1.3309	.44637	.35570	.58122	.40954	1.1006
#1	.02064	.08659	.00993	.01180	2.3738	.05084	.48418	.03258
#2	.02065	.08658	.00994	.01180	2.3665	.05041	.48597	.03229
#3	.02065	.08686	.00971	.01189	2.3570	.05097	.48201	.03187

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.07501**	**.03149**	**.06691**	**.09011**	**3.1187**	**1.7787**	**.08774**	**.14342**
Stddev	.00151	.00002	.00087	.00067	.0101	.0084	.00095	.00073
%RSD	2.0087	.07917	1.3005	.73863	.32502	.47525	1.0874	.50778
#1	.07590	.03151	.06731	.09087	3.1238	1.7864	.08733	.14421
#2	.07587	.03146	.06750	.08982	3.1253	1.7799	.08707	.14278
#3	.07327	.03151	.06591	.08963	3.1071	1.7697	.08884	.14325

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.19010**	**10.031**	**.06912**	**.14015**	**.03198**	**.03679**	**.00650**	**.19465**
Stddev	.00320	.031	.00122	.00166	.00039	.00044	.00006	.00189
%RSD	1.6820	.30525	1.7673	1.1877	1.2138	1.2060	.93201	.97168
#1	.19198	10.065	.06958	.14102	.03217	.03714	.00648	.19548
#2	.19192	10.023	.07004	.14120	.03223	.03694	.00645	.19599
#3	.18641	10.006	.06773	.13823	.03153	.03629	.00657	.19249

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.07287**	**3.7649**	**.12124**	**.01349**	**.07263**	**.43918**	**.03425**
Stddev	.00149	.0133	.00157	.00007	.00007	.00628	.00334
%RSD	2.0404	.35227	1.2970	.49638	.09332	1.4298	9.7640
#1	.07370	3.7784	.12301	.01344	.07262	.44288	.03321
#2	.07376	3.7642	.12068	.01357	.07257	.44273	.03156
#3	.07115	3.7519	.12001	.01347	.07270	.43193	.03800

Approved: July 02, 2016

Sample Name: S3 Acquired: 7/1/2016 14:22:22 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v992) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9050.1**	**54163.**	**2481.6**
Stddev	7.2	31.	5.3
%RSD	.07942	.05689	.21174
#1	9042.8	54138.	2485.2
#2	9050.3	54198.	2475.6
#3	9057.2	54155.	2484.0

Approved: July 02, 2016

Sample Name: S4 Acquired: 7/1/2016 14:26:00 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v992) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.03753**	**.17262**	**.02016**	**.02406**	**4.6792**	**.10024**	**.96553**	**.06522**
Stddev	.00005	.00020	.00004	.00001	.0214	.00011	.00321	.00022
%RSD	.14118	.11680	.20428	.05130	.45777	.10689	.33207	.33731
#1	.03751	.17285	.02020	.02407	4.7029	.10033	.96914	.06515
#2	.03759	.17255	.02014	.02407	4.6732	.10028	.96301	.06505
#3	.03749	.17247	.02013	.02405	4.6614	.10012	.96445	.06547

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.15035**	**.06234**	**.13427**	**.18077**	**6.2852**	**3.5954**	**.17894**	**.28571**
Stddev	.00025	.00012	.00045	.00058	.0264	.0192	.00128	.00209
%RSD	.16302	.19429	.33746	.32343	.41973	.53330	.71547	.73262
#1	.15057	.06221	.13464	.18142	6.2860	3.6132	.17889	.28787
#2	.15009	.06245	.13441	.18060	6.3112	3.5979	.18024	.28369
#3	.15040	.06237	.13377	.18029	6.2584	3.5751	.17768	.28557

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.38297**	**20.297**	**.13923**	**.28229**	**.06481**	**.07489**	**.01353**	**.40579**
Stddev	.00038	.080	.00018	.00048	.00027	.00029	.00011	.00039
%RSD	.09847	.39658	.12626	.16978	.42390	.39213	.81617	.09576
#1	.38310	20.383	.13934	.28178	.06501	.07492	.01354	.40564
#2	.38326	20.285	.13932	.28274	.06449	.07458	.01364	.40623
#3	.38254	20.224	.13903	.28235	.06492	.07516	.01342	.40550

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.14772**	**7.5549**	**.24915**	**.02703**	**.14520**	**.88286**	**.12668**
Stddev	.00018	.0372	.00096	.00008	.00024	.00085	.00550
%RSD	.12244	.49265	.38471	.27756	.16791	.09664	4.3433
#1	.14789	7.5953	.25012	.02709	.14547	.88342	.12532
#2	.14774	7.5471	.24911	.02695	.14514	.88328	.13273
#3	.14753	7.5221	.24821	.02705	.14500	.88188	.12198

Approved: July 02, 2016

Sample Name: S4 Acquired: 7/1/2016 14:26:00 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v992) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9046.4**	**53932.**	**2486.7**
Stddev	35.9	125.	13.7
%RSD	.39671	.23222	.55163
#1	9019.7	53787.	2483.1
#2	9032.4	54008.	2475.1
#3	9087.2	54000.	2501.8

Approved: July 02, 2016

Sample Name: ICV Acquired: 7/1/2016 14:29:37 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v992) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .42234	10.148	.40396	.49964	1.0160	.04989	9.9560
Stddev	.00172	.022	.00214	.00117	.0019	.00016	.0658
%RSD	.40750	.21426	.52888	.23366	.18452	.32229	.66102
#1	.42398	10.171	.40159	.50077	1.0166	.04974	9.9729
#2	.42249	10.147	.40574	.49844	1.0139	.05006	9.8834
#3	.42054	10.127	.40455	.49973	1.0175	.04987	10.012
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	.40000						
Range	5.0000%						

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05006	.19959	.50305	.50591	4.0464	49.164	.99098
Stddev	.00014	.00090	.00371	.00119	.0208	.427	.00453
%RSD	.27832	.45104	.73791	.23467	.51368	.86867	.45759
#1	.05020	.19892	.50115	.50458	4.0231	48.969	.98739
#2	.04992	.19923	.50733	.50625	4.0630	48.870	.98947
#3	.05008	.20061	.50068	.50688	4.0530	49.654	.99607
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.293	.50187	.95524	49.457	.50208	10.086	.50437
Stddev	.042	.00400	.00170	.214	.00089	.015	.00232
%RSD	.40898	.79625	.17757	.43315	.17768	.14995	.45972
#1	10.255	.49758	.95655	49.532	.50310	10.097	.50568
#2	10.286	.50255	.95332	49.216	.50141	10.093	.50575
#3	10.338	.50548	.95583	49.624	.50175	10.069	.50170
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: July 02, 2016

Sample Name: ICV Acquired: 7/1/2016 14:29:37 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v992) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2227**	**.40281**	**4.8693**	**1.0343**	**.98730**	**.99995**	**.50636**
Stddev	.0071	.01015	.0151	.0021	.00359	.00610	.00187
%RSD	.58413	2.5204	.31027	.20568	.36320	.61026	.36875
#1	1.2297	.39387	4.8853	1.0367	.98827	.99691	.50503
#2	1.2154	.40071	4.8553	1.0336	.98333	1.0070	.50849
#3	1.2230	.41384	4.8673	1.0326	.99030	.99597	.50555
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.99040**	**1.0076**	F **.04491**
Stddev	.00101	.0006	.01823
%RSD	.10244	.06386	40.596
#1	.99011	1.0073	.06411
#2	.99153	1.0083	.04278
#3	.98957	1.0071	.02783
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-5.0000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9123.2**	**54593.**	**2498.0**
Stddev	29.4	207.	15.2
%RSD	.32277	.37880	.60949
#1	9104.7	54667.	2504.1
#2	9157.1	54360.	2509.2
#3	9107.7	54753.	2480.6

Approved: July 02, 2016

Sample Name: ICB Acquired: 7/1/2016 14:33:17 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v992) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00252**	**.00167**	**-.00060**	**.00211**	**-.00164**	**.00007**	**.01452**	**.00007**
Stddev	.00044	.00980	.00179	.00205	.00092	.00005	.01916	.00009
%RSD	17.568	587.99	299.82	96.718	55.829	82.234	131.96	129.14
#1	-.00201	-.00956	.00142	.00053	-.00087	.00013	.03560	.00005
#2	-.00284	.00607	-.00123	.00139	-.00266	.00003	-.00183	-.00001
#3	-.00269	.00849	-.00198	.00442	-.00141	.00004	.00978	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**.00025**	**-.00096**	**.00304**	**.21120**	**-.00108**	**.03675**	**-.00040**
Stddev	.00036	.00049	.00029	.00730	.05752	.00674	.10142	.00314
%RSD	6238.5	194.95	29.760	239.90	27.233	622.96	275.94	783.63
#1	-.00036	-.00030	-.00091	-.00245	.25398	.00669	-.07079	.00322
#2	.00037	.00043	-.00071	.00026	.23382	-.00476	.13068	-.00235
#3	.00001	.00064	-.00127	.01133	.14582	-.00518	.05038	-.00208
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.04731**	**-.00011**	**.00097**	**.00072**	**.00059**	**-.00226**	**.00642**
Stddev	.00025	.03367	.00057	.00171	.00420	.00119	.00418	.00092
%RSD	486.89	71.162	541.52	177.23	580.87	202.64	184.93	14.292
#1	-.00011	.04682	-.00007	-.00088	.00205	.00078	-.00162	.00561
#2	-.00027	.08122	-.00069	.00249	.00410	.00167	.00156	.00622
#3	.00022	.01389	.00045	.00129	-.00398	-.00069	-.00672	.00742
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: ICB Acquired: 7/1/2016 14:33:17 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v992) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	-.00029	.00199	-.00075	.00051	.00044	-.03190
Stddev	.00091	.00055	.00276	.00155	.00073	.00008	.03063
%RSD	782.97	190.36	139.07	206.23	141.97	17.073	96.005
#1	.00106	-.00064	-.00120	.00093	-.00033	.00038	-.04981
#2	-.00077	.00035	.00363	-.00105	.00094	.00042	.00346
#3	.00006	-.00058	.00354	-.00212	.00092	.00053	-.04936
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9440.9	56917.	2578.4
Stddev	10.9	201.	6.6
%RSD	.11514	.35291	.25663
#1	9432.9	56858.	2570.8
#2	9436.6	56753.	2581.5
#3	9453.3	57141.	2582.9

Approved: July 02, 2016

Sample Name: LLICV Acquired: 7/1/2016 14:37:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v992) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00822	.17236	.00508	.08057	.00719	.00162	.40323	.00094
Stddev	.00091	.00084	.00206	.00211	.00075	.00006	.01889	.00015
%RSD	11.094	.48781	40.490	2.6185	10.476	3.9099	4.6851	15.686
#1	.00878	.17241	.00499	.07925	.00702	.00166	.42332	.00105
#2	.00871	.17150	.00307	.08300	.00654	.00166	.40054	.00100
#3	.00717	.17318	.00718	.07946	.00801	.00155	.38582	.00077
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00402	.00480	.00346	.03006	.88917	.07859	.46048	.00902
Stddev	.00026	.00106	.00046	.01248	.11088	.00157	.03649	.00199
%RSD	6.5668	22.107	13.281	41.502	12.470	1.9961	7.9252	22.094
#1	.00426	.00368	.00293	.03654	.78385	.07679	.42070	.00974
#2	.00374	.00579	.00370	.03797	.87880	.07961	.46831	.01056
#3	.00407	.00493	.00375	.01568	1.0049	.07938	.49242	.00677
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00786	.41946	.01709	.78557	.00829	.07986	.01299	.76733
Stddev	.00009	.01656	.00163	.00438	.00286	.00177	.00631	.00155
%RSD	1.1119	3.9474	9.5659	.55696	34.461	2.2120	48.629	.20233
#1	.00786	.40083	.01845	.79052	.00636	.07926	.00581	.76707
#2	.00794	.42508	.01755	.78400	.00694	.07846	.01771	.76900
#3	.00777	.43249	.01527	.78220	.01157	.08184	.01543	.76593
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: LLICV Acquired: 7/1/2016 14:37:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v992) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40757**	**.04103**	**.02795**	**.15042**	**.00776**	**.01708**	**2.9792**
Stddev	.00039	.00046	.00260	.00268	.00084	.00026	.0418
%RSD	.09649	1.1147	9.3159	1.7833	10.867	1.5321	1.4024
#1	.40713	.04059	.03014	.14778	.00821	.01697	3.0266
#2	.40769	.04100	.02507	.15315	.00679	.01688	2.9476
#3	.40789	.04150	.02865	.15032	.00828	.01737	2.9635
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9191.4**	**55703.**	**2489.6**
Stddev	15.2	161.	15.5
%RSD	.16563	.28945	.62339
#1	9192.0	55879.	2478.7
#2	9175.9	55667.	2507.4
#3	9206.4	55562.	2482.8

Approved: July 02, 2016

Sample Name: ICSA Acquired: 7/1/2016 14:41:12 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v992) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**248.93**	**-.00276**	**-.01645**	**-.00185**	**-.00002**	**231.94**
Stddev	.00124	.24	.00031	.00328	.00092	.00006	.98
%RSD	4938.8	.09498	11.291	19.958	49.924	357.00	.42136
#1	-.00013	249.08	-.00268	-.01519	-.00223	-.00008	233.00
#2	.00133	249.04	-.00311	-.02017	-.00253	.00003	231.75
#3	-.00113	248.66	-.00250	-.01398	-.00080	.00000	231.08
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00046**	**-.00121**	**-.00133**	**.00218**	**93.296**	**.14313**	**.00236**
Stddev	.00023	.00022	.00090	.00279	.539	.09512	.00417
%RSD	49.301	18.447	68.142	128.14	.57775	66.456	176.55
#1	-.00067	-.00106	-.00064	.00446	93.583	.25235	.00394
#2	-.00050	-.00147	-.00099	.00301	93.631	.09864	-.00237
#3	-.00022	-.00111	-.00235	-.00093	92.674	.07841	.00551
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**235.67**	**.00084**	**-.00038**	**.02567**	**.00089**	**.01318**	**-.00065**
Stddev	1.26	.00207	.00010	.01843	.00062	.00174	.00378
%RSD	.53356	246.63	26.229	71.773	69.333	13.184	584.62
#1	236.60	-.00151	-.00026	.03608	.00018	.01121	.00342
#2	236.18	.00165	-.00045	.00440	.00125	.01388	-.00129
#3	234.24	.00238	-.00042	.03654	.00125	.01447	-.00407
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 02, 2016

Sample Name: ICSA Acquired: 7/1/2016 14:41:12 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v992) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00099	-.00179	.00949	.00053	.00019	-.00529	-.00375
Stddev	.00166	.00611	.00310	.00082	.00011	.00883	.00099
%RSD	167.27	341.99	32.723	156.23	58.049	167.01	26.309
#1	.00114	.00496	.01092	.00147	.00032	-.01503	-.00290
#2	.00257	-.00336	.01161	-.00003	.00014	.00217	-.00351
#3	-.00074	-.00696	.00592	.00014	.00012	-.00300	-.00483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00315	-.00549	F -.43618
Stddev	.00022	.00015	.02334
%RSD	7.0178	2.7938	5.3508
#1	-.00324	-.00533	-.42827
#2	-.00289	-.00549	-.46245
#3	-.00330	-.00564	-.41782
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02000
Low Limit			-.02000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8964.0	53413.	2521.8
Stddev	13.7	179.	26.6
%RSD	.15236	.33448	1.0557
#1	8979.1	53362.	2491.8
#2	8952.4	53612.	2531.1
#3	8960.6	53266.	2542.5

Approved: July 02, 2016

Sample Name: ICSAB Acquired: 7/1/2016 14:45:03 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v992) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52785**	**251.76**	**.24203**	**-.01582**	**.23433**	**.22752**	**235.20**
Stddev	.00328	.34	.00360	.00265	.00294	.00069	1.55
%RSD	.62094	.13380	1.4861	16.739	1.2547	.30513	.65990
#1	.52432	251.71	.24346	-.01496	.23520	.22753	234.06
#2	.52844	252.12	.24469	-.01879	.23675	.22821	236.97
#3	.53079	251.46	.23794	-.01371	.23106	.22682	234.56
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.46325**	**.22370**	**.23331**	**.23580**	**93.520**	**5.1425**	**.00524**
Stddev	.00270	.00154	.00074	.00362	.674	.1464	.00185
%RSD	.58178	.68867	.31761	1.5345	.72037	2.8468	35.298
#1	.46439	.22497	.23246	.23752	92.881	5.3063	.00519
#2	.46520	.22413	.23364	.23823	94.224	5.0968	.00712
#3	.46018	.22199	.23382	.23164	93.454	5.0244	.00342
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**236.94**	**.22799**	**-.00030**	**5.0128**	**.44793**	**.08092**	**.45632**
Stddev	1.73	.00263	.00022	.0111	.00390	.00510	.00515
%RSD	.72876	1.1546	74.105	.22117	.87016	6.3004	1.1293
#1	235.09	.22913	-.00028	5.0075	.44881	.08678	.45765
#2	238.50	.22986	-.00009	5.0255	.45132	.07752	.46068
#3	237.24	.22498	-.00053	5.0054	.44367	.07846	.45063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 02, 2016

Sample Name: ICSAB Acquired: 7/1/2016 14:45:03 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v992) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.46649**	**.23334**	**.00917**	**.00061**	**-.00004**	**-.00797**	**.43527**
Stddev	.00534	.00258	.00127	.00080	.00032	.00616	.00277
%RSD	1.1437	1.1064	13.818	131.89	799.99	77.258	.63641
#1	.46758	.23085	.00908	-.00031	-.00041	-.00086	.43844
#2	.46070	.23601	.01048	.00097	.00012	-.01167	.43333
#3	.47120	.23317	.00795	.00117	.00017	-.01137	.43403
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.23446**	**.44998**	F **-.45635**
Stddev	.00152	.00321	.02747
%RSD	.64659	.71318	6.0191
#1	.23478	.45219	-.42677
#2	.23579	.45146	-.48106
#3	.23281	.44630	-.46122
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02500
Low Limit			-.02500

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8988.8**	**53603.**	**2521.0**
Stddev	9.1	119.	19.4
%RSD	.10136	.22217	.76792
#1	8986.4	53632.	2530.2
#2	8981.2	53471.	2498.8
#3	8998.9	53704.	2534.1

Approved: July 02, 2016

Sample Name: CCV Acquired: 7/1/2016 14:48:46 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v992) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.42435	9.8789	.39848	.49150	.97659	.04922	9.7822
Stddev	.00314	.0147	.00274	.00254	.00495	.00007	.1129
%RSD	.73954	.14930	.68749	.51691	.50734	.14904	1.1547
#1	.42183	9.8633	.40164	.48874	.97921	.04914	9.7157
#2	.42787	9.8809	.39705	.49201	.97088	.04929	9.7182
#3	.42335	9.8926	.39675	.49375	.97968	.04924	9.9126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04969	.19853	.49248	.49722	3.9946	49.031	.97437
Stddev	.00046	.00105	.00061	.00259	.0146	.263	.00719
%RSD	.92341	.52642	.12356	.52078	.36638	.53727	.73760
#1	.05001	.19919	.49289	.49510	4.0001	48.873	.96739
#2	.04989	.19908	.49178	.50010	3.9780	48.886	.97395
#3	.04917	.19733	.49277	.49645	4.0056	49.335	.98175
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.013	.49211	.98909	48.900	.49394	9.8868	.49596
Stddev	.151	.00586	.00455	.344	.00212	.0232	.00391
%RSD	1.5108	1.1915	.45995	.70422	.42889	.23506	.78808
#1	10.071	.49630	.99202	48.957	.49541	9.8939	.49227
#2	9.8417	.48541	.99140	48.531	.49490	9.9056	.49555
#3	10.127	.49461	.98385	49.212	.49151	9.8608	.50006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: July 02, 2016

Sample Name: CCV Acquired: 7/1/2016 14:48:46 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v992) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1812**	**.39917**	**4.8148**	**.98846**	**.98106**	**.98830**	**.49616**
Stddev	.0029	.00292	.0135	.00686	.00769	.00399	.00119
%RSD	.24531	.73224	.28073	.69374	.78362	.40414	.24062
#1	1.1826	.39723	4.8223	.99061	.98258	.99022	.49577
#2	1.1831	.40253	4.8229	.99399	.97272	.99098	.49750
#3	1.1779	.39775	4.7992	.98079	.98787	.98371	.49521
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.98572**	**.98854**	F **.69752**
Stddev	.00178	.00354	.03125
%RSD	.18020	.35845	4.4796
#1	.98729	.99106	.72260
#2	.98607	.99008	.66252
#3	.98379	.98449	.70745
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9158.4**	**54773.**	**2506.9**
Stddev	30.9	76.	17.3
%RSD	.33706	.13932	.69176
#1	9123.0	54728.	2503.2
#2	9179.5	54729.	2525.8
#3	9172.7	54861.	2491.7

Approved: July 02, 2016

Sample Name: CCB Acquired: 7/1/2016 14:52:26 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v992) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00180	.00503	-.00160	.00360	-.00046	.00002	.02034	-.00024
Stddev	.00171	.00458	.00162	.00290	.00056	.00004	.03660	.00020
%RSD	94.920	90.906	101.13	80.480	121.67	241.89	179.96	83.162
#1	-.00307	-.00021	-.00010	.00270	-.00092	-.00002	-.00930	-.00047
#2	.00014	.00820	-.00332	.00684	-.00063	.00001	.06125	-.00010
#3	-.00246	.00711	-.00139	.00126	.00017	.00007	.00907	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	.00048	-.00007	-.00889	.23249	-.00758	.03410	-.00248
Stddev	.00019	.00095	.00073	.04954	.15777	.00346	.08653	.00194
%RSD	370.91	197.11	1069.9	556.96	67.863	45.671	253.73	78.309
#1	-.00005	-.00029	-.00021	.03774	.08487	-.00857	-.06157	-.00120
#2	.00014	.00020	.00072	-.00352	.21384	-.01044	.05699	-.00472
#3	-.00024	.00155	-.00071	-.06090	.39876	-.00373	.10689	-.00153
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.02024	.00158	-.00460	.00308	.00418	-.00300	.00169
Stddev	.00024	.03536	.00052	.01408	.00151	.00150	.00455	.00190
%RSD	128.02	174.69	32.892	305.96	49.096	35.935	151.62	112.45
#1	-.00009	.02467	.00150	-.00506	.00469	.00468	.00188	.00331
#2	.00036	.05317	.00214	.00970	.00168	.00249	-.00375	-.00041
#3	.00030	-.01712	.00111	-.01845	.00288	.00538	-.00714	.00218
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: CCB Acquired: 7/1/2016 14:52:26 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v992) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	.00002	.00468	-.00428	.00013	.00019	-.02062
Stddev	.00093	.00021	.00493	.00294	.00091	.00009	.03398
%RSD	137.07	865.44	105.29	68.730	681.65	44.560	164.77
#1	.00175	.00012	.01005	-.00560	-.00092	.00026	-.00359
#2	.00003	.00017	.00035	-.00632	.00068	.00022	-.05976
#3	.00026	-.00021	.00365	-.00091	.00065	.00010	.00147
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9232.6	55878.	2498.8
Stddev	24.2	181.	12.8
%RSD	.26214	.32400	.51314
#1	9222.2	55670.	2486.9
#2	9215.3	55999.	2512.4
#3	9260.2	55966.	2497.1

Approved: July 02, 2016

Sample Name: PBW 9P Acquired: 7/1/2016 15:15:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574940-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	.01597	-.00239	.00112	-.00224	-.00004	.04465	.00016
Stddev	.00155	.00186	.00338	.00227	.00071	.00007	.04747	.00012
%RSD	942.84	11.646	141.16	203.41	31.614	158.32	106.31	75.219
#1	.00127	.01459	.00024	.00099	-.00236	.00003	.08752	.00012
#2	-.00181	.01808	-.00620	.00345	-.00148	-.00006	.05280	.00007
#3	.00005	.01523	-.00121	-.00109	-.00288	-.00010	-.00637	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.00020	.00152	-.01519	.15899	-.00227	.03059	-.00014
Stddev	.00013	.00104	.00043	.02082	.11387	.00192	.03067	.00079
%RSD	57.888	529.36	28.276	137.05	71.621	84.491	100.29	583.69
#1	.00034	.00139	.00115	-.00938	.28716	-.00447	.02074	-.00095
#2	.00024	-.00026	.00142	-.03830	.06948	-.00138	.00605	-.00009
#3	.00008	-.00054	.00200	.00210	.12034	-.00096	.06497	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.01864	.00024	.00553	.00004	.00005	.00439	.00282
Stddev	.00025	.02346	.00065	.00358	.00224	.00056	.00295	.00230
%RSD	138.10	125.84	265.81	64.870	5113.6	1046.4	67.243	81.487
#1	-.00008	.03559	.00099	.00312	.00238	.00035	.00601	.00176
#2	.00020	.02846	-.00017	.00965	-.00016	-.00059	.00098	.00125
#3	.00042	-.00813	-.00009	.00382	-.00209	.00040	.00619	.00547
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: PBW 9P Acquired: 7/1/2016 15:15:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574940-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00099	.00066	.00218	-.00112	-.00005	.00105	-.03138
Stddev	.00012	.00062	.01159	.00184	.00070	.00016	.03708
%RSD	11.920	94.373	532.09	164.96	1408.1	15.692	118.19
#1	.00100	.00068	-.01082	-.00205	.00004	.00121	-.01773
#2	.00086	.00127	.00592	.00100	.00060	.00106	-.07335
#3	.00110	.00003	.01143	-.00230	-.00079	.00088	-.00305
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9272.6	56792.	2580.6
Stddev	22.9	360.	10.1
%RSD	.24733	.63429	.39041
#1	9280.7	57147.	2584.6
#2	9290.4	56801.	2569.1
#3	9246.7	56427.	2588.0

Approved: July 02, 2016

Sample Name: LCSW 9P Acquired: 7/1/2016 15:19:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574940-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20464	4.7270	.18934	.92545	.48172	.02335	4.8859	.02386
Stddev	.00234	.0068	.00094	.00150	.00207	.00010	.0015	.00041
%RSD	1.1427	.14300	.49720	.16259	.42993	.41572	.03131	1.7232
#1	.20286	4.7207	.19040	.92460	.48151	.02331	4.8875	.02426
#2	.20729	4.7261	.18859	.92719	.47976	.02328	4.8859	.02344
#3	.20378	4.7341	.18902	.92456	.48389	.02346	4.8844	.02387
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09696	.23684	.24208	1.9466	23.667	.48452	4.7635	.23952
Stddev	.00046	.00103	.00025	.0059	.210	.00172	.1017	.00054
%RSD	.46975	.43630	.10494	.30067	.88806	.35514	2.1343	.22637
#1	.09722	.23741	.24231	1.9460	23.612	.48291	4.7646	.23890
#2	.09721	.23565	.24181	1.9527	23.490	.48430	4.6613	.23993
#3	.09643	.23747	.24212	1.9410	23.899	.48634	4.8646	.23973
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48422	24.143	.24205	4.6329	.24229	.56717	.17970	2.3487
Stddev	.00220	.118	.00103	.0104	.00269	.00093	.00784	.0036
%RSD	.45369	.49063	.42353	.22508	1.1086	.16463	4.3602	.15266
#1	.48651	24.047	.24323	4.6439	.24539	.56738	.17159	2.3482
#2	.48404	24.106	.24139	4.6316	.24070	.56799	.18723	2.3525
#3	.48213	24.275	.24154	4.6232	.24077	.56615	.18029	2.3454
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: LCSW 9P Acquired: 7/1/2016 15:19:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574940-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48030**	**.48581**	**.48252**	**.23950**	**.47451**	**.47896**	**.01388**
Stddev	.00234	.00184	.00747	.00164	.00129	.00112	.04190
%RSD	.48646	.37780	1.5484	.68564	.27265	.23430	301.80
#1	.48216	.48420	.47448	.23823	.47377	.47979	-.02827
#2	.48106	.48542	.48384	.24135	.47600	.47941	.05552
#3	.47767	.48781	.48924	.23890	.47375	.47769	.01441
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9160.4**	**55821.**	**2511.2**
Stddev	21.8	89.	7.8
%RSD	.23846	.15946	.31214
#1	9135.3	55760.	2515.0
#2	9170.8	55923.	2516.4
#3	9175.0	55780.	2502.2

Approved: July 02, 2016

Sample Name: F BLANK Acquired: 7/1/2016 15:23:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574809-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00036**	**.02042**	**-.00050**	**.00413**	**-.00084**	**-.00003**	**.04822**	**.00012**
Stddev	.00104	.00546	.00052	.00138	.00045	.00001	.03125	.00017
%RSD	287.66	26.723	104.13	33.425	53.395	39.838	64.809	138.14
#1	-.00110	.02667	-.00109	.00522	-.00101	-.00003	.04837	.00001
#2	.00083	.01660	-.00022	.00460	-.00033	-.00002	.07941	.00004
#3	-.00083	.01799	-.00018	.00258	-.00117	-.00004	.01690	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**.00026**	**.00029**	**-.00512**	**.20653**	**-.00224**	**.04626**	**.00129**
Stddev	.00026	.00037	.00076	.00521	.20381	.00381	.02394	.00068
%RSD	298.21	142.95	262.74	101.67	98.682	169.66	51.752	52.210
#1	.00038	.00011	.00108	-.00371	-.01485	-.00657	.05918	.00166
#2	-.00004	.00069	-.00043	-.00076	.24807	-.00075	.06096	.00051
#3	-.00009	-.00002	.00021	-.01088	.38638	.00059	.01864	.00171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00044**	**127.01**	**.00047**	**-.00310**	**-.00267**	**-.00258**	**-.00433**	**.00827**
Stddev	.00036	.40	.00112	.00352	.00124	.00192	.00346	.00243
%RSD	80.960	.31650	239.06	113.65	46.418	74.467	79.932	29.351
#1	.00086	126.96	-.00050	-.00715	-.00147	-.00463	-.00168	.01046
#2	.00023	127.43	.00021	-.00079	-.00260	-.00231	-.00824	.00868
#3	.00024	126.63	.00170	-.00136	-.00394	-.00081	-.00305	.00566
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: F BLANK Acquired: 7/1/2016 15:23:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574809-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00040**	**-.00031**	**-.00077**	**-.00165**	**-.00013**	**.00323**	**.00158**
Stddev	.00028	.00014	.00459	.00178	.00108	.00011	.02150
%RSD	70.745	45.921	599.45	107.89	849.27	3.5467	1363.0
#1	.00010	-.00043	-.00455	-.00351	.00107	.00335	.00483
#2	.00066	-.00015	.00434	.00004	-.00043	.00322	.02127
#3	.00044	-.00036	-.00209	-.00148	-.00102	.00312	-.02136
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9181.4**	**55349.**	**2532.4**
Stddev	7.8	135.	10.7
%RSD	.08476	.24414	.42287
#1	9190.3	55203.	2543.7
#2	9175.9	55375.	2522.4
#3	9178.0	55470.	2531.1

Approved: July 02, 2016

Sample Name: L1606159101 Acquired: 7/1/2016 15:27:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.03467	-.00141	.01734	.03057	-.00009	193.75	.00019
Stddev	.00167	.00731	.00139	.00293	.00024	.00011	.52	.00029
%RSD	931.20	21.083	98.285	16.871	.78657	126.62	.27032	151.69
#1	.00085	.03807	-.00288	.01647	.03072	.00001	193.65	.00049
#2	.00141	.02628	-.00125	.02061	.03030	-.00021	194.31	.00019
#3	-.00173	.03966	-.00011	.01495	.03071	-.00006	193.28	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00203	.00061	.00171	.01402	.26671	.00434	2.0506	.44456
Stddev	.00053	.00038	.00129	.01890	.05264	.00184	.0068	.00273
%RSD	25.959	62.353	75.481	134.78	19.737	42.361	.33046	.61382
#1	.00150	.00104	.00320	.01875	.25015	.00514	2.0439	.44611
#2	.00255	.00039	.00107	.03011	.32564	.00565	2.0504	.44616
#3	.00204	.00038	.00087	-.00679	.22433	.00224	2.0575	.44141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	1.7945	.00419	.00824	.00434	.00254	-.00311	.17382
Stddev	.00065	.0341	.00048	.00473	.00142	.00284	.00680	.00899
%RSD	93.965	1.9028	11.522	57.353	32.757	111.90	218.70	5.1742
#1	.00107	1.8297	.00373	.00329	.00456	.00124	-.00432	.18110
#2	.00106	1.7922	.00470	.00873	.00563	.00058	.00422	.17659
#3	-.00006	1.7615	.00415	.01270	.00282	.00579	-.00922	.16376
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: L1606159101 Acquired: 7/1/2016 15:27:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.84364	-.02997	-.00171	-.00019	.02103	-.02854
Stddev	.00129	.00470	.00345	.00068	.00089	.00165	.00595
%RSD	425.33	.55728	11.519	39.885	478.50	7.8249	20.838
#1	-.00074	.84354	-.03345	-.00094	-.00106	.02183	-.02319
#2	.00174	.84839	-.02655	-.00223	-.00022	.02212	-.02748
#3	-.00009	.83899	-.02991	-.00196	.00072	.01914	-.03494
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9130.3	55329.	2558.6
Stddev	12.2	237.	12.3
%RSD	.13332	.42827	.48259
#1	9117.2	55071.	2550.4
#2	9132.3	55380.	2552.6
#3	9141.3	55537.	2572.8

Approved: July 02, 2016

Sample Name: L1606159102 Acquired: 7/1/2016 15:31:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574940-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.01480**	**-.00060**	**.01734**	**.03284**	**-.00002**	**194.34**
Stddev	.00203	.00096	.00474	.00300	.00058	.00013	.07
%RSD	1176.9	6.5000	784.73	17.289	1.7707	577.10	.03760
#1	.00217	.01563	.00482	.02000	.03305	-.00015	194.31
#2	-.00143	.01374	-.00269	.01409	.03329	-.00002	194.29
#3	-.00126	.01504	-.00394	.01794	.03219	.00010	194.42
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00049**	**.00220**	**.00144**	**.00121**	**-.00901**	**.39265**	**.00400**
Stddev	.00031	.00026	.00145	.00067	.02373	.15545	.00320
%RSD	64.784	11.643	100.75	55.532	263.45	39.590	79.936
#1	.00051	.00228	-.00007	.00123	-.03641	.51044	.00452
#2	.00016	.00240	.00283	.00053	.00515	.21646	.00058
#3	.00079	.00191	.00156	.00187	.00423	.45106	.00692
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.3044**	**.82882**	**.00031**	**2.4009**	**.00359**	**.00060**	**.00390**
Stddev	.0897	.00357	.00016	.0269	.00101	.00436	.00215
%RSD	3.8910	.43104	52.676	1.1193	28.263	721.82	55.204
#1	2.2828	.82490	.00014	2.3825	.00444	.00507	.00328
#2	2.4030	.83190	.00034	2.4317	.00386	.00037	.00629
#3	2.2276	.82967	.00046	2.3884	.00247	-.00363	.00212
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 02, 2016

Sample Name: L1606159102 Acquired: 7/1/2016 15:31:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574940-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00160**	**-.00802**	**.32530**	**-.00022**	**.80693**	F **-.03740**	**-.00095**
Stddev	.00187	.00416	.01808	.00033	.00155	.00856	.00100
%RSD	116.97	51.847	5.5566	148.25	.19172	22.903	105.32
#1	-.00036	-.01098	.33606	-.00054	.80552	-.04546	-.00190
#2	-.00069	-.00982	.33540	-.00023	.80668	-.03832	-.00106
#3	-.00376	-.00327	.30443	.00011	.80859	-.02840	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00010**	**.00681**	**-.00550**
Stddev	.00045	.00051	.04219
%RSD	461.18	7.5459	767.30
#1	-.00027	.00721	.04257
#2	-.00003	.00700	-.03639
#3	.00060	.00623	-.02268
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9145.5**	**55568.**	**2554.1**
Stddev	12.0	114.	6.1
%RSD	.13170	.20445	.23989
#1	9138.8	55437.	2560.8
#2	9138.3	55630.	2548.8
#3	9159.4	55637.	2552.7

Approved: July 02, 2016

Sample Name: L1606159102S Acquired: 7/1/2016 15:35:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574940-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20795**	**4.7676**	**.19564**	**.95505**	**.51313**	**.02351**	**202.16**	**.02419**
Stddev	.00116	.0259	.00190	.00052	.00429	.00009	.58	.00029
%RSD	.55825	.54398	.97319	.05409	.83624	.37293	.28729	1.2033
#1	.20919	4.7973	.19476	.95553	.51400	.02341	202.10	.02423
#2	.20778	4.7562	.19782	.95450	.50847	.02359	201.62	.02445
#3	.20689	4.7493	.19433	.95510	.51692	.02354	202.77	.02387
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09576**	**.23436**	**.23396**	**1.8995**	**24.253**	**.49439**	**6.9526**	**1.0749**
Stddev	.00148	.00114	.00208	.0289	.155	.00292	.0467	.0042
%RSD	1.5438	.48601	.88822	1.5223	.63936	.59116	.67223	.38933
#1	.09666	.23441	.23517	1.9071	24.128	.49199	6.9037	1.0704
#2	.09657	.23320	.23515	1.8675	24.427	.49764	6.9574	1.0757
#3	.09406	.23547	.23156	1.9238	24.203	.49352	6.9968	1.0786
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48353**	**26.717**	**.23530**	**4.7943**	**.23404**	**.57505**	**.18511**	**2.7161**
Stddev	.00586	.100	.00228	.0425	.00411	.01196	.00755	.0210
%RSD	1.2128	.37299	.96896	.88626	1.7544	2.0798	4.0805	.77291
#1	.48589	26.703	.23529	4.8184	.23054	.58135	.19280	2.7258
#2	.48785	26.625	.23758	4.8192	.23856	.58255	.17770	2.7304
#3	.47686	26.823	.23302	4.7453	.23302	.56126	.18483	2.6920
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: L1606159102S Acquired: 7/1/2016 15:35:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574940-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47590**	**1.2958**	**.44755**	**.23368**	**.47717**	**.46754**	**.02079**
Stddev	.00717	.0032	.00591	.00150	.00245	.00466	.02524
%RSD	1.5075	.24491	1.3208	.64179	.51270	.99631	121.36
#1	.47868	1.2947	.45373	.23540	.47538	.47036	.04133
#2	.48128	1.2932	.44699	.23299	.47995	.47010	-.00738
#3	.46776	1.2993	.44194	.23264	.47617	.46216	.02842
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9025.1**	**54998.**	**2532.2**
Stddev	7.6	153.	2.5
%RSD	.08449	.27905	.09820
#1	9019.7	54829.	2529.6
#2	9033.8	55128.	2532.3
#3	9021.8	55038.	2534.6

Approved: July 02, 2016

Sample Name: L1606159102SD Acquired: 7/1/2016 15:38:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574940-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20859**	**4.7990**	**.19794**	**.96237**	**.51618**	**.02354**	**204.26**	**.02443**
Stddev	.00132	.0105	.00153	.00229	.00056	.00004	.06	.00008
%RSD	.63170	.21817	.77523	.23803	.10848	.16151	.03084	.32643
#1	.20737	4.7889	.19795	.96172	.51554	.02356	204.22	.02449
#2	.20999	4.7984	.19947	.96047	.51639	.02349	204.23	.02446
#3	.20840	4.8098	.19640	.96491	.51660	.02356	204.33	.02434
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09716**	**.23660**	**.23789**	**1.9090**	**24.610**	**.49846**	**7.0140**	**1.0836**
Stddev	.00024	.00076	.00183	.0087	.077	.00276	.0480	.0023
%RSD	.24208	.32014	.76900	.45535	.31286	.55456	.68397	.20862
#1	.09696	.23687	.23907	1.9011	24.547	.49544	6.9632	1.0820
#2	.09708	.23574	.23578	1.9074	24.585	.50088	7.0585	1.0862
#3	.09742	.23719	.23882	1.9183	24.696	.49906	7.0204	1.0825
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49064**	**26.807**	**.23673**	**4.8353**	**.24086**	**.58167**	**.18675**	**2.7435**
Stddev	.00075	.010	.00075	.0070	.00248	.00276	.00345	.0023
%RSD	.15221	.03699	.31713	.14413	1.0286	.47375	1.8469	.08424
#1	.49127	26.812	.23588	4.8404	.23914	.58134	.19066	2.7459
#2	.48982	26.796	.23728	4.8273	.23973	.57909	.18542	2.7433
#3	.49085	26.814	.23704	4.8381	.24370	.58457	.18416	2.7413
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: L1606159102SD Acquired: 7/1/2016 15:38:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574940-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48075**	**1.3078**	**.45673**	**.23754**	**.48020**	**.47378**	**.02200**
Stddev	.00019	.0027	.00589	.00237	.00079	.00032	.02225
%RSD	.03905	.20625	1.2894	.99583	.16366	.06804	101.11
#1	.48055	1.3066	.45557	.23487	.48103	.47386	-.00214
#2	.48077	1.3059	.46311	.23838	.48012	.47342	.04167
#3	.48092	1.3109	.45151	.23937	.47946	.47405	.02648
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9079.5**	**55002.**	**2533.4**
Stddev	17.0	218.	9.6
%RSD	.18689	.39643	.37981
#1	9083.4	55202.	2539.4
#2	9094.1	54770.	2538.6
#3	9060.9	55035.	2522.3

Approved: July 02, 2016

Sample Name: L1606159103 Acquired: 7/1/2016 15:42:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00049	.40908	.00145	.03094	.02869	.00021	139.72	.00070
Stddev	.00224	.00640	.00251	.00266	.00034	.00004	.56	.00017
%RSD	452.01	1.5654	172.74	8.6014	1.1884	17.190	.39885	24.553
#1	-.00093	.41637	.00427	.03354	.02901	.00023	139.23	.00079
#2	.00193	.40650	-.00056	.03105	.02833	.00022	139.61	.00050
#3	-.00248	.40437	.00065	.02822	.02873	.00017	140.32	.00080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00394	.00162	.00364	.06076	.56025	.00514	13.420	1.0976
Stddev	.00019	.00118	.00073	.01994	.03445	.00135	.119	.0065
%RSD	4.9212	72.893	20.180	32.813	6.1491	26.348	.88337	.59480
#1	.00416	.00102	.00448	.03930	.56008	.00538	13.460	1.0977
#2	.00387	.00085	.00334	.07871	.52588	.00368	13.286	1.0911
#3	.00379	.00297	.00310	.06427	.59478	.00636	13.513	1.1041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	2.0624	.00932	.01228	.00646	-.00002	-.00328	3.2548
Stddev	.00013	.0263	.00111	.00327	.00182	.00182	.00168	.1075
%RSD	37.802	1.2750	11.892	26.639	28.133	9789.8	51.248	3.3034
#1	.00021	2.0928	.00955	.01553	.00470	-.00069	-.00517	3.3198
#2	.00047	2.0467	.01030	.00898	.00833	-.00141	-.00197	3.3138
#3	.00036	2.0478	.00812	.01233	.00634	.00204	-.00269	3.1306
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: L1606159103 Acquired: 7/1/2016 15:42:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	.53480	-.01948	-.00435	-.00013	.04375	-.00479
Stddev	.00031	.00329	.00559	.00131	.00106	.00186	.01009
%RSD	50.859	.61539	28.703	30.192	840.36	4.2490	210.75
#1	.00093	.53382	-.01341	-.00586	-.00045	.04501	-.01165
#2	.00056	.53211	-.02062	-.00349	.00106	.04464	-.00951
#3	.00032	.53847	-.02442	-.00370	-.00098	.04162	.00680
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9253.2	56197.	2564.7
Stddev	23.4	163.	14.6
%RSD	.25243	.29087	.57039
#1	9240.5	56027.	2550.6
#2	9280.1	56210.	2579.8
#3	9238.9	56353.	2563.7

Approved: July 02, 2016

Sample Name: L1606164201 Acquired: 7/1/2016 15:46:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00085	7.2377	.00866	.01037	.14169	.00038	47.773	.00385
Stddev	.00244	.0302	.00174	.00102	.00086	.00013	.122	.00024
%RSD	287.28	.41766	20.147	9.7901	.60996	35.281	.25482	6.3563
#1	-.00058	7.2214	.00674	.01071	.14106	.00053	47.900	.00403
#2	.00367	7.2190	.01016	.01118	.14267	.00032	47.761	.00394
#3	-.00054	7.2725	.00907	.00923	.14133	.00028	47.658	.00357
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01290	.01734	.42994	23.662	10.703	.00544	10.012	.55910
Stddev	.00026	.00150	.01957	.084	.135	.00318	.151	.00205
%RSD	2.0372	8.6739	4.5517	.35495	1.2650	58.537	1.5044	.36665
#1	.01272	.01731	.44180	23.739	10.841	.00894	9.8467	.55695
#2	.01320	.01886	.44067	23.673	10.570	.00272	10.142	.56104
#3	.01279	.01585	.40736	23.572	10.696	.00465	10.046	.55930
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00171	21.103	.03122	.66240	.05369	-.00344	-.00492	14.026
Stddev	.00002	.031	.00165	.02662	.00305	.00322	.00666	.386
%RSD	1.3307	.14639	5.2745	4.0185	5.6861	93.616	135.28	2.7528
#1	.00169	21.138	.03141	.67765	.05668	-.00451	.00272	14.269
#2	.00174	21.088	.03277	.67789	.05382	-.00599	-.00802	14.229
#3	.00170	21.082	.02949	.63167	.05058	.00018	-.00948	13.581
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: L1606164201 Acquired: 7/1/2016 15:46:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01023	.19653	.16777	-.00141	.01328	.37582	.61659
Stddev	.00010	.00020	.00316	.00361	.00048	.01567	.01822
%RSD	.93818	.09964	1.8826	256.96	3.5998	4.1704	2.9554
#1	.01012	.19656	.16560	-.00112	.01371	.38539	.59557
#2	.01028	.19632	.16633	-.00515	.01336	.38433	.62625
#3	.01029	.19671	.17140	.00206	.01277	.35773	.62795
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9241.4	55795.	2558.3
Stddev	25.0	40.	11.4
%RSD	.27043	.07090	.44548
#1	9222.6	55833.	2570.5
#2	9231.9	55798.	2556.5
#3	9269.8	55754.	2547.9

Approved: July 02, 2016

Sample Name: CCV Acquired: 7/1/2016 15:50:02 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41674	9.6451	.38939	.47746	.96077	.04818	9.5764
Stddev	.00166	.0182	.00481	.00217	.00113	.00020	.0410
%RSD	.39876	.18920	1.2358	.45428	.11757	.41627	.42812
#1	.41864	9.6577	.38393	.47546	.96088	.04841	9.6031
#2	.41554	9.6534	.39123	.47715	.96184	.04811	9.5968
#3	.41605	9.6242	.39301	.47976	.95959	.04803	9.5292
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04865	.19566	.48241	.48740	3.9032	48.213	.96180
Stddev	.00019	.00064	.00252	.00050	.0399	.302	.00344
%RSD	.38581	.32848	.52182	.10350	1.0219	.62537	.35771
#1	.04885	.19634	.48530	.48785	3.9112	48.257	.96577
#2	.04848	.19557	.48129	.48685	3.9384	48.490	.95992
#3	.04862	.19507	.48065	.48748	3.8598	47.892	.95972
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.7995	.48287	.97012	47.960	.48356	9.6360	.48570
Stddev	.1668	.00144	.00156	.031	.00012	.0192	.00332
%RSD	1.7018	.29766	.16107	.06375	.02409	.19963	.68382
#1	9.7774	.48124	.97130	47.987	.48343	9.6455	.48437
#2	9.9761	.48343	.97071	47.965	.48366	9.6485	.48324
#3	9.6448	.48395	.96835	47.927	.48358	9.6138	.48948
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: July 02, 2016

Sample Name: CCV Acquired: 7/1/2016 15:50:02 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1544**	**.38909**	**4.7028**	**.96986**	**.96218**	**.95980**	**.48881**
Stddev	.0018	.00429	.0034	.00144	.00136	.01348	.00268
%RSD	.15922	1.1029	.07249	.14828	.14156	1.4048	.54769
#1	1.1557	.38426	4.7065	.97140	.96361	.94745	.48599
#2	1.1551	.39055	4.6997	.96963	.96090	.97418	.49132
#3	1.1523	.39246	4.7022	.96855	.96204	.95776	.48911
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.96618**	**.96735**	F **.66445**
Stddev	.00282	.00093	.02093
%RSD	.29201	.09564	3.1499
#1	.96941	.96842	.67865
#2	.96419	.96682	.67428
#3	.96495	.96682	.64041
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9346.8**	**56280.**	**2564.6**
Stddev	26.6	36.	18.4
%RSD	.28480	.06457	.71616
#1	9377.0	56259.	2548.1
#2	9327.0	56322.	2561.3
#3	9336.3	56258.	2584.4

Approved: July 02, 2016

Sample Name: CCB Acquired: 7/1/2016 15:53:41 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**.00596**	**-.00171**	**.00290**	**-.00096**	**-.00000**	**.00592**	**-.00006**
Stddev	.00243	.00499	.00170	.00258	.00082	.00003	.01342	.00020
%RSD	19012.	83.778	99.077	89.065	85.393	634.72	226.60	335.04
#1	.00181	.00696	-.00085	.00374	-.00158	.00003	.02032	-.00026
#2	.00098	.00054	-.00062	.00495	-.00003	-.00002	-.00624	.00015
#3	-.00275	.01037	-.00366	.00000	-.00127	-.00003	.00369	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**-.00003**	**-.00022**	**-.01913**	**.20038**	**-.00400**	**.07507**	**-.00025**
Stddev	.00018	.00061	.00018	.00947	.05038	.00035	.01041	.00396
%RSD	577.38	1751.0	80.960	49.527	25.141	8.8285	13.869	1601.2
#1	.00009	-.00073	-.00004	-.02073	.22229	-.00362	.07046	-.00369
#2	-.00017	.00029	-.00023	-.02770	.14275	-.00406	.08700	-.00114
#3	.00018	.00035	-.00039	-.00895	.23609	-.00432	.06776	.00408
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**.03431**	**.00043**	**-.00256**	**.00362**	**.00010**	**-.00277**	**.00288**
Stddev	.00025	.03529	.00096	.00273	.00102	.00514	.00269	.00172
%RSD	112.22	102.85	222.31	106.82	28.194	4907.6	97.326	59.819
#1	-.00014	.00231	.00153	-.00425	.00449	-.00546	-.00078	.00105
#2	-.00002	.02847	-.00005	-.00402	.00386	.00467	-.00170	.00447
#3	-.00050	.07217	-.00019	.00059	.00250	.00110	-.00583	.00312
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: CCB Acquired: 7/1/2016 15:53:41 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00030**	**-.00051**	**-.00012**	**-.00056**	**.00034**	**.00006**	**-.00819**
Stddev	.00039	.00041	.00447	.00064	.00094	.00010	.02534
%RSD	131.38	80.443	3707.0	114.01	272.39	155.98	309.26
#1	.00027	-.00063	-.00081	-.00120	-.00014	.00005	.00550
#2	-.00008	-.00084	.00465	.00008	-.00025	-.00003	-.03743
#3	.00070	-.00005	-.00421	-.00057	.00142	.00017	.00736
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9419.0**	**56855.**	**2561.6**
Stddev	20.0	158.	7.9
%RSD	.21256	.27796	.30834
#1	9411.7	56825.	2556.8
#2	9441.6	56714.	2557.3
#3	9403.7	57026.	2570.7

Approved: July 02, 2016

Sample Name: L1606164202 Acquired: 7/1/2016 15:57:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00221**	**64.189**	**.10156**	**.06281**	**1.4325**	**.00421**	F **591.15**
Stddev	.00037	.087	.00275	.00297	.0105	.00001	4.70
%RSD	16.788	.13578	2.7068	4.7354	.73310	.22624	.79540
#1	.00256	64.286	.10081	.06219	1.4425	.00420	595.93
#2	.00182	64.163	.10460	.06605	1.4332	.00420	590.98
#3	.00225	64.118	.09926	.06020	1.4216	.00422	586.53
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01552**	**.03991**	**.15669**	**4.8344**	**83.363**	**32.399**	**.08247**
Stddev	.00028	.00037	.00080	.0627	.551	.367	.00533
%RSD	1.8095	.93046	.51265	1.2976	.66051	1.1317	6.4635
#1	.01584	.04011	.15601	4.8727	83.796	32.722	.08862
#2	.01538	.04015	.15650	4.8685	83.550	32.474	.07952
#3	.01533	.03948	.15758	4.7620	82.744	32.000	.07927
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**113.75**	**1.8749**	**.00516**	**35.658**	**.19639**	**9.2684**	**.45090**
Stddev	.75	.0170	.00042	.238	.00231	.0822	.00394
%RSD	.66140	.90743	8.1696	.66628	1.1780	.88726	.87387
#1	114.61	1.8944	.00485	35.876	.19645	9.3151	.45454
#2	113.44	1.8670	.00498	35.693	.19868	9.3165	.45146
#3	113.20	1.8632	.00564	35.405	.19406	9.1734	.44672
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 02, 2016

Sample Name: L1606164202 Acquired: 7/1/2016 15:57:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00370**	F **-.01156**	F **68.964**	**.04965**	**1.3454**	**.94868**	**-.00279**
Stddev	.00357	.00675	.329	.00067	.0117	.00495	.00204
%RSD	96.350	58.359	.47650	1.3481	.86930	.52176	73.271
#1	.00511	-.01505	69.142	.05032	1.3554	.95047	-.00113
#2	.00635	-.01585	69.166	.04965	1.3482	.95249	-.00216
#3	-.00035	-.00378	68.585	.04898	1.3326	.94308	-.00507
Check ?	Chk Pass	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		90.000	36.000				
Low Limit		-.01000	-1.0000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.13611**	**2.0000**	**3.9773**
Stddev	.00051	.0259	.0163
%RSD	.37112	1.2955	.40916
#1	.13576	2.0159	3.9688
#2	.13669	2.0141	3.9961
#3	.13587	1.9701	3.9670
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8368.7**	**49534.**	**2253.7**
Stddev	108.1	196.	14.1
%RSD	1.2920	.39579	.62532
#1	8283.5	49469.	2237.9
#2	8332.2	49378.	2258.3
#3	8490.3	49754.	2265.0

Approved: July 02, 2016

Sample Name: L1606164802 Acquired: 7/1/2016 16:01:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00121**	**.09622**	**.00039**	**.01487**	**.31891**	**.00009**	**25.607**
Stddev	.00118	.01192	.00179	.00116	.00187	.00002	.096
%RSD	98.208	12.389	461.67	7.7825	.58557	24.814	.37309
#1	-.00128	.09992	.00099	.01377	.31832	.00011	25.513
#2	.00001	.10585	.00180	.01476	.32100	.00009	25.704
#3	-.00235	.08288	-.00163	.01607	.31741	.00006	25.604
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00025**	**.00972**	**.00011**	**.00171**	**15.647**	**1.9496**	**.00404**
Stddev	.00010	.00075	.00050	.00244	.098	.1913	.00333
%RSD	41.923	7.7513	465.85	142.59	.62935	9.8134	82.470
#1	.00016	.01057	.00067	.00360	15.586	1.9201	.00192
#2	.00036	.00942	-.00030	.00259	15.761	2.1539	.00232
#3	.00022	.00916	-.00005	-.00105	15.594	1.7747	.00788
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**15.654**	**4.1404**	**.00068**	**35.203**	**.00405**	**-.00148**	**-.00012**
Stddev	.133	.0236	.00016	.196	.00022	.00525	.00058
%RSD	.84992	.57103	23.200	.55659	5.3167	354.54	477.75
#1	15.685	4.1179	.00082	35.004	.00430	.00316	.00021
#2	15.768	4.1650	.00051	35.396	.00395	-.00717	.00022
#3	15.508	4.1384	.00070	35.210	.00391	-.00043	-.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 02, 2016

Sample Name: L1606164802 Acquired: 7/1/2016 16:01:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00029**	**-.00417**	**10.989**	**.00018**	**.49490**	**-.00134**	**-.00161**
Stddev	.00281	.00620	.362	.00016	.00180	.00691	.00083
%RSD	974.00	148.64	3.2914	89.334	.36273	513.86	51.459
#1	-.00351	.00216	11.177	.00028	.49300	-.00928	-.00151
#2	.00164	-.01025	11.219	.00027	.49513	.00334	-.00249
#3	.00100	-.00443	10.572	-.00001	.49656	.00190	-.00084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00045**	**.00680**	F **-.11992**
Stddev	.00040	.00036	.03894
%RSD	88.682	5.3187	32.473
#1	.00089	.00708	-.16454
#2	.00013	.00692	-.10242
#3	.00032	.00639	-.09280
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8983.4**	**53865.**	**2394.7**
Stddev	107.8	399.	5.9
%RSD	1.1997	.74037	.24490
#1	8913.6	53452.	2397.6
#2	8929.1	54248.	2388.0
#3	9107.6	53897.	2398.6

Approved: July 02, 2016

Sample Name: L1606165236 Acquired: 7/1/2016 16:05:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00036**	**.00946**	**-.00055**	**.00117**	**-.00030**	**.00007**	**.06859**
Stddev	.00025	.00584	.00153	.00207	.00070	.00005	.01379
%RSD	69.622	61.747	280.17	176.42	233.70	74.208	20.099
#1	-.00061	.00287	-.00087	-.00086	-.00020	.00005	.05584
#2	-.00010	.01401	.00112	.00327	-.00104	.00003	.06672
#3	-.00038	.01148	-.00188	.00111	.00034	.00013	.08322
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00023**	**.00006**	**.00089**	**.00084**	F **-.02645**	**.10393**	**-.00306**
Stddev	.00001	.00019	.00077	.00092	.00560	.06729	.00086
%RSD	2.4362	309.14	86.786	109.56	21.163	64.743	28.251
#1	.00023	.00027	.00147	-.00021	-.02015	.05541	-.00406
#2	.00022	-.00012	.00117	.00152	-.02837	.18075	-.00259
#3	.00022	.00004	.00001	.00121	-.03083	.07564	-.00253
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.06144**	**-.00090**	**-.00001**	**1.4892**	**.00087**	**.00279**	**.00192**
Stddev	.01395	.00077	.00027	.0213	.00031	.00249	.00389
%RSD	22.708	85.551	2943.0	1.4311	35.335	89.042	202.65
#1	.05023	-.00115	.00016	1.4714	.00105	.00121	.00094
#2	.07707	-.00151	-.00032	1.4835	.00105	.00566	.00620
#3	.05703	-.00004	.00013	1.5128	.00052	.00151	-.00139
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 02, 2016

Sample Name: L1606165236 Acquired: 7/1/2016 16:05:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00060**	**.00056**	**.51849**	**.00036**	**.00003**	**.00202**	**-.00097**
Stddev	.00211	.00233	.01581	.00038	.00021	.00199	.00170
%RSD	350.91	419.31	3.0500	106.15	760.30	98.471	175.96
#1	-.00036	.00253	.53096	.00045	.00022	.00199	-.00130
#2	.00302	-.00201	.52380	-.00006	.00006	.00005	-.00247
#3	-.00085	.00115	.50070	.00068	-.00020	.00402	.00088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00033**	**.00174**	**-.03443**
Stddev	.00040	.00021	.04605
%RSD	122.58	12.097	133.74
#1	-.00005	.00155	-.06352
#2	.00028	.00196	.01866
#3	.00075	.00169	-.05843
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9266.3**	**56670.**	**2513.8**
Stddev	29.3	31.	14.8
%RSD	.31624	.05481	.58735
#1	9297.8	56706.	2498.2
#2	9261.5	56648.	2527.5
#3	9239.8	56656.	2515.8

Approved: July 02, 2016

Sample Name: L1606165238 Acquired: 7/1/2016 16:09:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00030**	**.00750**	**-.00193**	**.00223**	**.00025**	**.00002**	**.02395**
Stddev	.00110	.00897	.00268	.00312	.00094	.00007	.01047
%RSD	366.61	119.66	138.76	139.57	379.32	290.12	43.732
#1	-.00095	.01779	-.00012	.00140	-.00028	.00004	.03019
#2	.00097	.00129	-.00502	-.00039	-.00031	-.00005	.01186
#3	-.00092	.00342	-.00067	.00569	.00134	.00008	.02980
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**.00006**	**.00031**	**.00031**	F **-.02473**	**.06401**	**-.00591**
Stddev	.00031	.00033	.00044	.00125	.02390	.12137	.00243
%RSD	463.87	511.33	143.77	397.38	96.636	189.61	41.159
#1	.00007	.00042	.00063	-.00103	-.03966	-.07574	-.00731
#2	.00038	-.00022	-.00019	.00145	.00283	.14303	-.00731
#3	-.00024	-.00001	.00048	.00053	-.03737	.12475	-.00310
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.07426**	**-.00180**	**.00006**	**1.4417**	**.00114**	**.00104**	**.00059**
Stddev	.05138	.00090	.00020	.0300	.00146	.00735	.00177
%RSD	69.192	49.844	341.40	2.0837	127.52	704.75	301.25
#1	.07085	-.00161	.00028	1.4115	.00282	.00708	.00136
#2	.02467	-.00277	-.00000	1.4418	.00038	-.00714	.00185
#3	.12727	-.00101	-.00010	1.4716	.00023	.00318	-.00144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 02, 2016

Sample Name: L1606165238 Acquired: 7/1/2016 16:09:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00272**	**-.00539**	**.48900**	**.00004**	**-.00024**	**.00287**	**-.00399**
Stddev	.00650	.00413	.01711	.00044	.00058	.00802	.00250
%RSD	238.74	76.631	3.4983	1089.1	239.67	279.80	62.732
#1	-.00262	-.00148	.49953	.00017	-.00022	.00284	-.00597
#2	-.00928	-.00497	.49820	-.00044	-.00084	-.00514	-.00118
#3	.00373	-.00971	.46926	.00040	.00033	.01090	-.00482
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00007**	**.00115**	F **-.05102**
Stddev	.00031	.00018	.04428
%RSD	410.52	15.565	86.796
#1	-.00013	.00116	-.06854
#2	.00043	.00097	-.00066
#3	-.00007	.00133	-.08386
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9256.8**	**56515.**	**2514.9**
Stddev	37.2	132.	9.0
%RSD	.40226	.23443	.35887
#1	9263.8	56380.	2507.0
#2	9290.1	56645.	2513.1
#3	9216.6	56519.	2524.7

Approved: July 02, 2016

Sample Name: L1606166001 Acquired: 7/1/2016 16:13:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00107	.07501	-.00233	.00613	.00111	.00004	.48936	.00019
Stddev	.00218	.01100	.00308	.00204	.00075	.00006	.00456	.00002
%RSD	204.20	14.668	131.91	33.213	67.622	161.92	.93218	10.556
#1	-.00108	.06461	-.00158	.00848	.00145	-.00001	.48415	.00020
#2	.00100	.08653	.00029	.00508	.00164	.00011	.49130	.00020
#3	.00328	.07389	-.00572	.00484	.00025	.00001	.49263	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	.00094	.01942	.03120	.19410	-.00281	.07566	.00097
Stddev	.00010	.00088	.00307	.03390	.09072	.00354	.04337	.00299
%RSD	66.350	94.087	15.784	108.65	46.738	125.85	57.316	309.04
#1	-.00005	.00034	.02119	.02946	.14056	.00127	.08160	.00321
#2	-.00014	.00053	.02119	-.00179	.29885	-.00467	.02963	-.00243
#3	-.00025	.00196	.01588	.06594	.14290	-.00503	.11575	.00212
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	.37028	.00145	.01126	-.00048	.00081	-.00231	.16351
Stddev	.00086	.02544	.00047	.00192	.00147	.00370	.00519	.01858
%RSD	623.30	6.8709	32.175	17.083	305.18	459.85	224.94	11.361
#1	.00059	.36849	.00188	.00964	.00119	.00142	.00068	.17988
#2	-.00108	.34578	.00095	.01339	-.00160	.00416	.00070	.16733
#3	.00007	.39657	.00152	.01076	-.00104	-.00317	-.00831	.14332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: L1606166001 Acquired: 7/1/2016 16:13:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	.00729	.01130	-.00530	.00032	.00559	-.02678
Stddev	.00109	.00055	.00238	.00099	.00110	.00038	.00801
%RSD	161.25	7.5385	21.020	18.746	342.88	6.7671	29.900
#1	-.00037	.00718	.01031	-.00479	.00155	.00592	-.01867
#2	.00059	.00789	.00958	-.00644	-.00059	.00567	-.03468
#3	.00182	.00680	.01401	-.00466	.00001	.00518	-.02700
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9284.1	56451.	2525.8
Stddev	14.7	36.	12.4
%RSD	.15857	.06460	.49150
#1	9267.2	56419.	2511.5
#2	9294.3	56444.	2532.9
#3	9290.8	56491.	2533.1

Approved: July 02, 2016

Sample Name: L1606166002 Acquired: 7/1/2016 16:17:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00074**	**.32978**	**-.00096**	**.00742**	**.00302**	**.00006**	**1.6268**	**.00022**
Stddev	.00239	.00980	.00543	.00266	.00056	.00006	.0163	.00016
%RSD	323.03	2.9706	567.36	35.870	18.372	98.665	1.0004	73.074
#1	-.00290	.33003	-.00285	.00929	.00285	.00005	1.6414	.00040
#2	.00183	.31987	-.00520	.00437	.00364	.00001	1.6093	.00017
#3	-.00115	.33945	.00517	.00860	.00257	.00013	1.6296	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00034**	**.00019**	**.05649**	**.24449**	**.51285**	**-.00316**	**.21380**	**.00587**
Stddev	.00030	.00058	.00381	.01246	.03169	.00207	.01789	.00484
%RSD	87.757	296.18	6.7473	5.0982	6.1801	65.674	8.3677	82.359
#1	.00029	.00077	.05949	.24380	.48065	-.00510	.23441	.00043
#2	.00007	.00021	.05778	.25729	.51387	-.00341	.20465	.00968
#3	.00067	-.00039	.05220	.23239	.54401	-.00097	.20233	.00752
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00029**	**.48423**	**.00127**	**.04705**	**.00686**	**.00104**	**-.00199**	**.68979**
Stddev	.00019	.00954	.00087	.01363	.00267	.00238	.00757	.06854
%RSD	64.146	1.9697	68.433	28.975	38.953	228.39	379.80	9.9359
#1	.00048	.49487	.00027	.04581	.00511	.00197	.00329	.73545
#2	.00029	.48141	.00187	.06127	.00994	-.00166	.00139	.72294
#3	.00011	.47643	.00167	.03408	.00553	.00281	-.01066	.61098
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: L1606166002 Acquired: 7/1/2016 16:17:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.00742	.02467	-.00255	.00089	.01421	.02069
Stddev	.00064	.00051	.00727	.00176	.00031	.00106	.00094
%RSD	158.07	6.8424	29.471	69.109	34.925	7.4279	4.5361
#1	-.00002	.00683	.01628	-.00133	.00077	.01491	.02174
#2	.00009	.00768	.02866	-.00175	.00065	.01471	.02042
#3	.00114	.00774	.02907	-.00458	.00124	.01299	.01992
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9274.2	56638.	2518.2
Stddev	22.5	126.	10.1
%RSD	.24224	.22279	.40207
#1	9296.7	56564.	2507.8
#2	9274.2	56566.	2518.9
#3	9251.7	56784.	2528.0

Approved: July 02, 2016

Sample Name: L1606166003 Acquired: 7/1/2016 16:21:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00104**	**.16904**	**-.00126**	**.01320**	**.00051**	**.00003**	**.98553**	**-.00003**
Stddev	.00102	.01036	.00156	.00308	.00081	.00001	.04261	.00006
%RSD	98.034	6.1269	123.60	23.306	158.03	47.183	4.3232	201.30
#1	-.00050	.15903	-.00136	.01007	.00060	.00004	.94017	-.00001
#2	-.00040	.16839	.00034	.01622	-.00034	.00003	.99169	.00002
#3	-.00222	.17971	-.00277	.01331	.00127	.00002	1.0247	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00033**	**.00378**	**.02672**	**.60770**	**.37129**	**-.00325**	**.11726**	**.00957**
Stddev	.00017	.00120	.00198	.01628	.03115	.00537	.05418	.00036
%RSD	53.506	31.686	7.4276	2.6791	8.3886	164.93	46.200	3.7730
#1	.00052	.00411	.02861	.59190	.34860	-.00749	.06218	.00964
#2	.00028	.00478	.02688	.60678	.35846	.00278	.11912	.00918
#3	.00018	.00246	.02466	.62442	.40680	-.00505	.17048	.00990
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00090**	**.19191**	**.00202**	**.01587**	**.00545**	**-.00047**	**-.00371**	**.29811**
Stddev	.00015	.03815	.00027	.00661	.00266	.00193	.00209	.03155
%RSD	16.635	19.876	13.507	41.663	48.867	408.98	56.422	10.584
#1	.00083	.22464	.00191	.01320	.00673	-.00269	-.00138	.32050
#2	.00107	.15002	.00183	.01100	.00239	.00081	-.00543	.31181
#3	.00080	.20108	.00234	.02339	.00724	.00046	-.00432	.26203
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: L1606166003 Acquired: 7/1/2016 16:21:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00106	.00169	.00473	.00007	.00019	.01117	-.03797
Stddev	.00152	.00011	.00944	.00093	.00068	.00086	.02158
%RSD	143.59	6.2620	199.52	1429.9	359.23	7.7164	56.849
#1	.00232	.00165	-.00193	.00086	.00072	.01175	-.01985
#2	-.00063	.00162	.00059	-.00096	.00042	.01159	-.06185
#3	.00149	.00182	.01554	.00030	-.00057	.01018	-.03220
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9272.0	56862.	2529.8
Stddev	18.1	248.	20.6
%RSD	.19512	.43559	.81498
#1	9280.3	56608.	2506.2
#2	9284.4	57103.	2539.2
#3	9251.2	56875.	2544.1

Approved: July 02, 2016

Sample Name: L1606166004 Acquired: 7/1/2016 16:25:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00067**	**.06544**	**-.00137**	**.00736**	**.00081**	**.00006**	**.53105**	**.00021**
Stddev	.00170	.00759	.00141	.00162	.00086	.00008	.00837	.00012
%RSD	255.58	11.600	103.26	21.977	105.42	151.50	1.5753	55.558
#1	-.00251	.05667	.00015	.00635	-.00012	-.00002	.52452	.00018
#2	-.00032	.06984	-.00265	.00651	.00101	.00015	.52815	.00034
#3	.00084	.06981	-.00160	.00923	.00155	.00003	.54048	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00027**	**.00028**	**.01484**	**.05190**	**.24570**	**-.00397**	**.11525**	**.00134**
Stddev	.00017	.00028	.00081	.00497	.03560	.00160	.01983	.00156
%RSD	61.639	99.087	5.4282	9.5851	14.489	40.382	17.208	116.54
#1	.00017	.00057	.01451	.05604	.23127	-.00489	.13813	-.00041
#2	.00018	.00027	.01576	.04638	.28625	-.00212	.10322	.00260
#3	.00047	.00001	.01425	.05328	.21958	-.00489	.10438	.00183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**.25271**	**.00043**	**.01163**	**.00231**	**.00126**	**-.00543**	**.10446**
Stddev	.00060	.03023	.00061	.00130	.00212	.00199	.00506	.00875
%RSD	1213.0	11.962	142.83	11.154	91.750	158.29	93.233	8.3740
#1	.00069	.25869	.00021	.01057	.00475	.00336	-.00353	.11078
#2	-.00049	.21994	.00112	.01307	.00120	-.00059	-.00159	.10812
#3	-.00005	.27950	-.00005	.01124	.00098	.00100	-.01116	.09448
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: L1606166004 Acquired: 7/1/2016 16:25:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00100	.00499	.00728	-.00414	.00071	.00611	-.00440
Stddev	.00055	.00026	.00199	.00007	.00078	.00037	.02403
%RSD	55.098	5.1098	27.381	1.5805	111.24	6.0195	546.56
#1	.00109	.00504	.00958	-.00422	.00146	.00644	-.03076
#2	.00149	.00522	.00622	-.00410	.00076	.00619	.00127
#3	.00041	.00472	.00604	-.00411	-.00011	.00571	.01630
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9249.8	56673.	2517.1
Stddev	39.5	104.	10.6
%RSD	.42690	.18333	.42289
#1	9283.8	56662.	2524.4
#2	9259.2	56575.	2522.1
#3	9206.5	56782.	2504.9

Approved: July 02, 2016

Sample Name: L1606166005 Acquired: 7/1/2016 16:29:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00053**	**.03463**	**.00004**	**.00555**	**.00055**	**.00009**	**.19548**	**.00016**
Stddev	.00124	.00354	.00071	.00078	.00028	.00005	.03423	.00008
%RSD	231.33	10.209	1824.1	13.990	51.176	57.249	17.509	50.656
#1	-.00134	.03809	.00058	.00473	.00030	.00015	.19834	.00021
#2	.00089	.03103	.00030	.00627	.00049	.00004	.15992	.00007
#3	-.00115	.03478	-.00077	.00567	.00086	.00009	.22819	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**.00061**	**.01684**	**.02027**	**.10795**	**-.00382**	**.04350**	**.00146**
Stddev	.00004	.00157	.00142	.04096	.18187	.00247	.02634	.00257
%RSD	76.572	256.72	8.4122	202.06	168.48	64.572	60.553	175.49
#1	.00001	.00216	.01654	-.01318	.01901	-.00647	.06617	.00231
#2	.00008	.00065	.01839	.00804	-.01233	-.00339	.01460	.00350
#3	.00007	-.00098	.01560	.06596	.31718	-.00160	.04974	-.00142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.32298**	**.00094**	**.01043**	**.00139**	**-.00391**	**.00110**	**.05444**
Stddev	.00048	.04349	.00080	.00120	.00124	.00390	.00776	.00455
%RSD	480.88	13.464	84.876	11.542	89.547	99.873	706.81	8.3652
#1	-.00010	.36617	.00063	.00926	.00033	-.00753	.00023	.05333
#2	-.00058	.27921	.00034	.01167	.00108	.00022	-.00619	.05945
#3	.00038	.32355	.00184	.01036	.00276	-.00440	.00926	.05055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: L1606166005 Acquired: 7/1/2016 16:29:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00007	-.00216	-.00337	.00056	.00493	.00073
Stddev	.00040	.00023	.00256	.00061	.00085	.00039	.03556
%RSD	618.95	320.34	118.51	18.113	150.80	7.9453	4882.8
#1	.00005	-.00017	-.00436	-.00370	.00073	.00512	-.01883
#2	.00047	.00009	-.00278	-.00374	.00132	.00520	-.02077
#3	-.00032	.00029	.00065	-.00267	-.00036	.00448	.04178
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9258.5	56291.	2508.0
Stddev	19.8	63.	19.5
%RSD	.21353	.11174	.77826
#1	9252.5	56233.	2488.5
#2	9280.6	56283.	2508.0
#3	9242.5	56358.	2527.5

Approved: July 02, 2016

Sample Name: L1606166006 Acquired: 7/1/2016 16:33:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00130**	**.14543**	**-.00270**	**.01413**	**.00264**	**.00000**	**.81864**	**.00009**
Stddev	.00060	.00337	.00017	.00145	.00009	.00004	.01810	.00011
%RSD	46.430	2.3191	6.3285	10.244	3.3150	1040.6	2.2113	120.13
#1	-.00060	.14300	-.00257	.01266	.00272	.00004	.80622	-.00003
#2	-.00166	.14928	-.00263	.01556	.00264	-.00004	.83941	.00012
#3	-.00164	.14402	-.00289	.01416	.00255	.00001	.81028	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**.00085**	**.09971**	**.20937**	**.28868**	**-.00218**	**.16039**	**.00328**
Stddev	.00018	.00063	.00551	.01956	.08916	.00158	.06476	.00345
%RSD	74.981	74.344	5.5243	9.3413	30.887	72.396	40.378	105.27
#1	-.00035	.00158	.10364	.22935	.37473	-.00382	.17974	.00604
#2	-.00032	.00042	.10208	.20849	.19670	-.00206	.08816	.00439
#3	-.00003	.00056	.09342	.19027	.29460	-.00066	.21328	-.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.18699**	**.00116**	**.04278**	**.00472**	**-.00163**	**.00467**	**.29162**
Stddev	.00063	.03443	.00057	.00641	.00101	.00456	.00410	.02522
%RSD	499.20	18.415	48.865	14.978	21.394	279.94	87.709	8.6476
#1	.00085	.16394	.00051	.03780	.00570	.00202	.00531	.30929
#2	-.00032	.22657	.00144	.04055	.00479	-.00674	.00842	.30283
#3	-.00015	.17045	.00154	.05001	.00368	-.00017	.00029	.26274
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: L1606166006 Acquired: 7/1/2016 16:33:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	.00168	.00942	-.00332	.00073	.01823	.02219
Stddev	.00042	.00030	.00446	.00185	.00051	.00111	.01335
%RSD	55.458	17.714	47.340	55.599	69.577	6.1125	60.149
#1	.00124	.00191	.00509	-.00420	.00027	.01877	.03388
#2	.00047	.00179	.01400	-.00120	.00128	.01897	.00765
#3	.00057	.00134	.00916	-.00456	.00065	.01695	.02505
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9288.8	56485.	2514.8
Stddev	23.1	173.	19.0
%RSD	.24841	.30624	.75499
#1	9262.8	56497.	2493.0
#2	9307.1	56306.	2524.0
#3	9296.4	56651.	2527.5

Approved: July 02, 2016

Sample Name: CCV Acquired: 7/1/2016 16:36:58 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41314	9.6290	.38678	.47517	.96347	.04793	9.5603
Stddev	.00200	.0245	.00328	.00169	.00096	.00028	.0083
%RSD	.48339	.25451	.84868	.35635	.09951	.58346	.08646
#1	.41258	9.6559	.38999	.47539	.96243	.04770	9.5632
#2	.41535	9.6080	.38692	.47675	.96432	.04785	9.5668
#3	.41148	9.6230	.38343	.47338	.96366	.04825	9.5510
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04852	.19508	.48033	.48598	3.9120	48.082	.95548
Stddev	.00026	.00128	.00120	.00192	.0650	.133	.00275
%RSD	.54611	.65591	.24958	.39573	1.6611	.27624	.28797
#1	.04882	.19604	.47947	.48790	3.9253	48.164	.95291
#2	.04831	.19558	.47983	.48598	3.8414	47.929	.95838
#3	.04844	.19363	.48170	.48405	3.9693	48.154	.95516
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.7822	.48152	.96692	48.049	.48191	9.6091	.48066
Stddev	.0938	.00168	.00499	.111	.00327	.0384	.00186
%RSD	.95839	.34901	.51589	.23046	.67882	.40015	.38643
#1	9.7580	.48011	.97105	48.101	.48356	9.6435	.48014
#2	9.8856	.48338	.96833	47.922	.48402	9.6161	.47912
#3	9.7029	.48107	.96137	48.124	.47814	9.5676	.48272
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: July 02, 2016

Sample Name: CCV Acquired: 7/1/2016 16:36:58 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1446**	**.38647**	**4.6867**	**.96847**	**.96506**	**.96022**	**.48786**
Stddev	.0047	.00346	.0111	.00580	.00372	.01575	.00321
%RSD	.40710	.89572	.23777	.59874	.38554	1.6401	.65782
#1	1.1479	.38265	4.6973	.97290	.96867	.94207	.48436
#2	1.1466	.38940	4.6877	.97060	.96124	.97026	.48855
#3	1.1393	.38737	4.6751	.96191	.96526	.96833	.49067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.95894**	**.96301**	F **.66661**
Stddev	.00105	.00535	.00635
%RSD	.10932	.55509	.95276
#1	.95822	.96427	.66396
#2	.95847	.96762	.66200
#3	.96015	.95715	.67385
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9289.9**	**56082.**	**2533.1**
Stddev	18.7	227.	13.2
%RSD	.20117	.40452	.52266
#1	9291.3	56330.	2518.1
#2	9270.5	56030.	2538.0
#3	9307.8	55886.	2543.1

Approved: July 02, 2016

Sample Name: CCB Acquired: 7/1/2016 16:40:37 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.00516**	**-.00037**	**.00409**	**-.00050**	**.00009**	**.01313**	**.00012**
Stddev	.00231	.00732	.00062	.00276	.00084	.00009	.04206	.00008
%RSD	1180.4	141.80	168.62	67.388	167.93	95.293	320.40	61.036
#1	-.00133	.01304	.00028	.00716	.00039	.00016	.05969	.00006
#2	-.00172	.00390	-.00043	.00331	-.00127	.00011	-.02210	.00010
#3	.00247	-.00145	-.00095	.00181	-.00062	-.00000	.00179	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**.00000**	**.00029**	**-.03719**	**.14568**	**-.00510**	**.06031**	**.00117**
Stddev	.00031	.00032	.00011	.00970	.07211	.00159	.07369	.00049
%RSD	218.83	8385.5	36.921	26.086	49.501	31.213	122.18	41.829
#1	.00042	-.00036	.00023	-.04794	.12643	-.00680	.08588	.00146
#2	.00019	.00017	.00042	-.03453	.22546	-.00484	-.02276	.00060
#3	-.00019	.00020	.00023	-.02909	.08514	-.00365	.11781	.00144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**.00418**	**.00150**	**.00306**	**-.00130**	**.00173**	**-.00419**	**.00137**
Stddev	.00010	.00445	.00091	.00311	.00185	.00108	.00299	.00127
%RSD	120.49	106.35	60.769	101.71	142.46	62.457	71.346	92.362
#1	-.00000	.00844	.00059	-.00040	-.00239	.00094	-.00757	-.00006
#2	.00018	.00455	.00150	.00563	.00084	.00128	-.00312	.00182
#3	.00006	-.00044	.00241	.00395	-.00235	.00296	-.00188	.00235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: CCB Acquired: 7/1/2016 16:40:37 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**-.00013**	**.00124**	**-.00392**	**-.00010**	**.00007**	**.02486**
Stddev	.00012	.00024	.00557	.00272	.00049	.00006	.05120
%RSD	44.272	180.93	448.11	69.446	498.71	74.808	205.98
#1	-.00023	.00008	-.00012	-.00191	-.00040	.00004	.00147
#2	-.00039	-.00040	-.00352	-.00702	.00047	.00014	-.01048
#3	-.00017	-.00008	.00737	-.00284	-.00035	.00004	.08358
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9397.3**	**56747.**	**2523.6**
Stddev	15.5	147.	22.6
%RSD	.16478	.25854	.89467
#1	9412.6	56869.	2498.6
#2	9381.6	56584.	2542.5
#3	9397.6	56788.	2529.8

Approved: July 02, 2016

Sample Name: L1606166007 Acquired: 7/1/2016 16:44:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00087	.04814	-.00055	.01444	.00056	.00008	.32678	.00002
Stddev	.00034	.00784	.00288	.00072	.00018	.00002	.03264	.00021
%RSD	38.948	16.280	522.71	5.0136	31.727	26.253	9.9892	842.14
#1	-.00049	.05001	-.00369	.01447	.00038	.00008	.32523	-.00000
#2	-.00113	.05488	.00196	.01515	.00056	.00009	.36018	-.00017
#3	-.00098	.03954	.00008	.01370	.00073	.00005	.29494	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00093	.04384	.01919	.26363	-.00648	.06716	.00286
Stddev	.00031	.00029	.00180	.01420	.11853	.00014	.01061	.00077
%RSD	168.46	31.514	4.1005	73.988	44.961	2.1394	15.800	26.914
#1	.00054	.00099	.04529	.02446	.34495	-.00664	.05494	.00369
#2	-.00005	.00061	.04440	.03000	.12763	-.00639	.07253	.00216
#3	.00006	.00119	.04183	.00311	.31831	-.00641	.07401	.00274
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.21701	.00060	.01957	.00491	.00184	-.00360	.08616
Stddev	.00061	.01289	.00016	.00887	.00189	.00330	.00096	.00839
%RSD	180.93	5.9405	25.906	45.317	38.480	179.33	26.792	9.7371
#1	-.00004	.23176	.00062	.02379	.00708	.00237	-.00279	.09401
#2	.00001	.21137	.00074	.00938	.00360	-.00169	-.00467	.08714
#3	.00103	.20789	.00043	.02553	.00406	.00484	-.00334	.07732
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: L1606166007 Acquired: 7/1/2016 16:44:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00120	.00165	.00466	-.00226	.00059	.00980	.00122
Stddev	.00038	.00034	.00260	.00053	.00044	.00072	.00745
%RSD	31.730	20.685	55.715	23.388	73.731	7.3833	611.54
#1	.00153	.00127	.00764	-.00267	.00014	.01002	-.00560
#2	.00128	.00175	.00353	-.00167	.00064	.01039	.00009
#3	.00078	.00194	.00283	-.00245	.00101	.00899	.00917
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9230.5	56449.	2514.9
Stddev	20.0	230.	18.9
%RSD	.21704	.40775	.75038
#1	9252.6	56354.	2532.2
#2	9225.5	56282.	2494.8
#3	9213.5	56712.	2517.8

Approved: July 02, 2016

Sample Name: L1606166008 Acquired: 7/1/2016 16:48:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.03556	-.00062	.00769	.00076	.00007	.53110	.00011
Stddev	.00148	.00619	.00109	.00103	.00099	.00013	.05117	.00015
%RSD	264.01	17.412	174.78	13.326	129.77	189.71	9.6350	131.78
#1	.00227	.04199	-.00041	.00693	.00190	-.00007	.58533	.00009
#2	-.00033	.02964	-.00181	.00886	.00020	.00019	.52429	-.00002
#3	-.00026	.03505	.00035	.00729	.00018	.00009	.48367	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	.00126	.02969	.12355	.26271	-.00250	.07534	.00168
Stddev	.00032	.00093	.00291	.02671	.04814	.00280	.11670	.00208
%RSD	686.54	73.952	9.8085	21.623	18.325	111.93	154.89	123.93
#1	-.00024	.00018	.03230	.10397	.23102	-.00563	.19488	.00178
#2	.00032	.00176	.03022	.11269	.23901	-.00026	-.03829	.00370
#3	-.00022	.00182	.02655	.15398	.31811	-.00160	.06943	-.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.24896	.00071	.01142	.00239	-.00119	-.00470	.07402
Stddev	.00025	.04121	.00054	.00449	.00144	.00079	.00339	.00678
%RSD	66.044	16.553	75.807	39.306	60.273	66.460	72.172	9.1577
#1	.00031	.22052	.00009	.01338	.00403	-.00146	-.00831	.07852
#2	.00016	.29622	.00102	.01460	.00176	-.00181	-.00159	.07731
#3	.00064	.23014	.00101	.00629	.00137	-.00030	-.00420	.06622
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: L1606166008 Acquired: 7/1/2016 16:48:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	.00129	.00963	-.00301	-.00011	.00802	-.02613
Stddev	.00007	.00055	.00768	.00247	.00048	.00070	.05045
%RSD	7.8452	42.485	79.756	81.866	427.69	8.7532	193.08
#1	.00099	.00181	.00557	-.00260	.00034	.00831	.03157
#2	.00090	.00133	.00483	-.00566	-.00061	.00853	-.04803
#3	.00085	.00072	.01849	-.00078	-.00006	.00722	-.06193
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9225.9	56399.	2513.6
Stddev	9.7	153.	13.4
%RSD	.10465	.27207	.53367
#1	9221.4	56286.	2498.6
#2	9219.2	56337.	2524.2
#3	9236.9	56574.	2518.2

Approved: July 02, 2016

Sample Name: L1606166008PS Acquired: 7/1/2016 16:52:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574995-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20746**	**4.7500**	**.19042**	**.91558**	**.47669**	**.02341**	**5.2671**	**.02349**
Stddev	.00288	.0143	.00263	.00427	.00212	.00012	.0766	.00007
%RSD	1.3895	.30027	1.3820	.46588	.44502	.51972	1.4542	.30154
#1	.20470	4.7664	.19196	.91203	.47425	.02349	5.1818	.02352
#2	.21045	4.7432	.19192	.92031	.47814	.02347	5.3299	.02355
#3	.20721	4.7404	.18738	.91441	.47767	.02327	5.2897	.02342
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09633**	**.23889**	**.26478**	**2.0611**	**23.801**	**.47993**	**4.9715**	**.24193**
Stddev	.00159	.00046	.00336	.0219	.264	.00457	.0244	.00418
%RSD	1.6498	.19248	1.2686	1.0645	1.1096	.95214	.49127	1.7295
#1	.09705	.23929	.26736	2.0433	23.513	.47553	4.9695	.23971
#2	.09743	.23900	.26599	2.0856	24.031	.47960	4.9481	.24676
#3	.09451	.23839	.26098	2.0545	23.858	.48465	4.9968	.23933
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47705**	**23.827**	**.23723**	**4.5755**	**.23957**	**.55790**	**.17575**	**2.3474**
Stddev	.00638	.168	.00349	.0542	.00408	.00956	.00764	.0180
%RSD	1.3370	.70376	1.4698	1.1840	1.7051	1.7134	4.3475	.76862
#1	.48091	23.636	.23993	4.6109	.23955	.56004	.18414	2.3567
#2	.48056	23.949	.23846	4.6024	.24366	.56620	.16920	2.3590
#3	.46969	23.895	.23329	4.5131	.23549	.54745	.17391	2.3267
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: L1606166008PS Acquired: 7/1/2016 16:52:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574995-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47515**	**.48274**	**.48742**	**.23635**	**.47651**	**.47573**	**.02517**
Stddev	.00843	.00266	.00922	.00015	.00106	.00721	.03059
%RSD	1.7750	.55077	1.8910	.06374	.22182	1.5163	121.54
#1	.48104	.47998	.48352	.23652	.47772	.47967	-.00099
#2	.47891	.48297	.48081	.23630	.47604	.48012	.01769
#3	.46549	.48528	.49795	.23623	.47578	.46741	.05880
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9168.8**	**55626.**	**2517.1**
Stddev	17.5	195.	5.6
%RSD	.19051	.34987	.22067
#1	9151.7	55605.	2522.2
#2	9168.2	55442.	2511.2
#3	9186.6	55830.	2517.8

Approved: July 02, 2016

Sample Name: L1606166008DL Acquired: 7/1/2016 16:56:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574995-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.00799**	**-.00018**	**.00476**	**.00243**	**.00010**	**.12239**	**.00013**
Stddev	.00199	.00890	.00315	.00278	.00120	.00000	.02070	.00011
%RSD	518.61	111.35	1757.0	58.425	49.461	5.0183	16.915	84.997
#1	-.00259	.01722	-.00200	.00294	.00104	.00009	.14612	.00023
#2	.00127	.00728	-.00200	.00796	.00309	.00010	.10796	.00002
#3	.00017	-.00053	.00346	.00337	.00317	.00010	.11311	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00029**	**-.00027**	**.00616**	**.01032**	**.18312**	**-.00701**	**.03141**	**.00048**
Stddev	.00024	.00054	.00102	.01729	.02384	.00103	.02217	.00153
%RSD	83.020	201.35	16.552	167.62	13.019	14.728	70.586	319.29
#1	.00035	-.00022	.00694	-.00676	.20457	-.00806	.04999	.00025
#2	.00050	-.00083	.00653	.02782	.15745	-.00600	.00687	-.00093
#3	.00003	.00025	.00501	.00989	.18735	-.00698	.03737	.00211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**.06827**	**.00050**	**.00518**	**-.00086**	**-.00019**	**.00421**	**.01508**
Stddev	.00039	.02073	.00088	.00143	.00306	.00410	.00150	.00156
%RSD	827.69	30.371	176.20	27.535	356.48	2207.8	35.664	10.353
#1	.00003	.04439	.00039	.00364	-.00182	-.00050	.00589	.01329
#2	-.00034	.08172	.00143	.00543	.00257	-.00412	.00298	.01582
#3	.00044	.07870	-.00032	.00646	-.00333	.00406	.00378	.01614
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: L1606166008DL Acquired: 7/1/2016 16:56:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574995-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.00001**	**-.00438**	**-.00228**	**-.00037**	**.00297**	**-.01499**
Stddev	.00087	.00043	.00911	.00433	.00034	.00022	.01676
%RSD	597.05	3250.1	207.91	190.18	93.238	7.4057	111.81
#1	-.00106	.00019	.00605	-.00018	-.00033	.00307	-.03128
#2	-.00004	-.00047	-.00843	-.00726	-.00004	.00312	.00220
#3	.00066	.00033	-.01077	.00061	-.00073	.00272	-.01589
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9119.2**	**55216.**	**2460.7**
Stddev	30.2	79.	6.9
%RSD	.33080	.14377	.27948
#1	9149.0	55279.	2468.1
#2	9120.1	55243.	2459.6
#3	9088.7	55127.	2454.5

Approved: July 02, 2016

Sample Name: L1606166008DL Acquired: 7/1/2016 17:00:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574995-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.00104**	**.00215**	**.00403**	**-.00078**	**.00008**	**.00401**
Stddev	.00096	.00727	.00112	.00155	.00017	.00007	.03991
%RSD	687.33	699.55	52.049	38.519	21.704	79.394	994.91
#1	.00068	.00287	.00109	.00416	-.00066	.00001	.04874
#2	.00010	-.00697	.00332	.00551	-.00072	.00010	-.02797
#3	-.00120	.00722	.00205	.00241	-.00098	.00013	-.00873
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00004**	**.00010**	**.00067**	**.00054**	F **-.02224**	**.22954**	**-.00487**
Stddev	.00036	.00043	.00062	.00093	.01162	.10331	.00087
%RSD	816.26	445.89	92.889	172.89	52.254	45.006	17.823
#1	-.00003	-.00039	.00102	.00005	-.00886	.11065	-.00451
#2	-.00027	.00039	-.00005	-.00005	-.02808	.29743	-.00586
#3	.00044	.00029	.00103	.00162	-.02980	.28055	-.00425
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09892**	**.00113**	**-.00017**	**.03021**	**.00120**	**.00422**	**-.00002**
Stddev	.02637	.00258	.00004	.00703	.00094	.00210	.00071
%RSD	26.658	228.73	26.098	23.271	78.402	49.820	3122.8
#1	.09166	.00388	-.00012	.02274	.00167	.00564	.00080
#2	.12815	-.00125	-.00018	.03670	.00181	.00521	-.00043
#3	.07693	.00076	-.00020	.03117	.00012	.00180	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 02, 2016

Sample Name: L1606166008DL Acquired: 7/1/2016 17:00:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574995-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00200**	**-.00199**	**.00383**	**-.00012**	**-.00025**	**-.00196**	**-.00113**
Stddev	.00312	.00270	.00177	.00028	.00059	.00914	.00148
%RSD	156.20	135.31	46.130	229.51	240.12	466.29	131.17
#1	-.00542	.00088	.00529	-.00028	-.00093	.00798	-.00184
#2	-.00122	-.00447	.00187	-.00029	.00012	-.00385	.00057
#3	.00066	-.00238	.00432	.00020	.00007	-.01000	-.00212
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00013**	**.00105**	**-.02628**
Stddev	.00020	.00009	.00591
%RSD	149.03	8.3037	22.481
#1	-.00007	.00097	-.02281
#2	.00033	.00114	-.03310
#3	.00013	.00105	-.02292
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9245.9**	**55904.**	**2489.0**
Stddev	25.6	135.	12.1
%RSD	.27704	.24132	.48689
#1	9268.7	56031.	2475.7
#2	9250.9	55919.	2491.9
#3	9218.2	55762.	2499.5

Approved: July 02, 2016

Sample Name: L1606145201 Acquired: 7/1/2016 17:04:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00193	.00663	-.00098	.00271	.02908	.00007	1.7692	.00006
Stddev	.00221	.00600	.00321	.00432	.00072	.00003	.0075	.00008
%RSD	114.74	90.504	328.01	159.27	2.4685	45.420	.42196	121.80
#1	.00320	.00527	-.00378	-.00028	.02900	.00011	1.7665	.00001
#2	-.00063	.01320	.00253	.00076	.02984	.00004	1.7776	.00003
#3	.00321	.00143	-.00169	.00767	.02841	.00007	1.7634	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00039	.00039	.00032	.10387	3.4292	.00249	1.3291	.03663
Stddev	.00021	.00030	.00026	.01792	.0391	.00169	.0788	.00239
%RSD	53.676	75.572	82.316	17.252	1.1392	68.009	5.9318	6.5278
#1	.00052	.00031	.00041	.11298	3.3870	.00161	1.3890	.03417
#2	.00051	.00073	.00002	.11540	3.4642	.00142	1.3584	.03894
#3	.00015	.00015	.00052	.08322	3.4362	.00444	1.2398	.03678
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00000	9.0921	.00038	.00149	.00104	.00134	.00119	.52237
Stddev	.00023	.0484	.00109	.00548	.00332	.00508	.00425	.01090
%RSD	6107.3	.53242	284.66	367.04	318.58	379.88	356.90	2.0860
#1	-.00006	9.0372	.00087	-.00467	.00349	-.00440	.00350	.51254
#2	.00025	9.1104	.00114	.00333	-.00274	.00315	.00379	.52048
#3	-.00020	9.1286	-.00087	.00581	.00238	.00527	-.00372	.53408
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: L1606145201 Acquired: 7/1/2016 17:04:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.04599**	**.00346**	**-.00095**	**-.00006**	**.00100**	**-.01086**
Stddev	.00088	.00072	.00370	.00172	.00035	.00014	.03063
%RSD	691.14	1.5743	106.87	181.23	618.99	13.545	282.12
#1	-.00082	.04551	.00515	-.00151	.00031	.00108	-.00198
#2	.00029	.04564	-.00078	.00098	-.00040	.00107	.01436
#3	.00091	.04682	.00602	-.00233	-.00008	.00084	-.04495
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9188.8**	**55433.**	**2480.1**
Stddev	2.6	66.	10.1
%RSD	.02881	.11927	.40620
#1	9186.7	55507.	2491.7
#2	9191.7	55381.	2475.2
#3	9187.8	55410.	2473.4

Approved: July 02, 2016

Sample Name: L1606145301 Acquired: 7/1/2016 17:08:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00179**	**.01288**	**-.00118**	**.00201**	**.10647**	**.00010**	**3.1701**	**-.00006**
Stddev	.00192	.00136	.00329	.00149	.00287	.00002	.0494	.00019
%RSD	106.95	10.584	277.99	74.169	2.6926	21.666	1.5582	336.10
#1	-.00116	.01350	.00003	.00344	.10420	.00012	3.1791	-.00009
#2	-.00395	.01131	.00133	.00214	.10552	.00008	3.1168	-.00023
#3	-.00027	.01382	-.00491	.00046	.10969	.00010	3.2144	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00243**	**.00169**	**-.00122**	**.27672**	**.25436**	**.00072**	**2.3309**	**.08073**
Stddev	.00032	.00053	.00015	.03069	.13726	.00094	.0542	.00226
%RSD	13.172	31.560	12.307	11.089	53.962	130.90	2.3270	2.8033
#1	.00219	.00229	-.00139	.30882	.29545	.00101	2.3180	.08288
#2	.00279	.00127	-.00119	.24767	.36639	-.00033	2.3905	.07837
#3	.00229	.00151	-.00109	.27368	.10125	.00148	2.2844	.08094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00000**	**8.8148**	**.00239**	**.00610**	**.00134**	**-.00167**	**-.00584**	**1.3445**
Stddev	.00042	.0716	.00045	.00305	.00143	.00157	.00151	.0098
%RSD	525850.	.81226	19.012	50.051	106.93	94.132	25.863	.72775
#1	.00043	8.7684	.00219	.00568	.00281	-.00189	-.00410	1.3337
#2	-.00001	8.7787	.00291	.00327	.00126	-.00312	-.00669	1.3527
#3	-.00041	8.8972	.00207	.00933	-.00005	.00000	-.00674	1.3470
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: L1606145301 Acquired: 7/1/2016 17:08:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	.06509	-.00557	-.00061	.00019	.00540	.01548
Stddev	.00065	.00079	.00143	.00312	.00076	.00021	.01312
%RSD	172.69	1.2083	25.753	513.76	401.81	3.8474	84.740
#1	.00081	.06442	-.00680	.00279	.00103	.00519	.02861
#2	-.00037	.06490	-.00399	-.00335	-.00001	.00540	.01548
#3	.00070	.06596	-.00592	-.00126	-.00045	.00560	.00237
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9159.3	55462.	2477.1
Stddev	3.0	28.	17.3
%RSD	.03318	.04968	.69661
#1	9162.1	55432.	2485.1
#2	9156.1	55467.	2488.9
#3	9159.6	55486.	2457.3

Approved: July 02, 2016

Sample Name: L1606145302 Acquired: 7/1/2016 17:12:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00180**	**.00554**	**-.00002**	**.00149**	**.03667**	**.00007**	**1.1265**
Stddev	.00126	.01049	.00303	.00183	.00118	.00002	.0302
%RSD	70.254	189.33	13241.	122.55	3.2311	35.178	2.6819
#1	-.00226	.01547	-.00338	.00054	.03632	.00004	1.1533
#2	-.00276	-.00543	.00081	.00034	.03571	.00007	1.0938
#3	-.00037	.00657	.00251	.00360	.03800	.00009	1.1324
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**-.00010**	**-.00011**	**.00007**	**2.0649**	**.29502**	**.00007**
Stddev	.00038	.00015	.00092	.00073	.0691	.09394	.00230
%RSD	147.41	155.76	851.06	1101.9	3.3471	31.840	3272.5
#1	-.00068	-.00019	-.00007	-.00073	2.0673	.27317	.00249
#2	.00005	.00008	-.00105	.00023	1.9946	.21393	-.00019
#3	-.00015	-.00018	.00079	.00069	2.1328	.39796	-.00209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.82842**	**.02471**	**-.00012**	**3.8862**	**.00015**	**.00951**	**-.00024**
Stddev	.03326	.00135	.00049	.0403	.00083	.00205	.00568
%RSD	4.0147	5.4540	414.14	1.0379	570.51	21.571	2376.7
#1	.83375	.02504	-.00064	3.9044	-.00056	.01055	.00387
#2	.79282	.02587	.00033	3.8400	.00106	.00714	.00213
#3	.85869	.02323	-.00004	3.9142	-.00006	.01083	-.00672
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 02, 2016

Sample Name: L1606145302 Acquired: 7/1/2016 17:12:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00110**	**.00086**	**.79673**	**.00009**	**.02559**	**-.00516**	**-.00091**
Stddev	.00446	.00318	.01334	.00018	.00027	.00708	.00076
%RSD	406.07	368.55	1.6738	196.00	1.0581	137.08	83.572
#1	-.00167	.00420	.78147	.00013	.02546	-.00219	-.00020
#2	.00624	.00050	.80611	.00025	.02540	-.01324	-.00081
#3	-.00128	-.00212	.80262	-.00010	.02590	-.00006	-.00171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00025**	**.00074**	F **-.04761**
Stddev	.00087	.00005	.04410
%RSD	354.29	6.9689	92.626
#1	.00125	.00079	-.00551
#2	-.00021	.00068	-.09347
#3	-.00030	.00075	-.04385
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9179.3**	**55486.**	**2466.6**
Stddev	6.2	126.	6.1
%RSD	.06707	.22769	.24905
#1	9186.3	55473.	2462.6
#2	9176.3	55618.	2473.7
#3	9175.1	55366.	2463.6

Approved: July 02, 2016

Sample Name: CCV Acquired: 7/1/2016 17:15:56 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41220**	**9.5485**	**.38752**	**.47473**	**.95893**	**.04721**	**9.4520**
Stddev	.00280	.0021	.00066	.00116	.00356	.00010	.0881
%RSD	.67983	.02200	.17028	.24369	.37102	.20415	.93192
#1	.41026	9.5476	.38805	.47455	.95489	.04732	9.5067
#2	.41093	9.5509	.38678	.47368	.96162	.04719	9.4988
#3	.41541	9.5469	.38772	.47597	.96026	.04713	9.3504
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04825**	**.19524**	**.47580**	**.48705**	**3.8557**	**47.785**	**.94865**
Stddev	.00038	.00061	.00055	.00081	.0233	.284	.00607
%RSD	.78937	.31290	.11587	.16642	.60485	.59347	.64031
#1	.04851	.19454	.47533	.48759	3.8289	47.527	.94393
#2	.04782	.19564	.47566	.48612	3.8673	48.089	.95550
#3	.04844	.19554	.47641	.48745	3.8709	47.739	.94652
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.6303**	**.48438**	**.96789**	**47.900**	**.48222**	**9.6239**	**.48385**
Stddev	.0343	.00370	.00232	.188	.00174	.0147	.00254
%RSD	.35577	.76377	.23943	.39197	.36111	.15266	.52507
#1	9.6691	.48019	.96769	47.687	.48265	9.6302	.48327
#2	9.6176	.48575	.96568	47.972	.48030	9.6071	.48663
#3	9.6042	.48719	.97030	48.041	.48371	9.6343	.48165
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: July 02, 2016

Sample Name: CCV Acquired: 7/1/2016 17:15:56 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1478**	**.38502**	**4.6810**	**.96907**	**.96365**	**.96447**	**.48800**
Stddev	.0024	.00297	.0128	.00221	.00382	.00556	.00198
%RSD	.20719	.77121	.27327	.22774	.39619	.57698	.40565
#1	1.1455	.38688	4.6798	.96751	.95987	.96034	.48833
#2	1.1478	.38159	4.6689	.96811	.96357	.96227	.48980
#3	1.1503	.38658	4.6944	.97159	.96751	.97080	.48588
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.95140**	**.96337**	F **.71116**
Stddev	.00079	.00084	.03116
%RSD	.08342	.08678	4.3823
#1	.95074	.96350	.67519
#2	.95228	.96413	.73007
#3	.95118	.96247	.72822
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9252.7**	**55784.**	**2538.8**
Stddev	8.7	59.	9.1
%RSD	.09358	.10512	.35852
#1	9251.4	55717.	2543.3
#2	9244.8	55811.	2528.3
#3	9262.0	55825.	2544.7

Approved: July 02, 2016

Sample Name: CCB Acquired: 7/1/2016 17:19:34 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00181**	**.00791**	**-.00280**	**.00036**	**-.00048**	**.00003**	**.01309**	**.00012**
Stddev	.00096	.00464	.00132	.00128	.00108	.00007	.04195	.00018
%RSD	52.773	58.611	47.271	356.60	223.56	287.64	320.55	146.19
#1	.00086	.00997	-.00345	-.00051	-.00066	-.00004	.05669	-.00008
#2	.00277	.00260	-.00367	.00183	-.00147	.00001	.00955	.00019
#3	.00180	.01116	-.00128	-.00024	.00067	.00010	-.02698	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**-.00086**	**-.00039**	**-.03555**	**.11871**	**-.00067**	**.05778**	**.00080**
Stddev	.00021	.00055	.00140	.01374	.10400	.00330	.07415	.00065
%RSD	227.52	63.473	361.11	38.640	87.602	491.78	128.33	81.199
#1	-.00004	-.00136	-.00052	-.03431	.00050	-.00063	-.00892	.00010
#2	.00034	-.00094	.00107	-.02247	.19612	-.00399	.04463	.00139
#3	-.00002	-.00028	-.00172	-.04986	.15951	.00261	.13763	.00092
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.03317**	**.00040**	**.00113**	**.00095**	**-.00100**	**-.00359**	**.00029**
Stddev	.00033	.00923	.00127	.00750	.00421	.00106	.00279	.00304
%RSD	1860.7	27.826	313.17	664.21	442.00	106.07	77.681	1033.6
#1	-.00001	.04342	-.00104	.00797	.00480	-.00143	-.00104	-.00308
#2	-.00035	.02550	.00130	.00230	.00160	.00021	-.00657	.00116
#3	.00030	.03060	.00096	-.00689	-.00354	-.00177	-.00317	.00280
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: CCB Acquired: 7/1/2016 17:19:34 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00049**	**-.00009**	**.00123**	**-.00318**	**.00090**	**.00017**	**-.01943**
Stddev	.00059	.00014	.00482	.00398	.00050	.00008	.02759
%RSD	121.38	157.54	391.40	125.01	55.934	48.064	141.98
#1	-.00019	-.00012	-.00117	-.00183	.00138	.00008	-.04732
#2	.00073	-.00020	-.00191	-.00005	.00094	.00018	.00784
#3	.00092	.00006	.00678	-.00766	.00038	.00025	-.01881
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9334.0**	**56493.**	**2536.9**
Stddev	21.2	178.	5.6
%RSD	.22692	.31590	.22269
#1	9355.7	56585.	2535.8
#2	9333.0	56607.	2531.9
#3	9313.4	56288.	2543.0

Approved: July 02, 2016

Sample Name: PBW 9A Acquired: 7/1/2016 17:23:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.00660**	**-.00111**	**.00406**	**-.00086**	**.00007**	**.05277**	**.00020**
Stddev	.00150	.00955	.00096	.00180	.00169	.00007	.02072	.00017
%RSD	871.88	144.83	86.387	44.268	194.88	102.80	39.274	87.382
#1	.00138	-.00137	-.00001	.00603	-.00279	.00007	.03016	.00006
#2	-.00027	.01719	-.00159	.00250	.00033	-.00000	.07086	.00014
#3	-.00163	.00397	-.00173	.00365	-.00013	.00014	.05729	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**-.00005**	**.00006**	**-.01750**	**.05930**	**-.00246**	**.02757**	**-.00006**
Stddev	.00015	.00080	.00066	.02627	.05809	.00073	.04562	.00112
%RSD	290.24	1712.7	1170.3	150.16	97.958	29.724	165.47	1910.0
#1	.00009	-.00087	-.00071	.00301	.09801	-.00327	-.02452	.00120
#2	-.00011	.00073	.00038	-.04711	-.00749	-.00228	.04679	-.00097
#3	.00018	.00000	.00049	-.00839	.08738	-.00184	.06044	-.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00037**	**-.01450**	**.00134**	**.00040**	**.00122**	**-.00009**	**-.00526**	**.00415**
Stddev	.00011	.03578	.00099	.00345	.00240	.00263	.00366	.00043
%RSD	29.797	246.74	74.355	860.07	197.13	2967.4	69.675	10.446
#1	.00027	-.01160	.00242	-.00345	-.00080	-.00272	-.00908	.00465
#2	.00037	-.05165	.00113	.00144	.00058	-.00009	-.00177	.00390
#3	.00049	.01974	.00046	.00321	.00388	.00255	-.00493	.00389
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: PBW 9A Acquired: 7/1/2016 17:23:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00082**	**-.00012**	**.00734**	**-.00408**	**.00023**	**.00176**	**.00769**
Stddev	.00092	.00011	.00245	.00226	.00069	.00009	.03951
%RSD	112.64	92.732	33.341	55.334	293.80	4.8379	514.02
#1	.00151	-.00025	.00453	-.00663	-.00054	.00174	-.03046
#2	.00116	-.00003	.00847	-.00329	.00046	.00185	.00509
#3	-.00023	-.00009	.00903	-.00233	.00078	.00169	.04843
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9150.2**	**55854.**	**2496.6**
Stddev	3.5	178.	33.0
%RSD	.03793	.31860	1.3222
#1	9153.5	55982.	2470.6
#2	9146.6	55651.	2485.4
#3	9150.7	55929.	2533.7

Approved: July 02, 2016

Sample Name: LCSW 9A Acquired: 7/1/2016 17:27:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20318**	**4.6956**	**.18969**	**.90922**	**.47628**	**.02329**	**4.8499**	**.02347**
Stddev	.00453	.0141	.00222	.00411	.00276	.00016	.0209	.00055
%RSD	2.2305	.30065	1.1718	.45212	.57995	.70299	.43089	2.3518
#1	.20712	4.7020	.18726	.91397	.47898	.02343	4.8696	.02386
#2	.19823	4.6794	.19163	.90688	.47346	.02311	4.8280	.02371
#3	.20420	4.7054	.19017	.90681	.47639	.02332	4.8521	.02284
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09563**	**.23822**	**.23983**	**1.9373**	**23.730**	**.47757**	**4.8010**	**.23593**
Stddev	.00096	.00159	.00229	.0227	.071	.00310	.0691	.00262
%RSD	1.0064	.66879	.95466	1.1728	.29989	.64840	1.4388	1.1121
#1	.09607	.23863	.24173	1.9596	23.812	.48067	4.8400	.23535
#2	.09629	.23646	.24047	1.9382	23.696	.47757	4.8416	.23364
#3	.09452	.23957	.23728	1.9142	23.682	.47448	4.7212	.23879
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47978**	**23.810**	**.23736**	**4.5585**	**.23890**	**.55949**	**.17439**	**2.3106**
Stddev	.00418	.100	.00211	.0283	.00225	.00355	.00287	.0089
%RSD	.87213	.42029	.88798	.61984	.94146	.63538	1.6480	.38305
#1	.48154	23.848	.23915	4.5730	.24145	.56211	.17219	2.3116
#2	.48280	23.697	.23790	4.5765	.23721	.56091	.17334	2.3189
#3	.47501	23.886	.23504	4.5259	.23804	.55544	.17764	2.3013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: LCSW 9A Acquired: 7/1/2016 17:27:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47674**	**.48246**	**.48100**	**.23650**	**.47155**	**.47082**	**-.01548**
Stddev	.00663	.00269	.00217	.00143	.00292	.00403	.03913
%RSD	1.3900	.55685	.45177	.60633	.61987	.85561	252.79
#1	.47943	.48459	.47932	.23600	.47284	.47362	-.04955
#2	.48160	.47944	.48345	.23811	.46820	.47265	-.02415
#3	.46919	.48334	.48022	.23538	.47361	.46620	.02726
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9106.7**	**55409.**	**2480.8**
Stddev	20.2	222.	14.4
%RSD	.22203	.39977	.57973
#1	9086.4	55204.	2464.3
#2	9106.8	55644.	2487.7
#3	9126.9	55379.	2490.5

Approved: July 02, 2016

Sample Name: L1606149601 Acquired: 7/1/2016 17:31:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	.03252	.00155	.04281	.08095	.00004	149.76	.00388
Stddev	.00111	.00219	.00361	.00095	.00084	.00008	.86	.00019
%RSD	144.98	6.7420	232.22	2.2137	1.0366	193.81	.57423	4.9608
#1	.00156	.03000	.00357	.04302	.08175	-.00003	149.89	.00369
#2	-.00050	.03357	.00371	.04177	.08007	.00003	150.55	.00407
#3	.00122	.03398	-.00261	.04363	.08102	.00013	148.84	.00389
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.00139	.08315	-.00533	2.4937	.00305	2.1412	.13764
Stddev	.00037	.00068	.00274	.00269	.0303	.00456	.0577	.00076
%RSD	103.02	48.874	3.2961	50.467	1.2152	149.65	2.6953	.55300
#1	-.00007	.00135	.08417	-.00795	2.5110	.00010	2.1733	.13729
#2	.00054	.00073	.08523	-.00545	2.4587	.00075	2.0746	.13712
#3	.00059	.00209	.08004	-.00258	2.5113	.00830	2.1758	.13852
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	3.7838	.00176	.48657	.04050	.00220	-.00445	.67690
Stddev	.00023	.0208	.00061	.00723	.00254	.00230	.00878	.01385
%RSD	280.24	.55090	34.655	1.4859	6.2808	104.64	197.17	2.0468
#1	-.00018	3.7869	.00244	.48959	.04283	.00473	-.01079	.68446
#2	.00021	3.8029	.00126	.49180	.04089	.00024	-.00814	.68534
#3	.00021	3.7616	.00158	.47832	.03779	.00162	.00557	.66091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: L1606149601 Acquired: 7/1/2016 17:31:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.33249	-.01835	-.00434	-.00009	.15147	-.02552
Stddev	.00029	.00188	.00756	.00096	.00047	.00547	.01284
%RSD	87.680	.56572	41.232	22.046	492.72	3.6098	50.297
#1	.00000	.33159	-.01687	-.00360	-.00031	.15444	-.01070
#2	.00045	.33465	-.01163	-.00542	-.00041	.15480	-.03320
#3	.00055	.33122	-.02654	-.00399	.00044	.14516	-.03266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9105.0	55191.	2528.8
Stddev	12.9	133.	21.5
%RSD	.14216	.24054	.85064
#1	9113.1	55061.	2515.4
#2	9111.9	55326.	2517.3
#3	9090.1	55187.	2553.6

Approved: July 02, 2016

Sample Name: L1606149601S Acquired: 7/1/2016 17:34:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-09

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20686**	**4.8373**	**.19895**	**.97881**	**.56398**	**.02376**	**147.13**	**.02794**
Stddev	.00261	.0108	.00170	.00245	.00295	.00008	.81	.00008
%RSD	1.2620	.22269	.85437	.25014	.52226	.34212	.54928	.27810
#1	.20781	4.8250	.20091	.98130	.56715	.02368	148.06	.02785
#2	.20391	4.8420	.19803	.97640	.56132	.02384	146.58	.02800
#3	.20887	4.8450	.19790	.97872	.56347	.02375	146.76	.02796
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09682**	**.24004**	**.31828**	**1.9683**	**26.553**	**.50241**	**6.7234**	**.37480**
Stddev	.00029	.00131	.00074	.0516	.092	.00324	.0831	.00342
%RSD	.29731	.54650	.23183	2.6212	.34479	.64395	1.2365	.91181
#1	.09661	.23918	.31904	2.0264	26.502	.50506	6.8126	.37659
#2	.09715	.24155	.31824	1.9279	26.499	.50337	6.7095	.37086
#3	.09670	.23940	.31756	1.9506	26.659	.49880	6.6480	.37695
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49720**	**27.980**	**.23957**	**5.3539**	**.27585**	**.58002**	**.18023**	**3.0819**
Stddev	.00166	.139	.00068	.0038	.00228	.00474	.00621	.0058
%RSD	.33378	.49838	.28484	.07102	.82476	.81748	3.4459	.18790
#1	.49775	28.141	.23880	5.3571	.27652	.58013	.17315	3.0865
#2	.49852	27.888	.24012	5.3548	.27772	.58470	.18478	3.0837
#3	.49534	27.911	.23978	5.3497	.27332	.57522	.18275	3.0754
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: L1606149601S Acquired: 7/1/2016 17:34:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-09

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48856**	**.79403**	**.46807**	**.24112**	**.48492**	**.61223**	**.00787**
Stddev	.00292	.00350	.00135	.00282	.00154	.00208	.03340
%RSD	.59762	.44072	.28902	1.1701	.31655	.33964	424.13
#1	.48823	.79804	.46867	.24003	.48405	.61344	-.03031
#2	.49164	.79163	.46902	.24433	.48401	.61343	.03165
#3	.48583	.79241	.46652	.23901	.48669	.60983	.02228
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8984.8**	**54766.**	**2503.0**
Stddev	25.2	85.	22.0
%RSD	.28022	.15446	.88081
#1	8956.7	54682.	2477.9
#2	8992.2	54851.	2519.5
#3	9005.4	54765.	2511.5

Approved: July 02, 2016

Sample Name: L1606149601SD Acquired: 7/1/2016 17:38:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-10

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21148**	**4.9339**	**.20189**	**.99761**	**.57725**	**.02436**	**156.35**	**.02872**
Stddev	.00055	.0043	.00083	.00153	.00191	.00012	.76	.00008
%RSD	.26241	.08765	.41300	.15294	.33020	.51217	.48406	.27202
#1	.21085	4.9298	.20093	.99595	.57943	.02429	157.14	.02862
#2	.21191	4.9334	.20240	.99895	.57647	.02450	155.63	.02876
#3	.21166	4.9384	.20235	.99793	.57586	.02428	156.30	.02876
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09808**	**.24519**	**.32637**	**1.9939**	**27.214**	**.50814**	**7.0502**	**.38428**
Stddev	.00056	.00084	.00024	.0222	.287	.00204	.1154	.00308
%RSD	.56829	.34207	.07329	1.1132	1.0558	.40169	1.6373	.80228
#1	.09870	.24497	.32618	2.0044	27.491	.50915	6.9774	.38776
#2	.09762	.24612	.32664	2.0089	26.917	.50579	6.9900	.38320
#3	.09791	.24449	.32629	1.9684	27.234	.50948	7.1833	.38189
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50346**	**28.477**	**.24217**	**5.4426**	**.28213**	**.59074**	**.18477**	**3.1558**
Stddev	.00041	.103	.00085	.0021	.00346	.00229	.00512	.0048
%RSD	.08114	.36275	.34895	.03938	1.2257	.38795	2.7692	.15122
#1	.50393	28.545	.24142	5.4451	.28577	.58867	.18017	3.1613
#2	.50330	28.358	.24200	5.4414	.28174	.59036	.18387	3.1532
#3	.50317	28.528	.24308	5.4414	.27889	.59321	.19028	3.1529
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: L1606149601SD Acquired: 7/1/2016 17:38:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574597-10

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49523**	**.82102**	**.47153**	**.24252**	**.49533**	**.62474**	**.00228**
Stddev	.00052	.00456	.01409	.00394	.00173	.00096	.00688
%RSD	.10589	.55552	2.9881	1.6239	.34991	.15304	302.04
#1	.49572	.82357	.46350	.24100	.49504	.62575	.00983
#2	.49530	.81576	.46330	.24699	.49376	.62385	.00062
#3	.49467	.82374	.48780	.23956	.49718	.62461	-.00362
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8977.8**	**54556.**	**2497.0**
Stddev	9.6	153.	8.8
%RSD	.10640	.28054	.35373
#1	8986.9	54455.	2488.0
#2	8967.8	54482.	2505.7
#3	8978.7	54732.	2497.3

Approved: July 02, 2016

L1606145802

Sample Name: L1606145801 Acquired: 7/1/2016 17:42:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00103**	**1.1397**	**.00124**	**.03295**	**.27286**	**.00011**	**24.822**	**.00018**
Stddev	.00071	.0058	.00099	.00271	.00263	.00005	.113	.00015
%RSD	68.985	.50496	79.787	8.2132	.96461	43.608	.45625	82.063
#1	-.00159	1.1446	.00012	.03294	.27579	.00008	24.944	.00002
#2	-.00126	1.1334	.00199	.03567	.27069	.00016	24.802	.00019
#3	-.00023	1.1412	.00161	.03025	.27210	.00008	24.720	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00057**	**.00440**	**.00828**	**1.5386**	**2.6048**	**.00143**	**5.7402**	**.08550**
Stddev	.00035	.00069	.00090	.0578	.0843	.00672	.1267	.00056
%RSD	61.736	15.584	10.909	3.7547	3.2381	468.68	2.2071	.65403
#1	.00047	.00413	.00868	1.5883	2.6969	-.00585	5.7711	.08599
#2	.00028	.00389	.00725	1.5522	2.5313	.00740	5.6009	.08489
#3	.00096	.00518	.00892	1.4752	2.5863	.00275	5.8485	.08562
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03706**	**12.184**	**.00441**	**.03049**	**.01439**	**-.00001**	**-.00841**	**2.4626**
Stddev	.00207	.063	.00075	.00356	.00173	.00486	.00362	.1076
%RSD	5.5821	.51576	17.010	11.681	11.992	56414.	43.040	4.3706
#1	.03847	12.231	.00393	.02761	.01269	.00558	-.00424	2.5265
#2	.03801	12.210	.00528	.02939	.01614	-.00319	-.01021	2.5230
#3	.03468	12.113	.00403	.03447	.01433	-.00242	-.01077	2.3384
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

L1606145802

Sample Name: L~~1606145801~~ Acquired: 7/1/2016 17:42:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00302**	**.12081**	**.01990**	**-.00120**	**.00253**	**.01635**	**.02868**
Stddev	.00034	.00062	.00789	.00092	.00037	.00086	.01415
%RSD	11.201	.51318	39.628	76.985	14.727	5.2725	49.340
#1	.00264	.12118	.02442	-.00050	.00295	.01675	.01710
#2	.00330	.12115	.01080	-.00085	.00244	.01694	.04446
#3	.00311	.12009	.02450	-.00224	.00222	.01536	.02449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9185.7**	**55621.**	**2507.0**
Stddev	11.1	20.	14.8
%RSD	.12073	.03607	.59204
#1	9197.2	55634.	2495.5
#2	9184.7	55598.	2501.9
#3	9175.1	55631.	2523.8

Approved: July 02, 2016

L1606145802PS

Sample Name: ~~L1606145801PS~~ Acquired: 7/1/2016 17:46:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574645-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20844	5.8628	.19870	.97024	.73434	.02404	27.371	.02438
Stddev	.00068	.0163	.00101	.00446	.00399	.00005	.125	.00032
%RSD	.32854	.27849	.50820	.45936	.54308	.22384	.45771	1.3212
#1	.20897	5.8468	.19890	.96565	.73856	.02409	27.474	.02469
#2	.20766	5.8621	.19960	.97455	.73064	.02404	27.232	.02439
#3	.20868	5.8794	.19761	.97051	.73383	.02398	27.408	.02405
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09979	.24733	.25133	3.4051	26.671	.49493	10.119	.31907
Stddev	.00035	.00182	.00118	.0241	.072	.00263	.070	.00062
%RSD	.35482	.73655	.46834	.70839	.27125	.53064	.69405	.19303
#1	.10016	.24752	.25139	3.4293	26.721	.49327	10.055	.31841
#2	.09974	.24905	.25012	3.4051	26.705	.49356	10.195	.31962
#3	.09946	.24542	.25248	3.3810	26.588	.49796	10.108	.31917
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53195	35.352	.24695	4.8438	.25699	.58699	.18044	4.7007
Stddev	.00043	.200	.00161	.0080	.00087	.00736	.00404	.0051
%RSD	.08143	.56682	.65321	.16538	.33967	1.2532	2.2414	.10872
#1	.53244	35.577	.24599	4.8345	.25786	.59431	.17734	4.7006
#2	.53183	35.193	.24882	4.8488	.25612	.57959	.17897	4.7060
#3	.53160	35.285	.24605	4.8480	.25699	.58709	.18502	4.6957
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: ~~L1606145801PS~~ Acquired: 7/1/2016 17:46:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574645-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49876**	**.60466**	**.50193**	**.24197**	**.49068**	**.49530**	**.08028**
Stddev	.00061	.00157	.00958	.00282	.00057	.00380	.04289
%RSD	.12317	.25983	1.9086	1.1652	.11687	.76639	53.431
#1	.49849	.60635	.51065	.23877	.49133	.49956	.09093
#2	.49947	.60437	.50347	.24407	.49046	.49228	.11685
#3	.49834	.60324	.49167	.24308	.49025	.49407	.03307
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9058.1**	**54864.**	**2494.5**
Stddev	24.1	175.	12.9
%RSD	.26563	.31972	.51637
#1	9030.8	55014.	2482.7
#2	9076.3	54671.	2508.3
#3	9067.1	54907.	2492.4

Approved: July 02, 2016

L1606145802SDL

Sample Name: ~~L1606145801SDL~~ Acquired: 7/1/2016 17:49:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574645-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00035**	**.27892**	**-.00121**	**.01102**	**.05826**	**.00004**	**5.3379**	**.00018**
Stddev	.00147	.00085	.00307	.00309	.00153	.00003	.1456	.00041
%RSD	417.77	.30354	253.85	28.028	2.6234	74.068	2.7282	221.49
#1	-.00205	.27941	-.00442	.00876	.05663	.00003	5.2162	.00049
#2	.00044	.27794	.00169	.00976	.05850	.00008	5.2984	.00033
#3	.00055	.27940	-.00089	.01454	.05966	.00002	5.4992	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**.00102**	**.00229**	**.30678**	**.76509**	**-.00097**	**1.2314**	**.01956**
Stddev	.00024	.00028	.00070	.00518	.06807	.00108	.0615	.00076
%RSD	56.783	27.510	30.652	1.6883	8.8966	111.03	4.9929	3.9062
#1	.00067	.00134	.00211	.31239	.83028	-.00153	1.1630	.02012
#2	.00021	.00079	.00169	.30219	.69447	.00027	1.2821	.01869
#3	.00037	.00094	.00306	.30575	.77050	-.00164	1.2491	.01987
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00966**	**2.6503**	**.00146**	**.00487**	**.00412**	**-.00085**	**-.00352**	**.64184**
Stddev	.00067	.0661	.00039	.00218	.00110	.00482	.01010	.00921
%RSD	6.9495	2.4926	26.769	44.696	26.777	569.51	287.26	1.4351
#1	.01029	2.5809	.00174	.00701	.00301	-.00439	-.00029	.64094
#2	.00975	2.6574	.00162	.00493	.00414	-.00278	-.01484	.65147
#3	.00895	2.7125	.00101	.00266	.00522	.00464	.00458	.63312
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: ~~L1606145801SDL~~ Acquired: 7/1/2016 17:49:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574645-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00044**	**.02547**	**.00418**	**-.00420**	**.00037**	**.00464**	**-.00021**
Stddev	.00065	.00103	.00621	.00186	.00039	.00017	.05844
%RSD	146.02	4.0316	148.58	44.386	106.90	3.6220	28077.
#1	.00004	.02429	-.00029	-.00216	.00076	.00466	.06599
#2	.00010	.02614	.01128	-.00581	.00038	.00447	-.04465
#3	.00119	.02599	.00156	-.00462	-.00003	.00480	-.02197
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8979.3**	**54453.**	**2415.6**
Stddev	6.8	51.	10.4
%RSD	.07548	.09416	.43179
#1	8971.5	54428.	2427.5
#2	8982.4	54512.	2407.9
#3	8983.9	54419.	2411.4

Approved: July 02, 2016

L1606145802SDL

Sample Name: ~~L1606145801SD~~L Acquired: 7/1/2016 17:53:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574645-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00217**	**.05026**	**.00214**	**.00204**	**.00944**	**.00007**	**.87112**
Stddev	.00234	.00189	.00100	.00106	.00072	.00002	.00451
%RSD	108.10	3.7599	46.551	52.010	7.6479	33.051	.51817
#1	-.00356	.05105	.00100	.00126	.00956	.00005	.86751
#2	.00054	.05162	.00261	.00324	.00866	.00009	.86967
#3	-.00347	.04810	.00282	.00161	.01009	.00007	.87618
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**.00010**	**.00014**	**.00036**	**.01323**	**.23028**	**-.00338**
Stddev	.00024	.00045	.00047	.00068	.05115	.11643	.00069
%RSD	309.95	464.19	326.38	189.06	386.69	50.560	20.398
#1	-.00032	.00023	-.00009	.00038	-.04238	.13364	-.00262
#2	.00016	-.00041	.00068	-.00033	.02378	.35954	-.00354
#3	-.00008	.00047	-.00016	.00103	.05828	.19765	-.00397
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.25089**	**.00594**	**.00165**	**.44320**	**.00044**	**.00460**	**.00287**
Stddev	.06873	.00305	.00008	.02907	.00108	.00529	.00229
%RSD	27.394	51.309	4.5992	6.5592	244.11	114.98	79.742
#1	.17335	.00262	.00160	.41170	-.00058	.01003	.00426
#2	.30428	.00658	.00174	.46900	.00157	-.00055	.00023
#3	.27505	.00860	.00162	.44891	.00033	.00433	.00413
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 02, 2016

Sample Name: ~~L1606145801SDL~~ Acquired: 7/1/2016 17:53:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574645-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00250**	**-.00334**	**.09023**	**-.00013**	**.00397**	**.00071**	**-.00270**
Stddev	.00229	.00120	.00360	.00010	.00016	.00512	.00149
%RSD	91.597	35.998	3.9927	77.955	3.9708	721.61	55.187
#1	.00435	-.00305	.09274	-.00025	.00415	-.00444	-.00214
#2	.00322	-.00465	.09184	-.00006	.00386	.00076	-.00438
#3	-.00006	-.00230	.08610	-.00008	.00391	.00580	-.00157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00017**	**.00112**	F **-.04240**
Stddev	.00038	.00007	.01724
%RSD	222.20	6.2064	40.653
#1	.00056	.00107	-.03801
#2	.00017	.00120	-.06141
#3	-.00021	.00109	-.02778
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9298.3**	**56448.**	**2504.8**
Stddev	58.7	81.	10.8
%RSD	.63154	.14301	.42948
#1	9343.2	56356.	2503.2
#2	9319.8	56505.	2516.3
#3	9231.8	56484.	2495.0

Approved: July 02, 2016

Sample Name: CCV Acquired: 7/1/2016 17:57:28 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .44084	10.256	.40115	.50587	1.0387	.05092	10.312
Stddev	.00351	.037	.00459	.00145	.0043	.00006	.130
%RSD	.79691	.36184	1.1443	.28667	.40986	.10979	1.2593
#1	.44373	10.295	.40468	.50736	1.0396	.05098	10.267
#2	.44185	10.253	.40282	.50578	1.0341	.05091	10.210
#3	.43693	10.221	.39596	.50446	1.0425	.05087	10.458
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	.40000						
Range	10.000%						

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05029	.20202	.51320	.50335	4.2247	51.663	1.0266
Stddev	.00087	.00250	.00210	.00563	.0398	.064	.0029
%RSD	1.7277	1.2398	.40970	1.1188	.94282	.12433	.28255
#1	.05115	.20446	.51411	.50898	4.1813	51.726	1.0235
#2	.05030	.20213	.51470	.50334	4.2596	51.667	1.0292
#3	.04941	.19946	.51080	.49772	4.2332	51.597	1.0271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.475	.52036	1.0006	51.500	.49778	9.9034	.49930
Stddev	.015	.00504	.0129	.175	.00585	.1185	.00972
%RSD	.14751	.96763	1.2903	.33970	1.1756	1.1962	1.9464
#1	10.458	.51808	1.0130	51.483	.50314	10.017	.51043
#2	10.480	.51687	1.0014	51.334	.49866	9.9133	.49496
#3	10.487	.52613	.98726	51.682	.49154	9.7803	.49250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: July 02, 2016

Sample Name: CCV Acquired: 7/1/2016 17:57:28 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1855**	**.39528**	**4.8274**	**1.0043**	**1.0367**	**1.0389**	**.50372**
Stddev	.0119	.00713	.0604	.0138	.0048	.0136	.00611
%RSD	1.0057	1.8039	1.2519	1.3769	.46697	1.3074	1.2128
#1	1.1942	.40119	4.8862	1.0165	1.0375	1.0276	.51058
#2	1.1904	.39729	4.8307	1.0073	1.0315	1.0353	.50172
#3	1.1719	.38736	4.7655	.98928	1.0411	1.0540	.49887
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0255**	**.99372**	F **.71618**
Stddev	.0048	.01271	.04537
%RSD	.46928	1.2790	6.3346
#1	1.0292	1.0061	.69510
#2	1.0273	.99438	.76825
#3	1.0201	.98070	.68518
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9020.3**	**52924.**	**2376.0**
Stddev	95.5	308.	9.3
%RSD	1.0586	.58144	.39046
#1	8933.8	52750.	2369.9
#2	9004.3	52743.	2386.7
#3	9122.7	53280.	2371.4

Approved: July 02, 2016

Sample Name: CCB Acquired: 7/1/2016 18:01:06 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00193	.00429	.00087	.00337	-.00012	.00001	.00137	.00007
Stddev	.00362	.00485	.00381	.00342	.00113	.00007	.02493	.00025
%RSD	187.44	113.18	435.51	101.47	939.23	863.65	1819.1	341.72
#1	-.00103	-.00120	-.00212	-.00050	-.00030	-.00005	-.02443	.00031
#2	-.00591	.00800	.00516	.00598	-.00115	-.00001	.02533	-.00019
#3	.00115	.00607	-.00042	.00465	.00109	.00009	.00322	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.00007	.00002	-.05015	.28608	-.00179	.01225	-.00032
Stddev	.00012	.00053	.00029	.02485	.08211	.00211	.01314	.00175
%RSD	85.111	711.98	1494.8	49.540	28.703	117.53	107.32	549.83
#1	.00027	.00021	-.00023	-.04046	.37833	.00014	.00135	-.00031
#2	.00013	-.00051	.00033	-.03162	.22101	-.00404	.02685	-.00208
#3	.00003	.00053	-.00005	-.07839	.25888	-.00148	.00854	.00143
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.01597	.00097	.00113	.00068	.00138	-.00293	-.00009
Stddev	.00028	.01732	.00080	.00531	.00137	.00406	.00621	.00159
%RSD	232.28	108.43	82.529	470.50	200.62	294.92	212.10	1739.1
#1	.00041	.01391	.00024	.00648	-.00072	.00296	-.00947	.00167
#2	.00010	.03423	.00183	-.00413	.00075	.00440	-.00220	-.00140
#3	-.00015	-.00022	.00085	.00103	.00202	-.00324	.00288	-.00055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: CCB Acquired: 7/1/2016 18:01:06 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**.00006**	**-.00344**	**-.00125**	**-.00020**	**.00027**	**-.02152**
Stddev	.00051	.00025	.00791	.00023	.00115	.00009	.00844
%RSD	740.06	418.16	230.11	18.748	569.77	31.027	39.234
#1	.00065	.00031	.00568	-.00098	-.00006	.00033	-.02816
#2	-.00026	.00004	-.00759	-.00136	-.00141	.00032	-.02436
#3	-.00019	-.00018	-.00841	-.00142	.00087	.00018	-.01202
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9362.7**	**56084.**	**2495.5**
Stddev	56.8	99.	19.8
%RSD	.60687	.17639	.79479
#1	9305.4	55975.	2502.5
#2	9363.7	56109.	2511.0
#3	9419.0	56168.	2473.2

Approved: July 02, 2016

Sample Name: ICSA Acquired: 7/1/2016 18:05:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00335**	**239.45**	**.00014**	**-.01758**	**-.00142**	**.00001**	**221.90**
Stddev	.00236	.28	.00137	.00096	.00108	.00004	2.71
%RSD	70.495	.11515	991.88	5.4603	76.368	681.89	1.2202
#1	-.00202	239.19	-.00032	-.01716	-.00140	-.00002	220.17
#2	-.00608	239.43	-.00094	-.01690	-.00251	-.00001	220.50
#3	-.00195	239.74	.00168	-.01868	-.00034	.00005	225.02
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00036**	**-.00091**	**-.00024**	F **.00639**	**89.946**	**.16604**	**.00470**
Stddev	.00045	.00052	.00056	.00141	.841	.08603	.00365
%RSD	127.33	57.108	234.88	22.010	.93528	51.813	77.595
#1	-.00053	-.00034	-.00064	.00607	89.373	.08459	.00856
#2	.00016	-.00137	.00040	.00793	89.553	.15751	.00424
#3	-.00069	-.00102	-.00049	.00517	90.912	.25601	.00131
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				.00400			
Low Limit				-.00400			

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**227.68**	**.00049**	**-.00050**	**.01370**	**.00146**	**.01227**	**-.00072**
Stddev	2.44	.00223	.00051	.02194	.00139	.00699	.00237
%RSD	1.0695	451.70	101.56	160.12	95.837	57.010	327.77
#1	226.08	.00249	-.00082	-.00476	-.00013	.00514	-.00299
#2	226.48	.00092	.00009	.00790	.00200	.01912	-.00092
#3	230.48	-.00192	-.00078	.03796	.00249	.01254	.00174
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 02, 2016

Sample Name: ICSA Acquired: 7/1/2016 18:05:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	-.00286	.00857	.00025	.00004	-.00426	-.00219
Stddev	.00277	.00754	.00207	.00087	.00057	.00246	.00213
%RSD	724.03	263.27	24.205	342.09	1381.2	57.836	97.118
#1	.00214	.00573	.01090	-.00050	-.00013	-.00663	-.00209
#2	.00182	-.00594	.00786	.00005	-.00043	-.00442	-.00012
#3	-.00281	-.00837	.00694	.00120	.00068	-.00172	-.00438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00258	-.00164	F -.43250
Stddev	.00071	.00029	.00609
%RSD	27.340	17.815	1.4070
#1	-.00271	-.00130	-.43188
#2	-.00322	-.00181	-.42674
#3	-.00182	-.00182	-.43887
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02000
Low Limit			-.02000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9119.1	54776.	2557.8
Stddev	4.8	280.	41.9
%RSD	.05290	.51137	1.6385
#1	9122.6	54666.	2570.8
#2	9121.1	55095.	2591.6
#3	9113.6	54568.	2510.9

Approved: July 02, 2016

Sample Name: ICSAB Acquired: 7/1/2016 18:08:55 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51287**	**246.43**	**.23909**	**-.01797**	**.22807**	**.22203**	**227.27**
Stddev	.00111	.41	.00121	.00231	.00029	.00025	.74
%RSD	.21683	.16669	.50651	12.865	.12803	.11112	.32616
#1	.51408	246.62	.23828	-.01563	.22839	.22195	226.99
#2	.51264	246.71	.24048	-.01804	.22782	.22231	226.70
#3	.51189	245.96	.23851	-.02025	.22802	.22184	228.11
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.45761**	**.22185**	**.22941**	**.23693**	**90.559**	**4.9313**	**.00535**
Stddev	.00014	.00046	.00074	.00152	.368	.1313	.00253
%RSD	.03150	.20624	.32326	.64153	.40627	2.6626	47.248
#1	.45746	.22145	.23024	.23754	90.135	4.8345	.00778
#2	.45762	.22235	.22880	.23805	90.754	5.0807	.00274
#3	.45774	.22174	.22920	.23520	90.788	4.8786	.00554
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**229.50**	**.22230**	**-.00074**	**4.8694**	**.44179**	**.07748**	**.45248**
Stddev	.63	.00397	.00059	.0492	.00162	.00409	.00125
%RSD	.27494	1.7853	80.489	1.0100	.36712	5.2800	.27610
#1	229.52	.22630	-.00141	4.8520	.43998	.07651	.45278
#2	228.86	.21836	-.00050	4.8313	.44312	.08197	.45110
#3	230.12	.22226	-.00030	4.9249	.44226	.07396	.45355
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 02, 2016

Sample Name: ICSAB Acquired: 7/1/2016 18:08:55 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.46320**	**.22998**	**.00915**	**.00078**	**-.00031**	**-.00717**	**.42695**
Stddev	.00194	.00403	.00041	.00057	.00035	.00170	.00315
%RSD	.41911	1.7513	4.5186	72.438	112.95	23.682	.73724
#1	.46476	.23325	.00946	.00120	-.00071	-.00755	.43041
#2	.46381	.22548	.00930	.00014	-.00008	-.00866	.42425
#3	.46102	.23121	.00868	.00102	-.00014	-.00532	.42620
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.23004**	**.44293**	F **-.43796**
Stddev	.00101	.00145	.03934
%RSD	.43841	.32748	8.9821
#1	.22941	.44145	-.44438
#2	.23120	.44435	-.39581
#3	.22951	.44297	-.47369
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02500
Low Limit			-.02500

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9115.7**	**54719.**	**2577.8**
Stddev	4.0	262.	7.2
%RSD	.04350	.47930	.27824
#1	9116.5	54573.	2571.7
#2	9119.2	54562.	2585.7
#3	9111.4	55022.	2575.9

Approved: July 02, 2016

Sample Name: CCV Acquired: 7/1/2016 18:12:38 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40233	9.3965	.37797	.46588	.93013	.04662	9.2956
Stddev	.00224	.0112	.00358	.00172	.00124	.00012	.0456
%RSD	.55669	.11956	.94706	.36922	.13330	.26684	.49045
#1	.40364	9.3937	.37385	.46601	.93120	.04649	9.3475
#2	.39974	9.3869	.37968	.46753	.93042	.04663	9.2772
#3	.40361	9.4089	.38037	.46410	.92877	.04674	9.2621
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04744	.19115	.46863	.47690	3.8017	46.982	.92688
Stddev	.00018	.00052	.00259	.00061	.0554	.158	.00509
%RSD	.37000	.27143	.55164	.12707	1.4585	.33573	.54873
#1	.04725	.19149	.46917	.47760	3.8312	46.854	.93116
#2	.04759	.19055	.47090	.47655	3.7377	47.158	.92824
#3	.04747	.19141	.46582	.47655	3.8361	46.933	.92126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.4712	.46675	.94593	46.403	.47271	9.3993	.47014
Stddev	.1030	.00409	.00215	.159	.00060	.0277	.00193
%RSD	1.0873	.87616	.22746	.34369	.12628	.29506	.40979
#1	9.5685	.47127	.94448	46.545	.47208	9.3837	.46796
#2	9.4819	.46332	.94841	46.432	.47279	9.4313	.47087
#3	9.3633	.46564	.94491	46.231	.47326	9.3828	.47160
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: July 02, 2016

Sample Name: CCV Acquired: 7/1/2016 18:12:38 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1238**	**.37761**	**4.5799**	**.94757**	**.92993**	**.92690**	**.47784**
Stddev	.0023	.00418	.0031	.00110	.00288	.00790	.00189
%RSD	.20217	1.1078	.06655	.11628	.31001	.85245	.39528
#1	1.1214	.37418	4.5827	.94707	.93274	.93602	.47995
#2	1.1259	.37638	4.5805	.94883	.93006	.92236	.47727
#3	1.1242	.38227	4.5766	.94681	.92698	.92231	.47631
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.93611**	**.94000**	F **.65188**
Stddev	.00228	.00124	.00751
%RSD	.24353	.13191	1.1525
#1	.93492	.93952	.65205
#2	.93466	.94141	.64428
#3	.93873	.93908	.65931
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9405.0**	**56624.**	**2561.0**
Stddev	13.8	26.	11.7
%RSD	.14652	.04626	.45665
#1	9404.1	56603.	2547.5
#2	9391.7	56616.	2568.2
#3	9419.2	56653.	2567.2

Approved: July 02, 2016

Sample Name: CCB Acquired: 7/1/2016 18:16:17 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00101**	**.01015**	**-.00041**	**.00326**	**-.00002**	**.00008**	**-.05279**	**-.00005**
Stddev	.00076	.00770	.00226	.00030	.00102	.00005	.00923	.00017
%RSD	76.073	75.834	557.61	9.2040	4251.5	59.525	17.475	309.96
#1	-.00115	.00482	.00067	.00352	.00105	.00012	-.05266	-.00017
#2	-.00169	.01897	.00112	.00334	-.00013	.00010	-.04364	.00014
#3	-.00018	.00665	-.00300	.00293	-.00099	.00003	-.06209	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.00090**	**.00013**	**.00380**	**.19971**	**-.00502**	**.02397**	**-.00095**
Stddev	.00008	.00035	.00135	.02518	.06932	.00229	.11357	.00040
%RSD	77.491	39.209	1068.1	662.44	34.711	45.697	473.88	41.458
#1	-.00003	.00122	.00097	.02188	.21365	-.00676	-.08752	-.00073
#2	-.00018	.00096	.00085	-.02496	.12448	-.00242	.13952	-.00141
#3	-.00008	.00052	-.00143	.01449	.26100	-.00587	.01990	-.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00012**	**-.00613**	**.00039**	**-.00034**	**-.00042**	**.00134**	**-.00141**	**-.00068**
Stddev	.00011	.02851	.00026	.00311	.00269	.00340	.00505	.00211
%RSD	99.271	465.24	67.624	909.98	634.26	252.82	357.53	309.86
#1	.00020	-.02538	.00067	.00263	.00240	-.00244	.00116	-.00047
#2	.00016	-.01963	.00016	-.00007	-.00297	.00414	.00184	-.00289
#3	-.00001	.02662	.00032	-.00358	-.00070	.00233	-.00723	.00131
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: CCB Acquired: 7/1/2016 18:16:17 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00066**	**-.00026**	**-.00040**	**-.00285**	**-.00023**	**.00007**	**-.01412**
Stddev	.00035	.00017	.00563	.00147	.00094	.00011	.03372
%RSD	53.252	65.926	1402.1	51.635	410.22	157.79	238.84
#1	.00106	-.00011	-.00675	-.00122	-.00056	.00019	-.03131
#2	.00042	-.00023	.00156	-.00325	-.00096	.00004	-.03578
#3	.00050	-.00045	.00399	-.00407	.00083	-.00002	.02474
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9463.7**	**57398.**	**2547.4**
Stddev	5.2	153.	6.9
%RSD	.05520	.26642	.26956
#1	9467.6	57245.	2539.8
#2	9465.7	57400.	2553.2
#3	9457.7	57550.	2549.2

Approved: July 02, 2016

Sample Name: LLCCV Acquired: 7/1/2016 18:20:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00729**	**.15634**	**.00768**	**.07424**	**.00656**	**.00153**	**.43190**	**.00093**
Stddev	.00206	.00251	.00097	.00099	.00054	.00008	.04897	.00021
%RSD	28.242	1.6074	12.648	1.3277	8.2637	5.5197	11.338	22.122
#1	.00727	.15897	.00810	.07332	.00669	.00145	.44936	.00078
#2	.00524	.15608	.00837	.07412	.00703	.00162	.46975	.00084
#3	.00936	.15396	.00657	.07528	.00597	.00151	.37660	.00117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00367**	**.00408**	**.00449**	**.06223**	**1.0425**	**.07185**	**.39225**	**.00761**
Stddev	.00019	.00050	.00075	.03086	.0829	.00260	.07813	.00200
%RSD	5.0644	12.323	16.686	49.591	7.9486	3.6140	19.919	26.290
#1	.00386	.00461	.00363	.09774	1.1178	.06891	.30371	.00561
#2	.00367	.00362	.00497	.04716	.95374	.07383	.45152	.00962
#3	.00349	.00401	.00488	.04181	1.0560	.07282	.42152	.00760
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00742**	**.40898**	**.01571**	**.73063**	**.00971**	**.07409**	**.01220**	**.71563**
Stddev	.00059	.00928	.00130	.01986	.00588	.00101	.00420	.01394
%RSD	7.9360	2.2698	8.2570	2.7181	60.500	1.3692	34.422	1.9485
#1	.00768	.41122	.01487	.74210	.01561	.07428	.01697	.72373
#2	.00784	.39878	.01720	.74209	.00386	.07299	.01053	.72365
#3	.00675	.41693	.01505	.70770	.00967	.07499	.00908	.69953
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 02, 2016

Sample Name: LLCCV Acquired: 7/1/2016 18:20:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v993) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38189**	**.03769**	**.02189**	**.14592**	**.00682**	**.01559**	**2.8235**
Stddev	.01277	.00022	.00169	.00374	.00088	.00070	.0055
%RSD	3.3449	.57212	7.7350	2.5664	12.910	4.4943	.19412
#1	.38966	.03769	.02115	.14798	.00768	.01581	2.8248
#2	.38887	.03748	.02070	.14818	.00685	.01615	2.8174
#3	.36715	.03791	.02383	.14160	.00592	.01481	2.8282
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9489.1**	**57497.**	**2562.0**
Stddev	29.7	211.	14.5
%RSD	.31348	.36740	.56572
#1	9522.7	57358.	2572.4
#2	9478.3	57740.	2568.0
#3	9466.2	57393.	2545.4

Approved: July 02, 2016

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.000090	0.054978	0.000000	1.000000
Al 308.215 {109}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.000726	0.008658	0.000000	1.000000
As 189.042 {478}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.000011	0.025290	0.000000	1.000000
B 249.678 {135}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.000097	0.025088	0.000000	1.000000
Ba 455.403 { 74}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.056022	2.203041	0.000000	1.000000
Be 313.107 {108}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.000475	1.073722	0.000000	1.000000
Ca 422.673 { 80}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.003067	0.044871	0.000000	1.000000
Cd 228.802 {447}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.000159	0.598146	0.000000	1.000000
Co 228.616 {447}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.000119	0.373840	0.000000	1.000000
Cr 267.716 {126}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.000216	0.065586	0.000000	1.000000
Cu 224.700 {450}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.000146	0.132310	0.000000	1.000000
Fe 261.187 {129}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.000215	0.022272	0.000000	1.000000
K 766.490 { 44}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.013881	0.073290	0.000000	1.000000
Li 670.784 { 50}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.022514	1.830799	0.000000	1.000000
Mg 279.079 {121}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.000222	0.008751	0.000000	1.000000
Mn 257.610 {131}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.000374	0.274882	0.000000	1.000000
Mo 202.030 {467}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.000008	0.189442	0.000000	1.000000
Na 589.592 { 57}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.061070	0.194853	0.000000	1.000000
Ni 231.604 {446}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.000582	0.139018	0.000000	1.000000
P 214.914 {457}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.000163	0.014579	0.000000	1.000000
Pb 220.353 {453}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.000812	0.064848	0.000000	1.000000
Sb 206.833 {463}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.000190	0.031630	0.000000	1.000000
Se 196.090 {472}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.000338	0.018191	0.000000	1.000000
Si 212.412 {459}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.000649	0.039906	0.000000	1.000000
Sn 189.989 {477}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.000015	0.073602	0.000000	1.000000
Sr 407.771 { 83}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.002405	3.565105	0.000000	1.000000
Ti 337.280 {100}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.002239	0.118308	0.000000	1.000000
Tl 190.856 {477}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.000380	0.030488	0.000000	1.000000
V 292.402 {115}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.000019	0.077582	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	0.000174	0.431759	0.000000	1.000000
Zr 339.198 { 99}	7/14/2016 12:17:50	7/14/2016 12:17:50	Linear	1/Conc	-0.006027	4.377591	0.000000	1.000000

Approved: July 16, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999635	0.000004	0.002083	0.006943	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999953	0.000005	0.009238	0.030795	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999836	0.000002	0.002994	0.009980	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999733	0.000003	0.002739	0.009131	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999972	0.000105	0.001135	0.003785	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999925	0.000004	0.000090	0.000299	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999805	0.000056	0.045625	0.152082	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999434	0.000007	0.000255	0.000850	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999934	0.000005	0.000392	0.001306	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999962	0.000002	0.001142	0.003806	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999904	0.000006	0.001299	0.004330	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999221	0.000022	0.030236	0.100786	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999940	0.000254	0.095451	0.318171	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999709	0.000433	0.003821	0.012737	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999966	0.000007	0.086381	0.287938	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999259	0.000034	0.002854	0.009512	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999985	0.000007	0.000412	0.001374	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999971	0.000474	0.033509	0.111696	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999978	0.000003	0.001116	0.003719	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999983	0.000005	0.006652	0.022173	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.998838	0.000010	0.003486	0.011619	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999850	0.000004	0.004214	0.014046	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.998889	0.000003	0.006099	0.020330	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999822	0.000024	0.002292	0.007639	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999970	0.000004	0.000849	0.002831	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999992	0.000090	0.000477	0.001589	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999887	0.000011	0.007758	0.025861	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999852	0.000002	0.002951	0.009837	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999971	0.000004	0.000932	0.003107	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999976	0.000019	0.000194	0.000647	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.999897	0.000399	0.000497	0.001657	OK.	1.000000	0.000000	1	0

Approved: July 16, 2016

Sample Name: S0 Acquired: 7/14/2016 11:58:59 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00009	.00073	-.00001	-.00010	.05602	.00047	.00307
Stddev	.00019	.00008	.00002	.00005	.00161	.00007	.00067
%RSD	210.06	10.455	185.29	49.405	2.8812	14.035	21.784
#1	.00013	.00072	-.00001	-.00009	.05433	.00040	.00230
#2	-.00021	.00081	-.00003	-.00015	.05621	.00049	.00348
#3	-.00018	.00066	.00001	-.00005	.05754	.00053	.00342

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00016	-.00012	.00022	.00015	-.00021	-.01387	-.02252
Stddev	.00012	.00012	.00005	.00005	.00056	.00297	.00367
%RSD	74.910	104.04	22.993	35.021	263.02	21.374	16.288
#1	-.00002	-.00026	.00016	.00010	-.00068	-.01088	-.02668
#2	-.00023	-.00009	.00024	.00013	-.00037	-.01681	-.01973
#3	-.00023	-.00002	.00025	.00020	.00041	-.01393	-.02116

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00022	.00038	.00001	-.06108	-.00058	-.00016	-.00081
Stddev	.00034	.00060	.00003	.00244	.00009	.00005	.00019
%RSD	151.73	160.15	321.53	3.9966	15.819	30.351	23.858
#1	.00012	-.00022	-.00000	-.06037	-.00057	-.00013	-.00061
#2	-.00023	.00036	.00004	-.05908	-.00068	-.00014	-.00100
#3	-.00055	.00099	-.00001	-.06380	-.00050	-.00022	-.00083

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00019	-.00034	.00065	.00001	.00240	-.00224	-.00038
Stddev	.00010	.00001	.00003	.00005	.00098	.00102	.00002
%RSD	52.529	4.3798	5.3665	347.08	40.865	45.623	5.5830
#1	.00008	-.00033	.00069	.00006	.00130	-.00235	-.00039
#2	.00027	-.00033	.00062	.00002	.00275	-.00320	-.00039
#3	.00022	-.00035	.00064	-.00004	.00317	-.00116	-.00036

Approved: July 16, 2016

Sample Name: S0 Acquired: 7/14/2016 11:58:59 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00002	.00017	-.00603
Stddev	.00010	.00005	.00159
%RSD	532.23	31.191	26.374
#1	.00013	.00014	-.00659
#2	-.00006	.00024	-.00423
#3	-.00001	.00015	-.00726
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10146.	59083.	2608.1
Stddev	33.	133.	3.5
%RSD	.32073	.22459	.13291
#1	10184.	59033.	2612.1
#2	10131.	59233.	2606.8
#3	10124.	58982.	2605.5

Approved: July 16, 2016

Sample Name: S1 Acquired: 7/14/2016 12:02:58 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00002	.00145	.07175	.00087	.00539	.00019	.00037
Stddev	.00002	.00001	.00036	.00005	.00151	.00018	.00013
%RSD	67.067	.78603	.49677	6.0419	28.072	93.785	35.479
#1	.00001	.00145	.07186	.00081	.00713	.00023	.00052
#2	.00004	.00144	.07136	.00090	.00470	.00035	.00032
#3	.00001	.00146	.07204	.00090	.00435	-.00000	.00027

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00047	.00057	.00003	.01104	.00103	.00139	.02687
Stddev	.00003	.00011	.00039	.00275	.00109	.00018	.00365
%RSD	7.0748	19.705	1561.4	24.872	105.86	12.664	13.586
#1	.00048	.00064	-.00042	.00920	.00000	.00154	.02869
#2	.00043	.00063	.00018	.00974	.00092	.00144	.02267
#3	.00050	.00044	.00032	.01420	.00217	.00120	.02925

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00009	.00089	-.00079	.00056	.00212	.00060	.03198
Stddev	.00014	.00010	.00009	.00010	.00015	.00007	.00195
%RSD	150.39	11.662	11.639	18.121	6.9890	12.404	6.1090
#1	-.00001	.00099	-.00080	.00065	.00225	.00066	.02999
#2	-.00002	.00088	-.00069	.00059	.00215	.00062	.03390
#3	-.00025	.00078	-.00087	.00045	.00196	.00052	.03205

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00152	.00058	.00340	.02671
Stddev	.00153	.00002	.00045	.00078
%RSD	100.50	3.9098	13.189	2.9187
#1	-.00260	.00056	.00369	.02647
#2	.00023	.00060	.00364	.02758
#3	-.00220	.00059	.00289	.02608

Approved: July 16, 2016

Sample Name: S1 Acquired: 7/14/2016 12:02:58 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10199.**	**59583.**	**2616.4**
Stddev	3.	113.	4.9
%RSD	.03154	.18926	.18723
#1	10198.	59453.	2615.1
#2	10202.	59656.	2612.2
#3	10196.	59640.	2621.8

Approved: July 16, 2016

Sample Name: S2 Acquired: 7/14/2016 12:06:56 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00017**	**.00229**	**.00011**	**.00016**	**.08980**	**.00149**	**.01014**
Stddev	.00003	.00003	.00007	.00004	.00737	.00005	.00118
%RSD	20.364	1.2987	60.531	26.923	8.2097	3.3393	11.618
#1	.00014	.00231	.00006	.00017	.08218	.00144	.00976
#2	.00020	.00226	.00009	.00020	.09033	.00148	.00919
#3	.00015	.00231	.00019	.00012	.09690	.00154	.01145

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00054**	**.00118**	**.00080**	**.00135**	**.00083**	**.03879**	**.01623**
Stddev	.00012	.00008	.00006	.00014	.00097	.00757	.00311
%RSD	23.164	6.9444	7.5106	10.193	116.76	19.514	19.162
#1	.00042	.00127	.00083	.00135	-.00028	.03008	.01266
#2	.00067	.00113	.00084	.00120	.00147	.04253	.01766
#3	.00053	.00113	.00073	.00148	.00129	.04377	.01836

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00130**	**.00160**	**.00315**	**.09973**	**.00051**	**.00225**	**-.00035**
Stddev	.00047	.00051	.00009	.00708	.00009	.00006	.00021
%RSD	35.945	31.748	2.9835	7.0966	16.941	2.6594	60.528
#1	.00144	.00212	.00318	.09207	.00058	.00223	-.00059
#2	.00167	.00110	.00305	.10110	.00041	.00232	-.00030
#3	.00077	.00158	.00323	.10602	.00054	.00220	-.00017

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00088**	**-.00030**	**.00401**	**.00131**	**.06045**	**-.00055**	**-.00011**
Stddev	.00007	.00002	.00008	.00001	.00636	.00072	.00003
%RSD	8.0754	5.8068	2.0733	.72540	10.520	131.79	25.280
#1	.00080	-.00031	.00407	.00132	.05314	-.00002	-.00009
#2	.00090	-.00028	.00392	.00131	.06470	-.00137	-.00014
#3	.00093	-.00031	.00406	.00131	.06352	-.00026	-.00009

Approved: July 16, 2016

Sample Name: S2 Acquired: 7/14/2016 12:06:56 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00133	.00762	.06496
Stddev	.00003	.00006	.00491
%RSD	2.3176	.76689	7.5621
#1	.00134	.00767	.05942
#2	.00129	.00764	.06671
#3	.00135	.00756	.06876
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9665.5	56421.	2606.9
Stddev	9.5	142.	145.0
%RSD	.09835	.25179	5.5635
#1	9676.5	56431.	2767.4
#2	9660.5	56274.	2568.1
#3	9659.6	56557.	2485.2

Approved: July 16, 2016

Sample Name: S3 Acquired: 7/14/2016 12:10:43 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.02184	.08752	.01000	.01228	2.2476	.05532	.44737	.03249
Stddev	.00003	.00025	.00022	.00008	.0142	.00014	.00350	.00081
%RSD	.13782	.28009	2.1521	.68206	.63198	.25076	.78215	2.4809
#1	.02182	.08770	.01013	.01236	2.2449	.05531	.44714	.03297
#2	.02188	.08724	.01011	.01219	2.2629	.05519	.45097	.03295
#3	.02182	.08763	.00975	.01228	2.2349	.05546	.44399	.03156

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.07472	.03290	.06683	.08945	3.6435	1.7919	.08765	.13775
Stddev	.00227	.00003	.00190	.00089	.0170	.0228	.00059	.00085
%RSD	3.0394	.10324	2.8463	.99201	.46579	1.2751	.67187	.62010
#1	.07591	.03293	.06806	.09047	3.6371	1.8168	.08833	.13794
#2	.07614	.03286	.06778	.08903	3.6627	1.7869	.08729	.13849
#3	.07210	.03290	.06464	.08885	3.6306	1.7720	.08734	.13681

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.18984	9.6336	.06871	.14355	.03167	.03718	.00698	.19579
Stddev	.00672	.0287	.00204	.00313	.00062	.00094	.00009	.00361
%RSD	3.5404	.29796	2.9671	2.1783	1.9728	2.5286	1.2817	1.8418
#1	.19390	9.6233	.06981	.14574	.03226	.03778	.00703	.19808
#2	.19353	9.6661	.06996	.14494	.03173	.03766	.00703	.19766
#3	.18208	9.6115	.06636	.13997	.03101	.03610	.00688	.19163

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.07354	3.5504	.11661	.01372	.07692	.43032	4.4581
Stddev	.00250	.0129	.00157	.00008	.00018	.01199	.0460
%RSD	3.4003	.36214	1.3473	.59054	.22773	2.7869	1.0308
#1	.07509	3.5474	.11568	.01375	.07692	.43740	4.4608
#2	.07487	3.5646	.11842	.01378	.07674	.43709	4.5027
#3	.07066	3.5394	.11572	.01362	.07709	.41648	4.4109

Approved: July 16, 2016

Sample Name: S3 Acquired: 7/14/2016 12:10:43 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10113.**	**58678.**	**2612.5**
Stddev	16.	202.	21.5
%RSD	.15673	.34362	.82166
#1	10104.	58732.	2614.6
#2	10105.	58847.	2590.0
#3	10131.	58455.	2632.8

Approved: July 16, 2016

Sample Name: S4 Acquired: 7/14/2016 12:14:19 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.04375	.17576	.02018	.02498	4.4769	.10976	.90627	.06497
Stddev	.00009	.00020	.00045	.00013	.0129	.00044	.00342	.00119
%RSD	.19555	.11328	2.2250	.51044	.28897	.39755	.37726	1.8257
#1	.04376	.17559	.02046	.02501	4.4637	.10945	.90283	.06549
#2	.04382	.17598	.02042	.02509	4.4896	.11026	.90966	.06581
#3	.04365	.17570	.01966	.02484	4.4776	.10958	.90633	.06362

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.14898	.06594	.13367	.17820	7.3325	3.6460	.17360	.27671
Stddev	.00375	.00017	.00320	.00045	.0190	.0073	.00162	.00178
%RSD	2.5186	.25861	2.3926	.25381	.25849	.20165	.93277	.64154
#1	.15095	.06589	.13537	.17772	7.3110	3.6375	.17178	.27502
#2	.15134	.06613	.13565	.17862	7.3396	3.6507	.17414	.27856
#3	.14465	.06580	.12998	.17826	7.3469	3.6498	.17489	.27656

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.37846	19.457	.13874	.28670	.06482	.07486	.01423	.40630
Stddev	.00977	.034	.00371	.00507	.00116	.00153	.00023	.00607
%RSD	2.5813	.17451	2.6752	1.7673	1.7893	2.0460	1.5926	1.4942
#1	.38387	19.419	.14065	.28913	.06511	.07563	.01434	.40918
#2	.38433	19.484	.14110	.29010	.06580	.07585	.01438	.41039
#3	.36718	19.469	.13446	.28088	.06354	.07309	.01397	.39932

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.14675	7.1481	.23379	.02737	.15525	.86428	8.6624
Stddev	.00417	.0196	.00207	.00030	.00050	.02107	.0311
%RSD	2.8434	.27344	.88575	1.0955	.32249	2.4384	.35911
#1	.14920	7.1257	.23144	.02740	.15505	.87643	8.6443
#2	.14913	7.1575	.23458	.02765	.15582	.87646	8.6983
#3	.14193	7.1612	.23534	.02705	.15488	.83994	8.6445

Approved: July 16, 2016

Sample Name: S4 Acquired: 7/14/2016 12:14:19 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9985.8**	**57666.**	**2610.5**
Stddev	22.9	256.	9.5
%RSD	.22950	.44447	.36475
#1	9962.1	57790.	2618.9
#2	9987.5	57836.	2612.3
#3	10008.	57371.	2600.1

Approved: July 16, 2016

Sample Name: ICV Acquired: 7/14/2016 12:17:56 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39916**	**9.9044**	**.39875**	**.49582**	**.98580**	**.05007**	**9.8368**	**.04976**
Stddev	.00127	.0242	.00904	.00044	.00643	.00012	.0162	.00139
%RSD	.31728	.24394	2.2680	.08819	.65218	.24106	.16430	2.7861
#1	.39821	9.9001	.40308	.49573	.97900	.05002	9.8249	.05082
#2	.39868	9.8826	.40482	.49544	.99178	.04998	9.8552	.05027
#3	.40060	9.9304	.38836	.49630	.98662	.05021	9.8303	.04819
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19958**	**.49555**	**.49704**	**3.9586**	**49.667**	**.99011**	**9.7795**	**.49668**
Stddev	.00643	.00030	.01443	.0300	.356	.00497	.0902	.00349
%RSD	3.2195	.06027	2.9035	.75670	.71716	.50204	.92213	.70201
#1	.20353	.49584	.50622	3.9931	49.297	.99403	9.7031	.49462
#2	.20305	.49557	.50449	3.9431	50.008	.99179	9.7563	.50071
#3	.19217	.49524	.48041	3.9395	49.695	.98452	9.8790	.49472
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99290**	**49.381**	**.49609**	**9.9800**	**.49510**	**1.1836**	**.40536**	**4.8641**
Stddev	.03309	.220	.01429	.2341	.00930	.0243	.00631	.0871
%RSD	3.3323	.44492	2.8807	2.3461	1.8794	2.0493	1.5557	1.7899
#1	1.0176	49.153	.50463	10.119	.50095	1.1975	.41264	4.9207
#2	1.0058	49.591	.50405	10.111	.49999	1.1978	.40150	4.9077
#3	.95531	49.400	.47959	9.7097	.48437	1.1556	.40194	4.7638
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: ICV Acquired: 7/14/2016 12:17:56 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99483**	**.98365**	**.98155**	**.50149**	**.99145**	**.99250**	**1.0046**
Stddev	.03487	.00508	.00899	.00315	.00235	.02760	.0065
%RSD	3.5050	.51612	.91561	.62741	.23697	2.7806	.64434
#1	1.0178	.97781	.97466	.50436	.99003	1.0093	.99709
#2	1.0120	.98700	.97827	.50197	.99015	1.0076	1.0083
#3	.95470	.98614	.99171	.49812	.99416	.96065	1.0083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10144.**	**58592.**	**2633.8**
Stddev	33.	28.	18.2
%RSD	.32593	.04817	.69189
#1	10108.	58625.	2652.9
#2	10152.	58572.	2616.6
#3	10173.	58580.	2631.8

Approved: July 16, 2016

Sample Name: ICB Acquired: 7/14/2016 12:21:33 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00046**	**.00069**	**-.00000**	**.00415**	**.00002**	**.00002**	**-.03169**	**.00003**
Stddev	.00066	.00496	.00111	.00100	.00071	.00002	.06486	.00008
%RSD	145.05	715.58	243600.	24.205	3121.0	92.313	204.70	277.67
#1	-.00121	.00102	-.00124	.00522	.00060	.00000	.02395	.00008
#2	-.00018	.00548	.00090	.00401	.00023	.00005	-.01607	-.00006
#3	.00002	-.00442	.00034	.00322	-.00077	.00003	-.10293	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00032**	**.00007**	**.00044**	**-.00341**	**.04719**	**.00442**	**-.03448**	**-.00333**
Stddev	.00038	.00098	.00074	.04090	.07336	.00355	.04733	.00325
%RSD	120.24	1493.8	168.50	1198.2	155.47	80.160	137.27	97.634
#1	-.00024	-.00101	-.00000	-.04100	.10796	.00845	.01722	-.00035
#2	.00002	.00090	.00129	.04015	.06791	.00179	-.07566	-.00679
#3	-.00073	.00031	.00002	-.00939	-.03431	.00303	-.04499	-.00284
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**.01951**	**-.00052**	**.00204**	**-.00209**	**.00255**	**-.00186**	**.00541**
Stddev	.00030	.02134	.00063	.00329	.00130	.00313	.00380	.00090
%RSD	324.08	109.37	120.99	160.93	62.541	122.71	203.87	16.580
#1	.00007	.00462	-.00064	-.00134	-.00058	.00558	-.00520	.00605
#2	-.00020	.00995	.00016	.00522	-.00289	-.00067	.00227	.00580
#3	.00040	.04396	-.00108	.00224	-.00279	.00274	-.00265	.00439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: ICB Acquired: 7/14/2016 12:21:33 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	.00021	-.00229	-.00010	-.00112	.00052	-.00018
Stddev	.00044	.00025	.01066	.00054	.00021	.00006	.00005
%RSD	56.829	120.30	465.46	554.79	18.848	12.036	29.794
#1	.00053	-.00007	-.01459	.00018	-.00098	.00045	-.00015
#2	.00128	.00041	.00366	.00025	-.00137	.00057	-.00016
#3	.00051	.00029	.00406	-.00072	-.00103	.00055	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10208.	59408.	2627.4
Stddev	29.	39.	10.9
%RSD	.28794	.06596	.41658
#1	10178.	59376.	2636.2
#2	10209.	59396.	2615.1
#3	10237.	59451.	2630.9

Approved: July 16, 2016

Sample Name: LLICV Acquired: 7/14/2016 12:25:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00801	.16056	.00772	.08082	.00812	.00155	.38268	.00092
Stddev	.00066	.01078	.00524	.00145	.00079	.00004	.01020	.00022
%RSD	8.2398	6.7169	67.856	1.7927	9.6814	2.8252	2.6662	23.566
#1	.00729	.14830	.01255	.08078	.00849	.00150	.37215	.00078
#2	.00818	.16480	.00846	.08229	.00722	.00158	.38337	.00117
#3	.00857	.16858	.00215	.07939	.00866	.00157	.39252	.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00381	.00457	.00345	.09019	.79243	.08368	.33444	.00637
Stddev	.00075	.00086	.00079	.00663	.04807	.00018	.11231	.00150
%RSD	19.646	18.893	22.965	7.3476	6.0662	.21416	33.583	23.619
#1	.00439	.00544	.00397	.08533	.80460	.08348	.29771	.00793
#2	.00408	.00455	.00254	.09774	.83325	.08374	.24508	.00493
#3	.00297	.00371	.00385	.08750	.73944	.08382	.46052	.00625
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00754	.43034	.01420	.74129	.00660	.07662	.01656	.72803
Stddev	.00080	.03411	.00205	.07234	.00062	.00597	.00108	.06547
%RSD	10.637	7.9253	14.468	9.7581	9.3569	7.7881	6.5210	8.9926
#1	.00830	.46884	.01613	.78449	.00700	.07852	.01742	.76990
#2	.00762	.41825	.01443	.78159	.00589	.08141	.01691	.76160
#3	.00670	.40393	.01204	.65778	.00692	.06994	.01535	.65258
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: LLICV Acquired: 7/14/2016 12:25:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38028**	**.04070**	**.03122**	**.14703**	**.00766**	**.01561**	**.04051**
Stddev	.04668	.00043	.00350	.01334	.00058	.00176	.00028
%RSD	12.276	1.0617	11.208	9.0757	7.6051	11.306	.68933
#1	.40961	.04096	.02868	.15251	.00735	.01662	.04032
#2	.40479	.04020	.03521	.15676	.00833	.01663	.04083
#3	.32644	.04094	.02977	.13181	.00730	.01357	.04037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10236.**	**59493.**	**2629.1**
Stddev	36.	53.	7.3
%RSD	.35109	.08833	.27667
#1	10227.	59544.	2635.9
#2	10205.	59439.	2621.5
#3	10275.	59495.	2629.8

Approved: July 16, 2016

Sample Name: LLICV Acquired: 7/14/2016 12:29:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02046**	**.40440**	**.02096**	**.19597**	**.02076**	**.00389**	**.97486**	**.00218**
Stddev	.00178	.00540	.00321	.00085	.00152	.00012	.03214	.00007
%RSD	8.7191	1.3354	15.312	.43158	7.3225	3.1173	3.2967	3.1653
#1	.02248	.39925	.02466	.19587	.02248	.00394	.98402	.00224
#2	.01909	.40391	.01907	.19518	.02019	.00376	1.0014	.00210
#3	.01982	.41002	.01914	.19686	.01961	.00399	.93914	.00219
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01022**	**.01029**	**.00962**	**.19185**	**1.9260**	**.19907**	**.95467**	**.01798**
Stddev	.00031	.00044	.00102	.01498	.0506	.00178	.07069	.00254
%RSD	3.0614	4.3176	10.614	7.8072	2.6283	.89590	7.4047	14.097
#1	.01027	.01004	.01054	.20819	1.9476	.19956	.95071	.01952
#2	.00989	.01002	.00979	.18856	1.8681	.19709	1.0273	.01937
#3	.01051	.01080	.00852	.17878	1.9622	.20056	.88604	.01506
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01943**	**1.0251**	**.03988**	**1.9258**	**.01796**	**.20123**	**.03731**	**1.8975**
Stddev	.00049	.0081	.00006	.0058	.00259	.00304	.00288	.0032
%RSD	2.5261	.78639	.15862	.30336	14.422	1.5085	7.7275	.17045
#1	.01895	1.0341	.03996	1.9227	.01956	.20473	.03826	1.9007
#2	.01942	1.0186	.03984	1.9326	.01934	.19956	.03961	1.8976
#3	.01993	1.0226	.03985	1.9222	.01497	.19939	.03408	1.8942
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: LLICV Acquired: 7/14/2016 12:29:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0143**	**.10031**	**.06148**	**.37673**	**.01872**	**.04161**	**.10056**
Stddev	.0026	.00064	.00479	.00086	.00017	.00006	.00083
%RSD	.25134	.63916	7.7960	.22701	.92152	.15197	.82242
#1	1.0170	.10092	.06640	.37579	.01884	.04167	.10080
#2	1.0140	.09964	.06122	.37746	.01852	.04161	.09964
#3	1.0119	.10036	.05682	.37695	.01879	.04155	.10124
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10246.**	**59854.**	**2639.7**
Stddev	25.	162.	9.7
%RSD	.23981	.27063	.36661
#1	10231.	60029.	2631.3
#2	10232.	59824.	2650.2
#3	10274.	59710.	2637.5

Approved: July 16, 2016

Sample Name: ICSA Acquired: 7/14/2016 12:33:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00352**	**268.21**	**.00132**	**-.01430**	**-.00014**	**-.00001**	**250.51**	**-.00027**
Stddev	.00171	.39	.00147	.00270	.00030	.00013	.97	.00017
%RSD	48.671	.14382	111.78	18.904	211.85	1475.1	.38717	64.091
#1	-.00273	267.82	.00277	-.01118	.00009	.00014	249.42	-.00015
#2	-.00234	268.22	.00135	-.01586	-.00003	-.00011	250.82	-.00046
#3	-.00548	268.59	-.00017	-.01587	-.00047	-.00007	251.29	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00131**	**-.00145**	**-.00251**	**99.133**	**-.02663**	**.00787**	**254.82**	**.00226**
Stddev	.00034	.00054	.01112	.349	.06423	.00149	.81	.00458
%RSD	25.893	37.260	443.61	.35175	241.20	18.981	.31849	202.37
#1	-.00104	-.00208	.00432	98.767	-.03428	.00759	253.89	.00029
#2	-.00119	-.00111	.00350	99.462	-.08669	.00949	255.26	.00750
#3	-.00169	-.00117	-.01534	99.170	.04108	.00654	255.33	-.00100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00062**	**.05520**	**-.00048**	**.00498**	**-.00036**	**-.00125**	**.00789**	**.03566**
Stddev	.00048	.01144	.00085	.00913	.00672	.00721	.00164	.00322
%RSD	77.513	20.720	175.28	183.40	1889.6	576.41	20.743	9.0419
#1	-.00101	.06840	-.00067	.01425	.00354	.00089	.00632	.03936
#2	-.00008	.04895	.00044	.00471	.00351	.00464	.00775	.03412
#3	-.00076	.04825	-.00122	-.00401	-.00812	-.00929	.00958	.03350
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: ICSA Acquired: 7/14/2016 12:33:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00123	.00079	-.01204	-.00145	-.00330	-.00618	-.00334
Stddev	.00094	.00062	.00619	.00307	.00081	.00026	.00026
%RSD	76.416	78.625	51.412	211.95	24.461	4.1417	7.8886
#1	.00015	.00070	-.01646	-.00485	-.00273	-.00595	-.00360
#2	.00173	.00144	-.00497	.00113	-.00294	-.00614	-.00334
#3	.00183	.00022	-.01469	-.00063	-.00422	-.00646	-.00308
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9564.1	55032.	2578.1
Stddev	8.0	57.	10.1
%RSD	.08404	.10400	.39196
#1	9573.3	55094.	2568.1
#2	9560.8	55022.	2588.3
#3	9558.3	54981.	2577.9

Approved: July 16, 2016

Sample Name: ICSAB Acquired: 7/14/2016 12:37:02 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51935	266.20	.25555	-.01844	.25489	.24607	249.00	.48809
Stddev	.00146	.04	.00540	.00081	.00174	.00013	.54	.01531
%RSD	.28065	.01371	2.1146	4.4042	.68219	.05127	.21847	3.1361
#1	.52024	266.16	.25582	-.01751	.25377	.24614	248.71	.49669
#2	.51767	266.22	.26082	-.01901	.25400	.24614	248.67	.49716
#3	.52015	266.23	.25002	-.01879	.25689	.24593	249.63	.47041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.23850	.25126	.25015	96.758	5.1663	.01221	248.97	.25158
Stddev	.00921	.00041	.01719	.198	.0803	.00405	1.14	.00060
%RSD	3.8619	.16289	6.8711	.20451	1.5547	33.190	.45597	.23775
#1	.24396	.25113	.26001	96.788	5.1507	.00759	248.75	.25156
#2	.24368	.25171	.26013	96.547	5.0949	.01515	247.96	.25098
#3	.22787	.25092	.23030	96.939	5.2533	.01389	250.20	.25218
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00078	5.3224	.48019	.08706	.49141	.49782	.25896	.01272
Stddev	.00042	.0112	.01851	.00797	.01542	.02690	.00595	.00154
%RSD	53.575	.21119	3.8542	9.1580	3.1382	5.4034	2.2991	12.143
#1	-.00126	5.3300	.49059	.09580	.50374	.50659	.25989	.01236
#2	-.00059	5.3095	.49116	.08519	.49637	.51924	.26439	.01441
#3	-.00049	5.3277	.45882	.08019	.47412	.46763	.25259	.01138
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: ICSAB Acquired: 7/14/2016 12:37:02 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.00059	-.01474	.45777	.25278	.47104	-.00342
Stddev	.00024	.00037	.00230	.01005	.00015	.01736	.00041
%RSD	25.813	62.694	15.615	2.1962	.05870	3.6855	12.087
#1	.00085	.00069	-.01684	.46101	.25261	.48084	-.00294
#2	.00076	.00018	-.01511	.46581	.25286	.48128	-.00371
#3	.00122	.00091	-.01228	.44650	.25287	.45099	-.00359
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9533.9	55010.	2550.3
Stddev	21.7	89.	2.0
%RSD	.22774	.16160	.07801
#1	9512.3	54952.	2548.5
#2	9533.7	55112.	2552.4
#3	9555.7	54966.	2549.9

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 12:40:32 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40238**	**9.8867**	**.40036**	**.49049**	**.99013**	**.04980**	**9.9286**	**.05000**
Stddev	.00148	.0081	.00874	.00168	.00465	.00010	.1044	.00113
%RSD	.36685	.08214	2.1832	.34260	.46945	.19665	1.0517	2.2636
#1	.40077	9.8812	.40304	.48920	.99204	.04975	9.9140	.05020
#2	.40367	9.8829	.40745	.48987	.99352	.04992	10.040	.05101
#3	.40270	9.8960	.39059	.49239	.98483	.04974	9.8322	.04878
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20108**	**.49572**	**.50095**	**3.9683**	**49.867**	**.99106**	**9.9766**	**.50269**
Stddev	.00629	.00154	.01284	.0290	.172	.00752	.0535	.00376
%RSD	3.1270	.30972	2.5637	.73039	.34559	.75891	.53662	.74729
#1	.20316	.49681	.50503	4.0017	49.951	.99884	9.9213	.49899
#2	.20606	.49637	.51126	3.9510	49.981	.99049	10.028	.50650
#3	.19401	.49396	.48656	3.9520	49.669	.98383	9.9804	.50258
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99796**	**49.503**	**.49773**	**10.015**	**.49955**	**1.1926**	**.40587**	**4.8726**
Stddev	.02275	.223	.01406	.204	.00908	.0266	.00592	.0851
%RSD	2.2794	.45040	2.8238	2.0344	1.8183	2.2276	1.4596	1.7466
#1	1.0027	49.640	.50153	10.054	.50243	1.2005	.40344	4.8797
#2	1.0180	49.623	.50949	10.197	.50684	1.2143	.41262	4.9540
#3	.97321	49.246	.48216	9.7950	.48937	1.1629	.40154	4.7842
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 12:40:32 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0005**	**.99100**	**.99102**	**.50480**	**.98756**	**.99587**	**1.0041**
Stddev	.0306	.00467	.00048	.00314	.00318	.02535	.0047
%RSD	3.0533	.47110	.04893	.62136	.32230	2.5457	.46601
#1	1.0120	.99267	.99158	.50466	.98820	1.0031	1.0094
#2	1.0237	.99460	.99076	.50801	.98411	1.0168	1.0024
#3	.96591	.98573	.99071	.50174	.99038	.96769	1.0006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10101.**	**58744.**	**2633.3**
Stddev	58.	89.	11.2
%RSD	.57499	.15080	.42587
#1	10167.	58762.	2620.5
#2	10078.	58822.	2637.9
#3	10058.	58647.	2641.5

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 12:44:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00378	-.00158	.00512	.00056	.00002	-.02572	.00022
Stddev	.00126	.00318	.00125	.00197	.00002	.00002	.01927	.00018
%RSD	1011.4	84.314	78.639	38.402	4.4181	86.513	74.934	81.598
#1	-.00120	.00280	-.00284	.00290	.00054	.00003	-.02358	.00041
#2	.00028	.00733	-.00156	.00582	.00057	.00004	-.04597	.00017
#3	.00130	.00119	-.00035	.00665	.00058	.00000	-.00761	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	.00132	-.00067	.01076	-.03728	.00303	-.01580	-.00042
Stddev	.00022	.00035	.00163	.02779	.06295	.00069	.10846	.00069
%RSD	104.52	26.753	244.12	258.26	168.84	22.805	686.61	163.49
#1	.00037	.00123	-.00030	-.01309	-.10766	.00288	.02300	-.00006
#2	.00030	.00171	.00075	.04127	-.01783	.00243	-.13832	.00001
#3	-.00004	.00103	-.00245	.00410	.01364	.00379	.06793	-.00122
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	.02743	-.00095	.00601	-.00340	.00104	-.00278	.00333
Stddev	.00043	.03496	.00127	.00109	.00147	.00092	.00286	.00024
%RSD	546.43	127.48	134.28	18.126	43.056	88.048	103.18	7.3358
#1	.00000	.04430	.00045	.00476	-.00479	.00153	-.00043	.00359
#2	.00031	-.01277	-.00204	.00671	-.00355	.00161	-.00597	.00330
#3	-.00054	.05075	-.00126	.00657	-.00187	-.00002	-.00193	.00310
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 12:44:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00019	-.00234	.00087	-.00097	-.00025	-.00001
Stddev	.00084	.00032	.00663	.00116	.00048	.00009	.00011
%RSD	266.28	168.80	283.33	132.65	49.744	38.367	1063.7
#1	.00006	.00006	-.00811	.00085	-.00061	-.00016	.00005
#2	.00125	-.00005	.00490	.00204	-.00152	-.00035	-.00014
#3	-.00037	.00055	-.00381	-.00027	-.00078	-.00024	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10161.	59298.	2623.8
Stddev	52.	195.	14.5
%RSD	.51553	.32854	.55092
#1	10137.	59080.	2613.6
#2	10125.	59455.	2640.4
#3	10221.	59358.	2617.6

Approved: July 16, 2016

Sample Name: PBW 96 Acquired: 7/14/2016 12:48:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575851-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00101**	**.02118**	**-.00173**	**.00664**	**-.00063**	**.00005**	**.02058**	**.00034**
Stddev	.00124	.01222	.00184	.00134	.00159	.00009	.01848	.00022
%RSD	122.28	57.695	106.41	20.126	251.86	176.10	89.799	65.325
#1	-.00226	.03501	-.00275	.00818	.00118	-.00005	.00270	.00008
#2	-.00098	.01184	-.00283	.00575	-.00178	.00011	.03960	.00046
#3	.00021	.01669	.00039	.00600	-.00129	.00008	.01943	.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**.00095**	**.00052**	**.03112**	**-.04723**	**.00148**	**-.01572**	**-.00029**
Stddev	.00020	.00046	.00075	.00728	.06974	.00180	.05242	.00445
%RSD	69.586	48.379	143.88	23.383	147.65	121.57	333.47	1552.0
#1	-.00020	.00081	.00115	.03907	-.12744	.00268	-.04647	.00356
#2	-.00014	.00058	.00073	.02480	-.01338	-.00059	.04481	-.00515
#3	-.00051	.00146	-.00031	.02948	-.00088	.00234	-.04550	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00025**	**-.00094**	**-.00032**	**.00552**	**-.00104**	**.00014**	**-.00642**	**.00416**
Stddev	.00020	.00881	.00086	.00329	.00232	.00290	.00342	.00028
%RSD	82.567	935.35	271.65	59.505	223.25	2034.3	53.297	6.8324
#1	.00043	-.01014	-.00112	.00633	.00100	.00054	-.01005	.00446
#2	.00003	-.00012	.00059	.00833	-.00357	-.00293	-.00325	.00413
#3	.00029	.00743	-.00041	.00191	-.00055	.00282	-.00596	.00390
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: PBW 96 Acquired: 7/14/2016 12:48:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1009) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575851-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.00116	-.00151	-.00126	-.00013	.00179	.00036
Stddev	.00052	.00041	.00824	.00228	.00092	.00025	.00065
%RSD	571.98	35.251	545.70	181.06	694.31	14.205	181.67
#1	-.00069	.00070	.00552	-.00264	-.00119	.00187	.00059
#2	.00020	.00147	.00053	-.00251	.00053	.00199	.00087
#3	.00022	.00132	-.01058	.00137	.00026	.00150	-.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10099.	59711.	2612.6
Stddev	91.	229.	8.2
%RSD	.89987	.38396	.31568
#1	10146.	59561.	2609.0
#2	10157.	59598.	2622.0
#3	9994.6	59975.	2606.7

Approved: July 16, 2016

Sample Name: LCSW 96 Acquired: 7/14/2016 12:55:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575851-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19901**	**4.9118**	**.19676**	**.95271**	**.50121**	**.02418**	**5.1433**	**.02451**
Stddev	.00070	.0213	.00187	.00514	.00368	.00011	.0819	.00034
%RSD	.35148	.43319	.94827	.54001	.73371	.45747	1.5920	1.3726
#1	.19910	4.9253	.19761	.95756	.50321	.02430	5.0874	.02481
#2	.19828	4.9228	.19805	.95325	.50345	.02418	5.2373	.02457
#3	.19967	4.8873	.19462	.94731	.49697	.02408	5.1052	.02414
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09928**	**.24602**	**.24915**	**1.9977**	**24.597**	**.50418**	**4.9673**	**.25253**
Stddev	.00287	.00203	.00600	.0334	.115	.00280	.0931	.00570
%RSD	2.8920	.82342	2.4069	1.6738	.46897	.55517	1.8753	2.2579
#1	.10073	.24636	.25379	2.0197	24.637	.50627	5.0686	.24888
#2	.10114	.24785	.25128	1.9592	24.467	.50527	4.8854	.24960
#3	.09597	.24384	.24238	2.0141	24.687	.50100	4.9480	.25910
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50146**	**24.812**	**.24914**	**4.7840**	**.24748**	**.58682**	**.18364**	**2.4233**
Stddev	.01118	.101	.00643	.0903	.00300	.01558	.00353	.0295
%RSD	2.2296	.40523	2.5807	1.8867	1.2110	2.6548	1.9205	1.2165
#1	.50790	24.911	.25356	4.8339	.25081	.59773	.18228	2.4432
#2	.50794	24.814	.25210	4.8384	.24499	.59375	.18764	2.4373
#3	.48855	24.710	.24177	4.6799	.24664	.56898	.18099	2.3894
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: LCSW 96 Acquired: 7/14/2016 12:55:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575851-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49639	.50926	.49701	.24847	.49343	.49269	.52077
Stddev	.01104	.00139	.01620	.00025	.00073	.01058	.00534
%RSD	2.2247	.27241	3.2596	.09945	.14801	2.1478	1.0251
#1	.50341	.51070	.50549	.24875	.49406	.49849	.52650
#2	.50210	.50793	.50721	.24837	.49263	.49911	.51593
#3	.48366	.50914	.47833	.24828	.49359	.48048	.51990
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10033.	58482.	2596.2
Stddev	17.	224.	25.4
%RSD	.16614	.38323	.97644
#1	10020.	58368.	2567.8
#2	10026.	58337.	2616.5
#3	10051.	58740.	2604.2

Approved: July 16, 2016

Sample Name: L1607000101 Acquired: 7/14/2016 12:59:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00362	.08134	.00334	.04281	.00297	.00084	.19444	.00062
Stddev	.00163	.01069	.00072	.00142	.00076	.00001	.03650	.00004
%RSD	45.144	13.141	21.568	3.3277	25.614	.87250	18.769	7.1566
#1	.00346	.08525	.00378	.04348	.00358	.00083	.16630	.00060
#2	.00207	.08952	.00374	.04117	.00212	.00085	.23568	.00059
#3	.00533	.06924	.00251	.04376	.00322	.00085	.18135	.00067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00177	.00173	.00141	.02885	.41855	.04169	.16030	.00436
Stddev	.00057	.00082	.00112	.00578	.08108	.00472	.06384	.00079
%RSD	32.534	47.098	79.188	20.024	19.372	11.322	39.823	18.135
#1	.00229	.00084	.00094	.03549	.36110	.03624	.23048	.00364
#2	.00186	.00191	.00269	.02609	.38325	.04462	.14472	.00521
#3	.00115	.00244	.00061	.02497	.51130	.04420	.10569	.00424
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00382	.23448	.00688	.35769	.00040	.03771	.00204	.35876
Stddev	.00064	.00508	.00118	.03491	.00384	.00200	.00218	.03179
%RSD	16.789	2.1647	17.213	9.7585	959.30	5.2947	106.95	8.8619
#1	.00415	.23676	.00811	.37682	.00362	.03777	.00075	.38030
#2	.00423	.23802	.00679	.37885	-.00385	.03968	.00456	.37374
#3	.00308	.22867	.00574	.31740	.00143	.03568	.00081	.32224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607000101 Acquired: 7/14/2016 12:59:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18708**	**.02058**	**.00645**	**.06881**	**.00338**	**.00853**	**.02042**
Stddev	.02211	.00038	.00483	.00544	.00041	.00090	.00034
%RSD	11.819	1.8236	74.856	7.9060	12.030	10.604	1.6690
#1	.20186	.02088	.00142	.07187	.00336	.00910	.02061
#2	.19773	.02016	.01106	.07204	.00380	.00900	.02062
#3	.16166	.02071	.00688	.06253	.00298	.00749	.02002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10107.**	**59785.**	**2611.1**
Stddev	66.	310.	14.4
%RSD	.65080	.51823	.55174
#1	10147.	59448.	2594.5
#2	10144.	59852.	2620.6
#3	10031.	60056.	2618.1

Approved: July 16, 2016

Sample Name: L1607000301 Acquired: 7/14/2016 13:03:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00707**	**.15479**	**.00656**	**.07574**	**.00715**	**.00154**	**.37229**	**.00094**
Stddev	.00119	.00291	.00112	.00155	.00056	.00008	.02330	.00014
%RSD	16.777	1.8829	17.106	2.0478	7.7978	5.2224	6.2594	15.006
#1	.00679	.15640	.00527	.07722	.00742	.00162	.34685	.00078
#2	.00605	.15143	.00727	.07413	.00651	.00155	.39261	.00103
#3	.00838	.15655	.00715	.07588	.00752	.00146	.37740	.00101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00366**	**.00448**	**.00347**	**.09037**	**.71712**	**.08126**	**.43194**	**.00865**
Stddev	.00038	.00082	.00126	.02534	.04015	.00137	.04733	.00071
%RSD	10.257	18.387	36.178	28.035	5.5985	1.6836	10.957	8.1670
#1	.00332	.00359	.00474	.08258	.68692	.08251	.42874	.00800
#2	.00407	.00464	.00347	.06985	.76268	.08147	.38629	.00855
#3	.00359	.00521	.00222	.11869	.70177	.07980	.48078	.00940
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00723**	**.41507**	**.01409**	**.69703**	**.00568**	**.07383**	**.01422**	**.70007**
Stddev	.00056	.04617	.00136	.04864	.00127	.00301	.00427	.04737
%RSD	7.7879	11.123	9.6615	6.9784	22.287	4.0745	30.025	6.7657
#1	.00758	.39998	.01379	.72869	.00703	.07668	.01113	.72769
#2	.00753	.46690	.01558	.72138	.00552	.07412	.01243	.72715
#3	.00658	.37834	.01291	.64103	.00451	.07068	.01909	.64538
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607000301 Acquired: 7/14/2016 13:03:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.36737**	**.03935**	**.02892**	**.13781**	**.00661**	**.01544**	**.03915**
Stddev	.03417	.00040	.00233	.00842	.00120	.00148	.00064
%RSD	9.3000	1.0108	8.0718	6.1090	18.228	9.5855	1.6394
#1	.38939	.03951	.03042	.14332	.00658	.01631	.03969
#2	.38471	.03964	.03011	.14200	.00542	.01627	.03933
#3	.32801	.03889	.02623	.12812	.00782	.01373	.03844
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10132.**	**59900.**	**2603.5**
Stddev	59.	116.	19.3
%RSD	.58657	.19426	.73979
#1	10166.	59883.	2591.7
#2	10168.	59792.	2593.1
#3	10064.	60023.	2625.7

Approved: July 16, 2016

Sample Name: L1607000309 Acquired: 7/14/2016 13:07:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00868	.15826	.00443	.07648	.00740	.00150	.34773	.00107
Stddev	.00126	.00317	.00212	.00046	.00042	.00007	.03651	.00020
%RSD	14.498	2.0033	47.871	.60112	5.7225	4.5237	10.500	18.954
#1	.00996	.16192	.00488	.07620	.00777	.00158	.36220	.00115
#2	.00745	.15659	.00629	.07701	.00751	.00146	.37479	.00121
#3	.00863	.15627	.00212	.07622	.00694	.00146	.30620	.00084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00373	.00314	.00357	.07231	.74241	.08067	.36064	.00745
Stddev	.00004	.00036	.00192	.03185	.13652	.00269	.04648	.00094
%RSD	.99003	11.574	53.693	44.043	18.389	3.3365	12.888	12.656
#1	.00376	.00356	.00558	.08055	.89828	.07834	.35768	.00647
#2	.00369	.00289	.00338	.03716	.64408	.08005	.31571	.00755
#3	.00373	.00297	.00176	.09923	.68486	.08361	.40853	.00835
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00735	.39509	.01308	.69376	.00719	.07399	.01335	.69759
Stddev	.00081	.02978	.00091	.04569	.00056	.00794	.00272	.04912
%RSD	10.975	7.5379	6.9624	6.5854	7.7531	10.727	20.384	7.0416
#1	.00776	.36388	.01370	.71707	.00708	.07846	.01358	.72385
#2	.00786	.42321	.01351	.72309	.00669	.07869	.01596	.72801
#3	.00642	.39819	.01204	.64112	.00779	.06483	.01053	.64092
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607000309 Acquired: 7/14/2016 13:07:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.36560**	**.03879**	**.01616**	**.13563**	**.00713**	**.01530**	**.03908**
Stddev	.03537	.00054	.00409	.01173	.00013	.00133	.00024
%RSD	9.6758	1.3812	25.309	8.6510	1.8900	8.6947	.60851
#1	.38717	.03835	.01978	.14187	.00698	.01618	.03884
#2	.38485	.03939	.01173	.14293	.00722	.01595	.03909
#3	.32477	.03863	.01699	.12210	.00720	.01377	.03932
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10142.**	**59652.**	**2619.1**
Stddev	46.	239.	8.3
%RSD	.45833	.40114	.31815
#1	10160.	59385.	2618.3
#2	10177.	59720.	2627.7
#3	10089.	59849.	2611.1

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 13:11:01 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39209**	**9.6626**	**.39114**	**.48329**	**.97702**	**.04869**	**9.7483**	**.04910**
Stddev	.00117	.0164	.00853	.00419	.00520	.00014	.0490	.00115
%RSD	.29857	.17019	2.1810	.86735	.53235	.28145	.50212	2.3516
#1	.39143	9.6761	.39643	.48489	.97600	.04877	9.7076	.04979
#2	.39344	9.6443	.39568	.47853	.97241	.04877	9.7348	.04974
#3	.39139	9.6675	.38130	.48644	.98266	.04853	9.8026	.04777
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19636**	**.48195**	**.48918**	**3.8704**	**49.159**	**.97872**	**9.6913**	**.49012**
Stddev	.00550	.00326	.01345	.0217	.316	.00125	.1868	.00223
%RSD	2.8035	.67697	2.7488	.55988	.64225	.12764	1.9276	.45503
#1	.19966	.48533	.49738	3.8782	48.931	.97934	9.4798	.49270
#2	.19941	.48170	.49649	3.8459	49.026	.97953	9.7607	.48892
#3	.19000	.47882	.47366	3.8871	49.519	.97728	9.8336	.48875
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.98297**	**49.093**	**.48923**	**9.8316**	**.48878**	**1.1703**	**.39633**	**4.7902**
Stddev	.02718	.329	.01389	.1991	.00674	.0280	.00932	.0793
%RSD	2.7652	.66928	2.8401	2.0255	1.3781	2.3934	2.3509	1.6560
#1	.99943	48.952	.49842	9.9532	.48993	1.1873	.39813	4.8379
#2	.99789	48.857	.49603	9.9399	.49486	1.1856	.40462	4.8340
#3	.95160	49.468	.47325	9.6018	.48154	1.1379	.38625	4.6986
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 13:11:01 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.97732	.97928	.98403	.49246	.96166	.97770	.99179
Stddev	.03254	.00666	.00644	.00304	.00129	.02521	.00506
%RSD	3.3290	.67989	.65458	.61636	.13367	2.5788	.51043
#1	.99711	.97762	.98058	.49444	.96295	.99264	.99618
#2	.99507	.97361	.98006	.49397	.96166	.99187	.98626
#3	.93977	.98661	.99147	.48897	.96038	.94859	.99294
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10322.	60008.	2667.2
Stddev	10.	181.	10.3
%RSD	.10067	.30161	.38796
#1	10311.	59931.	2656.0
#2	10331.	59879.	2676.5
#3	10325.	60215.	2669.1

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 13:14:36 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**.00198**	**.00150**	**.00266**	**-.00164**	**.00006**	**-.02969**	**.00019**
Stddev	.00056	.00466	.00337	.00239	.00071	.00007	.02380	.00021
%RSD	253.73	235.76	224.32	89.835	43.533	115.74	80.180	111.91
#1	-.00070	-.00212	-.00031	.00396	-.00101	.00015	-.02182	.00028
#2	.00039	.00704	.00539	-.00010	-.00242	.00000	-.05643	-.00005
#3	-.00035	.00101	-.00057	.00412	-.00149	.00004	-.01082	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00000**	**-.00043**	**-.00038**	**-.00988**	**.05401**	**.00572**	**-.04989**	**.00025**
Stddev	.00061	.00032	.00131	.02973	.06948	.00241	.07690	.00167
%RSD	51970.	74.651	341.38	301.09	128.65	42.238	154.12	666.11
#1	.00069	-.00014	-.00162	-.00470	.02679	.00832	-.12192	.00167
#2	-.00046	-.00037	.00099	.01693	.13298	.00527	.03109	-.00159
#3	-.00023	-.00077	-.00052	-.04186	.00226	.00355	-.05885	.00067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00020**	**.04110**	**-.00180**	**.00246**	**-.00211**	**-.00062**	**-.00155**	**.00121**
Stddev	.00008	.01575	.00105	.00671	.00069	.00258	.00339	.00099
%RSD	40.493	38.327	58.231	272.31	32.851	414.89	218.70	81.907
#1	.00024	.05834	-.00273	-.00395	-.00172	-.00314	-.00507	.00192
#2	.00026	.02745	-.00201	.00943	-.00169	-.00073	-.00127	.00163
#3	.00011	.03752	-.00066	.00191	-.00290	.00201	.00169	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 13:14:36 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	.00009	-.00125	.00226	-.00039	.00000	.00016
Stddev	.00013	.00030	.00536	.00136	.00044	.00009	.00011
%RSD	31.290	317.77	428.84	59.920	114.40	3153.2	67.014
#1	.00035	.00001	.00030	.00363	-.00026	-.00010	.00028
#2	.00058	.00042	.00316	.00091	-.00002	.00008	.00009
#3	.00035	-.00016	-.00722	.00225	-.00088	.00003	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10445.	60838.	2680.8
Stddev	96.	168.	1.4
%RSD	.91584	.27608	.05226
#1	10374.	61030.	2682.3
#2	10408.	60716.	2680.6
#3	10554.	60769.	2679.6

Approved: July 16, 2016

Sample Name: L1607029101 Acquired: 7/14/2016 13:18:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575851-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00084**	**.32642**	**-.00031**	**.01385**	**.02386**	**-.00001**	**51.815**	**.00026**
Stddev	.00038	.01098	.00257	.00055	.00201	.00008	.238	.00009
%RSD	45.770	3.3653	841.18	3.9542	8.4206	859.13	.45923	33.196
#1	-.00040	.33277	.00211	.01434	.02190	-.00009	51.644	.00018
#2	-.00109	.31373	-.00301	.01326	.02592	.00008	52.086	.00024
#3	-.00103	.33275	-.00001	.01394	.02375	-.00002	51.714	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.00149**	**.00101**	**.44480**	**1.2917**	**.01137**	**14.606**	**.00632**
Stddev	.00011	.00051	.00079	.01679	.0693	.00113	.093	.00282
%RSD	106.14	34.599	77.857	3.7744	5.3682	9.9059	.63949	44.622
#1	.00002	.00101	.00166	.42768	1.2650	.01032	14.498	.00315
#2	-.00014	.00142	.00124	.44547	1.3704	.01124	14.670	.00726
#3	-.00018	.00203	.00014	.46124	1.2397	.01256	14.648	.00856
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00149**	**5.1891**	**-.00024**	**.02482**	**-.00109**	**.00074**	**-.00359**	**4.3086**
Stddev	.00052	.0291	.00050	.00431	.00113	.00181	.00330	.3602
%RSD	34.981	.56144	210.90	17.378	104.00	243.49	91.772	8.3590
#1	.00117	5.1714	.00033	.02814	-.00124	.00278	-.00001	4.5415
#2	.00209	5.2228	-.00061	.02636	-.00213	-.00071	-.00426	4.4904
#3	.00120	5.1732	-.00043	.01994	.00011	.00017	-.00650	3.8937
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607029101 Acquired: 7/14/2016 13:18:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575851-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.12122	-.00724	-.00014	-.00027	.00565	.00090
Stddev	.00008	.00080	.00438	.00150	.00062	.00069	.00009
%RSD	143.72	.66213	60.516	1045.6	230.68	12.146	9.8070
#1	-.00003	.12118	-.00634	.00010	.00033	.00600	.00081
#2	.00007	.12205	-.00338	-.00175	-.00091	.00609	.00090
#3	.00012	.12044	-.01201	.00122	-.00022	.00486	.00099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10037.	58875.	2628.3
Stddev	49.	21.	31.5
%RSD	.49154	.03535	1.1971
#1	10051.	58852.	2624.5
#2	10078.	58882.	2598.9
#3	9982.5	58892.	2661.5

Approved: July 16, 2016

Sample Name: L1607029101S Acquired: 7/14/2016 13:22:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575851-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19676**	**5.1877**	**.19876**	**.96856**	**.52248**	**.02400**	**55.795**	**.02431**
Stddev	.00110	.0149	.00120	.00268	.00458	.00015	.296	.00051
%RSD	.55862	.28628	.60569	.27667	.87683	.62369	.53038	2.0985
#1	.19799	5.1824	.20014	.96567	.52598	.02416	55.740	.02471
#2	.19643	5.2045	.19817	.96906	.52417	.02388	56.115	.02448
#3	.19587	5.1762	.19795	.97096	.51730	.02395	55.531	.02374
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09761**	**.24516**	**.24487**	**2.4340**	**25.943**	**.51058**	**19.238**	**.25663**
Stddev	.00209	.00059	.00523	.0358	.153	.00378	.052	.00488
%RSD	2.1411	.23975	2.1344	1.4707	.58919	.74104	.27180	1.8997
#1	.09890	.24485	.24929	2.4746	26.015	.51246	19.294	.25256
#2	.09874	.24583	.24622	2.4070	26.047	.51306	19.226	.26203
#3	.09520	.24478	.23911	2.4203	25.767	.50623	19.192	.25529
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50326**	**29.765**	**.24405**	**4.9073**	**.24736**	**.58908**	**.18922**	**6.8713**
Stddev	.00914	.194	.00463	.0615	.00907	.01086	.00306	.1047
%RSD	1.8161	.65028	1.8987	1.2541	3.6674	1.8436	1.6162	1.5238
#1	.51063	29.831	.24714	4.9572	.25292	.59997	.19220	6.9543
#2	.50612	29.917	.24629	4.9261	.25227	.58901	.18609	6.9060
#3	.49303	29.547	.23872	4.8385	.23689	.57826	.18936	6.7537
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607029101S Acquired: 7/14/2016 13:22:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575851-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49668	.62528	.49611	.24735	.49079	.49133	.50130
Stddev	.01014	.00395	.00277	.00343	.00177	.01043	.00287
%RSD	2.0419	.63130	.55898	1.3849	.36098	2.1223	.57327
#1	.50375	.62567	.49368	.24510	.49281	.50026	.50396
#2	.50122	.62901	.49913	.25129	.48951	.49385	.50169
#3	.48506	.62115	.49552	.24565	.49004	.47987	.49825
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9986.4	58246.	2619.9
Stddev	29.6	163.	15.8
%RSD	.29604	.28057	.60173
#1	9956.3	58188.	2606.9
#2	10015.	58120.	2615.3
#3	9987.4	58431.	2637.4

Approved: July 16, 2016

Sample Name: L1607029101SD Acquired: 7/14/2016 13:26:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575851-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19520	5.1529	.19620	.96066	.51534	.02385	54.634	.02431
Stddev	.00106	.0057	.00430	.00358	.00473	.00003	.358	.00039
%RSD	.54478	.11047	2.1894	.37255	.91809	.14341	.65562	1.5843
#1	.19627	5.1488	.20113	.96004	.52007	.02381	55.048	.02444
#2	.19518	5.1506	.19418	.95743	.51534	.02386	54.445	.02462
#3	.19414	5.1594	.19329	.96451	.51060	.02388	54.410	.02388
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09666	.24347	.24263	2.4310	25.478	.50556	18.991	.25130
Stddev	.00197	.00059	.00414	.0194	.034	.00224	.197	.00176
%RSD	2.0423	.24173	1.7076	.79819	.13175	.44221	1.0354	.70138
#1	.09780	.24335	.24426	2.4518	25.507	.50784	19.218	.24962
#2	.09780	.24295	.24572	2.4276	25.442	.50547	18.884	.25314
#3	.09438	.24411	.23792	2.4134	25.486	.50337	18.871	.25115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49742	29.320	.24128	4.8467	.24222	.58007	.18473	6.8037
Stddev	.01044	.165	.00571	.0670	.00403	.01143	.00580	.0957
%RSD	2.0998	.56313	2.3661	1.3820	1.6626	1.9707	3.1404	1.4072
#1	.50316	29.508	.24583	4.8890	.24221	.58608	.18252	6.8648
#2	.50373	29.257	.24314	4.8816	.24625	.58725	.19132	6.8530
#3	.48536	29.196	.23488	4.7694	.23820	.56689	.18037	6.6934
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607029101SD Acquired: 7/14/2016 13:26:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575851-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49216	.61721	.48993	.24351	.48664	.48647	.49949
Stddev	.01120	.00345	.00256	.00348	.00159	.00666	.00223
%RSD	2.2756	.55907	.52285	1.4276	.32636	1.3682	.44568
#1	.49780	.62072	.48985	.24567	.48619	.48964	.50200
#2	.49942	.61709	.49253	.24537	.48532	.49094	.49875
#3	.47927	.61383	.48741	.23950	.48840	.47882	.49774
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9989.9	58353.	2629.1
Stddev	18.1	77.	14.5
%RSD	.18119	.13154	.55115
#1	10010.	58436.	2613.3
#2	9974.3	58285.	2632.2
#3	9985.7	58337.	2641.7

Approved: July 16, 2016

Sample Name: L1607037601 Acquired: 7/14/2016 13:29:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	.00416	-.00100	.00681	-.00147	.00010	-.03190	.00034
Stddev	.00134	.00273	.00310	.00244	.00055	.00004	.02724	.00019
%RSD	7403.4	65.522	310.63	35.835	37.306	42.751	85.379	54.191
#1	-.00057	.00537	.00211	.00707	-.00097	.00007	-.05955	.00023
#2	-.00100	.00104	-.00102	.00425	-.00138	.00015	-.03106	.00024
#3	.00151	.00608	-.00408	.00911	-.00206	.00008	-.00509	.00056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.00067	.00160	-.00147	.03594	.00114	.00845	.00079
Stddev	.00035	.00055	.00043	.01146	.09224	.00155	.16441	.00192
%RSD	1049.3	82.795	26.996	778.30	256.67	136.37	1945.0	243.41
#1	.00003	.00108	.00121	.00081	-.06499	.00112	.14758	.00054
#2	-.00032	.00004	.00206	.00867	.05693	.00270	.05074	-.00099
#3	.00039	.00088	.00152	-.01391	.11587	-.00040	-.17297	.00282
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	.04769	-.00049	.00198	-.00140	.00304	-.00276	.00508
Stddev	.00031	.01664	.00039	.00531	.00377	.00115	.00551	.00224
%RSD	1513.4	34.887	79.928	268.11	269.66	37.782	199.83	44.032
#1	-.00009	.06178	-.00083	.00787	.00251	.00373	.00146	.00559
#2	-.00029	.05197	-.00006	.00052	-.00501	.00367	-.00899	.00701
#3	.00032	.02934	-.00058	-.00245	-.00169	.00171	-.00074	.00263
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607037601 Acquired: 7/14/2016 13:29:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	.00001	.00395	.00062	-.00046	.00239	.00003
Stddev	.00015	.00042	.00364	.00143	.00030	.00011	.00061
%RSD	58.181	3611.8	92.127	230.74	64.248	4.5360	1946.0
#1	.00009	.00038	-.00023	-.00031	-.00027	.00249	-.00035
#2	.00031	.00009	.00567	-.00010	-.00031	.00239	.00073
#3	.00039	-.00044	.00642	.00227	-.00080	.00227	-.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10157.	59870.	2638.2
Stddev	36.	30.	24.9
%RSD	.35834	.04975	.94494
#1	10189.	59885.	2618.4
#2	10163.	59836.	2630.0
#3	10118.	59890.	2666.2

Approved: July 16, 2016

Sample Name: L1607037602 Acquired: 7/14/2016 13:33:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00135	-.00015	-.00194	.00303	-.00098	.00006	-.00465	.00037
Stddev	.00133	.00358	.00147	.00061	.00095	.00005	.03003	.00014
%RSD	98.541	2428.3	75.826	20.173	96.491	82.678	645.56	37.857
#1	.00011	-.00421	-.00035	.00373	-.00117	.00002	-.03726	.00049
#2	-.00167	.00256	-.00326	.00269	.00004	.00012	.00144	.00039
#3	-.00249	.00121	-.00221	.00265	-.00182	.00004	.02186	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00075	.00087	-.01341	-.04036	.00222	-.03097	-.00102
Stddev	.00023	.00131	.00108	.01851	.05248	.00076	.03266	.00124
%RSD	374.90	175.00	123.66	137.97	130.05	34.089	105.46	121.71
#1	-.00014	.00099	-.00028	.00796	-.07877	.00308	-.06558	.00040
#2	.00032	-.00067	.00103	-.02420	.01944	.00163	-.00071	-.00192
#3	.00001	.00192	.00186	-.02400	-.06174	.00197	-.02661	-.00155
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.05378	-.00021	.00090	-.00385	.00292	.00090	.00814
Stddev	.00015	.01097	.00037	.00696	.00323	.00235	.00226	.00247
%RSD	90.287	20.389	175.54	775.89	83.876	80.412	250.28	30.355
#1	-.00015	.05978	.00021	.00854	-.00409	.00468	-.00001	.01074
#2	-.00003	.04113	-.00050	-.00075	-.00051	.00383	.00348	.00786
#3	-.00033	.06044	-.00036	-.00510	-.00696	.00025	-.00076	.00582
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607037602 Acquired: 7/14/2016 13:33:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**-.00003**	**-.00287**	**.00020**	**.00005**	**.00150**	**-.00025**
Stddev	.00090	.00030	.00341	.00183	.00029	.00019	.00020
%RSD	1081.2	1171.7	118.60	936.22	548.67	12.644	82.153
#1	-.00090	.00027	-.00223	.00064	.00026	.00157	-.00005
#2	.00030	-.00001	-.00656	.00176	-.00028	.00163	-.00024
#3	.00085	-.00034	.00017	-.00182	.00018	.00128	-.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10127.**	**59766.**	**2634.1**
Stddev	39.	143.	19.9
%RSD	.38363	.23889	.75667
#1	10130.	59628.	2616.9
#2	10164.	59913.	2629.3
#3	10087.	59758.	2655.9

Approved: July 16, 2016

Sample Name: L1607037603 Acquired: 7/14/2016 13:37:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00146	-.00102	-.00058	.00353	-.00016	.00004	.03206	.00051
Stddev	.00130	.01039	.00232	.00201	.00071	.00002	.03561	.00010
%RSD	89.374	1014.9	403.17	56.770	455.86	49.604	111.06	20.003
#1	-.00281	.00303	.00021	.00122	-.00014	.00006	.04972	.00057
#2	-.00020	.00673	-.00319	.00457	-.00087	.00003	-.00892	.00055
#3	-.00137	-.01283	.00125	.00481	.00055	.00002	.05540	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	.00132	.00177	.00187	-.02373	.00399	-.05238	-.00120
Stddev	.00037	.00037	.00032	.01301	.05515	.00111	.05243	.00268
%RSD	162.08	27.783	17.780	694.43	232.41	27.796	100.11	222.80
#1	.00019	.00151	.00196	-.00516	-.08100	.00329	-.10212	-.00267
#2	-.00051	.00090	.00141	-.00611	-.01920	.00340	.00239	-.00284
#3	-.00037	.00155	.00194	.01689	.02901	.00526	-.05740	.00189
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.02785	-.00089	.00624	-.00221	.00191	-.00283	.01222
Stddev	.00031	.02918	.00109	.00101	.00339	.00121	.00227	.00126
%RSD	680.81	104.79	122.87	16.124	153.54	63.678	80.230	10.286
#1	-.00006	-.00374	-.00148	.00544	.00030	.00276	-.00085	.01264
#2	-.00019	.05380	.00037	.00592	-.00086	.00052	-.00233	.01321
#3	.00039	.03350	-.00155	.00737	-.00606	.00244	-.00531	.01080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607037603 Acquired: 7/14/2016 13:37:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	.00008	.00113	.00306	-.00061	.00087	-.00036
Stddev	.00061	.00037	.00609	.00043	.00047	.00017	.00027
%RSD	71.726	477.68	540.26	14.175	76.472	19.519	76.909
#1	.00142	.00050	.00504	.00352	-.00007	.00077	-.00066
#2	.00020	-.00016	-.00589	.00301	-.00093	.00107	-.00012
#3	.00094	-.00011	.00423	.00266	-.00084	.00078	-.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10138.	59762.	2625.0
Stddev	34.	105.	23.6
%RSD	.33482	.17513	.89831
#1	10159.	59652.	2598.8
#2	10157.	59860.	2631.8
#3	10099.	59775.	2644.4

Approved: July 16, 2016

Sample Name: L1607020103 Acquired: 7/14/2016 13:41:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00045**	**175.05**	**.00833**	**.85524**	**.10512**	**.00019**	**249.47**
Stddev	.00073	1.23	.00356	.01361	.00189	.00004	3.00
%RSD	163.57	.70286	42.693	1.5910	1.8005	20.053	1.2032
#1	.00020	176.47	.01166	.86058	.10682	.00015	252.06
#2	-.00124	174.37	.00875	.83977	.10546	.00019	250.17
#3	-.00031	174.30	.00459	.86536	.10308	.00022	246.18
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09339**	**30.632**	**.50318**	**1.0206**	**5.1057**	**32.384**	**7.6010**
Stddev	.00578	2.073	.00423	.0683	.0388	.365	.0858
%RSD	6.1848	6.7674	.84149	6.6874	.76059	1.1267	1.1284
#1	.09715	31.919	.50801	1.0626	5.1495	32.592	7.6675
#2	.09627	31.736	.50010	1.0573	5.0919	32.597	7.6312
#3	.08674	28.241	.50143	.94182	5.0756	31.963	7.5042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**64.563**	**.95180**	**.00246**	F **910.05**	**59.165**	**166.02**	**.03448**
Stddev	.630	.01164	.00052	15.46	3.947	9.38	.00649
%RSD	.97545	1.2227	21.293	1.6989	6.6708	5.6488	18.827
#1	65.116	.95716	.00235	916.89	61.621	171.65	.03987
#2	64.695	.95978	.00304	920.91	61.261	171.22	.03628
#3	63.878	.93845	.00201	892.35	54.612	155.19	.02727
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 16, 2016

Sample Name: L1607020103 Acquired: 7/14/2016 13:41:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00132	.01005	6.8387	-.00032	1.9000	F -.03514	.04196
Stddev	.00252	.00313	.3632	.00114	.0224	.00596	.00339
%RSD	190.41	31.173	5.3112	351.39	1.1778	16.972	8.0894
#1	.00125	.00649	7.0569	.00035	1.9171	-.03945	.04557
#2	.00388	.01124	7.0398	-.00163	1.9081	-.02834	.04149
#3	-.00116	.01241	6.4194	.00032	1.8747	-.03765	.03883
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00855	3.7754	.00010
Stddev	.00013	.2525	.00028
%RSD	1.5179	6.6883	293.15
#1	.00867	3.9326	.00042
#2	.00841	3.9094	-.00003
#3	.00856	3.4841	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9639.9	55431.	2597.1
Stddev	20.4	237.	43.2
%RSD	.21187	.42681	1.6632
#1	9618.9	55167.	2560.7
#2	9659.7	55624.	2585.8
#3	9641.2	55503.	2644.9

Approved: July 16, 2016

Sample Name: L1607020103PS Acquired: 7/14/2016 13:45:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576082-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19991	161.84	.20875	1.7416	.60272	.02442	229.20
Stddev	.00083	.73	.00779	.0026	.00811	.00023	2.81
%RSD	.41737	.44979	3.7323	.15001	1.3453	.95902	1.2248
#1	.20088	162.63	.21354	1.7429	.61096	.02466	232.04
#2	.19941	161.69	.21296	1.7386	.60243	.02439	229.14
#3	.19945	161.20	.19976	1.7433	.59476	.02420	226.43
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10805	27.836	.68719	1.1612	6.5462	55.613	7.3345
Stddev	.00549	1.466	.00513	.0596	.0516	.508	.0827
%RSD	5.0847	5.2678	.74619	5.1350	.78871	.91257	1.1278
#1	.11130	28.789	.69311	1.1995	6.5907	56.148	7.4157
#2	.11113	28.570	.68435	1.1917	6.5582	55.554	7.3376
#3	.10170	26.147	.68412	1.0925	6.4896	55.138	7.2503
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	62.563	1.1076	.48744	F 829.85	53.984	155.55	.26062
Stddev	.442	.0140	.02510	10.82	2.788	6.61	.01339
%RSD	.70617	1.2646	5.1485	1.3041	5.1646	4.2514	5.1383
#1	63.035	1.1227	.50419	841.57	55.765	159.68	.27048
#2	62.160	1.0950	.49954	820.24	55.417	159.05	.26601
#3	62.493	1.1050	.45859	827.73	50.771	147.93	.24538
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 16, 2016

Sample Name: L1607020103PS Acquired: 7/14/2016 13:45:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576082-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.58685	.20160	8.6258	.47100	2.2040	.46954	.25617
Stddev	.03107	.00376	.3451	.02758	.0236	.00407	.01077
%RSD	5.2938	1.8668	4.0008	5.8548	1.0713	.86651	4.2030
#1	.60683	.20529	8.8428	.48886	2.2287	.46490	.26068
#2	.60267	.20174	8.8067	.48490	2.2017	.47248	.26396
#3	.55106	.19777	8.2278	.43924	2.1816	.47124	.24389
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.49866	3.8831	.00056
Stddev	.00120	.1971	.00049
%RSD	.24041	5.0755	89.017
#1	.50003	4.0080	.00087
#2	.49781	3.9854	-.00001
#3	.49813	3.6559	.00081
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9671.7	55553.	2620.0
Stddev	16.5	167.	35.2
%RSD	.17049	.30006	1.3442
#1	9653.0	55379.	2582.8
#2	9683.8	55568.	2624.2
#3	9678.5	55711.	2652.9

Approved: July 16, 2016

Sample Name: L1607020103SDL Acquired: 7/14/2016 13:49:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG576082-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00107**	**34.629**	**.00088**	**.17909**	**.01645**	**.00004**	**46.434**	**.02004**
Stddev	.00033	.049	.00319	.00255	.00357	.00009	4.644	.00090
%RSD	30.725	.14157	361.20	1.4253	21.721	237.88	10.002	4.4784
#1	-.00088	34.582	-.00280	.17638	.01235	.00000	41.109	.02072
#2	-.00088	34.626	.00259	.18145	.01888	-.00003	48.548	.02037
#3	-.00145	34.680	.00285	.17943	.01813	.00014	49.645	.01902
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**6.4706**	**.10186**	**.21937**	**.93639**	**5.8240**	**1.3235**	**11.836**	**.16952**
Stddev	.1554	.00092	.00564	.08422	.6556	.1315	1.120	.01998
%RSD	2.4012	.89860	2.5695	8.9941	11.257	9.9368	9.4626	11.788
#1	6.5974	.10111	.22381	.83918	5.0953	1.1730	10.548	.14710
#2	6.5173	.10158	.22127	.98728	6.0110	1.3811	12.380	.17596
#3	6.2973	.10288	.21303	.98272	6.3659	1.4164	12.581	.18548
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00069**	**171.48**	**12.727**	**34.095**	**.00728**	**.00254**	**-.00050**	**1.3826**
Stddev	.00020	17.13	.304	.879	.00405	.00157	.00508	.0342
%RSD	28.523	9.9887	2.3880	2.5779	55.635	61.745	1014.3	2.4753
#1	.00047	151.81	12.975	34.806	.00615	.00083	.00312	1.4082
#2	.00085	179.58	12.819	34.365	.01178	.00287	.00169	1.3958
#3	.00075	183.06	12.388	33.112	.00392	.00391	-.00631	1.3437
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607020103SDL Acquired: 7/14/2016 13:49:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG576082-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.34604	-.00426	.01077	.00139	.81498	.00014
Stddev	.00070	.03435	.00491	.00329	.00071	.02044	.00017
%RSD	1434.0	9.9260	115.18	30.553	50.699	2.5083	118.26
#1	.00055	.30666	.00028	.01272	.00180	.83156	.00003
#2	-.00076	.36166	-.00947	.01262	.00180	.82125	.00034
#3	.00036	.36981	-.00359	.00697	.00058	.79214	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10488.	60924.	2886.1
Stddev	33.	131.	138.7
%RSD	.31234	.21578	4.8055
#1	10521.	60995.	3045.1
#2	10487.	61005.	2822.9
#3	10455.	60773.	2790.2

Approved: July 16, 2016

Sample Name: L1607020103SDL Acquired: 7/14/2016 13:52:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG576082-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00079**	**7.2353**	**.00134**	**.03956**	**.00275**	**.00005**	**10.451**	**.00433**
Stddev	.00045	.0060	.00232	.00084	.00044	.00006	.081	.00002
%RSD	56.482	.08244	173.32	2.1218	15.868	111.32	.77720	.38077
#1	-.00115	7.2421	-.00059	.03860	.00229	.00011	10.360	.00431
#2	-.00029	7.2326	.00391	.04014	.00281	.00005	10.515	.00434
#3	-.00094	7.2311	.00069	.03994	.00316	-.00000	10.478	.00433
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.3551**	**.02141**	**.04651**	**.21559**	**1.2467**	**.30504**	**2.7669**	**.03496**
Stddev	.0629	.00064	.00347	.02632	.0480	.00164	.0659	.00347
%RSD	4.6402	2.9773	7.4614	12.207	3.8533	.53708	2.3798	9.9141
#1	1.3908	.02204	.04832	.23707	1.2147	.30615	2.6995	.03228
#2	1.3920	.02144	.04871	.22349	1.2235	.30581	2.7702	.03887
#3	1.2825	.02076	.04251	.18623	1.3019	.30316	2.8310	.03374
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00017**	**38.448**	**2.6925**	**6.9794**	**.00051**	**-.00106**	**.00118**	**.27878**
Stddev	.00024	.063	.1248	.4866	.00142	.00226	.00367	.01875
%RSD	143.20	.16274	4.6331	6.9723	275.91	212.90	310.24	6.7272
#1	-.00010	38.469	2.7654	7.2909	-.00095	-.00205	.00155	.29160
#2	.00025	38.497	2.7636	7.2286	.00188	-.00267	-.00266	.28749
#3	.00035	38.377	2.5485	6.4186	.00061	.00153	.00466	.25726
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607020103SDL Acquired: 7/14/2016 13:52:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG576082-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.07845	.00236	.00489	.00061	.17472	-.00023
Stddev	.00051	.00026	.00726	.00152	.00045	.00850	.00020
%RSD	288.32	.33381	307.87	30.993	73.320	4.8626	88.947
#1	.00076	.07816	.00930	.00497	.00027	.17949	-.00007
#2	-.00018	.07864	.00297	.00334	.00044	.17977	-.00016
#3	-.00005	.07857	-.00519	.00637	.00112	.16491	-.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10610.	61883.	2759.7
Stddev	76.	120.	3.9
%RSD	.71451	.19442	.14149
#1	10674.	62016.	2756.9
#2	10631.	61850.	2758.0
#3	10527.	61782.	2764.2

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 13:56:43 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.38616	9.4206	.38676	.47772	.94740	.04733	9.4813	.04840
Stddev	.00267	.0175	.00960	.00605	.00560	.00021	.0693	.00067
%RSD	.69074	.18586	2.4833	1.2662	.59117	.44937	.73096	1.3893
#1	.38649	9.4060	.39078	.47781	.94992	.04711	9.5502	.04884
#2	.38334	9.4400	.39371	.48372	.95130	.04753	9.4821	.04874
#3	.38864	9.4159	.37580	.47162	.94098	.04736	9.4116	.04763
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19251	.46912	.48298	3.7785	47.637	.95100	9.4238	.47720
Stddev	.00501	.00215	.01141	.0145	.388	.01085	.0073	.00473
%RSD	2.6008	.45910	2.3633	.38372	.81507	1.1408	.07704	.99147
#1	.19554	.46698	.49043	3.7905	47.732	.96331	9.4220	.48231
#2	.19525	.47129	.48867	3.7825	47.969	.94687	9.4318	.47630
#3	.18673	.46909	.46984	3.7624	47.210	.94282	9.4176	.47298
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.96285	47.829	.48195	9.7801	.48593	1.1610	.39705	4.7527
Stddev	.02721	.223	.01310	.1970	.01154	.0234	.00337	.0734
%RSD	2.8260	.46558	2.7177	2.0143	2.3742	2.0201	.84921	1.5444
#1	.98277	47.941	.48805	9.8702	.49145	1.1738	.39681	4.7861
#2	.97393	47.974	.49089	9.9160	.49368	1.1752	.40053	4.8035
#3	.93185	47.573	.46692	9.5541	.47267	1.1339	.39380	4.6686
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 13:56:43 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.96040	.95124	.96325	.48756	.93623	.96395	.94566
Stddev	.02861	.00475	.01383	.00305	.00199	.02259	.00860
%RSD	2.9786	.49930	1.4362	.62612	.21254	2.3440	.90980
#1	.97623	.95340	.95536	.48847	.93397	.97653	.94588
#2	.97760	.95453	.97923	.48416	.93771	.97746	.95415
#3	.92738	.94579	.95517	.49006	.93700	.93787	.93694
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10518.	61390.	2796.7
Stddev	30.	107.	25.2
%RSD	.28580	.17356	.89939
#1	10510.	61513.	2797.4
#2	10552.	61332.	2771.2
#3	10493.	61325.	2821.5

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 14:00:20 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00119**	**.00725**	**.00001**	**.00618**	**-.00314**	**.00001**	**-.05384**	**.00025**
Stddev	.00094	.00509	.00203	.00372	.00058	.00004	.03163	.00013
%RSD	78.898	70.169	21490.	60.172	18.383	390.29	58.759	50.361
#1	-.00182	.01126	-.00029	.00985	-.00268	-.00003	-.09002	.00026
#2	-.00162	.00153	-.00185	.00627	-.00379	.00000	-.04011	.00012
#3	-.00011	.00896	.00217	.00242	-.00296	.00006	-.03139	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**.00036**	**.00045**	**.00845**	**.11558**	**.00342**	**.01691**	**.00045**
Stddev	.00014	.00118	.00074	.01368	.07581	.00231	.11117	.00037
%RSD	150.72	330.89	162.96	161.82	65.596	67.510	657.35	81.766
#1	-.00016	-.00100	-.00031	.02240	.02804	.00093	-.05060	.00003
#2	.00007	.00092	.00116	-.00495	.15923	.00384	-.04388	.00064
#3	-.00017	.00115	.00050	.00792	.15947	.00549	.14523	.00069
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00011**	**.07194**	**-.00046**	**.00154**	**-.00239**	**.00206**	**.00158**	**.00136**
Stddev	.00018	.00412	.00130	.00314	.00097	.00209	.00607	.00092
%RSD	159.22	5.7225	281.37	203.60	40.504	101.34	383.06	67.875
#1	.00020	.07536	.00104	.00415	-.00147	-.00031	.00102	.00187
#2	-.00009	.06737	-.00118	-.00195	-.00231	.00287	-.00418	.00029
#3	.00023	.07309	-.00125	.00243	-.00340	.00362	.00791	.00192
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 14:00:20 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	-.00023	.00812	.00260	-.00089	-.00004	-.00000
Stddev	.00063	.00020	.00150	.00125	.00025	.00012	.00058
%RSD	184.89	84.265	18.496	48.131	27.809	282.80	25045.
#1	-.00005	-.00031	.00662	.00231	-.00117	-.00011	.00063
#2	.00000	-.00037	.00963	.00397	-.00070	-.00011	-.00050
#3	.00106	-.00001	.00811	.00152	-.00080	.00009	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10292.	61823.	2785.5
Stddev	70.	386.	10.2
%RSD	.68150	.62447	.36505
#1	10356.	62027.	2793.3
#2	10217.	62065.	2789.1
#3	10302.	61378.	2774.0

Approved: July 16, 2016

Sample Name: PBW 68 Acquired: 7/14/2016 14:04:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576011-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00206**	**.01332**	**-.00061**	**.00467**	**-.00214**	**.00006**	**-.02156**	**.00037**
Stddev	.00180	.00723	.00190	.00124	.00038	.00005	.01338	.00030
%RSD	87.459	54.287	310.80	26.513	17.907	87.606	62.053	80.203
#1	-.00116	.02122	-.00235	.00427	-.00203	-.00000	-.01584	.00039
#2	-.00414	.01170	.00142	.00606	-.00256	.00009	-.01199	.00007
#3	-.00089	.00703	-.00091	.00368	-.00182	.00008	-.03685	.00067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.00038**	**-.00012**	**-.01265**	**-.02006**	**.00467**	**-.07916**	**-.00207**
Stddev	.00023	.00046	.00045	.02361	.08332	.00167	.01428	.00327
%RSD	478.10	121.27	362.68	186.74	415.31	35.787	18.045	158.11
#1	.00020	.00065	.00008	-.02335	-.06604	.00373	-.09264	-.00485
#2	-.00025	-.00015	.00019	.01442	.07612	.00660	-.08065	.00154
#3	-.00009	.00063	-.00064	-.02902	-.07026	.00368	-.06419	-.00290
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**.06208**	**-.00088**	**-.00115**	**-.00324**	**.00231**	**.00056**	**.00372**
Stddev	.00012	.00621	.00112	.00335	.00207	.00129	.00181	.00246
%RSD	51.776	10.008	127.06	290.68	63.681	55.943	325.85	66.032
#1	-.00018	.05915	.00023	-.00106	-.00122	.00108	.00244	.00265
#2	-.00014	.06921	-.00087	.00215	-.00535	.00365	.00039	.00198
#3	-.00037	.05787	-.00200	-.00454	-.00316	.00220	-.00117	.00653
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: PBW 68 Acquired: 7/14/2016 14:04:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576011-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	-.00015	.00531	.00059	-.00102	.00269	.00019
Stddev	.00040	.00019	.00671	.00337	.00032	.00045	.00060
%RSD	387.77	130.68	126.42	572.93	31.440	16.708	308.77
#1	-.00035	-.00031	.00562	.00446	-.00070	.00307	-.00020
#2	.00040	.00006	-.00155	-.00168	-.00102	.00281	.00088
#3	.00026	-.00019	.01187	-.00102	-.00135	.00220	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10215.	60573.	2679.7
Stddev	45.	267.	7.9
%RSD	.44375	.44138	.29424
#1	10240.	60306.	2674.4
#2	10242.	60573.	2676.0
#3	10162.	60841.	2688.8

Approved: July 16, 2016

Sample Name: LCSW 68 Acquired: 7/14/2016 14:08:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576011-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19572**	**4.9050**	**.20175**	**.96744**	**.50443**	**.02417**	**5.1413**	**.02485**
Stddev	.00252	.0030	.00712	.00474	.00249	.00007	.0294	.00080
%RSD	1.2874	.06141	3.5282	.49023	.49308	.29565	.57173	3.2263
#1	.19362	4.9015	.20283	.96962	.50276	.02418	5.1512	.02563
#2	.19851	4.9071	.20827	.96200	.50325	.02409	5.1083	.02490
#3	.19502	4.9063	.19416	.97071	.50729	.02423	5.1645	.02403
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10012**	**.24751**	**.25348**	**2.0110**	**24.726**	**.50778**	**5.0021**	**.25217**
Stddev	.00287	.00219	.00527	.0246	.074	.00256	.0729	.00248
%RSD	2.8664	.88653	2.0805	1.2219	.29844	.50391	1.4567	.98186
#1	.10189	.24499	.25663	1.9832	24.702	.50795	5.0573	.24932
#2	.10167	.24896	.25642	2.0298	24.666	.50513	4.9195	.25340
#3	.09681	.24859	.24739	2.0200	24.808	.51024	5.0296	.25379
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50945**	**25.061**	**.25446**	**4.8868**	**.24939**	**.59984**	**.19307**	**2.4912**
Stddev	.01258	.054	.00635	.0912	.00535	.01296	.00539	.0419
%RSD	2.4687	.21732	2.4940	1.8657	2.1445	2.1610	2.7893	1.6811
#1	.51800	25.037	.25927	4.9545	.25441	.60812	.19837	2.5193
#2	.51534	25.023	.25685	4.9227	.24998	.60649	.18761	2.5113
#3	.49501	25.123	.24727	4.7831	.24377	.58490	.19324	2.4430
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: LCSW 68 Acquired: 7/14/2016 14:08:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576011-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50347	.51298	.51101	.25241	.49377	.50054	.00130
Stddev	.01517	.00123	.00309	.00248	.00016	.01185	.00014
%RSD	3.0122	.23891	.60418	.98237	.03340	2.3678	10.828
#1	.51360	.51222	.50993	.25300	.49379	.50821	.00144
#2	.51077	.51232	.51449	.25454	.49392	.50653	.00116
#3	.48603	.51439	.50861	.24968	.49359	.48689	.00129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10156.	59814.	2681.8
Stddev	18.	224.	11.6
%RSD	.17564	.37439	.43130
#1	10141.	60055.	2683.7
#2	10176.	59613.	2692.4
#3	10151.	59774.	2669.5

Approved: July 16, 2016

Sample Name: F BLANK Acquired: 7/14/2016 14:11:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575805-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00170	.01612	.00020	.00581	-.00094	-.00001	-.01134	.00032
Stddev	.00177	.00244	.00203	.00180	.00036	.00005	.03567	.00002
%RSD	104.20	15.112	1014.4	30.970	37.776	416.22	314.54	7.4520
#1	-.00330	.01838	.00088	.00565	-.00062	-.00003	.02980	.00035
#2	-.00200	.01644	.00180	.00769	-.00132	.00004	-.03025	.00030
#3	.00020	.01354	-.00208	.00410	-.00088	-.00005	-.03357	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.00110	-.00056	-.01365	.02379	.00103	-.03449	-.00097
Stddev	.00026	.00061	.00102	.03614	.06862	.00401	.08407	.00103
%RSD	150.34	55.310	180.50	264.73	288.39	388.51	243.72	105.91
#1	-.00007	.00097	-.00169	.01302	.08871	.00545	.05466	-.00005
#2	.00014	.00056	-.00030	-.05479	.03068	-.00236	-.11233	-.00208
#3	.00044	.00176	.00029	.00081	-.04801	.00000	-.04581	-.00078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00028	142.97	-.00056	.00150	-.00292	.00178	.00002	.00737
Stddev	.00037	.12	.00035	.00247	.00181	.00073	.00081	.00057
%RSD	132.05	.08527	62.170	164.68	61.807	41.115	5008.0	7.6909
#1	-.00041	143.10	-.00030	.00233	-.00288	.00250	.00076	.00779
#2	-.00056	142.95	-.00042	-.00128	-.00475	.00104	.00015	.00760
#3	.00014	142.86	-.00095	.00346	-.00114	.00178	-.00086	.00672
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: F BLANK Acquired: 7/14/2016 14:11:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575805-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00067	.00009	-.00316	.00018	-.00053	.00362	.00023
Stddev	.00122	.00018	.00350	.00273	.00117	.00058	.00018
%RSD	182.03	202.82	110.84	1549.9	220.80	16.084	77.779
#1	.00201	.00012	-.00097	.00017	.00067	.00414	.00041
#2	.00038	-.00011	-.00131	-.00255	-.00167	.00373	.00005
#3	-.00038	.00025	-.00719	.00290	-.00059	.00299	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10133.	59358.	2696.6
Stddev	16.	148.	14.9
%RSD	.15573	.24969	.55433
#1	10123.	59494.	2680.1
#2	10125.	59200.	2709.2
#3	10151.	59378.	2700.6

Approved: July 16, 2016

Sample Name: F BLANK Acquired: 7/14/2016 14:15:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575805-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.00535	.00117	.00406	-.00177	-.00001	-.01783	.00029
Stddev	.00203	.00551	.00227	.00193	.00062	.00006	.00560	.00024
%RSD	216.76	102.93	193.66	47.682	34.918	542.40	31.423	81.908
#1	.00102	.00772	.00185	.00286	-.00246	-.00004	-.02193	.00004
#2	-.00113	-.00094	.00304	.00302	-.00129	.00006	-.02013	.00052
#3	.00292	.00928	-.00136	.00629	-.00155	-.00005	-.01145	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	.00108	.00185	-.00508	.02480	.00344	-.06770	-.00279
Stddev	.00012	.00015	.00047	.00816	.07237	.00211	.05064	.00033
%RSD	105.98	13.872	25.343	160.67	291.86	61.523	74.801	11.861
#1	-.00024	.00116	.00145	.00431	.05482	.00560	-.02833	-.00283
#2	-.00009	.00091	.00237	-.01047	-.05776	.00138	-.04994	-.00244
#3	-.00000	.00117	.00174	-.00907	.07733	.00333	-.12482	-.00309
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.66923	-.00062	.00088	-.00452	.00187	-.00123	.00560
Stddev	.00045	.01325	.00034	.00794	.00121	.00404	.00501	.00077
%RSD	517.94	1.9799	54.191	901.34	26.778	215.40	407.28	13.757
#1	.00026	.68325	-.00025	-.00579	-.00321	.00645	.00007	.00649
#2	-.00059	.66753	-.00090	.00966	-.00476	.00035	.00300	.00520
#3	.00007	.65691	-.00071	-.00123	-.00559	-.00118	-.00676	.00511
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: F BLANK Acquired: 7/14/2016 14:15:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575805-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**-.00013**	**.00323**	**.00044**	**-.00003**	**.00408**	**.00022**
Stddev	.00035	.00052	.00146	.00251	.00053	.00055	.00013
%RSD	179.43	413.87	45.216	570.27	1558.7	13.430	57.269
#1	.00060	.00028	.00194	-.00169	-.00063	.00444	.00036
#2	-.00002	-.00072	.00482	-.00020	.00039	.00436	.00011
#3	.00001	.00006	.00293	.00321	.00014	.00345	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10310.**	**60905.**	**2722.5**
Stddev	12.	149.	12.0
%RSD	.11675	.24450	.44031
#1	10316.	60822.	2720.7
#2	10296.	61077.	2711.6
#3	10317.	60816.	2735.3

Approved: July 16, 2016

Sample Name: L1607039701 Acquired: 7/14/2016 14:19:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576011-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00212**	**.05238**	**-.00138**	**.01980**	**.00085**	**.00005**	**9.5331**	**.00042**
Stddev	.00111	.00492	.00092	.00390	.00040	.00004	.0580	.00013
%RSD	52.194	9.3947	66.676	19.691	47.369	67.750	.60823	30.671
#1	-.00222	.05461	-.00148	.02345	.00076	.00006	9.4990	.00045
#2	-.00097	.04674	-.00041	.02027	.00050	.00001	9.6000	.00052
#3	-.00318	.05579	-.00224	.01569	.00128	.00008	9.5003	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00148**	**.09868**	**.03441**	**.03124**	**1.1026**	**.00376**	**.51937**	**.14683**
Stddev	.00005	.00072	.00439	.00638	.0239	.00133	.05477	.00213
%RSD	3.3244	.73052	12.761	20.429	2.1672	35.472	10.545	1.4526
#1	.00147	.09919	.03637	.02466	1.0762	.00224	.46101	.14455
#2	.00154	.09785	.03748	.03740	1.1229	.00427	.56965	.14878
#3	.00144	.09899	.02938	.03166	1.1086	.00476	.52744	.14714
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00027**	**144.04**	**.00780**	**.04330**	**-.00248**	**.00101**	**-.00003**	**.27103**
Stddev	.00047	.11	.00149	.00034	.00252	.00202	.00487	.01973
%RSD	176.60	.07915	19.163	.79629	101.48	198.77	15835.	7.2804
#1	-.00049	144.04	.00868	.04353	-.00282	.00334	.00138	.28228
#2	.00027	143.93	.00864	.04347	-.00481	-.00022	.00397	.28256
#3	-.00058	144.16	.00607	.04291	.00019	-.00008	-.00545	.24824
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607039701 Acquired: 7/14/2016 14:19:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576011-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.88538	-.00530	.00116	-.00058	1.3399	.00024
Stddev	.00028	.00044	.00488	.00133	.00088	.1268	.00028
%RSD	40.337	.04953	91.916	115.06	151.42	9.4644	119.08
#1	.00101	.88585	-.01074	.00239	-.00040	1.4200	.00051
#2	.00049	.88529	-.00384	-.00025	.00019	1.4059	-.00005
#3	.00058	.88499	-.00133	.00133	-.00155	1.1937	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10109.	59195.	2732.9
Stddev	11.	81.	19.7
%RSD	.10597	.13725	.72008
#1	10098.	59191.	2732.6
#2	10120.	59115.	2752.8
#3	10109.	59278.	2713.4

Approved: July 16, 2016

Sample Name: L1607039701S Acquired: 7/14/2016 14:23:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576011-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19436**	**4.9227**	**.20109**	**.97853**	**.49861**	**.02407**	**14.067**	**.02468**
Stddev	.00122	.0163	.00547	.00255	.00168	.00002	.054	.00032
%RSD	.62640	.33053	2.7208	.26069	.33715	.08542	.38620	1.3064
#1	.19342	4.9219	.20632	.98113	.49961	.02405	14.124	.02476
#2	.19574	4.9069	.20154	.97604	.49667	.02408	14.016	.02495
#3	.19392	4.9394	.19541	.97841	.49956	.02408	14.062	.02432
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09999**	**.33450**	**.28195**	**2.0159**	**25.932**	**.50658**	**5.4317**	**.38921**
Stddev	.00170	.00125	.00553	.0104	.084	.00221	.1546	.00352
%RSD	1.7018	.37339	1.9621	.51583	.32268	.43720	2.8463	.90375
#1	.10104	.33517	.28617	2.0146	26.004	.50403	5.4514	.38760
#2	.10090	.33306	.28398	2.0270	25.840	.50762	5.2682	.38679
#3	.09803	.33528	.27569	2.0063	25.952	.50807	5.5755	.39325
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50540**	**162.31**	**.25629**	**4.9820**	**.24652**	**.58905**	**.19128**	**2.7966**
Stddev	.01009	.28	.00483	.0720	.00386	.01023	.00340	.0326
%RSD	1.9966	.17432	1.8865	1.4458	1.5676	1.7371	1.7763	1.1672
#1	.51110	162.46	.25914	5.0364	.24986	.59720	.19355	2.8164
#2	.51135	161.98	.25902	5.0092	.24740	.59238	.19290	2.8143
#3	.49375	162.49	.25070	4.9003	.24228	.57757	.18737	2.7589
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607039701S Acquired: 7/14/2016 14:23:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576011-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49761	1.3421	.50305	.24041	.48973	1.8124	.00138
Stddev	.01042	.0022	.00428	.00194	.00197	.0321	.00059
%RSD	2.0946	.16423	.85075	.80529	.40310	1.7709	42.549
#1	.50396	1.3431	.50617	.24106	.49030	1.8318	.00206
#2	.50329	1.3396	.49817	.24194	.48753	1.8301	.00109
#3	.48558	1.3436	.50481	.23823	.49136	1.7754	.00100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10112.	59489.	2725.2
Stddev	11.	249.	12.6
%RSD	.10882	.41931	.46416
#1	10100.	59407.	2710.8
#2	10122.	59769.	2734.6
#3	10115.	59291.	2730.2

Approved: July 16, 2016

Sample Name: L1607039701SD Acquired: 7/14/2016 14:27:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576011-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19129**	**4.8592**	**.20129**	**.97067**	**.49784**	**.02385**	**14.255**	**.02486**
Stddev	.00520	.1219	.00231	.02623	.00264	.00068	.136	.00064
%RSD	2.7173	2.5081	1.1461	2.7022	.53099	2.8646	.95212	2.5895
#1	.19327	4.9241	.20163	.98909	.50087	.02430	14.408	.02532
#2	.19522	4.9349	.20341	.98227	.49597	.02420	14.206	.02512
#3	.18540	4.7186	.19883	.94064	.49669	.02307	14.150	.02412
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10127**	**.33542**	**.28795**	**1.9968**	**25.850**	**.50709**	**5.4125**	**.39161**
Stddev	.00311	.00892	.00715	.0276	.133	.00240	.0519	.00269
%RSD	3.0682	2.6585	2.4841	1.3832	.51268	.47246	.95962	.68564
#1	.10287	.34090	.29099	2.0280	25.988	.50982	5.4180	.39346
#2	.10324	.34022	.29307	1.9755	25.723	.50534	5.3581	.38853
#3	.09768	.32513	.27978	1.9869	25.839	.50610	5.4615	.39285
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51189**	**166.67**	**.25894**	**5.0434**	**.25071**	**.59989**	**.19864**	**2.8261**
Stddev	.01155	1.04	.00559	.0825	.00702	.01360	.00443	.0424
%RSD	2.2570	.62258	2.1601	1.6369	2.7987	2.2673	2.2313	1.4991
#1	.51749	167.84	.26299	5.0773	.25650	.61154	.19899	2.8470
#2	.51957	165.88	.26127	5.1036	.25272	.60320	.20289	2.8540
#3	.49860	166.28	.25256	4.9493	.24291	.58494	.19404	2.7773
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607039701SD Acquired: 7/14/2016 14:27:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576011-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50182	1.3701	.50557	.24405	.48688	1.8739	.00155
Stddev	.01366	.0092	.00057	.00404	.01183	.0439	.00051
%RSD	2.7224	.67324	.11312	1.6549	2.4295	2.3447	33.103
#1	.50895	1.3803	.50587	.24478	.49320	1.8943	.00096
#2	.51045	1.3624	.50491	.24768	.49421	1.9040	.00190
#3	.48607	1.3677	.50593	.23970	.47324	1.8235	.00179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10053.	59698.	2731.2
Stddev	42.	896.	21.6
%RSD	.42127	1.5004	.79199
#1	10040.	59078.	2706.4
#2	10019.	59291.	2741.0
#3	10101.	60725.	2746.2

Approved: July 16, 2016

Sample Name: L1607034701 Acquired: 7/14/2016 14:30:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00136	.20647	-.00059	.02106	.27600	.00004	1.1209	.00022
Stddev	.00060	.00692	.00227	.00283	.00164	.00002	.0057	.00007
%RSD	44.261	3.3521	387.81	13.459	.59366	44.500	.50866	30.091
#1	-.00201	.21124	.00051	.02093	.27450	.00003	1.1254	.00016
#2	-.00082	.20964	-.00319	.01829	.27775	.00003	1.1227	.00029
#3	-.00124	.19854	.00093	.02396	.27576	.00006	1.1145	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00084	.00198	.00075	7.0465	.17124	.00283	.26358	.07646
Stddev	.00032	.00068	.00222	.0282	.05761	.00089	.05706	.00078
%RSD	37.945	34.399	296.51	.39961	33.645	31.493	21.650	1.0171
#1	.00109	.00241	.00255	7.0140	.22305	.00205	.27323	.07579
#2	.00094	.00234	.00143	7.0633	.10920	.00265	.20231	.07731
#3	.00048	.00120	-.00173	7.0622	.18146	.00380	.31520	.07627
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	139.94	.00277	.00940	-.00060	.00054	.00084	.48387
Stddev	.00030	.27	.00118	.00523	.00135	.00193	.00233	.04228
%RSD	138.24	.19331	42.690	55.645	226.54	359.36	276.93	8.7387
#1	-.00008	139.78	.00270	.00769	.00015	.00255	-.00169	.50783
#2	-.00057	140.25	.00399	.01527	-.00216	-.00129	.00132	.50874
#3	-.00001	139.78	.00163	.00524	.00022	.00034	.00290	.43505
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607034701 Acquired: 7/14/2016 14:30:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.02074	.01225	-.00032	-.00018	.02831	-.00023
Stddev	.00061	.00029	.00371	.00190	.00069	.00279	.00019
%RSD	185.27	1.3870	30.276	598.73	389.30	9.8441	85.624
#1	.00004	.02053	.01194	-.00169	-.00084	.02992	-.00027
#2	-.00009	.02107	.01610	.00186	.00053	.02991	-.00039
#3	.00102	.02062	.00870	-.00112	-.00023	.02509	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10218.	59713.	2719.4
Stddev	8.	209.	7.5
%RSD	.07729	.34945	.27437
#1	10217.	59494.	2727.2
#2	10210.	59735.	2712.3
#3	10226.	59910.	2718.5

Approved: July 16, 2016

Sample Name: L1607034701PS Acquired: 7/14/2016 14:34:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576110-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19689**	**5.1294**	**.20349**	**.99499**	**.75803**	**.02446**	**6.1926**	**.02487**
Stddev	.00231	.0038	.00312	.00508	.00091	.00002	.0274	.00047
%RSD	1.1733	.07440	1.5337	.51091	.11957	.08213	.44215	1.8771
#1	.19859	5.1274	.20501	.99508	.75803	.02444	6.2184	.02534
#2	.19426	5.1269	.20556	.98986	.75713	.02447	6.1639	.02487
#3	.19781	5.1338	.19990	1.0000	.75894	.02448	6.1953	.02440
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10084**	**.25098**	**.25379**	**8.3770**	**25.224**	**.51448**	**5.1382**	**.32265**
Stddev	.00206	.00152	.00646	.0079	.007	.00221	.0417	.00173
%RSD	2.0402	.60709	2.5465	.09440	.02659	.42960	.81204	.53546
#1	.10205	.25195	.25858	8.3747	25.222	.51342	5.1835	.32232
#2	.10201	.24923	.25634	8.3858	25.231	.51300	5.1014	.32110
#3	.09846	.25177	.24644	8.3705	25.218	.51702	5.1298	.32451
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51208**	**151.85**	**.25530**	**4.9624**	**.25170**	**.60210**	**.19468**	**2.9419**
Stddev	.01171	.26	.00643	.0902	.00413	.01457	.00517	.0447
%RSD	2.2861	.16905	2.5173	1.8169	1.6390	2.4196	2.6558	1.5203
#1	.52021	151.56	.25971	5.0187	.25303	.61402	.20054	2.9711
#2	.51738	151.98	.25827	5.0099	.25500	.60643	.19077	2.9642
#3	.49866	152.02	.24793	4.8584	.24707	.58586	.19273	2.8904
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607034701PS Acquired: 7/14/2016 14:34:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576110-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50407**	**.53383**	**.51465**	**.24579**	**.49748**	**.52815**	**.00076**
Stddev	.01245	.00164	.00580	.00282	.00154	.01193	.00043
%RSD	2.4695	.30765	1.1279	1.1475	.30953	2.2592	56.241
#1	.51232	.53232	.50795	.24861	.49712	.53486	.00036
#2	.51014	.53359	.51788	.24579	.49616	.53521	.00070
#3	.48975	.53558	.51813	.24297	.49917	.51437	.00121
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10129.**	**59386.**	**2705.7**
Stddev	26.	167.	3.9
%RSD	.26152	.28159	.14478
#1	10124.	59568.	2701.4
#2	10106.	59239.	2706.7
#3	10158.	59351.	2709.0

Approved: July 16, 2016

Sample Name: L1607034701SDL Acquired: 7/14/2016 14:38:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG576110-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00161	.03923	-.00117	.00889	.05412	.00005	.16897	.00016
Stddev	.00064	.00423	.00027	.00139	.00121	.00005	.03373	.00006
%RSD	39.816	10.772	22.907	15.692	2.2401	88.648	19.964	37.097
#1	-.00102	.03443	-.00115	.01003	.05464	.00011	.15142	.00009
#2	-.00229	.04090	-.00091	.00930	.05273	.00005	.20786	.00019
#3	-.00151	.04237	-.00144	.00733	.05498	.00001	.14764	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.00112	-.00058	1.4335	.02615	-.00054	.03956	.01439
Stddev	.00018	.00087	.00043	.0427	.03662	.00144	.03081	.00161
%RSD	701.33	77.654	73.534	2.9779	140.05	268.29	77.891	11.190
#1	-.00017	.00037	-.00068	1.4104	.06656	.00112	.07007	.01454
#2	.00018	.00207	-.00095	1.4073	.01670	-.00132	.04014	.01592
#3	-.00009	.00091	-.00011	1.4828	-.00482	-.00142	.00846	.01271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	28.105	.00022	.00272	.00087	.00240	-.00180	.09388
Stddev	.00006	.129	.00077	.00746	.00242	.00260	.00430	.01272
%RSD	25.554	.46014	355.24	274.36	278.82	108.25	238.96	13.544
#1	-.00016	28.253	-.00030	.01085	-.00192	.00211	-.00329	.10271
#2	-.00028	28.015	-.00015	-.00382	.00229	-.00004	-.00517	.09963
#3	-.00024	28.046	.00110	.00113	.00223	.00514	.00305	.07931
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607034701SDL Acquired: 7/14/2016 14:38:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG576110-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.00434**	**.00284**	**.00345**	**-.00094**	**.00612**	**-.00006**
Stddev	.00022	.00025	.00286	.00225	.00015	.00084	.00008
%RSD	496.48	5.7636	100.92	65.172	16.224	13.718	129.32
#1	-.00001	.00457	.00479	.00373	-.00110	.00675	-.00002
#2	.00016	.00437	.00418	.00107	-.00093	.00645	-.00002
#3	-.00027	.00408	-.00045	.00555	-.00080	.00517	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10479.**	**61148.**	**2709.8**
Stddev	8.	138.	10.5
%RSD	.07748	.22534	.38901
#1	10478.	61114.	2697.6
#2	10487.	61300.	2716.4
#3	10471.	61031.	2715.3

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 14:42:25 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41120	10.118	.40826	.51260	1.0143	.05057	10.112	.05099
Stddev	.00201	.013	.00619	.00151	.0025	.00024	.022	.00131
%RSD	.49001	.12608	1.5171	.29421	.24330	.48067	.21888	2.5672
#1	.40889	10.131	.41331	.51355	1.0134	.05074	10.132	.05188
#2	.41207	10.117	.41012	.51339	1.0170	.05068	10.116	.05160
#3	.41263	10.106	.40135	.51086	1.0123	.05029	10.088	.04949
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20304	.50463	.50760	4.0319	50.666	1.0137	10.083	.51068
Stddev	.00667	.00149	.01686	.0427	.090	.0121	.034	.00183
%RSD	3.2842	.29561	3.3214	1.0592	.17687	1.1885	.33765	.35801
#1	.20764	.50495	.51715	4.0053	50.564	1.0273	10.122	.51277
#2	.20609	.50594	.51752	4.0092	50.700	1.0098	10.069	.50940
#3	.19539	.50300	.48813	4.0811	50.733	1.0041	10.059	.50987
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0092	51.016	.50730	10.270	.50596	1.2257	.41429	4.9915
Stddev	.0297	.094	.01522	.238	.01197	.0283	.00769	.0835
%RSD	2.9426	.18445	3.0005	2.3133	2.3658	2.3113	1.8562	1.6739
#1	1.0277	50.977	.51616	10.425	.51182	1.2419	.41990	5.0106
#2	1.0251	51.123	.51602	10.388	.51386	1.2422	.41744	5.0638
#3	.97498	50.948	.48972	9.9966	.49219	1.1930	.40552	4.9000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 14:42:25 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0117**	**1.0154**	**1.0207**	**.50755**	**1.0017**	**1.0128**	**1.0106**
Stddev	.0359	.0007	.0080	.00627	.0036	.0281	.0009
%RSD	3.5447	.07085	.78097	1.2361	.35761	2.7713	.08465
#1	1.0350	1.0148	1.0200	.51327	1.0049	1.0300	1.0116
#2	1.0298	1.0162	1.0290	.50853	1.0024	1.0280	1.0100
#3	.97042	1.0153	1.0131	.50084	.99782	.98042	1.0101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10174.**	**58886.**	**2687.0**
Stddev	14.	212.	6.2
%RSD	.14175	.36012	.23092
#1	10158.	58888.	2687.3
#2	10177.	58672.	2680.7
#3	10186.	59097.	2693.1

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 14:46:01 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00060**	**.00351**	**-.00095**	**.00454**	**-.00202**	**.00002**	**-.00794**	**.00007**
Stddev	.00026	.00246	.00223	.00055	.00036	.00004	.03471	.00007
%RSD	42.481	70.180	236.01	12.167	18.019	162.61	437.16	92.161
#1	-.00077	.00586	-.00282	.00395	-.00177	.00005	-.04754	.00008
#2	-.00073	.00371	.00152	.00462	-.00243	-.00002	.01722	.00000
#3	-.00031	.00095	-.00154	.00505	-.00185	.00005	.00650	.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.00004**	**-.00107**	**.00083**	**.01134**	**.00307**	**-.08953**	**-.00333**
Stddev	.00011	.00062	.00091	.02376	.07329	.00249	.07914	.00141
%RSD	182.39	1401.7	85.207	2871.9	646.52	81.223	88.400	42.300
#1	.00004	-.00045	-.00082	.01987	.01506	.00286	-.07144	-.00230
#2	-.00018	.00074	-.00031	-.02580	.08269	.00566	-.17615	-.00276
#3	-.00004	-.00015	-.00208	.00841	-.06374	.00069	-.02100	-.00494
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00000**	**.05458**	**-.00137**	**.00275**	**-.00045**	**-.00008**	**-.00339**	**.00216**
Stddev	.00039	.02744	.00076	.00123	.00471	.00393	.00164	.00161
%RSD	27739.	50.283	55.399	44.538	1056.8	5186.1	48.569	74.468
#1	-.00045	.07743	-.00212	.00168	-.00247	.00273	-.00254	.00399
#2	.00015	.02414	-.00061	.00409	-.00381	-.00457	-.00528	.00149
#3	.00030	.06215	-.00137	.00248	.00494	.00161	-.00234	.00099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 14:46:01 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00082**	**.00003**	**.00004**	**-.00018**	**-.00066**	**.00000**	**.00009**
Stddev	.00052	.00022	.00286	.00023	.00061	.00012	.00022
%RSD	63.598	826.69	7584.3	123.98	92.692	10978.	238.15
#1	.00134	-.00021	.00209	-.00045	-.00131	.00003	.00001
#2	.00082	.00008	.00126	-.00008	-.00011	.00010	.00034
#3	.00030	.00021	-.00323	-.00003	-.00055	-.00013	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10269.**	**60526.**	**2698.2**
Stddev	54.	114.	17.4
%RSD	.52151	.18897	.64645
#1	10328.	60634.	2714.5
#2	10224.	60406.	2700.2
#3	10253.	60537.	2679.8

Approved: July 16, 2016

Sample Name: L1607039702 Acquired: 7/14/2016 14:50:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00114	.04371	.00147	.02388	.00094	.00002	7.3981	.00027
Stddev	.00126	.00465	.00161	.00152	.00031	.00007	.0257	.00040
%RSD	110.89	10.638	109.71	6.3687	33.065	427.77	.34716	147.30
#1	.00010	.03851	.00014	.02472	.00102	-.00006	7.3702	-.00018
#2	-.00110	.04514	.00326	.02479	.00119	.00008	7.4207	.00058
#3	-.00242	.04748	.00100	.02212	.00059	.00003	7.4034	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	.23440	.02578	.03275	.90890	.00873	.42465	.10659
Stddev	.00038	.00043	.00173	.00835	.06109	.00400	.06132	.00100
%RSD	50.030	.18470	6.6941	25.498	6.7218	45.811	14.439	.94038
#1	.00048	.23473	.02693	.02382	.97431	.00648	.49544	.10774
#2	.00119	.23391	.02662	.03405	.85330	.00637	.38822	.10613
#3	.00060	.23456	.02380	.04036	.89909	.01335	.39030	.10591
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	138.32	.00551	.03545	.00002	.00011	-.00298	.20834
Stddev	.00046	.52	.00049	.00414	.00040	.00142	.00172	.01345
%RSD	228.90	.37261	8.8942	11.687	2007.2	1331.1	57.549	6.4539
#1	.00023	138.83	.00607	.03872	-.00037	.00014	-.00101	.21643
#2	-.00015	138.33	.00529	.03079	.00043	.00151	-.00415	.21577
#3	-.00069	137.80	.00517	.03683	-.00000	-.00133	-.00379	.19282
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607039702 Acquired: 7/14/2016 14:50:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00119**	**.97246**	**.00274**	**-.00078**	**-.00057**	**1.1100**	**.00052**
Stddev	.00015	.00378	.00113	.00262	.00025	.0930	.00032
%RSD	12.338	.38821	41.384	336.96	44.031	8.3788	60.948
#1	.00118	.97679	.00401	.00113	-.00087	1.1682	.00016
#2	.00105	.97070	.00182	-.00376	-.00042	1.1590	.00066
#3	.00135	.96988	.00239	.00030	-.00044	1.0027	.00075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10242.**	**59937.**	**2754.4**
Stddev	28.	328.	16.3
%RSD	.27406	.54723	.59331
#1	10212.	59560.	2741.7
#2	10268.	60157.	2748.7
#3	10245.	60094.	2772.9

Approved: July 16, 2016

Sample Name: L1607040401 Acquired: 7/14/2016 14:53:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	.06170	-.00132	.01504	-.00091	.00008	.50947	.00035
Stddev	.00097	.00824	.00295	.00171	.00085	.00003	.02112	.00010
%RSD	213.90	13.353	223.68	11.388	92.576	31.900	4.1446	29.206
#1	-.00029	.07115	-.00147	.01694	-.00032	.00011	.51559	.00034
#2	.00155	.05609	-.00419	.01364	-.00188	.00006	.48598	.00046
#3	.00010	.05784	.00170	.01453	-.00054	.00006	.52686	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	.00135	.00759	.07424	.08107	.00079	.06188	.00109
Stddev	.00020	.00026	.00081	.02102	.02319	.00253	.08225	.00246
%RSD	79.419	19.119	10.736	28.317	28.603	318.48	132.92	225.09
#1	-.00041	.00113	.00760	.09314	.08294	-.00201	.00552	-.00150
#2	-.00003	.00164	.00840	.07798	.05700	.00290	.02385	.00137
#3	-.00032	.00130	.00677	.05160	.10326	.00149	.15626	.00341
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.16785	.00027	.01079	.00092	-.00131	-.00488	.14463
Stddev	.00029	.00614	.00088	.00380	.00055	.00159	.00389	.01211
%RSD	496.91	3.6589	330.11	35.249	60.001	121.95	79.663	8.3719
#1	.00039	.16876	.00054	.01498	.00082	-.00308	-.00758	.14937
#2	-.00017	.17348	-.00072	.00755	.00151	-.00084	-.00042	.15364
#3	-.00004	.16130	.00098	.00986	.00042	.00000	-.00663	.13086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607040401 Acquired: 7/14/2016 14:53:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.00146	.00697	.00083	-.00019	.00455	.00001
Stddev	.00058	.00034	.00403	.00205	.00061	.00038	.00006
%RSD	113.99	23.428	57.858	246.58	315.31	8.3353	396.90
#1	-.00010	.00182	.00293	.00152	-.00032	.00478	.00006
#2	.00105	.00144	.00699	.00246	.00047	.00476	.00004
#3	.00056	.00113	.01100	-.00148	-.00073	.00411	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10353.	61636.	2734.1
Stddev	40.	167.	14.4
%RSD	.38292	.27039	.52505
#1	10395.	61561.	2730.1
#2	10350.	61520.	2750.0
#3	10316.	61827.	2722.1

Approved: July 16, 2016

Sample Name: L1607040402 Acquired: 7/14/2016 14:57:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00090	.07661	-.00080	.01882	-.00067	.00001	.42932	.00031
Stddev	.00200	.00148	.00294	.00103	.00063	.00004	.02358	.00011
%RSD	222.42	1.9382	367.66	5.4617	93.964	360.84	5.4917	34.206
#1	.00081	.07578	-.00345	.01948	-.00113	.00002	.40881	.00037
#2	-.00040	.07572	.00236	.01934	-.00093	.00004	.42408	.00019
#3	-.00310	.07832	-.00131	.01764	.00005	-.00003	.45508	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.00029	.05945	.04715	.19542	.00515	-.00201	-.00006
Stddev	.00021	.00019	.00682	.03561	.05155	.00125	.04330	.00092
%RSD	232.28	66.193	11.481	75.527	26.381	24.231	2157.3	1662.0
#1	.00001	.00049	.06467	.03181	.15671	.00583	-.02726	.00064
#2	.00005	.00030	.06194	.08786	.17560	.00592	-.02675	-.00110
#3	-.00033	.00010	.05172	.02178	.25394	.00371	.04799	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.36485	-.00042	.02233	.00100	.00063	-.00632	.15893
Stddev	.00027	.03801	.00090	.00633	.00225	.00134	.00209	.01355
%RSD	181.41	10.419	215.42	28.340	226.29	212.19	33.163	8.5245
#1	-.00014	.38418	-.00070	.02370	.00138	-.00036	-.00442	.16795
#2	.00038	.38931	-.00114	.02786	-.00142	.00010	-.00596	.16550
#3	.00021	.32105	.00059	.01543	.00303	.00215	-.00857	.14335
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607040402 Acquired: 7/14/2016 14:57:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00141	.00547	.00748	-.00062	-.00065	.01550	.00036
Stddev	.00065	.00038	.00294	.00225	.00037	.00167	.00042
%RSD	45.945	6.9370	39.259	365.10	56.339	10.799	115.19
#1	.00066	.00590	.00757	.00198	-.00067	.01630	.00084
#2	.00176	.00537	.01038	-.00209	-.00027	.01662	.00006
#3	.00180	.00516	.00451	-.00173	-.00100	.01358	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10373.	61411.	2726.0
Stddev	24.	268.	9.8
%RSD	.23397	.43711	.36069
#1	10401.	61721.	2720.7
#2	10365.	61238.	2737.3
#3	10355.	61275.	2720.0

Approved: July 16, 2016

Sample Name: L1607040403 Acquired: 7/14/2016 15:01:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00090	.01070	-.00167	.01791	-.00095	.00004	.13865	.00035
Stddev	.00168	.00467	.00219	.00061	.00115	.00009	.02923	.00013
%RSD	187.48	43.628	131.38	3.4185	121.55	201.35	21.080	36.487
#1	.00064	.01334	-.00216	.01859	-.00228	.00005	.12186	.00035
#2	.00269	.01344	.00073	.01774	-.00025	.00013	.17240	.00048
#3	-.00064	.00531	-.00357	.01740	-.00032	-.00004	.12170	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00040	.00050	.00682	.02484	.12797	.00642	-.08225	-.00132
Stddev	.00017	.00105	.00068	.01723	.09987	.00193	.03690	.00178
%RSD	42.935	208.86	9.9358	69.354	78.040	30.131	44.868	135.18
#1	-.00058	.00133	.00677	.01118	.20650	.00475	-.06623	.00063
#2	-.00024	.00085	.00753	.01915	.16184	.00854	-.05606	-.00172
#3	-.00038	-.00068	.00617	.04419	.01557	.00597	-.12446	-.00287
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.22354	.00041	.00681	-.00212	.00121	-.00540	.02539
Stddev	.00022	.01670	.00088	.00237	.00228	.00264	.00225	.00452
%RSD	3709.7	7.4720	213.99	34.816	107.42	219.03	41.688	17.793
#1	-.00014	.21123	.00118	.00436	-.00393	.00156	-.00650	.02760
#2	-.00010	.24255	.00060	.00699	-.00288	-.00159	-.00689	.02837
#3	.00026	.21684	-.00055	.00909	.00044	.00366	-.00281	.02019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607040403 Acquired: 7/14/2016 15:01:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.00059	.00458	.00101	-.00063	.00476	.00005
Stddev	.00029	.00021	.00632	.00255	.00054	.00055	.00021
%RSD	30.557	35.407	138.18	252.57	86.263	11.470	430.75
#1	.00063	.00083	.00792	.00352	-.00125	.00517	-.00010
#2	.00119	.00043	.00853	-.00159	-.00034	.00497	-.00004
#3	.00101	.00051	-.00272	.00110	-.00029	.00414	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10361.	61619.	2734.4
Stddev	22.	29.	10.0
%RSD	.21098	.04782	.36488
#1	10355.	61605.	2737.9
#2	10385.	61599.	2723.2
#3	10342.	61653.	2742.2

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 15:05:47 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41187**	**10.159**	**.40899**	**.51126**	**1.0335**	**.05093**	**10.274**	**.05118**
Stddev	.00053	.008	.00739	.00338	.0051	.00010	.072	.00145
%RSD	.12756	.07732	1.8062	.66177	.49672	.19342	.69707	2.8305
#1	.41236	10.165	.41345	.50783	1.0376	.05102	10.283	.05180
#2	.41194	10.150	.41305	.51460	1.0351	.05083	10.340	.05220
#3	.41132	10.163	.40046	.51137	1.0277	.05096	10.198	.04952
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20512**	**.50434**	**.51196**	**4.1131**	**51.600**	**1.0194**	**10.311**	**.51759**
Stddev	.00613	.00160	.01563	.0491	.254	.0053	.078	.00590
%RSD	2.9894	.31682	3.0538	1.1938	.49248	.51908	.75175	1.1397
#1	.20929	.50618	.52134	4.1624	51.680	1.0247	10.333	.52011
#2	.20800	.50357	.52063	4.1128	51.804	1.0194	10.376	.52181
#3	.19808	.50327	.49391	4.0642	51.315	1.0141	10.225	.51085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0149**	**51.890**	**.51080**	**10.335**	**.51267**	**1.2320**	**.40828**	**5.0521**
Stddev	.0286	.187	.01599	.239	.01222	.0272	.00624	.1051
%RSD	2.8140	.36075	3.1296	2.3137	2.3840	2.0274	1.5287	2.0812
#1	1.0329	52.009	.51986	10.487	.51852	1.2481	.41467	5.1144
#2	1.0298	51.987	.52020	10.458	.52087	1.2472	.40795	5.1112
#3	.98195	51.674	.49234	10.059	.49862	1.2006	.40220	4.9307
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 15:05:47 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0213**	**1.0339**	**1.0418**	**.51478**	**1.0077**	**1.0210**	**1.0274**
Stddev	.0377	.0043	.0003	.00392	.0015	.0296	.0039
%RSD	3.6926	.42034	.03057	.76192	.14631	2.9017	.37910
#1	1.0438	1.0372	1.0421	.51760	1.0066	1.0389	1.0263
#2	1.0423	1.0356	1.0417	.51644	1.0094	1.0374	1.0317
#3	.97775	1.0290	1.0415	.51030	1.0071	.98685	1.0241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10156.**	**58861.**	**2652.0**
Stddev	4.	29.	7.1
%RSD	.03728	.04938	.26749
#1	10160.	58831.	2654.3
#2	10156.	58889.	2644.1
#3	10152.	58864.	2657.7

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 15:09:24 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.01156	-.00156	.00382	-.00114	.00005	-.03587	.00024
Stddev	.00155	.00575	.00231	.00275	.00075	.00008	.03480	.00013
%RSD	2633.4	49.780	148.64	72.137	65.523	181.00	97.028	53.707
#1	.00014	.00529	.00107	.00207	-.00044	.00007	.00309	.00020
#2	-.00153	.01277	-.00331	.00239	-.00105	.00012	-.06389	.00014
#3	.00156	.01660	-.00243	.00699	-.00193	-.00005	-.04681	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	.00099	-.00017	.00056	.09122	.00421	-.01023	-.00094
Stddev	.00032	.00056	.00046	.00714	.08203	.00382	.05538	.00406
%RSD	158.12	56.051	279.27	1270.2	89.919	90.882	541.60	433.19
#1	.00015	.00074	.00037	-.00758	.10408	.00862	.05164	-.00077
#2	-.00029	.00060	-.00038	.00351	.16607	.00216	-.05518	-.00509
#3	-.00047	.00163	-.00049	.00575	.00353	.00185	-.02714	.00304
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.04707	-.00031	.00297	-.00194	.00055	-.00346	.00345
Stddev	.00058	.01583	.00073	.00778	.00142	.00145	.00520	.00065
%RSD	1771.1	33.637	234.16	262.07	72.883	265.81	150.30	18.825
#1	-.00055	.03035	-.00079	.00681	-.00357	.00211	-.00237	.00272
#2	.00060	.04902	.00053	-.00598	-.00096	.00029	.00111	.00395
#3	-.00015	.06184	-.00067	.00807	-.00130	-.00076	-.00913	.00370
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 15:09:24 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.00010	.00017	.00063	-.00063	-.00006	.00029
Stddev	.00084	.00022	.00040	.00280	.00034	.00024	.00042
%RSD	486.15	228.06	240.20	441.55	54.566	407.41	143.41
#1	.00044	.00002	.00027	-.00019	-.00059	.00004	-.00019
#2	-.00077	.00035	-.00027	.00375	-.00099	-.00033	.00060
#3	.00084	-.00008	.00051	-.00166	-.00031	.00011	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10219.	60159.	2663.7
Stddev	21.	106.	14.7
%RSD	.20353	.17581	.55236
#1	10197.	60086.	2646.8
#2	10238.	60110.	2670.9
#3	10223.	60280.	2673.4

Approved: July 16, 2016

Sample Name: L1607023801 Acquired: 7/14/2016 15:13:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	.00124	-.00037	.01139	.40499	.00003	19.608	-.00004
Stddev	.00030	.00198	.00359	.00166	.00310	.00005	.129	.00011
%RSD	234.05	160.08	969.81	14.562	.76448	184.35	.65883	295.12
#1	.00020	.00324	-.00451	.01268	.40744	-.00002	19.649	.00007
#2	-.00020	-.00072	.00197	.00952	.40601	.00003	19.712	-.00015
#3	-.00039	.00119	.00143	.01196	.40151	.00007	19.463	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01052	-.00090	-.00069	61.116	.21949	.00596	.35309	.57986
Stddev	.00052	.00063	.00902	.239	.08082	.00239	.11606	.00612
%RSD	4.9350	70.334	1306.6	.39056	36.824	40.098	32.868	1.0552
#1	.01103	-.00032	.00698	61.008	.12645	.00370	.30204	.58157
#2	.01052	-.00080	.00158	61.389	.25958	.00846	.48592	.58494
#3	.00999	-.00157	-.01063	60.950	.27243	.00572	.27131	.57307
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00035	138.34	.03006	-.01760	.00330	-.00122	-.00487	.65822
Stddev	.00024	.52	.00285	.00635	.00308	.00063	.00345	.03478
%RSD	67.924	.37254	9.4824	36.056	93.492	51.911	70.802	5.2837
#1	-.00061	138.31	.03076	-.01157	.00466	-.00130	-.00504	.68062
#2	-.00014	138.86	.03250	-.01702	.00546	-.00055	-.00134	.67588
#3	-.00030	137.83	.02692	-.02422	-.00023	-.00181	-.00822	.61815
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607023801 Acquired: 7/14/2016 15:13:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.03346	.01260	.00029	-.00076	.57445	-.00204
Stddev	.00041	.00013	.01012	.00252	.00023	.03786	.00016
%RSD	403.93	.38237	80.349	879.57	30.085	6.5901	8.0158
#1	.00028	.03357	.01870	.00310	-.00102	.59765	-.00206
#2	-.00053	.03348	.00091	-.00047	-.00063	.59494	-.00219
#3	-.00006	.03332	.01817	-.00177	-.00062	.53076	-.00186
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10281.	60255.	2750.7
Stddev	5.	186.	9.0
%RSD	.05246	.30939	.32692
#1	10275.	60330.	2760.1
#2	10285.	60393.	2742.3
#3	10284.	60043.	2749.6

Approved: July 16, 2016

Sample Name: L1607034001 Acquired: 7/14/2016 15:17:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	.00330	-.00306	.03422	.09113	-.00004	173.84	.00041
Stddev	.00051	.00850	.00094	.00303	.00101	.00006	.82	.00019
%RSD	183.46	257.42	30.587	8.8466	1.1074	148.70	.47332	46.896
#1	.00011	-.00594	-.00406	.03247	.09054	-.00008	173.52	.00059
#2	-.00013	.00506	-.00220	.03247	.09229	.00003	174.77	.00044
#3	.00085	.01079	-.00292	.03771	.09055	-.00007	173.22	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	.00171	.00104	.01416	.22471	.00869	5.0930	.62882
Stddev	.00023	.00020	.00062	.01612	.01335	.00168	.0502	.00558
%RSD	58.051	11.918	59.358	113.85	5.9388	19.348	.98590	.88768
#1	.00061	.00148	.00112	-.00335	.21644	.01061	5.0974	.62260
#2	.00015	.00187	.00161	.02838	.24010	.00751	5.1409	.63340
#3	.00043	.00177	.00038	.01745	.21758	.00794	5.0408	.63047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	3.6952	.00185	.00446	-.00203	-.00110	-.00645	.94394
Stddev	.00002	.0098	.00056	.00846	.00337	.00066	.00194	.07957
%RSD	17.871	.26507	30.191	189.71	165.83	59.840	30.046	8.4295
#1	.00009	3.7004	.00247	.01421	-.00272	-.00107	-.00860	.99740
#2	.00010	3.7013	.00138	-.00083	-.00501	-.00046	-.00485	.98191
#3	.00007	3.6839	.00171	-.00001	.00163	-.00177	-.00589	.85249
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607034001 Acquired: 7/14/2016 15:17:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.27148	-.02643	.00222	-.00045	.00399	-.00009
Stddev	.00031	.00031	.00611	.00240	.00011	.00031	.00038
%RSD	62.017	.11260	23.129	108.10	25.252	7.7145	395.06
#1	.00084	.27115	-.03009	.00346	-.00037	.00426	.00022
#2	.00048	.27153	-.01937	.00375	-.00040	.00406	-.00051
#3	.00021	.27176	-.02982	-.00055	-.00058	.00365	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10306.	60666.	2758.6
Stddev	17.	112.	25.2
%RSD	.16374	.18381	.91392
#1	10297.	60699.	2756.3
#2	10295.	60542.	2734.6
#3	10325.	60758.	2784.9

Approved: July 16, 2016

Sample Name: L1607045101 Acquired: 7/14/2016 15:21:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00084	.00648	-.00229	.04687	.11420	-.00001	139.97	.00035
Stddev	.00342	.00635	.00119	.00145	.00084	.00011	.08	.00012
%RSD	407.81	98.054	51.872	3.0899	.73298	842.50	.05528	35.525
#1	-.00073	.00435	-.00354	.04796	.11412	.00010	139.88	.00021
#2	.00252	.01362	-.00214	.04743	.11341	-.00012	140.00	.00041
#3	-.00431	.00146	-.00118	.04523	.11508	-.00002	140.02	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.00104	.13312	.00684	1.7352	.03119	21.782	.04463
Stddev	.00022	.00076	.01006	.02907	.0827	.00294	.235	.00099
%RSD	130.42	72.911	7.5576	425.05	4.7660	9.4120	1.0800	2.2257
#1	-.00004	.00095	.13952	.02156	1.6778	.02837	21.511	.04573
#2	.00015	.00185	.13831	.02561	1.8300	.03099	21.933	.04439
#3	.00039	.00033	.12152	-.02665	1.6979	.03423	21.903	.04378
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	23.130	-.00032	.04866	-.00139	.00261	-.00421	7.7364
Stddev	.00036	.054	.00044	.00868	.00323	.00262	.00684	.4451
%RSD	178.61	.23140	137.34	17.832	232.40	100.48	162.53	5.7530
#1	.00055	23.072	-.00006	.04876	-.00512	.00501	.00165	8.0057
#2	.00023	23.177	-.00007	.05729	.00036	.00300	-.00255	7.9809
#3	-.00017	23.141	-.00082	.03994	.00059	-.00019	-.01173	7.2227
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607045101 Acquired: 7/14/2016 15:21:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	.87757	-.01634	.00066	-.00130	.02493	-.00003
Stddev	.00080	.00121	.00234	.00193	.00025	.00166	.00016
%RSD	190.79	.13741	14.328	291.96	19.214	6.6523	590.68
#1	-.00050	.87644	-.01384	.00288	-.00120	.02591	-.00021
#2	.00096	.87743	-.01849	-.00045	-.00111	.02588	.00011
#3	.00080	.87884	-.01669	-.00046	-.00158	.02302	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10098.	59779.	2734.4
Stddev	18.	40.	8.3
%RSD	.17924	.06636	.30442
#1	10118.	59802.	2734.3
#2	10082.	59733.	2742.7
#3	10093.	59802.	2726.1

Approved: July 16, 2016

Sample Name: L1607045102 Acquired: 7/14/2016 15:24:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00216	.02623	-.00083	.01776	.05863	.00001	62.695	.00032
Stddev	.00295	.00896	.00144	.00251	.00298	.00001	1.710	.00009
%RSD	136.61	34.163	173.20	14.148	5.0842	215.82	2.7275	27.763
#1	-.00145	.01617	-.00234	.01488	.05960	.00001	62.548	.00022
#2	.00037	.03336	-.00071	.01949	.05529	-.00001	61.064	.00036
#3	-.00540	.02916	.00054	.01891	.06101	.00002	64.474	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00031	.00056	.01632	.03326	.67939	.01231	6.3568	.00200
Stddev	.00029	.00055	.00068	.00474	.03550	.00227	.2045	.00216
%RSD	93.527	96.568	4.1837	14.257	5.2260	18.430	3.2167	108.26
#1	-.00009	.00063	.01684	.03125	.71994	.01209	6.1978	.00426
#2	-.00020	-.00001	.01658	.02986	.65390	.01016	6.2852	-.00004
#3	-.00064	.00107	.01555	.03868	.66432	.01468	6.5875	.00177
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	5.2789	.00015	.00944	-.00076	.00184	-.00701	3.5690
Stddev	.00015	.1437	.00079	.00405	.00254	.00107	.00247	.1922
%RSD	49.371	2.7220	537.91	42.929	334.63	58.426	35.163	5.3849
#1	.00014	5.2604	.00076	.01317	-.00353	.00278	-.00575	3.6735
#2	.00038	5.1454	-.00075	.01001	.00146	.00067	-.00543	3.6864
#3	.00042	5.4309	.00043	.00513	-.00021	.00208	-.00986	3.3473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607045102 Acquired: 7/14/2016 15:24:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	.22016	-.00790	.00119	-.00057	.01300	-.00015
Stddev	.00128	.00554	.00135	.00202	.00093	.00109	.00034
%RSD	142.71	2.5161	17.136	169.51	162.22	8.3909	218.63
#1	-.00057	.21981	-.00744	.00138	-.00164	.01346	.00014
#2	.00151	.21480	-.00683	.00312	.00005	.01378	-.00052
#3	.00174	.22586	-.00942	-.00092	-.00013	.01175	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10140.	59956.	2722.3
Stddev	23.	124.	49.0
%RSD	.22282	.20641	1.8017
#1	10152.	59824.	2714.7
#2	10114.	60070.	2774.7
#3	10154.	59973.	2677.5

Approved: July 16, 2016

Sample Name: L1607045201 Acquired: 7/14/2016 15:28:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00087**	**.06566**	**-.00220**	**.04250**	**.93272**	**.00006**	**74.906**	**.00010**
Stddev	.00040	.00289	.00233	.00206	.00513	.00005	.210	.00016
%RSD	46.652	4.4084	106.13	4.8501	.55039	83.691	.28097	161.62
#1	-.00052	.06899	-.00064	.04224	.93627	.00004	75.087	.00014
#2	-.00077	.06376	-.00107	.04058	.93505	.00003	74.956	-.00008
#3	-.00131	.06423	-.00487	.04468	.92683	.00012	74.675	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**.00133**	**.08408**	**.43998**	**1.7929**	**.01472**	**12.002**	**.23157**
Stddev	.00024	.00067	.00570	.01256	.0409	.00421	.063	.00406
%RSD	103.15	50.410	6.7816	2.8547	2.2830	28.581	.52439	1.7542
#1	-.00051	.00059	.08703	.44336	1.8331	.01588	12.075	.23575
#2	-.00006	.00150	.08771	.42608	1.7944	.01823	11.972	.23132
#3	-.00013	.00190	.07751	.45051	1.7513	.01006	11.961	.22764
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**29.725**	**-.00102**	**.03144**	**-.00076**	**-.00088**	**-.00329**	**6.5605**
Stddev	.00047	.025	.00064	.00121	.00033	.00400	.00253	.3725
%RSD	794.93	.08274	62.434	3.8605	44.261	454.50	76.717	5.6776
#1	-.00060	29.744	-.00155	.03116	-.00113	.00281	-.00365	6.7175
#2	.00028	29.733	-.00031	.03277	-.00064	-.00032	-.00562	6.8287
#3	.00014	29.697	-.00121	.03039	-.00050	-.00512	-.00061	6.1352
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607045201 Acquired: 7/14/2016 15:28:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**1.1102**	**-.01770**	**-.00115**	**-.00097**	**.02057**	**.00031**
Stddev	.00029	.0037	.00343	.00057	.00051	.00144	.00027
%RSD	2403.4	.33248	19.394	49.297	51.981	7.0008	87.345
#1	-.00006	1.1125	-.01764	-.00062	-.00045	.02147	.00039
#2	-.00028	1.1121	-.02116	-.00175	-.00146	.02132	.00052
#3	.00030	1.1059	-.01430	-.00107	-.00101	.01891	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10003.**	**59663.**	**2705.0**
Stddev	80.	161.	21.4
%RSD	.79504	.27038	.78932
#1	10087.	59645.	2686.5
#2	9928.7	59511.	2728.4
#3	9993.0	59832.	2700.3

Approved: July 16, 2016

Sample Name: L1607045202 Acquired: 7/14/2016 15:32:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.09844	.00227	.08765	.27299	.00005	22.855	.00027
Stddev	.00100	.00766	.00249	.00086	.00038	.00007	.048	.00016
%RSD	2222.4	7.7832	110.02	.98084	.13952	146.68	.20865	59.916
#1	.00119	.10432	-.00058	.08833	.27331	.00002	22.847	.00020
#2	-.00064	.08977	.00408	.08794	.27257	.00013	22.906	.00016
#3	-.00042	.10122	.00330	.08668	.27308	-.00000	22.812	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00145	.00323	.20737	.92473	.01088	4.0563	.14642
Stddev	.00005	.00067	.00032	.04061	.05819	.00340	.0630	.00163
%RSD	44.396	46.540	9.7844	19.585	6.2931	31.243	1.5534	1.1136
#1	.00017	.00072	.00359	.22120	.90509	.00816	4.0034	.14487
#2	.00011	.00157	.00312	.16165	.87890	.00978	4.0395	.14812
#3	.00007	.00206	.00298	.23927	.99021	.01468	4.1260	.14627
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	111.48	.00001	.06066	-.00219	.00430	-.00212	3.7832
Stddev	.00027	.22	.00046	.00567	.00125	.00144	.00600	.2766
%RSD	52.583	.19503	3603.8	9.3447	57.151	33.594	282.54	7.3108
#1	.00021	111.61	.00039	.06101	-.00303	.00597	-.00904	3.9544
#2	.00061	111.59	-.00050	.06614	-.00279	.00342	.00153	3.9311
#3	.00072	111.23	.00014	.05482	-.00075	.00352	.00114	3.4641
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607045202 Acquired: 7/14/2016 15:32:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.30590	.00005	.00237	-.00015	.01446	.00030
Stddev	.00046	.00062	.00486	.00143	.00063	.00138	.00024
%RSD	67.451	.20423	9186.2	60.424	429.50	9.5182	78.565
#1	.00095	.30648	-.00433	.00073	.00058	.01532	.00016
#2	.00096	.30524	.00528	.00335	-.00052	.01518	.00058
#3	.00015	.30599	-.00079	.00302	-.00051	.01287	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9996.0	58512.	2665.0
Stddev	54.9	184.	12.9
%RSD	.54950	.31493	.48576
#1	9962.1	58720.	2659.5
#2	9966.5	58443.	2655.8
#3	10059.	58372.	2679.8

Approved: July 16, 2016

Sample Name: L1607045301 Acquired: 7/14/2016 15:36:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00081	.01293	.00168	.01299	.05197	-.00001	39.081	.00036
Stddev	.00173	.00318	.00152	.00167	.00144	.00005	.265	.00015
%RSD	213.83	24.570	90.916	12.867	2.7708	823.43	.67934	41.023
#1	-.00190	.00927	.00068	.01139	.05116	-.00004	39.386	.00032
#2	-.00172	.01457	.00091	.01286	.05112	-.00003	38.903	.00024
#3	.00119	.01494	.00343	.01473	.05363	.00005	38.953	.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	.00145	.00091	-.00506	.63940	.00752	3.8300	-.00088
Stddev	.00015	.00065	.00058	.01633	.08967	.00481	.0742	.00138
%RSD	325.85	45.046	63.174	322.98	14.024	64.026	1.9366	157.68
#1	-.00005	.00070	.00035	-.01128	.53616	.00201	3.7446	.00048
#2	-.00019	.00185	.00150	.01347	.69779	.00962	3.8787	-.00229
#3	.00010	.00180	.00088	-.01736	.68425	.01093	3.8667	-.00083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	2.2494	-.00064	.00616	-.00148	.00116	-.00600	3.8310
Stddev	.00049	.0267	.00135	.00545	.00265	.00236	.00416	.2915
%RSD	855.29	1.1881	210.27	88.341	179.23	202.94	69.391	7.6084
#1	.00057	2.2772	-.00013	.00004	.00114	-.00136	-.00391	4.0057
#2	-.00041	2.2238	-.00217	.01046	-.00415	.00153	-.01079	3.9928
#3	.00002	2.2472	.00038	.00799	-.00143	.00331	-.00329	3.4945
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607045301 Acquired: 7/14/2016 15:36:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	.12006	-.00977	.00061	-.00063	.00124	-.00048
Stddev	.00086	.00004	.00451	.00058	.00034	.00017	.00068
%RSD	112.64	.03384	46.206	93.884	54.110	13.859	141.31
#1	-.00016	.12002	-.00512	.00020	-.00093	.00138	.00007
#2	.00154	.12011	-.01413	.00127	-.00071	.00130	-.00124
#3	.00090	.12006	-.01006	.00037	-.00026	.00105	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10126.	59759.	2669.8
Stddev	14.	183.	9.7
%RSD	.13943	.30677	.36350
#1	10110.	59716.	2678.3
#2	10132.	59601.	2659.2
#3	10136.	59960.	2671.8

Approved: July 16, 2016

Sample Name: L1607045302 Acquired: 7/14/2016 15:40:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00091	.02677	-.00295	.02743	.03881	.00004	34.085	.00048
Stddev	.00096	.00673	.00291	.00134	.00090	.00008	.115	.00020
%RSD	105.37	25.130	98.831	4.8804	2.3223	193.76	.33744	41.394
#1	-.00030	.03453	-.00105	.02677	.03800	-.00003	34.132	.00055
#2	-.00041	.02310	-.00149	.02655	.03978	.00013	33.953	.00026
#3	-.00202	.02267	-.00630	.02897	.03864	.00002	34.168	.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.00026	.00144	.00123	1.2934	.00259	4.8913	.14913
Stddev	.00020	.00035	.00069	.02334	.0748	.00126	.0323	.00296
%RSD	267.65	134.19	47.485	1896.5	5.7818	48.391	.66141	1.9878
#1	.00015	.00021	.00142	.01993	1.2935	.00250	4.9275	.14788
#2	-.00014	.00064	.00077	.00870	1.2186	.00139	4.8651	.14699
#3	-.00023	-.00006	.00214	-.02493	1.3682	.00390	4.8813	.15251
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	9.7879	-.00000	.02585	-.00262	-.00055	-.00676	3.0061
Stddev	.00021	.0554	.00037	.00262	.00027	.00369	.00397	.1971
%RSD	218.96	.56551	8816.1	10.150	10.299	669.08	58.768	6.5584
#1	-.00008	9.8068	-.00010	.02685	-.00271	-.00221	-.01066	3.1232
#2	.00033	9.7255	-.00031	.02783	-.00232	.00368	-.00688	3.1167
#3	.00004	9.8313	.00040	.02288	-.00283	-.00312	-.00272	2.7785
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607045302 Acquired: 7/14/2016 15:40:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00062	.09017	.00218	-.00128	-.00068	.00650	-.00022
Stddev	.00044	.00030	.00214	.00350	.00087	.00043	.00021
%RSD	71.638	.33324	98.374	273.17	127.61	6.5835	92.672
#1	.00079	.09042	-.00030	.00162	.00019	.00677	-.00039
#2	.00095	.08983	.00342	-.00030	-.00155	.00672	.00001
#3	.00012	.09025	.00342	-.00517	-.00068	.00600	-.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10124.	59917.	2672.4
Stddev	21.	22.	14.1
%RSD	.21207	.03695	.52650
#1	10132.	59905.	2657.7
#2	10141.	59904.	2685.7
#3	10100.	59943.	2673.8

Approved: July 16, 2016

Sample Name: L1607045303 Acquired: 7/14/2016 15:44:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00028	.11477	.00005	.02832	.04154	.00000	33.515	.00046
Stddev	.00128	.00389	.00222	.00142	.00032	.00002	.041	.00005
%RSD	461.11	3.3919	4417.9	5.0297	.76627	13967.	.12260	10.804
#1	-.00052	.11121	.00188	.02691	.04189	.00002	33.470	.00051
#2	.00111	.11893	-.00242	.02976	.04126	.00001	33.551	.00041
#3	-.00141	.11416	.00069	.02830	.04147	-.00002	33.524	.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00032	.00208	.00105	.08791	.87230	.00475	4.8254	.00534
Stddev	.00022	.00080	.00137	.02794	.06321	.00202	.1170	.00212
%RSD	68.175	38.641	131.38	31.782	7.2461	42.586	2.4244	39.724
#1	-.00041	.00202	.00260	.06334	.92653	.00642	4.8420	.00388
#2	-.00007	.00131	.00054	.08208	.88750	.00532	4.9333	.00437
#3	-.00048	.00291	-.00001	.11830	.80288	.00250	4.7011	.00777
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	7.9321	.00002	.03083	-.00150	.00183	-.00613	3.5489
Stddev	.00018	.0956	.00108	.00399	.00101	.00138	.00352	.2536
%RSD	42.107	1.2048	4784.9	12.959	67.054	75.292	57.407	7.1456
#1	.00031	8.0070	-.00114	.03227	-.00240	.00325	-.00373	3.7031
#2	.00064	7.8245	.00100	.03390	-.00042	.00050	-.01016	3.6873
#3	.00035	7.9650	.00021	.02631	-.00169	.00173	-.00448	3.2562
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607045303 Acquired: 7/14/2016 15:44:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00070	.08860	.00518	.00006	-.00008	.01768	-.00014
Stddev	.00040	.00084	.00549	.00068	.00035	.00149	.00014
%RSD	57.836	.95274	106.05	1124.5	461.77	8.4264	98.917
#1	.00086	.08781	.01144	-.00072	.00024	.01863	-.00028
#2	.00099	.08949	.00118	.00040	-.00001	.01845	-.00001
#3	.00024	.08851	.00291	.00050	-.00045	.01596	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10108.	59886.	2703.7
Stddev	16.	243.	18.7
%RSD	.15972	.40646	.69114
#1	10111.	59981.	2684.0
#2	10122.	59610.	2705.8
#3	10091.	60068.	2721.2

Approved: July 16, 2016

Sample Name: L1607045304 Acquired: 7/14/2016 15:48:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00104	.04609	-.00259	.01661	.04185	.00000	53.688	.00026
Stddev	.00143	.00554	.00254	.00136	.00052	.00015	.044	.00024
%RSD	137.87	12.025	98.311	8.1948	1.2536	5982.1	.08111	93.025
#1	.00061	.05248	-.00148	.01730	.04125	.00015	53.732	.00005
#2	-.00200	.04322	-.00549	.01750	.04224	.00001	53.644	.00021
#3	-.00173	.04257	-.00078	.01504	.04205	-.00015	53.688	.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.00165	.00147	.02797	.74724	.00776	7.3161	-.00091
Stddev	.00015	.00065	.00066	.01864	.08009	.00304	.0571	.00182
%RSD	87.565	39.326	44.655	66.671	10.718	39.158	.78102	198.79
#1	-.00007	.00240	.00140	.01106	.79166	.01083	7.3065	-.00220
#2	-.00009	.00134	.00215	.04797	.79527	.00476	7.3775	-.00170
#3	-.00033	.00122	.00085	.02487	.65478	.00768	7.2644	.00116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	6.6382	.00038	.01478	-.00045	.00121	-.00451	4.3497
Stddev	.00014	.0450	.00072	.00070	.00103	.00203	.00805	.2945
%RSD	35.268	.67731	188.13	4.7157	230.77	168.27	178.32	6.7696
#1	.00028	6.6742	.00100	.01404	.00018	.00321	-.01354	4.5394
#2	.00057	6.6528	-.00041	.01488	-.00164	-.00085	-.00190	4.4993
#3	.00038	6.5878	.00055	.01543	.00012	.00126	.00190	4.0105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607045304 Acquired: 7/14/2016 15:48:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.14559	-.00979	-.00041	-.00025	.00164	.00007
Stddev	.00061	.00057	.00143	.00074	.00062	.00019	.00042
%RSD	605.68	.39359	14.616	181.98	246.67	11.510	628.41
#1	-.00028	.14493	-.00971	.00044	.00030	.00156	-.00042
#2	.00080	.14590	-.00840	-.00093	-.00012	.00186	.00028
#3	-.00022	.14594	-.01126	-.00073	-.00093	.00151	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10100.	59661.	2695.6
Stddev	21.	164.	11.4
%RSD	.20561	.27496	.42443
#1	10096.	59513.	2691.1
#2	10122.	59634.	2687.1
#3	10081.	59837.	2708.6

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 15:51:55 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40796**	**10.059**	**.40720**	**.50405**	**1.0261**	**.05046**	**10.204**	**.05088**
Stddev	.00123	.049	.01073	.00460	.0026	.00019	.059	.00088
%RSD	.30156	.48521	2.6352	.91256	.25296	.37839	.58033	1.7324
#1	.40845	10.112	.41445	.50930	1.0290	.05066	10.252	.05115
#2	.40887	10.050	.41228	.50210	1.0253	.05044	10.222	.05160
#3	.40656	10.016	.39487	.50074	1.0240	.05028	10.138	.04990
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20407**	**.50149**	**.50985**	**4.0911**	**51.405**	**1.0178**	**10.148**	**.51811**
Stddev	.00538	.00201	.01185	.0117	.199	.0027	.056	.00226
%RSD	2.6363	.40007	2.3233	.28473	.38729	.26251	.54909	.43553
#1	.20741	.50370	.51732	4.0918	51.515	1.0189	10.110	.51954
#2	.20694	.50100	.51605	4.0791	51.524	1.0197	10.122	.51551
#3	.19787	.49978	.49620	4.1024	51.175	1.0147	10.212	.51928
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0150**	**51.404**	**.50795**	**10.261**	**.50797**	**1.2230**	**.40958**	**5.0096**
Stddev	.0305	.136	.01439	.188	.00381	.0281	.00727	.0755
%RSD	3.0046	.26420	2.8326	1.8359	.75047	2.2996	1.7760	1.5076
#1	1.0255	51.509	.51560	10.364	.51076	1.2404	.41143	5.0517
#2	1.0389	51.452	.51691	10.376	.50953	1.2381	.41575	5.0546
#3	.98069	51.250	.49136	10.043	.50363	1.1906	.40156	4.9224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 15:51:55 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0148**	**1.0275**	**1.0320**	**.50964**	**.99752**	**1.0138**	**1.0220**
Stddev	.0330	.0021	.0113	.00335	.00178	.0252	.0077
%RSD	3.2533	.20526	1.0964	.65704	.17814	2.4825	.75429
#1	1.0350	1.0298	1.0443	.50604	.99922	1.0272	1.0299
#2	1.0326	1.0256	1.0296	.51266	.99766	1.0294	1.0217
#3	.97666	1.0270	1.0221	.51023	.99567	.98473	1.0144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10173.**	**59187.**	**2657.7**
Stddev	15.	34.	7.5
%RSD	.14988	.05731	.28105
#1	10190.	59181.	2652.9
#2	10161.	59224.	2653.9
#3	10169.	59158.	2666.3

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 15:55:32 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00114**	**-.00042**	**-.00038**	**.00297**	**-.00154**	**.00006**	**-.03848**	**.00033**
Stddev	.00105	.00382	.00048	.00071	.00040	.00005	.03753	.00008
%RSD	92.481	918.90	126.42	23.911	26.034	74.438	97.532	23.409
#1	-.00180	-.00332	.00013	.00306	-.00163	.00007	-.00100	.00038
#2	.00008	-.00184	-.00082	.00222	-.00189	.00011	-.03838	.00035
#3	-.00169	.00391	-.00044	.00362	-.00110	.00001	-.07605	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**-.00025**	**-.00026**	**-.01626**	**.02061**	**.00330**	**.00899**	**.00020**
Stddev	.00034	.00035	.00107	.04420	.07945	.00182	.05829	.00278
%RSD	310.97	140.30	410.54	271.81	385.54	55.171	648.61	1361.1
#1	-.00048	.00011	-.00109	-.05476	.06984	.00310	-.04291	-.00278
#2	.00020	-.00059	.00095	.03201	.06303	.00521	.07206	.00272
#3	-.00005	-.00027	-.00065	-.02603	-.07105	.00159	-.00219	.00067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**.06140**	**-.00092**	**.00667**	**-.00468**	**.00168**	**-.00497**	**.00209**
Stddev	.00004	.00667	.00032	.00225	.00246	.00186	.00074	.00008
%RSD	662.70	10.858	34.509	33.770	52.490	110.83	14.915	3.6185
#1	.00005	.06909	-.00060	.00858	-.00700	.00294	-.00433	.00201
#2	-.00004	.05728	-.00123	.00418	-.00210	.00255	-.00479	.00216
#3	.00001	.05782	-.00093	.00725	-.00493	-.00046	-.00578	.00210
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 15:55:32 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**-.00015**	**-.00413**	**.00146**	**-.00128**	**-.00008**	**-.00001**
Stddev	.00058	.00033	.00405	.00172	.00057	.00009	.00013
%RSD	350.98	222.31	97.914	118.39	44.240	104.34	954.04
#1	-.00060	.00023	.00049	.00158	-.00076	-.00001	.00010
#2	.00049	-.00030	-.00701	-.00033	-.00121	-.00018	.00001
#3	-.00039	-.00038	-.00589	.00311	-.00188	-.00006	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10430.**	**61440.**	**2752.3**
Stddev	73.	42.	10.2
%RSD	.70212	.06800	.37131
#1	10380.	61480.	2746.8
#2	10397.	61444.	2764.1
#3	10514.	61396.	2746.1

Approved: July 16, 2016

Sample Name: L1607045305 Acquired: 7/14/2016 15:59:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.07317	-.00055	.03477	.04226	.00001	31.067	.00038
Stddev	.00181	.00702	.00244	.00029	.00098	.00011	.154	.00005
%RSD	531.05	9.5991	443.37	.84671	2.3122	746.10	.49486	12.309
#1	-.00058	.07948	-.00060	.03462	.04250	-.00009	31.106	.00043
#2	-.00083	.07444	.00192	.03458	.04310	.00012	30.897	.00035
#3	.00243	.06560	-.00297	.03511	.04119	.00002	31.197	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	.00054	.00099	.76935	2.0823	.00140	4.2033	.68062
Stddev	.00032	.00052	.00006	.01931	.0578	.00111	.0170	.00249
%RSD	280.89	95.470	6.1316	2.5100	2.7781	79.095	.40554	.36513
#1	-.00010	.00042	.00095	.77097	2.0175	.00154	4.2154	.68311
#2	.00048	.00010	.00106	.78780	2.1005	.00242	4.2106	.68059
#3	-.00004	.00111	.00096	.74929	2.1289	.00023	4.1838	.67814
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	7.0364	-.00051	.13532	-.00272	.00098	-.00165	4.1730
Stddev	.00026	.0644	.00026	.00644	.00154	.00065	.00251	.2649
%RSD	50.191	.91530	50.770	4.7607	56.369	66.390	152.38	6.3489
#1	.00024	7.1021	-.00041	.13717	-.00260	.00163	-.00032	4.3378
#2	.00055	7.0338	-.00080	.14064	-.00125	.00099	-.00455	4.3138
#3	.00076	6.9734	-.00031	.12816	-.00432	.00033	-.00008	3.8674
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607045305 Acquired: 7/14/2016 15:59:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	.08904	-.00632	.00012	.00029	.00357	.00001
Stddev	.00101	.00090	.00459	.00097	.00095	.00047	.00034
%RSD	447.42	1.0085	72.574	784.86	326.84	13.054	2698.7
#1	.00125	.08998	-.01093	.00067	.00111	.00404	-.00002
#2	.00021	.08895	-.00176	.00069	-.00075	.00356	.00037
#3	-.00078	.08819	-.00627	-.00099	.00051	.00311	-.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10111.	59961.	2698.0
Stddev	23.	206.	31.3
%RSD	.22901	.34322	1.1588
#1	10097.	59729.	2671.2
#2	10099.	60035.	2690.4
#3	10138.	60120.	2732.4

Approved: July 16, 2016

Sample Name: L1607045401 Acquired: 7/14/2016 16:03:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00097	1.7098	-.00018	.02342	.18371	.00011	57.052	.00034
Stddev	.00138	.0173	.00079	.00084	.00284	.00006	.417	.00023
%RSD	142.94	1.0129	443.13	3.5659	1.5441	58.280	.73157	68.027
#1	.00023	1.7173	.00070	.02427	.18558	.00009	57.271	.00016
#2	-.00065	1.6900	-.00083	.02260	.18045	.00018	56.571	.00060
#3	-.00248	1.7221	-.00041	.02339	.18511	.00006	57.314	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	.00281	.01143	2.0912	1.2497	.01159	6.4373	.19742
Stddev	.00014	.00046	.00174	.0173	.1098	.00392	.0795	.00299
%RSD	22.916	16.323	15.213	.82818	8.7881	33.852	1.2356	1.5124
#1	.00061	.00313	.01261	2.0934	1.1863	.01294	6.3850	.19664
#2	.00076	.00229	.01225	2.0729	1.1863	.00717	6.5288	.19490
#3	.00047	.00303	.00944	2.1073	1.3765	.01465	6.3980	.20071
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	10.858	.00694	.05840	-.00128	.00195	-.00385	6.2356
Stddev	.00046	.067	.00144	.00397	.00156	.00214	.00202	.3623
%RSD	113.66	.61678	20.780	6.7899	122.47	109.47	52.366	5.8097
#1	.00003	10.903	.00823	.05420	-.00234	.00063	-.00153	6.4608
#2	.00027	10.781	.00722	.05893	.00052	.00442	-.00489	6.4282
#3	.00092	10.890	.00538	.06208	-.00201	.00081	-.00514	5.8177
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607045401 Acquired: 7/14/2016 16:03:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.23216	.02416	-.00060	.00164	.01207	.00084
Stddev	.00089	.00146	.00468	.00042	.00030	.00067	.00019
%RSD	407.21	.62691	19.351	70.649	18.479	5.5177	22.509
#1	.00084	.23318	.01876	-.00094	.00197	.01248	.00063
#2	-.00080	.23049	.02684	-.00013	.00156	.01242	.00099
#3	.00062	.23279	.02689	-.00073	.00138	.01130	.00091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10079.	59708.	2697.8
Stddev	13.	76.	22.8
%RSD	.12513	.12654	.84565
#1	10073.	59684.	2682.0
#2	10093.	59792.	2723.9
#3	10069.	59646.	2687.4

Approved: July 16, 2016

Sample Name: L1607020101 Acquired: 7/14/2016 16:07:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00084	39.300	.00403	.23325	.23400	.00007	50.376
Stddev	.00181	.074	.00289	.00505	.00104	.00006	.092
%RSD	215.50	.18951	71.636	2.1659	.44616	85.768	.18317
#1	-.00106	39.271	.00349	.22936	.23516	.00002	50.461
#2	-.00254	39.245	.00716	.23142	.23371	.00013	50.388
#3	.00107	39.385	.00146	.23896	.23313	.00005	50.278
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01680	5.2940	.14580	.25879	5.2918	6.3355	2.6635
Stddev	.00171	.5967	.00085	.02987	.0160	.1420	.0010
%RSD	10.194	11.271	.58132	11.540	.30161	2.2407	.03901
#1	.01792	5.6844	.14509	.27829	5.2746	6.2445	2.6647
#2	.01767	5.5905	.14556	.27368	5.3061	6.2630	2.6628
#3	.01483	4.6071	.14674	.22441	5.2948	6.4991	2.6629
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	13.044	.17370	.01376	F 424.50	13.789	42.362	.01446
Stddev	.131	.00157	.00139	3.52	1.546	4.360	.00240
%RSD	1.0049	.90620	10.103	.82951	11.215	10.292	16.576
#1	13.028	.17202	.01442	428.46	14.801	45.128	.01702
#2	13.182	.17392	.01470	423.30	14.558	44.621	.01227
#3	12.921	.17515	.01216	421.73	12.009	37.336	.01409
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 16, 2016

Sample Name: L1607020101 Acquired: 7/14/2016 16:07:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00200	.00204	2.0004	.00062	.38129	-.00008	.00589
Stddev	.00711	.00084	.1967	.00061	.00018	.00304	.00188
%RSD	354.49	41.398	9.8317	97.782	.04791	3957.1	31.933
#1	.00473	.00258	2.1291	.00113	.38149	.00030	.00423
#2	.00734	.00107	2.0980	.00079	.38125	-.00328	.00794
#3	-.00606	.00247	1.7740	-.00005	.38113	.00275	.00552
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00174	.70378	-.00007
Stddev	.00053	.07745	.00096
%RSD	30.700	11.005	1344.8
#1	.00235	.75443	-.00088
#2	.00143	.74229	-.00032
#3	.00143	.61462	.00099
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10112.	58404.	2673.0
Stddev	23.	42.	41.5
%RSD	.22486	.07116	1.5539
#1	10086.	58371.	2628.7
#2	10124.	58390.	2679.3
#3	10127.	58451.	2711.0

Approved: July 16, 2016

Sample Name: L1607020102 Acquired: 7/14/2016 16:11:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00121**	**39.765**	**.00797**	**.26672**	**.34361**	**.00000**	**53.917**
Stddev	.00159	.061	.00064	.00598	.00261	.00006	.342
%RSD	131.82	.15275	8.0095	2.2425	.75983	1470.5	.63469
#1	-.00304	39.695	.00859	.26065	.34060	-.00003	53.570
#2	-.00046	39.796	.00731	.26690	.34501	-.00003	53.926
#3	-.00013	39.805	.00801	.27261	.34522	.00007	54.254
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01628**	**5.2023**	**.16700**	**.27773**	**9.4615**	**5.9353**	**2.4496**
Stddev	.00227	.7339	.00033	.04160	.1053	.0312	.0168
%RSD	13.948	14.107	.19717	14.978	1.1131	.52588	.68547
#1	.01780	5.7191	.16662	.30654	9.3498	5.9002	2.4304
#2	.01736	5.5256	.16725	.29663	9.4760	5.9598	2.4573
#3	.01367	4.3623	.16712	.23004	9.5589	5.9460	2.4612
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**14.594**	**.17354**	**.03256**	F **414.62**	**13.161**	**50.704**	**.02223**
Stddev	.073	.00098	.00445	4.37	1.844	6.879	.00474
%RSD	.50303	.56307	13.670	1.0534	14.009	13.566	21.320
#1	14.511	.17328	.03564	410.03	14.457	55.490	.02636
#2	14.651	.17271	.03458	415.11	13.976	53.800	.02328
#3	14.621	.17462	.02745	418.73	11.050	42.821	.01705
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 16, 2016

Sample Name: L1607020102 Acquired: 7/14/2016 16:11:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	.00343	2.5250	.00180	.39746	.01041	.00638
Stddev	.00280	.00505	.3217	.00017	.00208	.00840	.00264
%RSD	657.90	147.32	12.741	9.6329	.52360	80.711	41.306
#1	-.00169	-.00086	2.7388	.00171	.39536	.00749	.00932
#2	-.00063	.00215	2.6813	.00200	.39749	.00386	.00422
#3	.00360	.00900	2.1550	.00168	.39952	.01988	.00560
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00377	.67234	.00059
Stddev	.00137	.09352	.00033
%RSD	36.348	13.909	56.612
#1	.00262	.73794	.00039
#2	.00529	.71382	.00097
#3	.00341	.56526	.00041
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10298.	59464.	2796.9
Stddev	90.	217.	8.9
%RSD	.87698	.36437	.31911
#1	10238.	59706.	2805.7
#2	10254.	59397.	2797.1
#3	10402.	59288.	2787.8

Approved: July 16, 2016

Sample Name: L1607020104 Acquired: 7/14/2016 16:15:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	60.218	.00289	.41001	.12995	.00014	133.89
Stddev	.00186	.117	.00344	.00555	.00068	.00004	.34
%RSD	397.74	.19452	119.03	1.3535	.52502	30.438	.25393
#1	.00236	60.117	.00682	.40395	.13018	.00011	134.28
#2	-.00136	60.191	.00044	.41125	.13048	.00011	133.68
#3	.00040	60.347	.00140	.41483	.12918	.00019	133.71
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04705	13.940	.16845	.40258	2.2411	14.455	3.5228
Stddev	.00544	1.635	.00090	.04935	.0150	.073	.0076
%RSD	11.553	11.730	.53363	12.258	.66897	.50284	.21511
#1	.05071	15.022	.16938	.43568	2.2542	14.531	3.5236
#2	.04964	14.740	.16837	.42619	2.2247	14.450	3.5300
#3	.04080	12.059	.16759	.34586	2.2444	14.385	3.5149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	36.656	.44609	.00428	F 481.57	21.075	66.240	.01195
Stddev	.062	.00224	.00052	9.56	2.479	7.133	.00340
%RSD	.16827	.50124	12.219	1.9853	11.764	10.768	28.412
#1	36.598	.44417	.00466	492.58	22.715	70.859	.01584
#2	36.649	.44855	.00449	475.36	22.287	69.835	.01049
#3	36.720	.44555	.00368	476.78	18.223	58.024	.00954
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 16, 2016

Sample Name: L1607020104 Acquired: 7/14/2016 16:15:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00031	.00043	3.6836	.00054	.93720	-.01316	.01739
Stddev	.00600	.00550	.3797	.00064	.00258	.00648	.00295
%RSD	1938.0	1268.3	10.308	118.26	.27570	49.270	16.993
#1	.00624	-.00585	3.9244	.00113	.94012	-.00790	.01732
#2	-.00552	.00440	3.8805	.00065	.93629	-.01118	.02038
#3	-.00165	.00275	3.2459	-.00014	.93520	-.02040	.01447
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00392	1.7517	.00018
Stddev	.00097	.2030	.00008
%RSD	24.681	11.587	46.115
#1	.00358	1.8851	.00019
#2	.00318	1.8517	.00027
#3	.00502	1.5181	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9775.5	56260.	2611.5
Stddev	78.2	69.	12.7
%RSD	.80002	.12328	.48775
#1	9756.4	56286.	2600.9
#2	9708.5	56181.	2608.0
#3	9861.4	56312.	2625.6

Approved: July 16, 2016

Sample Name: L1607024903 Acquired: 7/14/2016 16:18:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .00134	k 6.6657	k .00854	k .10522	1.0159	k .00105	^ *****	k .00092
Stddev	.00632	.1035	.00097	.00095	.3466	.00004	-----	.00036
%RSD	471.73	1.5525	11.409	.89995	34.121	3.9679	-----	38.577
#1	k -.00589	k 6.6772	k .00956	k .10523	.61857	k .00108	^ -----	k .00059
#2	.00585	6.5569	.00763	.10426	1.1729	.00100	119.98	.00130
#3	.00406	6.7629	.00842	.10616	1.2563	.00107	129.32	.00088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .02186	k .13681	k .14198	k 24.855	1.5410	.01578	k 4.6375	^ *****
Stddev	.00389	.00558	.03724	7.997	.4875	.00225	1.6831	-----
%RSD	17.804	4.0771	26.230	32.174	31.635	14.256	36.293	-----
#1	k .02587	k .14315	k .18386	k 15.706	.98199	.01326	k 2.7043	^ -----
#2	.02161	.13264	.12947	28.351	1.7634	.01649	5.4320	23.955
#3	.01810	.13464	.11260	30.509	1.8777	.01758	5.7763	25.755
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .02347	5.1991	k .16132	k 10.140	k .01925	k .00179	k .01399	8.3431
Stddev	.00155	1.8916	.01650	.734	.00459	.00255	.00860	.6433
%RSD	6.6018	36.384	10.225	7.2393	23.843	142.66	61.483	7.7106
#1	k .02507	3.0517	k .17819	k 10.806	k .02373	k -.00095	k .02376	8.9194
#2	.02337	5.9271	.16056	10.262	.01946	.00409	.00756	8.4607
#3	.02198	6.6186	.14522	9.3529	.01456	.00222	.01065	7.6491
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607024903 Acquired: 7/14/2016 16:18:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k .21909	k .39945	k .15193	k .01418	k .02768	k .95855	k .00274
Stddev	.01412	.13434	.04517	.01345	.00287	.06475	.00068
%RSD	6.4470	33.631	29.733	94.896	10.383	6.7545	24.778
#1	k .23228	k .24578	k .09978	k .02958	k .02445	k 1.0209	k .00196
#2	.22080	.45800	.17712	.00824	.02865	.96304	.00318
#3	.20419	.49458	.17889	.00471	.02994	.89168	.00307
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9989.6	58927.	3108.9
Stddev	42.8	511.	581.9
%RSD	.42832	.86788	18.718
#1	9942.4	59039.	3780.1
#2	10026.	59374.	2801.1
#3	10000.	58369.	2745.6

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 16:22:38 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40141	9.8066	.40530	.49543	.99416	.04891	9.9274	.05042
Stddev	.00442	.0172	.00799	.00134	.00648	.00011	.0224	.00133
%RSD	1.1006	.17498	1.9713	.27116	.65136	.23045	.22548	2.6332
#1	.39666	9.7925	.40914	.49402	1.0005	.04902	9.9412	.05080
#2	.40540	9.8016	.41063	.49557	.98756	.04890	9.9395	.05151
#3	.40216	9.8257	.39611	.49669	.99440	.04880	9.9016	.04894
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20105	.48729	.50288	3.9850	49.874	.98892	9.8808	.50244
Stddev	.00544	.00195	.01205	.0424	.435	.00464	.1062	.00142
%RSD	2.7066	.39964	2.3966	1.0640	.87281	.46898	1.0750	.28202
#1	.20396	.48511	.50843	4.0160	50.330	.99333	9.7655	.50389
#2	.20441	.48790	.51115	3.9367	49.463	.98409	9.9022	.50106
#3	.19477	.48885	.48905	4.0023	49.829	.98933	9.9747	.50237
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0036	49.906	.49993	10.136	.50215	1.2085	.40683	4.9894
Stddev	.0236	.406	.01301	.188	.00615	.0197	.00534	.0821
%RSD	2.3466	.81450	2.6031	1.8505	1.2254	1.6266	1.3125	1.6453
#1	1.0106	50.307	.50612	10.229	.50671	1.2205	.40692	5.0309
#2	1.0229	49.494	.50870	10.258	.50460	1.2191	.41213	5.0425
#3	.97734	49.919	.48498	9.9196	.49515	1.1858	.40145	4.8949
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 16:22:38 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99883	.99802	1.0041	.50208	.96914	.99781	.98634
Stddev	.03066	.00660	.0076	.00335	.00254	.02462	.00196
%RSD	3.0698	.66092	.76083	.66816	.26236	2.4674	.19870
#1	1.0153	1.0039	1.0117	.50252	.96845	1.0100	.98649
#2	1.0177	.99090	.99639	.50519	.96701	1.0140	.98431
#3	.96345	.99923	1.0042	.49852	.97195	.96948	.98822
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10253.	60205.	2730.3
Stddev	27.	83.	4.8
%RSD	.26382	.13728	.17407
#1	10278.	60155.	2725.8
#2	10259.	60300.	2735.3
#3	10224.	60160.	2729.7

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 16:26:13 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00084**	**.00693**	**.00004**	**.00329**	**-.00064**	**.00008**	**-.04658**	**.00033**
Stddev	.00216	.00079	.00020	.00240	.00058	.00002	.02232	.00008
%RSD	258.05	11.321	544.76	72.957	90.922	28.177	47.916	24.640
#1	.00145	.00650	.00026	.00055	.00002	.00007	-.07187	.00026
#2	-.00285	.00784	-.00009	.00427	-.00087	.00011	-.03821	.00042
#3	-.00111	.00646	-.00006	.00504	-.00107	.00007	-.02965	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00017**	**.00042**	**-.00041**	**-.00320**	**.05261**	**.00130**	**-.04620**	**.00044**
Stddev	.00027	.00070	.00035	.03152	.07100	.00421	.06598	.00078
%RSD	156.44	165.34	85.933	985.22	134.97	324.93	142.82	179.49
#1	-.00007	-.00038	-.00019	-.02061	.05839	-.00356	.01057	.00108
#2	.00012	.00076	-.00022	.03318	.12054	.00353	-.11858	.00067
#3	.00046	.00089	-.00081	-.02217	-.02111	.00393	-.03059	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.08500**	**-.00095**	**.00360**	**-.00124**	**.00257**	**-.00552**	**.00768**
Stddev	.00030	.01715	.00028	.00317	.00304	.00333	.00209	.00069
%RSD	224.99	20.173	29.483	88.269	244.96	129.52	37.753	9.0048
#1	-.00032	.10445	-.00098	.00209	.00197	.00598	-.00404	.00763
#2	.00021	.07848	-.00121	.00146	-.00162	-.00067	-.00462	.00840
#3	-.00030	.07206	-.00065	.00724	-.00408	.00239	-.00791	.00701
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 16:26:13 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00010	-.00094	-.00112	-.00069	.00011	-.00000
Stddev	.00018	.00016	.00717	.00221	.00084	.00005	.00006
%RSD	98.291	152.20	766.70	198.42	121.65	44.310	2421.7
#1	.00020	.00028	.00730	-.00251	-.00135	.00009	-.00005
#2	-.00000	.00002	-.00432	.00144	-.00095	.00017	-.00001
#3	.00035	.00001	-.00578	-.00227	.00025	.00008	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9666.1	57466.	2626.1
Stddev	8.4	464.	5.4
%RSD	.08697	.80688	.20502
#1	9657.3	57700.	2631.6
#2	9674.0	57766.	2625.8
#3	9666.9	56932.	2620.8

Approved: July 16, 2016

Sample Name: L1607029102 Acquired: 7/14/2016 16:30:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	1.1867	-.00206	.01154	.02452	.00008	17.286	.00038
Stddev	.00124	.0048	.00264	.00239	.00183	.00002	.049	.00010
%RSD	347.24	.40589	128.13	20.669	7.4462	27.829	.28632	26.278
#1	.00067	1.1822	-.00468	.01072	.02663	.00011	17.341	.00049
#2	.00000	1.1861	.00061	.01423	.02346	.00007	17.274	.00035
#3	-.00174	1.1918	-.00212	.00968	.02347	.00007	17.244	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00095	.00213	.00289	2.0895	1.1450	.00594	2.6275	.04525
Stddev	.00034	.00024	.00030	.0270	.0376	.00223	.0701	.00391
%RSD	35.847	11.300	10.279	1.2940	3.2823	37.626	2.6674	8.6494
#1	.00133	.00187	.00272	2.1070	1.1414	.00805	2.5665	.04146
#2	.00088	.00235	.00271	2.1031	1.1093	.00360	2.6118	.04927
#3	.00065	.00217	.00323	2.0583	1.1843	.00616	2.7040	.04501
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00101	2.5388	.00137	.06471	-.00042	-.00031	.00052	5.0057
Stddev	.00011	.0305	.00048	.00071	.00221	.00118	.00236	.3706
%RSD	11.240	1.2012	35.074	1.1030	527.10	376.76	449.67	7.4031
#1	.00100	2.5367	.00190	.06494	-.00002	-.00044	.00319	5.2064
#2	.00091	2.5093	.00095	.06529	.00156	.00093	-.00130	5.2326
#3	.00114	2.5702	.00127	.06391	-.00280	-.00143	-.00031	4.5781
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607029102 Acquired: 7/14/2016 16:30:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	.04893	.01795	.00062	.00192	.03617	.00078
Stddev	.00063	.00042	.00646	.00253	.00061	.00326	.00028
%RSD	92.318	.85552	35.979	407.70	31.834	9.0114	35.922
#1	.00106	.04859	.02482	.00259	.00122	.03817	.00046
#2	.00104	.04940	.01201	-.00223	.00218	.03794	.00099
#3	-.00005	.04881	.01701	.00150	.00236	.03241	.00089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10248.	60671.	2707.4
Stddev	59.	246.	18.6
%RSD	.57913	.40483	.68686
#1	10289.	60622.	2688.9
#2	10276.	60453.	2707.3
#3	10180.	60937.	2726.1

Approved: July 16, 2016

Sample Name: L1607029103 Acquired: 7/14/2016 16:33:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	1.8695	.00195	.01468	.02602	.00017	26.738	.00037
Stddev	.00124	.0065	.00158	.00303	.00165	.00005	.190	.00014
%RSD	7025.6	.34955	81.044	20.651	6.3371	30.509	.70997	38.838
#1	-.00026	1.8695	.00343	.01743	.02679	.00013	26.876	.00021
#2	.00137	1.8761	.00028	.01143	.02714	.00015	26.817	.00049
#3	-.00105	1.8630	.00215	.01518	.02413	.00023	26.521	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	.00433	.00482	3.0936	1.2736	.00561	5.2465	.05894
Stddev	.00027	.00111	.00133	.0156	.0357	.00232	.1059	.00211
%RSD	30.904	25.728	27.515	.50272	2.8011	41.395	2.0183	3.5851
#1	.00062	.00452	.00614	3.0892	1.2540	.00552	5.3391	.06121
#2	.00085	.00534	.00482	3.1109	1.2520	.00334	5.2693	.05856
#3	.00116	.00314	.00349	3.0807	1.3147	.00798	5.1310	.05704
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	3.0795	.00242	.06464	-.00005	.00297	-.00155	5.6872
Stddev	.00028	.0063	.00062	.00985	.00187	.00241	.00426	.3786
%RSD	57.590	.20335	25.599	15.233	4033.1	80.986	275.03	6.6572
#1	.00068	3.0771	.00232	.07320	.00191	.00548	-.00459	5.9148
#2	.00063	3.0866	.00308	.06684	-.00182	.00278	.00332	5.8967
#3	.00017	3.0748	.00185	.05388	-.00022	.00067	-.00337	5.2502
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607029103 Acquired: 7/14/2016 16:33:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	.06853	.01763	-.00083	.00165	.03804	.00097
Stddev	.00037	.00029	.00573	.00119	.00015	.00331	.00016
%RSD	60.794	.43013	32.475	144.06	9.3800	8.6959	16.676
#1	.00103	.06854	.02353	-.00002	.00171	.04034	.00079
#2	.00042	.06823	.01729	-.00027	.00148	.03952	.00109
#3	.00036	.06882	.01209	-.00220	.00177	.03425	.00102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10216.	60428.	2709.6
Stddev	39.	91.	25.5
%RSD	.38120	.15037	.94223
#1	10218.	60329.	2682.2
#2	10254.	60448.	2713.9
#3	10176.	60507.	2732.7

Approved: July 16, 2016

Sample Name: L1607029104 Acquired: 7/14/2016 16:37:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00104	3.3244	.00180	.01960	.08210	.00028	93.243	.00060
Stddev	.00135	.0149	.00237	.00206	.00136	.00001	.445	.00032
%RSD	129.58	.44746	132.03	10.532	1.6569	2.2977	.47719	54.129
#1	-.00028	3.3355	.00353	.02054	.08084	.00028	92.865	.00083
#2	-.00261	3.3302	-.00091	.02103	.08354	.00029	93.130	.00023
#3	-.00025	3.3075	.00278	.01723	.08191	.00027	93.734	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00460	.00724	.00832	6.1093	3.0817	.01515	15.392	2.3640
Stddev	.00053	.00031	.00239	.0351	.0428	.00309	.106	.0043
%RSD	11.549	4.2686	28.737	.57466	1.3898	20.370	.69136	.18078
#1	.00519	.00707	.00910	6.0688	3.0349	.01611	15.271	2.3618
#2	.00416	.00704	.01023	6.1315	3.1190	.01766	15.470	2.3613
#3	.00445	.00759	.00564	6.1276	3.0912	.01170	15.435	2.3689
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	8.5530	.01230	.17924	.00526	.00166	-.00373	7.7557
Stddev	.00017	.0857	.00125	.00966	.00432	.00061	.00150	.4323
%RSD	35.120	1.0023	10.125	5.3885	82.039	36.998	40.061	5.5739
#1	.00053	8.6517	.01236	.17999	.00318	.00218	-.00208	8.0157
#2	.00030	8.4972	.01351	.18850	.01022	.00098	-.00499	7.9946
#3	.00064	8.5102	.01102	.16923	.00238	.00183	-.00413	7.2566
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607029104 Acquired: 7/14/2016 16:37:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00133	.32868	.03666	.00109	.00431	.04269	.00105
Stddev	.00035	.00244	.00621	.00397	.00044	.00300	.00005
%RSD	26.088	.74147	16.927	363.13	10.286	7.0183	5.0059
#1	.00173	.32596	.04305	.00165	.00458	.04460	.00111
#2	.00116	.32942	.03066	-.00313	.00456	.04424	.00100
#3	.00110	.33066	.03627	.00476	.00380	.03924	.00105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10125.	59777.	2701.6
Stddev	28.	114.	10.9
%RSD	.27506	.19105	.40188
#1	10131.	59660.	2713.7
#2	10149.	59888.	2692.7
#3	10094.	59784.	2698.3

Approved: July 16, 2016

Sample Name: L1607038001 Acquired: 7/14/2016 16:41:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00134**	**.01853**	**-.00194**	**.01623**	**.12932**	**-.00001**	**42.240**	**.00033**
Stddev	.00043	.00712	.00135	.00276	.00177	.00004	.256	.00012
%RSD	31.724	38.406	69.588	16.987	1.3698	409.40	.60614	36.884
#1	-.00152	.01031	-.00349	.01360	.12949	-.00006	41.947	.00023
#2	-.00165	.02281	-.00132	.01598	.12747	.00003	42.359	.00047
#3	-.00086	.02246	-.00101	.01910	.13100	-.00000	42.415	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**.00049**	**.03008**	**.87688**	**1.3340**	**.00503**	**4.8098**	**.12251**
Stddev	.00002	.00122	.00181	.03156	.0978	.00264	.0856	.00127
%RSD	25.928	247.52	6.0294	3.5989	7.3307	52.428	1.7803	1.0371
#1	-.00008	-.00009	.03159	.84738	1.4408	.00775	4.7135	.12129
#2	-.00011	-.00033	.03057	.91015	1.3122	.00486	4.8387	.12383
#3	-.00007	.00190	.02807	.87311	1.2489	.00248	4.8772	.12241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**2.6953**	**.00056**	**.01908**	**.00745**	**-.00031**	**-.00296**	**2.8755**
Stddev	.00017	.0308	.00060	.00973	.00052	.00340	.00430	.1834
%RSD	224.99	1.1429	107.24	50.977	6.9370	1112.5	145.45	6.3761
#1	.00026	2.6620	.00114	.03022	.00790	.00362	.00138	2.9863
#2	.00004	2.7010	-.00005	.01472	.00688	-.00245	-.00302	2.9764
#3	-.00007	2.7228	.00057	.01230	.00757	-.00208	-.00722	2.6639
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607038001 Acquired: 7/14/2016 16:41:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00132	.26267	-.00100	-.00034	-.00092	.24632	.00005
Stddev	.00074	.00149	.00446	.00093	.00041	.01932	.00035
%RSD	56.201	.56675	446.89	273.34	44.859	7.8441	649.03
#1	.00048	.26096	-.00499	.00073	-.00079	.25817	.00010
#2	.00159	.26366	-.00182	-.00098	-.00139	.25677	.00038
#3	.00189	.26340	.00381	-.00078	-.00059	.22402	-.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10380.	61476.	2768.1
Stddev	31.	177.	6.8
%RSD	.29934	.28819	.24500
#1	10383.	61513.	2775.1
#2	10348.	61631.	2761.5
#3	10410.	61283.	2767.8

Approved: July 16, 2016

Sample Name: L1607038002 Acquired: 7/14/2016 16:45:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	5.0204	.00218	.02584	.20975	.00044	16.452	.00041
Stddev	.00149	.0084	.00077	.00021	.00157	.00004	.117	.00038
%RSD	234.89	.16826	35.499	.79621	.74761	10.088	.71185	93.351
#1	-.00049	5.0148	.00306	.02564	.21150	.00040	16.581	.00080
#2	.00232	5.0164	.00188	.02582	.20847	.00048	16.352	.00040
#3	.00007	5.0301	.00160	.02605	.20928	.00043	16.423	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00323	.00801	.00871	13.581	2.8801	.00688	3.4753	.40424
Stddev	.00003	.00054	.00260	.137	.0456	.00093	.0725	.00394
%RSD	1.0657	6.7234	29.896	1.0106	1.5825	13.516	2.0856	.97463
#1	.00319	.00863	.01017	13.738	2.8907	.00704	3.4080	.40855
#2	.00324	.00765	.01025	13.486	2.9195	.00771	3.4658	.40083
#3	.00325	.00775	.00570	13.518	2.8302	.00588	3.5521	.40333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00112	58.898	.00726	.33069	.00644	.00329	-.00728	8.3754
Stddev	.00037	.337	.00123	.02578	.00296	.00022	.00147	.4880
%RSD	32.969	.57136	16.868	7.7962	45.960	6.5480	20.146	5.8266
#1	.00128	59.240	.00680	.33890	.00490	.00304	-.00603	8.6862
#2	.00070	58.567	.00866	.35137	.00985	.00344	-.00691	8.6271
#3	.00138	58.886	.00634	.30181	.00456	.00340	-.00889	7.8130
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607038002 Acquired: 7/14/2016 16:45:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.17198	.06567	.00276	.01099	.09259	.00088
Stddev	.00051	.00090	.00336	.00249	.00012	.00695	.00020
%RSD	104.04	.52464	5.1104	90.473	1.1287	7.5020	22.752
#1	.00001	.17299	.06676	.00194	.01102	.09684	.00076
#2	.00103	.17124	.06835	.00556	.01110	.09636	.00077
#3	.00045	.17172	.06191	.00078	.01085	.08458	.00111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10129.	59770.	2703.1
Stddev	25.	78.	17.9
%RSD	.24450	.13111	.66134
#1	10158.	59859.	2686.2
#2	10115.	59711.	2721.8
#3	10115.	59740.	2701.1

Approved: July 16, 2016

Sample Name: L1607038003 Acquired: 7/14/2016 16:49:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00043	.04855	.00052	.02623	.08332	.00002	15.480	.00036
Stddev	.00060	.00369	.00282	.00251	.00009	.00008	.063	.00013
%RSD	138.53	7.5952	546.28	9.5762	.10513	466.96	.40584	36.658
#1	-.00111	.04486	-.00133	.02436	.08325	-.00005	15.545	.00028
#2	-.00021	.04856	.00376	.02908	.08329	-.00001	15.475	.00051
#3	.00003	.05223	-.00088	.02525	.08342	.00011	15.420	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.00130	.00302	.07723	1.5043	.00544	2.3626	.00233
Stddev	.00010	.00033	.00140	.00817	.0599	.00102	.0476	.00258
%RSD	238.46	25.056	46.446	10.576	3.9838	18.741	2.0158	110.68
#1	.00002	.00157	.00460	.08519	1.5363	.00609	2.3676	.00436
#2	-.00005	.00139	.00192	.07764	1.5415	.00427	2.4076	-.00058
#3	.00016	.00094	.00255	.06887	1.4352	.00598	2.3127	.00322
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	63.852	-.00005	.05706	-.00184	.00231	-.00132	2.5851
Stddev	.00048	.293	.00033	.00626	.00279	.00428	.00306	.1832
%RSD	63.443	.45832	664.00	10.966	151.99	185.08	232.36	7.0853
#1	.00104	64.001	.00029	.06219	-.00158	.00695	-.00022	2.6965
#2	.00105	64.040	-.00007	.05891	.00082	-.00149	.00104	2.6851
#3	.00020	63.515	-.00037	.05009	-.00475	.00147	-.00478	2.3737
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607038003 Acquired: 7/14/2016 16:49:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00140	.16519	-.00167	-.00057	-.00029	.00414	.00043
Stddev	.00059	.00011	.00605	.00216	.00073	.00052	.00036
%RSD	42.344	.06932	362.80	382.64	255.38	12.577	82.485
#1	.00081	.16524	-.00567	.00003	-.00028	.00416	.00010
#2	.00200	.16528	.00529	-.00296	.00044	.00465	.00040
#3	.00141	.16506	-.00462	.00123	-.00102	.00361	.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10125.	59818.	2684.1
Stddev	19.	64.	23.8
%RSD	.18560	.10675	.88785
#1	10146.	59819.	2660.7
#2	10112.	59754.	2683.2
#3	10115.	59882.	2708.4

Approved: July 16, 2016

Sample Name: L1607038004 Acquired: 7/14/2016 16:53:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00066	.03271	-.00129	.14829	.05204	-.00008	1.4588	.00027
Stddev	.00211	.01771	.00134	.00139	.00075	.00003	.0045	.00024
%RSD	319.99	54.134	103.73	.93467	1.4410	32.889	.30777	88.417
#1	.00177	.01925	-.00126	.14669	.05134	-.00005	1.4568	.00047
#2	-.00167	.02612	.00004	.14910	.05283	-.00010	1.4556	.00000
#3	-.00207	.05277	-.00263	.14909	.05195	-.00009	1.4639	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.00073	.00156	-.01782	.33850	.01017	.23569	.00137
Stddev	.00019	.00070	.00080	.03203	.06408	.00091	.09170	.00086
%RSD	420.93	95.961	51.275	179.74	18.930	8.9685	38.909	63.043
#1	.00026	.00085	.00146	-.04271	.38826	.00966	.18224	.00080
#2	-.00003	-.00002	.00241	.01832	.36104	.00963	.18325	.00095
#3	-.00010	.00136	.00082	-.02908	.26620	.01123	.34158	.00236
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00085	156.79	-.00101	.03392	-.00345	.00263	-.00566	2.7826
Stddev	.00018	.18	.00055	.00013	.00210	.00382	.00179	.2276
%RSD	21.550	.11415	54.403	.38554	60.848	145.14	31.619	8.1810
#1	.00092	156.79	-.00090	.03405	-.00190	.00646	-.00482	2.9236
#2	.00099	156.97	-.00052	.03394	-.00261	-.00118	-.00771	2.9042
#3	.00064	156.62	-.00161	.03379	-.00584	.00262	-.00444	2.5200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607038004 Acquired: 7/14/2016 16:53:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.06588	.00301	-.00124	-.00101	.00333	.00034
Stddev	.00035	.00091	.00715	.00104	.00027	.00050	.00030
%RSD	915.54	1.3865	237.45	84.422	26.322	14.947	87.714
#1	-.00015	.06631	.00147	-.00043	-.00120	.00349	.00008
#2	.00044	.06483	-.00324	-.00087	-.00071	.00372	.00027
#3	-.00017	.06649	.01081	-.00242	-.00113	.00277	.00067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10048.	58987.	2688.9
Stddev	20.	109.	11.8
%RSD	.20051	.18442	.43933
#1	10050.	58861.	2684.5
#2	10067.	59057.	2679.9
#3	10027.	59042.	2702.3

Approved: July 16, 2016

Sample Name: L1607038101 Acquired: 7/14/2016 16:57:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00081	.01572	-.00170	.03053	.03562	.00005	40.029	.00044
Stddev	.00110	.01035	.00127	.00160	.00115	.00002	.077	.00013
%RSD	136.10	65.838	75.106	5.2291	3.2289	28.897	.19274	29.091
#1	.00014	.00378	-.00133	.03216	.03653	.00007	39.952	.00044
#2	-.00202	.02217	-.00311	.03047	.03601	.00004	40.028	.00031
#3	-.00056	.02122	-.00065	.02897	.03433	.00006	40.106	.00056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	.00142	.00159	.01751	1.2089	.00521	3.1514	.00197
Stddev	.00038	.00095	.00165	.02767	.0646	.00392	.0543	.00291
%RSD	2986.8	66.756	103.85	157.97	5.3452	75.206	1.7215	148.09
#1	-.00044	.00241	.00066	.03464	1.1406	.00931	3.2082	.00271
#2	.00029	.00132	.00349	.03230	1.2690	.00151	3.1459	.00443
#3	.00011	.00053	.00061	-.01440	1.2170	.00480	3.1001	-.00125
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	5.7023	-.00057	.09557	-.00147	.00125	-.00717	4.1217
Stddev	.00013	.0072	.00025	.00842	.00162	.00283	.00428	.3111
%RSD	41.200	.12631	44.783	8.8068	110.49	226.27	59.640	7.5477
#1	.00018	5.6980	-.00067	.10223	.00038	.00262	-.00946	4.3113
#2	.00035	5.7106	-.00075	.09838	-.00212	.00313	-.00982	4.2911
#3	.00044	5.6982	-.00028	.08611	-.00266	-.00200	-.00224	3.7627
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607038101 Acquired: 7/14/2016 16:57:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.13332	-.00021	.00091	-.00088	.00753	-.00018
Stddev	.00049	.00017	.00227	.00279	.00034	.00078	.00039
%RSD	93.429	.12620	1095.9	305.84	38.541	10.322	211.50
#1	.00090	.13350	.00149	.00299	-.00049	.00794	.00025
#2	.00069	.13316	.00067	-.00226	-.00113	.00801	-.00032
#3	-.00003	.13329	-.00278	.00200	-.00103	.00663	-.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10157.	60473.	2709.6
Stddev	37.	180.	11.5
%RSD	.35968	.29841	.42428
#1	10146.	60458.	2697.1
#2	10198.	60300.	2711.9
#3	10128.	60660.	2719.7

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 17:01:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41338	10.125	.41455	.51185	1.0365	.05040	10.287	.05167
Stddev	.00120	.020	.00973	.00127	.0045	.00012	.011	.00117
%RSD	.29130	.20013	2.3479	.24887	.43519	.23840	.10426	2.2597
#1	.41304	10.126	.42041	.51068	1.0406	.05028	10.279	.05230
#2	.41472	10.144	.41993	.51167	1.0374	.05052	10.299	.05238
#3	.41239	10.104	.40332	.51321	1.0317	.05040	10.283	.05032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20684	.50089	.51728	4.1508	51.804	1.0224	10.182	.52227
Stddev	.00616	.00119	.01540	.0385	.315	.0113	.109	.00199
%RSD	2.9793	.23683	2.9771	.92773	.60900	1.1074	1.0663	.38076
#1	.21065	.50047	.52567	4.1262	52.122	1.0239	10.200	.52097
#2	.21014	.50223	.52665	4.1952	51.797	1.0329	10.065	.52456
#3	.19973	.49997	.49950	4.1311	51.492	1.0104	10.280	.52129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0333	52.061	.51703	10.437	.51981	1.2452	.41775	5.1131
Stddev	.0271	.273	.01625	.212	.00626	.0279	.00829	.1006
%RSD	2.6219	.52356	3.1429	2.0330	1.2044	2.2393	1.9842	1.9679
#1	1.0440	52.346	.52700	10.561	.52141	1.2605	.42561	5.1698
#2	1.0534	52.034	.52581	10.558	.52512	1.2620	.41855	5.1726
#3	1.0025	51.803	.49828	10.192	.51291	1.2130	.40909	4.9969
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 17:01:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0294**	**1.0397**	**1.0539**	**.51323**	**.99797**	**1.0308**	**1.0267**
Stddev	.0351	.0054	.0060	.00509	.00324	.0283	.0004
%RSD	3.4141	.52118	.56626	.99191	.32418	2.7402	.03930
#1	1.0498	1.0448	1.0604	.51655	1.0015	1.0467	1.0271
#2	1.0495	1.0402	1.0527	.51577	.99733	1.0474	1.0263
#3	.98879	1.0340	1.0487	.50737	.99510	.99816	1.0268
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10042.**	**58910.**	**2650.0**
Stddev	23.	134.	10.1
%RSD	.23090	.22826	.38042
#1	10041.	58803.	2639.6
#2	10020.	58866.	2650.6
#3	10066.	59061.	2659.7

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 17:04:43 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00086	.00735	-.00053	.00383	-.00133	.00006	-.00283	.00043
Stddev	.00040	.00420	.00195	.00131	.00090	.00008	.01562	.00027
%RSD	45.922	57.163	370.24	34.243	68.098	134.87	551.87	62.844
#1	-.00129	.00278	-.00118	.00356	-.00053	.00006	-.02058	.00023
#2	-.00051	.00822	.00167	.00267	-.00114	.00013	.00881	.00033
#3	-.00079	.01105	-.00207	.00525	-.00231	-.00002	.00328	.00074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00057	-.00072	-.00496	.02287	.00171	-.08680	.00013
Stddev	.00050	.00052	.00052	.04659	.06681	.00032	.08419	.00221
%RSD	809.36	91.089	71.424	939.39	292.15	18.721	97.002	1697.1
#1	.00008	.00076	-.00086	-.05296	.04171	.00134	-.18401	-.00026
#2	.00056	.00097	-.00015	.04007	-.05134	.00190	-.03746	-.00186
#3	-.00045	-.00002	-.00115	-.00198	.07823	.00188	-.03892	.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.04528	-.00076	.00055	-.00356	.00495	-.00776	.00416
Stddev	.00024	.02835	.00046	.00561	.00220	.00289	.00116	.00138
%RSD	323.22	62.607	60.292	1019.4	61.775	58.256	14.940	33.130
#1	-.00000	.01380	-.00092	-.00567	-.00113	.00272	-.00744	.00441
#2	.00012	.06881	-.00024	.00208	-.00414	.00821	-.00904	.00267
#3	-.00034	.05324	-.00112	.00524	-.00542	.00392	-.00679	.00538
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 17:04:43 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**-.00017**	**-.00002**	**.00032**	**-.00055**	**.00004**	**-.00013**
Stddev	.00026	.00008	.00604	.00221	.00079	.00016	.00028
%RSD	62.330	45.334	27283.	695.57	142.89	407.77	216.17
#1	.00044	-.00009	-.00374	-.00058	-.00112	-.00010	.00010
#2	.00065	-.00024	.00694	-.00130	-.00090	.00000	-.00004
#3	.00014	-.00018	-.00327	.00284	.00035	.00021	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10137.**	**59445.**	**2663.4**
Stddev	86.	339.	33.8
%RSD	.85165	.57019	1.2702
#1	10082.	59083.	2628.5
#2	10091.	59498.	2696.0
#3	10236.	59754.	2665.6

Approved: July 16, 2016

Sample Name: PBW 76 Acquired: 7/14/2016 17:08:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.01451**	**-.00095**	**.00413**	**-.00278**	**.00006**	**-.04258**	**.00023**
Stddev	.00105	.00584	.00071	.00168	.00043	.00004	.01760	.00001
%RSD	518.39	40.237	75.036	40.700	15.583	70.858	41.337	5.3576
#1	-.00088	.02100	-.00164	.00601	-.00230	.00001	-.03182	.00022
#2	-.00073	.01282	-.00022	.00360	-.00314	.00010	-.03302	.00024
#3	.00101	.00970	-.00098	.00278	-.00291	.00007	-.06289	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.00078**	**.00057**	**.00268**	**-.03299**	**.00122**	**.00746**	**-.00096**
Stddev	.00030	.00117	.00059	.01188	.12353	.00385	.04260	.00046
%RSD	210.12	150.26	103.54	442.94	374.47	314.73	571.18	48.254
#1	-.00024	-.00053	.00023	-.00416	-.13556	.00553	.02821	-.00118
#2	-.00038	.00116	.00023	.01640	.10415	.00004	.03571	-.00127
#3	.00019	.00171	.00125	-.00420	-.06756	-.00189	-.04155	-.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.06484**	**-.00027**	**.00175**	**-.00312**	**.00227**	**-.00225**	**.02091**
Stddev	.00031	.02335	.00069	.00202	.00187	.00358	.00195	.00148
%RSD	297.81	36.005	252.77	115.33	59.800	157.59	86.386	7.0929
#1	.00014	.03808	-.00106	-.00041	-.00337	-.00105	-.00262	.01983
#2	.00000	.07540	.00020	.00208	-.00114	.00606	-.00015	.02260
#3	-.00046	.08104	.00005	.00360	-.00485	.00181	-.00399	.02029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: PBW 76 Acquired: 7/14/2016 17:08:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.00023	.00044	-.00117	-.00070	.00069	-.00019
Stddev	.00019	.00035	.00313	.00101	.00069	.00032	.00057
%RSD	55.195	151.80	711.67	86.544	97.859	45.550	303.41
#1	.00042	.00025	.00096	-.00138	.00003	.00086	-.00064
#2	.00048	-.00013	.00328	-.00007	-.00134	.00089	-.00038
#3	.00013	.00057	-.00292	-.00206	-.00080	.00033	.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10235.	60911.	2718.1
Stddev	35.	100.	10.9
%RSD	.34043	.16386	.39985
#1	10266.	60798.	2705.5
#2	10241.	60985.	2723.6
#3	10197.	60950.	2725.0

Approved: July 16, 2016

Sample Name: LCSW 76 Acquired: 7/14/2016 17:12:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19559**	**4.9300**	**.20044**	**.97707**	**.51179**	**.02399**	**5.1758**	**.02522**
Stddev	.00080	.0250	.00234	.00398	.00221	.00004	.0410	.00051
%RSD	.41154	.50731	1.1678	.40782	.43233	.16552	.79245	2.0114
#1	.19551	4.9159	.20062	.97338	.51418	.02394	5.2081	.02525
#2	.19644	4.9589	.20268	.97652	.50982	.02401	5.1897	.02570
#3	.19483	4.9152	.19801	.98130	.51135	.02401	5.1297	.02469
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10159**	**.24814**	**.25573**	**2.0797**	**25.144**	**.51757**	**4.9823**	**.25380**
Stddev	.00246	.00085	.00551	.0218	.108	.00308	.0723	.00372
%RSD	2.4256	.34230	2.1554	1.0469	.42993	.59578	1.4517	1.4655
#1	.10317	.24905	.25858	2.0545	25.214	.51716	5.0402	.25278
#2	.10285	.24736	.25924	2.0925	25.020	.52084	4.9012	.25792
#3	.09875	.24800	.24938	2.0919	25.199	.51471	5.0054	.25070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51305**	**25.490**	**.25666**	**4.9356**	**.25380**	**.60597**	**.18871**	**2.5368**
Stddev	.01128	.099	.00596	.0799	.00260	.01127	.00267	.0367
%RSD	2.1978	.38734	2.3236	1.6194	1.0253	1.8590	1.4128	1.4452
#1	.52070	25.500	.25957	4.9886	.25605	.61136	.19104	2.5602
#2	.51835	25.584	.26061	4.9745	.25439	.61352	.18930	2.5558
#3	.50010	25.387	.24980	4.8437	.25095	.59302	.18580	2.4946
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: LCSW 76 Acquired: 7/14/2016 17:12:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50673	.52174	.51681	.25277	.49056	.50164	.00078
Stddev	.01294	.00196	.00824	.00587	.00027	.01104	.00020
%RSD	2.5542	.37604	1.5949	2.3237	.05433	2.2002	25.229
#1	.51418	.52108	.50872	.25784	.49083	.50865	.00072
#2	.51423	.52395	.52520	.25413	.49029	.50736	.00100
#3	.49179	.52020	.51652	.24633	.49056	.48892	.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10117.	59881.	2697.8
Stddev	6.	186.	3.9
%RSD	.06141	.31103	.14590
#1	10110.	59752.	2696.5
#2	10122.	59798.	2694.6
#3	10119.	60095.	2702.2

Approved: July 16, 2016

Sample Name: L1606145502 Acquired: 7/14/2016 17:16:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.25043	-.00066	.01942	.01622	.00006	39.573	.00066
Stddev	.00066	.00527	.00166	.00283	.00098	.00005	.193	.00015
%RSD	551.41	2.1045	251.79	14.564	6.0157	87.124	.48790	22.343
#1	.00023	.25587	.00123	.02118	.01570	.00008	39.570	.00077
#2	-.00059	.25007	-.00188	.02091	.01735	.00009	39.768	.00072
#3	.00072	.24534	-.00133	.01615	.01561	.00000	39.382	.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.00071	.01270	.51790	3.7198	.00727	5.9513	.01793
Stddev	.00019	.00044	.00181	.01865	.0948	.00365	.0709	.00226
%RSD	58.185	62.487	14.240	3.6004	2.5487	50.259	1.1922	12.617
#1	.00014	.00080	.01332	.49945	3.8272	.00788	5.9432	.01865
#2	.00052	.00023	.01413	.53674	3.6476	.00335	6.0260	.01540
#3	.00033	.00109	.01067	.51752	3.6847	.01057	5.8848	.01975
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00119	1.0901	.00398	.12178	-.00033	-.00038	-.00346	2.9544
Stddev	.00030	.0334	.00025	.00726	.00190	.00199	.00446	.1976
%RSD	25.605	3.0624	6.1561	5.9635	574.56	520.60	129.06	6.6880
#1	.00084	1.0515	.00410	.12007	-.00032	-.00267	-.00837	3.0757
#2	.00136	1.1099	.00414	.12974	.00157	.00071	.00034	3.0611
#3	.00137	1.1088	.00370	.11552	-.00224	.00082	-.00235	2.7264
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1606145502 Acquired: 7/14/2016 17:16:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	.08856	.00958	-.00068	.00013	.32531	.00041
Stddev	.00044	.00036	.00270	.00085	.00017	.02687	.00036
%RSD	180.12	.40394	28.146	125.22	130.03	8.2592	87.088
#1	.00071	.08898	.00647	-.00094	.00004	.34099	.00038
#2	-.00017	.08838	.01117	.00027	.00032	.34066	.00007
#3	.00019	.08833	.01111	-.00136	.00003	.29429	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10183.	60648.	2721.9
Stddev	17.	132.	7.5
%RSD	.16204	.21835	.27721
#1	10197.	60624.	2721.2
#2	10188.	60791.	2714.7
#3	10165.	60529.	2729.7

Approved: July 16, 2016

Sample Name: L1606145503S Acquired: 7/14/2016 17:20:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19455	5.2080	.20330	.97591	.52017	.02360	43.711	.02485
Stddev	.00136	.0126	.00220	.00087	.00481	.00009	.275	.00029
%RSD	.69908	.24153	1.0844	.08929	.92384	.37234	.62911	1.1476
#1	.19517	5.1937	.20367	.97565	.52488	.02368	43.900	.02503
#2	.19299	5.2171	.20530	.97519	.52036	.02360	43.837	.02500
#3	.19550	5.2132	.20094	.97688	.51528	.02351	43.395	.02452
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09991	.24298	.26234	2.4864	28.264	.50823	10.832	.26534
Stddev	.00176	.00047	.00499	.0467	.211	.00059	.150	.00175
%RSD	1.7601	.19395	1.9039	1.8772	.74501	.11533	1.3856	.65814
#1	.10104	.24291	.26515	2.4622	28.461	.50859	10.908	.26655
#2	.10081	.24255	.26529	2.5402	28.290	.50854	10.929	.26612
#3	.09788	.24349	.25657	2.4568	28.042	.50755	10.659	.26334
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50769	26.068	.25477	5.0509	.24922	.60228	.18627	5.7136
Stddev	.01047	.170	.00649	.0741	.00190	.00835	.01108	.0683
%RSD	2.0615	.65358	2.5491	1.4667	.76280	1.3859	5.9503	1.1963
#1	.51529	26.182	.25991	5.1049	.24703	.60333	.19840	5.7639
#2	.51202	26.151	.25692	5.0812	.25045	.61006	.18377	5.7411
#3	.49575	25.872	.24747	4.9664	.25018	.59346	.17665	5.6358
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1606145503S Acquired: 7/14/2016 17:20:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49873**	**.60220**	**.50667**	**.24600**	**.48209**	**.81803**	**.00079**
Stddev	.01192	.00168	.00995	.00188	.00120	.01355	.00018
%RSD	2.3896	.27910	1.9638	.76258	.24934	1.6565	22.459
#1	.50758	.60271	.50884	.24745	.48334	.82639	.00060
#2	.50345	.60356	.49581	.24665	.48095	.82531	.00095
#3	.48518	.60032	.51535	.24388	.48199	.80240	.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10022.**	**59592.**	**2697.3**
Stddev	19.	112.	42.7
%RSD	.19384	.18782	1.5815
#1	10001.	59712.	2661.5
#2	10040.	59490.	2686.0
#3	10024.	59574.	2744.5

Approved: July 16, 2016

Sample Name: L1606145504SD Acquired: 7/14/2016 17:23:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20476**	**5.7375**	**.21015**	**1.0380**	**.55226**	**.02515**	**46.383**	**.02655**
Stddev	.00077	.0231	.00704	.0020	.00166	.00005	.286	.00029
%RSD	.37377	.40322	3.3490	.19066	.30076	.18669	.61629	1.1098
#1	.20437	5.7635	.21281	1.0385	.55367	.02520	46.683	.02681
#2	.20427	5.7302	.21546	1.0396	.55267	.02512	46.352	.02662
#3	.20564	5.7190	.20217	1.0357	.55043	.02512	46.114	.02623
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10455**	**.25906**	**.27580**	**2.7842**	**29.865**	**.54213**	**11.396**	**.28495**
Stddev	.00209	.00225	.00601	.0214	.043	.00270	.106	.00170
%RSD	1.9983	.86894	2.1806	.76713	.14322	.49847	.93273	.59552
#1	.10589	.26149	.28109	2.7742	29.862	.54512	11.365	.28335
#2	.10561	.25705	.27706	2.7696	29.823	.54142	11.514	.28477
#3	.10214	.25864	.26926	2.8087	29.909	.53986	11.309	.28673
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53361**	**27.613**	**.26733**	**5.3106**	**.25970**	**.62709**	**.20062**	**6.2455**
Stddev	.01001	.121	.00610	.0824	.00500	.01394	.00353	.0803
%RSD	1.8758	.43670	2.2830	1.5518	1.9270	2.2232	1.7597	1.2857
#1	.54004	27.740	.27074	5.3647	.26389	.63736	.19787	6.3002
#2	.53871	27.500	.27097	5.3513	.26105	.63269	.20460	6.2829
#3	.52208	27.598	.26029	5.2157	.25416	.61122	.19939	6.1533
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1606145504SD Acquired: 7/14/2016 17:23:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574636-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52422	.63790	.53477	.25895	.51355	.85705	.00093
Stddev	.01199	.00186	.00831	.00353	.00222	.01603	.00031
%RSD	2.2877	.29091	1.5532	1.3639	.43151	1.8708	32.921
#1	.53232	.63980	.54391	.26078	.51582	.86812	.00074
#2	.52990	.63609	.53272	.26120	.51139	.86436	.00078
#3	.51045	.63781	.52768	.25488	.51343	.83866	.00129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9938.6	58561.	2642.6
Stddev	38.0	121.	22.8
%RSD	.38233	.20616	.86221
#1	9898.5	58428.	2616.4
#2	9943.2	58663.	2657.6
#3	9974.1	58593.	2653.8

Approved: July 16, 2016

Sample Name: L1606145201 Acquired: 7/14/2016 17:27:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00078	.01275	-.00155	.01616	.11553	-.00001	7.2477	.00036
Stddev	.00019	.00601	.00275	.00170	.00162	.00004	.0631	.00023
%RSD	24.744	47.104	177.52	10.525	1.4059	273.50	.87038	65.407
#1	-.00070	.01961	-.00041	.01796	.11620	-.00003	7.3044	.00031
#2	-.00065	.01021	-.00469	.01595	.11367	-.00004	7.1797	.00061
#3	-.00100	.00843	.00045	.01458	.11670	.00003	7.2589	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00124	.00075	-.00050	.55363	13.964	.03022	5.2451	.14867
Stddev	.00029	.00083	.00111	.01652	.035	.00348	.0482	.00456
%RSD	23.833	109.36	220.06	2.9831	.25295	11.503	.91897	3.0694
#1	.00120	-.00015	-.00177	.53552	13.984	.02649	5.2796	.15345
#2	.00155	.00096	.00025	.55751	13.984	.03081	5.1900	.14436
#3	.00097	.00146	.00002	.56786	13.923	.03336	5.2656	.14820
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00038	37.662	.00040	.00850	-.00169	-.00142	-.00431	2.0303
Stddev	.00018	.032	.00095	.00465	.00193	.00074	.00595	.1811
%RSD	48.707	.08378	236.37	54.758	113.87	52.228	138.13	8.9177
#1	-.00032	37.630	-.00037	.00955	.00051	-.00131	-.00031	2.1298
#2	-.00023	37.663	.00146	.00341	-.00254	-.00222	-.01115	2.1398
#3	-.00058	37.693	.00011	.01253	-.00305	-.00074	-.00147	1.8213
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1606145201 Acquired: 7/14/2016 17:27:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**.19323**	**-.00355**	**.00227**	**-.00101**	**.00228**	**-.00049**
Stddev	.00040	.00108	.00803	.00190	.00034	.00030	.00051
%RSD	178.28	.56019	226.41	83.579	33.741	13.054	103.10
#1	-.00056	.19199	-.01259	.00426	-.00062	.00248	-.00012
#2	.00022	.19371	-.00079	.00048	-.00120	.00242	-.00029
#3	-.00033	.19398	.00274	.00207	-.00122	.00194	-.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10205.**	**60612.**	**2728.5**
Stddev	63.	131.	10.8
%RSD	.61988	.21653	.39405
#1	10270.	60740.	2738.3
#2	10199.	60618.	2717.0
#3	10144.	60478.	2730.1

Approved: July 16, 2016

Sample Name: L1606145301 Acquired: 7/14/2016 17:31:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00058	.00322	-.00069	.00537	.22484	.00008	6.6978	.00032
Stddev	.00227	.00542	.00274	.00193	.00085	.00004	.0383	.00005
%RSD	388.96	168.56	395.65	35.963	.37640	55.762	.57208	15.233
#1	-.00220	.00345	-.00056	.00404	.22402	.00004	6.7176	.00026
#2	-.00156	-.00232	-.00349	.00449	.22571	.00013	6.6537	.00034
#3	.00201	.00851	.00197	.00759	.22479	.00007	6.7222	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00435	.00138	.00060	.64236	.26791	.01145	4.8324	.16966
Stddev	.00037	.00072	.00100	.03109	.07923	.00271	.0451	.00095
%RSD	8.4880	52.179	165.43	4.8404	29.575	23.716	.93313	.56120
#1	.00461	.00198	.00097	.65606	.35485	.01447	4.8500	.16991
#2	.00452	.00058	.00136	.60676	.24914	.01066	4.7812	.16861
#3	.00393	.00156	-.00052	.66424	.19975	.00921	4.8662	.17046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	18.925	.00290	.00700	-.00404	.00316	-.00054	2.7265
Stddev	.00036	.067	.00121	.00132	.00075	.00392	.00693	.2427
%RSD	210.70	.35330	41.717	18.892	18.594	124.06	1286.7	8.9023
#1	.00023	18.862	.00352	.00808	-.00390	.00671	.00466	2.8678
#2	-.00048	18.996	.00366	.00741	-.00486	-.00105	.00212	2.8655
#3	-.00027	18.918	.00150	.00552	-.00337	.00384	-.00840	2.4463
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1606145301 Acquired: 7/14/2016 17:31:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00041	.14108	.00220	.00173	-.00070	.00980	-.00018
Stddev	.00086	.00115	.00571	.00166	.00051	.00090	.00031
%RSD	209.46	.81581	259.11	96.265	72.545	9.1468	176.40
#1	.00053	.13981	-.00208	-.00006	-.00124	.01026	.00011
#2	-.00116	.14205	.00001	.00323	-.00063	.01037	-.00050
#3	-.00060	.14138	.00868	.00201	-.00023	.00877	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10380.	61157.	2743.8
Stddev	29.	287.	10.5
%RSD	.28166	.46966	.38261
#1	10408.	61450.	2754.7
#2	10383.	61146.	2733.8
#3	10349.	60876.	2742.8

Approved: July 16, 2016

Sample Name: L1606145303 Acquired: 7/14/2016 17:35:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00140**	**.00143**	**-.00068**	**.00417**	**.07438**	**.00004**	**2.3532**	**.00013**
Stddev	.00175	.00081	.00150	.00106	.00141	.00001	.0153	.00012
%RSD	125.48	56.790	221.82	25.427	1.8930	32.576	.64798	86.036
#1	.00036	.00092	.00082	.00346	.07295	.00005	2.3590	.00010
#2	-.00315	.00101	-.00218	.00366	.07577	.00004	2.3359	.00004
#3	-.00140	.00237	-.00067	.00538	.07443	.00003	2.3647	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**.00049**	**-.00009**	**4.3182**	**.39251**	**.00316**	**1.6064**	**.04862**
Stddev	.00009	.00064	.00038	.0717	.06543	.00252	.0525	.00196
%RSD	56.970	130.21	449.41	1.6603	16.670	79.833	3.2681	4.0258
#1	.00008	.00122	.00015	4.2588	.31697	.00357	1.5464	.05023
#2	.00025	.00023	.00012	4.2978	.43140	.00545	1.6442	.04918
#3	.00013	.00002	-.00053	4.3978	.42917	.00046	1.6284	.04644
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00045**	**8.1561**	**-.00003**	**.01935**	**-.00053**	**.00045**	**-.00287**	**1.5654**
Stddev	.00027	.0436	.00113	.00257	.00205	.00263	.00253	.1590
%RSD	60.693	.53438	4001.8	13.292	384.61	587.93	88.106	10.160
#1	-.00014	8.1083	.00037	.02046	.00171	-.00259	-.00578	1.6707
#2	-.00066	8.1936	-.00131	.01641	-.00099	.00195	-.00124	1.6431
#3	-.00054	8.1664	.00085	.02119	-.00232	.00198	-.00158	1.3825
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1606145303 Acquired: 7/14/2016 17:35:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00000**	**.05576**	**.00132**	**.00095**	**-.00080**	**.00097**	**-.00020**
Stddev	.00019	.00007	.00099	.00123	.00025	.00009	.00038
%RSD	8441.9	.12613	74.750	129.63	30.934	9.2769	192.82
#1	.00002	.05579	.00122	.00162	-.00104	.00104	.00016
#2	.00018	.05582	.00039	-.00047	-.00081	.00100	-.00015
#3	-.00020	.05568	.00236	.00170	-.00055	.00087	-.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10420.**	**61586.**	**2754.2**
Stddev	62.	99.	16.8
%RSD	.59231	.16067	.61111
#1	10402.	61670.	2772.8
#2	10489.	61612.	2740.0
#3	10370.	61477.	2749.9

Approved: July 16, 2016

Sample Name: L1606145303PS Acquired: 7/14/2016 17:39:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG574839-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19182	4.8542	.20166	.97722	.56716	.02332	7.3237	.02474
Stddev	.00144	.0176	.00582	.00288	.00534	.00004	.0727	.00046
%RSD	.74869	.36370	2.8845	.29476	.94240	.17190	.99321	1.8615
#1	.19049	4.8736	.20348	.98010	.56834	.02331	7.3484	.02491
#2	.19334	4.8498	.20635	.97722	.56132	.02336	7.2419	.02509
#3	.19164	4.8391	.19515	.97434	.57181	.02328	7.3809	.02422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09886	.23774	.24962	6.1274	24.956	.50068	6.4674	.29650
Stddev	.00235	.00153	.00553	.0473	.254	.00609	.0689	.00413
%RSD	2.3738	.64288	2.2154	.77188	1.0166	1.2172	1.0654	1.3942
#1	.09982	.23904	.25237	6.0887	24.901	.50219	6.5343	.29597
#2	.10058	.23813	.25323	6.1134	24.735	.49398	6.3967	.29265
#3	.09619	.23606	.24325	6.1802	25.233	.50588	6.4713	.30087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49332	32.606	.24944	4.9727	.24819	.59728	.20122	4.0583
Stddev	.01219	.285	.00632	.1027	.00616	.01427	.00813	.0661
%RSD	2.4706	.87396	2.5337	2.0643	2.4808	2.3891	4.0413	1.6283
#1	.49921	32.611	.25280	5.0073	.25228	.60333	.20611	4.0796
#2	.50145	32.319	.25338	5.0536	.25118	.60753	.20572	4.1112
#3	.47931	32.889	.24215	4.8573	.24110	.58098	.19184	3.9842
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1606145303PS Acquired: 7/14/2016 17:39:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG574839-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49135**	**.55563**	**.50247**	**.24787**	**.46839**	**.50359**	**.00047**
Stddev	.01612	.00397	.00941	.00465	.00345	.01181	.00042
%RSD	3.2814	.71411	1.8721	1.8780	.73642	2.3450	89.600
#1	.49983	.55697	.50973	.25284	.47235	.50946	.00095
#2	.50146	.55117	.49185	.24718	.46684	.51131	.00024
#3	.47275	.55876	.50585	.24361	.46600	.49000	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10547.**	**62217.**	**2780.4**
Stddev	20.	275.	16.5
%RSD	.19171	.44179	.59288
#1	10569.	61901.	2761.5
#2	10529.	62348.	2791.7
#3	10544.	62402.	2788.1

Approved: July 16, 2016

Sample Name: L1606145303SDL Acquired: 7/14/2016 17:42:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 50 Custom ID2: Custom ID3:
Comment: WG574839-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00053**	**.00241**	**-.00022**	**.00589**	**.01269**	**-.00002**	**.43202**	**.00018**
Stddev	.00087	.01080	.00188	.00233	.00063	.00003	.01711	.00020
%RSD	164.29	448.10	870.33	39.615	4.9380	205.51	3.9597	110.60
#1	-.00117	-.00962	-.00089	.00325	.01207	-.00003	.43852	-.00005
#2	.00046	.01128	-.00166	.00673	.01267	.00002	.41262	.00028
#3	-.00088	.00557	.00191	.00768	.01332	-.00004	.44492	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**-.00018**	**-.00055**	**.80787**	**.10209**	**.00283**	**.30322**	**.01035**
Stddev	.00027	.00074	.00021	.01933	.10235	.00247	.10069	.00201
%RSD	240.05	405.60	37.754	2.3928	100.25	87.229	33.206	19.451
#1	-.00016	-.00056	-.00072	.79382	.21552	.00537	.22544	.00971
#2	-.00036	.00067	-.00060	.79988	.01665	.00269	.41694	.01261
#3	.00018	-.00065	-.00032	.82991	.07411	.00044	.26727	.00874
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**1.6643**	**-.00043**	**.00696**	**-.00212**	**.00206**	**-.00048**	**.30019**
Stddev	.00034	.0062	.00012	.00390	.00280	.00362	.00328	.03265
%RSD	220.27	.37091	27.746	56.016	132.43	175.27	688.74	10.875
#1	.00053	1.6615	-.00057	.00448	.00063	.00176	.00320	.31997
#2	.00009	1.6601	-.00040	.01145	-.00200	.00582	-.00307	.31810
#3	-.00015	1.6714	-.00033	.00495	-.00498	-.00139	-.00156	.26251
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1606145303SDL Acquired: 7/14/2016 17:42:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 50 Custom ID2: Custom ID3:
Comment: WG574839-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	.01058	.00180	.00054	-.00084	.00053	.00020
Stddev	.00034	.00017	.00415	.00030	.00049	.00009	.00029
%RSD	159.95	1.5849	230.92	54.577	58.644	16.185	144.56
#1	.00060	.01068	.00540	.00087	-.00053	.00059	-.00005
#2	-.00003	.01039	.00274	.00029	-.00141	.00043	.00013
#3	.00006	.01068	-.00274	.00048	-.00058	.00057	.00052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10816.	64472.	2857.3
Stddev	34.	113.	23.0
%RSD	.31429	.17477	.80585
#1	10835.	64560.	2880.7
#2	10836.	64511.	2856.7
#3	10777.	64345.	2834.6

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 17:46:37 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40502	9.9100	.40602	.50773	1.0142	.04883	10.127	.05081
Stddev	.00179	.0087	.00832	.00346	.0072	.00011	.022	.00091
%RSD	.44213	.08795	2.0496	.68106	.70770	.22834	.21412	1.7963
#1	.40611	9.9040	.41249	.50432	1.0220	.04890	10.125	.05116
#2	.40599	9.9059	.40894	.50762	1.0127	.04889	10.106	.05149
#3	.40295	9.9200	.39663	.51124	1.0079	.04870	10.149	.04977
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20259	.48635	.50696	4.0372	50.812	1.0067	9.9299	.50970
Stddev	.00550	.00251	.01316	.0071	.152	.0121	.0711	.00191
%RSD	2.7137	.51616	2.5965	.17562	.29878	1.2068	.71606	.37479
#1	.20577	.48924	.51317	4.0405	50.964	1.0207	9.9709	.51188
#2	.20576	.48510	.51586	4.0420	50.660	1.0007	9.8478	.50833
#3	.19624	.48470	.49184	4.0291	50.813	.99873	9.9710	.50889
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0131	51.135	.50510	10.253	.50913	1.2317	.40886	5.0306
Stddev	.0238	.293	.01238	.206	.00699	.0268	.00599	.0863
%RSD	2.3440	.57276	2.4510	2.0133	1.3726	2.1754	1.4662	1.7158
#1	1.0197	51.469	.51128	10.359	.51487	1.2454	.41393	5.0743
#2	1.0329	51.016	.51317	10.386	.51116	1.2488	.41040	5.0863
#3	.98678	50.921	.49085	10.015	.50135	1.2008	.40224	4.9311
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 17:46:37 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0051**	**1.0186**	**1.0339**	**.50513**	**.96878**	**1.0109**	**.99576**
Stddev	.0319	.0037	.0062	.00274	.00225	.0249	.00174
%RSD	3.1781	.36659	.60141	.54163	.23200	2.4646	.17518
#1	1.0230	1.0225	1.0406	.50694	.96646	1.0242	.99776
#2	1.0241	1.0183	1.0329	.50648	.97095	1.0263	.99454
#3	.96823	1.0150	1.0283	.50199	.96894	.98215	.99498
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10100.**	**59302.**	**2691.8**
Stddev	45.	55.	9.5
%RSD	.44177	.09333	.35199
#1	10083.	59240.	2681.1
#2	10067.	59319.	2694.8
#3	10151.	59346.	2699.3

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 17:50:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.01461**	**-.00102**	**.00459**	**-.00139**	**.00011**	**-.02346**	**.00033**
Stddev	.00171	.00505	.00154	.00097	.00097	.00004	.00830	.00007
%RSD	1002.2	34.589	151.28	21.210	69.809	35.441	35.394	20.973
#1	.00148	.01939	-.00203	.00450	-.00186	.00006	-.02434	.00025
#2	-.00005	.01511	.00075	.00366	-.00205	.00012	-.01475	.00036
#3	-.00194	.00932	-.00177	.00560	-.00028	.00014	-.03128	.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00000**	**.00088**	**.00014**	**-.01037**	**.05229**	**.00303**	**.00649**	**-.00251**
Stddev	.00026	.00059	.00037	.01130	.06064	.00035	.08122	.00211
%RSD	11636.	66.411	273.32	108.91	115.97	11.408	1252.1	84.082
#1	-.00006	.00060	.00015	-.00887	.11443	.00294	-.06118	-.00145
#2	-.00023	.00050	.00050	.00009	-.00673	.00341	-.01592	-.00114
#3	.00029	.00156	-.00024	-.02235	.04916	.00273	.09655	-.00494
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.07541**	**-.00042**	**.00229**	**-.00376**	**.00363**	**-.00589**	**.00316**
Stddev	.00017	.02750	.00132	.00195	.00199	.00549	.00616	.00037
%RSD	120.49	36.468	311.43	85.036	52.994	151.24	104.60	11.789
#1	-.00031	.10259	.00108	.00448	-.00270	.00974	-.01259	.00291
#2	-.00014	.04759	-.00137	.00073	-.00606	-.00090	-.00457	.00359
#3	.00003	.07606	-.00099	.00167	-.00252	.00206	-.00049	.00298
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 17:50:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00070	.00020	.00140	.00232	-.00064	-.00016	.00030
Stddev	.00035	.00046	.00563	.00092	.00014	.00007	.00014
%RSD	50.186	231.25	402.89	39.402	22.523	42.896	46.416
#1	.00030	.00012	-.00354	.00224	-.00051	-.00017	.00015
#2	.00094	-.00022	.00753	.00328	-.00079	-.00021	.00032
#3	.00087	.00070	.00020	.00146	-.00061	-.00008	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10128.	60348.	2685.4
Stddev	14.	210.	10.1
%RSD	.13753	.34805	.37517
#1	10143.	60192.	2684.6
#2	10126.	60587.	2695.9
#3	10115.	60265.	2675.8

Approved: July 16, 2016

Sample Name: L1606164802 Acquired: 7/14/2016 17:54:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00107	-.00118	.00655	.01456	.00009	1.2811	.00025
Stddev	.00056	.00259	.00172	.00151	.00016	.00003	.0222	.00012
%RSD	448.55	242.47	146.10	22.963	1.1200	36.103	1.7355	47.185
#1	.00073	.00327	.00052	.00518	.01470	.00012	1.3066	.00024
#2	-.00037	.00172	-.00113	.00816	.01461	.00006	1.2657	.00037
#3	.00002	-.00178	-.00292	.00632	.01438	.00008	1.2711	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.00020	-.00033	.79599	.06159	.00057	.79547	.21923
Stddev	.00023	.00059	.00093	.04095	.01674	.00049	.05959	.00435
%RSD	71.343	288.17	280.06	5.1450	27.176	85.471	7.4909	1.9828
#1	.00057	-.00047	-.00106	.83822	.04235	.00065	.83446	.22417
#2	.00029	.00058	.00071	.79330	.06962	.00005	.72687	.21751
#3	.00011	.00050	-.00065	.75645	.07279	.00101	.82506	.21600
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	2.1534	.00045	.00319	-.00114	.00031	.00213	.56095
Stddev	.00019	.0089	.00053	.00484	.00194	.00337	.00101	.05192
%RSD	201.37	.41198	119.13	151.73	170.42	1105.6	47.506	9.2554
#1	.00011	2.1484	-.00008	.00080	-.00216	-.00243	.00302	.59583
#2	-.00026	2.1482	.00044	.00001	-.00236	-.00073	.00103	.58574
#3	-.00013	2.1636	.00098	.00876	.00110	.00407	.00235	.50129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1606164802 Acquired: 7/14/2016 17:54:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	.02537	.00344	.00157	-.00084	.00102	-.00008
Stddev	.00071	.00070	.00973	.00162	.00053	.00005	.00057
%RSD	900.65	2.7611	282.73	103.42	63.616	4.7393	689.73
#1	.00073	.02616	.01228	.00104	-.00144	.00103	.00007
#2	-.00034	.02510	-.00699	.00338	-.00066	.00107	.00040
#3	-.00063	.02484	.00504	.00028	-.00042	.00097	-.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10908.	62915.	2874.0
Stddev	95.	3111.	66.2
%RSD	.86918	4.9445	2.3047
#1	10860.	65247.	2797.6
#2	11017.	59382.	2908.8
#3	10847.	64114.	2915.6

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 17:58:00 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39562	9.6758	.40267	.49695	.98901	.04747	9.8552	.05005
Stddev	.00285	.0544	.00160	.00173	.00427	.00033	.0191	.00043
%RSD	.71914	.56262	.39733	.34797	.43210	.70136	.19402	.85562
#1	.39694	9.6547	.40451	.49628	.98408	.04739	9.8365	.05014
#2	.39236	9.6351	.40175	.49566	.99116	.04719	9.8545	.05043
#3	.39757	9.7377	.40174	.49892	.99178	.04784	9.8747	.04959
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20001	.47608	.49898	3.9000	49.598	.98554	9.6768	.49758
Stddev	.00287	.00256	.00529	.0303	.170	.00642	.1448	.00373
%RSD	1.4340	.53725	1.0611	.77729	.34290	.65182	1.4968	.74932
#1	.20096	.47718	.50147	3.8692	49.525	.99150	9.5285	.49337
#2	.20229	.47316	.50256	3.9011	49.793	.98638	9.6841	.49889
#3	.19679	.47790	.49290	3.9298	49.477	.97874	9.8179	.50048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0015	49.870	.49802	10.094	.50206	1.2116	.40253	4.9544
Stddev	.0112	.101	.00589	.072	.00253	.0088	.00613	.0280
%RSD	1.1189	.20330	1.1824	.71091	.50384	.72549	1.5240	.56455
#1	.99906	49.760	.50088	10.118	.50131	1.2142	.40890	4.9581
#2	1.0138	49.960	.50194	10.150	.50488	1.2188	.40203	4.9804
#3	.99180	49.889	.49125	10.013	.49999	1.2018	.39666	4.9248
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 17:58:00 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99351	.99395	1.0112	.49293	.94523	.99913	.97166
Stddev	.01326	.00261	.0055	.00292	.00397	.01069	.00132
%RSD	1.3343	.26284	.54753	.59227	.42009	1.0703	.13537
#1	.99937	.99094	1.0067	.49621	.94220	1.0038	.97036
#2	1.0028	.99561	1.0095	.49062	.94378	1.0067	.97162
#3	.97833	.99532	1.0174	.49197	.94973	.98689	.97299
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10226.	60388.	2744.5
Stddev	24.	191.	5.7
%RSD	.23139	.31643	.20748
#1	10246.	60540.	2749.8
#2	10233.	60450.	2738.5
#3	10200.	60173.	2745.2

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 18:01:36 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00051	.00678	-.00228	.00501	-.00142	.00008	.01111	.00027
Stddev	.00110	.00653	.00232	.00073	.00131	.00001	.02181	.00008
%RSD	213.70	96.397	101.76	14.642	92.322	14.031	196.38	29.668
#1	.00073	.01376	-.00227	.00583	-.00267	.00007	.03453	.00018
#2	-.00134	.00576	.00003	.00443	-.00006	.00009	-.00862	.00033
#3	-.00092	.00081	-.00461	.00475	-.00152	.00007	.00741	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	.00013	-.00058	-.00686	.06854	.00315	-.00069	-.00079
Stddev	.00024	.00088	.00090	.01367	.08042	.00242	.06290	.00207
%RSD	112.74	654.31	156.19	199.21	117.33	76.612	9161.5	261.19
#1	-.00002	-.00026	-.00043	-.02121	.16129	.00269	.07185	.00133
#2	-.00014	-.00048	-.00154	.00602	.02614	.00577	-.03363	-.00091
#3	-.00049	.00114	.00024	-.00540	.01820	.00100	-.04028	-.00281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.04678	.00021	.00195	-.00404	.00086	-.00164	.00299
Stddev	.00015	.00630	.00092	.00329	.00153	.00280	.00640	.00079
%RSD	545.43	13.474	449.63	168.51	37.895	325.08	389.54	26.502
#1	.00002	.04162	-.00086	-.00063	-.00249	.00038	-.00752	.00249
#2	.00010	.04492	.00081	.00083	-.00406	.00387	.00518	.00391
#3	-.00020	.05381	.00066	.00565	-.00555	-.00166	-.00258	.00258
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 18:01:36 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00055**	**-.00003**	**.00151**	**-.00076**	**-.00078**	**.00004**	**-.00001**
Stddev	.00021	.00041	.00731	.00145	.00094	.00020	.00021
%RSD	37.609	1536.0	483.70	190.37	120.73	504.01	2002.3
#1	.00046	-.00049	-.00537	.00082	-.00111	-.00017	.00006
#2	.00041	.00028	.00072	-.00109	-.00151	.00022	.00016
#3	.00079	.00013	.00918	-.00201	.00028	.00006	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10145.**	**59750.**	**2665.9**
Stddev	97.	143.	14.4
%RSD	.95209	.23955	.54155
#1	10059.	59587.	2653.9
#2	10250.	59809.	2662.0
#3	10125.	59854.	2681.9

Approved: July 16, 2016

Sample Name: LLCCV Acquired: 7/14/2016 18:05:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00661	.15818	.00588	.08209	.00530	.00151	.34264	.00090
Stddev	.00063	.00248	.00364	.00104	.00007	.00005	.02019	.00012
%RSD	9.5020	1.5657	61.772	1.2626	1.3728	3.1340	5.8919	12.908
#1	.00705	.15838	.00312	.08241	.00538	.00153	.32094	.00102
#2	.00589	.15561	.01000	.08093	.00524	.00153	.34613	.00090
#3	.00689	.16055	.00454	.08292	.00527	.00145	.36086	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00367	.00490	.00403	.08175	.76390	.08624	.41759	.00875
Stddev	.00058	.00082	.00055	.02068	.12561	.00364	.03351	.00213
%RSD	15.754	16.716	13.702	25.293	16.443	4.2194	8.0239	24.320
#1	.00364	.00580	.00413	.06281	.72588	.08217	.38666	.00984
#2	.00427	.00473	.00453	.10381	.66170	.08919	.45318	.00630
#3	.00311	.00418	.00344	.07864	.90413	.08736	.41291	.01012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00735	.47173	.01492	.75012	.00788	.08177	.01238	.74304
Stddev	.00100	.01289	.00229	.06823	.00146	.00797	.00388	.06308
%RSD	13.630	2.7329	15.325	9.0955	18.545	9.7448	31.341	8.4891
#1	.00784	.48527	.01689	.78698	.00928	.08472	.01644	.77930
#2	.00800	.45961	.01546	.79199	.00799	.08785	.00871	.77961
#3	.00619	.47031	.01242	.67139	.00636	.07275	.01198	.67020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: LLCCV Acquired: 7/14/2016 18:05:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37878**	**.04087**	**.02946**	**.14136**	**.00680**	**.01608**	**.03982**
Stddev	.04351	.00087	.00456	.01351	.00124	.00164	.00044
%RSD	11.486	2.1186	15.486	9.5540	18.246	10.170	1.1116
#1	.40607	.04181	.02908	.14753	.00644	.01708	.03990
#2	.40165	.04012	.03421	.15068	.00577	.01696	.03935
#3	.32860	.04066	.02511	.12587	.00818	.01419	.04022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10386.**	**61504.**	**2737.8**
Stddev	25.	347.	19.0
%RSD	.24326	.56365	.69312
#1	10412.	61229.	2718.4
#2	10384.	61893.	2738.7
#3	10362.	61390.	2756.3

Approved: July 16, 2016

Sample Name: LLCCV Acquired: 7/14/2016 18:09:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01814	.38138	.01778	.19587	.01750	.00364	.94634	.00215
Stddev	.00115	.00823	.00148	.00171	.00055	.00006	.01361	.00018
%RSD	6.3286	2.1577	8.2993	.87082	3.1240	1.7155	1.4378	8.2170
#1	.01877	.37356	.01903	.19446	.01802	.00371	.96186	.00230
#2	.01681	.38062	.01816	.19777	.01755	.00362	.94074	.00219
#3	.01884	.38997	.01615	.19539	.01693	.00359	.93643	.00196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00915	.00971	.00931	.19221	1.9824	.20140	.95430	.01812
Stddev	.00067	.00040	.00106	.01847	.0200	.00166	.06054	.00070
%RSD	7.3195	4.1424	11.330	9.6080	1.0098	.82529	6.3440	3.8451
#1	.00971	.00943	.01053	.21298	1.9826	.19950	.89514	.01740
#2	.00933	.00954	.00869	.18601	1.9623	.20259	.95162	.01818
#3	.00840	.01017	.00872	.17763	2.0023	.20210	1.0161	.01879
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01790	1.0343	.03732	1.8220	.01595	.18992	.03523	1.8186
Stddev	.00140	.0313	.00326	.1189	.00386	.01072	.00683	.1110
%RSD	7.8195	3.0248	8.7224	6.5275	24.184	5.6425	19.385	6.1036
#1	.01889	1.0701	.03988	1.8975	.02003	.19420	.03873	1.8875
#2	.01851	1.0126	.03843	1.8835	.01545	.19783	.03960	1.8778
#3	.01630	1.0201	.03366	1.6849	.01237	.17773	.02736	1.6906
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: LLCCV Acquired: 7/14/2016 18:09:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.93307	.09982	.05820	.35162	.01804	.03870	.09683
Stddev	.08318	.00063	.00625	.02117	.00063	.00305	.00041
%RSD	8.9147	.63352	10.746	6.0213	3.5033	7.8874	.42610
#1	.98523	.10014	.05584	.36688	.01825	.04056	.09683
#2	.97683	.10022	.06529	.36052	.01733	.04037	.09724
#3	.83714	.09909	.05347	.32745	.01855	.03518	.09642
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10457.	62211.	2747.1
Stddev	3.	92.	23.7
%RSD	.03101	.14829	.86154
#1	10453.	62106.	2722.1
#2	10458.	62282.	2750.0
#3	10459.	62244.	2769.2

Approved: July 16, 2016

Sample Name: PBW AI Acquired: 7/14/2016 18:13:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575642-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00062**	**.00879**	**.00152**	**.00453**	**-.00208**	**.00007**	**-.05132**	**.00006**
Stddev	.00014	.00344	.00151	.00213	.00083	.00004	.01516	.00019
%RSD	22.643	39.122	99.226	47.046	39.847	65.973	29.537	344.60
#1	-.00057	.00763	.00324	.00406	-.00151	.00002	-.05696	.00023
#2	-.00051	.00608	.00088	.00267	-.00170	.00010	-.06285	.00008
#3	-.00078	.01266	.00043	.00686	-.00303	.00009	-.03415	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00029**	**.00032**	**.00025**	**.01264**	**.00126**	**.00346**	**-.00775**	**-.00149**
Stddev	.00048	.00018	.00085	.05521	.05350	.00385	.07031	.00242
%RSD	166.92	55.845	340.06	436.66	4235.0	111.30	907.47	162.53
#1	-.00003	.00053	-.00051	.06876	.05652	-.00088	-.04806	-.00021
#2	.00001	.00023	.00117	-.04161	-.05028	.00480	-.04863	.00003
#3	-.00084	.00021	.00009	.01078	-.00245	.00645	.07344	-.00428
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**.08915**	**-.00066**	**.00357**	**-.00275**	**-.00083**	**-.00515**	**.00483**
Stddev	.00056	.00908	.00081	.01181	.00081	.00328	.00155	.00200
%RSD	528.28	10.181	122.62	330.92	29.335	397.63	30.110	41.359
#1	-.00070	.09434	-.00130	-.00067	-.00353	.00018	-.00338	.00255
#2	.00041	.07867	-.00092	.01692	-.00281	-.00449	-.00626	.00629
#3	-.00003	.09444	.00025	-.00554	-.00191	.00184	-.00581	.00565
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: PBW AI Acquired: 7/14/2016 18:13:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575642-07

Elem	Sn1899	Sr4077	Ti3372	TI1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	-.00006	.00586	-.00048	-.00105	.00091	.00029
Stddev	.00037	.00030	.00193	.00208	.00029	.00007	.00004
%RSD	41.022	537.12	32.852	431.90	27.420	7.3703	13.578
#1	.00127	.00029	.00808	.00166	-.00130	.00096	.00030
#2	.00092	-.00020	.00496	-.00250	-.00111	.00094	.00025
#3	.00052	-.00025	.00455	-.00060	-.00074	.00084	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10258.	61416.	2717.9
Stddev	12.	59.	20.6
%RSD	.11587	.09588	.75849
#1	10258.	61470.	2741.7
#2	10246.	61353.	2707.0
#3	10270.	61423.	2705.1

Approved: July 16, 2016

Sample Name: LCSW Al Acquired: 7/14/2016 18:17:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575642-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19104**	**4.7905**	**.19568**	**.95041**	**.49866**	**.02300**	**5.0434**	**.02438**
Stddev	.00176	.0180	.00354	.00074	.00411	.00006	.0973	.00048
%RSD	.92174	.37537	1.8068	.07765	.82384	.25803	1.9292	1.9838
#1	.19162	4.8108	.19976	.95010	.50181	.02302	5.0832	.02443
#2	.18906	4.7766	.19386	.94989	.49401	.02305	4.9325	.02484
#3	.19243	4.7840	.19343	.95126	.50016	.02294	5.1145	.02388
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09864**	**.23858**	**.24807**	**1.9994**	**24.569**	**.50440**	**4.9501**	**.24818**
Stddev	.00244	.00170	.00607	.0185	.319	.00217	.1531	.00408
%RSD	2.4704	.71445	2.4456	.92748	1.2993	.42994	3.0923	1.6422
#1	.10075	.23745	.25283	2.0209	24.833	.50297	4.9356	.25137
#2	.09919	.24054	.25013	1.9891	24.214	.50333	4.8048	.24358
#3	.09597	.23775	.24124	1.9883	24.659	.50689	5.1099	.24957
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49892**	**24.891**	**.24838**	**4.7838**	**.24775**	**.59079**	**.18434**	**2.4501**
Stddev	.01134	.205	.00521	.0926	.00122	.01390	.00456	.0393
%RSD	2.2727	.82397	2.0958	1.9362	.49379	2.3526	2.4731	1.6031
#1	.50776	25.076	.25257	4.8577	.24858	.60075	.18939	2.4864
#2	.50286	24.671	.25001	4.8139	.24634	.59671	.18052	2.4555
#3	.48614	24.927	.24255	4.6799	.24832	.57491	.18311	2.4084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: LCSW Al Acquired: 7/14/2016 18:17:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575642-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49215**	**.50929**	**.50906**	**.24622**	**.47603**	**.48824**	**.00095**
Stddev	.01389	.00372	.00514	.00227	.00100	.01112	.00019
%RSD	2.8220	.73007	1.0099	.92293	.20963	2.2776	19.999
#1	.50251	.51043	.51234	.24794	.47669	.49690	.00106
#2	.49758	.50513	.51170	.24708	.47652	.49211	.00073
#3	.47637	.51230	.50313	.24365	.47488	.47570	.00105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10206.**	**60624.**	**2723.1**
Stddev	36.	334.	13.2
%RSD	.35397	.55113	.48528
#1	10166.	60243.	2708.8
#2	10218.	60864.	2735.0
#3	10235.	60765.	2725.5

Approved: July 16, 2016

Sample Name: L1607022707 Acquired: 7/14/2016 18:20:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575642-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00085**	**.44765**	**-.00129**	**.00652**	**.02687**	**.00011**	**.49583**	**.00043**
Stddev	.00072	.01207	.00127	.00179	.00100	.00013	.02126	.00005
%RSD	85.434	2.6964	98.360	27.514	3.7109	111.96	4.2872	11.849
#1	-.00080	.45020	-.00009	.00680	.02736	.00020	.50379	.00044
#2	-.00159	.45825	-.00117	.00816	.02752	.00017	.51196	.00048
#3	-.00015	.43451	-.00261	.00460	.02572	-.00003	.47174	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00043**	**.00305**	**.00172**	**1.0939**	**.66243**	**.00575**	**.46543**	**.03027**
Stddev	.00030	.00112	.00051	.0179	.05846	.00200	.02786	.00030
%RSD	69.259	36.675	29.760	1.6398	8.8257	34.837	5.9860	.98112
#1	.00023	.00176	.00227	1.1093	.60799	.00635	.49539	.03055
#2	.00029	.00367	.00162	1.0984	.72422	.00739	.46061	.03031
#3	.00077	.00372	.00126	1.0742	.65507	.00352	.44030	.02996
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**1.5449**	**.00146**	**.02068**	**-.00097**	**.00084**	**-.00605**	**3.3514**
Stddev	.00013	.0185	.00107	.00100	.00276	.00035	.00263	.2686
%RSD	206.18	1.1996	72.933	4.8507	283.85	41.515	43.406	8.0141
#1	-.00013	1.5620	.00242	.01953	-.00410	.00073	-.00302	3.5112
#2	.00008	1.5475	.00166	.02110	.00113	.00056	-.00747	3.5016
#3	-.00014	1.5252	.00031	.02140	.00005	.00123	-.00767	3.0413
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607022707 Acquired: 7/14/2016 18:20:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575642-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.00537	.00269	.00188	-.00004	.00941	.00032
Stddev	.00069	.00003	.00161	.00073	.00054	.00087	.00022
%RSD	98.810	.52929	59.716	38.591	1212.3	9.2160	69.222
#1	.00088	.00534	.00455	.00154	-.00037	.00989	.00057
#2	.00126	.00539	.00170	.00271	.00058	.00994	.00019
#3	-.00007	.00539	.00183	.00139	-.00034	.00841	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10310.	61629.	2755.3
Stddev	28.	99.	9.0
%RSD	.27254	.16018	.32655
#1	10339.	61626.	2763.1
#2	10308.	61531.	2757.4
#3	10282.	61729.	2745.4

Approved: July 16, 2016

Sample Name: L1607022708S Acquired: 7/14/2016 18:24:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575642-09

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19550	5.6775	.19759	.95807	.53028	.02352	5.5452	.02480
Stddev	.00247	.0128	.00267	.00214	.00310	.00005	.0535	.00051
%RSD	1.2653	.22490	1.3535	.22297	.58483	.21530	.96417	2.0560
#1	.19287	5.6898	.19612	.95617	.53385	.02358	5.5776	.02526
#2	.19778	5.6643	.20067	.96039	.52831	.02348	5.4835	.02487
#3	.19584	5.6782	.19596	.95766	.52868	.02351	5.5745	.02425
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10096	.24869	.25251	3.7351	25.213	.50997	5.4910	.29661
Stddev	.00248	.00054	.00601	.0203	.058	.00053	.0552	.00594
%RSD	2.4583	.21556	2.3818	.54270	.23011	.10314	1.0054	2.0032
#1	.10272	.24853	.25686	3.7148	25.279	.51004	5.5382	.30330
#2	.10205	.24825	.25501	3.7553	25.168	.51046	5.4303	.29194
#3	.09812	.24928	.24564	3.7351	25.193	.50942	5.5044	.29458
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50600	26.600	.25456	4.8437	.24996	.59212	.18796	6.4818
Stddev	.01147	.115	.00592	.0868	.00654	.01404	.00372	.0986
%RSD	2.2666	.43283	2.3248	1.7915	2.6156	2.3705	1.9795	1.5211
#1	.51270	26.719	.25837	4.9007	.25677	.59936	.18900	6.5415
#2	.51253	26.489	.25758	4.8865	.24938	.60106	.19105	6.5359
#3	.49275	26.593	.24775	4.7438	.24373	.57594	.18383	6.3680
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607022708S Acquired: 7/14/2016 18:24:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575642-09

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50104	.51889	.51211	.24722	.48519	.50869	.00149
Stddev	.01237	.00285	.00240	.00365	.00079	.01116	.00020
%RSD	2.4680	.55000	.46875	1.4783	.16216	2.1940	13.531
#1	.50851	.51856	.51363	.24768	.48556	.51566	.00133
#2	.50784	.51622	.51336	.25062	.48429	.51459	.00172
#3	.48677	.52190	.50934	.24335	.48573	.49582	.00143
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10113.	59854.	2703.6
Stddev	37.	73.	13.6
%RSD	.36251	.12212	.50210
#1	10078.	59790.	2688.2
#2	10111.	59838.	2713.9
#3	10151.	59933.	2708.8

Approved: July 16, 2016

Sample Name: L1607022709SD Acquired: 7/14/2016 18:28:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575642-10

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19031	5.5331	.19557	.94235	.51893	.02317	5.5136	.02447
Stddev	.00148	.0093	.00257	.00232	.00095	.00012	.0307	.00068
%RSD	.78030	.16840	1.3157	.24575	.18360	.53767	.55655	2.7921
#1	.18871	5.5267	.19686	.94107	.52003	.02307	5.5482	.02519
#2	.19164	5.5438	.19724	.94502	.51831	.02331	5.5029	.02438
#3	.19059	5.5288	.19261	.94095	.51845	.02314	5.4897	.02383
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09957	.24355	.24984	3.5313	24.841	.50022	5.3178	.28791
Stddev	.00223	.00097	.00549	.0119	.075	.00298	.0282	.00230
%RSD	2.2443	.39636	2.1976	.33715	.30359	.59648	.52947	.79975
#1	.10114	.24244	.25178	3.5449	24.766	.49854	5.3266	.28832
#2	.10057	.24422	.25409	3.5227	24.840	.49846	5.2863	.28543
#3	.09701	.24398	.24364	3.5264	24.917	.50367	5.3405	.28998
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50008	26.068	.25175	4.7751	.24921	.58750	.18800	6.2927
Stddev	.00975	.059	.00651	.0681	.00363	.01283	.00574	.0823
%RSD	1.9500	.22512	2.5846	1.4258	1.4556	2.1832	3.0532	1.3070
#1	.50704	26.133	.25537	4.8219	.25014	.59571	.18845	6.3510
#2	.50427	26.052	.25565	4.8065	.25228	.59406	.19351	6.3284
#3	.48893	26.019	.24424	4.6970	.24521	.57272	.18205	6.1986
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607022709SD Acquired: 7/14/2016 18:28:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG575642-10

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49520**	**.50999**	**.50488**	**.24556**	**.47605**	**.50046**	**.00118**
Stddev	.01218	.00125	.00775	.00389	.00016	.00984	.00059
%RSD	2.4588	.24599	1.5355	1.5858	.03330	1.9654	49.846
#1	.50303	.50956	.51259	.25005	.47623	.50613	.00051
#2	.50140	.50900	.49708	.24332	.47593	.50614	.00143
#3	.48117	.51140	.50497	.24331	.47599	.48910	.00159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10100.**	**60050.**	**2699.3**
Stddev	24.	19.	11.1
%RSD	.23650	.03132	.41284
#1	10073.	60070.	2694.1
#2	10119.	60034.	2712.1
#3	10109.	60044.	2691.7

Approved: July 16, 2016

Sample Name: L1607018402 Acquired: 7/14/2016 18:32:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00096	.02362	.00255	.03532	.19901	.00005	24.251
Stddev	.00099	.00866	.00098	.00289	.00346	.00005	.545
%RSD	103.09	36.651	38.471	8.1931	1.7390	96.051	2.2476
#1	-.00209	.01647	.00328	.03719	.19555	.00004	23.635
#2	-.00049	.02113	.00292	.03678	.19900	.00010	24.450
#3	-.00029	.03324	.00143	.03199	.20248	.00000	24.669
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.00277	.00380	.00127	.17941	.87256	.02255
Stddev	.00004	.00016	.00055	.00046	.00783	.05192	.00184
%RSD	11.603	5.9067	14.405	36.320	4.3634	5.9503	8.1737
#1	.00039	.00259	.00438	.00181	.17047	.84183	.02204
#2	.00036	.00283	.00370	.00103	.18507	.93251	.02459
#3	.00031	.00290	.00330	.00098	.18267	.84334	.02101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	37.002	.03185	.00082	F 360.94	.00612	1.5220	.00103
Stddev	.463	.00078	.00011	7.30	.00015	.0566	.00409
%RSD	1.2514	2.4476	13.777	2.0230	2.4941	3.7173	397.71
#1	36.573	.03105	.00082	352.63	.00601	1.5557	.00218
#2	36.941	.03191	.00093	363.85	.00605	1.5536	.00442
#3	37.493	.03261	.00070	366.33	.00629	1.4567	-.00352
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 16, 2016

Sample Name: L1607018402 Acquired: 7/14/2016 18:32:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**-.00133**	**14.872**	**-.00050**	**.47650**	**-.00531**	**-.00047**
Stddev	.00505	.00221	.487	.00041	.01088	.00634	.00130
%RSD	3357.9	165.92	3.2745	83.489	2.2841	119.38	279.32
#1	.00469	.00117	15.167	-.00097	.46420	-.01155	.00062
#2	-.00528	-.00214	15.139	-.00018	.48042	.00112	-.00191
#3	.00105	-.00301	14.310	-.00034	.48488	-.00549	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00063**	**.02239**	**.00003**
Stddev	.00029	.00102	.00024
%RSD	45.422	4.5751	876.89
#1	-.00090	.02303	-.00025
#2	-.00066	.02293	.00014
#3	-.00033	.02121	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9678.5**	**56910.**	**2587.2**
Stddev	11.7	54.	107.7
%RSD	.12109	.09453	4.1621
#1	9676.3	56972.	2462.9
#2	9691.2	56882.	2648.5
#3	9668.0	56875.	2650.2

Approved: July 16, 2016

Sample Name: L1607018402PS Acquired: 7/14/2016 18:35:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576077-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19966**	**5.1303**	**.21107**	**1.0392**	**.70423**	**.02484**	**27.658**
Stddev	.00103	.0270	.00116	.0068	.00037	.00013	.071
%RSD	.51770	.52706	.55086	.65250	.05199	.50579	.25640
#1	.20052	5.1609	.21112	1.0468	.70428	.02499	27.583
#2	.19851	5.1205	.21221	1.0338	.70456	.02476	27.724
#3	.19994	5.1095	.20988	1.0369	.70384	.02478	27.667
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02544**	**.10331**	**.25359**	**.25401**	**2.2078**	**27.041**	**.54992**
Stddev	.00042	.00154	.00170	.00434	.0127	.142	.00036
%RSD	1.6586	1.4913	.67171	1.7082	.57425	.52529	.06534
#1	.02559	.10430	.25555	.25535	2.2083	27.201	.54998
#2	.02577	.10409	.25271	.25753	2.1949	26.992	.55025
#3	.02497	.10154	.25250	.24916	2.2202	26.930	.54953
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**39.054**	**.28985**	**.52264**	F **357.98**	**.25769**	**6.5377**	**.25096**
Stddev	.110	.00189	.00940	.85	.00425	.0792	.00291
%RSD	.28249	.65218	1.7983	.23622	1.6483	1.2113	1.1605
#1	39.058	.29203	.52827	358.46	.26050	6.5869	.25431
#2	39.162	.28867	.52785	358.47	.25977	6.5799	.24959
#3	38.942	.28884	.51179	357.00	.25281	6.4464	.24899
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 16, 2016

Sample Name: L1607018402PS Acquired: 7/14/2016 18:35:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576077-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.61751	.19988	16.125	.51681	.94395	.52659	.24609
Stddev	.01270	.00327	.190	.01133	.00264	.00971	.00234
%RSD	2.0563	1.6344	1.1808	2.1917	.27969	1.8446	.94944
#1	.62911	.20140	16.255	.52368	.94544	.53340	.24874
#2	.61946	.20211	16.213	.52302	.94550	.53090	.24435
#3	.60394	.19613	15.906	.50374	.94090	.51547	.24516
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.50633	.52597	.00131
Stddev	.00231	.00878	.00047
%RSD	.45531	1.6697	36.282
#1	.50899	.53105	.00076
#2	.50511	.53102	.00155
#3	.50489	.51583	.00162
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9652.2	56294.	2604.4
Stddev	17.8	154.	10.5
%RSD	.18482	.27426	.40136
#1	9632.2	56116.	2604.2
#2	9657.7	56399.	2594.0
#3	9666.6	56365.	2614.9

Approved: July 16, 2016

Sample Name: L1607018402SDL Acquired: 7/14/2016 18:39:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG576077-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00029	.00715	-.00194	.01023	.04028	.00010	5.0005	.00002
Stddev	.00075	.00272	.00278	.00286	.00134	.00008	.0564	.00022
%RSD	257.81	38.019	142.88	27.968	3.3287	82.933	1.1280	1208.1
#1	-.00078	.00590	.00096	.01160	.04114	.00000	4.9626	-.00011
#2	.00057	.00528	-.00222	.00694	.03873	.00014	4.9735	.00027
#3	-.00066	.01026	-.00457	.01215	.04097	.00014	5.0653	-.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00087	.00079	.03530	.13346	.00710	7.7658	.00338
Stddev	.00031	.00074	.00022	.02061	.07975	.00570	.1819	.00027
%RSD	101.35	84.995	28.131	58.380	59.755	80.277	2.3426	8.0358
#1	.00060	.00170	.00094	.05085	.13427	.00426	7.5591	.00352
#2	.00034	.00030	.00053	.04313	.21280	.00338	7.8367	.00306
#3	-.00002	.00061	.00088	.01192	.05331	.01367	7.9016	.00354
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	74.357	.00048	.30477	-.00365	.00135	-.00429	2.9898
Stddev	.00023	.284	.00134	.02615	.00065	.00092	.00419	.2514
%RSD	2134.0	.38197	278.93	8.5797	17.813	68.086	97.800	8.4087
#1	-.00027	74.136	.00161	.31554	-.00334	.00061	.00048	3.1349
#2	.00017	74.258	-.00100	.32381	-.00321	.00238	-.00739	3.1349
#3	.00007	74.677	.00082	.27496	-.00439	.00105	-.00594	2.6995
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607018402SDL Acquired: 7/14/2016 18:39:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG576077-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00012**	**.09696**	**.00086**	**-.00074**	**-.00046**	**.00502**	**.00042**
Stddev	.00017	.00107	.00140	.00310	.00014	.00067	.00005
%RSD	140.36	1.0986	163.38	419.92	30.741	13.361	11.144
#1	-.00025	.09575	.00117	-.00029	-.00030	.00535	.00045
#2	-.00018	.09740	-.00067	-.00404	-.00051	.00546	.00043
#3	.00007	.09774	.00207	.00211	-.00057	.00424	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10094.**	**59213.**	**2652.8**
Stddev	33.	128.	10.1
%RSD	.32887	.21662	.38137
#1	10059.	59337.	2641.8
#2	10098.	59081.	2661.7
#3	10125.	59221.	2654.8

Approved: July 16, 2016

Sample Name: L1607018402SDL Acquired: 7/14/2016 18:43:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG576077-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00140**	**.00543**	**.00160**	**.00313**	**.00649**	**.00003**	**.94357**	**.00015**
Stddev	.00009	.00303	.00227	.00210	.00074	.00005	.05096	.00021
%RSD	6.5955	55.716	141.55	66.973	11.372	200.58	5.4009	145.05
#1	-.00149	.00340	.00188	.00233	.00703	.00006	.91001	-.00010
#2	-.00140	.00398	-.00079	.00156	.00565	-.00004	1.0022	.00023
#3	-.00131	.00891	.00372	.00552	.00680	.00006	.91850	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**-.00003**	**-.00096**	**.00824**	**.02174**	**.00561**	**1.5096**	**-.00106**
Stddev	.00028	.00100	.00100	.02391	.04821	.00145	.0163	.00168
%RSD	147.11	3663.4	103.80	290.09	221.75	25.749	1.0825	158.93
#1	-.00002	-.00106	-.00211	.02676	.07372	.00614	1.5270	.00041
#2	.00051	.00093	-.00028	.01671	.01303	.00398	1.5072	-.00069
#3	.00009	.00005	-.00049	-.01875	-.02152	.00672	1.4946	-.00290
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**14.665**	**-.00012**	**.05905**	**-.00143**	**.00092**	**-.00253**	**.57889**
Stddev	.00017	.120	.00046	.00472	.00244	.00347	.00611	.04408
%RSD	343.68	.81508	394.89	7.9847	170.66	377.63	241.97	7.6140
#1	-.00024	14.553	.00031	.06372	-.00143	-.00031	-.00223	.60370
#2	-.00001	14.653	-.00060	.05914	-.00387	-.00177	-.00879	.60497
#3	.00010	14.791	-.00005	.05429	.00101	.00483	.00343	.52800
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607018402SDL Acquired: 7/14/2016 18:43:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG576077-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.01896	.00412	.00188	-.00064	.00136	.00011
Stddev	.00066	.00030	.00868	.00401	.00066	.00014	.00041
%RSD	336.82	1.5563	210.77	214.04	103.73	10.271	381.79
#1	.00006	.01863	.01370	.00326	-.00134	.00138	.00017
#2	-.00039	.01918	-.00321	-.00265	-.00056	.00149	.00049
#3	.00091	.01907	.00187	.00501	-.00002	.00122	-.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10529.	62154.	2747.0
Stddev	53.	186.	14.9
%RSD	.49874	.29862	.54105
#1	10578.	62228.	2754.9
#2	10534.	62290.	2756.3
#3	10474.	61942.	2729.9

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 18:47:17 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41638**	**10.254**	**.41978**	**.51594**	**1.0385**	**.05069**	**10.349**	**.05213**
Stddev	.00126	.022	.00768	.00251	.0085	.00028	.105	.00103
%RSD	.30159	.21084	1.8283	.48644	.81834	.55861	1.0116	1.9802
#1	.41668	10.268	.42604	.51793	1.0463	.05092	10.374	.05297
#2	.41745	10.265	.42210	.51312	1.0294	.05077	10.234	.05245
#3	.41500	10.229	.41122	.51676	1.0400	.05037	10.439	.05098
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20949**	**.50819**	**.51993**	**4.1519**	**52.009**	**1.0219**	**10.281**	**.52578**
Stddev	.00439	.00215	.00982	.0075	.375	.0034	.074	.00569
%RSD	2.0955	.42317	1.8889	.18001	.72159	.33698	.72375	1.0813
#1	.21271	.51067	.52603	4.1560	52.282	1.0222	10.363	.53229
#2	.21128	.50680	.52516	4.1565	51.581	1.0183	10.217	.52326
#3	.20449	.50710	.50860	4.1433	52.163	1.0251	10.264	.52179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0346**	**51.849**	**.51838**	**10.436**	**.51803**	**1.2533**	**.41942**	**5.1018**
Stddev	.0236	.297	.01336	.190	.00759	.0263	.00928	.1121
%RSD	2.2840	.57216	2.5763	1.8175	1.4643	2.1011	2.2132	2.1966
#1	1.0500	52.103	.52725	10.558	.52082	1.2709	.42296	5.1667
#2	1.0463	51.523	.52487	10.533	.52382	1.2660	.42641	5.1662
#3	1.0074	51.920	.50302	10.218	.50945	1.2230	.40889	4.9724
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 18:47:17 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0427**	**1.0416**	**1.0509**	**.52049**	**1.0117**	**1.0311**	**1.0331**
Stddev	.0278	.0070	.0106	.00098	.0040	.0216	.0077
%RSD	2.6644	.67006	1.0035	.18830	.39046	2.0897	.74777
#1	1.0595	1.0470	1.0594	.52161	1.0151	1.0452	1.0407
#2	1.0579	1.0337	1.0391	.52008	1.0126	1.0418	1.0253
#3	1.0106	1.0440	1.0542	.51979	1.0073	1.0063	1.0334
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9841.2**	**57511.**	**2600.8**
Stddev	16.9	190.	11.7
%RSD	.17141	.33075	.44824
#1	9829.6	57365.	2588.5
#2	9860.6	57441.	2611.7
#3	9833.5	57726.	2602.1

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 18:50:53 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00167	.00676	-.00195	.00644	.00004	.00009	.00370	.00022
Stddev	.00139	.00289	.00161	.00164	.00084	.00004	.00683	.00024
%RSD	83.555	42.711	82.319	25.488	2374.5	44.218	184.55	108.45
#1	-.00029	.00343	-.00200	.00820	-.00028	.00006	.00688	-.00002
#2	-.00164	.00826	-.00032	.00615	-.00060	.00014	.00836	.00023
#3	-.00307	.00860	-.00353	.00496	.00098	.00008	-.00414	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00012	.00036	-.00018	.01095	.01489	.00303	-.01140	-.00260
Stddev	.00043	.00056	.00066	.00899	.06241	.00247	.02510	.00232
%RSD	359.60	156.11	361.18	82.112	419.23	81.535	220.23	89.258
#1	-.00055	-.00029	-.00070	.01645	.06255	.00050	-.01686	-.00478
#2	.00032	.00067	.00056	.01581	-.05575	.00544	-.03332	-.00284
#3	-.00014	.00070	-.00040	.00057	.03787	.00315	.01599	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.07094	-.00117	-.00036	-.00305	.00141	-.00064	.00259
Stddev	.00014	.01016	.00068	.00480	.00368	.00420	.00347	.00230
%RSD	383.44	14.327	57.747	1316.6	120.71	296.66	542.77	88.843
#1	.00007	.06763	-.00048	-.00584	-.00234	-.00306	-.00406	.00307
#2	-.00012	.06285	-.00120	.00311	.00022	.00526	.00288	.00462
#3	.00016	.08235	-.00183	.00164	-.00704	.00204	-.00073	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 18:50:53 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	-.00003	-.00039	.00070	-.00021	-.00002	-.00018
Stddev	.00044	.00025	.00097	.00147	.00031	.00016	.00044
%RSD	58.080	923.19	247.76	210.95	146.50	830.62	242.17
#1	.00031	-.00031	.00048	.00237	.00010	-.00020	-.00030
#2	.00078	.00016	-.00022	-.00040	-.00022	.00006	.00031
#3	.00120	.00007	-.00144	.00013	-.00053	.00008	-.00055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9960.5	59240.	2614.8
Stddev	32.3	55.	20.4
%RSD	.32467	.09206	.78153
#1	9962.2	59210.	2592.4
#2	9992.0	59207.	2619.6
#3	9927.4	59303.	2632.3

Approved: July 16, 2016

Sample Name: L1607020901 Acquired: 7/14/2016 18:54:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00081	.01289	-.00008	.01132	-.00011	.00006	15.887	.00010
Stddev	.00061	.00507	.00419	.00134	.00112	.00005	.038	.00016
%RSD	75.574	39.360	5498.5	11.870	1050.0	89.763	.23710	170.78
#1	-.00121	.01489	-.00478	.01104	-.00135	-.00000	15.907	-.00009
#2	-.00010	.01665	.00327	.01013	.00082	.00010	15.844	.00022
#3	-.00111	.00712	.00128	.01277	.00021	.00008	15.911	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.00143	.00062	.06158	.27050	.00535	4.9301	-.00063
Stddev	.00015	.00030	.00045	.01176	.04396	.00311	.0764	.00327
%RSD	197.54	20.643	73.127	19.097	16.251	58.162	1.5486	521.04
#1	.00020	.00135	.00016	.07304	.22058	.00479	4.9545	.00309
#2	.00011	.00175	.00106	.04954	.28751	.00256	4.9912	-.00191
#3	-.00009	.00118	.00064	.06216	.30342	.00871	4.8445	-.00306
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	5.1049	-.00085	.00824	-.00229	.00118	-.00350	2.6733
Stddev	.00016	.0091	.00068	.00438	.00177	.00214	.00437	.1843
%RSD	109.72	.17875	80.610	53.127	77.156	181.34	124.95	6.8934
#1	.00026	5.1147	-.00027	.00590	-.00092	.00338	-.00088	2.7755
#2	-.00004	5.0966	-.00160	.00553	-.00166	.00104	-.00854	2.7839
#3	.00021	5.1035	-.00067	.01330	-.00429	-.00089	-.00107	2.4606
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607020901 Acquired: 7/14/2016 18:54:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.02291	.00516	.00000	-.00052	.00227	.00035
Stddev	.00018	.00027	.00416	.00340	.00031	.00038	.00014
%RSD	311.43	1.1637	80.747	157240.	59.424	16.598	39.621
#1	.00016	.02284	.00878	.00348	-.00076	.00243	.00025
#2	-.00015	.02268	.00061	-.00331	-.00017	.00254	.00051
#3	.00017	.02320	.00608	-.00016	-.00064	.00184	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10038.	59832.	2662.8
Stddev	31.	235.	16.0
%RSD	.30642	.39356	.60015
#1	10063.	59590.	2668.9
#2	10047.	60060.	2674.7
#3	10004.	59845.	2644.6

Approved: July 16, 2016

Sample Name: L1607020902 Acquired: 7/14/2016 18:58:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00069	.01216	-.00047	.02119	.02820	.00007	32.607	.00042
Stddev	.00051	.00651	.00111	.00148	.00099	.00005	.301	.00020
%RSD	73.537	53.536	237.35	6.9864	3.5267	78.355	.92439	47.888
#1	-.00123	.01832	.00061	.01970	.02932	.00006	32.779	.00063
#2	-.00064	.01280	-.00041	.02266	.02743	.00012	32.783	.00023
#3	-.00021	.00535	-.00161	.02122	.02784	.00002	32.259	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.00103	.00213	.66892	.63359	.00932	12.097	.01620
Stddev	.00039	.00050	.00044	.00711	.11312	.00262	.246	.00021
%RSD	111.14	48.651	20.526	1.0622	17.855	28.065	2.0350	1.3010
#1	-.00003	.00052	.00257	.67088	.62142	.01219	12.370	.01634
#2	.00034	.00152	.00214	.67484	.52704	.00708	12.029	.01596
#3	.00075	.00106	.00169	.66104	.75230	.00868	11.892	.01629
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	3.4436	-.00055	.01043	-.00360	.00025	-.00266	2.5148
Stddev	.00033	.0220	.00126	.00180	.00441	.00400	.00255	.1435
%RSD	219.40	.63881	229.90	17.243	122.33	1603.0	95.659	5.7075
#1	-.00020	3.4689	-.00080	.01205	-.00066	.00401	-.00383	2.5930
#2	.00021	3.4329	-.00167	.01073	-.00148	.00070	-.00443	2.6023
#3	.00045	3.4291	.00082	.00849	-.00867	-.00396	.00026	2.3492
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607020902 Acquired: 7/14/2016 18:58:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.08855	-.00634	.00318	-.00030	.00627	.00018
Stddev	.00023	.00068	.00566	.00128	.00034	.00057	.00065
%RSD	326.84	.76311	89.215	40.278	116.08	9.0130	359.84
#1	-.00015	.08832	-.00776	.00445	-.00045	.00665	.00049
#2	.00031	.08931	-.01116	.00320	-.00053	.00655	-.00056
#3	.00005	.08801	-.00011	.00189	.00010	.00562	.00061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10036.	59631.	2653.9
Stddev	11.	142.	24.0
%RSD	.10510	.23880	.90462
#1	10047.	59476.	2646.1
#2	10033.	59757.	2634.8
#3	10027.	59660.	2680.9

Approved: July 16, 2016

Sample Name: L1607020903 Acquired: 7/14/2016 19:02:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00051	.00794	-.00310	.00634	.00944	.00007	5.9632	.00040
Stddev	.00187	.00442	.00091	.00237	.00090	.00006	.0182	.00023
%RSD	369.92	55.671	29.413	37.368	9.5825	81.526	.30477	58.908
#1	-.00249	.01084	-.00258	.00785	.01026	.00002	5.9449	.00020
#2	-.00024	.01014	-.00415	.00361	.00959	.00013	5.9636	.00065
#3	.00122	.00285	-.00256	.00757	.00847	.00005	5.9813	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	-.00009	-.00035	.73554	.16610	.00403	2.3587	.01060
Stddev	.00012	.00075	.00041	.04316	.06942	.00142	.0945	.00064
%RSD	32.323	861.48	118.18	5.8675	41.791	35.205	4.0076	6.0197
#1	-.00040	-.00083	-.00078	.75831	.24378	.00437	2.4670	.01108
#2	-.00023	.00067	-.00029	.76255	.14438	.00525	2.2932	.00987
#3	-.00045	-.00010	.00003	.68577	.11014	.00247	2.3157	.01084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	1.4958	-.00063	.05359	-.00279	-.00031	-.00595	2.7102
Stddev	.00047	.0351	.00028	.00738	.00305	.00390	.00297	.1656
%RSD	396.92	2.3487	44.565	13.764	109.39	1252.1	49.837	6.1117
#1	.00048	1.4996	-.00093	.05673	-.00238	.00247	-.00581	2.8017
#2	-.00041	1.5288	-.00039	.05888	.00004	.00136	-.00899	2.8100
#3	.00029	1.4589	-.00056	.04517	-.00602	-.00477	-.00306	2.5190
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607020903 Acquired: 7/14/2016 19:02:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.01420	.00691	-.00133	-.00035	.06076	.00024
Stddev	.00093	.00041	.00626	.00159	.00062	.00483	.00043
%RSD	728.33	2.9028	90.536	119.77	177.64	7.9438	180.72
#1	.00111	.01462	.01381	-.00053	.00030	.06370	.00060
#2	-.00000	.01380	.00162	-.00317	-.00041	.06339	-.00024
#3	-.00073	.01416	.00530	-.00030	-.00093	.05519	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10088.	59706.	2640.5
Stddev	26.	142.	24.3
%RSD	.25598	.23773	.92108
#1	10109.	59792.	2625.9
#2	10095.	59542.	2627.1
#3	10059.	59784.	2668.6

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 19:06:34 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41635**	**10.260**	**.41810**	**.51243**	**1.0390**	**.05072**	**10.353**	**.05196**
Stddev	.00315	.007	.00346	.00142	.0062	.00003	.076	.00104
%RSD	.75659	.07078	.82749	.27758	.59143	.06326	.73188	2.0087
#1	.41876	10.259	.42167	.51227	1.0335	.05068	10.323	.05267
#2	.41751	10.253	.41787	.51392	1.0457	.05073	10.439	.05246
#3	.41279	10.268	.41476	.51109	1.0379	.05074	10.297	.05076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20944**	**.50920**	**.52058**	**4.1813**	**52.115**	**1.0251**	**10.452**	**.52381**
Stddev	.00455	.00086	.01219	.0095	.238	.0021	.023	.00252
%RSD	2.1704	.16959	2.3412	.22607	.45764	.19971	.21735	.48180
#1	.21227	.50910	.52808	4.1824	51.965	1.0251	10.432	.52672
#2	.21185	.51011	.52713	4.1901	52.390	1.0272	10.477	.52253
#3	.20419	.50839	.50651	4.1713	51.990	1.0231	10.448	.52220
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0325**	**51.919**	**.51533**	**10.370**	**.51802**	**1.2377**	**.41236**	**5.0236**
Stddev	.0226	.085	.01059	.182	.00315	.0175	.00144	.0391
%RSD	2.1849	.16307	2.0554	1.7534	.60801	1.4170	.34925	.77846
#1	1.0461	51.902	.52228	10.484	.52054	1.2477	.41312	5.0518
#2	1.0450	52.012	.52057	10.466	.51904	1.2480	.41327	5.0400
#3	1.0065	51.845	.50314	10.160	.51449	1.2175	.41070	4.9789
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 19:06:34 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0418**	**1.0442**	**1.0543**	**.51930**	**1.0144**	**1.0280**	**1.0441**
Stddev	.0286	.0027	.0078	.00139	.0008	.0225	.0049
%RSD	2.7497	.26209	.73977	.26693	.08225	2.1915	.46761
#1	1.0571	1.0437	1.0579	.52087	1.0137	1.0429	1.0428
#2	1.0595	1.0472	1.0597	.51825	1.0141	1.0389	1.0495
#3	1.0087	1.0418	1.0454	.51878	1.0153	1.0020	1.0399
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9858.6**	**57806.**	**2584.0**
Stddev	11.9	62.	9.2
%RSD	.12063	.10774	.35782
#1	9845.5	57819.	2585.6
#2	9861.5	57862.	2574.0
#3	9868.7	57739.	2592.3

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 19:10:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00153**	**.00382**	**-.00077**	**.00388**	**-.00025**	**.00005**	**-.03073**	**.00023**
Stddev	.00025	.00359	.00182	.00062	.00062	.00006	.03644	.00016
%RSD	16.568	93.829	235.39	15.935	243.77	120.20	118.59	67.680
#1	-.00155	.00791	.00028	.00317	.00033	.00009	.01034	.00028
#2	-.00127	.00120	.00028	.00424	-.00089	-.00002	-.04334	.00006
#3	-.00178	.00236	-.00288	.00424	-.00020	.00008	-.05918	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00027**	**.00038**	**.00071**	**-.00714**	**.02700**	**.00282**	**-.06020**	**-.00177**
Stddev	.00032	.00074	.00095	.03283	.11873	.00083	.07532	.00126
%RSD	118.86	192.13	135.03	459.75	439.76	29.490	125.12	71.634
#1	-.00002	-.00041	.00179	.02898	.03190	.00235	-.14715	-.00052
#2	.00022	.00106	.00002	-.01523	.14321	.00233	-.01791	-.00173
#3	.00061	.00050	.00030	-.03517	-.09411	.00378	-.01553	-.00304
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.03302**	**-.00115**	**.00236**	**-.00206**	**.00141**	**-.00562**	**.00232**
Stddev	.00019	.02288	.00052	.00332	.00348	.00122	.00284	.00258
%RSD	123.92	69.297	45.014	140.86	169.24	86.799	50.599	111.09
#1	-.00003	.00727	-.00151	-.00099	.00155	.00170	-.00888	.00507
#2	-.00037	.05101	-.00139	.00564	-.00232	.00246	-.00432	-.00005
#3	-.00006	.04078	-.00056	.00242	-.00540	.00007	-.00366	.00194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 19:10:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	.00000	.00613	.00326	-.00044	-.00005	.00002
Stddev	.00045	.00045	.01114	.00219	.00049	.00011	.00035
%RSD	105.08	10774.	181.55	67.120	110.69	208.77	2220.7
#1	.00044	-.00049	-.00230	.00289	-.00045	-.00016	-.00000
#2	.00087	.00040	.01876	.00128	-.00092	-.00006	-.00033
#3	-.00003	.00010	.00195	.00561	.00005	.00006	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9953.5	58945.	2595.6
Stddev	51.4	240.	18.6
%RSD	.51641	.40739	.71674
#1	9979.0	58693.	2577.4
#2	9987.1	59171.	2614.6
#3	9894.3	58971.	2594.9

Approved: July 16, 2016

Sample Name: LLCCV Acquired: 7/14/2016 19:14:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00800	.17612	.00849	.08342	.00806	.00162	.33310	.00098
Stddev	.00083	.00563	.00269	.00192	.00011	.00004	.01634	.00006
%RSD	10.386	3.1972	31.669	2.3031	1.4159	2.7325	4.9057	6.2708
#1	.00883	.17242	.00564	.08135	.00794	.00157	.35074	.00097
#2	.00716	.17335	.01097	.08375	.00808	.00163	.31847	.00105
#3	.00801	.18260	.00886	.08515	.00816	.00165	.33009	.00093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00406	.00481	.00444	.09999	.86862	.08636	.36131	.00900
Stddev	.00029	.00068	.00105	.02363	.09726	.00139	.08280	.00088
%RSD	7.2296	14.083	23.677	23.628	11.197	1.6149	22.917	9.8065
#1	.00439	.00553	.00565	.12114	.77345	.08524	.26581	.00907
#2	.00399	.00472	.00380	.10434	.86455	.08592	.40508	.00808
#3	.00381	.00418	.00386	.07449	.96784	.08793	.41304	.00984
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00755	.45754	.01546	.77270	.00756	.08063	.01474	.76140
Stddev	.00060	.00559	.00159	.06446	.00289	.00763	.00263	.05542
%RSD	7.8899	1.2226	10.315	8.3425	38.276	9.4661	17.870	7.2783
#1	.00778	.45332	.01635	.81101	.00674	.08464	.01366	.79227
#2	.00799	.46389	.01641	.80881	.01077	.08541	.01774	.79451
#3	.00687	.45542	.01362	.69827	.00516	.07182	.01282	.69742
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: LLCCV Acquired: 7/14/2016 19:14:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40268	.04234	.03203	.15012	.00788	.01674	.04181
Stddev	.04075	.00054	.00561	.00954	.00065	.00162	.00047
%RSD	10.119	1.2716	17.503	6.3569	8.2625	9.6677	1.1194
#1	.42669	.04270	.03198	.15484	.00741	.01770	.04168
#2	.42572	.04261	.03766	.15638	.00862	.01766	.04142
#3	.35563	.04172	.02645	.13914	.00761	.01487	.04233
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9974.4	58987.	2607.1
Stddev	23.8	75.	14.6
%RSD	.23850	.12758	.55932
#1	9976.4	59021.	2591.6
#2	9997.1	58901.	2620.5
#3	9949.6	59039.	2609.3

Approved: July 16, 2016

Sample Name: PBW 04 Acquired: 7/14/2016 19:18:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576227-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00166**	**.00137**	**-.00193**	**.00328**	**-.00020**	**.00009**	**-.04077**
Stddev	.00276	.00492	.00188	.00187	.00115	.00005	.02639
%RSD	166.27	359.86	97.386	57.002	579.40	51.469	64.718
#1	.00101	.00194	-.00400	.00470	-.00057	.00004	-.07074
#2	-.00450	-.00381	-.00145	.00396	-.00111	.00011	-.03055
#3	-.00149	.00598	-.00034	.00116	.00109	.00013	-.02103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00031**	**-.00001**	**.00063**	**.00001**	F **-.03223**	**.08562**	**.00562**
Stddev	.00016	.00016	.00071	.00052	.01993	.07847	.00408
%RSD	51.178	2504.5	112.79	7474.6	61.841	91.648	72.473
#1	.00032	.00017	.00110	-.00058	-.01849	-.00012	.00332
#2	.00047	-.00003	-.00019	.00041	-.02311	.10310	.00323
#3	.00015	-.00016	.00097	.00019	-.05509	.15387	.01033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00983**	**-.00163**	**-.00003**	**.05471**	**-.00078**	**-.00110**	**-.00143**
Stddev	.04129	.00109	.00015	.00652	.00032	.00203	.00134
%RSD	420.09	66.973	462.08	11.922	40.850	184.52	93.894
#1	.05017	-.00044	.00008	.06166	-.00113	-.00244	-.00104
#2	-.03234	-.00187	.00003	.05374	-.00051	-.00209	-.00293
#3	.01166	-.00259	-.00021	.04872	-.00069	.00123	-.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 16, 2016

Sample Name: PBW 04 Acquired: 7/14/2016 19:18:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576227-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00210	-.00594	.00449	.00016	.00031	-.00044	.00095
Stddev	.00128	.00566	.00073	.00102	.00031	.00559	.00199
%RSD	61.092	95.319	16.210	635.13	102.65	1270.2	210.26
#1	.00317	-.01038	.00426	.00055	.00051	-.00687	-.00106
#2	.00068	.00044	.00392	.00093	-.00006	.00226	.00292
#3	.00243	-.00789	.00531	-.00100	.00046	.00328	.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00007	.00114	-.00025
Stddev	.00087	.00011	.00029
%RSD	1261.6	9.4250	115.37
#1	.00090	.00120	-.00041
#2	.00015	.00101	-.00042
#3	-.00084	.00120	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10086.	60051.	2637.9
Stddev	44.	102.	28.3
%RSD	.43237	.16937	1.0730
#1	10120.	59942.	2630.4
#2	10102.	60067.	2614.1
#3	10037.	60143.	2669.2

Approved: July 16, 2016

Sample Name: LCSW 04 Acquired: 7/14/2016 19:21:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576227-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19829**	**5.0217**	**.20442**	**.97799**	**.51468**	**.02449**	**5.1633**	**.02518**
Stddev	.00128	.0063	.00114	.00172	.00355	.00005	.0677	.00036
%RSD	.64455	.12642	.55934	.17542	.69039	.20404	1.3103	1.4418
#1	.19812	5.0290	.20568	.97983	.51785	.02451	5.2400	.02546
#2	.19711	5.0186	.20344	.97643	.51536	.02444	5.1376	.02532
#3	.19964	5.0175	.20415	.97772	.51084	.02453	5.1122	.02477
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10347**	**.25374**	**.25706**	**2.0871**	**25.342**	**.51890**	**5.3233**	**.25781**
Stddev	.00154	.00019	.00368	.0075	.056	.00256	.0387	.00661
%RSD	1.4891	.07518	1.4334	.35789	.22288	.49344	.72726	2.5645
#1	.10469	.25352	.26022	2.0869	25.381	.52179	5.3528	.26540
#2	.10400	.25384	.25793	2.0797	25.368	.51693	5.3378	.25470
#3	.10174	.25385	.25301	2.0946	25.277	.51797	5.2795	.25333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51988**	**25.320**	**.25580**	**4.8866**	**.25260**	**.60154**	**.18929**	**2.5152**
Stddev	.00732	.088	.00365	.0485	.00502	.00452	.00070	.0209
%RSD	1.4072	.34833	1.4259	.99343	1.9883	.75066	.37040	.83169
#1	.52523	25.421	.25868	4.9279	.25077	.60614	.19002	2.5309
#2	.52287	25.261	.25703	4.8988	.25828	.60137	.18862	2.5232
#3	.51154	25.277	.25170	4.8331	.24875	.59712	.18924	2.4914
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: LCSW 04 Acquired: 7/14/2016 19:21:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576227-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51654	.52531	.51243	.25610	.50437	.50144	.00071
Stddev	.00817	.00364	.01030	.00426	.00137	.00667	.00035
%RSD	1.5809	.69251	2.0098	1.6635	.27149	1.3303	48.964
#1	.52123	.52884	.51968	.26043	.50544	.50645	.00031
#2	.52128	.52552	.51696	.25596	.50282	.50400	.00095
#3	.50711	.52157	.50064	.25191	.50483	.49387	.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9991.4	58843.	2627.3
Stddev	12.4	226.	23.4
%RSD	.12384	.38482	.88994
#1	9984.7	58590.	2600.4
#2	10006.	58913.	2642.8
#3	9983.7	59026.	2638.6

Approved: July 16, 2016

Sample Name: F BLANK Acquired: 7/14/2016 19:25:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576038-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00163**	**.00325**	**-.00014**	**.00484**	**-.00005**	**.00008**	**-.00781**	**.00012**
Stddev	.00071	.00891	.00202	.00170	.00055	.00003	.01676	.00021
%RSD	43.804	274.23	1453.0	35.151	1028.0	37.469	214.62	167.09
#1	-.00082	.01183	-.00154	.00418	-.00003	.00006	.01095	.00023
#2	-.00218	.00387	.00218	.00677	.00049	.00006	-.01307	-.00011
#3	-.00188	-.00595	-.00106	.00357	-.00062	.00011	-.02130	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**.00090**	**-.00012**	**.00047**	**.02151**	**.00325**	**.02516**	**-.00187**
Stddev	.00050	.00105	.00109	.04140	.07609	.00180	.06895	.00201
%RSD	685.01	117.18	892.56	8770.1	353.78	55.333	274.03	107.30
#1	.00015	.00047	-.00130	.04818	-.01279	.00389	.05670	-.00387
#2	.00052	.00013	.00083	-.02065	.10871	.00122	-.05392	.00015
#3	-.00046	.00210	.00011	-.02611	-.03140	.00464	.07269	-.00191
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.03636**	**-.00031**	**.00220**	**-.00030**	**-.00072**	**-.00264**	**.00622**
Stddev	.00045	.00850	.00035	.00210	.00164	.00041	.00400	.00240
%RSD	630.49	23.363	112.53	95.703	556.44	57.278	151.62	38.646
#1	-.00008	.04251	-.00015	.00140	-.00083	-.00119	-.00594	.00884
#2	.00038	.03992	-.00007	.00061	-.00160	-.00050	.00181	.00573
#3	-.00051	.02667	-.00070	.00458	.00155	-.00046	-.00378	.00410
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: F BLANK Acquired: 7/14/2016 19:25:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576038-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00079	.00043	.00161	.00213	-.00081	.00205	.00009
Stddev	.00031	.00030	.00271	.00213	.00031	.00024	.00022
%RSD	39.851	70.970	168.28	99.605	38.445	11.483	256.60
#1	.00095	.00021	-.00149	.00127	-.00054	.00207	-.00011
#2	.00099	.00077	.00353	.00058	-.00115	.00228	.00004
#3	.00043	.00030	.00279	.00456	-.00073	.00181	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10184.	60070.	2643.9
Stddev	118.	42.	31.6
%RSD	1.1635	.07052	1.1945
#1	10119.	60119.	2614.0
#2	10112.	60052.	2640.8
#3	10320.	60040.	2676.9

Approved: July 16, 2016

Sample Name: F BLANK Acquired: 7/14/2016 19:29:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576038-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00112	.00875	.00007	.00575	-.00053	.00010	-.03007	-.00005
Stddev	.00165	.00781	.00356	.00125	.00071	.00002	.04818	.00017
%RSD	147.60	89.162	5107.0	21.648	134.92	25.717	160.23	344.37
#1	-.00281	.00834	-.00401	.00713	-.00128	.00011	-.00919	.00015
#2	.00049	.00116	.00170	.00471	.00014	.00007	.00415	-.00015
#3	-.00104	.01676	.00252	.00542	-.00044	.00012	-.08517	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00102	.00029	-.01442	-.02299	.00369	-.02807	-.00121
Stddev	.00034	.00059	.00085	.01043	.06879	.00263	.00995	.00171
%RSD	286.71	58.024	296.18	72.358	299.16	71.288	35.442	141.49
#1	.00041	.00101	.00063	-.00633	.01039	.00385	-.03953	-.00192
#2	-.00026	.00044	-.00068	-.01073	.02273	.00098	-.02171	-.00246
#3	.00021	.00162	.00092	-.02620	-.10210	.00623	-.02296	.00074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	143.28	-.00120	.00339	-.00176	.00101	-.00540	.00523
Stddev	.00025	.98	.00081	.00504	.00140	.00226	.00645	.00078
%RSD	96.054	.68329	67.920	148.66	79.525	223.79	119.46	14.909
#1	-.00007	144.37	-.00056	-.00241	-.00337	.00283	-.01270	.00580
#2	-.00054	143.00	-.00211	.00668	-.00078	.00173	-.00301	.00434
#3	-.00016	142.47	-.00092	.00591	-.00115	-.00152	-.00049	.00554
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: F BLANK Acquired: 7/14/2016 19:29:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576038-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00021	-.00001	-.00010	.00238	-.00030	.00266	.00017
Stddev	.00045	.00025	.00255	.00282	.00035	.00019	.00035
%RSD	210.63	2514.8	2474.8	118.29	115.49	7.0648	206.15
#1	.00019	-.00023	.00098	.00393	-.00053	.00279	-.00023
#2	-.00069	-.00007	.00173	-.00087	.00010	.00274	.00035
#3	-.00014	.00027	-.00302	.00410	-.00048	.00244	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9967.9	58561.	2640.4
Stddev	25.5	250.	22.3
%RSD	.25581	.42728	.84614
#1	9941.7	58284.	2615.2
#2	9992.6	58769.	2657.7
#3	9969.5	58631.	2648.3

Approved: July 16, 2016

Sample Name: F BLANK Acquired: 7/14/2016 19:33:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576227-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00113	.00784	-.00122	.00163	-.00035	.00009	.15155	.00045
Stddev	.00120	.01012	.00085	.00060	.00011	.00005	.03347	.00015
%RSD	106.17	129.13	70.196	37.088	32.191	61.114	22.084	33.070
#1	-.00202	.01952	-.00027	.00157	-.00041	.00013	.11615	.00043
#2	-.00161	.00212	-.00193	.00105	-.00043	.00003	.15584	.00031
#3	.00024	.00187	-.00146	.00225	-.00022	.00010	.18267	.00061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00041	-.00052	-.01081	.01922	.00191	.16475	-.00076
Stddev	.00023	.00038	.00118	.03059	.01907	.00341	.06474	.00072
%RSD	190.44	94.258	227.92	283.13	99.223	178.22	39.295	94.251
#1	.00035	.00062	-.00169	.01510	.01788	.00282	.23462	-.00002
#2	.00014	.00063	.00066	-.04456	.03892	.00478	.10679	-.00145
#3	-.00012	-.00004	-.00052	-.00295	.00085	-.00186	.15283	-.00082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	.14396	-.00080	-.00006	-.00176	.00031	-.00679	.00995
Stddev	.00013	.02442	.00059	.00110	.00154	.00039	.00397	.00145
%RSD	116.88	16.966	73.876	1967.9	87.171	127.65	58.466	14.538
#1	.00018	.15506	-.00037	.00077	-.00116	.00076	-.01138	.01153
#2	-.00004	.16086	-.00056	.00038	-.00062	.00004	-.00461	.00870
#3	.00020	.11596	-.00148	-.00131	-.00351	.00013	-.00439	.00961
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: F BLANK Acquired: 7/14/2016 19:33:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576227-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	.00109	-.00015	.00005	-.00084	.00139	-.00023
Stddev	.00021	.00028	.00675	.00197	.00042	.00038	.00049
%RSD	37.004	26.076	4478.2	3607.2	50.443	27.555	214.08
#1	.00071	.00142	-.00655	-.00071	-.00035	.00170	.00024
#2	.00069	.00094	-.00082	.00229	-.00110	.00150	-.00019
#3	.00033	.00091	.00691	-.00142	-.00107	.00096	-.00074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10102.	59575.	2646.2
Stddev	21.	196.	23.5
%RSD	.20935	.32837	.88696
#1	10124.	59785.	2621.3
#2	10100.	59543.	2649.3
#3	10081.	59397.	2668.0

Approved: July 16, 2016

Sample Name: L1607044901 Acquired: 7/14/2016 19:37:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00238	.14447	-.00069	.01678	.23318	.00011	1.6898	.00012
Stddev	.00224	.00714	.00138	.00275	.00115	.00009	.0068	.00008
%RSD	93.976	4.9431	198.59	16.411	.49502	78.254	.40237	67.494
#1	-.00062	.14426	-.00226	.01512	.23445	.00002	1.6948	.00016
#2	-.00490	.15172	.00033	.01526	.23290	.00019	1.6924	.00003
#3	-.00162	.13744	-.00015	.01996	.23219	.00014	1.6821	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	.00346	-.00059	13.951	.12228	.00239	.16320	.21488
Stddev	.00028	.00141	.00117	.081	.05484	.00295	.10681	.00268
%RSD	24.065	40.599	197.77	.57732	44.848	123.26	65.447	1.2459
#1	.00096	.00433	.00029	14.036	.18451	-.00084	.28652	.21763
#2	.00149	.00422	-.00015	13.875	.10131	.00309	.10355	.21228
#3	.00105	.00184	-.00191	13.943	.08102	.00492	.09954	.21474
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	139.53	.00209	-.00759	.00044	.00300	-.00422	.45142
Stddev	.00037	.75	.00008	.00726	.00018	.00113	.00565	.02130
%RSD	166.51	.53979	3.8763	95.694	41.637	37.732	133.96	4.7187
#1	.00019	140.39	.00211	-.00824	.00049	.00419	.00199	.46393
#2	-.00034	139.16	.00216	-.00003	.00059	.00193	-.00559	.46351
#3	-.00051	139.02	.00200	-.01451	.00023	.00289	-.00907	.42683
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607044901 Acquired: 7/14/2016 19:37:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.00897	.00522	.00386	.00098	.13695	-.00071
Stddev	.00005	.00028	.00669	.00127	.00112	.00909	.00030
%RSD	12.417	3.0747	128.21	33.001	113.97	6.6341	42.544
#1	.00047	.00866	.00376	.00339	.00012	.14211	-.00104
#2	.00040	.00918	.01252	.00289	.00057	.14229	-.00045
#3	.00037	.00907	-.00062	.00530	.00225	.12646	-.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9956.8	58108.	2626.1
Stddev	30.6	216.	21.0
%RSD	.30683	.37153	.80088
#1	9972.0	57859.	2602.9
#2	9976.8	58218.	2631.6
#3	9921.6	58246.	2643.8

Approved: July 16, 2016

Sample Name: L1607044901PS Acquired: 7/14/2016 19:41:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576493-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20019**	**5.1873**	**.20535**	**.98679**	**.71403**	**.02498**	**6.6530**	**.02531**
Stddev	.00174	.0089	.00332	.00205	.00206	.00011	.0718	.00028
%RSD	.86814	.17251	1.6173	.20807	.28784	.44490	1.0791	1.1237
#1	.20102	5.1940	.20558	.98905	.71190	.02486	6.6905	.02500
#2	.20136	5.1771	.20191	.98630	.71600	.02498	6.6982	.02557
#3	.19819	5.1908	.20854	.98503	.71421	.02509	6.5702	.02535
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10440**	**.25766**	**.25765**	**14.572**	**25.304**	**.51671**	**5.2826**	**.44819**
Stddev	.00029	.00264	.00054	.132	.129	.00314	.0647	.00516
%RSD	.27561	1.0264	.20790	.90613	.50839	.60821	1.2242	1.1516
#1	.10456	.25905	.25728	14.628	25.246	.51367	5.3309	.44254
#2	.10406	.25932	.25741	14.667	25.451	.51994	5.2091	.45267
#3	.10456	.25461	.25827	14.421	25.214	.51653	5.3078	.44936
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52249**	**149.41**	**.25686**	**4.9589**	**.25224**	**.60453**	**.19245**	**2.8981**
Stddev	.00130	.45	.00131	.0117	.00423	.00100	.00635	.0073
%RSD	.24907	.29999	.51067	.23579	1.6773	.16464	3.2985	.25353
#1	.52250	149.19	.25575	4.9480	.25212	.60567	.19554	2.9025
#2	.52378	149.92	.25653	4.9713	.24807	.60399	.19667	2.8896
#3	.52118	149.11	.25831	4.9575	.25653	.60391	.18515	2.9021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607044901PS Acquired: 7/14/2016 19:41:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576493-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51914	.52103	.51390	.25130	.51400	.62875	.00043
Stddev	.00054	.00083	.00481	.00214	.00056	.00175	.00020
%RSD	.10408	.15972	.93612	.85103	.10969	.27818	47.021
#1	.51975	.52089	.51899	.25303	.51419	.63049	.00022
#2	.51873	.52192	.51330	.25197	.51445	.62876	.00062
#3	.51893	.52027	.50942	.24891	.51337	.62699	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9881.7	57501.	2628.4
Stddev	20.7	49.	11.4
%RSD	.20933	.08456	.43279
#1	9858.6	57518.	2615.3
#2	9898.5	57447.	2636.0
#3	9887.9	57539.	2633.9

Approved: July 16, 2016

Sample Name: L1607044901SDL Acquired: 7/14/2016 19:44:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG576493-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00062	.03421	-.00024	.00737	.05293	.00014	.33398	.00023
Stddev	.00146	.00114	.00160	.00220	.00167	.00010	.02660	.00008
%RSD	235.86	3.3351	659.48	29.896	3.1583	69.457	7.9656	32.834
#1	-.00203	.03527	.00123	.00947	.05469	.00019	.35307	.00018
#2	-.00072	.03300	-.00194	.00508	.05136	.00021	.30359	.00020
#3	.00089	.03434	-.00002	.00755	.05274	.00003	.34527	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.00106	.00030	3.0860	.00592	.00395	.08856	.04707
Stddev	.00023	.00073	.00041	.0075	.04174	.00147	.02209	.00144
%RSD	40.418	69.235	137.61	.24251	704.88	37.207	24.948	3.0535
#1	.00079	.00076	.00023	3.0830	-.00751	.00227	.06692	.04552
#2	.00033	.00053	.00073	3.0945	.05273	.00459	.08768	.04836
#3	.00057	.00190	-.00007	3.0804	-.02745	.00499	.11108	.04731
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00033	30.357	-.00017	.00089	-.00382	.00230	-.00314	.10168
Stddev	.00036	.143	.00079	.00720	.00091	.00056	.00164	.00803
%RSD	108.57	.47258	456.20	811.17	23.928	24.159	52.256	7.8984
#1	-.00071	30.193	.00066	-.00679	-.00279	.00172	-.00125	.10455
#2	-.00029	30.421	-.00093	.00197	-.00454	.00283	-.00418	.10789
#3	.00000	30.459	-.00025	.00749	-.00412	.00235	-.00400	.09261
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607044901SDL Acquired: 7/14/2016 19:44:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG576493-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00195	.00133	.00195	.00002	.03194	-.00050
Stddev	.00054	.00051	.00840	.00137	.00045	.00282	.00007
%RSD	173.05	26.203	633.04	70.335	2371.8	8.8419	13.254
#1	-.00003	.00234	-.00837	.00232	.00032	.03354	-.00042
#2	.00003	.00214	.00603	.00309	.00024	.03361	-.00055
#3	.00093	.00137	.00632	.00043	-.00050	.02868	-.00052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9609.1	56151.	2483.9
Stddev	18.4	108.	6.5
%RSD	.19146	.19218	.26038
#1	9629.7	56044.	2485.5
#2	9603.5	56260.	2476.7
#3	9594.2	56150.	2489.3

Approved: July 16, 2016

Sample Name: L1607044901SDL Acquired: 7/14/2016 19:48:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG576493-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00109	.00747	-.00088	.00186	.00998	.00013	.01945	.00018
Stddev	.00151	.00752	.00195	.00196	.00106	.00007	.03764	.00031
%RSD	138.51	100.55	222.20	105.52	10.625	57.205	193.48	178.02
#1	-.00274	.01345	.00136	.00405	.00996	.00006	.04265	-.00018
#2	-.00077	.00994	-.00177	.00029	.00893	.00021	.03969	.00029
#3	.00023	-.00096	-.00223	.00123	.01105	.00011	-.02397	.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00006	.00109	-.00043	.56203	.00885	-.00166	-.03350	.00664
Stddev	.00004	.00051	.00081	.01000	.12294	.00214	.06379	.00283
%RSD	65.974	46.805	191.19	1.7795	1389.0	128.88	190.44	42.615
#1	-.00002	.00119	.00037	.55757	-.13256	-.00051	.00978	.00985
#2	-.00007	.00053	-.00039	.57349	.06873	-.00414	-.10675	.00559
#3	-.00011	.00154	-.00126	.55504	.09038	-.00034	-.00351	.00449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	5.7110	-.00027	.00869	-.00317	.00077	-.00149	.01803
Stddev	.00037	.0676	.00072	.00455	.00208	.00233	.00409	.00234
%RSD	223.21	1.1831	262.34	52.347	65.698	301.67	275.44	12.948
#1	-.00005	5.7869	-.00056	.01275	-.00095	.00346	-.00317	.01738
#2	.00013	5.6891	.00054	.00378	-.00507	-.00066	.00318	.02063
#3	-.00058	5.6572	-.00081	.00953	-.00348	-.00048	-.00447	.01609
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607044901SDL Acquired: 7/14/2016 19:48:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG576493-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00085	.00052	.00162	.00055	-.00019	.00611	-.00016
Stddev	.00054	.00041	.00424	.00109	.00026	.00040	.00028
%RSD	63.903	78.996	261.34	197.48	137.62	6.5172	176.18
#1	.00142	.00027	.00651	.00131	-.00005	.00609	-.00016
#2	.00034	.00099	-.00073	-.00070	-.00003	.00651	.00012
#3	.00079	.00029	-.00092	.00104	-.00049	.00572	-.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10045.	58408.	2562.8
Stddev	31.	76.	8.5
%RSD	.30924	.12937	.33200
#1	10054.	58377.	2553.4
#2	10070.	58494.	2564.9
#3	10010.	58353.	2570.1

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 19:52:49 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41922**	**10.424**	**.42150**	**.50886**	**1.0363**	**.05248**	**10.256**	**.05225**
Stddev	.00238	.034	.00450	.00594	.0071	.00024	.034	.00096
%RSD	.56787	.32579	1.0687	1.1671	.68620	.44984	.33008	1.8301
#1	.42035	10.410	.42142	.51178	1.0442	.05241	10.289	.05298
#2	.42083	10.463	.42604	.51278	1.0345	.05275	10.221	.05260
#3	.41649	10.400	.41704	.50203	1.0303	.05229	10.258	.05117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21151**	**.52164**	**.52459**	**4.2117**	**52.166**	**1.0350**	**10.514**	**.52254**
Stddev	.00384	.00275	.00879	.0305	.240	.0125	.074	.00358
%RSD	1.8136	.52749	1.6752	.72322	.46001	1.2082	.70776	.68456
#1	.21395	.52110	.53106	4.2377	52.443	1.0488	10.537	.52497
#2	.21349	.52462	.52813	4.1782	52.031	1.0318	10.574	.51843
#3	.20709	.51919	.51459	4.2192	52.024	1.0245	10.431	.52422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0475**	**51.148**	**.51714**	**10.338**	**.51836**	**1.2354**	**.41507**	**5.0199**
Stddev	.0176	.291	.01012	.142	.00606	.0162	.01320	.0514
%RSD	1.6814	.56810	1.9572	1.3733	1.6686	1.3112	3.1804	1.0229
#1	1.0642	51.483	.52265	10.414	.52131	1.2470	.42248	5.0048
#2	1.0492	50.971	.52331	10.425	.52238	1.2424	.42291	5.0771
#3	1.0291	50.988	.50546	10.174	.51139	1.2169	.39983	4.9778
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 19:52:49 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0559**	**1.0397**	**1.0454**	**.52382**	**1.0462**	**1.0267**	**1.0511**
Stddev	.0235	.0066	.0039	.00337	.0042	.0191	.0096
%RSD	2.2268	.63433	.36845	.64423	.40033	1.8609	.90925
#1	1.0709	1.0468	1.0435	.52644	1.0443	1.0391	1.0572
#2	1.0680	1.0385	1.0499	.52501	1.0510	1.0362	1.0559
#3	1.0288	1.0338	1.0430	.52002	1.0434	1.0047	1.0401
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9748.8**	**56306.**	**2537.8**
Stddev	28.3	82.	14.1
%RSD	.29017	.14648	.55433
#1	9719.1	56397.	2526.6
#2	9751.8	56287.	2533.3
#3	9775.5	56236.	2553.6

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 19:56:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00278**	**.00459**	**-.00005**	**.00494**	**.00026**	**.00013**	**-.01699**	**.00036**
Stddev	.00253	.00075	.00316	.00290	.00064	.00000	.03278	.00009
%RSD	91.020	16.337	5782.6	58.607	247.89	2.7938	192.98	25.173
#1	-.00006	.00416	.00029	.00813	.00018	.00013	-.02625	.00046
#2	-.00321	.00416	-.00338	.00422	.00094	.00013	-.04414	.00029
#3	-.00507	.00546	.00292	.00247	-.00034	.00013	.01943	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**.00022**	**.00012**	**-.00741**	**.04349**	**.00453**	**-.01273**	**-.00213**
Stddev	.00024	.00035	.00071	.02955	.04847	.00235	.08297	.00147
%RSD	326.39	159.06	613.23	398.73	111.43	51.723	651.68	68.724
#1	.00034	.00033	-.00014	.00734	.06373	.00608	-.10458	-.00273
#2	-.00014	.00051	.00092	-.04143	.07856	.00569	.05680	-.00046
#3	.00002	-.00017	-.00043	.01186	-.01181	.00184	.00958	-.00321
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**.00159**	**-.00152**	**.00602**	**-.00493**	**.00020**	**-.00205**	**.00279**
Stddev	.00050	.01074	.00009	.00156	.00255	.00424	.00147	.00084
%RSD	230.63	676.90	6.1073	25.860	51.669	2140.5	71.772	30.056
#1	.00022	.01384	-.00156	.00575	-.00521	.00510	-.00244	.00375
#2	-.00011	-.00290	-.00158	.00769	-.00733	-.00231	-.00042	.00237
#3	-.00076	-.00618	-.00141	.00462	-.00226	-.00219	-.00329	.00224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 19:56:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	.00014	.00116	.00119	-.00062	-.00007	.00007
Stddev	.00032	.00038	.00331	.00163	.00011	.00016	.00064
%RSD	70.414	268.40	286.17	137.03	17.382	226.37	861.35
#1	.00083	.00052	-.00069	-.00048	-.00050	.00000	.00051
#2	.00028	-.00023	.00498	.00128	-.00068	.00004	.00038
#3	.00026	.00014	-.00082	.00277	-.00068	-.00025	-.00066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9871.4	57694.	2565.0
Stddev	6.6	86.	2.7
%RSD	.06657	.14824	.10521
#1	9874.5	57788.	2568.0
#2	9875.8	57621.	2562.7
#3	9863.8	57674.	2564.5

Approved: July 16, 2016

Sample Name: L1607052101 Acquired: 7/14/2016 20:00:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576227-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	.02011	.00048	.04817	.13762	.00002	43.337	.00030
Stddev	.00174	.00328	.00285	.00082	.00049	.00004	.054	.00016
%RSD	923.09	16.307	592.86	1.7082	.35647	152.98	.12537	51.925
#1	-.00205	.01885	.00134	.04821	.13817	.00005	43.307	.00013
#2	.00008	.02384	.00279	.04898	.13724	-.00002	43.303	.00044
#3	.00141	.01766	-.00270	.04733	.13745	.00004	43.399	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00024	.00054	.05707	.00304	1.2420	.01246	19.282	-.00128
Stddev	.00035	.00076	.00338	.01811	.0474	.00141	.218	.00314
%RSD	149.38	142.31	5.9166	595.16	3.8194	11.320	1.1288	246.30
#1	-.00008	.00136	.05966	-.01784	1.1934	.01230	19.119	.00224
#2	-.00064	.00038	.05831	.01442	1.2445	.01114	19.197	-.00381
#3	.00001	-.00014	.05325	.01254	1.2881	.01395	19.529	-.00226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	30.682	-.00124	.02840	-.00189	.00341	-.00560	3.8460
Stddev	.00029	.106	.00009	.00295	.00217	.00289	.00326	.1685
%RSD	45.467	.34454	7.6006	10.382	115.05	84.603	58.145	4.3804
#1	.00094	30.653	-.00115	.02671	-.00305	.00160	-.00878	3.9531
#2	.00061	30.595	-.00125	.03180	.00062	.00675	-.00575	3.9331
#3	.00036	30.800	-.00133	.02668	-.00322	.00190	-.00227	3.6518
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607052101 Acquired: 7/14/2016 20:00:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576227-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.74938	-.00845	.00329	-.00098	.02228	.00048
Stddev	.00050	.00329	.00333	.00138	.00076	.00151	.00027
%RSD	103.65	.43914	39.334	42.043	77.068	6.7549	55.655
#1	.00102	.74936	-.00767	.00464	-.00021	.02303	.00078
#2	.00041	.74609	-.00559	.00188	-.00173	.02326	.00037
#3	.00002	.75267	-.01210	.00336	-.00101	.02055	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9922.6	58087.	2601.0
Stddev	19.1	54.	6.9
%RSD	.19288	.09373	.26447
#1	9941.3	58083.	2608.5
#2	9903.1	58035.	2595.0
#3	9923.3	58144.	2599.4

Approved: July 16, 2016

Sample Name: L1607052102S Acquired: 7/14/2016 20:04:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576227-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19827**	**5.0240**	**.20717**	**1.0055**	**.64303**	**.02473**	**48.882**	**.02536**
Stddev	.00214	.0148	.00626	.0037	.00333	.00012	.129	.00052
%RSD	1.0771	.29495	3.0224	.36885	.51741	.47828	.26472	2.0552
#1	.20052	5.0341	.20473	1.0088	.64617	.02482	48.935	.02512
#2	.19626	5.0070	.21429	1.0015	.64336	.02460	48.977	.02596
#3	.19803	5.0309	.20250	1.0062	.63954	.02478	48.735	.02501
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10210**	**.25259**	**.31401**	**2.0357**	**26.203**	**.51725**	**24.696**	**.25130**
Stddev	.00283	.00065	.00910	.0066	.080	.00100	.149	.00125
%RSD	2.7721	.25914	2.8987	.32278	.30343	.19401	.60401	.49595
#1	.10170	.25236	.31213	2.0393	26.141	.51609	24.817	.25016
#2	.10511	.25333	.32390	2.0281	26.292	.51791	24.742	.25263
#3	.09949	.25209	.30599	2.0397	26.174	.51774	24.530	.25112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52367**	**55.525**	**.25014**	**4.9992**	**.25151**	**.60632**	**.19120**	**6.4623**
Stddev	.01445	.096	.00799	.1309	.00561	.01568	.00219	.1595
%RSD	2.7584	.17248	3.1929	2.6183	2.2288	2.5868	1.1448	2.4674
#1	.52141	55.520	.24904	4.9664	.24725	.60855	.19365	6.4129
#2	.53912	55.622	.25862	5.1434	.25786	.62077	.18942	6.6406
#3	.51050	55.431	.24277	4.8878	.24942	.58964	.19055	6.3335
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607052102S Acquired: 7/14/2016 20:04:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576227-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52095**	**1.2536**	**.49797**	**.25420**	**.50951**	**.51583**	**.00088**
Stddev	.01642	.0009	.00703	.00268	.00282	.01444	.00022
%RSD	3.1519	.07435	1.4120	1.0542	.55351	2.7987	24.541
#1	.51801	1.2539	.50535	.25490	.50983	.51324	.00080
#2	.53864	1.2544	.49135	.25646	.50655	.53139	.00113
#3	.50619	1.2526	.49720	.25123	.51216	.50287	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9739.3**	**57309.**	**2588.6**
Stddev	120.8	237.	24.1
%RSD	1.2407	.41275	.92931
#1	9807.7	57073.	2590.9
#2	9599.8	57546.	2563.5
#3	9810.4	57310.	2611.4

Approved: July 16, 2016

Sample Name: L1607052103SD Acquired: 7/14/2016 20:07:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576227-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20076	5.1495	.20934	1.0335	.65804	.02535	49.970	.02546
Stddev	.00019	.0097	.00487	.0037	.00701	.00011	.486	.00052
%RSD	.09354	.18806	2.3284	.35327	1.0649	.42285	.97256	2.0301
#1	.20068	5.1424	.21220	1.0349	.66242	.02525	50.303	.02582
#2	.20098	5.1605	.21211	1.0362	.66174	.02547	50.194	.02570
#3	.20064	5.1455	.20371	1.0293	.64996	.02534	49.412	.02487
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10274	.25972	.31690	2.0860	26.787	.53171	25.129	.25321
Stddev	.00157	.00165	.00394	.0357	.378	.00691	.093	.00165
%RSD	1.5312	.63409	1.2438	1.7140	1.4124	1.3000	.37028	.64977
#1	.10387	.26035	.32031	2.1198	27.116	.53968	25.234	.25506
#2	.10340	.26096	.31779	2.0486	26.871	.52795	25.092	.25191
#3	.10094	.25785	.31258	2.0895	26.373	.52749	25.059	.25266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52869	56.809	.25181	5.0308	.25452	.60813	.18840	6.5242
Stddev	.00778	.529	.00405	.0544	.00412	.00862	.00779	.0574
%RSD	1.4709	.93153	1.6078	1.0803	1.6203	1.4169	4.1359	.87977
#1	.53316	57.229	.25364	5.0608	.25888	.61347	.19335	6.5573
#2	.53319	56.983	.25462	5.0635	.25400	.61273	.19244	6.5574
#3	.51971	56.214	.24717	4.9680	.25068	.59819	.17942	6.4580
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607052103SD Acquired: 7/14/2016 20:07:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576227-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52597	1.2805	.51173	.25869	.52204	.52067	.00091
Stddev	.00592	.0128	.00474	.00124	.00147	.00704	.00038
%RSD	1.1261	1.0001	.92616	.47870	.28254	1.3530	41.947
#1	.53081	1.2895	.51343	.25729	.52299	.52490	.00122
#2	.52773	1.2861	.51539	.25917	.52279	.52457	.00049
#3	.51936	1.2658	.50638	.25962	.52034	.51254	.00102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9798.9	57264.	2583.0
Stddev	19.3	68.	26.7
%RSD	.19646	.11940	1.0353
#1	9791.3	57296.	2584.3
#2	9820.8	57186.	2555.6
#3	9784.6	57311.	2609.1

Approved: July 16, 2016

Sample Name: L1607034801 Acquired: 7/14/2016 20:11:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00199	.00027	-.00114	.02789	.05695	.00010	61.969	.00090
Stddev	.00106	.01053	.00232	.00135	.00065	.00005	.917	.00018
%RSD	53.273	3949.6	203.80	4.8316	1.1349	51.464	1.4793	20.085
#1	-.00087	.01184	-.00311	.02925	.05754	.00016	62.974	.00082
#2	-.00211	-.00229	.00142	.02786	.05707	.00005	61.755	.00111
#3	-.00298	-.00875	-.00173	.02656	.05626	.00010	61.179	.00078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.00062	.03884	.06720	1.2414	.00680	12.418	-.00033
Stddev	.00017	.00040	.00233	.01792	.0571	.00161	.055	.00211
%RSD	387.81	64.840	6.0086	26.671	4.6001	23.733	.44561	647.65
#1	.00004	.00109	.03961	.08734	1.3053	.00780	12.479	.00090
#2	.00022	.00041	.04069	.06125	1.2232	.00494	12.403	-.00276
#3	-.00013	.00037	.03622	.05301	1.1955	.00767	12.371	.00088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	9.0884	.00020	.01844	.00312	.00495	-.00106	4.6329
Stddev	.00031	.0251	.00177	.00394	.00241	.00291	.00342	.1788
%RSD	98.787	.27586	881.83	21.375	77.172	58.816	321.44	3.8603
#1	-.00002	9.0968	.00036	.02213	.00432	.00315	-.00500	4.7316
#2	.00059	9.1081	-.00164	.01889	.00035	.00338	.00061	4.7406
#3	.00037	9.0602	.00188	.01429	.00471	.00830	.00120	4.4265
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607034801 Acquired: 7/14/2016 20:11:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.10367	-.01099	-.00107	-.00048	.36515	-.00001
Stddev	.00059	.00027	.00309	.00205	.00032	.01947	.00025
%RSD	105.36	.25597	28.115	191.64	67.196	5.3318	4274.3
#1	.00029	.10395	-.01413	-.00156	-.00040	.37648	.00019
#2	.00125	.10363	-.01087	-.00284	-.00083	.37629	-.00029
#3	.00016	.10343	-.00796	.00118	-.00020	.34267	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9921.6	58090.	2590.1
Stddev	8.8	98.	21.0
%RSD	.08864	.16890	.81191
#1	9928.1	58131.	2580.8
#2	9911.6	57978.	2575.2
#3	9925.1	58161.	2614.1

Approved: July 16, 2016

Sample Name: L1607034802 Acquired: 7/14/2016 20:14:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	**.00137**	**-.00222**	**.02324**	**.05629**	**.00003**	**60.903**	**.00099**
Stddev	.00227	.00640	.00259	.00363	.00115	.00006	.896	.00016
%RSD	1209.9	467.42	116.67	15.627	2.0475	219.64	1.4705	16.404
#1	-.00173	.00875	.00077	.02278	.05751	-.00003	61.901	.00095
#2	-.00126	-.00224	-.00376	.01986	.05521	.00008	60.637	.00116
#3	.00242	-.00240	-.00368	.02708	.05617	.00002	60.170	.00085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.00117**	**.03574**	**-.00162**	**1.1723**	**.00720**	**12.108**	**.00065**
Stddev	.00034	.00038	.00283	.02908	.0388	.00007	.086	.00367
%RSD	89.266	32.307	7.9201	1795.0	3.3106	1.0157	.70718	563.33
#1	-.00048	.00124	.03698	.00574	1.1321	.00719	12.014	-.00135
#2	-.00000	.00150	.03775	-.03367	1.2095	.00713	12.130	.00488
#3	-.00067	.00076	.03250	.02307	1.1753	.00727	12.181	-.00158
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00076**	**8.9692**	**-.00096**	**.01610**	**.00195**	**-.00040**	**-.00208**	**4.5462**
Stddev	.00014	.0633	.00119	.00371	.00378	.00201	.00496	.1758
%RSD	18.899	.70616	123.92	23.044	193.70	504.63	238.04	3.8661
#1	.00074	8.9856	-.00189	.02038	-.00147	-.00150	.00234	4.6543
#2	.00092	9.0227	-.00137	.01402	.00601	.00192	-.00115	4.6410
#3	.00063	8.8993	.00038	.01389	.00131	-.00161	-.00744	4.3434
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607034802 Acquired: 7/14/2016 20:14:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.10133	-.01180	.00013	-.00086	.38022	.00022
Stddev	.00048	.00039	.00716	.00272	.00051	.02027	.00027
%RSD	320.85	.38179	60.680	2071.3	59.490	5.3305	123.89
#1	.00042	.10138	-.01944	.00189	-.00091	.39251	.00031
#2	.00043	.10169	-.01070	-.00300	-.00136	.39133	.00044
#3	-.00041	.10092	-.00525	.00150	-.00033	.35683	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9903.5	57910.	2595.9
Stddev	18.1	130.	24.2
%RSD	.18313	.22519	.93377
#1	9888.8	58005.	2569.9
#2	9923.7	57964.	2600.1
#3	9897.9	57761.	2617.8

Approved: July 16, 2016

Sample Name: L1607044701 Acquired: 7/14/2016 20:18:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00184	-.00391	-.00113	.05151	.39173	.00019	177.78	.00055
Stddev	.00208	.01011	.00433	.00324	.00053	.00005	.48	.00012
%RSD	112.97	258.59	384.46	6.2813	.13631	23.848	.26946	22.426
#1	-.00234	.00227	.00179	.04821	.39222	.00016	177.88	.00065
#2	-.00362	.00158	-.00610	.05468	.39182	.00017	177.26	.00041
#3	.00044	-.01558	.00094	.05163	.39116	.00024	178.20	.00057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	.00128	.00222	.02913	.59470	.00874	6.6851	.31741
Stddev	.00060	.00075	.00099	.02998	.13601	.00192	.0461	.00278
%RSD	129.07	58.350	44.565	102.92	22.871	21.960	.69041	.87441
#1	-.00017	.00065	.00286	.05624	.74977	.00948	6.7319	.31650
#2	.00054	.00211	.00272	-.00307	.53874	.01019	6.6836	.31521
#3	.00103	.00109	.00108	.03423	.49560	.00657	6.6396	.32053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05074	4.3885	.08664	.00345	-.00310	-.00001	-.00092	.72057
Stddev	.00320	.0130	.00486	.00531	.00121	.00265	.00560	.03631
%RSD	6.3097	.29541	5.6111	153.89	38.964	21021.	607.48	5.0390
#1	.05284	4.3976	.08985	-.00158	-.00269	-.00305	.00424	.74278
#2	.05232	4.3737	.08902	.00900	-.00215	.00122	-.00014	.74026
#3	.04705	4.3943	.08105	.00293	-.00446	.00180	-.00687	.67867
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607044701 Acquired: 7/14/2016 20:18:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	.39930	-.02625	.00561	.14226	.00624	-.00017
Stddev	.00087	.00082	.00839	.00366	.00051	.00056	.00019
%RSD	136.21	.20504	31.965	65.154	.36059	9.0405	111.98
#1	.00034	.39909	-.02943	.00475	.14190	.00646	-.00018
#2	-.00004	.39861	-.03259	.00246	.14204	.00667	.00003
#3	.00162	.40020	-.01673	.00962	.14285	.00560	-.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9855.3	57607.	2589.0
Stddev	26.3	176.	15.5
%RSD	.26669	.30567	.60017
#1	9837.7	57513.	2577.3
#2	9842.6	57810.	2606.7
#3	9885.5	57498.	2583.2

Approved: July 16, 2016

Sample Name: L1607046401 Acquired: 7/14/2016 20:22:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00172	.01141	.00176	.02109	.60441	.00009	F 295.18
Stddev	.00157	.00550	.00073	.00164	.00369	.00003	1.54
%RSD	90.978	48.253	41.472	7.7516	.61040	37.967	.52036
#1	-.00329	.01772	.00092	.02233	.60850	.00005	296.89
#2	-.00016	.00885	.00226	.02171	.60341	.00010	294.73
#3	-.00172	.00765	.00209	.01924	.60133	.00011	293.92
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00062	.00039	.00151	.00283	-.01140	242.15	.04908
Stddev	.00019	.00012	.00085	.00117	.01722	1.17	.00112
%RSD	30.256	30.441	56.445	41.348	151.03	.48446	2.2824
#1	.00083	.00037	.00059	.00416	.00333	243.43	.04841
#2	.00057	.00051	.00227	.00236	-.03033	241.88	.04846
#3	.00046	.00028	.00167	.00197	-.00720	241.13	.05037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03168	.00018	.00512	263.72	-.00007	.05699	.06792
Stddev	.11410	.00058	.00077	1.31	.00101	.00818	.00418
%RSD	360.18	316.53	14.958	.49522	1548.0	14.346	6.1512
#1	-.02941	-.00045	.00548	265.10	-.00083	.06643	.07273
#2	.16331	.00067	.00564	263.56	.00108	.05222	.06586
#3	-.03887	.00033	.00424	262.51	-.00045	.05232	.06517
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 16, 2016

Sample Name: L1607046401 Acquired: 7/14/2016 20:22:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00319	.01304	.15046	.00044	.33172	F -.04332	.00281
Stddev	.00353	.00592	.00794	.00028	.00053	.00634	.00468
%RSD	110.60	45.409	5.2771	64.597	.16115	14.644	166.39
#1	.00623	.00980	.15415	.00013	.33215	-.05043	-.00137
#2	.00402	.01988	.15589	.00051	.33112	-.03826	.00786
#3	-.00068	.00945	.14135	.00068	.33188	-.04125	.00195
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00094	.01315	-.00028
Stddev	.00018	.00086	.00074
%RSD	19.066	6.5117	268.44
#1	-.00096	.01359	.00046
#2	-.00111	.01370	-.00026
#3	-.00075	.01216	-.00103
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9480.0	54918.	2555.1
Stddev	14.1	157.	16.9
%RSD	.14841	.28511	.66224
#1	9481.2	55074.	2535.8
#2	9493.4	54761.	2562.5
#3	9465.3	54920.	2567.2

Approved: July 16, 2016

Sample Name: L1607046501 Acquired: 7/14/2016 20:26:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00136	.13792	.00051	.01479	.13059	.00012	F 287.25
Stddev	.00242	.00743	.00337	.00272	.00168	.00003	1.72
%RSD	178.28	5.3857	662.50	18.383	1.2887	21.744	.59867
#1	.00009	.13073	.00415	.01425	.13249	.00016	289.13
#2	-.00415	.13746	-.00012	.01774	.12929	.00011	286.88
#3	-.00001	.14556	-.00250	.01238	.12998	.00011	285.75
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	.00044	.00145	.00678	.01588	228.87	.04290
Stddev	.00014	.00028	.00064	.00076	.02093	1.52	.00248
%RSD	32.711	63.985	44.309	11.208	131.81	.66520	5.7757
#1	.00036	.00016	.00097	.00757	.00226	230.51	.04004
#2	.00033	.00073	.00218	.00605	.03998	228.61	.04428
#3	.00059	.00043	.00120	.00673	.00540	227.50	.04438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02800	-.00062	.00463	251.22	-.00208	.03147	-.00123
Stddev	.07806	.00144	.00029	1.34	.00158	.00079	.00288
%RSD	278.82	231.51	6.2369	.53469	76.111	2.5134	234.70
#1	.01891	-.00051	.00484	252.67	-.00120	.03085	-.00194
#2	-.04512	-.00211	.00476	250.98	-.00390	.03236	.00194
#3	.11020	.00076	.00430	250.01	-.00113	.03120	-.00368
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 16, 2016

Sample Name: L1607046501 Acquired: 7/14/2016 20:26:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00328	.08687	.26309	.00023	.41035	F -.04148	.00139
Stddev	.00352	.00207	.01399	.00082	.00164	.00469	.00226
%RSD	107.14	2.3855	5.3192	360.77	.40083	11.295	162.24
#1	.00036	.08910	.27140	.00112	.41225	-.04217	.00031
#2	.00230	.08500	.27094	.00008	.40944	-.04578	-.00013
#3	.00718	.08651	.24693	-.00051	.40937	-.03649	.00398
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00033	.00324	.00029
Stddev	.00019	.00018	.00038
%RSD	58.620	5.6235	128.73
#1	-.00011	.00328	.00005
#2	-.00041	.00340	.00010
#3	-.00046	.00304	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9501.2	55026.	2592.1
Stddev	26.5	259.	29.0
%RSD	.27928	.46977	1.1195
#1	9475.9	55113.	2570.8
#2	9498.9	54735.	2580.4
#3	9528.8	55229.	2625.2

Approved: July 16, 2016

Sample Name: L1607046601 Acquired: 7/14/2016 20:30:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00055	.16968	.00042	.18816	1.0441	.00014	14.631
Stddev	.00143	.00913	.00375	.00088	.0047	.00004	.081
%RSD	261.12	5.3781	887.62	.46510	.45424	24.522	.55039
#1	-.00142	.16593	.00302	.18716	1.0495	.00018	14.723
#2	-.00132	.16302	-.00387	.18880	1.0421	.00015	14.602
#3	.00110	.18008	.00212	.18853	1.0406	.00011	14.570
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.00527	.00083	.00275	1.3321	358.65	.03756
Stddev	.00023	.00052	.00102	.00097	.0210	3.13	.00110
%RSD	465.35	9.8795	122.90	35.348	1.5789	.87387	2.9292
#1	.00031	.00541	-.00034	.00309	1.3562	361.57	.03790
#2	-.00002	.00570	.00128	.00351	1.3224	359.05	.03632
#3	-.00014	.00469	.00155	.00165	1.3176	355.34	.03844
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	13.678	.85414	.00032	F 560.22	.02111	.10326	-.00326
Stddev	.201	.00280	.00024	10.41	.00217	.00858	.00111
%RSD	1.4716	.32795	75.412	1.8589	10.301	8.3135	33.901
#1	13.867	.85697	.00036	552.21	.02217	.11098	-.00218
#2	13.467	.85408	.00006	572.00	.02255	.10478	-.00321
#3	13.701	.85137	.00053	556.46	.01861	.09402	-.00439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 16, 2016

Sample Name: L1607046601 Acquired: 7/14/2016 20:30:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00135	-.00524	2.3148	.00081	.85078	-.00278	-.00058
Stddev	.00245	.00844	.1116	.00097	.00461	.00586	.00201
%RSD	181.44	161.11	4.8189	119.83	.54229	210.75	349.22
#1	.00268	-.00467	2.3713	.00157	.85488	-.00617	.00145
#2	-.00148	-.01395	2.3868	.00115	.85167	.00399	-.00060
#3	.00284	.00290	2.1863	-.00029	.84578	-.00617	-.00258
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00038	.17418	.00015
Stddev	.00084	.01671	.00049
%RSD	223.45	9.5911	321.26
#1	.00003	.18453	.00046
#2	-.00135	.18310	.00041
#3	.00019	.15491	-.00041
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9534.3	54166.	2591.2
Stddev	11.0	151.	22.3
%RSD	.11538	.27952	.86013
#1	9546.2	54001.	2584.3
#2	9524.5	54298.	2573.1
#3	9532.1	54201.	2616.1

Approved: July 16, 2016

Sample Name: L1607046801 Acquired: 7/14/2016 20:34:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	20.735	.00121	1.0386	.41748	.00181	18.350
Stddev	.00122	.057	.00299	.0056	.00091	.00006	.093
%RSD	1628.4	.27670	247.76	.53790	.21695	3.5785	.50758
#1	-.00065	20.671	-.00023	1.0353	.41850	.00175	18.271
#2	.00149	20.783	-.00080	1.0355	.41715	.00188	18.453
#3	-.00062	20.751	.00464	1.0451	.41678	.00179	18.326
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	.00736	.01740	.05111	.04952	267.59	.04274
Stddev	.00023	.00074	.00068	.00473	.04587	.96	.00220
%RSD	46.258	10.073	3.9072	9.2503	92.629	.35778	5.1433
#1	.00027	.00779	.01792	.05389	.06822	268.29	.04466
#2	.00074	.00779	.01663	.05380	-.00275	267.97	.04034
#3	.00049	.00651	.01764	.04566	.08309	266.50	.04323
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	41.284	3.0164	-.00002	F 481.14	.06546	.03224	.00148
Stddev	.194	.0284	.00028	6.16	.00549	.00393	.00077
%RSD	.46938	.94057	1532.1	1.2805	8.3855	12.180	52.088
#1	41.308	3.0238	-.00010	487.79	.06823	.03482	.00121
#2	41.080	2.9851	.00029	475.63	.06901	.03418	.00235
#3	41.465	3.0404	-.00024	479.99	.05913	.02772	.00088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 16, 2016

Sample Name: L1607046801 Acquired: 7/14/2016 20:34:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00451	-.00329	1.1264	.00084	.30427	.00715	-.00139
Stddev	.00278	.00119	.0570	.00110	.00024	.00318	.00072
%RSD	61.715	36.334	5.0564	131.11	.07823	44.513	51.753
#1	.00360	-.00286	1.1667	.00199	.30400	.00408	-.00177
#2	.00229	-.00464	1.1514	.00073	.30433	.00692	-.00184
#3	.00763	-.00236	1.0613	-.00020	.30446	.01043	-.00056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00810	1.5617	.00023
Stddev	.00045	.1163	.00009
%RSD	5.5772	7.4472	41.079
#1	.00843	1.6317	.00034
#2	.00759	1.6260	.00018
#3	.00829	1.4275	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9599.2	55202.	2597.7
Stddev	20.3	154.	17.4
%RSD	.21119	.27902	.66818
#1	9578.5	55050.	2579.2
#2	9619.0	55198.	2613.6
#3	9600.2	55358.	2600.2

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 20:38:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41606**	**10.387**	**.41723**	**.50313**	**1.0156**	**.05231**	**10.090**	**.05182**
Stddev	.00252	.032	.00298	.00346	.0014	.00008	.016	.00105
%RSD	.60594	.30473	.71370	.68854	.14295	.16086	.16043	2.0245
#1	.41315	10.380	.41817	.49974	1.0141	.05224	10.091	.05232
#2	.41764	10.421	.41963	.50666	1.0170	.05240	10.073	.05252
#3	.41738	10.359	.41390	.50300	1.0159	.05229	10.105	.05061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21093**	**.52097**	**.51862**	**4.1290**	**51.530**	**1.0126**	**10.513**	**.51014**
Stddev	.00438	.00325	.00914	.0301	.039	.0010	.043	.00812
%RSD	2.0786	.62433	1.7627	.72955	.07594	.09366	.41219	1.5920
#1	.21376	.52019	.52450	4.1293	51.512	1.0130	10.464	.50828
#2	.21316	.52454	.52326	4.1589	51.503	1.0133	10.529	.50311
#3	.20588	.51817	.50808	4.0986	51.575	1.0116	10.546	.51903
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0310**	**50.126**	**.51114**	**10.203**	**.51114**	**1.2162**	**.41011**	**4.9180**
Stddev	.0191	.052	.00947	.135	.00341	.0196	.00611	.0457
%RSD	1.8531	.10347	1.8527	1.3278	.66667	1.6133	1.4891	.92929
#1	1.0426	50.180	.51730	10.283	.51231	1.2273	.40979	4.9408
#2	1.0414	50.121	.51589	10.278	.51382	1.2277	.41637	4.9477
#3	1.0089	50.076	.50024	10.046	.50731	1.1935	.40417	4.8653
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 20:38:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0553**	**1.0150**	**1.0235**	**.52325**	**1.0460**	**1.0176**	**1.0522**
Stddev	.0246	.0007	.0094	.00254	.0075	.0176	.0037
%RSD	2.3307	.07058	.91615	.48473	.71372	1.7319	.34670
#1	1.0690	1.0156	1.0149	.52553	1.0397	1.0276	1.0561
#2	1.0699	1.0142	1.0335	.52051	1.0542	1.0279	1.0515
#3	1.0269	1.0151	1.0221	.52370	1.0441	.99723	1.0489
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9808.7**	**56603.**	**2537.4**
Stddev	24.3	186.	2.1
%RSD	.24736	.32883	.08214
#1	9792.1	56784.	2536.7
#2	9797.4	56412.	2539.7
#3	9836.5	56612.	2535.6

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 20:41:58 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00029	.00123	.00060	.00629	.00160	.00008	-.04145	.00016
Stddev	.00170	.00151	.00220	.00222	.00096	.00011	.03198	.00028
%RSD	590.24	123.33	366.75	35.262	59.846	130.59	77.170	175.35
#1	-.00225	.00227	.00192	.00823	.00228	.00005	-.06193	.00000
#2	.00061	-.00051	.00182	.00676	.00051	-.00001	-.05782	-.00001
#3	.00078	.00192	-.00194	.00387	.00201	.00020	-.00459	.00049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.00061	-.00050	-.00266	.06537	.00082	-.04161	-.00065
Stddev	.00048	.00025	.00112	.03015	.08211	.00220	.04629	.00119
%RSD	1750.6	40.900	225.21	1131.6	125.60	268.03	111.24	183.53
#1	-.00038	.00040	.00066	.02451	.00380	.00282	-.07625	-.00089
#2	-.00023	.00088	-.00157	.00261	.03372	.00118	.01096	-.00170
#3	.00052	.00054	-.00058	-.03511	.15860	-.00154	-.05953	.00064
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	.05418	-.00081	.00204	-.00152	-.00188	-.00311	.00734
Stddev	.00009	.02493	.00070	.00599	.00153	.00577	.00522	.00090
%RSD	42.577	46.008	86.552	293.61	100.26	307.29	168.09	12.297
#1	-.00011	.08139	-.00063	.00845	-.00265	-.00837	.00233	.00698
#2	-.00029	.04868	-.00022	.00111	-.00213	.00263	-.00808	.00666
#3	-.00026	.03246	-.00158	-.00343	.00021	.00011	-.00357	.00836
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 20:41:58 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.00005	.00231	.00152	-.00036	-.00015	-.00028
Stddev	.00016	.00041	.00874	.00025	.00102	.00022	.00030
%RSD	96.351	801.41	379.17	16.483	280.69	141.71	109.52
#1	.00013	.00002	.01174	.00123	-.00143	-.00006	-.00014
#2	.00034	-.00035	.00069	.00167	.00062	.00000	-.00063
#3	.00003	.00047	-.00552	.00167	-.00028	-.00040	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9905.0	57758.	2543.2
Stddev	20.8	79.	3.7
%RSD	.20955	.13627	.14685
#1	9891.3	57848.	2547.4
#2	9928.9	57702.	2541.9
#3	9895.0	57723.	2540.2

Approved: July 16, 2016

Sample Name: L1607047401 Acquired: 7/14/2016 20:45:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	.01530	-.00220	.03320	.21551	.00011	26.946
Stddev	.00013	.00843	.00091	.00172	.00159	.00005	.053
%RSD	94.120	55.058	41.430	5.1812	.73809	42.886	.19532
#1	-.00012	.00651	-.00302	.03121	.21369	.00017	26.888
#2	-.00028	.02330	-.00122	.03429	.21620	.00007	26.990
#3	-.00002	.01611	-.00236	.03409	.21663	.00010	26.959
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.00330	.00387	.00191	.14503	1.6589	.02739
Stddev	.00019	.00039	.00016	.00068	.02870	.0355	.00262
%RSD	59.509	11.708	4.0943	35.448	19.788	2.1384	9.5732
#1	.00039	.00361	.00370	.00255	.15046	1.6266	.03015
#2	.00011	.00342	.00391	.00199	.17063	1.6969	.02494
#3	.00047	.00287	.00401	.00120	.11401	1.6532	.02707
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	38.953	.03530	.00060	F 331.66	.00495	1.4961	-.00310
Stddev	.205	.00278	.00023	.49	.00015	.0561	.00109
%RSD	.52645	7.8751	38.329	.14910	3.0111	3.7503	35.319
#1	39.185	.03482	.00035	331.14	.00490	1.5196	-.00413
#2	38.798	.03829	.00080	332.12	.00484	1.5367	-.00321
#3	38.875	.03279	.00066	331.74	.00512	1.4321	-.00195
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 16, 2016

Sample Name: L1607047401 Acquired: 7/14/2016 20:45:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	-.00124	15.596	.00025	.50749	-.00505	.00057
Stddev	.00305	.00038	.480	.00103	.00084	.00542	.00052
%RSD	859.53	30.951	3.0796	410.99	.16650	107.36	91.901
#1	-.00307	-.00127	15.875	.00087	.50827	-.00857	-.00001
#2	.00277	-.00160	15.872	-.00093	.50761	-.00776	.00070
#3	.00137	-.00084	15.042	.00081	.50659	.00119	.00100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00083	.04499	.00012
Stddev	.00082	.00203	.00016
%RSD	99.563	4.5149	126.02
#1	-.00087	.04610	.00013
#2	.00002	.04621	.00028
#3	-.00163	.04264	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9686.6	55925.	2570.0
Stddev	9.8	139.	13.2
%RSD	.10140	.24923	.51368
#1	9677.6	55767.	2569.2
#2	9697.1	55980.	2557.2
#3	9685.3	56029.	2583.6

Approved: July 16, 2016

Sample Name: L1607047402 Acquired: 7/14/2016 20:49:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00197	.01575	.00055	.03497	.20856	.00010	25.966
Stddev	.00073	.00626	.00230	.00087	.00335	.00004	.247
%RSD	36.882	39.721	416.23	2.4803	1.6049	41.062	.95272
#1	-.00281	.00853	.00319	.03507	.21214	.00011	26.233
#2	-.00151	.01934	-.00044	.03406	.20803	.00013	25.920
#3	-.00159	.01940	-.00108	.03579	.20551	.00005	25.745
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	.00348	.00368	.00234	.14803	1.5886	.02626
Stddev	.00015	.00044	.00097	.00106	.00991	.1659	.00283
%RSD	28.127	12.654	26.411	45.067	6.6972	10.441	10.761
#1	.00036	.00384	.00479	.00215	.15221	1.3991	.02819
#2	.00060	.00363	.00303	.00140	.15516	1.7073	.02302
#3	.00064	.00299	.00321	.00348	.13671	1.6594	.02758
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	38.283	.02949	.00049	F 328.50	.00487	1.5090	-.00394
Stddev	.034	.00040	.00024	2.77	.00058	.0670	.00134
%RSD	.08890	1.3572	49.673	.84246	11.945	4.4406	34.010
#1	38.321	.02994	.00077	331.62	.00539	1.5490	-.00374
#2	38.271	.02920	.00037	327.53	.00499	1.5464	-.00537
#3	38.256	.02931	.00033	326.34	.00424	1.4316	-.00271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: July 16, 2016

Sample Name: L1607047402 Acquired: 7/14/2016 20:49:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	-.00014	15.065	.00059	.49448	.00728	.00078
Stddev	.00342	.00423	.554	.00073	.00188	.00451	.00243
%RSD	479.54	3019.6	3.6796	122.06	.38113	61.866	312.46
#1	.00415	.00331	15.377	.00141	.49630	.00517	.00352
#2	.00067	.00114	15.393	.00003	.49460	.00422	-.00004
#3	-.00268	-.00487	14.425	.00034	.49254	.01246	-.00114
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00124	.04541	-.00037
Stddev	.00105	.00231	.00025
%RSD	84.638	5.0873	68.526
#1	-.00074	.04680	-.00014
#2	-.00244	.04668	-.00034
#3	-.00053	.04274	-.00064
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9700.6	55781.	2570.7
Stddev	16.1	127.	20.6
%RSD	.16580	.22848	.80114
#1	9705.9	55879.	2548.2
#2	9682.6	55637.	2575.4
#3	9713.4	55828.	2588.5

Approved: July 16, 2016

Sample Name: L1607048501 Acquired: 7/14/2016 20:53:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00119	.05482	.01046	.04670	.09435	.00010	119.87	.00845
Stddev	.00035	.00635	.00347	.00053	.00048	.00003	.83	.00038
%RSD	29.183	11.590	33.185	1.1273	.51208	34.151	.69118	4.4796
#1	-.00157	.05063	.01235	.04714	.09464	.00007	120.65	.00865
#2	-.00112	.06213	.01257	.04684	.09461	.00013	119.00	.00869
#3	-.00089	.05170	.00645	.04612	.09379	.00008	119.96	.00802
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.00179	.83222	.03152	1.4949	.00740	2.4960	.14739
Stddev	.00026	.00093	.04108	.03170	.0517	.00131	.1060	.00110
%RSD	358.00	51.784	4.9356	100.57	3.4594	17.780	4.2478	.74895
#1	-.00023	.00139	.85525	.02896	1.5037	.00670	2.3744	.14619
#2	.00023	.00113	.85661	.00118	1.4393	.00657	2.5690	.14836
#3	.00022	.00285	.78480	.06441	1.5417	.00891	2.5445	.14762
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	4.9229	.00155	.57878	.01395	.00179	-.00634	1.1176
Stddev	.00027	.0472	.00139	.02754	.00172	.00117	.00197	.0389
%RSD	917.18	.95835	89.564	4.7580	12.344	65.079	31.109	3.4784
#1	-.00004	4.9068	.00276	.59025	.01489	.00222	-.00465	1.1457
#2	.00025	4.8858	.00003	.59874	.01500	.00047	-.00851	1.1339
#3	-.00030	4.9760	.00186	.54737	.01197	.00268	-.00586	1.0732
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607048501 Acquired: 7/14/2016 20:53:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.42735	-.01785	-.00032	-.00106	.23372	.00025
Stddev	.00016	.00236	.00917	.00080	.00054	.01063	.00018
%RSD	31.558	.55167	51.370	246.36	51.277	4.5496	71.683
#1	.00062	.42974	-.00740	.00008	-.00060	.23966	.00020
#2	.00033	.42503	-.02455	.00019	-.00093	.24007	.00010
#3	.00062	.42729	-.02158	-.00125	-.00166	.22145	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9936.4	58126.	2630.9
Stddev	21.2	30.	12.9
%RSD	.21338	.05166	.49135
#1	9923.0	58161.	2616.2
#2	9960.8	58106.	2640.3
#3	9925.3	58112.	2636.3

Approved: July 16, 2016

Sample Name: L1607048701 Acquired: 7/14/2016 20:57:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00079	.03413	.00117	.03260	.10328	.00010	35.715	.02190
Stddev	.00173	.00398	.00122	.00158	.00080	.00006	.138	.00081
%RSD	217.88	11.663	104.46	4.8614	.77757	63.672	.38762	3.7129
#1	.00119	.02954	.00035	.03095	.10353	.00016	35.849	.02252
#2	-.00192	.03626	.00058	.03411	.10393	.00008	35.572	.02220
#3	-.00165	.03659	.00257	.03275	.10238	.00004	35.723	.02098
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.00079	.00633	.03904	.98578	.00426	1.6809	.12427
Stddev	.00015	.00074	.00051	.00870	.00964	.00368	.0604	.00207
%RSD	50.463	93.452	8.1006	22.277	.97784	86.453	3.5954	1.6667
#1	.00036	.00152	.00685	.04508	.97475	.00475	1.6390	.12299
#2	.00042	.00005	.00634	.02907	.99260	.00766	1.7502	.12316
#3	.00013	.00079	.00582	.04297	.98998	.00035	1.6536	.12666
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00029	134.59	.00039	.11540	.00986	.00063	.00040	.66900
Stddev	.00014	.33	.00063	.00694	.00343	.00293	.00097	.02889
%RSD	48.002	.24194	162.46	6.0133	34.807	465.70	244.17	4.3184
#1	-.00043	134.97	.00054	.11901	.00833	.00033	.00143	.69024
#2	-.00016	134.38	.00093	.11978	.00746	-.00214	-.00048	.68066
#3	-.00028	134.43	-.00030	.10740	.01380	.00369	.00024	.63611
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607048701 Acquired: 7/14/2016 20:57:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00116	.09407	-.00495	.00060	-.00022	2.3880	-.00012
Stddev	.00060	.00074	.00469	.00196	.00096	.1239	.00016
%RSD	51.835	.78887	94.786	325.16	438.03	5.1899	135.29
#1	.00171	.09459	-.01000	.00019	.00049	2.4640	-.00028
#2	.00052	.09440	-.00073	-.00112	.00016	2.4550	-.00010
#3	.00125	.09322	-.00413	.00274	-.00132	2.2450	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9867.3	57188.	2622.2
Stddev	7.5	115.	1.1
%RSD	.07620	.20033	.04272
#1	9872.2	57062.	2621.8
#2	9871.0	57216.	2621.3
#3	9858.6	57286.	2623.5

Approved: July 16, 2016

Sample Name: L1607051901 Acquired: 7/14/2016 21:01:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00132**	**.00486**	**-.00016**	**.00940**	**.13702**	**.00012**	**3.7067**	**.00032**
Stddev	.00038	.00572	.00371	.00200	.00127	.00002	.0467	.00032
%RSD	28.886	117.77	2303.0	21.291	.92503	18.634	1.2590	100.67
#1	-.00175	.00262	-.00172	.00857	.13704	.00013	3.7231	.00049
#2	-.00105	.01136	-.00284	.00795	.13827	.00012	3.7430	.00051
#3	-.00114	.00060	.00407	.01168	.13574	.00009	3.6541	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.00127**	**.09268**	**-.00952**	**1.3099**	**.00544**	**2.3329**	**.01942**
Stddev	.00043	.00051	.00601	.02719	.0277	.00286	.0478	.00120
%RSD	212.41	40.137	6.4804	285.74	2.1163	52.552	2.0498	6.1798
#1	.00025	.00083	.09608	-.01175	1.2791	.00873	2.3710	.01977
#2	-.00060	.00115	.09622	.01873	1.3179	.00399	2.3484	.01808
#3	-.00025	.00183	.08575	-.03552	1.3328	.00360	2.2792	.02040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00029**	**3.0346**	**.00038**	**.03538**	**.00182**	**.00307**	**-.00429**	**5.2464**
Stddev	.00011	.0279	.00035	.00379	.00137	.00245	.00450	.2178
%RSD	39.904	.92092	91.270	10.705	75.355	79.731	104.80	4.1512
#1	-.00042	3.0311	.00008	.03388	.00293	.00114	.00085	5.3691
#2	-.00022	3.0086	.00031	.03257	.00226	.00582	-.00621	5.3751
#3	-.00022	3.0641	.00077	.03969	.00028	.00225	-.00751	4.9949
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607051901 Acquired: 7/14/2016 21:01:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.04846	-.00480	.00064	-.00071	.03375	-.00001
Stddev	.00069	.00025	.00338	.00287	.00073	.00197	.00030
%RSD	133.81	.50798	70.406	452.09	103.96	5.8359	2199.2
#1	.00063	.04854	-.00217	.00176	-.00133	.03474	.00011
#2	.00115	.04818	-.00861	.00277	.00010	.03503	.00020
#3	-.00022	.04865	-.00362	-.00263	-.00090	.03148	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10028.	58788.	2607.1
Stddev	8.	65.	24.0
%RSD	.07920	.11088	.91975
#1	10035.	58856.	2585.0
#2	10029.	58727.	2603.8
#3	10020.	58782.	2632.6

Approved: July 16, 2016

Sample Name: L1607051902 Acquired: 7/14/2016 21:05:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00135	.00446	-.00092	.05199	.13366	.00009	82.096	.00032
Stddev	.00044	.00587	.00145	.00053	.00118	.00005	.411	.00016
%RSD	32.168	131.57	157.81	1.0254	.88231	53.380	.50028	48.525
#1	-.00162	.00975	-.00242	.05241	.13484	.00004	82.157	.00020
#2	-.00085	-.00185	-.00081	.05218	.13366	.00014	82.473	.00050
#3	-.00159	.00548	.00047	.05139	.13248	.00009	81.658	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00006	.00100	.00712	.01838	1.9293	.01105	11.284	.00226
Stddev	.00036	.00066	.00020	.01807	.0105	.00547	.043	.00194
%RSD	588.43	66.569	2.8575	98.325	.54489	49.522	.38039	86.009
#1	.00028	.00024	.00707	.02627	1.9177	.01035	11.248	.00152
#2	-.00002	.00128	.00735	-.00230	1.9382	.01683	11.331	.00446
#3	-.00043	.00147	.00696	.03115	1.9319	.00595	11.272	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	16.163	-.00076	.00997	-.00174	.00346	-.00106	5.9234
Stddev	.00028	.075	.00051	.00550	.00159	.00110	.00191	.1762
%RSD	111.98	.46206	67.284	55.203	91.177	31.913	179.10	2.9742
#1	-.00007	16.162	-.00130	.01578	-.00265	.00473	-.00099	6.0209
#2	.00035	16.238	-.00069	.00929	-.00266	.00272	.00080	6.0292
#3	.00048	16.088	-.00029	.00484	.00009	.00293	-.00301	5.7200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607051902 Acquired: 7/14/2016 21:05:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.25895	-.01195	.00148	-.00044	.42597	-.00021
Stddev	.00071	.00176	.00400	.00302	.00064	.01682	.00035
%RSD	363.96	.67866	33.447	204.40	143.52	3.9492	166.87
#1	.00093	.25854	-.01372	.00495	-.00115	.43554	-.00029
#2	-.00049	.26088	-.00737	.00002	-.00027	.43583	.00017
#3	.00014	.25744	-.01475	-.00053	.00009	.40655	-.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9809.7	57173.	2569.4
Stddev	9.6	163.	17.1
%RSD	.09828	.28490	.66369
#1	9799.7	57086.	2561.9
#2	9810.5	57361.	2557.4
#3	9818.9	57071.	2589.0

Approved: July 16, 2016

Sample Name: L1607052401 Acquired: 7/14/2016 21:08:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00169	.59548	-.00003	.05987	.13203	.00009	64.259	.00038
Stddev	.00259	.00897	.00177	.00101	.00073	.00003	.169	.00025
%RSD	153.46	1.5071	6237.8	1.6851	.55431	32.672	.26369	64.694
#1	-.00012	.60407	-.00192	.05960	.13285	.00009	64.086	.00041
#2	-.00027	.58617	.00159	.06099	.13182	.00013	64.269	.00061
#3	-.00468	.59621	.00025	.05903	.13143	.00007	64.424	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00084	.00480	.01299	.95933	1.3068	.01314	12.327	.06223
Stddev	.00011	.00125	.00140	.02033	.0543	.00325	.194	.00324
%RSD	13.598	26.030	10.769	2.1191	4.1531	24.714	1.5746	5.2027
#1	.00080	.00463	.01425	.98225	1.2961	.01261	12.110	.06588
#2	.00076	.00613	.01324	.95228	1.3656	.01018	12.388	.05971
#3	.00098	.00365	.01148	.94347	1.2586	.01661	12.484	.06110
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	14.177	.01328	.04592	.00064	.00119	-.00462	5.6420
Stddev	.00013	.049	.00122	.00979	.00348	.00332	.00428	.2680
%RSD	28.327	.34545	9.1778	21.310	546.05	277.59	92.616	4.7492
#1	.00037	14.122	.01468	.05698	-.00334	.00221	-.00249	5.8120
#2	.00043	14.217	.01264	.03838	.00211	-.00251	-.00955	5.7809
#3	.00062	14.192	.01251	.04241	.00313	.00388	-.00183	5.3331
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: L1607052401 Acquired: 7/14/2016 21:08:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	.49699	.00213	.00030	-.00005	.01573	.00045
Stddev	.00086	.00166	.00310	.00420	.00072	.00096	.00025
%RSD	112.76	.33449	145.52	1413.9	1374.3	6.0945	54.223
#1	-.00018	.49578	.00517	.00202	.00057	.01631	.00029
#2	.00095	.49889	-.00102	.00336	-.00084	.01627	.00074
#3	.00151	.49631	.00224	-.00449	.00011	.01463	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9881.6	57638.	2580.6
Stddev	25.4	199.	8.0
%RSD	.25740	.34459	.31065
#1	9908.3	57477.	2583.6
#2	9878.9	57577.	2571.6
#3	9857.7	57860.	2586.8

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 21:12:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40867**	**10.140**	**.41183**	**.49550**	**.99292**	**.05119**	**9.8550**	**.05096**
Stddev	.00040	.025	.00052	.00172	.00941	.00012	.0686	.00066
%RSD	.09760	.25036	.12686	.34716	.94817	.23423	.69586	1.2866
#1	.40913	10.131	.41213	.49474	.99605	.05129	9.8565	.05135
#2	.40840	10.168	.41213	.49747	.98234	.05122	9.7858	.05134
#3	.40848	10.120	.41123	.49429	1.0004	.05106	9.9229	.05021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20781**	**.51064**	**.51238**	**4.0367**	**50.208**	**.98935**	**10.339**	**.51121**
Stddev	.00321	.00176	.00643	.0546	.348	.00599	.065	.00390
%RSD	1.5427	.34502	1.2558	1.3537	.69268	.60521	.62442	.76288
#1	.20976	.50864	.51693	4.0260	50.306	.98826	10.346	.51542
#2	.20955	.51133	.51519	3.9881	49.822	.98399	10.271	.50773
#3	.20411	.51196	.50502	4.0958	50.497	.99581	10.399	.51047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0197**	**49.165**	**.50748**	**10.123**	**.50586**	**1.2070**	**.40559**	**4.8816**
Stddev	.0130	.383	.00700	.104	.00393	.0139	.00542	.0742
%RSD	1.2747	.77880	1.3801	1.0302	.77770	1.1507	1.3372	1.5200
#1	1.0278	49.167	.51147	10.200	.50980	1.2089	.40938	4.9619
#2	1.0265	48.781	.51159	10.164	.50585	1.2199	.40802	4.8672
#3	1.0047	49.547	.49940	10.004	.50193	1.1923	.39938	4.8156
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 16, 2016

Sample Name: CCV Acquired: 7/14/2016 21:12:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0427**	**.99398**	**1.0175**	**.51460**	**1.0184**	**1.0123**	**1.0264**
Stddev	.0187	.00667	.0039	.00607	.0018	.0120	.0088
%RSD	1.7924	.67154	.38346	1.1788	.17643	1.1817	.85683
#1	1.0511	.99528	1.0173	.51556	1.0181	1.0197	1.0283
#2	1.0556	.98675	1.0137	.52014	1.0169	1.0187	1.0167
#3	1.0212	.99991	1.0215	.50812	1.0204	.99850	1.0340
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10037.**	**58018.**	**2607.0**
Stddev	8.	108.	29.7
%RSD	.08262	.18557	1.1394
#1	10042.	58099.	2601.5
#2	10028.	58059.	2639.1
#3	10042.	57895.	2580.5

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 21:16:29 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00227**	**.00164**	**.00078**	**.00485**	**.00130**	**.00015**	**-.01287**	**.00009**
Stddev	.00067	.00604	.00342	.00251	.00047	.00004	.03147	.00005
%RSD	29.338	368.18	439.63	51.739	35.747	29.200	244.47	52.337
#1	-.00296	-.00513	.00427	.00474	.00092	.00020	.01670	.00005
#2	-.00223	.00645	-.00257	.00741	.00182	.00014	-.04595	.00008
#3	-.00163	.00360	.00063	.00240	.00117	.00011	-.00937	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.00019**	**-.00011**	**.00940**	**.04646**	**.00313**	**-.02505**	**-.00081**
Stddev	.00026	.00048	.00060	.02155	.05638	.00303	.06773	.00411
%RSD	1248.2	257.41	523.60	229.24	121.37	96.772	270.39	508.57
#1	.00005	.00072	.00052	.01306	.06200	.00393	-.04580	-.00494
#2	-.00030	-.00021	-.00067	-.01375	.09344	-.00022	.05063	-.00076
#3	.00020	.00005	-.00019	.02889	-.01607	.00567	-.07998	.00327
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00000**	**.03550**	**-.00094**	**.00428**	**-.00124**	**-.00013**	**.00102**	**.00286**
Stddev	.00026	.03698	.00126	.00343	.00117	.00131	.00039	.00286
%RSD	6994.9	104.18	133.02	80.010	94.296	1004.3	38.608	99.883
#1	-.00004	.05077	-.00239	.00824	-.00251	-.00162	.00061	.00133
#2	.00028	.06239	-.00026	.00237	-.00019	.00084	.00107	.00110
#3	-.00023	-.00667	-.00018	.00224	-.00103	.00039	.00139	.00616
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: CCB Acquired: 7/14/2016 21:16:29 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00097	.00008	.00132	.00160	.00012	.00006	.00041
Stddev	.00046	.00041	.00121	.00108	.00031	.00005	.00022
%RSD	47.414	496.21	91.746	67.829	266.02	79.006	53.242
#1	.00088	.00055	.00006	.00091	.00047	.00011	.00039
#2	.00056	-.00014	.00248	.00103	.00003	.00005	.00020
#3	.00146	-.00016	.00144	.00285	-.00014	.00002	.00064
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9994.5	58657.	2578.5
Stddev	74.8	30.	32.7
%RSD	.74820	.05139	1.2664
#1	10039.	58625.	2541.9
#2	10036.	58660.	2604.6
#3	9908.1	58685.	2588.9

Approved: July 16, 2016

Sample Name: LLCCV Acquired: 7/14/2016 21:20:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00729	.17130	.00692	.08527	.00992	.00182	.39864	.00105
Stddev	.00152	.00097	.00246	.00095	.00039	.00005	.03424	.00002
%RSD	20.857	.56341	35.594	1.1166	3.9637	2.7881	8.5897	2.3544
#1	.00878	.17214	.00542	.08635	.00951	.00178	.39029	.00105
#2	.00574	.17151	.00558	.08492	.00997	.00180	.36935	.00108
#3	.00735	.17024	.00977	.08454	.01029	.00187	.43629	.00103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00416	.00417	.00434	.08701	.91009	.08623	.39378	.00487
Stddev	.00032	.00083	.00065	.01640	.05631	.00224	.02982	.00457
%RSD	7.6463	19.962	14.936	18.850	6.1877	2.5959	7.5738	93.752
#1	.00442	.00413	.00484	.09629	.84959	.08768	.36245	.00635
#2	.00427	.00336	.00361	.06808	.91971	.08365	.42183	.00851
#3	.00381	.00503	.00457	.09668	.96098	.08735	.39707	-.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00818	.41159	.01661	.81568	.00457	.08469	.01061	.80216
Stddev	.00031	.01178	.00066	.00177	.00142	.00314	.00358	.00421
%RSD	3.7438	2.8610	3.9753	.21723	31.058	3.7046	33.681	.52506
#1	.00802	.41882	.01601	.81757	.00413	.08700	.01438	.80358
#2	.00853	.39800	.01649	.81541	.00615	.08112	.01020	.80548
#3	.00799	.41794	.01732	.81406	.00342	.08595	.00726	.79742
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 16, 2016

Sample Name: LLCCV Acquired: 7/14/2016 21:20:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1011) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.43996**	**.04281**	**.02397**	**.16176**	**.00812**	**.01840**	**.04358**
Stddev	.00268	.00052	.00414	.00178	.00072	.00010	.00063
%RSD	.60974	1.2072	17.274	1.1023	8.8997	.53427	1.4532
#1	.44280	.04237	.02394	.16280	.00830	.01840	.04431
#2	.43961	.04338	.01984	.15970	.00873	.01849	.04323
#3	.43747	.04268	.02812	.16279	.00732	.01830	.04320
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9808.9**	**56807.**	**2507.3**
Stddev	30.4	66.	20.3
%RSD	.30982	.11654	.81106
#1	9790.3	56807.	2483.9
#2	9792.4	56741.	2517.9
#3	9844.0	56873.	2520.2

Approved: July 16, 2016

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	7/19/2016 9:14:16	7/19/2016 9:14:16	Linear	1/Conc	-0.000170	0.069143	0.000000	1.000000
Al 308.215 {109}	7/19/2016 9:14:16	7/19/2016 9:14:16	Linear	1/Conc	0.000995	0.010746	0.000000	1.000000
As 189.042 {478}	7/19/2016 9:14:16	7/19/2016 9:14:16	Linear	1/Conc	-0.000070	0.025580	0.000000	1.000000
B 249.678 {135}	7/19/2016 9:14:16	7/19/2016 9:14:16	Linear	1/Conc	-0.000036	0.032398	0.000000	1.000000
Ba 455.403 { 74}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	0.048691	2.266092	0.000000	1.000000
Be 313.107 {108}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	0.000581	1.308734	0.000000	1.000000
Ca 422.673 { 80}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	0.003433	0.046368	0.000000	1.000000
Cd 228.802 {447}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	0.000095	0.609144	0.000000	1.000000
Co 228.616 {447}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	-0.000199	0.377527	0.000000	1.000000
Cr 267.716 {126}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	0.000307	0.080385	0.000000	1.000000
Cu 224.700 {450}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	0.000048	0.136877	0.000000	1.000000
Fe 261.187 {129}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	0.000028	0.022352	0.000000	1.000000
K 766.490 { 44}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	-0.016470	0.067157	0.000000	1.000000
Li 670.784 { 50}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	-0.020933	1.884755	0.000000	1.000000
Mg 279.079 {121}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	0.000331	0.008646	0.000000	1.000000
Mn 257.610 {131}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	-0.000246	0.288480	0.000000	1.000000
Mo 202.030 {467}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	0.000047	0.194847	0.000000	1.000000
Na 589.592 { 57}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	0.008983	0.191192	0.000000	1.000000
Ni 231.604 {446}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	-0.000775	0.146546	0.000000	1.000000
P 214.914 {457}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	-0.000134	0.015346	0.000000	1.000000
Pb 220.353 {453}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	-0.000914	0.068498	0.000000	1.000000
Sb 206.833 {463}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	0.000218	0.033326	0.000000	1.000000
Se 196.090 {472}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	-0.000393	0.018962	0.000000	1.000000
Si 212.412 {459}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	0.000719	0.042096	0.000000	1.000000
Sn 189.989 {477}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	0.000012	0.073893	0.000000	1.000000
Sr 407.771 { 83}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	0.003834	3.674096	0.000000	1.000000
Ti 337.280 {100}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	-0.001583	0.107273	0.000000	1.000000
Tl 190.856 {477}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	-0.000324	0.030706	0.000000	1.000000
V 292.402 {115}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	0.000027	0.094193	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	0.000093	0.455702	0.000000	1.000000
Zr 339.198 { 99}	7/19/2016 9:14:17	7/19/2016 9:14:17	Linear	1/Conc	-0.006015	4.494391	0.000000	1.000000

Approved: July 19, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999994	0.000001	0.001938	0.006461	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999974	0.000005	0.008608	0.028693	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999373	0.000004	0.002865	0.009550	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999951	0.000002	0.002473	0.008243	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999982	0.000087	0.001069	0.003565	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999924	0.000005	0.000085	0.000282	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999231	0.000115	0.042887	0.142958	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.998873	0.000010	0.000241	0.000805	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999993	0.000002	0.000375	0.001249	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999959	0.000002	0.001083	0.003611	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999880	0.000007	0.001216	0.004052	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999496	0.000018	0.029177	0.097256	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999951	0.000210	0.108718	0.362394	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999968	0.000149	0.003621	0.012071	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.998757	0.000042	0.084751	0.282503	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999335	0.000033	0.002669	0.008896	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999926	0.000015	0.000386	0.001287	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999962	0.000531	0.031344	0.104481	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999944	0.000005	0.001024	0.003415	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999934	0.000011	0.006100	0.020332	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999834	0.000004	0.003193	0.010645	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999655	0.000007	0.003859	0.012862	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999773	0.000002	0.005636	0.018788	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999800	0.000027	0.002098	0.006993	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999969	0.000004	0.000814	0.002714	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999975	0.000163	0.000450	0.001499	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999591	0.000019	0.007910	0.026367	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999941	0.000001	0.002813	0.009378	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999910	0.000008	0.000888	0.002959	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999965	0.000024	0.000178	0.000593	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.999981	0.000175	0.000474	0.001579	OK.	1.000000	0.000000	1	0

Approved: July 19, 2016

Sample Name: S0 Acquired: 7/19/2016 8:55:45 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00017	.00099	-.00007	-.00004	.04869	.00058	.00344
Stddev	.00009	.00010	.00007	.00004	.00297	.00005	.00117
%RSD	51.868	9.6622	93.225	97.150	6.1085	8.2613	34.076
#1	-.00014	.00109	-.00000	-.00001	.05131	.00064	.00478
#2	-.00027	.00090	-.00007	-.00008	.04931	.00055	.00263
#3	-.00010	.00100	-.00013	-.00002	.04546	.00055	.00290

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00010	-.00020	.00031	.00005	.00003	-.01647	-.02093
Stddev	.00015	.00007	.00004	.00002	.00058	.01072	.00900
%RSD	157.90	34.160	13.303	33.709	2047.4	65.087	43.015
#1	-.00002	-.00019	.00035	.00004	.00050	-.00644	-.01205
#2	.00005	-.00014	.00030	.00007	-.00062	-.02776	-.03006
#3	.00026	-.00027	.00027	.00004	.00020	-.01519	-.02069

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00033	-.00025	.00005	.00899	-.00077	-.00013	-.00091
Stddev	.00016	.00040	.00001	.00646	.00002	.00006	.00007
%RSD	49.060	160.67	22.388	71.797	2.9553	48.592	7.7284
#1	.00050	.00010	.00004	.00327	-.00077	-.00006	-.00089
#2	.00018	-.00068	.00006	.01599	-.00080	-.00019	-.00099
#3	.00032	-.00016	.00004	.00772	-.00075	-.00015	-.00086

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00022	-.00039	.00072	.00001	.00384	-.00158	-.00032
Stddev	.00002	.00001	.00006	.00004	.00150	.00019	.00006
%RSD	7.2264	2.3261	8.9291	321.09	39.183	11.717	19.175
#1	.00020	-.00038	.00079	.00005	.00357	-.00173	-.00037
#2	.00023	-.00040	.00070	.00001	.00546	-.00137	-.00035
#3	.00023	-.00040	.00066	-.00002	.00248	-.00164	-.00025

Approved: July 19, 2016

Sample Name: S0 Acquired: 7/19/2016 8:55:45 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00003	.00009	-.00601
Stddev	.00004	.00001	.00140
%RSD	135.92	14.708	23.295
#1	.00007	.00011	-.00721
#2	.00002	.00009	-.00636
#3	-.00001	.00008	-.00447
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10594.	51142.	2697.9
Stddev	72.	54.	10.8
%RSD	.67864	.10556	.40031
#1	10566.	51165.	2692.3
#2	10541.	51081.	2691.1
#3	10676.	51181.	2710.4

Approved: July 19, 2016

Sample Name: S4 Acquired: 7/19/2016 9:10:57 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.05473	.21876	.02030	.03241	4.5985	.13444	.94199	.06718
Stddev	.00011	.00017	.00023	.00007	.0444	.00012	.01021	.00105
%RSD	.19231	.07850	1.1155	.22677	.96460	.09191	1.0843	1.5677
#1	.05484	.21858	.02042	.03238	4.5954	.13430	.94366	.06772
#2	.05471	.21876	.02044	.03235	4.6443	.13448	.95127	.06786
#3	.05464	.21893	.02004	.03249	4.5557	.13454	.93105	.06597

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.15085	.08108	.13849	.17996	6.7334	3.7694	.17413	.28836
Stddev	.00319	.00019	.00266	.00220	.0574	.0393	.00035	.00213
%RSD	2.1143	.23519	1.9173	1.2214	.85290	1.0414	.19999	.73981
#1	.15246	.08116	.14023	.18007	6.7335	3.7558	.17446	.28644
#2	.15291	.08122	.13980	.18211	6.7907	3.8137	.17415	.29066
#3	.14717	.08087	.13543	.17771	6.6759	3.7388	.17377	.28798

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.39128	19.235	.14639	.30275	.06843	.07931	.01478	.42892
Stddev	.00798	.153	.00306	.00451	.00089	.00127	.00006	.00524
%RSD	2.0398	.79405	2.0929	1.4902	1.3054	1.5977	.39978	1.2209
#1	.39577	19.229	.14818	.30551	.06875	.08008	.01472	.43154
#2	.39600	19.390	.14814	.30519	.06911	.08000	.01484	.43232
#3	.38206	19.085	.14285	.29754	.06742	.07785	.01478	.42289

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.14816	7.3824	.21292	.02780	.18924	.91496	8.9527
Stddev	.00360	.0710	.00172	.00026	.00009	.01731	.1154
%RSD	2.4285	.96172	.80959	.94371	.04542	1.8914	1.2889
#1	.15008	7.3646	.21357	.02798	.18914	.92500	9.0055
#2	.15038	7.4606	.21422	.02793	.18929	.92491	9.0321
#3	.14400	7.3220	.21096	.02750	.18928	.89498	8.8203

Approved: July 19, 2016

Sample Name: S4 Acquired: 7/19/2016 9:10:57 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10172.**	**48263.**	**2648.9**
Stddev	19.	97.	33.5
%RSD	.18550	.20041	1.2638
#1	10166.	48373.	2638.7
#2	10157.	48196.	2621.7
#3	10193.	48219.	2686.3

Approved: July 19, 2016

Sample Name: ICV Acquired: 7/19/2016 9:14:17 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39909	9.8904	.39883	.49081	.99422	.05023	9.8498	.05016
Stddev	.00088	.0299	.00616	.00130	.00383	.00007	.0688	.00125
%RSD	.22055	.30183	1.5444	.26526	.38551	.14200	.69852	2.4989
#1	.39947	9.9047	.40076	.48931	.99301	.05015	9.7791	.05118
#2	.39808	9.8561	.40379	.49169	.99851	.05029	9.9165	.05053
#3	.39971	9.9104	.39194	.49142	.99114	.05025	9.8539	.04876
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20094	.49476	.50036	3.9986	50.559	.99241	10.078	.49798
Stddev	.00632	.00013	.01373	.0059	.182	.00164	.147	.00397
%RSD	3.1438	.02642	2.7439	.14654	.35931	.16540	1.4566	.79629
#1	.20458	.49461	.50820	4.0001	50.477	.99409	10.070	.49429
#2	.20459	.49486	.50838	4.0036	50.767	.99082	10.229	.49747
#3	.19365	.49482	.48451	3.9922	50.432	.99232	9.9362	.50217
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99873	50.215	.49965	10.020	.50074	1.1962	.40303	4.9119
Stddev	.02840	.082	.01475	.211	.00863	.0253	.00671	.0838
%RSD	2.8434	.16298	2.9531	2.1036	1.7243	2.1136	1.6643	1.7054
#1	1.0147	50.304	.50737	10.125	.50830	1.2090	.40998	4.9568
#2	1.0156	50.197	.50893	10.157	.50258	1.2125	.40250	4.9636
#3	.96594	50.143	.48263	9.7774	.49133	1.1671	.39660	4.8152
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 19, 2016

Sample Name: ICV Acquired: 7/19/2016 9:14:17 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0024**	**.99231**	**1.0105**	**.50473**	**.99122**	**.99937**	**1.0168**
Stddev	.0321	.00381	.0061	.00577	.00184	.02722	.0019
%RSD	3.2072	.38384	.60725	1.1433	.18591	2.7240	.18186
#1	1.0205	.98935	1.0036	.50463	.99329	1.0157	1.0148
#2	1.0214	.99660	1.0153	.51055	.98975	1.0145	1.0184
#3	.96529	.99096	1.0126	.49901	.99061	.96794	1.0173
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10310.**	**49303.**	**2671.0**
Stddev	14.	228.	3.0
%RSD	.13175	.46257	.11239
#1	10302.	49043.	2668.7
#2	10301.	49467.	2670.0
#3	10325.	49400.	2674.4

Approved: July 19, 2016

Sample Name: ICB Acquired: 7/19/2016 9:17:50 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00074**	**.00484**	**-.00003**	**.00510**	**.00009**	**-.00004**	**-.00674**	**-.00037**
Stddev	.00130	.00383	.00177	.00060	.00036	.00004	.02581	.00007
%RSD	174.19	79.161	6393.7	11.771	412.42	120.77	382.74	18.038
#1	-.00150	.00238	.00190	.00445	.00007	-.00006	-.00428	-.00041
#2	-.00149	.00926	-.00158	.00564	-.00027	.00001	.01775	-.00041
#3	.00075	.00289	-.00040	.00520	.00046	-.00006	-.03370	-.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00030**	**-.00035**	**.00019**	**-.01717**	**.08584**	**.00340**	**-.09706**	**.00009**
Stddev	.00031	.00040	.00087	.01476	.04330	.00236	.05185	.00150
%RSD	105.10	112.42	456.97	85.948	50.441	69.576	53.423	1650.1
#1	-.00006	.00008	-.00027	-.03062	.03768	.00590	-.03881	.00157
#2	.00047	-.00044	.00119	-.00138	.12154	.00120	-.11420	.00013
#3	.00049	-.00070	-.00035	-.01951	.09830	.00310	-.13818	-.00143
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.00830**	**.00087**	**.00213**	**-.00089**	**-.00203**	**.00350**	**.00468**
Stddev	.00003	.01559	.00016	.00244	.00359	.00397	.00765	.00265
%RSD	283.41	187.79	18.625	114.24	402.02	195.94	218.66	56.540
#1	-.00002	-.00705	.00101	.00366	-.00406	.00241	-.00512	.00415
#2	-.00004	.00783	.00092	-.00068	.00301	-.00525	.00614	.00756
#3	.00002	.02413	.00069	.00342	-.00162	-.00325	.00947	.00234
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: ICB Acquired: 7/19/2016 9:17:50 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**-.00058**	**-.00307**	**-.00109**	**-.00051**	**.00065**	**-.00031**
Stddev	.00032	.00042	.00876	.00288	.00051	.00011	.00009
%RSD	468.39	72.930	285.63	263.44	99.622	17.156	28.925
#1	-.00015	-.00082	.00432	.00046	-.00009	.00072	-.00040
#2	-.00034	-.00083	-.01274	.00067	-.00108	.00072	-.00030
#3	.00028	-.00009	-.00078	-.00442	-.00036	.00052	-.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10598.**	**50897.**	**2728.0**
Stddev	32.	46.	18.9
%RSD	.30475	.08976	.69310
#1	10588.	50846.	2741.6
#2	10572.	50913.	2706.4
#3	10634.	50933.	2736.0

Approved: July 19, 2016

Sample Name: LLICV Acquired: 7/19/2016 9:21:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00875	.15422	.00860	.07849	.00833	.00150	.37671	.00054
Stddev	.00039	.00625	.00140	.00230	.00046	.00006	.02411	.00033
%RSD	4.4977	4.0495	16.302	2.9338	5.5538	3.9272	6.4004	60.414
#1	.00844	.15769	.00877	.08113	.00816	.00145	.37348	.00091
#2	.00919	.14701	.00990	.07689	.00798	.00157	.40227	.00034
#3	.00861	.15797	.00712	.07745	.00885	.00148	.35438	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00366	.00297	.00508	.06630	.79652	.07928	.32673	.00931
Stddev	.00034	.00102	.00101	.01530	.03503	.00090	.01885	.00387
%RSD	9.2580	34.431	19.948	23.080	4.3977	1.1297	5.7685	41.581
#1	.00389	.00409	.00478	.06544	.76858	.07855	.30552	.01378
#2	.00381	.00276	.00621	.08201	.78515	.07903	.34155	.00694
#3	.00327	.00207	.00426	.05144	.83581	.08028	.33313	.00722
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00688	.38665	.01591	.71642	.00666	.07529	.01361	.71799
Stddev	.00096	.02903	.00155	.07172	.00234	.00869	.00814	.06921
%RSD	13.965	7.5091	9.7329	10.011	35.091	11.535	59.783	9.6392
#1	.00725	.37033	.01681	.76194	.00769	.07794	.02301	.75944
#2	.00761	.42017	.01681	.75357	.00830	.08235	.00911	.75643
#3	.00579	.36944	.01413	.63375	.00398	.06559	.00872	.63809
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: LLICV Acquired: 7/19/2016 9:21:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.36909**	**.03899**	**.03024**	**.13995**	**.00751**	**.01579**	**.03945**
Stddev	.04536	.00050	.00873	.01272	.00083	.00215	.00063
%RSD	12.291	1.2868	28.867	9.0854	11.099	13.637	1.6059
#1	.39719	.03841	.02021	.14695	.00763	.01719	.03963
#2	.39332	.03923	.03613	.14763	.00662	.01687	.03875
#3	.31676	.03933	.03437	.12527	.00827	.01331	.03997
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10657.**	**51042.**	**2719.0**
Stddev	34.	166.	16.6
%RSD	.32192	.32451	.61002
#1	10661.	50925.	2717.2
#2	10621.	51232.	2736.4
#3	10689.	50970.	2703.3

Approved: July 19, 2016

Sample Name: LLICV Acquired: 7/19/2016 9:25:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01507	.31246	.01657	.15197	.01553	.00298	.74750	.00109
Stddev	.00154	.00366	.00325	.00068	.00100	.00007	.01882	.00015
%RSD	10.246	1.1705	19.615	.44720	6.4198	2.2299	2.5174	14.195
#1	.01666	.31586	.01438	.15120	.01639	.00302	.73005	.00119
#2	.01495	.30859	.02030	.15221	.01444	.00290	.76744	.00116
#3	.01358	.31292	.01502	.15250	.01577	.00302	.74501	.00091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00770	.00675	.00824	.11845	1.5395	.16127	.75226	.01731
Stddev	.00081	.00033	.00096	.02353	.0251	.00351	.06861	.00194
%RSD	10.480	4.8567	11.622	19.863	1.6314	2.1792	9.1208	11.232
#1	.00836	.00643	.00907	.09747	1.5165	.16424	.72188	.01564
#2	.00795	.00709	.00846	.14389	1.5356	.15739	.70409	.01944
#3	.00680	.00674	.00720	.11398	1.5663	.16218	.83082	.01686
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01396	.79334	.03097	1.4545	.01428	.15033	.03030	1.4511
Stddev	.00122	.02309	.00298	.1198	.00119	.00973	.00426	.1167
%RSD	8.7419	2.9109	9.6138	8.2377	8.3102	6.4737	14.050	8.0385
#1	.01461	.81932	.03276	1.5223	.01562	.15444	.03499	1.5171
#2	.01472	.78556	.03262	1.5251	.01336	.15733	.02924	1.5198
#3	.01255	.77514	.02753	1.3162	.01387	.13922	.02668	1.3164
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: LLICV Acquired: 7/19/2016 9:25:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.74871	.07858	.04748	.28381	.01501	.03131	.07897
Stddev	.07965	.00080	.00158	.02151	.00041	.00297	.00077
%RSD	10.639	1.0180	3.3220	7.5784	2.7104	9.4913	.97146
#1	.79806	.07907	.04599	.29509	.01458	.03300	.07973
#2	.79126	.07766	.04733	.29733	.01539	.03305	.07897
#3	.65682	.07902	.04913	.25901	.01506	.02788	.07820
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10549.	50853.	2702.2
Stddev	41.	210.	18.0
%RSD	.38651	.41351	.66453
#1	10541.	50891.	2681.7
#2	10512.	51042.	2710.3
#3	10593.	50627.	2714.8

Approved: July 19, 2016

Sample Name: ICSA Acquired: 7/19/2016 9:29:20 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00334	269.01	.00253	-.00625	.00091	-.00005	250.06	-.00051
Stddev	.00085	.31	.00158	.00087	.00067	.00007	.68	.00040
%RSD	25.361	.11704	62.259	13.980	73.179	157.73	.27166	77.766
#1	.00362	269.02	.00397	-.00724	.00014	-.00013	250.02	-.00095
#2	.00239	268.69	.00277	-.00592	.00135	.00001	249.40	-.00041
#3	.00402	269.32	.00085	-.00559	.00124	-.00002	250.76	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00112	-.00109	.00095	100.32	.05186	.00622	258.57	.00340
Stddev	.00049	.00051	.01433	.38	.01429	.00178	.52	.00265
%RSD	44.046	46.844	1503.3	.38197	27.549	28.630	.20064	77.859
#1	-.00133	-.00149	.01010	99.963	.06150	.00741	258.64	.00633
#2	-.00147	-.00128	.00832	100.27	.03544	.00706	258.02	.00115
#3	-.00056	-.00051	-.01557	100.72	.05863	.00417	259.06	.00273
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00093	.03133	.00042	.01134	.00086	.00043	.00626	.09497
Stddev	.00016	.00699	.00104	.00335	.01017	.00296	.00628	.00540
%RSD	17.671	22.309	248.35	29.522	1186.9	683.82	100.21	5.6823
#1	-.00078	.03585	.00150	.01501	.00972	.00346	.00222	.09711
#2	-.00091	.03487	.00034	.01054	.00310	-.00246	.01350	.09897
#3	-.00111	.02328	-.00058	.00846	-.01025	.00030	.00308	.08883
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: ICSA Acquired: 7/19/2016 9:29:20 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00149**	**-.00013**	**-.01233**	**-.00125**	**-.00319**	**-.00532**	**-.00322**
Stddev	.00045	.00045	.00947	.00457	.00088	.00026	.00025
%RSD	30.524	338.67	76.791	366.63	27.542	4.9379	7.8267
#1	.00127	-.00064	-.00761	-.00606	-.00242	-.00520	-.00295
#2	.00118	.00006	-.02323	-.00071	-.00300	-.00514	-.00327
#3	.00201	.00019	-.00614	.00303	-.00415	-.00562	-.00345
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9665.3**	**45891.**	**2578.1**
Stddev	47.3	93.	13.0
%RSD	.48897	.20160	.50392
#1	9626.1	45983.	2584.6
#2	9652.0	45798.	2586.5
#3	9717.8	45893.	2563.1

Approved: July 19, 2016

Sample Name: ICSAB Acquired: 7/19/2016 9:33:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51660**	**263.75**	**.25317**	**-.01172**	**.25347**	**.24727**	**246.88**	**.48369**
Stddev	.00418	.75	.00783	.00112	.00034	.00047	.87	.01687
%RSD	.80891	.28412	3.0916	9.5720	.13224	.19156	.35060	3.4877
#1	.51184	263.55	.25923	-.01051	.25310	.24729	246.76	.49347
#2	.51827	263.12	.25595	-.01194	.25375	.24678	247.80	.49338
#3	.51968	264.57	.24433	-.01272	.25356	.24773	246.08	.46421
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.23706**	**.24898**	**.25620**	**97.585**	**5.3123**	**.00872**	**251.66**	**.24746**
Stddev	.01005	.00025	.01668	.234	.0769	.00255	.56	.00186
%RSD	4.2382	.10006	6.5118	.24001	1.4474	29.255	.22179	.75206
#1	.24350	.24898	.26546	97.463	5.3849	.00715	252.00	.24624
#2	.24219	.24922	.26619	97.855	5.3202	.01166	251.96	.24960
#3	.22548	.24873	.23694	97.437	5.2317	.00735	251.01	.24653
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00119**	**5.3075**	**.48088**	**.09112**	**.49206**	**.50013**	**.25762**	**.00926**
Stddev	.00037	.0121	.01952	.00559	.01612	.01892	.00428	.00207
%RSD	30.840	.22717	4.0592	6.1380	3.2770	3.7829	1.6597	22.333
#1	-.00161	5.2985	.49269	.09329	.50191	.51091	.26183	.00779
#2	-.00094	5.3212	.49160	.09531	.50082	.51119	.25777	.01162
#3	-.00102	5.3027	.45835	.08477	.47345	.47828	.25328	.00835
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: ICSAB Acquired: 7/19/2016 9:33:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	-.00015	-.01480	.45894	.25213	.46986	-.00332
Stddev	.00079	.00023	.00515	.01060	.00129	.01810	.00062
%RSD	282.22	146.94	34.788	2.3087	.51328	3.8514	18.753
#1	-.00061	.00004	-.01283	.46363	.25091	.48023	-.00265
#2	.00092	-.00009	-.01093	.46638	.25200	.48038	-.00342
#3	.00053	-.00040	-.02065	.44681	.25349	.44896	-.00388
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9690.0	46162.	2585.6
Stddev	18.0	214.	19.6
%RSD	.18528	.46409	.75636
#1	9694.9	46165.	2579.7
#2	9670.1	46375.	2569.6
#3	9705.0	45946.	2607.4

Approved: July 19, 2016

Sample Name: CCV Acquired: 7/19/2016 9:36:41 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39826	9.7999	.39892	.48562	.99052	.05003	9.8550	.05000
Stddev	.00170	.0239	.00635	.00261	.00662	.00015	.0558	.00108
%RSD	.42804	.24344	1.5907	.53645	.66871	.29350	.56618	2.1587
#1	.39693	9.7762	.40050	.48490	.98293	.04999	9.7908	.05070
#2	.40018	9.8239	.40432	.48850	.99348	.05020	9.8825	.05053
#3	.39768	9.7996	.39193	.48344	.99515	.04991	9.8918	.04875
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20047	.49172	.49772	3.9733	50.373	.98583	9.9780	.49491
Stddev	.00639	.00054	.01340	.0066	.384	.00603	.0914	.00479
%RSD	3.1860	.11007	2.6929	.16586	.76235	.61141	.91639	.96795
#1	.20430	.49227	.50563	3.9777	50.039	.97937	9.9268	.48995
#2	.20403	.49169	.50528	3.9657	50.793	.99131	9.9237	.49526
#3	.19310	.49119	.48225	3.9766	50.286	.98681	10.084	.49951
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99397	50.111	.49830	10.008	.49549	1.1926	.39931	4.8917
Stddev	.02822	.262	.01475	.209	.00931	.0307	.00021	.0834
%RSD	2.8389	.52318	2.9602	2.0927	1.8793	2.5770	.05235	1.7046
#1	1.0113	49.867	.50772	10.129	.50193	1.2100	.39908	4.9432
#2	1.0092	50.388	.50589	10.130	.49973	1.2106	.39937	4.9364
#3	.96141	50.078	.48130	9.7665	.48482	1.1571	.39948	4.7955
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 19, 2016

Sample Name: CCV Acquired: 7/19/2016 9:36:41 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0008**	**.98780**	**1.0184**	**.50118**	**.98557**	**.99355**	**1.0147**
Stddev	.0310	.00635	.0109	.00738	.00155	.02581	.0085
%RSD	3.0949	.64306	1.0653	1.4717	.15751	2.5973	.83724
#1	1.0174	.98061	1.0062	.50726	.98717	1.0088	1.0139
#2	1.0199	.99267	1.0223	.50329	.98407	1.0081	1.0235
#3	.96504	.99010	1.0268	.49297	.98546	.96375	1.0066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10346.**	**49579.**	**2676.4**
Stddev	12.	76.	17.5
%RSD	.11535	.15390	.65568
#1	10359.	49576.	2677.3
#2	10337.	49657.	2658.5
#3	10340.	49504.	2693.5

Approved: July 19, 2016

Sample Name: CCB Acquired: 7/19/2016 9:40:14 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	-.00158	.00030	.00201	.00052	-.00005	-.01292	-.00046
Stddev	.00094	.00416	.00147	.00188	.00092	.00008	.02391	.00011
%RSD	117.79	263.32	493.12	93.504	178.49	143.24	185.07	24.007
#1	-.00026	-.00314	-.00136	-.00006	.00029	-.00005	-.02409	-.00036
#2	.00113	-.00474	.00081	.00248	.00153	.00002	-.02921	-.00045
#3	.00153	.00314	.00145	.00362	-.00027	-.00014	.01453	-.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	-.00029	-.00014	-.03347	.03492	.00131	-.11719	.00035
Stddev	.00027	.00098	.00083	.03206	.09016	.00071	.01335	.00211
%RSD	1983.4	332.75	580.85	95.793	258.16	53.945	11.390	598.99
#1	.00025	-.00011	.00041	-.02182	-.06633	.00050	-.10504	.00265
#2	-.00028	-.00135	-.00110	-.00886	.10653	.00179	-.11504	-.00150
#3	.00007	.00058	.00026	-.06973	.06457	.00165	-.13148	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00040	-.01506	.00138	.00137	-.00010	.00069	-.00131	.00345
Stddev	.00030	.02893	.00072	.00299	.00010	.00233	.00366	.00149
%RSD	76.920	192.15	51.914	217.98	94.894	336.00	278.68	43.172
#1	-.00010	-.04699	.00061	-.00100	-.00004	.00114	-.00533	.00251
#2	-.00071	-.00761	.00150	.00474	-.00005	.00276	.00184	.00267
#3	-.00038	.00943	.00203	.00038	-.00022	-.00183	-.00045	.00517
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: CCB Acquired: 7/19/2016 9:40:14 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	-.00018	.00513	.00016	-.00117	.00020	-.00008
Stddev	.00046	.00013	.00363	.00012	.00026	.00013	.00028
%RSD	79.859	75.720	70.754	72.255	22.630	67.628	338.28
#1	.00091	-.00024	.00882	.00007	-.00091	.00031	-.00033
#2	.00076	-.00002	.00501	.00029	-.00144	.00023	.00021
#3	.00005	-.00027	.00156	.00012	-.00117	.00005	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10569.	50866.	2696.3
Stddev	59.	72.	2.7
%RSD	.55809	.14227	.10175
#1	10539.	50945.	2699.4
#2	10530.	50803.	2694.5
#3	10637.	50851.	2694.9

Approved: July 19, 2016

Sample Name: PBW 9P Acquired: 7/19/2016 9:44:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574940-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	-.01078	.00197	.00196	-.00057	-.00007	-.03603
Stddev	.00162	.00961	.00133	.00100	.00040	.00009	.01125
%RSD	422.84	89.071	67.403	50.883	69.395	133.75	31.211
#1	.00205	-.01887	.00105	.00287	-.00081	.00002	-.04469
#2	.00030	-.00017	.00137	.00089	-.00080	-.00016	-.02332
#3	-.00120	-.01332	.00349	.00211	-.00011	-.00007	-.04008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00038	.00034	-.00026	.00063	-.00846	-.00778	.00353
Stddev	.00007	.00023	.00030	.00039	.01739	.07441	.00420
%RSD	19.279	69.417	113.97	61.238	205.48	956.66	119.02
#1	-.00030	.00055	.00003	.00026	-.00952	.00501	.00326
#2	-.00041	.00009	-.00056	.00059	.00943	-.08775	-.00053
#3	-.00044	.00037	-.00026	.00103	-.02530	.05941	.00785
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -.11459	.00228	-.00052	.01226	.00022	.00228	.00015
Stddev	.05472	.00119	.00010	.01833	.00030	.00325	.00172
%RSD	47.753	52.138	20.175	149.53	133.05	142.24	1125.0
#1	-.05765	.00098	-.00057	.03278	-.00009	.00120	.00203
#2	-.16678	.00331	-.00040	-.00251	.00049	.00593	-.00136
#3	-.11934	.00254	-.00058	.00651	.00027	-.00029	-.00021
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	900.00						
Low Limit	-.10000						

Approved: July 19, 2016

Sample Name: PBW 9P Acquired: 7/19/2016 9:44:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574940-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00483	.00182	-.00092	.00042	-.00033	.00168	-.00111
Stddev	.00332	.00160	.00162	.00027	.00055	.00929	.00278
%RSD	68.648	88.317	176.59	62.783	163.69	552.68	250.08
#1	.00203	.00098	-.00261	.00069	-.00092	-.00591	.00209
#2	.00849	.00367	.00064	.00043	-.00025	-.00109	-.00285
#3	.00396	.00081	-.00079	.00015	.00017	.01204	-.00258
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00019	.00044	-.00026
Stddev	.00045	.00013	.00015
%RSD	239.85	28.435	56.257
#1	-.00060	.00055	-.00043
#2	.00029	.00047	-.00021
#3	-.00025	.00031	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10975.	53082.	2809.1
Stddev	13.	138.	17.7
%RSD	.11901	.26086	.63127
#1	10983.	53086.	2793.3
#2	10960.	53219.	2828.3
#3	10982.	52942.	2805.8

Approved: July 19, 2016

Sample Name: LCSW 9P Acquired: 7/19/2016 9:51:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574940-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19145**	**4.8121**	**.19803**	**.93281**	**.49426**	**.02405**	**4.9747**	**.02437**
Stddev	.00168	.0241	.00208	.00515	.00487	.00010	.0590	.00007
%RSD	.87707	.50072	1.0480	.55169	.98626	.43034	1.1866	.29488
#1	.19283	4.8355	.19817	.93537	.49986	.02416	5.0180	.02431
#2	.19194	4.7873	.20004	.92688	.49195	.02397	4.9075	.02434
#3	.18958	4.8134	.19589	.93617	.49097	.02402	4.9987	.02445
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10045**	**.24324**	**.25107**	**2.0133**	**24.935**	**.50012**	**4.9796**	**.24638**
Stddev	.00050	.00209	.00096	.0127	.194	.00452	.0654	.00203
%RSD	.49532	.85805	.38108	.62883	.77710	.90385	1.3138	.82504
#1	.10101	.24478	.25158	2.0205	25.074	.50534	5.0049	.24462
#2	.10024	.24408	.25166	1.9987	24.713	.49764	5.0287	.24861
#3	.10008	.24086	.24996	2.0208	25.017	.49738	4.9053	.24590
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50733**	**24.764**	**.25183**	**4.8003**	**.25186**	**.58837**	**.18762**	**2.4431**
Stddev	.00156	.277	.00015	.0059	.00287	.00338	.00158	.0066
%RSD	.30819	1.1180	.05834	.12339	1.1411	.57369	.84477	.27158
#1	.50854	25.061	.25200	4.8068	.24872	.59227	.18597	2.4386
#2	.50788	24.514	.25175	4.7989	.25248	.58659	.18914	2.4508
#3	.50557	24.717	.25174	4.7952	.25437	.58627	.18776	2.4401
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: LCSW 9P Acquired: 7/19/2016 9:51:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574940-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50405	.50087	.50041	.24862	.49114	.49672	.00031
Stddev	.00143	.00339	.00233	.00201	.00188	.00140	.00009
%RSD	.28371	.67748	.46547	.80829	.38276	.28233	28.828
#1	.50458	.50443	.50086	.24758	.49290	.49621	.00029
#2	.50515	.49767	.50249	.24734	.48916	.49831	.00024
#3	.50244	.50050	.49789	.25093	.49136	.49566	.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10327.	50076.	2690.1
Stddev	14.	248.	26.0
%RSD	.13425	.49513	.96797
#1	10317.	49826.	2660.4
#2	10322.	50322.	2709.2
#3	10343.	50080.	2700.5

Approved: July 19, 2016

Sample Name: L1606159102 Acquired: 7/19/2016 9:55:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574940-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00153	-.00114	.00346	.02092	.03557	-.00009	201.67
Stddev	.00049	.00186	.00293	.00109	.00029	.00001	1.39
%RSD	31.780	163.41	84.596	5.1888	.81923	15.396	.69014
#1	.00193	-.00194	.00613	.02217	.03562	-.00008	203.05
#2	.00166	.00099	.00033	.02031	.03582	-.00011	201.70
#3	.00099	-.00245	.00393	.02028	.03525	-.00008	200.26
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	.00213	.00133	.00199	F -.02326	.22679	.00555
Stddev	.00003	.00011	.00077	.00133	.02055	.09290	.00148
%RSD	12.003	4.9993	57.860	66.876	88.383	40.964	26.614
#1	-.00025	.00225	.00136	.00349	-.00305	.13794	.00666
#2	-.00022	.00204	.00208	.00093	-.04414	.21916	.00613
#3	-.00028	.00212	.00054	.00157	-.02258	.32327	.00387
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.1544	.85532	-.00035	2.4786	.00346	.00296	-.00096
Stddev	.0432	.00667	.00019	.0113	.00135	.00384	.00074
%RSD	2.0066	.78037	54.597	.45629	38.932	129.74	77.039
#1	2.2026	.86301	-.00029	2.4714	.00268	.00192	-.00074
#2	2.1418	.85109	-.00019	2.4728	.00268	-.00025	-.00178
#3	2.1189	.85184	-.00056	2.4916	.00501	.00722	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 19, 2016

Sample Name: L1606159102 Acquired: 7/19/2016 9:55:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574940-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00051**	**.00101**	**.33193**	**-.00006**	**.83438**	F **-.03372**	**-.00173**
Stddev	.00393	.00545	.02869	.00040	.00722	.00419	.00213
%RSD	777.03	542.13	8.6435	680.19	.86562	12.413	122.57
#1	.00244	-.00107	.35043	-.00036	.84210	-.03674	.00070
#2	.00102	-.00311	.34648	-.00022	.83325	-.03547	-.00322
#3	-.00497	.00719	.29888	.00040	.82779	-.02894	-.00268
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00099**	**.00701**	**-.00019**
Stddev	.00025	.00066	.00014
%RSD	25.146	9.4506	72.815
#1	-.00120	.00743	-.00014
#2	-.00071	.00735	-.00008
#3	-.00105	.00625	-.00034
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10201.**	**49539.**	**2702.8**
Stddev	28.	108.	16.0
%RSD	.27165	.21709	.59351
#1	10220.	49491.	2684.9
#2	10214.	49463.	2707.5
#3	10169.	49662.	2715.9

Approved: July 19, 2016

Sample Name: L1606159102S Acquired: 7/19/2016 9:59:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574940-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19537**	**4.8902**	**.20198**	**.96858**	**.52907**	**.02406**	**208.79**	**.02463**
Stddev	.00151	.0056	.00110	.00484	.00363	.00009	.99	.00068
%RSD	.77034	.11476	.54640	.49998	.68534	.37352	.47435	2.7671
#1	.19549	4.8851	.20119	.97301	.53305	.02415	209.86	.02522
#2	.19682	4.8962	.20324	.96932	.52595	.02397	207.91	.02479
#3	.19381	4.8894	.20151	.96341	.52821	.02407	208.60	.02388
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09895**	**.24215**	**.24188**	**1.9312**	**25.266**	**.51302**	**7.1512**	**1.1023**
Stddev	.00214	.00079	.00529	.0286	.250	.00189	.0520	.0037
%RSD	2.1651	.32579	2.1879	1.4820	.99103	.36861	.72791	.33472
#1	.10002	.24124	.24422	1.9613	25.554	.51092	7.2065	1.1022
#2	.10034	.24259	.24559	1.9043	25.106	.51458	7.1032	1.0986
#3	.09648	.24263	.23582	1.9281	25.137	.51357	7.1439	1.1060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50309**	**27.274**	**.24413**	**4.9428**	**.24486**	**.58897**	**.19160**	**2.8199**
Stddev	.00866	.137	.00437	.0680	.00313	.01186	.00491	.0354
%RSD	1.7211	.50333	1.7888	1.3755	1.2797	2.0142	2.5612	1.2559
#1	.50820	27.432	.24639	4.9809	.24530	.59600	.18633	2.8435
#2	.50798	27.209	.24690	4.9832	.24775	.59563	.19603	2.8371
#3	.49310	27.181	.23909	4.8643	.24153	.57527	.19244	2.7792
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: L1606159102S Acquired: 7/19/2016 9:59:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574940-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49525	1.3352	.46237	.24421	.49250	.48109	.00064
Stddev	.01090	.0100	.00966	.00043	.00086	.00876	.00032
%RSD	2.2002	.74530	2.0890	.17805	.17540	1.8205	50.226
#1	.50072	1.3465	.45471	.24404	.49154	.48594	.00044
#2	.50232	1.3277	.45918	.24471	.49274	.48635	.00047
#3	.48270	1.3315	.47322	.24389	.49322	.47098	.00101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10138.	48999.	2690.6
Stddev	23.	72.	19.6
%RSD	.22562	.14749	.72849
#1	10137.	49013.	2668.9
#2	10115.	49064.	2707.0
#3	10161.	48921.	2695.9

Approved: July 19, 2016

Sample Name: L1606159102SD Acquired: 7/19/2016 10:02:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574940-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19496**	**4.9187**	**.20592**	**.96391**	**.53303**	**.02422**	**211.20**	**.02493**
Stddev	.00142	.0185	.00347	.00278	.00364	.00006	1.52	.00025
%RSD	.72665	.37642	1.6860	.28885	.68351	.23671	.71949	1.0160
#1	.19514	4.9368	.20191	.96574	.53645	.02427	212.73	.02512
#2	.19346	4.8998	.20804	.96070	.53342	.02416	211.17	.02503
#3	.19628	4.9194	.20779	.96529	.52920	.02422	209.69	.02464
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10109**	**.24396**	**.24709**	**1.9713**	**25.654**	**.51763**	**7.1787**	**1.1188**
Stddev	.00025	.00154	.00133	.0336	.113	.00357	.0651	.0054
%RSD	.24756	.63258	.53784	1.7051	.43965	.69003	.90641	.48621
#1	.10136	.24520	.24609	2.0095	25.730	.51545	7.1064	1.1251
#2	.10103	.24223	.24658	1.9463	25.708	.52175	7.1973	1.1157
#3	.10087	.24445	.24860	1.9581	25.524	.51569	7.2325	1.1156
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51294**	**27.683**	**.24800**	**5.0000**	**.24753**	**.59925**	**.19780**	**2.8556**
Stddev	.00034	.092	.00096	.0070	.00230	.00719	.00433	.0040
%RSD	.06686	.33071	.38670	.13952	.92735	1.1991	2.1913	.13901
#1	.51319	27.787	.24830	4.9927	.24668	.60240	.19365	2.8566
#2	.51308	27.641	.24693	5.0005	.24578	.59103	.19743	2.8512
#3	.51255	27.619	.24878	5.0067	.25013	.60433	.20230	2.8590
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: L1606159102SD Acquired: 7/19/2016 10:02:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574940-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50572	1.3458	.46766	.24592	.49651	.48984	.00059
Stddev	.00128	.0068	.00559	.00402	.00083	.00039	.00048
%RSD	.25335	.50390	1.1962	1.6364	.16673	.07951	81.130
#1	.50573	1.3512	.46554	.24810	.49602	.48986	.00006
#2	.50699	1.3480	.47400	.24838	.49605	.49022	.00099
#3	.50443	1.3382	.46343	.24128	.49747	.48944	.00071
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10094.	49315.	2676.0
Stddev	8.	63.	23.0
%RSD	.07965	.12692	.86107
#1	10090.	49305.	2653.0
#2	10089.	49258.	2675.9
#3	10104.	49382.	2699.1

Approved: July 19, 2016

Sample Name: L1606164802 Acquired: 7/19/2016 10:06:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00249	-.01062	.00190	.00332	.01571	-.00003	1.2867	-.00032
Stddev	.00151	.00498	.00136	.00245	.00022	.00007	.0260	.00014
%RSD	60.528	46.856	71.498	73.790	1.3770	249.02	2.0181	44.289
#1	.00351	-.00737	.00099	.00497	.01590	-.00010	1.2725	-.00027
#2	.00076	-.01635	.00124	.00050	.01548	.00000	1.2708	-.00047
#3	.00321	-.00814	.00345	.00449	.01574	.00002	1.3166	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00065	-.00108	-.00046	.78330	.20649	.00347	.65356	.20839
Stddev	.00033	.00126	.00138	.04321	.04750	.00313	.03814	.00244
%RSD	51.305	115.97	298.72	5.5159	23.005	90.218	5.8355	1.1719
#1	.00048	-.00090	-.00125	.73345	.16025	.00312	.69263	.20913
#2	.00103	-.00242	.00113	.80644	.20408	.00677	.65162	.21038
#3	.00043	.00007	-.00126	.81000	.25516	.00053	.61643	.20567
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00051	1.7823	.00133	.00372	.00300	.00126	.00396	.52436
Stddev	.00013	.0223	.00095	.00456	.00204	.00258	.00177	.05440
%RSD	25.896	1.2509	70.870	122.60	67.935	204.02	44.751	10.375
#1	-.00039	1.7887	.00038	.00402	.00083	-.00149	.00267	.55810
#2	-.00065	1.8007	.00227	-.00098	.00329	.00166	.00598	.55339
#3	-.00048	1.7575	.00135	.00811	.00488	.00362	.00323	.46161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: L1606164802 Acquired: 7/19/2016 10:06:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00046**	**.02435**	**.00882**	**.00099**	**-.00046**	**.00098**	**-.00004**
Stddev	.00036	.00016	.00843	.00193	.00071	.00016	.00050
%RSD	76.945	.67343	95.577	195.47	152.87	16.223	1136.9
#1	-.00082	.02454	.00517	.00321	-.00015	.00097	-.00007
#2	-.00011	.02431	.01847	-.00022	.00003	.00114	.00047
#3	-.00045	.02422	.00283	-.00003	-.00127	.00083	-.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11147.**	**53640.**	**2831.7**
Stddev	32.	12.	18.8
%RSD	.29127	.02330	.66530
#1	11156.	53640.	2820.4
#2	11174.	53653.	2821.3
#3	11111.	53628.	2853.5

Approved: July 19, 2016

Sample Name: L1606164802PS Acquired: 7/19/2016 10:10:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG574995-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.18695	4.7102	.19108	.92267	.47882	.02321	5.9541	.02327
Stddev	.00037	.0070	.00208	.00117	.00241	.00007	.0448	.00074
%RSD	.19607	.14834	1.0862	.12705	.50408	.31751	.75280	3.1791
#1	.18700	4.7023	.18924	.92135	.47632	.02319	5.9025	.02352
#2	.18728	4.7157	.19333	.92305	.48114	.02329	5.9765	.02386
#3	.18656	4.7125	.19067	.92360	.47899	.02315	5.9833	.02244
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09493	.22965	.23876	2.6625	23.669	.46854	5.5130	.43954
Stddev	.00285	.00075	.00574	.0283	.126	.00444	.1203	.00162
%RSD	2.9973	.32552	2.4057	1.0636	.53112	.94786	2.1821	.36912
#1	.09616	.23026	.24072	2.6406	23.559	.46677	5.4482	.44110
#2	.09696	.22882	.24327	2.6525	23.806	.47360	5.6518	.43967
#3	.09168	.22987	.23230	2.6945	23.642	.46527	5.4390	.43786
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.46864	24.867	.23719	4.6580	.23571	.55930	.19829	2.8386
Stddev	.01353	.079	.00530	.0968	.00546	.01423	.00503	.0519
%RSD	2.8862	.31806	2.2350	2.0785	2.3150	2.5440	2.5351	1.8296
#1	.47393	24.791	.23923	4.6764	.23731	.56317	.19643	2.8533
#2	.47872	24.949	.24117	4.7443	.24019	.57120	.20398	2.8817
#3	.45327	24.861	.23117	4.5533	.22964	.54354	.19445	2.7809
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: L1606164802PS Acquired: 7/19/2016 10:10:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG574995-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47198**	**.49351**	**.46280**	**.23846**	**.46633**	**.47815**	**-.00001**
Stddev	.01617	.00287	.00461	.00388	.00161	.01151	.00046
%RSD	3.4256	.58080	.99528	1.6259	.34454	2.4068	4385.8
#1	.48014	.49258	.46532	.24115	.46480	.48230	.00017
#2	.48245	.49673	.46560	.24022	.46618	.48701	-.00053
#3	.45336	.49123	.45748	.23402	.46801	.46514	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11002.**	**52400.**	**2819.9**
Stddev	15.	183.	12.9
%RSD	.14002	.34989	.45861
#1	11019.	52599.	2832.4
#2	10988.	52237.	2806.6
#3	10999.	52364.	2820.6

Approved: July 19, 2016

Sample Name: L1606164802SDL Acquired: 7/19/2016 10:13:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG574995-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00164	-.00716	.00285	.00471	.00291	-.00003	.24542	-.00031
Stddev	.00084	.00646	.00027	.00068	.00044	.00003	.05016	.00024
%RSD	51.043	90.323	9.6058	14.555	15.196	96.553	20.439	77.761
#1	.00068	-.01280	.00295	.00540	.00296	-.00002	.27935	-.00039
#2	.00202	-.00010	.00305	.00403	.00333	-.00006	.26911	-.00004
#3	.00222	-.00857	.00254	.00470	.00245	-.00001	.18780	-.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	-.00112	-.00006	.13556	.08263	.00176	.12383	.04176
Stddev	.00034	.00022	.00003	.02361	.05941	.00339	.03355	.00177
%RSD	95.206	19.619	53.996	17.416	71.904	192.48	27.094	4.2368
#1	.00024	-.00132	-.00007	.11751	.06714	-.00059	.10902	.04367
#2	.00009	-.00116	-.00002	.16227	.14825	.00022	.10023	.04018
#3	.00075	-.00089	-.00009	.12689	.03249	.00565	.16224	.04143
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00044	.33842	.00032	.00104	-.00162	.00053	-.00003	.09840
Stddev	.00039	.03118	.00038	.00611	.00151	.00143	.00050	.01112
%RSD	87.131	9.2148	120.91	586.28	92.906	266.94	1700.4	11.305
#1	-.00015	.36384	-.00009	-.00190	-.00335	.00034	-.00038	.10545
#2	-.00029	.34780	.00036	.00807	-.00085	-.00078	.00054	.10417
#3	-.00088	.30362	.00068	-.00304	-.00066	.00205	-.00025	.08557
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: L1606164802SDL Acquired: 7/19/2016 10:13:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG574995-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00029**	**.00429**	**-.00086**	**.00242**	**-.00066**	**.00018**	**.00001**
Stddev	.00060	.00026	.00190	.00286	.00042	.00007	.00036
%RSD	208.85	6.0852	220.37	118.31	63.975	36.949	3220.9
#1	.00022	.00424	-.00267	.00388	-.00017	.00021	.00037
#2	-.00013	.00405	.00112	-.00088	-.00085	.00010	.00001
#3	-.00096	.00457	-.00104	.00424	-.00095	.00023	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11094.**	**53028.**	**2827.0**
Stddev	44.	226.	1.8
%RSD	.40056	.42555	.06206
#1	11124.	53201.	2828.7
#2	11115.	53109.	2827.2
#3	11043.	52773.	2825.2

Approved: July 19, 2016

Sample Name: CCV Acquired: 7/19/2016 10:17:43 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40159	9.9024	.40096	.48942	.99700	.05012	9.8841	.04989
Stddev	.00155	.0266	.00891	.00338	.00125	.00003	.0356	.00100
%RSD	.38712	.26841	2.2220	.69108	.12580	.06751	.36030	2.0101
#1	.40066	9.9254	.40761	.48585	.99711	.05014	9.8944	.05036
#2	.40339	9.9085	.40442	.49258	.99819	.05008	9.9134	.05058
#3	.40073	9.8733	.39084	.48983	.99569	.05014	9.8444	.04874
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20096	.49380	.49855	4.0277	50.324	.98889	10.096	.49757
Stddev	.00525	.00123	.01411	.0297	.076	.00525	.093	.00273
%RSD	2.6102	.24986	2.8305	.73801	.15064	.53091	.91761	.54818
#1	.20459	.49245	.50753	4.0203	50.385	.98315	10.040	.50071
#2	.20335	.49406	.50584	4.0605	50.239	.99007	10.046	.49620
#3	.19495	.49487	.48229	4.0024	50.348	.99345	10.203	.49579
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99341	49.923	.49575	9.9748	.49603	1.1910	.40363	4.8594
Stddev	.02541	.056	.01427	.1899	.01232	.0294	.00315	.0716
%RSD	2.5580	.11307	2.8781	1.9034	2.4837	2.4643	.78165	1.4734
#1	1.0094	49.986	.50578	10.100	.50471	1.2055	.40470	4.9268
#2	1.0068	49.877	.50206	10.068	.50146	1.2103	.40612	4.8672
#3	.96411	49.905	.47942	9.7563	.48193	1.1572	.40008	4.7842
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 19, 2016

Sample Name: CCV Acquired: 7/19/2016 10:17:43 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0018**	**.99697**	**1.0016**	**.50370**	**.99179**	**.99026**	**1.0168**
Stddev	.0319	.00089	.0099	.00522	.00246	.02500	.0071
%RSD	3.1841	.08911	.98665	1.0361	.24810	2.5249	.69468
#1	1.0203	.99761	1.0122	.50675	.98985	1.0061	1.0249
#2	1.0202	.99734	.99991	.50667	.99096	1.0032	1.0135
#3	.96501	.99596	.99268	.49767	.99456	.96144	1.0120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10318.**	**49235.**	**2664.4**
Stddev	14.	73.	11.2
%RSD	.13546	.14730	.41854
#1	10314.	49316.	2651.7
#2	10333.	49177.	2672.6
#3	10306.	49212.	2668.8

Approved: July 19, 2016

Sample Name: CCB Acquired: 7/19/2016 10:21:15 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00160**	**-.00017**	**.00146**	**.00194**	**.00058**	**.00004**	**-.01737**	**-.00037**
Stddev	.00087	.00521	.00161	.00111	.00098	.00006	.00926	.00020
%RSD	54.713	3123.9	110.28	57.022	167.35	155.61	53.334	54.562
#1	.00179	-.00044	.00017	.00320	.00104	.00006	-.02554	-.00040
#2	.00236	-.00523	.00327	.00152	-.00054	-.00003	-.01926	-.00056
#3	.00064	.00517	.00094	.00111	.00125	.00008	-.00731	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00024**	**-.00040**	**.00044**	**-.00979**	**.06319**	**.00223**	**-.04951**	**.00027**
Stddev	.00014	.00059	.00046	.01175	.14547	.00365	.05386	.00095
%RSD	57.096	148.87	103.40	120.05	230.23	163.89	108.79	346.99
#1	.00010	.00021	-.00007	-.02331	.11791	.00304	-.08278	.00136
#2	.00037	-.00097	.00079	-.00207	.17336	-.00176	-.07837	-.00038
#3	.00027	-.00044	.00060	-.00398	-.10171	.00541	.01263	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00033**	**-.00785**	**.00024**	**.00287**	**-.00033**	**-.00378**	**.00193**	**.00314**
Stddev	.00043	.01321	.00091	.00166	.00283	.00396	.00242	.00118
%RSD	131.19	168.29	372.90	57.775	858.91	104.75	125.03	37.640
#1	-.00063	.00735	.00088	.00112	-.00353	-.00597	.00466	.00450
#2	.00017	-.01657	-.00080	.00307	.00072	.00079	.00107	.00242
#3	-.00052	-.01434	.00066	.00442	.00183	-.00617	.00007	.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: CCB Acquired: 7/19/2016 10:21:15 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00064**	**-.00003**	**.00346**	**.00059**	**-.00056**	**.00034**	**.00003**
Stddev	.00057	.00039	.00569	.00269	.00035	.00005	.00027
%RSD	88.927	1573.4	164.53	456.62	62.292	16.001	820.92
#1	.00101	.00013	-.00258	.00127	-.00051	.00036	-.00024
#2	-.00002	.00027	.00424	-.00237	-.00024	.00028	.00029
#3	.00092	-.00047	.00872	.00287	-.00094	.00038	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10612.**	**51068.**	**2721.2**
Stddev	75.	34.	4.6
%RSD	.70234	.06662	.16734
#1	10569.	51064.	2720.9
#2	10568.	51104.	2716.9
#3	10698.	51036.	2726.0

Approved: July 19, 2016

Sample Name: LLCCV Acquired: 7/19/2016 10:25:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00839**	**.16099**	**.01035**	**.07792**	**.00805**	**.00156**	**.36730**	**.00046**
Stddev	.00089	.00437	.00125	.00161	.00104	.00004	.04398	.00002
%RSD	10.607	2.7170	12.105	2.0633	12.928	2.7984	11.973	4.5100
#1	.00926	.16442	.00921	.07865	.00722	.00161	.36082	.00047
#2	.00748	.16248	.01169	.07903	.00921	.00152	.41416	.00044
#3	.00843	.15606	.01015	.07607	.00771	.00155	.32693	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00383**	**.00317**	**.00447**	**.05237**	**.80653**	**.07914**	**.39005**	**.00791**
Stddev	.00039	.00068	.00084	.02276	.07486	.00278	.05598	.00137
%RSD	10.290	21.577	18.709	43.455	9.2821	3.5071	14.352	17.286
#1	.00417	.00368	.00528	.06859	.84054	.07880	.41475	.00800
#2	.00394	.00239	.00452	.06217	.72070	.08207	.42942	.00923
#3	.00340	.00343	.00361	.02635	.85835	.07655	.32597	.00650
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00690**	**.38559**	**.01517**	**.71674**	**.00847**	**.07302**	**.01560**	**.72010**
Stddev	.00070	.02075	.00139	.07170	.00218	.01033	.00660	.06241
%RSD	10.095	5.3803	9.1450	10.004	25.764	14.150	42.317	8.6676
#1	.00743	.36164	.01612	.76211	.00736	.08126	.00799	.75914
#2	.00717	.39817	.01580	.75404	.00706	.07638	.01985	.75304
#3	.00611	.39695	.01358	.63408	.01098	.06143	.01895	.64811
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: LLCCV Acquired: 7/19/2016 10:25:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37528**	**.03913**	**.02605**	**.13970**	**.00657**	**.01600**	**.04005**
Stddev	.04234	.00030	.00708	.01283	.00017	.00156	.00061
%RSD	11.283	.77182	27.168	9.1847	2.6645	9.7612	1.5127
#1	.40113	.03883	.03254	.14719	.00657	.01702	.03999
#2	.39829	.03944	.02710	.14702	.00639	.01679	.04069
#3	.32642	.03913	.01850	.12488	.00674	.01421	.03948
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10594.**	**50975.**	**2697.3**
Stddev	34.	85.	10.2
%RSD	.31631	.16670	.37810
#1	10567.	51027.	2685.6
#2	10584.	51020.	2704.3
#3	10631.	50877.	2701.9

Approved: July 19, 2016

Sample Name: LLCCV Acquired: 7/19/2016 10:29:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01557	.31524	.01694	.15244	.01586	.00302	.75198	.00122
Stddev	.00068	.00298	.00141	.00125	.00083	.00007	.05301	.00011
%RSD	4.3615	.94640	8.3178	.81914	5.2576	2.2252	7.0497	8.6980
#1	.01479	.31444	.01818	.15310	.01677	.00310	.80946	.00135
#2	.01591	.31854	.01722	.15100	.01566	.00300	.74147	.00117
#3	.01602	.31273	.01541	.15321	.01514	.00296	.70501	.00116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00762	.00685	.00727	.14147	1.6425	.15881	.69973	.01634
Stddev	.00111	.00041	.00228	.01846	.0423	.00258	.06957	.00319
%RSD	14.592	5.9126	31.426	13.052	2.5766	1.6234	9.9419	19.489
#1	.00858	.00678	.00881	.12042	1.6095	.15719	.66008	.01994
#2	.00788	.00729	.00835	.14904	1.6278	.15746	.78005	.01520
#3	.00640	.00649	.00464	.15495	1.6902	.16178	.65905	.01389
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01386	.78876	.03056	1.4396	.01660	.15036	.02585	1.4356
Stddev	.00126	.01901	.00356	.1309	.00041	.01441	.01023	.1191
%RSD	9.1067	2.4100	11.663	9.0954	2.4769	9.5843	39.570	8.2930
#1	.01466	.80118	.03389	1.5142	.01653	.15855	.03460	1.5077
#2	.01451	.76688	.03098	1.5161	.01704	.15880	.02836	1.5008
#3	.01240	.79822	.02680	1.2884	.01622	.13372	.01460	1.2981
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: LLCCV Acquired: 7/19/2016 10:29:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.74649	.07771	.04639	.28266	.01454	.03128	.07889
Stddev	.08497	.00015	.00498	.02109	.00045	.00313	.00045
%RSD	11.383	.18994	10.735	7.4603	3.1176	10.003	.57376
#1	.80089	.07788	.04396	.29504	.01413	.03335	.07927
#2	.78999	.07762	.05212	.29463	.01503	.03280	.07901
#3	.64857	.07762	.04310	.25831	.01446	.02768	.07839
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10636.	51201.	2721.6
Stddev	22.	204.	9.7
%RSD	.20589	.39763	.35653
#1	10638.	51432.	2712.0
#2	10614.	51045.	2731.4
#3	10658.	51127.	2721.3

Approved: July 19, 2016

Sample Name: PBW 12 Acquired: 7/19/2016 10:32:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576596-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00083**	**-.00150**	**.00259**	**.00083**	**.00017**	**-.00007**	**-.03724**
Stddev	.00145	.00962	.00052	.00176	.00056	.00003	.02865
%RSD	174.10	643.14	20.057	211.40	330.58	49.568	76.942
#1	-.00184	.00928	.00213	.00032	.00050	-.00006	-.00854
#2	.00083	-.00919	.00248	-.00061	-.00048	-.00003	-.03732
#3	-.00149	-.00458	.00315	.00279	.00050	-.00010	-.06584
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00012**	**.00027**	**-.00019**	**.00043**	F **-.04280**	**.00697**	**.00222**
Stddev	.00004	.00001	.00002	.00066	.01789	.02523	.00084
%RSD	31.726	4.6187	12.241	152.76	41.785	362.16	37.697
#1	-.00008	.00028	-.00022	-.00025	-.04943	-.01685	.00134
#2	-.00013	.00026	-.00019	.00108	-.02255	.00434	.00300
#3	-.00016	.00027	-.00017	.00047	-.05643	.03341	.00232
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **-.12718**	**.00241**	**-.00019**	**.00603**	**.00009**	**-.00311**	**-.00079**
Stddev	.08774	.00340	.00022	.01009	.00056	.00244	.00101
%RSD	68.986	140.93	111.31	167.41	621.98	78.584	128.66
#1	-.03385	.00479	-.00044	-.00299	-.00047	-.00209	-.00184
#2	-.20798	.00392	-.00005	.00415	.00065	-.00134	.00017
#3	-.13972	-.00148	-.00009	.01692	.00010	-.00589	-.00069
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	900.00						
Low Limit	-.10000						

Approved: July 19, 2016

Sample Name: PBW 12 Acquired: 7/19/2016 10:32:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576596-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00057	.00100	.00118	.00102	-.00073	-.00108	-.00159
Stddev	.00131	.00193	.00075	.00060	.00045	.00554	.00123
%RSD	227.73	193.21	63.479	59.035	61.615	512.43	77.503
#1	-.00204	.00080	.00055	.00151	-.00024	-.00554	-.00280
#2	-.00014	-.00083	.00201	.00122	-.00081	-.00283	-.00164
#3	.00046	.00302	.00099	.00035	-.00113	.00513	-.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00115	.00118	-.00002
Stddev	.00042	.00019	.00056
%RSD	36.898	15.835	2466.1
#1	-.00073	.00125	-.00066
#2	-.00158	.00133	.00038
#3	-.00115	.00097	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10451.	50394.	2711.9
Stddev	43.	223.	11.0
%RSD	.41083	.44195	.40742
#1	10476.	50137.	2700.6
#2	10476.	50538.	2712.4
#3	10402.	50507.	2722.6

Approved: July 19, 2016

Sample Name: LCSW 12 Acquired: 7/19/2016 10:36:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576596-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19323**	**4.8672**	**.19547**	**.94272**	**.49952**	**.02410**	**5.0283**	**.02432**
Stddev	.00109	.0204	.00250	.00363	.00120	.00008	.0197	.00033
%RSD	.56195	.41982	1.2769	.38524	.24053	.33417	.39203	1.3685
#1	.19214	4.8502	.19735	.94163	.49981	.02406	5.0061	.02459
#2	.19325	4.8615	.19641	.93975	.49820	.02420	5.0349	.02444
#3	.19431	4.8899	.19263	.94677	.50055	.02406	5.0439	.02395
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09960**	**.24441**	**.24915**	**2.0076**	**24.756**	**.50013**	**4.9639**	**.24875**
Stddev	.00244	.00145	.00723	.0169	.182	.00122	.0798	.00143
%RSD	2.4513	.59396	2.9017	.84168	.73663	.24402	1.6071	.57485
#1	.10111	.24275	.25474	1.9909	24.546	.50116	5.0287	.24842
#2	.10090	.24547	.25173	2.0247	24.843	.49878	4.9881	.24752
#3	.09678	.24499	.24099	2.0072	24.878	.50045	4.8748	.25032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50270**	**24.674**	**.24978**	**4.7672**	**.24871**	**.58300**	**.18695**	**2.4331**
Stddev	.01241	.125	.00660	.0739	.00447	.01374	.00307	.0293
%RSD	2.4691	.50611	2.6421	1.5509	1.7971	2.3564	1.6415	1.2048
#1	.51055	24.530	.25377	4.8203	.25196	.59351	.18638	2.4560
#2	.50916	24.755	.25342	4.7985	.25056	.58803	.19027	2.4431
#3	.48839	24.737	.24217	4.6828	.24361	.56746	.18421	2.4001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: LCSW 12 Acquired: 7/19/2016 10:36:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576596-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50092**	**.50489**	**.50320**	**.24922**	**.49436**	**.49235**	**.00073**
Stddev	.01106	.00082	.00748	.00471	.00144	.01046	.00016
%RSD	2.2083	.16226	1.4869	1.8901	.29220	2.1252	21.810
#1	.50717	.50419	.50983	.25339	.49386	.49880	.00086
#2	.50743	.50579	.50467	.25016	.49599	.49797	.00055
#3	.48814	.50468	.49509	.24411	.49323	.48028	.00078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10358.**	**49907.**	**2705.2**
Stddev	9.	113.	10.7
%RSD	.08891	.22731	.39632
#1	10350.	49872.	2717.1
#2	10356.	50033.	2696.2
#3	10368.	49814.	2702.5

Approved: July 19, 2016

Sample Name: F BLANK Acquired: 7/19/2016 10:40:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576479-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	-.00266	.00008	.00479	.00038	-.00002	-.02560
Stddev	.00059	.00250	.00078	.00141	.00080	.00006	.02246
%RSD	232.01	93.945	957.73	29.507	209.48	230.35	87.721
#1	.00015	-.00049	-.00030	.00391	-.00054	-.00005	-.00294
#2	.00089	-.00209	.00097	.00404	.00081	-.00006	-.04785
#3	-.00028	-.00539	-.00043	.00643	.00089	.00004	-.02600
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	-.00012	-.00016	.00026	-.01685	.14202	.00183
Stddev	.00018	.00038	.00029	.00071	.01854	.04290	.00356
%RSD	67.444	315.20	181.66	270.53	110.05	30.207	194.52
#1	-.00046	-.00049	-.00049	-.00053	-.03480	.09258	.00370
#2	-.00019	.00027	.00002	.00048	.00224	.16952	.00406
#3	-.00013	-.00014	-.00000	.00084	-.01799	.16394	-.00227
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -.11622	.00125	-.00009	.01123	.00097	-.00146	-.00049
Stddev	.10616	.00030	.00005	.02239	.00113	.00171	.00300
%RSD	91.344	24.216	50.258	199.31	117.29	116.99	614.96
#1	-.01296	.00158	-.00009	.02517	.00118	-.00201	-.00318
#2	-.11065	.00120	-.00014	-.01459	.00198	.00045	-.00104
#3	-.22506	.00098	-.00005	.02312	-.00026	-.00284	.00275
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	900.00						
Low Limit	-.10000						

Approved: July 19, 2016

Sample Name: F BLANK Acquired: 7/19/2016 10:40:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576479-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00213	-.00123	.00289	.00040	-.00039	.00469	-.00376
Stddev	.00304	.00214	.00098	.00054	.00021	.00678	.00034
%RSD	142.93	173.13	33.821	135.48	55.070	144.57	9.0744
#1	-.00011	-.00090	.00292	-.00020	-.00060	-.00191	-.00339
#2	.00090	.00072	.00385	.00056	-.00040	.00434	-.00406
#3	.00559	-.00352	.00190	.00084	-.00017	.01164	-.00383
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00075	.00239	-.00032
Stddev	.00018	.00033	.00052
%RSD	24.750	13.716	158.55
#1	-.00059	.00269	-.00059
#2	-.00069	.00243	.00027
#3	-.00095	.00204	-.00065
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10442.	50639.	2698.2
Stddev	27.	138.	19.7
%RSD	.25396	.27336	.73107
#1	10460.	50515.	2700.2
#2	10455.	50788.	2677.5
#3	10412.	50613.	2716.8

Approved: July 19, 2016

Sample Name: L1607055801 Acquired: 7/19/2016 10:44:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG576596-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	-.00861	.00144	.03729	-.00039	-.00003	.03844	-.00041
Stddev	.00109	.00314	.00294	.00202	.00060	.00008	.02809	.00027
%RSD	313.03	36.490	204.41	5.4141	151.27	295.82	73.068	67.353
#1	.00012	-.00499	.00048	.03845	.00013	.00006	.03130	-.00051
#2	.00154	-.01060	.00474	.03845	-.00104	-.00009	.01461	-.00061
#3	-.00061	-.01023	-.00090	.03496	-.00027	-.00005	.06941	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	-.00004	-.00001	.00441	.01952	.00315	-.01551	.00186
Stddev	.00033	.00044	.00097	.00705	.09267	.00511	.02597	.00228
%RSD	108.15	1155.8	15273.	159.81	474.66	162.40	167.38	122.95
#1	.00015	-.00031	-.00052	.00959	.11800	-.00203	-.02735	.00311
#2	.00008	.00047	-.00061	.00726	.00654	.00818	-.03345	.00324
#3	.00069	-.00028	.00111	-.00362	-.06597	.00329	.01426	-.00078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00051	3.0036	-.00030	.00033	.00148	.00241	-.00169	.03067
Stddev	.00011	.0419	.00050	.00472	.00256	.00228	.00301	.00365
%RSD	21.732	1.3944	166.17	1429.0	172.94	94.544	177.78	11.899
#1	-.00050	2.9577	-.00028	.00469	.00038	.00359	-.00401	.03290
#2	-.00063	3.0398	.00019	.00097	.00441	-.00022	.00171	.03265
#3	-.00041	3.0132	-.00081	-.00468	-.00034	.00385	-.00277	.02646
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: L1607055801 Acquired: 7/19/2016 10:44:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG576596-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00029**	**.00119**	**.00567**	**.00029**	**.00001**	**.00174**	**-.00020**
Stddev	.00056	.00040	.01084	.00181	.00007	.00017	.00041
%RSD	195.22	33.316	191.09	634.58	980.56	9.9223	203.86
#1	-.00030	.00099	.00915	.00033	.00007	.00185	-.00049
#2	.00034	.00165	.01434	-.00155	-.00006	.00184	.00027
#3	.00083	.00093	-.00648	.00207	.00001	.00154	-.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11122.**	**53388.**	**2820.0**
Stddev	44.	115.	12.9
%RSD	.39281	.21609	.45795
#1	11156.	53257.	2822.2
#2	11136.	53475.	2806.1
#3	11072.	53432.	2831.7

Approved: July 19, 2016

Sample Name: L1607055801S Acquired: 7/19/2016 10:48:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG576596-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00102	.03627	.00318	.04431	.00566	.00020	.05886
Stddev	.00085	.00187	.00087	.00048	.00035	.00005	.01920
%RSD	82.973	5.1542	27.488	1.0725	6.2289	26.863	32.616
#1	.00196	.03823	.00371	.04377	.00599	.00025	.07988
#2	.00031	.03608	.00365	.04454	.00571	.00022	.04225
#3	.00079	.03451	.00217	.04463	.00529	.00014	.05445
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.00112	.00155	.00188	F -.02280	.30886	.00856
Stddev	.00009	.00022	.00005	.00060	.02096	.07984	.00236
%RSD	88.397	19.804	3.5220	31.983	91.921	25.850	27.613
#1	-.00007	.00137	.00151	.00118	-.02528	.22081	.00650
#2	-.00003	.00106	.00161	.00226	-.00071	.32924	.01114
#3	-.00019	.00094	.00153	.00219	-.04241	.37655	.00805
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00130	.00491	.00399	3.1346	.00289	.04499	.00434
Stddev	.02632	.00344	.00023	.0102	.00056	.01035	.00162
%RSD	2024.5	70.134	5.7124	.32397	19.418	23.018	37.394
#1	.02394	.00102	.00388	3.1229	.00229	.05081	.00481
#2	-.02857	.00615	.00425	3.1407	.00298	.05112	.00254
#3	.00073	.00756	.00383	3.1403	.00340	.03303	.00568
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 19, 2016

Sample Name: L1607055801S Acquired: 7/19/2016 10:48:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG576596-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00207	.00647	.05058	.00458	.00590	.00795	.00416
Stddev	.00047	.00409	.00616	.00018	.00046	.00194	.00088
%RSD	22.709	63.282	12.173	4.0356	7.7322	24.417	21.077
#1	.00167	.00183	.05461	.00476	.00631	.00696	.00366
#2	.00259	.00959	.05365	.00439	.00541	.00669	.00365
#3	.00196	.00798	.04350	.00459	.00596	.01018	.00518
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00446	.00674	-.00018
Stddev	.00034	.00061	.00021
%RSD	7.6590	9.1226	117.03
#1	.00456	.00719	-.00009
#2	.00474	.00699	-.00042
#3	.00408	.00604	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11092.	53306.	2820.7
Stddev	37.	238.	6.8
%RSD	.32909	.44659	.24254
#1	11102.	53525.	2823.5
#2	11123.	53342.	2812.9
#3	11052.	53053.	2825.7

Approved: July 19, 2016

Sample Name: L1607055801SD Acquired: 7/19/2016 10:51:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG576596-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00168	.03540	.00436	.04436	.00487	.00020	.05972	.00001
Stddev	.00104	.00371	.00135	.00227	.00126	.00003	.00509	.00025
%RSD	61.922	10.480	30.974	5.1199	25.878	15.268	8.5171	4461.9
#1	.00176	.03628	.00395	.04437	.00344	.00020	.06544	.00029
#2	.00267	.03859	.00326	.04209	.00533	.00016	.05800	-.00019
#3	.00060	.03133	.00587	.04663	.00583	.00022	.05571	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00130	.00151	.00216	-.00535	.27873	.00619	.03564	.00407
Stddev	.00033	.00053	.00074	.00706	.05004	.00308	.09325	.00194
%RSD	25.267	34.940	34.230	131.81	17.952	49.800	261.66	47.644
#1	.00143	.00160	.00149	.00202	.28840	.00729	.01123	.00186
#2	.00154	.00094	.00295	-.01205	.22456	.00858	.13866	.00482
#3	.00092	.00199	.00203	-.00603	.32322	.00271	-.04298	.00551
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00409	3.1227	.00233	.04631	.00431	.00443	.00025	.05003
Stddev	.00008	.0511	.00054	.00260	.00404	.00149	.00630	.00740
%RSD	2.0753	1.6353	23.242	5.6177	93.855	33.641	2485.3	14.796
#1	.00418	3.0850	.00249	.04891	.00795	.00357	-.00000	.05301
#2	.00401	3.1022	.00277	.04370	.00502	.00357	.00667	.05546
#3	.00409	3.1808	.00173	.04633	-.00004	.00615	-.00591	.04160
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: L1607055801SD Acquired: 7/19/2016 10:51:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG576596-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00444	.00555	.00467	.00418	.00403	.00632	.00012
Stddev	.00033	.00027	.00530	.00104	.00035	.00055	.00040
%RSD	7.5308	4.8845	113.49	24.916	8.7801	8.7259	342.89
#1	.00427	.00555	.00750	.00300	.00426	.00666	.00021
#2	.00483	.00528	-.00144	.00457	.00421	.00661	.00046
#3	.00423	.00582	.00794	.00496	.00362	.00568	-.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11097.	52978.	2819.3
Stddev	33.	208.	33.9
%RSD	.29434	.39320	1.2027
#1	11105.	52854.	2858.2
#2	11125.	53219.	2795.9
#3	11061.	52863.	2803.8

Approved: July 19, 2016

Sample Name: L1607060505 Acquired: 7/19/2016 10:55:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**-.00046**	**.00235**	**.00816**	**.00050**	**-.00005**	**.00918**	**-.00033**
Stddev	.00099	.00396	.00069	.00081	.00084	.00003	.01597	.00014
%RSD	1081.9	862.32	29.572	9.9562	168.70	52.717	173.87	42.875
#1	.00016	-.00306	.00267	.00765	.00093	-.00007	.02722	-.00021
#2	.00075	.00409	.00155	.00772	.00104	-.00005	.00349	-.00049
#3	-.00119	-.00241	.00282	.00909	-.00047	-.00002	-.00316	-.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**-.00019**	**.00040**	**-.00540**	**.04306**	**.00277**	**-.05968**	**.00120**
Stddev	.00002	.00047	.00094	.01289	.04974	.00325	.03742	.00157
%RSD	88.224	247.91	236.63	238.76	115.52	117.35	62.695	131.27
#1	.00003	.00024	.00073	.00734	.03904	-.00040	-.10190	-.00061
#2	.00000	-.00070	.00112	-.01844	-.00455	.00262	-.04653	.00227
#3	.00004	-.00011	-.00066	-.00511	.09468	.00609	-.03061	.00192
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.00942**	**.00113**	**-.00240**	**-.00007**	**-.00157**	**.00357**	**.00483**
Stddev	.00013	.00582	.00015	.00403	.00045	.00232	.00391	.00189
%RSD	95.128	61.758	13.459	168.10	694.54	147.20	109.33	39.178
#1	-.00025	.00507	.00098	-.00623	-.00013	-.00274	.00362	.00675
#2	.00000	.01602	.00113	-.00279	-.00048	.00109	-.00035	.00476
#3	-.00015	.00716	.00129	.00181	.00042	-.00307	.00746	.00297
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: L1607060505 Acquired: 7/19/2016 10:55:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	-.00024	.00133	-.00257	-.00067	.00219	.00017
Stddev	.00041	.00035	.00546	.00191	.00064	.00025	.00018
%RSD	59.880	141.40	410.20	74.201	94.689	11.640	107.03
#1	.00084	-.00061	-.00366	-.00432	.00006	.00223	.00036
#2	.00022	.00008	.00048	-.00287	-.00097	.00242	.00013
#3	.00098	-.00021	.00717	-.00053	-.00110	.00191	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10405.	50855.	2694.6
Stddev	23.	137.	7.5
%RSD	.22439	.26964	.27906
#1	10417.	50757.	2691.0
#2	10420.	51012.	2689.4
#3	10378.	50797.	2703.2

Approved: July 19, 2016

Sample Name: L1607060505PS Acquired: 7/19/2016 10:59:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576859-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19387**	**4.8774**	**.19698**	**.94389**	**.49743**	**.02423**	**5.0475**	**.02439**
Stddev	.00057	.0081	.00346	.00453	.00204	.00012	.0573	.00024
%RSD	.29614	.16541	1.7576	.47941	.41020	.48866	1.1359	1.0019
#1	.19424	4.8687	.19828	.94352	.49844	.02415	5.0911	.02461
#2	.19416	4.8845	.19960	.94859	.49877	.02436	5.0690	.02443
#3	.19321	4.8791	.19305	.93956	.49508	.02417	4.9826	.02412
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10042**	**.24660**	**.25106**	**2.0410**	**24.874**	**.50671**	**5.0025**	**.24853**
Stddev	.00259	.00186	.00510	.0116	.179	.00107	.0195	.00263
%RSD	2.5794	.75621	2.0319	.56901	.72147	.21160	.38962	1.0595
#1	.10201	.24472	.25293	2.0503	24.854	.50599	4.9810	.24577
#2	.10182	.24845	.25497	2.0448	25.063	.50794	5.0190	.24880
#3	.09743	.24664	.24529	2.0280	24.706	.50620	5.0075	.25101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50420**	**24.705**	**.25040**	**4.7972**	**.24805**	**.58685**	**.18895**	**2.4118**
Stddev	.01052	.134	.00521	.0836	.00373	.00871	.00291	.0322
%RSD	2.0867	.54427	2.0821	1.7435	1.5026	1.4850	1.5394	1.3333
#1	.51102	24.728	.25391	4.8314	.25177	.59121	.18560	2.4267
#2	.50950	24.826	.25289	4.8583	.24807	.59252	.19047	2.4338
#3	.49208	24.560	.24441	4.7019	.24432	.57682	.19079	2.3749
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: L1607060505PS Acquired: 7/19/2016 10:59:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG576859-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50212	.50298	.50084	.24964	.49450	.49484	.00043
Stddev	.01421	.00172	.00341	.00394	.00051	.01009	.00025
%RSD	2.8305	.34184	.68035	1.5775	.10267	2.0396	58.444
#1	.51016	.50387	.50267	.25164	.49482	.50027	.00051
#2	.51049	.50408	.50294	.25217	.49478	.50105	.00062
#3	.48571	.50100	.49691	.24510	.49392	.48319	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10296.	49869.	2682.2
Stddev	10.	83.	13.8
%RSD	.09480	.16693	.51394
#1	10307.	49942.	2679.1
#2	10295.	49779.	2670.2
#3	10287.	49887.	2697.3

Approved: July 19, 2016

Sample Name: L1607060505SDL Acquired: 7/19/2016 11:03:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG576859-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00067**	**-.00969**	**.00201**	**.00327**	**-.00090**	**-.00000**	**-.02910**
Stddev	.00100	.00498	.00252	.00187	.00138	.00003	.02725
%RSD	150.73	51.357	125.00	57.225	153.62	783.06	93.638
#1	-.00048	-.00431	.00228	.00428	-.00015	-.00004	-.02283
#2	-.00175	-.01413	.00439	.00441	-.00006	.00001	-.05894
#3	.00023	-.01062	-.00063	.00111	-.00249	.00001	-.00553
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00041**	**.00023**	**.00023**	**.00052**	F **-.02147**	**.02275**	**.00364**
Stddev	.00003	.00028	.00090	.00090	.02701	.09161	.00096
%RSD	6.3303	124.98	395.06	175.40	125.80	402.59	26.248
#1	-.00044	.00055	.00127	-.00019	-.02760	.12578	.00368
#2	-.00041	.00005	-.00029	.00021	-.04488	-.04952	.00267
#3	-.00039	.00007	-.00029	.00153	.00808	-.00800	.00458
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.01527**	**.00080**	**-.00035**	**-.00191**	**.00107**	**.00092**	**.00039**
Stddev	.05090	.00294	.00013	.02129	.00042	.00428	.00140
%RSD	333.40	367.57	37.005	1114.6	39.257	463.70	364.52
#1	.04262	-.00258	-.00020	.02036	.00060	-.00107	.00129
#2	-.05301	.00217	-.00044	-.00404	.00140	-.00199	.00110
#3	-.03541	.00281	-.00042	-.02205	.00121	.00583	-.00123
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 19, 2016

Sample Name: L1607060505SDL Acquired: 7/19/2016 11:03:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG576859-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00368	.00064	-.00206	.00032	-.00042	.00725	-.00133
Stddev	.00502	.00393	.00100	.00079	.00022	.00554	.00214
%RSD	136.21	612.36	48.683	246.87	51.847	76.460	160.29
#1	.00081	-.00374	-.00232	.00036	-.00035	.00931	-.00177
#2	-.00909	.00183	-.00095	-.00049	-.00025	.01146	.00099
#3	-.00277	.00384	-.00290	.00108	-.00067	.00097	-.00322
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00058	.00089	.00001
Stddev	.00032	.00008	.00045
%RSD	54.815	9.0160	4774.2
#1	-.00023	.00087	.00043
#2	-.00086	.00098	.00006
#3	-.00065	.00082	-.00046
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11108.	53641.	2826.5
Stddev	39.	81.	14.1
%RSD	.35171	.15049	.49915
#1	11140.	53688.	2829.4
#2	11120.	53687.	2811.2
#3	11064.	53548.	2839.0

Approved: July 19, 2016

Sample Name: L1607060505SDL Acquired: 7/19/2016 11:07:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG576859-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**-.00799**	**.00168**	**.00014**	**.00088**	**-.00002**	**-.04248**
Stddev	.00130	.00532	.00281	.00335	.00070	.00005	.00842
%RSD	826.77	66.551	167.59	2314.7	79.146	283.69	19.822
#1	-.00079	-.00855	.00429	-.00358	.00165	-.00007	-.03438
#2	.00164	-.00242	.00202	.00290	.00030	-.00002	-.04189
#3	-.00038	-.01301	-.00129	.00112	.00068	.00003	-.05119
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00031**	**.00007**	**-.00080**	**.00030**	**-.01349**	**-.00572**	**.00241**
Stddev	.00009	.00028	.00071	.00027	.00570	.06475	.00357
%RSD	29.614	396.77	89.100	88.774	42.250	1132.4	148.02
#1	-.00021	-.00025	-.00142	.00033	-.00766	.06552	.00624
#2	-.00033	.00024	-.00002	.00002	-.01904	-.06099	-.00084
#3	-.00040	.00023	-.00096	.00056	-.01376	-.02169	.00184
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **-.11567**	**.00150**	**-.00035**	**-.02184**	**.00008**	**.00516**	**.00021**
Stddev	.07912	.00060	.00013	.00809	.00054	.00044	.00104
%RSD	68.399	39.694	37.048	37.059	641.88	8.4771	496.02
#1	-.15877	.00185	-.00042	-.02828	.00070	.00472	-.00074
#2	-.02436	.00184	-.00020	-.02447	-.00027	.00560	.00005
#3	-.16389	.00081	-.00043	-.01276	-.00018	.00515	.00133
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	900.00						
Low Limit	-.10000						

Approved: July 19, 2016

Sample Name: L1607060505SDL Acquired: 7/19/2016 11:07:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG576859-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00032**	**-.00180**	**-.00189**	**-.00001**	**-.00051**	**.00660**	**.00007**
Stddev	.00471	.00106	.00043	.00067	.00026	.00371	.00032
%RSD	1487.3	59.224	22.886	12787.	51.019	56.132	459.00
#1	-.00415	-.00136	-.00166	-.00043	-.00069	.00435	-.00003
#2	-.00175	-.00102	-.00238	-.00035	-.00021	.01088	.00042
#3	.00494	-.00301	-.00161	.00076	-.00064	.00458	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00044**	**.00063**	**-.00000**
Stddev	.00058	.00015	.00067
%RSD	129.46	23.802	13388.
#1	-.00105	.00079	-.00026
#2	.00010	.00061	.00075
#3	-.00039	.00049	-.00051
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**11093.**	**53478.**	**2800.2**
Stddev	26.	14.	7.7
%RSD	.23637	.02680	.27379
#1	11110.	53492.	2792.1
#2	11105.	53479.	2807.3
#3	11062.	53464.	2801.3

Approved: July 19, 2016

Sample Name: CCV Acquired: 7/19/2016 11:11:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40644**	**10.030**	**.40803**	**.49755**	**1.0063**	**.05084**	**9.9653**	**.05067**
Stddev	.00080	.014	.00828	.00212	.0012	.00005	.0392	.00091
%RSD	.19604	.14200	2.0305	.42592	.11700	.10034	.39302	1.8052
#1	.40584	10.044	.41361	.49567	1.0068	.05081	9.9706	.05139
#2	.40734	10.030	.41197	.49985	1.0072	.05090	10.002	.05097
#3	.40612	10.016	.39851	.49715	1.0050	.05081	9.9238	.04964
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20422**	**.49754**	**.50649**	**4.0627**	**50.799**	**1.0035**	**10.101**	**.50208**
Stddev	.00520	.00327	.01118	.0027	.213	.0027	.179	.00507
%RSD	2.5481	.65638	2.2066	.06670	.41954	.27365	1.7768	1.0096
#1	.20704	.50131	.51291	4.0652	51.043	1.0009	9.9705	.49831
#2	.20741	.49563	.51298	4.0631	50.709	1.0064	10.026	.50009
#3	.19822	.49567	.49359	4.0599	50.647	1.0033	10.305	.50784
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0147**	**50.436**	**.50347**	**10.123**	**.50242**	**1.2045**	**.40249**	**4.9493**
Stddev	.0285	.120	.01350	.186	.00941	.0276	.00480	.0815
%RSD	2.8087	.23709	2.6816	1.8328	1.8729	2.2887	1.1928	1.6464
#1	1.0265	50.562	.51237	10.225	.50456	1.2161	.40378	4.9979
#2	1.0354	50.324	.51011	10.234	.51057	1.2244	.40652	4.9946
#3	.98218	50.421	.48794	9.9084	.49212	1.1731	.39718	4.8552
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 19, 2016

Sample Name: CCV Acquired: 7/19/2016 11:11:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0185**	**1.0049**	**1.0195**	**.50931**	**1.0060**	**1.0080**	**1.0251**
Stddev	.0299	.0033	.0087	.00374	.0045	.0241	.0098
%RSD	2.9336	.33182	.85081	.73395	.44559	2.3919	.95756
#1	1.0384	1.0043	1.0287	.50923	1.0112	1.0228	1.0364
#2	1.0329	1.0086	1.0182	.51309	1.0034	1.0209	1.0198
#3	.98414	1.0020	1.0115	.50562	1.0035	.98015	1.0191
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10218.**	**48782.**	**2660.7**
Stddev	2.	81.	19.3
%RSD	.01901	.16669	.72364
#1	10220.	48766.	2638.6
#2	10216.	48710.	2669.5
#3	10217.	48870.	2674.0

Approved: July 19, 2016

Sample Name: CCB Acquired: 7/19/2016 11:14:37 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	.00056	.00279	.00255	.00123	-.00001	-.03712	-.00010
Stddev	.00058	.00696	.00062	.00090	.00040	.00008	.01308	.00011
%RSD	79.187	1236.8	22.370	35.147	32.229	1290.2	35.248	109.71
#1	.00101	-.00721	.00303	.00164	.00093	-.00008	-.02213	-.00016
#2	.00007	.00622	.00208	.00257	.00108	.00008	-.04297	-.00017
#3	.00111	.00268	.00326	.00343	.00167	-.00002	-.04626	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	-.00014	.00068	-.00670	.07558	.00104	-.11610	.00119
Stddev	.00044	.00098	.00068	.01396	.10678	.00069	.01456	.00437
%RSD	99.340	707.02	100.79	208.44	141.29	66.476	12.540	366.76
#1	.00093	.00087	.00008	-.02143	.14008	.00174	-.13287	.00624
#2	.00034	-.00020	.00142	-.00499	.13433	.00100	-.10674	-.00130
#3	.00006	-.00108	.00053	.00633	-.04768	.00037	-.10868	-.00137
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	.01062	.00097	-.00238	-.00226	-.00235	-.00084	.00409
Stddev	.00021	.03508	.00091	.00343	.00037	.00076	.00503	.00020
%RSD	59.310	330.42	94.001	144.10	16.265	32.456	597.86	4.8986
#1	-.00011	.05078	.00178	-.00467	-.00229	-.00166	-.00665	.00390
#2	-.00047	-.00491	-.00002	.00156	-.00188	-.00317	.00214	.00406
#3	-.00049	-.01402	.00115	-.00402	-.00261	-.00222	.00199	.00430
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: CCB Acquired: 7/19/2016 11:14:37 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	-.00030	-.00381	-.00113	-.00092	.00032	.00016
Stddev	.00049	.00014	.00794	.00128	.00016	.00019	.00027
%RSD	174.44	47.826	208.67	113.00	16.808	60.645	169.78
#1	.00008	-.00016	.00123	.00027	-.00081	.00051	-.00015
#2	-.00008	-.00029	-.01296	-.00143	-.00086	.00033	.00031
#3	.00083	-.00044	.00032	-.00224	-.00110	.00012	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10526.	50695.	2683.3
Stddev	9.	122.	22.8
%RSD	.08218	.23989	.85105
#1	10516.	50804.	2659.6
#2	10532.	50717.	2685.1
#3	10529.	50564.	2705.2

Approved: July 19, 2016

Sample Name: L1607056202 Acquired: 7/19/2016 11:18:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00128	.00850	.00402	.01759	.00273	.00002	.79269	-.00014
Stddev	.00083	.00506	.00091	.00215	.00068	.00004	.04589	.00016
%RSD	64.744	59.528	22.725	12.236	24.896	266.90	5.7890	111.95
#1	-.00207	.00725	.00315	.01905	.00236	.00007	.78439	-.00003
#2	-.00041	.00418	.00498	.01860	.00232	.00001	.84216	-.00032
#3	-.00137	.01406	.00394	.01512	.00351	-.00002	.75152	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.29799	.00132	.00419	.21670	.00363	.16716	.00318
Stddev	.00011	.00049	.00079	.00733	.02671	.00186	.05024	.00065
%RSD	30.307	.16299	59.690	175.06	12.324	51.316	30.058	20.516
#1	.00045	.29773	.00209	.01195	.21884	.00558	.13815	.00256
#2	.00037	.29856	.00052	-.00262	.18899	.00187	.22517	.00313
#3	.00024	.29770	.00135	.00323	.24228	.00343	.13815	.00386
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	67.395	.00052	.00751	-.00257	-.00413	.00224	.03333
Stddev	.00009	.515	.00124	.00473	.00168	.00161	.00255	.00436
%RSD	46.375	.76476	237.80	63.040	65.346	38.968	113.68	13.094
#1	-.00010	66.969	.00085	.00936	-.00427	-.00544	.00452	.03631
#2	-.00019	67.968	.00155	.01104	-.00090	-.00233	.00271	.03537
#3	-.00028	67.247	-.00085	.00213	-.00256	-.00461	-.00051	.02832
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: L1607056202 Acquired: 7/19/2016 11:18:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.00245**	**.00060**	**.00018**	**-.00028**	**.00573**	**-.00013**
Stddev	.00066	.00015	.00215	.00229	.00056	.00066	.00030
%RSD	175.57	5.9374	360.10	1239.4	199.16	11.495	233.16
#1	-.00023	.00261	.00306	.00212	.00027	.00607	.00001
#2	.00020	.00233	-.00039	-.00235	-.00027	.00614	.00008
#3	-.00110	.00242	-.00088	.00078	-.00084	.00497	-.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10425.**	**49511.**	**2677.1**
Stddev	64.	67.	7.1
%RSD	.61121	.13571	.26576
#1	10375.	49557.	2684.6
#2	10404.	49434.	2676.4
#3	10497.	49541.	2670.4

Approved: July 19, 2016

Sample Name: +1 PPM CR Acquired: 7/19/2016 11:22:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	.00652	.00467	.01369	.00134	-.00004	.73522	-.00037
Stddev	.00177	.00161	.00186	.00229	.00022	.00005	.02584	.00008
%RSD	470.54	24.666	39.784	16.731	16.716	116.67	3.5141	20.530
#1	.00221	.00483	.00541	.01183	.00154	-.00002	.70540	-.00029
#2	-.00132	.00671	.00256	.01300	.00110	-.00010	.74943	-.00038
#3	.00024	.00802	.00605	.01625	.00138	-.00001	.75084	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	1.3305	.00148	.01179	.16090	.00188	.20182	.00171
Stddev	.00031	.0040	.00033	.01864	.01557	.00153	.03566	.00191
%RSD	35.714	.30132	22.010	158.15	9.6756	81.517	17.668	111.81
#1	.00064	1.3310	.00165	.00229	.15119	.00085	.20232	-.00045
#2	.00121	1.3342	.00169	.03326	.15266	.00114	.16592	.00239
#3	.00072	1.3262	.00111	-.00019	.17886	.00364	.23723	.00318
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	65.328	.00055	.00699	.00177	-.01448	-.00161	.03298
Stddev	.00013	.401	.00098	.00145	.00081	.00708	.00416	.00380
%RSD	429.44	.61392	178.55	20.746	45.925	48.920	259.29	11.518
#1	-.00016	65.711	.00137	.00681	.00124	-.01007	.00221	.03600
#2	.00011	64.911	-.00053	.00564	.00270	-.01073	-.00605	.03424
#3	-.00004	65.361	.00081	.00852	.00136	-.02265	-.00097	.02871
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: +1 PPM CR Acquired: 7/19/2016 11:22:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.00218	-.00488	.00096	-.00120	.00615	-.00033
Stddev	.00056	.00024	.00129	.00250	.00032	.00060	.00019
%RSD	135.79	10.804	26.448	260.46	26.258	9.8148	59.391
#1	.00086	.00242	-.00514	.00325	-.00092	.00633	-.00018
#2	-.00022	.00217	-.00603	-.00171	-.00154	.00664	-.00055
#3	.00059	.00195	-.00348	.00134	-.00115	.00548	-.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10547.	50644.	2729.5
Stddev	59.	54.	25.0
%RSD	.56277	.10681	.91486
#1	10531.	50668.	2701.1
#2	10497.	50681.	2739.4
#3	10612.	50582.	2748.1

Approved: July 19, 2016

Sample Name: +1.5 PPM CR Acquired: 7/19/2016 11:26:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00097**	**.00303**	**.00613**	**.01518**	**.00236**	**-.00002**	**.78760**
Stddev	.00089	.00131	.00271	.00117	.00124	.00011	.03797
%RSD	91.891	43.307	44.247	7.6962	52.400	541.10	4.8208
#1	-.00042	.00454	.00572	.01507	.00367	-.00014	.79775
#2	-.00049	.00236	.00365	.01640	.00121	-.00002	.81947
#3	-.00200	.00219	.00903	.01407	.00221	.00009	.74559
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**.00149**	**1.8105**	**.00225**	F **-.03432**	**.22494**	**.00467**
Stddev	.00016	.00013	.0046	.00013	.01593	.03080	.00137
%RSD	43.341	8.9491	.25517	5.7717	46.411	13.694	29.340
#1	-.00020	.00155	1.8082	.00212	-.05255	.25989	.00394
#2	-.00051	.00157	1.8074	.00224	-.02308	.21314	.00381
#3	-.00040	.00133	1.8158	.00238	-.02734	.20178	.00624
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09893**	**.00259**	**-.00013**	**64.926**	**.00121**	**.00554**	**.00070**
Stddev	.02175	.00301	.00007	.364	.00097	.00515	.00129
%RSD	21.984	116.14	49.233	.56103	80.484	92.940	183.05
#1	.08023	-.00088	-.00006	64.966	.00009	.00970	.00033
#2	.12280	.00415	-.00019	65.269	.00189	-.00022	.00213
#3	.09376	.00450	-.00015	64.544	.00164	.00714	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 19, 2016

Sample Name: +1.5 PPM CR Acquired: 7/19/2016 11:26:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -.02261	.00032	.03202	.00078	.00242	.00354	-.00135
Stddev	.00069	.00113	.00358	.00010	.00017	.00240	.00173
%RSD	3.0473	358.17	11.195	12.915	6.8636	67.709	128.04
#1	-.02316	.00157	.03499	.00069	.00225	.00481	-.00301
#2	-.02184	.00001	.03304	.00089	.00259	.00504	-.00147
#3	-.02283	-.00063	.02804	.00077	.00241	.00078	.00044
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	45.000						
Low Limit	-.02000						

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00020	.00642	-.00108
Stddev	.00042	.00043	.00011
%RSD	209.31	6.7301	10.006
#1	.00016	.00658	-.00116
#2	-.00010	.00674	-.00096
#3	-.00066	.00593	-.00113
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10562.	50407.	2737.9
Stddev	55.	149.	9.6
%RSD	.52436	.29606	.35066
#1	10508.	50490.	2741.4
#2	10559.	50496.	2727.1
#3	10619.	50235.	2745.3

Approved: July 19, 2016

Sample Name: +2 PPM CR Acquired: 7/19/2016 11:30:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00031	.00584	.00744	.01386	.00177	-.00008	.77259
Stddev	.00120	.00349	.00231	.00125	.00071	.00004	.00657
%RSD	389.79	59.759	31.099	9.0493	40.074	46.343	.85066
#1	.00054	.00186	.00785	.01525	.00102	-.00008	.78017
#2	-.00168	.00837	.00494	.01281	.00186	-.00012	.76851
#3	.00021	.00728	.00951	.01353	.00243	-.00005	.76910
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	.00125	2.3392	.00331	-.00330	.26670	.00360
Stddev	.00024	.00037	.0038	.00087	.01981	.02259	.00032
%RSD	90.145	29.834	.16069	26.308	599.97	8.4694	8.9033
#1	-.00010	.00113	2.3354	.00423	-.02189	.28700	.00339
#2	-.00015	.00167	2.3394	.00251	-.00556	.27072	.00344
#3	-.00053	.00095	2.3429	.00317	.01754	.24237	.00397
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.15183	.00009	-.00016	65.933	.00118	.00807	.00101
Stddev	.04816	.00354	.00017	1.353	.00073	.00776	.00283
%RSD	31.717	4102.6	106.59	2.0528	62.095	96.222	281.15
#1	.19503	-.00020	-.00033	65.811	.00038	.01277	.00089
#2	.09991	-.00330	-.00017	64.644	.00182	.01233	-.00176
#3	.16056	.00376	.00001	67.343	.00135	-.00089	.00390
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: July 19, 2016

Sample Name: +2 PPM CR Acquired: 7/19/2016 11:30:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -.02847	.00208	.03440	-.00002	.00231	.00197	-.00295
Stddev	.00286	.00346	.00472	.00080	.00054	.00542	.00149
%RSD	10.046	165.92	13.729	3320.1	23.429	275.44	50.369
#1	-.02581	-.00164	.03850	-.00026	.00286	.00076	-.00124
#2	-.02810	.00519	.03545	.00087	.00178	-.00275	-.00379
#3	-.03149	.00270	.02924	-.00068	.00228	.00788	-.00384
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	45.000						
Low Limit	-.02000						

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00048	.00673	-.00129
Stddev	.00061	.00029	.00027
%RSD	128.14	4.3242	20.900
#1	.00006	.00704	-.00138
#2	-.00035	.00671	-.00098
#3	-.00114	.00646	-.00150
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10434.	50161.	2706.6
Stddev	72.	103.	32.7
%RSD	.68577	.20613	1.2068
#1	10383.	50042.	2706.6
#2	10404.	50224.	2739.2
#3	10516.	50218.	2673.9

Approved: July 19, 2016

Sample Name: L1607061101 Acquired: 7/19/2016 11:34:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00084	.48248	.00273	.10973	.00718	-.00002	9.1862	-.00024
Stddev	.00205	.01496	.00070	.00213	.00184	.00006	.0474	.00011
%RSD	244.19	3.1010	25.674	1.9406	25.662	249.32	.51547	47.618
#1	-.00188	.46525	.00351	.10728	.00912	-.00000	9.1394	-.00035
#2	.00152	.49007	.00253	.11077	.00546	-.00009	9.2341	-.00012
#3	-.00216	.49213	.00215	.11113	.00694	.00002	9.1849	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.00121	.00348	.33138	1.5698	.00724	.48819	.00318
Stddev	.00044	.00053	.00075	.04212	.1693	.00369	.07151	.00326
%RSD	84.507	43.838	21.694	12.711	10.784	50.995	14.649	102.61
#1	.00060	.00101	.00435	.28715	1.4709	.00309	.46865	.00603
#2	.00091	.00082	.00306	.37102	1.7652	.00850	.42848	.00389
#3	.00005	.00182	.00302	.33596	1.4731	.01014	.56745	-.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00090	50.870	.00170	.04157	.00293	-.00116	-.00347	2.5939
Stddev	.00049	.171	.00054	.00800	.00244	.00176	.00216	.1870
%RSD	54.272	.33587	31.766	19.254	83.144	150.80	62.221	7.2099
#1	.00036	50.900	.00108	.04942	.00112	.00063	-.00527	2.7079
#2	.00101	51.025	.00196	.04187	.00570	-.00287	-.00107	2.6958
#3	.00131	50.687	.00206	.03342	.00197	-.00125	-.00407	2.3781
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: L1607061101 Acquired: 7/19/2016 11:34:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00316	.01935	.00354	-.00214	-.00022	.00609	.00031
Stddev	.00112	.00054	.00581	.00180	.00028	.00063	.00021
%RSD	35.433	2.7713	164.00	84.055	130.36	10.334	67.771
#1	.00427	.01936	.00931	-.00010	-.00050	.00643	.00020
#2	.00319	.01988	-.00231	-.00348	.00007	.00649	.00018
#3	.00203	.01881	.00364	-.00284	-.00022	.00537	.00055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10305.	49333.	2689.4
Stddev	20.	94.	15.5
%RSD	.19185	.19088	.57666
#1	10313.	49236.	2673.1
#2	10319.	49424.	2691.0
#3	10283.	49339.	2704.0

Approved: July 19, 2016

Sample Name: L1607064701 Acquired: 7/19/2016 11:37:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	.01367	.00143	.01240	.00788	-.00002	3.3802	-.00015
Stddev	.00073	.00735	.00115	.00019	.00035	.00006	.0467	.00010
%RSD	384.38	53.768	80.946	1.4981	4.3798	392.71	1.3823	67.666
#1	-.00082	.02177	.00067	.01225	.00764	.00004	3.3940	-.00005
#2	-.00035	.01183	.00085	.01233	.00773	-.00001	3.3281	-.00016
#3	.00061	.00742	.00275	.01261	.00827	-.00007	3.4185	-.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00101	.00047	.00146	3.9210	2.8985	1.1317	1.2050	.03584
Stddev	.00030	.00104	.00142	.0552	.1284	.0094	.0154	.00046
%RSD	29.936	222.29	97.296	1.4086	4.4291	.83427	1.2753	1.2943
#1	.00127	.00156	.00271	3.9714	2.7757	1.1412	1.2144	.03570
#2	.00109	-.00052	.00175	3.8620	2.8880	1.1223	1.1873	.03546
#3	.00068	.00037	-.00008	3.9297	3.0318	1.1316	1.2133	.03636
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	25.866	.00312	.06681	.00165	.00147	.00043	.74748
Stddev	.00021	.127	.00025	.01012	.00387	.00060	.00137	.05441
%RSD	90.768	.49016	8.1055	15.146	235.21	40.973	322.78	7.2794
#1	.00048	25.996	.00321	.07310	.00423	.00197	-.00093	.77904
#2	.00011	25.743	.00332	.07220	.00352	.00080	.00040	.77875
#3	.00011	25.858	.00284	.05514	-.00281	.00163	.00181	.68465
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: L1607064701 Acquired: 7/19/2016 11:37:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	.01191	-.00387	-.00122	-.00046	.09664	-.00024
Stddev	.00042	.00036	.00225	.00131	.00024	.00936	.00021
%RSD	55.800	3.0460	58.204	107.77	52.091	9.6873	88.238
#1	.00084	.01221	-.00160	-.00181	-.00021	.10234	-.00045
#2	.00029	.01202	-.00391	.00029	-.00069	.10175	-.00023
#3	.00111	.01151	-.00611	-.00212	-.00049	.08584	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10364.	50064.	2683.3
Stddev	36.	163.	8.3
%RSD	.35161	.32586	.30895
#1	10362.	49923.	2679.1
#2	10402.	50243.	2692.9
#3	10329.	50027.	2678.0

Approved: July 19, 2016

Sample Name: L1607062701 Acquired: 7/19/2016 11:41:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00069	-.00587	.00182	-.00096	.00116	.00002	6.4729	-.00024
Stddev	.00012	.00614	.00165	.00245	.00090	.00009	.0352	.00008
%RSD	16.797	104.60	90.199	254.84	78.075	493.27	.54321	31.844
#1	-.00064	.00121	.00362	-.00235	.00220	-.00008	6.4625	-.00016
#2	-.00082	-.00971	.00147	.00186	.00057	.00011	6.5121	-.00026
#3	-.00061	-.00911	.00038	-.00240	.00071	.00003	6.4442	-.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	-.00068	.00068	-.00054	.17311	.00407	.36263	.01337
Stddev	.00034	.00065	.00032	.02896	.06795	.00352	.08717	.00091
%RSD	156.42	94.400	47.018	5408.9	39.252	86.485	24.037	6.8441
#1	.00033	.00005	.00098	.01102	.25155	.00163	.29555	.01441
#2	-.00016	-.00092	.00073	-.03349	.13544	.00811	.46115	.01300
#3	.00048	-.00118	.00034	.02086	.13233	.00248	.33118	.01269
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	8.2229	.00147	.00427	-.00042	-.00059	-.00022	.02536
Stddev	.00031	.0502	.00036	.00299	.00242	.00219	.00164	.00367
%RSD	114.21	.61018	24.147	69.987	579.68	371.75	749.44	14.484
#1	-.00063	8.1872	.00130	.00614	.00237	-.00311	-.00033	.02869
#2	-.00009	8.2802	.00123	.00082	-.00183	.00073	-.00180	.02596
#3	-.00009	8.2011	.00188	.00584	-.00180	.00062	.00147	.02142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: L1607062701 Acquired: 7/19/2016 11:41:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.01691	-.00190	-.00047	-.00110	.00069	.00020
Stddev	.00035	.00024	.00232	.00194	.00076	.00011	.00029
%RSD	243.48	1.4470	121.83	413.19	69.125	16.522	147.61
#1	-.00026	.01719	-.00074	.00032	-.00190	.00077	.00000
#2	.00035	.01673	-.00457	-.00268	-.00040	.00075	.00054
#3	.00035	.01681	-.00040	.00095	-.00098	.00056	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	11008.	52717.	2782.5
Stddev	44.	76.	7.2
%RSD	.40364	.14506	.26048
#1	11052.	52775.	2787.5
#2	11011.	52745.	2785.8
#3	10963.	52630.	2774.2

Approved: July 19, 2016

Sample Name: L1607062702 Acquired: 7/19/2016 11:45:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	-.00811	.00225	.01620	.01003	-.00004	51.495	-.00004
Stddev	.00147	.00448	.00228	.00222	.00059	.00011	.037	.00020
%RSD	1143.3	55.281	101.19	13.678	5.8937	283.93	.07229	461.05
#1	-.00182	-.01184	.00485	.01533	.01040	-.00015	51.469	-.00021
#2	.00090	-.00314	.00131	.01455	.00935	-.00003	51.477	.00017
#3	.00053	-.00934	.00059	.01872	.01034	.00007	51.537	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	.00005	.00154	.00170	2.2084	.04730	-.07572	.00475
Stddev	.00010	.00038	.00066	.01115	.0728	.00449	.08864	.00407
%RSD	43.287	837.00	43.159	657.38	3.2985	9.4866	117.07	85.795
#1	.00018	.00040	.00224	-.01022	2.2903	.05232	-.17797	.00895
#2	.00016	-.00036	.00147	.01189	2.1508	.04589	-.02067	.00081
#3	.00034	.00010	.00091	.00341	2.1842	.04368	-.02851	.00448
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00062	1.1521	.00048	.00300	.00195	-.00096	.00012	.00676
Stddev	.00010	.0037	.00010	.00383	.00521	.00127	.00472	.00205
%RSD	17.000	.32051	20.333	127.64	267.34	133.12	4036.7	30.348
#1	-.00068	1.1496	.00049	.00417	.00564	-.00218	.00462	.00907
#2	-.00067	1.1504	.00057	-.00128	.00421	-.00105	.00053	.00604
#3	-.00050	1.1563	.00038	.00612	-.00401	.00036	-.00480	.00516
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: L1607062702 Acquired: 7/19/2016 11:45:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00024	.79851	-.00705	-.00176	-.00085	.00101	-.00020
Stddev	.00036	.00130	.00504	.00343	.00009	.00012	.00018
%RSD	148.25	.16241	71.516	194.85	10.135	12.242	88.482
#1	-.00020	.79763	-.00207	-.00463	-.00093	.00112	-.00039
#2	-.00062	.79791	-.01214	-.00268	-.00076	.00088	-.00005
#3	.00009	.80000	-.00693	.00203	-.00087	.00104	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10911.	52250.	2780.5
Stddev	25.	43.	10.7
%RSD	.22556	.08158	.38569
#1	10902.	52228.	2780.1
#2	10939.	52223.	2770.0
#3	10893.	52299.	2791.4

Approved: July 19, 2016

Sample Name: L1607062703 Acquired: 7/19/2016 11:49:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00049	-.01359	.00141	.01420	.31064	-.00003	4.1627	-.00037
Stddev	.00046	.00925	.00224	.00036	.00112	.00005	.0309	.00021
%RSD	92.220	68.083	158.10	2.5030	.35903	154.74	.74327	57.302
#1	-.00101	-.00308	.00317	.01449	.30990	-.00007	4.1426	-.00061
#2	-.00032	-.01719	-.00110	.01380	.31192	.00002	4.1472	-.00026
#3	-.00015	-.02051	.00218	.01429	.31011	-.00004	4.1984	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	.00011	.00141	-.00255	.31320	.03793	.32162	.00308
Stddev	.00038	.00129	.00044	.01143	.05185	.00318	.04734	.00267
%RSD	154.51	1130.4	31.589	447.32	16.555	8.3860	14.718	86.853
#1	-.00019	-.00136	.00109	.01045	.26638	.03970	.31314	.00547
#2	.00052	.00101	.00191	-.01101	.30429	.03983	.37262	.00019
#3	.00041	.00069	.00122	-.00710	.36893	.03426	.27910	.00358
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	15.938	.00065	.00297	.00101	-.00069	.00072	.01102
Stddev	.00015	.122	.00086	.00191	.00144	.00578	.00148	.00356
%RSD	55.785	.76404	132.27	64.161	141.92	838.62	205.03	32.277
#1	-.00011	15.905	-.00018	.00122	.00123	-.00066	.00067	.01449
#2	-.00041	16.073	.00058	.00269	.00233	-.00649	-.00073	.01118
#3	-.00028	15.837	.00154	.00501	-.00052	.00508	.00222	.00738
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: L1607062703 Acquired: 7/19/2016 11:49:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**1.8913**	**.00199**	**-.00001**	**-.00073**	**.00231**	**-.00046**
Stddev	.00057	.0074	.00493	.00215	.00058	.00022	.00034
%RSD	9184.6	.39167	248.26	37992.	79.457	9.3591	73.685
#1	.00018	1.8885	.00745	.00230	-.00140	.00228	-.00016
#2	.00044	1.8996	-.00214	-.00196	-.00035	.00255	-.00040
#3	-.00065	1.8856	.00065	-.00036	-.00044	.00212	-.00083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10986.**	**52448.**	**2794.6**
Stddev	24.	23.	9.1
%RSD	.21921	.04358	.32438
#1	10995.	52463.	2798.2
#2	11004.	52422.	2784.3
#3	10959.	52460.	2801.4

Approved: July 19, 2016

Sample Name: CCV Acquired: 7/19/2016 11:53:20 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39823	9.8832	.39905	.48707	.99070	.05023	9.8634	.05034
Stddev	.00319	.0434	.00724	.00114	.00442	.00008	.0816	.00098
%RSD	.79996	.43858	1.8152	.23321	.44582	.16089	.82722	1.9433
#1	.40151	9.9247	.40570	.48817	.98573	.05030	9.7713	.05098
#2	.39515	9.8382	.40012	.48714	.99218	.05023	9.8922	.05084
#3	.39802	9.8868	.39133	.48590	.99418	.05014	9.9267	.04922
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20192	.48987	.50084	4.0331	50.609	.99807	10.135	.49566
Stddev	.00545	.00133	.01282	.0201	.407	.00935	.155	.00123
%RSD	2.6978	.27061	2.5593	.49765	.80413	.93644	1.5288	.24731
#1	.20559	.48930	.50954	4.0549	50.615	1.0074	10.012	.49547
#2	.20451	.49138	.50686	4.0291	50.199	.98874	10.309	.49697
#3	.19566	.48892	.48612	4.0154	51.012	.99804	10.084	.49454
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0004	49.886	.49732	9.9891	.50058	1.1908	.40310	4.8715
Stddev	.0281	.274	.01218	.1917	.00496	.0314	.00811	.0644
%RSD	2.8067	.54904	2.4496	1.9192	.98993	2.6345	2.0108	1.3213
#1	1.0116	49.935	.50490	10.118	.50514	1.2101	.40643	4.8802
#2	1.0212	49.591	.50378	10.081	.50129	1.2076	.40901	4.9311
#3	.96844	50.132	.48326	9.7688	.49531	1.1546	.39386	4.8033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: July 19, 2016

Sample Name: CCV Acquired: 7/19/2016 11:53:20 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0109**	**.99086**	**1.0129**	**.50388**	**.99806**	**.99140**	**1.0075**
Stddev	.0289	.00186	.0154	.00287	.00357	.02281	.0050
%RSD	2.8555	.18783	1.5211	.56920	.35747	2.3006	.50052
#1	1.0304	.98953	1.0138	.50518	1.0005	1.0053	1.0107
#2	1.0245	.99007	.99708	.50587	.99971	1.0038	1.0017
#3	.97770	.99299	1.0279	.50059	.99397	.96507	1.0101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10236.**	**48768.**	**2661.2**
Stddev	12.	158.	20.1
%RSD	.11548	.32447	.75521
#1	10231.	48623.	2646.9
#2	10228.	48937.	2684.2
#3	10250.	48746.	2652.5

Approved: July 19, 2016

Sample Name: CCB Acquired: 7/19/2016 11:56:53 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.00576	.00175	.00344	.00077	.00006	-.03098	-.00017
Stddev	.00165	.00950	.00107	.00090	.00086	.00008	.01588	.00027
%RSD	442.09	164.95	61.174	26.143	111.04	127.15	51.245	163.50
#1	.00181	-.00315	.00069	.00259	.00036	.00000	-.01297	.00007
#2	-.00143	.00466	.00173	.00334	.00175	.00003	-.04296	-.00010
#3	.00073	.01576	.00282	.00438	.00020	.00015	-.03702	-.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	-.00057	.00060	-.01072	-.00917	-.00095	-.00746	-.00078
Stddev	.00008	.00052	.00030	.01243	.05076	.00276	.05015	.00142
%RSD	32.914	92.154	50.215	115.95	553.80	290.03	671.77	182.37
#1	.00035	-.00012	.00077	.00363	-.03048	-.00410	-.04657	.00038
#2	.00020	-.00114	.00025	-.01826	-.04579	.00015	-.02490	-.00236
#3	.00021	-.00044	.00079	-.01752	.04877	.00109	.04907	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00040	-.00292	.00020	-.00070	.00060	.00071	-.00024	.00580
Stddev	.00008	.00381	.00081	.00500	.00067	.00087	.00696	.00060
%RSD	21.023	130.31	416.87	710.01	111.76	123.04	2927.4	10.307
#1	-.00031	-.00426	.00002	.00310	.00020	-.00012	-.00089	.00643
#2	-.00041	-.00588	-.00052	-.00637	.00138	.00162	-.00685	.00524
#3	-.00047	.00137	.00108	.00115	.00023	.00062	.00702	.00573
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: July 19, 2016

Sample Name: CCB Acquired: 7/19/2016 11:56:53 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v1018) Mode: CONC Corr. Factor: 1.0000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00092	-.00061	.00260	-.00039	-.00076	.00022	.00018
Stddev	.00017	.00012	.00272	.00156	.00022	.00010	.00027
%RSD	18.028	20.055	104.34	405.94	29.281	45.219	146.98
#1	.00077	-.00075	.00542	-.00201	-.00054	.00026	.00049
#2	.00089	-.00055	.00239	.00111	-.00075	.00031	.00007
#3	.00110	-.00053	.00000	-.00025	-.00098	.00011	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10542.	50581.	2684.8
Stddev	63.	209.	9.2
%RSD	.59499	.41323	.34320
#1	10498.	50786.	2678.7
#2	10514.	50589.	2695.4
#3	10613.	50368.	2680.4

Approved: July 19, 2016

2.3.2 Metals ICP-MS Data

2.3.2.1 Summary Data

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061648-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW25F-062916	**Prep Method:**	3015	**Prep Date:**	07/06/2016 08:44
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/07/2016 09:57
Workgroup #:	WG575345	**Analyst:**	JYH	**Run Date:**	07/07/2016 15:10
Collect Date:	06/29/2016 08:05	**Dilution:**	1	**File ID:**	NI.070716.151016
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061648-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW25F-062916	**Prep Method:**	3015	**Prep Date:**	07/06/2016 08:44
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/07/2016 09:57
Workgroup #:	WG575345	**Analyst:**	JYH	**Run Date:**	07/07/2016 10:29
Collect Date:	06/29/2016 08:05	**Dilution:**	1	**File ID:**	NI.070716.102920
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Arsenic, Total	7440-38-2	0.00243		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00200	U	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.0135		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00200	U	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.00596	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061648-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW25F-062916	**Prep Method:**	3015	**Prep Date:**	07/06/2016 08:44
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/07/2016 09:57
Workgroup #:	WG575345	**Analyst:**	JYH	**Run Date:**	07/07/2016 13:03
Collect Date:	06/29/2016 08:05	**Dilution:**	50	**File ID:**	NI.070716.130338
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.391		0.300	0.150	0.0750
Manganese, Total	7439-96-5	5.29		0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer NexION 300X

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	100
Vi = Initial volume	40
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/L)	0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	200
Vi = Initial volume	0.5
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/kg)	40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	40
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	50

50 ug/kg = 0.050 mg/kg

Perkin Elmer NexION ICP/MS

STANDARDS KEY

QC Std 1 - ICV
QC Std 2 - ICB
QC Std 3 - LLICV
QC Std 4 - ICSA
QC Std 5 - ICSAB
QC Std 6 - CCV
QC Std 7 - CCB
QC Std 8 - LLCCV

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.00005	0.05	0.1
Sb	10	0	0.00005	0.05	0.1
As	10	0	0.00005	0.05	0.1
Ba	10	0	0.00005	0.05	0.1
Be	10	0	0.00005	0.05	0.1
Ca	1000	0	0.005	5	10
Cd	10	0	0.0005	0.05	0.1
Cr	10	0	0.0005	0.05	0.1
Co	10	0	0.0005	0.05	0.1
Cu	10	0	0.0005	0.05	0.1
Fe	1000	0	0.005	5	10
Pb	10	0	0.00005	0.05	0.1
Mg	1000	0	0.005	5	10
Mn	10	0	0.00005	0.05	0.1
Ni	10	0	0.00005	0.05	0.1
K	1000	0	0.005	5	10
Se	10	0	0.00005	0.05	0.1
Ag	10	0	0.00005	0.05	0.1
Na	1000	0	0.005	5	10
Tl	10	0	0.00005	0.05	0.1
V	10	0	0.00005	0.05	0.1
U	1000	0	0.00005	0.05	0.1
Zn	10	0	0.00005	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG575246
Analyst: ERP
Spike Analyst: ERP
Run Date: 07/06/2016 08:44
Method: 3015
Balance: BAL019
Instrument: MW-1
Instrument Start: 07/06/2016 08:44

SOP: ME407 Revison 19
Spike Solution: STD75998
Spike Witness: REK
HNO3 Lot #: COA19030
40 & 50 ML. DIGESTION TU COA18987
MS Filters- fisher-Lot#R RGT35621

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG575246-03	BLANK	1	20 mL	50 mL	183.319 g	183.313 g		
2	WG575246-04	LCS	1	20 mL	50 mL	184.762 g	184.757 g	.25 mL	
3	L16061615-01	SAMP	2	20 mL	50 mL	183.744 g	183.725 g		07/07/16
4	L16061615-02	SAMP	2	20 mL	50 mL	184.155 g	184.142 g		07/07/16
5	WG575246-01	REF	1	20 mL	50 mL	184.987 g	184.983 g		
6	L16061648-02	SAMP	1	20 mL	50 mL	184.987 g	184.983 g		07/11/16
7	L16061650-01	SAMP	2	20 mL	50 mL	182.149 g	182.131 g		07/08/16
8	L16061652-36	SAMP	1	20 mL	50 mL	185.107 g	185.088 g		07/14/16
9	L16061652-38	SAMP	1	20 mL	50 mL	182.109 g	182.096 g		07/14/16
10	L16070050-01	SAMP	2	20 mL	50 mL	183.336 g	183.316 g		07/07/16
11	L16070050-02	SAMP	2	20 mL	50 mL	183.771 g	183.738 g		07/07/16
12	WG575246-02	REF	2	20 mL	50 mL	184.566 g	184.544 g		
13	L16070054-01	SAMP	2	20 mL	50 mL	184.566 g	184.544 g		07/08/16
14	L16070074-01	SAMP	2	20 mL	50 mL	183.091 g	183.07 g		07/07/16
15	L16070090-01	SAMP	1	20 mL	50 mL	182.985 g	182.973 g		07/12/16
16	L16070104-01	SAMP	2	20 mL	50 mL	182.97 g	182.95 g		07/11/16
17	L16070104-02	SAMP	2	20 mL	50 mL	184.551 g	184.53 g		07/11/16
18	L16070104-03	SAMP	2	20 mL	50 mL	184.78 g	184.759 g		07/11/16
19	L16070104-04	SAMP	2	20 mL	50 mL	182.612 g	182.597 g		07/11/16
20	L16070104-05	SAMP	2	20 mL	50 mL	183.317 g	183.299 g		07/11/16
21	L16070107-01	SAMP	2	20 mL	50 mL	182.61 g	182.566 g		07/11/16
22	WG575246-05	MS	1	20 mL	50 mL	182.175 g	182.168 g	.25 mL	
23	WG575246-06	MSD	1	20 mL	50 mL	182.359 g	182.345 g	.25 mL	
24	WG575246-07	DUP	1	20 mL	50 mL	180.43 g	180.404 g		

L16070050-01	filtered digestate
L16061650-01	filtered digestate
L16070107-01	filtered digestate
L16070090-01	filtered digestate

Analyst: Erin Potter

Reviewer:

MW_DIG - Modified 09/30/2009
PDF ID: 4839974
Report generated: 07/06/2016 09:35

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070716A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD77006 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76989
Stannous : Hydroxylamine :

Workgroups: 575345,575483,575542,575059

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.070716.094432	Blank	Blank		1		07/07/16 09:44
2	NI.070716.094744	WG575526-01	Calibration Point		1		07/07/16 09:47
3	NI.070716.095056	WG575526-02	Calibration Point		1		07/07/16 09:50
4	NI.070716.095407	WG575526-03	Calibration Point		1		07/07/16 09:54
5	NI.070716.095719	WG575526-04	Calibration Point		1		07/07/16 09:57
6	NI.070716.100032	WG575526-05	Initial Calibration Verification		1		07/07/16 10:00
7	NI.070716.100345	WG575526-06	Initial Calib Blank		1		07/07/16 10:03
8	NI.070716.100657	WG575526-07	Low Level Initial Calibration V		1		07/07/16 10:06
9	NI.070716.101008	WG575526-08	Interference Check		1		07/07/16 10:10
10	NI.070716.101320	WG575526-09	Interference Check		1		07/07/16 10:13
11	NI.070716.101633	WG575526-10	CCV		1		07/07/16 10:16
12	NI.070716.101945	WG575526-11	CCB		1		07/07/16 10:19
13	NI.070716.102257	WG575246-03	Method/Prep Blank	20/50	1		07/07/16 10:22
14	NI.070716.102608	WG575246-04	Laboratory Control S	20/50	1		07/07/16 10:26
15	NI.070716.102920	WG575246-01	Reference Sample		1	L16061648-02	07/07/16 10:29
16	NI.070716.103238	WG575246-05	Matrix Spike	20/50	1	L16061648-02	07/07/16 10:32
17	NI.070716.103550	WG575246-06	Matrix Spike Duplica	20/50	1	L16061648-02	07/07/16 10:35
18	NI.070716.103901	L16061615-01	BMG20		1		07/07/16 10:39
19	NI.070716.104213	L16061615-02	BMG20	20/50	1		07/07/16 10:42
20	NI.070716.104524	WG575345-01	Post Digestion Spike		1	L16061615-02	07/07/16 10:45
21	NI.070716.104836	WG575345-02	Serial Dilution		5	L16061615-02	07/07/16 10:48
22	NI.070716.105147	WG575345-02	Serial Dilution		25	L16061615-02	07/07/16 10:51
23	NI.070716.105500	WG575526-12	CCV		1		07/07/16 10:55
24	NI.070716.105812	WG575526-13	CCB		1		07/07/16 10:58
25	NI.070716.110125	L16061650-01	16F2389-01	20/50	1		07/07/16 11:01
26	NI.070716.110436	L16070050-01	16F1953-01		1		07/07/16 11:04
27	NI.070716.110748	L16070050-02	16F1953-02	20/50	1		07/07/16 11:07
28	NI.070716.111100	WG575246-02	Reference Sample		1	L16070054-01	07/07/16 11:11
29	NI.070716.111411	WG575246-07	Duplicate	20/50	1	L16070054-01	07/07/16 11:14
30	NI.070716.111723	L16070074-01	J6F1079-01	20/50	1		07/07/16 11:17
31	NI.070716.112034	L16070090-01	1046-C	20/50	1		07/07/16 11:20
32	NI.070716.112345	L16061652-36	ORG-S01-322-14	20/50	1		07/07/16 11:23
33	NI.070716.112657	L16061652-38	ORG-S02-322-14	20/50	1		07/07/16 11:26
34	NI.070716.113010	WG575526-14	CCV		1		07/07/16 11:30

Page: 1 Approved: July 08, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070716A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD77006 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76989
Stannous : Hydroxylamine :

Workgroups: 575345,575483,575542,575059

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.070716.113321	WG575526-15	CCB		1		07/07/16 11:33
36	NI.070716.113634	L16070104-01	6062123-01	20/50	1		07/07/16 11:36
37	NI.070716.113946	L16070104-02	6062123-02	20/50	1		07/07/16 11:39
38	NI.070716.114257	L16070104-03	6062123-03	20/50	1		07/07/16 11:42
39	NI.070716.114609	L16070104-04	6062123-04	20/50	1		07/07/16 11:46
40	NI.070716.114920	L16070104-05	6062123-05	20/50	1		07/07/16 11:49
41	NI.070716.115232	L16070107-01	6062132-01	20/50	1		07/07/16 11:52
42	NI.070716.115544	WG575526-16	CCV		1		07/07/16 11:55
43	NI.070716.115855	WG575526-17	CCB		1		07/07/16 11:58
44	NI.070716.120901	WG575435-03	Method/Prep Blank	20/50	1		07/07/16 12:09
45	NI.070716.121213	WG575435-04	Laboratory Control S	20/50	1		07/07/16 12:12
46	NI.070716.121524	WG575435-05	Filter Blank		1		07/07/16 12:15
47	NI.070716.121836	WG575435-09	Filter Blank		1		07/07/16 12:18
48	NI.070716.122147	WG575435-01	Reference Sample		1	L16070079-12	07/07/16 12:21
49	NI.070716.122459	WG575435-06	Matrix Spike	20/50	1	L16070079-12	07/07/16 12:24
50	NI.070716.122810	WG575435-07	Matrix Spike Duplica	20/50	1	L16070079-12	07/07/16 12:28
51	NI.070716.123121	L16070078-02	V6F0348-02	20/50	1		07/07/16 12:31
52	NI.070716.123433	WG575483-01	Post Digestion Spike		1	L16070078-02	07/07/16 12:34
53	NI.070716.123744	WG575483-02	Serial Dilution		5	L16070078-02	07/07/16 12:37
54	NI.070716.124058	WG575526-18	CCV		1		07/07/16 12:40
55	NI.070716.124409	WG575526-19	CCB		1		07/07/16 12:44
56	NI.070716.124722	L16070078-04	V6F0348-04	20/50	1		07/07/16 12:47
57	NI.070716.125034	L16070078-06	V6F0348-06	20/50	1		07/07/16 12:50
58	NI.070716.125715	L16061615-01	BMG20	20/50	5		07/07/16 12:57
59	NI.070716.130026	L16070050-01	16F1953-01	20/50	2		07/07/16 13:00
60	NI.070716.130338	WG575246-01	Reference Sample		50	L16061648-02	07/07/16 13:03
61	NI.070716.130649	WG575246-05	Matrix Spike	20/50	50	L16061648-02	07/07/16 13:06
62	NI.070716.131001	WG575246-06	Matrix Spike Duplica	20/50	50	L16061648-02	07/07/16 13:10
63	NI.070716.131313	WG575526-20	CCV		1		07/07/16 13:13
64	NI.070716.131624	WG575526-21	CCB		1		07/07/16 13:16
65	NI.070716.131937	L16070078-08	V6F0348-08	20/50	1		07/07/16 13:19
66	NI.070716.132248	L16070078-10	V6F0348-10	20/50	1		07/07/16 13:22
67	NI.070716.132600	L16070078-12	V6F0348-12	20/50	1		07/07/16 13:26
68	NI.070716.132911	L16070079-02	V6F0347-02	20/50	1		07/07/16 13:29

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070716A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD77006 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76989
Stannous : Hydroxylamine :

Workgroups: 575345,575483,575542,575059

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.070716.133223	L16070079-04	V6F0347-04	20/50	1		07/07/16 13:32
70	NI.070716.133534	L16070079-06	V6F0347-06	20/50	1		07/07/16 13:35
71	NI.070716.133846	L16070079-08	V6F0347-08	20/50	1		07/07/16 13:38
72	NI.070716.134157	L16070079-10	V6F0347-10	20/50	1		07/07/16 13:41
73	NI.070716.134508	L16070181-01	OUTFALL 003 COMP	20/50	1		07/07/16 13:45
74	NI.070716.134820	L16070182-01	OUTFALL 002 COMP	20/50	1		07/07/16 13:48
75	NI.070716.135133	WG575526-22	CCV		1		07/07/16 13:51
76	NI.070716.135445	WG575526-23	CCB		1		07/07/16 13:54
77	NI.070716.135757	WG575246-03	Method/Prep Blank	20/50	1		07/07/16 13:57
78	NI.070716.140110	WG575526-24	CCV		1		07/07/16 14:01
79	NI.070716.140421	WG575526-25	CCB		1		07/07/16 14:04
80	NI.070716.140738	L16070184-02	LH18/24-SP650-6376-GRAB	20/50	1		07/07/16 14:07
81	NI.070716.141050	L16070191-01	16G0737-03	20/50	1		07/07/16 14:10
82	NI.070716.141402	L16070192-03	OUTFALL 203	20/50	1000		07/07/16 14:14
83	NI.070716.141713	WG575435-02	Reference Sample		1	L16070197-01	07/07/16 14:17
84	NI.070716.142024	WG575435-08	Duplicate	20/50	1	L16070197-01	07/07/16 14:20
85	NI.070716.142413	L16070191-01	16G0737-03	20/50	5		07/07/16 14:24
86	NI.070716.144102	L16070184-02	LH18/24-SP650-6376-GRAB	20/50	20		07/07/16 14:41
87	NI.070716.144415	WG575526-26	CCV		1		07/07/16 14:44
88	NI.070716.144726	WG575526-27	CCB		1		07/07/16 14:47
89	NI.070716.145039	WG575526-28	Low Level Continuing Calibra		1		07/07/16 14:50
90	NI.070716.145940	WG575246-04	Laboratory Control S	20/50	1		07/07/16 14:59
91	NI.070716.150353	WG575246-02	Reference Sample		1	L16070054-01	07/07/16 15:03
92	NI.070716.150704	WG575246-07	Duplicate	20/50	1	L16070054-01	07/07/16 15:07
93	NI.070716.151016	WG575246-01	Reference Sample		1	L16061648-02	07/07/16 15:10
94	NI.070716.151327	WG575246-05	Matrix Spike	20/50	1	L16061648-02	07/07/16 15:13
95	NI.070716.151638	WG575246-06	Matrix Spike Duplica	20/50	1	L16061648-02	07/07/16 15:16
96	NI.070716.152218	L16061615-02	BMG20	20/50	1		07/07/16 15:22
97	NI.070716.152529	WG575345-01	Post Digestion Spike		1	L16061615-02	07/07/16 15:25
98	NI.070716.152841	WG575345-02	Serial Dilution		5	L16061615-02	07/07/16 15:28
99	NI.070716.153152	WG575345-02	Serial Dilution		25	L16061615-02	07/07/16 15:31
100	NI.070716.153505	WG575526-29	CCV		1		07/07/16 15:35
101	NI.070716.153817	WG575526-30	CCB		1		07/07/16 15:38
102	NI.070716.154130	WG575526-31	Low Level Continuing Calibra		1		07/07/16 15:41

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070716A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD77006 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76989
Stannous : Hydroxylamine :

Workgroups: 575345,575483,575542,575059

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.070716.155808	WG575508-03	Method/Prep Blank	20/50	1		07/07/16 15:58
104	NI.070716.160120	WG575508-04	Laboratory Control S	20/50	1		07/07/16 16:01
105	NI.070716.160446	WG575508-01	Reference Sample		1	L16070209-03	07/07/16 16:04
106	NI.070716.160758	WG575508-05	Matrix Spike	20/50	1	L16070209-03	07/07/16 16:07
107	NI.070716.161109	WG575508-06	Matrix Spike Duplica	20/50	1	L16070209-03	07/07/16 16:11
108	NI.070716.161421	L16070206-02	OUTFALL 001 / COMP	20/50	1		07/07/16 16:14
109	NI.070716.161732	L16070209-01	T6F1104-05	20/50	1		07/07/16 16:17
110	NI.070716.162044	WG575542-01	Post Digestion Spike		1	L16070209-01	07/07/16 16:20
111	NI.070716.162355	WG575542-02	Serial Dilution		5	L16070209-01	07/07/16 16:23
112	NI.070716.162706	WG575542-02	Serial Dilution		25	L16070209-01	07/07/16 16:27
113	NI.070716.163020	WG575526-32	CCV		1		07/07/16 16:30
114	NI.070716.163331	WG575526-33	CCB		1		07/07/16 16:33
115	NI.070716.163644	L16070209-02	T6F1104-06	20/50	1		07/07/16 16:36
116	NI.070716.163955	L16070212-01	1617 PWT001-PC	50/50	1		07/07/16 16:39
117	NI.070716.164307	WG575508-02	Reference Sample		1	L16070212-02	07/07/16 16:43
118	NI.070716.164618	WG575508-07	Duplicate	20/50	1	L16070212-02	07/07/16 16:46
119	NI.070716.164931	WG575526-34	CCV		1		07/07/16 16:49
120	NI.070716.165243	WG575526-35	CCB		1		07/07/16 16:52
121	NI.070716.165555	WG574535-02	Method/Prep Blank	.25/100	1		07/07/16 16:55
122	NI.070716.165906	WG574535-03	Laboratory Control S	.25/100	1		07/07/16 16:59
123	NI.070716.170217	L16061444-01	TS935DS03105A	.252/100	1		07/07/16 17:02
124	NI.070716.170529	L16061444-02	TS935DS01305C	.254/100	1		07/07/16 17:05
125	NI.070716.170840	L16061444-03	TS935DS01405A	.255/100	1		07/07/16 17:08
126	NI.070716.171152	L16061444-04	TS935DS01505A	.254/100	1		07/07/16 17:11
127	NI.070716.171503	L16061444-05	TS935DS00105A	.252/100	1		07/07/16 17:15
128	NI.070716.171815	L16061444-06	TS935DS00100A	.257/100	1		07/07/16 17:18
129	NI.070716.172126	WG575059-01	Post Digestion Spike		1	L16061444-06	07/07/16 17:21
130	NI.070716.172438	WG575059-02	Serial Dilution		5	L16061444-06	07/07/16 17:24
131	NI.070716.172750	WG575526-36	CCV		1		07/07/16 17:27
132	NI.070716.173101	WG575526-37	CCB		1		07/07/16 17:31
133	NI.070716.173414	L16061444-07	TS935DS00200A		1		07/07/16 17:34
134	NI.070716.173725	L16061444-08	TS935DS00205A	.257/100	1		07/07/16 17:37
135	NI.070716.174037	L16061444-09	TS935DS00500A		1		07/07/16 17:40
136	NI.070716.174348	WG574535-01	Reference Sample		1	L16061444-10	07/07/16 17:43

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070716A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD77006 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76989
Stannous : Hydroxylamine :

Workgroups: 575345,575483,575542,575059

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	NI.070716.174700	L16061444-12	TS935DS00600A	.252/100	1		07/07/16 17:47
138	NI.070716.175011	L16061444-13	TS935DS00605A	.258/100	1		07/07/16 17:50
139	NI.070716.175322	L16061444-14	TS935DS00300A	.251/100	1		07/07/16 17:53
140	NI.070716.175634	L16061444-15	TS935DS00305A	.254/100	1		07/07/16 17:56
141	NI.070716.175945	L16061444-16	TS935DS00400A	.25/100	1		07/07/16 17:59
142	NI.070716.180257	L16061444-17	TS935DS00400C	.256/100	1		07/07/16 18:02
143	NI.070716.180610	WG575526-38	CCV		1		07/07/16 18:06
144	NI.070716.180921	WG575526-39	CCB		1		07/07/16 18:09
145	NI.070716.181234	L16061444-18	TS935DS00405A	.252/100	1		07/07/16 18:12
146	NI.070716.181546	WG574535-04	Matrix Spike	.253/100	1	L16061444-10	07/07/16 18:15
147	NI.070716.181857	WG574535-05	Matrix Spike Duplica	.25/100	1	L16061444-10	07/07/16 18:18
148	NI.070716.182209	L16061458-01	SCF-WS01-062416	.254/100	1		07/07/16 18:22
149	NI.070716.182520	L16061458-01	SCF-WS01-062416		100		07/07/16 18:25
150	NI.070716.182833	WG575526-40	Interference Check		1		07/07/16 18:28
151	NI.070716.183145	WG575526-41	Interference Check		1		07/07/16 18:31
152	NI.070716.183458	WG575526-42	CCV		1		07/07/16 18:34
153	NI.070716.183810	WG575526-43	CCB		1		07/07/16 18:38

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Microbac Laboratories Inc.

Data Checklist

Date: 07-JUL-2016
Analyst: JYH
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 575526
Runlog ID: 76158
Analytical Workgroups: 575345,575483,575542,575059

Additional Workgroup	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	212,1458
Level 4	1648,191,1444
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	BKT
Comments	

Primary Reviewer:
08-JUL-2016

Secondary Reviewer:
08-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-08-2016 15:22:13

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG575345

Login Number: L16061648

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW25F-062916	02	06/29/16					07/06/2016	7	180		07/07/16	8.3	180	
18WW25F-062916	02	06/29/16					07/06/2016	7	180		07/07/16	8.1	180	
18WW25F-062916	02	06/29/16					07/06/2016	7	180		07/07/16	8.2	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4843195
Report generated 07/08/2016 07:59

METHOD BLANK SUMMARY

Login Number: L16061648
Blank File ID: NI.070716.102257
Prep Date: 07/06/16 08:44
Analyzed Date: 07/07/16 10:22
Analyst: JYH

Work Group: WG575345
Blank Sample ID: WG575246-03
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG575246-04	NI.070716.102608	07/07/16 10:26	01
18WW25F-062916	L16061648-02	NI.070716.102920	07/07/16 10:29	01
DUP	WG575246-07	NI.070716.111411	07/07/16 11:14	01
18WW25F-062916	L16061648-02	NI.070716.130338	07/07/16 13:03	DL01
LCS	WG575246-04	NI.070716.145940	07/07/16 14:59	02
18WW25F-062916	L16061648-02	NI.070716.151016	07/07/16 15:10	02

Report Name: BLANK_SUMMARY
PDF File ID: 4843196
Report generated 07/08/2016 07:59

METHOD BLANK SUMMARY

Login Number: L16061648
Blank File ID: NI.070716.135757
Prep Date: 07/06/16 08:44
Analyzed Date: 07/07/16 13:57
Analyst: JYH

Work Group: WG575345
Blank Sample ID: WG575246-03
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG575246-04	NI.070716.102608	07/07/16 10:26	01
18WW25F-062916	L16061648-02	NI.070716.102920	07/07/16 10:29	01
DUP	WG575246-07	NI.070716.111411	07/07/16 11:14	01
18WW25F-062916	L16061648-02	NI.070716.130338	07/07/16 13:03	DL01
LCS	WG575246-04	NI.070716.145940	07/07/16 14:59	02
18WW25F-062916	L16061648-02	NI.070716.151016	07/07/16 15:10	02

Report Name: BLANK_SUMMARY
PDF File ID: 4843196
Report generated 07/08/2016 07:59

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061648 Prep Date: 07/06/16 08:44 Sample ID: WG575246-03
Instrument ID: ICP-MS2 Run Date: 07/07/16 10:22 Prep Method: 3015
File ID: NI.070716.102257 Analyst: JYH Method: 6020A
Workgroup (AAB#): WG575345 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-07-JUL-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Arsenic, Total	0.000500	0.00200	0.000500	1	U
Barium, Total	0.00150	0.00600	0.00150	1	U
Cadmium, Total	0.000300	0.00120	0.000300	1	U
Chromium, Total	0.00100	0.00400	0.00100	1	U
Cobalt, Total	0.000500	0.00200	0.000500	1	U
Copper, Total	0.00100	0.00400	0.00100	1	U
Lead, Total	0.000500	0.00200	0.000500	1	U
Manganese, Total	0.00100	0.00400	0.00100	1	U
Nickel, Total	0.00200	0.00800	0.00200	1	U
Silver, Total	0.000500	0.00200	0.000500	1	U
Thallium, Total	0.000100	0.000400	0.000100	1	U
Vanadium, Total	0.000500	0.00200	0.000500	1	U
Zinc, Total	0.0125	0.0500	0.0125	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4843197
08-JUL-2016 07:59

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061648 Prep Date: 07/06/16 08:44 Sample ID: WG575246-03
Instrument ID: ICP-MS2 Run Date: 07/07/16 13:57 Prep Method: 3015
File ID: NI.070716.135757 Analyst: JYH Method: 6020A
Workgroup (AAB#): WG575345 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-07-JUL-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Antimony, Total	0.000500	0.00200	0.000500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4843197
08-JUL-2016 07:59

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061648 Run Date: 07/07/2016 Sample ID: WG575246-04
Instrument ID: ICP-MS2 Run Time: 10:26 Prep Method: 3015
File ID: NI.070716.102608 Analyst: JYH Method: 6020A
Workgroup (AAB#): WG575345 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD75998 Cal ID: ICP-MS-07-JUL-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Arsenic, Total	0.125	0.129	103	80 - 120	
Barium, Total	0.125	0.129	103	80 - 120	
Cadmium, Total	0.125	0.128	103	80 - 120	
Chromium, Total	0.125	0.130	104	80 - 120	
Cobalt, Total	0.125	0.129	103	80 - 120	
Copper, Total	0.125	0.135	108	80 - 120	
Lead, Total	0.125	0.132	106	80 - 120	
Manganese, Total	0.125	0.131	105	80 - 120	
Nickel, Total	0.125	0.132	106	80 - 120	
Silver, Total	0.125	0.131	104	80 - 120	
Thallium, Total	0.125	0.130	104	80 - 120	
Vanadium, Total	0.125	0.127	102	80 - 120	
Zinc, Total	0.125	0.132	105	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4843198
Report generated: 07/08/2016 15:47

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061648 Run Date: 07/07/2016 Sample ID: WG575246-04
Instrument ID: ICP-MS2 Run Time: 14:59 Prep Method: 3015
File ID: NI.070716.145940 Analyst: JYH Method: 6020A
Workgroup (AAB#): WG575345 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD75998 Cal ID: ICP-MS-07-JUL-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Antimony, Total	0.125	0.122	97.4	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4843198
Report generated: 07/08/2016 15:47

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061648 Cal ID: ICP-MS2- Worknum: WG575345
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG575246-01 File ID: NI.070716.102920 Dil: 1 Matrix: WATER
Sample ID: WG575246-05 MS File ID: NI.070716.103238 Dil: 1 Units: mg/L
Sample ID: WG575246-06 MSD File ID: NI.070716.103550 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Arsenic, Total	0.00243	0.125	0.133	105	0.125	0.133	105	0.0581	80 - 120	20	
Cadmium, Total	ND	0.125	0.129	103	0.125	0.127	102	0.854	80 - 120	20	
Chromium, Total	ND	0.125	0.126	101	0.125	0.128	102	1.51	80 - 120	20	
Cobalt, Total	0.0135	0.125	0.140	101	0.125	0.141	102	0.549	80 - 120	20	
Copper, Total	ND	0.125	0.127	101	0.125	0.126	101	0.367	80 - 120	20	
Lead, Total	ND	0.125	0.130	104	0.125	0.128	103	1.37	80 - 120	20	
Nickel, Total	0.00596	0.125	0.131	100	0.125	0.132	101	1.06	80 - 120	20	
Silver, Total	ND	0.125	0.128	102	0.125	0.127	102	0.109	80 - 120	20	
Thallium, Total	ND	0.125	0.128	102	0.125	0.126	101	0.935	80 - 120	20	
Vanadium, Total	ND	0.125	0.126	101	0.125	0.127	102	0.602	80 - 120	20	
Zinc, Total	ND	0.125	0.139	111	0.125	0.139	111	0.506	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4843199
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061648 Cal ID: ICP-MS2 - Worknum: WG575345
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG575246-01 File ID: NI.070716.130338 Dil: 50 Matrix: WATER
Sample ID: WG575246-05 MS File ID: NI.070716.130649 Dil: 50 Units: mg/L
Sample ID: WG575246-06 MSD File ID: NI.070716.131001 Dil: 50

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Barium, Total	0.391	0.125	0.535	115	0.125	0.537	117	0.455	80 - 120	20	
Manganese, Total	5.29	0.125	5.64	285	0.125	5.63	273	0.259	80 - 120	20	*

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4843199
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061648 Cal ID: ICP-MS2 - Worknum: WG575345
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG575246-01 File ID: NI.070716.151016 Dil: 1 Matrix: WATER
Sample ID: WG575246-05 MS File ID: NI.070716.151327 Dil: 1 Units: mg/L
Sample ID: WG575246-06 MSD File ID: NI.070716.151638 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Antimony, Total	ND	0.125	0.130	104	0.125	0.130	104	0.0515	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4843199
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16061648 **Worknum:** WG575345
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG575345-02 **File ID:** NI.070716.152841 **Dil:** 5 **Units:** ug/L
Sample: L16061615-02 **File ID:** NI.070716.152218 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	ND	U	ND	U		
Arsenic	7.78	X	8.57	F	10.20	
Barium	ND	U	ND	U		
Cadmium	ND	U	ND	U		
Chromium	3.14	F	ND	U		
Cobalt	ND	U	ND	U		
Copper	5.08	X	7.31	F	43.90	
Lead	ND	U	ND	U		
Manganese	162		156		3.95	
Nickel	10.1	X	10.5	F	4.25	
Silver	ND	U	12.0	X	105000.00	
Thallium	ND	U	ND	U		
Vanadium	ND	U	ND	U		
Zinc	ND	U	ND	U		

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4843193
07/08/2016 08:30

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16061648 **Worknum:** WG575345
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG575345-02 **File ID:** NI.070716.104836 **Dil:** 5 **Units:** ug/L
Sample: L16061615-02 **File ID:** NI.070716.104213 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	ND	U	ND	U		
Arsenic	5.14	X	8.76	F	70.50	
Barium	2.85	F	ND	U		
Cadmium	ND	U	ND	U		
Chromium	2.94	F	ND	U		
Cobalt	ND	U	ND	U		
Copper	4.68	X	7.13	F	52.30	
Lead	ND	U	ND	U		
Manganese	317		162		49.00	E
Nickel	12.4	X	11.2	F	9.95	
Silver	ND	U	ND	U		
Thallium	ND	U	ND	U		
Vanadium	ND	U	ND	U		
Zinc	ND	U	ND	U		

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4843193
07/08/2016 08:30

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061648 **Worknum:** WG575345
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG575345-01 **File ID:** NI.070716.104524 **Dil:** 1 **Units:** ug/L
Sample ID: L16061615-02 **File ID:** NI.070716.104213 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	54.3		0	U	50	108.5	75 - 125	
ARSENIC	59.2		5.14		50	108.1	75 - 125	
BARIUM	51.8		2.85		50	98.0	75 - 125	
CADMIUM	48.6		0	U	50	97.2	75 - 125	
CHROMIUM	55.6		2.94		50	105.3	75 - 125	
COBALT	50.5		0.340	F	50	100.4	75 - 125	
COPPER	53.1		4.68		50	96.8	75 - 125	
LEAD	52.0		0	U	50	104.1	75 - 125	
MANGANESE	220		317		50	-192.6	75 - 125	N
NICKEL	60.0		12.4		50	95.3	75 - 125	
SILVER	46.6		0	U	50	93.1	75 - 125	
THALLIUM	52.3		0	U	50	104.6	75 - 125	
VANADIUM	55.1		0.306	F	50	109.5	75 - 125	
ZINC	55.8		7.28	F	50	97.1	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4843194
Report generated: 07/08/2016 08:30

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061648 **Worknum:** WG575345
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG575345-01 **File ID:** NI.070716.152529 **Dil:** 1 **Units:** ug/L
Sample ID: L16061615-02 **File ID:** NI.070716.152218 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	49.2		0	U	50	98.4	75 - 125	
ARSENIC	59.8		7.78		50	104.0	75 - 125	
BARIUM	50.1		1.16	F	50	97.9	75 - 125	
CADMIUM	47.5		0	U	50	95.0	75 - 125	
CHROMIUM	55.0		3.14		50	103.7	75 - 125	
COBALT	49.6		0.233	F	50	98.8	75 - 125	
COPPER	52.5		5.08		50	94.8	75 - 125	
LEAD	51.9		0	U	50	103.8	75 - 125	
MANGANESE	214		162		50	103.1	75 - 125	
NICKEL	58.5		10.1		50	96.7	75 - 125	
SILVER	42.0		0	U	50	84.0	75 - 125	
THALLIUM	51.2		0	U	50	102.5	75 - 125	
VANADIUM	53.8		0	U	50	107.6	75 - 125	
ZINC	56.2		6.54	F	50	99.3	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4843194
Report generated: 07/08/2016 08:30

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061648	Workgroup (AAB#):	WG575345
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG575526	Initial Calibration Date:	07-JUL-2016 09:57

	WG575526-01		WG575526-02		WG575526-03		WG575526-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	95.4	.4	306	50	222000	100	442000	.999996	
ARSENIC	0	-56.7	.4	13.9	50	54200	100	107000	.999975	
BARIUM	0	20.3	.4	131	50	94900	100	187000	.999996	
CADMIUM	0	4.70	.4	109	50	99200	100	193000	.999974	
CHROMIUM	0	6700	.4	7070	50	353000	100	676000	.999994	
COBALT	0	214	.4	566	50	332000	100	641000	.999994	
COPPER	0	115	.4	195	50	90400	100	174000	.999988	
LEAD	0	781	.4	1770	50	907000	100	1790000	.999989	
MANGANESE	0	740	.4	1130	50	317000	100	615000	1	
NICKEL	0	459	.4	553	50	91100	100	175000	.99998	
SILVER	0	73.3	.4	405	50	312000	100	604000	.999946	
THALLIUM	0	4.30	.4	414	50	391000	100	763000	1	
VANADIUM	0	1290	.4	1520	50	336000	100	655000	1	
ZINC	0	136	.4	265	50	53600	100	105000	.999997	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4843202
Report generated: 08-JUL-2016 08:00

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-06
Instrument ID: ICP-MS2
Run Time: 10:03
Method: 6020A
File ID: NI.070716.100345
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG575345
Cal ID: ICP-MS2 - 07-JUL-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
COPPER	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.2	U
THALLIUM	.04	.16	.04	U
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4843204
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-11
Instrument ID: ICP-MS2
Run Time: 10:19
Method: 6020A
File ID: NI.070716.101945
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.297	F
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4843207
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-13
Instrument ID: ICP-MS2
Run Time: 10:58
Method: 6020A
File ID: NI.070716.105812
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4843207
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-17
Instrument ID: ICP-MS2
Run Time: 11:58
Method: 6020A
File ID: NI.070716.115855
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4843207
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-19
Instrument ID: ICP-MS2
Run Time: 12:44
Method: 6020A
File ID: NI.070716.124409
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.203	F
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4843207
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-21
Instrument ID: ICP-MS2
Run Time: 13:16
Method: 6020A
File ID: NI.070716.131624
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4843207
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-23
Instrument ID: ICP-MS2
Run Time: 13:54
Method: 6020A
File ID: NI.070716.135445
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-25
Instrument ID: ICP-MS2
Run Time: 14:04
Method: 6020A
File ID: NI.070716.140421
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-27
Instrument ID: ICP-MS2
Run Time: 14:47
Method: 6020A
File ID: NI.070716.144726
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-30
Instrument ID: ICP-MS2
Run Time: 15:38
Method: 6020A
File ID: NI.070716.153817
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-39
Instrument ID: ICP-MS2
Run Time: 18:09
Method: 6020A
File ID: NI.070716.180921
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.232	F
Manganese	0.400	1.60	1.07	F
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-43
Instrument ID: ICP-MS2
Run Time: 18:38
Method: 6020A
File ID: NI.070716.183810
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.361	F
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Report generated 07/08/2016 08:00

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-05
Instrument ID: ICP-MS2
Run Time: 10:00
Method: 6020A
File ID: NI.070716.100032
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	50.2	100	90 - 110	
Arsenic		50	50.5	101	90 - 110	
Barium		50	49.9	99.7	90 - 110	
Cadmium		50	50.2	100	90 - 110	
Chromium		50	50.1	100	90 - 110	
Cobalt		50	50.6	101	90 - 110	
Copper		50	50.7	101	90 - 110	
Lead		50	50.6	101	90 - 110	
Manganese		50	50.7	101	90 - 110	
Nickel		50	50.7	101	90 - 110	
Silver		50	49.8	99.6	90 - 110	
Thallium		50	50.3	101	90 - 110	
Vanadium		50	50.0	100	90 - 110	
Zinc		50	50.9	102	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4843203
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-10
Instrument ID: ICP-MS2
Run Time: 10:16
Method: 6020A
File ID: NI.070716.101633
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0507	mg/L	101	90 - 110		
Arsenic		0.0500	0.0499	mg/L	99.8	90 - 110		
Barium		0.0500	0.0489	mg/L	97.7	90 - 110		
Cadmium		0.0500	0.0492	mg/L	98.3	90 - 110		
Chromium		0.0500	0.0495	mg/L	99.0	90 - 110		
Cobalt		0.0500	0.0504	mg/L	101	90 - 110		
Copper		0.0500	0.0499	mg/L	99.8	90 - 110		
Lead		0.0500	0.0507	mg/L	101	90 - 110		
Manganese		0.0500	0.0502	mg/L	100	90 - 110		
Nickel		0.0500	0.0497	mg/L	99.4	90 - 110		
Silver		0.0500	0.0492	mg/L	98.4	90 - 110		
Thallium		0.0500	0.0498	mg/L	99.7	90 - 110		
Vanadium		0.0500	0.0502	mg/L	100	90 - 110		
Zinc		0.0500	0.0499	mg/L	99.8	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4843206
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-12
Instrument ID: ICP-MS2
Run Time: 10:55
Method: 6020A
File ID: NI.070716.105500
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0483	mg/L	96.7	90 - 110		
Arsenic		0.0500	0.0501	mg/L	100	90 - 110		
Barium		0.0500	0.0482	mg/L	96.5	90 - 110		
Cadmium		0.0500	0.0490	mg/L	97.9	90 - 110		
Chromium		0.0500	0.0501	mg/L	100	90 - 110		
Cobalt		0.0500	0.0504	mg/L	101	90 - 110		
Copper		0.0500	0.0506	mg/L	101	90 - 110		
Lead		0.0500	0.0506	mg/L	101	90 - 110		
Manganese		0.0500	0.0529	mg/L	106	90 - 110		
Nickel		0.0500	0.0507	mg/L	101	90 - 110		
Silver		0.0500	0.0492	mg/L	98.3	90 - 110		
Thallium		0.0500	0.0494	mg/L	98.9	90 - 110		
Vanadium		0.0500	0.0507	mg/L	101	90 - 110		
Zinc		0.0500	0.0502	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

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Report generated 07/08/2016 08:00

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-16
Instrument ID: ICP-MS2
Run Time: 11:55
Method: 6020A
File ID: NI.070716.115544
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0485	mg/L	97.0	90 - 110		
Arsenic		0.0500	0.0488	mg/L	97.5	90 - 110		
Barium		0.0500	0.0480	mg/L	96.0	90 - 110		
Cadmium		0.0500	0.0487	mg/L	97.4	90 - 110		
Chromium		0.0500	0.0490	mg/L	98.0	90 - 110		
Cobalt		0.0500	0.0498	mg/L	99.6	90 - 110		
Copper		0.0500	0.0495	mg/L	99.1	90 - 110		
Lead		0.0500	0.0506	mg/L	101	90 - 110		
Manganese		0.0500	0.0500	mg/L	100	90 - 110		
Nickel		0.0500	0.0495	mg/L	99.0	90 - 110		
Silver		0.0500	0.0487	mg/L	97.5	90 - 110		
Thallium		0.0500	0.0494	mg/L	98.7	90 - 110		
Vanadium		0.0500	0.0491	mg/L	98.2	90 - 110		
Zinc		0.0500	0.0497	mg/L	99.4	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-18
Instrument ID: ICP-MS2
Run Time: 12:40
Method: 6020A
File ID: NI.070716.124058
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0489	mg/L	97.7	90 - 110		
Arsenic		0.0500	0.0483	mg/L	96.5	90 - 110		
Barium		0.0500	0.0478	mg/L	95.6	90 - 110		
Cadmium		0.0500	0.0489	mg/L	97.9	90 - 110		
Chromium		0.0500	0.0486	mg/L	97.3	90 - 110		
Cobalt		0.0500	0.0484	mg/L	96.8	90 - 110		
Copper		0.0500	0.0495	mg/L	98.9	90 - 110		
Lead		0.0500	0.0512	mg/L	102	90 - 110		
Manganese		0.0500	0.0488	mg/L	97.6	90 - 110		
Nickel		0.0500	0.0490	mg/L	98.0	90 - 110		
Silver		0.0500	0.0483	mg/L	96.7	90 - 110		
Thallium		0.0500	0.0496	mg/L	99.3	90 - 110		
Vanadium		0.0500	0.0480	mg/L	96.1	90 - 110		
Zinc		0.0500	0.0494	mg/L	98.8	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-20
Instrument ID: ICP-MS2
Run Time: 13:13
Method: 6020A
File ID: NI.070716.131313
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0484	mg/L	96.7	90 - 110		
Arsenic		0.0500	0.0493	mg/L	98.7	90 - 110		
Barium		0.0500	0.0479	mg/L	95.9	90 - 110		
Cadmium		0.0500	0.0489	mg/L	97.7	90 - 110		
Chromium		0.0500	0.0499	mg/L	99.8	90 - 110		
Cobalt		0.0500	0.0482	mg/L	96.3	90 - 110		
Copper		0.0500	0.0502	mg/L	100	90 - 110		
Lead		0.0500	0.0507	mg/L	101	90 - 110		
Manganese		0.0500	0.0502	mg/L	100	90 - 110		
Nickel		0.0500	0.0504	mg/L	101	90 - 110		
Silver		0.0500	0.0485	mg/L	96.9	90 - 110		
Thallium		0.0500	0.0492	mg/L	98.4	90 - 110		
Vanadium		0.0500	0.0482	mg/L	96.3	90 - 110		
Zinc		0.0500	0.0496	mg/L	99.2	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-22
Instrument ID: ICP-MS2
Run Time: 13:51
Method: 6020A
File ID: NI.070716.135133
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0481	mg/L	96.2	90 - 110		
Arsenic		0.0500	0.0487	mg/L	97.3	90 - 110		
Barium		0.0500	0.0478	mg/L	95.6	90 - 110		
Cadmium		0.0500	0.0486	mg/L	97.2	90 - 110		
Chromium		0.0500	0.0495	mg/L	98.9	90 - 110		
Cobalt		0.0500	0.0483	mg/L	96.6	90 - 110		
Copper		0.0500	0.0494	mg/L	98.8	90 - 110		
Lead		0.0500	0.0513	mg/L	103	90 - 110		
Manganese		0.0500	0.0505	mg/L	101	90 - 110		
Nickel		0.0500	0.0499	mg/L	99.7	90 - 110		
Silver		0.0500	0.0480	mg/L	96.1	90 - 110		
Thallium		0.0500	0.0499	mg/L	99.8	90 - 110		
Vanadium		0.0500	0.0486	mg/L	97.1	90 - 110		
Zinc		0.0500	0.0493	mg/L	98.6	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-24
Instrument ID: ICP-MS2
Run Time: 14:01
Method: 6020A
File ID: NI.070716.140110
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0486	mg/L	97.2	90 - 110		
Arsenic		0.0500	0.0486	mg/L	97.1	90 - 110		
Barium		0.0500	0.0481	mg/L	96.2	90 - 110		
Cadmium		0.0500	0.0486	mg/L	97.3	90 - 110		
Chromium		0.0500	0.0491	mg/L	98.2	90 - 110		
Cobalt		0.0500	0.0480	mg/L	96.0	90 - 110		
Copper		0.0500	0.0496	mg/L	99.2	90 - 110		
Lead		0.0500	0.0513	mg/L	103	90 - 110		
Manganese		0.0500	0.0498	mg/L	99.6	90 - 110		
Nickel		0.0500	0.0496	mg/L	99.2	90 - 110		
Silver		0.0500	0.0481	mg/L	96.3	90 - 110		
Thallium		0.0500	0.0496	mg/L	99.2	90 - 110		
Vanadium		0.0500	0.0481	mg/L	96.2	90 - 110		
Zinc		0.0500	0.0493	mg/L	98.6	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-26
Instrument ID: ICP-MS2
Run Time: 14:44
Method: 6020A
File ID: NI.070716.144415
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0482	mg/L	96.3	90 - 110		
Arsenic		0.0500	0.0489	mg/L	97.7	90 - 110		
Barium		0.0500	0.0477	mg/L	95.5	90 - 110		
Cadmium		0.0500	0.0486	mg/L	97.3	90 - 110		
Chromium		0.0500	0.0497	mg/L	99.3	90 - 110		
Cobalt		0.0500	0.0485	mg/L	97.0	90 - 110		
Copper		0.0500	0.0494	mg/L	98.7	90 - 110		
Lead		0.0500	0.0513	mg/L	103	90 - 110		
Manganese		0.0500	0.0514	mg/L	103	90 - 110		
Nickel		0.0500	0.0498	mg/L	99.6	90 - 110		
Silver		0.0500	0.0482	mg/L	96.5	90 - 110		
Thallium		0.0500	0.0493	mg/L	98.6	90 - 110		
Vanadium		0.0500	0.0483	mg/L	96.7	90 - 110		
Zinc		0.0500	0.0498	mg/L	99.5	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-29
Instrument ID: ICP-MS2
Run Time: 15:35
Method: 6020A
File ID: NI.070716.153505
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0484	mg/L	96.9	90 - 110		
Arsenic		0.0500	0.0485	mg/L	97.0	90 - 110		
Barium		0.0500	0.0472	mg/L	94.3	90 - 110		
Cadmium		0.0500	0.0480	mg/L	96.1	90 - 110		
Chromium		0.0500	0.0492	mg/L	98.4	90 - 110		
Cobalt		0.0500	0.0494	mg/L	98.7	90 - 110		
Copper		0.0500	0.0494	mg/L	98.9	90 - 110		
Lead		0.0500	0.0507	mg/L	101	90 - 110		
Manganese		0.0500	0.0501	mg/L	100	90 - 110		
Nickel		0.0500	0.0495	mg/L	99.1	90 - 110		
Silver		0.0500	0.0487	mg/L	97.3	90 - 110		
Thallium		0.0500	0.0493	mg/L	98.7	90 - 110		
Vanadium		0.0500	0.0491	mg/L	98.2	90 - 110		
Zinc		0.0500	0.0501	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4843206
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-38
Instrument ID: ICP-MS2
Run Time: 18:06
Method: 6020A
File ID: NI.070716.180610
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0486	mg/L	97.1	90 - 110		
Arsenic		0.0500	0.0484	mg/L	96.7	90 - 110		
Barium		0.0500	0.0470	mg/L	94.0	90 - 110		
Cadmium		0.0500	0.0485	mg/L	96.9	90 - 110		
Chromium		0.0500	0.0490	mg/L	98.0	90 - 110		
Cobalt		0.0500	0.0487	mg/L	97.5	90 - 110		
Copper		0.0500	0.0495	mg/L	99.0	90 - 110		
Lead		0.0500	0.0511	mg/L	102	90 - 110		
Manganese		0.0500	0.0499	mg/L	99.8	90 - 110		
Nickel		0.0500	0.0491	mg/L	98.3	90 - 110		
Silver		0.0500	0.0484	mg/L	96.8	90 - 110		
Thallium		0.0500	0.0495	mg/L	99.0	90 - 110		
Vanadium		0.0500	0.0483	mg/L	96.6	90 - 110		
Zinc		0.0500	0.0493	mg/L	98.5	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4843206
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-42
Instrument ID: ICP-MS2
Run Time: 18:34
Method: 6020A
File ID: NI.070716.183458
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0499	mg/L	99.9	90 - 110		
Arsenic		0.0500	0.0488	mg/L	97.5	90 - 110		
Barium		0.0500	0.0470	mg/L	94.1	90 - 110		
Cadmium		0.0500	0.0481	mg/L	96.1	90 - 110		
Chromium		0.0500	0.0492	mg/L	98.3	90 - 110		
Cobalt		0.0500	0.0488	mg/L	97.5	90 - 110		
Copper		0.0500	0.0495	mg/L	98.9	90 - 110		
Lead		0.0500	0.0513	mg/L	103	90 - 110		
Manganese		0.0500	0.0495	mg/L	99.1	90 - 110		
Nickel		0.0500	0.0498	mg/L	99.5	90 - 110		
Silver		0.0500	0.0482	mg/L	96.5	90 - 110		
Thallium		0.0500	0.0493	mg/L	98.5	90 - 110		
Vanadium		0.0500	0.0481	mg/L	96.3	90 - 110		
Zinc		0.0500	0.0493	mg/L	98.5	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4843206
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-07
Instrument ID: ICP-MS2
Run Time: 10:06
Method: 6020A
File ID: NI.070716.100657
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.378	ug/L	94.4	70 - 130		
Arsenic		0.400	0.364	ug/L	91.1	70 - 130		
Barium		0.750	0.709	ug/L	94.5	70 - 130		
Cadmium		0.240	0.229	ug/L	95.3	70 - 130		
Chromium		0.800	0.704	ug/L	88.0	70 - 130		
Cobalt		0.400	0.382	ug/L	95.6	70 - 130		
Copper		0.800	0.767	ug/L	95.9	70 - 130		
Lead		0.200	0.195	ug/L	97.4	70 - 130		
Manganese		0.500	0.451	ug/L	90.2	70 - 130		
Nickel		1.60	1.53	ug/L	95.5	70 - 130		
Silver		0.400	0.383	ug/L	95.8	70 - 130		
Thallium		0.0800	0.0846	ug/L	106	70 - 130		
Vanadium		0.400	0.365	ug/L	91.2	70 - 130		
Zinc		6.25	6.32	ug/L	101	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4844225
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-28
Instrument ID: ICP-MS2
Run Time: 14:50
Method: 6020A
File ID: NI.070716.145039
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.364	ug/L	91.0	70 - 130		
Arsenic		0.400	0.386	ug/L	96.6	70 - 130		
Barium		0.750	0.693	ug/L	92.5	70 - 130		
Cadmium		0.240	0.230	ug/L	95.9	70 - 130		
Chromium		0.800	0.695	ug/L	86.9	70 - 130		
Cobalt		0.400	0.363	ug/L	90.8	70 - 130		
Copper		0.800	0.773	ug/L	96.6	70 - 130		
Lead		0.200	0.195	ug/L	97.7	70 - 130		
Manganese		0.500	0.446	ug/L	89.2	70 - 130		
Nickel		1.60	1.40	ug/L	87.4	70 - 130		
Silver		0.400	0.371	ug/L	92.7	70 - 130		
Thallium		0.0800	0.0784	ug/L	98.0	70 - 130		
Vanadium		0.400	0.330	ug/L	82.5	70 - 130		
Zinc		6.25	6.43	ug/L	103	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4844225
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575526-31
Instrument ID: ICP-MS2
Run Time: 15:41
Method: 6020A
File ID: NI.070716.154130
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG575345
Cal ID: ICP-MS - 07-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.382	ug/L	95.6	70 - 130		
Arsenic		0.400	0.418	ug/L	104	70 - 130		
Barium		0.750	0.695	ug/L	92.7	70 - 130		
Cadmium		0.240	0.229	ug/L	95.5	70 - 130		
Chromium		0.800	0.729	ug/L	91.1	70 - 130		
Cobalt		0.400	0.376	ug/L	94.0	70 - 130		
Copper		0.800	0.901	ug/L	113	70 - 130		
Lead		0.200	0.197	ug/L	98.5	70 - 130		
Manganese		0.500	0.479	ug/L	95.8	70 - 130		
Nickel		1.60	1.55	ug/L	96.6	70 - 130		
Silver		0.400	0.391	ug/L	97.7	70 - 130		
Thallium		0.0800	0.0816	ug/L	102	70 - 130		
Vanadium		0.400	0.366	ug/L	91.6	70 - 130		
Zinc		6.25	6.55	ug/L	105	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4844225
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061648
Instrument ID: ICP-MS2
Sol. A : WG575526-08 **File ID:** NI.070716.101008
Sol. AB : WG575526-09 **File ID:** NI.070716.101320

Workgroup (AAB#): WG575345
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.160	NS	100	97.1	97.1	
Arsenic	NS	0.0379	NS	100	101	101	
Barium	NS	0.0300	NS	100	97.1	97.1	
Cadmium	NS	-0.0681	NS	100	98.3	98.3	
Chromium	NS	-0.128	NS	100	98.6	98.6	
Cobalt	NS	0.0367	NS	100	98.0	98.0	
Copper	NS	0.265	NS	100	98.5	98.5	
Lead	NS	0.0392	NS	100	98.9	98.9	
Manganese	NS	0.171	NS	100	99.8	99.8	
Nickel	NS	0.254	NS	100	98.2	98.2	
Silver	NS	0.0319	NS	100	96.3	96.3	
Thallium	NS	0.0342	NS	100	97.6	97.6	
Vanadium	NS	-0.0102	NS	100	98.8	98.8	
Zinc	NS	0.485	NS	100	101	101	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4843205
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061648
Instrument ID: ICP-MS2
Sol. A : WG575526-40 **File ID:** NI.070716.182833
Sol. AB : WG575526-41 **File ID:** NI.070716.183145

Workgroup (AAB#): WG575345
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.0725	NS	100	94.1	94.1	
Arsenic	NS	0.0454	NS	100	96.7	96.7	
Barium	NS	0.0630	NS	100	91.5	91.5	
Cadmium	NS	-0.0909	NS	100	95.1	95.1	
Chromium	NS	-0.111	NS	100	96.7	96.7	
Cobalt	NS	0.0221	NS	100	93.8	93.8	
Copper	NS	0.247	NS	100	96.7	96.7	
Lead	NS	0.0270	NS	100	101	101	
Manganese	NS	0.273	NS	100	97.5	97.5	
Nickel	NS	0.143	NS	100	96.6	96.6	
Silver	NS	0.00980	NS	100	84.6	84.6	
Thallium	NS	0.00960	NS	100	97.2	97.2	
Vanadium	NS	-0.0341	NS	100	94.2	94.2	
Zinc	NS	0.637	NS	100	99.3	99.3	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4843205
Report generated 07/08/2016 08:00

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16061648 **Analytical Method:** 6020
Analytical Workgroup: WG575345 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** JYH
ICAL Date: 07-JUL-2016 09:47

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16061648-02	SAMP	07-JUL-2016 10:29	97.859	98.052	97.6
L16061648-02	SAMP	07-JUL-2016 13:03	95.508	95.665	94.394
L16061648-02	SAMP	07-JUL-2016 15:10	97.079	100.091	98.64
WG575246-03	BLANK	07-JUL-2016 10:22	94.546	91.389	90.186
WG575246-03	BLANK	07-JUL-2016 13:57	99.578	100.791	100.062
WG575246-04	LCS	07-JUL-2016 10:26	100.687	101.333	100.247
WG575246-04	LCS	07-JUL-2016 14:59	99.204	100.923	100.044
WG575246-05	MS	07-JUL-2016 10:32	97.953	99.08	97.281
WG575246-05	MS	07-JUL-2016 13:06	94.558	94.569	93.531
WG575246-05	MS	07-JUL-2016 15:13	97.916	100.097	98.769
WG575246-06	MSD	07-JUL-2016 10:35	99.06	98.781	97.689
WG575246-06	MSD	07-JUL-2016 13:10	95.222	94.622	94.089
WG575246-06	MSD	07-JUL-2016 15:16	97.356	100.435	99.357
WG575345-01	PSPK	07-JUL-2016 10:45	79.015	88.027	84.512
WG575345-01	PSPK	07-JUL-2016 15:25	79.832	88.071	85.522
WG575345-02	SERIAL	07-JUL-2016 10:48	88.527	93.775	90.782
WG575345-02	SERIAL	07-JUL-2016 15:28	88.268	93.446	91.345
WG575526-05	ICV	07-JUL-2016 10:00	97.703	97.758	97.371
WG575526-06	ICB	07-JUL-2016 10:03	99.365	97.904	98.341
WG575526-07	LLICV	07-JUL-2016 10:06	96.535	95.213	94.89
WG575526-08	ICS	07-JUL-2016 10:10	91.589	91.281	88.803
WG575526-09	ICS	07-JUL-2016 10:13	98.971	97.813	97.014
WG575526-10	CCV	07-JUL-2016 10:16	98.436	98.047	98.495
WG575526-11	CCB	07-JUL-2016 10:19	99.428	98.152	99.19
WG575526-12	CCV	07-JUL-2016 10:55	103.662	102.854	104.06
WG575526-13	CCB	07-JUL-2016 10:58	103.386	101.827	102.88
WG575526-16	CCV	07-JUL-2016 11:55	102.209	102.778	102.709
WG575526-17	CCB	07-JUL-2016 11:58	103.177	102.052	103.209
WG575526-18	CCV	07-JUL-2016 12:40	99.435	102.382	100.961
WG575526-19	CCB	07-JUL-2016 12:44	101.335	101.344	102.049
WG575526-20	CCV	07-JUL-2016 13:13	99.543	102.619	101.477
WG575526-21	CCB	07-JUL-2016 13:16	99.692	101.512	100.276
WG575526-22	CCV	07-JUL-2016 13:51	98.998	101.614	101.077
WG575526-23	CCB	07-JUL-2016 13:54	99.961	101.056	101.014
WG575526-24	CCV	07-JUL-2016 14:01	97.593	101.029	99.449
WG575526-25	CCB	07-JUL-2016 14:04	98.809	99.831	99.302
WG575526-26	CCV	07-JUL-2016 14:44	97.258	100.46	99.199
WG575526-27	CCB	07-JUL-2016 14:47	97.299	99.143	98.75
WG575526-28	LLCCV	07-JUL-2016 14:50	96.231	97.046	95.939
WG575526-29	CCV	07-JUL-2016 15:35	102.687	103.453	103.709

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4843201
Report generated: 07/08/2016 08:00

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16061648 **Analytical Method:** 6020
Analytical Workgroup: WG575345 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** JYH
ICAL Date: 07-JUL-2016 09:47

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
WG575526-30	CCB	07-JUL-2016 15:38	103.104	102.285	103.349
WG575526-31	LLCCV	07-JUL-2016 15:41	99.895	97.303	98.679
WG575526-38	CCV	07-JUL-2016 18:06	99.878	107.479	105.008
WG575526-39	CCB	07-JUL-2016 18:09	100.593	106.417	105.453
WG575526-40	ICS	07-JUL-2016 18:28	92.003	96.992	94.114
WG575526-41	ICS	07-JUL-2016 18:31	98.375	104.467	102.723
WG575526-42	CCV	07-JUL-2016 18:34	98.651	103.868	103.113
WG575526-43	CCB	07-JUL-2016 18:38	99.652	103.116	103.403

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4843201
Report generated: 07/08/2016 08:00

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16061648 **Analytical Method:** 6020
Analytical Workgroup: WG575345 **Matrix:** 2
Instrument: ICP-MS2 **Analyst:** JYH
ICAL Date: 07-JUL-2016 09:47

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16061615-02	SAMP	07-JUL-2016 10:42	74.015	83.606	78.904
L16061615-02	SAMP	07-JUL-2016 15:22	77.419	86.115	82.875

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4843201
Report generated: 07/08/2016 08:00

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16061648 **Date:** 04/19/2016
Insturment ID: ICP-MS2 **Method:** 6020A

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Uranium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4843200
Report generated: 07/08/2016 08:00

2.3.2.3 Raw Data

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Thursday, July 07, 2016 09:25:36

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	6.975	1327	2024	0.708	
Mg	23.985	23.975	4500	2020	0.699	
Co	58.933	58.925	11690	2022	0.693	
In	114.904	114.925	22863	2028	0.692	
U	238.050	238.025	47454	2042	0.694	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	4.399
5.575	2.667
5.625	2.808
5.675	4.159
5.725	2.639
5.775	2.279
5.825	4.276
5.875	3.595
5.925	3.422
5.975	3.733
6.025	3.503
6.075	3.327
6.125	3.280
6.175	5.722
6.225	21.601
6.275	223.607
6.325	156.492
6.375	33.535
6.425	54.149
6.475	15.000
6.525	4.612
6.575	3.377
6.625	2.090
6.675	3.093
6.725	2.392
6.775	2.174
6.825	0.465

Report Date/Time: Thursday, July 07, 2016 09:28:47
Page 1

Approved: July 08, 2016

6.875	2.087
6.925	2.206
6.975	1.371
7.025	2.069
7.075	2.539
7.125	3.241
7.175	3.686
7.225	2.905
7.275	5.375
7.325	45.799
7.375	83.853
7.425	39.123
7.475	75.691
7.525	61.237
7.575	58.685
7.625	91.287
7.675	37.268
7.725	63.888
7.775	70.711
7.825	67.748
7.875	50.000
7.925	34.233
7.975	81.441
8.025	24.845
8.075	67.420
8.125	108.653
8.175	223.607
8.225	79.057
8.275	43.853
8.325	34.401
8.375	63.888
8.425	74.689
8.475	103.652
22.525	223.607
22.575	58.685
22.625	54.294
22.675	55.416
22.725	49.516
22.775	20.306
22.825	29.737
22.875	15.215
22.925	15.935
22.975	27.065
23.025	43.361
23.075	13.176
23.125	31.611
23.175	22.780

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23.225	34.654
23.275	31.367
23.325	35.355
23.375	35.951
23.425	19.939
23.475	15.319
23.525	4.329
23.575	0.828
23.625	0.914
23.675	0.966
23.725	1.177
23.775	1.332
23.825	1.078
23.875	0.761
23.925	0.871
23.975	0.743
24.025	0.803
24.075	1.186
24.125	0.908
24.175	0.849
24.225	0.890
24.275	2.554
24.325	9.980
24.375	33.164
24.425	37.029
24.475	6.693
24.525	4.530
24.575	2.284
24.625	1.257
24.675	2.971
24.725	1.395
24.775	0.896
24.825	1.202
24.875	1.111
24.925	0.715
24.975	0.725
25.025	1.230
25.075	1.130
25.125	1.753
25.175	1.276
25.225	2.443
25.275	10.811
25.325	36.099
25.375	51.618
25.425	26.438
25.475	18.095
57.525	7.511

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57.575	4.917
57.625	2.009
57.675	1.329
57.725	0.560
57.775	1.800
57.825	1.664
57.875	1.529
57.925	1.607
57.975	1.441
58.025	1.645
58.075	1.884
58.125	1.593
58.175	2.232
58.225	2.858
58.275	9.239
58.325	26.716
58.375	26.352
58.425	10.499
58.475	4.545
58.525	1.560
58.575	1.381
58.625	1.584
58.675	1.468
58.725	1.187
58.775	0.961
58.825	1.600
58.875	1.572
58.925	2.265
58.975	1.366
59.025	2.150
59.075	1.296
59.125	0.845
59.175	2.005
59.225	3.302
59.275	7.063
59.325	58.330
59.375	34.312
59.425	65.124
59.475	22.880
59.525	16.867
59.575	6.590
59.625	5.299
59.675	2.322
59.725	5.064
59.775	2.316
59.825	2.708
59.875	1.987

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59.925	2.004
59.975	2.895
60.025	1.749
60.075	3.245
60.125	4.501
60.175	3.483
60.225	6.309
60.275	15.798
60.325	42.426
60.375	77.427
60.425	79.057
60.475	24.786
113.525	7.014
113.575	5.732
113.625	3.582
113.675	2.805
113.725	2.577
113.775	0.716
113.825	1.935
113.875	3.000
113.925	1.130
113.975	1.176
114.025	1.240
114.075	2.756
114.125	1.990
114.175	1.993
114.225	1.783
114.275	7.703
114.325	12.938
114.375	20.328
114.425	34.551
114.475	13.399
114.525	2.431
114.575	3.237
114.625	2.181
114.675	2.704
114.725	2.061
114.775	1.833
114.825	0.867
114.875	1.019
114.925	1.728
114.975	1.431
115.025	0.861
115.075	1.970
115.125	0.480
115.175	0.705
115.225	2.303

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115.275	2.760
115.325	14.061
115.375	29.881
115.425	55.902
115.475	20.494
115.525	17.020
115.575	9.109
115.625	4.696
115.675	7.467
115.725	4.777
115.775	2.824
115.825	2.194
115.875	3.012
115.925	2.125
115.975	3.542
116.025	3.080
116.075	2.789
116.125	2.744
116.175	2.884
116.225	6.375
116.275	19.955
116.325	48.445
116.375	52.296
116.425	40.745
116.475	26.307
236.525	223.607
236.575	20.092
236.625	30.322
236.675	25.272
236.725	23.981
236.775	26.504
236.825	36.487
236.875	47.791
236.925	35.761
236.975	29.737
237.025	28.748
237.075	24.268
237.125	7.090
237.175	32.061
237.225	17.100
237.275	28.743
237.325	26.504
237.375	52.613
237.425	24.495
237.475	26.146
237.525	28.248
237.575	5.978

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237.625	6.128
237.675	3.368
237.725	2.448
237.775	0.585
237.825	1.473
237.875	0.973
237.925	0.500
237.975	0.879
238.025	1.433
238.075	1.012
238.125	0.870
238.175	0.460
238.225	0.802
238.275	0.990
238.325	1.311
238.375	2.314
238.425	2.218
238.475	6.886
238.525	8.951
238.575	9.781
238.625	23.704
238.675	31.419
238.725	19.612
238.775	18.190
238.825	20.074
238.875	28.979
238.925	23.697
238.975	36.335
239.025	32.808
239.075	21.757
239.125	36.288
239.175	29.572
239.225	25.693
239.275	45.134
239.325	42.286
239.375	50.034
239.425	25.471
239.475	42.962

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SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 7/7/2016 9:30:58 AM
End Time: 7/7/2016 9:33:10 AM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 4480.20
        Obtained Intensity (Mg 23.985): 253633.68
        Obtained Intensity (In 114.904): 63480.18
        Obtained Intensity (U 238.05): 131915.39
        Obtained Intensity (Bkgd 220): 0.27
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.019 (=3554.68 / 189899.25)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.011 (=2175.22 / 189899.25)
```

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SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 7/7/2016 9:30:58 AM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 4480.20
                Obtained Intensity (Mg 23.985): 253633.68
                Obtained Intensity (In 114.904): 63480.18
                Obtained Intensity (U 238.05): 131915.39
                Obtained Intensity (Bkgd 220): 0.27
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.019 (=3554.68 / 189899.25)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.011 (=2175.22 / 189899.25)
[Passed]  Optimum value(s): N/A

End Time: 7/7/2016 9:33:10 AM
```


Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Thursday, July 07, 2016 09:44:32
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59299.1	0.2				ug/L		Standard
	Be	9	16.7	17.3				ug/L		Standard
	Al	27	1471.7	6.1				ug/L		Standard
	Sc	45	27860.6	0.9				ug/L		Standard
	Ti	47	27.7	13.7				ug/L		Standard
	V	51	1156.0	2.3				ug/L		Standard
	Cr	52	6689.5	1.5				ug/L		Standard
	Cr	53	348.3	19.1				ug/L		Standard
	Mn	55	770.4	3.0				ug/L		Standard
	Co	59	215.7	1.6				ug/L		Standard
	Ni	60	439.7	5.9				ug/L		Standard
	Cu	65	116.0	7.4				ug/L		Standard
	Zn	66	135.0	17.1				ug/L		Standard
>	**Ge**	72	445277.3	1.0				ug/L		Standard
	As	75	-57.2	32.7				ug/L		Standard
	Se	82	9.6	71.7				ug/L		Standard
	Se-1	77	56.7	11.8				ug/L		Standard
>	**Ga**	71	78.3	31.5				mg/L		Standard
	Rb	85	21.7	74.2				ug/L		Standard
	Y	89	388958.9	2.0				ug/L		Standard
>	**Rh**	103	8.3	124.9				ug/L		Standard
	Mo	98	10.4	12.9				ug/L		Standard
	Ag	107	65.7	13.0				ug/L		Standard
	Cd	111	3.3	46.2				mg/L		Standard
	Cd	114	3.6	159.7				ug/L		Standard
>	**In**	115	523326.7	0.8				ug/L		Standard
	Sn	118	488.3	8.8				ug/L		Standard
	Sb	123	195.2	33.1				ug/L		Standard
	Ba	135	28.0	31.7				ug/L		Standard
	Ce	140	83.3	33.0				ug/L		Standard
>	**Tb**	159	809211.0	0.6				ug/L		Standard
	Ho	165	13.3	43.3				ug/L		Standard
	Tl	203	4.3	26.6				ug/L		Standard
	Tl	205	8.3	69.3				ug/L		Standard
	Pb	206	230.3	3.7				ug/L		Standard
	Pb	207	184.3	6.7				ug/L		Standard
	Pb	208	775.0	4.2				ug/L		Standard
	U	238	3.3	17.3				ug/L		Standard
>	**Bi**	209	472451.6	0.9				ug/L		Standard

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	Na	23	0.0		mg/L	Standard
	Mg	24	51.7	14.8	mg/L	Standard
	K	39	31.7	36.5	mg/L	Standard
	Ca	43	33.3	17.3	mg/L	Standard
	Fe	54	137.6	18.1	mg/L	Standard
	Fe	57	263.3	19.1	mg/L	Standard
>	**Sc-1**	45	27860.6	0.9	mg/L	Standard
	Cl	35	100606.9	0.6	ug/L	Standard
	Kr	83	2.0	132.3	ug/L	Standard
	Br	81	1776.8	7.5	ug/L	Standard
	P	31	18074.1	3.0	ug/L	Standard
	S	34	3900.5	2.6	ug/L	Standard
	Sr	88	60.0	14.4	ug/L	Standard
	C	12	110.0	36.4	mg/L	Standard
	N	14	0.0		mg/L	Standard
	Hg	202	6.7	86.6	mg/L	Standard
	Dy	164	13.2	86.6	mg/L	Standard
	Ho-1	165	13.3	43.3	mg/L	Standard
	Er	166	3.3	173.2	mg/L	Standard
	I	127	8539.1	1.9	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Blank
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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Thursday, July 07, 2016 09:47:44
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60562.5	1.6				ug/L	59299	Standard
	Be	9	13.3	43.3				ug/L	17	Standard
	Al	27	1513.4	4.1				ug/L	1472	Standard
	Sc	45	27925.7	1.8				ug/L	27861	Standard
	Ti	47	25.7	21.5				ug/L	28	Standard
	V	51	1294.9	1.2				ug/L	1156	Standard
	Cr	52	6700.8	0.7				ug/L	6689	Standard
	Cr	53	330.0	19.7				ug/L	348	Standard
	Mn	55	740.0	0.4				ug/L	770	Standard
	Co	59	213.7	12.0				ug/L	216	Standard
	Ni	60	459.3	5.8				ug/L	440	Standard
	Cu	65	115.3	4.3				ug/L	116	Standard
	Zn	66	136.0	1.5				ug/L	135	Standard
>	**Ge**	72	443674.7	0.5				ug/L	445277	Standard
	As	75	-56.7	30.9				ug/L	-57	Standard
	Se	82	14.4	11.2				ug/L	10	Standard
	Se-1	77	46.7	11.8				ug/L	57	Standard
>	**Ga**	71	83.3	6.9				mg/L	78	Standard
	Rb	85	28.3	20.4				ug/L	22	Standard
	Y	89	385119.4	2.1				ug/L	388959	Standard
>	**Rh**	103	18.3	68.6				ug/L	8	Standard
	Mo	98	8.2	5.2				ug/L	10	Standard
	Ag	107	73.3	7.9				ug/L	66	Standard
	Cd	111	4.7	62.0				mg/L	3	Standard
	Cd	114	8.7	119.3				ug/L	4	Standard
>	**In**	115	524007.2	0.3				ug/L	523327	Standard
	Sn	118	421.7	7.1				ug/L	488	Standard
	Sb	123	95.4	36.0				ug/L	195	Standard
	Ba	135	20.3	24.8				ug/L	28	Standard
	Ce	140	68.3	16.9				ug/L	83	Standard
>	**Tb**	159	815907.7	0.5				ug/L	809211	Standard
	Ho	165	13.3	21.7				ug/L	13	Standard
	Tl	203	4.3	26.6				ug/L	4	Standard
	Tl	205	5.0	100.0				ug/L	8	Standard
	Pb	206	221.3	5.6				ug/L	230	Standard
	Pb	207	179.3	13.0				ug/L	184	Standard
	Pb	208	780.7	2.3				ug/L	775	Standard
	U	238	4.0	25.0				ug/L	3	Standard
>	**Bi**	209	471338.4	0.3				ug/L	472452	Standard

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Na	23	1.7	173.2	mg/L	0	Standard
Mg	24	35.0	42.9	mg/L	52	Standard
K	39	26.7	28.6	mg/L	32	Standard
Ca	43	25.0	34.6	mg/L	33	Standard
Fe	54	114.0	15.0	mg/L	138	Standard
Fe	57	236.7	15.9	mg/L	263	Standard
> **Sc-1**	45	27925.7	1.8	mg/L	27861	Standard
Cl	35	98693.1	0.4	ug/L	100607	Standard
Kr	83	3.3	96.4	ug/L	2	Standard
Br	81	1930.1	14.8	ug/L	1777	Standard
P	31	17720.4	1.8	ug/L	18074	Standard
S	34	3968.9	2.6	ug/L	3901	Standard
Sr	88	78.3	13.3	ug/L	60	Standard
C	12	93.3	22.3	mg/L	110	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	16.7	91.7	mg/L	7	Standard
Dy	164	2.5	239.4	mg/L	13	Standard
Ho-1	165	13.3	21.7	mg/L	13	Standard
Er	166	16.7	69.3	mg/L	3	Standard
I	127	8744.2	3.2	mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 1
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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Thursday, July 07, 2016 09:50:56
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60770.0	1.1				ug/L	59299	Standard
	Be	9	41.7	34.6				ug/L	17	Standard
	Al	27	8615.8	2.5				ug/L	1472	Standard
	Sc	45	28019.2	2.1				ug/L	27861	Standard
	Ti	47	51.0	7.1				ug/L	28	Standard
	V	51	1523.8	1.9				ug/L	1156	Standard
	Cr	52	7074.7	1.1				ug/L	6689	Standard
	Cr	53	391.7	3.9				ug/L	348	Standard
	Mn	55	1126.4	1.7				ug/L	770	Standard
	Co	59	566.0	1.1				ug/L	216	Standard
	Ni	60	553.3	4.4				ug/L	440	Standard
	Cu	65	195.0	0.9				ug/L	116	Standard
	Zn	66	265.0	4.9				ug/L	135	Standard
>	**Ge**	72	447029.9	0.6				ug/L	445277	Standard
	As	75	13.9	144.9				ug/L	-57	Standard
	Se	82	21.7	25.3				ug/L	10	Standard
	Se-1	77	50.7	6.3				ug/L	57	Standard
>	**Ga**	71	63.3	27.7				mg/L	78	Standard
	Rb	85	25.0	0.0				ug/L	22	Standard
	Y	89	390857.2	0.1				ug/L	388959	Standard
>	**Rh**	103	16.7	17.3				ug/L	8	Standard
	Mo	98	274.0	4.6				ug/L	10	Standard
	Ag	107	404.7	1.9				ug/L	66	Standard
	Cd	111	108.8	8.9				mg/L	3	Standard
	Cd	114	267.8	17.0				ug/L	4	Standard
>	**In**	115	528990.4	1.0				ug/L	523327	Standard
	Sn	118	705.0	6.3				ug/L	488	Standard
	Sb	123	306.1	4.0				ug/L	195	Standard
	Ba	135	131.0	11.1				ug/L	28	Standard
	Ce	140	86.7	33.8				ug/L	83	Standard
>	**Tb**	159	820820.8	0.4				ug/L	809211	Standard
	Ho	165	10.0	100.0				ug/L	13	Standard
	Tl	203	413.7	5.9				ug/L	4	Standard
	Tl	205	358.3	8.5				ug/L	8	Standard
	Pb	206	489.0	4.3				ug/L	230	Standard
	Pb	207	420.0	3.7				ug/L	184	Standard
	Pb	208	1773.7	3.5				ug/L	775	Standard
	U	238	345.0	3.9				ug/L	3	Standard
>	**Bi**	209	477512.5	0.8				ug/L	472452	Standard

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	Na	23	0.0		mg/L	0	Standard
	Mg	24	51.7	36.6	mg/L	52	Standard
	K	39	28.3	36.7	mg/L	32	Standard
	Ca	43	30.0	44.1	mg/L	33	Standard
	Fe	54	141.1	14.7	mg/L	138	Standard
	Fe	57	220.0	14.2	mg/L	263	Standard
>	**Sc-1**	45	28019.2	2.1	mg/L	27861	Standard
	Cl	35	98404.5	0.5	ug/L	100607	Standard
	Kr	83	2.7	43.3	ug/L	2	Standard
	Br	81	1780.1	2.6	ug/L	1777	Standard
	P	31	18099.1	0.9	ug/L	18074	Standard
	S	34	3712.1	3.5	ug/L	3901	Standard
	Sr	88	48.3	11.9	ug/L	60	Standard
	C	12	80.0	21.7	mg/L	110	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	6.7	86.6	mg/L	7	Standard
	Dy	164	6.3	86.9	mg/L	13	Standard
	Ho-1	165	10.0	100.0	mg/L	13	Standard
	Er	166	6.7	173.2	mg/L	3	Standard
	I	127	8364.0	1.9	mg/L	8539	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Thursday, July 07, 2016 09:54:07
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58069.4	2.5				ug/L	59299	Standard
	Be	9	41027.2	1.9	**50.0000**	0.729	1.5	ug/L	17	Standard
	Al	27	6517126.9	1.2	**50.0000**	0.929	1.9	ug/L	1472	Standard
	Sc	45	27651.9	0.6				ug/L	27861	Standard
	Ti	47	23647.4	2.2	**100.0000**	1.783	1.8	ug/L	28	Standard
	V	51	336346.6	0.9	**50.0000**	0.244	0.5	ug/L	1156	Standard
	Cr	52	352909.1	2.3	**50.0000**	0.981	2.0	ug/L	6689	Standard
	Cr	53	43846.7	2.6	**50.0000**	1.147	2.3	ug/L	348	Standard
	Mn	55	316708.6	0.8	**50.0000**	0.401	0.8	ug/L	770	Standard
	Co	59	331578.8	1.6	**50.0000**	0.599	1.2	ug/L	216	Standard
	Ni	60	91054.2	1.9	**50.0000**	0.771	1.5	ug/L	440	Standard
	Cu	65	90405.6	1.7	**50.0000**	0.662	1.3	ug/L	116	Standard
	Zn	66	53623.4	2.2	**50.0000**	0.967	1.9	ug/L	135	Standard
>	**Ge**	72	445834.0	0.4				ug/L	445277	Standard
	As	75	54192.2	0.6	**50.0000**	0.365	0.7	ug/L	-57	Standard
	Se	82	5531.5	1.0	**50.0000**	0.526	1.1	ug/L	10	Standard
	Se-1	77	3754.5	2.1	**50.0000**	1.104	2.2	ug/L	57	Standard
>	**Ga**	71	91.7	26.9				mg/L	78	Standard
	Rb	85	760.0	2.0				ug/L	22	Standard
	Y	89	380544.6	2.3				ug/L	388959	Standard
>	**Rh**	103	36.7	39.4				ug/L	8	Standard
	Mo	98	248731.4	0.8	**100.0000**	0.745	0.7	ug/L	10	Standard
	Ag	107	311799.3	0.8	**50.0000**	0.777	1.6	ug/L	66	Standard
	Cd	111	99173.6	0.5	**50.0000**	0.634	1.3	mg/L	3	Standard
	Cd	114	241575.7	1.3	**50.0000**	0.138	0.3	ug/L	4	Standard
>	**In**	115	512915.7	1.0				ug/L	523327	Standard
	Sn	118	271499.9	2.1	**50.0000**	1.250	2.5	ug/L	488	Standard
	Sb	123	222228.3	1.2	**50.0000**	0.410	0.8	ug/L	195	Standard
	Ba	135	94884.9	0.8	**50.0000**	0.331	0.7	ug/L	28	Standard
	Ce	140	123.3	30.7				ug/L	83	Standard
>	**Tb**	159	804042.9	1.7				ug/L	809211	Standard
	Ho	165	8.3	124.9				ug/L	13	Standard
	Tl	203	391260.5	0.4	**50.0000**	0.239	0.5	ug/L	4	Standard
	Tl	205	337342.6	0.9	**50.0000**	0.860	1.7	ug/L	8	Standard
	Pb	206	246546.8	0.8	**50.0000**	0.391	0.8	ug/L	230	Standard
	Pb	207	222630.7	0.4	**50.0000**	0.577	1.2	ug/L	184	Standard
	Pb	208	906726.2	0.4	**50.0000**	0.222	0.4	ug/L	775	Standard
	U	238	333111.8	0.7	**50.0000**	0.494	1.0	ug/L	3	Standard
>	**Bi**	209	469047.5	0.8				ug/L	472452	Standard

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Na	23	3.3	86.6	**5.0000**	4.326	86.5	mg/L	0	Standard
Mg	24	3652.1	1.3	**5.0000**	0.098	2.0	mg/L	52	Standard
K	39	1078.4	12.3	**5.0000**	0.616	12.3	mg/L	32	Standard
Ca	43	65.0	23.1	**5.0000**	2.092	41.8	mg/L	33	Standard
Fe	54	6107.3	5.1	**5.0000**	0.292	5.8	mg/L	138	Standard
Fe	57	1875.1	3.8	**5.0000**	0.185	3.7	mg/L	263	Standard
Sc-1	45	27651.9	0.6				mg/L	27861	Standard
Cl	35	104900.6	0.5				ug/L	100607	Standard
Kr	83	2.0	132.3				ug/L	2	Standard
Br	81	1870.1	9.3				ug/L	1777	Standard
P	31	20380.4	1.6				ug/L	18074	Standard
S	34	4659.1	3.4				ug/L	3901	Standard
Sr	88	78.3	25.8				ug/L	60	Standard
C	12	80.0	69.6				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	100.0				mg/L	7	Standard
Dy	164	5.5	86.7				mg/L	13	Standard
Ho-1	165	8.3	124.9				mg/L	13	Standard
Er	166	23.3	89.2				mg/L	3	Standard
I	127	15479.6	1.2				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Thursday, July 07, 2016 09:57:19
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	56717.7	2.4				ug/L	59299	Standard
	Be	9	79235.0	1.5	**99.4299**	1.121	1.1	ug/L	17	Standard
	Al	27	12863276.6	1.8	**100.5155**	0.744	0.7	ug/L	1472	Standard
	Sc	45	27045.8	2.6				ug/L	27861	Standard
	Ti	47	46653.1	1.0	**201.3179**	1.276	0.6	ug/L	28	Standard
	V	51	654718.1	1.5	**100.0465**	1.483	1.5	ug/L	1156	Standard
	Cr	52	676444.3	0.8	**99.6641**	0.930	0.9	ug/L	6689	Standard
	Cr	53	84496.6	0.8	**99.6554**	0.920	0.9	ug/L	348	Standard
	Mn	55	615132.2	1.7	**99.9104**	1.534	1.5	ug/L	770	Standard
	Co	59	641274.8	1.1	**99.6534**	1.040	1.0	ug/L	216	Standard
	Ni	60	174722.0	0.5	**99.3696**	0.604	0.6	ug/L	440	Standard
	Cu	65	174315.0	0.4	**99.5142**	0.880	0.9	ug/L	116	Standard
	Zn	66	104770.1	1.7	**100.2436**	1.553	1.5	ug/L	135	Standard
>	Ge	72	434291.3	0.6				ug/L	445277	Standard
	As	75	107129.6	1.3	**100.7087**	0.882	0.9	ug/L	-57	Standard
	Se	82	10847.2	0.5	**100.4003**	0.173	0.2	ug/L	10	Standard
	Se-1	77	7144.4	1.6	**99.1286**	1.167	1.2	ug/L	57	Standard
>	Ga	71	123.3	6.2				mg/L	78	Standard
	Rb	85	1448.4	3.2				ug/L	22	Standard
	Y	89	373844.2	0.3				ug/L	388959	Standard
>	Rh	103	45.0	19.2				ug/L	8	Standard
	Mo	98	494647.4	1.1	**200.4938**	2.034	1.0	ug/L	10	Standard
	Ag	107	604333.5	0.6	**98.9644**	0.698	0.7	ug/L	66	Standard
	Cd	111	193461.4	0.4	**99.2827**	0.707	0.7	mg/L	3	Standard
	Cd	114	474834.3	0.8	**99.6652**	0.437	0.4	ug/L	4	Standard
>	In	115	507518.2	1.2				ug/L	523327	Standard
	Sn	118	540158.3	1.7	**100.2977**	0.615	0.6	ug/L	488	Standard
	Sb	123	442057.1	0.5	**100.2705**	1.273	1.3	ug/L	195	Standard
	Ba	135	186681.0	0.2	**99.7207**	1.285	1.3	ug/L	28	Standard
	Ce	140	166.7	16.5				ug/L	83	Standard
>	Tb	159	784779.4	0.3				ug/L	809211	Standard
	Ho	165	5.0	100.0				ug/L	13	Standard
	Tl	203	762588.9	0.8	**99.9152**	0.386	0.4	ug/L	4	Standard
	Tl	205	650502.8	0.8	**99.3789**	1.078	1.1	ug/L	8	Standard
	Pb	206	476610.6	0.5	**99.5293**	0.700	0.7	ug/L	230	Standard
	Pb	207	434766.1	0.9	**100.0319**	0.876	0.9	ug/L	184	Standard
	Pb	208	1786027.6	0.4	**100.4673**	0.877	0.9	ug/L	775	Standard
	U	238	655152.3	0.9	**100.3683**	1.313	1.3	ug/L	3	Standard
>	Bi	209	457869.4	0.5				ug/L	472452	Standard

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Na	23	3.3	86.6	**6.8096**	5.896	86.6	mg/L	0	Standard
Mg	24	7176.7	0.6	**10.0581**	0.319	3.2	mg/L	52	Standard
K	39	2141.8	5.7	**10.1477**	0.797	7.9	mg/L	32	Standard
Ca	43	111.7	5.2	**10.9123**	1.061	9.7	mg/L	33	Standard
Fe	54	11785.3	2.2	**9.9895**	0.487	4.9	mg/L	138	Standard
Fe	57	3197.0	2.2	**9.5846**	0.259	2.7	mg/L	263	Standard
Sc-1	45	27045.8	2.6				mg/L	27861	Standard
Cl	35	104243.4	1.5				ug/L	100607	Standard
Kr	83	3.7	56.8				ug/L	2	Standard
Br	81	1726.8	6.7				ug/L	1777	Standard
P	31	21441.8	2.2				ug/L	18074	Standard
S	34	4945.8	2.6				ug/L	3901	Standard
Sr	88	80.0	16.5				ug/L	60	Standard
C	12	70.0	51.5				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	57.3				mg/L	7	Standard
Dy	164	19.2	101.7				mg/L	13	Standard
Ho-1	165	5.0	100.0				mg/L	13	Standard
Er	166	16.7	69.3				mg/L	3	Standard
I	127	1571.7	9.2				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998
Corr. Coef.	Ca	43	Correlation coefficient < 0.998

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Thursday, July 07, 2016 10:00:32
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	56319.5	1.7				ug/L	59299	Standard
	Be	9	39648.5	1.3	**50.1029**	0.706	1.4	ug/L	17	Standard
	Al	27	6562380.7	1.8	**51.6307**	0.423	0.8	ug/L	1472	Standard
	Sc	45	27182.7	1.7				ug/L	27861	Standard
	Ti	47	23353.0	1.7	**100.4874**	1.717	1.7	ug/L	28	Standard
	V	51	328826.6	0.5	**50.0469**	0.677	1.4	ug/L	1156	Standard
	Cr	52	344293.6	1.3	**50.1292**	0.394	0.8	ug/L	6689	Standard
	Cr	53	42554.7	2.7	**49.8685**	0.984	2.0	ug/L	348	Standard
	Mn	55	313412.0	0.2	**50.7264**	0.336	0.7	ug/L	770	Standard
	Co	59	326728.0	0.7	**50.6418**	0.691	1.4	ug/L	216	Standard
	Ni	60	89645.1	1.6	**50.7411**	0.781	1.5	ug/L	440	Standard
	Cu	65	89128.4	0.6	**50.7371**	0.517	1.0	ug/L	116	Standard
	Zn	66	53405.0	0.8	**50.8854**	0.489	1.0	ug/L	135	Standard
>	Ge	72	435294.3	0.8				ug/L	445277	Standard
	As	75	53807.3	1.1	**50.4846**	0.230	0.5	ug/L	-57	Standard
	Se	82	5474.8	1.4	**50.4837**	0.416	0.8	ug/L	10	Standard
	Se-1	77	3632.1	1.1	**49.9725**	0.956	1.9	ug/L	57	Standard
>	Ga	71	108.3	37.0				mg/L	78	Standard
	Rb	85	795.0	1.7				ug/L	22	Standard
	Y	89	372679.1	2.2				ug/L	388959	Standard
>	Rh	103	25.0	52.9				ug/L	8	Standard
	Mo	98	246151.3	0.6	**99.3659**	0.616	0.6	ug/L	10	Standard
	Ag	107	305467.3	0.8	**49.8125**	0.083	0.2	ug/L	66	Standard
	Cd	111	98160.7	0.7	**50.1686**	0.141	0.3	mg/L	3	Standard
	Cd	114	238427.1	2.5	**49.8356**	0.848	1.7	ug/L	4	Standard
>	In	115	509567.6	0.8				ug/L	523327	Standard
	Sn	118	266639.1	0.8	**49.2755**	0.344	0.7	ug/L	488	Standard
	Sb	123	222185.3	0.5	**50.1830**	0.146	0.3	ug/L	195	Standard
	Ba	135	93720.6	0.6	**49.8500**	0.372	0.7	ug/L	28	Standard
	Ce	140	90.0	49.4				ug/L	83	Standard
>	Tb	159	789248.0	1.3				ug/L	809211	Standard
	Ho	165	11.7	89.2				ug/L	13	Standard
	Tl	203	386655.1	0.2	**50.2521**	0.412	0.8	ug/L	4	Standard
	Tl	205	334858.4	0.9	**50.7409**	0.153	0.3	ug/L	8	Standard
	Pb	206	242431.5	0.2	**50.1949**	0.418	0.8	ug/L	230	Standard
	Pb	207	219210.7	0.2	**50.0098**	0.482	1.0	ug/L	184	Standard
	Pb	208	906763.8	0.7	**50.5741**	0.678	1.3	ug/L	775	Standard
	U	238	332051.8	1.2	**50.4589**	0.764	1.5	ug/L	3	Standard
>	Bi	209	461601.7	0.9				ug/L	472452	Standard

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Na	23	1.7	173.2	**3.3600**	5.811	172.9	mg/L	0	Standard
Mg	24	3830.5	3.0	**5.3100**	0.235	4.4	mg/L	52	Standard
K	39	1030.0	3.9	**4.7869**	0.269	5.6	mg/L	32	Standard
Ca	43	66.7	18.9	**4.8961**	1.497	30.6	mg/L	33	Standard
Fe	54	5998.5	1.6	**5.0016**	0.171	3.4	mg/L	138	Standard
Fe	57	1791.8	1.7	**5.0455**	0.164	3.2	mg/L	263	Standard
Sc-1	45	27182.7	1.7				mg/L	27861	Standard
Cl	35	102719.7	1.3				ug/L	100607	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	1590.1	8.2				ug/L	1777	Standard
P	31	21024.6	2.8				ug/L	18074	Standard
S	34	4697.4	3.0				ug/L	3901	Standard
Sr	88	58.3	19.8				ug/L	60	Standard
C	12	56.7	36.7				mg/L	110	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	7	Standard
Dy	164	19.2	88.9				mg/L	13	Standard
Ho-1	165	11.7	89.2				mg/L	13	Standard
Er	166	16.7	124.9				mg/L	3	Standard
I	127	14513.6	3.0				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	100.206		
Al	27	103.261		
Sc	45			
Ti	47	100.487		
V	51	100.094		
Cr	52	100.258		
Cr	53			
Mn	55	101.453		
Co	59	101.284		
Ni	60	101.482		
Cu	65	101.474		
Zn	66	101.771		
Ge	72		97.758	
As	75	100.969		
Se	82	100.967		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	99.366		
Ag	107	99.625		
Cd	111	100.337		
Cd	114			
In	115		97.371	
Sn	118	98.551		
Sb	123	100.366		
Ba	135	99.700		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.504		
Tl	205			
Pb	206	100.390		
Pb	207	100.020		
Pb	208	101.148		
U	238	100.918		
Bi	209		97.703	
Na	23	67.200		
Mg	24	106.201		
K	39	95.737		
Ca	43	97.922		
Fe	54	100.031		
Fe	57	100.910		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Thursday, July 07, 2016 10:03:45
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56900.1	4.1				ug/L	59299	Standard
	Be	9	33.3	56.8	**0.0425**	0.022	51.1	ug/L	17	Standard
	Al	27	4379.0	40.2	**0.0215**	0.015	69.3	ug/L	1472	Standard
	Sc	45	27688.6	2.2				ug/L	27861	Standard
	Ti	47	39.0	26.8	**0.0538**	0.045	83.6	ug/L	28	Standard
	V	51	1124.4	4.4	**-0.0052**	0.007	139.2	ug/L	1156	Standard
	Cr	52	6067.2	1.7	**-0.0733**	0.014	18.6	ug/L	6689	Standard
	Cr	53	351.7	20.7	**0.0143**	0.086	601.4	ug/L	348	Standard
	Mn	55	1048.7	8.7	**0.0419**	0.015	35.0	ug/L	770	Standard
	Co	59	388.0	16.9	**0.0246**	0.010	41.0	ug/L	216	Standard
	Ni	60	446.7	8.4	**-0.0028**	0.021	774.3	ug/L	440	Standard
	Cu	65	161.0	22.6	**0.0334**	0.021	62.1	ug/L	116	Standard
	Zn	66	385.0	6.7	**0.1708**	0.025	14.3	ug/L	135	Standard
>	**Ge**	72	435944.3	0.2				ug/L	445277	Standard
	As	75	4.4	594.4	**0.0414**	0.024	59.1	ug/L	-57	Standard
	Se	82	22.3	11.0	**0.0601**	0.022	36.9	ug/L	10	Standard
	Se-1	77	55.0	14.5	**0.1279**	0.113	88.1	ug/L	57	Standard
>	**Ga**	71	101.7	7.5				mg/L	78	Standard
	Rb	85	20.0	66.1				ug/L	22	Standard
	Y	89	379784.6	1.1				ug/L	388959	Standard
>	**Rh**	103	16.7	17.3				ug/L	8	Standard
	Mo	98	375.1	17.7	**0.1435**	0.027	19.2	ug/L	10	Standard
	Ag	107	240.3	27.6	**0.0253**	0.011	43.5	ug/L	66	Standard
	Cd	111	52.0	55.8	**0.0228**	0.015	65.5	mg/L	3	Standard
	Cd	114	105.8	17.4	**0.0180**	0.004	22.3	ug/L	4	Standard
>	**In**	115	514644.0	0.8				ug/L	523327	Standard
	Sn	118	1086.7	26.0	**0.1236**	0.052	42.3	ug/L	488	Standard
	Sb	123	843.2	31.1	**0.1721**	0.059	34.2	ug/L	195	Standard
	Ba	135	80.3	34.9	**0.0252**	0.015	59.7	ug/L	28	Standard
	Ce	140	23.3	24.7				ug/L	83	Standard
>	**Tb**	159	791224.8	1.9				ug/L	809211	Standard
	Ho	165	8.3	34.6				ug/L	13	Standard
	Tl	203	207.3	46.2	**0.0245**	0.012	49.6	ug/L	4	Standard
	Tl	205	148.3	63.7	**0.0196**	0.014	71.4	ug/L	8	Standard
	Pb	206	361.0	17.7	**0.0256**	0.013	50.7	ug/L	230	Standard
	Pb	207	311.7	22.3	**0.0273**	0.016	57.2	ug/L	184	Standard
	Pb	208	1310.4	15.3	**0.0262**	0.011	41.9	ug/L	775	Standard
	U	238	149.3	39.6	**0.0216**	0.009	40.7	ug/L	3	Standard
>	**Bi**	209	469451.2	0.5				ug/L	472452	Standard

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Na	23	1.7	173.2	**3.2342**	5.593	172.9	mg/L	0	Standard
Mg	24	45.0	44.4	**-0.0040**	0.027	676.4	mg/L	52	Standard
K	39	40.0	12.5	**0.0604**	0.020	32.3	mg/L	32	Standard
Ca	43	18.3	15.7	**-1.4818**	0.327	22.0	mg/L	33	Standard
Fe	54	170.7	8.8	**0.0311**	0.010	31.3	mg/L	138	Standard
Fe	57	280.0	15.5	**0.2011**	0.131	65.3	mg/L	263	Standard
> **Sc-1**	45	27688.6	2.2				mg/L	27861	Standard
Cl	35	101435.8	1.3				ug/L	100607	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1686.8	0.7				ug/L	1777	Standard
P	31	19614.4	2.4				ug/L	18074	Standard
S	34	4705.7	1.3				ug/L	3901	Standard
Sr	88	98.3	17.9				ug/L	60	Standard
C	12	73.3	20.8				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	16.3	72.4				mg/L	13	Standard
Ho-1	165	8.3	34.6				mg/L	13	Standard
Er	166	6.7	173.2				mg/L	3	Standard
I	127	8405.7	2.1				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.904	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.341	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.365	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Na	23	
QC Std 2	Ca	43	
QC Std 2	Fe	57	

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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Thursday, July 07, 2016 10:06:57
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55217.1	2.3				ug/L	59299	Standard
	Be	9	165.0	6.1	**0.2141**	0.015	6.9	ug/L	17	Standard
	Al	27	1831.8	14.1	**0.0018**	0.002	97.7	ug/L	1472	Standard
	Sc	45	26611.7	3.6				ug/L	27861	Standard
	Ti	47	26.0	21.4	**0.0010**	0.024	2520.0	ug/L	28	Standard
	V	51	3453.1	1.5	**0.3648**	0.008	2.3	ug/L	1156	Standard
	Cr	52	11002.0	0.3	**0.7042**	0.007	1.0	ug/L	6689	Standard
	Cr	53	956.7	2.2	**0.7599**	0.025	3.2	ug/L	348	Standard
	Mn	55	3474.4	1.2	**0.4508**	0.007	1.6	ug/L	770	Standard
	Co	59	2623.9	1.6	**0.3823**	0.006	1.5	ug/L	216	Standard
	Ni	60	3054.6	2.3	**1.5276**	0.038	2.5	ug/L	440	Standard
	Cu	65	1410.4	3.5	**0.7671**	0.031	4.0	ug/L	116	Standard
	Zn	66	6635.1	0.5	**6.3191**	0.033	0.5	ug/L	135	Standard
>	**Ge**	72	423960.0	0.2				ug/L	445277	Standard
	As	75	339.7	4.5	**0.3643**	0.014	3.9	ug/L	-57	Standard
	Se	82	54.3	15.2	**0.3701**	0.078	21.2	ug/L	10	Standard
	Se-1	77	68.0	5.9	**0.3354**	0.059	17.7	ug/L	57	Standard
>	**Ga**	71	81.7	21.5				mg/L	78	Standard
	Rb	85	15.0	100.0				ug/L	22	Standard
	Y	89	362618.0	0.5				ug/L	388959	Standard
>	**Rh**	103	25.0	20.0				ug/L	8	Standard
	Mo	98	109.5	11.3	**0.0388**	0.005	12.9	ug/L	10	Standard
	Ag	107	2371.2	1.0	**0.3833**	0.001	0.4	ug/L	66	Standard
	Cd	111	443.1	1.6	**0.2288**	0.005	2.3	mg/L	3	Standard
	Cd	114	1102.0	6.0	**0.2325**	0.014	5.9	ug/L	4	Standard
>	**In**	115	496585.0	0.8				ug/L	523327	Standard
	Sn	118	548.3	24.5	**0.0284**	0.025	87.7	ug/L	488	Standard
	Sb	123	1700.6	6.2	**0.3775**	0.022	5.7	ug/L	195	Standard
	Ba	135	1329.7	1.0	**0.7088**	0.011	1.6	ug/L	28	Standard
	Ce	140	20.0	66.1				ug/L	83	Standard
>	**Tb**	159	756474.2	1.1				ug/L	809211	Standard
	Ho	165	5.0	100.0				ug/L	13	Standard
	Tl	203	657.7	9.4	**0.0846**	0.008	9.9	ug/L	4	Standard
	Tl	205	526.7	13.5	**0.0783**	0.011	13.9	ug/L	8	Standard
	Pb	206	1212.0	2.8	**0.2063**	0.008	3.7	ug/L	230	Standard
	Pb	207	1021.0	2.2	**0.1932**	0.005	2.3	ug/L	184	Standard
	Pb	208	4256.6	1.2	**0.1948**	0.004	1.8	ug/L	775	Standard
	U	238	2534.5	2.2	**0.3891**	0.010	2.5	ug/L	3	Standard
>	**Bi**	209	456080.2	0.3				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	31.7	24.1	**-0.0200**	0.013	63.4	mg/L	52	Standard
K	39	33.3	34.6	**0.0345**	0.052	149.4	mg/L	32	Standard
Ca	43	25.0	72.1	**-0.4955**	2.355	475.3	mg/L	33	Standard
Fe	54	117.2	11.0	**-0.0095**	0.012	124.5	mg/L	138	Standard
Fe	57	265.0	16.4	**0.1867**	0.126	67.7	mg/L	263	Standard
Sc-1	45	26611.7	3.6				mg/L	27861	Standard
Cl	35	97886.5	1.1				ug/L	100607	Standard
Kr	83	3.0	88.2				ug/L	2	Standard
Br	81	1573.4	9.6				ug/L	1777	Standard
P	31	13617.8	1.8				ug/L	18074	Standard
S	34	4444.0	3.8				ug/L	3901	Standard
Sr	88	66.7	22.9				ug/L	60	Standard
C	12	80.0	33.1				mg/L	110	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	9.4	5.9				mg/L	13	Standard
Ho-1	165	5.0	100.0				mg/L	13	Standard
Er	166	13.3	86.6				mg/L	3	Standard
I	127	948.4	8.4				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	107.044		
Al	27	0.185		
Sc	45			
Ti	47			
V	51	91.211		
Cr	52	88.021		
Cr	53			
Mn	55	90.168		
Co	59	95.586		
Ni	60	95.477		
Cu	65	95.885		
Zn	66	101.106		
Ge	72		95.213	
As	75	91.069		
Se	82	92.537		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	95.821		
Cd	111	95.341		
Cd	114			
> In	115			94.890
Sn	118			
Sb	123	94.376		
Ba	135	94.513		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	105.709		
Tl	205			
Pb	206			
Pb	207			
Pb	208	97.395		
U	238	97.282		
> Bi	209			96.535
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

Sample ID: QC Std 3
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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Thursday, July 07, 2016 10:10:08
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	50893.8	4.6				ug/L	59299	Standard
	Be	9	31.7	92.5	**0.0464**	0.042	91.4	ug/L	17	Standard
	Al	27	5702420.5	1.3	**49.6963**	1.622	3.3	ug/L	1472	Standard
	Sc	45	24878.7	1.7				ug/L	27861	Standard
	Ti	47	22532.1	0.8	**103.8445**	1.615	1.6	ug/L	28	Standard
	V	51	1017.2	6.2	**-0.0102**	0.011	112.0	ug/L	1156	Standard
	Cr	52	5313.3	2.4	**-0.1279**	0.015	11.8	ug/L	6689	Standard
	Cr	53	2333.5	5.7	**2.5512**	0.147	5.8	ug/L	348	Standard
	Mn	55	1719.1	4.6	**0.1707**	0.013	7.8	ug/L	770	Standard
	Co	59	435.0	15.1	**0.0367**	0.010	28.6	ug/L	216	Standard
	Ni	60	837.7	4.4	**0.2538**	0.020	7.9	ug/L	440	Standard
	Cu	65	529.3	7.8	**0.2647**	0.023	8.5	ug/L	116	Standard
	Zn	66	665.3	2.7	**0.4847**	0.021	4.3	ug/L	135	Standard
>	Ge	72	406452.8	0.8				ug/L	445277	Standard
	As	75	0.6	1984.1	**0.0379**	0.012	32.2	ug/L	-57	Standard
	Se	82	20.5	19.9	**0.0571**	0.039	67.6	ug/L	10	Standard
	Se-1	77	248.3	6.5	**3.0670**	0.212	6.9	ug/L	57	Standard
>	Ga	71	156.7	12.1				mg/L	78	Standard
	Rb	85	666.7	3.4				ug/L	22	Standard
	Y	89	341056.2	1.2				ug/L	388959	Standard
>	Rh	103	8.3	124.9				ug/L	8	Standard
	Mo	98	209657.3	0.7	**92.8017**	1.115	1.2	ug/L	10	Standard
	Ag	107	254.3	36.0	**0.0319**	0.016	51.0	ug/L	66	Standard
	Cd	111	-115.1	55.9	**-0.0681**	0.036	53.3	mg/L	3	Standard
	Cd	114	515.3	21.4	**0.1142**	0.025	22.0	ug/L	4	Standard
>	In	115	464727.9	0.6				ug/L	523327	Standard
	Sn	118	611.7	7.0	**0.0484**	0.008	17.0	ug/L	488	Standard
	Sb	123	714.1	29.5	**0.1604**	0.053	32.9	ug/L	195	Standard
	Ba	135	81.0	55.8	**0.0300**	0.026	87.6	ug/L	28	Standard
	Ce	140	205.0	62.3				ug/L	83	Standard
>	Tb	159	740286.5	2.0				ug/L	809211	Standard
	Ho	165	8.3	69.3				ug/L	13	Standard
	Tl	203	260.7	63.0	**0.0342**	0.023	66.6	ug/L	4	Standard
	Tl	205	173.3	24.5	**0.0255**	0.007	27.1	ug/L	8	Standard
	Pb	206	408.3	16.7	**0.0423**	0.015	35.8	ug/L	230	Standard
	Pb	207	347.3	19.8	**0.0419**	0.017	40.4	ug/L	184	Standard
	Pb	208	1425.4	12.1	**0.0392**	0.011	27.0	ug/L	775	Standard
	U	238	81.7	51.6	**0.0126**	0.007	54.6	ug/L	3	Standard
>	Bi	209	432715.4	0.4				ug/L	472452	Standard

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Na	23	1.7	173.2	**3.6544**	6.321	173.0	mg/L	0	Standard
Mg	24	8212.2	4.0	**12.5201**	0.401	3.2	mg/L	52	Standard
K	39	1075.0	8.5	**5.4712**	0.427	7.8	mg/L	32	Standard
Ca	43	136.7	11.2	**15.7658**	2.137	13.6	mg/L	33	Standard
Fe	54	12984.7	2.8	**11.9831**	0.543	4.5	mg/L	138	Standard
Fe	57	3460.4	7.3	**11.4003**	0.981	8.6	mg/L	263	Standard
Sc-1	45	24878.7	1.7				mg/L	27861	Standard
Cl	35	95142.5	1.1				ug/L	100607	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1496.7	1.4				ug/L	1777	Standard
P	31	6833.2	3.0				ug/L	18074	Standard
S	34	4120.6	3.9				ug/L	3901	Standard
Sr	88	70.0	64.3				ug/L	60	Standard
C	12	100.0	17.3				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	7	Standard
Dy	164	6.2	93.6				mg/L	13	Standard
Ho-1	165	8.3	69.3				mg/L	13	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	4892.5	1.7				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27	0.994		
Sc	45			
Ti	47	103.845		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		91.281	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	92.802		
Ag	107			
Cd	111			
Cd	114			
In	115			88.803
Sn	118			
Sb	123			
Ba	135			
Ce	140			
Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
Bi	209			91.589
Na	23	29.235		
Mg	24	250.401		
K	39	109.424		
Ca	43	105.105		
Fe	54	95.865		
Fe	57	91.203		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Thursday, July 07, 2016 10:13:20
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	55541.6	0.8				ug/L	59299	Standard
	Be	9	80533.5	0.9	**103.1882**	1.466	1.4	ug/L	17	Standard
	Al	27	5392041.8	1.5	**43.0193**	0.979	2.3	ug/L	1472	Standard
	Sc	45	27141.0	1.7				ug/L	27861	Standard
	Ti	47	20965.8	2.4	**90.1563**	2.316	2.6	ug/L	28	Standard
	V	51	648326.1	0.7	**98.7918**	1.495	1.5	ug/L	1156	Standard
	Cr	52	671386.6	1.0	**98.6289**	1.330	1.3	ug/L	6689	Standard
	Cr	53	84427.9	1.6	**99.2856**	1.244	1.3	ug/L	348	Standard
	Mn	55	615984.8	0.5	**99.7679**	1.040	1.0	ug/L	770	Standard
	Co	59	632094.7	1.2	**97.9521**	1.722	1.8	ug/L	216	Standard
	Ni	60	173236.8	0.9	**98.2489**	1.781	1.8	ug/L	440	Standard
	Cu	65	173068.9	1.0	**98.5276**	1.908	1.9	ug/L	116	Standard
	Zn	66	105930.0	0.8	**101.0756**	1.660	1.6	ug/L	135	Standard
>	Ge	72	435539.2	0.9				ug/L	445277	Standard
	As	75	107334.1	0.5	**100.6162**	0.424	0.4	ug/L	-57	Standard
	Se	82	10768.5	0.6	**99.3930**	1.490	1.5	ug/L	10	Standard
	Se-1	77	7398.8	0.9	**102.3924**	0.997	1.0	ug/L	57	Standard
>	Ga	71	143.3	21.3				mg/L	78	Standard
	Rb	85	713.4	4.3				ug/L	22	Standard
	Y	89	375267.2	0.8				ug/L	388959	Standard
>	Rh	103	36.7	34.3				ug/L	8	Standard
	Mo	98	200040.3	0.3	**81.0480**	0.665	0.8	ug/L	10	Standard
	Ag	107	588522.5	0.3	**96.3381**	0.710	0.7	ug/L	66	Standard
	Cd	111	191557.3	0.2	**98.2663**	0.395	0.4	mg/L	3	Standard
	Cd	114	471678.8	1.3	**98.9670**	1.502	1.5	ug/L	4	Standard
>	In	115	507700.1	0.5				ug/L	523327	Standard
	Sn	118	1076.7	15.3	**0.1243**	0.031	24.7	ug/L	488	Standard
	Sb	123	428248.9	1.6	**97.0998**	1.904	2.0	ug/L	195	Standard
	Ba	135	181906.1	0.6	**97.1285**	0.999	1.0	ug/L	28	Standard
	Ce	140	85.0	30.6				ug/L	83	Standard
>	Tb	159	792348.6	0.5				ug/L	809211	Standard
	Ho	165	6.7	173.2				ug/L	13	Standard
	Tl	203	760377.8	0.2	**97.5590**	0.751	0.8	ug/L	4	Standard
	Tl	205	659523.3	1.4	**98.6578**	0.810	0.8	ug/L	8	Standard
	Pb	206	487390.8	0.4	**99.6699**	1.245	1.2	ug/L	230	Standard
	Pb	207	425230.0	0.6	**95.8086**	1.352	1.4	ug/L	184	Standard
	Pb	208	1794987.1	0.2	**98.8743**	1.038	1.0	ug/L	775	Standard
	U	238	649735.5	1.0	**97.4724**	1.539	1.6	ug/L	3	Standard
>	Bi	209	467591.9	0.9				ug/L	472452	Standard

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Na	23	3.3	86.6	**6.6890**	5.791	86.6	mg/L	0	Standard
Mg	24	7546.9	3.2	**10.5362**	0.207	2.0	mg/L	52	Standard
K	39	843.4	3.9	**3.9028**	0.227	5.8	mg/L	32	Standard
Ca	43	111.7	15.7	**10.8671**	2.488	22.9	mg/L	33	Standard
Fe	54	12089.7	1.6	**10.2094**	0.325	3.2	mg/L	138	Standard
Fe	57	3363.7	2.2	**10.0803**	0.264	2.6	mg/L	263	Standard
Sc-1	45	27141.0	1.7				mg/L	27861	Standard
Cl	35	102626.5	2.0				ug/L	100607	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	1656.8	4.4				ug/L	1777	Standard
P	31	17695.3	3.0				ug/L	18074	Standard
S	34	4100.6	2.3				ug/L	3901	Standard
Sr	88	66.7	15.6				ug/L	60	Standard
C	12	123.3	20.4				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	69.3				mg/L	7	Standard
Dy	164	19.5	50.0				mg/L	13	Standard
Ho-1	165	6.7	173.2				mg/L	13	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	7428.5	2.4				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	103.188		
Al	27	0.860		
Sc	45			
Ti	47	90.156		
V	51	98.792		
Cr	52	98.629		
Cr	53			
Mn	55	99.768		
Co	59	97.952		
Ni	60	98.249		
Cu	65	98.528		
Zn	66	101.076		
Ge	72		97.813	
As	75	100.616		
Se	82	99.393		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	81.048		
Ag	107	96.338		
Cd	111	98.266		
Cd	114			
In	115		97.014	
Sn	118			
Sb	123	97.100		
Ba	135	97.128		
Ce	140			
Tb	159			
Ho	165			
Tl	203	97.559		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.874		
U	238	97.472		
Bi	209		98.971	
Na	23	53.512		
Mg	24	210.724		
K	39	78.056		
Ca	43	72.447		
Fe	54	81.675		
Fe	57	80.642		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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QC Std 5	K	39
QC Std 5	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, July 07, 2016 10:16:33
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	57728.1	1.5				ug/L	59299	Standard
	Be	9	40883.4	1.9	**50.4099**	1.443	2.9	ug/L	17	Standard
	Al	27	6549254.1	1.7	**50.2698**	0.474	0.9	ug/L	1472	Standard
	Sc	45	27222.8	1.4				ug/L	27861	Standard
	Ti	47	22813.8	1.0	**97.8743**	1.029	1.1	ug/L	28	Standard
	V	51	330704.6	0.8	**50.1845**	0.761	1.5	ug/L	1156	Standard
	Cr	52	340944.0	0.4	**49.4858**	0.492	1.0	ug/L	6689	Standard
	Cr	53	43042.7	1.4	**50.2981**	0.357	0.7	ug/L	348	Standard
	Mn	55	310835.0	1.2	**50.1624**	0.979	2.0	ug/L	770	Standard
	Co	59	326210.3	0.5	**50.4109**	0.516	1.0	ug/L	216	Standard
	Ni	60	88113.5	1.0	**49.7205**	0.126	0.3	ug/L	440	Standard
	Cu	65	87926.1	0.9	**49.9031**	0.533	1.1	ug/L	116	Standard
	Zn	66	52538.9	0.2	**49.9094**	0.487	1.0	ug/L	135	Standard
>	Ge	72	436582.8	0.7				ug/L	445277	Standard
	As	75	53321.1	0.5	**49.8826**	0.154	0.3	ug/L	-57	Standard
	Se	82	5427.5	0.3	**49.9018**	0.533	1.1	ug/L	10	Standard
	Se-1	77	3622.4	2.6	**49.6911**	1.660	3.3	ug/L	57	Standard
>	Ga	71	120.0	11.0				mg/L	78	Standard
	Rb	85	676.7	10.8				ug/L	22	Standard
	Y	89	377624.8	0.9				ug/L	388959	Standard
>	Rh	103	21.7	26.6				ug/L	8	Standard
	Mo	98	246608.6	0.6	**98.4120**	0.518	0.5	ug/L	10	Standard
	Ag	107	305187.8	1.0	**49.1997**	0.624	1.3	ug/L	66	Standard
	Cd	111	97311.2	0.8	**49.1657**	0.281	0.6	mg/L	3	Standard
	Cd	114	236807.5	0.7	**48.9359**	0.183	0.4	ug/L	4	Standard
>	In	115	515450.0	0.3				ug/L	523327	Standard
	Sn	118	265997.1	2.3	**48.5923**	1.009	2.1	ug/L	488	Standard
	Sb	123	226933.1	1.3	**50.6712**	0.789	1.6	ug/L	195	Standard
	Ba	135	92934.8	0.6	**48.8661**	0.233	0.5	ug/L	28	Standard
	Ce	140	76.7	38.2				ug/L	83	Standard
>	Tb	159	791982.1	0.7				ug/L	809211	Standard
	Ho	165	6.7	86.6				ug/L	13	Standard
	Tl	203	386311.2	0.4	**49.8344**	0.388	0.8	ug/L	4	Standard
	Tl	205	338220.2	0.9	**50.8762**	0.997	2.0	ug/L	8	Standard
	Pb	206	245142.6	0.3	**50.3808**	0.607	1.2	ug/L	230	Standard
	Pb	207	222663.9	0.3	**50.4228**	0.753	1.5	ug/L	184	Standard
	Pb	208	915689.5	0.5	**50.6949**	0.842	1.7	ug/L	775	Standard
	U	238	335661.7	0.5	**50.6277**	0.350	0.7	ug/L	3	Standard
>	Bi	209	465063.4	1.2				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3938.8	2.9	**5.4514**	0.127	2.3	mg/L	52	Standard
K	39	1028.4	1.5	**4.7688**	0.027	0.6	mg/L	32	Standard
Ca	43	46.7	49.5	**2.2848**	3.043	133.2	mg/L	33	Standard
Fe	54	5847.4	0.7	**4.8642**	0.070	1.4	mg/L	138	Standard
Fe	57	1730.1	4.3	**4.8400**	0.260	5.4	mg/L	263	Standard
> **Sc-1**	45	27222.8	1.4				mg/L	27861	Standard
Cl	35	101092.1	0.4				ug/L	100607	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	1766.8	11.9				ug/L	1777	Standard
P	31	18841.7	2.6				ug/L	18074	Standard
S	34	4487.3	2.4				ug/L	3901	Standard
Sr	88	81.7	15.4				ug/L	60	Standard
C	12	70.0	37.8				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	7	Standard
Dy	164	16.2	71.4				mg/L	13	Standard
Ho-1	165	6.7	86.6				mg/L	13	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	14757.2	0.9				mg/L	8539	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	100.820		
	Al	27	100.540		
	Sc	45			
	Ti	47	97.874		
	V	51	100.369		
	Cr	52	98.972		
	Cr	53			
	Mn	55	100.325		
	Co	59	100.822		
	Ni	60	99.441		
	Cu	65	99.806		
	Zn	66	99.819		
>	Ge	72		98.047	
	As	75	99.765		
	Se	82	99.804		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	98.412		
Ag	107	98.399		
Cd	111	98.331		
Cd	114			
In	115			98.495
Sn	118	97.185		
Sb	123	101.342		
Ba	135	97.732		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.669		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.390		
U	238	101.255		
Bi	209			98.436
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, July 07, 2016 10:19:45
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58735.3	1.3				ug/L	59299	Standard
	Be	9	28.3	53.9	**0.0355**	0.018	50.6	ug/L	17	Standard
	Al	27	2701.9	15.4	**0.0075**	0.003	38.6	ug/L	1472	Standard
	Sc	45	27254.5	2.3				ug/L	27861	Standard
	Ti	47	26.0	20.0	**-0.0024**	0.022	924.3	ug/L	28	Standard
	V	51	1089.6	3.9	**-0.0109**	0.007	61.6	ug/L	1156	Standard
	Cr	52	6027.2	1.5	**-0.0815**	0.013	16.1	ug/L	6689	Standard
	Cr	53	388.3	8.6	**0.0564**	0.040	70.6	ug/L	348	Standard
	Mn	55	933.4	5.8	**0.0229**	0.009	38.6	ug/L	770	Standard
	Co	59	305.3	12.0	**0.0117**	0.006	48.6	ug/L	216	Standard
	Ni	60	405.3	2.3	**-0.0268**	0.006	21.2	ug/L	440	Standard
	Cu	65	125.7	7.1	**0.0131**	0.005	39.3	ug/L	116	Standard
	Zn	66	383.3	0.2	**0.1683**	0.001	0.6	ug/L	135	Standard
>	**Ge**	72	437048.8	0.2				ug/L	445277	Standard
	As	75	-34.5	48.6	**0.0052**	0.016	301.7	ug/L	-57	Standard
	Se	82	13.2	15.5	**-0.0237**	0.019	79.1	ug/L	10	Standard
	Se-1	77	61.7	6.1	**0.2183**	0.051	23.4	ug/L	57	Standard
>	**Ga**	71	75.0	35.3				mg/L	78	Standard
	Rb	85	28.3	50.9				ug/L	22	Standard
	Y	89	376446.1	1.1				ug/L	388959	Standard
>	**Rh**	103	16.7	45.8				ug/L	8	Standard
	Mo	98	297.7	8.0	**0.1114**	0.009	8.2	ug/L	10	Standard
	Ag	107	161.0	8.8	**0.0122**	0.002	17.8	ug/L	66	Standard
	Cd	111	16.2	56.0	**0.0045**	0.005	100.5	mg/L	3	Standard
	Cd	114	57.5	46.1	**0.0079**	0.005	68.5	ug/L	4	Standard
>	**In**	115	519086.6	0.5				ug/L	523327	Standard
	Sn	118	838.4	25.1	**0.0767**	0.038	49.8	ug/L	488	Standard
	Sb	123	1413.9	34.5	**0.2971**	0.109	36.5	ug/L	195	Standard
	Ba	135	57.3	34.2	**0.0127**	0.010	79.8	ug/L	28	Standard
	Ce	140	40.0	21.7				ug/L	83	Standard
>	**Tb**	159	798575.4	0.8				ug/L	809211	Standard
	Ho	165	11.7	65.5				ug/L	13	Standard
	Tl	203	101.3	16.8	**0.0110**	0.002	20.6	ug/L	4	Standard
	Tl	205	71.7	20.1	**0.0082**	0.002	26.2	ug/L	8	Standard
	Pb	206	285.0	13.4	**0.0101**	0.008	79.4	ug/L	230	Standard
	Pb	207	265.3	13.8	**0.0169**	0.008	49.9	ug/L	184	Standard
	Pb	208	1029.7	7.4	**0.0108**	0.005	42.0	ug/L	775	Standard
	U	238	75.3	35.5	**0.0106**	0.004	38.5	ug/L	3	Standard
>	**Bi**	209	469749.0	0.7				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	36.7	39.4	**-0.0141**	0.021	149.0	mg/L	52	Standard
K	39	21.7	13.3	**-0.0235**	0.014	59.1	mg/L	32	Standard
Ca	43	28.3	36.7	**-0.1237**	1.377	1113.0	mg/L	33	Standard
Fe	54	159.3	11.4	**0.0241**	0.018	76.0	mg/L	138	Standard
Fe	57	213.3	13.7	**0.0035**	0.098	2816.2	mg/L	263	Standard
Sc-1	45	27254.5	2.3				mg/L	27861	Standard
Cl	35	101937.1	1.3				ug/L	100607	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1676.8	12.8				ug/L	1777	Standard
P	31	19375.7	4.3				ug/L	18074	Standard
S	34	4472.3	2.7				ug/L	3901	Standard
Sr	88	83.3	15.1				ug/L	60	Standard
C	12	90.0	69.4				mg/L	110	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	13.3	173.2				mg/L	7	Standard
Dy	164	5.9	101.5				mg/L	13	Standard
Ho-1	165	11.7	65.5				mg/L	13	Standard
Er	166	16.7	91.7				mg/L	3	Standard
I	127	8147.2	1.5				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.152	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.190
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.428
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

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Method 6020 - Summary Report

Sample ID: PBW 67 WG575246-03
Sample Date/Time: Thursday, July 07, 2016 10:22:57
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52838.7	3.6				ug/L	59299	Standard
	Be	9	23.3	32.7	**0.0330**	0.011	34.1	ug/L	17	Standard
	Al	27	1740.1	11.0	**0.0018**	0.002	87.0	ug/L	1472	Standard
	Sc	45	24633.3	2.2				ug/L	27861	Standard
	Ti	47	24.0	14.4	**-0.0033**	0.017	499.8	ug/L	28	Standard
	V	51	970.5	3.2	**-0.0181**	0.005	26.1	ug/L	1156	Standard
	Cr	52	4193.6	3.8	**-0.3068**	0.020	6.5	ug/L	6689	Standard
	Cr	53	208.3	10.0	**-0.1374**	0.024	17.5	ug/L	348	Standard
	Mn	55	439.3	6.3	**-0.0517**	0.005	9.5	ug/L	770	Standard
	Co	59	243.0	9.4	**0.0049**	0.004	85.8	ug/L	216	Standard
	Ni	60	380.0	4.1	**-0.0252**	0.011	43.5	ug/L	440	Standard
	Cu	65	82.7	8.8	**-0.0078**	0.004	51.8	ug/L	116	Standard
	Zn	66	187.3	26.1	**-0.0049**	0.052	1040.9	ug/L	135	Standard
>	**Ge**	72	406933.5	0.9				ug/L	445277	Standard
	As	75	-16.9	153.2	**0.0205**	0.026	126.1	ug/L	-57	Standard
	Se	82	17.8	29.7	**0.0312**	0.054	173.4	ug/L	10	Standard
	Se-1	77	49.7	14.8	**0.1023**	0.104	101.8	ug/L	57	Standard
>	**Ga**	71	48.3	57.0				mg/L	78	Standard
	Rb	85	18.3	15.7				ug/L	22	Standard
	Y	89	344665.1	1.5				ug/L	388959	Standard
>	**Rh**	103	13.3	94.4				ug/L	8	Standard
	Mo	98	200.9	21.4	**0.0809**	0.018	22.4	ug/L	10	Standard
	Ag	107	89.7	11.6	**0.0022**	0.002	78.0	ug/L	66	Standard
	Cd	111	6.6	14.4	**0.0001**	0.001	879.9	mg/L	3	Standard
	Cd	114	23.5	42.0	**0.0014**	0.002	158.5	ug/L	4	Standard
>	**In**	115	471969.4	1.3				ug/L	523327	Standard
	Sn	118	118.3	23.3	**-0.0521**	0.005	9.9	ug/L	488	Standard
	Sb	123	1955.9	12.6	**0.4604**	0.059	12.9	ug/L	195	Standard
	Ba	135	26.3	13.3	**-0.0021**	0.002	88.2	ug/L	28	Standard
	Ce	140	26.7	71.0				ug/L	83	Standard
>	**Tb**	159	741240.3	0.3				ug/L	809211	Standard
	Ho	165	11.7	24.7				ug/L	13	Standard
	Tl	203	49.3	27.5	**0.0047**	0.002	39.3	ug/L	4	Standard
	Tl	205	40.0	45.1	**0.0038**	0.003	75.3	ug/L	8	Standard
	Pb	206	221.0	8.0	**-0.0006**	0.004	550.3	ug/L	230	Standard
	Pb	207	183.7	6.6	**0.0006**	0.003	410.6	ug/L	184	Standard
	Pb	208	810.0	3.3	**0.0010**	0.002	161.2	ug/L	775	Standard
	U	238	17.7	36.4	**0.0021**	0.001	48.7	ug/L	3	Standard
>	**Bi**	209	446686.2	0.5				ug/L	472452	Standard

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Na	23	1.7	173.2	**3.7300**	6.452	173.0	mg/L	0	Standard
Mg	24	38.3	54.3	**-0.0063**	0.032	511.4	mg/L	52	Standard
K	39	13.3	94.4	**-0.0555**	0.067	121.3	mg/L	32	Standard
Ca	43	35.0	57.1	**1.2411**	2.960	238.5	mg/L	33	Standard
Fe	54	49.5	36.4	**-0.0652**	0.016	24.2	mg/L	138	Standard
Fe	57	258.3	10.7	**0.2327**	0.076	32.8	mg/L	263	Standard
> **Sc-1**	45	24633.3	2.2				mg/L	27861	Standard
Cl	35	90938.8	0.6				ug/L	100607	Standard
Kr	83	3.0	0.0				ug/L	2	Standard
Br	81	1503.4	3.7				ug/L	1777	Standard
P	31	5974.5	3.8				ug/L	18074	Standard
S	34	4180.6	3.1				ug/L	3901	Standard
Sr	88	105.0	9.5				ug/L	60	Standard
C	12	60.0	44.1				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	90.0	38.5				mg/L	7	Standard
Dy	164	2.9	202.3				mg/L	13	Standard
Ho-1	165	11.7	24.7				mg/L	13	Standard
Er	166	10.0					mg/L	3	Standard
I	127	9608.0	4.0				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.105	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		91.389	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.186
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.546
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 67 WG575246-04
Sample Date/Time: Thursday, July 07, 2016 10:26:08
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	58104.5	1.1				ug/L	59299	Standard
	Be	9	43621.1	2.8	**53.4306**	1.695	3.2	ug/L	17	Standard
	Al	27	24019.2	10.5	**0.1704**	0.020	11.6	ug/L	1472	Standard
	Sc	45	28197.9	1.2				ug/L	27861	Standard
	Ti	47	50.3	35.0	**0.0946**	0.070	74.2	ug/L	28	Standard
	V	51	345553.6	2.2	**50.7503**	1.727	3.4	ug/L	1156	Standard
	Cr	52	370687.1	0.4	**52.1144**	0.899	1.7	ug/L	6689	Standard
	Cr	53	45339.4	1.0	**51.2752**	0.284	0.6	ug/L	348	Standard
	Mn	55	336000.2	0.9	**52.4766**	1.156	2.2	ug/L	770	Standard
	Co	59	344155.3	1.5	**51.4674**	1.270	2.5	ug/L	216	Standard
	Ni	60	96710.3	0.5	**52.8257**	0.834	1.6	ug/L	440	Standard
	Cu	65	97978.4	0.7	**53.8132**	0.631	1.2	ug/L	116	Standard
	Zn	66	57334.9	0.7	**52.7125**	0.600	1.1	ug/L	135	Standard
>	Ge	72	451214.2	1.4				ug/L	445277	Standard
	As	75	56972.4	0.7	**51.5775**	1.045	2.0	ug/L	-57	Standard
	Se	82	5730.6	1.7	**50.9943**	1.528	3.0	ug/L	10	Standard
	Se-1	77	3820.1	0.3	**50.7166**	0.811	1.6	ug/L	57	Standard
>	Ga	71	88.3	14.2				mg/L	78	Standard
	Rb	85	211.7	9.5				ug/L	22	Standard
	Y	89	388872.2	2.4				ug/L	388959	Standard
>	Rh	103	33.3	48.2				ug/L	8	Standard
	Mo	98	130.7	26.2	**0.0447**	0.014	30.9	ug/L	10	Standard
	Ag	107	329696.2	0.2	**52.2235**	0.407	0.8	ug/L	66	Standard
	Cd	111	103265.4	0.7	**51.2633**	0.163	0.3	mg/L	3	Standard
	Cd	114	249476.4	1.0	**50.6571**	0.817	1.6	ug/L	4	Standard
>	In	115	524619.5	0.8				ug/L	523327	Standard
	Sn	118	788.4	15.6	**0.0662**	0.023	35.0	ug/L	488	Standard
	Sb	123	214311.3	3.0	**47.0087**	1.072	2.3	ug/L	195	Standard
	Ba	135	100126.1	0.8	**51.7280**	0.054	0.1	ug/L	28	Standard
	Ce	140	271.7	14.1				ug/L	83	Standard
>	Tb	159	805893.7	1.1				ug/L	809211	Standard
	Ho	165	13.3	21.7				ug/L	13	Standard
	Tl	203	410991.8	0.9	**51.8296**	0.328	0.6	ug/L	4	Standard
	Tl	205	356569.5	1.9	**52.4301**	0.984	1.9	ug/L	8	Standard
	Pb	206	264594.8	0.7	**53.1620**	0.573	1.1	ug/L	230	Standard
	Pb	207	230582.1	0.9	**51.0448**	0.646	1.3	ug/L	184	Standard
	Pb	208	975575.9	0.2	**52.7988**	0.318	0.6	ug/L	775	Standard
	U	238	344070.3	0.7	**50.7344**	0.527	1.0	ug/L	3	Standard
>	Bi	209	475698.2	0.4				ug/L	472452	Standard

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Na	23	1.7	173.2	**3.2749**	5.664	172.9	mg/L	0	Standard
Mg	24	48.3	11.9	**-0.0004**	0.007	2011.0	mg/L	52	Standard
K	39	23.3	75.3	**-0.0198**	0.080	406.2	mg/L	32	Standard
Ca	43	23.3	12.4	**-0.8864**	0.372	41.9	mg/L	33	Standard
Fe	54	157.4	34.3	**0.0177**	0.044	249.0	mg/L	138	Standard
Fe	57	245.0	9.4	**0.0773**	0.062	80.0	mg/L	263	Standard
> **Sc-1**	45	28197.9	1.2				mg/L	27861	Standard
Cl	35	100977.4	1.7				ug/L	100607	Standard
Kr	83	2.7	43.3				ug/L	2	Standard
Br	81	1883.5	7.7				ug/L	1777	Standard
P	31	19085.4	2.4				ug/L	18074	Standard
S	34	4415.6	1.0				ug/L	3901	Standard
Sr	88	51.7	22.3				ug/L	60	Standard
C	12	80.0	33.1				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	56.8				mg/L	7	Standard
Dy	164	16.2	92.5				mg/L	13	Standard
Ho-1	165	13.3	21.7				mg/L	13	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	3195.3	6.1				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.985	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.333	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.247
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.687
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 67 WG575246-04
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Method 6020 - Summary Report

Sample ID: L1606164802 WG575246-01
Sample Date/Time: Thursday, July 07, 2016 10:29:20
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57288.1	1.0				ug/L	59299	Standard
	Be	9	40.0	21.7	**0.0510**	0.011	21.3	ug/L	17	Standard
	Al	27	10376992.3	1.1	**80.2803**	1.713	2.1	ug/L	1472	Standard
	Sc	45	29006.1	0.8				ug/L	27861	Standard
	Ti	47	269.7	7.9	**1.0438**	0.083	8.0	ug/L	28	Standard
	V	51	1580.9	9.0	**0.0642**	0.023	36.6	ug/L	1156	Standard
	Cr	52	7984.4	2.4	**0.2090**	0.024	11.5	ug/L	6689	Standard
	Cr	53	1623.4	12.6	**1.5120**	0.246	16.3	ug/L	348	Standard
	Mn	55	12513344.8	1.4	**2024.1071**	20.009	1.0	ug/L	770	Standard
	Co	59	35094.9	1.5	**5.3911**	0.052	1.0	ug/L	216	Standard
	Ni	60	4652.7	2.1	**2.3824**	0.051	2.1	ug/L	440	Standard
	Cu	65	637.3	5.1	**0.3040**	0.020	6.7	ug/L	116	Standard
	Zn	66	4433.6	1.8	**4.0317**	0.111	2.8	ug/L	135	Standard
>	**Ge**	72	436605.2	0.8				ug/L	445277	Standard
	As	75	998.1	10.4	**0.9701**	0.093	9.6	ug/L	-57	Standard
	Se	82	150.4	13.0	**1.2406**	0.170	13.7	ug/L	10	Standard
	Se-1	77	137.3	15.2	**1.2694**	0.279	22.0	ug/L	57	Standard
>	**Ga**	71	608.3	14.5				mg/L	78	Standard
	Rb	85	16675.8	2.5				ug/L	22	Standard
	Y	89	379123.1	0.7				ug/L	388959	Standard
>	**Rh**	103	101.7	20.5				ug/L	8	Standard
	Mo	98	969.1	4.6	**0.3838**	0.021	5.3	ug/L	10	Standard
	Ag	107	198.7	10.8	**0.0187**	0.004	19.0	ug/L	66	Standard
	Cd	111	36.9	18.0	**0.0152**	0.003	21.6	mg/L	3	Standard
	Cd	114	90.3	17.7	**0.0149**	0.003	23.2	ug/L	4	Standard
>	**In**	115	510766.0	0.6				ug/L	523327	Standard
	Sn	118	733.4	15.2	**0.0598**	0.021	35.2	ug/L	488	Standard
	Sb	123	2788.5	30.3	**0.6126**	0.194	31.7	ug/L	195	Standard
	Ba	135	302075.9	0.5	**160.3330**	0.779	0.5	ug/L	28	Standard
	Ce	140	1405.1	10.7				ug/L	83	Standard
>	**Tb**	159	786860.6	1.4				ug/L	809211	Standard
	Ho	165	56.7	22.2				ug/L	13	Standard
	Tl	203	215.3	11.8	**0.0260**	0.003	12.1	ug/L	4	Standard
	Tl	205	183.3	19.7	**0.0252**	0.005	21.1	ug/L	8	Standard
	Pb	206	400.3	13.7	**0.0349**	0.012	33.4	ug/L	230	Standard
	Pb	207	348.7	3.6	**0.0368**	0.003	8.2	ug/L	184	Standard
	Pb	208	1503.4	6.1	**0.0381**	0.005	13.8	ug/L	775	Standard
	U	238	608.3	6.0	**0.0916**	0.006	6.6	ug/L	3	Standard
>	**Bi**	209	462334.3	0.5				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	13245.8	3.4	**17.3507**	0.712	4.1	mg/L	52	Standard
K	39	185.0	15.0	**0.6993**	0.119	17.0	mg/L	32	Standard
Ca	43	105.0	8.2	**9.0748**	0.963	10.6	mg/L	33	Standard
Fe	54	9138.8	3.0	**7.1874**	0.278	3.9	mg/L	138	Standard
Fe	57	2721.9	3.2	**7.4688**	0.326	4.4	mg/L	263	Standard
> **Sc-1**	45	29006.1	0.8				mg/L	27861	Standard
Cl	35	112874.3	2.0				ug/L	100607	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	32080.7	6.6				ug/L	1777	Standard
P	31	25705.1	1.6				ug/L	18074	Standard
S	34	4113.9	0.9				ug/L	3901	Standard
Sr	88	408.3	11.8				ug/L	60	Standard
C	12	153.3	44.4				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	7	Standard
Dy	164	35.7	48.6				mg/L	13	Standard
Ho-1	165	56.7	22.2				mg/L	13	Standard
Er	166	90.0	22.2				mg/L	3	Standard
I	127	194286.2	4.7				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		96.609	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.052	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.600
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.859
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606164802S WG575246-05
Sample Date/Time: Thursday, July 07, 2016 10:32:38
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59163.6	1.4				ug/L	59299	Standard
	Be	9	43530.8	2.0	**52.3579**	0.567	1.1	ug/L	17	Standard
	Al	27	11063520.9	1.6	**82.8750**	1.589	1.9	ug/L	1472	Standard
	Sc	45	28510.1	1.7				ug/L	27861	Standard
	Ti	47	290.0	13.8	**1.1193**	0.178	15.9	ug/L	28	Standard
	V	51	336886.8	1.0	**50.5913**	0.855	1.7	ug/L	1156	Standard
	Cr	52	350509.3	0.6	**50.3596**	0.390	0.8	ug/L	6689	Standard
	Cr	53	43818.3	0.3	**50.6773**	0.464	0.9	ug/L	348	Standard
	Mn	55	13568478.5	1.3	**2172.2327**	42.746	2.0	ug/L	770	Standard
	Co	59	366793.9	0.8	**56.0971**	0.860	1.5	ug/L	216	Standard
	Ni	60	93775.3	0.9	**52.3800**	0.637	1.2	ug/L	440	Standard
	Cu	65	90286.9	0.9	**50.7118**	0.778	1.5	ug/L	116	Standard
	Zn	66	58983.3	0.3	**55.4685**	0.500	0.9	ug/L	135	Standard
>	Ge	72	441181.9	0.7				ug/L	445277	Standard
	As	75	57609.3	0.4	**53.3301**	0.261	0.5	ug/L	-57	Standard
	Se	82	5728.5	0.7	**52.1244**	0.182	0.3	ug/L	10	Standard
	Se-1	77	3902.8	2.2	**53.0111**	0.922	1.7	ug/L	57	Standard
>	Ga	71	613.3	14.6				mg/L	78	Standard
	Rb	85	17433.4	3.0				ug/L	22	Standard
	Y	89	377809.0	2.3				ug/L	388959	Standard
>	Rh	103	100.0	21.8				ug/L	8	Standard
	Mo	98	1061.1	2.3	**0.4222**	0.011	2.5	ug/L	10	Standard
	Ag	107	312671.2	1.1	**51.0365**	0.776	1.5	ug/L	66	Standard
	Cd	111	100501.0	0.4	**51.4128**	0.420	0.8	mg/L	3	Standard
	Cd	114	243256.1	1.0	**50.8952**	0.295	0.6	ug/L	4	Standard
>	In	115	509099.2	0.5				ug/L	523327	Standard
	Sn	118	5664.4	6.1	**0.9738**	0.068	6.9	ug/L	488	Standard
	Sb	123	236264.9	0.3	**53.4129**	0.245	0.5	ug/L	195	Standard
	Ba	135	414782.9	1.0	**220.8805**	2.325	1.1	ug/L	28	Standard
	Ce	140	2298.5	3.4				ug/L	83	Standard
>	Tb	159	800744.8	2.0				ug/L	809211	Standard
	Ho	165	38.3	39.8				ug/L	13	Standard
	Tl	203	393994.9	0.3	**51.0731**	0.108	0.2	ug/L	4	Standard
	Tl	205	347484.6	0.9	**52.5205**	0.528	1.0	ug/L	8	Standard
	Pb	206	255001.7	0.7	**52.6629**	0.387	0.7	ug/L	230	Standard
	Pb	207	221290.3	0.5	**50.3533**	0.333	0.7	ug/L	184	Standard
	Pb	208	935784.6	1.1	**52.0574**	0.568	1.1	ug/L	775	Standard
	U	238	342122.5	0.3	**51.8540**	0.197	0.4	ug/L	3	Standard
>	Bi	209	462782.6	0.3				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	13769.6	0.4	**18.3537**	0.263	1.4	mg/L	52	Standard
K	39	248.3	16.9	**1.0033**	0.199	19.8	mg/L	32	Standard
Ca	43	100.0	21.8	**8.6517**	2.553	29.5	mg/L	33	Standard
Fe	54	9769.9	4.4	**7.8233**	0.223	2.8	mg/L	138	Standard
Fe	57	2853.6	7.0	**8.0062**	0.502	6.3	mg/L	263	Standard
> **Sc-1**	45	28510.1	1.7				mg/L	27861	Standard
Cl	35	115432.1	0.7				ug/L	100607	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	31626.3	3.9				ug/L	1777	Standard
P	31	27057.5	3.1				ug/L	18074	Standard
S	34	4265.6	2.1				ug/L	3901	Standard
Sr	88	496.7	18.0				ug/L	60	Standard
C	12	163.3	15.4				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	24.7				mg/L	7	Standard
Dy	164	53.8	23.0				mg/L	13	Standard
Ho-1	165	38.3	39.8				mg/L	13	Standard
Er	166	60.0	33.3				mg/L	3	Standard
I	127	230951.9	6.6				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.771	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.080	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.281
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.953
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606164802SD WG575246-06
Sample Date/Time: Thursday, July 07, 2016 10:35:50
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60910.6	2.0				ug/L	59299	Standard
	Be	9	43530.8	0.9	**50.8768**	1.461	2.9	ug/L	17	Standard
	Al	27	11340779.8	1.7	**82.5142**	1.018	1.2	ug/L	1472	Standard
	Sc	45	28839.1	0.7				ug/L	27861	Standard
	Ti	47	291.3	5.8	**1.1279**	0.070	6.2	ug/L	28	Standard
	V	51	337905.2	0.1	**50.8969**	0.334	0.7	ug/L	1156	Standard
	Cr	52	354654.0	0.1	**51.1247**	0.416	0.8	ug/L	6689	Standard
	Cr	53	44602.2	2.1	**51.7468**	1.030	2.0	ug/L	348	Standard
	Mn	55	13735191.1	0.1	**2205.4717**	17.062	0.8	ug/L	770	Standard
	Co	59	367704.1	0.5	**56.4061**	0.671	1.2	ug/L	216	Standard
	Ni	60	94485.4	0.4	**52.9396**	0.527	1.0	ug/L	440	Standard
	Cu	65	89689.0	0.5	**50.5261**	0.334	0.7	ug/L	116	Standard
	Zn	66	59103.7	0.3	**55.7499**	0.203	0.4	ug/L	135	Standard
>	Ge	72	439848.9	0.7				ug/L	445277	Standard
	As	75	57470.0	0.9	**53.3611**	0.181	0.3	ug/L	-57	Standard
	Se	82	5776.2	1.5	**52.7166**	0.431	0.8	ug/L	10	Standard
	Se-1	77	3808.8	1.6	**51.8845**	1.164	2.2	ug/L	57	Standard
>	Ga	71	640.0	8.3				mg/L	78	Standard
	Rb	85	17787.1	0.3				ug/L	22	Standard
	Y	89	375141.0	1.0				ug/L	388959	Standard
>	Rh	103	100.0	26.0				ug/L	8	Standard
	Mo	98	1071.5	0.5	**0.4246**	0.004	1.0	ug/L	10	Standard
	Ag	107	313624.6	1.2	**50.9809**	0.972	1.9	ug/L	66	Standard
	Cd	111	100064.7	0.3	**50.9757**	0.185	0.4	mg/L	3	Standard
	Cd	114	243379.3	1.0	**50.7091**	0.274	0.5	ug/L	4	Standard
>	In	115	511230.2	0.7				ug/L	523327	Standard
	Sn	118	566.7	12.0	**0.0289**	0.013	44.9	ug/L	488	Standard
	Sb	123	236298.2	0.7	**53.1986**	0.481	0.9	ug/L	195	Standard
	Ba	135	419212.3	0.3	**222.3111**	1.033	0.5	ug/L	28	Standard
	Ce	140	1581.7	3.6				ug/L	83	Standard
>	Tb	159	803049.5	0.8				ug/L	809211	Standard
	Ho	165	56.7	18.4				ug/L	13	Standard
	Tl	203	394735.8	0.3	**50.5980**	0.284	0.6	ug/L	4	Standard
	Tl	205	345145.7	1.4	**51.5834**	0.705	1.4	ug/L	8	Standard
	Pb	206	255756.5	0.3	**52.2284**	0.189	0.4	ug/L	230	Standard
	Pb	207	222528.6	0.2	**50.0696**	0.329	0.7	ug/L	184	Standard
	Pb	208	933513.2	0.4	**51.3502**	0.161	0.3	ug/L	775	Standard
	U	238	340081.6	0.4	**50.9696**	0.409	0.8	ug/L	3	Standard
>	Bi	209	468012.7	0.4				ug/L	472452	Standard

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Na	23	3.3	86.6	**6.3418**	5.488	86.5	mg/L	0	Standard
Mg	24	14255.0	1.7	**18.7833**	0.343	1.8	mg/L	52	Standard
K	39	203.3	20.6	**0.7863**	0.183	23.3	mg/L	32	Standard
Ca	43	133.3	9.4	**12.6547**	1.437	11.4	mg/L	33	Standard
Fe	54	10067.9	1.9	**7.9743**	0.141	1.8	mg/L	138	Standard
Fe	57	2858.6	5.8	**7.9273**	0.541	6.8	mg/L	263	Standard
> **Sc-1**	45	28839.1	0.7				mg/L	27861	Standard
Cl	35	114844.4	2.0				ug/L	100607	Standard
Kr	83	2.7	43.3				ug/L	2	Standard
Br	81	28430.0	4.0				ug/L	1777	Standard
P	31	26291.1	1.5				ug/L	18074	Standard
S	34	4078.9	5.1				ug/L	3901	Standard
Sr	88	478.3	7.4				ug/L	60	Standard
C	12	213.3	29.8				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	49.5				mg/L	7	Standard
Dy	164	57.0	35.1				mg/L	13	Standard
Ho-1	165	56.7	18.4				mg/L	13	Standard
Er	166	63.3	9.1				mg/L	3	Standard
I	127	236214.0	6.6				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.717	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.781	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.689
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.060
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606161501
Sample Date/Time: Thursday, July 07, 2016 10:39:01
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49342.8	13.0				ug/L	59299	Standard
	Be	9	170.0	22.2	**0.2457**	0.038	15.6	ug/L	17	Standard
	Al	27	94647048.7	0.7	**859.5748**	109.094	12.7	ug/L	1472	Standard
	Sc	45	18783.3	3.1				ug/L	27861	Standard
	Ti	47	856.4	4.1	**6.2112**	0.217	3.5	ug/L	28	Standard
	V	51	5063.5	8.8	**1.1515**	0.147	12.8	ug/L	1156	Standard
	Cr	52	15787.2	3.5	**3.0548**	0.348	11.4	ug/L	6689	Standard
	Cr	53	9881.6	13.4	**19.7238**	3.598	18.2	ug/L	348	Standard
	Mn	55	61119391.1	2.8	**17041.4250**	1393.771	8.2	ug/L	770	Standard
	Co	59	44054.7	4.6	**11.7106**	1.119	9.6	ug/L	216	Standard
	Ni	60	122038.6	4.8	**119.0842**	11.396	9.6	ug/L	440	Standard
	Cu	65	14063.9	3.7	**13.7167**	1.203	8.8	ug/L	116	Standard
	Zn	66	42658.7	2.1	**69.8935**	5.106	7.3	ug/L	135	Standard
>	**Ge**	72	254091.3	5.7				ug/L	445277	Standard
	As	75	90.7	516.2	**0.2055**	0.746	363.0	ug/L	-57	Standard
	Se	82	677.2	10.3	**10.6017**	1.226	11.6	ug/L	10	Standard
	Se-1	77	7580.6	11.2	**181.3884**	29.291	16.1	ug/L	57	Standard
>	**Ga**	71	726.7	9.2				mg/L	78	Standard
	Rb	85	35291.1	1.4				ug/L	22	Standard
	Y	89	316060.1	3.5				ug/L	388959	Standard
>	**Rh**	103	35301.1	1.9				ug/L	8	Standard
	Mo	98	350.0	4.1	**0.2410**	0.024	9.8	ug/L	10	Standard
	Ag	107	1018.7	4.0	**0.2768**	0.011	3.9	ug/L	66	Standard
	Cd	111	2058.7	3.4	**1.8397**	0.166	9.0	mg/L	3	Standard
	Cd	114	4322.1	2.7	**1.5783**	0.129	8.1	ug/L	4	Standard
>	**In**	115	291922.7	5.9				ug/L	523327	Standard
	Sn	118	566.7	10.9	**0.1080**	0.025	23.1	ug/L	488	Standard
	Sb	123	1445.7	23.1	**0.5598**	0.160	28.6	ug/L	195	Standard
	Ba	135	170775.6	1.8	**159.0580**	11.805	7.4	ug/L	28	Standard
	Ce	140	16006.8	3.5				ug/L	83	Standard
>	**Tb**	159	483469.3	7.4				ug/L	809211	Standard
	Ho	165	1531.7	6.1				ug/L	13	Standard
	Tl	203	102.7	31.7	**0.0308**	0.008	26.1	ug/L	4	Standard
	Tl	205	130.0	17.6	**0.0462**	0.006	12.0	ug/L	8	Standard
	Pb	206	355.0	11.1	**0.1346**	0.012	8.7	ug/L	230	Standard
	Pb	207	250.0	8.4	**0.0991**	0.006	6.2	ug/L	184	Standard
	Pb	208	1220.0	8.9	**0.1233**	0.006	4.5	ug/L	775	Standard
	U	238	22357.5	0.8	**8.4600**	0.490	5.8	ug/L	3	Standard
>	**Bi**	209	185828.9	6.7				ug/L	472452	Standard

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Na	23	220.0	13.6	**638.2449**	67.399	10.6	mg/L	0	Standard
Mg	24	667441.0	0.6	**1355.6161**	34.961	2.6	mg/L	52	Standard
K	39	878.4	2.7	**5.9377**	0.264	4.4	mg/L	32	Standard
Ca	43	18928.5	0.6	**3595.8509**	133.561	3.7	mg/L	33	Standard
Fe	54	3235.9	4.9	**3.8808**	0.216	5.6	mg/L	138	Standard
Fe	57	25312.8	5.1	**116.4696**	9.576	8.2	mg/L	263	Standard
> **Sc-1**	45	18783.3	3.1				mg/L	27861	Standard
Cl	35	506135.0	2.0				ug/L	100607	Standard
Kr	83	3.0	0.0				ug/L	2	Standard
Br	81	878774.3	2.7				ug/L	1777	Standard
P	31	24491.4	1.6				ug/L	18074	Standard
S	34	3812.1	3.3				ug/L	3901	Standard
Sr	88	186562.5	3.6				ug/L	60	Standard
C	12	106.7	42.3				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	45.8				mg/L	7	Standard
Dy	164	1748.6	10.9				mg/L	13	Standard
Ho-1	165	1531.7	6.1				mg/L	13	Standard
Er	166	1493.4	5.9				mg/L	3	Standard
I	127	551100.7	14.4				mg/L	8539	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		83.210	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		57.064	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	55.782	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	39.333	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	

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Se-1 77 Upper, S, EEE	Se-1	77
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606161502
Sample Date/Time: Thursday, July 07, 2016 10:42:13
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68089.5	3.7				ug/L	59299	Standard
	Be	9	31.7	48.2	**0.0341**	0.015	43.8	ug/L	17	Standard
	Al	27	111264005.6	1.9	**724.7345**	24.404	3.4	ug/L	1472	Standard
	Sc	45	25526.5	4.1				ug/L	27861	Standard
	Ti	47	335.3	2.4	**1.5755**	0.020	1.3	ug/L	28	Standard
	V	51	2737.3	68.6	**0.3063**	0.328	107.1	ug/L	1156	Standard
	Cr	52	22517.7	2.5	**2.9364**	0.039	1.3	ug/L	6689	Standard
	Cr	53	49733.7	10.1	**68.1981**	4.702	6.9	ug/L	348	Standard
	Mn	55	1659005.9	26.3	**316.7767**	93.285	29.4	ug/L	770	Standard
	Co	59	2062.5	15.5	**0.3402**	0.071	20.8	ug/L	216	Standard
	Ni	60	18978.6	4.5	**12.3904**	0.999	8.1	ug/L	440	Standard
	Cu	65	7111.3	1.6	**4.6835**	0.145	3.1	ug/L	116	Standard
	Zn	66	6675.5	2.5	**7.2781**	0.412	5.7	ug/L	135	Standard
>	**Ge**	72	372276.8	3.5				ug/L	445277	Standard
	As	75	4629.3	18.6	**5.1370**	1.117	21.7	ug/L	-57	Standard
	Se	82	2239.8	12.8	**24.1629**	3.929	16.3	ug/L	10	Standard
	Se-1	77	5921.8	5.7	**95.7921**	2.448	2.6	ug/L	57	Standard
>	**Ga**	71	293.3	8.7				mg/L	78	Standard
	Rb	85	56363.0	1.5				ug/L	22	Standard
	Y	89	330223.7	3.1				ug/L	388959	Standard
>	**Rh**	103	1796.8	5.7				ug/L	8	Standard
	Mo	98	394.9	4.5	**0.1904**	0.014	7.6	ug/L	10	Standard
	Ag	107	117.7	7.1	**0.0101**	0.002	22.7	ug/L	66	Standard
	Cd	111	58.3	52.5	**0.0335**	0.020	60.7	mg/L	3	Standard
	Cd	114	121.1	24.3	**0.0274**	0.008	28.2	ug/L	4	Standard
>	**In**	115	412925.4	2.8				ug/L	523327	Standard
	Sn	118	581.7	5.7	**0.0571**	0.005	8.1	ug/L	488	Standard
	Sb	123	551.2	30.5	**0.1362**	0.043	31.3	ug/L	195	Standard
	Ba	135	4331.3	36.1	**2.8475**	1.106	38.8	ug/L	28	Standard
	Ce	140	333.3	47.5				ug/L	83	Standard
>	**Tb**	159	676507.8	2.6				ug/L	809211	Standard
	Ho	165	65.0	13.3				ug/L	13	Standard
	Tl	203	91.0	16.6	**0.0137**	0.003	19.5	ug/L	4	Standard
	Tl	205	58.3	17.8	**0.0092**	0.002	24.1	ug/L	8	Standard
	Pb	206	314.7	3.0	**0.0382**	0.005	12.3	ug/L	230	Standard
	Pb	207	284.0	4.3	**0.0430**	0.006	13.1	ug/L	184	Standard
	Pb	208	1178.7	1.7	**0.0412**	0.001	2.3	ug/L	775	Standard
	U	238	592.7	28.7	**0.1188**	0.037	31.1	ug/L	3	Standard
>	**Bi**	209	349687.2	2.5				ug/L	472452	Standard

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Na	23	8.3	91.7	**17.8977**	16.755	93.6	mg/L	0	Standard
Mg	24	1114896.8	2.3	**1666.1531**	29.234	1.8	mg/L	52	Standard
K	39	1325.1	11.6	**6.5947**	0.641	9.7	mg/L	32	Standard
Ca	43	441.7	26.2	**58.3925**	18.566	31.8	mg/L	33	Standard
Fe	54	223.1	21.4	**0.0915**	0.048	52.3	mg/L	138	Standard
Fe	57	1171.7	19.3	**3.3309**	0.921	27.7	mg/L	263	Standard
> **Sc-1**	45	25526.5	4.1				mg/L	27861	Standard
Cl	35	844217.7	1.0				ug/L	100607	Standard
Kr	83	3.7	83.3				ug/L	2	Standard
Br	81	1036899.0	2.7				ug/L	1777	Standard
P	31	18274.4	2.0				ug/L	18074	Standard
S	34	5334.3	0.9				ug/L	3901	Standard
Sr	88	3270.4	34.5				ug/L	60	Standard
C	12	110.0	32.8				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	7	Standard
Dy	164	36.8	94.9				mg/L	13	Standard
Ho-1	165	65.0	13.3				mg/L	13	Standard
Er	166	66.7	31.2				mg/L	3	Standard
I	127	1977320.1	10.6				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.824	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		83.606	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	78.904	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	74.015	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606161502PS WG575345-01
Sample Date/Time: Thursday, July 07, 2016 10:45:24
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	78260.0	1.6				ug/L	59299	Standard
	Be	9	40689.6	1.2	**37.0021**	0.295	0.8	ug/L	17	Standard
	Al	27	117234929.3	1.3	**664.0593**	15.177	2.3	ug/L	1472	Standard
	Sc	45	26429.7	1.3				ug/L	27861	Standard
	Ti	47	317.7	5.2	**1.4056**	0.077	5.4	ug/L	28	Standard
	V	51	325745.3	1.1	**55.0731**	0.742	1.3	ug/L	1156	Standard
	Cr	52	342984.8	0.9	**55.5644**	0.652	1.2	ug/L	6689	Standard
	Cr	53	98257.6	0.5	**128.5115**	0.333	0.3	ug/L	348	Standard
	Mn	55	1224150.0	1.3	**220.4565**	3.243	1.5	ug/L	770	Standard
	Co	59	293508.3	0.5	**50.5181**	0.160	0.3	ug/L	216	Standard
	Ni	60	95421.5	0.8	**60.0280**	0.612	1.0	ug/L	440	Standard
	Cu	65	83985.1	0.2	**53.0948**	0.194	0.4	ug/L	116	Standard
	Zn	66	52746.0	1.5	**55.8312**	0.907	1.6	ug/L	135	Standard
>	Ge	72	391965.6	0.3				ug/L	445277	Standard
	As	75	56790.0	1.6	**59.1661**	0.804	1.4	ug/L	-57	Standard
	Se	82	7711.8	3.9	**79.0505**	2.849	3.6	ug/L	10	Standard
	Se-1	77	9903.2	1.3	**152.5970**	2.382	1.6	ug/L	57	Standard
>	Ga	71	283.3	10.3				mg/L	78	Standard
	Rb	85	57192.8	2.9				ug/L	22	Standard
	Y	89	350245.3	0.3				ug/L	388959	Standard
>	Rh	103	1630.1	7.0				ug/L	8	Standard
	Mo	98	414.6	6.1	**0.1862**	0.012	6.2	ug/L	10	Standard
	Ag	107	247841.0	0.6	**46.5633**	0.131	0.3	ug/L	66	Standard
	Cd	111	82488.1	0.4	**48.5730**	0.307	0.6	mg/L	3	Standard
	Cd	114	200383.4	0.8	**48.2606**	0.384	0.8	ug/L	4	Standard
>	In	115	442275.6	0.3				ug/L	523327	Standard
	Sn	118	681.7	8.2	**0.0697**	0.012	17.7	ug/L	488	Standard
	Sb	123	208479.4	0.8	**54.2520**	0.329	0.6	ug/L	195	Standard
	Ba	135	84581.1	1.1	**51.8321**	0.395	0.8	ug/L	28	Standard
	Ce	140	91.7	19.2				ug/L	83	Standard
>	Tb	159	719770.7	1.0				ug/L	809211	Standard
	Ho	165	53.3	44.3				ug/L	13	Standard
	Tl	203	325480.5	0.6	**52.3064**	0.273	0.5	ug/L	4	Standard
	Tl	205	271952.6	1.4	**50.9615**	1.048	2.1	ug/L	8	Standard
	Pb	206	215034.9	0.9	**55.0560**	0.129	0.2	ug/L	230	Standard
	Pb	207	186246.5	1.1	**52.5386**	0.028	0.1	ug/L	184	Standard
	Pb	208	754712.9	1.4	**52.0473**	0.424	0.8	ug/L	775	Standard
	U	238	289640.8	1.7	**54.4195**	0.460	0.8	ug/L	3	Standard
>	Bi	209	373306.5	1.1				ug/L	472452	Standard

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Na	23	5.0	100.0	**10.2613**	10.260	100.0	mg/L	0	Standard
Mg	24	1187511.2	0.2	**1713.4260**	23.492	1.4	mg/L	52	Standard
K	39	1283.4	1.0	**6.1672**	0.138	2.2	mg/L	32	Standard
Ca	43	281.7	24.2	**34.1675**	8.958	26.2	mg/L	33	Standard
Fe	54	186.6	4.3	**0.0521**	0.009	16.6	mg/L	138	Standard
Fe	57	890.0	6.3	**2.2480**	0.225	10.0	mg/L	263	Standard
Sc-1	45	26429.7	1.3				mg/L	27861	Standard
Cl	35	870636.7	1.7				ug/L	100607	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1045298.3	2.5				ug/L	1777	Standard
P	31	19195.5	3.5				ug/L	18074	Standard
S	34	5355.9	1.3				ug/L	3901	Standard
Sr	88	1586.7	5.3				ug/L	60	Standard
C	12	113.3	18.4				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	34.3	16.9				mg/L	13	Standard
Ho-1	165	53.3	44.3				mg/L	13	Standard
Er	166	50.0	20.0				mg/L	3	Standard
I	127	4196228.4	1.1				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		131.975	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		88.027	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	84.512	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	79.015	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Cr 53 Upper, S, EEE	Cr	53	

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Mn 55 Upper, S, EEE	Mn	55
Se-1 77 Upper, S, EEE	Se-1	77

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Method 6020 - Summary Report

Sample ID: L1606161502SDL WG575345-02
Sample Date/Time: Thursday, July 07, 2016 10:48:36
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65349.0	0.9				ug/L	59299	Standard
	Be	9	43.3	53.3	**0.0485**	0.025	51.4	ug/L	17	Standard
	Al	27	23825231.5	1.4	**161.5947**	3.562	2.2	ug/L	1472	Standard
	Sc	45	27536.7	3.4				ug/L	27861	Standard
	Ti	47	70.0	10.8	**0.2006**	0.037	18.4	ug/L	28	Standard
	V	51	1655.0	32.0	**0.0870**	0.085	97.4	ug/L	1156	Standard
	Cr	52	11900.0	3.4	**0.8685**	0.044	5.0	ug/L	6689	Standard
	Cr	53	22211.3	0.9	**26.9575**	0.504	1.9	ug/L	348	Standard
	Mn	55	191765.0	0.9	**32.3108**	0.466	1.4	ug/L	770	Standard
	Co	59	526.0	2.8	**0.0496**	0.003	5.1	ug/L	216	Standard
	Ni	60	4195.2	1.6	**2.2314**	0.029	1.3	ug/L	440	Standard
	Cu	65	2498.2	7.6	**1.4268**	0.129	9.0	ug/L	116	Standard
	Zn	66	3338.4	5.3	**3.1331**	0.209	6.7	ug/L	135	Standard
>	Ge	72	417558.6	1.0				ug/L	445277	Standard
	As	75	1755.1	9.8	**1.7519**	0.152	8.7	ug/L	-57	Standard
	Se	82	849.7	4.1	**8.0446**	0.260	3.2	ug/L	10	Standard
	Se-1	77	1889.5	3.1	**26.8107**	1.030	3.8	ug/L	57	Standard
>	Ga	71	110.0	12.0				mg/L	78	Standard
	Rb	85	12163.2	2.4				ug/L	22	Standard
	Y	89	361689.5	0.6				ug/L	388959	Standard
>	Rh	103	621.7	34.6				ug/L	8	Standard
	Mo	98	100.3	4.4	**0.0368**	0.002	5.2	ug/L	10	Standard
	Ag	107	121.0	11.5	**0.0076**	0.002	31.2	ug/L	66	Standard
	Cd	111	22.5	11.3	**0.0087**	0.001	16.0	mg/L	3	Standard
	Cd	114	55.1	11.3	**0.0084**	0.001	17.2	ug/L	4	Standard
>	In	115	475086.0	0.5				ug/L	523327	Standard
	Sn	118	306.7	17.3	**-0.0148**	0.011	73.0	ug/L	488	Standard
	Sb	123	686.9	41.3	**0.1500**	0.069	46.3	ug/L	195	Standard
	Ba	135	462.7	2.7	**0.2468**	0.007	2.7	ug/L	28	Standard
	Ce	140	21.7	35.3				ug/L	83	Standard
>	Tb	159	768326.9	1.0				ug/L	809211	Standard
	Ho	165	13.3	43.3				ug/L	13	Standard
	Tl	203	96.3	9.4	**0.0119**	0.001	11.3	ug/L	4	Standard
	Tl	205	113.3	35.9	**0.0165**	0.007	41.7	ug/L	8	Standard
	Pb	206	320.3	3.6	**0.0253**	0.003	10.6	ug/L	230	Standard
	Pb	207	271.7	8.4	**0.0258**	0.006	23.1	ug/L	184	Standard
	Pb	208	1192.4	6.6	**0.0278**	0.005	18.4	ug/L	775	Standard
	U	238	120.3	12.1	**0.0195**	0.003	12.8	ug/L	3	Standard
>	Bi	209	418249.2	0.3				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	234430.4	2.5	**324.6375**	3.865	1.2	mg/L	52	Standard
K	39	293.3	21.6	**1.2603**	0.342	27.2	mg/L	32	Standard
Ca	43	93.3	8.2	**8.2753**	1.225	14.8	mg/L	33	Standard
Fe	54	70.4	39.6	**-0.0528**	0.021	40.5	mg/L	138	Standard
Fe	57	448.3	10.7	**0.7400**	0.190	25.7	mg/L	263	Standard
> **Sc-1**	45	27536.7	3.4				mg/L	27861	Standard
Cl	35	301926.1	0.9				ug/L	100607	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	201704.1	2.1				ug/L	1777	Standard
P	31	9092.7	0.6				ug/L	18074	Standard
S	34	4689.1	2.8				ug/L	3901	Standard
Sr	88	375.0	4.8				ug/L	60	Standard
C	12	73.3	34.3				mg/L	110	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	12.4	113.3				mg/L	13	Standard
Ho-1	165	13.3	43.3				mg/L	13	Standard
Er	166	20.0	132.3				mg/L	3	Standard
I	127	494650.0	3.7				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.202	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.775	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.782
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		88.527
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606161502SDL WG575345-02
Sample Date/Time: Thursday, July 07, 2016 10:51:47
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63929.6	2.3				ug/L	59299	Standard
	Be	9	25.0	69.3	**0.0293**	0.020	67.3	ug/L	17	Standard
	Al	27	4946825.4	1.1	**34.2954**	0.933	2.7	ug/L	1472	Standard
	Sc	45	27040.8	2.1				ug/L	27861	Standard
	Ti	47	32.7	4.7	**0.0281**	0.006	22.0	ug/L	28	Standard
	V	51	2343.4	16.3	**0.1849**	0.060	32.5	ug/L	1156	Standard
	Cr	52	9429.6	1.3	**0.4408**	0.011	2.5	ug/L	6689	Standard
	Cr	53	7598.6	4.6	**8.6635**	0.372	4.3	ug/L	348	Standard
	Mn	55	42036.7	5.3	**6.7587**	0.334	4.9	ug/L	770	Standard
	Co	59	315.0	9.4	**0.0138**	0.004	31.9	ug/L	216	Standard
	Ni	60	1405.1	3.9	**0.5507**	0.033	6.1	ug/L	440	Standard
	Cu	65	976.4	6.5	**0.5036**	0.034	6.7	ug/L	116	Standard
	Zn	66	1561.4	7.7	**1.3109**	0.108	8.2	ug/L	135	Standard
>	**Ge**	72	431057.2	0.5				ug/L	445277	Standard
	As	75	473.6	18.0	**0.4859**	0.082	16.9	ug/L	-57	Standard
	Se	82	245.1	8.4	**2.1435**	0.192	9.0	ug/L	10	Standard
	Se-1	77	569.0	9.4	**7.3663**	0.717	9.7	ug/L	57	Standard
>	**Ga**	71	46.7	40.6				mg/L	78	Standard
	Rb	85	2360.2	8.8				ug/L	22	Standard
	Y	89	367334.7	0.8				ug/L	388959	Standard
>	**Rh**	103	126.7	23.1				ug/L	8	Standard
	Mo	98	47.0	14.8	**0.0129**	0.003	21.3	ug/L	10	Standard
	Ag	107	106.7	8.0	**0.0043**	0.002	35.3	ug/L	66	Standard
	Cd	111	18.6	59.6	**0.0062**	0.006	95.0	mg/L	3	Standard
	Cd	114	33.6	74.4	**0.0034**	0.005	161.4	ug/L	4	Standard
>	**In**	115	494263.4	0.9				ug/L	523327	Standard
	Sn	118	175.0	24.9	**-0.0423**	0.008	19.8	ug/L	488	Standard
	Sb	123	837.6	42.3	**0.1780**	0.081	45.5	ug/L	195	Standard
	Ba	135	131.7	7.2	**0.0551**	0.006	10.2	ug/L	28	Standard
	Ce	140	10.0	50.0				ug/L	83	Standard
>	**Tb**	159	774688.1	0.6				ug/L	809211	Standard
	Ho	165	15.0	66.7				ug/L	13	Standard
	Tl	203	107.7	24.6	**0.0125**	0.004	28.9	ug/L	4	Standard
	Tl	205	81.7	40.8	**0.0103**	0.005	51.1	ug/L	8	Standard
	Pb	206	268.7	14.4	**0.0094**	0.009	91.5	ug/L	230	Standard
	Pb	207	256.0	2.6	**0.0175**	0.002	10.6	ug/L	184	Standard
	Pb	208	1017.7	5.9	**0.0128**	0.004	29.3	ug/L	775	Standard
	U	238	54.0	42.4	**0.0078**	0.004	46.4	ug/L	3	Standard
>	**Bi**	209	448346.6	0.6				ug/L	472452	Standard

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Na	23	1.7	173.2	**3.3040**	5.714	172.9	mg/L	0	Standard
Mg	24	47830.4	1.6	**67.3976**	1.465	2.2	mg/L	52	Standard
K	39	98.3	7.8	**0.3444**	0.031	8.9	mg/L	32	Standard
Ca	43	43.3	17.6	**1.8895**	1.073	56.8	mg/L	33	Standard
Fe	54	72.7	14.5	**-0.0493**	0.009	17.7	mg/L	138	Standard
Fe	57	318.3	15.7	**0.3450**	0.157	45.4	mg/L	263	Standard
> **Sc-1**	45	27040.8	2.1				mg/L	27861	Standard
Cl	35	175120.9	0.9				ug/L	100607	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	42379.2	2.9				ug/L	1777	Standard
P	31	6748.2	3.1				ug/L	18074	Standard
S	34	4647.4	5.7				ug/L	3901	Standard
Sr	88	153.3	6.8				ug/L	60	Standard
C	12	70.0	49.5				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	29.2	59.8				mg/L	13	Standard
Ho-1	165	15.0	66.7				mg/L	13	Standard
Er	166	16.7	34.6				mg/L	3	Standard
I	127	136360.9	1.2				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.809	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.806	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.446
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.898
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, July 07, 2016 10:55:00
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	66093.9	1.8				ug/L	59299	Standard
	Be	9	48196.6	2.1	**51.8920**	0.412	0.8	ug/L	17	Standard
	Al	27	7425415.7	0.8	**49.7917**	1.036	2.1	ug/L	1472	Standard
	Sc	45	29892.8	2.5				ug/L	27861	Standard
	Ti	47	24707.5	2.6	**101.0428**	2.124	2.1	ug/L	28	Standard
	V	51	350306.3	0.8	**50.6747**	0.366	0.7	ug/L	1156	Standard
	Cr	52	362349.7	1.6	**50.1458**	0.659	1.3	ug/L	6689	Standard
	Cr	53	46422.7	3.7	**51.7238**	1.778	3.4	ug/L	348	Standard
	Mn	55	343593.8	1.5	**52.8602**	0.648	1.2	ug/L	770	Standard
	Co	59	342201.2	1.2	**50.4085**	0.291	0.6	ug/L	216	Standard
	Ni	60	94251.3	1.4	**50.7052**	0.622	1.2	ug/L	440	Standard
	Cu	65	93602.9	1.5	**50.6418**	0.492	1.0	ug/L	116	Standard
	Zn	66	55440.3	1.1	**50.2033**	0.227	0.5	ug/L	135	Standard
>	Ge	72	457986.3	1.1				ug/L	445277	Standard
	As	75	56139.2	0.7	**50.0657**	0.346	0.7	ug/L	-57	Standard
	Se	82	5788.6	2.2	**50.7328**	0.860	1.7	ug/L	10	Standard
	Se-1	77	4002.5	2.5	**52.3598**	0.741	1.4	ug/L	57	Standard
>	Ga	71	85.0	17.6				mg/L	78	Standard
	Rb	85	880.0	11.0				ug/L	22	Standard
	Y	89	401461.1	1.0				ug/L	388959	Standard
>	Rh	103	65.0	33.5				ug/L	8	Standard
	Mo	98	258652.3	1.4	**97.6969**	0.756	0.8	ug/L	10	Standard
	Ag	107	322144.5	0.9	**49.1555**	0.203	0.4	ug/L	66	Standard
	Cd	111	102398.8	1.3	**48.9692**	0.235	0.5	mg/L	3	Standard
	Cd	114	246907.2	2.8	**48.2912**	1.084	2.2	ug/L	4	Standard
>	In	115	544575.4	1.0				ug/L	523327	Standard
	Sn	118	281041.7	2.3	**48.5926**	0.649	1.3	ug/L	488	Standard
	Sb	123	228758.8	0.4	**48.3469**	0.289	0.6	ug/L	195	Standard
	Ba	135	96924.1	1.4	**48.2366**	0.207	0.4	ug/L	28	Standard
	Ce	140	71.7	17.6				ug/L	83	Standard
>	Tb	159	836307.4	0.1				ug/L	809211	Standard
	Ho	165	10.0	50.0				ug/L	13	Standard
	Tl	203	403616.3	0.5	**49.4394**	0.123	0.2	ug/L	4	Standard
	Tl	205	349669.2	1.2	**49.9384**	0.280	0.6	ug/L	8	Standard
	Pb	206	256646.0	0.4	**50.0817**	0.173	0.3	ug/L	230	Standard
	Pb	207	232938.0	0.6	**50.0843**	0.066	0.1	ug/L	184	Standard
	Pb	208	962597.4	0.7	**50.5986**	0.173	0.3	ug/L	775	Standard
	U	238	351208.0	0.8	**50.3012**	0.589	1.2	ug/L	3	Standard
>	Bi	209	489754.4	0.7				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4047.2	5.1	**5.0950**	0.144	2.8	mg/L	52	Standard
K	39	993.4	11.6	**4.1898**	0.614	14.6	mg/L	32	Standard
Ca	43	40.0	21.7	**0.9441**	1.082	114.6	mg/L	33	Standard
Fe	54	6069.2	1.6	**4.5939**	0.179	3.9	mg/L	138	Standard
Fe	57	1803.4	2.8	**4.5605**	0.158	3.5	mg/L	263	Standard
Sc-1	45	29892.8	2.5				mg/L	27861	Standard
Cl	35	127889.0	4.8				ug/L	100607	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	4117.2	5.1				ug/L	1777	Standard
P	31	21942.6	3.8				ug/L	18074	Standard
S	34	5060.8	0.8				ug/L	3901	Standard
Sr	88	86.7	29.0				ug/L	60	Standard
C	12	76.7	27.2				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	41.7				mg/L	7	Standard
Dy	164	15.7	36.9				mg/L	13	Standard
Ho-1	165	10.0	50.0				mg/L	13	Standard
Er	166	20.0	50.0				mg/L	3	Standard
I	127	40769.9	4.7				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	103.784		
Al	27	99.583		
Sc	45			
Ti	47	101.043		
V	51	101.349		
Cr	52	100.292		
Cr	53			
Mn	55	105.720		
Co	59	100.817		
Ni	60	101.410		
Cu	65	101.284		
Zn	66	100.407		
Ge	72		102.854	
As	75	100.131		
Se	82	101.466		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	97.697		
Ag	107	98.311		
Cd	111	97.938		
Cd	114			
In	115			104.060
Sn	118	97.185		
Sb	123	96.694		
Ba	135	96.473		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.879		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.197		
U	238	100.602		
Bi	209			103.662
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, July 07, 2016 10:58:12
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64179.1	3.0				ug/L	59299	Standard
	Be	9	43.3	17.6	**0.0493**	0.007	14.7	ug/L	17	Standard
	Al	27	8747.8	42.7	**0.0476**	0.026	54.7	ug/L	1472	Standard
	Sc	45	29036.1	1.1				ug/L	27861	Standard
	Ti	47	23.7	8.8	**-0.0161**	0.009	56.6	ug/L	28	Standard
	V	51	1268.0	10.2	**0.0093**	0.019	207.3	ug/L	1156	Standard
	Cr	52	6811.5	0.7	**-0.0019**	0.007	379.3	ug/L	6689	Standard
	Cr	53	1783.4	4.5	**1.6225**	0.101	6.2	ug/L	348	Standard
	Mn	55	2166.2	25.4	**0.2097**	0.088	41.7	ug/L	770	Standard
	Co	59	257.3	13.6	**0.0029**	0.005	188.9	ug/L	216	Standard
	Ni	60	703.3	7.3	**0.1277**	0.030	23.5	ug/L	440	Standard
	Cu	65	401.7	10.2	**0.1616**	0.023	14.4	ug/L	116	Standard
	Zn	66	573.7	2.9	**0.3300**	0.018	5.5	ug/L	135	Standard
>	**Ge**	72	453411.3	0.5				ug/L	445277	Standard
	As	75	-11.3	322.8	**0.0272**	0.033	120.1	ug/L	-57	Standard
	Se	82	36.1	28.5	**0.1749**	0.091	52.1	ug/L	10	Standard
	Se-1	77	130.3	8.1	**1.1060**	0.142	12.8	ug/L	57	Standard
>	**Ga**	71	56.7	27.0				mg/L	78	Standard
	Rb	85	65.0	23.1				ug/L	22	Standard
	Y	89	394269.0	0.6				ug/L	388959	Standard
>	**Rh**	103	38.3	39.8				ug/L	8	Standard
	Mo	98	217.6	16.1	**0.0765**	0.013	17.2	ug/L	10	Standard
	Ag	107	144.7	14.9	**0.0087**	0.003	37.1	ug/L	66	Standard
	Cd	111	19.2	77.7	**0.0057**	0.007	126.7	mg/L	3	Standard
	Cd	114	66.9	26.2	**0.0093**	0.003	36.7	ug/L	4	Standard
>	**In**	115	538400.2	0.5				ug/L	523327	Standard
	Sn	118	921.7	20.9	**0.0859**	0.034	39.9	ug/L	488	Standard
	Sb	123	709.3	31.1	**0.1352**	0.048	35.3	ug/L	195	Standard
	Ba	135	56.3	35.6	**0.0111**	0.010	89.5	ug/L	28	Standard
	Ce	140	20.0	109.0				ug/L	83	Standard
>	**Tb**	159	823108.5	0.5				ug/L	809211	Standard
	Ho	165	8.3	124.9				ug/L	13	Standard
	Tl	203	122.0	36.7	**0.0130**	0.006	42.5	ug/L	4	Standard
	Tl	205	100.0	52.7	**0.0119**	0.008	64.0	ug/L	8	Standard
	Pb	206	295.0	11.6	**0.0098**	0.007	70.1	ug/L	230	Standard
	Pb	207	256.3	13.7	**0.0126**	0.008	61.1	ug/L	184	Standard
	Pb	208	1056.3	9.0	**0.0100**	0.005	51.9	ug/L	775	Standard
	U	238	75.3	31.5	**0.0101**	0.003	33.9	ug/L	3	Standard
>	**Bi**	209	488447.4	0.4				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	126.7	18.2	**0.1007**	0.030	30.0	mg/L	52	Standard
K	39	20.0	25.0	**-0.0372**	0.023	61.2	mg/L	32	Standard
Ca	43	18.3	15.7	**-1.5844**	0.376	23.7	mg/L	33	Standard
Fe	54	144.0	5.7	**0.0033**	0.006	173.3	mg/L	138	Standard
Fe	57	273.3	16.4	**0.1415**	0.142	100.1	mg/L	263	Standard
Sc-1	45	29036.1	1.1				mg/L	27861	Standard
Cl	35	123843.5	1.4				ug/L	100607	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	3020.3	5.5				ug/L	1777	Standard
P	31	21236.6	5.7				ug/L	18074	Standard
S	34	4909.1	3.7				ug/L	3901	Standard
Sr	88	81.7	56.9				ug/L	60	Standard
C	12	53.3	21.7				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	7	Standard
Dy	164	12.9	44.9				mg/L	13	Standard
Ho-1	165	8.3	124.9				mg/L	13	Standard
Er	166	10.0					mg/L	3	Standard
I	127	25112.5	0.2				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.827	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.880
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.386
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606165001
Sample Date/Time: Thursday, July 07, 2016 11:01:25
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67173.7	3.3				ug/L	59299	Standard
	Be	9	36.7	28.4	**0.0401**	0.010	26.1	ug/L	17	Standard
	Al	27	8248422.7	1.0	**54.4415**	1.503	2.8	ug/L	1472	Standard
	Sc	45	29415.2	1.0				ug/L	27861	Standard
	Ti	47	979.0	7.2	**3.8766**	0.283	7.3	ug/L	28	Standard
	V	51	2571.0	13.5	**0.1952**	0.053	27.0	ug/L	1156	Standard
	Cr	52	12496.2	1.1	**0.7830**	0.052	6.6	ug/L	6689	Standard
	Cr	53	6578.1	4.9	**6.9573**	0.475	6.8	ug/L	348	Standard
	Mn	55	242513.5	0.9	**37.1092**	0.699	1.9	ug/L	770	Standard
	Co	59	1235.7	2.6	**0.1459**	0.008	5.5	ug/L	216	Standard
	Ni	60	3471.4	0.7	**1.6125**	0.049	3.0	ug/L	440	Standard
	Cu	65	43698.9	1.3	**23.5058**	0.203	0.9	ug/L	116	Standard
	Zn	66	45694.1	1.8	**41.1566**	0.464	1.1	ug/L	135	Standard
>	Ge	72	460078.0	1.9				ug/L	445277	Standard
	As	75	852.1	7.2	**0.7939**	0.067	8.4	ug/L	-57	Standard
	Se	82	325.4	4.0	**2.7030**	0.154	5.7	ug/L	10	Standard
	Se-1	77	408.3	2.5	**4.7484**	0.241	5.1	ug/L	57	Standard
>	Ga	71	113.3	20.4				mg/L	78	Standard
	Rb	85	44130.8	0.6				ug/L	22	Standard
	Y	89	399573.8	1.0				ug/L	388959	Standard
>	Rh	103	75.0	6.7				ug/L	8	Standard
	Mo	98	1271.0	3.8	**0.4816**	0.022	4.6	ug/L	10	Standard
	Ag	107	4441.3	1.7	**0.6756**	0.005	0.7	ug/L	66	Standard
	Cd	111	63.8	11.3	**0.0274**	0.003	11.1	mg/L	3	Standard
	Cd	114	153.0	14.6	**0.0266**	0.005	18.2	ug/L	4	Standard
>	In	115	535640.8	1.6				ug/L	523327	Standard
	Sn	118	3803.8	0.8	**0.5942**	0.012	2.1	ug/L	488	Standard
	Sb	123	873.8	17.3	**0.1715**	0.035	20.5	ug/L	195	Standard
	Ba	135	56834.7	1.3	**28.7525**	0.295	1.0	ug/L	28	Standard
	Ce	140	785.0	8.4				ug/L	83	Standard
>	Tb	159	830598.5	1.8				ug/L	809211	Standard
	Ho	165	46.7	30.9				ug/L	13	Standard
	Tl	203	89.3	2.8	**0.0092**	0.000	1.8	ug/L	4	Standard
	Tl	205	76.7	10.0	**0.0087**	0.001	13.0	ug/L	8	Standard
	Pb	206	2042.1	1.0	**0.3586**	0.004	1.0	ug/L	230	Standard
	Pb	207	1689.8	3.3	**0.3279**	0.007	2.2	ug/L	184	Standard
	Pb	208	7168.7	0.4	**0.3387**	0.006	1.6	ug/L	775	Standard
	U	238	433.7	6.5	**0.0626**	0.005	7.7	ug/L	3	Standard
>	Bi	209	480534.4	1.4				ug/L	472452	Standard

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Na	23	1.7	173.2	**3.0916**	5.346	172.9	mg/L	0	Standard
Mg	24	34440.8	1.4	**44.5872**	1.016	2.3	mg/L	52	Standard
K	39	945.0	2.3	**4.0364**	0.055	1.4	mg/L	32	Standard
Ca	43	143.3	7.3	**13.5483**	1.166	8.6	mg/L	33	Standard
Fe	54	322.6	10.0	**0.1426**	0.028	19.5	mg/L	138	Standard
Fe	57	501.7	10.1	**0.8031**	0.137	17.1	mg/L	263	Standard
Sc-1	45	29415.2	1.0				mg/L	27861	Standard
Cl	35	154553.7	1.3				ug/L	100607	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	59791.2	4.6				ug/L	1777	Standard
P	31	23286.2	1.7				ug/L	18074	Standard
S	34	4994.2	4.1				ug/L	3901	Standard
Sr	88	273.3	9.2				ug/L	60	Standard
C	12	476.7	10.6				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	41.7				mg/L	7	Standard
Dy	164	41.4	49.4				mg/L	13	Standard
Ho-1	165	46.7	30.9				mg/L	13	Standard
Er	166	40.0	25.0				mg/L	3	Standard
I	127	638638.4	2.5				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		113.279	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.324	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.353
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.711
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1607005001
Sample Date/Time: Thursday, July 07, 2016 11:04:36
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68246.7	1.2				ug/L	59299	Standard
	Be	9	93.3	8.2	**0.0987**	0.009	9.2	ug/L	17	Standard
	Al	27	16894064.1	1.4	**109.7011**	0.859	0.8	ug/L	1472	Standard
	Sc	45	30881.4	0.7				ug/L	27861	Standard
	Ti	47	2996.3	3.2	**12.2847**	0.323	2.6	ug/L	28	Standard
	V	51	8830.5	3.8	**1.1193**	0.058	5.2	ug/L	1156	Standard
	Cr	52	22652.3	2.7	**2.2572**	0.062	2.8	ug/L	6689	Standard
	Cr	53	10558.7	2.3	**11.5835**	0.291	2.5	ug/L	348	Standard
	Mn	55	615680.1	2.4	**95.8474**	2.531	2.6	ug/L	770	Standard
	Co	59	5004.5	5.4	**0.7103**	0.045	6.3	ug/L	216	Standard
	Ni	60	8413.0	2.6	**4.3408**	0.079	1.8	ug/L	440	Standard
	Cu	65	58656.7	1.7	**32.0550**	0.445	1.4	ug/L	116	Standard
	Zn	66	145801.8	0.3	**133.7804**	0.818	0.6	ug/L	135	Standard
>	**Ge**	72	453110.1	0.9				ug/L	445277	Standard
	As	75	369.5	21.7	**0.3698**	0.070	18.9	ug/L	-57	Standard
	Se	82	131.3	9.4	**1.0207**	0.101	9.9	ug/L	10	Standard
	Se-1	77	581.0	1.1	**7.1399**	0.134	1.9	ug/L	57	Standard
>	**Ga**	71	1001.7	5.1				mg/L	78	Standard
	Rb	85	72966.9	0.6				ug/L	22	Standard
	Y	89	399029.5	0.5				ug/L	388959	Standard
>	**Rh**	103	103.3	17.0				ug/L	8	Standard
	Mo	98	6159.9	3.2	**2.4097**	0.061	2.5	ug/L	10	Standard
	Ag	107	1472.7	25.8	**0.2199**	0.061	27.6	ug/L	66	Standard
	Cd	111	644.9	26.3	**0.3168**	0.085	26.7	mg/L	3	Standard
	Cd	114	1591.6	27.7	**0.3195**	0.090	28.2	ug/L	4	Standard
>	**In**	115	524362.4	1.0				ug/L	523327	Standard
	Sn	118	8704.2	1.9	**1.4899**	0.031	2.1	ug/L	488	Standard
	Sb	123	4657.5	6.2	**1.0061**	0.068	6.7	ug/L	195	Standard
	Ba	135	65664.7	1.8	**33.9339**	0.378	1.1	ug/L	28	Standard
	Ce	140	23182.7	3.1				ug/L	83	Standard
>	**Tb**	159	828267.9	1.5				ug/L	809211	Standard
	Ho	165	440.0	11.2				ug/L	13	Standard
	Tl	203	477.0	132.0	**0.0531**	0.073	137.3	ug/L	4	Standard
	Tl	205	210.0	83.0	**0.0257**	0.024	91.8	ug/L	8	Standard
	Pb	206	6113.9	2.7	**1.0702**	0.035	3.3	ug/L	230	Standard
	Pb	207	5100.2	2.0	**0.9850**	0.026	2.6	ug/L	184	Standard
	Pb	208	21970.6	1.9	**1.0366**	0.026	2.5	ug/L	775	Standard
	U	238	613.7	26.3	**0.0817**	0.022	27.3	ug/L	3	Standard
>	**Bi**	209	523125.7	1.2				ug/L	472452	Standard

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Na	23	8.3	69.3	**14.6975**	10.075	68.5	mg/L	0	Standard
Mg	24	52915.7	3.6	**65.2692**	2.118	3.2	mg/L	52	Standard
K	39	1531.7	8.1	**6.2997**	0.495	7.9	mg/L	32	Standard
Ca	43	265.0	14.2	**26.7858**	4.344	16.2	mg/L	33	Standard
Fe	54	2703.3	1.9	**1.9161**	0.049	2.5	mg/L	138	Standard
Fe	57	1131.7	10.3	**2.5029**	0.311	12.4	mg/L	263	Standard
> **Sc-1**	45	30881.4	0.7				mg/L	27861	Standard
Cl	35	151468.9	2.3				ug/L	100607	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	12218.3	4.8				ug/L	1777	Standard
P	31	30707.8	2.8				ug/L	18074	Standard
S	34	4587.4	2.6				ug/L	3901	Standard
Sr	88	338.3	18.5				ug/L	60	Standard
C	12	1403.4	14.0				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	83.3	6.9				mg/L	7	Standard
Dy	164	657.2	14.7				mg/L	13	Standard
Ho-1	165	440.0	11.2				mg/L	13	Standard
Er	166	406.7	9.3				mg/L	3	Standard
I	127	76038.7	0.3				mg/L	8539	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		115.089	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.759	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		100.198
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		110.726
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1607005001
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Method 6020 - Summary Report

Sample ID: L1607005002
Sample Date/Time: Thursday, July 07, 2016 11:07:48
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68782.5	2.4				ug/L	59299	Standard
	Be	9	28.3	71.3	**0.0305**	0.021	68.1	ug/L	17	Standard
	Al	27	29535580.5	1.2	**190.3538**	3.534	1.9	ug/L	1472	Standard
	Sc	45	30265.2	1.4				ug/L	27861	Standard
	Ti	47	225.3	2.4	**0.8185**	0.025	3.1	ug/L	28	Standard
	V	51	6450.3	5.6	**0.7700**	0.061	7.9	ug/L	1156	Standard
	Cr	52	10228.1	3.8	**0.4855**	0.042	8.6	ug/L	6689	Standard
	Cr	53	8118.8	4.5	**8.8110**	0.352	4.0	ug/L	348	Standard
	Mn	55	11656.1	1.0	**1.6888**	0.032	1.9	ug/L	770	Standard
	Co	59	1662.4	4.1	**0.2121**	0.008	3.7	ug/L	216	Standard
	Ni	60	5395.3	1.5	**2.6916**	0.028	1.0	ug/L	440	Standard
	Cu	65	2268.8	0.6	**1.1838**	0.004	0.4	ug/L	116	Standard
	Zn	66	16171.3	0.6	**14.6606**	0.058	0.4	ug/L	135	Standard
>	**Ge**	72	453177.1	1.0				ug/L	445277	Standard
	As	75	352.3	4.5	**0.3546**	0.013	3.6	ug/L	-57	Standard
	Se	82	178.2	4.5	**1.4368**	0.057	4.0	ug/L	10	Standard
	Se-1	77	479.7	10.9	**5.7788**	0.648	11.2	ug/L	57	Standard
>	**Ga**	71	426.7	10.9				mg/L	78	Standard
	Rb	85	62386.5	1.0				ug/L	22	Standard
	Y	89	395178.8	0.2				ug/L	388959	Standard
>	**Rh**	103	81.7	27.6				ug/L	8	Standard
	Mo	98	3123.1	3.0	**1.2135**	0.034	2.8	ug/L	10	Standard
	Ag	107	91.7	20.5	**0.0009**	0.003	346.0	ug/L	66	Standard
	Cd	111	29.8	13.8	**0.0112**	0.002	19.1	mg/L	3	Standard
	Cd	114	84.1	19.3	**0.0131**	0.003	26.2	ug/L	4	Standard
>	**In**	115	526549.0	1.0				ug/L	523327	Standard
	Sn	118	1401.7	2.7	**0.1754**	0.005	2.6	ug/L	488	Standard
	Sb	123	1395.5	7.1	**0.2885**	0.023	7.9	ug/L	195	Standard
	Ba	135	8642.1	0.8	**4.4332**	0.078	1.8	ug/L	28	Standard
	Ce	140	635.0	14.2				ug/L	83	Standard
>	**Tb**	159	822284.8	0.9				ug/L	809211	Standard
	Ho	165	23.3	81.1				ug/L	13	Standard
	Tl	203	73.0	21.5	**0.0074**	0.002	27.1	ug/L	4	Standard
	Tl	205	26.7	39.0	**0.0015**	0.002	104.2	ug/L	8	Standard
	Pb	206	506.3	3.8	**0.0552**	0.004	7.2	ug/L	230	Standard
	Pb	207	448.7	2.1	**0.0580**	0.002	3.7	ug/L	184	Standard
	Pb	208	1812.0	0.6	**0.0538**	0.001	1.5	ug/L	775	Standard
	U	238	27.0	58.8	**0.0033**	0.002	70.7	ug/L	3	Standard
>	**Bi**	209	469484.1	0.2				ug/L	472452	Standard

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Na	23	3.3	86.6	**5.9898**	5.184	86.5	mg/L	0	Standard
Mg	24	40337.0	0.8	**50.7653**	1.062	2.1	mg/L	52	Standard
K	39	1275.1	6.4	**5.3364**	0.417	7.8	mg/L	32	Standard
Ca	43	168.3	3.4	**16.0082**	0.401	2.5	mg/L	33	Standard
Fe	54	175.6	4.3	**0.0229**	0.007	29.4	mg/L	138	Standard
Fe	57	470.0	12.3	**0.6728**	0.181	26.9	mg/L	263	Standard
> **Sc-1**	45	30265.2	1.4				mg/L	27861	Standard
Cl	35	160456.6	1.3				ug/L	100607	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	33076.1	4.8				ug/L	1777	Standard
P	31	28187.9	0.8				ug/L	18074	Standard
S	34	4685.7	4.8				ug/L	3901	Standard
Sr	88	280.0	4.7				ug/L	60	Standard
C	12	180.0	28.9				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	14.4	147.8				mg/L	13	Standard
Ho-1	165	23.3	81.1				mg/L	13	Standard
Er	166	46.7	44.6				mg/L	3	Standard
I	127	71008.1	6.0				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.992	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.774	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.616
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.372
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1607005401 WG575246-02
Sample Date/Time: Thursday, July 07, 2016 11:11:00
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67903.5	2.5				ug/L	59299	Standard
	Be	9	16.7	86.6	**0.0187**	0.015	80.5	ug/L	17	Standard
	Al	27	8771544.0	1.4	**57.2499**	0.685	1.2	ug/L	1472	Standard
	Sc	45	28181.2	2.9				ug/L	27861	Standard
	Ti	47	734.0	16.7	**2.9612**	0.505	17.1	ug/L	28	Standard
	V	51	2274.5	6.6	**0.1614**	0.024	14.6	ug/L	1156	Standard
	Cr	52	10641.1	3.1	**0.5640**	0.047	8.4	ug/L	6689	Standard
	Cr	53	7913.7	2.9	**8.6947**	0.261	3.0	ug/L	348	Standard
	Mn	55	145515.8	0.7	**22.8412**	0.097	0.4	ug/L	770	Standard
	Co	59	928.0	3.3	**0.1045**	0.004	4.1	ug/L	216	Standard
	Ni	60	2632.9	1.9	**1.2006**	0.022	1.9	ug/L	440	Standard
	Cu	65	7582.9	0.2	**4.1458**	0.011	0.3	ug/L	116	Standard
	Zn	66	27726.7	1.7	**25.6023**	0.383	1.5	ug/L	135	Standard
>	Ge	72	447447.1	0.3				ug/L	445277	Standard
	As	75	761.4	11.7	**0.7316**	0.079	10.8	ug/L	-57	Standard
	Se	82	330.2	4.3	**2.8253**	0.123	4.3	ug/L	10	Standard
	Se-1	77	510.7	3.2	**6.2848**	0.237	3.8	ug/L	57	Standard
>	Ga	71	93.3	15.5				mg/L	78	Standard
	Rb	85	40796.5	0.5				ug/L	22	Standard
	Y	89	386635.4	1.9				ug/L	388959	Standard
>	Rh	103	100.0	8.7				ug/L	8	Standard
	Mo	98	895.3	4.5	**0.3463**	0.016	4.7	ug/L	10	Standard
	Ag	107	202.0	6.5	**0.0186**	0.002	11.2	ug/L	66	Standard
	Cd	111	45.7	6.7	**0.0192**	0.001	7.8	mg/L	3	Standard
	Cd	114	113.8	34.0	**0.0193**	0.008	40.3	ug/L	4	Standard
>	In	115	521910.6	0.5				ug/L	523327	Standard
	Sn	118	1101.7	7.0	**0.1234**	0.013	10.6	ug/L	488	Standard
	Sb	123	617.0	16.5	**0.1194**	0.022	18.2	ug/L	195	Standard
	Ba	135	26023.3	0.6	**13.5021**	0.152	1.1	ug/L	28	Standard
	Ce	140	161.7	20.6				ug/L	83	Standard
>	Tb	159	810811.5	0.6				ug/L	809211	Standard
	Ho	165	26.7	28.6				ug/L	13	Standard
	Tl	203	84.3	7.9	**0.0089**	0.001	9.4	ug/L	4	Standard
	Tl	205	86.7	12.0	**0.0105**	0.002	15.0	ug/L	8	Standard
	Pb	206	1101.4	2.5	**0.1775**	0.006	3.1	ug/L	230	Standard
	Pb	207	960.0	3.2	**0.1738**	0.007	4.0	ug/L	184	Standard
	Pb	208	3876.9	2.3	**0.1681**	0.005	3.2	ug/L	775	Standard
	U	238	57.7	6.1	**0.0080**	0.001	6.4	ug/L	3	Standard
>	Bi	209	467314.2	0.2				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	37596.6	3.6	**50.8005**	0.506	1.0	mg/L	52	Standard
K	39	885.0	6.1	**3.9406**	0.131	3.3	mg/L	32	Standard
Ca	43	218.3	19.5	**23.8854**	5.789	24.2	mg/L	33	Standard
Fe	54	152.1	14.7	**0.0135**	0.018	132.8	mg/L	138	Standard
Fe	57	520.0	8.4	**0.9280**	0.172	18.6	mg/L	263	Standard
> **Sc-1**	45	28181.2	2.9				mg/L	27861	Standard
Cl	35	157033.1	2.0				ug/L	100607	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	68715.5	0.5				ug/L	1777	Standard
P	31	22076.1	1.9				ug/L	18074	Standard
S	34	4677.4	5.5				ug/L	3901	Standard
Sr	88	268.3	8.8				ug/L	60	Standard
C	12	163.3	14.1				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	49.5				mg/L	7	Standard
Dy	164	37.9	81.7				mg/L	13	Standard
Ho-1	165	26.7	28.6				mg/L	13	Standard
Er	166	43.3	70.5				mg/L	3	Standard
I	127	651280.3	5.7				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.510	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.487	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.729
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.913
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607005401DP WG575246-07
Sample Date/Time: Thursday, July 07, 2016 11:14:11
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67212.2	4.0				ug/L	59299	Standard
	Be	9	23.3	81.1	**0.0256**	0.019	73.1	ug/L	17	Standard
	Al	27	8190056.1	1.4	**54.0374**	1.745	3.2	ug/L	1472	Standard
	Sc	45	28089.4	3.4				ug/L	27861	Standard
	Ti	47	587.0	4.7	**2.3481**	0.111	4.7	ug/L	28	Standard
	V	51	2078.2	9.7	**0.1323**	0.028	21.0	ug/L	1156	Standard
	Cr	52	10471.3	2.0	**0.5408**	0.020	3.7	ug/L	6689	Standard
	Cr	53	7518.5	0.8	**8.2489**	0.129	1.6	ug/L	348	Standard
	Mn	55	133979.8	0.8	**21.0401**	0.209	1.0	ug/L	770	Standard
	Co	59	839.0	3.9	**0.0912**	0.004	4.5	ug/L	216	Standard
	Ni	60	2431.2	3.6	**1.0901**	0.043	4.0	ug/L	440	Standard
	Cu	65	7103.0	0.2	**3.8834**	0.034	0.9	ug/L	116	Standard
	Zn	66	24172.9	0.7	**22.3167**	0.171	0.8	ug/L	135	Standard
>	**Ge**	72	447044.3	0.7				ug/L	445277	Standard
	As	75	758.6	8.2	**0.7301**	0.062	8.4	ug/L	-57	Standard
	Se	82	318.0	3.8	**2.7186**	0.124	4.6	ug/L	10	Standard
	Se-1	77	473.0	3.9	**5.7800**	0.260	4.5	ug/L	57	Standard
>	**Ga**	71	90.0	38.5				mg/L	78	Standard
	Rb	85	39429.6	1.8				ug/L	22	Standard
	Y	89	389051.8	2.4				ug/L	388959	Standard
>	**Rh**	103	68.3	11.2				ug/L	8	Standard
	Mo	98	800.0	6.0	**0.3089**	0.020	6.4	ug/L	10	Standard
	Ag	107	178.0	6.5	**0.0148**	0.002	12.9	ug/L	66	Standard
	Cd	111	39.2	10.7	**0.0160**	0.002	13.5	mg/L	3	Standard
	Cd	114	97.7	25.6	**0.0160**	0.005	31.3	ug/L	4	Standard
>	**In**	115	521692.8	0.4				ug/L	523327	Standard
	Sn	118	1453.4	7.8	**0.1870**	0.020	10.5	ug/L	488	Standard
	Sb	123	545.7	12.0	**0.1038**	0.015	14.3	ug/L	195	Standard
	Ba	135	24416.0	0.5	**12.6719**	0.070	0.6	ug/L	28	Standard
	Ce	140	116.7	13.8				ug/L	83	Standard
>	**Tb**	159	809781.0	1.0				ug/L	809211	Standard
	Ho	165	35.0	28.6				ug/L	13	Standard
	Tl	203	75.0	9.3	**0.0077**	0.001	11.9	ug/L	4	Standard
	Tl	205	65.0	15.4	**0.0072**	0.001	20.3	ug/L	8	Standard
	Pb	206	933.0	2.6	**0.1432**	0.004	3.0	ug/L	230	Standard
	Pb	207	796.4	2.9	**0.1371**	0.005	3.7	ug/L	184	Standard
	Pb	208	3191.1	1.7	**0.1304**	0.002	1.9	ug/L	775	Standard
	U	238	46.7	25.7	**0.0063**	0.002	28.5	ug/L	3	Standard
>	**Bi**	209	466911.1	0.4				ug/L	472452	Standard

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Na	23	5.0	173.2	**9.5102**	16.463	173.1	mg/L	0	Standard
Mg	24	36138.1	2.3	**49.0091**	0.956	2.0	mg/L	52	Standard
K	39	880.0	13.4	**3.9260**	0.437	11.1	mg/L	32	Standard
Ca	43	175.0	7.6	**18.3863**	1.228	6.7	mg/L	33	Standard
Fe	54	172.3	35.5	**0.0317**	0.056	176.1	mg/L	138	Standard
Fe	57	468.3	10.7	**0.7719**	0.162	21.0	mg/L	263	Standard
> **Sc-1**	45	28089.4	3.4				mg/L	27861	Standard
Cl	35	155839.4	0.9				ug/L	100607	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	68276.9	2.6				ug/L	1777	Standard
P	31	22468.3	1.9				ug/L	18074	Standard
S	34	4587.4	1.6				ug/L	3901	Standard
Sr	88	248.3	14.3				ug/L	60	Standard
C	12	126.7	46.3				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	0.0				mg/L	7	Standard
Dy	164	31.7	68.7				mg/L	13	Standard
Ho-1	165	35.0	28.6				mg/L	13	Standard
Er	166	33.3	75.5				mg/L	3	Standard
I	127	584344.8	4.6				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.344	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.397	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.688
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.827
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607007401
Sample Date/Time: Thursday, July 07, 2016 11:17:23
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67898.7	4.9				ug/L	59299	Standard
	Be	9	15.0	88.2	**0.0167**	0.013	80.4	ug/L	17	Standard
	Al	27	12964222.1	0.7	**84.7236**	3.465	4.1	ug/L	1472	Standard
	Sc	45	26670.1	2.6				ug/L	27861	Standard
	Ti	47	206.3	6.2	**0.8289**	0.052	6.3	ug/L	28	Standard
	V	51	2662.0	19.1	**0.2541**	0.078	30.6	ug/L	1156	Standard
	Cr	52	20884.1	1.8	**2.3167**	0.055	2.4	ug/L	6689	Standard
	Cr	53	33670.7	2.8	**41.8213**	1.722	4.1	ug/L	348	Standard
	Mn	55	26002.3	1.3	**4.3486**	0.004	0.1	ug/L	770	Standard
	Co	59	5261.2	1.0	**0.8305**	0.017	2.0	ug/L	216	Standard
	Ni	60	19221.9	2.1	**11.3455**	0.136	1.2	ug/L	440	Standard
	Cu	65	296730.0	1.2	**179.3764**	1.710	1.0	ug/L	116	Standard
	Zn	66	2988.6	1.6	**2.8363**	0.040	1.4	ug/L	135	Standard
>	**Ge**	72	410244.3	1.3				ug/L	445277	Standard
	As	75	2763.3	8.4	**2.7847**	0.199	7.1	ug/L	-57	Standard
	Se	82	1019.4	0.6	**9.8582**	0.092	0.9	ug/L	10	Standard
	Se-1	77	2876.6	1.3	**41.8968**	1.051	2.5	ug/L	57	Standard
>	**Ga**	71	443.3	9.7				mg/L	78	Standard
	Rb	85	290379.6	0.8				ug/L	22	Standard
	Y	89	364299.4	0.9				ug/L	388959	Standard
>	**Rh**	103	183.3	8.3				ug/L	8	Standard
	Mo	98	16002.8	1.5	**7.0127**	0.143	2.0	ug/L	10	Standard
	Ag	107	172.0	1.5	**0.0169**	0.001	4.1	ug/L	66	Standard
	Cd	111	8.6	27.7	**0.0012**	0.001	111.2	mg/L	3	Standard
	Cd	114	93.5	19.3	**0.0173**	0.004	24.4	ug/L	4	Standard
>	**In**	115	469021.6	0.8				ug/L	523327	Standard
	Sn	118	988.4	1.6	**0.1231**	0.003	2.2	ug/L	488	Standard
	Sb	123	2408.2	3.0	**0.5745**	0.016	2.7	ug/L	195	Standard
	Ba	135	137894.1	1.4	**79.6963**	1.119	1.4	ug/L	28	Standard
	Ce	140	130.0	20.4				ug/L	83	Standard
>	**Tb**	159	762401.3	1.8				ug/L	809211	Standard
	Ho	165	3.3	173.2				ug/L	13	Standard
	Tl	203	67.7	18.7	**0.0079**	0.002	23.5	ug/L	4	Standard
	Tl	205	60.0	58.3	**0.0077**	0.006	77.2	ug/L	8	Standard
	Pb	206	331.0	6.9	**0.0291**	0.006	19.2	ug/L	230	Standard
	Pb	207	284.3	3.0	**0.0302**	0.003	8.5	ug/L	184	Standard
	Pb	208	1165.4	2.7	**0.0274**	0.002	8.4	ug/L	775	Standard
	U	238	22.0	7.9	**0.0031**	0.000	9.1	ug/L	3	Standard
>	**Bi**	209	411096.8	0.5				ug/L	472452	Standard

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Na	23	11.7	89.2	**23.5999**	20.900	88.6	mg/L	0	Standard
Mg	24	325913.4	1.4	**466.0329**	8.244	1.8	mg/L	52	Standard
K	39	11761.2	0.7	**57.0489**	1.671	2.9	mg/L	32	Standard
Ca	43	725.0	5.5	**93.1498**	3.111	3.3	mg/L	33	Standard
Fe	54	144.6	17.2	**0.0144**	0.024	166.5	mg/L	138	Standard
Fe	57	1065.0	3.5	**2.7893**	0.094	3.4	mg/L	263	Standard
> **Sc-1**	45	26670.1	2.6				mg/L	27861	Standard
Cl	35	257687.5	0.5				ug/L	100607	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	242529.8	2.5				ug/L	1777	Standard
P	31	20387.0	2.6				ug/L	18074	Standard
S	34	4924.1	2.1				ug/L	3901	Standard
Sr	88	415.0	7.5				ug/L	60	Standard
C	12	130.0	27.7				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	31.5				mg/L	7	Standard
Dy	164	9.7	100.8				mg/L	13	Standard
Ho-1	165	3.3	173.2				mg/L	13	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	943581.1	6.2				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.502	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.132	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1607007401
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.623
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.014
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cu 65 Upper, S, EEE	Cu	65	

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607009001
Sample Date/Time: Thursday, July 07, 2016 11:20:34
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65434.3	1.1				ug/L	59299	Standard
	Be	9	35.0	14.3	**0.0394**	0.006	14.0	ug/L	17	Standard
	Al	27	361608.2	1.5	**2.4365**	0.025	1.0	ug/L	1472	Standard
	Sc	45	29508.7	2.9				ug/L	27861	Standard
	Ti	47	5160.9	2.2	**19.7657**	0.377	1.9	ug/L	28	Standard
	V	51	559556.4	0.5	**76.2419**	0.185	0.2	ug/L	1156	Standard
	Cr	52	1410102.2	0.7	**186.1862**	0.871	0.5	ug/L	6689	Standard
	Cr	53	177050.1	0.7	**186.6411**	1.048	0.6	ug/L	348	Standard
	Mn	55	4496422.1	1.2	**652.2867**	9.521	1.5	ug/L	770	Standard
	Co	59	171439.9	1.3	**23.7422**	0.377	1.6	ug/L	216	Standard
	Ni	60	202851.6	0.7	**102.9350**	0.669	0.6	ug/L	440	Standard
	Cu	65	20706598.6	0.6	**10552.1569**	47.360	0.4	ug/L	116	Standard
	Zn	66	571278.6	0.2	**488.4224**	0.799	0.2	ug/L	135	Standard
>	**Ge**	72	486782.0	0.3				ug/L	445277	Standard
	As	75	19642.5	1.3	**16.5060**	0.258	1.6	ug/L	-57	Standard
	Se	82	83.2	5.4	**0.5424**	0.039	7.2	ug/L	10	Standard
	Se-1	77	168.0	16.6	**1.4562**	0.351	24.1	ug/L	57	Standard
>	**Ga**	71	25978.9	1.2				mg/L	78	Standard
	Rb	85	6072.9	3.7				ug/L	22	Standard
	Y	89	403894.5	0.9				ug/L	388959	Standard
>	**Rh**	103	1425.1	2.1				ug/L	8	Standard
	Mo	98	129654.3	0.7	**49.2551**	0.544	1.1	ug/L	10	Standard
	Ag	107	2788.9	0.2	**0.4145**	0.002	0.6	ug/L	66	Standard
	Cd	111	15029.9	0.5	**7.2263**	0.031	0.4	mg/L	3	Standard
	Cd	114	38459.3	2.4	**7.5633**	0.203	2.7	ug/L	4	Standard
>	**In**	115	541434.3	0.4				ug/L	523327	Standard
	Sn	118	406483.6	2.1	**70.7295**	1.493	2.1	ug/L	488	Standard
	Sb	123	28087.5	0.7	**5.9559**	0.069	1.2	ug/L	195	Standard
	Ba	135	2887892.3	0.6	**1446.1112**	8.219	0.6	ug/L	28	Standard
	Ce	140	11591.1	1.9				ug/L	83	Standard
>	**Tb**	159	823197.7	1.0				ug/L	809211	Standard
	Ho	165	278.3	6.3				ug/L	13	Standard
	Tl	203	315.0	10.0	**0.0366**	0.004	10.5	ug/L	4	Standard
	Tl	205	273.3	14.9	**0.0365**	0.006	16.1	ug/L	8	Standard
	Pb	206	3279147.8	0.5	**640.0029**	3.150	0.5	ug/L	230	Standard
	Pb	207	2624108.2	0.6	**564.2586**	3.674	0.7	ug/L	184	Standard
	Pb	208	11316404.6	0.1	**594.9222**	0.591	0.1	ug/L	775	Standard
	U	238	375.3	3.5	**0.0530**	0.002	3.7	ug/L	3	Standard
>	**Bi**	209	490093.9	0.1				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	1298.4	3.9	**1.6136**	0.097	6.0	mg/L	52	Standard
K	39	98.3	5.9	**0.3060**	0.038	12.5	mg/L	32	Standard
Ca	43	46.7	40.6	**1.8360**	2.391	130.2	mg/L	33	Standard
Fe	54	180576.1	1.3	**141.6848**	3.465	2.4	mg/L	138	Standard
Fe	57	47255.3	1.9	**138.3183**	1.315	1.0	mg/L	263	Standard
> **Sc-1**	45	29508.7	2.9				mg/L	27861	Standard
Cl	35	161361.6	2.0				ug/L	100607	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	7101.7	15.5				ug/L	1777	Standard
P	31	24177.6	2.4				ug/L	18074	Standard
S	34	5227.6	5.1				ug/L	3901	Standard
Sr	88	243.3	16.5				ug/L	60	Standard
C	12	166.7	9.2				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1020.0	8.5				mg/L	7	Standard
Dy	164	393.4	4.4				mg/L	13	Standard
Ho-1	165	278.3	6.3				mg/L	13	Standard
Er	166	206.7	26.6				mg/L	3	Standard
I	127	102473.4	7.9				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.346	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.321	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.460
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.734
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

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Ni 60 Upper, S, EEE	Ni	60
Cu 65 Upper, S, EEE	Cu	65
Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135
Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606165236
Sample Date/Time: Thursday, July 07, 2016 11:23:45
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65451.1	1.4				ug/L	59299	Standard
	Be	9	18.3	83.3	**0.0214**	0.017	79.3	ug/L	17	Standard
	Al	27	13974.8	5.5	**0.0818**	0.004	4.9	ug/L	1472	Standard
	Sc	45	29420.2	1.6				ug/L	27861	Standard
	Ti	47	39.0	9.2	**0.0433**	0.015	35.1	ug/L	28	Standard
	V	51	1060.0	13.4	**-0.0252**	0.020	79.6	ug/L	1156	Standard
	Cr	52	7883.4	2.7	**0.1226**	0.036	29.3	ug/L	6689	Standard
	Cr	53	1386.7	5.6	**1.1324**	0.083	7.4	ug/L	348	Standard
	Mn	55	1919.8	15.9	**0.1636**	0.047	28.7	ug/L	770	Standard
	Co	59	248.7	7.6	**0.0006**	0.003	451.1	ug/L	216	Standard
	Ni	60	578.7	1.3	**0.0515**	0.002	3.9	ug/L	440	Standard
	Cu	65	4144.9	30.6	**2.1532**	0.679	31.5	ug/L	116	Standard
	Zn	66	1738.8	1.6	**1.3595**	0.038	2.8	ug/L	135	Standard
>	**Ge**	72	465199.3	0.9				ug/L	445277	Standard
	As	75	19.0	213.1	**0.0542**	0.036	65.7	ug/L	-57	Standard
	Se	82	47.1	21.2	**0.2626**	0.089	34.1	ug/L	10	Standard
	Se-1	77	96.7	22.7	**0.6211**	0.275	44.3	ug/L	57	Standard
>	**Ga**	71	33.3	8.7				mg/L	78	Standard
	Rb	85	131.7	25.3				ug/L	22	Standard
	Y	89	405234.4	0.6				ug/L	388959	Standard
>	**Rh**	103	30.0	44.1				ug/L	8	Standard
	Mo	98	130.5	12.6	**0.0422**	0.006	13.9	ug/L	10	Standard
	Ag	107	87.3	12.6	**-0.0004**	0.002	387.9	ug/L	66	Standard
	Cd	111	6.1	34.0	**-0.0007**	0.001	135.6	mg/L	3	Standard
	Cd	114	21.8	97.0	**0.0003**	0.004	1376.6	ug/L	4	Standard
>	**In**	115	550341.6	0.6				ug/L	523327	Standard
	Sn	118	1175.0	23.1	**0.1258**	0.047	37.3	ug/L	488	Standard
	Sb	123	277.3	27.5	**0.0414**	0.016	38.9	ug/L	195	Standard
	Ba	135	1348.1	17.2	**0.6466**	0.112	17.2	ug/L	28	Standard
	Ce	140	60.0	22.0				ug/L	83	Standard
>	**Tb**	159	842951.4	0.7				ug/L	809211	Standard
	Ho	165	8.3	91.7				ug/L	13	Standard
	Tl	203	23.3	47.0	**0.0009**	0.001	152.7	ug/L	4	Standard
	Tl	205	16.7	17.3	**-0.0001**	0.000	280.3	ug/L	8	Standard
	Pb	206	693.4	30.4	**0.0856**	0.040	46.4	ug/L	230	Standard
	Pb	207	592.7	24.3	**0.0831**	0.030	35.9	ug/L	184	Standard
	Pb	208	2520.8	25.5	**0.0851**	0.033	38.3	ug/L	775	Standard
	U	238	4.0	25.0	**-0.0001**	0.000	114.0	ug/L	3	Standard
>	**Bi**	209	496273.9	0.8				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	701.7	10.1	**0.8443**	0.099	11.7	mg/L	52	Standard
K	39	18.3	83.3	**-0.0451**	0.069	152.6	mg/L	32	Standard
Ca	43	21.7	58.1	**-1.2212**	1.489	121.9	mg/L	33	Standard
Fe	54	179.0	4.6	**0.0293**	0.005	15.6	mg/L	138	Standard
Fe	57	275.0	16.2	**0.1337**	0.118	88.3	mg/L	263	Standard
> **Sc-1**	45	29420.2	1.6				mg/L	27861	Standard
Cl	35	111616.4	1.7				ug/L	100607	Standard
Kr	83	2.7	108.3				ug/L	2	Standard
Br	81	6704.8	1.5				ug/L	1777	Standard
P	31	22049.4	2.9				ug/L	18074	Standard
S	34	4887.5	3.0				ug/L	3901	Standard
Sr	88	83.3	29.6				ug/L	60	Standard
C	12	93.3	12.4				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	7	Standard
Dy	164	5.7	94.0				mg/L	13	Standard
Ho-1	165	8.3	91.7				mg/L	13	Standard
Er	166	20.0	50.0				mg/L	3	Standard
I	127	17550.3	11.8				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.374	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.474	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.162
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.042
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606165238
Sample Date/Time: Thursday, July 07, 2016 11:26:57
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64811.7	0.9				ug/L	59299	Standard
	Be	9	11.7	24.7	**0.0142**	0.003	23.2	ug/L	17	Standard
	Al	27	15372.9	16.0	**0.0923**	0.017	18.2	ug/L	1472	Standard
	Sc	45	29341.7	2.4				ug/L	27861	Standard
	Ti	47	35.7	18.7	**0.0300**	0.027	90.8	ug/L	28	Standard
	V	51	1076.5	15.8	**-0.0225**	0.025	111.0	ug/L	1156	Standard
	Cr	52	7901.7	1.9	**0.1267**	0.024	19.2	ug/L	6689	Standard
	Cr	53	1458.4	0.5	**1.2142**	0.019	1.5	ug/L	348	Standard
	Mn	55	1608.8	16.8	**0.1168**	0.042	36.1	ug/L	770	Standard
	Co	59	251.7	6.8	**0.0011**	0.003	242.7	ug/L	216	Standard
	Ni	60	588.0	0.9	**0.0570**	0.004	7.5	ug/L	440	Standard
	Cu	65	2734.0	49.2	**1.4036**	0.725	51.7	ug/L	116	Standard
	Zn	66	2183.8	1.1	**1.7606**	0.011	0.6	ug/L	135	Standard
>	**Ge**	72	464490.2	0.7				ug/L	445277	Standard
	As	75	-69.3	36.7	**-0.0237**	0.023	95.8	ug/L	-57	Standard
	Se	82	18.1	31.1	**0.0112**	0.048	425.9	ug/L	10	Standard
	Se-1	77	106.3	10.4	**0.7504**	0.134	17.9	ug/L	57	Standard
>	**Ga**	71	48.3	33.3				mg/L	78	Standard
	Rb	85	101.7	43.0				ug/L	22	Standard
	Y	89	398769.7	0.9				ug/L	388959	Standard
>	**Rh**	103	26.7	71.0				ug/L	8	Standard
	Mo	98	57.0	23.7	**0.0147**	0.005	34.5	ug/L	10	Standard
	Ag	107	79.0	13.3	**-0.0017**	0.002	99.0	ug/L	66	Standard
	Cd	111	8.2	28.2	**0.0003**	0.001	376.2	mg/L	3	Standard
	Cd	114	11.1	185.5	**-0.0018**	0.004	228.4	ug/L	4	Standard
>	**In**	115	549884.8	0.5				ug/L	523327	Standard
	Sn	118	703.4	29.5	**0.0450**	0.036	79.6	ug/L	488	Standard
	Sb	123	198.3	31.2	**0.0249**	0.013	52.5	ug/L	195	Standard
	Ba	135	1101.0	15.4	**0.5257**	0.084	16.1	ug/L	28	Standard
	Ce	140	126.7	32.1				ug/L	83	Standard
>	**Tb**	159	831868.0	0.5				ug/L	809211	Standard
	Ho	165	6.7	114.6				ug/L	13	Standard
	Tl	203	23.3	24.7	**0.0009**	0.001	80.7	ug/L	4	Standard
	Tl	205	11.7	24.7	**-0.0008**	0.000	50.0	ug/L	8	Standard
	Pb	206	492.3	33.9	**0.0469**	0.031	67.2	ug/L	230	Standard
	Pb	207	431.0	37.6	**0.0488**	0.034	69.1	ug/L	184	Standard
	Pb	208	1729.4	35.7	**0.0440**	0.031	71.2	ug/L	775	Standard
	U	238	5.7	27.0	**0.0001**	0.000	196.9	ug/L	3	Standard
>	**Bi**	209	496017.7	0.8				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	721.7	11.7	**0.8743**	0.133	15.3	mg/L	52	Standard
K	39	33.3	31.2	**0.0214**	0.050	233.2	mg/L	32	Standard
Ca	43	33.3	8.7	**0.2199**	0.424	193.0	mg/L	33	Standard
Fe	54	149.1	23.8	**0.0062**	0.028	450.2	mg/L	138	Standard
Fe	57	303.3	14.2	**0.2201**	0.118	53.4	mg/L	263	Standard
> **Sc-1**	45	29341.7	2.4				mg/L	27861	Standard
Cl	35	110408.2	1.8				ug/L	100607	Standard
Kr	83	2.3	107.9				ug/L	2	Standard
Br	81	2753.6	8.9				ug/L	1777	Standard
P	31	21074.6	1.1				ug/L	18074	Standard
S	34	4739.1	3.1				ug/L	3901	Standard
Sr	88	78.3	3.7				ug/L	60	Standard
C	12	86.7	33.3				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	7	Standard
Dy	164	6.0	180.1				mg/L	13	Standard
Ho-1	165	6.7	114.6				mg/L	13	Standard
Er	166	13.3	114.6				mg/L	3	Standard
I	127	12603.6	2.9				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.296	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.315	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606165238
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.075
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.988
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, July 07, 2016 11:30:10
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63405.7	1.1				ug/L	59299	Standard
	Be	9	46116.8	3.8	**51.7516**	1.601	3.1	ug/L	17	Standard
	Al	27	7161462.7	1.2	**50.0462**	0.253	0.5	ug/L	1472	Standard
	Sc	45	29107.9	1.8				ug/L	27861	Standard
	Ti	47	24537.2	1.4	**100.5111**	2.225	2.2	ug/L	28	Standard
	V	51	344774.5	0.6	**49.9480**	0.681	1.4	ug/L	1156	Standard
	Cr	52	359934.4	0.4	**49.8838**	0.652	1.3	ug/L	6689	Standard
	Cr	53	45155.6	2.8	**50.3873**	1.791	3.6	ug/L	348	Standard
	Mn	55	329260.9	1.3	**50.7272**	0.793	1.6	ug/L	770	Standard
	Co	59	338352.9	1.3	**49.9197**	0.922	1.8	ug/L	216	Standard
	Ni	60	93483.2	1.5	**50.3652**	0.737	1.5	ug/L	440	Standard
	Cu	65	93306.1	1.3	**50.5558**	0.388	0.8	ug/L	116	Standard
	Zn	66	55002.3	0.5	**49.8813**	0.438	0.9	ug/L	135	Standard
>	Ge	72	457306.7	0.9				ug/L	445277	Standard
	As	75	55601.5	0.4	**49.6598**	0.295	0.6	ug/L	-57	Standard
	Se	82	5705.6	0.6	**50.0816**	0.554	1.1	ug/L	10	Standard
	Se-1	77	3878.5	1.5	**50.7985**	0.584	1.2	ug/L	57	Standard
>	Ga	71	50.0	26.5				mg/L	78	Standard
	Rb	85	813.4	6.2				ug/L	22	Standard
	Y	89	394891.6	0.6				ug/L	388959	Standard
>	Rh	103	28.3	36.7				ug/L	8	Standard
	Mo	98	255325.4	1.2	**97.3983**	1.403	1.4	ug/L	10	Standard
	Ag	107	321144.6	1.1	**49.4891**	0.691	1.4	ug/L	66	Standard
	Cd	111	101817.0	1.0	**49.1743**	0.571	1.2	mg/L	3	Standard
	Cd	114	249985.1	0.6	**49.3805**	0.169	0.3	ug/L	4	Standard
>	In	115	539236.7	0.4				ug/L	523327	Standard
	Sn	118	282903.7	1.3	**49.4061**	0.845	1.7	ug/L	488	Standard
	Sb	123	229250.4	0.3	**48.9293**	0.286	0.6	ug/L	195	Standard
	Ba	135	96197.8	0.7	**48.3515**	0.487	1.0	ug/L	28	Standard
	Ce	140	73.3	25.8				ug/L	83	Standard
>	Tb	159	824945.9	0.1				ug/L	809211	Standard
	Ho	165	6.7	43.3				ug/L	13	Standard
	Tl	203	397833.0	0.3	**49.7018**	0.078	0.2	ug/L	4	Standard
	Tl	205	345551.2	1.0	**50.3348**	0.430	0.9	ug/L	8	Standard
	Pb	206	253962.4	0.4	**50.5460**	0.289	0.6	ug/L	230	Standard
	Pb	207	229576.5	0.2	**50.3456**	0.143	0.3	ug/L	184	Standard
	Pb	208	949692.1	0.8	**50.9156**	0.369	0.7	ug/L	775	Standard
	U	238	347453.7	0.1	**50.7537**	0.142	0.3	ug/L	3	Standard
>	Bi	209	480182.6	0.2				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3892.2	4.5	**5.0322**	0.176	3.5	mg/L	52	Standard
K	39	966.7	5.3	**4.1772**	0.215	5.2	mg/L	32	Standard
Ca	43	45.0	11.1	**1.6825**	0.665	39.6	mg/L	33	Standard
Fe	54	6127.4	2.2	**4.7661**	0.176	3.7	mg/L	138	Standard
Fe	57	1836.8	5.8	**4.8014**	0.345	7.2	mg/L	263	Standard
> **Sc-1**	45	29107.9	1.8				mg/L	27861	Standard
Cl	35	112323.5	0.9				ug/L	100607	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	2123.5	8.5				ug/L	1777	Standard
P	31	21563.7	1.6				ug/L	18074	Standard
S	34	4930.8	3.8				ug/L	3901	Standard
Sr	88	65.0	23.1				ug/L	60	Standard
C	12	53.3	28.6				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	19.5	53.7				mg/L	13	Standard
Ho-1	165	6.7	43.3				mg/L	13	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	20685.8	3.0				mg/L	8539	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	103.503		
	Al	27	100.092		
	Sc	45			
	Ti	47	100.511		
	V	51	99.896		
	Cr	52	99.768		
	Cr	53			
	Mn	55	101.454		
	Co	59	99.839		
	Ni	60	100.730		
	Cu	65	101.112		
	Zn	66	99.763		
>	Ge	72		102.702	
	As	75	99.320		
	Se	82	100.163		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	97.398		
Ag	107	98.978		
Cd	111	98.349		
Cd	114			
> In	115			103.040
Sn	118	98.812		
Sb	123	97.859		
Ba	135	96.703		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.404		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.831		
U	238	101.507		
> Bi	209			101.636
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, July 07, 2016 11:33:21
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63009.1	2.6				ug/L	59299	Standard
	Be	9	38.3	19.9	**0.0447**	0.009	20.2	ug/L	17	Standard
	Al	27	4535.9	72.4	**0.0189**	0.023	120.3	ug/L	1472	Standard
	Sc	45	28585.3	3.9				ug/L	27861	Standard
	Ti	47	28.7	14.1	**0.0045**	0.017	381.0	ug/L	28	Standard
	V	51	1026.2	7.3	**-0.0263**	0.010	39.1	ug/L	1156	Standard
	Cr	52	6075.6	2.1	**-0.1076**	0.019	17.7	ug/L	6689	Standard
	Cr	53	883.4	8.3	**0.6001**	0.078	13.0	ug/L	348	Standard
	Mn	55	1060.0	32.2	**0.0369**	0.053	143.0	ug/L	770	Standard
	Co	59	268.7	25.9	**0.0045**	0.010	230.3	ug/L	216	Standard
	Ni	60	496.0	9.3	**0.0141**	0.025	175.0	ug/L	440	Standard
	Cu	65	1247.8	103.4	**0.6232**	0.704	112.9	ug/L	116	Standard
	Zn	66	467.3	8.6	**0.2317**	0.035	15.1	ug/L	135	Standard
>	**Ge**	72	453869.0	0.5				ug/L	445277	Standard
	As	75	-13.6	337.6	**0.0251**	0.041	164.3	ug/L	-57	Standard
	Se	82	25.8	29.1	**0.0835**	0.067	80.0	ug/L	10	Standard
	Se-1	77	71.3	4.9	**0.3157**	0.043	13.5	ug/L	57	Standard
>	**Ga**	71	43.3	58.1				mg/L	78	Standard
	Rb	85	41.7	66.1				ug/L	22	Standard
	Y	89	394419.3	2.2				ug/L	388959	Standard
>	**Rh**	103	41.7	25.0				ug/L	8	Standard
	Mo	98	252.6	15.1	**0.0892**	0.014	15.8	ug/L	10	Standard
	Ag	107	156.0	32.1	**0.0103**	0.008	73.8	ug/L	66	Standard
	Cd	111	23.6	45.7	**0.0077**	0.005	66.7	mg/L	3	Standard
	Cd	114	76.0	37.1	**0.0110**	0.005	49.9	ug/L	4	Standard
>	**In**	115	542461.9	0.4				ug/L	523327	Standard
	Sn	118	895.0	31.9	**0.0799**	0.050	62.1	ug/L	488	Standard
	Sb	123	650.8	38.5	**0.1215**	0.053	43.7	ug/L	195	Standard
	Ba	135	187.3	103.4	**0.0763**	0.096	126.5	ug/L	28	Standard
	Ce	140	23.3	86.6				ug/L	83	Standard
>	**Tb**	159	819822.1	1.9				ug/L	809211	Standard
	Ho	165	11.7	65.5				ug/L	13	Standard
	Tl	203	109.3	58.8	**0.0115**	0.008	68.6	ug/L	4	Standard
	Tl	205	91.7	55.7	**0.0106**	0.007	68.5	ug/L	8	Standard
	Pb	206	444.3	49.8	**0.0390**	0.043	110.6	ug/L	230	Standard
	Pb	207	359.7	40.5	**0.0349**	0.031	89.7	ug/L	184	Standard
	Pb	208	1634.4	49.4	**0.0404**	0.042	104.7	ug/L	775	Standard
	U	238	89.0	51.4	**0.0121**	0.007	54.2	ug/L	3	Standard
>	**Bi**	209	488723.4	0.4				ug/L	472452	Standard

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Na	23	1.7	173.2	**3.3379**	5.773	172.9	mg/L	0	Standard
Mg	24	73.3	35.0	**0.0314**	0.031	100.0	mg/L	52	Standard
K	39	23.3	32.7	**-0.0201**	0.038	188.9	mg/L	32	Standard
Ca	43	28.3	88.8	**-0.3600**	3.072	853.2	mg/L	33	Standard
Fe	54	167.8	15.3	**0.0250**	0.025	101.8	mg/L	138	Standard
Fe	57	276.7	10.0	**0.1660**	0.108	65.3	mg/L	263	Standard
> **Sc-1**	45	28585.3	3.9				mg/L	27861	Standard
Cl	35	112008.5	1.1				ug/L	100607	Standard
Kr	83	3.3	45.8				ug/L	2	Standard
Br	81	2213.5	2.7				ug/L	1777	Standard
P	31	20790.9	2.6				ug/L	18074	Standard
S	34	4690.7	1.2				ug/L	3901	Standard
Sr	88	61.7	26.1				ug/L	60	Standard
C	12	50.0	72.1				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	12.4	50.0				mg/L	13	Standard
Ho-1	165	11.7	65.5				mg/L	13	Standard
Er	166	20.0	50.0				mg/L	3	Standard
I	127	13702.9	1.3				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.930	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.656
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.444
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1607010401
Sample Date/Time: Thursday, July 07, 2016 11:36:34
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69576.1	1.7				ug/L	59299	Standard
	Be	9	33.3	62.5	**0.0353**	0.021	59.4	ug/L	17	Standard
	Al	27	21615254.7	1.1	**137.6949**	1.802	1.3	ug/L	1472	Standard
	Sc	45	28972.7	1.9				ug/L	27861	Standard
	Ti	47	212.0	5.6	**0.7798**	0.056	7.1	ug/L	28	Standard
	V	51	2025.3	4.1	**0.1260**	0.012	9.3	ug/L	1156	Standard
	Cr	52	9717.1	2.6	**0.4390**	0.046	10.5	ug/L	6689	Standard
	Cr	53	4207.3	24.1	**4.4686**	1.203	26.9	ug/L	348	Standard
	Mn	55	541112.7	0.4	**85.7836**	0.888	1.0	ug/L	770	Standard
	Co	59	1465.1	4.8	**0.1869**	0.012	6.6	ug/L	216	Standard
	Ni	60	4127.6	2.6	**2.0414**	0.076	3.7	ug/L	440	Standard
	Cu	65	1572.4	4.1	**0.8186**	0.035	4.2	ug/L	116	Standard
	Zn	66	3691.8	1.8	**3.2580**	0.039	1.2	ug/L	135	Standard
>	**Ge**	72	444874.2	0.7				ug/L	445277	Standard
	As	75	776.1	6.5	**0.7492**	0.045	6.0	ug/L	-57	Standard
	Se	82	338.8	3.8	**2.9205**	0.132	4.5	ug/L	10	Standard
	Se-1	77	305.7	13.1	**3.5322**	0.572	16.2	ug/L	57	Standard
>	**Ga**	71	103.3	24.4				mg/L	78	Standard
	Rb	85	22124.5	2.9				ug/L	22	Standard
	Y	89	385670.5	1.1				ug/L	388959	Standard
>	**Rh**	103	266.7	11.3				ug/L	8	Standard
	Mo	98	345.9	10.2	**0.1306**	0.014	10.7	ug/L	10	Standard
	Ag	107	141.0	8.4	**0.0090**	0.002	20.2	ug/L	66	Standard
	Cd	111	77.4	6.7	**0.0352**	0.003	7.4	mg/L	3	Standard
	Cd	114	228.3	17.7	**0.0430**	0.009	19.9	ug/L	4	Standard
>	**In**	115	518702.2	0.6				ug/L	523327	Standard
	Sn	118	1181.7	15.1	**0.1393**	0.034	24.2	ug/L	488	Standard
	Sb	123	551.5	19.7	**0.1058**	0.025	23.2	ug/L	195	Standard
	Ba	135	61427.9	0.4	**32.0920**	0.236	0.7	ug/L	28	Standard
	Ce	140	3662.1	2.4				ug/L	83	Standard
>	**Tb**	159	803522.9	0.4				ug/L	809211	Standard
	Ho	165	55.0	31.5				ug/L	13	Standard
	Tl	203	177.3	11.5	**0.0214**	0.003	12.3	ug/L	4	Standard
	Tl	205	171.7	28.7	**0.0239**	0.008	31.9	ug/L	8	Standard
	Pb	206	1056.7	1.9	**0.1739**	0.004	2.2	ug/L	230	Standard
	Pb	207	920.0	9.7	**0.1702**	0.021	12.3	ug/L	184	Standard
	Pb	208	4002.9	1.2	**0.1807**	0.003	1.6	ug/L	775	Standard
	U	238	1346.7	2.0	**0.2067**	0.005	2.2	ug/L	3	Standard
>	**Bi**	209	455571.6	0.3				ug/L	472452	Standard

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Na	23	6.7	86.6	**12.5353**	10.857	86.6	mg/L	0	Standard
Mg	24	35917.5	1.8	**47.2074**	0.197	0.4	mg/L	52	Standard
K	39	410.0	6.1	**1.7067**	0.089	5.2	mg/L	32	Standard
Ca	43	526.7	16.0	**61.1704**	11.307	18.5	mg/L	33	Standard
Fe	54	366.0	15.2	**0.1808**	0.043	23.7	mg/L	138	Standard
Fe	57	681.7	16.9	**1.3622**	0.312	22.9	mg/L	263	Standard
> **Sc-1**	45	28972.7	1.9				mg/L	27861	Standard
Cl	35	177997.8	2.2				ug/L	100607	Standard
Kr	83	1.7	124.9				ug/L	2	Standard
Br	81	76700.6	4.4				ug/L	1777	Standard
P	31	23312.9	2.0				ug/L	18074	Standard
S	34	4647.4	5.3				ug/L	3901	Standard
Sr	88	1070.0	5.3				ug/L	60	Standard
C	12	180.0	22.2				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	7	Standard
Dy	164	104.8	5.1				mg/L	13	Standard
Ho-1	165	55.0	31.5				mg/L	13	Standard
Er	166	40.0	25.0				mg/L	3	Standard
I	127	1092081.0	6.6				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.331	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.909	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.116
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.427
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1607010402
Sample Date/Time: Thursday, July 07, 2016 11:39:46
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65710.5	1.1				ug/L	59299	Standard
	Be	9	11.7	65.5	**0.0140**	0.008	59.3	ug/L	17	Standard
	Al	27	20990870.8	1.5	**141.5639**	0.846	0.6	ug/L	1472	Standard
	Sc	45	28590.3	2.0				ug/L	27861	Standard
	Ti	47	119.0	11.7	**0.3804**	0.057	14.9	ug/L	28	Standard
	V	51	1721.3	12.4	**0.0769**	0.031	39.9	ug/L	1156	Standard
	Cr	52	9802.8	1.0	**0.4310**	0.014	3.1	ug/L	6689	Standard
	Cr	53	1805.1	6.8	**1.6564**	0.138	8.3	ug/L	348	Standard
	Mn	55	1531786.6	0.7	**239.6174**	2.583	1.1	ug/L	770	Standard
	Co	59	1696.8	2.3	**0.2183**	0.005	2.1	ug/L	216	Standard
	Ni	60	4548.3	1.0	**2.2393**	0.012	0.6	ug/L	440	Standard
	Cu	65	1461.4	7.3	**0.7449**	0.054	7.3	ug/L	116	Standard
	Zn	66	6351.0	1.0	**5.6627**	0.067	1.2	ug/L	135	Standard
>	**Ge**	72	451274.6	0.5				ug/L	445277	Standard
	As	75	155.7	22.8	**0.1780**	0.031	17.6	ug/L	-57	Standard
	Se	82	96.1	6.4	**0.7118**	0.051	7.1	ug/L	10	Standard
	Se-1	77	120.3	6.8	**0.9796**	0.105	10.7	ug/L	57	Standard
>	**Ga**	71	48.3	29.9				mg/L	78	Standard
	Rb	85	5107.5	3.8				ug/L	22	Standard
	Y	89	384590.2	1.1				ug/L	388959	Standard
>	**Rh**	103	110.0	7.9				ug/L	8	Standard
	Mo	98	97.7	3.8	**0.0318**	0.002	4.7	ug/L	10	Standard
	Ag	107	82.0	8.5	**-0.0006**	0.001	202.0	ug/L	66	Standard
	Cd	111	31.5	12.8	**0.0121**	0.002	16.4	mg/L	3	Standard
	Cd	114	80.3	10.6	**0.0124**	0.002	14.2	ug/L	4	Standard
>	**In**	115	523015.1	0.2				ug/L	523327	Standard
	Sn	118	1356.7	3.4	**0.1690**	0.008	5.0	ug/L	488	Standard
	Sb	123	265.3	29.3	**0.0418**	0.017	41.1	ug/L	195	Standard
	Ba	135	38727.4	0.9	**20.0586**	0.184	0.9	ug/L	28	Standard
	Ce	140	576.7	1.8				ug/L	83	Standard
>	**Tb**	159	813230.0	1.4				ug/L	809211	Standard
	Ho	165	38.3	19.9				ug/L	13	Standard
	Tl	203	72.7	6.9	**0.0074**	0.001	8.9	ug/L	4	Standard
	Tl	205	86.7	39.3	**0.0105**	0.005	47.8	ug/L	8	Standard
	Pb	206	324.0	1.3	**0.0185**	0.001	3.7	ug/L	230	Standard
	Pb	207	289.3	11.5	**0.0227**	0.007	31.3	ug/L	184	Standard
	Pb	208	1249.0	10.8	**0.0233**	0.007	30.4	ug/L	775	Standard
	U	238	4561.0	1.2	**0.6854**	0.004	0.6	ug/L	3	Standard
>	**Bi**	209	466282.0	0.7				ug/L	472452	Standard

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Na	23	11.7	24.7	**22.3159**	5.668	25.4	mg/L	0	Standard
Mg	24	7665.3	2.2	**10.1631**	0.415	4.1	mg/L	52	Standard
K	39	101.7	27.1	**0.3341**	0.125	37.4	mg/L	32	Standard
Ca	43	480.0	8.9	**56.0555**	4.640	8.3	mg/L	33	Standard
Fe	54	182.3	15.5	**0.0362**	0.023	64.4	mg/L	138	Standard
Fe	57	743.4	6.6	**1.5818**	0.181	11.4	mg/L	263	Standard
> **Sc-1**	45	28590.3	2.0				mg/L	27861	Standard
Cl	35	207924.5	1.4				ug/L	100607	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	17610.2	2.2				ug/L	1777	Standard
P	31	23079.2	1.9				ug/L	18074	Standard
S	34	4655.7	1.7				ug/L	3901	Standard
Sr	88	335.0	9.0				ug/L	60	Standard
C	12	216.7	16.2				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	44.8	54.5				mg/L	13	Standard
Ho-1	165	38.3	19.9				mg/L	13	Standard
Er	166	40.0	43.3				mg/L	3	Standard
I	127	389673.4	3.0				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.812	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.347	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.940
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.694
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1607010403
Sample Date/Time: Thursday, July 07, 2016 11:42:57
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64684.5	1.1				ug/L	59299	Standard
	Be	9	25.0	60.0	**0.0288**	0.016	57.1	ug/L	17	Standard
	Al	27	9855401.6	1.6	**67.5139**	0.533	0.8	ug/L	1472	Standard
	Sc	45	29513.7	3.1				ug/L	27861	Standard
	Ti	47	1030.0	18.4	**4.1464**	0.789	19.0	ug/L	28	Standard
	V	51	4873.7	4.4	**0.5379**	0.030	5.6	ug/L	1156	Standard
	Cr	52	11347.3	4.4	**0.6444**	0.069	10.8	ug/L	6689	Standard
	Cr	53	1956.8	6.2	**1.8188**	0.138	7.6	ug/L	348	Standard
	Mn	55	2821657.7	0.4	**439.3946**	1.587	0.4	ug/L	770	Standard
	Co	59	5657.7	1.4	**0.8069**	0.012	1.5	ug/L	216	Standard
	Ni	60	8304.3	2.5	**4.2787**	0.111	2.6	ug/L	440	Standard
	Cu	65	2383.5	28.5	**1.2455**	0.370	29.7	ug/L	116	Standard
	Zn	66	21871.8	0.8	**19.8864**	0.136	0.7	ug/L	135	Standard
>	**Ge**	72	453422.9	0.2				ug/L	445277	Standard
	As	75	739.9	5.1	**0.7033**	0.034	4.8	ug/L	-57	Standard
	Se	82	65.5	10.4	**0.4364**	0.061	14.0	ug/L	10	Standard
	Se-1	77	93.7	13.5	**0.6154**	0.169	27.5	ug/L	57	Standard
>	**Ga**	71	421.7	12.0				mg/L	78	Standard
	Rb	85	12089.8	2.0				ug/L	22	Standard
	Y	89	395844.3	0.7				ug/L	388959	Standard
>	**Rh**	103	81.7	25.5				ug/L	8	Standard
	Mo	98	638.8	4.6	**0.2418**	0.011	4.7	ug/L	10	Standard
	Ag	107	120.3	34.9	**0.0053**	0.007	126.3	ug/L	66	Standard
	Cd	111	433.9	5.4	**0.2101**	0.013	6.1	mg/L	3	Standard
	Cd	114	1040.5	7.6	**0.2057**	0.017	8.5	ug/L	4	Standard
>	**In**	115	529005.4	0.7				ug/L	523327	Standard
	Sn	118	915.0	4.8	**0.0875**	0.008	8.6	ug/L	488	Standard
	Sb	123	438.4	6.1	**0.0788**	0.005	7.0	ug/L	195	Standard
	Ba	135	46372.9	0.9	**23.7513**	0.371	1.6	ug/L	28	Standard
	Ce	140	16360.5	0.5				ug/L	83	Standard
>	**Tb**	159	814290.9	0.6				ug/L	809211	Standard
	Ho	165	223.3	14.6				ug/L	13	Standard
	Tl	203	126.3	40.4	**0.0140**	0.007	47.2	ug/L	4	Standard
	Tl	205	103.3	37.6	**0.0127**	0.006	45.6	ug/L	8	Standard
	Pb	206	1964.1	12.7	**0.3465**	0.054	15.6	ug/L	230	Standard
	Pb	207	1574.4	14.0	**0.3057**	0.052	17.1	ug/L	184	Standard
	Pb	208	6706.3	9.6	**0.3170**	0.038	12.1	ug/L	775	Standard
	U	238	3189.0	1.1	**0.4686**	0.007	1.5	ug/L	3	Standard
>	**Bi**	209	476718.3	1.0				ug/L	472452	Standard

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Na	23	5.0	173.2	**9.5301**	16.498	173.1	mg/L	0	Standard
Mg	24	6598.1	1.4	**8.4660**	0.347	4.1	mg/L	52	Standard
K	39	181.7	11.1	**0.6721**	0.100	14.8	mg/L	32	Standard
Ca	43	213.3	17.0	**22.0454**	5.080	23.0	mg/L	33	Standard
Fe	54	930.4	5.9	**0.6183**	0.022	3.6	mg/L	138	Standard
Fe	57	688.3	12.0	**1.3537**	0.304	22.4	mg/L	263	Standard
> **Sc-1**	45	29513.7	3.1				mg/L	27861	Standard
Cl	35	138645.7	2.5				ug/L	100607	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	10260.1	4.0				ug/L	1777	Standard
P	31	23935.6	1.0				ug/L	18074	Standard
S	34	4710.7	4.3				ug/L	3901	Standard
Sr	88	286.7	11.6				ug/L	60	Standard
C	12	196.7	17.9				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	7	Standard
Dy	164	325.0	20.8				mg/L	13	Standard
Ho-1	165	223.3	14.6				mg/L	13	Standard
Er	166	173.3	49.1				mg/L	3	Standard
I	127	65576.7	3.4				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.082	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.829	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.085
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.903
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1607010404
Sample Date/Time: Thursday, July 07, 2016 11:46:09
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	103175.3	3.1				ug/L	59299	Standard
	Be	9	23.3	49.5	**0.0174**	0.008	45.0	ug/L	17	Standard
	Al	27	91850165.0	2.1	**394.7002**	10.190	2.6	ug/L	1472	Standard
	Sc	45	27453.2	0.3				ug/L	27861	Standard
	Ti	47	1197.7	40.9	**5.0062**	2.054	41.0	ug/L	28	Standard
	V	51	4899.1	7.2	**0.5671**	0.049	8.7	ug/L	1156	Standard
	Cr	52	11564.4	0.7	**0.7341**	0.012	1.6	ug/L	6689	Standard
	Cr	53	4329.0	1.9	**4.6844**	0.104	2.2	ug/L	348	Standard
	Mn	55	267063.0	1.4	**42.9591**	0.911	2.1	ug/L	770	Standard
	Co	59	5200.2	0.3	**0.7664**	0.007	0.9	ug/L	216	Standard
	Ni	60	97126.3	0.4	**54.6797**	0.456	0.8	ug/L	440	Standard
	Cu	65	5186.6	9.1	**2.8819**	0.288	10.0	ug/L	116	Standard
	Zn	66	378227.2	1.4	**359.4927**	5.203	1.4	ug/L	135	Standard
>	Ge	72	437818.1	0.8				ug/L	445277	Standard
	As	75	547.8	5.9	**0.5482**	0.034	6.2	ug/L	-57	Standard
	Se	82	235.1	3.7	**2.0162**	0.076	3.8	ug/L	10	Standard
	Se-1	77	326.0	5.9	**3.8775**	0.234	6.0	ug/L	57	Standard
>	Ga	71	341.7	23.2				mg/L	78	Standard
	Rb	85	57624.4	0.6				ug/L	22	Standard
	Y	89	385267.1	2.6				ug/L	388959	Standard
>	Rh	103	395.0	21.6				ug/L	8	Standard
	Mo	98	148.0	5.6	**0.0537**	0.004	7.0	ug/L	10	Standard
	Ag	107	114.0	14.8	**0.0052**	0.003	54.6	ug/L	66	Standard
	Cd	111	474.7	5.4	**0.2412**	0.014	6.0	mg/L	3	Standard
	Cd	114	1109.4	7.8	**0.2300**	0.019	8.3	ug/L	4	Standard
>	In	115	505268.1	0.6				ug/L	523327	Standard
	Sn	118	1080.0	14.9	**0.1258**	0.029	22.9	ug/L	488	Standard
	Sb	123	249.7	16.3	**0.0403**	0.009	23.1	ug/L	195	Standard
	Ba	135	7357.8	1.4	**3.9309**	0.041	1.0	ug/L	28	Standard
	Ce	140	16382.2	2.3				ug/L	83	Standard
>	Tb	159	792243.4	0.5				ug/L	809211	Standard
	Ho	165	290.0	16.4				ug/L	13	Standard
	Tl	203	275.3	11.9	**0.0352**	0.004	12.7	ug/L	4	Standard
	Tl	205	231.7	6.9	**0.0340**	0.003	8.0	ug/L	8	Standard
	Pb	206	957.0	8.3	**0.1582**	0.018	11.4	ug/L	230	Standard
	Pb	207	829.0	6.9	**0.1540**	0.014	9.4	ug/L	184	Standard
	Pb	208	3494.5	7.2	**0.1570**	0.016	9.9	ug/L	775	Standard
	U	238	472.7	3.3	**0.0739**	0.002	3.4	ug/L	3	Standard
>	Bi	209	444277.3	0.5				ug/L	472452	Standard

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Na	23	8.3	69.3	**16.5745**	11.462	69.2	mg/L	0	Standard
Mg	24	81575.7	1.7	**113.2381**	1.644	1.5	mg/L	52	Standard
K	39	986.7	9.2	**4.5304**	0.421	9.3	mg/L	32	Standard
Ca	43	671.7	12.4	**83.5115**	11.119	13.3	mg/L	33	Standard
Fe	54	458.6	2.9	**0.2754**	0.011	4.1	mg/L	138	Standard
Fe	57	1180.0	13.9	**3.0538**	0.515	16.9	mg/L	263	Standard
> **Sc-1**	45	27453.2	0.3				mg/L	27861	Standard
Cl	35	567492.9	0.3				ug/L	100607	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	45705.6	4.6				ug/L	1777	Standard
P	31	23833.7	1.3				ug/L	18074	Standard
S	34	4679.1	6.1				ug/L	3901	Standard
Sr	88	1568.4	6.2				ug/L	60	Standard
C	12	103.3	34.0				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	516.1	16.8				mg/L	13	Standard
Ho-1	165	290.0	16.4				mg/L	13	Standard
Er	166	290.0	37.3				mg/L	3	Standard
I	127	21198.2	4.0				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		173.991	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.325	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.549
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.037
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1607010405
Sample Date/Time: Thursday, July 07, 2016 11:49:20
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67620.6	2.8				ug/L	59299	Standard
	Be	9	23.3	12.4	**0.0260**	0.004	14.1	ug/L	17	Standard
	Al	27	21853050.9	2.0	**143.2413**	1.381	1.0	ug/L	1472	Standard
	Sc	45	29159.7	2.4				ug/L	27861	Standard
	Ti	47	141.3	12.8	**0.4723**	0.077	16.3	ug/L	28	Standard
	V	51	3083.7	13.1	**0.2766**	0.057	20.5	ug/L	1156	Standard
	Cr	52	10908.9	3.7	**0.5862**	0.050	8.5	ug/L	6689	Standard
	Cr	53	3832.2	3.0	**3.9589**	0.159	4.0	ug/L	348	Standard
	Mn	55	4583358.2	0.8	**715.8801**	7.454	1.0	ug/L	770	Standard
	Co	59	1804.4	0.8	**0.2340**	0.003	1.2	ug/L	216	Standard
	Ni	60	5839.8	3.5	**2.9418**	0.104	3.5	ug/L	440	Standard
	Cu	65	1383.4	53.1	**0.6995**	0.398	56.8	ug/L	116	Standard
	Zn	66	7850.4	1.3	**7.0321**	0.054	0.8	ug/L	135	Standard
>	**Ge**	72	452124.4	0.6				ug/L	445277	Standard
	As	75	452.9	12.7	**0.4460**	0.049	11.1	ug/L	-57	Standard
	Se	82	176.7	8.2	**1.4280**	0.125	8.7	ug/L	10	Standard
	Se-1	77	244.3	4.3	**2.6405**	0.151	5.7	ug/L	57	Standard
>	**Ga**	71	105.0	12.6				mg/L	78	Standard
	Rb	85	21962.6	0.2				ug/L	22	Standard
	Y	89	388045.4	1.5				ug/L	388959	Standard
>	**Rh**	103	303.3	23.1				ug/L	8	Standard
	Mo	98	141.3	5.4	**0.0490**	0.003	7.1	ug/L	10	Standard
	Ag	107	90.3	15.7	**0.0008**	0.002	298.1	ug/L	66	Standard
	Cd	111	8.7	99.4	**0.0007**	0.004	578.0	mg/L	3	Standard
	Cd	114	27.5	45.0	**0.0017**	0.003	149.1	ug/L	4	Standard
>	**In**	115	522821.9	0.9				ug/L	523327	Standard
	Sn	118	653.3	13.6	**0.0422**	0.016	36.9	ug/L	488	Standard
	Sb	123	253.5	6.0	**0.0392**	0.003	8.6	ug/L	195	Standard
	Ba	135	121881.9	0.6	**63.1901**	0.419	0.7	ug/L	28	Standard
	Ce	140	4017.2	1.3				ug/L	83	Standard
>	**Tb**	159	816839.7	0.8				ug/L	809211	Standard
	Ho	165	361.7	0.8				ug/L	13	Standard
	Tl	203	88.0	21.8	**0.0094**	0.002	26.5	ug/L	4	Standard
	Tl	205	93.3	24.2	**0.0115**	0.003	29.4	ug/L	8	Standard
	Pb	206	427.7	23.0	**0.0400**	0.020	50.8	ug/L	230	Standard
	Pb	207	370.7	23.7	**0.0413**	0.020	48.3	ug/L	184	Standard
	Pb	208	1513.7	21.0	**0.0382**	0.018	46.4	ug/L	775	Standard
	U	238	799.4	4.3	**0.1199**	0.006	4.6	ug/L	3	Standard
>	**Bi**	209	465185.5	0.3				ug/L	472452	Standard

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Na	23	6.7	43.3	**12.4779**	5.337	42.8	mg/L	0	Standard
Mg	24	15496.3	3.1	**20.2086**	0.877	4.3	mg/L	52	Standard
K	39	460.0	2.9	**1.9194**	0.106	5.5	mg/L	32	Standard
Ca	43	533.3	15.5	**61.3939**	9.508	15.5	mg/L	33	Standard
Fe	54	1309.0	3.5	**0.9285**	0.041	4.5	mg/L	138	Standard
Fe	57	1140.0	2.4	**2.7191**	0.163	6.0	mg/L	263	Standard
> **Sc-1**	45	29159.7	2.4				mg/L	27861	Standard
Cl	35	163884.3	1.1				ug/L	100607	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	35601.8	4.1				ug/L	1777	Standard
P	31	23772.0	2.0				ug/L	18074	Standard
S	34	4804.1	2.5				ug/L	3901	Standard
Sr	88	1206.7	13.9				ug/L	60	Standard
C	12	273.3	20.1				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	430.4	9.9				mg/L	13	Standard
Ho-1	165	361.7	0.8				mg/L	13	Standard
Er	166	410.0	16.0				mg/L	3	Standard
I	127	849773.8	5.0				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.033	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.538	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.904
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.462
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1607010701
Sample Date/Time: Thursday, July 07, 2016 11:52:32
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66167.6	2.5				ug/L	59299	Standard
	Be	9	41.7	36.7	**0.0464**	0.017	37.5	ug/L	17	Standard
	Al	27	15810840.8	0.5	**105.9375**	2.722	2.6	ug/L	1472	Standard
	Sc	45	28703.8	2.6				ug/L	27861	Standard
	Ti	47	523.3	17.2	**2.0553**	0.367	17.9	ug/L	28	Standard
	V	51	4559.2	3.2	**0.4935**	0.014	2.8	ug/L	1156	Standard
	Cr	52	11870.0	0.6	**0.7235**	0.030	4.2	ug/L	6689	Standard
	Cr	53	5697.7	5.3	**6.0812**	0.414	6.8	ug/L	348	Standard
	Mn	55	378985.8	1.4	**59.0634**	1.010	1.7	ug/L	770	Standard
	Co	59	2536.2	3.6	**0.3432**	0.017	4.9	ug/L	216	Standard
	Ni	60	10989.0	1.1	**5.7609**	0.086	1.5	ug/L	440	Standard
	Cu	65	1907.5	3.6	**0.9884**	0.049	4.9	ug/L	116	Standard
	Zn	66	6256.3	2.3	**5.5622**	0.063	1.1	ug/L	135	Standard
>	**Ge**	72	452251.9	1.2				ug/L	445277	Standard
	As	75	1380.1	3.3	**1.2828**	0.038	3.0	ug/L	-57	Standard
	Se	82	218.6	7.6	**1.8015**	0.162	9.0	ug/L	10	Standard
	Se-1	77	299.0	7.2	**3.3726**	0.293	8.7	ug/L	57	Standard
>	**Ga**	71	208.3	8.4				mg/L	78	Standard
	Rb	85	18571.4	0.7				ug/L	22	Standard
	Y	89	389409.0	0.5				ug/L	388959	Standard
>	**Rh**	103	171.7	6.7				ug/L	8	Standard
	Mo	98	917.3	1.7	**0.3524**	0.004	1.1	ug/L	10	Standard
	Ag	107	134.3	12.2	**0.0076**	0.002	32.7	ug/L	66	Standard
	Cd	111	9.7	46.7	**0.0012**	0.002	188.5	mg/L	3	Standard
	Cd	114	17.3	68.9	**-0.0004**	0.002	568.8	ug/L	4	Standard
>	**In**	115	525637.8	0.8				ug/L	523327	Standard
	Sn	118	846.7	17.1	**0.0764**	0.027	35.3	ug/L	488	Standard
	Sb	123	1427.7	6.2	**0.2961**	0.020	6.9	ug/L	195	Standard
	Ba	135	62417.0	0.7	**32.1778**	0.050	0.2	ug/L	28	Standard
	Ce	140	3675.4	1.7				ug/L	83	Standard
>	**Tb**	159	809226.8	0.6				ug/L	809211	Standard
	Ho	165	105.0	21.8				ug/L	13	Standard
	Tl	203	102.7	21.7	**0.0112**	0.003	24.9	ug/L	4	Standard
	Tl	205	78.3	30.2	**0.0092**	0.003	37.6	ug/L	8	Standard
	Pb	206	1408.7	3.7	**0.2409**	0.011	4.6	ug/L	230	Standard
	Pb	207	1244.4	2.2	**0.2385**	0.007	3.1	ug/L	184	Standard
	Pb	208	5082.7	4.0	**0.2350**	0.011	4.8	ug/L	775	Standard
	U	238	1804.8	1.2	**0.2707**	0.001	0.4	ug/L	3	Standard
>	**Bi**	209	466515.8	0.8				ug/L	472452	Standard

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Na	23	3.3	86.6	**6.2636**	5.421	86.6	mg/L	0	Standard
Mg	24	23191.1	2.9	**30.7657**	1.503	4.9	mg/L	52	Standard
K	39	588.3	11.6	**2.5254**	0.240	9.5	mg/L	32	Standard
Ca	43	256.7	4.1	**28.0977**	1.757	6.3	mg/L	33	Standard
Fe	54	405.3	10.3	**0.2151**	0.026	12.1	mg/L	138	Standard
Fe	57	555.0	8.6	**1.0025**	0.151	15.1	mg/L	263	Standard
> **Sc-1**	45	28703.8	2.6				mg/L	27861	Standard
Cl	35	158640.2	1.1				ug/L	100607	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	44401.7	3.5				ug/L	1777	Standard
P	31	22376.5	1.8				ug/L	18074	Standard
S	34	4755.7	1.9				ug/L	3901	Standard
Sr	88	673.3	5.4				ug/L	60	Standard
C	12	213.3	13.5				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	7	Standard
Dy	164	169.5	13.5				mg/L	13	Standard
Ho-1	165	105.0	21.8				mg/L	13	Standard
Er	166	150.0	43.7				mg/L	3	Standard
I	127	728146.3	6.6				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.583	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.566	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.442	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.744	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, July 07, 2016 11:55:44
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64324.7	3.1				ug/L	59299	Standard
	Be	9	47143.2	1.7	**52.1709**	0.860	1.6	ug/L	17	Standard
	Al	27	7062364.9	2.0	**48.6614**	0.753	1.5	ug/L	1472	Standard
	Sc	45	28207.9	1.0				ug/L	27861	Standard
	Ti	47	24075.1	1.4	**98.5276**	0.801	0.8	ug/L	28	Standard
	V	51	339321.7	1.3	**49.1139**	0.376	0.8	ug/L	1156	Standard
	Cr	52	353951.6	1.2	**48.9977**	0.476	1.0	ug/L	6689	Standard
	Cr	53	45234.1	2.7	**50.4249**	1.107	2.2	ug/L	348	Standard
	Mn	55	324801.9	0.7	**49.9991**	0.265	0.5	ug/L	770	Standard
	Co	59	337683.1	1.5	**49.7778**	0.456	0.9	ug/L	216	Standard
	Ni	60	91961.3	1.4	**49.5014**	0.372	0.8	ug/L	440	Standard
	Cu	65	91482.1	1.8	**49.5278**	0.600	1.2	ug/L	116	Standard
	Zn	66	54855.5	0.2	**49.7095**	0.255	0.5	ug/L	135	Standard
>	Ge	72	457645.2	0.6				ug/L	445277	Standard
	As	75	54629.9	0.8	**48.7546**	0.103	0.2	ug/L	-57	Standard
	Se	82	5643.3	1.9	**49.4919**	0.662	1.3	ug/L	10	Standard
	Se-1	77	3830.2	1.8	**50.1197**	0.807	1.6	ug/L	57	Standard
>	Ga	71	60.0	36.3				mg/L	78	Standard
	Rb	85	835.0	5.7				ug/L	22	Standard
	Y	89	393508.1	0.9				ug/L	388959	Standard
>	Rh	103	30.0	44.1				ug/L	8	Standard
	Mo	98	254685.6	0.6	**97.4715**	0.961	1.0	ug/L	10	Standard
	Ag	107	315247.3	0.8	**48.7385**	0.579	1.2	ug/L	66	Standard
	Cd	111	100542.2	0.5	**48.7194**	0.669	1.4	mg/L	3	Standard
	Cd	114	248070.6	0.3	**49.1657**	0.680	1.4	ug/L	4	Standard
>	In	115	537505.9	1.2				ug/L	523327	Standard
	Sn	118	276427.6	1.6	**48.4265**	0.435	0.9	ug/L	488	Standard
	Sb	123	226453.9	1.2	**48.4893**	0.531	1.1	ug/L	195	Standard
	Ba	135	95149.2	0.3	**47.9810**	0.473	1.0	ug/L	28	Standard
	Ce	140	66.7	22.9				ug/L	83	Standard
>	Tb	159	821632.5	1.5				ug/L	809211	Standard
	Ho	165	3.3	86.6				ug/L	13	Standard
	Tl	203	397400.9	0.5	**49.3710**	0.225	0.5	ug/L	4	Standard
	Tl	205	351145.8	0.6	**50.8647**	0.241	0.5	ug/L	8	Standard
	Pb	206	253584.2	0.6	**50.1893**	0.435	0.9	ug/L	230	Standard
	Pb	207	228335.4	0.6	**49.7952**	0.574	1.2	ug/L	184	Standard
	Pb	208	949055.2	0.4	**50.5987**	0.480	0.9	ug/L	775	Standard
	U	238	349855.2	0.8	**50.8203**	0.555	1.1	ug/L	3	Standard
>	Bi	209	482888.7	0.9				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4180.6	5.2	**5.5845**	0.251	4.5	mg/L	52	Standard
K	39	865.0	7.2	**3.8494**	0.325	8.4	mg/L	32	Standard
Ca	43	61.7	26.1	**3.9768**	2.125	53.4	mg/L	33	Standard
Fe	54	5919.0	6.2	**4.7498**	0.323	6.8	mg/L	138	Standard
Fe	57	1800.1	3.8	**4.8632**	0.260	5.4	mg/L	263	Standard
Sc-1	45	28207.9	1.0				mg/L	27861	Standard
Cl	35	130519.4	2.8				ug/L	100607	Standard
Kr	83	3.3	62.4				ug/L	2	Standard
Br	81	2546.9	11.8				ug/L	1777	Standard
P	31	22213.0	4.0				ug/L	18074	Standard
S	34	5262.6	1.7				ug/L	3901	Standard
Sr	88	68.3	15.2				ug/L	60	Standard
C	12	100.0	36.1				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	173.2				mg/L	7	Standard
Dy	164	5.1	222.3				mg/L	13	Standard
Ho-1	165	3.3	86.6				mg/L	13	Standard
Er	166	33.3	17.3				mg/L	3	Standard
I	127	34853.4	25.0				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	104.342		
Al	27	97.323		
Sc	45			
Ti	47	98.528		
V	51	98.228		
Cr	52	97.995		
Cr	53			
Mn	55	99.998		
Co	59	99.556		
Ni	60	99.003		
Cu	65	99.056		
Zn	66	99.419		
Ge	72		102.778	
As	75	97.509		
Se	82	98.984		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	97.471		
Ag	107	97.477		
Cd	111	97.439		
Cd	114			
> In	115			102.709
Sn	118	96.853		
Sb	123	96.979		
Ba	135	95.962		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.742		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.197		
U	238	101.641		
> Bi	209			102.209
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, July 07, 2016 11:58:55
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62975.7	3.3				ug/L	59299	Standard
	Be	9	53.3	5.4	**0.0617**	0.005	8.4	ug/L	17	Standard
	Al	27	4213.9	9.6	**0.0168**	0.003	16.9	ug/L	1472	Standard
	Sc	45	28839.1	1.3				ug/L	27861	Standard
	Ti	47	27.7	16.3	**0.0003**	0.019	7642.1	ug/L	28	Standard
	V	51	1246.2	3.5	**0.0057**	0.007	127.7	ug/L	1156	Standard
	Cr	52	6419.7	1.3	**-0.0597**	0.013	21.9	ug/L	6689	Standard
	Cr	53	783.4	6.7	**0.4862**	0.064	13.1	ug/L	348	Standard
	Mn	55	1020.7	3.7	**0.0307**	0.005	16.8	ug/L	770	Standard
	Co	59	257.3	6.0	**0.0028**	0.003	91.5	ug/L	216	Standard
	Ni	60	432.0	4.4	**-0.0211**	0.011	50.3	ug/L	440	Standard
	Cu	65	258.3	11.0	**0.0827**	0.015	17.6	ug/L	116	Standard
	Zn	66	450.0	6.5	**0.2154**	0.025	11.5	ug/L	135	Standard
>	**Ge**	72	454414.1	0.6				ug/L	445277	Standard
	As	75	-41.7	53.9	**-0.0002**	0.020	9430.1	ug/L	-57	Standard
	Se	82	19.1	36.6	**0.0234**	0.061	261.3	ug/L	10	Standard
	Se-1	77	66.3	4.8	**0.2480**	0.046	18.5	ug/L	57	Standard
>	**Ga**	71	48.3	15.8				mg/L	78	Standard
	Rb	85	40.0	21.7				ug/L	22	Standard
	Y	89	391078.3	1.3				ug/L	388959	Standard
>	**Rh**	103	18.3	41.7				ug/L	8	Standard
	Mo	98	219.7	9.1	**0.0771**	0.008	10.8	ug/L	10	Standard
	Ag	107	129.0	16.1	**0.0063**	0.003	53.9	ug/L	66	Standard
	Cd	111	15.3	54.4	**0.0038**	0.004	108.0	mg/L	3	Standard
	Cd	114	42.7	30.6	**0.0045**	0.003	58.2	ug/L	4	Standard
>	**In**	115	540120.4	1.1				ug/L	523327	Standard
	Sn	118	893.4	17.8	**0.0802**	0.027	33.1	ug/L	488	Standard
	Sb	123	637.8	30.8	**0.1190**	0.041	34.2	ug/L	195	Standard
	Ba	135	64.3	3.2	**0.0151**	0.001	4.9	ug/L	28	Standard
	Ce	140	18.3	31.5				ug/L	83	Standard
>	**Tb**	159	817889.2	1.4				ug/L	809211	Standard
	Ho	165	11.7	24.7				ug/L	13	Standard
	Tl	203	93.3	20.1	**0.0095**	0.002	24.2	ug/L	4	Standard
	Tl	205	80.0	25.0	**0.0090**	0.003	31.7	ug/L	8	Standard
	Pb	206	290.7	12.0	**0.0091**	0.007	74.3	ug/L	230	Standard
	Pb	207	266.0	16.6	**0.0148**	0.010	64.6	ug/L	184	Standard
	Pb	208	1102.0	7.3	**0.0126**	0.004	33.7	ug/L	775	Standard
	U	238	71.7	22.4	**0.0096**	0.002	23.9	ug/L	3	Standard
>	**Bi**	209	487459.9	0.1				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	68.3	22.4	**0.0249**	0.022	86.5	mg/L	52	Standard
K	39	28.3	53.9	**0.0003**	0.068	22063.5	mg/L	32	Standard
Ca	43	8.3	34.6	**-2.8077**	0.363	12.9	mg/L	33	Standard
Fe	54	132.7	22.1	**-0.0049**	0.024	491.9	mg/L	138	Standard
Fe	57	225.0	30.9	**-0.0010**	0.201	19563.4	mg/L	263	Standard
Sc-1	45	28839.1	1.3				mg/L	27861	Standard
Cl	35	127614.5	0.4				ug/L	100607	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	2040.1	4.8				ug/L	1777	Standard
P	31	23049.3	7.7				ug/L	18074	Standard
S	34	5105.9	3.3				ug/L	3901	Standard
Sr	88	88.3	27.9				ug/L	60	Standard
C	12	63.3	39.7				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	57.3				mg/L	7	Standard
Dy	164	15.2	104.5				mg/L	13	Standard
Ho-1	165	11.7	24.7				mg/L	13	Standard
Er	166	30.0	57.7				mg/L	3	Standard
I	127	16155.3	6.3				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.052	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.209
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.177
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW D2 WG575435-03
Sample Date/Time: Thursday, July 07, 2016 12:09:01
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58097.9	3.7				ug/L	59299	Standard
	Be	9	26.7	84.5	**0.0335**	0.026	78.5	ug/L	17	Standard
	Al	27	4935.9	45.3	**0.0251**	0.018	72.9	ug/L	1472	Standard
	Sc	45	25766.9	1.6				ug/L	27861	Standard
	Ti	47	20.7	20.1	**-0.0221**	0.019	88.1	ug/L	28	Standard
	V	51	1062.6	13.1	**-0.0095**	0.022	230.0	ug/L	1156	Standard
	Cr	52	9995.3	3.5	**0.5557**	0.039	7.1	ug/L	6689	Standard
	Cr	53	1166.7	7.6	**1.0203**	0.122	11.9	ug/L	348	Standard
	Mn	55	636.0	17.5	**-0.0218**	0.017	78.9	ug/L	770	Standard
	Co	59	190.7	9.9	**-0.0050**	0.003	66.0	ug/L	216	Standard
	Ni	60	421.3	1.3	**-0.0096**	0.001	15.1	ug/L	440	Standard
	Cu	65	1231.4	4.5	**0.6646**	0.023	3.5	ug/L	116	Standard
	Zn	66	784.7	0.9	**0.5764**	0.011	1.9	ug/L	135	Standard
>	**Ge**	72	422524.3	1.3				ug/L	445277	Standard
	As	75	-42.5	17.3	**-0.0037**	0.007	182.3	ug/L	-57	Standard
	Se	82	17.0	30.9	**0.0164**	0.051	311.6	ug/L	10	Standard
	Se-1	77	54.7	8.2	**0.1478**	0.073	49.7	ug/L	57	Standard
>	**Ga**	71	30.0	16.7				mg/L	78	Standard
	Rb	85	31.7	9.1				ug/L	22	Standard
	Y	89	366536.7	2.0				ug/L	388959	Standard
>	**Rh**	103	23.3	12.4				ug/L	8	Standard
	Mo	98	38.5	36.9	**0.0094**	0.006	62.0	ug/L	10	Standard
	Ag	107	73.7	21.5	**-0.0012**	0.003	216.3	ug/L	66	Standard
	Cd	111	8.3	38.8	**0.0007**	0.002	224.0	mg/L	3	Standard
	Cd	114	18.3	31.4	**0.0000**	0.001	4166.7	ug/L	4	Standard
>	**In**	115	493876.5	0.4				ug/L	523327	Standard
	Sn	118	810.0	3.4	**0.0790**	0.005	6.4	ug/L	488	Standard
	Sb	123	357.8	37.7	**0.0667**	0.031	46.6	ug/L	195	Standard
	Ba	135	33.3	28.8	**0.0011**	0.005	478.3	ug/L	28	Standard
	Ce	140	21.7	81.0				ug/L	83	Standard
>	**Tb**	159	768258.1	0.8				ug/L	809211	Standard
	Ho	165	8.3	34.6				ug/L	13	Standard
	Tl	203	24.3	35.9	**0.0012**	0.001	93.2	ug/L	4	Standard
	Tl	205	15.0	33.3	**-0.0002**	0.001	340.6	ug/L	8	Standard
	Pb	206	1783.8	1.6	**0.3212**	0.005	1.6	ug/L	230	Standard
	Pb	207	1542.4	4.2	**0.3090**	0.014	4.5	ug/L	184	Standard
	Pb	208	6520.9	1.9	**0.3178**	0.006	1.8	ug/L	775	Standard
	U	238	12.7	91.2	**0.0012**	0.002	141.8	ug/L	3	Standard
>	**Bi**	209	462190.3	0.5				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	60.0	8.3	**0.0231**	0.006	26.0	mg/L	52	Standard
K	39	36.7	7.9	**0.0580**	0.017	29.6	mg/L	32	Standard
Ca	43	31.7	48.2	**0.5687**	2.177	382.9	mg/L	33	Standard
Fe	54	67.1	17.2	**-0.0513**	0.010	18.9	mg/L	138	Standard
Fe	57	256.7	23.5	**0.1875**	0.199	106.4	mg/L	263	Standard
Sc-1	45	25766.9	1.6				mg/L	27861	Standard
Cl	35	123004.7	1.5				ug/L	100607	Standard
Kr	83	2.7	43.3				ug/L	2	Standard
Br	81	1763.4	6.8				ug/L	1777	Standard
P	31	10300.2	5.4				ug/L	18074	Standard
S	34	4932.5	2.4				ug/L	3901	Standard
Sr	88	101.7	18.6				ug/L	60	Standard
C	12	60.0	33.3				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	2.9	203.0				mg/L	13	Standard
Ho-1	165	8.3	34.6				mg/L	13	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	13304.2	2.0				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.974	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.890	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.372
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.828
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW D2 WG575435-03
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Method 6020 - Summary Report

Sample ID: LCSW D2 WG575435-04
Sample Date/Time: Thursday, July 07, 2016 12:12:13
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59479.9	1.7				ug/L	59299	Standard
	Be	9	44690.8	1.3	**53.4750**	0.820	1.5	ug/L	17	Standard
	Al	27	9821.5	0.7	**0.0604**	0.001	1.2	ug/L	1472	Standard
	Sc	45	28254.7	2.5				ug/L	27861	Standard
	Ti	47	28.3	2.0	**0.0047**	0.003	63.8	ug/L	28	Standard
	V	51	336308.6	0.8	**49.7536**	0.521	1.0	ug/L	1156	Standard
	Cr	52	355314.3	0.6	**50.2942**	0.205	0.4	ug/L	6689	Standard
	Cr	53	44480.2	0.8	**50.6813**	0.215	0.4	ug/L	348	Standard
	Mn	55	325055.6	0.8	**51.1425**	0.448	0.9	ug/L	770	Standard
	Co	59	329326.0	1.4	**49.6173**	0.816	1.6	ug/L	216	Standard
	Ni	60	91987.1	0.8	**50.6139**	0.610	1.2	ug/L	440	Standard
	Cu	65	92477.0	0.6	**51.1753**	0.678	1.3	ug/L	116	Standard
	Zn	66	55966.2	0.4	**51.8400**	0.247	0.5	ug/L	135	Standard
>	**Ge**	72	447799.3	0.9				ug/L	445277	Standard
	As	75	53387.6	1.2	**48.6956**	0.640	1.3	ug/L	-57	Standard
	Se	82	5503.7	2.9	**49.3322**	1.429	2.9	ug/L	10	Standard
	Se-1	77	3675.8	2.4	**49.1420**	0.832	1.7	ug/L	57	Standard
>	**Ga**	71	53.3	39.0				mg/L	78	Standard
	Rb	85	58.3	17.8				ug/L	22	Standard
	Y	89	386924.8	2.3				ug/L	388959	Standard
>	**Rh**	103	35.0	37.8				ug/L	8	Standard
	Mo	98	68.4	9.5	**0.0196**	0.003	13.2	ug/L	10	Standard
	Ag	107	316154.8	0.3	**48.8412**	0.642	1.3	ug/L	66	Standard
	Cd	111	100381.0	1.2	**48.5976**	0.232	0.5	mg/L	3	Standard
	Cd	114	247375.1	1.0	**48.9840**	0.147	0.3	ug/L	4	Standard
>	**In**	115	537936.9	1.2				ug/L	523327	Standard
	Sn	118	750.0	3.7	**0.0559**	0.006	10.9	ug/L	488	Standard
	Sb	123	214526.0	2.4	**45.8968**	1.061	2.3	ug/L	195	Standard
	Ba	135	94449.1	0.4	**47.5919**	0.741	1.6	ug/L	28	Standard
	Ce	140	50.0	26.5				ug/L	83	Standard
>	**Tb**	159	804270.7	1.1				ug/L	809211	Standard
	Ho	165	3.3	86.6				ug/L	13	Standard
	Tl	203	395401.9	0.3	**49.3661**	0.304	0.6	ug/L	4	Standard
	Tl	205	343155.8	0.5	**49.9543**	0.457	0.9	ug/L	8	Standard
	Pb	206	256723.0	0.4	**51.0627**	0.379	0.7	ug/L	230	Standard
	Pb	207	224144.1	0.4	**49.1208**	0.198	0.4	ug/L	184	Standard
	Pb	208	953553.2	0.4	**51.0897**	0.336	0.7	ug/L	775	Standard
	U	238	337670.6	0.4	**49.2921**	0.185	0.4	ug/L	3	Standard
>	**Bi**	209	480506.6	0.7				ug/L	472452	Standard

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Na	23	1.7	173.2	**3.3208**	5.743	172.9	mg/L	0	Standard
Mg	24	60.0	30.0	**0.0149**	0.023	151.6	mg/L	52	Standard
K	39	38.3	7.5	**0.0494**	0.016	32.4	mg/L	32	Standard
Ca	43	18.3	15.7	**-1.5298**	0.312	20.4	mg/L	33	Standard
Fe	54	130.1	27.0	**-0.0045**	0.031	685.2	mg/L	138	Standard
Fe	57	253.3	24.7	**0.1020**	0.190	186.1	mg/L	263	Standard
> **Sc-1**	45	28254.7	2.5				mg/L	27861	Standard
Cl	35	129535.5	1.6				ug/L	100607	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	2063.5	3.4				ug/L	1777	Standard
P	31	20939.5	2.3				ug/L	18074	Standard
S	34	5050.8	2.4				ug/L	3901	Standard
Sr	88	101.7	14.2				ug/L	60	Standard
C	12	60.0	44.1				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	7	Standard
Dy	164	9.2	111.8				mg/L	13	Standard
Ho-1	165	3.3	86.6				mg/L	13	Standard
Er	166	16.7	124.9				mg/L	3	Standard
I	127	12143.2	3.2				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.305	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.566	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.792
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.705
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW D2 WG575435-04
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Method 6020 - Summary Report

Sample ID: F BLANK WG575435-05
Sample Date/Time: Thursday, July 07, 2016 12:15:24
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60346.6	2.0				ug/L	59299	Standard
	Be	9	15.0	33.3	**0.0190**	0.006	31.4	ug/L	17	Standard
	Al	27	12126.7	21.8	**0.0765**	0.021	27.3	ug/L	1472	Standard
	Sc	45	27479.9	2.3				ug/L	27861	Standard
	Ti	47	30.0	10.0	**0.0118**	0.013	110.9	ug/L	28	Standard
	V	51	1345.8	7.7	**0.0234**	0.014	62.0	ug/L	1156	Standard
	Cr	52	8669.5	1.0	**0.2800**	0.006	2.3	ug/L	6689	Standard
	Cr	53	1015.0	6.9	**0.7665**	0.075	9.8	ug/L	348	Standard
	Mn	55	1948.5	9.5	**0.1798**	0.029	16.2	ug/L	770	Standard
	Co	59	306.3	11.9	**0.0108**	0.006	51.1	ug/L	216	Standard
	Ni	60	525.0	10.6	**0.0341**	0.029	86.3	ug/L	440	Standard
	Cu	65	266.7	4.3	**0.0897**	0.007	7.7	ug/L	116	Standard
	Zn	66	1948.5	2.4	**1.6171**	0.035	2.2	ug/L	135	Standard
>	**Ge**	72	447189.8	0.5				ug/L	445277	Standard
	As	75	-26.3	91.3	**0.0133**	0.022	164.2	ug/L	-57	Standard
	Se	82	19.3	21.5	**0.0282**	0.038	134.3	ug/L	10	Standard
	Se-1	77	66.3	2.3	**0.2622**	0.018	6.8	ug/L	57	Standard
>	**Ga**	71	45.0	19.2				mg/L	78	Standard
	Rb	85	58.3	4.9				ug/L	22	Standard
	Y	89	384400.7	1.3				ug/L	388959	Standard
>	**Rh**	103	15.0	66.7				ug/L	8	Standard
	Mo	98	51.6	52.9	**0.0133**	0.010	78.8	ug/L	10	Standard
	Ag	107	173.3	5.5	**0.0134**	0.001	10.2	ug/L	66	Standard
	Cd	111	26.9	56.2	**0.0095**	0.007	77.0	mg/L	3	Standard
	Cd	114	79.3	37.9	**0.0119**	0.006	49.8	ug/L	4	Standard
>	**In**	115	532940.4	0.5				ug/L	523327	Standard
	Sn	118	708.3	8.3	**0.0497**	0.010	20.3	ug/L	488	Standard
	Sb	123	2636.2	31.6	**0.5524**	0.178	32.2	ug/L	195	Standard
	Ba	135	117.7	13.5	**0.0426**	0.008	18.5	ug/L	28	Standard
	Ce	140	53.3	47.2				ug/L	83	Standard
>	**Tb**	159	805670.8	0.3				ug/L	809211	Standard
	Ho	165	5.0	100.0				ug/L	13	Standard
	Tl	203	186.0	31.2	**0.0212**	0.007	32.9	ug/L	4	Standard
	Tl	205	138.3	41.1	**0.0176**	0.008	45.7	ug/L	8	Standard
	Pb	206	371.7	13.4	**0.0260**	0.009	34.6	ug/L	230	Standard
	Pb	207	332.0	13.9	**0.0301**	0.009	30.4	ug/L	184	Standard
	Pb	208	1416.0	13.1	**0.0302**	0.009	29.9	ug/L	775	Standard
	U	238	116.0	41.1	**0.0162**	0.007	41.5	ug/L	3	Standard
>	**Bi**	209	480125.5	1.4				ug/L	472452	Standard

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	Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
	Mg	24	60.0	22.0	**0.0174**	0.017	98.2	mg/L	52	Standard
	K	39	15.0	57.7	**-0.0561**	0.040	70.9	mg/L	32	Standard
	Ca	43	18.3	63.0	**-1.4815**	1.465	98.9	mg/L	33	Standard
	Fe	54	130.9	15.6	**-0.0011**	0.018	1560.0	mg/L	138	Standard
	Fe	57	250.0	10.0	**0.1124**	0.064	57.2	mg/L	263	Standard
>	**Sc-1**	45	27479.9	2.3				mg/L	27861	Standard
	Cl	35	128311.0	0.6				ug/L	100607	Standard
	Kr	83	3.7	103.3				ug/L	2	Standard
	Br	81	1873.4	8.5				ug/L	1777	Standard
	P	31	20872.7	1.8				ug/L	18074	Standard
	S	34	4942.5	3.7				ug/L	3901	Standard
	Sr	88	86.7	17.6				ug/L	60	Standard
	C	12	73.3	34.3				mg/L	110	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	173.2				mg/L	7	Standard
	Dy	164	9.5	107.6				mg/L	13	Standard
	Ho-1	165	5.0	100.0				mg/L	13	Standard
	Er	166	10.0	100.0				mg/L	3	Standard
	I	127	5852.8	2.5				mg/L	8539	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		101.766	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.429	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.837
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.624
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: F BLANK WG575435-09
Sample Date/Time: Thursday, July 07, 2016 12:18:36
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54409.2	3.2				ug/L	59299	Standard
	Be	9	11.7	65.5	**0.0164**	0.009	57.4	ug/L	17	Standard
	Al	27	1495.1	15.9	**-0.0007**	0.002	234.5	ug/L	1472	Standard
	Sc	45	24915.5	2.7				ug/L	27861	Standard
	Ti	47	18.0	48.4	**-0.0323**	0.040	122.5	ug/L	28	Standard
	V	51	1156.9	6.0	**0.0097**	0.011	113.3	ug/L	1156	Standard
	Cr	52	4963.5	2.0	**-0.1956**	0.017	8.7	ug/L	6689	Standard
	Cr	53	443.3	16.5	**0.1514**	0.088	57.9	ug/L	348	Standard
	Mn	55	350.7	11.8	**-0.0680**	0.007	9.9	ug/L	770	Standard
	Co	59	187.7	7.4	**-0.0048**	0.002	44.6	ug/L	216	Standard
	Ni	60	399.3	5.9	**-0.0169**	0.015	91.7	ug/L	440	Standard
	Cu	65	112.3	8.1	**0.0093**	0.005	56.1	ug/L	116	Standard
	Zn	66	291.0	29.3	**0.0963**	0.084	87.3	ug/L	135	Standard
>	**Ge**	72	412803.0	0.7				ug/L	445277	Standard
	As	75	-34.7	100.3	**0.0028**	0.035	1227.0	ug/L	-57	Standard
	Se	82	22.0	20.8	**0.0690**	0.044	63.3	ug/L	10	Standard
	Se-1	77	57.0	26.2	**0.1998**	0.218	109.2	ug/L	57	Standard
>	**Ga**	71	48.3	31.6				mg/L	78	Standard
	Rb	85	21.7	13.3				ug/L	22	Standard
	Y	89	347154.1	1.4				ug/L	388959	Standard
>	**Rh**	103	25.0	52.9				ug/L	8	Standard
	Mo	98	85.6	24.3	**0.0298**	0.009	29.8	ug/L	10	Standard
	Ag	107	74.0	7.2	**-0.0009**	0.001	97.1	ug/L	66	Standard
	Cd	111	5.5	69.3	**-0.0006**	0.002	323.2	mg/L	3	Standard
	Cd	114	2.5	129.8	**-0.0034**	0.001	21.5	ug/L	4	Standard
>	**In**	115	484590.8	0.6				ug/L	523327	Standard
	Sn	118	155.0	23.3	**-0.0455**	0.007	15.4	ug/L	488	Standard
	Sb	123	2427.2	18.8	**0.5603**	0.110	19.7	ug/L	195	Standard
	Ba	135	21.0	29.0	**-0.0054**	0.003	63.3	ug/L	28	Standard
	Ce	140	8.3	91.7				ug/L	83	Standard
>	**Tb**	159	749937.4	1.6				ug/L	809211	Standard
	Ho	165	10.0	50.0				ug/L	13	Standard
	Tl	203	40.0	36.8	**0.0033**	0.002	58.5	ug/L	4	Standard
	Tl	205	28.3	127.7	**0.0019**	0.006	296.1	ug/L	8	Standard
	Pb	206	232.3	8.1	**0.0010**	0.004	373.6	ug/L	230	Standard
	Pb	207	195.7	14.0	**0.0028**	0.006	232.9	ug/L	184	Standard
	Pb	208	821.0	2.9	**0.0009**	0.001	151.4	ug/L	775	Standard
	U	238	11.7	64.9	**0.0011**	0.001	105.2	ug/L	3	Standard
>	**Bi**	209	453663.6	0.3				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	58.3	17.8	**0.0234**	0.014	60.1	mg/L	52	Standard
K	39	25.0	72.1	**0.0047**	0.095	2035.7	mg/L	32	Standard
Ca	43	23.3	12.4	**-0.5029**	0.343	68.3	mg/L	33	Standard
Fe	54	47.9	21.2	**-0.0670**	0.010	14.5	mg/L	138	Standard
Fe	57	300.0	4.4	**0.3683**	0.022	5.9	mg/L	263	Standard
Sc-1	45	24915.5	2.7				mg/L	27861	Standard
Cl	35	118817.5	2.0				ug/L	100607	Standard
Kr	83	2.3	107.9				ug/L	2	Standard
Br	81	1606.8	4.1				ug/L	1777	Standard
P	31	6538.1	1.2				ug/L	18074	Standard
S	34	4802.4	4.2				ug/L	3901	Standard
Sr	88	83.3	9.2				ug/L	60	Standard
C	12	33.3	34.6				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	100.0	45.8				mg/L	7	Standard
Dy	164	2.7	188.8				mg/L	13	Standard
Ho-1	165	10.0	50.0				mg/L	13	Standard
Er	166	13.3	114.6				mg/L	3	Standard
I	127	5267.6	7.7				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.754	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.707	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115	92.598	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209	96.023	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: F BLANK WG575435-09
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Method 6020 - Summary Report

Sample ID: L1607007912 WG575435-01
Sample Date/Time: Thursday, July 07, 2016 12:21:47
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59151.9	1.1				ug/L	59299	Standard
	Be	9	20.0	43.3	**0.0253**	0.010	40.0	ug/L	17	Standard
	Al	27	13156998.9	0.5	**98.5745**	0.797	0.8	ug/L	1472	Standard
	Sc	45	29934.5	1.6				ug/L	27861	Standard
	Ti	47	136.7	7.7	**0.4477**	0.041	9.1	ug/L	28	Standard
	V	51	1209.3	8.2	**-0.0002**	0.017	6722.7	ug/L	1156	Standard
	Cr	52	9318.5	1.0	**0.3476**	0.029	8.4	ug/L	6689	Standard
	Cr	53	3740.5	7.1	**3.8190**	0.350	9.2	ug/L	348	Standard
	Mn	55	17031778.3	1.1	**2637.0131**	10.821	0.4	ug/L	770	Standard
	Co	59	43789.9	1.2	**6.4455**	0.004	0.1	ug/L	216	Standard
	Ni	60	40148.5	1.2	**21.5387**	0.119	0.6	ug/L	440	Standard
	Cu	65	847.4	14.6	**0.4021**	0.062	15.3	ug/L	116	Standard
	Zn	66	10243.8	0.9	**9.1532**	0.033	0.4	ug/L	135	Standard
>	Ge	72	456158.2	1.3				ug/L	445277	Standard
	As	75	300.0	1.7	**0.3057**	0.006	1.9	ug/L	-57	Standard
	Se	82	39.1	17.0	**0.1990**	0.055	27.7	ug/L	10	Standard
	Se-1	77	224.7	6.8	**2.3515**	0.236	10.1	ug/L	57	Standard
>	Ga	71	281.7	10.4				mg/L	78	Standard
	Rb	85	13335.9	1.8				ug/L	22	Standard
	Y	89	392432.5	1.1				ug/L	388959	Standard
>	Rh	103	36.7	28.4				ug/L	8	Standard
	Mo	98	585.6	1.6	**0.2198**	0.003	1.4	ug/L	10	Standard
	Ag	107	82.3	23.8	**-0.0007**	0.003	408.5	ug/L	66	Standard
	Cd	111	75.6	23.1	**0.0334**	0.008	25.2	mg/L	3	Standard
	Cd	114	160.3	26.9	**0.0282**	0.009	30.2	ug/L	4	Standard
>	In	115	532031.7	0.4				ug/L	523327	Standard
	Sn	118	795.0	12.0	**0.0653**	0.017	26.6	ug/L	488	Standard
	Sb	123	375.8	10.1	**0.0647**	0.008	12.9	ug/L	195	Standard
	Ba	135	337531.9	0.4	**171.9932**	1.286	0.7	ug/L	28	Standard
	Ce	140	540.0	6.7				ug/L	83	Standard
>	Tb	159	809116.0	0.6				ug/L	809211	Standard
	Ho	165	43.3	43.7				ug/L	13	Standard
	Tl	203	1666.4	2.3	**0.2092**	0.004	2.1	ug/L	4	Standard
	Tl	205	1496.7	8.0	**0.2188**	0.019	8.6	ug/L	8	Standard
	Pb	206	360.3	12.8	**0.0248**	0.009	36.1	ug/L	230	Standard
	Pb	207	306.7	9.8	**0.0256**	0.006	24.9	ug/L	184	Standard
	Pb	208	1279.7	3.0	**0.0240**	0.002	10.0	ug/L	775	Standard
	U	238	157.3	13.6	**0.0226**	0.003	14.5	ug/L	3	Standard
>	Bi	209	473342.6	0.8				ug/L	472452	Standard

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Na	23	5.0	0.0	**9.1283**	0.145	1.6	mg/L	0	Standard
Mg	24	14313.4	1.7	**18.1685**	0.283	1.6	mg/L	52	Standard
K	39	178.3	15.4	**0.6460**	0.124	19.2	mg/L	32	Standard
Ca	43	100.0	18.0	**8.0655**	1.970	24.4	mg/L	33	Standard
Fe	54	152.5	16.3	**0.0064**	0.019	297.7	mg/L	138	Standard
Fe	57	421.7	11.3	**0.5468**	0.146	26.6	mg/L	263	Standard
> **Sc-1**	45	29934.5	1.6				mg/L	27861	Standard
Cl	35	133328.2	1.7				ug/L	100607	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	5224.2	2.2				ug/L	1777	Standard
P	31	25765.2	0.7				ug/L	18074	Standard
S	34	5127.5	1.6				ug/L	3901	Standard
Sr	88	133.3	2.2				ug/L	60	Standard
C	12	96.7	21.5				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	0.0				mg/L	7	Standard
Dy	164	77.3	14.5				mg/L	13	Standard
Ho-1	165	43.3	43.7				mg/L	13	Standard
Er	166	56.7	44.4				mg/L	3	Standard
I	127	84359.5	4.7				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.752	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.444	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.663
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.189
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1607007912S WG575435-06
Sample Date/Time: Thursday, July 07, 2016 12:24:59
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59401.2	1.5				ug/L	59299	Standard
	Be	9	44918.2	1.0	**53.8168**	0.682	1.3	ug/L	17	Standard
	Al	27	13296124.7	0.1	**99.2079**	1.472	1.5	ug/L	1472	Standard
	Sc	45	29396.8	1.8				ug/L	27861	Standard
	Ti	47	133.3	9.4	**0.4368**	0.055	12.7	ug/L	28	Standard
	V	51	333224.8	0.6	**48.6107**	0.813	1.7	ug/L	1156	Standard
	Cr	52	354935.7	0.9	**49.5270**	0.362	0.7	ug/L	6689	Standard
	Cr	53	46655.1	1.7	**52.4355**	1.000	1.9	ug/L	348	Standard
	Mn	55	17623253.1	0.9	**2740.9065**	28.617	1.0	ug/L	770	Standard
	Co	59	367165.1	0.9	**54.5536**	0.836	1.5	ug/L	216	Standard
	Ni	60	129824.5	1.1	**70.5402**	1.033	1.5	ug/L	440	Standard
	Cu	65	89323.9	0.6	**48.7376**	0.309	0.6	ug/L	116	Standard
	Zn	66	63252.1	0.9	**57.7948**	0.207	0.4	ug/L	135	Standard
>	Ge	72	454123.6	1.1				ug/L	445277	Standard
	As	75	55839.0	0.6	**50.2244**	0.729	1.5	ug/L	-57	Standard
	Se	82	5528.4	1.1	**48.8655**	0.865	1.8	ug/L	10	Standard
	Se-1	77	3864.8	1.5	**50.9866**	1.337	2.6	ug/L	57	Standard
>	Ga	71	281.7	12.1				mg/L	78	Standard
	Rb	85	13739.6	2.2				ug/L	22	Standard
	Y	89	397916.5	1.5				ug/L	388959	Standard
>	Rh	103	55.0	32.8				ug/L	8	Standard
	Mo	98	629.5	1.0	**0.2383**	0.002	0.7	ug/L	10	Standard
	Ag	107	305533.6	0.9	**48.0164**	0.595	1.2	ug/L	66	Standard
	Cd	111	98333.0	1.0	**48.4316**	0.269	0.6	mg/L	3	Standard
	Cd	114	240533.3	1.9	**48.4553**	0.897	1.9	ug/L	4	Standard
>	In	115	528755.2	0.5				ug/L	523327	Standard
	Sn	118	683.3	13.1	**0.0462**	0.016	34.3	ug/L	488	Standard
	Sb	123	218338.4	1.5	**47.5262**	0.966	2.0	ug/L	195	Standard
	Ba	135	441404.0	0.3	**226.3214**	1.431	0.6	ug/L	28	Standard
	Ce	140	588.3	7.2				ug/L	83	Standard
>	Tb	159	812475.1	0.3				ug/L	809211	Standard
	Ho	165	46.7	6.2				ug/L	13	Standard
	Tl	203	389087.5	0.3	**49.5221**	0.088	0.2	ug/L	4	Standard
	Tl	205	337407.3	0.9	**50.0739**	0.713	1.4	ug/L	8	Standard
	Pb	206	249610.6	0.3	**50.6132**	0.330	0.7	ug/L	230	Standard
	Pb	207	218025.1	0.6	**48.7102**	0.522	1.1	ug/L	184	Standard
	Pb	208	930290.5	0.8	**50.8132**	0.563	1.1	ug/L	775	Standard
	U	238	335508.3	1.1	**49.9312**	0.772	1.5	ug/L	3	Standard
>	Bi	209	471334.0	0.5				ug/L	472452	Standard

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Na	23	3.3	86.6	**6.2627**	5.419	86.5	mg/L	0	Standard
Mg	24	15075.8	4.6	**19.5045**	1.234	6.3	mg/L	52	Standard
K	39	173.3	13.0	**0.6387**	0.110	17.2	mg/L	32	Standard
Ca	43	123.3	12.4	**11.1181**	1.606	14.4	mg/L	33	Standard
Fe	54	139.5	15.6	**-0.0018**	0.016	894.1	mg/L	138	Standard
Fe	57	380.0	3.5	**0.4458**	0.047	10.5	mg/L	263	Standard
> **Sc-1**	45	29396.8	1.8				mg/L	27861	Standard
Cl	35	130571.6	0.8				ug/L	100607	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	5967.8	2.6				ug/L	1777	Standard
P	31	26055.7	1.5				ug/L	18074	Standard
S	34	4960.8	3.1				ug/L	3901	Standard
Sr	88	130.0	16.8				ug/L	60	Standard
C	12	136.7	37.5				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	100.0				mg/L	7	Standard
Dy	164	55.2	46.6				mg/L	13	Standard
Ho-1	165	46.7	6.2				mg/L	13	Standard
Er	166	30.0	66.7				mg/L	3	Standard
I	127	96560.6	5.0				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.172	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.987	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.037	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.763	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1607007912SD WG575435-07
Sample Date/Time: Thursday, July 07, 2016 12:28:10
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59712.4	0.9				ug/L	59299	Standard
	Be	9	43505.7	1.8	**51.8510**	1.056	2.0	ug/L	17	Standard
	Al	27	12497054.4	1.8	**92.7585**	2.406	2.6	ug/L	1472	Standard
	Sc	45	28632.0	0.3				ug/L	27861	Standard
	Ti	47	120.3	8.9	**0.3827**	0.045	11.8	ug/L	28	Standard
	V	51	325560.6	1.1	**47.4625**	0.659	1.4	ug/L	1156	Standard
	Cr	52	347542.5	0.5	**48.4511**	0.136	0.3	ug/L	6689	Standard
	Cr	53	46210.4	1.3	**51.9080**	0.961	1.9	ug/L	348	Standard
	Mn	55	16595256.9	0.7	**2579.7029**	11.247	0.4	ug/L	770	Standard
	Co	59	358257.1	0.5	**53.2006**	0.257	0.5	ug/L	216	Standard
	Ni	60	124805.3	0.7	**67.7668**	0.206	0.3	ug/L	440	Standard
	Cu	65	87297.4	0.8	**47.6076**	0.440	0.9	ug/L	116	Standard
	Zn	66	62682.4	1.4	**57.2434**	0.527	0.9	ug/L	135	Standard
>	Ge	72	454332.3	0.6				ug/L	445277	Standard
	As	75	54462.5	0.5	**48.9601**	0.095	0.2	ug/L	-57	Standard
	Se	82	5440.6	1.7	**48.0582**	0.509	1.1	ug/L	10	Standard
	Se-1	77	3783.5	3.2	**49.8626**	1.332	2.7	ug/L	57	Standard
>	Ga	71	313.3	9.6				mg/L	78	Standard
	Rb	85	13114.0	2.7				ug/L	22	Standard
	Y	89	389749.5	0.9				ug/L	388959	Standard
>	Rh	103	53.3	19.5				ug/L	8	Standard
	Mo	98	586.1	6.0	**0.2179**	0.012	5.5	ug/L	10	Standard
	Ag	107	299932.7	0.8	**46.4197**	0.531	1.1	ug/L	66	Standard
	Cd	111	97453.4	0.4	**47.2729**	0.622	1.3	mg/L	3	Standard
	Cd	114	233670.4	2.7	**46.3526**	0.856	1.8	ug/L	4	Standard
>	In	115	536920.1	0.9				ug/L	523327	Standard
	Sn	118	701.7	11.4	**0.0476**	0.014	29.0	ug/L	488	Standard
	Sb	123	223331.7	0.8	**47.8750**	0.745	1.6	ug/L	195	Standard
	Ba	135	415888.9	1.0	**209.9932**	1.290	0.6	ug/L	28	Standard
	Ce	140	598.3	6.3				ug/L	83	Standard
>	Tb	159	811779.2	0.2				ug/L	809211	Standard
	Ho	165	33.3	22.9				ug/L	13	Standard
	Tl	203	383760.2	0.4	**48.5298**	0.124	0.3	ug/L	4	Standard
	Tl	205	334666.2	1.4	**49.3461**	0.756	1.5	ug/L	8	Standard
	Pb	206	245680.5	0.3	**49.4943**	0.183	0.4	ug/L	230	Standard
	Pb	207	213430.7	0.4	**47.3744**	0.109	0.2	ug/L	184	Standard
	Pb	208	913657.4	0.5	**49.5818**	0.342	0.7	ug/L	775	Standard
	U	238	329595.7	1.2	**48.7342**	0.651	1.3	ug/L	3	Standard
>	Bi	209	474382.2	0.2				ug/L	472452	Standard

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Na	23	1.7	173.2	**3.1723**	5.486	172.9	mg/L	0	Standard
Mg	24	13727.9	2.0	**18.2178**	0.423	2.3	mg/L	52	Standard
K	39	180.0	16.7	**0.6878**	0.133	19.4	mg/L	32	Standard
Ca	43	103.3	10.1	**9.0424**	1.317	14.6	mg/L	33	Standard
Fe	54	136.5	22.0	**-0.0012**	0.024	1984.3	mg/L	138	Standard
Fe	57	371.7	11.2	**0.4501**	0.125	27.8	mg/L	263	Standard
Sc-1	45	28632.0	0.3				mg/L	27861	Standard
Cl	35	130563.6	2.0				ug/L	100607	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	6744.8	6.2				ug/L	1777	Standard
P	31	25790.3	0.9				ug/L	18074	Standard
S	34	4850.8	3.3				ug/L	3901	Standard
Sr	88	128.3	21.5				ug/L	60	Standard
C	12	113.3	33.4				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	17.9	57.1				mg/L	13	Standard
Ho-1	165	33.3	22.9				mg/L	13	Standard
Er	166	43.3	13.3				mg/L	3	Standard
I	127	89962.0	6.4				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		100.697	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.034	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.597
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.409
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1607007802
Sample Date/Time: Thursday, July 07, 2016 12:31:21
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61258.6	0.9				ug/L	59299	Standard
	Be	9	36.7	7.9	**0.0439**	0.004	8.2	ug/L	17	Standard
	Al	27	4252451.1	0.9	**30.7558**	0.426	1.4	ug/L	1472	Standard
	Sc	45	29153.0	1.1				ug/L	27861	Standard
	Ti	47	101.7	18.3	**0.2990**	0.077	25.7	ug/L	28	Standard
	V	51	1800.4	1.2	**0.0825**	0.002	3.0	ug/L	1156	Standard
	Cr	52	9843.2	0.6	**0.4046**	0.001	0.3	ug/L	6689	Standard
	Cr	53	1531.7	7.7	**1.3053**	0.137	10.5	ug/L	348	Standard
	Mn	55	14845.0	8.3	**2.1416**	0.174	8.1	ug/L	770	Standard
	Co	59	417.0	7.8	**0.0255**	0.004	17.3	ug/L	216	Standard
	Ni	60	1276.1	2.2	**0.4278**	0.018	4.3	ug/L	440	Standard
	Cu	65	1463.1	0.3	**0.7277**	0.004	0.6	ug/L	116	Standard
	Zn	66	8326.6	2.8	**7.3093**	0.180	2.5	ug/L	135	Standard
>	**Ge**	72	461828.3	0.6				ug/L	445277	Standard
	As	75	73.8	46.4	**0.1026**	0.031	29.8	ug/L	-57	Standard
	Se	82	59.9	11.8	**0.3772**	0.065	17.1	ug/L	10	Standard
	Se-1	77	102.3	9.5	**0.7063**	0.125	17.6	ug/L	57	Standard
>	**Ga**	71	145.0	12.4				mg/L	78	Standard
	Rb	85	5347.6	1.2				ug/L	22	Standard
	Y	89	397946.7	0.8				ug/L	388959	Standard
>	**Rh**	103	43.3	17.6				ug/L	8	Standard
	Mo	98	79.8	5.0	**0.0238**	0.001	6.1	ug/L	10	Standard
	Ag	107	142.7	11.9	**0.0083**	0.002	29.7	ug/L	66	Standard
	Cd	111	123.2	8.9	**0.0557**	0.005	8.6	mg/L	3	Standard
	Cd	114	289.7	13.2	**0.0531**	0.007	13.9	ug/L	4	Standard
>	**In**	115	540916.1	0.8				ug/L	523327	Standard
	Sn	118	943.4	8.0	**0.0888**	0.014	15.5	ug/L	488	Standard
	Sb	123	1086.2	28.8	**0.2145**	0.067	31.1	ug/L	195	Standard
	Ba	135	44164.6	1.2	**22.1198**	0.235	1.1	ug/L	28	Standard
	Ce	140	396.7	5.1				ug/L	83	Standard
>	**Tb**	159	817931.4	0.8				ug/L	809211	Standard
	Ho	165	145.0	17.9				ug/L	13	Standard
	Tl	203	146.3	6.2	**0.0162**	0.001	6.3	ug/L	4	Standard
	Tl	205	116.7	21.6	**0.0144**	0.004	25.9	ug/L	8	Standard
	Pb	206	361.0	4.1	**0.0234**	0.003	13.1	ug/L	230	Standard
	Pb	207	292.3	4.5	**0.0209**	0.003	14.0	ug/L	184	Standard
	Pb	208	1255.7	6.4	**0.0211**	0.004	19.9	ug/L	775	Standard
	U	238	115.0	12.2	**0.0160**	0.002	13.2	ug/L	3	Standard
>	**Bi**	209	484260.9	0.6				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	1080.0	5.8	**1.3475**	0.094	6.9	mg/L	52	Standard
K	39	195.0	21.0	**0.7394**	0.177	23.9	mg/L	32	Standard
Ca	43	78.3	45.3	**5.7392**	4.289	74.7	mg/L	33	Standard
Fe	54	143.9	12.3	**0.0028**	0.015	523.5	mg/L	138	Standard
Fe	57	316.7	3.3	**0.2662**	0.022	8.1	mg/L	263	Standard
> **Sc-1**	45	29153.0	1.1				mg/L	27861	Standard
Cl	35	131476.6	0.3				ug/L	100607	Standard
Kr	83	2.3	89.2				ug/L	2	Standard
Br	81	5130.9	6.5				ug/L	1777	Standard
P	31	25204.3	1.1				ug/L	18074	Standard
S	34	4847.4	1.9				ug/L	3901	Standard
Sr	88	138.3	11.0				ug/L	60	Standard
C	12	76.7	27.2				mg/L	110	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	23.3	107.9				mg/L	7	Standard
Dy	164	122.2	15.4				mg/L	13	Standard
Ho-1	165	145.0	17.9				mg/L	13	Standard
Er	166	163.3	19.7				mg/L	3	Standard
I	127	13025.6	7.3				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.304	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.717	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	103.361
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	102.500
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1607007802PS WG575483-01
Sample Date/Time: Thursday, July 07, 2016 12:34:33
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60129.1	0.5				ug/L	59299	Standard
	Be	9	45347.8	1.8	**53.6671**	0.704	1.3	ug/L	17	Standard
	Al	27	4239421.0	2.2	**31.2345**	0.564	1.8	ug/L	1472	Standard
	Sc	45	29428.6	1.0				ug/L	27861	Standard
	Ti	47	121.0	2.2	**0.3808**	0.014	3.8	ug/L	28	Standard
	V	51	343987.3	1.1	**49.6908**	0.915	1.8	ug/L	1156	Standard
	Cr	52	370202.5	0.5	**51.1816**	0.260	0.5	ug/L	6689	Standard
	Cr	53	46619.9	0.7	**51.8745**	0.103	0.2	ug/L	348	Standard
	Mn	55	345115.0	1.4	**53.0184**	0.338	0.6	ug/L	770	Standard
	Co	59	338283.8	0.8	**49.7650**	0.695	1.4	ug/L	216	Standard
	Ni	60	94614.2	1.1	**50.8289**	0.370	0.7	ug/L	440	Standard
	Cu	65	95980.4	0.5	**51.8609**	0.677	1.3	ug/L	116	Standard
	Zn	66	64901.4	0.6	**58.7232**	0.385	0.7	ug/L	135	Standard
>	Ge	72	458625.3	0.8				ug/L	445277	Standard
	As	75	53567.8	0.8	**47.7086**	0.624	1.3	ug/L	-57	Standard
	Se	82	5785.5	2.2	**50.6356**	0.934	1.8	ug/L	10	Standard
	Se-1	77	3862.8	2.1	**50.4507**	1.409	2.8	ug/L	57	Standard
>	Ga	71	123.3	27.6				mg/L	78	Standard
	Rb	85	5347.6	0.5				ug/L	22	Standard
	Y	89	397066.3	1.5				ug/L	388959	Standard
>	Rh	103	38.3	32.8				ug/L	8	Standard
	Mo	98	102.3	14.7	**0.0323**	0.005	16.3	ug/L	10	Standard
	Ag	107	320976.9	0.2	**49.3733**	0.755	1.5	ug/L	66	Standard
	Cd	111	103255.8	0.6	**49.7761**	0.368	0.7	mg/L	3	Standard
	Cd	114	254825.2	0.4	**50.2480**	0.872	1.7	ug/L	4	Standard
>	In	115	540273.6	1.3				ug/L	523327	Standard
	Sn	118	1130.0	7.0	**0.1216**	0.014	11.7	ug/L	488	Standard
	Sb	123	223794.3	1.8	**47.6844**	1.447	3.0	ug/L	195	Standard
	Ba	135	140911.2	0.9	**70.7073**	1.365	1.9	ug/L	28	Standard
	Ce	140	428.3	5.5				ug/L	83	Standard
>	Tb	159	822252.3	0.6				ug/L	809211	Standard
	Ho	165	136.7	13.9				ug/L	13	Standard
	Tl	203	409406.6	0.5	**50.7343**	0.389	0.8	ug/L	4	Standard
	Tl	205	358687.7	0.4	**51.8276**	0.570	1.1	ug/L	8	Standard
	Pb	206	264029.3	0.7	**52.1280**	0.735	1.4	ug/L	230	Standard
	Pb	207	230024.9	0.3	**50.0367**	0.486	1.0	ug/L	184	Standard
	Pb	208	975992.3	0.6	**51.9037**	0.459	0.9	ug/L	775	Standard
	U	238	349299.9	0.7	**50.6096**	0.200	0.4	ug/L	3	Standard
>	Bi	209	484109.9	0.7				ug/L	472452	Standard

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Na	23	1.7	173.2	**3.1042**	5.368	172.9	mg/L	0	Standard
Mg	24	1070.0	4.5	**1.3205**	0.049	3.7	mg/L	52	Standard
K	39	185.0	14.3	**0.6874**	0.108	15.7	mg/L	32	Standard
Ca	43	58.3	9.9	**3.2306**	0.630	19.5	mg/L	33	Standard
Fe	54	156.3	11.9	**0.0114**	0.013	118.8	mg/L	138	Standard
Fe	57	331.7	20.5	**0.3029**	0.209	68.9	mg/L	263	Standard
> **Sc-1**	45	29428.6	1.0				mg/L	27861	Standard
Cl	35	130058.6	1.7				ug/L	100607	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	5030.8	4.1				ug/L	1777	Standard
P	31	24835.3	2.7				ug/L	18074	Standard
S	34	4745.7	1.1				ug/L	3901	Standard
Sr	88	146.7	7.9				ug/L	60	Standard
C	12	130.0	33.5				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	7	Standard
Dy	164	184.1	6.1				mg/L	13	Standard
Ho-1	165	136.7	13.9				mg/L	13	Standard
Er	166	123.3	20.4				mg/L	3	Standard
I	127	11000.7	1.5				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.400	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.998	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.238
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.468
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607007802SDL WG575483-02
Sample Date/Time: Thursday, July 07, 2016 12:37:44
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55747.5	4.7				ug/L	59299	Standard
	Be	9	36.7	56.8	**0.0474**	0.024	50.5	ug/L	17	Standard
	Al	27	823499.2	2.5	**6.5388**	0.153	2.3	ug/L	1472	Standard
	Sc	45	25501.4	1.0				ug/L	27861	Standard
	Ti	47	38.3	10.9	**0.0544**	0.019	35.5	ug/L	28	Standard
	V	51	1276.0	5.4	**0.0220**	0.010	45.1	ug/L	1156	Standard
	Cr	52	6253.0	0.8	**-0.0262**	0.010	36.7	ug/L	6689	Standard
	Cr	53	580.0	9.9	**0.2979**	0.066	22.3	ug/L	348	Standard
	Mn	55	4326.6	10.2	**0.5879**	0.075	12.7	ug/L	770	Standard
	Co	59	293.7	7.0	**0.0110**	0.003	30.7	ug/L	216	Standard
	Ni	60	509.0	6.4	**0.0388**	0.020	51.8	ug/L	440	Standard
	Cu	65	466.3	4.8	**0.2128**	0.014	6.4	ug/L	116	Standard
	Zn	66	2338.8	3.2	**2.0841**	0.080	3.8	ug/L	135	Standard
>	**Ge**	72	426951.7	0.6				ug/L	445277	Standard
	As	75	5.3	402.6	**0.0424**	0.020	47.8	ug/L	-57	Standard
	Se	82	30.0	32.8	**0.1376**	0.094	68.0	ug/L	10	Standard
	Se-1	77	61.7	9.8	**0.2386**	0.085	35.7	ug/L	57	Standard
>	**Ga**	71	83.3	19.3				mg/L	78	Standard
	Rb	85	1008.4	5.5				ug/L	22	Standard
	Y	89	360673.2	1.7				ug/L	388959	Standard
>	**Rh**	103	25.0	20.0				ug/L	8	Standard
	Mo	98	24.3	31.3	**0.0034**	0.003	91.5	ug/L	10	Standard
	Ag	107	154.7	20.7	**0.0122**	0.005	43.8	ug/L	66	Standard
	Cd	111	32.3	20.2	**0.0133**	0.003	25.7	mg/L	3	Standard
	Cd	114	87.9	54.3	**0.0149**	0.010	68.6	ug/L	4	Standard
>	**In**	115	498160.8	0.1				ug/L	523327	Standard
	Sn	118	328.3	9.8	**-0.0135**	0.006	45.6	ug/L	488	Standard
	Sb	123	1597.5	31.2	**0.3525**	0.115	32.7	ug/L	195	Standard
	Ba	135	8300.3	1.0	**4.5002**	0.046	1.0	ug/L	28	Standard
	Ce	140	76.7	7.5				ug/L	83	Standard
>	**Tb**	159	755751.4	0.2				ug/L	809211	Standard
	Ho	165	25.0	52.9				ug/L	13	Standard
	Tl	203	143.3	20.8	**0.0167**	0.004	23.9	ug/L	4	Standard
	Tl	205	126.7	23.8	**0.0167**	0.005	28.8	ug/L	8	Standard
	Pb	206	380.0	2.3	**0.0307**	0.003	9.2	ug/L	230	Standard
	Pb	207	312.3	14.3	**0.0286**	0.011	39.3	ug/L	184	Standard
	Pb	208	1315.7	6.1	**0.0277**	0.005	19.5	ug/L	775	Standard
	U	238	93.0	36.6	**0.0135**	0.005	39.9	ug/L	3	Standard
>	**Bi**	209	462169.0	1.5				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	268.3	14.5	**0.3359**	0.061	18.2	mg/L	52	Standard
K	39	55.0	24.1	**0.1526**	0.065	42.8	mg/L	32	Standard
Ca	43	38.3	32.8	**1.5349**	1.809	117.9	mg/L	33	Standard
Fe	54	72.7	28.4	**-0.0457**	0.018	39.8	mg/L	138	Standard
Fe	57	318.3	13.2	**0.4061**	0.132	32.6	mg/L	263	Standard
> **Sc-1**	45	25501.4	1.0				mg/L	27861	Standard
Cl	35	121849.4	1.7				ug/L	100607	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	2320.2	11.5				ug/L	1777	Standard
P	31	10490.3	5.5				ug/L	18074	Standard
S	34	4687.4	5.3				ug/L	3901	Standard
Sr	88	75.0	13.3				ug/L	60	Standard
C	12	56.7	71.3				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	24.9	45.8				mg/L	13	Standard
Ho-1	165	25.0	52.9				mg/L	13	Standard
Er	166	36.7	15.7				mg/L	3	Standard
I	127	11344.2	3.5				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.011	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.884	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.191
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.824
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, July 07, 2016 12:40:58
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	56736.0	1.2				ug/L	59299	Standard
	Be	9	42753.6	1.7	**53.6239**	0.552	1.0	ug/L	17	Standard
	Al	27	6676811.3	0.3	**52.1509**	0.756	1.4	ug/L	1472	Standard
	Sc	45	28249.6	1.3				ug/L	27861	Standard
	Ti	47	23646.8	0.8	**97.1584**	0.791	0.8	ug/L	28	Standard
	V	51	330596.7	0.4	**48.0437**	0.969	2.0	ug/L	1156	Standard
	Cr	52	349948.5	0.3	**48.6341**	0.973	2.0	ug/L	6689	Standard
	Cr	53	43330.2	0.4	**48.4862**	0.824	1.7	ug/L	348	Standard
	Mn	55	315710.0	0.2	**48.7932**	0.865	1.8	ug/L	770	Standard
	Co	59	326866.5	1.2	**48.3782**	0.932	1.9	ug/L	216	Standard
	Ni	60	90675.2	0.4	**49.0072**	0.976	2.0	ug/L	440	Standard
	Cu	65	90964.6	0.5	**49.4504**	0.975	2.0	ug/L	116	Standard
	Zn	66	54268.0	0.9	**49.3778**	1.207	2.4	ug/L	135	Standard
>	Ge	72	455884.6	1.6				ug/L	445277	Standard
	As	75	53858.0	1.2	**48.2613**	1.019	2.1	ug/L	-57	Standard
	Se	82	5441.5	0.7	**47.9156**	1.100	2.3	ug/L	10	Standard
	Se-1	77	3720.1	1.4	**48.8656**	1.317	2.7	ug/L	57	Standard
>	Ga	71	110.0	19.8				mg/L	78	Standard
	Rb	85	773.4	9.2				ug/L	22	Standard
	Y	89	385813.8	0.6				ug/L	388959	Standard
>	Rh	103	43.3	24.0				ug/L	8	Standard
	Mo	98	247166.6	0.7	**96.2337**	1.505	1.6	ug/L	10	Standard
	Ag	107	307363.4	0.7	**48.3413**	0.525	1.1	ug/L	66	Standard
	Cd	111	99267.0	0.8	**48.9303**	0.302	0.6	mg/L	3	Standard
	Cd	114	242687.2	1.6	**48.9329**	1.169	2.4	ug/L	4	Standard
>	In	115	528354.5	0.8				ug/L	523327	Standard
	Sn	118	273458.5	2.8	**48.7439**	1.628	3.3	ug/L	488	Standard
	Sb	123	224359.7	0.4	**48.8723**	0.223	0.5	ug/L	195	Standard
	Ba	135	93157.5	1.1	**47.7916**	0.920	1.9	ug/L	28	Standard
	Ce	140	81.7	35.9				ug/L	83	Standard
>	Tb	159	792183.9	1.3				ug/L	809211	Standard
	Ho	165	5.0	100.0				ug/L	13	Standard
	Tl	203	388626.9	0.2	**49.6268**	0.166	0.3	ug/L	4	Standard
	Tl	205	336677.9	0.6	**50.1284**	0.331	0.7	ug/L	8	Standard
	Pb	206	243745.0	0.9	**49.5864**	0.601	1.2	ug/L	230	Standard
	Pb	207	222099.7	0.7	**49.7846**	0.517	1.0	ug/L	184	Standard
	Pb	208	933879.0	0.6	**51.1765**	0.299	0.6	ug/L	775	Standard
	U	238	336355.5	0.2	**50.2205**	0.232	0.5	ug/L	3	Standard
>	Bi	209	469783.9	0.4				ug/L	472452	Standard

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Na	23	6.7	43.3	**12.8693**	5.474	42.5	mg/L	0	Standard
Mg	24	3872.2	4.5	**5.1636**	0.302	5.9	mg/L	52	Standard
K	39	903.4	13.8	**4.0130**	0.523	13.0	mg/L	32	Standard
Ca	43	58.3	13.1	**3.5227**	0.881	25.0	mg/L	33	Standard
Fe	54	5910.4	5.2	**4.7330**	0.202	4.3	mg/L	138	Standard
Fe	57	1720.1	6.0	**4.6110**	0.389	8.4	mg/L	263	Standard
> **Sc-1**	45	28249.6	1.3				mg/L	27861	Standard
Cl	35	126151.7	1.3				ug/L	100607	Standard
Kr	83	1.7	124.9				ug/L	2	Standard
Br	81	1726.8	1.7				ug/L	1777	Standard
P	31	22451.6	1.9				ug/L	18074	Standard
S	34	5489.3	3.3				ug/L	3901	Standard
Sr	88	71.7	8.1				ug/L	60	Standard
C	12	53.3	28.6				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	173.2				mg/L	7	Standard
Dy	164	6.2	86.7				mg/L	13	Standard
Ho-1	165	5.0	100.0				mg/L	13	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	13894.7	2.1				mg/L	8539	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	107.248		
	Al	27	104.302		
	Sc	45			
	Ti	47	97.158		
	V	51	96.087		
	Cr	52	97.268		
	Cr	53			
	Mn	55	97.586		
	Co	59	96.756		
	Ni	60	98.014		
	Cu	65	98.901		
	Zn	66	98.756		
>	Ge	72		102.382	
	As	75	96.523		
	Se	82	95.831		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	96.234		
Ag	107	96.683		
Cd	111	97.861		
Cd	114			
> In	115			100.961
Sn	118	97.488		
Sb	123	97.745		
Ba	135	95.583		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.254		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.353		
U	238	100.441		
> Bi	209			99.435
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, July 07, 2016 12:44:09
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57017.1	0.9				ug/L	59299	Standard
	Be	9	40.0	21.7	**0.0513**	0.011	21.4	ug/L	17	Standard
	Al	27	3285.4	17.2	**0.0127**	0.004	32.8	ug/L	1472	Standard
	Sc	45	27957.4	2.5				ug/L	27861	Standard
	Ti	47	27.7	19.9	**0.0009**	0.022	2490.4	ug/L	28	Standard
	V	51	1210.3	7.9	**0.0017**	0.015	869.9	ug/L	1156	Standard
	Cr	52	6298.0	1.7	**-0.0708**	0.014	19.2	ug/L	6689	Standard
	Cr	53	488.3	11.3	**0.1561**	0.065	41.4	ug/L	348	Standard
	Mn	55	1590.4	33.4	**0.1213**	0.085	70.0	ug/L	770	Standard
	Co	59	282.7	10.8	**0.0068**	0.005	70.8	ug/L	216	Standard
	Ni	60	345.0	5.2	**-0.0672**	0.009	14.1	ug/L	440	Standard
	Cu	65	168.7	8.4	**0.0345**	0.008	24.3	ug/L	116	Standard
	Zn	66	401.0	7.1	**0.1732**	0.028	16.1	ug/L	135	Standard
>	**Ge**	72	451259.9	0.6				ug/L	445277	Standard
	As	75	-8.6	234.5	**0.0295**	0.018	62.0	ug/L	-57	Standard
	Se	82	19.2	13.3	**0.0261**	0.023	89.2	ug/L	10	Standard
	Se-1	77	59.0	13.9	**0.1560**	0.115	73.8	ug/L	57	Standard
>	**Ga**	71	80.0	22.5				mg/L	78	Standard
	Rb	85	31.7	24.1				ug/L	22	Standard
	Y	89	389318.7	1.0				ug/L	388959	Standard
>	**Rh**	103	21.7	53.3				ug/L	8	Standard
	Mo	98	213.6	10.4	**0.0757**	0.008	11.2	ug/L	10	Standard
	Ag	107	171.0	24.3	**0.0130**	0.007	49.9	ug/L	66	Standard
	Cd	111	33.3	48.0	**0.0126**	0.008	61.8	mg/L	3	Standard
	Cd	114	54.1	43.8	**0.0069**	0.005	68.8	ug/L	4	Standard
>	**In**	115	534051.4	0.1				ug/L	523327	Standard
	Sn	118	780.0	27.5	**0.0621**	0.038	61.2	ug/L	488	Standard
	Sb	123	1018.2	32.3	**0.2029**	0.071	35.0	ug/L	195	Standard
	Ba	135	72.3	21.7	**0.0195**	0.008	41.0	ug/L	28	Standard
	Ce	140	23.3	81.1				ug/L	83	Standard
>	**Tb**	159	803001.2	0.2				ug/L	809211	Standard
	Ho	165	8.3	34.6				ug/L	13	Standard
	Tl	203	119.3	30.6	**0.0130**	0.005	35.2	ug/L	4	Standard
	Tl	205	116.7	34.6	**0.0146**	0.006	40.6	ug/L	8	Standard
	Pb	206	320.7	8.1	**0.0161**	0.005	32.6	ug/L	230	Standard
	Pb	207	269.3	3.0	**0.0166**	0.002	10.4	ug/L	184	Standard
	Pb	208	1173.7	6.2	**0.0175**	0.004	22.6	ug/L	775	Standard
	U	238	112.7	18.0	**0.0158**	0.003	18.8	ug/L	3	Standard
>	**Bi**	209	478756.9	0.1				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	53.3	35.5	**0.0075**	0.028	371.7	mg/L	52	Standard
K	39	21.7	58.1	**-0.0252**	0.061	243.6	mg/L	32	Standard
Ca	43	16.7	17.3	**-1.7058**	0.427	25.0	mg/L	33	Standard
Fe	54	113.9	31.8	**-0.0171**	0.030	175.1	mg/L	138	Standard
Fe	57	293.3	11.6	**0.2356**	0.120	51.1	mg/L	263	Standard
Sc-1	45	27957.4	2.5				mg/L	27861	Standard
Cl	35	126377.5	0.4				ug/L	100607	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	1930.1	9.3				ug/L	1777	Standard
P	31	21249.9	3.4				ug/L	18074	Standard
S	34	5324.3	3.2				ug/L	3901	Standard
Sr	88	90.0	14.7				ug/L	60	Standard
C	12	46.7	89.2				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	7	Standard
Dy	164	12.9	45.1				mg/L	13	Standard
Ho-1	165	8.3	34.6				mg/L	13	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	8125.5	2.3				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.344	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.049
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.335
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

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Method 6020 - Summary Report

Sample ID: L1607007804
Sample Date/Time: Thursday, July 07, 2016 12:47:22
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56694.2	0.3				ug/L	59299	Standard
	Be	9	13.3	78.1	**0.0181**	0.013	72.6	ug/L	17	Standard
	Al	27	3551954.8	0.4	**27.7551**	0.202	0.7	ug/L	1472	Standard
	Sc	45	28298.1	0.5				ug/L	27861	Standard
	Ti	47	88.7	25.0	**0.2491**	0.091	36.5	ug/L	28	Standard
	V	51	1581.1	5.6	**0.0530**	0.015	28.1	ug/L	1156	Standard
	Cr	52	9368.6	2.9	**0.3498**	0.047	13.4	ug/L	6689	Standard
	Cr	53	983.4	12.9	**0.7050**	0.153	21.7	ug/L	348	Standard
	Mn	55	9958.3	5.7	**1.4085**	0.094	6.7	ug/L	770	Standard
	Co	59	416.0	11.3	**0.0259**	0.007	28.9	ug/L	216	Standard
	Ni	60	1478.7	6.9	**0.5435**	0.060	11.1	ug/L	440	Standard
	Cu	65	1607.4	29.7	**0.8139**	0.265	32.5	ug/L	116	Standard
	Zn	66	10729.5	0.2	**9.5607**	0.117	1.2	ug/L	135	Standard
>	**Ge**	72	457856.4	1.0				ug/L	445277	Standard
	As	75	32.3	251.8	**0.0665**	0.073	109.4	ug/L	-57	Standard
	Se	82	53.0	29.4	**0.3217**	0.141	43.9	ug/L	10	Standard
	Se-1	77	82.0	2.4	**0.4487**	0.019	4.1	ug/L	57	Standard
>	**Ga**	71	86.7	14.5				mg/L	78	Standard
	Rb	85	4117.2	3.8				ug/L	22	Standard
	Y	89	398018.4	3.2				ug/L	388959	Standard
>	**Rh**	103	48.3	41.8				ug/L	8	Standard
	Mo	98	136.8	11.5	**0.0457**	0.006	12.8	ug/L	10	Standard
	Ag	107	133.7	33.4	**0.0070**	0.007	96.4	ug/L	66	Standard
	Cd	111	78.4	32.6	**0.0343**	0.012	35.6	mg/L	3	Standard
	Cd	114	210.6	11.9	**0.0378**	0.005	12.4	ug/L	4	Standard
>	**In**	115	538139.9	0.8				ug/L	523327	Standard
	Sn	118	910.0	9.1	**0.0839**	0.016	18.7	ug/L	488	Standard
	Sb	123	641.2	21.5	**0.1207**	0.030	25.2	ug/L	195	Standard
	Ba	135	34056.6	1.3	**17.1422**	0.288	1.7	ug/L	28	Standard
	Ce	140	838.4	6.9				ug/L	83	Standard
>	**Tb**	159	798753.7	0.3				ug/L	809211	Standard
	Ho	165	66.7	17.3				ug/L	13	Standard
	Tl	203	139.7	41.8	**0.0157**	0.007	46.8	ug/L	4	Standard
	Tl	205	98.3	26.1	**0.0121**	0.004	31.3	ug/L	8	Standard
	Pb	206	474.7	9.6	**0.0480**	0.009	18.9	ug/L	230	Standard
	Pb	207	380.7	8.1	**0.0421**	0.007	16.0	ug/L	184	Standard
	Pb	208	1721.7	5.1	**0.0481**	0.005	9.6	ug/L	775	Standard
	U	238	172.7	3.2	**0.0249**	0.001	3.1	ug/L	3	Standard
>	**Bi**	209	473003.4	0.2				ug/L	472452	Standard

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Na	23	1.7	173.2	**3.2114**	5.554	172.9	mg/L	0	Standard
Mg	24	761.7	19.7	**0.9600**	0.198	20.6	mg/L	52	Standard
K	39	191.7	25.6	**0.7515**	0.227	30.2	mg/L	32	Standard
Ca	43	58.3	17.8	**3.5159**	1.299	36.9	mg/L	33	Standard
Fe	54	158.9	24.4	**0.0186**	0.032	173.0	mg/L	138	Standard
Fe	57	315.0	9.7	**0.2899**	0.095	32.9	mg/L	263	Standard
> **Sc-1**	45	28298.1	0.5				mg/L	27861	Standard
Cl	35	127571.5	0.7				ug/L	100607	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	2933.6	2.6				ug/L	1777	Standard
P	31	23194.4	1.4				ug/L	18074	Standard
S	34	4897.5	1.3				ug/L	3901	Standard
Sr	88	150.0	20.3				ug/L	60	Standard
C	12	96.7	26.0				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	7	Standard
Dy	164	74.1	39.1				mg/L	13	Standard
Ho-1	165	66.7	17.3				mg/L	13	Standard
Er	166	53.3	10.8				mg/L	3	Standard
I	127	13974.8	5.4				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.607	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.825	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.831
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.117
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1607007806
Sample Date/Time: Thursday, July 07, 2016 12:50:34
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57801.7	0.8				ug/L	59299	Standard
	Be	9	26.7	28.6	**0.0341**	0.009	27.4	ug/L	17	Standard
	Al	27	7379941.3	1.1	**56.5795**	0.984	1.7	ug/L	1472	Standard
	Sc	45	28520.2	1.3				ug/L	27861	Standard
	Ti	47	76.0	15.2	**0.1994**	0.047	23.4	ug/L	28	Standard
	V	51	1647.6	5.2	**0.0643**	0.012	19.1	ug/L	1156	Standard
	Cr	52	11551.4	2.0	**0.6691**	0.036	5.4	ug/L	6689	Standard
	Cr	53	1688.4	8.0	**1.5095**	0.158	10.5	ug/L	348	Standard
	Mn	55	56293.1	2.1	**8.6168**	0.176	2.0	ug/L	770	Standard
	Co	59	327.7	21.3	**0.0132**	0.010	77.9	ug/L	216	Standard
	Ni	60	1320.4	3.6	**0.4627**	0.028	6.0	ug/L	440	Standard
	Cu	65	929.4	3.7	**0.4488**	0.017	3.9	ug/L	116	Standard
	Zn	66	6095.9	0.6	**5.3854**	0.016	0.3	ug/L	135	Standard
>	**Ge**	72	454657.1	0.3				ug/L	445277	Standard
	As	75	41.7	95.4	**0.0747**	0.036	47.6	ug/L	-57	Standard
	Se	82	217.9	4.7	**1.7842**	0.090	5.0	ug/L	10	Standard
	Se-1	77	204.3	7.5	**2.0880**	0.199	9.5	ug/L	57	Standard
>	**Ga**	71	106.7	30.1				mg/L	78	Standard
	Rb	85	8093.8	0.8				ug/L	22	Standard
	Y	89	391052.2	0.5				ug/L	388959	Standard
>	**Rh**	103	53.3	19.5				ug/L	8	Standard
	Mo	98	87.4	8.5	**0.0269**	0.003	11.4	ug/L	10	Standard
	Ag	107	134.0	58.9	**0.0071**	0.012	170.0	ug/L	66	Standard
	Cd	111	86.1	63.3	**0.0381**	0.026	68.7	mg/L	3	Standard
	Cd	114	196.7	49.0	**0.0350**	0.019	53.7	ug/L	4	Standard
>	**In**	115	537221.4	0.9				ug/L	523327	Standard
	Sn	118	805.0	3.5	**0.0657**	0.006	9.5	ug/L	488	Standard
	Sb	123	457.8	15.1	**0.0816**	0.016	19.2	ug/L	195	Standard
	Ba	135	35049.8	1.1	**17.6718**	0.125	0.7	ug/L	28	Standard
	Ce	140	430.0	2.0				ug/L	83	Standard
>	**Tb**	159	802995.3	0.9				ug/L	809211	Standard
	Ho	165	65.0	33.5				ug/L	13	Standard
	Tl	203	118.7	78.4	**0.0130**	0.012	89.6	ug/L	4	Standard
	Tl	205	51.7	56.7	**0.0051**	0.004	83.5	ug/L	8	Standard
	Pb	206	382.7	19.8	**0.0290**	0.015	51.0	ug/L	230	Standard
	Pb	207	300.3	11.7	**0.0239**	0.007	30.7	ug/L	184	Standard
	Pb	208	1258.7	9.1	**0.0225**	0.006	25.8	ug/L	775	Standard
	U	238	42.3	51.0	**0.0055**	0.003	56.7	ug/L	3	Standard
>	**Bi**	209	475218.0	0.8				ug/L	472452	Standard

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Na	23	1.7	173.2	**3.2074**	5.547	172.9	mg/L	0	Standard
Mg	24	1143.4	10.9	**1.4639**	0.179	12.2	mg/L	52	Standard
K	39	138.3	18.2	**0.5024**	0.119	23.6	mg/L	32	Standard
Ca	43	78.3	25.8	**5.9734**	2.605	43.6	mg/L	33	Standard
Fe	54	130.5	23.4	**-0.0054**	0.026	487.4	mg/L	138	Standard
Fe	57	295.0	10.6	**0.2222**	0.105	47.0	mg/L	263	Standard
> **Sc-1**	45	28520.2	1.3				mg/L	27861	Standard
Cl	35	136383.3	2.2				ug/L	100607	Standard
Kr	83	3.3	17.3				ug/L	2	Standard
Br	81	3343.7	6.9				ug/L	1777	Standard
P	31	22722.0	0.6				ug/L	18074	Standard
S	34	4774.1	5.0				ug/L	3901	Standard
Sr	88	186.7	3.1				ug/L	60	Standard
C	12	110.0	39.6				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	100.0				mg/L	7	Standard
Dy	164	113.3	28.4				mg/L	13	Standard
Ho-1	165	65.0	33.5				mg/L	13	Standard
Er	166	70.0	14.3				mg/L	3	Standard
I	127	17446.7	0.1				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.475	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.107	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.655
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.586
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606161501
Sample Date/Time: Thursday, July 07, 2016 12:57:15
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51721.6	4.8				ug/L	59299	Standard
	Be	9	70.0	21.4	**0.0983**	0.024	24.2	ug/L	17	Standard
	Al	27	29143615.2	1.1	**250.0949**	12.047	4.8	ug/L	1472	Standard
	Sc	45	23663.5	2.1				ug/L	27861	Standard
	Ti	47	233.3	2.4	**1.0889**	0.011	1.0	ug/L	28	Standard
	V	51	2589.0	10.6	**0.2963**	0.045	15.3	ug/L	1156	Standard
	Cr	52	9981.0	5.0	**0.8000**	0.066	8.3	ug/L	6689	Standard
	Cr	53	7056.6	7.7	**9.5713**	0.644	6.7	ug/L	348	Standard
	Mn	55	15496112.9	2.8	**3008.7016**	48.280	1.6	ug/L	770	Standard
	Co	59	11119.1	2.4	**2.0282**	0.021	1.1	ug/L	216	Standard
	Ni	60	43999.9	5.0	**29.6902**	1.081	3.6	ug/L	440	Standard
	Cu	65	4428.0	4.3	**2.9612**	0.096	3.2	ug/L	116	Standard
	Zn	66	14913.0	2.2	**16.8738**	0.235	1.4	ug/L	135	Standard
>	**Ge**	72	363711.9	1.4				ug/L	445277	Standard
	As	75	1340.8	9.9	**1.5430**	0.164	10.7	ug/L	-57	Standard
	Se	82	701.9	1.9	**7.6229**	0.039	0.5	ug/L	10	Standard
	Se-1	77	1898.1	10.4	**30.9927**	2.966	9.6	ug/L	57	Standard
>	**Ga**	71	253.3	3.0				mg/L	78	Standard
	Rb	85	9726.5	1.9				ug/L	22	Standard
	Y	89	336771.8	1.1				ug/L	388959	Standard
>	**Rh**	103	9696.4	1.7				ug/L	8	Standard
	Mo	98	66.8	19.0	**0.0269**	0.006	22.5	ug/L	10	Standard
	Ag	107	308.3	3.3	**0.0489**	0.003	5.4	ug/L	66	Standard
	Cd	111	576.5	2.5	**0.3625**	0.011	3.0	mg/L	3	Standard
	Cd	114	1385.2	9.3	**0.3557**	0.030	8.6	ug/L	4	Standard
>	**In**	115	410231.5	1.3				ug/L	523327	Standard
	Sn	118	305.0	4.3	**-0.0055**	0.004	69.5	ug/L	488	Standard
	Sb	123	628.6	38.9	**0.1592**	0.067	41.8	ug/L	195	Standard
	Ba	135	52738.3	1.9	**34.8360**	0.222	0.6	ug/L	28	Standard
	Ce	140	4889.1	4.7				ug/L	83	Standard
>	**Tb**	159	670575.7	1.7				ug/L	809211	Standard
	Ho	165	370.0	15.2				ug/L	13	Standard
	Tl	203	56.0	9.4	**0.0079**	0.001	12.0	ug/L	4	Standard
	Tl	205	40.0	33.1	**0.0057**	0.003	47.3	ug/L	8	Standard
	Pb	206	274.3	6.5	**0.0292**	0.005	17.0	ug/L	230	Standard
	Pb	207	248.0	3.5	**0.0341**	0.003	7.6	ug/L	184	Standard
	Pb	208	927.0	2.1	**0.0245**	0.001	5.9	ug/L	775	Standard
	U	238	6230.3	1.2	**1.2835**	0.014	1.1	ug/L	3	Standard
>	**Bi**	209	340294.7	0.2				ug/L	472452	Standard

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Na	23	63.3	24.1	**146.6855**	38.591	26.3	mg/L	0	Standard
Mg	24	183916.3	1.6	**296.3422**	4.283	1.4	mg/L	52	Standard
K	39	265.0	18.9	**1.3249**	0.270	20.4	mg/L	32	Standard
Ca	43	5907.8	2.8	**887.1936**	7.130	0.8	mg/L	33	Standard
Fe	54	1335.4	11.0	**1.1956**	0.140	11.7	mg/L	138	Standard
Fe	57	7071.7	2.5	**25.2566**	0.270	1.1	mg/L	263	Standard
Sc-1	45	23663.5	2.1				mg/L	27861	Standard
Cl	35	262418.5	1.1				ug/L	100607	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	177237.7	2.4				ug/L	1777	Standard
P	31	12638.6	2.1				ug/L	18074	Standard
S	34	5125.9	1.0				ug/L	3901	Standard
Sr	88	34497.6	3.4				ug/L	60	Standard
C	12	53.3	39.0				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	514.7	15.6				mg/L	13	Standard
Ho-1	165	370.0	15.2				mg/L	13	Standard
Er	166	390.0	21.9				mg/L	3	Standard
I	127	215052.9	16.6				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		87.221	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		81.682	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	78.389
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	72.027
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607005001
Sample Date/Time: Thursday, July 07, 2016 13:00:26
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 2
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55437.9	0.2				ug/L	59299	Standard
	Be	9	36.7	51.6	**0.0484**	0.024	50.2	ug/L	17	Standard
	Al	27	7646748.4	1.0	**61.1203**	0.556	0.9	ug/L	1472	Standard
	Sc	45	29687.4	2.1				ug/L	27861	Standard
	Ti	47	1519.1	1.7	**5.9915**	0.118	2.0	ug/L	28	Standard
	V	51	4998.3	5.3	**0.5356**	0.038	7.2	ug/L	1156	Standard
	Cr	52	14373.1	1.2	**1.0179**	0.023	2.2	ug/L	6689	Standard
	Cr	53	6594.8	2.8	**6.8685**	0.204	3.0	ug/L	348	Standard
	Mn	55	311487.8	3.0	**47.0278**	1.492	3.2	ug/L	770	Standard
	Co	59	2547.9	1.7	**0.3332**	0.007	2.0	ug/L	216	Standard
	Ni	60	4325.0	1.1	**2.0390**	0.019	1.0	ug/L	440	Standard
	Cu	65	30312.6	1.3	**16.0592**	0.205	1.3	ug/L	116	Standard
	Zn	66	84347.8	0.3	**75.0744**	0.170	0.2	ug/L	135	Standard
>	**Ge**	72	466553.6	0.3				ug/L	445277	Standard
	As	75	223.9	22.7	**0.2332**	0.044	19.1	ug/L	-57	Standard
	Se	82	75.9	22.5	**0.5096**	0.147	28.9	ug/L	10	Standard
	Se-1	77	347.0	7.5	**3.8728**	0.329	8.5	ug/L	57	Standard
>	**Ga**	71	525.0	14.1				mg/L	78	Standard
	Rb	85	35981.0	1.0				ug/L	22	Standard
	Y	89	398941.4	1.6				ug/L	388959	Standard
>	**Rh**	103	61.7	36.6				ug/L	8	Standard
	Mo	98	2992.7	2.9	**1.1599**	0.033	2.8	ug/L	10	Standard
	Ag	107	650.0	9.5	**0.0888**	0.010	10.8	ug/L	66	Standard
	Cd	111	290.7	9.6	**0.1398**	0.014	9.8	mg/L	3	Standard
	Cd	114	727.0	12.0	**0.1428**	0.018	12.3	ug/L	4	Standard
>	**In**	115	527756.3	0.2				ug/L	523327	Standard
	Sn	118	4087.2	2.8	**0.6548**	0.021	3.3	ug/L	488	Standard
	Sb	123	3900.6	2.4	**0.8343**	0.021	2.6	ug/L	195	Standard
	Ba	135	32662.5	0.8	**16.7625**	0.136	0.8	ug/L	28	Standard
	Ce	140	11257.5	2.8				ug/L	83	Standard
>	**Tb**	159	812390.3	1.0				ug/L	809211	Standard
	Ho	165	226.7	19.9				ug/L	13	Standard
	Tl	203	135.0	36.5	**0.0148**	0.006	41.4	ug/L	4	Standard
	Tl	205	116.7	30.1	**0.0144**	0.005	35.1	ug/L	8	Standard
	Pb	206	3106.0	0.8	**0.5659**	0.003	0.5	ug/L	230	Standard
	Pb	207	2650.9	1.1	**0.5346**	0.006	1.2	ug/L	184	Standard
	Pb	208	11448.4	1.5	**0.5639**	0.016	2.9	ug/L	775	Standard
	U	238	272.0	19.9	**0.0387**	0.008	20.4	ug/L	3	Standard
>	**Bi**	209	484009.3	1.3				ug/L	472452	Standard

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Na	23	3.3	86.6	**6.0988**	5.280	86.6	mg/L	0	Standard
Mg	24	25204.3	2.4	**32.3113**	0.699	2.2	mg/L	52	Standard
K	39	786.7	4.1	**3.3084**	0.160	4.8	mg/L	32	Standard
Ca	43	158.3	23.7	**15.2551**	4.823	31.6	mg/L	33	Standard
Fe	54	1362.4	4.9	**0.9520**	0.065	6.8	mg/L	138	Standard
Fe	57	746.7	10.9	**1.5040**	0.195	12.9	mg/L	263	Standard
> **Sc-1**	45	29687.4	2.1				mg/L	27861	Standard
Cl	35	138953.1	2.0				ug/L	100607	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	6154.6	17.4				ug/L	1777	Standard
P	31	18127.5	3.8				ug/L	18074	Standard
S	34	5045.8	5.7				ug/L	3901	Standard
Sr	88	205.0	8.4				ug/L	60	Standard
C	12	523.3	16.3				mg/L	110	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	43.3	26.6				mg/L	7	Standard
Dy	164	324.4	23.8				mg/L	13	Standard
Ho-1	165	226.7	19.9				mg/L	13	Standard
Er	166	186.7	35.7				mg/L	3	Standard
I	127	45265.9	3.0				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.489	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.778	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.846
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.446
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606164802 WG575246-01
Sample Date/Time: Thursday, July 07, 2016 13:03:38
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52427.3	3.5				ug/L	59299	Standard
	Be	9	20.0	66.1	**0.0283**	0.018	63.1	ug/L	17	Standard
	Al	27	212733.2	1.4	**1.7866**	0.046	2.6	ug/L	1472	Standard
	Sc	45	25817.0	0.6				ug/L	27861	Standard
	Ti	47	20.7	31.5	**-0.0231**	0.028	122.0	ug/L	28	Standard
	V	51	1314.5	6.9	**0.0286**	0.016	55.0	ug/L	1156	Standard
	Cr	52	5806.8	2.5	**-0.0917**	0.020	21.7	ug/L	6689	Standard
	Cr	53	800.0	6.8	**0.5655**	0.069	12.2	ug/L	348	Standard
	Mn	55	255857.3	1.0	**42.2966**	0.471	1.1	ug/L	770	Standard
	Co	59	817.7	7.4	**0.0941**	0.010	10.1	ug/L	216	Standard
	Ni	60	411.0	4.5	**-0.0176**	0.009	53.3	ug/L	440	Standard
	Cu	65	254.0	5.2	**0.0897**	0.006	7.2	ug/L	116	Standard
	Zn	66	1196.4	4.4	**0.9723**	0.042	4.3	ug/L	135	Standard
>	**Ge**	72	425976.6	1.2				ug/L	445277	Standard
	As	75	-17.9	122.3	**0.0201**	0.021	105.8	ug/L	-57	Standard
	Se	82	20.6	5.9	**0.0491**	0.010	21.2	ug/L	10	Standard
	Se-1	77	75.7	4.6	**0.4396**	0.037	8.4	ug/L	57	Standard
>	**Ga**	71	60.0	22.0				mg/L	78	Standard
	Rb	85	358.3	6.6				ug/L	22	Standard
	Y	89	360165.3	2.4				ug/L	388959	Standard
>	**Rh**	103	18.3	56.8				ug/L	8	Standard
	Mo	98	58.7	14.4	**0.0178**	0.003	19.2	ug/L	10	Standard
	Ag	107	91.0	19.3	**0.0017**	0.003	169.2	ug/L	66	Standard
	Cd	111	12.6	53.0	**0.0030**	0.003	115.4	mg/L	3	Standard
	Cd	114	24.5	79.7	**0.0014**	0.004	307.2	ug/L	4	Standard
>	**In**	115	493991.5	0.6				ug/L	523327	Standard
	Sn	118	203.3	22.3	**-0.0369**	0.009	23.4	ug/L	488	Standard
	Sb	123	1202.0	41.1	**0.2637**	0.116	44.1	ug/L	195	Standard
	Ba	135	5728.4	0.8	**3.1268**	0.010	0.3	ug/L	28	Standard
	Ce	140	45.0	11.1				ug/L	83	Standard
>	**Tb**	159	757555.8	1.9				ug/L	809211	Standard
	Ho	165	11.7	65.5				ug/L	13	Standard
	Tl	203	35.7	38.2	**0.0028**	0.002	64.8	ug/L	4	Standard
	Tl	205	33.3	8.7	**0.0027**	0.000	16.2	ug/L	8	Standard
	Pb	206	228.7	10.5	**0.0005**	0.005	970.7	ug/L	230	Standard
	Pb	207	195.3	4.9	**0.0029**	0.002	72.0	ug/L	184	Standard
	Pb	208	887.3	2.7	**0.0050**	0.001	24.6	ug/L	775	Standard
	U	238	32.7	40.7	**0.0044**	0.002	46.9	ug/L	3	Standard
>	**Bi**	209	451230.9	0.3				ug/L	472452	Standard

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Na	23	3.3	86.6	**7.0597**	6.110	86.5	mg/L	0	Standard
Mg	24	300.0	6.0	**0.3775**	0.029	7.7	mg/L	52	Standard
K	39	35.0	24.7	**0.0491**	0.043	88.2	mg/L	32	Standard
Ca	43	18.3	68.6	**-1.2994**	1.753	134.9	mg/L	33	Standard
Fe	54	202.8	8.7	**0.0703**	0.015	21.1	mg/L	138	Standard
Fe	57	381.7	9.2	**0.6064**	0.113	18.7	mg/L	263	Standard
> **Sc-1**	45	25817.0	0.6				mg/L	27861	Standard
Cl	35	121303.1	1.6				ug/L	100607	Standard
Kr	83	3.3	45.8				ug/L	2	Standard
Br	81	2520.2	12.4				ug/L	1777	Standard
P	31	6944.9	2.1				ug/L	18074	Standard
S	34	4784.1	1.6				ug/L	3901	Standard
Sr	88	65.0	7.7				ug/L	60	Standard
C	12	50.0	52.9				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	12.9	86.6				mg/L	13	Standard
Ho-1	165	11.7	65.5				mg/L	13	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	19606.0	4.1				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.412	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.665	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.394
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.508
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606164802S WG575246-05
Sample Date/Time: Thursday, July 07, 2016 13:06:49
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	50492.4	2.3				ug/L	59299	Standard
	Be	9	801.7	4.2	**1.1309**	0.027	2.4	ug/L	17	Standard
	Al	27	210928.2	1.4	**1.8390**	0.032	1.7	ug/L	1472	Standard
	Sc	45	25953.9	3.6				ug/L	27861	Standard
	Ti	47	25.3	25.1	**-0.0011**	0.029	2577.7	ug/L	28	Standard
	V	51	7289.3	1.4	**0.9742**	0.018	1.9	ug/L	1156	Standard
	Cr	52	12299.0	0.3	**0.9146**	0.010	1.1	ug/L	6689	Standard
	Cr	53	1445.1	3.9	**1.3645**	0.077	5.6	ug/L	348	Standard
	Mn	55	269893.0	0.6	**45.1426**	0.506	1.1	ug/L	770	Standard
	Co	59	6681.8	1.7	**1.0357**	0.010	0.9	ug/L	216	Standard
	Ni	60	2164.8	3.6	**1.0164**	0.038	3.7	ug/L	440	Standard
	Cu	65	1896.8	1.2	**1.0593**	0.020	1.8	ug/L	116	Standard
	Zn	66	2173.2	1.7	**1.9518**	0.027	1.4	ug/L	135	Standard
>	Ge	72	421093.3	0.8				ug/L	445277	Standard
	As	75	1080.3	4.4	**1.0846**	0.053	4.9	ug/L	-57	Standard
	Se	82	136.4	7.7	**1.1589**	0.110	9.5	ug/L	10	Standard
	Se-1	77	150.3	10.0	**1.5277**	0.213	13.9	ug/L	57	Standard
>	Ga	71	68.3	16.9				mg/L	78	Standard
	Rb	85	350.0	4.3				ug/L	22	Standard
	Y	89	356744.3	0.4				ug/L	388959	Standard
>	Rh	103	16.7	45.8				ug/L	8	Standard
	Mo	98	36.8	23.9	**0.0089**	0.004	41.9	ug/L	10	Standard
	Ag	107	5830.8	0.5	**0.9765**	0.006	0.6	ug/L	66	Standard
	Cd	111	1993.7	0.5	**1.0573**	0.007	0.6	mg/L	3	Standard
	Cd	114	4912.4	4.4	**1.0652**	0.046	4.4	ug/L	4	Standard
>	In	115	489472.5	0.2				ug/L	523327	Standard
	Sn	118	251.7	7.0	**-0.0272**	0.003	12.1	ug/L	488	Standard
	Sb	123	5237.4	6.2	**1.2153**	0.079	6.5	ug/L	195	Standard
	Ba	135	7753.7	0.9	**4.2777**	0.044	1.0	ug/L	28	Standard
	Ce	140	40.0	43.3				ug/L	83	Standard
>	Tb	159	740061.1	1.7				ug/L	809211	Standard
	Ho	165	10.0					ug/L	13	Standard
	Tl	203	7270.4	1.3	**0.9744**	0.015	1.5	ug/L	4	Standard
	Tl	205	6156.3	2.4	**0.9615**	0.025	2.6	ug/L	8	Standard
	Pb	206	4775.8	1.5	**0.9747**	0.016	1.7	ug/L	230	Standard
	Pb	207	4141.2	2.4	**0.9342**	0.017	1.9	ug/L	184	Standard
	Pb	208	17815.5	0.7	**0.9819**	0.006	0.6	ug/L	775	Standard
	U	238	5888.5	1.5	**0.9240**	0.019	2.0	ug/L	3	Standard
>	Bi	209	446738.8	1.1				ug/L	472452	Standard

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	Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
	Mg	24	270.0	6.7	**0.3309**	0.017	5.2	mg/L	52	Standard
	K	39	15.0	33.3	**-0.0514**	0.027	51.7	mg/L	32	Standard
	Ca	43	30.0	16.7	**0.3049**	0.832	272.9	mg/L	33	Standard
	Fe	54	208.2	16.8	**0.0743**	0.031	42.0	mg/L	138	Standard
	Fe	57	365.0	18.8	**0.5411**	0.195	36.0	mg/L	263	Standard
>	**Sc-1**	45	25953.9	3.6				mg/L	27861	Standard
	Cl	35	122973.7	1.1				ug/L	100607	Standard
	Kr	83	1.0	0.0				ug/L	2	Standard
	Br	81	2266.8	6.5				ug/L	1777	Standard
	P	31	6841.5	0.5				ug/L	18074	Standard
	S	34	4969.1	1.7				ug/L	3901	Standard
	Sr	88	96.7	32.8				ug/L	60	Standard
	C	12	50.0	52.9				mg/L	110	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	7	Standard
	Dy	164	3.0	200.7				mg/L	13	Standard
	Ho-1	165	10.0					mg/L	13	Standard
	Er	166	6.7	86.6				mg/L	3	Standard
	I	127	18856.7	4.9				mg/L	8539	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		85.149	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		94.569	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.531
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.558
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1606164802SD WG575246-06
Sample Date/Time: Thursday, July 07, 2016 13:10:01
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49699.7	1.4				ug/L	59299	Standard
	Be	9	740.0	8.3	**1.0607**	0.084	7.9	ug/L	17	Standard
	Al	27	208584.3	0.7	**1.8474**	0.017	0.9	ug/L	1472	Standard
	Sc	45	25591.6	1.6				ug/L	27861	Standard
	Ti	47	28.0	9.4	**0.0107**	0.012	115.8	ug/L	28	Standard
	V	51	7349.5	3.4	**0.9829**	0.031	3.2	ug/L	1156	Standard
	Cr	52	12253.6	0.9	**0.9067**	0.026	2.8	ug/L	6689	Standard
	Cr	53	1318.4	8.6	**1.2093**	0.149	12.3	ug/L	348	Standard
	Mn	55	269363.7	0.8	**45.0260**	0.101	0.2	ug/L	770	Standard
	Co	59	6793.5	0.7	**1.0531**	0.003	0.3	ug/L	216	Standard
	Ni	60	2136.8	1.3	**0.9994**	0.019	1.9	ug/L	440	Standard
	Cu	65	1836.4	1.3	**1.0230**	0.011	1.0	ug/L	116	Standard
	Zn	66	2121.8	2.1	**1.9001**	0.054	2.8	ug/L	135	Standard
>	**Ge**	72	421328.9	0.7				ug/L	445277	Standard
	As	75	1059.3	3.1	**1.0636**	0.037	3.5	ug/L	-57	Standard
	Se	82	125.4	8.2	**1.0524**	0.095	9.1	ug/L	10	Standard
	Se-1	77	136.0	0.7	**1.3203**	0.020	1.5	ug/L	57	Standard
>	**Ga**	71	70.0	18.9				mg/L	78	Standard
	Rb	85	333.3	10.5				ug/L	22	Standard
	Y	89	352355.1	0.5				ug/L	388959	Standard
>	**Rh**	103	36.7	61.5				ug/L	8	Standard
	Mo	98	39.6	8.8	**0.0099**	0.001	13.8	ug/L	10	Standard
	Ag	107	5823.8	2.4	**0.9694**	0.015	1.5	ug/L	66	Standard
	Cd	111	1999.1	2.0	**1.0537**	0.014	1.3	mg/L	3	Standard
	Cd	114	4804.2	3.1	**1.0353**	0.022	2.1	ug/L	4	Standard
>	**In**	115	492392.9	1.0				ug/L	523327	Standard
	Sn	118	183.3	18.2	**-0.0406**	0.006	15.2	ug/L	488	Standard
	Sb	123	5034.7	4.9	**1.1602**	0.047	4.1	ug/L	195	Standard
	Ba	135	7835.7	1.7	**4.2972**	0.041	1.0	ug/L	28	Standard
	Ce	140	26.7	39.0				ug/L	83	Standard
>	**Tb**	159	748388.4	0.9				ug/L	809211	Standard
	Ho	165	8.3	34.6				ug/L	13	Standard
	Tl	203	7271.7	1.0	**0.9678**	0.017	1.8	ug/L	4	Standard
	Tl	205	6323.0	3.0	**0.9806**	0.023	2.4	ug/L	8	Standard
	Pb	206	4710.7	1.4	**0.9538**	0.018	1.9	ug/L	230	Standard
	Pb	207	4077.9	2.6	**0.9128**	0.032	3.5	ug/L	184	Standard
	Pb	208	17441.6	0.8	**0.9534**	0.018	1.9	ug/L	775	Standard
	U	238	5898.1	0.8	**0.9190**	0.014	1.5	ug/L	3	Standard
>	**Bi**	209	449877.6	1.0				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	318.3	13.4	**0.4085**	0.061	14.9	mg/L	52	Standard
K	39	46.7	22.3	**0.1098**	0.053	48.4	mg/L	32	Standard
Ca	43	21.7	70.5	**-0.8303**	2.098	252.7	mg/L	33	Standard
Fe	54	230.6	10.1	**0.0971**	0.020	20.5	mg/L	138	Standard
Fe	57	315.0	8.2	**0.3918**	0.086	21.9	mg/L	263	Standard
> **Sc-1**	45	25591.6	1.6				mg/L	27861	Standard
Cl	35	124375.1	0.9				ug/L	100607	Standard
Kr	83	3.7	41.7				ug/L	2	Standard
Br	81	2096.8	5.9				ug/L	1777	Standard
P	31	7461.8	0.8				ug/L	18074	Standard
S	34	5195.9	0.9				ug/L	3901	Standard
Sr	88	88.3	11.8				ug/L	60	Standard
C	12	40.0	43.3				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	7	Standard
Dy	164	15.9	71.9				mg/L	13	Standard
Ho-1	165	8.3	34.6				mg/L	13	Standard
Er	166	16.7	34.6				mg/L	3	Standard
I	127	17712.0	3.8				mg/L	8539	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		83.812	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		94.622	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.089
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.222
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, July 07, 2016 13:13:13
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	52877.1	0.6				ug/L	59299	Standard
	Be	9	39478.1	3.5	**53.1250**	1.589	3.0	ug/L	17	Standard
	Al	27	6376332.7	0.9	**53.4338**	0.546	1.0	ug/L	1472	Standard
	Sc	45	28533.5	3.0				ug/L	27861	Standard
	Ti	47	23946.2	2.0	**98.1476**	0.848	0.9	ug/L	28	Standard
	V	51	332152.5	0.7	**48.1502**	0.303	0.6	ug/L	1156	Standard
	Cr	52	359640.9	1.2	**49.8795**	0.163	0.3	ug/L	6689	Standard
	Cr	53	44968.3	1.5	**50.2071**	0.225	0.4	ug/L	348	Standard
	Mn	55	325633.9	2.0	**50.2015**	0.417	0.8	ug/L	770	Standard
	Co	59	326166.8	0.8	**48.1564**	0.210	0.4	ug/L	216	Standard
	Ni	60	93555.0	1.0	**50.4444**	0.198	0.4	ug/L	440	Standard
	Cu	65	92506.6	1.2	**50.1629**	0.087	0.2	ug/L	116	Standard
	Zn	66	54675.8	1.4	**49.6216**	0.324	0.7	ug/L	135	Standard
>	Ge	72	456939.8	1.2				ug/L	445277	Standard
	As	75	55207.5	1.1	**49.3467**	0.094	0.2	ug/L	-57	Standard
	Se	82	5590.0	1.5	**49.0998**	0.219	0.4	ug/L	10	Standard
	Se-1	77	3820.5	3.0	**50.0642**	1.034	2.1	ug/L	57	Standard
>	Ga	71	78.3	22.4				mg/L	78	Standard
	Rb	85	863.4	7.3				ug/L	22	Standard
	Y	89	388768.1	1.0				ug/L	388959	Standard
>	Rh	103	45.0	58.8				ug/L	8	Standard
	Mo	98	244331.3	0.9	**94.6381**	0.230	0.2	ug/L	10	Standard
	Ag	107	309769.9	0.4	**48.4716**	0.331	0.7	ug/L	66	Standard
	Cd	111	99647.7	1.3	**48.8684**	0.622	1.3	mg/L	3	Standard
	Cd	114	244186.8	1.1	**48.9778**	0.161	0.3	ug/L	4	Standard
>	In	115	531058.6	1.0				ug/L	523327	Standard
	Sn	118	272439.5	1.4	**48.3090**	0.674	1.4	ug/L	488	Standard
	Sb	123	223112.9	1.2	**48.3530**	0.488	1.0	ug/L	195	Standard
	Ba	135	93937.0	1.1	**47.9440**	0.684	1.4	ug/L	28	Standard
	Ce	140	85.0	31.1				ug/L	83	Standard
>	Tb	159	797488.0	0.5				ug/L	809211	Standard
	Ho	165	11.7	65.5				ug/L	13	Standard
	Tl	203	385616.6	0.6	**49.1920**	0.651	1.3	ug/L	4	Standard
	Tl	205	331587.6	0.8	**49.3201**	0.708	1.4	ug/L	8	Standard
	Pb	206	240047.0	0.6	**48.7824**	0.650	1.3	ug/L	230	Standard
	Pb	207	217582.9	0.6	**48.7197**	0.527	1.1	ug/L	184	Standard
	Pb	208	927024.4	0.4	**50.7477**	0.493	1.0	ug/L	775	Standard
	U	238	328762.0	0.7	**49.0349**	0.496	1.0	ug/L	3	Standard
>	Bi	209	470290.4	0.7				ug/L	472452	Standard

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Na	23	3.3	86.6	**6.3819**	5.530	86.7	mg/L	0	Standard
Mg	24	3848.8	4.2	**5.0795**	0.220	4.3	mg/L	52	Standard
K	39	930.0	11.6	**4.0904**	0.377	9.2	mg/L	32	Standard
Ca	43	58.3	24.7	**3.4630**	1.831	52.9	mg/L	33	Standard
Fe	54	5901.8	2.2	**4.6813**	0.143	3.1	mg/L	138	Standard
Fe	57	1925.1	0.7	**5.1816**	0.146	2.8	mg/L	263	Standard
Sc-1	45	28533.5	3.0				mg/L	27861	Standard
Cl	35	130138.2	3.2				ug/L	100607	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	1906.8	6.3				ug/L	1777	Standard
P	31	22177.9	1.7				ug/L	18074	Standard
S	34	5617.7	0.6				ug/L	3901	Standard
Sr	88	85.0	5.9				ug/L	60	Standard
C	12	70.0	28.6				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	124.9				mg/L	7	Standard
Dy	164	6.3	86.6				mg/L	13	Standard
Ho-1	165	11.7	65.5				mg/L	13	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	14058.2	1.1				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	106.250		
Al	27	106.868		
Sc	45			
Ti	47	98.148		
V	51	96.300		
Cr	52	99.759		
Cr	53			
Mn	55	100.403		
Co	59	96.313		
Ni	60	100.889		
Cu	65	100.326		
Zn	66	99.243		
Ge	72		102.619	
As	75	98.693		
Se	82	98.200		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	94.638		
Ag	107	96.943		
Cd	111	97.737		
Cd	114			
In	115		101.477	
Sn	118	96.618		
Sb	123	96.706		
Ba	135	95.888		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.384		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.495		
U	238	98.070		
Bi	209		99.543	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, July 07, 2016 13:16:24
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51698.1	1.4				ug/L	59299	Standard
	Be	9	36.7	41.7	**0.0516**	0.020	39.6	ug/L	17	Standard
	Al	27	2365.2	17.1	**0.0074**	0.003	44.8	ug/L	1472	Standard
	Sc	45	28446.7	1.6				ug/L	27861	Standard
	Ti	47	24.7	28.8	**-0.0114**	0.031	273.8	ug/L	28	Standard
	V	51	1197.0	5.0	**-0.0005**	0.010	1887.6	ug/L	1156	Standard
	Cr	52	6479.7	0.8	**-0.0459**	0.026	55.5	ug/L	6689	Standard
	Cr	53	550.0	11.9	**0.2259**	0.082	36.2	ug/L	348	Standard
	Mn	55	1038.4	8.2	**0.0341**	0.010	30.3	ug/L	770	Standard
	Co	59	252.0	2.0	**0.0022**	0.001	51.5	ug/L	216	Standard
	Ni	60	342.0	1.8	**-0.0691**	0.002	3.2	ug/L	440	Standard
	Cu	65	162.3	10.9	**0.0308**	0.008	26.5	ug/L	116	Standard
	Zn	66	404.0	4.8	**0.1752**	0.015	8.5	ug/L	135	Standard
>	**Ge**	72	452008.3	2.0				ug/L	445277	Standard
	As	75	-41.9	42.1	**-0.0005**	0.016	3306.0	ug/L	-57	Standard
	Se	82	15.6	24.1	**-0.0067**	0.031	469.0	ug/L	10	Standard
	Se-1	77	66.3	7.0	**0.2520**	0.045	17.7	ug/L	57	Standard
>	**Ga**	71	46.7	24.7				mg/L	78	Standard
	Rb	85	33.3	31.2				ug/L	22	Standard
	Y	89	385173.0	1.0				ug/L	388959	Standard
>	**Rh**	103	30.0	28.9				ug/L	8	Standard
	Mo	98	189.3	11.3	**0.0676**	0.008	12.1	ug/L	10	Standard
	Ag	107	137.0	8.9	**0.0081**	0.002	23.1	ug/L	66	Standard
	Cd	111	12.6	13.7	**0.0027**	0.001	32.2	mg/L	3	Standard
	Cd	114	37.3	58.8	**0.0037**	0.004	122.0	ug/L	4	Standard
>	**In**	115	524772.6	0.3				ug/L	523327	Standard
	Sn	118	845.0	7.4	**0.0762**	0.011	15.0	ug/L	488	Standard
	Sb	123	725.4	31.1	**0.1426**	0.050	35.0	ug/L	195	Standard
	Ba	135	48.3	3.2	**0.0078**	0.001	11.1	ug/L	28	Standard
	Ce	140	23.3	44.6				ug/L	83	Standard
>	**Tb**	159	802757.1	0.3				ug/L	809211	Standard
	Ho	165	1.7	173.2				ug/L	13	Standard
	Tl	203	78.3	9.8	**0.0080**	0.001	12.5	ug/L	4	Standard
	Tl	205	60.0	22.0	**0.0064**	0.002	30.2	ug/L	8	Standard
	Pb	206	277.0	7.8	**0.0083**	0.004	53.3	ug/L	230	Standard
	Pb	207	222.3	13.3	**0.0071**	0.007	95.5	ug/L	184	Standard
	Pb	208	1035.3	6.5	**0.0110**	0.004	35.3	ug/L	775	Standard
	U	238	67.7	25.3	**0.0094**	0.003	27.3	ug/L	3	Standard
>	**Bi**	209	470998.4	0.4				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	53.3	5.4	**0.0059**	0.005	84.3	mg/L	52	Standard
K	39	25.0	60.0	**-0.0126**	0.069	549.6	mg/L	32	Standard
Ca	43	26.7	28.6	**-0.4858**	1.002	206.3	mg/L	33	Standard
Fe	54	137.2	20.0	**0.0001**	0.022	19769.0	mg/L	138	Standard
Fe	57	266.7	7.8	**0.1378**	0.072	52.1	mg/L	263	Standard
Sc-1	45	28446.7	1.6				mg/L	27861	Standard
Cl	35	126406.5	0.7				ug/L	100607	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1810.1	5.8				ug/L	1777	Standard
P	31	22009.3	1.9				ug/L	18074	Standard
S	34	5512.7	1.7				ug/L	3901	Standard
Sr	88	83.3	50.0				ug/L	60	Standard
C	12	60.0	16.7				mg/L	110	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	6.3	93.2				mg/L	13	Standard
Ho-1	165	1.7	173.2				mg/L	13	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	8799.2	8.2				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.512	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.276
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.692
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1607007808
Sample Date/Time: Thursday, July 07, 2016 13:19:37
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53141.4	3.0				ug/L	59299	Standard
	Be	9	20.0	25.0	**0.0280**	0.006	21.1	ug/L	17	Standard
	Al	27	11756447.4	1.3	**98.0714**	1.686	1.7	ug/L	1472	Standard
	Sc	45	29687.4	1.9				ug/L	27861	Standard
	Ti	47	113.3	15.9	**0.3538**	0.075	21.3	ug/L	28	Standard
	V	51	1794.8	7.4	**0.0860**	0.021	24.9	ug/L	1156	Standard
	Cr	52	10752.2	3.8	**0.5565**	0.072	12.9	ug/L	6689	Standard
	Cr	53	2066.8	8.5	**1.9395**	0.220	11.3	ug/L	348	Standard
	Mn	55	3626.1	1.9	**0.4355**	0.006	1.5	ug/L	770	Standard
	Co	59	429.7	3.0	**0.0283**	0.002	5.8	ug/L	216	Standard
	Ni	60	1342.1	2.4	**0.4749**	0.024	5.1	ug/L	440	Standard
	Cu	65	683.3	2.8	**0.3148**	0.013	4.2	ug/L	116	Standard
	Zn	66	4581.7	2.3	**4.0001**	0.056	1.4	ug/L	135	Standard
>	**Ge**	72	454473.0	0.9				ug/L	445277	Standard
	As	75	11.4	292.1	**0.0474**	0.030	62.6	ug/L	-57	Standard
	Se	82	67.9	2.1	**0.4564**	0.015	3.3	ug/L	10	Standard
	Se-1	77	143.3	5.3	**1.2756**	0.107	8.4	ug/L	57	Standard
>	**Ga**	71	73.3	10.4				mg/L	78	Standard
	Rb	85	15169.3	1.3				ug/L	22	Standard
	Y	89	391930.5	1.8				ug/L	388959	Standard
>	**Rh**	103	26.7	21.7				ug/L	8	Standard
	Mo	98	155.7	18.9	**0.0539**	0.011	20.9	ug/L	10	Standard
	Ag	107	113.0	9.3	**0.0041**	0.002	37.0	ug/L	66	Standard
	Cd	111	42.7	10.2	**0.0174**	0.002	11.8	mg/L	3	Standard
	Cd	114	85.8	41.5	**0.0134**	0.007	54.2	ug/L	4	Standard
>	**In**	115	529089.9	0.7				ug/L	523327	Standard
	Sn	118	841.7	8.8	**0.0744**	0.014	18.8	ug/L	488	Standard
	Sb	123	407.5	28.0	**0.0721**	0.025	35.1	ug/L	195	Standard
	Ba	135	40112.4	1.3	**20.5373**	0.145	0.7	ug/L	28	Standard
	Ce	140	141.7	11.3				ug/L	83	Standard
>	**Tb**	159	802566.0	0.6				ug/L	809211	Standard
	Ho	165	45.0	19.2				ug/L	13	Standard
	Tl	203	97.3	7.8	**0.0106**	0.001	8.7	ug/L	4	Standard
	Tl	205	105.0	17.2	**0.0133**	0.003	19.8	ug/L	8	Standard
	Pb	206	251.0	2.5	**0.0037**	0.001	33.9	ug/L	230	Standard
	Pb	207	215.7	2.6	**0.0062**	0.001	14.9	ug/L	184	Standard
	Pb	208	988.7	2.4	**0.0091**	0.001	12.0	ug/L	775	Standard
	U	238	731.0	3.3	**0.1096**	0.004	3.6	ug/L	3	Standard
>	**Bi**	209	465017.0	0.7				ug/L	472452	Standard

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Na	23	1.7	173.2	**3.0584**	5.289	172.9	mg/L	0	Standard
Mg	24	4030.5	2.6	**5.1128**	0.177	3.5	mg/L	52	Standard
K	39	216.7	10.7	**0.8182**	0.085	10.4	mg/L	32	Standard
Ca	43	141.7	14.3	**13.1906**	2.374	18.0	mg/L	33	Standard
Fe	54	154.1	14.8	**0.0085**	0.016	190.1	mg/L	138	Standard
Fe	57	383.3	12.4	**0.4462**	0.160	35.8	mg/L	263	Standard
> **Sc-1**	45	29687.4	1.9				mg/L	27861	Standard
Cl	35	138329.3	1.0				ug/L	100607	Standard
Kr	83	1.3	173.2				ug/L	2	Standard
Br	81	4457.3	5.5				ug/L	1777	Standard
P	31	24927.2	1.6				ug/L	18074	Standard
S	34	5139.2	3.6				ug/L	3901	Standard
Sr	88	141.7	16.3				ug/L	60	Standard
C	12	113.3	50.2				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	89.2				mg/L	7	Standard
Dy	164	54.8	23.4				mg/L	13	Standard
Ho-1	165	45.0	19.2				mg/L	13	Standard
Er	166	40.0	66.1				mg/L	3	Standard
I	127	12143.2	2.2				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.616	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.065	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.101	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.426	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1607007810
Sample Date/Time: Thursday, July 07, 2016 13:22:48
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53857.2	2.1				ug/L	59299	Standard
	Be	9	11.7	99.0	**0.0168**	0.015	92.0	ug/L	17	Standard
	Al	27	20483813.1	0.2	**168.6058**	3.652	2.2	ug/L	1472	Standard
	Sc	45	29072.9	1.2				ug/L	27861	Standard
	Ti	47	123.3	20.7	**0.3993**	0.109	27.4	ug/L	28	Standard
	V	51	1881.4	10.2	**0.1008**	0.029	29.2	ug/L	1156	Standard
	Cr	52	12061.5	0.9	**0.7559**	0.026	3.4	ug/L	6689	Standard
	Cr	53	9651.4	9.1	**10.6070**	1.006	9.5	ug/L	348	Standard
	Mn	55	27135.6	0.8	**4.1224**	0.021	0.5	ug/L	770	Standard
	Co	59	562.0	0.6	**0.0487**	0.000	0.9	ug/L	216	Standard
	Ni	60	2720.6	1.6	**1.2376**	0.020	1.6	ug/L	440	Standard
	Cu	65	1592.8	0.3	**0.8181**	0.008	1.0	ug/L	116	Standard
	Zn	66	3893.2	0.9	**3.3979**	0.016	0.5	ug/L	135	Standard
>	**Ge**	72	450910.7	0.6				ug/L	445277	Standard
	As	75	-26.5	322.4	**0.0130**	0.078	594.5	ug/L	-57	Standard
	Se	82	144.1	4.2	**1.1413**	0.047	4.1	ug/L	10	Standard
	Se-1	77	586.0	7.3	**7.2463**	0.609	8.4	ug/L	57	Standard
>	**Ga**	71	68.3	16.9				mg/L	78	Standard
	Rb	85	23097.6	0.8				ug/L	22	Standard
	Y	89	384851.5	0.6				ug/L	388959	Standard
>	**Rh**	103	53.3	30.1				ug/L	8	Standard
	Mo	98	483.5	2.9	**0.1859**	0.006	3.4	ug/L	10	Standard
	Ag	107	635.7	1.0	**0.0886**	0.002	1.8	ug/L	66	Standard
	Cd	111	25.8	41.5	**0.0094**	0.005	56.7	mg/L	3	Standard
	Cd	114	71.5	13.6	**0.0108**	0.002	19.0	ug/L	4	Standard
>	**In**	115	516906.4	0.6				ug/L	523327	Standard
	Sn	118	1123.4	8.3	**0.1292**	0.016	12.4	ug/L	488	Standard
	Sb	123	311.4	21.5	**0.0527**	0.015	28.7	ug/L	195	Standard
	Ba	135	61386.1	0.1	**32.1815**	0.207	0.6	ug/L	28	Standard
	Ce	140	155.0	36.4				ug/L	83	Standard
>	**Tb**	159	788016.2	0.4				ug/L	809211	Standard
	Ho	165	76.7	33.5				ug/L	13	Standard
	Tl	203	121.7	3.3	**0.0142**	0.001	3.5	ug/L	4	Standard
	Tl	205	98.3	28.9	**0.0128**	0.004	34.3	ug/L	8	Standard
	Pb	206	489.3	1.7	**0.0560**	0.001	2.0	ug/L	230	Standard
	Pb	207	470.7	0.5	**0.0675**	0.001	1.7	ug/L	184	Standard
	Pb	208	1853.7	1.9	**0.0604**	0.002	3.4	ug/L	775	Standard
	U	238	2684.2	0.9	**0.4174**	0.006	1.4	ug/L	3	Standard
>	**Bi**	209	450381.0	0.6				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	36397.0	2.2	**47.6740**	1.034	2.2	mg/L	52	Standard
K	39	331.7	12.3	**1.3533**	0.197	14.6	mg/L	32	Standard
Ca	43	211.7	27.3	**22.1162**	6.945	31.4	mg/L	33	Standard
Fe	54	163.6	10.4	**0.0188**	0.014	75.8	mg/L	138	Standard
Fe	57	505.0	6.2	**0.8306**	0.077	9.2	mg/L	263	Standard
> **Sc-1**	45	29072.9	1.2				mg/L	27861	Standard
Cl	35	151453.2	0.7				ug/L	100607	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	8178.9	2.5				ug/L	1777	Standard
P	31	24217.7	1.2				ug/L	18074	Standard
S	34	5414.3	3.0				ug/L	3901	Standard
Sr	88	155.0	3.2				ug/L	60	Standard
C	12	126.7	9.1				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	71.4	45.3				mg/L	13	Standard
Ho-1	165	76.7	33.5				mg/L	13	Standard
Er	166	110.0	18.2				mg/L	3	Standard
I	127	16774.3	2.2				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.823	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.265	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.773
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.328
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1607007812
Sample Date/Time: Thursday, July 07, 2016 13:26:00
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53945.9	1.8				ug/L	59299	Standard
	Be	9	15.0	33.3	**0.0211**	0.006	30.1	ug/L	17	Standard
	Al	27	16522009.4	0.8	**135.7454**	1.475	1.1	ug/L	1472	Standard
	Sc	45	29076.2	1.7				ug/L	27861	Standard
	Ti	47	104.7	9.7	**0.3196**	0.039	12.2	ug/L	28	Standard
	V	51	1917.9	3.7	**0.1052**	0.009	8.7	ug/L	1156	Standard
	Cr	52	15346.1	0.7	**1.2193**	0.035	2.9	ug/L	6689	Standard
	Cr	53	3310.4	6.3	**3.3625**	0.243	7.2	ug/L	348	Standard
	Mn	55	4564.4	5.4	**0.5846**	0.039	6.6	ug/L	770	Standard
	Co	59	519.3	6.2	**0.0420**	0.005	12.4	ug/L	216	Standard
	Ni	60	1768.4	1.1	**0.7115**	0.018	2.6	ug/L	440	Standard
	Cu	65	782.7	4.4	**0.3709**	0.016	4.3	ug/L	116	Standard
	Zn	66	2787.9	2.2	**2.3686**	0.040	1.7	ug/L	135	Standard
>	**Ge**	72	452423.3	0.9				ug/L	445277	Standard
	As	75	33.9	72.3	**0.0680**	0.022	32.6	ug/L	-57	Standard
	Se	82	58.4	11.7	**0.3743**	0.058	15.6	ug/L	10	Standard
	Se-1	77	170.7	1.2	**1.6507**	0.047	2.8	ug/L	57	Standard
>	**Ga**	71	51.7	55.0				mg/L	78	Standard
	Rb	85	10825.5	1.3				ug/L	22	Standard
	Y	89	391102.4	1.5				ug/L	388959	Standard
>	**Rh**	103	50.0	17.3				ug/L	8	Standard
	Mo	98	710.1	2.9	**0.2736**	0.007	2.6	ug/L	10	Standard
	Ag	107	92.0	15.2	**0.0011**	0.002	204.7	ug/L	66	Standard
	Cd	111	34.0	31.1	**0.0134**	0.005	38.8	mg/L	3	Standard
	Cd	114	73.9	23.9	**0.0112**	0.004	31.6	ug/L	4	Standard
>	**In**	115	521377.1	0.7				ug/L	523327	Standard
	Sn	118	663.3	4.4	**0.0443**	0.006	13.5	ug/L	488	Standard
	Sb	123	291.8	17.3	**0.0478**	0.011	23.7	ug/L	195	Standard
	Ba	135	38681.0	0.9	**20.0982**	0.228	1.1	ug/L	28	Standard
	Ce	140	565.0	0.0				ug/L	83	Standard
>	**Tb**	159	794907.5	0.4				ug/L	809211	Standard
	Ho	165	136.7	18.0				ug/L	13	Standard
	Tl	203	186.7	3.5	**0.0224**	0.001	4.3	ug/L	4	Standard
	Tl	205	180.0	24.7	**0.0249**	0.007	27.6	ug/L	8	Standard
	Pb	206	348.3	3.1	**0.0244**	0.002	8.7	ug/L	230	Standard
	Pb	207	294.0	8.1	**0.0245**	0.005	20.7	ug/L	184	Standard
	Pb	208	1298.7	6.0	**0.0269**	0.004	16.7	ug/L	775	Standard
	U	238	4132.9	2.3	**0.6286**	0.018	2.9	ug/L	3	Standard
>	**Bi**	209	460736.8	0.6				ug/L	472452	Standard

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Na	23	5.0	100.0	**9.2958**	9.276	99.8	mg/L	0	Standard
Mg	24	8334.0	5.3	**10.8686**	0.673	6.2	mg/L	52	Standard
K	39	240.0	6.3	**0.9427**	0.054	5.7	mg/L	32	Standard
Ca	43	193.3	12.2	**19.8917**	2.836	14.3	mg/L	33	Standard
Fe	54	151.8	10.6	**0.0095**	0.014	145.4	mg/L	138	Standard
Fe	57	405.0	8.6	**0.5337**	0.123	23.0	mg/L	263	Standard
> **Sc-1**	45	29076.2	1.7				mg/L	27861	Standard
Cl	35	151314.5	0.4				ug/L	100607	Standard
Kr	83	3.7	83.3				ug/L	2	Standard
Br	81	3673.8	11.5				ug/L	1777	Standard
P	31	23748.6	1.0				ug/L	18074	Standard
S	34	5419.3	1.2				ug/L	3901	Standard
Sr	88	146.7	7.9				ug/L	60	Standard
C	12	90.0	69.4				mg/L	110	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	156.6	4.0				mg/L	13	Standard
Ho-1	165	136.7	18.0				mg/L	13	Standard
Er	166	140.0	7.1				mg/L	3	Standard
I	127	17561.8	4.1				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.972	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.605	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.627
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.520
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1607007902
Sample Date/Time: Thursday, July 07, 2016 13:29:11
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53691.7	1.9				ug/L	59299	Standard
	Be	9	50.0	20.0	**0.0678**	0.014	21.3	ug/L	17	Standard
	Al	27	6590895.3	1.1	**54.3998**	0.588	1.1	ug/L	1472	Standard
	Sc	45	29346.7	1.3				ug/L	27861	Standard
	Ti	47	81.7	8.9	**0.2247**	0.033	14.5	ug/L	28	Standard
	V	51	1817.3	4.0	**0.0905**	0.011	12.6	ug/L	1156	Standard
	Cr	52	11198.1	1.8	**0.6270**	0.021	3.4	ug/L	6689	Standard
	Cr	53	3392.0	2.3	**3.4564**	0.114	3.3	ug/L	348	Standard
	Mn	55	38809.3	0.5	**5.9320**	0.040	0.7	ug/L	770	Standard
	Co	59	323.7	1.3	**0.0128**	0.001	6.1	ug/L	216	Standard
	Ni	60	1868.4	1.3	**0.7664**	0.006	0.8	ug/L	440	Standard
	Cu	65	2264.2	0.6	**1.1835**	0.007	0.6	ug/L	116	Standard
	Zn	66	11444.0	1.6	**10.3365**	0.110	1.1	ug/L	135	Standard
>	**Ge**	72	452327.1	0.7				ug/L	445277	Standard
	As	75	3.7	759.3	**0.0406**	0.025	62.2	ug/L	-57	Standard
	Se	82	90.0	4.8	**0.6561**	0.043	6.5	ug/L	10	Standard
	Se-1	77	214.7	8.2	**2.2421**	0.258	11.5	ug/L	57	Standard
>	**Ga**	71	51.7	11.2				mg/L	78	Standard
	Rb	85	19674.4	0.6				ug/L	22	Standard
	Y	89	402180.4	1.6				ug/L	388959	Standard
>	**Rh**	103	23.3	86.6				ug/L	8	Standard
	Mo	98	54.4	4.0	**0.0143**	0.001	6.8	ug/L	10	Standard
	Ag	107	81.3	9.2	**-0.0010**	0.001	130.1	ug/L	66	Standard
	Cd	111	147.2	4.4	**0.0678**	0.004	5.7	mg/L	3	Standard
	Cd	114	323.4	11.6	**0.0602**	0.007	11.4	ug/L	4	Standard
>	**In**	115	536865.7	1.0				ug/L	523327	Standard
	Sn	118	743.4	15.1	**0.0550**	0.021	38.2	ug/L	488	Standard
	Sb	123	248.8	19.8	**0.0368**	0.011	29.9	ug/L	195	Standard
	Ba	135	83464.6	0.7	**42.1345**	0.134	0.3	ug/L	28	Standard
	Ce	140	866.7	4.1				ug/L	83	Standard
>	**Tb**	159	800750.2	0.5				ug/L	809211	Standard
	Ho	165	380.0	9.9				ug/L	13	Standard
	Tl	203	142.7	7.8	**0.0163**	0.001	9.1	ug/L	4	Standard
	Tl	205	125.0	14.4	**0.0162**	0.003	16.2	ug/L	8	Standard
	Pb	206	289.7	10.7	**0.0112**	0.006	56.9	ug/L	230	Standard
	Pb	207	255.7	6.9	**0.0148**	0.004	25.5	ug/L	184	Standard
	Pb	208	1012.3	1.6	**0.0100**	0.001	10.4	ug/L	775	Standard
	U	238	59.7	10.2	**0.0082**	0.001	10.8	ug/L	3	Standard
>	**Bi**	209	468448.1	0.3				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	7361.8	4.9	**9.5008**	0.484	5.1	mg/L	52	Standard
K	39	233.3	11.8	**0.9032**	0.112	12.4	mg/L	32	Standard
Ca	43	68.3	51.9	**4.5030**	4.376	97.2	mg/L	33	Standard
Fe	54	154.1	35.8	**0.0102**	0.044	436.0	mg/L	138	Standard
Fe	57	336.7	7.3	**0.3199**	0.084	26.2	mg/L	263	Standard
> **Sc-1**	45	29346.7	1.3				mg/L	27861	Standard
Cl	35	146674.0	2.0				ug/L	100607	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	4617.4	4.4				ug/L	1777	Standard
P	31	23690.2	1.8				ug/L	18074	Standard
S	34	5309.3	3.3				ug/L	3901	Standard
Sr	88	130.0	3.8				ug/L	60	Standard
C	12	50.0	20.0				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	34.6				mg/L	7	Standard
Dy	164	343.1	10.7				mg/L	13	Standard
Ho-1	165	380.0	9.9				mg/L	13	Standard
Er	166	353.3	16.3				mg/L	3	Standard
I	127	19223.9	3.9				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.544	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.583	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.587	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.153	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1607007904
Sample Date/Time: Thursday, July 07, 2016 13:32:23
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	53879.0	1.5				ug/L	59299	Standard
	Be	9	41.7	38.6	**0.0562**	0.020	36.1	ug/L	17	Standard
	Al	27	9972341.7	0.8	**82.0258**	0.669	0.8	ug/L	1472	Standard
	Sc	45	29032.8	3.3				ug/L	27861	Standard
	Ti	47	97.0	7.2	**0.2851**	0.030	10.6	ug/L	28	Standard
	V	51	1899.2	7.0	**0.1003**	0.018	18.0	ug/L	1156	Standard
	Cr	52	10901.3	0.4	**0.5725**	0.004	0.8	ug/L	6689	Standard
	Cr	53	4949.1	5.3	**5.1832**	0.322	6.2	ug/L	348	Standard
	Mn	55	18797.0	1.5	**2.7840**	0.030	1.1	ug/L	770	Standard
	Co	59	690.0	6.6	**0.0667**	0.006	9.4	ug/L	216	Standard
	Ni	60	2107.5	3.1	**0.8884**	0.041	4.6	ug/L	440	Standard
	Cu	65	1394.1	2.9	**0.7004**	0.025	3.6	ug/L	116	Standard
	Zn	66	6557.4	0.7	**5.7918**	0.046	0.8	ug/L	135	Standard
>	Ge	72	455890.7	0.5				ug/L	445277	Standard
	As	75	37.3	63.7	**0.0707**	0.021	29.9	ug/L	-57	Standard
	Se	82	98.6	7.5	**0.7253**	0.067	9.2	ug/L	10	Standard
	Se-1	77	292.3	4.1	**3.2520**	0.171	5.3	ug/L	57	Standard
>	Ga	71	56.7	28.4				mg/L	78	Standard
	Rb	85	24242.7	1.0				ug/L	22	Standard
	Y	89	397125.1	2.0				ug/L	388959	Standard
>	Rh	103	25.0	69.3				ug/L	8	Standard
	Mo	98	120.8	5.8	**0.0408**	0.002	6.1	ug/L	10	Standard
	Ag	107	98.0	2.0	**0.0019**	0.000	21.2	ug/L	66	Standard
	Cd	111	120.7	13.2	**0.0564**	0.008	14.7	mg/L	3	Standard
	Cd	114	340.9	6.9	**0.0653**	0.005	7.4	ug/L	4	Standard
>	In	115	524717.6	0.6				ug/L	523327	Standard
	Sn	118	773.4	10.0	**0.0634**	0.015	23.1	ug/L	488	Standard
	Sb	123	293.1	14.0	**0.0477**	0.009	18.5	ug/L	195	Standard
	Ba	135	115007.2	0.3	**59.4090**	0.377	0.6	ug/L	28	Standard
	Ce	140	545.0	6.4				ug/L	83	Standard
>	Tb	159	799499.2	1.0				ug/L	809211	Standard
	Ho	165	470.0	14.9				ug/L	13	Standard
	Tl	203	474.7	7.4	**0.0598**	0.004	7.5	ug/L	4	Standard
	Tl	205	385.0	6.9	**0.0559**	0.004	6.7	ug/L	8	Standard
	Pb	206	365.3	6.3	**0.0279**	0.005	17.4	ug/L	230	Standard
	Pb	207	337.0	5.6	**0.0344**	0.004	12.9	ug/L	184	Standard
	Pb	208	1352.7	2.6	**0.0299**	0.002	6.2	ug/L	775	Standard
	U	238	51.3	25.0	**0.0071**	0.002	26.7	ug/L	3	Standard
>	Bi	209	460826.8	0.7				ug/L	472452	Standard

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Na	23	3.3	173.2	**6.2762**	10.862	173.1	mg/L	0	Standard
Mg	24	11596.1	1.0	**15.1770**	0.572	3.8	mg/L	52	Standard
K	39	321.7	15.1	**1.3136**	0.256	19.5	mg/L	32	Standard
Ca	43	100.0	48.2	**8.3587**	5.728	68.5	mg/L	33	Standard
Fe	54	177.2	16.4	**0.0303**	0.026	87.5	mg/L	138	Standard
Fe	57	350.0	10.3	**0.3700**	0.104	28.0	mg/L	263	Standard
Sc-1	45	29032.8	3.3				mg/L	27861	Standard
Cl	35	147936.7	0.6				ug/L	100607	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	6031.2	3.7				ug/L	1777	Standard
P	31	23247.8	2.1				ug/L	18074	Standard
S	34	5416.0	2.5				ug/L	3901	Standard
Sr	88	138.3	8.3				ug/L	60	Standard
C	12	60.0	66.7				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	75.5				mg/L	7	Standard
Dy	164	397.7	16.5				mg/L	13	Standard
Ho-1	165	470.0	14.9				mg/L	13	Standard
Er	166	466.7	10.1				mg/L	3	Standard
I	127	41037.4	7.8				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.860	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.384	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.266
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.539
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1607007906
Sample Date/Time: Thursday, July 07, 2016 13:35:34
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53501.0	2.1				ug/L	59299	Standard
	Be	9	41.7	6.9	**0.0567**	0.003	4.7	ug/L	17	Standard
	Al	27	6716370.5	0.8	**55.6375**	0.795	1.4	ug/L	1472	Standard
	Sc	45	29179.7	1.2				ug/L	27861	Standard
	Ti	47	99.3	6.4	**0.2901**	0.028	9.6	ug/L	28	Standard
	V	51	1777.4	2.6	**0.0796**	0.006	7.2	ug/L	1156	Standard
	Cr	52	11039.4	1.3	**0.5744**	0.028	4.9	ug/L	6689	Standard
	Cr	53	3383.7	4.8	**3.3726**	0.161	4.8	ug/L	348	Standard
	Mn	55	29967.3	1.9	**4.4626**	0.113	2.5	ug/L	770	Standard
	Co	59	389.3	7.6	**0.0215**	0.005	21.1	ug/L	216	Standard
	Ni	60	1654.4	3.1	**0.6321**	0.031	4.9	ug/L	440	Standard
	Cu	65	969.4	0.7	**0.4633**	0.006	1.3	ug/L	116	Standard
	Zn	66	7338.4	1.6	**6.4294**	0.112	1.7	ug/L	135	Standard
>	**Ge**	72	461107.8	0.5				ug/L	445277	Standard
	As	75	10.9	207.3	**0.0471**	0.020	42.6	ug/L	-57	Standard
	Se	82	133.0	6.1	**1.0158**	0.068	6.7	ug/L	10	Standard
	Se-1	77	235.3	10.3	**2.4584**	0.325	13.2	ug/L	57	Standard
>	**Ga**	71	61.7	24.8				mg/L	78	Standard
	Rb	85	25004.0	2.4				ug/L	22	Standard
	Y	89	439152.1	1.1				ug/L	388959	Standard
>	**Rh**	103	43.3	17.6				ug/L	8	Standard
	Mo	98	166.6	11.4	**0.0575**	0.008	13.2	ug/L	10	Standard
	Ag	107	127.7	22.8	**0.0063**	0.005	74.7	ug/L	66	Standard
	Cd	111	99.7	6.3	**0.0449**	0.003	6.4	mg/L	3	Standard
	Cd	114	241.1	6.3	**0.0441**	0.003	7.6	ug/L	4	Standard
>	**In**	115	535050.7	0.6				ug/L	523327	Standard
	Sn	118	828.4	0.3	**0.0703**	0.001	1.9	ug/L	488	Standard
	Sb	123	221.1	8.6	**0.0309**	0.004	12.4	ug/L	195	Standard
	Ba	135	95813.3	0.7	**48.5346**	0.324	0.7	ug/L	28	Standard
	Ce	140	588.3	10.6				ug/L	83	Standard
>	**Tb**	159	805642.7	1.6				ug/L	809211	Standard
	Ho	165	1726.8	3.9				ug/L	13	Standard
	Tl	203	126.0	21.8	**0.0140**	0.003	24.1	ug/L	4	Standard
	Tl	205	121.7	27.4	**0.0155**	0.005	30.9	ug/L	8	Standard
	Pb	206	353.3	4.4	**0.0236**	0.003	11.2	ug/L	230	Standard
	Pb	207	303.7	4.1	**0.0251**	0.002	9.2	ug/L	184	Standard
	Pb	208	1288.7	3.1	**0.0246**	0.002	6.9	ug/L	775	Standard
	U	238	36.0	50.7	**0.0046**	0.003	57.4	ug/L	3	Standard
>	**Bi**	209	472361.0	0.7				ug/L	472452	Standard

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Na	23	1.7	173.2	**3.1476**	5.443	172.9	mg/L	0	Standard
Mg	24	4485.7	5.3	**5.7943**	0.243	4.2	mg/L	52	Standard
K	39	345.0	8.1	**1.4048**	0.106	7.5	mg/L	32	Standard
Ca	43	60.0	8.3	**3.5036**	0.686	19.6	mg/L	33	Standard
Fe	54	147.6	8.6	**0.0056**	0.010	180.1	mg/L	138	Standard
Fe	57	321.7	8.6	**0.2801**	0.076	27.3	mg/L	263	Standard
Sc-1	45	29179.7	1.2				mg/L	27861	Standard
Cl	35	144985.8	1.1				ug/L	100607	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	4630.7	9.2				ug/L	1777	Standard
P	31	24147.6	1.1				ug/L	18074	Standard
S	34	5252.6	2.3				ug/L	3901	Standard
Sr	88	135.0	13.4				ug/L	60	Standard
C	12	110.0	15.7				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	49.5				mg/L	7	Standard
Dy	164	2156.4	5.2				mg/L	13	Standard
Ho-1	165	1726.8	3.9				mg/L	13	Standard
Er	166	1680.1	10.6				mg/L	3	Standard
I	127	18187.6	0.9				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.222	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.555	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.240
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.981
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1607007906
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Method 6020 - Summary Report

Sample ID: L1607007908
Sample Date/Time: Thursday, July 07, 2016 13:38:46
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55232.2	1.8				ug/L	59299	Standard
	Be	9	373.3	20.1	**0.4814**	0.088	18.2	ug/L	17	Standard
	Al	27	7093113.2	0.9	**56.9126**	0.605	1.1	ug/L	1472	Standard
	Sc	45	29114.6	1.8				ug/L	27861	Standard
	Ti	47	95.7	18.7	**0.2841**	0.071	25.1	ug/L	28	Standard
	V	51	1813.8	13.1	**0.0912**	0.034	37.7	ug/L	1156	Standard
	Cr	52	10745.5	0.4	**0.5699**	0.013	2.2	ug/L	6689	Standard
	Cr	53	7910.4	4.6	**8.6359**	0.381	4.4	ug/L	348	Standard
	Mn	55	19220.9	0.1	**2.8880**	0.027	0.9	ug/L	770	Standard
	Co	59	346.0	4.1	**0.0164**	0.002	10.2	ug/L	216	Standard
	Ni	60	5270.9	0.9	**2.6433**	0.032	1.2	ug/L	440	Standard
	Cu	65	1779.1	3.8	**0.9221**	0.031	3.4	ug/L	116	Standard
	Zn	66	23785.0	0.3	**21.8036**	0.151	0.7	ug/L	135	Standard
>	**Ge**	72	450139.5	1.0				ug/L	445277	Standard
	As	75	3.8	1986.1	**0.0405**	0.068	168.7	ug/L	-57	Standard
	Se	82	82.2	14.8	**0.5892**	0.102	17.4	ug/L	10	Standard
	Se-1	77	394.7	2.8	**4.6813**	0.198	4.2	ug/L	57	Standard
>	**Ga**	71	68.3	18.4				mg/L	78	Standard
	Rb	85	34257.0	1.4				ug/L	22	Standard
	Y	89	405460.7	1.3				ug/L	388959	Standard
>	**Rh**	103	26.7	28.6				ug/L	8	Standard
	Mo	98	50.8	26.3	**0.0135**	0.005	39.1	ug/L	10	Standard
	Ag	107	1015.4	3.7	**0.1485**	0.006	3.8	ug/L	66	Standard
	Cd	111	753.9	2.2	**0.3735**	0.010	2.6	mg/L	3	Standard
	Cd	114	1911.4	3.7	**0.3871**	0.014	3.7	ug/L	4	Standard
>	**In**	115	520750.8	0.4				ug/L	523327	Standard
	Sn	118	698.3	8.1	**0.0508**	0.010	20.2	ug/L	488	Standard
	Sb	123	223.5	12.0	**0.0328**	0.006	17.6	ug/L	195	Standard
	Ba	135	172843.3	0.6	**89.9719**	0.188	0.2	ug/L	28	Standard
	Ce	140	976.7	7.4				ug/L	83	Standard
>	**Tb**	159	792666.5	1.7				ug/L	809211	Standard
	Ho	165	745.0	6.0				ug/L	13	Standard
	Tl	203	112.7	8.9	**0.0127**	0.001	9.7	ug/L	4	Standard
	Tl	205	81.7	15.4	**0.0099**	0.002	18.6	ug/L	8	Standard
	Pb	206	443.7	3.5	**0.0441**	0.003	7.4	ug/L	230	Standard
	Pb	207	379.0	1.0	**0.0440**	0.000	0.9	ug/L	184	Standard
	Pb	208	1602.0	3.7	**0.0438**	0.003	6.8	ug/L	775	Standard
	U	238	13.7	11.2	**0.0014**	0.000	16.0	ug/L	3	Standard
>	**Bi**	209	461048.7	0.5				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	18379.5	0.9	**24.0125**	0.578	2.4	mg/L	52	Standard
K	39	375.0	1.3	**1.5427**	0.023	1.5	mg/L	32	Standard
Ca	43	56.7	36.7	**3.0834**	2.428	78.7	mg/L	33	Standard
Fe	54	148.9	3.5	**0.0070**	0.005	75.1	mg/L	138	Standard
Fe	57	336.7	13.3	**0.3271**	0.131	40.1	mg/L	263	Standard
> **Sc-1**	45	29114.6	1.8				mg/L	27861	Standard
Cl	35	140540.8	0.8				ug/L	100607	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	6177.9	4.1				ug/L	1777	Standard
P	31	24124.2	3.4				ug/L	18074	Standard
S	34	5284.3	5.6				ug/L	3901	Standard
Sr	88	131.7	25.3				ug/L	60	Standard
C	12	86.7	6.7				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	366.7	18.6				mg/L	7	Standard
Dy	164	790.9	8.6				mg/L	13	Standard
Ho-1	165	745.0	6.0				mg/L	13	Standard
Er	166	676.7	15.1				mg/L	3	Standard
I	127	11322.6	5.6				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.142	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.092	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.508
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.586
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607007910
Sample Date/Time: Thursday, July 07, 2016 13:41:57
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	53589.7	2.9				ug/L	59299	Standard
	Be	9	25.0	72.1	**0.0341**	0.023	68.0	ug/L	17	Standard
	Al	27	12962926.0	2.2	**107.2164**	1.388	1.3	ug/L	1472	Standard
	Sc	45	28582.0	4.1				ug/L	27861	Standard
	Ti	47	112.3	13.1	**0.3565**	0.076	21.2	ug/L	28	Standard
	V	51	1335.4	12.7	**0.0216**	0.031	142.0	ug/L	1156	Standard
	Cr	52	10105.4	2.4	**0.4821**	0.050	10.4	ug/L	6689	Standard
	Cr	53	9036.0	2.6	**9.9498**	0.264	2.7	ug/L	348	Standard
	Mn	55	7486983.4	0.6	**1177.9106**	27.011	2.3	ug/L	770	Standard
	Co	59	5361.9	0.9	**0.7709**	0.015	2.0	ug/L	216	Standard
	Ni	60	4380.3	2.9	**2.1590**	0.025	1.2	ug/L	440	Standard
	Cu	65	1309.4	1.7	**0.6653**	0.013	1.9	ug/L	116	Standard
	Zn	66	7187.7	2.1	**6.4710**	0.248	3.8	ug/L	135	Standard
>	Ge	72	449064.8	2.7				ug/L	445277	Standard
	As	75	144.8	11.3	**0.1691**	0.018	10.4	ug/L	-57	Standard
	Se	82	102.5	12.6	**0.7757**	0.140	18.1	ug/L	10	Standard
	Se-1	77	497.3	3.7	**6.0787**	0.124	2.0	ug/L	57	Standard
>	Ga	71	223.3	15.7				mg/L	78	Standard
	Rb	85	24933.8	3.5				ug/L	22	Standard
	Y	89	387612.8	4.2				ug/L	388959	Standard
>	Rh	103	46.7	22.3				ug/L	8	Standard
	Mo	98	242.3	8.9	**0.0903**	0.007	8.3	ug/L	10	Standard
	Ag	107	78.3	9.0	**-0.0009**	0.001	129.5	ug/L	66	Standard
	Cd	111	647.2	2.6	**0.3246**	0.014	4.2	mg/L	3	Standard
	Cd	114	1634.5	0.4	**0.3350**	0.007	2.0	ug/L	4	Standard
>	In	115	513818.6	1.5				ug/L	523327	Standard
	Sn	118	893.4	12.4	**0.0883**	0.020	23.1	ug/L	488	Standard
	Sb	123	305.3	15.8	**0.0519**	0.012	22.3	ug/L	195	Standard
	Ba	135	103894.3	0.8	**54.8139**	1.027	1.9	ug/L	28	Standard
	Ce	140	1890.1	4.4				ug/L	83	Standard
>	Tb	159	785377.8	0.6				ug/L	809211	Standard
	Ho	165	183.3	12.3				ug/L	13	Standard
	Tl	203	647.7	0.5	**0.0833**	0.002	1.9	ug/L	4	Standard
	Tl	205	603.3	6.7	**0.0901**	0.007	8.3	ug/L	8	Standard
	Pb	206	370.3	0.7	**0.0297**	0.001	2.3	ug/L	230	Standard
	Pb	207	312.3	1.8	**0.0295**	0.001	4.0	ug/L	184	Standard
	Pb	208	1409.7	2.0	**0.0340**	0.003	8.0	ug/L	775	Standard
	U	238	577.3	6.0	**0.0882**	0.007	7.4	ug/L	3	Standard
>	Bi	209	456068.6	1.3				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	24695.1	0.7	**32.9128**	1.182	3.6	mg/L	52	Standard
K	39	295.0	7.4	**1.2108**	0.076	6.3	mg/L	32	Standard
Ca	43	128.3	46.2	**12.3061**	7.664	62.3	mg/L	33	Standard
Fe	54	182.5	4.3	**0.0366**	0.012	32.2	mg/L	138	Standard
Fe	57	425.0	14.7	**0.6111**	0.148	24.2	mg/L	263	Standard
> **Sc-1**	45	28582.0	4.1				mg/L	27861	Standard
Cl	35	136551.4	2.1				ug/L	100607	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	6484.7	5.2				ug/L	1777	Standard
P	31	24060.8	2.4				ug/L	18074	Standard
S	34	5449.3	1.4				ug/L	3901	Standard
Sr	88	196.7	28.0				ug/L	60	Standard
C	12	113.3	28.4				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	99.0				mg/L	7	Standard
Dy	164	261.5	14.4				mg/L	13	Standard
Ho-1	165	183.3	12.3				mg/L	13	Standard
Er	166	176.7	22.9				mg/L	3	Standard
I	127	100073.2	4.7				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.372	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.851	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.183	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.532	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607018101
Sample Date/Time: Thursday, July 07, 2016 13:45:08
Number of Replicates: 3
Autosampler Position: 346
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56080.3	2.5				ug/L	59299	Standard
	Be	9	13.3	43.3	**0.0181**	0.007	37.6	ug/L	17	Standard
	Al	27	5615167.0	1.4	**44.3737**	0.644	1.5	ug/L	1472	Standard
	Sc	45	28266.3	2.1				ug/L	27861	Standard
	Ti	47	509.0	49.2	**2.0297**	1.043	51.4	ug/L	28	Standard
	V	51	679.1	394.1	**-0.0772**	0.401	518.8	ug/L	1156	Standard
	Cr	52	502648.3	0.8	**72.0566**	0.243	0.3	ug/L	6689	Standard
	Cr	53	65861.2	2.0	**75.7575**	0.983	1.3	ug/L	348	Standard
	Mn	55	228940.2	1.4	**36.2328**	0.375	1.0	ug/L	770	Standard
	Co	59	1620.8	2.8	**0.2105**	0.005	2.4	ug/L	216	Standard
	Ni	60	3487.1	1.1	**1.6853**	0.016	1.0	ug/L	440	Standard
	Cu	65	14101.9	0.7	**7.8083**	0.021	0.3	ug/L	116	Standard
	Zn	66	5215.9	1.9	**4.6862**	0.057	1.2	ug/L	135	Standard
>	**Ge**	72	444699.9	0.8				ug/L	445277	Standard
	As	75	551.2	7.9	**0.5433**	0.041	7.6	ug/L	-57	Standard
	Se	82	81.1	7.8	**0.5886**	0.063	10.8	ug/L	10	Standard
	Se-1	77	250.3	5.7	**2.7767**	0.192	6.9	ug/L	57	Standard
>	**Ga**	71	408.3	5.1				mg/L	78	Standard
	Rb	85	11307.6	2.5				ug/L	22	Standard
	Y	89	381990.8	1.2				ug/L	388959	Standard
>	**Rh**	103	36.7	28.4				ug/L	8	Standard
	Mo	98	2852.2	3.0	**1.1414**	0.043	3.8	ug/L	10	Standard
	Ag	107	89.3	12.0	**0.0009**	0.002	205.5	ug/L	66	Standard
	Cd	111	26.3	12.0	**0.0098**	0.001	15.2	mg/L	3	Standard
	Cd	114	4784.9	26.5	**0.9926**	0.263	26.5	ug/L	4	Standard
>	**In**	115	511208.3	1.6				ug/L	523327	Standard
	Sn	118	1582120.5	2.4	**291.7884**	3.205	1.1	ug/L	488	Standard
	Sb	123	3035.1	1.5	**0.6671**	0.020	3.1	ug/L	195	Standard
	Ba	135	16409.9	0.8	**8.6869**	0.107	1.2	ug/L	28	Standard
	Ce	140	2033.5	5.8				ug/L	83	Standard
>	**Tb**	159	786804.1	1.3				ug/L	809211	Standard
	Ho	165	66.7	45.8				ug/L	13	Standard
	Tl	203	61.0	17.3	**0.0061**	0.001	22.0	ug/L	4	Standard
	Tl	205	41.7	48.5	**0.0040**	0.003	78.0	ug/L	8	Standard
	Pb	206	2387.9	2.9	**0.4577**	0.012	2.6	ug/L	230	Standard
	Pb	207	1979.5	1.3	**0.4193**	0.010	2.4	ug/L	184	Standard
	Pb	208	8593.3	0.6	**0.4445**	0.003	0.7	ug/L	775	Standard
	U	238	817.0	5.6	**0.1262**	0.007	5.8	ug/L	3	Standard
>	**Bi**	209	451671.0	0.9				ug/L	472452	Standard

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Na	23	1.7	173.2	**3.1498**	5.447	172.9	mg/L	0	Standard
Mg	24	37229.0	0.4	**50.1687**	0.866	1.7	mg/L	52	Standard
K	39	195.0	17.9	**0.7679**	0.165	21.5	mg/L	32	Standard
Ca	43	180.0	10.0	**18.8913**	2.289	12.1	mg/L	33	Standard
Fe	54	935.8	9.8	**0.6549**	0.069	10.5	mg/L	138	Standard
Fe	57	701.7	6.7	**1.4797**	0.175	11.8	mg/L	263	Standard
> **Sc-1**	45	28266.3	2.1				mg/L	27861	Standard
Cl	35	187038.2	1.5				ug/L	100607	Standard
Kr	83	3.0	0.0				ug/L	2	Standard
Br	81	12168.2	0.2				ug/L	1777	Standard
P	31	23060.9	0.5				ug/L	18074	Standard
S	34	5002.5	2.7				ug/L	3901	Standard
Sr	88	206.7	7.4				ug/L	60	Standard
C	12	120.0	33.3				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	80.1	20.2				mg/L	13	Standard
Ho-1	165	66.7	45.8				mg/L	13	Standard
Er	166	66.7	37.7				mg/L	3	Standard
I	127	36462.4	9.2				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.572	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.870	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.684
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.602
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Sn 118 Upper, S, EEE	Sn	118	

Sample ID: L1607018101
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Method 6020 - Summary Report

Sample ID: L1607018201
Sample Date/Time: Thursday, July 07, 2016 13:48:20
Number of Replicates: 3
Autosampler Position: 347
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55386.1	0.7				ug/L	59299	Standard
	Be	9	25.0	52.9	**0.0335**	0.017	51.2	ug/L	17	Standard
	Al	27	4588931.5	0.9	**36.7105**	0.491	1.3	ug/L	1472	Standard
	Sc	45	28742.2	0.5				ug/L	27861	Standard
	Ti	47	649.0	45.5	**2.5742**	1.241	48.2	ug/L	28	Standard
	V	51	4779.4	1.2	**0.5239**	0.013	2.4	ug/L	1156	Standard
	Cr	52	11151.8	1.5	**0.6158**	0.015	2.5	ug/L	6689	Standard
	Cr	53	2298.5	5.2	**2.2061**	0.158	7.2	ug/L	348	Standard
	Mn	55	425540.1	0.5	**66.1330**	0.873	1.3	ug/L	770	Standard
	Co	59	1732.8	2.8	**0.2224**	0.009	4.0	ug/L	216	Standard
	Ni	60	2486.9	0.6	**1.1012**	0.020	1.8	ug/L	440	Standard
	Cu	65	2850.9	0.9	**1.5008**	0.002	0.1	ug/L	116	Standard
	Zn	66	5166.2	0.6	**4.5452**	0.068	1.5	ug/L	135	Standard
>	**Ge**	72	453623.8	0.9				ug/L	445277	Standard
	As	75	339.6	4.6	**0.3428**	0.014	4.2	ug/L	-57	Standard
	Se	82	62.2	9.0	**0.4070**	0.053	13.1	ug/L	10	Standard
	Se-1	77	130.7	8.2	**1.1094**	0.139	12.5	ug/L	57	Standard
>	**Ga**	71	211.7	13.6				mg/L	78	Standard
	Rb	85	11766.2	1.6				ug/L	22	Standard
	Y	89	385950.9	1.2				ug/L	388959	Standard
>	**Rh**	103	35.0	71.4				ug/L	8	Standard
	Mo	98	1440.7	2.3	**0.5604**	0.015	2.7	ug/L	10	Standard
	Ag	107	97.7	10.9	**0.0019**	0.002	94.0	ug/L	66	Standard
	Cd	111	57.7	8.6	**0.0251**	0.002	9.0	mg/L	3	Standard
	Cd	114	187.7	13.2	**0.0344**	0.005	15.6	ug/L	4	Standard
>	**In**	115	522704.7	0.9				ug/L	523327	Standard
	Sn	118	3132.0	13.2	**0.4897**	0.078	15.9	ug/L	488	Standard
	Sb	123	390.7	5.8	**0.0694**	0.006	8.1	ug/L	195	Standard
	Ba	135	36878.8	0.6	**19.1132**	0.261	1.4	ug/L	28	Standard
	Ce	140	4350.6	10.1				ug/L	83	Standard
>	**Tb**	159	791343.2	0.6				ug/L	809211	Standard
	Ho	165	136.7	11.8				ug/L	13	Standard
	Tl	203	110.3	27.7	**0.0122**	0.004	31.6	ug/L	4	Standard
	Tl	205	91.7	16.7	**0.0113**	0.002	20.8	ug/L	8	Standard
	Pb	206	2085.1	3.1	**0.3802**	0.013	3.3	ug/L	230	Standard
	Pb	207	1771.8	2.4	**0.3582**	0.009	2.4	ug/L	184	Standard
	Pb	208	7699.1	0.4	**0.3802**	0.003	0.7	ug/L	775	Standard
	U	238	324.3	3.5	**0.0481**	0.002	3.1	ug/L	3	Standard
>	**Bi**	209	465810.0	0.4				ug/L	472452	Standard

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Na	23	1.7	173.2	**3.1640**	5.472	172.9	mg/L	0	Standard
Mg	24	7190.0	2.5	**9.4728**	0.203	2.1	mg/L	52	Standard
K	39	168.3	4.5	**0.6323**	0.031	4.9	mg/L	32	Standard
Ca	43	106.7	31.2	**9.4011**	4.105	43.7	mg/L	33	Standard
Fe	54	522.5	6.9	**0.3094**	0.027	8.7	mg/L	138	Standard
Fe	57	478.3	5.8	**0.7680**	0.083	10.8	mg/L	263	Standard
> **Sc-1**	45	28742.2	0.5				mg/L	27861	Standard
Cl	35	156667.2	1.1				ug/L	100607	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	8439.0	5.9				ug/L	1777	Standard
P	31	21046.3	2.4				ug/L	18074	Standard
S	34	5112.5	1.3				ug/L	3901	Standard
Sr	88	200.0	10.9				ug/L	60	Standard
C	12	103.3	24.4				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	7	Standard
Dy	164	204.7	9.2				mg/L	13	Standard
Ho-1	165	136.7	11.8				mg/L	13	Standard
Er	166	110.0	24.1				mg/L	3	Standard
I	127	30280.4	8.4				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.401	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.874	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.881
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.594
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, July 07, 2016 13:51:33
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	52840.3	1.1				ug/L	59299	Standard
	Be	9	40006.1	1.4	**53.8836**	1.060	2.0	ug/L	17	Standard
	Al	27	6441786.6	0.6	**54.0230**	0.650	1.2	ug/L	1472	Standard
	Sc	45	28259.7	2.5				ug/L	27861	Standard
	Ti	47	23991.3	0.9	**99.3125**	0.774	0.8	ug/L	28	Standard
	V	51	331766.4	0.8	**48.5690**	0.296	0.6	ug/L	1156	Standard
	Cr	52	353193.6	0.5	**49.4616**	0.181	0.4	ug/L	6689	Standard
	Cr	53	43512.4	2.7	**49.0568**	1.473	3.0	ug/L	348	Standard
	Mn	55	324195.8	1.5	**50.4770**	0.618	1.2	ug/L	770	Standard
	Co	59	323960.9	1.5	**48.3015**	0.622	1.3	ug/L	216	Standard
	Ni	60	91553.1	1.3	**49.8507**	0.788	1.6	ug/L	440	Standard
	Cu	65	90230.9	0.6	**49.4123**	0.383	0.8	ug/L	116	Standard
	Zn	66	53777.6	0.5	**49.2883**	0.261	0.5	ug/L	135	Standard
>	Ge	72	452464.9	0.3				ug/L	445277	Standard
	As	75	53910.7	0.3	**48.6643**	0.174	0.4	ug/L	-57	Standard
	Se	82	5462.9	1.9	**48.4572**	0.911	1.9	ug/L	10	Standard
	Se-1	77	3733.1	1.6	**49.4002**	0.702	1.4	ug/L	57	Standard
>	Ga	71	51.7	24.4				mg/L	78	Standard
	Rb	85	851.7	8.8				ug/L	22	Standard
	Y	89	381944.3	0.7				ug/L	388959	Standard
>	Rh	103	25.0	20.0				ug/L	8	Standard
	Mo	98	246235.9	0.8	**95.7533**	0.762	0.8	ug/L	10	Standard
	Ag	107	305875.4	0.8	**48.0499**	0.406	0.8	ug/L	66	Standard
	Cd	111	98714.4	0.8	**48.6015**	0.419	0.9	mg/L	3	Standard
	Cd	114	242138.0	1.7	**48.7601**	0.847	1.7	ug/L	4	Standard
>	In	115	528960.6	0.1				ug/L	523327	Standard
	Sn	118	274166.4	3.0	**48.8076**	1.501	3.1	ug/L	488	Standard
	Sb	123	221088.8	0.9	**48.1033**	0.445	0.9	ug/L	195	Standard
	Ba	135	93307.8	0.1	**47.8088**	0.024	0.1	ug/L	28	Standard
	Ce	140	61.7	20.4				ug/L	83	Standard
>	Tb	159	799437.3	1.4				ug/L	809211	Standard
	Ho	165	5.0	173.2				ug/L	13	Standard
	Tl	203	388869.2	0.8	**49.8766**	0.252	0.5	ug/L	4	Standard
	Tl	205	329727.6	0.7	**49.3118**	0.565	1.1	ug/L	8	Standard
	Pb	206	242576.4	0.5	**49.5653**	0.076	0.2	ug/L	230	Standard
	Pb	207	220141.4	0.4	**49.5625**	0.091	0.2	ug/L	184	Standard
	Pb	208	931473.3	0.3	**51.2710**	0.299	0.6	ug/L	775	Standard
	U	238	332742.1	0.8	**49.9001**	0.329	0.7	ug/L	3	Standard
>	Bi	209	467716.0	0.4				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3802.1	4.9	**5.0692**	0.342	6.7	mg/L	52	Standard
K	39	938.4	14.8	**4.1782**	0.655	15.7	mg/L	32	Standard
Ca	43	58.3	19.8	**3.5212**	1.411	40.1	mg/L	33	Standard
Fe	54	6032.6	2.6	**4.8340**	0.141	2.9	mg/L	138	Standard
Fe	57	1840.1	4.6	**4.9732**	0.174	3.5	mg/L	263	Standard
Sc-1	45	28259.7	2.5				mg/L	27861	Standard
Cl	35	130634.3	2.3				ug/L	100607	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1820.1	11.4				ug/L	1777	Standard
P	31	23009.1	1.3				ug/L	18074	Standard
S	34	5666.1	5.0				ug/L	3901	Standard
Sr	88	106.7	11.8				ug/L	60	Standard
C	12	50.0	52.9				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	49.5				mg/L	7	Standard
Dy	164	25.9	19.7				mg/L	13	Standard
Ho-1	165	5.0	173.2				mg/L	13	Standard
Er	166	16.7	91.7				mg/L	3	Standard
I	127	11988.1	5.1				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	107.767		
Al	27	108.046		
Sc	45			
Ti	47	99.313		
V	51	97.138		
Cr	52	98.923		
Cr	53			
Mn	55	100.954		
Co	59	96.603		
Ni	60	99.701		
Cu	65	98.825		
Zn	66	98.577		
Ge	72		101.614	
As	75	97.329		
Se	82	96.914		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	95.753		
Ag	107	96.100		
Cd	111	97.203		
Cd	114			
> In	115		101.077	
Sn	118	97.615		
Sb	123	96.207		
Ba	135	95.618		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.753		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.542		
U	238	99.800		
> Bi	209		98.998	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, July 07, 2016 13:54:45
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51850.3	3.2				ug/L	59299	Standard
	Be	9	25.0	60.0	**0.0359**	0.022	60.0	ug/L	17	Standard
	Al	27	2583.6	17.8	**0.0092**	0.003	35.4	ug/L	1472	Standard
	Sc	45	28496.8	1.9				ug/L	27861	Standard
	Ti	47	27.3	18.4	**0.0000**	0.022	100455.6	ug/L	28	Standard
	V	51	1147.5	3.2	**-0.0071**	0.004	60.9	ug/L	1156	Standard
	Cr	52	6282.0	1.0	**-0.0705**	0.002	3.0	ug/L	6689	Standard
	Cr	53	546.7	5.5	**0.2241**	0.030	13.2	ug/L	348	Standard
	Mn	55	1033.4	3.0	**0.0342**	0.004	10.3	ug/L	770	Standard
	Co	59	236.0	20.2	**-0.0001**	0.007	6763.6	ug/L	216	Standard
	Ni	60	320.0	5.7	**-0.0804**	0.009	10.7	ug/L	440	Standard
	Cu	65	146.7	7.5	**0.0226**	0.006	26.0	ug/L	116	Standard
	Zn	66	413.3	10.8	**0.1856**	0.042	22.5	ug/L	135	Standard
>	**Ge**	72	449981.1	0.8				ug/L	445277	Standard
	As	75	-50.2	15.3	**-0.0082**	0.007	87.1	ug/L	-57	Standard
	Se	82	12.3	46.5	**-0.0360**	0.050	139.0	ug/L	10	Standard
	Se-1	77	54.0	16.1	**0.0899**	0.113	125.3	ug/L	57	Standard
>	**Ga**	71	51.7	40.3				mg/L	78	Standard
	Rb	85	26.7	47.2				ug/L	22	Standard
	Y	89	381280.3	1.7				ug/L	388959	Standard
>	**Rh**	103	8.3	69.3				ug/L	8	Standard
	Mo	98	206.1	23.5	**0.0737**	0.019	26.2	ug/L	10	Standard
	Ag	107	120.3	16.1	**0.0053**	0.003	59.0	ug/L	66	Standard
	Cd	111	16.6	39.2	**0.0046**	0.003	70.9	mg/L	3	Standard
	Cd	114	38.6	19.9	**0.0039**	0.002	41.1	ug/L	4	Standard
>	**In**	115	528631.5	0.6				ug/L	523327	Standard
	Sn	118	1045.0	18.6	**0.1107**	0.034	30.6	ug/L	488	Standard
	Sb	123	641.8	27.2	**0.1230**	0.037	30.4	ug/L	195	Standard
	Ba	135	46.3	28.2	**0.0066**	0.007	103.7	ug/L	28	Standard
	Ce	140	10.0	50.0				ug/L	83	Standard
>	**Tb**	159	791618.3	0.2				ug/L	809211	Standard
	Ho	165	10.0	100.0				ug/L	13	Standard
	Tl	203	72.3	5.6	**0.0072**	0.000	6.4	ug/L	4	Standard
	Tl	205	66.7	17.3	**0.0074**	0.002	22.7	ug/L	8	Standard
	Pb	206	272.0	11.2	**0.0071**	0.006	84.0	ug/L	230	Standard
	Pb	207	238.7	7.5	**0.0106**	0.004	36.3	ug/L	184	Standard
	Pb	208	992.7	3.4	**0.0085**	0.002	20.1	ug/L	775	Standard
	U	238	60.0	19.2	**0.0082**	0.002	21.0	ug/L	3	Standard
>	**Bi**	209	472266.4	0.6				ug/L	472452	Standard

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Na	23	3.3	173.2	**6.3296**	10.955	173.1	mg/L	0	Standard
Mg	24	55.0		**0.0079**	0.001	17.4	mg/L	52	Standard
K	39	25.0	34.6	**-0.0134**	0.038	282.0	mg/L	32	Standard
Ca	43	18.3	56.8	**-1.5489**	1.279	82.6	mg/L	33	Standard
Fe	54	156.1	3.6	**0.0154**	0.006	40.4	mg/L	138	Standard
Fe	57	236.7	1.2	**0.0445**	0.011	25.8	mg/L	263	Standard
Sc-1	45	28496.8	1.9				mg/L	27861	Standard
Cl	35	128828.1	1.4				ug/L	100607	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	1690.1	6.6				ug/L	1777	Standard
P	31	21426.8	1.4				ug/L	18074	Standard
S	34	5521.0	5.2				ug/L	3901	Standard
Sr	88	78.3	13.3				ug/L	60	Standard
C	12	60.0	33.3				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	12.2	48.8				mg/L	13	Standard
Ho-1	165	10.0	100.0				mg/L	13	Standard
Er	166	23.3	65.5				mg/L	3	Standard
I	127	7125.0	6.2				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.056	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.014
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.961
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW 67 WG575246-03
Sample Date/Time: Thursday, July 07, 2016 13:57:57
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51216.5	2.8				ug/L	59299	Standard
	Be	9	10.0	50.0	**0.0151**	0.007	43.4	ug/L	17	Standard
	Al	27	18324.4	4.7	**0.1458**	0.009	6.1	ug/L	1472	Standard
	Sc	45	27331.3	0.5				ug/L	27861	Standard
	Ti	47	31.0	22.3	**0.0154**	0.028	183.1	ug/L	28	Standard
	V	51	1193.1	5.1	**0.0001**	0.010	7460.2	ug/L	1156	Standard
	Cr	52	7792.7	0.3	**0.1494**	0.010	6.8	ug/L	6689	Standard
	Cr	53	690.0	7.1	**0.3899**	0.052	13.2	ug/L	348	Standard
	Mn	55	1770.4	4.9	**0.1506**	0.012	7.7	ug/L	770	Standard
	Co	59	227.0	4.7	**-0.0013**	0.001	103.9	ug/L	216	Standard
	Ni	60	406.0	4.9	**-0.0325**	0.010	29.7	ug/L	440	Standard
	Cu	65	200.0	7.0	**0.0524**	0.008	15.8	ug/L	116	Standard
	Zn	66	1003.4	3.9	**0.7340**	0.036	4.9	ug/L	135	Standard
>	**Ge**	72	448798.4	0.7				ug/L	445277	Standard
	As	75	-27.5	19.2	**0.0123**	0.005	39.1	ug/L	-57	Standard
	Se	82	17.9	19.2	**0.0155**	0.031	198.2	ug/L	10	Standard
	Se-1	77	53.0	17.3	**0.0784**	0.120	153.7	ug/L	57	Standard
>	**Ga**	71	50.0	30.0				mg/L	78	Standard
	Rb	85	185.0	9.7				ug/L	22	Standard
	Y	89	386993.5	0.9				ug/L	388959	Standard
>	**Rh**	103	11.7	99.0				ug/L	8	Standard
	Mo	98	77.7	13.9	**0.0239**	0.004	16.6	ug/L	10	Standard
	Ag	107	98.0	22.8	**0.0019**	0.003	177.3	ug/L	66	Standard
	Cd	111	10.5	69.9	**0.0016**	0.004	222.8	mg/L	3	Standard
	Cd	114	28.5	78.6	**0.0019**	0.005	241.9	ug/L	4	Standard
>	**In**	115	523650.4	0.9				ug/L	523327	Standard
	Sn	118	801.7	13.7	**0.0687**	0.019	28.1	ug/L	488	Standard
	Sb	123	309.8	34.9	**0.0514**	0.024	46.2	ug/L	195	Standard
	Ba	135	213.7	8.1	**0.0934**	0.008	8.7	ug/L	28	Standard
	Ce	140	175.0	20.0				ug/L	83	Standard
>	**Tb**	159	788364.3	0.9				ug/L	809211	Standard
	Ho	165	13.3	21.7				ug/L	13	Standard
	Tl	203	40.3	38.4	**0.0032**	0.002	61.8	ug/L	4	Standard
	Tl	205	28.3	66.8	**0.0017**	0.003	162.9	ug/L	8	Standard
	Pb	206	360.0	4.1	**0.0253**	0.003	12.8	ug/L	230	Standard
	Pb	207	298.3	7.1	**0.0241**	0.005	19.1	ug/L	184	Standard
	Pb	208	1273.0	4.4	**0.0240**	0.003	11.9	ug/L	775	Standard
	U	238	31.3	39.9	**0.0040**	0.002	46.6	ug/L	3	Standard
>	**Bi**	209	470456.6	0.3				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	60.0	50.0	**0.0182**	0.042	232.1	mg/L	52	Standard
K	39	26.7	65.8	**0.0001**	0.084	76827.7	mg/L	32	Standard
Ca	43	21.7	35.3	**-1.0085**	1.008	99.9	mg/L	33	Standard
Fe	54	154.1	12.8	**0.0191**	0.017	87.9	mg/L	138	Standard
Fe	57	268.3	7.1	**0.1759**	0.063	35.9	mg/L	263	Standard
Sc-1	45	27331.3	0.5				mg/L	27861	Standard
Cl	35	127294.6	1.3				ug/L	100607	Standard
Kr	83	3.7	41.7				ug/L	2	Standard
Br	81	1900.1	1.4				ug/L	1777	Standard
P	31	21310.0	5.6				ug/L	18074	Standard
S	34	5551.0	0.9				ug/L	3901	Standard
Sr	88	90.0	14.7				ug/L	60	Standard
C	12	96.7	26.0				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	2.9	217.0				mg/L	13	Standard
Ho-1	165	13.3	21.7				mg/L	13	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	4579.0	2.9				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		86.370	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.791	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.062	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.578	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, July 07, 2016 14:01:10
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	49870.3	1.8				ug/L	59299	Standard
	Be	9	38617.5	2.3	**55.1058**	0.871	1.6	ug/L	17	Standard
	Al	27	6309734.3	0.8	**56.0699**	0.550	1.0	ug/L	1472	Standard
	Sc	45	28560.2	0.9				ug/L	27861	Standard
	Ti	47	23536.3	0.9	**97.9955**	1.248	1.3	ug/L	28	Standard
	V	51	326689.2	1.2	**48.1036**	0.778	1.6	ug/L	1156	Standard
	Cr	52	348662.2	0.7	**49.1049**	0.578	1.2	ug/L	6689	Standard
	Cr	53	43736.4	0.4	**49.5968**	0.132	0.3	ug/L	348	Standard
	Mn	55	318079.8	1.3	**49.8118**	0.702	1.4	ug/L	770	Standard
	Co	59	320167.1	1.8	**48.0128**	0.811	1.7	ug/L	216	Standard
	Ni	60	90544.4	0.6	**49.5855**	0.441	0.9	ug/L	440	Standard
	Cu	65	90050.8	0.4	**49.5999**	0.334	0.7	ug/L	116	Standard
	Zn	66	53458.5	0.3	**49.2800**	0.219	0.4	ug/L	135	Standard
>	Ge	72	449858.4	0.5				ug/L	445277	Standard
	As	75	53487.2	1.2	**48.5614**	0.498	1.0	ug/L	-57	Standard
	Se	82	5413.0	1.5	**48.2953**	0.946	2.0	ug/L	10	Standard
	Se-1	77	3573.1	1.9	**47.5313**	0.699	1.5	ug/L	57	Standard
>	Ga	71	73.3	25.8				mg/L	78	Standard
	Rb	85	731.7	6.7				ug/L	22	Standard
	Y	89	383060.9	1.5				ug/L	388959	Standard
>	Rh	103	43.3	24.0				ug/L	8	Standard
	Mo	98	239371.8	1.3	**94.6204**	2.054	2.2	ug/L	10	Standard
	Ag	107	301426.5	0.3	**48.1297**	0.581	1.2	ug/L	66	Standard
	Cd	111	97197.2	0.1	**48.6409**	0.511	1.1	mg/L	3	Standard
	Cd	114	237235.4	0.3	**48.5582**	0.603	1.2	ug/L	4	Standard
>	In	115	520442.4	1.0				ug/L	523327	Standard
	Sn	118	270817.6	1.5	**48.9997**	0.472	1.0	ug/L	488	Standard
	Sb	123	219645.4	0.7	**48.5766**	0.793	1.6	ug/L	195	Standard
	Ba	135	92371.4	0.2	**48.1063**	0.410	0.9	ug/L	28	Standard
	Ce	140	80.0	34.8				ug/L	83	Standard
>	Tb	159	789908.3	0.8				ug/L	809211	Standard
	Ho	165	13.3	21.7				ug/L	13	Standard
	Tl	203	381373.5	0.6	**49.6197**	0.008	0.0	ug/L	4	Standard
	Tl	205	329649.8	1.7	**50.0068**	0.632	1.3	ug/L	8	Standard
	Pb	206	238267.9	0.8	**49.3874**	0.556	1.1	ug/L	230	Standard
	Pb	207	217653.5	0.6	**49.7097**	0.510	1.0	ug/L	184	Standard
	Pb	208	918006.3	0.3	**51.2570**	0.189	0.4	ug/L	775	Standard
	U	238	330815.3	0.7	**50.3261**	0.373	0.7	ug/L	3	Standard
>	Bi	209	461077.5	0.6				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3617.1	7.0	**4.7626**	0.313	6.6	mg/L	52	Standard
K	39	931.7	7.9	**4.1011**	0.336	8.2	mg/L	32	Standard
Ca	43	51.7	53.3	**2.6059**	3.425	131.4	mg/L	33	Standard
Fe	54	5844.4	1.6	**4.6285**	0.090	2.0	mg/L	138	Standard
Fe	57	1821.8	2.9	**4.8601**	0.198	4.1	mg/L	263	Standard
> **Sc-1**	45	28560.2	0.9				mg/L	27861	Standard
Cl	35	124633.9	1.1				ug/L	100607	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1916.8	11.3				ug/L	1777	Standard
P	31	22026.0	2.3				ug/L	18074	Standard
S	34	5486.0	2.3				ug/L	3901	Standard
Sr	88	101.7	18.6				ug/L	60	Standard
C	12	66.7	60.6				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	100.0				mg/L	7	Standard
Dy	164	9.0	110.6				mg/L	13	Standard
Ho-1	165	13.3	21.7				mg/L	13	Standard
Er	166	20.0	0.0				mg/L	3	Standard
I	127	10448.6	0.9				mg/L	8539	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	110.212		
	Al	27	112.140		
	Sc	45			
	Ti	47	97.995		
	V	51	96.207		
	Cr	52	98.210		
	Cr	53			
	Mn	55	99.624		
	Co	59	96.026		
	Ni	60	99.171		
	Cu	65	99.200		
	Zn	66	98.560		
>	Ge	72		101.029	
	As	75	97.123		
	Se	82	96.591		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	94.620		
Ag	107	96.259		
Cd	111	97.282		
Cd	114			
In	115		99.449	
Sn	118	97.999		
Sb	123	97.153		
Ba	135	96.213		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.239		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.514		
U	238	100.652		
Bi	209		97.593	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, July 07, 2016 14:04:21
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50642.9	2.5				ug/L	59299	Standard
	Be	9	30.0	16.7	**0.0436**	0.008	17.7	ug/L	17	Standard
	Al	27	3192.0	26.4	**0.0150**	0.007	45.2	ug/L	1472	Standard
	Sc	45	28271.4	1.6				ug/L	27861	Standard
	Ti	47	28.3	32.8	**0.0057**	0.040	700.3	ug/L	28	Standard
	V	51	1137.0	4.1	**-0.0066**	0.006	91.2	ug/L	1156	Standard
	Cr	52	6167.9	2.5	**-0.0761**	0.017	22.4	ug/L	6689	Standard
	Cr	53	496.7	5.0	**0.1741**	0.031	17.6	ug/L	348	Standard
	Mn	55	863.0	5.1	**0.0091**	0.006	71.1	ug/L	770	Standard
	Co	59	279.0	11.0	**0.0069**	0.005	65.5	ug/L	216	Standard
	Ni	60	307.0	3.7	**-0.0855**	0.006	6.6	ug/L	440	Standard
	Cu	65	147.0	13.7	**0.0238**	0.011	45.0	ug/L	116	Standard
	Zn	66	234.3	3.1	**0.0226**	0.006	26.3	ug/L	135	Standard
>	**Ge**	72	444525.1	0.6				ug/L	445277	Standard
	As	75	-37.1	29.8	**0.0033**	0.010	300.6	ug/L	-57	Standard
	Se	82	16.8	36.1	**0.0071**	0.056	787.3	ug/L	10	Standard
	Se-1	77	57.7	34.7	**0.1491**	0.273	183.2	ug/L	57	Standard
>	**Ga**	71	48.3	21.5				mg/L	78	Standard
	Rb	85	26.7	47.2				ug/L	22	Standard
	Y	89	378168.3	1.2				ug/L	388959	Standard
>	**Rh**	103	25.0	0.0				ug/L	8	Standard
	Mo	98	243.1	26.3	**0.0897**	0.026	28.8	ug/L	10	Standard
	Ag	107	162.0	17.0	**0.0123**	0.004	36.5	ug/L	66	Standard
	Cd	111	27.9	43.0	**0.0104**	0.006	58.6	mg/L	3	Standard
	Cd	114	73.6	52.1	**0.0112**	0.008	70.6	ug/L	4	Standard
>	**In**	115	519672.9	0.6				ug/L	523327	Standard
	Sn	118	985.0	22.7	**0.1030**	0.040	38.5	ug/L	488	Standard
	Sb	123	714.8	26.5	**0.1416**	0.041	29.1	ug/L	195	Standard
	Ba	135	61.3	47.9	**0.0148**	0.016	104.4	ug/L	28	Standard
	Ce	140	20.0	50.0				ug/L	83	Standard
>	**Tb**	159	774181.5	0.6				ug/L	809211	Standard
	Ho	165	6.7	114.6				ug/L	13	Standard
	Tl	203	103.7	32.5	**0.0114**	0.004	38.1	ug/L	4	Standard
	Tl	205	70.0	12.4	**0.0080**	0.001	16.4	ug/L	8	Standard
	Pb	206	276.0	12.2	**0.0086**	0.007	79.1	ug/L	230	Standard
	Pb	207	254.7	2.5	**0.0148**	0.001	9.2	ug/L	184	Standard
	Pb	208	1097.3	10.8	**0.0149**	0.006	43.6	ug/L	775	Standard
	U	238	86.0	35.8	**0.0122**	0.005	37.8	ug/L	3	Standard
>	**Bi**	209	466825.5	0.3				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	63.3	16.4	**0.0196**	0.013	65.2	mg/L	52	Standard
K	39	16.7	45.8	**-0.0504**	0.034	67.8	mg/L	32	Standard
Ca	43	23.3	24.7	**-0.8868**	0.781	88.0	mg/L	33	Standard
Fe	54	135.9	25.2	**0.0001**	0.030	35456.3	mg/L	138	Standard
Fe	57	256.7	15.1	**0.1111**	0.114	102.7	mg/L	263	Standard
Sc-1	45	28271.4	1.6				mg/L	27861	Standard
Cl	35	125629.4	0.9				ug/L	100607	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1606.8	5.9				ug/L	1777	Standard
P	31	21430.2	2.3				ug/L	18074	Standard
S	34	5606.0	6.0				ug/L	3901	Standard
Sr	88	76.7	42.4				ug/L	60	Standard
C	12	36.7	41.7				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	23.3	65.5				mg/L	13	Standard
Ho-1	165	6.7	114.6				mg/L	13	Standard
Er	166	0.0					mg/L	3	Standard
I	127	6263.0	2.8				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.831	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.302
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.809
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1607018402
Sample Date/Time: Thursday, July 07, 2016 14:07:38
Number of Replicates: 3
Autosampler Position: 348
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52735.1	4.8				ug/L	59299	Standard
	Be	9	23.3	24.7	**0.0329**	0.008	25.5	ug/L	17	Standard
	Al	27	23859895.8	1.0	**200.8618**	10.916	5.4	ug/L	1472	Standard
	Sc	45	28750.6	2.1				ug/L	27861	Standard
	Ti	47	691.7	2.8	**2.9322**	0.072	2.5	ug/L	28	Standard
	V	51	2328.7	13.7	**0.1871**	0.051	27.0	ug/L	1156	Standard
	Cr	52	18726.2	2.0	**1.8695**	0.068	3.6	ug/L	6689	Standard
	Cr	53	27376.4	2.9	**32.6696**	1.100	3.4	ug/L	348	Standard
	Mn	55	109676.5	0.7	**18.0664**	0.127	0.7	ug/L	770	Standard
	Co	59	6915.9	0.7	**1.0612**	0.003	0.3	ug/L	216	Standard
	Ni	60	6788.5	2.4	**3.6922**	0.111	3.0	ug/L	440	Standard
	Cu	65	1733.1	1.2	**0.9516**	0.011	1.2	ug/L	116	Standard
	Zn	66	12757.4	1.3	**12.2788**	0.161	1.3	ug/L	135	Standard
>	**Ge**	72	425754.7	0.4				ug/L	445277	Standard
	As	75	1594.7	9.5	**1.5664**	0.152	9.7	ug/L	-57	Standard
	Se	82	446.2	6.6	**4.0745**	0.294	7.2	ug/L	10	Standard
	Se-1	77	1336.4	4.9	**18.4022**	1.012	5.5	ug/L	57	Standard
>	**Ga**	71	100.0	26.5				mg/L	78	Standard
	Rb	85	7501.9	2.0				ug/L	22	Standard
	Y	89	366407.7	0.9				ug/L	388959	Standard
>	**Rh**	103	116.7	20.3				ug/L	8	Standard
	Mo	98	1120.5	2.5	**0.4659**	0.009	2.0	ug/L	10	Standard
	Ag	107	95.0	28.5	**0.0026**	0.005	182.1	ug/L	66	Standard
	Cd	111	75.6	13.6	**0.0368**	0.006	15.0	mg/L	3	Standard
	Cd	114	199.5	15.6	**0.0397**	0.007	16.9	ug/L	4	Standard
>	**In**	115	487785.0	1.0				ug/L	523327	Standard
	Sn	118	950.0	11.7	**0.1079**	0.020	18.8	ug/L	488	Standard
	Sb	123	878.5	14.4	**0.1905**	0.028	14.8	ug/L	195	Standard
	Ba	135	185277.0	0.8	**102.9675**	0.657	0.6	ug/L	28	Standard
	Ce	140	780.0	5.1				ug/L	83	Standard
>	**Tb**	159	767240.6	1.0				ug/L	809211	Standard
	Ho	165	36.7	20.8				ug/L	13	Standard
	Tl	203	149.7	10.2	**0.0191**	0.002	10.6	ug/L	4	Standard
	Tl	205	108.3	9.6	**0.0153**	0.002	11.6	ug/L	8	Standard
	Pb	206	368.3	4.5	**0.0348**	0.003	9.3	ug/L	230	Standard
	Pb	207	301.7	2.5	**0.0320**	0.002	7.2	ug/L	184	Standard
	Pb	208	1316.7	4.8	**0.0339**	0.004	10.4	ug/L	775	Standard
	U	238	48761.0	0.8	**8.0290**	0.081	1.0	ug/L	3	Standard
>	**Bi**	209	425957.0	0.6				ug/L	472452	Standard

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Na	23	3.3	173.2	**6.2589**	10.832	173.1	mg/L	0	Standard
Mg	24	137726.5	0.9	**182.6776**	5.535	3.0	mg/L	52	Standard
K	39	83.3	22.7	**0.2504**	0.094	37.7	mg/L	32	Standard
Ca	43	103.3	17.0	**8.9947**	2.196	24.4	mg/L	33	Standard
Fe	54	216.9	11.2	**0.0629**	0.016	25.4	mg/L	138	Standard
Fe	57	446.7	10.9	**0.6744**	0.176	26.1	mg/L	263	Standard
> **Sc-1**	45	28750.6	2.1				mg/L	27861	Standard
Cl	35	165631.8	1.1				ug/L	100607	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	96449.4	1.4				ug/L	1777	Standard
P	31	29243.2	3.3				ug/L	18074	Standard
S	34	4994.2	5.4				ug/L	3901	Standard
Sr	88	358.3	3.5				ug/L	60	Standard
C	12	173.3	14.5				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	69.3				mg/L	7	Standard
Dy	164	42.4	36.0				mg/L	13	Standard
Ho-1	165	36.7	20.8				mg/L	13	Standard
Er	166	20.0	0.0				mg/L	3	Standard
I	127	533108.7	5.6				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.931	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.616	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.208
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.159
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1607019101
Sample Date/Time: Thursday, July 07, 2016 14:10:50
Number of Replicates: 3
Autosampler Position: 349
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58465.9	1.2				ug/L	59299	Standard
	Be	9	26.7	60.3	**0.0337**	0.019	57.2	ug/L	17	Standard
	Al	27	34154612.2	0.1	**258.9244**	2.842	1.1	ug/L	1472	Standard
	Sc	45	28966.0	1.6				ug/L	27861	Standard
	Ti	47	351.0	6.8	**1.3957**	0.089	6.4	ug/L	28	Standard
	V	51	493980.1	0.4	**75.1819**	0.745	1.0	ug/L	1156	Standard
	Cr	52	36508.6	0.5	**4.4404**	0.067	1.5	ug/L	6689	Standard
	Cr	53	14869.0	1.6	**17.1464**	0.365	2.1	ug/L	348	Standard
	Mn	55	161404.1	0.2	**26.0316**	0.279	1.1	ug/L	770	Standard
	Co	59	78675.1	0.7	**12.1529**	0.127	1.0	ug/L	216	Standard
	Ni	60	487800.8	0.6	**276.9207**	0.948	0.3	ug/L	440	Standard
	Cu	65	28629.0	0.7	**16.2383**	0.073	0.5	ug/L	116	Standard
	Zn	66	84444.3	0.6	**80.4789**	0.272	0.3	ug/L	135	Standard
>	**Ge**	72	435804.7	0.9				ug/L	445277	Standard
	As	75	11358.6	3.2	**10.6732**	0.273	2.6	ug/L	-57	Standard
	Se	82	4553.7	3.2	**41.9152**	1.205	2.9	ug/L	10	Standard
	Se-1	77	845.4	2.5	**11.1267**	0.270	2.4	ug/L	57	Standard
>	**Ga**	71	375.0	10.9				mg/L	78	Standard
	Rb	85	67376.2	2.7				ug/L	22	Standard
	Y	89	370114.0	2.2				ug/L	388959	Standard
>	**Rh**	103	313.3	17.2				ug/L	8	Standard
	Mo	98	1916878.5	0.9	**797.0464**	6.559	0.8	ug/L	10	Standard
	Ag	107	124.0	4.8	**0.0072**	0.001	15.0	ug/L	66	Standard
	Cd	111	-949.7	1.4	**-0.5036**	0.006	1.2	mg/L	3	Standard
	Cd	114	4395.2	4.3	**0.9425**	0.042	4.5	ug/L	4	Standard
>	**In**	115	494724.7	0.4				ug/L	523327	Standard
	Sn	118	1136.7	5.2	**0.1410**	0.010	7.4	ug/L	488	Standard
	Sb	123	2445.7	11.6	**0.5525**	0.065	11.8	ug/L	195	Standard
	Ba	135	127677.7	0.5	**69.9541**	0.200	0.3	ug/L	28	Standard
	Ce	140	705.0	7.8				ug/L	83	Standard
>	**Tb**	159	771256.0	0.5				ug/L	809211	Standard
	Ho	165	30.0	44.1				ug/L	13	Standard
	Tl	203	249.3	5.5	**0.0328**	0.002	5.2	ug/L	4	Standard
	Tl	205	228.3	23.4	**0.0346**	0.008	24.4	ug/L	8	Standard
	Pb	206	1507.1	2.6	**0.2872**	0.007	2.6	ug/L	230	Standard
	Pb	207	1276.4	2.3	**0.2701**	0.006	2.1	ug/L	184	Standard
	Pb	208	5332.4	1.0	**0.2738**	0.002	0.7	ug/L	775	Standard
	U	238	1373.4	2.9	**0.2233**	0.007	2.9	ug/L	3	Standard
>	**Bi**	209	430092.7	0.6				ug/L	472452	Standard

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Na	23	5.0	0.0	**9.4335**	0.154	1.6	mg/L	0	Standard
Mg	24	93906.8	1.6	**123.5811**	3.053	2.5	mg/L	52	Standard
K	39	1161.7	9.3	**5.0769**	0.566	11.2	mg/L	32	Standard
Ca	43	611.7	12.6	**71.5631**	9.722	13.6	mg/L	33	Standard
Fe	54	212.1	4.8	**0.0582**	0.010	16.8	mg/L	138	Standard
Fe	57	910.0	2.0	**2.0502**	0.037	1.8	mg/L	263	Standard
> **Sc-1**	45	28966.0	1.6				mg/L	27861	Standard
Cl	35	321811.3	1.2				ug/L	100607	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	1027528.3	1.7				ug/L	1777	Standard
P	31	26004.0	1.6				ug/L	18074	Standard
S	34	5107.5	2.5				ug/L	3901	Standard
Sr	88	931.7	3.7				ug/L	60	Standard
C	12	116.7	50.2				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	243.3	6.3				mg/L	7	Standard
Dy	164	84.8	4.9				mg/L	13	Standard
Ho-1	165	30.0	44.1				mg/L	13	Standard
Er	166	40.0	90.1				mg/L	3	Standard
I	127	67287.5	2.4				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.595	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.873	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	94.535	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	91.034	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ni 60 Upper, S, EEE	Ni	60	
Mo 98 Upper, S, EEE	Mo	98	

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Cd 111 Lower	Cd	111

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Method 6020 - Summary Report

Sample ID: L1607019203
Sample Date/Time: Thursday, July 07, 2016 14:14:02
Number of Replicates: 3
Autosampler Position: 350
Sample Description: 1000
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56378.1	3.4				ug/L	59299	Standard
	Be	9	18.3	41.7	**0.0246**	0.010	40.3	ug/L	17	Standard
	Al	27	33494.4	17.2	**0.2497**	0.037	14.8	ug/L	1472	Standard
	Sc	45	28592.0	4.9				ug/L	27861	Standard
	Ti	47	29.0	17.2	**0.0051**	0.022	442.0	ug/L	28	Standard
	V	51	-201.1	184.3	**-0.2058**	0.054	26.1	ug/L	1156	Standard
	Cr	52	313678.8	1.3	**43.3205**	0.899	2.1	ug/L	6689	Standard
	Cr	53	39237.4	0.4	**43.6973**	0.582	1.3	ug/L	348	Standard
	Mn	55	1378.4	5.9	**0.0847**	0.009	10.6	ug/L	770	Standard
	Co	59	238.7	1.7	**-0.0003**	0.001	454.3	ug/L	216	Standard
	Ni	60	438.3	13.7	**-0.0196**	0.030	151.9	ug/L	440	Standard
	Cu	65	1367.7	2.4	**0.6831**	0.006	0.9	ug/L	116	Standard
	Zn	66	2110.5	1.7	**1.7236**	0.051	3.0	ug/L	135	Standard
>	**Ge**	72	457639.0	1.6				ug/L	445277	Standard
	As	75	77.8	75.3	**0.1061**	0.051	48.2	ug/L	-57	Standard
	Se	82	74.1	38.2	**0.5041**	0.238	47.1	ug/L	10	Standard
	Se-1	77	73.3	25.8	**0.3321**	0.235	70.6	ug/L	57	Standard
>	**Ga**	71	53.3	30.1				mg/L	78	Standard
	Rb	85	51.7	20.1				ug/L	22	Standard
	Y	89	388063.8	1.1				ug/L	388959	Standard
>	**Rh**	103	28.3	36.7				ug/L	8	Standard
	Mo	98	1516.6	29.8	**0.5802**	0.167	28.8	ug/L	10	Standard
	Ag	107	92.0	2.2	**0.0008**	0.000	24.2	ug/L	66	Standard
	Cd	111	4.1	41.1	**-0.0016**	0.001	55.1	mg/L	3	Standard
	Cd	114	21.2	45.1	**0.0003**	0.002	574.1	ug/L	4	Standard
>	**In**	115	530330.7	1.4				ug/L	523327	Standard
	Sn	118	888.4	3.4	**0.0823**	0.004	4.5	ug/L	488	Standard
	Sb	123	333.8	32.0	**0.0560**	0.024	42.9	ug/L	195	Standard
	Ba	135	127.0	26.0	**0.0476**	0.016	33.6	ug/L	28	Standard
	Ce	140	31.7	9.1				ug/L	83	Standard
>	**Tb**	159	804185.2	0.5				ug/L	809211	Standard
	Ho	165	1.7	173.2				ug/L	13	Standard
	Tl	203	58.7	37.2	**0.0055**	0.003	50.4	ug/L	4	Standard
	Tl	205	40.0	57.3	**0.0034**	0.003	98.5	ug/L	8	Standard
	Pb	206	291.0	10.7	**0.0111**	0.006	56.5	ug/L	230	Standard
	Pb	207	227.0	9.3	**0.0081**	0.005	58.6	ug/L	184	Standard
	Pb	208	963.7	4.5	**0.0070**	0.002	33.8	ug/L	775	Standard
	U	238	21.7	38.7	**0.0025**	0.001	49.3	ug/L	3	Standard
>	**Bi**	209	471419.8	0.1				ug/L	472452	Standard

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Na	23	1.7	173.2	**3.2382**	5.600	172.9	mg/L	0	Standard
Mg	24	203.3	2.8	**0.2061**	0.019	9.4	mg/L	52	Standard
K	39	30.0	33.3	**0.0100**	0.049	488.6	mg/L	32	Standard
Ca	43	21.7	13.3	**-1.1287**	0.413	36.6	mg/L	33	Standard
Fe	54	179.2	5.4	**0.0337**	0.006	17.2	mg/L	138	Standard
Fe	57	260.0	10.0	**0.1123**	0.061	53.9	mg/L	263	Standard
Sc-1	45	28592.0	4.9				mg/L	27861	Standard
Cl	35	147508.6	0.5				ug/L	100607	Standard
Kr	83	3.3	75.5				ug/L	2	Standard
Br	81	13556.6	37.4				ug/L	1777	Standard
P	31	20266.9	0.5				ug/L	18074	Standard
S	34	5054.2	5.6				ug/L	3901	Standard
Sr	88	76.7	39.3				ug/L	60	Standard
C	12	63.3	77.9				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	8.9	112.6				mg/L	13	Standard
Ho-1	165	1.7	173.2				mg/L	13	Standard
Er	166	23.3	24.7				mg/L	3	Standard
I	127	10787.2	6.9				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.074	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.776	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.338	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.782	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1607019701 WG575435-02
Sample Date/Time: Thursday, July 07, 2016 14:17:13
Number of Replicates: 3
Autosampler Position: 351
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	55173.6	2.3				ug/L	59299	Standard
	Be	9	20.0	25.0	**0.0270**	0.006	21.7	ug/L	17	Standard
	Al	27	5747178.0	1.6	**46.1656**	1.006	2.2	ug/L	1472	Standard
	Sc	45	28648.7	2.9				ug/L	27861	Standard
	Ti	47	306.3	13.7	**1.1603**	0.185	15.9	ug/L	28	Standard
	V	51	6931.1	2.5	**0.8449**	0.036	4.2	ug/L	1156	Standard
	Cr	52	11287.2	2.5	**0.6437**	0.025	4.0	ug/L	6689	Standard
	Cr	53	2703.6	3.5	**2.6818**	0.133	5.0	ug/L	348	Standard
	Mn	55	109172.6	0.3	**16.9630**	0.145	0.9	ug/L	770	Standard
	Co	59	754.4	1.3	**0.0774**	0.002	2.1	ug/L	216	Standard
	Ni	60	2063.1	0.9	**0.8760**	0.018	2.0	ug/L	440	Standard
	Cu	65	1690.8	3.0	**0.8716**	0.035	4.1	ug/L	116	Standard
	Zn	66	2123.1	3.5	**1.7625**	0.073	4.1	ug/L	135	Standard
>	Ge	72	451181.2	1.0				ug/L	445277	Standard
	As	75	2330.3	3.2	**2.1455**	0.077	3.6	ug/L	-57	Standard
	Se	82	82.3	21.6	**0.5890**	0.159	27.0	ug/L	10	Standard
	Se-1	77	157.0	6.5	**1.4735**	0.147	10.0	ug/L	57	Standard
>	Ga	71	351.7	15.3				mg/L	78	Standard
	Rb	85	10101.7	4.5				ug/L	22	Standard
	Y	89	382209.1	0.1				ug/L	388959	Standard
>	Rh	103	61.7	12.4				ug/L	8	Standard
	Mo	98	2859.6	2.1	**1.1218**	0.023	2.0	ug/L	10	Standard
	Ag	107	71.0	3.7	**-0.0023**	0.000	19.7	ug/L	66	Standard
	Cd	111	12.8	26.3	**0.0028**	0.002	59.6	mg/L	3	Standard
	Cd	114	35.7	61.2	**0.0034**	0.004	132.2	ug/L	4	Standard
>	In	115	521296.0	0.3				ug/L	523327	Standard
	Sn	118	718.4	7.0	**0.0543**	0.009	17.0	ug/L	488	Standard
	Sb	123	619.3	6.8	**0.1201**	0.010	8.1	ug/L	195	Standard
	Ba	135	40564.2	0.8	**21.0803**	0.186	0.9	ug/L	28	Standard
	Ce	140	1811.8	3.8				ug/L	83	Standard
>	Tb	159	789821.9	0.6				ug/L	809211	Standard
	Ho	165	71.7	21.3				ug/L	13	Standard
	Tl	203	371.3	3.1	**0.0462**	0.001	3.0	ug/L	4	Standard
	Tl	205	341.7	11.1	**0.0492**	0.006	12.2	ug/L	8	Standard
	Pb	206	508.3	1.8	**0.0571**	0.002	3.6	ug/L	230	Standard
	Pb	207	416.7	5.2	**0.0522**	0.005	10.0	ug/L	184	Standard
	Pb	208	1968.1	2.9	**0.0639**	0.003	4.7	ug/L	775	Standard
	U	238	753.4	1.0	**0.1135**	0.001	0.5	ug/L	3	Standard
>	Bi	209	462753.1	0.5				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	8609.1	0.8	**11.4016**	0.431	3.8	mg/L	52	Standard
K	39	226.7	15.6	**0.8981**	0.149	16.5	mg/L	32	Standard
Ca	43	110.0	24.1	**9.9319**	3.731	37.6	mg/L	33	Standard
Fe	54	195.6	24.3	**0.0463**	0.036	78.8	mg/L	138	Standard
Fe	57	351.7	3.6	**0.3902**	0.067	17.2	mg/L	263	Standard
> **Sc-1**	45	28648.7	2.9				mg/L	27861	Standard
Cl	35	160527.4	1.5				ug/L	100607	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	12898.8	8.6				ug/L	1777	Standard
P	31	21450.2	1.2				ug/L	18074	Standard
S	34	5167.5	2.9				ug/L	3901	Standard
Sr	88	173.3	18.8				ug/L	60	Standard
C	12	96.7	39.2				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	107.9				mg/L	7	Standard
Dy	164	66.6	30.8				mg/L	13	Standard
Ho-1	165	71.7	21.3				mg/L	13	Standard
Er	166	70.0	28.6				mg/L	3	Standard
I	127	29485.4	4.6				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.043	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.326	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.612
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.947
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607019701DP WG575435-08
Sample Date/Time: Thursday, July 07, 2016 14:20:24
Number of Replicates: 3
Autosampler Position: 352
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54711.9	0.9				ug/L	59299	Standard
	Be	9	20.0	90.1	**0.0272**	0.023	85.3	ug/L	17	Standard
	Al	27	5315336.4	0.6	**43.0491**	0.627	1.5	ug/L	1472	Standard
	Sc	45	28144.4	0.7				ug/L	27861	Standard
	Ti	47	285.7	18.4	**1.0745**	0.212	19.7	ug/L	28	Standard
	V	51	6484.0	2.5	**0.7804**	0.022	2.8	ug/L	1156	Standard
	Cr	52	11508.4	1.4	**0.6783**	0.013	1.9	ug/L	6689	Standard
	Cr	53	2545.2	4.5	**2.5057**	0.139	5.5	ug/L	348	Standard
	Mn	55	100387.5	0.6	**15.6141**	0.156	1.0	ug/L	770	Standard
	Co	59	715.7	3.7	**0.0718**	0.004	5.5	ug/L	216	Standard
	Ni	60	1909.5	3.6	**0.7932**	0.033	4.1	ug/L	440	Standard
	Cu	65	1537.7	4.6	**0.7886**	0.034	4.3	ug/L	116	Standard
	Zn	66	2162.8	2.4	**1.8025**	0.053	3.0	ug/L	135	Standard
>	**Ge**	72	450413.9	0.6				ug/L	445277	Standard
	As	75	2104.8	2.7	**1.9448**	0.062	3.2	ug/L	-57	Standard
	Se	82	78.8	6.2	**0.5584**	0.039	7.0	ug/L	10	Standard
	Se-1	77	146.3	4.9	**1.3327**	0.087	6.5	ug/L	57	Standard
>	**Ga**	71	311.7	12.1				mg/L	78	Standard
	Rb	85	9117.7	5.4				ug/L	22	Standard
	Y	89	382073.2	1.6				ug/L	388959	Standard
>	**Rh**	103	40.0	66.1				ug/L	8	Standard
	Mo	98	2459.8	1.1	**0.9627**	0.013	1.4	ug/L	10	Standard
	Ag	107	69.7	12.2	**-0.0025**	0.001	54.3	ug/L	66	Standard
	Cd	111	13.1	5.5	**0.0029**	0.000	12.2	mg/L	3	Standard
	Cd	114	31.9	48.9	**0.0026**	0.003	122.7	ug/L	4	Standard
>	**In**	115	522033.5	0.2				ug/L	523327	Standard
	Sn	118	738.4	14.1	**0.0577**	0.019	32.9	ug/L	488	Standard
	Sb	123	575.1	6.4	**0.1102**	0.008	7.5	ug/L	195	Standard
	Ba	135	37254.1	0.9	**19.3314**	0.207	1.1	ug/L	28	Standard
	Ce	140	1758.4	9.8				ug/L	83	Standard
>	**Tb**	159	784011.5	0.6				ug/L	809211	Standard
	Ho	165	90.0	5.6				ug/L	13	Standard
	Tl	203	334.3	0.9	**0.0415**	0.000	0.5	ug/L	4	Standard
	Tl	205	278.3	6.8	**0.0397**	0.003	7.2	ug/L	8	Standard
	Pb	206	521.0	1.4	**0.0601**	0.002	2.5	ug/L	230	Standard
	Pb	207	454.0	4.4	**0.0611**	0.005	8.2	ug/L	184	Standard
	Pb	208	1975.1	1.2	**0.0647**	0.001	2.2	ug/L	775	Standard
	U	238	693.0	5.4	**0.1047**	0.005	5.0	ug/L	3	Standard
>	**Bi**	209	461148.3	0.4				ug/L	472452	Standard

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Na	23	1.7	173.2	**3.2451**	5.612	172.9	mg/L	0	Standard
Mg	24	7805.3	1.5	**10.5091**	0.096	0.9	mg/L	52	Standard
K	39	220.0	26.2	**0.8867**	0.268	30.3	mg/L	32	Standard
Ca	43	118.3	17.6	**11.1614**	2.590	23.2	mg/L	33	Standard
Fe	54	200.5	5.3	**0.0535**	0.008	14.5	mg/L	138	Standard
Fe	57	343.3	8.4	**0.3823**	0.088	23.0	mg/L	263	Standard
> **Sc-1**	45	28144.4	0.7				mg/L	27861	Standard
Cl	35	155977.6	1.8				ug/L	100607	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	11057.4	8.3				ug/L	1777	Standard
P	31	21521.9	1.5				ug/L	18074	Standard
S	34	5057.5	4.5				ug/L	3901	Standard
Sr	88	173.3	14.5				ug/L	60	Standard
C	12	73.3	34.3				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	7	Standard
Dy	164	74.6	33.4				mg/L	13	Standard
Ho-1	165	90.0	5.6				mg/L	13	Standard
Er	166	43.3	13.3				mg/L	3	Standard
I	127	27842.3	4.5				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.264	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.154	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.753	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.608	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607019101
Sample Date/Time: Thursday, July 07, 2016 14:24:13
Number of Replicates: 3
Autosampler Position: 353
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	51825.2	2.6				ug/L	59299	Standard
	Be	9	13.3	43.3	**0.0195**	0.007	37.6	ug/L	17	Standard
	Al	27	6436753.8	1.1	**55.0619**	1.678	3.0	ug/L	1472	Standard
	Sc	45	26050.7	1.2				ug/L	27861	Standard
	Ti	47	75.3	15.1	**0.2228**	0.053	23.6	ug/L	28	Standard
	V	51	92205.7	0.6	**14.4325**	0.065	0.5	ug/L	1156	Standard
	Cr	52	11956.7	0.8	**0.8686**	0.009	1.1	ug/L	6689	Standard
	Cr	53	3683.8	1.4	**4.1142**	0.048	1.2	ug/L	348	Standard
	Mn	55	31331.4	2.6	**5.1455**	0.104	2.0	ug/L	770	Standard
	Co	59	15068.2	1.0	**2.3890**	0.019	0.8	ug/L	216	Standard
	Ni	60	94957.7	1.2	**55.7865**	0.869	1.6	ug/L	440	Standard
	Cu	65	5862.8	0.9	**3.4080**	0.027	0.8	ug/L	116	Standard
	Zn	66	18436.5	0.2	**18.0975**	0.113	0.6	ug/L	135	Standard
>	Ge	72	419592.4	0.6				ug/L	445277	Standard
	As	75	1979.3	7.7	**1.9622**	0.145	7.4	ug/L	-57	Standard
	Se	82	823.1	6.8	**7.7508**	0.520	6.7	ug/L	10	Standard
	Se-1	77	221.7	3.1	**2.5665**	0.091	3.6	ug/L	57	Standard
>	Ga	71	128.3	13.7				mg/L	78	Standard
	Rb	85	12543.5	0.4				ug/L	22	Standard
	Y	89	356229.9	1.8				ug/L	388959	Standard
>	Rh	103	55.0	32.8				ug/L	8	Standard
	Mo	98	351997.5	0.5	**150.0964**	0.288	0.2	ug/L	10	Standard
	Ag	107	123.0	68.3	**0.0076**	0.014	190.0	ug/L	66	Standard
	Cd	111	-169.5	17.8	**-0.0951**	0.016	17.2	mg/L	3	Standard
	Cd	114	824.1	4.3	**0.1781**	0.009	4.9	ug/L	4	Standard
>	In	115	482402.0	0.7				ug/L	523327	Standard
	Sn	118	343.3	22.4	**-0.0086**	0.015	170.1	ug/L	488	Standard
	Sb	123	672.5	20.6	**0.1437**	0.032	22.3	ug/L	195	Standard
	Ba	135	24156.9	0.9	**13.5596**	0.036	0.3	ug/L	28	Standard
	Ce	140	165.0	10.9				ug/L	83	Standard
>	Tb	159	739408.9	0.2				ug/L	809211	Standard
	Ho	165	8.3	69.3				ug/L	13	Standard
	Tl	203	181.7	41.7	**0.0229**	0.010	43.2	ug/L	4	Standard
	Tl	205	143.3	10.7	**0.0204**	0.002	10.2	ug/L	8	Standard
	Pb	206	522.3	18.2	**0.0662**	0.019	28.4	ug/L	230	Standard
	Pb	207	416.7	25.1	**0.0576**	0.023	40.6	ug/L	184	Standard
	Pb	208	1771.7	4.1	**0.0588**	0.003	4.6	ug/L	775	Standard
	U	238	275.0	12.4	**0.0434**	0.005	10.9	ug/L	3	Standard
>	Bi	209	436958.3	1.6				ug/L	472452	Standard

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Na	23	1.7	173.2	**3.5498**	6.140	173.0	mg/L	0	Standard
Mg	24	17348.3	2.0	**25.3277**	0.403	1.6	mg/L	52	Standard
K	39	278.3	9.2	**1.2584**	0.132	10.5	mg/L	32	Standard
Ca	43	145.0	15.8	**16.0229**	3.073	19.2	mg/L	33	Standard
Fe	54	65.8	16.0	**-0.0530**	0.010	18.0	mg/L	138	Standard
Fe	57	413.3	9.8	**0.7010**	0.138	19.7	mg/L	263	Standard
> **Sc-1**	45	26050.7	1.2				mg/L	27861	Standard
Cl	35	167383.5	0.9				ug/L	100607	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	192840.4	3.5				ug/L	1777	Standard
P	31	10722.1	3.3				ug/L	18074	Standard
S	34	4932.5	6.2				ug/L	3901	Standard
Sr	88	220.0	10.4				ug/L	60	Standard
C	12	76.7	32.8				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	53.3	10.8				mg/L	7	Standard
Dy	164	38.9	69.0				mg/L	13	Standard
Ho-1	165	8.3	69.3				mg/L	13	Standard
Er	166	23.3	99.0				mg/L	3	Standard
I	127	21480.2	0.4				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		87.396	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.232	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		92.180
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.487
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mo 98 Upper, S, EEE	Mo	98	

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Method 6020 - Summary Report

Sample ID: L1607018402
Sample Date/Time: Thursday, July 07, 2016 14:41:02
Number of Replicates: 3
Autosampler Position: 354
Sample Description: 20
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49338.6	3.0				ug/L	59299	Standard
	Be	9	8.3	124.9	**0.0135**	0.015	111.8	ug/L	17	Standard
	Al	27	1205970.2	1.3	**10.8280**	0.398	3.7	ug/L	1472	Standard
	Sc	45	25591.6	0.5				ug/L	27861	Standard
	Ti	47	57.0	1.8	**0.1443**	0.005	3.5	ug/L	28	Standard
	V	51	1434.0	11.8	**0.0537**	0.027	50.0	ug/L	1156	Standard
	Cr	52	6484.7	0.8	**0.0398**	0.009	21.4	ug/L	6689	Standard
	Cr	53	1926.8	6.5	**1.9935**	0.159	8.0	ug/L	348	Standard
	Mn	55	6185.9	1.3	**0.9276**	0.013	1.4	ug/L	770	Standard
	Co	59	507.0	2.9	**0.0472**	0.002	4.7	ug/L	216	Standard
	Ni	60	618.3	5.0	**0.1134**	0.018	15.5	ug/L	440	Standard
	Cu	65	214.0	3.1	**0.0700**	0.004	5.9	ug/L	116	Standard
	Zn	66	1336.7	2.5	**1.1478**	0.036	3.2	ug/L	135	Standard
>	**Ge**	72	413897.1	0.2				ug/L	445277	Standard
	As	75	37.1	68.5	**0.0740**	0.025	34.0	ug/L	-57	Standard
	Se	82	35.8	16.5	**0.2031**	0.058	28.7	ug/L	10	Standard
	Se-1	77	118.7	3.0	**1.1015**	0.054	4.9	ug/L	57	Standard
>	**Ga**	71	45.0	29.4				mg/L	78	Standard
	Rb	85	375.0	14.0				ug/L	22	Standard
	Y	89	347709.8	1.1				ug/L	388959	Standard
>	**Rh**	103	25.0	60.0				ug/L	8	Standard
	Mo	98	164.5	16.7	**0.0640**	0.012	18.0	ug/L	10	Standard
	Ag	107	60.0	6.7	**-0.0032**	0.001	22.7	ug/L	66	Standard
	Cd	111	7.4	7.9	**0.0004**	0.000	77.7	mg/L	3	Standard
	Cd	114	23.8	18.4	**0.0014**	0.001	70.2	ug/L	4	Standard
>	**In**	115	478876.5	0.3				ug/L	523327	Standard
	Sn	118	230.0	20.7	**-0.0304**	0.009	30.4	ug/L	488	Standard
	Sb	123	378.0	34.3	**0.0742**	0.031	41.7	ug/L	195	Standard
	Ba	135	9103.1	1.4	**5.1368**	0.084	1.6	ug/L	28	Standard
	Ce	140	58.3	13.1				ug/L	83	Standard
>	**Tb**	159	732373.1	1.4				ug/L	809211	Standard
	Ho	165	21.7	48.0				ug/L	13	Standard
	Tl	203	81.7	12.0	**0.0092**	0.001	14.6	ug/L	4	Standard
	Tl	205	80.0	49.6	**0.0103**	0.006	61.6	ug/L	8	Standard
	Pb	206	244.7	9.9	**0.0055**	0.005	96.0	ug/L	230	Standard
	Pb	207	208.3	10.7	**0.0075**	0.005	72.6	ug/L	184	Standard
	Pb	208	851.3	1.6	**0.0044**	0.001	17.8	ug/L	775	Standard
	U	238	2248.8	3.3	**0.3598**	0.011	3.2	ug/L	3	Standard
>	**Bi**	209	437611.3	0.1				ug/L	472452	Standard

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Na	23	3.3	86.6	**7.1086**	6.152	86.5	mg/L	0	Standard
Mg	24	6578.1	2.3	**9.7366**	0.271	2.8	mg/L	52	Standard
K	39	31.7	50.8	**0.0339**	0.082	241.4	mg/L	32	Standard
Ca	43	30.0	33.3	**0.3478**	1.412	405.9	mg/L	33	Standard
Fe	54	62.9	43.9	**-0.0547**	0.025	45.2	mg/L	138	Standard
Fe	57	306.7	11.8	**0.3634**	0.120	33.0	mg/L	263	Standard
Sc-1	45	25591.6	0.5				mg/L	27861	Standard
Cl	35	134825.9	0.2				ug/L	100607	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	6244.6	9.0				ug/L	1777	Standard
P	31	8322.3	2.4				ug/L	18074	Standard
S	34	5354.3	1.6				ug/L	3901	Standard
Sr	88	116.7	23.6				ug/L	60	Standard
C	12	43.3	58.1				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	6.3	86.6				mg/L	13	Standard
Ho-1	165	21.7	48.0				mg/L	13	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	37397.9	5.5				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		83.203	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		92.953	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.506
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.626
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, July 07, 2016 14:44:15
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	50251.6	2.2				ug/L	59299	Standard
	Be	9	37868.9	1.4	**53.6346**	0.551	1.0	ug/L	17	Standard
	Al	27	6219530.0	1.7	**54.8494**	0.778	1.4	ug/L	1472	Standard
	Sc	45	27528.3	1.5				ug/L	27861	Standard
	Ti	47	23521.9	0.4	**98.4873**	0.283	0.3	ug/L	28	Standard
	V	51	326521.1	0.3	**48.3498**	0.097	0.2	ug/L	1156	Standard
	Cr	52	350537.2	0.3	**49.6577**	0.222	0.4	ug/L	6689	Standard
	Cr	53	44135.9	0.7	**50.3398**	0.512	1.0	ug/L	348	Standard
	Mn	55	326160.0	0.9	**51.3710**	0.657	1.3	ug/L	770	Standard
	Co	59	321687.4	1.2	**48.5156**	0.695	1.4	ug/L	216	Standard
	Ni	60	90395.5	0.6	**49.7837**	0.187	0.4	ug/L	440	Standard
	Cu	65	89098.6	1.0	**49.3514**	0.336	0.7	ug/L	116	Standard
	Zn	66	53685.9	0.8	**49.7706**	0.267	0.5	ug/L	135	Standard
>	Ge	72	447327.0	0.4				ug/L	445277	Standard
	As	75	53513.2	1.0	**48.8608**	0.593	1.2	ug/L	-57	Standard
	Se	82	5430.1	0.8	**48.7213**	0.500	1.0	ug/L	10	Standard
	Se-1	77	3738.8	3.5	**50.0519**	1.732	3.5	ug/L	57	Standard
>	Ga	71	91.7	35.5				mg/L	78	Standard
	Rb	85	781.7	6.5				ug/L	22	Standard
	Y	89	381971.9	1.1				ug/L	388959	Standard
>	Rh	103	35.0	37.8				ug/L	8	Standard
	Mo	98	243568.2	0.8	**96.5150**	0.968	1.0	ug/L	10	Standard
	Ag	107	301294.0	1.0	**48.2273**	0.197	0.4	ug/L	66	Standard
	Cd	111	96969.7	1.3	**48.6457**	0.059	0.1	mg/L	3	Standard
	Cd	114	236666.7	0.9	**48.5618**	0.304	0.6	ug/L	4	Standard
>	In	115	519135.4	1.3				ug/L	523327	Standard
	Sn	118	267523.0	1.1	**48.5315**	0.886	1.8	ug/L	488	Standard
	Sb	123	217228.2	0.3	**48.1618**	0.481	1.0	ug/L	195	Standard
	Ba	135	91403.9	0.3	**47.7258**	0.732	1.5	ug/L	28	Standard
	Ce	140	90.0	40.1				ug/L	83	Standard
>	Tb	159	777035.5	0.6				ug/L	809211	Standard
	Ho	165	10.0	50.0				ug/L	13	Standard
	Tl	203	377606.1	0.3	**49.2989**	0.154	0.3	ug/L	4	Standard
	Tl	205	326686.2	0.9	**49.7306**	0.585	1.2	ug/L	8	Standard
	Pb	206	237489.2	0.8	**49.3946**	0.472	1.0	ug/L	230	Standard
	Pb	207	215374.3	0.6	**49.3570**	0.380	0.8	ug/L	184	Standard
	Pb	208	915490.5	0.5	**51.2928**	0.394	0.8	ug/L	775	Standard
	U	238	328000.3	0.1	**50.0697**	0.289	0.6	ug/L	3	Standard
>	Bi	209	459499.0	0.6				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3573.8	2.1	**4.8862**	0.168	3.4	mg/L	52	Standard
K	39	878.4	7.1	**4.0071**	0.259	6.5	mg/L	32	Standard
Ca	43	66.7	22.9	**4.7865**	1.866	39.0	mg/L	33	Standard
Fe	54	5827.6	0.7	**4.7923**	0.071	1.5	mg/L	138	Standard
Fe	57	1733.4	4.5	**4.7875**	0.203	4.2	mg/L	263	Standard
Sc-1	45	27528.3	1.5				mg/L	27861	Standard
Cl	35	132975.4	3.2				ug/L	100607	Standard
Kr	83	3.0	145.3				ug/L	2	Standard
Br	81	2240.2	3.9				ug/L	1777	Standard
P	31	23034.2	1.5				ug/L	18074	Standard
S	34	5709.4	1.4				ug/L	3901	Standard
Sr	88	86.7	38.4				ug/L	60	Standard
C	12	53.3	65.8				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	1.9	328.5				mg/L	13	Standard
Ho-1	165	10.0	50.0				mg/L	13	Standard
Er	166	30.0	57.7				mg/L	3	Standard
I	127	10188.4	4.0				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	107.269		
Al	27	109.699		
Sc	45			
Ti	47	98.487		
V	51	96.700		
Cr	52	99.315		
Cr	53			
Mn	55	102.742		
Co	59	97.031		
Ni	60	99.567		
Cu	65	98.703		
Zn	66	99.541		
Ge	72		100.460	
As	75	97.722		
Se	82	97.443		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	96.515		
Ag	107	96.455		
Cd	111	97.291		
Cd	114			
> In	115			99.199
Sn	118	97.063		
Sb	123	96.324		
Ba	135	95.452		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.598		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.586		
U	238	100.139		
> Bi	209			97.258
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, July 07, 2016 14:47:26
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49668.0	2.8				ug/L	59299	Standard
	Be	9	16.7	62.4	**0.0254**	0.015	59.3	ug/L	17	Standard
	Al	27	2268.5	11.7	**0.0074**	0.003	33.8	ug/L	1472	Standard
	Sc	45	27159.3	0.6				ug/L	27861	Standard
	Ti	47	28.0	12.9	**0.0050**	0.015	312.5	ug/L	28	Standard
	V	51	1120.2	8.2	**-0.0079**	0.014	172.4	ug/L	1156	Standard
	Cr	52	6253.0	2.2	**-0.0573**	0.021	36.0	ug/L	6689	Standard
	Cr	53	498.3	7.6	**0.1800**	0.045	24.8	ug/L	348	Standard
	Mn	55	827.7	1.3	**0.0044**	0.002	41.7	ug/L	770	Standard
	Co	59	261.0	9.1	**0.0044**	0.004	82.5	ug/L	216	Standard
	Ni	60	297.7	2.2	**-0.0895**	0.004	4.3	ug/L	440	Standard
	Cu	65	157.7	11.2	**0.0304**	0.010	32.9	ug/L	116	Standard
	Zn	66	800.4	4.6	**0.5580**	0.035	6.2	ug/L	135	Standard
>	**Ge**	72	441460.6	0.1				ug/L	445277	Standard
	As	75	-31.1	48.0	**0.0085**	0.014	162.1	ug/L	-57	Standard
	Se	82	17.5	14.4	**0.0137**	0.023	165.5	ug/L	10	Standard
	Se-1	77	61.7	12.4	**0.2097**	0.105	49.8	ug/L	57	Standard
>	**Ga**	71	51.7	11.2				mg/L	78	Standard
	Rb	85	28.3	10.2				ug/L	22	Standard
	Y	89	379037.7	0.7				ug/L	388959	Standard
>	**Rh**	103	21.7	13.3				ug/L	8	Standard
	Mo	98	258.7	8.1	**0.0965**	0.010	10.3	ug/L	10	Standard
	Ag	107	134.7	15.9	**0.0081**	0.004	44.5	ug/L	66	Standard
	Cd	111	17.1	52.7	**0.0051**	0.005	90.8	mg/L	3	Standard
	Cd	114	65.9	59.1	**0.0098**	0.008	84.7	ug/L	4	Standard
>	**In**	115	516785.4	1.6				ug/L	523327	Standard
	Sn	118	896.7	24.5	**0.0878**	0.039	44.1	ug/L	488	Standard
	Sb	123	681.2	29.6	**0.1349**	0.044	32.5	ug/L	195	Standard
	Ba	135	44.3	36.2	**0.0061**	0.009	140.2	ug/L	28	Standard
	Ce	140	15.0	66.7				ug/L	83	Standard
>	**Tb**	159	773377.6	1.9				ug/L	809211	Standard
	Ho	165	11.7	24.7				ug/L	13	Standard
	Tl	203	84.3	15.7	**0.0090**	0.002	18.6	ug/L	4	Standard
	Tl	205	78.3	31.5	**0.0094**	0.004	39.3	ug/L	8	Standard
	Pb	206	270.3	11.9	**0.0083**	0.006	77.8	ug/L	230	Standard
	Pb	207	227.7	9.7	**0.0095**	0.005	52.0	ug/L	184	Standard
	Pb	208	1045.7	7.9	**0.0129**	0.004	33.8	ug/L	775	Standard
	U	238	69.0	10.1	**0.0098**	0.001	10.7	ug/L	3	Standard
>	**Bi**	209	459688.6	0.6				ug/L	472452	Standard

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Na	23	1.7	173.2	**3.3774**	5.841	172.9	mg/L	0	Standard
Mg	24	56.7	13.5	**0.0139**	0.010	75.4	mg/L	52	Standard
K	39	36.7	47.9	**0.0481**	0.083	172.3	mg/L	32	Standard
Ca	43	28.3	36.7	**-0.1190**	1.361	1143.1	mg/L	33	Standard
Fe	54	147.7	37.2	**0.0142**	0.046	325.7	mg/L	138	Standard
Fe	57	251.7	6.4	**0.1277**	0.048	37.8	mg/L	263	Standard
Sc-1	45	27159.3	0.6				mg/L	27861	Standard
Cl	35	129512.5	0.9				ug/L	100607	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	2033.5	6.1				ug/L	1777	Standard
P	31	21762.3	0.2				ug/L	18074	Standard
S	34	5672.7	2.3				ug/L	3901	Standard
Sr	88	96.7	25.5				ug/L	60	Standard
C	12	56.7	79.6				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	2.7	219.6				mg/L	13	Standard
Ho-1	165	11.7	24.7				mg/L	13	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	6036.2	1.8				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.143	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.750	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.299	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, July 07, 2016 14:50:39
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	48417.3	2.9				ug/L	59299	Standard
	Be	9	135.0	20.6	**0.1991**	0.035	17.6	ug/L	17	Standard
	Al	27	1411.7	9.4	**0.0001**	0.001	1301.6	ug/L	1472	Standard
	Sc	45	26463.1	1.6				ug/L	27861	Standard
	Ti	47	17.3	29.6	**-0.0388**	0.022	56.2	ug/L	28	Standard
	V	51	3293.7	3.1	**0.3301**	0.018	5.4	ug/L	1156	Standard
	Cr	52	11155.1	1.5	**0.6953**	0.011	1.6	ug/L	6689	Standard
	Cr	53	1176.7	10.1	**1.0002**	0.146	14.6	ug/L	348	Standard
	Mn	55	3510.4	3.3	**0.4459**	0.024	5.4	ug/L	770	Standard
	Co	59	2551.5	1.9	**0.3632**	0.012	3.2	ug/L	216	Standard
	Ni	60	2889.3	2.3	**1.3991**	0.021	1.5	ug/L	440	Standard
	Cu	65	1447.4	4.9	**0.7725**	0.033	4.3	ug/L	116	Standard
	Zn	66	6879.6	1.1	**6.4317**	0.067	1.0	ug/L	135	Standard
>	Ge	72	432123.5	1.0				ug/L	445277	Standard
	As	75	369.6	4.2	**0.3864**	0.013	3.3	ug/L	-57	Standard
	Se	82	63.7	9.8	**0.4475**	0.053	11.8	ug/L	10	Standard
	Se-1	77	80.0	11.9	**0.4846**	0.123	25.4	ug/L	57	Standard
>	Ga	71	51.7	20.1				mg/L	78	Standard
	Rb	85	30.0	33.3				ug/L	22	Standard
	Y	89	359987.5	2.1				ug/L	388959	Standard
>	Rh	103	15.0	115.5				ug/L	8	Standard
	Mo	98	87.3	16.2	**0.0291**	0.005	18.8	ug/L	10	Standard
	Ag	107	2321.2	3.0	**0.3706**	0.009	2.4	ug/L	66	Standard
	Cd	111	450.5	0.6	**0.2301**	0.002	0.8	mg/L	3	Standard
	Cd	114	1150.5	3.2	**0.2402**	0.007	2.8	ug/L	4	Standard
>	In	115	502072.3	0.8				ug/L	523327	Standard
	Sn	118	416.7	27.4	**0.0025**	0.021	835.7	ug/L	488	Standard
	Sb	123	1659.8	1.9	**0.3640**	0.006	1.7	ug/L	195	Standard
	Ba	135	1315.7	1.0	**0.6934**	0.013	1.8	ug/L	28	Standard
	Ce	140	5.0	100.0				ug/L	83	Standard
>	Tb	159	761667.4	0.7				ug/L	809211	Standard
	Ho	165	5.0	100.0				ug/L	13	Standard
	Tl	203	608.7	2.2	**0.0784**	0.002	2.6	ug/L	4	Standard
	Tl	205	476.7	7.0	**0.0708**	0.005	6.8	ug/L	8	Standard
	Pb	206	1118.0	0.9	**0.1873**	0.003	1.6	ug/L	230	Standard
	Pb	207	937.4	3.1	**0.1746**	0.008	4.3	ug/L	184	Standard
	Pb	208	4252.9	1.3	**0.1953**	0.004	2.2	ug/L	775	Standard
	U	238	2425.2	1.9	**0.3735**	0.006	1.5	ug/L	3	Standard
>	Bi	209	454645.1	0.4				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	36.7	28.4	**-0.0128**	0.015	117.6	mg/L	52	Standard
K	39	30.0	28.9	**0.0208**	0.045	217.0	mg/L	32	Standard
Ca	43	23.3	24.7	**-0.6847**	0.836	122.1	mg/L	33	Standard
Fe	54	115.5	24.8	**-0.0107**	0.024	222.1	mg/L	138	Standard
Fe	57	268.3	10.3	**0.2032**	0.081	39.9	mg/L	263	Standard
Sc-1	45	26463.1	1.6				mg/L	27861	Standard
Cl	35	124949.1	0.9				ug/L	100607	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1756.8	10.0				ug/L	1777	Standard
P	31	15386.1	1.8				ug/L	18074	Standard
S	34	5484.3	1.4				ug/L	3901	Standard
Sr	88	90.0	16.7				ug/L	60	Standard
C	12	56.7	36.7				mg/L	110	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	8.7	123.1				mg/L	13	Standard
Ho-1	165	5.0	100.0				mg/L	13	Standard
Er	166	26.7	78.1				mg/L	3	Standard
I	127	1803.4	6.8				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	99.540		
Al	27			
Sc	45			
Ti	47			
V	51	82.537		
Cr	52	86.917		
Cr	53			
Mn	55	89.187		
Co	59	90.808		
Ni	60	87.442		
Cu	65	96.561		
Zn	66	102.908		
Ge	72		97.046	
As	75	96.592		
Se	82	111.874		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	92.658		
Cd	111	95.880		
Cd	114			
> In	115			95.939
Sn	118			
Sb	123	90.991		
Ba	135	92.450		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	97.957		
Tl	205			
Pb	206			
Pb	207			
Pb	208	97.674		
U	238	93.364		
> Bi	209			96.231
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
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Method 6020 - Summary Report

Sample ID: LCSW 67 WG575246-04
Sample Date/Time: Thursday, July 07, 2016 14:59:40
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50463.9	1.9				ug/L	59299	Standard
	Be	9	40514.1	1.6	**57.1347**	0.512	0.9	ug/L	17	Standard
	Al	27	22111.8	25.2	**0.1813**	0.048	26.7	ug/L	1472	Standard
	Sc	45	27912.4	0.8				ug/L	27861	Standard
	Ti	47	33.3	12.1	**0.0252**	0.018	70.0	ug/L	28	Standard
	V	51	338030.0	0.5	**49.8356**	0.761	1.5	ug/L	1156	Standard
	Cr	52	368637.3	1.6	**52.0389**	1.453	2.8	ug/L	6689	Standard
	Cr	53	45448.1	0.8	**51.6136**	0.829	1.6	ug/L	348	Standard
	Mn	55	345402.3	0.5	**54.1612**	0.465	0.9	ug/L	770	Standard
	Co	59	336048.8	0.5	**50.4526**	0.410	0.8	ug/L	216	Standard
	Ni	60	96431.9	0.2	**52.8852**	0.542	1.0	ug/L	440	Standard
	Cu	65	97530.9	0.3	**53.7841**	0.466	0.9	ug/L	116	Standard
	Zn	66	56996.7	0.6	**52.6120**	0.311	0.6	ug/L	135	Standard
>	**Ge**	72	449385.1	1.2				ug/L	445277	Standard
	As	75	55899.5	0.5	**50.8060**	0.333	0.7	ug/L	-57	Standard
	Se	82	5582.4	0.9	**49.8628**	0.387	0.8	ug/L	10	Standard
	Se-1	77	3856.5	0.3	**51.4126**	0.508	1.0	ug/L	57	Standard
>	**Ga**	71	75.0	26.7				mg/L	78	Standard
	Rb	85	223.3	15.2				ug/L	22	Standard
	Y	89	386074.4	1.6				ug/L	388959	Standard
>	**Rh**	103	28.3	27.0				ug/L	8	Standard
	Mo	98	98.3	41.4	**0.0320**	0.016	49.0	ug/L	10	Standard
	Ag	107	320308.6	0.2	**50.8392**	0.371	0.7	ug/L	66	Standard
	Cd	111	101641.6	0.9	**50.5623**	0.717	1.4	mg/L	3	Standard
	Cd	114	247941.1	0.4	**50.4466**	0.548	1.1	ug/L	4	Standard
>	**In**	115	523558.2	0.9				ug/L	523327	Standard
	Sn	118	611.7	12.7	**0.0346**	0.014	42.0	ug/L	488	Standard
	Sb	123	221411.4	1.3	**48.6760**	0.991	2.0	ug/L	195	Standard
	Ba	135	96386.7	1.4	**49.8992**	0.825	1.7	ug/L	28	Standard
	Ce	140	246.7	10.4				ug/L	83	Standard
>	**Tb**	159	784115.9	1.0				ug/L	809211	Standard
	Ho	165	18.3	56.8				ug/L	13	Standard
	Tl	203	397896.7	0.5	**50.9288**	0.032	0.1	ug/L	4	Standard
	Tl	205	339254.4	0.4	**50.6300**	0.100	0.2	ug/L	8	Standard
	Pb	206	256628.2	0.9	**52.3296**	0.178	0.3	ug/L	230	Standard
	Pb	207	223573.1	0.1	**50.2322**	0.316	0.6	ug/L	184	Standard
	Pb	208	960444.1	0.6	**52.7569**	0.352	0.7	ug/L	775	Standard
	U	238	334309.1	0.8	**50.0304**	0.144	0.3	ug/L	3	Standard
>	**Bi**	209	468690.2	0.6				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	58.3	13.1	**0.0140**	0.010	70.9	mg/L	52	Standard
K	39	35.0	37.8	**0.0362**	0.062	172.8	mg/L	32	Standard
Ca	43	23.3	24.7	**-0.8543**	0.756	88.5	mg/L	33	Standard
Fe	54	138.9	17.0	**0.0038**	0.020	537.5	mg/L	138	Standard
Fe	57	278.3	10.5	**0.1896**	0.098	51.5	mg/L	263	Standard
Sc-1	45	27912.4	0.8				mg/L	27861	Standard
Cl	35	130402.8	1.3				ug/L	100607	Standard
Kr	83	3.3	62.4				ug/L	2	Standard
Br	81	2206.8	2.7				ug/L	1777	Standard
P	31	21231.5	1.9				ug/L	18074	Standard
S	34	5419.3	3.5				ug/L	3901	Standard
Sr	88	91.7	32.9				ug/L	60	Standard
C	12	43.3	35.3				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	78.1				mg/L	7	Standard
Dy	164	11.9	126.0				mg/L	13	Standard
Ho-1	165	18.3	56.8				mg/L	13	Standard
Er	166	30.0	66.7				mg/L	3	Standard
I	127	2898.6	5.9				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		85.101	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.923	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.044
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.204
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 67 WG575246-04
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Method 6020 - Summary Report

Sample ID: L1607005401 WG575246-02
Sample Date/Time: Thursday, July 07, 2016 15:03:53
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	49698.1	2.2				ug/L	59299	Standard
	Be	9	20.0	50.0	**0.0299**	0.014	47.9	ug/L	17	Standard
	Al	27	7335307.9	1.0	**65.4162**	0.877	1.3	ug/L	1472	Standard
	Sc	45	28025.9	1.3				ug/L	27861	Standard
	Ti	47	670.3	0.6	**2.7450**	0.036	1.3	ug/L	28	Standard
	V	51	2010.5	8.3	**0.1272**	0.023	18.2	ug/L	1156	Standard
	Cr	52	9992.3	3.6	**0.4956**	0.043	8.6	ug/L	6689	Standard
	Cr	53	7621.9	11.2	**8.5118**	0.961	11.3	ug/L	348	Standard
	Mn	55	144387.4	0.2	**23.0667**	0.203	0.9	ug/L	770	Standard
	Co	59	929.4	12.2	**0.1073**	0.018	16.7	ug/L	216	Standard
	Ni	60	2297.8	1.5	**1.0377**	0.023	2.2	ug/L	440	Standard
	Cu	65	7348.8	1.5	**4.0878**	0.034	0.8	ug/L	116	Standard
	Zn	66	26592.7	1.0	**24.9841**	0.059	0.2	ug/L	135	Standard
>	**Ge**	72	439685.4	0.8				ug/L	445277	Standard
	As	75	784.1	10.0	**0.7648**	0.067	8.8	ug/L	-57	Standard
	Se	82	313.6	6.0	**2.7257**	0.168	6.1	ug/L	10	Standard
	Se-1	77	425.3	4.5	**5.2284**	0.219	4.2	ug/L	57	Standard
>	**Ga**	71	86.7	3.3				mg/L	78	Standard
	Rb	85	39844.0	1.3				ug/L	22	Standard
	Y	89	373938.6	1.2				ug/L	388959	Standard
>	**Rh**	103	75.0	6.7				ug/L	8	Standard
	Mo	98	846.6	5.6	**0.3398**	0.022	6.4	ug/L	10	Standard
	Ag	107	265.0	12.1	**0.0302**	0.006	18.3	ug/L	66	Standard
	Cd	111	75.1	21.7	**0.0353**	0.009	24.4	mg/L	3	Standard
	Cd	114	190.0	19.9	**0.0364**	0.008	23.0	ug/L	4	Standard
>	**In**	115	502875.9	0.9				ug/L	523327	Standard
	Sn	118	1118.4	7.9	**0.1341**	0.017	12.9	ug/L	488	Standard
	Sb	123	2421.2	29.1	**0.5367**	0.157	29.2	ug/L	195	Standard
	Ba	135	24884.1	1.2	**13.3988**	0.038	0.3	ug/L	28	Standard
	Ce	140	160.0	13.6				ug/L	83	Standard
>	**Tb**	159	766646.0	0.7				ug/L	809211	Standard
	Ho	165	31.7	24.1				ug/L	13	Standard
	Tl	203	228.3	16.5	**0.0289**	0.005	18.0	ug/L	4	Standard
	Tl	205	216.7	16.7	**0.0316**	0.006	18.3	ug/L	8	Standard
	Pb	206	1112.7	3.7	**0.1915**	0.010	5.1	ug/L	230	Standard
	Pb	207	876.4	7.6	**0.1651**	0.017	10.0	ug/L	184	Standard
	Pb	208	4081.2	5.3	**0.1909**	0.014	7.1	ug/L	775	Standard
	U	238	119.7	52.1	**0.0182**	0.010	54.4	ug/L	3	Standard
>	**Bi**	209	444573.4	0.4				ug/L	472452	Standard

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Na	23	1.7	173.2	**3.2974**	5.703	172.9	mg/L	0	Standard
Mg	24	33565.5	2.2	**45.6019**	0.736	1.6	mg/L	52	Standard
K	39	946.7	5.4	**4.2531**	0.289	6.8	mg/L	32	Standard
Ca	43	198.3	16.2	**21.3919**	3.806	17.8	mg/L	33	Standard
Fe	54	147.3	16.1	**0.0102**	0.020	192.6	mg/L	138	Standard
Fe	57	485.0	12.5	**0.8272**	0.208	25.1	mg/L	263	Standard
> **Sc-1**	45	28025.9	1.3				mg/L	27861	Standard
Cl	35	155693.2	0.3				ug/L	100607	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	65270.4	2.7				ug/L	1777	Standard
P	31	21618.7	1.4				ug/L	18074	Standard
S	34	5169.2	1.0				ug/L	3901	Standard
Sr	88	238.3	28.5				ug/L	60	Standard
C	12	123.3	4.7				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	49.5				mg/L	7	Standard
Dy	164	38.2	52.9				mg/L	13	Standard
Ho-1	165	31.7	24.1				mg/L	13	Standard
Er	166	36.7	15.7				mg/L	3	Standard
I	127	626771.4	6.4				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		83.809	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.744	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.092
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.099
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607005401DP WG575246-07
Sample Date/Time: Thursday, July 07, 2016 15:07:04
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51793.4	0.9				ug/L	59299	Standard
	Be	9	10.0	100.0	**0.0151**	0.014	90.7	ug/L	17	Standard
	Al	27	7031464.9	1.7	**60.1592**	1.039	1.7	ug/L	1472	Standard
	Sc	45	27955.8	0.3				ug/L	27861	Standard
	Ti	47	643.3	8.3	**2.6214**	0.212	8.1	ug/L	28	Standard
	V	51	1829.6	12.6	**0.0994**	0.036	36.4	ug/L	1156	Standard
	Cr	52	10092.4	2.2	**0.5063**	0.017	3.4	ug/L	6689	Standard
	Cr	53	8188.9	4.2	**9.1540**	0.501	5.5	ug/L	348	Standard
	Mn	55	133711.4	1.0	**21.2914**	0.171	0.8	ug/L	770	Standard
	Co	59	826.7	3.0	**0.0911**	0.004	4.6	ug/L	216	Standard
	Ni	60	2136.5	0.3	**0.9435**	0.010	1.0	ug/L	440	Standard
	Cu	65	6826.5	0.3	**3.7829**	0.044	1.2	ug/L	116	Standard
	Zn	66	23061.5	1.0	**21.5808**	0.219	1.0	ug/L	135	Standard
>	**Ge**	72	440910.7	1.0				ug/L	445277	Standard
	As	75	817.0	3.4	**0.7938**	0.031	3.9	ug/L	-57	Standard
	Se	82	317.4	0.9	**2.7525**	0.047	1.7	ug/L	10	Standard
	Se-1	77	429.7	0.9	**5.2736**	0.116	2.2	ug/L	57	Standard
>	**Ga**	71	90.0	25.5				mg/L	78	Standard
	Rb	85	37250.7	0.7				ug/L	22	Standard
	Y	89	375397.2	1.0				ug/L	388959	Standard
>	**Rh**	103	58.3	4.9				ug/L	8	Standard
	Mo	98	740.3	1.7	**0.2941**	0.006	1.9	ug/L	10	Standard
	Ag	107	202.0	9.1	**0.0196**	0.003	16.3	ug/L	66	Standard
	Cd	111	36.9	19.0	**0.0154**	0.004	23.0	mg/L	3	Standard
	Cd	114	88.1	44.1	**0.0146**	0.008	55.5	ug/L	4	Standard
>	**In**	115	506530.8	0.6				ug/L	523327	Standard
	Sn	118	1436.7	6.3	**0.1919**	0.018	9.6	ug/L	488	Standard
	Sb	123	990.3	24.2	**0.2082**	0.053	25.5	ug/L	195	Standard
	Ba	135	23437.8	0.5	**12.5281**	0.015	0.1	ug/L	28	Standard
	Ce	140	121.7	15.6				ug/L	83	Standard
>	**Tb**	159	779251.2	1.1				ug/L	809211	Standard
	Ho	165	31.7	39.7				ug/L	13	Standard
	Tl	203	118.7	4.6	**0.0140**	0.001	5.1	ug/L	4	Standard
	Tl	205	98.3	29.4	**0.0129**	0.005	35.3	ug/L	8	Standard
	Pb	206	873.7	3.0	**0.1395**	0.006	4.5	ug/L	230	Standard
	Pb	207	713.7	1.8	**0.1260**	0.003	2.0	ug/L	184	Standard
	Pb	208	3136.1	1.6	**0.1355**	0.004	2.6	ug/L	775	Standard
	U	238	55.7	16.3	**0.0081**	0.002	18.6	ug/L	3	Standard
>	**Bi**	209	445889.4	0.8				ug/L	472452	Standard

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Na	23	10.0	50.0	**19.5482**	9.806	50.2	mg/L	0	Standard
Mg	24	31795.0	0.5	**43.3030**	0.295	0.7	mg/L	52	Standard
K	39	811.7	3.7	**3.6363**	0.150	4.1	mg/L	32	Standard
Ca	43	161.7	9.9	**16.7977**	2.003	11.9	mg/L	33	Standard
Fe	54	165.8	14.9	**0.0258**	0.020	77.8	mg/L	138	Standard
Fe	57	413.3	6.2	**0.6068**	0.081	13.3	mg/L	263	Standard
> **Sc-1**	45	27955.8	0.3				mg/L	27861	Standard
Cl	35	159807.1	0.9				ug/L	100607	Standard
Kr	83	1.7	124.9				ug/L	2	Standard
Br	81	65832.7	1.7				ug/L	1777	Standard
P	31	21660.5	2.0				ug/L	18074	Standard
S	34	5312.6	1.0				ug/L	3901	Standard
Sr	88	228.3	12.8				ug/L	60	Standard
C	12	113.3	18.4				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	7	Standard
Dy	164	35.2	42.5				mg/L	13	Standard
Ho-1	165	31.7	39.7				mg/L	13	Standard
Er	166	30.0	66.7				mg/L	3	Standard
I	127	567318.9	4.1				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		87.343	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.019	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.791
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.378
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606164802 WG575246-01
Sample Date/Time: Thursday, July 07, 2016 15:10:16
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51206.4	2.1				ug/L	59299	Standard
	Be	9	15.0	33.3	**0.0222**	0.007	32.7	ug/L	17	Standard
	Al	27	10122388.0	2.2	**87.6303**	2.854	3.3	ug/L	1472	Standard
	Sc	45	28892.5	1.4				ug/L	27861	Standard
	Ti	47	255.7	10.6	**0.9613**	0.109	11.3	ug/L	28	Standard
	V	51	1273.6	16.0	**0.0132**	0.029	221.6	ug/L	1156	Standard
	Cr	52	8111.2	3.9	**0.2032**	0.040	19.6	ug/L	6689	Standard
	Cr	53	5309.3	5.2	**5.7246**	0.289	5.0	ug/L	348	Standard
	Mn	55	12787702.8	0.9	**2026.3590**	12.065	0.6	ug/L	770	Standard
	Co	59	33803.7	0.6	**5.0853**	0.060	1.2	ug/L	216	Standard
	Ni	60	4682.4	2.0	**2.3451**	0.047	2.0	ug/L	440	Standard
	Cu	65	626.7	6.1	**0.2907**	0.023	8.0	ug/L	116	Standard
	Zn	66	4423.3	1.7	**3.9356**	0.092	2.3	ug/L	135	Standard
>	**Ge**	72	445683.7	0.6				ug/L	445277	Standard
	As	75	957.5	4.2	**0.9142**	0.037	4.0	ug/L	-57	Standard
	Se	82	142.7	7.4	**1.1434**	0.093	8.1	ug/L	10	Standard
	Se-1	77	239.3	0.2	**2.6195**	0.027	1.0	ug/L	57	Standard
>	**Ga**	71	251.7	8.0				mg/L	78	Standard
	Rb	85	15991.8	2.8				ug/L	22	Standard
	Y	89	380893.4	0.9				ug/L	388959	Standard
>	**Rh**	103	90.0	20.0				ug/L	8	Standard
	Mo	98	912.3	3.7	**0.3570**	0.014	3.9	ug/L	10	Standard
	Ag	107	74.0	18.2	**-0.0017**	0.002	126.8	ug/L	66	Standard
	Cd	111	17.3	30.6	**0.0051**	0.003	51.2	mg/L	3	Standard
	Cd	114	48.2	47.5	**0.0061**	0.005	78.5	ug/L	4	Standard
>	**In**	115	516208.1	0.5				ug/L	523327	Standard
	Sn	118	686.7	4.0	**0.0498**	0.006	11.3	ug/L	488	Standard
	Sb	123	686.0	28.1	**0.1365**	0.044	32.0	ug/L	195	Standard
	Ba	135	294316.4	0.3	**154.5675**	0.991	0.6	ug/L	28	Standard
	Ce	140	1316.7	5.1				ug/L	83	Standard
>	**Tb**	159	777924.9	0.9				ug/L	809211	Standard
	Ho	165	53.3	42.3				ug/L	13	Standard
	Tl	203	85.7	5.8	**0.0092**	0.001	6.3	ug/L	4	Standard
	Tl	205	65.0	33.5	**0.0074**	0.003	45.0	ug/L	8	Standard
	Pb	206	346.0	0.8	**0.0242**	0.001	2.2	ug/L	230	Standard
	Pb	207	304.0	3.9	**0.0272**	0.003	11.7	ug/L	184	Standard
	Pb	208	1372.0	2.5	**0.0314**	0.002	6.4	ug/L	775	Standard
	U	238	539.7	2.0	**0.0819**	0.002	2.4	ug/L	3	Standard
>	**Bi**	209	458650.0	0.8				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	13164.1	2.1	**17.3085**	0.326	1.9	mg/L	52	Standard
K	39	190.0	21.5	**0.7257**	0.183	25.2	mg/L	32	Standard
Ca	43	106.7	14.3	**9.3540**	2.051	21.9	mg/L	33	Standard
Fe	54	8968.2	2.9	**7.0775**	0.157	2.2	mg/L	138	Standard
Fe	57	2640.2	3.4	**7.2556**	0.327	4.5	mg/L	263	Standard
> **Sc-1**	45	28892.5	1.4				mg/L	27861	Standard
Cl	35	138156.8	3.1				ug/L	100607	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	30754.5	3.7				ug/L	1777	Standard
P	31	28029.3	6.4				ug/L	18074	Standard
S	34	4959.1	3.2				ug/L	3901	Standard
Sr	88	433.3	4.8				ug/L	60	Standard
C	12	113.3	41.7				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	7	Standard
Dy	164	64.0	23.0				mg/L	13	Standard
Ho-1	165	53.3	42.3				mg/L	13	Standard
Er	166	56.7	27.0				mg/L	3	Standard
I	127	203993.0	2.6				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		86.353	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.091	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.640
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.079
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606164802S WG575246-05
Sample Date/Time: Thursday, July 07, 2016 15:13:27
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52599.5	0.9				ug/L	59299	Standard
	Be	9	42481.1	1.7	**57.4729**	0.817	1.4	ug/L	17	Standard
	Al	27	10520171.9	1.4	**88.6295**	0.596	0.7	ug/L	1472	Standard
	Sc	45	28737.2	0.8				ug/L	27861	Standard
	Ti	47	299.3	11.6	**1.1447**	0.137	11.9	ug/L	28	Standard
	V	51	330101.6	1.2	**49.0616**	0.665	1.4	ug/L	1156	Standard
	Cr	52	353309.2	0.3	**50.2456**	0.522	1.0	ug/L	6689	Standard
	Cr	53	48348.7	1.7	**55.3832**	0.806	1.5	ug/L	348	Standard
	Mn	55	13882467.9	0.5	**2199.7883**	13.476	0.6	ug/L	770	Standard
	Co	59	359185.8	1.4	**54.3714**	0.717	1.3	ug/L	216	Standard
	Ni	60	94855.3	0.5	**52.4457**	0.508	1.0	ug/L	440	Standard
	Cu	65	89776.9	0.7	**49.9112**	0.564	1.1	ug/L	116	Standard
	Zn	66	58866.1	0.6	**54.7924**	0.256	0.5	ug/L	135	Standard
>	**Ge**	72	445707.8	0.7				ug/L	445277	Standard
	As	75	56974.2	0.8	**52.2092**	0.678	1.3	ug/L	-57	Standard
	Se	82	5615.1	1.0	**50.5724**	0.804	1.6	ug/L	10	Standard
	Se-1	77	3951.2	0.9	**53.1276**	0.512	1.0	ug/L	57	Standard
>	**Ga**	71	251.7	6.1				mg/L	78	Standard
	Rb	85	17029.6	1.6				ug/L	22	Standard
	Y	89	379636.5	1.7				ug/L	388959	Standard
>	**Rh**	103	126.7	21.7				ug/L	8	Standard
	Mo	98	1009.6	1.1	**0.3952**	0.001	0.4	ug/L	10	Standard
	Ag	107	304621.5	0.6	**48.9736**	0.295	0.6	ug/L	66	Standard
	Cd	111	98587.9	0.5	**49.6763**	0.390	0.8	mg/L	3	Standard
	Cd	114	240239.7	1.0	**49.5096**	0.363	0.7	ug/L	4	Standard
>	**In**	115	516883.6	1.2				ug/L	523327	Standard
	Sn	118	5619.4	4.7	**0.9495**	0.042	4.4	ug/L	488	Standard
	Sb	123	232842.9	0.1	**51.8513**	0.709	1.4	ug/L	195	Standard
	Ba	135	403865.5	0.3	**211.8430**	2.227	1.1	ug/L	28	Standard
	Ce	140	2265.2	6.3				ug/L	83	Standard
>	**Tb**	159	784126.8	0.3				ug/L	809211	Standard
	Ho	165	63.3	29.9				ug/L	13	Standard
	Tl	203	388229.6	0.3	**50.3460**	0.240	0.5	ug/L	4	Standard
	Tl	205	332904.3	0.6	**50.3360**	0.270	0.5	ug/L	8	Standard
	Pb	206	250918.7	0.6	**51.8416**	0.661	1.3	ug/L	230	Standard
	Pb	207	217974.7	0.3	**49.6189**	0.456	0.9	ug/L	184	Standard
	Pb	208	934215.4	0.3	**51.9909**	0.234	0.4	ug/L	775	Standard
	U	238	333239.5	0.6	**50.5270**	0.062	0.1	ug/L	3	Standard
>	**Bi**	209	462605.8	0.7				ug/L	472452	Standard

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Na	23	1.7	173.2	**3.1449**	5.438	172.9	mg/L	0	Standard
Mg	24	14275.1	0.6	**18.8770**	0.210	1.1	mg/L	52	Standard
K	39	193.3	7.5	**0.7450**	0.058	7.8	mg/L	32	Standard
Ca	43	120.0	27.3	**11.0797**	4.136	37.3	mg/L	33	Standard
Fe	54	9427.9	5.7	**7.4883**	0.454	6.1	mg/L	138	Standard
Fe	57	2796.9	1.4	**7.7702**	0.139	1.8	mg/L	263	Standard
> **Sc-1**	45	28737.2	0.8				mg/L	27861	Standard
Cl	35	134684.8	2.2				ug/L	100607	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	30447.3	5.1				ug/L	1777	Standard
P	31	27989.2	2.8				ug/L	18074	Standard
S	34	4754.1	1.3				ug/L	3901	Standard
Sr	88	390.0	14.8				ug/L	60	Standard
C	12	140.0	28.6				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	56.5	91.5				mg/L	13	Standard
Ho-1	165	63.3	29.9				mg/L	13	Standard
Er	166	73.3	55.1				mg/L	3	Standard
I	127	238228.5	7.5				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.702	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.097	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.769
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.916
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606164802SD WG575246-06
Sample Date/Time: Thursday, July 07, 2016 15:16:38
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	53890.7	1.2				ug/L	59299	Standard
	Be	9	42855.5	2.4	**56.6012**	1.791	3.2	ug/L	17	Standard
	Al	27	10939590.0	0.3	**89.9663**	1.218	1.4	ug/L	1472	Standard
	Sc	45	29366.8	1.3				ug/L	27861	Standard
	Ti	47	403.3	37.5	**1.5747**	0.622	39.5	ug/L	28	Standard
	V	51	336580.8	1.4	**49.8592**	0.857	1.7	ug/L	1156	Standard
	Cr	52	354377.4	0.6	**50.2273**	0.629	1.3	ug/L	6689	Standard
	Cr	53	48512.5	0.9	**55.3875**	0.851	1.5	ug/L	348	Standard
	Mn	55	13904410.0	0.2	**2195.8419**	14.661	0.7	ug/L	770	Standard
	Co	59	360109.3	0.7	**54.3295**	0.693	1.3	ug/L	216	Standard
	Ni	60	94765.8	0.8	**52.2159**	0.177	0.3	ug/L	440	Standard
	Cu	65	89816.1	0.6	**49.7640**	0.507	1.0	ug/L	116	Standard
	Zn	66	58934.7	0.3	**54.6717**	0.437	0.8	ug/L	135	Standard
>	Ge	72	447215.9	0.6				ug/L	445277	Standard
	As	75	57380.5	0.8	**52.4040**	0.697	1.3	ug/L	-57	Standard
	Se	82	5698.3	1.4	**51.1484**	0.826	1.6	ug/L	10	Standard
	Se-1	77	3957.2	2.0	**53.0319**	1.361	2.6	ug/L	57	Standard
>	Ga	71	246.7	1.2				mg/L	78	Standard
	Rb	85	17091.3	1.3				ug/L	22	Standard
	Y	89	380041.0	1.3				ug/L	388959	Standard
>	Rh	103	116.7	23.6				ug/L	8	Standard
	Mo	98	1074.8	3.1	**0.4187**	0.015	3.7	ug/L	10	Standard
	Ag	107	306606.6	0.8	**48.9988**	0.318	0.6	ug/L	66	Standard
	Cd	111	99453.8	0.5	**49.8151**	0.545	1.1	mg/L	3	Standard
	Cd	114	243893.7	1.3	**49.9625**	0.424	0.8	ug/L	4	Standard
>	In	115	519961.7	0.6				ug/L	523327	Standard
	Sn	118	585.0	7.0	**0.0304**	0.007	23.6	ug/L	488	Standard
	Sb	123	234378.2	1.3	**51.8780**	0.504	1.0	ug/L	195	Standard
	Ba	135	411204.9	0.2	**214.4024**	0.970	0.5	ug/L	28	Standard
	Ce	140	1410.1	2.8				ug/L	83	Standard
>	Tb	159	790197.2	0.5				ug/L	809211	Standard
	Ho	165	63.3	19.9				ug/L	13	Standard
	Tl	203	386476.1	0.6	**50.4058**	0.224	0.4	ug/L	4	Standard
	Tl	205	335367.6	0.4	**51.0001**	0.285	0.6	ug/L	8	Standard
	Pb	206	251148.7	0.4	**52.1849**	0.059	0.1	ug/L	230	Standard
	Pb	207	218790.4	0.2	**50.0901**	0.270	0.5	ug/L	184	Standard
	Pb	208	927769.7	0.5	**51.9280**	0.107	0.2	ug/L	775	Standard
	U	238	335547.2	0.5	**51.1693**	0.089	0.2	ug/L	3	Standard
>	Bi	209	459958.5	0.3				ug/L	472452	Standard

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Na	23	1.7	173.2	**3.1406**	5.431	172.9	mg/L	0	Standard
Mg	24	14170.0	1.8	**18.3346**	0.340	1.9	mg/L	52	Standard
K	39	198.3	2.9	**0.7489**	0.035	4.7	mg/L	32	Standard
Ca	43	121.7	8.6	**10.9581**	1.422	13.0	mg/L	33	Standard
Fe	54	9678.2	1.3	**7.5230**	0.169	2.2	mg/L	138	Standard
Fe	57	2853.6	3.2	**7.7549**	0.162	2.1	mg/L	263	Standard
> **Sc-1**	45	29366.8	1.3				mg/L	27861	Standard
Cl	35	132946.1	1.0				ug/L	100607	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	27762.2	7.1				ug/L	1777	Standard
P	31	28246.3	0.7				ug/L	18074	Standard
S	34	4737.4	1.7				ug/L	3901	Standard
Sr	88	406.7	6.3				ug/L	60	Standard
C	12	150.0	11.5				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	7	Standard
Dy	164	67.0	15.4				mg/L	13	Standard
Ho-1	165	63.3	19.9				mg/L	13	Standard
Er	166	63.3	32.9				mg/L	3	Standard
I	127	245471.6	6.7				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.879	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.435	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.357
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.356
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606161502
Sample Date/Time: Thursday, July 07, 2016 15:22:18
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	71935.4	2.1				ug/L	59299	Standard
	Be	9	16.7	62.4	**0.0177**	0.010	56.9	ug/L	17	Standard
	Al	27	106932877.4	2.7	**658.8484**	12.859	2.0	ug/L	1472	Standard
	Sc	45	24706.8	1.5				ug/L	27861	Standard
	Ti	47	397.0	8.0	**1.8276**	0.156	8.6	ug/L	28	Standard
	V	51	1607.5	163.4	**0.0999**	0.455	455.4	ug/L	1156	Standard
	Cr	52	24389.6	1.8	**3.1368**	0.045	1.4	ug/L	6689	Standard
	Cr	53	77630.3	4.8	**103.7397**	5.753	5.5	ug/L	348	Standard
	Mn	55	882156.5	0.5	**162.3618**	1.062	0.7	ug/L	770	Standard
	Co	59	1526.4	1.6	**0.2333**	0.003	1.3	ug/L	216	Standard
	Ni	60	16021.1	2.0	**10.0891**	0.132	1.3	ug/L	440	Standard
	Cu	65	7945.4	4.3	**5.0811**	0.190	3.7	ug/L	116	Standard
	Zn	66	6207.9	6.3	**6.5419**	0.382	5.8	ug/L	135	Standard
>	Ge	72	383452.0	0.8				ug/L	445277	Standard
	As	75	7269.3	12.4	**7.7792**	1.014	13.0	ug/L	-57	Standard
	Se	82	3387.5	6.5	**35.4300**	2.570	7.3	ug/L	10	Standard
	Se-1	77	7566.2	1.4	**119.0280**	0.782	0.7	ug/L	57	Standard
>	Ga	71	376.7	7.5				mg/L	78	Standard
	Rb	85	54041.2	0.7				ug/L	22	Standard
	Y	89	338475.7	0.7				ug/L	388959	Standard
>	Rh	103	1018.4	33.4				ug/L	8	Standard
	Mo	98	361.1	0.8	**0.1647**	0.001	0.6	ug/L	10	Standard
	Ag	107	130.7	12.6	**0.0115**	0.003	29.0	ug/L	66	Standard
	Cd	111	26.3	26.6	**0.0122**	0.004	34.6	mg/L	3	Standard
	Cd	114	42.6	40.5	**0.0065**	0.004	64.5	ug/L	4	Standard
>	In	115	433706.2	0.6				ug/L	523327	Standard
	Sn	118	586.7	11.5	**0.0519**	0.014	27.5	ug/L	488	Standard
	Sb	123	371.8	33.9	**0.0820**	0.033	40.5	ug/L	195	Standard
	Ba	135	1878.4	2.3	**1.1571**	0.029	2.5	ug/L	28	Standard
	Ce	140	83.3	12.5				ug/L	83	Standard
>	Tb	159	694972.4	2.1				ug/L	809211	Standard
	Ho	165	60.0	41.7				ug/L	13	Standard
	Tl	203	84.0	20.3	**0.0118**	0.003	22.5	ug/L	4	Standard
	Tl	205	73.3	3.9	**0.0115**	0.000	3.6	ug/L	8	Standard
	Pb	206	247.7	6.9	**0.0168**	0.004	22.7	ug/L	230	Standard
	Pb	207	213.7	2.6	**0.0189**	0.001	4.9	ug/L	184	Standard
	Pb	208	918.3	3.0	**0.0190**	0.002	9.5	ug/L	775	Standard
	U	238	297.0	2.7	**0.0563**	0.001	2.5	ug/L	3	Standard
>	Bi	209	365769.3	1.1				ug/L	472452	Standard

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Na	23	10.0	86.6	**21.9413**	18.702	85.2	mg/L	0	Standard
Mg	24	1117419.2	2.0	**1725.0426**	56.990	3.3	mg/L	52	Standard
K	39	1188.4	9.8	**6.1136**	0.700	11.5	mg/L	32	Standard
Ca	43	266.7	5.7	**34.6763**	1.918	5.5	mg/L	33	Standard
Fe	54	162.1	2.9	**0.0405**	0.006	15.4	mg/L	138	Standard
Fe	57	861.7	6.7	**2.3505**	0.203	8.6	mg/L	263	Standard
> **Sc-1**	45	24706.8	1.5				mg/L	27861	Standard
Cl	35	907616.5	0.7				ug/L	100607	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1002093.3	2.5				ug/L	1777	Standard
P	31	20822.6	1.1				ug/L	18074	Standard
S	34	5781.1	1.5				ug/L	3901	Standard
Sr	88	1578.4	2.9				ug/L	60	Standard
C	12	110.0	47.2				mg/L	110	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	7	Standard
Dy	164	14.6	36.4				mg/L	13	Standard
Ho-1	165	60.0	41.7				mg/L	13	Standard
Er	166	43.3	53.3				mg/L	3	Standard
I	127	1665336.9	17.2				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		121.309	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		86.115	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	82.875	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	77.419	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Cr 53 Upper, S, EEE	Cr	53	

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Mn 55 Upper, S, EEE	Mn	55
Se-1 77 Upper, S, EEE	Se-1	77

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Method 6020 - Summary Report

Sample ID: L1606161502PS WG575345-01
Sample Date/Time: Thursday, July 07, 2016 15:25:29
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81974.5	1.8				ug/L	59299	Standard
	Be	9	42116.8	0.5	**36.5722**	0.824	2.3	ug/L	17	Standard
	Al	27	116573164.8	2.7	**630.3628**	18.709	3.0	ug/L	1472	Standard
	Sc	45	25695.1	3.0				ug/L	27861	Standard
	Ti	47	346.7	5.6	**1.5449**	0.119	7.7	ug/L	28	Standard
	V	51	318462.5	1.4	**53.8113**	0.119	0.2	ug/L	1156	Standard
	Cr	52	339526.9	1.5	**54.9685**	0.567	1.0	ug/L	6689	Standard
	Cr	53	109452.2	0.1	**143.1561**	2.526	1.8	ug/L	348	Standard
	Mn	55	1188034.6	1.2	**213.8989**	5.720	2.7	ug/L	770	Standard
	Co	59	288405.8	0.9	**49.6279**	1.218	2.5	ug/L	216	Standard
	Ni	60	92968.4	0.5	**58.4558**	0.720	1.2	ug/L	440	Standard
	Cu	65	83045.3	0.6	**52.4822**	0.822	1.6	ug/L	116	Standard
	Zn	66	53102.3	2.3	**56.1769**	0.397	0.7	ug/L	135	Standard
>	Ge	72	392160.1	1.7				ug/L	445277	Standard
	As	75	57370.2	1.1	**59.7583**	1.553	2.6	ug/L	-57	Standard
	Se	82	8159.2	2.6	**83.6425**	3.384	4.0	ug/L	10	Standard
	Se-1	77	10760.5	0.7	**165.7973**	2.289	1.4	ug/L	57	Standard
>	Ga	71	298.3	15.8				mg/L	78	Standard
	Rb	85	55350.9	1.1				ug/L	22	Standard
	Y	89	347466.0	1.1				ug/L	388959	Standard
>	Rh	103	1408.4	15.5				ug/L	8	Standard
	Mo	98	417.3	6.5	**0.1852**	0.011	6.0	ug/L	10	Standard
	Ag	107	226088.4	0.9	**41.9738**	0.071	0.2	ug/L	66	Standard
	Cd	111	81641.0	1.1	**47.5053**	0.145	0.3	mg/L	3	Standard
	Cd	114	197249.0	1.2	**46.9443**	0.377	0.8	ug/L	4	Standard
>	In	115	447558.2	0.8				ug/L	523327	Standard
	Sn	118	758.4	9.0	**0.0841**	0.014	16.3	ug/L	488	Standard
	Sb	123	191333.9	0.4	**49.2022**	0.206	0.4	ug/L	195	Standard
	Ba	135	82701.4	1.0	**50.0818**	0.228	0.5	ug/L	28	Standard
	Ce	140	71.7	24.5				ug/L	83	Standard
>	Tb	159	721795.5	1.0				ug/L	809211	Standard
	Ho	165	40.0	21.7				ug/L	13	Standard
	Tl	203	322181.9	0.7	**51.2454**	0.360	0.7	ug/L	4	Standard
	Tl	205	270532.3	0.9	**50.1751**	0.842	1.7	ug/L	8	Standard
	Pb	206	215562.3	0.2	**54.6283**	0.616	1.1	ug/L	230	Standard
	Pb	207	187232.1	0.4	**52.2795**	0.686	1.3	ug/L	184	Standard
	Pb	208	759955.8	0.7	**51.8735**	0.357	0.7	ug/L	775	Standard
	U	238	296472.3	1.0	**55.1356**	0.478	0.9	ug/L	3	Standard
>	Bi	209	377169.3	0.9				ug/L	472452	Standard

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Na	23	1.7	173.2	**3.5477**	6.136	173.0	mg/L	0	Standard
Mg	24	1184832.8	1.3	**1759.4063**	63.467	3.6	mg/L	52	Standard
K	39	1080.0	1.2	**5.3246**	0.216	4.1	mg/L	32	Standard
Ca	43	233.3	20.3	**28.6207**	6.911	24.1	mg/L	33	Standard
Fe	54	136.1	5.9	**0.0114**	0.011	96.1	mg/L	138	Standard
Fe	57	875.0	5.1	**2.2837**	0.240	10.5	mg/L	263	Standard
> **Sc-1**	45	25695.1	3.0				mg/L	27861	Standard
Cl	35	945049.6	0.9				ug/L	100607	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	1015879.6	1.5				ug/L	1777	Standard
P	31	21610.4	2.1				ug/L	18074	Standard
S	34	5661.1	5.9				ug/L	3901	Standard
Sr	88	1648.4	3.8				ug/L	60	Standard
C	12	133.3	53.2				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	20.8	119.0				mg/L	13	Standard
Ho-1	165	40.0	21.7				mg/L	13	Standard
Er	166	53.3	21.7				mg/L	3	Standard
I	127	3205214.7	2.0				mg/L	8539	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		138.239	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		88.071	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	85.522	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	79.832	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Cr 53 Upper, S, EEE	Cr	53	

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Mn 55 Upper, S, EEE	Mn	55
Se-1 77 Upper, S, EEE	Se-1	77

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Method 6020 - Summary Report

Sample ID: L1606161502SDL WG575345-02
Sample Date/Time: Thursday, July 07, 2016 15:28:41
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64403.3	0.8				ug/L	59299	Standard
	Be	9	33.3	8.7	**0.0382**	0.003	8.7	ug/L	17	Standard
	Al	27	22949042.3	0.7	**157.9295**	2.333	1.5	ug/L	1472	Standard
	Sc	45	25873.7	1.7				ug/L	27861	Standard
	Ti	47	75.3	17.7	**0.2256**	0.061	27.0	ug/L	28	Standard
	V	51	805.4	74.7	**-0.0479**	0.096	200.7	ug/L	1156	Standard
	Cr	52	11094.7	0.1	**0.7503**	0.005	0.7	ug/L	6689	Standard
	Cr	53	21184.8	1.7	**25.7811**	0.369	1.4	ug/L	348	Standard
	Mn	55	184505.7	0.9	**31.1899**	0.212	0.7	ug/L	770	Standard
	Co	59	535.0	9.1	**0.0513**	0.008	14.8	ug/L	216	Standard
	Ni	60	3965.9	1.6	**2.1036**	0.034	1.6	ug/L	440	Standard
	Cu	65	2551.2	9.3	**1.4625**	0.138	9.4	ug/L	116	Standard
	Zn	66	2965.6	9.2	**2.7701**	0.263	9.5	ug/L	135	Standard
>	**Ge**	72	416095.8	0.3				ug/L	445277	Standard
	As	75	1709.9	6.9	**1.7147**	0.121	7.1	ug/L	-57	Standard
	Se	82	767.1	2.9	**7.2761**	0.238	3.3	ug/L	10	Standard
	Se-1	77	1907.1	0.9	**27.1598**	0.251	0.9	ug/L	57	Standard
>	**Ga**	71	113.3	22.6				mg/L	78	Standard
	Rb	85	11744.6	2.0				ug/L	22	Standard
	Y	89	358205.1	1.0				ug/L	388959	Standard
>	**Rh**	103	400.0	44.2				ug/L	8	Standard
	Mo	98	95.5	18.9	**0.0345**	0.008	23.0	ug/L	10	Standard
	Ag	107	13902.5	17.0	**2.4060**	0.428	17.8	ug/L	66	Standard
	Cd	111	47.4	57.5	**0.0222**	0.015	67.0	mg/L	3	Standard
	Cd	114	94.8	76.7	**0.0172**	0.016	94.4	ug/L	4	Standard
>	**In**	115	478034.0	0.9				ug/L	523327	Standard
	Sn	118	316.7	18.0	**-0.0132**	0.011	85.5	ug/L	488	Standard
	Sb	123	1144.8	43.9	**0.2596**	0.122	47.1	ug/L	195	Standard
	Ba	135	508.3	16.6	**0.2711**	0.048	17.8	ug/L	28	Standard
	Ce	140	28.3	27.0				ug/L	83	Standard
>	**Tb**	159	747851.5	1.1				ug/L	809211	Standard
	Ho	165	8.3	69.3				ug/L	13	Standard
	Tl	203	166.7	30.4	**0.0220**	0.007	33.1	ug/L	4	Standard
	Tl	205	96.7	34.4	**0.0137**	0.006	41.2	ug/L	8	Standard
	Pb	206	394.3	17.8	**0.0425**	0.016	38.5	ug/L	230	Standard
	Pb	207	335.7	6.3	**0.0422**	0.006	13.5	ug/L	184	Standard
	Pb	208	1342.4	2.2	**0.0372**	0.002	5.6	ug/L	775	Standard
	U	238	143.7	16.0	**0.0235**	0.004	16.9	ug/L	3	Standard
>	**Bi**	209	417023.8	0.4				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	225656.3	0.4	**332.5569**	5.456	1.6	mg/L	52	Standard
K	39	228.3	9.1	**1.0170**	0.101	10.0	mg/L	32	Standard
Ca	43	90.0	27.8	**8.5387**	3.241	38.0	mg/L	33	Standard
Fe	54	80.4	18.4	**-0.0395**	0.014	34.9	mg/L	138	Standard
Fe	57	408.3	5.5	**0.6940**	0.090	12.9	mg/L	263	Standard
> **Sc-1**	45	25873.7	1.7				mg/L	27861	Standard
Cl	35	324566.9	0.5				ug/L	100607	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	192309.7	1.8				ug/L	1777	Standard
P	31	9996.6	0.9				ug/L	18074	Standard
S	34	4940.8	2.1				ug/L	3901	Standard
Sr	88	335.0	7.9				ug/L	60	Standard
C	12	50.0	72.1				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	15.7	73.5				mg/L	13	Standard
Ho-1	165	8.3	69.3				mg/L	13	Standard
Er	166	20.0	0.0				mg/L	3	Standard
I	127	1049314.9	3.0				mg/L	8539	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		108.607	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		93.446	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.345
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		88.268
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606161502SDL WG575345-02
Sample Date/Time: Thursday, July 07, 2016 15:31:52
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62826.7	1.4				ug/L	59299	Standard
	Be	9	75.0	116.2	**0.0866**	0.100	115.0	ug/L	17	Standard
	Al	27	4587938.7	1.1	**32.3562**	0.519	1.6	ug/L	1472	Standard
	Sc	45	25965.6	1.1				ug/L	27861	Standard
	Ti	47	32.7	9.4	**0.0286**	0.013	46.6	ug/L	28	Standard
	V	51	1746.1	17.7	**0.0935**	0.047	49.9	ug/L	1156	Standard
	Cr	52	8837.6	3.5	**0.3570**	0.052	14.5	ug/L	6689	Standard
	Cr	53	7285.1	0.5	**8.3219**	0.073	0.9	ug/L	348	Standard
	Mn	55	38930.8	6.6	**6.2747**	0.447	7.1	ug/L	770	Standard
	Co	59	305.3	26.0	**0.0125**	0.013	100.9	ug/L	216	Standard
	Ni	60	1256.7	6.5	**0.4681**	0.049	10.6	ug/L	440	Standard
	Cu	65	1006.4	8.4	**0.5230**	0.049	9.3	ug/L	116	Standard
	Zn	66	1590.8	2.0	**1.3451**	0.026	1.9	ug/L	135	Standard
>	**Ge**	72	429519.0	0.4				ug/L	445277	Standard
	As	75	403.9	19.1	**0.4211**	0.073	17.4	ug/L	-57	Standard
	Se	82	220.6	6.1	**1.9218**	0.118	6.2	ug/L	10	Standard
	Se-1	77	543.7	4.1	**7.0385**	0.279	4.0	ug/L	57	Standard
>	**Ga**	71	68.3	8.4				mg/L	78	Standard
	Rb	85	2475.2	6.5				ug/L	22	Standard
	Y	89	362055.0	1.0				ug/L	388959	Standard
>	**Rh**	103	158.3	20.1				ug/L	8	Standard
	Mo	98	66.5	36.3	**0.0211**	0.010	49.8	ug/L	10	Standard
	Ag	107	639.7	20.9	**0.0939**	0.024	25.9	ug/L	66	Standard
	Cd	111	31.5	133.3	**0.0132**	0.023	171.1	mg/L	3	Standard
	Cd	114	71.2	150.1	**0.0116**	0.023	201.5	ug/L	4	Standard
>	**In**	115	495726.2	1.9				ug/L	523327	Standard
	Sn	118	205.0	4.2	**-0.0367**	0.002	4.8	ug/L	488	Standard
	Sb	123	786.8	54.7	**0.1667**	0.103	61.5	ug/L	195	Standard
	Ba	135	166.3	74.3	**0.0745**	0.070	93.5	ug/L	28	Standard
	Ce	140	6.7	43.3				ug/L	83	Standard
>	**Tb**	159	756961.3	0.3				ug/L	809211	Standard
	Ho	165	11.7	24.7				ug/L	13	Standard
	Tl	203	128.0	85.5	**0.0152**	0.015	96.7	ug/L	4	Standard
	Tl	205	258.3	138.0	**0.0380**	0.056	147.2	ug/L	8	Standard
	Pb	206	329.7	18.3	**0.0225**	0.013	57.9	ug/L	230	Standard
	Pb	207	274.7	18.0	**0.0220**	0.012	53.6	ug/L	184	Standard
	Pb	208	1587.7	52.1	**0.0458**	0.048	104.5	ug/L	775	Standard
	U	238	266.3	149.1	**0.0411**	0.062	151.7	ug/L	3	Standard
>	**Bi**	209	447477.3	0.2				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	45749.0	0.7	**67.1214**	0.461	0.7	mg/L	52	Standard
K	39	63.3	9.1	**0.1897**	0.032	17.1	mg/L	32	Standard
Ca	43	33.3	31.2	**0.7386**	1.408	190.7	mg/L	33	Standard
Fe	54	70.6	45.5	**-0.0485**	0.029	59.3	mg/L	138	Standard
Fe	57	325.0	8.0	**0.4103**	0.093	22.6	mg/L	263	Standard
Sc-1	45	25965.6	1.1				mg/L	27861	Standard
Cl	35	184936.6	1.3				ug/L	100607	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	40083.0	4.2				ug/L	1777	Standard
P	31	7747.0	5.3				ug/L	18074	Standard
S	34	4677.4	2.8				ug/L	3901	Standard
Sr	88	133.3	22.9				ug/L	60	Standard
C	12	80.0	12.5				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	107.9				mg/L	7	Standard
Dy	164	6.0	93.6				mg/L	13	Standard
Ho-1	165	11.7	24.7				mg/L	13	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	215896.9	6.8				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		105.949	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.461	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.726
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.714
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, July 07, 2016 15:35:05
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64122.1	2.7				ug/L	59299	Standard
	Be	9	47176.7	2.0	**52.3644**	0.546	1.0	ug/L	17	Standard
	Al	27	7025453.1	0.8	**48.5643**	0.978	2.0	ug/L	1472	Standard
	Sc	45	28718.9	3.4				ug/L	27861	Standard
	Ti	47	23995.3	1.0	**97.5781**	1.648	1.7	ug/L	28	Standard
	V	51	341378.6	1.2	**49.0932**	0.286	0.6	ug/L	1156	Standard
	Cr	52	357689.0	1.4	**49.1980**	0.232	0.5	ug/L	6689	Standard
	Cr	53	46060.0	3.4	**51.0097**	0.874	1.7	ug/L	348	Standard
	Mn	55	327857.9	1.2	**50.1434**	0.317	0.6	ug/L	770	Standard
	Co	59	336994.2	0.6	**49.3622**	0.790	1.6	ug/L	216	Standard
	Ni	60	92639.0	1.4	**49.5452**	0.378	0.8	ug/L	440	Standard
	Cu	65	91907.9	0.4	**49.4439**	0.722	1.5	ug/L	116	Standard
	Zn	66	55595.1	0.8	**50.0574**	0.568	1.1	ug/L	135	Standard
>	**Ge**	72	460654.6	1.8				ug/L	445277	Standard
	As	75	54721.2	1.2	**48.5211**	0.287	0.6	ug/L	-57	Standard
	Se	82	5648.6	1.7	**49.2168**	0.044	0.1	ug/L	10	Standard
	Se-1	77	3839.5	3.2	**49.9226**	1.852	3.7	ug/L	57	Standard
>	**Ga**	71	100.0	22.9				mg/L	78	Standard
	Rb	85	825.0	3.2				ug/L	22	Standard
	Y	89	397106.0	1.9				ug/L	388959	Standard
>	**Rh**	103	95.0	24.1				ug/L	8	Standard
	Mo	98	255080.8	0.1	**96.6927**	1.673	1.7	ug/L	10	Standard
	Ag	107	317789.0	1.0	**48.6575**	0.350	0.7	ug/L	66	Standard
	Cd	111	100113.4	1.1	**48.0414**	0.267	0.6	mg/L	3	Standard
	Cd	114	247500.7	1.3	**48.5781**	0.540	1.1	ug/L	4	Standard
>	**In**	115	542739.1	1.6				ug/L	523327	Standard
	Sn	118	278410.0	1.5	**48.3100**	0.896	1.9	ug/L	488	Standard
	Sb	123	228356.3	1.3	**48.4262**	0.462	1.0	ug/L	195	Standard
	Ba	135	94436.7	0.4	**47.1667**	0.776	1.6	ug/L	28	Standard
	Ce	140	50.0	26.5				ug/L	83	Standard
>	**Tb**	159	816810.4	1.0				ug/L	809211	Standard
	Ho	165	8.3	69.3				ug/L	13	Standard
	Tl	203	399007.1	0.7	**49.3408**	0.622	1.3	ug/L	4	Standard
	Tl	205	343766.0	0.2	**49.5640**	0.353	0.7	ug/L	8	Standard
	Pb	206	252925.2	0.2	**49.8245**	0.284	0.6	ug/L	230	Standard
	Pb	207	229306.2	0.1	**49.7721**	0.232	0.5	ug/L	184	Standard
	Pb	208	955350.6	0.6	**50.6954**	0.325	0.6	ug/L	775	Standard
	U	238	348023.3	0.2	**50.3176**	0.282	0.6	ug/L	3	Standard
>	**Bi**	209	485145.5	0.5				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3957.2	5.4	**5.1874**	0.178	3.4	mg/L	52	Standard
K	39	816.7	5.9	**3.5663**	0.347	9.7	mg/L	32	Standard
Ca	43	55.0	78.7	**3.1139**	5.701	183.1	mg/L	33	Standard
Fe	54	5634.6	5.6	**4.4310**	0.132	3.0	mg/L	138	Standard
Fe	57	1818.4	8.0	**4.8189**	0.400	8.3	mg/L	263	Standard
> **Sc-1**	45	28718.9	3.4				mg/L	27861	Standard
Cl	35	133445.5	5.4				ug/L	100607	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	3770.5	12.6				ug/L	1777	Standard
P	31	22329.8	2.0				ug/L	18074	Standard
S	34	4837.4	3.1				ug/L	3901	Standard
Sr	88	66.7	15.6				ug/L	60	Standard
C	12	73.3	47.9				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	12.7	50.0				mg/L	13	Standard
Ho-1	165	8.3	69.3				mg/L	13	Standard
Er	166	13.3	114.6				mg/L	3	Standard
I	127	29178.2	9.1				mg/L	8539	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	104.729		
	Al	27	97.129		
	Sc	45			
	Ti	47	97.578		
	V	51	98.186		
	Cr	52	98.396		
	Cr	53			
	Mn	55	100.287		
	Co	59	98.724		
	Ni	60	99.090		
	Cu	65	98.888		
	Zn	66	100.115		
>	Ge	72		103.453	
	As	75	97.042		
	Se	82	98.434		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	96.693		
Ag	107	97.315		
Cd	111	96.083		
Cd	114			
> In	115			103.709
Sn	118	96.620		
Sb	123	96.852		
Ba	135	94.333		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.682		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.391		
U	238	100.635		
> Bi	209			102.687
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, July 07, 2016 15:38:17
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63553.0	0.4				ug/L	59299	Standard
	Be	9	35.0	65.5	**0.0405**	0.026	63.1	ug/L	17	Standard
	Al	27	6131.3	32.8	**0.0299**	0.014	46.4	ug/L	1472	Standard
	Sc	45	28059.3	2.9				ug/L	27861	Standard
	Ti	47	32.0	5.4	**0.0178**	0.008	44.4	ug/L	28	Standard
	V	51	1154.8	6.6	**-0.0080**	0.012	153.6	ug/L	1156	Standard
	Cr	52	6507.4	2.9	**-0.0493**	0.029	59.8	ug/L	6689	Standard
	Cr	53	1703.4	10.2	**1.5237**	0.207	13.6	ug/L	348	Standard
	Mn	55	1434.4	13.1	**0.0945**	0.030	31.4	ug/L	770	Standard
	Co	59	263.7	14.9	**0.0036**	0.006	164.2	ug/L	216	Standard
	Ni	60	516.3	3.7	**0.0242**	0.009	35.3	ug/L	440	Standard
	Cu	65	475.0	2.6	**0.2005**	0.008	4.1	ug/L	116	Standard
	Zn	66	1093.0	0.9	**0.8024**	0.010	1.3	ug/L	135	Standard
>	Ge	72	455450.2	0.7				ug/L	445277	Standard
	As	75	13.6	224.9	**0.0495**	0.027	55.4	ug/L	-57	Standard
	Se	82	46.3	17.3	**0.2641**	0.073	27.7	ug/L	10	Standard
	Se-1	77	117.7	12.8	**0.9296**	0.201	21.7	ug/L	57	Standard
>	Ga	71	91.7	25.2				mg/L	78	Standard
	Rb	85	50.0	10.0				ug/L	22	Standard
	Y	89	386559.0	0.3				ug/L	388959	Standard
>	Rh	103	55.0	32.8				ug/L	8	Standard
	Mo	98	227.9	13.0	**0.0802**	0.012	14.8	ug/L	10	Standard
	Ag	107	363.3	11.0	**0.0423**	0.007	15.5	ug/L	66	Standard
	Cd	111	17.6	31.3	**0.0049**	0.003	55.6	mg/L	3	Standard
	Cd	114	48.9	76.3	**0.0058**	0.007	128.8	ug/L	4	Standard
>	In	115	540855.3	0.7				ug/L	523327	Standard
	Sn	118	911.7	19.5	**0.0832**	0.030	35.8	ug/L	488	Standard
	Sb	123	808.5	29.5	**0.1552**	0.049	31.9	ug/L	195	Standard
	Ba	135	69.0	45.4	**0.0175**	0.016	91.4	ug/L	28	Standard
	Ce	140	25.0	52.9				ug/L	83	Standard
>	Tb	159	810551.3	1.2				ug/L	809211	Standard
	Ho	165	15.0	88.2				ug/L	13	Standard
	Tl	203	114.0	26.1	**0.0121**	0.004	30.6	ug/L	4	Standard
	Tl	205	83.3	21.1	**0.0095**	0.003	26.4	ug/L	8	Standard
	Pb	206	288.0	12.3	**0.0086**	0.007	82.3	ug/L	230	Standard
	Pb	207	240.7	10.4	**0.0094**	0.005	56.8	ug/L	184	Standard
	Pb	208	1066.0	11.6	**0.0107**	0.006	60.1	ug/L	775	Standard
	U	238	79.3	29.7	**0.0107**	0.003	31.6	ug/L	3	Standard
>	Bi	209	487114.6	0.7				ug/L	472452	Standard

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Na	23	1.7	173.2	**3.3232**	5.747	172.9	mg/L	0	Standard
Mg	24	148.3	8.5	**0.1363**	0.023	16.7	mg/L	52	Standard
K	39	23.3	32.7	**-0.0187**	0.036	192.1	mg/L	32	Standard
Ca	43	28.3	44.4	**-0.2625**	1.506	573.6	mg/L	33	Standard
Fe	54	126.0	10.3	**-0.0075**	0.011	146.0	mg/L	138	Standard
Fe	57	241.7	8.4	**0.0728**	0.083	114.6	mg/L	263	Standard
Sc-1	45	28059.3	2.9				mg/L	27861	Standard
Cl	35	127876.0	0.3				ug/L	100607	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	2666.9	4.1				ug/L	1777	Standard
P	31	22248.0	2.1				ug/L	18074	Standard
S	34	4750.7	2.8				ug/L	3901	Standard
Sr	88	86.7	14.5				ug/L	60	Standard
C	12	76.7	54.3				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	6.5	86.7				mg/L	13	Standard
Ho-1	165	15.0	88.2				mg/L	13	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	34957.0	6.1				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.285	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.349
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.104
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Se	82	

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, July 07, 2016 15:41:30
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61251.9	2.6				ug/L	59299	Standard
	Be	9	208.3	40.3	**0.2419**	0.091	37.5	ug/L	17	Standard
	Al	27	4272.3	40.3	**0.0183**	0.013	71.5	ug/L	1472	Standard
	Sc	45	27409.8	2.5				ug/L	27861	Standard
	Ti	47	26.0	25.2	**-0.0017**	0.027	1626.3	ug/L	28	Standard
	V	51	3538.5	3.4	**0.3662**	0.014	3.8	ug/L	1156	Standard
	Cr	52	11406.6	1.4	**0.7285**	0.013	1.8	ug/L	6689	Standard
	Cr	53	2025.1	8.2	**2.0042**	0.212	10.6	ug/L	348	Standard
	Mn	55	3722.1	1.6	**0.4788**	0.011	2.2	ug/L	770	Standard
	Co	59	2639.9	0.4	**0.3759**	0.003	0.9	ug/L	216	Standard
	Ni	60	3152.7	3.5	**1.5453**	0.056	3.6	ug/L	440	Standard
	Cu	65	1675.8	4.3	**0.9014**	0.044	4.9	ug/L	116	Standard
	Zn	66	7022.6	1.0	**6.5525**	0.139	2.1	ug/L	135	Standard
>	**Ge**	72	433269.4	1.2				ug/L	445277	Standard
	As	75	404.0	2.2	**0.4179**	0.007	1.7	ug/L	-57	Standard
	Se	82	71.4	12.7	**0.5183**	0.087	16.9	ug/L	10	Standard
	Se-1	77	134.3	16.0	**1.2428**	0.296	23.9	ug/L	57	Standard
>	**Ga**	71	73.3	21.9				mg/L	78	Standard
	Rb	85	36.7	20.8				ug/L	22	Standard
	Y	89	373342.0	0.1				ug/L	388959	Standard
>	**Rh**	103	40.0	87.5				ug/L	8	Standard
	Mo	98	74.3	17.4	**0.0230**	0.005	23.3	ug/L	10	Standard
	Ag	107	2511.5	3.4	**0.3906**	0.011	2.8	ug/L	66	Standard
	Cd	111	461.2	5.7	**0.2291**	0.014	6.3	mg/L	3	Standard
	Cd	114	1078.3	4.2	**0.2185**	0.008	3.7	ug/L	4	Standard
>	**In**	115	516414.3	0.9				ug/L	523327	Standard
	Sn	118	438.3	19.8	**0.0045**	0.016	368.6	ug/L	488	Standard
	Sb	123	1789.6	3.9	**0.3824**	0.018	4.8	ug/L	195	Standard
	Ba	135	1356.7	1.1	**0.6951**	0.003	0.5	ug/L	28	Standard
	Ce	140	8.3	124.9				ug/L	83	Standard
>	**Tb**	159	796045.1	0.5				ug/L	809211	Standard
	Ho	165	3.3	173.2				ug/L	13	Standard
	Tl	203	657.7	5.9	**0.0816**	0.005	6.0	ug/L	4	Standard
	Tl	205	523.3	4.0	**0.0751**	0.003	4.0	ug/L	8	Standard
	Pb	206	1254.4	4.7	**0.2063**	0.012	5.8	ug/L	230	Standard
	Pb	207	1032.0	1.2	**0.1878**	0.003	1.5	ug/L	184	Standard
	Pb	208	4444.6	1.1	**0.1970**	0.003	1.5	ug/L	775	Standard
	U	238	2576.6	2.7	**0.3822**	0.010	2.6	ug/L	3	Standard
>	**Bi**	209	471953.7	0.2				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	115.0	22.6	**0.0950**	0.041	42.8	mg/L	52	Standard
K	39	16.7	62.4	**-0.0486**	0.048	98.6	mg/L	32	Standard
Ca	43	31.7	24.1	**0.2730**	0.927	339.6	mg/L	33	Standard
Fe	54	83.9	17.7	**-0.0404**	0.014	35.3	mg/L	138	Standard
Fe	57	275.0	9.6	**0.1934**	0.063	32.7	mg/L	263	Standard
> **Sc-1**	45	27409.8	2.5				mg/L	27861	Standard
Cl	35	125050.6	0.9				ug/L	100607	Standard
Kr	83	2.7	108.3				ug/L	2	Standard
Br	81	2296.8	7.1				ug/L	1777	Standard
P	31	15709.8	0.6				ug/L	18074	Standard
S	34	4684.1	4.3				ug/L	3901	Standard
Sr	88	81.7	19.7				ug/L	60	Standard
C	12	66.7	8.7				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	13.2	86.6				mg/L	13	Standard
Ho-1	165	3.3	173.2				mg/L	13	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	16200.3	6.3				mg/L	8539	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	120.966		
	Al	27			
	Sc	45			
	Ti	47			
	V	51	91.557		
	Cr	52	91.060		
	Cr	53			
	Mn	55	95.764		
	Co	59	93.973		
	Ni	60	96.580		
	Cu	65	112.670		
	Zn	66	104.841		
>	Ge	72		97.303	
	As	75	104.477		
	Se	82	129.568		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	97.648		
Cd	111	95.442		
Cd	114			
> In	115			98.679
Sn	118			
Sb	123	95.605		
Ba	135	92.680		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	102.052		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.481		
U	238	95.560		
> Bi	209			99.895
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW 81 WG575508-03
Sample Date/Time: Thursday, July 07, 2016 15:58:08
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	61315.5	1.0				ug/L	59299	Standard
	Be	9	11.7	65.5	**0.0149**	0.009	60.3	ug/L	17	Standard
	Al	27	8562.4	1.4	**0.0491**	0.001	2.2	ug/L	1472	Standard
	Sc	45	28353.2	2.3				ug/L	27861	Standard
	Ti	47	34.0	17.9	**0.0253**	0.025	98.8	ug/L	28	Standard
	V	51	1283.7	15.1	**0.0098**	0.028	282.4	ug/L	1156	Standard
	Cr	52	8619.5	0.4	**0.2445**	0.012	5.1	ug/L	6689	Standard
	Cr	53	1035.0	3.8	**0.7629**	0.056	7.3	ug/L	348	Standard
	Mn	55	1079.7	4.0	**0.0386**	0.006	14.9	ug/L	770	Standard
	Co	59	203.7	8.2	**-0.0054**	0.003	51.0	ug/L	216	Standard
	Ni	60	555.0	6.6	**0.0440**	0.023	51.6	ug/L	440	Standard
	Cu	65	322.7	3.5	**0.1167**	0.008	6.4	ug/L	116	Standard
	Zn	66	935.7	2.4	**0.6545**	0.027	4.1	ug/L	135	Standard
>	Ge	72	457647.8	1.0				ug/L	445277	Standard
	As	75	-14.4	304.4	**0.0247**	0.039	158.7	ug/L	-57	Standard
	Se	82	22.4	26.7	**0.0522**	0.054	104.1	ug/L	10	Standard
	Se-1	77	83.0	12.0	**0.4623**	0.129	27.8	ug/L	57	Standard
>	Ga	71	68.3	11.2				mg/L	78	Standard
	Rb	85	61.7	12.4				ug/L	22	Standard
	Y	89	395189.4	1.0				ug/L	388959	Standard
>	Rh	103	41.7	30.2				ug/L	8	Standard
	Mo	98	35.2	19.9	**0.0067**	0.003	38.5	ug/L	10	Standard
	Ag	107	108.3	9.5	**0.0030**	0.001	50.1	ug/L	66	Standard
	Cd	111	2.3	25.8	**-0.0025**	0.000	11.3	mg/L	3	Standard
	Cd	114	17.5	112.8	**-0.0005**	0.004	822.9	ug/L	4	Standard
>	In	115	542810.4	0.9				ug/L	523327	Standard
	Sn	118	776.7	11.6	**0.0592**	0.014	24.3	ug/L	488	Standard
	Sb	123	353.5	35.5	**0.0583**	0.026	45.4	ug/L	195	Standard
	Ba	135	75.0	9.6	**0.0203**	0.003	17.0	ug/L	28	Standard
	Ce	140	28.3	27.0				ug/L	83	Standard
>	Tb	159	819438.8	0.2				ug/L	809211	Standard
	Ho	165	15.0	88.2				ug/L	13	Standard
	Tl	203	20.3	33.5	**0.0006**	0.001	152.1	ug/L	4	Standard
	Tl	205	13.3	78.1	**-0.0006**	0.001	267.4	ug/L	8	Standard
	Pb	206	261.3	2.9	**0.0037**	0.002	49.8	ug/L	230	Standard
	Pb	207	210.7	4.0	**0.0032**	0.002	64.0	ug/L	184	Standard
	Pb	208	944.7	5.4	**0.0046**	0.003	64.5	ug/L	775	Standard
	U	238	6.7	17.3	**0.0003**	0.000	59.6	ug/L	3	Standard
>	Bi	209	483751.4	0.7				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	73.3	17.2	**0.0332**	0.019	56.8	mg/L	52	Standard
K	39	28.3	36.7	**0.0031**	0.049	1566.6	mg/L	32	Standard
Ca	43	20.0	25.0	**-1.3214**	0.644	48.7	mg/L	33	Standard
Fe	54	147.4	40.3	**0.0085**	0.047	558.4	mg/L	138	Standard
Fe	57	258.3	14.8	**0.1131**	0.100	88.1	mg/L	263	Standard
Sc-1	45	28353.2	2.3				mg/L	27861	Standard
Cl	35	137468.8	0.9				ug/L	100607	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	2026.8	7.4				ug/L	1777	Standard
P	31	22107.8	1.0				ug/L	18074	Standard
S	34	5167.5	4.0				ug/L	3901	Standard
Sr	88	95.0	19.0				ug/L	60	Standard
C	12	83.3	66.1				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	19.5	52.5				mg/L	13	Standard
Ho-1	165	15.0	88.2				mg/L	13	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	9147.8	5.3				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.400	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.778	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.723
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.392
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 81 WG575508-04
Sample Date/Time: Thursday, July 07, 2016 16:01:20
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60560.8	2.4				ug/L	59299	Standard
	Be	9	44343.1	1.8	**52.1179**	1.103	2.1	ug/L	17	Standard
	Al	27	9401.2	1.8	**0.0560**	0.001	1.0	ug/L	1472	Standard
	Sc	45	27962.4	0.9				ug/L	27861	Standard
	Ti	47	28.7	20.1	**0.0029**	0.023	805.1	ug/L	28	Standard
	V	51	335407.6	1.2	**48.3236**	0.387	0.8	ug/L	1156	Standard
	Cr	52	358745.8	0.5	**49.4449**	0.369	0.7	ug/L	6689	Standard
	Cr	53	45446.4	1.4	**50.4369**	0.892	1.8	ug/L	348	Standard
	Mn	55	332407.9	0.9	**50.9386**	0.271	0.5	ug/L	770	Standard
	Co	59	333045.6	0.6	**48.8715**	0.112	0.2	ug/L	216	Standard
	Ni	60	93168.9	0.5	**49.9281**	0.460	0.9	ug/L	440	Standard
	Cu	65	93192.4	1.3	**50.2289**	0.802	1.6	ug/L	116	Standard
	Zn	66	55727.6	0.2	**50.2718**	0.244	0.5	ug/L	135	Standard
>	Ge	72	459738.4	0.4				ug/L	445277	Standard
	As	75	55667.9	1.1	**49.4539**	0.393	0.8	ug/L	-57	Standard
	Se	82	5545.1	0.7	**48.4084**	0.370	0.8	ug/L	10	Standard
	Se-1	77	3731.1	3.3	**48.5853**	1.725	3.6	ug/L	57	Standard
>	Ga	71	98.3	20.5				mg/L	78	Standard
	Rb	85	60.0	16.7				ug/L	22	Standard
	Y	89	394762.2	1.5				ug/L	388959	Standard
>	Rh	103	41.7	34.6				ug/L	8	Standard
	Mo	98	39.9	21.1	**0.0086**	0.003	37.7	ug/L	10	Standard
	Ag	107	318764.3	1.2	**48.9638**	0.258	0.5	ug/L	66	Standard
	Cd	111	100855.9	1.4	**48.5540**	0.439	0.9	mg/L	3	Standard
	Cd	114	243507.4	1.1	**47.9527**	0.860	1.8	ug/L	4	Standard
>	In	115	540949.0	0.7				ug/L	523327	Standard
	Sn	118	781.7	3.3	**0.0606**	0.004	7.3	ug/L	488	Standard
	Sb	123	233974.5	1.6	**49.7770**	0.455	0.9	ug/L	195	Standard
	Ba	135	93733.7	0.7	**46.9623**	0.030	0.1	ug/L	28	Standard
	Ce	140	38.3	45.8				ug/L	83	Standard
>	Tb	159	814137.8	1.6				ug/L	809211	Standard
	Ho	165	5.0	100.0				ug/L	13	Standard
	Tl	203	395255.3	0.8	**48.8772**	0.206	0.4	ug/L	4	Standard
	Tl	205	343580.3	0.4	**49.5409**	0.532	1.1	ug/L	8	Standard
	Pb	206	259190.1	1.5	**51.0603**	0.514	1.0	ug/L	230	Standard
	Pb	207	224496.0	1.1	**48.7284**	0.305	0.6	ug/L	184	Standard
	Pb	208	956931.6	0.2	**50.7832**	0.419	0.8	ug/L	775	Standard
	U	238	337326.5	0.8	**48.7731**	0.353	0.7	ug/L	3	Standard
>	Bi	209	485120.5	0.7				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	81.7	12.7	**0.0458**	0.015	33.1	mg/L	52	Standard
K	39	23.3	32.7	**-0.0186**	0.035	188.9	mg/L	32	Standard
Ca	43	31.7	18.2	**0.2011**	0.734	364.7	mg/L	33	Standard
Fe	54	117.0	18.1	**-0.0146**	0.018	123.4	mg/L	138	Standard
Fe	57	280.0	9.3	**0.1924**	0.075	38.9	mg/L	263	Standard
Sc-1	45	27962.4	0.9				mg/L	27861	Standard
Cl	35	134087.5	1.9				ug/L	100607	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	7708.7	25.4				ug/L	1777	Standard
P	31	21475.2	1.7				ug/L	18074	Standard
S	34	4945.8	1.8				ug/L	3901	Standard
Sr	88	83.3	44.2				ug/L	60	Standard
C	12	90.0	44.4				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	12.5	96.6				mg/L	13	Standard
Ho-1	165	5.0	100.0				mg/L	13	Standard
Er	166	16.7	91.7				mg/L	3	Standard
I	127	7460.2	12.2				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		102.128	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.248	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.367
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.682
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1607020903 WG575508-01
Sample Date/Time: Thursday, July 07, 2016 16:04:46
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59878.1	0.7				ug/L	59299	Standard
	Be	9	38.3	49.4	**0.0469**	0.022	47.6	ug/L	17	Standard
	Al	27	1543853.0	0.8	**11.4147**	0.092	0.8	ug/L	1472	Standard
	Sc	45	28657.1	1.9				ug/L	27861	Standard
	Ti	47	80.7	6.4	**0.2150**	0.019	8.9	ug/L	28	Standard
	V	51	1437.0	7.1	**0.0313**	0.015	49.5	ug/L	1156	Standard
	Cr	52	9275.2	0.7	**0.3313**	0.004	1.1	ug/L	6689	Standard
	Cr	53	1415.1	5.7	**1.1825**	0.082	6.9	ug/L	348	Standard
	Mn	55	37319.6	0.8	**5.6069**	0.021	0.4	ug/L	770	Standard
	Co	59	348.3	6.5	**0.0157**	0.003	19.4	ug/L	216	Standard
	Ni	60	742.0	7.6	**0.1432**	0.028	19.6	ug/L	440	Standard
	Cu	65	465.0	5.8	**0.1927**	0.013	6.8	ug/L	116	Standard
	Zn	66	33110.5	0.8	**29.7967**	0.187	0.6	ug/L	135	Standard
>	**Ge**	72	459615.1	0.6				ug/L	445277	Standard
	As	75	220.6	9.1	**0.2332**	0.016	7.1	ug/L	-57	Standard
	Se	82	32.7	1.9	**0.1410**	0.007	5.1	ug/L	10	Standard
	Se-1	77	89.3	11.9	**0.5415**	0.142	26.2	ug/L	57	Standard
>	**Ga**	71	90.0	16.7				mg/L	78	Standard
	Rb	85	1380.1	5.7				ug/L	22	Standard
	Y	89	393578.2	0.8				ug/L	388959	Standard
>	**Rh**	103	25.0	20.0				ug/L	8	Standard
	Mo	98	78.6	14.5	**0.0231**	0.004	17.9	ug/L	10	Standard
	Ag	107	146.3	14.6	**0.0088**	0.003	37.8	ug/L	66	Standard
	Cd	111	181.2	8.6	**0.0832**	0.008	10.0	mg/L	3	Standard
	Cd	114	427.3	3.6	**0.0798**	0.003	4.4	ug/L	4	Standard
>	**In**	115	543749.9	1.0				ug/L	523327	Standard
	Sn	118	785.0	1.1	**0.0605**	0.001	1.7	ug/L	488	Standard
	Sb	123	282.6	32.6	**0.0432**	0.020	45.3	ug/L	195	Standard
	Ba	135	9145.4	0.9	**4.5432**	0.066	1.4	ug/L	28	Standard
	Ce	140	98.3	20.5				ug/L	83	Standard
>	**Tb**	159	816943.3	1.7				ug/L	809211	Standard
	Ho	165	11.7	89.2				ug/L	13	Standard
	Tl	203	223.0	9.8	**0.0257**	0.002	9.6	ug/L	4	Standard
	Tl	205	185.0	11.8	**0.0242**	0.003	12.0	ug/L	8	Standard
	Pb	206	1054.0	4.8	**0.1603**	0.010	6.5	ug/L	230	Standard
	Pb	207	895.7	5.1	**0.1524**	0.011	7.5	ug/L	184	Standard
	Pb	208	3749.2	1.2	**0.1539**	0.004	2.6	ug/L	775	Standard
	U	238	212.3	11.9	**0.0301**	0.004	12.9	ug/L	3	Standard
>	**Bi**	209	484147.2	0.9				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	593.3	16.5	**0.7225**	0.116	16.0	mg/L	52	Standard
K	39	30.0	44.1	**0.0096**	0.062	641.4	mg/L	32	Standard
Ca	43	36.7	55.1	**0.7022**	2.444	348.1	mg/L	33	Standard
Fe	54	492.4	5.1	**0.2863**	0.014	4.8	mg/L	138	Standard
Fe	57	403.3	6.8	**0.5445**	0.065	12.0	mg/L	263	Standard
> **Sc-1**	45	28657.1	1.9				mg/L	27861	Standard
Cl	35	131580.2	0.8				ug/L	100607	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	4053.9	5.5				ug/L	1777	Standard
P	31	23892.2	1.9				ug/L	18074	Standard
S	34	4917.5	1.8				ug/L	3901	Standard
Sr	88	86.7	21.8				ug/L	60	Standard
C	12	73.3	41.7				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	7	Standard
Dy	164	9.4	104.3				mg/L	13	Standard
Ho-1	165	11.7	89.2				mg/L	13	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	6129.6	3.6				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.976	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.220	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.903
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.476
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607020903S WG575508-05
Sample Date/Time: Thursday, July 07, 2016 16:07:58
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	58974.6	2.2				ug/L	59299	Standard
	Be	9	45165.6	1.8	**54.5036**	0.392	0.7	ug/L	17	Standard
	Al	27	1475480.5	1.1	**11.0794**	0.279	2.5	ug/L	1472	Standard
	Sc	45	28466.7	1.2				ug/L	27861	Standard
	Ti	47	95.0	29.5	**0.2750**	0.113	41.1	ug/L	28	Standard
	V	51	332387.0	0.8	**48.1124**	0.531	1.1	ug/L	1156	Standard
	Cr	52	353565.7	0.3	**48.9473**	0.253	0.5	ug/L	6689	Standard
	Cr	53	43972.1	1.1	**49.0155**	0.666	1.4	ug/L	348	Standard
	Mn	55	364600.0	1.1	**56.1439**	0.408	0.7	ug/L	770	Standard
	Co	59	329192.1	0.5	**48.5311**	0.362	0.7	ug/L	216	Standard
	Ni	60	91085.6	0.9	**49.0321**	0.309	0.6	ug/L	440	Standard
	Cu	65	91737.2	0.5	**49.6726**	0.396	0.8	ug/L	116	Standard
	Zn	66	86254.8	0.8	**78.2796**	0.467	0.6	ug/L	135	Standard
>	Ge	72	457616.7	0.6				ug/L	445277	Standard
	As	75	55821.6	1.6	**49.8189**	0.482	1.0	ug/L	-57	Standard
	Se	82	5522.2	2.0	**48.4290**	0.653	1.3	ug/L	10	Standard
	Se-1	77	3811.5	3.0	**49.8728**	1.312	2.6	ug/L	57	Standard
>	Ga	71	86.7	14.5				mg/L	78	Standard
	Rb	85	1313.4	12.3				ug/L	22	Standard
	Y	89	386626.5	1.6				ug/L	388959	Standard
>	Rh	103	35.0	37.8				ug/L	8	Standard
	Mo	98	105.5	10.1	**0.0338**	0.004	12.3	ug/L	10	Standard
	Ag	107	314384.5	0.4	**48.5969**	0.418	0.9	ug/L	66	Standard
	Cd	111	100200.7	0.4	**48.5442**	0.427	0.9	mg/L	3	Standard
	Cd	114	244980.4	0.9	**48.5429**	0.525	1.1	ug/L	4	Standard
>	In	115	537579.1	0.8				ug/L	523327	Standard
	Sn	118	795.0	4.4	**0.0638**	0.007	11.3	ug/L	488	Standard
	Sb	123	216823.9	2.4	**46.4258**	1.475	3.2	ug/L	195	Standard
	Ba	135	101608.9	0.4	**51.2315**	0.574	1.1	ug/L	28	Standard
	Ce	140	141.7	21.6				ug/L	83	Standard
>	Tb	159	805585.3	1.7				ug/L	809211	Standard
	Ho	165	16.7	34.6				ug/L	13	Standard
	Tl	203	394847.2	0.8	**49.0154**	0.254	0.5	ug/L	4	Standard
	Tl	205	340429.5	3.2	**49.2771**	1.686	3.4	ug/L	8	Standard
	Pb	206	256827.8	0.4	**50.7917**	0.148	0.3	ug/L	230	Standard
	Pb	207	223797.8	0.8	**48.7666**	0.544	1.1	ug/L	184	Standard
	Pb	208	952601.0	1.0	**50.7496**	0.758	1.5	ug/L	775	Standard
	U	238	337642.0	0.6	**49.0089**	0.546	1.1	ug/L	3	Standard
>	Bi	209	483252.1	0.5				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	600.0	8.2	**0.7377**	0.058	7.8	mg/L	52	Standard
K	39	23.3	65.5	**-0.0204**	0.070	341.7	mg/L	32	Standard
Ca	43	36.7	68.6	**0.7620**	3.185	418.0	mg/L	33	Standard
Fe	54	547.9	11.1	**0.3345**	0.053	15.8	mg/L	138	Standard
Fe	57	396.7	21.0	**0.5311**	0.238	44.9	mg/L	263	Standard
> **Sc-1**	45	28466.7	1.2				mg/L	27861	Standard
Cl	35	129084.9	1.1				ug/L	100607	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	3843.8	5.3				ug/L	1777	Standard
P	31	23700.2	4.0				ug/L	18074	Standard
S	34	4625.7	0.8				ug/L	3901	Standard
Sr	88	75.0	24.0				ug/L	60	Standard
C	12	113.3	51.7				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	29.7	69.0				mg/L	13	Standard
Ho-1	165	16.7	34.6				mg/L	13	Standard
Er	166	6.7	173.2				mg/L	3	Standard
I	127	11516.1	9.6				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.453	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.771	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.723
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.286
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607020903SD WG575508-06
Sample Date/Time: Thursday, July 07, 2016 16:11:09
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59083.4	2.4				ug/L	59299	Standard
	Be	9	44714.2	1.0	**53.8733**	1.181	2.2	ug/L	17	Standard
	Al	27	1512733.2	0.5	**11.3386**	0.233	2.1	ug/L	1472	Standard
	Sc	45	28136.1	2.7				ug/L	27861	Standard
	Ti	47	72.0	0.0	**0.1813**	0.000	0.1	ug/L	28	Standard
	V	51	332364.3	2.1	**48.1557**	1.020	2.1	ug/L	1156	Standard
	Cr	52	352045.3	1.1	**48.7812**	0.556	1.1	ug/L	6689	Standard
	Cr	53	43335.2	2.2	**48.3464**	1.073	2.2	ug/L	348	Standard
	Mn	55	360373.1	0.6	**55.5475**	0.326	0.6	ug/L	770	Standard
	Co	59	327379.4	0.4	**48.3108**	0.213	0.4	ug/L	216	Standard
	Ni	60	89871.8	0.7	**48.4238**	0.350	0.7	ug/L	440	Standard
	Cu	65	91291.2	0.6	**49.4789**	0.290	0.6	ug/L	116	Standard
	Zn	66	85769.1	1.1	**77.9152**	0.869	1.1	ug/L	135	Standard
>	**Ge**	72	457161.0	0.0				ug/L	445277	Standard
	As	75	55350.8	0.6	**49.4501**	0.256	0.5	ug/L	-57	Standard
	Se	82	5498.1	1.3	**48.2684**	0.621	1.3	ug/L	10	Standard
	Se-1	77	3724.8	1.9	**48.7765**	0.960	2.0	ug/L	57	Standard
>	**Ga**	71	66.7	24.1				mg/L	78	Standard
	Rb	85	1418.4	4.3				ug/L	22	Standard
	Y	89	388027.7	0.7				ug/L	388959	Standard
>	**Rh**	103	30.0	44.1				ug/L	8	Standard
	Mo	98	90.2	15.2	**0.0278**	0.005	18.8	ug/L	10	Standard
	Ag	107	314464.5	0.5	**48.4469**	0.221	0.5	ug/L	66	Standard
	Cd	111	99385.4	1.0	**47.9892**	0.578	1.2	mg/L	3	Standard
	Cd	114	240796.5	0.6	**47.5553**	0.380	0.8	ug/L	4	Standard
>	**In**	115	539358.6	0.2				ug/L	523327	Standard
	Sn	118	701.7	8.6	**0.0470**	0.011	22.6	ug/L	488	Standard
	Sb	123	221908.1	1.0	**47.3498**	0.361	0.8	ug/L	195	Standard
	Ba	135	102085.8	0.5	**51.2996**	0.342	0.7	ug/L	28	Standard
	Ce	140	125.0	17.4				ug/L	83	Standard
>	**Tb**	159	815403.2	0.5				ug/L	809211	Standard
	Ho	165	10.0	50.0				ug/L	13	Standard
	Tl	203	394854.3	0.5	**49.1175**	0.285	0.6	ug/L	4	Standard
	Tl	205	337594.8	1.1	**48.9646**	0.537	1.1	ug/L	8	Standard
	Pb	206	256824.0	0.5	**50.8959**	0.365	0.7	ug/L	230	Standard
	Pb	207	223611.4	0.6	**48.8251**	0.325	0.7	ug/L	184	Standard
	Pb	208	951339.7	0.3	**50.7841**	0.045	0.1	ug/L	775	Standard
	U	238	336699.2	0.9	**48.9719**	0.598	1.2	ug/L	3	Standard
>	**Bi**	209	482259.8	0.3				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	548.3	16.2	**0.6782**	0.125	18.4	mg/L	52	Standard
K	39	31.7	24.1	**0.0187**	0.031	166.1	mg/L	32	Standard
Ca	43	51.7	39.1	**2.6898**	2.503	93.1	mg/L	33	Standard
Fe	54	497.1	15.5	**0.2973**	0.060	20.0	mg/L	138	Standard
Fe	57	425.0	7.7	**0.6364**	0.125	19.7	mg/L	263	Standard
> **Sc-1**	45	28136.1	2.7				mg/L	27861	Standard
Cl	35	126515.5	2.4				ug/L	100607	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	2383.5	11.5				ug/L	1777	Standard
P	31	24060.8	2.0				ug/L	18074	Standard
S	34	4520.7	5.3				ug/L	3901	Standard
Sr	88	70.0	12.4				ug/L	60	Standard
C	12	103.3	20.1				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	7	Standard
Dy	164	22.7	62.7				mg/L	13	Standard
Ho-1	165	10.0	50.0				mg/L	13	Standard
Er	166	13.3	173.2				mg/L	3	Standard
I	127	10828.9	8.7				mg/L	8539	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		99.636	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		102.669	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	103.063
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	102.076
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1607020602
Sample Date/Time: Thursday, July 07, 2016 16:14:21
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62619.1	1.5				ug/L	59299	Standard
	Be	9	55.0	27.3	**0.0637**	0.016	25.3	ug/L	17	Standard
	Al	27	38830921.4	2.2	**274.8398**	5.567	2.0	ug/L	1472	Standard
	Sc	45	28184.5	2.1				ug/L	27861	Standard
	Ti	47	844.0	36.7	**3.5138**	1.340	38.1	ug/L	28	Standard
	V	51	5966.9	7.6	**0.7318**	0.064	8.8	ug/L	1156	Standard
	Cr	52	17233.8	3.2	**1.5786**	0.096	6.1	ug/L	6689	Standard
	Cr	53	9903.3	10.1	**11.2710**	1.250	11.1	ug/L	348	Standard
	Mn	55	44948.2	1.0	**7.1445**	0.078	1.1	ug/L	770	Standard
	Co	59	2843.9	5.9	**0.4043**	0.024	5.8	ug/L	216	Standard
	Ni	60	7193.4	1.2	**3.8240**	0.033	0.9	ug/L	440	Standard
	Cu	65	5144.2	1.7	**2.8650**	0.036	1.3	ug/L	116	Standard
	Zn	66	3881.8	1.4	**3.5056**	0.058	1.6	ug/L	135	Standard
>	**Ge**	72	436533.4	0.7				ug/L	445277	Standard
	As	75	709.0	5.8	**0.7003**	0.042	6.0	ug/L	-57	Standard
	Se	82	113.3	10.0	**0.8988**	0.098	10.9	ug/L	10	Standard
	Se-1	77	637.0	6.5	**8.2109**	0.526	6.4	ug/L	57	Standard
>	**Ga**	71	435.0	0.0				mg/L	78	Standard
	Rb	85	24873.7	2.4				ug/L	22	Standard
	Y	89	375073.0	1.5				ug/L	388959	Standard
>	**Rh**	103	153.3	18.0				ug/L	8	Standard
	Mo	98	19395.1	0.3	**7.8024**	0.100	1.3	ug/L	10	Standard
	Ag	107	299.3	34.2	**0.0352**	0.017	48.3	ug/L	66	Standard
	Cd	111	83.4	57.8	**0.0390**	0.025	63.6	mg/L	3	Standard
	Cd	114	254.3	35.1	**0.0492**	0.019	38.6	ug/L	4	Standard
>	**In**	115	510960.4	1.0				ug/L	523327	Standard
	Sn	118	1391.7	2.0	**0.1813**	0.007	4.0	ug/L	488	Standard
	Sb	123	4708.5	23.2	**1.0442**	0.247	23.6	ug/L	195	Standard
	Ba	135	126900.9	1.1	**67.3198**	0.580	0.9	ug/L	28	Standard
	Ce	140	1211.7	4.2				ug/L	83	Standard
>	**Tb**	159	792966.2	0.3				ug/L	809211	Standard
	Ho	165	71.7	38.4				ug/L	13	Standard
	Tl	203	682.3	19.4	**0.0898**	0.018	19.6	ug/L	4	Standard
	Tl	205	590.0	18.0	**0.0900**	0.016	18.1	ug/L	8	Standard
	Pb	206	645.7	7.5	**0.0906**	0.011	12.1	ug/L	230	Standard
	Pb	207	541.3	14.6	**0.0853**	0.019	22.1	ug/L	184	Standard
	Pb	208	2342.7	12.1	**0.0897**	0.017	19.0	ug/L	775	Standard
	U	238	5654.1	2.1	**0.8888**	0.018	2.0	ug/L	3	Standard
>	**Bi**	209	445866.3	0.6				ug/L	472452	Standard

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Na	23	6.7	114.6	**12.8180**	14.479	113.0	mg/L	0	Standard
Mg	24	51311.8	1.7	**69.3829**	2.210	3.2	mg/L	52	Standard
K	39	908.4	7.5	**4.0550**	0.396	9.8	mg/L	32	Standard
Ca	43	673.3	2.6	**81.4903**	4.035	5.0	mg/L	33	Standard
Fe	54	284.8	3.6	**0.1224**	0.003	2.8	mg/L	138	Standard
Fe	57	1020.0	3.4	**2.4669**	0.175	7.1	mg/L	263	Standard
> **Sc-1**	45	28184.5	2.1				mg/L	27861	Standard
Cl	35	353284.3	1.2				ug/L	100607	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	9786.5	3.2				ug/L	1777	Standard
P	31	24286.1	4.0				ug/L	18074	Standard
S	34	4844.1	7.1				ug/L	3901	Standard
Sr	88	610.0	5.7				ug/L	60	Standard
C	12	156.7	13.3				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	0.0				mg/L	7	Standard
Dy	164	92.0	53.1				mg/L	13	Standard
Ho-1	165	71.7	38.4				mg/L	13	Standard
Er	166	96.7	36.3				mg/L	3	Standard
I	127	31110.3	2.4				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.599	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.036	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.637
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.373
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1607020901
Sample Date/Time: Thursday, July 07, 2016 16:17:32
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62403.3	2.5				ug/L	59299	Standard
	Be	9	28.3	27.0	**0.0338**	0.009	28.0	ug/L	17	Standard
	Al	27	3143277.9	0.8	**22.3180**	0.377	1.7	ug/L	1472	Standard
	Sc	45	28566.9	3.1				ug/L	27861	Standard
	Ti	47	63.0	11.4	**0.1414**	0.027	18.9	ug/L	28	Standard
	V	51	1851.3	9.1	**0.0896**	0.024	26.7	ug/L	1156	Standard
	Cr	52	10923.9	2.1	**0.5541**	0.027	4.9	ug/L	6689	Standard
	Cr	53	2026.8	7.1	**1.8531**	0.138	7.5	ug/L	348	Standard
	Mn	55	3257.4	2.2	**0.3696**	0.007	1.9	ug/L	770	Standard
	Co	59	436.0	1.4	**0.0282**	0.001	5.2	ug/L	216	Standard
	Ni	60	877.7	6.4	**0.2135**	0.027	12.5	ug/L	440	Standard
	Cu	65	1293.4	2.6	**0.6357**	0.013	2.0	ug/L	116	Standard
	Zn	66	1741.4	3.1	**1.3713**	0.044	3.2	ug/L	135	Standard
>	**Ge**	72	462324.3	0.9				ug/L	445277	Standard
	As	75	146.0	4.0	**0.1662**	0.005	2.7	ug/L	-57	Standard
	Se	82	28.6	10.7	**0.1034**	0.025	24.6	ug/L	10	Standard
	Se-1	77	120.3	13.3	**0.9410**	0.210	22.3	ug/L	57	Standard
>	**Ga**	71	78.3	24.2				mg/L	78	Standard
	Rb	85	490.0	5.3				ug/L	22	Standard
	Y	89	394086.6	1.5				ug/L	388959	Standard
>	**Rh**	103	38.3	7.5				ug/L	8	Standard
	Mo	98	57.3	10.2	**0.0150**	0.003	16.6	ug/L	10	Standard
	Ag	107	105.3	2.7	**0.0025**	0.000	20.3	ug/L	66	Standard
	Cd	111	46.2	6.6	**0.0185**	0.002	9.8	mg/L	3	Standard
	Cd	114	133.1	6.2	**0.0221**	0.002	7.2	ug/L	4	Standard
>	**In**	115	545561.0	1.6				ug/L	523327	Standard
	Sn	118	876.7	11.0	**0.0760**	0.018	23.3	ug/L	488	Standard
	Sb	123	962.2	40.1	**0.1873**	0.085	45.1	ug/L	195	Standard
	Ba	135	482.0	3.7	**0.2223**	0.005	2.3	ug/L	28	Standard
	Ce	140	81.7	30.8				ug/L	83	Standard
>	**Tb**	159	818356.0	0.4				ug/L	809211	Standard
	Ho	165	16.7	34.6				ug/L	13	Standard
	Tl	203	132.7	7.9	**0.0145**	0.001	9.8	ug/L	4	Standard
	Tl	205	111.7	22.1	**0.0137**	0.004	27.1	ug/L	8	Standard
	Pb	206	520.7	0.6	**0.0550**	0.001	2.6	ug/L	230	Standard
	Pb	207	433.0	5.3	**0.0516**	0.004	8.5	ug/L	184	Standard
	Pb	208	1847.4	2.4	**0.0526**	0.001	2.7	ug/L	775	Standard
	U	238	129.7	10.5	**0.0181**	0.002	11.8	ug/L	3	Standard
>	**Bi**	209	484060.0	1.0				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	1888.5	6.7	**2.4558**	0.165	6.7	mg/L	52	Standard
K	39	30.0	33.3	**0.0102**	0.049	479.5	mg/L	32	Standard
Ca	43	70.0	7.1	**4.9158**	0.754	15.3	mg/L	33	Standard
Fe	54	145.6	20.1	**0.0065**	0.023	360.3	mg/L	138	Standard
Fe	57	368.3	3.4	**0.4437**	0.062	13.9	mg/L	263	Standard
> **Sc-1**	45	28566.9	3.1				mg/L	27861	Standard
Cl	35	151004.9	1.9				ug/L	100607	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	3710.5	3.4				ug/L	1777	Standard
P	31	23982.3	0.7				ug/L	18074	Standard
S	34	4900.8	3.8				ug/L	3901	Standard
Sr	88	106.7	23.1				ug/L	60	Standard
C	12	80.0	50.0				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	7	Standard
Dy	164	1.6	332.4				mg/L	13	Standard
Ho-1	165	16.7	34.6				mg/L	13	Standard
Er	166	36.7	41.7				mg/L	3	Standard
I	127	12768.7	4.4				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.235	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.828	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.249
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.457
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1607020901PS WG575542-01
Sample Date/Time: Thursday, July 07, 2016 16:20:44
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	61225.2	3.3				ug/L	59299	Standard
	Be	9	46263.9	1.2	**53.7966**	1.091	2.0	ug/L	17	Standard
	Al	27	3096631.5	1.2	**22.4140**	0.478	2.1	ug/L	1472	Standard
	Sc	45	27992.5	0.4				ug/L	27861	Standard
	Ti	47	63.0	11.0	**0.1433**	0.027	18.6	ug/L	28	Standard
	V	51	341631.8	0.1	**49.3111**	0.284	0.6	ug/L	1156	Standard
	Cr	52	366855.3	2.0	**50.6695**	0.726	1.4	ug/L	6689	Standard
	Cr	53	46441.1	2.5	**51.6417**	1.502	2.9	ug/L	348	Standard
	Mn	55	333973.0	2.1	**51.2681**	1.018	2.0	ug/L	770	Standard
	Co	59	337546.2	1.2	**49.6171**	0.331	0.7	ug/L	216	Standard
	Ni	60	93170.6	0.8	**50.0139**	0.088	0.2	ug/L	440	Standard
	Cu	65	94608.5	0.4	**51.0801**	0.265	0.5	ug/L	116	Standard
	Zn	66	57679.3	0.9	**52.1283**	0.257	0.5	ug/L	135	Standard
>	Ge	72	458947.4	0.7				ug/L	445277	Standard
	As	75	56911.8	0.9	**50.6456**	0.156	0.3	ug/L	-57	Standard
	Se	82	5628.5	1.0	**49.2233**	0.218	0.4	ug/L	10	Standard
	Se-1	77	3825.1	1.8	**49.9149**	1.178	2.4	ug/L	57	Standard
>	Ga	71	75.0	20.0				mg/L	78	Standard
	Rb	85	541.7	4.4				ug/L	22	Standard
	Y	89	389484.7	1.2				ug/L	388959	Standard
>	Rh	103	55.0	9.1				ug/L	8	Standard
	Mo	98	68.1	2.1	**0.0195**	0.001	3.3	ug/L	10	Standard
	Ag	107	316484.3	0.9	**48.9622**	0.762	1.6	ug/L	66	Standard
	Cd	111	102078.6	0.4	**49.4928**	0.343	0.7	mg/L	3	Standard
	Cd	114	248677.1	1.5	**49.3118**	0.478	1.0	ug/L	4	Standard
>	In	115	537152.6	0.8				ug/L	523327	Standard
	Sn	118	971.7	7.0	**0.0949**	0.012	12.4	ug/L	488	Standard
	Sb	123	225284.5	2.6	**48.2640**	0.852	1.8	ug/L	195	Standard
	Ba	135	95388.3	0.9	**48.1294**	0.127	0.3	ug/L	28	Standard
	Ce	140	50.0	20.0				ug/L	83	Standard
>	Tb	159	809748.6	0.7				ug/L	809211	Standard
	Ho	165	11.7	49.5				ug/L	13	Standard
	Tl	203	403965.7	0.3	**50.5612**	0.441	0.9	ug/L	4	Standard
	Tl	205	351540.2	1.3	**51.3004**	0.621	1.2	ug/L	8	Standard
	Pb	206	262017.9	0.6	**52.2457**	0.343	0.7	ug/L	230	Standard
	Pb	207	227852.5	0.2	**50.0586**	0.254	0.5	ug/L	184	Standard
	Pb	208	974314.6	0.3	**52.3331**	0.409	0.8	ug/L	775	Standard
	U	238	350172.4	0.7	**51.2454**	0.601	1.2	ug/L	3	Standard
>	Bi	209	479313.2	0.5				ug/L	472452	Standard

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Na	23	1.7	173.2	**3.2417**	5.606	172.9	mg/L	0	Standard
Mg	24	1778.4	2.3	**2.3570**	0.062	2.6	mg/L	52	Standard
K	39	43.3	53.3	**0.0741**	0.107	144.7	mg/L	32	Standard
Ca	43	85.0	15.6	**7.0015**	1.723	24.6	mg/L	33	Standard
Fe	54	195.7	14.7	**0.0504**	0.024	48.3	mg/L	138	Standard
Fe	57	328.3	15.6	**0.3416**	0.160	46.7	mg/L	263	Standard
> **Sc-1**	45	27992.5	0.4				mg/L	27861	Standard
Cl	35	146539.4	2.0				ug/L	100607	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	3700.5	6.2				ug/L	1777	Standard
P	31	23393.0	1.1				ug/L	18074	Standard
S	34	4930.8	2.8				ug/L	3901	Standard
Sr	88	108.3	16.2				ug/L	60	Standard
C	12	123.3	32.8				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	13.0	46.5				mg/L	13	Standard
Ho-1	165	11.7	49.5				mg/L	13	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	12541.9	6.0				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.248	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.070	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		102.642
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		101.452
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607020901SDL WG575542-02
Sample Date/Time: Thursday, July 07, 2016 16:23:55
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57174.4	3.5				ug/L	59299	Standard
	Be	9	43.3	43.7	**0.0556**	0.025	44.4	ug/L	17	Standard
	Al	27	608113.3	2.9	**4.7064**	0.256	5.4	ug/L	1472	Standard
	Sc	45	25720.1	0.8				ug/L	27861	Standard
	Ti	47	25.7	13.7	**-0.0008**	0.016	2010.6	ug/L	28	Standard
	V	51	1653.6	5.9	**0.0818**	0.016	20.0	ug/L	1156	Standard
	Cr	52	7048.3	3.6	**0.0979**	0.043	43.7	ug/L	6689	Standard
	Cr	53	808.4	14.9	**0.5771**	0.152	26.3	ug/L	348	Standard
	Mn	55	2883.0	26.6	**0.3509**	0.129	36.9	ug/L	770	Standard
	Co	59	422.0	34.3	**0.0316**	0.023	74.0	ug/L	216	Standard
	Ni	60	578.0	7.5	**0.0800**	0.027	33.9	ug/L	440	Standard
	Cu	65	538.7	7.8	**0.2559**	0.025	9.8	ug/L	116	Standard
	Zn	66	1738.4	6.3	**1.5043**	0.106	7.0	ug/L	135	Standard
>	**Ge**	72	425472.0	0.7				ug/L	445277	Standard
	As	75	61.7	25.7	**0.0965**	0.015	15.8	ug/L	-57	Standard
	Se	82	23.9	21.9	**0.0809**	0.050	61.2	ug/L	10	Standard
	Se-1	77	78.7	5.7	**0.4842**	0.070	14.5	ug/L	57	Standard
>	**Ga**	71	60.0	8.3				mg/L	78	Standard
	Rb	85	143.3	4.0				ug/L	22	Standard
	Y	89	359991.6	0.9				ug/L	388959	Standard
>	**Rh**	103	40.0	21.7				ug/L	8	Standard
	Mo	98	35.0	38.9	**0.0079**	0.006	71.0	ug/L	10	Standard
	Ag	107	206.0	30.6	**0.0208**	0.010	50.0	ug/L	66	Standard
	Cd	111	54.6	52.5	**0.0250**	0.015	59.8	mg/L	3	Standard
	Cd	114	105.6	51.4	**0.0187**	0.012	61.9	ug/L	4	Standard
>	**In**	115	497314.1	0.3				ug/L	523327	Standard
	Sn	118	350.0	19.8	**-0.0093**	0.013	142.9	ug/L	488	Standard
	Sb	123	1721.6	37.8	**0.3818**	0.151	39.5	ug/L	195	Standard
	Ba	135	178.0	32.3	**0.0798**	0.031	38.9	ug/L	28	Standard
	Ce	140	31.7	24.1				ug/L	83	Standard
>	**Tb**	159	752912.1	1.3				ug/L	809211	Standard
	Ho	165	13.3	21.7				ug/L	13	Standard
	Tl	203	216.0	60.3	**0.0263**	0.017	65.0	ug/L	4	Standard
	Tl	205	326.7	86.1	**0.0473**	0.043	90.8	ug/L	8	Standard
	Pb	206	445.3	15.0	**0.0447**	0.014	31.5	ug/L	230	Standard
	Pb	207	383.7	13.5	**0.0453**	0.012	26.5	ug/L	184	Standard
	Pb	208	2085.1	39.7	**0.0712**	0.047	65.5	ug/L	775	Standard
	U	238	304.3	95.9	**0.0458**	0.045	97.5	ug/L	3	Standard
>	**Bi**	209	459668.6	0.2				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	388.3	21.6	**0.5100**	0.124	24.3	mg/L	52	Standard
K	39	26.7	39.0	**0.0075**	0.052	686.3	mg/L	32	Standard
Ca	43	28.3	53.9	**0.0809**	2.087	2581.8	mg/L	33	Standard
Fe	54	70.5	35.2	**-0.0480**	0.023	47.3	mg/L	138	Standard
Fe	57	258.3	5.6	**0.1956**	0.055	28.2	mg/L	263	Standard
> **Sc-1**	45	25720.1	0.8				mg/L	27861	Standard
Cl	35	137189.0	1.2				ug/L	100607	Standard
Kr	83	2.3	99.0				ug/L	2	Standard
Br	81	1923.5	10.8				ug/L	1777	Standard
P	31	10702.1	3.4				ug/L	18074	Standard
S	34	5017.5	3.8				ug/L	3901	Standard
Sr	88	81.7	34.8				ug/L	60	Standard
C	12	53.3	39.0				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	6.3	179.8				mg/L	13	Standard
Ho-1	165	13.3	21.7				mg/L	13	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	12553.5	3.4				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		96.417	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.552	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.029
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.294
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607020901SDL WG575542-02
Sample Date/Time: Thursday, July 07, 2016 16:27:06
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54335.6	1.5				ug/L	59299	Standard
	Be	9	16.7	69.3	**0.0231**	0.015	64.4	ug/L	17	Standard
	Al	27	113859.6	1.3	**0.9159**	0.004	0.4	ug/L	1472	Standard
	Sc	45	25616.6	2.1				ug/L	27861	Standard
	Ti	47	24.0	22.0	**-0.0068**	0.023	340.5	ug/L	28	Standard
	V	51	1492.2	5.0	**0.0600**	0.012	20.5	ug/L	1156	Standard
	Cr	52	6216.6	2.0	**-0.0144**	0.022	155.5	ug/L	6689	Standard
	Cr	53	560.0	3.2	**0.2864**	0.023	8.0	ug/L	348	Standard
	Mn	55	665.3	4.0	**-0.0159**	0.005	31.0	ug/L	770	Standard
	Co	59	215.3	11.8	**-0.0008**	0.004	551.6	ug/L	216	Standard
	Ni	60	359.3	4.6	**-0.0442**	0.010	21.6	ug/L	440	Standard
	Cu	65	202.0	5.9	**0.0613**	0.008	12.7	ug/L	116	Standard
	Zn	66	843.7	1.1	**0.6410**	0.008	1.2	ug/L	135	Standard
>	**Ge**	72	419255.6	0.7				ug/L	445277	Standard
	As	75	-33.5	72.8	**0.0048**	0.024	494.3	ug/L	-57	Standard
	Se	82	15.9	7.7	**0.0075**	0.013	171.3	ug/L	10	Standard
	Se-1	77	64.7	8.5	**0.2982**	0.081	27.2	ug/L	57	Standard
>	**Ga**	71	60.0	14.4				mg/L	78	Standard
	Rb	85	51.7	31.1				ug/L	22	Standard
	Y	89	348920.8	1.6				ug/L	388959	Standard
>	**Rh**	103	21.7	26.6				ug/L	8	Standard
	Mo	98	41.8	43.2	**0.0108**	0.007	69.3	ug/L	10	Standard
	Ag	107	76.3	15.8	**-0.0008**	0.002	264.3	ug/L	66	Standard
	Cd	111	6.3	18.0	**-0.0003**	0.001	195.4	mg/L	3	Standard
	Cd	114	4.1	132.0	**-0.0030**	0.001	38.9	ug/L	4	Standard
>	**In**	115	494314.8	0.3				ug/L	523327	Standard
	Sn	118	218.3	8.0	**-0.0340**	0.003	10.2	ug/L	488	Standard
	Sb	123	901.9	39.3	**0.1932**	0.082	42.5	ug/L	195	Standard
	Ba	135	33.3	6.2	**0.0011**	0.001	109.6	ug/L	28	Standard
	Ce	140	16.7	91.7				ug/L	83	Standard
>	**Tb**	159	746840.7	0.5				ug/L	809211	Standard
	Ho	165	10.0	100.0				ug/L	13	Standard
	Tl	203	53.7	28.6	**0.0051**	0.002	39.8	ug/L	4	Standard
	Tl	205	48.3	39.2	**0.0050**	0.003	58.9	ug/L	8	Standard
	Pb	206	250.0	1.7	**0.0047**	0.001	18.9	ug/L	230	Standard
	Pb	207	200.3	0.8	**0.0038**	0.000	7.2	ug/L	184	Standard
	Pb	208	876.7	2.2	**0.0041**	0.001	25.0	ug/L	775	Standard
	U	238	13.7	33.0	**0.0014**	0.001	49.1	ug/L	3	Standard
>	**Bi**	209	454018.3	0.2				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	101.7	19.9	**0.0861**	0.033	38.4	mg/L	52	Standard
K	39	36.7	31.5	**0.0596**	0.062	103.9	mg/L	32	Standard
Ca	43	30.0	28.9	**0.3249**	1.112	342.2	mg/L	33	Standard
Fe	54	42.6	43.1	**-0.0732**	0.016	21.4	mg/L	138	Standard
Fe	57	285.0	8.0	**0.2885**	0.060	20.7	mg/L	263	Standard
Sc-1	45	25616.6	2.1				mg/L	27861	Standard
Cl	35	138161.1	0.4				ug/L	100607	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1633.4	10.6				ug/L	1777	Standard
P	31	7972.1	5.8				ug/L	18074	Standard
S	34	5087.5	3.6				ug/L	3901	Standard
Sr	88	85.0	17.6				ug/L	60	Standard
C	12	53.3	21.7				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	9.8	99.2				mg/L	13	Standard
Ho-1	165	10.0	100.0				mg/L	13	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	12021.4	4.1				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.630	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.156	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.456
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.098
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, July 07, 2016 16:30:20
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	56287.8	2.9				ug/L	59299	Standard
	Be	9	42631.6	4.4	**53.8860**	1.132	2.1	ug/L	17	Standard
	Al	27	6533590.3	1.4	**51.4492**	0.883	1.7	ug/L	1472	Standard
	Sc	45	27992.5	1.4				ug/L	27861	Standard
	Ti	47	23694.9	1.8	**97.7062**	1.237	1.3	ug/L	28	Standard
	V	51	330344.1	1.2	**48.1747**	0.387	0.8	ug/L	1156	Standard
	Cr	52	350609.7	1.4	**48.9007**	0.460	0.9	ug/L	6689	Standard
	Cr	53	43915.2	2.7	**49.3203**	1.222	2.5	ug/L	348	Standard
	Mn	55	314356.6	1.2	**48.7549**	0.446	0.9	ug/L	770	Standard
	Co	59	325607.2	1.8	**48.3613**	0.651	1.3	ug/L	216	Standard
	Ni	60	91100.8	1.4	**49.4106**	0.461	0.9	ug/L	440	Standard
	Cu	65	89658.2	1.1	**48.9098**	0.321	0.7	ug/L	116	Standard
	Zn	66	54243.9	1.3	**49.5260**	0.381	0.8	ug/L	135	Standard
>	Ge	72	454192.9	0.5				ug/L	445277	Standard
	As	75	53955.5	0.7	**48.5192**	0.136	0.3	ug/L	-57	Standard
	Se	82	5433.2	1.9	**48.0079**	0.681	1.4	ug/L	10	Standard
	Se-1	77	3739.1	3.7	**49.2947**	1.970	4.0	ug/L	57	Standard
>	Ga	71	90.0	16.7				mg/L	78	Standard
	Rb	85	745.0	2.9				ug/L	22	Standard
	Y	89	388066.9	0.5				ug/L	388959	Standard
>	Rh	103	45.0	66.7				ug/L	8	Standard
	Mo	98	248412.4	1.0	**96.1827**	0.863	0.9	ug/L	10	Standard
	Ag	107	308514.0	1.3	**48.2534**	0.380	0.8	ug/L	66	Standard
	Cd	111	98320.8	0.6	**48.2001**	0.521	1.1	mg/L	3	Standard
	Cd	114	240017.9	1.8	**48.1211**	0.559	1.2	ug/L	4	Standard
>	In	115	531262.2	0.8				ug/L	523327	Standard
	Sn	118	271670.1	2.7	**48.1481**	0.972	2.0	ug/L	488	Standard
	Sb	123	224843.7	0.2	**48.7099**	0.290	0.6	ug/L	195	Standard
	Ba	135	92016.6	1.1	**46.9426**	0.387	0.8	ug/L	28	Standard
	Ce	140	58.3	26.2				ug/L	83	Standard
>	Tb	159	791073.9	1.0				ug/L	809211	Standard
	Ho	165	6.7	43.3				ug/L	13	Standard
	Tl	203	387941.7	1.1	**49.2367**	0.367	0.7	ug/L	4	Standard
	Tl	205	333064.4	0.7	**49.2895**	0.511	1.0	ug/L	8	Standard
	Pb	206	245484.4	0.2	**49.6353**	0.090	0.2	ug/L	230	Standard
	Pb	207	221539.9	0.3	**49.3564**	0.345	0.7	ug/L	184	Standard
	Pb	208	935921.0	0.6	**50.9758**	0.091	0.2	ug/L	775	Standard
	U	238	338262.6	0.2	**50.1981**	0.263	0.5	ug/L	3	Standard
>	Bi	209	472659.3	0.4				ug/L	472452	Standard

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Na	23	1.7	173.2	**3.2193**	5.567	172.9	mg/L	0	Standard
Mg	24	3740.5	2.5	**5.0296**	0.106	2.1	mg/L	52	Standard
K	39	781.7	5.3	**3.4941**	0.237	6.8	mg/L	32	Standard
Ca	43	53.3	37.9	**2.9789**	2.668	89.6	mg/L	33	Standard
Fe	54	5881.2	1.7	**4.7546**	0.034	0.7	mg/L	138	Standard
Fe	57	1910.1	5.3	**5.2457**	0.313	6.0	mg/L	263	Standard
> **Sc-1**	45	27992.5	1.4				mg/L	27861	Standard
Cl	35	135259.0	3.9				ug/L	100607	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	1970.1	1.3				ug/L	1777	Standard
P	31	23368.0	1.8				ug/L	18074	Standard
S	34	5549.3	1.8				ug/L	3901	Standard
Sr	88	68.3	8.4				ug/L	60	Standard
C	12	86.7	40.5				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	12.7	40.1				mg/L	13	Standard
Ho-1	165	6.7	43.3				mg/L	13	Standard
Er	166	13.3	114.6				mg/L	3	Standard
I	127	9229.5	2.9				mg/L	8539	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	107.772		
	Al	27	102.898		
	Sc	45			
	Ti	47	97.706		
	V	51	96.349		
	Cr	52	97.801		
	Cr	53			
	Mn	55	97.510		
	Co	59	96.723		
	Ni	60	98.821		
	Cu	65	97.820		
	Zn	66	99.052		
>	Ge	72		102.002	
	As	75	97.038		
	Se	82	96.016		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 6
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Rb	85			
Y	89			
Rh	103			
Mo	98	96.183		
Ag	107	96.507		
Cd	111	96.400		
Cd	114			
In	115			101.516
Sn	118	96.296		
Sb	123	97.420		
Ba	135	93.885		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.473		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.952		
U	238	100.396		
Bi	209			100.044
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, July 07, 2016 16:33:31
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	55090.0	2.3				ug/L	59299	Standard
	Be	9	30.0	72.6	**0.0397**	0.027	67.9	ug/L	17	Standard
	Al	27	2630.2	36.4	**0.0082**	0.007	86.7	ug/L	1472	Standard
	Sc	45	27823.9	2.4				ug/L	27861	Standard
	Ti	47	24.7	37.7	**-0.0108**	0.038	348.1	ug/L	28	Standard
	V	51	1203.3	4.5	**0.0024**	0.006	247.4	ug/L	1156	Standard
	Cr	52	6254.3	1.4	**-0.0680**	0.002	2.6	ug/L	6689	Standard
	Cr	53	663.3	16.4	**0.3622**	0.116	32.0	ug/L	348	Standard
	Mn	55	865.7	4.5	**0.0089**	0.005	60.9	ug/L	770	Standard
	Co	59	266.7	16.8	**0.0048**	0.006	132.2	ug/L	216	Standard
	Ni	60	339.7	6.2	**-0.0683**	0.009	13.6	ug/L	440	Standard
	Cu	65	187.3	7.0	**0.0458**	0.007	16.4	ug/L	116	Standard
	Zn	66	820.7	0.6	**0.5680**	0.011	1.8	ug/L	135	Standard
>	Ge	72	446755.1	1.3				ug/L	445277	Standard
	As	75	-20.7	79.8	**0.0185**	0.015	80.1	ug/L	-57	Standard
	Se	82	23.4	14.5	**0.0655**	0.033	50.2	ug/L	10	Standard
	Se-1	77	59.0	12.2	**0.1641**	0.104	63.3	ug/L	57	Standard
>	Ga	71	55.0	18.2				mg/L	78	Standard
	Rb	85	23.3	24.7				ug/L	22	Standard
	Y	89	384368.1	1.3				ug/L	388959	Standard
>	Rh	103	20.0	43.3				ug/L	8	Standard
	Mo	98	296.2	21.8	**0.1079**	0.025	23.2	ug/L	10	Standard
	Ag	107	135.3	16.4	**0.0075**	0.003	46.3	ug/L	66	Standard
	Cd	111	15.8	30.3	**0.0041**	0.002	56.8	mg/L	3	Standard
	Cd	114	59.3	45.3	**0.0079**	0.005	67.7	ug/L	4	Standard
>	In	115	532293.2	0.2				ug/L	523327	Standard
	Sn	118	896.7	18.3	**0.0832**	0.029	35.1	ug/L	488	Standard
	Sb	123	1075.1	31.9	**0.2159**	0.074	34.4	ug/L	195	Standard
	Ba	135	58.7	58.2	**0.0127**	0.017	137.2	ug/L	28	Standard
	Ce	140	13.3	21.7				ug/L	83	Standard
>	Tb	159	791538.1	0.6				ug/L	809211	Standard
	Ho	165	6.7	114.6				ug/L	13	Standard
	Tl	203	85.7	39.5	**0.0088**	0.004	48.5	ug/L	4	Standard
	Tl	205	111.7	14.4	**0.0139**	0.002	17.2	ug/L	8	Standard
	Pb	206	301.7	12.4	**0.0125**	0.008	61.7	ug/L	230	Standard
	Pb	207	246.0	17.2	**0.0116**	0.009	80.9	ug/L	184	Standard
	Pb	208	1081.7	10.7	**0.0126**	0.006	49.8	ug/L	775	Standard
	U	238	84.7	27.2	**0.0117**	0.003	28.8	ug/L	3	Standard
>	Bi	209	477848.1	0.7				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	51.7	14.8	**0.0053**	0.012	229.4	mg/L	52	Standard
K	39	36.7	41.7	**0.0444**	0.071	159.7	mg/L	32	Standard
Ca	43	20.0	0.0	**-1.2740**	0.062	4.9	mg/L	33	Standard
Fe	54	132.6	5.3	**-0.0011**	0.008	754.0	mg/L	138	Standard
Fe	57	290.0	4.6	**0.2279**	0.021	9.3	mg/L	263	Standard
Sc-1	45	27823.9	2.4				mg/L	27861	Standard
Cl	35	132344.2	0.5				ug/L	100607	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	1806.8	9.5				ug/L	1777	Standard
P	31	21748.9	2.7				ug/L	18074	Standard
S	34	5379.3	2.6				ug/L	3901	Standard
Sr	88	76.7	10.0				ug/L	60	Standard
C	12	76.7	32.8				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	6.0	193.9				mg/L	13	Standard
Ho-1	165	6.7	114.6				mg/L	13	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	6296.3	3.4				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.332	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.713
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.142
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1607020902
Sample Date/Time: Thursday, July 07, 2016 16:36:44
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56337.9	1.5				ug/L	59299	Standard
	Be	9	25.0	69.3	**0.0331**	0.022	66.9	ug/L	17	Standard
	Al	27	7654249.4	1.6	**60.2040**	0.497	0.8	ug/L	1472	Standard
	Sc	45	27605.1	1.5				ug/L	27861	Standard
	Ti	47	63.7	9.6	**0.1506**	0.023	15.4	ug/L	28	Standard
	V	51	1475.5	12.1	**0.0410**	0.028	68.8	ug/L	1156	Standard
	Cr	52	9524.3	1.7	**0.3921**	0.035	9.0	ug/L	6689	Standard
	Cr	53	1000.0	4.4	**0.7401**	0.061	8.3	ug/L	348	Standard
	Mn	55	45437.4	1.2	**6.9876**	0.077	1.1	ug/L	770	Standard
	Co	59	1909.1	1.9	**0.2503**	0.003	1.3	ug/L	216	Standard
	Ni	60	1269.7	2.1	**0.4407**	0.013	3.0	ug/L	440	Standard
	Cu	65	1722.8	1.8	**0.8893**	0.014	1.6	ug/L	116	Standard
	Zn	66	4350.0	1.8	**3.8186**	0.048	1.3	ug/L	135	Standard
>	**Ge**	72	451014.9	0.9				ug/L	445277	Standard
	As	75	272.1	13.5	**0.2835**	0.033	11.6	ug/L	-57	Standard
	Se	82	73.6	13.6	**0.5112**	0.088	17.2	ug/L	10	Standard
	Se-1	77	88.3	10.3	**0.5504**	0.120	21.8	ug/L	57	Standard
>	**Ga**	71	68.3	11.2				mg/L	78	Standard
	Rb	85	3873.8	3.6				ug/L	22	Standard
	Y	89	384283.1	1.7				ug/L	388959	Standard
>	**Rh**	103	55.0	31.5				ug/L	8	Standard
	Mo	98	321.3	5.6	**0.1184**	0.007	5.8	ug/L	10	Standard
	Ag	107	103.7	4.6	**0.0027**	0.001	27.0	ug/L	66	Standard
	Cd	111	32.7	12.6	**0.0125**	0.002	16.1	mg/L	3	Standard
	Cd	114	80.6	30.4	**0.0123**	0.005	40.0	ug/L	4	Standard
>	**In**	115	528788.8	0.1				ug/L	523327	Standard
	Sn	118	910.0	2.9	**0.0866**	0.005	5.5	ug/L	488	Standard
	Sb	123	762.4	28.5	**0.1493**	0.047	31.5	ug/L	195	Standard
	Ba	135	24850.4	0.4	**12.7243**	0.043	0.3	ug/L	28	Standard
	Ce	140	305.0	11.8				ug/L	83	Standard
>	**Tb**	159	796654.2	0.5				ug/L	809211	Standard
	Ho	165	23.3	65.5				ug/L	13	Standard
	Tl	203	48.7	13.7	**0.0043**	0.001	20.3	ug/L	4	Standard
	Tl	205	46.7	43.3	**0.0045**	0.003	67.3	ug/L	8	Standard
	Pb	206	1336.7	0.6	**0.2244**	0.001	0.5	ug/L	230	Standard
	Pb	207	1147.0	2.5	**0.2147**	0.005	2.6	ug/L	184	Standard
	Pb	208	4868.3	0.9	**0.2214**	0.002	0.9	ug/L	775	Standard
	U	238	1070.4	2.3	**0.1592**	0.003	2.0	ug/L	3	Standard
>	**Bi**	209	469594.2	0.4				ug/L	472452	Standard

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Na	23	1.7	173.2	**3.2690**	5.653	172.9	mg/L	0	Standard
Mg	24	1171.7	7.6	**1.5518**	0.099	6.4	mg/L	52	Standard
K	39	80.0	27.2	**0.2487**	0.100	40.2	mg/L	32	Standard
Ca	43	138.3	12.7	**14.0268**	2.025	14.4	mg/L	33	Standard
Fe	54	497.6	2.9	**0.3060**	0.010	3.2	mg/L	138	Standard
Fe	57	478.3	15.1	**0.8253**	0.206	25.0	mg/L	263	Standard
> **Sc-1**	45	27605.1	1.5				mg/L	27861	Standard
Cl	35	160861.0	2.0				ug/L	100607	Standard
Kr	83	2.0	132.3				ug/L	2	Standard
Br	81	2620.2	11.3				ug/L	1777	Standard
P	31	23820.4	3.0				ug/L	18074	Standard
S	34	5167.5	2.1				ug/L	3901	Standard
Sr	88	143.3	17.2				ug/L	60	Standard
C	12	73.3	34.3				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	7	Standard
Dy	164	48.9	21.4				mg/L	13	Standard
Ho-1	165	23.3	65.5				mg/L	13	Standard
Er	166	23.3	49.5				mg/L	3	Standard
I	127	11402.6	6.4				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.006	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.289	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.044
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.395
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 08, 2016

Method 6020 - Summary Report

Sample ID: L1607021201
Sample Date/Time: Thursday, July 07, 2016 16:39:55
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	66788.6	0.7				ug/L	59299	Standard
	Be	9	40.0	120.5	**0.0440**	0.051	116.8	ug/L	17	Standard
	Al	27	15016031.2	1.8	**99.6296**	1.226	1.2	ug/L	1472	Standard
	Sc	45	26528.2	1.4				ug/L	27861	Standard
	Ti	47	56.0	11.2	**0.1327**	0.028	21.4	ug/L	28	Standard
	V	51	1871.5	11.9	**0.1155**	0.033	28.7	ug/L	1156	Standard
	Cr	52	25815.3	1.0	**2.9450**	0.019	0.7	ug/L	6689	Standard
	Cr	53	2861.9	1.2	**3.0565**	0.063	2.1	ug/L	348	Standard
	Mn	55	1428385.4	0.2	**236.8325**	1.796	0.8	ug/L	770	Standard
	Co	59	26772.6	0.3	**4.2099**	0.020	0.5	ug/L	216	Standard
	Ni	60	36278.4	1.3	**20.8453**	0.404	1.9	ug/L	440	Standard
	Cu	65	6920.2	2.9	**3.9744**	0.139	3.5	ug/L	116	Standard
	Zn	66	5594.4	3.3	**5.2747**	0.210	4.0	ug/L	135	Standard
>	Ge	72	425758.2	0.6				ug/L	445277	Standard
	As	75	2035.0	0.9	**1.9880**	0.012	0.6	ug/L	-57	Standard
	Se	82	184.7	3.2	**1.6010**	0.048	3.0	ug/L	10	Standard
	Se-1	77	134.7	5.7	**1.2808**	0.104	8.1	ug/L	57	Standard
>	Ga	71	618.3	13.4				mg/L	78	Standard
	Rb	85	50846.9	2.1				ug/L	22	Standard
	Y	89	368621.9	2.4				ug/L	388959	Standard
>	Rh	103	213.3	8.9				ug/L	8	Standard
	Mo	98	565.3	8.2	**0.2259**	0.019	8.2	ug/L	10	Standard
	Ag	107	145.3	50.0	**0.0105**	0.012	114.4	ug/L	66	Standard
	Cd	111	160.6	25.7	**0.0800**	0.021	26.7	mg/L	3	Standard
	Cd	114	440.4	25.6	**0.0899**	0.024	26.9	ug/L	4	Standard
>	In	115	500068.7	1.0				ug/L	523327	Standard
	Sn	118	793.4	16.3	**0.0738**	0.023	31.4	ug/L	488	Standard
	Sb	123	478.5	29.7	**0.0933**	0.032	34.2	ug/L	195	Standard
	Ba	135	4856.1	1.5	**2.6158**	0.046	1.8	ug/L	28	Standard
	Ce	140	140.0	27.0				ug/L	83	Standard
>	Tb	159	777503.9	0.8				ug/L	809211	Standard
	Ho	165	8.3	34.6				ug/L	13	Standard
	Tl	203	110007.3	0.6	**15.2129**	0.206	1.4	ug/L	4	Standard
	Tl	205	95802.0	1.2	**15.4460**	0.166	1.1	ug/L	8	Standard
	Pb	206	364.3	24.7	**0.0324**	0.020	60.8	ug/L	230	Standard
	Pb	207	324.3	26.5	**0.0361**	0.021	57.5	ug/L	184	Standard
	Pb	208	1366.4	28.4	**0.0354**	0.023	64.7	ug/L	775	Standard
	U	238	580.0	33.3	**0.0930**	0.031	33.3	ug/L	3	Standard
>	Bi	209	433790.4	0.8				ug/L	472452	Standard

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Na	23	23.3	44.6	**47.9743**	21.041	43.9	mg/L	0	Standard
Mg	24	7106.7	3.0	**10.1486**	0.214	2.1	mg/L	52	Standard
K	39	165.0	10.5	**0.6791**	0.078	11.5	mg/L	32	Standard
Ca	43	2495.2	4.0	**332.0572**	18.324	5.5	mg/L	33	Standard
Fe	54	119.7	12.0	**-0.0071**	0.011	155.6	mg/L	138	Standard
Fe	57	2781.9	2.1	**8.4237**	0.093	1.1	mg/L	263	Standard
Sc-1	45	26528.2	1.4				mg/L	27861	Standard
Cl	35	801542.8	1.5				ug/L	100607	Standard
Kr	83	4.0	50.0				ug/L	2	Standard
Br	81	3927.2	2.6				ug/L	1777	Standard
P	31	20385.4	2.1				ug/L	18074	Standard
S	34	5821.1	3.7				ug/L	3901	Standard
Sr	88	728.4	9.3				ug/L	60	Standard
C	12	93.3	24.7				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	7	Standard
Dy	164	16.3	93.8				mg/L	13	Standard
Ho-1	165	8.3	34.6				mg/L	13	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	9723.1	0.6				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		112.630	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.616	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.556
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	91.817
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1607021202 WG575508-02
Sample Date/Time: Thursday, July 07, 2016 16:43:07
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	70433.3	0.9				ug/L	59299	Standard
	Be	9	25.0	34.6	**0.0265**	0.008	32.0	ug/L	17	Standard
	Al	27	16775496.9	0.7	**105.5500**	0.215	0.2	ug/L	1472	Standard
	Sc	45	26728.6	1.8				ug/L	27861	Standard
	Ti	47	67.0	6.8	**0.1792**	0.020	11.2	ug/L	28	Standard
	V	51	2155.8	8.0	**0.1578**	0.027	17.1	ug/L	1156	Standard
	Cr	52	30291.9	0.6	**3.5942**	0.023	0.6	ug/L	6689	Standard
	Cr	53	3475.4	5.4	**3.7704**	0.242	6.4	ug/L	348	Standard
	Mn	55	1570178.2	0.1	**258.6409**	0.950	0.4	ug/L	770	Standard
	Co	59	36800.6	0.9	**5.7616**	0.039	0.7	ug/L	216	Standard
	Ni	60	44225.8	1.4	**25.2965**	0.251	1.0	ug/L	440	Standard
	Cu	65	8227.9	3.9	**4.7038**	0.165	3.5	ug/L	116	Standard
	Zn	66	5796.4	0.4	**5.4343**	0.019	0.3	ug/L	135	Standard
>	Ge	72	428569.7	0.5				ug/L	445277	Standard
	As	75	3056.5	0.4	**2.9479**	0.010	0.3	ug/L	-57	Standard
	Se	82	189.0	0.8	**1.6294**	0.008	0.5	ug/L	10	Standard
	Se-1	77	137.7	5.5	**1.3109**	0.111	8.5	ug/L	57	Standard
>	Ga	71	738.4	4.8				mg/L	78	Standard
	Rb	85	56853.1	1.2				ug/L	22	Standard
	Y	89	377337.0	1.9				ug/L	388959	Standard
>	Rh	103	221.7	23.7				ug/L	8	Standard
	Mo	98	590.3	1.3	**0.2360**	0.004	1.7	ug/L	10	Standard
	Ag	107	85.3	12.2	**0.0006**	0.002	292.2	ug/L	66	Standard
	Cd	111	181.6	8.3	**0.0909**	0.008	9.1	mg/L	3	Standard
	Cd	114	461.1	11.1	**0.0942**	0.011	11.9	ug/L	4	Standard
>	In	115	500515.9	0.5				ug/L	523327	Standard
	Sn	118	828.4	11.7	**0.0804**	0.018	22.0	ug/L	488	Standard
	Sb	123	336.5	27.1	**0.0608**	0.021	34.5	ug/L	195	Standard
	Ba	135	5371.6	0.6	**2.8926**	0.026	0.9	ug/L	28	Standard
	Ce	140	2915.3	6.6				ug/L	83	Standard
>	Tb	159	790482.9	0.1				ug/L	809211	Standard
	Ho	165	111.7	6.8				ug/L	13	Standard
	Tl	203	116944.9	1.0	**16.0229**	0.113	0.7	ug/L	4	Standard
	Tl	205	101680.1	1.2	**16.2430**	0.099	0.6	ug/L	8	Standard
	Pb	206	259.7	7.3	**0.0088**	0.004	44.5	ug/L	230	Standard
	Pb	207	217.3	3.7	**0.0096**	0.002	23.3	ug/L	184	Standard
	Pb	208	958.3	2.2	**0.0107**	0.001	13.0	ug/L	775	Standard
	U	238	596.7	5.4	**0.0949**	0.005	5.6	ug/L	3	Standard
>	Bi	209	437804.9	0.6				ug/L	472452	Standard

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Na	23	43.3	35.3	**88.8759**	32.577	36.7	mg/L	0	Standard
Mg	24	7687.0	2.7	**10.8999**	0.150	1.4	mg/L	52	Standard
K	39	148.3	8.5	**0.5928**	0.064	10.8	mg/L	32	Standard
Ca	43	2525.2	2.1	**333.4911**	11.478	3.4	mg/L	33	Standard
Fe	54	359.0	16.7	**0.2001**	0.057	28.3	mg/L	138	Standard
Fe	57	2833.6	4.3	**8.5230**	0.338	4.0	mg/L	263	Standard
> **Sc-1**	45	26728.6	1.8				mg/L	27861	Standard
Cl	35	853704.9	1.3				ug/L	100607	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	3830.5	7.9				ug/L	1777	Standard
P	31	19816.3	3.6				ug/L	18074	Standard
S	34	5699.4	3.9				ug/L	3901	Standard
Sr	88	815.0	5.2				ug/L	60	Standard
C	12	76.7	15.1				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	7	Standard
Dy	164	126.3	32.4				mg/L	13	Standard
Ho-1	165	111.7	6.8				mg/L	13	Standard
Er	166	76.7	30.1				mg/L	3	Standard
I	127	4937.5	5.1				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.776	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.248	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.641
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	92.667
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1607021202DP WG575508-07
Sample Date/Time: Thursday, July 07, 2016 16:46:18
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70967.5	1.9				ug/L	59299	Standard
	Be	9	30.0	50.0	**0.0313**	0.015	46.4	ug/L	17	Standard
	Al	27	15959301.4	0.4	**99.6858**	2.267	2.3	ug/L	1472	Standard
	Sc	45	26613.4	1.5				ug/L	27861	Standard
	Ti	47	183.0	19.1	**0.6877**	0.151	22.0	ug/L	28	Standard
	V	51	2304.6	8.8	**0.1814**	0.031	17.1	ug/L	1156	Standard
	Cr	52	29590.2	1.6	**3.4951**	0.066	1.9	ug/L	6689	Standard
	Cr	53	3527.1	3.4	**3.8380**	0.138	3.6	ug/L	348	Standard
	Mn	55	1478485.2	0.9	**243.8915**	1.785	0.7	ug/L	770	Standard
	Co	59	34811.3	0.3	**5.4565**	0.005	0.1	ug/L	216	Standard
	Ni	60	42402.3	0.9	**24.2805**	0.244	1.0	ug/L	440	Standard
	Cu	65	7498.5	3.1	**4.2886**	0.131	3.0	ug/L	116	Standard
	Zn	66	4878.1	0.6	**4.5493**	0.026	0.6	ug/L	135	Standard
>	**Ge**	72	427926.5	0.2				ug/L	445277	Standard
	As	75	2887.3	0.5	**2.7909**	0.017	0.6	ug/L	-57	Standard
	Se	82	180.6	7.8	**1.5534**	0.134	8.6	ug/L	10	Standard
	Se-1	77	160.3	7.4	**1.6349**	0.169	10.3	ug/L	57	Standard
>	**Ga**	71	800.0	6.5				mg/L	78	Standard
	Rb	85	53790.3	1.2				ug/L	22	Standard
	Y	89	376717.4	2.4				ug/L	388959	Standard
>	**Rh**	103	206.7	12.4				ug/L	8	Standard
	Mo	98	559.8	2.9	**0.2226**	0.006	2.6	ug/L	10	Standard
	Ag	107	89.0	10.8	**0.0011**	0.002	142.4	ug/L	66	Standard
	Cd	111	162.4	9.0	**0.0806**	0.007	9.1	mg/L	3	Standard
	Cd	114	372.3	6.6	**0.0750**	0.006	7.3	ug/L	4	Standard
>	**In**	115	502346.6	0.4				ug/L	523327	Standard
	Sn	118	785.0	6.1	**0.0717**	0.009	13.0	ug/L	488	Standard
	Sb	123	291.8	33.7	**0.0502**	0.022	44.4	ug/L	195	Standard
	Ba	135	5219.6	0.6	**2.8000**	0.027	1.0	ug/L	28	Standard
	Ce	140	3113.7	2.6				ug/L	83	Standard
>	**Tb**	159	781166.2	0.1				ug/L	809211	Standard
	Ho	165	66.7	28.4				ug/L	13	Standard
	Tl	203	110860.5	1.2	**15.1464**	0.150	1.0	ug/L	4	Standard
	Tl	205	96075.3	0.9	**15.3050**	0.173	1.1	ug/L	8	Standard
	Pb	206	282.3	4.6	**0.0136**	0.003	21.3	ug/L	230	Standard
	Pb	207	239.3	6.2	**0.0148**	0.003	23.2	ug/L	184	Standard
	Pb	208	998.0	3.6	**0.0129**	0.002	16.3	ug/L	775	Standard
	U	238	544.3	2.8	**0.0863**	0.002	2.6	ug/L	3	Standard
>	**Bi**	209	439036.7	0.2				ug/L	472452	Standard

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Na	23	26.7	65.8	**54.4902**	35.661	65.4	mg/L	0	Standard
Mg	24	7500.2	3.9	**10.6781**	0.268	2.5	mg/L	52	Standard
K	39	141.7	32.0	**0.5651**	0.229	40.5	mg/L	32	Standard
Ca	43	2355.2	6.1	**312.0879**	19.877	6.4	mg/L	33	Standard
Fe	54	392.0	25.2	**0.2291**	0.082	35.6	mg/L	138	Standard
Fe	57	2835.3	3.8	**8.5668**	0.218	2.5	mg/L	263	Standard
> **Sc-1**	45	26613.4	1.5				mg/L	27861	Standard
Cl	35	818946.0	0.4				ug/L	100607	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	5447.6	1.7				ug/L	1777	Standard
P	31	19092.0	1.8				ug/L	18074	Standard
S	34	5329.3	4.0				ug/L	3901	Standard
Sr	88	801.7	4.2				ug/L	60	Standard
C	12	96.7	11.9				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	106.2	55.0				mg/L	13	Standard
Ho-1	165	66.7	28.4				mg/L	13	Standard
Er	166	80.0	66.1				mg/L	3	Standard
I	127	7173.4	6.0				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.677	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.103	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.991
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	92.927
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, July 07, 2016 16:49:31
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64525.6	3.6				ug/L	59299	Standard
	Be	9	47255.3	2.1	**52.1406**	1.270	2.4	ug/L	17	Standard
	Al	27	6973815.3	1.7	**47.9132**	1.113	2.3	ug/L	1472	Standard
	Sc	45	27909.0	0.3				ug/L	27861	Standard
	Ti	47	23425.1	0.8	**97.2578**	1.682	1.7	ug/L	28	Standard
	V	51	333681.9	1.1	**48.9996**	1.049	2.1	ug/L	1156	Standard
	Cr	52	349558.6	1.1	**49.0881**	0.479	1.0	ug/L	6689	Standard
	Cr	53	44139.2	1.8	**49.9073**	0.023	0.0	ug/L	348	Standard
	Mn	55	319241.0	0.9	**49.8540**	0.863	1.7	ug/L	770	Standard
	Co	59	333528.2	0.9	**49.8861**	1.346	2.7	ug/L	216	Standard
	Ni	60	90488.4	1.2	**49.4109**	0.534	1.1	ug/L	440	Standard
	Cu	65	89719.5	0.5	**49.2781**	0.698	1.4	ug/L	116	Standard
	Zn	66	54060.9	1.2	**49.7022**	1.247	2.5	ug/L	135	Standard
>	**Ge**	72	451198.1	1.9				ug/L	445277	Standard
	As	75	53934.9	1.0	**48.8281**	0.472	1.0	ug/L	-57	Standard
	Se	82	5478.9	1.7	**48.7379**	0.219	0.4	ug/L	10	Standard
	Se-1	77	3696.8	2.2	**49.0530**	0.564	1.1	ug/L	57	Standard
>	**Ga**	71	75.0	11.5				mg/L	78	Standard
	Rb	85	736.7	3.2				ug/L	22	Standard
	Y	89	379961.2	1.8				ug/L	388959	Standard
>	**Rh**	103	25.0	80.0				ug/L	8	Standard
	Mo	98	253772.2	0.4	**97.0756**	0.265	0.3	ug/L	10	Standard
	Ag	107	315169.4	0.8	**48.7029**	0.373	0.8	ug/L	66	Standard
	Cd	111	98932.6	1.0	**47.9148**	0.487	1.0	mg/L	3	Standard
	Cd	114	244157.1	0.8	**48.3649**	0.351	0.7	ug/L	4	Standard
>	**In**	115	537723.6	0.1				ug/L	523327	Standard
	Sn	118	275814.5	0.7	**48.2999**	0.362	0.7	ug/L	488	Standard
	Sb	123	226214.9	1.5	**48.4162**	0.697	1.4	ug/L	195	Standard
	Ba	135	92924.4	0.8	**46.8360**	0.345	0.7	ug/L	28	Standard
	Ce	140	66.7	17.3				ug/L	83	Standard
>	**Tb**	159	804134.6	1.3				ug/L	809211	Standard
	Ho	165	6.7	86.6				ug/L	13	Standard
	Tl	203	396009.4	1.0	**49.3909**	0.674	1.4	ug/L	4	Standard
	Tl	205	339614.0	0.2	**49.3858**	0.185	0.4	ug/L	8	Standard
	Pb	206	252515.5	0.5	**50.1724**	0.463	0.9	ug/L	230	Standard
	Pb	207	229211.8	0.4	**50.1802**	0.384	0.8	ug/L	184	Standard
	Pb	208	951344.2	0.4	**50.9182**	0.477	0.9	ug/L	775	Standard
	U	238	346548.4	0.3	**50.5353**	0.317	0.6	ug/L	3	Standard
>	**Bi**	209	481010.5	0.6				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3958.9	3.9	**5.3436**	0.224	4.2	mg/L	52	Standard
K	39	823.4	6.7	**3.6961**	0.247	6.7	mg/L	32	Standard
Ca	43	51.7	11.2	**2.7682**	0.752	27.2	mg/L	33	Standard
Fe	54	5893.1	3.2	**4.7790**	0.145	3.0	mg/L	138	Standard
Fe	57	1766.8	6.1	**4.8172**	0.333	6.9	mg/L	263	Standard
Sc-1	45	27909.0	0.3				mg/L	27861	Standard
Cl	35	133958.1	3.5				ug/L	100607	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	2040.1	1.7				ug/L	1777	Standard
P	31	21852.4	3.1				ug/L	18074	Standard
S	34	5174.2	7.8				ug/L	3901	Standard
Sr	88	71.7	26.4				ug/L	60	Standard
C	12	70.0	42.9				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	69.3				mg/L	7	Standard
Dy	164	9.0	115.9				mg/L	13	Standard
Ho-1	165	6.7	86.6				mg/L	13	Standard
Er	166	20.0	50.0				mg/L	3	Standard
I	127	8227.2	2.3				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	104.281		
Al	27	95.826		
Sc	45			
Ti	47	97.258		
V	51	97.999		
Cr	52	98.176		
Cr	53			
Mn	55	99.708		
Co	59	99.772		
Ni	60	98.822		
Cu	65	98.556		
Zn	66	99.404		
Ge	72		101.330	
As	75	97.656		
Se	82	97.476		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	97.076		
Ag	107	97.406		
Cd	111	95.830		
Cd	114			
In	115			102.751
Sn	118	96.600		
Sb	123	96.832		
Ba	135	93.672		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.782		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.836		
U	238	101.071		
Bi	209			101.812
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, July 07, 2016 16:52:43
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61777.4	1.9				ug/L	59299	Standard
	Be	9	33.3	8.7	**0.0397**	0.003	7.2	ug/L	17	Standard
	Al	27	7348.7	42.9	**0.0399**	0.023	57.1	ug/L	1472	Standard
	Sc	45	27099.2	0.3				ug/L	27861	Standard
	Ti	47	24.3	10.3	**-0.0123**	0.010	83.1	ug/L	28	Standard
	V	51	1132.4	5.9	**-0.0087**	0.010	115.6	ug/L	1156	Standard
	Cr	52	6106.9	2.6	**-0.0925**	0.022	23.6	ug/L	6689	Standard
	Cr	53	448.3	15.6	**0.1136**	0.080	70.1	ug/L	348	Standard
	Mn	55	1263.1	19.3	**0.0710**	0.039	54.5	ug/L	770	Standard
	Co	59	300.7	11.5	**0.0098**	0.005	53.5	ug/L	216	Standard
	Ni	60	327.0	2.3	**-0.0759**	0.005	6.3	ug/L	440	Standard
	Cu	65	229.3	1.7	**0.0687**	0.002	2.6	ug/L	116	Standard
	Zn	66	854.7	2.3	**0.5968**	0.021	3.6	ug/L	135	Standard
>	**Ge**	72	448375.3	0.4				ug/L	445277	Standard
	As	75	-33.6	80.7	**0.0067**	0.025	372.0	ug/L	-57	Standard
	Se	82	19.2	20.2	**0.0266**	0.035	132.5	ug/L	10	Standard
	Se-1	77	61.7	17.8	**0.1965**	0.147	74.6	ug/L	57	Standard
>	**Ga**	71	53.3	43.3				mg/L	78	Standard
	Rb	85	38.3	7.5				ug/L	22	Standard
	Y	89	383592.2	1.3				ug/L	388959	Standard
>	**Rh**	103	25.0	40.0				ug/L	8	Standard
	Mo	98	338.7	22.6	**0.1240**	0.030	24.1	ug/L	10	Standard
	Ag	107	156.0	19.0	**0.0107**	0.005	44.4	ug/L	66	Standard
	Cd	111	27.4	53.4	**0.0098**	0.007	73.6	mg/L	3	Standard
	Cd	114	59.8	31.7	**0.0080**	0.004	47.3	ug/L	4	Standard
>	**In**	115	533796.0	0.5				ug/L	523327	Standard
	Sn	118	938.4	19.6	**0.0902**	0.033	36.4	ug/L	488	Standard
	Sb	123	792.8	34.3	**0.1543**	0.058	37.8	ug/L	195	Standard
	Ba	135	57.7	36.8	**0.0121**	0.011	89.9	ug/L	28	Standard
	Ce	140	20.0	43.3				ug/L	83	Standard
>	**Tb**	159	800956.5	0.9				ug/L	809211	Standard
	Ho	165	8.3	69.3				ug/L	13	Standard
	Tl	203	140.3	29.1	**0.0155**	0.005	33.3	ug/L	4	Standard
	Tl	205	141.7	45.4	**0.0181**	0.009	52.2	ug/L	8	Standard
	Pb	206	302.3	7.3	**0.0119**	0.004	35.6	ug/L	230	Standard
	Pb	207	266.3	9.9	**0.0154**	0.006	37.6	ug/L	184	Standard
	Pb	208	1145.4	8.9	**0.0154**	0.005	34.2	ug/L	775	Standard
	U	238	103.0	35.3	**0.0143**	0.005	36.9	ug/L	3	Standard
>	**Bi**	209	482918.1	0.6				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	56.7	33.4	**0.0141**	0.027	189.7	mg/L	52	Standard
K	39	33.3	22.9	**0.0328**	0.036	110.6	mg/L	32	Standard
Ca	43	10.0	100.0	**-2.5212**	1.321	52.4	mg/L	33	Standard
Fe	54	154.5	17.1	**0.0205**	0.023	109.9	mg/L	138	Standard
Fe	57	285.0	11.5	**0.2363**	0.104	44.0	mg/L	263	Standard
Sc-1	45	27099.2	0.3				mg/L	27861	Standard
Cl	35	130535.3	1.2				ug/L	100607	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	1846.8	2.1				ug/L	1777	Standard
P	31	21136.4	1.3				ug/L	18074	Standard
S	34	5092.5	1.9				ug/L	3901	Standard
Sr	88	66.7	28.4				ug/L	60	Standard
C	12	76.7	41.9				mg/L	110	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	7	Standard
Dy	164	9.2	108.7				mg/L	13	Standard
Ho-1	165	8.3	69.3				mg/L	13	Standard
Er	166	16.7	34.6				mg/L	3	Standard
I	127	5607.7	2.9				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.696	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.001
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.215
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBS H3 WG574535-02
Sample Date/Time: Thursday, July 07, 2016 16:55:55
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60090.6	1.2				ug/L	59299	Standard
	Be	9	20.0	66.1	**0.0251**	0.016	63.7	ug/L	17	Standard
	Al	27	14870.8	17.2	**0.0969**	0.019	20.0	ug/L	1472	Standard
	Sc	45	27702.0	1.0				ug/L	27861	Standard
	Ti	47	69.3	5.5	**0.1761**	0.018	10.1	ug/L	28	Standard
	V	51	1255.9	1.9	**0.0096**	0.005	52.1	ug/L	1156	Standard
	Cr	52	7897.7	1.6	**0.1658**	0.021	12.5	ug/L	6689	Standard
	Cr	53	676.7	2.6	**0.3756**	0.014	3.8	ug/L	348	Standard
	Mn	55	1507.1	8.0	**0.1094**	0.018	16.9	ug/L	770	Standard
	Co	59	256.3	19.8	**0.0031**	0.007	238.7	ug/L	216	Standard
	Ni	60	468.3	0.9	**0.0022**	0.003	137.4	ug/L	440	Standard
	Cu	65	510.7	0.7	**0.2244**	0.003	1.2	ug/L	116	Standard
	Zn	66	1725.4	2.0	**1.4056**	0.024	1.7	ug/L	135	Standard
>	**Ge**	72	448290.4	0.8				ug/L	445277	Standard
	As	75	-57.4	40.1	**-0.0151**	0.021	142.4	ug/L	-57	Standard
	Se	82	22.0	31.0	**0.0516**	0.060	116.3	ug/L	10	Standard
	Se-1	77	57.7	18.5	**0.1423**	0.140	98.4	ug/L	57	Standard
>	**Ga**	71	50.0	36.1				mg/L	78	Standard
	Rb	85	53.3	53.3				ug/L	22	Standard
	Y	89	388084.7	1.6				ug/L	388959	Standard
>	**Rh**	103	16.7	17.3				ug/L	8	Standard
	Mo	98	244.2	12.2	**0.0873**	0.012	13.4	ug/L	10	Standard
	Ag	107	113.3	31.4	**0.0040**	0.006	137.4	ug/L	66	Standard
	Cd	111	17.2	65.1	**0.0048**	0.005	114.1	mg/L	3	Standard
	Cd	114	38.9	33.8	**0.0038**	0.003	68.2	ug/L	4	Standard
>	**In**	115	535142.3	0.2				ug/L	523327	Standard
	Sn	118	601.7	25.0	**0.0304**	0.027	87.8	ug/L	488	Standard
	Sb	123	412.0	37.1	**0.0720**	0.033	45.8	ug/L	195	Standard
	Ba	135	63.7	11.1	**0.0151**	0.004	23.5	ug/L	28	Standard
	Ce	140	53.3	5.4				ug/L	83	Standard
>	**Tb**	159	805928.3	0.9				ug/L	809211	Standard
	Ho	165	11.7	65.5				ug/L	13	Standard
	Tl	203	69.3	56.4	**0.0067**	0.005	73.4	ug/L	4	Standard
	Tl	205	58.3	35.7	**0.0060**	0.003	51.3	ug/L	8	Standard
	Pb	206	300.3	3.9	**0.0116**	0.002	20.1	ug/L	230	Standard
	Pb	207	247.7	12.1	**0.0114**	0.007	60.5	ug/L	184	Standard
	Pb	208	1095.3	8.1	**0.0128**	0.005	40.1	ug/L	775	Standard
	U	238	44.3	60.1	**0.0058**	0.004	67.7	ug/L	3	Standard
>	**Bi**	209	482809.4	0.7				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	60.0	25.0	**0.0170**	0.021	123.7	mg/L	52	Standard
K	39	30.0	28.9	**0.0140**	0.042	299.4	mg/L	32	Standard
Ca	43	13.3	108.3	**-2.1122**	1.883	89.2	mg/L	33	Standard
Fe	54	134.3	20.8	**0.0009**	0.024	2759.0	mg/L	138	Standard
Fe	57	248.3	7.1	**0.1015**	0.052	51.0	mg/L	263	Standard
> **Sc-1**	45	27702.0	1.0				mg/L	27861	Standard
Cl	35	132900.4	1.6				ug/L	100607	Standard
Kr	83	3.0	88.2				ug/L	2	Standard
Br	81	3093.6	1.7				ug/L	1777	Standard
P	31	21899.1	1.4				ug/L	18074	Standard
S	34	5422.6	2.4				ug/L	3901	Standard
Sr	88	73.3	55.5				ug/L	60	Standard
C	12	106.7	37.9				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	7	Standard
Dy	164	13.2	86.6				mg/L	13	Standard
Ho-1	165	11.7	65.5				mg/L	13	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	18764.9	1.8				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.335	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.677	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.258
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.192
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSS H3 WG574535-03
Sample Date/Time: Thursday, July 07, 2016 16:59:06
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59600.4	2.2				ug/L	59299	Standard
	Be	9	22942.4	2.7	**27.3928**	0.271	1.0	ug/L	17	Standard
	Al	27	9596.4	4.1	**0.0585**	0.002	3.5	ug/L	1472	Standard
	Sc	45	28052.6	1.3				ug/L	27861	Standard
	Ti	47	146.3	7.5	**0.4986**	0.045	9.1	ug/L	28	Standard
	V	51	166641.0	0.8	**24.5556**	0.084	0.3	ug/L	1156	Standard
	Cr	52	181861.1	1.6	**25.2600**	0.441	1.7	ug/L	6689	Standard
	Cr	53	22102.8	1.2	**24.9744**	0.130	0.5	ug/L	348	Standard
	Mn	55	162103.9	0.6	**25.4330**	0.213	0.8	ug/L	770	Standard
	Co	59	166059.0	0.1	**24.9938**	0.185	0.7	ug/L	216	Standard
	Ni	60	46206.7	1.2	**25.2892**	0.415	1.6	ug/L	440	Standard
	Cu	65	46917.2	1.0	**25.9259**	0.307	1.2	ug/L	116	Standard
	Zn	66	29175.7	0.3	**26.9227**	0.209	0.8	ug/L	135	Standard
>	Ge	72	447933.5	0.9				ug/L	445277	Standard
	As	75	27536.7	0.8	**25.1268**	0.148	0.6	ug/L	-57	Standard
	Se	82	2755.4	3.4	**24.6136**	0.645	2.6	ug/L	10	Standard
	Se-1	77	1922.1	2.9	**25.3843**	0.544	2.1	ug/L	57	Standard
>	Ga	71	56.7	20.4				mg/L	78	Standard
	Rb	85	131.7	43.8				ug/L	22	Standard
	Y	89	384807.4	1.2				ug/L	388959	Standard
>	Rh	103	31.7	24.1				ug/L	8	Standard
	Mo	98	89.3	11.5	**0.0276**	0.004	14.5	ug/L	10	Standard
	Ag	107	158241.1	0.9	**24.4822**	0.361	1.5	ug/L	66	Standard
	Cd	111	50508.9	0.7	**24.4962**	0.271	1.1	mg/L	3	Standard
	Cd	114	121761.2	0.5	**24.1525**	0.188	0.8	ug/L	4	Standard
>	In	115	536962.5	0.6				ug/L	523327	Standard
	Sn	118	605.0	13.0	**0.0306**	0.014	45.0	ug/L	488	Standard
	Sb	123	116983.7	1.0	**25.0667**	0.378	1.5	ug/L	195	Standard
	Ba	135	47059.3	0.9	**23.7449**	0.282	1.2	ug/L	28	Standard
	Ce	140	41.7	6.9				ug/L	83	Standard
>	Tb	159	799651.3	0.7				ug/L	809211	Standard
	Ho	165	15.0	66.7				ug/L	13	Standard
	Tl	203	199066.2	0.4	**24.8247**	0.143	0.6	ug/L	4	Standard
	Tl	205	172336.3	1.1	**25.0582**	0.323	1.3	ug/L	8	Standard
	Pb	206	129608.0	0.9	**25.7261**	0.171	0.7	ug/L	230	Standard
	Pb	207	112906.5	0.4	**24.6946**	0.145	0.6	ug/L	184	Standard
	Pb	208	483881.7	0.2	**25.8738**	0.062	0.2	ug/L	775	Standard
	U	238	170995.5	0.3	**24.9332**	0.046	0.2	ug/L	3	Standard
>	Bi	209	481035.4	0.2				ug/L	472452	Standard

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Na	23	3.3	173.2	**6.4542**	11.170	173.1	mg/L	0	Standard
Mg	24	76.7	15.1	**0.0385**	0.015	39.3	mg/L	52	Standard
K	39	71.7	28.2	**0.2040**	0.090	44.3	mg/L	32	Standard
Ca	43	30.0	28.9	**-0.0271**	1.079	3986.2	mg/L	33	Standard
Fe	54	155.8	15.1	**0.0172**	0.021	121.1	mg/L	138	Standard
Fe	57	268.3	16.3	**0.1549**	0.144	93.1	mg/L	263	Standard
Sc-1	45	28052.6	1.3				mg/L	27861	Standard
Cl	35	130669.8	1.8				ug/L	100607	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	2083.5	12.2				ug/L	1777	Standard
P	31	22369.8	1.7				ug/L	18074	Standard
S	34	5157.5	4.8				ug/L	3901	Standard
Sr	88	76.7	7.5				ug/L	60	Standard
C	12	63.3	9.1				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	7	Standard
Dy	164	2.7	234.8				mg/L	13	Standard
Ho-1	165	15.0	66.7				mg/L	13	Standard
Er	166	13.3	86.6				mg/L	3	Standard
I	127	7276.7	3.5				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.508	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.597	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.606
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.817
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSS H3 WG574535-03
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Method 6020 - Summary Report

Sample ID: L1606144401
Sample Date/Time: Thursday, July 07, 2016 17:02:17
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60939.0	0.7				ug/L	59299	Standard
	Be	9	571.7	12.6	**0.6689**	0.083	12.5	ug/L	17	Standard
	Al	27	4419898.5	2.2	**32.1319**	0.595	1.9	ug/L	1472	Standard
	Sc	45	31885.2	0.5				ug/L	27861	Standard
	Ti	47	50880.6	0.6	**211.4212**	2.548	1.2	ug/L	28	Standard
	V	51	355129.0	0.2	**52.1692**	0.679	1.3	ug/L	1156	Standard
	Cr	52	177212.7	1.0	**24.4117**	0.131	0.5	ug/L	6689	Standard
	Cr	53	21600.4	3.5	**24.2223**	0.625	2.6	ug/L	348	Standard
	Mn	55	4290469.2	0.6	**671.7724**	11.783	1.8	ug/L	770	Standard
	Co	59	44409.0	0.6	**6.6119**	0.083	1.3	ug/L	216	Standard
	Ni	60	38396.9	0.7	**20.8236**	0.093	0.4	ug/L	440	Standard
	Cu	65	19535.6	0.6	**10.6869**	0.175	1.6	ug/L	116	Standard
	Zn	66	147030.7	1.0	**135.5196**	0.295	0.2	ug/L	135	Standard
>	Ge	72	451065.3	1.2				ug/L	445277	Standard
	As	75	8769.9	0.6	**7.9727**	0.082	1.0	ug/L	-57	Standard
	Se	82	42.9	9.4	**0.2380**	0.040	16.7	ug/L	10	Standard
	Se-1	77	95.0	11.1	**0.6400**	0.143	22.4	ug/L	57	Standard
>	Ga	71	14246.7	1.5				mg/L	78	Standard
	Rb	85	52997.5	0.9				ug/L	22	Standard
	Y	89	523051.1	1.4				ug/L	388959	Standard
>	Rh	103	106.7	34.6				ug/L	8	Standard
	Mo	98	2373.2	0.9	**0.9137**	0.006	0.7	ug/L	10	Standard
	Ag	107	1004.4	9.7	**0.1438**	0.015	10.6	ug/L	66	Standard
	Cd	111	955.7	3.2	**0.4657**	0.016	3.5	mg/L	3	Standard
	Cd	114	2196.5	5.3	**0.4372**	0.024	5.5	ug/L	4	Standard
>	In	115	530453.2	0.4				ug/L	523327	Standard
	Sn	118	1380.1	1.3	**0.1697**	0.003	1.6	ug/L	488	Standard
	Sb	123	514.3	30.3	**0.0949**	0.033	35.3	ug/L	195	Standard
	Ba	135	185920.1	0.4	**95.0102**	0.060	0.1	ug/L	28	Standard
	Ce	140	599861.0	0.6				ug/L	83	Standard
>	Tb	159	814799.5	1.5				ug/L	809211	Standard
	Ho	165	10733.8	0.6				ug/L	13	Standard
	Tl	203	394.3	15.1	**0.0489**	0.007	15.1	ug/L	4	Standard
	Tl	205	375.0	14.8	**0.0539**	0.008	14.7	ug/L	8	Standard
	Pb	206	55398.8	0.7	**11.3449**	0.162	1.4	ug/L	230	Standard
	Pb	207	46130.8	0.5	**10.4089**	0.081	0.8	ug/L	184	Standard
	Pb	208	202772.7	0.3	**11.1863**	0.069	0.6	ug/L	775	Standard
	U	238	8029.8	1.2	**1.2101**	0.020	1.6	ug/L	3	Standard
>	Bi	209	465190.3	0.8				ug/L	472452	Standard

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Na	23	18.3	15.7	**31.3883**	4.791	15.3	mg/L	0	Standard
Mg	24	136.7	24.9	**0.0977**	0.040	41.2	mg/L	52	Standard
K	39	136.7	2.1	**0.4288**	0.010	2.4	mg/L	32	Standard
Ca	43	736.7	6.3	**78.6208**	5.015	6.4	mg/L	33	Standard
Fe	54	15089.8	1.5	**10.8496**	0.113	1.0	mg/L	138	Standard
Fe	57	5002.5	3.6	**12.9377**	0.445	3.4	mg/L	263	Standard
> **Sc-1**	45	31885.2	0.5				mg/L	27861	Standard
Cl	35	132784.7	1.4				ug/L	100607	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	2196.8	3.5				ug/L	1777	Standard
P	31	23912.2	3.4				ug/L	18074	Standard
S	34	5342.6	0.5				ug/L	3901	Standard
Sr	88	406.7	15.8				ug/L	60	Standard
C	12	110.0	32.8				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	12.4				mg/L	7	Standard
Dy	164	16367.5	1.7				mg/L	13	Standard
Ho-1	165	10733.8	0.6				mg/L	13	Standard
Er	166	10060.0	3.4				mg/L	3	Standard
I	127	19330.7	2.0				mg/L	8539	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		102.765	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.300	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.362	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.463	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1606144402
Sample Date/Time: Thursday, July 07, 2016 17:05:29
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63630.0	1.4				ug/L	59299	Standard
	Be	9	901.7	4.4	**1.0098**	0.044	4.3	ug/L	17	Standard
	Al	27	7390489.5	1.5	**51.4660**	0.536	1.0	ug/L	1472	Standard
	Sc	45	33351.7	1.1				ug/L	27861	Standard
	Ti	47	11332.2	1.3	**46.0116**	0.444	1.0	ug/L	28	Standard
	V	51	232604.3	2.5	**33.3882**	0.705	2.1	ug/L	1156	Standard
	Cr	52	169070.4	0.6	**22.7396**	0.179	0.8	ug/L	6689	Standard
	Cr	53	21041.3	2.7	**23.0927**	0.852	3.7	ug/L	348	Standard
	Mn	55	3370651.2	0.2	**516.6706**	6.861	1.3	ug/L	770	Standard
	Co	59	59309.2	0.7	**8.6571**	0.158	1.8	ug/L	216	Standard
	Ni	60	39503.4	0.3	**20.9783**	0.204	1.0	ug/L	440	Standard
	Cu	65	20744.2	0.1	**11.1127**	0.123	1.1	ug/L	116	Standard
	Zn	66	98295.1	0.2	**88.6450**	1.207	1.4	ug/L	135	Standard
>	Ge	72	460698.8	1.2				ug/L	445277	Standard
	As	75	6125.9	1.6	**5.4644**	0.095	1.7	ug/L	-57	Standard
	Se	82	45.7	10.4	**0.2539**	0.045	17.7	ug/L	10	Standard
	Se-1	77	94.3	6.4	**0.6042**	0.074	12.2	ug/L	57	Standard
>	Ga	71	17136.4	1.8				mg/L	78	Standard
	Rb	85	164134.4	1.5				ug/L	22	Standard
	Y	89	568300.6	1.8				ug/L	388959	Standard
>	Rh	103	95.0	24.1				ug/L	8	Standard
	Mo	98	2284.0	2.6	**0.8599**	0.023	2.7	ug/L	10	Standard
	Ag	107	714.0	3.6	**0.0959**	0.004	4.3	ug/L	66	Standard
	Cd	111	300.6	2.7	**0.1408**	0.005	3.5	mg/L	3	Standard
	Cd	114	687.5	4.7	**0.1312**	0.007	5.5	ug/L	4	Standard
>	In	115	542263.1	0.7				ug/L	523327	Standard
	Sn	118	1026.7	13.2	**0.1029**	0.024	23.2	ug/L	488	Standard
	Sb	123	320.1	44.0	**0.0515**	0.030	59.0	ug/L	195	Standard
	Ba	135	303023.9	0.6	**151.5007**	2.016	1.3	ug/L	28	Standard
	Ce	140	911655.8	1.0				ug/L	83	Standard
>	Tb	159	832139.4	0.7				ug/L	809211	Standard
	Ho	165	14635.4	1.1				ug/L	13	Standard
	Tl	203	736.7	0.4	**0.0911**	0.001	0.6	ug/L	4	Standard
	Tl	205	618.3	1.7	**0.0886**	0.001	1.1	ug/L	8	Standard
	Pb	206	190808.3	0.1	**38.3995**	0.233	0.6	ug/L	230	Standard
	Pb	207	160116.6	0.7	**35.5018**	0.107	0.3	ug/L	184	Standard
	Pb	208	700379.7	0.5	**37.9683**	0.418	1.1	ug/L	775	Standard
	U	238	5275.6	1.4	**0.7787**	0.007	1.0	ug/L	3	Standard
>	Bi	209	474758.2	0.6				ug/L	472452	Standard

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Na	23	1.7	173.2	**2.7041**	4.675	172.9	mg/L	0	Standard
Mg	24	203.3	8.6	**0.1669**	0.021	12.8	mg/L	52	Standard
K	39	318.3	9.2	**1.1097**	0.102	9.2	mg/L	32	Standard
Ca	43	433.3	15.7	**42.5692**	7.607	17.9	mg/L	33	Standard
Fe	54	19702.2	1.8	**13.5722**	0.286	2.1	mg/L	138	Standard
Fe	57	5614.4	2.4	**13.9315**	0.275	2.0	mg/L	263	Standard
> **Sc-1**	45	33351.7	1.1				mg/L	27861	Standard
Cl	35	126799.1	1.7				ug/L	100607	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	2430.2	4.9				ug/L	1777	Standard
P	31	21044.6	2.4				ug/L	18074	Standard
S	34	5601.0	1.6				ug/L	3901	Standard
Sr	88	380.0	13.7				ug/L	60	Standard
C	12	176.7	8.6				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	66.1				mg/L	7	Standard
Dy	164	23425.1	1.2				mg/L	13	Standard
Ho-1	165	14635.4	1.1				mg/L	13	Standard
Er	166	13235.8	3.1				mg/L	3	Standard
I	127	20518.9	3.1				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.303	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.463	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.618
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.488
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144403
Sample Date/Time: Thursday, July 07, 2016 17:08:40
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64761.4	0.8				ug/L	59299	Standard
	Be	9	1030.0	3.0	**1.1333**	0.039	3.4	ug/L	17	Standard
	Al	27	16213795.4	1.1	**110.9591**	1.959	1.8	ug/L	1472	Standard
	Sc	45	35215.9	2.5				ug/L	27861	Standard
	Ti	47	4245.9	1.6	**16.7004**	0.390	2.3	ug/L	28	Standard
	V	51	167323.1	1.0	**23.3144**	0.356	1.5	ug/L	1156	Standard
	Cr	52	136158.8	1.6	**17.6062**	0.416	2.4	ug/L	6689	Standard
	Cr	53	16729.2	3.8	**17.7647**	0.602	3.4	ug/L	348	Standard
	Mn	55	2557501.5	0.6	**381.3137**	1.284	0.3	ug/L	770	Standard
	Co	59	74268.2	0.7	**10.5526**	0.048	0.5	ug/L	216	Standard
	Ni	60	46771.7	0.7	**24.2025**	0.342	1.4	ug/L	440	Standard
	Cu	65	28943.6	0.8	**15.1047**	0.223	1.5	ug/L	116	Standard
	Zn	66	53822.4	0.5	**47.1241**	0.162	0.3	ug/L	135	Standard
>	**Ge**	72	473556.5	0.7				ug/L	445277	Standard
	As	75	5349.8	0.9	**4.6482**	0.072	1.6	ug/L	-57	Standard
	Se	82	48.9	5.6	**0.2702**	0.026	9.7	ug/L	10	Standard
	Se-1	77	114.3	13.6	**0.8275**	0.205	24.8	ug/L	57	Standard
>	**Ga**	71	20602.3	1.9				mg/L	78	Standard
	Rb	85	210120.5	1.5				ug/L	22	Standard
	Y	89	649907.4	1.3				ug/L	388959	Standard
>	**Rh**	103	30.0	33.3				ug/L	8	Standard
	Mo	98	381.8	7.7	**0.1345**	0.011	8.5	ug/L	10	Standard
	Ag	107	573.7	5.0	**0.0721**	0.004	6.0	ug/L	66	Standard
	Cd	111	262.3	3.7	**0.1191**	0.005	3.8	mg/L	3	Standard
	Cd	114	514.8	6.3	**0.0946**	0.007	6.9	ug/L	4	Standard
>	**In**	115	556660.4	0.6				ug/L	523327	Standard
	Sn	118	503.3	19.7	**0.0097**	0.017	178.5	ug/L	488	Standard
	Sb	123	323.4	35.8	**0.0503**	0.024	47.8	ug/L	195	Standard
	Ba	135	370840.7	0.3	**180.6060**	0.783	0.4	ug/L	28	Standard
	Ce	140	1338325.5	0.8				ug/L	83	Standard
>	**Tb**	159	857127.5	1.2				ug/L	809211	Standard
	Ho	165	21116.4	2.6				ug/L	13	Standard
	Tl	203	1044.7	1.7	**0.1260**	0.003	2.1	ug/L	4	Standard
	Tl	205	866.7	11.9	**0.1213**	0.015	12.2	ug/L	8	Standard
	Pb	206	77980.2	0.3	**15.1810**	0.038	0.2	ug/L	230	Standard
	Pb	207	64541.8	0.3	**13.8443**	0.087	0.6	ug/L	184	Standard
	Pb	208	286944.7	0.8	**15.0485**	0.057	0.4	ug/L	775	Standard
	U	238	4358.3	1.5	**0.6234**	0.007	1.1	ug/L	3	Standard
>	**Bi**	209	489834.1	0.5				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	171.7	11.0	**0.1206**	0.025	20.6	mg/L	52	Standard
K	39	308.3	21.1	**1.0076**	0.238	23.6	mg/L	32	Standard
Ca	43	101.7	10.2	**6.4835**	1.271	19.6	mg/L	33	Standard
Fe	54	20081.5	1.3	**13.0989**	0.161	1.2	mg/L	138	Standard
Fe	57	5521.0	2.2	**12.9394**	0.634	4.9	mg/L	263	Standard
> **Sc-1**	45	35215.9	2.5				mg/L	27861	Standard
Cl	35	122808.4	1.3				ug/L	100607	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2423.5	6.3				ug/L	1777	Standard
P	31	22361.5	3.4				ug/L	18074	Standard
S	34	5160.9	6.0				ug/L	3901	Standard
Sr	88	118.3	17.1				ug/L	60	Standard
C	12	220.0	12.0				mg/L	110	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	50.0	34.6				mg/L	7	Standard
Dy	164	34374.0	3.2				mg/L	13	Standard
Ho-1	165	21116.4	2.6				mg/L	13	Standard
Er	166	19075.3	2.1				mg/L	3	Standard
I	127	16278.7	4.1				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.211	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.351	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.370
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.679
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144404
Sample Date/Time: Thursday, July 07, 2016 17:11:52
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63924.6	1.6				ug/L	59299	Standard
	Be	9	771.7	3.3	**0.8604**	0.026	3.0	ug/L	17	Standard
	Al	27	10230820.6	1.5	**70.9313**	1.421	2.0	ug/L	1472	Standard
	Sc	45	35140.7	0.3				ug/L	27861	Standard
	Ti	47	4668.1	3.1	**18.3052**	0.677	3.7	ug/L	28	Standard
	V	51	104152.6	0.5	**14.3917**	0.139	1.0	ug/L	1156	Standard
	Cr	52	114303.9	0.7	**14.5661**	0.189	1.3	ug/L	6689	Standard
	Cr	53	13702.9	0.8	**14.4261**	0.189	1.3	ug/L	348	Standard
	Mn	55	4182962.4	0.2	**621.4745**	5.069	0.8	ug/L	770	Standard
	Co	59	60735.8	0.2	**8.5918**	0.062	0.7	ug/L	216	Standard
	Ni	60	38531.3	1.1	**19.8186**	0.255	1.3	ug/L	440	Standard
	Cu	65	20041.9	0.8	**10.4024**	0.116	1.1	ug/L	116	Standard
	Zn	66	39491.4	0.9	**34.3974**	0.386	1.1	ug/L	135	Standard
>	**Ge**	72	475298.0	0.6				ug/L	445277	Standard
	As	75	3461.0	1.7	**3.0090**	0.030	1.0	ug/L	-57	Standard
	Se	82	39.8	30.2	**0.1916**	0.099	51.9	ug/L	10	Standard
	Se-1	77	94.0	6.5	**0.5618**	0.073	13.0	ug/L	57	Standard
>	**Ga**	71	17324.9	0.8				mg/L	78	Standard
	Rb	85	146594.1	0.8				ug/L	22	Standard
	Y	89	628937.4	2.3				ug/L	388959	Standard
>	**Rh**	103	26.7	28.6				ug/L	8	Standard
	Mo	98	729.7	2.6	**0.2636**	0.007	2.6	ug/L	10	Standard
	Ag	107	430.7	4.4	**0.0509**	0.003	6.3	ug/L	66	Standard
	Cd	111	168.4	8.7	**0.0754**	0.007	9.6	mg/L	3	Standard
	Cd	114	402.9	6.1	**0.0734**	0.005	6.7	ug/L	4	Standard
>	**In**	115	555505.5	0.6				ug/L	523327	Standard
	Sn	118	1011.7	11.0	**0.0962**	0.020	20.7	ug/L	488	Standard
	Sb	123	346.7	22.7	**0.0552**	0.016	29.7	ug/L	195	Standard
	Ba	135	277107.4	0.4	**135.2315**	0.470	0.3	ug/L	28	Standard
	Ce	140	1011016.2	0.6				ug/L	83	Standard
>	**Tb**	159	842546.1	2.4				ug/L	809211	Standard
	Ho	165	18317.7	2.7				ug/L	13	Standard
	Tl	203	832.4	3.7	**0.1010**	0.005	4.7	ug/L	4	Standard
	Tl	205	736.7	7.5	**0.1037**	0.008	7.6	ug/L	8	Standard
	Pb	206	48141.7	0.9	**9.4439**	0.234	2.5	ug/L	230	Standard
	Pb	207	39106.4	0.4	**8.4516**	0.161	1.9	ug/L	184	Standard
	Pb	208	175385.1	0.3	**9.2677**	0.133	1.4	ug/L	775	Standard
	U	238	3808.1	1.9	**0.5497**	0.004	0.6	ug/L	3	Standard
>	**Bi**	209	485303.2	1.6				ug/L	472452	Standard

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Na	23	1.7	173.2	**2.5985**	4.492	172.9	mg/L	0	Standard
Mg	24	128.3	19.2	**0.0736**	0.027	36.1	mg/L	52	Standard
K	39	230.0	20.7	**0.7220**	0.178	24.7	mg/L	32	Standard
Ca	43	48.3	21.5	**1.0700**	1.066	99.6	mg/L	33	Standard
Fe	54	14089.6	0.9	**9.1752**	0.087	1.0	mg/L	138	Standard
Fe	57	3820.5	1.3	**8.7583**	0.098	1.1	mg/L	263	Standard
Sc-1	45	35140.7	0.3				mg/L	27861	Standard
Cl	35	119065.4	1.6				ug/L	100607	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	2320.2	5.9				ug/L	1777	Standard
P	31	20957.8	1.0				ug/L	18074	Standard
S	34	4647.4	3.0				ug/L	3901	Standard
Sr	88	118.3	2.4				ug/L	60	Standard
C	12	116.7	34.6				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	66.7				mg/L	7	Standard
Dy	164	29631.9	1.3				mg/L	13	Standard
Ho-1	165	18317.7	2.7				mg/L	13	Standard
Er	166	16045.2	4.8				mg/L	3	Standard
I	127	26054.1	2.1				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		107.800	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.742	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.149
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.720
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144405
Sample Date/Time: Thursday, July 07, 2016 17:15:03
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63042.6	0.9				ug/L	59299	Standard
	Be	9	511.7	8.8	**0.5790**	0.053	9.1	ug/L	17	Standard
	Al	27	12097422.8	1.4	**85.0336**	0.433	0.5	ug/L	1472	Standard
	Sc	45	32676.9	0.8				ug/L	27861	Standard
	Ti	47	3699.8	1.3	**14.5090**	0.160	1.1	ug/L	28	Standard
	V	51	97070.5	0.9	**13.4258**	0.142	1.1	ug/L	1156	Standard
	Cr	52	85225.4	0.4	**10.6339**	0.038	0.4	ug/L	6689	Standard
	Cr	53	10403.6	0.8	**10.8765**	0.108	1.0	ug/L	348	Standard
	Mn	55	1564880.7	0.3	**232.8413**	1.452	0.6	ug/L	770	Standard
	Co	59	41553.6	1.0	**5.8776**	0.045	0.8	ug/L	216	Standard
	Ni	60	28548.5	0.8	**14.6444**	0.090	0.6	ug/L	440	Standard
	Cu	65	21137.7	0.4	**10.9943**	0.011	0.1	ug/L	116	Standard
	Zn	66	39760.8	0.9	**34.6962**	0.210	0.6	ug/L	135	Standard
>	Ge	72	474425.2	0.3				ug/L	445277	Standard
	As	75	2358.0	4.0	**2.0659**	0.084	4.1	ug/L	-57	Standard
	Se	82	53.3	12.6	**0.3073**	0.058	19.0	ug/L	10	Standard
	Se-1	77	94.0	7.0	**0.5644**	0.087	15.4	ug/L	57	Standard
>	Ga	71	11717.9	1.3				mg/L	78	Standard
	Rb	85	114304.6	0.6				ug/L	22	Standard
	Y	89	567689.4	1.6				ug/L	388959	Standard
>	Rh	103	38.3	27.2				ug/L	8	Standard
	Mo	98	207.2	2.6	**0.0704**	0.002	2.3	ug/L	10	Standard
	Ag	107	389.3	7.5	**0.0449**	0.004	9.7	ug/L	66	Standard
	Cd	111	245.6	9.5	**0.1119**	0.010	9.3	mg/L	3	Standard
	Cd	114	616.2	4.5	**0.1147**	0.005	4.5	ug/L	4	Standard
>	In	115	553519.4	0.5				ug/L	523327	Standard
	Sn	118	451.7	13.8	**0.0013**	0.011	830.4	ug/L	488	Standard
	Sb	123	242.0	27.8	**0.0337**	0.014	42.1	ug/L	195	Standard
	Ba	135	121636.3	1.3	**59.5617**	0.530	0.9	ug/L	28	Standard
	Ce	140	840491.5	0.4				ug/L	83	Standard
>	Tb	159	841378.0	1.4				ug/L	809211	Standard
	Ho	165	14096.6	1.8				ug/L	13	Standard
	Tl	203	552.7	9.0	**0.0667**	0.006	8.5	ug/L	4	Standard
	Tl	205	453.3	4.5	**0.0632**	0.004	5.9	ug/L	8	Standard
	Pb	206	44163.9	0.6	**8.7057**	0.083	1.0	ug/L	230	Standard
	Pb	207	36188.5	0.2	**7.8600**	0.086	1.1	ug/L	184	Standard
	Pb	208	161120.7	0.5	**8.5568**	0.130	1.5	ug/L	775	Standard
	U	238	4182.2	1.3	**0.6071**	0.007	1.1	ug/L	3	Standard
>	Bi	209	482663.5	1.3				ug/L	472452	Standard

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Na	23	3.3	173.2	**5.5915**	9.676	173.1	mg/L	0	Standard
Mg	24	130.0	32.9	**0.0863**	0.051	59.0	mg/L	52	Standard
K	39	216.7	9.3	**0.7323**	0.074	10.2	mg/L	32	Standard
Ca	43	53.3	10.8	**1.9873**	0.662	33.3	mg/L	33	Standard
Fe	54	10557.2	2.4	**7.3726**	0.225	3.1	mg/L	138	Standard
Fe	57	2938.6	3.9	**7.1293**	0.353	4.9	mg/L	263	Standard
> **Sc-1**	45	32676.9	0.8				mg/L	27861	Standard
Cl	35	122198.1	0.7				ug/L	100607	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	2653.6	6.2				ug/L	1777	Standard
P	31	21288.3	1.1				ug/L	18074	Standard
S	34	5319.3	5.6				ug/L	3901	Standard
Sr	88	143.3	16.5				ug/L	60	Standard
C	12	193.3	10.8				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	80.0	21.7				mg/L	7	Standard
Dy	164	22895.1	2.5				mg/L	13	Standard
Ho-1	165	14096.6	1.8				mg/L	13	Standard
Er	166	12451.8	5.5				mg/L	3	Standard
I	127	26481.5	1.7				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.313	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.546	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.769
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.161
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606144406
Sample Date/Time: Thursday, July 07, 2016 17:18:15
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63681.9	1.6				ug/L	59299	Standard
	Be	9	796.7	14.5	**0.8927**	0.139	15.6	ug/L	17	Standard
	Al	27	10040718.8	2.0	**69.8662**	0.570	0.8	ug/L	1472	Standard
	Sc	45	34479.2	0.8				ug/L	27861	Standard
	Ti	47	5538.0	1.9	**21.1115**	0.467	2.2	ug/L	28	Standard
	V	51	150714.1	1.4	**20.3016**	0.271	1.3	ug/L	1156	Standard
	Cr	52	433271.4	0.6	**56.2432**	0.499	0.9	ug/L	6689	Standard
	Cr	53	53646.5	1.0	**55.9850**	0.507	0.9	ug/L	348	Standard
	Mn	55	3321224.8	1.2	**479.3201**	7.096	1.5	ug/L	770	Standard
	Co	59	75140.2	0.4	**10.3327**	0.021	0.2	ug/L	216	Standard
	Ni	60	40179.9	0.2	**20.0793**	0.059	0.3	ug/L	440	Standard
	Cu	65	179669.4	0.9	**91.0390**	1.043	1.1	ug/L	116	Standard
	Zn	66	436590.2	0.4	**371.3245**	1.966	0.5	ug/L	135	Standard
>	Ge	72	489270.9	0.3				ug/L	445277	Standard
	As	75	6174.4	1.1	**5.1877**	0.065	1.2	ug/L	-57	Standard
	Se	82	131.4	8.4	**0.9355**	0.094	10.0	ug/L	10	Standard
	Se-1	77	154.3	16.7	**1.2759**	0.322	25.3	ug/L	57	Standard
>	Ga	71	15127.6	2.1				mg/L	78	Standard
	Rb	85	190864.8	1.6				ug/L	22	Standard
	Y	89	596675.6	0.8				ug/L	388959	Standard
>	Rh	103	120.0	28.9				ug/L	8	Standard
	Mo	98	7038.7	1.0	**2.5467**	0.036	1.4	ug/L	10	Standard
	Ag	107	1942.5	1.9	**0.2711**	0.006	2.2	ug/L	66	Standard
	Cd	111	11145.2	1.1	**5.1151**	0.072	1.4	mg/L	3	Standard
	Cd	114	27701.5	2.5	**5.1992**	0.107	2.0	ug/L	4	Standard
>	In	115	567110.3	0.5				ug/L	523327	Standard
	Sn	118	2943.6	4.5	**0.4139**	0.023	5.7	ug/L	488	Standard
	Sb	123	1155.9	3.7	**0.2180**	0.008	3.6	ug/L	195	Standard
	Ba	135	493322.8	1.1	**235.8349**	2.898	1.2	ug/L	28	Standard
	Ce	140	939644.2	0.5				ug/L	83	Standard
>	Tb	159	862341.8	1.3				ug/L	809211	Standard
	Ho	165	14563.7	1.8				ug/L	13	Standard
	Tl	203	863.7	3.1	**0.0981**	0.004	3.7	ug/L	4	Standard
	Tl	205	748.4	12.1	**0.0986**	0.012	12.2	ug/L	8	Standard
	Pb	206	1832153.9	0.2	**338.3829**	2.955	0.9	ug/L	230	Standard
	Pb	207	1540625.5	0.7	**313.4908**	3.820	1.2	ug/L	184	Standard
	Pb	208	6779443.0	0.3	**337.2635**	2.277	0.7	ug/L	775	Standard
	U	238	9249.8	0.6	**1.2521**	0.003	0.2	ug/L	3	Standard
>	Bi	209	517894.6	0.7				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	201.7	14.3	**0.1573**	0.031	19.6	mg/L	52	Standard
K	39	268.3	19.1	**0.8830**	0.202	22.8	mg/L	32	Standard
Ca	43	123.3	6.2	**8.9279**	0.802	9.0	mg/L	33	Standard
Fe	54	17167.7	2.5	**11.4230**	0.376	3.3	mg/L	138	Standard
Fe	57	4824.1	3.7	**11.4675**	0.511	4.5	mg/L	263	Standard
> **Sc-1**	45	34479.2	0.8				mg/L	27861	Standard
Cl	35	125056.7	1.4				ug/L	100607	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	7615.3	7.7				ug/L	1777	Standard
P	31	21935.9	2.8				ug/L	18074	Standard
S	34	4960.8	1.6				ug/L	3901	Standard
Sr	88	150.0	5.8				ug/L	60	Standard
C	12	930.0	5.7				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	406.7	16.4				mg/L	7	Standard
Dy	164	24019.3	0.7				mg/L	13	Standard
Ho-1	165	14563.7	1.8				mg/L	13	Standard
Er	166	13305.8	3.9				mg/L	3	Standard
I	127	52007.5	3.4				mg/L	8539	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		107.391	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		109.880	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.366
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.619
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1606144406PS WG575059-01
Sample Date/Time: Thursday, July 07, 2016 17:21:26
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63663.5	1.7				ug/L	59299	Standard
	Be	9	48270.1	1.0	**53.9633**	0.837	1.6	ug/L	17	Standard
	Al	27	9912237.7	0.9	**69.0027**	0.962	1.4	ug/L	1472	Standard
	Sc	45	34526.0	1.8				ug/L	27861	Standard
	Ti	47	5518.3	1.4	**21.1179**	0.295	1.4	ug/L	28	Standard
	V	51	503384.8	1.0	**68.4897**	0.798	1.2	ug/L	1156	Standard
	Cr	52	805938.1	0.7	**105.8709**	0.858	0.8	ug/L	6689	Standard
	Cr	53	101750.5	0.8	**106.9630**	0.571	0.5	ug/L	348	Standard
	Mn	55	3634580.5	0.5	**526.6017**	4.582	0.9	ug/L	770	Standard
	Co	59	425547.3	1.0	**58.9133**	0.587	1.0	ug/L	216	Standard
	Ni	60	137335.7	1.1	**69.5223**	0.636	0.9	ug/L	440	Standard
	Cu	65	276326.7	0.1	**140.5930**	0.647	0.5	ug/L	116	Standard
	Zn	66	497399.6	0.9	**424.7338**	5.078	1.2	ug/L	135	Standard
>	Ge	72	487365.3	0.3				ug/L	445277	Standard
	As	75	66543.2	0.5	**55.7612**	0.445	0.8	ug/L	-57	Standard
	Se	82	6270.8	1.3	**51.6512**	0.754	1.5	ug/L	10	Standard
	Se-1	77	4279.9	2.3	**52.6202**	1.059	2.0	ug/L	57	Standard
>	Ga	71	15364.5	3.5				mg/L	78	Standard
	Rb	85	190667.2	0.7				ug/L	22	Standard
	Y	89	592347.7	1.0				ug/L	388959	Standard
>	Rh	103	140.0	9.4				ug/L	8	Standard
	Mo	98	6914.2	1.8	**2.5189**	0.053	2.1	ug/L	10	Standard
	Ag	107	329428.5	0.7	**48.6048**	0.531	1.1	ug/L	66	Standard
	Cd	111	116119.5	0.5	**53.6960**	0.419	0.8	mg/L	3	Standard
	Cd	114	285423.2	0.8	**53.9836**	0.638	1.2	ug/L	4	Standard
>	In	115	563202.8	0.4				ug/L	523327	Standard
	Sn	118	4122.2	4.2	**0.6146**	0.027	4.3	ug/L	488	Standard
	Sb	123	234632.9	2.3	**47.9478**	1.205	2.5	ug/L	195	Standard
	Ba	135	585429.0	0.7	**281.8107**	2.367	0.8	ug/L	28	Standard
	Ce	140	931331.0	1.2				ug/L	83	Standard
>	Tb	159	856026.8	1.3				ug/L	809211	Standard
	Ho	165	14872.3	1.1				ug/L	13	Standard
	Tl	203	411167.0	0.4	**47.6813**	0.261	0.5	ug/L	4	Standard
	Tl	205	356611.5	1.1	**48.2199**	0.753	1.6	ug/L	8	Standard
	Pb	206	2141052.7	0.4	**395.8767**	2.451	0.6	ug/L	230	Standard
	Pb	207	1750473.5	0.3	**356.5860**	2.029	0.6	ug/L	184	Standard
	Pb	208	7681131.3	0.4	**382.5490**	1.722	0.5	ug/L	775	Standard
	U	238	358383.4	0.8	**48.5932**	0.428	0.9	ug/L	3	Standard
>	Bi	209	517316.7	0.7				ug/L	472452	Standard

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Na	23	1.7	173.2	**2.6692**	4.615	172.9	mg/L	0	Standard
Mg	24	171.7	16.0	**0.1240**	0.031	25.1	mg/L	52	Standard
K	39	281.7	8.4	**0.9301**	0.077	8.3	mg/L	32	Standard
Ca	43	103.3	10.1	**6.8478**	1.150	16.8	mg/L	33	Standard
Fe	54	16661.1	1.4	**11.0661**	0.048	0.4	mg/L	138	Standard
Fe	57	4737.4	1.6	**11.2326**	0.213	1.9	mg/L	263	Standard
> **Sc-1**	45	34526.0	1.8				mg/L	27861	Standard
Cl	35	123863.6	1.2				ug/L	100607	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	7521.9	2.6				ug/L	1777	Standard
P	31	22017.7	1.3				ug/L	18074	Standard
S	34	5217.6	4.3				ug/L	3901	Standard
Sr	88	151.7	18.2				ug/L	60	Standard
C	12	823.4	10.1				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	400.0	13.0				mg/L	7	Standard
Dy	164	24220.5	1.6				mg/L	13	Standard
Ho-1	165	14872.3	1.1				mg/L	13	Standard
Er	166	13149.0	1.7				mg/L	3	Standard
I	127	55704.1	5.8				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.360	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.452	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	107.620
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	109.496
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

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Cu 65 Upper, S, EEE	Cu	65
Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135
Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1606144406SDL WG575059-02
Sample Date/Time: Thursday, July 07, 2016 17:24:38
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55079.9	1.0				ug/L	59299	Standard
	Be	9	110.0	27.3	**0.1432**	0.037	26.1	ug/L	17	Standard
	Al	27	1024956.9	0.1	**8.2352**	0.085	1.0	ug/L	1472	Standard
	Sc	45	27369.7	1.9				ug/L	27861	Standard
	Ti	47	570.0	4.0	**2.3069**	0.101	4.4	ug/L	28	Standard
	V	51	15709.6	2.1	**2.1888**	0.057	2.6	ug/L	1156	Standard
	Cr	52	46835.3	2.0	**5.8815**	0.169	2.9	ug/L	6689	Standard
	Cr	53	5457.7	7.2	**5.9574**	0.482	8.1	ug/L	348	Standard
	Mn	55	340050.1	1.0	**54.2691**	0.739	1.4	ug/L	770	Standard
	Co	59	7648.9	2.6	**1.1341**	0.031	2.8	ug/L	216	Standard
	Ni	60	4319.6	1.5	**2.1662**	0.045	2.1	ug/L	440	Standard
	Cu	65	18723.9	0.7	**10.4618**	0.103	1.0	ug/L	116	Standard
	Zn	66	48797.1	0.9	**45.8174**	0.460	1.0	ug/L	135	Standard
>	**Ge**	72	441533.5	0.5				ug/L	445277	Standard
	As	75	649.9	2.3	**0.6381**	0.016	2.5	ug/L	-57	Standard
	Se	82	34.6	11.8	**0.1701**	0.039	22.6	ug/L	10	Standard
	Se-1	77	65.0	6.7	**0.2553**	0.057	22.3	ug/L	57	Standard
>	**Ga**	71	1535.1	1.1				mg/L	78	Standard
	Rb	85	19270.6	1.9				ug/L	22	Standard
	Y	89	394682.8	0.1				ug/L	388959	Standard
>	**Rh**	103	38.3	49.4				ug/L	8	Standard
	Mo	98	680.3	0.9	**0.2640**	0.003	1.2	ug/L	10	Standard
	Ag	107	375.0	18.9	**0.0467**	0.012	25.1	ug/L	66	Standard
	Cd	111	1178.9	1.4	**0.5900**	0.009	1.5	mg/L	3	Standard
	Cd	114	2819.1	2.6	**0.5767**	0.017	2.9	ug/L	4	Standard
>	**In**	115	517242.0	0.6				ug/L	523327	Standard
	Sn	118	480.0	6.3	**0.0119**	0.006	50.4	ug/L	488	Standard
	Sb	123	1543.7	35.8	**0.3266**	0.121	37.1	ug/L	195	Standard
	Ba	135	50270.6	0.7	**26.3340**	0.249	0.9	ug/L	28	Standard
	Ce	140	95319.0	2.1				ug/L	83	Standard
>	**Tb**	159	770191.4	1.0				ug/L	809211	Standard
	Ho	165	1548.4	5.6				ug/L	13	Standard
	Tl	203	211.7	40.0	**0.0253**	0.011	42.8	ug/L	4	Standard
	Tl	205	148.3	33.8	**0.0198**	0.007	37.8	ug/L	8	Standard
	Pb	206	190569.3	0.7	**39.0802**	0.339	0.9	ug/L	230	Standard
	Pb	207	160240.9	0.4	**36.2052**	0.192	0.5	ug/L	184	Standard
	Pb	208	691728.7	0.2	**38.2104**	0.121	0.3	ug/L	775	Standard
	U	238	1009.4	4.6	**0.1513**	0.007	4.4	ug/L	3	Standard
>	**Bi**	209	465908.2	0.2				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	46.7	55.0	**-0.0003**	0.037	13514.8	mg/L	52	Standard
K	39	58.3	43.1	**0.1500**	0.119	79.5	mg/L	32	Standard
Ca	43	23.3	12.4	**-0.7934**	0.419	52.8	mg/L	33	Standard
Fe	54	1646.3	4.3	**1.2813**	0.036	2.8	mg/L	138	Standard
Fe	57	710.0	12.9	**1.5751**	0.286	18.2	mg/L	263	Standard
Sc-1	45	27369.7	1.9				mg/L	27861	Standard
Cl	35	109460.6	0.6				ug/L	100607	Standard
Kr	83	1.0	173.2				ug/L	2	Standard
Br	81	2326.8	5.7				ug/L	1777	Standard
P	31	8253.9	4.9				ug/L	18074	Standard
S	34	4652.4	3.0				ug/L	3901	Standard
Sr	88	86.7	17.6				ug/L	60	Standard
C	12	143.3	8.1				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	24.7				mg/L	7	Standard
Dy	164	2611.9	3.7				mg/L	13	Standard
Ho-1	165	1548.4	5.6				mg/L	13	Standard
Er	166	1426.7	10.6				mg/L	3	Standard
I	127	16065.2	1.8				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.885	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.159	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.837
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.615
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, July 07, 2016 17:27:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	56956.9	0.7				ug/L	59299	Standard
	Be	9	44501.9	2.1	**55.6005**	1.034	1.9	ug/L	17	Standard
	Al	27	6633419.0	0.3	**51.6060**	0.209	0.4	ug/L	1472	Standard
	Sc	45	29268.2	1.8				ug/L	27861	Standard
	Ti	47	24635.3	0.4	**98.5615**	0.741	0.8	ug/L	28	Standard
	V	51	343396.9	2.2	**48.5896**	1.231	2.5	ug/L	1156	Standard
	Cr	52	362469.1	1.6	**49.0520**	0.846	1.7	ug/L	6689	Standard
	Cr	53	45531.7	1.3	**49.6158**	0.768	1.5	ug/L	348	Standard
	Mn	55	329443.4	1.7	**49.5759**	1.007	2.0	ug/L	770	Standard
	Co	59	337677.1	0.5	**48.6608**	0.336	0.7	ug/L	216	Standard
	Ni	60	93741.4	0.8	**49.3281**	0.509	1.0	ug/L	440	Standard
	Cu	65	93095.5	1.1	**49.2732**	0.723	1.5	ug/L	116	Standard
	Zn	66	55712.9	1.2	**49.3509**	0.636	1.3	ug/L	135	Standard
>	Ge	72	468156.7	0.4				ug/L	445277	Standard
	As	75	55716.7	0.8	**48.6099**	0.535	1.1	ug/L	-57	Standard
	Se	82	5707.9	1.2	**48.9366**	0.730	1.5	ug/L	10	Standard
	Se-1	77	3886.5	2.8	**49.7117**	1.445	2.9	ug/L	57	Standard
>	Ga	71	73.3	43.8				mg/L	78	Standard
	Rb	85	820.0	12.8				ug/L	22	Standard
	Y	89	399643.7	2.2				ug/L	388959	Standard
>	Rh	103	25.0	34.6				ug/L	8	Standard
	Mo	98	256190.1	0.3	**97.1726**	0.800	0.8	ug/L	10	Standard
	Ag	107	318535.4	1.0	**48.8091**	0.784	1.6	ug/L	66	Standard
	Cd	111	101588.4	0.9	**48.7837**	0.268	0.6	mg/L	3	Standard
	Cd	114	250696.2	1.9	**49.2366**	0.617	1.3	ug/L	4	Standard
>	In	115	542324.5	0.6				ug/L	523327	Standard
	Sn	118	282764.7	1.8	**49.1019**	1.129	2.3	ug/L	488	Standard
	Sb	123	233456.3	0.5	**49.5438**	0.304	0.6	ug/L	195	Standard
	Ba	135	95501.7	0.1	**47.7282**	0.259	0.5	ug/L	28	Standard
	Ce	140	1145.0	30.3				ug/L	83	Standard
>	Tb	159	811876.4	0.6				ug/L	809211	Standard
	Ho	165	15.0	33.3				ug/L	13	Standard
	Tl	203	393986.0	0.2	**49.7215**	0.579	1.2	ug/L	4	Standard
	Tl	205	339380.6	0.8	**49.9410**	0.915	1.8	ug/L	8	Standard
	Pb	206	246150.4	0.7	**49.4885**	0.744	1.5	ug/L	230	Standard
	Pb	207	223209.5	0.9	**49.4488**	0.979	2.0	ug/L	184	Standard
	Pb	208	946539.0	0.6	**51.2644**	0.835	1.6	ug/L	775	Standard
	U	238	339513.1	0.5	**50.0960**	0.394	0.8	ug/L	3	Standard
>	Bi	209	475391.6	1.1				ug/L	472452	Standard

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Na	23	1.7	173.2	**3.1745**	5.490	172.9	mg/L	0	Standard
Mg	24	3972.2	5.5	**5.1074**	0.199	3.9	mg/L	52	Standard
K	39	890.0	6.4	**3.8128**	0.204	5.4	mg/L	32	Standard
Ca	43	55.0	32.8	**2.8580**	2.164	75.7	mg/L	33	Standard
Fe	54	6131.9	0.7	**4.7424**	0.121	2.6	mg/L	138	Standard
Fe	57	1800.1	5.1	**4.6598**	0.214	4.6	mg/L	263	Standard
Sc-1	45	29268.2	1.8				mg/L	27861	Standard
Cl	35	123431.4	0.8				ug/L	100607	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	2000.1	3.5				ug/L	1777	Standard
P	31	21113.0	2.9				ug/L	18074	Standard
S	34	5234.2	2.4				ug/L	3901	Standard
Sr	88	80.0	27.2				ug/L	60	Standard
C	12	86.7	24.0				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	7	Standard
Dy	164	25.4	82.7				mg/L	13	Standard
Ho-1	165	15.0	33.3				mg/L	13	Standard
Er	166	26.7	94.4				mg/L	3	Standard
I	127	8600.8	1.9				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	111.201		
Al	27	103.212		
Sc	45			
Ti	47	98.562		
V	51	97.179		
Cr	52	98.104		
Cr	53			
Mn	55	99.152		
Co	59	97.322		
Ni	60	98.656		
Cu	65	98.546		
Zn	66	98.702		
Ge	72		105.138	
As	75	97.220		
Se	82	97.873		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	97.173		
Ag	107	97.618		
Cd	111	97.567		
Cd	114			
> In	115			103.630
Sn	118	98.204		
Sb	123	99.088		
Ba	135	95.456		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.443		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.529		
U	238	100.192		
> Bi	209			100.622
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, July 07, 2016 17:31:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56615.6	2.3				ug/L	59299	Standard
	Be	9	31.7	18.2	**0.0411**	0.007	16.5	ug/L	17	Standard
	Al	27	9106.2	98.9	**0.0593**	0.072	121.6	ug/L	1472	Standard
	Sc	45	28733.9	0.8				ug/L	27861	Standard
	Ti	47	39.7	28.1	**0.0471**	0.045	95.4	ug/L	28	Standard
	V	51	1377.6	28.2	**0.0213**	0.053	249.9	ug/L	1156	Standard
	Cr	52	6447.4	3.1	**-0.0704**	0.018	25.3	ug/L	6689	Standard
	Cr	53	471.7	12.2	**0.1246**	0.060	48.4	ug/L	348	Standard
	Mn	55	2784.7	95.2	**0.2951**	0.398	134.7	ug/L	770	Standard
	Co	59	404.0	51.9	**0.0234**	0.030	127.3	ug/L	216	Standard
	Ni	60	328.7	15.1	**-0.0804**	0.024	30.0	ug/L	440	Standard
	Cu	65	213.3	31.0	**0.0562**	0.034	60.8	ug/L	116	Standard
	Zn	66	965.0	14.5	**0.6728**	0.119	17.7	ug/L	135	Standard
>	**Ge**	72	461704.0	1.4				ug/L	445277	Standard
	As	75	-29.4	27.2	**0.0113**	0.007	62.2	ug/L	-57	Standard
	Se	82	20.2	21.3	**0.0308**	0.037	119.9	ug/L	10	Standard
	Se-1	77	61.0	12.8	**0.1631**	0.094	57.5	ug/L	57	Standard
>	**Ga**	71	45.0	66.7				mg/L	78	Standard
	Rb	85	155.0	103.4				ug/L	22	Standard
	Y	89	399602.9	0.9				ug/L	388959	Standard
>	**Rh**	103	11.7	65.5				ug/L	8	Standard
	Mo	98	297.2	34.6	**0.1056**	0.039	36.5	ug/L	10	Standard
	Ag	107	282.7	76.4	**0.0295**	0.033	111.1	ug/L	66	Standard
	Cd	111	66.4	100.7	**0.0281**	0.032	113.3	mg/L	3	Standard
	Cd	114	200.0	117.6	**0.0351**	0.046	130.5	ug/L	4	Standard
>	**In**	115	544713.6	0.4				ug/L	523327	Standard
	Sn	118	995.0	28.2	**0.0965**	0.048	49.6	ug/L	488	Standard
	Sb	123	1237.8	34.2	**0.2448**	0.089	36.2	ug/L	195	Standard
	Ba	135	355.3	118.7	**0.1592**	0.209	131.3	ug/L	28	Standard
	Ce	140	1093.4	90.1				ug/L	83	Standard
>	**Tb**	159	810052.6	1.3				ug/L	809211	Standard
	Ho	165	21.7	35.3				ug/L	13	Standard
	Tl	203	284.3	117.5	**0.0336**	0.042	124.5	ug/L	4	Standard
	Tl	205	163.3	83.1	**0.0213**	0.020	93.1	ug/L	8	Standard
	Pb	206	875.4	87.4	**0.1265**	0.153	120.8	ug/L	230	Standard
	Pb	207	717.7	92.1	**0.1149**	0.145	126.6	ug/L	184	Standard
	Pb	208	2815.1	76.2	**0.1054**	0.116	109.6	ug/L	775	Standard
	U	238	183.0	80.5	**0.0260**	0.022	82.8	ug/L	3	Standard
>	**Bi**	209	480887.6	1.0				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	58.3	77.8	**0.0115**	0.059	517.2	mg/L	52	Standard
K	39	15.0	66.7	**-0.0588**	0.046	77.6	mg/L	32	Standard
Ca	43	10.0	50.0	**-2.6018**	0.611	23.5	mg/L	33	Standard
Fe	54	165.8	17.5	**0.0220**	0.022	101.5	mg/L	138	Standard
Fe	57	271.7	18.4	**0.1434**	0.145	101.2	mg/L	263	Standard
Sc-1	45	28733.9	0.8				mg/L	27861	Standard
Cl	35	121031.5	1.3				ug/L	100607	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	1906.8	2.1				ug/L	1777	Standard
P	31	20730.8	1.4				ug/L	18074	Standard
S	34	4979.2	5.5				ug/L	3901	Standard
Sr	88	70.0	35.7				ug/L	60	Standard
C	12	46.7	61.9				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	7	Standard
Dy	164	22.2	69.9				mg/L	13	Standard
Ho-1	165	21.7	35.3				mg/L	13	Standard
Er	166	23.3	99.0				mg/L	3	Standard
I	127	5794.4	6.9				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.689	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.087
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.786
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606144407
Sample Date/Time: Thursday, July 07, 2016 17:34:14
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62630.9	0.8				ug/L	59299	Standard
	Be	9	1031.7	2.2	**1.1737**	0.034	2.9	ug/L	17	Standard
	Al	27	14608595.3	1.4	**103.3752**	2.144	2.1	ug/L	1472	Standard
	Sc	45	35525.0	3.0				ug/L	27861	Standard
	Ti	47	4791.8	1.1	**18.6256**	0.403	2.2	ug/L	28	Standard
	V	51	174876.1	0.4	**24.0683**	0.297	1.2	ug/L	1156	Standard
	Cr	52	451160.6	0.5	**59.8174**	0.834	1.4	ug/L	6689	Standard
	Cr	53	56316.2	1.8	**59.9871**	0.395	0.7	ug/L	348	Standard
	Mn	55	3407836.1	0.5	**501.8260**	7.055	1.4	ug/L	770	Standard
	Co	59	82161.5	1.0	**11.5329**	0.229	2.0	ug/L	216	Standard
	Ni	60	53573.2	0.9	**27.4097**	0.419	1.5	ug/L	440	Standard
	Cu	65	145884.0	1.3	**75.4074**	0.787	1.0	ug/L	116	Standard
	Zn	66	403897.6	0.4	**350.4876**	3.023	0.9	ug/L	135	Standard
>	**Ge**	72	479558.0	1.2				ug/L	445277	Standard
	As	75	6159.7	1.5	**5.2804**	0.132	2.5	ug/L	-57	Standard
	Se	82	112.9	9.4	**0.8031**	0.099	12.4	ug/L	10	Standard
	Se-1	77	159.7	2.0	**1.3818**	0.022	1.6	ug/L	57	Standard
>	**Ga**	71	22907.3	2.8				mg/L	78	Standard
	Rb	85	238341.8	0.9				ug/L	22	Standard
	Y	89	647888.3	1.8				ug/L	388959	Standard
>	**Rh**	103	133.3	34.0				ug/L	8	Standard
	Mo	98	2453.9	3.1	**0.9112**	0.031	3.4	ug/L	10	Standard
	Ag	107	3233.3	1.2	**0.4750**	0.005	1.1	ug/L	66	Standard
	Cd	111	27777.0	1.4	**13.1478**	0.131	1.0	mg/L	3	Standard
	Cd	114	68029.2	1.4	**13.1700**	0.129	1.0	ug/L	4	Standard
>	**In**	115	550079.8	0.4				ug/L	523327	Standard
	Sn	118	2115.1	11.2	**0.2869**	0.039	13.7	ug/L	488	Standard
	Sb	123	1445.9	14.5	**0.2859**	0.043	15.0	ug/L	195	Standard
	Ba	135	540753.9	0.3	**266.5121**	0.705	0.3	ug/L	28	Standard
	Ce	140	1251421.4	1.4				ug/L	83	Standard
>	**Tb**	159	846496.4	1.3				ug/L	809211	Standard
	Ho	165	19959.8	2.3				ug/L	13	Standard
	Tl	203	1194.4	2.1	**0.1456**	0.004	2.9	ug/L	4	Standard
	Tl	205	1035.0	5.6	**0.1466**	0.009	5.9	ug/L	8	Standard
	Pb	206	2541612.4	0.3	**500.4147**	3.612	0.7	ug/L	230	Standard
	Pb	207	2142805.6	0.7	**464.8107**	3.377	0.7	ug/L	184	Standard
	Pb	208	9246889.1	0.4	**490.4001**	3.954	0.8	ug/L	775	Standard
	U	238	6281.0	0.9	**0.9062**	0.010	1.2	ug/L	3	Standard
>	**Bi**	209	485831.5	0.8				ug/L	472452	Standard

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Na	23	3.3	86.6	**5.2060**	4.506	86.6	mg/L	0	Standard
Mg	24	183.3	8.3	**0.1310**	0.013	10.3	mg/L	52	Standard
K	39	305.0	3.3	**0.9871**	0.063	6.3	mg/L	32	Standard
Ca	43	81.7	7.1	**4.3592**	0.383	8.8	mg/L	33	Standard
Fe	54	22718.3	1.9	**14.7138**	0.684	4.6	mg/L	138	Standard
Fe	57	6304.6	0.8	**14.7355**	0.551	3.7	mg/L	263	Standard
> **Sc-1**	45	35525.0	3.0				mg/L	27861	Standard
Cl	35	119399.3	0.2				ug/L	100607	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	5004.2	4.9				ug/L	1777	Standard
P	31	21393.5	5.8				ug/L	18074	Standard
S	34	4992.5	2.8				ug/L	3901	Standard
Sr	88	155.0	14.1				ug/L	60	Standard
C	12	313.3	14.4				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	500.0	16.0				mg/L	7	Standard
Dy	164	32827.0	2.7				mg/L	13	Standard
Ho-1	165	19959.8	2.3				mg/L	13	Standard
Er	166	17753.7	1.4				mg/L	3	Standard
I	127	57786.8	4.1				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.618	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.699	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	105.112	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	102.832	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135
Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1606144408
Sample Date/Time: Thursday, July 07, 2016 17:37:25
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63693.7	2.9				ug/L	59299	Standard
	Be	9	993.4	7.2	**1.1120**	0.091	8.1	ug/L	17	Standard
	Al	27	16683679.4	0.5	**116.1495**	3.608	3.1	ug/L	1472	Standard
	Sc	45	34900.2	2.9				ug/L	27861	Standard
	Ti	47	4125.2	1.9	**16.1865**	0.370	2.3	ug/L	28	Standard
	V	51	175897.2	0.1	**24.4638**	0.070	0.3	ug/L	1156	Standard
	Cr	52	146272.0	0.2	**18.9413**	0.052	0.3	ug/L	6689	Standard
	Cr	53	17710.4	3.2	**18.7916**	0.662	3.5	ug/L	348	Standard
	Mn	55	1608684.4	0.9	**239.2814**	1.453	0.6	ug/L	770	Standard
	Co	59	67267.3	0.9	**9.5338**	0.081	0.8	ug/L	216	Standard
	Ni	60	45947.2	0.5	**23.7182**	0.093	0.4	ug/L	440	Standard
	Cu	65	44902.1	0.8	**23.4130**	0.194	0.8	ug/L	116	Standard
	Zn	66	69591.8	1.0	**60.8582**	0.809	1.3	ug/L	135	Standard
>	**Ge**	72	474575.8	0.4				ug/L	445277	Standard
	As	75	2521.8	2.3	**2.2061**	0.055	2.5	ug/L	-57	Standard
	Se	82	97.0	18.2	**0.6776**	0.153	22.5	ug/L	10	Standard
	Se-1	77	159.0	3.3	**1.3945**	0.066	4.7	ug/L	57	Standard
>	**Ga**	71	20246.9	2.4				mg/L	78	Standard
	Rb	85	211416.5	0.4				ug/L	22	Standard
	Y	89	661692.0	0.8				ug/L	388959	Standard
>	**Rh**	103	35.0	62.3				ug/L	8	Standard
	Mo	98	458.1	19.0	**0.1666**	0.033	19.5	ug/L	10	Standard
	Ag	107	696.3	11.0	**0.0928**	0.011	12.2	ug/L	66	Standard
	Cd	111	634.3	5.5	**0.3000**	0.015	4.8	mg/L	3	Standard
	Cd	114	1498.1	2.1	**0.2895**	0.009	3.0	ug/L	4	Standard
>	**In**	115	543927.1	0.8				ug/L	523327	Standard
	Sn	118	818.4	8.7	**0.0662**	0.012	17.7	ug/L	488	Standard
	Sb	123	484.6	31.9	**0.0860**	0.033	38.4	ug/L	195	Standard
	Ba	135	306973.5	0.5	**152.9991**	0.557	0.4	ug/L	28	Standard
	Ce	140	1316094.2	0.8				ug/L	83	Standard
>	**Tb**	159	839765.2	1.4				ug/L	809211	Standard
	Ho	165	21269.9	1.2				ug/L	13	Standard
	Tl	203	1022.0	10.8	**0.1267**	0.013	10.1	ug/L	4	Standard
	Tl	205	941.7	15.8	**0.1358**	0.021	15.4	ug/L	8	Standard
	Pb	206	117933.9	0.3	**23.6425**	0.138	0.6	ug/L	230	Standard
	Pb	207	96333.3	0.7	**21.2769**	0.097	0.5	ug/L	184	Standard
	Pb	208	424848.7	0.8	**22.9416**	0.053	0.2	ug/L	775	Standard
	U	238	11260.2	1.6	**1.6579**	0.035	2.1	ug/L	3	Standard
>	**Bi**	209	476226.0	0.9				ug/L	472452	Standard

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Na	23	1.7	173.2	**2.6893**	4.649	172.9	mg/L	0	Standard
Mg	24	165.0	29.8	**0.1150**	0.055	47.9	mg/L	52	Standard
K	39	370.0	15.2	**1.2514**	0.247	19.7	mg/L	32	Standard
Ca	43	70.0	21.4	**3.3365**	1.668	50.0	mg/L	33	Standard
Fe	54	18288.0	1.0	**12.0326**	0.390	3.2	mg/L	138	Standard
Fe	57	5022.5	2.2	**11.8207**	0.499	4.2	mg/L	263	Standard
> **Sc-1**	45	34900.2	2.9				mg/L	27861	Standard
Cl	35	116703.8	1.0				ug/L	100607	Standard
Kr	83	2.0	132.3				ug/L	2	Standard
Br	81	2876.9	5.3				ug/L	1777	Standard
P	31	20697.5	3.9				ug/L	18074	Standard
S	34	4799.1	2.6				ug/L	3901	Standard
Sr	88	146.7	12.0				ug/L	60	Standard
C	12	246.7	26.4				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	146.7	17.2				mg/L	7	Standard
Dy	164	34819.1	2.0				mg/L	13	Standard
Ho-1	165	21269.9	1.2				mg/L	13	Standard
Er	166	18361.1	3.3				mg/L	3	Standard
I	127	24356.2	3.1				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.411	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.580	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.936
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.799
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144409
Sample Date/Time: Thursday, July 07, 2016 17:40:37
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64053.5	1.8				ug/L	59299	Standard
	Be	9	1078.4	2.3	**1.1999**	0.046	3.8	ug/L	17	Standard
	Al	27	15514733.1	1.2	**107.3485**	0.900	0.8	ug/L	1472	Standard
	Sc	45	36136.4	2.7				ug/L	27861	Standard
	Ti	47	6865.2	2.1	**26.8531**	0.619	2.3	ug/L	28	Standard
	V	51	190724.4	1.5	**26.3839**	0.446	1.7	ug/L	1156	Standard
	Cr	52	417772.9	0.9	**55.5690**	0.437	0.8	ug/L	6689	Standard
	Cr	53	51612.8	1.2	**55.1975**	0.515	0.9	ug/L	348	Standard
	Mn	55	5184710.1	0.3	**766.9477**	2.971	0.4	ug/L	770	Standard
	Co	59	91417.3	0.2	**12.8929**	0.067	0.5	ug/L	216	Standard
	Ni	60	55205.1	0.4	**28.3795**	0.128	0.5	ug/L	440	Standard
	Cu	65	92816.4	0.6	**48.1733**	0.355	0.7	ug/L	116	Standard
	Zn	66	362986.3	0.2	**316.3815**	1.233	0.4	ug/L	135	Standard
>	**Ge**	72	477384.3	0.3				ug/L	445277	Standard
	As	75	8092.4	1.0	**6.9557**	0.089	1.3	ug/L	-57	Standard
	Se	82	160.6	1.7	**1.2091**	0.025	2.1	ug/L	10	Standard
	Se-1	77	190.7	6.7	**1.7847**	0.158	8.9	ug/L	57	Standard
>	**Ga**	71	24855.4	0.9				mg/L	78	Standard
	Rb	85	306194.7	0.4				ug/L	22	Standard
	Y	89	655863.2	0.7				ug/L	388959	Standard
>	**Rh**	103	106.7	5.4				ug/L	8	Standard
	Mo	98	4369.1	1.0	**1.6355**	0.007	0.4	ug/L	10	Standard
	Ag	107	2102.1	1.0	**0.3057**	0.005	1.7	ug/L	66	Standard
	Cd	111	23925.0	1.4	**11.3809**	0.098	0.9	mg/L	3	Standard
	Cd	114	57948.4	0.8	**11.2746**	0.068	0.6	ug/L	4	Standard
>	**In**	115	547330.3	0.6				ug/L	523327	Standard
	Sn	118	1328.4	7.4	**0.1532**	0.016	10.2	ug/L	488	Standard
	Sb	123	786.1	10.8	**0.1487**	0.018	11.8	ug/L	195	Standard
	Ba	135	394101.3	0.3	**195.2100**	1.561	0.8	ug/L	28	Standard
	Ce	140	1328703.1	1.0				ug/L	83	Standard
>	**Tb**	159	853607.3	0.7				ug/L	809211	Standard
	Ho	165	20340.3	1.3				ug/L	13	Standard
	Tl	203	1236.1	2.6	**0.1522**	0.004	2.3	ug/L	4	Standard
	Tl	205	1045.0	6.0	**0.1495**	0.009	6.0	ug/L	8	Standard
	Pb	206	2639473.7	0.6	**525.0355**	4.790	0.9	ug/L	230	Standard
	Pb	207	2188747.7	0.5	**479.6700**	4.015	0.8	ug/L	184	Standard
	Pb	208	9518966.7	0.1	**510.0217**	2.117	0.4	ug/L	775	Standard
	U	238	6546.4	0.8	**0.9542**	0.011	1.2	ug/L	3	Standard
>	**Bi**	209	480873.1	0.4				ug/L	472452	Standard

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Na	23	8.3	69.3	**12.6169**	8.768	69.5	mg/L	0	Standard
Mg	24	183.3	12.9	**0.1283**	0.030	23.4	mg/L	52	Standard
K	39	435.0	13.0	**1.4310**	0.163	11.4	mg/L	32	Standard
Ca	43	71.7	42.6	**3.2939**	3.217	97.7	mg/L	33	Standard
Fe	54	26273.0	2.7	**16.7343**	0.549	3.3	mg/L	138	Standard
Fe	57	7161.7	3.9	**16.5417**	1.116	6.7	mg/L	263	Standard
Sc-1	45	36136.4	2.7				mg/L	27861	Standard
Cl	35	116669.0	2.3				ug/L	100607	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	5454.3	6.6				ug/L	1777	Standard
P	31	20946.1	3.7				ug/L	18074	Standard
S	34	4624.0	3.0				ug/L	3901	Standard
Sr	88	110.0	4.5				ug/L	60	Standard
C	12	413.3	18.8				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	316.7	36.6				mg/L	7	Standard
Dy	164	33227.1	2.8				mg/L	13	Standard
Ho-1	165	20340.3	1.3				mg/L	13	Standard
Er	166	18955.2	5.4				mg/L	3	Standard
I	127	68328.8	2.2				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.018	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.211	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.587
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.783
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135
Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1606144410 WG574535-01
Sample Date/Time: Thursday, July 07, 2016 17:43:48
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	62741.3	2.2				ug/L	59299	Standard
	Be	9	945.0	8.7	**1.0735**	0.096	8.9	ug/L	17	Standard
	Al	27	16983951.2	1.2	**119.9811**	1.244	1.0	ug/L	1472	Standard
	Sc	45	35241.0	2.4				ug/L	27861	Standard
	Ti	47	3676.8	0.6	**14.3965**	0.119	0.8	ug/L	28	Standard
	V	51	122127.0	1.2	**16.9107**	0.167	1.0	ug/L	1156	Standard
	Cr	52	139217.0	0.8	**17.9581**	0.132	0.7	ug/L	6689	Standard
	Cr	53	17139.7	1.6	**18.1504**	0.328	1.8	ug/L	348	Standard
	Mn	55	1876781.6	0.4	**278.8499**	0.796	0.3	ug/L	770	Standard
	Co	59	65930.5	0.3	**9.3325**	0.046	0.5	ug/L	216	Standard
	Ni	60	44164.9	1.4	**22.7606**	0.300	1.3	ug/L	440	Standard
	Cu	65	34167.5	0.7	**17.7804**	0.121	0.7	ug/L	116	Standard
	Zn	66	57446.7	0.5	**50.1413**	0.217	0.4	ug/L	135	Standard
>	Ge	72	475141.7	0.2				ug/L	445277	Standard
	As	75	3803.9	0.9	**3.3046**	0.026	0.8	ug/L	-57	Standard
	Se	82	138.0	9.9	**1.0242**	0.118	11.5	ug/L	10	Standard
	Se-1	77	183.0	5.0	**1.6986**	0.122	7.2	ug/L	57	Standard
>	Ga	71	20028.2	1.9				mg/L	78	Standard
	Rb	85	197313.2	0.7				ug/L	22	Standard
	Y	89	624177.3	0.4				ug/L	388959	Standard
>	Rh	103	18.3	56.8				ug/L	8	Standard
	Mo	98	729.8	6.2	**0.2693**	0.017	6.4	ug/L	10	Standard
	Ag	107	512.7	4.4	**0.0647**	0.003	5.3	ug/L	66	Standard
	Cd	111	641.7	1.3	**0.3036**	0.004	1.3	mg/L	3	Standard
	Cd	114	1515.1	7.2	**0.2927**	0.021	7.2	ug/L	4	Standard
>	In	115	544091.5	0.1				ug/L	523327	Standard
	Sn	118	496.7	10.6	**0.0104**	0.009	87.0	ug/L	488	Standard
	Sb	123	252.7	34.5	**0.0368**	0.018	50.0	ug/L	195	Standard
	Ba	135	304315.4	0.4	**151.6253**	0.644	0.4	ug/L	28	Standard
	Ce	140	1146156.4	0.2				ug/L	83	Standard
>	Tb	159	831642.9	0.5				ug/L	809211	Standard
	Ho	165	17842.2	1.4				ug/L	13	Standard
	Tl	203	989.0	2.6	**0.1242**	0.003	2.1	ug/L	4	Standard
	Tl	205	850.0	13.8	**0.1241**	0.018	14.8	ug/L	8	Standard
	Pb	206	73852.9	0.2	**14.9788**	0.122	0.8	ug/L	230	Standard
	Pb	207	60846.9	0.7	**13.5967**	0.022	0.2	ug/L	184	Standard
	Pb	208	271020.5	1.0	**14.8074**	0.135	0.9	ug/L	775	Standard
	U	238	10199.4	0.8	**1.5209**	0.007	0.5	ug/L	3	Standard
>	Bi	209	470167.0	0.7				ug/L	472452	Standard

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Na	23	1.7	173.2	**2.5630**	4.431	172.9	mg/L	0	Standard
Mg	24	148.3	7.8	**0.0950**	0.015	16.0	mg/L	52	Standard
K	39	365.0	12.6	**1.2186**	0.200	16.4	mg/L	32	Standard
Ca	43	90.0	22.2	**5.2839**	2.046	38.7	mg/L	33	Standard
Fe	54	18029.1	3.4	**11.7444**	0.553	4.7	mg/L	138	Standard
Fe	57	5029.2	1.5	**11.7099**	0.134	1.1	mg/L	263	Standard
Sc-1	45	35241.0	2.4				mg/L	27861	Standard
Cl	35	115900.3	1.3				ug/L	100607	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	2820.3	4.8				ug/L	1777	Standard
P	31	20886.1	1.0				ug/L	18074	Standard
S	34	4835.8	6.1				ug/L	3901	Standard
Sr	88	96.7	24.4				ug/L	60	Standard
C	12	116.7	47.2				mg/L	110	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	63.3	24.1				mg/L	7	Standard
Dy	164	29582.6	2.6				mg/L	13	Standard
Ho-1	165	17842.2	1.4				mg/L	13	Standard
Er	166	16168.6	2.9				mg/L	3	Standard
I	127	20488.9	2.8				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		105.805	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.707	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.968
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.516
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144412
Sample Date/Time: Thursday, July 07, 2016 17:47:00
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64195.7	1.8				ug/L	59299	Standard
	Be	9	948.4	4.4	**1.0525**	0.041	3.9	ug/L	17	Standard
	Al	27	15083801.6	1.4	**104.1487**	2.362	2.3	ug/L	1472	Standard
	Sc	45	36258.4	3.7				ug/L	27861	Standard
	Ti	47	3746.1	2.5	**14.5841**	0.287	2.0	ug/L	28	Standard
	V	51	164554.2	0.8	**22.7166**	0.371	1.6	ug/L	1156	Standard
	Cr	52	148370.6	1.1	**19.0882**	0.337	1.8	ug/L	6689	Standard
	Cr	53	18059.1	1.9	**19.0350**	0.496	2.6	ug/L	348	Standard
	Mn	55	3294957.3	1.3	**486.8670**	8.085	1.7	ug/L	770	Standard
	Co	59	71903.9	0.9	**10.1239**	0.217	2.1	ug/L	216	Standard
	Ni	60	47406.0	0.7	**24.3086**	0.230	0.9	ug/L	440	Standard
	Cu	65	37212.3	0.3	**19.2601**	0.301	1.6	ug/L	116	Standard
	Zn	66	97092.4	0.4	**84.3952**	0.745	0.9	ug/L	135	Standard
>	Ge	72	477907.1	1.2				ug/L	445277	Standard
	As	75	7670.5	1.2	**6.5878**	0.036	0.5	ug/L	-57	Standard
	Se	82	159.2	1.3	**1.1955**	0.002	0.2	ug/L	10	Standard
	Se-1	77	188.3	2.2	**1.7525**	0.037	2.1	ug/L	57	Standard
>	Ga	71	21007.9	1.1				mg/L	78	Standard
	Rb	85	238142.1	1.4				ug/L	22	Standard
	Y	89	658455.6	1.6				ug/L	388959	Standard
>	Rh	103	33.3	22.9				ug/L	8	Standard
	Mo	98	963.9	7.3	**0.3538**	0.026	7.4	ug/L	10	Standard
	Ag	107	603.0	7.4	**0.0775**	0.007	8.7	ug/L	66	Standard
	Cd	111	1346.9	3.6	**0.6342**	0.023	3.6	mg/L	3	Standard
	Cd	114	3359.8	1.3	**0.6468**	0.012	1.9	ug/L	4	Standard
>	In	115	550064.3	0.6				ug/L	523327	Standard
	Sn	118	641.7	16.8	**0.0343**	0.018	53.3	ug/L	488	Standard
	Sb	123	687.0	8.1	**0.1272**	0.012	9.7	ug/L	195	Standard
	Ba	135	296965.0	0.6	**146.3567**	0.747	0.5	ug/L	28	Standard
	Ce	140	1333956.4	1.1				ug/L	83	Standard
>	Tb	159	842965.0	1.1				ug/L	809211	Standard
	Ho	165	19767.9	2.5				ug/L	13	Standard
	Tl	203	958.4	5.2	**0.1189**	0.006	5.1	ug/L	4	Standard
	Tl	205	908.4	3.6	**0.1311**	0.005	3.6	ug/L	8	Standard
	Pb	206	380750.4	0.2	**76.5186**	0.310	0.4	ug/L	230	Standard
	Pb	207	312208.0	0.9	**69.1278**	0.715	1.0	ug/L	184	Standard
	Pb	208	1376460.0	0.6	**74.5119**	0.428	0.6	ug/L	775	Standard
	U	238	4865.8	1.1	**0.7168**	0.007	0.9	ug/L	3	Standard
>	Bi	209	475702.6	0.2				ug/L	472452	Standard

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Na	23	1.7	173.2	**2.5444**	4.398	172.9	mg/L	0	Standard
Mg	24	148.3	19.5	**0.0912**	0.035	38.7	mg/L	52	Standard
K	39	470.0	12.9	**1.5530**	0.207	13.3	mg/L	32	Standard
Ca	43	48.3	36.3	**0.9294**	1.805	194.2	mg/L	33	Standard
Fe	54	19780.3	2.1	**12.5359**	0.553	4.4	mg/L	138	Standard
Fe	57	5562.7	0.5	**12.6488**	0.467	3.7	mg/L	263	Standard
Sc-1	45	36258.4	3.7				mg/L	27861	Standard
Cl	35	115862.0	1.2				ug/L	100607	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	4524.0	1.3				ug/L	1777	Standard
P	31	21054.6	4.1				ug/L	18074	Standard
S	34	4594.0	4.4				ug/L	3901	Standard
Sr	88	85.0	11.8				ug/L	60	Standard
C	12	256.7	21.5				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	113.3	27.0				mg/L	7	Standard
Dy	164	33232.9	0.3				mg/L	13	Standard
Ho-1	165	19767.9	2.5				mg/L	13	Standard
Er	166	17997.4	1.6				mg/L	3	Standard
I	127	38542.3	3.3				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		108.257	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		107.328	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.109
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.688
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144412
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Method 6020 - Summary Report

Sample ID: L1606144413
Sample Date/Time: Thursday, July 07, 2016 17:50:11
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61566.5	0.0				ug/L	59299	Standard
	Be	9	808.4	5.9	**0.9357**	0.055	5.9	ug/L	17	Standard
	Al	27	16499092.9	0.9	**118.7621**	1.068	0.9	ug/L	1472	Standard
	Sc	45	33613.9	0.5				ug/L	27861	Standard
	Ti	47	2850.3	0.1	**11.1938**	0.084	0.8	ug/L	28	Standard
	V	51	110064.4	1.5	**15.3030**	0.098	0.6	ug/L	1156	Standard
	Cr	52	108168.4	0.6	**13.8133**	0.073	0.5	ug/L	6689	Standard
	Cr	53	13089.0	5.8	**13.8362**	0.710	5.1	ug/L	348	Standard
	Mn	55	1321786.6	1.2	**197.3744**	0.709	0.4	ug/L	770	Standard
	Co	59	49457.3	0.5	**7.0287**	0.038	0.5	ug/L	216	Standard
	Ni	60	35391.3	0.6	**18.2850**	0.106	0.6	ug/L	440	Standard
	Cu	65	22404.6	0.4	**11.7004**	0.058	0.5	ug/L	116	Standard
	Zn	66	43054.8	1.1	**37.7284**	0.436	1.2	ug/L	135	Standard
>	**Ge**	72	472673.6	0.9				ug/L	445277	Standard
	As	75	3280.5	2.1	**2.8696**	0.037	1.3	ug/L	-57	Standard
	Se	82	43.7	14.7	**0.2266**	0.052	22.9	ug/L	10	Standard
	Se-1	77	106.0	8.4	**0.7228**	0.115	16.0	ug/L	57	Standard
>	**Ga**	71	16327.1	2.0				mg/L	78	Standard
	Rb	85	154109.8	0.9				ug/L	22	Standard
	Y	89	582318.1	0.9				ug/L	388959	Standard
>	**Rh**	103	35.0	24.7				ug/L	8	Standard
	Mo	98	422.6	6.0	**0.1518**	0.010	6.8	ug/L	10	Standard
	Ag	107	449.7	11.0	**0.0545**	0.007	13.0	ug/L	66	Standard
	Cd	111	155.9	5.4	**0.0704**	0.004	5.8	mg/L	3	Standard
	Cd	114	356.9	11.3	**0.0653**	0.007	11.3	ug/L	4	Standard
>	**In**	115	548899.2	0.7				ug/L	523327	Standard
	Sn	118	798.4	0.7	**0.0615**	0.002	3.1	ug/L	488	Standard
	Sb	123	225.7	37.6	**0.0308**	0.018	58.8	ug/L	195	Standard
	Ba	135	240574.6	0.5	**118.8196**	1.475	1.2	ug/L	28	Standard
	Ce	140	1027918.5	0.6				ug/L	83	Standard
>	**Tb**	159	829539.6	0.9				ug/L	809211	Standard
	Ho	165	15489.6	2.4				ug/L	13	Standard
	Tl	203	810.0	5.1	**0.1010**	0.005	4.7	ug/L	4	Standard
	Tl	205	690.0	9.7	**0.0998**	0.009	9.3	ug/L	8	Standard
	Pb	206	46790.1	1.3	**9.4409**	0.061	0.6	ug/L	230	Standard
	Pb	207	38589.4	1.1	**8.5794**	0.052	0.6	ug/L	184	Standard
	Pb	208	171187.6	1.3	**9.3056**	0.080	0.9	ug/L	775	Standard
	U	238	4011.9	1.3	**0.5959**	0.004	0.7	ug/L	3	Standard
>	**Bi**	209	471693.3	0.6				ug/L	472452	Standard

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Na	23	5.0	100.0	**8.1461**	8.132	99.8	mg/L	0	Standard
Mg	24	148.3	34.1	**0.1025**	0.057	55.5	mg/L	52	Standard
K	39	223.3	6.5	**0.7343**	0.051	7.0	mg/L	32	Standard
Ca	43	83.3	18.3	**5.0041**	1.583	31.6	mg/L	33	Standard
Fe	54	14673.5	2.8	**9.9985**	0.235	2.4	mg/L	138	Standard
Fe	57	4092.2	3.5	**9.8896**	0.408	4.1	mg/L	263	Standard
> **Sc-1**	45	33613.9	0.5				mg/L	27861	Standard
Cl	35	119350.9	0.7				ug/L	100607	Standard
Kr	83	3.0	88.2				ug/L	2	Standard
Br	81	3510.4	3.3				ug/L	1777	Standard
P	31	21336.7	2.6				ug/L	18074	Standard
S	34	5089.2	4.6				ug/L	3901	Standard
Sr	88	151.7	5.0				ug/L	60	Standard
C	12	103.3	39.1				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	32.7				mg/L	7	Standard
Dy	164	25736.6	1.2				mg/L	13	Standard
Ho-1	165	15489.6	2.4				mg/L	13	Standard
Er	166	13422.6	0.9				mg/L	3	Standard
I	127	21350.0	3.1				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.824	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.153	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.887
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.839
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144414
Sample Date/Time: Thursday, July 07, 2016 17:53:22
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	61835.9	0.3				ug/L	59299	Standard
	Be	9	1133.4	13.2	**1.3059**	0.176	13.5	ug/L	17	Standard
	Al	27	19329730.8	0.2	**138.5335**	0.293	0.2	ug/L	1472	Standard
	Sc	45	35961.0	2.2				ug/L	27861	Standard
	Ti	47	4303.9	1.9	**16.9226**	0.176	1.0	ug/L	28	Standard
	V	51	197978.0	0.8	**27.6107**	0.418	1.5	ug/L	1156	Standard
	Cr	52	170268.4	1.0	**22.2536**	0.405	1.8	ug/L	6689	Standard
	Cr	53	20735.8	1.1	**22.1135**	0.444	2.0	ug/L	348	Standard
	Mn	55	4077816.9	0.6	**607.9346**	8.707	1.4	ug/L	770	Standard
	Co	59	84557.3	0.3	**12.0166**	0.132	1.1	ug/L	216	Standard
	Ni	60	52976.1	1.3	**27.4411**	0.614	2.2	ug/L	440	Standard
	Cu	65	39855.0	1.0	**20.8155**	0.372	1.8	ug/L	116	Standard
	Zn	66	97440.3	1.0	**85.4540**	1.373	1.6	ug/L	135	Standard
>	Ge	72	473694.6	1.0				ug/L	445277	Standard
	As	75	6779.5	2.0	**5.8793**	0.164	2.8	ug/L	-57	Standard
	Se	82	102.7	8.7	**0.7272**	0.074	10.1	ug/L	10	Standard
	Se-1	77	145.0	8.0	**1.2199**	0.162	13.3	ug/L	57	Standard
>	Ga	71	24730.2	3.1				mg/L	78	Standard
	Rb	85	256647.1	0.5				ug/L	22	Standard
	Y	89	680511.3	1.2				ug/L	388959	Standard
>	Rh	103	30.0	44.1				ug/L	8	Standard
	Mo	98	807.1	4.6	**0.2994**	0.013	4.5	ug/L	10	Standard
	Ag	107	690.0	2.3	**0.0921**	0.001	1.5	ug/L	66	Standard
	Cd	111	900.3	3.5	**0.4285**	0.016	3.6	mg/L	3	Standard
	Cd	114	2284.3	2.3	**0.4445**	0.009	2.0	ug/L	4	Standard
>	In	115	542685.0	1.5				ug/L	523327	Standard
	Sn	118	841.7	9.3	**0.0708**	0.016	22.3	ug/L	488	Standard
	Sb	123	375.6	14.5	**0.0630**	0.011	17.1	ug/L	195	Standard
	Ba	135	391757.3	0.9	**195.7332**	3.483	1.8	ug/L	28	Standard
	Ce	140	1541900.1	0.5				ug/L	83	Standard
>	Tb	159	840970.4	0.5				ug/L	809211	Standard
	Ho	165	22832.2	1.7				ug/L	13	Standard
	Tl	203	1216.4	2.7	**0.1526**	0.004	2.6	ug/L	4	Standard
	Tl	205	971.7	7.9	**0.1415**	0.010	7.0	ug/L	8	Standard
	Pb	206	250221.0	0.7	**50.6702**	0.971	1.9	ug/L	230	Standard
	Pb	207	204953.9	0.8	**45.7272**	0.956	2.1	ug/L	184	Standard
	Pb	208	911164.1	0.4	**49.6973**	0.457	0.9	ug/L	775	Standard
	U	238	5579.4	1.6	**0.8284**	0.004	0.5	ug/L	3	Standard
>	Bi	209	472023.0	1.3				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	141.7	20.7	**0.0841**	0.027	32.6	mg/L	52	Standard
K	39	646.7	7.0	**2.2069**	0.213	9.6	mg/L	32	Standard
Ca	43	103.3	23.9	**6.4061**	2.381	37.2	mg/L	33	Standard
Fe	54	24298.6	1.6	**15.5475**	0.596	3.8	mg/L	138	Standard
Fe	57	6541.4	1.4	**15.1121**	0.235	1.6	mg/L	263	Standard
> **Sc-1**	45	35961.0	2.2				mg/L	27861	Standard
Cl	35	118755.6	1.3				ug/L	100607	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	4360.6	9.7				ug/L	1777	Standard
P	31	22041.0	1.8				ug/L	18074	Standard
S	34	5112.5	1.4				ug/L	3901	Standard
Sr	88	138.3	10.4				ug/L	60	Standard
C	12	463.3	26.8				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	103.3	11.2				mg/L	7	Standard
Dy	164	38187.2	0.3				mg/L	13	Standard
Ho-1	165	22832.2	1.7				mg/L	13	Standard
Er	166	20667.4	1.6				mg/L	3	Standard
I	127	37782.1	2.3				mg/L	8539	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		104.278	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		106.382	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.699	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.909	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144415
Sample Date/Time: Thursday, July 07, 2016 17:56:34
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66363.4	2.4				ug/L	59299	Standard
	Be	9	2108.5	1.5	**2.2634**	0.079	3.5	ug/L	17	Standard
	Al	27	39174737.2	0.5	**261.7315**	7.318	2.8	ug/L	1472	Standard
	Sc	45	38859.8	0.7				ug/L	27861	Standard
	Ti	47	3226.0	1.1	**12.7016**	0.129	1.0	ug/L	28	Standard
	V	51	232421.6	1.5	**32.5586**	0.543	1.7	ug/L	1156	Standard
	Cr	52	224601.5	0.5	**29.7710**	0.213	0.7	ug/L	6689	Standard
	Cr	53	27319.6	2.5	**29.3641**	0.768	2.6	ug/L	348	Standard
	Mn	55	6225231.5	0.5	**931.3624**	5.395	0.6	ug/L	770	Standard
	Co	59	135653.6	0.5	**19.3668**	0.093	0.5	ug/L	216	Standard
	Ni	60	87895.6	0.9	**45.8556**	0.516	1.1	ug/L	440	Standard
	Cu	65	48064.4	0.3	**25.2019**	0.032	0.1	ug/L	116	Standard
	Zn	66	93460.4	0.7	**82.2404**	0.475	0.6	ug/L	135	Standard
>	**Ge**	72	472019.4	0.3				ug/L	445277	Standard
	As	75	5719.8	1.0	**4.9828**	0.053	1.1	ug/L	-57	Standard
	Se	82	75.7	18.7	**0.5000**	0.122	24.5	ug/L	10	Standard
	Se-1	77	158.3	8.2	**1.3969**	0.167	11.9	ug/L	57	Standard
>	**Ga**	71	37197.3	2.0				mg/L	78	Standard
	Rb	85	341732.8	1.1				ug/L	22	Standard
	Y	89	788339.5	0.8				ug/L	388959	Standard
>	**Rh**	103	55.0	48.1				ug/L	8	Standard
	Mo	98	487.1	3.3	**0.1777**	0.006	3.5	ug/L	10	Standard
	Ag	107	793.7	8.5	**0.1077**	0.010	9.1	ug/L	66	Standard
	Cd	111	480.4	5.1	**0.2266**	0.013	5.6	mg/L	3	Standard
	Cd	114	1162.8	11.4	**0.2239**	0.025	11.0	ug/L	4	Standard
>	**In**	115	543585.1	0.6				ug/L	523327	Standard
	Sn	118	2753.6	3.0	**0.4021**	0.017	4.3	ug/L	488	Standard
	Sb	123	200.9	30.8	**0.0259**	0.013	50.1	ug/L	195	Standard
	Ba	135	862276.7	0.7	**430.0626**	1.895	0.4	ug/L	28	Standard
	Ce	140	2256470.5	0.1				ug/L	83	Standard
>	**Tb**	159	855953.7	1.1				ug/L	809211	Standard
	Ho	165	31748.2	2.2				ug/L	13	Standard
	Tl	203	1725.8	1.4	**0.2195**	0.004	1.9	ug/L	4	Standard
	Tl	205	1480.1	11.2	**0.2189**	0.023	10.6	ug/L	8	Standard
	Pb	206	123737.2	0.2	**25.2723**	0.175	0.7	ug/L	230	Standard
	Pb	207	101759.9	0.6	**22.8992**	0.266	1.2	ug/L	184	Standard
	Pb	208	451105.0	0.8	**24.8189**	0.286	1.2	ug/L	775	Standard
	U	238	7070.0	1.2	**1.0601**	0.014	1.3	ug/L	3	Standard
>	**Bi**	209	467495.5	0.7				ug/L	472452	Standard

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Na	23	3.3	86.6	**4.6803**	4.049	86.5	mg/L	0	Standard
Mg	24	236.7	9.8	**0.1665**	0.022	13.2	mg/L	52	Standard
K	39	473.3	8.2	**1.4526**	0.140	9.6	mg/L	32	Standard
Ca	43	240.0	25.3	**18.2155**	5.667	31.1	mg/L	33	Standard
Fe	54	32223.4	2.4	**19.0951**	0.456	2.4	mg/L	138	Standard
Fe	57	8730.8	3.3	**18.8250**	0.786	4.2	mg/L	263	Standard
Sc-1	45	38859.8	0.7				mg/L	27861	Standard
Cl	35	120377.7	1.4				ug/L	100607	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	2950.3	8.0				ug/L	1777	Standard
P	31	22698.7	3.2				ug/L	18074	Standard
S	34	5169.2	2.3				ug/L	3901	Standard
Sr	88	270.0	17.0				ug/L	60	Standard
C	12	143.3	24.5				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	53.3	47.2				mg/L	7	Standard
Dy	164	53566.9	2.3				mg/L	13	Standard
Ho-1	165	31748.2	2.2				mg/L	13	Standard
Er	166	28443.4	3.5				mg/L	3	Standard
I	127	29413.6	4.4				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		111.913	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.006	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.871	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.951	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606144415
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Method 6020 - Summary Report

Sample ID: L1606144416
Sample Date/Time: Thursday, July 07, 2016 17:59:45
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61978.2	0.3				ug/L	59299	Standard
	Be	9	1008.4	4.1	**1.1591**	0.046	4.0	ug/L	17	Standard
	Al	27	19566258.4	0.8	**139.9065**	1.010	0.7	ug/L	1472	Standard
	Sc	45	35837.3	1.1				ug/L	27861	Standard
	Ti	47	3287.7	0.1	**12.6045**	0.021	0.2	ug/L	28	Standard
	V	51	163394.1	0.6	**22.2333**	0.144	0.6	ug/L	1156	Standard
	Cr	52	143730.5	0.1	**18.1858**	0.016	0.1	ug/L	6689	Standard
	Cr	53	17695.3	1.6	**18.3731**	0.312	1.7	ug/L	348	Standard
	Mn	55	3922690.2	1.2	**571.4511**	7.145	1.3	ug/L	770	Standard
	Co	59	78753.5	0.7	**10.9333**	0.066	0.6	ug/L	216	Standard
	Ni	60	51328.8	0.6	**25.9658**	0.116	0.4	ug/L	440	Standard
	Cu	65	39944.6	0.9	**20.3847**	0.202	1.0	ug/L	116	Standard
	Zn	66	73762.5	0.5	**63.1615**	0.385	0.6	ug/L	135	Standard
>	**Ge**	72	484718.0	0.1				ug/L	445277	Standard
	As	75	8159.5	1.2	**6.9074**	0.080	1.2	ug/L	-57	Standard
	Se	82	85.9	9.4	**0.5680**	0.067	11.8	ug/L	10	Standard
	Se-1	77	144.3	9.5	**1.1684**	0.169	14.5	ug/L	57	Standard
>	**Ga**	71	21511.9	1.5				mg/L	78	Standard
	Rb	85	216548.2	0.0				ug/L	22	Standard
	Y	89	677358.4	0.5				ug/L	388959	Standard
>	**Rh**	103	45.0	11.1				ug/L	8	Standard
	Mo	98	2043.7	3.9	**0.7546**	0.034	4.5	ug/L	10	Standard
	Ag	107	636.3	23.9	**0.0821**	0.023	27.7	ug/L	66	Standard
	Cd	111	1218.4	5.0	**0.5709**	0.033	5.7	mg/L	3	Standard
	Cd	114	2857.9	1.8	**0.5472**	0.009	1.7	ug/L	4	Standard
>	**In**	115	552443.1	0.7				ug/L	523327	Standard
	Sn	118	708.4	16.0	**0.0452**	0.019	41.9	ug/L	488	Standard
	Sb	123	652.8	14.4	**0.1194**	0.019	16.0	ug/L	195	Standard
	Ba	135	405525.5	0.9	**199.0027**	0.448	0.2	ug/L	28	Standard
	Ce	140	1350116.3	0.5				ug/L	83	Standard
>	**Tb**	159	846778.5	1.8				ug/L	809211	Standard
	Ho	165	21286.6	1.5				ug/L	13	Standard
	Tl	203	1142.7	9.6	**0.1417**	0.013	9.3	ug/L	4	Standard
	Tl	205	941.7	7.4	**0.1355**	0.010	7.2	ug/L	8	Standard
	Pb	206	352240.5	0.6	**70.5774**	0.801	1.1	ug/L	230	Standard
	Pb	207	289153.4	0.2	**63.8304**	0.431	0.7	ug/L	184	Standard
	Pb	208	1280862.1	1.0	**69.1300**	0.925	1.3	ug/L	775	Standard
	U	238	5162.9	1.0	**0.7584**	0.011	1.5	ug/L	3	Standard
>	**Bi**	209	477119.9	0.5				ug/L	472452	Standard

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Na	23	3.3	86.6	**5.1063**	4.418	86.5	mg/L	0	Standard
Mg	24	143.3	16.5	**0.0867**	0.024	27.4	mg/L	52	Standard
K	39	466.7	8.0	**1.5612**	0.139	8.9	mg/L	32	Standard
Ca	43	93.3	43.6	**5.4393**	3.978	73.1	mg/L	33	Standard
Fe	54	19779.9	0.7	**12.6739**	0.227	1.8	mg/L	138	Standard
Fe	57	5439.3	3.1	**12.4980**	0.510	4.1	mg/L	263	Standard
> **Sc-1**	45	35837.3	1.1				mg/L	27861	Standard
Cl	35	119410.7	0.8				ug/L	100607	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	4517.3	5.8				ug/L	1777	Standard
P	31	21984.3	1.1				ug/L	18074	Standard
S	34	4960.8	1.7				ug/L	3901	Standard
Sr	88	138.3	7.5				ug/L	60	Standard
C	12	266.7	20.7				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	100.0	36.1				mg/L	7	Standard
Dy	164	35740.6	0.9				mg/L	13	Standard
Ho-1	165	21286.6	1.5				mg/L	13	Standard
Er	166	19562.6	1.4				mg/L	3	Standard
I	127	36450.5	3.6				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.518	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.858	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	105.564	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.988	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144417
Sample Date/Time: Thursday, July 07, 2016 18:02:57
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65086.2	2.2				ug/L	59299	Standard
	Be	9	1806.8	5.4	**1.9759**	0.066	3.4	ug/L	17	Standard
	Al	27	33900214.7	2.1	**230.8357**	0.568	0.2	ug/L	1472	Standard
	Sc	45	37934.1	1.3				ug/L	27861	Standard
	Ti	47	3588.1	1.5	**14.3140**	0.396	2.8	ug/L	28	Standard
	V	51	229693.1	1.9	**32.5693**	1.014	3.1	ug/L	1156	Standard
	Cr	52	222624.7	0.6	**29.8724**	0.770	2.6	ug/L	6689	Standard
	Cr	53	26975.7	1.7	**29.3522**	1.083	3.7	ug/L	348	Standard
	Mn	55	5077704.5	1.1	**768.8417**	14.417	1.9	ug/L	770	Standard
	Co	59	120381.0	0.9	**17.3937**	0.509	2.9	ug/L	216	Standard
	Ni	60	78670.7	0.7	**41.5207**	1.134	2.7	ug/L	440	Standard
	Cu	65	59222.5	0.7	**31.4469**	0.832	2.6	ug/L	116	Standard
	Zn	66	104689.1	0.5	**93.2682**	2.001	2.1	ug/L	135	Standard
>	Ge	72	466476.1	2.0				ug/L	445277	Standard
	As	75	10837.2	0.8	**9.5220**	0.252	2.6	ug/L	-57	Standard
	Se	82	87.1	18.9	**0.6065**	0.143	23.6	ug/L	10	Standard
	Se-1	77	161.7	7.4	**1.4630**	0.115	7.9	ug/L	57	Standard
>	Ga	71	36366.9	1.9				mg/L	78	Standard
	Rb	85	329596.4	0.6				ug/L	22	Standard
	Y	89	751587.8	1.0				ug/L	388959	Standard
>	Rh	103	45.0	11.1				ug/L	8	Standard
	Mo	98	566.6	15.0	**0.2114**	0.033	15.8	ug/L	10	Standard
	Ag	107	748.0	2.9	**0.1027**	0.004	4.2	ug/L	66	Standard
	Cd	111	1157.1	2.5	**0.5598**	0.010	1.7	mg/L	3	Standard
	Cd	114	2810.0	0.7	**0.5558**	0.009	1.5	ug/L	4	Standard
>	In	115	534851.6	0.9				ug/L	523327	Standard
	Sn	118	570.0	4.6	**0.0248**	0.004	14.8	ug/L	488	Standard
	Sb	123	409.3	10.3	**0.0714**	0.008	11.6	ug/L	195	Standard
	Ba	135	546625.3	0.1	**277.0901**	2.348	0.8	ug/L	28	Standard
	Ce	140	1980044.4	0.6				ug/L	83	Standard
>	Tb	159	836960.7	0.5				ug/L	809211	Standard
	Ho	165	28812.4	2.0				ug/L	13	Standard
	Tl	203	1592.4	1.0	**0.2052**	0.002	1.0	ug/L	4	Standard
	Tl	205	1498.4	10.4	**0.2249**	0.024	10.7	ug/L	8	Standard
	Pb	206	236723.0	1.0	**49.0665**	0.627	1.3	ug/L	230	Standard
	Pb	207	194455.3	0.8	**44.4066**	0.518	1.2	ug/L	184	Standard
	Pb	208	858693.9	0.2	**47.9421**	0.086	0.2	ug/L	775	Standard
	U	238	6800.5	2.1	**1.0339**	0.021	2.0	ug/L	3	Standard
>	Bi	209	461076.4	0.3				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	206.7	23.0	**0.1422**	0.048	33.8	mg/L	52	Standard
K	39	816.7	18.3	**2.6645**	0.517	19.4	mg/L	32	Standard
Ca	43	238.3	6.4	**18.6001**	1.739	9.3	mg/L	33	Standard
Fe	54	31659.0	0.8	**19.2209**	0.284	1.5	mg/L	138	Standard
Fe	57	8574.1	1.1	**18.9390**	0.163	0.9	mg/L	263	Standard
> **Sc-1**	45	37934.1	1.3				mg/L	27861	Standard
Cl	35	118769.0	0.6				ug/L	100607	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	3723.8	5.5				ug/L	1777	Standard
P	31	22062.7	1.4				ug/L	18074	Standard
S	34	4934.1	5.3				ug/L	3901	Standard
Sr	88	166.7	31.8				ug/L	60	Standard
C	12	153.3	10.0				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	60.0	44.1				mg/L	7	Standard
Dy	164	48443.8	2.0				mg/L	13	Standard
Ho-1	165	28812.4	2.0				mg/L	13	Standard
Er	166	26463.1	0.4				mg/L	3	Standard
I	127	38133.0	4.0				mg/L	8539	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		109.759	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		104.761	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.202	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.592	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, July 07, 2016 18:06:10
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	55984.9	2.3				ug/L	59299	Standard
	Be	9	43841.7	2.1	**55.7325**	0.753	1.4	ug/L	17	Standard
	Al	27	6792924.1	1.8	**53.7719**	0.801	1.5	ug/L	1472	Standard
	Sc	45	30487.3	1.5				ug/L	27861	Standard
	Ti	47	25132.2	1.8	**98.3589**	1.785	1.8	ug/L	28	Standard
	V	51	348856.3	0.7	**48.2847**	0.439	0.9	ug/L	1156	Standard
	Cr	52	370271.6	0.8	**49.0184**	0.733	1.5	ug/L	6689	Standard
	Cr	53	45306.0	2.4	**48.2852**	1.284	2.7	ug/L	348	Standard
	Mn	55	338984.8	1.3	**49.9009**	0.735	1.5	ug/L	770	Standard
	Co	59	345694.2	1.2	**48.7315**	0.602	1.2	ug/L	216	Standard
	Ni	60	95470.6	1.5	**49.1467**	1.070	2.2	ug/L	440	Standard
	Cu	65	95646.0	0.9	**49.5223**	0.752	1.5	ug/L	116	Standard
	Zn	66	56859.5	1.5	**49.2698**	0.745	1.5	ug/L	135	Standard
>	Ge	72	478581.8	0.8				ug/L	445277	Standard
	As	75	56668.4	0.4	**48.3635**	0.312	0.6	ug/L	-57	Standard
	Se	82	5750.5	1.7	**48.2252**	0.755	1.6	ug/L	10	Standard
	Se-1	77	3918.5	1.3	**49.0221**	0.815	1.7	ug/L	57	Standard
>	Ga	71	68.3	37.5				mg/L	78	Standard
	Rb	85	878.4	2.0				ug/L	22	Standard
	Y	89	404697.6	1.5				ug/L	388959	Standard
>	Rh	103	30.0	33.3				ug/L	8	Standard
	Mo	98	259235.1	1.5	**97.0319**	1.133	1.2	ug/L	10	Standard
	Ag	107	320130.3	0.4	**48.4068**	0.230	0.5	ug/L	66	Standard
	Cd	111	102257.4	0.7	**48.4605**	0.164	0.3	mg/L	3	Standard
	Cd	114	250929.6	1.8	**48.6365**	0.690	1.4	ug/L	4	Standard
>	In	115	549537.0	0.6				ug/L	523327	Standard
	Sn	118	283666.0	1.1	**48.6098**	0.777	1.6	ug/L	488	Standard
	Sb	123	231932.5	0.6	**48.5737**	0.273	0.6	ug/L	195	Standard
	Ba	135	95322.3	0.8	**47.0130**	0.493	1.0	ug/L	28	Standard
	Ce	140	1728.4	31.8				ug/L	83	Standard
>	Tb	159	815158.8	1.6				ug/L	809211	Standard
	Ho	165	30.0	76.4				ug/L	13	Standard
	Tl	203	389318.0	0.4	**49.4972**	0.579	1.2	ug/L	4	Standard
	Tl	205	335424.0	0.8	**49.7209**	0.381	0.8	ug/L	8	Standard
	Pb	206	244813.0	0.1	**49.5832**	0.361	0.7	ug/L	230	Standard
	Pb	207	220921.6	0.4	**49.3005**	0.210	0.4	ug/L	184	Standard
	Pb	208	935952.4	0.2	**51.0639**	0.295	0.6	ug/L	775	Standard
	U	238	335209.9	0.7	**49.8283**	0.410	0.8	ug/L	3	Standard
>	Bi	209	471876.7	0.8				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3995.5	4.0	**4.9325**	0.216	4.4	mg/L	52	Standard
K	39	850.0	9.1	**3.4839**	0.279	8.0	mg/L	32	Standard
Ca	43	51.7	56.7	**2.2371**	3.517	157.2	mg/L	33	Standard
Fe	54	6192.0	3.4	**4.5919**	0.101	2.2	mg/L	138	Standard
Fe	57	1866.8	6.1	**4.6366**	0.293	6.3	mg/L	263	Standard
> **Sc-1**	45	30487.3	1.5				mg/L	27861	Standard
Cl	35	122563.7	0.6				ug/L	100607	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	2126.8	3.1				ug/L	1777	Standard
P	31	22867.2	0.5				ug/L	18074	Standard
S	34	5492.7	3.0				ug/L	3901	Standard
Sr	88	78.3	9.8				ug/L	60	Standard
C	12	70.0	28.6				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	24.7				mg/L	7	Standard
Dy	164	75.4	67.5				mg/L	13	Standard
Ho-1	165	30.0	76.4				mg/L	13	Standard
Er	166	26.7	57.3				mg/L	3	Standard
I	127	8073.8	8.2				mg/L	8539	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	111.465		
	Al	27	107.544		
	Sc	45			
	Ti	47	98.359		
	V	51	96.569		
	Cr	52	98.037		
	Cr	53			
	Mn	55	99.802		
	Co	59	97.463		
	Ni	60	98.293		
	Cu	65	99.045		
	Zn	66	98.540		
>	Ge	72		107.479	
	As	75	96.727		
	Se	82	96.450		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	97.032		
Ag	107	96.814		
Cd	111	96.921		
Cd	114			
In	115		105.008	
Sn	118	97.220		
Sb	123	97.147		
Ba	135	94.026		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.994		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.128		
U	238	99.657		
Bi	209		99.878	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, July 07, 2016 18:09:21
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	54894.3	1.1				ug/L	59299	Standard
	Be	9	26.7	21.7	**0.0359**	0.007	20.0	ug/L	17	Standard
	Al	27	33121.4	102.4	**0.2538**	0.271	106.8	ug/L	1472	Standard
	Sc	45	30283.6	1.7				ug/L	27861	Standard
	Ti	47	39.3	60.0	**0.0415**	0.092	223.0	ug/L	28	Standard
	V	51	1662.0	37.8	**0.0563**	0.087	154.0	ug/L	1156	Standard
	Cr	52	6963.3	4.9	**-0.0231**	0.044	189.2	ug/L	6689	Standard
	Cr	53	451.7	22.0	**0.0892**	0.104	117.0	ug/L	348	Standard
	Mn	55	8087.2	109.5	**1.0735**	1.310	122.0	ug/L	770	Standard
	Co	59	561.3	64.1	**0.0443**	0.051	114.2	ug/L	216	Standard
	Ni	60	359.7	28.3	**-0.0686**	0.052	76.2	ug/L	440	Standard
	Cu	65	232.0	39.5	**0.0631**	0.047	75.0	ug/L	116	Standard
	Zn	66	1004.0	25.2	**0.6847**	0.217	31.7	ug/L	135	Standard
>	Ge	72	473852.5	0.7				ug/L	445277	Standard
	As	75	-23.0	147.8	**0.0174**	0.029	168.3	ug/L	-57	Standard
	Se	82	19.7	17.9	**0.0220**	0.029	132.6	ug/L	10	Standard
	Se-1	77	55.7	12.6	**0.0748**	0.087	116.7	ug/L	57	Standard
>	Ga	71	53.3	57.3				mg/L	78	Standard
	Rb	85	280.0	84.9				ug/L	22	Standard
	Y	89	406803.7	2.1				ug/L	388959	Standard
>	Rh	103	13.3	21.7				ug/L	8	Standard
	Mo	98	321.1	29.3	**0.1132**	0.036	31.8	ug/L	10	Standard
	Ag	107	160.3	31.2	**0.0106**	0.008	72.4	ug/L	66	Standard
	Cd	111	42.5	58.6	**0.0165**	0.012	72.1	mg/L	3	Standard
	Cd	114	104.1	36.6	**0.0162**	0.007	45.7	ug/L	4	Standard
>	In	115	551862.8	0.6				ug/L	523327	Standard
	Sn	118	905.0	18.7	**0.0791**	0.029	37.2	ug/L	488	Standard
	Sb	123	761.3	34.3	**0.1423**	0.055	38.7	ug/L	195	Standard
	Ba	135	442.0	91.8	**0.2006**	0.201	100.3	ug/L	28	Standard
	Ce	140	1760.1	74.5				ug/L	83	Standard
>	Tb	159	808534.7	0.7				ug/L	809211	Standard
	Ho	165	16.7	124.9				ug/L	13	Standard
	Tl	203	128.7	48.0	**0.0143**	0.008	54.4	ug/L	4	Standard
	Tl	205	173.3	68.4	**0.0230**	0.017	75.7	ug/L	8	Standard
	Pb	206	1230.4	115.7	**0.1995**	0.286	143.5	ug/L	230	Standard
	Pb	207	1086.1	113.7	**0.1980**	0.274	138.2	ug/L	184	Standard
	Pb	208	5121.9	96.8	**0.2318**	0.268	115.8	ug/L	775	Standard
	U	238	173.7	47.6	**0.0249**	0.012	48.8	ug/L	3	Standard
>	Bi	209	475252.5	0.2				ug/L	472452	Standard

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Na	23	1.7	173.2	**3.0279**	5.236	172.9	mg/L	0	Standard
Mg	24	55.0	41.7	**0.0033**	0.028	840.5	mg/L	52	Standard
K	39	16.7	45.8	**-0.0549**	0.034	61.5	mg/L	32	Standard
Ca	43	18.3	15.7	**-1.6757**	0.372	22.2	mg/L	33	Standard
Fe	54	215.8	21.5	**0.0535**	0.036	66.9	mg/L	138	Standard
Fe	57	270.0	6.7	**0.0979**	0.059	60.7	mg/L	263	Standard
Sc-1	45	30283.6	1.7				mg/L	27861	Standard
Cl	35	121755.4	1.9				ug/L	100607	Standard
Kr	83	1.7	124.9				ug/L	2	Standard
Br	81	2086.8	3.5				ug/L	1777	Standard
P	31	21483.6	2.1				ug/L	18074	Standard
S	34	5194.2	5.4				ug/L	3901	Standard
Sr	88	75.0	37.1				ug/L	60	Standard
C	12	80.0	12.5				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	7	Standard
Dy	164	72.4	76.7				mg/L	13	Standard
Ho-1	165	16.7	124.9				mg/L	13	Standard
Er	166	20.0	100.0				mg/L	3	Standard
I	127	5257.6	2.8				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.417	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.453
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.593
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606144418
Sample Date/Time: Thursday, July 07, 2016 18:12:34
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65673.7	1.4				ug/L	59299	Standard
	Be	9	1835.1	1.9	**1.9902**	0.055	2.8	ug/L	17	Standard
	Al	27	38467332.8	1.0	**259.6485**	6.173	2.4	ug/L	1472	Standard
	Sc	45	39732.0	2.2				ug/L	27861	Standard
	Ti	47	3607.4	1.5	**14.2355**	0.166	1.2	ug/L	28	Standard
	V	51	271116.3	0.8	**38.0596**	0.441	1.2	ug/L	1156	Standard
	Cr	52	271623.1	0.3	**36.2569**	0.192	0.5	ug/L	6689	Standard
	Cr	53	33154.6	0.4	**35.7691**	0.226	0.6	ug/L	348	Standard
	Mn	55	4183630.7	0.7	**626.7068**	4.374	0.7	ug/L	770	Standard
	Co	59	130693.3	1.5	**18.6829**	0.345	1.8	ug/L	216	Standard
	Ni	60	85872.3	0.3	**44.8536**	0.219	0.5	ug/L	440	Standard
	Cu	65	55019.7	1.2	**28.8952**	0.261	0.9	ug/L	116	Standard
	Zn	66	100882.1	0.7	**88.9047**	0.325	0.4	ug/L	135	Standard
>	**Ge**	72	471392.7	0.4				ug/L	445277	Standard
	As	75	9740.1	0.4	**8.4701**	0.047	0.6	ug/L	-57	Standard
	Se	82	89.6	2.2	**0.6194**	0.017	2.7	ug/L	10	Standard
	Se-1	77	154.3	7.2	**1.3479**	0.135	10.0	ug/L	57	Standard
>	**Ga**	71	42143.5	0.9				mg/L	78	Standard
	Rb	85	400510.2	1.5				ug/L	22	Standard
	Y	89	793627.9	0.3				ug/L	388959	Standard
>	**Rh**	103	66.7	8.7				ug/L	8	Standard
	Mo	98	995.1	0.7	**0.3738**	0.003	0.7	ug/L	10	Standard
	Ag	107	928.4	4.3	**0.1298**	0.007	5.1	ug/L	66	Standard
	Cd	111	391.9	1.7	**0.1861**	0.004	2.0	mg/L	3	Standard
	Cd	114	916.9	5.9	**0.1776**	0.011	6.4	ug/L	4	Standard
>	**In**	115	538154.0	0.4				ug/L	523327	Standard
	Sn	118	550.0	11.6	**0.0207**	0.011	54.8	ug/L	488	Standard
	Sb	123	357.8	35.2	**0.0598**	0.027	44.6	ug/L	195	Standard
	Ba	135	1256101.9	0.5	**632.8131**	2.217	0.4	ug/L	28	Standard
	Ce	140	2379856.1	1.2				ug/L	83	Standard
>	**Tb**	159	840635.0	0.9				ug/L	809211	Standard
	Ho	165	32466.4	2.6				ug/L	13	Standard
	Tl	203	1984.1	1.9	**0.2542**	0.006	2.5	ug/L	4	Standard
	Tl	205	1768.4	6.6	**0.2638**	0.020	7.8	ug/L	8	Standard
	Pb	206	123366.5	0.5	**25.3496**	0.474	1.9	ug/L	230	Standard
	Pb	207	101037.4	0.5	**22.8726**	0.290	1.3	ug/L	184	Standard
	Pb	208	453732.5	0.7	**25.1156**	0.519	2.1	ug/L	775	Standard
	U	238	8586.4	1.3	**1.2953**	0.011	0.9	ug/L	3	Standard
>	**Bi**	209	464747.0	1.5				ug/L	472452	Standard

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Na	23	6.7	114.6	**9.1759**	10.396	113.3	mg/L	0	Standard
Mg	24	225.0	3.8	**0.1503**	0.008	5.4	mg/L	52	Standard
K	39	858.4	1.3	**2.6734**	0.027	1.0	mg/L	32	Standard
Ca	43	346.7	10.6	**27.2678**	2.735	10.0	mg/L	33	Standard
Fe	54	39489.4	3.2	**22.9141**	0.803	3.5	mg/L	138	Standard
Fe	57	10573.7	2.8	**22.4212**	0.594	2.6	mg/L	263	Standard
> **Sc-1**	45	39732.0	2.2				mg/L	27861	Standard
Cl	35	119700.4	1.8				ug/L	100607	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	3740.5	3.4				ug/L	1777	Standard
P	31	21969.3	2.0				ug/L	18074	Standard
S	34	5215.9	2.4				ug/L	3901	Standard
Sr	88	315.0	14.3				ug/L	60	Standard
C	12	140.0	44.6				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	43.3	113.8				mg/L	7	Standard
Dy	164	54349.2	1.6				mg/L	13	Standard
Ho-1	165	32466.4	2.6				mg/L	13	Standard
Er	166	28663.8	4.7				mg/L	3	Standard
I	127	30340.4	2.2				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.750	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.865	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.833	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.369	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144419S WG574535-04
Sample Date/Time: Thursday, July 07, 2016 18:15:46
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60935.7	2.2				ug/L	59299	Standard
	Be	9	23773.6	3.2	**27.7691**	0.916	3.3	ug/L	17	Standard
	Al	27	18667083.8	1.8	**135.7725**	1.438	1.1	ug/L	1472	Standard
	Sc	45	36415.4	1.6				ug/L	27861	Standard
	Ti	47	4576.4	2.1	**17.7749**	0.272	1.5	ug/L	28	Standard
	V	51	315016.1	0.9	**43.4839**	0.435	1.0	ug/L	1156	Standard
	Cr	52	328403.1	1.1	**43.2614**	0.297	0.7	ug/L	6689	Standard
	Cr	53	41015.4	1.2	**43.5729**	0.543	1.2	ug/L	348	Standard
	Mn	55	4329482.6	0.9	**637.3658**	4.645	0.7	ug/L	770	Standard
	Co	59	239459.8	1.8	**33.6671**	0.509	1.5	ug/L	216	Standard
	Ni	60	95668.8	1.7	**49.1303**	0.610	1.2	ug/L	440	Standard
	Cu	65	82381.4	0.4	**42.5469**	0.109	0.3	ug/L	116	Standard
	Zn	66	89723.9	0.7	**77.6821**	0.088	0.1	ug/L	135	Standard
>	Ge	72	479670.0	0.6				ug/L	445277	Standard
	As	75	29322.9	0.8	**24.9860**	0.104	0.4	ug/L	-57	Standard
	Se	82	2162.2	0.3	**18.0014**	0.158	0.9	ug/L	10	Standard
	Se-1	77	1544.7	2.3	**18.8947**	0.487	2.6	ug/L	57	Standard
>	Ga	71	23782.0	1.7				mg/L	78	Standard
	Rb	85	234457.2	2.0				ug/L	22	Standard
	Y	89	649182.6	0.5				ug/L	388959	Standard
>	Rh	103	38.3	39.8				ug/L	8	Standard
	Mo	98	552.8	3.7	**0.2024**	0.007	3.6	ug/L	10	Standard
	Ag	107	153373.4	0.7	**23.4151**	0.250	1.1	ug/L	66	Standard
	Cd	111	50530.4	1.2	**24.1832**	0.333	1.4	mg/L	3	Standard
	Cd	114	122937.1	1.0	**24.0644**	0.314	1.3	ug/L	4	Standard
>	In	115	544139.8	0.7				ug/L	523327	Standard
	Sn	118	740.0	14.4	**0.0527**	0.019	36.5	ug/L	488	Standard
	Sb	123	8734.2	1.0	**1.8314**	0.023	1.3	ug/L	195	Standard
	Ba	135	389039.3	1.0	**193.8379**	2.947	1.5	ug/L	28	Standard
	Ce	140	1318627.0	1.9				ug/L	83	Standard
>	Tb	159	830693.4	1.7				ug/L	809211	Standard
	Ho	165	20136.7	1.2				ug/L	13	Standard
	Tl	203	187741.7	0.6	**23.9484**	0.218	0.9	ug/L	4	Standard
	Tl	205	164412.3	1.4	**24.4563**	0.619	2.5	ug/L	8	Standard
	Pb	206	219308.2	0.8	**44.5643**	0.607	1.4	ug/L	230	Standard
	Pb	207	184741.2	0.9	**41.3643**	0.882	2.1	ug/L	184	Standard
	Pb	208	811237.8	0.4	**44.4050**	0.522	1.2	ug/L	775	Standard
	U	238	167150.9	0.3	**24.9323**	0.395	1.6	ug/L	3	Standard
>	Bi	209	470301.3	1.3				ug/L	472452	Standard

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Na	23	1.7	173.2	**2.4610**	4.254	172.9	mg/L	0	Standard
Mg	24	165.0	16.0	**0.1074**	0.030	27.9	mg/L	52	Standard
K	39	371.7	4.1	**1.1968**	0.074	6.2	mg/L	32	Standard
Ca	43	106.7	23.1	**6.6308**	2.533	38.2	mg/L	33	Standard
Fe	54	20878.1	2.0	**13.1673**	0.096	0.7	mg/L	138	Standard
Fe	57	5802.8	2.7	**13.1582**	0.588	4.5	mg/L	263	Standard
> **Sc-1**	45	36415.4	1.6				mg/L	27861	Standard
Cl	35	114414.4	1.5				ug/L	100607	Standard
Kr	83	2.0	132.3				ug/L	2	Standard
Br	81	3347.0	5.7				ug/L	1777	Standard
P	31	21276.6	1.6				ug/L	18074	Standard
S	34	4784.1	5.5				ug/L	3901	Standard
Sr	88	138.3	19.9				ug/L	60	Standard
C	12	110.0	24.1				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	83.3	48.5				mg/L	7	Standard
Dy	164	33667.7	3.7				mg/L	13	Standard
Ho-1	165	20136.7	1.2				mg/L	13	Standard
Er	166	18057.4	3.0				mg/L	3	Standard
I	127	26095.8	3.0				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.760	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.724	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.977	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.545	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144420SD WG574535-05
Sample Date/Time: Thursday, July 07, 2016 18:18:57
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60980.8	1.7				ug/L	59299	Standard
	Be	9	22581.8	1.9	**26.3523**	0.060	0.2	ug/L	17	Standard
	Al	27	18145741.3	0.8	**131.9055**	3.124	2.4	ug/L	1472	Standard
	Sc	45	35620.2	4.7				ug/L	27861	Standard
	Ti	47	4438.7	1.6	**17.4667**	0.332	1.9	ug/L	28	Standard
	V	51	320003.0	1.3	**44.7582**	0.557	1.2	ug/L	1156	Standard
	Cr	52	319491.8	1.5	**42.6279**	0.577	1.4	ug/L	6689	Standard
	Cr	53	39489.7	1.0	**42.4929**	0.223	0.5	ug/L	348	Standard
	Mn	55	4438149.5	1.2	**661.9746**	8.673	1.3	ug/L	770	Standard
	Co	59	235190.9	1.4	**33.5015**	0.311	0.9	ug/L	216	Standard
	Ni	60	94162.0	0.7	**48.9944**	0.346	0.7	ug/L	440	Standard
	Cu	65	80476.8	1.1	**42.1099**	0.493	1.2	ug/L	116	Standard
	Zn	66	87781.2	1.0	**76.9975**	0.296	0.4	ug/L	135	Standard
>	Ge	72	473441.2	0.6				ug/L	445277	Standard
	As	75	28779.0	0.6	**24.8456**	0.057	0.2	ug/L	-57	Standard
	Se	82	2067.7	1.2	**17.4356**	0.207	1.2	ug/L	10	Standard
	Se-1	77	1481.4	1.4	**18.3408**	0.381	2.1	ug/L	57	Standard
>	Ga	71	22625.2	2.6				mg/L	78	Standard
	Rb	85	233541.2	0.9				ug/L	22	Standard
	Y	89	643890.5	0.5				ug/L	388959	Standard
>	Rh	103	38.3	39.8				ug/L	8	Standard
	Mo	98	511.7	7.1	**0.1881**	0.015	8.0	ug/L	10	Standard
	Ag	107	148081.5	0.8	**22.7409**	0.316	1.4	ug/L	66	Standard
	Cd	111	49029.0	1.3	**23.6029**	0.320	1.4	mg/L	3	Standard
	Cd	114	119744.3	2.8	**23.5777**	0.679	2.9	ug/L	4	Standard
>	In	115	540943.4	0.7				ug/L	523327	Standard
	Sn	118	586.7	5.7	**0.0266**	0.005	19.8	ug/L	488	Standard
	Sb	123	3118.1	2.0	**0.6469**	0.010	1.5	ug/L	195	Standard
	Ba	135	406252.7	0.2	**203.6050**	1.323	0.6	ug/L	28	Standard
	Ce	140	1263277.9	0.2				ug/L	83	Standard
>	Tb	159	825216.9	1.9				ug/L	809211	Standard
	Ho	165	19334.0	1.8				ug/L	13	Standard
	Tl	203	181450.4	0.5	**23.4461**	0.390	1.7	ug/L	4	Standard
	Tl	205	157927.3	1.9	**23.7953**	0.706	3.0	ug/L	8	Standard
	Pb	206	197502.7	1.3	**40.6491**	0.850	2.1	ug/L	230	Standard
	Pb	207	166457.8	1.0	**37.7446**	0.564	1.5	ug/L	184	Standard
	Pb	208	732349.6	1.2	**40.6014**	0.756	1.9	ug/L	775	Standard
	U	238	163026.4	0.7	**24.6301**	0.334	1.4	ug/L	3	Standard
>	Bi	209	464307.9	1.3				ug/L	472452	Standard

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Na	23	3.3	173.2	**4.9043**	8.486	173.0	mg/L	0	Standard
Mg	24	143.3	11.2	**0.0885**	0.024	26.7	mg/L	52	Standard
K	39	418.3	15.4	**1.4050**	0.311	22.1	mg/L	32	Standard
Ca	43	85.0	36.7	**4.7497**	3.312	69.7	mg/L	33	Standard
Fe	54	21530.0	1.7	**13.9163**	0.906	6.5	mg/L	138	Standard
Fe	57	6057.9	2.0	**14.1131**	0.991	7.0	mg/L	263	Standard
> **Sc-1**	45	35620.2	4.7				mg/L	27861	Standard
Cl	35	112916.0	2.0				ug/L	100607	Standard
Kr	83	3.3	96.4				ug/L	2	Standard
Br	81	2990.3	14.0				ug/L	1777	Standard
P	31	20400.4	2.2				ug/L	18074	Standard
S	34	4795.8	1.5				ug/L	3901	Standard
Sr	88	120.0	7.2				ug/L	60	Standard
C	12	170.0	15.6				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	53.3	21.7				mg/L	7	Standard
Dy	164	32159.3	1.2				mg/L	13	Standard
Ho-1	165	19334.0	1.8				mg/L	13	Standard
Er	166	17186.4	3.5				mg/L	3	Standard
I	127	24820.3	0.9				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.836	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.325	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.366
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.276
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606145801
Sample Date/Time: Thursday, July 07, 2016 18:22:09
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59478.2	1.6				ug/L	59299	Standard
	Be	9	1430.1	0.9	**1.7126**	0.036	2.1	ug/L	17	Standard
	Al	27	5219865.0	0.9	**38.8937**	0.947	2.4	ug/L	1472	Standard
	Sc	45	38796.3	4.0				ug/L	27861	Standard
	Ti	47	44649.4	0.4	**174.0333**	0.721	0.4	ug/L	28	Standard
	V	51	252895.9	1.2	**34.7933**	0.365	1.0	ug/L	1156	Standard
	Cr	52	187692.1	0.8	**24.2512**	0.189	0.8	ug/L	6689	Standard
	Cr	53	22912.3	3.1	**24.1080**	0.776	3.2	ug/L	348	Standard
	Mn	55	4695861.8	0.9	**689.7417**	7.268	1.1	ug/L	770	Standard
	Co	59	128190.1	1.9	**17.9650**	0.273	1.5	ug/L	216	Standard
	Ni	60	54457.4	1.1	**27.7938**	0.421	1.5	ug/L	440	Standard
	Cu	65	47073.0	0.5	**24.2307**	0.088	0.4	ug/L	116	Standard
	Zn	66	166193.9	1.0	**143.7249**	0.691	0.5	ug/L	135	Standard
>	**Ge**	72	480772.8	0.7				ug/L	445277	Standard
	As	75	9716.9	0.9	**8.2862**	0.109	1.3	ug/L	-57	Standard
	Se	82	66.8	8.8	**0.4135**	0.045	10.9	ug/L	10	Standard
	Se-1	77	135.7	16.6	**1.0749**	0.290	27.0	ug/L	57	Standard
>	**Ga**	71	29256.6	3.2				mg/L	78	Standard
	Rb	85	237908.7	1.9				ug/L	22	Standard
	Y	89	778434.5	2.1				ug/L	388959	Standard
>	**Rh**	103	36.7	31.5				ug/L	8	Standard
	Mo	98	1918.5	2.1	**0.7193**	0.013	1.8	ug/L	10	Standard
	Ag	107	748.0	2.0	**0.1008**	0.002	1.8	ug/L	66	Standard
	Cd	111	434.5	3.7	**0.2046**	0.007	3.3	mg/L	3	Standard
	Cd	114	1095.8	1.7	**0.2108**	0.005	2.1	ug/L	4	Standard
>	**In**	115	543652.5	0.4				ug/L	523327	Standard
	Sn	118	14697.1	1.9	**2.4741**	0.055	2.2	ug/L	488	Standard
	Sb	123	236.7	25.6	**0.0335**	0.013	37.9	ug/L	195	Standard
	Ba	135	371524.9	0.3	**185.2668**	0.541	0.3	ug/L	28	Standard
	Ce	140	1289228.4	1.1				ug/L	83	Standard
>	**Tb**	159	838327.5	1.0				ug/L	809211	Standard
	Ho	165	30477.3	1.3				ug/L	13	Standard
	Tl	203	2160.5	0.9	**0.2747**	0.001	0.4	ug/L	4	Standard
	Tl	205	1806.8	4.6	**0.2673**	0.014	5.3	ug/L	8	Standard
	Pb	206	188287.7	0.4	**38.4001**	0.508	1.3	ug/L	230	Standard
	Pb	207	154634.1	0.3	**34.7441**	0.229	0.7	ug/L	184	Standard
	Pb	208	689169.5	0.4	**37.8606**	0.520	1.4	ug/L	775	Standard
	U	238	10609.4	1.2	**1.5879**	0.032	2.0	ug/L	3	Standard
>	**Bi**	209	468506.6	0.9				ug/L	472452	Standard

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Na	23	1.7	173.2	**2.2555**	3.898	172.8	mg/L	0	Standard
Mg	24	836.7	15.2	**0.7556**	0.107	14.2	mg/L	52	Standard
K	39	245.0	16.7	**0.6892**	0.108	15.7	mg/L	32	Standard
Ca	43	33.3	43.3	**-0.7670**	1.348	175.8	mg/L	33	Standard
Fe	54	51272.8	1.4	**30.5228**	0.944	3.1	mg/L	138	Standard
Fe	57	13601.1	3.4	**29.7568**	0.734	2.5	mg/L	263	Standard
> **Sc-1**	45	38796.3	4.0				mg/L	27861	Standard
Cl	35	111468.0	2.2				ug/L	100607	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	2466.9	3.0				ug/L	1777	Standard
P	31	20867.7	2.2				ug/L	18074	Standard
S	34	4460.7	3.7				ug/L	3901	Standard
Sr	88	143.3	12.3				ug/L	60	Standard
C	12	113.3	31.0				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	193.3	26.0				mg/L	7	Standard
Dy	164	47134.4	1.0				mg/L	13	Standard
Ho-1	165	30477.3	1.3				mg/L	13	Standard
Er	166	28804.1	4.1				mg/L	3	Standard
I	127	23097.6	1.8				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.302	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.972	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.884	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.165	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606145801
Sample Date/Time: Thursday, July 07, 2016 18:25:20
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52079.4	3.9				ug/L	59299	Standard
	Be	9	20.0	25.0	**0.0287**	0.007	25.6	ug/L	17	Standard
	Al	27	50649.6	3.5	**0.4185**	0.016	3.9	ug/L	1472	Standard
	Sc	45	26910.5	1.2				ug/L	27861	Standard
	Ti	47	415.7	0.5	**1.6570**	0.006	0.4	ug/L	28	Standard
	V	51	3328.6	0.7	**0.3262**	0.002	0.5	ug/L	1156	Standard
	Cr	52	6373.7	3.6	**-0.0369**	0.028	74.7	ug/L	6689	Standard
	Cr	53	451.7	12.3	**0.1272**	0.065	51.0	ug/L	348	Standard
	Mn	55	44624.6	2.2	**7.0343**	0.208	3.0	ug/L	770	Standard
	Co	59	1349.4	5.0	**0.1715**	0.009	5.5	ug/L	216	Standard
	Ni	60	730.4	3.2	**0.1544**	0.010	6.6	ug/L	440	Standard
	Cu	65	559.7	5.5	**0.2573**	0.017	6.8	ug/L	116	Standard
	Zn	66	2358.5	2.2	**2.0345**	0.060	2.9	ug/L	135	Standard
>	**Ge**	72	440112.8	0.7				ug/L	445277	Standard
	As	75	44.0	37.4	**0.0781**	0.015	19.4	ug/L	-57	Standard
	Se	82	17.6	11.1	**0.0154**	0.017	112.6	ug/L	10	Standard
	Se-1	77	54.3	18.2	**0.1107**	0.131	118.6	ug/L	57	Standard
>	**Ga**	71	280.0	9.4				mg/L	78	Standard
	Rb	85	2130.2	7.5				ug/L	22	Standard
	Y	89	373439.7	1.0				ug/L	388959	Standard
>	**Rh**	103	30.0	16.7				ug/L	8	Standard
	Mo	98	83.5	34.8	**0.0276**	0.012	42.8	ug/L	10	Standard
	Ag	107	89.3	4.2	**0.0012**	0.001	51.8	ug/L	66	Standard
	Cd	111	7.2	70.7	**0.0001**	0.003	1995.8	mg/L	3	Standard
	Cd	114	14.9	67.3	**-0.0007**	0.002	288.1	ug/L	4	Standard
>	**In**	115	501803.6	0.3				ug/L	523327	Standard
	Sn	118	251.7	8.0	**-0.0284**	0.004	13.7	ug/L	488	Standard
	Sb	123	941.7	45.0	**0.1993**	0.097	48.6	ug/L	195	Standard
	Ba	135	3473.4	2.4	**1.8594**	0.039	2.1	ug/L	28	Standard
	Ce	140	12199.9	1.3				ug/L	83	Standard
>	**Tb**	159	749432.3	0.4				ug/L	809211	Standard
	Ho	165	273.3	21.1				ug/L	13	Standard
	Tl	203	40.3	13.7	**0.0035**	0.001	20.6	ug/L	4	Standard
	Tl	205	35.0	14.3	**0.0030**	0.001	25.6	ug/L	8	Standard
	Pb	206	1960.5	3.5	**0.3724**	0.012	3.4	ug/L	230	Standard
	Pb	207	1558.4	5.6	**0.3254**	0.018	5.7	ug/L	184	Standard
	Pb	208	6959.6	2.1	**0.3563**	0.007	2.0	ug/L	775	Standard
	U	238	104.3	11.7	**0.0157**	0.002	12.8	ug/L	3	Standard
>	**Bi**	209	446080.5	0.6				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	61.7	32.8	**0.0217**	0.029	133.2	mg/L	52	Standard
K	39	18.3	103.3	**-0.0390**	0.090	229.7	mg/L	32	Standard
Ca	43	20.0	66.1	**-1.2019**	1.713	142.5	mg/L	33	Standard
Fe	54	434.4	15.6	**0.2621**	0.056	21.3	mg/L	138	Standard
Fe	57	385.0	5.7	**0.5660**	0.085	15.0	mg/L	263	Standard
> **Sc-1**	45	26910.5	1.2				mg/L	27861	Standard
Cl	35	97785.2	0.8				ug/L	100607	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1560.1	1.7				ug/L	1777	Standard
P	31	6371.3	2.4				ug/L	18074	Standard
S	34	3908.8	0.6				ug/L	3901	Standard
Sr	88	83.3	33.0				ug/L	60	Standard
C	12	53.3	47.2				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	7	Standard
Dy	164	472.3	19.0				mg/L	13	Standard
Ho-1	165	273.3	21.1				mg/L	13	Standard
Er	166	300.0	3.3				mg/L	3	Standard
I	127	8742.5	2.9				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		87.825	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.840	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.887
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.418
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Thursday, July 07, 2016 18:28:33
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48432.4	4.1				ug/L	59299	Standard
	Be	9	11.7	89.2	**0.0185**	0.016	84.2	ug/L	17	Standard
	Al	27	5665867.3	0.5	**51.8946**	2.164	4.2	ug/L	1472	Standard
	Sc	45	27732.0	2.4				ug/L	27861	Standard
	Ti	47	24494.1	1.5	**106.2374**	1.740	1.6	ug/L	28	Standard
	V	51	926.2	9.4	**-0.0341**	0.013	38.0	ug/L	1156	Standard
	Cr	52	5760.8	4.8	**-0.1108**	0.036	32.2	ug/L	6689	Standard
	Cr	53	4857.4	4.1	**5.3833**	0.231	4.3	ug/L	348	Standard
	Mn	55	2455.2	25.4	**0.2731**	0.099	36.3	ug/L	770	Standard
	Co	59	368.7	10.7	**0.0221**	0.006	25.9	ug/L	216	Standard
	Ni	60	697.0	4.7	**0.1431**	0.017	11.6	ug/L	440	Standard
	Cu	65	532.0	4.5	**0.2473**	0.012	4.7	ug/L	116	Standard
	Zn	66	864.7	1.3	**0.6368**	0.017	2.6	ug/L	135	Standard
>	**Ge**	72	431881.9	0.7				ug/L	445277	Standard
	As	75	8.2	897.3	**0.0454**	0.069	151.9	ug/L	-57	Standard
	Se	82	13.1	27.9	**-0.0235**	0.034	144.4	ug/L	10	Standard
	Se-1	77	356.3	3.4	**4.3660**	0.139	3.2	ug/L	57	Standard
>	**Ga**	71	118.3	25.5				mg/L	78	Standard
	Rb	85	785.0	13.2				ug/L	22	Standard
	Y	89	361645.5	2.8				ug/L	388959	Standard
>	**Rh**	103	15.0	120.2				ug/L	8	Standard
	Mo	98	214642.3	0.7	**89.6475**	1.179	1.3	ug/L	10	Standard
	Ag	107	138.7	11.2	**0.0098**	0.003	27.0	ug/L	66	Standard
	Cd	111	-165.1	5.4	**-0.0909**	0.004	4.6	mg/L	3	Standard
	Cd	114	430.7	8.4	**0.0893**	0.008	9.1	ug/L	4	Standard
>	**In**	115	492522.4	0.7				ug/L	523327	Standard
	Sn	118	410.0	8.0	**0.0028**	0.006	221.7	ug/L	488	Standard
	Sb	123	382.1	45.4	**0.0725**	0.040	55.2	ug/L	195	Standard
	Ba	135	145.3	44.7	**0.0630**	0.036	57.8	ug/L	28	Standard
	Ce	140	370.0	55.4				ug/L	83	Standard
>	**Tb**	159	747205.2	0.9				ug/L	809211	Standard
	Ho	165	23.3	32.7				ug/L	13	Standard
	Tl	203	83.7	22.8	**0.0096**	0.003	27.6	ug/L	4	Standard
	Tl	205	81.7	9.4	**0.0107**	0.001	11.5	ug/L	8	Standard
	Pb	206	334.7	11.7	**0.0257**	0.009	33.5	ug/L	230	Standard
	Pb	207	291.0	11.3	**0.0279**	0.008	28.2	ug/L	184	Standard
	Pb	208	1226.4	8.5	**0.0270**	0.006	22.7	ug/L	775	Standard
	U	238	18.3	56.8	**0.0023**	0.002	73.9	ug/L	3	Standard
>	**Bi**	209	434670.5	0.3				ug/L	472452	Standard

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Na	23	3.3	86.6	**6.6023**	5.718	86.6	mg/L	0	Standard
Mg	24	8434.0	0.6	**11.5357**	0.293	2.5	mg/L	52	Standard
K	39	895.0	1.7	**4.0586**	0.172	4.2	mg/L	32	Standard
Ca	43	113.3	10.2	**10.7683**	1.734	16.1	mg/L	33	Standard
Fe	54	13141.5	1.4	**10.8668**	0.187	1.7	mg/L	138	Standard
Fe	57	3807.1	4.8	**11.2363**	0.466	4.1	mg/L	263	Standard
Sc-1	45	27732.0	2.4				mg/L	27861	Standard
Cl	35	109200.8	1.3				ug/L	100607	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	1683.4	18.7				ug/L	1777	Standard
P	31	7265.1	3.0				ug/L	18074	Standard
S	34	4579.0	2.5				ug/L	3901	Standard
Sr	88	86.7	23.3				ug/L	60	Standard
C	12	103.3	14.8				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	57.3				mg/L	7	Standard
Dy	164	16.2	38.3				mg/L	13	Standard
Ho-1	165	23.3	32.7				mg/L	13	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	3003.6	2.1				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27	1.038		
Sc	45			
Ti	47	106.237		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.992	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	89.648		
Ag	107			
Cd	111			
Cd	114			
> In	115			94.114
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209			92.003
Na	23	52.819		
Mg	24	230.715		
K	39	81.171		
Ca	43	71.789		
Fe	54	86.935		
Fe	57	89.891		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Mn	55	
QC Std 4	Na	23	

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QC Std 4	Mg	24
QC Std 4	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Thursday, July 07, 2016 18:31:45
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	50791.7	2.2				ug/L	59299	Standard
	Be	9	84642.4	0.1	**118.6299**	2.802	2.4	ug/L	17	Standard
	Al	27	5467395.8	0.8	**47.7156**	1.370	2.9	ug/L	1472	Standard
	Sc	45	29027.8	1.2				ug/L	27861	Standard
	Ti	47	22416.9	1.4	**90.2542**	1.482	1.6	ug/L	28	Standard
	V	51	660199.2	0.1	**94.1796**	0.665	0.7	ug/L	1156	Standard
	Cr	52	702857.2	0.3	**96.6535**	0.595	0.6	ug/L	6689	Standard
	Cr	53	91966.6	0.9	**101.2698**	0.081	0.1	ug/L	348	Standard
	Mn	55	642800.7	1.3	**97.4683**	0.609	0.6	ug/L	770	Standard
	Co	59	646389.5	1.1	**93.7773**	0.721	0.8	ug/L	216	Standard
	Ni	60	181893.7	1.0	**96.5742**	0.935	1.0	ug/L	440	Standard
	Cu	65	181396.7	0.5	**96.6795**	0.311	0.3	ug/L	116	Standard
	Zn	66	111120.3	0.5	**99.2640**	0.757	0.8	ug/L	135	Standard
>	Ge	72	465170.0	0.8				ug/L	445277	Standard
	As	75	110140.9	0.4	**96.6734**	0.802	0.8	ug/L	-57	Standard
	Se	82	10938.4	0.7	**94.5147**	0.175	0.2	ug/L	10	Standard
	Se-1	77	7747.3	1.6	**100.3806**	2.230	2.2	ug/L	57	Standard
>	Ga	71	130.0	3.8				mg/L	78	Standard
	Rb	85	713.4	6.0				ug/L	22	Standard
	Y	89	389851.3	1.9				ug/L	388959	Standard
>	Rh	103	31.7	48.2				ug/L	8	Standard
	Mo	98	206597.8	0.5	**79.0608**	1.281	1.6	ug/L	10	Standard
	Ag	107	547187.4	1.3	**84.6073**	2.113	2.5	ug/L	66	Standard
	Cd	111	196194.5	0.1	**95.0587**	1.034	1.1	mg/L	3	Standard
	Cd	114	474211.4	1.8	**93.9823**	2.475	2.6	ug/L	4	Standard
>	In	115	537576.1	1.2				ug/L	523327	Standard
	Sn	118	896.7	8.9	**0.0816**	0.014	17.1	ug/L	488	Standard
	Sb	123	439249.0	2.3	**94.0751**	3.062	3.3	ug/L	195	Standard
	Ba	135	181442.6	0.6	**91.4976**	0.623	0.7	ug/L	28	Standard
	Ce	140	1083.4	35.5				ug/L	83	Standard
>	Tb	159	791767.7	0.4				ug/L	809211	Standard
	Ho	165	33.3	67.6				ug/L	13	Standard
	Tl	203	752794.2	0.4	**97.1671**	0.257	0.3	ug/L	4	Standard
	Tl	205	653201.4	0.0	**98.3063**	0.316	0.3	ug/L	8	Standard
	Pb	206	479667.5	0.6	**98.6772**	0.463	0.5	ug/L	230	Standard
	Pb	207	415813.7	0.7	**94.2458**	0.370	0.4	ug/L	184	Standard
	Pb	208	1813698.9	0.2	**100.5054**	0.257	0.3	ug/L	775	Standard
	U	238	639962.1	0.7	**96.5825**	0.976	1.0	ug/L	3	Standard
>	Bi	209	464776.6	0.3				ug/L	472452	Standard

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Na	23	5.0	0.0	**9.4126**	0.112	1.2	mg/L	0	Standard
Mg	24	7980.4	1.2	**10.4188**	0.199	1.9	mg/L	52	Standard
K	39	686.7	11.3	**2.9419**	0.381	13.0	mg/L	32	Standard
Ca	43	88.3	34.6	**7.0120**	3.741	53.3	mg/L	33	Standard
Fe	54	12595.5	1.9	**9.9382**	0.086	0.9	mg/L	138	Standard
Fe	57	3487.1	1.5	**9.7496**	0.211	2.2	mg/L	263	Standard
Sc-1	45	29027.8	1.2				mg/L	27861	Standard
Cl	35	116265.8	2.0				ug/L	100607	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	2026.8	4.0				ug/L	1777	Standard
P	31	18194.3	1.7				ug/L	18074	Standard
S	34	4427.3	3.4				ug/L	3901	Standard
Sr	88	61.7	12.4				ug/L	60	Standard
C	12	170.0	25.6				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	7	Standard
Dy	164	39.2	43.8				mg/L	13	Standard
Ho-1	165	33.3	67.6				mg/L	13	Standard
Er	166	16.7	34.6				mg/L	3	Standard
I	127	4252.3	6.5				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	118.630		
Al	27	0.954		
Sc	45			
Ti	47	90.254		
V	51	94.180		
Cr	52	96.653		
Cr	53			
Mn	55	97.468		
Co	59	93.777		
Ni	60	96.574		
Cu	65	96.680		
Zn	66	99.264		
Ge	72		104.467	
As	75	96.673		
Se	82	94.515		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	79.061		
Ag	107	84.607		
Cd	111	95.059		
Cd	114			
In	115		102.723	
Sn	118			
Sb	123	94.075		
Ba	135	91.498		
Ce	140			
Tb	159			
Ho	165			
Tl	203	97.167		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.505		
U	238	96.582		
Bi	209		98.375	
Na	23	75.301		
Mg	24	208.377		
K	39	58.838		
Ca	43	46.747		
Fe	54	79.506		
Fe	57	77.997		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Mo	98	
QC Std 5	Na	23	

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QC Std 5	Mg	24
QC Std 5	K	39
QC Std 5	Ca	43
QC Std 5	Fe	54
QC Std 5	Fe	57

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, July 07, 2016 18:34:58
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	53813.7	1.5				ug/L	59299	Standard
	Be	9	42243.8	2.6	**55.8838**	2.221	4.0	ug/L	17	Standard
	Al	27	6585407.5	0.6	**54.2341**	0.994	1.8	ug/L	1472	Standard
	Sc	45	28982.7	1.2				ug/L	27861	Standard
	Ti	47	24460.4	1.4	**99.0594**	1.578	1.6	ug/L	28	Standard
	V	51	336202.2	1.5	**48.1498**	0.768	1.6	ug/L	1156	Standard
	Cr	52	358962.4	0.3	**49.1731**	0.062	0.1	ug/L	6689	Standard
	Cr	53	45138.8	1.0	**49.7890**	0.472	0.9	ug/L	348	Standard
	Mn	55	325151.6	0.7	**49.5258**	0.315	0.6	ug/L	770	Standard
	Co	59	334244.8	1.1	**48.7551**	0.570	1.2	ug/L	216	Standard
	Ni	60	93426.5	0.3	**49.7649**	0.089	0.2	ug/L	440	Standard
	Cu	65	92328.1	0.7	**49.4636**	0.426	0.9	ug/L	116	Standard
	Zn	66	54951.8	1.1	**49.2716**	0.589	1.2	ug/L	135	Standard
>	Ge	72	462501.9	0.2				ug/L	445277	Standard
	As	75	55230.7	0.9	**48.7737**	0.407	0.8	ug/L	-57	Standard
	Se	82	5593.1	2.0	**48.5354**	0.883	1.8	ug/L	10	Standard
	Se-1	77	3809.1	2.2	**49.3126**	1.155	2.3	ug/L	57	Standard
>	Ga	71	41.7	18.3				mg/L	78	Standard
	Rb	85	873.4	4.9				ug/L	22	Standard
	Y	89	391190.7	0.3				ug/L	388959	Standard
>	Rh	103	35.0	57.1				ug/L	8	Standard
	Mo	98	252601.1	1.3	**96.2919**	1.558	1.6	ug/L	10	Standard
	Ag	107	313215.1	0.9	**48.2309**	0.286	0.6	ug/L	66	Standard
	Cd	111	99574.7	0.2	**48.0572**	0.210	0.4	mg/L	3	Standard
	Cd	114	241057.7	1.0	**47.5834**	0.425	0.9	ug/L	4	Standard
>	In	115	539615.7	0.4				ug/L	523327	Standard
	Sn	118	278808.5	0.4	**48.6543**	0.354	0.7	ug/L	488	Standard
	Sb	123	234122.5	0.4	**49.9338**	0.141	0.3	ug/L	195	Standard
	Ba	135	93656.6	1.1	**47.0393**	0.446	0.9	ug/L	28	Standard
	Ce	140	491.7	12.8				ug/L	83	Standard
>	Tb	159	795106.8	0.9				ug/L	809211	Standard
	Ho	165	20.0	75.0				ug/L	13	Standard
	Tl	203	382621.3	0.4	**49.2527**	0.630	1.3	ug/L	4	Standard
	Tl	205	332846.4	0.8	**49.9550**	0.576	1.2	ug/L	8	Standard
	Pb	206	241102.2	0.5	**49.4397**	0.307	0.6	ug/L	230	Standard
	Pb	207	217155.1	0.3	**49.0663**	0.626	1.3	ug/L	184	Standard
	Pb	208	928907.9	0.2	**51.3141**	0.685	1.3	ug/L	775	Standard
	U	238	332209.7	1.0	**49.9970**	0.386	0.8	ug/L	3	Standard
>	Bi	209	466076.1	1.1				ug/L	472452	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3798.8	1.8	**4.9331**	0.126	2.6	mg/L	52	Standard
K	39	841.7	5.6	**3.6377**	0.229	6.3	mg/L	32	Standard
Ca	43	58.3	17.8	**3.3339**	1.189	35.7	mg/L	33	Standard
Fe	54	6114.9	4.2	**4.7761**	0.228	4.8	mg/L	138	Standard
Fe	57	1881.8	8.0	**4.9599**	0.479	9.7	mg/L	263	Standard
> **Sc-1**	45	28982.7	1.2				mg/L	27861	Standard
Cl	35	114614.6	1.1				ug/L	100607	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1873.4	2.9				ug/L	1777	Standard
P	31	19916.4	1.5				ug/L	18074	Standard
S	34	4892.5	3.0				ug/L	3901	Standard
Sr	88	86.7	8.8				ug/L	60	Standard
C	12	70.0	37.8				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	7	Standard
Dy	164	16.0	127.5				mg/L	13	Standard
Ho-1	165	20.0	75.0				mg/L	13	Standard
Er	166	13.3	86.6				mg/L	3	Standard
I	127	6413.0	6.0				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	111.768		
Al	27	108.468		
Sc	45			
Ti	47	99.059		
V	51	96.300		
Cr	52	98.346		
Cr	53			
Mn	55	99.052		
Co	59	97.510		
Ni	60	99.530		
Cu	65	98.927		
Zn	66	98.543		
> Ge	72		103.868	
As	75	97.547		
Se	82	97.071		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	96.292		
Ag	107	96.462		
Cd	111	96.114		
Cd	114			
> In	115			103.113
Sn	118	97.309		
Sb	123	99.868		
Ba	135	94.079		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.505		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.628		
U	238	99.994		
> Bi	209			98.651
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, July 07, 2016 18:38:10
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54014.5	1.9				ug/L	59299	Standard
	Be	9	43.3	58.1	**0.0582**	0.032	55.5	ug/L	17	Standard
	Al	27	6925.7	87.9	**0.0435**	0.049	112.2	ug/L	1472	Standard
	Sc	45	29151.4	0.8				ug/L	27861	Standard
	Ti	47	34.7	64.3	**0.0271**	0.090	330.1	ug/L	28	Standard
	V	51	1252.2	21.1	**0.0045**	0.037	818.0	ug/L	1156	Standard
	Cr	52	6291.0	5.0	**-0.0874**	0.037	42.6	ug/L	6689	Standard
	Cr	53	550.0	11.8	**0.2152**	0.069	32.1	ug/L	348	Standard
	Mn	55	1661.8	65.8	**0.1268**	0.165	130.4	ug/L	770	Standard
	Co	59	396.0	56.1	**0.0226**	0.032	142.0	ug/L	216	Standard
	Ni	60	277.3	19.3	**-0.1071**	0.027	25.7	ug/L	440	Standard
	Cu	65	200.3	27.3	**0.0499**	0.028	57.1	ug/L	116	Standard
	Zn	66	881.7	3.5	**0.6025**	0.021	3.5	ug/L	135	Standard
>	**Ge**	72	459154.0	0.9				ug/L	445277	Standard
	As	75	-5.8	547.3	**0.0320**	0.028	88.8	ug/L	-57	Standard
	Se	82	17.6	19.6	**0.0089**	0.031	349.8	ug/L	10	Standard
	Se-1	77	63.0	7.3	**0.1949**	0.065	33.1	ug/L	57	Standard
>	**Ga**	71	28.3	40.8				mg/L	78	Standard
	Rb	85	91.7	80.4				ug/L	22	Standard
	Y	89	393198.4	0.5				ug/L	388959	Standard
>	**Rh**	103	25.0	34.6				ug/L	8	Standard
	Mo	98	508.0	36.6	**0.1862**	0.069	37.0	ug/L	10	Standard
	Ag	107	381.7	23.6	**0.0450**	0.013	29.7	ug/L	66	Standard
	Cd	111	46.7	109.4	**0.0188**	0.024	129.4	mg/L	3	Standard
	Cd	114	114.9	87.4	**0.0186**	0.019	104.7	ug/L	4	Standard
>	**In**	115	541136.5	1.1				ug/L	523327	Standard
	Sn	118	935.0	6.2	**0.0873**	0.010	11.0	ug/L	488	Standard
	Sb	123	1773.9	29.5	**0.3612**	0.113	31.2	ug/L	195	Standard
	Ba	135	166.3	87.0	**0.0658**	0.071	108.7	ug/L	28	Standard
	Ce	140	421.7	70.5				ug/L	83	Standard
>	**Tb**	159	798148.1	0.4				ug/L	809211	Standard
	Ho	165	10.0	50.0				ug/L	13	Standard
	Tl	203	216.0	76.1	**0.0256**	0.021	81.8	ug/L	4	Standard
	Tl	205	171.7	76.5	**0.0230**	0.019	84.7	ug/L	8	Standard
	Pb	206	388.3	35.6	**0.0309**	0.028	90.7	ug/L	230	Standard
	Pb	207	333.3	40.7	**0.0319**	0.030	95.0	ug/L	184	Standard
	Pb	208	1430.7	42.6	**0.0326**	0.033	102.2	ug/L	775	Standard
	U	238	173.7	90.8	**0.0252**	0.023	93.2	ug/L	3	Standard
>	**Bi**	209	470805.2	0.3				ug/L	472452	Standard

Sample ID: QC Std 7
Report Date/Time: Thursday, July 07, 2016 18:40:26
Page 1

Approved: July 08, 2016

Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	46.7	27.0	**-0.0046**	0.017	361.3	mg/L	52	Standard
K	39	20.0	66.1	**-0.0380**	0.058	153.7	mg/L	32	Standard
Ca	43	15.0	57.7	**-2.0040**	1.060	52.9	mg/L	33	Standard
Fe	54	177.4	16.7	**0.0294**	0.023	77.8	mg/L	138	Standard
Fe	57	283.3	18.4	**0.1674**	0.157	93.7	mg/L	263	Standard
Sc-1	45	29151.4	0.8				mg/L	27861	Standard
Cl	35	115608.8	1.5				ug/L	100607	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	1923.5	3.0				ug/L	1777	Standard
P	31	19545.9	2.1				ug/L	18074	Standard
S	34	4854.1	4.2				ug/L	3901	Standard
Sr	88	86.7	24.0				ug/L	60	Standard
C	12	80.0	12.5				mg/L	110	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	7	Standard
Dy	164	39.5	42.8				mg/L	13	Standard
Ho-1	165	10.0	50.0				mg/L	13	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	4280.6	0.8				mg/L	8539	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.116	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, July 07, 2016 18:40:26
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Approved: July 08, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.403	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.652	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

Sample ID: QC Std 7
Report Date/Time: Thursday, July 07, 2016 18:40:26
Page 3

Approved: July 08, 2016

2.3.3 Metals CVAA Data (Mercury)

2.3.3.1 Summary Data

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061648-02	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18WW25F-062916	**Prep Method:**	7470A	**Prep Date:**	07/05/2016 07:18
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	07/07/2016 13:11
Workgroup #:	WG575509	**Analyst:**	PDM	**Run Date:**	07/07/2016 13:54
Collect Date:	06/29/2016 08:05	**Dilution:**	1	**File ID:**	M7.070716.135434
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061648
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.3.2 QC Summary

Example Cold Vapor Mercury Calculations
Hydra AA Mercury Analyzer / CETAC M-7600 Quick Trace Mercury Analyzer

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and five standards.

2.0 Calculating the concentration (C) of an element in water using data from run log and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to Volume (mL)	40
Vi = Aliquot Volume (mL)	40
D = Manual dilution factor, if required (10X = 10)	1
Cx = Concentration of element in ppb (ug/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Ws} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to volume (mL)	40
Ws = Aliquot weight (g)	0.6
D = Manual dilution factor	1
Cx = Concentration of element in ug/kg	6.67

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

1 Cx = Concentration calculated as received (wet basis)	6.67
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	8.33

8.33 ug/kg = 0.00833 mg/kg

Microbac Laboratories Inc.
Metals Digest Log

Workgroup: WG575094
Analyst: REK
Spike Analyst: REK
Method: 7470A
Run Date: 07/05/2016 07:18
Hotblock Start Temp: 95.4 @ 07:10
Hotblock End Temp: 95.5 @ 09:10
Instrument: HB6

SOP: ME404 Revison 17
Spike Solution: STD76924
Spike Witness: ERP
H2SO4 Lot #: COA18359
40 & 50 ML. DIGESTION TU COA18987
HNO3 Lot #: COA19030
KMnO4 1:1 Lot #: RGT37128
K2S2O8 1:1 Lot #: RGT37142
Mercury Water ICV Lot #: STD76926
HG H2O STDS 10PPM Lot #: STD76932

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Spike Amount	Due Date
1	WG575094-03	BLANK	1	40 mL	40 mL		
2	WG574809-01	FBLK1	17	4 mL	40 mL		
3	WG575094-04	LCS	1	40 mL	40 mL	4 mL	
4	L16061591-01	SAMP	17	4 mL	40 mL		07/07/16
5	WG575094-01	REF	17	4 mL	40 mL		
6	L16061591-02	SAMP	17	4 mL	40 mL		07/07/16
7	L16061591-03	SAMP	17	4 mL	40 mL		07/07/16
8	L16061636-02	SAMP	2	40 mL	40 mL		07/08/16
9	L16061648-02	SAMP	1	40 mL	40 mL		07/11/16
10	L16070001-01	ML01	1	40 mL	40 mL	.1 mL	07/15/16
11	L16070003-01	ML01	1	40 mL	40 mL	.2 mL	07/15/16
12	L16070003-09	ML09	1	40 mL	40 mL	.2 mL	07/15/16
13	WG575094-02	REF	2	40 mL	40 mL		
14	L16070067-01	SAMP	2	40 mL	40 mL		07/12/16
15	L16070067-02	SAMP	2	40 mL	40 mL		07/12/16
16	L16070067-03	SAMP	2	40 mL	40 mL		07/12/16
17	WG575094-05	MS	1	36 mL	40 mL	4 mL	
18	WG575094-06	MSD	1	36 mL	40 mL	4 mL	
19	WG575094-07	DUP	1	40 mL	40 mL		

Analyst: [signature]

Reviewer: [signature]

* All calibration and check standards are prepared and digested with sample batch following the procedures in section 7.0 of SOP ME404/ME405.

HB_DIG - Modified 07/26/2012
PDF ID: 4838325
Report generated: 07/05/2016 10:27

MICROBAC®

TCLP Non-Volatile

Analyst(s): AMA, CPD, BNB
Date: 6/30/16
Filter Lot #: 94860030
Microbac SOP: TCLP01 Rev #: 12

Analyst / Date		Analyst / Date	
AMA	6/30/16	CPD	7/1/16
Time On	Temp On °C	Time Off	Temp Off °C
1529	23.4	0818	22.1

Agitator Speed 30 ± 2 rpm ☑

Jug #	Sample #	Tests	Method	Fluid #	Matrix *	% Solid	Pretest pH Initial	Pretest pH Final	Int. Wt. (g)	Fluid Vol. (mL)	Final extract pH
G-8	6-1591-01	ME, SV	1311	F2-380	S	100	8.81	6.61	50.47	1009	6.24
G-10	-02						8.78	6.70	50.77	1015	6.32
G15	-03						8.59	5.70	50.30	1006	5.00
NA	FBLK 2	ME, SV	1311	F2-380	NA	NA	NA	NA	100	100	2.85

BNB 06/30/16

*Matrix Code: (S = solid, sand, soil or sludge) (P = paint) (O = organic) (W = water or aqueous waste)
D = Disposable plastic jug
TCLP Pretest weight will be 5.0 g (± 0.1) unless otherwise noted.
Temperature shall be maintained at 23° ± 2 for 18 ± 2 hours unless otherwise noted.

Comments: NA

Peer Review By: [signature]

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 070716A.CSV

Analyst1: PDM Analyst2: N/A

Method: 7470A/245.1 SOP: ME404 Rev: 17

Maintenance Log ID:

Calibration Std: STD76932 ICV Std: STD76926 Post Spike: STD76932

ICSA: N/A ICSAB: N/A Int. Std:

CCV: LLCCV: Tuning Sol :

Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 575509

Comments: Seqeunces 28 through 31 were not reported due to continuing calibration verification failure for NPDES acceptance criteria.

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	M7.070716.125846	WG575552-01	Calibration Point		1		07/07/16 12:58
2	M7.070716.130117	WG575552-02	Calibration Point		1		07/07/16 13:01
3	M7.070716.130349	WG575552-03	Calibration Point		1		07/07/16 13:03
4	M7.070716.130621	WG575552-04	Calibration Point		1		07/07/16 13:06
5	M7.070716.130854	WG575552-05	Calibration Point		1		07/07/16 13:08
6	M7.070716.131128	WG575552-06	Calibration Point		1		07/07/16 13:11
7	M7.070716.131402	WG575552-07	Initial Calibration Verification		1		07/07/16 13:14
8	M7.070716.131633	WG575552-08	Initial Calib Blank		1		07/07/16 13:16
9	M7.070716.131905	WG575552-09	CCV		1		07/07/16 13:19
10	M7.070716.132136	WG575552-10	CCB		1		07/07/16 13:21
11	M7.070716.132407	WG575094-03	Method/Prep Blank	40/40	1		07/07/16 13:24
12	M7.070716.132638	WG575094-04	Laboratory Control S	40/40	1		07/07/16 13:26
13	M7.070716.132910	WG574809-01	Fluid Blank 1		1		07/07/16 13:29
14	M7.070716.133141	L16061591-01	062316-11	4/40	1		07/07/16 13:31
15	M7.070716.133413	WG575509-01	Post Digestion Spike		1	L16061591-01	07/07/16 13:34
16	M7.070716.133646	WG575094-01	Reference Sample	4/40	1	L16061591-02	07/07/16 13:36
17	M7.070716.133918	WG575094-05	Matrix Spike	36/40	1	L16061591-02	07/07/16 13:39
18	M7.070716.134151	WG575094-06	Matrix Spike Duplica	36/40	1	L16061591-02	07/07/16 13:41
19	M7.070716.134424	L16061591-03	062316-13	4/40	1		07/07/16 13:44
20	M7.070716.134657	L16061636-02	V6F0241-02	40/40	1		07/07/16 13:46
21	M7.070716.134930	WG575552-11	CCV		1		07/07/16 13:49
22	M7.070716.135201	WG575552-12	CCB		1		07/07/16 13:52
23	M7.070716.135434	L16061648-02	18WW25F-062916	40/40	1		07/07/16 13:54
24	M7.070716.135708	WG575509-02	Post Digestion Spike		1	L16061648-02	07/07/16 13:57
25	M7.070716.135939	L16070001-01	MDL-1	40/40	1		07/07/16 13:59
26	M7.070716.140209	L16070003-01	LOQ-1	40/40	1		07/07/16 14:02
27	M7.070716.140440	L16070003-09	LOQ-9	40/40	1		07/07/16 14:04
28	M7.070716.140711	L16070067-01	WEST RETENTION POND		1	WG575094-02	07/07/16 14:07
29	M7.070716.140943	WG575094-07	Duplicate		1	L16070067-01	07/07/16 14:09
30	M7.070716.141214	L16070067-02	OUTFALL 001		1		07/07/16 14:12
31	M7.070716.141446	L16070067-03	CATCH BASIN 29		1		07/07/16 14:14
32	M7.070716.141719	WG575552-13	CCV		1		07/07/16 14:17
33	M7.070716.141949	WG575552-14	CCB		1		07/07/16 14:19

Page: 1 Approved: July 11, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 07-JUL-2016
Analyst: PDM
Analyst: NA
Method: 7470/245.1
Instrument: CVAA1
Curve Workgroup: 575552
Runlog ID: 76164
Analytical Workgroups: 575509

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	1648
Client Forms	X
Level X	
Level 3	
Level 4	1648
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	PDM
Secondary Reviewer	KHR
Comments	

Primary Reviewer: 08-JUL-2016 Pierce Morris

Secondary Reviewer: 11-JUL-2016 Kym H. Rhoden

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-11-2016 07:38:16

Microbac Laboratories Inc.

00692631

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 7470A

AAB#: WG575509

Login Number: L16061648

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW25F-062916	02	06/29/16					07/05/2016	6	28		07/07/16	8.2	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4845210
Report generated 07/08/2016 12:43

METHOD BLANK SUMMARY

Login Number: L16061648
Blank File ID: M7.070716.132407
Prep Date: 07/05/16 07:18
Analyzed Date: 07/07/16 13:24
Analyst: PDM

Work Group: WG575509
Blank Sample ID: WG575094-03
Instrument ID: CVAA1
Method: 7470A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG575094-04	M7.070716.132638	07/07/16 13:26	01
18WW25F-062916	L16061648-02	M7.070716.135434	07/07/16 13:54	01

Report Name: BLANK_SUMMARY
PDF File ID: 4845211
Report generated 07/08/2016 12:43

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061648 Prep Date: 07/05/16 07:18 Sample ID: WG575094-03
Instrument ID: CVAA1 Run Date: 07/07/16 13:24 Prep Method: 7470A
File ID: M7.070716.132407 Analyst: PDM Method: 7470A
Workgroup (AAB#): WG575509 Matrix: Water Units: mg/L
Contract #: Cal ID: CVAA1-07-JUL-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Mercury	0.000100	0.000400	0.000100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4845212
08-JUL-2016 12:43

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061648 Run Date: 07/07/2016 Sample ID: WG575094-04
Instrument ID: CVAA1 Run Time: 13:26 Prep Method: 7470A
File ID: M7.070716.132638 Analyst: PDM Method: 7470A
Workgroup (AAB#): WG575509 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76924 Cal ID: CVAA1-07-JUL-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Mercury	0.00400	0.00430	107	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4845213
Report generated: 07/08/2016 12:43

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061648 Cal ID: CVAA1 - Worknum: WG575509
Instrument ID: CVAA1 Contract #: Method: 7470A
Parent ID: WG575094-01 File ID: M7.070716.133646 Dil: 1 Matrix: WATER
Sample ID: WG575094-05 MS File ID: M7.070716.133918 Dil: 1 Units: mg/L
Sample ID: WG575094-06 MSD File ID: M7.070716.134151 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Mercury	ND	0.00444	0.00488	110	0.00444	0.00486	109	0.251	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4845214
Report generated 07/08/2016 12:43

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061648 **Worknum:** WG575509
Instrument ID: CVAA1 **Method:** 7470A
Post Spike ID: WG575509-02 **File ID:** M7.070716.135708 **Dil:** 1 **Units:** ug/L
Sample ID: L16061648-02 **File ID:** M7.070716.135434 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MERCURY	1.07		0	U	1	107.4	85 - 115	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4845209
Report generated: 07/08/2016 12:43

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061648
Analytical Method: 7470A
ICAL Worknum: WG575552

Workgroup (AAB#): WG575509
Instrument ID: CVAA1
Initial Calibration Date: 07/07/2016 13:11

Analyte	WG575552-01		WG575552-02		WG575552-03		WG575552-04		WG575552-05		WG575552-06	
	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT
Mercury	0	-28.08	0.200	2269	1.00	11300	2.00	23140	5.00	57040	10.0	109900

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4845215
Report generated 07/08/2016 12:43

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061648
Analytical Method: 7470A
ICAL Worknum: WG575552

Workgroup (AAB#): WG575509
Instrument ID: CVAA1
Initial Calibration Date: 07/07/2016 13:11

Analyte	R	Q
Mercury	1.000	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4845215
Report generated 07/08/2016 12:43

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061648
Instrument ID: CVAA1
File ID: M7.070716.131633
Workgroup (AAB#): WG575509
Matrix: WATER

Run Date: 07/07/2016
Run Time: 13:16
Analyst: PDM
Cal ID: CVAA1 - 07-JUL-16

Sample ID: WG575552-08
Method: 7470A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
MERCURY	.1	.4	.1	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4845217
Report generated 07/08/2016 12:43

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575552-10
Instrument ID: CVAA1
Run Time: 13:21
Method: 7470A
File ID: M7.070716.132136
Analyst: PDM
Units: ug/L
Workgroup (AAB#): WG575509
Cal ID: CVAA1 - 07-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4845219
Report generated 07/08/2016 12:43

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575552-12
Instrument ID: CVAA1
Run Time: 13:52
Method: 7470A
File ID: M7.070716.135201
Analyst: PDM
Units: ug/L
Workgroup (AAB#): WG575509
Cal ID: CVAA1 - 07-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4845219
Report generated 07/08/2016 12:43

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575552-14
Instrument ID: CVAA1
Run Time: 14:19
Method: 7470A
File ID: M7.070716.141949
Analyst: PDM
Units: ug/L
Workgroup (AAB#): WG575509
Cal ID: CVAA1 - 07-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4845219
Report generated 07/08/2016 12:43

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575552-07
Instrument ID: CVAA1
Run Time: 13:14
Method: 7470A
File ID: M7.070716.131402
Analyst: PDM
Units: ug/L
Workgroup (AAB#): WG575509
Cal ID: CVAA1 - 07-JUL-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Mercury		2	2.05	102	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4845216
Report generated 07/08/2016 12:43

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575552-09
Instrument ID: CVAA1
Run Time: 13:19
Method: 7470A
File ID: M7.070716.131905
Analyst: PDM
QC Key: DOD4
Workgroup (AAB#): WG575509
Cal ID: CVAA1 - 07-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00207	mg/L	104	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4845218
Report generated 07/08/2016 12:43

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575552-11
Instrument ID: CVAA1
Run Time: 13:49
Method: 7470A
File ID: M7.070716.134930
Analyst: PDM
QC Key: DOD4
Workgroup (AAB#): WG575509
Cal ID: CVAA1 - 07-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00215	mg/L	108	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4845218
Report generated 07/08/2016 12:43

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061648
Run Date: 07/07/2016
Sample ID: WG575552-13
Instrument ID: CVAA1
Run Time: 14:17
Method: 7470A
File ID: M7.070716.141719
Analyst: PDM
QC Key: DOD4
Workgroup (AAB#): WG575509
Cal ID: CVAA1 - 07-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00223	mg/L	111	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4845218
Report generated 07/08/2016 12:43

2.3.3.3 Raw Data

PDM CVAA1 245.1/7470/7471

Report Generated By CETAC QuickTrace
Analyst: VOA
Worksheet file: C:\Program Files (x86)\QuickTrace\Worksheets\070716A.wsz
Date Started: 7/7/2016 12:36:09 PM
Comment:

Results

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
Standard #0					STD	07/07/16 12:58:46 pm	0.0000	-28	98.19		1.00
Replicates	1.6	-53.6	-49.4	-10.9							
Standard #1 (0.2 ug/L)					STD	07/07/16 01:01:17 pm	0.2000	2269	0.70		1.00
Replicates	2289.7	2256.5	2256.7	2274.5							
Standard #2 (1.0 ug/L)					STD	07/07/16 01:03:49 pm	1.0000	11300	0.31		1.00
Replicates	11349.4	11297.0	11269.8	11284.3							
Standard #3 (2.0 ug/L)					STD	07/07/16 01:06:21 pm	2.0000	23139	0.18		1.00
Replicates	23194.7	23147.0	23116.8	23096.5							
Standard #4 (5.0 ug/L)					STD	07/07/16 01:08:54 pm	5.0000	57042	0.26		1.00
Replicates	57240.8	57061.1	56930.6	56935.9							
Standard #5 (10.0 ug/L)					STD	07/07/16 01:11:28 pm	10.0000	109860	0.39		1.00
Replicates	110419.9	109967.5	109578.8	109475.3							

Calibration

Equation: A = 517.356 + 11015.300C
R2: 0.99960
SEE: 956.2371
Flags:

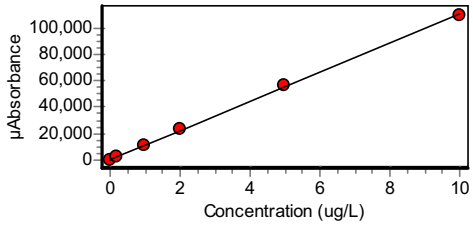

ICV					ICV	07/07/16 01:14:02 pm	2.0480	23073	0.36		1.00
Replicates	23170.8	23111.7	23010.2	23001.2							
% Recovery	102.39										

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Pierce Morris

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
ICB					ICB	07/07/16 01:16:33 pm	-0.0506	-40	28.11		1.00
Replicates	-39.6	-36.2	-29.0	-55.7							
CCV					CCV	07/07/16 01:19:05 pm	2.0710	23330	0.80		1.00
Replicates	23541.1	23407.5	23266.3	23106.2							
% Recovery	103.55										
CCB					CCB	07/07/16 01:21:36 pm	-0.0581	-123	22.01		1.00
Replicates	-92.2	-112.0	-130.7	-155.5							
WG575094-03					MB	07/07/16 01:24:07 pm	-0.0464	6	176.12		1.00
Replicates	-2.0	0.2	4.6	22.9							
WG575094-04					LCS	07/07/16 01:26:38 pm	4.2970	47849	0.91		1.00
Replicates	48342.6	48043.9	47674.4	47336.9							
% Recovery	107.42										
WG574809-01					UNK	07/07/16 01:29:10 pm	-0.0414	61	59.38		1.00
Replicates	100.8	83.3	23.7	38.2							
L1606159101					UNK	07/07/16 01:31:41 pm	-0.0476	-7	375.01		1.00
Replicates	-26.8	23.7	-27.1	3.7							
WG575509-01					SPK	07/07/16 01:34:13 pm	1.0300	11867	0.59		1.00
Replicates	11942.0	11902.5	11841.6	11782.0							
% Recovery	107.79										
L1606159102					UNK	07/07/16 01:36:46 pm	-0.0477	-8	391.78		1.00
Replicates	7.5	21.9	-11.0	-50.3							
WG575094-05					MSK	07/07/16 01:39:18 pm	4.3880	48850	0.53		1.00
Replicates	48474.1	48877.3	49003.3	49046.9							
% Recovery	110.89										
WG575094-06					MSDUP	07/07/16 01:41:51 pm	4.3770	48731	0.58		1.00
Replicates	49006.5	48893.6	48659.6	48363.6							
% Recovery	110.62	RPD 0.25									
L1606159103					UNK	07/07/16 01:44:24 pm	-0.0241	251	23.64		1.00
Replicates	310.5	280.2	242.5	172.7							

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Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1606163602					UNK	07/07/16 01:46:57 pm	-0.0393	85	16.76		1.00
Replicates	97.8	94.8	67.8	78.1							
CCV					CCV	07/07/16 01:49:30 pm	2.1510	24206	0.69		1.00
Replicates	24377.7	24295.9	24148.4	24001.6							
% Recovery	107.53										
CCB					CCB	07/07/16 01:52:01 pm	-0.0370	110	40.65		1.00
Replicates	151.7	133.2	103.6	49.7							
L1606164802					UNK	07/07/16 01:54:34 pm	-0.0444	28	72.29		1.00
Replicates	29.7	2.1	29.3	52.1							
WG575509-02					SPK	07/07/16 01:57:08 pm	1.0740	12351	0.38		1.00
Replicates	12381.0	12399.5	12322.7	12301.7							
% Recovery	111.87										
L1607000101					UNK	07/07/16 01:59:39 pm	0.0823	1424	2.28		1.00
Replicates	1452.9	1445.9	1381.9	1414.9							
L1607000301					UNK	07/07/16 02:02:09 pm	0.1791	2490	1.43		1.00
Replicates	2524.3	2514.2	2448.1	2472.6							
L1607000309					UNK	07/07/16 02:04:40 pm	0.1823	2526	0.55		1.00
Replicates	2528.7	2523.7	2542.2	2508.8							
L1607006701					UNK	07/07/16 02:07:11 pm	-0.0440	33	55.90		1.00
Replicates	22.9	12.3	47.3	50.3							
WG575094-07					DUP	07/07/16 02:09:43 pm	-0.0474	-5	259.33		1.00
Replicates	-2.0	-12.0	11.2	-15.8							
		RPD 0.00									
L1607006702					UNK	07/07/16 02:12:14 pm	-0.0457	14	32.15		1.00
Replicates	11.0	11.3	21.0	14.5							
L1607006703					UNK	07/07/16 02:14:46 pm	-0.0457	14	78.82		1.00
Replicates	26.1	2.2	18.2	7.7							

Approved: July 08, 2016
Pierce Morris

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
CCV					CCV	07/07/16 02:17:19 pm	2.2250	25027	0.66	Q	1.00
	Replicates	25174.9	25133.1	24989.3	24811.4						
	% Recovery	111.25									
CCB					CCB	07/07/16 02:19:49 pm	-0.0351	130	11.61		1.00
	Replicates	150.5	131.9	123.3	115.3						

Approved: July 08, 2016

Pierce Morris

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
July 20, 2016

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001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BNB - Brandi N. Bentley
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJQ - Cameron J. Quick
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
CV - Carl Volkman
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
EMW - ERIC M. WILKEN
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
HDC - HANAH D. COE
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LJH - Lacey J. Hendershot
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
NPH - Natalie P. Hart
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RNP - RICK N. PETTY
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
July 20, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
July 20, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Debra Richmann
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD	pH:	
Project Name/Location:	Longhorn		
Project Number:	60274185.0013BH 1824 MR10		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Total Metals	1,4 - DIOXANE	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 18/24	18WW25-062916			6/29/16	0805		✓	W	6	✓	✓		✓					
	18WW25F-062916			6/29/16	0805		✓	W	1			✓						
	TRIP BLANK			6/29/16			✓	W	2	✓								

Microbac OVD
Received: 06/30/2016 09:36
By: CARA STRICKLER
221000087876
Cara Strickler

Comments: **STANDARD TAT**

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Scott Beesinger	6/29/16	1500					
Relinquished by: (Signature)	**Date**	**Time**	**Received for Laboratory by: (Signature)**	**Date**	**Time**	**Remarks:**	

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061648
Account: 2551
Project: 2551.096
Samples: 3
Due Date: 11-JUL-2016

Samplenum	Container ID	Products
L16061648-01	768205	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	30-JUN-2016 13:52	CLS		
2	ANALYZ	L1	ORG4	30-JUN-2016 16:23	JST	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	30-JUN-2016 13:52	CLS		
2	ANALYZ	L1	ORG4	30-JUN-2016 16:23	JST	CLS	
3	STORE	ORG4	A1	14-JUL-2016 07:18	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	30-JUN-2016 13:52	CLS		
2	ANALYZ	L1	ORG4	30-JUN-2016 16:23	JST	CLS	
3	STORE	ORG4	A1	14-JUL-2016 07:18	CLS	AWE	

Samplenum	Container ID	Products
L16061648-01	768206	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	30-JUN-2016 13:52	CLS		
2	PREP	W1	EXT	30-JUN-2016 16:17	CPD	CLS	
3	DISP	EXT	DISP	01-JUL-2016 08:21	BJO	BJO	
4	ANALYZ*	EXT	SEMI	01-JUL-2016 15:24	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		30-JUN-2016 13:52	CLS		

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061648-01	768207	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	30-JUN-2016 13:52	CLS		
2	ANALYZ	W1	SEM	01-JUL-2016 10:24	JWR	CLS	
3	STORE	SEM	A1	05-JUL-2016 13:47	BRG	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16061648
Account: 2551
Project: 2551.096
Samples: 3
Due Date: 11-JUL-2016

Samplenum	Container ID	Products
L16061648-02	768208	CR-MS CU-MS FE HG K MG MN-MS NA NI-MS PB-MS SE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	30-JUN-2016 13:52	CLS		
2	PREP	W1	DIG	30-JUN-2016 15:34	ERP	CLS	
3	ANALYZ*	DIG	METALS	01-JUL-2016 12:49	JYH	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16061648-03	768209	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	ORG4	30-JUN-2016 13:52	CLS		
2	STORE	ORG4	A1	14-JUL-2016 07:18	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	30-JUN-2016 13:52	CLS		
2	ANALYZ	L1	ORG4	30-JUN-2016 16:23	JST	CLS	
3	STORE	ORG4	A1	14-JUL-2016 07:18	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

APPENDIX C: Groundwater Sampling Forms – June 2016

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 102	Date: 6/15/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: ~~Bladder Pump~~ Bailer ID#:	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 21.13	Weather Conditions: Clear
	Total Well Depth (ft) from TOC: 29.33	Screen Interval (ft) from TOC: 15.20 - 30.20	Condition of Well/Remarks: Good
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/15/16	1348	21.33	NA							Bailing well
6/15/16	1354	29.30	NA							Bailed 1.25 gallons Ran Dry
	0840									
6/16/16	[redacted]	21.37	NA	21.74	4.90	0.327	NA	8.7	NA	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 102-061616 TIME: 0840

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Bailer	VOC
1-250 ml plastic	NA	Y	Bailer	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 109	Date: 6/21/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: ~~Bladder Pump~~ Bailer ID#:	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 28.98	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 38.23	Screen Intverval (ft) from TOC: 22.83-37.83	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/21/16	1514	28.98	NA							Bailing well
6/21/16	1520	38.19	NA							Bailed 1.5 gallons Ran dry
6/22/16	0720	29.02	NA	21.35	5.53	0.235	NA	10.1	NA	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 109-062216 TIME: 0720

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3- 40 ml glass	HCL	N	Bailer	VOC
2- 1 Liter Amber	NA	N		1,4-Dioxane
1- 500 ml plastic	HNO3			TOTAL metals
1- 250 ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 120	Date: 6/15/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: ~~Bladder Pump~~ Bailer ID#:	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 12.31	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 26.93	Screen Interval (ft) from TOC: 12.00 - 27.00	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/15/16	1413	12.31	NA							Bailing well
6/15/16	1419	26.87	NA							Bailed 2.25 gallons RANDRY
6/16/16	0925	13.03	NA	27.10	6.02	1.32	NA	139	NA	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 120-061616 TIME: 0925

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40 ml glass	HCL	N	Bailer	VOC
2 - 1 Liter Amber	NA	N	↓	1,4-Dioxane
1 - 500 ml plastic	HNO3	Y	↓	Total metals
1 - 250 ml plastic	NA	Y	↓	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 123	Date: 6/15/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: ~~Bladder Pump~~ Bailer ID#:	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 12.60	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 20.10	Screen Intverval (ft) from TOC: 6.00 - 21.00	Condition of Well/Remarks: Good
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/15/16	1423	12.60	NA							Bailing well
6/15/16	1430	20.03	NA							Bailed 1.25 gallons Ran Dry
6/16/16	0955	12.89	NA	24.37	6.56	0.263	NA	9.3	NA	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 123-061616 TIME: 0955

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Bailer	VOC
2-1 Liter Amber	NA	N	↓	1,4-Dioxane
1-500 ml plastic	HNO3			TOTAL metals
1-250 ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 125	Date: 6/21/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst : ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: ~~Bladder Pump~~ Bailer ID#:	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 24.18	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 27.43	Screen Intverval (ft) from TOC: 12.94 - 27.94	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/21/16	1505	24.18	NA							Bailing well
6/21/16	1510	27.39	NA							Bailed .5 gallons RAN DRY
6/22/16	0655	24.22	NA	21.25	4.50	0.338	NA	22.2	NA	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 125-062216 TIME: 0655

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40ml glass	HCL	N	Bailer	VOC
1 - 250 ml plastic	NA	Y	Bailer	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 126	Date: 6/14/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4 11	Static Water Level Reading (ft) from TOC: 28.85	Weather Conditions: Cloudy
	Total Well Depth (ft) from TOC: 39.00	Screen Interval (ft) from TOC: 24.00 - 39.00	Condition of Well/Remarks: Good
		Pump Placement (ft) from TOC: 31.50	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/14/16	1040	28.87	100	24.48	5.49	7.30	2.28	35.9	205	
	1045	28.93	100	23.45	5.76	7.36	1.20	32.2	139	
	1050	28.97	100	22.76	5.49	7.40	0.60	32.9	145	
	1055	29.00	100	22.40	5.49	7.41	0.67	29.2	135	
	1100	29.02	100	22.37	5.50	7.42	0.68	29.0	134	
	1105	29.03	100	22.34	5.50	7.43	0.69	28.5	133	
	1110	29.03	100	22.31	5.50	7.43	0.69	28.0	132	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 126-061416 TIME: 1110

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N		1,4-Dioxane
1-500 ml plastic	HNO3	Y		Total metals
1-250 ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 129	Date: 6/15/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: ~~Bladder Pump~~ Bailer ID#:	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 25.95	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 36.24	Screen Intverval (ft) from TOC: 21.25 - 36.25	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/15/16	1403	25.95	NA							Bailing well
6/15/16	1409	36.20	NA							Bailed 1.5 gallons RAN DRY
6/16/16	0905	25.95	NA	23.54	5.35	0.956	NA	3.6	NA	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 129-061616 TIME: 0905

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40 ml glass	HCl	N	~~Pump~~ Bailer	VOC
2 - 1 Liter Amber	NA	N	↓	1,4-Dioxane
1 - 500 ml plastic	HNO3			TOTAL metals
1 - 250 ml plastic	NA	Y	↓	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 130	Date: 6/10/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 2"	Static Water Level Reading (ft) from TOC: 6.30	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 25.63	Screen Intverval (ft) from TOC: 10.57- 25.57	Condition of Well/Remarks: Needs paint
		Pump Placement (ft) from TOC: 18.07	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/10/16	1035	6.27	100	22.39	5.35	1.68	1.22	41.9	168	
	1040	6.35	100	21.85	5.20	1.85	0.78	36.9	171	
	1045	6.41	100	21.68	5.18	1.79	0.39	32.6	170	
	1050	6.45	100	21.76	5.19	1.74	0.38	16.3	166	
	1055	6.47	100	21.79	5.18	1.72	0.37	16.0	166	
	1100	6.49	100	21.83	5.20	1.72	0.37	7.4	164	
	1105	6.50	100	21.85	5.21	1.73	0.38	7.9	163	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 130-061016 TIME: 1105

DUPLICATE (D): YES/NO Yes

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
6- 40 ml glass	HCL	N	Pump	VOC
2- 250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPTMW01DW	Date: 6/24/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 37.33	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 101.73	Screen Interval (ft) from TOC: 91.73 - 101.23	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 96.48	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/in ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/24/16	1300	37.33	100	26.49	7.64	1.37	1.10	0.0	47	
	1305	37.38	100	24.74	7.14	1.31	0.84	0.0	98	
	1310	37.43	100	24.55	6.33	1.29	0.69	0.0	124	
	1315	37.47	100	24.34	6.14	1.29	0.63	0.0	107	
	1320	37.49	100	24.30	6.13	1.28	0.62	0.1	105	
	1325	37.50	100	24.39	6.13	1.27	0.62	0.2	105	
	1330	37.51	100	24.44	6.12	1.27	0.62	0.5	104	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18CPTMW01DW-062416 TIME: 1330

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3- 40 ml glass	HCL	N	Pump	VOC
2- 1 Liter Amber	NA	N	Pump	1,4-Dioxane
1- 250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPTMW01SW	Date: 6/24/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 27.25	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 65.32	Screen Intverval (ft) from TOC: 57.32-66.82	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 62.07	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/in ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/24/16	1355	27.27	100	26.25	5.99	1.16	2.07	21.2	28	
	1400	27.35	100	25.09	5.55	1.13	0.88	7.3	42	
	1405	27.41	100	24.50	5.18	1.15	0.70	1.0	60	
	1410	27.44	100	24.40	5.04	1.15	0.59	1.4	79	
	1415	27.46	100	24.30	5.02	1.14	0.58	2.7	80	
	1420	27.47	100	24.29	5.00	1.15	0.57	3.8	82	
	1425	27.48	100	24.24	4.99	1.15	0.57	3.2	83	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18CPTMW01SW-062416 TIME: 1425

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3- 40 ml glass	HCL	N	Pump	VOC
2- 1 Liter Amber	NA	N		1,4-Dioxane
1- 500 ml plastic	HNO3	N		TOTAL metals
1-250 ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPTMW035W	Date: 6/8/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 28.35	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 70.38	Screen Intverval (ft) from TOC: 60.18 - 69.78	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 65.00	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/8/16	1050	28.37	100	24.64	8.03	2.74	1.55	10.6	-17	
	1055	28.42	100	24.48	7.77	2.52	0.84	12.0	-102	
	1100	28.46	100	24.17	7.60	2.44	0.68	12.2	-122	
	1105	28.49	100	23.90	7.51	2.37	0.65	11.9	-132	
	1110	28.52	100	23.95	7.50	2.37	0.64	12.5	-134	
	1115	28.53	100	23.91	7.49	2.37	0.63	11.9	-136	
	1120	28.53	100	23.96	7.49	2.36	0.63	11.8	-137	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18CPTMW035W-060816 TIME: 1120

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N	Pump	1,4-Dioxane
1-250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPTMW04	Date: 6/14/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 24.12	Weather Conditions: CLOUDY
	Total Well Depth (ft) from TOC: 37.38	Screen Interval (ft) from TOC: 17.38-36.88	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 27.13	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/14/16	0930	24.15	100	23.52	6.45	0.920	2.86	2.4	183	
	0935	24.22	100	23.40	6.17	0.897	2.29	2.0	193	
	0940	24.27	100	23.34	5.85	0.895	1.45	1.4	210	
	0945	24.30	100	23.34	5.59	0.896	1.41	1.7	227	
	0950	24.33	100	23.39	5.58	0.897	1.39	1.8	228	
	0955	24.35	100	23.44	5.55	0.897	1.37	1.6	228	
	1000	24.36	100	23.47	5.54	0.897	1.36	1.4	229	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: 18CPTMW04-061416 TIME: 1000

DUPLICATE (D): YES/NO Yes

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
6-40ml glass	HCL	N	Pump	VOC
4-1 Liter Amber	NA	N	↓	1,4-Dioxane
2-250ml plastic	NA	Y	↓	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPTMW04SW	Date: 6/14/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 26.33	Weather Conditions: Cloudy
	Total Well Depth (ft) from TOC: 65.45	Screen Interval (ft) from TOC: 54.98 - 64.48	Condition of Well/Remarks: Good
		Pump Placement (ft) from TOC: 59.73	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/14/16	0825	26.35	100	22.02	6.65	1.23	2.93	20.6	157	
	0830	26.43	100	21.70	6.59	1.23	2.55	15.4	146	
	0835	26.49	100	21.56	6.33	1.22	2.31	12.1	140	
	0840	26.53	100	21.53	6.30	1.22	2.16	9.8	140	
	0845	26.55	100	21.53	6.17	1.22	2.05	9.0	140	
	0850	26.57	100	21.54	6.14	1.23	2.03	8.6	138	
	0855	26.59	100	21.55	6.13	1.22	2.01	8.0	136	
	0900	26.60	100	21.57	6.12	1.22	1.99	7.7	135	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18CPTMW04SW-061416 TIME: 0900

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N		1,4-Dioxane
1-500ml plastic	HNO3	N		TOTAL metals
1-250ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPTmw06	Date: 6/8/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 27.95	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 66.80	Screen Intverval (ft) from TOC: 57.25 - 66.75	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 62.00	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/8/16	1300	27.97	100	23.88	7.76	1.51	1.18	14.4	-188	
	1305	28.03	100	23.00	7.27	1.56	0.74	16.3	-157	
	1310	28.07	100	23.32	6.42	1.60	0.70	15.2	-137	
	1315	28.10	100	23.44		1.69	0.70	15.1	-100	
	1320	28.12	100	23.30		1.68	0.72	15.4	-98	
	1325	28.13	100	23.29		1.69	0.71	15.5	-97	
	1330	28.13	100	23.22	6.26	1.70	0.72	15.7	-95	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18CPTmw06-060816 TIME: 1330

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO Yes

MATRIX DUPLICATE (MD): YES/NO Yes

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
9 - 40 ml glass	HCL	N	Pump	VOC
6 - 1 Liter Amber	NA	N	Pump	1,4-Dioxane
3 - 250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPTMW07	Date: 6/22/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 27.47	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 67.10	Screen Interval (ft) from TOC: 57.10-66.60	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 61.35	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/22/16	0755	27.49	100	21.19	7.81	0.982	4.07	34.4	113	
	0800	27.57	100	20.52	7.43	0.879	2.63	15.2	121	
	0805	27.82	100	20.24	7.08	0.863	2.10	15.3	-22	
	0810	27.85	100	20.17	6.48	0.872	1.65	16.2	-10	
	0815	27.87	100	20.20	6.45	0.872	1.50	16.9	-23	
	0820	27.88	100	20.23	6.45	0.871	1.49	17.1	-24	
	0825	27.89	100	20.30	6.44	0.873	1.48	16.5	-25	
	0830	27.89	100	20.25	6.44	0.873	1.47	16.8	-25	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18CPTMW07-062216 TIME: 0830

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N	Pump	1,4-Dioxane
1-250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPTmw08DW	Date: 6/8/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 26.40	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 102.28	Screen Interval (ft) from TOC: 92.86-102.36	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 97.61	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/8/16	0835	26.42	100	19.99	8.96	1.16	1.86	12.3	153	
	0840	26.47	100	19.67	8.07	1.15	0.90	14.3	65	
	0845	26.50	100	19.70	7.75	1.14	0.63	14.9	25	
	0850	26.52	100	19.77	7.33	1.12	0.63	14.7	22	
	0855	26.53	100	19.81	7.30	1.10	0.63	14.8	23	
	0900	26.53	100	19.84	7.29	1.09	0.62	14.9	24	
	0905	26.53	100	19.83	7.28	1.09	0.62	15.0	25	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18CPTmw08DW-060816 TIME: 0905

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
2-1 Liter Amber	NA	N	Pump	1,4-Dioxane
1-250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPTMW085W	Date: 6/8/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 25.98	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 56.26	Screen Intverval (ft) from TOC: 49.95 - 55.45	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 50.07	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/8/16	0730	26.00	100	22.20	4.16	1.37	2.57	6.0	298	
	0735	26.06	100	18.95	5.23	1.48	1.05	0.5	278	
	0740	26.12	100	18.91	5.21	1.48	0.69	0.0	278	
	0745	26.17	100	18.93	5.15	1.47	0.66	0.0	285	
	0750	26.21	100	18.98	5.12	1.46	0.65	0.0	286	
	0755	26.22	100	19.01	5.12	1.46	0.65	0.0	287	
	0800	26.23	100	19.03	5.14	1.46	0.64	0.0	286	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18CPTMW085W-060815 TIME: 0800

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3- 40 ml glass	HCL	N	Pump	VOC
2- 1 Liter Amber	NA	N	Pump	1,4-Dioxane
1- 250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPTmw10SW	Date: 6/22/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 16.86	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 56.05	Screen Interval (ft) from TOC: 46.29 - 55.79	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 51.04	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/22/16	1425	16.88	100	23.20	5.80	1.24	0.94	11.4	56	
	1430	16.95	100	22.50	5.85	1.30	0.60	22.0	27	
	1435	17.00	100	22.40	5.83	1.32	0.54	24.9	20	
	1440	17.04	100	22.38	5.82	1.33	0.46	25.5	10	
	1445	17.08	100	22.33	5.78	1.33	0.45	24.9	9	
	1450	17.10	100	22.30	5.77	1.34	0.45	24.3	8	
	1455	17.11	100	22.29	5.76	1.34	0.44	24.0	7	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: 18CPTmw10SW-062216 TIME: 1455

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N	Pump	1,4-Dioxane
1-250 ml plastic	NA	Y	Pump	Perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPTMW12DW	Date: 6/24/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 20.53	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 103.16	Screen Interval (ft) from TOC: 93.16 - 102.66	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 97.91	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/24/16	0820	20.53	100	23.65	6.11	1.77	2.05	8.6	199	
	0825	20.58	100	22.59	8.76	1.50	1.11	7.6	72	
	0830	20.62	100	22.39	8.45	1.48	0.80	8.6	27	
	0835	20.65	100	22.45	8.21	1.46	0.70	7.1	0	
	0840	20.67	100	22.46	7.95	1.45	0.66	7.5	-13	
	0845	20.68	100	22.48	7.93	1.43	0.65	7.3	-14	
	0850	20.68	100	22.52	7.92	1.42	0.64	7.4	-15	
	0855	20.68	100	22.55	7.92	1.42	0.64	7.5	-16	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18CPTMW12DW-062416 TIME: 0855

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
2 - 1 Liter Amber	NA	N	Pump	1,4-Dioxane

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPTMW12SW	Date: 6/24/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 21.00	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 56.08	Screen Intverval (ft) from TOC: 45.66 - 55.16	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 50.41	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/24/16	0715	21.03	100	25.27	5.64	2.06	2.44	10.4	360	
	0720	21.10	100	22.93	6.09	2.14	1.88	8.0	342	
	0725	21.16	100	22.01	5.80	2.10	1.59	7.2	351	
	0730	21.21	100	22.08	5.49	2.09	1.33	6.3	361	
	0735	21.25	100	22.10	5.45	2.08	1.32	4.4	350	
	0740	21.27	100	22.12	5.45	2.07	1.31	3.9	348	
	0745	21.28	100	22.13	5.46	2.06	1.30	4.0	347	
	0750	21.29	100	22.15	5.47	2.06	1.30	3.7	346	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18CPTMW12SW-062416 TIME: 0750

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N		1,4-Dioxane
1-500 ml plastic	HNO3	N		TOTAL metals
1-250 ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPTMW14	Date: 6/13/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 27.05	Weather Conditions: Cloudy
	Total Well Depth (ft) from TOC: 37.18	Screen Intverval (ft) from TOC: 27.18 - 36.68	Condition of Well/Remarks: Good
		Pump Placement (ft) from TOC: 31.93	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/13/16	0845	27.07	100	23.77	7.47	4.31	5.28	43.2	47	
	0850	27.14	100	22.33	6.56	3.66	4.45	23.1	56	
	0855	27.19	100	21.45	6.00	3.85	2.07	11.9	186	
	0900	27.23	100	21.00	5.60	3.89	2.06	8.8	233	
	0905	27.25	100	20.83	5.58	3.89	2.04	6.3	235	
	0910	27.26	100	20.80	5.57	3.90	2.02	3.8	237	
	0915	27.27	100	20.77	5.55	3.91	2.00	3.5	239	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: 18CPTMW14-061316 TIME: 0915

DUPLICATE (D): YES/NO yes

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40ml glass	HCL	N	Pump	VOC
4-1 Liter Amber	NA	N		1,4-Dioxane
2-500 ml plastic	HNO3	N		Total metals
2-250 ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPT MW 15B	Date: 6/7/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 9.92	Weather Conditions: Clear
	Total Well Depth (ft) from TOC: 38.68	Screen Intverval (ft) from TOC: 18.37-37.87	Condition of Well/Remarks: Good
		Pump Placement (ft) from TOC: 33.00	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/7/16	1335	9.95	100	23.21	4.40	1.56	1.63	25.5	282	
	1340	9.97	100	23.30	4.30	1.56	1.49	24.3	295	
	1345	9.99	100	23.37	4.23	1.55	1.45	24.0	296	
	1350	10.00	100	23.40	4.25	1.55	1.47	23.8	297	
	1355	10.00	100	23.42	4.27	1.54	1.46	23.5	298	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18CPTMW15B-060716 TIME: 1355

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40 ml glass	HCL	N	Pump	VOC
2 - 1 Liter Amber	NA	N		1,4-Dioxane
1 - 250 ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPTMW15T	Date: 6/7/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 9.78	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 38.68	Screen Interval (ft) from TOC: 18.37 - 37.87	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 23.25	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/7/16	1245	9.80	100	25.30	5.62	1.58	1.79	51.7	200	
	1250	9.85	100	24.16	5.37	1.59	1.24	12.7	220	
	1255	9.89	100	23.67	4.88	1.59	1.35	8.2	241	
	1300	9.93	100	23.40	4.35	1.58	1.39	8.9	258	
	1305	9.95	100	23.39	4.34	1.57	1.40	8.3	269	
	1310	9.96	100	23.41	4.33	1.56	1.38	8.0	270	
	1315	9.96	100	23.47	4.32	1.56	1.39	8.2	271	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18CPTMW15T-060716 TIME: 1315

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40 ml glass	HCL	N	Pump	VOC
2 - 1 Liter Amber	NA	N	↓	1,4-Dioxane
1 - 250 ml plastic	NA	Y	↓	Perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPTmw16	Date: 6/21/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 5.51	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 37.72	Screen Intverval (ft) from TOC: 17.72-37.22	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 27.47	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/21/16	1245	5.54	100	23.25	6.19	0.588	0.95	160	60	
	1250	5.60	100	21.70	6.14	0.616	0.84	246	46	
	1255	5.65	100	20.86	6.10	0.629	0.62	116	38	
	1300	5.68	100	20.49	6.02	0.637	0.57	53.0	35	
	1305	5.70	100	20.24	5.91	0.639	0.51	45.9	34	
	1310	5.71	100	20.24	5.89	0.639	0.50	44.5	34	
	1315	5.72	100	20.23	5.86	0.639	0.49	44.1	34	
	1320	5.72	100	20.20	5.86	0.638	0.49	44.0	33	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18CPTmw16-062116 TIME: 1320

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
2-1 Liter Amber	NA	N	Pump	1,4-Dioxane
1-250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPT mw18	Date: 6/21/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 26.98	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 38.08	Screen Interval (ft) from TOC: 28.08 - 37.58	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 32.83	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/21/16	0835	27.00	100	21.01	5.35	7.70	1.09	0.0	219	
	0840	27.06	100	20.32	5.32	7.78	0.65	0.0	195	
	0845	27.12	100	20.02	5.33	7.79	0.59	0.0	169	
	0850	27.15	100	19.89	5.37	7.80	0.49	0.0	153	
	0855	27.18	100	19.82	5.38	7.81	0.48	0.0	152	
	0900	27.20	100	19.75	5.39	7.82	0.47	0.0	151	
	0905	27.21	100	19.73	5.40	7.82	0.46	0.0	151	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18CPTmw18-062116 TIME: 0905

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N		1,4-Dioxane
1-500 ml plastic	HNO3	N		TOTAL metals
1-250 ml plastic	NA	Y		Perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPTMW19	Date: 6/15/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 21.89	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 37.16	Screen Intverval (ft) from TOC: 27.16 36.66	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 31.91	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/15/16	1045	21.89	100	20.85	5.23	0.183	0.30	67.7	184	
	1050	21.95	100	19.95	4.87	0.184	1.54	76.9	192	
	1055	22.01	100	19.86	4.70	0.183	0.90	80.4	191	
	1100	22.05	100	19.83	4.68	0.184	0.79	80.5	185	
	1105	22.08	100	19.90	4.68	0.185	0.78	80.9	185	
	1110	22.10	100	19.95	4.67	0.185	0.77	81.1	184	
	1115	22.12	100	19.97	4.66	0.185	0.76	81.4	183	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18CPTMW19-061516 TIME:

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40ml glass	HCl	N	Pump	VOC
2-1 liter Amber	NA	N	↓	1,4-Dioxane
1-250 ml plastic	NA	Y	↓	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPTMW195W	Date: 6/15/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 22.96	Weather Conditions: Clear
	Total Well Depth (ft) from TOC: 67.51	Screen Interval (ft) from TOC: 57.58-67.18	Condition of Well/Remarks: Good
		Pump Placement (ft) from TOC: 62.38	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/15/16	0945	22.98	100	21.00	5.77	0.457	1.17	55.3	41	
	0950	23.05	100	20.03	5.43	0.457	0.89	50.1	74	
	0955	23.09	100	19.89	5.41	0.458	0.75	49.9	77	
	1000	23.12	100	19.78	5.43	0.457	0.71	48.4	77	
	1005	23.14	100	19.76	5.41	0.458	0.71	48.1	79	
	1010	23.16	100	19.76	5.43	0.457	0.72	48.0	78	
	1015	23.18	100	19.76	5.43	0.456	0.71	47.8	77	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18CPTMW195W-061516 TIME: 1015

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N	↓	1,4-Dioxane
1-250 ml plastic	NA	Y	↓	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPTMW22DW	Date: 6/9/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 17.72	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 85.45	Screen Interval (ft) from TOC: 75.45 - 85.05	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 80.25	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/9/16	0810	17.75	100	19.11	5.71	1.17	2.48	5.8	202	
	0815	17.81	100	18.49	6.22	1.32	1.25	2.2	66	
	0820	17.86	100	18.66	5.92	1.36	0.85	2.2	67	
	0825	17.90	100	18.55	5.82	1.37	0.80	1.9	84	
	0830	17.93	100	18.53	5.80	1.37	0.79	1.7	85	
	0835	17.95	100	18.52	5.79	1.38	0.79	1.4	86	
	0840	17.96	100	18.52	5.78	1.38	0.80	1.9	87	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: 18CPTMW22DW-060916 TIME: 0840

DUPLICATE (D): YES/NO Yes

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
6 - 40 ml glass	HCL	N	Pump	VOC
4 - 1 Liter Amber	NA	N	Pump	1,4-Dioxane
2 - 250 ml plastic	NA	Y	Pump	Perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPT MW22R	Date: 6/9/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 9.14	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 16.88	Screen Intverval (ft) from TOC: 6.90 - 16.40	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 11.65	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/9/16	0710	9.16	100	20.62	5.37	0.306	3.16	117	312	
	0715	9.22	100	19.33	4.97	0.175	2.05	110	339	
	0720	9.25	100	18.93	4.55	0.147	1.37	105	362	
	0725	9.28	100	18.60	4.24	0.137	1.10	101	379	
	0730	9.30	100	18.57	4.21	0.137	1.09	100	380	
	0735	9.31	100	18.55	4.20	0.138	1.07	100	381	
	0740	9.32	100	18.58	4.19	0.139	1.09	100	383	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18CPTMW22R-060916 TIME: 0740

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N	Pump	1,4-Dioxane
1-250ml plastic	NA	Y	Pump	Perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPTMW22SW	Date: 6/9/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 17.92	Weather Conditions: Clear
	Total Well Depth (ft) from TOC: 57.14	Screen Intverval (ft) from TOC: 47.14 - 56.74	Condition of Well/Remarks: Good
		Pump Placement (ft) from TOC: 51.94	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/9/16	0920	17.95	100	19.60	8.06	3.45	2.37	6.0	-17	
	0925	18.00	100	19.29	7.79	3.36	1.46	14.0	-40	
	0930	18.03	100	19.22	7.61	3.05	1.17	17.3	[redacted]-9	
	0935	18.05	100	19.12	7.55	2.77	1.03	20.2	[redacted]23	
	0940	18.06	100	18.97	7.43	2.68	1.07	20.3	55	
	0945	18.06	100	19.00	7.42	2.68	1.07	20.5	56	
	0950	18.06	100	19.05	7.41	2.67	1.08	20.7	57	
	0955	18.06	100	19.08	7.41	2.67	1.08	20.9	58	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18CPTMW22SW-060916 TIME: 0955

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40ml glass	HCL	N	Pump	VOC
2-1 liter Amber	NA	N	Pump	1,4-Dioxane
1-250ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPTMW23	Date: 6/15/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 7.39	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 34.34	Screen Intverval (ft) from TOC: 23.97 - 33.47	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 28.72	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/15/16	0830	7.41	100	22.05	6.16	0.524	2.06	87.4	35	
	0835	7.47	100	20.80	5.48	0.686	1.17	91.9	66	
	0840	7.53	100	20.10	5.21	0.702	0.89	69.6	80	
	0845	7.56	100	20.06	5.14	0.701	0.84	65.9	84	
	0850	7.58	100	20.00	5.12	0.695	0.70	65.3	86	
	0855	7.59	100	19.98	5.12	0.694	0.70	65.0	86	
	0900	7.60	100	19.98	5.10	0.693	0.71	64.9	88	
	0905	7.60	100	19.95	5.09	0.693	0.71	64.7	89	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: 18CPTMW23-061516 TIME: 0905

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N	↓	1,4-Dioxane
1-250 ml plastic	NA	Y	↓	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPTMW233W	Date: 6/15/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 7.07	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 68.56	Screen Intverval (ft) from TOC: 58.50 - 68.20	Condition of Well/Remarks: NO PAD OR BOLLARDS
		Pump Placement (ft) from TOC: 63.35	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/15/16	0725	7.09	100	22.01	6.04	0.857	2.41	9.5	84	
	0730	7.14	100	20.29	6.13	0.901	1.17	11.3	-17	
	0735	7.18	100	19.81	6.13	0.907	0.80	11.3	-29	
	0740	7.20	100	19.65	6.13	0.908	0.70	11.1	-43	
	0745	7.21	100	19.50	6.28	0.907	0.66	11.5	-52	
	0750	7.22	100	19.52	6.28	0.908	0.65	11.7	-54	
	0755	7.22	100	19.47	6.29	0.907	0.64	11.5	-55	
	0800	7.22	100	19.49	6.30	0.906	0.64	11.1	-56	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18CPTMW233W-061516 TIME:

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N	Pump	1,4-Dioxane
1-250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPTmw24	Date: 6/13/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 213944	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 26.58	Weather Conditions: Cloudy / RAIN
	Total Well Depth (ft) from TOC: 37.45	Screen Intverval (ft) from TOC: 27.45 - 36.95	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 32.20	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/13/16	1000	26.60	100	23.85	6.25	8.05	4.37	5.2	234	
	1005	26.67	100	23.29	6.12	8.05	1.29	4.5	198	
	1010	26.74	100	22.82	5.90	8.02	0.74	5.0	174	
	1015	26.78	100	22.50	5.75	8.03	0.60	5.1	114	
	1020	26.81	100	22.25	5.71	8.06	0.60	4.9	104	
	1025	26.83	100	22.21	5.70	8.07	0.61	4.3	102	
	1030	26.85	100	22.18	5.69	8.07	0.60	4.0	104	
	1035	26.87	100	22.14	5.68	8.08	0.58	4.0	106	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18CPTmw24-061316 TIME: 1035

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N		1,4-Dioxane
1-500ml plastic	HNO3	N		TOTAL metals
1-250 ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPTMW26	Date: 6/15/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: ~~Bladder Pump~~ Bailer ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 15.72	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 17.30	Screen Interval (ft) from TOC: 7.30 - 17.00	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 12.15	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/15/16	1335	15.72	N/A							Bailing well
6/15/16	1340	17.25	N/A							Bailed 1 gallon RAN DRY

Well DID NOT Recharge to within 80% of original DTW

Well is CONSIDERED DRY

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: TIME:

DUPLICATE (D): YES/NO

MATRIX SPIKE (MS): YES/NO

MATRIX DUPLICATE (MD): YES/NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18CPTmw26SW	Date: 6/9/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 11.71	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 58.25	Screen Interval (ft) from TOC: 42.60 - 52.20	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 47.4	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/9/16	1255	11.73	100	23.93	6.30	1.71	2.08	7.4	-18	
	1300	11.77	100	21.26	6.23	2.56	0.94	5.4	-39	
	1305	11.80	100	20.79	6.04	2.65	0.81	6.0	-42	
	1310	11.82	100	20.80	5.87	2.60	0.80	5.6	-40	
	1315	11.82	100	20.85	5.86	2.61	0.80	5.5	-38	
	1320	11.82	100	20.87	5.86	2.61	0.80	5.7	-37	
	1325	11.82	100	20.90	5.85	2.61	0.79	6.1	-36	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18CPTmw26SW-060916 TIME: 1325

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N		1,4-Dioxane
1-500 ml plastic	HNO3	N		total metals
1-250 ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 17WW08	Date: 6/10/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 9.31	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 33.98	Screen Interval (ft) from TOC: 24.00 - 34.00	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 29.00	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/10/16	0935	9.33	100	19.53	6.11	0.970	1.76	39.4	57	
	0940	9.39	100	18.68	5.75	1.08	0.60	23.1	91	
	0945	9.45	100	18.55	5.40	1.01	0.59	14.3	121	
	0950	9.48	100	18.41	5.29	0.928	0.40	9.9	140	
	0955	9.50	100	18.37	5.15	0.909	0.40	9.0	141	
	1000	9.50	100	18.34	5.16	0.910	0.42	8.8	143	
	1005	9.50	100	18.40	5.12	0.909	0.42	8.0	145	
	1010	9.50	100	18.41	5.11	0.908	0.43	8.4	147	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 17WW08-061016 TIME: 1010

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40ml glass	HCL	N	Pump	VOC
1-500 ml plastic	HNO3	N	Pump	TOTAL metals
1-250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18WW02	Date: 6/22/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 321394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 8.83	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 188.10	Screen Interval (ft) from TOC: 178.06 - 188.06	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 183.06	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/22/16	1305	8.83	100	27.20	6.70	0.536	3.36	23.8	269	
	1310	8.87	100	26.75	6.61	0.221	1.57	36.9	115	
	1315	8.90	100	25.37	5.37	0.156	0.87	30.3	33	
	1320	8.92	100	24.10	5.35	0.146	0.82	17.1	61	
	1325	8.94	100	24.21	5.16	0.137	0.60	23.4	95	
	1330	8.95	100	24.25	5.13	0.138	0.59	24.0	97	
	1335	8.95	100	24.28	5.17	0.139	0.60	24.3	98	
	1340	8.95	100	24.30	5.15	0.138	0.59	23.9	99	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18WW02-062216 TIME: 1340

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N		1,4-Dioxane
1-500 ml plastic	HNO3	Y		TOTAL metals
1-250 ml plastic	NA	Y		Perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18WW03	Date: 6/14/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 25.90	Weather Conditions: Cloudy
	Total Well Depth (ft) from TOC: 74.96	Screen Interval (ft) from TOC: 65.00 - 75.00	Condition of Well/Remarks: Needs paint
		Pump Placement (ft) from TOC: 70.00	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/14/16	0710	25.92	100	22.87	6.24	0.865	2.24	62.9	248	
	0715	25.97	100	21.55	6.13	0.716	1.05	37.2	87	
	0720	26.02	100	20.90	6.00	0.687	0.90	37.5	56	
	0725	26.05	100	20.50	5.87	0.665	0.89	30.9	78	
	0730	26.08	100	20.47	5.86	0.664	0.88	30.5	80	
	0735	26.10	100	20.40	5.86	0.663	0.87	30.1	79	
	0740	26.11	100	20.35	5.85	0.663	0.87	29.8	79	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18WW03-061416 TIME: 0740

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N	↓	1,4-Dioxane
1-500 ml plastic	HNO3	Y		TOTAL metals
1-250 ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18WW06	Date: 6/20/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4 4	Static Water Level Reading (ft) from TOC: 9.83	Weather Conditions: CLOUDY
	Total Well Depth (ft) from TOC: 70.06	Screen Interval (ft) from TOC: 60.66-70.66	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 65.66	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/20/16	1315	9.84	100	24.64	5.74	0.152	0.99	32.4	151	
	1320	9.88	100	24.08	5.82	0.157	0.67	21.6	98	
	1325	9.91	100	23.65	5.84	0.151	0.47	18.3	65	
	1330	9.94	100	23.42	5.83	0.147	0.46	18.7	53	
	1335	9.96	100	23.43	5.83	0.147	0.46	19.0	52	
	1340	9.97	100	23.43	5.82	0.146	0.45	19.1	51	
	1345	9.97	100	23.44	5.82	0.146	0.45	19.3	50	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18WW06-062016 TIME: 1345

DUPLICATE (D): YES/NO Yes

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
6 - 40 ml glass	HCL	N	Pump	VOC
4 - 1 Liter Amber	NA	N	Pump	1,4-Dioxane
2 - 250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18WW08	Date: 6/20/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4 4	Static Water Level Reading (ft) from TOC: 8.77	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 22.48	Screen Interval (ft) from TOC: 12.23 - 22.23	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 17.23	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/20/16	0940	8.79	100	22.07	5.60	0.701	1.04	26.3	199	
	0945	8.85	100	21.73	5.62	0.728	0.82	19.2	162	
	0950	8.90	100	21.50	5.61	0.735	0.68	11.2	129	
	0955	8.93	100	21.39	5.60	0.740	0.55	7.5	118	
	1000	8.95	100	21.29	5.59	0.741	0.54	5.2	118	
	1005	8.96	100	21.35	5.59	0.742	0.53	4.5	117	
	1010	8.96	100	21.37	5.59	0.742	0.53	2.2	116	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18WW08-062016 TIME: 1010

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N	Pump	1,4-Dioxane
1-250 ml plastic	NA	Y	Pump	Perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18WW09	Date: 6/20/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 8.63	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 62.10	Screen Interval (ft) from TOC: 52.17-62.17	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 57.17	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/20/16	1040	8.65	100	22.44	5.44	0.112	0.99	47.4	117	
	1045	8.70	100	22.05	5.39	0.112	0.79	38.5	98	
	1050	8.75	100	21.90	5.47	0.110	0.60	30.4	72	
	1055	8.78	100	21.94	5.57	0.110	0.57	23.7	53	
	1100	8.80	100	21.88	5.58	0.111	0.56	23.2	51	
	1105	8.80	100	21.92	5.59	0.112	0.55	22.9	50	
	1110	8.80	100	21.90	5.60	0.112	0.55	22.8	49	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18WW09-062016 TIME: 1110

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N	Pump	1,4-Dioxane
1-250 ml plastic	NA	Y	Pump	Perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18WW16	Date: 6/15/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 213944	Sampling Equipment: ~~Bladder Pump~~ Bailer ID#:	
WELL INFO	Casing I.D. (in): 4 11	Static Water Level Reading (ft) from TOC: 31.63	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 33.75	Screen Interval (ft) from TOC: 23.75 - 33.75	Condition of Well/Remarks: Needs paint
		Pump Placement (ft) from TOC: NA	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/15/16	1315	31.63	NA							Bailing well
6/15/16	1325	33.70	NA							Bailed .5 gallons RAN DRY
6/15/16	0755	31.63	NA	22.10	3.51	5.57	NA	35.9	NA	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18NW16-061616 TIME: 0755

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40ml glass	HCL	N	Bailer	VOC
1-500 ml plastic	HNO3	Y	↓	TOTAL metals
1-250 ml plastic	NA	Y	↓	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18WW18	Date: 6/21/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 27.09	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 64.24	Screen Interval (ft) from TOC: 54.02 - 64.02	Condition of Well/Remarks: Needs paint
		Pump Placement (ft) from TOC: 59.02	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/21/16	1045	27.12	100	21.28	6.05	1.81	1.53	0.0	133	
	1050	27.19	100	20.13	5.50	1.76	0.89	0.0	115	
	1055	27.25	100	19.85	5.30	1.74	0.63	0.0	118	
	1100	27.28	100	19.81	5.22	1.73	0.61	0.0	120	
	1105	27.30	100	19.76	5.21	1.72	0.60	0.0	121	
	1110	27.32	100	19.73	5.20	1.72	0.59	0.0	122	
	1115	27.34	100	19.70	5.20	1.72	0.59	0.0	123	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18NW18-062116 TIME: 1115

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N		1,4-Dioxane
1-500 ml plastic	HNO3	N		TOTAL metals
1-250 ml plastic	NA	Y		Perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18WW19	Date: 6/20/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 10.00	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 58.18	Screen Interval (ft) from TOC: 47.53 - 57.53	Condition of Well/Remarks: Needs paint
		Pump Placement (ft) from TOC: 52.53	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/20/16	0825	10.02	100	20.36	5.00	0.100	1.41	71.3	346	
	0830	10.08	100	20.05	5.27	0.101	0.89	72.3	176	
	0835	10.15	100	19.97	5.28	0.096	0.71	64.5	106	
	0840	10.20	100	19.96	5.39	0.096	0.67	47.7	102	
	0845	10.23	100	19.93	5.42	0.098	0.66	47.3	101	
	0850	10.25	100	19.97	5.43	0.098	0.65	47.0	100	
	0855	10.25	100	20.01	5.43	0.098	0.64	46.6	98	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18WW19-062016 TIME: 0855

DUPLICATE (D): YES/NO Yes

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
6 - 40 ml glass	HCL	N	Pump	VOC
2 - 500 ml plastic	HNO3	Y		TOTAL metals
2 - 250 ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18WW20	Date: 6/20/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Bessinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4 11	Static Water Level Reading (ft) from TOC: 10.86	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 36.80	Screen Interval (ft) from TOC: 26.80 - 36.80	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 31.80	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/20/16	0725	10.88	100	20.16	4.72	0.218	2.27	13.2	316	
	0730	10.95	100	19.30	4.40	0.194	1.04	7.8	305	
	0735	11.01	100	19.09	4.30	0.190	0.78	3.6	303	
	0740	11.04	100	19.03	4.33	0.190	0.70	2.8	303	
	0745	11.06	100	18.98	4.30	0.190	0.69	3.6	305	
	0750	11.07	100	19.08	4.32	0.190	0.68	4.7	307	
	0755	11.08	100	19.06	4.31	0.190	0.68	4.5	308	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18WW20-06 2016 TIME: 0755

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N		1,4-Dioxane
1-500 ml plastic	HNO3	N		Total metals
1-250 ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18WW22	Date: 6/21/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 213 94	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 25.53	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 45.53	Screen Interval (ft) from TOC: 30.53 - 45.03	Condition of Well/Remarks: Good
		Pump Placement (ft) from TOC: 37.78	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/21/16	0725	25.55	100	22.05	7.83	0.990	4.12	5.5	75	
	0730	25.61	100	20.14	6.82	1.04	2.21	2.1	196	
	0735	25.66	100	19.60	5.38	1.11	1.25	0.0	301	
	0740	25.70	100	19.29	5.39	1.20	1.18	0.0	322	
	0745	25.72	100	19.25	5.37	1.20	1.17	0.0	323	
	0750	25.73	100	19.23	5.37	1.21	1.16	0.0	324	
	0755	25.74	100	19.20	5.37	1.22	1.16	0.0	325	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18WW22-062116 TIME: 0755

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N		1,4-Dioxane
1-500 ml plastic	HNO3	N		total metals
1-250 ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18WW24	Date: 6/10/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 5.32	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: ~~18.43~~ 18.91	Screen Interval (ft) from TOC: 8.91 - 18.41	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 13.66	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/10/16	1405	5.34	100	20.99	4.73	0.972	1.25	13.9	165	
	1410	5.39	100	20.68	4.10	0.708	1.15	18.1	220	
	1415	5.45	100	20.46	3.88	0.695	1.13	17.7	237	
	1420	5.50	100	20.46	3.67	0.679	1.01	20.5	254	
	1425	5.53	100	20.39	3.68	0.687	0.88	20.7	259	
	1430	5.55	100	20.25	3.73	0.688	0.86	21.0	257	
	1435	5.57	100	20.30	3.72	0.689	0.85	21.2	258	
	1440	5.59	100	20.24	3.70	0.689	0.84	21.4	260	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18WW24-061016 TIME: 1440

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
1-500 ml plastic	HNO3	Y	Pump	TOTAL metals
1-250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: 18WW25	Date: 6/29/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4	Static Water Level Reading (ft) from TOC: 6.51	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 17.48	Screen Interval (ft) from TOC: 17.18 - 26.78	Condition of Well/Remarks: No pad or Bollards yet
		Pump Placement (ft) from TOC: 21.98	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/29/16	0730	6.53	100	20.18	5.72	0.773	2.36	23.3	-12	
	0735	6.60	100	19.39	5.78	0.730	1.58	20.7	-42	
	0740	6.65	100	19.13	5.75	0.719	1.28	22.6	-50	
	0745	6.67	100	19.08	5.69	0.716	1.25	22.8	-53	
	0750	6.69	100	19.07	5.60	0.717	1.20	23.0	-54	
	0755	6.70	100	19.00	5.59	0.717	1.22	23.2	-55	
	0800	6.71	100	18.94	5.59	0.717	1.23	23.5	-56	
	0805	6.72	100	18.94	5.60	0.716	1.21	23.1	-58	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: 18WW25-062916 TIME: 0805

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N	↓	1,4-Dioxane
1-500 ml plastic	HNO3	Y	↓	TOTAL metals
1-250 ml plastic	NA	Y	↓	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: AWD1B	Date: 6/7/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 9.77	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 25.53	Screen Interval (ft) from TOC: 7.5-27.5	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 22.50 Bottom portion of screen	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/7/16	0815	9.79	100	19.15	4.82	0.384	1.12	700	239	
	0820	9.83	100	19.07	4.77	0.386	0.91	533	233	
	0825	9.85	100	19.07	4.69	0.386	0.70	493	235	
	0830	9.87	100	19.07	4.60	0.385	0.65	475	238	
	0835	9.88	100	19.10	4.59	0.384	0.63	473	240	
	0840	9.89	100	19.12	4.60	0.384	0.62	473	241	
	0845	9.89	100	19.13	4.59	0.383	0.62	472	242	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: AWD1B-060716 TIME: 0845

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N	↓	1,4-Dioxane
1-250 ml plastic	NA	Y	↓	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: AWDIT	Date: 6/7/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 9.64	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 25.53	Screen Interval (ft) from TOC: 7.5 - 27.5	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 12.5 Top portion of screen	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/7/16	0720	9.67	100	20.29	6.24	0.560	4.03	177	147	
	0725	9.73	100	19.24	5.19	0.416	3.87	184	190	
	0730	9.77	100	19.08	5.02	0.403	3.89	175	203	
	0735	9.79	100	18.94	4.77	0.396	3.86	170	222	
	0740	9.80	100	18.92	4.61	0.391	3.84	158	237	
	0745	9.81	100	18.91	4.60	0.390	3.82	159	239	
	0750	9.81	100	18.90	4.59	0.390	3.78	160	240	
	0755	9.81	100	18.92	4.59	0.389	3.76	160	241	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: AWDIT-060716 TIME: 0755

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3- 40 ml glass	HCL	N	Pump	VOC
1- 250 ml plastic	NA	Y		Perchlorate
2- 1 Liter Amber	NA	N		1,4-Dioxane

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: AWD4B	Date: 6/7/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 21.71	Weather Conditions: Clear
	Total Well Depth (ft) from TOC: 38.49	Screen Intverval (ft) from TOC: 18.47-38.47	Condition of Well/Remarks: Good
		Pump Placement (ft) from TOC: 33.47 bottom portion of screen	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/7/16	1515	21.71	100	24.33	5.85	0.381	1.10	48.5	NO	
	1520	21.73	100	24.30	5.76	0.382	1.05	46.5	208	
	1525	21.75	100	24.25	5.74	0.382	1.07	46.7	208	
	1530	21.77	100	24.21	5.73	0.383	1.07	46.3	210	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: AWD4B-060716 TIME: 1530

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass				
2-1 Liter Amber				
1-500 ml plastic				
1-250 ml plastic				

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: AWD4T	Date: 6/7/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4	Static Water Level Reading (ft) from TOC: 21.55	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 38.~~29~~	Screen Interval (ft) from TOC: 18.47- 38.47	Condition of Well/Remarks: Good
		Pump Placement (ft) from TOC: 23.47 top portion of screen	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/7/16	1430	21.57	100	24.24	5.97	0.408	2.18	63.5	186	
	1435	21.63	100	24.00	5.74	0.395	1.44	49.5	207	
	1440	21.66	100	23.91	5.66	0.395	1.22	54.5	230	
	1445	21.68	100	23.51	5.26	0.394	1.02	53.8	242	
	1450	21.70	100	23.55	5.25	0.394	1.00	53.6	244	
	1455	21.72	100	23.60	5.24	0.394	0.99	53.0	245	
	1500	21.74	100	23.62	5.23	0.393	0.99	52.7	247	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: AWD4T-060716 TIME: 1500

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NA

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N		1,4-Dioxane
1-500 ml plastic	HNO3	N		TOTAL metals
1-250 ml Plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: C01	Date: 6/17/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 23.39	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 49.20	Screen Interval (ft) from TOC: 39.48 - 49.48	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 39.48	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/17/16	0805	23.42	100	20.58	5.55	2.74	1.48	0.0	312	
	0810	23.47	100	20.05	5.28	2.77	0.93	0.0	322	
	0815	23.53	100	19.82	5.09	2.70	0.85	0.0	325	
	0820	23.57	100	19.89	5.09	2.63	0.85	0.0	325	
	0825	23.59	100	19.86	5.07	2.62	0.85	0.0	323	
	0830	23.60	100	19.90	5.06	2.61	0.84	0.0	322	
	0835	23.60	100	19.91	5.06	2.61	0.83	0.0	320	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: C01-061716 TIME: 0835

DUPLICATE (D): YES/NO yes

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
6 - 40 ml glass	HCL	N	Pump	VOC
2 - 500 ml plastic	HNO3	N	↓	Total metals
2 - 250 ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: CO2	Date: 6/17/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 5.27	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 29.19	Screen Intverval (ft) from TOC: 19.00 - 29.00	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 24.00	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/17/16	1005	5.29	100	21.07	5.85	0.661	1.22	68.6	41	
	1010	5.35	100	20.41	5.62	0.772	0.72	44.5	39	
	1015	5.40	100	20.35	5.49	0.761	0.63	45.7	42	
	1020	5.43	100	20.35	5.35	0.729	0.64	44.3	50	
	1025	5.45	100	20.30	5.30	0.720	0.60	43.2	52	
	1030	5.46	100	20.39	5.15	0.690	0.50	31.1	60	
	1035	5.47	100	20.42	5.16	0.691	0.49	30.9	60	
	1040	5.47	100	20.46	5.17	0.691	0.49	30.4	60	
	1045	5.47	100	20.40	5.15	0.690	0.50	30.1	61	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: CO2-061716 TIME: 1045

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO yes

MATRIX DUPLICATE (MD): YES/NO yes

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
9-40 ml glass	HCL	N	Pump	VOC
3-250 ml plastic	NA	Y	Pump	perchlorate
~~3-250 ml plastic~~				

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: C03	Date: 6/14/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 26.22	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 62.56	Screen Interval (ft) from TOC: 52.60 - 62.80	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 57.70	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/14/16	1345	26.24	100	24.02	5.71	1.95	1.41	3.3	75	
	1350	26.30	100	21.52	5.55	1.88	0.91	0.0	68	
	1355	26.33	100	21.00	5.40	1.85	0.75	0.0	70	
	1400	26.35	100	20.59	5.40	1.84	0.70	0.0	65	
	1405	26.36	100	20.50	5.43	1.85	0.69	0.0	64	
	1410	26.37	100	20.44	5.42	1.86	0.68	0.0	62	
	1415	26.37	100	20.40	5.41	1.87	0.67	0.0	61	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: C03-061416 TIME: 1415

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO NO
MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N		1,4-Dioxane
1-500 ml plastic	HNO3	N		Total metals
1-250 ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: C04	Date: 6/21/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 24.67	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 55.15	Screen Interval (ft) from TOC: 45.33 - 55.33	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 50.38	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/21/16	0825	24.69	100	20.40	5.67	0.416	2.42	95.7	282	
	0830	24.76	100	19.73	5.23	0.384	1.10	97.8	260	
	0835	24.82	100	19.48	4.90	0.367	0.91	97.5	267	
	0840	24.85	100	19.29	4.75	0.362	0.95	97.9	275	
	0845	24.87	100	19.30	4.74	0.361	0.96	98.3	276	
	0850	24.89	100	19.34	4.73	0.361	0.97	98.5	277	
	0855	24.90	100	19.37	4.72	0.361	0.97	98.6	276	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: C04-062116 TIME: 0855

DUPLICATE (D): YES/NO YES

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
6 - 40 ml glass	HCL	N	Pump	VOC
2 - 500 ml plastic	HNO3	Y	Pump	TOTAL metals
2 - 250 ml plastic	N	Y	Pump	Perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: C08	Date: 6/14/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 23.95	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 32.66	Screen Interval (ft) from TOC: 22.66-32.66	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 27.66	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/14/16	1240	23.95	100	23.52	6.27	5.80	1.49	6.6	172	
	1245	23.98	100	21.92	5.98	5.71	0.90	6.5	172	
	1250	24.04	100	21.65	6.02	5.71	0.79	5.6	171	
	1255	24.10	100	21.30	5.61	5.76	0.73	6.0	170	
	1300	24.14	100	21.29	5.61	5.77	0.72	6.0	169	
	1305	24.16	100	21.20	5.63	5.79	0.70	6.1	169	
	1310	24.17	100	21.16	5.65	5.79	0.69	5.6	168	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: C08-061416 TIME: 1310

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N		1,4-Dioxane
1-500ml plastic	HNO3	N		TOTAL metals
1-250ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: MW1	Date: 6/10/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 27.15	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 40.30	Screen Interval (ft) from TOC: 35.30 - 40.30	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 37.80	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/10/16	0720	27.17	100	20.08	6.02	2.10	1.59	14.5	51	
	0725	27.22	100	19.83	5.86	1.98	0.87	10.1	64	
	0730	27.26	100	19.77	5.71	1.97	0.70	9.6	69	
	0735	27.30	100	19.74	5.68	2.01	0.67	9.6	62	
	0740	27.33	100	19.75	5.67	2.16	0.66	7.6	47	
	0745	27.35	100	19.77	5.65	2.17	0.65	6.3	46	
	0750	27.37	100	19.78	5.65	2.18	0.65	6.1	45	
	0755	27.39	100	19.80	5.64	2.18	0.64	5.5	44	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: MW1-061016 TIME: 0755

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
1-500 ml plastic	HNO3	N	Pump	TOTAL metals
1-250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: mw2	Date: 6/24/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 27.40	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 42.74	Screen Interval (ft) from TOC: 37.74 - 42.74	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 39.24	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/24/16	1030	27.43	100	25.29	5.20	2.41	0.82	0.0	178	
	1035	27.50	100	23.91	5.10	2.38	0.67	0.0	170	
	1040	27.55	100	23.94	5.04	2.38	0.63	0.0	167	
	1045	27.59	100	23.75	4.91	2.30	0.47	0.0	167	
	1050	27.61	100	23.70	4.90	2.30	0.46	0.0	167	
	1055	27.62	100	23.65	4.90	2.29	0.45	0.0	168	
	1100	27.62	100	23.68	4.89	2.29	0.45	0.0	168	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: mw2-062416 TIME: 1100

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N		1,4-Dioxane
1-500 ml plastic	HNO3	N		TOTAL metals
1-250 ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: MW3	Date: 6/10/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 26.15	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 49.63	Screen Intverval (ft) from TOC: 44.63 - 49.63	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 47.13	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/10/16	0835	26.18	100	19.97	5.96	1.61	1.89	0.0	110	
	0840	26.25	100	19.81	5.78	1.59	1.50	0.0	129	
	0845	26.30	100	19.83	5.60	1.58	1.24	0.0	150	
	0850	26.35	100	19.90	5.51	1.57	1.33	0.0	160	
	0855	26.37	100	19.99	5.50	1.57	1.35	0.0	161	
	0900	26.39	100	20.03	5.48	1.57	1.32	0.0	163	
	0905	26.40	100	20.05	5.47	1.57	1.33	0.0	164	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: MW3-061016 TIME:

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
8-40ml glass	HCL	N	Pump	VOC
1-500ml plastic	HNO3	N	Pump	TOTAL metals
1-250ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: MW5	Date: 6/8/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 24.25	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 43.60	Screen Intverval (ft) from TOC: 38.70 - 43.70	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: ~~38.70~~ 41.20	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/8/16	0935	24.27	100	24.49	5.58	0.963	1.77	5.4	162	
	0940	24.35	100	24.33	5.78	1.13	1.08	2.4	201	
	0945	24.40	100	23.40	5.59	1.11	0.71	0.0	228	
	0950	24.44	100	23.36	5.68	1.10	0.67	0.0	242	
	0955	24.46	100	23.42	5.00	1.10	0.67	0.0	244	
	1000	24.48	100	23.48	5.02	1.11	0.68	0.0	246	
	1005	24.49	100	23.50	5.03	1.10	0.68	0.0	247	
	1010	24.50	100	23.55	5.04	1.10	0.67	0.0	248	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: MW5-060815 TIME: 1010

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N	↓	1,4-Dioxane
1-500 ml plastic	HNO3	N		Total metals
1-250 ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: MW7	Date: 6/24/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4 11	Static Water Level Reading (ft) from TOC: 18.88	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 27.74	Screen Intverval (ft) from TOC: 22.74-27.74	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 23.24	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/24/16	0925	18.90	100	26.95	7.43	1.12	1.05	1.1	180	
	0930	18.96	100	26.25	6.76	1.10	0.84	2.5	211	
	0935	19.02	100	26.22	6.21	1.10	0.72	4.3	229	
	0940	19.06	100	25.90	5.90	1.09	0.62	4.9	225	
	0945	19.09	100	25.87	5.87	1.09	0.62	3.9	224	
	0950	19.11	100	25.90	5.85	1.09	0.61	3.1	223	
	0955	19.12	100	25.88	5.85	1.09	0.61	1.7	222	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: MW7-062416 TIME: 0955

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N	Pump	1,4-Dioxane
1-250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: MW8	Date: 6/9/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 15.56	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 33.63	Screen Intverval (ft) from TOC: 23.63 - 33.63	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 30.03	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/9/16	1030	15.58	100	22.64	7.04	1.13	2.24	18.9	190	
	1035	15.65	100	20.61	5.20	1.10	1.53	3.9	259	
	1040	15.71	100	20.20	4.80	1.08	1.41	3.0	290	
	1045	15.75	100	19.85	4.63	1.07	1.33	2.2	310	
	1050	15.78	100	19.81	4.62	1.07	1.34	2.0	312	
	1055	15.79	100	19.83	4.61	1.07	1.34	2.4	314	
	1100	15.80	100	19.84	4.61	1.07	1.35	2.1	315	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: MW8-060916 TIME: 1100

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N		1,4-Dioxane
1-500 ml plastic	HNO3	N		TOTAL metals
1-250 ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: MW9	Date: 6/22/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 13.60	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 29.75	Screen Interval (ft) from TOC: 24.75 - 29.75	Condition of Well/Remarks: Good
		Pump Placement (ft) from TOC: 27.25	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/22/16	1035	13.63	100	23.22	5.45	0.298	1.29	24.4	252	
	1040	13.70	100	22.50	5.34	0.188	0.83	17.4	242	
	1045	13.75	100	22.48	5.31	0.176	0.74	13.2	230	
	1050	13.80	100	22.59	5.31	0.173	0.67	9.3	219	
	1055	13.83	100	22.61	5.31	0.172	0.67	8.6	218	
	1100	13.85	100	22.65	5.32	0.172	0.66	8.0	217	
	1105	13.85	100	22.67	5.32	0.172	0.66	7.5	217	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: MW9-062216 TIME: 1105

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCl	N	Pump	VOC
2-1 Liter Amber	NA	N	Pump	1,4-Dioxane
1-250 ml plastic	NA	Y	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: MW10	Date: 6/9/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 7.77	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 36.70	Screen Interval (ft) from TOC: 31.70 - 36.70	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 33.20	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/9/16	1405	7.80	100	21.21	6.54	0.237	1.94	57.1	41	
	1410	7.85	100	19.03	5.87	0.164	0.90	49.3	73	
	1415	7.90	100	18.67	5.43	0.143	0.55	50.1	113	
	1420	7.93	100	18.54	4.86	0.141	0.44	45.3	129	
	1425	7.95	100	18.40	4.62	0.143	0.43	45.9	148	
	1430	7.96	100	18.41	4.61	0.144	0.43	46.1	150	
	1435	7.96	100	18.48	4.60	0.145	0.44	46.3	152	
	1440	7.96	100	18.50	4.60	0.145	0.43	46.5	154	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: MW10-060916 TIME: 1440

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N		1,4-Dioxane
1-500 ml plastic	HNO3	Y		TOTAL metals
1-250 ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: MW12	Date: 6/10/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 8.58	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 31.21	Screen Interval (ft) from TOC: 26.21 - 31.21	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 28.71	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/10/16	1300	8.60	100	22.56	5.60	1.04	1.24	28.4	76	
	1305	8.66	100	21.18	5.41	1.15	0.84	25.6	74	
	1310	8.71	100	20.70	5.20	1.14	0.50	16.0	87	
	1315	8.75	100	20.90	5.11	1.10	0.50	9.5	90	
	1320	8.77	100	20.93	5.13	1.12	0.50	8.7	88	
	1325	8.78	100	20.95	5.12	1.12	0.50	8.9	87	
	1330	8.79	100	20.97	5.11	1.13	0.50	5.3	87	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: MW12-061016 TIME: 1330

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
1-250 ml plastic	NA	Y	Pump	Perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: MW13	Date: 6/17/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 6.58	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 48.83	Screen Interval (ft) from TOC: 43.80 - 48.80	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 46.30	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/17/16	0910	6.59	100	21.58	5.99	0.540	1.35	43.1	107	
	0915	6.65	100	20.38	6.10	0.527	0.75	46.9	-4	
	0920	6.70	100	20.19	6.12	0.527	0.50	47.4	-24	
	0925	6.75	100	20.13	6.13	0.358	0.45	45.3	-25	
	0930	6.78	100	20.11	6.12	0.205	0.41	35.9	-25	
	0935	6.80	100	20.03	6.11	0.205	0.40	35.1	-26	
	0940	6.80	100	20.02	6.09	0.204	0.40	34.7	-26	
	0945	6.80	100	20.04	6.08	0.205	0.40	34.5	-25	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: MW13-061716 TIME: 0945

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
1-250 ml plastic	NA	Y	Pump	PERCHLORATE

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: MW14B	Date: 6/7/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 12.67	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 53.80	Screen Intverval (ft) from TOC: 48.82-53.82	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 52.57	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/7/16	1050	12.70	100	24.88	4.81	3.52	1.02	53.4	174	
	1055	12.73	100	23.54	4.85	3.80	0.76	44.4	148	
	1100	12.75	100	23.17	4.83	3.88	0.70	35.1	143	
	1105	12.77	100	23.19	4.72	3.85	0.67	33.3	146	
	1110	12.78	100	23.15	4.71	3.85	0.65	33.0	145	
	1115	12.79	100	23.18	4.71	3.84	0.64	32.9	146	
	1120	12.79	100	23.20	4.70	3.84	0.64	32.5	145	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: MW14B-060716 TIME: 1120

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40ml glass	HCL	N	Pump	VOC
2 - 1 Liter Amber	NA	N	↓	1,4-Dioxane
1 - 250 ml plastic	NA	Y	↓	Perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: MW14T	Date: 6/7/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4	Static Water Level Reading (ft) from TOC: 12.53	Weather Conditions: Clear
	Total Well Depth (ft) from TOC: 53.80	Screen Interval (ft) from TOC: 48.82 - 53.82	Condition of Well/Remarks: Good
		Pump Placement (ft) from TOC: 50.07 Top portion of Screen	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/7/16	0955	12.55	100	24.17	5.12	1.92	4.56	231	140	
	1000	12.61	100	23.39	5.30	2.78	2.06	171	133	
	1005	12.65	100	23.48	5.11	2.93	1.08	152	140	
	1010	12.68	100	23.56	4.80	3.13	0.90	139	159	
	1015	12.70	100	23.74	4.52	3.27	0.81	96.1	182	
	1020	12.70	100	23.84	4.51	3.28	0.80	95.8	184	
	1025	12.70	100	23.85	4.50	3.29	0.80	95.2	186	
	1030	12.70	100	23.89	4.50	3.29	0.79	94.4	188	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: MW14T-060716 TIME: 1030

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCl	N	Pump	VOC
2-1 Liter Amber	NA	N	↓	perchlorate
1-250 ml plastic	NA	Y	↓	1,4-Dioxane

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: MW16	Date: 6/21/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 8.68	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 37.24	Screen Intverval (ft) from TOC: 32.00 - 37.00	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 34.50	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/21/16	1405	8.70	100	25.53	5.74	1.10	1.61	95.1	118	
	1410	8.77	100	23.77	5.36	1.50	0.88	75.9	97	
	1415	8.83	100	23.41	5.35	1.50	0.75	61.0	91	
	1420	8.86	100	22.89	5.20	1.40	0.59	56.8	96	
	1425	8.89	100	22.76	5.02	1.30	0.59	41.2	113	
	1430	8.91	100	22.70	5.00	1.20	0.59	41.0	114	
	1435	8.93	100	22.65	5.00	1.21	0.58	40.7	113	
	1440	8.93	100	22.61	5.00	1.22	0.58	40.3	114	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: MW16-062116 TIME: 1440

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N		1,4-Dioxane
1-500 ml plastic	HNO3	Y		TOTAL metals
1-250 ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: MW17	Date: 6/20/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 8.76	Weather Conditions: Cloudy
	Total Well Depth (ft) from TOC: 28.63	Screen Intverval (ft) from TOC: 23.63-28.13	Condition of Well/Remarks: Good
		Pump Placement (ft) from TOC: 26.13	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/20/16	1430	8.79	100	25.20	5.80	0.114	0.92	111	113	
	1435	8.86	100	24.09	5.20	0.125	0.63	67.9	139	
	1440	8.91	100	23.00	5.08	0.129	0.49	52.3	142	
	1445	8.95	100	23.08	5.05	0.130	0.49	49.1	142	
	1450	8.97	100	23.11	5.04	0.131	0.48	48.8	142	
	1455	8.98	100	23.13	5.03	0.132	0.48	48.7	142	
	1500	8.98	100	23.14	5.03	0.132	0.48	48.5	142	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU Ideal), for 4 consecutive readings

SAMPLE ID: MW17-062016 TIME: 1500

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N	Pump	1,4-Dioxane
1-250 ml plastic	NA	Y	Pump	Perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: MW18	Date: 6/17/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 8.02	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 33.69	Screen Interval (ft) from TOC: 28.60-33.60	Condition of Well/Remarks: ~~[illegible]~~ Needs paint
		Pump Placement (ft) from TOC: 31.10	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/17/16	1345	8.04	100	20.70	5.99	1.76	1.11	206	97	
	1350	8.10	100	19.70	5.34	1.62	0.79	184	112	
	1355	8.15	100	19.56	5.27	1.61	0.66	177	113	
	1400	8.20	100	19.60	5.24	1.59	0.50	140	113	
	1405	8.23	100	19.65	5.15	1.56	0.41	136	113	
	1410	8.25	100	19.70	5.13	1.55	0.41	135	113	
	1415	8.27	100	19.72	5.13	1.54	0.41	135	112	
	1420	8.27	100	19.75	5.12	1.54	0.42	134	112	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: MW18-061716 TIME: 1420

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO yes

MATRIX DUPLICATE (MD): YES/NO yes

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
9 - 40 ml glass	HCL	N	Pump	VOC
~~[illegible]~~				
3 - 500 ml plastic	HNO3	Y	Pump	TOTAL metals
3 - 250 ml plastic	NA	N	Pump	perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: MW19	Date: 6/17/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 8.16	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 33.61	Screen Interval (ft) from TOC: 28.60 - 33.60	Condition of Well/Remarks: Needs paint
		Pump Placement (ft) from TOC: 31.10	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/17/16	1235	8.18	100	19.54	5.37	0.225	0.60	437	107	
	1240	8.25	100	18.87	4.98	0.205	0.52	384	129	
	1245	8.31	100	18.49	4.88	0.200	0.45	300	134	
	1250	8.35	100	18.50	4.82	0.199	0.42	288	137	
	1255	8.37	100	18.37	4.77	0.198	0.41	264	138	
	1300	8.39	100	18.37	4.74	0.199	0.41	263	140	
	1305	8.40	100	18.30	4.73	0.200	0.40	262	141	
	1310	8.40	100	19.26	4.73	0.201	0.39	262	142	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: MW19-061716 TIME: 1310

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
1-500 ml plastic	HNO3	Y	Pump	TOTAL metals
1-250 ml plastic	NA	Y	Pump	Perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: MW21	Date: 6/22/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 32.25	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 46.80	Screen Intverval (ft) from TOC: 41.80 - 46.80	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 44.30	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/22/16	0915	32.28	100	22.40	5.72	5.17	1.58	8.7	192	
	0920	32.35	100	22.26	5.39	5.23	1.01	4.8	183	
	0925	32.41	100	22.47	5.22	5.26	0.90	3.8	182	
	0930	32.45	100	22.56	5.04	5.30	0.90	3.3	191	
	0935	32.47	100	22.60	5.03	5.31	0.89	2.6	192	
	0940	32.49	100	22.63	5.02	5.32	0.89	2.3	193	
	0945	32.50	100	22.65	5.02	5.32	0.88	1.9	194	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: MW21-062216 TIME: 0945

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3-40 ml glass	HCL	N	Pump	VOC
2-1 Liter Amber	NA	N		1,4-Dioxane
1-500 ml plastic	HNO3	N		Total metals
1-250 ml plastic	NA	Y		perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: mw22	Date: 6/8/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst · ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 27.69	Weather Conditions: clear
	Total Well Depth (ft) from TOC: 43.79	Screen Intverval (ft) from TOC: 38.69 - 44.89	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 41.29	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/8/16	1420	27.72	100	26.31	6.32	2.47	1.52	12.2	29	
	1425	27.77	100	26.01	5.95	2.41	1.46	16.0	81	
	1430	27.82	100	25.60	5.60	2.40	1.47	16.8	124	
	1435	27.86	100	25.16	5.47	2.39	1.45	17.0	143	
	1440	27.88	100	25.12	5.37	2.38	1.41	17.7	159	
	1445	27.89	100	24.91	5.32	2.39	1.39	16.9	171	
	1450	27.90	100	24.84	5.34	2.40	1.37	16.8	173	
	1455	27.90	100	24.80	5.34	2.40	1.35	16.5	174	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: mw22-060816 TIME: 1455

DUPLICATE (D): YES/NO NO

MATRIX SPIKE (MS): YES/NO NO

MATRIX DUPLICATE (MD): YES/NO NO

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
3 - 40 ml glass	HCL	N	Pump	VOC
1 - 250 ml plastic	NA	Y	Pump	Perchlorate

AECOM

MONITORING WELL SAMPLE COLLECTION FORM

LOCATION	Site: 18/24	LocID: MW23	Date: 6/17/16
	Project: Longhorn Army Ammunition Plant	Project No. 60274185.0013BH 1824 MR10	Recorded By: Scott Beesinger Checked By:
EQUIPMENT	Water Quality Meter Type/ID #: Horiba U-52	Water Interface Probe: Water Level Indicator: Solinst ID#: 101	Min Recharge Level = (TD-DTW(0.80)) - TD
	Unit # 21394	Sampling Equipment: Bladder Pump ID#:	
WELL INFO	Casing I.D. (in): 4"	Static Water Level Reading (ft) from TOC: 27.70	Weather Conditions: CLEAR
	Total Well Depth (ft) from TOC: 46.80	Screen Interval (ft) from TOC: 36.80 - 46.80	Condition of Well/Remarks: GOOD
		Pump Placement (ft) from TOC: 39.30	

CASING INFO												
Casing I.D. (in):	0.75	1.5	2.0	2.2	3.0	4.0	4.3	5.0	6.0	7.0	8.0
Unit Casing Volume (gal/lin ft):	0.023	0.09	0.16	0.20	0.37	0.65	0.75	1.0	1.5	2.0	2.6

Date	Time (24 hr)	Water Level (FTOC)	Pumping Rate (mL/min)	Temp. (°C)	pH	Cond (µS/cm)	DO (mg/L)	Turb. (NTU)	ORP (mv)	Remarks (odor, clarity, etc.)
6/17/16	0700	27.72	100	21.14	5.57	2.02	1.85	0.4	255	
	0705	27.79	100	20.26	5.24	2.00	1.33	0.0	265	
	0710	27.85	100	20.12	5.08	1.98	1.01	0.0	280	
	0715	27.90	100	20.09	5.00	1.98	1.01	0.0	288	
	0720	27.93	100	20.14	4.98	1.98	1.00	0.0	290	
	0725	27.95	100	20.15	4.99	1.98	1.00	0.0	292	
	0730	27.96	100	20.19	4.99	1.99	0.99	0.1	294	

Pump Rate: <=0.5 L/min Drawdown: <0.33 ft Measurements: 3-5 min Stabilization: +/-10% C, +/-0.1 pH, +/-3% Cond, +/-10% DO, +/-10%Turb(<=10 NTU ideal), for 4 consecutive readings

SAMPLE ID: MW23-061716 TIME: 0730

DUPLICATE (D): YES/NO NO
MATRIX SPIKE (MS): YES/NO Yes
MATRIX DUPLICATE (MD): YES/NO Yes

CO= LEL= OXY= H2S=

No. Containers/Volume/Type	Preserv.	Filter (Y/N)	Pump OR Bailer	Parameter(s)
9 - 40ml glass	HCL	N	Pump	VOC
3 - 250 ml plastic	NA	Y	Pump	perchlorate

DEPARTMENT OF THE ARMY
LONGHORN ARMY AMMUNITION PLANT
POST OFFICE BOX 220
RATCLIFF, AR 72951

January 18, 2017

DAIM-ODB-LO

Mr. Rich Mayer
US Environmental Protection Agency
Federal Facilities Section R6
1445 Ross Avenue
Dallas, TX 75202-2733

Re: Draft Final Remedial Design for LHAAP-16 Landfill at Longhorn Army Ammunition Plant, Karnack, Texas

Dear Mr. Mayer,

The above-referenced document is being transmitted to you for your records and includes revisions based upon your comments on the Draft. In accordance with the FFA, the Draft Final will be considered Final after 30 days without further comment.

The document was prepared by AECOM on behalf of the Army as part of AECOM's Performance Based Remediation contract for the facility. I ask that Debra Richmann, AECOM's Project Manager, be copied on any communications related to the project.

The point of contact for this action is the undersigned. I may be contacted at 479-635-0110, or by email at rose.m.zeiler.civ@mail.mil.

Sincerely,

Rose M. Zeiler

Rose M. Zeiler, Ph.D.
Longhorn AAP Site Manager

Copies furnished:
A. Palmie, TCEQ, Austin, TX
P. Bruckwicki, Caddo Lake NWR, TX
R. Smith, USACE, Tulsa District, OK
A. Williams, USACE, Tulsa District, OK
N. Smith, USAEC, San Antonio, TX
D. Richmann, AECOM – San Antonio, TX (for project files)

DEPARTMENT OF THE ARMY
LONGHORN ARMY AMMUNITION PLANT
POST OFFICE BOX 220
RATCLIFF, AR 72951

January 18, 2017

DAIM-ODB-LO

Ms. April Palmie
Texas Commission on Environmental Quality Superfund Section, MC-136
12100 Park 35 Circle, Bldg D
Austin, TX 78753

Re: Draft Final Remedial Design for LHAAP-16 Landfill at Longhorn Army Ammunition Plant, Karnack, Texas

Dear Ms. Palmie,

The above-referenced document is being transmitted to you for your records and includes revisions based upon your comments on the Draft. In accordance with the FFA, the Draft Final will be considered Final after 30 days without further comment.

The document was prepared by AECOM on behalf of the Army as part of AECOM's Performance Based Remediation contract for the facility. I ask that Debra Richmann, AECOM's Project Manager, be copied on any communications related to the project.

The point of contact for this action is the undersigned. I may be contacted at 479-635-0110, or by email at rose.m.zeiler.civ@mail.mil.

Sincerely,

Rose M. Zeiler

Rose M. Zeiler, Ph.D.
Longhorn AAP Site Manager

Copies furnished:
R. Mayer, USEPA Region 6, Dallas, TX
P. Bruckwicki, Caddo Lake NWR, TX
R. Smith, USACE, Tulsa District, OK
A. Williams, USACE, Tulsa District, OK
N. Smith, USAEC, San Antonio, TX
D. Richmann, AECOM, San Antonio, TX (for project files)

Responses to Comments on
Draft Remedial Design for LHAAP-16 Landfill
Longhorn Army Ammunition Plant, Karnack, Texas

October 2016

Reviewer: Richard Mayer, EPA

Respondents: Purshotam Juriasingani, Glenn Hilton, Cheri Walker and Debra Richmann, AECOM

1. Respondent Concurs (C), Does Not Concur (D), Takes Exception (E), or Delete (X).
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Comment #	Page	Section/ Paragraph	Comment	C, D, E or X[1]	Response	A or D[2]
1		General Comment	Will the 2009 shallow zone pilot wells need to be redeveloped/maintained?	C	Due to the nature of pilot test conducted that used the recirculation method of distributing the electron donor, it is not anticipated that the wells will need redevelopment. However, slug tests will be performed to determine their acceptability for use as injection wells. If necessary, they will be redeveloped. The following sentence has been inserted after the first sentence in 4.2.2.1: "Before any of the pilot test wells are used for injection, slug tests will be performed to confirm they are in acceptable condition. If the results show they are not, they will be re-developed prior to use as injection wells for Landfill Biobarrier #2".	
2		General Comment, Figure 4-7	Why is the well spacing (injection points) for the Mid Plume wells in the intermediate zone aquifer less dense than the shallow zone aquifer?	C	The perchlorate and VOCs concentrations in the intermediate zone are much lower than in the shallow zone. The details for the Mid Plume injection are based on the ROD document which states that the carbon source and bioaugmentation culture would be injected into the shallow zone using 40 DPT injection points and into the intermediate zone by injection through existing wells. However, according to the ESTCP demonstration, travel time between recirculation wells 35 feet apart was approximately one to two months. Therefore two injection wells will be installed between existing extraction wells 16EW05 and 16EW06, 16EW06 and 16EW07, and 16EW07 and 16EW08 for a total of six new injection wells at approximately 35 ft apart in the mid plume area intermediate groundwater zone. Figures 4-1 and 4-7, Table 4-9, and Table 4-10 and associated text have been revised to reflect the additional intermediate zone injection wells.	

Responses to Comments on
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October 2016

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3		General Comment	What are the criteria for determining when MNA will be implemented at the site?		Please refer to Section 4.5 – Performance Monitoring. Subsection 4.5.3.2 – MNA Performance Monitoring, provides the criteria for determining when MNA will be implemented in the active remedy areas, based on eight quarters of monitoring results and historical data, as required by the ROD. In the following subsection, (4.5.3.3) it is stated that in accordance with the ROD, these same criteria are applicable to passive MNA areas, and if not met, would trigger implementation of a contingency remedy.	
4		General Comment	Is the surface water monitoring/sampling plan similar to the other sites (such as sites 50, 47, 37, etc.) being monitored for surface water? Please include a reference for the surface water sampling plan.		The ROD requires that the surface water sampling plan be included in the RD and it is presented in Section 4.5.3.5, with locations depicted on Figure 4-8. The second to the last paragraph in Section 4.5.3.5 has been revised to indicate that the surface water samples will be collected following the protocols in Section 3.7 of the Final Installation-wide Work Plan, and to state that the surface water cleanup levels for the COCs are provided in Table 1-1. The phrase "Surface water samples are collected for the purpose of evaluating impact from groundwater, therefore, " has been inserted at the beginning of the last paragraph in the section. The last sentence in Section 4.5.5 has been revised to insert "and surface water locations" after "by the data, the wells".	

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Comment #	Page	Section/ Paragraph	Comment	C, D, E or X[1]	Response	A or D[2]
5		Figure 4-1, ISB Locations	Also, should Landfill Barrier # 3 be connected to Landfill Barrier # 2 on the figure, otherwise there is a small gap?	C	Yes, Landfill biobarrier #3 shown in Figure 4-1 consists of DPT injection points and Landfill biobarrier #2 consists of recirculation wells to distribute the electron donor. The southernmost DPT injection point and the northernmost recirculation well in Landfill biobarriers #3 and #2, respectively will distribute the electron donor in the gap mentioned in the comment. Figure 4-1 has been revised to connect the lines for Landfill biobarriers #3 and #2.	
6		Figure 4-4	It appears that proposed well 16IW10 is not evenly spaced between DPTs 22 and 23? It seems closer to DPT-22.	C	The location of 16IW10 in Figure 4-4 will be revised so it is equally spaced between DPT 22 and DPT 23, approximately 2.5 ft south of its currently shown location.	
7		Figure 4-8	Should the surface water location HBW-1 in Harrison Bayou be moved equal to or slightly NW of monitoring well 16WW40 to capture the higher plume concentrations of the groundwater (potential) to surface water releases?	D	HBW-1 is an established surface water sampling location and captures flow of groundwater from site LHAAP-16. Perchlorate was most recently detected above the TRRP Tier 1 groundwater residential PCL (17µg/L) in a sample from HBW-1 collected in August 2007 at a concentration of 122 µg/L, and prior to that, at a concentration of 99.3 µg/L in a sample collected in August 2003.	
8	Page 4-3	Section 4.1.2.2	The ESTCP ISB study mentions a distance of 30 feet between the injection and extraction wells: however, the Figure 4-7 only shows four wells (injection wells) approximately 100 feet apart. Please clarify.	C	Based on the ESTCP study that recommended approximately 35 feet between the recirculation wells, two new injection wells will be installed between existing extraction wells 16EW05 and 16EW06, 16EW06 and 16EW07, and 16EW07 and 16EW08 for a total of six new injection wells in the Intermediate Zone ISB area to recirculate the groundwater between the injection and extraction wells. Figure 4-7, Table 4-9, and Section 4.4.1.2 have been revised to reflect installation of the additional injection wells.	

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Comment #	Page	Section/ Paragraph	Comment	C, D, E or X[1]	Response	A or D[2]
9	Page 4-11	Sections 4.4.2.1 & 4.4.2.2	It appears that the injection numbers mentioned in this section are different that those shown in Table 4-10.	C	The tables had not been revised to reflect edits made to the text when the draft was submitted for review. Now Sections 4.4.2 and 4.4.3, Table 4-9, 4-10, and Appendix D have been made consistent to reflect correct quantities and locations as shown in Figures 4-6 and 4-7. A calculation sheet is included to show how the correct quantities were derived, based on the treatment areas shown in Figure 4-6 and 4-7 and using the model presented in Appendix D.	
10		Table 4-11, ISB Area Column	Please correct the following: Well 16WW12 is upgradient; Well 16WW14 is upgradient to Landfill Biobarrier #3; Well 16WW26 is downgradient to Landfill Barrier #2; and, Well 16WW42 is downgradient of Landfill Barrier #1.	C	Table 4-11 has been revised for consistency with the figures, and corrected to reflect the following: 16WW26: Downgradient to landfill biobarrier #1 16WW42: Downgradient to landfill biobarrier #1 16WW12: Upgradient to Bayou Biobarrier 16WW14: Upgradient to Landfill Biobarrier #3	

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Comment #	Page	Section/ Paragraph	Comment	C, D, E or X[1]	Response	A or D[2]
11		Table 4-12, ISB Area Column	Please correct the following: Well 16WW37 is upgradient of proposed Landfill Barrier #2; Well 16WW35 is downgradient of proposed Landfill Barrier #2; Well 16WW25 is downgradient of proposed Landfill Barrier #1; Wells 16WW41 and 29 need to be designated as proposed (please identify them on a figure); Well 16WW43 is not an intermediate well; Well 16WW21is not downgradient of the Mid-Plume ISB Area, it is downgradient of the Bayou Biobarrier. Also, revised Figure 4-1 (a Rose and April collaboration from Nov. 3 email from Rose) indicates it is a shallow well.	C

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12		Table 4-16, Rationale Column	Please correct the following: Well 16RW12 is downgradient of the Biobarrier; Well 16RW11 is within the Biobarrier; and, Wells 16RW13 and 16WW22 do not show up on Figure 4-5.	C	Table 4-16 has been revised for consistency with the figures, and corrected to reflect the following in Primary Rationale for Well Selection: 16RW12: Performance data downgradient of the biobarrier 16RW11: Performance data within the biobarrier 16RW13: Not included in Figure 4-5 and deleted from Table 4-16 because no record of this well could be found. 16WW22 is shown in Figure 4-5, however, it is an upgradient well to monitor effluent concentrations and biobarrier effectiveness 16WW12: Upgradient well to monitor effluent concentrations and biobarrier effectiveness	
13		Table 4-18, MNA and LTM Performance Monitoring Plan	Please provide a separate figure that identifies the wells found in the table. It is difficult to discern which figure all these wells are found on.	C	A separate figure (4-8) has been included that identifies the wells shown in Table 4-18	

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14		Table 4-17, Rationale Column	Please correct the following: Well 16EW01 appears questionable (as compared to wells 16EW03 & 16EW02) for monitoring within the Mid-Plume ISB as it is farther in distance from the DPT points than 16EW04;	D	Since 16EW01 is an existing well, it will be sampled to determine the outside influence of injection within the ISB Area. The monitoring data will also show if any contamination has been pushed outside of the treatment area shown in Figure 4-6.	
			Well 16WW30 is not shown on figure 4-6;		16WW30 is shown on Figure 4-6 near injection point DPT-70.	
			Well 16WW30 appears questionable for the downgradient monitoring of the Mid-Plume (it depends on the flow direction). If the groundwater flow direction is consistently east, then it would be acceptable. If the groundwater flow direction is consistently to the northeast, then probably it is not.		Well 16WW30 along with 16WW39 and 16WW48 will be used to determine the downgradient influence of the ISB injection. These three monitoring wells approximately cover the path perpendicular to the groundwater flow and should capture the downgradient influence of ISB injection even if there is a slight change in groundwater flow direction.	
			Also, well 16WW21 is not found on Figure 4-7.	C	16WW21 is not included on Figure 4-7, because this figure depicts the Mid Plume Design for the intermediate Groundwater Zone. Therefore it only shows the locations and proposed locations of Intermediate Zone monitoring wells.	
15		Appendix A, RAO Inspection and Maintenance Checklist, Groundwater Monitoring Wells	EPA recommends adding a row requiring the inspection of the concrete aprons and bollards.	C	A row has been added for inspection of the concrete aprons and bollards.	

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16		General Comment	Was there an evaluation performed on all the injection materials to ensure that there will not be deleterious effects to the wells or to the groundwater aquifers? In other words, are all these materials compatible? Also, another potential concern is when injection is conducted, are there detrimental effects on pushing contaminants downward (or outward in certain instances).		The proposed materials are compatible. ABC is an oil based product but is formulated with lactic acid and a buffer solution. ABC+ adds ZVI. The fatty acids used in the formulation are essentially the same as produced from hydrolysis of vegetable oil when introduced in the environment. Hence, it is the same as vegetable oil but it is completely soluble. Hence it is not emulsified. The fatty acids are the long term releasing carbon source. No need for site testing because the material behaves similar to EVO. The buffer in ABC provides an added benefit and testing is not required because there is no downside for the presence of the buffer. ZVI is micro-scale and therefore, it does not have a tendency to clog the aquifer. Manufacturer's information is appended. The presence of ZVI requires the material to be mixed in specialized mixers before injecting. Redox Tech provides the equipment and field crew to conduct the work. Details of the substrate selection and evaluation for each biobarrier are presented in corresponding subsections in Section 4.1.3.The SDS for these products are included in Appendix B. The potential to push the contaminants downward or outside the treatment zone will be avoided by using low pressures for injection, as stated in Section 4.1.1.1 for direct push and for injection wells in Section 4.1.1.2. It is anticipated that the substrate will be injected at low pressures (< 200 psi) to minimize spreading of the contaminants	

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17		General Comment	EPA agrees with the additional shallow wells proposed by TCEQ shown on revised Figure 4-1. Also, EPA recognizes there may be a need for additional Intermediate groundwater monitoring wells in the future, especially in the outer eastern reaches of the plume.		Noted.	
18		General Comment	When is the last time that the Upper Deep and Lower Deep groundwater monitoring wells have been sampled at the site?		May 2013.	
19		Overall Note	There seems to be an error on Figure 4-1. Shallow Groundwater ISB Treatment Area detail is referred to 4-5; however, figure 4-5 is the Bayou Biobarrier; Bayou Biobarrier detail is referred to fig 4-6; however, figure 4-6 is Mid Plume Design Shallow Groundwater Zone; Mid Plume Design Intermediate Groundwater Zone (figure 4-7) is not depicted on Figure 4-1.	C	Figure 4-1 has been revised to reflect correct treatment area call-out figures.	

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Comment #	Page	Section/ Paragraph	Comment	C, D, E or X[1]	Response	A or D[2]
1	1-1	Section 1.2	Last paragraph - Why CVOCs here but VOCs elsewhere?	C	cVOCs has been replaced with VOCs throughout the document.	
2	2-2 & 2-3	Section 2.4	This section should reference LHAAP-16 (not 18/24) throughout.	C	The incorrect references to LHAAP-18/24 have been replaced with LHAAP-16 throughout this section.	
3		Figure 2-3	Add note to reference date collected well location data	C	The well location information is from the Banks Environmental Data, June 17, 2015 Water Well Report for LHAAP. A note identifying this source has been added to Figure 2-3.	
4		Figures	General notes: Change orange and brown fonts to black or other more readable color. Isocontour maps should not be based on two data sets (such as in Figure 2-4, 2-6 and 2-7). Interpretation should be based on one clear data set.	 C C	 The orange and brown color have been replaced with a more readable dark color (black or dark blue). The isocontour maps have been redrawn using COC concentrations from the most recent comprehensive monitoring event, which was performed in May 2013.	
5		Figure 2-5	Contours by Harrison Bayou (100 and 17) are based on nothing since we have no downgradient data points. They should be removed.	C	The inner perchlorate contours (dashed 17ug/L and solid100 ug/L) have been deleted.	
6		Figure 2-7	Remove the closed (dashed) loop for 1,000 isocontour by Harrison Bayou. We don't have data to support this inference.	C	The closed 1,000 µg/L isoconcentration contour in Figure 2-7 has been re-drawn as an inferred contour line that truncates at Harrison Bayou.	
7	3-1	Section 3	O&M components in 2nd sentence should not have each word capitalized.	C	The names of the O&M components in the 2nd sentence have been changed to all lower case letters.	
8		Section 3.1.2	First sentence, Typo "majorevents"	C	The typo has been corrected by inserting a space between "major" and "events".	

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9	4-11 & 4-12	Section 4.4.2 & 4.4.3	The narrative and tables are not consistent regarding injection locations and quantities. Here are the specific inconsistencies I noticed:		Section 4.4.2 and 4.4.3, Table 4-9, 4-10, and Appendix D have been made consistent to reflect correct quantities and locations as shown in Figures 4-6 and 4-7. A calculation sheet is included to show how the correct quantities were derived, based on the treatment areas shown in Figure 4-6 and 4-7 and using the model presented in Appendix D.	
			4.4.2.1 – 2nd paragraph 6,533 and 10,018 lbs. don't seem to match table 4-10. Shouldn't points be DPT-40-70?	C	Shallow Zone DPT ID numbers in both Tables 4-9 and 4-10 have been corrected to DPT-40 through DPT-79. In Table 4-10, substrate weight and volumes have been re-calculated.	
			4.4.2.2 – Add total lbs. for consistency	C	The weight of substrate for the Intermediate Zone wells in Table 4-10 has been verified and included in Section 4.4.2.2 for consistency.	
			4.4.3 – 1st paragraph 2nd sentence, regarding shallow is not correct. Probably should be 30 points at 1 liter each. 16IW12, 14, 16, and 18 are only in this sentence – nowhere else in the document.	E	The sentence, and the following sentence, have been changed to reflect the correct number of injection points and wells with correct quantities of KB-1. The correct locations are DPT-40 through DPT-79 for the shallow zone, and wells 16EW05, 16EW06, 16EW07, and 16EW08 for the intermediate zone. The correct quantities of KB-1 are 40 L for the shallow zone and 12 L for the intermediate zone.	
			Last paragraph, can we stick with the term "anaerobic" rather than "anoxic"?	C	The term "anoxic" in the last paragraph will be replaced with "anaerobic".	

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10		Figure 4-1	I received a revised Figure 4-1 on 11/3 which addressed many of my concerns:			
			Additional delineation wells are needed on other side of Harrison Bayou, between Landfill Biobarrrier #3 and Mid-Plume shallow in-situ, and down gradient of Bayou biobarrier. Four additional wells were proposed and I accept those locations. If the plume is not delineated across Harrison Bayou additional wells will be necessary.	C	The need for additional wells across Harrison Bayou, beyond the two already proposed, will be addressed, if needed, during the RD implementation phase.	
			Furthermore, the LUC boundary will most likely need to be adjusted based on these new wells.	C	Agree that the final LUC boundary may need to be adjusted, however, the Army will continue to use the boundary that was presented in the ROD until additional data are in hand, in order to avoid having two boundaries in the record.	
			The proposed wells from Figures 4-2 through 4-7 were added to the figure. Please add the proposed well numbers.	C	The proposed well numbers have been added to Figure 4-1.	
			Orange replaced with black. Thank you.		You are welcome.	
			Additional edit - Please rename yellow box to add “Mid-Plume” (pop-out and legend)	C	“Mid-Plume” has been inserted between “Shallow” and “Groundwater” in the pop-out box on the figure and the symbol in the legend has been re-named for consistency.	
11		Figure 4-8	The LUC boundary will most likely need to be adjusted based on the new wells across Harrison Bayou. It would be preferable to go ahead and estimate extent on this figure.	E	The Army will use the boundary that was presented in the ROD until additional data is in hand to avoid having more than two boundaries in the record.	

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12		Table 4-9	DPT points should be DPT-40 through 70	E	As shown in Figure 4-6, there are 40 injection points (DPT 40-79). Table 4-9 has been corrected to reflect the correct DPT points.	
			16WW39 & 30 should be Existing (not Proposed)	C	For 16WW39 and 30, the entry in the second column has been changed to ”Existing”.	
13		Table 4-10	DPT point should be DPT-40 -70, volume of KB-1 in shallow should probably be 30(1)	E	Please see response to comment to comment 9, fourth part. Table 4-10 has been revised accordingly and thetotal volume of KB-1 that will be injected in the Mid-Plume ISB shallow zone is 40L.	

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14		Table 4-11	ISB Area description edits needed for:		Table 4-11 has been edited as indicated in the comment and in the responses below:	
			16WW26 & 16WW42– Downgradient to landfill biobarrier #1	C	16WW26 and 16WW42: Changed from Downgradient to Landfill Biobarrier #3 to #1	
			Add new point for Downgradient to landfill biobarrier #3	C	The proposed well located Downgradient to Landfill Biobarrier #3 is identified as 16WW55 in Figure 4-1and has been added to Table 4-11	
			16WW39 – existing, not proposed	C	16 WW39 has been changed from Proposed to Existing	
			16WW12 & 16WW22– Upgradient to Bayou Biobarrier	C	16WW12 and 16WW22 have been changed from Downgradient to Bayou Biobarrier to Updgradient	
			Add new point for Downgradient to Bayou Biobarrier	C	The proposed well located Downgradient to Bayou Biobarrier is identified as 16WW56 in Figure 4-1and has been added to Table 4-11	
			No crossgradient to south of plume – need 16WW24 & 16WW43	C	Existing wells 16WW24 and 16WW43 have been added to Table 4-11 as Cross-gradient to South of Plume	
			Add new wells across Harrison Bayou		The two proposed wells across Harrison Bayou are identified as 16WW57 and 16W58 in Figure 4-1 and have been added to Table 4-11	

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15		Table 4-12	ISB Area description edits needed for:		Table 4-12 have been edited as indicated in the comment and in the responses below:	
			16WW37 & 16WW13 – Downgradient of Landfill	C	16WW37 and 16WW13 have been changed from Upgradient and Downgradient of Mid-Plume ISB Area, respectively, to Downgradient of Landfill	
			16WW 35 & 16WW25 – Upgradient of Mid-Plume ISB Area	C	16WW25 and 16WW35 have been changed from Downgradient of Mid-Plume ISB Area to Upgradient of Mid-Plume ISB Area	
			16WW43 – Is a shallow well. Do mean 16WW27 or 28?	C	16WW43 has been deleted; Intermediate Zone well 16WW27 is co-located with 16WW43 and is already included in Table 4-12.	
16		Table 4-18	16WW50 – This well is not in the document anywhere else.	C	16WW50 has been deleted from Table 4-18.	
			Please add the four new locations on Figure 4-1 (include MNA) - new well downgradient of Bayou Biobarrier, new well between landfill biobarrier #3/Mid-Plume ISB, and two new wells across Harrison Bayou	C	The following proposed four new monitoring wells (identified as 16WW55, 16WW56, 16WW57, and 16WW58 in Figure 4-1have been added to Table 4-18 as suggested: -New well 16WW55 between landfill biobarrier #3/Mid-Plume ISB -New well 16WW56 downgradient of Bayou Biobarrier, and -New wells 16WW57 and 16WW58 across Harrison Bayou	

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17	5-3	Section 5.2	First bullet on page – Note that LUC boundary may (will) change following plume delineation on other side of Harrison Bayou.	E	Finalizing the LUC boundaries is addressed in Section 5.1 – LUC Implementation on page 5-2. After the first sentence of the second sub-bullet, the following sentence has been added: "The LUC boundary presented in this RD is subject to change, based on COC results from the two proposed wells to be installed on the east side of Harrison Bayou".	
18		Section 5.3.1	End of paragraph, unnecessary "	C	The extraneous " will be deleted.	
19		Section 5.3.5	Sentence beginning with "The decision to terminate" revise "potentially including an explanation"	C	The "and" after "potentially including" has been changed to "an".	
20		Figure 5-1	The LUC boundary will extend across Harrison Bayou. It would be preferable to go ahead and estimate extent on this figure.	E	Please see responses to comment numbers 10, second part; and 11.	
21		General	For future work (such as Section 6) – Suggest a change from AECOM to Contractor.	C	AECOM has been replaced with "Contractor" wherever future work is discussed in the RD.	
22	6-2	Section 6.4	First paragraph, sentence beginning with "The two biobarriers" Please revise since there are more than two. Suggest "The biobarriers"	C	The word "two" has been deleted from the sentence.	
23		Table 6-1	2. Coordinate with TCEQ. Permit not required but must meet substantive requirements. We will have to provide detailed information to Underground Injection Control.	C	Under "Notes", the entry has been changed to "Permit not required, but must meet substantive requirements."	

From: Mayer, Richard <mayer.richard@epa.gov>
Sent: Thursday, January 26, 2017 2:31 PM
To: Snow, JoLynn; Zeiler, Rose M CIV USARMY HQDA ACSIM (US)
Cc: Aaron.K.Williams@usace.army.mil; Smith, Nicholas B CIV USARMY IMCOM (US; 'Becher, Kent'; Tzhone, Stephen; Richmann, Debra; Richard.P.Smith@usace.army.mil; April Palmie; Forsythe, Barry; Harrison, Dorelle; Sharp, Elspeth; paul_bruckwicki@fws.gov
Subject: FW: EPA Approval of the Longhorn Site 16 (Landfill) Draft Final Remedial Design

Good Afternoon JoLynn/Rose, I've reviewed the Draft Final Remedial Design for Longhorn Site 16 (Landfill) and accept all edits and comment responses. Thanks.

From: April Palmie <april.palmie@tceq.texas.gov>
Sent: Tuesday, January 31, 2017 2:40 PM
To: Snow, JoLynn
Cc: Williams, Aaron K CIV USARMY CESWT (US); Zeiler, Rose M CIV USARMY HQDA ACSIM (US); Smith, Nicholas B CIV USARMY IMCOM (US); Smith, Richard P CIV USARMY CESWF (US); Richmann, Debra; Sharp, Elspeth; Juriasingani, Purshotam; April Palmie; Holloway, Craig; mayer.richard@epa.gov
Subject: RE: FOR AGENCY REVIEW - LHAAP-16 Draft Final RD

Thank you. With these edits, I accept the LHAAP-16 Draft Final RD and RTCs.

April Palmie
Project and Grant Manager
Superfund Section
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Phone: (512) 239-4152
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From: Snow, JoLynn [mailto:JoLynn.Snow@aecom.com]
Sent: Tuesday, January 31, 2017 2:15 PM
To: April Palmie <april.palmie@tceq.texas.gov>
Cc: Williams, Aaron K CIV USARMY CESWT (US) <Aaron.K.Williams@usace.army.mil>; Zeiler, Rose M CIV USARMY HQDA ACSIM (US) <rose.m.zeiler.civ@mail.mil>; Smith, Nicholas B CIV USARMY IMCOM (US) <nicholas.b.smith56.civ@mail.mil>; Smith, Richard P CIV USARMY CESWF (US) <Richard.P.Smith@usace.army.mil>; Richmann, Debra <debra.richmann@aecom.com>; Sharp, Elspeth <elspeth.sharp@aecom.com>; Juriasingani, Purshotam <purshotam.juriasingani@aecom.com>; Holloway, Craig <craig.holloway@aecom.com>; mayer.richard@epa.gov
Subject: RE: FOR AGENCY REVIEW - LHAAP-16 Draft Final RD

Good afternoon April,

Please see the attached redline RTC table and revised figure based on your additional comment to Aaron. Please let us know if you need anything else.

Thank you,
JoLynn

JoLynn Snow
Project Administrator, AECOM Environment
Direct: 1-210-823-6710
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Bossier City, LA, 71111
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From: Snow, JoLynn
Sent: Wednesday, January 18, 2017 11:52 AM
To: 'April Palmie'; 'mayer.richard@epa.gov'
Cc: Williams, Aaron K CIV USARMY CESWT (US); 'Zeiler, Rose M CIV USARMY HQDA ACSIM (US)'; Smith, Nicholas B CIV USARMY IMCOM (US); Smith, Richard P CIV USARMY CESWF (US); Richmann, Debra; Sharp, Elspeth; Juriasingani, Purshotam; Holloway, Craig
Subject: FOR AGENCY REVIEW - LHAAP-16 Draft Final RD

Good afternoon,

Please see the attached Draft Final RD for LHAAP-16. I have also attached the redline Draft Word document to assist in review. Please let me know if you need anything else.

Thank you,
JoLynn

JoLynn Snow
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DRAFT FINAL
REMEDIAL DESIGN
LHAAP-16 LANDFILL
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

Prepared For:

U.S. Army Corps of Engineers
Tulsa District

Prepared By:

AECOM Technical Services

January 2017

DRAFT FINAL
REMEDIAL DESIGN LHAAP-16 LANDFILL
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

Prepared For:

U.S. Army Corps of Engineers

Tulsa District

Prepared By:

AECOM Technical Services

Contract No. W912DY-09-D-0059

Task Order No. DS01

January 2017

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Acronyms and Abbreviations

µg/L	microgram per liter
ABC+	Anaerobic Biochem Plus
API	American Petroleum Institute
ARAR	applicable or relevant and appropriate requirements
bgs	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
cm/sec	centimeters per second
COC	contaminant of concern
DCA	Dichloroethane
DCE	Dichloroethene
DO	dissolved oxygen
DPT	direct push technology
ECP	Environmental Condition of Property
EDS-ER	Electron Donor Solution - Extended Release
ESD	Explanation of Significant Difference
ESTCP	Environmental Security Technology Certification Program
EVO	emulsified vegetable oil
FFA	Federal Facilities Agreement
FS	Feasibility Study
HDPE	high-density polyethyelene
HFCS	high-fructose corn syrup
HSA	hollow stem auger
IRA	Interim Remedial Action
ISB	in-situ bioremediation
IWWP	Installation-Wide Work Plan
lbs	pounds
LHAAP	Longhorn Army Ammunition Plant
LTM	long-term monitoring
LUC	land use control
mg/L	milligrams per liter

MNA	monitored natural attenuation
MOA	Memorandum of Agreement
msl	mean sea level
mV	millivolt
NPL	National Priorities List
O&M	operation and maintenance
ORP	Oxidation-Reduction Potential
RACR	Remedial Action Completion Report
RAO	Remedial Action Objectives
RD	Remedial Design
RI	Remedial Investigation
ROD	Record of Decision
ROI	Radius of Influence
SARA	Superfund Amendment and Reauthorization Act
TAC	Texas Administrative Code
TCA	Trichloroethane
TCE	Trichloroethene
TCEQ	Texas Commission on Environmental Quality
U.S.	United States
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
VOC	volatile organic compound
VC	Vinyl chloride
ZVI	zero valent iron

1 INTRODUCTION

This document presents the remedial design (RD), inspection and maintenance requirements, and land use control (LUC) requirements associated with the remedy set forth in the Final Longhorn Army Ammunition Plant (LHAAP)-16 Record of Decision (ROD) (U.S. Army 2016), generated in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986.

This RD document was prepared for the United States (U.S.) Army under the Worldwide Environmental Remediation Services Contract No. W912DY-09-D-0059 managed by the U.S. Army Corps of Engineers, Tulsa District.

1.1 LHAAP Background

The LHAAP is an inactive, government-owned, formerly contractor-operated and maintained industrial facility located in central-east Texas in the northeastern corner of Harrison County. The facility occupies approximately 1,200 of its former 8,416 acres located between State Highway 43 in Karnack, Texas, and the western shore of Caddo Lake as shown in **Figure 1-1**. LHAAP was listed as a National Priorities List (NPL) site on August 9, 1990 due to threatened releases of hazardous substances, pollutants, or contaminants. The United States Environmental Protection Agency (USEPA), the Texas Water Commission (now the Texas Commission on Environmental Quality [TCEQ]), and the U.S. Army signed a Federal Facility Agreement (FFA) on December 30, 1991.

1.2 LHAAP-16 Site Description

LHAAP-16 is a capped landfill covering approximately 20 acres in the south-central portion of the former LHAAP (**Figures 1-2 and 1-3**). Harrison Bayou is located along the northeastern edge of the site and flows into Caddo Lake, northeast of the site (**Figure 1-2**). The landfill, which covered approximately 13 acres prior to cap construction, was established in the 1940s for the disposal of solid and industrial wastes, until the 1980s, when disposal activities were terminated.

The U.S. Army and the USEPA signed a ROD and the Texas Water Commission concurred in 1995 approving an interim remedial action for LHAAP-16 to mitigate potential risks posed by buried source material at the site. The interim remedial action included the construction of a landfill cap, which is considered a component of the final remedy for the site. Construction of the multilayer cap was completed in 1998. The ROD also specified that the U.S. Army would be required to “perform long-term maintenance of the cap.” LUCs, such as future use restrictions, would also be required.

Previous investigations identified groundwater impacted with chlorinated volatile organic compounds (VOCs), perchlorate, and five metals (arsenic, chromium, manganese, nickel, and thallium) at LHAAP-16 (U.S. Army 2016). Figure 1-3 shows the existing groundwater monitoring system and the approximate lateral extent of perchlorate and TCE in the Shallow Zone and Intermediate Zone groundwater, based on the last comprehensive groundwater sampling event performed in May 2013 (AECOM, 2013). The source of this impacted groundwater is the landfill, although the metals were only detected at elevated concentrations sporadically, and do not appear to reflect widespread contamination from the landfill. A

groundwater extraction system was voluntarily installed by the U.S. Army in 1996 and 1997 as a treatability study to prevent the groundwater plume from migrating to Harrison Bayou. The extraction system was shut down in August 2012 due to operational issues including damage to the power feed to the system, but operation was restored in November 2012 and the extraction system has been operational since that time.

The Final ROD for LHAAP-16 was issued in September 2016 and documents the final selected remedy for the site, including impacted groundwater (U.S. Army 2016). A summary of remedial action objectives (RAOs), cleanup levels, and the selected remedy for LHAAP-16 presented in the Final ROD is presented in the following sections.

1.3 Remedial Action Objectives

The RAOs developed for LHAAP-16 and outlined in the LHAAP-16 ROD (US Army 2016) are:

- Protection of human health and the environment by preventing exposure to landfill contents;
- Protection of human health and the environment by reducing leaching and migration of landfill hazardous substances into the groundwater;
- Protection of human health by preventing human exposure to the contaminated groundwater;
- Protection of human health and the environment by preventing contaminants of concern (COCs) and COC by-products from migrating into Harrison Bayou at levels that cause surface water in Harrison Bayou to exceed surface water criteria; and
- Return of groundwater to its potential beneficial uses as drinking water, wherever practicable.

1.4 Planned Remedial Action

The planned remedial action at LHAAP-16 is comprised of several elements:

- Maintenance of the existing landfill cap to preserve its integrity and minimize or prevent infiltration through the landfill.
- Installation of two (2) biobarriers in the shallow groundwater, one located adjacent to the landfill and the other located near Harrison Bayou.
- In situ bioremediation (ISB) in the most contaminated portion of the shallow and intermediate groundwater zones in conjunction with phased shut down of the existing groundwater extraction system.
- Monitored natural attenuation (MNA) of both the shallow and intermediate groundwater zones to ensure continued degradation of COCs and daughter products and that surface water in Harrison Bayou is not adversely affected by groundwater such that it fails to meet surface water standards for COCs and daughter products. MNA includes**:**
    - Evaluation of MNA based on performance objectives after 2 years quarterly monitoring;
    - Reapplication of bio-amendments if MNA is found to be ineffective; and

  - Long-term monitoring (LTM) semiannually for 3 years, then annually thereafter until recommended otherwise by the five-year review. LTM will not be initiated until MNA performance monitoring establishes the effectiveness of MNA.

- LUCs to prohibit access to the contaminated groundwater except for environmental monitoring and testing only;
- LUCs to preserve the integrity of the landfill cap, and to restrict intrusive activities (e.g., digging) that would degrade or alter the cap;
- LUCs to restrict land use to nonresidential; and
- LUCs to maintain the integrity of any current or future remedial or monitoring systems.

1.5 Cleanup Levels

Groundwater and surface water cleanup levels were established in the ROD (U.S. Army 2016) to meet the RAOs and are presented in **Table 1-1** (adapted from Table 2-7 of the ROD).

1.6 Applicable or Relevant and Appropriate Requirements

The applicable or relevant and appropriate requirements (ARARs) for the planned remedial action at LHAAP-16 documented in the ROD are summarized in **Table 1-2**.

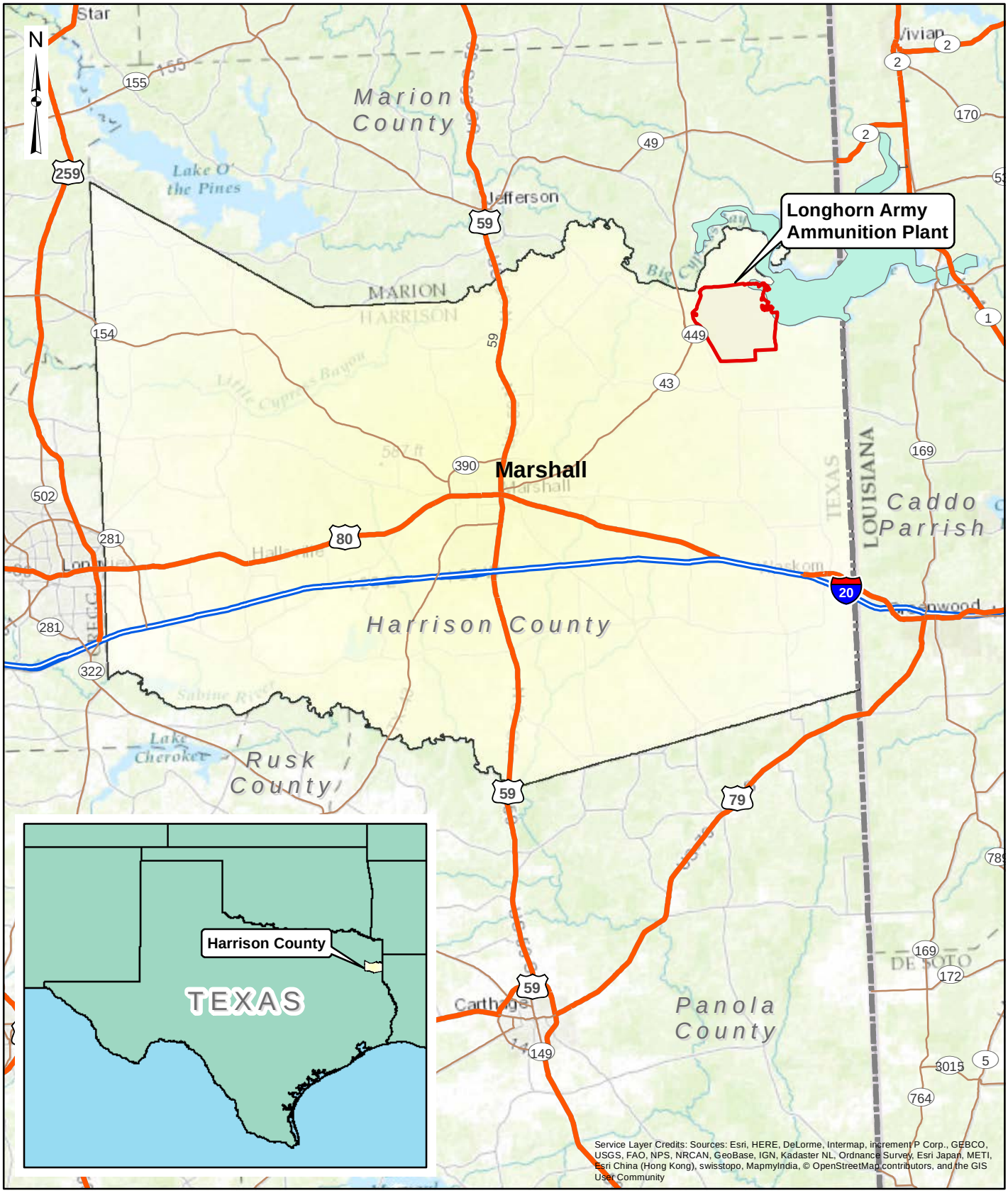

0 3.5 7 14 Miles

AECOM

Figure 1-1
LHAAP Location
LHAAP-16 Remedial Design

Longhorn Army Ammunition Plant
Karnack, Texas

60256135 January 2017

L:\AGEIGIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-16\RAWP\Fig 1-1 LHAAP Location.mxd

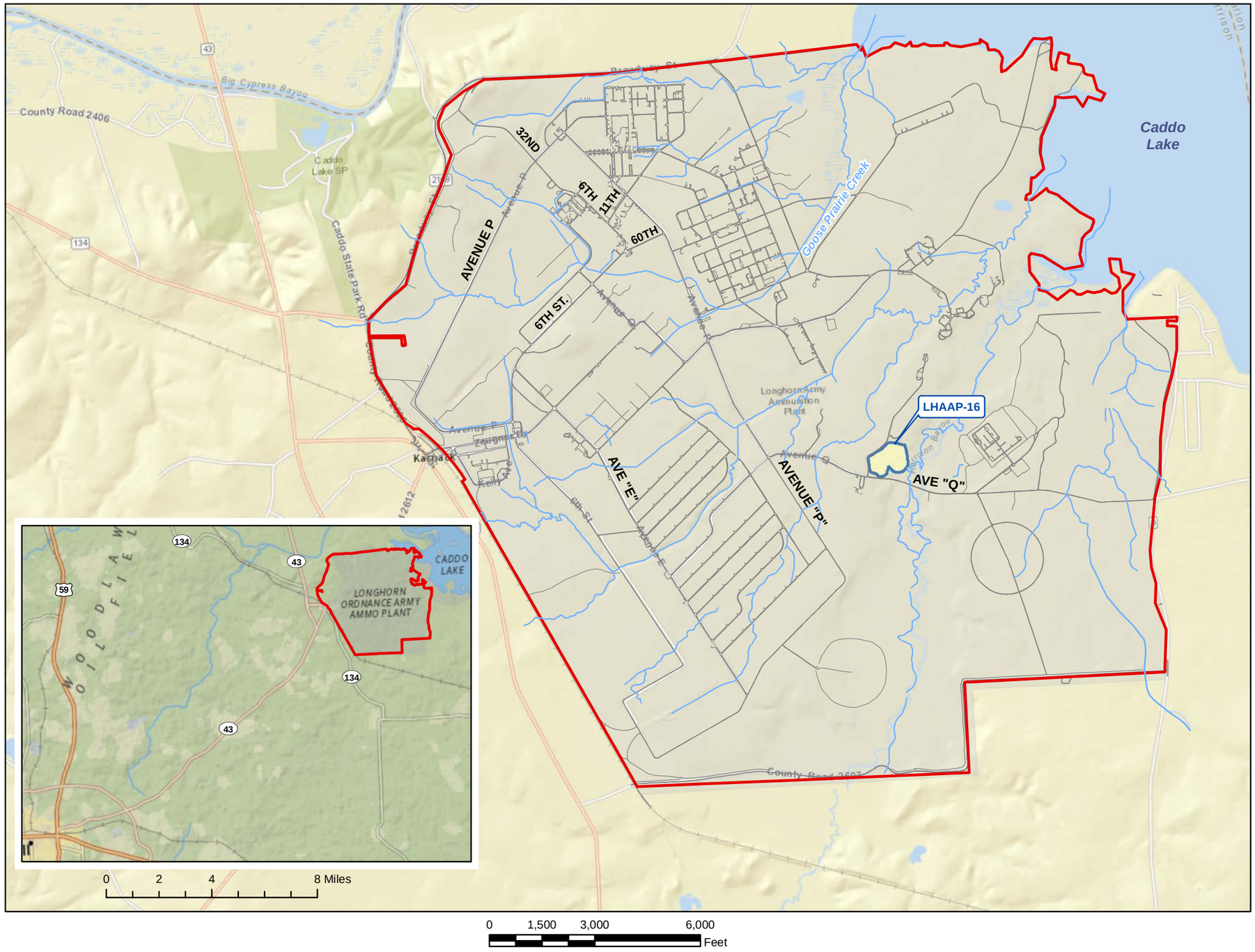

AECOM

Figure 1-2
Site Location Map
LHAAP-16 Remedial Design
Longhorn Army Ammunition Plant
Karnack, Texas

60256135

January 2017

Document Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-16\RAWP\Fig 1-2 LHAAP-16 Site Location Map.mxd

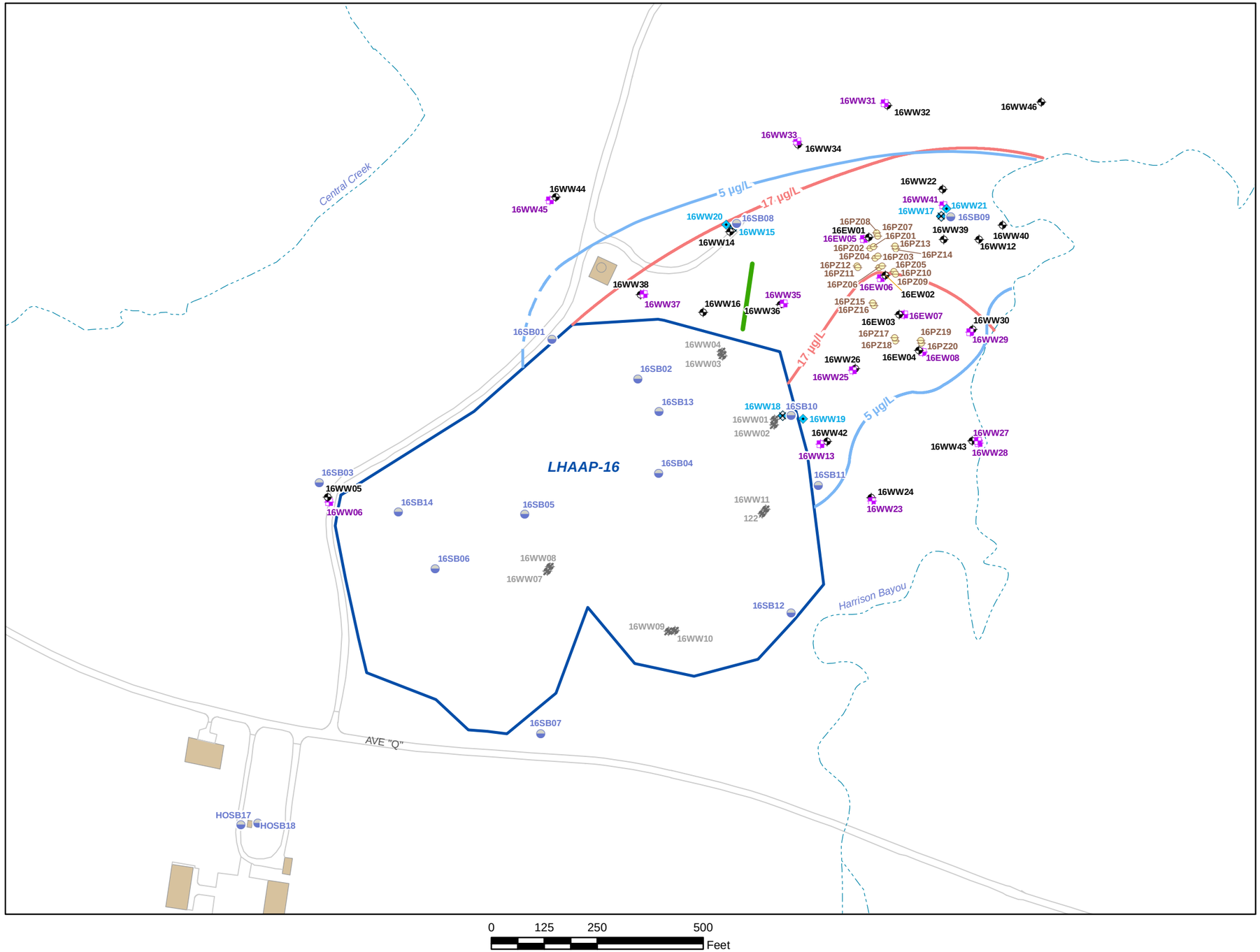

Legend

- Existing Shallow Monitoring Well
- Existing Intermediate Monitoring Well
- Existing Upper Deep Monitoring Well
- Existing Lower Deep Monitoring Well
- Piezometer
- Soil Boring
- Abandoned or Plugged Well
- Extent of Perchlorate Contamination > 17 ug/L in Intermediate and Shallow Zones (May 2013)
- Extent of TCE Contamination > 5 ug/L in Intermediate and Shallow Zones (Dashed Where Inferred) (May 2013)
- Location of Semi-Passive Biobarrier Demonstration (February 2004 through June 2006 [ESTCP 2009]).
- Road
- Stream
- LHAAP-16 Landfill Fence

AECOM

Figure 1-3
LHAAP-16 Site Plan
LHAAP-16 Remedial Design
Longhorn Army Ammunition Plant
Karnack, Texas

60256135

January 2017

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-16\RAWP\Fig 1-3 LHAAP-16 Site Plan.mxd

Table 1-1: Groundwater and Surface Water Cleanup Levels

Chemical of Concern	Cleanup Level (µg/L)
	MCL
Trichloroethene	5
cis-1,2-Dichloroethene	70
1,1-Dichloroethene	7
1,2-Dichloroethane	5
Vinyl Chloride	2
1,1,2-Trichloroethane	5
Methylene Chloride	5
Chromium	100
Arsenic	10
Thallium	2
	TRRP Tier 1 Groundwater Residential PCLs
Nickel	490
Perchlorate	17
Manganese	1,100*

Notes and Abbreviations:

All values are in micrograms per liter (µg/L).

MCL maximum contaminant level

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

* 95% UTL value from Final Evaluation of Perimeter Well Data for Use as Groundwater Background (Shaw, 2007) for Manganese is 7,820 µg/L, which is above the TRRP Tier 1 Groundwater Residential PCL thus the background value will be considered the Cleanup Level for Manganese

Table 1-2: Federal and State ARARs – LHAAP-16 Remedial Action*

Description of ARARs for Final Selected Remedy

Citation	Activity or Prerequisite/Status	Requirement
Groundwater		
Federal Safe Drinking Water Act Maximum Contaminant Levels (MCLs) 40 CFR 141	Applicable to drinking water for a public water system—**relevant and appropriate** for water that could potentially be used for human consumption	Must not exceed MCLs/non-zero MCLGs for water designated as a current or potential source of drinking water. See Table 2-7 for specific numeric criteria
Surface Water		
State of Texas Surface Water Quality Standards: General Criteria and Toxic Materials Criteria 30 TAC 307.4 30 TAC 307.6	Applicable to surface waters of the state - **applicable** if water is discharged to a surface water body or surface waters are remediated as part of the remedial action.	Discharges to waters of the state must not cause in-stream exceedance of numeric and narrative water quality standards. Remediation of contaminated surface waters must ensure that numeric and narrative water quality standards are achieved, as determined by 307.8 (Application of the Standards) and Section 307.9 (Determination of Standards Attainment). See Table 2-7 for specific numeric criteria.
State of Texas Surface Water Quality Standards: Antidegradation 30TAC 307.5	Applicable to surface waters of the state – **applicable** if water is discharged directly to a surface water body or surface waters are remediated as part of the remedial action.	No activity subject to regulatory action that would cause degradation of waters that exceed fishable/swimmable quality will be allowed. Degradation is defined as a lowering of water quality by more than a de minimis extent but not to the extent than an existing use is impaired. Water quality sufficient to protect existing uses will be maintained. The highest water quality sustained since November 28, 1975, defines baseline conditions for determination of degradation.
General Site Preparation, Construction, and Excavation Activities		
Air Contaminants – General Nuisance Rules 30 TAC 101.4	Emissions of air contaminants—**applicable**.	No person shall discharge from any source whatsoever one or more air contaminants or combinations thereof, to exceed an opacity of 30 percent for any 6-minute period as are or may tend to be injurious to or to adversely affect human health or welfare, animal life, vegetation, or property, or as to interfere with the normal use and enjoyment of animal life, vegetation, or property.
Storm Water Runoff Controls 40 CFR 122.26; 30 TAC 205, Subchapter A; 30 TAC 308.121	Storm water discharges associated with construction activities—**applicable** to disturbances of equal to or greater than 1 acre of land.	Good construction management techniques, phasing of construction projects, minimal clearing, and sediment, erosion, structural, and vegetative controls shall be implemented to mitigate storm water run-on/runoff in areas of active remediation.
Waste Management		
Characterization of Solid Waste 40 CFR 262.11 30 TAC 335.62 30 TAC 335.504 30 TAC 335.503(a)(4)	Generation of solid waste, as defined in 30 TAC 335.1—**applicable**.	Must determine whether the generated solid waste is RCRA hazardous waste by using prescribed testing methods or applying generator knowledge based on information regarding material or process used. If the waste is determined to be hazardous, it must be managed in accordance with 40 CFR 262–268. After making the hazardous waste determination as required, if the waste is determined to be nonhazardous, the generator shall then classify the waste as Class 1, Class 2, or Class 3 (as defined in Section 335.505 through Section 335.507) using one or more of the methods listed in Section 335.503(a)(4) and Section 335.508 and manage the waste in accordance with the requirements of Chapter 335 of the TAC for industrial solid waste.

Table 1-2: Federal and State ARARs – LHAAP-16 Remedial Action*

Citation	Activity or Prerequisite/Status	Requirement
Characterization of Hazardous Waste 40 CFR 268.7 30 TAC 335.504(3) 30 TAC 335.509 30 TAC 335.511	Generation of a RCRA hazardous waste for treatment, storage, or disposal—**applicable** if hazardous waste is generated (e.g., personal protective equipment [PPE]).	Must obtain a detailed chemical and physical analysis of a representative sample of the waste(s) that at a minimum contains all the information that must be known to treat, store, or dispose of the waste in accordance with 40 CFR 264 and 268. Must also determine whether the waste is restricted from land disposal under 40 CFR 268 et seq. by testing in accordance with prescribed methods or use of generator knowledge of waste.
Requirements for Temporary Storage of Hazardous Waste in Accumulation Areas 40 CFR 262.34(a) and (c)(1) 30 TAC 335.69(a) and (d)	On-site accumulation of 55 gallons or less of RCRA hazardous waste for 90 days or less at or near the point of generation—**applicable** if hazardous waste is generated (e.g., PPE) and stored in an accumulation area.	Remedial activities derived waste (from monitoring, intercepting and treating contaminated groundwater) is expected for this facility. A generator may accumulate hazardous waste at the facility provided that • Waste is placed in containers that comply with 40 CFR 264.171 to 264.173 (Subpart I); and • Container is marked with the words "hazardous waste"; or • Container may be marked with other words that identify the contents.
Well Construction		
Well Construction Standards—Monitoring or Injection Wells 16 TAC 76.1000	Construction of water wells—**applicable** to construction of new monitoring or injection wells, if needed.	Injection wells shall be completed in accordance with the technical requirements of Section 76.1000, as appropriate. Substantive requirements applicable to the injection wells will be adhered to.
Class V Injection Wells 30 TAC 331, Subchapters A,C and H	Installation, operation, and closure of injection wells fall in the category of Class V Injection Wells – **relevant and appropriate**.	Injection wells shall be constructed to the required specifications for isolation casing, surface completion, prevention of commingling, and confinement of undesirable groundwater to its zone of origin. Closure shall be accomplished by removing all of the removable casing and the entire well shall be pressure filled via a tremie pipe with cement from bottom to the land surface, or closure shall be performed by the alternative method for Class V Wells completed in zones of undesirable groundwater. Groundwater concentrations at time of well closure will determine the appropriate method of abandonment. Substantive requirements applicable to the injection wells will be adhered to.
Treatment/Disposal		
Disposal of Wastewater (e.g., contaminated groundwater, dewatering fluids, decontamination liquids) 40 CFR 268.1(c)(4)(i) 30 TAC 335.431(c)	RCRA-restricted characteristically hazardous waste intended for disposal—**applicable** if extracted groundwater or rinsate from incinerator is determined to be RCRA characteristically hazardous.	Disposal is not prohibited if such wastes are managed in a treatment system subject to regulation under Section 402 of the CWA that subsequently discharges to waters of the United States.

Table 1-2: Federal and State ARARs – LHAAP-16 Remedial Action*

Citation	Activity or Prerequisite/Status	Requirement
Closure		
Standards for Plugging Wells that Penetrate Undesirable Water or Constituent Zones 16 TAC 76.1004(a) through (c)	Plugging and abandonment of wells—**applicable** to plugging and closure of monitoring and/or extraction wells.	If a well is abandoned, all removable casing shall be removed and the entire well pressure filled via a tremie pipe with cement from bottom up to the land surface. In lieu of this procedure, the well shall be pressure-filled via a tremie tube with bentonite grout of a minimum 9.1 lb/gal weight followed by a cement plug extending from land surface to a depth of not less than 2 feet. Undesirable water or constituents or the freshwater zone(s) shall be isolated with cement plugs.
Post Closure Care		
Post Closure Care Requirements for Hazardous Waste Landfills 40 CFR 264.310(b)(1)(4)(5)(6) 40 CFR 264.228(b)(1)(3)(4) 30 TAC 335.174(b) 40 CFR 264.117 - 264.120	Closure of a RCRA landfill – **relevant and appropriate** to closure or post closure under CERCLA of landfills containing RCRA hazardous waste	Owner or operator must • Maintain the effectiveness and integrity of the final cover including making repairs to the cap as necessary to correct effects of settling, erosion, etc.; • Prevent run-on and runoff from eroding or otherwise damaging final cover; and • Maintain and monitor a groundwater monitoring system.

Abbreviations:

CFR	Code of Federal Regulations
PPE	personal protective equipment
RCRA	Resource Conservation and Recovery Act of 1976
TAC	Texas Administrative Code

* Source: Final Record of Decision, LHAAP-16 Landfill, Longhorn Army Ammunition Plant, Karnack, TX (U.S. Army 2016).

2 SITE CHARACTERISTICS

This section presents a summary of site characteristics for LHAAP-16 primarily based on the following historical documents: (1) Final ROD (U.S. Army 2016), (2) Addendum to Final Feasibility Study (Shaw 2010), (3) Feasibility Study Report (Jacobs 2002), and (4) Remedial Investigation Report (Jacobs 2000).

LHAAP-16 encompasses an area of approximately 20 acres. Harrison Bayou runs along the northeastern edge of LHAAP-16. Most of LHAAP-16 is relatively flat. The outer edges of the site are forested, and the land becomes steeper near Harrison Bayou. The capped landfill is vegetated.

Surface drainage from LHAAP-16 flows mostly through small gullies and ditches to Harrison Bayou. Harrison Bayou flows into Caddo Lake, to the northeast of the site. The eastern and southeastern edges of LHAAP-16 are located within the 100-year floodplain of Harrison Bayou. LHAAP-16 has no known areas of archeological or historical importance.

2.1 Geology and Hydrogeology

The surface soil at LHAAP-16 consists of fine sandy loam. The subsurface is composed of medium plastic sandy silt, fine sands, and clay. The clay layers tend to separate the groundwater into shallow, intermediate, upper deep and deep zones.

The shallow groundwater zone varies in thickness from 9 to 18 feet and extends 33 feet below ground surface (bgs). **Figure 2-1** presents shallow groundwater elevation contours based on the last comprehensive groundwater elevations measured at the Site in June 2016. Depth to groundwater in the shallow zone is approximately 4 feet to 25 feet bgs. In general, the shallower groundwater depths (approximately 4 feet bgs) are encountered near the locations of monitoring wells 16WW42 and 16WW24; and the deeper groundwater depths (approximately 25 feet bgs) are encountered near the locations of piezometers 16PZ02 and 16PZ08 (see **Figure 2-1**).

An intermediate groundwater zone containing fewer fines than the shallow zone extends from 35 to 62 feet bgs. **Figure 2-2** presents intermediate groundwater elevation contours based on the last comprehensive groundwater elevations measured at the Site in June 2016. The upper deep groundwater zone extends from approximately 80 to 151 feet bgs. The lower deep groundwater zone extends below 220 feet bgs. While flow is primarily horizontal in these zones, vertical interaction between the shallow and intermediate zones is evidenced by pumping test results as well as the presence of contamination in both zones. Such interconnection is consistent with soil layers formed in fluvial depositional environments.

The groundwater flow direction is northeast toward Harrison Bayou in the shallow, intermediate and deep zones, while flow direction is southeast toward Harrison Bayou in the upper deep groundwater zone. Overall, the groundwater flow is toward Caddo Lake. The mean hydraulic conductivity value varies from 1.5×10^{-3} centimeters per second (cm/sec) in the Shallow Zone to 4.2×10^{-4} cm/sec in the Deep Zone (Jacobs 2002). Groundwater flow between the landfill and Harrison Bayou is also influenced by the presence of an extraction well system consisting of four wells in the shallow groundwater zone and four wells in the intermediate groundwater zone. The wells were installed in 1996 and 1997 as part of a treatability study.

2.2 Current and Future Land Use

LHAAP has been an industrial facility since 1942. Production activities and associated waste management activities continued until the facility was determined to be in excess of the U.S. Army's needs in 1997. The plant area has been relatively dormant since that time. LHAAP is surrounded by a fence (except on the border with Caddo Lake), and current access measures at the LHAAP preclude unlimited public access to areas within the fence. The fence now represents the National Wildlife Refuge boundary. Approved access for hunters is limited.

The reasonably anticipated future use of LHAAP-16 is as part of a national wildlife refuge. This anticipated future use is based on a Memorandum of Agreement (MOA) (U.S. Army 2004) between the United States Fish and Wildlife Service (USFWS) and the U.S. Army. That MOA documents the transfer process of the LHAAP acreage to USFWS to become the Caddo Lake National Wildlife Refuge and will be used to facilitate a future transfer of LHAAP-16. Presently the Caddo Lake National Wildlife Refuge occupies approximately 7,200 acres of the 8,416-acre former installation. In accordance with the National Wildlife Refuge System Administration Act of 1966 and its amendments (16 USC 668dd), the land will remain as a national wildlife refuge unless there is a change brought about by an act of Congress, or the land is part of an exchange authorized by the Secretary of the Interior.

2.3 Current and Future Surface Water Uses

Harrison Bayou, which is located on and adjacent to LHAAP, currently supports wildlife and aquatic life. Humans may have limited access to parts of Harrison Bayou during animal hunts, but there is no routine use of Harrison Bayou located at LHAAP. Harrison Bayou does not carry adequate numbers and size of fish to support either sport or subsistence fishing. During the summer months, Harrison Bayou ceases flowing and/or dries up. The eastern portion of the LHAAP-16 is located within Harrison Bayou's 100-year flood-plain. When flowing, Harrison Bayou discharges into Caddo Lake, a large recreational lake covering 51 square miles with a mean depth of 6 feet. The watershed of the lake encompasses approximately 2,700 square miles. Caddo Lake is used extensively for fishing and boating. The lake is also a source of drinking water for several neighboring communities in Louisiana including Vivian, Oil City, Mooringsport, South Shore, Blanchard, Shreveport, and Bossier City. The anticipated future uses of surface water are the same as the current uses (U.S. Army 2016).

2.4 Current and Future Groundwater Uses

Groundwater in the drinking water aquifer (250-430 feet bgs) is currently used as a drinking water source in areas outside the former installation boundary. The drinking water aquifer should not be confused with the deep zone groundwater. The deep zone groundwater, a term used in LHAAP environmental documents, and the drinking water aquifer are distinct from each other and there is no connectivity between the contaminated zone and the drinking water aquifer (U.S. Army 2016).

As of May 2015, six active water supply wells near the LHAAP were identified (**Figure 2-3**). All of the six wells are located greater than 2 miles from LHAAP-16. Karnack Water Supply Corporation operates two groundwater supply wells servicing the town of Karnack that are greater than two miles from the LHAAP-16 site. These wells were completed in 1905 to depths of 287 and 285 feet bgs and are located hydraulically upgradient approximately one-quarter mile

northwest and one-half mile southwest of the town center, respectively. Caddo Lake Water Supply Corporation operates three groundwater supply wells located north and northwest of LHAAP that have been in use since 1905. These wells are hydraulically upgradient of LHAAP (Jacobs, 2002) with completion depths of 244, 185 and 310 feet below ground surface. These wells are also greater than two miles from the LHAAP-16 site. Caddo Lake State Park operates one groundwater supply well located approximately 1.6 miles northwest, upgradient of LHAAP. This well was installed in 1905 with a total depth of 292 feet. Due to the large distance between these wells and LHAAP, water removal from these wells is not expected to affect groundwater flow at the site. In addition, there are several livestock and domestic wells located in the vicinity of LHAAP with depths averaging 250 ft (**Figure 2-3**). There are three water supply wells located within LHAAP (see **Figure 2-3**) upgradient of LHAAP-16. These water wells supply water to buildings currently in use on the installation. Their approximate locations and depths are as follows:

- 150 ft south-southeast of the fire station approximately 1.7 miles from LHAAP-16; 128 ft deep
- ½ mile southwest of the fire station approximately 1.6 miles from LHAAP-16; 195 ft deep
- At the U.S. Fish and Wildlife Service facility approximately 2.1 miles from LHAAP-16; 220 ft deep

None of these wells are close to LHAAP-16, and none of these wells are used for drinking water. Two additional wells that had previously supplied water to the installation have been plugged and abandoned. None of the water supply wells are associated with or are in imminent danger from the localized contaminated groundwater at LHAAP-16. The water well search report (Banks Environmental Data, 2015).is presented in the Final Updated PSI for LHAAP-18/24 (AECOM, 2016).

Although the anticipated future use of the facility as a national wildlife refuge does not include the use of the groundwater at LHAAP-16 as a drinking water source, the State of Texas designates all groundwater as potential drinking water, unless otherwise classified, and consistent with 30 TAC 335.563(h)(1). To be conservative, a hypothetical industrial use scenario was evaluated for risk assessment summarized in the Final ROD (U. S. Army 2016). The future industrial scenario for LHAAP assumes limited use of groundwater as a drinking water source. At the current time, the wild life refuge uses public water supply for their drinking purposes.

2.5 Nature and Extent of Contamination

The contaminated media at LHAAP-16 include buried source material (landfill waste under the cap) and the shallow and intermediate groundwater beneath and downgradient of the landfill. A presumptive remedy (interim remedial action [IRA]) was implemented in 1996 through 1998, which included placement of a multilayer cap at LHAAP-16 mitigating potential risks posed by buried landfill waste. The cap prevents rainfall from infiltrating and leaching contaminants from principal threat wastes within the landfill. However, groundwater in contact with the buried waste material still provides a mechanism for transportation of COCs away from the landfill (Jacobs 2000). A groundwater extraction system was installed as a treatability study to prevent the groundwater plume from migrating to Harrison Bayou.

The groundwater COCs for LHAAP-16 identified in the Final ROD (U.S. Army 2016) include chlorinated volatile organic compounds (VOCs) (trichloroethene [TCE]; cis-1,2-dichloroethene [DCE]; 1,1-DCE; 1,2-dichloroethane [DCA]; vinyl chloride [VC]; 1,1,2-trichloroethane [TCA]; methylene chloride), perchlorate, and metals (arsenic, chromium, manganese, nickel and thallium) in the shallow and/or intermediate groundwater. **Figures 2-4 through 2-7** present the isoconcentration contours for major VOCs, and perchlorate, in Shallow Zone and Intermediate Zone groundwater based on the last comprehensive round of groundwater sampling conducted in May 2013.

Five metals (arsenic, chromium, manganese, nickel and thallium) had sporadic elevated detections and were retained as COCs in the Final ROD. The detected metals do not appear to be associated with widespread contamination from the landfill.

Data collected from the upper deep groundwater zone from 1998 until 2008 indicate that no COCs were reported at concentrations exceeding their respective cleanup levels (**Table 1-1**). In addition, the data collected from deep groundwater from 1997 until 2004 indicate that no COCs were reported at concentrations exceeding their respective cleanup levels (Shaw 2010).

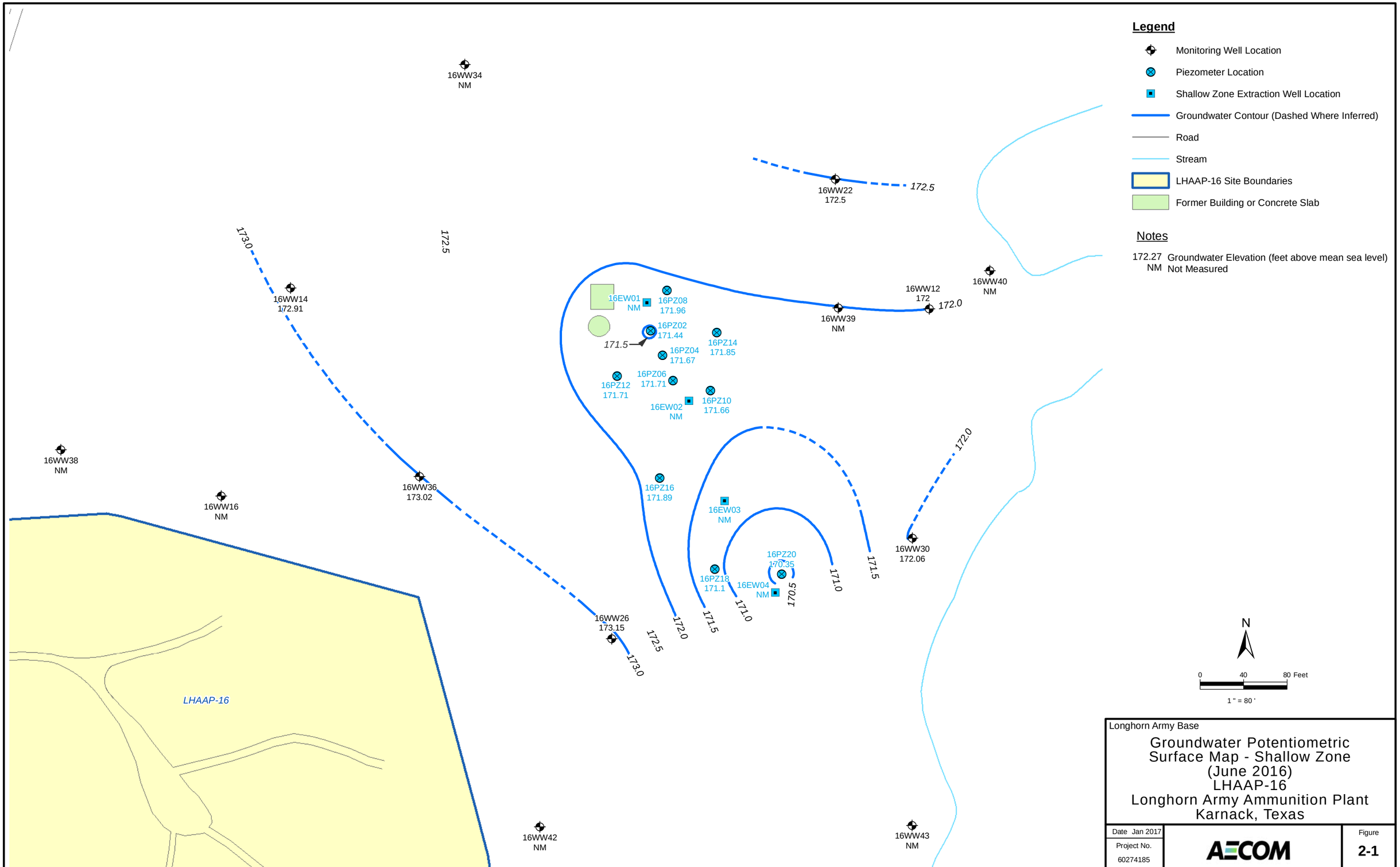

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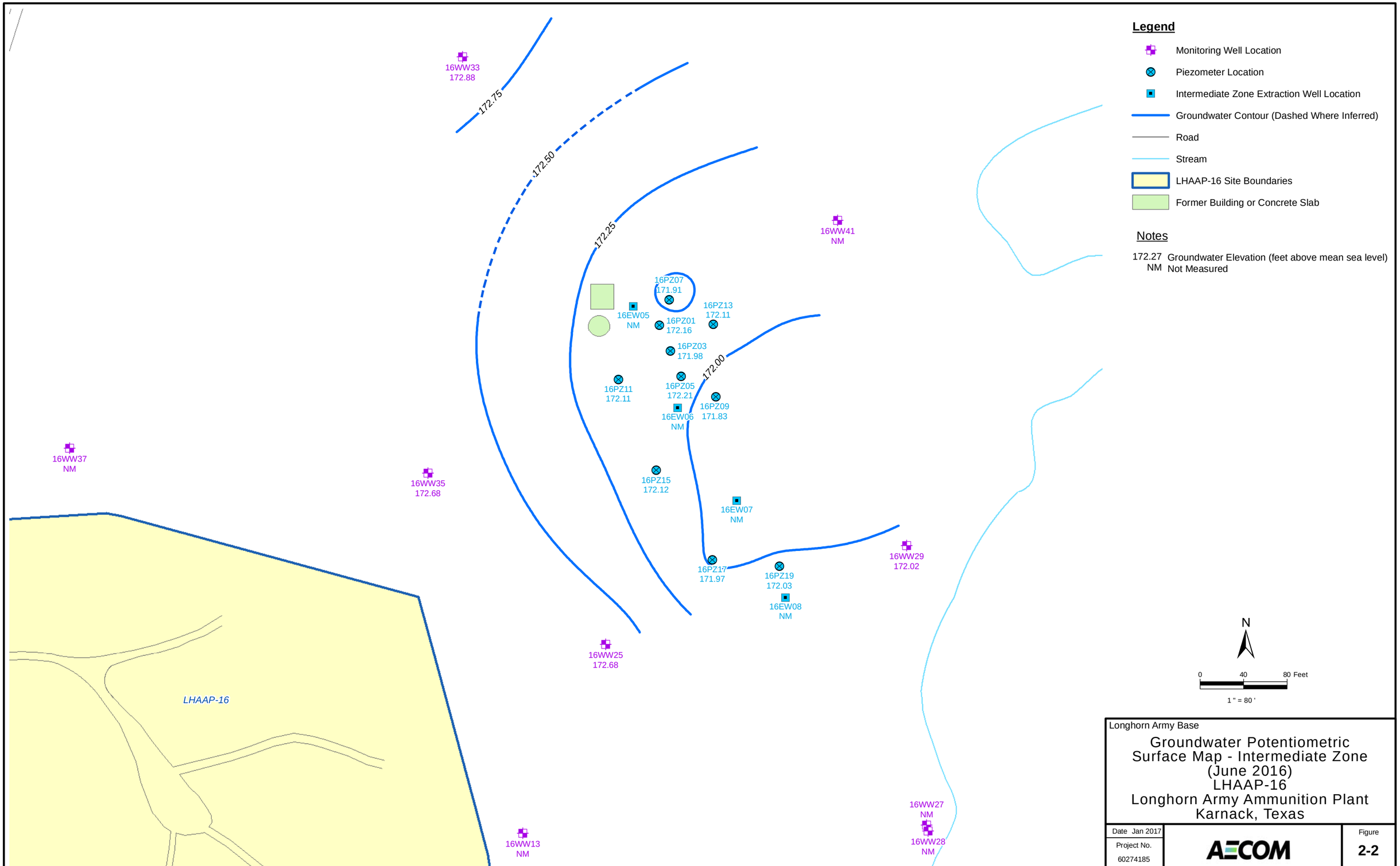

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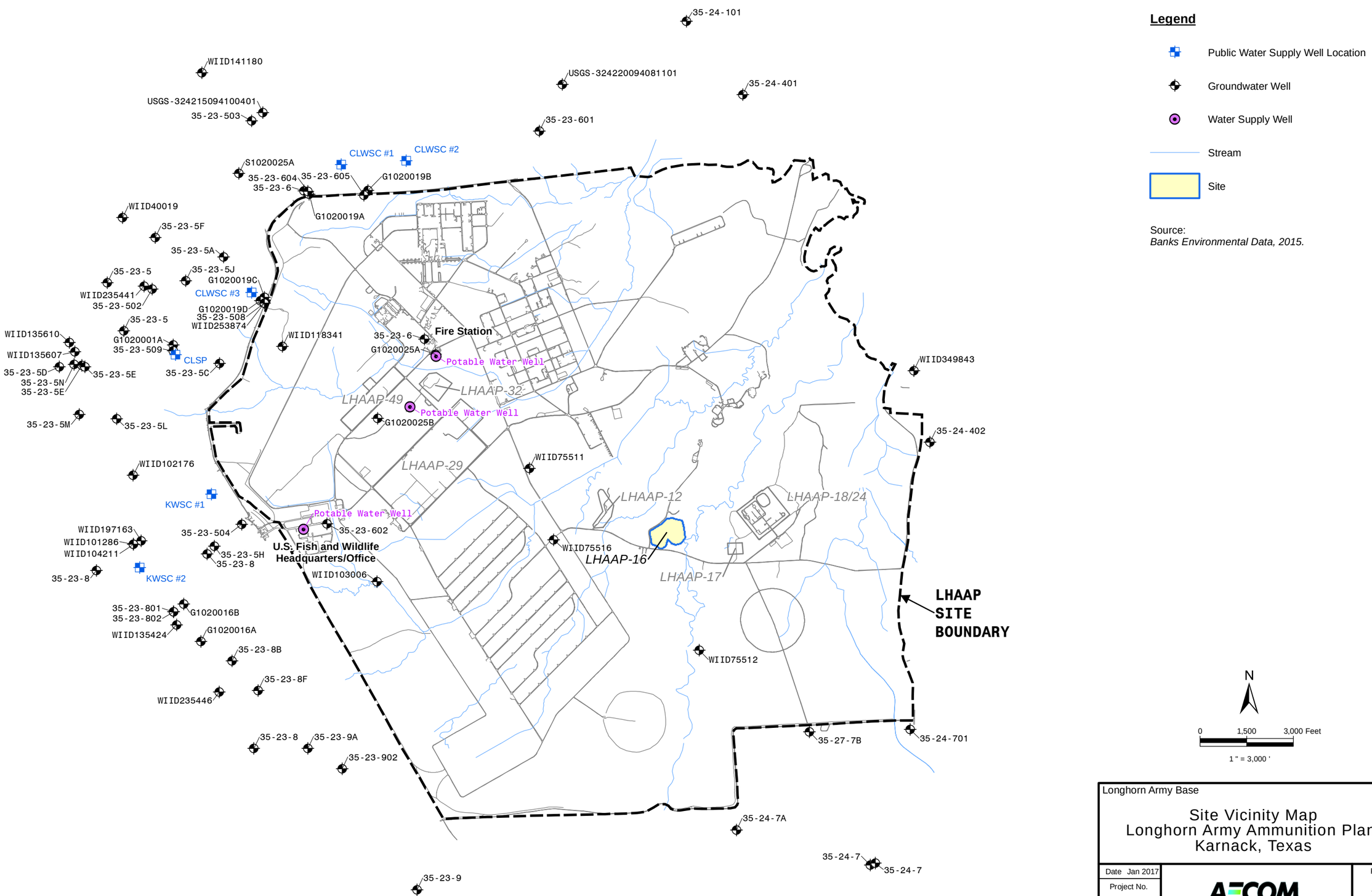

Longhorn Army Base

Site Vicinity Map
Longhorn Army Ammunition Plant
Karnack, Texas

Date Jan 2017	AECOM	Figure
Project No. 60263702		2-3

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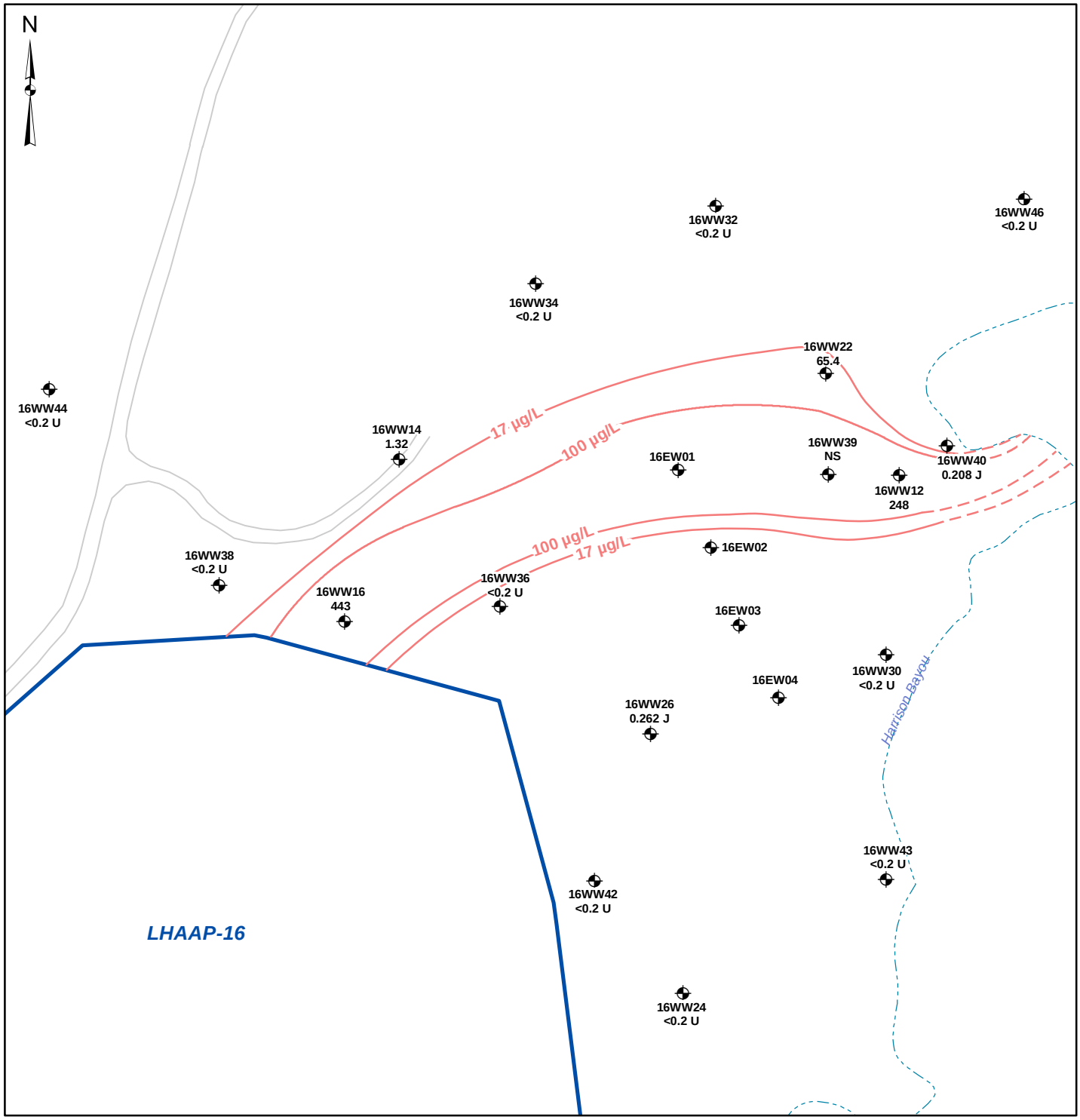

Legend

- Shallow Monitoring Well
- Perchlorate Concentration Contour (Dashed Where Inferred)
- Stream
- Road
- LHAAP-16 Landfill Fence

Notes:
Results are in micrograms per liter (µg/L)
TRRP Residential PCL for Perchlorate = 17 µg/L.
J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
U - Undetected: The analyte was analyzed for, but not detected.
NS - Not Sampled

0 85 170 340 Feet

AECOM

Figure 2-4
Perchlorate Concentrations in Groundwater
Shallow Zone - May 2013
LHAAP-16 Remedial Design
Longhorn Army Ammunition Plant
Karnack, Texas

60256135

January 2017

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-16\RAWP\Fig 2-4 LHAAP-16 Perchlorate in Shallow Zone May 2013.mxd

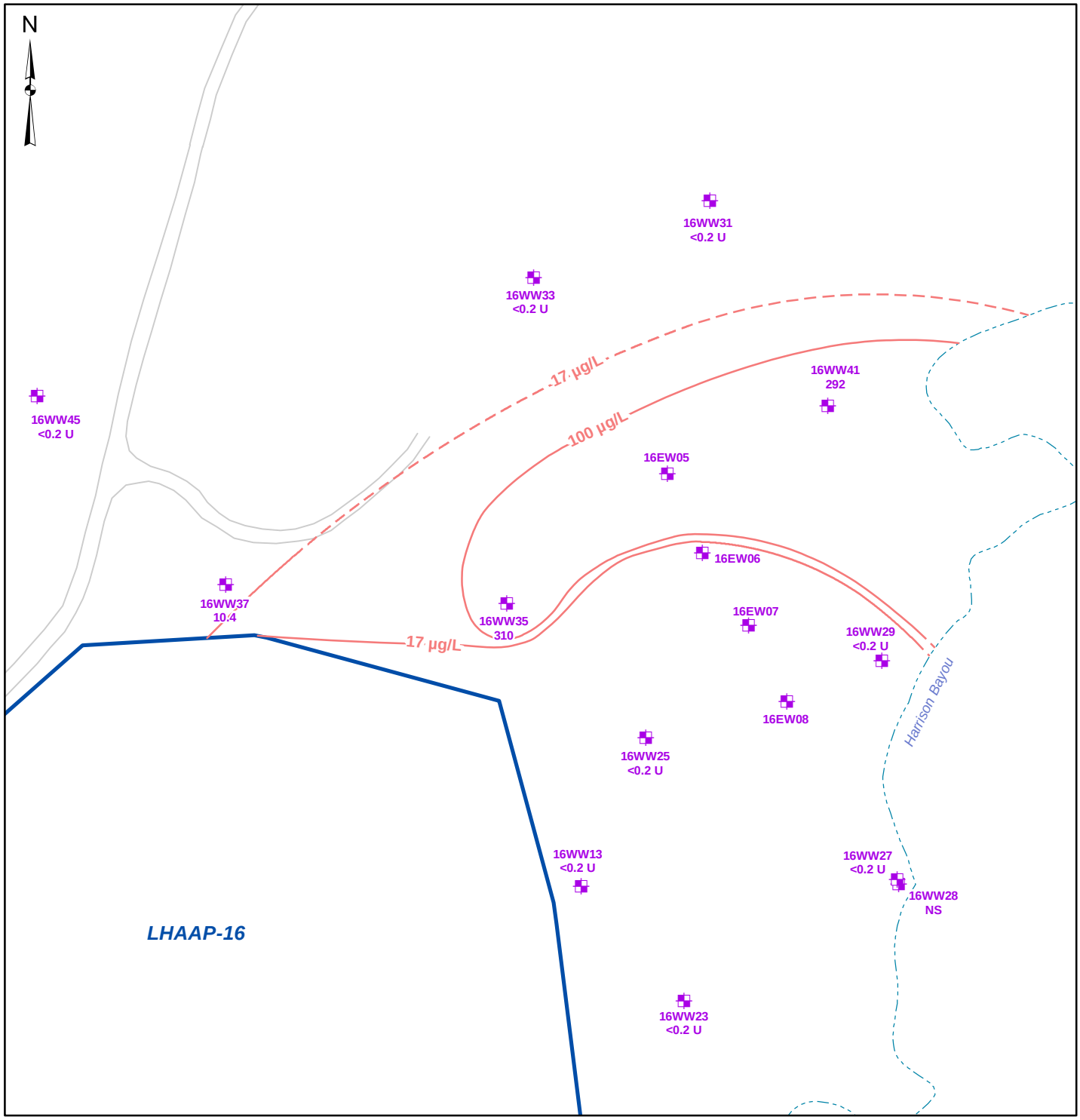

Legend

- Intermediate Monitoring Well
- Perchlorate Concentration Contour (Dashed Where Inferred)
- Stream
- Road
- LHAAP-16 Landfill Fence

Notes:
Results are in micrograms per liter (µg/L)
TRRP Residential PCL for Perchlorate = 17 µg/L.
J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
U - Undetected: The analyte was analyzed for, but not detected.
NS - Not Sampled

0 85 170 340 Feet

AECOM

Figure 2-5
Perchlorate Concentrations in Groundwater
Intermediate Zone - May 2013
LHAAP-16 Remedial Design
Longhorn Army Ammunition Plant
Karnack, Texas

60256135

January 2017

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-16\RAWP\Fig 2-5 LHAAP-16 Perchlorate in Intermediate Zone May 2013.mxd

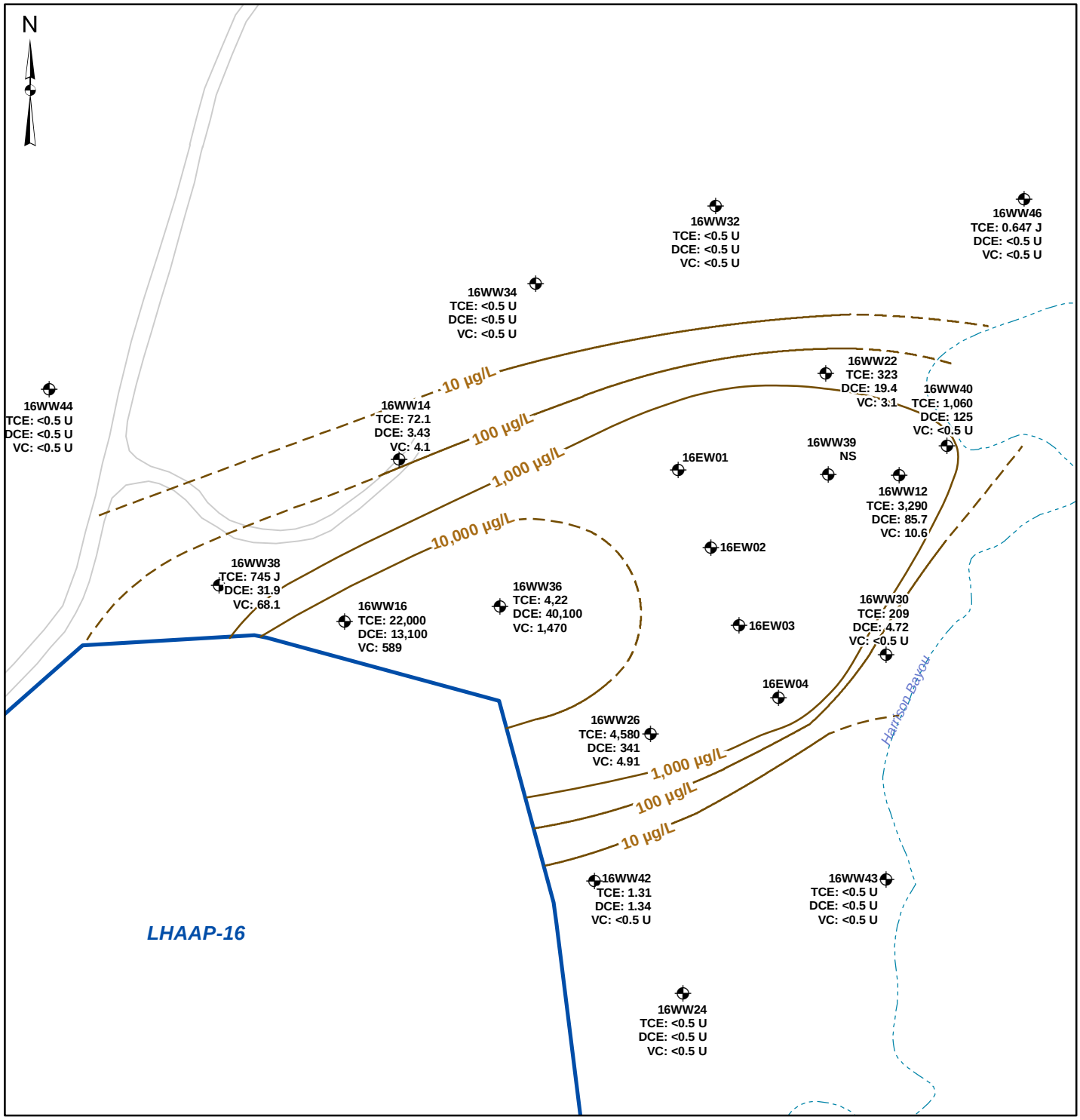

Legend

- Shallow Monitoring Well
- TCE Concentration Contour (Dashed Where Inferred)
- Stream
- Road
- LHAAP-16 Landfill Fence

Notes:
Results are in micrograms per liter (µg/L)
DCE - cis-1,2-Dichloroethene
U - Undetected: The analyte was analyzed for, but not detected.
J - Estimated Value
NS - Not Sampled
TCE - Trichloroethene
VC - Vinyl Chloride
VOC - Volatile Organic Compound

0 85 170 340 Feet

AECOM

Figure 2-6
VOCs in Groundwater
Shallow Zone - May 2013
LHAAP-16 Remedial Design
Longhorn Army Ammunition Plant
Karnack, Texas

60256135

January 2017

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-16\RAWP\Fig 2-6 LHAAP-16 VOCs in Shallow Zone May 2013.mxd

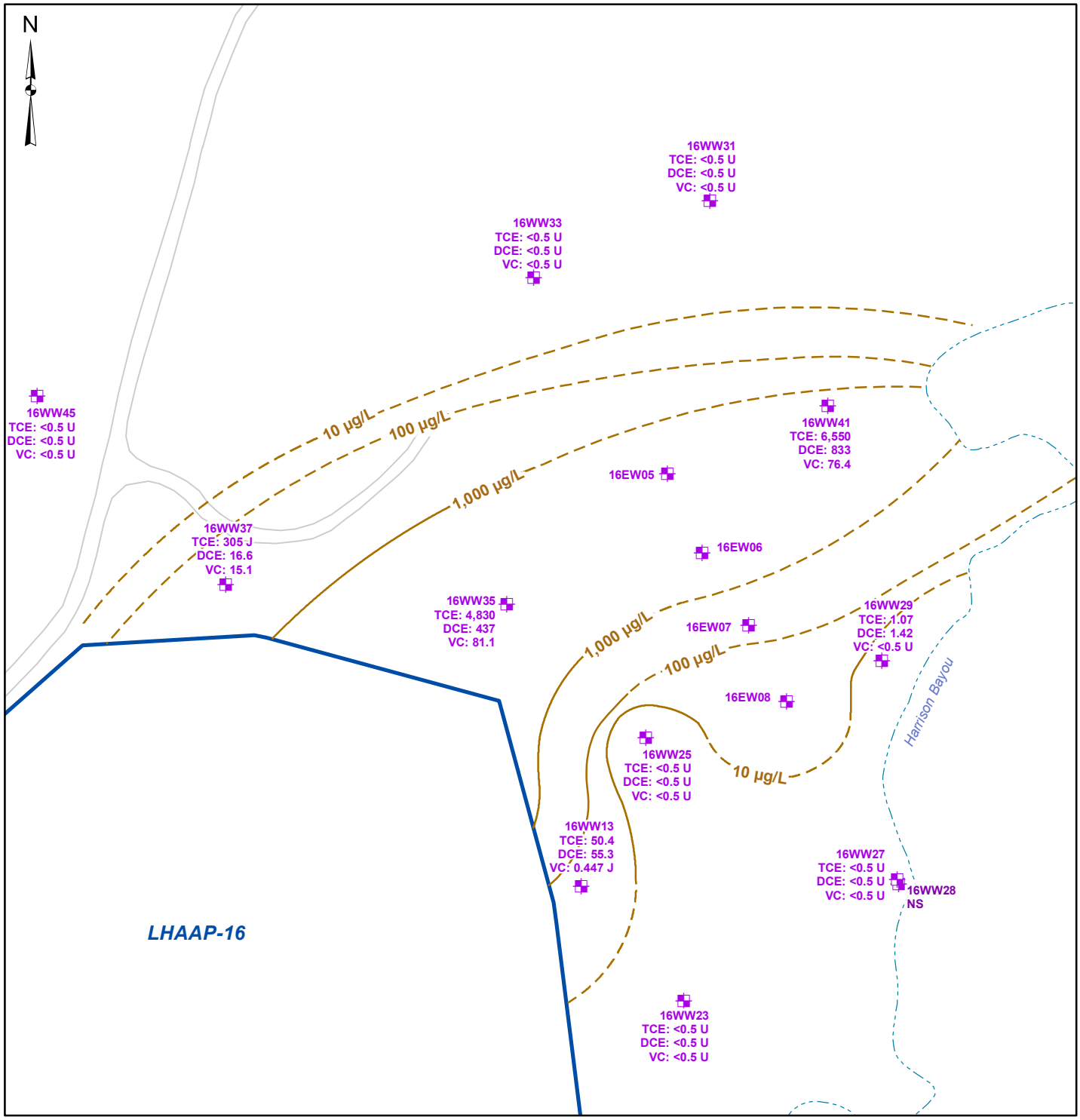

Legend

- Intermediate Monitoring Well
- TCE Concentration Contour (Dashed Where Inferred)
- Stream
- Road
- LHAAP-16 Landfill Fence

Notes:
Results are in micrograms per liter (µg/L)
DCE - cis-1,2-Dichloroethene
U - Undetected: The analyte was analyzed for, but not detected.
J - Estimated Value
NS - Not Sampled
TCE - Trichloroethene
VC - Vinyl Chloride
VOC - Volatile Organic Compound

0 85 170 340 Feet

AECOM

Figure 2-7
VOCs in Groundwater
Intermediate Zone - May 2013
LHAAP-16 Remedial Design
Longhorn Army Ammunition Plant
Karnack, Texas

60256135

January 2017

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3 OPERATION AND MAINTENANCE PROCEDURES

Some components of the final remedy at LHAAP-16 require operation and maintenance (O&M) and those O&M activities are described in this section, along with other routine maintenance activities. The remedy components that require O&M are: maintenance of the existing landfill cap, which includes signage; and maintenance of the current or future groundwater monitoring system (this would include all wells that serve some purpose, including bioremediation, MNA, background, water levels, and cap performance). Other routine maintenance activities include maintenance and repair of site access features, such as roads, gates, and fencing, as needed. These activities will be conducted annually unless recommended otherwise during a five-year review.

3.1 Maintenance of the Existing Landfill Cap

As discussed previously, a multilayer cap was constructed at LHAAP-16 landfill from 1996 through 1998 as part of an early IRA (under CERCLA) in accordance with the interim ROD signed in 1995. Per the 1995 IRA ROD and 2016 Final ROD, this cap includes the following layers: foundation soil layer, sodium bentonite geocomposite liner, geomembrane, 18-inch fill soil layer, 6-inch top soil, and perimeter berms and drainage swales (see **Figure 3-1**).

Per the selected remedy documented in the 2016 Final ROD, the existing cap will continue to be monitored, maintained, and repaired, as necessary, to preserve its long-term effectiveness. This includes inspection of the landfill cap to check for erosion, settlement, and deep-rooted vegetation, and implementation of necessary repairs. Per the 1995 IRA ROD and 2016 Final ROD, the substantive post-closure requirements at 40 CFR Sections 264.228 (b)(1), (3), and (4); 264.310 (b); and 30 TAC 335.174 are ARARs for landfill cap maintenance and monitoring. The substantive requirements of these post-closure ARARs relevant to LHAAP-16 include the following:

- Maintain the integrity and effectiveness of the final cover, including making repairs to the cap as necessary to correct the effects of settling, subsidence, erosion, or other events (e.g. deep-rooted vegetation and burrowing animals).
- Maintain and monitor the ground-water monitoring system.
- Prevent run-on and run-off from eroding or otherwise damaging the final cover.

In order to comply with above requirements, annual inspections will be conducted for the different components of the landfill cap. Inspections will include examining each component of the cap to determine maintenance needs. **Table 3-1** summarizes the landfill cap inspection schedule. Inspection and maintenance of the signs will be conducted as part of the landfill cap inspection and maintenance activities. The area will be checked for proper signage to ensure that required signs are posted and are legible. If missing or no longer legible, the signs will be replaced.

An RAO Inspection and Maintenance Checklist is presented in **Appendix A**.

3.1.1 Vegetative Cover Maintenance

Vegetative cover is intended to reduce erosion caused by wind or water. Vegetation will be visually inspected annually, or as needed, following major events including a seismic event greater than a magnitude of 4 on the Richter scale, wildfires, or floods that may affect the integrity of the cover system, for overall health and continuous coverage. Bare spots where the topsoil is exposed, and/or areas of the cap where vegetation is dead or stressed to the point it no longer adequately inhibit erosion will be re-seeded, as appropriate Unwanted vegetation (e.g. plants with potentially deep root systems such as trees) that have the potential to compromise the integrity of the cap will be removed.

3.1.2 Erosion and Settlement Inspection and Maintenance

The landfill cap will be inspected annually, for erosion and settlement, or as needed following major events including a seismic event greater than a magnitude of 4 on the Richter scale, wildfires, or floods that may affect the integrity of the cover system. If evidence of significant erosion, settlement, or deterioration, such as gullies, linear crevasses, washouts, rills, or settlement depressions, are observed, the need for cap repair will be evaluated. Settlement can cause cracks, differential displacement, or zones of depression that disrupt the intended flow of storm water over the cover. If repairs are determined to be needed, they will be performed to preserve the integrity of the cap and may include filling and covering the erosion and settlement features with material of similar composition to the existing topsoil. Replacement topsoil will be compacted to restore the cap to the specified grade.

3.1.3 Drainage System Inspection and Maintenance

The drainage system consisting of graded drainage swales will be visually inspected annually, or as needed, following major events including a seismic event greater than a magnitude of 4 on the Richter scale, wildfires, or floods that may affect the integrity of the cover system, for overgrown vegetation, debris and silt, and erosion of banks and slopes. Areas of the drainage system where vegetation is overgrown to the point that it interferes with drainage off the cover, or where silt and/or debris have accumulated, will be maintained by removing the overgrowth and/or accumulated sediment/debris from the drainage swale. Also, areas with bank and slope erosion will be restored by removing eroded soil, adding new soil, compacting in 6 inch lifts, and adding vegetation for slope stability. If further stabilization is required, riprap can be placed along the bank slope.

3.2 Maintenance of the Current or Future Groundwater Monitoring System

The groundwater monitoring system is comprised of a network of monitoring wells used to implement enhanced in-situ bioremediation (discussed later), monitor progress of the remedial activities, evaluate the performance of the cap, and determine the magnitude and extent of COCs. This system of wells will be inspected and maintained as part of the annual inspection and maintenance program discussed for the landfill cap. The monitoring wells will be inspected for the integrity of the pad, bollards, surface casing, and well markings, the presence and accumulation of silt in the well screen, the presence and integrity of a locking mechanism, the presence of encroaching vegetation, such as tree roots and weeds, and the presence of biological hazards, such as ant mounds and bee nests. Maintenance activities will be performed as needed

and could include replacement of the pads and well markings, resurfacing/painting the well casing and bollards, and redevelopment of the wells.

3.3 Maintenance of Site Access Features

LHAAP-16 is accessed by roads and through gates in a perimeter fence. The roads, perimeter fence and gates will be visually inspected annually, or as needed, to ensure that the roads remain accessible and the perimeter fence and gates are intact and undamaged. Maintenance will be conducted as needed.

Any fence posts that are not securely anchored in the ground and/or metallic parts that are excessively corroded, will be repaired or replaced. If evidence of unauthorized entry through, over, or under the fence is observed, these sections of the fence will be reinforced.

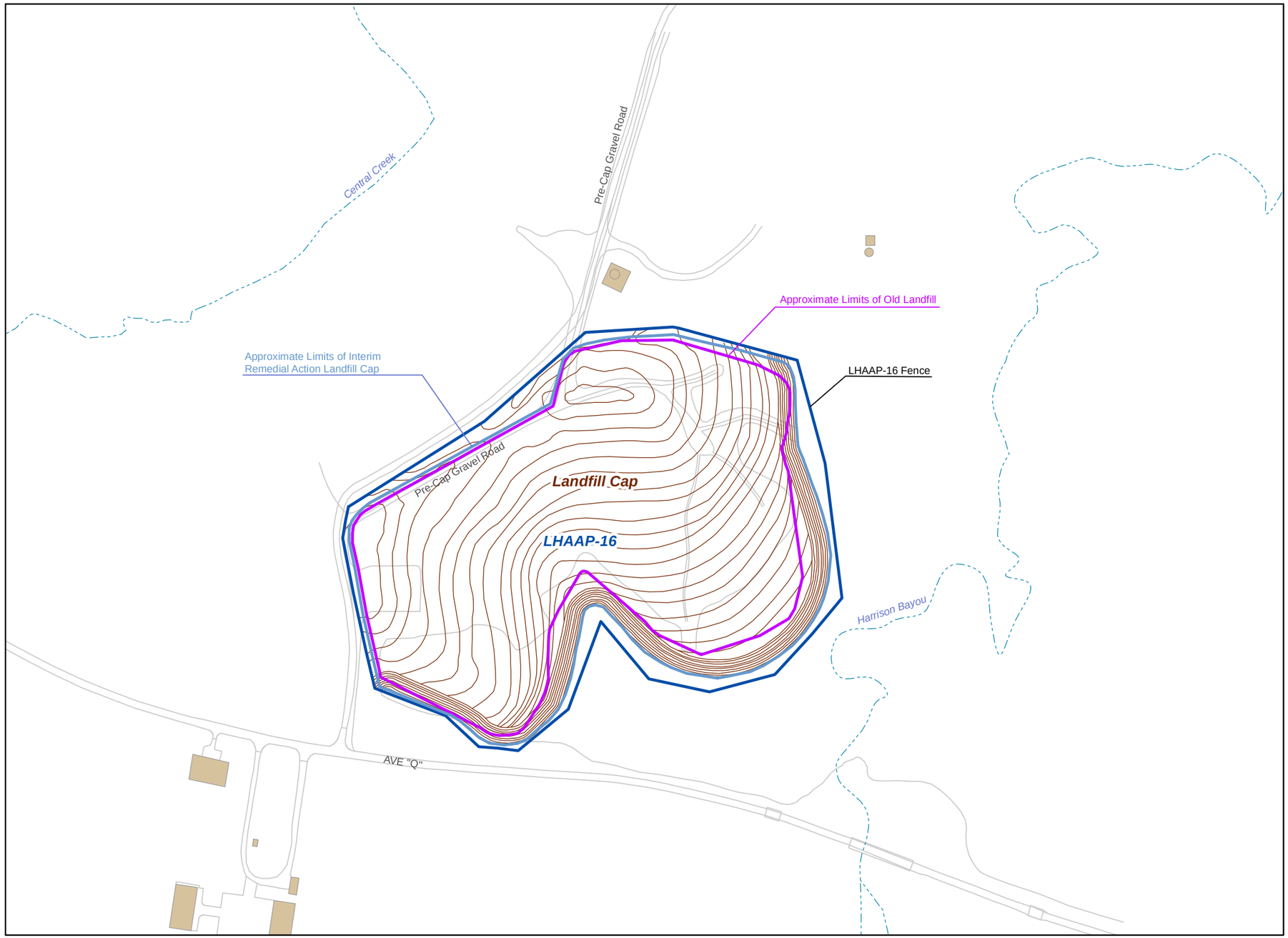

0 125 250 500 Feet

Legend

- Landfill Cap Contours
- Stream
- Road
- Building
- LHAAP-16 Landfill Fence

N

Source:
1. Construction Completion Report, Interim Remedial Action, Landfills 12 and 16 Cap Construction (OHM 1998).
2. LHAAP-16 Record of Decision (U.S.Army 2011).

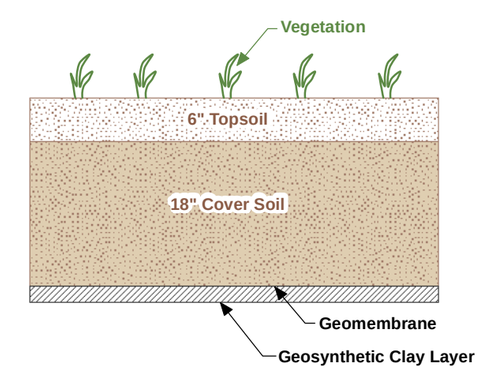

Cap Cross Section

AECOM

Figure 3-1
Landfill Cap
LHAAP-16 Remedial Design

Longhorn Army Ammunition Plant
Karnack, Texas

60256135

January 2017

Path: L:\AGEG\SAUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-16\RAWP\Fig 3-1 LHAAP-16 Landfill Figure.mxd

Table 3-1: Landfill Inspection Schedule

Landfill Feature	Frequency of Inspection
Existing Landfill Cap	Annually, or as needed, and after a major event[a]
- Vegetative Cover	
- Erosion and Settlement	
- Drainage System	
Current and Future Groundwater Monitoring Systems	Annually, or as needed, and after a major event[a]
Site Access Features*	Annually, or as needed

Notes:

[a] A major event is defined as a storm event that causes major local flooding, a seismic event greater than a magnitude of 4, or other events such as wildfires that may affect the cover.

* This is not a ROD requirement

4 IN-SITU BIOREMEDIATION DESIGN

ISB will be implemented at LHAAP-16 to remediate groundwater impacted with COCs. Per the Final ROD (U.S. Army 2016), the following ISB systems will be designed and implemented to remediate COC-impacted groundwater at LHAAP-16:

- Biobarriers in the Shallow Zone groundwater adjacent to the landfill (hereinafter referred to as Landfill Biobarriers)
- Biobarrier in the Shallow Zone groundwater near Harrison Bayou (hereinafter referred to as Bayou Biobarrier)
- ISB in the most contaminated portion of the Shallow Zone and Intermediate Zone groundwater (hereinafter referred to as Mid-Plume ISB)

The proposed locations of these ISB systems are presented on **Figure 4-1**. The Final ROD provides preliminary design concepts, but states that the details of the ISB implementation would be established during the remedial design phase. The design and implementation details of the ISB systems are summarized in the subsections below.

In general, implementation of biobarriers and ISB will include injection of an electron donor/ substrate, and a microbial consortium capable of biodegrading primary chlorinated COCs (perchlorate, TCE, cis-1,2-DCE; and VC) in the subsurface. The indigenous and augmented microorganisms will grow and multiply using injected substrate as a carbon and energy source, thereby degrading perchlorate, TCE, cis-1,2-DCE, and VC. The schematics showing degradation pathways for perchlorate and chlorinated VOCs are provided below. For chlorinated VOCs, if zero valent iron (ZVI) is mixed with substrate, abiotic degradation to ethene (Pathway 2 shown on the schematic) may occur in addition to biotic degradation (Pathway 1). While the ROD does not prescribe the use of ZVI for ISB, ZVI supplements the use of electron donor/substrate and accelerates degradation of site COCs in groundwater to the same end product, ethene, although through a different degradation pathway.

Perchlorate Degradation Pathway

$$ClO_4^- \longrightarrow ClO_3^- \longrightarrow ClO_2^- \longrightarrow Cl^- + O_2$$

Perchlorate Chlorate Chlorite Chloride + Oxygen

Biotic and Abiotic Degradation Pathways – Chlorinated VOCs

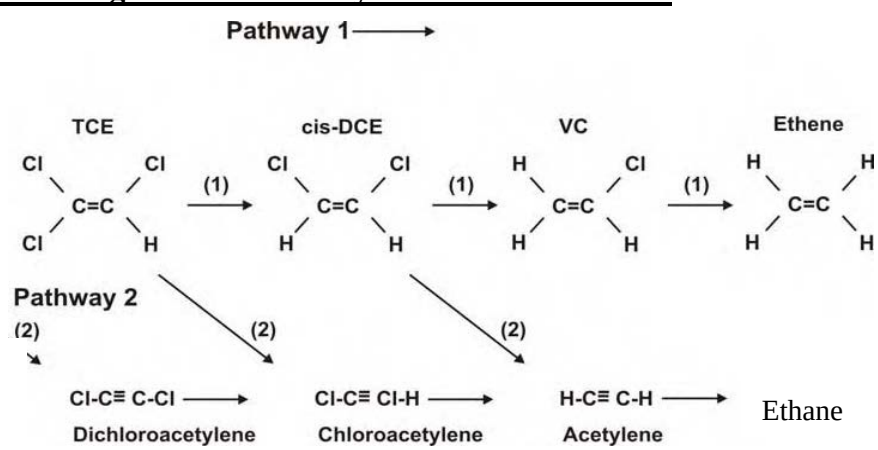

A groundwater extraction system was voluntarily installed by the U.S. Army in 1996 and 1997 as a treatability study to prevent the groundwater plume from migrating to Harrison Bayou. The groundwater extraction system is comprised of four wells in the Shallow Zone and four wells in the Intermediate Zone. The existing Shallow Zone extraction system will be shut down prior to implementation of the remedy. The existing Intermediate Zone extraction wells will continue to be pumped during implementation of ISB and will be shut down immediately after injection is complete to prevent extraction of the injected substrate. The downhole equipment in the extraction wells will be removed after power shut down and the extraction wells will be used as injection points in the Intermediate Zone. The extraction conveyance conduits will be evaluated for conveying substrate to the subsurface and the existing above ground tank will be evaluated for mixing injectate. The conveyance pipes and above ground storage tanks will be decommissioned when there is no longer a need for their use. This will occur when the criteria for MNA are met (i.e., MNA is demonstrated to be an effective remedy).

4.1 ISB Design Parameters

This section presents the general ISB design parameters common to the three ISB systems summarized above (Landfill Biobarriers, Bayou Biobarrier, and Mid-Plume ISB). The specific design details for each ISB system are discussed in subsequent sections. The details of the field implementation procedures are presented in Section 6.

4.1.1 General Substrate Injection Strategies

The substrate for the Shallow Zone Mid-Plume ISB and the biobarriers will be injected using direct push technology (DPT), except for Landfill Biobarrier #2, where existing wells will be used for injection. The substrate for the Intermediate Zone Mid-Plume ISB will be emplaced using injection wells, as summarized below. The type of substrate and specific injection quantities are discussed in the detailed design of each ISB system in **Sections 4.2 through 4.4**.

4.1.1.1 Direct Push Technology

Substrate for the Landfill Biobarriers, Bayou Biobarrier, and Shallow Zone Mid-Plume ISB will be injected using DPT, except for Shallow Zone Landfill Biobarrier #2, which will use existing wells installed in this area for the Environmental Security Technology Certification Program (ESTCP) study (Geosyntec 2009) for injection of the substrate.

DPT will be used to inject substrate at 2- to 3-foot intervals to cover the entire Shallow Zone groundwater treatment interval using a “top-down” approach at each proposed injection point. Using this approach, the injection tool string is advanced to the top of the injection interval and the substrate is pumped through the probe rods. The tools are then advanced to the next injection depth and the substrate is again pumped through the rods. This cycle is repeated to provide coverage across the entire injection interval. The top-down injection approach is expected to be effective since it will prevent backflow of injected material up through the tool string and reduces preferential flow of substrate.

Several direct push injection points may be manifolded for simultaneous injection to maximize delivery efficiency. The substrate will be injected at relatively low pressures (e.g., up to 200 psi) to avoid development of preferential flow pathways within the formation. The injection pressure

at each DPT location will be dictated by the formation back pressure on the pumping system, but will be controlled by use of pressure relief valves.

4.1.1.2 Injection Wells

Injection wells will be used to emplace Landfill Biobarrier #2 and the Intermediate Zone Mid-Plume ISB. The substrate will be gravity fed or injected into wells using pumps operated at relatively low pressures to avoid development of preferential flow pathways within the formation. The injection and distribution of substrate within the subsurface will be hydraulically controlled by extracting groundwater from nearby wells during injection to enhance distribution of substrate away from the injection well.

Groundwater will be extracted from wells located adjacent to or near the injection wells using submersible pumps. The extracted groundwater will be used as dilution water for substrate at a central dosing unit. Diluted substrate will be injected into wells through a multi-channel manifold with simultaneous groundwater extraction from nearby wells. Following injection of substrate, chase water may be injected, if required, to enhance substrate distribution and flush the wells to limit biological growth and/or plugging of injection wells screens.

4.1.2 Radius of Influence and Injection Point Spacing

4.1.2.1 Direct Push Technology

An ISB pilot study was conducted at LHAAP-16 from 2004 through 2006 as part of ESTCP demonstration (Geosyntec 2009). As part of this pilot study, substrate solution, including a conservative tracer, was gravity fed into injection wells and its distribution was enhanced by extracting groundwater from nearby wells. The pilot study generally achieved good distribution of the electron donor with extraction wells 35 feet apart except in one area. The biobarrier achieved perchlorate reduction from 450 micrograms per liter (μg/L) to 13 μg/L on average. No biofouling was observed and minimal impact on sulfate and metals concentrations was observed. These results indicate use of biobarriers would be effective at LHAAP-16.

In general, the substrate was distributed (i.e. travel time for peak tracer concentration injected with substrate) to a distance of 14 feet in one to two weeks and to a distance of 35 feet in one to two months. The injection radius of influence (ROI) for low pressure injection using DPT is unknown at the Site. However, it is estimated that substrate can be pushed under pressure to approximately half the tracer travel distance (7.5 feet) in one to two week time-frame. Therefore, the ROI for each DPT injection point for the biobarriers was conservatively estimated to be 7.5 feet. Groundwater monitoring will be conducted as proposed in Section 4.5 to evaluate if adequate zone of influence has been attained to create an effective biobarrier.

4.1.2.2 Injection Wells

Based on the ESTCP ISB study, a distance between injection and extraction wells of approximately 35 feet was selected to distribute substrate for the Intermediate Zone Mid-Plume area.

4.1.3 Substrate Selection

4.1.3.1 Landfill Biobarrier

Emulsified vegetable oil (EVO) was selected as the substrate for the installation of Landfill Biobarrier per the Final ROD (June 2016). Sufficient EVO mass will be injected such that replenishment would not be required for 3 years to 5 years; therefore, the use of EVO is expected to be cost-effective since it would eliminate the need for continuous or more frequent injection of substrate into the subsurface. There are various formulations of EVO commercially-available in the market for groundwater remediation. Most of these EVOs are vegetable oil based products and are expected to have similar long-term performance for bioremediation. The specific formulation of EVO proposed for this project is Electron Donor Solution - Extended Release (EDS-ER™) available from Tersus Environmental (**Appendix B**). EDS-ER is a water-mixable oil formulated with at least 92 percent natural seed oils. EDS-ER is a food-grade carbon and is made from renewable crop-based oils. EDS-ER is provided by the vendor as water-mixable oil that contains no water as shipped; therefore, it will be mixed with water in the field. This will reduce the cost and environmental footprint associated with transportation of higher volumes of more dilute substrate to the site. The product mixes easily with water and does not require high energy mixers. It formulates a completely miscible product when mixed with water (it does not create emulsions or particles in water), thus preventing clogging effects when injected in groundwater. A mixing tank located adjacent to the location of the biobarrier will be used to mix the product with water. The product will be added to the tank in the volume desired, followed by pumping clean potable water into the tank to produce the mixture with the design concentration for injection. No mixers will be required due to the nature of the EDS-ER™ oil. The same procedure will be followed for the other injection locations. The manufacturer's product information sheet is provided in **Appendix B**

4.1.3.2 Bayou Biobarrier

Anaerobic Biochem Plus (ABC+), an oil-based product, was selected as the substrate for the installation of Bayou Biobarrier. ABC is an oil based product but is formulated with lactic acid and a buffer solution. ABC+ includes ZVI also. The fatty acids used in the formulation are essentially the same as produced from hydrolysis of vegetable oil when introduced in the environment. Hence, it is the same as vegetable oil but it is completely soluble and not emulsified. The fatty acids are the long term releasing carbon source. There is no need for site testing because the material behaves similar to EVO. The buffer in ABC provides an added benefit because the buffer helps to maintain the pH in a range that is best suited for microbial growth.

ZVI is micro-scale and therefore, it does not have a tendency to clog the aquifer. Manufacturer's information is presented in Appendix B. The presence of ZVI requires the material to be mixed in specialized mixers before injecting. Redox Tech provides the equipment and field crew to conduct the work.

Micro-scale ZVI will be added to ABC at 50 percent by weight. The ZVI will result in abiotic degradation of chlorinated hydrocarbons and may limit the generation of byproducts (cis-1,2-DCE and VC) of incomplete reductive dechlorination of TCE. Studies have shown that once injected, ZVI will remain active for years in the subsurface (ITRC 2011).

Following establishment of Bayou Barrier using ABC+, any subsequent replenishment of substrate (if required) will be conducted using EVO (EDS-ER) similar to the Landfill Biobarrier.

4.1.3.3 Mid-Plume ISB

EDS-ER was selected as the substrate for the Mid-Plume ISB for the Shallow Zone and Intermediate Zone groundwater. Sufficient EVO mass will be injected such that replenishment would not be required for 3 years to 5 years; therefore, the use of EVO is expected to be cost-effective since it will eliminate the need for continuous or more frequent injection of substrate into the subsurface.

EDS-ER will be mixed with water in the field and does not require high energy mixers. It formulates a completely miscible product with water, preventing clogging effects when injected in groundwater. A mixing tank located adjacent to the location of the injection points will be used to mix the product with water. The product will be added to the tank in the volume desired followed by pumping clean potable water into the tank to produce the mixture with the design concentration for injection. No mixers will be required due to the nature of the EDS-ER™ oil.

4.2 Landfill Biobarrier Design

The purpose of the Landfill Biobarriers is to control migration of COCs in shallow groundwater immediately downgradient of the landfill. In order to take advantage of existing infrastructure installed as part of the ESTCP study at LHAAP-16 (Geosyntec 2009), and based on the review of groundwater flow conditions, the Landfill Biobarrier will contain the following three segments (see **Figure 4-1**):

- Landfill Biobarrier #1: This segment will be approximately 270 feet long and will be installed upgradient of existing wells 16WW26 and 16WW42.
- Landfill Biobarrier #2: This segment will be approximately 140 feet long and was installed as part of ESTCP study at the Site (Geosyntec 2009). This biobarrier is located upgradient of monitoring well 16WW36.
- Landfill Biobarrier #3: This segment will be approximately 100 feet long and will be installed to the north of Landfill Biobarrier #2 and downgradient from monitoring well 16WW14.

The locations of Landfill Biobarriers #1, #2, and #3 are designed to fully intercept the plume of VOCs and perchlorate from the landfill in the Shallow Zone above their respective cleanup goals (see **Figures 2-4 through 2-7, and 4-1**).

4.2.1 Landfill Biobarrier #1

4.2.1.1 Injection Point and Monitoring Well Placement and Design

Eighteen DPT locations (DPT01 through DPT18) and one injection well (16IW09) will be used to inject EVO transverse to the direction of groundwater flow to establish Landfill Biobarrier #1 (see **Figure 4-2**). The injection well is proposed to also serve as a groundwater monitoring location within the biobarrier (see **Section 4.5** for details).

The rationale for selection of EVO for the Landfill Biobarriers is presented in **Section 4.1.3**. The spacing of 15 feet between injection locations was selected based on the rationale and injection ROI presented in **Section 4.1.2**.

Table 4-1 presents the injection intervals for DPT borings and screen intervals for monitoring wells for Landfill Biobarrier #1. Existing well logs for monitoring wells 16WW26 and 16WW42, located downgradient of the biobarrier, are presented in **Appendix C**. These injection/screen intervals are intended to target the treatment of Shallow Zone groundwater. The injection depths and monitoring well screen intervals and lengths may be modified, based on initial field observations including depth of clay layer separating shallow and intermediate groundwater zones and depth to groundwater.

4.2.1.2 Substrate Loading and Injection

The mass of EVO required for the establishment of Landfill Biobarrier #1 was calculated based on the stochiometric demand exerted by the native (e.g., dissolved oxygen [DO], nitrate, and sulfate) and anthropogenic (COCs) electron acceptors. These calculations were performed using the ESTCP spreadsheet-based Substrate Estimating Tool (ESTCP 2010). **Appendix D** provides the input and output calculations spreadsheets.

The specific formulation of EVO proposed for the establishment of Landfill Biobarrier #1 is EDS-ER. Based on the stochiometric demand, the total estimated weight of concentrated EDS-ER (at least 92 percent natural seed oils) proposed for injection is 5,041 pounds (see **Table 4-2**). This is the same as 7,729 pounds (lbs) determined using the ESTCP spreadsheet for 60% EVO formulation – **Appendix D**. The concentrated solution of EDS-ER will be diluted by mixing 1 part of EDS-ER with 10 parts of water. During mixing, sodium bromide (a conservative tracer) will be added to the solution at a target concentration of 500 milligrams per liter (mg/L) to evaluate distribution of substrate as part of performance monitoring (see **Section 4.5**). The diluted EDS-ER solution will be injected into injection points, DPT-01 through DPT-18, and well 16IW09. The details of the substrate injection using DPT and wells are discussed in **Section 4.1.1**.

4.2.1.3 Bioaugmentation Culture Injection

Based on vendor recommendations, one liter of dechlorinating culture KB-1 will be injected at each of the nineteen injection points (DPT-01 through DPT-18, and 16IW09) of Landfill Biobarrier #1 to facilitate a more rapid onset of complete reductive dechlorination of TCE to ethene. The injection of KB-1 will be conducted in conjunction with the injection of EDS-ER at each direct push point and injection well. Fifty percent of the target volume of EDS-ER will be injected into each injection location before the introduction of KB-1. To provide conducive conditions for KB-1 in situ, 200 to 300 gallon of anaerobic water will be injected before and after the KB-1 injection. After the addition of the anaerobic water, one liter of KB-1 will be delivered to the middle of the injection interval. Following KB-1 injection, an additional 200 to 300 gallons of anaerobic water will be injected into each injection point before proceeding with the injection of the remaining EDS-ER solution.

The anaerobic water used during the KB-1 injection will be generated on-site in bladder tanks or equivalent, using potable water. The potable water will be mixed with soluble electron donor such as high fructose corn syrup (HFCS) and seeded with groundwater containing indigenous

bacteria and/or KB-1. The water will be ready for injection once the anaerobic condition in the tank is confirmed (DO less than 0.5 mg/L and oxidation-reduction potential [ORP] less than -75 millivolts [mV]). Multiple tanks will be used to generate anaerobic water to ensure a constant supply of anaerobic water needed during the KB-1 injections.

4.2.2 Landfill Biobarrier #2

4.2.2.1 Injection and Monitoring Well Placement and Design

Existing wells installed during the ESTCP study (Geosyntec 2009) will be used to inject EVO to establish Landfill Biobarrier #2 transverse to the direction of groundwater flow (see **Figure 4-3**). Before any of the pilot test wells are used for injection, slug tests will be performed to confirm they are in acceptable condition. If the results show they are not, they will be re-developed prior to use as injection wells for Landfill Biobarrier #2. The rationale for selection of EVO for the Landfill Biobarriers is presented in **Section 4.1.3**.

Table 4-3 presents the screen intervals and depths of existing injection/monitoring wells for the Landfill Biobarrier #2. Existing well log for monitoring well 16WW35, located downgradient of the biobarrier, is presented in **Appendix C**. No new monitoring wells or injection wells are proposed for Landfill Biobarrier #2, because based on the ESTCP Study (Geosyntec 2009), existing injection/monitoring wells can be used to create/monitor an effective biobarrier.

4.2.2.2 Substrate Loading and Injection

The mass of EVO required for the establishment of Landfill Biobarrier #2 was calculated based on the stochiometric demand exerted by the native (e.g., DO, nitrate, and sulfate) and anthropogenic (COCs) electron acceptors. These calculations were performed using the ESTCP spreadsheet-based Substrate Estimating Tool (ESTCP 2010). **Appendix D** provides the input and output calculations spreadsheets.

The specific formulation of EVO proposed for the establishment of Landfill Biobarrier #2 is EDS-ER. Based on the stochiometric demand, the total estimated weight of concentrated EDS-ER (at least 92 percent natural seed oils) proposed for injection is 3,594 pounds (see **Table 4-4**). This is the same as 5,510 lbs determined using the ESTCP spreadsheet for 60% EVO formulation – **Appendix D**. As discussed in **Sections 4.1.1.2**, the EDS-ER will be injected into the subsurface using hydraulically-enhanced injection strategy as summarized in **Table 4-4** and described below:

- ***Phase I:*** The concentrated solution of EDS-ER will be diluted by mixing 1 part of EDS-ER with 10 parts of water. During mixing, sodium bromide (a conservative tracer) will be added to the solution at a target concentration of 500 mg/L to evaluate distribution of substrate as part of performance monitoring (see **Section 4.5**). The diluted EDS-ER will be injected into wells 16IW01, 16IW03, 16IW05, and 16IW07. During the entire duration of injection, which is expected to last approximately 2-3 days, groundwater extraction will be conducted from wells 16EW11, 16EW12B, 16EW13, 16EW14B, and 16EW15 to enhance distribution of substrate cross-gradient. The specific injection volumes for EDS-ER are presented in **Table 4-4**. Just before extraction ends (i.e., concurrently with the end of the injection period), a sample of the extracted groundwater from each extraction well will be collected and tested for the presence of bromide. If bromide is detected, the hydraulically-enhanced injection

strategy would be considered successful. If bromide is not detected, additional extraction of groundwater would take place until bromide is detected in the extraction wells. The extracted groundwater will be used to prepare the solution for Phase II described below.

- ***Phase II:*** The concentrated solution of EDS-ER will be diluted by mixing 1 part of EDS-ER with 10 parts of extracted groundwater. During mixing, sodium bromide (a conservative tracer) will be added to the solution at a target concentration of 500 mg/L to evaluate distribution of substrate as part of performance monitoring (see **Section 4.5**). The diluted EDS-ER will be injected into wells 16EW11, 16EW12B, 16EW13, 16EW14B, and 16EW15 over a 2-3 day period. The specific injection volumes for EDS-ER are presented in **Table 4-4**.

4.2.2.3 Bioaugmentation Culture Injection

Injection of dechlorinating culture KB-1 will be conducted during Phase I and Phase II of the EDS-ER injection. During Phase I of EDS-ER injection, based on the vendor recommendations, two liters of dechlorinating culture KB-1 will be injected at each of the four injection locations (16IW01, 16IW03, 16IW05, and 16IW07). During Phase II of EDS-ER injection, two liters of dechlorinating culture KB-1 will be injected into each of the five injection locations (16EW11, 16EW12B, 16EW13, 16EW14B, and 16EW15).

During both phases, fifty percent of the target volume of EDS-ER will be injected into each injection location before the introduction of KB-1. To provide conducive conditions for KB-1 in situ, 200 to 300 gallon of anaerobic water will be injected before and after the KB-1 injection. After the addition of the anaerobic water, two liters of KB-1 will be delivered to the middle of the injection interval. Following KB-1 injection, an additional 200 to 300 gallons of anaerobic water will be injected into each injection well before proceeding with the injection of remaining EDS-ER Solution. The procedure for generating anaerobic water used during the KB-1 injection is presented in **Section 4.2.1.3**; however, Extraction groundwater could be used to make up the anaerobic water.

4.2.3 Landfill Biobarrier #3

4.2.3.1 Injection Point and Monitoring Well Placement and Design

Seven DPT locations (DPT19 through DPT25) and one injection well (16IW10) will be used to inject EVO transverse to the direction of groundwater flow to establish Landfill Biobarrier #3 (see **Figure 4-4**). The injection well is proposed to also serve as a groundwater monitoring location within the biobarrier along with 16RW08 (see **Section 4.5** for details).

The rationale for selection of EVO for the Landfill Biobarriers is presented in **Section 4.1.3**. The spacing of 15 feet between injection locations was selected based on the rationale and injection ROI presented in **Section 4.1.2**.

Table 4-5 presents the injection intervals for direct push points and screen intervals for monitoring wells for the Landfill Biobarrier #3. Existing well log for monitoring well 16WW14, located upgradient of the biobarrier is presented in **Appendix C**. These injection/screen intervals are intended to target the treatment of Shallow Zone groundwater. The injection depths and monitoring well screen intervals and lengths may be modified based on initial field observations

including depth of clay layer separating shallow and intermediate groundwater zones and depth to groundwater.

4.2.3.2 Substrate Loading and Injection

The mass of EVO required for the establishment of Landfill Biobarrier #3 was calculated based on the stochiometric demand exerted by the native (e.g., DO, nitrate, and sulfate) and anthropogenic (COCs) electron acceptors. These calculations were performed using the ESTCP spreadsheet-based Substrate Estimating Tool (ESTCP 2010). **Appendix D** provides the input and output calculations spreadsheets.

The specific formulation of EVO proposed for the Landfill Biobarrier #3 establishment is EDS-ER. Based on the stochiometric demand, the total estimated weight of concentrated EDS-ER (at least 92 percent natural seed oils) proposed for injection is 2,333 pounds (see **Table 4-6**). This is the same as 3,578 lbs determined using the ESTCP spreadsheet for 60% EVO formulation – **Appendix D**. The concentrated solution of EDS-ER will be diluted by mixing 1 part of EDS-ER with 10 parts of water. During mixing, sodium bromide (a conservative tracer) will be added to the solution at a target concentration of 500 mg/L to evaluate distribution of substrate as part of performance monitoring (see **Section 4.5**). The diluted EDS-ER solution will be injected into at injection points, DPT-19 through DPT-25, and well 16IW10. The details of the substrate injection using DPT and wells are discussed in **Section 4.1.1**.

4.2.3.3 Bioaugmentation Culture Injection

Based on vendor recommendations, one liter of dechlorinating culture KB-1 will be injected at each of the eight injection points (DPT-19 through DPT-25, and 16IW10) of Landfill Biobarrier #3 to facilitate a more rapid onset of complete reductive dechlorination of TCE to ethene. The injection of KB-1 will be conducted in conjunction with the injection of EDS-ER at each direct push point and injection well. Fifty percent of the target volume of EDS-ER will be injected into each injection location before the introduction of KB-1. To provide conducive conditions for KB-1 in situ, 200 to 300 gallon of anaerobic water will be injected before and after the KB-1 injection. After the addition of the anaerobic water, one liter of KB-1 will be delivered to the middle of the injection interval. Following KB-1 injection, an additional 200 to 300 gallons of anaerobic water will be injected into each injection wells before proceeding with the injection of remaining EVO. The procedure for generating anaerobic water used during the KB-1 injection is presented in **Section 4.2.1.3**.

4.3 Bayou Biobarrier

4.3.1 Injection Point and Monitoring Well Placement and Design

Thirteen direct push locations (DPT-26 through DPT-39) and one injection well (16IW20) will be used to inject ABC+ transverse to the direction of groundwater flow to establish the Bayou biobarrier (see **Figure 4-5**). One injection well is proposed to also serve as a groundwater monitoring location within the biobarrier along with 16RW11 (see **Section 4.5** for details). The biobarrier is planned to be positioned downgradient of monitoring well 16WW12, as specified in the ROD and shown on **Figure 4-5**. However if the slope of the ground surface near Harrison

Bayou is too steep for safe injection in this area of the site, the biobarrier location will be moved just upgradient of monitoring well 16WW12.

The rationale for selection of ABC+ for the Bayou Biobarrier is presented in **Section 4.1.3**. The spacing of 15 feet between injection locations is selected based on the rationale and injection ROI presented in **Section 5.1.2**.

Table 4-7 presents the injection intervals for the DPT borings and the screen intervals for monitoring wells for the Bayou Biobarrier. Existing well logs for monitoring wells 16WW22 and 16WW12, located upgradient of the biobarrier are presented in **Appendix C**. These injection/screen intervals are intended to target the treatment of shallow groundwater zone. The injection depths and monitoring well screen intervals and lengths may be modified based on initial field observations including depth of clay layer separating shallow and intermediate groundwater zones and depth to groundwater.

4.3.2 Substrate Loading and Injection

The mass of ABC+ for establishment of Bayou Biobarrier is based on the recommendation of the vendor and is presented in **Table 4-8**. ABC+ will contain 3,500 pounds of ABC and 3,500 pounds of ZVI. The ABC will be diluted with water to form a solution of approximately 10 percent by weight before injection. During mixing, sodium bromide (a conservative tracer) will be added to the solution at a target concentration of 500 mg/L to evaluate distribution of substrate as part of performance monitoring (see **Section 4.5**). The injection of ABC+ will be conducted using DPT at 2 to 3-foot intervals.

4.3.3 Bioaugmentation Culture Injection

Based on vendor recommendations, one liter of dechlorinating culture KB-1 will be injected at each of the fourteen injection points (DPT-26 through DPT-39, and 16IW20) of Bayou Biobarrier to facilitate a more rapid onset of complete reductive dechlorination of TCE to ethene. The injection of KB-1 will be conducted in conjunction with the injection of ABC+ at each direct push point and injection well. Fifty percent of the target volume of ABC+ will be injected into each injection location before the introduction of KB-1. To provide conducive conditions for KB-1 in situ, 200 to 300 gallon of anaerobic water will be injected before and after the KB-1 injection. After the addition of the anaerobic water, one liter of KB-1 will be delivered to the middle of the injection interval. Following KB-1 injection, an additional 200 to 300 gallons of anaerobic water will be injected into each injection wells before proceeding with the injection of remaining EVO. The procedure for generating anaerobic water used during the KB-1 injection is presented in **Section 4.2.1.3**.

4.4 Mid-Plume ISB

4.4.1 Well Placement and Design

4.4.1.1 Shallow Groundwater Zone

The Mid-Plume ISB will be approximately 280 feet long. Forty DPT locations (DPT40 through DPT79) will be used to inject EVO transverse to the direction of groundwater flow (see **Figure 4-6**). The injection will occur in a wide area in the vicinity of existing extraction wells 16EW01,

16EW02, 16EW03, and 16EW04. The DPT injection points will be staggered to provide good distribution of injected chemicals. The extraction wells, two existing monitoring wells, 16WW30 and 16WW39, and

one new well that will be installed in the Shallow Zone approximately 40 to 50 feet downgradient from the Shallow Zone ISB area (16WW48), will be used to monitor ISB performance. The proposed DPTs for substrate emplacement within Shallow Zone groundwater are listed in **Table 4-9** and the locations are shown on **Figure 4-6**. The injection depths may be modified during field implementation activities based on field observations including depth to groundwater.

4.4.1.2 Intermediate Groundwater Zone

Per the Final ROD (U.S. Army 2016), the existing wells screened in the Intermediate Zone listed in **Table 4-9** and shown on **Figure 4-7** will be used for implementing ISB. These wells will be redeveloped after extraction is shut down and downhole equipment has been removed. Based on the ESTCP study that recommended approximately 35 feet between the recirculation wells, two new injection wells will be installed between the existing extraction wells 16EW05 and 16EW06, 16EW06 and 16EW07, and 16EW07 and 16EW08 for a total of six new injection wells in the Intermediate Zone ISB area to recirculate the groundwater between the injection and extraction wells. The existing extraction wells will be used as injection wells once the recirculation of groundwater between the injection and extraction wells is terminated, as required by the ROD. Two new Intermediate Zone wells (16WW49 and 16WW51) will also be installed approximately 40 feet downgradient from the Intermediate Zone ISB area and will be used to monitor ISB performance.

4.4.2 Substrate Loading and Injection

4.4.2.1 Shallow Groundwater Zone

The mass of EVO required for Mid-Plume ISB in the Shallow Zone groundwater was estimated based on the stochiometric demand exerted by the native (e.g. DO, nitrate, and sulfate) and anthropogenic electron acceptors. These calculations were performed using the ESTCP spreadsheet-based Substrate Estimating Tool (ESTCP 2010). **Appendix D** provides the input and output calculations spreadsheets.

The specific formulation of EVO proposed is EDS-ER. Based on the stochiometric demand, the total estimated weight of concentrated EDS-ER (at least 92 percent natural seed oils) proposed for injection is 28,414 pounds (see **Table 4-10**). This is the same as 43,568 lbs determined using the ESTCP spreadsheet for 60% EVO formulation – **Appendix D**. The concentrated solution of EDS-ER will be diluted by mixing 1 part of EDS-ER with 10 parts of water. Approximately 41,070 gallons of dilute EDS-ER solution will be injected into 40 injection points listed in **Table 4-10**. During mixing, sodium bromide (at target concentration of 500 mg/L) and fluorescein dye will be added to the solution to evaluate distribution of substrate during performance monitoring (see **Section 4.5**). The diluted EDS-ER solution will be injected at injection points DPT-40 through DPT-79. The details of the substrate injection using DPT and injection wells are discussed in **Section 4.1.1**.

4.4.2.2 Intermediate Groundwater Zone

Similar to the electron donor estimation for the shallow plume, the mass of EDS-ER required for Mid-Plume ISB in Intermediate Zone groundwater was estimated based on stochiometric demand. The total estimated weight of concentrated EDS-ER (at least 92 percent natural seed oils) proposed for injection is 16,565 pounds (see **Table 4-10**). This is the same as 25,399 lbs determined using the ESTCP spreadsheet for 60% EVO formulation – **Appendix D**. The EDS-ER will be diluted by mixing 1 part of EDS-ER with 10 parts of water. Approximately 23,940 gallons of dilute EDS-ER solution will be injected into six injection wells listed in **Table 4-10**.

4.4.3 Bioaugmentation Culture Injection

Injection of dechlorinating culture KB-1 will be conducted during the EDS-ER injections in the ISB area. For the shallow groundwater zone, based on the vendor recommendation, one liter of dechlorinating culture KB-1 will be injected at each of the 40 injection locations (DPT-40 through DPT-79) for a total of forty liters. For intermediate groundwater, two liters of dechlorinating culture KB-1 will be injected at each of the six injection locations (16IW25 through 16IW30) and four previously used extraction wells (16EW05, 16EW06, 16EW07, and 16EW08) for a total of twenty liters.

Fifty percent of the target volume of EDS-ER will be injected into each injection location before the introduction of KB-1. To provide conducive conditions for KB-1 in situ, 200 to 300 gallons of anaerobic water will be injected before and after the KB-1 injection. After the addition of the anaerobic water, one liter (two liters in case of injection wells) of KB-1 will be delivered to the middle of the injection interval. Following KB-1 injection, an additional 200 to 300 gallons of anaerobic water will be injected into each injection points/wells before proceeding with the injection of remaining EDS-ER. The procedure for generating anaerobic water used during the KB-1 injection is presented in Section 4.2.1.3.

4.5 Performance Monitoring

Performance monitoring conducted as part of the selected remedy for LHAAP-16 will include the following:

- Groundwater monitoring in the areas of active ISB to evaluate its effectiveness, and to assess changes in groundwater geochemistry, concentrations of COCs and their degradation products.
- Groundwater monitoring to evaluate changes in concentrations of COCs and their degradation products in the areas outside the influence of active ISB.
- Surface water monitoring

In the short-term (1-3 months), monitoring of groundwater conditions will be conducted to evaluate design effectiveness associated with the distribution of the injectate in the formation.

Per the ROD, the performance evaluation for MNA will be conducted after the collection of eight quarters of ISB performance data (see MNA criteria in **Section 4.5.3**). If MNA is determined to be effective, a baseline will be established from the data to this point in time. Monitoring will be conducted to evaluate the remedy performance and determine if the plume conditions remain constant, improve, or worsen after the baseline is established. This LTM will

be implemented at a semiannual frequency for three years, then annually until the next five-year review. If after eight quarters of ISB performance data collection, MNA is determined to be ineffective according to **Section 4.5.3.1** criteria, a contingency action would be initiated as described in **Section 4.5.3.2**.

4.5.1 Pre-Remedy Implementation Groundwater Sampling

The pre-remedy implementation groundwater sampling will be performed as a single-event to characterize the COC concentrations and geochemical conditions in the Shallow Zone and Intermediate Zone prior to emplacement of bioremediation substrate. The wells selected for the pre-remedy groundwater sampling include wells inside and outside of the contaminant plumes, and wells located upgradient, within, and downgradient of ISB areas. The pre-remedy groundwater sampling results will be used to optimize the locations of biobarriers. In addition, the baseline groundwater sampling results will be compared with monitoring results following substrate emplacement to assess the performance of ISB systems. The baseline sampling plan is summarized in **Table 4-11** for the Shallow Zone groundwater and **Table 4-12** for the Intermediate Zone groundwater.

4.5.2 Evaluation of Design Effectiveness

Within the first two months after remedy implementation, groundwater data will be collected from the various monitoring points in the treatment areas to evaluate effectiveness of injectate distribution and the occurrence of geochemical changes. Up to two sets of groundwater samples will be collected before the 1st quarterly sampling is implemented. The ISB performance monitoring plans for Landfill Biobarrier #1, Landfill Biobarrier #2, Landfill Biobarrier #3, Bayou Biobarrier, and Mid-Plume ISB, are presented in **Tables 4-13, 4-14, 4-15, 4-16,** and **4-17**, respectively. These tables present the proposed monitoring locations along with the rationale for the selection of each monitoring location.

4.5.3 Performance Monitoring – Years 1 and 2

Performance monitoring will be conducted at LHAAP-16 during Years 1 and 2 in accordance with the monitoring plans summarized in the subsections below. After each monitoring round, the data will be reviewed to evaluate progress towards attainment of remedial action objectives/cleanup levels. Optimization/changes of the monitoring plans presented below will be conducted as warranted by the results of the data reviews. The optimizations/changes will be presented to the regulatory agencies prior to implementation.

4.5.3.1 ISB Performance Monitoring

When a bioremediation substrate such as EVO and ABC+ is injected into the subsurface, the naturally-occurring bacteria are stimulated and degrade the injected organic substrate. Biodegradation of substrate depletes the DO and other terminal electron acceptors (e.g., nitrate or sulfate), and lowers the ORP of groundwater, thereby creating conditions conducive to the anaerobic COC degradation processes. The ISB performance monitoring will be conducted to assess changes in geochemical conditions and perchlorate concentrations due to biodegradation reactions.

The performance monitoring plans for Landfill Biobarrier #1, Landfill Biobarrier #2, Landfill Biobarrier #3, Bayou Biobarrier, and Mid-Plume ISB, are presented in **Tables 4-13, 4-14, 4-15, 4-16,** and **4-17**, respectively. These tables present the proposed monitoring locations along with the rationale for the selection of each monitoring location.

4.5.3.2 MNA Performance Monitoring

MNA is the component of the selected remedy for LHAAP-16 to reduce COC concentrations and to return groundwater to its potential beneficial use, wherever practical. No new groundwater monitoring wells are proposed to implement MNA at LHAAP-16. Monitoring of existing wells is expected to provide sufficient data to evaluate the performance of MNA. The performance monitoring plan for MNA for shallow and intermediate groundwater zones is presented in **Table 4-18** and shown in **Figure 4-8**.

Per the Final ROD (U.S. Army 2016), the performance evaluation for MNA will be based on data from eight quarters of monitoring combined with historical data to evaluate the effectiveness of various natural physical, chemical, and biological processes in reducing contaminant concentrations. Per the Final ROD, the following performance objectives will be used to evaluate MNA performance after two years:

- Plume stability (i.e., the plume concentrations are decreasing in the majority of performance wells, and the plume is not expanding in area as demonstrated with compliance wells).
- MNA potential based on evaluation of biodegradation screening scores using USEPA guidance
- MNA process evaluation, based on an attenuation rate calculated with empirical performance monitoring data, and MNA process demonstration based on the presence of daughter products and bacterial culture counts.

4.5.3.3 Contingency Action for MNA Areas

Per the ROD, a contingency remedy would be implemented if the above criteria (**Section 4.5.3.2**) are not met for the passive MNA areas (i.e., MNA areas outside the active remediation areas). The contingency remedy includes application of bioamendments (i.e., additional in-situ bioremediation) to address the ineffective aspects of MNA. The area and the elements of the contingency remedy would be determined based on the magnitude of deviation from the MNA performance criteria and the remedy area(s) with observed deviations. Therefore, the contingency remedy will evaluate any deficiencies in MNA performance and will attempt to address those deficiencies. If the contingency remedy is required, it will be documented in an Explanation of Significant Difference (ESD).

4.5.3.4 Follow-up Injections in Biobarriers

As specified in the ROD, follow-up injections for the biobarriers will be implemented based on groundwater monitoring results. The emulsified oil for the biobarriers is specified to last between 3 and 5 years. Nonetheless, the decision for reapplication of organic carbon will be made based on groundwater monitoring results. Three criteria for determining the need to reinject are:

- Depletion of the organic carbon to below 20 mg/L;

- ORP increases above -50 mV; and
- Contaminant concentrations in groundwater for the Landfill Biobarriers and in surface water for the Bayou Biobarrier remain above the cleanup standards.

If these conditions occur, then reinjection of organic carbon would be conducted, but only in those specific areas that meet the above criteria.

4.5.3.5 Surface Water Monitoring

Surface water monitoring will be conducted to confirm that surface water standards for the contaminants and by-product contaminants are not exceeded in Harrison Bayou, which flows into Caddo Lake. The surface water sampling events will be conducted concurrently with the groundwater sampling events for performance monitoring. Harrison Bayou is classified as an intermittent stream with perennial pools. Therefore, it is not expected that Harrison Bayou would be dry. However, as a contingency, if surface water samples could not be collected from Harrison Bayou during the quarterly sampling events, samples from Harrison Bayou would be collected outside the routine quarterly sampling events following significant rain events. The goal is to collect four surface water samples every monitoring year.

During each monitoring round, surface water samples will be collected at three locations in Harrison Bayou; upgradient, downgradient and immediately adjacent to LHAAP-16 (**Figure 4-9**). Surface water samples will be collected following the protocols included in Section 3.7 of the Final Installation-wide Work Plan (IWWP) for LHAAP (AECOM, 2014). These surface water samples will be analyzed for the COCs and the sample concentrations will be compared to the surface water cleanup levels listed in **Table 1-1**.

Surface water samples are collected for the purpose of evaluating impact from groundwater. Therefore, at these locations and during surface water sampling, the groundwater elevation in wells 16WW46, 16WW40, and 16WW43 will be gauged and compared to the bottom elevation of the creek to determine whether there is groundwater contribution to surface water.

4.5.4 Performance Monitoring – Year 3 through Five-Year Review

If MNA is determined to be effective based on the first two years of performance monitoring data, LTM will be initiated. Per the Final ROD, LTM will be implemented at a semiannual frequency for three years, then annually until the next five-year review. For LTM, the performance monitoring plan presented in **Table 4-18** will be modified as appropriate based on the review of first two years of data.

If MNA is found to be ineffective, a contingency remedy will be implemented to include application of bioamendments to address the ineffective aspects of MNA. If the bioamendments are reapplied, the ISB and MNA performance monitoring plans presented in **Tables 4-12 through 4-17** and the frequency of monitoring will be modified as appropriate based on the review of first two years of data.

4.5.5 Performance Monitoring Following Five-Year Review

Per the ROD, the results from performance monitoring will be reviewed during the five-year review. Unless otherwise indicated by the data, the wells and surface water locations will then be sampled during each five-year review.

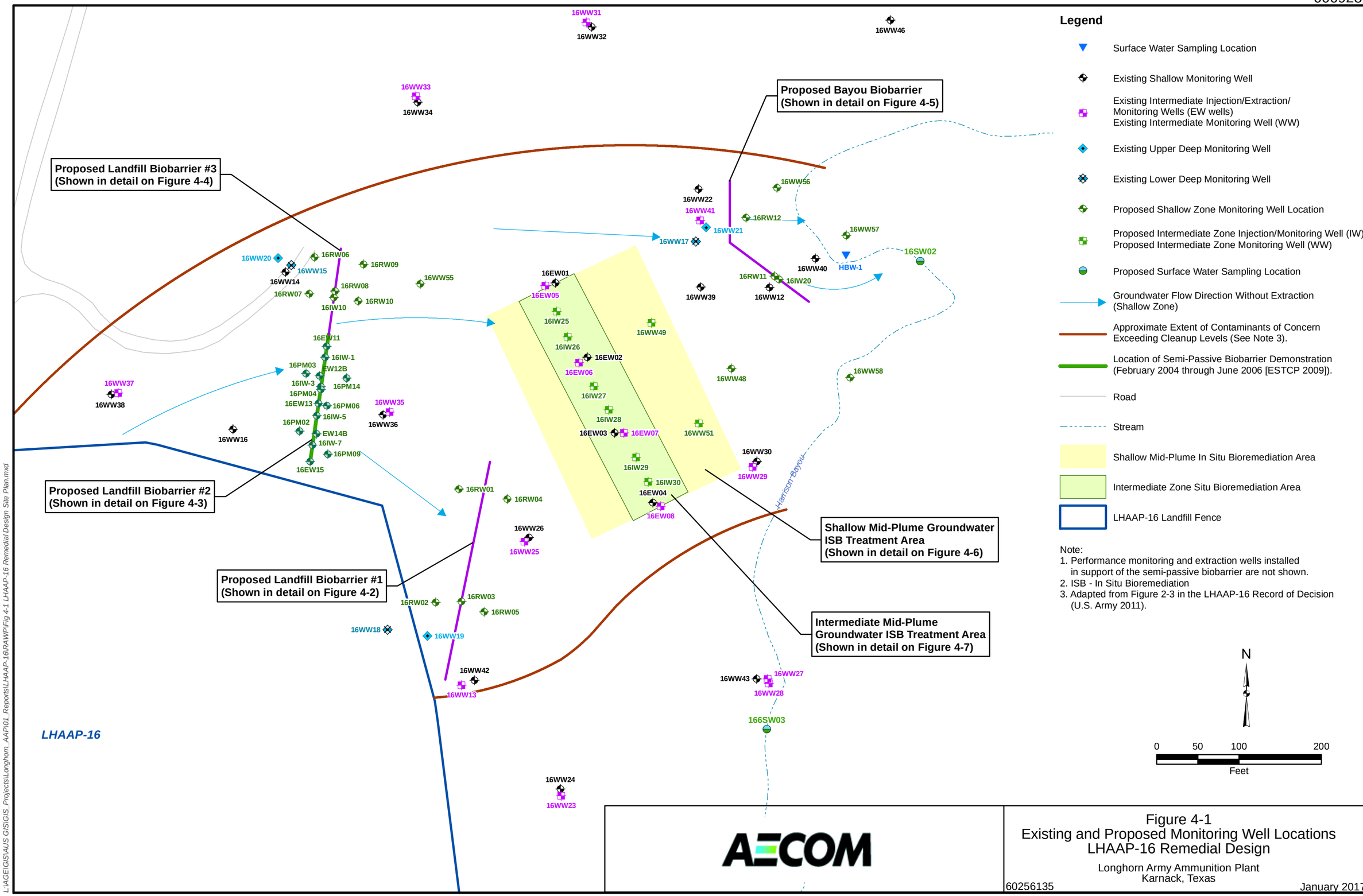

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Figure 4-1
Existing and Proposed Monitoring Well Locations
LHAAP-16 Remedial Design

Longhorn Army Ammunition Plant
Karnack, Texas

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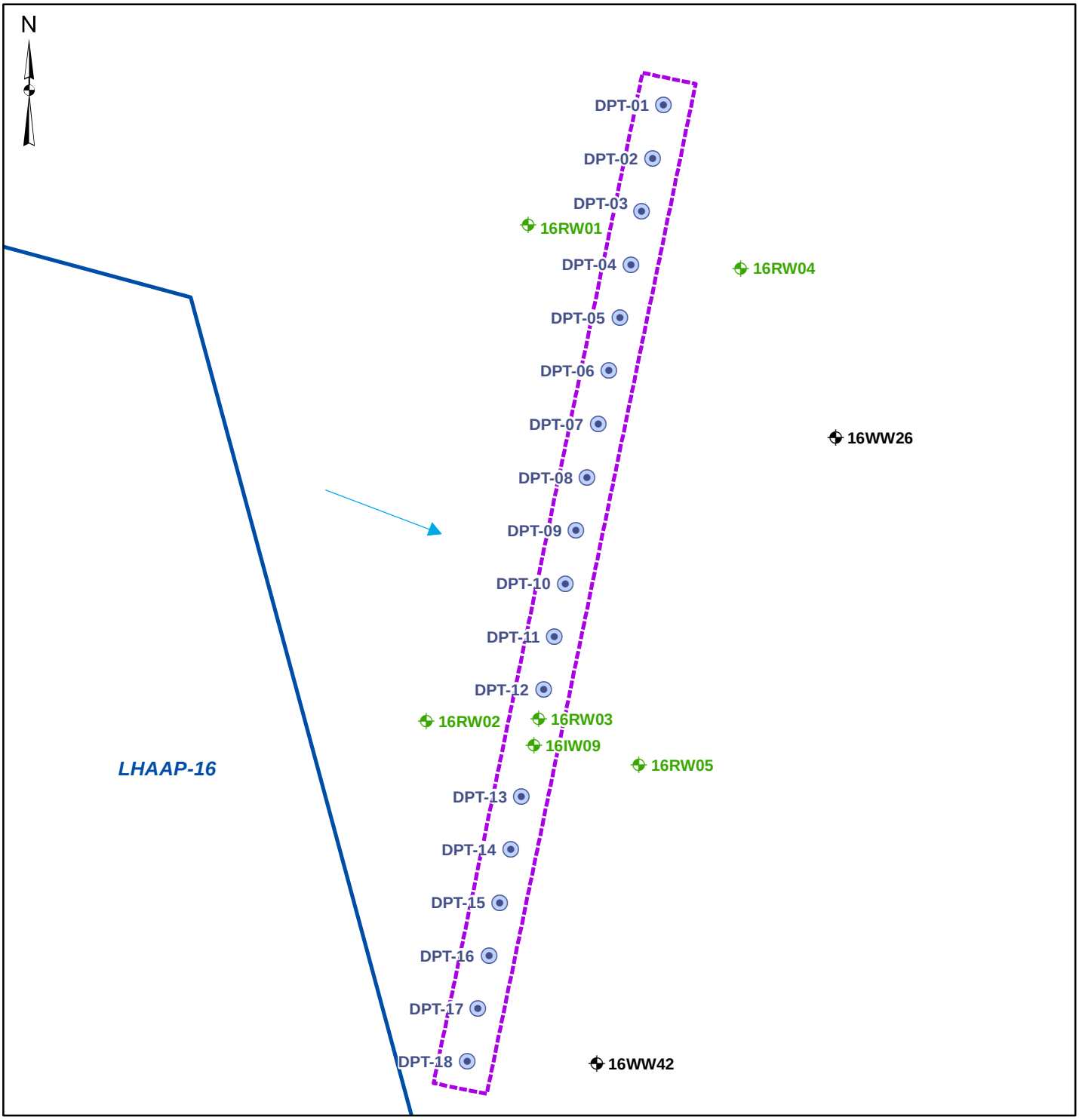

Legend

- Proposed Well Location
- Existing Well Location
- Proposed Direct Push Injection Point
- Groundwater Flow Direction Without Extraction (Shallow Zone)
- Target In-Situ Reaction Zone Based on Design Radius of Influence
- LHAAP-16 Landfill Fence

0 20 40 80 Feet

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Figure 4-2
Landfill Biobarrier #1 Design
LHAAP-16 Remedial Design

Longhorn Army Ammunition Plant
Karnack, Texas

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L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-16\RAWP\Fig 4-2 LHAAP-16 Landfill Biobarrier 1.mxd

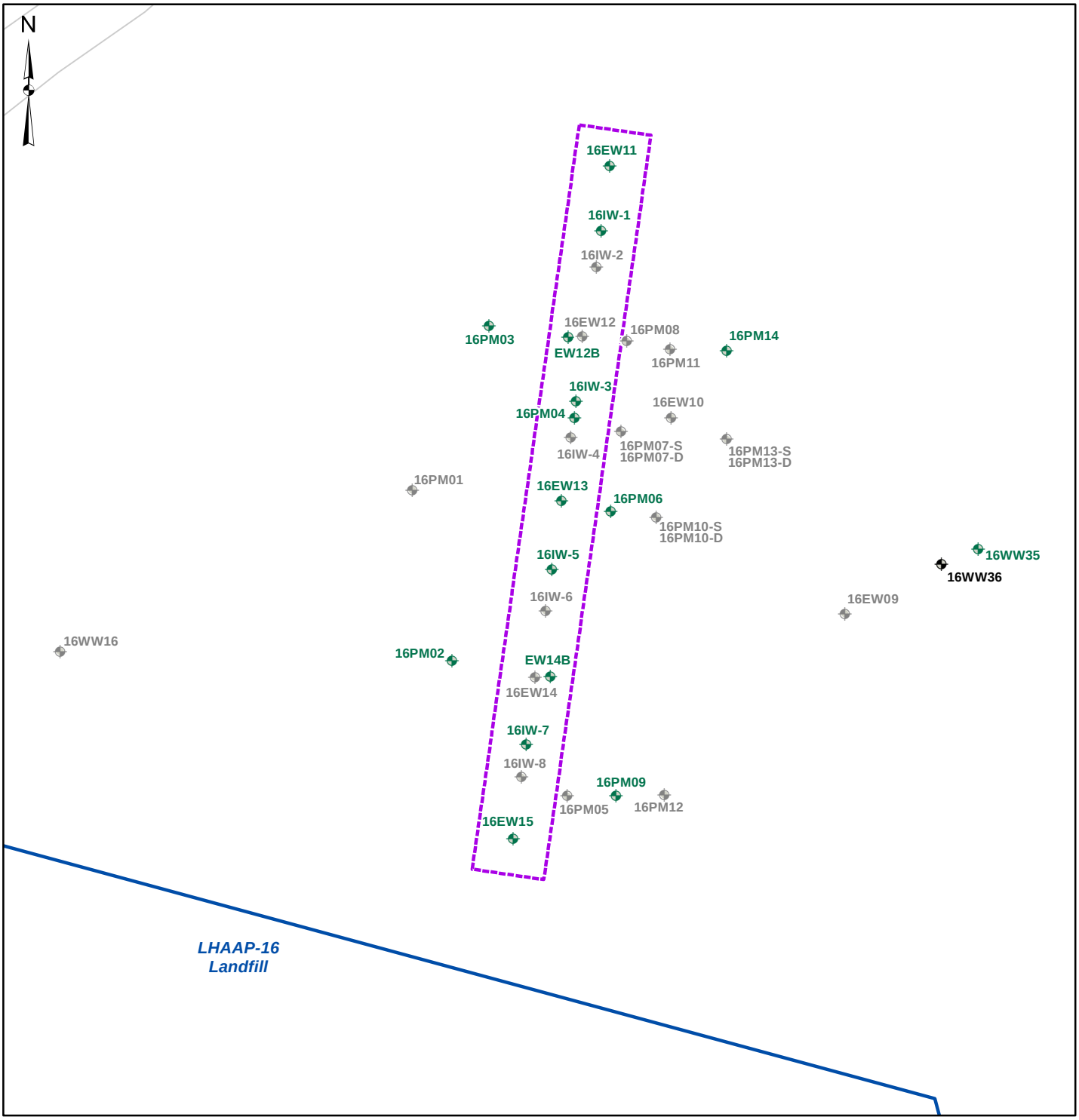

Legend

- Existing In-Situ Bioremediation Injection/ Extraction/Performance Monitoring Well
- Existing Monitored Natural Attenuation Performance Monitoring Well
- Other Existing Monitoring Well
- Target In-Situ Reaction Zone Based on Design Radius of Influence
- LHAAP Landfill Fence

Note:
1. Adapted from Figure 5-1 (ESTCP 2009).

0 15 30 60 Feet

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Figure 4-3
Landfill Biobarrier #2 Design
LHAAP-16 Remedial Design

Longhorn Army Ammunition Plant
Karnack, Texas

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L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-16\RAWP\Fig 4-3 LHAAP-16 Landfill Biobarrier 2.mxd

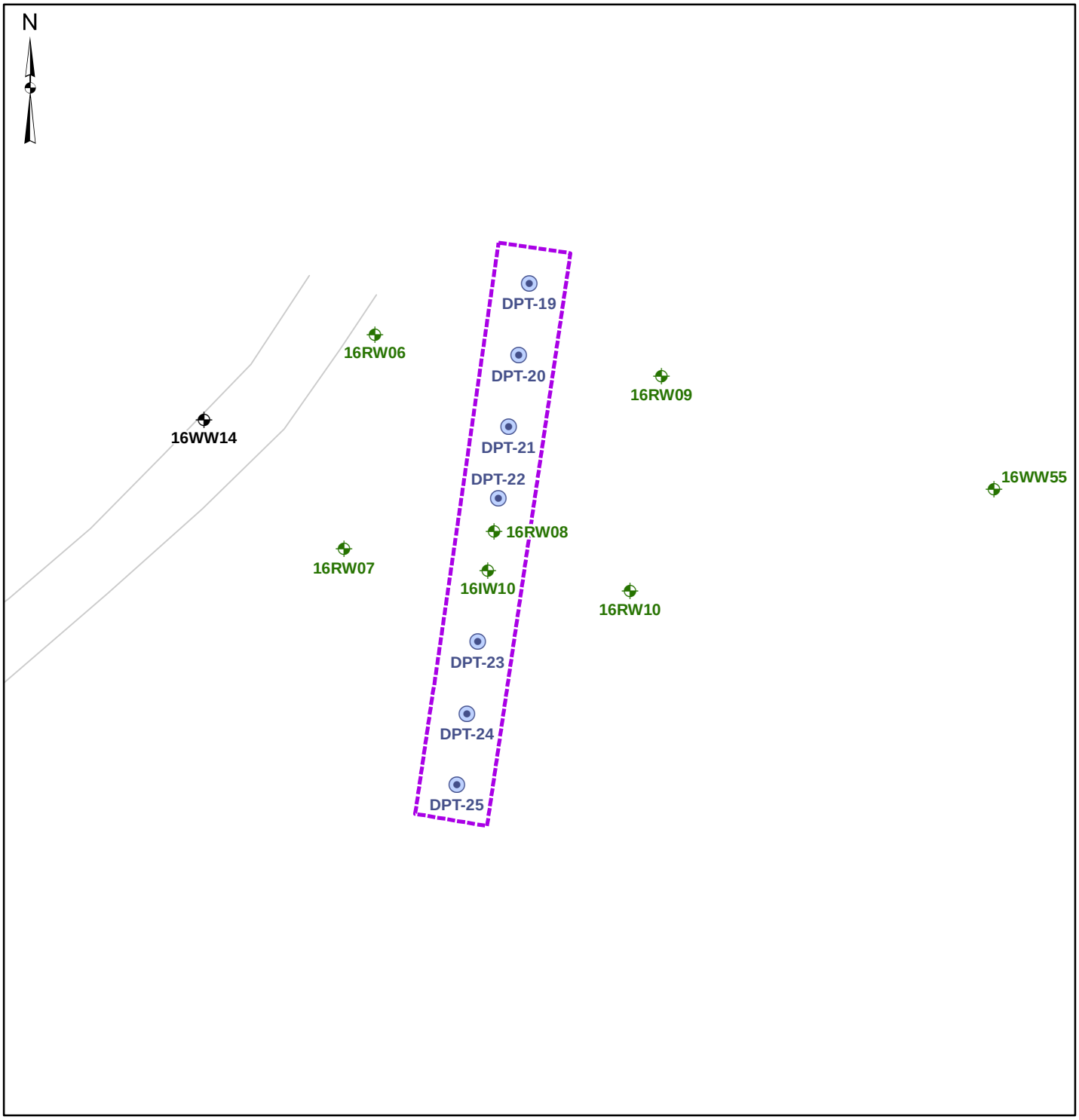

Legend

- Existing Shallow Monitoring Well
- Proposed Shallow Well Location
  IW -- Injection Well Location
  RW - Recovery Well Location
- Proposed Direct Push Injection Point
- Target In-Situ Reaction Zone Based on Design Radius of Influence

0 10 20 40 Feet

AECOM

Figure 4-4
Landfill Biobarrier #3 Design
LHAAP-16 Remedial Design

Longhorn Army Ammunition Plant
Karnack, Texas

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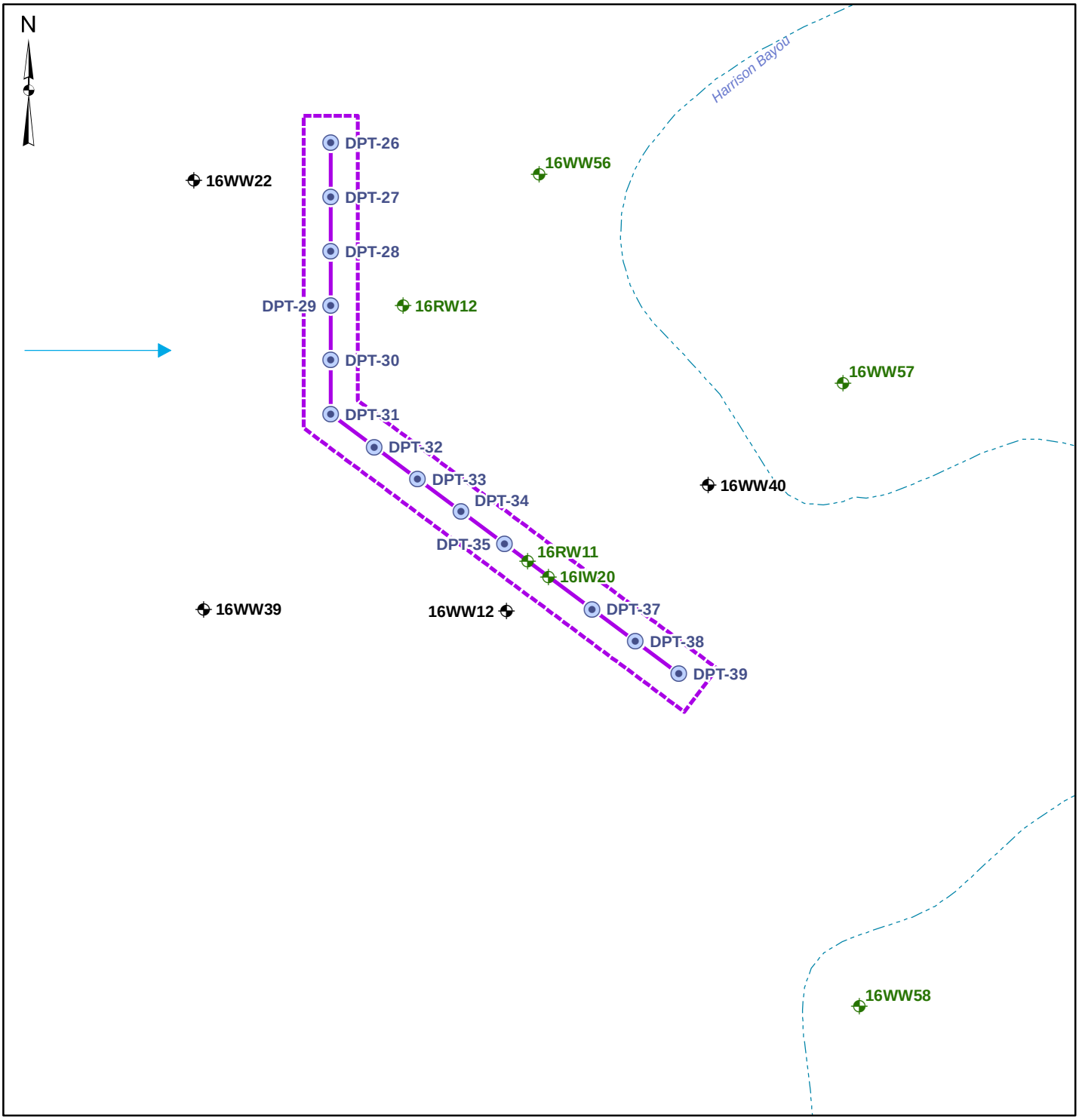

Legend

- Proposed Direct Push Injection Point
- Proposed Shallow Well Location
  IIW = Injection Well
  RW = Recovery Well Location
- Existing Shallow Monitoring Well Location
- Groundwater Flow Direction Without Extraction (Shallow Zone)
- Target In-Situ Reaction Zone Based on Design Radius of Influence

0 20 40 80 Feet

AECOM

Figure 4-5
Bayou Biobarrier Design
LHAAP-16 Remedial Design

Longhorn Army Ammunition Plant
Karnack, Texas

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L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-16\RAWP\Fig 4-5 LHAAP-16 Bayou Biobarrier.mxd

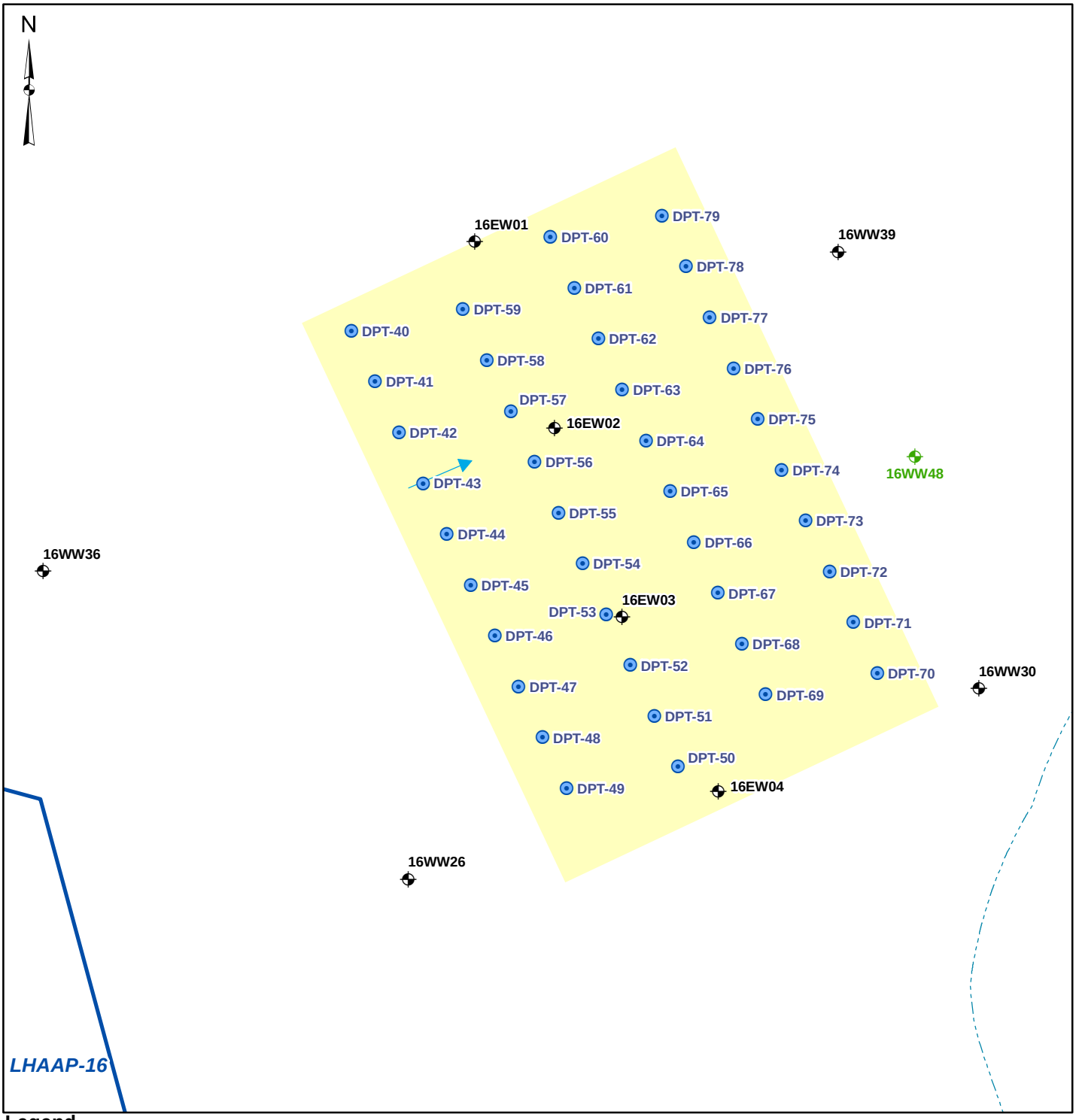

Legend

- Existing Shallow Monitoring Well (WW) or Extraction Well (EW) Location
- Proposed Shallow Monitoring Well Location
- Proposed Direct Push Injection Point
- Stream
- Groundwater Flow Direction Without Extraction (Shallow Zone)
- Shallow In Situ Bioremediation Area
- LHAAP-16 Landfill Fence

0 35 70 140 210 Feet

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Figure 4-6
Mid Plume Design Shallow Groundwater Zone
LHAAP-16 Remedial Design

Longhorn Army Ammunition Plant
Karnack, Texas

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L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-16\RAWP\Fig 4-6 LHAAP-16 Shallow Groundwater In Situ Bio Area.mxd

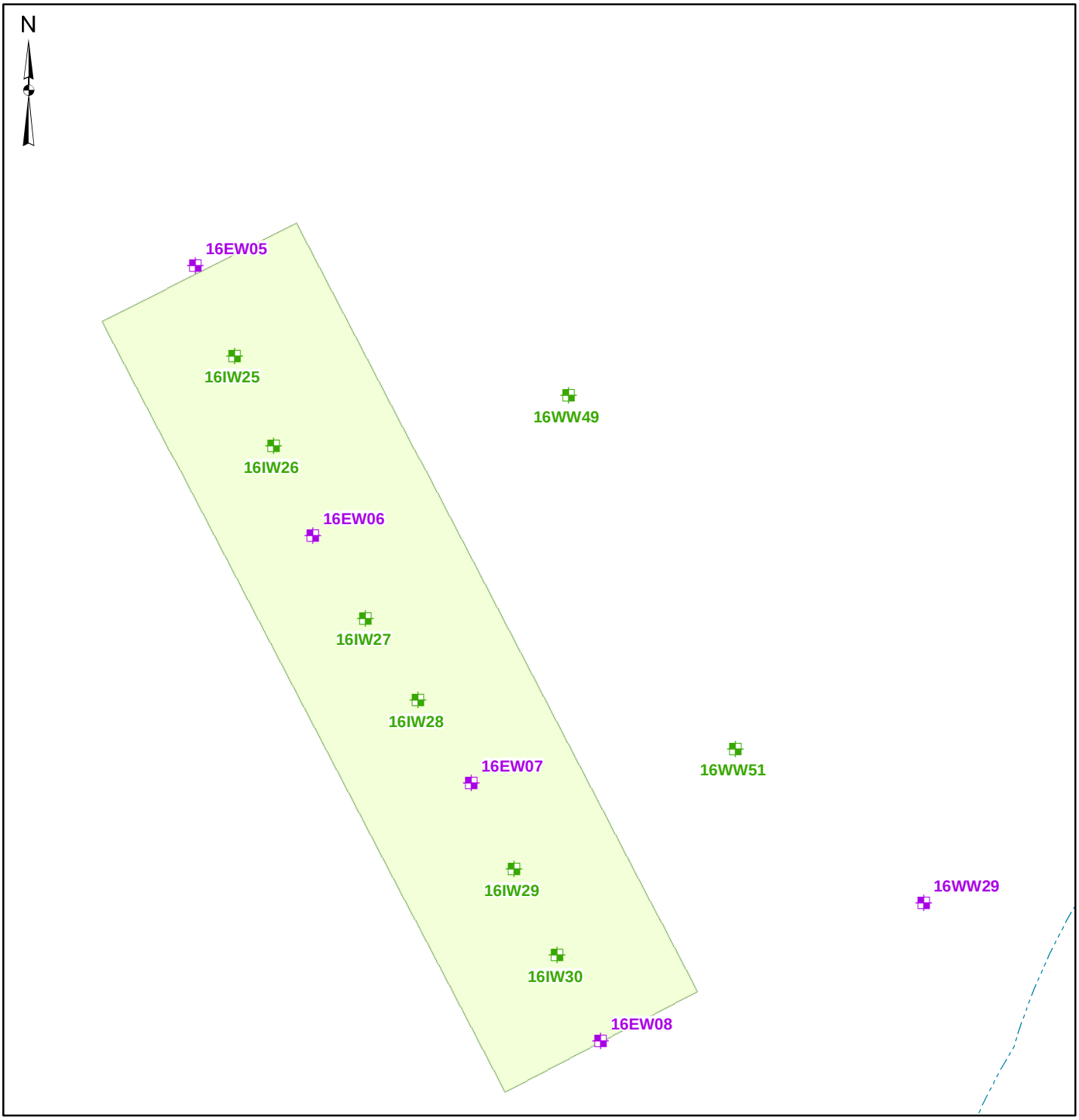

Legend

Existing Intermediate Injection/Extraction/Monitoring Well (EW well)
Existing Intermediate Monitoring Well (WW)

Proposed Intermediate Zone Injection/Monitoring Well (IW);
Proposed Intermediate Zone Monitoring Well (WW)

Intermediate Zone Situ Bioremediation Area

0 25 50 100 Feet

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Figure 4-7
Mid Plume Design Intermediate Groundwater Zone
LHAAP-16 Remedial Design

Longhorn Army Ammunition Plant
Karnack, Texas

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L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-16\RAWP\Fig 4-7 LHAAP-16 Int Groundwater In Situ Bio Area1.mxd

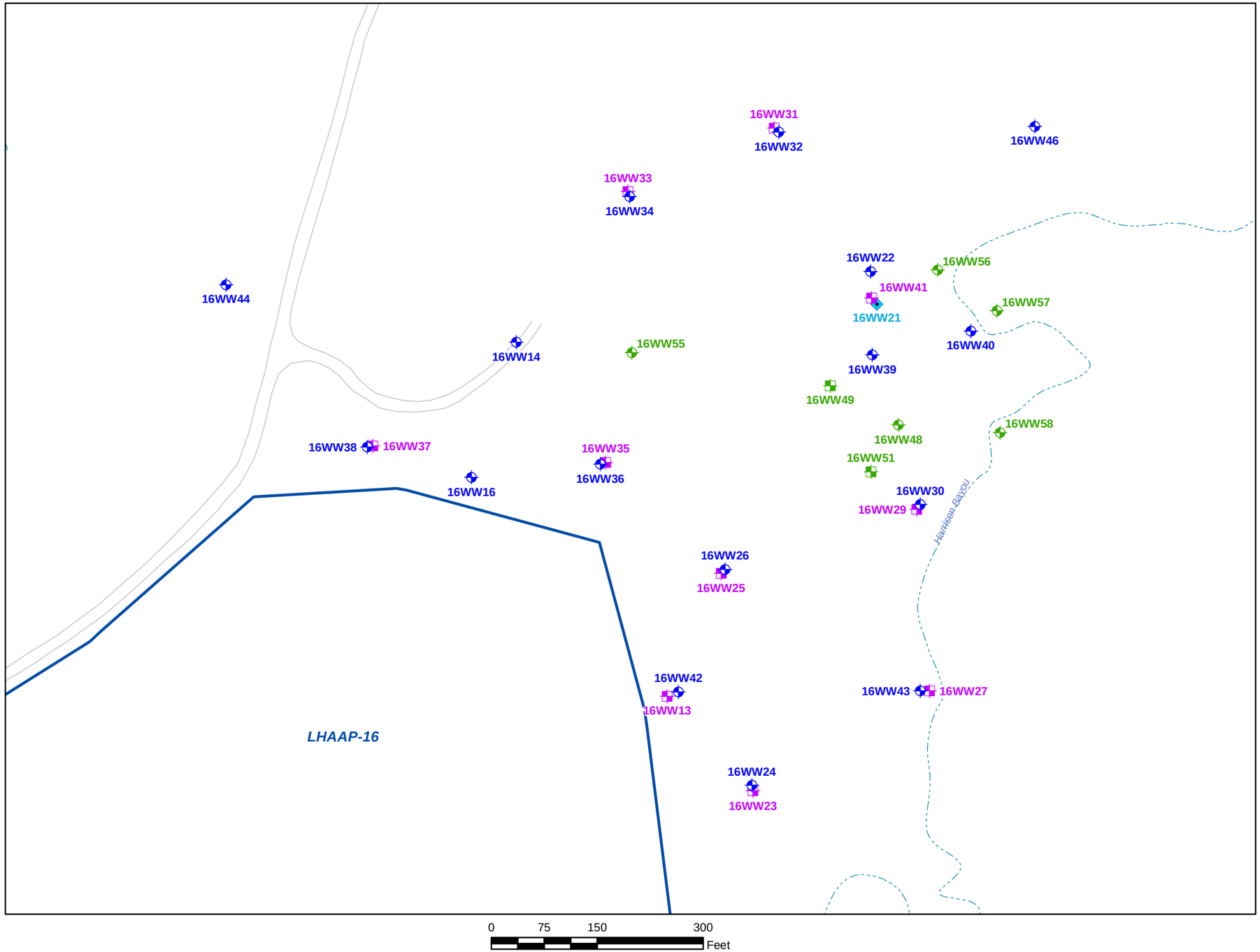

Legend

- LHAAP-16 Landfill Fence
- Road
- Stream
- Monitoring Well Location (Shallow Zone)
- Monitoring Well Location (Intermediate Zone)
- Monitoring Well Location (Deep Zone)
- Proposed Monitoring Well Location (Shallow Zone)
- Proposed Monitoring Well Location (Intermediate Zone)

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Figure 4-8
MNA and LTM Performance Monitoring Plan
LHAAP-16 Remedial Design

Longhorn Army Ammunition Plant
Karnack, Texas

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L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-16\RAWP\Fig 4-8 LHAAP-16 MNA&LTM PerfMonPlan.mxd

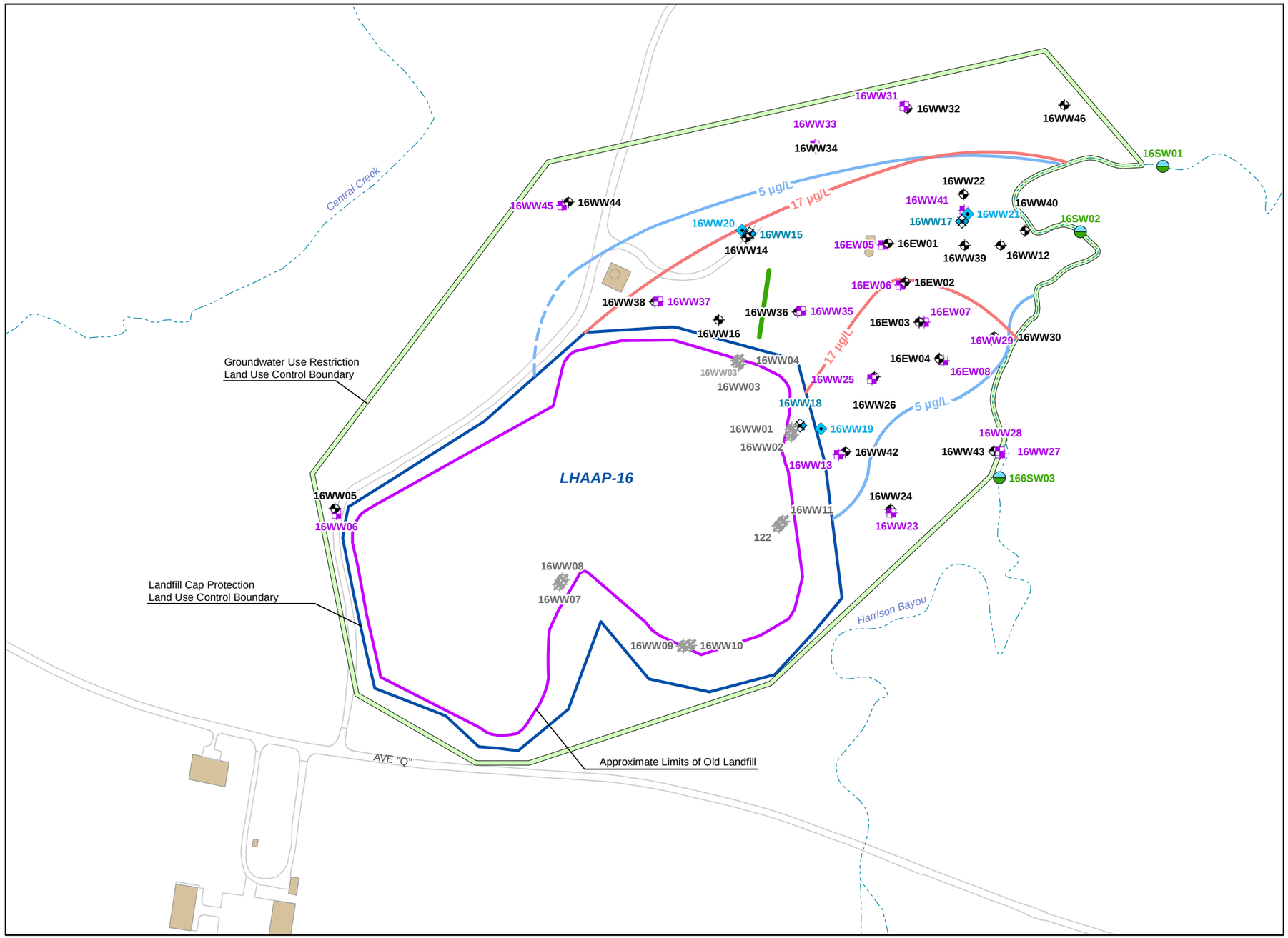

0 125 250 500 Feet

Legend

- Existing Shallow Monitoring Well
- Existing Intermediate Monitoring Well
- Existing Upper Deep Monitoring Well
- Existing Lower Deep Monitoring Well
- Abandoned or Plugged Well
- Proposed Surface Water Sampling Location
- Extent of Perchlorate Contamination > 17 µg/L in Intermediate and Shallow Zones (2013 May)
- Extent of TCE Contamination > 5 µg/L in Intermediate and Shallow Zones (Dashed Where Inferred) (2013 May)
- Location of Semi-Passive Biobarrier Demonstration (February 2004 through June 2006 [ESTCP 2009]).
- Road
- Stream
- Groundwater Use Restriction Land Use Control Boundary
- LHAAP-16 Landfill Fence

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Figure 4-9
Surface Water Sampling Locations
LHAAP-16 Remedial Design

Longhorn Army Ammunition Plant
Karnack, Texas

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Document Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn AAP\01_Reports\LHAAP-16\RAWP\Fig 4-9 LHAAP-16 SW Samp Locs.mxd

Table 4-1: Injection Depths and Monitoring Well Screen Intervals – Landfill Biobarrier #1

Well or DPT ID	Existing/ Proposed	Primary Purpose		DPT Injection Depths/ Screen Intervals (feet bgs)*
		Substrate Injection	Performance Monitoring	
DPT-01 — DPT-07	Proposed	✓		15 - 21
DPT-08 — DPT-12	Proposed	✓		13 – 18
DPT-13 — DPT-18	Proposed	✓		5 – 18
16IW09	Proposed	✓		13 – 18
16RW01	Proposed		✓	15 – 21
16RW02	Proposed		✓	13 – 18
16RW03	Proposed		✓	13 – 18
16RW04	Proposed		✓	15 – 21
16RW05	Proposed		✓	13 – 18
16WW26	Existing		✓	13 – 18
16WW42	Existing		✓	2 – 12

Note:

* DPT Injection depths and monitoring well screen intervals may be modified based on field observations including depth of clay layer separating shallow and intermediate groundwater zones and depth to groundwater.

Existing wells boring and well logs are included in **Appendix B**. Wells 16WW26 and 16WW42 used to estimate injection depths.

bgs - below ground surface

ID - identification

Table 4-2: Summary of Substrate Loading/Injection – Landfill Biobarrier #1

Injection Points	Total Weight of Concentrated Substrate (pounds)	Total Volume of Concentrated Substrate (gallons)	Dilution Ratio of Substrate with Water (by volume)	Volume of Diluted EDS-ER (with water) (gallons)	Volume of KB-1 Culture (liters)
DPT-01 through DPT-18, and 16IW09	5,041	729	10:1	7,290 (383.7)[a]	19 (1) [a]

Notes:

[a] Total volume in all injection points (Volume in each injection point).

EDS-ER - Electron Donor Substrate – Extended Release

ESTCP	EVO @ 60%	7729	lbs
	EDS-ER @ 92%	5041	lbs
	Volume of Conc. Sub.	729	gallons
	Specific gravity of EDS-ER	0.925	s.g of EDS-ER

Table 4-3: Screen Intervals of Injection/Monitoring Wells – Landfill Biobarrier #2

Well ID	Existing/Proposed	Primary Purpose		Injection/ Screen Intervals (feet bgs)*
		Substrate Injection	Performance Monitoring	
16EW11	Existing	✓		15.2 – 24.8
16EW12B	Existing	✓		13 – 28
16EW13	Existing	✓		15 – 24.6
16EW14B	Existing	✓		14 – 29
16EW15	Existing	✓		13.9 – 23.5
16IW01	Existing	✓		15 – 25
16IW03	Existing	✓		15 – 25
16IW05	Existing	✓		15 – 25
16IW07	Existing	✓		14 – 24
16PM02	Existing		✓	15.1 – 24.8
16PM03	Existing		✓	15 – 24.5
16PM04	Existing		✓	15.1 – 24.8
16PM14	Existing		✓	15.2 – 24.8
16PM06	Existing		✓	14.9 – 24.6
16PM09	Existing		✓	14.1 – 23.8

Note:

* Injection / monitoring well screen intervals may be modified during field implementation activities based on field observations including depth clay layer separating shallow and intermediate groundwater zones and depth to groundwater.

Existing wells boring and well logs are included in **Appendix B**. Wells 16EW11 through 16EW15 used to estimate injection depths.

bgs - below ground surface

ID - identification

Table 4-4: Summary of Substrate Loading/Injection – Landfill Biobarrier #2

Injection Wells	Extraction Wells	Total Weight of Concentrated Substrate (pounds)	Total Volume of Concentrated Substrate (gallons)	Dilution Ratio of Substrate with Water (by volume)	Volume of Dilute EDS-ER + Water (gallons)	Volume of KB-1 Culture (liters)
Phase I						
16IW01 16IW03 16IW05 16IW07	16EW11 16EW12B 16EW13 16EW14B 16EW15	1797	260	10:1	2,600 (1,475.5)[a]	8 (2)[a]
Phase II						
16EW11 16EW12B 16EW13 16EW14B 16EW15	No extraction will take place during Phase II	1797	260	10:1	2,600 (1,180)[a]	10 (2)[a]

Notes:

[a] Total volume in all injection wells during subject injection phase (Volume in each injection well during subject injection phase).

EDS-ER - Electron Donor Substrate – Extended Release

ESTCP	EVO @ 60%	5510	lbs
	EDS-ER @ 92%	3593	lbs
	EDS-ER @ 92% per Phase	1797	lbs
	Volume of Conc. Sub.	260	gallons
	Specific gracity of EDS-ER	0.925	s.g of EDS-ER

Table 4-5: Injection Depths and Monitoring Well Screen Intervals – Landfill Biobarrier #3

Well or DPT ID	Existing/Proposed	Primary Purpose		DPT Injection Depths/Screen Intervals (feet bgs)*
		Substrate Injection	Performance Monitoring	
DPT-19 — DPT-22	Proposed	✓		17 - 27
DPT-23 — DPT-25	Proposed	✓		15 – 25
16IW10	Proposed	✓		15 – 25
16RW06	Proposed		✓	17 – 27
16RW07	Proposed		✓	15 – 25
16RW08	Proposed		✓	15 – 25
16RW09	Proposed		✓	17 - 27
16RW10	Proposed		✓	15 – 25

Note:

* DPT Injection depths and monitoring well screen intervals may be modified based on field observations including depth of clay layer separating shallow and intermediate groundwater zones and depth to groundwater.

Existing wells boring and well logs are included in Appendix B. Wells 16WW14 used to estimate injection depths.

bgs - below ground surface

ID - identification

Table 4-6: Summary of Substrate Loading/Injection – Landfill Biobarrier #3

Injection Points	Total Weight of Concentrated Substrate (pounds)	Total Volume of Concentrated Substrate (gallons)	Dilution Ratio of Substrate with Water (by volume)	Volume of Diluted EDS-ER (with water) (gallons)	Volume of KB-1 Culture (liters)
DPT-19 through DPT-25, and 16IW10	2,333	337	10:1	3,370 (374.5)[a]	8 (1) [a]

Notes:

[a] Total volume in all injection points (Volume in each injection point).

EDS-ER - Electron Donor Substrate – Extended Release

ESTCP	EVO @ 60%	3578	lbs
	EDS-ER @ 92%	2333	lbs
	Volume of Conc. Sub.	337	gallons
	Specific gracity of EDS-ER	0.925	s.g of EDS-ER

Table 4-7: Injection Depths and Monitoring Well Screening Intervals – Bayou Biobarrier

Well or DPT ID	Existing/Proposed	Primary Purpose		DPT Injection Depths/Screen Intervals (feet bgs)*
		Substrate Injection	Performance Monitoring	
DPT-26 — DPT-31	Proposed	✓		22 – 32
DPT-32 — DPT-35	Proposed	✓		18 – 28
DPT-37 — DPT-39	Proposed	✓		14 – 24
16IW20	Proposed	✓		14 – 24
16WW22	Existing		✓	21 – 31
16RW11	Proposed		✓	14 – 24
16RW12	Proposed		✓	22 – 32
16WW39	Existing		✓	N/A
16WW12	Existing		✓	14 – 24

Note:

* DPT Injection depths and monitoring well screen intervals may be modified based on field observations including depth of clay layer separating shallow and intermediate groundwater zones and depth to groundwater.

Existing wells boring and well logs are included in **Appendix B**. Wells 16WW12 and 16WW22 used to estimate injection depths.

bgs - below ground surface

ID - identification

N/A - not available

Table 4-8: Summary of Substrate Loading/Injection – Bayou Biobarrier

Injection Points	Total Weight of Concentrated Substrate (pounds)	Dilution Ratio of Substrate (ABC) with Water (by weight)	Volume of Diluted ABC[b] (with water) (gallons)	Volume of KB-1 Culture (liters)
DPT-26 through DPT-39, and 16IW20	7,000[a]	10:01	3,800 (271)[c]	14 (1) [c]

Notes:

[a] Includes 3,500 pounds of ABC and 3,500 pounds of ZVI.

[b] Includes ABC volume only (ZVI volume not included).

[c] Total volume in all injection points (Volume in each injection point).

Table 4-9: Screen Intervals of Injection/Extraction Wells – Mid-Plume ISB

Well ID	Existing/ Proposed	Purpose		Screen Intervals (feet bgs)[b]
		Substrate Emplacement[a]	Performance Monitoring	
Shallow Groundwater Zone				
DPT-40 — DPT-79	Proposed	✓		14-36
16EW01	Existing		✓	31.2 – 36.2
16EW02	Existing		✓	21.5 – 26.5
16EW03	Existing		✓	13 – 18
16EW04	Existing		✓	14 – 19
16WW48	Proposed		✓	25-35
16WW39	Existing		✓	N/A
16WW30	Existing		✓	25-35
Intermediate Groundwater Zone				
16EW05	Existing	✓	✓	47 – 52
16EW06	Existing	✓	✓	50 – 55
16EW07	Existing	✓	✓	41 – 46
16EW08	Existing	✓	✓	34 – 39
16IW25	Proposed	✓		40 - 55
16IW26	Proposed	✓		40 - 55
16IW27	Proposed	✓		40 - 55
16IW28	Proposed	✓		35 - 50
16IW29	Proposed	✓		35 - 50
16IW30	Proposed	✓		35 - 50
16WW49	Proposed		✓	45-55
16WW51	Proposed		✓	35-45

Note:

[a] See Table 4-10 for details.

[b] Injection / monitoring well screen intervals may be modified during field implementation activities based on field observations including depth clay layer separating shallow and intermediate groundwater zones and depth to groundwater.

Existing wells boring and well logs are included in **Appendix B**. Wells 16EW01 through 16EW04 in the Shallow Zone and wells 16EW05 through 16EW08 in the Intermediate Zone used to estimate injection depths.

N/A - not available

Table 4-10: Summary of Substrate Loading/Injection – Mid-Plume ISB

Injection Wells	Total Weight of Substrate (pounds)	Total Volume of Concentrated Substrate (gallons)	Dilution Ratio of Substrate with Water (by volume)	Volume of Diluted EDS-ER (with water) (gallons)	Volume of KB-1 Culture (liters)
Shallow Zone					
DPT-40 through DPT-79	28,414	4,107	10:1	41,070 (1,027)[a]	40 (1) [a]
Intermediate Zone					
Injection Wells 16IW25 16IW26 16IW27 16IW28 16IW29 16IW30 Injection/Extraction Wells 16EW05 16EW06 16EW07 16EW08	16,565	2,394	10:1	23,940 (3,990)[a]	20 (2)[a]

Notes:

[a] Total volume in all injection points/wells (Volume in each injection point/wells)
EDS-ER - Electron Donor Substrate – Extended Release

Shallow Zone

ESTCP	EVO @ 60% (ESTCP)	43568	lbs
	EDS-ER @ 92%	28414	lbs
	Volume of Conc. Sub.	4107	gallons
	Specific gracity of EDS-ER	0.925	

Intermeidate Zone

ESTCP	EVO @ 60% (ESTCP)	25399	lbs
	EDS-ER @ 92%	16565	lbs
	Volume of Conc. Sub.	2394	gallons
	Specific gracity of EDS-ER	0.925	

Table 4-11: Pre-Remedy Groundwater Sampling Plan in the Shallow Zone - LHAAP-16

Monitoring Locations	ISB Area	Proposed Analyses								
		VOCs[a] (SW8260B)	Perchlorate (314.0)	Anions[b] (E300.0)	Dissolved Gases[c] (RSK-175)	Alkalinity (2320B)	TOC (SW9060)	DHC (qPCR)	Bromide (E300.0)	Field Parameters[d]
16WW44	Background	✓	✓							✓
16WW38	Upgradient to Landfill Biobarrier #2	✓	✓							✓
16WW16	Upgradient to Landfill Biobarrier #2	✓	✓	✓	✓	✓	✓	✓	✓	✓
16WW14	Upgradient to Landfill Biobarrier #3	✓	✓							✓
16WW55	Downgradient to Landfill Biobarrier #3	✓	✓	✓	✓	✓	✓	✓	✓	✓
16WW36	Downgradient to Landfill Biobarrier #2	✓	✓	✓	✓	✓	✓	✓	✓	✓
16WW26	Downgradient to Landfill Biobarrier #1	✓	✓	✓	✓	✓	✓	✓	✓	✓
16WW42	Downgradient to Landfill Biobarrier #1	✓	✓						✓	✓
16WW30	Downgradient of Mid-Plume ISB Area	✓	✓						✓	✓
16WW48	Downgradient of Mid-Plume ISB Area (proposed)	✓	✓	✓	✓	✓	✓	✓	✓	✓
16WW39	Downgradient of Mid-Plume ISB Area (Existing)	✓	✓						✓	✓
16WW12	Upgradient to Bayou Biobarrier	✓	✓						✓	✓
16WW40	Downgradient to Bayou Biobarrier	✓	✓						✓	✓
16WW22	Upgradient to Bayou Biobarrier	✓	✓	✓	✓	✓	✓	✓	✓	✓
16WW56	Downgradient to Bayou Biobarrier	✓	✓	✓	✓	✓	✓	✓	✓	✓
16WW57	Across Bayou Biobarrier	✓	✓	✓	✓	✓	✓	✓	✓	✓
16WW58	Across Bayou Biobarrier	✓	✓	✓	✓	✓	✓	✓	✓	✓
16WW46	Downgradient Outside of Contaminated Area	✓	✓							✓
16WW32	Cross-graident Outside of Containment Area	✓	✓							✓
16WW34	Cross-graident Outside of Containment Area	✓	✓							✓
16WW24	Cross-gradient to South of Plume	✓	✓	✓	✓	✓	✓	✓	✓	✓
16WW43	Cross-gradient to South of Plume	✓	✓	✓	✓	✓	✓	✓	✓	✓
16WW21	Downgradient of Mid-Plume ISB Area	✓	✓						✓	✓
16EW02	Inside Mid-Plume ISB Area	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 4-11: Pre-Remedy Groundwater Sampling Plan in the Shallow Zone - LHAAP-16

Notes:
This schedule assumes sampling of the extraction wells will be continued annualy until the remedy is implemented; therefore, only 16EW02 will be sampled during pre-remedy monitoring.

[a] VOCs include TCE; cis-1,2-DCE; 1,1-DCE; 1,2-DCA; 1,1,2-TCA; VC; and methylene chloride.

[b] Anions include nitrate and sulfate.

[c] Dissolved gasses include ethene, ethane, and methane.

[d] Field Parameters include dissolved oxygen, oxidation reduction potential, and pH.

✓ Indicates that sample will be collected and analyzed for the listed analyte.

DHC - Dehalococcoides (microbial analysis)

TOC - total organic carbon

VOCs - volatile organic compounds

Table 4-12: Pre-Remedy Groundwater Sampling Plan in the Intermediate Zone - LHAAP-16

Monitoring Locations	ISB Area	Proposed Analyses								
		VOCs[a] (SW8260B)	Perchlorate (314.0)	Anions[b] (E300.0)	Dissolved Gases[c] (RSK-175)	Alkalinity (2320B)	TOC (SW9060)	DHC (qPCR)	Bromide (E300.0)	Field Parameters[d]
16WW45	Background	✓	✓							✓
16WW37	Downgradient of Landfill/Upgradient of Landfill Biobarrier #2	✓	✓							✓
16WW35	Upgradient of Mid-Plume ISB Area/Downgradient of Landfill Biobarrier #2	✓	✓	✓	✓	✓	✓	✓	✓	✓
16WW25	Upgradient of Mid-Plume ISB Area/Downgradient of Landfill Biobarrier #1	✓	✓	✓	✓	✓	✓	✓	✓	✓
16WW13	Downgradient of Landfill	✓	✓						✓	✓
16WW23	Downgradient of Landfill	✓	✓							✓
16WW27	Downgradient Outside of Contaminated Area	✓	✓							✓
16WW29	Downgradient of Mid-Plume ISB Area	✓	✓	✓	✓	✓	✓	✓	✓	✓
16WW41	Downgradient of Mid-Plume ISB Area	✓	✓	✓	✓	✓	✓	✓	✓	✓
16WW31	Cross-graident Outside of Containment Area	✓	✓							✓
16WW33	Cross-graident Outside of Containment Area	✓	✓							✓
16WW49	Downgradient of Mid-Plume ISB Area (proposed)	✓	✓						✓	✓
16WW51	Downgradient of Mid-Plume ISB Area (proposed)	✓	✓						✓	✓
16WW21[e]	Downgradient of Mid-Plume ISB Area	✓	✓							✓
16EW06	Inside Mid-Plume ISB Area	✓	✓	✓	✓	✓	✓	✓	✓	✓

Notes:

This schedule assumes sampling of the extraction wells will be continued annualy until the remedy is implemented; therefore, only 16EW06 will be sampled during pre-remedymonitoring.

[a] VOCs include TCE; cis-1,2-DCE; 1,1-DCE; 1,2-DCA; 1,1,2-TCA; VC; and methylene chloride.

[b] Anions include nitrate and sulfate.

[c] Dissolved gasses include ethene, ethane, and methane.

[d] Field Parameters include dissolved oxygen, oxidation reduction potential, and pH.

[e] Upper Deep Monitoring Well

✓ Indicates that sample will be collected and analyzed for the listed analyte.

DHC - Dehalococcoides (microbial analysis)

TOC - total organic carbon

VOCs - volatile organic compounds

Table 4-13: ISB Performance Monitoring Plan (Years 1 and 2) – Landfill Biobarrier #1

Monitoring Locations	Primary Rationale for Well Selection	Proposed Analyses																																				
		First Two Months (Up to Two Events)[a]												Year 1 (Quarterly)													Year 2 (Quarterly)											
		Perchlorate (314.0)	VOCs[c] (SW8260B)	DO (field reading)	ORP (field reading)	pH (field reading)	Alkalinity (2320B)	Anions[b] (E300.0)	Ethene (RSK-175)	Ethane (RSK-175)	Methane (RSK-175)	Bromide (E300.0)	TOC (SW9060)	Perchlorate (314.0)	VOCs[c] (SW8260B)	DO (field reading)	ORP (field reading)	pH (field reading)	Alkalinity (2320B)	Anions[b] (E300.0)	Ethene (RSK-175)	Ethane (RSK-175)	Methane (RSK-175)	DHC (qPCR)	Bromide (E300.0)	TOC (SW9060)	Perchlorate (314.0)	VOCs[c] (SW8260B)	DO (field reading)	ORP (field reading)	pH (field reading)	Alkalinity (2320B)	Anions[b] (E300.0)	Ethene (RSK-175)	Ethane (RSK-175)	Methane (RSK-175)	Bromide (E300.0)	TOC (SW9060)
16IW09	Performance data within the biobarrier			✓	✓	✓						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
16RW03	Performance data within the biobarrier			✓	✓	✓						✓	✓																										
16RW01	Upgradient well for monitoring influent concentrations			✓	✓	✓						✓	✓	✓	✓	✓	✓	✓									✓	✓	✓	✓	✓							
16RW02	Upgradient well for monitoring influent concentrations			✓	✓	✓						✓	✓	✓	✓	✓	✓	✓									✓	✓	✓	✓	✓							
16RW04	Downgradient well to monitor effluent concentrations and biobarrier effectiveness			✓	✓	✓						✓	✓	✓	✓	✓	✓	✓							✓	✓	✓	✓	✓	✓	✓	✓						
16RW05	Downgradient well to monitor effluent concentrations and biobarrier effectiveness			✓	✓	✓						✓	✓	✓	✓	✓	✓	✓							✓	✓	✓	✓	✓	✓	✓	✓						
16WW26	Downgradient well to monitor effluent concentrations and biobarrier effectiveness			✓	✓	✓						✓	✓	✓	✓	✓	✓	✓							✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓		✓
16WW42	Downgradient well to monitor effluent concentrations and biobarrier effectiveness			✓	✓	✓						✓	✓	✓	✓	✓	✓	✓							✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓		✓

Notes:

[a] To be conducted within 15 to 30 days of the completion of substrate injection. A second event will be collected between 45 and 60 days if the results from the first event were inconclusive.

[b] Anions include nitrate and sulfate.

[c] VOCs include TCE; cis-1,2-DCE; 1,1-DCE; 1,2-DCA; 1,1,2-TCA; VC; and methylene chloride.

✓ Indicates that sample will be collected and analyzed for the listed analyte.

Table 4-14: ISB Performance Monitoring Plan (Years 1 and 2) – Landfill Biobarrier #2

Monitoring Locations	Primary Rationale for Well Selection	Proposed Analyses																																			
		First Two Months (Up to Two Events)[a]												Year 1 (Quarterly)													Year 2 (Quarterly)											
		Perchlorate (314.0)	VOCs[c] (SW8260B)	DO (field reading)	ORP (field reading)	pH (field reading)	Alkalinity (2320B)	Anions[b] (E300.0)	Ethene (RSK-175)	Ethane (RSK-175)	Methane (RSK-175)	Bromide (E300.0)	TOC (SW9060)	Perchlorate (314.0)	VOCs[c] (SW8260B)	DO (field reading)	ORP (field reading)	pH (field reading)	Alkalinity (2320B)	Anions[b] (E300.0)	Ethene (RSK-175)	Ethane (RSK-175)	Methane (RSK-175)	DHC (qPCR)	Bromide (E300.0)	TOC (SW9060)	Perchlorate (314.0)	VOCs[c] (SW8260B)	DO (field reading)	ORP (field reading)	pH (field reading)	Alkalinity (2320B)	Anions[b] (E300.0)	Ethene (RSK-175)	Ethane (RSK-175)	Methane (RSK-175)	Bromide (E300.0)	TOC (SW9060)
16IW03	Performance data within the biobarrier			✓	✓	✓						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
16IW04	Performance data within the biobarrier			✓	✓	✓						✓	✓																									
16PM02	Upgradient well for monitoring influent concentrations			✓	✓	✓						✓	✓	✓	✓	✓	✓	✓									✓	✓	✓	✓	✓							
16PM03	Upgradient well for monitoring influent concentrations			✓	✓	✓						✓	✓	✓	✓	✓	✓	✓									✓	✓	✓	✓	✓							
16PM06	Downgradient well to monitor effluent concentrations and biobarrier effectiveness			✓	✓	✓						✓	✓	✓	✓	✓	✓	✓							✓	✓	✓	✓	✓	✓	✓							
16PM09	Downgradient well to monitor effluent concentrations and biobarrier effectiveness			✓	✓	✓						✓	✓	✓	✓	✓	✓	✓									✓	✓	✓	✓	✓							
16PM14	Downgradient well to monitor effluent concentrations and biobarrier effectiveness			✓	✓	✓						✓	✓	✓	✓	✓	✓	✓							✓	✓	✓	✓	✓	✓	✓							
16WW36	Downgradient well to monitor effluent concentrations and biobarrier effectiveness			✓	✓	✓						✓	✓	✓	✓	✓	✓	✓							✓	✓	✓	✓	✓	✓	✓			✓	✓	✓		✓

Notes:

[a] To be conducted within 15 to 30 days of the completion of substrate injection. A second event will be collected between 45 and 60 days if the results from the first event were inconclusive.

[b] Anions include nitrate and sulfate.

[c] VOCs include TCE; cis-1,2-DCE; 1,1-DCE; 1,2-DCA; 1,1,2-TCA; VC; and methylene chloride.

✓ Indicates that sample will be collected and analyzed for the listed analyte.

Table 4-15: ISB Performance Monitoring Plan (Years 1 and 2) – Landfill Biobarrier #3

Monitoring Locations	Primary Rationale for Well Selection	Proposed Analyses																																				
		First Two Months (Up to Two Events)[a]												Year 1 (Quarterly)													Year 2 (Quarterly)											
		Perchlorate (314.0)	VOCs[c] (SW8260B)	DO (field reading)	ORP (field reading)	pH (field reading)	Alkalinity (2320B)	Anions[b] (E300.0)	Ethene (RSK-175)	Ethane (RSK-175)	Methane (RSK-175)	Bromide (E300.0)	TOC (SW9060)	Perchlorate (314.0)	VOCs[c] (SW8260B)	DO (field reading)	ORP (field reading)	pH (field reading)	Alkalinity (2320B)	Anions[b] (E300.0)	Ethene (RSK-175)	Ethane (RSK-175)	Methane (RSK-175)	DHC (qPCR)	Bromide (E300.0)	TOC (SW9060)	Perchlorate (314.0)	VOCs[c] (SW8260B)	DO (field reading)	ORP (field reading)	pH (field reading)	Alkalinity (2320B)	Anions[b] (E300.0)	Ethene (RSK-175)	Ethane (RSK-175)	Methane (RSK-175)	Bromide (E300.0)	TOC (SW9060)
16IW10	Performance data within the biobarrier			✓	✓	✓						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
16RW08	Performance data within the biobarrier			✓	✓	✓						✓	✓																										
16RW06	Upgradient well for monitoring influent concentrations			✓	✓	✓						✓	✓	✓	✓	✓	✓	✓									✓	✓	✓	✓	✓							
16RW07	Upgradient well for monitoring influent concentrations			✓	✓	✓						✓	✓	✓	✓	✓	✓	✓									✓	✓	✓	✓	✓							
16RW09	Downgradient well to monitor effluent concentrations and biobarrier effectiveness			✓	✓	✓						✓	✓	✓	✓	✓	✓	✓							✓	✓	✓	✓	✓	✓	✓			✓	✓	✓		✓
16RW10	Downgradient well to monitor effluent concentrations and biobarrier effectiveness			✓	✓	✓						✓	✓	✓	✓	✓	✓	✓							✓	✓	✓	✓	✓	✓	✓			✓	✓	✓		✓

Notes:

[a] To be conducted within 15 to 30 days of the completion of substrate injection. A second event will be collected between 45 and 60 days if the results from the first event were inconclusive.

[b] Anions include nitrate and sulfate.

[c] VOCs include TCE; cis-1,2-DCE; 1,1-DCE; 1,2-DCA; 1,1,2-TCA; VC; and methylene chloride.

✓ Indicates that sample will be collected and analyzed for the listed analyte.

Table 4-16: ISB Performance Monitoring Plan (Years 1 and 2) – Bayou Biobarrier

Monitoring Locations	Primary Rationale for Well Selection	Proposed Analyses																																				
		First Two Months (Up to Two Events)[a]												Year 1 (Quarterly)													Year 2 (Quarterly)											
		Perchlorate (314.0)	VOCs[c] (SW8260B)	DO (field reading)	ORP (field reading)	pH (field reading)	Alkalinity (2320B)	Anions[b] (E300.0)	Ethene (RSK-175)	Ethane (RSK-175)	Methane (RSK-175)	Bromide (E300.0)	TOC (SW9060)	Perchlorate (314.0)	VOCs[c] (SW8260B)	DO (field reading)	ORP (field reading)	pH (field reading)	Alkalinity (2320B)	Anions[b] (E300.0)	Ethene (RSK-175)	Ethane (RSK-175)	Methane (RSK-175)	DHC (qPCR)	Bromide (E300.0)	TOC (SW9060)	Perchlorate (314.0)	VOCs[c] (SW8260B)	DO (field reading)	ORP (field reading)	pH (field reading)	Alkalinity (2320B)	Anions[b] (E300.0)	Ethene (RSK-175)	Ethane (RSK-175)	Methane (RSK-175)	Bromide (E300.0)	TOC (SW9060)
16IW20	Performance data within the biobarrier			✓	✓	✓						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
16RW12	Performance data downgradient of biobarrier			✓	✓	✓						✓	✓																									
16RW11	Performance data within the biobarrier			✓	✓	✓						✓	✓	✓	✓	✓	✓	✓									✓	✓	✓	✓	✓							
16WW39	Upgradient well for monitoring influent concentrations			✓	✓	✓						✓	✓	✓	✓	✓	✓	✓									✓	✓	✓	✓	✓							
16WW12	Upgradient well to monitor effluent concentrations and biobarrier effectiveness			✓	✓	✓						✓	✓	✓	✓	✓	✓	✓							✓	✓	✓	✓	✓	✓	✓							
16WW22	Upgradient well to monitor effluent concentrations and biobarrier effectiveness			✓	✓	✓						✓	✓	✓	✓	✓	✓	✓							✓	✓	✓	✓	✓	✓	✓							
16WW40	Downgradient well to monitor effluent concentrations and biobarrier effectiveness			✓	✓	✓						✓	✓	✓	✓	✓	✓	✓							✓	✓	✓	✓	✓	✓	✓			✓	✓	✓		✓

Notes:

[a] To be conducted within 15 to 30 days of the completion of substrate injection. A second event will be collected between 45 and 60 days if the results from the first event were inconclusive.

[b] Anions include nitrate and sulfate.

[c] VOCs include TCE; cis-1,2-DCE; 1,1-DCE; 1,2-DCA; 1,1,2-TCA; VC; and methylene chloride.

✓ Indicates that sample will be collected and analyzed for the listed analyte.

Table 4-17: ISB Performance Monitoring Plan (Years 1 and 2) – Mid-Plume ISB

Monitoring Locations	Primary Rationale for Well Selection	Proposed Analyses																																				
		First Two Months (Up to Two Events)[a]												Year 1 (Quarterly)													Year 2 (Quarterly)											
		Perchlorate (314.0)	VOCs[c] (SW8260B)	DO (field reading)	ORP (field reading)	pH (field reading)	Alkalinity (2320B)	Anions[b] (E300.0)	Ethene (RSK-175)	Ethane (RSK-175)	Methane (RSK-175)	Bromide (E300.0)	TOC (SW9060)	Perchlorate (314.0)	VOCs[c] (SW8260B)	DO (field reading)	ORP (field reading)	pH (field reading)	Alkalinity (2320B)	Anions[b] (E300.0)	Ethene (RSK-175)	Ethane (RSK-175)	Methane (RSK-175)	DHC (qPCR)	Bromide (E300.0)	TOC (SW9060)	Perchlorate (314.0)	VOCs[c] (SW8260B)	DO (field reading)	ORP (field reading)	pH (field reading)	Alkalinity (2320B)	Anions[b] (E300.0)	Ethene (RSK-175)	Ethane (RSK-175)	Methane (RSK-175)	Bromide (E300.0)	TOC (SW9060)
16EW01	Performance data for injection ISB area - Shallow Zone			✓	✓	✓						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
16EW02	Performance data for injection ISB area - Shallow Zone			✓	✓	✓						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓							
16EW03	Performance data for injection ISB area - Shallow Zone			✓	✓	✓						✓	✓	✓	✓	✓	✓	✓									✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
16EW04	Performance data for injection ISB area - Shallow Zone			✓	✓	✓						✓	✓	✓	✓	✓	✓	✓									✓	✓	✓	✓	✓							
16EW05	Performance data for injection well - Intermediate Zone			✓	✓	✓						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
16EW06	Performance data for injection well - Intermediate Zone			✓	✓	✓						✓	✓	✓	✓	✓	✓	✓									✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
16EW07	Performance data for injection well - Intermediate Zone			✓	✓	✓						✓	✓	✓	✓	✓	✓	✓									✓	✓	✓	✓	✓							
16EW08	Performance data for injection well - Intermediate Zone			✓	✓	✓						✓	✓	✓	✓	✓	✓	✓							✓	✓	✓	✓	✓	✓	✓							
16WW48	Performance data for downgradient - Shallow Zone (proposed)													✓	✓	✓	✓	✓							✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
16WW30	Performance data for downgradient - Shallow Zone													✓	✓	✓	✓	✓							✓	✓	✓	✓	✓	✓	✓							
16WW39	Performance data for downgradient - Shallow Zone													✓	✓	✓	✓	✓							✓	✓	✓	✓	✓	✓	✓							
16WW29	Performance data for downgradient well - Intermediate Zone													✓	✓	✓	✓	✓							✓	✓	✓	✓	✓	✓	✓							
16WW49	Performance data for downgradient well - Intermediate Zone (proposed)													✓	✓	✓	✓	✓							✓	✓	✓	✓	✓	✓	✓							
16WW51	Performance data for downgradient well - Intermediate Zone (proposed)													✓	✓	✓	✓	✓							✓	✓	✓	✓	✓	✓	✓							
16WW21	Performance data for downgradient well in Upper Deep Zone													✓	✓	✓	✓	✓							✓	✓	✓	✓	✓	✓	✓							

Notes:

[a] To be conducted within 15 to 30 days of the completion of substrate injection. A second event will be collected between 45 and 60 days if the results from the first event were inconclusive.

[b] Anions include nitrate and sulfate.

[c] VOCs include TCE; cis-1,2-DCE; 1,1-DCE; 1,2-DCA; 1,1,2-TCA; VC; and methylene chloride.

✓ Indicates that sample will be collected and analyzed for the listed analyte.

Table 4-18: MNA and LTM Performance Monitoring Plan - LHAAP-16

Monitoring Locations	Groundwater Zone	Proposed Analyses								
		VOCs[a] (SW8260B)	Perchlorate (314.0)	Anions[b] (E300.0)	Dissolved Gases[c] (RSK-175)	Alkalinity (2320B)	TOC (SW9060)	DHC (qPCR)	Bromide (E300.0)	Field Parameters[d]
16WW44	Shallow	✓	✓							✓
16WW38	Shallow	✓	✓							✓
16WW16	Shallow	✓	✓	✓	✓	✓	✓	✓	✓	✓
16WW14	Shallow	✓	✓							✓
16WW36	Shallow	✓	✓	✓	✓	✓	✓	✓	✓	✓
16WW26	Shallow	✓	✓	✓	✓	✓	✓	✓	✓	✓
16WW42	Shallow	✓	✓							✓
16WW43	Shallow	✓	✓							✓
16WW30	Shallow	✓	✓							✓
16WW40	Shallow	✓	✓							✓
16WW22	Shallow	✓	✓	✓	✓	✓	✓	✓	✓	✓
16WW46	Shallow	✓	✓							✓
16WW32	Shallow	✓	✓							✓
16WW34	Shallow	✓	✓							✓
16WW24	Shallow	✓	✓							✓
16WW48	Shallow	✓	✓	✓	✓	✓	✓	✓	✓	✓
16WW39	Shallow	✓	✓							✓
16WW55	Shallow	✓	✓	✓	✓	✓	✓	✓	✓	✓
16WW56	Shallow	✓	✓	✓	✓	✓	✓	✓	✓	✓
16WW57	Shallow	✓	✓	✓	✓	✓	✓	✓	✓	✓
16WW58	Shallow	✓	✓	✓	✓	✓	✓	✓	✓	✓
16WW37	Intermediate	✓	✓							✓
16WW35	Intermediate	✓	✓	✓	✓	✓	✓	✓	✓	✓
16WW13	Intermediate	✓	✓							✓
16WW23	Intermediate	✓	✓							✓
16WW25	Intermediate	✓	✓	✓	✓	✓	✓	✓	✓	✓
16WW27	Intermediate	✓	✓							✓
16WW29	Intermediate	✓	✓	✓	✓	✓	✓	✓	✓	✓
16WW41	Intermediate	✓	✓	✓	✓	✓	✓	✓	✓	✓
16WW31	Intermediate	✓	✓							✓
16WW33	Intermediate	✓	✓							✓
16WW49	Intermediate	✓	✓							✓
16WW51	Intermediate	✓	✓							✓
16WW21	Upper Deep	✓	✓							✓

Notes:

This schedule assumes sampling of the extraction wells will be continued annualy until the remedy is implemented; therefore, only 16EW02 will be sampled during baseline monitoring.

[a] VOCs include TCE; cis-1,2-DCE; 1,1-DCE; 1,2-DCA; 1,1,2-TCA; VC; and methylene chloride.

[b] Anions include nitrate and sulfate.

[c] Dissolved gasses include ethene, ethane, and methane.

[d] Field Parameters include dissolved oxygen, oxidation reduction potential, and pH.

✓ Indicates that sample will be collected and analyzed for the listed analyte.

DHC - Dehalococcoides (microbial analysis)

LTM - Long-Term Monitoring

TOC - total organic carbon

VOCs - volatile organic compounds

5 LAND USE CONTROL REMEDIAL DESIGN

This section describes the LUC RD for LHAAP-16. In accordance with the Final ROD (U.S. Army, 2016), the LUC RD will be finalized as the land use component of the Remedial Design.

Per the Final ROD (U.S. Army, 2016), LUCs' performance objectives are to:

- Prohibit access to the contaminated groundwater except for environmental monitoring and testing only;
- Preserve the integrity of the landfill cap, and to restrict intrusive activities (e.g., digging) that would degrade or alter the cap;
- Restrict land use to nonresidential;
- Maintain the integrity of any current or future remedial or monitoring systems; and

The implementation, maintenance, and inspection requirements associated with each of the performance objectives that comprise this LUC RD are described below. The actions taken to implement the LUC objectives during the RA phase, as well as ongoing maintenance, monitoring and reporting requirements will be presented in the Remedial Action Completion Report (RACR), as the final LUC RD. Upon regulatory review and concurrence with the final LUC RD, it will be distributed as part of the Comprehensive LUC Management Plan.

For portions of the Site subject to land use controls that are not owned by the Army, the Army will monitor and report on the implementation, maintenance, and enforcement of land use controls, and coordinate with federal, state, and local governments and owners and occupants of properties subject to land use controls. The Army remains responsible for ensuring that the remedy remains protective of human health and the environment.

5.1 LUC Implementation

The actions required to implement the LUCs for LHAAP-16 are described below. The first of these, the initial notice of LUCs, has been completed. A figure depicting the preliminary LUC boundaries is presented in **Figure 5-1**. The following actions will be undertaken to implement the LUCs for LHAAP-16:

- Provide initial notice of the LUCs before remedial action is implemented.
    - Develop the initial notice of the groundwater and soil (surface and subsurface) contamination and any land use restrictions referenced in the ROD. The notice will consist of a brief description of the contaminants in groundwater and soil, a written description of the LUCS and a figure depicting the preliminary LUC boundaries presented in **Figure 5-1**.
    - Transmit the notice to federal, state and local governments involved at this site and the owners and occupants of the properties subject to those use restrictions and land use controls within 90 days of ROD signature, which is on or before December 12, 2016. The notices will be sent to federal, state and local officials including: U.S. Senator Ted Cruz, U.S. Senator John Cornyn, U.S. Congressman Louie Gohmert, State Senator Kevin Eltiffe, State Representative Chris Paddie, Harrison County

Judge Hugh Taylor, Harrison County Commissioner Precinct 1 William D. Hatfield, City of Uncertain Mayor Sam Canup, and Karnack Water Supply Corporation Board Members. Notice will also be sent to the Caddo Lake National Wildlife Refuge Manager.

- Finalize the Boundaries for the LUCs as a part of the remedial action.
    - Revise the boundaries if necessary. The LUC boundary presented in this RD is subject to change, based on COC results from the two proposed wells to be installed on the east side of Harrison Bayou. The final boundaries of the groundwater LUCs (prevent the use of groundwater contaminated above cleanup levels as a potable water source and prohibit access to the contaminated groundwater except for environmental monitoring and testing only); the landfill LUCs (preserve the integrity of the landfill cap, and to restrict intrusive activities (e.g., digging) that would degrade or alter the cap); the remedial or monitoring system LUCs (maintain the integrity of any current or future remedial or monitoring systems); and, the nonresidential land use LUC (restrict land use to nonresidential) will be reviewed during remedial action activities after an evaluation of new data has been completed and revised if necessary.
    - Survey the LUC Boundaries. The boundaries will be finalized after concurrence by USEPA and TCEQ, and the LUC boundaries will be surveyed by a State-licensed surveyor. A legal description of the surveyed areas will be appended to the survey plat.
- Record the LUCs in Harrison County. The LUC plat, legal description and LUC restriction language will be recorded in the Harrison County Courthouse in accordance with TAC Title 30, §335.566.
- Notify the Texas Department of Licensing and Regulation of the groundwater LUCs. The Texas Department of Licensing and Regulation will be notified of the groundwater restrictions, which include the prohibition of water well installation for any purpose other than environmental monitoring and testing without prior approval from the Army, the USEPA, and the TCEQ. The survey plat, legal boundary and description of the groundwater restriction LUCs, in conjunction with a locator map, will be provided in hard and electronic copy.

5.2 Maintenance and Monitoring Requirements

The LUCs will be maintained in place as follows:

- The landfill LUCs will remain in place as long as the landfill waste remains at the site or until the levels of Contaminants of Concern (i.e., including all hazardous substances, pollutants, and contaminants found at the Site at cleanup levels as listed in **Table 1-1**) allow for unlimited use and unrestricted exposure;
- The LUCs restricting the use of groundwater to environmental monitoring and testing only and the LUC restricting land use to nonresidential will remain in place until the levels of COCs (i.e., including all hazardous substances, pollutants, and contaminants found at the Site

at cleanup levels as listed in **Table 1-1**) in surface and subsurface soil and groundwater allow for unlimited use and unrestricted exposure;

- The LUC to maintain the integrity of any current or future remedial or monitoring systems will remain in place until groundwater cleanup levels of COCs (i.e., including all hazardous substances, pollutants and contaminants found at the Site at cleanup levels as listed in **Table 1-1**) are met; and,
- The LUC prohibiting groundwater use (except for environmental monitoring and testing) as a potable source will remain in place until the levels of COCs (i.e., all hazardous substances, pollutants, and contaminants found at the Site at cleanup levels as listed in **Table 1-1**) in soil and groundwater allow for unlimited use and unrestricted exposure.

Landfill and Remedial or Monitoring System LUCs include physical components that require repair and maintenance. These are described in **Section 3.0.** The Inspection and Maintenance Checklist is provided in **Appendix A.**

The administrative maintenance required to ensure the five LUCs remain in place and effective until the cleanup levels of the COCs are at levels that allow unrestricted use and unlimited exposure are:

- Annual field inspections of the site to confirm that no violations of the LUCs have occurred. Documentation of the inspection will be included in the Inspection and Maintenance Checklist (see **Appendix A).**
- Annual certifications that no LUC-restricted activities have been authorized and that site conditions and use are consistent with the LUCs. The Certification Form is presented in **Appendix E).**
- Periodic transmittal of a LUC Notice to federal, state, and local authorities and to owners and occupants of LHAAP-16. The notice will include the groundwater and soil (surface and subsurface) contamination and any land use restrictions referenced in the ROD, a written description of the LUCs and a figure depicting the LUC boundaries. The transmittal will coincide with each Five Year Review and will be documented in the report.
- The final LUC RD appendix of the RACR will be added to the Comprehensive LUC Management Plan and the plan will be provided to the owner or occupant of LHAAP-16.

The U.S. Army will address LUC problems within its control that are likely to impact remedy integrity and shall address problems as soon as practicable.

5.3 Reporting of LUC Inspection and Monitoring

Beginning with finalization of this RD and approval of the Inspection and Maintenance forms and the Annual Certification Form, the U.S. Army will undertake inspections and certify continued compliance with the LUC objectives. The U.S. Army, or the transferee after transfer, will retain the LUC Inspection and Certification documents in the project files for incorporation into the five-year review reports, and these documents will be made available to USEPA and TCEQ upon request. In addition, should any violations be found during the certification, the U.S. Army will provide to USEPA and TCEQ, along with the document, a separate written explanation indicating the specific violations found and what efforts or measures have or will be

taken to correct those violations. The need to continue inspections and certifications will be revisited at five year reviews.

5.3.1 Notice of Planned Property Conveyances

Upon transfer of Army-owned property, the Army will provide written notice to the transferee of the LHAAP-16 groundwater and soil (surface and subsurface) contamination and any land use restrictions. Within 15 days of transfer, the U.S. Army will provide written notice to USEPA and TCEQ of the division of implementation, maintenance, and enforcement responsibilities unless the information has already been provided in the LUC RD. The notice will describe the mechanism by which the LUC will continue to be implemented, maintained, inspected, reported, and enforced. Upon transfer, such responsibilities may shift to the transferee via appropriate provisions placed in the Environmental Condition of Property (ECP) or other environmental document for transfer. Although the US Army may transfer responsibility for various implementation actions, the U.S. Army will also retain ultimate responsibility for the remedy integrity. This means that the U.S. Army is responsible for addressing substantive violations of the LUC performance objectives that would undermine the U.S. Army's CERCLA remedy. The US Army also will be responsible for incorporating RD information and outlining the transferee's LUC obligations into property transfer documentation. In the event property is transferred out of Federal control, the land use controls relating to property and groundwater restrictions shall be recorded in the deed and shall be enforceable by the United States and the state of Texas.

5.3.2 Opportunity to Review Text of Intended Land Use Controls

The US Army will provide a copy of the groundwater and land use restriction notification to TCEQ for review and approval prior to its recordation in Harrison County. USEPA will also receive a copy for review. The US Army will produce an ECP or other environmental document for transfer of LHAAP-16, but before executing transfer, the US Army will provide USEPA and TCEQ with a copy of the ECP or other environmental document for transfer so that they may have reasonable opportunity, before transfer, to review all LUC-related provisions.

5.3.3 Notification Should Action(s) which Interfere with land Use Control Effectiveness be Discovered Subsequent to Conveyance

Should the US Army discover after conveyance of the site any activity on the property inconsistent with the LUC performance objectives, the US Army shall notify USEPA and TCEQ within 72 hours of such discovery. Consistent with Section 5.2.5 below, the US Army will then work with USEPA, TCEQ and the transferee to correct the problem(s) discovered. This reporting requirement does not preclude the US Army from taking immediate action pursuant to its CERCLA authorities to prevent any perceived risk(s) to human health or the environment.

5.3.4 Land Use Control Enforcement

Should the LUC remedy reflected in this RD fail, the US Army will coordinate with USEPA and TCEQ to ensure that appropriate actions are taken to reestablish its protectiveness. These actions are taken to reestablish its protectiveness. These actions may range from informal resolutions with the USFWS or its lessee, to the institution of judicial action against non-federal third

parties. Alternatively, should the circumstances warrant such, the US Army could choose to exercise its response authorities under CERCLA. Should the US Army become aware that any future owner or user of the property has violated any LUC requirement over which a local agency may have independent jurisdiction, the US Army may notify those agencies of such violation(s) and work cooperatively with them to re-achieve owner/user compliance with the LUC.

5.3.5 Modification or Termination of Land Use Controls

The LUCs shall remain in effect until such time as the US Army and USEPA agree that the concentrations of COCs in groundwater have met cleanup levels in groundwater and that surface and subsurface soil concentrations allow unrestricted use. When this occurs, the LUC will be terminated as needed. The decision to terminate the LUC will be documented consistent with the NCP process for post-ROD changes, potentially including an explanation of significant differences or a remedial action complete report. If the property has been transferred and a determination by the US Army and USEPA has been made to terminate the LUC, the US Army shall provide to the owner of the property an appropriate release for recordation pertaining to the site and will also timely advise other local stakeholders of the action.

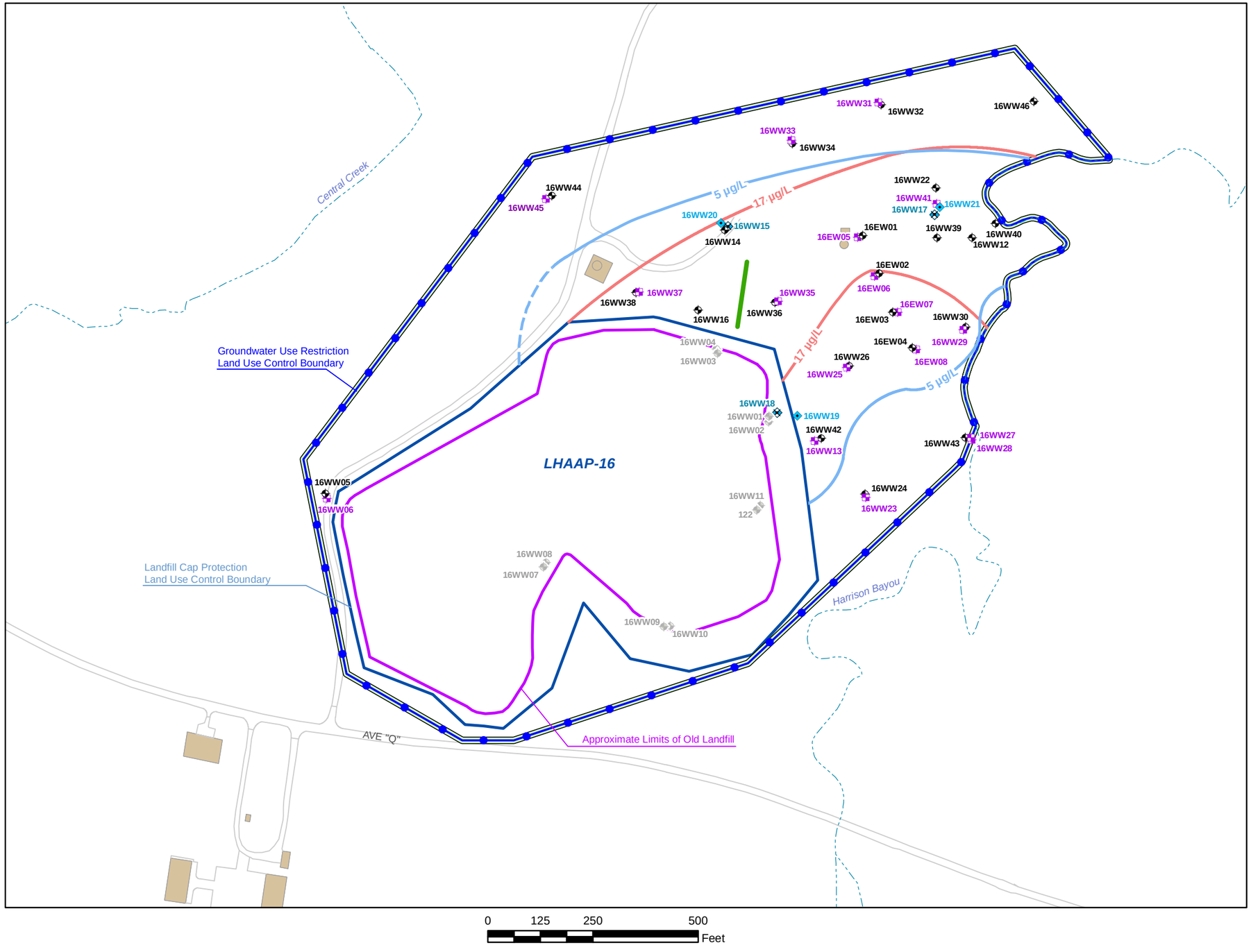

Legend

- Existing Shallow Monitoring Well
- Existing Intermediate Monitoring Well
- Existing Upper Deep Monitoring Well
- Existing Lower Deep Monitoring Well
- Abandoned or Plugged Well
- Extent of Perchlorate Contamination > 17 ug/L in Intermediate and Shallow Zones (May 2013)
- Extent of TCE Contamination > 5 ug/L in Intermediate and Shallow Zones (Dashed Where Inferred) (May 2013)
- Location of Semi-Passive Biobarrier Demonstration (February 2004 through June 2006 [ESTCP 2009]).
- Road
- Stream
- Remedial and Monitoring System Boundary
- Groundwater Use Restriction Land Use Control Boundary
- LHAAP-16 Landfill Fence

AECOM

Figure 5-1
Land Use Contol Boundaries
LHAAP-16 Remedial Design

Longhorn Army Ammunition Plant
Karnack, Texas

60256135

January 2017

Path: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP-16\RAWP\Fig 5-1 LHAAP-16 Land Use Control Boundaries.mxd

6 FIELD ACTIVITIES

All field activities proposed as part of implementation of the selected remedy at LHAAP-16 will be performed in accordance with the *Installation-Wide Work Plan* (IWWP) (AECOM 2014). This section generally describes field activities planned at LHAAP-16. Field activities to be conducted as part of this RD are:

- Pre-Mobilization Activities
- Site Preparation
- Utility Clearance
- Drilling and Well Installation
- Amendment Procurement and Storage
- Substrate Injection and Equipment
- Location Survey
- Performance Monitoring and MNA Groundwater Sampling
- Remediation-Derived Wastes Management

The proposed schedule of implementation is presented in **Table 6-1**.

6.1 Pre-Mobilization Activities

Prior to commencing field work, a pre-construction meeting will be held. USEPA, TCEQ and USFWS will be notified of the meeting at least two weeks prior. A survey will be performed by a state-licensed surveyor to determine the metes-and-bounds for the LUC and notification of non-residential use. The Texas State Plane, NAD 1983 coordinate system will be used. **Figure 5-1** shows the proposed LUC boundary that will be surveyed.

Prior to mobilization for any field activities, the Contractor will secure any applicable approvals and notifications, which can include federal, state, and local requirements (i.e. underground injection control, notification of Texas 811). The Contractor will also secure utility clearance, where applicable, for water, sewer, gas, electric, and communication.

Mobilization and site setup will be performed in accordance with the procedures outlined in Section 3.1 of the IWWP. Once onsite, the Contractor will inspect the site to identify any underground or overhead obstructions that may interfere with in situ bioremediation activities or groundwater and landfill cap monitoring. If necessary, injection and biobarrier locations will be modified to avoid any obstructions.

6.2 Site Preparation

Proposed well locations will be staked based on site maps. Areas around these wells will be cleared of vegetation and biohazards (e.g. poison ivy, stinging insects) to the extent practicable to protect field staff while minimizing impact to the environment.

6.3 Utility Clearance

The Contractor will secure utility clearance for water, sewer, gas, electric, and communication. This will include survey of the site to assess the presence of any underground or overhead utilities that may limit groundwater sampling and notify Texas811 prior to any subsurface activities.

6.4 Drilling and Well Installation

All drilling and well installation activities will be supervised by a Texas-registered geologist. Monitoring and injection well installation and development will be performed in accordance with **Section 3.3** of the IWWP. The biobarriers will be installed primarily using DPT. Monitoring wells will be installed within and downgradient from the biobarriers for performance monitoring. Mid-plume treatment will include the use of 40 DPT injection points in the shallow zone.

The injection wells for the remedial action will be classified as Class V injection wells. The substantive requirements for Class V injection wells at 30 TAC 331.5(a); 30 TAC 331.6; 30 TAC 331.132(c), (d); and 30 TAC 331.133(a) - (e) will be complied with for installation, operation and closure of injection wells (see Table 1-2). Injection wells will be constructed to the required specifications for isolation casing, surface completion, prevention of commingling, and confinement of undesirable groundwater to its zone of origin. The closure of injection wells following completion of the remedial action will be accomplished by removing all of the removable casing and by pressure filling via tremmie pipe with cement, or other alternative method for Class V wells stipulated in 30 TAC 331.133 (a) – (e).

6.4.1 DPT Drilling

DPT drilling will be used for the biobarriers. A total of 79 injection points will be advanced using DPT techniques in the area of high VOC concentration between the landfill and Harrison Bayou (**Figures 4-2 through 4-6**). DPT drilling will be conducted in accordance with procedures presented in the IWWP (AECOM, 2014).

6.4.2 Drilling

All injection and monitoring wells will be installed using either a hollow stem auger (HSA) or rotary sonic drilling techniques and the borehole lithology will be logged. Proposed well locations are presented on **Figures 4-2 through 4-6**. Eight-inch diameter augers will be used to drill all boreholes. Drilling will be conducted in accordance with **Section 3.2** of the IWWP (AECOM, 2014).

6.4.3 Well Installation

All injection wells will be completed with 2-inch diameter Schedule 80 PVC well screen and blank casing. All monitoring wells will be completed with 4-inch diameter Schedule 40 PVC well screen and blank casing.

All wells will be completed using 0.02-inch slot well screen and Lone Star #3 sand filter pack material. All well casings will be sealed at the bottom with a flush threaded end cap of the same material as the well screen. Screen and blank riser sections will be steam cleaned and wrapped in

plastic for transportation to the well locations. The casing will remain wrapped in plastic until it is assembled and lowered down the borehole.

The well casing will be plumb and centered with centralizers placed every 20 feet, if necessary. Once the casing is installed, the filter pack, consisting of acid-resistant, washed and graded silica sand, will be placed by tremie pipe down the annulus between the well casing and the borehole wall. The sand will be furnished in sacks and will be certified clean and free of oil, acids, and organic and other deleterious materials. The filter pack will be placed from the bottom of the borehole to 2 feet above the top of the well screen or between the bentonite seals for the multi-screen wells. The filter pack depth will be periodically sounded to monitor the depth and to locate any points of bridging between the well casing and the borehole wall. Potable water may be poured down the annulus to break bridges if they are encountered. The amount of water introduced into the well will be kept to a minimum and the quantities will be recorded in the field logbook.

The volume of filter pack material used will be recorded in the field logbook during filter pack construction. The volume of sand used will be compared to the volume of annulus filled every 5 feet to 10 feet. If a significant discrepancy arises between the sand volume used versus the filled volume measured, the source of this error will be identified and corrected.

Wells will be predeveloped by bailing and surging to aid in settling the filter pack before placing the bentonite seal. After the filter pack has been placed, a 2-foot to 5-foot sodium bentonite seal (either granular for unsaturated conditions or coated pellet form for saturated conditions) will be introduced into the well above the filter pack. The bentonite will be saturated with potable water and allowed to hydrate for at least 1 hour. After the bentonite seal has hydrated, the remaining annulus will be grouted using a Type I Portland or American Petroleum Institute (API) Class A cement/bentonite slurry.

6.4.4 Well Development

Each newly-installed well will be developed no sooner than 24 hours following well completion in accordance with **Section 3.3.1** of the IWWP. Existing wells that will be used for injection will be redeveloped.

6.5 Location Survey

After well installation and injection operations are complete, a survey of new well locations and DPT injection points (including top of casing elevation in the wells) will be performed by a state-licensed surveyor. Vertical elevations of the casings and elevations of the ground surface will be measured to the nearest 0.01-foot, referenced to mean sea level (msl). The horizontal location will be measured to the nearest 0.1-foot. The Texas State Plane, NAD 1983 coordinate system will be used. All surveying will be performed in accordance with **Section 3.4** of the IWWP (AECOM, 2014). The“as built” blank length of casing will be included on the well construction log.

6.6 Groundwater and Surface Water Sampling

Prior to groundwater sampling, areas around the wells will be cleared of vegetation and biohazards (e.g. poison ivy, stinging insects) to protect field staff. Low-flow groundwater

sampling will be performed in accordance with **Section 3.5** of the IWWP. Surface water samples will be collected in accordance with **Section 3.7** of the IWWP.

6.7 Remediation-Derived Waste Management

All remediation-derived waste will be managed appropriately. Remediation-derived waste includes the following:

- Cuttings from injection and monitoring well boreholes
- Groundwater generated from development of new wells
- Groundwater generated from purging of wells prior to sampling
- Decontamination fluids
- Disposable protective clothing and supplies.

Drill cuttings may be placed in 55-gallon drums or high-density polyethylene (HDPE)-lined roll-off containers. Composite samples will be collected and analyzed for waste characterization prior to disposal. All handling of drill cuttings will be performed in accordance with **Section 3.8.1** of the IWWP (AECOM, 2014).

Wastewater generated from equipment decontamination, well development, groundwater sampling or other investigative and remedial activities will be stored in 55-gallon drums and transported to the groundwater treatment plant at LHAAP-18/24, as specified in **Section 3.8.2** of the IWWP.

Table 6-1: LHAAP-16 Remedial Design Implementation Schedule

Task	Duration (days)	Elapsed Time* (days)	Notes
1. Develop RAWP	90	90	
2. Coordinate with TCEQ	7	35	Permit not required but must meet substantive requirements
2. GW Sampling	4	35	
3. SOW			
Chemical Vendors	7	29	Concurrently
Drilling Contractor	7	29	Concurrently
Surveyor	7	29	Concurrently
4. Subcontracting			
Chemical Vendors	30	35	Concurrently
Drilling Contractor	30	35	Concurrently
Surveyor	30	35	Concurrently
5. Utility clearance	1	105	At least 48 hours before work can begin
6. Clear injection/new well locations	3	98	
7. Install Injection/Monitoring Wells	35	112	
8. Procure Chemicals	5	112	
9. Conduct Injection	30	147	
10. IDW Management	30	112	
Obtain Roll-off	5	101	
Store on Site		108	
Sample/Analyze	20	111	
Profile	7	130	
Manifest	7	136	
Dispose	5	141	
11. Reporting	75	242	

Sampling will occur on a quarterly basis for 2 years. Quarterly sampling will occur a few weeks after injection takes place.
RA(O) report will be generated one year after injection).
* From initiation of work

7 REFERENCES

AECOM, 2013. *Longhorn Army Ammunition Plant Monthly Managers' Meeting Minutes* (LHAAP-16 Pre-Design Sampling Event Validated Data Attachment). November.

AECOM, 2014. *Final Installation-Wide Work Plan, Longhorn Army Ammunition Plant, Karnack, Texas.* July.

AECOM, 2016. *Final Updated Post-Screening Investigation Report for LHAAP-18/24, Burning Ground No. 3 and Unlined Evaporation Pond at Longhorn Army Ammunition Plant, Karnack, Texas.* February.

Banks Environmental Data, 2015. *Water Well Reportk Longhorn army Base (LHAAP), Karnack, TX*. June.

Environmental Security Technology Certification Program (ESTCP). 2009. *Comparative Demonstration of Active and Semi-Passive In Situ Bioremediation Approaches for Perchlorate-Impacted Groundwater (Longhorn Army Ammunition Plan).* Prepared by Geosyntec consultants. ESTCP Project ER-0219. January.

The Interstate Technology & Regulatory Council. 2011. Technical Regulatory Guidance, Permeable Reactive Barrier: Technology Update. June.

Jacobs Engineering Group, Inc. (Jacobs). 2000. *Final Remedial Investigation Report, Volume 1: Report for the Site 16 Landfill Remedial Investigation and Feasibility Study at the Longhorn Army Ammunition Plant (LHAAP), Karnack, Texas.* Final . St. Louis, Missouri. October 2000.

Jacobs Engineering Group, Inc. (Jacobs). 2002. *Feasibility Study for Site 16, Longhorn Army Ammunition Plant, Karnack, Texas.* Final. Oak Ridge, Tennessee. March.

OHM Remediation Services Corporation (OHM). 1998. *Final Construction Complete Report, Interim Remedial Action, Landfills 12 and 16 Cap Construction, Longhorn Army Ammunition Plant (LHAAP), Karnack, Texas.* Prepared for the USACE. Houston, Texas. December.

US Army. 2016. *Record of Decision LHAAP-16 Landfill, Longhorn Army Ammunition Plant, Karnack, Texas.* Prepared by Shaw Environmental Inc. (Shaw), Houston, Texas. Tulsa, Oklahoma. To Be Determined.

United States Environmental Protection Agency (USEPA). 2004. *Performance Monitoring of MNA Remedies for VOCs in Ground Water*. EPA/600/R-04/027. National Risk Management Research Laboratory. April.

APPENDIX A: LHAAP-16 INSPECTION AND MAINTENANCE CHECKLIST

RAO Inspection and Maintenance Checklist

General Information	
Project Name	RAO Inspection and Maintenance, LHAAP-16 Landfill, Longhorn Army Ammunition Plant, Karnack, TX
Contractor	
Inspector's Name	
Inspector's Title	
Inspector's Signature	
Inspector's Contact Number	
Inspection Date	
Type of Inspection	☐ Quarterly ☐ Semiannual ☐ Annual ☐ Prior to forecast rain ☐ After a rain event ☐Other ----------

Description		**Yes**	**No**	**N/A**	**Comments** (Attach photos/location sketches)	**Corrective Action** (Attach photos)
A. CAP Cover Surface						
A.1	Are there any significant cracks present?					
A.2.	Are there any damaged areas?					
A.3	Is there any ponded water present?					
A.4	Any other relevant observations?					
B. CAP Vegetation and Animal Burrows						
B.1	Are there signs of stressed/ dead vegetation?					
B.2	Are there any significant bare spots?					
B.3	Are deep-rooted plants present?					
B.4	Are there signs of animal burrows?					
B. 5	Any other relevant observations?					

Description		Yes	No	N/A	**Comments** (Attach photos/location sketches)	**Corrective Action** (Attach photos)
C. CAP Erosion and Drainage System						
C.1	Is there any evidence of significant/ clearly visible erosion, settlement, or other deterioration?					
C.2	Are the drainage systems in poor condition?					
C.3	Is there excessive silting or debris clogging?					
C.4	Is there erosion of banks and slopes?					
C.5	Are there areas of choking by overgrown vegetation?					
C.7	Is there pooling of water in or along side a channel or berm?					
C.8	Any other relevant observations?					
D. Groundwater Monitoring Wells						
D.1	Are the installed groundwater monitoring wells in poor condition?					
D.2	Are there any signs of damage, unusual wear, rust and corrosion, vandalism, unauthorized entry/use, or settlement?					
D.3	Is well cap and/or locking mechanism not properly functioning?					
D.4	Are the well heads and protective casings damaged?					
D.5	Is the well cleared of vegetation and accessible?					
D.6	Any other relevant observations?					

Description		Yes	No	N/A	**Comments** (Attach photos/location sketches)	**Corrective Action** (Attach photos)
E. Site Access Features						
E.1	Are the perimeter fence and gates damaged?					
E.2	Gate(s) damaged?					
E.3	Litter encountered within the area?					
E.4	Are the gate locks missing?					
E.4	Are signs to prevent unauthorized entry missing?					
E.5	Are the access roads in unusable or poor condition?					
E.6	Any other relevant observations?					
F. Concrete Aprons and Bollards						
F.1	Are there any significant cracks present?					
F.2	Are there any damaged areas?					
F.3	Any other relevant observations?					

APPENDIX B: CHEMICAL MANUFACURER'S LITERATURE

REDOX TECH, LLC

"Providing Innovative In Situ Soil and Groundwater Treatment"

Anaerobic BioChem (ABC®)
The "Green" Substrate

In 2003, Redox Tech introduced its proprietary formulation for anaerobic biodegradation of halogenated solvents in groundwater. The product, Anaerobic Biochem ABC®, is a patented mixture of lactates, fatty acids, alcohols and a phosphate buffer. ABC® contains soluble lactic acid as well as slow- and long-term releasing components. Redox Tech was one of the first companies to recognize the importance of maintaining optimum pH, and for that reason, ABC has always had a phosphate buffer and other alkaline materials, when necessary, to maintain the optimal pH. The phosphate buffer provides phosphates, which are a micronutrient for bioremediation. In addition, the buffer helps to maintain the pH in a range that is best suited for microbial growth.

Since ABC's introduction, millions of pounds of ABC have been used on hundreds of sites throughout the United States and even Europe. Over time, the "essential ingredients" have been slightly modified, but to our knowledge, ABC remains the only carbon substrate on the crowded market that is formulated specifically for each site's own unique geochemistry, biology, and hydrogeology.

"Green" Before Green was Cool

Redox Tech is a niche environmental remediation contractor. Therefore, we have always felt obligated to be environmentally conscious. Before "green" was all the rave, Redox Tech utilized waste streams from green energy processes, such as ethanol and biodiesel production to formulate ABC. Only a small percentage of the components are "virgin" chemicals. The phosphate buffer provides phosphates, which are a micronutrient for bioremediation. In addition, the buffer helps to maintain the pH in a range that is best suited for microbial growth.

ABC® Advantages

- WATER SOLUBLE - the biggest advantage with ABC is that it is completely soluble in water, even the long-lasting carbon. There is no need to emulsify our product, and thus no worry about an emulsion breaking. Also, because it is a water soluble product, the need for large volumes of "chase" water is eliminated. ABC is typically injected at about 15 to 25 weight percent mixed into about 100 to 200 gallons of water.
- LONG LASTING – ABC has C14 to C18 fatty acids that have been shown in the field to last over two years. Emulsified oils break down into C18 fatty acids through hydrolysis, so we are essentially using the same long-lived components of emulsified oils without having to emulsify or wait for hydrolysis to occur.
- NATURAL CO-SOLVENT – ABC, through a license with Oregon State University, adds ethyl lactate which is a "green" co-solvent. This helps dissolve the fatty acids, and it also serves as a solvent for sites that may have DNAPL, because the ethyl lactate solvates the DNAPL and promotes rapid treatment.
- GREEN – ABC is formulated with byproducts from "green" energy processes, so it is better for the environment.
- COST-COMPETITIVE – carbon substrates are becoming commodities, and ABC is priced accordingly. When all factors are considered, ABC is a great value.

200 QUADE DRIVE, CARY NC 27513 P. 919.678.0140 F. 919.678.0150
www.redox-tech.com

REDOX TECH, LLC
Providing Innovative In Situ Soil & Groundwater Treatment

ABC+

ANAEROBIC BIOCHEM PLUS (ABC®+)

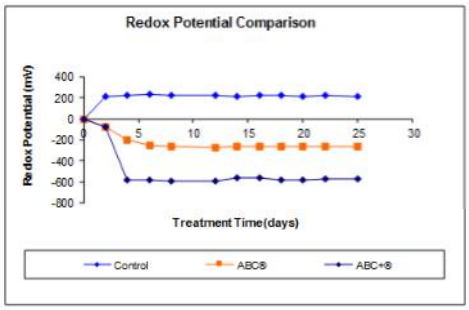

ABC+ an enhanced version of our industry proven Anaerobic Biochem (ABC®) formula, promoting both anaerobic biodegradation and reductive dechlorination of halogenated solvents in groundwater. This product, Anaerobic Biochem Plus (ABC+), is a mixture of our ABC® formula and Zero Valent Iron (ZVI). Formulated and mixed on a site-by-site basis, up to fifty percent (50%) by weight of ZVI can be added. ZVI has been proven and widely accepted as an effective in situ remediation technology of chlorinated solvents such as TCA, PCE, TCE, and daughter products. The degradation process using ZVI is an abiotic reductive dechlorination process occurring on the surface of the granular iron, with the iron acting as an electron donor.

The addition of ZVI to the ABC® mixture provides a number of advantages for enhanced reductive dechlorination (ERD). The ZVI will provide an immediate reduction. The ABC® will provide short-term and long-term nutrients to anaerobic growth, which also assists to create a reducing environment. ABC® contains soluble lactic acid and a phosphate buffer that provides phosphates, which are a micronutrient for bioremediation, and maintains the pH in a range that is best suited for microbial growth. In addition, the corrosion of iron metal yields ferrous iron and hydrogen, both of which are possible reducing agents. The hydrogen gas produced is also an excellent energy source for a wide variety of anaerobic bacteria.

The ABC® and ZVI are mixed with potable water and emplaced in the subsurface simultaneously. The dilution factor (i.e. water content) can be adjusted to achieve optimal dispersion and distribution based on site-specific parameters such as well spacing, permeability of the formation, and contaminant concentrations. The solution can be emplaced by a variety of techniques, including injection through wells or drill rods (for permeable geologic environments such as sands and fractured rock), hydraulic fracturing (for lower permeable environments such as silt and clay), and through soil blending (for all unconsolidated shallow depth applications less than 20 ft bgs). All of these techniques are part of Redox Tech's service offerings.

Benefits of ABC+ include:

- The presence of ZVI allows for the rapid and complete dechlorination of target compounds. Degradation rates using ZVI are several orders of magnitude greater than under natural conditions. As a consequence, the process does not result in the formation of daughter products other than ethane, ethane, and methane.
- ABC® will last up to 12-24 months in the subsurface environment due to slow releasing compounds, allowing for long-term anaerobic biodegradation
- By creating a reducing environment, ABC+ has the ability to provide long term immobilization of heavy metals (e.g. Ni, Zn, Hg, As)
- Does not require direct contact to act on target constituents.
- Does not divert groundwater flow. ABC is typically mixed at a 15% by weight solution with water. The viscosity of the solution is similar to sugar water and therefore does not measurably influence groundwater flow paths. Due to the relatively low volume of ZVI used, it does not measurably lower the bulk permeability of the formation
- Does not divert groundwater flow. ABC is typically mixed at a 15% by weight solution with water. The viscosity of the solution is similar to sugar water and therefore does not measurably influence groundwater flow paths. Due to the relatively low volume of ZVI used, it does not measurably lower the bulk permeability of the formation
- Patent protection: Redox Tech is licensed under Enviromental Technologies, Inc. (an Adventus Company) who is the current holder of patents pertaining to remediation using ZVI. Therefore, Redox Tech is able to market, sell, and emplace our ABC+ product. There is no patent infringement risk to the client in selecting the ABC+ approach.
- Price advantage. The cost of the ABC+ formula is an extremely competitive approach in relation to other ERD products on the market.

SUB MENU

ABC®
ABC+
ABC-OLÉ
OBC™
OBC+
NUBUFF
ZVI

ANAEROBIC BIOCHEM

Anaerobic Biochem (ABC®), is a patented mixture of lactates, fatty acids, and a phosphate buffer that promotes anaerobic biodegradation of halogenated solvents in groundwater.

ABC® BROCHURE
Adobe PDF File
Click here

LATEST NEWS

Redox Tech Introduces NuBuff
Redox Tech, LLC Renews Comarketing Relationship with Carus Corporation
New Soil Blender Debuts in Cambridge, Mass
ABC® and ABC+ Applied at Over 350 Sites
Anaerobic BioChem (ABC®), The "Green" Substrate

- ABC+ produces a significantly lower redox potential of approximately –600 mV

Let Redox Tech help formulate an enhanced anaerobic program for your site today. For more information contact our Main Office.

ADDITIONAL INFO

BROCHURES & PRESENTATIONS	ABC+ Presentation (713.91 kB) ABC+ Presentation (58.6 kB)
CASE STUDIES	ABC+ TCA Case Study (101.76 kB)
OTHER DOCUMENTS	ABC versus Emulsified Oils (55.99 kB) Site Profile for Cost Estimate (27.11 kB) Florida Remediation Conference (2.23 MB) Lactate (webpage)

[1]ABC® is protected by US Patent 6,001,252.

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SAFETY DATA SHEET
Anaerobic BioChem (ABC)

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **Anaerobic BioChem**
GENERAL USE: **Bioremediation of halogenated organics and metals**

MANUFACTURER:

Redox Tech, LLC
200 Quade Drive
Cary, NC 27513
919-678-0140

EMERGENCY TELEPHONE:

Within USA and Canada: 1-800-424-9300
+1 703-527-3887 (collect calls accepted)

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Product is generally recognized as safe. May cause irritation exposure to eyes. Long term contact to skin may cause some drying and minor irritation.

3. COMPOSITION INFORMATION ON INGREDIENTS

Proprietary mixture of fatty acids, glycerol, lactates and dipotassium phosphate.

4. FIRST AID MEASURES

EYES: Immediately flush with water for up to 15 minutes. If irritation persists, seek medical attention.

SKIN: Rinse with water. Irritation is unlikely, but if irritation occurs or persists, seek medical attention.

INGESTION: Generally safe to ingest but not recommended.

INHALATION: No first aid required.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Deluge with water

FIRE/EXPLOSION HAZARDS: Product is combustible only at temperatures above 600C

FIRE FIGHTING PROCEDURES: Use flooding with plenty of water, carbon dioxide or other inert gasses. Wear full protective clothing and self-contained breathing apparatus. Deluging with water is the best method to control combustion of the product.

FLAMMABILITY LIMITS: non-combustible

SENSITIVITY TO IMPACT: non-sensitive

SENSITIVITY TO STATIC DISCHARGE: non-senstive

6. ACCIDENTAL RELEASE MEASURES

Confine and collect spill. Transfer to an approved DOT container and properly dispose. Do not dispose of or rinse material into sewer, stormwater or surface water. Discharge of product to surface water could result in depressed dissolved oxygen levels and subsequent biological impacts.

7. HANDLING AND STORAGE

HANDLING: Protective gloves and safety glasses are recommended.

STORAGE: Keep dry. Use first in, first out storage system. Keep container tightly closed when not in use. Avoid contamination of opened product. Avoid contact with reducing agents.

8. EXPOSURE CONTROLS – PERSONAL PROTECTION

EXPOSURE LIMITS

Chemical Name	ACGIH	OSHA	Supplier
ABC	**NA**	**NA**	**NA**

ENGINEERING CONTROLS: None are required

PERSONAL PROTECTIVE EQUIPMENT

EYES and FACE: Safety glasses recommended
RESPIRATOR: none necessary
PROTECTIVE CLOTHING: None necessary
GLOVES: rubber, latex or neoprene recommended but not required

9. PHYSICAL AND CHEMICAL PROPERTIES

Odor:	none to mild pleasant organic odor
Appearance:	clear to light amber
Auto-ignition Temperature	Non-combustible
Boiling Point	>600 C
Melting Point	NA
Density	1.15 gram/cc
Solubility	infinite
pH	7-9

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID: Do not contact with strong oxidizers
STABILITY: product is stable
POLYMERIZATION: will not occur
INCOMPATIBLE MATERIALS: strong oxidizers
HAZARDOUS DECOMPOSITION PRODUCTS:

11. TOXICOLOGICAL INFORMATION

Acute Toxicity
A: General Product Information
Acute exposure may cause mild skin and eye irritation.
B: Component Analysis - LD50/LC50

No information available.

B: Component Analysis - TDLo/LDLo
TDLo (Oral-Man) none

Carcinogenicity
A: General Product Information
No information available.
B: Component Carcinogenicity
Product is not listed by ACGIH, IARC, OSHA, NIOSH, or NTP.

Epidemiology
No information available.

Neurotoxicity
No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity
Discharge to water may cause depressed dissolved oxygen and subsequent ecological stresses
Environmental Fate
No potential for food chain concentration

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Material is not considered hazardous, but consult with local, state and federal agencies prior to disposal to ensure all applicable laws are met.

14. TRANSPORT INFORMATION

NOTE: The shipping classification information in this section (Section 14) is meant as a guide to the overall classification of the product. However, transportation classifications may be subjectto change with changes in package size. Consult shipperrequirements under I.M.O., I.C.A.O. (I.A.T.A.) and 49 CFR to assure regulatory compliance.

US DOT Information
Shipping Name: Not Regulated
Hazard Class: Not Classified
UN/NA #: Not Classified
Packing Group:None
Required Label(s):None

50th Edition International Air Transport Association (IATA):
Not hazardous and not regulated

INTERNATIONAL MARITIME DANGEROUS GOODS (IMDG)

Material is not regulated under IMDG

15. REGULATORY INFORMATION

UNITED STATES

SARA TITLE III

SECTION 311 No Hazard for Immediate health Hazard
SECTION 312 No Threshold Quanitity
SECTION 313 Not listed

CERCLA NOT REGULATED UNDER CERCLA

TSCA NOT REGULATED UNDER TSCA

CANADA (WHIMS): NOT REGULATED

16. OTHER INFORMATION

HMIS:

Health	1
Flammability	0
Physical Hazard	0
Personal Protection	E

E: Safety Glasses, gloves

For every zone of your plume, we've got you covered!

Electron Donor Solutions for Enhanced Reductive Dechlorination

Interested in a Site Evaluation?

Let our Experienced Technical Service Team assist you with a no charge evaluation of your site.

Learn More

Nutrimens®

- Enhances Efficiency
- Minimizes Methane Production

Learn More

Tersus hosts Technology Lecture Series on groundwater remediation at multiple cities across the US

iSOC®

Accelerating Natural Attenuation of Petroluem Hydrocarbons

Additive injection and groundwater recirculation trailers available for short or long term lease.

TersOx™ - Inorganic Peroxygen for Enhanced Aerobic Bioremediation

RemBind designed to treat TPH, PAH, PFOS, PCBs, PCPs, and various pesticides

Formulating Surfactant Blends

Learn More

Leaders in Remediation of Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS)

Sulfate Enhanced Bioremediation

Advancing the Science of Enhanced Reductive Dechlorination

Electron Donor Solution – Extended Release

As delivered, the physical state of *EDS-ER*™ (electron donor solution – extended release) by Tersus Environmental is significantly different than standard emulsified vegetable oil (EVO) products. Whereas other EVO products are concentrated emulsions containing water, EDS-ER™ is a water-mixable oil; it contains no water. Thus, the costs for shipping *EDS-ER*™ are about 50% less than conventional products.

At room temperature, *EDS-ER*™ is a liquid material with an appearance and viscosity roughly equivalent to vegetable oil. Unlike common EVO products, *EDS-ER*™ will not separate, will not freeze, and has a shelf life of 2 years without spoilage.

Tersus Environmental is proud to announce that *EDS-ER*™ does NOT contain ethoxylated polysorbate surfactants. As you may know, many environmental remediation injectates, such as emulsified vegetable oils use biodegradable non-ionic surfactants. Unfortunately, ethoxylation, the manufacturing process that creates these surfactants (e.g., polysorbates) often results in these products containing 1,4-dioxane.

Purpose

EDS-ER™ is a simple, safe, low-cost solution for the bioremediation of halogenated compounds (e.g., PCE, TCE, DCE, VC, TCA, CT, etc.), nitrates, perchlorate, energetics, and select immobilization of oxidized heavy metals.

Benefits

- 100% fermentable and contains no water
- Because the product is completely water mixable, the number of necessary injection points for low permeability structures decreases
- Easily mixes with water, simplifying field operations
- Controlled release of electron donors for up to five years
- Food-grade carbon source
- Low total dissolved solids to comply with secondary water quality requirements for amendments with low salt content
- Conforms to EPA's EPP (Environmentally Preferable Purchasing) and USDA biobased criteria
- Neutral pH when mixed with water
- Clean, low-cost, non-disruptive application (e.g., direct-push, wells and excavations)
- Lowers transportation costs when compared to other electron donors
- Over two years shelf life
- Freezing Point is -4 °F (-20 °C)

Field Application Design

EDS-ER™ applications are easily tailored to meet site-specific conditions. Typical configurations consist of grid and barrier patterns and application in excavations or trenches. The product's low viscosity allows subsurface distribution through direct-push injection points, hollow-stem augers or pumped through existing wells.

PackagingOptions

- 55-gallon poly drums
- 275-gallon IBC containers
- 3,000 - 5,000 gallon tankers

Chemical & Physical Properties

Parameter	Typical Value
Organic Carbon (% by wt.)	100
Refined and Bleached US Soybean Oil (% by wt.)	93
Slow Release Organics, food grade vegetable oil derived fatty acid esters (% by wt.)	7
Specific Gravity	0.92 to 0.93

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Material Safety Data Sheet

Electron Donor Solution

Section 1: Chemical Product and Company Identification

Product Name: Electron Donor Solution Extended Release
Catalog Codes: EDS-ER
CAS#: 8001-22-7
TSCA: TSCA 8(b) inventory: Soybean oil
HMIS Code: H F R P: 10 0 A
Trade Name and Synonyms: EDS-ER
Chemical Family: Glyceride Oils

Contact Information:
Tersus Environmental, LLC
109 E. 17th Street, Suite #3880
Cheyenne, WY 82001
Ph: 307.638.2822 • info@tersusenv.com
www.tersusenv.com
For emergency assistance, call: 919.638.7892

Section 2: Composition and Information on Ingredients

COMPONANT	CAS #	OSHA TWA	OSHA STEL	ACGIH TWA	ACGIH STEL
Soybean Oil	8001-22-7	---	10 mg/m^3	---	---
Vegetable Oil Derived Fatty Acid Esters	Confidential	---	---	---	---

HAZARDOUS INGREDIENTS: NONE AS DEFINED UNDER THE U.S. OSHA HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200) OR THE CANADIAN HAZARDOUS PRODUCTS. ACT S.C. 1987, C.30 (PART 1).

THE PRECISE COMPOSITION OF THIS PRODUCT IS PROPRIETARY INFORMATION. A MORE COMPLETE DISCLOSURE WILL BE PROVIDED TO A PHYSICIAN IN THE EVENT OF A MEDICAL EMERGENCY.

SARA HAZARD: NONE NOTED (SECTION 311/312) TITLE III SECTION 313 - NOT LISTED
All components of this product are listed on the TSCA registry.

Section 3: Physical/Chemical Characteristics

BOILING RANGE: Not applicable VAPOR DENSITY: Exceeds 1.0

SPECIFIC GRAVITY (H20=1.0): 0.92 - 0.925 VAPOR PRESSURE: Not applicable

PERCENT VOLATILE BY VOLUME: 0% SOLUBILITY IN WATER: Miscible

EVAPORATION RATE: Not applicable
APPEARANCE AND ODOR: A pale yellow, oily liquid - only a faint odor.
WEIGHT PER GALLON: 7.7 lbs. at 60F.

Section 4: Fire and Explosion Data

FLAMMABILITY CLASSIFICATION: Combustible Liquid - Class IIIB.
FLASHPOINT: Greater than 550 F (288 C).
METHOD USED: Tag Closed Cup.
EXTINGUISHING MEDIA: CO2, dry chemical, foam, sand.
SPECIAL FIREFIGHTING PROCEDURES: Avoid use of water as it may spread fire by dispersing oil. Use water to keep fire-exposed containers cool. Water spray may be used to flush spills away from fire.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Rags soaked with any oil or solvent can present a fire hazard and should always be stored in UL Listed or Factory Mutual approved, covered containers. Improperly stored rags can create conditions that lead to oxidation. Oxidation, under certain conditions can lead to spontaneous combustion.

Section 5: Reactivity Data

STABILITY: Generally stable. Spontaneous combustion can occur. See Unusual Fire and Explosion Procedures, Section IV.

CONDITIONS TO AVOID: High surface area exposure to oxygen can result in polymerization and release of heat.

INCOMPATABILITY (MATERIALS TO AVOID): Avoid contact with strong oxidizing agents.

HAZARDOUS DECOMPOSITIONS OR BY-PRODUCTS: Decomposition may produce carbon dioxide and carbon monoxide.

HAZARDOUS POLYMERIZATION: Will not occur.

Section 6: Health Hazard Data

THRESHHOLD LIMIT VALUE: As a liquid - none. As oil mist - 10 mg/m3 total particulate.

INHALATION HEALTH RISKS AND SYMPTOMS OF EXPOSURE: Excessive inhalation of oil mist may affect the respiratory system. Oil mist is classified as a nuisance particulate by ACGIH.

SKIN ABSORPTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE: Not classified as a primary skin irritant or corrosive material. Sensitive individuals may experience dermatitis after long exposure of oil on skin.

HEALTH HAZARDS (ACUTE AND CHRONIC): Acute: none observed by inhalation. Chronic: none reported.

EMERGENCY AND FIRST AID PROCEDURES FOR:

SKIN CONTACT: May be removed from skin by washing with soap and warm water.

EYE CONTACT: Immediately flush eyes with plenty of cool water for at least 15 minutes. Do NOT let victim rub eyes.

INHALATION: Immediately remove exposed individual to fresh air source. If victim has stopped breathing give artificial respiration, get medical attention immediately.

Section 7: Precautions for Safe Handling and Use

ENVIRONMENTAL PRECAUTIONS: Where large spills are possible, a comprehensive spill response plan should be developed and implemented.

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Wear appropriate respiratory protection and protective clothing as described in section VIII. Depending on quantity of spill: (a) Small spill - add solid adsorbent, shovel into disposable container and wash the area. Clean area with detergent. (b) Large spill - Squeegee or pump into holding container. Clean area with detergent. In the event of an uncontrolled release of this material, the user should determine if this release is reportable under applicable laws and regulations.

WASTE DISPOSAL METHOD: All recovered material should be packaged, labeled, transported, and disposed or reclaimed in accordance with local, state, and federal regulations and good engineering practices.

Section 8: Control Measures

RESPIRATORY PROTECTION: Not normally needed. A qualified health specialist should evaluate whether there is a need for respiratory protection under specific conditions.

VENTILATION: Handle in the presence of adequate ventilation. Intermittent clean air exchanges recommended, but not required.

PROTECTIVE GLOVES: Not normally needed. However, protective clothing is always recommended when handling chemicals.

EYE PROTECTION: Eye protection is always recommended when handling chemicals. Wear safety glasses meeting the specifications established in ANSI Standard Z87.1.

Section 9: Special Precautions

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Store away from flame, fire, and excessive heat.

Section 10: Disposal Considerations

General Information: Do not discharge into drains, watercourses or onto the ground. Discharge, treatment, or disposal may be subject to national, state, or local laws. Empty containers may contain product residues.

Disposal Methods: No specific disposal method required.

Container: Since emptied containers retain product residue, follow label warnings even after container is emptied.

Section 11: Transportation Information

DOT Not regulated.
TDG Not regulated.
IATA Not regulated.
IMDG Not regulated.

Section 12: Other Information

Hazard Ratings

	Health Hazard	Fire Hazard	Instability	Special Hazard
NFPA	1	1	0	NONE

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe
NFPA Label colored diamond code: Blue - Health; Red - Flammability; Yellow - Instability; White - Special Hazards

	Health Hazard	Flammability	Physical Hazard	Personal Protection
HMIS	1	1	0	--

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe
HMIS Label colored bar code: Blue - Health; Red - Flammability; Orange - Physical Hazards; White - Special

Section 13: Disclaimer and/or Comments

We suggest that containers be either professionally reconditioned for re-use by certified firms or properly disposed of by certified firms to help reduce the possibility of an accident. Disposal of containers should be in accordance with applicable federal, state and local laws and regulations. "Empty" drums should not be given to individuals.

The conditions of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Tersus Environmental be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Tersus Environmental has been advised of the possibility of such damages.

SAFETY DATA SHEET
Zero Valent Iron (ZVI)

Section 1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **ZVI**
GENERAL USE: Chemical reduction of halogenated organics and-or metals

MANUFACTURER:

Redox Tech, LLC
200 Quade Drive
Cary, NC 27513
919-678-0140

EMERGENCY TELEPHONE:

Within USA and Canada: 1-800-424-9300
+1 703-527-3887 (collect calls accepted)

Section 2. HAZARDS IDENTIFICATION

Physical state : Solid (Powder)
Emergency Overview : Potential dust explosion. Avoid contact with oxidizing agents. USE WITH CARE. Follow good industrial hygiene practice

Routes of entry : Demal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects
- Eyes : May cause eye irritation.
- Skin : No known significant effects or critical hazards
- Inhalation : May cause respiratory tract irritation.
- Ingestion : No known significant effects or critical hazards.

Potential Chronic Effects: : Carcinogenic effects: Not classified or listed by IARC, NTP, OSHA, EU AND ACGIH.
Mutagenic effects: Not available
: Teratogenic effects: Not Available
Medical conditions : Repeated exposure of the eyes to a low level of dust can produce eye irritation

Section 3. COMPOSITION INFORMATION ON INGREDIENTS

Greater than 98% Iron CAS# 7439-89-6
Contains carbon, sulfur and other metal impurities.

Section 4. FIRST AID MEASURES

Eye contact : Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 20 minutes. Get medical attention if irritation occurs
Skin contact : Wash with soap and water. Get medical attention if irritation occurs.
Inhalation : Move person to fresh air. Get medical attention if breathing difficulty persists

Ingestion	:	Do not induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention if symptoms appear.
Notes to physician:		No specific antidote. Material is used as an iron supplement in food and vitamins. Treatment would be the same as for iron overdose.

Section 5. FIRE FIGHTING MEASURES

Flammability of the product	Generally non-flammable but susceptible to dust explosion.
Fire-fighting media	Use a fog nozzle to spray water.
Special protective Equipment for fire-fighters	Fire-fighters should wear appropriate protective equipment.
Special remarks on fire	As with any finely granulated product, a risk of dust explosion is present should the material be dispersed in air and exposed to a source of ignition. Fine powder can form flammable and explosive mixtures in air.

Section 6. ACCIDENTAL RELEASE MEASURES

In case of a significant release, take immediate efforts to minimize discharge to surface water (storm drains, streams, lakes, rivers, etc). If the release occurs in a closed area, take steps to improve ventilation. If improvement of ventilation is not possible, call the fire department. The material can be swept up and placed into approved storage containers. Do not use a vacuum to gather the material because this may result in dispersion of dust particles and increase the risk for a dust explosion.

Section 7. HANDLING AND STORAGE

The material should be stored in a cool, dry, environment. It is not recommended to store the material in the proximity of oxidants. When handling the product, wear a dusk mask, eye protection and gloves. The product should always be handled in a well ventilated environment.

Section 8. EXPOSURE CONTROLS – PERSONAL PROTECTION

Engineering controls	:	Use process enclosures, local exhaust ventilation or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fumes or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
Personal protection		
Eyes	:	Safety eyewear complying with an approved standard should be used and selected based on the t ask being performed and the risks involved (avoid exposure to liquid splashed, mists, gases or dusts). Where there is a risk of exposure to high velocity particles safety glasses or face shield complying with an approved standard should be used to protect against impact. Where there is a risk of exposure to dusts, goggles should be used. Recommended: Safety glasses.
Respiratory	:	Dusk mask or respirator is recommended.
Hands	:	Gloves are recommended

Skin/Body	:	Personal protective equipment for the body should be selected based on the task being performed and the risks involved. Risk from dermal contact is minimal.

Section 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	:	Solid (Powder)
Color	:	Gray
Melting/freezing point	:	1535ºC (2795ºF)
Specific gravity	:	7.88
Bulk density	:	2.4 to 3.2 g/cm³
Solubility	:	Insoluble in water

Section 10. STABILITY AND REACTIVITY

The product is reactive with oxidizers. Precautions should be taken not to store or contact the product with oxidizers.

Fine particles of this product (not widely found in this grade) have a potential for a dust explosion. The product should be handled in a well ventilated area where dust generation is minimized.

Section 11. TOXICOLOGICAL INFORMATION

Acute Effects

Eyes	May cause eye irritation.
Skin	No known significant effects or critical hazards.
Inhalation	May cause respiratory tract irritation.
Ingestion	No known significant effects or critical hazards.

Chronic Health Effects:	Carcinogenic effects: Not classified or listed by IARC, NTP, OSHA, EU and ACGIH

Section 12. ECOLOGICAL INFORMATION

Will reduce dissolved oxygen levels in aquatic ecosystems. Direct discharge to surface water should be avoided.

Section 13. DISPOSAL CONSIDERATIONS

The generation of waste should be avoided or minimized to the extent practical. Disposal of this product, solutions and any by-products should be completed in an environmentally responsible manner that complies with all local, state and federal laws.

Section 14. TRANSPORT INFORMATION

Classification:

AND/ADR/TDG/DOT/IMDG/IATA: Not regulated.

Section 15. REGULATORY INFORMATION

This product is not regulated in the United States and Canada. The user should ensure this product is not regulated where used.

Section 16. OTHER INFORMATION

Health	0
Fire Hazard	2
Reactivity	1
Personal Protection	C

APPENDIX C: LHAAP-16 WELL LOGS

00084632 00092875

HOLE NO. 16WW41

BORING LOG	DIVISION Federal	INSTALLATION Longhorn AAP	SHEET 1 OF 1 SHEETS

1. PROJECT 117591	9. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
2. LOCATION Site 16	10. MANUFACTURER'S DESIGNATION OF DRILL HSA 10" / Mud Rotary
3. DRILLING AGENCY ETTL	11. OVERBURDEN SAMPLES DISTURBED — UNDISTURBED —
4. HOLE NO. (As shown on drawing title and file number) 16WW41	12. TOTAL NUMBER CORE BOXES —
	13. ELEVATION GROUND WATER
5. NAME OF DRILLER Jonny Cook	14. DATE HOLE STARTED 09/30/08 COMPLETED 11/05/08
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED 0 DEG. FROM VERT.	15. ELEVATION TOP OF HOLE NA
7. TOTAL DEPTH OF HOLE 50'	16. TOTAL CORE RECOVERY FOR BORING 55 %
8. SIZE AND TYPE OF BIT 10" hollow stem	17. LOGGED BY Allen QC

PID (ppm) a	DEPTH b	USCS c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			(LITHOLOGY SAME AS 16WW22).			
	45		No recovery			
0.0	46	SC	Sand, clay, fine-grained, damp	10%		
	47	CL	Clay, sand, ~~dense~~ soft, high plasticity, damp			
0.0	48	SC	Sand, clay, fine-grained, damp	100%		
	49					
	50	CL	Clay, sand, soft, high plasticity, moist			
			End of Boring			

00084633 00093876

WELL CONSTRUCTION DETAILS AND ABANDONMENT FORM

FIELD REPRESENTATIVE: Susan Oller / Shaw

DRILLING CONTRACTOR: ETTL

DRILLING TECHNIQUE: Mud Rotary
AUGER SIZE AND TYPE: 10"

BOREHOLE IDENTIFICATION: LH16WW41
BOREHOLE DIAMETER: 10"
WELL IDENTIFICATION: LH16WW41

WELL CONSTRUCTION START DATE: 11/04/08
WELL CONSTRUCTION COMPLETE DATE: 11/05/08

SCREEN MATERIAL: Sch 40 PVC
SCREEN DIAMETER: 4"
STRATUM-SCREENED INTERVAL (FT): 10

CASING MATERIAL: Sch 40 PVC
CASING DIAMETER: 4"

TYPE OF FILTER PACK: Quartz Sand
GRADIATION: 20/40
AMOUNT OF FILTER PACK USED: 15 bags

TYPE OF BENTONITE: Pellets
AMOUNT BENTONITE USED: 50 pounds

TYPE OF CEMENT: Portland
AMOUNT CEMENT USED: 11
GROUT MATERIALS USED: Bentonite

DIMENSIONS OF SECURITY BOX: NA

TYPE OF WELL CAP: Plugging cap
TYPE OF END CAP: Sch 40 PVC

COMMENTS:

SPECIAL CONDITIONS
(describe and draw)

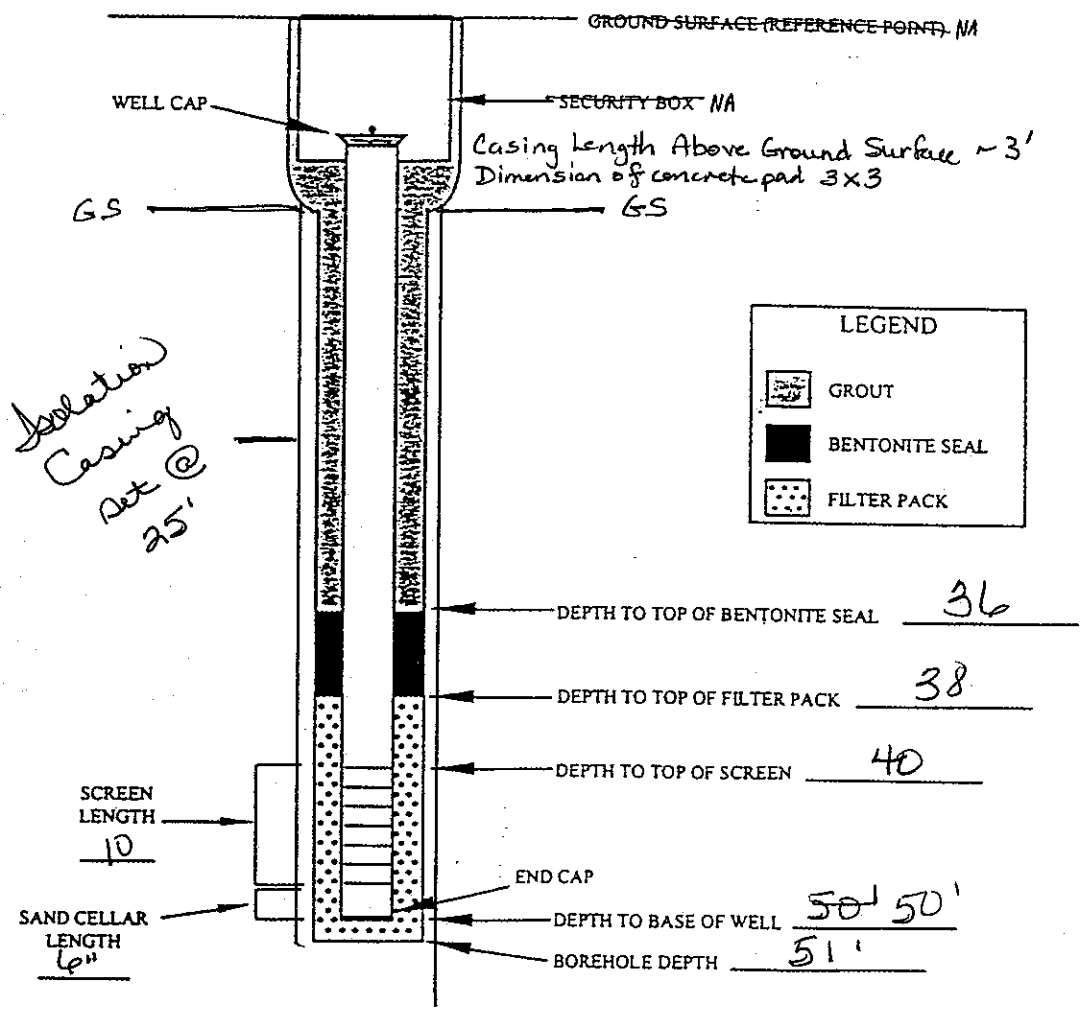

INSTALLED BY: ETTL

INSTALLATION OBSERVED BY: Susan Oller

DISCREPANCIES: NONE

HOLE NO. 16WW42

DRILLING LOG	DIVISION FEDERAL	INSTALLATION Longhorn	SHEET 1 OF SHEETS

1. PROJECT LHAAP	10. SIZE AND TYPE OF BIT 8" I.D. HSA
2. LOCATION (Coordinates or Station) Karnack, Texas	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY ETTL	12. MANUFACTURER'S DESIGNATION OF DRILL 5500 CME
4. HOLE NO. (As shown on drawing title and file number) 16WW42	13. OVERBURDEN SAMPLES: DISTURBED / UNDISTURBED ✓
5. NAME OF DRILLER Doug Hinds	14. TOTAL NUMBER CORE BOXES NR
6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED 0° DEG. FROM VERT.	15. ELEVATION GROUND WATER NA
	16. DATE HOLE: STARTED 11/4/08 COMPLETED 11/4/08
7. THICKNESS OF OVERBURDEN	17. ELEVATION TOP OF HOLE NR
8. DEPTH DRILLED INTO ROCK 0'	18. TOTAL CORE RECOVERY FOR BORING NR %
9. TOTAL DEPTH OF HOLE 12'	ALLEN WILLMORE INSPECTOR

~~ELEVATION~~ PID a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
3.2			SAND CLAYEY, LOW PLASTICITY, MOIST, SOFT, SLIGHTLY ORGANIC, REDDISH-BROWN			
2.1		SC		100%		
3.6			SAND, SILTY, FINE-GRAINED PALE GRAY, MOIST, LOOSE			
0.4	5	SM				
4.3			— BECOMES LIGHTER GRAY	100%		
9.1	10					
		EL	CLAY, SANDY, moist, soft, fine-grained	10%		
			END OF BORING @ 12'			

00084635 00095878

16WW42

WELL COMPLETION FORM (Stickup or Above Grade Completion Well)

FIELD REPRESENTATIVE: A. Willmore

DRILLING CONTRACTOR: ETTL

DRILLING TECHNIQUE: HSA
AUGER SIZE AND TYPE: 10"

BOREHOLE IDENTIFICATION: 16WW42
BOREHOLE DIAMETER: 10"
WELL IDENTIFICATION: 16WW42

WELL CONSTRUCTION START DATE: 11/4/08
WELL CONSTRUCTION COMPLETE DATE: 11/4/08

SCREEN MATERIAL: Sch. 40 PVC
SCREEN DIAMETER: 4"
STRATUM-SCREENED INTERVAL (FT): 16'

CASING MATERIAL: Sch. 40 PVC
CASING DIAMETER: 4"

TYPE OF FILTER PACK: Silica Sand
GRADIATION: 20/40
AMOUNT OF FILTER PACK USED:

TYPE OF BENTONITE: bentonite pellets
AMOUNT BENTONITE USED:

TYPE OF CEMENT: Portland
AMOUNT CEMENT USED:
GROUT MATERIALS USED: bentonite

DIMENSIONS OF SECURITY CASING: 8" x 8" x 5'

TYPE OF WELL CAP: plugging cap
TYPE OF END CAP: Sch. 40 PVC

COMMENTS:

SPECIAL CONDITIONS
(describe and draw)

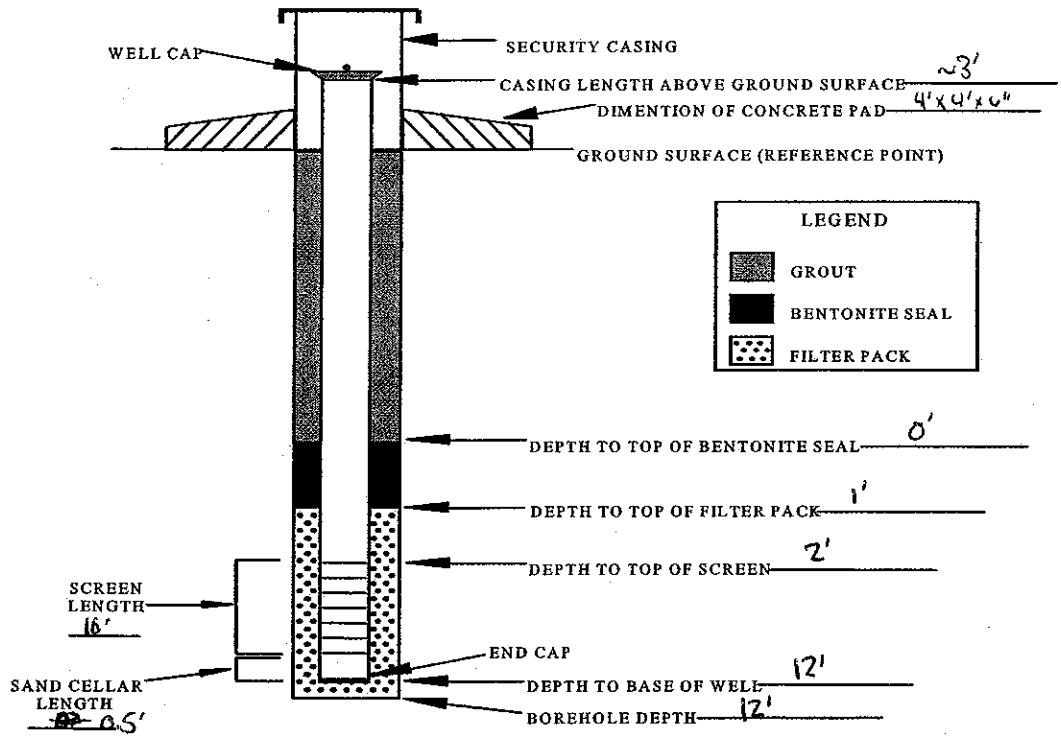

NOT TO SCALE

INSTALLED BY: Billy Pagan INSTALLATION OBSERVED BY: Allen Willmore

DISCREPANCIES: See log for 16DPT01 for lithology

00084636 00036879

HOLE NO. 16WW43

DRILLING LOG	DIVISION FEDERAL	INSTALLATION Longhorn	SHEET 1 OF 1 SHEETS

1. PROJECT LHAAP	10. SIZE AND TYPE OF BIT 8" I.D. HSA
2. LOCATION (Coordinates or Station) Karnack, Texas	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY ETTL	12. MANUFACTURER'S DESIGNATION OF DRILL 5500 CME
4. HOLE NO. (As shown on drawing title and file number) WW 16WW43	13. OVERBURDEN SAMPLES: DISTURBED / UNDISTURBED ✓
5. NAME OF DRILLER Doug Hinds	14. TOTAL NUMBER CORE BOXES NR
6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED 0° DEG. FROM VERT.	15. ELEVATION GROUND WATER
	16. DATE HOLE: STARTED 11/4/08 COMPLETED 11/4/08
7. THICKNESS OF OVERBURDEN 12'	17. ELEVATION TOP OF HOLE NR
8. DEPTH DRILLED INTO ROCK 0'	18. TOTAL CORE RECOVERY FOR BORING NR %
9. TOTAL DEPTH OF HOLE 12'	Allen Willmore INSPECTOR

~~ELEVATION~~ PID a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
0.0			Sand, SILTY, fine-grained, dry, loose organic			
0.0				100%		
0.0		SM				
	5		← Increasing moisture			
0.0				100%		
0.0						
			– Become wet & pale brown			
0.0						
0.0	10			100%		
0.0		CL	CLAY, SOFT, MOIST, Low Plasticity			
			END OF BORING @ 12'			

00084637 00092880
16WW43

WELL COMPLETION FORM (Stickup or Above Grade Completion Well)

FIELD REPRESENTATIVE: A. Willmore

DRILLING CONTRACTOR: ETTL

DRILLING TECHNIQUE: HSA
AUGER SIZE AND TYPE: 10"

BOREHOLE IDENTIFICATION: 16WW43
BOREHOLE DIAMETER: 10"
WELL IDENTIFICATION: 16WW43

WELL CONSTRUCTION START DATE: 11/4/08
WELL CONSTRUCTION COMPLETE DATE: 11/4/08

SCREEN MATERIAL: sch. 40 PVC
SCREEN DIAMETER: 4"
STRATUM-SCREENED INTERVAL (FT): 10'

CASING MATERIAL: sch. 40 PVC
CASING DIAMETER: 4"

TYPE OF FILTER PACK: Silica sand
GRADIATION: 20/40
AMOUNT OF FILTER PACK USED:

TYPE OF BENTONITE: bentonite pellets
AMOUNT BENTONITE USED:

TYPE OF CEMENT: portland - cement
AMOUNT CEMENT USED:
GROUT MATERIALS USED: bentonite

DIMENSIONS OF SECURITY CASING: 8" x 8" x ~5'

TYPE OF WELL CAP: plugging cap
TYPE OF END CAP: sch. 40 PVC

COMMENTS:

SPECIAL CONDITIONS
(describe and draw)

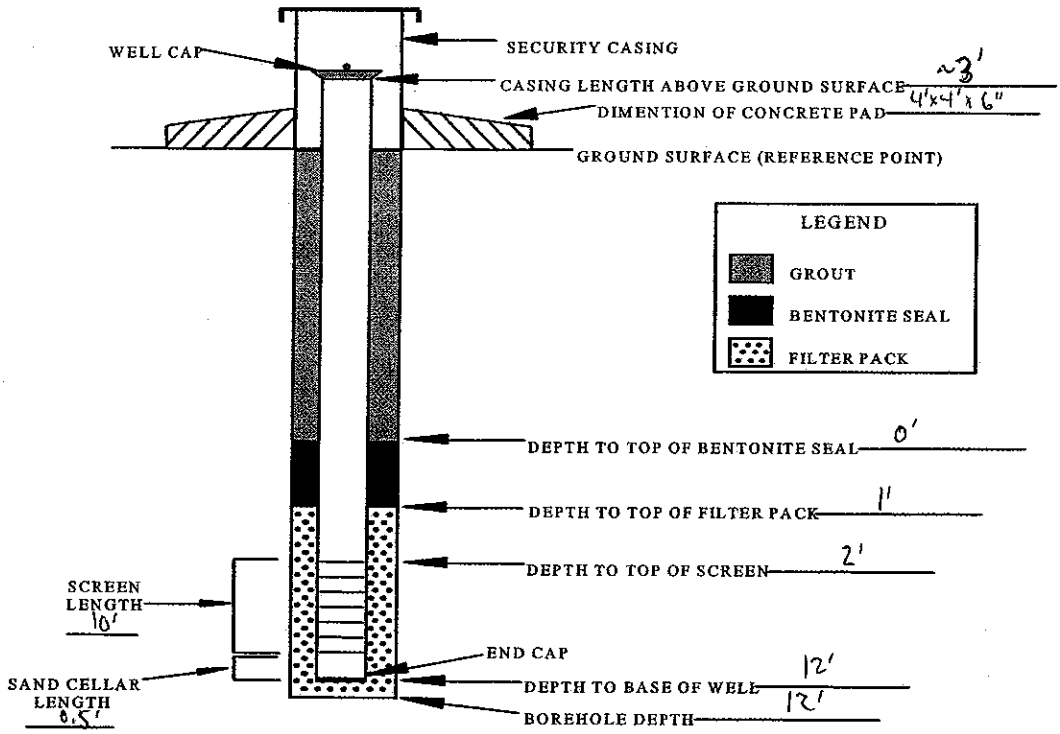

NOT TO SCALE

INSTALLED BY: Billy Ragon INSTALLATION OBSERVED BY: Allen Willmore

DISCREPANCIES: see log for 16DPT02 for lithology

00084633 00092881

HOLE NO. 16WW44

BORING LOG	DIVISION Federal	INSTALLATION Longhorn AAP	SHEET 1 OF 3 SHEETS

1. PROJECT 117591	9. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
2. LOCATION Site 19	10. MANUFACTURER'S DESIGNATION OF DRILL 10" HSA
3. DRILLING AGENCY ETTL	11. OVERBURDEN SAMPLES DISTURBED — UNDISTURBED —
4. HOLE NO. (As shown on drawing title and file number) 11/5/08 ~~16WW~~ 16WW44	12. TOTAL NUMBER CORE BOXES —
	13. ELEVATION GROUND WATER
5. NAME OF DRILLER Jimmy Cook	14. DATE HOLE STARTED 11/05/08 COMPLETED 11/06/08
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED 0 DEG. FROM VERT.	15. ELEVATION TOP OF HOLE
7. TOTAL DEPTH OF HOLE 30'	16. TOTAL CORE RECOVERY FOR BORING 100 %
8. SIZE AND TYPE OF BIT 10" hollow stem	17. LOGGED BY Ola QC KE

PID (ppm) a	DEPTH b	USCS c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	1, 2					Top 3ft removed during clearing
	3, 4	CL	Clay, sand, dense, low plasticity, dry, brown			
0.0 ~~1000~~ ola 11/5/08	5	SC	Sand, clay, fine-grained dry, brown	100%		
	6	CL	Clay, sand, dense, low plasticity, dry, brown			
ola 11/5/08	7	SC	Sand, clay, fine to very fine grained, dry, tan			
	8, 9	CL	Clay, sand, very dense, dry, brown			
0.0	10, 11, 12	SC	Sand, clay, fine to medium-grained, dry brown — becomes more clayey	100%		

DRILLING LOG (Cont Sheet)	ELEVATION TOP OF HOLE	Hole No. 16WW44
PROJECT 117591	INSTALLATION Longhorn AAP	SHEET 2 OF 3 SHEETS

ELEVATION P.I.D.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	13					
	14					
	15			100%		
0.0	16					
	17					
	18					
	19	SC	Sand, clay, some silt, mottling dense, course-grained dry, gray			
	20					
	21		Clay, sand, some silt, low plasticity dense, dry, brown	100%		
0.0	22	CL	- becomes moist			
	23					
	24					
	25		- becomes clayey			
	26					
	27	SC	Sand, silt, clay, dense, course-grained wet, iron staining			

PROJECT | HOLE NO.

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DRILLING LOG (Cont Sheet)	ELEVATION TOP OF HOLE	Hole No. 16WW44
PROJECT 117591	INSTALLATION Longhorn AAP	SHEET 3 OF 3 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
0.0	28			100%		
	29	CL	Clay, sand, dirt, no plasticity, dry			
	30		End of Boring			

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PROJECT | HOLE NO.

00084641 00491884

16WW44

WELL CONSTRUCTION DIAGRAM (Stickup or Above Grade Completion Well)

FIELD REPRESENTATIVE: Susan Allen

DRILLING CONTRACTOR: ETTL

DRILLING TECHNIQUE: Hollow Stem

AUGER SIZE AND TYPE: 10"

BOREHOLE IDENTIFICATION: 16WW44 ~~45~~ Allen 11/05/08

BOREHOLE DIAMETER: 10"

WELL IDENTIFICATION: 16WW44 ~~45~~

WELL CONSTRUCTION START DATE: 11/05/08

WELL CONSTRUCTION COMPLETE DATE: 11/06/08

SCREEN MATERIAL: Sch 40 PVC

SCREEN DIAMETER: 10"

STRATUM-SCREENED INTERVAL (FT): 10'

CASING MATERIAL: Sch 40 PVC

CASING DIAMETER: 10"

TYPE OF FILTER PACK: #2 Silica Sand

GRADATION: 20/40

AMOUNT OF FILTER PACK USED: 12

AMOUNT BENTONITE USED: 50 pounds

TYPE OF CEMENT: Portland

AMOUNT CEMENT USED: 12

GROUT MATERIALS USED: Bentonite

DIMENSIONS OF SECURITY BOX: 8"x8"x~3'

TYPE OF WELL CAP: plugging cap

TYPE OF END CAP: PVC

COMMENTS:

SPECIAL CONDITIONS (describe and draw)

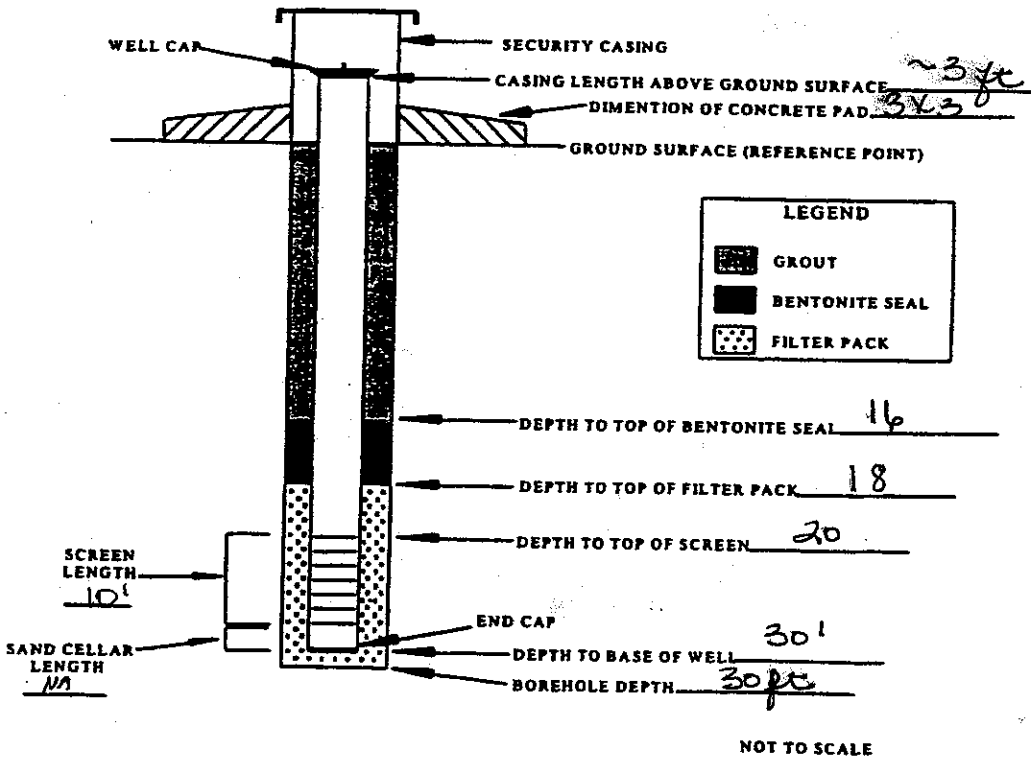

INSTALLED BY: Doug Hinds

INSTALLATION OBSERVED BY: Susan Allen

DISCREPANCIES: None

00084642 00492885

HOLE NO. 16WW45

BORING LOG	DIVISION Federal	INSTALLATION Longhorn AAP	SHEET 1 OF 4 SHEETS

1. PROJECT 117591	9. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
2. LOCATION Site 16	10. MANUFACTURER'S DESIGNATION OF DRILL HSA 10" / Mud Rotary
3. DRILLING AGENCY ETTL	11. OVERBURDEN SAMPLES DISTURBED — UNDISTURBED —
4. HOLE NO. (As shown on drawing title and file number) 16WW45	12. TOTAL NUMBER CORE BOXES —
	13. ELEVATION GROUND WATER —
5. NAME OF DRILLER Billy	14. DATE HOLE STARTED 11/5/08 COMPLETED 11/12/08
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED 0 DEG. FROM VERT.	15. ELEVATION TOP OF HOLE NA
7. TOTAL DEPTH OF HOLE 51'	16. TOTAL CORE RECOVERY FOR BORING ~80 %
8. SIZE AND TYPE OF BIT 10" hollow stem	17. LOGGED BY Allen QC KE

PID (ppm) a	DEPTH b	USCS c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
0.0	3–5	CL	Clay, sand, dense, low plasticity, dry - becomes damp	100%		Top 3' removed during cleaning.
0.0	5–6	SC	Sand, clay, fine-grained dry			
	6–7	CL	Clay, sand, dense, low plasticity, dry			
	7–8	SC	Sand, clay, fine to very fine, dry			
	8–9	CL	~~Sand~~ Clay, sand, very dense, dry, brown	100%		
0.0	9–10	SC	Sand, clay, fine to med grained, dry brown			
	10–14		- becomes more clayey			Allen Willmore takes over log ~~for~~ from S. Oller

11/05/08 Allen

DRILLING LOG (Cont Sheet)	ELEVATION TOP OF HOLE NA	Hole No. 16 WW 45
PROJECT 117591	INSTALLATION Longhorn AAP	SHEET 2 OF 4 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
0.0						
0.0	18	SP	Sand, clayey, mottling (little), dense poorly-sorted slightly, gray			
	20		CLAY, SILTY, LOW PLASTICITY, STIFF brown, dry			
0.0		CL	-becomes damp -becomes harder			
	25		-becomes more clayey			
	29	SP	SAND, SILTY, MODERATELY DENSE, POORLY SORTED, WET, IRON STAINING, GRAY			

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PROJECT | HOLE NO.

DRILLING LOG (Cont Sheet)	ELEVATION TOP OF HOLE NA	Hole No. 16WW48
PROJECT 117591	INSTALLATION Longhorn AAP	SHEET 3 OF 4 SHEETS

ELEVATION PID	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) e	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	30					- Set isolation casing @ 30' bgs.
0.0	31	CL	Clay, sand, dense no plasticity, dry - becomes moist to wet	70%		- Allen takes over from Nelmore
	32					
0.0	33	SC	Sand, clay, dense fine to very fine-grained, moist	80%		
	34		lignite			
0.0	35	SC	Sand, clay, dense course-grained, some iron staining damp	80%		
	36					
0.0	37	CL	Clay, sand, dense low plasticity	80%		
	38					
0.0	39	SC	Sand, clay, soft, fine-grained, moist, brownish gray			
	40					
0.0	41		- becomes clayey	80%		
	42		- becomes less clayey			
0.0	43					
	44					

ENG FORM 1836—APREVIOUS EDITIONS ARE OBSOLETE. MAR 71

PROJECT | HOLE NO.

DRILLING LOG (Cont Sheet)	ELEVATION TOP OF HOLE NA	Hole No. 16WW45
PROJECT 117591	INSTALLATION Longhorn AAP	SHEET 4 OF 4 SHEETS

ELEVATION P.D	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
0.0	45					
	46		Organics (black)			
0.0	47					
	48					
0.0	49					
		Cl	Clay, sand dense no plasticity dry			Wtr set @ 50' bgs.
	50					
	51		End of Boring			

ENG FORM 1836—APREVIOUS EDITIONS ARE OBSOLETE.
MAR 71

PROJECT | HOLE NO.

00084646 00492889

16WW45

WELL CONSTRUCTION DIAGRAM (Stickup or Above Grade Completion Well)

FIELD REPRESENTATIVE: Susan Allen

DRILLING CONTRACTOR: ETTL

DRILLING TECHNIQUE: Mud Rotary

AUGER SIZE AND TYPE: 10"

BOREHOLE IDENTIFICATION: 16WW45

BOREHOLE DIAMETER: 10"

WELL IDENTIFICATION: 16WW45

WELL CONSTRUCTION START DATE: 11/04/08

WELL CONSTRUCTION COMPLETE DATE: ~~11/05/08~~ 11/12/08 Allen 11/12/08

SCREEN MATERIAL: Sch 40 PVC

SCREEN DIAMETER: 10"

STRATUM-SCREENED INTERVAL (FT): 10'

CASING MATERIAL: Sch 40 PVC

CASING DIAMETER: 10"

TYPE OF FILTER PACK: Silica Sand

GRADATION: 20/40

AMOUNT OF FILTER PACK USED: 11

AMOUNT BENTONITE USED: 50 pounds

TYPE OF CEMENT: Portland

AMOUNT CEMENT USED: 12

GROUT MATERIALS USED: Bentonite

DIMENSIONS OF SECURITY BOX: ~~3x~~ 8"x8"x3'

TYPE OF WELL CAP: Plugging Cap

TYPE OF END CAP: Sch 40 PVC

COMMENTS:

SPECIAL CONDITIONS (describe and draw)

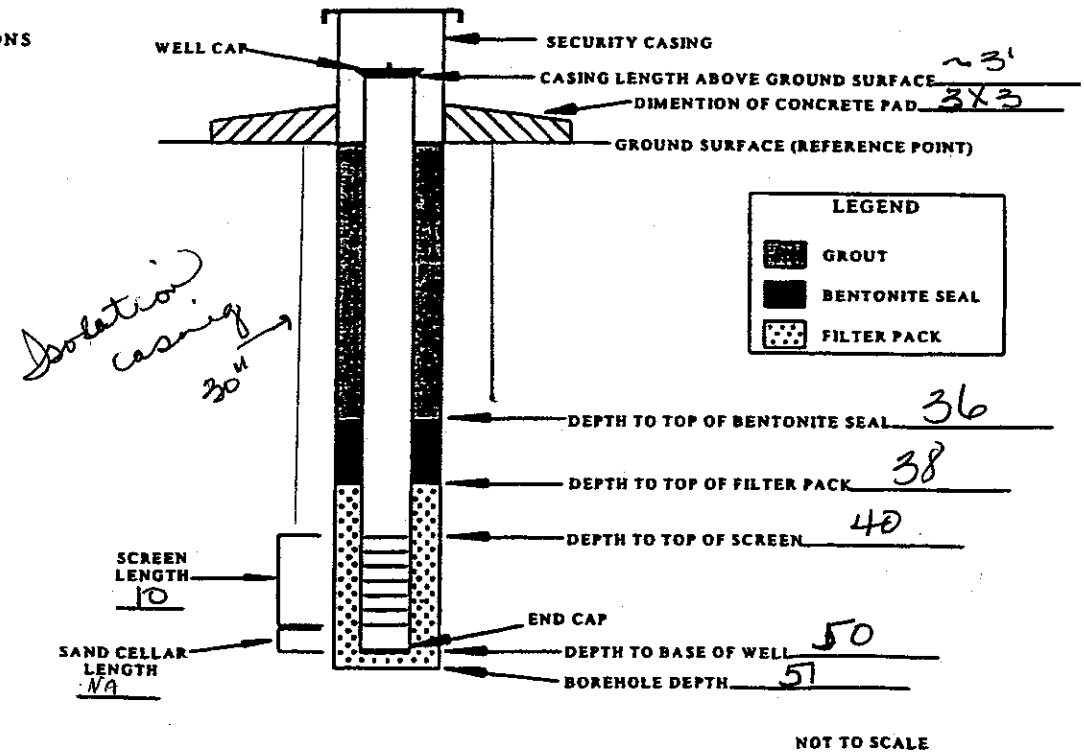

INSTALLED BY: ETTL

INSTALLATION OBSERVED BY: Susan Allen

DISCREPANCIES: None

00084647 00492890

HOLE NO. 16WW46

BORING LOG	DIVISION Federal	INSTALLATION Longhorn AAP	SHEET 1 OF 2 SHEETS

1. PROJECT 117591	9. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
2. LOCATION LHAAP-16	10. MANUFACTURER'S DESIGNATION OF DRILL HSA 10'
3. DRILLING AGENCY ETTL	11. OVERBURDEN SAMPLES DISTURBED — UNDISTURBED —
4. HOLE NO. (As shown on drawing title and file number) 16WW~~44~~46 Ollw 11/06/08	12. TOTAL NUMBER CORE BOXES —
	13. ELEVATION GROUND WATER ~17'
5. NAME OF DRILLER Jonny Cook	14. DATE HOLE STARTED 11/06/08 COMPLETED 11/06/08
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED 0 DEG. FROM VERT.	15. ELEVATION TOP OF HOLE NA
7. TOTAL DEPTH OF HOLE 20'	16. TOTAL CORE RECOVERY FOR BORING ~100 %
8. SIZE AND TYPE OF BIT 10" hollow stem	17. LOGGED BY Ollw QC KC

PID (ppm) a	DEPTH b	USCS c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	SAMPLE f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
—	1 2 3 4			0%		
0.0	5 6 7		No Recovery	20%		13:45
	8 9		Clay, sand, dense, no plasticity, dry			
	10		Sand, clay, fine to med-grained, ~~moist~~ moist Ollw 11/6/08			
0.0	11 12		- becomes more clayey	100% ~~80%~~ Ollw 11/06/08		14:00

DRILLING LOG (Cont Sheet)	ELEVATION TOP OF HOLE NA	Hole No. 16WW 46
PROJECT 117591	INSTALLATION Longhorn AAP	SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	13		Clay, sand, dense, med to high plasticity, damp			
	14					
	15		Sand, clay, fine-grained, damp			
	16		Clay, sand, dense high plasticity damp			14:15
	17					
0.0	18		Sand, clay, fine-grained, damp	100%	▼	
	19		Clay, sand, dense, high plasticity, damp			
	20		End of Boring			

ENG FORM 1836—APREVIOUS EDITIONS ARE OBSOLETE.
MAR 71

PROJECT | HOLE NO.

00084649 00499892

16WW46

WELL CONSTRUCTION DIAGRAM (Stickup or Above Grade Completion Well)

FIELD REPRESENTATIVE: Susan Allen

DRILLING CONTRACTOR: ETTL

DRILLING TECHNIQUE: hollow stem

AUGER SIZE AND TYPE: 10"

BOREHOLE IDENTIFICATION: 16WW46

BOREHOLE DIAMETER: 10"

WELL IDENTIFICATION: 16WW46

WELL CONSTRUCTION START DATE: 11/06/08

WELL CONSTRUCTION COMPLETE DATE: 11/06/08

SCREEN MATERIAL: Sch 40 PVC

SCREEN DIAMETER: 10"

STRATUM-SCREENED INTERVAL (FT): 10'

CASING MATERIAL: Sch 40 PVC

CASING DIAMETER: 10"

TYPE OF FILTER PACK: Silica Sand

GRADATION: 20/40

AMOUNT OF FILTER PACK USED: 12

AMOUNT BENTONITE USED: 50 pounds

TYPE OF CEMENT: Portland

AMOUNT CEMENT USED: 12

GROUT MATERIALS USED: Bentonite

DIMENSIONS OF SECURITY BOX: 8"x8"x~3'

TYPE OF WELL CAP: plugging

TYPE OF END CAP: sch. 40 PVC.

COMMENTS:

SPECIAL CONDITIONS (describe and draw)

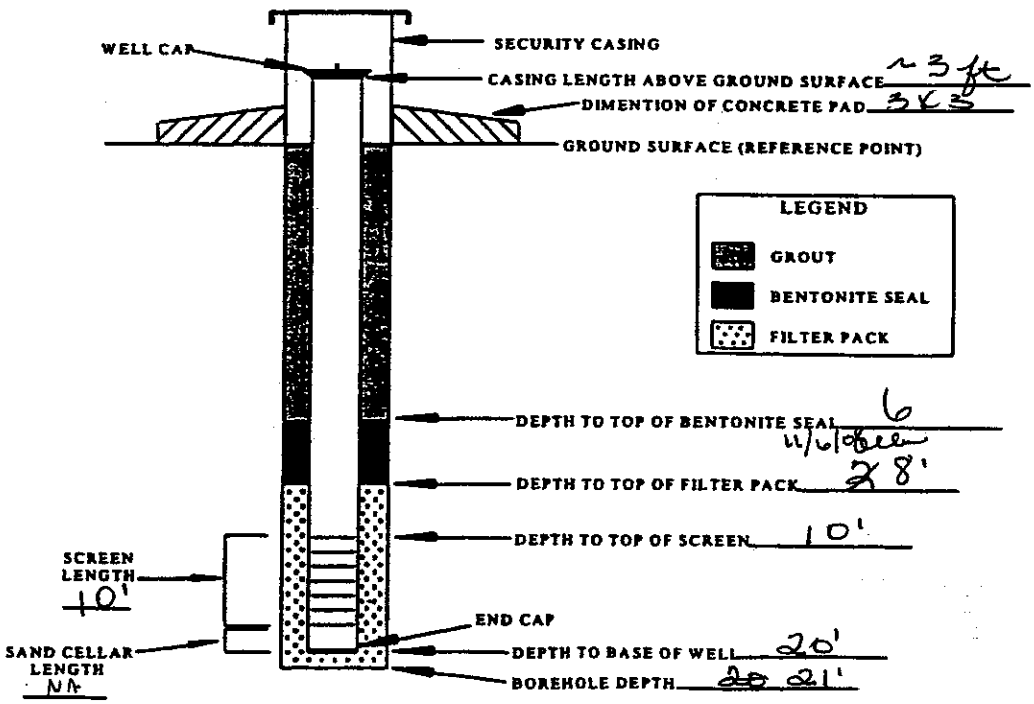

NOT TO SCALE

INSTALLED BY: Tommy Cook ETTL

INSTALLATION OBSERVED BY: Susan Allen

DISCREPANCIES: NONE

APPENDIX D: ESTCP SUBSTRATE CALCULATION SHEETS

SUBSTRATE ESTIMATING TOOL FOR ENHANCED ANAEROBIC BIOREMEDIATION OF CHLORINATED SOLVENTS

Version 1.2
November 2010

Site Data Input Table

TABLE S.1 - INPUT TABLE

Calculation Tables

Table S.2 - Substrate Calculations in Hydrogen

Table S.3 - Hydrogen Produced by Common Substrates

Table S.4 - Estimated Substrate Requirements for

Output Summary Table

TABLE S.5 - OUTPUT TABLE

PRINT SUMMARY TABLE

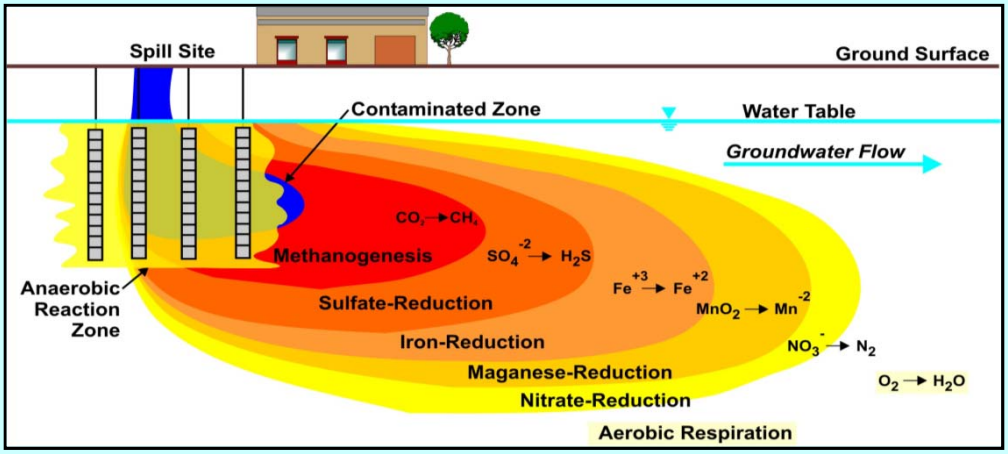

This Substrate Estimating Tool for Enhanced Anaerobic Bioremediation of Chlorinated Solvents has been developed by Parsons Infrastructure & Technology Group, Inc. (Parsons) for the Environmental Security Technology Certification Program (ESTCP). This substrate estimating tool is made available on an as-is basis without guarantee or warranty of any kind, express or implied. The United States Government, Parsons, the authors, and the reviewers accept no liability resulting from the use of this substrate estimating tool or its documentation; nor does the above warrant or otherwise represent in any way the accuracy, adequacy, efficacy, or applicability of the contents hereof. This substrate estimating tool is intended soley for educational and site screening purposes. Implementation of the substrate estimating tool and interpretation or use of the results provided in the model are the sole responsibility of the user. The substrate estimating tool is provided free of charge for everyone to use, but is not supported in any way by the United States Government or Parsons. Mention of trade names in this report is for information purposes only; no endorsement is implied.

Substrate Estimating Tool (Version 1.2)

Table S.1 Input for Substrate Requirements in Hydrogen Equivalents

Site Name: LHAAP 16

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NOTE: Unshaded boxes are user input.

1. Treatment Zone Physical Dimensions	Values	Range	Units	User Notes
Width (Perpendicular to predominant groundwater flow direction)	100	1-10,000	feet	Landfill Biobarrier #3
Length (Parallel to predominant groundwater flow)	15	1-1,000	feet	
Saturated Thickness	10	1-100	feet	
Treatment Zone Cross Sectional Area	1000	--	ft^2	
Treatment Zone Volume	15,000	--	ft^3	
Treatment Zone Total Pore Volume (total volume x total porosity)	39,281	--	gallons	
Treatment Zone Effective Pore Volume (total volume x effective porosity)	11,223	--	gallons	
Design Period of Performance	5.0	.5 to 5	year	
Design Factor (times the electron acceptor hydrogen demand)	3.0	2 to 20	unitless	
2. Treatment Zone Hydrogeologic Properties				
Total Porosity	35%	.05-50	percent	
Effective Porosity	10%	.05-50	percent	
Average Aquifer Hydraulic Conductivity	4.25	.01-1000	ft/day	
Average Hydraulic Gradient	0.0025	0.0001-0.1	ft/ft	
Average Groundwater Seepage Velocity through the Treatment Zone	0.11	--	ft/day	
Average Groundwater Seepage Velocity through the Treatment Zone	38.8	--	ft/yr	
Average Groundwater Discharge through the Treatment Zone	29,016	--	gallons/year	
Soil Bulk Density	1.7	1.4-2.0	gm/cm^3	
Soil Fraction Organic Carbon (foc)	0.05%	0.01-10	percent	
3. Native Electron Acceptors				
A. Aqueous-Phase Native Electron Acceptors				
Oxygen	1.6	0.01 to 10	mg/L	
Nitrate	0.10	0.1 to- 20	mg/L	
Sulfate	612	10 to 5,000	mg/L	
Carbon Dioxide (estimated as the amount of Methane produced)	20.0	0.1 to 20	mg/L	
B. Solid-Phase Native Electron Acceptors				
Manganese (IV) (estimated as the amount of Mn (II) produced)	20	0.1 to 20	mg/L	
Iron (III) (estimated as the amount of Fe (II) produced)	20	0.1 to 20	mg/L	
4. Contaminant Electron Acceptors				
Tetrachloroethene (PCE)	0.000	--	mg/L	
Trichloroethene (TCE)	5.000	--	mg/L	
Dichloroethene (cis-DCE, trans-DCE, and 1,1-DCE)	0.500	--	mg/L	
Vinyl Chloride (VC)	0.100	--	mg/L	
Carbon Tetrachloride (CT)	0.000	--	mg/L	
Trichloromethane (or chloroform) (CF)	0.000	--	mg/L	
Dichloromethane (or methylene chloride) (MC)	0.000	--	mg/L	
Chloromethane	0.000	--	mg/L	
Tetrachloroethane (1,1,1,2-PCA and 1,1,2,2-PCA)	0.000	--	mg/L	
Trichloroethane (1,1,1-TCA and 1,1,2-TCA)	0.000	--	mg/L	
Dichloroethane (1,1-DCA and 1,2-DCA)	0.000	--	mg/L	
Chloroethane	0.000	--	mg/L	
Perchlorate	1.000	--	mg/L	
5. Aquifer Geochemistry (Optional Screening Parameters)				
A. Aqueous Geochemistry				
Oxidation-Reduction Potential (ORP)	100	-400 to +500	mV	
Temperature	22	5.0 to 30	ºC	
pH	6.0	4.0 to 10.0	su	
Alkalinity	200	10 to 1,000	mg/L	
Total Dissolved Solids (TDS, or salinity)	100	10 to 1,000	mg/L	
Specific Conductivity	2500	100 to 10,000	µs/cm	
Chloride	637	10 to 10,000	mg/L	
Sulfide - Pre injection	0.0	0.1 to 100	mg/L	
Sulfide - Post injection	0.0	0.1 to 100	mg/L	
B. Aquifer Matrix				
Total Iron	10000	200 to 20,000	mg/kg	
Cation Exchange Capacity	NA	1.0 to 10	meq/100 g	
Neutralization Potential	10.0%	1.0 to 100	Percent as $CaCO_3$	

NOTES:

Substrate Estimating Tool (Version 1.2)

Table S.2 Substrate Calculations in Hydrogen Equivalents

Site Name: LHAAP 16

RETURN TO COVER PAGE

NOTE: Open cells are user input.

1. Treatment Zone Physical Dimensions

	Values	Range	Units
Width (Perpendicular to predominant groundwater flow direction)	100	1-10,000	feet
Length (Parallel to predominant groundwater flow)	15	1-1,000	feet
Saturated Thickness	10	1-100	feet
Treatment Zone Cross Sectional Area	1000	--	ft^2
Treatment Zone Volume	15,000	--	ft^3
Treatment Zone Effective Pore Volume (total volume x effective porosity)	11,223	--	gallons
Design Period of Performance	5.0	.5 to 5	year

2. Treatment Zone Hydrogeologic Properties

Total Porosity	0.35	.05-50	
Effective Porosity	0.10	.05-50	
Average Aquifer Hydraulic Conductivity	4.25	.01-1000	ft/day
Average Hydraulic Gradient	0.0025	0.1-0.0001	ft/ft
Average Groundwater Seepage Velocity through the Treatment Zone	0.11	--	ft/day
Average Groundwater Seepage Velocity through the Treatment Zone	38.8	--	ft/yr
Average Groundwater Flux through the Treatment Zon 0	29,016	--	gallons/year
Soil Bulk Density	1.7	1.4-2.0	gm/cm^3
Soil Fraction Organic Carbon (foc)	0.0005	0.0001-0.1	

3. Initial Treatment Cell Electron-Acceptor Demand (one total pore volume)

A. Aqueous-Phase Native Electron Acceptors	Concentration (mg/L)	Mass (lb)	Stoichiometric demand (wt/wt h_2)	Hydrogen Demand (lb)	Electron Equivalents per Mole
Oxygen	1.6	0.15	7.94	0.02	4
Nitrate (denitrification)	0.1	0.01	12.30	0.00	5
Sulfate	612	57.31	11.91	4.81	8
Carbon Dioxide (estimated as the amount of methane produced)	20.0	1.87	1.99	0.94	8
Soluble Competing Electron Acceptor Demand (lb.)				**5.77**	

B. Solid-Phase Native Electron Acceptors (Based on manganese and iron produced)	Concentration (mg/L)	Mass (lb)	Stoichiometric demand (wt/wt h_2)	Hydrogen Demand (lb)	Electron Equivalents per Mole
Manganese (IV) (estimated as the amount of Mn (II) produced)	20.0	26.09	27.25	0.96	2
Iron (III) (estimated as the amount of Fe (II) produced)	20.0	26.09	55.41	0.47	1
Solid-Phase Competing Electron Acceptor Demand (lb.)				**1.43**	

C. Soluble Contaminant Electron Acceptors	Concentration (mg/L)	Mass (lb)	Stoichiometric demand (wt/wt h_2)	Hydrogen Demand (lb)	Electron Equivalents per Mole
Tetrachloroethene (PCE)	0.000	0.00	20.57	0.00	8
Trichloroethene (TCE)	5.000	0.47	21.73	0.02	6
Dichloroethene (cis-DCE, trans-DCE, and 1,1-DCE)	0.500	0.05	24.05	0.00	4
Vinyl Chloride (VC)	0.100	0.01	31.00	0.00	2
Carbon Tetrachloride (CT)	0.000	0.00	19.08	0.00	8
Trichloromethane (or chloroform) (CF)	0.000	0.00	19.74	0.00	6
Dichloromethane (or methylene chloride) (MC)	0.000	0.00	21.06	0.00	4
Chloromethane	0.000	0.00	25.04	0.00	2
Tetrachloroethane (1,1,1,2-PCA and 1,1,2,2-PCA)	0.000	0.00	20.82	0.00	8
Trichloroethane (1,1,1-TCA and 1,1,2-TCA)	0.000	0.00	22.06	0.00	6
Dichloroethane (1,1-DCA and 1,2-DCA)	0.000	0.00	24.55	0.00	4
Chloroethane	0.000	0.00	32.00	0.00	2
Perchlorate	1.000	0.09	12.33	0.01	6
Total Soluble Contaminant Electron Acceptor Demand (lb.)				**0.03**	

D. Sorbed Contaminant Electron Acceptors (Soil Concentration = Koc x foc x Cgw)	Koc (mL/g)	Soil Conc. (mg/kg)	Mass (lb)	Stoichiometric demand (wt/wt h_2)	Hydrogen Demand (lb)	Electron Equivalents per Mole
Tetrachloroethene (PCE)	263	0.00	0.00	20.57	0.00	8
Trichloroethene (TCE)	107	0.27	0.43	21.73	0.02	6
Dichloroethene (cis-DCE, trans-DCE, and 1,1-DCE)	45	0.01	0.02	24.05	0.00	4
Vinyl Chloride (VC)	3.0	0.00	0.00	31.00	0.00	2
Carbon Tetrachloride (CT)	224	0.00	0.00	19.08	0.00	8
Trichloromethane (or chloroform) (CF)	63	0.00	0.00	19.74	0.00	6
Dichloromethane (or methylene chloride) (MC)	28	0.00	0.00	21.06	0.00	4
Chloromethane	25	0.00	0.00	25.04	0.00	2
Tetrachloroethane (1,1,1,2-PCA and 1,1,2,2-PCA)	117	0.00	0.00	20.82	0.00	8
Trichloroethane (1,1,1-TCA and 1,1,2-TCA)	105	0.00	0.00	22.06	0.00	6
Dichloroethane (1,1-DCA and 1,2-DCA)	30	0.00	0.00	24.55	0.00	4
Chloroethane	3	0.00	0.00	32.00	0.00	2
Perchlorate	0.0	0.00	0.00	12.33	0.00	6
Total Sorbed Contaminant Electron Acceptor Demand (lb.)					**0.02**	

(continued)

Substrate Estimating Tool (Version 1.2)

Table S.2 Substrate Calculations in Hydrogen Equivalents

4. Treatment Cell Electron-Acceptor Flux (per year)

A. Soluble Native Electron Acceptors	Concentration (mg/L)	Mass (lb)	Stoichiometric demand (wt/wt h_2)	Hydrogen Demand (lb)	Electron Equivalents per Mole
Oxygen	1.6	0.39	7.94	0.05	4
Nitrate (denitrification)	0.1	0.02	10.25	0.00	5
Sulfate	612	148.18	11.91	12.44	8
Carbon Dioxide (estimated as the amount of Methane produced)	20	4.84	1.99	2.43	8
Total Competing Electron Acceptor Demand Flux (lb/yr)				**14.9**	

B. Soluble Contaminant Electron Acceptors	Concentration (mg/L)	Mass (lb)	Stoichiometric demand (wt/wt h_2)	Hydrogen Demand (lb)	Electron Equivalents per Mole
Tetrachloroethene (PCE)	0.000	0.00	20.57	0.00	8
Trichloroethene (TCE)	5.000	1.21	21.73	0.06	6
Dichloroethene (cis-DCE, trans-DCE, and 1,1-DCE)	0.500	0.12	24.05	0.01	4
Vinyl Chloride (VC)	0.100	0.02	31.00	0.00	2
Carbon Tetrachloride (CT)	0.000	0.00	19.08	0.00	8
Trichloromethane (or chloroform) (CF)	0.000	0.00	19.74	0.00	6
Dichloromethane (or methylene chloride) (MC)	0.000	0.00	21.06	0.00	4
Chloromethane	0.000	0.00	25.04	0.00	2
Tetrachloroethane (1,1,1,2-PCA and 1,1,2,2-PCA)	0.000	0.00	20.82	0.00	8
Trichloroethane (1,1,1-TCA and 1,1,2-TCA)	0.000	0.00	22.06	0.00	6
Dichloroethane (1,1-DCA and 1,2-DCA)	0.000	0.00	24.55	0.00	4
Chloroethane	0.000	0.00	32.00	0.00	2
Perchlorate	1.000	0.24	12.33	0.02	6
Total Soluble Contaminant Electron Acceptor Demand Flux (lb/yr)				**0.08**	

Initial Hydrogen Requirement First Year (lb)	**22.3**
Total Life-Cycle Hydrogen Requirement (lb)	**82.3**

5. Design Factors

Microbial Efficiency Uncertainty Factor	2X - 4X
Methane and Solid-Phase Electron Acceptor Uncertainty	2X - 4X
Remedial Design Factor (e.g., Substrate Leaving Reaction Zone)	1X - 3X
Design Factor	**3.0**
Total Life-Cycle Hydrogen Requirement with Design Factor (lb)	**246.9**

6. Acronyns and Abbreviations

°C =degrees celsius
µs/cm = microsiemens per centimeter
cm/day = centimeters per day
cm/sec = centimeters per second
ft^2 = square feet
ft/day = feet per day
ft/ft = foot per foot
ft/yr = feet per year
gm/cm^3 = grams per cubic centimeter
kg of CaCO3 per mg = kilograms of calcium carbonate per milligram
lb = pounds

meq/100 g = milliequivalents per 100 grams
mg/kg = milligrams per kilogram
mg/L = milligrams per liter
m/m = meters per meters
mV = millivolts
m/yr = meters per year
su = standard pH units
wt/wt H2 = concetration molecular hydrogen, weight per weight

Table S.3

Hydrogen Produced by Fermentation Reactions of Common Substrates

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Substrate	Molecular Formula	Substrate Molecular Weight (gm/mole)	Moles of Hydrogen Produced per Mole of Substrate	Ratio of Hydrogen Produced to Substrate (gm/gm)	Range of Moles H_2/Mole Substrate
Lactic Acid	$C_3H_6O_3$	90.1	2	0.0448	**2 to 3**
Molasses (assuming 100% sucrose)	$C_{12}H_{22}O_{11}$	342	8	0.0471	**8 to 11**
High Fructose Corn Syrup (assuming 50% fructose and 50% glucose)	$C_6H_{12}O_6$	180	4	0.0448	**4 to 6**
Ethanol	C_2H_6O	46.1	2	0.0875	**2 to 6**
Whey (assuming 100% lactose)	$C_{12}H_{22}O_{11}$	342	11	0.0648	**11**
HRC® (assumes 40% lactic acid and 40% glycerol by weight)	$C_{39}H_{56}O_{39}$	956	28	0.0590	**28**
Linoleic Acid (Soybean Oil, Corn Oil, Cotton Oil)	$C_{18}H_{32}O_2$	281	16	0.1150	**16**

Table S.4

Estimated Substrate Requirements for Hydrogen Demand in Table S.3

Design Life (years): 5

Substrate	Design Factor	Pure Substrate Mass Required to Fulfill Hydrogen Demand (pounds)	Substrate Product Required to Fulfill Hydrogen Demand (pounds)	Substrate Mass Required to Fulfill Hydrogen Demand (milligrams)	Effective Substrate Concentration (mg/L)
Lactic Acid	3.0	5,515	5,515	2.50E+09	4,228
Sodium Lactate Product (60 percent solution)	3.0	5,515	11,443	2.50E+09	4,228
Molasses (assuming 6 0	3.0	5,240	8,733	2.38E+09	4,017
HFCS (assuming 40% fructose and 40% glucose by weight)	3.0	5,517	6,896	2.50E+09	4,229
Ethanol Product (assuming 80% ethanol by weight)	3.0	2,821	3,526	1.28E+09	2,163
Whey (assuming 100% lactose)	3.0	3,807	5,439	1.73E+09	2,919
HRC® (assumes 40% lactic acid and 40% glycerol by weight)	3.0	4,181	4,181	1.90E+09	2,564
Linoleic Acid (Soybean Oil, Corn Oil, Cotton Oil)	3.0	2,147	2,147	9.74E+08	1,646
Commercial Vegetable Oil Emulsion Product (60% oil by weight)	3.0	2,147	3,578	9.74E+08	1,646

NOTES: Sodium Lactate Product

1. Assumes sodium lactate product is 60 percent sodium lactate by weight.
2. Molecular weight of sodium lactate (CH_3-CHOH-COONa) = 112.06.
3. Molecular weight of lactic Acid ($C_6H_6O_3$) = 90.08 .
4. Therefore, sodium lactate product yields 48.4 (0.60 x (90.08/112.06)) percent by weight lactic acid.
5. Weight of sodium lactate product = 11.0 pounds per gallon.
6. Pounds per gallon of lactic acid in product = 1.323 x 8.33 lb/gal H2O x 0.60 x (90.08/112.06) = 5.31 lb/gal.

NOTES: Standard HRC Product

1. Assumes HRC product is 40 percent lactic acid and 40 percent glycerol by weight.
2. HRC® weighs approximately 9.18 pounds per gallon.

NOTES: Vegetable Oil Emulsion Product

1. Assumes emulsion product is 60 percent soybean oil by weight.
2. Soybean oil is 7.8 pounds per gallon.
3. Assumes specific gravity of emulsion product is 0.96.

Substrate Estimating Tool (Version 1.2)

Table S.5 Output for Substrate Requirements in Hydrogen Equivalents

Site Name: LHAAP 16

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1. Treatment Zone Physical Dimensions

	Values	Units	Values	Units
Width (perpendicular to groundwater flow)	100	feet	30	meters
Length (parallel to groundwater flow)	15	feet	4.6	meters
Saturated Thickness	10	feet	3.0	meters
Design Period of Performance	5	years	5	years

2. Treatment Zone Hydrogeologic Properties

	Values	Units	Values	Units
Total Porosity	0.35	percent	0.35	percent
Effective Porosity	0.1	percent	0.1	percent
Average Aquifer Hydraulic Conductivity	4.25	ft/day	1.5E-03	cm/sec
Average Hydraulic Gradient	0.0025	ft/ft	0.0025	m/m
Average Groundwater Seepage Velocity	0.11	ft/day	3.2E+00	cm/day
Average Groundwater Seepage Velocity	39	ft/yr	11.8	m/yr
Effective Treatment Zone Pore Volume	11,223	gallons	42,482	liters
Groundwater Flux (per year)	29,016	gallons/year	109,835	liters/year
Total Groundwater Volume Treated (over entire design period)	156,304	gallons total	591,657	liters total

3. Distribution of Electron Acceptor Demand

	Percent of Total	Hydrogen Demand (lb)
Aerobic Respiration	0.3%	0.263
Nitrate Reduction	0.0%	0.013
Sulfate Reduction	81.4%	67.021
Manganese Reduction	1.2%	0.957
Iron Reduction	0.6%	0.471
Methanogenesis	15.9%	13.108
Dechlorination	0.4%	0.352
Perchlorate Reduction	0.1%	0.106
Totals:	**100.00%**	**82.29**

Hydrogen demand in pounds/gallon:	5.26E-04
Hydrogen demand in grams per liter:	6.31E-02

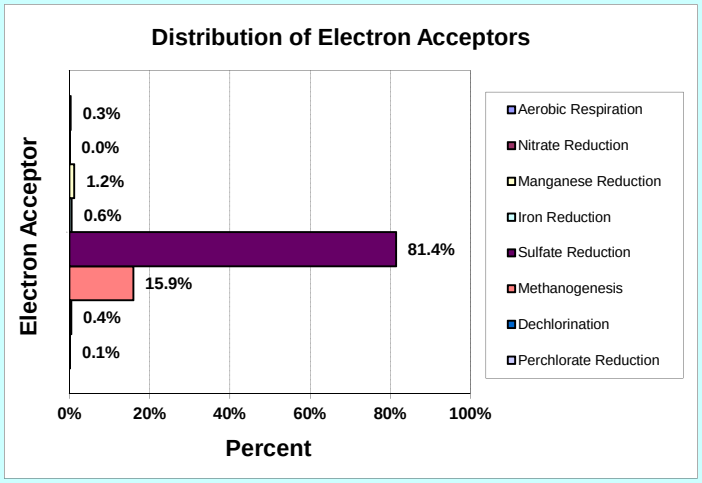

4. Substrate Equivalents: Design Factor = 3.0

Product	Quantity (lb)	Quantity (gallons)	Effective Concentration (mg/L)	Effective concentration is for total volume of groundwater treated.
1. Sodium Lactate Product	11,443	1,040	4,228	as lactic acid
2. Molasses Product	8,733	728	4,017	as sucrose
3. Fructose Product	6,896	616	4,229	as fructose
4. Ethanol Product	3,526	511	2,163	as ethanol
5. Sweet Dry Whey (lactose)	5,439	sold by pound	2,919	as lactose
6. HRC®	4,181	sold by pound	2,564	as 40% lactic acid/40% glycerol
7. Linoleic Acid (Soybean Oil)	2,147	275	1,646	as soybean oil
8. Emulsified Vegetable Oil	3,578	459	1,646	as soybean oil

Notes:
1. Quantity assumes product is 60% sodium lactate by weight.
2. Quantity assumes product is 60% sucrose by weight and weighs 12 pounds per gallon.
3. Quantity assumes product is 80% fructose by weight and weighs 11.2 pounds per gallon.
4. Quantity assumes product is 80% ethanol by weight and weighs 6.9 pounds per gallon.
5. Quantity assumes product is 70% lactose by weight.
6. Quantity assumes HRC® is 40% lactic acid and 40% glycerol by weight.
7. Quantity of neat soybean oil, corn oil, or canola oil.
8. Quantity assumes commercial product is 60% soybean oil by weight.

SUBSTRATE ESTIMATING TOOL FOR ENHANCED ANAEROBIC BIOREMEDIATION OF CHLORINATED SOLVENTS

Version 1.2
November 2010

Site Data Input Table

TABLE S.1 - INPUT TABLE

Calculation Tables

Table S.2 - Substrate Calculations in Hydrogen

Table S.3 - Hydrogen Produced by Common Substrates

Table S.4 - Estimated Substrate Requirements for

Output Summary Table

TABLE S.5 - OUTPUT TABLE

PRINT SUMMARY TABLE

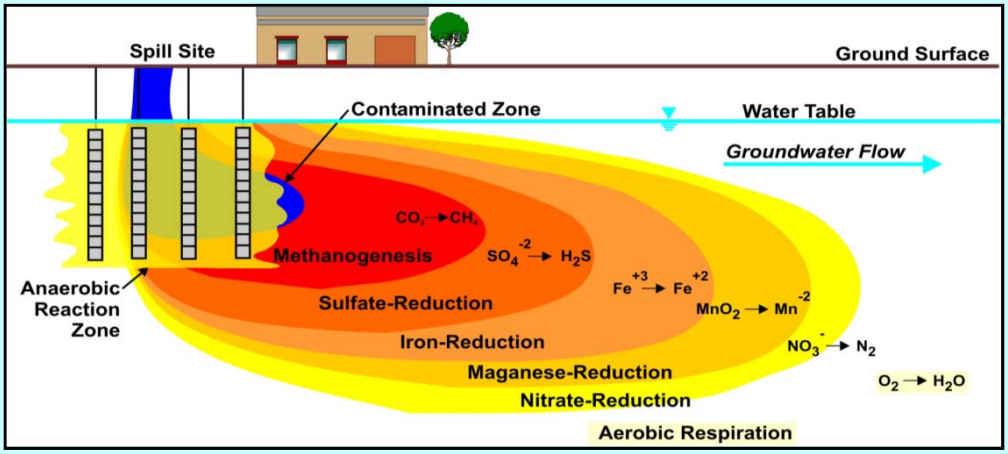

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Substrate Estimating Tool (Version 1.2)

Table S.1 Input for Substrate Requirements in Hydrogen Equivalents

Site Name: LHAAP 16

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NOTE: Unshaded boxes are user input.

1. Treatment Zone Physical Dimensions	Values	Range	Units	User Notes
Width (Perpendicular to predominant groundwater flow direction)	140	1-10,000	feet	Landfill Biobarrier #2
Length (Parallel to predominant groundwater flow)	15	1-1,000	feet	
Saturated Thickness	11	1-100	feet	
Treatment Zone Cross Sectional Area	1540	--	ft^2	
Treatment Zone Volume	23,100	--	ft^3	
Treatment Zone Total Pore Volume (total volume x total porosity)	60,492	--	gallons	
Treatment Zone Effective Pore Volume (total volume x effective porosity)	17,283	--	gallons	
Design Period of Performance	5.0	.5 to 5	year	
Design Factor (times the electron acceptor hydrogen demand)	3.0	2 to 20	unitless	
2. Treatment Zone Hydrogeologic Properties				
Total Porosity	35%	.05-50	percent	
Effective Porosity	10%	.05-50	percent	
Average Aquifer Hydraulic Conductivity	4.25	.01-1000	ft/day	
Average Hydraulic Gradient	0.0025	0.0001-0.1	ft/ft	
Average Groundwater Seepage Velocity through the Treatment Zone	0.11	--	ft/day	
Average Groundwater Seepage Velocity through the Treatment Zone	38.8	--	ft/yr	
Average Groundwater Discharge through the Treatment Zone	44,685	--	gallons/year	
Soil Bulk Density	1.7	1.4-2.0	gm/cm^3	
Soil Fraction Organic Carbon (foc)	0.05%	0.01-10	percent	
3. Native Electron Acceptors				
A. Aqueous-Phase Native Electron Acceptors				
Oxygen	1.6	0.01 to 10	mg/L	
Nitrate	0.10	0.1 to- 20	mg/L	
Sulfate	612	10 to 5,000	mg/L	
Carbon Dioxide (estimated as the amount of Methane produced)	20.0	0.1 to 20	mg/L	
B. Solid-Phase Native Electron Acceptors				
Manganese (IV) (estimated as the amount of Mn (II) produced)	20	0.1 to 20	mg/L	
Iron (III) (estimated as the amount of Fe (II) produced)	20	0.1 to 20	mg/L	
4. Contaminant Electron Acceptors				
Tetrachloroethene (PCE)	0.000	--	mg/L	
Trichloroethene (TCE)	5.000	--	mg/L	
Dichloroethene (cis-DCE, trans-DCE, and 1,1-DCE)	0.500	--	mg/L	
Vinyl Chloride (VC)	0.100	--	mg/L	
Carbon Tetrachloride (CT)	0.000	--	mg/L	
Trichloromethane (or chloroform) (CF)	0.000	--	mg/L	
Dichloromethane (or methylene chloride) (MC)	0.000	--	mg/L	
Chloromethane	0.000	--	mg/L	
Tetrachloroethane (1,1,1,2-PCA and 1,1,2,2-PCA)	0.000	--	mg/L	
Trichloroethane (1,1,1-TCA and 1,1,2-TCA)	0.000	--	mg/L	
Dichloroethane (1,1-DCA and 1,2-DCA)	0.000	--	mg/L	
Chloroethane	0.000	--	mg/L	
Perchlorate	1.000	--	mg/L	
5. Aquifer Geochemistry (Optional Screening Parameters)				
A. Aqueous Geochemistry				
Oxidation-Reduction Potential (ORP)	100	-400 to +500	mV	
Temperature	22	5.0 to 30	ºC	
pH	6.0	4.0 to 10.0	su	
Alkalinity	200	10 to 1,000	mg/L	
Total Dissolved Solids (TDS, or salinity)	100	10 to 1,000	mg/L	
Specific Conductivity	2500	100 to 10,000	µs/cm	
Chloride	637	10 to 10,000	mg/L	
Sulfide - Pre injection	0.0	0.1 to 100	mg/L	
Sulfide - Post injection	0.0	0.1 to 100	mg/L	
B. Aquifer Matrix				
Total Iron	10000	200 to 20,000	mg/kg	
Cation Exchange Capacity	NA	1.0 to 10	meq/100 g	
Neutralization Potential	10.0%	1.0 to 100	Percent as $CaCO_3$	

NOTES:

Substrate Estimating Tool (Version 1.2)

Table S.2 Substrate Calculations in Hydrogen Equivalents

Site Name: LHAAP 16

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NOTE: Open cells are user input.

1. Treatment Zone Physical Dimensions

	Values	Range	Units
Width (Perpendicular to predominant groundwater flow direction)	140	1-10,000	feet
Length (Parallel to predominant groundwater flow)	15	1-1,000	feet
Saturated Thickness	11	1-100	feet
Treatment Zone Cross Sectional Area	1540	--	ft^2
Treatment Zone Volume	23,100	--	ft^3
Treatment Zone Effective Pore Volume (total volume x effective porosity)	17,283	--	gallons
Design Period of Performance	5.0	.5 to 5	year

2. Treatment Zone Hydrogeologic Properties

Total Porosity	0.35	.05-50	
Effective Porosity	0.10	.05-50	
Average Aquifer Hydraulic Conductivity	4.25	.01-1000	ft/day
Average Hydraulic Gradient	0.0025	0.1-0.0001	ft/ft
Average Groundwater Seepage Velocity through the Treatment Zone	0.11	--	ft/day
Average Groundwater Seepage Velocity through the Treatment Zone	38.8	--	ft/yr
Average Groundwater Flux through the Treatment Zon 0	44,685	--	gallons/year
Soil Bulk Density	1.7	1.4-2.0	gm/cm^3
Soil Fraction Organic Carbon (foc)	0.0005	0.0001-0.1	

3. Initial Treatment Cell Electron-Acceptor Demand (one total pore volume)

A. Aqueous-Phase Native Electron Acceptors	Concentration (mg/L)	Mass (lb)	Stoichiometric demand (wt/wt h_2)	Hydrogen Demand (lb)	Electron Equivalents per Mole
Oxygen	1.6	0.23	7.94	0.03	4
Nitrate (denitrification)	0.1	0.01	12.30	0.00	5
Sulfate	612	88.26	11.91	7.41	8
Carbon Dioxide (estimated as the amount of methane produced)	20.0	2.88	1.99	1.45	8
Soluble Competing Electron Acceptor Demand (lb.)				**8.89**	

B. Solid-Phase Native Electron Acceptors (Based on manganese and iron produced)	Concentration (mg/L)	Mass (lb)	Stoichiometric demand (wt/wt h_2)	Hydrogen Demand (lb)	Electron Equivalents per Mole
Manganese (IV) (estimated as the amount of Mn (II) produced)	20.0	40.17	27.25	1.47	2
Iron (III) (estimated as the amount of Fe (II) produced)	20.0	40.17	55.41	0.72	1
Solid-Phase Competing Electron Acceptor Demand (lb.)				**2.20**	

C. Soluble Contaminant Electron Acceptors	Concentration (mg/L)	Mass (lb)	Stoichiometric demand (wt/wt h_2)	Hydrogen Demand (lb)	Electron Equivalents per Mole
Tetrachloroethene (PCE)	0.000	0.00	20.57	0.00	8
Trichloroethene (TCE)	5.000	0.72	21.73	0.03	6
Dichloroethene (cis-DCE, trans-DCE, and 1,1-DCE)	0.500	0.07	24.05	0.00	4
Vinyl Chloride (VC)	0.100	0.01	31.00	0.00	2
Carbon Tetrachloride (CT)	0.000	0.00	19.08	0.00	8
Trichloromethane (or chloroform) (CF)	0.000	0.00	19.74	0.00	6
Dichloromethane (or methylene chloride) (MC)	0.000	0.00	21.06	0.00	4
Chloromethane	0.000	0.00	25.04	0.00	2
Tetrachloroethane (1,1,1,2-PCA and 1,1,2,2-PCA)	0.000	0.00	20.82	0.00	8
Trichloroethane (1,1,1-TCA and 1,1,2-TCA)	0.000	0.00	22.06	0.00	6
Dichloroethane (1,1-DCA and 1,2-DCA)	0.000	0.00	24.55	0.00	4
Chloroethane	0.000	0.00	32.00	0.00	2
Perchlorate	1.000	0.14	12.33	0.01	6
Total Soluble Contaminant Electron Acceptor Demand (lb.)				**0.05**	

D. Sorbed Contaminant Electron Acceptors (Soil Concentration = Koc x foc x Cgw)	Koc (mL/g)	Soil Conc. (mg/kg)	Mass (lb)	Stoichiometric demand (wt/wt h_2)	Hydrogen Demand (lb)	Electron Equivalents per Mole
Tetrachloroethene (PCE)	263	0.00	0.00	20.57	0.00	8
Trichloroethene (TCE)	107	0.27	0.66	21.73	0.03	6
Dichloroethene (cis-DCE, trans-DCE, and 1,1-DCE)	45	0.01	0.03	24.05	0.00	4
Vinyl Chloride (VC)	3.0	0.00	0.00	31.00	0.00	2
Carbon Tetrachloride (CT)	224	0.00	0.00	19.08	0.00	8
Trichloromethane (or chloroform) (CF)	63	0.00	0.00	19.74	0.00	6
Dichloromethane (or methylene chloride) (MC)	28	0.00	0.00	21.06	0.00	4
Chloromethane	25	0.00	0.00	25.04	0.00	2
Tetrachloroethane (1,1,1,2-PCA and 1,1,2,2-PCA)	117	0.00	0.00	20.82	0.00	8
Trichloroethane (1,1,1-TCA and 1,1,2-TCA)	105	0.00	0.00	22.06	0.00	6
Dichloroethane (1,1-DCA and 1,2-DCA)	30	0.00	0.00	24.55	0.00	4
Chloroethane	3	0.00	0.00	32.00	0.00	2
Perchlorate	0.0	0.00	0.00	12.33	0.00	6
Total Sorbed Contaminant Electron Acceptor Demand (lb.)					**0.03**	

(continued)

Substrate Estimating Tool (Version 1.2)

Table S.2 Substrate Calculations in Hydrogen Equivalents

4. Treatment Cell Electron-Acceptor Flux (per year)

A. Soluble Native Electron Acceptors	Concentration (mg/L)	Mass (lb)	Stoichiometric demand (wt/wt h_2)	Hydrogen Demand (lb)	Electron Equivalents per Mole
Oxygen	1.6	0.60	7.94	0.08	4
Nitrate (denitrification)	0.1	0.04	10.25	0.00	5
Sulfate	612	228.20	11.91	19.16	8
Carbon Dioxide (estimated as the amount of Methane produced)	20	7.46	1.99	3.75	8
Total Competing Electron Acceptor Demand Flux (lb/yr)				**23.0**	

B. Soluble Contaminant Electron Acceptors	Concentration (mg/L)	Mass (lb)	Stoichiometric demand (wt/wt h_2)	Hydrogen Demand (lb)	Electron Equivalents per Mole
Tetrachloroethene (PCE)	0.000	0.00	20.57	0.00	8
Trichloroethene (TCE)	5.000	1.86	21.73	0.09	6
Dichloroethene (cis-DCE, trans-DCE, and 1,1-DCE)	0.500	0.19	24.05	0.01	4
Vinyl Chloride (VC)	0.100	0.04	31.00	0.00	2
Carbon Tetrachloride (CT)	0.000	0.00	19.08	0.00	8
Trichloromethane (or chloroform) (CF)	0.000	0.00	19.74	0.00	6
Dichloromethane (or methylene chloride) (MC)	0.000	0.00	21.06	0.00	4
Chloromethane	0.000	0.00	25.04	0.00	2
Tetrachloroethane (1,1,1,2-PCA and 1,1,2,2-PCA)	0.000	0.00	20.82	0.00	8
Trichloroethane (1,1,1-TCA and 1,1,2-TCA)	0.000	0.00	22.06	0.00	6
Dichloroethane (1,1-DCA and 1,2-DCA)	0.000	0.00	24.55	0.00	4
Chloroethane	0.000	0.00	32.00	0.00	2
Perchlorate	1.000	0.37	12.33	0.03	6
Total Soluble Contaminant Electron Acceptor Demand Flux (lb/yr)				**0.12**	

Initial Hydrogen Requirement First Year (lb)	**34.3**
Total Life-Cycle Hydrogen Requirement (lb)	**126.7**

5. Design Factors

Microbial Efficiency Uncertainty Factor	2X - 4X
Methane and Solid-Phase Electron Acceptor Uncertainty	2X - 4X
Remedial Design Factor (e.g., Substrate Leaving Reaction Zone)	1X - 3X
Design Factor	**3.0**
Total Life-Cycle Hydrogen Requirement with Design Factor (lb)	**380.2**

6. Acronyns and Abbreviations

°C =degrees celsius
µs/cm = microsiemens per centimeter
cm/day = centimeters per day
cm/sec = centimeters per second
ft^2 = square feet
ft/day = feet per day
ft/ft = foot per foot
ft/yr = feet per year
gm/cm^3 = grams per cubic centimeter
kg of CaCO3 per mg = kilograms of calcium carbonate per milligram
lb = pounds

meq/100 g = milliequivalents per 100 grams
mg/kg = milligrams per kilogram
mg/L = milligrams per liter
m/m = meters per meters
mV = millivolts
m/yr = meters per year
su = standard pH units
wt/wt H2 = concetration molecular hydrogen, weight per weight

Table S.3

Hydrogen Produced by Fermentation Reactions of Common Substrates

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Substrate	Molecular Formula	Substrate Molecular Weight (gm/mole)	Moles of Hydrogen Produced per Mole of Substrate	Ratio of Hydrogen Produced to Substrate (gm/gm)	Range of Moles H_2/Mole Substrate
Lactic Acid	$C_3H_6O_3$	90.1	2	0.0448	**2 to 3**
Molasses (assuming 100% sucrose)	$C_{12}H_{22}O_{11}$	342	8	0.0471	**8 to 11**
High Fructose Corn Syrup (assuming 50% fructose and 50% glucose)	$C_6H_{12}O_6$	180	4	0.0448	**4 to 6**
Ethanol	C_2H_6O	46.1	2	0.0875	**2 to 6**
Whey (assuming 100% lactose)	$C_{12}H_{22}O_{11}$	342	11	0.0648	**11**
HRC® (assumes 40% lactic acid and 40% glycerol by weight)	$C_{39}H_{56}O_{39}$	956	28	0.0590	**28**
Linoleic Acid (Soybean Oil, Corn Oil, Cotton Oil)	$C_{18}H_{32}O_2$	281	16	0.1150	**16**

Table S.4

Estimated Substrate Requirements for Hydrogen Demand in Table S.3

Design Life (years): 5

Substrate	Design Factor	Pure Substrate Mass Required to Fulfill Hydrogen Demand (pounds)	Substrate Product Required to Fulfill Hydrogen Demand (pounds)	Substrate Mass Required to Fulfill Hydrogen Demand (milligrams)	Effective Substrate Concentration (mg/L)
Lactic Acid	3.0	8,494	8,494	3.85E+09	4,228
Sodium Lactate Product (60 percent solution)	3.0	8,494	17,622	3.85E+09	4,228
Molasses (assuming 6 0	3.0	8,069	13,448	3.66E+09	4,017
HFCS (assuming 40% fructose and 40% glucose by weight)	3.0	8,496	10,620	3.85E+09	4,229
Ethanol Product (assuming 80% ethanol by weight)	3.0	4,344	5,430	1.97E+09	2,163
Whey (assuming 100% lactose)	3.0	5,863	8,376	2.66E+09	2,919
HRC® (assumes 40% lactic acid and 40% glycerol by weight)	3.0	6,439	6,439	2.92E+09	2,564
Linoleic Acid (Soybean Oil, Corn Oil, Cotton Oil)	3.0	3,306	3,306	1.50E+09	1,646
Commercial Vegetable Oil Emulsion Product (60% oil by weight)	3.0	3,306	5,510	1.50E+09	1,646

NOTES: Sodium Lactate Product

1. Assumes sodium lactate product is 60 percent sodium lactate by weight.
2. Molecular weight of sodium lactate (CH_3-CHOH-COONa) = 112.06.
3. Molecular weight of lactic Acid ($C_6H_6O_3$) = 90.08 .
4. Therefore, sodium lactate product yields 48.4 (0.60 x (90.08/112.06)) percent by weight lactic acid.
5. Weight of sodium lactate product = 11.0 pounds per gallon.
6. Pounds per gallon of lactic acid in product = 1.323 x 8.33 lb/gal H2O x 0.60 x (90.08/112.06) = 5.31 lb/gal.

NOTES: Standard HRC Product

1. Assumes HRC product is 40 percent lactic acid and 40 percent glycerol by weight.
2. HRC® weighs approximately 9.18 pounds per gallon.

NOTES: Vegetable Oil Emulsion Product

1. Assumes emulsion product is 60 percent soybean oil by weight.
2. Soybean oil is 7.8 pounds per gallon.
3. Assumes specific gravity of emulsion product is 0.96.

Substrate Estimating Tool (Version 1.2)

Table S.5 Output for Substrate Requirements in Hydrogen Equivalents

Site Name: LHAAP 16

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1. Treatment Zone Physical Dimensions

	Values	Units	Values	Units
Width (perpendicular to groundwater flow)	140	feet	43	meters
Length (parallel to groundwater flow)	15	feet	4.6	meters
Saturated Thickness	11	feet	3.4	meters
Design Period of Performance	5	years	5	years

2. Treatment Zone Hydrogeologic Properties

	Values	Units	Values	Units
Total Porosity	0.35	percent	0.35	percent
Effective Porosity	0.1	percent	0.1	percent
Average Aquifer Hydraulic Conductivity	4.25	ft/day	1.5E-03	cm/sec
Average Hydraulic Gradient	0.0025	ft/ft	0.0025	m/m
Average Groundwater Seepage Velocity	0.11	ft/day	3.2E+00	cm/day
Average Groundwater Seepage Velocity	39	ft/yr	11.8	m/yr
Effective Treatment Zone Pore Volume	17,283	gallons	65,423	liters
Groundwater Flux (per year)	44,685	gallons/year	169,146	liters/year
Total Groundwater Volume Treated (over entire design period)	240,708	gallons total	911,152	liters total

3. Distribution of Electron Acceptor Demand

	Percent of Total	Hydrogen Demand (lb)
Aerobic Respiration	0.3%	0.405
Nitrate Reduction	0.0%	0.019
Sulfate Reduction	81.4%	103.212
Manganese Reduction	1.2%	1.474
Iron Reduction	0.6%	0.725
Methanogenesis	15.9%	20.187
Dechlorination	0.4%	0.542
Perchlorate Reduction	0.1%	0.163
Totals:	**100.00%**	**126.73**

Hydrogen demand in pounds/gallon:	5.26E-04
Hydrogen demand in grams per liter:	6.31E-02

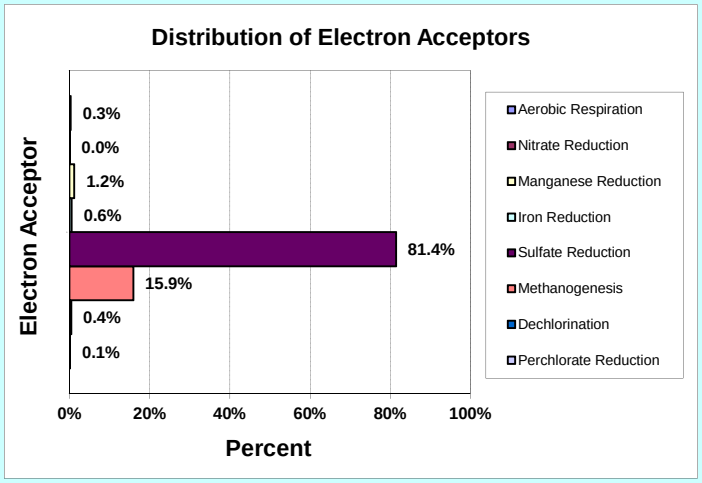

4. Substrate Equivalents: Design Factor = 3.0

Product	Quantity (lb)	Quantity (gallons)	Effective Concentration (mg/L)	Effective concentration is for total volume of groundwater treated.
1. Sodium Lactate Product	17,622	1,602	4,228	as lactic acid
2. Molasses Product	13,448	1,121	4,017	as sucrose
3. Fructose Product	10,620	948	4,229	as fructose
4. Ethanol Product	5,430	787	2,163	as ethanol
5. Sweet Dry Whey (lactose)	8,376	sold by pound	2,919	as lactose
6. HRC®	6,439	sold by pound	2,564	as 40% lactic acid/40% glycerol
7. Linoleic Acid (Soybean Oil)	3,306	424	1,646	as soybean oil
8. Emulsified Vegetable Oil	5,510	706	1,646	as soybean oil

Notes:
1. Quantity assumes product is 60% sodium lactate by weight.
2. Quantity assumes product is 60% sucrose by weight and weighs 12 pounds per gallon.
3. Quantity assumes product is 80% fructose by weight and weighs 11.2 pounds per gallon.
4. Quantity assumes product is 80% ethanol by weight and weighs 6.9 pounds per gallon.
5. Quantity assumes product is 70% lactose by weight.
6. Quantity assumes HRC® is 40% lactic acid and 40% glycerol by weight.
7. Quantity of neat soybean oil, corn oil, or canola oil.
8. Quantity assumes commercial product is 60% soybean oil by weight.

SUBSTRATE ESTIMATING TOOL FOR ENHANCED ANAEROBIC BIOREMEDIATION OF CHLORINATED SOLVENTS

Version 1.2
November 2010

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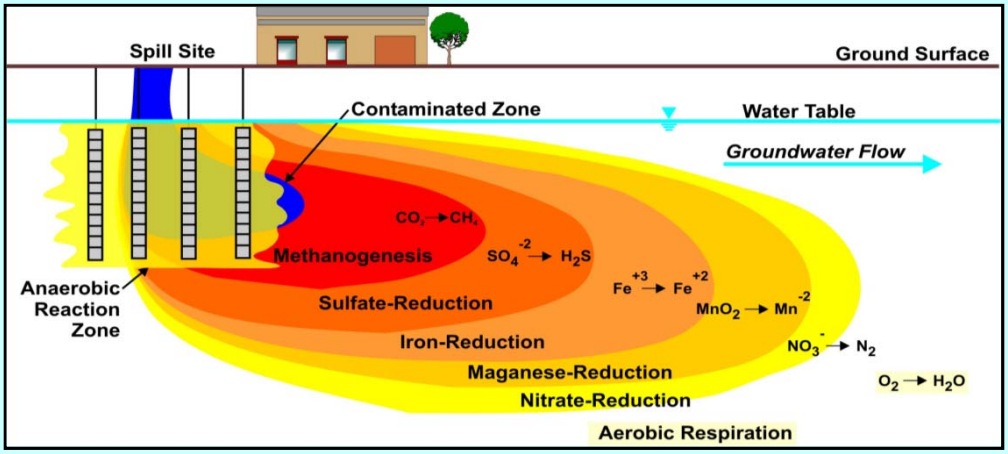

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Substrate Estimating Tool (Version 1.2)

Table S.1 Input for Substrate Requirements in Hydrogen Equivalents

Site Name: LHAAP 16

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NOTE: Unshaded boxes are user input.

1. Treatment Zone Physical Dimensions	Values	Range	Units	User Notes
Width (Perpendicular to predominant groundwater flow direction)	270	1-10,000	feet	Landfill Biobarrier #1
Length (Parallel to predominant groundwater flow)	15	1-1,000	feet	
Saturated Thickness	8	1-100	feet	
Treatment Zone Cross Sectional Area	2160	--	ft^2	
Treatment Zone Volume	32,400	--	ft^3	
Treatment Zone Total Pore Volume (total volume x total porosity)	84,846	--	gallons	
Treatment Zone Effective Pore Volume (total volume x effective porosity)	24,242	--	gallons	
Design Period of Performance	5.0	.5 to 5	year	
Design Factor (times the electron acceptor hydrogen demand)	3.0	2 to 20	unitless	
2. Treatment Zone Hydrogeologic Properties				
Total Porosity	35%	.05-50	percent	
Effective Porosity	10%	.05-50	percent	
Average Aquifer Hydraulic Conductivity	4.25	.01-1000	ft/day	
Average Hydraulic Gradient	0.0025	0.0001-0.1	ft/ft	
Average Groundwater Seepage Velocity through the Treatment Zone	0.11	--	ft/day	
Average Groundwater Seepage Velocity through the Treatment Zone	38.8	--	ft/yr	
Average Groundwater Discharge through the Treatment Zone	62,675	--	gallons/year	
Soil Bulk Density	1.7	1.4-2.0	gm/cm^3	
Soil Fraction Organic Carbon (foc)	0.05%	0.01-10	percent	
3. Native Electron Acceptors				
A. Aqueous-Phase Native Electron Acceptors				
Oxygen	1.6	0.01 to 10	mg/L	
Nitrate	0.10	0.1 to- 20	mg/L	
Sulfate	612	10 to 5,000	mg/L	
Carbon Dioxide (estimated as the amount of Methane produced)	20.0	0.1 to 20	mg/L	
B. Solid-Phase Native Electron Acceptors				
Manganese (IV) (estimated as the amount of Mn (II) produced)	20	0.1 to 20	mg/L	
Iron (III) (estimated as the amount of Fe (II) produced)	20	0.1 to 20	mg/L	
4. Contaminant Electron Acceptors				
Tetrachloroethene (PCE)	0.000	--	mg/L	
Trichloroethene (TCE)	5.000	--	mg/L	
Dichloroethene (cis-DCE, trans-DCE, and 1,1-DCE)	0.500	--	mg/L	
Vinyl Chloride (VC)	0.100	--	mg/L	
Carbon Tetrachloride (CT)	0.000	--	mg/L	
Trichloromethane (or chloroform) (CF)	0.000	--	mg/L	
Dichloromethane (or methylene chloride) (MC)	0.000	--	mg/L	
Chloromethane	0.000	--	mg/L	
Tetrachloroethane (1,1,1,2-PCA and 1,1,2,2-PCA)	0.000	--	mg/L	
Trichloroethane (1,1,1-TCA and 1,1,2-TCA)	0.000	--	mg/L	
Dichloroethane (1,1-DCA and 1,2-DCA)	0.000	--	mg/L	
Chloroethane	0.000	--	mg/L	
Perchlorate	1.000	--	mg/L	
5. Aquifer Geochemistry (Optional Screening Parameters)				
A. Aqueous Geochemistry				
Oxidation-Reduction Potential (ORP)	100	-400 to +500	mV	
Temperature	22	5.0 to 30	ºC	
pH	6.0	4.0 to 10.0	su	
Alkalinity	200	10 to 1,000	mg/L	
Total Dissolved Solids (TDS, or salinity)	100	10 to 1,000	mg/L	
Specific Conductivity	2500	100 to 10,000	µs/cm	
Chloride	637	10 to 10,000	mg/L	
Sulfide - Pre injection	0.0	0.1 to 100	mg/L	
Sulfide - Post injection	0.0	0.1 to 100	mg/L	
B. Aquifer Matrix				
Total Iron	10000	200 to 20,000	mg/kg	
Cation Exchange Capacity	NA	1.0 to 10	meq/100 g	
Neutralization Potential	10.0%	1.0 to 100	Percent as $CaCO_3$	

NOTES:

Substrate Estimating Tool (Version 1.2)

Table S.2 Substrate Calculations in Hydrogen Equivalents

Site Name: LHAAP 16

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NOTE: Open cells are user input.

1. Treatment Zone Physical Dimensions

	Values	Range	Units
Width (Perpendicular to predominant groundwater flow direction)	270	1-10,000	feet
Length (Parallel to predominant groundwater flow)	15	1-1,000	feet
Saturated Thickness	8	1-100	feet
Treatment Zone Cross Sectional Area	2160	--	ft^2
Treatment Zone Volume	32,400	--	ft^3
Treatment Zone Effective Pore Volume (total volume x effective porosity)	24,242	--	gallons
Design Period of Performance	5.0	.5 to 5	year

2. Treatment Zone Hydrogeologic Properties

Total Porosity	0.35	.05-50	
Effective Porosity	0.10	.05-50	
Average Aquifer Hydraulic Conductivity	4.25	.01-1000	ft/day
Average Hydraulic Gradient	0.0025	0.1-0.0001	ft/ft
Average Groundwater Seepage Velocity through the Treatment Zone	0.11	--	ft/day
Average Groundwater Seepage Velocity through the Treatment Zone	38.8	--	ft/yr
Average Groundwater Flux through the Treatment Zon 0	62,675	--	gallons/year
Soil Bulk Density	1.7	1.4-2.0	gm/cm^3
Soil Fraction Organic Carbon (foc)	0.0005	0.0001-0.1	

3. Initial Treatment Cell Electron-Acceptor Demand (one total pore volume)

A. Aqueous-Phase Native Electron Acceptors	Concentration (mg/L)	Mass (lb)	Stoichiometric demand (wt/wt h_2)	Hydrogen Demand (lb)	Electron Equivalents per Mole
Oxygen	1.6	0.32	7.94	0.04	4
Nitrate (denitrification)	0.1	0.02	12.30	0.00	5
Sulfate	612	123.80	11.91	10.39	8
Carbon Dioxide (estimated as the amount of methane produced)	20.0	4.05	1.99	2.03	8
Soluble Competing Electron Acceptor Demand (lb.)				**12.47**	

B. Solid-Phase Native Electron Acceptors (Based on manganese and iron produced)	Concentration (mg/L)	Mass (lb)	Stoichiometric demand (wt/wt h_2)	Hydrogen Demand (lb)	Electron Equivalents per Mole
Manganese (IV) (estimated as the amount of Mn (II) produced)	20.0	56.34	27.25	2.07	2
Iron (III) (estimated as the amount of Fe (II) produced)	20.0	56.34	55.41	1.02	1
Solid-Phase Competing Electron Acceptor Demand (lb.)				**3.08**	

C. Soluble Contaminant Electron Acceptors	Concentration (mg/L)	Mass (lb)	Stoichiometric demand (wt/wt h_2)	Hydrogen Demand (lb)	Electron Equivalents per Mole
Tetrachloroethene (PCE)	0.000	0.00	20.57	0.00	8
Trichloroethene (TCE)	5.000	1.01	21.73	0.05	6
Dichloroethene (cis-DCE, trans-DCE, and 1,1-DCE)	0.500	0.10	24.05	0.00	4
Vinyl Chloride (VC)	0.100	0.02	31.00	0.00	2
Carbon Tetrachloride (CT)	0.000	0.00	19.08	0.00	8
Trichloromethane (or chloroform) (CF)	0.000	0.00	19.74	0.00	6
Dichloromethane (or methylene chloride) (MC)	0.000	0.00	21.06	0.00	4
Chloromethane	0.000	0.00	25.04	0.00	2
Tetrachloroethane (1,1,1,2-PCA and 1,1,2,2-PCA)	0.000	0.00	20.82	0.00	8
Trichloroethane (1,1,1-TCA and 1,1,2-TCA)	0.000	0.00	22.06	0.00	6
Dichloroethane (1,1-DCA and 1,2-DCA)	0.000	0.00	24.55	0.00	4
Chloroethane	0.000	0.00	32.00	0.00	2
Perchlorate	1.000	0.20	12.33	0.02	6
Total Soluble Contaminant Electron Acceptor Demand (lb.)				**0.07**	

D. Sorbed Contaminant Electron Acceptors (Soil Concentration = Koc x foc x Cgw)	Koc (mL/g)	Soil Conc. (mg/kg)	Mass (lb)	Stoichiometric demand (wt/wt h_2)	Hydrogen Demand (lb)	Electron Equivalents per Mole
Tetrachloroethene (PCE)	263	0.00	0.00	20.57	0.00	8
Trichloroethene (TCE)	107	0.27	0.92	21.73	0.04	6
Dichloroethene (cis-DCE, trans-DCE, and 1,1-DCE)	45	0.01	0.04	24.05	0.00	4
Vinyl Chloride (VC)	3.0	0.00	0.00	31.00	0.00	2
Carbon Tetrachloride (CT)	224	0.00	0.00	19.08	0.00	8
Trichloromethane (or chloroform) (CF)	63	0.00	0.00	19.74	0.00	6
Dichloromethane (or methylene chloride) (MC)	28	0.00	0.00	21.06	0.00	4
Chloromethane	25	0.00	0.00	25.04	0.00	2
Tetrachloroethane (1,1,1,2-PCA and 1,1,2,2-PCA)	117	0.00	0.00	20.82	0.00	8
Trichloroethane (1,1,1-TCA and 1,1,2-TCA)	105	0.00	0.00	22.06	0.00	6
Dichloroethane (1,1-DCA and 1,2-DCA)	30	0.00	0.00	24.55	0.00	4
Chloroethane	3	0.00	0.00	32.00	0.00	2
Perchlorate	0.0	0.00	0.00	12.33	0.00	6
Total Sorbed Contaminant Electron Acceptor Demand (lb.)					**0.04**	

(continued)

Substrate Estimating Tool (Version 1.2)

Table S.2 Substrate Calculations in Hydrogen Equivalents

4. Treatment Cell Electron-Acceptor Flux (per year)

A. Soluble Native Electron Acceptors	Concentration (mg/L)	Mass (lb)	Stoichiometric demand (wt/wt h_2)	Hydrogen Demand (lb)	Electron Equivalents per Mole
Oxygen	1.6	0.84	7.94	0.11	4
Nitrate (denitrification)	0.1	0.05	10.25	0.01	5
Sulfate	612	320.07	11.91	26.87	8
Carbon Dioxide (estimated as the amount of Methane produced)	20	10.46	1.99	5.26	8
Total Competing Electron Acceptor Demand Flux (lb/yr)				**32.2**	

B. Soluble Contaminant Electron Acceptors	Concentration (mg/L)	Mass (lb)	Stoichiometric demand (wt/wt h_2)	Hydrogen Demand (lb)	Electron Equivalents per Mole
Tetrachloroethene (PCE)	0.000	0.00	20.57	0.00	8
Trichloroethene (TCE)	5.000	2.61	21.73	0.12	6
Dichloroethene (cis-DCE, trans-DCE, and 1,1-DCE)	0.500	0.26	24.05	0.01	4
Vinyl Chloride (VC)	0.100	0.05	31.00	0.00	2
Carbon Tetrachloride (CT)	0.000	0.00	19.08	0.00	8
Trichloromethane (or chloroform) (CF)	0.000	0.00	19.74	0.00	6
Dichloromethane (or methylene chloride) (MC)	0.000	0.00	21.06	0.00	4
Chloromethane	0.000	0.00	25.04	0.00	2
Tetrachloroethane (1,1,1,2-PCA and 1,1,2,2-PCA)	0.000	0.00	20.82	0.00	8
Trichloroethane (1,1,1-TCA and 1,1,2-TCA)	0.000	0.00	22.06	0.00	6
Dichloroethane (1,1-DCA and 1,2-DCA)	0.000	0.00	24.55	0.00	4
Chloroethane	0.000	0.00	32.00	0.00	2
Perchlorate	1.000	0.52	12.33	0.04	6
Total Soluble Contaminant Electron Acceptor Demand Flux (lb/yr)				**0.18**	

Initial Hydrogen Requirement First Year (lb)	**48.1**
Total Life-Cycle Hydrogen Requirement (lb)	**177.7**

5. Design Factors

Microbial Efficiency Uncertainty Factor	2X - 4X
Methane and Solid-Phase Electron Acceptor Uncertainty	2X - 4X
Remedial Design Factor (e.g., Substrate Leaving Reaction Zone)	1X - 3X
Design Factor	**3.0**
Total Life-Cycle Hydrogen Requirement with Design Factor (lb)	**533.2**

6. Acronyns and Abbreviations

°C =degrees celsius
µs/cm = microsiemens per centimeter
cm/day = centimeters per day
cm/sec = centimeters per second
ft^2 = square feet
ft/day = feet per day
ft/ft = foot per foot
ft/yr = feet per year
gm/cm^3 = grams per cubic centimeter
kg of CaCO3 per mg = kilograms of calcium carbonate per milligram
lb = pounds

meq/100 g = milliequivalents per 100 grams
mg/kg = milligrams per kilogram
mg/L = milligrams per liter
m/m = meters per meters
mV = millivolts
m/yr = meters per year
su = standard pH units
wt/wt H2 = concetration molecular hydrogen, weight per weight

Table S.3

Hydrogen Produced by Fermentation Reactions of Common Substrates

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Substrate	Molecular Formula	Substrate Molecular Weight (gm/mole)	Moles of Hydrogen Produced per Mole of Substrate	Ratio of Hydrogen Produced to Substrate (gm/gm)	Range of Moles H_2/Mole Substrate
Lactic Acid	$C_3H_6O_3$	90.1	2	0.0448	**2 to 3**
Molasses (assuming 100% sucrose)	$C_{12}H_{22}O_{11}$	342	8	0.0471	**8 to 11**
High Fructose Corn Syrup (assuming 50% fructose and 50% glucose)	$C_6H_{12}O_6$	180	4	0.0448	**4 to 6**
Ethanol	C_2H_6O	46.1	2	0.0875	**2 to 6**
Whey (assuming 100% lactose)	$C_{12}H_{22}O_{11}$	342	11	0.0648	**11**
HRC® (assumes 40% lactic acid and 40% glycerol by weight)	$C_{39}H_{56}O_{39}$	956	28	0.0590	**28**
Linoleic Acid (Soybean Oil, Corn Oil, Cotton Oil)	$C_{18}H_{32}O_2$	281	16	0.1150	**16**

Table S.4

Estimated Substrate Requirements for Hydrogen Demand in Table S.3

Design Life (years): 5

Substrate	Design Factor	Pure Substrate Mass Required to Fulfill Hydrogen Demand (pounds)	Substrate Product Required to Fulfill Hydrogen Demand (pounds)	Substrate Mass Required to Fulfill Hydrogen Demand (milligrams)	Effective Substrate Concentration (mg/L)
Lactic Acid	3.0	11,913	11,913	5.40E+09	4,228
Sodium Lactate Product (60 percent solution)	3.0	11,913	24,716	5.40E+09	4,228
Molasses (assuming 6 0	3.0	11,318	18,863	5.13E+09	4,017
HFCS (assuming 40% fructose and 40% glucose by weight)	3.0	11,916	14,895	5.41E+09	4,229
Ethanol Product (assuming 80% ethanol by weight)	3.0	6,093	7,616	2.76E+09	2,163
Whey (assuming 100% lactose)	3.0	8,224	11,748	3.73E+09	2,919
HRC® (assumes 40% lactic acid and 40% glycerol by weight)	3.0	9,031	9,031	4.10E+09	2,564
Linoleic Acid (Soybean Oil, Corn Oil, Cotton Oil)	3.0	4,637	4,637	2.10E+09	1,646
Commercial Vegetable Oil Emulsion Product (60% oil by weight)	3.0	4,637	7,729	2.10E+09	1,646

NOTES: Sodium Lactate Product

1. Assumes sodium lactate product is 60 percent sodium lactate by weight.
2. Molecular weight of sodium lactate (CH_3-CHOH-COONa) = 112.06.
3. Molecular weight of lactic Acid ($C_6H_6O_3$) = 90.08 .
4. Therefore, sodium lactate product yields 48.4 (0.60 x (90.08/112.06)) percent by weight lactic acid.
5. Weight of sodium lactate product = 11.0 pounds per gallon.
6. Pounds per gallon of lactic acid in product = 1.323 x 8.33 lb/gal H2O x 0.60 x (90.08/112.06) = 5.31 lb/gal.

NOTES: Standard HRC Product

1. Assumes HRC product is 40 percent lactic acid and 40 percent glycerol by weight.
2. HRC® weighs approximately 9.18 pounds per gallon.

NOTES: Vegetable Oil Emulsion Product

1. Assumes emulsion product is 60 percent soybean oil by weight.
2. Soybean oil is 7.8 pounds per gallon.
3. Assumes specific gravity of emulsion product is 0.96.

Substrate Estimating Tool (Version 1.2)

Table S.5 Output for Substrate Requirements in Hydrogen Equivalents

Site Name: LHAAP 16

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1. Treatment Zone Physical Dimensions

	Values	Units	Values	Units
Width (perpendicular to groundwater flow)	270	feet	82	meters
Length (parallel to groundwater flow)	15	feet	4.6	meters
Saturated Thickness	8	feet	2.4	meters
Design Period of Performance	5	years	5	years

2. Treatment Zone Hydrogeologic Properties

	Values	Units	Values	Units
Total Porosity	0.35	percent	0.35	percent
Effective Porosity	0.1	percent	0.1	percent
Average Aquifer Hydraulic Conductivity	4.25	ft/day	1.5E-03	cm/sec
Average Hydraulic Gradient	0.0025	ft/ft	0.0025	m/m
Average Groundwater Seepage Velocity	0.11	ft/day	3.2E+00	cm/day
Average Groundwater Seepage Velocity	39	ft/yr	11.8	m/yr
Effective Treatment Zone Pore Volume	24,242	gallons	91,762	liters
Groundwater Flux (per year)	62,675	gallons/year	237,243	liters/year
Total Groundwater Volume Treated (over entire design period)	337,616	gallons total	1,277,979	liters total

3. Distribution of Electron Acceptor Demand

	Percent of Total	Hydrogen Demand (lb)
Aerobic Respiration	0.3%	0.568
Nitrate Reduction	0.0%	0.027
Sulfate Reduction	81.4%	144.765
Manganese Reduction	1.2%	2.068
Iron Reduction	0.6%	1.017
Methanogenesis	15.9%	28.314
Dechlorination	0.4%	0.760
Perchlorate Reduction	0.1%	0.228
Totals:	**100.00%**	**177.75**

Hydrogen demand in pounds/gallon:	5.26E-04
Hydrogen demand in grams per liter:	6.31E-02

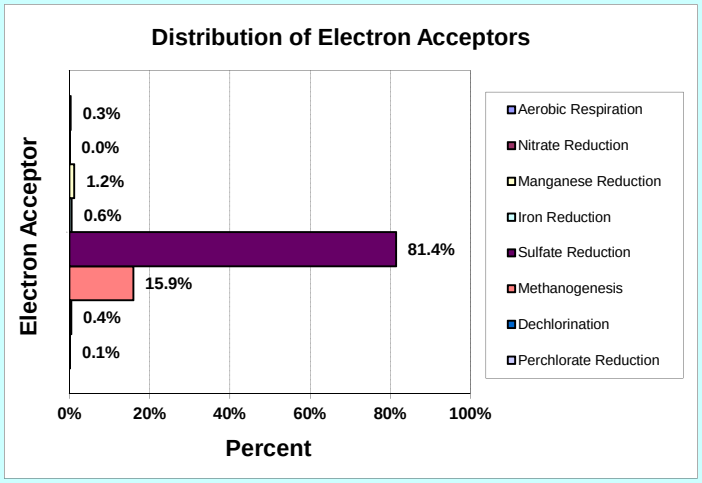

4. Substrate Equivalents: Design Factor = 3.0

Product	Quantity (lb)	Quantity (gallons)	Effective Concentration (mg/L)	Effective concentration is for total volume of groundwater treated.
1. Sodium Lactate Product	24,716	2,247	4,228	as lactic acid
2. Molasses Product	18,863	1,572	4,017	as sucrose
3. Fructose Product	14,895	1,330	4,229	as fructose
4. Ethanol Product	7,616	1,104	2,163	as ethanol
5. Sweet Dry Whey (lactose)	11,748	sold by pound	2,919	as lactose
6. HRC®	9,031	sold by pound	2,564	as 40% lactic acid/40% glycerol
7. Linoleic Acid (Soybean Oil)	4,637	595	1,646	as soybean oil
8. Emulsified Vegetable Oil	7,729	991	1,646	as soybean oil

Notes:
1. Quantity assumes product is 60% sodium lactate by weight.
2. Quantity assumes product is 60% sucrose by weight and weighs 12 pounds per gallon.
3. Quantity assumes product is 80% fructose by weight and weighs 11.2 pounds per gallon.
4. Quantity assumes product is 80% ethanol by weight and weighs 6.9 pounds per gallon.
5. Quantity assumes product is 70% lactose by weight.
6. Quantity assumes HRC® is 40% lactic acid and 40% glycerol by weight.
7. Quantity of neat soybean oil, corn oil, or canola oil.
8. Quantity assumes commercial product is 60% soybean oil by weight.

SUBSTRATE ESTIMATING TOOL FOR ENHANCED ANAEROBIC BIOREMEDIATION OF CHLORINATED SOLVENTS

Version 1.2
November 2010

Site Data Input Table

TABLE S.1 - INPUT TABLE

Calculation Tables

Table S.2 - Substrate Calculations in Hydrogen

Table S.3 - Hydrogen Produced by Common Substrates

Table S.4 - Estimated Substrate Requirements for

Output Summary Table

TABLE S.5 - OUTPUT TABLE

PRINT SUMMARY TABLE

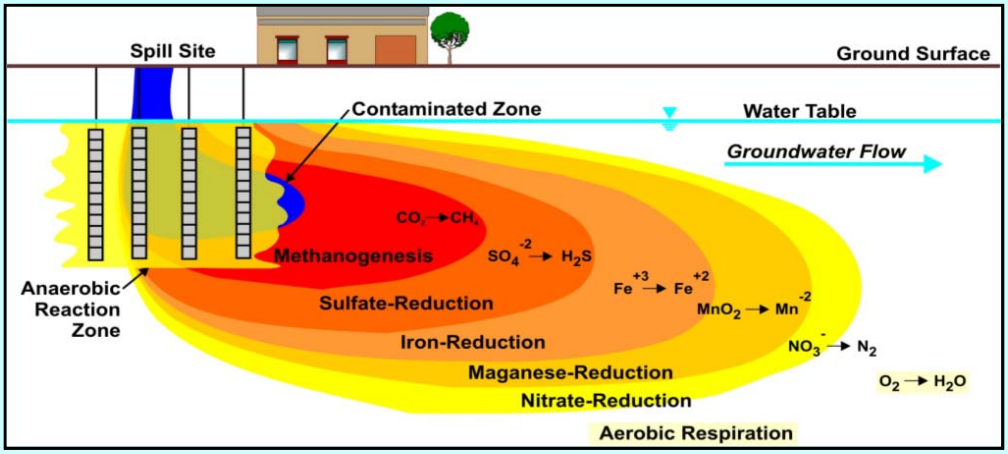

This Substrate Estimating Tool for Enhanced Anaerobic Bioremediation of Chlorinated Solvents has been developed by Parsons Infrastructure & Technology Group, Inc. (Parsons) for the Environmental Security Technology Certification Program (ESTCP). This substrate estimating tool is made available on an as-is basis without guarantee or warranty of any kind, express or implied. The United States Government, Parsons, the authors, and the reviewers accept no liability resulting from the use of this substrate estimating tool or its documentation; nor does the above warrant or otherwise represent in any way the accuracy, adequacy, efficacy, or applicability of the contents hereof. This substrate estimating tool is intended soley for educational and site screening purposes. Implementation of the substrate estimating tool and interpretation or use of the results provided in the model are the sole responsibility of the user. The substrate estimating tool is provided free of charge for everyone to use, but is not supported in any way by the United States Government or Parsons. Mention of trade names in this report is for information purposes only; no endorsement is implied.

Substrate Estimating Tool (Version 1.2)

Table S.1 Input for Substrate Requirements in Hydrogen Equivalents

Site Name: LHAAP 16

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NOTE: Unshaded boxes are user input.

1. Treatment Zone Physical Dimensions	Values	Range	Units	User Notes
Width (Perpendicular to predominant groundwater flow direction)	280	1-10,000	feet	Mid Plume Intermediate ISB
Length (Parallel to predominant groundwater flow)	70	1-1,000	feet	
Saturated Thickness	20	1-100	feet	
Treatment Zone Cross Sectional Area	5600	--	ft^2	
Treatment Zone Volume	392,000	--	ft^3	
Treatment Zone Total Pore Volume (total volume x total porosity)	1,026,530	--	gallons	
Treatment Zone Effective Pore Volume (total volume x effective porosity)	293,294	--	gallons	
Design Period of Performance	5.0	.5 to 5	year	
Design Factor (times the electron acceptor hydrogen demand)	3.0	2 to 20	unitless	
2. Treatment Zone Hydrogeologic Properties				
Total Porosity	35%	.05-50	percent	
Effective Porosity	10%	.05-50	percent	
Average Aquifer Hydraulic Conductivity	4.25	.01-1000	ft/day	
Average Hydraulic Gradient	0.0025	0.0001-0.1	ft/ft	
Average Groundwater Seepage Velocity through the Treatment Zone	0.11	--	ft/day	
Average Groundwater Seepage Velocity through the Treatment Zone	38.8	--	ft/yr	
Average Groundwater Discharge through the Treatment Zone	162,490	--	gallons/year	
Soil Bulk Density	1.7	1.4-2.0	gm/cm^3	
Soil Fraction Organic Carbon (foc)	0.05%	0.01-10	percent	
3. Native Electron Acceptors				
A. Aqueous-Phase Native Electron Acceptors				
Oxygen	1.6	0.01 to 10	mg/L	
Nitrate	0.10	0.1 to- 20	mg/L	
Sulfate	612	10 to 5,000	mg/L	
Carbon Dioxide (estimated as the amount of Methane produced)	20.0	0.1 to 20	mg/L	
B. Solid-Phase Native Electron Acceptors				
Manganese (IV) (estimated as the amount of Mn (II) produced)	20	0.1 to 20	mg/L	
Iron (III) (estimated as the amount of Fe (II) produced)	20	0.1 to 20	mg/L	
4. Contaminant Electron Acceptors				
Tetrachloroethene (PCE)	0.000	--	mg/L	
Trichloroethene (TCE)	4.000	--	mg/L	
Dichloroethene (cis-DCE, trans-DCE, and 1,1-DCE)	6.000	--	mg/L	
Vinyl Chloride (VC)	1.000	--	mg/L	
Carbon Tetrachloride (CT)	0.000	--	mg/L	
Trichloromethane (or chloroform) (CF)	0.000	--	mg/L	
Dichloromethane (or methylene chloride) (MC)	0.000	--	mg/L	
Chloromethane	0.000	--	mg/L	
Tetrachloroethane (1,1,1,2-PCA and 1,1,2,2-PCA)	0.000	--	mg/L	
Trichloroethane (1,1,1-TCA and 1,1,2-TCA)	0.000	--	mg/L	
Dichloroethane (1,1-DCA and 1,2-DCA)	0.000	--	mg/L	
Chloroethane	0.000	--	mg/L	
Perchlorate	0.400	--	mg/L	
5. Aquifer Geochemistry (Optional Screening Parameters)				
A. Aqueous Geochemistry				
Oxidation-Reduction Potential (ORP)	100	-400 to +500	mV	
Temperature	22	5.0 to 30	ºC	
pH	6.0	4.0 to 10.0	su	
Alkalinity	200	10 to 1,000	mg/L	
Total Dissolved Solids (TDS, or salinity)	100	10 to 1,000	mg/L	
Specific Conductivity	2500	100 to 10,000	µs/cm	
Chloride	637	10 to 10,000	mg/L	
Sulfide - Pre injection	0.0	0.1 to 100	mg/L	
Sulfide - Post injection	0.0	0.1 to 100	mg/L	
B. Aquifer Matrix				
Total Iron	10000	200 to 20,000	mg/kg	
Cation Exchange Capacity	NA	1.0 to 10	meq/100 g	
Neutralization Potential	10.0%	1.0 to 100	Percent as $CaCO_3$	

NOTES:

Substrate Estimating Tool (Version 1.2)

Table S.2 Substrate Calculations in Hydrogen Equivalents

Site Name: LHAAP 16

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NOTE: Open cells are user input.

1. Treatment Zone Physical Dimensions

	Values	Range	Units
Width (Perpendicular to predominant groundwater flow direction)	280	1-10,000	feet
Length (Parallel to predominant groundwater flow)	70	1-1,000	feet
Saturated Thickness	20	1-100	feet
Treatment Zone Cross Sectional Area	5600	--	ft^2
Treatment Zone Volume	392,000	--	ft^3
Treatment Zone Effective Pore Volume (total volume x effective porosity)	293,294	--	gallons
Design Period of Performance	5.0	.5 to 5	year

2. Treatment Zone Hydrogeologic Properties

Total Porosity	0.35	.05-50	
Effective Porosity	0.10	.05-50	
Average Aquifer Hydraulic Conductivity	4.25	.01-1000	ft/day
Average Hydraulic Gradient	0.0025	0.1-0.0001	ft/ft
Average Groundwater Seepage Velocity through the Treatment Zone	0.11	--	ft/day
Average Groundwater Seepage Velocity through the Treatment Zone	38.8	--	ft/yr
Average Groundwater Flux through the Treatment Zon 0	162,490	--	gallons/year
Soil Bulk Density	1.7	1.4-2.0	gm/cm^3
Soil Fraction Organic Carbon (foc)	0.0005	0.0001-0.1	

3. Initial Treatment Cell Electron-Acceptor Demand (one total pore volume)

A. Aqueous-Phase Native Electron Acceptors	Concentration (mg/L)	Mass (lb)	Stoichiometric demand (wt/wt h_2)	Hydrogen Demand (lb)	Electron Equivalents per Mole
Oxygen	1.6	3.92	7.94	0.49	4
Nitrate (denitrification)	0.1	0.24	12.30	0.02	5
Sulfate	612	1497.81	11.91	125.76	8
Carbon Dioxide (estimated as the amount of methane produced)	20.0	48.95	1.99	24.60	8
Soluble Competing Electron Acceptor Demand (lb.)				**150.87**	

B. Solid-Phase Native Electron Acceptors (Based on manganese and iron produced)	Concentration (mg/L)	Mass (lb)	Stoichiometric demand (wt/wt h_2)	Hydrogen Demand (lb)	Electron Equivalents per Mole
Manganese (IV) (estimated as the amount of Mn (II) produced)	20.0	184.54	27.25	6.77	2
Iron (III) (estimated as the amount of Fe (II) produced)	20.0	184.54	55.41	3.33	1
Solid-Phase Competing Electron Acceptor Demand (lb.)				**10.10**	

C. Soluble Contaminant Electron Acceptors	Concentration (mg/L)	Mass (lb)	Stoichiometric demand (wt/wt h_2)	Hydrogen Demand (lb)	Electron Equivalents per Mole
Tetrachloroethene (PCE)	0.000	0.00	20.57	0.00	8
Trichloroethene (TCE)	4.000	9.79	21.73	0.45	6
Dichloroethene (cis-DCE, trans-DCE, and 1,1-DCE)	6.000	14.68	24.05	0.61	4
Vinyl Chloride (VC)	1.000	2.45	31.00	0.08	2
Carbon Tetrachloride (CT)	0.000	0.00	19.08	0.00	8
Trichloromethane (or chloroform) (CF)	0.000	0.00	19.74	0.00	6
Dichloromethane (or methylene chloride) (MC)	0.000	0.00	21.06	0.00	4
Chloromethane	0.000	0.00	25.04	0.00	2
Tetrachloroethane (1,1,1,2-PCA and 1,1,2,2-PCA)	0.000	0.00	20.82	0.00	8
Trichloroethane (1,1,1-TCA and 1,1,2-TCA)	0.000	0.00	22.06	0.00	6
Dichloroethane (1,1-DCA and 1,2-DCA)	0.000	0.00	24.55	0.00	4
Chloroethane	0.000	0.00	32.00	0.00	2
Perchlorate	0.400	0.98	12.33	0.08	6
Total Soluble Contaminant Electron Acceptor Demand (lb.)				**1.22**	

D. Sorbed Contaminant Electron Acceptors (Soil Concentration = Koc x foc x Cgw)	Koc (mL/g)	Soil Conc. (mg/kg)	Mass (lb)	Stoichiometric demand (wt/wt h_2)	Hydrogen Demand (lb)	Electron Equivalents per Mole
Tetrachloroethene (PCE)	263	0.00	0.00	20.57	0.00	8
Trichloroethene (TCE)	107	0.21	8.90	21.73	0.41	6
Dichloroethene (cis-DCE, trans-DCE, and 1,1-DCE)	45	0.14	5.62	24.05	0.23	4
Vinyl Chloride (VC)	3.0	0.00	0.06	31.00	0.00	2
Carbon Tetrachloride (CT)	224	0.00	0.00	19.08	0.00	8
Trichloromethane (or chloroform) (CF)	63	0.00	0.00	19.74	0.00	6
Dichloromethane (or methylene chloride) (MC)	28	0.00	0.00	21.06	0.00	4
Chloromethane	25	0.00	0.00	25.04	0.00	2
Tetrachloroethane (1,1,1,2-PCA and 1,1,2,2-PCA)	117	0.00	0.00	20.82	0.00	8
Trichloroethane (1,1,1-TCA and 1,1,2-TCA)	105	0.00	0.00	22.06	0.00	6
Dichloroethane (1,1-DCA and 1,2-DCA)	30	0.00	0.00	24.55	0.00	4
Chloroethane	3	0.00	0.00	32.00	0.00	2
Perchlorate	0.0	0.00	0.00	12.33	0.00	6
Total Sorbed Contaminant Electron Acceptor Demand (lb.)					**0.65**	

(continued)

Substrate Estimating Tool (Version 1.2)

Table S.2 Substrate Calculations in Hydrogen Equivalents

4. Treatment Cell Electron-Acceptor Flux (per year)

A. Soluble Native Electron Acceptors	Concentration (mg/L)	Mass (lb)	Stoichiometric demand (wt/wt h_2)	Hydrogen Demand (lb)	Electron Equivalents per Mole
Oxygen	1.6	2.17	7.94	0.27	4
Nitrate (denitrification)	0.1	0.14	10.25	0.01	5
Sulfate	612	829.82	11.91	69.67	8
Carbon Dioxide (estimated as the amount of Methane produced)	20	27.12	1.99	13.63	8
Total Competing Electron Acceptor Demand Flux (lb/yr)				**83.6**	

B. Soluble Contaminant Electron Acceptors	Concentration (mg/L)	Mass (lb)	Stoichiometric demand (wt/wt h_2)	Hydrogen Demand (lb)	Electron Equivalents per Mole
Tetrachloroethene (PCE)	0.000	0.00	20.57	0.00	8
Trichloroethene (TCE)	4.000	5.42	21.73	0.25	6
Dichloroethene (cis-DCE, trans-DCE, and 1,1-DCE)	6.000	8.14	24.05	0.34	4
Vinyl Chloride (VC)	1.000	1.36	31.00	0.04	2
Carbon Tetrachloride (CT)	0.000	0.00	19.08	0.00	8
Trichloromethane (or chloroform) (CF)	0.000	0.00	19.74	0.00	6
Dichloromethane (or methylene chloride) (MC)	0.000	0.00	21.06	0.00	4
Chloromethane	0.000	0.00	25.04	0.00	2
Tetrachloroethane (1,1,1,2-PCA and 1,1,2,2-PCA)	0.000	0.00	20.82	0.00	8
Trichloroethane (1,1,1-TCA and 1,1,2-TCA)	0.000	0.00	22.06	0.00	6
Dichloroethane (1,1-DCA and 1,2-DCA)	0.000	0.00	24.55	0.00	4
Chloroethane	0.000	0.00	32.00	0.00	2
Perchlorate	0.400	0.54	12.33	0.04	6
Total Soluble Contaminant Electron Acceptor Demand Flux (lb/yr)				**0.68**	

Initial Hydrogen Requirement First Year (lb)	**247.1**
Total Life-Cycle Hydrogen Requirement (lb)	**584.2**

5. Design Factors

Microbial Efficiency Uncertainty Factor	2X - 4X
Methane and Solid-Phase Electron Acceptor Uncertainty	2X - 4X
Remedial Design Factor (e.g., Substrate Leaving Reaction Zone)	1X - 3X
Design Factor	**3.0**
Total Life-Cycle Hydrogen Requirement with Design Factor (lb)	**1,752.5**

6. Acronyns and Abbreviations

^{o}C =degrees celsius
µs/cm = microsiemens per centimeter
cm/day = centimeters per day
cm/sec = centimeters per second
ft^2 = square feet
ft/day = feet per day
ft/ft = foot per foot
ft/yr = feet per year
gm/cm^3 = grams per cubic centimeter
kg of CaCO3 per mg = kilograms of calcium carbonate per milligram
lb = pounds

meq/100 g = milliequivalents per 100 grams
mg/kg = milligrams per kilogram
mg/L = milligrams per liter
m/m = meters per meters
mV = millivolts
m/yr = meters per year
su = standard pH units
wt/wt H2 = concetration molecular hydrogen, weight per weight

Table S.3

Hydrogen Produced by Fermentation Reactions of Common Substrates

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Substrate	Molecular Formula	Substrate Molecular Weight (gm/mole)	Moles of Hydrogen Produced per Mole of Substrate	Ratio of Hydrogen Produced to Substrate (gm/gm)	Range of Moles H_2/Mole Substrate
Lactic Acid	$C_3H_6O_3$	90.1	2	0.0448	**2 to 3**
Molasses (assuming 100% sucrose)	$C_{12}H_{22}O_{11}$	342	8	0.0471	**8 to 11**
High Fructose Corn Syrup (assuming 50% fructose and 50% glucose)	$C_6H_{12}O_6$	180	4	0.0448	**4 to 6**
Ethanol	C_2H_6O	46.1	2	0.0875	**2 to 6**
Whey (assuming 100% lactose)	$C_{12}H_{22}O_{11}$	342	11	0.0648	**11**
HRC® (assumes 40% lactic acid and 40% glycerol by weight)	$C_{39}H_{56}O_{39}$	956	28	0.0590	**28**
Linoleic Acid (Soybean Oil, Corn Oil, Cotton Oil)	$C_{18}H_{32}O_2$	281	16	0.1150	**16**

Table S.4

Estimated Substrate Requirements for Hydrogen Demand in Table S.3

Design Life (years): 5

Substrate	Design Factor	Pure Substrate Mass Required to Fulfill Hydrogen Demand (pounds)	Substrate Product Required to Fulfill Hydrogen Demand (pounds)	Substrate Mass Required to Fulfill Hydrogen Demand (milligrams)	Effective Substrate Concentration (mg/L)
Lactic Acid	3.0	39,152	39,152	1.78E+10	4,243
Sodium Lactate Product (60 percent solution)	3.0	39,152	81,229	1.78E+10	4,243
Molasses (assuming 6 0	3.0	37,194	61,990	1.69E+10	4,031
HFCS (assuming 40% fructose and 40% glucose by weight)	3.0	39,161	48,951	1.78E+10	4,244
Ethanol Product (assuming 80% ethanol by weight)	3.0	20,024	25,030	9.08E+09	2,170
Whey (assuming 100% lactose)	3.0	27,027	38,609	1.23E+10	2,929
HRC® (assumes 40% lactic acid and 40% glycerol by weight)	3.0	29,680	29,680	1.35E+10	2,573
Linoleic Acid (Soybean Oil, Corn Oil, Cotton Oil)	3.0	15,240	15,240	6.91E+09	1,652
Commercial Vegetable Oil Emulsion Product (60% oil by weight)	3.0	15,240	25,399	6.91E+09	1,652

NOTES: Sodium Lactate Product

1. Assumes sodium lactate product is 60 percent sodium lactate by weight.
2. Molecular weight of sodium lactate (CH_3-CHOH-COONa) = 112.06.
3. Molecular weight of lactic Acid ($C_6H_6O_3$) = 90.08 .
4. Therefore, sodium lactate product yields 48.4 (0.60 x (90.08/112.06)) percent by weight lactic acid.
5. Weight of sodium lactate product = 11.0 pounds per gallon.
6. Pounds per gallon of lactic acid in product = 1.323 x 8.33 lb/gal H2O x 0.60 x (90.08/112.06) = 5.31 lb/gal.

NOTES: Standard HRC Product

1. Assumes HRC product is 40 percent lactic acid and 40 percent glycerol by weight.
2. HRC® weighs approximately 9.18 pounds per gallon.

NOTES: Vegetable Oil Emulsion Product

1. Assumes emulsion product is 60 percent soybean oil by weight.
2. Soybean oil is 7.8 pounds per gallon.
3. Assumes specific gravity of emulsion product is 0.96.

Substrate Estimating Tool (Version 1.2)

Table S.5 Output for Substrate Requirements in Hydrogen Equivalents

Site Name: LHAAP 16

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1. Treatment Zone Physical Dimensions

	Values	Units	Values	Units
Width (perpendicular to groundwater flow)	280	feet	85	meters
Length (parallel to groundwater flow)	70	feet	21.3	meters
Saturated Thickness	20	feet	6.1	meters
Design Period of Performance	5	years	5	years

2. Treatment Zone Hydrogeologic Properties

	Values	Units	Values	Units
Total Porosity	0.35	percent	0.35	percent
Effective Porosity	0.1	percent	0.1	percent
Average Aquifer Hydraulic Conductivity	4.25	ft/day	1.5E-03	cm/sec
Average Hydraulic Gradient	0.0025	ft/ft	0.0025	m/m
Average Groundwater Seepage Velocity	0.11	ft/day	3.2E+00	cm/day
Average Groundwater Seepage Velocity	39	ft/yr	11.8	m/yr
Effective Treatment Zone Pore Volume	293,294	gallons	1,110,209	liters
Groundwater Flux (per year)	162,490	gallons/year	615,076	liters/year
Total Groundwater Volume Treated (over entire design period)	1,105,746	gallons total	4,185,587	liters total

3. Distribution of Electron Acceptor Demand

	Percent of Total	Hydrogen Demand (lb)
Aerobic Respiration	0.3%	1.859
Nitrate Reduction	0.0%	0.086
Sulfate Reduction	81.2%	474.130
Manganese Reduction	1.2%	6.772
Iron Reduction	0.6%	3.330
Methanogenesis	15.9%	92.733
Dechlorination	0.8%	4.943
Perchlorate Reduction	0.1%	0.299
Totals:	**100.00%**	**584.15**

Hydrogen demand in pounds/gallon:	5.28E-04
Hydrogen demand in grams per liter:	6.33E-02

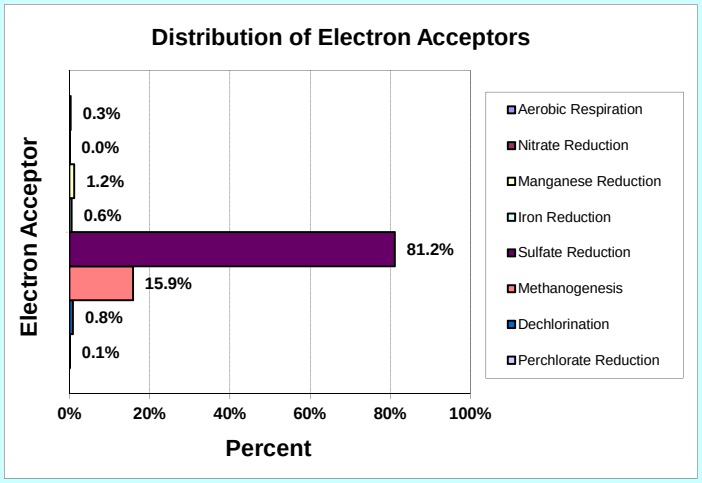

4. Substrate Equivalents: Design Factor = 3.0

Product	Quantity (lb)	Quantity (gallons)	Effective Concentration (mg/L)	Effective concentration is for total volume of groundwater treated.
1. Sodium Lactate Product	81,229	7,384	4,243	as lactic acid
2. Molasses Product	61,990	5,166	4,031	as sucrose
3. Fructose Product	48,951	4,371	4,244	as fructose
4. Ethanol Product	25,030	3,627	2,170	as ethanol
5. Sweet Dry Whey (lactose)	38,609	sold by pound	2,929	as lactose
6. HRC®	29,680	sold by pound	2,573	as 40% lactic acid/40% glycerol
7. Linoleic Acid (Soybean Oil)	15,240	1,954	1,652	as soybean oil
8. Emulsified Vegetable Oil	25,399	3,256	1,652	as soybean oil

Notes:
1. Quantity assumes product is 60% sodium lactate by weight.
2. Quantity assumes product is 60% sucrose by weight and weighs 12 pounds per gallon.
3. Quantity assumes product is 80% fructose by weight and weighs 11.2 pounds per gallon.
4. Quantity assumes product is 80% ethanol by weight and weighs 6.9 pounds per gallon.
5. Quantity assumes product is 70% lactose by weight.
6. Quantity assumes HRC® is 40% lactic acid and 40% glycerol by weight.
7. Quantity of neat soybean oil, corn oil, or canola oil.
8. Quantity assumes commercial product is 60% soybean oil by weight.

SUBSTRATE ESTIMATING TOOL FOR ENHANCED ANAEROBIC BIOREMEDIATION OF CHLORINATED SOLVENTS

Version 1.2
November 2010

Site Data Input Table

TABLE S.1 - INPUT TABLE

Calculation Tables

Table S.2 - Substrate Calculations in Hydrogen

Table S.3 - Hydrogen Produced by Common Substrates

Table S.4 - Estimated Substrate Requirements for

Output Summary Table

TABLE S.5 - OUTPUT TABLE

PRINT SUMMARY TABLE

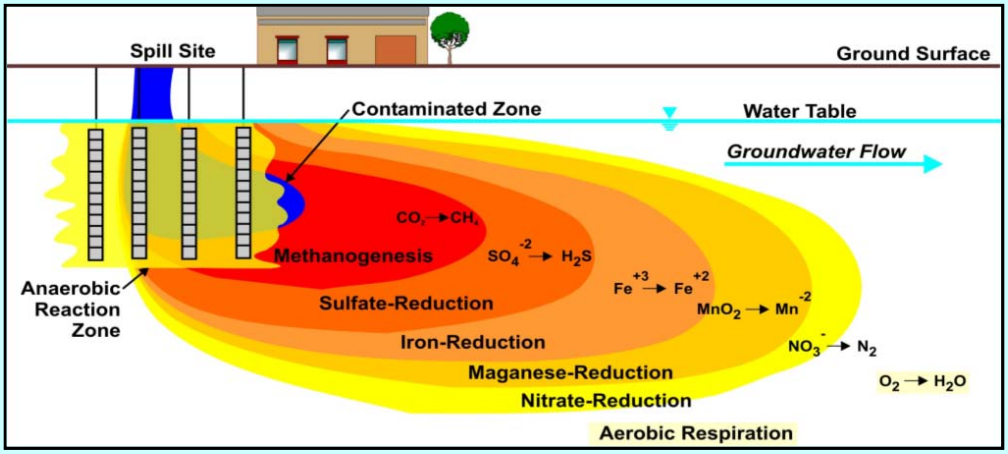

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Substrate Estimating Tool (Version 1.2)

Table S.1 Input for Substrate Requirements in Hydrogen Equivalents

Site Name: LHAAP 16

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NOTE: Unshaded boxes are user input.

1. Treatment Zone Physical Dimensions	Values	Range	Units	User Notes
Width (Perpendicular to predominant groundwater flow direction)	280	1-10,000	feet	Mid Plume Shallow ISB
Length (Parallel to predominant groundwater flow)	192	1-1,000	feet	
Saturated Thickness	22	1-100	feet	
Treatment Zone Cross Sectional Area	6160	--	ft^2	
Treatment Zone Volume	1,182,720	--	ft^3	
Treatment Zone Total Pore Volume (total volume x total porosity)	3,097,189	--	gallons	
Treatment Zone Effective Pore Volume (total volume x effective porosity)	884,911	--	gallons	
Design Period of Performance	5.0	.5 to 5	year	
Design Factor (times the electron acceptor hydrogen demand)	3.0	2 to 20	unitless	
2. Treatment Zone Hydrogeologic Properties				
Total Porosity	35%	.05-50	percent	
Effective Porosity	10%	.05-50	percent	
Average Aquifer Hydraulic Conductivity	4.25	.01-1000	ft/day	
Average Hydraulic Gradient	0.0025	0.0001-0.1	ft/ft	
Average Groundwater Seepage Velocity through the Treatment Zone	0.11	--	ft/day	
Average Groundwater Seepage Velocity through the Treatment Zone	38.8	--	ft/yr	
Average Groundwater Discharge through the Treatment Zone	178,739	--	gallons/year	
Soil Bulk Density	1.7	1.4-2.0	gm/cm^3	
Soil Fraction Organic Carbon (foc)	0.05%	0.01-10	percent	
3. Native Electron Acceptors				
A. Aqueous-Phase Native Electron Acceptors				
Oxygen	1.6	0.01 to 10	mg/L	
Nitrate	0.10	0.1 to- 20	mg/L	
Sulfate	612	10 to 5,000	mg/L	
Carbon Dioxide (estimated as the amount of Methane produced)	20.0	0.1 to 20	mg/L	
B. Solid-Phase Native Electron Acceptors				
Manganese (IV) (estimated as the amount of Mn (II) produced)	20	0.1 to 20	mg/L	
Iron (III) (estimated as the amount of Fe (II) produced)	20	0.1 to 20	mg/L	
4. Contaminant Electron Acceptors				
Tetrachloroethene (PCE)	0.000	--	mg/L	
Trichloroethene (TCE)	45.000	--	mg/L	
Dichloroethene (cis-DCE, trans-DCE, and 1,1-DCE)	35.000	--	mg/L	
Vinyl Chloride (VC)	1.000	--	mg/L	
Carbon Tetrachloride (CT)	0.000	--	mg/L	
Trichloromethane (or chloroform) (CF)	0.000	--	mg/L	
Dichloromethane (or methylene chloride) (MC)	0.000	--	mg/L	
Chloromethane	0.000	--	mg/L	
Tetrachloroethane (1,1,1,2-PCA and 1,1,2,2-PCA)	0.000	--	mg/L	
Trichloroethane (1,1,1-TCA and 1,1,2-TCA)	0.000	--	mg/L	
Dichloroethane (1,1-DCA and 1,2-DCA)	0.000	--	mg/L	
Chloroethane	0.000	--	mg/L	
Perchlorate	0.002	--	mg/L	
5. Aquifer Geochemistry (Optional Screening Parameters)				
A. Aqueous Geochemistry				
Oxidation-Reduction Potential (ORP)	100	-400 to +500	mV	
Temperature	22	5.0 to 30	ºC	
pH	6.0	4.0 to 10.0	su	
Alkalinity	200	10 to 1,000	mg/L	
Total Dissolved Solids (TDS, or salinity)	100	10 to 1,000	mg/L	
Specific Conductivity	2500	100 to 10,000	µs/cm	
Chloride	637	10 to 10,000	mg/L	
Sulfide - Pre injection	0.0	0.1 to 100	mg/L	
Sulfide - Post injection	0.0	0.1 to 100	mg/L	
B. Aquifer Matrix				
Total Iron	10000	200 to 20,000	mg/kg	
Cation Exchange Capacity	NA	1.0 to 10	meq/100 g	
Neutralization Potential	10.0%	1.0 to 100	Percent as $CaCO_3$	

NOTES:

Substrate Estimating Tool (Version 1.2)

Table S.2 Substrate Calculations in Hydrogen Equivalents

Site Name: LHAAP 16

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NOTE: Open cells are user input.

1. Treatment Zone Physical Dimensions

	Values	Range	Units
Width (Perpendicular to predominant groundwater flow direction)	280	1-10,000	feet
Length (Parallel to predominant groundwater flow)	192	1-1,000	feet
Saturated Thickness	22	1-100	feet
Treatment Zone Cross Sectional Area	6160	--	ft^2
Treatment Zone Volume	1,182,720	--	ft^3
Treatment Zone Effective Pore Volume (total volume x effective porosity)	884,911	--	gallons
Design Period of Performance	5.0	.5 to 5	year

2. Treatment Zone Hydrogeologic Properties

Total Porosity	0.35	.05-50	
Effective Porosity	0.10	.05-50	
Average Aquifer Hydraulic Conductivity	4.25	.01-1000	ft/day
Average Hydraulic Gradient	0.0025	0.1-0.0001	ft/ft
Average Groundwater Seepage Velocity through the Treatment Zone	0.11	--	ft/day
Average Groundwater Seepage Velocity through the Treatment Zone	38.8	--	ft/yr
Average Groundwater Flux through the Treatment Zon 0	178,739	--	gallons/year
Soil Bulk Density	1.7	1.4-2.0	gm/cm^3
Soil Fraction Organic Carbon (foc)	0.0005	0.0001-0.1	

3. Initial Treatment Cell Electron-Acceptor Demand (one total pore volume)

A. Aqueous-Phase Native Electron Acceptors	Concentration (mg/L)	Mass (lb)	Stoichiometric demand (wt/wt h_2)	Hydrogen Demand (lb)	Electron Equivalents per Mole
Oxygen	1.6	11.81	7.94	1.49	4
Nitrate (denitrification)	0.1	0.74	12.30	0.06	5
Sulfate	612	4519.12	11.91	379.44	8
Carbon Dioxide (estimated as the amount of methane produced)	20.0	147.68	1.99	74.21	8
Soluble Competing Electron Acceptor Demand (lb.)				**455.20**	

B. Solid-Phase Native Electron Acceptors (Based on manganese and iron produced)	Concentration (mg/L)	Mass (lb)	Stoichiometric demand (wt/wt h_2)	Hydrogen Demand (lb)	Electron Equivalents per Mole
Manganese (IV) (estimated as the amount of Mn (II) produced)	20.0	296.83	27.25	10.89	2
Iron (III) (estimated as the amount of Fe (II) produced)	20.0	296.83	55.41	5.36	1
Solid-Phase Competing Electron Acceptor Demand (lb.)				**16.25**	

C. Soluble Contaminant Electron Acceptors	Concentration (mg/L)	Mass (lb)	Stoichiometric demand (wt/wt h_2)	Hydrogen Demand (lb)	Electron Equivalents per Mole
Tetrachloroethene (PCE)	0.000	0.00	20.57	0.00	8
Trichloroethene (TCE)	45.000	332.29	21.73	15.29	6
Dichloroethene (cis-DCE, trans-DCE, and 1,1-DCE)	35.000	258.45	24.05	10.75	4
Vinyl Chloride (VC)	1.000	7.38	31.00	0.24	2
Carbon Tetrachloride (CT)	0.000	0.00	19.08	0.00	8
Trichloromethane (or chloroform) (CF)	0.000	0.00	19.74	0.00	6
Dichloromethane (or methylene chloride) (MC)	0.000	0.00	21.06	0.00	4
Chloromethane	0.000	0.00	25.04	0.00	2
Tetrachloroethane (1,1,1,2-PCA and 1,1,2,2-PCA)	0.000	0.00	20.82	0.00	8
Trichloroethane (1,1,1-TCA and 1,1,2-TCA)	0.000	0.00	22.06	0.00	6
Dichloroethane (1,1-DCA and 1,2-DCA)	0.000	0.00	24.55	0.00	4
Chloroethane	0.000	0.00	32.00	0.00	2
Perchlorate	0.002	0.01	12.33	0.00	6
Total Soluble Contaminant Electron Acceptor Demand (lb.)				**26.28**	

D. Sorbed Contaminant Electron Acceptors (Soil Concentration = Koc x foc x Cgw)	Koc (mL/g)	Soil Conc. (mg/kg)	Mass (lb)	Stoichiometric demand (wt/wt h_2)	Hydrogen Demand (lb)	Electron Equivalents per Mole
Tetrachloroethene (PCE)	263	0.00	0.00	20.57	0.00	8
Trichloroethene (TCE)	107	2.41	302.25	21.73	13.91	6
Dichloroethene (cis-DCE, trans-DCE, and 1,1-DCE)	45	0.79	98.87	24.05	4.11	4
Vinyl Chloride (VC)	3.0	0.00	0.19	31.00	0.01	2
Carbon Tetrachloride (CT)	224	0.00	0.00	19.08	0.00	8
Trichloromethane (or chloroform) (CF)	63	0.00	0.00	19.74	0.00	6
Dichloromethane (or methylene chloride) (MC)	28	0.00	0.00	21.06	0.00	4
Chloromethane	25	0.00	0.00	25.04	0.00	2
Tetrachloroethane (1,1,1,2-PCA and 1,1,2,2-PCA)	117	0.00	0.00	20.82	0.00	8
Trichloroethane (1,1,1-TCA and 1,1,2-TCA)	105	0.00	0.00	22.06	0.00	6
Dichloroethane (1,1-DCA and 1,2-DCA)	30	0.00	0.00	24.55	0.00	4
Chloroethane	3	0.00	0.00	32.00	0.00	2
Perchlorate	0.0	0.00	0.00	12.33	0.00	6
Total Sorbed Contaminant Electron Acceptor Demand (lb.)					**18.03**	

(continued)

Substrate Estimating Tool (Version 1.2)

Table S.2 Substrate Calculations in Hydrogen Equivalents

4. Treatment Cell Electron-Acceptor Flux (per year)

A. Soluble Native Electron Acceptors	Concentration (mg/L)	Mass (lb)	Stoichiometric demand (wt/wt h_2)	Hydrogen Demand (lb)	Electron Equivalents per Mole
Oxygen	1.6	2.39	7.94	0.30	4
Nitrate (denitrification)	0.1	0.15	10.25	0.01	5
Sulfate	612	912.80	11.91	76.64	8
Carbon Dioxide (estimated as the amount of Methane produced)	20	29.83	1.99	14.99	8
Total Competing Electron Acceptor Demand Flux (lb/yr)				**91.9**	

B. Soluble Contaminant Electron Acceptors	Concentration (mg/L)	Mass (lb)	Stoichiometric demand (wt/wt h_2)	Hydrogen Demand (lb)	Electron Equivalents per Mole
Tetrachloroethene (PCE)	0.000	0.00	20.57	0.00	8
Trichloroethene (TCE)	45.000	67.12	21.73	3.09	6
Dichloroethene (cis-DCE, trans-DCE, and 1,1-DCE)	35.000	52.20	24.05	2.17	4
Vinyl Chloride (VC)	1.000	1.49	31.00	0.05	2
Carbon Tetrachloride (CT)	0.000	0.00	19.08	0.00	8
Trichloromethane (or chloroform) (CF)	0.000	0.00	19.74	0.00	6
Dichloromethane (or methylene chloride) (MC)	0.000	0.00	21.06	0.00	4
Chloromethane	0.000	0.00	25.04	0.00	2
Tetrachloroethane (1,1,1,2-PCA and 1,1,2,2-PCA)	0.000	0.00	20.82	0.00	8
Trichloroethane (1,1,1-TCA and 1,1,2-TCA)	0.000	0.00	22.06	0.00	6
Dichloroethane (1,1-DCA and 1,2-DCA)	0.000	0.00	24.55	0.00	4
Chloroethane	0.000	0.00	32.00	0.00	2
Perchlorate	0.002	0.00	12.33	0.00	6
Total Soluble Contaminant Electron Acceptor Demand Flux (lb/yr)				**5.31**	

Initial Hydrogen Requirement First Year (lb)	**613.0**
Total Life-Cycle Hydrogen Requirement (lb)	**1,002.0**

5. Design Factors

Microbial Efficiency Uncertainty Factor	2X - 4X
Methane and Solid-Phase Electron Acceptor Uncertainty	2X - 4X
Remedial Design Factor (e.g., Substrate Leaving Reaction Zone)	1X - 3X
Design Factor	**3.0**
Total Life-Cycle Hydrogen Requirement with Design Factor (lb)	**3,006.1**

6. Acronyns and Abbreviations

°C =degrees celsius
µs/cm = microsiemens per centimeter
cm/day = centimeters per day
cm/sec = centimeters per second
ft^2 = square feet
ft/day = feet per day
ft/ft = foot per foot
ft/yr = feet per year
gm/cm^3 = grams per cubic centimeter
kg of CaCO3 per mg = kilograms of calcium carbonate per milligram
lb = pounds

meq/100 g = milliequivalents per 100 grams
mg/kg = milligrams per kilogram
mg/L = milligrams per liter
m/m = meters per meters
mV = millivolts
m/yr = meters per year
su = standard pH units
wt/wt H2 = concetration molecular hydrogen, weight per weight

Table S.3

Hydrogen Produced by Fermentation Reactions of Common Substrates

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Substrate	Molecular Formula	Substrate Molecular Weight (gm/mole)	Moles of Hydrogen Produced per Mole of Substrate	Ratio of Hydrogen Produced to Substrate (gm/gm)	Range of Moles H_2/Mole Substrate
Lactic Acid	$C_3H_6O_3$	90.1	2	0.0448	**2 to 3**
Molasses (assuming 100% sucrose)	$C_{12}H_{22}O_{11}$	342	8	0.0471	**8 to 11**
High Fructose Corn Syrup (assuming 50% fructose and 50% glucose)	$C_6H_{12}O_6$	180	4	0.0448	**4 to 6**
Ethanol	C_2H_6O	46.1	2	0.0875	**2 to 6**
Whey (assuming 100% lactose)	$C_{12}H_{22}O_{11}$	342	11	0.0648	**11**
HRC® (assumes 40% lactic acid and 40% glycerol by weight)	$C_{39}H_{56}O_{39}$	956	28	0.0590	**28**
Linoleic Acid (Soybean Oil, Corn Oil, Cotton Oil)	$C_{18}H_{32}O_2$	281	16	0.1150	**16**

Table S.4

Estimated Substrate Requirements for Hydrogen Demand in Table S.3

Design Life (years): 5

Substrate	Design Factor	Pure Substrate Mass Required to Fulfill Hydrogen Demand (pounds)	Substrate Product Required to Fulfill Hydrogen Demand (pounds)	Substrate Mass Required to Fulfill Hydrogen Demand (milligrams)	Effective Substrate Concentration (mg/L)
Lactic Acid	3.0	67,159	67,159	3.05E+10	4,525
Sodium Lactate Product (60 percent solution)	3.0	67,159	139,335	3.05E+10	4,525
Molasses (assuming 6 0	3.0	63,801	106,334	2.89E+10	4,299
HFCS (assuming 40% fructose and 40% glucose by weight)	3.0	67,174	83,968	3.05E+10	4,526
Ethanol Product (assuming 80% ethanol by weight)	3.0	34,348	42,934	1.56E+10	2,314
Whey (assuming 100% lactose)	3.0	46,360	66,228	2.10E+10	3,123
HRC® (assumes 40% lactic acid and 40% glycerol by weight)	3.0	50,911	50,911	2.31E+10	2,744
Linoleic Acid (Soybean Oil, Corn Oil, Cotton Oil)	3.0	26,141	26,141	1.19E+10	1,761
Commercial Vegetable Oil Emulsion Product (60% oil by weight)	3.0	26,141	43,568	1.19E+10	1,761

NOTES: Sodium Lactate Product

1. Assumes sodium lactate product is 60 percent sodium lactate by weight.
2. Molecular weight of sodium lactate (CH_3-CHOH-COONa) = 112.06.
3. Molecular weight of lactic Acid ($C_6H_6O_3$) = 90.08 .
4. Therefore, sodium lactate product yields 48.4 (0.60 x (90.08/112.06)) percent by weight lactic acid.
5. Weight of sodium lactate product = 11.0 pounds per gallon.
6. Pounds per gallon of lactic acid in product = 1.323 x 8.33 lb/gal H2O x 0.60 x (90.08/112.06) = 5.31 lb/gal.

NOTES: Standard HRC Product

1. Assumes HRC product is 40 percent lactic acid and 40 percent glycerol by weight.
2. HRC® weighs approximately 9.18 pounds per gallon.

NOTES: Vegetable Oil Emulsion Product

1. Assumes emulsion product is 60 percent soybean oil by weight.
2. Soybean oil is 7.8 pounds per gallon.
3. Assumes specific gravity of emulsion product is 0.96.

Table S.5 Output for Substrate Requirements in Hydrogen Equivalents

Site Name: LHAAP 16

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1. Treatment Zone Physical Dimensions

	Values	Units	Values	Units
Width (perpendicular to groundwater flow)	280	feet	85	meters
Length (parallel to groundwater flow)	192	feet	58.5	meters
Saturated Thickness	22	feet	6.7	meters
Design Period of Performance	5	years	5	years

2. Treatment Zone Hydrogeologic Properties

	Values	Units	Values	Units
Total Porosity	0.35	percent	0.35	percent
Effective Porosity	0.1	percent	0.1	percent
Average Aquifer Hydraulic Conductivity	4.25	ft/day	1.5E-03	cm/sec
Average Hydraulic Gradient	0.0025	ft/ft	0.0025	m/m
Average Groundwater Seepage Velocity	0.11	ft/day	3.2E+00	cm/day
Average Groundwater Seepage Velocity	39	ft/yr	11.8	m/yr
Effective Treatment Zone Pore Volume	884,911	gallons	3,349,659	liters
Groundwater Flux (per year)	178,739	gallons/year	676,583	liters/year
Total Groundwater Volume Treated (over entire design period)	1,778,608	gallons total	6,732,575	liters total

3. Distribution of Electron Acceptor Demand

	Percent of Total	Hydrogen Demand (lb)
Aerobic Respiration	0.3%	2.991
Nitrate Reduction	0.0%	0.133
Sulfate Reduction	76.1%	762.645
Manganese Reduction	1.1%	10.893
Iron Reduction	0.5%	5.357
Methanogenesis	14.9%	149.162
Dechlorination	7.1%	70.839
Perchlorate Reduction	0.0%	0.002
Totals:	**100.00%**	**1002.02**

Hydrogen demand in pounds/gallon:	5.63E-04
Hydrogen demand in grams per liter:	6.75E-02

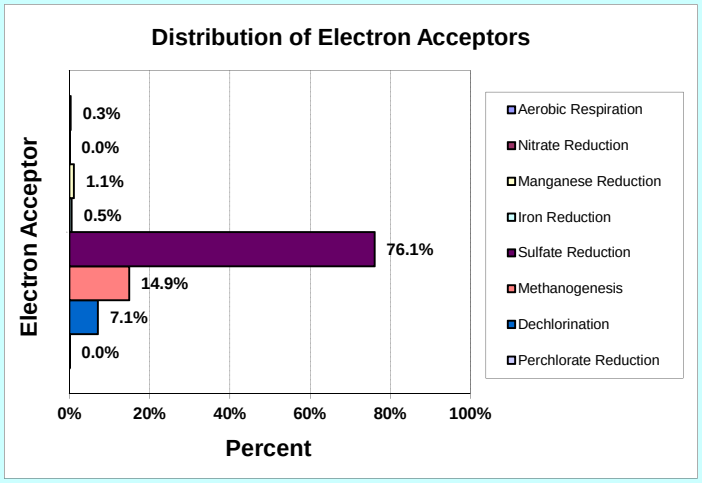

4. Substrate Equivalents: Design Factor = 3.0

Product	Quantity (lb)	Quantity (gallons)	Effective Concentration (mg/L)	Effective concentration is for total volume of groundwater treated.
1. Sodium Lactate Product	139,335	12,667	4,525	as lactic acid
2. Molasses Product	106,334	8,861	4,299	as sucrose
3. Fructose Product	83,968	7,497	4,526	as fructose
4. Ethanol Product	42,934	6,222	2,314	as ethanol
5. Sweet Dry Whey (lactose)	66,228	sold by pound	3,123	as lactose
6. HRC®	50,911	sold by pound	2,744	as 40% lactic acid/40% glycerol
7. Linoleic Acid (Soybean Oil)	26,141	3,351	1,761	as soybean oil
8. Emulsified Vegetable Oil	43,568	5,586	1,761	as soybean oil

Notes:
1. Quantity assumes product is 60% sodium lactate by weight.
2. Quantity assumes product is 60% sucrose by weight and weighs 12 pounds per gallon.
3. Quantity assumes product is 80% fructose by weight and weighs 11.2 pounds per gallon.
4. Quantity assumes product is 80% ethanol by weight and weighs 6.9 pounds per gallon.
5. Quantity assumes product is 70% lactose by weight.
6. Quantity assumes HRC® is 40% lactic acid and 40% glycerol by weight.
7. Quantity of neat soybean oil, corn oil, or canola oil.
8. Quantity assumes commercial product is 60% soybean oil by weight.

APPENDIX E: ANNUAL LUC COMPLIANCE DOCUMENTATION FORM

Annual Land Use Control Compliance Inspection Form

In accordance with the Remedial Design dated _____ for LHAAP-16 an inspection of the site was conducted by _____ [indicate transferee] on _____.

The land use control mechanisms are:

- Groundwater restrictions - prohibit access to the contaminated groundwater except for environmental monitoring and testing only until cleanup goals are met;
- Landfill integrity - preserve the integrity of the landfill cap and restrict intrusive activities (e.g., digging) that would degrade or alter the cap;
- Land use restrictions - restrict land use to nonresidential;
- Integrity of remedial and monitoring systems - maintain the integrity of any current or future remedial or monitoring systems until cleanup goals are met.

No unauthorized activities or uses have occurred. Compliance with land use controls and restrictions is as follows:

- No use of groundwater (other than environmental testing and monitoring), installation of new groundwater wells, or tampering with existing monitoring wells;
- No landfill intrusive activities (e.g., digging) that would degrade or alter the landfill cap; maintenance of vegetative cover and repair of soil subsidence or erosion areas on the cap;
- No land use other than nonresidential; and
- No activities that would compromise the integrity of the remedial or monitoring systems.

I, the undersigned, do document that the inspection was conducted as indicated above, and that the above information is true and correct to the best of my knowledge, information, and belief.

Date: _____

Name/Title: _____

Signature: _____

Annual compliance certification forms shall be completed no later than March 1 of each year for the previous calendar year, retained in the file and provided to Army, EPA and TCEQ upon request.

Subject: **Final Minutes, Monthly Managers' Meeting, Longhorn Army Ammunition Plant (LHAAP)**

Location of Meeting: **Teleconference – 888-369-1427, Passcode 4887611**
Date of Meeting: **January 19, 2017 – 10:00 AM**

Attendees:

Army BRAC:	Rose Zeiler (RMZ)
AEC:	Nick Smith (NS), Randy Cerrar (RC)
EPA:	Rich Mayer (RM), Barry Forsythe (BF) (by phone), Dorelle Harrison (DH)
TCEQ:	April Palmie (AP)
USACE:	Aaron Williams (AW)
AECOM:	Debra Richmann (DR), Elspeth Sharp (ES), Craig Holloway (CH), JoLynn Snow (JS)

Welcome **RMZ**

RMZ welcomed the group and asked that everyone introduce themselves. NS introduced RC, Midwest Division Chief, with AEC. DH, with EPA, introduced himself as the person replacing Paul Torcoletti.

Action Items

AECOM

Complete arrangements for removal and disposal of a roll-off box containing IDW at LHAAP-67 - **In Progress.** DR said that Glenn Hilton (GH) (Project Geologist) is working with the landfill and RMZ to get all required paperwork completed for removal and disposal of the roll-off box containing IDW at LHAAP-67 (and also roll-offs that are no longer needed at LHAAP-18/24 and -37).

Army

- Discuss future management of irrigation with treated water at LHAAP-18/24, when necessary, in response to regulator comments - **In Progress.** RMZ said that she also has concerns with irrigation at 18/24. CH said he is evaluating historical discharge criteria to Harrison Bayou (HB), to the INF pond, and through irrigation at the site. Discharge to HB is dependent on sufficient surface water flow. AP clarified that in addition to restrictions caused by low flow in HB, the FBR unit has not been removing perchlorate reliably. CH, AP, RM and RMZ discussed the possibility of recalculating the discharge limit for perchlorate under the ROD. AP asked if there is a reason to wait for the ROD to re-look at limits. RMZ agreed that it warrants additional discussion. In the future, additional groundwater from LHAAP-17 will be treated at the GWTP, but reduced flow from LHAAP-16 will somewhat offset it. AP pointed out the need for more effluent capacity (currently CH said capacity is approximately 100K gallons). AECOM will have two 20K gallon frac tanks delivered and set up on site to provide additional temporary storage capacity until the FBR is back up and running. RMZ said that would take place this week. CH said there needs to be a later discussion about redesigning the irrigation system. RM and AP agree. RS asked over what time period irrigation is occurring. CH answered that when the sprinkler system is running, it is for about 8 hours at a time, typically for 3 days per week. RMZ said CH will have an update for the next MMM.

EPA

- No outstanding action items.

TCEQ

- No outstanding action items.

AEC

- No outstanding action items.

USFWS

- No outstanding action items.

Schedule Review **RMZ**

- Restoration
  - RMZ said she is working on the schedule and has it pretty much ready but is not sure about the dates for RAO because the PWS has not been finalized.
- Contract – AW said he could not discuss the RFP issuance date (NOTE: After discussion of the agenda items was complete, AECOM left the trailer so the Army and regulators could discuss the schedule privately).

Defense Environmental Restoration Program (DERP) PBR Update **AECOM**

DR asked everyone to refer to the Document and Issue Tracker dated 1/19/17, which was distributed with the agenda. It includes currently projected dates for submittal of remaining project milestone deliverables to EPA and TCEQ.

- Item 1 (GWTP Quarterly Report) – DR said the draft GWTP report for Q2 2016 is currently in preparation and will incorporate responses to agency comments on the Q1 2016 report in a separate section of the report. The date for submittal of the Q2 2016 report to EPA and TCEQ is still to be determined.

- Item 2 (Revised Updated LHAAP-18/24 PSI Addendum) and Item 2-1 (LHAAP-18/24 Data Gap Sampling) are complete, so were not discussed.

- Item 2-2 (Previous Regulatory Comments on LHAAP-18/24 FS) – DR said Army responses to TCEQ and EPA comments on the old FS report have all been accepted. The final RTC tables will be included in the Final Revised FS.

- Item 2-3 (LHAAP-18/24 Revised FS) – See item 2-2. DR said the Final Revised FS is in preparation. The date for submittal of the final report to EPA and TCEQ is still TBD, but soon. RMZ said that the Final Supplemental to the Updated PSI Report will be presented in the Final Revised FS as Appendix B, in addition to being produced as a stand-alone document. This is so it will not be lost to the Administrative Record.

- Items 3-1 (LHAAP-37 RACR), 4 (LHAAP-46 RACR), 5 (LHAAP-50 RACR), 6 (LHAAP-58 RACR), 7 (LHAAP-67 RACR), and 8 (LHAAP-12 2015 Annual Report) are all complete, so were not discussed.

- Item 8-1 (LHAAP-12 2016 RA-O Report) – DR said the validated data for groundwater samples collected in December 2016 should be available in late January/February 2017. She reminded the group that no evaluation report will be provided, just a validated data package.

- Item 9 (LHAAP-46 Yr. 1 and Yr.2 RA-O Reports) is complete, so was not discussed.

- Item 9-1 (LHAAP-46 Yr. 3 RA-O Report) – AW said the Army plans to provide comments on the Army draft Yr. 3 report, but resolution of Army comments on the draft by AECOM will be the endpoint for this report under the current contract. The draft report will be submitted to TCEQ and EPA for review after the new contract is awarded.

- Item 10-1 (LHAAP-67 Yr. 1 RA-O Report) and Item 10-2 (LHAAP-67 Yr. 2. RA-O Report) – DR said RTCs to EPA and TCEQ comments on the Year 1 and Year 2 draft reports are in preparation.

- Item 10-3 (LHAAP-67 Yr. 3 RA-O Report) - Like the Year 3 RA-O report for LHAAP-46, AW said the Army plans to provide comments on the Army draft Yr. 3 report, but resolution of Army comments on the draft by AECOM will be the endpoint for this report under the current contract. The draft report will be submitted to TCEQ and EPA for review after the new contract is awarded.

- Item 11-1 (LHAAP-50 Yr. 1 RA-O Report) – DR said this item is complete except for entering the draft final report and concurrence emails into the next AR update.

- Item 11-2 (LHAAP-50 Yr. 2 RA-O Report) – DR said the only thing remaining to complete the Draft Final Yr. 2 report is to revise Figure 2-10 using the most recent set of Year 2 RA-O sampling results. The revised figure will be provided as a replacement page, in response to a TCEQ comment, and EPA will also be copied.

- Item 12-1 (LHAAP-58 Yr. 1 and Yr. 2 RA-O Reports) are complete, so were not discussed.

- Item 12-2 (LHAAP-58 Contingency Remedial Action Work Plan) – This item is complete except for entering the Final LHAAP-58 Contingency RAWP into the next AR update.

- Item 13 (MMM) – DR said the draft November and December 2016 MMM minutes were approved by EPA and TCEQ as final and will be entered into the next Admin Record update. The next MMM meeting will be held at 10:00 CST on Thursday 2/23/17 by teleconference.

- Item 14-1 (LHAAP-29 RI Addendum) is complete, so was not discussed.

- Item 14-2 (LHAAP-29 FS Addendum) – DR said a determination of whether the draft FS addendum will be submitted to the regulators under the current PBR contract is pending a decision from the Army. AP and RM agreed it would be good to get this reviewed and approved by the agencies under the current contract, if possible. RMZ said she would discuss it with AW.

- Item 15-1 (LHAAP-47 PSI Work Plan) – This item is complete except for entering the Final PSI WP into Q4 2016 AR Update.

- Item 15-2 (LHAAP-16 RD) – DR said the redline RD and RTCs to agency comments on the draft RD were submitted to EPA and TCEQ approval/concurrence on 1/17/17.

- Item 15-2a (LHAAP-16 RD Post ROD Requirements) is complete, so was not discussed.

- Items 15-3 (LHAAP-17 RD) – The Army is deferring the RD to the next PBR contract.

- Item 15-3a (LHAAP-17 PDI WP) – This item is complete, except for entering the final work plan into the Q4 2016 AR Update.

- Item 15-3b (LHAAP-17 Post-ROD Requirements) is complete, so was not discussed.

- Item 15-4 (LHAAP-001-R-01 RD/RDWP) – The Army is deferring the LUC RD to the follow-on PBR contract, so this item was not discussed.

- Item 15-4a (LHAAP-001-R-01 Limited LTM) and Item 15-4b (LHAAP-001-R-01 Post-ROD Requirements) are complete, so were not discussed.

- Item 15-5 (LHAAP-003-R-01 RD/RDWP) – The Army is deferring the LUC RD to the follow-on PBR contract, so this item was not discussed.

- Item 15-5a (LHAAP-003-R-01 Limited LTM) – DR said the draft tech memo with the results of groundwater sampling completed in September 2016is in preparation.

- Item 15-5b (LHAAP-003-R-01 Post-ROD Requirements) is complete, so was not discussed.

- Item 15-6 (LHAAP-04 ROD) – The Army submitted RTCs for EPA comments on the Draft Final ROD on 11/4/16 and distributed paper copies of the final ROD and letters for concurrence to EPA and TCEQ on 1/10/17. AP said the ROD is being routed through her management chain. Once TCEQ concurs, it will go to EPA for signature. A preliminary public notice will be published after the ROD is signed. NS suggested having a RAB at that time; RMZ responded that although it is not required, it is a good idea.

- Item 15-7 (Site-wide LUC Management Plan) – The FY2016 Revision Log and signed transmittal letters will be entered into the next Admin Record update. The next revision will be in October 2017.

- Item 16 (RAB/Website) – DR said the draft minutes from October 2016 RAB were distributed to RAB members with meeting announcement and agenda on 1/9/16. The RAB meeting will be at the Karnack Community Center tonight at 6:00 pm CST. RMZ said she will ask the RAB members if they want to suspend future RABs until October 2017, after the next PBR contract is awarded.

- Item 17-1 (GWTP O&M – GWTP Sampling and Optimization Memo) is complete so was not discussed.

- Item 17-2 (GWTP Sampling and Analysis Plan) – DR said the revised SAP is complete and planned for submittal to AP the week of 1/23/17, probably on Monday.

- Item 17-3 (GWTP Continuing O&M) – CH presented a summary of the release of HCl from Acid Storage Tank TK-380 at GWTP that was discovered 12/12/16. All acid was in secondary containment and none was released to the environment. CH discussed the corrective actions that are in progress and planned within the next few weeks. Two 20,000 gallon frac tanks with containment skirts will be set up on site next week. The plan is to move water from TK-140 into frac tanks and pump fresh groundwater from the ICTs into TK-140 to raise the pH and process through the FBR by the middle of next week (week of 1/23/17).
  - RC and CH discussed options for long term changes to the GWTP system for other chemical treatment (molasses and corn steep). RMZ further discussed this system and how it would work based on another project RC has experience with.

- Item 18 (Admin. Record Update) – The Q3 2016 AR update was uploaded to the LHAAP website on 12/14/16, and CDs were sent later in the week. The 2016 AR Q4 update is currently in preparation. JS said the quarterly GWTP evaluation reports are still being uploaded; two volumes are complete, with Bates numbers.

- Item 19 (LHAAP-02) – The third round of semi-annual sampling was performed the week of 10/3/16. A draft Tech Memo covering the first year (two rounds) of semi-annual sampling (10/15/15 and 4/29/16), was submitted to TCEQ and EPA on 10/27/16. TCEQ approved the draft memo on 12/15/16 and during the meeting RM indicated EPA does not have further comments. There was a question about whether or not the approved Tech Memo should go in the AR; RMZ and AW agreed to wait and enter it along with the third year memo, to be prepared under the next PBR contract. Therefore, there is no further action at this time.

- Item 20 (LHAAP-37 Geochemical Rebound) – The Army provided comments on the draft rebound memo to AECOM. Based on the Army's review, RMZ said it looks like the current results are comparable to the old results and the groundwater has probably rebounded as much as it ever was. AECOM will review and respond to the Army comments, after which the draft rebound memo will be submitted to EPA and TCEQ.

- Item 21 (Smart Map) – AECOM continues to develop the Smart Map. JS said that discussions with the Smart Map developers concerning how to transfer the site to the follow-on PBR contractor are ongoing. JS and AW discussed having a teleconference to go through the process the week of 1/23/17.

- Upcoming/ongoing field work
  - RM mentioned that EPA has some uncommitted funding available and is considering using it to perform some geophysical testing at LHAAP-18/24. RMZ cautioned about the timing and potential problems that may occur if it is conducted while the PBR

solicitation is outstanding. Before starting any work, RMZ requested further discussion with RM.

- Monthly data – See attached December 2016 Validated LHAAP Data
- Groundwater Treatment Plant Operations – Discussed earlier in Item 17-1.

MMRP Update **Army**

- No update

Other Environmental Restoration **Army**

- Quarterly Reporting and Requirements – These items were already discussed (see summaries in the DERP PBR Update section.
  - GWTP Evaluation
  - Surface Water/Perimeter Well Quarterly Update
  - Administrative Record Update
  - Website Update
- Annual Reporting
  - LUC Management Plan Update - Signed Revision Log and transmittal letters will be entered into the 2016 Q4 AR update.
  - CRP/CIP Revision (Biennial) – RMZ asked NS if there was any update on the CRP; NS responded that there is not.

USFWS Update **RMZ/PB**

Schedule Next Managers' Meeting

- February 2017 MMM will be held by teleconference on 2/23/17 at 10:00 am CST.

Adjourn

Attachments:

- **December 2016 Validated LHAAP Data:**
  - GWTP Effluent: Weekly, Bi-weekly, and Monthly Sampling (November 2016)
  - GWTP Influent: Monthly (November 2016)
  - LHAAP-50: Semi-annual MNA Sampling (November 2016)
  - SW/PER: Surface Water/Perimeter Well Sampling (November 2016)

ACRONYM LIST

AEC	United States Army Environmental Command
AECOM	AECOM Technical Services, Inc.
AP	April Palmie
AR	Administrative Record
AW	Aaron Williams
BF	Barry Forsythe
BRAC	Base Realignment and Closure
CH	Craig Holloway
CIP	Community Involvement Plan
CRP	Community Relations Plan
CST	Central Standard Time
DERP	Defense Environmental Restoration Program
DH	Dorelle Harrison
DR	Debra Richmann
EPA	United States Environmental Protection Agency
ES	Elspeth Sharp
FBR	Fluidized Bed Reactor
FS	Feasibility Study
GH	Glenn Hilton
GWTP	Ground Water Treatment Plant
HB	Harrison Bayou
HCl	Hydrochloric Acid
ICT	Interceptor Collection Trench
IDW	Investigation-Derived Waste
JS	JoLynn Snow
LHAAP	Longhorn Army Ammunition Plant
LTM	Long-Term Monitoring
LUC	Land Use Control
MMM	Monthly Managers' Meeting
MMRP	Military Munitions Response Program
MNA	Monitored Natural Attenuation
NS	Nick Smith
O&M	Operation and Maintenance
PB	Paul Bruckwicki
PBR	Performance-Based Remediation
PDI	Pre-Design Investigation
PSI	Post-Screening Investigation
RAB	Restoration Advisory Board
RACR	Remedial Action Completion Report
RA-O	Remedial Action Operation
RAWP	Remedial Action Work Plan
RC	Randy Cerar
RD	Remedial Design
RFP	Request for Proposal
RI	Remedial Investigation
RM	Rich Mayer

RMZ	Rose M. Zeiler
ROD	Record of Decision
RTC	Response to Comments
SAP	Sampling and Analysis Plan
TBD	To Be Determined
TCEQ	Texas Commission on Environmental Quality
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
WP	Work Plan

LHAAP Data Validated
December 2016

GWTP Effluent *Weekly, Bi-weekly and Monthly Sampling - November 2016*

Ammonia (350.1)	Metals (6010C)
Ortho-Phosphate (365.2)	Metals (6020A)
Organic Carbon (415.1)	Hexavalent Chromium (7196A)
Perchlorate (6850)	VOC (8260B)
1,4-Dioxane (8270D-SIM)	Anions (9056)

GWTP Influent *Monthly - November 2016*

Perchlorate (6850)
VOC (8260B)

LHAAP-50 *Semi-Annual MNA Sampling - November 2016*

Alkalinity (310.2)	VOC (8260B)
Phosphorus (365.4)	Anions (9056)
TOC (415.1)	Dissolved Gases (RSK-175)
Metals (6010C)	Sulfide (SM-4500-S-(-2)-F-2000)
Metals (6020A)	
Perchlorate (6850)	

SW/PER *Surface Water/Perimeter Well Sampling - November 2016*

Perchlorate (6850)

GWTP Effluent Weekly Sampling - November 2016

Location ID: / Sample Date:	Units	Daily Maximum Conc	LH18/24-SP650-6408-GRAB 11/7/2016	LH18/24-SP650-6410-GRAB 11/14/2016	LH18/24-SP650-6411-GRAB 11/21/2016	LH18/24-SP650-6413-GRAB 11/28/2016
Location Description:			GWTP–Collected from a spigot on the discharge of effluent TK-650. Sampled Weekly.			
Ammonia as N (350.1)						
AMMONIA AS N	mg/L		11.8	7.26	10.7	16.6
Ortho-Phosphate (365.2)						
ORTHO-PHOSPHATE	mg/L		2.82	1.9	2.42	2.93
Organic Carbon (415.1)						
TOTAL ORGANIC CARBON (TO	mg/L		49.8	29.1	47.8	52.6
Perchlorate (6850)						
PERCHLORATE	ug/L	13	18.4	6.62	1.26	<0.2 U
Semi-Volatile Organic Compounds (8270D-SIM)						
1,4-DIOXANE*	ug/L	134.2	19.4	14.6	24.1	25.3

* Calculated Effluent Limit

mg/L - milligrams per liter

U - Undetected: The analyte was analyzed for, but not detected.

ug/L - micrograms per liter

GWTP Effluent Biweekly Sampling - November 2016

Location ID: / Sample Date:	Units	Daily Maximum Conc	LH18/24-SP650-6409-COMP 11/14/2016	LH18/24-SP650-6409-GRAB 11/14/2016	LH18/24-SP650-6412-COMP 11/28/2016	LH18/24-SP650-6412-GRAB 11/28/2016
Location Description:			GWTP – Collected from holding jar accumulating aliquots of discharge from a TK-650 effluent spigot every few hours. Sampled Biweekly.	GWTP – Collected from a spigot on the discharge of effluent TK-650 Sampled Biweekly.	GWTP – Collected from holding jar accumulating aliquots of discharge from a TK-650 effluent spigot every few hours. Sampled Biweekly.	GWTP – Collected from a spigot on the discharge of effluent TK-650 Sampled Biweekly.
Metals (6010C)						
SELENIUM	mg/L	0.012	<0.02 U	<0.02 U	<0.02 U	<0.02 U
Metals (6020A)						
LEAD	mg/L	0.0046	<0.001 U	<0.001 U	0.0013 J	0.00102 J
SILVER	mg/L	0.003	<0.001 UJ	<0.001 UJ	<0.001 U	<0.001 U
Perchlorate (6850)						
PERCHLORATE	ug/L	13	<0.2 U	<0.2 U	<0.2 U	<0.2 U
Hexavalent Chromium (7196A)						
HEXAVALENT CHROMIUM	mg/L	0.1244	<0.01 U	<0.01 U	<0.01 U	<0.01 U
Volatile Organic Compounds (8260B)						
1,1,1,2-TETRACHLOROETHANE	ug/L		NA	<0.5 U	NA	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	7230	NA	<0.5 U	NA	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L		NA	<0.4 U	NA	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	216.9	NA	<0.5 U	NA	<0.5 U
1,1-DICHLOROETHANE	ug/L	14032	NA	<0.25 U	NA	<0.25 U
1,1-DICHLOROETHENE	ug/L	253	NA	<1 U	NA	<1 U
1,1-DICHLOROPROPENE	ug/L		NA	<0.5 U	NA	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L		NA	<0.3 U	NA	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L		NA	<1 U	NA	<1 U
1,2,4-TRICHLOROBENZENE	ug/L		NA	<0.4 U	NA	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L		NA	<0.5 U	NA	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L		NA	<2 U	NA	<2 U
1,2-DIBROMOETHANE	ug/L		NA	<0.5 U	NA	<0.5 U
1,2-DICHLOROBENZENE	ug/L		NA	<0.25 U	NA	<0.25 U
1,2-DICHLOROETHANE	ug/L	181	NA	<0.5 U	NA	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	NA	<0.4 U	NA	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L		NA	<0.5 U	NA	<0.5 U
1,3-DICHLOROBENZENE	ug/L		NA	<0.5 U	NA	<0.5 U
1,3-DICHLOROPROPANE	ug/L		NA	<0.4 U	NA	<0.4 U
1,4-DICHLOROBENZENE	ug/L		NA	<0.25 U	NA	<0.25 U
2,2-DICHLOROPROPANE	ug/L		NA	<0.5 U	NA	<0.5 U
2-BUTANONE	ug/L		NA	<5 U	NA	<5 U
2-CHLOROTOLUENE	ug/L		NA	<0.25 U	NA	<0.25 U
2-HEXANONE	ug/L		NA	<5 U	NA	<5 U
4-CHLOROTOLUENE	ug/L		NA	<0.5 U	NA	<0.5 U
4-METHYL-2-PENTANONE	ug/L		NA	<5 U	NA	<5 U
ACETONE	ug/L	2395	NA	2.83 J	NA	<5 U
BENZENE	ug/L	181	NA	<0.25 U	NA	<0.25 U
BROMOBENZENE	ug/L		NA	<0.25 U	NA	<0.25 U
BROMOCHLOROMETHANE	ug/L		NA	<0.4 U	NA	<0.4 U
BROMODICHLOROMETHANE	ug/L		NA	<0.5 U	NA	<0.5 U
BROMOFORM	ug/L		NA	<1 U	NA	<1 U
BROMOMETHANE	ug/L		NA	<1 U	NA	<1 U
CARBON DISULFIDE	ug/L		NA	<1 U	NA	<1 U
CARBON TETRACHLORIDE	ug/L	181	NA	<0.5 U	NA	<0.5 U

GWTP Effluent Biweekly Sampling - November 2016

Location ID: / Sample Date:	Units	Daily Maximum Conc	LH18/24-SP650-6409-COMP 11/14/2016	LH18/24-SP650-6409-GRAB 11/14/2016	LH18/24-SP650-6412-COMP 11/28/2016	LH18/24-SP650-6412-GRAB 11/28/2016
CHLOROBENZENE	ug/L	47180	NA	<0.25 U	NA	<0.25 U
CHLOROETHANE	ug/L		NA	<1 U	NA	<1 U
CHLOROFORM	ug/L	3615	NA	<0.25 U	NA	<0.25 U
CHLOROMETHANE	ug/L		NA	<1 U	NA	<1 U
CIS-1,2-DICHLOROETHENE	ug/L		NA	10.1	NA	9.24
CIS-1,3-DICHLOROPROPENE	ug/L		NA	<0.5 U	NA	<0.5 U
DIBROMOCHLOROMETHANE	ug/L		NA	<0.5 U	NA	<0.5 U
DIBROMOMETHANE	ug/L		NA	<0.5 U	NA	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L		NA	<0.5 U	NA	<0.5 U
ETHYLBENZENE	ug/L	57025	NA	<0.5 U	NA	<0.5 U
HEXACHLOROBUTADIENE	ug/L		NA	<0.5 U	NA	<0.5 U
ISOPROPYLBENZENE	ug/L		NA	<0.5 U	NA	<0.5 U
M,P-XYLENE	ug/L	83.6	NA	<1 U	NA	<1 U
METHYLENE CHLORIDE	ug/L	1699	NA	<0.5 U	NA	<0.5 U
NAPHTHALENE	ug/L		NA	<0.4 U	NA	<0.4 U
N-BUTYLBENZENE	ug/L		NA	<0.5 U	NA	<0.5 U
N-PROPYLBENZENE	ug/L		NA	<0.25 U	NA	<0.25 U
O-XYLENE	ug/L	83.6	NA	<0.5 U	NA	<0.5 U
P-ISOPROPYLTOLUENE	ug/L		NA	<0.5 U	NA	<0.5 U
SEC-BUTYLBENZENE	ug/L		NA	<0.5 U	NA	<0.5 U
STYRENE	ug/L	5987	NA	<0.25 U	NA	<0.25 U
TERT-BUTYLBENZENE	ug/L		NA	<0.5 U	NA	<0.5 U
TETRACHLOROETHENE	ug/L	180.7	NA	<0.5 U	NA	<0.5 U
TOLUENE	ug/L	4189	NA	<0.5 U	NA	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L		NA	<0.5 U	NA	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L		NA	<1 U	NA	<1 U
TRICHLOROETHENE	ug/L	181	NA	3.81	NA	3.3
TRICHLOROFLUOROMETHANE	ug/L		NA	<0.5 U	NA	<0.5 U
VINYL CHLORIDE	ug/L	72	NA	<0.5 U	NA	<0.5 U
Anions (9056)						
CHLORIDE	mg/L		552 J	539 J	532 J	524 J
SULFATE	mg/L		128 J	89 J	117 J	92.9 J

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

mg/L - milligrams per liter

NA - not analyzed

U - Undetected: The analyte was analyzed for, but not detected.

ug/L - micrograms per liter

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

GWTP Effluent Monthly Sampling - November 2016

Location ID: Sample Date:	Units	Daily Maximum Conc	LH18/24-SP650-6407-GRAB 11/7/2016
Location Description:			GWTP – Collected from a spigot on the discharge of effluent TK-650. Sampled Monthly.
Metals (6010C)			
ALUMINUM	mg/L	1.644	<0.2 U
IRON	mg/L	2.395	0.388
SELENIUM	mg/L	0.012	<0.02 U
Metals (6020A)			
ANTIMONY	mg/L		<0.001 U
ARSENIC	mg/L	0.722	0.002
BARIUM	mg/L	2	0.738
CADMIUM	mg/L	0.0034	<0.0006 U
CHROMIUM	mg/L	0.752	0.0158
COBALT	mg/L	11.495	0.00401
LEAD	mg/L	0.0046	<0.001 U
MANGANESE	mg/L	15.494	0.294 J
NICKEL	mg/L	0.184	0.0158
SILVER	mg/L	0.003	<0.001 U
THALLIUM	mg/L		0.000193 J
VANADIUM	mg/L	3.592	0.000853 J
ZINC	mg/L	0.31	0.116

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

mg/L - milligrams per liter

U - Undetected: The analyte was analyzed for, but not detected.

GWTP Influent Monthly Sampling - November 2016

Location ID: / Sample Date:	Units	LH18/24-SP140-7407-GRAB 11/7/2016
Location Description:		GWTP – Collected from a spigot on the influent to TK-140. Sampled Monthly.
Perchlorate (6850)		
PERCHLORATE	ug/L	14000
Volatile Organic Compounds (8260B)		
1,1,1,2-TETRACHLOROETHANE	ug/L	<25 U
1,1,1-TRICHLOROETHANE	ug/L	<25 U
1,1,2,2-TETRACHLOROETHANE	ug/L	<20 U
1,1,2-TRICHLOROETHANE	ug/L	<25 U
1,1-DICHLOROETHANE	ug/L	<12.5 U
1,1-DICHLOROETHENE	ug/L	85.7 J
1,1-DICHLOROPROPENE	ug/L	<25 U
1,2,3-TRICHLOROBENZENE	ug/L	<15 U
1,2,3-TRICHLOROPROPANE	ug/L	<50 U
1,2,4-TRICHLOROBENZENE	ug/L	<20 U
1,2,4-TRIMETHYLBENZENE	ug/L	<25 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	<100 U
1,2-DIBROMOETHANE	ug/L	<25 U
1,2-DICHLOROBENZENE	ug/L	<12.5 U
1,2-DICHLOROETHANE	ug/L	70.7
1,2-DICHLOROPROPANE	ug/L	<20 U
1,3,5-TRIMETHYLBENZENE	ug/L	<25 U
1,3-DICHLOROBENZENE	ug/L	<25 U
1,3-DICHLOROPROPANE	ug/L	<20 U
1,4-DICHLOROBENZENE	ug/L	<12.5 U
2,2-DICHLOROPROPANE	ug/L	<25 U
2-BUTANONE	ug/L	<250 U
2-CHLOROTOLUENE	ug/L	<12.5 U
2-HEXANONE	ug/L	<250 U
4-CHLOROTOLUENE	ug/L	<25 U
4-METHYL-2-PENTANONE	ug/L	<250 U
ACETONE	ug/L	<250 U
BENZENE	ug/L	<12.5 U
BROMOBENZENE	ug/L	<12.5 U
BROMOCHLOROMETHANE	ug/L	<20 U
BROMODICHLOROMETHANE	ug/L	<25 U
BROMOFORM	ug/L	<50 U
BROMOMETHANE	ug/L	<50 U
CARBON DISULFIDE	ug/L	<50 U
CARBON TETRACHLORIDE	ug/L	<25 U
CHLOROBENZENE	ug/L	<12.5 U
CHLOROETHANE	ug/L	<50 U
CHLOROFORM	ug/L	21.5 J
CHLOROMETHANE	ug/L	<50 U
CIS-1,2-DICHLOROETHENE	ug/L	5020

GWTP Influent Monthly Sampling - November 2016

Location ID: / Sample Date:	Units	LH18/24-SP140-7407-GRAB 11/7/2016
CIS-1,3-DICHLOROPROPENE	ug/L	<25 U
DIBROMOCHLOROMETHANE	ug/L	<25 U
DIBROMOMETHANE	ug/L	<25 U
DICHLORODIFLUOROMETHANE	ug/L	<25 U
ETHYLBENZENE	ug/L	<25 U
HEXACHLOROBUTADIENE	ug/L	<25 U
ISOPROPYLBENZENE	ug/L	<25 U
M,P-XYLENE	ug/L	<50 U
METHYLENE CHLORIDE	ug/L	1130
NAPHTHALENE	ug/L	<20 U
N-BUTYLBENZENE	ug/L	<25 U
N-PROPYLBENZENE	ug/L	<12.5 U
O-XYLENE	ug/L	<25 U
P-ISOPROPYLTOLUENE	ug/L	<25 U
SEC-BUTYLBENZENE	ug/L	<25 U
STYRENE	ug/L	<12.5 U
TERT-BUTYLBENZENE	ug/L	<25 U
TETRACHLOROETHENE	ug/L	42.5 J
TOLUENE	ug/L	<25 U
TRANS-1,2-DICHLOROETHENE	ug/L	14.2 J
TRANS-1,3-DICHLOROPROPENE	ug/L	<50 U
TRICHLOROETHENE	ug/L	8560
TRICHLOROFLUOROMETHANE	ug/L	<25 U
VINYL CHLORIDE	ug/L	146

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

U - Undetected: The analyte was analyzed for, but not detected.

ug/L - micrograms per liter

LHAAP-50 Semi-Annual MNA Sampling - November 2016

Sample ID: Sample Date:	Units	MCL/ PCL/ UTL	50WW05-110316 11/3/2016	50WW06-110116 11/1/2016	50WW06FF-110116 11/1/2016	50WW08-110216 11/2/2016	50WW08FF-110216 11/2/2016	50WW09-110316 11/3/2016	50WW10-110316 11/3/2016	50WW10FD-110316 11/3/2016	50WW11-110116 11/1/2016	50WW11FF-110116 11/1/2016	50WW12-110116 11/1/2016
Location Description:			Site 50 - NE, lower shallow, outside site boundary.	Site 50 - ENE, outside site boundary.	Site 50 - ENE, outside site boundary. Filtered.	Site 50 - E, upper shallow, inside site boundary.	Site 50 - E, upper shallow, inside site boundary. Filtered.	Site 50 - E, lower shallow, inside site boundary.	Site 50 - E, intermediate, inside site boundary.	Site 50 - E, intermediate, inside site boundary. Duplicate	Site 50 - ENE, upper shallow, outside site boundary	Site 50 - ENE, upper shallow, outside site boundary. Filtered.	Site 50 - ENE, upper shallow, outside site boundary.
Alkalinity (310.2)													
ALKALINITY, TOTAL	mg/L		NA	345	NA	419	NA	NA	NA	NA	333	NA	338
Phosphours (365.4)													
PHOSPHORUS	mg/L		NA	0.59	NA	0.135 J	NA	NA	NA	NA	0.136 J	NA	2.07
Total Organic Carbon (415.1)													
TOTAL ORGANIC CARBON (TOC)	mg/L		NA	34.6	NA	13.6	NA	NA	NA	NA	31.4	NA	21.6
Iron (6010C)													
IRON	mg/L		NA	NA	<0.1 U	NA	<0.1 U	NA	NA	NA	NA	0.456	NA
Manganese (6020A)													
MANGANESE	mg/L	1.1	NA	NA	0.244	NA	0.0392	NA	NA	NA	NA	0.104	NA
Perchlorate (6850)													
PERCHLORATE	ug/L	17	<0.2 U	5240	NA	126	NA	<0.2 U	<0.2 U	<0.2 U	13400	NA	25300
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	<0.5 U	NA	<1.25 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<0.5 U	NA	<1.25 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	<0.4 U	NA	<1 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	NA	<1.25 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	0.222 J	<0.25 U	NA	0.75 J	NA	<0.25 U	<0.25 U	<0.25 U	4.92	NA	0.504 J
1,1-DICHLOROETHENE	ug/L	7	1.78 J	<1 U	NA	<2.5 U	NA	<1 U	<1 U	<1 U	21.4	NA	1.57 J
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	<0.5 U	NA	<1.25 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	<0.3 U	NA	<0.75 U	NA	<0.3 U	<0.3 U	<0.3 U	<0.3 U	NA	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	<1 U	NA	<2.5 U	NA	<1 U	<1 U	<1 U	<1 U	NA	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	<0.4 U	NA	<1 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	NA	<1.25 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	<2 U	NA	<5 U	NA	<2 U	<2 U	<2 U	<2 U	NA	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	<0.5 U	NA	<1.25 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	<0.25 U	NA	<0.626 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	1.56	<0.5 U	NA	2.41 J	NA	0.519 J	<0.5 U	<0.5 U	26.1	NA	0.952 J
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	<0.4 U	NA	<1 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	NA	<1.25 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	<0.5 U	NA	<1.25 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	<0.4 U	NA	<1 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	<0.25 U	NA	<0.626 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	<0.5 U	NA	<1.25 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
2-BUTANONE	ug/L	15000	<5 U	<5 U	NA	<12.5 U	NA	<5 U	<5 U	<5 U	<5 U	NA	<5 U
2-CHLOROTOLUENE	ug/L	490	<0.25 U	<0.25 U	NA	<0.626 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U
2-HEXANONE	ug/L	120	<5 U	<5 UJ	NA	<12.5 U	NA	<5 U	<5 U	<5 U	<5 UJ	NA	<5 UJ
4-CHLOROTOLUENE	ug/L	490	<0.5 U	<0.5 U	NA	<1.25 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U

LHAAP-50 Semi-Annual MNA Sampling - November 2016

Sample ID: Sample Date:	Units	MCL/ PCL/ UTL	50WW05- 110316 11/3/2016	50WW06- 110116 11/1/2016	50WW06FF- 110116 11/1/2016	50WW08- 110216 11/2/2016	50WW08FF- 110216 11/2/2016	50WW09- 110316 11/3/2016	50WW10- 110316 11/3/2016	50WW10FD- 110316 11/3/2016	50WW11- 110116 11/1/2016	50WW11FF- 110116 11/1/2016	50WW12- 110116 11/1/2016
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	<5 U	NA	<12.5 U	NA	<5 U	<5 U	<5 U	<5 UJ	NA	<5 U
ACETONE	ug/L	22000	<5 U	<5 U	NA	<12.5 U	NA	4.5 J	4.19 J	3.67 J	<5 U	NA	<5 U
BENZENE	ug/L	5	<0.25 U	<0.25 U	NA	<0.626 U	NA	<0.25 U	<0.25 U	<0.25 U	0.414 J	NA	<0.25 U
BROMOBENZENE	ug/L	200	<0.25 U	<0.25 U	NA	<0.626 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	<0.4 U	NA	<1 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	<0.5 U	NA	<1.25 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
BROMOFORM	ug/L	120	<1 U	<1 U	NA	<2.5 U	NA	<1 U	<1 U	<1 U	<1 U	NA	<1 U
BROMOMETHANE	ug/L	34	<1 U	<1 U	NA	<2.5 U	NA	<1 U	<1 U	<1 U	<1 U	NA	<1 U
CARBON DISULFIDE	ug/L	2400	<1 U	<1 U	NA	<2.5 U	NA	<1 U	0.573 J	0.584 J	<1 U	NA	<1 U
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	<0.5 U	NA	<1.25 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
CHLOROBENZENE	ug/L	100	<0.25 U	<0.25 U	NA	<0.626 U	NA	<0.25 U	<0.25 U	<0.25 U	0.837 J	NA	<0.25 U
CHLOROETHANE	ug/L	98000	<1 U	<1 U	NA	<2.5 U	NA	<1 U	<1 U	<1 U	<1 U	NA	<1 U
CHLOROFORM	ug/L	240	<0.25 U	<0.25 U	NA	0.351 J	NA	0.205 J	<0.25 U	<0.25 U	0.752 J	NA	<0.25 U
CHLOROMETHANE	ug/L	70	<1 U	<1 U	NA	<2.5 U	NA	<1 U	<1 U	<1 U	0.554 J	NA	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	66.7 J	2.37	NA	38	NA	10.8	<0.5 U	<0.5 U	67.4	NA	<0.5 U
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	<0.5 U	NA	<1.25 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	<0.5 U	NA	<1.25 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
DIBROMOMETHANE	ug/L	120	<0.5 U	<0.5 U	NA	<1.25 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	<0.5 U	NA	<1.25 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
ETHYLBENZENE	ug/L	700	<0.5 U	<0.5 U	NA	<1.25 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	<0.5 U	NA	<1.25 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	<0.5 U	NA	<1.25 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
M,P-XYLENE	ug/L	10000	<1 U	<1 U	NA	<2.5 U	NA	<1 U	<1 U	<1 U	<1 U	NA	<1 U
METHYLENE CHLORIDE	ug/L	5	<0.5 U	<0.5 U	NA	<1.25 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
NAPHTHALENE	ug/L	490	<0.4 U	<0.4 U	NA	<1 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U
N-BUTYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	NA	<1.25 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
N-PROPYLBENZENE	ug/L	980	<0.25 U	<0.25 U	NA	<0.626 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U
O-XYLENE	ug/L	10000	<0.5 U	<0.5 U	NA	<1.25 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	<0.5 U	NA	<1.25 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	NA	<1.25 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
STYRENE	ug/L	100	<0.25 U	<0.25 U	NA	<0.626 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	NA	<1.25 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
TETRACHLOROETHENE	ug/L	5	0.637 J	<0.5 U	NA	1.11 J	NA	0.344 J	<0.5 U	<0.5 U	4.91	NA	<0.5 U
TOLUENE	ug/L	1000	<0.5 U	<0.5 U	NA	<1.25 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	<0.5 U	NA	<1.25 U	NA	<0.5 U	<0.5 U	<0.5 U	1.35	NA	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	<1 U	NA	<2.5 U	NA	<1 U	<1 U	<1 U	<1 U	NA	<1 U
TRICHLOROETHENE	ug/L	5	184	54.2	NA	379	NA	126	<0.5 U	<0.5 U	2880	NA	109
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	<0.5 U	NA	<1.25 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	NA	<1.25 U	NA	<0.5 U	<0.5 U	<0.5 U	1.9	NA	<0.5 U
Inorganic Anions (9056)													
CHLORIDE	mg/L		NA	205	NA	349	NA	NA	NA	NA	319	NA	986
NITRATE	mg/L	10	NA	<0.2 U	NA	<0.4 U	NA	NA	NA	NA	<0.4 U	NA	<1 U
NITRITE	mg/L	1	NA	<0.2 U	NA	0.35 J	NA	NA	NA	NA	<0.4 U	NA	<1 U
SULFATE	mg/L		NA	114	NA	300	NA	NA	NA	NA	379	NA	496
Dissolved Gases (RSK-175)													
CARBON DIOXIDE	ug/L		NA	353000	NA	529000	NA	NA	NA	NA	651000	NA	663000
ETHANE	ug/L		NA	<2 U	NA	<2 U	NA	NA	NA	NA	<2 U	NA	<2 U
ETHENE	ug/L		NA	<2 U	NA	<2 U	NA	NA	NA	NA	<2 U	NA	<2 U
METHANE	ug/L		NA	<2 U	NA	6.61	NA	NA	NA	NA	9.71	NA	2.26 J

LHAAP-50 Semi-Annual MNA Sampling - November 2016

Sample ID: Sample Date:	Units	MCL/ PCL/ UTL	50WW05- 110316 11/3/2016	50WW06- 110116 11/1/2016	50WW06FF- 110116 11/1/2016	50WW08- 110216 11/2/2016	50WW08FF- 110216 11/2/2016	50WW09- 110316 11/3/2016	50WW10- 110316 11/3/2016	50WW10FD- 110316 11/3/2016	50WW11- 110116 11/1/2016	50WW11FF- 110116 11/1/2016	50WW12- 110116 11/1/2016
SM4500-S-(-2)-F-2000													
SULFIDE	mg/L		NA	<1 U	NA	<1 U	NA	NA	NA	NA	<1 U	NA	<1 U

Blue Highlighting Indicates concentrations above the MCL/PCL/UTL

Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

Metals results for "FF" samples are dissolved.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Limit

mg/L - milligrams per liter

NA - not analyzed

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

UTL - Upper Tolerance Limit

LHAAP-50 Semi-Annual MNA Sampling - November 2016

Sample ID: / Sample Date:	Units	MCL/ PCL/ UTL	50WW12FF-110116 11/1/2016	50WW13-110116 11/1/2016	50WW13FF-110116 11/1/2016	50WW14-110116 11/1/2016	50WW14FF-110116 11/1/2016	50WW15-110216 11/2/2016	50WW15FD-110216 11/2/2016	50WW16-110216 11/2/2016	50WW16FF-110216 11/2/2016	50WW17-110416 11/4/2016	50WW18-110316 11/3/2016
Location Description:			Site 50 - ENE, upper shallow, outside site boundary. Filtered.	Site 50 - E, upper shallow, outside site boundary.	Site 50 - E, upper shallow, outside site boundary. Filtered	Site 50 - E, lower shallow, outside site boundary, along S. Crockett Ave.	Site 50 - E, lower shallow, outside site boundary, along S. Crockett Ave. Filtered.	Site 50 - NNE, upper shallow, outside site boundary, along Goose Prairie Creek bridge.	Site 50 - NNE, upper shallow, outside site boundary, along Goose Prairie Creek bridge. Duplicate	Site 50 - NE, upper shallow, outside site boundary, along Goose Prairie Creek.	Site 50 - NE, upper shallow, outside site boundary, along Goose Prairie Creek. Filtered.	Site 50 - NE, fully-penetrating shallow, outside site boundary, near Goose Prairie Creek.	Site 50 - NE, upper shallow, outside site boundary, along Goose Prairie Creek.
Alkalinity (310.2)													
ALKALINITY, TOTAL	mg/L		NA	363	NA	257	NA	NA	NA	108	NA	NA	NA
Phosphours (365.4)													
PHOSPHORUS	mg/L		NA	<0.2 U	NA	0.488	NA	NA	NA	0.909	NA	NA	NA
Total Organic Carbon (415.1)													
TOTAL ORGANIC CARBON (TOC)	mg/L		NA	37.9	NA	19.5	NA	NA	NA	10.3	NA	NA	NA
Iron (6010C)													
IRON	mg/L		<0.1 U	NA	0.155	NA	6.93	NA	NA	NA	4.45	NA	NA
Manganese (6020A)													
MANGANESE	mg/L	1.1	0.0536	NA	0.0997	NA	0.468	NA	NA	NA	0.0557	NA	NA
Perchlorate (6850)													
PERCHLORATE	ug/L	17	NA	8650	NA	<0.2 U	NA	<0.2 U	<0.2 U	0.846	NA	<0.2 U	<0.2 U
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/L	35	NA	<25 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	NA	<25 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	NA	<20 U	NA	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	NA	<25 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	NA	7.75 J	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U
1,1-DICHLOROETHENE	ug/L	7	NA	<50 U	NA	<1 U	NA	<1 U	<1 U	<1 U	NA	<1 U	<1 U
1,1-DICHLOROPROPENE	ug/L	9.1	NA	<25 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	NA	<15 U	NA	<0.3 U	NA	<0.3 U	<0.3 U	<0.3 U	NA	<0.3 U	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	NA	<50 U	NA	<1 U	NA	<1 U	<1 U	<1 U	NA	<1 U	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	NA	<20 U	NA	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	NA	<25 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	NA	<100 U	NA	<2 U	NA	<2 U	<2 U	<2 U	NA	<2 U	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	NA	<25 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	NA	<12.5 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	NA	36.7 J	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	NA	<20 U	NA	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	NA	<25 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	NA	<25 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	NA	<20 U	NA	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	NA	<12.5 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U
2,2-DICHLOROPROPANE	ug/L	13	NA	<25 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
2-BUTANONE	ug/L	15000	NA	<250 U	NA	<5 U	NA	<5 U	<5 U	<5 U	NA	<5 U	<5 U
2-CHLOROTOLUENE	ug/L	490	NA	<12.5 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U
2-HEXANONE	ug/L	120	NA	<250 UJ	NA	<5 UJ	NA	<5 U	<5 U	<5 U	NA	<5 U	<5 U
4-CHLOROTOLUENE	ug/L	490	NA	<25 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U

LHAAP-50 Semi-Annual MNA Sampling - November 2016

Sample ID: Sample Date:	Units	MCL/ PCL/ UTL	50WW12FF- 110116 11/1/2016	50WW13- 110116 11/1/2016	50WW13FF- 110116 11/1/2016	50WW14- 110116 11/1/2016	50WW14FF- 110116 11/1/2016	50WW15- 110216 11/2/2016	50WW15FD- 110216 11/2/2016	50WW16- 110216 11/2/2016	50WW16FF- 110216 11/2/2016	50WW17- 110416 11/4/2016	50WW18- 110316 11/3/2016
4-METHYL-2-PENTANONE	ug/L	2000	NA	<250 U	NA	<5 U	NA	<5 U	<5 U	<5 U	NA	<5 U	<5 U
ACETONE	ug/L	22000	NA	<250 U	NA	<5 U	NA	<5 U	<5 U	<5 U	NA	<5 U	<5 U
BENZENE	ug/L	5	NA	<12.5 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U
BROMOBENZENE	ug/L	200	NA	<12.5 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	NA	<20 U	NA	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	NA	<25 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
BROMOFORM	ug/L	120	NA	<50 U	NA	<1 U	NA	<1 U	<1 U	<1 U	NA	<1 U	<1 U
BROMOMETHANE	ug/L	34	NA	<50 U	NA	<1 U	NA	<1 U	<1 U	<1 U	NA	<1 U	<1 U
CARBON DISULFIDE	ug/L	2400	NA	<50 U	NA	<1 U	NA	<1 U	<1 U	<1 U	NA	<1 U	<1 U
CARBON TETRACHLORIDE	ug/L	5	NA	<25 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
CHLOROBENZENE	ug/L	100	NA	<12.5 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U
CHLOROETHANE	ug/L	98000	NA	<50 U	NA	<1 U	NA	<1 U	<1 U	<1 U	NA	<1 U	<1 U
CHLOROFORM	ug/L	240	NA	<12.5 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U
CHLOROMETHANE	ug/L	70	NA	<50 U	NA	<1 U	NA	<1 U	<1 U	<1 U	NA	<1 U	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	NA	228	NA	2.76	NA	6.63 J	5.37 J	<0.5 U	NA	<0.5 U	<0.5 U
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	NA	<25 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	NA	<25 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
DIBROMOMETHANE	ug/L	120	NA	<25 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	NA	<25 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
ETHYLBENZENE	ug/L	700	NA	<25 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	NA	<25 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	NA	<25 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
M,P-XYLENE	ug/L	10000	NA	<50 U	NA	<1 U	NA	<1 U	<1 U	<1 U	NA	<1 U	<1 U
METHYLENE CHLORIDE	ug/L	5	NA	<25 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
NAPHTHALENE	ug/L	490	NA	<20 U	NA	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U
N-BUTYLBENZENE	ug/L	1200	NA	<25 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
N-PROPYLBENZENE	ug/L	980	NA	<12.5 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U
O-XYLENE	ug/L	10000	NA	<25 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	NA	<25 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	NA	<25 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
STYRENE	ug/L	100	NA	<12.5 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	NA	<25 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	NA	<25 U	NA	<0.5 U	NA	1.89 J	0.917 J	<0.5 U	NA	<0.5 U	<0.5 U
TOLUENE	ug/L	1000	NA	<25 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	NA	<25 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	NA	<50 U	NA	<1 U	NA	<1 U	<1 U	<1 U	NA	<1 U	<1 U
TRICHLOROETHENE	ug/L	5	NA	6050	NA	10.9	NA	9.52 J	7.1 J	2.72	NA	<0.5 U	<0.5 U
TRICHLOROFLUOROMETHANE	ug/L	7300	NA	<25 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	NA	<25 U	NA	<0.5 U	NA	1.18 J	0.927 J	<0.5 U	NA	<0.5 U	<0.5 U
Inorganic Anions (9056)													
CHLORIDE	mg/L		NA	306	NA	370	NA	NA	NA	6.59	NA	NA	NA
NITRATE	mg/L	10	NA	<0.4 U	NA	<0.4 U	NA	NA	NA	<0.2 U	NA	NA	NA
NITRITE	mg/L	1	NA	<0.4 U	NA	<0.4 U	NA	NA	NA	<0.2 U	NA	NA	NA
SULFATE	mg/L		NA	347	NA	339	NA	NA	NA	38	NA	NA	NA
Dissolved Gases (RSK-175)													
CARBON DIOXIDE	ug/L		NA	464000	NA	309000	NA	NA	NA	599000	NA	NA	NA
ETHANE	ug/L		NA	<2 U	NA	<2 U	NA	NA	NA	<2 U	NA	NA	NA
ETHENE	ug/L		NA	<2 U	NA	<2 U	NA	NA	NA	<2 U	NA	NA	NA
METHANE	ug/L		NA	17.9	NA	9.64	NA	NA	NA	15.3	NA	NA	NA

LHAAP-50 Semi-Annual MNA Sampling - November 2016

Sample ID: Sample Date:	Units	MCL/ PCL/ UTL	50WW12FF-110116 11/1/2016	50WW13-110116 11/1/2016	50WW13FF-110116 11/1/2016	50WW14-110116 11/1/2016	50WW14FF-110116 11/1/2016	50WW15-110216 11/2/2016	50WW15FD-110216 11/2/2016	50WW16-110216 11/2/2016	50WW16FF-110216 11/2/2016	50WW17-110416 11/4/2016	50WW18-110316 11/3/2016
SM4500-S-(-2)-F-2000													
SULFIDE	mg/L		NA	<1 U	NA	<1 U	NA	NA	NA	<1 U	NA	NA	NA

Blue Highlighting Indicates concentrations above the MCL/PCL/UTL

Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

Metals results for "FF" samples are dissolved.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Limit

mg/L - milligrams per liter

NA - not analyzed

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

UTL - Upper Tolerance Limit

LHAAP-50 Semi-Annual MNA Sampling - November 2016

Sample ID: Sample Date:	Units	MCL/ PCL/ UTL	50WW19-110416 11/4/2016	50WW21-110316 11/3/2016	50WW22-110216 11/2/2016	50WW22FF-110216 11/2/2016	50WW23-110116 11/1/2016	50WW23FF-110116 11/1/2016	50WW24-110316 11/3/2016	50WW27-110216 11/2/2016
Location Description:			Site 50 - ENE, fully-penetrating shallow, outside site boundary, near Site 67.	Site 50 - E, upper shallow, outside site boundary, east side of S. Crockett Ave.	Site 50 - SE, upper shallow, outside site boundary.	Site 50 - SE, upper shallow, outside site boundary. Filtered.	Site 50 - E, upper shallow, outside site boundary.	Site 50 - E, upper shallow, outside site boundary. Filtered.	Site 50 - ENE, upper shallow, outside site boundary.	Site 50 - N, upper shallow, outside site boundary, east of S. Crockett Ave.
Alkalinity (310.2)										
ALKALINITY, TOTAL	mg/L		NA	NA	407	NA	253	NA	NA	NA
Phosphours (365.4)										
PHOSPHORUS	mg/L		NA	NA	<0.2 U	NA	<0.2 U	NA	NA	NA
Total Organic Carbon (415.1)										
TOTAL ORGANIC CARBON (TOC)	mg/L		NA	NA	26	NA	15.6	NA	NA	NA
Iron (6010C)										
IRON	mg/L		NA	NA	NA	<0.1 U	NA	<0.1 U	NA	NA
Manganese (6020A)										
MANGANESE	mg/L	1.1	NA	NA	NA	0.0039 J	NA	0.0288	NA	NA
Perchlorate (6850)										
PERCHLORATE	ug/L	17	<0.2 U	0.581	1.02	NA	4.76	NA	<0.2 U	0.124 J
Volatile Organic Compounds (8260B)										
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	NA	<0.4 U	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U
1,1-DICHLOROETHENE	ug/L	7	<1 U	<1 U	<1 U	NA	<1 U	NA	<1 U	<1 U
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	<0.3 U	<0.3 U	NA	<0.3 UJ	NA	<0.3 U	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	<1 U	<1 U	NA	<1 U	NA	<1 U	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	NA	<0.4 U	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	<2 U	<2 U	NA	<2 U	NA	<2 U	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	NA	<0.4 U	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	NA	<0.4 U	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U
2-BUTANONE	ug/L	15000	<5 U	<5 U	<5 U	NA	<5 U	NA	<5 U	<5 U
2-CHLOROTOLUENE	ug/L	490	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U
2-HEXANONE	ug/L	120	<5 U	<5 U	<5 U	NA	<5 UJ	NA	<5 U	<5 U
4-CHLOROTOLUENE	ug/L	490	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 UJ	NA	<0.5 U	<0.5 U

LHAAP-50 Semi-Annual MNA Sampling - November 2016

Sample ID: Sample Date:	Units	MCL/ PCL/ UTL	50WW19- 110416 11/4/2016	50WW21- 110316 11/3/2016	50WW22- 110216 11/2/2016	50WW22FF- 110216 11/2/2016	50WW23- 110116 11/1/2016	50WW23FF- 110116 11/1/2016	50WW24- 110316 11/3/2016	50WW27- 110216 11/2/2016
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	<5 U	<5 U	NA	<5 U	NA	<5 U	<5 U
ACETONE	ug/L	22000	<5 U	<5 U	<5 U	NA	<5 U	NA	<5 U	<5 U
BENZENE	ug/L	5	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U
BROMOBENZENE	ug/L	200	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	NA	<0.4 U	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U
BROMOFORM	ug/L	120	<1 U	<1 U	<1 U	NA	<1 U	NA	<1 U	<1 U
BROMOMETHANE	ug/L	34	<1 U	<1 U	<1 U	NA	<1 U	NA	<1 U	<1 U
CARBON DISULFIDE	ug/L	2400	<1 U	<1 U	<1 U	NA	<1 U	NA	<1 U	<1 U
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U
CHLOROBENZENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U
CHLOROETHANE	ug/L	98000	<1 U	<1 U	<1 U	NA	<1 U	NA	<1 U	<1 U
CHLOROFORM	ug/L	240	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U
CHLOROMETHANE	ug/L	70	<1 U	<1 U	<1 U	NA	<1 U	NA	<1 U	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	0.498 J
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U
DIBROMOMETHANE	ug/L	120	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U
ETHYLBENZENE	ug/L	700	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U
M,P-XYLENE	ug/L	10000	<1 U	<1 U	<1 U	NA	<1 U	NA	<1 U	<1 U
METHYLENE CHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U
NAPHTHALENE	ug/L	490	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	NA	<0.4 U	<0.4 U
N-BUTYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U
N-PROPYLBENZENE	ug/L	980	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U
O-XYLENE	ug/L	10000	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U
STYRENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U
TOLUENE	ug/L	1000	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	<1 U	<1 U	NA	<1 U	NA	<1 U	<1 U
TRICHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U
Inorganic Anions (9056)										
CHLORIDE	mg/L		NA	NA	856	NA	1740	NA	NA	NA
NITRATE	mg/L	10	NA	NA	<2 U	NA	<2 U	NA	NA	NA
NITRITE	mg/L	1	NA	NA	<2 U	NA	<2 U	NA	NA	NA
SULFATE	mg/L		NA	NA	658	NA	99.9	NA	NA	NA
Dissolved Gases (RSK-175)										
CARBON DIOXIDE	ug/L		NA	NA	828000	NA	274000	NA	NA	NA
ETHANE	ug/L		NA	NA	<2 U	NA	<2 U	NA	NA	NA
ETHENE	ug/L		NA	NA	<2 U	NA	<2 U	NA	NA	NA
METHANE	ug/L		NA	NA	<2 U	NA	<2 U	NA	NA	NA

LHAAP-50 Semi-Annual MNA Sampling - November 2016

Sample ID: Sample Date:	Units	MCL/ PCL/ UTL	50WW19- 110416 11/4/2016	50WW21- 110316 11/3/2016	50WW22- 110216 11/2/2016	50WW22FF- 110216 11/2/2016	50WW23- 110116 11/1/2016	50WW23FF- 110116 11/1/2016	50WW24- 110316 11/3/2016	50WW27- 110216 11/2/2016
SM4500-S-(-2)-F-2000										
SULFIDE	mg/L		NA	NA	<1 U	NA	<1 U	NA	NA	NA

Blue Highlighting Indicates concentrations above the MCL/PCL/UTL

Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

Metals results for "FF" samples are dissolved.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Limit

mg/L - milligrams per liter

NA - not analyzed

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

UTL - Upper Tolerance Limit

LHAAP Surface Water and Perimeter Well Sampling - November 2016

Location ID: / Sample Date:	Units	MCL/ PCL	GPW 1 - 112916 11/29/2016	GPW 3 - 112916 11/29/2016	HBW 1 - 112916 11/29/2016	HBW 7 - 112916 11/29/2016	HBW 10 - 112916 11/29/2016	PW110- 110716 11/7/2016	PW110FD- 110716 11/7/2016	PW111- 110716 11/7/2016	PW112- 110716 11/7/2016
Location Description:			Goose Prairie Creek - Grab sample, collected off a bridge on the north side of LHAAP-50 Sampled Quarterly if the creek contains water	Goose Prairie Creek – Grab sample, collected near a bridge inside of LHAAP-47 Sampled Quarterly if the creek contains water	Harrison Bayou - Grab sample, south of LHAAP-16, downhill, and below the pump house Sampled Quarterly if the creek contains water	Harrison Bayou - Grab sample, collected near the GWTP creek discharge Sampled Quarterly if the creek contains water	Harrison Bayou - Grab sample, at the backside of the Well field, down in the woods Sampled Quarterly if the creek contains water	LHAAP Perimeter – SSE. Sampled annually.	LHAAP Perimeter – SSE. Sampled annually. Duplicate	LHAAP Perimeter – WSW. Sampled annually.	LHAAP Perimeter – WNW. Sampled annually.
Perchlorate (6850)											
PERCHLORATE	ug/L	17	0.301 J	0.563	<0.2 U	0.318 J	<0.2 U	<0.2 U	<0.2 U	<0.2 U	<0.2 U

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Limit

PCL – Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level

U - Undetected: The analyte was analyzed for, but not detected.

ug/L - micrograms per liter

DEPARTMENT OF THE ARMY
LONGHORN ARMY AMMUNITION PLANT
POST OFFICE BOX 220
RATCLIFF, AR 72951

January 27, 2017

DAIM-ODB-LO

Mr. Rich Mayer
US Environmental Protection Agency
Federal Facilities Section R6
1445 Ross Avenue
Dallas, TX 75202-2733

Re: Final Revised Feasibility Study for LHAAP-18/24, Burning Ground No. 3 and Unlined Evaporation Pond at Longhorn Army Ammunition Plant, Karnack, Texas, January 2015

Dear Mr. Mayer,

As discussed during the January Monthly Manager's Meeting, the above referenced document will be considered the final version based on the resolution of agency comments during a conference call held on 12/14/16 and acceptance email on 12/16/16. Amended Comment Response Matrices documenting Agency concurrence with the Army's responses are attached for your file.

The document was prepared by AECOM on behalf of the Army as part of AECOM's Performance Based Remediation contract for the facility. I ask that Debra Richmann, AECOM's Project Manager, be copied on any communications related to the project.

The point of contact for this action is the undersigned. I may be contacted at 479-635-0110, or by email at rose.m.zeiler.civ@mail.mil.

Sincerely,

Rose M. Zeiler, Ph.D.
Longhorn AAP Site Manager

Copies furnished:
A. Palmie, TCEQ, Austin, TX
P. Bruckwicki, Caddo Lake NWR, TX
R. Smith, USACE, Tulsa District, OK
A. Williams, USACE, Tulsa District, OK
N. Smith, USACE, San Antonio, TX
D. Richmann, AECOM – San Antonio, TX (for project files)

DEPARTMENT OF THE ARMY
LONGHORN ARMY AMMUNITION PLANT
POST OFFICE BOX 220
RATCLIFF, AR 72951

January 27, 2017

DAIM-ODB-LO

Ms. April Palmie
Texas Commission on Environmental Quality Superfund Section, MC-136
12100 Park 35 Circle, Bldg D
Austin, TX 78753

Re: Final Revised Feasibility Study for LHAAP-18/24, Burning Ground No. 3 and Unlined Evaporation Pond at Longhorn Army Ammunition Plant, Karnack, Texas, January 2015

Dear Ms. Palmie,

As discussed during the January Monthly Manager's Meeting, the above referenced document will be considered the final version based on the resolution of agency comments during a conference call held on 12/14/16 and acceptance email on 12/16/16. Amended Comment Response Matrices documenting Agency concurrence with the Army's responses are attached for your file.

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Responses to Comments on
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Longhorn Army Ammunition Plant, Karnack, Texas

Document Date: October 2016

Reviewer: Rich Mayer, EPA

Respondent: Debra Richmann and Doug Gray, AECOM

1. Respondent Concurs (C), Does Not Concur (D), Takes Exception (E), or Delete (X).
2. Commentor Agrees (A) with response, or Does not Agree (D) with response.

Comment #	Page	Section/ Paragraph	Comment	C, D, E or X[1]	Response	A or D[2]
1	Page VI	Acronyms and Abbreviations	(a). Please add DCE to the list (first use on page xiii). (b). Please add TSD to the list (first use on page 1-3) (c). Please add SDWA to the list (first use on page 3-4). (d). Please add ASTM to the list (first use on page 4-20) (e). Please remove FR from the list, since it is not used in document.	C	(a). Removed cis-1,2-DCE and replaced with DCE – dichloroethene – in the list of Acronyms and Abbreviations. (b). Added to the list of Acronyms and Abbreviations. (c). Added as above; also SDWA is first used and defined) on page 2-2. (d). Added as above; also added definition at first use on page 4-20. (e). FR not removed from list since it is used in the document (first use on page 3-2), where it is now also defined.	A
2		Table of Contents	The electronic version of the table of contents is incomplete.	C	The partial TOC in electronic version has been replaced with the complete TOC.	A
3	Page XII		Please add references for Camp, Dresser, and McKee 1986 and Final Updated PSI AECOM 2016, to the reference page.	C	The references have been added to Section 7 – References (Note-Final Updated PSI Report is AECOM, 2016a).	A
4	Page XIII	Minor Editorial Comment	First use of MSC, please define in text.	C	Added definition of MSC to the text on first use.	A
5	Page XV	First paragraph		X	No comment provided.	A
6	Page 1-1	Section 1.1, First Paragraph	Please include references for the work conducted by the Army in 2013 and 2104 (PSI?).	E	The 2013 and 2014 investigation results are presented in the Updated PSI Report, which has been added to the references in Section 7 (AECOM, 2016a).The text in Section 1.1 has been revised accordingly.	A
7	Page 1-2	First Bullet	Please add AECOM 2015 reference to reference list.	C	The year of the reference in the first bullet, 2015, is incorrect. It has been corrected in the text (2016a) and added to the references in Section 7, as noted in the response to comment 6.	A

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Comment #	Page	Section/ Paragraph	Comment	C, D, E or X[1]	Response	A or D[2]
8		Table ES-1, Comparative Analysis of Alternative	For alternatives 2 and 3, EPA considers the timeframes (several hundred and 500 years) as being unreasonable.	E	Noted. However, as stated in the Alternative 2 text, because the use of groundwater as a water supply is unlikely based on future land use at LHAAP-18/24, the time frame to achieve groundwater ARARs could be considered acceptable. For Alternative 3, ARARs would be achieved in 20 years outside the containment, but would require an ARAR waiver for groundwater inside the slurry wall which is allowed under CERCLA if properly justified. No changes were made to Table ES-1.	A
9	Page 1-2		Please see the reference section for USACE, 1993. There are two USACE 1993 references, so please add an a and b to distinguish them.	C	Cannot find a USACE, 1993 reference on indicated page 1-2. There should only be one reference for USACE, 1993 in Section 7 – it is for the source documents used for Figures 1-8, 2-3, and 2-4, which show the Shallow Zone potentiometric surface and/or COC concentrations, based on November 1992 data. The full citation is already included in the References section. It is also identified on each of these figures and will be inserted in the text where these figures are introduced. The second USACE, 1993 reference in Section 7 has been removed, because it is not referred to in the revised FS.	A
10	Page 1-4	First Paragraph, Second Sentence	EPA agrees that there are no natural drainages within the containment area, but based on previous site visits there does appear to be surface drainages developed on the eastern side (developed during broken pipe) and in the northwestern corner (excessive sprinkling). Please revise.	C	Assume this comment refers to the first paragraph of Section 1.4. The following was added at the end of the referenced sentence: “, however, minor drainage paths have been observed in the northwestern part of the site, associated with intermittent ponding in low areas after heavy rainfall events”. The eastern side of the site is flat, and as such, any limited runoff is not channelized.	A

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Comment #	Page	Section/ Paragraph	Comment	C, D, E or X[1]	Response	A or D[2]
11		Figure 1-6 (EPA Comment No. 6 from PSI addendum)	Monitoring well MW-20 is known to be in a perched zone. The new well, 18CPTMW22R appears to be completed in the same perched zone. EPA recommends not using these wells for groundwater level contouring.	C	The figure was changed and the referenced wells were not used for shallow zone groundwater level contouring.	A
12	Page 1-6	Minor Editorial Comment, First Paragraph	Please see typo error about midway through the paragraph. Please remove "4".	C	The typo "4" has been deleted in the clean pdf document (it did not appear in the redline version).	A
13	Page 1-6	Section 1.6, Table 1-1	Please include all references in this section and table in the reference section (i.e., U.S. Army Environmental Agency, 1982 and etc.).	E	Some of the items included Table 1-1 are not actually documents, i.e., bulleted items describing activities included in primary reference documents, or are secondary references that were not consulted. Primary references that were used to develop this revised FS are included in Section 7 – References.	A
14		Figure 1-9, Minor Editorial Comment	Please check the explanation and legend on the figure to ensure what is listed is shown on the figure. In this case, FD and others are not shown on map.	C	FD, F, and UJ are not used in the figure, so were deleted from the explanation.	A
15	Page 1-7	Second Paragraph	Please include Shaw 2007 reference in reference section. There is already a Shaw 2007a and 2007b, but EPA believes the one mentioned in the text refers to a different document.	C	The reference for the pilot study, (Shaw, 2007c), has been added.	A
16	Page 1-9		The first use of GWP-ind, please define.	D	The first use of GWP-Ind is on page 1-8 (first bullet), where it is defined.	A
17		Figure 1-20	It is obvious that there has been a lot of effort in compiling the more recent and historical soil data. It would be helpful if the explanation has the year the data was collected for each soil sample. EPA recommends adding a label for the ACD on the map since the text references the area west and south of the ACD.	C	The year the soil samples were collected and the sources of the information have been added to Figure 1-20. The ACD is now labelled on the figure.	A

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Comment #	Page	Section/ Paragraph	Comment	C, D, E or X[1]	Response	A or D[2]
18	Page 1-9	First Paragraph	The text states that the water levels range between 3.41 and 6.25 bgs. in monitoring wells 120 and AWD-1 and that these are the natural groundwater table. As stated in previous comments on saturated soils at 18/24, both of these wells are in an area that is typically saturated by irrigation. The comparison of the water levels from the 1992 data does indicate water levels are within a few feet of the current elevation (PSI), but EPA would recommend being more conservative with the depths due to irrigation. What is more cost effective for the Army, soil removal or groundwater extraction and treatment? 12/16/16 Follow-on comment: "EPA agrees with the wording changes which depicts a more accurate condition of that region. EPA's point (from the last sentence of the comment) is that soil remediation is generally less expensive that groundwater remediation."	E	The statement "the impacted soil …is within the natural groundwater table fluctuations and is considered saturated soil" was modified to "is within the range of observed groundwater table fluctuations, considering seasonal variations and potential intermittent influences from irrigation at the site". With regard to cost effectiveness, the FS is intended to evaluate and identify potential remedial alternatives related to the entire site. Noted.	A [3]
19	Page 2-2	First Paragraph, Third to Last Sentence, Minor Editorial Comment	Please see minor typo error "discussion of".	C	A space was inserted between the two words. Also inserted "to" between "risk" and "a hypothetical …" in the same sentence.	A
20	Page 2-3	Last Paragraph	Have the values for dioxin and furans been updated to include EPA new numbers?	--	The values used to assess the carcinogenic risk of dioxin (2,3,7,8-TCDD equivalents) are shown in Table 2-1.	A
21	Page 2-9	Section 2.4.2.2	Please add ITRC, 2003 to the reference page.	C	The reference is listed in Section 7 as "The Interstate Technology and Regulatory Council". It has been re-named "Interstate Technology and Regulatory Council" and inserted alphabetically after the Gomes reference.	A
22	Page 2-16	First Paragraph	Please see spacing and typo error in the third sentence.	C	The spacing irregularities and missing text have been corrected. Also, in the second sentence, "liner" was changed to "layer".	A

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Comment #	Page	Section/ Paragraph	Comment	C, D, E or X[1]	Response	A or D[2]
23	Page 2-16	Last Paragraph, Second Sentence	EPA recommends mentioning that the mounding shown on maps from data collected prior to the IRA may be showing the effects of the unlined evaporation pond.	D	The UEP was closed by removing waste and installing a cap in 1986 well before 1992, thereby eliminating it as a source of enhanced recharge.	A
24	Page 2-16	Last Paragraph, Last Complete Sentence	"*The current depiction of the potentiometric lines in the Shallow Zone in the southern area of the site (Figure 1-6) consistently shows that there is no horizontal gradient to the south to facilitate migration of COCs outside the containment area*". It appears there is the potential for flow towards the southeast based on information depicted on Figure 1-6. Please clarify.	C	The text has been revised to replace "no" with "little", "…there is little horizontal gradient to the south to facilitate migration…" There is an element of flow from the high mounded area near 123 and AWD-2 to the south. However, the gradient becomes extremely flat near the southern corner of the site. Along with the extraction conditions in ICT 12A and ICT 11, little possibility exists for the contaminants to flow outside the containment to the south. It has been acknowledged in the revised text that monitoring well 18CPTMW22R is completed in a perched water zone and it was not used for contouring the shallow zone groundwater surface in revised Figure 1-6 (see response to comment 11). Therefore, the off-site groundwater high previously shown in this area no longer exists and with its removal, the previous apparent steep radial gradient off of the high is no longer present.	A

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Comment #	Page	Section/ Paragraph	Comment	C, D, E or X[1]	Response	A or D[2]
25	Page 2-17	Top of Page. Please see EPA Comment Number 6 from the PSI	*Well MW-20 is known to be in a perched zone. The new well 18CPTMW22R appears to also be completed in that small perched zone.* EPA recommends not using these wells for groundwater level contouring. If you follow this logic, then this would mean the perchlorate found in the southwest area did not come from onsite, which in previous text states the perchlorate did originate from onsite prior to IRA implementation. Is the intent to say the perchlorate in this area all migrated in from a deeper depth. Please clarify.	C	See response to Comment #11. See also the related text deletion at the end of the second to the last paragraph in Section 2.4.2.5.	A
26	Page 2-17	Second Paragraph	So far the report does not include any information about the injection and irrigation of the GWTP effluent which has an effect on groundwater levels in the containment area (especially in the northwest corner). In addition, historical data has indicated that the pumps have not been working on the north side, which would also contribute to the mounding. EPA recommends writing a few sentences to indicate that the pilot study and irrigation may be effecting the groundwater levels at different locations across the site.	D/C	The pilot study re-injection of groundwater was discontinued as of July 15, 2012 and therefore the effects would no longer be present. In Section 4.4.1.7.3 – Reinjection, the sentence before the first bullet has been replaced with the following: "However, reinjection of treated wastewater has not been performed at the GWTP since 2012 and resumption of the practice is unlikely due to potentially deleterious risks."	A
27	Page 2-18	Minor Editorial Comment, First Paragraph	Please see minor typo error "*18CPTMW04adjacent*".	C	A space was added between the well ID and "adjacent".	A
28		Table 2-11, Minor Editorial Comment	Please see minor typo error in notes at the bottom of the table "*The 2016 concentrations from ??? were used*".	C	Footnote was changed to "The concentrations from 2016 were used."	A

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Comment #	Page	Section/ Paragraph	Comment	C, D, E or X[1]	Response	A or D[2]
29	Page 2-20	First Paragraph, Text References, Figure 2-6	The actual figure is marked as figure 2-6a. The text should introduce the figures 2-6a-c. EPA recommends using some other units besides exponential notation. The 3 rows at the bottom of the graphs appear to be yearly totals, but it is difficult to see the exponent. Please revise the figures.	C E	Figure numbers have been changed to 2-6a, -6b, and -6c respectively for perchlorate, TCE, and MC in the text and the LOF. The last three rows at the bottom of the graph have been deleted because the information is redundant. It is provided at the top of each annual bar.	A
30	Page 2-21	Section 2.4.3, Wilcox Formation Groundwater	EPA agrees with the saturated thickness within the Wilcox used to determine potential mass of the COCs. However, there are several locations as stated in the comments on the PSI where the vertical extent of the COCs is not known. In particular, MW-14 has had a detection of >200,000 µg/L in lower section of the screened interval. The concentrations below that location is unknown, so the mass estimates could be low. A secondary issue is that the ICT concentrations of COCs tend to be higher than in monitoring wells. Are the ICT concentrations being considered in the calculation in determining mass?	C	It is acknowledged that the mass estimates could be low in certain areas of the site. However, it is also noted that the high concentration in MW-14 is likely limited in aerial extent as illustrated by the low perchlorate concentrations in surrounding MWs screened in the Wilcox. Therefore while some underestimate of calculated mass may be possible with respect to the overall distribution of mass in the subsurface the current estimate is believed to be suitable for use in evaluating the various potential remedial alternatives in this area of the site. The first complete sentence in the paragraph at the top of page 2-23 states: "For every one (1) foot increase in impacted thickness, the dissolved mass would increase by a factor of ~5%, assuming the groundwater concentrations remain unchanged." The ICT concentrations are used for determining the mass of COCs recovered, but the estimates of dissolved phase mass are based on the isoconcentration contours for the respective COCs, as depicted in the associated figures in the FS.	A
31	Page 2-23	Last Sentence	The first use of UCL. Please define here.	C	The definition – upper confidence limit – has been added.	A

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Comment #	Page	Section/ Paragraph	Comment	C, D, E or X[1]	Response	A or D[2]
32	Page 2-24	First Paragraph, Second Sentence	EPA recommends deleting the sentence since it compares mounding between 1992 shallow groundwater and 2016 Wilcox aquifer wells. The mounding for 1992 is located in a different location and second there was very little data collected in the Wilcox until recently.	C	The second sentence has been deleted.	A
33	Page 2-25	Section 2.4.4	The text states an effective porosity of 25 percent was used. This value seems to be high for the effective porosity since the Wilcox is predominantly fine grained. Are there geotechnical data to support the use of the 25 effective porosity? It appears the flux is being calculated through the clay, so the effective porosity should be lower than 25 percent. Table 2-22 appears to be using .110 for effective porosity, so please revise the text to agree to what is shown in the table. Also, please note that there is a typo error in the spelling of conductivity in the table. Also, please reference where the hydraulic conductivity value of clay originated.	C/E	The comments have been addressed by revised text. The sentence reading "*An effective porosity of 25% of the total porosity was assumed.*" Has been replaced with "An effective porosity of 11% is 25% of the reported total porosity of of 44% for the clay. The reference to 25% and the effective porosity of 11% in Table 2-22 have been provided in a footnote. In fact, 11% effective porosity was assumed for the calculation of mass flux through the clay layer. The typo for conductivity in Table 2-22 has been corrected. The reference for the hydraulic conductivity value for the clay is from a soil sample from 18CPTMW01 from a depth of 40 – 40.5 feet bgs. Table 2-22 has been revised to move the reference from the column label to a footnote at the bottom of Table 2-22.	A
34	Page 2-25	Section 2.4.4, General Comment	This section has several inconsistencies between the tables and text. EPA found the section to be confusing, therefore, EPA would like to have a technical discussion with the Army and their contractor to clarify certain sections. EPA did include a few comments found below, but feels it would be better to discuss the section face to face than to write multiple comments and questions. EPA does recognize the efforts to use the new data to further characterize the vertical component at the site.	C	A call was scheduled at a mutually agreeable time to have a real-time discussion of this section. Prior to that call, the text and tables were reviewed for inconsistencies, which were identified during the discussion.	A

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Comment #	Page	Section/ Paragraph	Comment	C, D, E or X[1]	Response	A or D[2]
35	Page 2-25	Table at the Bottom of Page	The concentrations of TCE, MC, and perchlorate in MW-2 from June 2016 concentrations do not match with the values shown on the isopleth figures. Therefore, the ratio calculation is not correct. The values should be 15.5, 21.3, and .033. Please check the maximum values, since the perchlorate value shown in the table for MW-2 shows 32.2 ug/l in October 2000 and figure 2-5 shows 40 ug/l for perchlorate in April 2001. The concentrations for MW-7 agree with the June 2016 maps. In addition, EPA would like to have a brief technical discussion with the Army and their consultants to discuss the vertical mass flux determination. In some places the text is not clearly understood.	E/C	Please note that the values in the table at the bottom of page 2-25 are in mg/L, not µg/L as indicated in the third sentence of the comment. However, the maximum perchlorate concentration should be 40 mg/L (April 2001) and has been corrected in the table. The table has also been revised to reflect the reported concentrations for MC, TCE and perchlorate in MW-2 as 21.3 mg/L, 15.5 mg/L, and 0.033 mg/L, respectively. Based on this revision, the calculated ratios for MC, TCE and perchlorate were revised to 1,254, 98.1, and 1,212, respectively. The revised ratios still reflect a 2 to 3 orders of magnitude decrease in concentrations from maximum values and therefore the conclusions discussed on the following page (2-26) are still valid.	A
36	Page 2-26	First Paragraph	The first sentence is confusing. *"As can be seen from the data for monitoring wells MW-2 and MW-7, the ratio of COC between the maximum reported concentrations and the most recent concentrations ranges in MW-2 ranges between 7.1 and 322,000."* Please rewrite as follows: "As can be seen from perchlorate data for monitoring wells MW-2 and MW-7, the ratio of perchlorate between the maximum reported concentrations and the most recent concentrations ranges between 7.1 and 322,000. Please note that he 322,000 value will most likely change based on the previous comment.	C	The referenced sentence has been re-written as indicated except the maximum ratio value is changed to 1,212 (see response to previous comment).	A
37	Page 2-29	Minor Editorial Comment, Last Sentence	EPA recommends changing the end of sentence from "*be evaluated in the Revised FS*" to "be evaluated in this FS".	C	Assume this comment refers to the last sentence of the third paragraph on page 2-29. The suggested change has been made.	A
38	Page 3-1	Last Paragraph	This is the first use of NCP in text. Please define.	C	The definition of NCP – National Oil and Hazardous Substances Pollution Contingency Plan – has been added.	A

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39	Page 3-4	Section 3.2.2.2	This is the first use of SDWA in text. Please define.	D	The first use of SDWA is on page 2-2, where it is defined as the Safe Drinking Water Act.	A
40	Page 4-2	First Bullet, Last Sentence	EPA has made this same comment on the draft FS and PSI documents. EPA agrees that the recent additional work has greatly improved the understanding of the hydrogeology and plume delineation. However, there are still some locations at the site where the groundwater concentrations are above the MCL (at Wilcox wells which do not have deeper screened wells in the vicinity, i.e., MW-14), thus the vertical extent of the contamination is not known. EPA has agreed that these additional deeper wells can be installed during the RD.	--	Noted. The last sentence was changed to indicate that the "lateral" extent of contamination in the Wilcox Formation is known, however determination of the maximum vertical extent of contamination may require installation of additional deeper Wilcox wells during the design phase".	A
41	Page 4-3	Second to last Paragraph	Please add "shallow' in front of "groundwater (118,000 µg/L …), since higher concentrations have been found in the Wilcox.	C	The word "shallow" has been added before "groundwater".	A
42	Page 4-20	Last Paragraph	The first use of ASTM, please define.	C	The definition of ASTM – American Society for Testing and Materials – has been added.	A
43	Page-4-27	General Comment	Please include the other options for effluent water discharge or storage (i.e., larger tank to hold water until it can be released to bayou). EPA would prefer that no effluent water be disposed of onsite by irrigation or injection.	E	Since all of the potential remedial alternatives were screened with the same assumption of effluent handling, revising the handling of effluent would not result in any substantive change in the comparison of alternatives. Therefore, this issue is more appropriate to address in the remedial design phase. Also, as indicated in the response to comment 26, in Section 4.4.1.7.3 – Reinjection, the sentence before the first bullet has been replaced with the following: "However, reinjection of treated wastewater has not been performed at the GWTP since 2012 and resumption of the practice is unlikely due to potentially deleterious risks."	A

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44	Page 5-4		The first use of ISB in text. Please define.	D	The first use of ISB is on page xiv (Executive Summary), where it is defined in the title of Alternative 2. The first use of ISB in the main body of the text is on page 4-19, where it is also defined.	A
45	Page 5-5	Minor Editorial Comment	Figure 5-2 is discussed in text before Figure 5-1. EPA suggests renumbering the figures to flow with the text.	C	The text has been revised to discuss Figure 5-1 before Figure 5-2.	A
46		Figure 5-3	EPA was looking for monitoring well 18WW02 on this figure, since it is mentioned in text. Please add this well to the figure. Also, EPA suggests removing well 18CPTMW22SW from both Figures 5-2 and 5-3, since it is the only Wilcox well shown on the figure.	C	Monitoring well 18WW02 has been added to Figure 5-3, and monitoring well18CPTMW22SW has been removed from Figures 5-3 and 5-2 as requested.	A
47		Figures 5-4 thru 5-6	The DNAPL removal color designation should be changed to a different color as it is difficult to distinguish.	C	The color has been changed to a darker visible color.	A
48	Page 5-17	Section 5.2.4.2	Is this the actual title for this section? EPA believes the title should just be Enhanced ISB polishing.	C	The formatting error has been corrected.	A
49	Page 6-6	Section 6.2.2, General Comment on Alternatives	EPA was surprised not to see any remedial alternatives that address the gap in the northwest corner of the containment area (all parties agree there is potential contaminant transport through the gap and under the ICTs in the area). Do any of the alternatives address the gap in the containment system (i.e., ISB barriers, etc.)?	E	The alternatives presented in this FS do specifically address the gap in northwest corner of the containment area. As an example Alternatives 2, 4, 5 and 6 have focused remedies in the northwest area of the site in both the Shallow Zone and Wilcox Formation.	A
50		References	Please remove the following since they are not cited in the report: TCEQ, 2000; TCEQ, 2006; USEPA, 1992; USEPA, 2006; and, USEPA, 2010.	C	Indicated references have been removed from Section 7.	A

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1	General	Since the Draft PSI Addendum Report and the Draft FS are being submitted concurrently and being reviewed by EPA for the first time, the Army needs to ensure that these two documents are synchronized. Under CERCLA process, the Draft PSI Addendum should be submitted before the FS. Secondly, environmental information from the complete PSI investigation, including data from monitoring wells 18CPTMW22SW, 18CRT03MWSW and 18MW24, must be fully addressed in the both the FS and in Appendix B, Draft PSI (currently neither document contain this complete information). This includes all affected tables, figures and text or any other pertinent sections which would be applicable to either document. This will require the current documents to be revised. In addition, from the review of the Draft PSI Addendum, EPA recognizes the presence of substantial contamination in the shallow Wilcox within and outside the southwest quadrant of the containment area.		The PSI report was finalized before the FS. Information from newly installed wells was included in the PSI report and the FS report. Investigation of the southwest quadrant has been conducted in March/April 2016 and the results included in a standalone investigation report and in the FS.	A				
2	General	EPA does not support deferral of unsaturated soil cleanup to some unknown future date. Although groundwater concentrations may be higher than overlying soil concentrations today, if proposed groundwater and source area remedies are successful, these source soils will eventually require appropriate management to mitigate groundwater risk. Over the timeframes contemplated, EPA believes it will be too easy for future project managers to overlook these subtle nuances and these source soils may never be addressed. Alternatively, the Feasibility Study and all subsequent documents (PP, ROD, RD, RAWP, FYR's, etc.) must make specific reference to future requirements to remediate these source soils. If deferred, the FS cost estimates should be revised to include the full costs to remediate and manage these soils.	C	The cost of remediation for the two areas beneath the UEP will be developed and included in the FS. The cost estimate will assume the remedial action, if implemented, would not occur until 2024 at the earliest, or approximately 5 years after commencing treatment. Currently, all FS alternatives include UEP cap maintenance to prevent infiltration of rainwater. Hence, the FS and all subsequent documents (PP, ROD, RD, RAWP, FYRs, etc.) will make specific reference to the future evaluation of removal of the soil under the cap.	A	Agree; however, EPA still does not understand the time delay. Is the UEP subsurface soils less of a priority versus other subsurface soils at the site? Or is the remedy based on some threshold?		The third from the last sentence of Section 5.2.2 on page 5-5 of the Revised FS has been replaced with: "Removal of contaminated soil under the UEP may be performed as a contingent remedy in the future, if conditions change such that it poses an imminent threat to human health or the environment. Currently however, the existing cap effectively prevents human contact with contaminated soil, and minimizes infiltration of precipitation/runoff that could potentially mobilize COCs in the waste and impact shallow groundwater. The cap is regularly maintained and inspected to ensure its continuing effectiveness. If in the future, groundwater monitoring detects a significant increase in COC concentrations in wells downgradient of the UEP, and/or the water table elevation rises significantly, causing a large part of the underlying waste to become saturated, a detailed evaluation would be performed to assess the need for a contingent remedy, either for the soil or for the groundwater. The RD will address the triggering criteria for evaluating whether a contingent remedy is needed."	A

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3	General	The current remedial system has not been optimized. Pages 2-16 of the FS (AECOM, 2015) indicates that downward head gradients occur under contaminated zones of the shallow aquifer. Additional vertical extraction wells may be needed to ensure upward flow occurs. Reactivation of several interceptor drains may also be warranted. Recharge into interceptor trenches or sprinkled lawn irrigation should not be done. Recharge of treated water near MW-1 produces mounding and facilitates downward flow into the Wilcox formation.	E	The current remedial system is running at optimum capacity. Each ICT has its own design capture zone that changes with the groundwater level and recharge rate at the site. Those capture zones cannot be optimized as they are influenced by system design, groundwater formation limitations, and groundwater elevation. Comparing shallow zone groundwater levels to the Wilcox aquifer groundwater levels from June 2014 results reveals the following well pair heads in ft amsl: MW-2 (168.73) vs. 18CPTMW01SW (168.75); MW-5 (168.87) vs. 18CPTMW08SW (168.77); MW-21 (166.48) vs. 18CPTMW07SW (168.75); MW-22 (169.64) vs. 18CPTM06SW (168.52); 18CPTMW04 (171.41) vs. 18CPTMW04SW (168.75); MW-7 (168.54) vs. 18CPTMW12SW (168.75); MW-9 (169.42) vs. 18CPTMWSW10 (168.98); 120 (172.24) vs. MW-14 (172.33); C-02 (169.50) vs. MW-13 (169.31); 18WW08 (169.07) vs. 169.04). With the exception of MW-22/18CPTMW06SW and 18CPTMW04/18CPTMW04SW, the head differences are either flat or pointing upward (examples: MW-21/18CPTMW07SW; MW-7/18CPTMW12SW; 120/MW-14). Therefore, the general statement that the heads in the impacted zones are downward does not fully represent extraction conditions. Areas MW-22 and 18CPTMW04 are the areas adjacent to and influenced by ICT9 and ICT6, respectively. As indicated during development of the conceptual site model, reinjection of treated water was deemed to be a poor practice and was discontinued. Irrigation has been occurring on the western portion of the site and the downward heads identified at the two locations above are observed on the eastern portion of the site. These areas are not influenced by irrigation water. No current recharge near MW-1 is taking place and the lack of a Wilcox well at that location precludes concluding that mounding is present there that facilitates downward flow into the Wilcox Formation. Additionally, natural mounding near 123/AWD-2 has been identified in 1992 maps, which supports that current irrigation is not causing the discussed mounding at the site. A third irrigation line has been added in January 2016 to provide a better distribution of irrigation water around the site.	A/D	EPA appreciates the additional vertical gradient analysis provided in the report. The mound observed in 1992 is most likely the remnants of the UEP. The current mounding in the shallow zone is further to the west and appears to happen in areas where there has been a history of ICT pump failures. Current maps (figure 1-7) show mounding in the northwest corner in the vicinity of MW-14 in the Wilcox. EPA agrees that there appears to be an upward head at wells MW-14/120; however, EPA has witnessed on several occasions that the area is over irrigated and the USGS geophysics (study of October 2015) indicates close to total saturation in the northwestern corner of the site which emanates outwards to Harrison Bayou, thus EPA does not concur with irrigation on the site and would prefer the release of treated effluent to the Bayou. In regards to the comment about MW-1, the report states on page 2-18 that there is a downward gradient at MW-1, probably due to the influence of injected water in the area. There are areas of downward gradient in the containment area and outside the area, so in those cases remediation should minimize or redirect the gradient. The new FS does indicate turning on two of the ICTs, so in those cases wells in those areas should show an upward gradient. In addition, until recently, there were very few wells completed in the Wilcox that could be used to determine vertical gradient, so prior to injection and irrigation, the gradients were not known.	D	Although the Army understands EPA has concerns about the use of irrigation with treated wastewater at the site, the Army does not agree that irrigation should be discontinued. Discharge to Harrison Bayou is the preferred method for treated wastewater disposition. Irrigation or temporary storage in the INF Pond is performed only when the preferred method of discharge to Harrison Bayou is precluded by inadequate or no flow in Harrison Bayou. Noted.	A

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4	General	The potentiometric head contours and the isopleths for COC concentrations both show a large amount of closed contours-particularly low heads. A hydrogeologic reason needs to exist for the low head to occur. Reasons include extraction, high permeability zones, downward flow zones, etc. Please check to see that the water level data was measured at the same time. Furthermore, the use of long screen wells may complicate the contouring because vertical flow exists and data represents different hydrogeologic units.	C	Noted. The water level at site 18/24 is typically measured within the same day with occasional situations where measurements could occur over two consecutive days. The use of closed contours is an artifact of the contouring program. Attempts to manage areas of closed contours have been implemented.	A				
5	General	It may be helpful if both hydraulic and chemical budgets are constructed for the site. Hydraulic budgets include information on the components of extracted water at the site. For the shallow aquifer, extracted water should equal= recharge+ lateral inflow to containment area + vertical upward flow. The amount of vertical upward flow is important to ensure a reduction in COC transport in the Wilcox Formation. Areas lacking the Wilcox clay should be identified and the rates of vertical transport estimated.	E	Noted – please also see the response to Comment 3. The analytical and head data currently collected are considered sufficient to characterize potential vertical transport for the current phase (FS) and to identify areas where it should be considered during the remedial design process.	A	Please see new comment 32 which pertains to the original comment and how it may have been addressed.			
6	General	A key decision on conceptualization of perchlorate at the site comes from observations of well concentrations at well 120 (p. 2-17). They indicate that the perchlorate resides in pore spaces and not as separate brine based on concentration ranges at the well. The reliability of the sampling and concentration data to reflect in situ groundwater concentrations (representing a good sample) should be high to support critical decisions. A recent EPA analysis of purge data (EPA can provide this analysis) shows that sufficient uncertainty exists on reproducibility of sampling at the site that suggests additional sampling methods may need be incorporated into the monitoring. The results of the purge analysis indicate that samples are being collected without adequate purging and the samples reflect casing water to a large degree and not fresh groundwater entering through the screen from the aquifer. Further, the sample does not integrate the potential variation of chemistry for the entire screen length, just a small part. Vertical profiling with passive samplers would help delineate the variation of COC concentration for the entire screen, after which, individual samples can be collected from the appropriate depths.	E	The majority of the wells are sampled using a low flow method, which is an accepted EPA and TCEQ methodology and is the primary method for monitoring well sampling specified in the IWWP (AECOM, July 2014). The low flow method requires wells to be purged at a low flow rate until stabilization of a specified set of water quality parameters within specified limits is achieved and representative groundwater samples can be collected. The final purge water parameters reflect the adequacy of groundwater purging. Monitoring well 120 had a perchlorate concentration of 122,000 ug/L, which is not at the level that would cause stratification. Monitoring well 120 is screened within a mostly sandy zone with little heterogeneity, so retardation or trapping of high concentrations of perchlorate in pockets is unlikely. Changes in perchlorate concentrations are typically observed over time and affected by seasonal variations. Remedial efforts targeting an area like 120 will consider worst case scenario with a factor of safety applied to the remedial design. That said, groundwater samples were collected from several wells from near the bottom of the screen (bottom samples) and from near the top of the screen (top samples). The results from these samples were shared with EPA. None of the results indicated the occurrence of stratification or inadequacy of purging.	D	EPA would agree that micro-purging is normally an acceptable technique at most sites, but the EPA study did show stratification in at least one well (MW-14) as did the Army's own sampling at the top and bottom of the screen. Based on the EPA/USGS study (October 2015), it indicated that there can be a significant difference in concentrations based on purged volume (high and low). In addition, the ICTs tend to show higher concentrations of COCs than the nearby wells, further indicating a heterogeneous system and is difficult to monitor by traditional well sampling. As an example of heterogeneity, MW-16 had a concentration of perchlorate in June 2015 of 9370 ug/l, but in June of 2016 the perchlorate concentration was 0.615 ug/l.	D	Our knowledge of the site is sufficient for remedy selection. Design and compliance monitoring details will be addressed in the remedial design and implementation phases, after the remedy is selected.	A

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7	General	Velocity and transport of COCs are not included in the FS; a surprising lack of hydraulic property information exists. COC transport rates should be included to help facilitate selection of remedy. EPA has recently completed an analysis and would be willing to provide this with the Army.	C/E	Thank you for sharing the analysis. The information may prove useful during the remedial design phase. During remedy design, transport of injected substrate over its design life span will be calculated to determine the travel length the substrate will cover. However, this will be done at the localized injection locations but not for the entire site.	A				
8	General	Table 2-13 appears to be a critical element in assigning predicted remediation times. It is unclear how Table 2-13 was created. Based on Table 2-13, remediation timeframes for alternatives presented ranged from 5 to 500 years. Additional information (see later comments) is needed to substantiate predicted timeframes.	E	Table 2-13 is determined from the total mass of each contaminant in the shallow groundwater zone and on the existing system extraction rate, assuming no attenuation of contaminants due to sorption or due to the presence of DNAPL. Tables 2-10, 2-11, and 2-12 and Figures 2-6 and 2-7 provide contaminant flux calculations and Tables 2-4 through 2-8 provide contaminant mass calculations in the shallow zone. The overall mass of a contaminant in the groundwater zone divided by the estimated extraction flux provides the average timeframe to achieve the endpoint.	A				
9	General	Proposed remedial scenarios that include injection may have unforeseen consequences such as mobilization of DNAPL to unknown locations if injections are not carefully planned. Downward movement of DNAPL to the Wilcox Formation is a concern. Technologies such as ERT heating can reduce the risk of injections.	E	Chlorinated VOC DNAPL is by nature heavier than water and has the potential to desiccate clay and migrate vertically downward. This has not occurred to date although COCs have been observed in the upper Wilcox Formation. Additionally, injection of fluids will be on a very short term basis and in limited areas of the site and not across the site, limiting the concerns about the vertical migration potential. Use of surfactants to mobilize DNAPL has its risks; however, the technology is associated with extraction of mobilized fluids at a rate that should minimize or prevent downward migration of DNAPL. Additionally, surfactants that solubilize DNAPL results in a solubilized form of DNAPL contaminants thus removing the concerns of downward movement of DNAPL to the Wilcox aquifer. That said, DNAPL mobilization during remedy assessment will be added to the risk factors.	A				
10	General	Several checks on Table 2-5, used to determine mass of COCs, disagree with what is reported. Table 2-5 should be revised to incorporate thickness and porosity in a separate column in order to follow computations more clearly. The amount of sorbed mass, included in Table 2-6, suggest that the sorbed mass for MC is equal to the dissolved whereas TCE sorbed mass is twice as much. Both sorbed calculations should be included in their entirety in	E	The porosity and thickness used in calculations in Table 2-5 are presented at the bottom of the table. An equation is introduced at the bottom of the table to provide the parameters and conversion factors used in calculating the dissolved phase mass. The observation made about soluble mass to sorbed mass ratios is correct. MC is more soluble than TCE and therefore with lower Koc, the ratio of soluble to sorbed mass for MC is higher than TCE. An equation for estimating sorbed mass on soil from	A				

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<tr><td></td><td></td><td>Table 2-6 to verify values.

Capture efficiency for the remedial system is COC dependent. The below table provides data to illustrate this point. Capture efficiency is defined as the ratio of mass flux captured to dissolved mass. Perchlorate capture is poor relative to other COCs. Why? Is it related to the capture area and plume distribution or is it a mobility issue? The fact that MC capture is almost 1:1 with the estimate of the dissolved plume mass for MC indicates that either a separate source exists for MC or the dissolved plume is underestimated.
<table>
<tr><th>Dissolved mass (Table 2-5)</th><th>COC</th><th>Mass Flux (Table 2-12, year 2014)</th><th>Annual Efficiency of capture (Mass/Diss)</th></tr>
<tr><td>12,514</td><td>Perchlorate</td><td>1,670</td><td>.13</td></tr>
<tr><td>1,181</td><td>MC</td><td>1,260</td><td>.93</td></tr>
<tr><td>651</td><td>TCE</td><td>1,393</td><td>.47</td></tr>
</table></td><td></td><td>dissolved concentrations is added to the footnote of Table 2-6.

The values shown in the table of the comment have been misplaced. The table below shows this information with corrected location of the numbers. However, the annual efficiency seems to have been correctly determined.
<table>
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</table>
The mass flux determination was based on the concentration in the extraction point and the flow rates. Since concentrations are measured only once a year, an approximation was made by assuming that the measured concentration is representative of the entire year. This is why two years of flux calculations were used to minimize dependence on a single measurement for flux calculations. The determined mass fluxes for these chemicals reflect their distribution at the site, the concentrations in each extraction point, and their physical/chemical characteristics. For example, perchlorate is present in a larger area of the site and has higher solubility than the other two chemicals which is reflected in a higher flux rate. MC is more soluble than TCE and shows a higher flux rate. The table shown in the comment only reflects the dissolved mass estimate and neglects sorbed mass and mass in DNAPL for MC/TCE. Therefore, the simple analysis to calculate capture efficiency is not a complete representation of site conditions. For MC and TCE the sources contributing to the dissolved plume are the sorbed mass and the mass within the DNAPL.</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>11</td><td>Page x</td><td>Please add the references for reports discussed in the first couple of sentences on top of this page.</td><td>C</td><td>The three references are all included in Jacobs Engineering Corporation’s reference, 2001. This information is added to clarify this point. The Jacobs’ report is included in the references section.</td><td>D</td><td>It is common practice in technical reports to include all references listed in a report. Yes, these references may be in the Jacobs report, but a reader should not have to go to another report to find the references listed in the report they are reading.</td><td>C</td><td>In the Revised FS, all documents used to develop the FS are included in the References section. However, some of the items included Table 1-1 are not actually documents, i.e., bulleted items describing activities included in primary reference documents, or are secondary references that were not consulted. It is not appropriate to include these in the references section.</td><td>A</td></tr>
</table>

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12	Page xi, 2nd Paragraph	Please define GW-ind.	E	The reference to GW-Ind is no longer valid. The document has been revised to replace references to GW-Ind with the TRRP PCL as the cleanup level for all non-MCL groundwater constituents. Definition of TRRP PCL added in text.	D	GW-Ind is still located in report and should be defined. Please see page xiii, 2nd paragraph.	C	GW-Ind is defined in the Acronyms and Abbreviations and where it first occurs on page xiii.	A
13	Page xi, First Bullet	First use of VOC, please define in text.	C	Definition added in text.	A				
14	Page xii, Alternative 3	Please define MNA (first use).	C	Definition added in text.	A				
15	Page xiii	First use of DNAPL and ZVI. Please define both in text.	C	Definition added in text. Definition for DNAPL and ZVI is found on Page xi and xiv, respectively.	A				
16	Page xi, 2nd Paragraph	EPA believes that COCs without MCLs must meet the TCEQ TRRP residential PCLs for groundwater. See the Administrators decision of October 31, 2014.	C	Please refer to the response to Comment #12.	A	Please see response to comment 12.			
17	Page xi, Groundwater RAOs	More specificity is needed in the cleanup numbers such as EPA MCLs, TRRP PCLs for contaminants without MCLs for the surface water and groundwater exposure routes.	C	Please refer to the response to Comment #12.	A	The wording is now found on page xiii.			
18	Page xii. Alternative 3	Please state how deep the slurry wall will be installed. Will a cap be used with the slurry wall?	C	Added text to provide depth of slurry wall. More details are presented in Section 5 with information detailing depth of wall at various locations around the site (see Figure 5-3). The information provides that a partial cap will be installed.	A				
19	Page 1-4, Fourth Paragraph	"*The treated water is primarily released to Harrison Bayou. Occasionally, the treated water is released to Harrison Bayou*". Are these statements accurate? It would appear to EPA that in the past few years much of the water has been re-injected or irrigated at the site, which is more of the normal occurrence than release to Bayou. Do you have the total volumes to support this statement?	C	Modified statement to indicate that the intent is to discharge primarily to Harrison Bayou with other release forms to be secondary mechanisms.	A				
20	Page 1-5, First Paragraph	The first sentence refers to Figure 1-4 that illustrates all the data collection points prior to the PSI. However, the text describes some data collected as part of the PSI (i.e., deeper monitor wells). EPA suggests adding the following statement to end of first sentence "prior to the PSI investigation".	C	The statement is added to the first sentence.	A				
21	Page 1-5, Third Paragraph	"*Localized influence of groundwater extraction can be observed in the shallow aquifer*". Please also include a statement that the influence of irrigation and problems with pumps in ICT 13 also influence	D	Mounding near ICT13 is a historical norm prior to operation of the extraction system or application of irrigation water based on information presented in Figure 1-8 where the northwestern area of the site	D	The mound shown in the 1992 figure resides near the UEP which would be expected since it was unlined. The mound has moved towards the west since installation of the IRA and now there appears	D	Please see 2004 groundwater levels for monitoring wells 123 and MW-14 presented in contour maps in Appendix III of the attached document: "Longhorn Army Ammunition Plant Groundwater Treatment	A

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		groundwater contours (mounding). EPA has observed that irrigation runoff normally flows towards the area in the northwest corner. EPA has also observed that mounding occurs along ICT 13, since a pump has not been working in that portion of the ICT.		shows higher groundwater levels. Additionally, regardless of whether ICT13 pumps are all functioning at peak capacity or any pump is malfunctioning, the mound remains persistent. For example, all six ICTs were functional (with the exception of ICT 13G which has not been operational for many years) and extracted approximately 185,000 gallons in January 2015; 291,000 in February 2015; and 222,000 gallons in March 2015; however, the water mound around monitoring well 123 persisted. Note also that the groundwater extraction system is an interim remedial measure and does not represent a final solution.		to be mounding in the Wilcox at MW-14 and EPA believes that is a reflection of constant recharge from irrigation. EPA agrees the mound seems to be continuous around monitoring well 123, but there is still constant recharge in that area from irrigation. EPA believes that the mound may dissipate if irrigation is discontinued. 12/12/16 Follow-on comment: "After careful review of the 2004 Report, EPA agrees that the ground water levels for the monitoring wells (MW-14 and 123) look very close or similar to the most recent levels taken in 2015/2016. However, EPA has observed that the contaminant levels of MW-14 and MW-16 (northwest corner of site) have increased rather dramatically since 2004. In 2004, MW-16 had no detections of perchlorate and TCE. The results for MW-16 from December 2015 indicate TCE at 433 ug/L and perchlorate at 1060 ug/L. For MW-14 in 2004, TCE was 224 ug/L, MC was ND and perchlorate was 2,190 ug/L. The results for MW-14 from December 2015 indicate TCE at 15,500 ug/L, MC at 54.7 ug/L, and perchlorate at 285,000ug/L. These wells are located in area (or close nearby) where EPA has observed excessive irrigation and runoff from the site the past 3-5 years. EPA believes that the excessive sprinkling is most likely leaching/pushing contaminants downward and outward in this region of the site. For future actions at Site 18/24, irrigation will have to be better controlled and managed for EPA approval of this practice."		Plant Annual Evaluation Report, Calendar Year 2004, Longhorn Army Ammunition Plant Site 18/24 and Site 16" (Complete Environmental Service, February 2005). These figures document the presence of historical mounding in this part of the site before the practice of irrigation began. Noted.	
22	Page 1-5, Last Paragraph	This section describes water supply wells in the area. EPA believes that there are other wells used by the public in the area, particularly one numbered 3524402 located to the northeast of LHAAP 18/24.	C	A new water well search was conducted and the information has been updated.	A				
23	Page 1-5, Figure 1-6	EPA interprets the contour map to indicate more of a complex flow pattern rather than a radial flow pattern.	C	The flow pattern depicted on Figure 1-6 is rather complex and is influenced by multiple water drainage areas and the groundwater extraction system. Groundwater flow is outward from the containment area in all directions, based on the groundwater surface contours. The text on page 1-5 has been revised to add the description "complex" to the term radial flow.	A	Please see EPA comments on PSI about the use of 18CPTMW22R for contouring.			

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24	Table 1-1	All reports listed in this table should be included in reference list at end of this report.	C	Please be specific on which references are not included. As indicated in response to comment 11 above, the four references in Table 1-1 under Jacobs 2001 are included in the report which is provided in the reference list.	D	It is common practice in technical reports to include all references listed in a report. Yes, these references maybe in the Jacobs report, but a reader should not have to go to another report to find references listed in other reports. In addition, the USEHA, 1980 reference in the table may be confused with another USEHA, 1980 that is referenced in this report. However, these are two different reports. The comment asked for ones missing from the reference, which would be USEHA, 1980; EPS, 1982; CDM, 1986; and EPA, 1987.	C	Please see response to comment 11. Also please see responses to EPA comments 3, 6, 7, 9, 13, 15, 21, and 50 on the Draft Final LHAAP-18/24 Revised FS.	A
25	Figure 1-3	Is there an extraction well(s) missing on the Figure? EPA recommends including color coded extraction rates. In other words, showing a map with contours next to the ICTs average or monthly extraction rates.	D	There are no known extraction wells missing. The intent of the figure is to show the layout of the site and the locations of former storage, disposal and treatment areas. .	A				
26	Figure 1-5	This Figure presents a three-dimension rendering of the Wilcox clay surface. Please also present an isopach map of the Wilcox clay to complement Figure 1-5. The isopach map will allow easier identification of thinner clays more easily breached by vertical contamination migration and will facilitate comparison with monitoring wells installed into the Wilcox formation.	D	The thickness of clay is known only in a limited number of locations where Wilcox wells/borings were installed, particularly inside the containment. Therefore, a true isopach map will be lacking important details, and an interpolation of Wilcox clay thickness could present misleading information.	A	However, the point should be taken that the thickness of the clay is important in regards to contaminant migration both laterally and vertically.			
27	Figure 1-7	There is no justification for the enclosed contours (no monitoring wells to the west) by well 18CPTMW12SW.	C	The cause of the contour line closure to the west of 18CPTMW12SW is related to groundwater elevation at 18WW15 to the southwest of 18CPTMW12SW which has a very similar elevation (168.59 ft amsl at 18WW15 and 168.75 ft amsl at 18CPTMW12SW). This caused the 168 ft amsl equipotential line to wrap around. However, the 167 ft amsl contour line should not be closed. The potentiometric maps have been updated to eliminate closed contours that are not justified by the data.	A	The original comment is no longer valid since the data for this map is from June 2016 and the newer data has been contoured.			
28	Figure 1-8	This figure is hard to read. EPA recommends using the revised figure 4 (somewhat easier to read) that is to scale from the USGS report entitled "Evaluation of Interim Remedial Action at Longhorn Army Ammunition Plant site 18/24, Karnack, Texas, 2012".	E	Although figure 4 may be easier to read, Army prefers the figure taken directly from the original document. The figure is a scanned map from a 1994 report. Army plans to replace the 1994 map with a map from 1992. The quality of the 1992 map is such that the contour lines and monitoring wells are clearly identified.	A	The new map from 1992 had not been seen before by EPA. It is easier to read than the 1994 map.			
29	Figure 1-2	This figure should also include the non-drinking water wells.	C	A new water well survey was conducted and the map updated.	A				

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30	Figure 1-4	While the figure is very informative, there should be individual figures provided per the media sampled.	D	This figure is added for informational purposes only to provide a representation of historical work. It was not meant to provide a detailed account of historical events.	A				
31	Figure 1-5 of Appendix B	There are four circular low potentiometric contours drawn on the map. Circular lows can only occur if they are discharge areas to wells, trenches, or evapotranspiration areas, or, there is significant vertical flow at the site.	X	This comment is related to the PSI Addendum which has been finalized.	A	The reviewer agrees that this comment is on the PSI, but one thing to note is that the gradient in the western area of the Wilcox appears to be coming from the bayou towards Longhorn Site 17 (from the map in the most recent PSI, March 2016, figure 1-5). The updated map in the FS from June 2016 (figure 1-7) data does not indicate the same feature. Well 18WW11 water level in June 2016 has decreased by almost 3 feet since the March reading. This is quite a dramatic change over a few months. EPA believes this may be due to the localized flooding which may have temporary reversed gradients within the Harrison Bayou Floodplain.		Noted.	A
32	Figure 1-10	Contours should not be enclosed between MW-14 and 18WW11 and 18WW02 because no data is shown.	C/E	The contours are closed based on data from recent sampling events indicating concentration in 18WW02 and 18WW11 below the MCL. For example, the concentration in 18WW11 was < 0.20 µg/L in December 2013. 18WW02 was reported at 0.216 µg/L in December 2014. Note the figures in the FS will be updated to include at a minimum data from December 2014 or more recent.	D	Figure 1-10 in FS does not include a concentration for well 18WW11. In addition, if the data from well 18WW02 is from December 2014, it should be flagged with a comment in the legend.	E	Figure 1-10 in the Revised FS was generated using perchlorate concentrations detected in samples from June 2016. Although 18WW11 was not sampled (no concentration is shown for this well symbol), the perchlorate concentration in the June 2016 sample from 18WW02 is <0.2U. Therefore, the closed contours are justified.	A
33	Figures 1-9 thru 14	Please ensure that all the monitoring wells installed during full PSI are included. It appears that a few are missing. Also, please include only the wells on the figure used to make isopleths. This comment also applies to all figures that show wells that are not used being for plume delineation or water level contouring.	C/D	The maps have been updated with more recent data which include all the wells. Army prefers that all the wells are included and labeled for completeness.	A				
34	Figure 1-12	The wells on this map are designated as shallow Wilcox and deep Wilcox. It appears that this map only shows shallow Wilcox data. There were some detections of VOCs in the deeper Wilcox. Please show these results on this map for the deeper Wilcox.	D	Results are shown for the wells that were sampled. No data indicates the well was not sampled.	D	For this map, it appears that only two DW wells were sampled and the remaining wells were not sampled, so the comment stands that this map is for the shallow Wilcox aquifer. EPA will expect sampling of deeper wells in the future for LTM. EPA believes that 18CPTMW08DW (perchlorate at 682 ug/l) has had several past detections above the MCL. Also, in the location of well MW-14, the vertical extent of contamination has not been determined and will need to be addressed in the future too.		Noted.	A
35	Figures 1-15 & 1-16	Please provide the MSC number in note no. 4.	E	Please see the response to Comment #12.	A				

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36	Figure 1-17	While the Figure is very informative, there should be individual Figures provided per the media or the item to be illustrated to reduce the "clutter effect" on a reviewer.	D	This figure is added for informational purposes only to provide a representation of historical work.	A				
37	Figure 1-18	EPA understands that this Figure excludes locations sourced from groundwater. From the text, the EPA assumes this means those samples within the smear zone, as defined by historically high water levels. As indicated in comments on Appendix B, EPA is not presently able to support exclusion of soils based on these criteria. Additional information may facilitate EPA acceptance of Army's proposals for excluding these soils. It is not clear if this Figure also excludes locations where the Army indicates that groundwater contamination levels are currently higher than overlying unsaturated soils concentrations even if those soil concentrations exceed groundwater protection criteria. Please clarify. This Figure may require adjustment pending outcome of additional clarifications.	D/C	The smear soil zone is part of the groundwater fluctuation zone and is considered within the groundwater aquifer and cannot be considered vadose zone soil. The impacted smear zone soil could become a secondary source of contamination to groundwater. However, if in-situ remediation of groundwater is done in a manner to leave residual substrate in groundwater or conducted under high water conditions (example when the extraction system is turned off during ISCR) then the smear zone soil will be cleaned up simultaneously with groundwater. The figure shows all points where vadose soil impacts exceeds groundwater protection standard regardless of whether the soil has higher concentrations at this time (e.g., locations 8A-975, 8A-911, and 18SB02 had higher groundwater concentration for TCE than in the soil but they are included in the remediation scope of work for unsaturated soil). Similarly, vadose zone soil concentrations under the UEP are included in this figure and will be included in the remedial design as areas of potential source of contaminants.	A				
38	Page 1-8, Area West of ACD	Based on previous soil investigations, it does not appear that there were perchlorate soil samples taken in the area of 18CPTMW22. This well detected over 100k ug/l of perchlorate. What is the source of the perchlorate in this well? How does the Army justify that there is not a soil source in this area? It appears additional soil samples need to be collected in this area to demonstrate that soil is a source or not.	C	Clarification is requested. The area west of the ACD is the area where 18CPT27 and 18CPT09 are located. Soil samples for perchlorate were collected from these samples. 18CPTMW22 is located to the south of the site and is not associated with the ACD. Evaluation of soil data in and around 18CPTMW22 was conducted and the results compiled in a standalone Supplemental PSI report which is appended to the revised FS.	A				
39	Table 1-1	The details provided for the PSI beginning in 2013 seems rather sparse compared to the amount of work performed.	D	The entire PSI Addendum report has been submitted and approved as a standalone report. The reviewer is encouraged to seek the details desired from that report.	D	More detail should be added to the additional investigations, similar to the summaries of the other reports. In the future, readers could then determine what was done for each main study instead of looking through previous reports.	D	No additional information will be added to the table. Section 1.1 of the Revised FS now includes references to the two stand-alone post-screening investigation (PSI) reports – the Updated PSI Report (AECOM, 2016a), and Supplemental to the Updated PSI Report (AECOM, 2016b). These reports provide the most recent and comprehensive information on the site since the RI (Jacobs, 2001).	A

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40	Table 1-2	EPA suggests adding a sentence to the end of this table. For example, "*Injection of treated water into ICTs was discontinued in 2012. Irrigation of treated water on the site has continued when there is not enough flow in Harrison Bayou for the release of treated water.*"	C	Statements added.	A				
41	Table 1-3	The notes on the bottom are confusing. Are there stand pipes used for TOC measurements? Also, TOC is defined twice with two different definitions. Please clarify.	E/C	Yes, there are standpipes where the pumps are. These are as built measurements. Second definition for TOC deleted.	A				
42	Figures 2-3 & 2-4	Please provide larger maps or use maps provided in the EPA/TVA/USGS IRA report.	D	These figures are from the original report and are sufficient for the intended purpose.	A	The new 1992 maps vs. the 1994 are much better.			
43	Tables 2-1, 2-2 & 2-3	Please include 1,4 dioxane in these Tables.	C	1,4-dioxane has been added to Tables 2-1, 2-2, and 2-3.	A				
44	Table 2-4	Please indicate that the reference elevation is the top of the casing and not the ground level. Please define the red value for MW-20 that is in parenthesis. Also, please confirm that the Depth to Clay Layer field represents the depth to the Wilcox clay as measured from the Reference Elevation.	C	The reference elevation is noted as the top of casing in the footnote. The table was corrected to reflect the difference between the ground surface and top of casing. There are no negative values in the table any longer. The depth to clay is the depth to Wilcox clay per the update CSM cross-sections.	D	Disagree. The comment has not been sufficiently answered. There is not a footnote that states TOC and is not clear if depth to clay is from TOC or from ground elevation.	C	The column headings for measurements made from the top of casing will be marked with an asterisk and the following footnote will be added at the bottom of the page: * indicates measurements are referenced to the top of the well casing.	A
45	Table 2-5	Table 2-5: Is this estimate mass for all groundwaters (shallow and Wilcox) and is the Army using the 2014 June isocontour Figure for the estimate? The pore volume should be multiplied by the average concentration to get a mass. EPA did not see thickness nor porosity incorporated into the calculations in the Table. Please redo the Table with the following: isopleth concentration, representative concentrations, area, thickness, volume, pore volume (multiply by porosity), and calculated mass.	C	The material balance was conducted for only the shallow zone aquifer. The June 2014 isocontours were used. The average thickness of the shallow zone aquifer and the porosity values are presented as footnotes to the table. The steps outlined by EPA were followed in the table. The volume of groundwater was calculated but not explicitly shown. The pore volume of groundwater for each isopleth contour line is added to the table. A mass balance equation is added at the bottom of the table to facilitate the calculations. A material balance for the Wilcox aquifer is added.	A	The RTC states the June 2014 iso-contours were used for calculations. Should it be from June 2016?	C	Yes, the June 2016 data were used (please see updated Table 2-5 in the Revised FS).	A
46	Page 2-6, Section 2.4.1, Third Para.	Please define ft^2 and yd^3 and add these to the acronym/abbrev page.	C	These units have been defined.	A				
47	Tables 2-5, 2-6, 2-8 and 2-9	EPA's understanding is that these represent the shallow groundwater only. The Tables need to clearly indicate this.	C	The table headers have been changed to reflect they belong to the shallow zone.	A				
48	Table 2-6	Are these calculations based on one of the figures included and does this include the areas inside and outside the containment area? Also, please include the sorption calculations in the Table. The kd (soil-water partition coefficient) values appear reasonable.	C	The information is provided in Section 2.4.2, fifth paragraph. The areas included in the figure are those enclosed by the isoconcentration lines, which encompass area both inside and outside the containment. An equation depicting the calculations for the sorbed mass in the saturated zone has been added at the bottom of the table.	A				

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49	Page 2-7, 3rd Paragraph, Last Sentence	Please provide a graph comparing well material type to chromium and nickel concentrations to support claim.	E	Deleted this statement because it is speculative in nature.	A				
50	Page 2-7	The FS presents mass calculations for MC, TCE and perchlorate in the shallow zone. While the depth of contamination is not known at all locations in the Wilcox formation, a mass calculation for the Wilcox formation aquifer should also be prepared, including data from 18CPTMW03SW and 18CPTMW22SW. This is needed because remediation of the Wilcox formation may be necessary, and the Army indicates that upward vertical gradients from the Wilcox formation to the shallow zone are present at certain locations due to extraction. Therefore, contaminants in the Wilcox formation represent a long-term source of groundwater contamination to the shallow groundwater system and need to be factored in the remedial design and estimates of remedial timeframes, plus costs.	C	Wilcox contamination mass balance has been prepared.	A				
51	Page 2-7	The FS indicates that the dissolved mass would increase with increased saturated thickness (i.e. pumping versus non-pumping conditions. It is possible that in higher water table conditions that dissolved mass would increase even more than predicted due to the dissolution/desorption of contaminants in the shallow zone. This possibility should be described.	C	This potential phenomenon was included.	A				
52	Table 2-7	Table 2-7: Please clarify if the porosity shown here is total or effective.	C	Clarified in the footnote that the porosity is total porosity.	A				
53	Table 2-8	What maps/reference are you basing these calculations on? If MW-9 or any other wells just to the west of the containment do include MC, then the first mass calculation may have to change. Was the 106,000 ug/l perchlorate value from 18CPTMW22 used in the calculation for the mass of perchlorate?		The information is provided in Section 2.4.2, fifth paragraph. As noted in the text, the areas included in the figure are those enclosed by the isoconcentration lines. The isoconcentration lines encompass area both inside and outside the containment.	A	Agree. However, EPA still believes the total mass calculation may be biased on the low side.	E/C	It is acknowledged that the mass estimates could be low in certain areas of the site. However, it is also noted that the high concentration in MW-14 is likely limited in aerial extent as illustrated by the low perchlorate concentrations in surrounding MWs screened in the Wilcox, therefore while some underestimate of calculated mass may be possible with respect to the overall distribution of mass in the subsurface the current estimate is believed to be suitable for use in evaluating the various potential remedial alternatives in this area of the site. The first complete sentence in the paragraph at the top of page 2-23 states: “For every one (1) foot increase in impacted thickness, the dissolved mass would increase by a factor of ~5%, assuming the groundwater concentrations remain unchanged.”	A

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54	Table 2-11	ICTs 12A, 12B, 12C, ICT 4, and ICT 11 show detections of MC above the MCL. However, the MC plume is shown to be isolated to the northwest (ICT 12E and 12D, Figure 1-13). Well 129 was sampled, but it had a non-detect (located near 12C). If the ICTs in this area are showing MC, then there is some MC in groundwater in this area (though not extremely high, but above an MCL). The MC in 14D is reported at 19,000 ug/l indicating that the center of the plume shown on Figure 1-13 extends at higher concentration to the east near that ICT. EPA realizes these isopleths are based on well data collected and not on ICT data, but the ICTs can be used as a tool to see where higher concentrations are located on the boundaries of the site. There are higher concentrations of TCE and perchlorate in these ICTs than plume isopleths indicated from wells. The mass of the contaminants may be higher than calculated based on the values from these ICTs.	D	Data from most recent samples of January 2015 indicate no MC is present in ICT 12A, 12B, 12C, and ICT 4 (ICT 11 was not sampled), albeit, the reporting limits for some ICTs were above the MCL at 10 to 50 µg/L. Therefore, the depiction of the plume to the northwest based on well data provides a good representation of MC distribution. MC in 129 was < 5 µg/L in June 2014 (Figure 1-13) corroborating the concentration reported in 12C in March 2015 of < 50 ug/L. MC in ICT 14D in March 2015 was reported at 33.3 µg/L, well in line with < 50 µg/L reported in MW-21 in June 2014. MC was reported in ICT 14C at 8,280 µg/L in March 2015. ICT 14 C is bounded by 109 and MW-21 and both have below detection levels. Therefore, it appears that ICT 14C draws heavily contaminated groundwater from near MW-1/EW-01 area while the areas along the containment boundary indicate absence of MC.	A	Same comment as above.	C	Please see response to comment 53.	A
55	Page 2-9, Second and 3rd Paragraph	Please define MIP and CPT and add them to acronym list.	C	MIP and CPT have been defined and added to acronym list.	A				
56	Page 2-13, General Comment	The MC plume has shown a reduction in plume size since the implementation of the IRA based on the 1994 map. MW-7, MW-8, and MW-9 all have shown previous contamination of MC and these wells have not been sampled recently. Shaw sampled these wells just prior to the injection in 2007 and they did not detect any MC. However, a TVA sample taken from MW-9 (in 2009) had a concentration of 60,000 µg/l. Is there newer data since 2009 that indicates no MC in these wells? The following TCE concentrations were found by TVA in 2009; MW-7 (15,400 ug/l), 129 at 11,500 ug/l (2,730 ug/l in 2014), MW-8 (5,570 ug/l) and MW-9 (6,080 ug/l). Please note that the 2009 samples were collected right after a significant rain event. Please provide the most recent samples collected from these three wells to determine if there is still MC and TCE contamination in the western portion of the site.		MW-7, MW-8, and MW-9 were sampled for MC in December 2014 and were all < 5 µg/L. The June 2015 results for MW-7, MW-8, and 129 were 0.352 J µg/L, < 1.25 µg/L, and < 1.25 µg/L, respectively. TCE in these wells continue to be present and the depiction of the isopleth contours indicate the same. MW-7, MW-8, and MW-9 were sampled for TCE in December 2014 and the concentrations were reported at 1,880 ug/L, 1,180, and 3,030 µg/L , respectively. The June 2015 results for MW-7, MW-8, and 129 were 1,860 µg/L, 575 µg/L, and 509 µg/L, respectively.	A				
57	Table 2-13	Not for sure EPA understands the Table. Does this assume the full extent of the groundwater plumes? EPA is not clear on the last two estimations shown.		This information is described in Section 2.4.2.6. The estimated mass in formation is based on calculations completed in Table 2-5 for the dissolved phase, Table 2-6 for the sorbed phase,	A				

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				Table 2-7 for DNAPL, and Table 2-8 providing the mass of contaminants outside the containment for the dissolved and sorbed mass. The duration in years is based on the masses determined in the tables identified above and the mass extraction rates determined in Tables 2-10, 2011, and 2-12. These rates of mass extraction are presented in Table 2-13 as a footnote. The ratio of the total mass for a contaminant divided by the mass removal rate provides the estimated duration to remove the contaminant in years.					
58	Page 2-13, Last Paragraph	As stated in the text, a higher concentration of perchlorate (106,000 ug/l) was detected in 18CPTMW22. The well was later plugged due to a concern about the screened interval passing through the shallow zone and the upper Wilcox aquifers. An upper Wilcox was installed and now the concentration is almost an order of magnitude lower (17,300 ug/l). What is the LTM plan for the shallow zone in this area since there is no longer a monitoring well? EPA believes that the shallow zone in this area should be monitored by installing a new well.		A shallow well (18CPTMWR) near 18CPTMW22SW was installed in April 2016.	A	Agree. However, it appears that the new well (18CPTMW22R) is in the same perched zone (vertically) as well MW-20, which has low levels of perchlorate. The 106,000 ug/l in well 18CPTMW22 was found in a deeper vertical zone, so it still appears that this highly concentrated zone is not being monitored or considered.	C/E	Text and figures in the Revised FS have been modified to acknowledge 18CPTMW22R is screened in a perched zone above the shallow groundwater zone and therefore is not considered part of the shallow zone. A pair of wells screened in the shallow and deep Wilcox Formation is located just southeast of abandoned well 18CPTMW22. Based on the June 2016 perchlorate results, the shallow Wilcox well (18CPT22SW) had a concentration of 10,200 µg/L, but the deep Wilcox well (CPTMW22DW) had an estimated concentration of 1.21J µg/L.	A
59	Page 2-15, First Paragraph, Second Sentence	The text states *"The current depiction of the potentiometric lines in the shallow zone in the southern area of the site (Figure 1-6) consistently shows that there is no horizontal gradient to the south to facilitate migration of CoC's outside the containment area."* EPA disagrees with this statement. There are plenty of maps from GWTP quarterly reports and other reports that show there is the potential for groundwater flow to the south of the site. Even the map that is reference here still shows at least one potential flow path towards the south.	C/E	The text has been revised to replace "no" with "little", "…there is little horizontal gradient to the south to facilitate migration…"One could argue there is an element of flow from the high mounded area near 123 and AWD-2 to the south. However, the gradient becomes extremely flat near the southern corner of the site. Along with the extraction conditions in ICT 12A and ICT 11, little possibility exists for the contaminants to flow to outside the containment to the south.	D	The RTC states the text has been changed from "no" to "little", but the text in the revised FS does not include the modification to the text. The new shallow well, 18CPTMW22R, is completed in a perched zone which indicates a groundwater high. The new well is now being used to say there is no potential gradient towards the south in the shallow zone. EPA still believes there has been a history of a gradient towards the south. Numerous groundwater maps in the past have shown this gradient since the start of the pilot study. If there is no historical gradient to south, then how did the perchlorate reach the southwest corner of the site? In past meetings, the Army has stated the perchlorate originated from the site. Newer soil data collected in the southwest corner does not indicate any source area in the southwest area.	C	The text in the latest version of the Revised FS has been revised to replace "no" with "little", "…there is little horizontal gradient to the south to facilitate migration…" There is an element of flow from the high mounded area near 123 and AWD-2 to the south. However, the gradient becomes extremely flat near the southern corner of the site. Along with the extraction conditions in ICT 12A and ICT 11, little possibility exists for the contaminants to flow outside the containment to the south. It has been acknowledged in the revised text that monitoring well 18CPTMW22R is completed in a perched water zone and it was not used for contouring the shallow zone groundwater surface in revised Figure 1-6. Therefore, the off-site groundwater high previously shown in this area no longer exists and with its removal, the previous apparent steep radial gradient off of the high is no longer present.	A
60	Section 2.4.2.5	Estimates of vertical discharge and contaminant mass flux should be presented for areas of both downward (shallow zone to Wilcox formation) and upward (Wilcox formation to shallow zone) vertical gradients.	C	Estimates of mass flux across the Wilcox clay have been made at the locations identified in Section 2.4.2.5.	A				

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61	Page 2-17, Last Paragraph	The text states "Generally, the extraction rates increased in 2013 and 2014 compared to 2012 due to the fact the GWTP was not operational for nearly 4 months in 2012 as a result of scrubber system failure. This is primarily due to lower CoC concentration at the extraction locations, and not the amount of extracted groundwater, although groundwater extraction volumes are expected to be impacted by variations in precipitation patterns." There appears to be a disconnect between these two sentences and the intent of this discussion is not clear. Please revise.	C	Confusing portion deleted.	A				
62	Page 2-18, Section 2.4.2.7, COC Removal Rates	Site specific retardation rates should be presented for the site.	C	An attempt will be made to estimate general retardation coefficients for TCE and MC but application of an overall average could be problematic due to site heterogeneity and on-going extraction of GW.	A				
63	Section 2.5, Conceptual Site Model	The conceptual site model is a summary rather than a formulation of COC processes and the implications of the remedy.	C	Acknowledged.	A				
64	Page 2-19, 6th Paragraph	The Sale and Newell model should be referenced. *Sale, T. C., and C. Newell. 2011. Guide for Selecting Remedies for Subsurface Releases of Chlorinated Solvents. ESTCP Project ER-200530.* Also, the model did not determine the presence of DNAPL as stated in the report, it was determined from field data.	C	Reference added to reference list as indicated. Agree, the model is used to describe the presence of DNAPL.	A				
65	Figures 2-6	Please provide the information/references for the computations displayed in the Figures.		Tables 2-10 and 2-11 provide detailed account of how these mass fluxes were calculated.	A				
66	Figures 2-6a through 2-6c	The bars plotted in opposite directions above and below unity are confusing and unintuitive. Please consider an alternative presentation. The exponent values in the table are cut-off. Please correct.	C	The coordinates were corrected to eliminate bars displayed below unity. The table is expanded to display exponents in the table.	D	The current tables are not expanded enough to allow the reader to see the exponents.	C	In the Revised FS, the last three rows at the bottom of the graphs have been deleted because the information is redundant. It is provided at the top of each annual bar.	A
67	Section 3.2.1, Page 3-3	No TBCs were identified for this site?		No TBCs were identified.	A				
68	Page 3-4: Section 3.2.2.2	EPA disagrees with the statement pertaining to using industrials levels for chemicals without a MCL. EPA will require TRRP residential PCLs for contaminants without a MCL. Also, first use of TAC in the document, please define in the text.		Please refer to the response to Comment #12.TAC defined in 3.2.2.1 and acronym list.	A				
69	Page 3-6, First Paragraph	The reference identified here does not match up with the one in the reference list.	C	Reference corrected.	A				
70	Page 3-7	There are bald eagles at LHAAP, one flew near EPA's vehicle within a mile of the GWTP about 6 months ago. Also, the text at the end of first paragraph indicates that species confirmed at	C	Comment acknowledgement. Those species are not italicized.	A				

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		Longhorn AAP are marked in italic, but none of the species are in italic.							
71	Page 3-8, Section 3.2.5.2	Please define TSDF in text and add it to acronym list.	C	TSDF defined and added to acronym list.	A				
72	Table 3-1	EPA disagrees with the use of industrial PCLs for groundwater and surface water. Residential TRRP PCLs apply for contaminants without an MCL.		Please refer to the response to Comment #12.	A				
73	Table 3-7	Please include the equations and calculations that are used to estimate mass.	C	There is no Table 3-7. The equation to estimate DNAPL mass is included in the footnotes of Table 2-7.	A				
74	Page 4-1, Section 4.1, 1st Paragraph	Is there potential for contaminated surface water runoff from the site to the Bayou? The section also describes contamination in the shallow zone aquifer, but there is no mention of contamination in the Wilcox. Please modify to describe contamination found deeper in the Wilcox aquifer at the site.	C	A sample was collected by EPA from the site runoff to the north and the sample had no detection of contaminants. Wilcox contamination discussion was added to this section.	A				
75	Page 4.1, Section 4.1, 1st bullet	EPA disagrees, the shallow groundwater south of 18CPTMW22 is not defined. This section also does not mention the Wilcox aquifer contamination at this location.	E/D	Added information about soil data from borehole 18WW23 that did not detect perchlorate. Added additional information associated with perchlorate delineation efforts in March 2015 to delineate extent of perchlorate in this area. Added information about Wilcox aquifer in this section.	A				
76	Page 4-2, Bullets 3 & 4	Since these bullets mention soil areas that are not well defined, why not define them now instead of defining them during the RD. Also, these areas should not be sprinkled (only highly controlled) or saturated.	D	Limited extent definition to the south using data from 18CPTBB01 has taken place adjacent to 8A-940. Due to the shallow nature of impacted soil, it will be readily determined during the remedial design phase. Regarding location 8A-911, several soil samples were collected in the vicinity from 18CPTUEP09, 18CPTPB16, 18CPTPB17, and 18CPTUEP08 in 2015 that provide extent determination for MC and TCE in the unsaturated zone, although refinement of this extent remains.	A				
77	Page 4-2, Next to last Paragraph	The discussion about the perchlorate mass is not clear. Does the perchlorate timeframe assume no mass transfer rate from brine? Please revise and clarify.	E	There is no indication of the presence of brine at the concentrations identified in groundwater and saturated soil. The text will be revised to state "The basis for this assumption……18CPTMW22) does not support the presence of brine in shallow groundwater."	A				
78	Page 4-2, Table 2-13	How was the mass determined?	E	Please refer to response to comment 57 related to Table 2-13. Section 4.1 does not discuss how the mass is determined.	A				

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79	Figure 4-1	EPA does not believe that the sprinkling, as currently implemented, is beneficial for the site. It drives down contaminants vertically and spreads them further outward from the containment area in some areas such as the Northwest.		See response to Comment #3.	A/D	See comment number 3.		See response to comment 3.	A
80	Page 4-11, Section 4.4.1.3.4	The sentence "Extreme restriction of groundwater flow through the site could result in marginalization of groundwater extraction and containment recovery". What does this mean? Please explain.		If recharge of rainwater to the site is eliminated, the amount of groundwater that can be recovered will be diminished, which in turn reduces the max flux of removal of contaminants.	A				
81	Page 4-13, 1st Bullet	The bullet mentions that horizontal wells were not effective according to field experiments in the 1990's. Since advancements have been made to horizontal drilling since that evaluation, should this technology be re-visited? Also, please reference the statement on equivalent effectiveness of vertical and horizontal wells.	C/E	The statement about equivalency of effectiveness of vertical and horizontal wells has been removed from the text.	A				
82	Page 4-13, Last Paragraph	Please define EVO in text.	C	EVO definition added to the text.	A				
83	Page 4-13, 1st Paragraph	Biodegradation may not be first order and therefore constrained at the lower and upper limits. Therefore, it may not be easily observable at very low or very high concentrations.	C	Acknowledged.	A				
84	Page 4-16, Thermal treatment	The Report states that thermal treatment is not limited by subsurface heterogeneities like other treatments. Contrary to that statement, high flow zones have been problematic, as shown in the literature, because they transport the heat away from the targeted area.	D	Temperature distribution in the subsurface can be made more uniform based on the duration of application of thermal treatment. Additionally, the majority of chlorinated VOCs are present in fine-grained soils.	A				
85	Page 4-18, Last Bullet	Please define CEC in text and add to acronym list.	C	CEC has been defined in the text and added to acronym list.	A				
86	Page 4-19	Please define EZVI in text and add to acronym list.	D/C	EZVI is defined in the text. EZVI has been added to the acronym list.	A				
87	Page 4-23 Section 4.4.1.6.2	*"The hydraulic capacity of the plant has not been met so additional flow could be effectively handled."* What about the effluent? If Harrison Bayou is not flowing then there have been issues determining what to do with effluent. Additional effluent storage or some other engineered structure to hold the effluent water needs to be considered in this study.	D	There is not enough storage volume that can be practically designed to hold the GWTP effluent in excess of a few days. There have been occasions where discharge to Harrison Bayou was not possible for weeks due to lack of surface water flow, particularly during the summer months. The INF Pond could be deployed to manage discharge of treated groundwater when discharge to Harrison Bayou is not possible (e.g., due to low flow or treated groundwater quality exceeding discharge limits) and release to 18/24 via the sprinkler system is not possible (e.g., during periods of heavy rainfall). The text has been revised to acknowledge the use of the INF Pond for effluent storage when needed.	A/D	While it is good that the INF pond is added as an additional storage area when the effluent discharge is restricted by flow, the potential for building a larger storage tank still needs to be considered. One concern with the INF pond is it still functional and if you discharge to it what standards are applicable. In other words, the discharge to the pond may potentially be more restrictive if the concentrations of a contaminant are above MCLs/PCLs. Also, why is sprinkling on this site considered more acceptable than the other Longhorn sites which have no sprinkling?		Discharge standards for the INF Pond were agreed to by the FFA parties and are in the Administrative Record (Bate Stamp 024467). Limiting the area of discharge of treated wastewater from the GWTP to the site when it cannot be discharged to Harrison Bayou is considered good standard practice. Even though the water is treated, it is prudent to keep the treated water at the site where it was generated/treated. Also, please see response to comment #3.	A

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88	Page 4-22	EPA agrees that arsenic mobilization is a concern with in situ bioremediation. In contrast, in situ oxidation would likely promote sorption of arsenic.	C	Comment acknowledged	A				
89	Page 4-25, Section 4.4.1.7.4	EPA recommends removing irrigation from Site 18/24. Irrigation can cause higher heads increasing the potential for migration downward and laterally towards the northwest corner where the Wilcox clay layer is absent.	D	See response to Comment #3.	D	See comment 3.			A
90	Page 4-37, Section 4.4.2.6	A slurry wall will require internal groundwater extraction to prevent downward migration of COCs.		Comment acknowledged.	A				
91	Page 5-3, Second Paragraph	The text here seems to contradict text on page 4-24 that states the current GWTP will be not be alternative. Please explain or modify the text?	C	Text modified to reflect that a new GWTP will be designed and installed. Section 5.2.2.1 discusses that a new GWTP will be designed and installed replacing the existing GWTP, however the existing GWTP will be used as an alternative.	A				
92	Figures 5-2	The text on page 5-3 states that wells 18CPTMW22, 18CPTMW23 (please note minor typo with the extra "W") and MW-8 will be converted to extraction wells. Please modify legend or well symbol on Figure to indicate these will be extraction wells. In addition, please note that ICT 3 and ICT 9 may be difficult to use due to bio fouling that occurred from previous injections.	E	No monitoring wells will be converted to extraction wells. The paragraph has been deleted.	A				
93	Page 5-4. Seventh Paragraph, Last Sentence	Please change "contaminated" to "contaminants".	C	Word correction completed.	A				
94	Page 5-4	It is difficult to assess remedial alternative discussion without better illustrations.	D	The text references Figure 5-2, which provides illustrations of remedial activities.	A				
95	Page 5-4	Based on recent results from the 18CPTMW22 (the new one that replaced the one that went through shallow and Wilcox) there is some significant perchlorate contamination. It appears the shallow zone aquifer in this area will be treated with ISB, but what about the contamination in Wilcox aquifer? The new well is being converted to an extraction well, so what is being used to clean up the perchlorate in this part of the Wilcox? In addition, how is the perchlorate contamination in the Wilcox in the northwestern corner being remediated?	C	No conversion to extraction wells will take place. Both the shallow zone and Wilcox aquifer will be treated with EISB. Similarly, the area to the northwest will be treated with EISB to treat for perchlorate. Because there is no clay in that area of the site, the shallow zone/Wilcox aquifer will be treated as one unit.	A				

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96	Page 5-5, Sec. 5.2.2.1	Why are ICT-3 and ICT-9 to be placed online? Has simulations been done to show the benefit of this?		These two ICTs are located in areas of groundwater contamination where no groundwater capture is taking place. They fill a gap within the containment. ICT 3 is also located adjacent to the groundwater high and should help reduce this mounding condition.	A				
97	Page 5-5, Section 5.2.2.1	Based on the GWTP reports monitoring well 18WW17 has not been used for extraction for quite some time. Is it still operational?		Yes. The well was put back on line on January 17, 2016.	A				
98	Page 5-5, Section 5.2.1.1	EPA agrees that reactivation of some of the ICTs is a good idea to enhance contaminant removal and hydraulic control. However, some of the ICTs may have bio fouling which may limit their effectiveness. EPA recommends adding some new ICTs in the RD or some contingency cost estimates in case it is determined that new ICTs in certain areas may be more effective in reaching the clean-up levels in a quicker timeframe.	C	The efficiency of hydraulic recovery of the proposed ICTs will be tested and if fouling is causing concerns, attempts to clear the fouling will be implemented. If not successful, new ICTs would be installed. Cost provisions have been made.	A				
99	Page 5-6. 1ST Paragraph	It is not conservative/reasonable to assume zero retardation for mass removal estimates.	C	Retardation was introduced and the duration of time has been updated to reflect a more conservative approach.	A				
100	Page 5-9, Groundwater Monitoring and MNA	EPA believes that at the present time MNA is not a viable remedy, but maybe sometime in the future.	C/D	MNA is not a viable remedy for areas with high concentrations of dissolved contaminants, in areas in contact with sorbed mass within fine grained soils, and areas that contain DNAPL inside the containment. However, MNA is a viable alternative for low concentrations of contaminants in groundwater outside the containment in coarse grained soils. Examples include low concentrations (e.g., < 100 µg/L) of COCs in the Wilcox Formation. The discussion has been changed to focus on the concept introduced here.	A				
101	Pages 5-15 & 17	Please see comment Page 5-4 (applies to these alternatives as well).		Please see responses to those comments.	A				
102	Page 6-44, Minor Editorial Comment	Suggest moving alternative 2 paragraph ahead of alternative 3 paragraph.	C	Change completed.	A				
103	Page VI, Acronyms and Abbreviation	(a). Please fix typo error for µg/kg definition (micrograms); (b). Please change RAO to RAOs and Remedial Action Objective to Remedial Action Objectives; (c). Please change DCE to cis-1,2 dichloroethene; (d). Please add definition of ZVI to list; (e). Please add TOC to acronym list; (f). Please change DDD definition to 4,4'-dichlorodiphenyldichloroethane; (g) Please change	C	(a) Correction to "micrograms" made. (b) Corrections made (c) Change completed to cis-1,2-DCE (d) ZVI definition added (e) TOC added to list (f) Added 4,4'- to the name (g) Added 1,1,2- to name (h) Added 2,3,7,8- to the name	A				

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		TCA to 1,1,2-trichloroethane; (h) Please change TCDD to 2,3,7,8-tetrachlorodienzon-p-dioxin; (i) Please add the definition of ISM to list; (j) Please add definition of ORC to list; (k) Please add the definition of PRB to list; (l) Please add definition of DC to list; (m) Please add the definition of mA/cm^2 to list; (n) Please add definition of nZVI to list; (o) Please add definition of nm to list; (p) Please add definition of BNP to list; (q) Please add definition of ORP to list; (r). Please add definition of ISM to list; (s). Please remove DNT from list. DNT isn't used in text of document; (t). Please remove SAI-Res from list. Sai-Res is not used in text of document; (u). Please define SEI on page 5-18 and add SEI to list; (v). Please remove SPLP from list. SPLP is not used in text of document; (x). Please remove TNT from list. TNT is not used in text of document; (y). Please define UCL in table 2-1; (z). Please define USC on page 3-8; (aa). Please define USFWS on page 3-7; (bb). Please remove WSA from list. WSA is not used in text of document.		(i) ISM added to acronym list (j) ORC added to acronym list (k) PRB added to acronym list (l) DC added to acronym list (m) mA/cm^2 added to acronym list (n) nZVI added to acronym list (o) nm added to acronym list (p) BNPs added to acronym list (q) ORP added to acronym list (r) See response (i) above (s) DNT removed from acronym list (t) SAI-Res removed from acronym list (u) Defined SEI on page 5-18. SEI already in acronym list (v) SPLP removed from acronym list (w) Not included (x) TNT removed from acronym list (y) UCL defined in Table 2-1 (z) USC defined on page 3-8 (aa) USFWS defined on page 3-7 (bb) WSA removed from acronym list					
104	References Removed/Added	(a). Please remove Solutions to Environmental Problems, 2005 since the reference is not located anywhere in text; (b). Please add TCEW, 2006 reference in text; (c.) Please remove Texas Water Commission, 1998 reference since reference is not located anywhere in text; (d). Please add USACE, 1993 reference or is there a typo for the USACE 1992 reference; (e). Please remove USEPA, 2006 references since neither report is cited in text; and, (f). Please add reference to TCEQ, 2010 (Page 1-1, Updated PSI report).	D/C	(a) Solutions to Environmental Problems, 2005 is located in the text in the executive summary, page xi, Sections 1.6 and 2.2.1. (b) TCEW, 2006 is not found in the text. (c) TWC reference removed. (d) Reference corrected to 1993. (e) The USEPA, August 2006 reference is referenced in the text. The USEPA, December 2006 has been deleted. (f) TCEQ reference will not be included. The PSI report is not part of the FS any longer.	A				
105	References to be added to Reference List Page	Shaw 2007b, AECOM 2015, Shaw 2007a, AECOM 2104, Shaw 2007c, ITRC 2003, TRRP June 2012, Sale and Newell reference, Office of Solid Waste, CLI (1995), USFWS (2003), TDPW (2003), EPA 2007 and EPA 2008.	C/D	Added the following references to the reference list: Shaw 2007b; ITRC 2003; TRRP March 2000 (not 2012); Sale and Newell, 2011; OSWER 1992; CLI, 1995; USFWS 2003, and EPA 2007. There is no AECOM 2014 any longer. This is the PSI addendum report which has since been updated. The references will be updated as such. AECOM 2015 is the PSI addendum report, which is included in the reference list. Shaw 2007c is actually Shaw 2008, which is already listed in the report. TPDW is not in the document. EPA 2008 is already included in the reference section.	A				

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Appendix A Comments									
1	Add to Reference list	Please add to the following to the reference list: Plexus, 2005; USACE, 1993; and, Bradley and Chapelle, 1997.	C	Added references as applicable. Bradley and Chapelle, 1997 is not used in the document.	A				
2	Define and Abbreviations	Please define the following and add to the abbreviation list: ft., MNO and bgs.	C/E	Defined, where needed, and added these terms to the abbreviation list. MNO is not in the document.	A				
3	Page 2-3	Please define mg/L on this page. First time used.	C	Definition added on page 2-3.	A				
4	Page 2-5, Last Paragraph	Is the reference Hendrickson or Henderson (as shown in reference section)?	C	Corrected reference to Hendrickson.	A				
5	Page 2-7	Please add AEC to abbreviation list.	C	Definition added on Page 2-7.	A				
6	Page 2-8	Please define GWRTAC in text.	C	Definition on Page 2-8.	A				
7	Page 2-10	Please add SQL to the abbreviations list.	C	Definition added in acronym list.	A				
8	Figures A-1 through A-44	The legend indicates the cleanup level and initial concentration variables are in units of mg/L, whereas the "solutions" box uses units of ug/L. While EPA does not believe this effects the calculations, please correct the discrepancy in units.	C	The concentrations in the legend were changed to µg/L.	D	It appears the solution box is still in µg/L, while the rest of the figure is in mg/L.		That is correct.	A
9	Page 3-1, Section 3.1, Second Paragraph, General Comment	EPA believes that the pH went down in the region of MW-8 after some additional drilling in the area. The loss of cement or mud into the formation may have caused the low pH in the area.	E	Cement should raise the pH of groundwater. The low pH is symptomatic of the formation in associated with the presence of relatively high natural levels of iron.	A	Initial comment is not correct.			
10	Page 3-2, Second Main Paragraph	What effects would injection and irrigation have on the MNA calculations? It would seem that in certain areas where injection or irrigation has occurred, dilution would be a factor in a decreasing trend. In addition, injection may have caused movement of contaminants both laterally and vertically.	C	Previous injections of treated groundwater in ICT6 and ICT 9 cause dilution of contaminants within the influence of injection and would push contaminants away from the injection area. This was discussed as part of the CSM. Changes in concentrations caused by injection of water, will affect MNA estimates for those areas. Discussion associated with effect of injection on NA rates is introduced.	A	Reviewer could not find the original comment paragraph since there is no longer a page 3-2 in the Appendix. The response is fine.			
11	Page 3-12, Table	EPA recommends identifying the wells that are influenced by groundwater extraction and the ones not influenced to be noted in the summary table.	C	Added this information pointing potential influences of nearby extraction trenches.	A				
12	Page 3-15	Please define MCL on this page, first time used.	C	MCL definition added on page 3-15.	A	The MCL is actually defined on previous page 3-7.			
13	Acronym page (Appendix A)	Please remove DHC, DO, GW-IND, MARC, MSC, STEP, TBC, TCEQ, TOC, USAFCEE, and USGS from list since they are not used in text.	C/E	Removed these terms from acronym list, where appropriate. Added definition for DO in the text.	A				

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~~**Appendix B: PSI Addendum Comments**~~									
~~1~~	~~Page 1-2, Last Paragraph~~	~~Please use/include volumes or percentages of total water released to bayou verses injection/irrigation. The use of the word "occasionally" gives the impression that the majority of the time the water is released to bayou, but drought conditions has limited the times when water is released to the bayou.~~	~~C~~	~~Added information requested.~~					
~~2~~	~~Page 1-3~~	~~Private drinking water supply wells should be included in this assessment. For instance, Administrative Record Document No. 00076389 (Shaw RAB presentation slide) shows several off-site private drinking water wells – one of which (3524402) is located east of and potentially downgradient of LHAAP-18/24.~~	~~C~~	~~A water well survey is done and the map is introduced as an attachment.~~					
~~3~~	~~Page x, Third Paragraph~~	~~The text states "*In northwestern corner of the site, ICT-12E and ICT13A are at least partially not tied into the Wilcox clay and could potentially continue to allow contaminants of concern (CoCs) to migrate from within the containment area to outside the containment area. The results also confirmed the performance of the ICT and liners particularly to the southwest in preventing CoC migration within the containment. HIgh concentrations of perchlorate and TCE outside of the containment in the southwest area of the site were determined as a result of this investigation to related historical migration of CoCs prior to containment.*" Monitoring wells that have been sampled outside of the northwest corner are now detecting contamination that was not there before. Due to the proximity of the potential gap in containment in that area, one could conclude that this contamination is a result of the gap and other ongoing activities (accumulation of sprinkling) at the site. In addition, EPA disagrees that the southwest corner of the containment system has proven to be effective when a recently installed well outside of that corner detected perchlorate over 100,000 ug/l. There was limited or no data in that region prior to the installation of the new monitoring well, therefore, this statement is only speculative. The existing data in the report cannot support the conclusion that contamination was there before or that contamination was transported to that area after the installation of the collection system.~~	~~C/E~~	~~The stated information agrees with EPA's comments that gaps in the northwestern corner would allow migration of contaminants to off-site locations. Irrigation near that area of the site did not show evidence of change in groundwater potentiometric elevation and there is no evidence that irrigation is causing groundwater contaminant migration. Measures to distribute irrigation water are being implemented.~~ ~~A distinction between the southwestern site boundary and the southern corner of the site should be made. The discussion about current containment at the southwest boundary and historical migration of contaminants to outside that boundary is related to the southwest boundary of the site not the southern area (or corner) of the site where high perchlorate was discovered recently in 18CPTMW22 (plugged well) and the replacement shallow Wilcox well 18CPTMW22SW. We agree that the presence of perchlorate outside the southern corner of the site is likely historically present but cannot be confirmed with the collected information. A statement is added to that effect.~~					
~~4~~	~~Page 2-5, Section~~	~~Should the heading be 2014 Investigation instead of 2013 Investigation?~~	~~C~~	~~Header information changed to 2014.~~					

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	~~2.2.2.5.2~~								
~~5~~	~~Page 2-9, First Paragraph~~	~~The text states that soil samples were collected at the location near C-01 to determine presence or absence of perchlorate in shallow soils. During the review of the FS, a comment was made that no soil data exists in the area of the high perchlorate concentration near new well 18CPTMW22. That statement is still valid since C01 area is not close enough to the area of contamination, thus a soil data gap exists in this area. In addition, as stated previously, this location is still lacking a shallow well in the proper zone to monitor the high concentrations in the original monitoring well 18CPTMW22.~~	~~E~~	~~The soil data collected from attempted shallow well 18WW23 adjacent to C-01 provides a southern extent for the presence of perchlorate in the shallow zone. The FS (**Section 2.4.2.3** Lateral Extent and Migration of COCs) has since been updated discussing the soil data collected from 18WW23. Monitoring well 18WW23 was not installed due to the lack of water in this area of the site in the shallow zone.~~ ~~Soil samples were collected during drilling of 18CPTMW22SW borehole between 13 feet bgs and 31.5 ft bgs and analyzed for perchlorate to determine whether the soil and in particular the Wilcox clay is a source of perchlorate in this area of the site. Text has been added to indicate that soil samples were collected. The results/findings of this work are presented in Section 3.4.6. The analytical results are provided in Table 3-4.~~					
~~6~~	~~Section 2.2.2.3.2~~	~~Section 2.2.2.3.2 states that soil samples were collected from the Wilcox Clay at 18CPTMW22SW. EPA was not able to identify any data from these samples. Also see Table 2-2 – if soil samples were collected at 18CPTMW22SW, they should be included in Table 2-2.~~	~~E~~	~~Data for soil samples collected from the borehole of monitoring well 18CPTMW22SW were added to Table 3-4 and the results are discussed in Section 3.4.6. See response to Comment 5 for additional details.~~					
~~7~~	~~Section 2.3.3.3~~	~~Reference to the Chicot Formation is erroneous – please revise. The rationale for plugging 18CPTMW22 should be described in detail somewhere in this document.~~	~~C~~	~~Reference should have been to Wilcox. Text modification made. Rationale for plugging 18CPTMW22 is added to the text.~~					
~~8~~	~~Section 2.2.2.3.2~~	~~Change "…out diameter…" to "…outside diameter…"~~	~~C~~	~~Change made to "…outside diameter…"~~					
~~9~~	~~Section 2.3.2.2~~	~~Three what?~~	~~C~~	~~Corrected statement to read: "…three locations..."~~					
~~10~~	~~Figure 2-1~~	~~Certain CPT or CPT/MIP locations were completed using DPT due to access limitations. Figure 2-1 must accurately portray the type of subsurface investigation performed – not what was planned.~~	~~C~~	~~Figure 2-1 was modified by indicating that location 16 and 18 were DPT logs.~~					
~~11~~	~~Figure 2-3~~	~~The attempted shallow monitoring well location near C-01 (18WW23) should be illustrated on this or some other figure. Abandoned monitoring well 18CPTMW22 should also be illustrated on this or some other figure.~~	~~C~~	~~Added the requested information on this figure.~~					
~~12~~	~~Section 3, Page 3-1~~	~~"…information it to improve…" Please correct this typo.~~	~~C~~	~~Changed text to: "…information is to improve…"~~					

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~~13~~	~~Section 3.1.2.2.2~~	~~The bullet list formatting is confusing. EPA believes that the first and fourth bullets are the major headings. For clarity, the subsequent sub-bullets should be indented or reformatted with a different bullet style.~~	~~C~~	~~Agree. Changes made as indicated.~~					
~~14~~	~~Section 3.1.2.2.4, Page 3-6~~	~~"…noted "mottling: of the sediments." Change the ":" to a "".~~	~~C~~	~~Concur. Change made.~~					
~~15~~	~~Section 3.1.3~~	~~The water level contour maps (Figures 3-1 and 3-2) should include data from 18MW24, 18CPTMW03SW and 18CPTMW22SW, as applicable.~~	~~C~~	~~The information for those wells were added by displaying the December 2014 data instead of the June 2014 data in the report.~~					
~~16~~	~~Section 3.1.3~~	~~The Army has indicated that HDPE liners installed outside of the ICTs along the southwest and northwest sides of the containment area are sufficient to act as a barrier to prevent ICT extraction of groundwater located outside of these liners. Such a barrier would surely alter shallow groundwater flow patterns under both natural and pumping conditions. Has the presence of these liners been considered when contouring shallow groundwater elevations? If so, please explain why the impermeable liners do not appear to affect the shallow contours. For discussion purposes, EPA suggests that alternative shallow groundwater contour maps be prepared assuming no flow across the liners.~~	~~E~~	~~The presence of the liners has not been factored while contouring the potentiometric lines at the site for the shallow zone groundwater.~~ ~~It might be possible to draw the contours assuming the liners produce a complete cutoff of groundwater between inside and outside the ICTs. However, the groundwater level data do not support distinct groundwater flow patterns across the HDPE liners.~~					
~~17~~	~~Section 3.1.3~~	~~Is accurate water level data available from the ICT sumps? If available, these data could help inform/understand shallow groundwater flow patterns and contours in and around LHAAP-18/24 under current pumping conditions.~~	~~C~~	~~Concur with the concept. However, water levels in the ICT sumps are not collected due to obstruction of the presence of downhole equipment. Additionally, the sump pumps cycle on and off between the ICT probes low and high elevations. When the groundwater level inside the ICT sump decreases to the ICT probe low level which is set above the pump intake to protect the pump, the pump turns off and allows the water level in the ICT to increase. Once the groundwater level reaches the high water level probe in the ICT, the pump turns on and pumping begins. Therefore, measuring the groundwater levels in the ICT sumps are not going to provide information that would help understand the shallow groundwater contours because of the dynamic and transient conditions that occur in the sumps.~~					
~~18~~	~~Section 3.1.3~~	~~The text states that during the gauging events re-injection was not occurring but discharge to Harrison Bayou was occurring. The second quarter 2014 Quarterly Evaluation Report indicates that discharge~~	~~C~~	~~Text has been revised to reflect treated water release method at the time sampling was conducted.~~					

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		~~to the Bayou only occurred for 15 days in May. The contour maps presented as Figures 3-1 and 3-2 were created from water level data collected in June 2014. The treated water was being sprinkled on LHAAP-18/24 at this time. It is probable that some recharge of shallow groundwater is occurring due to sprinkling. Please revise to accurately reflect water management practices at the time of water level gauging events.~~							
~~19~~	~~Figure 3-1~~	~~What is the hydrogeological basis for closed low elevation contours centered near or around MW-8, MW-16 and 18WW07? Army has explained that the HDPE liners prevent groundwater withdrawal in these locations so extraction does not seem to be a plausible explanation. The EPA finds the closed 167 ft. contour on the northeast side of the containment area (ICT-14C) to be plausible due to the lack of HDPE liners along this ICT wall.~~	~~E/C~~	~~These wells had lower elevations than surrounding wells and also crossed the 1-foot contour intervals used for plotting the data. Closed contours represent one interpretation of the results. It might be possible to open the closed contours along with using the ICT liners as cut off locations to reinterpret the groundwater flow. However, it is uncertain if this would be successful. For example, the contour line around 18WW07 may not be possible to open unless the contour at 168 foot elevation is also opened. In other words, the interpretation of the potentiometric line around 18WW07 is controlled by a set of wells surrounding this well; namely: 18CTPMW19, 18WW08, and 18CPTMW16 and a different interpretation may not be plausible.~~ ~~Agree with EPA's interpretations about the effect of extraction in the northeastern ICTs on the potentiometric interpretation.~~					
~~20~~	~~Figure 3-1~~	~~Shallow groundwater contours appear to ignore the presence of Harrison Bayou. Regardless of whether or not the bayou is acting as a gaining or losing stream (or both) in this area, it seems implausible that groundwater surface water interactions along the bayou would not alter shallow groundwater contours in some fashion. Please explain how Figure 3-1 represents an accurate depiction of conditions in this area. The EPA observes that the potentiometric surface maps presented in the fourth quarter 2014 Quarterly Evaluation Report appear to handle this better by terminating the contours before crossing the bayou.~~	~~C~~	~~Concur with EPA that SW/GW interaction would alter the contours in this area of the site. Figure 3-1 is redrawn with this in mind.~~					
~~21~~	~~Figure 3-2~~	~~What is the hydrogeological basis for the closed 167-foot elevation contour to the southwest of the containment area?~~	~~C~~	~~Contours have been redrawn to avoid presence of artificially closed contours.~~					
~~22~~	~~Section 3.2.3~~	~~The text describes soil samples collected at depths of 6, 12 and 16 ft bgs at the location of proposed well 18MW23 with no detections of perchlorate. Army asserts these data demonstrate that there was no~~	~~C~~	~~Added text to this section and elsewhere in this document and in the Revised FS to provide specific information about the data collected. The proposed well location has been added to Figure 2-3 in~~					

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		~~shallow groundwater perchlorate migration to this location from source areas. While EPA does not dispute this conclusion, additional details regarding the depths of these samples relative to the Wilcox Clay should be provided to further substantiate this claim. The location of proposed well 18MW23 should be shown on a map and the results presented in a table. Is a log for this well provided in Attachment A?~~		~~response to Comment 11. The results are indicated in Table 3-4 and the reference to the table in the text has been added. Additionally, the boring log is presented in Attachment A as 18WW23DPT and the reference has been added in the text.~~					
~~23~~	~~Section 3.2.3, Page 3-14~~	~~The discrete groundwater samples at 18CPT15 represent a snapshot in time. Wells 18CPTMW23 and 18CPTMW15 have elevated concentrations of perchlorate and TCE. No Wilcox Clay is present and downward vertical gradients are generally present outside of the containment area. EPA agrees that at least one Wilcox formation well is needed in this area as described in Section 3.5.3.~~	~~E~~	~~The proposed well 18WW24 has been installed to delineate extent of perchlorate laterally. Since the groundwater level between the shallow zone and the Wilcox Formation is very similar (example C-02 in the shallow zone has an elevation of 169.50 ft amsl and the adjacent Wilcox well MW-13 has an elevation of 169.31 ft amsl; another example 18WW08 in the shallow formation has an elevation of 169.07 ft amsl and adjacent Wilcox well 18WW09 has an elevation of 169.04 ft amsl) in that area of the site, there appears to be a very slight downward vertical gradient between the shallow zone groundwater and the Wilcox Formation groundwater, which is a reflection of the continuous nature of the water column in these areas where the Wilcox clay is absent. Additionally, the discrete groundwater data collected from 18CPT15 at depths of 14-18 ft bgs, 25-29 ft bgs, and 38 to 42 ft bgs for perchlorate and TCE presented in Table 3-5 clearly indicate rapidly decreasing concentrations of perchlorate and TCE with depth (e.g., perchlorate concentration decreased from 2,620 µg/L at 14 to 18 ft bgs to 87.5µg/L at 25 to 29 ft bgs, and further to 6.16 µg/L at 38 to 42 ft bgs (Wilcox Formation sample). Also, 18CPTMW15 (and 18CPTMW23) straddles both formations which negate the need for a Wilcox Formation well. Finally Wilcox Formation monitoring wells 18WW02 and 18WW09 in that area of the site have reported perchlorate concentrations of 0.216 µg/L and 0.125 µg/L, respectively in June 2014 and monitoring well 18WW24 had a reported perchlorate concentration of 0.439 µg/L in December 2014. Therefore, perchlorate delineation to the northwest area of the site in the Wilcox Formation is complete.~~					
~~24~~	~~Figure 3-10~~	~~As demonstrated in the fourth quarter 2014 Quarterly Evaluation Report, data from monitoring wells 18CPTMW03SW and 18CPTMW22SW considerably change the isoconcentration contours for~~	~~C/E~~	~~The December 2014 data and maps have been introduced in the PSI report to take advantage of the data from the three new wells 18CPTMW03SW, 18CPTMW22SW, and 18WW24. Note that the~~					

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		~~perchlorate, TCE and MC in the shallow Wilcox. These data must be included to ensure the FS adequately evaluates/addresses the need for potential groundwater remediation in the shallow Wilcox formation. The substantial changes to these contours will also affect the calculations of contaminant mass presented in the FS, which may affect estimated remediation timeframes. EPA assumes that the Wilcox mass was calculated in the FS. Is this correct?~~		~~concentration reported in 18CPTMW03SW in December 2014 for MC is very negligible (59 µg/L) compared to 32,400 µg/L in 18CPTMW01SW and therefore, has negligible effect on the mass of MC in the Wilcox Formation. Similarly, TCE concentration in 18CPTMW03SW at 1,010 µg/L is small compared to 16,800 µg/L in MW-14 and does not affect the total mass of TCE in the Wilcox Formation appreciably. Finally for perchlorate the picture is very similar to MC and TCE whereby the detection of perchlorate in 18CPTMW03SW at 5,880 µg/L is small compared to perchlorate in MW-14 at 261,000 µg/L and 50,000 µg/L in 18CPTMW08SW. Additionally, perchlorate detection in 18CPTMW22 was known previously and was factored into the FS assessment. Current remedial action includes the Wilcox Formation areas near 18CPTMW08SW and MW-14 where the highest perchlorate and TCE concentrations reside. Shallow zone remediation is targeted at 18CPT15 and 18CPTMW22 areas.~~					
~~25~~	~~Section 3.2.3, Page 3-14~~	~~This section describes perchlorate contamination in the shallow Wilcox. Perchlorate concentrations in MW-14 are not mentioned. This well consistently has some of the highest concentrations in the Wilcox formation and should be described in the text. The elevated perchlorate concentrations at abandoned shallow well 18CPTMW22 and new Wilcox well 18CPTMW22SW, along with elevated perchlorate data from ICT-11 and ICT-12A and ICT-12B suggest the presence of a possible continuing perchlorate source area in the southwest quadrant of the containment area independent of source areas previously identified in this document. The EPA observes two former buildings in the southwest quadrant of the LHAAP-18/24 – Buildings 24-X and 25-X. Historical records indicate these buildings contained wash racks used for washing containers containing contaminated wastes, including explosive wastes. Given the high solubility of perchlorate, if perchlorate residues were washed from drums in this area, significant concentrations may have been released to the environment. Feasibility Study Figure 1-5, shows a depression in the Wilcox clay surface below this area. Concentrated perchlorate brines, if released, could have migrated down into this depression, pooled and migrated into the fine grained~~	~~C~~	~~Agree that the perchlorate source in the area to the south of the site is independent from other perchlorate areas and should not have been mapped as a single contiguous plume across the site as depicted in the 4th quarter 2014 report as described in Comment 24. The presence of wash racks in that area of the site is well known and is the cause of high perchlorate in this area. The extent of perchlorate in the shallow zone to the south has been defined by the clean soil data from location 18WW23 adjacent to C-01 as discussed above in response to Comments 5, 6, and 22. Additionally, as described in the revision to the text in Section 3.4.6, as depicted in Table 3-4, and in response to Comments 5, and 6, soil data have been collected from the borehole of 18CPTMW22SW at 10 discrete locations and analyzed for perchlorate. The results as described in Section 3.4.6 indicated that perchlorate is not sourced from the Wilcox Clay and that the majority of perchlorate is in the groudnwater. Figure 1-5 of the FS does not show a depression, it rather shows that flow gradient is towards that area of the site and then farther to the south. The impression of the depression is because the well is~~					

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		~~clay, representing a long-term continuing source to the groundwater. Please identify all investigations and data, if any, indicating these releases from these buildings and related sumps are not potential sources of the perchlorate contamination observed in this area of the site. If sufficient information is not available, then additional site characterization may be needed in this area.~~		~~at the edge of the contoured area. A better depiction of the Wilcox clay pattern is presented in cross-section D-D' presented in Attachment B. The cross-section does not show the presence of a depression in the Wilcox clay at this location. Note that if the concept of accumulation of perchlorate brine within this "depression" area has occurred, perchlorate in soil samples collected at 18CPTMW22SW would be very high. The highest perchlorate concentration in the Wilcox clay at location 18CPTMW22SW is 1,410 ug/kg (see Table 3-4) which is hardly a concentration representing perchlorate brine.~~ ~~Finally, two soil samples (18-SB08 at 10 to 12 ft bgs and 16.5 to 17.5 ft bgs) were collected in August 2011 and the perchlorate results were < 1.27 ug/kg and < 1.22 ug/kg, respectively. The borehole location is identified in Figure 1-4. The borehole was drilled within former sump 25-X, which is depicted in Figures 1-3 and 1-4. These results indicate there is no source of perchlorate in the soil.~~ ~~Therefore, this hypothesis is not substantiated and no further action would be required.~~					
~~26~~	~~Section 3.2.4.4~~	~~December 2014 perchlorate and TCE concentrations in well 18CPTMW03SW were 5,880 and 1,010 ug/L, respectively. This document should be updated to include these data so that the FS considers all available data.~~	~~C~~	~~Information updated.~~					
~~27~~	~~Section 3.2.4.12, Page 3-20, Last Paragraph~~	~~Clay elevations appear to be reported as both feet amsl and feet bgs. The EPA is not aware that the Wilcox Clay is found 157 ft. bgs, as indicated. Also, the sentence containing "…migrate to the north towards 18CPT25 to the north…" should be revised to remove the double reference to direction.~~	~~C~~	~~The reported elevation in fee bgs should be in feet amsl. Correction to the text was made.~~					
~~28~~	~~Section 3.4.6~~	~~December 2014 sampling results indicate a perchlorate concentration of 17,300 ug/L at 18CPTMW22SW. The presence of high concentrations of perchlorate in the shallow Wilcox outside of the containment area may warrant remedial action. Appendix B should be updated to reflect this finding so that the FS is based on all available information.~~	~~E~~	~~Section 3.4.6 was updated to reflect the concentrations of perchlorate in the soil samples that were collected at this location from borehole 18CPTMW22SW. The maps have been updated to reflect December 2014 results. The presence of high perchlorate in the shallow Wilcox at this location will be addressed in the FS as needed.~~					
~~29~~	~~Section 3.5.3~~	~~The EPA concurs that a Wilcox formation well is needed at this location; however, it is not clear from the text if Army is proposing a shallow Wilcox or~~	~~E~~	~~Please see response to Comment 23. No Wilcox well is required in this area of the site and the text is modified to reflect this position with additional~~					

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		~~Deep Wilcox well? More than one Wilcox well may be needed.~~		~~details providing justification for this conclusion. Note that 18CPTMW15 is mostly screened in the Wilcox Formation and an additional Wilcox Formation well would not be required due to the presence of low concentration of perchlorate below the medium-specific concentration of perchlorate of 26 ug/L at a depth of 38 to 42 ft bgs form the discrete water sample collected in March 2013.~~					
~~30~~	~~Section 3.5.4~~	~~Water level and chemical data are now available for this well and should be included in this addendum. The EPA recognizes that the available data indicate contaminants have not migrated to this location above applicable criteria and the FS is not affected by the lack of this information.~~	~~C~~	~~Text updated with December 2014 results.~~					
~~31~~	~~Section 3.8.3~~	~~Arsenic, barium and chromium are not chemicals of potential concern. They are chemicals of concern.~~	~~C/E~~	~~Agree for barium and chromium but not for arsenic. Arsenic was not considered as a CoC at this site.~~					
~~32~~	~~Section 4.1.2, First Bullet~~	~~The EPA did not comment previously on the detailed evaluations presented for each location. The descriptions used to substantiate Army's conclusions regarding source areas were extremely difficult to understand and conceptualize and, based on the information provided the EPA cannot conclude that impacted soils within the purported smear zone are not source areas due to their interaction with and sourcing from groundwater. Alternative, preferably graphical demonstrations are needed to support Army's position. One suggestion is that potential source area elevations (e.g. tops and bottoms of contaminated interval) be plotted with groundwater hydrographs for supporting wells to demonstrate that these contaminated soils are consistently within a smear zone and potentially sourced by groundwater. Other graphical demonstrations may be as or more effective.~~	~~E~~	~~The same information is provided in tabular format (see Tables 3-3 and 3-4).~~					
~~33~~	~~Section 4.1.3~~	~~The EPA concurs with the assessment that contamination could migrate below or between the ICTs 12E and 13A. Based upon extremely high perchlorate concentrations in 18CPTMW22, the EPA also believes that bypass may also be occurring between ICT-11 and ICT-12E. Furthermore, perchlorate data from 18ICTMW22SW demonstrates elevated impacts to the Wilcox formation. It cannot be concluded if these represent historic impacts prior to ICT installation or represent continuing migration.~~	~~E~~	~~Added language to reflect the information provided by soil data from 18-SB08 and 18CPTMW22SW, which implies that perchlorate is no longer sourced from the unsaturated soil and that the majority of perchlorate in the saturated zone is present in groundwater.~~					
~~34~~	~~Section 4.2~~	~~Please see earlier comments regarding the need to~~	~~C~~	~~Added text to introduce those wells and their~~					

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27-February 2015

Reviewer: Richard Mayer, EPA

Respondent: Debra Richmann and Doug Gray, AECOM

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		~~include data from the three newest monitoring wells installed in 2014. Also, any groundwater related comments made during review of the main body of the report must also be resolved in this section.~~		~~December 2014 results.~~					
~~35~~	~~Section 5~~	~~Please revise this section, as necessary, in response to the applicable comments provided above.~~	~~C~~	~~Updates made as appropriate.~~					
~~36~~	~~Section 5.2~~	~~Recommendations for all proposed additional site characterization (e.g. Wilcox formation well near 18CPTMW23, etc.) should be identified in this section.~~	~~E~~	~~Please see response to Comment 23. No new wells are recommended for delineation.~~					

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Document Date: October 2016

Reviewer: April Palmie, TCEQ

Respondent: Debra Richmann and Elspeth Sharp, AECOM

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Comment #	Page	Section/ Paragraph	Comment	C, D, E or X[1]	Response	A or D[2]
		RTC	Accept all RTC.	--	Noted.	A
1	1-6	1.5, 1st Paragraph	Sentence beginning with "Caddo Lake State Park operates" should reference 18/24 at end of sentence.	C	Missing site number (18/24) has been added to the end of the sentence.	A
2		Figure 1-6 and references to MW-20 and 18CPTMW22R	This area of the site is odd, but it needs to be dealt with consistently. We should not include one of these wells and disregard the other for contouring and discussions of gradient or contaminant migration. Suggest a technical discussion to determine how to deal with data in this area and what it means.	C	Both monitoring wells MW-20 and CPTMW22R are completed in a small perched groundwater unit that is not in direct hydraulic communication with the Shallow Zone groundwater. Therefore, the groundwater elevations for these two wells were not included when the Shallow Zone potentiometric surface was re-contoured. Figure 1-6 was revised accordingly and includes a note indicating the groundwater elevations for MW-20 and CPTMW22R were not used for Figure 1-6. This information was also added to the text in Section 2.4.2.3 in response to TCEQ comment 7.	A
3		Figures that display Isopleth contours for Wilcox	Between one version and another, all of these Wilcox figures changed from a nice readable color, for well numbers and concentrations, to the orange hash-mark color that is really difficult to read. Please change them back to a solid color. Black would be great. Please talk to the map maker and ask him/her not to use this color.	C	All figures in the revised FS with symbols that were orange/ hash marked have been replaced with darker, easy to read symbols.	A
4	2-2	2.1.2	Sentence beginning with "Since groundwater is being restored" has some typos - "discussion of" and revise this clause to "risk to a hypothetical"	C	Typographical errors were corrected as indicated.	A
5	2-4	2.2.2	First paragraph – Sentence beginning with "After dispute resolution" add "in absence of MCL" to end.	C	"in the absence of an MCL" has been added to the end of the indicated sentence.	A
6	2-16	2.4.2.3	First paragraph – formatting strangeness in print version and "clay liner" should read "clay layer"	C	Spacing issues have been corrected and "liner" has been changed to "layer" as indicated.	A

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7	2-17	2.4.2.3	References to MW-20 and 18CPTMW22R, see comment 2. Also, if not hydraulically possible for contaminants to move here with groundwater, where did they come from? Suggest revision of sentence to something a little less absolute.	C	The discussion in this section (2.4.2.3) and elsewhere in the document concerning the groundwater surface high associated with MW-20 and 18CPTMW22R has been changed to indicate that the elevations in these wells reflect the groundwater surface of a perched unit, not the Shallow Zone groundwater. Related Shallow Zone potentiometric surface maps have been re-contoured without the groundwater elevations from the perched wells. The June 2016 sample results for CPTMW22R (perched groundwater) for all VOCs and 1,4-dioxane are below the detection limit and perchlorate was detected at 0.917 µg/L, well below the PCL of 17 µg/L. In the second to last sentence on page 2-16 “no” has been changed to “little” in response to an EPA comment and the text that follows has been modified to indicate that there is no Shallow Zone groundwater surface high at 18CPTMW22R. The absence of Shallow Zone groundwater mounding in this area is consistent with historical monitoring results in this area and a scenario where COCs in Shallow Zone groundwater migrated to the southwest part of the site before installation and operation of the extraction system.	A
8	2-23	2.4.3.3	Last paragraph – Sentence beginning with “Only arsenic” to clarify add “For metals,”	C	“For metals” has been added to the beginning of the indicated sentence.	A

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9	5-5	5.2.2	Last paragraph – Briefly note the decision criteria for deferring and later initiating removal of soil under UEP. Why defer? What criteria later indicates it is time to remove or leave in place?	C	The current language has been modified as follows: "Removal of contaminated soil under the UEP may be performed as a contingent remedy in the future, if conditions change such that it poses an imminent threat to human health or the environment. Currently however, the existing cap effectively prevents human contact with contaminated soil, and minimizes infiltration of precipitation/runoff that could potentially mobilize COCs in the waste and impact shallow groundwater. The cap is regularly maintained and inspected to ensure its continuing effectiveness. If in the future, groundwater monitoring detects a significant increase in COC concentrations in wells downgradient of the UEP, and/or the water table elevation rises significantly, causing a large part of the underlying waste to become saturated, a detailed evaluation would be performed to assess the need for a contingent remedy, either for the soil or for the groundwater. The RD will address the triggering criteria for evaluating whether a contingent remedy is needed".	A

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Respondent: Marwan Salameh, AECOM

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1	Exec Summary, x, 2nd paragraph	The last sentence is misleading. Please replace "The only areas where exceedances exist" with something like "After comparing to these criteria, the remaining soil sources to address include"	C	Changed the statement to the following: "Based on these criteria, the remaining soil sources where exceedances exist are located to…"	A
2	1.5, 1-5	2nd paragraph – Add "Appendix B" to PSI Report reference Last paragraph – Active water supply wells should be rechecked. Current reference is to 2010; things can change in five years.	C	Added Appendix B to the PSI Report reference. A water well search within one-mile of the installation boundary was conducted on June 17, 2015. The results were presented in the Draft Final PSI Addendum report dated August 2015 in Section 1.2.2, Figure 1-2, and as Appendix H. This information will be either referenced or introduced in the FS as appropriate.	A
3	Figure 1-5	The inset map and main figure should be oriented the same way – North should not be shifted 45 degrees between the two components of the map.	E	The three dimensional map is meant to be oriented at the shown angle to maximize the view of the existing wells with the minimal overlap.	A
4	Figures (general)	Check for "Draft for Discussion Purposes Only" on figures and remove.	C	"Draft for Discussion Purposes Only" text removed from the figures where applicable.	A
5	Figure 1-8	Add reference to the source document for this figure	C	Added source: "U.S. Army, 1995, Record of Decision for Early Interim Remedial Action at Burning Ground No. 3, May."	A
6	Section 2	General comment – This section should also evaluate Wilcox groundwater (not just shallow).	E	A new Section 2.4.3 was added, similar to existing Section 2.4.2, to discuss Wilcox formation. The hydrogeology of the Wilcox Formation is discussed in **Section 1.5**, the presence and distribution of COCs is discussed in **Section 1.6**, and vertical connectivity between the shallow zone and the Wilcox Formation is presented in **Section 2.4.2.5**.	A

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7	2.4.2.2, 2-8	Table, last row missing % solubility	C	Added %solubility to the table.	A
8	3.2.2.1, 3-4	Second paragraph – Discharge criteria will need to be recalculated prior to implementing remedy. Standards are revised every few years. Revise last sentence.	C	Added statement that the discharge criteria will be recalculated using most current TCEQ standards.	A
9	Table 3-1	Surface Water Quality Standards - Discharge criteria will need to be recalculated prior to implementing remedy. Revise requirements statement.	C	Added statement that the discharge criteria will be recalculated using most current TCEQ standards.	A
10	4.1, 4-1	Each bullet should also discuss impacts to Wilcox	C	Added discussion associated with impacts to the Wilcox Formation.	A
11	4.4.1.3.3, 4-10	Implementability bullet – typo “multiplayer”	C	Corrected to “multilayer”	A
12	4.4.1.5.1, 4-18	Effectiveness bullet – a few typos Sentence 4 - Revise “precipitation (fouling of) on” Sentence 5 – Revise “precipitation or iron” to “of” Sentence 6 – Revise “electorkinetics”	C	Corrections made.	A
13	4-20	Effectiveness bullet Revise “In soured areas” to “source”	C	Correction made.	A

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14	4.4.2.3.3, 4-34	Paragraph beginning "Out of these in situ options" References EZVI, typo	C	Correction made.	A
15	4.4.3.3.3, 4-42	First sentence references in situ groundwater treatments; should be soil	C	Correction made.	A
16	Figure 4-1 (and other flow charts)	Typo "Monnitored Natural Attenuation"	C	Correction made.	A
17	5.2.2, 5-3	Paragraph after table – If wells are converted to extraction points, new monitoring wells will need to be installed. Please add to narrative.	E	Changed narrative to indicate that no extraction will be conducted from existing monitoring wells or new extraction wells. Since in-situ bioremediation will be conducted at these areas, use of extraction points is no longer advisable.	A
18	5.2.2.4, 5-8	Last sentence, first paragraph – In sentence with "arsenic tends to come of the soil" change to "off"	C	Correction made.	A
19	5.2.2.5, 5-8	In "additional excavation" sentence, change "walls of bottom" to "or"	C	Correction made.	A
20	5.2.4.2, 5-16	Last sentence – add "will be required" after "surfactants"	C	The sentence is revised by adding "will be required".	A

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21	5.2.6.2, 5-20	Last sentence on page should reference ZVI not thermal	C	Correction made.	A
22	5 series Figures	For Alternatives 2 and 4-6, if MW-8, 18CPTMW22, and 18CPTMW23 will be converted to extraction wells, the change needs to be indicated by changing symbol and adding to the legend.	E	See response to comment #17. No vertical extraction from existing monitoring wells is planned. No changes to the figures will be made.	A
23	Figure 5-3	Check the note. What or where does this reference? Also wells are missing labels.	C	The note is changed to read: "Depth to Wilcox in feet below ground surface is shown along the proposed length of the slurry wall." Well labels are added.	A
24	6.1.6, 6-3	Last sentence in section, change "will" to "would"	C	Correction made.	A
25	6.2.1.3.2, 6-5	First sentence, 2nd paragraph Revise "unacceptable risk from surface water" to "to surface water"	C	Correction made.	A
26	6.2.5.5.1, 6-32	This sentence "If a spill occurs, which contains food grade substrate, which is harmless…" is confusing and repeated in the document. Please revise all occurrences of this sentence to make it more concise and clear.	C	Corrections made.	A
27	Appendix A, 3.1, 3-1	2nd paragraph, 2nd sentence "ferrous concentrations almost indicate" remove "almost" or replace with "also"	C	Correction made.	AA

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28	Appendix A, Figures A-1 and A-12	The last row of each table includes a clean-up level (PCL, MCL, MSC). There are some inconsistencies. Please check the other figures too. A-1 – References Tier 1 GW MCL for Perchlorate at 0.0005 mg/L. There are several things wrong with this statement. A-12 Uses GW-Ind 0.026 in table and calculation.	C	Checked cleanup levels. Errors identified for MW 109 for perchlorate (Figure A-6) and correction made in table and where applicable in the text to TRRP PCL of 17 ug/L. Figure A-1 referenced cleanup level corrected for perchlorate to TRRP PCL of 17 ug/L. No effect on calculation of first order decay constant. Figure A-12 referenced cleanup level corrected for perchlorate to TRRP PCL of 17 ug/L. No effect on calculation of first order decay constant. No other changes were required for the remainder of the figures of Appendix A.	A
~~29~~	~~Appendix B, viii~~	~~Paragraph beginning "For soil physical characterization", please revise the last two sentences for clarity.~~	~~C~~	~~Sentences revised.~~	
~~30~~	~~X~~	~~Paragraph beginning "MIP results were used", please add former borehole location numbers to sentence beginning 18CPTBB02.~~ ~~All bulleted statements in this section should also include groundwater results to complete the discussion.~~	~~E/C~~	~~Former borehole locations 8A-940 and 8A-984 are referenced in the sentence beginning with 18CPTBB02. Added former borehole locations adjacent to 18CPTPB17 in the ensuing sentence.~~ ~~Added groundwater data from nearest sample/well location for each bullet.~~	
~~31~~	~~Xi, Contaminant Presence section~~	~~2nd paragraph~~ ~~Sentence beginning "18CPTMW22 was plugged", please say why the well was plugged.~~	~~C~~	~~Added clarification in the text indicating why the well was plugged.~~	
~~32~~	~~Xii, Groundwater gradients section~~	~~First paragraph~~ ~~Add reference to unlined 14 series ICT in gradient discussion.~~	~~C~~	~~Added reference to the unlined 14 series ICTs.~~	

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~~33~~	~~1-3~~	~~Bullets at top of page~~ ~~Add sentence to include revisions to the modifications. Current narrative makes it look like injection is still happening.~~	~~C~~	~~Added text to update information that reinjection is not being practiced.~~	
~~34~~	~~2.2.2.4.1, 2-4~~	~~First sentence needs some commas.~~	~~C~~	~~Sentence modified to provide clarity of content.~~	
~~35~~	~~General~~	~~Look for Draft IWWP and revise~~		~~Revised as Final.~~	
~~36~~	~~2.2.5.2, 2-5~~	~~Should be titled "2014" investigation~~	~~C~~	~~Changed header to 2014.~~	
~~37~~	~~2.3.3.3, 2-13~~	~~2014 – Is reference to "Chicot" correct here?~~	~~C~~	~~Should reference Wilcox. Correction made.~~	
~~38~~	~~3-44~~	~~Last paragraph should start section 3.2.4.63 with section heading~~	~~C~~	~~Added a new Section for 18CPTPB17.~~	
~~39~~	~~3.4.4, 3-51~~	~~Last sentence~~ ~~TCEQ agrees that data gaps remain in this area and additional delineation is required. This information should also be included in the feasibility study~~	~~D~~	~~Section 3.4.4 pertains to 18CPT24 location located near the eastern corner of the site. The last paragraph of this section pertains to 18CPTMW22SW located near the southern corner of the site. Therefore, the last paragraph was deleted. Instead see Section 3.4.5 and 3.4.6 pertaining to the area in the vicinity of~~	

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				~~18CPTMWW22SW.~~	
~~40~~	~~3.5.3, 3-54~~	~~Conclusion sentences~~ ~~TCEQ agrees that data gaps remain in this area and additional delineation is required.~~	~~C~~	~~Additional delineation was completed as described in added text to this section and as described in ensuing **Section 3.5.4** describing installation of MW-18WW24.~~	
~~41~~	~~4-2~~	~~(Similar to comment 29)~~ ~~Relevant bulleted statement should also include discussion of groundwater concentration.~~	~~C~~	~~The reference should be to Comment 30. Added groundwater data from nearest sample/well location for each bullet.~~	
~~42~~	~~4.2.1, 4-4~~	~~(Similar to comment 30)~~ ~~Explain why 18CPTMW22 was plugged.~~	~~C~~	~~The reference should be to Comment 31. Explanation added.~~	
~~43~~	~~Attachment A~~	~~Thank you for adding cross-reference cover page.~~	~~C~~	~~Thank you.~~	
44	Appendix D	Cost build-ups are missing detailed costs for EISB (all relevant), slurry wall construction (Alternative 3), and thermal treatment (Alternative 5). These seem to be included on the first page of each cost build-up (by year) but not on the following pages (by task).	C	Added details for the EISB, slurry wall construction, and thermal treatment to the various alternative detailed cost sheets.	A

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LHAAP-18/24, BURNING GROUND NO. 3 AND UNLINED EVAPORATION POND
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

Prepared For:

U.S. Army Corps of Engineers
Tulsa District

Prepared By:

AECOM Technical Services, Inc.

January 2017

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Contract No. W912DY-09-D-0059

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January 2017

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Acronyms and Abbreviations

µg/kg	micrograms per kilogram
µg/L	micrograms per liter
ACD	Air Curtain Destructor
AECOM	AECOM Technical Services, Inc.
AOC	area of contamination
AR	Administrative Record
ARAR	applicable or relevant and appropriate requirement
ASTM	American Society for Testing and Materials
BERA	Baseline Ecological Risk Assessment
bgs	below ground surface
BNPs	bimetallic nanoparticles
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CEC	cation exchange capacity
CFR	Code of Federal Regulations
CoCs	contaminants of concern
COPEC	contaminant of potential ecological concern
CPT	cone penetrometer test
CSM	Conceptual Site Model
CWA	Clean Water Act of 1972
DC	direct current
DCE	Dichloroethene
DCA	Dichloroethane
DDD	4,4’-dichlorodiphenyldichloroethane
DNAPL	dense nonaqueous phase liquids
DPT	direct push technology
EEQ	ecological effects quotient
ELCR	excess lifetime cancer risk
EPC	exposure point concentration
ERH	electrical resistance heating
EVO	emulsified vegetable oil
EZVI	emulsified zero-valent iron
FFA	Federal Facility Agreement
FR	Federal Register

FS	Feasibility Study
Ft	Feet
Ft^3	cubic feet
GAC	granulated activated carbon
GRA	general response action
GW-Ind	groundwater MSC for industrial use
GWP-Ind	groundwater protection-industrial MSC
GWTP	groundwater treatment plant
HDPE	high-density polyethylene
HI	hazard index
HQ	hazard quotient
ICT	interceptor collection trench
IRA	Interim Remedial Action
ISB	in situ bioremediation
ISM	in situ microcosm
Jacobs	Jacobs Engineering Corporation, Inc.
lb/ft^3	pound per cubic foot
LHAAP	Longhorn Army Ammunition Plant
LTM	long-term monitoring
LUC	Land Use Control
mA/cm^2	milliamps per centimeter square
MC	methylene chloride
MCL	maximum contaminant level
mg/L	milligrams per liter
MIP	membrane interface probe
MNA	monitored natural attenuation
MSC	medium-specific concentration
NA	natural attenuation
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
nm	nanometer
NOAEL	no-observed adverse effect level
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
nZVI	nano zero-valent iron
O&M	operation and maintenance

ORC	oxygen releasing compound
ORP	oxidation-reduction potential
OPS	operating properly and successfully
OSHA	Occupational Safety and Health Administration
PCE	tetrachloroethene
PCL	Protective Concentration Level
PID	photoionization detector
PP	Proposed Plan
PPE	personal protective equipment
ppmv	parts per million by volume
PRB	permeable reactive barrier
PSI	Post-Screening Investigation
RAOs	Remedial Action Objectives
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
ROD	Record of Decision
SAI-Ind	soil MSC for industrial use based on inhalation, ingestion and dermal contact
SDWA	Safe Drinking Water Act
SEI	steam enhanced injection
Shaw	Shaw Environmental, Inc.
SVOC	semivolatile organic compound
TAC	Texas Administrative Code
TBC	to-be-considered
TCA	1,1,2-trichloroethane
TCDD	2,3,7,8-tetrachlorodibenzo-p-dioxin
TCE	Trichloroethene
TCEQ	Texas Commission on Environmental Quality
TOC	total organic carbon
tpy	tons per year
TRRP	Texas Risk Reduction Program
TRV	toxicity reference value
TSD	Treatment, storage, and disposal
TSDF	treatment, storage, and disposal facility
UCL	upper confidence limit
UEP	Unlined Evaporation Pond

U.S.	United States
U.S. Army	U.S. Department of the Army
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
VC	vinyl chloride
VOC	volatile organic compound
Yd^3	cubic yard
ZVI	zero-valent iron
ZVM	zero-valence metals

EXECUTIVE SUMMARY

This Feasibility Study (FS) has been prepared by AECOM Technology Services, Inc. (AECOM) on behalf of the United States (U.S.) Army Corps of Engineers (USACE), Tulsa District, under the Huntsville District's Worldwide Environmental Remediation Services Contract No. W912DY-09-D-0059 Task Order No. DS01, for remediation activities at the former Longhorn Army Ammunition Plant (LHAAP) located in Karnack, Texas. This FS presents the analysis of remediation alternatives for the Burning Ground No. 3 (designated as LHAAP-18) and the Unlined Evaporation Pond (UEP) (designated as LHAAP-24) in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), and provides a basis for remedy selection to address potential risks to human health and the environment consistent with the intended future use of LHAAP as a national wildlife refuge.

Background

LHAAP is an inactive, government-owned, formerly contractor-operated and maintained Department of Defense facility located in central-east Texas. LHAAP operated until 1997 when it was placed on inactive status and classified by the U.S. Army Armament, Munitions, and Chemical Command as excess property.

LHAAP-18/24 is a fenced, cleared area consisting of 34.5 acres in the southeastern section of LHAAP. LHAAP-18/24 had been used since 1955 as a burial and burning ground for various industrial and hazardous wastes generated at LHAAP. The UEP was no longer used after 1984, and was closed under the Resource Conservation and Recovery Act in 1986. As part of the LHAAP-18/24 Interim Remedial Action (IRA), approximately 32,000 cubic yards of soil were excavated and treated by low temperature thermal desorption. A groundwater extraction system incorporating approximately 5,000 feet (ft) of interceptor trenches and a groundwater treatment plant was installed in 1997 to control the migration of contaminated groundwater. This treatment system is still operating.

LHAAP was placed on the National Priorities List (NPL) on August 9, 1990. A Federal Facility Agreement (FFA) became effective on December 30, 1991, among the U.S. Environmental Protection Agency (USEPA), the U.S. Department of the Army (U.S. Army), and the Texas Water Commission (later named the Texas Natural Resources Conservation Commission, now named the Texas Commission on Environmental Quality [TCEQ]). LHAAP-18 and LHAAP-24 were listed as NPL sites in the FFA due to threatened releases of hazardous substances, pollutants or contaminants.

The entire LHAAP installation was under the control of the U.S. Army until May 5, 2004, when approximately two-thirds of the property was transferred to the U.S. Fish and Wildlife Service. Property transfer continues as response actions are completed at smaller parcels of land. The U.S. Army Environmental Command provides funding for the environmental remedial activities. The Base Realignment and Closure Division is responsible for all aspects of LHAAP including the environmental program, operations, and land transfer.

Harrison Bayou watershed is the nearest significant surface water body to LHAAP-18/24. Runoff from the site drains into Harrison Bayou, which eventually flows into Caddo Lake (a drinking water source for multiple communities).

Sampling specific to LHAAP-18/24 was conducted as referenced in Jacobs Engineering Corporation (2001) in 1980 (U.S. Army Environmental Hygiene Agency), in 1982 and 1987 (Environmental Protection Systems), and in 1986 (Camp, Dresser, & McKee). Following those initial investigations was the multiphase Remedial Investigation (RI) (Jacobs Engineering Group, Inc.). Additional investigations were performed through 2008 (Solutions to Environmental Problems, Inc., Plexus Scientific Corporation, and Shaw Environmental, Inc. (Shaw)). A limited source assessment was conducted in August 2011 (Shaw) and additional investigations were conducted in 2013, 2014, and 2016 (AECOM) in an attempt to improve the Conceptual Site Model and assess for the presence of source areas (unsaturated soil and residual dense non-aqueous phase liquid (DNAPL) in the saturated shallow zone). The results of the 2014 investigation were compiled with the 2013 investigation and documented in the Final Updated Post-Screening Investigation (PSI) Report (AECOM, 2016a). The 2016 PSI results were compiled and presented in the Draft Final Supplemental to the Updated PSI Report (AECOM, 2016c) (**Appendix B**). Currently, groundwater at LHAAP-18/24 is monitored semi-annually, associated with operation of the existing groundwater extraction and treatment system.

The investigation data available for the site identified impacts to soil, shallow groundwater, and the Wilcox Formation. The majority of impacts to the soil (i.e., source areas) were removed in the 1997 IRA where approximately 32,000 cubic yards of soil were removed. The major concern associated with the presence of contaminants of concern (CoCs) in the soil is associated with potential soil leaching to groundwater. Compilation of analytical results from historical and recent data overlain on areas of soil removal produced a map of potential residual soil source areas. These areas are isolated to the west and south of former Air Curtain Destructor (ACD), and to the south, west, and beneath the UEP. Analysis of the data indicated the majority of CoCs in the soil of these areas do not constitute source areas because either 1) the soil was identified to be present within the groundwater zone (i.e., saturated zone), such as to the west of the ACD, 2) data indicate the soil concentration decreases with depth and does not constitute a source, such as to the south of the ACD, or 3) the impacted soil is located within the UEP, which prevents infiltration and potential migration of CoCs from soil to groundwater. The only areas where exceedances exist are to the south of the UEP (in the vicinity of 18SB02 and 8A-911 from 8 to 12 ft below ground surface (bgs) and in the vicinity of 8A-975 between 5.5 and 12 ft bgs) and to the west of the UEP (in the vicinity of 18CPTBB02 and 8A-940 between 4 and 10 ft bgs and in the vicinity of 18SB04 between 10 and 14 ft bgs). Although the soil beneath the UEP is protected by the UEP cap, this soil could constitute a source of CoCs to groundwater and is addressed in this Revised FS.

CoCs were detected in monitoring wells within the shallow groundwater bearing unit (formerly designated as shallow and shallow/intermediate zones), and occasionally in the Wilcox Formation (formerly designated as intermediate and deep zones). The shallow zone and the Wilcox Formation are separated by a Wilcox clay unit present over the majority of the site, with the exception of the area to the northwest. The clay layer is also absent to the north of the site approaching Harrison Bayou.

Risk Assessment

The baseline human health risk assessment for LHAAP-18/24 is based on data from the RI and additional investigations performed through 2001 (Jacobs, 2002). The future use of

LHAAP-18/24 is as a national wildlife refuge as a part of the Caddo Lake National Wildlife Refuge. The human health exposure scenario for LHAAP-18/24 is a hypothetical future maintenance worker. Groundwater at LHAAP-18/24 presented a cancer risk of 4.4×10^{-1}, which exceeds the acceptable cancer risk range of 1×10^{-6} to 1×10^{-4}. Groundwater contaminants determined to be CoCs due to cancer risk were methylene chloride (MC), trichloroethene (TCE), and chloroform. The total hazard index (HI) from groundwater was 3,200, which exceeds the acceptable HI of 1. Groundwater contaminants determined to be CoCs due to noncancer health hazards were MC, TCE, perchlorate, chloroform, and cis-1,2-dichloroethene (DCE).

For chemicals in groundwater posing unacceptable risk or hazard, USEPA maximum contaminant levels (MCLs) are utilized as cleanup levels. In the absence of federal drinking water standards, cleanup levels will be based on the Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Levels (PCLs), hereby referred to in this document as “TRRP PCLs” or “PCLs”.

Certain groundwater contaminants were selected as CoCs due to historical MCL exceedances that have not been superseded by more recent sampling results. These included tetrachloroethene (PCE), benzene, 1,1,2-trichloroethane (TCA), barium, chromium, and thallium. Chemicals were not selected as CoCs if they were found to be naturally-occurring or if exceedances of MCLs or the groundwater Texas Risk Reduction Standard 2 medium-specific concentrations (MSCs) for industrial use (GW-Ind) in early sampling were not confirmed in later events.

Additional screening of potential CoCs was conducted as additional groundwater data in the Shallow Zone and Wilcox Formation were collected. Compounds such as chloroform which are sporadically detected with highest concentrations below the TRRP PCL were eliminated from the list of CoCs. Thus, the groundwater CoCs for the Revised FS are: MC, TCE, perchlorate, cis-1,2-DCE, 1,4-dioxane, PCE, benzene, 1,1,2-trichloroethane (TCA), vinyl chloride (VC), bromodichloromethane, 1,3,5-trinitrobenzene, antimony, barium, chromium, and nickel. Bromodichloromethane, 1,3,5-trinitrobeznene, arsenic, and cobalt have been retained on a provisional basis, because the concentrations above the PCL are only detected sporadically (cobalt), no recent results are available (1,3,5-trinitrobenzene), detection limits for recent results were above the cleanup levels (bromodichloromethane), or the CoC is not associated with the site (arsenic). These provisional CoCs will be re-evaluated when additional data are collected with lower reporting limits. 1,4-Dioxane has been added as a COC as a result of its detection in several wells across the site above the TRRP PCL.

The original risk assessment was developed based on CoC concentrations in the Shallow Zone groundwater. As additional data were collected from the Wilcox Formation, it became possible to determine whether the CoCs identified in the Shallow Zone are also CoCs in the Wilcox Formation. Therefore, the CoCs identified in the Shallow Zone groundwater were considered potential COCs in the Wilcox Formation. The Wilcox Formation results were screened against the MCLs and PCLs for the various CoCs. The results identified the CoCs in the Wilcox Formation. These CoCs include MC, TCE, perchlorate, 1,4-dioxane, cis-1,2-DCE, benzene, 1,1,2-TCA, VC, arsenic, and barium. PCE, 1,3,5-trinitrobenzene, and bromodichloromethane, have been retained on a provisional basis because of high detection limits for PCE and bromodichloromethane, and due to lack of recent data for 1,3,5-trinitrobenzene. 1,4-Dioxane has been added as a result of its detection in several wells across the site above the TRRP PCL.

The soil at LHAAP-18/24 presented a cancer risk of 5.0×10^{-7}, which is less than the acceptable cancer risk range of 1×10^{-6} to 1×10^{-4}, and a total HI of 0.042, less than the acceptable HI of 1. No CoCs were selected for soil based on human health considerations.

The Installation-Wide Baseline Ecological Risk Assessment (Final Installation-Wide BERA – Shaw, 2007b) did not identify potential risk to ecological receptors at LHAAP-18/24. Should there have been any ecological risk, it would have been expressed by this point in time. An addendum to the BERA was completed in 2014 (AGEISS, Inc., July 8, 2014). The conclusions of the 2007 BERA were not changed by the 2014 BERA Addendum.

Remedial Action Objectives

The Army recognizes the USEPA's policy to return all groundwater to potential beneficial uses, based on the non-binding programmatic expectation in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). The Remedial Action Objectives (RAOs) for LHAAP-18/24, which address contamination associated with the media at the site and take into account the future uses of LHAAP streams, land, and groundwater are:

Groundwater:

- Prevent human exposure to the groundwater contaminated with volatile organic compounds (VOCs), metals, and perchlorate above cleanup levels
- Prevent or minimize contaminated groundwater from discharging to surface water above cleanup levels
- Prevent or minimize further migration of the contaminant plume
- Return groundwater to its potential beneficial uses as drinking water, where practicable.

Source Materials:

- Prevent or minimize further migration of contaminants from source materials in the saturated and unsaturated zones to groundwater.

Remedial Alternatives

This FS identifies and screens remedial technologies and associated process options that may be appropriate for satisfying the RAOs for LHAAP-18/24. Selected remedial technologies and process options were carried forward for further evaluation after the initial screening, and were combined to develop the following list of potential remedial alternatives for LHAAP-18/24:

- **Alternative 1 – No Action.** Contaminated groundwater and source areas in the saturated and unsaturated soil would be left in place with no remedial action or additional measures to prevent exposure to the CoCs or to prevent migration. The no action alternative serves as a baseline for comparison with other alternatives as required under CERCLA. The no action alternative does not meet the RAOs.
- **Alternative 2 –Enhanced Groundwater Extraction and Ex Situ Treatment, Land Use Control (LUC), Enhanced In Situ Bioremediation (ISB) Inside & Outside Containment Area and in Wilcox Formation, Unsaturated Soil Excavation and Off-site Disposal.** The existing groundwater extraction and treatment system would continue operating for

contaminant removal, hydraulic control, and groundwater treatment. However, interception collection trenches (ICTs), ICT3 and ICT9, previously inactivated, would be reactivated based on a material balance identifying these ICTs as critical for removing more contaminant mass from groundwater. Saturated soil contaminated with VOCs or perchlorate at high concentrations that may be acting as a source of groundwater contamination (one area in the UEP vicinity and another area in the ACD vicinity) would be remediated by enhancing groundwater extraction using vertical extraction wells. ISB would be conducted in shallow zone contaminated areas inside and outside the containment area and in three areas in the Wilcox Formation. Unsaturated soil in two areas south of the UEP and two areas to the west of the UEP would be excavated and disposed off-site. The cost estimate for two soil areas beneath the UEP will be developed and included in the FS but the actual implementation would be deferred to 2024 at the earliest. In the interim, maintenance of the UEP cap will continue. A new groundwater treatment plant (GWTP) enhanced with an advanced oxidation process for treatment of 1,4-dioxane is included in this alternative. This alternative would take a very long time (several hundred years) to achieve RAOs. LUCs would be implemented to prevent human exposure to contaminated groundwater.

- **Alternative 3 – Groundwater Extraction and Treatment, Monitored Natural Attenuation (MNA) Outside the Containment and in Wilcox Formation, LUC, and Containment.** A slurry wall would be used to contain the contaminated groundwater in the shallow zone; additional soil cover would be added to portions of the site and the drainage ditches would be improved to promote runoff and reduce infiltration. The slurry wall would be tied into the clay layer, where present, that separates the Shallow Zone from the Wilcox aquifer. Where the clay layer is not present, the slurry wall would be installed to a depth just below the bottom depth of Harrison Bayou to the north of the containment. The existing groundwater extraction system would be used as needed to maintain hydraulic control inside the slurry wall, and would be ramped down gradually to an approximate 65% extraction rate (actual rate that would be required to achieve an inward and upward gradient would be determined with a 2-year hydraulic evaluation). MNA would ensure that groundwater contamination remains localized for the areas outside the slurry wall and within the Wilcox Formation. This alternative would take a very long time (several hundred years) to achieve RAOs. A new GWTP is included in this alternative, which incorporates an advanced oxidation process for the treatment of 1,4-dioxane. LUCs would be implemented to prevent human exposure to contaminated groundwater. Maintenance of the UEP cap will continue.

- **Alternative 4 – Enhanced Groundwater Extraction and Treatment, LUC, Enhanced ISB Inside & Outside Containment Area and in Wilcox Formation, Unsaturated Soil Excavation and Off-site Disposal, and Surfactant Enhanced DNAPL Removal.** Saturated soil contaminated with VOCs or perchlorate at high concentrations that may be acting as a source of groundwater contamination (one area in the UEP vicinity and another area in the ACD vicinity) would be treated via surfactant flushing. ISB will also be applied to these areas after completion of surfactant flushing as a polishing step because surfactant flushing effectiveness might be hindered by low permeability zones and to remove perchlorate which is not treated via surfactant flushing. ISB would be conducted in shallow zone contaminated areas inside and outside the containment area and in three areas in the Wilcox Formation. Unsaturated soil in two areas south of the UEP, two areas to the west of the UEP, and two areas beneath the UEP would be excavated and disposed off-site. The cost estimate for two

soil areas beneath the UEP will be developed and included in the FS but the actual implementation would be deferred to 2024 at the earliest. Maintenance of the UEP cap will continue. The groundwater extraction system in its enhanced form (reactivation of ICT 3 and ICT 9) would continue operating to maintain hydraulic control and remove remaining Shallow Zone contaminants within the containment area. A new GWTP enhanced with an advanced oxidation process for treatment of 1,4-dioxane is included in this alternative. This alternative would achieve site RAOs more quickly than Alternatives 2 and 3, but is expected to exceed 30 years. LUCs would be implemented to prevent human exposure to contaminated groundwater.

- **Alternative 5 – Enhanced Groundwater Extraction and Treatment, LUC, Enhanced ISB Inside and Outside Containment Area and in Wilcox Formation, Unsaturated Soil Excavation and Off-site Disposal, Thermal DNAPL Removal.** This alternative is the same as Alternative 4 with the exception that thermal treatment is applied at the residual DNAPL source areas of the UEP and ACD instead of surfactant flushing. While the technology is more expensive, it is very effective in low permeability zones where the majority of the residual DNAPL resides. Removal rate of 99.9% is expected. ISB would be applied to the thermally-treated areas as a polishing step after thermal treatment is completed. It is estimated that this alternative allows achievement of the RAOs within 20 years.
- **Alternative 6 - Enhanced Groundwater Extraction and Treatment, LUC, Enhanced ISB Inside and Outside Containment Area and in Wilcox Formation, Unsaturated Soil Excavation and Off-site Disposal, Enhanced DNAPL Remediation using Zero-Valent Iron (ZVI).** This alternative is the same as Alternative 5 but instead of use of in situ thermal remediation, zero-valent iron for treatment of residual DNAPL source areas will be used. Uniform distribution of zero-valent iron in low permeability zones may not be possible due to subsurface heterogeneity and therefore, effective remediation of these areas by ZVI may not be effective. Hence, ISB will be applied to these areas after ZVI remediation is completed as a polishing step. It is estimated that 70% to 80% reduction in CoCs will occur after each injection of ZVI with two injections planned for the site. With application of ISB after the ZVI, it is estimated that this alternative allows achievement of the RAOs within 30 years.

Each alternative was evaluated against CERCLA criteria to provide a basis for selecting a preferred alternative in the follow-on Proposed Plan (PP) and Record of Decision documents.

Table ES-1 summarizes the comparative analysis of the alternatives presented in this Revised FS. Two additional criteria, State acceptance and community acceptance, will be evaluated during the PP stage.

Table ES-1: Comparative Analysis of Alternatives

Criteria	No Action	Alternative 2 Enhanced Groundwater Extraction and Treatment, ISB Inside & Outside Containment and in Wilcox, Unsaturated Soil Excavation, LUC.	Alternative 3 Containment, Groundwater Extraction and Treatment, MNA, LUC	Alternative 4 Enhanced Groundwater Extraction and Treatment, ISB Inside & Outside Containment and in Wilcox, Unsaturated Soil Excavation, Enhanced DNAPL Removal by Surfactant Flushing, LUC	Alternative 5 Enhanced Groundwater Extraction and Treatment, ISB Inside & Outside Containment and in Wilcox, Unsaturated Soil Excavation, Enhanced DNAPL Removal by Thermal Treatment, LUC	Alternative 6 Enhanced Groundwater Extraction and Treatment, ISB Inside & Outside Containment and in Wilcox, Unsaturated Soil Excavation, Enhanced DNAPL Removal by Application of ZVI, LUC
Overall protection of human health and the environment	No protection. Does not achieve RAOs.	Achieves RAOs but over a very long time. Protection of human health and environment provided by in situ bioremediation, ex situ groundwater treatment, DNAPL source removal, and maintenance of LUC. LTM to verify progress and hydraulic containment.	Achieves RAO for protecting human health by preventing exposure to contaminated groundwater. RAO for restoration of groundwater within the slurry wall area is not achieved within a reasonable time. Protection of human health and environment provided by physical containment of groundwater, and maintenance of LUC. MNA to treat areas outside slurry well and in Wilcox Formation. LTM to verify progress and containment.	Achieves RAOs. Protection of human health and environment provided by in situ bioremediation, ex situ groundwater treatment, DNAPL source removal, and maintenance of LUC. LTM to verify progress and hydraulic containment.	Achieves RAOs. Protection of human health and environment provided by in situ bioremediation, ex situ groundwater treatment, DNAPL source removal, and maintenance of LUC. LTM to verify progress and hydraulic containment.	Achieves RAOs. Protection of human health and environment provided by in situ bioremediation, ex situ groundwater treatment, DNAPL source removal, and maintenance of LUC. LTM to verify progress and hydraulic containment.
Compliance with ARARs	No compliance with chemical-specific ARARs.	Complies with all ARARs.	Will require an ARAR waiver for groundwater inside the slurry wall.	Complies with all ARARs.	Complies with all ARARs.	Complies with all ARARs.
Long-term effectiveness and permanence	Is not effective at protection of human health and the environment and does not provide permanence.	Soil removal is a permanent remedy. In situ and ex situ groundwater treatment permanently removes or destroys contaminants. DNAPL source removal permanently removes contaminants though effectiveness is limited and progress slow. LUC would be effective and reliable so long as they are maintained and enforced.	Containment would be permanent and effective so long as the slurry wall and hydraulic control are maintained. LUC would be effective and reliable so long as they are maintained and enforced.	Soil removal is a permanent remedy. In situ and ex situ groundwater treatment permanently removes or destroys contaminants. DNAPL source removal permanently removes contaminants although small amounts of residual DNAPL would remain in low permeability zones. LUC would be effective and reliable so long as they are maintained and enforced.	Soil removal is a permanent remedy. In situ and ex situ groundwater treatment permanently removes or destroys contaminants. DNAPL source removal permanently removes contaminants. LUC would be effective and reliable so long as they are maintained and enforced.	Soil removal is a permanent remedy. In situ and ex situ groundwater treatment permanently removes or destroys contaminants. DNAPL source removal permanently removes contaminants although small amounts of residual DNAPL would remain in low permeability zones. LUC would be effective and reliable so long as they are maintained and enforced.
Reduction of toxicity, mobility, or volume through treatment	No reduction outside of natural processes.	Reduced toxicity, mobility, and volume through in situ treatment, DNAPL and soil removal, and operating groundwater treatment system.	Very limited reduction of toxicity and volume with no treatment of source areas. Reduced mobility within slurry wall.	Reduced toxicity, mobility, and volume through in situ treatment, DNAPL and soil removal, and operating groundwater treatment system.	Reduced toxicity, mobility, and volume through in situ treatment, DNAPL and soil removal, and operating groundwater treatment system.	Reduced toxicity, mobility, and volume through in situ treatment, DNAPL and soil removal, and operating groundwater treatment system.
Short-term effectiveness	No short-term impacts.	Greater potential for impacts to the community or LHAAP workers through off-site transportation of excavated soil. Release to environment can be controlled during construction. Some potential for impacts to workers during in situ treatment applications. Duration several hundred years.	Potential for impacts to the community through increased construction activity. Some potential for impacts to workers during construction of slurry wall. Outside slurry wall area CoC removal estimated ≤ 20 years. Duration inside containment > 500 years.	Greater potential for impacts to the community or LHAAP workers through off-site transportation of excavated soil. Release to environment can be controlled during construction. Some potential for impacts to workers during in situ treatment applications. Duration 30+ years.	Greater potential for impacts to the community or LHAAP workers through off-site transportation of excavated soil. Release to environment can be controlled during construction. Some potential for impacts to workers during in situ treatment applications. Duration ≤ 20 years.	Greater potential for impacts to the community or LHAAP workers through off-site transportation of excavated soil. Release to environment can be controlled during construction. Some potential for impacts to workers during in situ treatment applications. Duration ≤ 30 years.

Table ES-1: Comparative Analysis of Alternatives

Criteria	No Action	Alternative 2 Enhanced Groundwater Extraction and Treatment, ISB Inside & Outside Containment and in Wilcox, Unsaturated Soil Excavation, LUC.	Alternative 3 Containment, Groundwater Extraction and Treatment, MNA, LUC	Alternative 4 Enhanced Groundwater Extraction and Treatment, ISB Inside & Outside Containment and in Wilcox, Unsaturated Soil Excavation, Enhanced DNAPL Removal by Surfactant Flushing, LUC	Alternative 5 Enhanced Groundwater Extraction and Treatment, ISB Inside & Outside Containment and in Wilcox, Unsaturated Soil Excavation, Enhanced DNAPL Removal by Thermal Treatment, LUC	Alternative 6 Enhanced Groundwater Extraction and Treatment, ISB Inside & Outside Containment and in Wilcox, Unsaturated Soil Excavation, Enhanced DNAPL Removal by Application of ZVI, LUC
Implementability	Technically implementable; administratively unacceptable.	Soil excavation readily implemented with standard earthmoving equipment. In situ bioremediation is a commercially available treatment technology. Extraction and treatment of groundwater is already implemented at the site. The effectiveness of extraction on DNAPL source removal is limited and controlled by the dissolution rate of DNAPL.	Implementable, but uncertainty exists in the effectiveness of slurry wall containment. Uncertain overall duration and cleanup levels possibly not attainable inside slurry wall.	Soil excavation readily implemented with standard earthmoving equipment. In situ bioremediation is a commercially available treatment technology. Injection of surfactants uses similar tools as in situ bioremediation. Dual phase extraction is an established technology.	Soil excavation readily implemented with standard earthmoving equipment. In situ bioremediation is a commercially available treatment technology. Thermal treatment is a commercially available technology but planning well in advance is required.	Soil excavation readily implemented with standard earthmoving equipment. In situ bioremediation is a commercially available treatment technology. Injection of ZVI uses similar tools as in situ bioremediation.
***Costs**						
Capital	$0	$14,560,000	$6,410,000	$13,110,000	$19,520,000	$102,230,000
O&M	$0	$19,600,000	$12,240,000	$19,390,000	$13,150,000	$19,390,000
Total	$0	$34,160,000	$18,650,000	$32,500,000	$32,670,000	$121,620,000
State Acceptance	This criterion will be evaluated in the Proposed Plan after state agency comments are provided					
Community Acceptance	This criterion will be evaluated in the Proposed Plan after community comments are provided					

Notes and Abbreviations:

* Costs are net present value and have been rounded to the nearest $100,000.

ARAR	applicable or relevant and appropriate requirement	LUC	land use control
CoC	contaminant of concern	MNA	monitored natural attenuation
LHAAP	Longhorn Army Ammunition Plant	O&M	operation and maintenance
LTM	long-term monitoring	RAO	remedial action objective
ISB	in situ bioremediation		

1 INTRODUCTION

This Feasibility Study (FS) was prepared by AECOM Technical Services, Inc. (AECOM), for This Revised Feasibility Study (FS) was prepared by AECOM Technical Services, Inc. (AECOM), for the United States (U.S.) Army Corps of Engineers (USACE), Tulsa District, under the Huntsville District's Worldwide Environmental Remedial Services No. W912DY-09-D-0059 Task Order No. DS01, for remediation activities at the former Longhorn Army Ammunition Plant (LHAAP) located in Karnack, Texas. This FS presents the analysis of remediation alternatives for the Burning Ground No. 3 and the Unlined Evaporation Pond (UEP) (designated as LHAAP-18/24) in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA).

The U.S. Army Environmental Command provides funding for the environmental remedial activities at LHAAP. The Base Realignment and Closure Division is responsible for all aspects of LHAAP including the environmental program, operations, and land transfer.

1.1 Purpose and Organization of Report

Environmental cleanup decision making under CERCLA follows a prescribed sequence: Remedial Investigation (RI), FS, Proposed Plan (PP), and Record of Decision (ROD). The RI serves as the mechanism for collecting data to characterize site conditions, determining the nature and extent of the contamination, and assessing risks to human health and the environment from the contamination. This investigatory element of decision making for LHAAP-18/24 has been completed and documented in an RI report (Jacobs, 2001) and a baseline risk assessment report (Jacobs, 2002). However, additional investigations at the site were conducted for the U.S. Department of the Army (U.S. Army) by AECOM in 2013 and 2014 to collect post-screening investigation data deemed necessary to support a revision of the Draft Final FS for LHAAP-18/24 (Shaw, May 2010). The results of the 2013 and 2014 investigations are presented in the Updated PSI Report (AECOM, 2016a). Additionally, treatability testing of viable alternatives was completed as part of supplemental investigation work conducted in 2016. The results of these additional investigations and treatability testing are documented in a Supplemental to the Updated PSI Report (AECOM, 2016c), and various testing laboratory reports that are appended to this Revised FS.

The Revised FS takes the next step of identifying and evaluating remedial solutions to the environmental problems identified for LHAAP-18/24. This step begins by briefly summarizing the findings of the RI and risk assessment and by updating these findings based on subsequent sampling and analyses. Based on those findings and the resulting Conceptual Site Model (CSM), Remedial Action Objectives (RAOs) are defined for the site. Viable alternatives are then formulated by considering general response actions (GRAs), types, volumes, or areas of media to be addressed, treatability testing results, and potentially applicable technologies and process options. After a reasonable set of alternatives has been formulated, the alternatives undergo a detailed analysis using nine established evaluation criteria under CERCLA. The detailed analysis profiles individual alternatives against the criteria and compares them with each other to gauge their relative performance. Each alternative that makes it to this stage of the analysis, with the exception of the required "no action" alternative, is expected to be protective of human health and compliant with applicable or relevant and appropriate requirements (ARARs) (unless a

waiver is justified), which are threshold requirements under CERCLA. The alternatives developed in this Revised FS address the media and contaminants of concern (CoCs) at LHAAP-18/24 through combinations of source control and groundwater actions.

The main text of this Revised FS is composed of the following sections:

- Section 2, "Risk and Site Assessment," summarizes the risk assessment approach and conclusions. It also provides the CSM for LHAAP-18/24 and discusses the LHAAP-18/24 media contamination assessment. This section also includes the updated CSM and incorporates the findings from the 2013 and 2014 investigations documented in the Final Updated PSI Report (AECOM, 2016a).
- Section 3, "Remedial Action Objectives and Cleanup Levels," presents the RAOs and a discussion of cleanup levels. The chemical-, location- and action-specific ARARs are presented in this section.
- Section 4, "Identification and Screening of Technologies and Process Options," summarizes the rationale for selecting technologies and process options for remediation of contamination to meet the RAOs.
- Section 5, "Development and Description of Alternatives," presents the rationale for developing a range of alternatives as well as a description of each alternative.
- Section 6, "Detailed Analysis of Alternatives," evaluates, compares, and contrasts the benefits and costs of the alternatives.
- Section 7, "References," presents the references cited in this document.

This Revised FS also includes a number of appendices that support the main text. **Appendix A** presents an evaluation of natural attenuation (NA) of groundwater contaminants at LHAAP-18/24. **Appendix B** provides the Draft Final Supplemental to the Updated PSI Report (AECOM, 2016c) and **Appendix C** compiles the treatability study results. **Appendix D** presents the cost estimates for the remedial action alternatives.

The preferred alternative for LHAAP-18/24 will be presented in the PP. The PP will briefly summarize the alternatives studied in this Revised FS, highlighting the key factors that led to identifying the preferred alternative. The U.S. Army will submit the PP to the regulatory agencies, TCEQ and USEPA, and then the public for review. After this review, the U.S. Army will release a ROD that documents the selected remedy, certifies that the remedy selection process was carried out in accordance with CERCLA, and addresses public comments on the PP. Relevant documentation, including the RI, Revised FS, and subsequent documents, are or will be available to the public in the Administrative Record (AR) for this project. The AR is housed at LHAAP and at the Marshall Public Library in Marshall, Texas.

1.2 LHAAP Background

The LHAAP is an inactive, government-owned, formerly contractor-operated and maintained industrial facility located in central-east Texas in the northeastern corner of Harrison County. The facility currently occupies approximately 1,200 of its former 8,416 acres located between State Highway 43 in Karnack, Texas, and the western shore of Caddo Lake as shown in **Figure**

1-1. LHAAP was listed as a National Priorities List (NPL) site on August 9, 1990, due to threatened releases of hazardous substances, pollutants, or contaminants. The USEPA, the Texas Water Commission (now the TCEQ), and the U.S. Army signed a Federal Facility Agreement (FFA) on December 30, 1991.

The nearest cities are Marshall, Texas, approximately 14 miles to the southwest, and Shreveport, Louisiana, approximately 40 miles to the southeast. Caddo Lake, a large freshwater lake situated on the Texas-Louisiana border, bounds LHAAP to the north and east. The industries in the surrounding area consist of agriculture, timber, oil and natural gas production, and recreation.

1.3 LHAAP-18/24 Background

LHAAP-18/24 is a 34.5 acre fenced, cleared area (with an interim remedy that includes a containment area) located in the southeastern section of LHAAP (**Figure 1-2**). The site is located between Avenue Q to the southeast and Harrison Bayou to the northwest. LHAAP-17 (Burning Ground No. 2) is to the southwest (**Figures 1-2 and 1-3**), and heavily wooded areas lie to the east and northeast. The area had been used for the treatment, storage, and disposal (TSD) of solid and liquid explosive, pyrotechnic, and combustible solvent waste by open burning/open detonation, incineration, evaporation, and burial. LHAAP-18/24 encompasses a number of Defense Environmental Restoration Program Management Information System sites:

- Burning Ground No. 3;
- Rocket Motor Washout Pond;
- Former UEP;
- Burn Burial Area;
- 24-X Holding Area;
- 25-X Washout Pad;
- Air Curtain Destructor (ACD);
- Three Open Burning Cage;
- Two Open Burning Pan;
- Building 41-X; and
- Building 43-X.

The locations of these sites within LHAAP-18/24 are presented in the Environmental Site Assessment (Plexus, 2005) and identified in **Figure 1-3**. The former UEP/Rocket Motor Washout Facility is located within the northern corner of LHAAP-18/24.

LHAAP-18/24 is generally vegetated with grass and weeds and is crossed by a number of paved roads. It is situated on a natural topographic high slightly west of the crest of a small topographic divide between Harrison Bayou and Saunder's Branch. The topography of the site has been greatly altered by operations over the past 35 years. LHAAP-18/24 is mostly level, with more relief near the western corner that contained an ACD until 2003, and near the northern corner that contains the mounded surface of the former UEP.

Burning Ground No. 3 operated between 1955 and 1998. Historical waste management units include open burn pits, the UEP, stockpiles of solvent-soaked sawdust, and suspected waste burial pits. The UEP was constructed at the burning ground in 1963 as a holding pond to store explosive wastes resulting from the washout of rocket motor casings. In 1973, the pond also began receiving waste water containing solvent residues and solids. An ACD was built in 1979 for the purpose of disposing of explosive and explosive-contaminated wastes by burning.

Use of burn pits and trenches were reportedly discontinued in 1984, and the use of the UEP was discontinued in 1984 when it was discovered that the pond was contaminating groundwater beneath the site. The UEP was closed as a Resource Conservation and Recovery Act (RCRA) interim status surface impoundment in 1986 by removing the waste and capping the impoundment. The last burning cage was removed in 1998.

Wastes removed during the closure of the UEP were disposed off-site at a RCRA certified disposal facility. As part of the LHAAP-18/24 Interim Remedial Action (IRA), approximately 32,000 cubic yards of source area soil were excavated and treated by low temperature thermal desorption. Some of the treated soil was placed at LHAAP-12 and LHAAP-16.

A groundwater extraction system incorporating approximately 5,000 feet (ft) of interceptor collection trenches (ICTs) and a groundwater treatment plant (GWTP) was installed in 1997 to control the migration of contaminated groundwater. As of September 2014, approximately 120.5 million gallons of contaminated groundwater had been extracted and treated. The treated water is to be primarily released to Harrison Bayou with occasional releases to the INF Pond or as irrigation water on LHAAP-18/24. However, due to drought conditions since 2011, the majority of the water has been released as irrigation water due to low or no flow in Harrison Bayou.

Between 18 September 2007 and 13 October 2008, four major system modifications were implemented to optimize the interim remedy. These modifications were:

- Injection of GWTP effluent into the shallow groundwater via two former ICTs 6 and 9,
- Conversion of monitoring well 18WW17 to an extraction well,
- Deactivation of ICTs 1, 3, 5, 10 and 12A, and
- Implementation of extraction at EW-1.

Reinjection into ICTs 6 and 9 was discontinued in July 2012. ICT 12A was reactivated in December 2012 and extraction from EW-1 was continued.

1.4 Surface Water Hydrology

Harrison Bayou flows within approximately 200 ft of the western corner of LHAAP-18/24. There are no surface water bodies or watercourses running through the site, however, minor drainage paths have been observed in the northwestern part of the site, associated with intermittent ponding in low areas after heavy rainfall events. Surface drainage occurs in all directions, but flow is generally directed toward Harrison Bayou to the west and by both natural and manmade ditches and drainage swales to the north. Harrison Bayou drains into Caddo Lake,

which is located approximately one mile northeast of LHAAP-18/24. The extreme western corner of the site is located within the 100-year floodplain of Harrison Bayou.

1.5 Hydrogeology

Figure 1-4 shows the locations of monitoring wells and soil, sediment, and surface water sampling locations at LHAAP-18/24, prior to the PSI. Until recently, the existing CSM (i.e., through June 2012) described three groundwater zones that were identified jointly by the FFA parties for LHAAP-18/24: shallow, intermediate, and deep. The three groundwater zones were described as somewhat separated by non-uniform, non-contiguous clay or silty clay layers. The separation between aquifer zones was, therefore, primarily descriptive and defined by the intervals in which groups of monitoring wells had been completed. The depth of monitoring wells in the shallow groundwater zone was indicated to occur between 10 and 53 ft below ground surface (bgs). The depth of monitoring wells in the intermediate groundwater zone was indicated to occur between 44 and 80 ft bgs. The depth of monitoring wells in the deep groundwater zone was described to occur between 98 and 185 ft bgs.

The CSM was updated on October 18, 2012, before completion of the 2013, 2014, and 2016 investigation activities, and was refined after completion of PSI data collection using a sequence stratigraphy methodology. The updated CSM describes the presence of only two groundwater zones at LHAAP-18/24: a "shallow zone" extending from the surface to a depth of approximately 45 ft bgs, and the Wilcox Formation below the shallow zone. Generally, these two units are separated by a contiguous clay layer which is believed to be present across the entire site with the exception of the area to the west and northwest towards Harrison Bayou (i.e., within the floodplain of Harrison Bayou) (**Figure 1-5**). As an example, it appears that the shallow zone and Wilcox Formation are well separated by the clay layer beyond the eastern edge of the site (e.g., near 18WW17 and 18WW18), while there is no separation (clay layer absent) just beyond the western corner (i.e., in the vicinity of 18WW02 and 18WW06). Between, these two areas, the clay layer beneath the shallow zone varies considerably in depth and thickness. Generally, based on the updated CSM, the wells previously described as "shallow" and "shallow/intermediate" are located in the shallow zone (up to a depth of 45 ft bgs), and those previously described as "intermediate" and "deep" wells are located in the Wilcox Formation (below 45 to 50 ft bgs). The updated CSM, including cross-sections identifying lithology at the site, is presented in the Final Updated PSI Report (AECOM, 2016a).

Figure 1-6 depicts the shallow groundwater elevations observed in June 2016, indicating the groundwater in the shallow zone flows radially outward in a complex pattern from the site. Shallow groundwater flow in the northwest area of the site is towards Harrison Bayou. To prevent discharge of groundwater to surface water, the interim remedial action was implemented in 1997. Localized influence of groundwater extraction can be observed in the shallow aquifer. The potentiometric map for the Wilcox Formation for June 2016 (**Figure 1-7**) indicates that the gradient and direction of flow in the northern portion of the site to be similar to the shallow zone; toward Harrison Bayou. The groundwater flow pattern and gradient direction in the Wilcox Formation prior to installation of the groundwater extraction system was similar to what is observed today. **Figure 1-8** presents the shallow groundwater potentiometric map for November 1992, prior to installation of the extraction system.

Groundwater in the Wilcox Formation near LHAAP is currently used as a drinking water source.

As of May 2015, six active water supply wells near the LHAAP were identified (**Figure 1-2**). All these public water supply wells are located greater than two miles from LHAAP-18/24. Karnack Water Supply Corporation operates two groundwater supply wells servicing the town of Karnack. These wells were completed in 1905 to depths of 287 and 285 feet bgs and are located hydraulically upgradient approximately one-quarter mile northwest and one-half mile southwest of the town center, respectively. Caddo Lake Water Supply Corporation operates three groundwater supply wells located north and northwest of LHAAP that have been in use since 1905. These wells are hydraulically upgradient of LHAAP (Jacobs, 2002) with completion depths of 244, 185 and 310 feet below ground surface. Caddo Lake State Park operates one groundwater supply well located northwest and also upgradient of LHAAP-18/24. This well was installed in 1905 with a total depth of 292 feet. Due to the large distance between these wells and LHAAP, water removal from these wells is not expected to affect groundwater flow at the site. In addition, there are several livestock and domestic wells located in the vicinity of LHAAP with depths averaging 250 ft (**Figure 1-2**). There are three water supply wells located within LHAAP (see **Figure 1-2**), upgradient of LHAAP-18/24. These water wells supply water to buildings currently in use on the installation. Their approximate locations and depths are as follows:

- 150 ft south-southeast of the fire station, approximately 2 miles from LHAAP-18/24; 128 ft deep
- ½ mile southwest of the fire station, approximately 2 miles from LHAAP-18/24; 195 ft deep
- At the U.S. Fish and Wildlife Service facility, approximately 2.6 miles from LHAAP-18/24; 220 ft deep

All of these wells are at least 2 miles from LHAAP-18/24, and none of these wells are used for drinking water. Two additional wells that had previously supplied water to the installation have been plugged and abandoned. None of the water supply wells are associated with or are in imminent danger from the localized contaminated groundwater at LHAAP-18/24. The water well search report is presented in the Final Updated PSI (AECOM, 2016a).

1.6 Previous Investigations at LHAAP-18/24

The environmental media (e.g., soil, groundwater, surface water, and sediment) at LHAAP-18/24 have been the subject of numerous investigations to identify potential contamination. Those investigations are summarized in **Table 1-1**. These include the Pre-RI investigations in 1980 (U.S. Army Environmental Hygiene Agency), in 1982 and 1987 (Environmental Protection Systems), and in 1986 (Camp, Dresser, & McKee). Phase I, Phase II, and Phase III RIs were conducted in 1993, 1995, and 1998, respectively (Jacobs Engineering Group, Inc.). The site-wide perchlorate investigation was conducted in 2002 (Solutions to Environmental Problems, Inc., 2005). An additional monitoring well, 18WW21, was installed in 2004 (Shaw, 2007a). Reports that document the studies mentioned above are included in the AR for LHAAP. A limited investigation for the presence of CoCs in unsaturated soil was performed in 2008 utilizing direct push technology (DPT) (Shaw, 2008).

The monitoring wells at LHAAP-18/24 have been periodically sampled to monitor the configuration of the contaminant plumes and to ensure that hydraulic containment is effective.

Results from the investigation completed in the Spring of 2013 and Spring of 2014 are presented in the Final Updated PSI Report (AECOM, 2016a) and the results of the spring of 2016 investigation is presented in the Draft Final Supplemental to the Updated PSI Report (AECOM, 2016c) (**Appendix B**). **Figures 1-9** through **Figure 1-16** present the isopleth maps for perchlorate, trichloroethene (TCE), methylene chloride (MC), and 1,4-dioxane from the June 2016 sampling event for the shallow zone and the Wilcox Formation, respectively. **Figures 1-17 and 1-18** present the metals concentrations for the metals that exceeded their respective maximum contaminant levels (MCLs) or Texas Risk Reduction Program (TRRP) Residential Groundwater Protective Concentration Limits (PCLs) for metals that don't have MCLs in the shallow zone and the Wilcox Formation, respectively.

A pilot study was implemented in July 2007 "to improve the performance of the containment area at LHAAP-18/24" (Shaw, 2007c). The major changes resulting from the pilot study are presented in **Section 1.3**. Two of those changes have been reversed as of July 2012, when reinjection of treated groundwater into ICT6 and ICT9 was discontinued and ICT-12A was reactivated.

A preliminary assessment of NA was prepared at LHAAP-18/24 (Shaw, 2010). The assessment was not based on geochemical or microbial data; rather, the long history of groundwater monitoring at LHAAP-18/24 provided the information to assess NA at LHAAP-18/24. Limited biogeochemical data was collected in 2013 from three wells during implementation of the PSI for NA evaluation. This information is presented in the Final Updated PSI Report (AECOM, 2016a). Assessment of NA for LHAAP-18/24 is primarily based on concentration trends and presence of degradation daughter compounds. The NA assessment completed at the site (Shaw, 2010) is presented in **Appendix A**.

The sample locations from previous investigations performed at LHAAP-18/24, excluding the data collected in 2013, 2014, and 2016 PSIs, are presented in **Figure 1-4**.

1.7 Remedial Actions at LHAAP-18/24

In addition to the IRAs described above, several remedial actions have been conducted at LHAAP-18/24. These are summarized in **Table 1-2**.

The largest of these IRAs were the closure of the UEP in 1986 and the excavation, treatment and disposal of soil in 1997. The total soil volume excavated was limited by contractual rather than remediation concerns. Exact limits of excavation were not well documented, and depths were likely limited to between 5 and 10 ft bgs, although accounts of deeper soil removal to 16 ft bgs in some areas were obtained (personal communication, 2013 from Chris Edgmon, former URS employee, to Wendy Lanier, USACE). Source areas identified in previous investigations and approximate limits of excavation are shown on **Figure 1-19**. This figure formed the basis for identification of potential remaining source areas used in implementation of the PSI and PSI Addendum activities (AECOM, 2016a), which collected data to identify areas that may require remediation.

Additionally, IRA implementation included installation of approximately 5,000 ft of ICTs and a GWTP for the extraction and treatment of groundwater at LHAAP-18/24. **Table 1-3** presents the physical characteristics of the ICTs. The groundwater extraction and treatment continues to date.

1.8 Potential Soil Source Areas

Using information from historical reports identifying potential unsaturated soil source areas and information from the IRA identifying areas of soil excavation, **Figure 1-20** was developed to identify the potential remaining vadose zone source areas. To develop the figure, all historical sampling results including soil vapor gas survey data, soil sample analytical results, and field-reported hydrocarbon concentrations (photoionization detector [PID], membrane interface probe, etc.) were used to develop the base map identified as **Figure 1-19**. All samples within the vadose zone collected in areas subsequently excavated during the IRA were then removed as depicted in the blue areas in **Figure 1-20**. Additionally, vadose zone concentrations meeting the following criteria were excluded as potential source areas:

- Volatile organic compounds (VOCs) in soil less than 500 micrograms per kilogram (µg/kg) and perchlorate less than 7,200 µg/kg (based on groundwater protection-industrial (GWP-Ind) MSC values for VOCs and perchlorate)
- PID less than 3 parts per million by volume (ppmv), which is considered a background concentration
- Soil gas survey detections less than 1 microgram per liter (µg/L) that were not substantiated by presence of soil contamination (i.e., the soil gas source is contaminated groundwater).

Additionally, soil data collected from saturated soils were excluded. Saturation of soils was determined based on depth to groundwater from adjacent monitoring wells. Generally, the depth to groundwater at LHAAP-18/24 is approximately 15 ft bgs but varies between a few ft bgs near Harrison Bayou to approximately 25 ft bgs in central areas of the site. The historical groundwater highs were used to determine the level of saturation (i.e., the zone of groundwater fluctuation is considered part of the saturated zone). **Figure 1-20** identifies those locations which could potentially represent remaining source areas and will be included in this Revised FS.

According to **Figure 1-20**, the remaining source areas include the areas immediately to the west and south of the former ACD, which were not excavated as part of the IRA, to the south of the former UEP (LHAAP-24), to the west of the former UEP, and beneath the UEP. Some of these locations were investigated in 2013 and 2014 and the locations exceeding the above criteria from these investigations are superimposed on the figure. These areas are further discussed below to identify which are of concern as a source of contaminants to groundwater and which remedial action might be employed.

- **Area West of ACD:** This area is located west of the IRA excavation area. Investigation indicated the presence of TCE, primarily, but MC was also observed at one location (18CPT27) and perchlorate at another location (18CPT09). Other than the soil gas results (samples SG-01, SG-07, and SG-55), the soil data with elevated TCE and MC were collected from soil samples at a depth of 7 to 10 ft bgs (8A-899, 8A-903, 18CPT27, and 18SB07). After further evaluation of groundwater levels in this area of the site (inside and outside of the containment area), it was determined that the maximum groundwater level inside the

containment in monitoring wells 120 and AWD-1 ranged between 3.41 and 6.25 ft bgs. Therefore, the impacted soil in this area of the site at this depth is within the range of natural groundwater table fluctuations, considering seasonal variations and potential intermittent influences from irrigation at the site. Similarly, perchlorate at 18CPT09 outside the containment area at a depth of 6 to 7 ft bgs is well within the saturated zone high as depicted by MW-16 and C-02 (these impacts were initially thought as being within the vadose zone as discussed in the PSI report). The maximum groundwater elevations at these wells were 3.18 and 0.58 ft bgs, respectively. Therefore, the impacted soil in this area at this depth is within the saturated zone and will not be considered in the remedial action for impacted soils, but will be addressed as part of impacted groundwater.

- **Area South of ACD:** This area is located south of the IRA excavation area. Three of the five locations identified in **Figure 1-20** are based on PID readings (SB-01, SB-02, and SB-03), with a fourth location based on soil gas data (SG-15). Only one boring had analytical concentrations reported (18SB06). TCE in this boring exceeded the TCE GWP-Ind MSC with 915 µg/kg at 10-12 ft bgs, but concentrations decreased to 447 µg/kg at a depth of 16 to 17 ft bgs. The highest groundwater table in this area ranged between 20.6 and 22.1 ft bgs based on data from AWD-3 and 129, respectively. This indicates that these samples are collected from the unsaturated soil. However, the results also indicate contaminant concentrations decrease with depth as a result of attenuation occurring in the soil due to volatilization losses, adsorption to the soil, and biodegradation. A similar observation is made for PID data from boring SB-02 where the PID response decreases with depth from 230 ppmv at 4 to 6 ft bgs to 7.6 ppmv at greater than 12.5 ft bgs. Therefore, the soil in this area of the site does not appear to be a source of contaminants to groundwater and will not be considered for remedial action.
- **Area South of UEP:** This area is composed of two areas, which were both excavated to 4 ft bgs, but TCE and MC occur at depths greater than 4 ft bgs at these locations. TCE concentrations greater than 500 µg/kg occur between 5.5 and 12 ft bgs (samples 8A-975, 8A-911, and 18SB02). The soil gas concentration for TCE at SG-39 at 4.5 ft bgs was very high at 430 µg/L, indicating a potential source of TCE in this area. The maximum groundwater elevation is approximately 19 ft bgs in MW-2 and MW-22, which bracket this area of the site. The investigation completed in 2014 in this area of the site identified one location at 18CPTPB17 with a TCE concentration of 531 µg/kg at a depth of 16 to 17 ft bgs. This concentration of TCE is very close to the GWP-Ind value of 500 µg/kg and is not of a major concern. The highest TCE concentration in the soil was reported in 18SB02 at a depth of 10 to 12 ft bgs at 11,800 µg/kg. The groundwater TCE concentration exceeds 10,000 µg/L; therefore, soil contribution to groundwater TCE concentrations is not significant at this time. Similarly, the MC concentration reported in 8A-911 at a depth of 8 ft was 4,318 µg/kg. The MC concentration in groundwater in this area is greater than 1,000 µg/L; therefore, the contribution of MC from soil to groundwater is not significant at this time. The TCE and MC contribution of soil to groundwater in this area could become relevant when the groundwater is remediated to concentrations less than those values. The soil in this area of the site will be considered as part of the remedial action.
- **Area Beneath the Former UEP:** The groundwater high beneath the UEP is at approximately 26.5 ft bgs. This area has been remediated to a certain depth. Remediation

information indicates that the native soil was not excavated during UEP closure, leaving potential source materials in the unsaturated soil; however, no data were collected during closure activities of the UEP. TCE is the primary CoC in this area, although tetrachloroethene (PCE) and MC are reported exceeding the GWP-Ind standard. TCE in 18CPT21 collected in 2013 was reported at 11,600 µg/kg at a depth of 16 to 17 ft bgs, which is 10 ft above the highest known groundwater elevation (i.e., at approximately at 26 ft bgs based on high groundwater elevation in MW-2 of 19 ft bgs in addition to UEP elevation of approximately 7 ft above native ground elevation). TCE in groundwater at this location was reported at 11,700 µg/L from a discrete groundwater sample. This concentration falls within the isoconcentration lines in this area of the site. The saturated and unsaturated soils at this location contained TCE at similar concentrations; therefore, based on saturated soil and groundwater TCE concentrations, the shallow unsaturated soil concentration of TCE is not a significant contributor to groundwater impacts at this time. The result of the sample collected at 18CPTUEP05 in 2014 indicated the presence of high MC in the soil at a depth of 24 to 25 ft bgs. The UEP cap is designed to minimize infiltration of rainwater; therefore, there is a low potential for TCE or MC in the unsaturated soil to leach to groundwater. Nonetheless, the TCE and MC-impacted soil at this location will be considered as part of the remedial action.

- **Area Beneath the Former UEP:** The groundwater high beneath the UEP is at approximately 26.5 ft bgs. 18CPT25 contained 7,960 µg/kg TCE at a depth of 15 to 16 ft bgs and 7,670 µg/kg at a depth of 21 to 22 ft bgs. Although a discrete groundwater sample collected at a depth of 28 to 32 ft bgs had a TCE concentration of 77.6 µg/L, the concentration in the discrete saturated soil sample collected at a depth of 31 to 32 ft bgs was 13,000 µg/kg TCE. The UEP cap is designed to minimize infiltration of rainwater; therefore, there is a low potential for TCE in the unsaturated soil to leach to groundwater. Nonetheless, TCE-impacted soil at this location will be considered as part of the remedial action.
- **Area to the West of the Former UEP:** Historical samples within the former Burn Burial area (8A-940 and 8A-984) to the west of the former UEP indicated the potential presence of TCE and MC soil sources at a depth of up to 14 ft bgs. Initially, these samples were not considered further as they appeared to be located within the former excavation depth of 16 ft bgs. However, to confirm that these exceedance soil areas were excavated, two soil borings 18CPTBB01 and 18CPTBB02 were driven in 2014 in the vicinity of borings 8A-940 and 8A-984 and soil samples collected at depths of 4.5 to 5.5 ft bgs, 22 to 23 ft bgs, 37 to 38 ft bgs, and 44 to 45 ft bgs for 18CPTBB01 and at 4.5 to 5.5 ft bgs, 15 to 16 ft bgs, 31 to 32 ft bgs, 39 to 40 ft bgs, and 47 to 48 ft bgs for 18CPTBB02 (Final Updated PSI Report, 2016). Only one sample at 18CPTBB02 at a depth of 4.5 to 5.5 ft bgs had a perchlorate concentration exceeding the GWP-Ind concentration of 7,200 µg/kg. No MC or TCE soil sources were identified in the unsaturated soil at these locations. Additionally, the nearest monitoring wells to these borings are AWD-2 and 123 with water level highs of 5.05 ft bgs and 3.81 ft bgs, respectively. The expected depth to groundwater at the boring locations located to the east of AWD-2 is slightly deeper or greater than 5 ft bgs. Therefore, the impacted soil at 4 ft bgs at 8A-940 and at 4.5 to 5.5 ft bgs at 18CPTBB02 is considered a threat to groundwater and will be targeted for remediation. Deeper soil samples at 8A-940 (e.g., at 10 ft bgs with TCE and MC exceedances) were not considered soil sources because these samples are located within the saturated zone. TCE was also detected in 18SB04 collected in August 2011 (i.e., after soil excavation had taken place) at depths of 10 to 12 ft bgs and 13 to 14 ft bgs. The depth to

groundwater high at this location is uncertain but is likely between 10 and 15 ft bgs. Therefore, the soil at this location could be a source of TCE to groundwater and will be targeted for remediation to a depth of 14 ft bgs.

In addition to the potential soil source areas discussed above, an area to the south of the site leading to the area in the vicinity of 18CPTMW22 outside the containment area was investigated in 2016 for the potential presence of a perchlorate source and for determining the extent of CoCs west of LHAAP-18/24 toward LHAAP-17 (Appendix B). Seventeen soil borings were driven to the Wilcox clay and soil samples were collected at approximately five-foot intervals and analyzed for perchlorate and VOCs. The results indicated that there is no perchlorate source in the soil or Shallow Zone groundwater and the presence of perchlorate in the vicinity of the former monitoring well 18CPTMW22 is likely historical migration to this area of the site. In addition to the 17 soil borings, four monitoring wells were installed in this area of the site. Monitoring well 18CPTMW22R was installed as a replacement of plugged and abandoned well 18CPTMW22 intended for the Shallow Zone (the well is actually screened in a perched unit above the Shallow Zone groundwater surface) ; monitoring well 18CPTMW22DW was used to determine the vertical extent of perchlorate in the Wilcox Formation; and monitoring wells 18CPTMW26 (Shallow Zone) and 18CPTMW26SW (upper Wilcox Formation) were installed to determine the extent of perchlorate in this area of the site in the direction of LHAAP-17. Very low concentrations of perchlorate (0.917 μg/L in 18CPTMW22R and 0.473 J μg/L in 18CPTMW22DW) and nondetect VOCs and 1,4-dioxane were reported in 18CPTMW22R and 18CPTMW22DW, defining the maximum vertical extent of the CoCs in groundwater. Monitoring well 18CPTMW26 had insufficient water to collect groundwater samples. Perchlorate was reported at 6.42 μg/L in 18CPTMW26SW, but VOCs and 1,4-dioxane were not detected. This well provides lateral extent determination in the shallow Wilcox Formation.

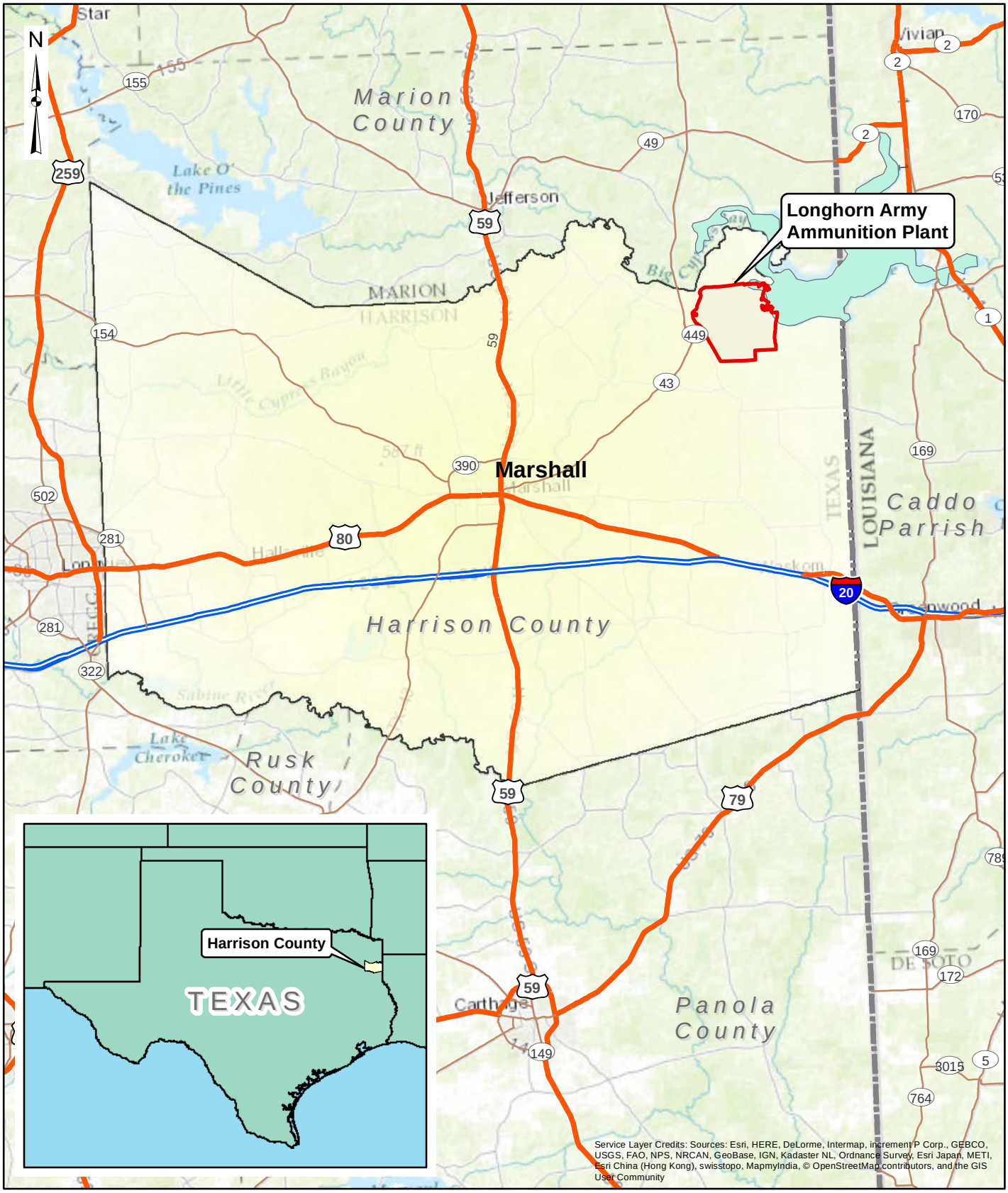

AECOM

Figure 1-1
LHAAP Location Map
Feasibility Study
LHAAP-18/24

Longhorn Army Ammunition Plant
Karnack, Texas

60256135

January 2017

L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP18_24\Feasibility_Study\Fig 1-1 LHAAP Location.mxd

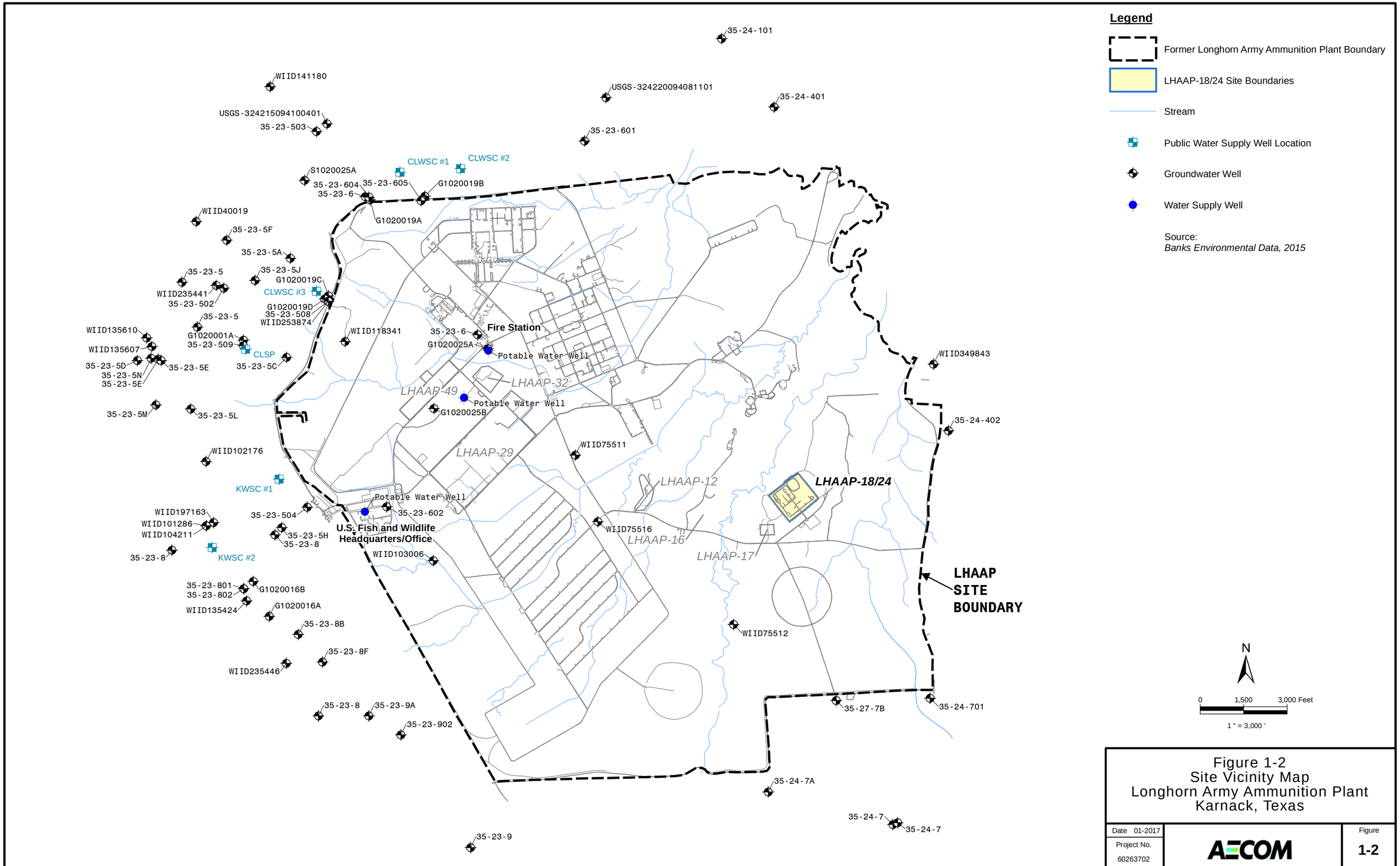

Figure 1-2
Site Vicinity Map
Longhorn Army Ammunition Plant
Karnack, Texas

Date 01-2017	AECOM	Figure
Project No. 60263702		1-2

File: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP18_24\Feasibility_Study\Fig 1-2 GW_Wells_Site_Vicinity.mxd
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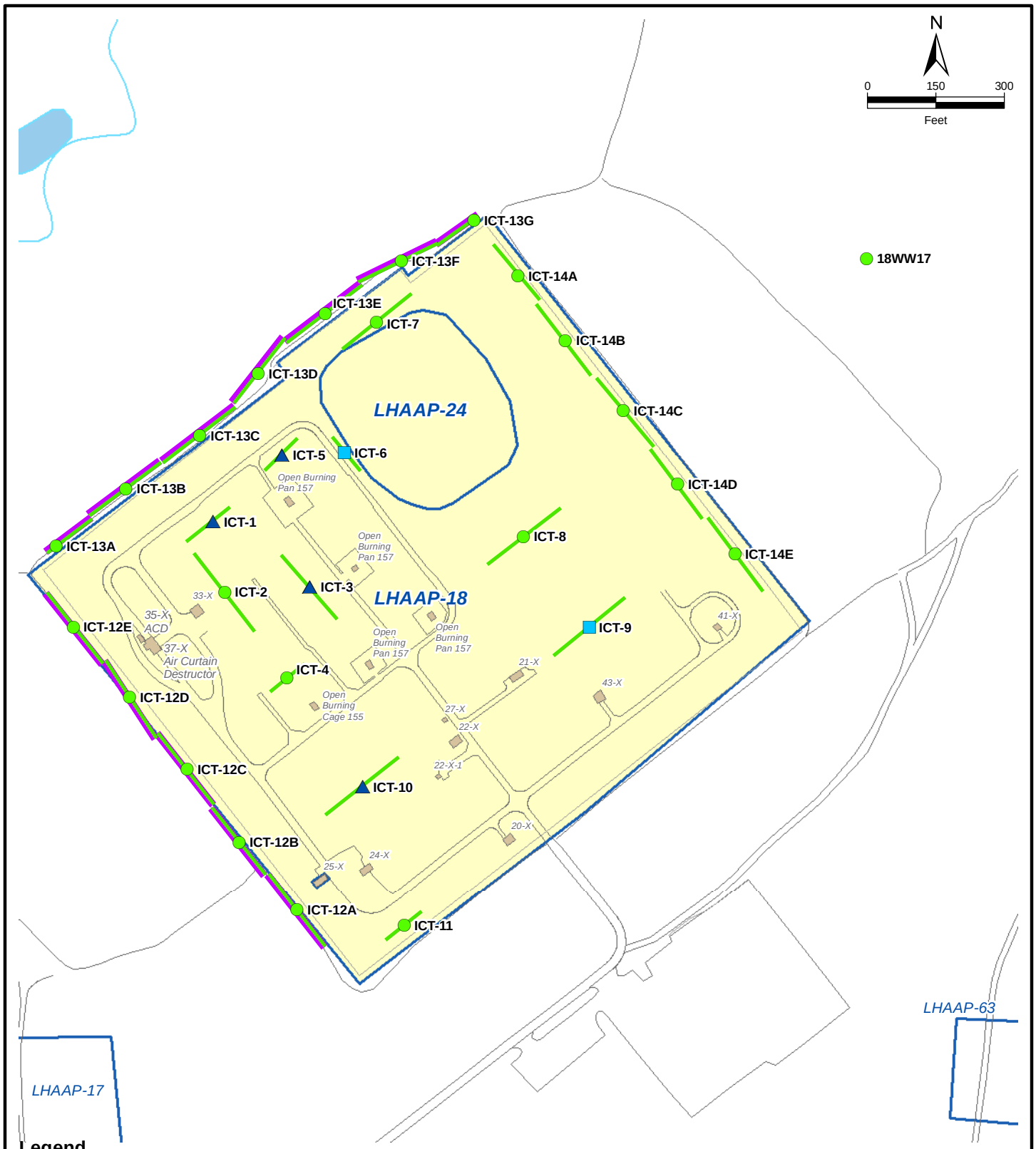

Legend

- LHAAP-18/24 Site Boundaries
- Other Site Boundary
- Former Building or Concrete Slab
- ICT Location
- HDPE Liner Installed on the Outside of the ICT
- Road
- Stream
- Extraction Location
- Deactivated ICT Sump
- Injection Point
- ACD Air Curtain Destructor

Figure 1-3
Site Layout
LHAAP-18/24
Longhorn Army Ammunition Plant
Karnack, Texas

Date 01-2017	AECOM	Figure
Project No. 60274185		1-3

File: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP18_24\Feasibility_Study\Fig 1-3 Site Layout.mxd
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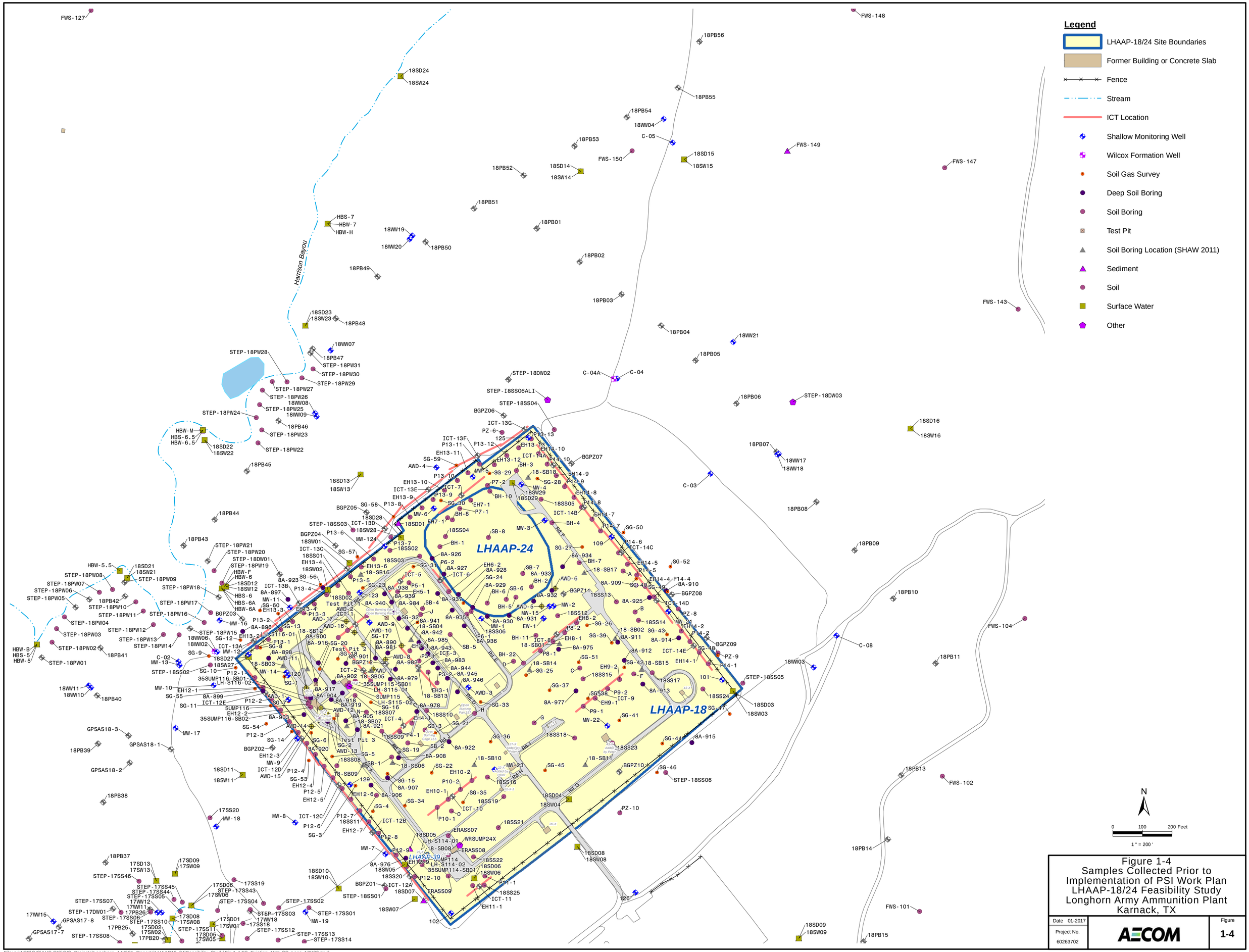

Figure 1-4
Samples Collected Prior to Implementation of PSI Work Plan
LHAAP-18/24 Feasibility Study
Longhorn Army Ammunition Plant
Karnack, TX

Date 01-2017	AECOM	Figure
Project No. 60263702		1-4

File: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP18_24\Feasibility_Study\Fig 1-4 FS_Existing_MW_SS_Locs_17X22.mxd
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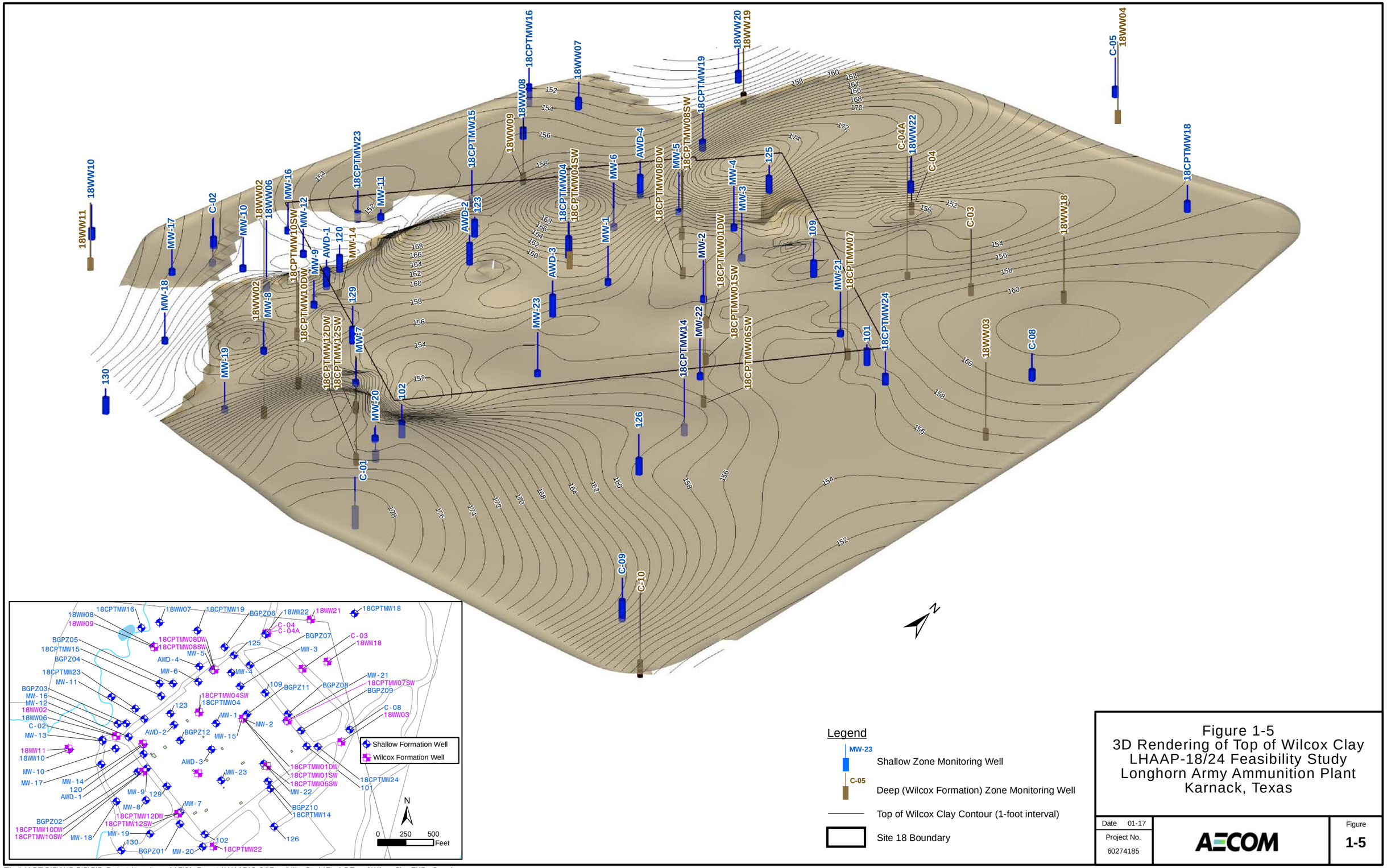

Figure 1-5
3D Rendering of Top of Wilcox Clay
LHAAP-18/24 Feasibility Study
Longhorn Army Ammunition Plant
Karnack, Texas

Date 01-17	AECOM	Figure
Project No. 60274185		1-5

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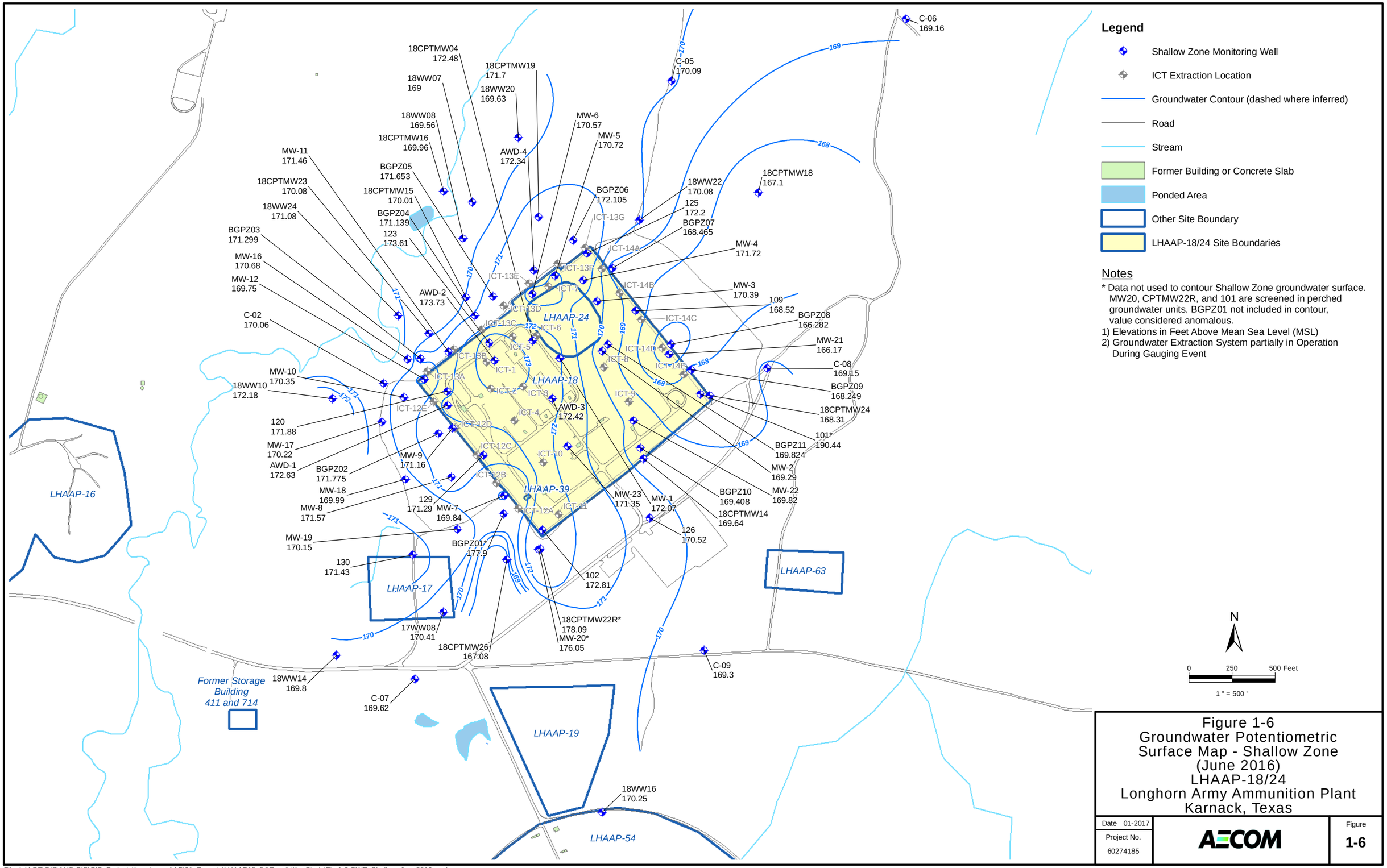

Figure 1-6
Groundwater Potentiometric Surface Map - Shallow Zone
(June 2016)
LHAAP-18/24
Longhorn Army Ammunition Plant
Karnack, Texas

Date 01-2017	AECOM	Figure
Project No. 60274185		1-6

File: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP18_24\Feasibility_Study\Fig 1-6 GWE_Shallow_Jun_2016.mxd
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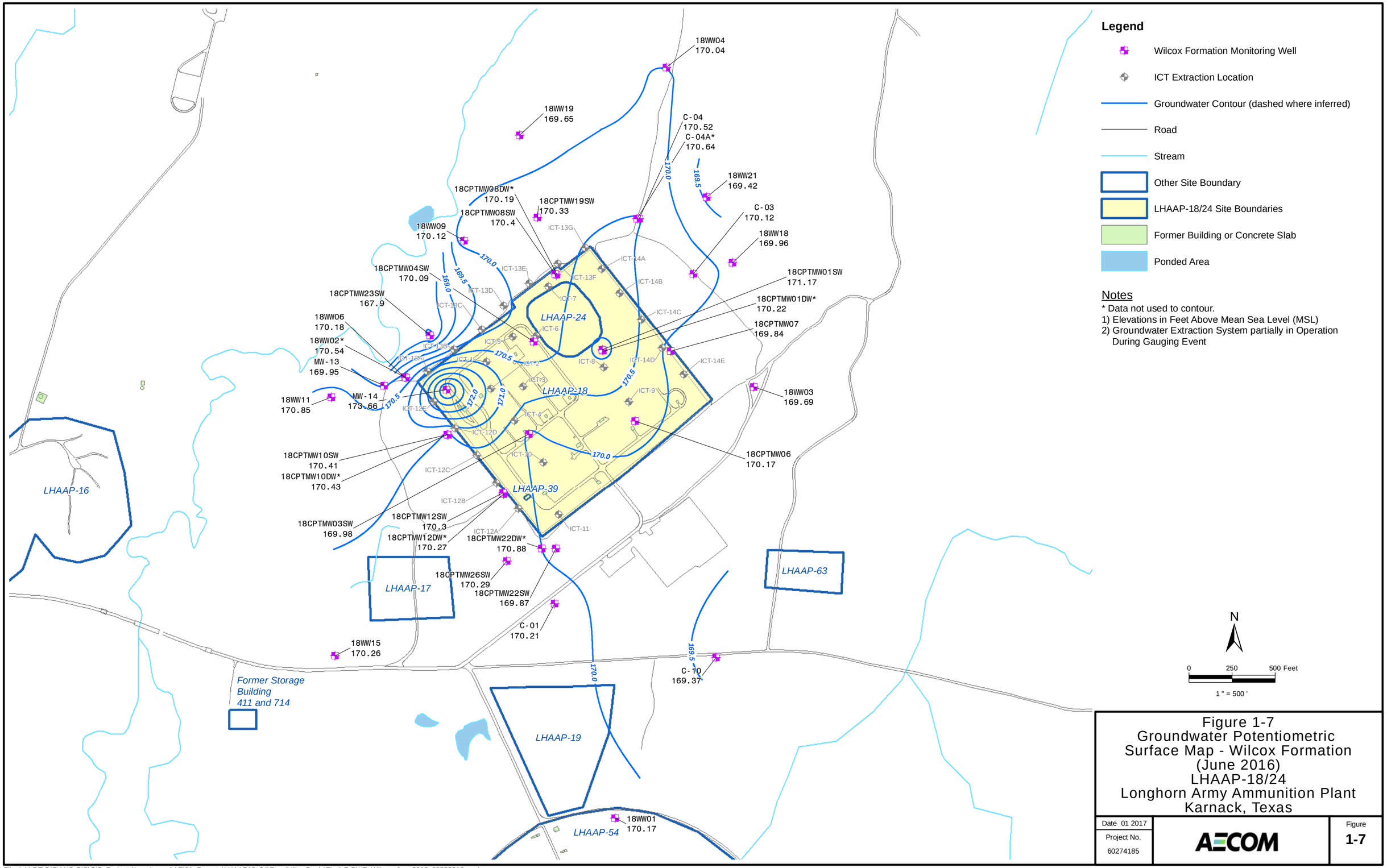

Figure 1-7
Groundwater Potentiometric Surface Map - Wilcox Formation (June 2016)
LHAAP-18/24
Longhorn Army Ammunition Plant
Karnack, Texas

Date 01 2017	AECOM	Figure
Project No. 60274185		1-7

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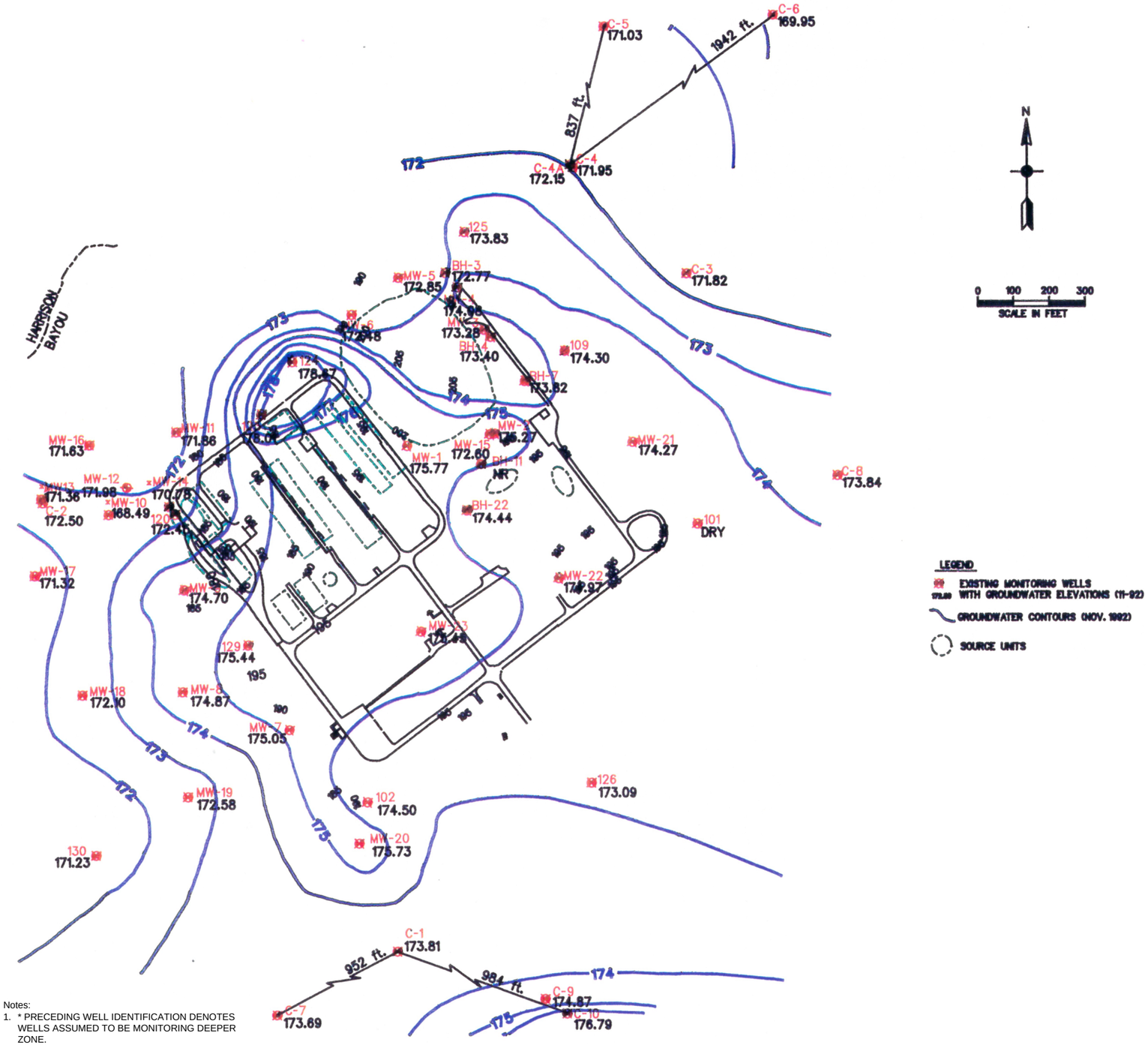

Notes:
1. * PRECEDING WELL IDENTIFICATION DENOTES WELLS ASSUMED TO BE MONITORING DEEPER ZONE.
2. NR = NOT READ.

SOURCE
USACE, 1993.

AECOM

Figure 1-8
Shallow Zone Groundwater Contours
November 1992
LHAAP-18/24 Feasibility Study

Longhorn Army Ammunition Plant
Karnack, Texas

60256135

January 2017

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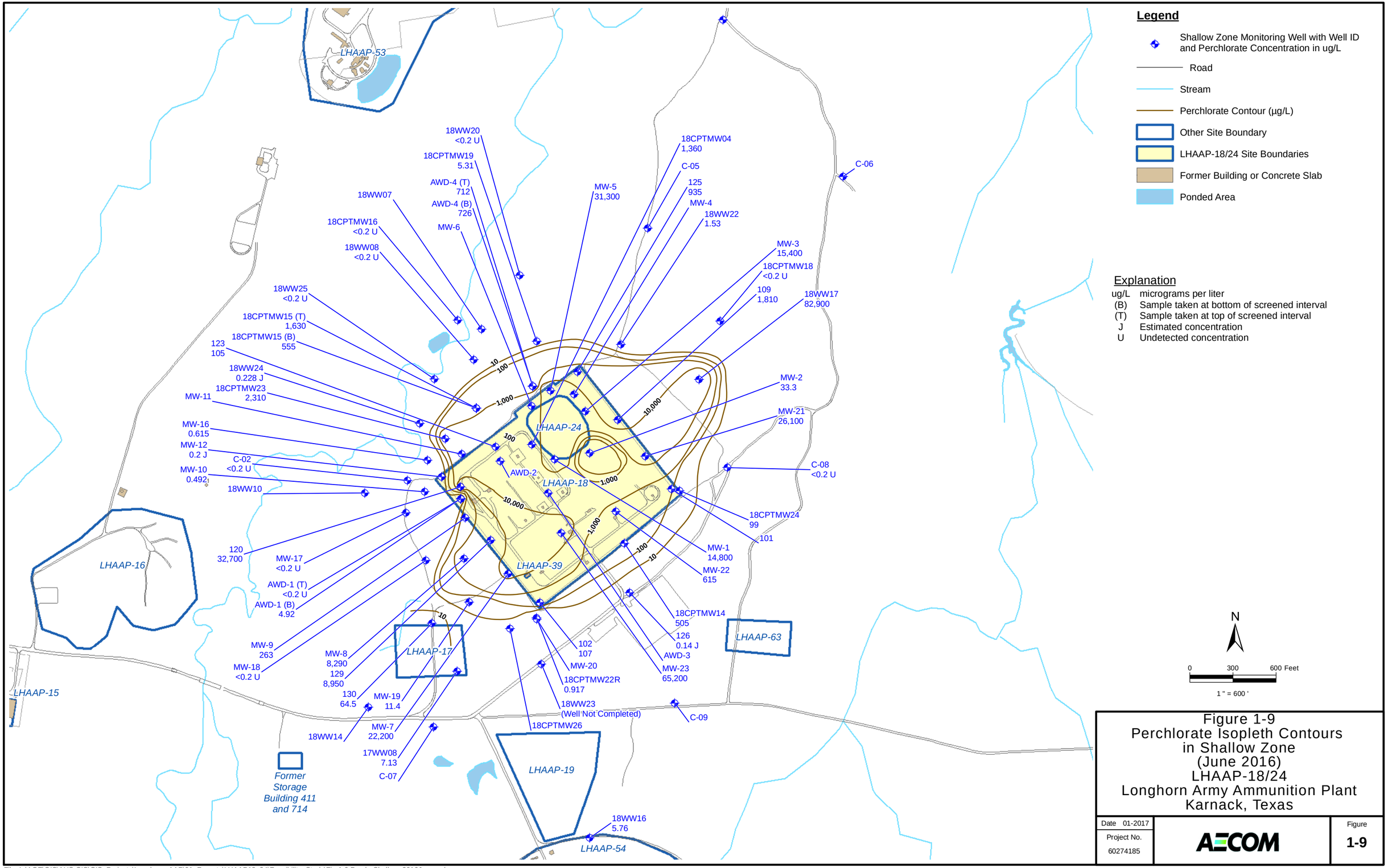

Figure 1-9
Perchlorate Isopleth Contours
in Shallow Zone
(June 2016)
LHAAP-18/24
Longhorn Army Ammunition Plant
Karnack, Texas

Date 01-2017	AECOM	Figure
Project No. 60274185		1-9

File: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP18_24\Feasibility_Study\Fig 1-9 Perch_Shallow_2016Jun.mxd
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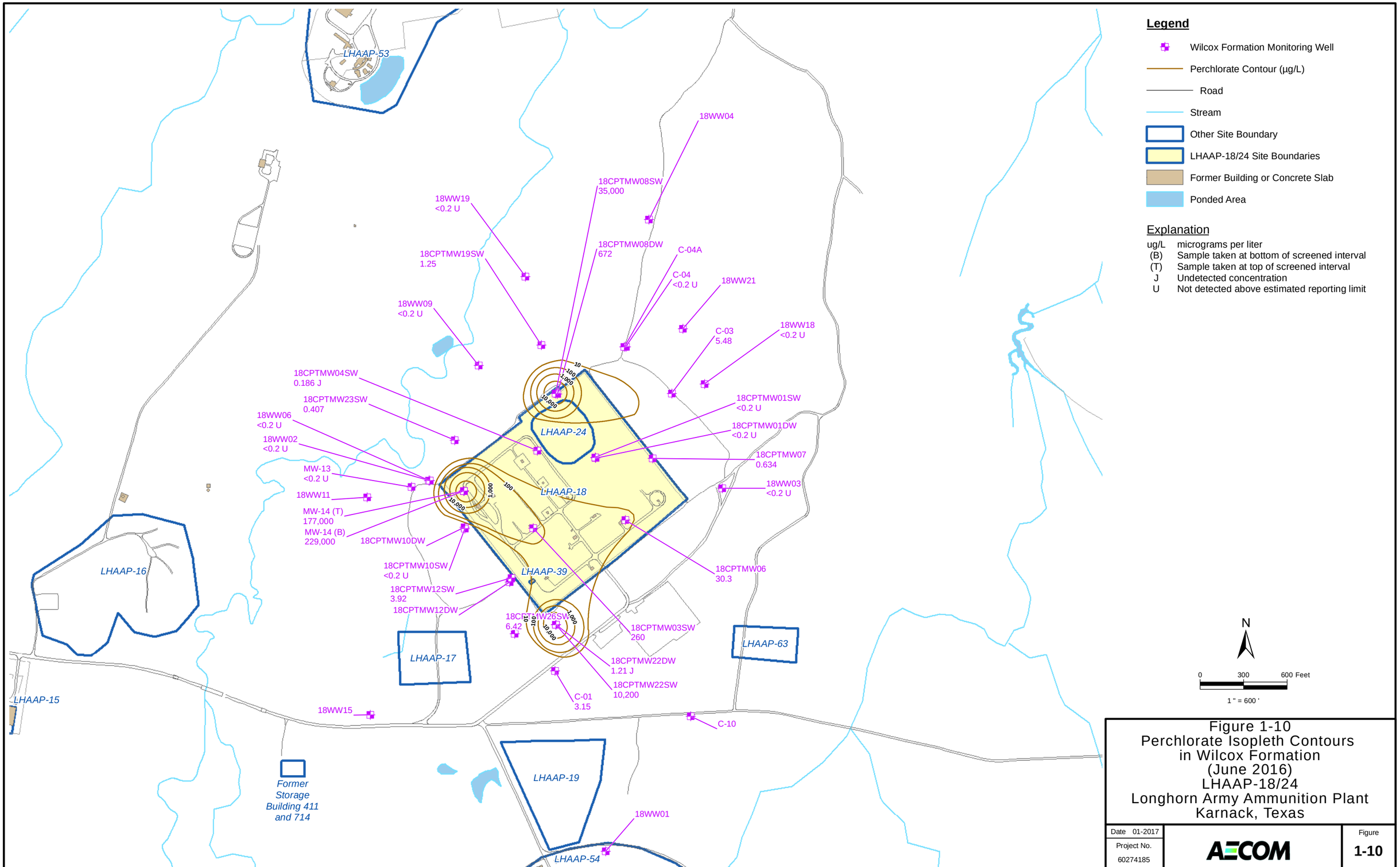

Figure 1-10
Perchlorate Isopleth Contours
in Wilcox Formation
(June 2016)
LHAAP-18/24
Longhorn Army Ammunition Plant
Karnack, Texas

Date 01-2017	AECOM	Figure
Project No. 60274185		1-10

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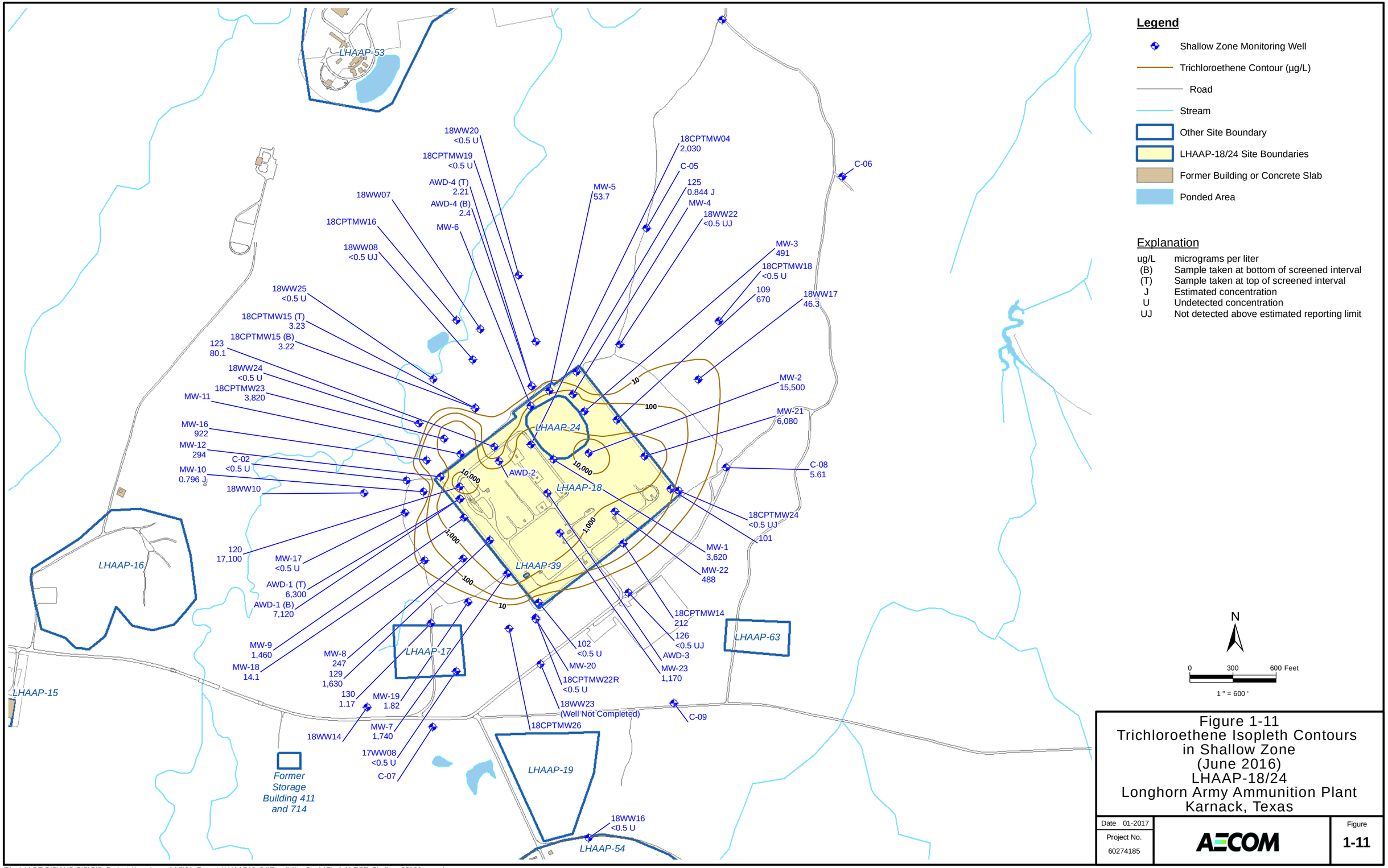

Figure 1-11
Trichloroethene Isopleth Contours in Shallow Zone (June 2016)
LHAAP-18/24
Longhorn Army Ammunition Plant
Karnack, Texas

Date 01-2017	AECOM	Figure
Project No. 60274185		1-11

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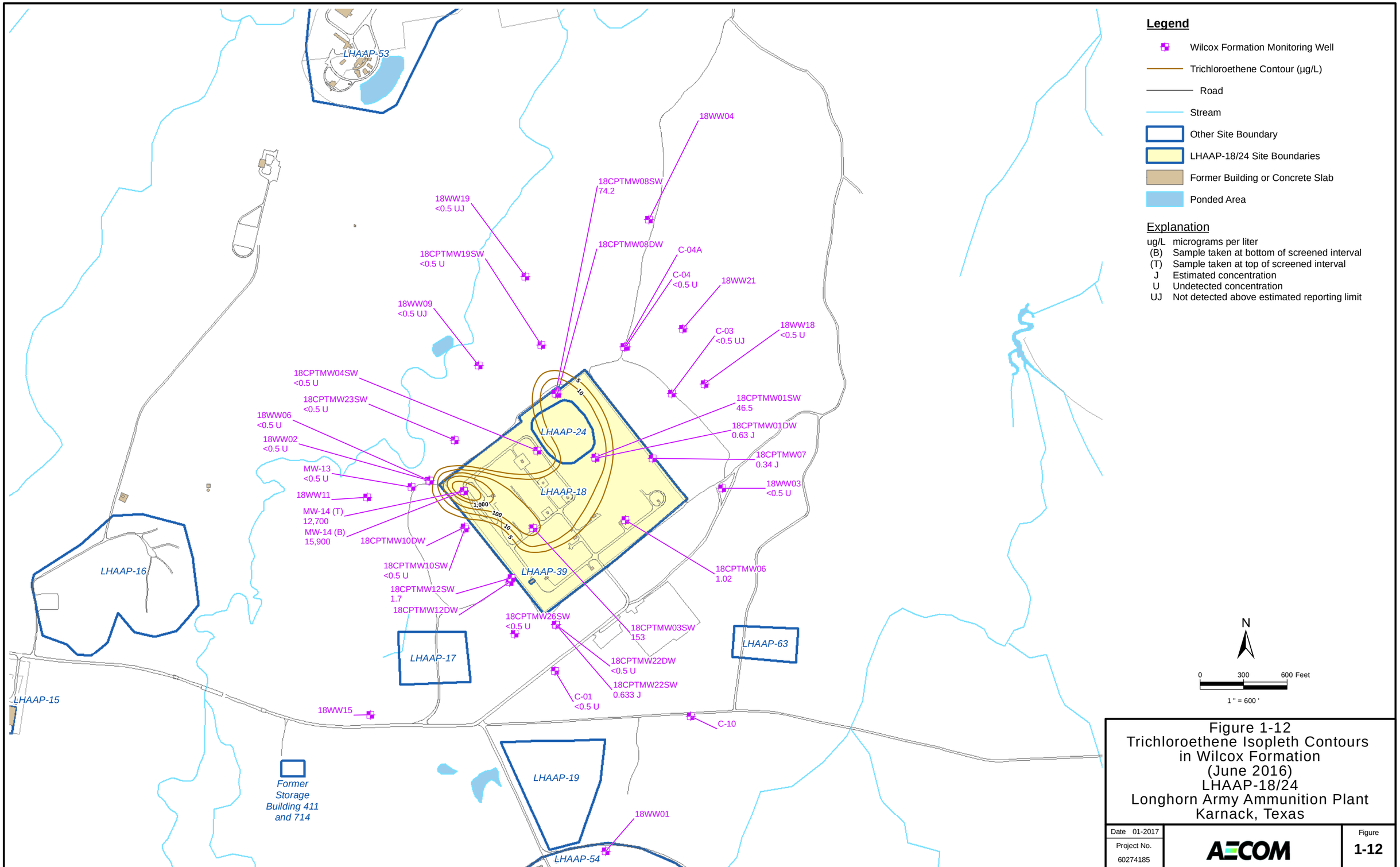

Figure 1-12
Trichloroethene Isopleth Contours in Wilcox Formation (June 2016)
LHAAP-18/24
Longhorn Army Ammunition Plant
Karnack, Texas

Date 01-2017	AECOM	Figure
Project No. 60274185		1-12

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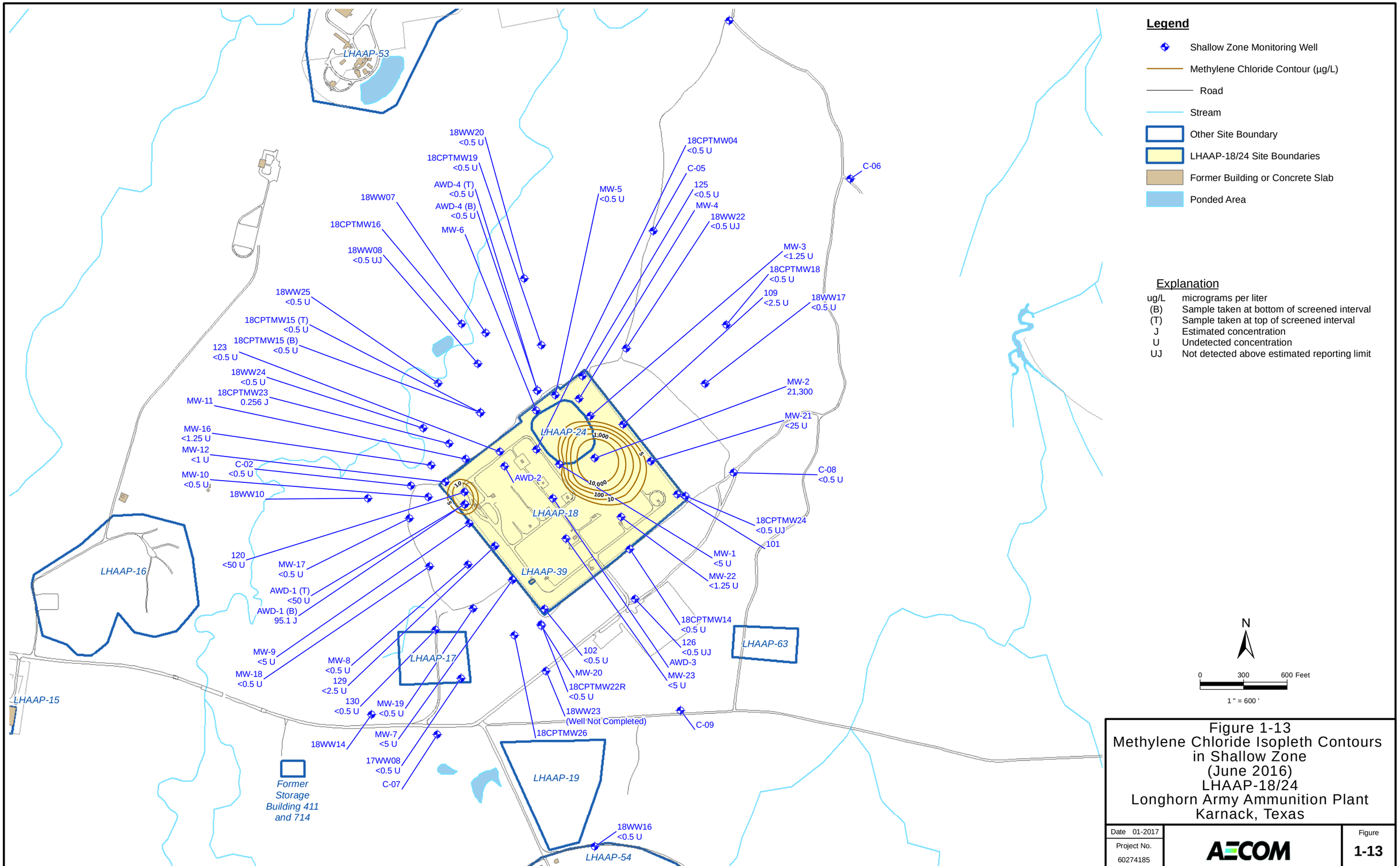

Figure 1-13
Methylene Chloride Isopleth Contours in Shallow Zone
(June 2016)
LHAAP-18/24
Longhorn Army Ammunition Plant
Karnack, Texas

Date 01-2017	AECOM	Figure
Project No. 60274185		1-13

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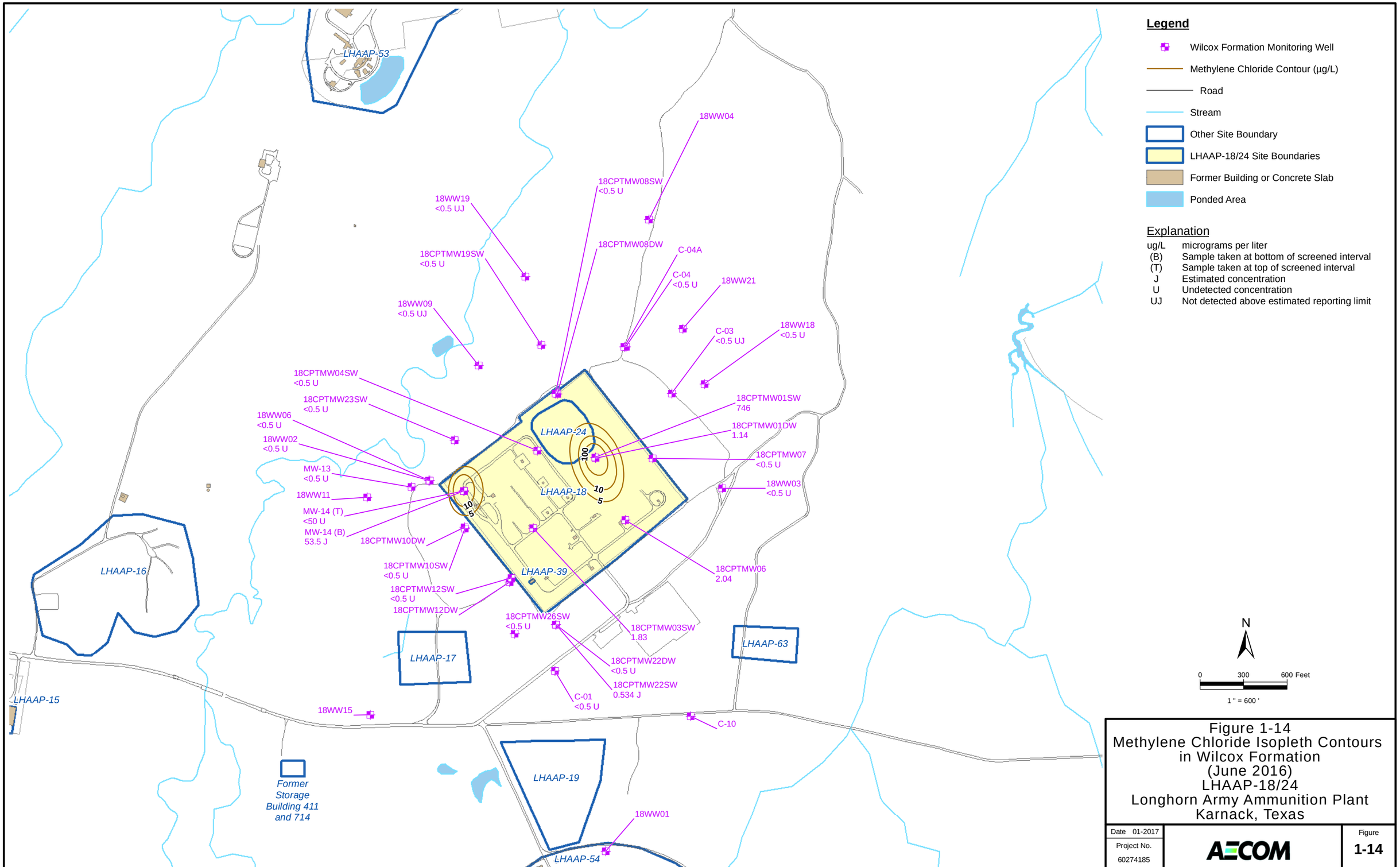

Figure 1-14
Methylene Chloride Isopleth Contours in Wilcox Formation (June 2016)
LHAAP-18/24
Longhorn Army Ammunition Plant
Karnack, Texas

Date 01-2017	AECOM	Figure
Project No. 60274185		1-14

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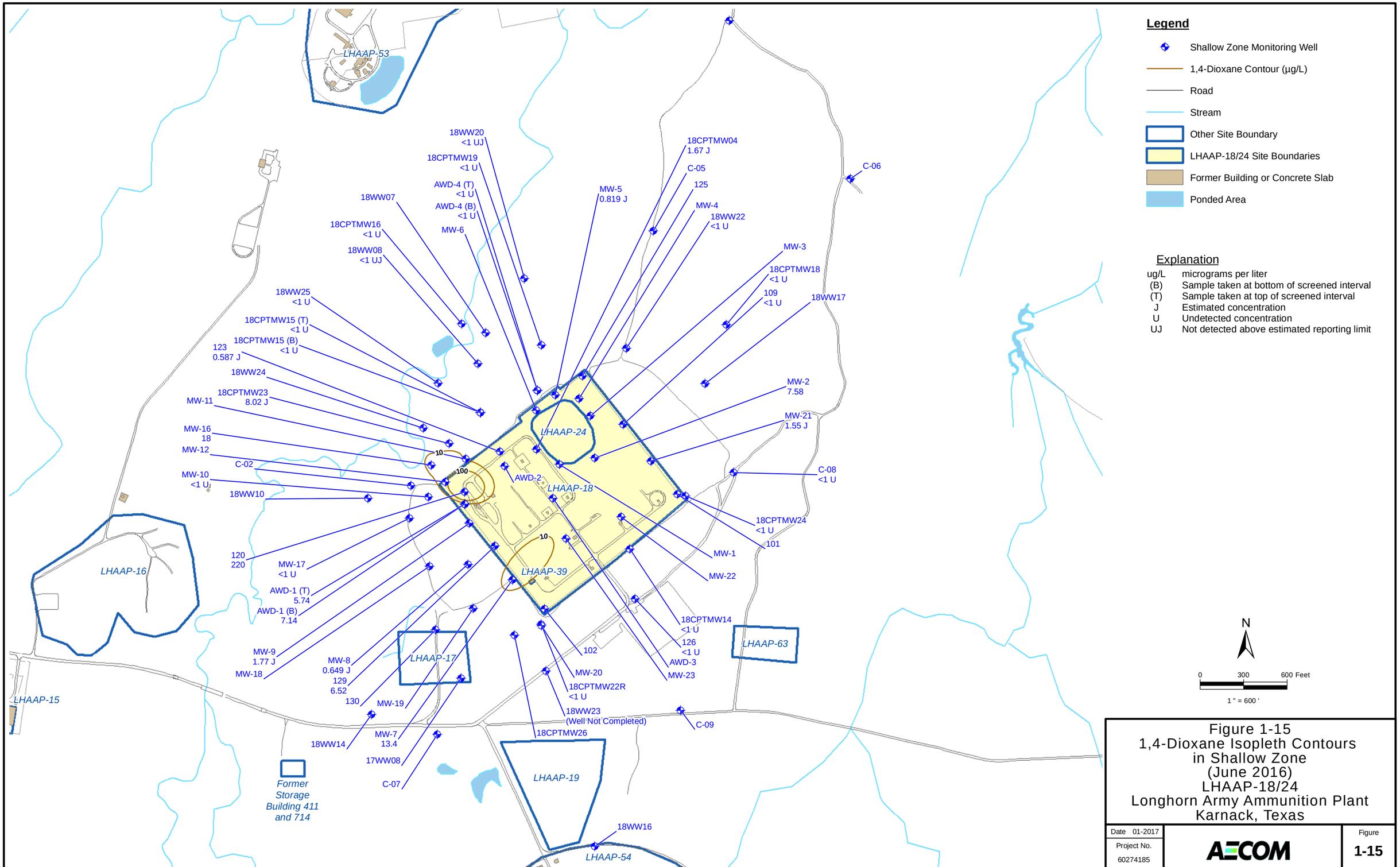

Figure 1-15
1,4-Dioxane Isopleth Contours
in Shallow Zone
(June 2016)
LHAAP-18/24
Longhorn Army Ammunition Plant
Karnack, Texas

Date 01-2017	AECOM	Figure
Project No. 60274185		1-15

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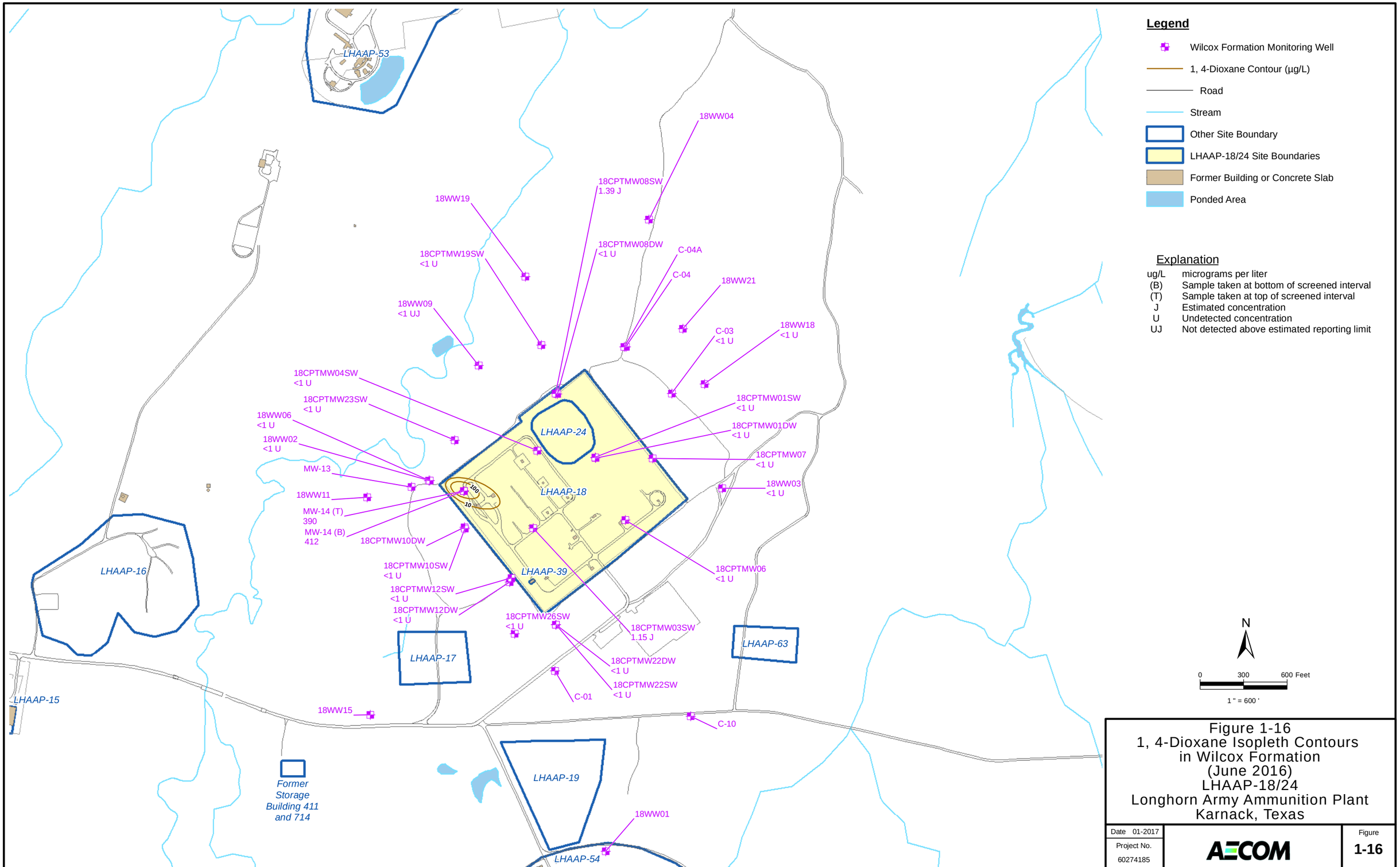

Figure 1-16
1, 4-Dioxane Isopleth Contours
in Wilcox Formation
(June 2016)
LHAAP-18/24
Longhorn Army Ammunition Plant
Karnack, Texas

Date 01-2017	AECOM	Figure
Project No. 60274185		1-16

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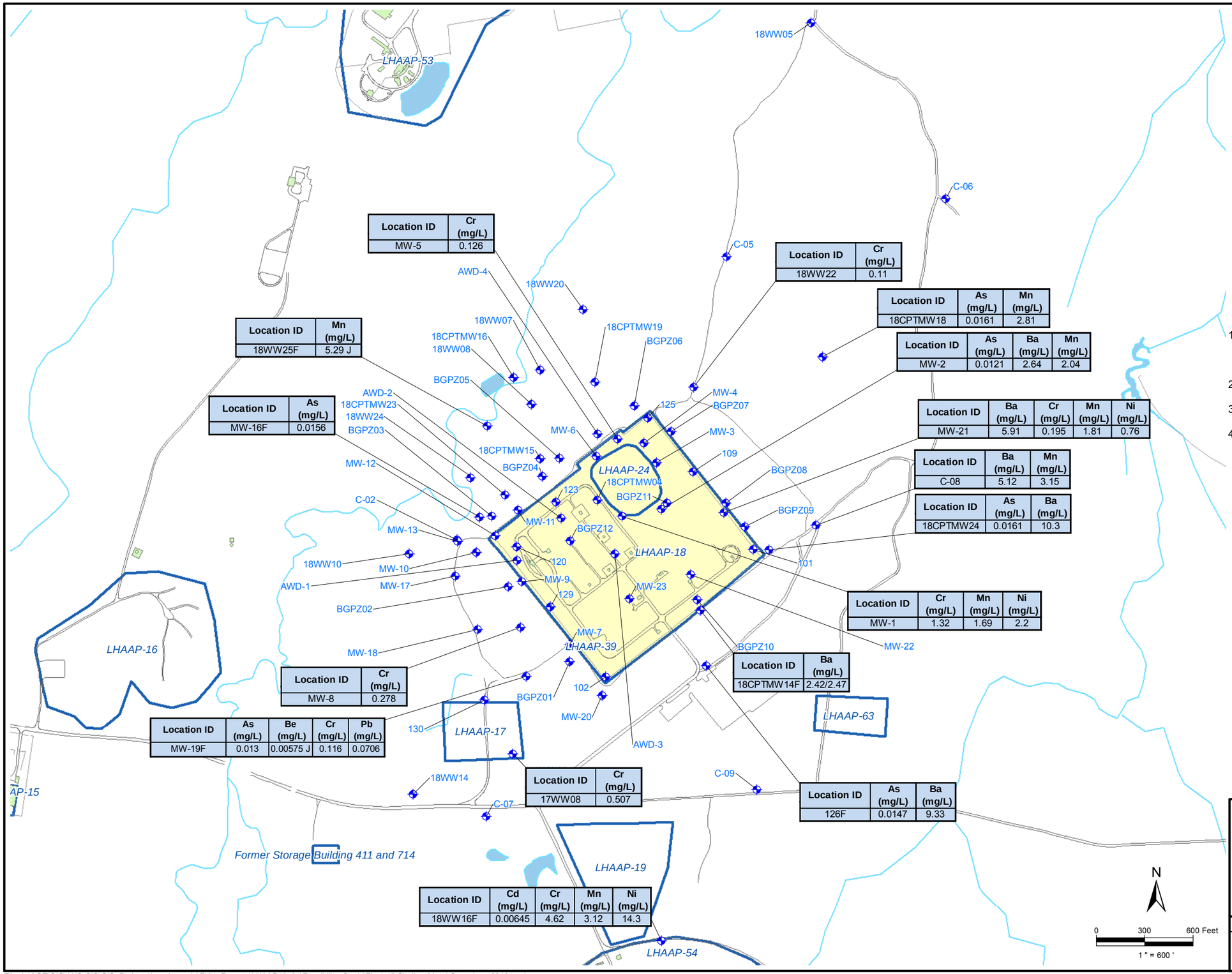

Location ID	Cr (mg/L)
MW-5	0.126

Location ID	Mn (mg/L)
18WW25F	5.29 J

Location ID	As (mg/L)
MW-16F	0.0156

Location ID	Cr (mg/L)
18WW22	0.11

Location ID	As (mg/L)	Mn (mg/L)
18CPTMW18	0.0161	2.81

Location ID	As (mg/L)	Ba (mg/L)	Mn (mg/L)
MW-2	0.0121	2.64	2.04

Location ID	Ba (mg/L)	Cr (mg/L)	Mn (mg/L)	Ni (mg/L)
MW-21	5.91	0.195	1.81	0.76

Location ID	Ba (mg/L)	Mn (mg/L)
C-08	5.12	3.15

Location ID	As (mg/L)	Ba (mg/L)
18CPTMW24	0.0161	10.3

Location ID	Cr (mg/L)	Mn (mg/L)	Ni (mg/L)
MW-1	1.32	1.69	2.2

Location ID	Ba (mg/L)
18CPTMW14F	2.42/2.47

Location ID	Cr (mg/L)
MW-8	0.278

Location ID	As (mg/L)	Be (mg/L)	Cr (mg/L)	Pb (mg/L)
MW-19F	0.013	0.00575 J	0.116	0.0706

Location ID	Cr (mg/L)
17WW08	0.507

Location ID	As (mg/L)	Ba (mg/L)
126F	0.0147	9.33

Location ID	Cd (mg/L)	Cr (mg/L)	Mn (mg/L)	Ni (mg/L)
18WW16F	0.00645	4.62	3.12	14.3

Legend

- Shallow Zone Monitoring Well
- Road
- Stream
- Other Site Boundary
- LHAAP-18/24 Site Boundaries
- Ponded Area
- Groundwater Result

Location ID	Cr (mg/L)
18WW22	0.11

Notes

1) All monitoring wells installed in 2013 and 2014 have nomenclature beginning with "18CPT" with the exception of 18WW22 and 18WW24 which were also installed in 2013 and 2014, respectively.
2) "SW" at the end of well nomenclature indicates a shallow Wilcox Formation monitoring well (i.e., to a depth of 70 feet bgs).
3) "DW" at the end of well nomenclature indicates a deep Wilcox Formation monitoring well (i.e., to a depth of 100 feet bgs).
4) Only values exceeding the MCL or PCL have been included.

Abbreviations

As	Arsenic
Ba	Barium
Be	Beryllium
Cd	Cadmium
Cr	Chromium
Mn	Manganese
Ni	Nickel
Pb	Lead
mg/L	milligrams per liter
MCL	Maximum Contaminant Level
PCL	Texas Risk Reduction Program Tier 1 Groundwater Residential Protective Concentration Level
F	Filtered
J	Estimated concentration

Chemical	MCL/PCL (mg/L)
Arsenic	0.01
Barium	2
Beryllium	0.004
Cadmium	0.005
Chromium	0.1
Lead	0.015
Maganese	1.1
Nickel	0.49

Figure 1-17
Metal Exceedance Concentrations in Groundwater
Shallow Zone (June 2016)
LHAAP-18/24
Longhorn Army Ammunition Plant
Karnack, Texas

Date 01-2017
Project No. 60274185
AECOM
Figure 1-17

File: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP18_24\Feasibility_Study\Fig 1-17 Shallow Metal Conc June 2016.mxd
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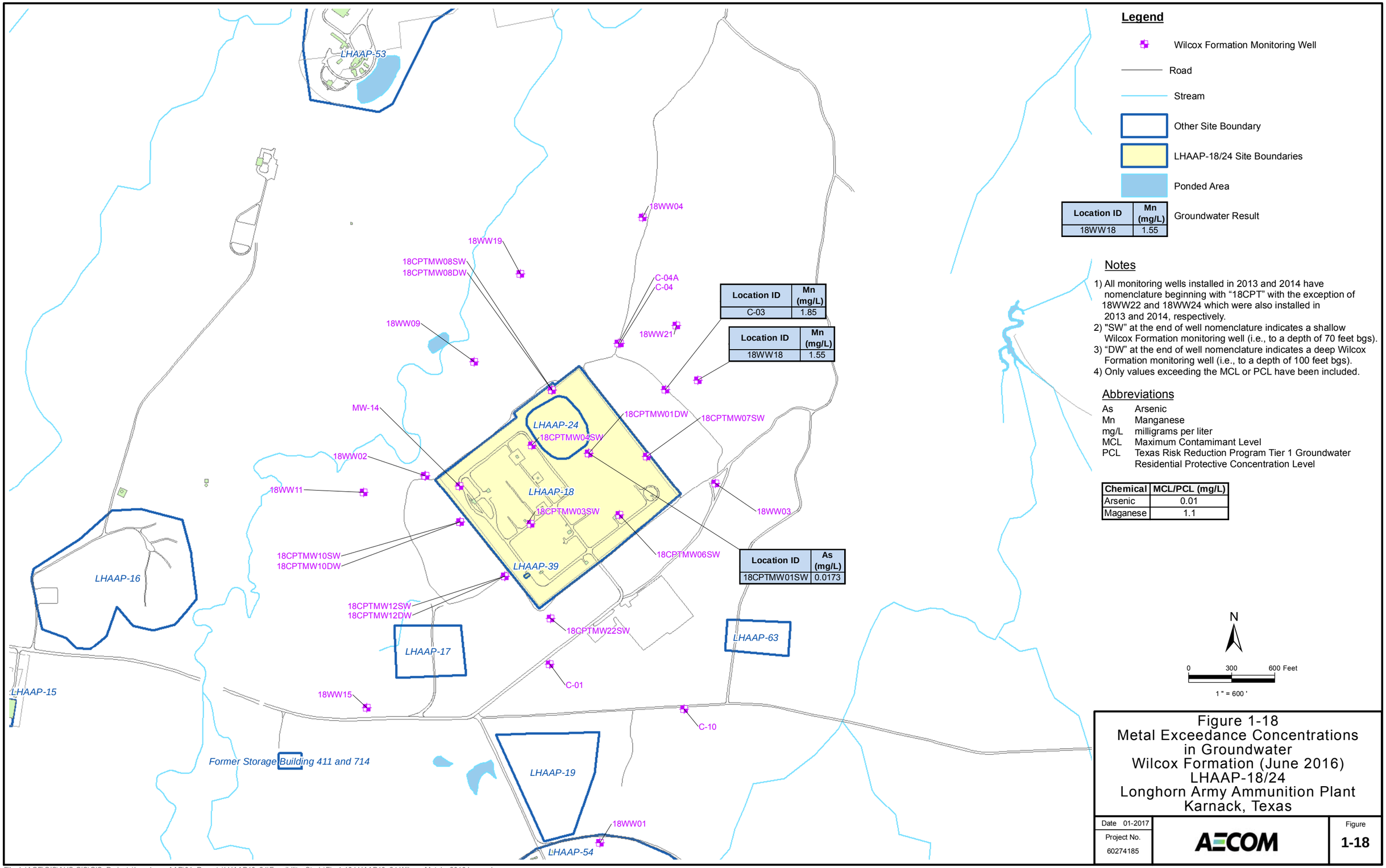

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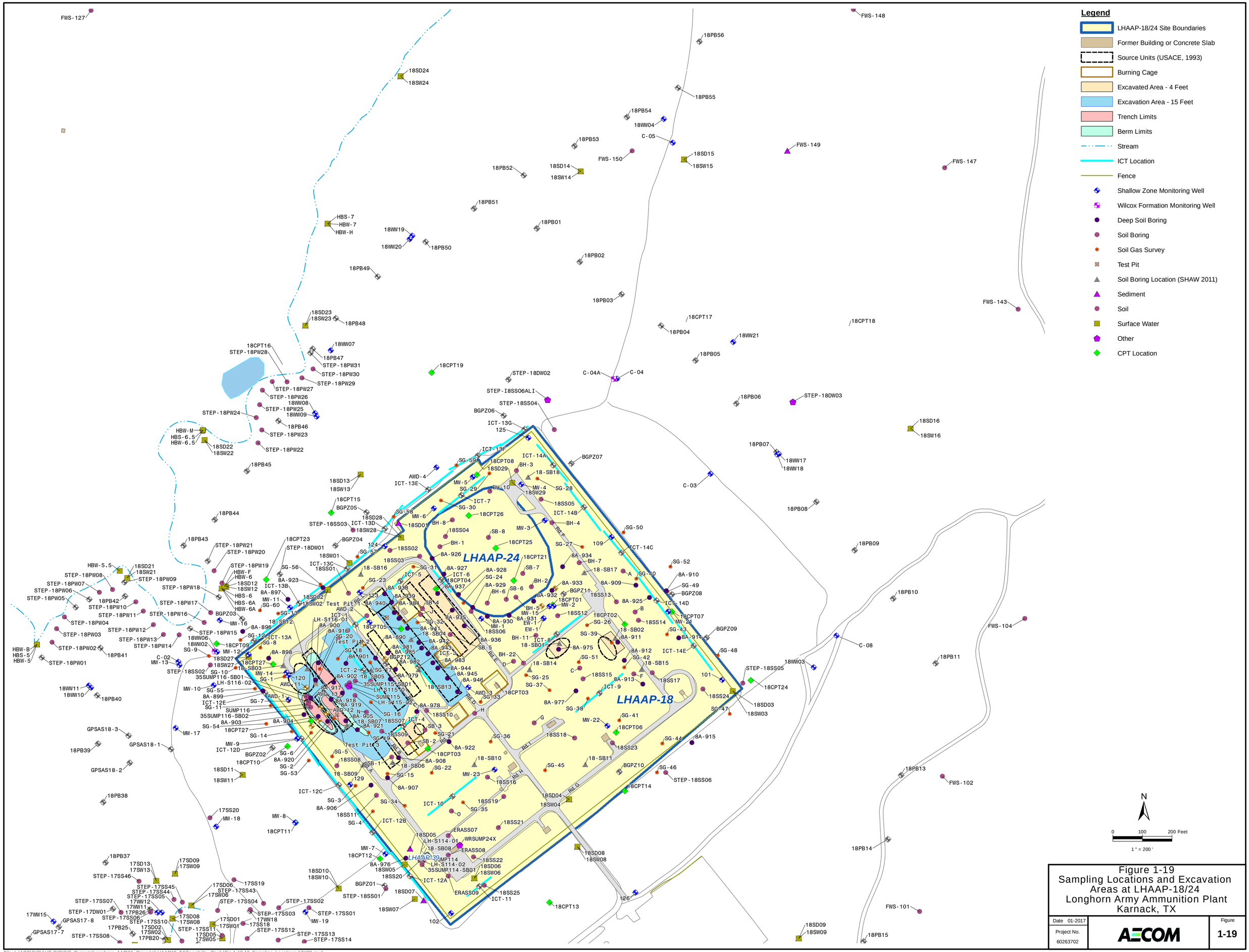

Figure 1-19
Sampling Locations and Excavation Areas at LHAAP-18/24
Longhorn Army Ammunition Plant
Karnack, TX

Date 01-2017	AECOM	Figure
Project No. 60263702		1-19

File: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP18_24\Feasibility_Study\Fig 1-19 All_Sampling_Locations 17X22.mxd
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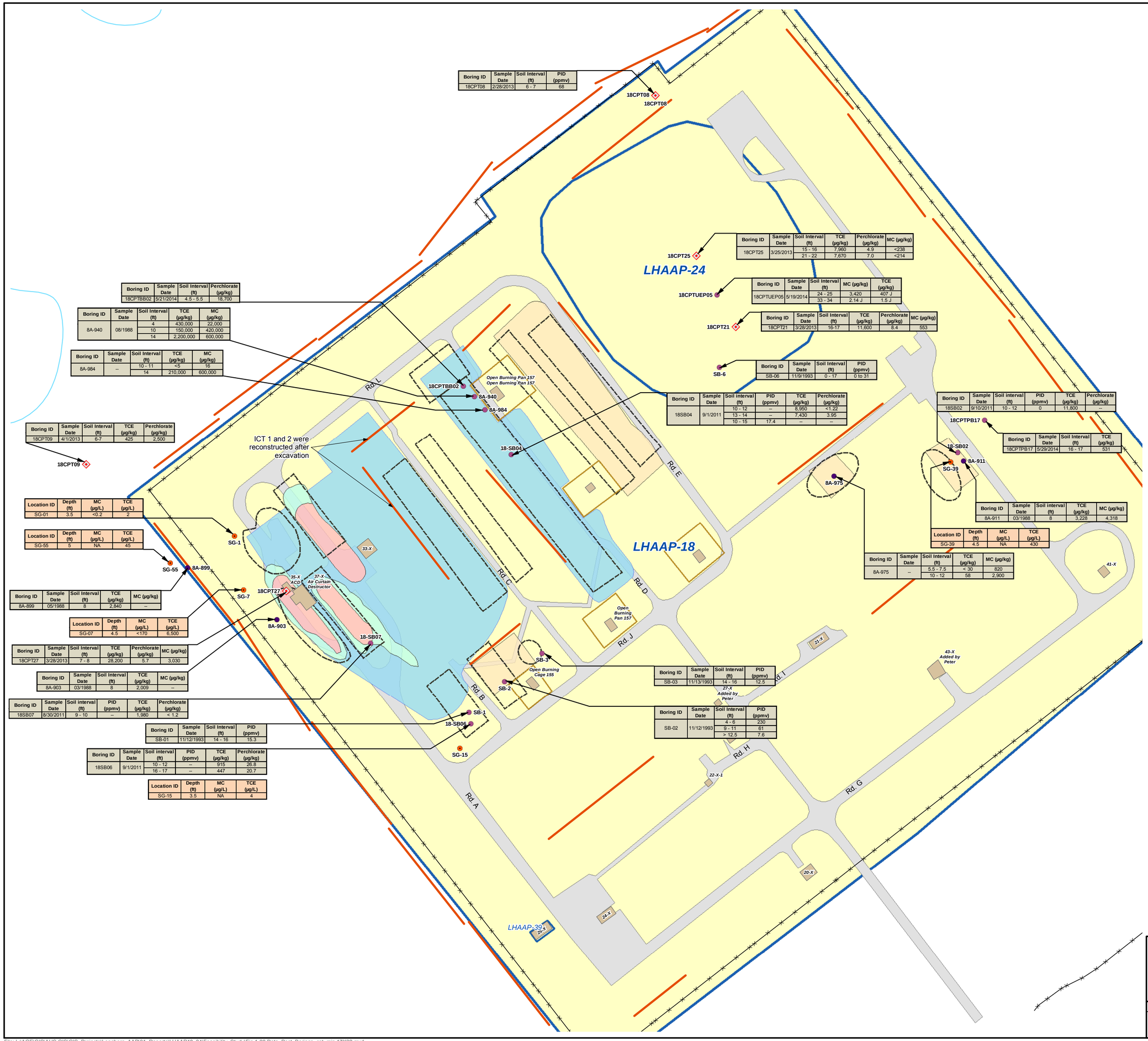

Boring ID	Sample Date	Soil Interval (ft)	PID (ppmv)
18CPT08	2/28/2013	6 - 7	68

Boring ID	Sample Date	Soil Interval (ft)	TCE (µg/kg)	Perchlorate (µg/kg)	MC (µg/kg)
18CPT25	3/25/2013	15 - 16	7,960	4.9	<238
		21 - 22	7,670	7.0	<214

Boring ID	Sample Date	Soil Interval (ft)	MC (µg/kg)	TCE (µg/kg)
18CPTUEP05	5/19/2014	24 - 25	3,420	407 J
		33 - 34	2.14 J	1.5 J

Boring ID	Sample Date	Soil Interval (ft)	TCE (µg/kg)	Perchlorate (µg/kg)	MC (µg/kg)
18CPT21	3/28/2013	16-17	11,600	8.4	553

Boring ID	Sample Date	Soil Interval (ft)	PID (ppmv)
SB-06	11/9/1993	0 - 17	0 to 31

Boring ID	Sample Date	Soil Interval (ft)	PID (ppmv)	TCE (µg/kg)	Perchlorate (µg/kg)
18SB04	9/1/2011	10 - 12	--	8,950	<1.22
		13 - 14	--	7,430	3.95
		10 - 15	17.4	--	--

Boring ID	Sample Date	Soil interval (ft)	PID (ppmv)	TCE (µg/kg)	Perchlorate (µg/kg)
18SB02	9/10/2011	10 - 12	0	11,800	--

Boring ID	Sample Date	Soil Interval (ft)	TCE (µg/kg)
18CPTPB17	5/29/2014	16 - 17	531

Boring ID	Sample Date	Soil interval (ft)	TCE (µg/kg)	MC (µg/kg)
8A-911	03/1988	8	3,228	4,318

Location ID	Depth (ft)	MC (µg/L)	TCE (µg/L)
SG-39	4.5	NA	430

Boring ID	Sample Date	Soil Interval (ft)	TCE (µg/kg)	MC (µg/kg)
8A-975	--	5.5 - 7.5	< 30	820
		10 - 12	58	2,900

Boring ID	Sample Date	Soil Interval (ft)	Perchlorate (µg/kg)
18CPTBB02	5/21/2014	4.5 - 5.5	18,700

Boring ID	Sample Date	Soil Interval (ft)	TCE (µg/kg)	MC (µg/kg)
8A-940	08/1988	4	430,000	22,000
		10	150,000	420,000
		14	2,200,000	600,000

Boring ID	Sample Date	Soil Interval (ft)	TCE (µg/kg)	MC (µg/kg)
8A-984	--	10 - 11	<5	16
		14	210,000	600,000

Boring ID	Sample Date	Soil Interval (ft)	TCE (µg/kg)	Perchlorate (µg/kg)
18CPT09	4/1/2013	6-7	425	2,500

Location ID	Depth (ft)	MC (µg/L)	TCE (µg/L)
SG-01	3.5	<0.2	2

Location ID	Depth (ft)	MC (µg/L)	TCE (µg/L)
SG-55	5	NA	45

Boring ID	Sample Date	Soil Interval (ft)	TCE (µg/kg)	MC (µg/kg)
8A-899	05/1988	8	2,840	--

Location ID	Depth (ft)	MC (µg/L)	TCE (µg/L)
SG-07	4.5	<170	6,500

Boring ID	Sample Date	Soil Interval (ft)	TCE (µg/kg)	Perchlorate (µg/kg)	MC (µg/kg)
18CPT27	3/28/2013	7 - 8	28,200	5.7	3,030

Boring ID	Sample Date	Soil Interval (ft)	TCE (µg/kg)	MC (µg/kg)
8A-903	03/1988	8	2,009	--

Boring ID	Sample Date	Soil interval (ft)	PID (ppmv)	TCE (µg/kg)	Perchlorate (µg/kg)
18SB07	8/30/2011	9 - 10	--	1,980	< 1.2

Boring ID	Sample Date	Soil Interval (ft)	PID (ppmv)
SB-01	11/12/1993	14 - 16	15.3

Boring ID	Sample Date	Soil interval (ft)	PID (ppmv)	TCE (µg/kg)	Perchlorate (µg/kg)
18SB06	9/1/2011	10 - 12	--	915	26.8
		16 - 17	--	447	20.7

Location ID	Depth (ft)	MC (µg/L)	TCE (µg/L)
SG-15	3.5	NA	4

Boring ID	Sample Date	Soil Interval (ft)	PID (ppmv)
SB-03	11/13/1993	14 - 16	12.5

Boring ID	Sample Date	Soil Interval (ft)	PID (ppmv)
SB-02	11/12/1993	4 - 6	230
		9 - 11	61
		> 12.5	7.6

Legend

- LHAAP-18/24 Site Boundaries
- Source Units (USACE, 1993)
- Burning Cage
- Excavated Area - 4 Feet
- Excavation Area - 15 Feet
- Trench Limits
- Berm Limits
- Former Building or Concrete Slab
- Soil Boring
- Deep Soil Boring
- Soil Gas Survey
- CPT/MIP Location (AECOM, 2013)
- ICT Trench
- Fence
- ACD Air Curtain Destructor

Soil Result

Boring ID	Sample Date	Soil Interval (ft)	PID (ppmv)
18CPT08	2/28/2013	6 - 7	68

Soil Gas Result

Location ID	Depth (ft)	MC (µg/L)	TCE (µg/L)
SG-15	3.5	NA	4

Screening Criteria:
- VOCs in soil > 500 µg/kg
- Perchlorate in soil > 7,154 µg/kg
- PID > 3 ppmv
- Soil gas survey detections > 1 µg/L
- Exclude excavation areas
- Exclude location sourcing from groundwater
- Exclude soil gas survey not substantiated with nearby boring data

Source:
USACE, 1989; AWD Technologies, 1994; Shaw, 2011; AECOM, 2016c.

N

100 50 0 100

Feet

1 " = 100 '

Figure 1-20
Unsaturated Soil Exceedance Map
Historical and Current Data
LHAAP – 18/24 Feasibility Study
Longhorn Army Ammunition Plant
Karnack, Texas

Date 01-2017		Figure
Project No. 60263702	AECOM	1-20

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Table 1-1: Summary of Previous Investigations at LHAAP-18/24*

USACE Remedial Investigations	
Pre-Phase I (Jacobs, 2001)	
USAEHA, 1980	Thirteen monitoring wells were installed and sampled (BH-1 to BH-11, BH-21, BH-22)
EPS, 1982	Nine Monitoring Wells were installed (101, 102, 109, 120, 123-126, and 129)
	Twenty-two monitoring wells were sampled (BH-1 series and the 9 newly installed wells)
CDM, 1986	Ten monitoring wells were installed (C-01 through C-10)
	Groundwater samples were collected from C-01 through C-10 and 18 existing monitoring wells
EPS, 1987	Groundwater samples were collected from three existing monitoring wells (BH6, BH11, and 102)
LHAAP RI/FS WP Volume,1 General June 1992 (USACE Ft Worth District)	
• 1987 sampling of eight wells (101,102, 109, 120, 123, 124, 125, & 129) for explosives, VOCs, total organic compound (TOC), total organic halide, & total & dissolved metals • Completion and sampling of 47 shallow borings • Completion and geophysical logging of 4 deep borings • Installation & sampling of 12 shallow monitoring wells (MW-1 through MW-12) • Installation & sampling of 3 deeper monitoring wells (MW-13 through MW-15) • Slug testing of all 15 new wells • 1988 September Groundwater samples were collected & tested from 25 wells (C-2 through C-5, 109, 120, 123, 124, 125, 129, & fifteen new wells) • 1989 Installation of 8 shallow monitoring wells (MW-16 through MW-23) and 1 deeper monitoring well (C-4A) • 1989 Geophysical logging the deep well boring for C-4A • 1989 November Groundwater samples were collected from all existing wells	
Data Summary Report of Investigations Results from 1976 through 1992 for Burning Ground 3 & the UEP, May 1993	
• 1990 June and September groundwater samples were collected for testing at MW-1 through MW-15 • 1992 November, the COE sampled 41 of the 49 wells at the site ((MW-1 through MW-23, C-1 through C-10 (including C-4A) 102, 103, 109, 120, 124, 126, 129, 130, BH-6,) to obtain data necessary for evaluating IRA alternatives and monitor plume concentrations and migration.	
Phases I of the Remedial Investigation (Jacobs, 2001)	
Jacobs, Phase I, 1993	Eight surface water and eight sediment samples were collected (18SW01 to 18SW08 and 18SD01 to 18SD08)

IRA Phases I, II, and III Investigation (AWD/DOW Environmental Inc./Radian 1993- 1998)	
AWD Technologies IRA Phases I Report February 1994	• 1993-Four new monitoring wells were installed in the shallow saturated zone (AWD-1,-2, -3 & -4) and one extraction well (EW-1) • Soil samples for geotechnical data (Physical) and Chemical testing were collected for all five wells • Slug test were performed on the new wells • 1993 Groundwater samples were collected from all existing monitoring wells and new wells • 1993 Eight new soil borings (SB-1 through SB-8) were completed and sampled • 1993 Three test pits were dug and samples collected for Treatability tests • All new wells and borings were surveyed for state plane coordinates and elevations • Groundwater elevations were collected for all existing monitoring wells and five new wells
DOW Environmental, Inc. (DEI) (Formerly AWD Technologies, INC.) Pilot Study Report - Phase II March 1995	• June 1994 Groundwater sampling and testing of 48 monitoring wells and the vertical extraction well (VEW) designated EW -1 which was installed during the implementation of the Phase I work. • 1994 Installation of a horizontal extraction well (HEW) under the ACD with soil sampling during installation and groundwater sampling from HEW after installation • 1994 Completion of Thirteen Soil Borings (AWD-5 through AWD-17) to investigate possible source material locations (around the ACD, in pits and the UEP) and to obtain information for installation of the Pilot Study ICT sections, samples were collected for physical and chemical testing • October/November, 1994.Groundwater sampling and testing of 48 monitoring wells and EW -1 following the completion of the flow tests in July/August
Phases II of the Remedial Investigation (Jacobs, 2001)	
Jacobs, Phase II, 1995	Eight surface water and eight sediment samples were collected (18SW01 to 18SW08 and 18SD01 to 18SD08)
	Eighteen surface water and 18 sediment samples were collected (18SW09 to 18SW26 and 18SD09 to 18SD26)
	Twenty-five soil samples were collected from 25 soil borings (18SS01 to 18SS25)
	Five deep soil borings were completed (18SB01 to 18SB05) for stratigraphic information
	Eighteen monitoring wells were installed (18WW01 to 18WW11 and 18WW14 to 18WW20) and groundwater samples were collected from each new well
Phases III of the Remedial Investigation (Jacobs, 2001)	
Jacobs, Phase III, 1998	Three surface water and three sediment samples were collected (18SW27 to 18SW29 and 18SD27 to 18SD29)
	Groundwater samples were collected from three existing wells (MW-1, MW-02, and MW-14)

Radian (Formerly DEI) Cost & Performance Report April 1999
1998 Groundwater samples were collected & tested for all remaining monitoring wells and ICT sumps
Additional Investigations
Perchlorate Investigation (STEP, 2005)
Environmental Site Assessment (Plexus, 2005)
Data Gaps Investigation (Shaw, 2007)
Final Sumps Evaluation (Shaw, 2008)
Direct Push Groundwater Sampling at 12 locations.
Routine Sampling of Existing Groundwater Treatment System (Quarterly Reports, Shaw)
Post-Screening Investigation (AECOM, 2013)

* From Draft Final Feasibility Study, LHAAP-18/24, Burning Ground No. 3 and Unlined Evaporation Pond, Longhorn Army Ammunition Plant, Karnack, Texas

Table 1-2: Summary of Previous Remedial Actions at LHAAP-18/24*

Date	Remedial Action
1980	The ACD began operation in 1980 burning non-hazardous waste. It operated through 2003, when it was removed.
1984	The burn pits were sampled, and contaminated soil and ash were removed to a permitted facility. The pits were backfilled with clean soil and grassed (TWC, 1988).
1986	8,116 cy of mostly barium and heavy metals sludge from the UEP were stabilized with Portland cement, removed, and sent to a permitted landfill in Carlyss, Louisiana. The pond was then capped (Jacobs, 2001).
1995	Seven monitoring wells were abandoned during the Phase II Remedial Investigation activities (BH-3, BH-4, BH-7, BH-11, BH-22, 124, and MW-15).
1995	Sumps 114, 115, and 116 were removed and disposed off-site as hazardous waste (114) or on-site as non-hazardous waste (115 and 116).
1997	An IRA was implemented. That action consisted of two major elements: • 32,000 cy of source soil were excavated and treated by low temperature thermal desorption, then placed at LHAAP-16 and LHAAP-12 (Jacobs, 2001) • 5,000 linear ft of interception collection trenches were installed with a vertical liner along the northwest and northeast boundaries of LHAAP-18/24, and a GWTP was constructed across the road to the southeast (Jacobs, 2001).
1999	In February 1999, 68 cy (57 tons) of soil were removed around open burning cage LHAAP-22W (Unit No. 6). All open burning cages and pans were also removed at this time.
1998 to Present	The groundwater extraction system is operated to control migration of contaminated groundwater. The GWTP removes contaminants from the extracted groundwater and then releases the treated water either by direct discharge to Harrison Bayou, irrigation at LHAAP-18/24, discharge to a holding pond, or (more recently) injection into the shallow groundwater at LHAAP-18/24. The GWTP is comprised of metals precipitation, air stripping, catalytic oxidation, and a fluidized bed reactor for the treatment of perchlorate which was added in 2002. In July 2007, a six day reinjection test of treated groundwater to ICTs 6 and 9 was conducted and on September 18, 2007, reinjection of treated groundwater into ICTs 6 and 9 was implemented on a long-term basis. Injection of treated water into ICTs was discontinued in 2012. Irrigation of treated water on the site has continued when there is not enough flow in Harrison Bayou for the release of treated water.

* From Draft Final Feasibility Study, LHAAP-18/24, Burning Ground No. 3 and Unlined Evaporation Pond, Longhorn Army Ammunition Plant, Karnack, Texas

Table 1-3: Completion Depths for ICTs

ICT	TOC Elevation	Total Depth	Sump Elevation	Design Elevation	Comment
ICT-1	186.07	22.50	163.57	165	Taken out of service in 2007
ICT-2	185.02	29.50	155.52	156	
ICT-3	192.27	37.75	154.52	154	Taken out of service in 2007
ICT-4	193.51	37.50	156.01	155	
ICT-5	192.67	35.00	157.67	156	Taken out of service in 2007
ICT-6	197.30	40.75	156.55	154	Converted to infiltration in 2007
ICT-7	198.03	32.33	165.70	165	
ICT-8	198.97	44.50	154.47	154	
ICT-9	197.64	45.50	152.14	153	Converted to infiltration in 2007
ICT-10	198.07	45.42	152.65	153	Taken out of service in 2007
ICT-11	198.01	43.33	154.68	157	
ICT-12A	189.06	31.50	157.56	156	Taken out of service in 2007
ICT-12B	191.97	35.25	156.72	155	
ICT-12C	193.90	34.33	159.57	155	
ICT-12D	185.64	33.75	151.89	154	
ICT-12E	183.38	32.25	151.13	154	
ICT-13A	182.59	28.17	154.42	156	
ICT-13B	184.72	29.58	155.14	156	
ICT-13C	186.13	28.17	157.96	158	
ICT-13D	186.72	26.17	160.55	165	
ICT-13E	191.79	27.08	164.71	164	
ICT-13F	197.81	32.33	165.48	166	
ICT-13G	197.03	27.25	169.78	166	
ICT-14A	196.80	43.00	153.80	154	
ICT-14B	197.61	43.42	154.19	154	
ICT-14C	197.86	41.33	156.53	154	
ICT-14D	198.47	44.25	154.22	153	
ICT-14E	198.47	43.08	155.39	154	

Notes:
Sump elevation calculated by subtracting total depth from TOC elevation.
Design elevation interpolated to nearest foot from July 1996 ICT Design Sheets.
ICTs were installed in 1998.
Elevations are reported as feet above mean sea level.
Total depths are reported as feet below TOC.
ICT interceptor collection trench
TOC top of casing, measuring point for groundwater elevations

2 RISK AND SITE ASSESSMENT

This section summarizes the risk assessment approach, risk conclusions, media contamination evaluation, and cleanup levels for LHAAP-18/24. Information in this section is based on data obtained from the following references:

- Group 2 Sites RI (Jacobs, 2001)
- Group 2 Sites Baseline Human Health Risk Assessment Report (Jacobs, 2002)
- Environmental Site Assessment (Plexus, 2005)
- Groups 2 and 4 Groundwater Data Gaps Investigation (Shaw, 2007a)
- Installation-Wide Baseline Ecological Risk Assessment (BERA) (Shaw, 2007b)
- Final Updated PSI Report (AECOM, 2016a)
- 1,4-Dioxane Groundwater Sampling Methodology and Analytical Results for LHAAP-18/24 at Longhorn Army Ammunition Plant, Karnack, Texas (AECOM, 2016b)
- Draft Final Supplemental to the Updated PSI Report (AECOM, 2016c)
- Final BERA Addendum (AGEISS, 2014)

Group 2, as referenced in the documents listed above, was a collection of environmental sites at LHAAP that included LHAAP-18/24.

2.1 Human Health Risk Assessment

This summary is based on the conclusions presented in the Final Baseline Human Health and Screening Ecological Risk Assessment for the Group 2 Sites (Jacobs, 2002). The risk assessment presented the human health risks and hazards from soil and groundwater to a hypothetical future maintenance worker under an industrial scenario. For the risk assessment, soil and groundwater data were used to calculate the aggregate risk values, which were then compared to the USEPA target risk range of 1×10^{-4} to 1×10^{-6} for excess lifetime cancer risk (ELCR) and to a hazard index (HI) of 1 for non-cancer risks. This risk assessment did not include 1,4-dioxane as a CoC because it was not detected at the high detection limits achieved at the time the samples were analyzed.

2.1.1 Soil

For the hypothetical future maintenance worker's exposure to soil at LHAAP-18/24, the carcinogenic risk was determined to be 5.0×10^{-7}, which is less than the USEPA target risk range of 1×10^{-4} to 1×10^{-6} ELCR. The non-carcinogenic hazard was determined to be 0.042, which is less than the acceptable HI of 1. Therefore chemicals in soil at LHAAP-18/24 do not pose unacceptable carcinogenic risk or non-carcinogenic hazard to human health.

2.1.2 Groundwater

For the hypothetical future maintenance worker's exposure to the groundwater at LHAAP-18/24, the carcinogenic risk and non-carcinogenic hazard exceed the acceptable limits. The total carcinogenic risk from groundwater for a hypothetical future maintenance worker was

determined at 4.4×10^{-1}, with TCE and MC contributing 99.98% of the risk. The total HI was calculated at 3,200, with MC, TCE, and perchlorate contributing greater than 98% of the HI. The reason for the high cancer risk and hazard index calculated for the hypothetical maintenance worker was related to the unrealistic assumption that groundwater extracted from the site would be used by the maintenance worker for showering, during which dermal and inhalation exposure to the contaminants in groundwater would occur. Exposure of the hypothetical future maintenance worker to the Wilcox Formation groundwater was not previously assessed because the concentrations of CoCs in the Wilcox Formation are less than the concentrations in the Shallow Zone groundwater and the risk from exposure to the Wilcox Formation groundwater is lower than exposure to the Shallow Zone groundwater. Additionally, very limited data were available for the Wilcox Formation at the time the assessment was performed. While additional data have since been collected, the presence and extent of CoCs are much more limited in the Wilcox Formation compared to the Shallow Zone. Since groundwater is being restored to MCLs, or to TRRP PCLs for those CoCs without MCLs, the discussion of risk to a hypothetical future maintenance worker due to exposure to the Wilcox Formation groundwater is not required. However, a determination of CoC concentrations in the Wilcox Formation will be made.

Chemicals identified in the Shallow Zone groundwater based on the risk assessment (Jacobs, 2002) with a risk greater than 1×10^{-6} or a hazard quotient (HQ) greater than 0.1 are listed in **Table 2-1** and **Table 2-2**, respectively. For the purposes of this Revised FS, these lists were expanded to include groundwater chemicals detected in excess of their associated Safe Drinking Water Act (SDWA) MCLs or TRRP PCLs, although they were not specified in the risk assessment. The chemicals were evaluated to determine which should be retained as CoCs. The reasons for retaining or excluding chemicals as CoCs are also shown in **Table 2-1** and **Table 2-2**, and are discussed further in **Section 2.2.2**. The added constituents were based on frequency of detection of these constituents in multiple wells over several sampling events. **Table 2-3** provides a summary of these six compounds that were added based on their detection above the MCL/PCL since September 2012 (between September 2012 and June 2016).

2.2 Evaluation of Data Collected Since the Risk Assessment

The risk assessment was completed using data from samples collected through February 2001 for groundwater and through 1998 for soil. Since that time, additional groundwater and soil samples have been collected and analyzed.

2.2.1 Soil

Additional soil samples were collected during the perchlorate investigation in 2002 (Solutions To Environmental Problems, Inc., STEP, 2005). These samples were analyzed only for perchlorate, and the results were all less than the GWP-Ind MSC of 7,200 µg/kg.

Three additional surface soil samples were collected in April 2006 for the installation-wide BERA (Shaw, 2007b). These samples were analyzed for total and hexavalent chromium, and results compared to TCEQ risk-based screening values. All results were found to be less than the soil MSC for industrial use based on inhalation, ingestion, and dermal contact (SAI-Ind).

Eight additional soil samples were collected in September 2006 for the sumps investigation (Shaw, 2008). The samples were analyzed for explosives, metals, semivolatile organic compounds (SVOCs), and VOCs. The results were all less than the SAI-Ind MSC values except

for vanadium, TCE, vinyl chloride (VC), and select SVOCs, which required further evaluation. In the sumps report, the additional sample results were used to calculate new exposure point concentrations (EPCs) analogous to the EPCs used in the human health risk assessment, and concluded that the new results would contribute negligible increases to the calculated cancer risk and non-cancer hazard values.

To address and identify remaining source areas, to conduct treatability studies, and to answer questions about vertical extent, PSI activities were conducted in 2013, 2014, and 2016. The 2013/2014 PSI studies resulted in collection of 271 discrete soil samples. Ninety five of these samples were collected from the unsaturated zone, 41 at the smear zone, and 135 from the saturated soil. For the unsaturated soil samples, the results were less than the GWP-Ind MSC values except for TCE in two samples (18CPT21 and 18CPT25), PCE in one sample (18CPT21), MC in two samples (18CPT21 and 18CPTUEP05), and perchlorate in one sample (18CPTBB02), which required further evaluation. Samples 18CPT21, 18CPT25, and 18CPTUEP05 were collected from within the former UEP and sample 18CPTBB02 was collected from former button bomb area to the west of the UEP.

The 2016 PSI study focused on the southern area of the site for perchlorate extent determination primarily in the Shallow Zone. One hundred and twenty one discrete soil samples were collected. Forty four of these samples were collected from the unsaturated Shallow Zone and 77 from the saturated soil in either the Shallow Zone, Wilcox clay, or Wilcox Formation below the Wilcox clay). For the unsaturated soil samples, the results were less than the GWP-Ind MSC values except for perchlorate in two samples (18DPT12 and 18CPTMW22DW), which required further evaluation. Sample 18DPT12 was collected from the Wilcox clay in the southern corner of the site just outside the containment. Sample 18CPTMW22DW was collected from the upper Wilcox Formation in the southern corner of the site just outside the containment. The 2016 Draft Final Supplemental to the Updated PSI Report is presented as **Appendix B**.

In general, the additional soil sample results do not change the conclusion of the risk assessments that soil poses no unacceptable human health risks to the hypothetical site worker.

2.2.2 Groundwater

Additional groundwater samples have been collected since the risk assessment and analyzed for perchlorate, metals, VOCs, SVOCs, and 1,4-dioxane. Proposed modifications to the CoCs are included in **Tables 2-1 and 2-2**. The reasoning for those modifications was discussed above. Six chemicals, (MC, TCE, chloroform, 2,3,7,8-tetrachlorodibenzo-p-dioxin [TCDD], bromodichloromethane, and 4,4'-dichlorodiphenyldichloroethane [DDD]) had a carcinogenic risk greater than 1×10^{-6}. Fourteen chemicals, (MC, TCE, perchlorate, chloroform, antimony, nickel, manganese, silver, barium, thallium, 1,3,5-trinitrobenzene, cis-1,2-dichloroethene, cobalt, and chromium) had an HQ greater than 0.1. Four organic chemicals that exceeded the MCL, PCE, benzene, 1,1,2-trichloroethane (TCA), and VC, and one that exceeded the PCL, 1,4-dioxane, were added to **Table 2-1** as CoCs. One inorganic that had exceeded the MCL, arsenic, and organic chemical that exceeded the PCL, 1,4-dioxane, were added to **Table 2-2** as CoCs. These chemicals were added based on their presence in groundwater at concentrations above the MCL/PCL in several wells.

The risks associated with 2,3,7,8-TCDD and 4,4'-DDD are less than 1×10^{-4} by at least one order of magnitude; therefore, these chemicals were not retained as CoCs. Individual risks associated

with chloroform and bromodichloromethane are also less than 1 x 10^{-4}. Originally, the MCL for total trihalomethanes of 80 µg/L was used for chloroform and dibromodichloromethane and historically, the results for monitoring well MW-2 exceeded the MCL of 80 µg/L. After dispute resolution between the USEPA and the US Army, the TRRP PCLs became the cleanup criteria for groundwater in absence of MCL. Therefore, the TRRP PCL for chloroform of 240 µg/L and for bromodichloromethane of 15 µg/L will be used. The maximum concentration of chloroform in June 2016 was reported below the PCL in MW-2. Therefore, due to its sporadic detection, chloroform is excluded as a CoC. However, because the detection limit for bromodichloromethane in MW-2 samples is higher than the PCL, it will be retained on a provisional basis, but will be evaluated for retention based on future groundwater results.

Antimony had relatively higher concentration results in samples from the early phase of the RI which skewed the EPC calculation. Subsequent RI sampling indicated much lower concentrations. Most recent results (e.g., June 2016) were all less than the MCL of 6 µg/L. The revised HQ using the recent maximum groundwater concentration, while not calculated in **Table 2-2**, is estimated at 0.036, which is less than 0.1. Therefore, antimony was excluded as a CoC.

Manganese had relatively higher concentration results in samples from the early phase of the RI which skewed the EPC calculation. Subsequent RI sampling indicated much lower concentrations, less than the EPC. A revised HQ for manganese was calculated by a ratio of maximum recent concentration to EPC giving a value of 1.1 (1.7×5,290/8,270), which is greater than 1.0. Although these concentrations are greater than the PCL of 1,100 µg/L, the concentrations are lower than the background 95% UTL for manganese of 7,820 µg/L. Therefore, manganese was not retained as a CoC.

Silver had an HQ value less than 1.0. Recent silver concentrations (e.g., June 2016) in groundwater were less than the detection limit of 1 µg/L, which is less than the PCL of 120 µg/L. The revised HQ based on recent maximum concentrations is significantly less than 0.1 (0.002). Silver was not retained as a CoC.

Barium had a HQ of 0.84 and June 2016 groundwater concentration indicated the presence of barium in several wells, with the maximum concentration exceeding the EPC and the MCL. Barium was retained as a CoC.

Thallium had an HQ value less than 1.0. Recent (e.g., June 2016) thallium concentrations in groundwater were less than the MCL of 2 µg/L. The revised HQ based on recent maximum concentrations is approximately 0.1. Thallium was not retained as a CoC on a provisional basis.

1,3,5-trinitrobenzene had an HQ value less than 1.0, but more than 0.1, with no recent analytical results. The EPC for 1,3,5-trinitrobenzene is greater than the PCL of 730 µg/L. Therefore, 1,3,5-trinitrobenzene was retained as a CoC on a provisional basis.

Cis-1,2-DCE had an HQ of 0.3 based on an EPC of 250 µg/L. The most recent groundwater results (June 2016) indicated the presence of cis-1,2-DCE at a concentration of 43,600 µg/L in MW-2. Therefore, cis-1,2-DCE is retained as a CoC.

Cobalt had an HQ value less than 1.0 at 0.14. The cobalt EPC and recent maximum concentrations (June 2016) are greater than the PCL of 240 µg/L. Although the revised HQ based on recent maximum concentrations is only 0.178, cobalt was retained as a CoC on a provisional basis due to the PCL exceedances.

Chromium had an HQ of 0.12 and June 2016 groundwater concentrations indicated the presence of chromium in several wells, with the maximum concentration exceeding the MCL. Therefore, chromium was retained as a CoC.

Nickel had an HQ of 4.7 and June 2016 groundwater concentrations indicated the presence of nickel in several wells, with the maximum concentration exceeding the PCL. Therefore, nickel was retained as a CoC.

Arsenic concentrations exceeding the MCL showed no correlation with site contamination. Conspicuously, some MCL exceedances occurred at monitoring wells far beyond the boundaries of the site, implying high background levels. Recent data from the June 2016 sampling event indicated the presence of arsenic exceeding the MCL in monitoring wells 126, 18CPTMW01SW, 18CPTMW18, 18CPTMW24, MW-16, MW19, and MW2. Nonetheless due to presence of arsenic in background areas, arsenic was retained as a CoC on a provisional basis.

The results obtained from these post risk assessment groundwater samples do not alter the conclusion of the risk assessment that groundwater poses risk to a hypothetical future maintenance worker.

2.3 Ecological Risk Assessment

The Final Installation-Wide BERA (Shaw, 2007b) evaluated potential hazards to ecological resources at LHAAP by conducting a screening evaluation to identify initial contaminants of potential ecological concern (COPECs) in the individual sub-areas and watersheds. The potential of these COPECs to adversely affect communities was evaluated for (1) organisms that have direct contact with the COPECs (e.g., plants and earthworms growing and living in contaminated soil); and (2) organisms that may be exposed to the chemicals via food chain pathways (e.g., ingestion of an earthworm living in the contaminated soil by a shrew). Potential impacts to invertebrate and plant communities were evaluated by comparing COPEC concentrations to benchmark values available from multiple literature sources. For the food chain exposure assessment, a number of measurement receptors were selected as representative species for the various trophic levels in the food web that could be at risk from contaminants in site media. The measurement receptors that were selected and used in the food chain evaluation included the following:

- Deer Mouse
- Raccoon
- Modified Raccoon (as a surrogate for the Louisiana Black Bear)
- Short-Tailed Shrew
- Red Fox
- Muskrat
- River Otter
- Townsend’s Big-Eared Bat
- Common Snapping Turtle

- Bank Swallow
- American Woodcock
- Belted Kingfisher
- Red-Tailed Hawk

A food chain model was developed and used to estimate the total dose for each measurement receptor based on species-specific considerations such as diet, body weight, ingestion rates, etc., using conservative exposure estimates. Ecological hazard estimates were developed based on exposure to all media, including soil in a particular sub-area and surface water and sediment from any watersheds present in the sub-areas. Two different soil depths were used for modeling exposure to ecological receptors: surface soil (0 to 0.5 foot) and total soil (0 to 3 ft). Each receptor was assumed to be exposed to one of the two depths based on its life history characteristics (e.g., burrowing animals were assumed to be exposed to total soil). Bioaccumulation of chemicals up the food chain was initially estimated using uptake factors obtained from available literature, and then refined using site-specific data obtained during the BERA.

Ecological effects quotients (EEQs) were developed for each of the measurement receptors. EEQs are similar to HQs for human health, and are calculated by dividing the total dose that the receptor is exposed to by the toxicity reference value (TRV), which is based on a no-observed adverse effect level (NOAEL) or the lowest-observed adverse effect level concentration. If the EEQ exceeds 1 for a receptor (based on the NOAEL TRV), then that chemical is considered to have a realistic potential to cause adverse ecological impacts, and is identified as a final COPEC that should be addressed either through remediation or further investigation. As discussed in the BERA, there are several important uncertainties associated with the assumptions used in the EEQ process, and it should be noted that EEQs greater than 1 do not necessarily mean that ecological impacts have occurred, or are occurring.

The Installation-Wide Baseline Ecological Risk Assessment did not identify potential risk to ecological receptors at LHAAP-18/24 (Shaw, 2007b). Should there have been any ecological risk, it would have been expressed by this point in time. The BERA Addendum completed in 2014 (AGEISS, Inc., July 8, 2014) did not change the conclusion of the 2007 BERA.

2.4 Media Contamination Assessment

Chemicals in the groundwater at LHAAP-18/24 pose an unacceptable risk to human health. Chemicals in soil do not directly pose an unacceptable risk to human or ecological receptors. Evaluation of data generated after the risk assessment did not identify any additional CoCs with risks exceeding the USEPA target risk level of 1×10^{-4}, or an HQ greater than 0.1, as shown on **Table 2-1** and **Table 2-2**. Although a limited number of CoCs were added to **Tables 2-1 and 2-2** based on maximum concentrations of recent results (e.g., June 2016), continued evaluation of those CoCs will be conducted based on their presence, distribution, and EPCs to determine their contribution to the risk posed by the site groundwater.

2.4.1 Soil

Based on the human health risk assessment, soil at LHAAP-18/24 poses no unacceptable carcinogenic risks or non-carcinogenic hazards to a hypothetical future maintenance worker at LHAAP under an industrial scenario.

As noted in **Section 2.3**, the Installation-Wide Baseline Ecological Risk Assessment did not identify potential risk to ecological receptors at LHAAP-18/24 (Shaw, 2007b). Should there have been any ecological risk, it would have been expressed by this point in time. The BERA Addendum completed in 2014 (AGEISS, Inc., July 8, 2014) did not change the conclusion of the 2007 BERA.

As discussed in **Section 1.8**, potential source areas in the soil that could impact groundwater are limited to the area to the south of UEP in the vicinity of 18SB02 and 8A-911 between 8 and 12 ft bgs and the in the vicinity of location 8A-975 between 5.5 and 12 ft bgs. These areas are located where soil excavation was conducted to a depth of 4 ft as part of the 1996 IRA. The data indicate the presence of potential source of CoCs to groundwater at these locations. The estimated extent of excavation conducted in 1996 at location 8A-911 was approximately 40 ft by 70 ft for a total area of 2,800 ft^2 and potential in-place total volume of 11,200 cubic feet (ft^3) or 414 cubic yard (yd^3). The estimated extent of excavation conducted in 1996 at location 8A-975 is approximately 50 ft by 50 ft for a total area of 2,500 ft^2 and potential in-place total volume of 16,250 ft^3 or 602 yd^3.

An area to the west of the former UEP in the area of the former Burn Burial was investigated in 2014 near former boring locations 8A-940 and 8A-984. The results indicated impacted soil at 4 ft bgs at 8A-940 (TCE and MC) and at 4.5 to 5.5 ft bgs at 18CPTBB02 (perchlorate) are considered a threat to groundwater. TCE was also detected in 18SB04 collected in August 2011 (i.e., after soil excavation had taken place) at depths of 10 to 12 ft bgs and 13 to 14 ft bgs.

Two areas beneath the UEP contain TCE above the GWP-Ind. These areas are in the vicinity of 18CPT21/18CPTUEP05/18CPT25 at a depth range of approximately 15 to 25 ft below the top of the UEP cover. While this soil does not pose a current threat to groundwater, because of the cap and the low TCE concentrations, it might pose a risk at some point in the future after groundwater VOC concentrations have been reduced to the MCL. Therefore, the remedial alternatives included in this Revised FS all include evaluation of the need for future remediation of the soil under the UEP cover.

2.4.2 Shallow Zone Groundwater

Based on the human health risk assessment, groundwater at LHAAP-18/24 poses an unacceptable carcinogenic risk and non-carcinogenic hazard to a hypothetical future maintenance worker at LHAAP under an industrial scenario.

Groundwater contaminants identified to have a cancer risk greater than 1×10^{-6} are listed in **Table 2-1**. The CoCs retained in **Table 2-1** for the LHAAP-18/24 groundwater are MC, TCE, PCE, benzene, 1,1,2-TCA, VC, and 1,4-dioxane due to their contribution to risk or exceedance of their respective MCL/PCL. Although none of the wells had historically detectable concentrations of bromodichloromethane, bromodichloromethane was retained on a provisional basis because the reporting limit for MW-2 exceeded the PCL due to dilution required for analysis. Should future groundwater compliance sampling events reveal that bromodichloromethane is not present in

groundwater at LHAAP-18/24 or concentrations are below the PCL, this CoC will be eliminated from further evaluation. Chloroform was not retained because its maximum concentration in MW-2 is below the PCL. The other two chemicals, 2,3,7,8-TCDD and 4,4'-DDD, were not retained as CoCs for the reasons noted in **Section 2.2.2**.

Groundwater contaminants with HQ's greater than 0.1 are listed in **Table 2-2**. Several CoCs have MCLs. For those chemicals without MCLs, the TRRP PCL was used for evaluation. The CoCs retained in **Table 2-2** for the LHAAP-18/24 groundwater are MC, TCE, perchlorate, cis-1,2-DCE, barium, chromium, nickel, and 1,4-dioxane due to the contribution to HI and/or exceedance of their respective MCL or PCL. 1,3,5-Trinitrobenzene, arsenic, and cobalt are retained on a provisional basis. Five chemicals (chloroform, antimony, manganese, silver, and thallium) were not retained as CoCs for the reasons noted in **Section 2.2.2**.

Thus, the current CoCs for groundwater at LHAAP-18/24 are VOCs (MC, TCE, cis-1,2-DCE, PCE, benzene, 1,1,2-TCA, VC, and 1,4-dioxane), metals (barium, chromium, and nickel), and the anion perchlorate. The following constituents were retained on a provisional basis: organics (1,3,5-trinitrobenzene and bromodichloromethane), and metals (arsenic and cobalt). Perchlorate, TCE, and MC present the vast majority of the human health risk in groundwater. **Figure 1-9** presents the most recent (June 2016) perchlorate concentrations in shallow zone groundwater. The area of groundwater contaminated with perchlorate exceeding the PCL is estimated at 67 acres. **Figures 1-11, 1-13, and 1-15** present the TCE, MC, and 1,4-dioxane concentrations in Shallow Zone groundwater using June 2016 data and **Figure 1-17** presents the metals exceedances in the Shallow Zone. Cis-1,2-DCE is not presented separately because the plume for cis-1,2-DCE is enveloped by the TCE plume. The other CoCs are present in sporadic locations, so plume maps for those CoCs have not been generated. The areas of groundwater contaminated with MC, TCE, and 1,4-dioxane are estimated at 7.3, 59, and 2.7 acres, respectively. The occurrences of other VOCs and metals concentrations in groundwater are intermittent and their distribution is generally not contiguous. In general, they do not present a clear pattern across the site.

The mass of dissolved-phase constituents in the Shallow Zone was estimated for perchlorate, TCE, MC, and 1,4-dioxane. The basis of this analysis was the groundwater concentrations detected in June 2016 and the isocontour lines depicted in **Figures 1-9, 1-11, 1-13**, and **1-15** for perchlorate, TCE, MC, and 1,4-dioxane, respectively. The areas between each set of adjacent isocontour lines were determined. Each of these areas was represented by the average isocontour line concentrations. For the inner-most isocontour line, the average of the concentration represented by the isocontour line and the concentration represented by the monitoring well(s) was calculated to represent the concentration for that area of the isocontour line. The average saturation thickness of groundwater in the Shallow Zone was calculated based on the difference between depth to the clay layer overlying the Wilcox Formation and the depth to groundwater measured in June 2016. **Table 2-4** presents the groundwater level calculations for this sampling event. The average groundwater saturation thickness was 11.96 ft, noting that this average would fluctuate with seasonal groundwater conditions. The results of mass estimates are presented in **Table 2-5**. The estimated dissolved phase mass for perchlorate was 7,950 lbs, 2,077 lbs for TCE, 419 lbs for MC, and 3.45 lbs for 1,4-dioxane. Note that the groundwater elevations used for these calculations are depressed due to groundwater extraction. Actual groundwater thickness could be greater by more than five (5) ft based on comparison of 1992 groundwater elevations

and June 2016 elevations. For every one (1) foot increase in groundwater table, the dissolved mass would increase by a factor of approximately 8.4%, assuming that groundwater concentrations remain unchanged. Additionally, if sorbed mass is present within the zone of groundwater fluctuations, an increase in groundwater elevation could increase the dissolved phase concentrations. Therefore, the dissolved phase mass could be substantially higher than the values shown in **Table 2-5**. However, for the purposes of this analysis, a groundwater average thickness of 11.96 ft is used.

2.4.2.1 Estimate of CoC Mass on Saturated Soil in the Shallow Zone

The mass of dissolved phase constituents in the shallow zone was used to estimate the mass adsorbed on the soil matrix for TCE and MC. The equation and parameters used to determine soil saturation concentrations are discussed in **Appendix F** of the Updated PSI Report for LHAAP-18/24 (AECOM, 2016a). The equation is taken from the Texas Risk Reduction Program (TRRP) guidance (TRRP Tier 2 PCL Equations, March 2000). The parameters are taken from site specific conditions (organic carbon, porosity, and bulk density) and from literature published values for solubilities and partition coefficients (TRRP, March 2016 lookup tables). **Table 2-6** presents these results for MC and TCE mass calculations in the soil. The estimated mass associated with the saturated soil for MC is estimated at 462 lbs and 3,647 lbs for TCE. A similar analysis was not done for perchlorate or 1,4-dioxane because perchlorate is a salt with complete solubility in water and 1,4-dioxane is miscible in water. The uncertainty associated with the dissolved mass estimation applies to estimation of CoC mass on the saturated soil.

2.4.2.2 DNAPL Analysis in the Shallow Zone

The concentrations of MC and TCE in groundwater in some portions of the site are sufficiently high to indicate the possible presence of dense nonaqueous phase liquid (DNAPL) within the saturated zone. As noted in *An Introduction to Characterizing Sites Contaminated with DNAPLs* (ITRC, 2003), "one indication of the presence of DNAPL in the saturated zone in a monitoring well with a long well screen (at least 10 ft long), is that the concentration of the contaminant is greater than one to ten percent (1-10%) of the compound's effective solubility." While this "rule of thumb" is not a conclusive indication of DNAPL, recent concentrations of MC and TCE shown below indicate the potential presence of DNAPL.

CoC	Solubility Limit [a] (µg/L)	Selected Concentrations at LHAAP-18/24 (µg/L)	% of solubility	Location	Saturated Screen Interval (feet)	Sampling Date
Methylene Chloride	15,400,000	1,050,000	6.8	MW-2	5	May 2013
		383,000	2.5	EW-1	20	February 2013
		173,000	1.1	ICT-12E	Trench	February 2013
Trichloroethene	1,100,000	68,400	6.2	MW-2	5	May 2013
		38,600	3.5	EW-1	20	February 2013
		97,400	8.9	ICT-12E	Trench	February 2013
		51,700	4.7	ICT-12D	Trench	February 2013
		24,500	2.2	120	15	May 2013
		14,400	1.3	MW-21	5	May 2013

Notes and Abbreviations:
a Source: TCEQ Texas Risk Reduction Program physical/chemical characteristics table (March 2016)
µg/L – micrograms per liter CoC – chemical of concern

As noted above, these concentrations are in excess of one percent (1%) and, historically, were sometimes in excess of ten percent (10%). While these CoC concentrations are not conclusive, they indicate that both MC and TCE were likely present as DNAPL in the past and are possibly still present as residual product in the saturated zone.

Soil sampling conducted in the spring of 2013 identified the potential presence of MC and TCE DNAPL at 18CPT21 between approximately 48 and 51 ft bgs and at 18CPT27 between approximately 23 and 35 ft bgs (see Appendix F of the Updated PSI Report (AECOM, 2016a) for estimation of soil concentrations above which DNAPL might be implied; and Appendix A of the same Report for membrane interface probe (MIP) logs indicating the presence of VOCs in the intervals indicated). 18CPT21 is located beneath the former UEP and 18CPT27 is located within the former ACD area. The determination of soil concentrations above which DNAPL would be implied is presented in the table below.

CoC	**TCE**		**MC**	
Parameter	**fine-grained soil**	**coarse-grained soil**	**fine-grained soil**	**coarse-grained soil**
Solubility (µg/L) [2]	1,100,000	1,100,000	15,400,000	15,400,000
Bulk Density (lb/ft^3)[1]	1.95	1.96	1.95	1.96
Porosity[1]	0.414	0.377	0.414	0.377
Organic carbon fraction[1]	0.001761	0.001871	0.001761	0.001871
OC-W Partition Coefficient (L/kg) [2]	93.33	93.33	11.75	11.75
Soil-Water Partition Coefficient (L/kg)[2]	0.1643	0.17461	0.0207	0.02198
Soil Saturation Limit (µg/kg soil)[3]	414,473	404,008	3,590,315	3,305,620

Notes and Abbreviations:
[1] From core samples analyzed at ETTL in 2013.
[2] From TCEQ Texas Risk Reduction Program physical/chemical characteristics table (March 2016)
[3] See Appendix F of the Updated PSI Report (AECOM, 2016a) for calculations methods

Further delineation of the potential presence of DNAPL was conducted between April and September 2014 in the former ACD and UEP areas. Cone penetrometer test (CPT)/MIP was driven at 11 locations surrounding 18CPT27 in the vicinity of the ACD area to determine the presence and potential extent of DNAPL in the saturated zone. A total of 46 discrete soil samples were collected from these locations and analyzed for VOCs and perchlorate. The results indicated the presence of DNAPL in another location (18CPTACD03) approximately 50 feet to the southwest of 18CPT27 and in the same general interval of approximately 23 and 35 ft bgs (TCE concentration was reported at 2,670,000 µg/kg in the sample at 26 to 28 ft bgs exceeding the theoretical solubility limit for TCE presented in the table above). **Figure 2-1** depicts the extent of DNAPL in the saturated zone in the former ACD area with the knowledge that there is no bright line between areas where DNAPL is present and areas where DNAPL is absent. The DNAPL impacted soil is characterized by fine-grained soil and described as the Wilcox clay. Therefore it appears that DNAPL has migrated into the fine-grained soil but none is observed in the overlying coarse-grained soil. This is likely the case because the site is mature and the extraction of groundwater in this area of the site resulted in the removal of the majority of DNAPL from the coarse-grained soils via physical extraction, but more likely via enhanced dissolution and volatilization.

The remainder of the 11 CPT/MIP data and analytical results did not indicate the potential presence of DNAPL, although relatively elevated concentrations of VOCs and perchlorate were observed. At eight (8) of the 10 locations (18CPTACD04, 18CPTACD05, 18CPTACD06, 18CPTACD07, 18CPTACD12, 18CPTACD13, 18CPTACD14, and 18CPTACD15) the high concentrations of VOCs and perchlorate were observed in the Wilcox clay with smaller amounts observed in coarse-grained soils. At only two locations (18CPTACD01 and 18CPTACD02) the elevated VOCs and perchlorate concentrations were observed in coarse-grained soils. 18CPTACD01 is the farthest location to the west and 18CPTACD02 is the farthest location to the north.

This information was introduced into the 14-compartment model developed by Sale and Newell and discussed in the ITRC document entitled: *Integrated DNAPL Site Strategy*, November 2011. The model provides a tool to aid in developing a simplified conceptualization of subsurface releases of chlorinated solvents. The model provides a complete view of the chlorinated solvent phases and their distribution in transmissive and low permeability zones within the source area and downgradient within the plume area. The 14 compartments of the model are shown in the table below along with qualitative estimates of the chemical potential in each compartment. The chemical potential refers to the relative amount of mass/concentration in each compartment relative to other compartments and allows for the determination of where the mass flux will occur (i.e., from which compartment to which other compartments). The information provided in the table below is taken from MIP and soil analytical results, analytical results of groundwater samples from AWD-1 located within the ACD area, and portioning information between the aqueous and soil per **Table 2-6** calculations.

14-Compartment Model Applied to ACD Area

Zone	Source		Plume	
	Lower K*	Transmissive*	Lower K	Transmissive
Vapor**	Low	Low	Low	Low
DNAPL	High	Low		
Aqueous	High	Moderate	Moderate	Moderate
Sorbed	High	Moderate	Moderate	Moderate

Notes and Abbreviations:

* Lower K refers to lower permeability zones or fine-grained soils that trap contaminants in the water and sorbed phases while the transmissive zone is the high permeability coarse-grained soils that allow advective transport of contaminants.
** In the saturated zone

The presence of DNAPL in the lower K zones but not in the transmissive coarse-grained zones has been documented and is indicative of a mature plume that has undergone extraction via the existing groundwater extraction system. It is expected that the aqueous and sorbed phases of VOCs to be high also in the lower K zones. The presence of VOCs in AWD-1 just outside the estimated DNAPL zone and monitoring well 120 downgradient from the source zone (i.e., in the plume zone) indicate the presence of moderate VOCs in the transmissive zones (assumed that the well data represent the transmissive zone more readily than the lower K zone). Because of the presence of moderate levels of VOCs in the transmissive zones, the sorbed phase is also considered moderate in these zones. Although lower K zones do not allow much if any advective

transport, the lower K zones in the plume would still contain moderate levels of CoCs via diffusive transport occurring over a long period of time associated with a mature plume.

The installation and operation of the groundwater extraction system occurred several decades after the occurrence of contaminant releases, allowing the DNAPL to migrate into the fine-grained soils. At the same time, the extraction system allowed removal of residual mass residing in the transmissive zones via direct recovery, but more likely via removal and depletion of aqueous-phase contaminants. The groundwater extraction system may have also accelerated migration of aqueous-phase contaminants from the source zones to the plume zones within the transmissive zone.

Based on this model, continued extraction of groundwater will continue to remove contaminant mass present in the transmissive zone and/or transported to the transmissive zone via diffusion from the lower K zones at the interphase between these zones. The presence of a source mass within the lower K zones will serve as a persistent source of groundwater contaminants. The groundwater extraction mass flux calculations are presented in **Section 2.4.2.6**. However, this model also indicates that removal of the source of contaminants within the lower K zones in the source area is required to reduce the lifecycle of the site. The presence of the majority of DNAPL/residual mass in lower K zones would hinder contaminant extraction or distribution of injected chemicals.

Further delineation of the potential presence of DNAPL in the UEP area was conducted between April and September 2014. CPT/MIP was driven at 18 locations surrounding 18CPT21 in the vicinity of the UEP area to determine the presence and potential extent of DNAPL in the saturated zone. A total of 80 discrete soil samples were collected from these locations and analyzed for VOCs and perchlorate. The results did not identify the potential presence of DNAPL in any location. Therefore, the depiction of DNAPL extent is governed by the results identified in 18CPT21 and the high concentration of MC in MW-2, implying presence of DNAPL in the vicinity of MW-2. **Figure 2-2** depicts the extent of DNAPL in the saturated zone within the UEP area. The DNAPL reported in 18CPT21 was identified in the fine-grained soil within the Wilcox clay.

At 18CPT21, the sample collected at 27 to 28 ft bgs from a coarse to fine-grained soil indicated the presence of high concentrations of VOCs (no perchlorate detected) but much lower (two orders of magnitude) than the concentrations at 48 to 49 ft bgs (Wilcox clay) where DNAPL was identified. Therefore it appears that DNAPL has migrated into the fine-grained soil but none is observed in the overlying coarse-grained soil. This is likely the case because the site is mature and the extraction of groundwater in this area of the site resulted in the removal of the majority of DNAPL from the coarse-grained soils via physical extraction and via enhanced dissolution and volatilization.

The results from the investigation conducted in 2014 indicated that the majority of the impact was identified in fine-grained soils within the saturated zone with eight (8) CPT/MIP locations (locations 18CPTUEP 04, 05, 06, 07, 10, 11, 12, and 17) out of 18 locations the soil was identified as Wilcox clay and at two (2) locations (CPT/MIP locations 18CPTUEP08 and 13) the contaminants resided primarily in fine-grained soil. Five (5) locations were characterized with little to no impact (CPT/MIP locations 18CPTUEP03, 09, 15, 16, and 17). Only at three locations the contaminants were identified in coarse-grained zones (CPT/MIP locations 18CPTUEP01, 02,

and 14). Therefore, it can be characterized that the majority of contaminants reside in fine-grained soil in the vicinity of the former UEP.

This information for the UEP area was introduced into the 14-compartment model. The 14 compartments of the model for the UEP area are shown in the table below along with qualitative estimates of the chemical potential in each compartment. The information provided in the table below is taken from MIP and soil analytical results, analytical results of groundwater samples from MW-2 located within the UEP area, and portioning information between the aqueous and soil per **Table 2-6** calculations. Based on the analytical data, the distribution of contaminants in the UEP area is similar to the distribution identified for the ACD area with the exception that the source concentration in the transmissive area was determined to be high based on the MC concentration in MW-2. The CSM for the UEP area is similar to the ACD area where the release has occurred decades ago before the extraction system was put in place and the effect of the extraction system is to decrease the transmissive zone concentrations particularly within the plume area. Also, a similar discussion about remedial technologies applies to this area as discussed for the ACD area.

14-Compartment Model Applied to UEP Area

Zone	Source		Plume	
	Lower K*	Transmissive*	Lower K	Transmissive
Vapor**	Low	Low	Low	Low
DNAPL	High	Low		
Aqueous	High	High	Moderate	Moderate
Sorbed	High	High	Moderate	Moderate

Notes and Abbreviations:

* Lower K refers to lower permeability zones or fine-grained soils that trap contaminants in the water and sorbed phases while the transmissive zone is the high permeability coarse-grained soils that allow advective transport of contaminants.
** In the saturated zone

Saturated soil samples collected from 18CPT01 in the 2013 investigation adjacent to MW-2 did not imply the presence of DNAPL in this area of the site, although the concentrations of TCE and MC in groundwater were high (TCE in MW-2 at 6.2% of solubility and MC in MW-2 at 6.8% of solubility in May 2013). This observation implies that use of 1% of solubility as an indicator for the presence of DNAPL is conservative and a concentration of 5% to 10% provides a better approximation of DNAPL presence at this site.

An estimate of the amount of DNAPL present can be estimated using **Figures 2-1 and 2-2**, where an approximation of the extent of DNAPL in the vicinity of the UEP and ACD is made. Using the estimated saturated soil concentrations, thickness of soil where DNAPL might be present, and the aerial extent of DNAPL from **Figures 2-1 and 2-2**, an estimate of TCE and MC mass is made. **Table 2-7** presents a summary of the calculations and results. The mass of MC in DNAPL is estimated at 80,000 lbs and the mass of TCE is estimated at 132,000 lbs. Because residual DNAPL is not present in a continuous, connected form but rather it occurs in disconnected globules or stringers trapped inside pore space, the volume of DNAPL as determined above likely overestimates the potential DNAPL quantity. The actual lateral extent, distribution, and concentrations of DNAPL cannot be determined from discrete samples and

because of its discontinuous nature, it is not readily identified. This phenomenon also makes identifying and treating residual DNAPL difficult.

2.4.2.3 Lateral Extent and Migration of CoCs

The ongoing shallow groundwater extraction has been effective at reducing the extent of contamination. **Figure 2-3 and Figure 2-4** show the MC and TCE plumes in the shallow zone as of November 1992, prior to the IRA and operation of the groundwater extraction system and treatment plant. Comparing these figures to **Figure 1-13** and **Figure 1-11**, respectively illustrates that the extent of the shallow zone plumes have decreased over time. The current extent of MC contamination is greatly reduced with respect to historical results. The horizontal extent of MC contamination in groundwater is limited to two distinct areas located within the containment area: in the vicinity of monitoring wells 120 and AWD-1 and extraction trenches ICT-12D and ICT-12E, and in the vicinity of MW-2 extending to MW-1 to the west and MW-21 to the east, with the highest concentration reported at monitoring well MW-2. The vertical extent of MC is mostly shallow, although detections in 18CPTMW01SW at 746 µg/L and in MW-14 at 53.5 J µg/L were reported in June 2016 in the upper Wilcox Formation.

In earlier sampling events, TCE concentrations exceeding the MCL were found in almost every well at LHAAP-18/24. The current extent of TCE contamination is consistent with historical results. However, the magnitude of the isoconcentration contour lines has decreased by approximately one order of magnitude. The horizontal extent of TCE contamination in groundwater covers the entire containment area, and extends outside the containment area southwest to MW-8 and MW-19, northwest to 18CPTMW-23, northeast to 18WW17 and C-08, and to the southeast to 18CPTMW14.

No equivalent comparison of plume extent changes is possible for perchlorate because perchlorate was not tested prior to implementation of the IRA. **Figure 2-5** shows the perchlorate shallow zone plume as of April 2001, more than three years after initiation of the IRA. Due to mobility of perchlorate, the shallow zone plume extent has undergone only limited reduction in the past 13 years when compared to **Figure 1-9** from June 2016. Historically, perchlorate concentrations exceeding the GW-Ind of 72 µg/L were found at two shallow zone wells (MW-17 and MW-19) that now have concentrations less than the current cleanup criteria of 17 µg/L (TRRP PCL). Concentrations of perchlorate in the shallow zone have been reduced in certain wells, such as in MW-2 from 40,000 µg/L in April 2001 to 33.3 µg/L in June 2016, but increased in other wells such as MW-23 from 4,080 µg/L in April 2001 to 65,200 µg/L in June 2016 and in MW-21 from 4,510 µg/L in April 2001 to 26,100 µg/L in June 2016. Additionally, investigation work completed between March and May 2013 resulted in identification of an area in the vicinity of 18CPTMW22 with a very high perchlorate concentration (106,000 µg/L in June 2014). A new upper Wilcox monitoring well (18CPTMW22SW) was installed in September 2014 and sampled in December 2014. The perchlorate concentration in this well was reported at 17,300 µg/L, which is lower than the concentration reported in plugged monitor well 18CPTMW22, but indicates that perchlorate is present in the upper Wilcox aquifer. In May 2014, an attempt to install a Shallow Zone well near C-01 to the south of 18CPTMW22 for lateral delineation of perchlorate in the Shallow Zone groundwater was made but the Wilcox clay was very shallow (only 13 feet bgs) and the upper soil was damp (no water was identified). Therefore, a well was not installed. Instead three (3) soil samples were collected at 6, 12, and 16 feet bgs and analyzed for perchlorate. No perchlorate was present at detection limits of 2.08 to 2.40 µg/kg, providing a

southern boundary to the extent of perchlorate in this area of the site. The 6 and 12 foot samples were collected from the transmissive Shallow Zone and the 16 foot sample was collected from the Wilcox clay.

To determine the lateral and vertical extent of perchlorate and the presence of a perchlorate source in this area of the site, 17 borings were installed in the Shallow Zone and soil samples were collected in the Spring of 2016. The results indicate the absence of a perchlorate source, defined the extent of perchlorate in the vicinity of 18CPTMW22, and determined that perchlorate from LHAAP-18/24 does not appear to be migrating to LHAAP-17, although new Shallow Zone monitoring well 18CPTMW26 had insufficient water to collect groundwater samples. New monitoring well 18CPTMW22R was intended to be completed in the Shallow Zone, however, it was completed in the first groundwater encountered, which is actually perched groundwater above the Shallow Zone. The perchlorate concentration is a sample from 18CPTMW22R was 0.917 µg/L in June 2016, which is much lower than the concentration detected in a sample collected from 18CPTMW22 in June 2014 of 106,000 µg/L. Monitoring well 18CPTMW22 was screened in the Wilcox clay and into the upper Wilcox sand. Soil data from this area of the site indicate that perchlorate resides primarily in the Wilcox clay compared to the unconsolidated soil of the Shallow Zone.

Monitoring wells 18CPTMW22DW, 18CPTMW26, and 18CPTMW26SW were installed in this area of the site in April 2016. The groundwater data from 18CPTMW22DW determined the vertical extent of perchlorate in the Wilcox Formation. Monitoring well 18CPTMW26 had insufficient water to collect groundwater samples and 18CPTMW26SW had a perchlorate concentration of 6.42 µg/L below the PCL of 17 µg/L, providing later extent of perchlorate between LHAAP-18/24 and LHAAP-17 in the Wilcox Formation. No VOCs or 1,4-dioxane were detected in this area of the site.

Perchlorate approaching Harrison Bayou at 18WW08 in the shallow zone has decreased from a high of 36,300 µg/L in 2002 (map not shown) to 3.36 µg/L in June 2014 and < 0.20 µg/L in June 2016, with an overall decreasing trend (table below). No perchlorate was detected north of Harrison Bayou in 18CPTMW16 (< 0.20 µg/L), sampled in June 2016. Due to disruption of electric power and operational disruptions associated with the sand filter, the extraction system was temporarily shut down in summer 2009. This disruption of power during the summer of 2009 caused migration of perchlorate towards 18WW08 with perchlorate concentration increasing from 220 µg/L in April 2009 before power disruption to 450 µg/L in September 2009 and 2,700 µg/L in September 2010. The increase in perchlorate in 18WW08 continued to be observed one year after power was restored due to the travel time of groundwater between the ICT-13 series and 18WW08.

Monitoring Well 18WW08	
Year	**Perchlorate (µg/L)**
2000	18,000
2002	36,300 (maximum)
November 2005	13,200
April 2009	220
September 2009	450

Monitoring Well 18WW08	
Year	**Perchlorate (µg/L)**
September 2010	2,700
May 2013	51.2
June 2014	3.36
June 2016	< 0.20 (minimum)

The temporary shutdown of the GWTP in summer 2009 may have allowed perchlorate to travel toward Harrison Bayou as observed in MW-16 (concentration increased from < 0.3 µg/L on September 30, 2009 to 5,500 µg/L on March 10, 2010). This could occur because of the presence of a gap in the ICT liners between ICT-12E and ICT-13A and also due to the absence of a clay layer that otherwise would separate the shallow zone from the Wilcox formation. Perchlorate fell to 800 µg/L on July 6, 2010 and 17 µg/L in September 2010. The May 2013 concentration of perchlorate in MW-16 was reported at 166 µg/L. However, recent disruption in performance of ICT-12E and ICT-13B between June and September 2014 resulted in migration and increase in perchlorate concentration in MW-11 with a June 2014 reported concentration of 11,600 µg/L. Operation of ICT-12E and ICT-13B was resumed in October 2014. MW-16 was sampled in December 2014 and a perchlorate concentration of 3,580 µg/L (J-flagged) was reported, appearing to be reversing the increasing trend. The perchlorate concentration in MW-16 declined further and was reported at 0.615 µg/L in June 2016. The June 2016 horizontal extent of perchlorate in shallow zone groundwater (**Figure 1-9**) covers the entire containment area with extensions beyond the containment area southwest to MW-8, northwest to 18CPTMW15 and MW-16, northeast to 18WW17, and to the southeast to 18CPTMW14 and to 126.

Historical data for 1,4-dioxane were not useful due to high reporting limits. However, recent groundwater samples were collected for 1,4-dioxane. The June 2016 Shallow Zone groundwater results are presented in **Figure 1-15**. The highest 1,4-dioxane concentration was observed in monitoring wells 120 and MW-16, with lower concentrations in MW-7 and AWD-1.

Isoconcentration maps for the Wilcox Formation were presented in **Section 1.4**. **Figure 1-14** shows MC concentrations less than the MCL or undetectable in the majority of Wilcox Formation wells, with detections above the MCL in June 2016 at 18CPTMW01SW (746 µg/L) and MW-14B (53.5 J µg/L). **Figure 1-12** shows TCE concentrations exceeding the MCL at Wilcox Formation wells inside the containment area, with the maximum concentration reported in June 2016 for MW-14 at 15,900 µg/L and 12,700 µg/L from the bottom and top of the screened interval, respectively. Other wells exceeding the MCL for TCE in the Wilcox Formation are 18CPTMW01SW (46.5 µg/L), 18CPTMW08SW (74.2 µg/L), and 18CPTMW06SW (1.02 µg/L). **Figure 1-10** shows perchlorate concentrations exceeding the PCL in the Wilcox Formation only in 18CPTMW03SW (260 µg/L), 18CPTMW06SW (30.3 µg/L), 18CPTMW08SW (35,000 µg/L), 18CPTMW08DW (672 µg/L), 18CPTMW22SW (10,200 µg/L), and MW-14 (229,000 and 177,000 µg/L in the bottom and top portions of the screened interval).

The general lateral direction of groundwater flow in the shallow formation is from within the northern portion of the site to the east, north, and west. The mounding effect at the site in the shallow formation is present historically as depicted on the 1992 potentiometric map completed

by USACE (**Figure 1-8**). The extraction system has decreased the lateral extent of the mound, which extended to the south of the site towards MW-20 in 1992, but now is isolated to the northwestern portion of the site. The historical potentiometric gradient at the site indicates the gradient in the southern corner flows east, west and south. The presence of western and southern flow components of the historical gradient facilitated CoC migration outside the site boundaries in this area of the site. The current depiction of the potentiometric lines in the Shallow Zone in the southern area of the site (**Figure 1-6**) consistently shows that there is little horizontal gradient to the south to facilitate migration of CoCs outside the containment area. New Shallow Zone monitoring well 18CPTMW22R indicates the presence of a groundwater high in this area of the site. However, the groundwater elevations in 18CPTMW22R and MW-20 reflect the groundwater surface of a small perched unit, not the Shallow Zone groundwater. Therefore, there is no Shallow Zone groundwater surface high in this area. Figure 1-6, which is based on Shallow Zone groundwater elevations measured in June 2016, and excludes the elevations from 18CPTMW22 and MW-20, shows the most recently interpreted configuration of the Shallow Zone potentiometric surface. This configuration suggests that CoCs in the Shallow Zone groundwater may have migrated to the southwest part of the site before installation and operation of the extraction system.

Groundwater extraction generally decreased the groundwater elevation and the lateral extent of the high water mound, but did not significantly change the pattern of flow with the exception of the southern area of the site as discussed above. The highest groundwater elevation continues to occur in the vicinity of monitoring wells 123 and AWD-2. The potentiometric maps in the shallow saturated zone reflect influence from groundwater extraction, as depicted by the groundwater level depression represented by the 167 foot potentiometric line in the northeast site boundary. The influence of extraction is less pronounced in the northwestern boundary due to the presence of the groundwater high and ICT liners, and to the southwestern boundary due to the presence of ICT liners.

The presence of ICT liners in the northwest and southwest boundaries is associated with impeding CoCs from migrating from within the containment area to outside the containment area. These ICTs are generally terminated in the clay layer and, if intact, should provide barriers to flow away from the site. The exception was identified in the northwest corner of the site where the liners are not connected horizontally and the absence of the clay layer does not allow the liners to prevent CoCs from migrating beneath the liners under observed gradient conditions.

Historical data indicated that CoCs present outside the containment area have migrated beyond this area prior to the installation of the ICTs and liners; particularly the area to the southwest. While the presence of liners prevents migration of contaminants from within the containment area to outside the containment area, the liners also prevent extraction of contaminants on the downgradient side of the ICT.

2.4.2.4 CoC Mass Distribution in the Shallow Zone

An estimate of CoC mass within the containment area versus outside the containment area was determined. The calculations included analysis of dissolved and adsorbed mass of CoCs following assumptions and calculations presented in **Table 2-5** and **Table 2-6,** the only difference being that areas covered by the isocontour lines for each CoC were divided between areas inside the containment and areas outside the containment. **Table 2-8** presents the mass

calculations for the areas outside the containment area for the dissolved and adsorbed phases. Using the calculated total CoC mass and CoC mass outside the containment area, the estimated mass within the containment area was determined and the fraction of CoC mass outside the containment area was determined. (See **Table 2-9**.)

The results in **Table 2-9** indicate that the majority of the CoC mass is inside the containment area (with the exception of perchlorate, located primarily to the west and northeast of the containment area). Additionally, the distribution of MC, TCE and perchlorate mass within the containment is primarily concentrated in the vicinity of the UEP and ACD areas. Distribution of perchlorate and TCE mass outside the containment area is concentrated to the west and southwest of the containment area. The northwestern area of the site is primarily composed of sandy soil in the Shallow Zone, without a clay layer. These coarse-grained areas are considered transmissive zones. The ICTs extract CoCs primarily from within the containment area based on their location within and at the perimeter of the containment area. 1,4-Dioxane is primarily located to the north of the ACD area.

2.4.2.5 Vertical Gradient and Connectivity

Groundwater gauging was conducted in June 2016 after completion of installation of 11 new Wilcox Formation monitoring wells. The gauging event allowed determination of depth to groundwater across the site in the shallow zone and Wilcox Formation wells and the vertical gradient occurring at the site. The June 2016 water level data (**Table 2-10**) generally indicate an upward gradient between the upper Wilcox and the shallow zone within the containment area, with the exception of areas in the vicinity of MW-5 and 18CPTMW04 adjacent to the former UEP. Other areas with a downward gradient include the vicinity of MW-9, 18WW11, 18CPTMW19, and 18CPTMW22R. All of these locations are outside the containment area. The vertical gradient between 18CPTMW22R and 18CPTMW22SW is reported at 8.22 ft. The upward gradients range between 0.07 ft and 3.67 ft while the downward gradients range between 0.05 ft and 8.22 ft.

A downward gradient is indicated between the shallow zone and the upper Wilcox Formation in the area of MW-5. The downward vertical gradient observed between the shallow zone and upper Wilcox Formation is likely associated with the lack of groundwater extraction in this area. (MW-5 is nearest to ICT-13F and ICT-13G. ICT-13F does not extract significant amounts of groundwater due to the low level of groundwater in that area of the site and ICT-13G continues to be non-operational, based on a decision that was made several years ago as a result of poor extraction quantities of groundwater from that area of the site.)

The 18CPTMW04 area, also with an observed downward gradient between shallow zone and upper Wilcox Formation, is adjacent to ICT-6, which was used as a re-injection trench between 2007 and 2012. Historical data from MW-1 located just to the south of ICT-6 indicated that the influence of re-injection was a significant increase in shallow zone groundwater elevation. While water re-injection ceased in June 2012, the vertical gradient continues to be in a downward direction with approximately 2 ft of head. This is likely due to lack of significant influence of other extraction trenches on the Shallow Zone groundwater in this area.

Upward gradients observed in the other areas of the site reflect the effect of ICT extraction reversing the natural downward gradient between the shallow zone and the upper Wilcox Formation. The areas near MW-2 and MW-22 are influenced by extraction in ICT-8, which has

one of the highest extraction quantities and a large area of influence. The MW-21 area is influenced by extraction in ICT-14D and ICT-14E, and monitoring wells 120/MW-14 area is influenced by extraction in ICT-12E and ICT-13A.

Outside the containment area, the well pairs indicate a mixture of downward and upward vertical gradients between the shallow zone and the upper Wilcox Formation.

Downward vertical gradients between the Shallow Zone and the Wilcox Formation drive CoCs downward. This is observed in several areas including areas where the current vertical gradient appears to be upward such as in the monitoring well pair 120/MW-14. The vertical gradient depicted in June 2016 was 1.78 ft in the upward direction. This implies CoC migration upward from MW-14 to monitoring well 120. However, this upward gradient is caused by the extraction system and historically the natural gradient is slightly downward that allowed the CoCs to migrate downward. Currently, the concentrations of CoCs in well pair 120/MW-14 is such that MW-14 contains higher concentrations of CoCs (e.g., perchlorate concentration in June 2016 in MW-14 is 229,000 μg/L from the bottom of the screen compared to 32,700 μg/L in monitoring well 120. A similar observation where the concentration of perchlorate in the Wilcox Formation is higher than in the Shallow Zone is in well pair MW-5/18CPTMW08SW where perchlorate concentrations are 31,300 μg/L and 35,000 μg/L, respectively. The June 2016 vertical gradient is 0.32 ft downward. In this area of the site the downward gradient has been observed fairly consistently. Generally, in all other areas of the site, regardless of the gradient direction (up or down) between the Shallow Zone and the Wilcox Formation, the Shallow Zone CoC concentrations are higher than the concentrations in the Wilcox Formation.

2.4.2.6 Mass Removal Flux

The CoC mass extracted by the GWTP was determined based on extraction rates measured on a monthly basis and concentrations in extraction locations measured annually. The mass flux for the first quarter of 2015 is presented in **Table 2-11,** and in **Table 2-12** for the first quarter of 2016. On average on a daily basis for the two year period, approximately 2.16 lbs of perchlorate, 1.85 lbs of TCE, and 1.98 lbs of MC were extracted from groundwater. Assuming future extraction rates and concentrations are similar to those observed in 2015 and 2016 (understanding that mass extraction rates naturally decrease as CoC mass decreases over time), the annual estimated mass removal rates are 0.39 tons per year (tpy) for perchlorate, 0.34 tpy for TCE, and 0.36 tpy for MC (**Table 2-13**).

Using the above extraction rates, CoC mass in groundwater, and the estimated total mass in the formation as discussed above, the estimated lifecycle for groundwater extraction at the site would be estimated as shown in **Table 2-14**. The estimated duration to remove the dissolved phase constituents is 2.0 years for MC, 2.4 years for TCE, and 18.5 years for perchlorate. To remove the adsorbed phase, assuming dissolution is not rate limiting, the estimated lifecycle duration for MC is 2.2 years and 4.4 years for TCE. In practice, the desorption of adsorbed mass is rate limiting and could increase the estimate lifecycle duration by multiples, if not orders of magnitude, especially as a large mass of VOCs is present in the lower permeability zones. The dissolution rate is a function of soil type, organic carbon content, contaminant characteristics, and concentration gradient between adsorbed and dissolved concentrations and will vary across the site based on localized variations in these factors.

Perchlorate mass was assumed to reside in the pore space, and not as brine. This is based on the fact that the highest concentration in groundwater reported at 229,000 µg/L in the bottom portion of monitoring well MW-14 measured in June 2016 is not high enough to imply the presence of perchlorate brine in the formation. For DNAPL, the estimated duration assuming dissolution of DNAPL at a non-limiting rate is 110 years for MC and 196 years for TCE. Therefore, groundwater extraction alone would not remediate groundwater quickly. The above estimates assume that groundwater extraction captures the entire extent of the CoC plumes, which is also not accurate. However, because groundwater extraction is successful in removing substantial amounts of contaminants, its importance as a remedy component remains, particularly in the short term.

First quarter 2013, 1st quarter 2015, and 1st quarter 2016 quarterly extraction rates of the three main CoCs, perchlorate, TCE, and MC, from each ICT and extraction well are presented in **Figures 2-6a, 2-6b,** and **2-6c,** respectively**.** Generally, the extraction rates increased for MC and TCE in 2015 and 2016 compared to 2013 but decreased for perchlorate. **Figures 2-7a, b, and c,** reflect 2013, 2015, and 2016 CoC extraction rates for boundary extraction ICTs, series 12, 13, and 14. The figures indicate that perchlorate has the highest removal rate in ICT-12 and ICT-13 series. Methylene chloride in ICT-14 series in 2016 reflects a high extraction rate. This was associated primarily with high MC concentrations in ICT-14C and ICT-14D. The figures also indicate that ICT-12 series along the southwestern boundary removes the highest mass of CoCs, followed by ICT-14 series along the northeastern boundary, then ICT-13 series along the northwestern boundary of the site. These varied removal rates reflect the varied contaminant concentrations and groundwater extraction rates (which reflect the natural ability of groundwater and CoCs to migrate in a certain area) with higher concentrations and groundwater extraction rates occurring for ICT-12 series and least for ICT-13 series. These varied conditions are important considerations for remediation design.

2.4.2.7 Assessment of GWTP Operations

Shallow groundwater extraction for treatment is currently occurring at LHAAP-18/24. As indicated above, it is estimated that 0.39 tpy of perchlorate, 0.34 tpy of TCE, and 0.36 tpy of MC, among other CoCs, are extracted from the shallow groundwater. This process not only reduces the quantity of CoCs in groundwater, but also influences potential lateral and vertical migration of CoCs in the containment area. The lateral gradient reversal observed primarily to the northeast, but also the northwest and southwest, is a result of groundwater extraction. The vertical gradient reversal between the Shallow Zone and the Wilcox Formation is also a result of groundwater extraction. These benefits cannot be substituted immediately by other remedial actions such as excavation, enhanced in situ biodegradation, or monitored natural attenuation (MNA). The importance and value of the GWTP will diminish when the CoC mass extracted by the GWTP becomes less than that occurring by other remedial actions, when containment by groundwater extraction becomes unnecessary because CoC concentrations and distribution is such that the groundwater plume is not expanding, and when the threat of vertical migration of CoCs diminishes due to reduced CoC concentrations in the Shallow Zone.

Contaminant removal rates are hindered by partitioning of the CoCs on the soil, particularly TCE and MC. Retardation for these compounds can be determined based on their partition coefficients, the soil bulk density, and the soil porosity. Using a soil bulk density of 1.95 kg/L,

total porosity of 0.396, and soil water partition coefficient for TCE and MC of 0.196 L/kg and 0.0213 L/kg, respectively, a retardation coefficient for TCE of 1.84 and for MC of 1.11 can be calculated. In practice, the content of the water that is actually moving is represented by the effective porosity, which is much lower than the total porosity but it is higher in coarse-grained soil and lower in fine-grained soils. Assuming an effective porosity of $1/10^{th}$ of the total porosity in fine-grained soil and ½ in coarse-grained soil indicates that the retardation coefficients in fine-grained soil could be as much as 10.0 for TCE and 2.04 for MC, and in coarse-grained soil as much as 2.67 for TCE and 1.21 for MC.

2.4.2.8 Natural Attenuation

Assessment of NA is important if MNA is utilized as part of the remedial alternative. **Appendix A** presents analysis of NA at the site and its role in remedial actions. The following were concluded from the NA analysis:

- It is believed that extraction of groundwater removes a greater mass of contaminants compared to NA mechanisms.
- Generally, it is not possible to differentiate between NA effects and effects of groundwater extraction on contaminant concentration decrease.
- The presence of TCE daughter compounds (1,2-DCE and VC) provides a good evidence of occurrence of NA at the site. TCE daughter compounds were identified in several wells (MW-2, MW-1, MW-4, MW-5, MW-7, MW-8, MW-14, MW-21, 109, 120, and AWD-1),
- Wells outside the influence of groundwater extraction such as 18WW08 and MW-8 provided evidence of occurrence of NA for perchlorate in 18WW08 and TCE in MW-8.

2.4.3 Wilcox Formation Groundwater

Human health risk assessment was not conducted on Wilcox Formation groundwater because very few Wilcox Formation wells were historically present within the contaminant zone. The majority of Wilcox Formation wells were located outside the containment area (e.g., C-01, C-10, C-04, 18WW02, 18WW03, 18WW09, and 18WW11) and most of these wells were either unimpacted or have very low concentrations of CoCs. Investigations completed in 2013/2015/2016 resulted in the installation of Wilcox Formation monitoring wells inside and at the boundary of the containment area. Several of these wells contain CoCs above their respective MCLs/PCLs. The analytical results from the June 2016 sampling event (**Table 2-15**) could be used as proxy for determining the CoCs in the Wilcox Formation. The criteria include:

- CoCs that are present in the Shallow Zone groundwater, and
- Chemicals that exceed their respective MCLs/PCLs.

The chemicals that are selected as COCs in the Wilcox Formation using the above rationale are included in **Table 2-16** for the carcinogenic chemicals and **Table 2-17** for noncarcinogenic chemicals. For the most part, the majority of the chemicals identified as CoCs in the Shallow Zone are selected in the Wilcox Formation.

The CoCs retained in **Table 2-16** for the LHAAP-18/24 groundwater are MC, TCE, PCE, benzene, VC, and 1,4-dioxane due to their contribution to risk or exceedance of their respective

MCL/PCL. Bromodichloromethane was retained on a provisional basis, although none of the wells had historically detectable concentrations of bromodichloromethane. Should future groundwater compliance sampling events reveal that bromodichloromethane is not present in groundwater at LHAAP-18/24 or below the PCL, this CoC will be eliminated from further evaluation. Chloroform was eliminated because the maximum concentration was below the PCL. 1,1,2-Trichloroethane was not retained because the maximum concentration is below the MCL. The other two chemicals, 2,3,7,8-TCDD and 4,4'-DDD, were not retained as CoCs for the reasons noted in the **Table 2-16**.

Based on calculations completed in the Shallow Zone groundwater concentrations, groundwater contaminants with HQ's greater than 0.1 are listed in **Table 2-17**. Some CoCs have MCLs. For those chemicals without MCLs, the TRRP PCLs were used for evaluation. The CoCs retained in **Table 2-17** for the LHAAP-18/24 groundwater are MC, TCE, perchlorate, cis-1,2-DCE, 1,3,5-trinitrobenzene, arsenic, barium, and 1,4-dioxane due to the contribution of the Wilcox Formation Revised Hazard Quotient to HI and/or exceedance of their respective MCL or PCL. Eight chemicals (chloroform, antimony, chromium, cobalt, manganese, nickel, silver, and thallium) were not retained as CoCs for the reasons noted in the **Table 2-17**.

Thus, the current CoCs for groundwater at LHAAP-18/24 are VOCs (MC, TCE, cis-1,2-DCE, benzene, VC, and 1,4-dioxane), metals (arsenic and barium), and the anion perchlorate. Tetrachloroethene and bromodichloromethane were retained on a provisional basis. Perchlorate, TCE, and MC present the vast majority of the human health risk in the Wilcox Formation. **Figure 1-10** presents the most recent (June 2016) perchlorate concentrations in the Wilcox Formation. The area of groundwater contaminated with perchlorate in the Wilcox Formation exceeding the PCL is estimated at 21 acres. **Figures 1-12, 1-14, and 1-16** present the TCE, MC, and 1,4-dioxane concentrations in Wilcox Formation groundwater using June 2016 data and **Figure 1-18** presents the metals exceedances. Cis-1,2-DCE is not presented separately because the plume for cis-1,2-DCE is enveloped by the TCE plume. The other CoCs are present in isolated locations, so plume maps for those CoCs have not been generated. The areas of groundwater in the Wilcox Formation contaminated with MC, TCE, and 1,4-dioxane are estimated at 4.8, 16.6, and 1.2 acres, respectively. The occurrences of other VOCs and metals detections in groundwater are intermittent and their distribution is generally not contiguous. In general, they do not present a clear pattern across the site.

The mass of dissolved-phase constituents in the Wilcox Formation was estimated for perchlorate, TCE, MC, and 1,4-dioxane. The basis of this analysis was the groundwater concentrations detected in June 2016 and the isocontour lines depicted in **Figures 1-10, 1-12, 1-14**, and **1-16** for perchlorate, TCE, MC, and 1,4-dioxane, respectively. The areas between each set of adjacent isocontour lines were determined. Each of these areas was represented by the average isocontour line concentrations. For the inner-most isocontour line, the average of the concentration represented by the isocontour line and the concentration represented by the monitoring well(s) was calculated to represent the concentration for that area of the isocontour line. The average thickness of groundwater in the Wilcox Formation was estimated based on the difference between depth of the bottom of the Wilcox clay layer and approximately 70 ft bgs, which is the approximate depth of the upper Wilcox Formation used in this analysis. In general, a thickness of 20 feet was used in this analysis.

The results of mass estimates are presented in **Table 2-18**. The estimated dissolved phase mass for perchlorate was 2,221 lbs, 212 lbs for TCE, 7.6 lbs for MC, and 2.6 lbs for 1,4-dioxane. The impacted thickness in the Wilcox Formation was assumed to be 20 feet representing the upper Wilcox portion of the aquifer (ranging from below the bottom of the Wilcox clay to 20 feet below the Wilcox clay). For example, in the central portion of the site represented by monitoring wells 18CPTMW01SW, 18CPTMW06SW, and 18CPTMW03SW and in the northwestern portion represented by 18CPTMW08SW, the upper Wilcox Formation ranges between approximately 45 feet bgs to 65 ft bgs; along the southwestern boundary represented by wells 18CPTMW10SW and 18CPTMW12SW, the upper Wilcox ranges between approximately 40 ft bgs and 60 ft bgs; in the southern area of the site represented by monitoring well 18CPTMW22SW, the upper Wilcox ranges between 30 ft bgs and 50 ft bgs; and in the northwestern area of the site represented by MW-14, the upper Wilcox ranges between 30 ft bgs and 50 ft bgs. For every one (1) foot increase in impacted thickness, the dissolved mass would increase by a factor of approximately 5%, assuming the groundwater concentrations remain unchanged. Therefore, the dissolved phase mass could differ from the values shown in **Table 2-18**. However, for the purposes of this analysis, a groundwater impacted thickness of 20 ft is used.

2.4.3.1 Estimate of CoC Mass in the Wilcox Formation

The mass of dissolved phase constituents in the Wilcox Formation was used to estimate the mass adsorbed on the soil matrix for TCE and MC. The equation and parameters used to determine soil saturation concentrations are discussed in **Appendix F** of the Updated PSI Report for LHAAP-18/24 (AECOM, 2016a). The equation is taken from the Texas Risk Reduction Program (TRRP) guidance (TRRP Tier 2 PCL Equations, March 2000). The parameters are taken from site specific conditions (organic carbon, porosity, and bulk density) and from literature published values for solubilities and partition coefficients (TRRP). **Table 2-19** presents these results for MC and TCE mass calculations in the soil. The estimated mass associated with the saturated soil for MC is estimated at 8.4 lbs and 389 lbs for TCE. A similar analysis was not done for perchlorate or 1,4-dioxane because perchlorate is a salt with complete solubility in water and 1,4-dioxane is miscible in water. The uncertainty associated with the dissolved mass estimation applies to estimation of CoC mass on the saturated soil.

2.4.3.2 DNAPL Analysis in the Wilcox Formation

At the concentrations identified in the Wilcox Formation, no DNAPL is suspected.

2.4.3.3 Lateral Extent and Migration of CoCs in the Wilcox Formation

Little historical information is available about the presence and distribution of CoCs in the Wilcox Formation. Therefore comparison to historical data is not possible. **Figures 1-10, 1-12**, **1-14, 1-16, and 1-18** provide the concentrations and distribution of perchlorate, TCE, MC, 1,4-dioxane, and metals in the Wilcox Formation based on June 2016 sampling results. In general, the concentrations and extent of CoCs in the Wilcox Formation is much smaller than identified in the Shallow Zone. Impedance of contaminant migration between the Shallow Zone and the Wilcox Formation occurs as a result of the presence of the Wilcox clay in a large area of the site. In areas where the Wilcox clay is absent, concentrations in the Wilcox Formation appear to be high such as in MW-14. However, this observation is not conclusive since high CoCs are identified at 18CPTMW08SW and 18CPTMW22SW, where the Wilcox clay is present.

The current perchlorate impact in the Wilcox Formation is concentrated in MW-14 to the west of the site, 18CPTMW08SW in the northern area of the site, and 18CPTMW22SW in the southern area outside the containment. Highest TCE and MC concentrations also reside in the vicinity of MW-14 and 18CPTMW08SW while 1,4-dioxane reside in the vicinity of MW-14. For metals, only arsenic and manganese had detections above the MCL/PCL in the Wilcox Formation in June 2016, noting that manganese concentration in the Wilcox Formation is lower than the background 95% upper confidence limit (UCL) determined in the Shallow Zone from perimeter wells.

The general lateral direction of groundwater flow in the Wilcox Formation is from within the northwestern portion of the site radially outward to the east, north, west, and south.

2.4.3.4 CoC Mass Distribution in the Wilcox Formation

An estimate of CoC mass within the containment area versus outside the containment area in the Wilcox Formation was determined. The calculations included analysis of dissolved and adsorbed mass of CoCs following assumptions and calculations presented in **Table 2-18** and **Table 2-19,** the only difference being that areas covered by the isocontour lines for each CoC were divided between areas inside the containment and areas outside the containment. **Table 2-20** presents the mass calculations for the areas outside the containment area for the dissolved and adsorbed phases. Using the calculated total CoC mass and CoC mass outside the containment area, the estimated mass within the containment area was determined by the difference and the fraction of CoC mass outside the containment area relative to the total mass was calculated. (See **Table 2-21**.)

The results in **Table 2-21** indicate that the majority of the CoC mass is inside the containment area (with the exception of perchlorate, located primarily to the southwest of the containment area). Additionally, the distribution of MC, TCE and perchlorate mass within the containment is primarily concentrated in the vicinity of the UEP and ACD areas, and in the ACD area for 1,4-dioxane.

2.4.3.5 Vertical Gradient and Connectivity within the Wilcox Formation

Groundwater gauging was conducted in June 2016 after completion of installation of 11 new Wilcox Formation wells. The gauging event allowed determination of depth to groundwater across the site in the upper and lower Wilcox Formation wells and the vertical gradient occurring at the site. The June 2016 water level data in the Wilcox Formation (**Table 2-10**) generally indicate mixed gradients, with a downward gradient within the containment area and an upward gradient outside the containment area.

The two well pairs inside the containment (18CPTMW01SW/18CPTMW01DW and 18CPTMW08SW/18CPTMW08DW) have a downward gradient. In general for the Wilcox Formation, the concentrations in the lower Wilcox are lower than the concentrations in the upper Wilcox. Good examples of the decrease in concentration with depth are for well pair 18CPTMW08SW/18CPTMW08DW and 18CPTMW22SW and 18CPTMW22DW for perchlorate. Perchlorate concentrations for well pair 18CPTMW08SW/18CPTMW08DW in June 2016 are 35,000 μg/L and 672 μg/L and the June 2016 perchlorate concentrations for well pair 18CPTMW22SW/18CPTMW22DW are 10,200 μg/L and 1.21 J μg/L, respectively. The only location where CoCs increase with depth is in MW-14. In June 2016, samples were collected

from near the top of the screen and the bottom of the screen. The results indicated that concentrations of perchlorate, TCE, MC, and 1,4-dioxane were higher at the bottom of the screen compared to the concentrations at the top of the screen (e.g., perchlorate concentration was 177,000 μg/L at the top of the screen compared to 229,000 μg/L at the bottom and 1,4-dioxane concentration was 390 μg/L at the top of the screen compared to 412 μg/L at the bottom of the screen).

2.4.4 Vertical Mass Flux Determination

As indicated in **Table 2-10**, groundwater elevations at several co-located wells inside and outside the containment area indicate a downward gradient between the Shallow Zone and the upper Wilcox Formation. These downward gradients were used to determine the potential vertical mass flux of CoCs across the Wilcox clay, where it is present. Where the Wilcox clay is absent, a Wilcox clay thickness of 0.1 ft was used for the calculations. The vertical gradient was determined by dividing the head difference by the clay thickness. **Table 2-22** provides the calculations of the mass flux for the main CoCs, perchlorate, TCE, and MC. Information about the clay characteristics such as porosity, hydraulic conductivity, bulk density, and organic carbon content was obtained from data collected in the 2013 investigation (AECOM, 2016a). An effective porosity of 11% is 25% of the reported total porosity of 44% for the clay. Organic carbon partitioning coefficients (koc) for MC and TCE were obtained from 30TAC 350.73(c) from which the distribution coefficients were determined. Retardation coefficients and transport velocities for MC and TCE were determined based on the compound-specific and Wilcox clay characteristics described above. The mass flux through the clay was determined based on CoC concentrations in the Shallow Zone groundwater and transport velocities for each CoC through the clay. **Table 2-22** provides the equations used in determining flux per unit area through the clay. Eventually to determine a total mass flux, the average flux was determined and a hypothetical area of 50 acres was assumed to represent the area of contamination in the Shallow Zone. The total flux through the clay was determined by multiplying the flux per unit area by the assumed area. It was also assumed that contamination has been present at the site for 70 years. Based on these assumptions, the mass of each CoC was determined (**Table 2-22**). The total mass for all three COCs was determined to be 2.01 lbs.

In comparison, the total mass in the Wilcox Formation determined for MC, TCE, and perchlorate is 2,840 lbs. (**Table 2-21**). The ratio between the estimated mass in the Wilcox Formation, based on measured concentrations and aerial extent, and the mass based on mass flux over 70 years is approximately 1,413. This discrepancy can be explained by the following factors:

- The Shallow Zone concentrations used in the mass flux determination are the June 2016 concentrations. Actual historical Shallow Zone concentrations were much higher before operating the Shallow Zone groundwater extraction system, which began operation in 1997/1998 and has removed a significant amount of contaminant mass from the Shallow Zone. Examples of the significant reduction in concentrations over time are presented for monitoring wells MW-2 and MW-7 as follows.

Ratio of Historical Maximum CoC Concentration to June 2016 Concentration in MW-2 and MW-7

CoC	MC	TCE	Perchlorate
MW-2 (inside containment)			
Maximum Historical Concentration (mg/L)	26,720 (June 1994)	1,520 (April 1994)	40 (April 2001)
June 2016 Concentration (mg/L)	21.3	15.5	0.033
Ratio	1,254	98.1	1,212
MW-7 (outside containment)			
Maximum Historical Concentration (mg/L)	1.7 (April 1994)	22.3 (November 2004)	157 (November 2003)
June 2016 Concentration (mg/L)	0.0025	1.74	22.2
Ratio	680	12.8	7.1

As can be seen from the data for monitoring wells MW-2 and MW-7, the ratio of perchlorate between the maximum reported concentrations and the most recent concentrations ranges between 7.1 and 1,212. The 1 to 3 orders of magnitude reduction in concentration of these CoCs explains the discrepancy between the total estimate of mass migrating to the Wilcox Formation calculated using the June 2016 results, compared to the total estimated mass in the Wilcox Formation for each CoC (**Table 2-21**). Similar ratios are obtained for other wells.

- The other important factor that provides additional explanation for the discrepancies identified above is related to the historical head differences between the Shallow Zone and the Wilcox Formation compared to current head differences between these water-bearing zones. Historically and prior to operating the extraction system, the groundwater head in the Shallow Zone was higher by up to 5 feet or more than observed today. The higher head differences historically present at the site provided a greater force driving the CoCs across the clay unit. For example a historical head difference between the Shallow Zone and the Wilcox Formation of five feet has a 10 times greater driving force than a head difference of ½ foot observed today.
- Another important factor that cannot be quantified is the historical installation of several BH-series wells into the Wilcox Formation around the UEP area. These wells were plugged due to the concern for contaminant migration from the Shallow Zone to the Wilcox Formation via these wells.
- Other less critical factors include the differences in hydraulic conductivity and organic carbon fraction values used in the calculations, compared to the actual values at the various locations.

Nonetheless, the determination above implies that movement of CoCs through the Wilcox clay takes place under groundwater head differences that create a downward hydraulic gradient between the Shallow Zone and the Wilcox Formation.

2.5 Conceptual Site Model

LHAAP-18/24 is a 34.5-acre site that has been impacted primarily with VOCs and perchlorate. 1,4-dioxane was also recently added to the site CoCs in groundwater. The area had been used for

the treatment, storage, and disposal (TSD) of solid and liquid explosive, pyrotechnic, and combustible solvent waste by open burning/open detonation, incineration, evaporation, and burial. Burning Ground No. 3 operated between 1955 and 1998. Historical waste management units include open burn pits, the UEP, stockpiles of solvent-soaked sawdust, and suspected waste burial pits. The UEP was constructed at the burning ground in 1963 as a holding pond to store explosive wastes resulting from the washout of rocket motor casings. In 1973, the pond also began receiving waste water containing solvent residues and solids. An ACD was built in 1979 for the purpose of disposing of explosive and explosive-contaminated wastes by burning. A groundwater extraction system incorporating approximately 5,000 feet (ft) of ICTs and a GWTP was installed in 1997 to control the migration of contaminated groundwater as an interim remedial action. Please refer to **Section 1.3** for additional details.

There are two groundwater zones at LHAAP-18/24: a "Shallow Zone" extending from the surface to a depth of approximately 45 ft bgs, and the Wilcox Formation below the Shallow Zone (please refer to **Sections 1.5 and 1.6** for additional details). Generally, these two units are separated by a contiguous clay layer which is believed to be present across the entire site with the exception of the area to the west and northwest towards Harrison Bayou (i.e., within the floodplain of Harrison Bayou). The Shallow Zone is heterogeneous composed of discrete layers of fine-grained and coarse-grained soils while the Wilcox Formation is characterized primarily with fine-grained sand.

The groundwater in the Shallow Zone flows radially outward from the northwestern area of the site. Localized influence of groundwater extraction can be observed in the shallow aquifer. The groundwater flow pattern and gradient direction in the Wilcox Formation is similar to what is observed in the shallow zone. Groundwater in the Wilcox Formation near LHAAP is currently used as a drinking water source (please see **Section 1.5** for additional details).

The major contaminants at the site are perchlorate and VOCs. 1,4-dioxane was recently added as a CoC in Shallow Zone groundwater. Residual contaminants remained in the unsaturated soil after completion of an interim remedial measure in 1997 whereby 32,000 cubic yard of source area soil were excavated and treated by low temperature thermal desorption.

The contaminants in the saturated zone occur in two forms: residual DNAPL in defined areas within the containment totaling an estimated aerial extent of 40,000 ft^2 (former UEP and former ACD areas) and dissolved plume within the containment area and outside the containment area where contaminants have migrated off-site before the installation of the interim remedial measure (groundwater extraction with 5,000 ft of ICTs and a GWTP which were installed in 1997 to control the migration of contaminated groundwater). Dissolved phase contaminants and DNAPL appear to have migrated from coarse-grained soils to fine-grained soils. Additionally, sorbed contaminants on the soil occur in areas where dissolved CoCs are present. The presence of contaminants in fine-grained soil and in the form of DNAPL provides for a long-term source at the site.

A 14-compartment model as developed by Sale and Newell and discussed in the ITRC document entitled: Integrated DNAPL Site Strategy, November 2011 was discussed. The model determined the presence of DNAPL in the lower conductivity (K) zones but not in the transmissive coarse-grained zones which is indicative of a mature plume that has undergone extraction via the existing groundwater extraction system. The aqueous and sorbed phases of VOCs are also high

in both the lower K and high K zones based on the high concentrations being extracted from the ICTs.

The model also determined that extraction of groundwater continues to remove an important mass of contaminants present in the transmissive zone and/or transported to the transmissive zone via diffusion from the lower K zones at the interphase between these zones and the presence of a source mass within the lower K zones will continue to serve as a persistent source of groundwater contaminants for a long time. The 14-compartment model also indicates that removal of the source of contaminants within the lower K zones in the source area is required to reduce the lifecycle of the site. The presence of the majority of DNAPL/residual mass in lower K zones, would hinder contaminant extraction or distribution of injected chemicals.

The Installation-Wide Baseline Ecological Risk Assessment (Final Installation-Wide BERA – Shaw, 2007b) did not identify potential risk to ecological receptors at LHAAP-18/24. Should there have been any ecological risk, it would have been expressed by this point in time. The BERA Addendum completed in 2014 (AGEISS, Inc., July 8, 2014) did not change the conclusion of the 2007 BERA.

Figure 2-8 illustrates the human health CSM for LHAAP-18/24. This model presents those exposure pathways that are hypothetically complete and being considered for remediation. Those exposure pathways that are likely to be incomplete or have negligible impact are not considered for remediation as discussed below.

VOCs and associated 1,4-dioxane, metals, and perchlorate releases associated with past operations of the former burn pits, burial trenches, the ACD, and the UEP are the suspected contamination sources at LHAAP-18/24. The majority of the unsaturated soil contaminated with these CoCs was remediated during an IRA. A risk assessment for soil was conducted with a hypothetical future maintenance worker's exposure to soil at LHAAP-18/24. The risk assessment determined the carcinogenic risk was determined to be 5.0×10^{-7}, which is less than the USEPA target risk range of 1×10^{-4} to 1×10^{-6} ELCR. The non-carcinogenic hazard was determined to be 0.042, which is less than the acceptable HI of 1. Therefore chemicals in soil at LHAAP-18/24 do not pose unacceptable carcinogenic risk or non-carcinogenic hazard to human health.

As discussed in **Section 1.8**, unsaturated soil known to contain CoCs constituting a potential source of CoCs to groundwater is isolated to locations south of the former UEP (as defined by locations 18SB02 for TCE at a depth of 10 to 12 ft bgs, location 8A-911 for MC at a depth of 8 ft bgs) and location 8A-975 (for MC at a depth of 5.5 to 12 ft bgs), to the west of the UEP (as defined by 18CPTBB02 at a depth of 4.5 to 5.5 ft bgs for perchlorate), and underneath the UEP (as defined by 18CPTUEP05 for MC at a depth of 24 to 25 ft bgs and 18CPT21/18CPT25 at a depth of 15 to 22 ft bgs). Therefore, the potential leaching of contaminants from the unsaturated soil at these locations to groundwater is considered a complete transport pathway that will be addressed during the remedial action. Other than the above-stated unsaturated soil locations, the medium of concern at LHAAP-18/24 is the groundwater.

Contamination, in the form of VOCs, 1,4-dioxane, metals, and perchlorate in the shallow groundwater at LHAAP-18/24, poses a potential risk to the hypothetical future maintenance worker. This is an exposure pathway at LHAAP-18/24 that was considered complete and has been determined to require remediation to manage this hypothetical risk. Concentrations of VOCs and perchlorate were detected in wells screened in the Shallow Zone and in localized

areas in the Wilcox Formation, though Shallow Zone contamination is much more widespread. The Shallow Zone and Wilcox Formation are hydraulically separated by a clay layer that extends over the majority of the site, with the exception of the area to the northwest towards Harrison Bayou. Potential interaction between the Shallow Zone and Wilcox formation in this northwestern area of the site warrants consideration during evaluation of remedial alternatives. The most significant contaminants in groundwater are MC, TCE, and perchlorate. It is implied that MC and TCE are present as residual DNAPL in the saturated zone at two locations in the former UEP and former ACD areas as discussed above. Another transport pathway that was considered potentially complete is the migration of Shallow Zone groundwater to surface water via seepage. This transport pathway is currently mitigated by the operation of a groundwater extraction system that prevents migration of contaminants to surface water as depicted in **Figure 2-8**. For the purposes of the CSM, this applies to Harrison Bayou and Caddo Lake because the point of compliance for Caddo Lake as it relates to discharge of groundwater to surface water is Harrison Bayou at LHAAP-18/24. The RI (Jacobs, 2001) concluded that LHAAP-18/24 does not appear to be significantly affecting the surface water based on surface water sampling data. Quarterly surface water sampling serves as verification of this determination. However, the main reason of apparent lack of migration of CoCs to surface water is, as indicated above, groundwater extraction associated with the interim remedial measure implemented in 1997 as part of the interim ROD. Additionally, the baseline risk assessment (Jacobs, 2002) did not link any surface water risks to LHAAP-18/24. However, concentrations of several CoCs in the shallow groundwater at LHAAP-18/24 exceed their MCLs/PCLs. Currently, discharge of these contaminants to Harrison Bayou is restricted by the on-going groundwater extraction. This observation was confirmed by data collected from 18CPTMW16, installed on the north side of Harrison Bayou.

Contamination, in the form of VOCs, 1,4-dioxane, metals, and perchlorate in the Wilcox Formation at LHAAP-18/24, also poses a potential risk to the hypothetical future maintenance worker. The magnitude of risk posed by Wilcox Formation groundwater is less than the risk posed by the Shallow Zone groundwater.

Residual DNAPL in the Shallow Zone groundwater was reported in two areas of the site (vicinity of former UEP and former ACD areas) primarily in the Wilcox clay, which is expected to constitute a source for a long period of time unless this mass is removed. Continued residual DNAPL dissolution of CoCs to groundwater is considered a complete transport pathway that will be evaluated in this FS.

A material balance for the four main contaminants (perchlorate, TCE, MC, and 1,4-dioxane) was completed in the Shallow Zone and Wilcox Formation and remediation duration estimates were determined for the Shallow Zone groundwater based on current groundwater extraction rates. These estimates did not take into account the diffusivity limitations associated with sorbed mass and DNAPL trapped in lower K zones. The estimates also assumed that the groundwater extraction system captures all impacted groundwater plumes. The estimated remediation durations ranged between 4 years for 1,4-dioxane and 200 years for TCE (**Table 2-14**). Understanding the limitations of contaminant release associated with the presence of DNAPL in lower K zones and sorbed mass within the lower K and high K zones, the durations associated with remediation by groundwater extraction are likely to exceed 1,000 years.

In summary, the CSM for the site described the complexity of the site with contaminants distributed among various heterogeneous zones. The CSM also determined that groundwater extraction minimizes or eliminates the expansion of the groundwater plume laterally and vertically, and continues to remove contaminant mass from groundwater. However, the CSM also determined that the lifecycle duration for the site under groundwater extraction is long, primarily because the majority of the contaminant mass is sorbed in lower K zones and/or present as residual DNAPL trapped in lower K zones.

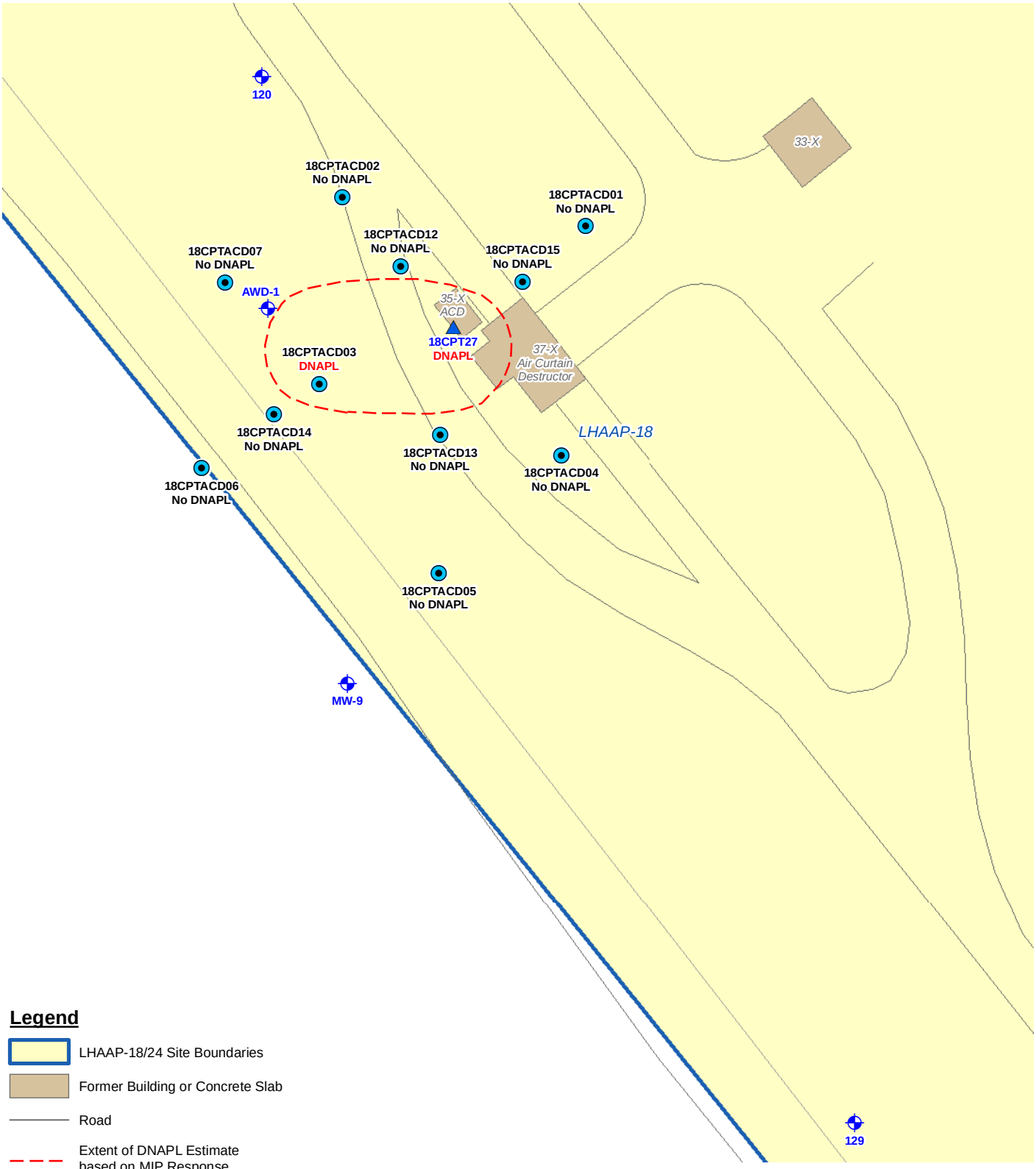

Legend

- LHAAP-18/24 Site Boundaries
- Former Building or Concrete Slab
- Road
- Extent of DNAPL Estimate based on MIP Response
- Shallow Zone Monitoring Well
- Soil Boring Location
- CPT/MIP Location
- CPT — Cone Penetrometer Tool
- DNAPL — Dense Non-aqueous Phase Liquid
- ACD — Air Curtain Destructor

N

0 25 50
Feet

Figure 2-1
ACD Area DNAPL Extent
in Shallow Zone (May 2014)
LHAAP-18/24
Longhorn Army Ammunition Plant
Karnack, Texas

Date 01-2017	AECOM	Figure
Project No. 60274185		2-1

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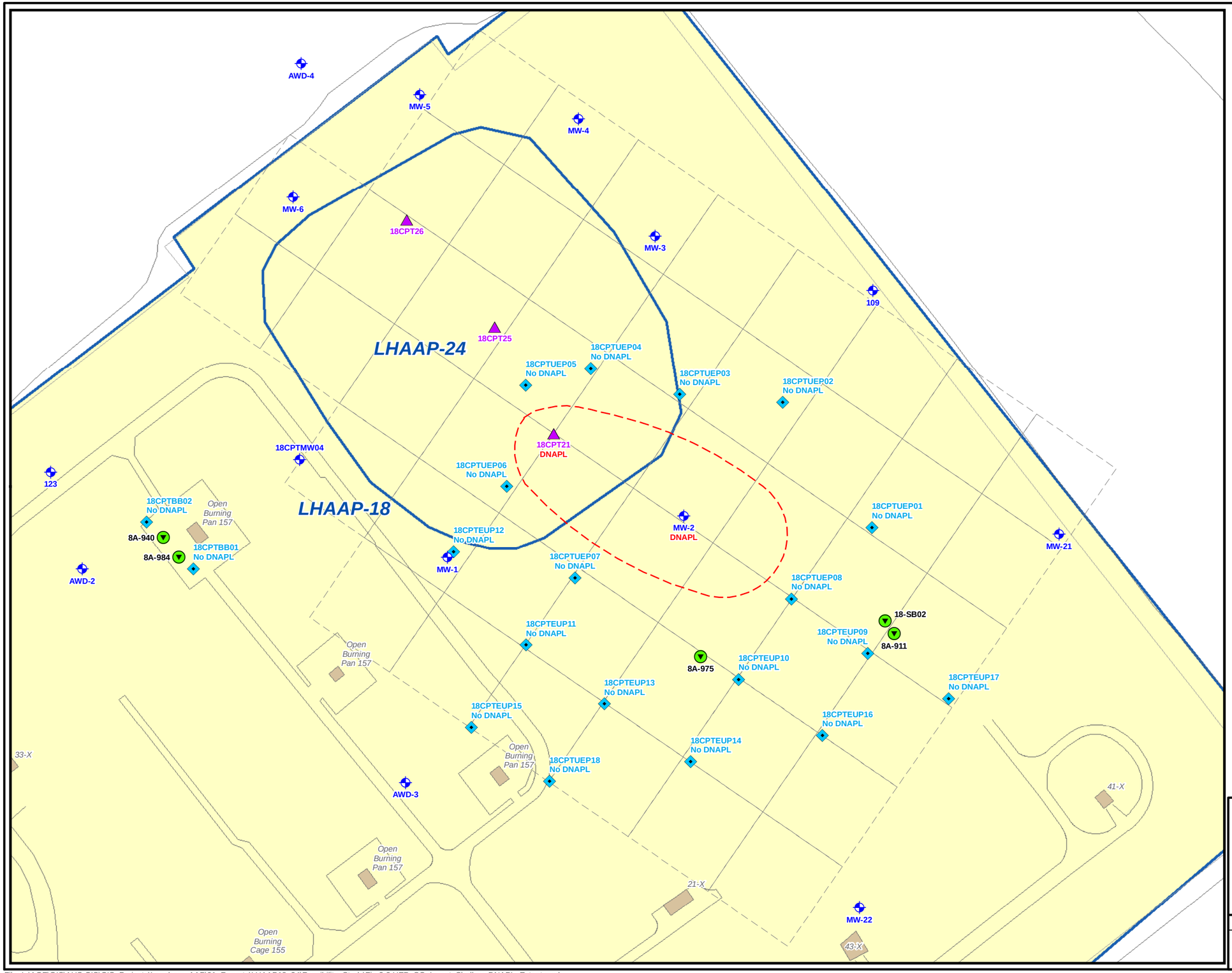

Legend

- LHAAP-18/24 Site Boundaries
- Former Building or Concrete Slab
- Road
- Extent of DNAPL Estimate based on Analytical Results
- Shallow Zone Monitoring Well
- Soil Boring Location (PSI, 2013)
- Soil Boring Location (Previous Events)
- CPT/MIP Location to Wilcox Clay
- CPT — Cone Penetrometer Tool
- DNAPL — Dense Non-aqueous Phase Liquid
- UEP — Unlined Evaporation Pond

N

0 50 100 200 Feet

Figure 2-2
UEP Area DNAPL Extent
in Shallow Zone (May 2014)
LHAAP-18/24
Longhorn Army Ammunition Plant
Karnack, Texas

Date 01 2017	AECOM	Figure
Project No. 60274185		2-2

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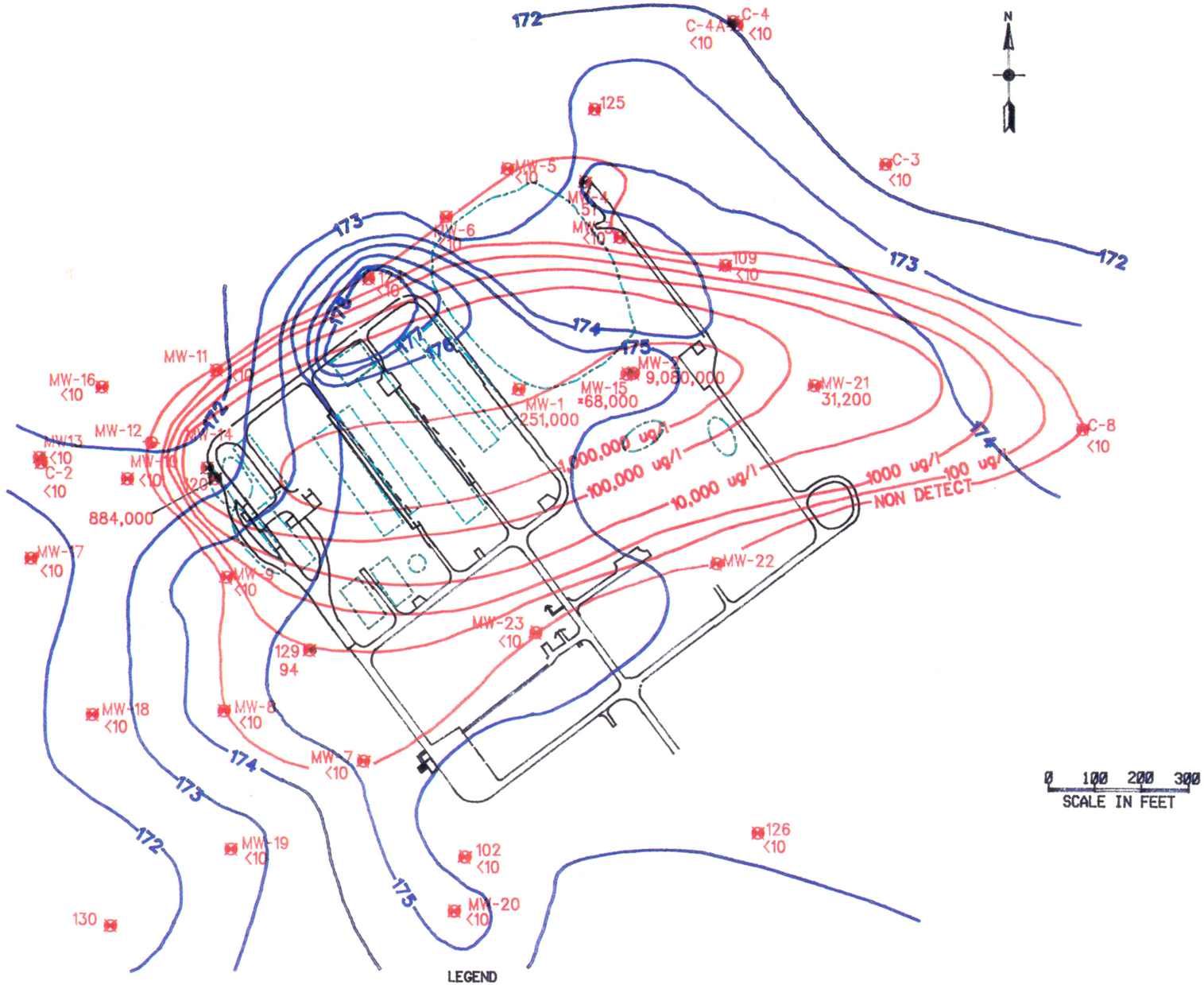

Notes:
1. * PRECEDING DETECTED CONCENTRATION DENOTES THAT THESE WELLS ARE ASSUMED TO BE MONITORING A DEEPER ZONE AND ARE NOT INCLUDED IN THESE CONTOURS.
2. DETECTION LIMIT IS <10.

SOURCE
USACE, 1993.

LEGEND

- EXISTING MONITORING WELLS
- <10 CONCENTRATION OF METHYLENE CHLORIDE DETECTED IN GROUNDWATER IN NOV. 1992 (ug/l)
- SOURCE UNITS
- GROUNDWATER CONTOURS (NOV. 1992)

AECOM

Figure 2-3
Methylene Chloride Concentrations in Shallow Zone Groundwater
November 1992
LHAAP-18/24 Feasibility Study

Longhorn Army Ammunition Plant
Karnack, Texas

60256135

January 2017

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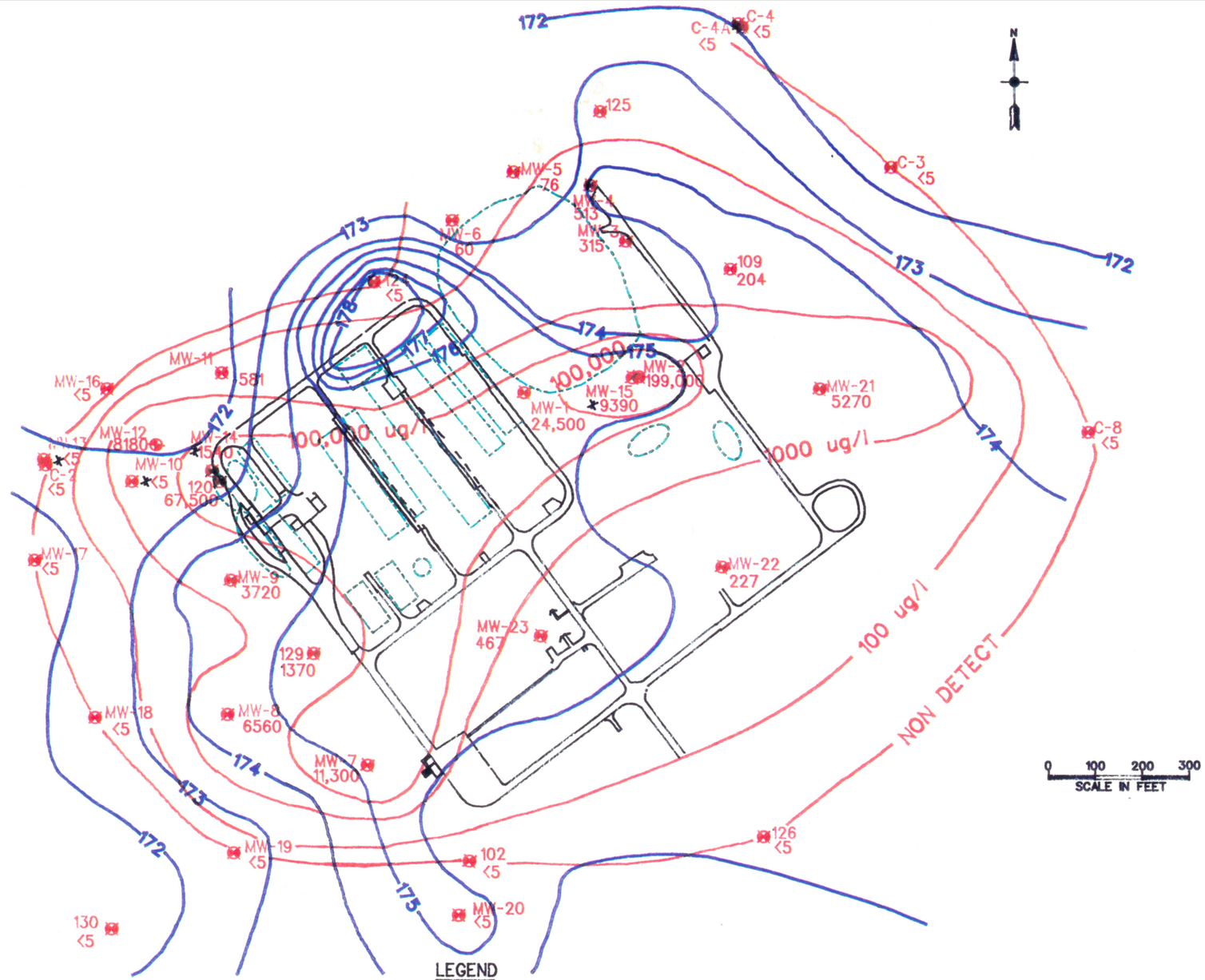

NOTES:

1) * PRECEDING DETECTED CONCENTRATION DENOTES THAT THESE WELLS ARE ASSUMED TO BE MONITORING A DEEPER ZONE AND ARE NOT INCLUDED IN THESE CONTOURS.

2) DETECTION LIMIT IS <5.

LEGEND

- EXISTING MONITORING WELLS
- <5 CONCENTRATION OF TCE DETECTED IN GROUNDWATER, NOV. 1992 (ug/l)
- GROUNDWATER CONTOURS (NOV. 1992)
- TCE ISOCONCENTRATION CONTOURS
- SOURCE UNITS

Notes:
1. * PRECEDING DETECTED CONCENTRATION DENOTES THAT THESE WELLS ARE ASSUMED TO BE MONITORING A DEEPER ZONE AND ARE NOT INCLUDED IN THESE CONTOURS.
2. DETECTION LIMIT IS <5.

SOURCE
USACE, 1993.

AECOM

Figure 2-4
Trichloorthene Concentrations in Shallow Zone Groundwater
November 1992
LHAAP-18/24 Feasibility Study

Longhorn Army Ammunition Plant
Karnack, Texas

60256135

January 2017

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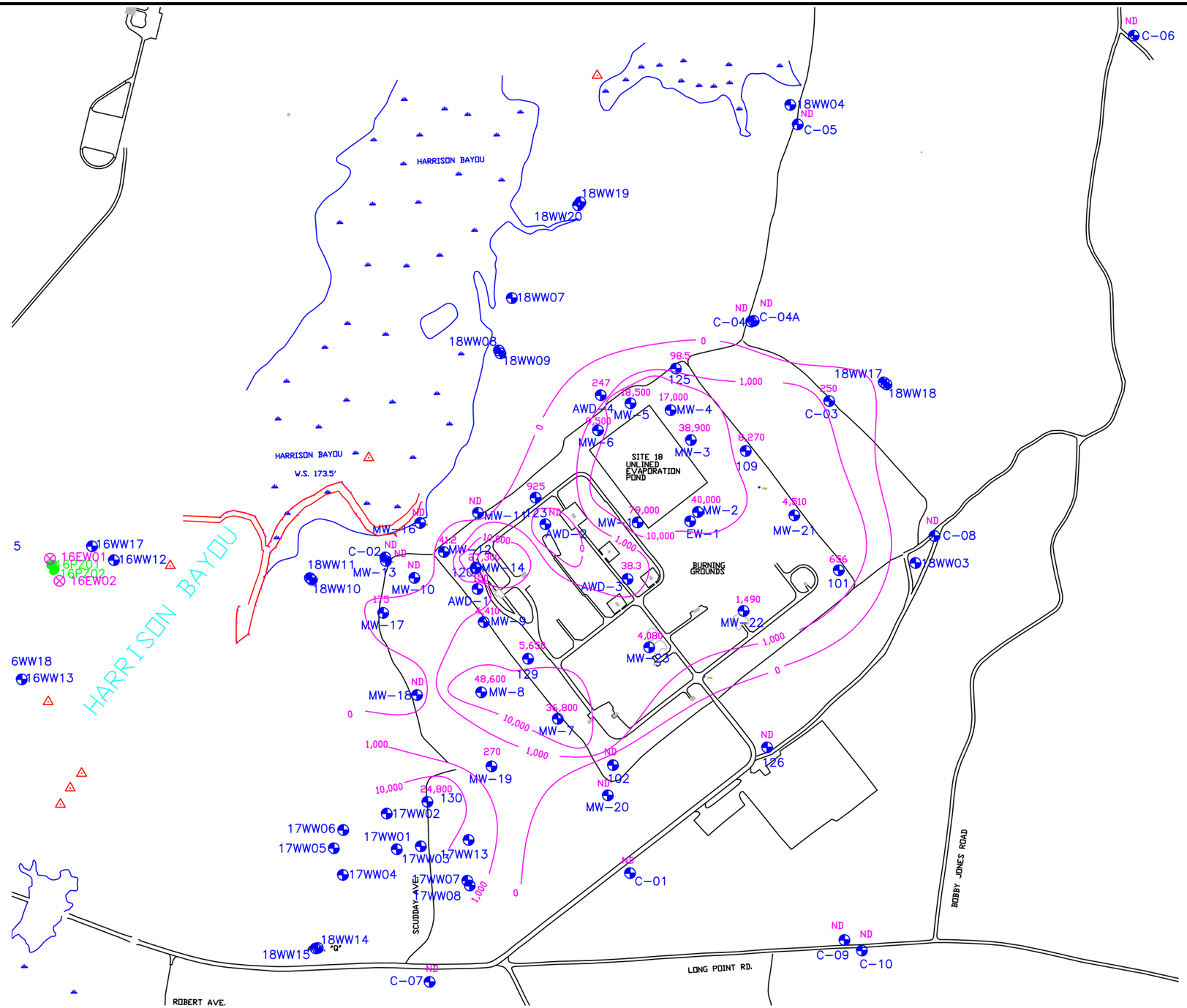

Source
Complete Environmental Service, 2002, First Five-Year Review Report for Longhorn Army Ammunition Plant Sites 18 & 24, Site 16, and Site 12, August.

AECOM

Figure 2-5
Perchlorate Concentrations in Shallow Zone Groundwater
April 2001
LHAAP-18/24 Feasibility Study

Longhorn Army Ammunition Plant
Karnack, Texas

60256135

January 2017

File: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP18_24\Feasibility_Study\LHAAP18_24_F5.dwg Layout: Fig 2-5 Plotted: Jan 23, 2017 - 2:56pm

Figure 2-6a - Shallow Zone Groundwater Perchlorate Mass Flux

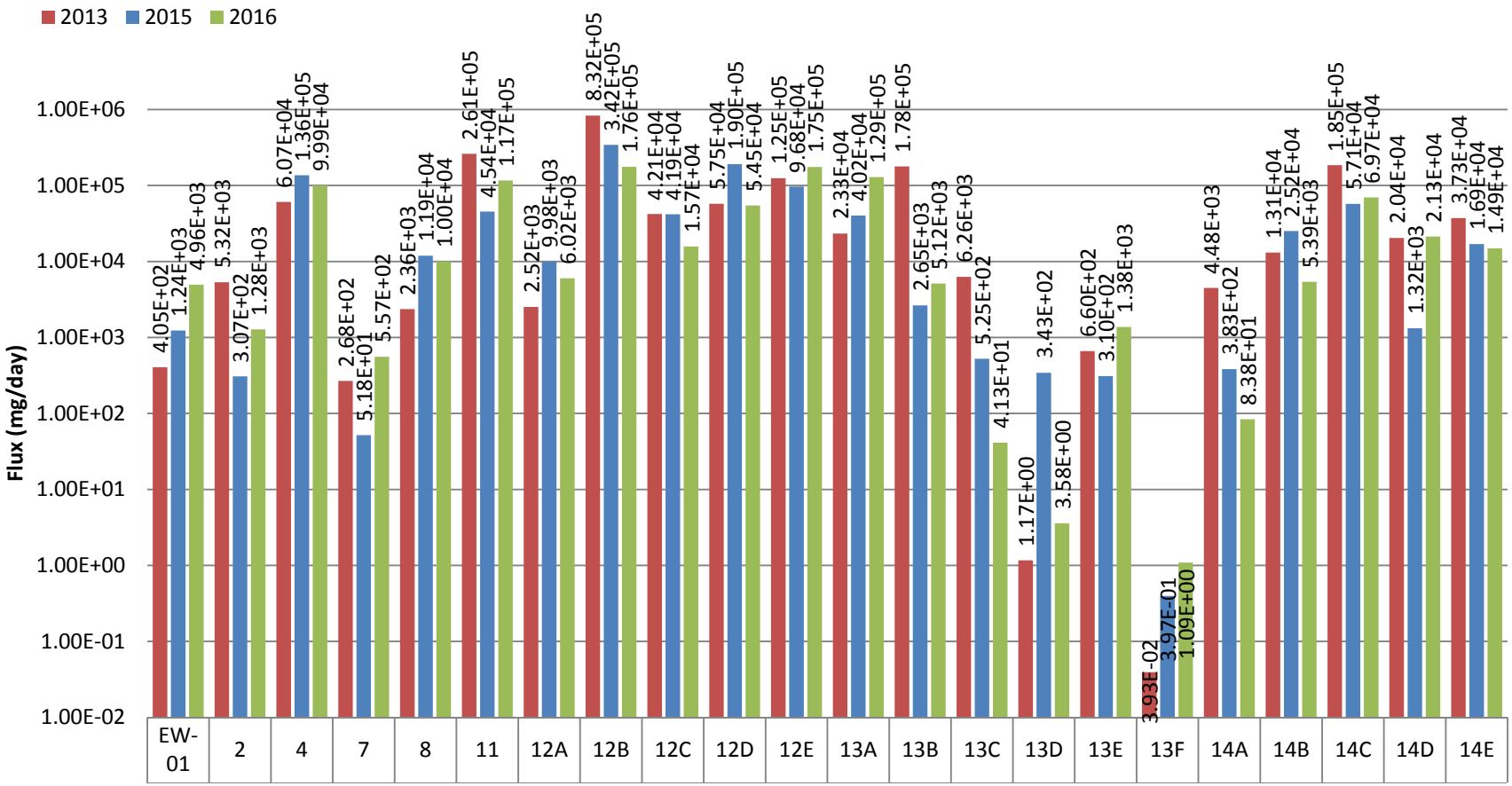

AECOM

Figure 2-6a
Perchlorate Mass Flux
Longhorn Army Ammunition Plant, Karnack, Texas

60274185

January 2017

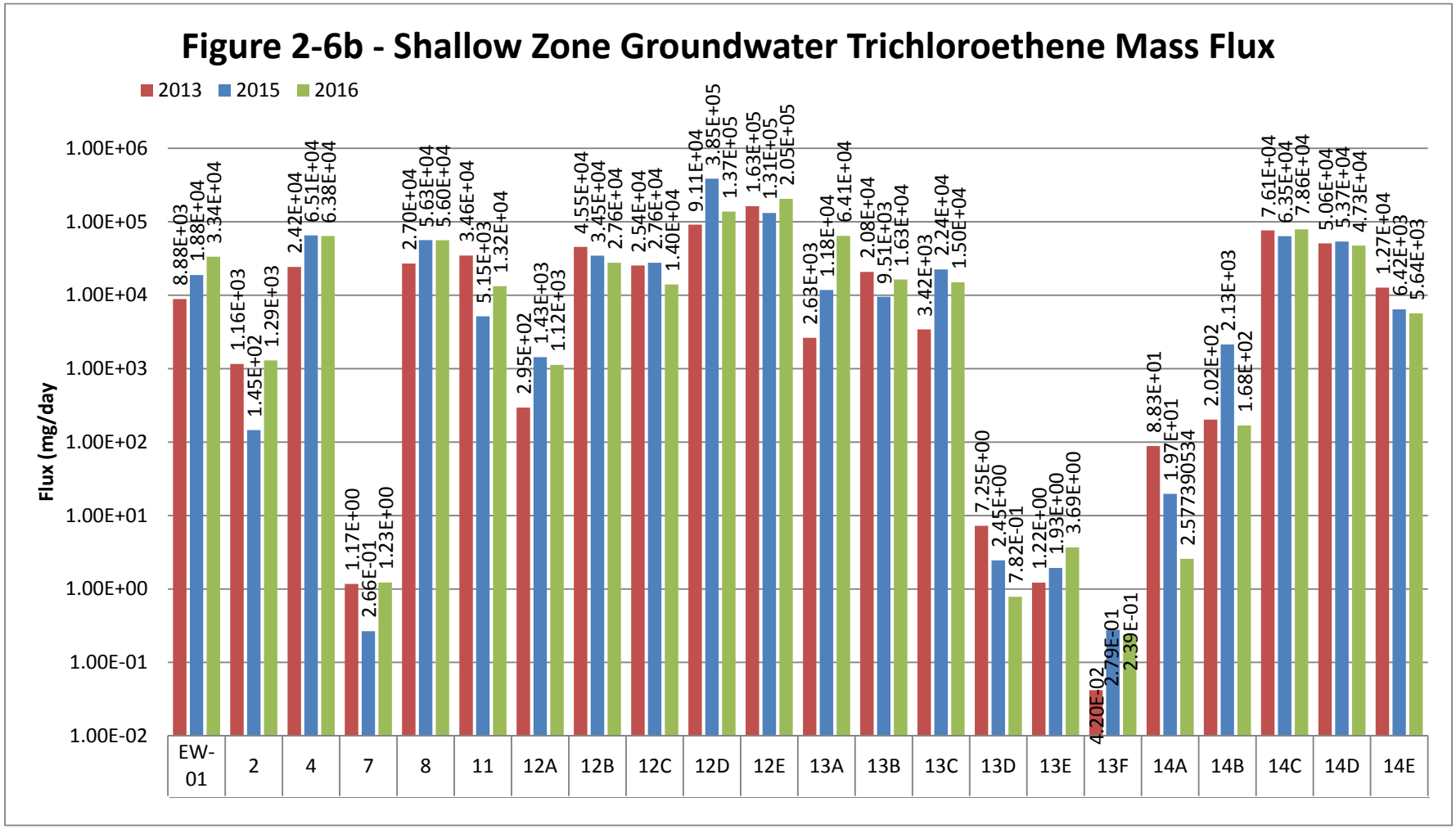

AECOM

Figure 2-6b
Trichloroethene Mass Flux
Longhorn Army Ammunition Plant, Karnack, Texas

60274185

January 2017

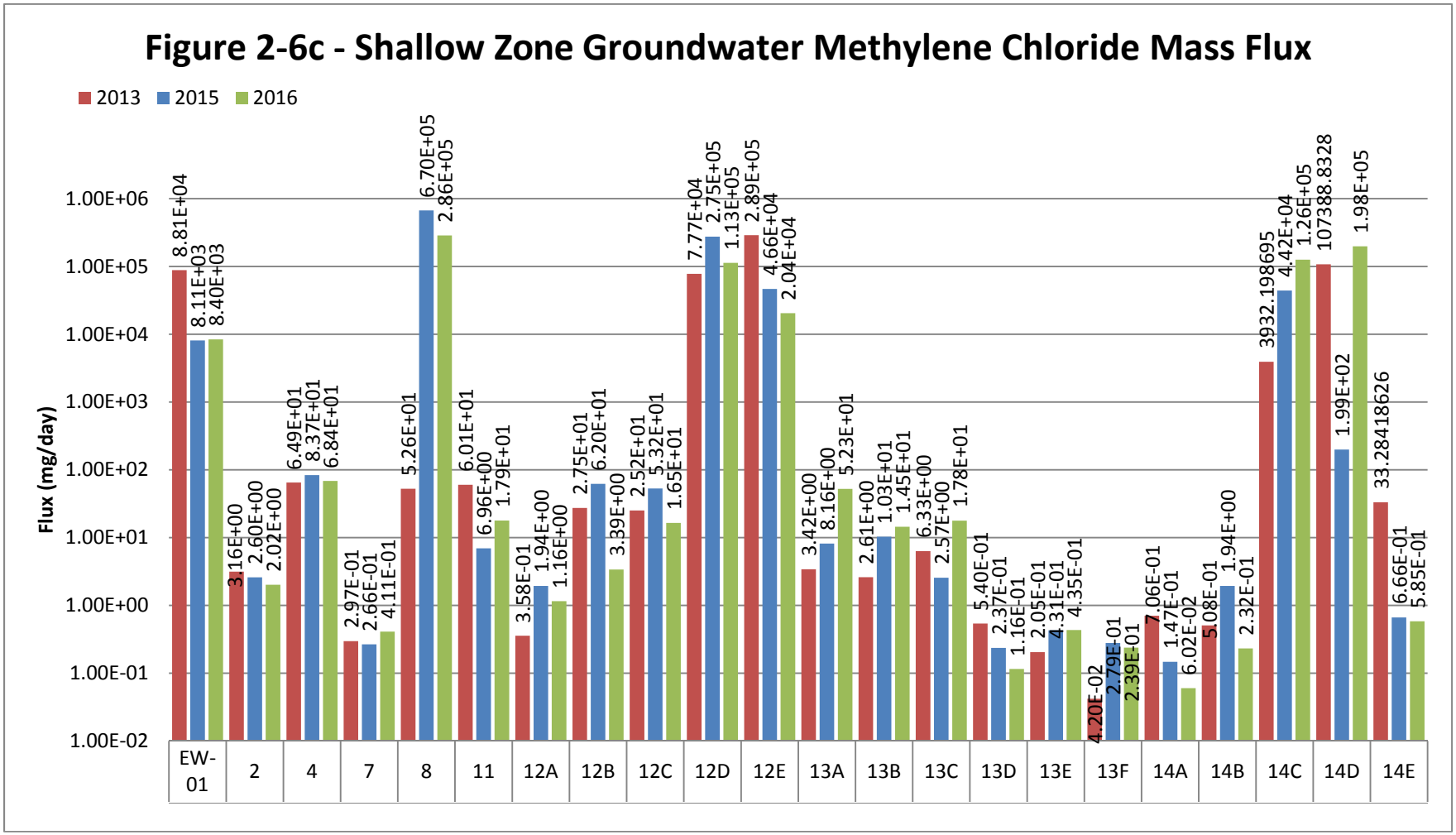

AECOM

Figure 2-6c
Methylene Chloride Mass Flux
Longhorn Army Ammunition Plant, Karnack, Texas

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January 2017

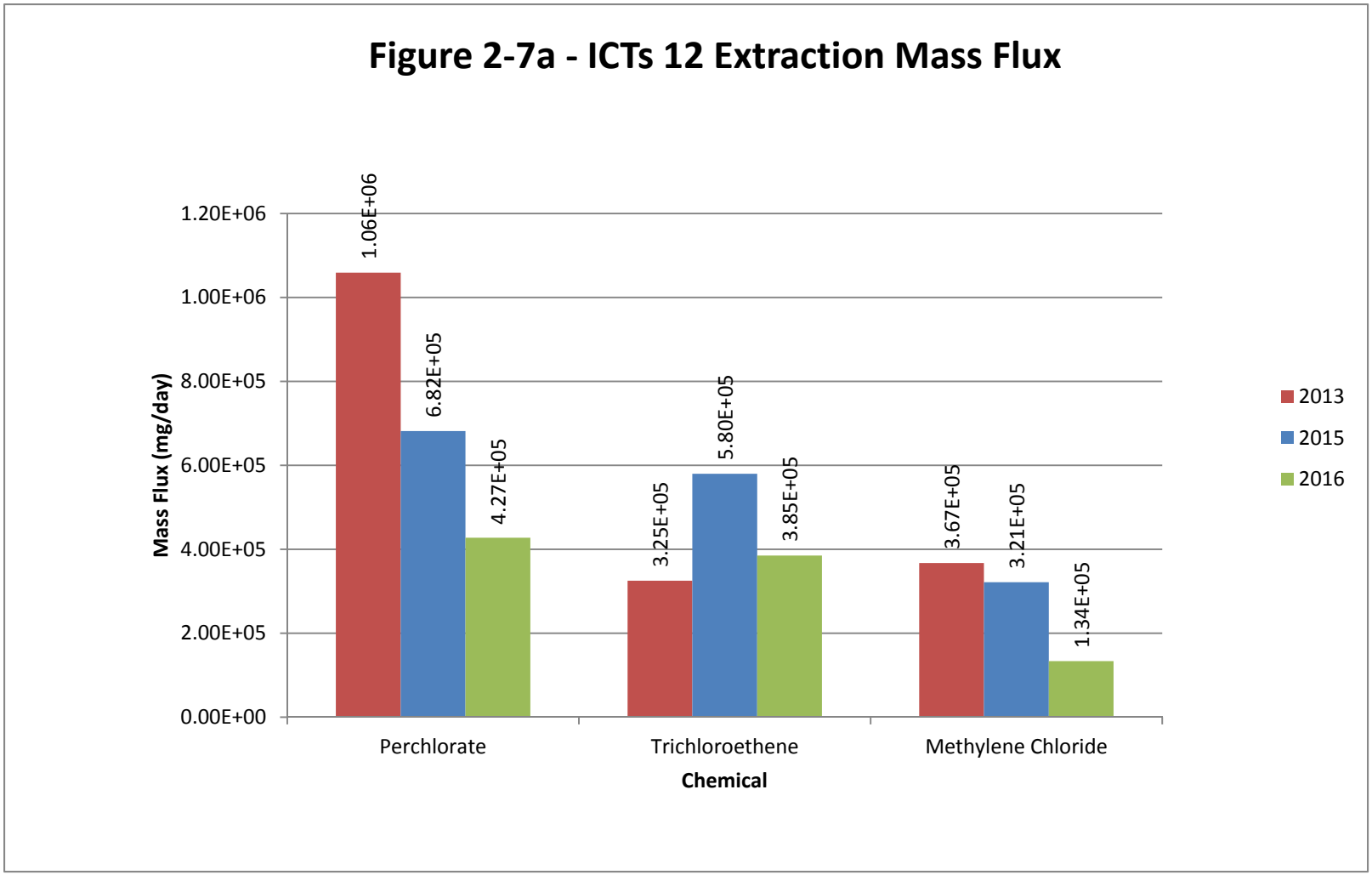

AECOM

Figure 2-7a
Mass Extraction Flux in ICT Series 12
Longhorn Army Ammunition Plant, Karnack, Texas

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January 2017

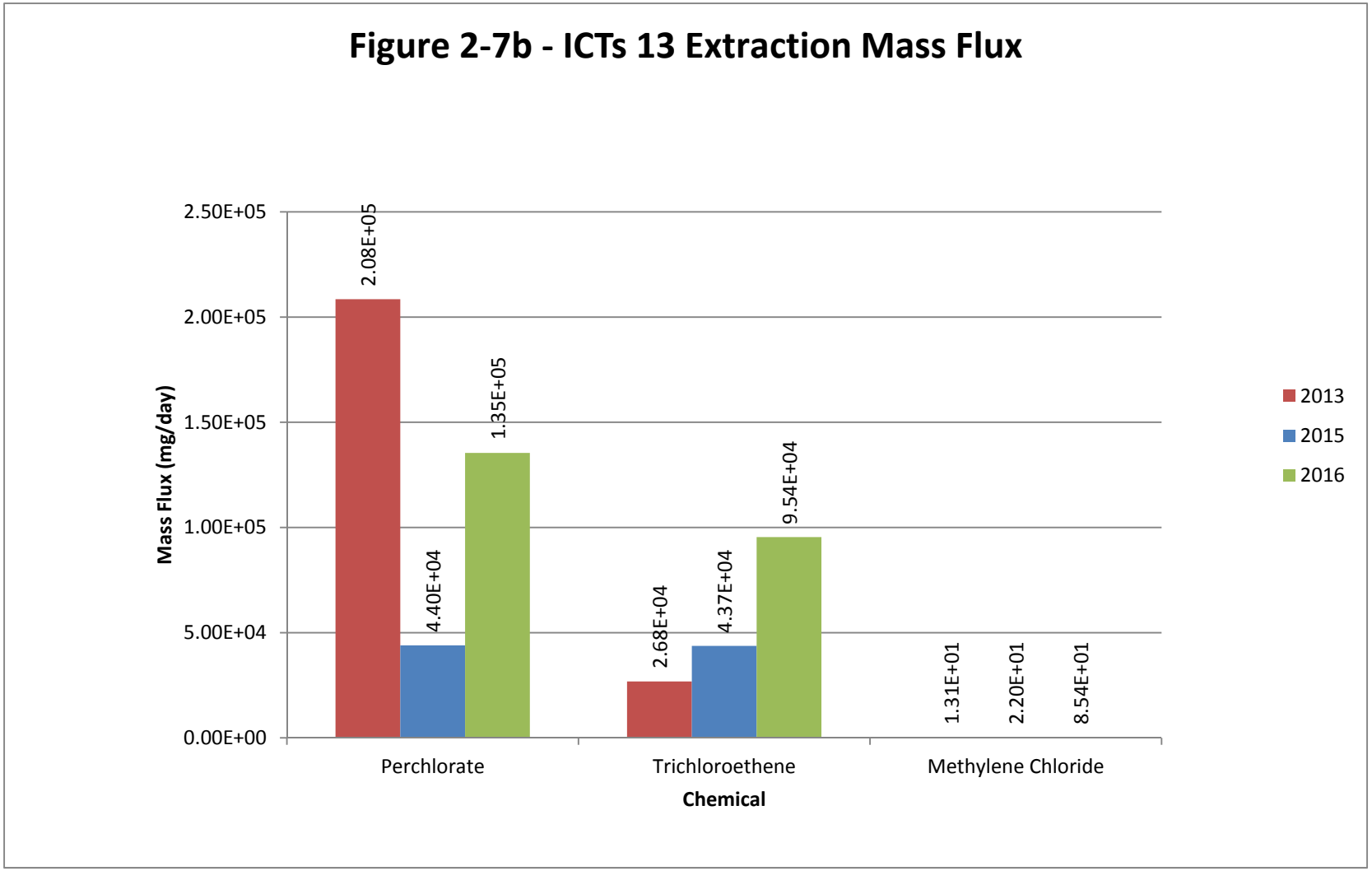

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Figure 2-7b
Mass Extraction Flux in ICT Series 13
Longhorn Army Ammunition Plant, Karnack, Texas

60274185

January 2017

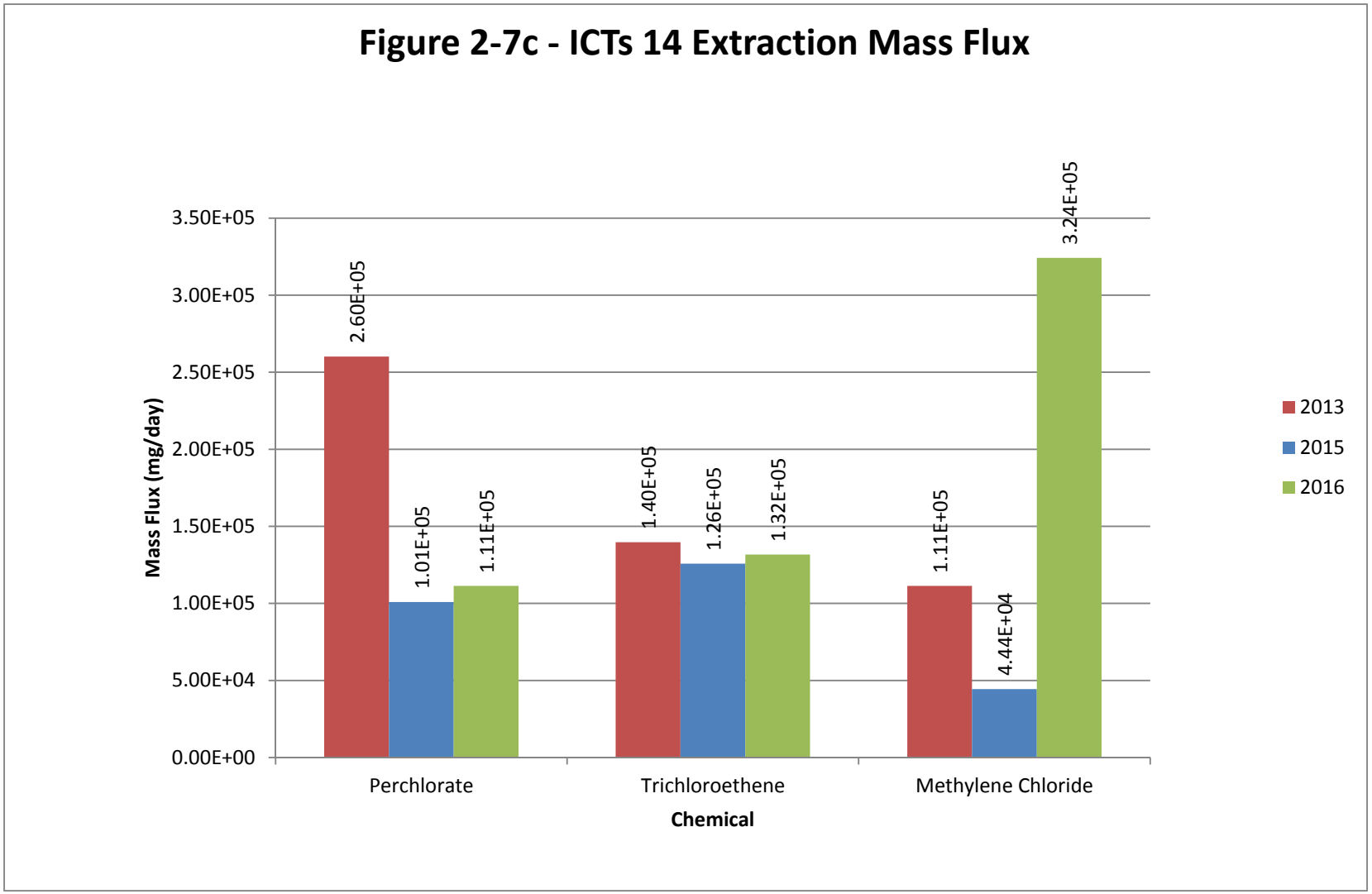

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Figure 2-7c
Mass Extraction Flux in ICT Series 14
Longhorn Army Ammunition Plant, Karnack, Texas

60274185

January 2017

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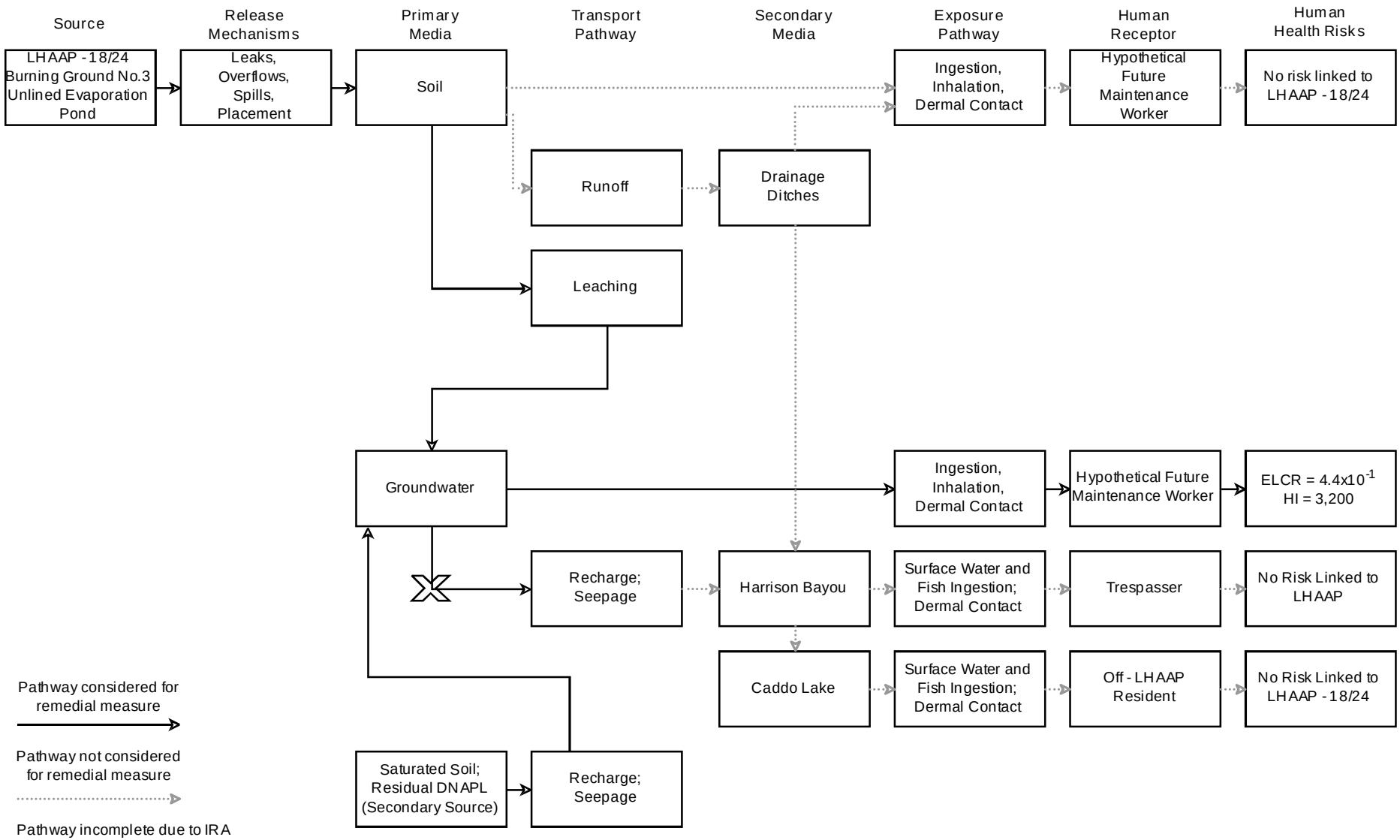

ELCR = Excess Lifetime Cancer Risk
IRA = Interim Remedial Action
HI = Hazard Index

AECOM

Figure 2-8
Conceptual Site Model
LHAAP-18/24 Feasibility Study

Longhorn Army Ammunition Plant
Karnack, Texas

60256135

January 2017

Table 2-1: Chemicals Contributing to Carcinogenic Risk in Shallow Zone Groundwater

Chemical	ELCR [a]	EPC [a] (µg/L)	Well	Revised ELCR	Recent Maximum (µg/L)	Date	Well	MCL (µg/L)	TRRP PCL (µg/L)	Retained as a CoC?
Methylene chloride	4.0×10^{-1}	7,300,000	MW-2	b	21,300	06/24/16	MW-2	5	—	Yes, 1
Trichloroethene	4.1×10^{-2}	210,000	MW-2	b	17,100	06/16/16	120	5	—	Yes, 1
2,3,7,8-TCDD	1.1×10^{-5}	530	95 UCL[d]	None More Recent				3.0×10^{-5}	—	No, 2
4,4'-DDD	1.3×10^{-6}	59	MW-2	None More Recent				—	3.8	No, 2
Tetrachloroethene[3]	—	—	—	—	85.1	06/24/16	MW-2	5	—	Yes, 1
Benzene[3]	—	—	—	—	< 62.6	06/24/16	MW-2	5	—	Yes, 1
1,1,2-Trichloroethane[3]	—	—	—	—	< 50	06/07/16	AWD1B	5	—	Yes, 1
Vinyl Chloride[3]	—	—	—	—	256	06/07/16	AWD-1	2	—	Yes, 1
1,4-Dioxane[3]	—	61.7	95 UCL[d]	—	412	06/07/16	MW-14	—	9.1	Yes, 1
Chloroform [d]	4.2×10^{-5}	28	95 UCL[d]	b	58.1	06/24/16	MW-2	—	240	No, 2, 4
Chemicals Retained on a Provisional Basis										
Bromodichloromethane [c]	2.3×10^{-6}	530	18WW09	b	< 125	06/24/16	MW-2	—	15	Yes, 1

Notes and Abbreviations:

1. Identified as a COC since EPC and/or Recent Results are above the MCL or PCL.
2. Combined Shallow Zone ELCR of Chemicals with no MCL is within acceptable range of 1×10^{-6} to 1×10^{-4}.
3. Included as contributing chemicals due to their frequency of detection above the MCL or PCL in recent sampling events (see Table 2-3).
4. Excluded as a COC as maximum concentration in the Shallow Zone is below MCL/PCL.

a. From Baseline Risk Assessment Table C-53 (Jacobs, 2002).
b. Revised ELCR not calculated for chemicals with an MCL.
c. All other wells were < 15 ug/L (the majority were below detection). Bromodichloromethane will be re-evaluated when data with lower reporting limit are obtained for MW-2.
d. Using ProUCL for the results of samples collected in June 2016.

95 UCL indicates that the EPC was calculated rather than the maximum concentration at a specific well.
CoC contaminant of concern
ELCR excess lifetime cancer risk
EPC exposure point concentration

TRRP PCL Texas Risk Reduction Program Protective Concentration Level (Tier 1 Groundwater Residential)
MCL maximum contaminant level from the Safe Drinking Water Act
µg/L micrograms per liter

Table 2-2: Chemicals with Hazard Quotient Greater than 0.1 in Shallow Zone Groundwater

Chemical	HQ	EPC [a] (µg/L)	Well	Revised HQ	Recent Maximum (µg/L)	Date	Well	MCL (µg/L)	TRRP PCL (µg/L)	Retained as a CoC?
Methylene chloride	1600	7,300,000	MW-2	b	21,300	06/24/16	MW-2	5	—	Yes, 1
Trichloroethene	800	210,000	MW-2	b	17,100	06/16/16	120	5	—	Yes, 1
Perchlorate	750	69,000	18WW17	2,500	82,900	06/21/16	18WW17	—	17	Yes, 2
Chloroform	16	28	95 UCL[d]	b	58.1	06/24/16	MW-2	—	240	No, 5
cis-1,2-Dichloroethene	0.3	250	95 UCL[d]	b	43,600	06/24/16	MW-2	70	—	Yes, 1
1,4-Dioxane[6]	—	61.7	95 UCL[d]	—	220	06/16/16	120	—	9.1	Yes, 1
Antimony	8.1	333	95 UCL[d]	b	1.49	06/17/16	MW-16	6	—	No, 5
Barium	0.84	6,000	MW-1	b	10,300	06/13/16	18CPTMW24	2,000	—	Yes, 1
Chromium	0.12	18,000	MW-1	b	4,620	06/16/16	18WW16	100	—	Yes, 1
Manganese	1.7	8,270	MW-1	1.1	5,290	06/29/16	18WW25	—	1,100*	No, 7
Nickel	4.7	9,600	MW-1	7.0	14,300	06/16/16	18WW16	—	490	Yes, 3
Silver	0.94	480	MW-1	< 0.002	< 1	June 2016	All wells	—	120	No, 4
Thallium	0.47	3.7	MW-2	b	0.821	06/17/16	109	2	—	No, 5
Chemicals Retained on a Provisional Basis										
Arsenic[6]	—	—	—	—	16.1	06/21/16 06/13/16	18CPTMW18 18CPTMW24	10	—	Yes, 1
Cobalt	0.14	280	MW-1	0.178	355	06/16/16	18WW16	—	240	Yes, 1
1,3,5-Trinitrobenzene	0.33	1,000	MW-2	No Recent Data				—	730	Yes, 3

Notes and Abbreviations:

1. Identified as a COC since EPC and/or Recent Results are above the MCL or PCL.
2. Identified as COC since hazard quotient (HQ) is > 0.1 and EPC and recent results are above the TCEQ PCL.
3. Retained as a COC since revised HQ > 0.1 and sum of HQs may exceed 1.0.
4. Excluded since Revised HQ < 0. 1 using recent maximum concentration and chemical concentration is < PCL.
5. Excluded since Recent results are all less than the MCL or PCL, and pattern of detections does not indicate association with site contamination.
6. Included as contributing chemicals due to their frequency of detection above the MCL or PCL in recent sampling events (see Table 2-3).
7. Excluded because maximum concentrations of recent results are below the background 95%UTL.

a. From Baseline Risk Assessment Table C-50 (Jacobs, 2002).
b. Revised HQ not calculated for chemicals with an MCL or PCL.
c. Using ProUCL for the results of samples collected in June 2016

95 UCL indicates that the EPC was calculated rather than the maximum concentration at a specific well.

CoC	contaminant of concern
EPC	exposure point concentration
HQ	hazard quotient
MCL	maximum contaminant level from the Safe Drinking Water Act
ND	non detect
TRRP PCL	Texas Risk Reduction Program Protective Concentration Level (Tier 1 Groundwater Residential)
UCL	upper confidence limit
µg/L	micrograms per liter

* 95% UTL value from Final Evaluation of Perimeter Well Data for Use as Groundwater Background (Shaw, 2007) for Manganese is 7,820 µg/L, which is above the TRRP Tier 1 Groundwater Residential PCL thus the background value will be considered the Cleanup Level for Manganese.

Table 2-3: Constituents Added to the Chemicals of Potential Concern in the Shallow Zone

	Compound in ug/L: MCL/PCL:	Arsenic 10 ug/L	1,4-Dioxane 9.1 ug/L	Vinyl Chloride 2 ug/L	Benzene 5 ug/L	1,1,2-Trichloroethane 5 ug/L	Tetrachloroethene 5 ug/L
Wells	**Sample Date**	**Shallow Zone**					
109	9/26/2012	0.743	NA	3.4	0.178	0.296	2.49
109	5/11/2013	1.83 J	NA	9.84 J	<0.25 U	< 5 U	< 5 U
109	12/14/2013	1.34 J	NA	7.76	<1.25 U	<2.5 U	2.25 J
109	12/18/2014	NA	NA	<2.5U	<1.25U	<2.5U	1.58J
109	6/9/2015	NA	NA	<2.5U	NA	NA	NA
109	12/3/2015	NA	NA	2.57J	<1.25U	<2.5U	1.67J
109	6/22/2016	1.37J	<1U	<2.5U	<1.25U	<2.5U	<2.5U
126	9/24/2012	13.8	NA	<0.5 U	<0.25 U	<0.5 U	<0.5 U
126	12/14/2013	12.5	NA	<0.5 U	<0.25 U	<0.5 U	<0.5 U
126	6/11/2014	10.6	NA	<0.5 U	<0.25 U	<0.5 U	<0.5 U
126	12/20/2014	6.42	NA	<0.5U	<0.25U	<0.5U	<0.5U
126	6/10/2015	NA	NA	<0.5U	NA	NA	NA
126F	6/10/2015	15.2	NA	NA	NA	NA	NA
126	12/2/2015	10.6	NA	<0.5U	<0.25U	<0.5U	<0.5U
126FD	12/2/2015	11.2	NA	<0.5U	<0.25U	<0.5U	<0.5U
126	6/14/2016	NA	<1U	<0.5UJ	<0.25UJ	<0.5UJ	<0.5UJ
126F	6/14/2016	14.7	NA	NA	NA	NA	NA
AWD-1	9/26/2012	19.4	NA	292	<12.5 U	<25 U	<25 U
AWD-1	6/5/2014	15.2	NA	1170	<50 U	<100 U	<100 U
AWD-1	12/18/2014	NA	NA	NA	NA	NA	NA
AWD-1F	12/18/2014	12.3	NA	NA	NA	NA	NA
AWD-1	6/10/2015	27.8	NA	2290J	NA	NA	NA
AWD-1	12/4/2015	NA	NA	NA	NA	NA	NA
AWD-1F	12/4/2015	11.9	NA	NA	NA	NA	NA
AWD-1B	6/7/2016	NA	7.14	256	<25U	<50U	<50U
AWD-1T	6/7/2016	NA	5.74	177	<25U	<50U	<50U
AWD-2	9/26/2012	0.788 J	NA	4.92	0.182 J	<0.5	<0.5
AWD-3	9/29/2012	<1.0 U	NA	3.85	3.48	0.626 J	4.04
AWD-3	12/20/2014	<1.0 U	NA	0.513J	0.418J	<1U	417
AWD-3	6/8/2015	<1.0 U	NA	0.563J	NA	NA	NA
AWD-3	12/3/2015	0.593J	NA	<2.5J	0.671J	<2.5U	2.52J
AWD-4	12/10/2013	1.13 J	NA	4.3	<0.25 U	<0.5 U	0.257 J
AWD-4	6/3/2014	1.56 J	NA	4.58	<0.25 U	<0.5 U	0.371 J
AWD-4	12/16/2014	1.12J	NA	3.12	<0.25U	<0.5U	61.8
AWD-4	6/16/2015	NA	NA	1.61	NA	NA	NA
AWD-4F	6/16/2015	1.62J	NA	NA	NA	NA	NA
AWD-4	12/7/2015	1.48J	NA	<0.5U	0.16J	<0.5U	<0.5U
AWD-4B	6/7/2016	1.24J	<1U	<0.5U	<0.25U	<0.5U	<0.5U
AWD-4T	6/7/2016	1.7J	<1U	<0.5U	<0.25U	<0.5U	<0.5U

Table 2-3: Constituents Added to the Chemicals of Potential Concern in the Shallow Zone

	Compound in ug/L: MCL/PCL:	Arsenic 10 ug/L	1,4-Dioxane 9.1 ug/L	Vinyl Chloride 2 ug/L	Benzene 5 ug/L	1,1,2-Trichloroethane 5 ug/L	Tetrachloroethene 5 ug/L
C-08	9/24/2012	14.5	NA	<0.5 U	<0.25 U	<0.5 U	<0.5 U
C-08	5/7/2013	16.9	NA	<0.5 U	<0.25 U	<0.5 U	<0.5 U
C-08	12/11/2014	11.7	NA	<0.5U	<0.25U	<0.5U	<0.5U
C-08	6/12/2015	5.54	NA	<0.5U	NA	NA	NA
C-08	12/14/2015	9.16	NA	<0.5U	<0.25U	<0.5U	<0.5U
C-08	6/14/2016	8.29	<1U	<0.5U	<0.25U	<0.5U	<0.5U
C-09	12/20/2014	2.47	NA	<0.5U	<0.25U	<0.5U	<0.5U
C-09	12/2/2015	2.68	NA	<0.5U	<0.25U	<0.5U	<0.5U
MW-12	9/29/2012	2.66	NA	6.15	0.978	0.658 J	<0.5
MW-12	12/14/2015	NA	NA	4.61	0.988J	0.528J	<0.5U
MW-12	6/10/2016	NA	NA	<1U	<0.5U	<1U	<1U
MW-1	9/29/2012	2.54	NA	8.99	0.65	<0.5	1.33
MW-1	6/10/2014	2.69	NA	7.92	0.593 J	<0.5	0.827 J
MW-1	6/11/2015	2.6	NA	1.08J	NA	NA	NA
MW-1FD	6/11/2015	2.39	NA	2.47	NA	NA	NA
MW-1	6/10/2016	<1.0 U	NA	6.08J	2.09J	<5U	<5U
MW-19	9/27/2012	14.9	NA	<0.5 U	<0.25 U	<0.5 U	<0.5 U
MW19	5/8/2013	16.5	NA	<0.5 U	<0.25 U	<0.5 U	<0.5 U
MW19	12/17/2013	10.6 J	NA	<0.5 U	<0.25 U	<0.5 U	<0.5 U
MW-19	6/13/2014	19	NA	<0.5 U	<0.25 U	<0.5 U	<0.5 U
MW-19	12/23/2014	NA	NA	<0.5U	<0.25U	<0.5U	<0.5U
MW-19F	12/23/2014	2.6	NA	NA	NA	NA	NA
MW-19	6/22/2015	NA	NA	<0.5U	NA	NA	NA
MW-19F	6/22/2015	11.2	NA	NA	NA	NA	NA
MW-19	12/7/2015	11.2	NA	<0.5U	<0.25U	<0.5U	<0.5U
MW-19	6/17/2016	NA	NA	<0.5U	<0.25U	<0.5U	<0.5U
MW-19F	6/17/2016	13	NA	NA	NA	NA	NA
MW-21	9/25/2012	19	NA	53.6	3.27 J	<12.5 U	<12.5 U
MW-21	5/7/2013	16.7	NA	68.8	8.7 J	19 J	<25 U
MW-21	12/14/2013	9.3	NA	58.8 J	<25 U	<50 U	<50 U
MW-21	6/9/2015	12.4	NA	63.6J	NA	NA	NA
MW-21	12/2/2015	6.87	NA	59.9J	<25U	<50U	<50U
MW-21	6/22/2016	8.12	1.55J	46.2J	<12.5U	<25U	<25U
MW-2	9/27/2012	6.13	NA	127	4.99	35.5	262
MW-2	5/9/2013	10.6	NA	<5000 U	<2500 U	<5000 U	<5000 U
MW-2	6/10/2014	10.1	NA	<1000 U	<500 U	<1000 U	<1000 U
MW-2	12/9/2014	14.6J	NA	<250UJ	<125UJ	<250UJ	<250UJ
MW-2	6/12/2015	6.75	NA	<500U	NA	NA	NA
MW-2	12/10/2015	7.31	NA	<250U	<125U	<250U	<250U
MW-2	6/24/2016	12.1	7.58	<125U	<62.6U	<125U	85.1J

Table 2-3: Constituents Added to the Chemicals of Potential Concern in the Shallow Zone

	Compound in ug/L: MCL/PCL:	Arsenic 10 ug/L	1,4-Dioxane 9.1 ug/L	Vinyl Chloride 2 ug/L	Benzene 5 ug/L	1,1,2-Trichloroethane 5 ug/L	Tetrachloroethene 5 ug/L
MW-3	9/29/2012	0.725 J	NA	29.7	0.225 J	<0.5 U	0.333 J
MW-3	5/7/2013	1.19 J	NA	7.84	0.167 J	<0.5 U	0.256 J
MW-3	12/9/2013	0.801 J	NA	29.5	0.243 J	<0.5 U	0.612 J
MW-3	6/10/2014	0.971 J	NA	9.33	<0.25 U	<0.5 U	0.334 J
MW-3	12/20/2014	<1.0 U	NA	38.3	0.351J	<0.5U	0.984J
MW-3	6/11/2015	1.31J	NA	16.5J	NA	NA	NA
MW-3	6/10/2016	<1.0 U	NA	10.2	<0.626U	<1.25U	0.992J
MW-4	9/29/2012	1.44 J	NA	14.5	0.193 J	<0.5 U	0.305 J
MW-5	9/29/2012	0.557 J	NA	9.73	<0.25 U	<0.5 U	<0.5 U
MW-5	5/13/2013	1.42 J	NA	7.83	<0.25 U	<0.5 U	<0.5 U
MW-5	12/9/2013	0.862 J	NA	9.53	<0.25 U	<0.5 U	0.252 J
MW-5	12/9/2014	<1.0 U	NA	7.81	<0.25U	<0.5U	<0.5U
MW-5	12/8/2015	0.938J	NA	7.23	<0.25U	<0.5U	<0.5U
MW-5	6/8/2016	1.22J	0.819J	4.91	<0.25U	<0.5U	<0.5U
MW-6	10/1/2012	3.59	NA	12.2	0.199 J	<0.5 U	<0.5 U
MW-6	5/9/2013	3.94	NA	9.22	0.187 J	<0.5 U	<0.5 U
MW-6	12/8/2015	NA	NA	8.97	0.17J	<0.5U	<0.5U
MW-7	5/14/2013	4.12	NA	< 12.5 U	7.79	< 12.5 U	< 12.5 U
MW-7	12/17/2014	NA	NA	<5U	2.93J	<5U	<5U
MW-7	6/17/2015	NA	NA	0.322J	NA	NA	NA
MW-7	12/1/2015	NA	NA	<10U	3.42J	<10U	<10U
MW-7	6/24/2016	NA	13.4	<5UJ	<2.5U	<5U	<5U
18CPTMW14	5/13/2013	21.2	NA	<0.5 U	1.23	<0.5 U	0.864 J
18CPTMW14	12/17/2013	17.1	NA	<1.25 U	0.499 J	<1.25 U	0.872 J
18CPTMW14	12/23/2014	20.1J	NA	<1U	1.05J	<1U	0.927J
18CPTMW14	6/22/2015	NA	NA	<0.5U	NA	NA	NA
18CPTMW14	12/4/2015	8.53	NA	<1U	0.651J	<1U	1.11J
18CPTMW14	6/13/2016	6.59	<1U	<0.5U	0.524J	<0.5U	0.422J
18CPTMW14FD	6/13/2016	7.31	<1U	<0.5U	0.509J	<0.5U	0.464J
18CPTMW23	5/13/2013	2.39	NA	2.98	1.45	0.767 J	1.06
18CPTMW23	6/3/2014	1.24 J	NA	4.77 J	2.35 J	<2.5 U	1.5 J
18CPTMW23	12/23/2014	NA	NA	<0.5U	<0.25U	<0.5U	<0.5U
18CPTMW23F	12/23/2014	NA	NA	<0.5U	<0.25U	<0.5U	<0.5U
18CPTMW23	6/17/2015	NA	NA	6.27	NA	NA	NA
18CPTMW23B	12/10/2015	NA	NA	<10U	<5U	<10U	<10U
18CPTMW23T	12/10/2015	NA	NA	<10U	<5U	<10U	<10U
18CPTMW23	6/15/2016	NA	8.02J	5.89	1.59	0.858J	1.22
18CPTMW24	5/14/2013	28	NA	<0.5 U	<0.25 U	<0.5 U	<0.5 U
18CPTMW24	12/4/2013	18	NA	<0.5 U	<0.25 U	<0.5 U	<0.5 U
18CPTMW24	12/12/2014	NA	NA	<0.5U	<0.25U	<0.5U	<0.5U

Table 2-3: Constituents Added to the Chemicals of Potential Concern in the Shallow Zone

	Compound in ug/L: MCL/PCL:	Arsenic 10 ug/L	1,4-Dioxane 9.1 ug/L	Vinyl Chloride 2 ug/L	Benzene 5 ug/L	1,1,2-Trichloroethane 5 ug/L	Tetrachloroethene 5 ug/L
18CPTMW24F	12/12/2014	25.6	NA	NA	NA	NA	NA
18CPTMW24	6/16/2015	NA	NA	<0.5U	NA	NA	NA
18CPTMW24	6/13/2016	16.1	<1U	<0.5UJ	<0.25UJ	<0.5UJ	<0.5UJ
18CPTMW24	12/4/2015	19.5	NA	<0.5U	<0.25U	<0.5U	<0.5U
18CPTMW24FD	12/4/2015	21.3	NA	<0.5U	<0.25U	<0.5U	<0.5U
120	5/11/2013	5.15	NA	152	7.77	9.12	11.8
120	12/14/2013	4.14	NA	336	<25 U	<50 U	<50 U
120	6/6/2014	3.86	NA	119	<25 U	<50 U	<50 U
120	12/19/2014	NA	NA	186	<25U	<50U	<50U
120	6/11/2015	NA	NA	165J	NA	NA	NA
120	6/16/2016	NA	220	88.7J	<25U	<50U	<50U
120F	6/16/2016	3.56	NA	NA	NA	NA	NA
AWD-4	12/10/2013	1.13 J	NA	4.3	<0.25 U	<0.5 U	0.257 J
AWD-4	6/3/2014	1.56 J	NA	4.58	<0.25 U	<0.5 U	0.371 J
AWD-4	12/16/2014	1.12J	NA	3.12	<0.25U	<0.5U	0.299J
AWD-4	6/16/2015	NA	NA	1.61	NA	NA	NA
AWD-4 F	6/16/2015	1.62J	NA	NA	NA	NA	NA
AWD-4 B	6/7/2016	1.24J	<1U	<0.5U	<0.25U	<0.5U	<0.5U
AWD-4 T	6/7/2016	1.7J	<1U	<0.5U	0.16	<0.5U	<0.5U
AWD-4	12/7/2015	1.48J	NA	<0.5U	0.16J	<0.5U	<0.5U
18CPTMW04	12/3/2013	10.2	NA	5.56	<0.25 U	<0.5 U	1.04
18CPTMW04	12/19/2014	NA	NA	4.51	<0.25U	<0.5U	0.822J
18CPTMW04S	12/19/2014	NA	NA	<0.5U	0.193J	<0.5U	<0.5U
18CPTMW04S	12/19/2014	3.35	NA	NA	NA	NA	NA
18CPTMW04	6/10/2015	NA	NA	1.62	NA	NA	NA
18CPTMW04SW	6/10/2015	NA	NA	<0.5U	NA	NA	NA
18CPTMW04	6/14/2016	NA	1.67J	0.617J	0.618J	<0.5U	2030
18CPTMW04FD	6/14/2016	NA	2.01	0.631J	0.612J	<0.5U	1960
18CPTMW04SW	6/14/2016	4.07	<1U	<0.5U	<0.25U	<0.5U	<0.5U
18CPTMW18	5/15/2013	15.2	NA	<0.5 U	<0.25 U	<0.5 U	<0.5 U
18CPTMW18	12/19/2013	23.3 J	NA	<0.5 U	<0.25 U	<0.5 U	<0.5 U
Total No. of Detections		104/111	10/21	68/136	40/116	9/116	36/116
Total No. of Exceedances		39/111	2/21	58/136	3/116	3/116	7/116
Maximum Concentration		28	220	1170	7.79	35.5	2030

Table 2-3: Constituents Added to the Chemicals of Potential Concern in the Shallow Zone

	Compound in ug/L: MCL/PCL:	Arsenic 10 ug/L	1,4-Dioxane 9.1 ug/L	Vinyl Chloride 2 ug/L	Benzene 5 ug/L	1,1,2-Trichloroethane 5 ug/L	Tetrachloroethene 5 ug/L
Wells	**Sample Date**	**Shallow Wilcox**					
18WW21	9/27/2012	11	NA	<0.5 U	<0.25 U	<0.5 U	<0.5 U
MW-14	9/29/2012	11.5	NA	3.84	4.03	3.92	0.893 J
MW-14	12/9/2013	4.13	NA	4.37	4.34	4.1	1.13
MW-14	6/5/2014	13.9	NA	5.52	4.89	4.26	1.39
MW-14	12/19/2014	0.00732	NA	<25U	6.57J	<25U	<25U
MW-14	6/10/2015	0.00827	NA	<50U	NA	NA	NA
MW-14B	12/14/2015	0.00333	NA	16.3	7.92	6.48	2.3
MW-14T	12/14/2015	0.00312	NA	15.5	7.74	6.59	2.09
MW-14B	6/7/2016	NA	412	<50U	<25U	<50U	<50U
MW-14T	6/7/2016	NA	390	<50U	<25U	<50U	<50U
18CPTMW01SW	5/16/2013	2.98	NA	<0.5 U	5.22 J+	<0.5 U	<0.5 U
18CPTMW01SW	12/2/2013	17.6	NA	<5 U	6.68 J	<5 U	<5 U
18CPTMW01SW	6/12/2014	25.1	NA	<0.5 U	6.57	<0.5 U	0.279 J
18CPTMW01SW	12/9/2014	0.0706	NA	<25U	7.16J	<25U	<25U
18CPTMW01DW	12/9/2014	NA	NA	<0.5U	<0.25U	<0.5U	<0.5U
18CPTMW01SW	6/12/2015	0.0194	NA	<25U	NA	NA	NA
18CPTMW01DW	6/12/2015	NA	<1U	<0.5UJ	<0.25U	<0.5U	<0.5U
18CPTMW01SW	6/12/2015	0.0173	<1U	<5U	5.49J	<5U	<5U
18CPTMW08SW	6/4/2013	1.29 J	NA	9.99	<0.25 U	<0.5 U	<0.5 U
18CPTMW08SW	12/2/2013	1.03 J	NA	20.9	0.161 J	<0.5 U	0.353 J
18CPTMW08D	12/9/2014	NA	NA	NA	NA	NA	NA
18CPTMW08S	12/9/2014	NA	NA	17.6	0.19J	<0.5U	0.298J
18CPTMW08SW	6/12/2015	2.59	NA	15.5	0.158 J	<0.5 U	0.295 J
18CPTMW08DW	6/8/2016	NA	<1U	NA	NA	NA	NA
18CPTMW08SW	6/8/2016	NA	1.39J	8.97	0.173J	<0.5U	0.29J
18CPTMW12SW	6/4/2013	12.5	NA	<0.5 U	<0.25 U	<0.5 U	<0.5 U
18CPTMW12SW	12/4/2013	12.2	NA	<0.5 U	<0.25 U	<0.5 U	<0.5 U
18CPTMW12SW	12/17/2014	NA	NA	<0.5U	<0.25U	<0.5U	<0.5U
18CPTMW12SWF	12/17/2014	0.00669	NA	NA	NA	NA	NA
18CPTMW12SW	6/18/2015	NA	NA	<0.5U	NA	NA	NA
18CPTMW12DW	6/24/2016	NA	<1U	NA	NA	NA	NA
18CPTMW12SW	6/24/2016	0.00647	<1U	<0.5UJ	<0.25U	<0.5U	<0.5U
18CPTMW23SW	6/15/2016	NA	<1U	<0.5U	<0.25U	<0.5U	<0.5U
Total No. of Detections		21/21	3/9	10/29	15/26	5/26	10/26
Total No. of Exceedances		10/21	2/9	8/29	8/26	5/26	0/26
Maximum Concentration		25.1	412	20.9	7.92	6.59	2.3

Table 2-3: Constituents Added to the Chemicals of Potential Concern in the Shallow Zone

	Compound in ug/L: MCL/PCL:	Arsenic 10 ug/L	1,4-Dioxane 9.1 ug/L	Vinyl Chloride 2 ug/L	Benzene 5 ug/L	1,1,2-Trichloroethane 5 ug/L	Tetrachloroethene 5 ug/L
Wells	**Sample Date**	**Deep Wilcox**					
18WW02	9/28/2012	10.9 J	NA	<0.5 U	<0.25 U	<0.5 U	<0.5 U
18WW02F	12/17/2014	N/A	NA	<0.5U	<0.25U	<0.5U	<0.5U
18WW02	12/17/2014	6.89	NA	NA	NA	NA	NA
18WW02	2/22/2016	NA	<1U	<0.5U	<0.25U	<0.5U	<0.5U
18WW02F	2/22/2016	0.926J	NA	NA	NA	NA	NA
Total No. of Detections		3/3	0/1	0/3	0/3	0/3	0/3
Total No. of Exceedances		1/3	0/1	0/3	0/3	0/3	0/3
Maximum Concentration		10.9	<1U	<0.5U	<0.25U	<0.5U	<0.5U

* Results when all five chemicals were not detected are not included

J - Estimated value; analyte concentration was less than the limit of quantification

U - Analyte was not detected.

Blue Highlighting Indicates Analyte Detected Above MCL/PCL

MCL - Maximum Contaminant Level

PCL - Protective Concentration Level

Table 2-4: Depth to Water and Shallow Zone Saturation Thickness - June 2016

Monitoring Well	Date	Reference Elevation*	Depth to Water*	Groundwater Elevation*	Depth to Clay Layer*	Saturation Thickness	Reason for Not Including
AWD-1	06/09/2016	182.27	9.64	172.63	29.50	19.86	
AWD-2	06/09/2016	186.78	13.05	173.73	26.70	13.65	
AWD-3	06/09/2016	200.13	27.71	172.42	43.60	15.89	
AWD-4	06/09/2016	193.89	21.55	172.34	30.20	8.65	
MW-1	06/09/2016	199.22	27.15	172.07	41.20	14.05	
MW-2	06/09/2016	196.73	27.44	169.29	41.00	13.56	
MW-3	06/09/2016	196.54	26.15	170.39	39.00	12.85	
MW-4	06/09/2016	197.27	25.55	171.72	40.00	14.45	
MW-5	06/09/2016	194.97	24.25	170.72	33.00	8.75	
MW-6	06/09/2016	192.18	21.61	170.57	24.70	3.09	
MW-7	06/09/2016	188.47	18.63	169.84	21.00	2.37	
MW-8	06/09/2016	187.13	15.56	171.57	27.20	11.64	
MW-9	06/09/2016	184.73	13.57	171.16	27.00	13.43	
MW-10	06/09/2016	178.12	7.77	170.35			No CoCs
MW-11	06/09/2016	184.65	13.19	171.46			Partially Penetrating
MW-12	06/09/2016	178.33	8.58	169.75	27.80	19.22	
MW-13	06/09/2016	176.72	6.77	169.95			No CoCs
MW-16	06/09/2016	178.59	7.91	170.68	31.30	23.39	
MW-17	06/09/2016	179.03	8.81	170.22			No CoCs
MW-18	06/09/2016	178.58	8.59	169.99			No CoCs
MW-19	06/09/2016	178.60	8.45	170.15			No CoCs
MW-20	06/09/2016	186.64	10.59	176.05	12.00	1.41	
MW-21	06/09/2016	198.70	32.53	166.17	41.60	9.07	
MW-22	06/09/2016	197.51	27.69	169.82	40.00	12.31	
MW-23	06/09/2016	198.79	27.44	171.35	38.00	10.56	
101	06/09/2016	197.53	7.09	190.44			Partially Penetrating
102	06/09/2016	193.94	21.13	172.81	17.70		Partially Penetrating
109	06/09/2016	197.02	28.50	168.52	40.00	11.50	
120	06/09/2016	184.19	12.31	171.88	25.80	13.49	
123	06/09/2016	186.21	12.60	173.61	22.70	10.10	
125	06/09/2016	196.28	24.08	172.20	40.00	24.13	
126	06/09/2016	199.37	28.85	170.52	36.00	7.15	
129	06/09/2016	197.24	25.95	171.29	36.00	10.05	
130	06/09/2016	177.73	6.30	171.43			LHAAP-17
C-02	06/09/2016	175.95	5.89	170.06			No CoCs
C-05	06/09/2016	180.74	10.65	170.09			No CoCs
C-06	06/09/2016	192.22	23.06	169.16			No CoCs
C-07	06/09/2016	196.80	27.18	169.62			No CoCs
C-08	06/09/2016	193.10	23.95	169.15	31.60	7.65	
C-09	06/09/2016	202.35	33.05	169.30			No CoCs
17WW08	06/09/2016	179.72	9.31	170.41			LHAAP-17
18WW05	06/09/2016	189.59	19.10	170.49			No CoCs
18WW06	06/09/2016	179.70	9.52	170.18			No CoCs
18WW07	06/09/2016	183.67	14.67	169.00			No CoCs
18WW08	06/09/2016	177.77	8.21	169.56	18.50	10.29	No CoCs
18WW10	06/09/2016	182.26	10.08	172.18	30.50	20.42	No CoCs
18WW14	06/09/2016	186.47	16.67	169.80			No CoCs
18WW16	06/09/2016	201.88	31.63	170.25			No CoCs
18WW20	06/09/2016	180.42	10.79	169.63			No CoCs
18WW22	06/09/2016	195.37	25.29	170.08			No CoCs
18WW24	06/09/2016	176.40	5.32	171.08			No CoCs
18CPTMW04	06/09/2016	196.60	24.12	172.48	37.50	12.80	
18CPTMW14	06/09/2016	196.69	27.05	169.64	33.40	6.35	
18CPTMW15	06/09/2016	179.79	9.78	167.98	20.30	10.52	No CoCs
18CPTMW16	06/09/2016	175.37	5.41	169.96			No CoCs
18CPTMW18	06/09/2016	194.53	27.43	167.10			No CoCs
18CPTMW19	06/09/2016	193.59	21.89	171.70	30.50	8.61	No CoCs
18CPTMW22R	06/09/2016		9.14				No CoCs
18CPTMW23	06/09/2016	177.47	7.39	168.69			No clay layer
18CPTMW24	06/09/2016	194.89	26.58	168.31	40.00	13.42	
18CPTMW26	06/09/2016		15.72				Not Surveyed
Minimum		--	5.32	166.17	12.00	1.41	
Maximum		--	33.05	190.44	43.60	24.13	
Average		188.60	17.47	170.90	31.63	11.96	

Estimated Average Stick up = 1.5 feet

* indicates measurements are referenced to the top of the well casing.

Table 2-5: Estimate of Mass of Dissovled CoCs in Shallow Zone Groundwater - June 2016

Analyte	Isoconcentration	Area Based on Isocontours	Representative Concentration	Dissolved Phase Mass based on Saturation Thickness	% Contribution	Cumulative Contribution
	ug/L	ft^2	ug/L	lbs		
Methylene Chloride	10000+	70,567	15,650	325.62	**77.8%**	77.8%
Methylene Chloride	1000 to 10000	51,836	5,500	84.060	**20.08%**	97.9%
Methylene Chloride	100 to 1000	47,044	550	7.629	1.823%	99.7%
Methylene Chloride	10 to 100	48,787	55	0.791	0.189%	99.9%
Methylene Chloride	10+	20,908	53	0.324	0.077%	100.0%
Methylene Chloride	5 to 10	77,536	6	0.126	0.030%	100.0%
Total Methylene Chloride				**419**	100%	
Trichloroethylene	10000+	22,215	13,550	89	**4.3%**	4.3%
Trichloroethylene	10000+	47,044	12,750	177	**8.5%**	12.8%
Trichloroethylene	1000 to 10000	1,029,758	5,500	1,670	**80.4%**	93.2%
Trichloroethylene	100 to 1000	803,682	550	130	**6.3%**	99.5%
Trichloroethylene	10 to 100	683,021	55	11	0.533%	100.0%
Total Trichloroethylene				**2,077**	100%	
Perchlorate	10000+	214,751	36,000	2,279	**28.7%**	28.7%
Perchlorate	10000+	6,970	16,100	33	**0.42%**	29.1%
Perchlorate	10000+	220,849	19,520	1,271	**16.0%**	45.1%
Perchlorate	10000+	174,240	46,450	2,386	**30.0%**	75.1%
Perchlorate	1000 to 10000	1,147,806	5,500	1,861	**23.41%**	98.5%
Perchlorate	100	53,578	63	0.99	0.0124%	98.5%
Perchlorate	100 to 1000	685,634	550	111	1.399%	99.9%
Perchlorate	10 to 100	407,286	55	6.60	0.0831%	100.0%
Total Perchlorate				**7,950**		
1,4-Dioxane	100+	40946	160	1.93	56.0%	56.0%
1,4-Dioxane	10 to 100	77101	55	1.25	36.2%	92.2%
1,4-Dioxane	10+	77972	12	0.269	7.8%	100.0%
Total 1,4-Dioxane				**3.45**		

Notes:
ug/L - micrograms per liter
ft^2 - square feet
lbs - pounds

Average Porosity from Post-Screening Investigation Report (Table 3-8)	0.396
Average Saturated Groundwater Thickness - May 2013 (feet) (Table 2-3)	11.96

Dissolved phase mass = sum of areas represented by the contour lines multiplied by each representative concentration X aquifer thickness X porosity

Table 2-6: Estimate of Mass of Sorbed CoCs on Shallow Zone Soil - June 2016

Analyte	Isoconcentration	Area Based on Isocontours	Representative Groundwater Concentration	Representative Soil Concentration	Absorbed Phase Mass based on Saturation Thickness*	% Contribution	Cumulative Contribution
	ug/L	ft^2	ug/L	ug/kg	lbs		
Methylene Chloride	10000+	70,567	15,650	3,504	359	**77.8%**	77.8%
Methylene Chloride	1000 to 10000	51,836	5,500	1,231	93	**20.1%**	97.9%
Methylene Chloride	100 to 1000	47,044	550	123	8	**1.82%**	99.7%
Methylene Chloride	10 to 100	48,787	55	12	0.9	0.189%	99.9%
Methylene Chloride	10+	20,908	53	12	0.36	0.077%	100.0%
Methylene Chloride	5 to 10	77,536	6	1	0.14	0.030%	100.0%
Total Methylene Chloride					**462**	100%	
Trichloroethylene	10000+	22,215	13,550	5,041	163	**4.5%**	4.5%
Trichloroethylene	10000+	47,044	12,750	4,743	324	**8.9%**	8.9%
Trichloroethylene	1000 to 10000	1,029,758	5,500	2,046	3,063	**84.0%**	92.9%
Trichloroethylene	100 to 1000	803,682	550	205	239	**6.6%**	99.4%
Trichloroethylene	10 to 100	683,021	55	20	20	0.557%	100.0%
Total Trichloroethylene					**3,647**		

Notes:
ug/L - micrograms per liter
ft^2 - square feet
ug/kg - micrograms per kilogram
lbs - pounds

*** Average saturated groundwater thickness - June 2016 (feet) (Table 2-4)**		11.96
Parameter from PSI Reprot (Table 3-8)	TCE	MC
Bulk Density (kg soil/L soil)	1.95	1.95
Total Porosity	0.396	0.396
Organic carbon fraction (g-C/g-C)	0.001816	0.001816
OC-W Partition Coefficient (L-water/kg Carbon)	93.33	11.75
Soil-Water Partition Coefficient (L-water/kg-soil)	0.1695	0.0213

Representative soil concentration = representative groundwater concentration / bulk density X [porosity + bulk density X soil-water partition coefficient]
Adsorbed phase mass = sum of areas represented by the contour lines X each representative soil concentration X bulk density X aquifer thickness

Table 2-7: Estimate of DNAPL Mass for MC and TCE in the Shallow Zone

Analyte	Concentration* ug/kg	Area ** ft^2	Thickness*** ft	Volume ft^3	Mass kg	Mass lbs
UEP Area						
Methylene Chloride	4,660,000	35,500	3	106,500	27,323.2	60,248
TCE	9,585,000	35,500	3	106,500	56,200.2	123,922
ACD Area						
Methylene Chloride	3,810,000	3,500	12	42,000	8,809.9	19,426
TCE	1,645,000	3,500	12	42,000	3,803.7	8,387
TOTAL						
Methylene Chloride					36,133	79,674
TCE					60,004	132,309

Notes:
ug/kg - micrograms per kilogram
ft^2 - square feet
ft - feet
ft^3 - cubic feet
lbs - pounds

* Based on average concentration of the two soil intervals where sample concentrations exceeded DNAPL saturation limits
Information from Table 3-6 of the Data Gap Report (AECOM, Nov 2013)
** Estimated based on locations with potential DNAPL present bounded by areas with low concentrations (**Figures 2-1 & 2-2**)
*** Determined based on discrete soil analytical results exceeding DNAPL saturation limits and MIP results
Information from Table 3-6 and Appendix A of the Data Gap Report (AECOM, Nov 2013)

DNAPL mass = Area X thickness of impact X concentration

Total Porosity	0.396
Bulk Density	1.95

Table 2-8: Estimate of Total Mass of CoCs in Shallow Zone Outside the Containment Area - June 2016

Analyte	Isoconcentration	Area Based on Isocontours	Representative GW Concentration	Representative Soil Concentration	Dissolved Phase Mass based on Saturation Thickness	Absorbed Phase Mass based on Saturation Thickness	Total Mass	% Contribution	Cumulative Contribution
	ug/L	ft^2	ug/L	ug/kg	lbs	lbs	lbs		
Methylene Chloride	5 to 10	3,920	5.5	1.2	0.0064	0.007	0.013	**100%**	100.0%
Total Methylene Chloride					**0.006**	**0.007**	**0.013**	100%	
Trichloroethylene	1000 to 10000	0.00	NA	NA	NA	NA	**0.000**	0%	0.0%
Trichloroethylene	1000 to 10000	186,872	5,500	2,046	307	556	863	**81.5%**	81.5%
Trichloroethylene	100 to 1000	365,032	550	205	59.9	109	169	**15.9%**	97.4%
Trichloroethylene	10 to 100	594,158	55	20	9.8	18	27	**2.59%**	100.0%
Total Trichloroethylene					**377**	**682**	**1,059**	100%	
Perchlorate	10000+	6,970	16,100	-	34	-	34	**1.0%**	1.0%
Perchlorate	10000+	174,240	46,450	-	2,416	-	2,416	**72.3%**	73.3%
Perchlorate	1000 to 10000	497,555	5,500	-	817	-	817	**24.4%**	97.7%
Perchlorate	100 to 1000	431,679	550	-	70.9	-	71	2.12%	99.8%
Perchlorate	10 to 100	393,782	55	-	6.47	-	6	0.19%	100.0%
Total Perchlorate					**3,344**	**0**	**3,344**	100%	
1,4-Dioxane	100+	0	NA	-	NA	-	NA	NA	NA
1,4-Dioxane	10 to 100	43,124	55	-	0.71	-	0.71	**94.134%**	94.1%
1,4-Dioxane	10+	12,632	12	-	0.044	-	0.044	**5.8658%**	100.0%
Total 1,4-Dioxane					**0.75**	**0**	**0.75**	100%	

Notes:
ug/L - micrograms per liter
ft^2 - square feet
ug/kg - micrograms per kilogram
lbs - pounds

Average Porosity from Post-Screening Investigation Report (Table 3-8)
Average saturated groundwater thickness - May 2013 (feet) (Table 2-3)

Parameter from PSI Reprot (Table 3-8)	TCE	MC
Bulk Density (kg soil/L soil)	1.95	1.95
Total Porosity	0.396	0.396
Organic carbon fraction (g-C/g-C)	0.001816	0.001816
OC-W Partition Coefficient (L-water/kg Carbon)	93.33	11.75
Soil-Water Partition Coefficient (L-water/kg-soil)	0.1695	0.0213

Table 2-9: Estimate of Shallow Zone Mass Distribution of CoCs Within and Outside Containment Area - June 2016

Analyte	Total Mass	Mass Outside Containment	Mass Inside Containment	% of Mass Outside Containment
	lbs	lbs	lbs	
Methylene Chloride	80,554	0.01	80,554	0.00002%
Trichloroethylene	138,033	1,059	136,974	0.77%
Perchlorate	7,950	3,344	4,606	42.07%
1,4-Dioxane	3.5	0.75	2.70	22%

Notes:

lbs - pounds

Table 2-10: Vertical Gradients - June 2016

Date	Monitorig Well	Formation	Reference Elevation (feet amsl)	Depth to Water (feet)	Groundwater Elevation (feet amsl)	Elevation Difference (ft)	Gradient Direction	Location
Shallow Zone vs. Upper Wilcox								
06/09/2016	MW-2	Shallow Zone	196.73	27.44	169.29			
06/09/2016	18CPTMW01SW	Upper Wilcox	198.20	27.03	171.17	1.88	Upward	Inside Containment
06/09/2016	MW-5	Shallow Zone	194.97	24.25	170.72			
06/09/2016	18CPTMW08SW	Upper Wilcox	196.38	25.98	170.40	(0.32)	Downward	Inside Containment
06/09/2016	120	Shallow Zone	184.19	12.31	171.88			
06/09/2016	MW-14	Upper Wilcox	186.19	12.53	173.66	1.78	Upward	Inside Containment
06/09/2016	MW-21	Shallow Zone	198.70	32.53	166.17			
06/09/2016	18CPTMW07SW	Upper Wilcox	197.32	27.48	169.84	3.67	Upward	Inside Containment
06/09/2016	MW-22	Shallow Zone	197.51	27.69	169.82			
06/09/2016	18CPTMW06SW	Upper Wilcox	198.12	27.95	170.17	0.35	Upward	Inside Containment
06/09/2016	18CPTMW04	Shallow Zone	196.60	24.12	172.48			
06/09/2016	18CPTMW04SW	Upper Wilcox	196.42	26.33	170.09	(2.39)	Downward	Inside Containment
06/09/2016	MW-7	Shallow Zone	188.47	18.63	169.84			
06/09/2016	18CPTMW12SW	Upper Wilcox	190.90	20.60	170.30	0.46	Upward	Outside Containment
06/09/2016	MW-9	Shallow Zone	184.73	13.57	171.16			
06/09/2016	18CPTMW10SW	Upper Wilcox	186.98	16.57	170.41	(0.75)	Downward	Outside Containment
06/09/2016	18WW22	Shallow Zone	195.37	25.29	170.08			
06/09/2016	C-04	Upper Wilcox	194.64	24.12	170.52	0.44	Upward	Outside Containment
06/09/2016	C-05	Shallow Zone	180.74	10.65	170.09			
06/09/2016	18WW04	Upper Wilcox	183.74	13.70	170.04	(0.05)	Downward	Outside Containment
06/09/2016	C-08	Shallow Zone	193.10	23.95	169.15			
06/09/2016	18WW03	Upper Wilcox	195.59	25.90	169.69	0.54	Upward	Outside Containment
06/09/2016	C-09	Shallow Zone	202.35	33.05	169.30			
06/09/2016	C-10	Upper Wilcox	201.86	32.49	169.37	0.07	Upward	Outside Containment
06/09/2016	18WW16	Shallow Zone	201.88	31.63	170.25			
06/09/2016	18WW01	Upper Wilcox	201.31	31.14	170.17	(0.08)	Downward	Outside Containment
06/09/2016	18WW08	Shallow Zone	177.77	8.21	169.56			
06/09/2016	18WW09	Upper Wilcox	177.51	7.39	170.12	0.56	Upward	Outside Containment
06/09/2016	18WW10	Shallow Zone	182.26	10.08	172.18			
06/09/2016	18WW11	Upper Wilcox	182.29	11.44	170.85	(1.33)	Downward	Outside Containment

Table 2-10: Vertical Gradients - June 2016

Date	Monitorig Well	Formation	Reference Elevation (feet amsl)	Depth to Water (feet)	Groundwater Elevation (feet amsl)	Elevation Difference (ft)	Gradient Direction	Location
06/09/2016	18WW14	Shallow Zone	186.47	16.67	169.80			
06/09/2016	18WW15	Upper Wilcox	186.24	15.98	170.26	0.46	Upward	Outside Containment
06/09/2016	18CPTMW19	Shallow Zone	193.59	21.89	171.70			
06/09/2016	18CPTMW19SW	Upper Wilcox	193.29	22.96	170.33	(1.37)	Downward	Outside Containment
06/09/2016	18CPTMW22R	Shallow Zone	187.23	9.14	178.09			
06/09/2016	18CPTMW22SW	Upper Wilcox	187.79	17.92	169.87	(8.22)	Downward	Outside Containment
06/09/2016	18CPTMW23	Shallow Zone	177.47	7.39	170.08			
06/09/2016	18CPTMW23SW	Upper Wilcox	177.43	7.07	170.36	0.28	Upward	Outside Containment
06/09/2016	18CPTMW26	Shallow Zone	182.80	15.72	167.08			
06/09/2016	18CPTMW26SW	Upper Wilcox	182.00	11.71	170.29	3.21	Upward	Outside Containment
Upper Wilcox vs. Lower Wilcox								
06/09/2016	18CPTMW01SW	Upper Wilcox	198.20	27.03	171.17			
06/09/2016	18CPTMW01DW	Lower Wilcox	197.92	27.70	170.22	(0.95)	Downward	Inside Containment
06/09/2016	18CPTMW08SW	Upper Wilcox	196.38	25.98	170.40			
06/09/2016	18CPTMW08DW	Lower Wilcox	196.59	26.40	170.19	(0.21)	Downward	Inside Containment
06/09/2016	18WW06	Upper Wilcox	179.70	9.52	170.18			
06/09/2016	18WW02	Lower Wilcox	179.30	8.76	170.54	0.36	Upward	Outside Containment
06/09/2016	C-04	Upper Wilcox	194.64	24.12	170.52			
06/09/2016	C-04A	Lower Wilcox	194.61	23.97	170.64	0.12	Upward	Outside Containment
06/09/2016	18CPTMW10SW	Upper Wilcox	186.98	16.57	170.41			
06/09/2016	18CPTMW10DW	Lower Wilcox	187.38	16.95	170.43	0.02	Upward	Outside Containment
06/09/2016	18CPTMW12SW	Upper Wilcox	190.90	20.60	170.30			
06/09/2016	18CPTMW12DW	Lower Wilcox	190.25	19.98	170.27	(0.03)	Downward	Outside Containment
06/09/2016	18CPTMW22SW	Upper Wilcox	187.79	17.92	169.87			
06/09/2016	18CPTMW22DW	Lower Wilcox	188.00	17.72	170.28	0.41	Upward	Outside Containment

Table 2-11: Shallow Zone Groundwater Extraction Mass Flux - 1st Quarter 2015

Well	Concentration			Extraction Rate			Flux		
	Perchlorate	Trichloroethene	Methylene Chloride	Average Monthly Extraction Rate[1]	Daily Extraction Rate[2]	Daily Extraction Rate	Perchlorate Flux = Q*C	TCE Flux = Q*C	MC Flux = Q*C
	µg/L	µg/L	µg/L	gal/month	gpd	L/day	mg/day	mg/day	mg/day
EW-01	3.32E+03	5.05E+04	2.18E+04	2.95E+03	9.83E+01	3.72E+02	1.24E+03	1.88E+04	8.11E+03
2	2.96E+01	1.40E+01	2.50E-01	8.23E+04	2.74E+03	1.04E+04	3.07E+02	1.45E+02	2.60E+00
4	8.15E+03	3.89E+03	5.00E+00	1.33E+05	4.42E+03	1.67E+04	1.36E+05	6.51E+04	8.37E+01
7	4.86E+01	2.50E-01	2.50E-01	8.45E+03	2.82E+02	1.07E+03	5.18E+01	2.66E-01	2.66E-01
8	1.83E+03	8.65E+03	1.03E+05	5.16E+04	1.72E+03	6.51E+03	1.19E+04	5.63E+04	6.70E+05
11*	1.63E+04	1.85E+03	2.50E+00	2.21E+04	7.35E+02	2.78E+03	4.54E+04	5.15E+03	6.96E+00
12A	6.44E+03	9.25E+02	1.25E+00	1.23E+04	4.09E+02	1.55E+03	9.98E+03	1.43E+03	1.94E+00
12B	1.38E+05	1.39E+04	2.50E+01	1.97E+04	6.55E+02	2.48E+03	3.42E+05	3.45E+04	6.20E+01
12C	1.97E+04	1.30E+04	2.50E+01	1.69E+04	5.62E+02	2.13E+03	4.19E+04	2.76E+04	5.32E+01
12D	3.84E+04	7.76E+04	5.54E+04	3.93E+04	1.31E+03	4.96E+03	1.90E+05	3.85E+05	2.75E+05
12E	3.70E+04	5.02E+04	1.78E+04	2.07E+04	6.91E+02	2.62E+03	9.68E+04	1.31E+05	4.66E+04
13A	1.23E+04	3.60E+03	2.50E+00	2.59E+04	8.62E+02	3.26E+03	4.02E+04	1.18E+04	8.16E+00
13B	3.20E+02	1.15E+03	1.25E+00	6.55E+04	2.18E+03	8.27E+03	2.65E+03	9.51E+03	1.03E+01
13C	5.11E+01	2.19E+03	2.50E-01	8.14E+04	2.71E+03	1.03E+04	5.25E+02	2.24E+04	2.57E+00
13D	3.62E+02	2.59E+00	2.50E-01	7.50E+03	2.50E+02	9.46E+02	3.43E+02	2.45E+00	2.37E-01
13E	1.80E+02	1.12E+00	2.50E-01	1.37E+04	4.55E+02	1.72E+03	3.10E+02	1.93E+00	4.31E-01
13F	3.56E-01	2.50E-01	2.50E-01	8.84E+03	2.95E+02	1.11E+03	3.97E-01	2.79E-01	2.79E-01
14A	6.50E+02	3.35E+01	2.50E-01	4.67E+03	1.56E+02	5.89E+02	3.83E+02	1.97E+01	1.47E-01
14B	8.13E+03	6.88E+02	6.25E-01	2.45E+04	8.18E+02	3.10E+03	2.52E+04	2.13E+03	1.94E+00
14C	1.07E+04	1.19E+04	8.28E+03	4.23E+04	1.41E+03	5.34E+03	5.71E+04	6.35E+04	4.42E+04
14D	2.21E+02	8.99E+03	3.33E+01	4.74E+04	1.58E+03	5.98E+03	1.32E+03	5.37E+04	1.99E+02
14E*	6.36E+03	2.41E+03	2.50E-01	2.11E+04	7.03E+02	2.66E+03	1.69E+04	6.42E+03	6.66E-01
						TOTAL	1.02E+06	8.95E+05	1.04E+06
						TOTAL (lbs/day)	2.25E+00	1.97E+00	2.30E+00

Notes:

1- Average of monthly extraction quantities from Table 2-1 of Quarterly Report

2- Assumes 30 days per month

* Not sampled in 2015. The concentrations from 2016 were used.

Table 2-12: Shallow Zone Groundwater Extraction Mass Flux - 1st Quarter 2016

Well	Concentration			Extraction Rate			Flux		
	Perchlorate	Trichloroethene	Methylene Chloride	Average Monthly Extraction Rate[1]	Daily Extraction Rate[2]	Daily Extraction Rate	Perchlorate Flux = Q*C	TCE Flux = Q*C	MC Flux = Q*C
	µg/L	µg/L	µg/L	gal/month	gpd	L/day	mg/day	mg/day	mg/day
18WW17	7.34E+04	5.16E+01	2.50E-01	3.00E+03	1.00E+02	3.79E+02	2.78E+04	1.96E+01	9.48E-02
EW-01	8.62E+03	5.80E+04	1.46E+04	4.56E+03	1.52E+02	5.76E+02	4.96E+03	3.34E+04	8.40E+03
2	1.58E+02	1.60E+02	2.50E-01	6.41E+04	2.14E+03	8.09E+03	1.28E+03	1.29E+03	2.02E+00
4	7.30E+03	4.66E+03	5.00E+00	1.08E+05	3.62E+03	1.37E+04	9.99E+04	6.38E+04	6.84E+01
7	3.39E+02	7.46E-01	2.50E-01	1.30E+04	4.34E+02	1.64E+03	5.57E+02	1.23E+00	4.11E-01
8	1.40E+03	7.81E+03	3.99E+04	5.68E+04	1.89E+03	7.17E+03	1.00E+04	5.60E+04	2.86E+05
11	1.63E+04	1.85E+03	2.50E+00	5.67E+04	1.89E+03	7.15E+03	1.17E+05	1.32E+04	1.79E+01
12A	6.50E+03	1.22E+03	1.25E+00	7.34E+03	2.45E+02	9.26E+02	6.02E+03	1.12E+03	1.16E+00
12B	6.48E+04	1.02E+04	1.25E+00	2.15E+04	7.16E+02	2.71E+03	1.76E+05	2.76E+04	3.39E+00
12C	4.77E+03	4.24E+03	5.00E+00	2.61E+04	8.71E+02	3.30E+03	1.57E+04	1.40E+04	1.65E+01
12D	1.60E+04	4.03E+04	3.32E+04	2.70E+04	9.00E+02	3.41E+03	5.45E+04	1.37E+05	1.13E+05
12E	4.58E+04	5.35E+04	5.33E+03	3.04E+04	1.01E+03	3.83E+03	1.75E+05	2.05E+05	2.04E+04
13A	1.54E+04	7.66E+03	6.25E+00	6.63E+04	2.21E+03	8.37E+03	1.29E+05	6.41E+04	5.23E+01
13B	4.42E+02	1.41E+03	1.25E+00	9.18E+04	3.06E+03	1.16E+04	5.12E+03	1.63E+04	1.45E+01
13C	2.90E+00	1.05E+03	1.25E+00	1.13E+05	3.76E+03	1.43E+04	4.13E+01	1.50E+04	1.78E+01
13D	7.74E+00	1.69E+00	2.50E-01	3.67E+03	1.22E+02	4.63E+02	3.58E+00	7.82E-01	1.16E-01
13E	7.92E+02	2.12E+00	2.50E-01	1.38E+04	4.59E+02	1.74E+03	1.38E+03	3.69E+00	4.35E-01
13F	1.14E+00	2.50E-01	2.50E-01	7.56E+03	2.52E+02	9.54E+02	1.09E+00	2.39E-01	2.39E-01
14A	3.48E+02	1.07E+01	2.50E-01	1.91E+03	6.36E+01	2.41E+02	8.38E+01	2.58E+00	6.02E-02
14B	5.80E+03	1.81E+02	2.50E-01	7.37E+03	2.46E+02	9.30E+02	5.39E+03	1.68E+02	2.32E-01
14C	9.85E+03	1.11E+04	1.78E+04	5.61E+04	1.87E+03	7.08E+03	6.97E+04	7.86E+04	1.26E+05
14D	2.74E+03	6.09E+03	2.55E+04	6.16E+04	2.05E+03	7.77E+03	2.13E+04	4.73E+04	1.98E+05
14E	6.36E+03	2.41E+03	2.50E-01	1.85E+04	6.18E+02	2.34E+03	1.49E+04	5.64E+03	5.85E-01
						TOTAL	9.35E+05	7.80E+05	7.52E+05
						TOTAL (lbs/day)	2.06E+00	1.72E+00	1.66E+00

Notes:

1- Average of monthly extraction quantities from Table 2-1 of Quarterly Report

2- Assumes 30 days per month

Table 2-13: Shallow Zone Contaminant Extraction Mass Flux

	Perchlorate Flux = Q*C	TCE Flux = Q*C	MC Flux = Q*C
2014			
Annual flux (lbs/day)	2.25	1.97	2.30
Annual flux (lb/yr)	822	720	841
Annual flux (tpy)	0.41	0.36	0.42
2016			
Annual flux (lbs/day)	2.06	1.72	1.66
Annual flux (lb/yr)	753	628	606
Annual flux (tpy)	0.38	0.31	0.30
Average 2015/2016			
Annual flux (lbs/day)	2.16	1.85	1.98
Annual flux (lb/yr)	788	674	723
Annual flux (tpy)	0.39	0.34	0.36

Q - extraction rate (gpm)
C - concentration (ug/L)
gpm - gallons per minute
ug/L - micrograms per liter

Table 2-14: GWTP Lifecycle Estimate

Parameter	Dissolved	Adsorbed	Accessible Mass	DNAPL	TOTAL
Estimated Mass in Formation (lbs)					
MC	419	462	880	79,674	80,554
TCE	2,077	3,647	5,724	132,309	138,033
Perchlorate	7,950	0	7,950	0	7,950
1,4-Dioxane	3.45	0	3.45	0	3.45
TOTAL	10,449	4,109	14,558	211,982	226,541
Estimated Years to Remove via GWTP Extraction*					
MC	0.6	0.6	1.2	110	111
TCE	3.1	5.4	8.5	196	205
Perchlorate	10.1	0	10.1	0	10.1
1,4-Dioxane	4.0	0	4.0	0	4.0
Estimated Years to Remove via GWTP Extraction for CoCs Inside Containment*					
MC	0.6	0.6	1.2	110	111
TCE	2.5	4.4	6.9	196	203
Perchlorate	5.8	0.0	5.8	0	5.8
1,4-Dioxane	3.9	0.0	3.9	0	3.9

Notes:

lbs - pounds

	Annual flux (lbs/yr)	Annual flux (tons/yr)
MC	723	0.36
TCE	674	0.34
Perchlorate	788	0.39
1,4-Dioxane**	0.87	0.00043

* Assumes no retardation associated with desorption, diffusion, or transport.

** Based on total flow since 2014 of 6.7 E+06 gallons/year and an average 1,4-dioxane concentration in the effluent to the GWTP of 15.54 ug/L for the period between June 2015 and August 2016.

Table 2-15: LHAAP-18/24 Semi-Annual Groundwater Sampling Results - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	102-061616 6/16/2016	109-062216 6/22/2016	120-061616 6/16/2016	120F-061616 6/16/2016	123-061616 6/16/2016	125-062216 6/22/2016	126-061416 6/14/2016	126F-061416 6/14/2016	129-061616 6/16/2016	130-061016 6/10/2016	130FD-061016 6/10/2016
Metals (6010C)													
ALUMINUM	mg/L	100	NA	3.62	NA	1.53	1.42	NA	NA	<0.1 U	0.644	NA	NA
BERYLLIUM	mg/L	0.004	NA	<0.01 U	NA	<0.01 U	<0.01 U	NA	NA	<0.01 U	<0.01 U	NA	NA
CALCIUM	mg/L		NA	2.3	NA	6.89	8.16	NA	NA	296	13.2	NA	NA
IRON	mg/L		NA	3.98	NA	2.04	1.66	NA	NA	5.93	1.18	NA	NA
MAGNESIUM	mg/L		NA	1.9	NA	7.27	4.83	NA	NA	235	10.4	NA	NA
POTASSIUM	mg/L		NA	0.692 J	NA	1.55 J	0.713 J	NA	NA	4.36	0.716 J	NA	NA
SELENIUM	mg/L	0.05	NA	0.00538 J	NA	<0.01 U	<0.01 U	NA	NA	<0.01 U	<0.01 U	NA	NA
SODIUM	mg/L		NA	33.8	NA	303	26	NA	NA	829	146	NA	NA
Metals (6020A)													
ANTIMONY	mg/L	0.006	NA	<0.001 U	NA	<0.001 U	<0.001 U	NA	NA	<0.001 U	<0.001 U	NA	NA
ARSENIC	mg/L	0.01	NA	0.00137 J	NA	0.00356	0.000767 J	NA	NA	0.0147	0.0011 J	NA	NA
BARIUM	mg/L	2	NA	0.0812	NA	0.0452	0.136	NA	NA	9.33	0.293	NA	NA
CADMIUM	mg/L	0.005	NA	<0.0006 U	NA	<0.0006 U	<0.0006 U	NA	NA	<0.0006 U	0.000383 J	NA	NA
CHROMIUM	mg/L	0.1	NA	0.00387 J	NA	0.012	0.00177 J	NA	NA	0.00231 J	0.00415	NA	NA
COBALT	mg/L	6.1	NA	0.00149 J	NA	0.0151	0.0025	NA	NA	0.0656	0.00182 J	NA	NA
COPPER	mg/L	1.3	NA	0.00212 J	NA	0.00476	0.00142 J	NA	NA	0.00314 J	0.00173 J	NA	NA
LEAD	mg/L	0.015	NA	0.00176 J	NA	0.00162 J	0.00104 J	NA	NA	<0.001 U	0.000875 J	NA	NA
MANGANESE	mg/L	1.1	NA	0.028	NA	0.186	0.0161	NA	NA	1.07	0.0478	NA	NA
NICKEL	mg/L	0.49	NA	0.00389 J	NA	0.0755	0.00319 J	NA	NA	0.0313	0.00956	NA	NA
SILVER	mg/L	0.51	NA	<0.001 U	NA	<0.001 U	<0.001 U	NA	NA	<0.001 U	<0.001 U	NA	NA
THALLIUM	mg/L	0.002	NA	<0.0002 U	NA	<0.0002 U	<0.0002 U	NA	NA	<0.0002 U	<0.0002 U	NA	NA
VANADIUM	mg/L	0.72	NA	0.00678	NA	0.0105	0.00241	NA	NA	0.000584 J	0.00246	NA	NA
ZINC	mg/L	31	NA	0.0126 J	NA	0.0659	<0.025 U	NA	NA	0.0168 J	<0.025 U	NA	NA
Perchlorate (6850)													
PERCHLORATE	ug/L	17	107	1810	32700	NA	105	935	0.14 J	NA	8950	64.5	62.5
Mercury (7470A)													
MERCURY	mg/L	0.002	NA	<0.0002 U	NA	<0.0002 U	<0.0002 U	NA	NA	<0.0002 U	<0.0002 U	NA	NA
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	<2 U	<40 U	NA	<0.4 U	<0.4 U	<0.4 UJ	NA	<2 U	<0.4 U	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	0.884 J	<25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	NA	<1.25 U	<0.25 U	<0.25 U
1,1-DICHLOROETHENE	ug/L	7	<1 U	<5 U	134 J	NA	<1 U	<1 UJ	<1 UJ	NA	<5 U	<1 U	<1 U
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	<1.5 U	<30 U	NA	<0.3 U	<0.3 U	<0.3 UJ	NA	<1.5 U	<0.3 U	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	<5 U	<100 U	NA	<1 U	<1 U	<1 UJ	NA	<5 U	<1 U	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	<2 U	<40 U	NA	<0.4 U	<0.4 U	<0.4 UJ	NA	<2 U	<0.4 U	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	<10 UJ	<200 U	NA	<2 U	<2 U	<2 UJ	NA	<10 U	<2 U	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	<1.25 U	<25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	NA	<1.25 U	<0.25 U	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<2.5 U	32.1 J	NA	1.2	<0.5 U	<0.5 UJ	NA	25.4	<0.5 U	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	<2 U	<40 U	NA	<0.4 U	<0.4 U	<0.4 UJ	NA	<2 U	<0.4 U	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U

Table 2-15: LHAAP-18/24 Semi-Annual Groundwater Sampling Results - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	102-061616 6/16/2016	109-062216 6/22/2016	120-061616 6/16/2016	120F-061616 6/16/2016	123-061616 6/16/2016	125-062216 6/22/2016	126-061416 6/14/2016	126F-061416 6/14/2016	129-061616 6/16/2016	130-061016 6/10/2016	130FD-061016 6/10/2016
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	<2 U	<40 U	NA	<0.4 U	<0.4 U	<0.4 UJ	NA	<2 U	<0.4 U	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	<1.25 U	<25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	NA	<1.25 U	<0.25 U	<0.25 U
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	<2.5 UJ	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U
2-BUTANONE	ug/L	15000	<5 U	<25 U	<500 U	NA	<5 U	<5 UJ	<5 UJ	NA	<25 U	<5 U	<5 U
2-CHLOROTOLUENE	ug/L	490	<0.25 U	<1.25 U	<25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	NA	<1.25 U	<0.25 U	<0.25 U
2-HEXANONE	ug/L	120	<5 UJ	<25 UJ	<500 UJ	NA	<5 UJ	<5 U	<5 UJ	NA	<25 UJ	<5 U	<5 U
4-CHLOROTOLUENE	ug/L	490	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	<25 U	<500 U	NA	<5 U	<5 U	<5 UJ	NA	<25 U	<5 U	<5 U
ACETONE	ug/L	22000	<5 U	<25 UJ	<500 U	NA	<5 U	<5 UJ	<5 UJ	NA	<25 U	<5 U	<5 U
BENZENE	ug/L	5	<0.25 U	<1.25 U	<25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	NA	<1.25 U	<0.25 U	<0.25 U
BROMOBENZENE	ug/L	200	<0.25 U	<1.25 U	<25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	NA	<1.25 U	<0.25 U	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	<2 U	<40 U	NA	<0.4 U	<0.4 U	<0.4 UJ	NA	<2 U	<0.4 U	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U
BROMOFORM	ug/L	120	<1 U	<5 U	<100 U	NA	<1 U	<1 U	<1 UJ	NA	<5 U	<1 U	<1 U
BROMOMETHANE	ug/L	34	<1 U	<5 U	<100 U	NA	<1 U	<1 U	<1 UJ	NA	<5 U	<1 U	<1 U
CARBON DISULFIDE	ug/L	2400	<1 U	<5 U	<100 U	NA	<1 U	<1 U	<1 UJ	NA	<5 U	<1 U	<1 U
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U
CHLOROBENZENE	ug/L	100	<0.25 U	<1.25 U	<25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	NA	<1.25 U	<0.25 U	<0.25 U
CHLOROETHANE	ug/L	98000	<1 U	<5 U	<100 U	NA	<1 U	<1 U	<1 UJ	NA	<5 U	<1 U	<1 U
CHLOROFORM	ug/L	240	<0.25 U	1.61 J	38 J	NA	<0.25 U	<0.25 U	<0.25 UJ	NA	3.28 J	<0.25 U	<0.25 U
CHLOROMETHANE	ug/L	70	<1 U	<5 U	<100 U	NA	<1 U	<1 UJ	<1 UJ	NA	<5 U	<1 U	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	149	1510	NA	14.4	<0.5 U	<0.5 UJ	NA	5.02	<0.5 U	<0.5 U
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U
DIBROMOMETHANE	ug/L	120	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 UJ	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U
ETHYLBENZENE	ug/L	700	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U
M,P-XYLENE	ug/L	10000	<1 U	<5 U	<100 U	NA	<1 U	<1 U	<1 UJ	NA	<5 U	<1 U	<1 U
METHYLENE CHLORIDE	ug/L	5	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U
NAPHTHALENE	ug/L	490	<0.4 U	<2 U	<40 U	NA	<0.4 U	<0.4 U	<0.4 UJ	NA	<2 U	<0.4 U	<0.4 U
N-BUTYLBENZENE	ug/L	1200	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U
N-PROPYLBENZENE	ug/L	980	<0.25 U	<1.25 U	<25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	NA	<1.25 U	<0.25 U	<0.25 U
O-XYLENE	ug/L	10000	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U
STYRENE	ug/L	100	<0.25 U	<1.25 U	<25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	NA	<1.25 U	<0.25 U	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U
TOLUENE	ug/L	1000	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	1.69 J	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	<5 U	<100 U	NA	<1 U	<1 U	<1 UJ	NA	<5 U	<1 U	<1 U
TRICHLOROETHENE	ug/L	5	<0.5 U	670	17100	NA	80.1	0.844 J	<0.5 UJ	NA	1630	1.17	1.19
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	<2.5 U	88.7 J	NA	<0.5 U	<0.5 UJ	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U

Table 2-15: LHAAP-18/24 Semi-Annual Groundwater Sampling Results - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	102-061616 6/16/2016	109-062216 6/22/2016	120-061616 6/16/2016	120F-061616 6/16/2016	123-061616 6/16/2016	125-062216 6/22/2016	126-061416 6/14/2016	126F-061416 6/14/2016	129-061616 6/16/2016	130-061016 6/10/2016	130FD-061016 6/10/2016
1,4-Dioxane (8270D-SIM)													
1,4-DIOXANE	ug/L	9.1	NA	<1 U	220	NA	0.587 J	NA	<1 U	NA	6.52	NA	NA

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter.

Location IDs containing "FD" indicate duplicate samples.

Location IDs containing "B" indicate sample taken at bottom of screened interval and "T" indicate sample taken at top of screened interval.

Blue Highlighting Indicates Analyte Detected Above MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Level

mg/L - milligrams per liter

NA - not analyzed

PCL – Texas Residential Groundwater protective concentration level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 2-15: LHAAP-18/24 Semi-Annual Groundwater Sampling Results - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	18CPTMW01DW-062416 6/24/2016	18CPTMW01SW-062416 6/24/2016	18CPTMW03SW-060816 6/8/2016	18CPTMW04-061416 6/14/2016	18CPTMW04FD-061416 6/14/2016	18CPTMW04SW-061416 6/14/2016	18CPTMW06-060816 6/8/2016	18CPTMW07-062216 6/22/2016	18CPTMW08DW-060816 6/8/2016	18CPTMW08SW-060816 6/8/2016
Metals (6010C)												
ALUMINUM	mg/L	100	NA	<0.1 U	NA	NA	NA	0.0639 J	NA	NA	NA	NA
BERYLLIUM	mg/L	0.004	NA	<0.01 U	NA	NA	NA	<0.01 U	NA	NA	NA	NA
CALCIUM	mg/L		NA	29.4	NA	NA	NA	38.2	NA	NA	NA	NA
IRON	mg/L		NA	54	NA	NA	NA	6.72	NA	NA	NA	NA
MAGNESIUM	mg/L		NA	20.1	NA	NA	NA	19.1	NA	NA	NA	NA
POTASSIUM	mg/L		NA	4.98	NA	NA	NA	64.8	NA	NA	NA	NA
SELENIUM	mg/L	0.05	NA	<0.01 U	NA	NA	NA	<0.01 U	NA	NA	NA	NA
SODIUM	mg/L		NA	102	NA	NA	NA	117	NA	NA	NA	NA
Metals (6020A)												
ANTIMONY	mg/L	0.006	NA	<0.001 U	NA	NA	NA	<0.001 U	NA	NA	NA	NA
ARSENIC	mg/L	0.01	NA	0.0173	NA	NA	NA	0.00407	NA	NA	NA	NA
BARIUM	mg/L	2	NA	0.894	NA	NA	NA	0.936	NA	NA	NA	NA
CADMIUM	mg/L	0.005	NA	<0.0006 U	NA	NA	NA	<0.0006 U	NA	NA	NA	NA
CHROMIUM	mg/L	0.1	NA	0.00204 J	NA	NA	NA	0.0095	NA	NA	NA	NA
COBALT	mg/L	6.1	NA	0.00176 J	NA	NA	NA	0.00368	NA	NA	NA	NA
COPPER	mg/L	1.3	NA	<0.002 U	NA	NA	NA	<0.002 U	NA	NA	NA	NA
LEAD	mg/L	0.015	NA	<0.001 U	NA	NA	NA	<0.001 U	NA	NA	NA	NA
MANGANESE	mg/L	1.1	NA	0.589	NA	NA	NA	0.213	NA	NA	NA	NA
NICKEL	mg/L	0.49	NA	0.00341 J	NA	NA	NA	0.00574 J	NA	NA	NA	NA
SILVER	mg/L	0.51	NA	<0.001 U	NA	NA	NA	<0.001 U	NA	NA	NA	NA
THALLIUM	mg/L	0.002	NA	<0.0002 U	NA	NA	NA	<0.0002 U	NA	NA	NA	NA
VANADIUM	mg/L	0.72	NA	0.00094 J	NA	NA	NA	<0.001 U	NA	NA	NA	NA
ZINC	mg/L	31	NA	<0.025 U	NA	NA	NA	<0.025 U	NA	NA	NA	NA
Perchlorate (6850)												
PERCHLORATE	ug/L	17	<0.2 U	<0.2 U	260	1360	1380	0.186 J	30.3	0.634	672	35000
Mercury (7470A)												
MERCURY	mg/L	0.002	NA	<0.0002 U	NA	NA	NA	<0.0002 U	NA	NA	NA	NA
Volatile Organic Compounds (8260B)												
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	<4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	<2.5 U	0.304 J	0.314 J	0.311 J	<0.25 U	<0.25 U	<0.25 U	NA	4.43
1,1-DICHLOROETHENE	ug/L	7	<1 UJ	<10 U	<1 U	5.87	5.76	<1 U	<1 U	<1 U	NA	0.989 J
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	<3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	NA	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	<10 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	<4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	<20 U	<2 UJ	<2 U	<2 U	<2 U	<2 U	<2 UJ	NA	<2 UJ
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	<2.5 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<5 U	13	4.87	4.84	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	<4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	0.491 J

Table 2-15: LHAAP-18/24 Semi-Annual Groundwater Sampling Results - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	18CPTMW01DW-062416 6/24/2016	18CPTMW01SW-062416 6/24/2016	18CPTMW03SW-060816 6/8/2016	18CPTMW04-061416 6/14/2016	18CPTMW04FD-061416 6/14/2016	18CPTMW04SW-061416 6/14/2016	18CPTMW06-060816 6/8/2016	18CPTMW07-062216 6/22/2016	18CPTMW08DW-060816 6/8/2016	18CPTMW08SW-060816 6/8/2016
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	<4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	<2.5 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	NA	<0.5 U
2-BUTANONE	ug/L	15000	<5 UJ	<50 U	<5 UJ	<5 U	<5 U	<5 U	<5 U	<5 U	NA	<5 UJ
2-CHLOROTOLUENE	ug/L	490	<0.25 U	<2.5 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U
2-HEXANONE	ug/L	120	<5 U	<50 UJ	<5 UJ	<5 U	<5 U	<5 U	<5 U	<5 UJ	NA	<5 UJ
4-CHLOROTOLUENE	ug/L	490	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	<50 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	NA	<5 U
ACETONE	ug/L	22000	<5 UJ	<50 U	7.3 J	<5 U	<5 U	<5 U	<5 U	<5 UJ	NA	<5 UJ
BENZENE	ug/L	5	<0.25 U	5.49 J	6.13	0.618 J	0.612 J	<0.25 U	<0.25 U	<0.25 U	NA	0.173 J
BROMOBENZENE	ug/L	200	<0.25 U	<2.5 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	<4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
BROMOFORM	ug/L	120	<1 U	<10 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA	<1 U
BROMOMETHANE	ug/L	34	<1 U	<10 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA	<1 U
CARBON DISULFIDE	ug/L	2400	1.27 J	<10 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA	<1 U
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
CHLOROBENZENE	ug/L	100	<0.25 U	<2.5 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U
CHLOROETHANE	ug/L	98000	<1 U	<10 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA	<1 U
CHLOROFORM	ug/L	240	<0.25 U	<2.5 U	<0.25 U	3.39	3.33	<0.25 U	<0.25 U	<0.25 U	NA	0.508 J
CHLOROMETHANE	ug/L	70	<1 UJ	<10 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	0.331 J	2.99 J	19.4	76.9	76.2	<0.5 U	<0.5 U	<0.5 U	NA	17.4
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
DIBROMOMETHANE	ug/L	120	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 UJ	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
ETHYLBENZENE	ug/L	700	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
M,P-XYLENE	ug/L	10000	<1 U	<10 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA	<1 U
METHYLENE CHLORIDE	ug/L	5	1.14	746	1.83	<0.5 U	<0.5 U	<0.5 U	2.04	<0.5 U	NA	<0.5 U
NAPHTHALENE	ug/L	490	<0.4 U	<4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U
N-BUTYLBENZENE	ug/L	1200	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
N-PROPYLBENZENE	ug/L	980	<0.25 U	<2.5 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U
O-XYLENE	ug/L	10000	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
STYRENE	ug/L	100	<0.25 U	<2.5 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	<5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	<5 U	<0.5 U	0.494 J	0.528 J	<0.5 U	<0.5 U	<0.5 U	NA	0.29 J
TOLUENE	ug/L	1000	<0.5 U	4.07 J	0.457 J	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	<5 U	4.5	0.593 J	0.671 J	<0.5 U	<0.5 U	<0.5 U	NA	0.347 J
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	<10 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	NA	<1 U
TRICHLOROETHENE	ug/L	5	0.63 J	46.5	153	2030	1960	<0.5 U	1.02	0.34 J	NA	74.2
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	22.5	<0.5 U	1.09	1.1	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 UJ	<5 U	1.12	0.617 J	0.631 J	<0.5 U	<0.5 U	<0.5 U	NA	8.97

Table 2-15: LHAAP-18/24 Semi-Annual Groundwater Sampling Results - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	18CPTMW01DW-062416 6/24/2016	18CPTMW01SW-062416 6/24/2016	18CPTMW03SW-060816 6/8/2016	18CPTMW04-061416 6/14/2016	18CPTMW04FD-061416 6/14/2016	18CPTMW04SW-061416 6/14/2016	18CPTMW06-060816 6/8/2016	18CPTMW07-062216 6/22/2016	18CPTMW08DW-060816 6/8/2016	18CPTMW08SW-060816 6/8/2016
1,4-Dioxane (8270D-SIM)												
1,4-DIOXANE	ug/L	9.1	<1 U	<1 U	1.15 J	1.67 J	2.01	<1 U	<1 U	<1 U	<1 U	1.39 J

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter.

Location IDs containing "FD" indicate duplicate samples.

Location IDs containing "B" indicate sample taken at bottom of screened interval and "T" indicate sample taken at top of screened interval.

Blue Highlighting Indicates Analyte Detected Above MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Level

mg/L - milligrams per liter

NA - not analyzed

PCL – Texas Residential Groundwater protective concentration level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 2-15: LHAAP-18/24 Semi-Annual Groundwater Sampling Results - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	18CPTMW10SW-062216 6/22/2016	18CPTMW12DW-062416 6/24/2016	18CPTMW12SW-062416 6/24/2016	18CPTMW14-061316 6/13/2016	18CPTMW14FD-061316 6/13/2016	18CPTMW15B-060716 6/7/2016	18CPTMW15T-060716 6/7/2016	18CPTMW16-062116 6/21/2016	18CPTMW18-062116 6/21/2016	18CPTMW19-061516 6/15/2016
Metals (6010C)												
ALUMINUM	mg/L	100	NA	NA	0.0712 J	0.4	0.377	NA	NA	NA	<0.1 U	NA
BERYLLIUM	mg/L	0.004	NA	NA	<0.01 U	<0.01 U	<0.01 U	NA	NA	NA	<0.01 U	NA
CALCIUM	mg/L		NA	NA	45.3	490	477	NA	NA	NA	337	NA
IRON	mg/L		NA	NA	3.46	0.0599 J	0.0756 J	NA	NA	NA	2.44	NA
MAGNESIUM	mg/L		NA	NA	32.8	12.5	13.5	NA	NA	NA	203	NA
POTASSIUM	mg/L		NA	NA	82	33.5	33.6	NA	NA	NA	7.88	NA
SELENIUM	mg/L	0.05	NA	NA	<0.01 U	<0.01 U	<0.01 U	NA	NA	NA	0.0077 J	NA
SODIUM	mg/L		NA	NA	235	378	373	NA	NA	NA	849	NA
Metals (6020A)												
ANTIMONY	mg/L	0.006	NA	NA	<0.001 U	<0.001 U	<0.001 U	NA	NA	NA	<0.001 U	NA
ARSENIC	mg/L	0.01	NA	NA	0.00647	0.00659	0.00731	NA	NA	NA	0.0161	NA
BARIUM	mg/L	2	NA	NA	0.667	2.42	2.47	NA	NA	NA	0.713	NA
CADMIUM	mg/L	0.005	NA	NA	<0.0006 U	<0.0006 U	<0.0006 U	NA	NA	NA	<0.0006 U	NA
CHROMIUM	mg/L	0.1	NA	NA	0.00727	0.0803	0.0794	NA	NA	NA	0.013	NA
COBALT	mg/L	6.1	NA	NA	0.00964	0.00346	0.00333	NA	NA	NA	0.0229	NA
COPPER	mg/L	1.3	NA	NA	<0.002 U	0.00404	0.0042	NA	NA	NA	0.00266 J	NA
LEAD	mg/L	0.015	NA	NA	<0.001 U	<0.001 U	<0.001 U	NA	NA	NA	<0.001 U	NA
MANGANESE	mg/L	1.1	NA	NA	0.893	0.00644	0.00655	NA	NA	NA	2.81	NA
NICKEL	mg/L	0.49	NA	NA	0.00744 J	0.0116	0.0113	NA	NA	NA	0.027	NA
SILVER	mg/L	0.51	NA	NA	<0.001 U	<0.001 U	<0.001 U	NA	NA	NA	<0.001 U	NA
THALLIUM	mg/L	0.002	NA	NA	<0.0002 U	<0.0002 U	<0.0002 U	NA	NA	NA	0.000115 J	NA
VANADIUM	mg/L	0.72	NA	NA	0.000779 J	0.00697	0.00668	NA	NA	NA	0.00313	NA
ZINC	mg/L	31	NA	NA	0.0132 J	<0.025 U	<0.025 U	NA	NA	NA	0.0175 J	NA
Perchlorate (6850)												
PERCHLORATE	ug/L	17	<0.2 U	NA	3.92	505	520	555	1630	<0.2 U	<0.2 U	5.31
Mercury (7470A)												
MERCURY	mg/L	0.002	NA	NA	<0.0002 U	<0.0002 U	<0.0002 U	NA	NA	NA	<0.0002 U	NA
Volatile Organic Compounds (8260B)												
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U
1,1-DICHLOROETHENE	ug/L	7	<1 UJ	NA	<1 UJ	<1 U	<1 U	<1 U	<1 U	NA	<1 U	<1 U
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	NA	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	NA	<0.3 U	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	NA	<1 U	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	NA	<2 U	<2 U	<2 U	<2 U	<2 U	NA	<2 U	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	NA	<0.5 U	1.66	1.52	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U

Table 2-15: LHAAP-18/24 Semi-Annual Groundwater Sampling Results - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	18CPTMW10SW-062216 6/22/2016	18CPTMW12DW-062416 6/24/2016	18CPTMW12SW-062416 6/24/2016	18CPTMW14-061316 6/13/2016	18CPTMW14FD-061316 6/13/2016	18CPTMW15B-060716 6/7/2016	18CPTMW15T-060716 6/7/2016	18CPTMW16-062116 6/21/2016	18CPTMW18-062116 6/21/2016	18CPTMW19-061516 6/15/2016
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
2-BUTANONE	ug/L	15000	<5 U	NA	<5 UJ	<5 U	<5 U	<5 U	<5 U	NA	<5 U	<5 U
2-CHLOROTOLUENE	ug/L	490	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U
2-HEXANONE	ug/L	120	<5 U	NA	<5 U	<5 U	<5 U	<5 U	<5 U	NA	<5 U	<5 U
4-CHLOROTOLUENE	ug/L	490	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	NA	<5 U	<5 U	<5 U	<5 U	<5 U	NA	<5 U	<5 U
ACETONE	ug/L	22000	<5 U	NA	<5 UJ	<5 U	<5 U	<5 U	<5 U	NA	3.39 J	<5 U
BENZENE	ug/L	5	<0.25 U	NA	<0.25 U	0.524 J	0.509 J	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U
BROMOBENZENE	ug/L	200	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
BROMOFORM	ug/L	120	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	NA	<1 U	<1 U
BROMOMETHANE	ug/L	34	<1 U	NA	<1 U	<1 UJ	<1 UJ	<1 UJ	<1 UJ	NA	<1 U	<1 UJ
CARBON DISULFIDE	ug/L	2400	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	NA	<1 U	<1 U
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
CHLOROBENZENE	ug/L	100	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U
CHLOROETHANE	ug/L	98000	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	NA	<1 U	<1 U
CHLOROFORM	ug/L	240	<0.25 U	NA	<0.25 U	2.2	2.13	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U
CHLOROMETHANE	ug/L	70	<1 U	NA	<1 UJ	<1 U	<1 U	<1 U	<1 U	NA	<1 U	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	NA	<0.5 U	25.7	25.1	0.532 J	0.566 J	NA	<0.5 U	<0.5 U
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
DIBROMOMETHANE	ug/L	120	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	NA	<0.5 UJ	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
ETHYLBENZENE	ug/L	700	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
M,P-XYLENE	ug/L	10000	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	NA	<1 U	<1 U
METHYLENE CHLORIDE	ug/L	5	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
NAPHTHALENE	ug/L	490	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 UJ	<0.4 UJ	NA	<0.4 U	<0.4 U
N-BUTYLBENZENE	ug/L	1200	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
N-PROPYLBENZENE	ug/L	980	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U
O-XYLENE	ug/L	10000	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
STYRENE	ug/L	100	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	NA	<0.5 U	0.422 J	0.464 J	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
TOLUENE	ug/L	1000	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	NA	<1 U	<1 U
TRICHLOROETHENE	ug/L	5	<0.5 U	NA	1.7	212	208	3.22	3.23	NA	<0.5 U	<0.5 U
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	NA	<0.5 UJ	<0.5 U	<0.5 U	0.319 J	0.311 J	NA	<0.5 U	<0.5 U

Table 2-15: LHAAP-18/24 Semi-Annual Groundwater Sampling Results - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	18CPTMW10SW-062216 6/22/2016	18CPTMW12DW-062416 6/24/2016	18CPTMW12SW-062416 6/24/2016	18CPTMW14-061316 6/13/2016	18CPTMW14FD-061316 6/13/2016	18CPTMW15B-060716 6/7/2016	18CPTMW15T-060716 6/7/2016	18CPTMW16-062116 6/21/2016	18CPTMW18-062116 6/21/2016	18CPTMW19-061516 6/15/2016
1,4-Dioxane (8270D-SIM)												
1,4-DIOXANE	ug/L	9.1	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter.

Location IDs containing "FD" indicate duplicate samples.

Location IDs containing "B" indicate sample taken at bottom of screened interval and "T" indicate sample taken at top of screened interval.

Blue Highlighting Indicates Analyte Detected Above MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Level

mg/L - milligrams per liter

NA - not analyzed

PCL – Texas Residential Groundwater protective concentration level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 2-15: LHAAP-18/24 Semi-Annual Groundwater Sampling Results - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	18CPTMW19SW-061516 6/15/2016	18CPTMW22DW-060916 6/9/2016	18CPTMW22DW FD-060916 6/9/2016	18CPTMW22R-060916 6/9/2016	18CPTMW22SW-060916 6/9/2016	18CPTMW23-061516 6/15/2016	18CPTMW23SW-061516 6/15/2016	18CPTMW24-061316 6/13/2016	18CPTMW26SW-060916 6/9/2016	17WW08-061016 6/10/2016
Metals (6010C)												
ALUMINUM	mg/L	100	NA	NA	NA	NA	NA	NA	NA	0.109 J	0.158 J	1.01
BERYLLIUM	mg/L	0.004	NA	NA	NA	NA	NA	NA	NA	<0.01 U	<0.01 U	<0.01 U
CALCIUM	mg/L		NA	NA	NA	NA	NA	NA	NA	431	61.4	20.5
IRON	mg/L		NA	NA	NA	NA	NA	NA	NA	9.62	72.2	12.8
MAGNESIUM	mg/L		NA	NA	NA	NA	NA	NA	NA	265	34.1	12.3
POTASSIUM	mg/L		NA	NA	NA	NA	NA	NA	NA	5.86	3.46	1.94 J
SELENIUM	mg/L	0.05	NA	NA	NA	NA	NA	NA	NA	<0.01 U	0.00586 J	<0.01 U
SODIUM	mg/L		NA	NA	NA	NA	NA	NA	NA	1090	320	136
Metals (6020A)												
ANTIMONY	mg/L	0.006	NA	NA	NA	NA	NA	NA	NA	<0.001 U	<0.001 U	<0.001 U
ARSENIC	mg/L	0.01	NA	NA	NA	NA	NA	NA	NA	0.0161	0.0064	0.00435
BARIUM	mg/L	2	NA	NA	NA	NA	NA	NA	NA	10.3	0.635	0.148
CADMIUM	mg/L	0.005	NA	NA	NA	NA	NA	NA	NA	<0.0006 U	<0.0006 U	0.00131
CHROMIUM	mg/L	0.1	NA	NA	NA	NA	NA	NA	NA	0.00409	0.00237 J	0.507
COBALT	mg/L	6.1	NA	NA	NA	NA	NA	NA	NA	0.00662	0.000803 J	0.00709
COPPER	mg/L	1.3	NA	NA	NA	NA	NA	NA	NA	0.00296 J	0.00116 J	0.017
LEAD	mg/L	0.015	NA	NA	NA	NA	NA	NA	NA	<0.001 U	<0.001 U	0.00133 J
MANGANESE	mg/L	1.1	NA	NA	NA	NA	NA	NA	NA	0.563	1.7	0.422
NICKEL	mg/L	0.49	NA	NA	NA	NA	NA	NA	NA	0.0163	0.00238 J	0.111
SILVER	mg/L	0.51	NA	NA	NA	NA	NA	NA	NA	<0.001 U	<0.001 U	<0.001 U
THALLIUM	mg/L	0.002	NA	NA	NA	NA	NA	NA	NA	<0.0002 U	<0.0002 U	<0.0002 U
VANADIUM	mg/L	0.72	NA	NA	NA	NA	NA	NA	NA	0.00192 J	0.00101 J	<0.001 U
ZINC	mg/L	31	NA	NA	NA	NA	NA	NA	NA	<0.025 U	<0.025 U	0.0388 J
Perchlorate (6850)												
PERCHLORATE	ug/L	17	1.25	1.21 J	0.473 J	0.917	10200	2310	0.407	99	6.42	7.13
Mercury (7470A)												
MERCURY	mg/L	0.002	NA	NA	NA	NA	NA	NA	NA	<0.0002 U	<0.0002 U	<0.0002 U
Volatile Organic Compounds (8260B)												
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 UJ	<0.4 U	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	0.858 J	<0.5 U	<0.5 UJ	<0.5 U	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	1.06	<0.25 U	<0.25 UJ	<0.25 U	<0.25 U
1,1-DICHLOROETHENE	ug/L	7	<1 U	<1 U	<1 U	<1 U	<1 U	10.1	<1 U	<1 UJ	<1 U	<1 U
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 UJ	<0.3 U	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 U	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 UJ	<0.4 U	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 UJ	<2 U	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	214	<0.5 U	<0.5 UJ	<0.5 U	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 UJ	<0.4 U	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	<0.5 U

Table 2-15: LHAAP-18/24 Semi-Annual Groundwater Sampling Results - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	18CPTMW19SW-061516 6/15/2016	18CPTMW22DW-060916 6/9/2016	18CPTMW22DW FD-060916 6/9/2016	18CPTMW22R-060916 6/9/2016	18CPTMW22SW-060916 6/9/2016	18CPTMW23-061516 6/15/2016	18CPTMW23SW-061516 6/15/2016	18CPTMW24-061316 6/13/2016	18CPTMW26SW-060916 6/9/2016	17WW08-061016 6/10/2016
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 UJ	<0.4 U	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U	<0.25 U
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	<0.5 U
2-BUTANONE	ug/L	15000	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 UJ	<5 U	<5 U
2-CHLOROTOLUENE	ug/L	490	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U	<0.25 U
2-HEXANONE	ug/L	120	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 UJ	<5 U	<5 U
4-CHLOROTOLUENE	ug/L	490	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 UJ	<5 U	<5 U
ACETONE	ug/L	22000	<5 U	<5 U	<5 U	<5 U	15.4	<5 U	9.67 J	<5 UJ	7.39 J	<5 U
BENZENE	ug/L	5	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	1.59	<0.25 U	<0.25 UJ	<0.25 U	<0.25 U
BROMOBENZENE	ug/L	200	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	0.388 J	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 UJ	<0.4 U	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	<0.5 U
BROMOFORM	ug/L	120	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 U	<1 U
BROMOMETHANE	ug/L	34	<1 U	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1 U	<1 U	<1 UJ	<1 UJ	<1 U
CARBON DISULFIDE	ug/L	2400	0.599 J	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 U	<1 U
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	<0.5 U
CHLOROBENZENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U	<0.25 U
CHLOROETHANE	ug/L	98000	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 U	<1 U
CHLOROFORM	ug/L	240	0.25 J	<0.25 U	<0.25 U	<0.25 U	<0.25 U	5.45	<0.25 U	<0.25 UJ	<0.25 U	<0.25 U
CHLOROMETHANE	ug/L	70	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 U	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	232	<0.5 U	<0.5 UJ	<0.5 U	<0.5 U
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	<0.5 U
DIBROMOMETHANE	ug/L	120	0.506 J	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	<0.5 U
ETHYLBENZENE	ug/L	700	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	<0.5 U
M,P-XYLENE	ug/L	10000	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 U	<1 U
METHYLENE CHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	0.534 J	0.256 J	<0.5 U	<0.5 UJ	<0.5 U	<0.5 U
NAPHTHALENE	ug/L	490	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 UJ	<0.4 U	<0.4 U
N-BUTYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	<0.5 U
N-PROPYLBENZENE	ug/L	980	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U	<0.25 U
O-XYLENE	ug/L	10000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	<0.5 U
STYRENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	1.22	<0.5 U	<0.5 UJ	<0.5 U	<0.5 U
TOLUENE	ug/L	1000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	4.09	<0.5 U	<0.5 UJ	<0.5 U	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 U	<1 U
TRICHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	0.633 J	3820	<0.5 U	<0.5 UJ	<0.5 U	<0.5 U
TRICHLOROFLUOROMETHANE	ug/L	7300	0.484 J	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	5.89	<0.5 U	<0.5 UJ	<0.5 U	<0.5 U

Table 2-15: LHAAP-18/24 Semi-Annual Groundwater Sampling Results - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	18CPTMW19SW-061516 6/15/2016	18CPTMW22DW-060916 6/9/2016	18CPTMW22DW FD-060916 6/9/2016	18CPTMW22R-060916 6/9/2016	18CPTMW22SW-060916 6/9/2016	18CPTMW23-061516 6/15/2016	18CPTMW23SW-061516 6/15/2016	18CPTMW24-061316 6/13/2016	18CPTMW26SW-060916 6/9/2016	17WW08-061016 6/10/2016
1,4-Dioxane (8270D-SIM)												
1,4-DIOXANE	ug/L	9.1	<1 U	<1 U	<1 U	<1 U	<1 U	8.02 J	<1 U	<1 U	<1 U	NA

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter.

Location IDs containing "FD" indicate duplicate samples.

Location IDs containing "B" indicate sample taken at bottom of screened interval and "T" indicate sample taken at top of screened interval.

Blue Highlighting Indicates Analyte Detected Above MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Level

mg/L - milligrams per liter

NA - not analyzed

PCL – Texas Residential Groundwater protective concentration level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 2-15: LHAAP-18/24 Semi-Annual Groundwater Sampling Results - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	18WW02-062216 6/22/2016	18WW02F-062216 6/22/2016	18WW03-061416 6/14/2016	18WW03F-061416 6/14/2016	18WW06-062016 6/20/2016	18WW06FD-062016 6/20/2016	18WW08-062016 6/20/2016	18WW09-062016 6/20/2016	18WW16-061616 6/16/2016	18WW16F-061616 6/16/2016	18WW17-062116 6/21/2016
Metals (6010C)													
ALUMINUM	mg/L	100	NA	1.12	NA	<0.1 U	NA	NA	NA	NA	NA	0.331	NA
BERYLLIUM	mg/L	0.004	NA	<0.01 U	NA	<0.01 U	NA	NA	NA	NA	NA	<0.01 U	NA
CALCIUM	mg/L		NA	7.09	NA	8.25	NA	NA	NA	NA	NA	195	NA
IRON	mg/L		NA	1.61	NA	2.77	NA	NA	NA	NA	NA	21.5	NA
MAGNESIUM	mg/L		NA	1.34	NA	5.84	NA	NA	NA	NA	NA	146	NA
POTASSIUM	mg/L		NA	2.24	NA	2.16	NA	NA	NA	NA	NA	13	NA
SELENIUM	mg/L	0.05	NA	<0.01 U	NA	<0.01 U	NA	NA	NA	NA	NA	<0.01 U	NA
SODIUM	mg/L		NA	14.1	NA	109	NA	NA	NA	NA	NA	587	NA
Metals (6020A)													
ANTIMONY	mg/L	0.006	NA	<0.001 U	NA	<0.001 U	NA	NA	NA	NA	NA	0.00134 J	NA
ARSENIC	mg/L	0.01	NA	0.000926 J	NA	0.000919 J	NA	NA	NA	NA	NA	0.00894	NA
BARIUM	mg/L	2	NA	0.0479	NA	0.173	NA	NA	NA	NA	NA	0.186	NA
CADMIUM	mg/L	0.005	NA	<0.0006 U	NA	<0.0006 U	NA	NA	NA	NA	NA	0.00645	NA
CHROMIUM	mg/L	0.1	NA	0.00315 J	NA	<0.002 U	NA	NA	NA	NA	NA	4.62	NA
COBALT	mg/L	6.1	NA	<0.001 U	NA	<0.001 U	NA	NA	NA	NA	NA	0.355	NA
COPPER	mg/L	1.3	NA	0.00608	NA	<0.002 U	NA	NA	NA	NA	NA	0.828	NA
LEAD	mg/L	0.015	NA	0.00127 J	NA	<0.001 U	NA	NA	NA	NA	NA	<0.001 U	NA
MANGANESE	mg/L	1.1	NA	0.0851	NA	0.096	NA	NA	NA	NA	NA	3.12	NA
NICKEL	mg/L	0.49	NA	0.00419 J	NA	<0.004 U	NA	NA	NA	NA	NA	14.3	NA
SILVER	mg/L	0.51	NA	<0.001 U	NA	<0.001 U	NA	NA	NA	NA	NA	<0.001 U	NA
THALLIUM	mg/L	0.002	NA	<0.0002 U	NA	<0.0002 U	NA	NA	NA	NA	NA	<0.0002 U	NA
VANADIUM	mg/L	0.72	NA	0.00226	NA	<0.001 U	NA	NA	NA	NA	NA	<0.02 U	NA
ZINC	mg/L	31	NA	<0.025 U	NA	<0.025 U	NA	NA	NA	NA	NA	0.158	NA
Perchlorate (6850)													
PERCHLORATE	ug/L	17	<0.2 U	NA	<0.2 U	NA	<0.2 U	<0.2 U	<0.2 U	<0.2 U	5.76	NA	82900
Mercury (7470A)													
MERCURY	mg/L	0.002	NA	<0.0002 U	NA	<0.0002 U	NA	NA	NA	NA	NA	<0.0002 U	NA
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	NA	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 UJ	<0.4 UJ	<0.4 U	NA	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	<0.25 UJ	<0.25 U	NA	<0.25 U
1,1-DICHLOROETHENE	ug/L	7	<1 UJ	NA	<1 U	NA	<1 U	<1 U	<1 UJ	<1 UJ	<1 U	NA	<1 U
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	NA	<0.3 U	NA	<0.3 U	<0.3 U	<0.3 UJ	<0.3 UJ	<0.3 U	NA	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	NA	<1 U	NA	<1 U	<1 U	<1 UJ	<1 UJ	<1 U	NA	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	NA	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 UJ	<0.4 UJ	<0.4 U	NA	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	NA	<2 U	NA	<2 U	<2 U	<2 UJ	<2 UJ	<2 U	NA	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	<0.25 UJ	<0.25 U	NA	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	NA	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 UJ	<0.4 UJ	<0.4 U	NA	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U

Table 2-15: LHAAP-18/24 Semi-Annual Groundwater Sampling Results - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	18WW02-062216 6/22/2016	18WW02F-062216 6/22/2016	18WW03-061416 6/14/2016	18WW03F-061416 6/14/2016	18WW06-062016 6/20/2016	18WW06FD-062016 6/20/2016	18WW08-062016 6/20/2016	18WW09-062016 6/20/2016	18WW16-061616 6/16/2016	18WW16F-061616 6/16/2016	18WW17-062116 6/21/2016
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	NA	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 UJ	<0.4 UJ	<0.4 U	NA	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	<0.25 UJ	<0.25 U	NA	<0.25 U
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U
2-BUTANONE	ug/L	15000	<5 U	NA	<5 U	NA	<5 U	<5 U	<5 UJ	<5 UJ	<5 U	NA	<5 U
2-CHLOROTOLUENE	ug/L	490	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	<0.25 UJ	<0.25 U	NA	<0.25 U
2-HEXANONE	ug/L	120	<5 U	NA	<5 U	NA	<5 U	<5 U	<5 UJ	<5 UJ	<5 UJ	NA	<5 U
4-CHLOROTOLUENE	ug/L	490	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	NA	<5 U	NA	<5 U	<5 U	<5 UJ	<5 UJ	<5 U	NA	<5 U
ACETONE	ug/L	22000	4.31 J	NA	<5 U	NA	<5 U	<5 U	<5 UJ	<5 UJ	<5 U	NA	<5 U
BENZENE	ug/L	5	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	<0.25 UJ	<0.25 U	NA	<0.25 U
BROMOBENZENE	ug/L	200	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	<0.25 UJ	<0.25 U	NA	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	NA	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 UJ	<0.4 UJ	<0.4 U	NA	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U
BROMOFORM	ug/L	120	<1 U	NA	<1 U	NA	<1 U	<1 U	<1 UJ	<1 UJ	<1 U	NA	<1 U
BROMOMETHANE	ug/L	34	<1 U	NA	<1 U	NA	<1 U	<1 U	<1 UJ	<1 UJ	<1 U	NA	<1 U
CARBON DISULFIDE	ug/L	2400	<1 U	NA	<1 U	NA	<1 U	<1 U	<1 UJ	<1 UJ	<1 U	NA	<1 U
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U
CHLOROBENZENE	ug/L	100	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	<0.25 UJ	<0.25 U	NA	<0.25 U
CHLOROETHANE	ug/L	98000	<1 U	NA	<1 U	NA	<1 U	<1 U	<1 UJ	<1 UJ	<1 U	NA	<1 U
CHLOROFORM	ug/L	240	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	<0.25 UJ	<0.25 U	NA	0.275 J
CHLOROMETHANE	ug/L	70	<1 U	NA	<1 U	NA	<1 U	<1 U	<1 UJ	<1 UJ	0.605 J	NA	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	0.703 J
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U
DIBROMOMETHANE	ug/L	120	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U
ETHYLBENZENE	ug/L	700	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U
M,P-XYLENE	ug/L	10000	<1 U	NA	<1 U	NA	<1 U	<1 U	<1 UJ	<1 UJ	<1 U	NA	<1 U
METHYLENE CHLORIDE	ug/L	5	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U
NAPHTHALENE	ug/L	490	<0.4 U	NA	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 UJ	<0.4 UJ	<0.4 U	NA	<0.4 U
N-BUTYLBENZENE	ug/L	1200	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U
N-PROPYLBENZENE	ug/L	980	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	<0.25 UJ	<0.25 U	NA	<0.25 U
O-XYLENE	ug/L	10000	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U
STYRENE	ug/L	100	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	<0.25 UJ	<0.25 U	NA	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U
TOLUENE	ug/L	1000	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	NA	<1 U	NA	<1 U	<1 U	<1 UJ	<1 UJ	<1 U	NA	<1 U
TRICHLOROETHENE	ug/L	5	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	46.3
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U

Table 2-15: LHAAP-18/24 Semi-Annual Groundwater Sampling Results - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	18WW02-062216 6/22/2016	18WW02F-062216 6/22/2016	18WW03-061416 6/14/2016	18WW03F-061416 6/14/2016	18WW06-062016 6/20/2016	18WW06FD-062016 6/20/2016	18WW08-062016 6/20/2016	18WW09-062016 6/20/2016	18WW16-061616 6/16/2016	18WW16F-061616 6/16/2016	18WW17-062116 6/21/2016
1,4-Dioxane (8270D-SIM)													
1,4-DIOXANE	ug/L	9.1	<1 U	NA	<1 U	NA	<1 U	<1 U	<1 UJ	<1 UJ	NA	NA	NA

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter.

Location IDs containing "FD" indicate duplicate samples.

Location IDs containing "B" indicate sample taken at bottom of screened interval and "T" indicate sample taken at top of screened interval.

Blue Highlighting Indicates Analyte Detected Above MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Level

mg/L - milligrams per liter

NA - not analyzed

PCL – Texas Residential Groundwater protective concentration level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 2-15: LHAAP-18/24 Semi-Annual Groundwater Sampling Results - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	18WW18-062116 6/21/2016	18WW19-062016 6/20/2016	18WW19F-062016 6/20/2016	18WW19FD-062016 6/20/2016	18WW19FFD-062016 6/20/2016	18WW20-062016 6/20/2016	18WW22-062116 6/21/2016	18WW24-061016 6/10/2016	18WW24F-061016 6/10/2016	18WW25-062916 6/29/2016	18WW25F-062916 6/29/2016
Metals (6010C)													
ALUMINUM	mg/L	100	<0.1 U	NA	0.342	NA	0.369	0.0733 J	2.57	NA	0.466	NA	0.12 J
BERYLLIUM	mg/L	0.004	<0.01 U	NA	<0.01 U	NA	<0.01 U	<0.01 U	<0.01 U	NA	<0.01 U	NA	<0.01 U
CALCIUM	mg/L		49.5	NA	8.66	NA	8.45	2.78	193	NA	6.94	NA	32
IRON	mg/L		78	NA	4.86	NA	4.92	5.75	<0.1 U	NA	0.284	NA	19.6
MAGNESIUM	mg/L		34	NA	1.59	NA	1.46	2.14	1.09	NA	4.4	NA	19.6
POTASSIUM	mg/L		3.75	NA	1.85 J	NA	1.74 J	1.32 J	8.42	NA	1.58 J	NA	2.44
SELENIUM	mg/L	0.05	<0.01 U	NA	<0.01 U	NA	<0.01 U	<0.01 U	0.00528 J	NA	<0.01 U	NA	<0.01 U
SODIUM	mg/L		146	NA	5.07	NA	4.86	24.6	60.6	NA	131	NA	44
Metals (6020A)													
ANTIMONY	mg/L	0.006	<0.001 U	NA	<0.001 U	NA	<0.001 U	<0.001 U	<0.001 U	NA	<0.001 U	NA	<0.001 U
ARSENIC	mg/L	0.01	0.00541	NA	0.000865 J	NA	0.00091 J	<0.001 U	0.00523	NA	0.00248	NA	0.00243
BARIUM	mg/L	2	1.01	NA	0.0557	NA	0.0588	0.0918	0.353	NA	0.0968	NA	0.391 J
CADMIUM	mg/L	0.005	<0.0006 U	NA	<0.0006 U	NA	<0.0006 U	<0.0006 U	<0.0006 U	NA	<0.0006 U	NA	<0.0006 U
CHROMIUM	mg/L	0.1	0.00126 J	NA	0.00184 J	NA	0.00219 J	0.00274 J	0.114	NA	0.00142 J	NA	<0.002 U
COBALT	mg/L	6.1	<0.001 U	NA	0.00116 J	NA	0.00119 J	0.00808	0.0011 J	NA	0.00207	NA	0.0135
COPPER	mg/L	1.3	0.00107 J	NA	0.00117 J	NA	0.00131 J	<0.002 U	0.00449	NA	0.002 J	NA	<0.002 U
LEAD	mg/L	0.015	<0.001 U	NA	<0.001 U	NA	<0.001 U	<0.001 U	<0.001 U	NA	<0.001 U	NA	<0.001 U
MANGANESE	mg/L	1.1	1.55	NA	0.221	NA	0.221	0.279	0.00227 J	NA	0.609	NA	5.29 J
NICKEL	mg/L	0.49	0.0497	NA	0.00429 J	NA	0.00449 J	0.00996	0.00569 J	NA	0.022	NA	0.00596 J
SILVER	mg/L	0.51	<0.001 U	NA	<0.001 U	NA	<0.001 U	<0.001 U	<0.001 U	NA	<0.001 U	NA	<0.001 U
THALLIUM	mg/L	0.002	<0.0002 U	NA	<0.0002 U	NA	<0.0002 U	<0.0002 U	<0.0002 U	NA	<0.0002 U	NA	<0.0002 U
VANADIUM	mg/L	0.72	<0.001 U	NA	0.0017 J	NA	0.00184 J	<0.001 U	0.0767	NA	0.00093 J	NA	<0.001 U
ZINC	mg/L	31	<0.025 U	NA	<0.025 U	NA	<0.025 U	<0.025 U	<0.025 U	NA	0.075	NA	<0.025 U
Perchlorate (6850)													
PERCHLORATE	ug/L	17	<0.2 U	<0.2 U	NA	<0.2 U	NA	<0.2 U	1.53	0.228 J	NA	<0.2 U	NA
Mercury (7470A)													
MERCURY	mg/L	0.002	<0.0002 U	NA	<0.0002 U	NA	<0.0002 U	<0.0002 U	<0.0002 U	NA	<0.0002 U	NA	<0.0002 U
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	<0.5 UJ	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<0.5 UJ	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	<0.4 UJ	NA	<0.4 U	NA	<0.4 U	<0.4 UJ	<0.4 U	NA	<0.4 U	NA
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<0.5 UJ	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	<0.25 UJ	NA	<0.25 U	NA	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U	NA
1,1-DICHLOROETHENE	ug/L	7	<1 U	<1 UJ	NA	<1 U	NA	<1 U	<1 UJ	<1 U	NA	<1 U	NA
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	<0.5 UJ	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	<0.3 UJ	NA	<0.3 U	NA	<0.3 U	<0.3 UJ	<0.3 U	NA	<0.3 U	NA
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	<1 UJ	NA	<1 U	NA	<1 U	<1 UJ	<1 U	NA	<1 U	NA
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	<0.4 UJ	NA	<0.4 U	NA	<0.4 U	<0.4 UJ	<0.4 U	NA	<0.4 U	NA
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 UJ	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	<2 UJ	NA	<2 U	NA	<2 U	<2 UJ	<2 U	NA	<2 U	NA
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	<0.5 UJ	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	<0.25 UJ	NA	<0.25 U	NA	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U	NA
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<0.5 UJ	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	<0.4 UJ	NA	<0.4 U	NA	<0.4 U	<0.4 UJ	<0.4 U	NA	<0.4 U	NA
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 UJ	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	<0.5 UJ	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA

Table 2-15: LHAAP-18/24 Semi-Annual Groundwater Sampling Results - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	18WW18-062116 6/21/2016	18WW19-062016 6/20/2016	18WW19F-062016 6/20/2016	18WW19FD-062016 6/20/2016	18WW19FFD-062016 6/20/2016	18WW20-062016 6/20/2016	18WW22-062116 6/21/2016	18WW24-061016 6/10/2016	18WW24F-061016 6/10/2016	18WW25-062916 6/29/2016	18WW25F-062916 6/29/2016
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	<0.4 UJ	NA	<0.4 U	NA	<0.4 U	<0.4 UJ	<0.4 U	NA	<0.4 U	NA
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	<0.25 UJ	NA	<0.25 U	NA	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U	NA
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	<0.5 UJ	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA
2-BUTANONE	ug/L	15000	<5 U	<5 UJ	NA	<5 U	NA	<5 U	<5 UJ	<5 U	NA	<5 U	NA
2-CHLOROTOLUENE	ug/L	490	<0.25 U	<0.25 UJ	NA	<0.25 U	NA	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U	NA
2-HEXANONE	ug/L	120	<5 U	<5 UJ	NA	<5 U	NA	<5 U	<5 UJ	<5 U	NA	<5 U	NA
4-CHLOROTOLUENE	ug/L	490	<0.5 U	<0.5 UJ	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	<5 UJ	NA	<5 U	NA	<5 U	<5 UJ	<5 U	NA	<5 U	NA
ACETONE	ug/L	22000	4.41 J	<5 UJ	NA	<5 U	NA	<5 U	<5 UJ	<5 U	NA	2.89 J	NA
BENZENE	ug/L	5	<0.25 U	<0.25 UJ	NA	<0.25 U	NA	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U	NA
BROMOBENZENE	ug/L	200	<0.25 U	<0.25 UJ	NA	<0.25 U	NA	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U	NA
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	<0.4 UJ	NA	<0.4 U	NA	<0.4 U	<0.4 UJ	<0.4 U	NA	<0.4 U	NA
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	<0.5 UJ	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA
BROMOFORM	ug/L	120	<1 U	<1 UJ	NA	<1 U	NA	<1 U	<1 UJ	<1 U	NA	<1 U	NA
BROMOMETHANE	ug/L	34	<1 U	<1 UJ	NA	<1 U	NA	<1 U	<1 UJ	<1 U	NA	<1 UJ	NA
CARBON DISULFIDE	ug/L	2400	<1 U	<1 UJ	NA	<1 U	NA	<1 U	<1 UJ	<1 U	NA	<1 U	NA
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	<0.5 UJ	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA
CHLOROBENZENE	ug/L	100	<0.25 U	<0.25 UJ	NA	<0.25 U	NA	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U	NA
CHLOROETHANE	ug/L	98000	<1 U	<1 UJ	NA	<1 U	NA	<1 U	<1 UJ	<1 U	NA	<1 U	NA
CHLOROFORM	ug/L	240	<0.25 U	<0.25 UJ	NA	<0.25 U	NA	<0.25 U	<0.25 UJ	<0.25 U	NA	0.45 J	NA
CHLOROMETHANE	ug/L	70	<1 U	<1 UJ	NA	<1 U	NA	<1 U	<1 UJ	<1 U	NA	<1 U	NA
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	<0.5 UJ	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	<0.5 UJ	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	<0.5 UJ	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA
DIBROMOMETHANE	ug/L	120	<0.5 U	<0.5 UJ	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	<0.5 UJ	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA
ETHYLBENZENE	ug/L	700	<0.5 U	<0.5 UJ	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	<0.5 UJ	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	<0.5 UJ	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA
M,P-XYLENE	ug/L	10000	<1 U	<1 UJ	NA	<1 U	NA	<1 U	<1 UJ	<1 U	NA	<1 U	NA
METHYLENE CHLORIDE	ug/L	5	<0.5 U	<0.5 UJ	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA
NAPHTHALENE	ug/L	490	<0.4 U	<0.4 UJ	NA	<0.4 U	NA	<0.4 U	<0.4 UJ	<0.4 U	NA	<0.4 U	NA
N-BUTYLBENZENE	ug/L	1200	<0.5 U	<0.5 UJ	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA
N-PROPYLBENZENE	ug/L	980	<0.25 U	<0.25 UJ	NA	<0.25 U	NA	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U	NA
O-XYLENE	ug/L	10000	<0.5 U	<0.5 UJ	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	<0.5 UJ	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 UJ	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA
STYRENE	ug/L	100	<0.25 U	<0.25 UJ	NA	<0.25 U	NA	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U	NA
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 UJ	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA
TETRACHLOROETHENE	ug/L	5	<0.5 U	<0.5 UJ	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA
TOLUENE	ug/L	1000	<0.5 U	<0.5 UJ	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	<0.5 UJ	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	<1 UJ	NA	<1 U	NA	<1 U	<1 UJ	<1 U	NA	<1 U	NA
TRICHLOROETHENE	ug/L	5	<0.5 U	<0.5 UJ	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	<0.5 UJ	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 UJ	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA

Table 2-15: LHAAP-18/24 Semi-Annual Groundwater Sampling Results - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	18WW18-062116 6/21/2016	18WW19-062016 6/20/2016	18WW19F-062016 6/20/2016	18WW19FD-062016 6/20/2016	18WW19FFD-062016 6/20/2016	18WW20-062016 6/20/2016	18WW22-062116 6/21/2016	18WW24-061016 6/10/2016	18WW24F-061016 6/10/2016	18WW25-062916 6/29/2016	18WW25F-062916 6/29/2016
1,4-Dioxane (8270D-SIM)													
1,4-DIOXANE	ug/L	9.1	<1 U	NA	NA	NA	NA	<1 UJ	<1 U	NA	NA	<1 U	NA

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter.

Location IDs containing "FD" indicate duplicate samples.

Location IDs containing "B" indicate sample taken at bottom of screened interval and "T" indicate sample taken at top of screened interval.

Blue Highlighting Indicates Analyte Detected Above MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Level

mg/L - milligrams per liter

NA - not analyzed

PCL – Texas Residential Groundwater protective concentration level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 2-15: LHAAP-18/24 Semi-Annual Groundwater Sampling Results - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	AWD1B-060716 6/7/2016	AWD1T-060716 6/7/2016	AWD4B-060716 6/7/2016	AWD4T-060716 6/7/2016	C01-061716 6/17/2016	C01FD-061716 6/17/2016	C02-061716 6/17/2016	C03-061416 6/14/2016	C04-062116 6/21/2016	C04F-062116 6/21/2016	C04FD-062116 6/21/2016
Metals (6010C)													
ALUMINUM	mg/L	100	NA	NA	5.34	5.71	<0.1 U	<0.1 U	NA	<0.1 U	NA	<0.1 U	NA
BERYLLIUM	mg/L	0.004	NA	NA	<0.01 U	<0.01 U	<0.01 U	<0.01 U	NA	<0.01 U	NA	<0.01 U	NA
CALCIUM	mg/L		NA	NA	8.65	8.62	91	90.3	NA	55.4	NA	13.9	NA
IRON	mg/L		NA	NA	4.64	5.13	0.189 J	0.18 J	NA	101	NA	7.76	NA
MAGNESIUM	mg/L		NA	NA	5.75	5.98	68.5	66.6	NA	35.8	NA	7.73	NA
POTASSIUM	mg/L		NA	NA	<1 U	<1 U	2.11	2.16	NA	4.01	NA	1.89 J	NA
SELENIUM	mg/L	0.05	NA	NA	<0.01 U	<0.01 U	<0.01 U	<0.01 U	NA	<0.01 U	NA	<0.01 U	NA
SODIUM	mg/L		NA	NA	72	70.6	334	336	NA	169	NA	27.9	NA
Metals (6020A)													
ANTIMONY	mg/L	0.006	NA	NA	<0.001 U	<0.001 U	<0.001 U	<0.001 U	NA	<0.001 U	NA	<0.001 U	NA
ARSENIC	mg/L	0.01	NA	NA	0.00124 J	0.0017 J	0.00438	0.00431	NA	0.00684	NA	0.000967 J	NA
BARIUM	mg/L	2	NA	NA	0.195	0.205	0.441	0.471	NA	1.56	NA	0.311	NA
CADMIUM	mg/L	0.005	NA	NA	<0.0006 U	<0.0006 U	0.000345 J	0.00034 J	NA	<0.0006 U	NA	<0.0006 U	NA
CHROMIUM	mg/L	0.1	NA	NA	0.0892	0.0946	0.00251 J	0.00247 J	NA	<0.002 U	NA	0.00355 J	NA
COBALT	mg/L	6.1	NA	NA	0.00687	0.0065	0.00101 J	0.000974 J	NA	0.000578 J	NA	<0.001 U	NA
COPPER	mg/L	1.3	NA	NA	0.00717	0.00851	0.00135 J	0.00128 J	NA	<0.002 U	NA	<0.002 U	NA
LEAD	mg/L	0.015	NA	NA	0.00258	0.00305	<0.001 U	<0.001 U	NA	<0.001 U	NA	<0.001 U	NA
MANGANESE	mg/L	1.1	NA	NA	0.0529	0.0466	0.0324	0.0318	NA	1.85	NA	0.287	NA
NICKEL	mg/L	0.49	NA	NA	0.283	0.23	0.00428 J	0.00424 J	NA	<0.004 U	NA	<0.004 U	NA
SILVER	mg/L	0.51	NA	NA	<0.001 U	<0.001 U	<0.001 U	<0.001 U	NA	<0.001 U	NA	<0.001 U	NA
THALLIUM	mg/L	0.002	NA	NA	<0.0002 U	0.00012 J	<0.0002 U	<0.0002 U	NA	<0.0002 U	NA	<0.0002 U	NA
VANADIUM	mg/L	0.72	NA	NA	0.0124	0.0174	0.00242	0.00266	NA	<0.001 U	NA	<0.001 U	NA
ZINC	mg/L	31	NA	NA	0.026 J	0.0348 J	<0.025 U	<0.025 U	NA	0.0153 J	NA	<0.025 U	NA
Perchlorate (6850)													
PERCHLORATE	ug/L	17	4.92	<0.2 U	726	712	3.15	3.02	<0.2 U	5.48	<0.2 U	NA	<0.2 U
Mercury (7470A)													
MERCURY	mg/L	0.002	NA	NA	<0.0002 U	<0.0002 U	<0.0002 U	<0.0002 U	NA	<0.0002 U	NA	<0.0002 U	NA
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<40 U	<40 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 UJ	<0.4 U	NA	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	113	90.5 J	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U
1,1-DICHLOROETHENE	ug/L	7	158 J	114 J	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 U	NA	<1 U
1,1-DICHLOROPROPENE	ug/L	9.1	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<30 U	<30 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 UJ	<0.3 U	NA	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<100 U	<100 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 U	NA	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<40 U	<40 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 UJ	<0.4 U	NA	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<200 U	<200 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 UJ	<2 U	NA	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	<25 U	<25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	158	143	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	<40 U	<40 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 UJ	<0.4 U	NA	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U

Table 2-15: LHAAP-18/24 Semi-Annual Groundwater Sampling Results - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	AWD1B-060716 6/7/2016	AWD1T-060716 6/7/2016	AWD4B-060716 6/7/2016	AWD4T-060716 6/7/2016	C01-061716 6/17/2016	C01FD-061716 6/17/2016	C02-061716 6/17/2016	C03-061416 6/14/2016	C04-062116 6/21/2016	C04F-062116 6/21/2016	C04FD-062116 6/21/2016
1,3-DICHLOROPROPANE	ug/L	9.1	<40 U	<40 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 UJ	<0.4 U	NA	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	<25 U	<25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U
2,2-DICHLOROPROPANE	ug/L	13	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U
2-BUTANONE	ug/L	15000	<500 U	<500 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 UJ	<5 U	NA	<5 U
2-CHLOROTOLUENE	ug/L	490	<25 U	<25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U
2-HEXANONE	ug/L	120	<500 U	<500 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 UJ	<5 U	NA	<5 U
4-CHLOROTOLUENE	ug/L	490	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	<500 U	<500 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 UJ	<5 U	NA	<5 U
ACETONE	ug/L	22000	<500 U	<500 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 UJ	3.24 J	NA	<5 U
BENZENE	ug/L	5	<25 U	<25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U
BROMOBENZENE	ug/L	200	<25 U	<25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	<40 U	<40 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 UJ	<0.4 U	NA	<0.4 U
BROMODICHLOROMETHANE	ug/L	15	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U
BROMOFORM	ug/L	120	<100 U	<100 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 U	NA	<1 U
BROMOMETHANE	ug/L	34	<100 U	<100 U	<1 UJ	<1 UJ	<1 U	<1 U	<1 U	<1 UJ	<1 U	NA	<1 U
CARBON DISULFIDE	ug/L	2400	<100 U	<100 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 U	NA	<1 U
CARBON TETRACHLORIDE	ug/L	5	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U
CHLOROBENZENE	ug/L	100	<25 U	<25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U
CHLOROETHANE	ug/L	98000	<100 U	<100 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 U	NA	<1 U
CHLOROFORM	ug/L	240	<25 U	<25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U
CHLOROMETHANE	ug/L	70	<100 U	<100 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 U	NA	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	14100	12000	0.338 J	0.274 J	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U
DIBROMOMETHANE	ug/L	120	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U
ETHYLBENZENE	ug/L	700	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U
M,P-XYLENE	ug/L	10000	<100 U	<100 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 U	NA	<1 U
METHYLENE CHLORIDE	ug/L	5	95.1 J	<50 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U
NAPHTHALENE	ug/L	490	<40 U	<40 U	<0.4 UJ	<0.4 UJ	<0.4 U	<0.4 U	<0.4 U	<0.4 UJ	<0.4 U	NA	<0.4 U
N-BUTYLBENZENE	ug/L	1200	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U
N-PROPYLBENZENE	ug/L	980	<25 U	<25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U
O-XYLENE	ug/L	10000	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U
STYRENE	ug/L	100	<25 U	<25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U
TETRACHLOROETHENE	ug/L	5	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U
TOLUENE	ug/L	1000	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<100 U	<100 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 U	NA	<1 U
TRICHLOROETHENE	ug/L	5	7120	6300	2.4	2.21	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U
TRICHLOROFLUOROMETHANE	ug/L	7300	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U
VINYL CHLORIDE	ug/L	2	256	177	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U

Table 2-15: LHAAP-18/24 Semi-Annual Groundwater Sampling Results - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	AWD1B-060716 6/7/2016	AWD1T-060716 6/7/2016	AWD4B-060716 6/7/2016	AWD4T-060716 6/7/2016	C01-061716 6/17/2016	C01FD-061716 6/17/2016	C02-061716 6/17/2016	C03-061416 6/14/2016	C04-062116 6/21/2016	C04F-062116 6/21/2016	C04FD-062116 6/21/2016
1,4-Dioxane (8270D-SIM)													
1,4-DIOXANE	ug/L	9.1	7.14	5.74	<1 U	<1 U	NA	NA	NA	<1 U	NA	NA	NA

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter.

Location IDs containing "FD" indicate duplicate samples.

Location IDs containing "B" indicate sample taken at bottom of screened interval and "T" indicate sample taken at top of screened interval.

Blue Highlighting Indicates Analyte Detected Above MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Level

mg/L - milligrams per liter

NA - not analyzed

PCL – Texas Residential Groundwater protective concentration level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 2-15: LHAAP-18/24 Semi-Annual Groundwater Sampling Results - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	C04FFD-062116 6/21/2016	C08-061416 6/14/2016	MW1-061016 6/10/2016	MW2-062416 6/24/2016	MW3-061016 6/10/2016	MW5-060816 6/8/2016	MW7-062416 6/24/2016	MW8-060916 6/9/2016	MW9-062216 6/22/2016	MW10-060916 6/9/2016	MW10F-060916 6/9/2016
Metals (6010C)													
ALUMINUM	mg/L	100	<0.1 U	0.114 J	0.0763 J	<0.1 U	<0.1 U	0.0635 J	NA	0.122 J	NA	NA	0.0804 J
BERYLLIUM	mg/L	0.004	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	NA	<0.01 U	NA	NA	<0.01 U
CALCIUM	mg/L		14	239	47.2	41.9	30.2	24.9	NA	8.3	NA	NA	7.72
IRON	mg/L		7.21	0.627	20.2	4.01	0.418	1	NA	0.888	NA	NA	5.73
MAGNESIUM	mg/L		7.47	143	41.4	30.2	20.3	26.1	NA	7.45	NA	NA	2.22
POTASSIUM	mg/L		1.89 J	2.18	3.24	3.43	2.1	2.42	NA	0.503 J	NA	NA	2.09
SELENIUM	mg/L	0.05	0.00539 J	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	NA	0.00533 J	NA	NA	<0.01 U
SODIUM	mg/L		27.5	761	299	118	260	124	NA	191	NA	NA	9.56
Metals (6020A)													
ANTIMONY	mg/L	0.006	<0.001 U	<0.001 U	<0.001 U	<0.001 U	<0.001 U	<0.001 U	NA	<0.001 U	NA	NA	<0.001 U
ARSENIC	mg/L	0.01	0.000991 J	0.00829	<0.001 U	0.0121	<0.001 U	0.00122 J	NA	<0.001 U	NA	NA	<0.001 U
BARIUM	mg/L	2	0.288	5.12	1.35	2.64	0.445	0.96	NA	0.144	NA	NA	0.0526
CADMIUM	mg/L	0.005	<0.0006 U	0.000385 J	0.000424 J	<0.0006 U	<0.0006 U	0.000758 J	NA	0.000344 J	NA	NA	0.000376 J
CHROMIUM	mg/L	0.1	0.00186 J	0.00247 J	1.32	0.0145	0.00398 J	0.126	NA	0.278	NA	NA	0.00283 J
COBALT	mg/L	6.1	<0.001 U	0.00683	0.0563	0.0571	0.00108 J	0.00267	NA	0.0414	NA	NA	0.00127 J
COPPER	mg/L	1.3	<0.002 U	0.00295 J	0.00432	0.00159 J	0.00151 J	0.00218 J	NA	0.0107	NA	NA	0.00144 J
LEAD	mg/L	0.015	<0.001 U	<0.001 U	<0.001 U	<0.001 U	<0.001 U	<0.001 U	NA	<0.001 U	NA	NA	<0.001 U
MANGANESE	mg/L	1.1	0.247	3.15	1.69	2.04	0.52	0.102	NA	0.35	NA	NA	0.3
NICKEL	mg/L	0.49	<0.004 U	0.0138	2.2	0.0432	0.00463 J	0.0777	NA	0.447	NA	NA	0.00494 J
SILVER	mg/L	0.51	<0.001 U	<0.001 U	<0.001 U	<0.001 U	<0.001 U	<0.001 U	NA	<0.001 U	NA	NA	<0.001 U
THALLIUM	mg/L	0.002	<0.0002 U	<0.0002 U	<0.0002 U	<0.0002 U	<0.0002 U	<0.0002 U	NA	0.000105 J	NA	NA	<0.0002 U
VANADIUM	mg/L	0.72	<0.001 U	0.00101 J	0.00922	0.00185 J	<0.001 U	0.00158 J	NA	<0.001 U	NA	NA	<0.001 U
ZINC	mg/L	31	<0.025 U	<0.025 U	<0.025 U	0.127	<0.025 U	0.0231 J	NA	0.0267 J	NA	NA	<0.025 U
Perchlorate (6850)													
PERCHLORATE	ug/L	17	NA	<0.2 U	14800	33.3	15400	31300	22200	8290	263	0.492	NA
Mercury (7470A)													
MERCURY	mg/L	0.002	<0.0002 U	<0.0002 U	<0.0002 U	<0.0002 U	<0.0002 U	<0.0002 U	NA	<0.0002 U	NA	NA	<0.0002 U
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/L	35	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U	<5 U	<0.5 U	NA
1,1,1-TRICHLOROETHANE	ug/L	200	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U	<5 U	<0.5 U	NA
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	NA	<0.4 U	<4 U	<100 U	<1 U	<0.4 U	<4 U	<0.4 U	<4 U	<0.4 U	NA
1,1,2-TRICHLOROETHANE	ug/L	5	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U	<5 U	<0.5 U	NA
1,1-DICHLOROETHANE	ug/L	4900	NA	<0.25 U	<2.5 U	<62.6 U	4.57	3.44	<2.5 U	<0.25 U	<2.5 U	<0.25 U	NA
1,1-DICHLOROETHENE	ug/L	7	NA	<1 U	7.5 J	505	32.8	1.01 J	5.8 J	<1 U	<10 UJ	<1 U	NA
1,1-DICHLOROPROPENE	ug/L	9.1	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U	<5 U	<0.5 U	NA
1,2,3-TRICHLOROBENZENE	ug/L	73	NA	<0.3 U	<3 U	<75 U	<0.75 U	<0.3 U	<3 U	<0.3 U	<3 U	<0.3 U	NA
1,2,3-TRICHLOROPROPANE	ug/L	0.03	NA	<1 U	<10 U	<250 U	<2.5 U	<1 U	<10 U	<1 U	<10 U	<1 U	NA
1,2,4-TRICHLOROBENZENE	ug/L	70	NA	<0.4 U	<4 U	<100 U	<1 U	<0.4 U	<4 U	<0.4 U	<4 U	<0.4 U	NA
1,2,4-TRIMETHYLBENZENE	ug/L	1200	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U	<5 U	<0.5 U	NA
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	NA	<2 U	<20 U	<500 U	<5 U	<2 UJ	<20 U	<2 U	<20 U	<2 U	NA
1,2-DIBROMOETHANE	ug/L	0.05	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U	<5 U	<0.5 U	NA
1,2-DICHLOROBENZENE	ug/L	600	NA	<0.25 U	<2.5 U	<62.6 U	<0.626 U	<0.25 U	<2.5 U	<0.25 U	<2.5 U	<0.25 U	NA
1,2-DICHLOROETHANE	ug/L	5	NA	<0.5 U	138	<125 U	<1.25 U	<0.5 U	28	0.592 J	<5 U	<0.5 U	NA
1,2-DICHLOROPROPANE	ug/L	5	NA	<0.4 U	<4 U	<100 U	<1 U	<0.4 U	<4 U	<0.4 U	<4 U	<0.4 U	NA
1,3,5-TRIMETHYLBENZENE	ug/L	1200	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U	<5 U	<0.5 U	NA
1,3-DICHLOROBENZENE	ug/L	730	NA	<0.5 U	<5 U	<125 U	<1.25 U	0.565 J	<5 U	<0.5 U	<5 U	<0.5 U	NA

Table 2-15: LHAAP-18/24 Semi-Annual Groundwater Sampling Results - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	C04FFD-062116 6/21/2016	C08-061416 6/14/2016	MW1-061016 6/10/2016	MW2-062416 6/24/2016	MW3-061016 6/10/2016	MW5-060816 6/8/2016	MW7-062416 6/24/2016	MW8-060916 6/9/2016	MW9-062216 6/22/2016	MW10-060916 6/9/2016	MW10F-060916 6/9/2016
1,3-DICHLOROPROPANE	ug/L	9.1	NA	<0.4 U	<4 U	<100 U	<1 U	<0.4 U	<4 U	<0.4 U	<4 U	<0.4 U	NA
1,4-DICHLOROBENZENE	ug/L	75	NA	<0.25 U	<2.5 U	<62.6 U	<0.626 U	<0.25 U	<2.5 U	<0.25 U	<2.5 U	<0.25 U	NA
2,2-DICHLOROPROPANE	ug/L	13	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U	<5 U	<0.5 U	NA
2-BUTANONE	ug/L	15000	NA	<5 U	<50 U	<1250 U	<12.5 U	<5 UJ	<50 UJ	<5 U	<50 U	<5 U	NA
2-CHLOROTOLUENE	ug/L	490	NA	<0.25 U	<2.5 U	<62.6 U	<0.626 U	<0.25 U	<2.5 U	<0.25 U	<2.5 U	<0.25 U	NA
2-HEXANONE	ug/L	120	NA	<5 U	<50 UJ	<1250 UJ	<12.5 UJ	<5 UJ	<50 U	<5 U	<50 U	<5 U	NA
4-CHLOROTOLUENE	ug/L	490	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U	<5 U	<0.5 U	NA
4-METHYL-2-PENTANONE	ug/L	2000	NA	<5 U	<50 U	<1250 U	<12.5 U	<5 U	<50 U	<5 U	<50 U	<5 U	NA
ACETONE	ug/L	22000	NA	<5 U	<50 U	<1250 U	48.4	<5 UJ	<50 UJ	<5 U	<50 U	<5 U	NA
BENZENE	ug/L	5	NA	<0.25 U	2.09 J	<62.6 U	<0.626 U	<0.25 U	<2.5 U	<0.25 U	<2.5 U	<0.25 U	NA
BROMOBENZENE	ug/L	200	NA	<0.25 U	<2.5 U	<62.6 U	<0.626 U	<0.25 U	<2.5 U	<0.25 U	<2.5 U	<0.25 U	NA
BROMOCHLOROMETHANE	ug/L	980	NA	<0.4 U	<4 U	<100 U	<1 U	<0.4 U	<4 U	<0.4 U	<4 U	<0.4 U	NA
BROMODICHLOROMETHANE	ug/L	15	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U	<5 U	<0.5 U	NA
BROMOFORM	ug/L	120	NA	<1 U	<10 U	<250 U	<2.5 U	<1 U	<10 U	<1 U	<10 U	<1 U	NA
BROMOMETHANE	ug/L	34	NA	<1 UJ	<10 U	<250 U	<2.5 U	<1 U	<10 U	<1 UJ	<10 U	<1 UJ	NA
CARBON DISULFIDE	ug/L	2400	NA	<1 U	<10 U	<250 U	<2.5 U	<1 U	<10 U	<1 U	<10 U	<1 U	NA
CARBON TETRACHLORIDE	ug/L	5	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	2.77 J	<0.5 U	<5 U	<0.5 U	NA
CHLOROBENZENE	ug/L	100	NA	<0.25 U	<2.5 U	<62.6 U	<0.626 U	<0.25 U	<2.5 U	<0.25 U	<2.5 U	<0.25 U	NA
CHLOROETHANE	ug/L	98000	NA	<1 U	<10 U	<250 U	<2.5 U	<1 U	<10 U	<1 U	<10 U	<1 U	NA
CHLOROFORM	ug/L	240	NA	<0.25 U	5.62 J	58.1 J	1.96 J	0.43 J	14.1	0.607 J	3.97 J	<0.25 U	NA
CHLOROMETHANE	ug/L	70	NA	<1 U	<10 U	<250 U	<2.5 U	<1 U	<10 UJ	<1 U	<10 U	<1 U	NA
CIS-1,2-DICHLOROETHENE	ug/L	70	NA	<0.5 U	1120	43600	85.2	13.4	13.8	0.867 J	64.7	<0.5 U	NA
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U	<5 U	<0.5 U	NA
DIBROMOCHLOROMETHANE	ug/L	11	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U	<5 U	<0.5 U	NA
DIBROMOMETHANE	ug/L	120	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U	<5 U	<0.5 U	NA
DICHLORODIFLUOROMETHANE	ug/L	4900	NA	<0.5 U	<5 U	<125 U	2.56	<0.5 U	<5 UJ	<0.5 U	<5 U	<0.5 U	NA
ETHYLBENZENE	ug/L	700	NA	<0.5 U	<5 U	159 J	<1.25 U	<0.5 U	<5 U	<0.5 U	<5 U	<0.5 U	NA
HEXACHLOROBUTADIENE	ug/L	12	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U	<5 U	<0.5 U	NA
ISOPROPYLBENZENE	ug/L	2400	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U	<5 U	<0.5 U	NA
M,P-XYLENE	ug/L	10000	NA	<1 U	<10 U	<250 U	<2.5 U	<1 U	<10 U	<1 U	<10 U	<1 U	NA
METHYLENE CHLORIDE	ug/L	5	NA	<0.5 U	<5 U	21300	<1.25 U	<0.5 U	<5 U	<0.5 U	<5 U	<0.5 U	NA
NAPHTHALENE	ug/L	490	NA	<0.4 U	<4 U	<100 U	<1 U	<0.4 U	<4 U	<0.4 U	<4 U	<0.4 U	NA
N-BUTYLBENZENE	ug/L	1200	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U	<5 U	<0.5 U	NA
N-PROPYLBENZENE	ug/L	980	NA	<0.25 U	<2.5 U	<62.6 U	<0.626 U	<0.25 U	<2.5 U	<0.25 U	<2.5 U	<0.25 U	NA
O-XYLENE	ug/L	10000	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U	<5 U	<0.5 U	NA
P-ISOPROPYLTOLUENE	ug/L	2400	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U	<5 U	<0.5 U	NA
SEC-BUTYLBENZENE	ug/L	980	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U	<5 U	<0.5 U	NA
STYRENE	ug/L	100	NA	<0.25 U	<2.5 U	<62.6 U	<0.626 U	<0.25 U	<2.5 U	<0.25 U	<2.5 U	<0.25 U	NA
TERT-BUTYLBENZENE	ug/L	980	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U	<5 U	<0.5 U	NA
TETRACHLOROETHENE	ug/L	5	NA	<0.5 U	<5 U	85.1 J	0.992 J	<0.5 U	<5 U	<0.5 U	<5 U	<0.5 U	NA
TOLUENE	ug/L	1000	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U	<5 U	<0.5 U	NA
TRANS-1,2-DICHLOROETHENE	ug/L	100	NA	<0.5 U	3.11 J	80.2 J	3.3	0.254 J	<5 U	<0.5 U	<5 U	<0.5 U	NA
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	NA	<1 U	<10 U	<250 U	<2.5 U	<1 U	<10 U	<1 U	<10 U	<1 U	NA
TRICHLOROETHENE	ug/L	5	NA	5.61	3620	15500	491	53.7	1740	247	1460	0.796 J	NA
TRICHLOROFLUOROMETHANE	ug/L	7300	NA	<0.5 U	<10 U	<125 U	0.74 J	<0.5 U	<5 U	<0.5 U	<5 U	<0.5 U	NA
VINYL CHLORIDE	ug/L	2	NA	<0.5 U	6.08 J	<125 U	10.2	4.91	<5 UJ	<0.5 U	<5 U	<0.5 U	NA

Table 2-15: LHAAP-18/24 Semi-Annual Groundwater Sampling Results - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	C04FFD-062116 6/21/2016	C08-061416 6/14/2016	MW1-061016 6/10/2016	MW2-062416 6/24/2016	MW3-061016 6/10/2016	MW5-060816 6/8/2016	MW7-062416 6/24/2016	MW8-060916 6/9/2016	MW9-062216 6/22/2016	MW10-060916 6/9/2016	MW10F-060916 6/9/2016
1,4-Dioxane (8270D-SIM)													
1,4-DIOXANE	ug/L	9.1	NA	<1 U	NA	7.58	NA	0.819 J	13.4	0.649 J	1.77 J	<1 U	NA

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter.

Location IDs containing "FD" indicate duplicate samples.

Location IDs containing "B" indicate sample taken at bottom of screened interval and "T" indicate sample taken at top of screened interval.

Blue Highlighting Indicates Analyte Detected Above MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Level

mg/L - milligrams per liter

NA - not analyzed

PCL – Texas Residential Groundwater protective concentration level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 2-15: LHAAP-18/24 Semi-Annual Groundwater Sampling Results - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	MW12-061016 6/10/2016	MW13-061716 6/17/2016	MW14B-060716 6/7/2016	MW14T-060716 6/7/2016	MW16-062116 6/21/2016	MW16F-062116 6/21/2016	MW17-062016 6/20/2016	MW18-061716 6/17/2016	MW18F-061716 6/17/2016	MW19-061716 6/17/2016	MW19F-061716 6/17/2016
Metals (6010C)													
ALUMINUM	mg/L	100	NA	NA	NA	NA	NA	<0.1 U	NA	NA	1.91	NA	35.6
BERYLLIUM	mg/L	0.004	NA	NA	NA	NA	NA	<0.01 U	NA	NA	<0.01 U	NA	0.00575 J
CALCIUM	mg/L		NA	NA	NA	NA	NA	23.7	NA	NA	14.1	NA	18.9
IRON	mg/L		NA	NA	NA	NA	NA	38.8	NA	NA	12.6	NA	50
MAGNESIUM	mg/L		NA	NA	NA	NA	NA	17.3	NA	NA	6.42	NA	9.83
POTASSIUM	mg/L		NA	NA	NA	NA	NA	4.1	NA	NA	2.19	NA	3.84
SELENIUM	mg/L	0.05	NA	NA	NA	NA	NA	0.00641 J	NA	NA	<0.01 U	NA	<0.01 U
SODIUM	mg/L		NA	NA	NA	NA	NA	142	NA	NA	249 J	NA	20.5
Metals (6020A)													
ANTIMONY	mg/L	0.006	NA	NA	NA	NA	NA	<0.001 U	NA	NA	0.00149 J	NA	<0.001 U
ARSENIC	mg/L	0.01	NA	NA	NA	NA	NA	0.0156	NA	NA	0.00583	NA	0.013
BARIUM	mg/L	2	NA	NA	NA	NA	NA	0.411	NA	NA	0.157 J	NA	0.695
CADMIUM	mg/L	0.005	NA	NA	NA	NA	NA	0.000563 J	NA	NA	0.00225	NA	0.00495
CHROMIUM	mg/L	0.1	NA	NA	NA	NA	NA	0.00236 J	NA	NA	0.0138 J	NA	0.116
COBALT	mg/L	6.1	NA	NA	NA	NA	NA	0.00976	NA	NA	0.00915	NA	0.0274
COPPER	mg/L	1.3	NA	NA	NA	NA	NA	<0.002 U	NA	NA	0.00447	NA	0.127
LEAD	mg/L	0.015	NA	NA	NA	NA	NA	<0.001 U	NA	NA	0.00227	NA	0.0706
MANGANESE	mg/L	1.1	NA	NA	NA	NA	NA	0.659	NA	NA	0.36 J	NA	1.09
NICKEL	mg/L	0.49	NA	NA	NA	NA	NA	0.0181	NA	NA	0.063	NA	0.0997
SILVER	mg/L	0.51	NA	NA	NA	NA	NA	<0.001 U	NA	NA	<0.001 U	NA	<0.001 U
THALLIUM	mg/L	0.002	NA	NA	NA	NA	NA	<0.0002 U	NA	NA	0.000127 J	NA	0.000821
VANADIUM	mg/L	0.72	NA	NA	NA	NA	NA	0.000902 J	NA	NA	0.0105	NA	0.152
ZINC	mg/L	31	NA	NA	NA	NA	NA	0.0293 J	NA	NA	0.0491 J	NA	1.09
Perchlorate (6850)													
PERCHLORATE	ug/L	17	0.2 J	<0.2 U	229000	177000	0.615	NA	<0.2 U	<0.2 U	NA	11.4	NA
Mercury (7470A)													
MERCURY	mg/L	0.002	NA	NA	NA	NA	NA	<0.0002 U	NA	NA	<0.0002 U	NA	0.000381 J
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
1,1,1-TRICHLOROETHANE	ug/L	200	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.8 U	<0.4 U	<40 U	<40 U	<1 U	NA	<0.4 U	<0.4 U	NA	<0.4 U	NA
1,1,2-TRICHLOROETHANE	ug/L	5	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
1,1-DICHLOROETHANE	ug/L	4900	1.71 J	<0.25 U	37.3 J	34.7 J	1.73 J	NA	<0.25 U	<0.25 U	NA	<0.25 U	NA
1,1-DICHLOROETHENE	ug/L	7	3.41 J	<1 U	195 J	154 J	9	NA	<1 U	<1 U	NA	<1 U	NA
1,1-DICHLOROPROPENE	ug/L	9.1	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.6 U	<0.3 U	<30 U	<30 U	<0.75 U	NA	<0.3 U	<0.3 U	NA	<0.3 U	NA
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<2 U	<1 U	<100 U	<100 U	<2.5 U	NA	<1 U	<1 U	NA	<1 U	NA
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.8 U	<0.4 U	<40 U	<40 U	<1 U	NA	<0.4 U	<0.4 U	NA	<0.4 U	NA
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<4 U	<2 U	<200 U	<200 U	<5 UJ	NA	<2 U	<2 U	NA	<2 U	NA
1,2-DIBROMOETHANE	ug/L	0.05	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
1,2-DICHLOROBENZENE	ug/L	600	<0.5 U	<0.25 U	<25 U	<25 U	<0.626 U	NA	<0.25 U	<0.25 U	NA	<0.25 U	NA
1,2-DICHLOROETHANE	ug/L	5	1.82 J	<0.5 U	140	114	<1.25 UJ	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
1,2-DICHLOROPROPANE	ug/L	5	<0.8 U	<0.4 U	<40 U	<40 U	<1 U	NA	<0.4 U	<0.4 U	NA	<0.4 U	NA
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
1,3-DICHLOROBENZENE	ug/L	730	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA

Table 2-15: LHAAP-18/24 Semi-Annual Groundwater Sampling Results - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	MW12-061016 6/10/2016	MW13-061716 6/17/2016	MW14B-060716 6/7/2016	MW14T-060716 6/7/2016	MW16-062116 6/21/2016	MW16F-062116 6/21/2016	MW17-062016 6/20/2016	MW18-061716 6/17/2016	MW18F-061716 6/17/2016	MW19-061716 6/17/2016	MW19F-061716 6/17/2016
1,3-DICHLOROPROPANE	ug/L	9.1	<0.8 U	<0.4 U	<40 U	<40 U	<1 U	NA	<0.4 U	<0.4 U	NA	<0.4 U	NA
1,4-DICHLOROBENZENE	ug/L	75	<0.5 U	<0.25 U	<25 U	<25 U	<0.626 U	NA	<0.25 U	<0.25 U	NA	<0.25 U	NA
2,2-DICHLOROPROPANE	ug/L	13	<1 U	<0.5 U	<50 U	<50 U	<1.25 UJ	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
2-BUTANONE	ug/L	15000	<10 U	<5 U	<500 U	<500 U	<12.5 UJ	NA	<5 U	<5 U	NA	<5 U	NA
2-CHLOROTOLUENE	ug/L	490	<0.5 U	<0.25 U	<25 U	<25 U	<0.626 U	NA	<0.25 U	<0.25 U	NA	<0.25 U	NA
2-HEXANONE	ug/L	120	<10 U	<5 U	<500 U	<500 U	<12.5 UJ	NA	<5 U	<5 U	NA	<5 U	NA
4-CHLOROTOLUENE	ug/L	490	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
4-METHYL-2-PENTANONE	ug/L	2000	<10 U	<5 U	<500 U	<500 U	<12.5 U	NA	<5 U	<5 U	NA	<5 U	NA
ACETONE	ug/L	22000	<10 U	<5 U	<500 U	<500 U	<12.5 UJ	NA	<5 U	<5 U	NA	<5 U	NA
BENZENE	ug/L	5	<0.5 U	<0.25 U	<25 U	<25 U	0.352 J	NA	<0.25 U	<0.25 U	NA	<0.25 U	NA
BROMOBENZENE	ug/L	200	<0.5 U	<0.25 U	<25 U	<25 U	<0.626 U	NA	<0.25 U	<0.25 U	NA	<0.25 U	NA
BROMOCHLOROMETHANE	ug/L	980	<0.8 U	<0.4 U	<40 U	<40 U	<1 U	NA	<0.4 U	<0.4 U	NA	<0.4 U	NA
BROMODICHLOROMETHANE	ug/L	15	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
BROMOFORM	ug/L	120	<2 U	<1 U	<100 U	<100 U	<2.5 U	NA	<1 U	<1 U	NA	<1 U	NA
BROMOMETHANE	ug/L	34	<2 U	<1 U	<100 U	<100 U	<2.5 U	NA	<1 U	<1 U	NA	<1 U	NA
CARBON DISULFIDE	ug/L	2400	<2 U	<1 U	<100 U	<100 U	<2.5 U	NA	<1 U	<1 U	NA	<1 U	NA
CARBON TETRACHLORIDE	ug/L	5	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
CHLOROBENZENE	ug/L	100	<0.5 U	<0.25 U	<25 U	<25 U	<0.626 U	NA	<0.25 U	<0.25 U	NA	<0.25 U	NA
CHLOROETHANE	ug/L	98000	<2 U	<1 U	<100 U	<100 U	<2.5 U	NA	<1 U	<1 U	NA	<1 U	NA
CHLOROFORM	ug/L	240	<0.5 U	<0.25 U	13.2 J	<25 U	<0.626 U	NA	<0.25 U	<0.25 U	NA	<0.25 U	NA
CHLOROMETHANE	ug/L	70	<2 U	<1 U	<100 U	<100 U	<2.5 U	NA	<1 U	<1 U	NA	<1 U	NA
CIS-1,2-DICHLOROETHENE	ug/L	70	42.6	<0.5 U	2550	2600	31.2	NA	0.41 J	1.11	NA	0.345 J	NA
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
DIBROMOCHLOROMETHANE	ug/L	11	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
DIBROMOMETHANE	ug/L	120	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
DICHLORODIFLUOROMETHANE	ug/L	4900	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
ETHYLBENZENE	ug/L	700	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
HEXACHLOROBUTADIENE	ug/L	12	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
ISOPROPYLBENZENE	ug/L	2400	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
M,P-XYLENE	ug/L	10000	<2 U	<1 U	<100 U	<100 U	<2.5 U	NA	<1 U	<1 U	NA	<1 U	NA
METHYLENE CHLORIDE	ug/L	5	<1 U	<0.5 U	53.5 J	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
NAPHTHALENE	ug/L	490	<0.8 U	<0.4 U	<40 U	<40 U	<1 U	NA	<0.4 U	<0.4 U	NA	<0.4 U	NA
N-BUTYLBENZENE	ug/L	1200	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
N-PROPYLBENZENE	ug/L	980	<0.5 U	<0.25 U	<25 U	<25 U	<0.626 U	NA	<0.25 U	<0.25 U	NA	<0.25 U	NA
O-XYLENE	ug/L	10000	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
P-ISOPROPYLTOLUENE	ug/L	2400	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
SEC-BUTYLBENZENE	ug/L	980	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
STYRENE	ug/L	100	<0.5 U	<0.25 U	<25 U	<25 U	<0.626 U	NA	<0.25 U	<0.25 U	NA	<0.25 U	NA
TERT-BUTYLBENZENE	ug/L	980	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
TETRACHLOROETHENE	ug/L	5	<1 U	<0.5 U	<50 U	<50 U	0.786 J	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
TOLUENE	ug/L	1000	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
TRANS-1,2-DICHLOROETHENE	ug/L	100	0.758 J	<0.5 U	<50 U	<50 U	0.747 J	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<2 U	<1 U	<100 U	<100 U	<2.5 U	NA	<1 U	<1 U	NA	<1 U	NA
TRICHLOROETHENE	ug/L	5	294	<0.5 U	15900	12700	922	NA	<0.5 U	14.1	NA	1.82	NA
TRICHLOROFLUOROMETHANE	ug/L	7300	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
VINYL CHLORIDE	ug/L	2	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA

Table 2-15: LHAAP-18/24 Semi-Annual Groundwater Sampling Results - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	MW12-061016 6/10/2016	MW13-061716 6/17/2016	MW14B-060716 6/7/2016	MW14T-060716 6/7/2016	MW16-062116 6/21/2016	MW16F-062116 6/21/2016	MW17-062016 6/20/2016	MW18-061716 6/17/2016	MW18F-061716 6/17/2016	MW19-061716 6/17/2016	MW19F-061716 6/17/2016
1,4-Dioxane (8270D-SIM)													
1,4-DIOXANE	ug/L	9.1	NA	NA	412	390	18	NA	<1 U	NA	NA	NA	NA

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter.

Location IDs containing "FD" indicate duplicate samples.

Location IDs containing "B" indicate sample taken at bottom of screened interval and "T" indicate sample taken at top of screened interval.

Blue Highlighting Indicates Analyte Detected Above MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Level

mg/L - milligrams per liter

NA - not analyzed

PCL – Texas Residential Groundwater protective concentration level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 2-15: LHAAP-18/24 Semi-Annual Groundwater Sampling Results - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	MW21-062216 6/22/2016	MW22-060816 6/8/2016	MW23-061716 6/17/2016
Metals (6010C)					
ALUMINUM	mg/L	100	<0.1 U	NA	NA
BERYLLIUM	mg/L	0.004	<0.01 U	NA	NA
CALCIUM	mg/L		213	NA	NA
IRON	mg/L		1.03	NA	NA
MAGNESIUM	mg/L		163	NA	NA
POTASSIUM	mg/L		2.61	NA	NA
SELENIUM	mg/L	0.05	<0.01 U	NA	NA
SODIUM	mg/L		580	NA	NA
Metals (6020A)					
ANTIMONY	mg/L	0.006	<0.001 U	NA	NA
ARSENIC	mg/L	0.01	0.00812	NA	NA
BARIUM	mg/L	2	5.91	NA	NA
CADMIUM	mg/L	0.005	0.00132	NA	NA
CHROMIUM	mg/L	0.1	0.195	NA	NA
COBALT	mg/L	6.1	0.0569	NA	NA
COPPER	mg/L	1.3	0.0261	NA	NA
LEAD	mg/L	0.015	<0.001 U	NA	NA
MANGANESE	mg/L	1.1	1.81	NA	NA
NICKEL	mg/L	0.49	0.76	NA	NA
SILVER	mg/L	0.51	<0.001 U	NA	NA
THALLIUM	mg/L	0.002	<0.0002 U	NA	NA
VANADIUM	mg/L	0.72	0.00262	NA	NA
ZINC	mg/L	31	0.023 J	NA	NA
Perchlorate (6850)					
PERCHLORATE	ug/L	17	26100	615	65200
Mercury (7470A)					
MERCURY	mg/L	0.002	<0.0002 U	NA	NA
Volatile Organic Compounds (8260B)					
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<25 U	<1.25 U	<5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<25 U	<1.25 U	<5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<20 U	<1 U	<4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<25 U	<1.25 U	<5 U
1,1-DICHLOROETHANE	ug/L	4900	<12.5 U	<0.626 U	<2.5 U
1,1-DICHLOROETHENE	ug/L	7	<50 UJ	1.37 J	<10 U
1,1-DICHLOROPROPENE	ug/L	9.1	<25 U	<1.25 U	<5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<15 U	<0.75 U	<3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<50 U	<2.5 U	<10 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<20 U	<1 U	<4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<25 U	<1.25 U	<5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<100 U	<5 U	<20 U
1,2-DIBROMOETHANE	ug/L	0.05	<25 U	<1.25 U	<5 U
1,2-DICHLOROBENZENE	ug/L	600	<12.5 U	<0.626 U	<2.5 U
1,2-DICHLOROETHANE	ug/L	5	35.2 J	5.5	50.5
1,2-DICHLOROPROPANE	ug/L	5	<20 U	<1 U	<4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<25 U	<1.25 U	<5 U
1,3-DICHLOROBENZENE	ug/L	730	<25 U	<1.25 U	<5 U

Table 2-15: LHAAP-18/24 Semi-Annual Groundwater Sampling Results - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	MW21-062216 6/22/2016	MW22-060816 6/8/2016	MW23-061716 6/17/2016
1,3-DICHLOROPROPANE	ug/L	9.1	<20 U	<1 U	<4 U
1,4-DICHLOROBENZENE	ug/L	75	<12.5 U	<0.626 U	<2.5 U
2,2-DICHLOROPROPANE	ug/L	13	<25 U	<1.25 U	<5 U
2-BUTANONE	ug/L	15000	<250 U	<12.5 U	<50 U
2-CHLOROTOLUENE	ug/L	490	<12.5 U	<0.626 U	<2.5 U
2-HEXANONE	ug/L	120	<250 U	<12.5 U	<50 U
4-CHLOROTOLUENE	ug/L	490	<25 U	<1.25 U	<5 U
4-METHYL-2-PENTANONE	ug/L	2000	<250 U	<12.5 U	<50 U
ACETONE	ug/L	22000	<250 U	<12.5 U	<50 U
BENZENE	ug/L	5	<12.5 U	2.51	<2.5 U
BROMOBENZENE	ug/L	200	<12.5 U	<0.626 U	<2.5 U
BROMOCHLOROMETHANE	ug/L	980	<20 U	<1 U	<4 U
BROMODICHLOROMETHANE	ug/L	15	<25 U	<1.25 U	<5 U
BROMOFORM	ug/L	120	<50 U	<2.5 U	<10 U
BROMOMETHANE	ug/L	34	<50 U	<2.5 U	<10 U
CARBON DISULFIDE	ug/L	2400	<50 U	<2.5 U	<10 U
CARBON TETRACHLORIDE	ug/L	5	<25 U	<1.25 U	<5 U
CHLOROBENZENE	ug/L	100	<12.5 U	<0.626 U	<2.5 U
CHLOROETHANE	ug/L	98000	<50 U	<2.5 U	<10 U
CHLOROFORM	ug/L	240	13.5 J	4.77	4.78 J
CHLOROMETHANE	ug/L	70	<50 U	<2.5 U	<10 U
CIS-1,2-DICHLOROETHENE	ug/L	70	112	5.7	7.33 J
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<25 U	<1.25 U	<5 U
DIBROMOCHLOROMETHANE	ug/L	11	<25 U	<1.25 U	<5 U
DIBROMOMETHANE	ug/L	120	<25 U	<1.25 U	<5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<25 U	<1.25 U	<5 U
ETHYLBENZENE	ug/L	700	<25 U	<1.25 U	<5 U
HEXACHLOROBUTADIENE	ug/L	12	<25 U	<1.25 U	<5 U
ISOPROPYLBENZENE	ug/L	2400	<25 U	<1.25 U	<5 U
M,P-XYLENE	ug/L	10000	<50 U	<2.5 U	<10 U
METHYLENE CHLORIDE	ug/L	5	<25 U	<1.25 U	<5 U
NAPHTHALENE	ug/L	490	<20 U	<1 U	<4 U
N-BUTYLBENZENE	ug/L	1200	<25 U	<1.25 U	<5 U
N-PROPYLBENZENE	ug/L	980	<12.5 U	<0.626 U	<2.5 U
O-XYLENE	ug/L	10000	<25 U	<1.25 U	<5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<25 U	<1.25 U	<5 U
SEC-BUTYLBENZENE	ug/L	980	<25 U	<1.25 U	<5 U
STYRENE	ug/L	100	<12.5 U	<0.626 U	<2.5 U
TERT-BUTYLBENZENE	ug/L	980	<25 U	<1.25 U	<5 U
TETRACHLOROETHENE	ug/L	5	<25 U	<1.25 U	<5 U
TOLUENE	ug/L	1000	<25 U	<1.25 U	<5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<25 U	<1.25 U	<5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<50 U	<2.5 U	<10 U
TRICHLOROETHENE	ug/L	5	6080	488	1170
TRICHLOROFLUOROMETHANE	ug/L	7300	<25 U	<1.25 U	<5 U
VINYL CHLORIDE	ug/L	2	46.2 J	<1.25 U	<5 U

Table 2-15: LHAAP-18/24 Semi-Annual Groundwater Sampling Results - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	MW21-062216 6/22/2016	MW22-060816 6/8/2016	MW23-061716 6/17/2016
1,4-Dioxane (8270D-SIM)					
1,4-DIOXANE	ug/L	9.1	1.55 J	NA	NA

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter.

Location IDs containing "FD" indicate duplicate samples.

Location IDs containing "B" indicate sample taken at bottom of screened interval and "T" indicate sample taken at top of screened interval.

Blue Highlighting Indicates Analyte Detected Above MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Level

mg/L - milligrams per liter

NA - not analyzed

PCL – Texas Residential Groundwater protective concentration level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 2-16: Chemicals Contributing to Carcinogenic Risk in Wilcox Formation Groundwater

Chemical	Shallow Zone ELCR [a]	Shallow Zone EPC [a] (µg/L)	Shallow Zone Well	Recent Maximum in Wilcox Formation (µg/L)	Date	Well	MCL (µg/L)	TTRP PCL (µg/L)	Retained as a CoC?
Methylene chloride	4.0×10^{-1}	7,300,000	MW-2	746	06/24/2016	18CPTMW01SW	5	—	Yes, 1
Trichloroethene	4.1×10^{-2}	210,000	MW-2	15,900	06/07/2016	MW-14B	5	—	Yes, 1
2,3,7,8-TCDD	1.1×10^{-5}	530	95 UCL	—	—		3.0×10^{-5}	—	No, 2
4,4'-DDD	1.3×10^{-6}	59	MW-2	—	—		—	3.8	No, 2
Benzene[3]	—	—	—	6.13	06/08/2016	18CPTMW03SW	5	—	Yes, 1
1,1,2-Trichloroethane[3]	—	—	—	0.858	06/15/2016	18CPTMW23	5	—	No, 5
Vinyl Chloride[3]	—	—	—	8.97	06/08/2016	18CPTMW08SW	2	—	Yes, 1
1,4-Dioxane[3]	—	61.7	95 UCL[c]	412	06/07/16	MW-14B	—	9.1	Yes, 1
Chloroform	4.2×10^{-5}	28	95 UCL	13.2	06/07/16	MW-14B	—	240	No, 2,5
Chemicals Retained on a Provisional Basis									
Tetrachloroethene	—	—	—	< 50	06/07/2016	MW-14B	5	—	Yes, 4
Bromodichloromethane[b]	2.3×10^{-6}	530	18WW09	< 40	06/07/16	MW-14B	—	15	Yes, 4

Notes and Abbreviations:

1. Identified as a COC since recent results are above the MCL or PCL and the compound is identified as a CoC in the Shallow Zone.
2. Combined Shallow Zone ELCR of Chemicals with no MCL is within acceptable range of 1×10^{-6} to 1×10^{-4}.
3. Included as contributing chemicals due to their frequency of detection above the MCL or PCL in recent sampling events.
4. Identified as a COC due to high reporting limit in Wilcox Formation well(s) and presence in Shallow Zone groundwater. Retained on a provisional basis.
5. Excluded as a COC as maximum concentration in Wilcox Formation is below MCL/PCL.

a. From Baseline Risk Assessment Table C-53 (Jacobs, 2002).
b. All other wells were < 15 ug/L (the majority were below detection). Bromodichloromethane will be re-evaluated when data with lower reporting limit are obtained.
c. Using ProUCL for the results of samples collected in June 2016.

95 UCL indicates that the EPC was calculated rather than the maximum concentration at a specific well.

CoC	contaminant of concern
ELCR	excess lifetime cancer risk
EPC	exposure point concentration
TRRP PCL	Texas Risk Reduction Program Protective Concentration Level (Tier 1 Groundwater Residential)
MCL	maximum contaminant level from the Safe Drinking Water Act
µg/L	micrograms per liter
B	Sample collected from the bottom of well screen

Table 2-17: Chemicals Contributing to Toxicity in Wilcox Formation Groundwater

Chemical	SZ HQ [a]	SZ EPCz [a] (µg/L)	SZ Well	Revised Wilcox Frmn HQ	Recent Wilcox Frmn Maximum (µg/L)	Date	Well	MCL (µg/L)	TRRP PCL (µg/L)	Retained as a CoC?
Methylene chloride	1600	7,300,000	MW-2	0.16	746	06/24/2016	18CPTMW01 SW	5		Yes, 1
Trichloroethene	800	210,000	MW-2	61	15,900	06/07/2016	MW-14B	5		Yes, 1
Perchlorate	750	69,000	18WW17	2,490	229,000	06/07/16	MW-14B		17	Yes, 1
Chloroform	16	28	95 UCL	7.5	13.2	06/07/16	MW-14B		240	No, 5
cis-1,2-Dichloroethene	0.3	250	95 UCL	3.1	2,600	06/07/16	MW-14T	70		Yes, 1
1,4-Dioxane[6]	—	102.4	95 UCL[b]	—	412	06/07/16	MW-14B	—	9.1	Yes, 1
Antimony	8.1	333	95 UCL[b]	<0.00002	<0.001	June 2016	All Wells	6		No, 4
Arsenic[6]	—	—	—	c	17.3	06/24/16	18CPTMW01 SW	10		Yes, 1
Barium	0.84	6,000	MW-1	0.22	1,560	06/14/14	C-03	2,000		Yes, 3
Chromium	0.12	18,000	MW-1	0.000063	9.5	06/14/16	18CPTMW04 SW	100		No, 4
Cobalt	0.14	280	MW-1	0.005	9.64	06/24/16	18CPTMW12 SW		240	No, 4
Manganese	1.7	8,270	MW-1	0.38	1,850	06/14/16	C-03		1,100*	No, 6
Nickel	4.7	9,600	MW-1	0.0036	7.44 J	06/24/16	18CPTMW12 SW		490	No, 4
Silver	0.94	480	MW-1	< 0.002	< 1	June 2016	All Wells		120	No, 4
Thallium	0.47	3.7	MW-2	< 0.025	< 0.200	June 2016	All Wells	2		No, 4
Chemicals Retained on a Provisional Basis										
1,3,5-Trinitrobenzene	0.33	1,000	MW-2		No Recent Data				730	Yes, 2

Notes and Abbreviations:

1. Identified as a COC since Recent Results are above the MCL or PCL.
2. Identified as COC since Shallow Zone hazard quotient (HQ) is > 0.1 and no recent data available.
3. Retained as a COC since Revised Wilcox Formation HQ > 0.1 and sum of HQs may exceed 1.0.
4. Excluded since Revised Wilcox Formation HQ < 0. 1 using recent maximum concentration and chemical concentration is < PCL.
5. Excluded as a COC as maximum concentration in Wilcox Formation is below MCL/PCL., and pattern of detections does not indicate association with site contamination.
6. Excluded because maximum concentrations of recent results are below the background 95%UTL.

a. From Baseline Risk Assessment Table C-50 (Jacobs, 2002).
b. Using ProUCL for the results of samples collected in June 2016.

95 UCL indicates that the EPC was calculated rather than the maximum concentration at a specific well.

SZ	Shallow Zone
CoC	contaminant of concern
EPC	exposure point concentration
HQ	hazard quotient
MCL	maximum contaminant level from the Safe Drinking Water Act
UCL	upper confidence limit
TRRP PCL	Texas Risk Reduction Program Protective Concentration Level (Tier 1 Groundwater Residential)
µg/L	micrograms per liter
B	Sample collected from the bottom of well screen
T	Sample collected from top of well screen

* 95% UTL value from Final Evaluation of Perimeter Well Data for Use as Groundwater Background (Shaw, 2007) for Manganese is 7,820 µg/L, which is above the TRRP Tier 1 Groundwater Residential PCL thus the background value will be considered the Cleanup Level for Manganese.

Table 2-18: Estimate of Mass of CoCs in Wilcox Formation Groundwater - June 2016

Analyte	Isoconcentration	Area Based on Isocontours	Representative Concentration	Area for Concentration	Area X Concentration	Dissolved Phase Mass based on Saturation Thickness	% Contribution	Cumulative Contribution
	ug/L	ft^2	ug/L	ft^2	ug/L*ft^2	lbs		
Methylene Chloride	100+	26,572	423	26,572	11,239,956	5.5	**72.9%**	72.9%
Methylene Chloride	10 to 100	46,174	55	46,174	2,539,570	1.25	**16.5%**	89.3%
Methylene Chloride	10+	25,700	32	25,700	815,975	0.40	5.29%	94.6%
Methylene Chloride	5 to 10	111,078	8	111,078	833,085	0.41	5.40%	100.0%
Total Methylene Chloride						**7.6**	100%	
Trichloroethylene	10,000+	16,988	12,150	16,988	206,404,200	102	**48.0%**	48.0%
Trichloroethylene	1000 to 10000	27,007	5,500	27,007	148,538,500	73	**34.6%**	82.6%
Trichloroethylene	100 to 1000	89,774	550	89,774	49,375,700	24	**11.5%**	94.1%
Trichloroethylene	10 to 100	443,876	55	443,876	24,413,180	12	5.68%	99.7%
Trichloroethylene	5 to 10	144,619	8	144,619	1,084,643	0.5	0.25%	100%
Total Trichloroethylene						**212**	100%	
Perchlorate	100,000+	16,117	101,500	16,117	1,635,875,500	807	**36.3%**	36.32%
Perchlorate	10,000+	22,651	10,100	22,651	228,775,100	113	**5.08%**	41.4%
Perchlorate	10,000+	19,602	22,500	19,602	441,045,000	217	**9.8%**	51.2%
Perchlorate	10000 to 100000	29,185	55,000	29,185	1,605,175,000	791	**35.6%**	86.8%
Perchlorate	1000 to 10000	95,832	5,500	95,832	527,076,000	260	**11.7%**	98.5%
Perchlorate	100 to 1000	53,579	550	53,579	29,468,450	15	0.654%	99.2%
Perchlorate	10 to 100	663,854	55	663,854	36,511,970	18.00	0.811%	100%
Total Perchlorate						**2,221**		
1,4-Dioxane	100+	16,117	201	16,117	3,231,459	1.59	61.1%	61.1%
1,4-Dioxane	10 to 100	37,462	55	37,462	2,060,410	1.02	38.9%	100%
Total 1,4-Dioxane						**2.61**		

Notes:
ug/L - micrograms per liter
ft^2 - square feet
lbs - pounds

Average Porosity from Post-Screening Investigation Report (Table 3-8)	0.396
Average saturated groundwater thickness - Estimated	20.00

Dissolved phase mass = sum of areas Dissolved phase mass = sum of areas represented by the contour lines multiplied by each representative concentration X aquifer thickness X porosity

Table 2-19: Estimate of Mass of CoCs on Wilcox Formation Soil - June 2016

Analyte	Isoconcentration	Area Based on Isocontours	Representative Groundwater Concentration	Representative Soil Concentration	Absorbed Phase Mass based on Saturation Thickness*	% Contribution	Cumulative Contribution
	ug/L	ft^2	ug/L	ug/kg	lbs		
Methylene Chloride	100,000+	26,572	423	95	6.1	**72.9%**	72.9%
Methylene Chloride	1000 to 10000	46,174	55	12	1.4	**16.46%**	89.3%
Methylene Chloride	100 to 1000	25,700	32	7	0.44	5.289%	94.6%
Methylene Chloride	10 to 100	111,078	8	2	0.45	5.400%	100.0%
Total Methylene Chloride					**8.4**	100%	
Trichloroethylene	10,000+	16,988	12,150	4,520	187	**48.0%**	48.0%
Trichloroethylene	1000 to 10000	27,007	5,500	2,046	134	**34.6%**	82.6%
Trichloroethylene	100 to 1000	89,774	550	205	45	**11.5%**	94.1%
Trichloroethylene	10 to 100	443,876	55	20	22	5.680%	99.7%
Trichloroethylene	5 to 10	144,619	8	2.8	1	0.2524%	100.0%
Total Trichloroethylene					**389**		

Notes:
ug/L - micrograms per liter
ft^2 - square feet
ug/kg - micrograms per kilogram
lbs - pounds

*** Average saturated groundwater thickness - Assumed** 20.00

Parameter from PSI Reprot (Table 3-8)	TCE	MC
Bulk Density (kg soil/L soil)	1.95	1.95
Total Porosity	0.396	0.396
Organic carbon fraction (g-C/g-C)	0.001816	0.001816
OC-W Partition Coefficient (L-water/kg Carbon)	93.33	11.75
Soil-Water Partition Coefficient (L-water/kg-soil)	0.1695	0.0213

Representative soil concentration = representative groundwater concentration / bulk density X [porosity + bulk density X soil-water partition coefficient]
Adsorbed phase mass = sum of areas represented by the contour lines X each representative soil concentration X bulk density X aquifer thickness

Table 2-20: Estimate of Wilcox Formation Mass of CoCs Outside the Containment Area - June 2016

Analyte	Isoconcentration	Area Based on Isocontours	Representative GW Concentration	Representative Soil Concentration	Dissolved Phase Mass based on Saturation Thickness	Absorbed Phase Mass based on Saturation Thickness	Total Mass	% Contribution	Cumulative Contribution
	ug/L	ft^2	ug/L	ug/kg	lbs	lbs	lbs		
Methylene Chloride				-	0.0000	0.000	0.000		
Total Methylene Chloride					**0.000**	**0.000**	**0.000**	0%	
Trichloroethylene	10 to 100	23,087	55	20	0.634	1.15	1.78	**80.19%**	80.2%
Trichloroethylene	5 to 10	41,818	7.5	3	0.157	0.284	0.440	19.81%	100.0%
Total Trichloroethylene					**0.791**	**1.43**	**2.22**	1.0	
Perchlorate	10,000+	22,651	10,100	-	114	-	114	**33.1%**	33.1%
Perchlorate	10,000+	6,534	22,500	-	73	-	73	**21.2%**	54.3%
Perchlorate	1000 to 10000	48,352	5,500	-	133	-	133	**38.4%**	92.7%
Perchlorate	100 to 1000	74,488	550	-	20.5	-	20	5.92%	98.7%
Perchlorate	10 to 100	168,577	55	-	4.63	-	5	1.34%	100.0%
Total Perchlorate					**345**	**0**	**345**	100%	
1,4-Dioxane				-	0.0000	0.000	0.000		
Total 1,4-Dioxane					**0.000**	**0.000**	**0.000**	0%	

Notes:
ug/L - micrograms per liter
ft^2 - square feet
ug/kg - micrograms per kilogram
lbs - pounds

Average Porosity from Post-Screening Investigation Report (Table 3-8)	0.401
Average saturated groundwater thickness - Assumed	20.00

Parameter from PSI Reprot (Table 3-8)	TCE	MC
Bulk Density (kg soil/L soil)	1.95	1.95
Total Porosity	0.396	0.396
Organic carbon fraction (g-C/g-C)	0.001816	0.001816
OC-W Partition Coefficient (L-water/kg Carbon)	93.33	11.75
Soil-Water Partition Coefficient (L-water/kg-soil)	0.1695	0.0213

Table 2-21: Estimate of Wilcox Formation Mass Distribution of CoCs Within and Outside Containment Area - June 2016

Analyte	Total Mass	Mass Outside Containment	Mass Inside Containment	% of Mass Outside Containment
	lbs	lbs	lbs	
Methylene Chloride	16.0	0.00	16.0	0.0%
Trichloroethylene	601	2.22	598	0.37%
Perchlorate	2,221	345	1,875	16%
1,4-Dioxane	2.61	0.00	2.61	0.0%

Notes:

lbs - pounds

Table 2-22: Vertical Gradients - June 2016

Date	Monitoring Well	Location of Well Pair	Elevation Difference (ft)	Wilcox Clay Thickness (ft)	Gradient (i)	Hydraulic Conductivity for Clay* (cm/sec) K	Porosity*	Effective Porosity** q	Darcy Velocity (cm/sec)	Linear V (cm/sec)	Bulk Density (lbm/ft3)	Bulk Density (kg/L)	Koc TCE (L/kg)	Koc for MC (L/kg)
Shallow Zone vs. Upper Wilcox				Cross-Sections/Logs	= elev diff/clay thickness	(from 18CPTMW01 at 40 to 40.5)	18CPTMW01	assume 25%	K . i	= k.i / q	for 18CPTMW01		30 TAC 350.73(c)	30 TAC 350.73(c)
06/09/2016	MW-2	Inside Containment	1.9	6.5	0.29	1.74E-08	0.441	0.110	5.03E-09	4.56E-08	118	1.895	93.33	11.75
06/09/2016	18CPTMW01SW													
06/09/2016	120	Inside Containment	1.8	0.1	17.80	1.74E-08	0.441	0.110	3.10E-07	2.81E-06	118	1.895	93.33	11.75
06/09/2016	MW-14													
06/09/2016	MW-21	Inside Containment	3.7	9	0.41	1.74E-08	0.441	0.110	7.10E-09	6.44E-08	118	1.895	93.33	11.75
06/09/2016	18CPTMW07SW													
06/09/2016	MW-22	Inside Containment	0.4	8.5	0.04	1.74E-08	0.441	0.110	7.16E-10	6.50E-09	118	1.895	93.33	11.75
06/09/2016	18CPTMW06SW													
06/09/2016	MW-7	Outside Containment	0.5	16	0.03	1.74E-08	0.441	0.110	5.00E-10	4.54E-09	118	1.895	93.33	11.75
06/09/2016	18CPTMW12SW													
06/09/2016	18WW22	Outside Containment	0.4	5	0.09	1.74E-08	0.441	0.110	1.53E-09	1.39E-08	118	1.895	93.33	11.75
06/09/2016	C-04													
06/09/2016	C-08	Outside Containment	0.5	9	0.06	1.74E-08	0.441	0.110	1.04E-09	9.47E-09	118	1.895	93.33	11.75
06/09/2016	18WW03													
06/09/2016	C-09	Outside Containment	0.1	10	0.01	1.74E-08	0.441	0.110	1.22E-10	1.10E-09	118	1.895	93.33	11.75
06/09/2016	C-10													
06/09/2016	18WW08	Outside Containment	0.6	15	0.04	1.74E-08	0.441	0.110	6.50E-10	5.89E-09	118	1.895	93.33	11.75
06/09/2016	18WW09													
06/09/2016	18WW14	Outside Containment	0.5	11	0.04	1.74E-08	0.441	0.110	7.28E-10	6.60E-09	118	1.895	93.33	11.75
06/09/2016	18WW15													
06/09/2016	18CPTMW23	Outside Containment	0.3	0.5	0.56	1.74E-08	0.441	0.110	9.74E-09	8.84E-08	118	1.895	93.33	11.75
06/09/2016	18CPTMW23SW													
06/09/2016	18CPTMW26	Outside Containment	3.2	5	0.64	1.74E-08	0.441	0.110	1.12E-08	1.01E-07	118	1.895	93.33	11.75
06/09/2016	18CPTMW26SW													
TOTAL FLUX (lb/yr)														
TOTAL MASS OVER 50 ACRES AND 70 YEARS (lbs)														

Darcy velocity = hydraulic conductivity X vertical gradient

Kd (distribution coefficient) = Koc (organic carbon partitin coefficient) foc (organic carbon content)

Retardation Coefficient = 1 + (distribution coefficient X bulk density/effective porosity)

* Hydraulic conductivity and porosity values for clay are for a sample collected from 40 - 40.5 ft bgs in 18CPTMW01

** Effective porosity (11%) = 25% of the total porosity for the sample collected from 40 - 40.5 ft bgs in 18CPTMW01

cm - centimeter

ft - feet

ft^2 - square feet

ft^3 - cubic feet

kg - kilogram

L - liter

lb - pound

lbm - pounds mass

mg - milligram

sec - second

yr - year

Table 2-22: Vertical Gradients - June 2016

Date	Monitoring Well	Location of Well Pair	foc	Kd for TCE (L/kg)	Kd for MC (L/kg)	Retardation for TCE	Retardation for MC	TCE Transport V (cm/sec)	MC Transport V (cm/sec)	TCE conc. (mg/L)	MC Conc. (mg/L)	Perch Conc. (mg/L)	TCE Flux (mg/yr/ft2)	MC Flux (mg/yr/ft2)	Perch Flux (mg/yr/ft2)
Shallow Zone vs. Upper Wilcox			18CPTMW01	foc.Koc	foc.Koc	350.75(c)	350.75(c)	= linear V/ Retard	= linear V/ Retard	from June 2016	from June 2016	from June 2016	Transport V . conc.	Transport V . conc.	Transport V . conc.
06/09/2016	MW-2	Inside Containment	0.284	26.5	3.3	457	58.4	1.00E-10	7.82E-10	0.0465	0.746	0.0001	4.31E-10	5.41E-08	4.23E-10
06/09/2016	18CPTMW01SW														
06/09/2016	120	Inside Containment	0.284	26.5	3.3	457	58.4	6.15E-09	4.81E-08	15.9	0.0535	229	9.07E-06	2.39E-07	5.96E-02
06/09/2016	MW-14														
06/09/2016	MW-21	Inside Containment	0.284	26.5	3.3	457	58.4	1.41E-10	1.10E-09	6.08	0.0125	26.1	7.94E-08	1.28E-09	1.56E-04
06/09/2016	18CPTMW07SW														
06/09/2016	MW-22	Inside Containment	0.284	26.5	3.3	457	58.4	1.42E-11	1.11E-10	0.488	0.000625	0.615	6.44E-10	6.45E-12	3.71E-07
06/09/2016	18CPTMW06SW														
06/09/2016	MW-7	Outside Containment	0.284	26.5	3.3	457	58.4	9.94E-12	7.77E-11	1.74	0.0025	22.2	1.60E-09	1.80E-11	9.34E-06
06/09/2016	18CPTMW12SW														
06/09/2016	18WW22	Outside Containment	0.284	26.5	3.3	457	58.4	3.04E-11	2.38E-10	0.00025	0.00025	0.00153	7.05E-13	5.52E-12	1.97E-09
06/09/2016	C-04														
06/09/2016	C-08	Outside Containment	0.284	26.5	3.3	457	58.4	2.07E-11	1.62E-10	0.00561	0.00025	0.0001	1.08E-11	3.76E-12	8.78E-11
06/09/2016	18WW03														
06/09/2016	C-09	Outside Containment	0.284	26.5	3.3	457	58.4	2.42E-12	1.89E-11	0.00025	0.00025	0.000439	5.61E-14	4.39E-13	4.50E-11
06/09/2016	C-10														
06/09/2016	18WW08	Outside Containment	0.284	26.5	3.3	457	58.4	1.29E-11	1.01E-10	0.00025	0.00025	0.0001	2.99E-13	2.34E-12	5.46E-11
06/09/2016	18WW09														
06/09/2016	18WW14	Outside Containment	0.284	26.5	3.3	457	58.4	1.45E-11	1.13E-10	0.00025	0.00025	ND	3.35E-13	2.62E-12	NA
06/09/2016	18WW15														
06/09/2016	18CPTMW23	Outside Containment	0.284	26.5	3.3	457	58.4	1.94E-10	1.51E-09	3.82	0.000256	2.31	6.85E-08	3.59E-11	1.89E-05
06/09/2016	18CPTMW23SW														
06/09/2016	18CPTMW26	Outside Containment	0.284	26.5	3.3	457	58.4	2.22E-10	1.74E-09	ND	ND	ND	NA	NA	NA
06/09/2016	18CPTMW26SW														
TOTAL FLUX (lb/yr)															
TOTAL MASS OVER 50 ACRES AND 70 YEARS (lbs)															

Darcy velocity = hydraulic conductivity X vertical gradient

Kd (distribution coefficient) = Koc (organic carbon partitin coefficient) foc (organic carbon content)

Retardation Coefficient = 1 + (distribution coefficient X bulk density/effective porosity)

* Hydraulic conductivity and porosity values for clay are for a sample collecte

** Effective porosity (11%) = 25% of the total porosity for the sample collecte

cm - centimeter

ft - feet

ft^2 - square feet

ft^3 - cubic feet

kg - kilogram

L - liter

lb - pound

lbm - pounds mass

mg - milligram

sec - second

yr - year

Table 2-22: Vertical Gradients - June 2016

Date	Monitoring Well	Location of Well Pair	TCE Flux (lb/yr/ft2)	MC Flux (lb/yr/ft2)	Perch Flux (lb/yr/ft2)
Shallow Zone vs. Upper Wilcox					
06/09/2016	MW-2	Inside Containment	9.50E-16	1.19E-13	9.33E-16
06/09/2016	18CPTMW01SW				
06/09/2016	120	Inside Containment	2.00E-11	5.26E-13	1.32E-07
06/09/2016	MW-14				
06/09/2016	MW-21	Inside Containment	1.75E-13	2.82E-15	3.43E-10
06/09/2016	18CPTMW07SW				
06/09/2016	MW-22	Inside Containment	1.42E-15	1.42E-17	8.17E-13
06/09/2016	18CPTMW06SW				
06/09/2016	MW-7	Outside Containment	3.53E-15	3.97E-17	2.06E-11
06/09/2016	18CPTMW12SW				
06/09/2016	18WW22	Outside Containment	1.55E-18	1.22E-17	4.34E-15
06/09/2016	C-04				
06/09/2016	C-08	Outside Containment	2.38E-17	8.29E-18	1.94E-16
06/09/2016	18WW03				
06/09/2016	C-09	Outside Containment	1.24E-19	9.67E-19	9.91E-17
06/09/2016	C-10				
06/09/2016	18WW08	Outside Containment	6.59E-19	5.16E-18	1.20E-16
06/09/2016	18WW09				
06/09/2016	18WW14	Outside Containment	7.39E-19	5.78E-18	NA
06/09/2016	18WW15				
06/09/2016	18CPTMW23	Outside Containment	1.51E-13	7.92E-17	4.17E-11
06/09/2016	18CPTMW23SW				
06/09/2016	18CPTMW26	Outside Containment	NA	NA	NA
06/09/2016	18CPTMW26SW				
TOTAL FLUX (lb/yr)			1.85E-12	5.90E-14	1.32E-08
TOTAL MASS OVER 50 ACRES AND 70 YEARS (lbs)			2.82E-04	8.99E-06	2.01E+00

Darcy velocity = hydraulic conductivity X vertical gradient

Kd (distribution coefficient) = Koc (organic carbon partitin coefficient) foc (organic carbon content)

Retardation Coefficient = 1 + (distribution coefficient X bulk density/effective porosity)

* Hydraulic conductivity and porosity values for clay are for a sample collecte

** Effective porosity (11%) = 25% of the total porosity for the sample collecte

cm - centimeter

ft - feet

ft^2 - square feet

ft^3 - cubic feet

kg - kilogram

L - liter

lb - pound

lbm - pounds mass

mg - milligram

sec - second

yr - year

3 REMEDIAL ACTION OBJECTIVES AND CLEANUP LEVELS

This section identifies the LHAAP-18/24 RAOs (**Section 3.1**), potential chemical-, location- and action-specific ARARs (**Section 3.2**), and cleanup levels (**Section 3.3**). The RAOs identify the general goals or endpoints that the remediation will accomplish, while the cleanup levels identify specific cleanup standards for each medium of concern based on risk or ARARs. The cleanup levels may be applied to individual contaminants.

3.1 Remedial Action Objectives

RAOs are established to protect human health and the environment while also meeting ARARs. The identification of RAOs must consider the environmental impacts at the site and the receptors that are affected. The CSM (**Section 2.5**) identifies the primary environmental issue at LHAAP-18/24 as groundwater posing an unacceptable risk or hazard to the hypothetical future maintenance worker due to contamination by VOCs (primarily MC, TCE, chloroform, and cis-1,2-DCE), the anion perchlorate, 1,4-dioxane, and metals (primarily barium, chromium, and nickel). Although the soil is not considered a medium of concern with respect to human health or ecological risk, unsaturated soils have the potential to serve as an ongoing source of contaminants to groundwater. Additionally, the implied presence of residual DNAPL within the saturated soil is considered a secondary source of contaminants to groundwater. Therefore, the RAOs will address these three media: unsaturated soil, groundwater, and saturated soil (secondary source areas w/ DNAPL).

The future use of the entire LHAAP facility is as a National Wildlife Refuge. The RAOs for LHAAP-18/24, which address contamination associated with the media at the site and take into account the future uses of LHAAP streams, land, and groundwater are as shown below by medium.

Groundwater:

- Prevent human exposure to the groundwater contaminated with VOCs, metals, 1,4-dioxane, and perchlorate above cleanup levels
- Prevent or minimize contaminated groundwater from discharging to surface water above cleanup levels
- Prevent or minimize further migration of the contaminant plume
- Return groundwater to its potential beneficial uses as drinking water, where practicable.

Source Materials:

- Prevent or minimize further migration of contaminants from source materials in the saturated and unsaturated zones to groundwater.

The above RAOs recognize USEPA's policy to return all groundwater to beneficial uses, based on the non-binding programmatic expectation in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) and are consistent with the NCP regulations requiring the lead agency, the U.S. Army in this case, to establish RAOs specifying contaminants and media of concern, potential exposure pathways, and remediation goals.

3.2 Applicable or Relevant and Appropriate Requirements

The NCP, 40 Code of Federal Regulations (CFR) 300.430(f)(1)(ii)(B) states that on-site remedial actions selected in a ROD must attain those ARARs that are identified at the time of the ROD signature, or provide grounds for invoking a waiver under CFR 300.430(f)(1)(ii)(C). This section provides a preliminary identification and evaluation of potential federal and State of Texas chemical-, location-, and action-specific ARARs for the remediation of LHAAP-18/24 under CERCLA.

3.2.1 Definitions and Methods

Applicable requirements are those cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated under federal or state environmental or facility siting laws that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site (40 CFR 300.5).

Relevant and appropriate requirements means those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that, while not “applicable” to a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well suited to the particular site. Only those state standards that are identified in a timely manner and are more stringent than federal requirements may be relevant and appropriate.

To qualify as a state ARAR mandating cleanup standards under 40 CFR 300.400(g)(4) of the NCP, a state requirement must be (1) promulgated (of general applicability and legally enforceable), (2) an environmental or facility siting law or regulation, (3) more stringent than federal requirement, (4) identified by the state in a timely manner, and (5) consistently applied throughout the state.

ARARs are generally divided into chemical-, location-, and action-specific requirements. Chemical-specific ARARs are usually promulgated health- or risk-based numerical values or methods used to determine acceptable concentrations of chemicals that may be found in, or discharged to, the environment. Location-specific ARARs restrict actions or contaminant concentrations in certain environmentally sensitive areas. Action-specific ARARs are usually technology- or activity-based requirements or limitations on actions taken with respect to hazardous wastes.

An on-site action need not comply with administrative parts of requirements identified as ARARs. According to USEPA guidance (USEPA, 1988a), administrative requirements are mechanisms that facilitate the implementation of the related substantive requirements of a statute or regulation (e.g., approval of or consultation with administrative bodies, documentation, permit issuance, reporting, and record keeping).

The NCP at 40 CFR 300.400(e)(1) exempts on-site actions from having to obtain federal, state, or local permits and defines “on-site” as meaning “the aerial extent of contamination and all suitable areas in very close proximity to the contamination necessary for implementation of the response action.” However, on-site actions must still be in compliance with any substantive permit requirements. CERCLA 121(e)(1) and 55 Federal Register (FR) 8666 state "CERCLA actions should not be delayed by time-consuming and duplicative administrative requirements

such as permitting, although remedies should achieve the substantive standards of applicable or relevant and appropriate laws."

Off-site actions must not only comply with requirements that are legally applicable, but they must comply with both the substantive and the administrative parts of those requirements. Permits, if required, must be obtained for all remedial activities conducted off site, (40 CFR 300.400(e)(2)). Statutory waivers of ARARs (40 CFR 300.430(f)(1)(ii)(C)) may not be used for off-site actions. CERCLA section 121(d) requires on-site Superfund remedial actions to comply with Federal, and more stringent State, environmental requirements that are determined to be ARARs; and even though requirements for off-site actions are not ARARs, they must be complied with.

The USEPA has noted in its CERCLA guidance that if attainment of a numerical value that is a potential chemical-specific ARAR is impossible because the background level of the chemical subject to CERCLA authority is higher than that of the potential ARAR, the numeric criterion would not be considered an ARAR (USEPA, 1991).

ARARs include only federal or more stringent state environmental laws and regulations that are identified in a timely manner and do not include occupational safety regulations. The USEPA requires compliance with the Occupational Safety and Health Administration (OSHA) standards and other worker protection requirements under Section 300.150 of the NCP, not through the ARARs process. Therefore, none of the promulgated OSHA regulations (e.g., 29 CFR 1926, 29 CFR 1910) are addressed here as ARARs.

In addition to ARARs, 40 CFR 300.400(g)(3) states that federal or state non-promulgated advisories or guidance may be identified as to-be-considered (TBC) guidance for contaminants, conditions, and/or actions at the site. TBCs consist of criteria, advisories, and guidance. TBCs are not ARARs because they are neither promulgated nor enforceable. TBCs may be used to interpret ARARs and to determine preliminary cleanup levels when ARARs do not exist for particular contaminants or are not sufficiently protective to develop cleanup levels. TBCs, such as guidance or policy documents, developed to implement regulations may be considered and used where necessary to ensure protectiveness. No TBCs were identified for LHAAP-18/24.

Potential chemical-specific requirements are discussed in **Section 3.2.2**; **Table 3-1** includes a narrative listing of chemical-specific ARARs for LHAAP-18/24. Potential location-specific ARARs were not identified at LHAAP-18/24. Potential action-specific ARARs are discussed in **Section 3.2.4** and are listed and grouped by component action in **Table 3-2**. **Table 3-3** provides a listing of non-ARARs. However, the procedural requirements of those non-ARARs will be adhered to during remedy implementation at LHAAP-18/24.

3.2.2 Potential Chemical Specific ARARs

This section identifies the potential chemical-specific ARARs that apply to surface/subsurface soils, air and groundwater at LHAAP-18/24. These ARARs are summarized in **Table 3-1**.

3.2.2.1 Potential Chemical Specific ARARs for Surface Water

Section 121(d)(2) of CERCLA states that every remedial action shall require a level of control which at least attains surface water quality criteria established under Sections 304 or 303 of the Clean Water Act of 1972 (CWA), where relevant and appropriate. Therefore, surface water

quality criteria are ARARs if there is a remedial action that affects surface water, and measures will be implemented during construction to prevent off-site migration of contaminants to surface waters. In the event of remedy failure resulting in or potentially resulting in a release to surface water, 40 CFR 122, 125, 129, 130, and 131 and 30 Texas Administrative Code (TAC) 307.1, 307.2, 307.3, 307.4, 307.5(a) and (b), 307.6, 307.7, 307.8 and 307.9 are considered potential future ARARs.

For discharge of treated groundwater to surface water, the Texas Surface Water Quality Standards (30 TAC 307.1 through 307.10) are considered relevant and appropriate. The interim Record of Decision for LHAAP-18/24 established effluent discharge criteria for treated groundwater. These criteria are considered the cleanup levels for extracted groundwater at LHAAP-18/24. The discharge criteria for the CoCs will be re-evaluated based on the most current TCEQ surface water quality criteria.

3.2.2.2 Potential Chemical Specific ARARs for Groundwater

The baseline risk assessment (Jacobs, 2002) indicated that the contaminated groundwater at LHAAP-18/24 presented unacceptable risk and hazard to a hypothetical future maintenance worker. The chemical-specific ARAR is the attainment of the SDWA MCL for all groundwater CoCs and by-product contaminants. In the absence of federal drinking water standards, cleanup levels will be based on TRRP Tier 1 Groundwater Residential PCLs.

3.2.3 Potential Location Specific ARARs

No location specific ARARs are identified for LHAAP-18/24. Some procedural considerations that are location specific but are not considered ARARs are discussed in **Section 3.2.5**.

3.2.4 Potential Action Specific ARARs

Action-specific ARARs include operation, performance and design requirements or limitations based on the waste types, media, and remedial activities. This section provides a preliminary identification and evaluation of potential federal and state of Texas action-specific ARARs for the proposed remediation of LHAAP-18/24.

Pursuant to USEPA guidance, there are no action-specific ARARs for the required no action alternative (USEPA, 1991). The action-specific ARARs for the activities common to the remedial action to be conducted at LHAAP-18/24 are discussed in **Section 3.2.4.1** below. All potential action-specific ARARs are listed in **Table 3-2** and are grouped by component action.

Each of the proposed remedial action alternatives will involve several of the following activities: waste generation, characterization, management, storage, and disposal activities; well construction; and water treatment. Action-specific ARARs are discussed here for the activities common to the remedial activities to be proposed for LHAAP-18/24.

3.2.4.1 Site Preparation, Construction, and Excavation Activities

Certain on-site preparation, construction, and/or excavation activities will be necessary under all remediation actions to prepare the site for remediation, including soil-moving or site-grading activities. Control of fugitive emissions and storm water runoff during implementation of these activities will be required.

Airborne particulate matter resulting from construction or excavation activities is subject to the fugitive dust and opacity limits listed in 30 TAC 111, Subchapter A. No person may cause, suffer, allow, or permit visible emissions from any source to exceed an opacity of 30 percent for any 6-minute period (30 TAC 111.111[a]). Reasonable precautions must also be taken to achieve maximum control of dust to the extent practicable, including the application of water or suitable chemicals or the complete covering of materials (30 TAC 111.143 and 30 TAC 111.145).

Texas has also promulgated general nuisance rules for air contaminants mandating that no person shall discharge from any source whatsoever one or more air contaminants, or combinations thereof, in such concentration and of such duration as are or may tend to be injurious to or to adversely affect human health or welfare, animal life, vegetation, or property, or as to interfere with the normal use and enjoyment of animal life, vegetation, or property (30 TAC 101.4).

Storm water discharges from construction activities that disturb equal to or greater than one acre of land must comply with the substantive requirements of a USEPA National Pollutant Discharge Elimination System (NPDES) general permit (40 CFR 122.26; 30 TAC 205, Subchapter A; and 30 TAC 308.121), depending on the amount of acreage disturbed. Substantive requirements include implementation of good construction management techniques; phasing of large construction projects; minimal clearing; and sediment, erosion, structural, and vegetative controls to mitigate runoff and ensure that discharges meet required parameters.

3.2.4.2 Waste Generation, Characterization, Management, Storage, and Disposal Activities

The processes of monitoring, intercepting, or treating contaminated groundwater may generate a variety of primary and secondary waste streams (e.g., soil, personal protective equipment [PPE], and dewatering and decontamination fluids). These waste streams are expected to be non-hazardous waste. All solid waste (defined as any solid, liquid, semisolid, or contained gaseous material intended for discard [40 CFR 261.2]) generated during remedial activities must be appropriately characterized to determine whether it contains RCRA hazardous waste (40 CFR 262.11; 30 TAC 335.62; 30 TAC 335.503[a][4]; 30 TAC 335.504). All wastes must be managed, stored, treated (if necessary), and disposed of in accordance with the ARARs for waste management listed in **Table 3-2** for the particular type of waste stream or contaminants in the waste.

Excavated environmental media including soil excavated during the installation of monitoring/ extraction wells or to remove contaminated soil would be sent off site for disposal or, in the case of non-hazardous trenching or well construction soil, redeposited within the area of contamination (AOC). The USEPA defines “onsite” as the areal extent of contamination and all suitable areas in close proximity to the contamination necessary for the implementation of the CERCLA response action and notes that such contamination may contain varying types and concentrations of hazardous substances (Volume 53FR page 51444; 55 FR 8758). Portions of the soil generated from remedial activities at LHAAP-18/24 could be hazardous. ARARs for the management of such media at the site of generation (i.e., within the AOC) are listed in **Table 3-2**.

The USEPA has stated that excavation and redeposition of contaminated soil within an AOC does not constitute “generation”; therefore, the requirements of 40 CFR 262.11 and 268.7 to characterize generated wastes are not applicable (Office of Solid Waste and Emergency

Response Directive 9441.1992[16], June 11, 1992). Consolidation of waste between AOCs for treatment or disposal, however, or excavation and treatment with subsequent disposal in the same AOC or off-site disposal constitute "placement." In these situations, RCRA Subtitle C requirements for the generation, handling, treatment, and disposal of such wastes are applicable if the waste/media is determined to contain RCRA hazardous waste (55 FR 8758) (USEPA, 1990).

3.2.4.3 Water Treatment

Contaminated groundwater and wastewaters collected during groundwater extraction, well drilling, or decontamination activities could be transported to the existing groundwater treatment plant constructed as a component of the previous IRA at LHAAP-18/24 and would subsequently be discharged in compliance with the CWA outfall limits for the plant as listed in the interim ROD. To assure compliance with the treatment plant's discharge limits, the incoming water must meet the design criteria for the plant such as air to water ratio for the air stripper. On-site wastewater treatment units (as defined in 40 CFR 260.10) that are part of a wastewater treatment plant that is subject to regulation under Section 402 or Section 307(b) of the CWA are not subject to RCRA Subtitle C hazardous waste management standards (40 CFR 270.1[c][2][v]; 40 CFR 264.1[g][6]; 30 TAC 335.42[d][1]). The USEPA has clarified that this exemption applies to all tanks, conveyance systems, and ancillary equipment, including piping and transfer trucks, associated with the wastewater treatment unit (53 FR 34079, September 2, 1988).

3.2.4.4 Well Construction

All of the proposed alternatives, other than the no action alternative, may involve the placement, use, or eventual plugging and abandonment of some type of groundwater monitoring, injection, and/or extraction wells, either for in situ treatment or extraction of the contaminated groundwater or for long-term monitoring (LTM) of the groundwater. Available standards for well construction and plugging/abandonment would provide ARARs for such actions and include 30 TAC 331, Subchapters A, C, and H.

Texas has promulgated technical requirements in Chapter 76 of Title 16 of the TAC applicable to construction, operation, and plugging/abandonment of water wells. In particular, 16 TAC 76.1000 (Locations and Standards of Completion for Wells), 16 TAC 76.1002 (Standards for Wells Producing Undesirable Water or Constituents) (LHAAP-18/24 contaminated groundwater could be considered "undesirable water" defined pursuant to Section 76.10[36] as "water that is injurious to human health and the environment or water that can cause pollution to land or other waters"), 16 TAC 76.1004 (Standards for Capping and Plugging of Wells and Plugging Wells that Penetrate Undesirable Water or Constituent Zones), and 16 TAC 76.1008 (Pump Installation) may provide ARARs for the placement, construction, and eventual plugging/abandonment of groundwater injection or extraction wells or the placement and long-term operation of groundwater monitoring wells for proposed groundwater remedial strategies.

3.2.5 Non-ARAR Procedural Considerations

Certain relevant requirements that are not identified as ARARs are included in this section and in **Table 3-3**.

3.2.5.1 Threatened and Endangered Species

No federally endangered species are known to occur on the installation. There are 22 animal species that could potentially be present on or near LHAAP that appear on federal or state threatened species lists. The historic details regarding the number and date of species sightings are presented in the Caddo Lake Institute report (CLI, 1995). Of the 22 animal species that could potentially be present, information from the U.S. Fish and Wildlife Service (USFWS), and the Texas Department of Parks and Wildlife in 2003 identified the following list of threatened species and ecological communities of concern that are known or suspected to occur in the vicinity of LHAAP (species that have been confirmed are listed in italics) (Shaw, 2007b).

- Federal Listed Threatened Species:
    - *Bald Eagle*
    - Louisiana Black Bear
- State Listed Threatened Species:
    - Louisiana Black Bear
    - *Rafinesque's Big-Eared Bat*
    - *Alligator Snapping Turtle*
    - *Timber Rattlesnake*
    - Bluehead Shiner
- State Species of Concern:
    - Southern Lady's Slipper
- State Special Features/Natural Communities/Managed Areas:
    - Colonial Waterbird Rookeries
    - Bald Cypress-Water Tupelo Series
    - Shortleaf Pine-Oak Series
    - Water Oak-Willow Oak Series
    - Caddo Lake State Park

Some conflicting evidence is available regarding the potential presence of the Timber Rattlesnake at Longhorn. This State-listed species is described in historical site documents as being confirmed present on the site, but there is no recent documented evidence of this species being present on site (Shaw, 2007b). Therefore, it is assumed that the Timber Rattlesnake is potentially present, along with the Alligator Snapping Turtle, as well as the Bald Eagle and the Rafinesque's Big-Eared Bat. Timber rattlesnakes prefer moist lowland forests and hilly woodlands or thickets near permanent water sources such as rivers, lakes, ponds, streams and swamps where tree stumps, logs and branches provide refuge. Alligator snapping turtles prefer deep waters of ponds, canals, lakes, streams, or swamps where they spend most of their time concealed by mud. Bald eagles in Texas may either represent breeding populations or wintering populations, and tend to roost on large lakes and rivers with tall trees for nesting and

unobstructed flight paths to food sources (typically fish). Although Rafinesque's big-eared bats roost in cave entrances, abandoned buildings and under bridges, the preferred roosting sites for these bats are large, dead, hollow trees. Timber Rattlesnakes have not been observed at the installation by resident wildlife experts, and large water bodies with deep pools required by alligator snapping turtles are not present at this site. Common bat roosting locations, such as dead tree snags and abandoned buildings are not features at this site, and no bald eagle nests are documented as being present in this area. Furthermore, although the site may be used occasionally by bald eagles or Rafinesque's big-eared bats during migration or as part of a foraging territory, this site is too small (34.5 acres) for regular exposure to occur for these species, which have home ranges of hundreds of acres. The potential for these threatened species to be present at LHAAP-18/24 is low. Thus, based on current information, potential remedial action alternatives are not expected to harm any federal- or state-listed threatened or endangered species or their critical habitat. Substantive requirements of the federal Endangered Species Act (16 U.S. Code (USC) 1531 et seq.), the federal Bald Eagle Protection Act (16 USC 668 et seq.), and the Texas Resource Protection Act (31 TAC 69, Subchapters A and B, and 31 TAC 65, Subchapter G) while not ARARs, will be complied of during implementation of proposed remedial alternatives. These non-ARARs are included in **Table 3-3** in the event that such threatened and endangered species/habitats are identified at LHAAP-18/24 in the future.

3.2.5.2 Waste Generation, Characterization, Management, Storage, and Disposal Activities

Hazardous waste requirements such as manifesting for off-site disposal (40 CFR 262.20) and planning/implementing off-site response action (40 CFR 300.440) will be complied with even though they are not considered an ARAR. Regulations associated with off-site treatment, storage, and disposal facilities (TSDF) that accept hazardous waste from the site are not considered ARARs, although the off-site TSDF must comply with waste characterization (40 CFR 264.13 and 268.7), land disposal requirements (40 CFR 268), and closure requirements (40CFR 264.111 & 264.178). The substantive requirements for hazardous waste storage in on site containers will be complied with in accordance with 40 CFR 264.171.

Table 3-1: Potential Chemical-Specific ARARs

Citation	Activity or Prerequisite/Status	Requirement
Groundwater		
Federal Safe Drinking Water Act MCLs 40 CFR 141	Applicable to drinking water—relevant and appropriate for water that could potentially be used for human consumption.	Must not exceed MCLs, if relevant and appropriate, for water designated as a current or potential source of drinking water. See Tables 2-1 and 2-2 for specific numeric criteria.
Surface Water		
Texas Surface Water Quality Criteria 30 TAC 307.1 through 307.10	Applicable to industrial groundwater—relevant and appropriate to meet Texas surface water quality criteria	Interim Record of Decision effluent discharge limits. The discharge criteria for the COCs will be re-evaluated based on most current TCEQ standards.

Abbreviations:

ARAR	applicable or relevant and appropriate requirement	TAC	Texas Administrative Code
GWP	groundwater protection	TCEQ	Texas Commission on Environmental Quality
MCL	maximum contaminant level	PCL	Texas Residential Groundwater Protective Concentration Levels

Table 3-2: Potential Action-Specific ARARs

Citation	Activity or Prerequisite/Status	Requirement
General Site Preparation, Construction, and Excavation Activities		
Air Contaminants – General Nuisance Rules 30 TAC 101.4	Emissions of air contaminants—applicable.	No person shall discharge from any source whatsoever one or more air contaminants or combinations thereof, in such concentration and of such duration as are or may tend to be injurious to or to adversely affect human health or welfare, animal life, vegetation, or property, or as to interfere with the normal use and enjoyment of animal life, vegetation, or property.
Opacity Standard 30 TAC 111.111(a)(8)(A)	Fugitive emissions from land-disturbing activities (e.g., excavation, construction)—applicable.	Visible emissions shall not be permitted to exceed opacity of 30% for any 6-minute period from any source.
Fugitive Particulate Matter Standard 30 TAC 111.145	Fugitive emissions from land-disturbing activities (e.g., excavation, construction)—applicable.	No person may cause, suffer, allow, or permit a structure, road, street, alley or parking area to be constructed, altered, repaired, or demolished, or land to be cleared without taking at least the following precautions to achieve control of dust emissions: • Use of water or of suitable oil or chemicals for control of dust in the demolition of structures, in construction operations, in work performed on a road, street, alley, or parking area, or in the clearing of land; and • Use of adequate methods to prevent airborne particulate matter during sandblasting of structures or similar operations.
Storm water Runoff Controls 40 CFR 122.26; 30 TAC 205, Subchapter A; 30 TAC 308.121	Storm water discharges associated with construction activities—applicable to disturbances of equal to or greater than 1 acre of land.	Good construction management techniques, phasing of construction projects, minimal clearing, and sediment, erosion, structural, and vegetative controls shall be implemented to mitigate storm water run-on/runoff.
Waste Generation, Management, and Storage		
Characterization of Solid Waste 40 CFR 262.11 30 TAC 335.62 30 TAC 335.504 30 TAC 335.503(a)(4)	Generation of solid waste, as defined in 30 TAC 335.1—applicable.	Must determine whether the generated solid waste is RCRA hazardous waste by using prescribed testing methods or applying generator knowledge based on information regarding material or process used. If the waste is determined to be hazardous, it must be managed in accordance with 40 CFR 262–268. After making the hazardous waste determination as required, if the waste is determined to be nonhazardous, the generator shall then classify the waste as Class 1, Class 2, or Class 3 (as defined in Section 335.505 through Section 335.507) using one or more of the methods listed in Section 335.503(a)(4) and Section 335.508 and manage the waste in accordance with the requirements of Chapter 335 of the TAC for industrial solid waste.

Table 3-2: Potential Action-Specific ARARs

Citation	Activity or Prerequisite/Status	Requirement
Requirements for Temporary Storage of Hazardous Waste in Accumulation Areas 40 CFR 262.34(a) and (c)(1) 30 TAC 335.69(a) and (d)	On-site accumulation of 55 gallons or less of RCRA hazardous waste for 90 days or less at or near the point of generation—applicable if hazardous waste is generated (e.g., PPE) and stored in an accumulation area.	A generator may accumulate hazardous waste at the facility provided that • Waste is placed in containers that comply with 40 CFR 264.171 to 264.173 (Subpart I); and • Container is marked with the words “hazardous waste”; or • Container may be marked with other words that identify the contents.
Characterization of Hazardous Waste 40 CFR 268.7 30 TAC 335.504(3) 30 TAC 335.509 30 TAC 335.511	Generation of a RCRA hazardous waste for treatment, storage, or disposal—applicable if hazardous waste is generated (e.g., PPE).	Must obtain a detailed chemical and physical analysis of a representative sample of the waste(s) that at a minimum contains all the information that must be known to treat, store, or dispose of the waste in accordance with 40 CFR 264 and 268. Must also determine whether the waste is restricted from land disposal under 40 CFR 268 et seq. by testing in accordance with prescribed methods or use of generator knowledge of waste.
Well Construction		
Well Construction Standards—Monitoring or Injection Wells 16 TAC 76.1000	Construction of water wells—applicable to construction of new monitoring or injection wells, if needed.	Wells shall be completed in accordance with the technical requirements of Section 76.1000, as appropriate.
Well Construction Standards—Extraction Wells 16 TAC 76.1000(a) and (c) through (h) 16 TAC 76.1002(a) through (c) 16 TAC 76.1008(a) through (c)	Construction of water wells—applicable to construction of extraction (recovery) wells.	Wells shall be completed in accordance with the technical requirements of Section 76.1000, as appropriate. Water wells completed to produce undesirable water shall be cased to prevent the mixing of water or constituent zones. The annular space between the casing and the wall of the borehole shall be pressure grouted with cement or bentonite grout to the land surface. Bentonite grout may not be used if a water zone contains chloride water above 1500 ppm or if hydrocarbons are present. Wells producing undesirable water or constituents shall be completed in such a manner that will not allow undesirable fluids to flow onto the land surface. During installation of a water well pump, installer shall make a reasonable effort to maintain integrity of groundwater and to prevent contamination by elevating the pump column and fittings, or by other means suitable under the circumstances. Pump shall be constructed so that no unprotected openings into the interior of the pump or well casing exist.

Table 3-2: Potential Action-Specific ARARs

Citation	Activity or Prerequisite/Status	Requirement
Class V Injection Wells 30 TAC 331, Subchapter A, C, and H	Installation, operation, and closure of injection wells for in situ chemical oxidation fall in the category of Class V Injection Wells – relevant and appropriate.	Injection wells shall be constructed to the required specifications for isolation casing, surface completion, prevention of commingling, and confinement of undesirable groundwater to its zone of origin. Closure shall be accomplished by removing all of the removable casing and the entire well shall be pressure filled via a tremie pipe with cement from bottom to the land surface, or closure shall be performed by the alternative method for Class V Wells completed in zones of undesirable groundwater. Groundwater concentrations at time of well closure will determine the appropriate method of abandonment.
Treatment/Disposal		
Disposal of Wastewater (e.g., contaminated groundwater, dewatering fluids, decontamination liquids) 40 CFR 268.1(c)(4)(i) 30 TAC 335.431(c)	RCRA-restricted characteristically hazardous waste intended for disposal—applicable if extracted groundwater is determined to be RCRA characteristically hazardous.	Disposal is not prohibited if such wastes are managed in a treatment system subject to regulation under Section 402 of the CWA that subsequently discharges to waters of the United States.
Closure		
Standards for Plugging Wells that Penetrate Undesirable Water or Constituent Zones 16 TAC 76.1004(a) through (c)	Plugging and abandonment of wells—applicable to plugging and closure of monitoring and/or extraction wells.	If a well is abandoned, all removable casing shall be removed and the entire well pressure filled via a tremie pipe with cement from bottom up to the land surface. In lieu of this procedure, the well shall be pressure-filled via a tremie tube with bentonite grout of a minimum 9.1 lb/gal weight followed by a cement plug extending from land surface to a depth of not less than 2 feet. Undesirable water or constituents or the freshwater zone(s) shall be isolated with cement plugs.

Abbreviations:

ARAR	applicable or relevant and appropriate requirement
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR	Code of Federal Regulations
CWA	Clean Water Act of 1972
USEPA	U.S. Environmental Protection Agency
lb/gal	pound per gallon
%	percent
PPE	personal protective equipment
ppm	part per million
RCRA	Resource Conservation and Recovery Act of 1976
TAC	Texas Administrative Code

Table 3-3: Non-ARAR Procedural Considerations

Resource/Citation	Activity or Prerequisite Status	Requirement
Protection of Threatened and Endangered Species (as listed in Table 3-5) Endangered Species Act (16 USC 1531 et seq.); 50 CFR 402; Bald Eagle Protection Act (16 USC 668 et seq.); Texas Resource Protection Act, 31 TAC 69 Subchapters A and B, and 31 TAC 65 Subchapter G	Activities that may adversely impact any state- or federally-listed, threatened or endangered species or their habitat—applicable if such species and/or habitats are impacted	Actions that jeopardize the existence of a listed species or result in the destruction or adverse modification of critical habitat must be avoided, or reasonable and prudent mitigation measures must be taken. No person may take, possess, propagate, transport, export, sell or offer for sale, or ship any species of fish, wildlife, or native plant listed by the Texas Parks and Wildlife Department as endangered or threatened. The Department shall actively seek full restitution for and/or restoration of such a native plant, fish, or wildlife, or habitat loss occurring as a result of human activities.
National Oil and Hazardous Substances Pollution Contingency Plan 0 CFR 300.440	Procedure for planning and implementing off-site response actions.	USEPA will determine the acceptability under the selection of any facility selected for the treatment, storage, or disposal of CERCLA waste.
Management of RCRA Hazardous Waters—Wastewater Treatment Unit Exclusion 40 CFR 264.1(g)(6) 40 CFR 270.1(c)(2) 30 TAC 335.41(d)(1)	Treatment/disposal of wastewater containing RCRA hazardous waste—applicable to management of contaminated groundwater if it is determined to contain RCRA characteristically hazardous waste.	On-site wastewater treatment units, as defined in 40 CFR 260.10, that are part of a wastewater treatment facility subject to regulation under Section 402 or Section 307(b) of the CWA are excluded from the requirements of RCRA Subtitle C (Note: USEPA has clarified that this exemption applies to all tank systems, conveyance systems, and ancillary equipment, including transfer trucks, associated with the wastewater treatment unit [53 FR 34079, September 2, 1988]).
Requirements for the Use and Management of Containers 40 CFR 264.171–264.173 30 TAC 335.69(e) 30 TAC 335.152(a)(7)	On-site storage/treatment of RCRA hazardous waste in containers for greater than 90 days—applicable if hazardous waste is generated (e.g., PPE) and is stored in containers.	Design and operating standards of 40 CFR 264.175(c) and 40 CFR 264.171, 264.172, and 264.173(a) and (b) must be met for the use and management of hazardous waste in containers.
Requirements for Closure of a RCRA Container Storage Area 40 CFR 264.111 40 CFR 264.178 30 TAC 335.152(a)(5) 30 TAC 335.152(a)(7)	Closure of a RCRA-permitted container storage area—applicable if hazardous waste is generated (e.g., PPE) and is stored in containers.	Must close unit in a manner that • Minimizes the need for further maintenance; • Controls, minimizes, or eliminates, to the extent necessary to protect human health and the environment, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products to ground or surface waters or to the atmosphere; and • Complies with closure requirements of 40 CFR 178. All hazardous waste and residues must be removed from containment system. Remaining containers, liners, bases, and soil containing or contaminated with hazardous waste or residues must be decontaminated or removed.

Abbreviations:

CFR	Code of Federal Regulations
ARAR	applicable or relevant and appropriate requirement
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CWA	Clean Water Act
PPE	personal protective equipment
RCRA	Resource Conservation and Recovery Act of 1976
TAC	Texas Administrative Code
USC	United States Code
USEPA	United States Environmental Protection Agency

4 IDENTIFICATION AND SCREENING OF TECHNOLOGIES AND PROCESS OPTIONS

The primary objective of identifying, screening, and evaluating potentially applicable technology types and process options for the LHAAP-18/24 is to identify an appropriate range of remedial technologies and process options to be developed into remediation alternatives. This screening process consists of a series of analytical steps that include the following:

- Identify volumes or areas of media of concern, and the associated CoCs (**Section 4.1**)
- Identify GRAs (**Section 4.2**)
- Identify and screen remedial technologies and process options (**Section 4.3**)
- Evaluate and select representative process options (**Section 4.4**)

These steps are outlined in the USEPA (RI)/FS guidance (USEPA, 1988b) and the NCP.

4.1 Contaminants and Media Quantities of Concern

Section 2.0 presents current site conditions at LHAAP-18/24. Based on available sampling data, groundwater at LHAAP-18/24 has been identified as the medium of concern because it poses an unacceptable carcinogenic risk and non-carcinogenic hazard to a hypothetical future maintenance worker. Soil has not been identified as a medium of concern for protection of human health and ecological risk; however, it was identified as a medium of potential concern for the protection of groundwater from potential cross-media transfer. The contamination can be summarized as follows:

- A plume of dissolved perchlorate contamination that exceeds the cleanup level exists under the entire site in the shallow zone with additional significant plume areas outside the LHAAP-18/24 footprint. The extent of the contamination is fairly well defined, with the perchlorate plume size in the Shallow Zone estimated at 67 acres (**Figure 1-9**) and in the Wilcox Formation at 21 acres (**Figure 1-10**). A Shallow Zone well, 18WW24, was installed in May 2014, just to the south of Harrison Bayou and north of MW-16. The perchlorate concentration in this well in June 2016 was 0.228 J µg/L. Another Shallow Zone well adjacent to Harrison Bayou, 18WW25 was installed and sampled in June 2016 and had a reported perchlorate concentration of < 0.2 µg/L. The concentrations in these two wells define the perchlorate plume to the north of MW-16 and 18CPTMW23, and to the northwest of 18CPTMW15. In May 2014, installation of monitoring well 18WW23 was attempted near C-01 to the south of 18CPTMW22 to determine extent of perchlorate in this area of the site. However, no groundwater was found and the Wilcox clay was encountered at approximately 12-13 ft bgs. Three soil samples were collected from the boring and the boring was plugged and abandoned. All three samples had perchlorate concentrations below the detection limit (< 2.4 µg/kg).
- A plume of dissolved MC contamination exceeding cleanup levels exists in the shallow zone and in the Wilcox Formation near the southern area of the UEP and to the northwest of the UEP inside the containment of LHAAP-18/24 (the ACD (west side) plume has very low MC concentrations). The extent of the contamination is known, and the size of the MC plume in

the Shallow Zone is approximately 7.3 acres (**Figure 1-13**) and 4.8 acres in the Wilcox Formation (**Figure 1-14**).

- A plume of dissolved TCE contamination exceeding the cleanup level exists in the shallow zone under the entire site with additional significant plume areas outside the LHAAP-18/24 footprint. The extent of the contamination is known, and the size of the TCE plume in the Shallow Zone is approximately 59 acres (**Figure 1-11**). The high TCE concentrations in shallow groundwater coincide with the two areas of MC contamination: MW-2 south of the former UEP and monitoring well 120 northwest of the former ACD. A Wilcox Formation dissolved TCE plume has an area of approximately 16.6 acres (**Figure 1-12**) and covers a large portion of the containment area with the highest concentration found in MW-14 in the former ACD area. The lateral extent of the contamination in the Wilcox Formation is known, however, determination of the vertical extent of contamination may require installation of additional deeper Wilcox wells during the design phase.
- A plume of dissolved 1,4-dioxane exceeding the cleanup level exists in the Shallow Zone in the ACD area and another plume is present to the south, in the area around MW-7. The extent of the contamination is known, and the size of the 1,4-dioxane plumes in the Shallow Zone is approximately 2.7 acres (**Figure 1-15**). A Wilcox Formation dissolved 1,4-dioxane plume has an area of approximately 1.2 acres (**Figure 1-16**) centered around MW-14 in the former ACD area.
- Isolated detections of metals in the shallow zone at concentrations exceeding the MCLs/PCLs occur across the site, but without the clear plume patterns exhibited by VOCs. The major metals in the Shallow Zone are arsenic, barium, and chromium. The other metals (manganese, cadmium, lead, and nickel) are not detected consistently. In the Wilcox Formation, sporadic detections of arsenic and manganese above the MCL/PCL were reported in three wells, although manganese concentrations are lower than the background 95%UTL. **Figures 1-17 and 1-18** present the metals concentrations with exceedances above the MCLs/PCLs in the shallow zone and the Wilcox Formation, respectively.
- The source of VOCs in trapped DNAPL is estimated to be present in the shallow zone in the ACD area and southern area of the former UEP, respectively (**Figures 2-1 and 2-2**). The aerial extent of the UEP DNAPL extent is estimated at 35,500 ft^2 and the aerial extent of the ACD DNAPL extent is estimated at 5,000 ft^2. Although the DNAPL investigation in 2014 defined the extent of DNAPL n the vicinity of the ACD (**Figure 2-1**), given the high concentrations of TCE and MC in ICT-12-E (97,400 μg/L and 173,000 μg/L in February 2013, respectively) and monitoring well 120 (24,500 μg/L in May 2013 for TCE), the ACD source area may be extended north from the ACD toward ICT-12E and monitoring well 120, increasing the area to be treated for DNAPL. Under this situation, the cost estimate for the DNAPL area in the vicinity of the ACD may become larger and will be considered during the remedial design phase.
- Unsaturated soil in the area south of the former UEP (in the vicinity of 18SB02 and 8A-911 at a depth of 8 to 12 ft bgs) contains TCE and MC that could leach to groundwater at concentrations exceeding the MCLs. A second area, in the vicinity of 8A-975 at a depth between 5.5 and 12 ft bgs, contains MC that could leach to groundwater at concentrations exceeding the MCL. Data collected in May 2014 adjacent to these boring locations helped

reduce the uncertainty in the lateral extent of TCE and MC. Borings 18CPTUEP09, 18CPTPB16, 18CPTPB17, and 18CPTUEP08 determined the general extent of MC and TCE in the unsaturated zone. A more refined extent determination of CoCs in the soil in these areas is recommended, but will be defined as part of remedial design. The estimated in-place volumes are 414 yd^3 and 602 yd^3, respectively, with both areas having been previously excavated to a depth of 4 ft bgs. **Figure 1-20** depicts the location of soil exceedances.

- Unsaturated soil in the area west of the UEP within the former Burn Burial Area at former sample location 8A-940 at a depth of 4 ft bgs contains TCE and MC that could leach to groundwater at concentrations exceeding the MCLs and at sample location 18CPTBB02 at a depth of 4.5 to 5.5 ft bgs had a perchlorate concentration exceeding the GWP-Ind concentration of 7,200 µg/kg. The extent of perchlorate to the south of 8A-940 has been provided by data collected at 18CPTBB01. Due to the shallow nature of impacted soil, the full extent will be readily determined during the remedial design phase. Several soil samples were collected in the vicinity of 8A-911 from borings 18CPTUEP09, 18CPTPB16, 18CPTPB17, and 18CPTUEP08 in 2015. The data from these borings determine the general extent of MC and TCE in the unsaturated zone, although further refinement of the extent will take place during the remedial design phase. The estimated in-place volume is 416 yd^3. **Figure 1-20** depicts the location of soil exceedances. Two soil areas beneath the UEP had concentrations of TCE and/or MC that exceed the groundwater protection-industrial MSCs. The first area is in the vicinity of 18CPT21 and the second area is in the vicinity of 18CPT25. A conservative extent estimate is 280 ft by 110 ft and a thickness of approximately 10 ft. Thus the estimated in-place soil volume is 11,400 yd^3. Further refinement of the extent will take place during the remedial design phase, particularly since an overlapping area where DNAPL exists may require remediation.

Other than the limited unsaturated soil containing MC and TCE that could leach to groundwater at concentrations exceeding the MCLs, the mass of contaminants can be considered in three parts: 1) mass dissolved in groundwater, 2) mass adsorbed onto soil below the water table, and 3) mass in the form of DNAPL (TCE and MC) or soil contamination (perchlorate). The dissolved and adsorbed mass can be considered accessible mass, readily removed by groundwater extraction, although within the lower K zones, limitations of mass removal will reduce the removal rate of contaminants by groundwater extraction. The DNAPL can be considered source mass and is less readily removed.

Accessible mass of perchlorate was estimated at 8,000 pounds, TCE at 5,700 pounds, MC at 880 pounds, and 1,4-dioxane 3.5 pounds (**Table 2-14**). Source mass (DNAPL) estimates for TCE and MC are 132,000 pounds and 80,000 pounds, respectively (**Table 2-14**). No additional source mass was estimated for perchlorate, since the groundwater concentration was applied to the entire soil column to estimate total mass of perchlorate, which included fine-grained as well as coarse-grained soils. The basis for this assumption is that the highest perchlorate concentration measured in shallow groundwater (118,000 µg/L in 18CPTMW22 in June 2014) does not support the presence of brine in shallow groundwater. No source mass was used for 1,4-dioxane due to its high miscibility in water.

The associated estimates of accessible mass (dissolved and adsorbed) removal times based on 2015/2016 average estimates for groundwater mass extraction rates ranged between 1.2 years for MC to 8.5 years for perchlorate. For secondary source (DNAPL) mass removal, assuming source

mass dissolution is not a limiting factor and mass removal rates remain at the 2015/2016 average levels, the lifecycle duration is estimated at 110 years for MC to 196 years for TCE. There is a significant uncertainty in these estimates of mass and time due to the number and nature of the supporting assumptions. Due to diffusivity and dissolution limitations associated with sorbed mass and DNAPL mass especially in fine-grained soils, the timeframe to achieve the remedial action objectives via groundwater extraction alone is expected to be much longer than estimated above. Nonetheless, the conclusion is that groundwater extraction is not able to restore the site as a sole remedy with time estimates exceeding several hundred years.

Industrial operations, with the potential to contribute contamination, took place across almost the majority of the 34.5-acre LHAAP-18/24 footprint; burning units (trenches, cages, pans) were used for a number of years, including direct placement of chlorinated solvents in trenches with sawdust; the UEP was used for washing out rocket motors, a process using MC to remove materials heavily laden with perchlorate; and, support facilities for storage and other uses existed along the southeastern side of the site. Large amounts of these contaminants, which are highly mobile in many cases, were introduced before these activities ceased. Some of the key contaminants were likely released as free product and travelled along preferential transport pathways through the vadose and saturated zones, pooling in some areas and moving laterally in others. Free product travel would have been independent of the direction of groundwater flow, as it is dictated by the topography of the confining layer.

Source material was removed in the late 1980s and late 1990s. More than 8,000 cubic yards of material was removed at the UEP when it was closed in 1987. The excavation, treatment and off-site disposal of soil during the IRA removed more than 32,000 cubic yards of soil from multiple areas across the site in 1996. Undoubtedly, these activities removed the initial source areas and the most highly-contaminated soil in the vicinity of those source areas. However, final excavation limits were not recorded.

Additionally, throughout the time of operational and IRA cleanup activities, water continued to enter the contaminated region via lateral groundwater flow and vertical infiltration, adding to the groundwater flow and causing further dispersion of the contamination. Thus, any remaining DNAPL will likely be residual, not a clearly defined free phase pool. Along with the historic observation of DNAPL in the groundwater at MW-2, the presence of recent (e.g., May 2013) high CoC concentrations in groundwater at MW-2, and the identification of high soil concentrations from discrete soil samples collected at 18CPT21, 18CPT27, and 18CPTACD03 suggest that two areas at the site should be targeted for secondary source (DNAPL in saturated soil) remediation (See **Figures 2-1** & **2-2** for a depiction of the estimated aerial extent of DNAPL in these two areas).

Finally, the groundwater sampling events between 2014 and 2016 provided a better understanding of the presence and distribution of 1,4-dioxane in Shallow Zone and Wilcox Formation groundwater. Because 1,4-dioxane was identified in groundwater at concentrations exceeding the PCL of 9.1 μg/L, 1,4-dioxane is considered a CoC at the site and a contingent remedy for 1,4-dioxane in groundwater is developed and evaluated in this Revised FS.

4.2 General Response Actions

GRAs are large groups of remedial actions that typically satisfy the RAOs. The GRAs for groundwater, saturated soil secondary source areas (i.e., DNAPL), and unsaturated soil include no action, LUCs, containment, removal, treatment, and disposal. These GRAs may be combined to form remediation alternatives that meet the RAOs. The following are descriptions of the GRAs:

- No Action—The no action GRA is retained throughout the FS process as required by the NCP. The no action alternative provides a comparative baseline against which other alternatives can be evaluated. Under this alternative no remedial action will be taken. The site is considered to be left "as is," with no LUCs, containment, removal, treatment, or other mitigating actions.
- Land Use Control—LUCs includes institutional and administrative controls that would restrict uses of the site. The volume, mobility, and toxicity of the contaminants are not reduced through the application of LUCs. LUCs are generally combined with other GRAs to meet the RAOs.
- Containment—Another method of reducing risk to receptors is through containment, which reduces access to the contaminated medium or the migration potential of the contaminants in the medium. The contaminated medium must be isolated from the primary transport mechanisms such as precipitation migration through the soil column and DNAPL dissolution and groundwater flow to unimpacted areas. This isolation may be accomplished through capping of contaminated soil or the installation of subsurface barriers to prevent groundwater migration.
- Removal—Removal GRAs extract the contaminated medium from its present location and move it to an alternative location for treatment and/or disposal. These removal technologies can be selected to reduce exposure to workers and can be used in conjunction with treatment processes.
- In Situ Treatment—In situ treatment GRAs or process options reduce the toxicity, mobility, or volume of the contaminated medium. Chemicals are added, physical properties of the medium are changed, or biological activity of the medium is modified without removal.
- Ex Situ Treatment—Ex situ treatment GRAs involve the reduction of toxicity, mobility, or volume of contaminated medium. Ex situ treatment processes are typically coupled with removal and disposal process options.
- Disposal—Disposal GRAs involve the discarding of the contaminated medium. Disposal process options are typically coupled with removal and treatment process options.

As noted in earlier sections of this Revised FS, the soil in the saturated zone is expected to contain a considerable amount of contamination adsorbed to soil particles as well as the potential for residual DNAPL. Because the saturated zone soil could serve as a long-term source of contamination for the groundwater, a subset of the GRAs is also applied to that soil. Those GRAs include no action, In Situ Treatment, Ex Situ Treatment, Removal, and Disposal. LUCs and Containment are not screened for the saturated soil, unsaturated soil, and DNAPL because their implementation at LHAAP-18/24 would be fundamentally the same as for the groundwater.

Technologies for saturated soil would not be implemented as stand-alone remedies, but only in conjunction with groundwater remedies.

4.3 Screening of Technologies

This section presents the approach to technology and process option screening. In the technology screening process, GRAs are identified that, by themselves or in combination with other GRAs, could be implemented to meet the RAOs established for LHAAP-18/24. Technologies associated with each GRA and process options associated with each technology are identified. Process options that are not technically feasible for the site are eliminated (screened out) from further consideration. If all of the process options under a given technology are screened out, the entire technology is eliminated.

The technologies and process options are initially screened for technical applicability to identify those to be carried forward for further evaluation. The screening process reduces the number of possible process options for a given technology to a number that is appropriate for consideration at LHAAP-18/24. The following are the two general criteria used to determine if a technology or process option should be retained for further evaluation:

- Applicability to the type and combination of contaminants
- Applicability to the site's physical conditions

Table 4-1 presents the technologies and process options considered for LHAAP-18/24 groundwater, unsaturated soil, and saturated (secondary source) zone soil (areas with residual DNAPL). Process options not considered technically applicable were not retained for further evaluation; the rationale for their elimination is shown in the table.

4.4 Evaluation and Selection of Representative Process Options

In this section, each of the process options retained from the initial screening in **Section 4.3** (**Table 4-1**) are further evaluated and screened, further reducing the list of process options that are developed into alternatives in **Section 5.0**. Process options are evaluated using three criteria: effectiveness, implementability, and cost. Based on these criteria, representative process options are selected for each technology. The representative process options provide a basis for developing alternatives in the FS.

The general descriptions of the process options retained from the screening, along with the relevant aspects of effectiveness, implementability, and cost, are discussed. The effectiveness evaluation considers the following: (1) the potential effectiveness of process options in handling the estimated areas or volumes of the contaminated medium; (2) the contribution toward meeting any of the goals identified in the RAOs; (3) the potential impacts to humans and the environment during the construction and implementation phase; and (4) how proven and reliable the process is with respect to the contaminants and conditions at the site.

The implementability evaluation considers both the technical and administrative feasibility of implementing a process option. Implementability concentrates on the difficulty of implementing the option, including the number of treatability studies required, the extent of innovative design required, and the extent of site preparation needed. Unusual equipment or unusual conditions for standard equipment may decrease the ease of implementation. The institutional aspects of

implementability such as meeting the substantive requirements of permitting and availability of services are also considered.

The cost evaluation focuses on the relative capital and operation and maintenance (O&M) costs required. A ranking of high, medium, or low relative to other similar process options is given, each ranking considering both capital and O&M costs. Based on this evaluation, one or more representative process options are selected for each response action to be carried forward into the development of alternatives. The selection of representative process options for the development of alternatives does not eliminate the remaining process options from future consideration. Those process options not carried forward may be reconsidered during the development of the PP, ROD, or remedial design.

4.4.1 Groundwater

In the following subsections, process options are evaluated to address groundwater contaminated with VOCs, metals, and perchlorate. Process options specific to 1,4-dioxane will be included as a contingency. The evaluation is presented graphically in **Figure 4-1**.

4.4.1.1 No Action

The "no action" process option provides no groundwater remedial activities. No monitoring of the groundwater or surface water conditions occurs under this process option. This process option is retained as a baseline with which other remediation alternatives are compared.

- **Effectiveness –** Without access controls or remediation, the groundwater from LHAAP-18/24 could result in a future unacceptable risk to humans if the groundwater is ingested or the groundwater could migrate to surface water. RAOs cannot be achieved with this option.
- **Implementability –** No implementation is required.
- **Cost –** None.

4.4.1.2 Land Use Control

This LUC process option would be implemented to achieve the following at LHAAP-18/24.

- A LUC prohibiting potable use of groundwater above cleanup levels until it is demonstrated that the COCs in soil and groundwater are at levels that allow for unlimited use and unrestricted exposure.
- A LUC restricting land use to non-residential until it is demonstrated that the COCs in groundwater and surface and subsurface soil are at levels that allow for unlimited use and unrestricted exposure.
- A LUC requiring protection and maintenance of the existing UEP cap.
- A LUC to maintain the integrity of any current or future remedial or monitoring systems will remain in place until groundwater cleanup levels of COCs are met.

- A LUC restricting the use of groundwater to environmental monitoring and testing only will remain in place until the levels of COCs in surface and subsurface soil and groundwater allow for unlimited use and unrestricted exposure.

The U.S. Army will perform notification of these land use controls which will accompany all transfer documents and will be recorded in the Harrison County Courthouse. Periodic monitoring will be performed to document that the land use controls remain in effect. LUCs do not achieve RAOs (e.g., preventing groundwater migration to surface water) but can be used in conjunction with other process options to achieve RAOs.

4.4.1.2.1 Access Restrictions

Use controls would be implemented to restrict access to the groundwater. The process options for access restrictions include legal restrictions, administrative controls, and physical mechanisms.

Legal Restrictions. Restrictions to the groundwater can be accomplished through modifications to the property deed or agreements about land use. Legal restrictions can be placed on the installation of groundwater extraction wells not only to prevent access to the contamination, but also to minimize the possibility of moving the contamination toward a future user. A recordation of the LUCs (including restriction to groundwater use) will accompany the transfer documentation from the U.S. Army to the USFWS. Deed restrictions would be needed only if the U.S. Army releases the property to a non-federal entity. These restrictions are effective only as long as the property owners and local authorities enforce them. The U.S. Army is ultimately responsible for the enforcement of the LUCs.

- **Effectiveness –** Because the future use of the site is by a federal agency as a refuge, LUCs are highly effective. These actions can limit or prevent exposure to contaminants remaining on the site after remediation and can be implemented on a temporary basis. Periodic maintenance and Five-Year Reviews will ensure that the restrictions are enforced and remain effective.
- **Implementability –** These options can be readily implemented and are easily implemented by the USFWS since the refuge use is compatible with the main refuge activities per the Wildlife Refuge Act provisions, which are all nonintrusive and limited impact activities. The Refuge System manages six wildlife-dependent recreational uses in accordance with the National Wildlife Refuge System Improvement Act of 1997, including hunting, fishing, birding, photography, environmental education, and interpretation.
- **Cost –** Low.

Administrative Controls. Administrative controls consist of the use of training or procedures to limit access to the site and reduce the risk to human health posed by site contamination. These measures may include internal notices and site inspections to serve as a reminder of the existence of LUCs, a site approval process to review land-use changes at LHAAP-18/24 to ensure the LUCs are followed, training of site personnel regarding the existence and care of the LUCs, and regular inspection and maintenance of the LUCs. These are controls the U.S. Army can use while it maintains control of the site.

- **Effectiveness –** Administrative controls are effective in controlling human intrusion into contaminated areas during and after remediation. The training required for access to the site limits potential exposure to the contaminated groundwater. Administrative controls can be used in conjunction with physical mechanisms. This option is effective due to the use of the site as a wildlife refuge.
- **Implementability –** Training and procedures are readily available and implemented. They may need to be modified for LHAAP-18/24.
- **Cost –** Low.

Physical Mechanisms. It is anticipated that administrative controls will be adequate to control access to the contaminated groundwater and soil and that physical mechanisms will not be required.

4.4.1.2.2 Monitoring

Monitoring and surveillance are used to assess the performance of remedial actions and verify compliance with the established RAOs. Process options for monitoring are physical surveillance and long-term media monitoring.

Physical Surveillance. Visual and physical inspections of engineered remedial action components can detect physical changes (e.g., iron deposition and pipeline cracks) that may ultimately lead to the failure or unsatisfactory performance of that component. Repairs and/or revised maintenance activities can be implemented as a result of these inspections.

- **Effectiveness –** Physical surveillance is effective in determining the continued integrity of engineered systems and the need for repairs and/or replacement. Physical surveillance needs to be used with contaminant monitoring to assess the impact of integrity failure.
- **Implementability –** Physical surveillance is easily implemented and requires experienced, but readily available personnel to make regular visits to the site for inspections.
- **Cost –** Low.

Long-Term Media Monitoring. Environmental media (e.g., groundwater) can be monitored during and after the implementation of the remedial action to determine the effect the remedy has had on the level of contamination. Long-term media monitoring can detect a potential failure of the action to meet the RAOs. Monitoring can also be used to detect changes in expected site conditions or changes in the expected effectiveness of the remedy, and indicate whether additional actions should be implemented or whether ongoing actions can be terminated.

- **Effectiveness**—Long-term media monitoring would be successful in evaluating the effectiveness of a remedial alternative. The effectiveness of the monitoring system depends on the design of the monitoring plan.
- **Implementability**—Equipment and personnel are readily available. The site is readily accessible, and most monitoring techniques have already been implemented at LHAAP. Multiple groundwater-monitoring wells are already in place, and there is a reasonable baseline of groundwater conditions.

- **Cost**—Moderate due to labor and analytical costs but can become substantial over longer periods of time.

4.4.1.2.3 Summary of Land Use Control Process Options

Administrative controls, physical surveillance, and long-term media monitoring are carried forward as representative process options for the LUCs GRA. Notification of industrial/recreational use will accompany all transfer documents and will be recorded in the Harrison County Courthouse. The covenants would only be used if the U.S. Army releases the land to a non-federal entity. All of these process options could be combined with other process options to meet the RAOs.

4.4.1.3 Containment

Containment consists of technologies that contain groundwater in place to prevent further migration or immobilize it for in situ treatment. The containment technologies considered are hydraulic containment and physical containment. The process options for hydraulic containment are identical to those for groundwater removal, and are discussed in the following **Section 4.4.1.4**. Physical containment process options fall into two categories:

- **Lateral containment –** slurry walls, grout curtains, and sheet pilings.
- **Capping –** soil covers, asphalt caps, multilayer caps.

Capping technology is intended to be applied in conjunction with a lateral containment option to minimize infiltration of surface water/precipitation and stabilize the water table (i.e., reduce the outward migration of groundwater from the site). Portions of LHAAP-18/24 may require some initial clearing, particularly outside the containment area.

4.4.1.3.1 Lateral Containment

Slurry Wall. A slurry wall is a continuous low permeability subsurface trench formed by mixing clay minerals (typically bentonite) with in situ soil to contain contaminated groundwater. It is constructed very much like an ICT with the exception that the intent is to prevent groundwater movement rather than encourage it. The slurry wall can be installed around the entire area of a shallow plume to effectively contain contaminated groundwater from lateral migration.

- **Effectiveness –** Slurry walls are very effective at containing groundwater horizontally. The trench functions like a continuous wall preventing the passage of groundwater. Slurry walls are only applicable to shallow zone contamination.
- **Implementability –** Slurry walls are relatively easy to install with the appropriate construction equipment, deep trencher, long-stick excavator, deep soil mixer. The process requires little long-term maintenance. Slurry walls become more difficult to install with greater depths as equipment becomes more specialized and costs per linear foot rise.
- **Cost –** Moderate.

Grout Curtain. A grout curtain is a low permeability subsurface barrier formed by injecting chemicals such as sodium silicate or cement-based grout in a series of overlapping columns to

form a barrier to groundwater flow. The grout curtain can be installed around the entire area of a shallow plume to effectively contain contaminated groundwater.

- **Effectiveness –** Grout curtains are effective at containing groundwater horizontally. The grout curtain prevents the passage of groundwater if well-constructed of materials compatible with the groundwater and contaminants. Grout curtains are only applicable to shallow zone contamination. Soil heterogeneity which is present at the site may result in an uneven distribution of grout that could result in leaks. Injected chemicals may interfere with NA processes at the site.
- **Implementability –** Grout curtains are relatively easy to install with the appropriate high pressure soil grout injection equipment. The process requires little long-term maintenance. Grout curtains may leak at improperly overlapped columns, with injection failure, or if chemical degradation occurs over time.
- **Cost –** Moderate.

Sheet Piling. Sheet piling can form an impermeable subsurface barrier by driving impermeable sheets of steel or synthetic material into the ground to form a barrier to groundwater flow. The sheet piling can be installed around the entire area of a shallow plume to effectively contain contaminated groundwater.

- **Effectiveness –** Sheet piling can be effective at containing groundwater horizontally. The sheet piling prevents the passage of groundwater if well-constructed of materials compatible with the groundwater and contaminants. Sheet piling is only applicable to shallow zone contamination. Sheet piling may leak at joints, or through holes in the sheet piles if chemical degradation occurs over time.
- **Implementability –** Sheet piling is relatively easy to install with the appropriate pile driving equipment, or they can be laid into an excavated trench that is later backfilled. Sheet piling requires little long-term maintenance.
- **Cost –** Moderate. However, there are uncertainties regarding long-term steel prices.

4.4.1.3.2 Summary of Lateral Containment Process Options

Slurry wall is retained as a representative groundwater containment process option because of their extensive use in environmental restoration actions. Grout curtain is not retained as a process option because applied grout could interfere with active NA. Sheet piling is not retained as a process option because it offers no significant containment advantage over a slurry wall.

4.4.1.3.3 Capping

Soil Cover. Soil covers consist of a layer of fine-grained soil placed and compacted over contamination and covered with a top soil layer. Vegetation is generally encouraged to limit erosion.

- **Effectiveness –** While not as effective as asphalt caps or multilayer caps, a properly designed soil cover can be effective at promoting runoff and reducing infiltration. A simple Hydrologic Evaluation of Landfill Performance (HELP) model of a soil cap indicated infiltration would be reduced by 83 percent.

- **Implementability –** Soil covers are easy to implement. Standard earthmoving equipment can move local soil over the contaminated areas. Portions of LHAAP-18/24 may require some initial clearing, particularly outside containment area. Soil cover maintenance to limit large vegetative growth that could disrupt the cover and to control erosion would be needed. Frequent maintenance (mowing) would be required.
- **Cost –** Low to moderate depending on the area of coverage.

Asphalt Cap. Asphalt caps control infiltration of rainwater or run-on water through the installation of impermeable asphalt. This process option is particularly useful if the site is to be used as a parking lot or other light industrial use.

- **Effectiveness –** Asphalt caps can be effective at reducing infiltration if sufficient maintenance occurs. Asphalt can quickly develop cracks and holes that need to be filled, and maintenance will be needed to repair them as they occur. These caps are most effective if the area needs to be asphalted for another use that will promote its long-term maintenance.
- **Implementability –** Asphalt caps are easy to install but require the land to be leveled and compacted below the asphalt and an asphalt base added. As with other caps to control infiltration, they need to be sloped to encourage runoff during rain events. Frequent maintenance is less necessary than with multilayer caps as the asphalt does not require mowing. However, the asphalt cracks easily and this must be controlled to maintain effectiveness.
- **Cost –** Low to moderate depending on the area of coverage.

Multilayer Cap. A multilayer cap is an engineered cover that can consist of various layers of soil, clay, membranes and other materials. Multilayer caps control infiltration of rainwater or run-on water through the installation of impermeable layer materials.

- **Effectiveness –** Multilayer caps can be effective at reducing infiltration if sufficient maintenance occurs. Long-term maintenance would be required to ensure cracks and holes do not develop. Maintenance will be needed to repair cracks as they occur. A simple HELP model of synthetic liner reduced infiltration by 99 percent.
- **Implementability –** A multilayer cap is more difficult to implement than a soil or asphalt cap due to the design and installation requirements. As with other caps to control infiltration, they need to be sloped to encourage runoff during rain events. More maintenance is necessary with multilayer cap than the asphalt cap as frequent mowing is required. The multilayer cap must be inspected and maintained to ensure its long-term effectiveness.
- **Cost –** High.

4.4.1.3.4 Summary of Capping Process Options

The UEP area at LHAAP-18/24 is already capped. Capping options can readily be implemented on other portions of the site and could include drainage improvements (e.g., lined ditches) that would promote better runoff and reduce infiltration. When used in conjunction with lateral containment, a cap would help control the water table within the contained area and could prevent an outward gradient that would otherwise drive migration of contaminated groundwater. If a cap is used, minimizing or eliminating infiltration of rainwater, in conjunction with the

existing impermeable barriers along the northwest and southwest boundaries of the site, flow through the site could be extremely restricted. Extreme restriction of groundwater flow through the site could result in marginalization of groundwater extraction and contaminant recovery. That said, the capping process option will be retained to allow better flexibility in developing remedial alternatives.

All three capping options would be acceptable, but the soil and asphalt caps are much lower cost options. Without a definitive reason to pave the area, the soil cover will be used as the representative process option. As indicated above, the use of a cap with a slightly lower performance (i.e., a soil cap versus a multilayer cap) is preferred to reduce infiltration to groundwater in the area of high water table, but not to marginalize on-going groundwater recovery via the extraction system.

4.4.1.4 Removal

The removal GRA consists of technologies that remove groundwater to either relocate it or prepare it for treatment. The removal technology considered is groundwater collection/removal. Groundwater collection and removal is accomplished by either vertical extraction wells, interception trenches, or horizontal extraction wells.

4.4.1.4.1 Vertical Extraction Wells

These are vertically installed wells designed to collect and extract clean or contaminated groundwater to contain a plume or to reduce contaminant mass in the plume.

- **Effectiveness –** Extraction wells are considered the most effective groundwater removal technology applicable over a wide range of site conditions. However, proper locations need to be selected to provide for effective extraction and long-term operation. To maintain operability, frequent maintenance to the pumping system is required due to high potential for iron fouling at this site.
- **Implementability –** This process is the single most commonly used method to remove groundwater in a very wide range of conditions. New wells will be installed in areas with high contamination or areas that would intercept groundwater before it reaches a potential receptor, such as surface water. Extraction wells are easy to install at all depths that might be required at LHAAP-18/24, including shallow zone and Wilcox Formation wells. Existing monitoring wells at LHAAP-18/24 could be converted to extraction wells.
- **Cost –** Low to moderate dependent on number and depths of wells required.

4.4.1.4.2 Interception Trenches

An interception trench is a high permeability subsurface trench that collects contaminated groundwater. It is constructed and operates similar to a vertical French drain, with the exception that collected groundwater is actively pumped from the trench for ex-situ treatment. The trench can be installed across the entire width of a shallow plume to more effectively capture contaminated groundwater.

- **Effectiveness –** Interception trenches are very effective at collecting groundwater. The trench functions like a continuous line of extraction wells. The trenches are only applicable

to shallow zone contamination. Their advantage in a heterogeneous environment is the ability to intercept various conductive zones that may not be interconnected. To maintain operability, frequent maintenance to the pumping system is required due to high potential for iron fouling at this site.

- **Implementability –** Interception trenches are relatively easy to install with conventional construction equipment. The process requires long-term maintenance to ensure that the permeable media and collection piping do not become clogged, particularly in a high iron groundwater environment. Interception trenches would be difficult to install in the Wilcox Formation (i.e., at depths greater than 45 ft bgs).
- **Cost –** Moderate to high depending on number, depth, and total length of trenches.

4.4.1.4.3 Horizontal Wells

Horizontal wells are similar to vertical wells with the exception that they are installed horizontally and are typically screened throughout their entire length. They function like drains and offer a water removal capability that exceeds that of a similarly sized vertical well, although testing conducted in the 1990s revealed that vertical wells are more effective than horizontal wells at this site. Horizontal wells could be installed under source areas to remove contaminated groundwater or collect migrating leachate.

- **Effectiveness –** Horizontal wells are very effective at removing large volumes of contaminated groundwater in applications where vertical wells cannot be used. Wells up to 12 inches in diameter and 10–500 ft deep can be installed over 1,000-foot lengths. Field tests in the 1990s revealed that horizontal wells at LHAAP-18/24 are not as effective, although advancements in directional drilling technology since the 1990's occurred.
- **Implementability –** Although this process is commonly used in the oil industry, it is still in the demonstration phase in environmental restoration. It would likely be used underneath a source area to collect contaminated groundwater or leachate.
- **Cost –** High.

4.4.1.4.4 Summary of Removal Process Options

Horizontal wells are not retained as a representative groundwater removal process option because of their limited use in environmental restoration actions, their high costs, and the limited effectiveness at LHAAP-18/24 as determined in 1990s field experiments, when compared to interception trenches. Vertical extraction wells and interception trenches are currently in use at LHAAP-18/24 with the existing groundwater extraction system. Thus, vertical extraction wells and interception trenches are retained as process options for alternative development. Although not retained as a process option for remedial action, horizontal wells could be used as an alternative to ICTs should the need arise to replace existing ICTs.

4.4.1.5 In Situ Treatment

In situ treatment technologies provide varying levels of groundwater treatment without prior removal of the groundwater, and reduce the mobility and/or toxicity of the contaminants in

groundwater. The in situ treatment technologies under consideration are physical/chemical and biological treatments.

4.4.1.5.1 Physical/Chemical Treatment

MNA, air sparging/soil vapor extraction, in situ oxidation, permeable reactive barriers, thermal treatment, electrokinetics, and nanotechnology are process options considered potentially applicable to the groundwater at LHAAP-18/24.

Monitored Natural Attenuation. MNA is a remedial process option that will achieve the cleanup levels over time. Natural subsurface processes such as dilution, volatilization, biodegradation, adsorption, and chemical (abiotic) reactions with subsurface materials are monitored to confirm their progress in reducing contaminant concentrations. **Appendix A** provides an evaluation of the ongoing NA at LHAAP-18/24. The VOCs and perchlorate are amenable to MNA. While 1,4-dioxane is amenable to MNA, it was not evaluated due to limited amount of data available for 1,4-dioxane.

In situ microcosm (ISM) study was deployed in monitoring wells MW2 and 120 for 84 days using Bio-Traps obtained from Microbial Insights. The study included monitoring for natural attenuation using a control unit, as well as biostimulation units amended with either oxygen releasing compound (ORC) or emulsified vegetable oil (EVO) to study aerobic and anaerobic enhancements, respectively. ^{13}C labeled MC was embedded in the Bio-traps. The results indicated no evidence of natural attenuation is taking place in MW2 for MC but some evidence of NA occurred in monitoring well 120. ORC enhanced degradation of MC in monitoring well 120 but EVO did not. EVO did not enhance biodegradation in MW2 while ORC indicated some stimulation but very limited. These results indicate that high concentration areas are not amenable to natural or enhanced biodegradation while natural or enhanced biodegradation was observed in low concentration areas.

- **Effectiveness –** MNA is considered under CERCLA on a case-by-case basis. USEPA guidance has been developed to aid in the selection of this process option for VOCs. MNA has been selected for a number of CERCLA sites. MNA is effective when source releases have been mitigated, off-site releases of contaminants at unacceptable levels are not occurring, and it can be demonstrated that NA mechanisms are occurring. Regular monitoring must be conducted throughout the process to confirm that attenuation is occurring in accordance with cleanup objectives. The MNA evaluation for LHAAP-18/24 (see **Appendix A**) demonstrated that NA is occurring at LHAAP-18/24, but not with high certainty or adequate consistency. Additionally, the rates of MNA are slow such that short-term effectiveness is uncertain for VOCs and perchlorate. MNA is also effective for metals due to sorption and precipitation processes. MNA would be primarily applicable to dilute dissolved phase plumes.
- **Implementability –** Significant groundwater sampling and analyses must be performed to confirm that conditions are suitable for NA and to establish a monitoring network. It must also be confirmed that additional source releases and unacceptable off-site releases are not occurring.

- **Cost –** Low to moderate but could be high with specialty tests, large number of monitored locations, and if MNA takes an extended timeframe to achieve the RAOs as would be expected for this site.

Air Sparging/Soil Vapor Extraction. This process option is designed to remove VOCs from the groundwater by volatilizing these contaminants through the introduction of air. Air is introduced into the groundwater, assisting in the volatilization of those organics in solution in the groundwater. Extraction wells are installed into the vadose zone and a vacuum is drawn on these wells. The extraction system draws off the organic-laden air that was bubbled through the groundwater in addition to any vapors that exist in the soil pore spaces. The volatilized contaminants can then be drawn from these extraction wells and treated. This process can be used in those areas where VOCs exist in the groundwater and the vadose zone above this groundwater is relatively permeable.

- **Effectiveness –** This process is very effective on highly volatile contaminants (e.g., TCE) and highly permeable formations. It is incompatible with certain soil types, and high humic content inhibits volatilization of contaminants. Implementation at LHAAP-18/24 is complicated by the subsurface heterogeneity and high clay content soil that may limit the effectiveness of air sparging by retarding the movement of air and vapors through the soil column. The presence of discontinuous high-permeability zones can result in preferential air flow paths, limiting the effectiveness. Air sparging is not effective for remediating perchlorate or metals and less effective for remediating 1,4-dioxane compared to VOCs.

- **Implementability –** Vapor extraction and air sparge equipment is readily available and commercial vendors are available to design and operate these systems. This process has been used at many hazardous waste sites in relatively homogeneous media. Organics that are removed from the vapor extraction wells require ex situ treatment. Site characterization and modeling are required to determine the proper location of the injection and extraction wells and extraction rates.

- **Cost –** Low to moderate.

In Situ Oxidation. Contaminated media are treated through the addition of oxidizers, such as potassium permanganate, hydrogen peroxide, or activated persulfate, which convert the contaminants to a less mobile or toxic form. This process option is applicable to VOCs such as TCE and 1,4-dioxane.

- **Effectiveness –** In situ oxidation is effective on contaminants in a relatively homogeneous and porous medium. The shallow groundwater zone at LHAAP-18/24 is largely non-homogenous, of variable porosity, and discontinuous from well to well. Chemical oxidation is most effective for VOCs (particularly TCE) and is considered a suitable approach for the primary CoCs at LHAAP-18/24 (MC and TCE). Some chemical oxidants are effective on 1,4-dioxane such as Fenton's reagent and activated persulfate, but others are not effective such as permanganate. Chemical oxidation is not effective for treatment of metals, perchlorate, or chlorinated alkanes such as 1,2- dichloroethane (DCA).

- **Implementability –** This process option is readily implementable but concerns regarding distribution and exposure of the contaminants to the chemical agents exists. An additional concern is the release of excess reactants or byproducts to the environment. In-situ

applications of these processes are well established. A recent USEPA evaluation by their Technology Innovation Office concluded that the application of in situ oxidation is highly dependent on the delivery system.

- **Cost –** Low to moderate.

Permeable Reactive Barriers (PRBs). Permeable reactive barriers can be a physical/chemical or biological treatment option. A reactive barrier or gate is a permeable wall containing reactive media that is constructed across the path of a contaminant plume. As contaminated water passes through the wall, the contaminants are removed or degraded, allowing uncontaminated water to emerge on the downgradient side. Reactive barriers are usually installed through adaptation of conventional construction methods for impermeable barriers such as open trenches, polymer slurry trenches, and overlapping caissons. Reactive barriers may be constructed from a variety of materials including zero-valence metals (ZVM), granulated activated carbon (GAC), biological organic material, and other sorbents. These materials treat contaminants through a combination of mechanisms, including adsorption, chemical reduction, and biodegradation.

ZVM works by chemically reducing contaminants, thus either causing their degradation or limiting their mobility. A variety of metals can be used as reducing agents such as silver, gold, palladium, copper, zinc, aluminum, manganese, and iron. In situ reactive gates require high volumes of ZVM, making the application of precious metals such as silver, gold, and palladium impractical. The most practical metal for this technology is iron, because of its relative abundance, low cost, and low toxicity. However, more expensive yet more effective forms of iron (palletized iron) may be necessary, depending on contaminant concentration. ZVM is not effective in treating perchlorate or 1,4-dioxane.

GAC is the most widely used adsorbent and filter medium because of its effectiveness on a variety of contaminants. GAC is chemically stable and will not produce secondary contaminants. The surface area of the carbon and the pH of the solution flowing through the medium determine the rate and effectiveness of GAC in adsorbing contaminants. In addition, different contaminants are adsorbed according to different ionic natures and kinetics.

- **Effectiveness –** The effectiveness of this process depends greatly on the contaminants, the reactive media, site hydrology, and site geochemistry. Reactive media clogging and exhaustion causes the need for periodic replacement. The gates are generally limited to shallower applications because of the difficulties in installing and monitoring the media at depth. There are concerns over the longevity of the reactive media given uncertain and changing chemical and physical conditions and the potential high load of CoCs through the gate that could exhaust the reactive barrier material rapidly. PRBs are limited by the CoC migration rates through the formation, particularly through fine-grained soils. GAC effectiveness is reduced once its capacity diminishes over time. GAC is not effective for perchlorate, 1,4-dioxane, or metals.
- **Implementability –** Permeable reactive barriers require adequate site and contaminant characterization and monitoring to determine effectiveness. This process requires treatability testing before full-scale implementation to determine potential physical and chemical interactions with surrounding materials, location within the aquifer, and criteria for replacement.

- **Cost –** moderate to expensive depending on length and depth of reactive barriers and material used.

Thermal Treatment. Heating the subsurface can effectively and quickly volatilize large quantities of VOCs, including those in the form of nonaqueous phase liquid. Available technologies include electrical resistance heating (ERH), steam injection, and conductive heating which are typically coupled with a soil vapor extraction system to capture VOCs. ERH delivers electricity to the subsurface through an array of electrodes. The heat generated by electrical resistance typically can raise subsurface temperatures to around the boiling point of groundwater. The steam produced from the groundwater serves as a medium to carry out volatilized VOCs. Steam injection involves the ex situ generation of heat and steam, which is delivered to the subsurface through new or existing wells. Similar to ERH, VOCs are volatilized and carried to the soil vapor extraction system by steam. Conductive heating involves applying heat and vacuum simultaneously to subsurface soils with an array of vertical heater/vacuum wells. Heat generated from heating elements is transferred to the subsurface largely via thermal conduction and radiant heating. In addition, heat can promote in situ biological activity in two ways. First, biological activity is boosted by moderately high temperatures (30 C) found at the periphery of the heated area during active thermal treatment, and throughout the heated area as it cools. Second, high temperatures increase the solubility of DNAPL (if it is present), resulting in increase in contaminant concentrations in the dissolved form that the microbes are able to use.

- **Effectiveness –** Removal of TCE, MC, and other VOCs, as well as 1,4-dioxane, is anticipated to be effective in high concentration areas, including where DNAPL may exist. Thermal treatment does not suffer from the same limitations of subsurface heterogeneity like the other in-situ technologies and should be effective in treating coarse-grained material and low K zones alike. High flow zones have been problematic because they transport the heat away from the targeted area more quickly than low K zones. However, temperature distribution in the subsurface can be made more uniform based on the duration of application of thermal treatment. Additionally, the majority of contamination resides within fine-grained units. VOC concentrations in thermally-treated groundwater may reach an asymptote; therefore, a follow-up treatment method is likely to be necessary to reach RAOs, including MNA. Thermal technology is not anticipated to have an effect on perchlorate (an ion) or metals.

- **Implementability –** Additional site characterization to better define DNAPL (especially with ERH because of the cost of installing electrodes) has been conducted and site samples were collected and tested for total organic carbon and thermal resistivity by the technology vendor. The results (**Appendix C**) indicated that the site is amenable to thermal treatment. A significant disadvantage to thermal treatment is that it may compromise the high-density polyethylene (HDPE) liners installed along the northern and western perimeters of the site, as well as the network of HDPE piping in the shallow soil (which carries groundwater to the treatment plant). However, the location where DNAPL is present is relatively far from ICTs with HDPE liners and direct impact is not anticipated. Additionally, affected HDPE components could be replaced following thermal treatment, but replacement costs would be significant for the liner. Should the need arise to protect HDPE liners, the treatment could be operated at lower temperatures or operated away from the liner; both would lower overall effectiveness of the technology if certain target areas are not treated.

- **Cost –** High to very high.

Electrokinetics. Electrokinetics techniques use low voltage direct current (DC) in the order of milliamps per centimeter square (mA/cm^2) of cross-sectional area between the electrodes or an electric potential difference on the order of a few volts per cm across electrodes placed in the ground in an open flow arrangement (GWRTAC, July 1997). Typically groundwater is used as the conductive medium. The open arrangement of electrodes allows placement or removal of processing fluids or of the pore water into and out of the porous medium. Water, ionic species, nonionic species, and particles can be made to migrate under induced potential via electroosmosis, electromigration, and electrophoresis (GWRTAC, July 1997). Electroosmosis is the movement of soil moisture or groundwater from the anode to the cathode of the electrolytic cell, which carries with it dissolved nonionic species. Electromigration is the transport of ions and ion complexes to the electrode of opposite charge. Electrophoresis is the transport of charged particles or colloids under the influence of an electric field, carrying bound contaminants with them.

The electrodes are inserted in the ground within the contaminated zone and a DC is applied. The electrodes are typically 3 to 10 feet apart inserted to the depth of contamination. The migration rate of dissolved constituents in soil pore water is typically one (1) inch per day, requiring a treatment time of 36 to 120 days (GWRTAC, July 1997). For large sites, this process will take a very long time to achieve remedial objectives and multiple simultaneous applications would be required. The advantages of electrokinetics are its effectiveness in fine-grained soils and for in situ treatment of heavy metals. Technology limitations include solubility of contaminants to be treated, corrosion of anode material, migration rates are slow, change in ambient pH could lead to precipitation and fouling of the cathode, and the presence of large quantities of iron or iron oxides can reduce removal efficiencies.

A variation of electrokinetics is the Lasagne™ process, which was developed in cooperation between the USEPA and a private consortium was demonstrated to treat TCE DNAPL in tight clay soil with removal efficiencies of 98% in soil up to 15 feet bgs (GWRTAC, 1997). The process can be described based on layering of the electrodes and treatment zones for sorption, immobilization, and/or degradation of contaminants (Gomes et. al., 2012). TCE was mobilized into carbon-containing treatment zones where it was trapped. The process involves creating in situ reactive zones to treat CoCs in situ without extraction. The Lasagne™ process could overcome many of known limitations of electrokinetics and avoids above ground remediation needs.

Enhanced electrokinetics is used to reduce some of the limitations of this process and include:

- Electrokinetic bioremediation: where nutrients and bacteria could be introduced and allowed to migrate through the contaminated zone via induced current to enhance in situ bioremediation (ISB).
- Electrokinetic oxidation: where oxidants, such as Fenton reagent or permanganate, are introduced at the electrodes to oxidize transported contaminants.
- Electrokinetic with permeable reactive barrier: the current is induced across the barrier allowing contaminants to pass through the barrier where decontamination could take

place. Reactive barriers typically contain zero valent iron, activated carbon, and other material.

- Electrokinetic with surfactants: use of surfactants to enhance desorption of contaminants facilitates migration under induced current for improved removal of contaminants.

Extraction of fluids mobilized to the electrodes for above ground treatment would be required which increases the complexity and cost of the process.

- **Effectiveness –** Removal of TCE, MC, and other VOCs is anticipated to be effective in high concentration and fine grained soil areas, including where DNAPL may exist. Some volatilization of VOCs could occur. Effectiveness depends on a lot of factors such as grain size, ionic strength (cation exchange capacity and salinity), contaminant concentrations, soil type and structure, and presence of high concentrations of other naturally occurring material such as iron. On its own, electrokinetics has severe limitations such as precipitation (fouling of) on electrodes, severe pH increase in soil, and solubility limitations of contaminants. The site has a very high iron content and with increasing pH, fouling due to precipitation or iron could compromise the success of the process. Therefore, electrokinetics combined with other technologies (enhanced electrokinetics) would be required to minimize limitations and improve opportunity to mobilize contaminants for removal or in situ treatment (e.g., oxidation and bioremediation).
- **Implementability –** Prior to implementing full scale treatment, it may be appropriate to perform additional soil characterization to better define potential limiting factors. Studies include field electrical conductivity surveys, pH and electrical conductivity of pore water, major dissolved ion concentrations in groundwater/pore water, buffering capacity and geochemistry of soil (cation exchange capacity (CEC) and salinity). Treatability testing to ensure that the system design delivers as expected might be required. Areas where ICTs are present may not be candidates for remediation as these ICTs will interfere with contaminant migration and continuity of induced currents. Although these ICTs could be used to extract mobilized contaminants for treatment. However, this approach requires a focused study to understand the dynamics and limitations.
- **Cost –** High to very high.

Nanotechnology. Remediation of groundwater and DNAPL using nanoparticles containing zero valent iron (nZVI) is a promising technology, which has been implemented on several sites for treatment of chlorinated VOCs (EPA, December 2007). A nanoparticle is defined by the American Society for Testing and Materials (ASTM) as an object with at least one dimension in the 1 to 100 nanometer (nm) range (EPA, October 2008). Nanoparticles have greater reactivity than larger sized particles in the millimeter range due to their larger overall specific surface area but not due to greater density of reactive sites on the particle surfaces or higher intrinsic reactivity of the reactive surface sites as sometimes speculated (Tratnyek and Johnson, May 2006). This characteristic results in a more rapid degradation of contaminants that already react at useful rates with larger particles. However, this high reactivity correlates with low selectivity, which makes remediation with nZVI susceptible to inefficiency because of the reaction of particles with nontarget substances, including dissolved oxygen and water. This 'natural demand' implies that nZVI will have a limited lifetime in environmental media, necessitating reinjections of nZVI and thereby adding to the cost of treatment (Tratnyek and Johnson, May

2006). Treatment of perchlorate by nZVI is indirect and occurs by enhancing the geochemistry of the environment where nZVI is introduced to biodegrade perchlorate by indigenous bacterial populations (Xueyuan et. al., 2006). Treatment of metals such as arsenate, selenite, and hexavalent chromium occurs in the presence of nZVI. nZVI is not effective in treating 1,4-dioxane.

Due to manufacturing limitations, many nZVI contain larger-sized particles (i.e., > 100 nm), additionally due to aggregation of nanoparticles in the subsurface that result in generation of larger particles, transport of nZVI in groundwater is limited from a few inches to a few feet (Tratnyek and Johnson, May 2006) and incorporation and distribution of injected ZVI into low K zones will not be as effective to treat this medium that contains a large mass of residual DNAPL. Therefore, other forms of nZVI were manufactured such as emulsified ZVI (EZVI). This product consists of ZVI surrounded by an oil-liquid membrane, made from food grade surfactants, biodegradable oil, water, and nanoscale iron in an emulsion form. The exterior oil membranes of the droplets are hydrophobic, as are DNAPL contaminants such as TCE. The droplets are therefore miscible with the DNAPL, allowing increased contact between the TCE DNAPL and the ZVI within the droplets via dissolution and diffusion into the droplet (EPA, October 2008). EZVI appears to be more effective in treatment of TCE than nZVI. The vegetable oil also enhances biological activity and destruction of the contaminant.

Other forms of nanoparticles are combining other metals with iron such as palladium or gold to generate bimetallic nanoparticles (BNPs). The combination of metals increases the kinetics of the oxidation-reduction reaction, thereby catalyzing the reaction.

- nZVI application can be conducted via injection wells, direct push technology, permeable reactive barriers, liquid atomization, pressure pulse technology, and pneumatic and/or hydraulic fracturing. pH increase occurs due to formation of hydroxyl ions and a decrease in the oxidation-reduction potential (ORP) occurs due to reducing conditions created by iron. The goal when nZVI is delivered to groundwater is to reduce the ORP to less than -400 millivolts to generate faster abiotic reactions (NAVFAC, September 2005). Passivation of nZVI could occur due to ‘natural demand’, particularly when mixed with large volumes of water before injection. Deoxygenation of water before mixing might be required. A ratio of iron to formation soil of 0.004 was found to be effective at a shipyard to achieve nZVI goals of abiotic removal of TCE in DNAPL (NAVFAC, September 2005). However, site-specific demand needs to be established for effective remediation of source areas.
- **Effectiveness –** nZVI is proven to remove TCE and other chlorinated VOCs in groundwater and DNAPL source areas. Effectiveness depends on contact between contaminants and the iron particles. Because migration of injected nZVI might be limited, injection in various areas of interest should be conducted. In source areas multiple injections might be required. However, limited effectiveness of distributing injected solution into low K zones is anticipated. Reaction occurs via beta elimination resulting in formation of ethane in the case of TCE degradation without generation of intermediates such as cis-1,2-DCE or vinyl chloride. Applicability of the process for treating perchlorate has not been studied, although the effect on reducing perchlorate was demonstrated to occur in the treatability study (**Appendix C**). nZVI is not effective on 1,4-dioxane.

- **Implementability –** Manufacturing nZVI and its variations such as EZVI and BNP is commercially available. Implementation can be conducted through existing delivery methods as mentioned above. The important information is to understand the radius of influence at injection points to create an overlapping condition. Injection along the entire vertical contaminant profile is also required to achieve remediation in the zone of interest. Creating nZVI on site reduces the amount of oxidation the iron undergoes ('natural demand') during storage and transport. Distribution of injected ZVI is challenged by subsurface heterogeneity.
- **Cost –** High to very high depending on the volume to be treated.

4.4.1.5.2 Biological Treatment

Biological treatment process options use living organisms such as bacteria or fungi to detoxify or immobilize contaminants in groundwater. These process options are primarily used to convert organic contaminants into nontoxic products.

Enhanced Bioremediation. This general process option covers a wide range of individual biological process options that rely on microbial transformation of organic contaminants under aerobic or anaerobic conditions into benign forms to obtain energy or carbon. Excessively high concentrations of contaminants could be toxic to microbes. Many organic contaminants, including some of the VOCs at LHAAP-18/24 and perchlorate, can be biodegraded under anaerobic (without oxygen) conditions. 1,4-Dioxane is relatively resistant to biodegradation in water and soil (EPA, 2014). Studies indicate that 1,4-dioxane does not biodegrade under anaerobic conditions (ESTCP, 2007). 1,4-Dioxane has been observed to degrade cometabolically under aerobic conditions but most of the work has been in microcosm studies or pilot studies (Zenker et al. 2004, and Lippincott et. al, 2015). The activity of microorganisms is greatly affected by pH, redox potential, temperature, oxygen content, and most importantly, nutrient availability. These conditions can be manipulated to achieve optimal conditions for microbial activity, accelerating the biodegradation of the target contaminants. The conditions are manipulated through the addition of nutrients and/or electron acceptors or donors. After anaerobic bioremediation of VOCs and perchlorate, institution of aerobic conditions in the aquifer with the addition of organic substrate would be required to enhance the potential cometabolic biodegradation of 1,4-dioxane.

A treatability study to assess effectiveness of microbial degradation of VOCs and perchlorate under anaerobic conditions was conducted at SiRem (Ontario, CA, 2014) (**Appendix C**). The testing was conducted on soil and groundwater material received from the area of MW21, representing moderately impacted areas within the dissolved plume migration zones. The results presented in **Appendix C** indicate that enhanced biodegradation is effective with the addition of lactate or emulsified oil as an electron donor. However, the subsurface media conditions had to be adjusted including buffering to improve the pH to near neutral and bioaugmenting with KB-1 Plus® to enhance biodegradation of TCE and its daughter products. The process suffered from the need to adjust the pH on multiple occasions and bioaugmenting at least on two occasions to enhance bacterial population and degrade cis-1,2-DCE. Complete degradation of MC occurred without the addition of organic substrate under strict anaerobic conditions, implying that native microorganisms capable of fermenting MC are readily available in the subsurface but it is hindered by the lack of strict anaerobic conditions and likely the low ambient pH levels. Perchlorate degradation occurred very rapidly once organic substrate was added under the

presence of native microbial populations. The laboratory treatability studies in microcosms could not evaluate the limitations imposed by the presence of contaminants in fine-grained soils and the heterogeneity of the site.

- **Effectiveness –** In situ anaerobic biodegradation is effective for the degradation of VOCs and perchlorate in low oxygen conditions in a permeable media that enhances the continuing delivery of nutrients to the bacteria. The primary challenge for in situ biological treatment is to effectively introduce the bacteria (if bioaugmentation is necessary) and nutrients to the affected areas and ensure adequate mixing and contact. pH buffering was determined to be necessary to enhance biodegradation of CoCs. The rate of destruction is typically slower than other competing processes, but fewer and less toxic byproducts result if complete biodegradation occurred. The vast amount of chloride ions that would be produced through enhanced bioremediation would likely reduce the effectiveness of biodegradation. High concentrations of CoCs (e.g., within DNAPL areas) can be toxic. Anaerobic conditions are not supportive of 1,4-dioxane degradation (ESTCP, 2007).
- **Implementability –** Enhancing the biological activity may be difficult in some of the low permeability soil at LHAAP-18/24 because of complications associated with the delivery of nutrients. Equipment and expertise are readily available and treatability testing provided the proof of concept that this technology works at this site but degradation can take time particularly for chlorinate ethenes. Creation of reducing conditions to enhance anaerobic biodegradation of CoCs could result in mobilization of arsenic from soil to groundwater. Additionally, capture of extraction trenches of the bio-front could result in biofouling of the extraction trenches and operational difficulties. These considerations should be evaluated before implementation of this technology.
- **Cost –** Low to moderate.

Phytoremediation. This general process option covers a wide range of individual plant species to remove VOCs and metals from the subsurface via plant uptake and release to the environment.

- **Effectiveness –** Phytoremediation could be effective for shallow contamination but is unlikely to be effective at the depth of groundwater at the site. The rate of removal of VOCs, 1,4-dioxane, or metals is too slow to be effective. This process is not known to be effective for perchlorate.
- **Implementability –** Planting trees is a straightforward process.
- **Cost –** Low to moderate.

4.4.1.5.3 Summary of In Situ Treatment Process Options

There are numerous in situ groundwater treatment process options available. The presence of daughter compounds for VOCs such as 1,2-DCE detected during the various rounds of groundwater monitoring indicates that NA is occurring in the groundwater at some monitoring wells. Because MNA is the least disruptive technology, MNA is retained as a remediation option for regions beyond the active groundwater removal area and/or as a supporting process option but not a primary process option.

The effectiveness of air sparging/soil vapor extraction and PRB process options for treatment of LHAAP-18/24 groundwater may be limited by site geology or hydraulic conditions (preferential transport pathways limits effectiveness), contaminant characteristics (air sparging is not effective for perchlorate and metals), or the degree of required long-term maintenance (for reactive barriers). In situ chemical oxidation is considered a fast and efficient process with respect to the VOCs and 1,4-dioxane in LHAAP-18/24 groundwater and treatability studies performed for groundwater from other areas at LHAAP identified this option as a viable alternative, but this process is not effective for perchlorate and metals and has its limitations for high VOC concentrations. In situ enhanced bioremediation has been shown to be effective on chlorinated solvents and perchlorate, but is less proven for 1,4-dioxane. Its effectiveness in areas with extreme VOC concentrations is uncertain due to the possibility that byproducts will be produced at concentrations detrimental to the microbial population, but that can be addressed through careful or targeted application of the bioremediation amendments. In situ thermal treatment could be promising for areas of very high concentrations, areas where 1,4-dioxane is present, and in heterogeneous subsurface conditions; however, it should be avoided in the vicinity of the HDPE liners, and its cost is typically very high. Electrokinetics could be implemented effectively in heterogeneous formations to treat not only organic contaminants but also ionic contaminants such as perchlorate and metals. However, the process is slow and in most situations, on site treatment of mobilized contaminants would be required, increasing process complexity and enhanced electrokinetics applications are required to overcome process limitations and improve the opportunity for successful removal and treatment of contaminants. Nanotechnology in the form of nZVI will likely be successful in remediating groundwater as long as distribution is achieved, but it is not effective on 1,4-dioxane. EZVI produces conditions for biodegradation in addition to abiotic degradation ZVI is capable of achieving, but treatability testing did not reveal that EZVI is effective in treating site contaminants.

Out of these in situ options, ISB is favored because it is cost effective and is a proven technology for chlorinated VOCs and perchlorate as has been demonstrated by the treatability testing, although issues such as arsenic mobilization, biofouling in extraction trenches, and its limited effectiveness on 1,4-dioxane need to be considered in the design and implementation of this process. Therefore, ISB will be retained as the primary representative in situ treatment option for remedial alternative development. ERH will not be retained for possible use for general groundwater remediation because this technology is very expensive for dilute concentrations and large volumes. However, it can be retained as a possible remediation technology for localized high concentrations of 1,4-dioxane near monitoring wells 120/MW-14 and MW-16 (see Supplemental to Updated PSI Report, **Appendix B**). Electrokinetics will not be retained for dilute concentrations and large volumes of contaminated groundwater because it is expensive and requires surface treatment technologies to be developed and implemented. nZVI could be used to treat groundwater; however, due to the large area of contaminated groundwater and limited migration potential of nZVI, this technology is best suited for creation of reactive barriers rather than to treat groundwater in a localized application format. Therefore, nZVI will not be retained.

4.4.1.6 Ex Situ Treatment

Ex situ treatment technologies provide varying levels of water treatment following extraction or collection of the water. These technologies are applied to reduce the volume, mobility, or

toxicity of recovered groundwater. Although ex situ treatment technologies considered are physical/chemical, thermal, and biological, they have been grouped into two process options under an on-site treatment technology – the existing treatment system with modifications as may be required, and a new mobile or skid-mounted system near the extraction point.

4.4.1.6.1 New Treatment Plant

A small, skid-mounted or mobile treatment plant could be built near the point of groundwater extraction or to replace a portion of the existing GWTP to make the plant more efficient, automated, and designed for the extraction volumetric rate (e.g., 50 gpm). The treatment system would be designed for removal of the CoCs from the extracted groundwater. Chemical precipitation or metals substitution could remove the metals. GAC or air stripping could remove the VOCs. Ion exchange or biological units could remove the perchlorate and if required, HiPOx^{TM} or advanced oxidation could remove 1,4-dioxane.

- **Effectiveness –** The new system could be very effective. All of the considered technologies for the removal of metals, VOCs, and perchlorate are proven effective and are used at an existing treatment plant at LHAAP. Technologies for the removal of 1,4-dioxane have been proven effective on other sites, but these technologies require high maintenance. The use of smaller units provide less operational flexibility and may expect deviations more often. However, this option could be effective.
- **Implementability –** The implementation of this option is more difficult than that of the existing treatment plant. A few studies would be needed to design the plant to meet the treatment objectives. This option is still reasonably easy to implement.
- **Cost –** High. The capital costs of this option are considerably greater than that of the existing plant. However, it is expected that the operational costs are less for the new treatment plant compared to the existing GWTP.

4.4.1.6.2 Existing Groundwater Treatment Plant

This facility, which is currently processing contaminated groundwater from LHAAP-18/24 and LHAAP-16, includes unit operations such as neutralization, precipitation, air stripping, and biological reduction. The effluent from the plant is currently discharged to Harrison Bayou or used for irrigation at LHAAP-18/24 to enhance contaminant removal. Addition of processes to remove 1,4-dioxane may be required. These technologies, such as advanced oxidation, are commercially available.

- **Effectiveness –** The existing plant is currently treating groundwater. The hydraulic capacity of the plant has not been met yet, so additional flow could be effectively handled. The discharge requirements are routinely met, with some occurrences of perchlorate exceeding the current effluent limit for perchlorate, in general, indicating an effective operation. During these perchlorate excursions, discharge to Harrison Bayou would not take place. The INF Pond, which was historically used for temporary storage, could be re-deployed to manage discharge of treated groundwater when discharge to Harrison Bayou is not possible (e.g., due to low flow or treated groundwater quality exceeding discharge limits) and release to LHAAP -18/24 via the sprinkler system is not possible (e.g., during periods of heavy

rainfall). The effectiveness of advanced oxidation technologies for the removal of 1,4-dioxane is established.

- **Implementability –** The existing plant is already operational. It is operating below current design capacity, so additional extraction wells could be added. Depending on the composition of the additional site groundwater sent to the plant, it is possible that no revisions to the plant would be necessary but this will be evaluated on a case by case basis. For example, current 1,4-dioxane concentrations passing through the plant meet the discharge limit established for Harrison Bayou and Caddo Lake. However, should treatment for 1,4-dioxane be deemed necessary, then modifications to the GWTP would be required. The existing GWTP requires upgrade or replacement of a few major items, such as the FBR tank (e.g. insulation and heat tracing), belt press, compressors, etc.
- **Cost –** Moderate to High dependent on number of units replaced or upgraded and whether advanced oxidation processes are added for 1,4-dioxane treatment.

4.4.1.6.3 Summary of Ex Situ Treatment Process Options

The use of a new treatment plant and the existing LHAAP GWTP will be retained. The existing GWTP has the capacity to take on additional influent volume and it is already effectively operational. Additional upgrades and high maintenance would be required to maintain operational effectiveness and reliability of the existing GWTP. The addition of advanced chemical oxidation for the removal of 1,4-dioxane might be required. However, because of the age and condition of the existing GWTP, the new treatment plant is used to develop remedial alternatives.

4.4.1.7 Disposal

Disposal technologies provide the means to handle the treated discharge from any GWTP. The technologies considered for LHAAP-18/24 are surface water discharge, irrigation, and reinjection. The INF Pond could be deployed to manage discharge of treated groundwater when discharge to Harrison Bayou is not possible (e.g., due to low flow or treated groundwater quality exceeding discharge limits) and release to LHAAP -18/24 via the sprinkler system is not possible (e.g., during periods of heavy rainfall).

Disposal also applies to final disposition of treated vapor generated from air sparging/soil vapor extraction or thermal treatment. The treated or untreated vapor will be discharged to the atmosphere and no additional evaluation of disposal of vapor will be included.

4.4.1.7.1 Surface Water Discharge

Surface water discharge disposes of treated wastewater into a surface water body, stream, or river. Currently, the existing treatment plant discharges to Harrison Bayou.

- **Effectiveness –** This process option is an effective method for disposal of water if the requisite discharge limits can be met. The current treatment system discharges to Harrison Bayou through a monitored point. The effluent limits could be revised in the final ROD and those new limits will need to be achieved to allow discharge to surface water.

- **Implementability –** A discharge point has been established and the infrastructure for the existing water treatment plant allows discharging through this point; therefore, this process option could be easily implemented.
- **Cost –** Low.

4.4.1.7.2 Irrigation

Irrigation disposes of treated wastewater by irrigating vegetation in an approved area. Currently, the existing treatment plant releases treated water via an existing irrigation system to areas of LHAAP-18/24.

- **Effectiveness –** This process option is an effective method for disposal of water when natural flows in Harrison Bayou are insufficient to support direct discharge. The flow rate for irrigation is limited by runoff limitations.
- **Implementability –** The infrastructure for the existing water treatment plant for discharging by irrigation exists; therefore, this process option could be easily implemented.
- **Cost –** Low.

4.4.1.7.3 Reinjection

Reinjection disposes of treated wastewater by reinjecting water into the subsurface. Currently, the existing treatment plant is allowed to reinject treated wastewater at selected ICTs following TCEQ requirements. However, reinjection of treated wastewater has not been performed at the GWTP since 2012 and resumption of the practice is unlikely due to potentially deleterious risks.

- **Effectiveness –** This process option is an effective method for disposal of water when natural flows in Harrison Bayou are insufficient to support direct discharge. The reinjected groundwater has the potential to flush out additional contaminants between the injection and extraction sites, but caution should be taken to ascertain that contaminants will not be driven off-site or downward to the Wilcox Formation.
- **Implementability –** The existing water treatment plant is currently connected to release treated groundwater to two ICTs; therefore, this process option could be easily implemented.
- **Cost –** Low.

4.4.1.7.4 Discharge to the INF Pond

Discharge of treated groundwater to the INF Pond is an available option when discharge to Harrison Bayou is not possible either because there is little to no flow in Harrison Bayou or the treated water quality exceeds the discharge limits. Currently, the existing treatment plant is capable of releasing treated wastewater to the INF Pond. However, there is no current mechanism for conveying the water from the INF Pond back to the GWTP, as might be required when the water in the INF Pond exceeds the discharge limits. Therefore, a pumping system would need to be designed and implemented before this discharge option becomes viable.

- **Effectiveness –** This process option is an effective method for disposal of treated water when natural flows in Harrison Bayou are insufficient to support direct discharge or when the concentrations in the effluent are higher than the discharge limits.

- **Implementability –** The existing water treatment plant is currently connected to the INF Pond and groundwater can be released; therefore, this process option could be easily implemented. However, a pumping system to convey INF Pond water back to the GWTP would be required.
- **Cost –** Low to moderate.

4.4.1.7.5 Summary of Disposal Process Options

Surface water discharge, discharge to the INF Pond, and irrigation are retained since they are currently part of the operation of the existing GWTP, which has been retained as a process option. Release of groundwater via reinjection has ceased because control over migration of CoCs to outside the containment is not present.

4.4.1.8 Summary of Representative Groundwater Process Options

The following representative GRAs, technologies or process options are retained for groundwater:

- No action
- LUCs
- Containment by slurry wall with soil cover
- In situ treatment by ISB or MNA
- ERH targeting high 1,4-dioxane areas as a contingency remedy
- Removal by vertical extraction well and interception trench
- Treatment in the existing GWTP with upgrades and potential addition of a 1,4-dioxane treatment process as a contingency remedy
- Treatment in a new GWTP including potential treatment for 1,4-dioxane.
- Disposal by surface water discharge, to INF Pond, or via irrigation

Detailed analyses of these remedial alternatives are included in **Section 5.0**.

4.4.2 Saturated (Secondary Source) Soil Source Areas

In the following subsections, soil process options are evaluated to address residual contamination in the saturated soil that has the potential to be a long-term source of contamination to the groundwater (i.e., DNAPL areas). The evaluation is presented graphically in **Figure 4-2**. As discussed previously, the LUCs and containment options are similar to the groundwater medium and will not be repeated here but are shown on **Figure 4-2**. It is assumed that this section applies to the two residual DNAPL areas identified during PSI and PSI Addendum investigation (AECOM, 2013 and 2014) conducted. These areas include the former UEP area extending approximately 35,500 ft^2 and the former ACD area extending approximately 5,000 ft^2 with a depth of impact to approximately 50 feet in the former UEP area and to 30 feet in the former ACD area.

4.4.2.1 No Action

The "no action" process option does not provide additional remediation, maintenance, or security activities at contaminated soil areas at LHAAP-18/24. This process option is retained as a baseline with which other remediation alternatives are compared.

- **Effectiveness –** This response action should not have negative long-term impacts on human health and the environment; however, it may impact the duration that some groundwater remedy components must be implemented.
- **Implementability –** No implementation is required.
- **Cost –** None.

4.4.2.2 Removal

The removal GRA consists of technologies that remove contaminated soil for treatment and/or disposal or entails mobilization and removal of DNAPL for treatment and/or disposal. The removal technology considered is excavation with a process option of conventional excavation or surfactant flushing for DNAPL followed by extraction.

4.4.2.2.1 Excavation

Conventional Excavation. This excavation method uses a variety of conventional excavation equipment to remove debris, soil, and other buried waste. The equipment includes excavators, track loaders, bulldozers, and tool carriers of differing sizes with attachments or manipulators suitable for dealing with a varied waste profile. This equipment can be used individually or together as circumstances dictate. It is considered applicable to the contaminated soil at LHAAP-18/24. It can be used for both shallow and deep soil.

- **Effectiveness –** Conventional excavation equipment is applicable to the LHAAP-18/24 soil contamination. The equipment has consistently proven reliable and effective for removal of soil and other media in hazardous and non-hazardous applications for decades. Various attachments can increase the versatility of the equipment, allowing their use with a wide range of wastes. Ancillary equipment for screening, sorting, and segregation can be effectively integrated with conventional excavation equipment.

  The hazards to operators, in addition to the normal excavation hazards, come from exposure to contaminated media. Misting or fixative agents can reduce fugitive dust emissions during excavation. PPE can reduce or eliminate exposure from inhalation/ingestion or dermal contact.
- **Implementability –** Conventional excavation is readily implementable, and the equipment, attachments, and operators are widely available. The equipment can be readily adapted to the material and conditions at the site. However, excavation into the saturated zone would require dewatering. Also the depth of the excavation would increase overall project costs via the additional excavation volumes associated with benching the slopes for safety or the use of shoring.
- **Cost –** Moderate to high depending on the volume requiring removal, the depth of excavation, and the amount of water requiring separation and processing.

4.4.2.2.2 Surfactant Flushing and DNAPL Extraction

This process option uses chemical surfactants injected in the subsurface within source areas (e.g., DNAPL areas) to mobilize DNAPL into the groundwater followed by extraction of groundwater for removal of source of contamination. The equipment includes use of direct push injection tools or injection through vertical wells either existing or installed for this process. Extraction of groundwater will occur via extraction wells installed for this process to capture mobilized contaminants and prevent migration to undesirable areas. It is considered applicable to the contaminated soil at LHAAP-18/24 but treatability testing to select the type and concentration of surfactant is recommended. It can be used for both shallow and deep soil.

- **Effectiveness –** Injection and extraction equipment is applicable to the LHAAP-18/24 soil contaminants. Similar equipment for extraction of groundwater has consistently proven reliable and effective for removal of groundwater at LHAAP-18/24. The surfactants are typically not hazardous to workers at the site. Extracted groundwater containing very high concentrations of VOCs must be managed in a closed loop system to minimize loss of vapors to the atmosphere and exposure of workers. If not designed well, surfactant flushing could result in uncontrolled NAPL migration to unintended locations. The distribution of surfactants could be uneven between coarse-grained and fine-grained soils (low K zones) with the majority of surfactants flowing through coarse-grained soils, resulting in poor mobilization of fine-grained soil DNAPL, which contains the majority of residual DNAPL.
- **Implementability –** Injection of chemicals and extraction of groundwater are readily implementable, and the equipment, attachments, and operators are widely available. The equipment can be readily adapted to the material and conditions at the site.
- **Cost –** Moderate to high.

4.4.2.2.3 Saturated Soil Summary of the Removal Process Option

Conventional excavation equipment is not carried forward because of the difficulties that would be encountered at the desired depths of excavation, the large volumes of soil that would be excavated increased by the need to slope the ground for deeper excavations, the potential for increasing in emissions of VOCs during excavation, and the high cost associated with off-site hauling and disposal. Surfactant flushing and extraction to reduce source area mass is carried forward for source reduction despite the uncertainty in delivering surfactants to low permeability zones for removal of trapped DNAPL.

4.4.2.3 In Situ Treatment

In situ treatment technologies provide varying levels of saturated soil treatment and reduce the mobility and/or toxicity of the contaminants associated with soil and present as DNAPL. The in situ treatment technologies under consideration are physical/chemical and biological treatments.

4.4.2.3.1 Physical/Chemical Treatment

MNA, air sparging/soil vapor extraction, in situ oxidation, permeable reactive barriers, thermal treatment, surfactant flushing, electrokinetics, and nanotechnology are process options considered potentially applicable to the saturated soil source areas at LHAAP-18/24.

Monitored Natural Attenuation. MNA is a remedial process option that will achieve the cleanup levels over time. Natural subsurface processes such as dilution, volatilization, biodegradation, adsorption, and chemical (abiotic) reactions with subsurface materials are monitored to confirm their progress in reducing contaminant concentrations. **Appendix A** provides an evaluation of the ongoing NA at LHAAP-18/24. The VOCs and perchlorate are amenable to MNA.

- **Effectiveness –** MNA is considered under CERCLA on a case-by-case basis. USEPA guidance has been developed to aid in the selection of this process option for VOCs. MNA has been selected for a number of CERCLA sites. MNA is not effective for source areas when DNAPL is present due to toxicity of high concentrations of VOCs and rate limitations associated with dissolution rates of contaminants from DNAPL to groundwater. MNA for source areas could be achieved as a polishing step after implementation of other effective remedies.
- **Implementability –** Significant groundwater sampling and analyses must be performed to confirm that conditions are suitable for NA and to establish a monitoring network.
- **Cost –** Low to moderate but could be high with specialty tests and if MNA takes a long time to achieve the RAOs.

Air Sparging/Soil Vapor Extraction. This process option is designed to remove VOCs from the groundwater by volatilizing these contaminants through the introduction of air. Air is introduced into the groundwater, assisting in the volatilization of those organics in solution in the groundwater. Extraction wells are installed into the vadose zone and a vacuum is drawn on these wells. The extraction system draws off the organic-laden air that was bubbled through the groundwater in addition to any vapors that exist in the soil pore spaces. The volatilized contaminants can then be drawn from these extraction wells and treated. This process can be used in those areas where VOCs exist in the groundwater and the vadose zone above this groundwater is relatively permeable but not effective in DNAPL areas.

- **Effectiveness –** This process is very effective on highly volatile contaminants (e.g., TCE) and highly permeable formations. It is incompatible with certain soil types, and high humic content inhibits volatilization of contaminants. Implementation at LHAAP-18/24 is complicated by the subsurface heterogeneity and high clay content soil that may limit the effectiveness of air sparging by retarding the movement of air and vapors through the soil column. The presence of discontinuous high-permeability zones can result in preferential air flow paths, limiting the effectiveness. Air sparging is not effective for remediating perchlorate or metals, and is less effective for remediating 1,4-dioxane compared to VOCs.
- **Implementability –** Vapor extraction and air sparge equipment is readily available and commercial vendors are available to design and operate these systems. This process has been used at many hazardous waste sites in relatively homogeneous media. Organics that are removed from the vapor extraction wells require ex situ treatment. Site characterization and modeling are required to determine the proper location of the injection and extraction wells and extraction rates.
- **Cost –** Low to moderate.

In Situ Oxidation. Contaminated media are treated through the addition of oxidizers, such as potassium permanganate, hydrogen peroxide, or activated persulfate, which convert the contaminants to a less mobile or toxic form. This process option is applicable to VOCs such as TCE, and 1,4-dioxane.

- **Effectiveness –** In situ oxidation is effective on contaminants in a relatively homogeneous and porous medium. The shallow groundwater zone at LHAAP-18/24 is largely non-homogenous, of variable porosity, and discontinuous. Chemical oxidation is most effective for VOCs (particularly TCE) and is considered a suitable approach for the primary CoCs at LHAAP-18/24 (MC and TCE). Some chemical oxidants are effective on 1,4-dioxane, such as Fenton's reagent and activated persulfate, but others are not effective, such as permanganate. Multiple applications might be required to treat DNAPL areas. Precipitates formed during the oxidation process could decrease effective permeability and make the process less effective. Chemical oxidation is not effective for treatment of metals or perchlorate, and certain oxidants are not effective on chlorinated alkanes such as 1,2- DCA. The great amount of mass of CoCs in DNAPL requiring oxidation makes this process ineffective.
- **Implementability –** This process option is readily implementable but concerns regarding distribution and exposure of the contaminants to the chemical agents exist. An additional concern is the release of excess reactants or byproducts to the environment. In-situ applications of these processes are well established. A recent USEPA evaluation by their Technology Innovation Office concluded that the application of in situ oxidation is highly dependent on the delivery system and application for remediation of DNAPL is not favored over other technologies (USEPA, August 2006).
- **Cost –** Moderate.

Permeable Reactive Barriers. PRBs can be a physical/chemical or biological treatment option. A reactive barrier or gate is a permeable wall containing reactive media that is constructed across the path of a contaminant plume. As contaminated water passes through the wall, the contaminants are removed or degraded, allowing uncontaminated water to emerge on the downgradient side. Reactive barriers are usually installed through adaptation of conventional construction methods for impermeable barriers such as open trenches, polymer slurry trenches, and overlapping caissons. Reactive barriers may be constructed from a variety of materials including ZVM, GAC, biological material, other sorbents, or a combination. These materials treat contaminants through a combination of mechanisms, including adsorption, chemical reduction, and biodegradation. Reactive barriers are used to prevent migration of contaminants off-site or to nearby receptors and requires contaminated groundwater to pass through the barrier. Therefore, this technology is not applicable to DNAPL source areas, which are primarily not mobile.

- **Effectiveness –** The effectiveness of this process depends greatly on the contaminants, the reactive media, site hydrology, and site geochemistry and highly depends on migration of contaminants through the barrier. DNAPL migration through the barrier is unlikely to occur at this site. Reactive media clogging and exhaustion causes the need for periodic replacement. There are concerns over the longevity of the reactive media given uncertain and changing chemical and physical conditions and the potential high load of CoCs through the gate that could exhaust the reactive barrier material rapidly. Not effective on metals.

- **Implementability –** PRBs are not applicable for DNAPL remediation.
- **Cost –** Not applicable for DNAPL remediation.

Thermal Treatment. Heating the subsurface can effectively and quickly volatilize large quantities of VOCs, including those in the form of non-aqueous phase liquid. Available technologies include ERH, steam injection, and conductive heating, which are typically coupled with a soil vapor extraction system to capture VOCs. ERH delivers electricity to the subsurface through an array of electrodes. The heat generated by electrical resistance typically can raise subsurface temperatures to around the boiling point of groundwater. The steam produced from the groundwater serves as a medium to carry out volatilized VOCs. Steam injection involves the ex situ generation of heat and steam, which is delivered to the subsurface through new or existing wells. Similar to ERH, VOCs are volatilized and carried to the soil vapor extraction system by steam. Conductive heating involves applying heat and vacuum simultaneously to subsurface soils with an array of vertical heater/vacuum wells. Heat generated from heating elements is transferred to the subsurface largely via thermal conduction and radiant heating. In addition, heat can promote in situ biological activity in two ways. First, biological activity is boosted by moderately high temperatures (30°C) found at the periphery of the heated area during active thermal treatment, and throughout the heated area as it cools. Second, high temperatures increase the solubility of DNAPL, resulting in increase in contaminant concentrations in the dissolved form that the microbes are able to use.

- **Effectiveness –** Removal of TCE, MC, and other VOCs is anticipated to be effective in high concentration areas, where DNAPL may exist. Thermal treatment does not suffer from the same limitations of subsurface heterogeneity like the other in-situ technologies. High flow zones have been problematic because they transport the heat away from the targeted area more quickly than low K zones. However, temperature distribution in the subsurface can be made more uniform based on the duration of application of thermal treatment. VOC concentrations in thermally-treated groundwater may reach an asymptote; therefore, a follow-up treatment method is likely to be necessary to reach RAOs, including MNA. Thermal technology is not anticipated to have an effect on perchlorate (an ion) or metals.
- **Implementability –** Additional site characterization to better define DNAPL (especially with ERH because of the cost of installing electrodes) has been conducted and site samples were collected and tested for total organic carbon and thermal resistivity by the technology vendor. The results (**Appendix C**) indicated that the site is amenable to thermal treatment. A significant disadvantage to thermal treatment is that it may compromise the HDPE liner installed along the northern and western perimeters of the site, as well as the network of HDPE piping in the shallow soil (which carries groundwater to the treatment plant). Affected HDPE components could be replaced following thermal treatment, but replacement costs would be significant for the liner. During the thermal treatment, which could take place over several months to over a year (depending on the actual size of the area of treatment), the possibility of compromising the liner could exacerbate the migration of perchlorate towards Harrison Bayou. Alternatively, the treatment could be operated at lower temperatures or operated away from the liner; both would lower overall effectiveness of the technology if certain target areas are not treated.
- **Cost –** High to very high.

Electrokinetics. Induced low voltage DC between the electrodes placed in the ground in an open flow arrangement causes water, ions, and colloids to migrate to the electrodes. Groundwater is the conductive medium. Movement occurs under induced potential via electroosmosis, electromigration, and electrophoresis. The advantages of electrokinetics is its effectiveness in fine-grained soils and for in situ treatment of heavy metals. Technology limitations include solubility of contaminants to be treated, corrosion of anode material, migration rates are slow, change in ambient pH could lead to precipitation and fouling of the cathode, and the presence of large quantities of iron or iron oxides can reduce removal efficiencies. Enhanced electrokinetics techniques attempt to reduce these limitations and improve process performance. Extraction of fluids mobilized to the electrodes for above ground treatment would be required which increases the complexity and cost of the process. The Lasagne™ process developed in cooperation between the USEPA and a private consortium was demonstrated to treat TCE DNAPL in tight clay soil with removal efficiencies of 98% in soil up to 15 feet bgs (GWRTAC, 1997). TCE was mobilized into carbon-containing treatment zones where it was trapped. The process involves creating in situ reactive zones to treat CoCs in situ without extraction. The Lasagne™ process could overcome many of known limitations of electrokinetics and avoids above ground remediation needs.

- **Effectiveness –** Removal of TCE, MC, and other VOCs is anticipated to be effective in high concentration and fine grained soil areas, including where DNAPL may exist. Some volatilization of VOCs could occur. Effectiveness depends on a lot of factors such as grain size, ionic strength (cation exchange capacity and salinity), contaminant concentrations, soil type and structure, and presence of high concentrations of other naturally occurring material such as iron. On its own, electrokinetics has severe limitations such as precipitation (fouling of) on electrodes, severe pH increase in soil, and solubility limitations of contaminants. The site has a very high iron content and with increasing pH, fouling due to precipitation or iron could compromise the success of the process. Therefore, electrokinetics combined with other technologies (enhanced electrokinetics) would be required to minimize limitations and improve opportunity to mobilize contaminants for removal or in situ treatment (e.g., oxidation and bioremediation).
- **Implementability –** Prior to implementing full scale treatment, it may be appropriate to perform additional soil characterization to better define potential limiting factors. Studies include field electrical conductivity surveys, pH and electrical conductivity of pore water, major dissolved ion concentrations in groundwater/pore water, buffering capacity and geochemistry of soil (CEC and salinity). Treatability testing to ensure that the system design delivers as expected might be required. Areas where ICTs are present may not be candidates for remediation as these ICTs will interfere with contaminant migration and continuity of induced currents. Although these ICTs could be used to extract mobilized contaminants for treatment. However, this approach requires a focused study to understand the dynamics and limitations.
- **Cost –** High to very high.

Nanotechnology. Remediation of DNAPL using nanoparticles containing nZVI or EZVI is a promising technology, which has been implemented on several sites (EPA, December 2007). The success will depend on delivering the right dose at the right place to allow contact between the contaminant and the iron particles. nZVI application can be conducted via injection wells, direct

push technology, permeable reactive barriers, liquid atomization, pressure pulse technology, and pneumatic and/or hydraulic fracturing. Treatment of perchlorate by nZVI is indirect and occurs by enhancing the geochemistry of the environment where nZVI is introduced to biodegrade perchlorate by indigenous bacterial populations. Treatment of metals such as arsenate, selenite, and hexavalent chromium occurs in the presence of nZVI. nZVI is not effective in treating 1,4-dioxane.

A treatability study to assess effectiveness of ZVI (0.1 to 5 um) and EZVI was conducted at SiRem (Ontario, CA, 2014) (**Appendix C**) to determine effectiveness to treat highly impacted saturated site areas that can be characterized to contain DNAPL. The results presented in **Appendix C** indicate that EZVI was not effective at various dose levels (0.004, 0.03, 0.1, and 0.2 g EZVI to g formation) and no degradation of VOCs or perchlorate occurred even when the reactors were bioaugmented with specific degrading bacteria (KB-1 Plus®). ZVI testing produced more promising results with degradation occurring at all four doses but the rate was quicker for higher ZVI doses compared to the lower ZVI doses. TCE degradation without the occurrence of daughter products was observed to occur readily. Significant reduction in MC and perchlorate concentrations was also observed likely associated with fermentation of MC and use of hydrogen by native bacteria for reduction of perchlorate. The tests were conducted on micron sized ZVI but it would be expected that nZVI to be as or more effective than micron-sized ZVI.

- **Effectiveness –** nZVI is proven to remove TCE, MC, and other chlorinated VOCs in DNAPL source areas. Effectiveness depends on contact between contaminants and the iron particles. Because migration of injected nZVI might be limited, injection in various areas of interest should be conducted. In source areas multiple injections might be required to achieve desired remediation goals. Reaction occurs via beta elimination resulting in formation of ethane in the case of TCE degradation without generation of intermediates such as cis-1,2-DCE or vinyl chloride. Applicability of the process for treating perchlorate has not been studied, although the effect on reducing perchlorate was demonstrated to occur in the treatability study (**Appendix C**). nZVI is not effective on 1,4-dioxane.
- **Implementability –** Manufacturing nZVI and its variations such as EZVI and BNP is commercially available. Implementation can be conducted through existing delivery methods as mentioned above. The important information is to understand the radius of influence at injection points to create an overlapping condition. Injection along the entire vertical contaminant profile is also required to achieve remediation in the zone of interest. Creating nZVI on site reduces the amount of oxidation the iron undergoes (‘natural demand’) during storage and transport. Distribution of injected ZVI is challenged by subsurface heterogeneity.
- **Cost –** High to very high depending on the volume to be treated.

4.4.2.3.2 Biological Treatment

Biological treatment process options use living organisms such as bacteria or fungi to detoxify or immobilize contaminants in groundwater. These process options are primarily used to convert organic contaminants into nontoxic products.

Enhanced Bioremediation. This general process option covers a wide range of individual biological process options that rely on microbial transformation of organic contaminants under aerobic or anaerobic conditions into benign forms to obtain energy or carbon. Many organic

contaminants, including some of the CoCs at LHAAP-18/24 and perchlorate, can be biodegraded under anaerobic (without oxygen) conditions. However, 1,4-dioxane is relatively resistant to biodegradation in water and soil (EPA, 2014). Studies indicate that 1,4-dioxane does not biodegrade under anaerobic conditions (ESTCP, 2007). 1,4-Dioxane has been observed to degrade cometabolically under aerobic conditions, but most of the work has been in microcosm studies or pilot studies (Zenker et al. 2004 and Lippincott et. al, 2015). The activity of microorganisms is greatly affected by pH, redox potential, temperature, oxygen content, and most importantly, nutrient availability. These conditions can be manipulated to achieve optimal conditions for microbial activity, accelerating the biodegradation of the target contaminants. The conditions are manipulated through the addition of nutrients and/or electron acceptors or donors. DNAPL is likely toxic to microbes and if biodegradation occurs at the periphery of the DNAPL areas, the process is very slow such that its effectiveness is minimal.

- **Effectiveness –** In situ anaerobic biodegradation is not effective for DNAPL which can be highly toxic. While biodegradation could be enhanced at the perimeter of the DNAPL zones, the duration would be very large to achieve RAOs. Effectiveness is also limited by the ability to distribute the substrate into the heterogeneous subsurface material.
- **Implementability –** Enhancing the biological activity may be difficult in some of the low permeability soil at LHAAP-18/24 because of complications associated with the delivery of nutrients and within high concentration areas (DNAPL) due to toxicity effects. Equipment and expertise are readily available. Treatability testing was not conducted directly in media containing DNAPL; nonetheless, bioaugmentation of an EZVI reactor with KB-1 Plus® did not result in enhancing biodegradation of highly impacted soil. It is believed that the concentrations were toxic to the added microbes. Creation of reducing conditions to enhance anaerobic biodegradation of CoCs could result in mobilization of arsenic from soil to groundwater. Additionally, capture of extraction trenches of the bio-front could result in biofouling of the extraction trenches and operational difficulties. These considerations should be evaluated before implementation of this technology.
- **Cost –** Low to moderate.

Phytoremediation. This general process option covers a wide range of individual plant species to remove VOCs and metals from the subsurface via plant uptake and release to the environment.

- **Effectiveness –** Phytoremediation could be effective for shallow contamination but is unlikely to be effective at the depth of DNAPL in the saturated zone at the site. The rate of removal of VOCs or metals is too slow to be effective and the time for the trees to grow to suitable height (depth of root zone) is long. This process is not known to be effective for perchlorate. Additionally, toxicity of DNAPL to trees would make this option infeasible.
- **Implementability –** Planting trees is a straightforward process.
- **Cost –** Low to moderate.

4.4.2.3.3 Summary of In Situ Treatment Process Options

There are numerous in situ groundwater treatment process options available. Reductions in VOC concentrations via MNA within the DNAPL zones are not likely due to potential toxic effects of DNAPL on bacterial populations. MNA is not retained as a remediation option for DNAPL

areas. However, MNA could be retained as a polishing technology for the DNAPL areas after implementation of other remediation technologies that is effective in treating DNAPL areas.

The effectiveness of air sparging/soil vapor extraction and permeable reactive barrier process options for treatment of DNAPL at LHAAP-18/24 in groundwater may be limited by site geology or hydraulic conditions (preferential transport pathways limits effectiveness), contaminant characteristics (air sparging is not effective for perchlorate and metals), or the degree of required long-term maintenance (for reactive barriers). These technologies are not retained. In situ chemical oxidation could be effective for destruction of VOCs; however, DNAPL remediation via in situ oxidation is unlikely to be effective due to the extremely high demand of oxidants by DNAPL and the inability to achieve oxidant-contaminant contact. Other processes are deemed more favorable for DNAPL remediation than in situ oxidation (USEPA, August 2006). This process is also not effective for perchlorate and metals. Therefore, in situ oxidation is not retained for DNAPL area remediation.

In situ enhanced bioremediation has been shown to be effective on chlorinated solvents and perchlorate. Its effectiveness in areas with extreme VOC concentrations is uncertain due to the possibility that byproducts will be produced at concentrations detrimental to the microbial population and the high VOC concentration is toxic to the organisms. Therefore, biodegradation of source areas is not retained, although enhanced ISB could be implemented as a polishing remedial technology. In situ thermal treatment is promising for areas of very high concentrations. Although, the technology should be avoided in the vicinity of the HDPE liners and its cost is typically very high, this technology will be retained. Surfactant flushing of DNAPL areas (evaluated under “Removal” options) has been proven to be effective with appropriate use of surfactant type and concentration and will be retained. Phytoremediation is not retained due to its lack of effectiveness for DNAPL remediation. Electrokinetics could be implemented effectively in heterogeneous formations to treat not only organic contaminants but also ionic contaminants such as perchlorate and metals. However, in most situations, on site treatment of mobilized contaminants would be required, increasing process complexity and enhanced electrokinetics applications are required to overcome process limitations and improve opportunity for successful removal and treatment of contaminants. Significant studies and treatability testing are required to assure that an understanding of formation limitations are achieved and the process can be designed and implemented with appropriate enhancement to achieve desired endpoints effectively. Nanotechnology in the form of nZVI will likely be successful in remediating source areas as long as sufficient iron is delivered and distribution is achieved. EZVI produces conditions for biodegradation in addition to abiotic degradation ZVI is capable of achieving.

Out of these in situ options, surfactant flushing, ERH, electrokinetics, and nZVI are favored. Surfactant flushing is cost effective and is proven to achieve significant reductions in DNAPL concentrations. Surfactant flushing could be followed with ISB as a secondary technology to further reduce residual concentrations. ERH is retained due to its effectiveness on remediating DNAPL, although the technology is expensive. Electrokinetics when implemented to achieve in situ remediation and avoid above ground treatment could be successful. Use of nZVI to treat source areas has been implemented with success and should be applicable at this site. Use of nZVI provides further enhancement for successful applications. Therefore, surfactant flushing, ERH, and nanotechnology are retained as representative technologies for the in situ treatment option. More detailed evaluation may be appropriate during remedial design to determine the

most effective in situ treatment option given the specific areas of application and the most recent cost information.

4.4.2.4 Ex Situ Treatment

Ex situ treatment technologies provide treatment of excavated soils or extracted DNAPL on site. These technologies are applied to reduce the volume, mobility, or toxicity of recovered material. Although ex situ treatment technologies considered are physical/chemical, thermal, and biological, they have been grouped into one process option under an on-site treatment technology using a skid-mounted system near the extraction point. Treatment of excavated soil containing DNAPL is not considered, as soil excavation was excluded.

4.4.2.4.1 On-Site Skid-mounted Treatment Plant

A skid-mounted or mobile treatment plant could be built near the point of DNAPL extraction. The treatment system would be designed for removal of extracted CoCs either in liquid form (i.e., via surfactant flushing) and or vapor form (i.e., thermal treatment).

Biological treatment methods are not effective at the concentrations of VOCs in extracted groundwater. Thermal treatment methods such as thermal oxidation or incineration can be effective for removal or oxidation of VOCs in vapor phase but the lack of availability, high cost, and complex processes associated with these methods to treat this material makes this process not feasible. Chemical oxidation methods could be effectively implemented to treat extracted DNAPL but requires design, procurement, construction, and operation. GAC can be effective in removing vapor phase and/or liquid phase VOCs extracted via thermal treatment process or surfactant flushing process, respectively, although the cost might be high. Treated extracted groundwater could then be discharged to the GWTP to treat metals and perchlorate. Vapor phase VOCs could be separated using cooling the vapor phase to very low temperatures, using liquid nitrogen or other cryogenic fluid as a refrigerant. The process is applied as a pretreatment stage in the gas treatment phase to reduce excessive loading for final treatment using GAC for example to polish residual VOCs.

- **Effectiveness –** A skid-mount system could be effective for chemical oxidation and thermal treatment but not for biological treatment. Emission controls are required to prevent exposure.
- **Implementability –** The implementation of this option is difficult. A few studies would be needed to design the plant to meet site conditions. Equipment availability and vendor expertise in this area is limited but available.
- **Cost –** Medium to high. The capital cost of this option is considerable. However, there is a potential that the operational costs could be minimized.

4.4.2.4.2 Summary of Ex Situ Treatment Process Options

A new skid-mounted plant will be retained for remedial alternative development. Ex-situ management of extracted DNAPL in liquid or vapor form provides a safe and cost-effective approach.

4.4.2.5 Disposal

The disposal GRA consists of those technologies that provide for the disposal of removed wastes at new or existing, permitted disposal facilities. Both on-site and off-site facilities are evaluated. A selection of on-site facilities versus off-site facilities is made for developing alternatives.

4.4.2.5.1 Off-Site Disposal

Off-site disposal options include off-site treatment and disposal facilities, a RCRA disposal facility, or an industrial landfill. The selection of the disposal facility depends on the waste characteristics.

Treatment, Storage, and Disposal Facility. A TSD facility is a commercial, permitted, off-site facility that is licensed to treat, store, and/or dispose of a variety of waste streams. There are numerous such facilities all over the country offering broad ranges of treatment options, many of which could effectively treat and dispose of the LHAAP-18/24 waste and soil. This option would be used if treatment before disposal is needed such as liquid phase DNAPL (from surfactant flushing).

- **Effectiveness –** A TSD facility is effective at treating and disposing of treated wastes in a permitted, off-site disposal facility.
- **Implementability –** Numerous facilities exist that have and are treating wastes similar to those found at LHAAP-18/24. These facilities are already permitted and licensed to operate. Wastes have to meet the waste acceptance criteria of the receiving TSD facility.
- **Cost –** Moderate to high based on distance to facility and volume of waste generated.

RCRA Disposal Facility. This process option consists of any number of existing disposal facilities that use engineered features such as multilayer liners and caps, leachate detection and collection systems, run-on/-off controls, and intrusion barriers to isolate wastes from human and environmental receptors.

- **Effectiveness –** Disposal involves permanent disposition of the RCRA-generated wastes in a manner that protects human health and the environment. Off-site disposal would include the transportation of generated wastes (e.g., precipitates generated from treatment of extracted surfactant flushed groundwater containing DNAPL) to an approved and licensed facility. This process option is not effective for extracted DNAPL.
- **Implementability –** Readily implementable if the waste acceptance criteria can be met.
- **Cost –** Moderate to high.

Industrial Landfill. An existing industrial landfill can be used to dispose of debris or refuse that is not a RCRA waste or has been decontaminated to acceptable levels. Such a facility is a Class II lined facility permitted to receive industrial, commercial, institutional, land-clearing, and construction/demolition waste. The facility does not accept RCRA-hazardous waste or free liquids. This option would be used to dispose of waste that is considered hazardous to human health and the environment but is not a RCRA-hazardous waste.

- **Effectiveness –** Industrial landfills are effective in isolating low hazard wastes from the environment and human receptors because the waste acceptance criteria severely restrict the type and concentrations of waste that may be disposed.
- **Implementability –** Disposal of the excavated clean wastes or treated wastes would involve transportation and compliance with waste acceptance criteria. An industrial landfill does not accept hazardous soil and/or DNAPL.
- **Cost –** Moderate.

4.4.2.5.2 On-Site Disposal

On-site consolidation is considered as the technology process option for on-site disposal.

Consolidation. Consolidation involves placing treated LHAAP-18/24 soil back into LHAAP areas. The waste is excavated, partially treated on the site if needed, and then placed elsewhere on LHAAP. The contaminants in the treated waste would have to have been destroyed or rendered immobile, making the treated waste better suited for placement. This option precludes the need to transport the treated waste to an off-site disposal facility. A single or multilayer cap would then be placed over the waste. If the waste is fully treated, no special disposal process option is needed.

- **Effectiveness –** Consolidation is effective in isolating the very low hazard wastes from human receptors and the environment. It can limit the area requiring long-term institutional controls. This process is not effective on DNAPL extracted groundwater/soil.
- **Implementability –** Consolidation is used at other hazardous waste sites around the country where off-site disposal options are unavailable or undesirable and where the continued on-site presence of treated waste is not problematic. Given the potential future land uses at the LHAAP, there may be regulatory and public reluctance to moving the waste around the LHAAP.
- **Cost –** Low compared to off-site disposal.

4.4.2.5.3 Summary of Disposal Process Options

RCRA landfill and TSD off-site disposal process options are carried forward for additional consideration until waste streams and volumes are more clearly identified in the alternative development process. Disposal in an industrial landfill is not retained as the generated wastes or extracted DNAPL will likely be hazardous. The on-site disposal option of consolidation is not retained because of the potential regulatory and public concerns about leaving waste on the site after having already removed it, the potential future land uses, and the widespread availability of off-site treatment and disposal facilities.

4.4.2.6 Summary of Representative Process Options for Source Soil in the Saturated Zone

The following representative GRAs, technologies or process options are retained:

- No action
- LUCs

- Containment by slurry wall with soil cover
- In situ treatment by ERH or nanotechnology
- Removal by surfactant flushing and off-site disposal and/or on-site treatment

Development of the remedial alternatives is included in **Section 5.0**.

4.4.3 Unsaturated Soil

In the following subsections, soil process options are evaluated to address residual contamination in the unsaturated soil that has the potential to be a long-term source of contamination to the groundwater via leaching. The evaluation is presented graphically in **Figure 4-3**. As discussed previously, the LUCs and containment options are similar to the groundwater medium and will not be repeated here but are shown on **Figure 4-3**.

4.4.3.1 No Action

The "no action" process option does not provide additional remediation, maintenance, or security activities at contaminated soil areas at LHAAP-18/24. This process option is retained as a baseline with which other remediation alternatives are compared.

- **Effectiveness –** This response action should not have negative long-term impacts on human health and the environment; however, it may impact the duration that some groundwater remedy components must be implemented.
- **Implementability –** No implementation is required.
- **Cost –** None.

4.4.3.2 Removal

The removal GRA consists of technologies that remove contaminated soil for treatment and/or disposal. The removal technology considered is excavation with a process option of conventional excavation.

4.4.3.2.1 Excavation

Conventional Excavation. This excavation method uses a variety of conventional excavation equipment to remove debris, soil, and other buried waste. The equipment includes excavators, track loaders, bulldozers, and tool carriers of differing sizes with attachments or manipulators suitable for dealing with a varied waste profile. This equipment can be used individually or together as circumstances dictate. It is considered applicable to the contaminated soil at LHAAP-18/24. It can be used for both shallow and deep soil.

- **Effectiveness –** Conventional excavation equipment is applicable to the LHAAP-18/24 soil contamination. The equipment has consistently proven reliable and effective for removal of soil and other media in hazardous and non-hazardous applications for decades. Various attachments can increase the versatility of the equipment, allowing their use with a wide range of wastes. Ancillary equipment for screening, sorting, and segregation can be effectively integrated with conventional excavation equipment. The hazards to operators, in addition to the normal excavation hazards, come from exposure to contaminated media.

Misting or fixative agents can reduce fugitive dust emissions during excavation. PPE can reduce or eliminate exposure from inhalation/ingestion or dermal contact.

- **Implementability –** Conventional excavation is readily implementable, and the equipment, attachments, and operators are widely available. The equipment can be readily adapted to the material and conditions at the site.
- **Cost –** Low to moderate depending on the volume requiring removal.

4.4.3.2.2 Unsaturated Soil Summary of the Removal Process Option

Conventional excavation equipment is carried forward as the representative process option for unsaturated soil removal because of its effective application for a wide range of wastes, its equipment availability, and its widespread use in environmental restoration activities.

4.4.3.3 In Situ Treatment

In situ treatment technologies provide varying levels of unsaturated soil treatment and reduce the mobility and/or toxicity of the contaminants associated with soil and present as DNAPL. The in situ treatment technologies under consideration are physical/chemical and biological treatments.

4.4.3.3.1 Physical/Chemical Treatment

MNA, air sparging/soil vapor extraction, in situ oxidation, thermal treatment, electrokinetics, and nanotechnology are process options considered potentially applicable to the soil at LHAAP-18/24.

Monitored Natural Attenuation. MNA is a remedial process option that will achieve the cleanup levels over time. Natural subsurface processes such as dilution, volatilization, biodegradation, adsorption, and chemical (abiotic) reactions with subsurface materials are responsible for reducing contaminant concentrations. The VOCs and perchlorate are amenable to MNA.

- **Effectiveness –** MNA is considered under CERCLA on a case-by-case basis. USEPA guidance has been developed to aid in the selection of this process option for VOCs. MNA has been selected for a number of CERCLA sites. MNA at this site while occurring has had limited effectiveness for unsaturated soil contaminants based on longevity of contaminants present in the unsaturated soil.
- **Implementability –** Sampling over time of impacted soil will need to be performed to determine effectiveness. Tools are available to conduct sampling and analysis of unsaturated soils.
- **Cost –** Low to moderate but could be high with specialty tests and if MNA takes a long time to achieve the RAOs.

Air Sparging/Soil Vapor Extraction. This process option is designed to remove VOCs from the unsaturated soils by volatilizing these contaminants through the introduction of air. Air is introduced into the soil, assisting in the volatilization of organics associated with the soil. Extraction points are installed into the vadose zone and a vacuum is drawn on these wells. The extraction system draws off VOCs from the soil vapor phase. The extracted chemicals are then

treated. This process can be used in those areas where VOCs exist in vadose zone soil that is relatively permeable.

- **Effectiveness –** This process is very effective on highly volatile contaminants (e.g., TCE) and highly permeable formations. It is incompatible with certain soil types, and high humic content inhibits volatilization of contaminants. Implementation at LHAAP-18/24 is complicated by the subsurface heterogeneity and high clay content soil that may limit the effectiveness of air sparging by retarding the movement of air and vapors through the soil column. The presence of discontinuous high-permeability zones can result in preferential air flow paths, limiting the effectiveness. Air sparging is not effective for remediating perchlorate or metals.
- **Implementability –** Vapor extraction and air sparge equipment is readily available and commercial vendors are available to design and operate these systems. This process has been used at many hazardous waste sites in relatively homogeneous media. Organics that are removed from the vapor extraction points require ex situ treatment. Site characterization and modeling are required to determine the proper location of the injection and extraction wells and extraction rates.
- **Cost –** Low to moderate.

In Situ Oxidation. Contaminated media are treated through the addition of oxidizers, such as potassium permanganate, hydrogen peroxide, activated persulfate, or ozone which convert the contaminants to a less mobile or toxic form. This process option is applicable to VOCs such as TCE.

- **Effectiveness –** In situ oxidation is effective on contaminants in a relatively homogeneous and porous medium. The shallow soil zone at LHAAP-18/24 is largely non-homogenous, of variable porosity, and discontinuous. Chemical oxidation is most effective for VOCs (particularly TCE) and is considered a suitable approach for the primary CoCs at LHAAP-18/24 (MC and TCE). Multiple applications might be required to treat a certain area. Precipitates formed during the oxidation process could decrease effective permeability and make the process less effective. Chemical oxidation is not effective for treatment of metals, perchlorate, or chlorinated alkanes such as 1,2- DCA.
- **Implementability –** This process option is readily implementable but requires addition of moisture to the vadose zone for soluble oxidants, which could result in mobilizing the CoCs to groundwater. An additional concern is related to distribution and exposure of the contaminants to the chemical agents exists. Another concern is the release of excess reactants or byproducts to the environment. There have been limited applications of these processes for vadose zone soils, which are generally more readily implemented in the ex situ mode. A recent USEPA evaluation by their Technology Innovation Office concluded that the application of in situ oxidation is highly dependent on the delivery system (USEPA, August 2006).
- **Cost –** Moderate.

Thermal Treatment. Heating the subsurface can effectively and quickly volatilize large quantities of VOCs, including those associated with the vadose soil. Available technologies include ERH, steam injection, and thermal conductive heating, which are typically coupled with

a soil vapor extraction system to capture VOCs. ERH is a complicated technology and is not cost effective on small volumes of soil. Steam injection and conductive heating involve the ex situ generation of heat and steam, which is delivered to the subsurface through new or existing vadose zone wells. VOCs are volatilized and carried to the soil vapor extraction system by steam. While thermal treatment to remediate limited vadose zone soil is not cost effective, use of this technology to treat vadose zone soil (e.g., under the UEP cap) could be readily extended if the technology is selected to treat saturated source areas.

- **Effectiveness –** Removal of TCE, MC, and other VOCs is anticipated to be effective using steam stripping. For shallow contamination (e.g., < 10-12 ft), capture of stripped VOCs may not be efficient due to the short distance to the ground surface. Thermal technology is not anticipated to have an effect on perchlorate (an ion) or metals.
- **Implementability –** A significant disadvantage to thermal treatment is that it may compromise the HDPE liner installed along the northern and western perimeters of the site, as well as the network of HDPE piping in the shallow soil (which carries groundwater to the treatment plant). Affected HDPE components could be replaced following thermal treatment, but replacement costs would be significant for the liner. Alternatively, the treatment could be operated at lower temperatures or operated away from the liner; both would lower overall effectiveness of the technology if certain target areas are not treated.
- **Cost –** For small volumes, the process is not cost competitive with respect to other remediation methods. General cost is high to very high.

Electrokinetics. Induced low voltage DC between the electrodes placed in the ground in an open flow arrangement causes water, ions, and colloids to migrate to the electrodes. Water moisture or introduced fluid would be the conductive medium. Movement occurs under induced potential via electroosmosis, electromigration, and electrophoresis. The advantages of electrokinetics is its effectiveness in fine-grained soils and for in situ treatment of heavy metals. Technology limitations include solubility of contaminants to be treated, corrosion of anode material, migration rates are slow, change in ambient pH could lead to precipitation and fouling of the cathode, and the presence of large quantities of iron or iron oxides can reduce removal efficiencies. Enhanced electrokinetics techniques attempt to reduce these limitations and improve process performance.

- **Effectiveness –** Removal of CoCs is anticipated to be effective for fine grained soil areas. Some volatilization of VOCs could occur. On its own, electrokinetics has severe limitations such as precipitation (fouling of) on electrodes, severe pH increase in soil, and solubility limitations of contaminants. Therefore, electrokinetics combined with other technologies (enhanced electrokinetics) would be required to minimize limitations and improve opportunity to mobilize contaminants for removal or in situ treatment (e.g., oxidation and bioremediation). This process may not be cost-competitive for small impacted areas and low concentrations that could be remediated by other methods such as excavation and disposal.
- **Implementability –** Prior to implementing full scale treatment, it may be appropriate to perform additional soil characterization to better define potential limiting factors. Treatability testing to ensure that the system design delivers as expected might be required. These pretreatment needs make the process more expensive and can be considered too cumbersome to treat a small volume of impacted soil.

- **Cost –** High.

Nanotechnology. Remediation of unsaturated soil using nanotechnology is not meaningful to implement in situ because distribution of nanoparticles in unsaturated soil is not effective. Soil excavation and above ground treatment is possible but the cost and effort for a small volume could exceed that for off-site disposal. Additionally, loss of VOCs would occur during excavation and treatment. Treatability testing to determine the dose and contact time would be required.

- **Effectiveness –** nZVI is proven to remove TCE, MC, and other chlorinated VOCs in groundwater and DNAPL source areas but it is not typically applied to unsaturated soil. Effectiveness depends on contact between contaminants and the iron particles and this might require excavating the soil. The process should be effective as long as contact is achieved between the chlorinated VOCs and iron.
- **Implementability –** Manufacturing nZVI and its variations such as EZVI and BNP is commercially available. Implementation can be conducted after excavating the soil.
- **Cost –** Medium to high depending on volume to be treated.

4.4.3.3.2 Biological Treatment

Biological treatment process options use living organisms such as bacteria or fungi to detoxify or immobilize contaminants in groundwater. These process options are primarily used to convert organic contaminants into nontoxic products.

Phytoremediation. This general process option covers a wide range of individual plant species to remove VOCs and metals from the subsurface via plant uptake and release to the environment.

- **Effectiveness –** Phytoremediation could be effective for shallow contamination. The rate of removal of VOCs or metals is slow but for low to medium concentrations, this process could be effective. The time for the trees to grow to suitable height (depth of root zone) might be too long. This process is not known to be effective for perchlorate. Application of phytoremediation at the site has been implemented but not monitored. Based on poor conditions of the trees within LHAAP-18/24 and the continued presence of high concentrations of contaminants in the soil and groundwater, phytoremediation does not appear to have been successful at this site.
- **Implementability –** Planting trees is a straightforward process.
- **Cost –** Low to moderate.

4.4.3.3.3 Summary of In Situ Treatment Process Options

There are numerous in situ soil treatment process options available. Significant reductions in VOC concentrations via MNA within the vadose zone are not known to be achievable at this site. MNA is not retained as a remediation option for unsaturated soils.

The effectiveness of air sparging/soil vapor extraction process option for treatment of vadose zone soil at LHAAP-18/24 may be limited by site heterogeneity (preferential transport pathways limits effectiveness) or contaminant characteristics (air sparging is not effective for perchlorate

and metals). Capture of vapors from soil vapor extraction for shallow soil may not be effective. This technology is not retained.

In situ chemical oxidation is not effective for vadose zone remediation because oxidation required wet conditions to be effective with the exception of ozone use. Addition of moisture may facilitate migration to groundwater. This process is not effective for perchlorate and metals. Therefore, in situ oxidation is not retained.

Thermal process options such ERH and electrokinetics are not cost effective for small volumes of soil and capture of vapors from the shallow soil may be difficult. ERH for treatment of soil under the UEP cap could be combined with DNAPL remediation. Steam stripping is applicable, but capture of vapor from shallow soil may be difficult. nZVI is unlikely to be applicable for in situ treatment of unsaturated soil.

Phytoremediation can be effective, but the process can be too slow to remove contaminants from the affected zone.

Only ERH of unsaturated soil under the UEP is retained.

4.4.3.4 Ex Situ Treatment

Ex situ treatment technologies provide treatment of excavated soils or extracted vapors on site. These technologies are applied to reduce the volume, mobility, or toxicity of recovered material. Although ex situ treatment technologies considered are physical/chemical, thermal, and biological, they have been grouped into one process option under an on-site treatment technology using a skid-mounted system near the extraction point.

4.4.3.4.1 On-Site Skid-mounted Treatment Plant

A skid-mounted or mobile treatment plant could be built near the point of soil excavation or vapor extraction. The treatment system would be designed for removal of the CoCs from the soil or vapors.

Thermal treatment methods such as thermal desorption or incineration can be effective for removal or oxidation of VOCs but the lack of availability, high cost, and complex processes associated with these methods to treat a limited amount of material is not feasible. Chemical oxidation methods could be effectively implemented to treat the excavated soil but vapor control is required. Additionally, the cost to design, procure, construct, and operate a chemical oxidation process for a limited volume of soil can be moderate to high. Chemical reduction using chemicals such ZVM is possible for excavated soil. Use of activated carbon and/or thermal oxidizer are established technologies for treatment of vapor phase VOCs.

- **Effectiveness –** A skid-mount system could be effective for chemical oxidation and chemical reduction of soil and thermal treatment and GAC for vapors.
- **Implementability –** The implementation of this option is difficult. A few studies would be needed to design the plant to meet site conditions. Equipment availability and vendor expertise in this area is limited. Application of a complex process for small volumes of soil is not feasible.

- **Cost –** High. The capital cost of this option is large relative to the estimated volumes of soil that could be generated.

4.4.3.4.2 Summary of Ex Situ Treatment Process Options

A new skid-mounted plant will not be retained for remedial alternative development. Off-site management of excavated soils provides a safer and more cost-effective approach.

4.4.3.5 Disposal

The disposal GRA consists of those technologies that provide for the disposal of removed wastes at new or existing, permitted disposal facilities. Both on-site and off-site facilities are evaluated. A selection of on-site facilities versus off-site facilities is made for developing alternatives.

4.4.3.5.1 Off-Site Disposal

Off-site disposal options for excavated soil include off-site treatment and disposal facilities, a RCRA disposal facility, or an industrial landfill. The selection of the disposal facility depends on the waste characteristics.

Treatment, Storage, and Disposal Facility. A TSD facility is a commercial, permitted, off-site facility that is licensed to treat, store, and/or dispose of a variety of waste streams. There are numerous such facilities all over the country offering broad ranges of treatment options, many of which could effectively treat and dispose of the LHAAP-18/24 waste and soil. This option would be used if treatment before disposal is needed.

- **Effectiveness –** A TSD facility is effective at treating and disposing of treated wastes in a permitted, off-site disposal facility.
- **Implementability –** Numerous facilities exist that have and are treating wastes similar to those found at LHAAP-18/24. These facilities are already permitted and licensed to operate. Wastes have to meet the waste acceptance criteria of the receiving TSD facility.
- **Cost –** Moderate.

RCRA Disposal Facility. This process option consists of any number of existing disposal facilities that use engineered features such as multilayer liners and caps, leachate detection and collection systems, run-on/-off controls, and intrusion barriers to isolate wastes from human and environmental receptors.

- **Effectiveness –** Disposal involves permanent disposition of the RCRA-generated contaminated soil in a manner that protects human health and the environment. Off-site disposal would include the transportation of excavated soils to an approved and licensed facility. This process option is not effective for extracted DNAPL.
- **Implementability –** Implementation is moderate if the waste acceptance criteria can be met.
- **Cost –** Moderate.

Industrial Landfill. An existing industrial landfill can be used to dispose of that debris or refuse that is not a RCRA waste or has been decontaminated to acceptable levels. Such a facility is a Class II lined facility permitted to receive industrial, commercial, institutional, land-clearing,

and construction/demolition waste. The facility does not accept RCRA-hazardous waste or free liquids. This option would be used to dispose of waste that is considered hazardous to human health and the environment but is not a RCRA-hazardous waste.

- **Effectiveness –** Industrial landfills are effective in isolating low hazard wastes from the environment and human receptors because the waste acceptance criteria severely restrict the type and concentrations of waste that may be disposed.
- **Implementability –** Disposal of the excavated clean wastes or treated wastes would involve transportation and compliance with waste acceptance criteria. An industrial landfill does not accept hazardous soil.
- **Cost –** Moderate.

4.4.3.5.2 On-Site Disposal

On-site consolidation is considered as the technology process option for on-site disposal.

Consolidation. Consolidation involves placing treated LHAAP-18/24 soil back into LHAAP areas. The waste is excavated, partially treated on the site if needed, and then placed elsewhere on LHAAP. The contaminants in the treated waste would have to have been destroyed or rendered immobile, making the treated waste better suited for placement. This option precludes the need to transport the treated waste to an off-site disposal facility. A single or multilayer cap would then be placed over the waste. If the waste is fully treated, no special disposal process option is needed.

- **Effectiveness –** Consolidation is effective in isolating the very low hazard wastes from human receptors and the environment. It can limit the area requiring long-term institutional controls.
- **Implementability –** Consolidation is used at other hazardous waste sites around the country where off-site disposal options are unavailable or undesirable and where the continued on-site presence of treated waste is not problematic. Given the potential future land uses at the LHAAP, there may be regulatory and public reluctance to moving the waste around the LHAAP.
- **Cost –** Low compared to off-site disposal.

4.4.3.5.3 Summary of Disposal Process Options

RCRA landfill, TSD, and industrial landfill off-site disposal process options are carried forward for additional consideration until waste streams and volumes are more clearly identified via additional delineation. The on-site disposal option of consolidation is not retained because of the potential regulatory and public concerns about leaving waste on the site after having already removed it, the potential future land uses, and the widespread availability of off-site treatment and disposal facilities.

4.4.3.6 Summary of Representative Process Options for Unsaturated Soil

The following representative GRAs, technologies or process options are retained:

- No action

- LUCs
- Containment by slurry wall with soil cover
- ERH for unsaturated soil underneath the UEP
- Removal and off-site disposal

Development of the remedial alternatives is included in **Section 5.0**.

General Response Action	Technology	Process Option	Description	Evaluation Comments
No Action	None	Not Applicable		Required for consideration
Land Use Control	Access Restrictions	Covenants	Restricts land use and zoning (no use of groundwater, no residential use	Potentially applicable
	Monitoring	Physical Surveillance	Inspection of engineered remedial actions and conduct maintenance to ensure proper operations of engineered controls including the UEP cap	Potentially applicable
		Long-Term Media Monitoring	Long-term groundwater monitoring used to determine effectiveness of remedial actions	Potentially applicable
Containment	Capping	Soil Cover	Clean soil placed over contaminated areas to reduce infiltration	Potentially applicable
		Asphalt Cap	Asphalt cap placed over contaminated areas to reduce infiltration	Complete prevention of infiltration is not desirable to maintain sustainable groundwater extraction
		Multilayer Cap	Multiple layers of soil, clay, membranes and other materials to prevent infiltration	Complete prevention of infiltration is not desirable to maintain sustainable groundwater extraction
	Lateral Containment	Slurry Wall	Soil/bentonite-filled trench to control or divert groundwater flow	Potentially applicable
		Ground Curtains	Chemical or cement-based grout injected in a series of overlapping columns to form a barrier to groundwater flow	No significant advantages over slurry wall and soil heterogeneity could result in uneven distribution of grout
		Sheep Pilings	A subsurface barrier to groundwater flow constructed by inserting overlapping steel panels into the ground	No significant advantages over slurry wall
	Hydraulic Containment*			
Removal	Groundwater Collection/ Removal	Vertical Extraction Wells	Groundwater extraction wells designed to remove contaminated groundwater	Potentially applicable; existing extraction wells at LHAAP - 18/24 perform satisfactorily
		Interception Trenches	Trench filled with permeable materials designed to intercept and collect shallow groundwater	Requires long-term maintenance; most existing trenches at LHAAP-18/24 perform satisfactorily
		Horizontal Wells	Wells installed horizontally beneath a waste area to collect groundwater and leachate	Considered inferior to trenches and vertical wells in previous studies at LHAAP-18/24
In Situ Treatment	Physical/ Chemical	Monitored Natural Attenuation	The monitored attenuation of contaminants through natural biological/chemical/physical processes	Potentially applicable to dilute dissolved phase
		Air Sparging/Soil Vapor Extraction	Air injected into saturated matrices to remove contaminants through volatilization	Interferes with anaerobic active natural processes; site heterogeneity reduces effectiveness
		In-situ Oxidation	Chemical oxidants or reducers added in situ to convert organics to less toxic forms	Potentially applicable to VOCs and 1,4-dioxane, not effective for perchlorate or metals; site heterogeneity reduces effectiveness of oxidant distribution in the subsurface
		Permeable Reactive Barrier	A trench filled with a reactive or sorbent material designed to treat groundwater as it passes through the trench	Requires a treatability study and long-term maintenance, applicable to dilute migrating plumes only; not effective for all COCs
		Electrokinetics	Application of a direct Current between electrodes inserted across a treatment area to allow migration and collection off contaminants on the electrodes for treatment or extraction	Slow process. Requires the use of a large number of electrodes; effective in heterogeneous formations. Additional studies would be required.
		Nanotechnology	Use of nZVI introduced to subsurface to convert chlorinated ethenes to less toxic forms	Non selective remediation method, suffers from site heterogeneity limiting uniform distribution into the subsurface; generally not effective for perchlorate and MC
	Thermal	Electrical Resistive Heating	Electricity delivered to the subsurface generates heat that volatilizes VOCs	Not applicable to large volumes of dilute groundwater; could damage subsurface piping, wells, and HDPE membranes. Could be used for localized high 1,4-dioxane concentration areas
		Steam Injection	Injected steam heats the subsurface to volatilize VOCs	Not applicable to large volumes of dilute groundwater; could damage subsurface piping, wells, and HDPE membranes
	Biological	Enhanced Bioremediation	Microbes and nutrients are injected into the subsurface to biologically degrade organics	Potentially applicable to both organics and perchlorate
		Phytoremediation	Plants are used to remove, stabilize, or destroy contaminants	Takes too long and process is slow; not effective for depth of contamination on site
Ex Situ Treatment	On Site Treatment	New Treatment Plant	Mobile or skid-mounted system installed near extraction points or to replace a portion of the existing GWTP	Requires design and treatability study; a new plant extends the longevity of the treatment process;
		Existing GWTP	Treatment processes at existing GWTP	Operating GWTP; potential new prcess for 1,4-dioxane treatment. Retained as an alternate should a new GWTP is not used
Disposal	On Site Disposal	Surface Water Discharge	Discharge of treated groundwater to surface water	These are current uses of effluent from the GWTP
		Reinjection	Injection of treated groundwater at LHAAP-18/24	Process discontinued at LHAAP - 18/24
		Irrigation	Watering ground cover vegetation at LHAAP-18/24 to maintain erosion control	These are current uses of effluent from the GWTP
		Release to INF Pond	Release of treated groundwater to the INF Pond	These are current uses of effluent from the GWTP

*Same process options as for groundwater collection/removal

Process option screened out

Process option retained

Groundwater Technology Screening
LHAAP - 18/24 Feasibility Study
Longhorn Army Ammunition Study
Karnack, Texas

DATE: January 2017
PROJECT No: 60274185

AECOM

Figure 4-1

General Response Action	Technology	Process Option	Description	Evaluation Comments
No Action	None	Not Applicable		Required for considerations
Land Use Control	Access Restrictions	Covenants	Restricts land use and zoning (no use of groundwater, no residential use	Potentially applicable
	Monitoring	Physical Surveillance	Inspection of engineered remedial actions and conduct maintenance to ensure proper operations of engineered controls including the UEP cap	Potentially applicable
		Long-Term Media Monitoring	Long-term groundwater monitoring used to determine effectiveness of remedial actions	Potentially applicable
Containment	Capping	Soil Cover	Clean soil placed over contaminated areas to reduce infiltration	Potentially applicable
		Asphalt Cap	Asphalt placed over contaminated areas to reduce infiltration	Complete prevention of infiltration is not desirable to maintain sustainable groundwater extraction
		Multilayer Cap	Multiple layers of soil, clay, membrane, and other materials to prevent infiltration	Complete prevention of infiltration is not desirable to maintain sustainable groundwater extraction
	Lateral Containment	Slurry Walls	Soil/bentonite-filled trench to control or divert groundwater flow	Potentially applicable
		Ground Curtains	Chemical or cement-based grout injected in a series of overlapping columns to form a barrier to groundwater flow	No significant advantage over slurry wall and soil heterogeneity could result in an uneven distribution of grout
		Sheet Pilings	A subsurface barrier to groundwater flow constructed by inserting overlapping panels into the ground	No significant advantage over slurry wall
Removal	Excavation	Conventional Mechanical Excavation	Ordinary earthmoving equipment such as backhoes, loaders, and bulldozers	Complicated by depth of impacted soil and potential excess volume removed to reach deep soils
	DNAPL Extraction	Surfactant Flushing and Extraction	Injection of surfactant to mobilize DNAPL to extraction wells for surface management	Distribution of surfactant to impermeable zones may not be possible; reduces source and longevity of remediation
In Situ Treatment	Physical/ Chemical	Monitored Natural Attenuation	The monitored attenuation of contaminants through natural biological/chemical/physical processes	Not applicable due to high contaminant concentrations / DNAPL phase
		Air Sparging/Soil Vapor Extraction	Air injected into the saturated matrices to remove contaminants through volatilization	Not applicable due to high contaminant concentrations / DNAPL phase
		In-situ Oxidation	Chemical oxidants or reducers added in situ to convert organics to less toxic form	Other processes are more effective at reduction of sources / DNAPL; soil heterogeneity reduces effectiveness of oxidant distribution
		Permeable Reactive Barrier	A trench filled with a reactive or sorbent material designed to treat groundwater as it passes through the trench	Not applicable due to high contaminant concentrations / DNAPL phase; not applicable to immobile contaminants
		Electrokinetics	Application of a direct Current between electrodes inserted across a treatment area to allow migration and collection off contaminants on the electrodes for treatment or extraction	Slow process. Requires the use of a large number of electrodes; effective in heterogeneous formations. Additional studies would be required.
		Nanotechnology	Use of nZVI introduced to subsurface to convert chlorinated ethenes to less toxic forms	Non selective remediation method, suffers from site heterogeneity limiting uniform distribution into the subsurface; generally not effective for perchlorate and MC
	Thermal	Electrical Resistive Heating (ERH)	Electricity delivered to the subsurface generates heat that volatilizes VOCs	Potentially applicable to DNAPL; could damage subsurface piping, wells, and HDPE membranes
		Steam Injection	Injected steam heats the subsurface to volatilize VOCs	Potentially applicable to DNAPL; could damage subsurface piping, wells, and HDPE membranes
	Biological	Enhanced Bioremediation	Microbes and nutrients are injected into the subsurface to biologically degrade organics	Potentially applicable to both VOCs and perchlorate but high concentrations/DNAPL could be toxic; time frame might be too long
		Phytoremediation	Plants are used to remove, stabilize, or destroy contaminants	Takes too long and process is slow; too shallow for deep DNAPL areas
Ex Situ Treatment	On Site Treatment	New Treatment Plant	Mobile or skid-mounted system installed near extraction point	Difficult to implement and requires design and treatability but could be part of another remedy such as ERH
Disposal	Off Site Disposal	TSD	Contaminated media sent to an off-site facility for treatment and/or disposal	Potentially applicable, destination will depend on disposal test results
		RCRA Disposal Facility	RCRA hazardous waste disposal in an off-site RCRA Subtitle C facility	Potentially applicable, destination will depend on disposal test results
		Industrial Landfill	Nonhazardous waste disposal in an off-site RCRA Subtitle D Facility	Not applicable as saturated soils/DNAPL are likely hazardous
	On Site Disposal	RCRA Disposal Facility	RCRA hazardous waste disposed in an on-site RCRA Subtitle C Facility	On-site RCRA facility not available
		Consolidation	Consolidate waste with other waste	Difficult to implement due to regulatory and public resistance to dispose waste at LHAAP

Process option screened out

Process option retained

TSD - Treatment, Storage, and Disposal facility

Saturated (Secondary Source) Source Soil Technology Screening
LHAAP - 18/24 Feasibility Study
Longhorn Army Ammunition Study
Karnack, Texas

DATE: January 2017
PROJECT No: 60274185

AECOM

Figure 4-2

General Response Action	Technology	Process Option	Description	Evaluation Comments
No Action	None	Not Applicable		Required for consideration
Land Use Control	Access Restrictions	Covenants	Restricts land use and zoning (no use of groundwater, no residential use	Potentially applicable
	Monitoring	Physical Surveillance	Inspection of engineered remedial actions and conduct maintenance to ensure proper operations of engineered controls including the UEP cap	Potentially applicable
		Long-Term Media Monitoring	Long-term groundwater monitoring used to determine effectiveness of remedial actions	Potentially applicable
Containment	Capping	Soil Cover	Clean soil placed over contaminated areas to reduce infiltration	Potentially applicable
		Asphalt Cap	Asphalt cap placed over contaminated areas to reduce infiltration	Complete prevention of infiltration is not desired
		Multilayer Cap	Multiple layers of soil, clay, membrane, and other materials to prevent infiltration	Complete prevention of infiltration is not desired
	Lateral Containment	Slurry Walls	Soil/bentonite-filled trench to control or divert groundwater flow	Potentially applicable
		Grout Curtains	Chemical or cement-based grout injected in a series of overlapping columns to form a barrier to groundwater flow	No significant advantages over slurry wall
		Sheet Pilings	A subsurface barrier to groundwater flow constructed by inserting overlapping panels into the ground	No significant advantages over slurry wall
Removal	Excavation	Conventional Mechanical Excavation	Ordinary earthmoving equipment such as backhoes, loaders, and bulldozers	Potentially applicable
In Situ Treatment	Physical/ Chemical	Monitored Natural Attenuation	The monitored attenuation of contaminants through natural biological/chemical/physical processes	Not applicable to unsaturated soil
		Air Sparging/Soil Vapor Extraction	Air injected into the saturated matrices to remove contaminants through volatilization	Not effective for shallow contamination in shallow heterogeneous soils
		In-situ Oxidation	Chemical oxidants or reducers added in-situ to convert organics to less toxic forms	Not applicable to unsaturated soil
		Electrokinetics	Application of a direct Current between electrodes inserted across a treatment area to allow migration and collection off contaminants on the electrodes for treatment or extraction	Slow process. Requires the use of a large number of electrodes; effective in heterogeneous formations. Additional studies would be required.
		Nanotechnology	Use of nZVI introduced to subsurface to convert chlorinated ethenes to less toxic forms	Non selective remediation method, suffers from site heterogeneity limiting uniform distribution into the subsurface; generally not effective for perchlorate and MC
	Thermal	Electrical Resistive Heating	Electricity delivered to the subsurface generates heat that volatilizes VOCs	Not cost effective on small soil volumes but soil beneath the UEP cap could be combined with DNAPL treatment areas near the UEP
		Steam Injection	Injected steam heats the subsurface to volatilize VOCs	Not effective for shallow contamination
	Biological	Phytoremediation	Plants are used to remove, stabilize, or destroy contaminants	Takes too long and the process slow
Ex Situ Treatment	On Site Treatment	New Treatment Plant	Mobile or skid-mounted system near extraction points	Difficult to implement and requires design and treatability
Disposal	Off Site Disposal	TSD	Contaminated media sent to an off-site facility for treatment and/or disposal	Potentially applicable; destination will depend on disposal test results
		RCRA Disposal Facility	RCRA hazardous waste disposal in an off-site RCRA Subtitle C facility	Potentially applicable; destination will depend on disposal test results
		Industrial Landfill	Nonhazardous waste disposal in an off-site RCRA Subtitle D Facility	Potentially applicable destination will depend on disposal test results
	On Site Disposal	RCRA Disposal Facility	RCRA hazardous waste disposed in an on-site RCRA Subtitle C Facility	On-site RCRA facility not available
		Consolidation	Consolidate waste with other waste	Difficult to implement due to regulatory and public resistance to dispose waste at LHAAP

Process option screened out

Process option retained

TSD - Treatment, Storage, and Disposal facility

Unsaturated Source Soil Technology Screening
LHAAP - 18/24 Feasibility Study
Longhorn Army Ammunition Study
Karnack, Texas

DATE: January 2016
PROJECT No: 60274185

AECOM

Figure 4-3

Table 4-1: Identification and Screening of Remedial Action Technologies LHAAP-18/24

General Response Action Technology Type	Description and Process Options	Retained for Evaluation in Section 4.4?	Considerations
Groundwater			
No action	No remedial measures to be taken.	Yes	The “no action” alternative must be fully evaluated according to 40 CFR 300.68.
Land Use Control (LUC)*	Restrict future use of and access to the contaminated media to prevent unauthorized exposure to contaminated media. Monitoring is grouped with LUC because it identifies monitoring is necessary to establish the continued need for other LUC.	Yes	For contaminated groundwater, unsaturated soil, and DNAPL a number of controls are feasible approaches for preventing exposure.
Containment*	Containment isolates the groundwater plume, associated DNAPL zones, and unsaturated soils in place and prevents migration. Containment can be hydraulic or by means of a solid barrier. Hydraulic containment for groundwater is included under “Removal.” Solid barriers include: • Capping Systems • Lateral Containment systems	Yes	Barrier containment is potentially effective to isolate the high concentration regions of the groundwater plume (e.g., DNAPL regions) where effective treatment may be difficult.
Removal	Groundwater removal can serve two purposes: (1) hydraulically isolate the groundwater to prevent its migration off site or to surface water, and (2) remove dissolved contaminants with groundwater from the subsurface for subsequent treatment and/or disposal. Technologies include: • Extraction wells • Interceptor collection trenches	Yes	On-going extraction at LHAAP-18/24 has demonstrated that these technologies are applicable to the contaminants and the site conditions for groundwater.

Table 4-1: Identification and Screening of Remedial Action Technologies LHAAP-18/24

General Response Action Technology Type	Description and Process Options	Retained for Evaluation in Section 4.4?	Considerations
In Situ Treatment	Treat groundwater in place to reduce the contaminant mobility or toxicity. Includes: • Monitored Natural Attenuation • Air sparging/soil vapor extraction • Oxidation • Permeable reactive barriers • Bioremediation • Phytoremediation • Thermal treatment	Yes	These are generally proven technologies that are potentially applicable to the major contaminants found at LHAAP-18/24. Subsurface characteristics (heterogeneity and presence of contaminants within fine-grained soils) will make design and implementability difficult for some of these technologies associated with the ability to drive the applied chemicals into fine-grained soils where contaminants reside. Phytoremediation is not appropriate for the depths of contamination within the saturated zone and is not considered further for groundwater. Some of these technologies are not applicable to perchlorate or metals such as air sparging or chemical oxidation and require use of other technologies.
Ex Situ Treatment	Treat extracted groundwater or vapor after removal from the subsurface • On-site with mobile treatment (for groundwater and/or vapor), or • Existing Groundwater Treatment Plant with potential modification to treat 1,4-dioxane (for groundwater). Examples include advanced oxidation processes using hydrogen peroxide with ultraviolet light or ozone with hydrogen peroxide (HiPOx™). • New GWTP with advanced oxidation processes.	Yes	On-going treatment at the site demonstrates that ex situ treatment of groundwater is applicable. Air emission determination would be made to determine the level of vapor mitigation needed in association with vapor extraction.
Groundwater Disposal	Discharge of treated groundwater to surface water or to the site via a sprinkler system.	Yes	Discharge to Harrison Bayou and on-site irrigation have been practiced for the existing GWTP. These operations demonstrate that disposal is applicable for the contaminants and specific conditions at LHAAP-18/24.
Soil in Saturated Zone – Potential Secondary Source Areas (DNAPL)			
No action	No remedial measures to be taken.	Yes	The “no action” alternative must be fully evaluated according to 40 CFR 300.68.

Table 4-1: Identification and Screening of Remedial Action Technologies LHAAP-18/24

General Response Action Technology Type	Description and Process Options	Retained for Evaluation in Section 4.4?	Considerations
Removal	Removal of source soils from the subsurface for ex situ treatment or disposal. Includes: • Excavation of soil from the subsurface • Surfactant flushing and extraction of solubilized DNAPL	Yes	Excavation could be readily implemented at LHAAP-18/24, though excavation into the saturated zone will be problematic due to dewatering and the costs associated with shoring and/or sloping around the excavations. DNAPL surfactant flushing and subsequent extraction might be successful in reducing the mass of DNAPL in the subsurface but will be less effective in fine-grained soils.
In Situ Treatment	Treat saturated soil in place to reduce the contaminant mobility or toxicity. Includes: • Monitored Natural Attenuation • Air sparging/soil vapor extraction • Oxidation • Permeable reactive barriers • Thermal treatment • Surfactant flushing • Bioremediation • Phytoremediation	Yes	These are generally proven technologies that are potentially applicable to the major contaminants found at LHAAP-18/24. Subsurface characteristics (heterogeneity and presence of contaminants within fine-grained soils) will make design and implementability difficult for some of these technologies associated with the ability to drive the applied chemicals into fine-grained soils where contaminants reside. Phytoremediation is not appropriate for the depths of contamination within the saturated zone and is not considered further for DNAPL. Surfactant flushing is discussed in removal process option.
Ex Situ Treatment	Treat soil/DNAPL after removal to reduce contaminant concentrations. • On-site with mobile treatment	No	Ex situ treatment of excavated soil or extracted DNAPL would be implemented only if it could be shown to be more cost effective than simply managing/disposing off site. This would only be true for very large volumes of soil, in which case soil removal itself would become prohibitively expensive.
Soil/DNAPL Disposal	Either dispose of excavated DNAPL soils or DNAPL if extracted via surfactants for example in RCRA Subtitle D landfill as nonhazardous (after off-site treatment) or Subtitle C landfill as hazardous waste depending on its characteristics.	Yes	This is a straightforward technology that can readily be implemented for the contaminants found at LHAAP-18/24. However, increasing volume can result in exorbitant costs or unacceptable truck traffic in the local area. Dewatering the soil before hauling off site would be required. The water might contain high concentrations of CoCs requiring treatment. Disposal off-site entails treatment such incineration before landfilling to achieve land ban standards.

Table 4-1: Identification and Screening of Remedial Action Technologies LHAAP-18/24

General Response Action Technology Type	Description and Process Options	Retained for Evaluation in Section 4.4?	Considerations
Unsaturated Soil			
No action	No remedial measures to be taken.	Yes	The “no action” alternative must be fully evaluated according to 40 CFR 300.68.
Removal	Unsaturated soil removal removes soil for subsequent treatment and/or disposal. Technologies include direct excavation of the unsaturated soil.	Yes	Soil excavation is a well-established technology applicable at the site.
In Situ Treatment	In-situ treatment for unsaturated soil entails technologies such as: • Monitored Natural Attenuation • Air sparging/soil vapor extraction • Oxidation • Phytoremediation • Thermal treatment	Yes	These are generally proven technologies that are potentially applicable to the major contaminants found at LHAAP-18/24. Subsurface characteristics (heterogeneity and presence of contaminants within fine-grained soils) will make design and implementability difficult for some of these technologies associated with the ability to drive the applied chemicals into fine-grained soils where contaminants reside.
Ex Situ Treatment	Treat excavated unsaturated soil or vapor after removal from the subsurface On-site with mobile treatment for vapors: • Thermal oxidizer • Activated carbon On-site with mobile treatment for soils: • Thermal treatment • Chemical oxidation • Chemical dechlorination	Yes	May not be cost-effective for small volumes of unsaturated soils (versus off-site disposal if excavated or release of vapors to the atmosphere under TCEQ remediation permit-by-rule concept)
Soil Disposal	Dispose of contaminated soil in RCRA Subtitle D landfill as nonhazardous waste.	Yes	This is a straightforward technology that can readily be implemented for the contaminants found at LHAAP-18/24.

Abbreviations:

CFR Code of Federal Regulations
CoCs Contaminants of Concern
DNAPL Dense Non-Aqueous Phase Liquid
GWTP Groundwater Treatment Plant
LUC Land Use Control
TCEQ Texas Commission on Environmental Quality
LHAAP Longhorn Army Ammunition Plant

* LUC and removal GRAs are also applicable to the secondary source DNAPL and unsaturated soils. Therefore, these were not repeated for these two media.

5 DEVELOPMENT AND DESCRIPTION OF ALTERNATIVES

Section 5.1 presents the development of a range of alternatives based on the key assumptions regarding site and contaminant conditions **(Section 2.0)**, the RAOs and applicable ARARs **(Section 3.0)**, and the representative process options **(Section 4.0)**. **Section 5.2** presents the detailed description of the alternatives.

5.1 Development of Alternatives

5.1.1 Requirements and Preferences

The CERCLA process, as defined in the NCP, develops a remedy that protects human health and the environment, complies with ARARs (unless a statutory waiver is justified and granted), is cost-effective, and uses permanent solutions and alternative treatment or resource recovery technologies to the maximum extent practicable. A statutory preference for remedies that would result in permanent and significant decreases in toxicity, mobility, or volume through treatment and provide long-term protection is stated in Section 121 of CERCLA, as amended.

The NCP defines the following preferences in developing remedial action alternatives:

- Use of treatment to address the "principal threats" posed by a site, wherever practical.
- Use of engineering controls, such as containment, for waste that poses a relatively low, long-term threat and for which treatment is not practical.
- Implementation of a combination of actions, as appropriate, to achieve protection of human health and the environment. For example, in appropriate site situations, treatment of principal threats would be combined with engineering controls, such as containment, and LUCs for treatment residuals and untreated waste.
- Use of LUCs, such as drinking water supply controls and covenants, to supplement engineering controls for short- and long-term management to prevent or limit exposures to hazardous substances.
- Selection of an innovative technology when the technology offers the following: the potential for comparable or better treatment performance or implementability, fewer or lesser magnitude adverse impacts than other technologies, or lower costs than demonstrated technologies for similar levels of performance.
- Groundwater is expected to be returned to beneficial uses, whenever practicable, given the particular circumstances of the site. When such restoration is not practicable, the prevention of further migration of the plume and of exposure to the contaminated groundwater is expected.

These statutory requirements and preferences were given due consideration in the development of alternatives for LHAAP-18/24.

5.1.2 Development using Remediation Strategies and Process Options

The medium at LHAAP-18/24 presenting an unacceptable risk or hazard is groundwater in the shallow zone. Additional assessment at the site identified the presence of potential source areas

within the saturated soil (i.e., DNAPL zones) and unsaturated soil that could be a potential source to groundwater, in addition to the presence of unacceptable levels of CoCs in the upper Wilcox Formation. Thus, the purpose of the remedial alternatives is to present the decision maker with technical and economic options for remediation of groundwater and potential source areas at LHAAP-18/24. Although all of the action alternatives developed within this FS have been designed to achieve the RAOs and the statutory requirements under CERCLA, each alternative must also be sufficiently unique in its strategy and approach that the range of alternatives represents a reasonable spectrum of final site conditions in the view of the decision makers.

The process options that remain after screening were grouped and combined into alternatives to meet the RAOs as indicated on **Table 5-1**.

A number of process options are common to all action alternatives (Alternatives 2 through 6):

- Maintenance of the existing RCRA closure cap over the former UEP.
- MNA that occurs at the site to reduce and control CoC concentrations in areas outside the direct influence of the containment area. MNA was evaluated (**Appendix A**) and is a viable option for those areas but not as a primary remedy as additional evidence is needed for MNA to be used as a primary remedy. MNA for 1,4-dioxane has not been established at this time.
- Long-term LUCs to restrict groundwater use. The proposed remedy for each of the action alternatives necessitates that groundwater LUCs be maintained until CoC levels in soil and groundwater allow for unrestricted use and limited exposure. The LUCs include access restrictions and monitoring as discussed in **Section 4.4.1.2**.
- Operation of the existing GWTP and associated groundwater extraction system. The intensity and duration of continued use varies within the alternatives.

5.2 Description of Remedial Alternatives

The following sections describe the remedial alternatives in more detail (see **Table 5-1** for a presentation of the process options within each alternative). The details included in the alternative descriptions (e.g., quantities and dimensions) support the evaluation in **Section 6.0** and the cost estimates in **Appendix D**. Quantities and dimensions are provided for cost estimating purposes only and may be changed based on the design and additional field assessments. The process options are considered representative, and process options other than those considered here may be substituted once the decision on remedial approach is made.

5.2.1 Alternative 1 – No Action Alternative

As required by the NCP, the “no action” alternative provides a comparative baseline against which the action alternatives can be evaluated. Under this alternative, the groundwater extraction and treatment system would be shut down, and unsaturated soil, groundwater, and source areas would be left “as is” without implementing any additional containment, removal, treatment, or other mitigating actions. No other actions would be implemented to reduce potential future impacts to human health and the environment.

5.2.2 Alternative 2 –Enhanced Groundwater Extraction Inside Containment and Ex Situ Treatment, LUC, Enhanced ISB Inside & Outside Containment Area and in Wilcox Formation, Unsaturated Soil Excavation and Off-site Disposal

The goals for this alternative are to prevent exposure of the hypothetical future maintenance worker to contaminated groundwater at LHAAP-18/24, to prevent migration of contaminated groundwater to Harrison Bayou, to eliminate source soils from potential leaching to groundwater, to reduce saturated soil secondary source (DNAPL) from leaching to groundwater, and to ultimately return the groundwater to beneficial use.

The groundwater extraction system would continue to operate with additional ICTs inside the containment area brought back on line (i.e., modifications implemented as part of the pilot study implemented in 2008 (Shaw) will be partially reversed), and a new GWTP replacing the existing GWTP would be designed and used to treat extracted groundwater. **Figure 5-1** presents the existing GWTP process. Historically, ICTs 1, 3, 5, 6, 9, and 10 recovered groundwater impacted with perchlorate, TCE, and MC concentrations as shown in the table below:

ICT	Date	Flow Rate (gallons per month)	MC (µg/L)	MC Mass (lbs/day)	TCE (µg/L)	TCE Mass (lbs/day)	Perchlorate (µg/L)	Perchlorate (lbs/day)
1	4/12/2006	179	40	2E-06	2,600	1.3E-04	1,700	8.5E-05
3	4/12/2006	40,311	33,000	0.37	40,000	0.45	45,000	0.50
5	4/12/2006	4,482	53	6.6E-05	5	6.2E-06	4,400	5.5E-03
6	4/12/2006	4,755	100	1.3E-04	260	3.4E-04	3,100	4.1E-03
9	4/12/2006	54,360	150,000	2.27	24,000	0.36	16,000	0.24
10	4/12/2006	0	200	0	7,200	0	57,000	0

µg/L – micrograms per liter
gallons per month – gallons per month
lbs/day – pounds per day

These preliminary results indicate that certain ICTs that were turned off could be very productive in removing contaminant mass from the subsurface if the extraction flow rate is sustainable. Two ICTs (ICT 3 and ICT 9) in particular have a high potential for removing a large amount of CoC mass from the groundwater at least based on historical results. Sampling of the various inactive ICTs to determine which ICTs would be most effective will be conducted before determining which two ICTs will be activated. Therefore, as part of enhancement of contaminant mass removal from the subsurface, ICT 3 and ICT 9 will be retrofitted to become extraction trenches as part of this and other active FS alternatives.

Under this alternative, vertical extraction wells will be placed inside the residual DNAPL areas and connected to the extraction manifold to the GWTP. The purpose of these extraction wells is to enhance removal of DNAPL. Free DNAPL, if present, will be removed by the gradient created by the extraction wells if present within the zone of influence. Additionally, a large portion of trapped DNAPL will be removed by enhanced dissolution as fresh groundwater is forced through the zone of influence of the wells. While this extraction approach enhances DNAPL removal, it is not expected that residual DNAPL be completely removed within 30 years because hydraulic extraction methods are ineffective on low K zones. If extraction wells within the DNAPL areas

removed residual DNAPL, it is estimated that the DNAPL will be completely dissolved by the time it reaches the GWTP as the DNAPL droplets mix with pumped groundwater in a turbulent pumping regime. The presence of DNAPL in the ACD area may extend farther to the north toward ICT-12E and monitoring well 120, increasing the area to be treated for DNAPL. Therefore, the cost estimate for the DNAPL area in the vicinity of the ACD may become larger and will be considered during the remedial design phase.

Under this alternative, groundwater extraction acts to remove source mass and contain the contamination within the Shallow Zone only. Treated effluent from the plant would be released to Harrison Bayou or used as irrigation water.

The closure cap over the UEP will be maintained in good condition, preventing erosion and maintaining vegetative cover to reduce infiltration in this area and prevent any contamination present in the unsaturated soil beneath the UEP from migrating to groundwater. Removal of the impacted unsaturated soil beneath the UEP in the vicinity of 18CPT21 and 18CPT25 is discussed in this alternative including development of cost estimates but implementation might be deferred to a future date.

LTM would be conducted to confirm that contaminant concentrations are being reduced to acceptable levels over time. Long-term groundwater LUCs would be required for LHAAP-18/24 until cleanup levels are met for the groundwater CoCs. While groundwater extraction removes source mass, the rate of removal is limited by the rate of dissolution of CoCs from the soil and/or DNAPL areas.

Samples would be collected from groundwater monitoring wells, the treatment plant influent and effluent, and additional locations as necessary to document removal of CoCs within and outside the containment area. While there is no current or projected exposure to the groundwater, protective LUCs would be established and maintained to prohibit use of groundwater, restrict land use to non-residential, and maintain the UEP cap.

The estimated restoration time frame for this alternative is expected to exceed the conservative estimate presented in **Table 2-14** of 200 years. For Alternative 2, it is expected that the extraction and treatment system will continue to operate indefinitely to extract the soluble, adsorbed, and particularly DNAPL mass from within the containment, although enhanced ISB will be implemented that would reduce the overall lifecycle for the restoration of groundwater. At some time in the future, the extraction and treatment system might be turned off to allow MNA to take over when the magnitude of the contaminant plume becomes stable or shrinking.

In this alternative enhancement of biodegradation will be implemented in the shallow zone and Wilcox Formation to destroy contaminant mass. Chlorinated VOCs and perchlorate are susceptible to enhanced ISB, particularly within the plume areas where the contaminants have migrated with groundwater compared to source areas where contaminants were released. At this time, enhanced ISB for 1,4-dioxane is not considered a feasible approach but MNA for 1,4-dioxane will be evaluated as more data are collected.

Enhanced in situ treatment would consist of the application of bioremediation amendments along the outside southwestern boundary, southern area outside containment, near 18CPTMW23, AWD-4 to the northwest, and along the area outside the northeastern boundary. These are the areas with highest perchlorate and TCE concentrations outside the containment. Inside the containment, enhanced ISB would be conducted upgradient of MW-21 and 109 in the northeast

boundary, near monitoring wells 120, and in the area of MW-23 and location 18CPT03 where high perchlorate concentrations were detected. Enhanced bioremediation will also be practiced near 18CPTMW08SW, MW-14, and 18CPTMW22SW into the Wilcox Formation due to the presence of high concentrations of perchlorate in the Wilcox Formation in this area of the site. Bioremediation amendments would be injected using direct push tools in a linear fashion. Destroying MC, TCE, and perchlorate in situ, would result in rapid attenuation of CoCs within the area of influence of the proposed enhanced ISB areas. **Figure 5-2** shows the areas targeted for in situ treatment. For cost estimating purposes, two applications of in situ treatment amendments are assumed but additional applications will be implemented if deemed necessary by the monitoring results.

Removal of unsaturated soil containing CoCs at concentrations that could be a continuing source to groundwater will eliminate this potential transport pathway. Contaminated soil has been identified in four (4) areas totaling an area of approximately 7,000 ft^2 and an in-place volume of approximately 1,350 cubic yards.

Removal of targeted source soil is limited to the area of 18SB03 and 8A-911 from a depth of 8 ft to a depth of 12 ft bgs, and the area of 8A-972 between 5.5 and 12 ft bgs. The estimated extent of excavation in the area of 18SB03 and 8A-911 conducted in 1996 is 40 ft by 70 ft for a total area of 2,800 ft^2 and potential total volume of 11,200 ft3 or 414 yd^3. The estimated extent of excavation in the area of 8A-972 conducted in 1996 is 50 ft by 50 ft for a total area of 2,500 ft^2 and potential total volume of 16,250 ft3 or 602 yd^3. Soil in this area was excavated to a depth of 4 feet in 1996, and replaced with clean backfill. Therefore, this soil will be removed and stockpiled for reuse as backfill. However, before any soil excavation is done, targeted extent delineation will be conducted to confirm the extent of CoC impacts before excavation of soil is conducted. The excavated source soil will be disposed off-site after characterization. Removal of contaminated soil under the UEP may be performed as a contingent remedy in the future, if conditions change such that it poses an imminent threat to human health or the environment. Currently however, the existing cap effectively prevents human contact with contaminated soil, and minimizes infiltration of precipitation/runoff that could potentially mobilize COCs in the waste and impact shallow groundwater. The cap is regularly maintained and inspected to ensure its continuing effectiveness. If in the future, groundwater monitoring detects a significant increase in COC concentrations in wells downgradient of the UEP, and/or the water table elevation rises significantly, causing a large part of the underlying waste to become saturated, a detailed evaluation would be performed to assess the need for a contingent remedy, either for the soil or for the groundwater. The RD will address the triggering criteria for evaluating whether a contingent remedy is needed. The estimated volume is 11,400 yd^3 at a depth between 15 and 25 ft bgs below the top of the UEP cover. For this work to take place, a portion of the UEP cover will be removed and then restored after removal of impacted soil and backfilling.

5.2.2.1 Enhanced Hydraulic Control and Groundwater Treatment

The existing groundwater extraction system currently removes water from 21 interception trenches and two vertical extraction wells (EW-1 and 18WW17). This groundwater extraction hydraulically controls migration of contaminants. The extracted groundwater is pumped to the GWTP, stored in an equalization tank for batch treatment, sent through precipitation to remove metals, subjected to air stripping to remove VOCs, and treated in a biological reactor to remove

perchlorate. **Figure 5-1** presents this existing GWTP process. The treated effluent is no longer reinjected at two former interception trenches (ICT-6 and ICT-9) as of July 2012, rather the treated water is discharged to Harrison Bayou or released to the Burning Ground No. 3 via a sprinkler system. Five other interception trenches that were previously used to extract groundwater (ICT-1, ICT-3, ICT-5, ICT-10, and ICT-12A) were deactivated on February 18, 2008 as part of pilot test to encourage subsurface flow across the most contaminated portions of LHAAP-18/24. On December 5, 2012, ICT-12A was restored and is currently extracting groundwater.

To enhance recovery of CoCs from the shallow groundwater, ICT-3 and ICT-9 will be reestablished as extraction trenches. No new extraction will be implemented outside the formation because enhanced ISB will be undertaken as discussed below.

The time required by the extraction system to remove the mass of contaminants at LHAAP-18/24 from within the containment area by hydraulic control only (excluding the effect of enhanced ISB) can be considered in two parts. The accessible mass of contaminants dissolved in groundwater or adsorbed onto soil, and the source mass of contaminants present as DNAPL or residual contamination. The time to remove the estimated accessible mass of contaminants from within the containment area ranges from 1.5 years for MC to 8 years for TCE. However, the actual length of time is much longer due to diffusion limitations that control the removal rate of adsorbed CoCs especially from lower K zones, sorption retardation and transport time. These processes could make the remedial action duration an order of magnitude longer than estimated above. Soil partitioning retardation could increase the duration by 20% up to 10 fold. The time to remove source mass contaminants ranges from 110 years for MC up to 196 years for TCE. The actual time is much longer due to dissolution limitation of CoCs from DNAPL, assuming no DNAPL will be removed as a separate phase. These determinations were made in **Section 2.4.2.2** and presented in **Table 2-14**. These estimates are based on mass removal rates in 2015 and 2016 at LHAAP-18/24, assumed quantities of source mass, and assumed absence of retardation effects. Actual source masses may be less or more than estimated, resulting in shorter or longer time frames. Removal rates may tail off, resulting in longer time frames.

Based on these estimates, it is expected that the GWTP will be operated for a minimum of 30 years. The current GWTP is nearly 17 years old and is aging requiring frequent maintenance with anticipated more maintenance requirements with recapitalization for major item replacement in the near future. Additionally, the existing GWTP is oversized with a design capacity of up to 300 gpm while current operations recover an average flow of 20 gpm. The plant is currently operated one day per week and idling the remainder of the week with the exception of the FBR which operates continuously. Idling of the plant results in stagnant conditions creating additional maintenance problems associated with corrosion of equipment, deposition of precipitates in tanks, piping, pumps, valves, etc., and freeze stresses in the winter that could be avoided if operations were continuous. Due to the age of the plant, frequent maintenance requirements, and idling conditions, capitalization of a smaller foot print GWTP to replace the existing plant is used to develop remedial alternatives.

The new GWTP will be designed for a 50 gpm flow rate, which should accommodate the anticipated increase in groundwater extraction rates (reactivation of two ICTs and additional extraction wells in the DNAPL areas in addition to any extraction from LHAAP-17 that could go on line for a duration of 18 months). The system will consist of the same processes of metals

precipitation, VOC stripper, and FBR for removal of perchlorate. Without replacement of TK-140 (equalization tank) and TK-630 (effluent storage tank), and without a new belt press, the cost to recapitalize the GWTP is estimated at $2.8 million with an annual operational and maintenance cost of $513,000. No major replacement is anticipated for the first 10 years with 10% of the capital cost spent once every five years thereafter for major equipment replacement. Should treatment for 1,4-dioxane be required, an advanced oxidation process using the HiPOx™ technology consisting of hydrogen peroxide with ozone will be implemented. The estimated capital cost including equipment cost, piping/valves, site work, installation, engineering, and contingency is $500,000. The annual operating cost including replacement parts, labor, analytical, chemical cost, and power is estimated at $30,000 per year.

5.2.2.2 UEP Cap Maintenance

The former UEP was closed under RCRA in 1986 and capped by 1987. The UEP cap design consisted of removing the sludge, filling the UEP with common fill, covering the common fill with 4 ft of compacted clay, then applying 1 foot of sand, covered by 1 foot of topsoil. The surface of the cap has an average slope of three percent on top while the sides have a vertical to horizontal ratio of 1:4. It is graded and equipped with a sand drainage layer to promote sheet flow runoff to minimize erosion.

This cap would continue to be monitored, maintained, and repaired, as necessary, to ensure long-term effectiveness. This includes inspections of the cap to check for erosion, settlement, and deep-rooted vegetation, and implementation of necessary repairs. Routine maintenance and repair of the cap would include actions needed to ensure that the integrity of the cap is maintained (e.g., mowing, seeding, and settlement/erosion repair).

The importance of maintaining the cap is to prevent contaminants present in the unsaturated soil from leaching to groundwater. Three locations within the UEP identified the presence of contaminants within the unsaturated zone above the water table (18CPT21, 18CPT25, and 18CPTUEP05). The highest contamination was reported in 18CPT21. This area is included in the DNAPL impact zone that will be addressed under this alternative via hydraulic removal/containment of DNAPL. However, the other two locations are outside the DNAPL zone. Nonetheless, the presence of the cap provides a significant protection of this soil as long as cap maintenance continues to minimize infiltration of rain water.

5.2.2.3 Land Use Control

The LUCs would be implemented to prevent any use of groundwater (other than monitoring) in both the shallow and Wilcox groundwater zones. This restriction would need to remain in place until CoC concentrations in soil and groundwater allow for unrestricted use and unlimited exposure.

5.2.2.4 Enhanced ISB

ISB would consist of the application of organic substrate (e.g., emulsified vegetable oil (EVO) or other formulations) as a bacterial food source, and a bacterial inoculation mix (e.g., SDC-9 or KB-1 Plus®), in areas of the groundwater plume outside the containment area within areas of high perchlorate and high TCE in the northeast, southwest, and southeast. Inside the containment, enhanced ISB would be conducted upgradient of MW-21 and 109 in the northeast

boundary, near monitoring wells 120 and MW-14, and in the area of MW-23 and location 18CPT03 where high perchlorate concentrations were detected. Enhanced bioremediation will also be applied near 18CPTMW08SW and 18CPTMW22SW into the Wilcox Formation due to the presence of high concentrations of perchlorate in the Wilcox Formation in this area of the site.

ISB would be applied using DPT injections. Injection via deep boreholes that are surface cased may be required for the Wilcox Formation. In the northeast boundary where no liners are present with the ICTs, ISB would be applied no closer than 100 foot from the site boundary so that extraction may continue to remove contaminant mass and to avoid extraction of injected ISB amendments. Tracer tests will be conducted to determine whether the proposed injection locations are within or outside the capture zone of the extraction system with the goal to prevent injected substrate from being pulled into the extraction ICTs. Additionally, in order to minimize loss of ISB amendments, extraction wells would be temporarily shut down when ISB treatment amendment begins to appear in the wells. If ISB amendments reached extraction sumps this may result in biofouling problems that subsequently lead to groundwater extraction complications. Therefore, nearby ICTs and monitoring wells will be monitored for the occurrence of treatment amendments during implementation of enhanced ISB.

ISB in the Wilcox aquifer in the vicinity of 18CPTMW08SW would be applied using DPT injections without use of surface casing because in this area of the site within the shallow zone, MC is non-detect, TCE is approximately 45 µg/L, and perchlorate is 31,300 µg/L, which is lower than the perchlorate concentration in the Wilcox Formation at 35,000 µg/L (June 2016). Because injection will occur in the Wilcox aquifer, the ICTs will continue operations without interruption. ISB will enhance biodegradation of perchlorate in situ that would ultimately reduce the concentration of perchlorate and VOCs to a level that would allow NA to take over and reduce concentrations to below the cleanup levels. **Figure 5-2** shows the area targeted for ISB treatment based on existing information.

ISB amendments that result in creating geochemical changes (reducing conditions) favorable for anaerobic biodegradation could also have the potential result in mobilization of arsenic to groundwater. Under anaerobic reducing conditions, immobilized ferric iron becomes reduced and mobile in the form of ferrous iron. Arsenic generally co-precipitates with ferric iron and as the iron is solubilized in the form of ferrous iron, arsenic tends to come off the soil matrix into solution. Therefore, monitoring for arsenic in groundwater will be an integral part of this process.

ISB will enhance biodegradation of MC, TCE, and perchlorate in situ and ultimately reduce the concentrations of those chemicals to a level that would allow NA to take over and reduce contaminant levels to below the cleanup levels. **Figure 5-2** shows the multiple areas targeted for ISB treatment based on existing information.

For cost estimating purposes, the ISB is assumed to be implemented using a biobarrier injection configuration. The spacing of injection points is assumed to be 20 ft. Five ISB biobarriers are planned one in the northeast (900 ft), one in the southwest (600 ft), two 300-foot biobarriers in the northwest in the vicinity of 18CPTMW23 and 18CPTMW15 and AWD-4, 150 ft ISB in the vicinity of monitoring well 120, and one in the south (200 ft) for a total length of 2,450 ft and 122 DPT injection point. For the two grid areas, each grid is 200 ft by 200 ft in area and the

injection points are 25 ft apart for a total of 81 injection points in each grid. In the Wilcox aquifer, the ISB is assumed to use a biobarrier injection in two rows each 100 ft long and 50 ft apart. Injection will occur upgradient of 18CPTMW08SW based on potentiometric surface for the Wilcox Formation in this area of the site. Another 200 ft ISB will be used in the vicinity of 18CPTMW22SW and 150 ft ISB for MW-14.

Two applications of ISB treatment are assumed. The first application will be DPT injection of a slow releasing organic substrate (EVO) during year 1 in the areas depicted on **Figure 5-2**. Bioaugmentation is anticipated to be conducted 3 months after establishment of sustainable anaerobic conditions. It is assumed the first injection will reduce perchlorate concentrations by 90% and TCE and MC concentrations by 75%. The second application will be DPT injections of EVO and bioaugmentation during year 3 in same areas. It is assumed the second injection will reduce perchlorate by 90% and TCE and MC by an additional 75%. After the first 2 injections, it is assumed that MNA will control any remaining dissolved CoCs. However, evaluation of whether additional applications would be required will be made from performance data.

5.2.2.5 Unsaturated Soil Excavation and Off-site Disposal

Soil to the south of UEP (**Figure 5-2**) identified by TCE and MC exceedances in borings 18SB03 and 8A-911 between the depths of 8 and 12 ft bgs and boring 8A-972 between the depths of 5.5 and 12 ft bgs will be excavated. Additionally, soil in the former burn pit area to the west of the former UEP in borings 18CPTBB02 and 8A-940 between the depth of 4 to 10 ft bgs and boring 18SB04 between the depth of 10 and 14 ft bgs will be excavated. The shallow soil will be removed and stockpiled for use as backfill if clean. However, the backfill soil will be characterized before reuse. Excavation side walls and bottom will be sampled to confirm clean soil before backfilling with clean soil. Additional excavation will be conducted if contaminants are detected in the excavation walls or bottom. The contaminated soil will be stockpiled, sampled for characterization, and then hauled off-site for disposal at either a RCRA Subtitle C or Subtitle D landfill depending on soil characteristics. The samples will be analyzed for VOCs, metals, and perchlorate and any other criteria for disposal. It is assumed that 60 samples in all will be collected from the excavation area, removed soil, and backfill soil. The in-place volume is estimated at 1,350 yd^3 with an equivalent backfill borrow soil. The soil is assumed to be characterized as hazardous for TCE for costing purposes.

Two locations under the UEP were identified with high TCE an MC in the unsaturated soil. This soil will be excavated by removing the clean top soil to a depth of 15 ft below top of UEP then removing the impacted soil to a depth of 25 ft below the top of the UEP (approximately 18 ft bgs). The contaminated soil will be stockpiled, sampled for characterization, and then hauled off-site for disposal at either a RCRA Subtitle C or Subtitle D landfill depending on soil characteristics. The samples will be analyzed for VOCs, metals, and perchlorate and any other criteria for disposal. It is assumed that up to 200 samples will be collected from the excavation area, removed soil, and backfill soil. The in-place volume is estimated at 11,400 yd^3 with an equivalent backfill borrow soil. The soil is assumed to be characterized as hazardous for TCE for costing purposes. Once confirmation samples indicate clean bottom soil, clean borrow fill will be used to reconstruct the site topography. The top six feet will be made of a similar material as the UEP cap (4 ft of compacted clay, 1 ft of sand, 1 ft of top soil). The cost estimate for removal of

the soil underneath the UEP is included in this FS but the remedial action, if implemented, would not occur until 2024 at the earliest.

The excavation will be conducted using typical construction equipment such as a backhoe, bulldozer, front end loader, and haul trucks. Any stockpiles will be placed on plastic sheeting and will be covered until removed. Wetting of excavation areas to minimize dust generation will be conducted. Use of PPE and conducting air monitoring as needed for particulates will be implemented to protect the workers. Approximately 100 cubic yards per day are expected to be excavated. Operation will occur in Level D with air monitoring for particulates with optional upgrade to Level C for respiratory protection.

5.2.2.6 Groundwater Monitoring and MNA

MNA under this alternative is limited to CoCs present in the Wilcox Formation and areas in the shallow zone not influenced by either extraction or enhanced ISB. Data collected from the Wilcox Formation indicated the presence of high concentration of perchlorate in 18CPTMW08SW at a concentration of 35,000 µg/L, this area will be treated with enhanced ISB. Other areas within the Wilcox Formation targeted for remediation are MW-14 and 18CPTMW22SW. The remainder of the areas has low concentrations of perchlorate, TCE, and MC as presented in the Updated PSI Report Addendum (AECOM, 2016a) and Supplemental to the Updated PSI Report (AECOM, 2016c) such that NA mechanisms are meaningful for those areas. For example, the highest perchlorate concentration in the Wilcox Formation outside of the treatment areas is 672 µg/L at 18CPTMW08DW, the highest TCE concentration is 46.5 µg/L in 18CPTMW01SW, and the highest MC concentration is 746 µg/L in 18CPTMW01SW. Remediation of the Wilcox formation at this location is not recommended under this alternative due to the presence of high concentrations of TCE and MC in the shallow zone in this area of the site which under this alternative (extraction of groundwater within the UEP DNAPL area) will remain for a long time and could continue acting as a source to Wilcox Formation groundwater.

Available data for the Wilcox Formation wells are limited to between two and six data points for each of the wells installed in the spring of 2013, Spring of 2014, and Spring of 2016. Therefore, analysis of MNA in these wells is not possible at this time, but will be included in future assessments. Nonetheless, for this alternative, MNA is assumed to occur in the Wilcox Formation as was observed for low contaminated shallow zone wells (e.g., 18WW08 for perchlorate and MW-8 for TCE – **Appendix A**).

Natural attenuation analysis as presented in **Appendix A** indicated the occurrence of NA but in a very limited number of wells. Due to the influence of groundwater extraction, it was not possible to isolate NA effects from groundwater extraction influence. However, the presence of TCE degradation daughter products were identified in a large number of wells even those wells influenced by extraction.

ISM study was deployed in MW2 and 120 for 84 days using Bio-Traps obtained from Microbial Insights. The study included monitoring for natural attenuation of MC using a control unit. ^{13}C labeled MC was embedded in the Bio-traps. The results indicted no evidence of natural attenuation is taking place in MW2 for MC but some evidence of NA occurred in 120. These results indicate that high concentration areas are not amenable to natural biodegradation while natural biodegradation was observed in low concentration areas.

For this alternative, it is assumed that a monitoring program would be designed and implemented in accordance with USEPA guidance (USEPA, 1998; USEPA, 2004) to evaluate the effectiveness of NA at the site. A total of 92 monitoring wells are currently available to provide groundwater data (32 Wilcox Formation wells and 60 shallow zone wells). For MNA, monitoring wells in the Shallow Zone and Wilcox Formation would be selected for sampling.

MNA sampling would be performed as part of groundwater monitoring plans. MNA sampling would be performed quarterly for the first two years, semiannually for the next three years, then annually until the next Five-Year Review. After that, the sampling frequency may be changed to once every five years if the data suggest less frequent sampling is appropriate. For costing purposes, a 30-year monitoring program is assumed. The analytical program would consist of VOCs, metals, perchlorate, and 1,4-dioxane. The following parameters would also be included in the initial analytical program: sulfate, nitrate, nitrites, alkalinity, total organic carbon, and field tests for dissolved oxygen, redox potential, and ferrous iron. These parameters would be dropped when NA is well documented. Additional parameters that will be conducted for two events only in select Wilcox Formation wells (e.g., 18CPTMW01SW and 18CPTMW06SW for TCE and MC wells) to establish biodegradation potential include: reductive TCE and VC gene expression, dehalococcoides and dehalobacter concentration, and compound specific isotope analysis for TCE. Subsequent LTM would be limited to VOCs, metals, and perchlorate. For cost estimating purposes, 45 monitoring wells were assumed for sampling (50 samples with QC). MNA parameters for this alternative will be captured for Wilcox Formation wells. For cost estimating purposes, 5 monitoring wells were assumed for MNA sampling (8 samples with QC) for two years.

Annual reports would be prepared to document the program. The second year annual report would include a review of the first eight rounds of sampling and provide the rationale for MNA as an effective part of the remedial alternative. Sampling frequency, reporting frequency, or analytical suite may be modified based on the results of the sampling program.

5.2.2.7 Alternative 2 Duration

This alternative's lifecycle will range between 300 and 500 years. The rate limiting factors would be the desorption rate of VOCs from the low K zones and dissolution of DNAPL into the extracted groundwater. The estimated duration is expected to exceed 30 years controlled by desorption of VOCs from the soil and residual DNAPL. For cost estimation, a duration of 30 years is used.

5.2.3 Alternative 3 – Groundwater Extraction and Treatment, MNA Outside the Containment and in Wilcox Formation, LUC, and Containment

The goals of this alternative are to prevent exposure of the hypothetical future maintenance worker to contaminated groundwater at LHAAP-18/24 and to prevent migration of contaminated groundwater to Harrison Bayou. Under this alternative, further migration of source material will not be prevented or minimized (i.e., migration of contaminants from the unsaturated soil to groundwater or from DNAPL zones to groundwater), this alternative remains protective of human health and will prevent further migration of the contaminant plume in groundwater and protect surface water. To achieve these goals, this alternative uses a slurry wall to contain contaminated groundwater within the existing plume extent. Protective LUCs would be

developed and maintained to prevent use of groundwater for human ingestion until the cleanup levels are met. As a containment alternative, it is not a long-term goal within this alternative to return the groundwater to beneficial use within the bounds of the containment itself. Hence, this alternative does not satisfy one of the RAOs defined in **Section 3.0**.

Under this scenario, a slurry wall would be installed to isolate the groundwater and source areas with high perchlorate and VOC concentrations. Groundwater extraction without enhancement would be intended for gradient control rather than contaminant mass removal, so operations at the GWTP could be reduced over time. The closure cap over the UEP will be maintained in good condition, preventing erosion and maintaining vegetative cover to reduce infiltration in this area. Groundwater monitoring would be conducted to confirm that the slurry wall is functioning properly, and that contaminant concentrations are staying at or below acceptable levels outside the slurry wall. Long-term groundwater LUCs would be required for LHAAP-18/24 until cleanup levels are met for the groundwater CoCs.

For Alternative 3, the slurry wall will contain the source material, but not destroy it. The groundwater extraction will remove a small amount of source material over time. The groundwater extraction and treatment will apply to the shallow groundwater within the containment area. MNA will be applicable to the Wilcox Formation groundwater and shallow groundwater outside the slurry wall not influenced by groundwater extraction. For Alternative 3, the groundwater extraction system will not be enhanced like for the other alternatives. It is expected that the extraction and treatment system will continue to operate for 2 years at existing extraction rates, then be set at reduced operation of approximately 50 to 65% to maintain an inward and upward gradient inside the slurry wall. The groundwater extraction and treatment system would never be completely shut down. MNA outside the slurry wall would continue until TCE and perchlorate concentrations reach the cleanup level. No definite duration can be calculated for attaining the cleanup level inside the slurry wall (e.g., the time frame will exceed 200 years based on **Table 2-14** projections) and an ARAR waiver would be required for the area contained within the slurry wall.

5.2.3.1 Groundwater Containment

A slurry wall would be installed to isolate groundwater with perchlorate, VOC, and other contaminant concentrations. The surface of LHAAP-18/24 would be improved by adding additional soil in some areas and improving drainage ditches to minimize storm water run-on and infiltration. The groundwater extraction and treatment system would be kept operating, but the extraction volume (and the associated treatment volume) would be reduced over time as monitoring demonstrates that the groundwater within the slurry wall is properly contained and an inward and upward hydraulic gradient is imposed.

5.2.3.1.1 Lateral Containment

The slurry wall would surround the area with the highest concentrations (e.g., > 100 µg/L for perchlorate and > 10 µg/L for TCE) including specifically the high perchlorate concentrations at ICT-11, 18CPTMW22 (plugged in September 2014), ICT-12E, MW-8, MW-5, and 18WW17; the high MC concentrations at MW-2, ICT-8 and ICT-12E; and the high TCE concentrations at EW-1, MW-2, MW-8, and ICT-12E. To encompass these locations, the slurry wall will have to surround the containment area and extend out to the northeast to encircle 18WW17, out to the

southwest to encircle MW-8, and to the south to encompass former well 18CPTMW22. **Figure 5-3** shows the projected outline of the area to be encircled by the slurry wall. As shown, the slurry wall is approximately 6,500 ft in length. The depth of the slurry wall will vary in accordance with the depth to the clay confining layer to key into. The approximate depth to the clay layer is depicted on **Figure 5-3** along the path of the slurry wall.

Near ICT-12E, which extends to approximately 31 ft bgs, and nearby wells, there is an absence of the clay layer near that depth. This alternative assumes the slurry wall will extend beyond 30 ft because there is no evidence of presence of a confining layer to improve vertical containment in that area. There is no contamination in the Wilcox wells in the northwest area of the site outside the containment (e.g., in monitoring wells 18WW02 and 18WW06). Therefore, although a clay layer is absent in this area of the site, the potential for vertical migration then lateral migration is not likely, particularly with continued groundwater extraction.

5.2.3.1.2 Surface Improvements

To reduce infiltration, the drainage ditches at the site would be re-graded and lined, and additional soil would be added in flat areas. The existing topography promotes rapid run off from the UEP and the western corner. In contrast, the southeastern portion of the site is relatively flat and drains poorly. Therefore, this alternative includes placement and grading of borrow soil to improve the slope on the southeastern portion of the site, and upgrading approximately 5,800 linear ft of ditches at the site. The latter includes new ditches around the UEP to rapidly convey runoff away from the remainder of the site. The estimated aerial extent of the area included in this work is 720 ft by 360 ft. It is estimated that on average 2.5 ft of soil will be used to grade the area. The total volume is estimated at 24,000 yd^3.

5.2.3.2 Reduced Groundwater Extraction

Reducing the existing volume of groundwater extraction would depend on shutting off extraction points as the inward and upward gradient is established. A study of rainfall amounts versus shallow groundwater elevation will be conducted to understand and determine how much groundwater extraction would be sufficient to maintain an inward and upward gradient. This study will entail use of data loggers in 20 wells within the slurry wall area for a period of two years (to understand seasonal variability) during which shutting off of extraction points will be tested to allow system optimization. Based on this analysis, a determination of the amount of reduction of extraction rate would be completed and implemented. It will be assumed that a reduction to 65% of the initial extraction rate (i.e., 65% of 20 gpm or 13 gpm) will be plausible as a result of surface improvements conducted at the site to improve drainage and reduce infiltration rate. Further reduction to 50% of extraction rate will be assumed at year 10 onward (i.e., eight (8) years after the two (2) year study is completed).

Extraction is expected to continue indefinitely at a reduced rate. Implementation of this alternative requires that no release of treated groundwater to the Burning Ground No. 3 occurs. Management of treated groundwater by discharging to Harrison Bayou and to the INF Pond will be conducted.

Ongoing monthly measurement of groundwater levels in the shallow zone will allow evaluation of groundwater capture zone and stability (i.e., after completion of the two year study).

Measurements of groundwater elevation in the Wilcox Formation will allow continued assessment of vertical gradients.

Based on these estimates, it is expected that the GWTP will be operated for a minimum of 30 years. The current GWTP is nearly 17 years old and is aging requiring frequent maintenance with anticipated more maintenance requirements with recapitalization for major item replacement in the near future. Additionally, the existing GWTP is oversized with a design capacity of up to 300 gpm while current operations recover an average flow of 20 gpm. The plant is currently operated one day per week and idling the remainder of the week with the exception of the FBR which operates continuously. Idling of the plant results in stagnant conditions creating additional maintenance problems associated with corrosion of equipment, deposition of precipitates in tanks, piping, pumps, valves, etc., and freeze stresses in the winter that could be avoided if operations were continuous. Due to the age of the plant, frequent maintenance requirements, and idling conditions, capitalization of a smaller foot print GWTP to replace the existing plan is recommended.

The new GWTP will be designed for a 50 gpm flow rate, which should accommodate the existing and anticipated decrease in groundwater extraction rates (deactivation of ICTs). The system will consist of the same processes of metals precipitation, VOC stripping, and a FBR for removal of perchlorate. Without replacement of TK-140 (equalization tank) and TK-630 (effluent storage tank), and without a new belt press, the cost to recapitalize the GWTP is estimated at $2.2 million with an annual operational and maintenance cost of $513,000. No major replacement is anticipated for the first 10 years with 10% of the capital cost spent once every five years thereafter for major equipment replacement.

5.2.3.3 UEP Cap Maintenance

The former UEP was closed under RCRA in 1986 and capped by 1987. The UEP cap design consisted of removing the sludge, filling the UEP with common fill, covering the common fill with 4 ft of compacted clay, then applying 1 foot of sand, covered by 1 foot of topsoil. The surface of the cap has an average slope of three percent on top while the sides have a vertical to horizontal ratio of 1:4. It is graded and equipped with a sand drainage layer to promote sheet flow runoff to minimize erosion.

This cap would continue to be monitored, maintained, and repaired, as necessary, to ensure long-term effectiveness. This includes inspections of the cap to check for erosion, settlement, and deep-rooted vegetation, and implementation of necessary repairs. Routine maintenance and repair of the cap would include actions needed to ensure that the integrity of the cap is maintained (e.g., mowing, seeding, and settlement/erosion repair).

The importance of maintaining the cap is to prevent contaminants present in the unsaturated soil from leaching to groundwater. Three locations within the UEP identified the presence of contaminants within the unsaturated zone above the water table (18CPT21, 18CPT25, and 18CPTUEP05). The highest contamination was reported in 18CPT21. The presence of the cap provides a significant protection of this soil as long as cap maintenance continues to minimize infiltration of rain water. The runoff water from the UEP cap will be drained to off-site locations to avoid infiltration of rain water inside the containment.

5.2.3.4 Land Use Control

The LUCs would be implemented to prevent any use of groundwater (other than monitoring) in both the shallow and Wilcox groundwater zones. This restriction would need to remain in place until CoC concentrations in soil and groundwater allow for unrestricted use and limited exposure.

5.2.3.5 Groundwater Monitoring and MNA

For this alternative, MNA is applicable to the contaminants left outside the slurry wall and the Wilcox Formation groundwater. The slurry wall will encompass the majority of contaminant concentrations above the cleanup levels. Wells that may contain CoCs above the cleanup level that fall outside the slurry wall (e.g., 18WW08 for perchlorate) will be monitored to ascertain that concentrations in those locations will decrease over time under NA. Similarly, concentrations in the Wilcox Formation will be monitored for CoC concentration changes over time. No NA information is available for Wilcox Formation wells at this time because the majority of Wilcox Formation wells that are impacted were installed since May 2013 and only two to three data points are available for these wells. New data will need to be evaluated for NA in the Wilcox Formation.

For this alternative, it is assumed that a monitoring program would be designed and implemented in accordance with USEPA guidance (USEPA, 1998; USEPA, 2004) to evaluate the effectiveness of NA at the site. A total of 92 monitoring wells are currently available to provide groundwater data (32 Wilcox Formation wells and 60 shallow zone wells). For MNA, monitoring wells in the Wilcox Formation and select wells outside the slurry wall in the shallow zone would be selected for NA sampling. Wells inside the slurry wall will not be included in the NA sampling program.

MNA sampling would be as part of groundwater monitoring plans. MNA sampling would be performed semi-annually for the first two years, annually for the next three years, then every two years for the next four years. After that, the sampling frequency may be changed to once every five years if the data suggest less frequent sampling is appropriate. For costing purposes, a 30-year monitoring program is assumed. The analytical program would consist of VOCs, metals, perchlorate, and 1,4-dioxane. The following parameters would also be included in the initial analytical program: sulfate, nitrate, nitrites, alkalinity, total organic carbon, and field tests for dissolved oxygen, redox potential, and ferrous iron. These parameters would be dropped when NA is well documented. Additional parameters that will be conducted for two events only in select Wilcox Formation wells (e.g., 18CPTMW01SW and 18CPTMW06SW for TCE and MC) to establish biodegradation potential include: reductive TCE and VC gene expression, dehalococcoides and dehalobacter concentration, and compound specific isotope analysis for TCE. Subsequent LTM would be limited to VOCs, metals, and perchlorate. For cost estimating purposes, 4 Wilcox monitoring wells and 12 shallow monitoring wells were assumed for sampling (20 samples with QC).

Annual reports would be prepared to document the program. The second year annual report would include a review of the first eight rounds of sampling and provide the rationale for MNA as an effective part of the remedial alternative. Sampling frequency, reporting frequency, or analytical suite may be modified based on the results of the sampling program.

5.2.3.6 Alternative 3 Duration

This alternative's lifecycle is controlled by the desorption rate of VOCs from the soil and dissolution of DNAPL with an estimated duration exceeding several hundred years. For cost estimation, a duration of 30 years is used.

5.2.4 Alternative 4 –Enhanced Groundwater Extraction Inside Containment and Ex Situ Treatment, LUC, Enhanced ISB Inside & Outside Containment Area and in Wilcox Formation, Unsaturated Soil Excavation and Off-site Disposal, and Surfactant Enhanced DNAPL Removal

This alternative is similar to Alternative 2 (i.e., ISB, unsaturated soil excavation, LUCs implementation, enhanced groundwater extraction, and capitalization of a new GWTP) with the addition of means to enhance removal of DNAPL from the shallow zone groundwater in the two DNAPL areas of the site. The application of surfactant flushing will accelerate removal of residual DNAPL, reduce remaining CoC mass, and reduce the lifecycle of the project. **Figure 5-4** depicts this alternative. The discussion below focuses only on DNAPL removal technology as the remainder of the technologies has been described in detail in Alternative 2.

The goal for this alternative is similar to Alternative 2 but the approach presents a higher level of contaminant removal from the DNAPL areas at a more rapid rate. This alternative achieves protection to human health and the environment. Acceleration for achieving RAOs occurs because this alternative attempts to remove the major source of VOCs believed to be present in residual DNAPL form as determined by the presence of very high concentrations in groundwater and soil (discrete soil data developed in the Updated PSI Report (AECOM, 2016a)).

CoCs inside the containment area within the shallow groundwater zone would be destroyed in the target areas by enhanced in situ biotreatment. These are the areas outside the DNAPL removal areas and are selected in areas with highest groundwater CoC concentrations. Outside the containment enhanced ISB will be implemented to accelerate dissolved plume attenuation and prevent further migration of contaminants to clean groundwater and/or surface water. Similarly, enhanced ISB will be implemented at three locations in the Wilcox aquifer as described for Alternative 2.

A monitoring program would be designed and implemented to evaluate enhanced NA of VOCs and perchlorate in the shallow zone inside and outside the containment area after completion of active remediation as may be necessary. The monitoring program would also monitor for CoCs in the upper Wilcox Formation. LTM would be conducted to confirm that contaminant concentrations are being reduced to acceptable levels over time. Implementation of LUCs will be required and maintenance of the UEP cap will be conducted.

The sections below discuss surfactant flushing technology.

5.2.4.1 Surfactant Flushing Approach

A surfactant flushing treatability study geared toward DNAPLs to identify and optimize the concentrations of the most compatible surfactant(s)/electrolyte(s) mixture, and application volume to the site groundwater and soil will be required. The study will also quantify the maximum groundwater remediation removal of the contaminants while also anticipating adverse incompatibilities that may occur during field implementation. Surfactant phase behavior,

geochemical compatibility, and one-dimensional column studies are recommended for the treatability study. Each treatability test requires sediment, free product, and groundwater collected from the specific site for groundwater remediation. The tests will also determine if adverse chemicals are generated from mixing surfactants with CoCs.

Once treatability testing is completed, pilot-scale testing is recommended to better understand how well surfactant addition would be distributed in the subsurface and result in solubilization of DNAPL from both coarse and fine-grained soils (i.e., to understand limitations of distributing surfactant due to soil heterogeneity). This is an important step because the majority of the residual DNAPL was identified to occur in fine-grained soils (low K zones). Pilot-scale testing will also be used to determine whether DNAPL migration to unintended areas would occur and to determine means to prevent this potential loss of process control. If pilot-scale testing proved successful, remediation will be designed and conducted. The process entails surfactant injection in injection points installed for this process. A few days after injection of the surfactant and solubilization of residual DNAPL, extraction of groundwater under vacuum applied at extraction points (i.e., dual phase extraction) specifically installed for this process will be conducted. Surfactants facilitate contaminant removal by two primary mechanisms: first, through enhancing the mobility of the contaminant by reducing interfacial tension; and secondly by increasing contaminant solubility. Contaminant mobility, increased by interfacial tension reduction, allows the DNAPL to flow more readily through the subsurface. Contaminant solubility will also increase by the formation of micro-emulsions. Following surfactant injection--generally within 16 to 48 hours- dual phase extraction is utilized to capture the mobilized contaminant, surfactant, and the micro-emulsions formed during this process. Extracting total fluids from the formation a very short period after injection of surfactant should minimize the risk of mobilizing DNAPL or movement of DNAPL downward to the Wilcox clay. Additionally, the surfactant itself solubilizes DNAPL such that DNAPL in its original form no longer exists.

In the final phase of the process, episodic dual phase extraction is implemented to allow for “vertical” flushing of the impacted soil column. The extraction pattern varies to assure the most efficient sweep of the contaminant zone.

The extracted fluid will be very concentrated and will be disposed off site as the on-site GWTP is not designed to handle very high loads expected to be removed from the DNAPL surfactant flushing process. The volume of groundwater removed is estimated at 1 million gallons. The estimated volume will be determined after the treatability study/process design is completed. The number of injection and extraction points will be a function of the aerial extent of DNAPL area, vertical distribution of DNAPL, and site-specific limitations. For costing purposes, it is assumed that 40 injection points and 52 extraction wells will be installed for the two DNAPL areas for the surfactant flushing.

Removal of residual DNAPL via surfactant flushing and extraction is not expected to be complete, particularly due to the difficulty in surfactant distribution within the low K zones. Removal of up to 90% is plausible based on vendor information, although this has to be confirmed by pilot-scale testing.

The presence of DNAPL in the ACD area may extend farther to the north toward ICT-12E and monitoring well 120, increasing the area to be treated for DNAPL. Therefore, the cost estimate

for the DNAPL area in the vicinity of the ACD may become larger and will be considered during the remedial design phase.

5.2.4.2 Enhanced ISB Polishing

Depending on the cleanup level achieved with surfactant flushing, it is anticipated that enhanced ISB in the treated DNAPL areas be implemented in a grid fashion with 25 by 25 ft spacing. Two events as described for other enhanced ISB will be implemented. Additionally, enhanced ISB would be required in the treated DNAPL areas due to the presence of perchlorate which is not readily removed by surfactant flushing. It is anticipated that residual surfactants will be required to also enhance ISB.

5.2.4.3 Alternative 4 Duration

Because of the presence of residual DNAPL, the duration of this alternative will remain long at approximately 30 years. For cost estimation, a duration of 30 years is used.

5.2.5 Alternative 5 –Enhanced Groundwater Extraction Inside Containment and Ex Situ Treatment, LUC, Enhanced ISB Inside and Outside Containment Area and in Wilcox Formation, Unsaturated Soil Excavation and Off-site Disposal, Thermal DNAPL Removal

This alternative is similar to Alternative 4 (i.e., ISB, unsaturated soil excavation, LUCs implementation, enhanced groundwater extraction, and capitalization of a new GWTP) with the use of ERH to address DNAPL areas instead of surfactant flushing. Note that while the focus of this discussion is on ERH, other thermal treatment technologies such as thermal conduction heating could be equally applicable. Typically, the selection as to which technology to implement is proposed by the technology vendor; particularly, when a performance-based approach is used. In this alternative, ERH was used to cost the technology. **Figure 5-5** depicts this alternative. This alternative is expected to achieve site RAOs in the shortest period of time compared to the other alternatives.

CoCs inside the containment area within the shallow groundwater zone would be reduced in the target areas by enhanced in situ biotreatment. These are the areas outside the DNAPL removal areas and are selected in areas with highest groundwater CoC concentrations. Outside the containment enhanced ISB will be implemented to accelerate dissolved plume attenuation and prevent further migration of contaminants to clean groundwater and/or surface water. Similarly, enhanced ISB will be implemented at three locations in the Wilcox aquifer as described for Alternative 2.

Removal of targeted soil will be conducted as discussed for Alternative 2. UEP cap maintenance will be implemented including LUCs to prevent use of groundwater. MNA for areas outside the influence of the treatment areas will be evaluated and implemented as discussed for Alternative 2.

A monitoring program would be designed and implemented to evaluate enhanced NA of VOCs and perchlorate in the shallow zone inside and outside the containment area after completion of active remediation as may be necessary. The monitoring program would also monitor for CoCs in the upper Wilcox Formation. LTM would be conducted to confirm that contaminant

concentrations are being reduced to acceptable levels over time. Implementation of LUCs as may be required and maintenance of the UEP cap will be conducted.

The discussion below focuses only on thermal treatment.

5.2.5.1 In Situ Thermal Treatment

The key physical and chemical properties that govern the fate and transport of chlorinated solvents, including viscosity, solubility, vapor pressure, octanol-water partition coefficient, and Henry's Law constant, are temperature dependent. The chlorinated solvent properties are generally based on a "standard" temperature of 25°C. At the higher temperatures employed during *in situ* thermal treatment, these properties change, typically in a way that enhances the treatability of the chlorinated solvents. The primary thermal effects applicable to chlorinated solvents present in the free phase, sorbed phase and the dissolved phase are summarized in the table below.

Fate and Transport Property	Effect as Temperature Increases
Liquid density	Decreases moderately (less than 100 percent)
Vapor pressure	Increases significantly (10 to 20 fold)
Liquid viscosity	Decreases significantly until boiling point and drops markedly upon conversion from liquid to vapor
Vapor Viscosity	Increases slightly as vapor temperature increases
Diffusivity	Increases
Solubility	Increases as temperature increases
Henry's Constant	Increases (more likely to volatilize from water)
Partition Coefficient	Increases (less likely to partition to organic matter in soil)
Biological Degradation	Increases (may decrease at higher temperatures)
Abiotic Degradation	Increases

Source: Derived from Davis, 1997

ERH involves the application of electrical current through the subsurface, resulting in the generation of heat. ERH uses the natural electrical resistance within the subsurface where energy is dissipated through ohmic, or resistive, losses. This manner of in situ heating allows energy to be focused into a specific source zone. When the subsurface temperature is increased to the boiling point of the pore water or the saturated media in the treatment zone, steam is generated. The steam strips contaminants from the soils and enables them to be extracted from the subsurface. In addition, contaminants are directly volatilized from unsaturated soil.

ERH is particularly suited to the treatment of lower permeability strata and to DNAPLs that have become consolidated within lower K zones with higher organic content. ERH is used to treat the lower K zones, which the steam vapors cannot penetrate rapidly (Beyke 1998).

An ERH system consists of subsurface electrodes connected to direct current through the subsurface, and a vapor extraction system to capture the volatilized water and contaminants. In some cases, groundwater extraction is also used to lower the water table within the treatment zone during initial stages of treatment (prior to temperatures exceeding the boiling point of

subsurface water) or to provide hydraulic control. Electrodes can be installed using several different drilling or direct-push techniques, including angled or horizontal methods.

Typically, utility (60 Hertz) electrical power is used with power conversion equipment to regulate voltage or to convert the phase characteristics of the power. Multi-phase heating requires additional space for a transformer (typically mounted on a standard tractor trailer), which can also be designed to include voltage controls (Beyke 1998). Vapor extraction systems are typically used to remove volatilized water and contaminants from the subsurface. The vapor extraction and aboveground treatment equipment is similar to that used with steam enhanced injection (SEI). Higher temperature conditions should be considered when designing extraction and monitoring wells and associated equipment for the treatment area. Existing equipment may require modifications or replacement to accommodate these elevated temperature conditions.

For the site, ERH will be the selected thermal remediation method due its efficiency for removing DNAPL. However, further discussion with vendors will be required to finalize the selection of thermal technology. For costing purposes, it will be assumed that 25 vapor extraction points will be used to a depth of 15 ft bgs using stainless steel material. Extraction will be conducted using a liquid ring vacuum pump and a thermal oxidizer will be used to treat the vapors. Air flow capacity is estimated at 4,000 cubic ft per minute.

Removal of residual DNAPL via thermal treatment and extraction will remove at least 99.9% according to the thermal vendors even within low K zones. Thermal treatment also enhances mobilization of organic matter from the soil to groundwater, which will act to enhance biodegradation of the CoCs. Additionally, higher ambient soil temperature imposed by the thermal treatment process during startup and cool down periods will increase the biodegradation rate by a factor of 2 for every 10 degree Celsius increase in ambient soil temperature up to approximately 25 degrees Celsius above which bacterial activity would decrease. Application of thermal treatment in the southern area of the UEP will also remove CoCs in the unsaturated zone (e.g., area represented by 18CPT21) that would otherwise be subject to excavation. Therefore, the volume requiring excavation is reduced and would be estimated by approximately 6,000 yd^3.

Groundwater extraction near the thermally treated areas might have to be ceased temporarily to reduce the groundwater flux through the area, which requires additional heating capacity.

The presence of DNAPL in the ACD area may extend farther to the north toward ICT-12E and monitoring well 120, increasing the area to be treated for DNAPL. Therefore, the cost estimate for the DNAPL area in the vicinity of the ACD may become larger and will be considered during the remedial design phase.

5.2.5.2 Enhanced ISB Polishing

Depending on the cleanup level achieved with thermal treatment for VOCs, it is anticipated that enhanced ISB in the treated DNAPL areas be implemented in a grid fashion with 25 by 25 ft spacing. Two events as described for other enhanced ISB will be implemented. Additionally, enhanced ISB would be required in the treated DNAPL areas due to the presence of perchlorate which is not readily removed by thermal treatment. Enhanced ISB application will occur when the temperature of the thermally treated area cools to below 30 degree Celsius.

5.2.5.3 Alternative 5 Duration

This alternative's lifecycle will be accelerated after DNAPL removal by ISB inside the containment within the shallow groundwater zone. The rate limiting factor would be the desorption rate of VOCs from the soil; however, the estimated duration would be less than for alternative 4 and will be assumed to be 20 years, at about 4 times the duration estimated for the adsorbed phase TCE to be remediated (**Table 2-14**). However, for cost estimation, a duration of 30 years is used.

5.2.6 Alternative 6 –Enhanced Groundwater Extraction Inside Containment and Ex Situ Treatment, LUC, Enhanced ISB Inside and Outside Containment Area and in Wilcox Formation, Unsaturated Soil Excavation and Off-site Disposal, Enhanced DNAPL Remediation using ZVI

This alternative is similar to Alternative 5 with a different method for treating DNAPL source areas inside the containment. **Figure 5-6** depicts this alternative. This alternative will achieve RAOs in a period of time comparable to Alternative 5. The discussion below focuses only on source area treatment because the remainder of the approach is similar to Alternative 5.

CoCs inside the containment area within the shallow groundwater zone would be destroyed in the target areas by enhanced in situ biotreatment. These are the areas outside the DNAPL removal areas and are selected in areas with highest groundwater CoC concentrations. Outside the containment enhanced ISB will be implemented to accelerate dissolved plume attenuation and prevent further migration of contaminants to clean groundwater and/or surface water. Similarly, enhanced ISB will be implemented at three locations in the Wilcox aquifer as described for Alternative 2.

Within the DNAPL areas remediation will be attained via application of micron-scale ZVI directly using injection wells and direct push methods across the full depth of impact within the saturated zone.

A monitoring program would be designed and implemented to evaluate enhanced NA of VOCs and perchlorate in the shallow zone inside and outside the containment area after completion of active remediation as may be necessary. The monitoring program would also monitor for CoCs in the upper Wilcox Formation. LTM would be conducted to confirm that contaminant concentrations are being reduced to acceptable levels over time. Implementation of LUCs as may be required and maintenance of the UEP cap will be conducted.

The discussion below focuses only on DNAPL Source Areas treatment using ZVI.

5.2.6.1 DNAPL Source Areas Remediation using ZVI

Micron-scale ZVI will be injected into targeted zones using direct push tools and/or injection wells. The radius of influence of the injection point should be known to determine spacing of injection locations and allow overlap of radii of influence. For cost estimation, it is assumed that one injection point is conducted for every 100 ft^2 area (radius of influence of approximately 5.5 ft). The amount of ZVI should be such that excess quantities of iron is introduced to account for the mass of chlorinated VOCs but also for 'natural demand' to ascertain that sufficient residual remains in the formation to treat chlorinated VOCs associated with diffusion from fine-grained soils that would occur over time. A quantity of 0.01 lb/lb of micron-scale ZVI to formation soil

is assumed based on treatability testing completed at SiRem laboratory for this site (**Appendix C**). **Figure 5-6** depicts locations where DNAPL remediation will be conducted. Indication of distribution of ZVI can be determined using pH, ORP, and dissolved iron concentrations. Re-application of ZVI might be required should conditions indicate absence of reducing conditions (e.g., elevation of ORP). ZVI results in creating a very reducing conditions in the subsurface (i.e., ORP < -400 mV). The creation of a very reducing condition in the subsurface creates the condition for effective natural biodegradation or enhanced ISB. It was observed in the laboratory, the generation of hydrogen resulted in fermentation of CM and even in reduction of perchlorate concentration associated with bacteria mediated reduction of perchlorate.

Injection of ZVI into DNAPL areas could have the unintended consequences of mobilizing DNAPL to unimpacted areas by virtue of creating a higher hydraulic head within the injection locations. This would be managed by minimizing the volume of fluid used to inject the ZVI, strategically placing the injection points starting at the perimeter of the area of impact and moving inward, and use of monitoring wells in the areas of injection particularly near the perimeter of the injection area to monitor CoC concentrations.

For cost estimating purposes, two applications of ZVI treatments are assumed with the second injection equal to 40% of the first injection due to mass and volume reduction associated with the first injection. After the injections, it is assumed that MNA will control any remaining dissolved CoCs in those areas. Due to the difficulty in distributing the injected ZVI in low K zones, ZVI application is assumed to remove no more than 70% to 80% of the mass of VOCs per application.

The presence of DNAPL in the ACD area may extend farther to the north toward ICT-12E and monitoring well 120, increasing the area to be treated for DNAPL. Therefore, the cost estimate for the DNAPL area in the vicinity of the ACD may become larger and will be considered during the remedial design phase.

5.2.6.2 Enhanced ISB Polishing

Depending on the cleanup level achieved with ZVI for VOCs and perchlorate, it is anticipated that enhanced ISB in the treated DNAPL areas be implemented in a grid fashion with 25 by 25 ft spacing. Two events as described for other enhanced ISB will be implemented. Additionally, enhanced ISB would be required in the treated DNAPL areas due to the presence of perchlorate which is not readily removed by ZVI treatment.

5.2.6.3 Alternative 6 Duration

This alternative's lifecycle will be accelerated after DNAPL remediation by ZVI application within the source areas and ISB inside the containment area within the shallow groundwater zone. The rate limiting factor would be the desorption rate of VOCs from the soil; however, the estimated duration is estimated at 30 years, at about 6 times the duration estimated for the adsorbed phase TCE to be remediated (**Table 2-14**). For cost estimation, a duration of 30 years is used.

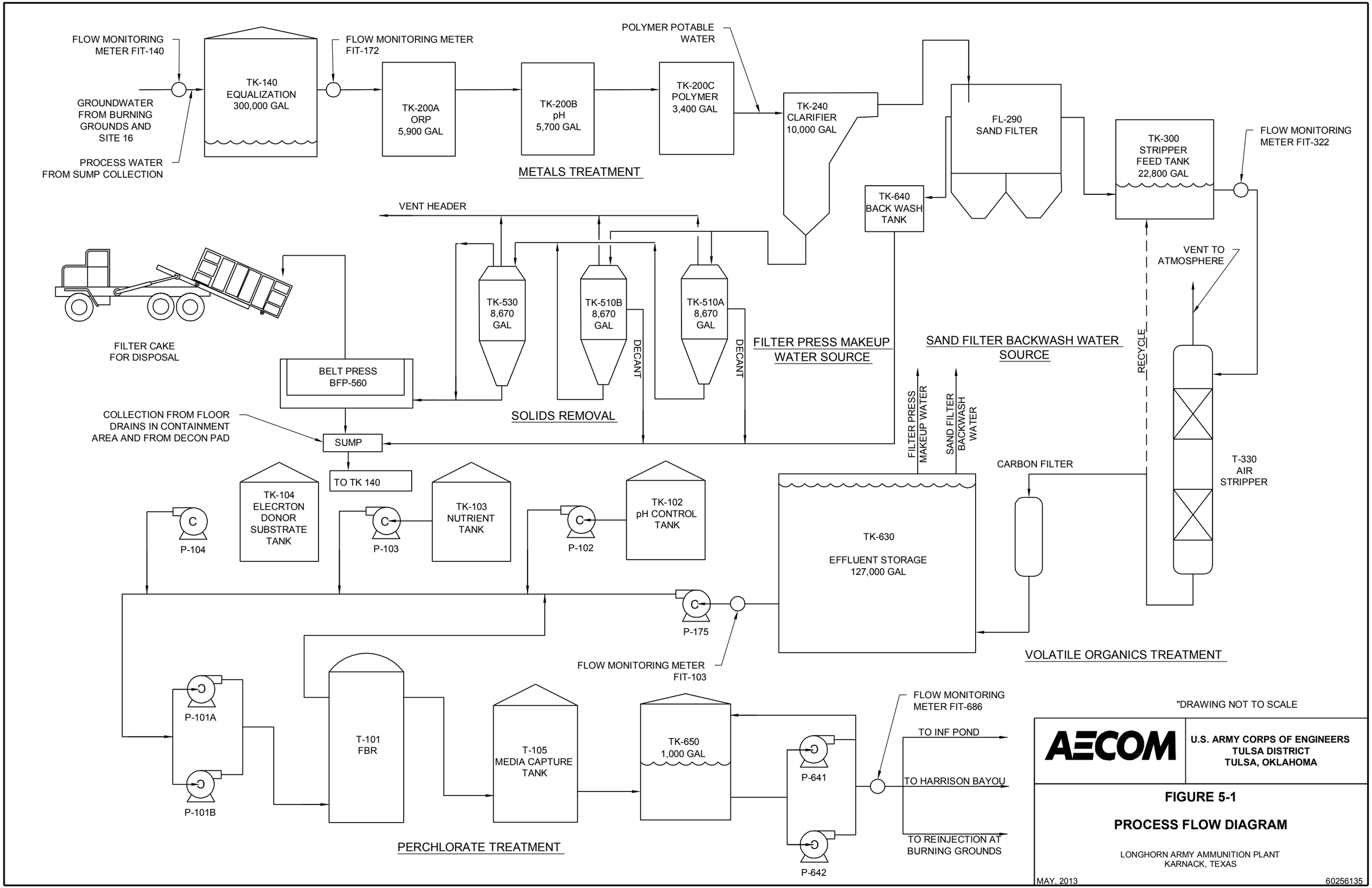
FLOW MONITORING METER FIT-140
GROUNDWATER FROM BURNING GROUNDS AND SITE 16
PROCESS WATER FROM SUMP COLLECTION
TK-140 EQUALIZATION 300,000 GAL
FLOW MONITORING METER FIT-172
TK-200A ORP 5,900 GAL
TK-200B pH 5,700 GAL
TK-200C POLYMER 3,400 GAL
POLYMER POTABLE WATER
TK-240 CLARIFIER 10,000 GAL
METALS TREATMENT
FL-290 SAND FILTER
TK-640 BACK WASH TANK
TK-300 STRIPPER FEED TANK 22,800 GAL
FLOW MONITORING METER FIT-322
VENT HEADER
VENT TO ATMOSPHERE
FILTER CAKE FOR DISPOSAL
TK-530 8,670 GAL
TK-510B 8,670 GAL
TK-510A 8,670 GAL
DECANT
DECANT
FILTER PRESS MAKEUP WATER SOURCE
SAND FILTER BACKWASH WATER SOURCE
RECYCLE
BELT PRESS BFP-560
SOLIDS REMOVAL
COLLECTION FROM FLOOR DRAINS IN CONTAINMENT AREA AND FROM DECON PAD
SUMP
TO TK 140
FILTER PRESS MAKEUP WATER
SAND FILTER BACKWASH WATER
CARBON FILTER
T-330 AIR STRIPPER
TK-104 ELECRTON DONOR SUBSTRATE TANK
TK-103 NUTRIENT TANK
TK-102 pH CONTROL TANK
TK-630 EFFLUENT STORAGE 127,000 GAL
P-104
P-103
P-102
P-175
FLOW MONITORING METER FIT-103
VOLATILE ORGANICS TREATMENT
P-101A
P-101B
T-101 FBR
T-105 MEDIA CAPTURE TANK
TK-650 1,000 GAL
P-641
P-642
FLOW MONITORING METER FIT-686
TO INF POND
TO HARRISON BAYOU
TO REINJECTION AT BURNING GROUNDS
PERCHLORATE TREATMENT
"DRAWING NOT TO SCALE
AECOM
U.S. ARMY CORPS OF ENGINEERS
TULSA DISTRICT
TULSA, OKLAHOMA
FIGURE 5-1
PROCESS FLOW DIAGRAM
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS
MAY, 2013
60256135

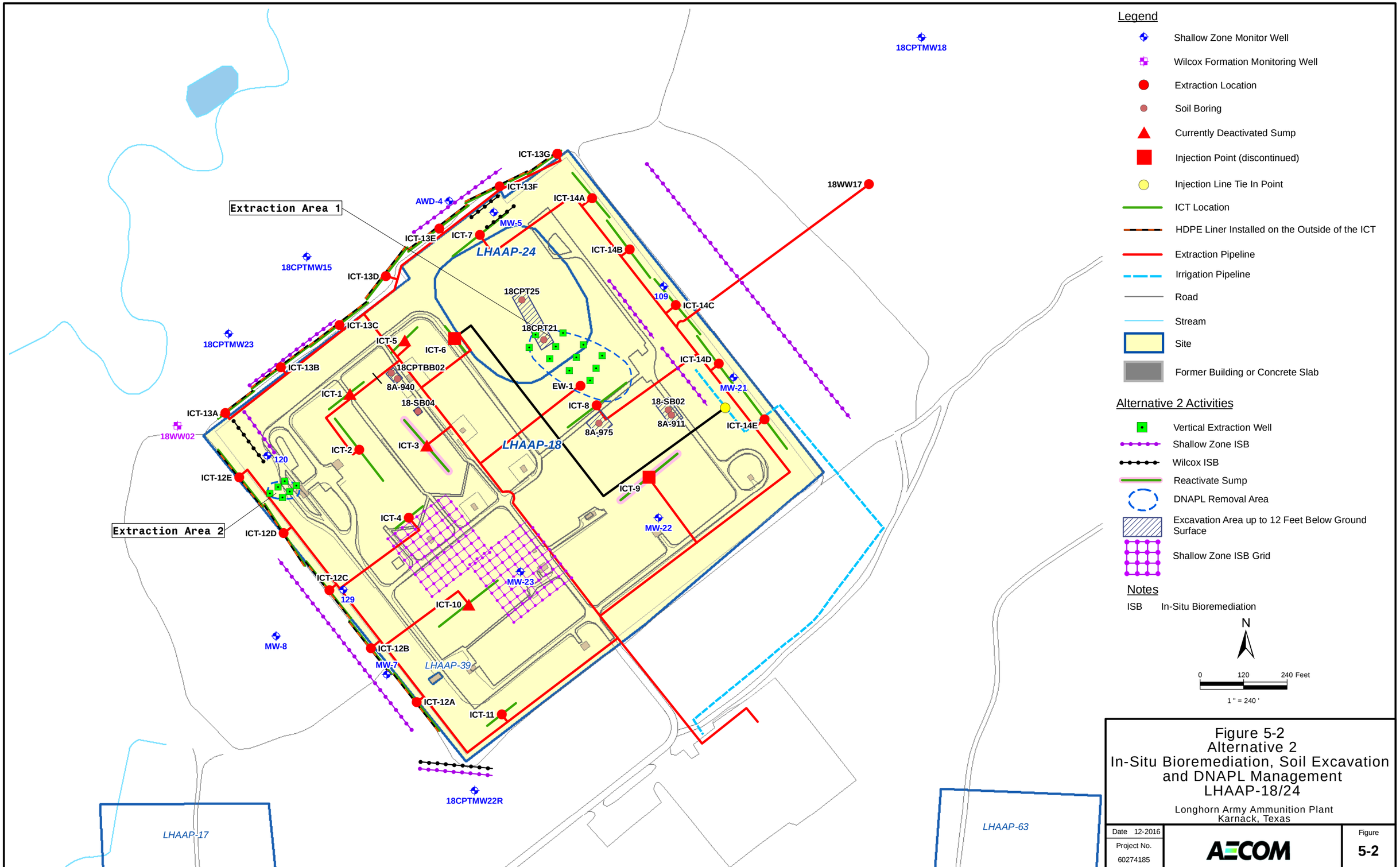

Figure 5-2
Alternative 2
In-Situ Bioremediation, Soil Excavation and DNAPL Management
LHAAP-18/24

Longhorn Army Ammunition Plant
Karnack, Texas

Date 12-2016	AECOM	Figure
Project No. 60274185		5-2

File: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP18_24\Feasibility_Study\Fig 5-2 LHAAP1824 FS Alt2.mxd
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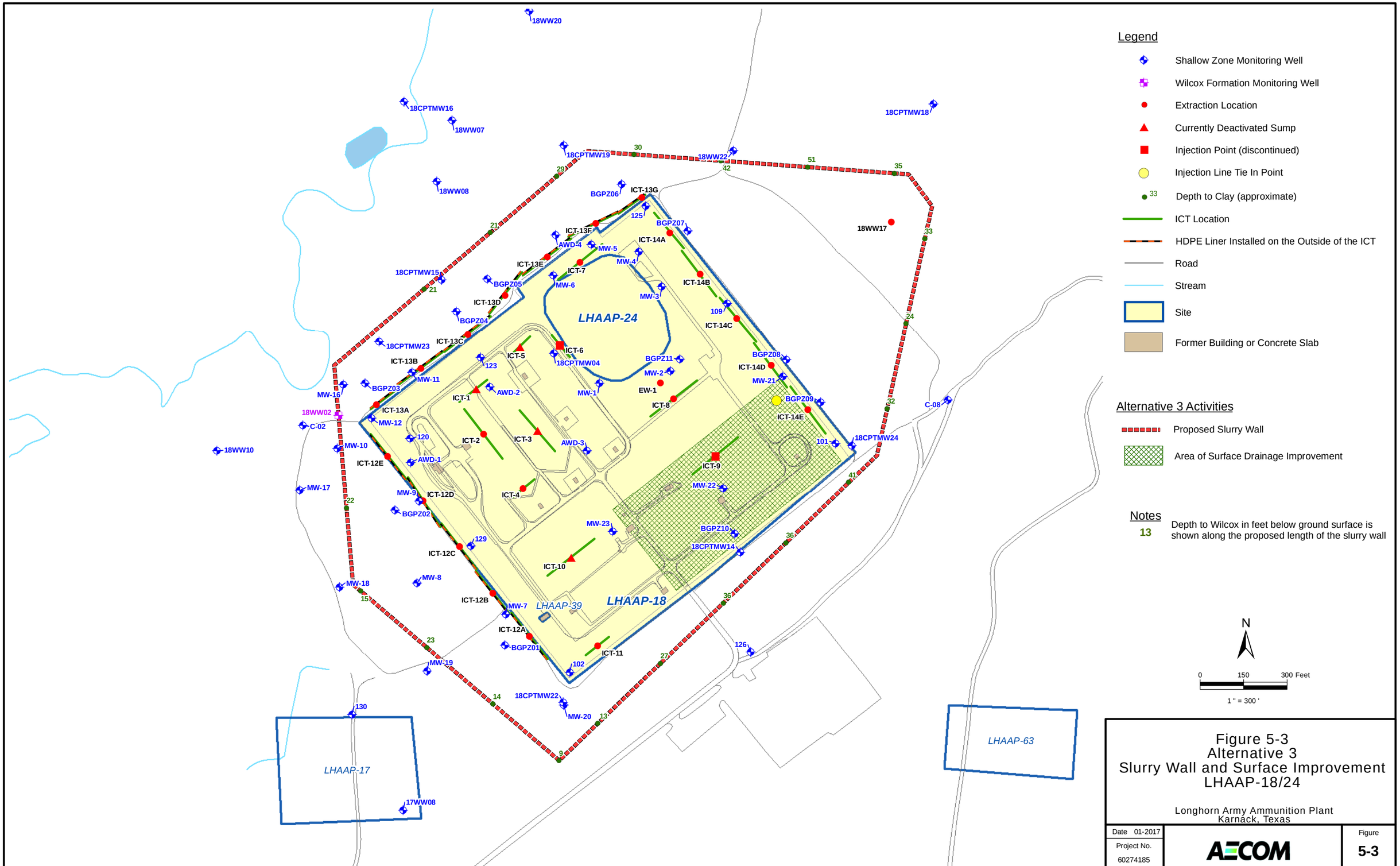

Figure 5-3
Alternative 3
Slurry Wall and Surface Improvement
LHAAP-18/24

Longhorn Army Ammunition Plant
Karnack, Texas

Date 01-2017	AECOM	Figure
Project No. 60274185		5-3

File: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP18_24\Feasibility_Study\Fig 5-3 LHAAP1824 FS Alt3.mxd
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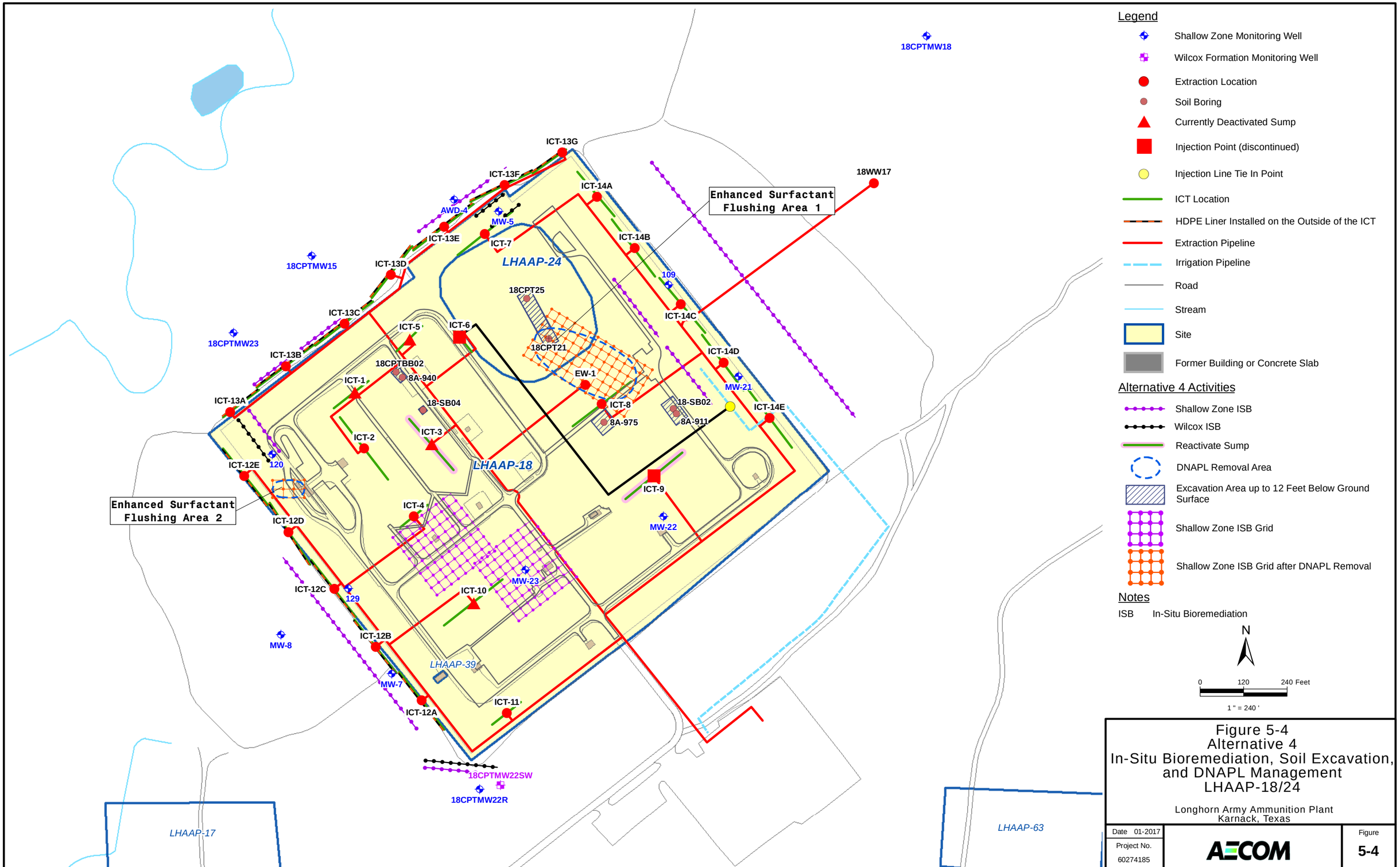

Figure 5-4
Alternative 4
In-Situ Bioremediation, Soil Excavation, and DNAPL Management
LHAAP-18/24

Longhorn Army Ammunition Plant
Karnack, Texas

Date 01-2017	AECOM	Figure
Project No. 60274185		5-4

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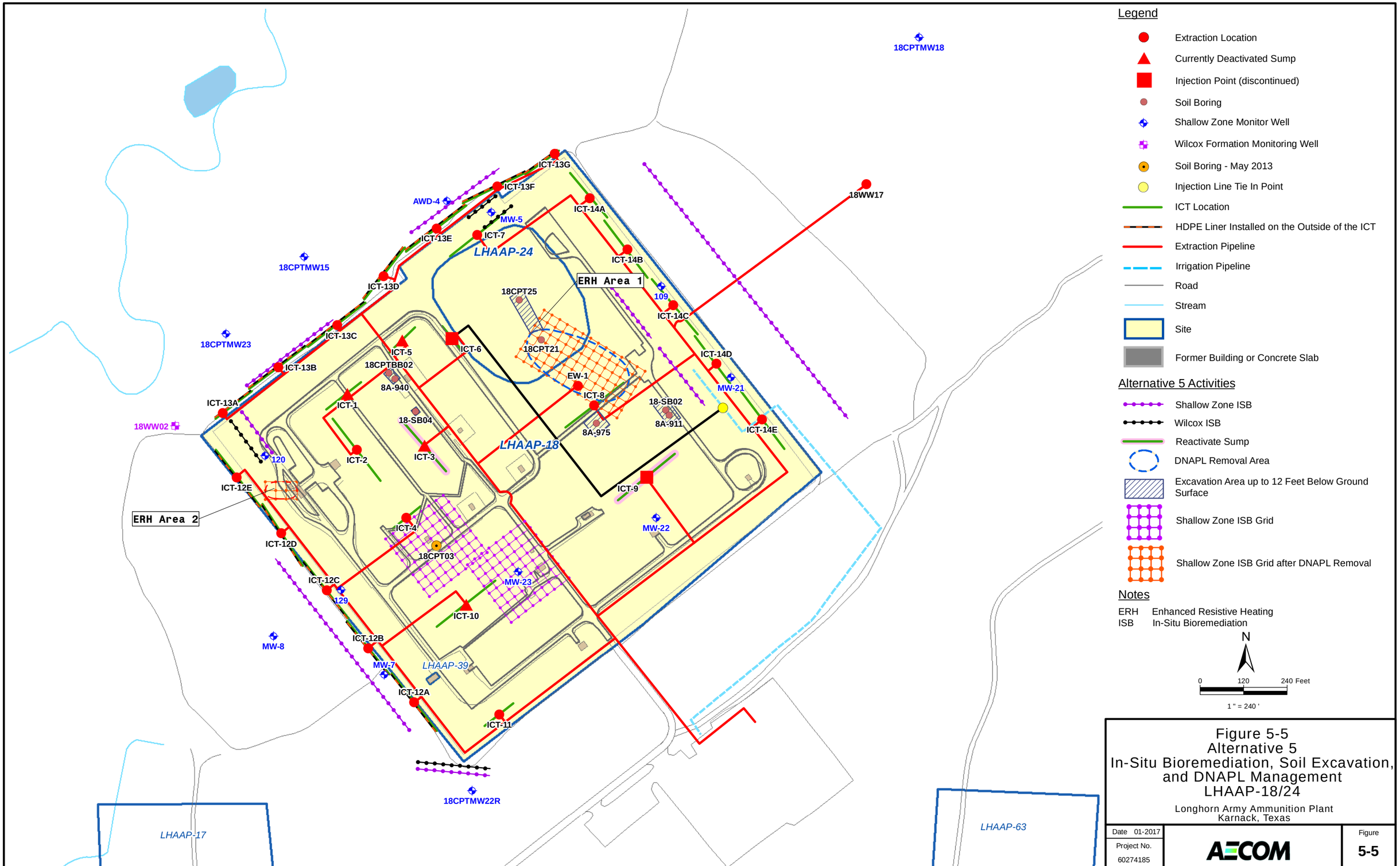

Figure 5-5
Alternative 5
In-Situ Bioremediation, Soil Excavation, and DNAPL Management
LHAAP-18/24

Longhorn Army Ammunition Plant
Karnack, Texas

Date 01-2017	AECOM	Figure
Project No. 60274185		5-5

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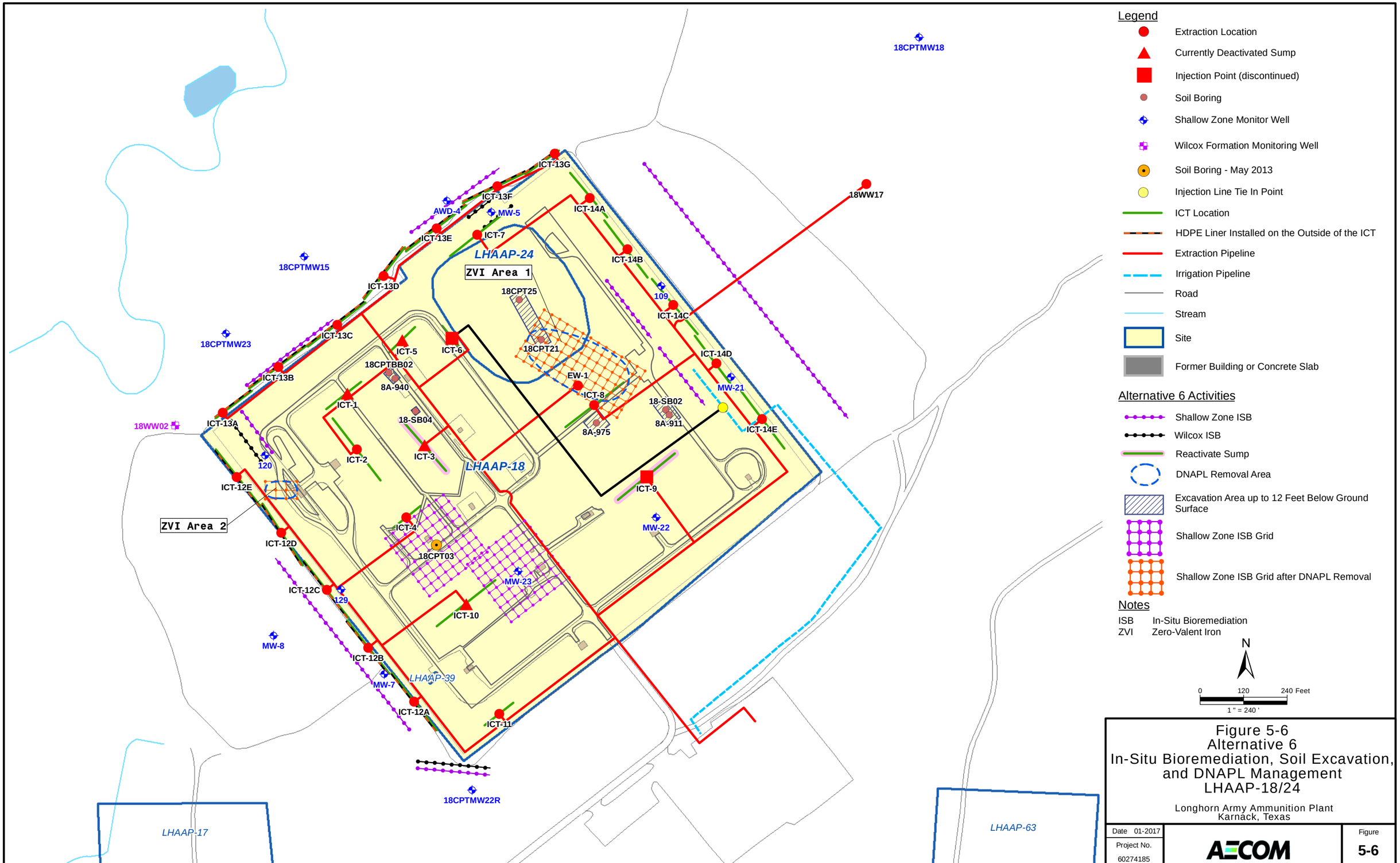

Figure 5-6
Alternative 6
In-Situ Bioremediation, Soil Excavation, and DNAPL Management
LHAAP-18/24

Longhorn Army Ammunition Plant
Karnack, Texas

Date 01-2017	AECOM	Figure
Project No. 60274185		5-6

File: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP18_24\Feasibility_Study\Fig 5-6 LHAAP1824 FS Alt6.mxd
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Table 5-1: Alternative Development

Contaminated Media	Process Option	Selected for Alternative Grouping					
		1 (No Action)	2	3	4	5	6
Groundwater	Continue operation of a new enhanced groundwater extraction and treatment system	—	X	X*	X	X	X
	Contain groundwater with a slurry wall; improve surface to promote runoff	—		X			
	In situ bioremediation in Shallow Zone outside containment	—	X*****		X*****	X*****	X*****
	In situ bioremediation in Wilcox Formation	—	X*****		X*****	X*****	X*****
	In situ bioremediation in Shallow Zone inside containment	—	X*****		X*****	X*****	X*****
	MNA and LUC until cleanup levels are met.	—	XX	XX**	XX	XX	XX
Soil (vadose zone)	Maintain cap over former UEP	—	X	X	X	X	X
	Cap additional area to reduce infiltration	—		X			
	Excavate source areas	—	X		X	X	X
	Excavate Soil under UEP	—	X		X	X****	X
Residual DNAPL Soil (in saturated zone)	DNAPL Removal via Extraction, Surfactant Flushing, ZVI, or ERH	—	X		X	X	X
	In situ bioremediation***	—			X	X	X

Abbreviations:

MNA	*monitored natural attenuation*
LUC	*land use control*
UEP	*unlined evaporation pond*
DNAPL	*dense non-aqueous phase liquid*
ERH	*electric resistive heating*
XX	*Natural attenuation occurs even though not considered in the alternative*
*	*Reduction of extraction volume and locations will occur over time*
**	*Cleanup level inside containment not expected to be met*
***	*Required as a polishing step for residual VOCs and for removal of perchlorate*
****	*Only partial excavation because thermal treatment overlaps a portion of the impacted soil underneath the UEP*
*****	*Includes remedies focused on the gap in the northwest corner of the containment area.*

6 DETAILED ANALYSIS OF ALTERNATIVES

This section presents and assesses relevant information that provides the basis for selecting an alternative. **Section 6.1** provides an overview of the evaluation criteria. The detailed analysis begins in **Section 6.2** in which each alternative is individually evaluated according to the evaluation criteria identified in the NCP (40 CFR 300.430). Following the individual analysis, the alternatives are compared in relation to the two threshold criteria and then the alternatives are assessed regarding the five balancing criteria, highlighting the key advantages, disadvantages, and trade-offs that are considered as part of the evaluation process (**Section 6.3**).

6.1 Overview of the Evaluation Criteria

CERCLA, Section 121, as amended, specifies statutory requirements for remedial actions. These requirements include protection of human health and the environment, compliance with ARARs, a preference for permanent solutions that incorporate treatment as a principal element to the maximum extent practicable, and cost-effectiveness. To assess whether alternatives meet the requirements, the USEPA has identified nine criteria in the NCP (40 CFR 300.430) that must be evaluated for each alternative considered for selection (Section 300.430[e][9][iii]). Provided here are summaries of the factors that comprise the nine criteria and an overview of the approach taken by this FS to address these criteria.

6.1.1 Criterion 1: Overall Protection of Human Health and the Environment

This evaluation criterion assesses whether the alternative achieves and maintains adequate protection of human health and the environment in accordance with the RAOs established in **Section 3.0**. Because the scope of this criterion is broad, it also reflects the discussions of the subsequent criteria, including long-term effectiveness and permanence, and short-term effectiveness. Evaluation of this criterion describes how site risks associated with each exposure pathway are eliminated, reduced, or mitigated through treatment, engineering, or LUCs. This criterion also considers whether an alternative poses an unacceptable short-term or cross-media effect.

6.1.2 Criterion 2: Compliance with ARARs

This criterion addresses compliance with promulgated federal and state environmental requirements. The detailed analysis summarizes which requirements are applicable or relevant and appropriate to an alternative and how the alternative meets these requirements. If an alternative cannot meet a requirement, a determination can be made that a waiver under CERCLA may be appropriate, and a basis for justifying the waiver is presented. ARARs consist of two sets of requirements – those that apply and those that are relevant and appropriate. In certain cases, standards may not exist that address the proposed action or the CoCs. In such cases, non-promulgated advisories, criteria, or guidance developed by the USEPA or other federal agencies or states can be TBCs. There are three types of ARARs; chemical-specific, location-specific, and action-specific. The chemical-, location- and action-specific ARARs are presented in **Section 3.2**.

6.1.3 Criterion 3: Long-Term Effectiveness and Permanence

This criterion evaluates the extent to which an alternative achieves an overall reduction in risk to human health and the environment after the RAOs are met. The criterion considers the degree to which the alternative provides sufficient long-term controls and reliability to prevent exposures that exceed protective levels for human and environmental receptors. The principal factors addressed by this criterion include magnitude of residual risk and the adequacy and reliability of controls to address such risk. This criterion also addresses the uncertainties associated with these factors.

The evaluation of adequacy and reliability of controls assesses the effectiveness of any treatment, containment, or institutional measures that are part of the alternative. Factors considered include performance characteristics, maintenance requirements, and expected durability. Information and data from past performance and similar technology applications are incorporated appropriately into the evaluation. LUCs are considered where they have the potential to improve the effectiveness of engineered measures.

6.1.4 Criterion 4: Reduction of Toxicity, Mobility, or Volume through Treatment

This criterion reflects the statutory preference that remedial alternatives contain a principal component that substantially reduces toxicity, mobility, or volume of hazardous substances through treatment. The evaluation regarding this criterion considers the extent to which alternative technologies can effectively and permanently fix, transform, immobilize, or reduce the volume of waste materials and contaminated media.

6.1.5 Criterion 5: Short-Term Effectiveness

This criterion addresses the effects of the construction and implementation phases of the alternative until the RAOs are achieved. The evaluation regarding this criterion considers the effect on human health and the environment posed by operations conducted during the remedial action phases. Both the potential effect and associated mitigative measures are examined for maintaining protectiveness for the community, remediation workers, and environmental receptors throughout the duration of activities.

Potential short-term risks to the public include inhalation of constituents that may be released during waste removal and treatment operations, and contaminant exposure and physical injury during waste transport off site. Potential short-term risks to workers include direct contact and exposure during construction, waste handling, and transportation; physical injury or death during construction and transportation activities; and nonremediation worker exposures to airborne contaminants during waste and soil removal operations. Alternative analyses also include a description of mitigating measures such as engineering and LUCs that are expected to minimize potential risks to the public and workers. This evaluation also addresses the anticipated duration of remedial activities.

6.1.6 Criterion 6: Implementability

This criterion examines the technical and administrative factors affecting implementation of an alternative and considers the availability of services and materials required during implementation. Technical factors to be assessed include the ease and reliability of construction

and operations, the prospects for implementing a future action, and the adequacy of monitoring systems to detect failures. Administrative factors include meeting the substantive requirements of permits and coordination requirements between the lead agency and regulatory agencies. Service and material considerations include TSD capacities, equipment and operator availability, and prospective technology applicability or development requirements.

The assessment of technical feasibility examines the performance history of the technologies in direct applications or considers the expected performance for similar applications. Uncertainties associated with construction, operation, and performance monitoring are also addressed.

The evaluation of administrative feasibility includes a discussion of those actions required to coordinate with regulatory agencies to establish the framework for complying with key substantive technical requirements that must be met by an alternative. Additionally, those alternatives that include off-site transportation of waste are reviewed to assess the feasibility of off-site disposal.

The availability of services and materials is addressed by analyzing the material components of the proposed technologies to determine the locations and quantities of those materials, and by reviewing process operations to identify special services, operator skills, or training required to readily implement the process.

The NCP requires that the evaluation of the relative administrative feasibility of each alternative include "…activities needed to coordinate with other offices and agencies, and the ability and time required to obtain any necessary approvals and permits from other agencies (for off-site actions). CERCLA, Section 121(e), stipulates that no deferral, state, or local permit shall be required for the portion of any removal or remedial action conducted entirely on site." An action must satisfy the substantive requirements of the permits that will otherwise be required.

6.1.7 Criterion 7: Cost

Cost estimates are included for each remedial alternative. The estimates are based on feasibility level scoping and are intended to aid in making project evaluations and comparisons among alternatives. The estimates have an expected accuracy of +50 to –30 percent for the scope of the action described in **Section 5.0** for each alternative. The estimates are divided into capital cost and O&M cost and are developed according to an assumed schedule for the various activities based on similar project experience.

Capital costs are defined as those expenditures required to initiate and install an alternative. These are short-term costs and are exclusive of costs required to maintain the action throughout the project lifetime. Capital costs consist of direct and indirect costs. Direct costs include construction costs (material, labor, and equipment to install an action), service equipment, process and new process buildings, utilities, and waste disposal costs. Indirect costs include design engineering, inspection, project integration, project administration and management, and project contingencies.

O&M costs are long-term costs associated with ongoing remediation at a site. These costs occur after construction and installation are completed. The costs include labor, materials, utilities, and services required to monitor, operate, and maintain the facilities for a period of up to 30 years.

The estimated present worth of each remedial alternative is determined on a discount rate of three (3) percent and a base O&M and monitoring period of up to 30 years, unless the alternative evaluated is expected to be complete in less than 30 years.

Appendix D presents detailed cost estimates for each remedial alternative.

6.1.8 Criterion 8: State Acceptance

State acceptance of an alternative will be evaluated in the PP issued for public comment. Therefore, this criterion is not considered in this Revised FS. However, the Texas Commission on Environmental Quality (TCEQ) as an FFA party will review and provide concurrence on this Revised FS.

6.1.9 Criterion 9: Community Acceptance

Community acceptance of each alternative will be evaluated after a PP is issued for public comment. Therefore, this criterion is not considered in this Revised FS.

6.2 Individual Analysis of Alternatives

6.2.1 Alternative 1 – No Action Alternative

Under the no action alternative, no further action would be taken at LHAAP-18/24 to control human exposure to contaminated groundwater or to monitor potential groundwater impacts to surface water. The contaminated groundwater would remain in place without the implementation of any contaminant removal, treatment, or containment. The groundwater extraction and treatment system would be shut down. The LUCs to prevent access to the sites will not be established or will be discontinued. No environmental monitoring will occur. It is assumed that the public and ecological species could access the area. This alternative provides a baseline for comparison purposes.

6.2.1.1 Overall Protection of Human Health and the Environment

The no action alternative would not achieve the RAOs for LHAAP-18/24. This alternative provides no control of exposure to the contaminated groundwater and no reduction in the risks to hypothetical human receptors for current and future land use scenarios. Risks to hypothetical groundwater receptors would exceed the USEPA-established threshold for acceptable incremental lifetime cancer risk of 1×10^{-4} for carcinogens or an HI of 1 for noncarcinogens from exposure to groundwater. The contaminants causing the greatest amount of risk are perchlorate and VOCs in the groundwater.

While there is no evidence that the high levels of contamination within LHAAP-18/24 are affecting Harrison Bayou, the no action alternative would cease the current hydraulic containment while providing no safeguards to ensure that the contaminants do not migrate to the surface water or allow further migration of groundwater contaminant plume. This alternative does not manage source materials and would not prevent migration of contaminants from unsaturated soil to groundwater or from residual DNAPL areas to groundwater. The no action alternative also provides no means of verifying that the mass of contamination within the saturated zone would ever be depleted and the groundwater returned to beneficial use.

6.2.1.2 Compliance with ARARs

CERCLA, Section 121, cleanup standards, including compliance with ARARs, apply only to actions the USEPA determines should be taken under CERCLA, Sections 104 and 106 authority. A no action decision will be made when no action is deemed necessary to reduce, control, or mitigate exposure because the site does not present a threat to human health and the environment, or because any action taken will worsen the negative effects on human health and the environment. Because no remedial activities are associated with this alternative, compliance with chemical-specific ARARs would not be met. Since no remedial activities will be conducted, action-specific and location-specific ARARs, if applicable, will not apply.

6.2.1.3 Long-Term Effectiveness and Performance

6.2.1.3.1 Magnitude of Residual Risk

The no action alternative would not provide an effective or permanent long-term solution. Soil exposure generated a carcinogenic risk of 5.0×10^{-7} and an HI of 0.038 for the hypothetical future maintenance worker. These risks and hazards from soil are acceptable. Soil in the unsaturated zone and in the saturated zone harbor additional contamination that will enter the groundwater over time, and the no action alternative would not address that source of contamination.

The residual risk and toxicity from groundwater exposure under a no action alternative would be unacceptable at LHAAP-18/24. For the hypothetical future maintenance worker, hypothetical groundwater exposure routes account for over 99 percent of the overall carcinogenic and non-carcinogenic risks, generating a carcinogenic risk of 4.4×10^{-1} and an HI of 3,200. These risks were conservatively calculated for a hypothetical future maintenance worker ingesting the groundwater. Currently, the groundwater at LHAAP-18/24 is not used for drinking water, and it is not anticipated to be used for drinking water under a national wildlife refuge future use scenario.

6.2.1.3.2 Adequacy and Reliability of Controls

The no action alternative would not establish or maintain any LUCs at LHAAP-18/24 and, therefore, will not reduce the existing site risks posed by contaminated groundwater if it were to be used at the site. However, groundwater use is hypothetical, and no actual use is envisioned based on current land use and anticipated future land use.

Based on the risk assessment (Jacobs, 2002), groundwater contamination has not resulted in unacceptable risk from surface water. However, the no action alternative would discontinue the current hydraulic containment, while providing no monitoring to check for future contaminant migration toward the surface water. The no action alternative does not provide adequate or reliable controls for exposure to contaminated media at the site or for cross-media contamination.

6.2.1.4 Reduction of Toxicity, Mobility, or Volume through Treatment

Implementation of the no action alternative will not reduce toxicity, mobility, or volume of contaminants because this alternative does not employ treatment.

6.2.1.5 Short-Term Effectiveness

Under the no action alternative, no remedial action would be taken; therefore, the short-term effectiveness criterion is not applicable to this alternative. The no action alternative would not cause any added short-term risks to remediation workers, the community or the environment.

6.2.1.6 Implementability

The no action alternative is inherently implementable from a technical perspective. However, it would involve shutting down the groundwater extraction and treatment system, which is likely to be administratively unacceptable. The system was implemented under an interim ROD executed by the U.S. Army and approved by the USEPA with concurrence from the state of Texas. While conditions have improved since the 1995 interim ROD, those conditions do not yet warrant shut down of the current groundwater extraction and treatment system.

6.2.1.7 Cost

There are no costs associated with the no action alternative, assuming that ceasing groundwater extraction and GWTP operation does not involve dismantling and decommissioning actions.

6.2.2 Alternative 2 –Enhanced Groundwater Extraction Inside Containment and Ex Situ Treatment, LUC, Enhanced ISB Inside & Outside Containment Area and in Wilcox Formation, Unsaturated Soil Excavation and Off-site Disposal

This alternative consists of the following major components:

- Continued use of the existing groundwater extraction system with enhancements (reactivate two existing ICTs) until CoC concentrations are low enough that MNA can address remaining contamination within and outside the containment area.
- Replacement of the existing GWTP with a new GWTP with the contingency to treat for 1,4-dioxane.
- Excavation of unsaturated soil exceeding groundwater protection-industrial MSC (GWP-Ind). The estimated cost to excavate soil beneath the UEP is included in this alternative and could be implemented in the future (e.g., depending on the results of the Five Year Review of the groundwater remedy).
- Implementation of ISB of shallow zone groundwater outside the containment area at several locations; in the Wilcox Formation at three locations, and inside the containment at five locations.
- Implementation of groundwater extraction and removal of residual DNAPL in two distinct areas inside the containment area at the site.
- Maintenance of existing cap over the former UEP.
- Long-term LUCs to restrict and monitor groundwater use at the site.

6.2.2.1 Overall Protection of Human Health and the Environment

6.2.2.1.1 Protection of Human Health

Existing soil concentrations are protective of a hypothetical future maintenance worker, but existing groundwater concentrations pose a potential risk.

This alternative would achieve the RAOs for LHAAP-18/24. Implementation of the LUCs would prevent human access and exposure to groundwater that poses an unacceptable risk to human health until the remedy achieves the RAOs. The LUCs would include land use notification at the Harrison County courthouse and periodic surveillance of LHAAP-18/24 to ensure that use restrictions are not being violated. The U.S. Army would include the notice with any transfer letter to the USFWS for the intended future use as a national wildlife refuge. If transferred out of U.S. government control, deed restrictions would be placed on the property to prohibit or restrict property uses that may result in exposure to groundwater (e.g., drinking water well installation).

With enhanced groundwater extraction inside the containment, implementation of ISB on three (3) sides outside the containment, five (5) Locations inside the containment, and in the Wilcox Formation, removal of potential unsaturated source soils, and remediation of secondary source areas in the saturated soil inside the containment area in two distinct areas (former UEP and former ACD), this alternative should accelerate the process of achieving the RAOs. No reliance on NA is proposed for this alternative. Since NA is occurring at the site, its use as part of the remedy is inevitable. NA inside the containment is a feasible option to polish the residual CoCs remaining after groundwater extraction operation ceases.

Groundwater use restrictions would remain in place until groundwater extraction and eventually NA reduces contaminant levels to allow unrestricted use and unlimited exposure.

A monitoring program that would track the continual attenuation of the groundwater CoCs and verify that contamination is not reaching Harrison Bayou will be implemented. The LTM program would provide information to support Five-Year Reviews and the termination of the remedy when cleanup levels have been met.

Because MNA is not currently a viable alternative throughout the entire containment area, the enhanced groundwater extraction and treatment system would continue to be operated to prevent migration of CoCs from the containment area and reduce the concentrations of those CoCs over time inside and outside the containment. Over the long term, extraction and treatment would eventually achieve concentrations throughout the containment area and outside the containment area that could be addressed via NA. At that point, the extraction and treatment system would be shut down.

6.2.2.1.2 Protection of the Environment

Alternative 2 would adequately protect the environment. The Installation-Wide Baseline Ecological Risk Assessment did not identify potential risk to ecological receptors at LHAAP-18/24 and the BERA Addendum completed in 2014 (AGEISS, Inc., July 8, 2014) did not change the conclusion of the 2007 BERA. Should there have been any ecological risk, it would have been expressed by this point in time.

This alternative includes removal of unsaturated soil and residual DNAPL sources, thus reducing or eliminating the threat of additional impact to groundwater. The alternative also prevents groundwater from impacting surface water, thus providing protection from exposure to the environmental receptors.

6.2.2.2 Compliance with ARARs

6.2.2.2.1 Chemical-Specific ARARs

This alternative would achieve the cleanup levels for groundwater contaminants that exceed their respective ARARs since the CoCs are being removed by the enhanced groundwater extraction and treatment system inside the containment and by enhanced ISB inside and outside the containment. Application of groundwater extraction within the residual DNAPL areas and removal of impacted unsaturated soil will also reduce or remove the CoCs towards achieving the chemical-specific ARARs. The estimated restoration time frames for this alternative are very long for groundwater and residual DNAPL but immediate for removing unsaturated soil source.

For Alternative 2, it is expected that the extraction and treatment system will continue to operate indefinitely (> 300 years inside the containment) to extract the soluble, adsorbed, and DNAPL mass from within the containment. This time frame is driven by the mass of VOCs in DNAPL areas and the limitation associated with dissolution of DNAPL and all adsorbed mass into the groundwater phase (diffusion limitation of low K zones).

The duration to achieve RAOs for groundwater outside the containment area in association with ISB will be short (3-5 years) but will be limited to the areas influenced by the ISB biobarriers. Enough substrate will be added to last for two years for each of two applications. Therefore, the coverage area would include a two year transport distance downgradient of the areas targeted for ISB. Additional injections will be performed after the first five years if the data indicate the need for additional substrate.

Since use of groundwater as a water supply is unlikely based on future land use at LHAAP-18/24, the time frame to achieve groundwater ARARs could be considered acceptable. Based on the risk assessment (Jacobs, 2002) and surface water sampling results, groundwater contamination has not led to unacceptable risk from surface water.

6.2.2.2.2 Location-Specific ARARs

No location-specific were identified for LHAAP-18/24.

6.2.2.2.3 Action-Specific ARARs

Activities that would be conducted under this alternative would comply with all action-specific ARARs. Extraction of groundwater will be treated and discharged in accordance with Section 402 of the CWA. ISB has been implemented at LHAAP previously and does not result in generating waste or air emissions. It typically is conducted using direct push tools to inject the substrate into the groundwater. The substrate and nutrients are food grade and state coordination is required. Bacterial formulations have been in use for some time and have been proven to be benign to the environment. Soil excavation could result in particulate emissions that would be controlled by wetting excavation areas and conducting air monitoring with established action levels. Stormwater best management practices would be developed and implemented. Excavated

soils and soil cuttings from well installation will be characterized before disposal, stored in appropriate containers, and characterized for disposal in a protective landfill suitable to the class of waste. The wells will be constructed in accordance to established industry standards.

6.2.2.2.4 Non-ARAR Procedural Considerations

Activities that would be conducted under this alternative are similar to current activities of groundwater extraction, treatment monitoring, and discharge and would comply with all procedural considerations described in **Table 3-3**. ISB source area remediation, and soil excavation will be implemented in areas that have already been disturbed. No activities would take place in sensitive environments such as wetlands, and no impacts to archeological resources or threatened and endangered species are anticipated. Compliance with the substantive requirements with waste generation, temporary storage, characterization, and off-site disposal are being carried out at this site and will be complied with during implementation of the remedy.

6.2.2.3 Long-Term Effectiveness and Permanence

6.2.2.3.1 Magnitude of Residual Risk

The risks from exposure to soil are already within the target risk range and below an HI of 1 for a hypothetical future maintenance worker.

The implementation of LUCs under this alternative would prevent direct contact by human receptors with the groundwater at LHAAP-18/24, thus minimizing the potential risk posed by groundwater contamination. Extraction of groundwater will result in continuous reduction in contaminant mass and mobility yielding reduction in overall risk to human health. Implementation of residual DNAPL source remediation, soil excavation, and ISB will also result in reduction in CoC mass and mobility, reducing overall risk to human health. Once the RAOs are achieved, complete reduction of risk to human health will be attained.

The occurrence of NA as determined in areas inside (e.g., presence of daughter TCE products) and outside the containment to the northwest and southwest will continue to reduce risk during and after groundwater extraction ceases. Further, groundwater is currently not used and is not anticipated to be used in the future due to 1) the low yield expected from thin discontinuous sand lenses, 2) the proposed future land use, and 3) implementation of groundwater use restrictions.

6.2.2.3.2 Adequacy and Reliability of Controls

The implementation of LUCs would protect potential human receptors from exposure to contaminated groundwater at LHAAP-18/24 and ensure that site use is consistent with the hypothetical future maintenance worker scenario. The adequacy and reliability of groundwater extraction and treatment system would depend on proper maintenance and operation. The system would be operated until such time as CoC concentrations are suitable for cessation of operation. The reliability of LUCs would depend on the long-term maintenance of the controls. Maintenance of the LUCs to restrict access to groundwater, would be required until cleanup levels are achieved. Because the future use of the site is by a federal agency as a refuge, LUCs are highly effective. Periodic maintenance and Five-Year Reviews will ensure that the restrictions are enforced and remain effective. The Five-Year Reviews might indicate the need for components of this alternative to be maintained, modified, or replaced.

DNAPL source area removal by groundwater extraction might be effective in removing additional mass of contaminants but it is not expected to achieve the RAOs. The extraction of groundwater results in mobilizing DNAPL by enhancing solubilization. Because no additional remediation is included in this remedy for the residual DNAPL source area (e.g., enhanced ISB), this alternative would not result in acceptable decrease in residual risk and will rely on LUCs implementation to manage risk of exposure at the site.

ISB for reduction of perchlorate and VOCs in shallow groundwater inside and outside the containment provides a permanent remedy by complete destruction of the CoCs. ISB will be implemented two times to ensure that any rebound that may occur or areas that are not treated receive additional treatment. Because the major source of CoCs located outside the containment is sourced from groundwater migration, ISB will be effective in reducing the contaminants and little to no rebound is expected. No maintenance is required between ISB applications.

Soil excavation and disposal is a very well established process and should completely remove residual CoCs in the unsaturated soil.

6.2.2.4 Reduction of Toxicity, Mobility, or Volume through Treatment

This alternative has five elements that will reduce the toxicity, mobility, and volume of the contaminants in the LHAAP-18/24 groundwater:

- Operation of an enhanced groundwater extraction and treatment system to extract groundwater from within the containment area
- Extraction of residual DNAPL in the saturated soil to mobilize and extract DNAPL
- Implementation of ISB in shallow zone groundwater inside and outside the containment and in the Wilcox aquifer
- Excavation of unsaturated source soil
- NA mechanisms including biodegradation (while this is not relied on as a main remedial action, its natural occurrence and benefits are inevitable)

These components satisfy the CERCLA statutory preference for remedial actions that permanently reduce contaminant toxicity, mobility, or volume through treatment. The reductions would be verified through monitoring.

6.2.2.5 Short-Term Effectiveness

6.2.2.5.1 Protection of the Community during Remedial Action

This alternative is protective of the surrounding community during remedy implementation primarily because all activities would occur on site with very little disturbance of contaminated material. ISB has been implemented at LHAAP previously and implementation at LHAAP-18/24 creates little disturbance as the majority of the process is conducted below ground. Vehicular traffic for equipment and materials delivery for in situ treatment would occur. If a spill occurs, which contains food grade substrate, which is harmless to the community, it could be contained and should not impact the surrounding communities. Vehicular traffic associated

with soil excavation and disposal would also be of concern and plans to minimize impacts will be taken.

Well installation activities have been implemented previously at the site without creation of hazards to the community. Groundwater extraction and treatment is also an on-going operation and does not pose hazards to the community as determined via monitoring air and water.

6.2.2.5.2 Protection of the Workers during Remedial Action

Short-term risks to human health or the environment would exist during implementation of this alternative. ISB implementation using a direct push tool, soil excavation, the operation of the GWTP, and groundwater sampling activities might expose workers to contaminants in soil and groundwater. Exposure to heavy equipment is also possible. Well installation and trenching activities for pipelines and the operation of the GWTP might expose workers to contaminants in soil and groundwater. Proper implementation of a comprehensive health and safety program would minimize risks to workers associated with this alternative. These activities have been implemented and some continue to be implemented without adverse effects on site workers.

6.2.2.5.3 Short-Term Environmental Effects

Minor clearing and grubbing at LHAAP-18/24 would be required to maintain access to monitoring wells or for access of DPT equipment for ISB implementation; since the majority of these areas have been cleared in the past, it is unlikely that there are any sensitive species that would be impacted. If any sensitive areas were found, the appropriate regulation would be followed. The implementation of proper engineering controls would minimize the risk of environmental impacts.

6.2.2.5.4 Duration of Remedial Activities

The anticipated duration of this remedial alternative depends on the groundwater extraction and treatment system achieving reductions of CoCs concentrations in groundwater to below the cleanup levels. These levels of CoCs in the shallow groundwater are not expected to be achieved within the 30-year time frame established for analyzing the alternatives.

Perchlorate, metals and VOCs detected in the groundwater are expected to continue to attenuate by operation of the enhanced groundwater extraction and treatment system and by NA. Influent and effluent concentrations as well as selected monitoring wells would continue to be monitored as part of the operation of the groundwater extraction and treatment system. These monitored concentrations will demonstrate that the remedy is operating properly and successfully (OPS).

LTM would be implemented quarterly for the first two years, semiannually for the next three years, then annually for the next five years, and once every two years thereafter. For costing purposes, a 30-year monitoring program is assumed. Until cleanup levels are met, monitoring would be needed to determine trends in groundwater contamination levels and effectiveness of the remedial action.

It is expected that the extraction and treatment system will continue to operate indefinitely (> 500 years inside the containment) to extract the soluble, adsorbed, and DNAPL mass from within the containment. This time frame is driven by the mass of VOCs in DNAPL areas and the

limitation associated with dissolution of DNAPL into the groundwater phase even under induced advective flow through the DNAPL zone.

Outside the containment area, the time frame to achieve RAOs will be shorter (5 to 10 years) because less mass is present in that area and the majority of the mass is associated with groundwater migration (i.e., present originally in the dissolved phase and easier to extract). Evaluation of performance of ISB outside the containment will be determined when data are collected.

The length of time to reach cleanup levels is probably longer for this alternative than for the other active alternatives, and there is uncertainty inherent in implementing any remedy over such a long timeframe.

The duration of implementation of soil removal is less than one month. The duration to install extraction wells within the residual DNAPL areas and extraction systems would take several months. Each ISB event is conducted over several weeks and collectively ISB will take several months to implement. Reactivation of ICT 6 and ICT 9 will take a few weeks to implement.

6.2.2.6 Implementability

6.2.2.6.1 Technical Feasibility

All components of this alternative are readily implementable. ISB and associated equipment and reactivation of ICTs have been previously implemented at this site or other sites at LHAAP. ISB treatment has been used at sites throughout the U.S. for a number of years. Injection techniques and equipment are well developed. Installation of new extraction wells and associated equipment and reactivation of ICTs have been previously implemented. The ongoing operation of the existing groundwater extraction and treatment system demonstrates this capability. All equipment, services and materials are readily available to conduct the activities for this alternative.

6.2.2.6.2 Administrative Feasibility

All actions under this alternative would be implemented on the site and thus do not require permits, though substantive provisions of permits that would otherwise be required are considered to be ARARs such as discharge of treated water to surface water meeting the established discharge limits and ISB and surfactant introduction meeting underground injection control requirements. By legal agreement (i.e., the FFA), the U.S. Army shall submit to the USEPA and TCEQ a Responsiveness Summary and ROD. Following consideration of any comments by TCEQ, the ROD will be finalized jointly by the U.S. Army and USEPA. By addressing the identified ARARs in the ROD and subsequent documents, it is anticipated that the alternative would adequately address all administrative barriers.

LUCs, although administratively implementable, would require the development of an implementation plan as part of the remedial design, and internal notices to relevant regulatory offices of the existence of the LUCs. Approval by the USEPA and the State of Texas is required prior to the significant modification or termination of a LUC, implementation actions, or modification of land-use by the U.S. Army. The U.S. Army must also seek concurrence from the

USEPA and the State of Texas prior to any action that may disrupt the effectiveness of the LUCs or any action that may alter or negate the need for LUCs.

Technology and skilled labor and equipment are available to implement this remedy including equipment and material for ISB, to install extraction wells, complete all electrical, control, and water hookups, and to excavate, contain, transport, and dispose of excavated soil. Technology, skilled labor, equipment, and material are available to operate and maintain the GWTP or to design, construct, and operate a new GWTP. Labor, tools, and methods are established for monitoring groundwater and air.

6.2.2.7 Cost

The total net present value cost of Alternative 2 is approximately $34.16 million. The details of the cost estimates for all of the alternatives are presented in **Appendix D**. This represents the 30-year cost.

6.2.2.7.1 Direct Capital Cost

The net present value capital cost is estimated at $14.56 million. Capital costs include recapitalization of a new GWTP including contingency use of advance oxidation technology for treating 1,4-dioxane, major replacement every five years beginning on year 10 for the lifecycle of the GWTP, excavation and disposal of unsaturated soils including the area under the UEP (assumed in year 6 for cost estimating purposes), implementation of additional extraction in the residual DNAPL areas, implementation of EISB, and reactivation of two ICTs. The capital cost also includes activities associated with LUCs and the work plan, regulatory documents, and a closure report.

6.2.2.7.2 O&M Cost

The net present value O&M cost is estimated at approximately $19.6 million. The O&M cost includes operation of the enhanced groundwater extraction and treatment system, monitoring for performance and MNA parameters in groundwater, and LUCs surveillance to verify continued industrial use. The LTM would support the required CERCLA Five-Year Reviews.

6.2.3 Alternative 3 – Groundwater Extraction and Treatment, MNA Outside the Containment and in Wilcox Formation, LUC, and Containment

This alternative consists of the following major components:

- Continued use of a reduced groundwater extraction system for hydraulic control.
- Replacement of the existing GWTP with a new GWTP with the contingency to treat for 1,4-dioxane.
- Installation of a slurry wall for containment of groundwater.
- Improvements to the soil cover to promote drainage and reduce infiltration.
- Maintenance of existing cap over the former UEP.
- MNA for groundwater contamination within the Wilcox Formation and outside the slurry wall.

- Long-term LUCs to restrict and monitor groundwater use at the site.

6.2.3.1 Overall Protection of Human Health and the Environment

6.2.3.1.1 Protection of Human Health

Existing soil concentrations are protective of a hypothetical future maintenance worker, but existing groundwater concentrations pose a potential risk.

This alternative would achieve the primary RAO for LHAAP-18/24 by preventing exposure to contaminated groundwater. Construction of the slurry wall, and properly keying it into the confining layer (majority of slurry wall path), would ensure that the contamination is contained. Improvement of the current soil cover and drainage features would minimize infiltration into the soil while continued operation of the groundwater extraction system would create an inward hydraulic gradient. These features would further reduce opportunity for contaminant migration and prevent the contaminants located within the slurry wall from migrating to surface water. While the slurry wall would not prevent or minimize migration of contaminants from source materials in the saturated and unsaturated zones to groundwater, the slurry wall will contain additional contaminants migrating to shallow groundwater inside the containment area.

Implementation of the LUCs would provide the following:

- Prevent human access and exposure to groundwater that poses an unacceptable risk to human health
- Prohibit activities at the site that would adversely impact soil cover at the site and associated drainage features
- Require monitoring and proper maintenance of the soil cover and slurry wall

The LUCs would include land use notification at the Harrison County courthouse and periodic surveillance of LHAAP-18/24 to ensure that use restrictions are not being violated. The U.S. Army would include the notice with any transfer letter to the USFWS for the intended future use as a national wildlife refuge. If transferred out of U.S. government control, deed restrictions would be placed on the property to prohibit or restrict property uses that may result in exposure to groundwater (e.g., drinking water well installation).

The LUCs for the area bounded by the slurry wall would remain in place indefinitely. Groundwater use restrictions outside the slurry wall would remain in place until NA reduces contaminant concentrations to allow unrestricted use and unlimited exposure. As noted in the preliminary evaluation in **Appendix A**, NA is a viable remedial measure at LHAAP-18/24 in shallow groundwater outside the containment area but has to be established for the Wilcox Formation. The MNA program would monitor the groundwater plume and ensure that the CoCs in groundwater in areas outside the slurry wall continue to degrade or remain stable. After MNA is confirmed, the MNA program would evolve into a LTM program that would track the continual degradation of the groundwater CoCs. The LTM program would provide information to support Five-Year Reviews.

Reliance on NA is also proposed for the Wilcox Formation under this alternative. Groundwater use restrictions would remain in place until NA reduces contaminant levels outside the containment and in the Wilcox Formation to allow unrestricted use and unlimited exposure.

6.2.3.1.2 Protection of the Environment

Alternative 3 would adequately protect the environment. The Installation-Wide Baseline Ecological Risk Assessment did not identify potential risk to ecological receptors at LHAAP-18/24 and the BERA Addendum completed in 2014 (AGEISS, Inc., July 8, 2014) did not change the conclusion of the 2007 BERA. Should there have been any ecological risk, it would have been expressed by this point in time.

This alternative does not remove unsaturated soil and residual DNAPL sources, thus it does not result in reducing or eliminating the threat of additional impact to groundwater. The alternative does prevent groundwater located within the slurry wall from impacting surface water, thus providing protection from exposure to the environmental receptors but it does not prevent groundwater outside the slurry wall from migrating to surface water.

While the exposure RAO would be satisfied by this alternative, the RAO for groundwater restoration would not be met within the slurry wall itself. The slurry wall would serve to cut off contaminant migration, but there would be a reservoir of contamination within the wall that would not be depleted. The groundwater restoration RAO would need to be waived for this area.

6.2.3.2 Compliance with ARARs

6.2.3.2.1 Chemical-Specific ARARs

Within the slurry wall, this alternative would not achieve cleanup levels. However, it would ensure that humans are not exposed to concentrations that exceed the cleanup levels. Outside the slurry wall, this alternative will achieve the cleanup levels for groundwater contaminants that exceed their respective ARARs by NA. The slurry wall would be designed to encompass the majority of impacted shallow groundwater zones inside and outside the containment area. Therefore, only low concentrations of CoCs would be left outside the slurry wall containment. Assuming 1,000 µg/L perchlorate concentration remained outside the slurry wall (conservative estimate as the slurry wall would encompass the majority of the perchlorate plume as depicted) and an attenuation rate for perchlorate similar to the rate observed for 18WW08 is achieved (~0.5 per year), allows perchlorate to attenuate to 72 µg/L in approximately seven (7) years. Similarly, for TCE, if an initial concentration outside the slurry wall of 20 µg/L (note that the slurry wall designed to capture perchlorate plume will encompass the entire TCE plume) and an attenuation rate similar to that observed for MW-8 (0.11 per year) were assumed, TCE would achieve the MCL in 12.5 years. Therefore, the time frame is estimated to be < 20 years to achieve cleanup goals outside the containment.

Since use of groundwater as a water supply is unlikely based on future land use at LHAAP-18/24, the time frame to achieve groundwater ARARs is considered acceptable. Based on the risk assessment (Jacobs, 2002) and surface water sampling results, groundwater contamination has not led to unacceptable risk from surface water.

6.2.3.2.2 Location-Specific ARARs

No location-specific were identified for LHAAP-18/24.

6.2.3.2.3 Action-Specific ARARs

Activities that would be conducted under this alternative would comply with all action-specific ARARs. Extraction of groundwater will be treated and discharged in accordance with Section 402 of the CWA.

The slurry wall and improved soil cover/drainage features would be constructed in compliance with all safety and transportation requirements. Runoff controls would be important during slurry wall construction. All runoff requirements would be met to protect Harrison Bayou. Construction at the western corner of the site would be implemented in compliance with flood plain management requirements. Removed soil will require characterization to determine disposal options and soil classification. All off-site disposal activities will comply with waste regulations and will be conducted using Department of Transportation permitted trucks. Storage of soil will meet storage requirements of hazardous waste as necessary. Unimpacted soil might be considered for reuse to construct the soil cover and improve drainage based on soil characteristics.

6.2.3.2.4 Non-ARAR Procedural Considerations

Certain activities that would be conducted under this alternative are similar to current activities of groundwater extraction, treatment monitoring, and discharge and would comply with all procedural considerations described in **Table 3-3**. The majority of the slurry wall will be placed in areas that already been disturbed, although there will be areas near Harrison Bayou that have not been previously disturbed. However, no impacts to archeological resources or threatened and endangered species are anticipated. Compliance with the substantive requirements with waste generation (soil cuttings), temporary storage, characterization, and off-site disposal are being carried out at this site and will be complied with during implementation of the remedy.

6.2.3.3 Long-Term Effectiveness and Permanence

6.2.3.3.1 Magnitude of Residual Risk

The risks from exposure to soil are already within the target risk range and below an HI of 1 for a hypothetical future maintenance worker.

The implementation of LUCs under this alternative would prevent direct contact by human receptors with the groundwater at LHAAP-18/24, thus minimizing the potential risk posed by groundwater contamination. Extraction of groundwater will result in continuous reduction in contaminant mass and mobility yielding reduction in overall risk to human health.

The occurrence of NA as determined in areas outside the containment to the northwest and southwest will continue to reduce risk after slurry wall installation. Further, groundwater is currently not used and is unlikely to be used in the future due to 1) the low yield expected from thin discontinuous sand lenses, 2) the proposed future land use, and 3) implementation of groundwater use restrictions.

6.2.3.3.2 Adequacy and Reliability of Controls

The implementation of LUCs would protect potential human receptors from exposure to contaminated groundwater at LHAAP-18/24 and ensure that site use is consistent with the hypothetical future maintenance worker scenario.

The adequacy and reliability of the slurry wall will depend on the quality of construction of the slurry wall and on maintaining a small head difference between the inside and outside the slurry wall. Since the wall will be placed in areas with very low concentrations of CoCs, the potential effect of CoCs on the wall integrity and effectiveness should be immaterial. The soil capping portion of this alternative will depend on maintenance of an adequate soil cover thickness and drainage features in the southeastern area of the site. The reliability of LUCs would depend on the long-term maintenance of the controls. Maintenance of the LUCs to restrict access to groundwater would be required indefinitely because contamination within the slurry wall would not be treated, although reduced groundwater extraction would be continued. Because the future use of the site is by a federal agency as a refuge, LUCs are highly effective. Periodic maintenance and Five-Year Reviews will ensure that the restrictions are enforced and remain effective. The Five-Year Reviews might indicate the need for components of this alternative to be maintained, modified, or replaced.

6.2.3.4 Reduction of Toxicity, Mobility, or Volume through Treatment

While this alternative is built around containment, the alternative includes two elements that will utilize treatment to reduce the toxicity, mobility, and volume of the contaminants in the LHAAP-18/24 groundwater:

- Operation of the groundwater extraction and treatment system as required to maintain an inward hydraulic gradient
- NA mechanisms in areas outside the slurry wall and Wilcox Formation

These two components satisfy the CERCLA statutory preference for remedial actions that permanently reduce contaminant toxicity, mobility, or volume through treatment. The reductions would be verified through monitoring, although the rate of mass reduction would be slower than for other alternatives.

The major element of the alternative, slurry wall containment, would reduce the mobility of the contamination, but would do so without treatment. A reservoir of contamination would remain on the site within the slurry wall.

6.2.3.5 Short-Term Effectiveness

6.2.3.5.1 Protection of the Community during Remedial Action

This alternative is protective of the surrounding community during remedy implementation primarily because all activities would occur on site with some disturbance of contaminated material. Truck traffic for equipment and materials, including the delivery of slurry wall materials and borrow soil (for improving soil cover and drainage at the site) would occur. Management of excavated soil will also result in using trucks to take the soil off-site for disposal. Increased road traffic will be a concern to the community and a traffic plan will be developed

and communicated to the community and traffic coordinated with local authorities as needed. During remediation activities at LHAAP-18/24, control of surface runoff would be important to avoid releases of contamination to adjacent surface water bodies.

Groundwater treatment is also an on-going operation and does not pose hazards to the community as determined via monitoring air and water.

6.2.3.5.2 Protection of the Workers during Remedial Action

Some short-term risks to human health or the environment would exist during implementation of this alternative. The slurry wall construction activities have the potential for transportation or construction accidents. Additionally, this alternative will involve potential short-term risks to workers associated with the operation of heavy equipment and potential exposure to decontamination fluids, contaminated groundwater, and possibly contaminated soil. Proper implementation of a comprehensive health and safety program should minimize risks associated with this alternative.

6.2.3.5.3 Short-Term Environmental Effects

Minor clearing and grubbing at LHAAP-18/24 would be required to improve soil cover, improve drainage features, and construct the slurry wall. Since the majority of the areas have been cleared in the past, it is unlikely that there are any sensitive species that would be impacted. If any sensitive areas are found, the appropriate regulation will be followed. Stormwater and drainage will be controlled to minimize loss of dredged material to the environment. The implementation of proper engineering controls will minimize the risk of environmental impacts.

6.2.3.5.4 Duration of Remedial Activities

The anticipated duration of the proposed construction activities, including mobilization/ demobilization, site preparation, soil placement, slurry wall construction, and site restoration is 15 months.

After construction of the slurry wall, monitoring would be implemented to demonstrate that VOCs and perchlorate remaining outside the slurry wall are attenuated by natural processes. NA of perchlorate and VOCs in the groundwater outside the slurry wall and within the Wilcox Formation will be monitored to demonstrate that the remedy is successfully operational.

Following demonstration of successful operation, LTM, consisting of LUCs and groundwater monitoring would be implemented semi-annually for two years, annually until the first Five-Year Review, two events two years apart, followed by two events every five years. After 20 years attainment of cleanup levels outside the containment barrier will occur and monitoring would not need to be performed thereafter. The amount of time needed to achieve cleanup levels outside the slurry wall in groundwater and within the Wilcox Formation would depend on the effectiveness of NA which determined cleanup to be achieved within 20 years. However, inside the slurry wall in the shallow zone there is no estimate for duration but will exceed several hundred years.

6.2.3.6 Implementability

6.2.3.6.1 Technical Feasibility

All components of this alternative are readily constructed and maintained. Slurry walls have been constructed at numerous sites with similar hydrogeology. The confining clay layer may need to be improved in some locations (e.g., west corner of the site). The ongoing operation of the existing groundwater extraction and treatment system demonstrates this capability. All equipment, services and materials are readily available to conduct the activities for this alternative.

A 2-year study will be conducted to determine how well the soil cover is working to reduce infiltration and how much groundwater extraction would be required to maintain an inward and upward gradient within the slurry wall. Availability of monitoring wells and instruments to measure rain amounts and gauge groundwater levels are readily available and implementable. Modifications of extraction rates and extraction locations will be conducted to optimize groundwater extraction to maintain desired gradients.

6.2.3.6.2 Administrative Feasibility

All actions under this alternative would be implemented on the site and thus do not require permits, though substantive provisions of permits that would otherwise be required are considered to be ARARs such as discharge of treated water to surface water meeting the established discharge limits. By agreement (i.e., the FFA), the U.S. Army shall submit to the USEPA and TCEQ a Responsiveness Summary and ROD. Following consideration of any comments by TCEQ, the ROD will be finalized jointly by the U.S. Army and USEPA. By addressing the identified ARARs in the ROD and subsequent documents, it is anticipated that the alternative would adequately address all administrative barriers.

LUCs, although administratively implementable, would require the development of an implementation plan as part of the remedial design, and internal notices to relevant regulatory offices of the existence of the LUCs. Approval by the USEPA and the State of Texas is required prior to the significant modification or termination of a LUC, implementation actions, or modification of land-use by the U.S. Army. The U.S. Army must also seek concurrence from the USEPA and the State of Texas prior to any action that may disrupt the effectiveness of the LUCs or any action that may alter or negate the need for LUCs.

Technology and skilled labor and equipment are available to implement this remedy including equipment and material for slurry wall construction. Technology, skilled labor, equipment, and material are available to operate and maintain the GWTP or to design, construct, and operate a new GWTP. Labor, tools, and methods are established for monitoring groundwater and air, as necessary.

6.2.3.7 Cost

The total net present value cost of Alternative 3 is approximately $18.65 million. The details of the cost estimates for all of the alternatives are presented in **Appendix D**. This represents the 30-year cost.

6.2.3.7.1 Direct Capital Cost

The net present value capital cost is estimated at $6.41 million. Capital costs include recapitalization of a new GWTP, major replacement every five years on year 10 for the lifecycle of the GWTP, and construction of the slurry wall and soil cover. The capital cost also includes activities associated with LUCs and the work plan, regulatory documents, and a closure report.

6.2.3.7.2 O&M Cost

The net present value O&M cost is estimated at approximately $12.24 million. The O&M cost includes operation of the reduced groundwater extraction and treatment system, reduced monitoring for performance, conducting the two year water balance study, and LUCs surveillance to verify continued industrial use. The LTM would support the required CERCLA Five-Year Reviews.

6.2.4 Alternative 4 –Enhanced Groundwater Extraction Inside Containment and Treatment, LUC, Enhanced ISB Inside & Outside Containment Area and in Wilcox Formation, Unsaturated Soil Excavation and Off-site Disposal, and Surfactant Enhanced DNAPL Removal

This alternative consists of the following major components:

- Continued use of the existing groundwater extraction system with enhancements (reactivate two existing ICTs) until CoC concentrations are low enough that MNA can address remaining contamination within the containment area.
- Replacement of the existing GWTP with a new GWTP with the option to treat for 1,4-dioxane.
- Excavation of unsaturated soil exceeding groundwater protection standard (GWP-Ind).
- Excavation of unsaturated soil exceeding groundwater protection-industrial MSC (GWP-Ind). The estimated cost to excavate soil beneath the UEP is included in this alternative, and could be implemented in the future (e.g., depending on the results of the Five-Year Review of the groundwater remedy).
- Implementation of ISB of shallow zone groundwater outside the containment area at several locations; in the Wilcox Formation at three locations, and inside the containment at five locations.
- Implementation of surfactant flushing for removal of DNAPL in two distinct areas inside the containment area at the site.
- Maintenance of existing cap over the former UEP.
- Long-term LUCs to restrict and monitor groundwater use at the site.

6.2.4.1 Overall Protection of Human Health and the Environment

6.2.4.1.1 Protection of Human Health

Existing soil concentrations are protective of a hypothetical future maintenance worker, but existing groundwater concentrations pose a potential risk.

This alternative would achieve the RAOs for LHAAP-18/24. Implementation of the LUCs would prevent human access and exposure to groundwater that poses an unacceptable risk to human health until the remedy achieves the RAOs. The LUCs would include land use notification at the Harrison County courthouse and periodic surveillance of LHAAP-18/24 to ensure that use restrictions are not being violated. The U.S. Army would include the notice with any transfer letter to the USFWS for the intended future use as a national wildlife refuge. If transferred out of U.S. government control, deed restrictions would be placed on the property to prohibit or restrict property uses that may result in exposure to groundwater (e.g., drinking water well installation).

With enhanced groundwater extraction inside the containment, implementation of ISB on three (3) sides outside the containment, in the Wilcox Formation, and inside the containment in five (5) areas, removal of potential unsaturated source soils, and remediation of secondary source areas in the saturated soil inside the containment area in two distinct areas (former UEP and former ACD), this alternative should accelerate the process of achieving the RAOs. No reliance on NA is proposed for this alternative. Since NA is occurring at the site, its use as part of the remedy is inevitable. NA inside the containment is a feasible option to polish the residual CoCs remaining after groundwater extraction and ISB implementation are completed.

Groundwater use restrictions would remain in place until groundwater extraction and eventually NA reduces contaminant levels inside and outside the containment and in the Wilcox Formation to allow unrestricted use and unlimited exposure.

A monitoring program that would track the continual attenuation of the groundwater CoCs and verify that contamination is not reaching Harrison Bayou will be implemented. The LTM program would provide information to support Five-Year Reviews and the termination of the remedy when cleanup levels have been met.

Because MNA is not currently a viable alternative throughout the entire containment area, the enhanced groundwater extraction and treatment system would continue to be operated to prevent migration of CoCs from the containment area and reduce the concentrations of those CoCs over time inside and outside the containment. Over the long term, extraction and treatment would eventually achieve concentrations throughout the containment area and outside the containment area that could be addressed via NA. At that point, the extraction and treatment system would be shut down.

6.2.4.1.2 Protection of the Environment

Alternative 4 would adequately protect the environment. The Installation-Wide Baseline Ecological Risk Assessment did not identify potential risk to ecological receptors at LHAAP-18/24 and the BERA Addendum completed in 2014 (AGEISS, Inc., July 8, 2014) did not change the conclusion of the 2007 BERA. Should there have been any ecological risk, it would have been expressed by this point in time.

This alternative includes removal of unsaturated soil and residual DNAPL sources, thus reducing or eliminating the threat of additional impact to groundwater. The alternative also prevents groundwater from impacting surface water, thus providing protection from exposure to the environmental receptors.

6.2.4.2 Compliance with ARARs

6.2.4.2.1 Chemical-Specific ARARs

This alternative would achieve the cleanup levels for groundwater contaminants that exceed their respective ARARs since the CoCs are being removed by the enhanced groundwater extraction and treatment system, surfactant flushing system, and ISB from within the containment and further remediated by ISB outside the containment. The estimated restoration time frames for this alternative are shorter than Alternative 2 or 3. For Alternative 4, it is expected that the extraction and treatment system will continue to operate for a duration exceeding 30 years to extract the soluble and adsorbed mass from within the containment that is not treated with surfactant flushing or enhanced ISB. This time frame is estimated from attenuation rates occurring in existing shallow wells inside the containment. This time frame is driven by the limitation associated with dissolution of adsorbed mass into the groundwater phase and migration to extraction points. With DNAPL source removed, it is possible that a quicker decrease in CoC concentrations in certain areas that are currently influenced by DNAPL could occur. Additionally, as certain areas are remediated and data indicate that CoC migration is diminishing, certain extraction points could be turned off.

The duration to achieve RAOs for groundwater outside the containment area in association with ISB will be short (3-5 years) but will be limited to the areas influenced by the ISB biobarriers. Enough substrate will be added to last for two years for each application. Therefore, the coverage area would include a two year transport distance.

Since use of groundwater as a water supply is unlikely based on future land use at LHAAP-18/24, the time frame to achieve groundwater ARARs could be considered acceptable. Based on the risk assessment (Jacobs, 2002) and surface water sampling results, groundwater contamination has not led to unacceptable risk from surface water.

6.2.4.2.2 Location-Specific ARARs

No location-specific were identified for LHAAP-18/24.

6.2.4.2.3 Action-Specific ARARs

Activities that would be conducted under this alternative would comply with all action-specific ARARs. Extraction of groundwater will be treated and discharged in accordance with Section 402 of the CWA. ISB has been implemented at LHAAP previously and does not result in generating waste or air emissions. It typically is conducted using direct push tools to inject the substrate into the groundwater. The substrate and nutrients are food grade. Bacterial formulations have been in use for some time and have been proven to be benign to the environment. Surfactant use in groundwater has been implemented previously and surfactants are typically non-toxic biodegradable in nature. Soil excavation could result in particulate emissions that would be controlled by wetting excavation areas and conducting air monitoring with established

action levels. Stormwater best management practices would be developed and implemented. Excavated soils and soil cuttings from well installation will be characterized before disposal, stored in appropriate containers, and characterized for disposal in a protective landfill suitable to the class of waste. The wells will be constructed in accordance to established industry standards.

6.2.4.2.4 Non-ARAR Procedural Considerations

Activities that would be conducted under this alternative are similar to current activities of groundwater extraction, treatment monitoring, and discharge and would comply with all procedural considerations described in **Table 3-3**. ISB source area remediation, and soil excavation will be implemented in areas that have already been disturbed. No activities would take place in sensitive environments such as wetlands, and no impacts to archeological resources or threatened and endangered species are anticipated. Compliance with the substantive requirements with waste generation, temporary storage, characterization, and off-site disposal are being carried out at this site and will be complied with during implementation of the remedy.

6.2.4.3 Long-Term Effectiveness and Permanence

6.2.4.3.1 Magnitude of Residual Risk

The risks from exposure to soil are already within the target risk range and below an HI of 1 for a hypothetical future maintenance worker.

The implementation of LUCs under this alternative would prevent direct contact by human receptors with the groundwater at LHAAP-18/24, thus minimizing the potential risk posed by groundwater contamination. Extraction of groundwater will result in continuous reduction in contaminant mass and mobility yielding reduction in overall risk to human health. Implementation of residual DNAPL source remediation, soil excavation, and ISB will also result in reduction in CoC mass and mobility, reducing overall risk to human health. Once the RAOs are achieved, complete reduction of risk to human health will be attained.

The occurrence of NA as determined in areas inside (e.g., presence of daughter TCE products) and outside the containment to the northwest and southwest will continue to reduce risk during and after active remediation ceases. Furthermore, groundwater is currently not used and is unlikely to be used in the future due to 1) the low yield expected from thin discontinuous sand lenses, 2) the proposed future land use, and 3) implementation of groundwater use restrictions.

6.2.4.3.2 Adequacy and Reliability of Controls

The implementation of LUCs would protect potential human receptors from exposure to contaminated groundwater at LHAAP-18/24 and ensure that site use is consistent with the hypothetical future maintenance worker scenario. The adequacy and reliability of groundwater extraction and treatment system would depend on proper maintenance and operation. The system would be operated until such time as CoC concentrations are suitable for cessation of operation. The reliability of LUCs would depend on the long-term maintenance of the controls. Maintenance of the LUCs to restrict access to groundwater, would be required until cleanup levels are achieved. Because the future use of the site is by a federal agency as a refuge, LUCs are highly effective. Periodic maintenance and Five-Year Reviews will ensure that the

restrictions are enforced and remain effective. The Five-Year Reviews might indicate the need for components of this alternative to be maintained, modified, or replaced.

ISB for reduction of perchlorate and VOCs in shallow groundwater inside and outside the containment provides a permanent remedy by complete destruction of the CoCs. ISB will be implemented two times to ensure that any rebound that may occur or areas that are not treated receive additional treatment. Because the major source of CoCs located outside the containment is sourced from groundwater migration, ISB will be effective in reducing the contaminants and little to no rebound is expected. No maintenance is required between ISB applications.

DNAPL source area removal by surfactant flushing has been implemented on several sites and results in mobilizing DNAPL by solubilization followed by dual phase extraction (vapor and liquid forms) where the vapor phase is treated on site and the liquid phase is disposed off-site. Up to 90% removal of source material would be expected to be removed with this technology, although treatability testing to provide proof of concept is recommended. The presence of low K zones with residual DNAPL will hinder the effectiveness of this technology. The residual surfactant not removed is biodegradable and would result in enhanced is situ bioremediation over time to achieve complete cleanup. Follow up ISB in this area would adequately polish residual VOCs and remediate perchlorate from this area.

Soil excavation and disposal is a very well established process and should completely remove residual CoCs in the unsaturated soil.

6.2.4.4 Reduction of Toxicity, Mobility, or Volume through Treatment

This alternative has five elements that will reduce the toxicity, mobility, and volume of the contaminants in the LHAAP-18/24 groundwater:

- Operation of an enhanced groundwater extraction and treatment system to extract groundwater from within the containment area
- Surfactant flushing of saturated source soil to mobilize and extract DNAPL
- Implementation of ISB in shallow zone groundwater inside and outside the containment and in the Wilcox aquifer
- Excavation of unsaturated source soil
- NA mechanisms including biodegradation (while this is not relied on as a main remedial action, its natural occurrence and benefits are inevitable)

These components satisfy the CERCLA statutory preference for remedial actions that permanently reduce contaminant toxicity, mobility, or volume through treatment. The reductions would be verified through monitoring.

6.2.4.5 Short-Term Effectiveness

6.2.4.5.1 Protection of the Community during Remedial Action

This alternative is protective of the surrounding community during remedy implementation primarily because all activities would occur on site with very little disturbance of contaminated material. ISB has been implemented at LHAAP previously and implementation at LHAAP-18/24

creates little disturbance as the majority of the process is conducted below ground. Vehicular traffic for equipment and materials delivery for in situ treatment would occur. If a spill occurs, which contains food grade substrate, which is harmless to the community, could be contained and should not impact the surrounding communities. Vehicular traffic associated with soil excavation and disposal would also be of concern and plans to minimize impacts will be taken. Implementation of surfactant flushing also occurs primarily in situ until the fluid is extracted at such time potential emissions could occur but the impact on the community would be minimal. Air monitoring would be conducted to ascertain protective levels are not exceeded.

Groundwater extraction and treatment is also an on-going operation and does not pose hazards to the community as determined via monitoring air and water.

6.2.4.5.2 Protection of the Workers during Remedial Action

Some short-term risks to human health or the environment would exist during implementation of this alternative. ISB implementation using a direct push tool, soil excavation, surfactant flushing, the operation of the GWTP, and groundwater sampling activities might expose workers to contaminants in soil and groundwater. Exposure to heavy equipment is also possible. Well installation and trenching activities for pipelines and the operation of the GWTP might expose workers to contaminants in soil and groundwater. Proper implementation of a comprehensive health and safety program would minimize risks to workers associated with this alternative. Many of these activities have been implemented and some continue to be implemented without adverse effects on site workers.

6.2.4.5.3 Short-Term Environmental Effects

Minor clearing and grubbing at LHAAP-18/24 would be required to maintain access to monitoring wells or for access of DPT equipment for ISB implementation; however, since the majority of these areas have been cleared in the past, it is unlikely that there are any sensitive species that would be impacted. If any sensitive areas were found, the appropriate regulation would be followed. The implementation of proper engineering controls would minimize the risk of environmental impacts.

6.2.4.5.4 Duration of Remedial Activities

The anticipated duration of this remedial alternative depends on the effectiveness of the surfactant flushing process, ISB, and the groundwater extraction and treatment system achieving reductions of CoCs concentrations in groundwater to below the cleanup levels. These levels of CoCs in the shallow groundwater are not expected to be achieved within the 30-year time frame established for analyzing the alternatives.

Perchlorate, metals and VOCs detected in the groundwater are expected to continue to attenuate by operation of the enhanced groundwater extraction and treatment system and by NA. Influent and effluent concentrations as well as selected monitoring wells would continue to be monitored as part of the operation of the groundwater extraction and treatment system. These monitored concentrations will demonstrate that the remedy is OPS.

Performing surfactant flushing to remove up to 90% of source material in saturated soil should decrease the longevity of this remedy significantly (e.g., from > 500 years to <100 years or less

inside the containment). The duration of this alternative remains long because dissolution of sorbed contaminants and the need to migrate to extraction points are limiting steps. Removal of source soil will have a minimal effect on longevity of this alternative.

LTM (consisting of LUCs surveillance and groundwater monitoring) would be implemented quarterly for the first two years, semiannually for the next three years, then annually for the next five years, and once every two years thereafter. For costing purposes, a 30-year monitoring program is assumed. Until cleanup levels are met, monitoring would be needed to determine trends in groundwater contamination levels and effectiveness of the remedial action.

Outside the containment area, the time frame to achieve RAOs will be shorter (5 to 10 years) because less mass is present in that area and the majority of the mass is associated with groundwater migration (i.e., present originally in the dissolved phase and easier to extract). Evaluation of performance of ISB outside the containment will be determined when data are collected.

The duration of implementation of soil removal is less than one month. The duration to conduct surfactant flushing would be over several months up to one year. Each ISB event is conducted over several weeks and collectively ISB will take several months to implement. Reactivation of ICT 6 and ICT 9 will take a few weeks to implement.

6.2.4.6 Implementability

6.2.4.6.1 Technical Feasibility

All components of this alternative are readily implementable. ISB and associated equipment and reactivation of ICTs have been previously implemented at this site or other sites at LHAAP. ISB treatment has been used at sites throughout the U.S. for a number of years. Injection techniques and equipment are well developed. Implementation of ISB inside the containment could result in biofouling of extraction systems should electron donors migrate to the extraction points leading to potential problems at the GWTP. Surfactant flushing will require to be demonstrated at this site particularly related to site heterogeneity. Equipment and tools to implement this technology are readily available based on discussion with vendors (e.g., injection points, extraction points, vapor phase remediation). However, bench-scale and pilot-scale testing is recommended before full-scale design and implementation take place. The ongoing operation of the existing groundwater extraction and treatment system demonstrates this capability. All equipment, services and materials are readily available to conduct the activities for this alternative.

6.2.4.6.2 Administrative Feasibility

All actions under this alternative would be implemented on the site and thus do not require permits, though substantive provisions of permits that would otherwise be required are considered to be ARARs such as discharge of treated water to surface water meeting the established discharge limits and ISB and surfactant introduction meeting underground injection control requirements. By legal agreement (i.e., the FFA), the U.S. Army shall submit to the USEPA and TCEQ a Responsiveness Summary and ROD. Following consideration of any comments by TCEQ, the ROD will be finalized jointly by the U.S. Army and USEPA. By addressing the identified ARARs in the ROD and subsequent documents, it is anticipated that the alternative would adequately address all administrative barriers.

LUCs, although administratively implementable, would require the development of an implementation plan as part of the remedial design, and internal notices to relevant regulatory offices of the existence of the LUCs. Approval by the USEPA and the State of Texas is required prior to the significant modification or termination of a LUC, implementation actions, or modification of land-use by the U.S. Army. The U.S. Army must also seek concurrence from the USEPA and the State of Texas prior to any action that may disrupt the effectiveness of the LUCs or any action that may alter or negate the need for LUCs.

Technology and skilled labor and equipment are available to implement this remedy including equipment and material for ISB, surfactant flushing implementation, and to excavate, contain, transport, and dispose of excavated soil. Advance planning with specialty vendors should be conducted to avoid delays or market constraints for implementation of surfactant treatment. Technology, skilled labor, equipment, and material are available to operate and maintain the GWTP or to design, construct, and operate a new GWTP. Labor, tools, and methods are established for monitoring groundwater and air.

6.2.4.7 Cost

The total net present value cost of Alternative 4 is approximately $32.5 million. The details of the cost estimates for all of the alternatives are presented in **Appendix D**. This represents the 30-year cost.

6.2.4.7.1 Direct Capital Cost

The net present value capital cost is estimated at $13.11 million. Capital costs include recapitalization of a new GWTP, including contingency use of advanced oxidation technology for treating 1,4-dioxane, major replacement every five years beginning on year 10 for the lifecycle of the GWTP, excavation and disposal of unsaturated soils including the area under the UEP (assumed in year 6 for cost estimating purposes), implementation of surfactant flushing in the residual DNAPL areas, implementation of EISB, and reactivation of two ICTs. The capital cost also includes activities associated with LUCs and the work plan, regulatory documents, and a closure report.

6.2.4.7.2 O&M Cost

The net present value O&M cost is estimated at approximately $19.39 million. The O&M cost includes operation of the enhanced groundwater extraction and treatment system, monitoring for performance and MNA parameters in groundwater, and LUCs surveillance to verify continued industrial use. The LTM would support the required CERCLA Five-Year Reviews.

6.2.5 Alternative 5 –Enhanced Groundwater Extraction Inside Containment and Treatment, LUC, Enhanced ISB Inside and Outside Containment Area and in Wilcox Formation, Unsaturated Soil Excavation and Off-site Disposal, Thermal DNAPL Removal

This alternative consists of the following major components:

- Continued use of the existing groundwater extraction system with enhancements (reactivate two existing ICTs) until CoC concentrations are low enough that MNA can address remaining contamination within the containment area.
- Replacement of the existing GWTP with a new GWTP with the option to treat for 1,4-dioxane.
- Excavation of unsaturated soil exceeding groundwater protection-industrial MSC (GWP-Ind). The estimated cost to excavate soil beneath the UEP is included in this alternative and could be implemented in the future (e.g., depending on the results of the Five-Year Review of the groundwater remedy).
- Implementation of ISB of shallow zone groundwater outside the containment area at several locations; in the Wilcox Formation at three locations, and inside the containment at five locations.
- Implementation of thermal desorption and removal of DNAPL in two distinct areas inside the containment area at the site.
- Maintenance of existing cap over the former UEP.
- Long-term LUCs to restrict and monitor groundwater use at the site.

6.2.5.1.1 Protection of Human Health

Existing soil concentrations are protective of a hypothetical future maintenance worker, but existing groundwater concentrations pose a potential risk.

This alternative would achieve the RAOs for LHAAP-18/24. Implementation of the LUCs would prevent human access and exposure to groundwater that poses an unacceptable risk to human health until the remedy achieves the RAOs. The LUCs would include land use notification at the Harrison County courthouse and periodic surveillance of LHAAP-18/24 to ensure that use restrictions are not being violated. The U.S. Army would include the notice with any transfer letter to the USFWS for the intended future use as a national wildlife refuge. If transferred out of U.S. government control, deed restrictions would be placed on the property to prohibit or restrict property uses that may result in exposure to groundwater (e.g., drinking water well installation).

With enhanced groundwater extraction inside the containment, implementation of ISB on three (3) sides outside the containment, in the Wilcox Formation, and inside the containment in five (5) areas, removal of potential unsaturated source soils, and remediation of secondary source areas in the saturated soil inside the containment area in two distinct areas (former UEP and former ACD), this alternative should accelerate the process of achieving the RAOs. No reliance on NA is proposed for this alternative. Since NA is occurring at the site, its use as part of the remedy is inevitable. NA inside the containment is a feasible option to polish the residual CoCs remaining after groundwater extraction operation and ISB implementation are completed.

Groundwater use restrictions would remain in place until groundwater extraction and eventually NA reduces contaminant levels inside and outside the containment and in the Wilcox Formation to allow unrestricted use and unlimited exposure.

A monitoring program that would track the continual attenuation of the groundwater CoCs and verify that contamination is not reaching Harrison Bayou will be implemented. The LTM program would provide information to support Five-Year Reviews and the termination of the remedy when cleanup levels have been met.

Because MNA is not currently a viable alternative throughout the entire containment area, the enhanced groundwater extraction and treatment system would continue to be operated to prevent migration of CoCs from the containment area and reduce the concentrations of those CoCs over time inside and outside the containment. Over the long term, extraction and treatment would eventually achieve concentrations throughout the containment area and outside the containment area that could be addressed via NA. At that point, the extraction and treatment system would be shut down.

6.2.5.1.2 Protection of the Environment

Alternative 5 would adequately protect the environment. The Installation-Wide Baseline Ecological Risk Assessment did not identify potential risk to ecological receptors at LHAAP-18/24 and the BERA Addendum completed in 2014 (AGEISS, Inc., July 8, 2014) did not change the conclusion of the 2007 BERA. Should there have been any ecological risk, it would have been expressed by this point in time.

This alternative includes removal of unsaturated soil and residual DNAPL sources, thus reducing or eliminating the threat of additional impact to groundwater. The alternative also prevents groundwater from impacting surface water, thus providing protection from exposure to the environmental receptors.

6.2.5.2 Compliance with ARARs

6.2.5.2.1 Chemical-Specific ARARs

This alternative would achieve the cleanup levels for groundwater contaminants that exceed their respective ARARs since the CoCs are being removed by the enhanced groundwater extraction and treatment system, thermal remediation system, and ISB from within the containment and further remediated by ISB outside the containment. The estimated restoration time frames for this alternative are shorter than other alternatives. For Alternative 5, it is expected that the extraction and treatment system will continue to operate for a duration up to 20 years to extract the soluble and adsorbed mass from within the containment that is not treated with thermal treatment and ISB.

This time frame is driven by the limitation associated with dissolution of adsorbed mass into the groundwater phase and migration to extraction points. With DNAPL source removed and ISB implemented in several high concentration areas at the site, it is possible that a quicker decrease in CoC concentrations could be witnessed. Additionally, as certain areas are remediated and data indicate that CoC migration is diminishing, certain extraction points could be turned off because the risk of CoC migration off-site would diminish significantly. Examples of those areas include the area adjacent to 109, MW-21, and 120.

The duration to achieve RAOs for groundwater outside the containment area in association with ISB will be short (3-5 years) but will be limited to the areas influenced by the ISB biobarriers.

Enough substrate will be added to last for two years for each application. Therefore, the coverage area would include a two year transport distance.

Since use of groundwater as a water supply is unlikely based on future land use at LHAAP-18/24, the time frame to achieve groundwater ARARs could be considered acceptable. Based on the risk assessment (Jacobs, 2002) and surface water sampling results, groundwater contamination has not led to unacceptable risk from surface water.

6.2.5.2.2 Location-Specific ARARs

No location-specific were identified for LHAAP-18/24.

6.2.5.2.3 Action-Specific ARARs

Activities that would be conducted under this alternative would comply with all action-specific ARARs. Extraction of groundwater will be treated and discharged in accordance with Section 402 of the CWA. ISB has been implemented at LHAAP previously and does not result in generating waste or air emissions. It typically is conducted using direct push tools to inject the substrate into the groundwater. The substrate and nutrients are food grade. Bacterial formulations have been in use for some time and have been proven to be benign to the environment. Thermal treatment is mostly conducted in situ although eventual extraction of vapors will be conducted and treated on site. Emission controls will be part of the process and any substantive requirements of permit by rule will be complied with. Soil excavation could result in particulate emissions that would be controlled by wetting excavation areas and conducting air monitoring with established action levels. Stormwater best management practices would be developed and implemented. Excavated soils and soil cuttings from well installation will be characterized before disposal, stored in appropriate containers, and characterized for disposal in a protective landfill suitable to the class of waste. The wells will be constructed in accordance to established industry standards.

6.2.5.2.4 Non-ARAR Procedural Considerations

Activities that would be conducted under this alternative are similar to current activities of groundwater extraction, treatment monitoring, and discharge and would comply with all procedural considerations described in **Table 3-3**. ISB source area remediation, and soil excavation will be implemented in areas that have already been disturbed. No activities would take place in sensitive environments such as wetlands, and no impacts to archeological resources or threatened and endangered species are anticipated. Compliance with the substantive requirements with waste generation, temporary storage, characterization, and off-site disposal are being carried out at this site and will be complied with during implementation of the remedy.

6.2.5.3 Long-Term Effectiveness and Permanence

6.2.5.3.1 Magnitude of Residual Risk

The risks from exposure to soil are already within the target risk range and below an HI of 1 for a hypothetical future maintenance worker.

The implementation of LUCs under this alternative would prevent direct contact by human receptors with the groundwater at LHAAP-18/24, thus minimizing the potential risk posed by

groundwater contamination. Extraction of groundwater will result in continuous reduction in contaminant mass and mobility yielding reduction in overall risk to human health. Implementation of residual DNAPL source remediation, soil excavation, and ISB will also result in reduction in CoC mass and mobility, reducing overall risk to human health. Once the RAOs are achieved, complete reduction of risk to human health will be attained.

The occurrence of NA as determined in areas inside (e.g., presence of daughter TCE products) and outside the containment to the northwest and southwest will continue to reduce risk during and after active remediation ceases. Furthermore, groundwater is currently not used and is unlikely to be used in the future due to 1) the low yield expected from thin discontinuous sand lenses, 2) the proposed future land use, and 3) implementation of groundwater use restrictions.

6.2.5.3.2 Adequacy and Reliability of Controls

The implementation of LUCs would protect potential human receptors from exposure to contaminated groundwater at LHAAP-18/24 and ensure that site use is consistent with the hypothetical future maintenance worker scenario. The adequacy and reliability of groundwater extraction and treatment system would depend on proper maintenance and operation of the GWTP. The system would be operated until such time as CoC concentrations are suitable for cessation of operation (i.e., risk of migration off-site is eliminated by a reduction in total mass in groundwater and source areas and natural attenuation is acting at a greater pace than contaminant migration). The reliability of LUCs would depend on the long-term maintenance of the controls. Maintenance of the LUCs to restrict access to groundwater, would be required until cleanup levels are achieved. Because the future use of the site is by a federal agency as a refuge, LUCs are highly effective. Periodic maintenance and Five-Year Reviews will ensure that the restrictions are enforced and remain effective. The Five-Year Reviews might indicate the need for components of this alternative to be maintained, modified, or replaced.

ISB for reduction of perchlorate and VOCs in shallow groundwater inside and outside the containment provides a permanent remedy by complete destruction of the CoCs. ISB will be implemented two times to ensure that any rebound that may occur or areas that are not treated receive additional treatment. Because the major source of CoCs located outside the containment is sourced from groundwater migration, ISB will be effective in reducing the contaminants and little to no rebound is expected. No maintenance is required between ISB applications.

DNAPL source area removal by thermal treatment has been implemented on many sites and results in volatilizing DNAPL followed by vapor phase extraction where the vapor phase is treated on site and liquid waste generate is disposed off-site. Construction and operation of the thermal treatment will be between 9 and 12 months. Greater than 99.9 percent removal of source material would be expected to be removed with this technology. Follow up ISB in this area would adequately polish residual VOCs and remediate perchlorate from this area.

Soil excavation and disposal is a very well established process and should completely remove residual CoCs in the unsaturated soil.

6.2.5.4 Reduction of Toxicity, Mobility, or Volume through Treatment

This alternative has five elements that will reduce the toxicity, mobility, and volume of the contaminants in the LHAAP-18/24 groundwater:

- Operation of an enhanced groundwater extraction and treatment system to extract groundwater from within the containment area
- Thermal treatment of saturated source soil to volatilize and extract DNAPL
- Implementation of ISB in shallow zone groundwater inside and outside the containment and in the Wilcox aquifer
- Excavation of unsaturated source soil
- NA mechanisms including biodegradation (while this is not relied on as a main remedial action, its natural occurrence and benefits are inevitable)

These components satisfy the CERCLA statutory preference for remedial actions that permanently reduce contaminant toxicity, mobility, or volume through treatment. The reductions would be verified through monitoring.

6.2.5.5 Short-Term Effectiveness

6.2.5.5.1 Protection of the Community during Remedial Action

This alternative is protective of the surrounding community during remedy implementation primarily because all activities would occur on site with very little disturbance of contaminated material. ISB has been implemented at LHAAP previously and implementation at LHAAP-18/24 creates little disturbance as the majority of the process is conducted below ground. Vehicular traffic for equipment and materials delivery for in situ treatment would occur. If a spill occurs, which contains food grade substrate, which is harmless to the community, could be contained and should not impact the surrounding communities. Vehicular traffic associated with soil excavation and disposal would also be of concern and plans to minimize impacts will be taken. Implementation of thermal treatment also occurs primarily in situ until the vapor is extracted at such time potential emissions could occur but vapor phase capture and treatment which is an integral part of the process will reduce any potential impact on the community. Air monitoring would be conducted to ascertain protective levels are not exceeded.

Groundwater treatment is also an on-going operation and does not pose hazards to the community as determined via monitoring air and water.

6.2.5.5.2 Protection of the Workers during Remedial Action

Some short-term risks to human health or the environment would exist during implementation of this alternative. ISB implementation using a direct push tool, soil excavation, thermal treatment, the operation of the GWTP, and groundwater sampling activities might expose workers to contaminants in soil and groundwater. Exposure to heavy equipment is also possible. Well installation and trenching activities for pipelines and the operation of the GWTP might expose workers to contaminants in soil and groundwater. Proper implementation of a comprehensive health and safety program would minimize risks to workers associated with this alternative. Many of these activities have been implemented and some continue to be implemented without adverse effects on site workers.

6.2.5.5.3 Short-Term Environmental Effects

Minor clearing and grubbing at LHAAP-18/24 would be required to maintain access to monitoring wells or for access of DPT equipment for ISB implementation; however, since the majority of these areas have been cleared in the past and are currently maintained, it is unlikely that there are any sensitive species that would be impacted. If any sensitive areas were found, the appropriate regulation would be followed. The implementation of proper engineering controls would minimize the risk of environmental impacts.

6.2.5.5.4 Duration of Remedial Activities

The anticipated duration of this remedial alternative depends on the effectiveness of the thermal treatment process, ISB, and the groundwater extraction and treatment system achieving reductions of CoCs concentrations in groundwater to below the cleanup levels. Implementing thermal treatment to remove greater than 99.9% of source material in saturated soil should decrease the longevity of this remedy significantly. ISB should be effective and achieve the cleanup levels in the areas of influence within five (5) years. Therefore, the cleanup levels in the shallow groundwater are expected to be achieved within 20 years at the majority of the site where treatment has occurred, allowing portions of the extraction system to be turned off within 10 years and completely discontinued by year 20. At that time any residual mass of CoCs will attenuate under “ISB enhanced” natural conditions.

Influent and effluent concentrations as well as selected monitoring wells would continue to be monitored as part of the operation of the groundwater extraction and treatment system. These monitored concentrations will demonstrate that the remedy is OPS.

LTM (consisting of LUCs surveillance and groundwater monitoring) would be implemented quarterly for the first two years, semiannually for the next three years, then annually for the next five years, and once every two years thereafter until year 20. After year 20, monitoring will consist of sampling once every 2 years until cleanup levels are achieved in all areas of the site. For costing purposes, a 30-year monitoring program is assumed. Until cleanup levels are met, monitoring would be needed to determine trends in groundwater contamination levels and effectiveness of the remedial action.

Outside the containment area, the time frame to achieve RAOs will be shorter (5 to 10 years) because less mass is present in that area and the majority of the mass is associated with groundwater migration (i.e., present originally in the dissolved phase and easier to extract). Evaluation of performance of ISB outside the containment will be determined when data are collected.

The duration of implementation of soil removal is less than one month. Thermal treatment would occur over several months up to one year. Each ISB event is conducted over several weeks and collectively ISB will take several months to implement. Reactivation of ICT 6 and ICT 9 will take a few weeks to implement.

6.2.5.6 Implementability

6.2.5.6.1 Technical Feasibility

All components of this alternative are readily implementable. ISB and associated equipment and reactivation of ICTs have been previously implemented at this site or other sites at LHAAP. ISB treatment has been used at sites throughout the U.S. for a number of years. Injection techniques and equipment are well developed. Implementation of ISB inside the containment could result in biofouling of extraction systems should electron donors migrate to the extraction points leading to potential problems at the GWTP. Thermal treatment has been demonstrated at other sites and the equipment and tools to implement this technology are readily available from specialty contractors (e.g., power sources, step downs, electrodes, extraction points, vapor phase remediation). The ongoing operation of the existing groundwater extraction and treatment system demonstrates this capability. All equipment, services and materials are readily available to conduct the activities for this alternative.

6.2.5.6.2 Administrative Feasibility

All actions under this alternative would be implemented on the site and thus do not require permits, though substantive provisions of permits that would otherwise be required are considered to be ARARs such as discharge of treated water to surface water meeting the established discharge limits and ISB and surfactant introduction meeting underground injection control requirements. By legal agreement (i.e., the FFA), the U.S. Army shall submit to the USEPA and TCEQ a Responsiveness Summary and ROD. Following consideration of any comments by TCEQ, the ROD will be finalized jointly by the U.S. Army and USEPA. By addressing the identified ARARs in the ROD and subsequent documents, it is anticipated that the alternative would adequately address all administrative barriers.

LUCs, although administratively implementable, would require the development of an implementation plan as part of the remedial design, and internal notices to relevant regulatory offices of the existence of the LUCs. Approval by the USEPA and the State of Texas is required prior to the significant modification or termination of a LUC, implementation actions, or modification of land-use by the U.S. Army. The U.S. Army must also seek concurrence from the USEPA and the State of Texas prior to any action that may disrupt the effectiveness of the LUCs or any action that may alter or negate the need for LUCs.

Technology and skilled labor and equipment are available to implement this remedy including equipment and material for ISB, thermal treatment implementation, and to excavate, contain, transport, and dispose of excavated soil. Advance planning with specialty vendors should be conducted to avoid delays or market constraints for implementation of thermal treatment. Technology, skilled labor, equipment, and material are available to operate and maintain the GWTP or to design, construct, and operate a new GWTP. Labor, tools, and methods are established for monitoring groundwater and air.

6.2.5.7 Cost

The total net present value cost of Alternative 5 is approximately $32.67 million. The details of the cost estimates for all of the alternatives are presented in **Appendix D**. This represents the 30-year cost.

6.2.5.7.1 Direct Capital Cost

The net present value capital cost is estimated at $19.52 million. Capital costs include recapitalization of a new GWTP, including contingency use of advanced oxidation technology for treating 1,4-doxane, major replacement every five years on year 10 for the lifecycle of the GWTP (20 years), excavation and disposal of unsaturated soils including the area under the UEP (assumed in year 6 for cost estimating purposes), implementation of thermal treatment within the residual DNAPL area, implementation of EISB, and reactivation of two ICTs. The capital cost also includes activities associated with LUCs and the work plan, regulatory documents, and a closure report.

6.2.5.7.2 O&M Cost

The net present value O&M cost is estimated at approximately $13.15 million. The O&M cost includes operation of the enhanced groundwater extraction and treatment system, monitoring for performance and MNA parameters in groundwater, and LUCs surveillance to verify continued industrial use. The LTM would support the required CERCLA Five-Year Reviews.

6.2.6 Alternative 6 –Enhanced Groundwater Extraction Inside Containment and Treatment, LUC, Enhanced ISB Inside and Outside Containment Area and in Wilcox Formation, Unsaturated Soil Excavation and Off-site Disposal, Enhanced DNAPL Remediation using ZVI

This alternative consists of the following major components:

- Continued use of the existing groundwater extraction system with enhancements (reactivate two existing ICTs) until CoC concentrations are low enough that MNA can address remaining contamination within the containment area.
- Replacement of the existing GWTP with a new GWTP with the contingency to treat for 1,4-dioxane.
- Excavation of unsaturated soil exceeding groundwater protection-industrial standard (GWP-Ind). The estimated cost to excavate soil beneath the UEP is included in this alternative, and could be implemented in the future (e.g., depending on the results of the Five-Year Review of the groundwater remedy).
- Implementation of ISB of shallow zone groundwater outside the containment area at several locations, in the Wilcox Formation at three locations, and inside the containment at five locations.
- Implementation of ZVI (micron-scale) for in situ treatment of DNAPL in two distinct areas inside the containment area at the site.
- Maintenance of existing cap over the former UEP.
- Long-term LUCs to restrict and monitor groundwater use at the site.

6.2.6.1 Overall Protection of Human Health and the Environment

6.2.6.1.1 Protection of Human Health

Existing soil concentrations are protective of a hypothetical future maintenance worker, but existing groundwater concentrations pose a potential risk.

This alternative would achieve the RAOs for LHAAP-18/24. Implementation of the LUCs would prevent human access and exposure to groundwater that poses an unacceptable risk to human health until the remedy achieves the RAOs. The LUCs would include land use notification at the Harrison County courthouse and periodic surveillance of LHAAP-18/24 to ensure that use restrictions are not being violated. The U.S. Army would include the notice with any transfer letter to the USFWS for the intended future use as a national wildlife refuge. If transferred out of U.S. government control, deed restrictions would be placed on the property to prohibit or restrict property uses that may result in exposure to groundwater (e.g., drinking water well installation).

With enhanced groundwater extraction inside the containment, implementation of ISB on three (3) sides outside the containment, in the Wilcox Formation, and inside the containment in five (5) areas, removal of potential unsaturated source soils, and remediation of secondary source areas in the saturated soil inside the containment area in two distinct areas (former UEP and former ACD), this alternative should accelerate the process of achieving the RAOs. No reliance on NA is proposed for this alternative. Since NA is occurring at the site, its use as part of the remedy is inevitable. NA inside the containment is a feasible option to polish the residual CoCs remaining after groundwater extraction operation and ISB implementation are completed.

Groundwater use restrictions would remain in place until groundwater extraction and eventually NA reduces contaminant levels inside and outside the containment and in the Wilcox Formation to unrestricted use and unlimited exposure.

A monitoring program that would track the continual attenuation of the groundwater CoCs and verify that contamination is not reaching Harrison Bayou will be implemented. The LTM program would provide information to support Five-Year Reviews and the termination of the remedy when cleanup levels have been met.

Because MNA is not currently a viable alternative throughout the entire containment area, the enhanced groundwater extraction and treatment system would continue to be operated to prevent migration of CoCs from the containment area and reduce the concentrations of those CoCs over time inside and outside the containment. Over the long term, extraction and treatment would eventually achieve concentrations throughout the containment area and outside the containment area that could be addressed via NA. At that point, the extraction and treatment system would be shut down.

6.2.6.1.2 Protection of the Environment

Alternative 6 would adequately protect the environment. The Installation-Wide Baseline Ecological Risk Assessment did not identify potential risk to ecological receptors at LHAAP-18/24 and the BERA Addendum completed in 2014 (AGEISS, Inc., July 8, 2014) did not change the conclusion of the 2007 BERA. Should there have been any ecological risk, it would have been expressed by this point in time.

This alternative includes removal of unsaturated soil and residual DNAPL sources, thus reducing or eliminating the threat of additional impact to groundwater. The alternative also prevents groundwater from impacting surface water, thus providing protection from exposure to the environmental receptors.

6.2.6.2 Compliance with ARARs

6.2.6.2.1 Chemical-Specific ARARs

This alternative would achieve the cleanup levels for groundwater contaminants that exceed their respective ARARs since the CoCs are being removed by the enhanced groundwater extraction and treatment system, ZVI implementation, and ISB within the containment area and further remediated by ISB outside the containment area. The estimated restoration time frames for this alternative are shorter than Alternatives 2, 3, and 4 but likely longer than Alternative 5. For Alternative 6, it is expected that the extraction and treatment system will continue to operate for a duration up to 30 years to extract the soluble and adsorbed mass from within the containment that is not treated directly with ZVI and ISB.

This time frame is driven by the limitation associated with dissolution of adsorbed mass into the groundwater phase and migration to extraction points. With DNAPL source removed and ISB implemented in several high concentration areas at the site, it is possible that a quicker decrease in CoC concentrations could be witnessed. Additionally, as certain areas are remediated and data indicate that CoC migration is diminishing, certain extraction points could be turned off because the risk of CoC migration off-site would diminish significantly. Examples of those areas include the area adjacent to 109, MW-21, and 120.

The duration to achieve RAOs for groundwater outside the containment area in association with ISB will be short (3-5 years) but will be limited to the areas influenced by the ISB biobarriers. Enough substrate will be added to last for two years for each application. Therefore, the coverage area would include a two year transport distance.

Since use of groundwater as a water supply is unlikely based on future land use at LHAAP-18/24, the time frame to achieve groundwater ARARs could be considered acceptable. Based on the risk assessment (Jacobs, 2002) and surface water sampling results, groundwater contamination has not led to unacceptable risk from surface water.

6.2.6.2.2 Location-Specific ARARs

No location-specific were identified for LHAAP-18/24.

6.2.6.2.3 Action-Specific ARARs

Activities that would be conducted under this alternative would comply with all action-specific ARARs. Extraction of groundwater will be treated and discharged in accordance with Section 402 of the CWA. ISB has been implemented at LHAAP previously and does not result in generating waste or air emissions. It typically is conducted using direct push tools to inject the substrate into the groundwater. The substrate and nutrients are food grade. Bacterial formulations have been in use for some time and have been proven to be benign to the environment. ZVI implementation is similar to ISB, but an inorganic substrate will be applied with majority of remediation occurring in situ. Soil excavation could result in particulate emissions that would be

controlled by wetting excavation areas and conducting air monitoring with established action levels. Stormwater best management practices would be developed and implemented. Excavated soils and soil cuttings from well installation will be characterized before disposal, stored in appropriate containers, and characterized for disposal in a protective landfill suitable to the class of waste. The wells will be constructed in accordance to established industry standards.

6.2.6.2.4 Non-ARAR Procedural Considerations

Activities that would be conducted under this alternative are similar to current activities of groundwater extraction, treatment monitoring, and discharge and would comply with all procedural considerations described in **Table 3-3**. ISB source area remediation, and soil excavation will be implemented in areas that have already been disturbed. No activities would take place in sensitive environments such as wetlands, and no impacts to archeological resources or threatened and endangered species are anticipated. Compliance with the substantive requirements with waste generation, temporary storage, characterization, and off-site disposal are being carried out at this site and will be complied with during implementation of the remedy.

6.2.6.3 Long-Term Effectiveness and Permanence

6.2.6.3.1 Magnitude of Residual Risk

The risks from exposure to soil are already within the target risk range and below an HI of 1 for a hypothetical future maintenance worker.

The implementation of LUCs under this alternative would prevent direct contact by human receptors with the groundwater at LHAAP-18/24, thus minimizing the potential risk posed by groundwater contamination. Extraction of groundwater will result in continuous reduction in contaminant mass and mobility yielding reduction in overall risk to human health. Implementation of residual DNAPL source remediation, soil excavation, and ISB will also result in reduction in CoC mass and mobility, reducing overall risk to human health. Once the RAOs are achieved, complete reduction of risk to human health will be attained.

The occurrence of NA as determined in areas inside (e.g., presence of daughter TCE products) and outside the containment to the northwest and southwest will continue to reduce risk during and after active remediation ceases. Furthermore, groundwater is currently not used and is unlikely to be used in the future due to 1) the low yield expected from thin discontinuous sand lenses, 2) the proposed future land use, and 3) implementation of groundwater use restrictions.

6.2.6.3.2 Adequacy and Reliability of Controls

The implementation of LUCs would protect potential human receptors from exposure to contaminated groundwater at LHAAP-18/24 and ensure that site use is consistent with the hypothetical future maintenance worker scenario. The adequacy and reliability of groundwater extraction and treatment system would depend on proper maintenance and operation of the GWTP. The system would be operated until such time as CoC concentrations are suitable for cessation of operation (i.e., risk of migration off-site is eliminated by a reduction in total mass in groundwater and source areas and natural attenuation is acting at a greater pace than contaminant migration). The reliability of LUCs would depend on the long-term maintenance of the controls. Maintenance of the LUCs to restrict access to groundwater, would be required until cleanup

levels are achieved. Because the future use of the site is by a federal agency as a refuge, LUCs are highly effective. Periodic maintenance and Five-Year Reviews will ensure that the restrictions are enforced and remain effective. The Five-Year Reviews might indicate the need for components of this alternative to be maintained, modified, or replaced.

ISB for reduction of perchlorate and VOCs in shallow groundwater inside and outside the containment provides a permanent remedy by complete destruction of the CoCs. ISB will be implemented two times to ensure that any rebound that may occur or areas that are not treated receive additional treatment. Because the major source of CoCs located outside the containment is sourced from groundwater migration, ISB will be effective in reducing the contaminants and little to no rebound is expected. No maintenance is required between ISB applications.

DNAPL source area remediation by ZVI has been implemented on several sites and results in destruction of chlorinated VOCs in the DNAPL. Treatability study conducted on site material provided evidence of effectiveness of ZVI in treating TCE and to a lesser extent MC and perchlorate at the site. Application of ZVI is conducted via readily available tools. Greater than 99% destruction of TCE would be expected with lesser %age removal for MC and perchlorate. However, the ability to distribute injected ZVI into low K zones with high residual DNAPL may not be effective, and achieving results comparable to treatability study results is unlikely. Due to the difficulty in distributing the injected ZVI in low K zones, ZVI application is assumed to remove no more than 70% to 80% of the mass of VOCs per application. However, the creation of a very reducing condition in the subsurface creates the condition for effective natural biodegradation or enhanced ISB.

Soil excavation and disposal is a well-established process and should completely remove residual CoCs in the unsaturated soil.

6.2.6.4 Reduction of Toxicity, Mobility, or Volume through Treatment

This alternative has five elements that will reduce the toxicity, mobility, and volume of the contaminants in the LHAAP-18/24 groundwater:

- Operation of an enhanced groundwater extraction and treatment system to extract groundwater from within the containment area
- ZVI implementation in the saturated source soil to destroy DNAPL via abiotic means
- Implementation of ISB in shallow zone groundwater inside and outside the containment and in the Wilcox aquifer
- Excavation of unsaturated source soil
- NA mechanisms including biodegradation (while this is not relied on as a main remedial action, its natural occurrence and benefits are inevitable)

These components satisfy the CERCLA statutory preference for remedial actions that permanently reduce contaminant toxicity, mobility, or volume through treatment. The reductions would be verified through monitoring.

6.2.6.5 Short-Term Effectiveness

6.2.6.5.1 Protection of the Community during Remedial Action

This alternative is protective of the surrounding community during remedy implementation primarily because all activities would occur on site with very little disturbance of contaminated material. ISB has been implemented at LHAAP previously and implementation at LHAAP-18/24 creates little disturbance as the majority of the process is conducted below ground. Implementation of ZVI is very similar to ISB and remediation occurs in the subsurface. Vehicular traffic for equipment and materials delivery for in situ treatment would occur. If a spill occurs, which contains food grade substrate and iron, which is harmless to the community, could be contained and should not impact the surrounding communities. Vehicular traffic associated with soil excavation and disposal would also be of concern and plans to minimize impacts will be taken.

Groundwater treatment is also an on-going operation and does not pose hazards to the community as determined via monitoring air and water.

6.2.6.5.2 Protection of the Workers during Remedial Action

Some short-term risks to human health or the environment would exist during implementation of this alternative. ISB and ZVI implementation using a direct push tool, soil excavation, the operation of the GWTP, and groundwater sampling activities might expose workers to contaminants in soil and groundwater. Exposure to heavy equipment is also possible. Well installation and trenching activities for pipelines and the operation of the GWTP might expose workers to contaminants in soil and groundwater. Proper implementation of a comprehensive health and safety program would minimize risks to workers associated with this alternative. Many of these activities have been implemented and some continue to be implemented without adverse effects on site workers.

6.2.6.5.3 Short-Term Environmental Effects

Minor clearing and grubbing at LHAAP-18/24 would be required to maintain access to monitoring wells or for access of DPT equipment for ISB implementation; however, since the majority of these areas have been cleared in the past and are currently maintained, it is unlikely that there are any sensitive species that would be impacted. If any sensitive areas were found, the appropriate regulation would be followed. The implementation of proper engineering controls would minimize the risk of environmental impacts.

6.2.6.5.4 Duration of Remedial Activities

The anticipated duration of this remedial alternative depends on the effectiveness of ZVI and ISB implementation, and the groundwater extraction and treatment system achieving reductions of CoCs concentrations in groundwater to below the cleanup levels. Implementing ZVI to remove greater than 99% of TCE and a large %age of MC and perchlorate in saturated soil should decrease the longevity of this remedy significantly. However, due to the difficulty in distributing the injected ZVI in low K zones, ZVI application is assumed to remove no more than 70% to 80% of the mass of VOCs per application. ISB should be effective and achieve the cleanup levels in the areas of influence within five (5) years. Therefore, the cleanup levels in the shallow

groundwater are expected to be achieved within 30 years at the majority of the site where treatment has occurred, allowing portions of the extraction system to be turned off within 10 years and completely discontinued by year 30. At that time any residual mass of CoCs will attenuate under "ISB enhanced" natural conditions.

Influent and effluent concentrations as well as selected monitoring wells would continue to be monitored as part of the operation of the groundwater extraction and treatment system. These monitored concentrations will demonstrate that the remedy is OPS.

LTM (consisting of LUCs surveillance and groundwater monitoring) would be implemented quarterly for the first two years, semiannually for the next three years, then annually for the next five years, and once every two years thereafter until year 30. After year 30, monitoring will consist of sampling once every 5 years until cleanup levels are achieved in all areas of the site. For costing purposes, a 30-year monitoring program is assumed. Until cleanup levels are met, monitoring would be needed to determine trends in groundwater contamination levels and effectiveness of the remedial action.

Outside the containment area, the time frame to achieve RAOs will be shorter (5 to 10 years) because less mass is present in that area and the majority of the mass is associated with groundwater migration (i.e., present originally in the dissolved phase and easier to extract). Evaluation of performance of ISB outside the containment will be determined when data are collected.

The duration of implementation of soil removal is less than one month. ZVI implementation would occur over several months. Each ISB event is conducted over several weeks and collectively ISB will take several months to implement. Reactivation of ICT 6 and ICT 9 will take a few weeks to implement.

6.2.6.6 Implementability

6.2.6.6.1 Technical Feasibility

All components of this alternative are readily implementable. ZVI and ISB implementation and associated equipment and reactivation of ICTs have been previously implemented at this site or other sites at LHAAP. ISB treatment has been used at sites throughout the U.S. for a number of years. Injection techniques and equipment are well developed. Implementation of ISB inside the containment could result in biofouling of extraction systems should electron donors migrate to the extraction points leading to potential problems at the GWTP. The ongoing operation of the existing groundwater extraction and treatment system demonstrates this capability. All equipment, services and materials are readily available to conduct the activities for this alternative.

6.2.6.6.2 Administrative Feasibility

All actions under this alternative would be implemented on the site and thus do not require permits, though substantive provisions of permits that would otherwise be required are considered to be ARARs such as discharge of treated water to surface water meeting the established discharge limits and ZVI and ISB introduction meeting underground injection control requirements. By legal agreement (i.e., the FFA), the U.S. Army shall submit to the USEPA and

TCEQ a Responsiveness Summary and ROD. Following consideration of any comments by TCEQ, the ROD will be finalized jointly by the U.S. Army and USEPA. By addressing the identified ARARs in the ROD and subsequent documents, it is anticipated that the alternative would adequately address all administrative barriers.

LUCs, although administratively implementable, would require the development of an implementation plan as part of the remedial design, and internal notices to relevant regulatory offices of the existence of the LUCs. Approval by the USEPA and the State of Texas is required prior to the significant modification or termination of a LUC, implementation actions, or modification of land-use by the U.S. Army. The U.S. Army must also seek concurrence from the USEPA and the State of Texas prior to any action that may disrupt the effectiveness of the LUCs or any action that may alter or negate the need for LUCs.

Technology and skilled labor and equipment are available to implement this remedy including equipment and material for ZVI and ISB implementation. Advance planning with specialty vendors should be conducted to avoid delays or market constraints for acquisition of ZVI material. Technology, skilled labor, equipment, and material are available to operate and maintain the GWTP or to design, construct, and operate a new GWTP. Labor, tools, and methods are established for monitoring groundwater and air.

6.2.6.7 Cost

The total net present value cost of Alternative 6 is approximately $121.62 million. The details of the cost estimates for all of the alternatives are presented in **Appendix D**. This represents the 30-year cost.

6.2.6.7.1 Direct Capital Cost

The net present value capital cost is estimated at $102.23 million. Capital costs include cost of micro-scale ZVI, recapitalization of a new GWTP including contingency use of advance oxidation technology for treating 1,4-dioxane, major replacement every five years on year 10 for the lifecycle of the GWTP (20 years), excavation and disposal of unsaturated soils including the area under the UEP (assumed in year 6 for cost estimating purposes), implementation of EISB, and reactivation of two ICTs. The capital cost also includes activities associated with LUCs and the work plan, regulatory documents, and a closure report.

6.2.6.7.2 O&M Cost

The net present value O&M cost is estimated at approximately $19.39 million. The O&M cost includes operation of the enhanced groundwater extraction and treatment system, implementation of ZVI in the two identified source areas, monitoring for performance and MNA parameters in groundwater, and LUCs surveillance to verify continued industrial use. The LTM would support the required CERCLA Five-Year Reviews.

6.3 Comparative Analysis of Alternatives

6.3.1 Introduction

This section presents a comparative analysis of the remedial alternatives for LHAAP-18/24 according to the CERCLA evaluation criteria described in **Section 6.2**. This analysis is the

second stage of the detailed evaluation process and provides information that forms the basis for selecting a preferred remedy.

This comparative analysis considers two of the three criteria categories, the threshold criteria and primary balancing criteria. The threshold category contains two criteria that must be satisfied by the selected alternative:

- Overall protection of human health and the environment; and
- Compliance with ARARs.

These criteria are important because they reflect the key statutory mandates of CERCLA. If an alternative does not satisfy both of these criteria, it is not eligible to be selected.

The primary balancing category contains five criteria under which the relative advantages and disadvantages of the alternatives are compared to determine the most appropriate remedy. The five criteria are the following:

- Long-term effectiveness and permanence
- Reduction of toxicity, mobility, or volume through treatment
- Short-term effectiveness
- Implementability
- Cost

The comparison of these five criteria for the alternatives forms the basis of the comparative analysis. Together, they form the basis for determining the general feasibility of each alternative and for determining whether costs are proportional to the overall effectiveness.

The two modifying criteria, state and community acceptance, must be satisfied if the alternative is to be accepted. The modifying criteria of state and community acceptance are typically not evaluated until the public has had an opportunity to comment on the PP. Because specific alternatives have not been presented to the state and community, these two criteria are not formally compared within this FS.

A comparative analysis under the threshold and primary balancing criteria is presented in **Sections 6.3.2** and **6.3.3**, respectively, and is consistent with the format of the individual analysis of alternatives in **Section 6.2**.

6.3.2 Threshold Criteria

6.3.2.1 Overall Protection of Human Health and the Environment

The six alternatives provide varying levels of human health protection. Alternative 1, no action, does not achieve the RAOs and provides the least protection of all the alternatives; it provides no reduction in risks to human health and the environment because no measures would be implemented to eliminate potential exposure pathways for human exposure to the groundwater contamination or potential migration of CoCs from groundwater to surface water.

All five action alternatives protect human health and the environment. The action alternatives implement LUCs to prevent exposure to contaminated groundwater and continue operation of the

groundwater extraction and treatment system until monitoring data verifies that the contaminant plume originating within the containment area is stable and contained. Alternative 3, which relies the most heavily on containment and LUCs, does not provide the same degree of contaminant removal or treatment in groundwater as the other alternatives, but would be protective of human health because the LUCs would prevent human access to the contaminated groundwater. Alternative 3 does not prevent migration of CoCs from groundwater outside containment to surface water and it does not prevent migration of CoCs from soil sources in the unsaturated and saturated soil to groundwater. Alternatives 2, 4, 5, and 6 provide a similar level of overall protection and can eventually achieve the cleanup levels for the groundwater CoCs due to active remediation and continued operation of the groundwater treatment system for contaminant removal; however, the duration to achieve the cleanup levels vary.

6.3.2.2 Compliance with ARARs

Alternative 1 does not comply with chemical-specific ARARs for groundwater, unsaturated soils, or secondary source within the saturated soil because no remedial measures would be implemented.

Alternative 3 is not expected to return groundwater concentrations within the slurry wall to less than the cleanup levels, so it does not meet the return to beneficial use RAO within the slurry wall. Alternative 3 will require an ARAR waiver for the groundwater within the slurry wall.

Alternatives 2, 4, 5, and 6 comply with the chemical-specific ARARs for groundwater, unsaturated soil, and secondary groundwater source (residual DNAPL) because they prevent exposure to groundwater that exceeds ARARs and would eventually return groundwater and soil concentrations to less than cleanup levels.

All of the action alternatives would comply with the action-specific ARARs and any non-ARAR considerations.

6.3.3 Primary Balancing Criteria

6.3.3.1 Long-Term Effectiveness and Permanence

Alternative 1 would be the least effective and permanent in the long term because no contaminant removal or treatment would take place and no measures would be implemented to control exposure to risks posed by contaminated groundwater or the potential for contaminated groundwater to migrate to Harrison Bayou.

Alternative 2 offers a moderate degree of long-term effectiveness through operation of an enhanced groundwater extraction and treatment system, combined with unsaturated soil removal, residual DNAPL source removal, and LUCs implementation, which would minimize the potential risk posed by the contaminated groundwater. Reduction of the residual DNAPL source with groundwater extraction is not highly effective and therefore, the magnitude of residual risk will remain unacceptable.

Alternative 3 offers a degree of long-term effectiveness through physical containment of contaminated groundwater using a slurry wall and gradient control by pumping, combined with MNA to monitor effectiveness and LUCs to prevent groundwater use. Alternative 3 is designed to contain contaminated groundwater in place in perpetuity and would require a waiver of the

restoration RAO prior to implementation. This alternative is effective in containing the contaminants but not practical as operation of the GWTP will have to occur in perpetuity.

Alternative 4 offers a higher degree of long-term effectiveness compared to Alternatives 2 and 3 through surfactant flushing of residual DNAPL, ISB of groundwater inside and outside the containment and in the Wilcox Formation including as a polishing step for the residual DNAPL areas in the shallow zone, unsaturated soil excavation, enhanced groundwater extraction and treatment system, and LUCs implementation. Alternative 4 is likely to achieve groundwater cleanup levels in a shorter period of time than Alternative 2. However, the period of time remains long because the effectiveness of surfactant flushing of residual DNAPL in low K zones is uncertain due to the difficulty in reaching into the low K zones.

Alternative 5 offers the highest degree of long-term effectiveness through thermal remediation of VOCs in residual DNAPL saturated soil areas in groundwater, ISB of groundwater inside and outside the containment and in the Wilcox Formation including as a polishing step for the residual DNAPL areas in the shallow zone, unsaturated soil excavation, enhanced groundwater extraction and treatment system, and LUCs implementation. Alternative 5 will achieve groundwater cleanup levels in a shorter period of time than Alternatives 3 or 4 because 99.9% removal of VOCs from the residual DNAPL areas is possible.

Alternative 6 also offers a high degree of long-term effectiveness through application of ZVI to the residual DNAPL saturated soil areas, ISB of groundwater inside and outside the containment and in the Wilcox Formation including as a polishing step for the residual DNAPL areas in the shallow zone, unsaturated soil excavation, enhanced groundwater extraction and treatment, and LUCs implementation. Alternative 6 relies on effective distribution of injected ZVI to all impacted areas. However, the ability to distribute injected ZVI into low K zones with high residual DNAPL may not be effective, and achieving results comparable to the treatability study results of greater than 99% reduction of TCE and high percentage reduction of MC and perchlorate is unlikely.

Alternative 5 is expected to have the shortest duration to shutdown of the GWTP. Alternatives 4 and 6, while rapidly addressing CoCs in residual DNAPL areas, suffer from the difficulty of distributing the injected material to low K zones and may not be as effective as would be expected from a treatability test results where contact between the contaminants and the material is not limiting. Alternative 2 will not achieve the RAOs within an acceptable period of time (e.g., within 30 years). Alternative 3 would not reach cleanup levels within the slurry wall, and, due to the risk of containment failure, would be the least permanent remedy.

6.3.3.2 Reduction of Toxicity, Mobility, or Volume through Treatment

Alternative 1 does not employ treatment in groundwater and would not result in a reduction of toxicity, mobility, or volume of contaminants. All of the action alternatives provide some degree of reduction of toxicity, mobility or volume through treatment.

Alternative 2 provides a reduction in toxicity, mobility and volume via continued operation of an enhanced groundwater extraction and treatment system but the rate of reduction expected within the residual DNAPL areas will be slow.

Alternative 3 provides mobility reduction through the installation of a slurry wall and continued hydraulic control as needed. Reduction of volume through treatment is limited to NA

mechanisms of contaminants outside the slurry wall and ex situ treatment of extracted groundwater from within the containment area.

Alternative 4 provides faster permanent reduction in toxicity and volume of the groundwater contaminants than Alternatives 2, and 3. This is achieved through surfactant flushing of saturated source soil to remove DNAPL that may serve as a long-term source of groundwater contamination, excavation of unsaturated soil, and implementation of ISB in areas inside and outside the containment and within the Wilcox Formation. In addition to enhanced groundwater extraction, all the above technologies will result in a reduction in contaminant toxicity, mobility, and volume. However, reduction of mass of residual DNAPL via surfactant flushing is expected to be partial due to difficulty of surfactants to reach low K zones. NA mechanisms of contamination outside the containment area will continue to act to reduce contaminant mass.

Alternative 5 provides the greatest reduction in toxicity, mobility, and volume of the groundwater contaminants compared to the other alternatives. This is achieved through thermal treatment of saturated source soil to treat DNAPL that may serve as a long-term source of groundwater contamination, excavation of unsaturated soil, and implementation of ISB in areas inside and outside the containment and within the Wilcox Formation. In addition to enhanced groundwater extraction, this technology will result in a reduction in contaminant toxicity, mobility, and volume. NA mechanisms of contamination outside the containment area will continue to act to reduce contaminant mass.

Alternative 6 provides a high level of reduction in toxicity, mobility, and volume of the groundwater contaminants compared to the other alternatives but is expected to be less than that achieved by Alternative 5. Reduction of mass of residual DNAPL via ZVI injection is expected to be partial due to difficulty of ZVI to effectively reach low K zones. Excavation of unsaturated soil and implementation of ISB in areas inside and outside the containment and within the Wilcox Formation, in addition to enhanced groundwater extraction will result in a reduction in contaminant toxicity, mobility, and volume. NA mechanisms of contamination outside the containment area will continue to act to reduce contaminant mass.

6.3.3.3 Short-Term Effectiveness

Because Alternative 1 does not involve remedial measures, no short-term risk to workers, the community, or the environment would exist.

All of the action alternatives involve potential short-term risks to workers associated with exposure to contaminated groundwater, vapor (i.e., volatilized and extracted VOCs), from monitoring and/or operation of drilling/construction equipment.

Alternative 2 presents risks associated with drilling new extraction wells, trenching for placement of conduits, and potential exposure to contaminated groundwater or heavy equipment. Alternative 2 presents potential risks associated with soil excavation (particulate emissions, heavy equipment) and off-site disposal which represents a greater exposure potential to LHAAP-18/24 workers, a greater potential for runoff releases to the environment and the potential for off-site traffic accidents and impacts on communities between LHAAP and the disposal facility. Risks are also associated with handling of chemicals used for ISB, although these chemicals are typically food grade and not harmful. Use of application equipment can also present risk.

Alternative 3 involves risks associated with the heavier equipment used in slurry wall construction and with handling the bentonite slurry used in construction. Alternative 4 requires a large construction footprint and will result in disturbing a wide area along the path of construction which will have impact on the environment. Control of run-on and run-off would be critical to prevent cross-contamination of surface water. Risks associated with subsurface utilities are another concern for slurry wall installation.

Alternative 4 involves the same risks as Alternative 2 with the additional risks associated with surfactant flushing implementation which includes potential exposure to the surfactant and extracted fluids from the subsurface which would require surface handling, storage, treatment, and disposal.

Alternative 5 presents similar risks like Alternative 2 but has additional risks associated with implementation of thermal treatment technology which requires use of high voltage equipment and results in volatilization of VOCs that requires treatment at the ground surface.

Alternative 6 presents similar risks like Alternative 2 but with additional risk associated with use and handling of ZVI.

By planning the construction, excavation, and transportation activities in accordance with industry and OSHA codes and requirements, risks from contaminant exposure and construction operations would be controlled to acceptable levels. Dust control and sediment deposition into adjacent surface water bodies can be controlled during earthwork and construction activities. Erosion control measures would include surface grading; emplacement of silt fences; covering surfaces with straw, mulch, riprap, and/or geotextile fabrics. Following completion of all construction and excavation, disturbed areas would be regraded with clean backfill and revegetated with native grasses. Appropriate PPE would be required for remediation workers. Overall risk can be mitigated by developing a health and safety plan in compliance with OSHA requirements, communicating the hazards to involved parties, and providing the know-how and tools to mitigate those hazards.

6.3.3.4 Implementability

Administratively, all the action alternatives are implementable. However, Alternative 1, No Action, would involve shutting down the groundwater extraction system, which is assumed to be administratively unacceptable to the U.S. Army and to the regulatory agencies.

The action alternatives for groundwater are all technically implementable with varying degrees of difficulty.

Reactivation of existing ICTs for Alternatives 2, 4, 5, and 6 should be easy to implement as the tools and skilled resources are available. Similarly, implementation of additional extraction points for Alternative 2 should not pose any difficulties to drill the wells and connect the wells to the GWTP. ISB is specified for Alternatives 2, 4, 5, and 6. ISB has been implemented at other LHAAP sites and should not pose any difficulties to implement at LHAAP-18/24. Success of ISB was determined by conducting treatability testing and bioaugmentation at the laboratory scale. Treatability testing at the bench-scale and pilot-scale will also be required for surfactant remediation to select and optimize surfactant dose and provide proof of concept for Alternative 4 (i.e., loss of control for DNAPL migration, generation of adverse chemicals, and penetration effectiveness in low K zones). Thermal treatment (Alternative 5) does not require treatability

testing and its implementability hinges on the availability of power to supply the electrodes with sufficient power to heat the saturated soils. Considering that power reliability has been a concern at the GWTP, this would be an important design consideration for this technology. Implementation of ZVI for Alternative 6 faces similar implementability considerations such as ISB implementation.

Alternative 3 has two significant implementation issues:

- The slurry wall would need to key into the confining layer for the shallow zone.
- Any significant discontinuities in the confining layer would need to be addressed.

There are areas at LHAAP-18/24 where both issues exist. Technologies are available to address both issues, but it will be difficult to ensure the quality of containment throughout the system.

For Alternative 2, 4, 5, and 6 soil excavation would also require coordination between excavation, sampling, transportation and disposal. However, because the volumes are not large, resources are readily available to implement.

6.3.3.5 Cost

Cost estimates are used in the CERCLA FS process to eliminate those remedial alternatives that are significantly more expensive than competing alternatives without offering commensurate increases in performance or overall protection of human health or the environment. The cost estimates developed are preliminary estimates with an intended accuracy range of +50 to –30 percent. Final costs will depend on actual labor and material costs, actual site conditions, productivity, competitive market conditions, final scope, final schedule, final engineering design, and other variables.

The costs include both capital costs (including fixed-price remedial construction) and long-term O&M costs (post-remediation). Overall 30-year present value costs are developed for each alternative assuming a discount rate of 3.0 percent. Total present value costs for each alternative are presented in **Appendix D** and a summary is presented below. It should be noted that some alternatives have extensive capital costs but could result in a serious reduction in the alternative lifecycle to achieve the RAOs (e.g., less than 30 years). Other alternatives that do not rely on intensive upfront remediation technologies have a very long remediation lifecycle (i.e., well beyond 30 years) that would outweigh the alternatives with high capital cost. Because cost determination was limited to 30 years per CERCLA requirements, the alternatives with high capital costs (e.g., Alternatives 5 and 6) appear to be as or more expensive on a 30-year basis than alternatives with low capital costs but long lifecycle duration (e.g., Alternatives 2 and 3).

The progression of total present value costs from the least expensive alternative to the most expensive alternative is as follows: Alternative 1, Alternative 3, Alternative 4, Alternative 5, Alternative 2, and Alternative 6. There are no costs associated with Alternative 1 because no remedial activities would be conducted. Alternative 6 has highest capital costs due to the high cost of ZVI, but lower O&M costs than all other alternatives with the exception of Alternatives 3 and 5. Alternative 5 has an O&M cost over 20 years after which the GWTP and extraction would be shut down. Alternative 5 has a higher capital cost associated with thermal treatment compared to Alternatives 2, 3, and 4. Alternatives 2, 3, and 4 have the lowest capital costs of the active remedial alternatives, with Alternative 3 having the lowest capital cost associated with slurry

wall construction and lowest O&M cost due to the greater cost reductions in O&M associated with reduction in GWTP operation and reduction in monitoring costs (this alternative does not require full extraction of groundwater). Alternatives 2, 4, and 6 have the highest O&M costs of all the alternatives because it is assumed that GWTP operations will continue for 30 years with no reduction in extraction rates.

Alternative	Capital Cost	O&M Cost	Total NPV
1	$0	$0	$0
2	$14.56	$19.60	$34.16
3	$6.41	$12.24	$18.65
4	$13.11	$19.39	$32.50
5	$19.52	$13.15	$32.67
6	$102.23	$19.39	$121.62

Costs given in millions
NPV – net present value

7 REFERENCES

AECOM, 2016a. *Final Updated Post-Screening Investigation Report – LHAAP-18/24 Longhorn Army Ammunition Plant, Karnack, Texas,* February.

AECOM, 2016b. 1,4-Dioxane Groundwater Sampling Methodology and Analytical Results for LHAAP-18/24 at Longhorn Army Ammunition Plant, Karnack, Texas, February.

AECOM, 2016c. *Draft Final Supplemental to the Updated Post-Screening Investigation Report, LHAAP-18/24, Longhorn Ammunition Plant, Karnack, Texas,* December.

AGEISS, Inc., 2014. *Final Baseline Ecological Risk Assessment Addendum, Longhorn Army Ammunition Plant, Karnack, Texas. Longhorn Ammunition Plant, Karnack, Texas,* July.

AEHA, 1980. *Land Disposal Study – Final Report No. 38-26-0104-81-82,* U.S. Army Environmental Hygiene Agency, Aberdeen Proving Ground, January-February.

AWD Technologies, Inc. (AWD), 1994a. *Draft Interim Remedial Action – Phase I, Evaluation of Thermal Treatment of On-Site Contaminated Soils and Buried Waste, Burning Ground No. 3 and Unlined Evaporation Pond,* Longhorn Army Ammunition Plant, Karnack, Texas, February.

AWD, 1994b. *Physical Surveying and Other Field Data, Early Interim Action at Burning Ground No.3, LHAAP-18 & LHAAP-24 Burning Ground/ Washout Pond & Unlined Evaporation Pond,* Longhorn Army Ammunition Plant, Marshall, TX, AWD Technologies, Inc., Rockville, MD, February.

Banks Environmental Data, 2015. *Water Well Report, Longhorn Army Base (LHAAP), Karnack, TX.* June.

Beyke, G. 6-Phase Electrical Heating. Paper presented at the In Situ Thermal Treatment Conference, U.S. EPA TIO. Atlanta, Georgia. December 1998.

Caddo Lake Institute, 1995, Appendix J, A Characterization of habitats and Fish and Wildlife Management Opportunities at Cypress Bayou Basin, Texas and Louisiana. U.S. Filf and Wildlife Service, February.

Camp, Dresser, and McKee, 1986. *Addendum to Groundwater Quality Assessment, Groundwater Contamination Related to Seepage from Unlined Evaporation Pond, Longhorn Army Ammunition Plant, Marshall, Texas,* May.

Davis, E.L. How Heat Can Enhance In Situ Soil and Aquifer Remediation: Important Chemical Properties and Guidance On Choosing The Appropriate Technique. EPA/540/S-97/502. April 1997.

DOW Environmental, Inc., 1995. *Interim Remedial Action Burning Ground No. 3 and Unlined Evaporation Pond,* March.

Environmental Security Technology Certification Program (ESTCP), 2007. *Biodegradation of 1,4-Dioxane,* ER-1422, August.

Ground-Water Remediation Technologies Analysis Center (GWRTAC), 1997, Electrokinetics. Liesbet Van Cauwenberghe, July.

Gomes, H.I., Dias-Ferriera C., and A. B. Ribeiro, 2012. Electrokinetic Remediation of Organochlorines in Soil: Enhancement Techniques and Integration with other Remediation Technologies., Chemosphere 87 (2012) 1077-1090, June.

Interstate Technology & Regulatory Council (ITRC), 2003. *An Introduction to Characterizing Sites Contaminated with DNAPLs,* September.

Jacobs Engineering Corporation (Jacobs), 2001. *Remedial Investigation Report for the Group 2 Sites Remedial Investigation (Sites 12, 17, 18/24, 29, and 32) at the Longhorn Army Ammunition Plant (LHAAP)*, Karnack, Texas, Final, St. Louis, Missouri, April.

Jacobs Engineering Corporation (Jacobs), 2002. *Baseline Human Health and Screening Ecological Risk Assessment for the Group 2 Sites (Sites 12, 17, 18/24, 29, and 32) at the Longhorn Army Ammunition Plant (LHAAP), Karnack, Texas, Final*, St. Louis, Missouri, August.

David Lippincott, Sheryl H. Streger, Charles E. Shaeffer, Jesse Hinkle, Jason Stormo, and Robert J. Stefan, 2015. Bioaugmentation and Propane Biosparging for In Situ Biodegradation of 1,4-Dioxane. Groundwater Monitoring and Remediation. Volume 35, Issue 2 January 28.

Naval Facilities Engineering Command (NAVFAC), 2005. Cost and Performance Report Nano-Scale Zero Valent Iron Technologies for Source Remediation by Gavaskar A., Tatar L., and W. Condit. Contract Report CR-05-007-ENV, September.

Plexus Scientific Corporation, 2005, *Final Environmental Site Assessment, Phase I and II Report, Production Areas, Longhorn Ammunition Plant, Karnack, Texas,* Columbia, Maryland, February.

Sale, T. C., and C. Newell. 2011. *Guide for Selecting Remedies for Subsurface Releases of Chlorinated Solvents*. ESTCP Project ER-200530.

Shaw Environmental, Inc. (Shaw), 2007a, F*inal Data Gaps Investigation Report, Longhorn Army Ammunition Plant, Karnack, Texas*, Houston, Texas, April.

Shaw, 2007b, Final Installation-Wide Baseline Ecological Risk Assessment, Longhorn Army Ammunition Plant, Karnack, Texas, Houston, Texas, Volume I: Step 3 Report, January, and Volume II: Steps 4 through 8, November.

Shaw, 2007c. *Pilot Study Implementation Plan, Groundwater Treatment Plant and Well Fields, Longhorn Army Ammunition Plant, Karnack, Texas,* September.

Shaw, 2008, *Final Data Evaluation Report for LHAAP-35/36, Longhorn Army Ammunition Plant, Karnack, Texas,* Houston, Texas, January.

Shaw, 2010, *Draft Final Feasibility Study Report for LHAAP-35/36, Longhorn Army Ammunition Plant, Karnack, Texas,* Houston, Texas, January.

Shaw, 2011. *Figure 1-11, Potential Source Areas, LHAAP-18/24 Feasibility Study, Longhorn Army Ammunition Plant, Karnack, Texas.* August, 18, 2011.

Solutions to Environmental Problems, Inc. (STEP), 2005, *Plant-Wide Perchlorate Investigation, Longhorn Army Ammunition Plant, Karnack, Texas, Final,* Oak Ridge, Tennessee, April.

Tratnyek, P.G., and R. L. Johnson, 2006, Nanotechnologies for Environmental Cleanup. Nanotoday, Vol 1, number 2, May.

U.S. Army Corps of Engineers (USACE), 1989. *Phase I RCRA Facility Investigation. (RFI), Active Burning Ground and Unlined Evaporation Pond, Longhorn Army Ammunition Plant, Marshall, Texas,* July.

USACE, 1993, Data Summary Report of Investigations Results from 1976 through 1992 for Burning Ground 3 and Unlined Evaporation Pond, May.

U.S. Army Environmental Hygiene Agency, 1980. *Land Disposal Study – Final Report No. 38-26-0104-81-82,* U.S. Army Environmental Hygiene Agency, Aberdeen Proving Ground, January-February.

U.S. Environmental Protection Agency (USEPA), 1988a, *CERCLA Compliance With Other Laws Manual, Volume I,* OSWER Directive 9234.1-01.

USEPA, 1988b, *Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA, Interim Final,* OSWER Directive 9355.3-01, Washington, DC.

USEPA, 1990, Final National Contingency Plan. 55 FR 8758-8760, Washington, DC, March 08.

USEPA, 1991, ARARs Q's & A's: General Policy, RCRA, CWA, SDWA, Post-ROD Information, and Contingent Waivers, OSWER Directive 9234.2-01FS-A, Washington, DC.

USEPA, 1998, *Technical Protocol for Evaluation of Natural Attenuation of Chlorinated Solvents in Ground Water*, EPA/600/R-98/128, Washington, DC, September.

USEPA, 2004, Performance *Monitoring of MNA Remedies for VOCs in Ground Water*, EPA/600/R-04/027, Cincinnati, OH, April.

USEPA, Nanotechnology White Paper, 2007. EPA-100/B-07/001, February.

USEPA, Solid Waste and Emergency Response, 2008. Nanotechnology for Site Remediation – Fact Sheet. EPA-542-F-08-009, October.

USEPA, 505-F-14-11, 2014, Technical Fact Sheet, 1,4-Dioxane, Office of Solid Waste and Emergency Response (5106P). January.

U.S. Fish and Wildlife Service (USFWS), 2003, Correspondence from Mr. Thomas J. Cloud (USFWS) to Mr. J. Marshall Davenport (Jacobs Engineering Group Inc.) regarding threatened and endangered species at Longhorn Army Ammunition Plant, January 6.

Xueyuan, Y., Amrhein, C., Desusses, M.A., and M.R., Matsumoto, 2006. Perchlorate Reduction by Autotrophic Bacteria in the Presence of Zero-Valent Iron. Enviro. Sci. Technol. 40, 1328-1334, January.

Zenker, Matthew, J., Robert C. Borden, and Morton A. Barlaz, Environmental Engineering Science, July 2004, 20(5): 423-432.

APPENDIX A: NATURAL ATTENUATION EVALUATION

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LHAAP-18/24, BURNING GROUND NO. 3 AND UNLINED EVAPORATION POND

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KARNACK, TEXAS

Prepared For:

U.S. Army Corps of Engineers

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Figure A-44: First-Order Decay Rate Calculation for MC Attenuation Determination – MW-120

Acronyms and Abbreviations

AECOM	AECOM Technical Services, Inc.
1,1-DCE	1,1-Dichloroethene
1,1,2-TCA	1,1,2-trichloroethane
1,2-DCA	1,2-dichloroethane
AEC	anion exchange capacity
AECOM	AECOM Technical Services, Inc.
bgs	below ground surface
C_2HCl_3	trichloroethene
$C_2Cl_2H_2$	dichloroethene
C_2ClH_3	vinyl chloride
Cl^-	chloride
CH_2Cl_2	methylene chloride
ClO_2^-	chlorite
ClO_3^-	chlorate
ClO_4^-	perchlorate
CO_2	carbon dioxide
CoC	chemicals of concern
CSIA	compound-specific isotope analysis
DCA	dichloroethane
DCE	dichloroethene
DO	dissolved oxygen
e^-	electron
EA	enhanced attenuation
Fe^{+3}	ferric iron
ft	foot or feet
GWRTAC	Ground-Water Remediation Technologies Analysis Center

H^+	Hydrogen ion
H_2O	water
ICT	interception collection trench
IRA	Interim Remedial Action
LHAAP	Longhorn Army Ammunition Plant
MC	methylene chloride
MCL	maximum contaminant level
mg/L	milligrams per liter
MNA	monitored natural attenuation
mV	millivolts
NA	Natural attenuation
NH_4ClO_4	ammonium perchlorate
NO_3^-	nitrate
O_2	oxygen
ORP	oxidation-reduction potential
OSWER	Office of Solid Waste and Emergency Response
PCE	tetrachloroethene
PCL	Protective Concentration Level
PSI	Post-Screening Investigation
R^2	correlation coefficient
Shaw	Shaw Environmental, Inc.
SO_4^{-2}	sulfate
SQL	Sample Quantification Limit
TCA	trichloroethane
TCE	trichloroethene
TRRP	Texas Risk Reduction Program
µg/L	micrograms per liter
UEP	unlined evaporation pond

USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
V	vanadium
VC	vinyl chloride
WERS	Worldwide Environmental Remediation Services

1 INTRODUCTION

AECOM Technical Services, Inc. (AECOM) has been contracted by the U.S. Army Corps of Engineers (USACE), Tulsa District, to perform remediation activities at various sites at the former Longhorn Army Ammunition Plant (LHAAP), Karnack, Texas. This work is being performed under USACE Huntsville district's Worldwide Environmental Remediation Services (WERS) Contract No. W912DY-09-D-0059 Task Order No. DS01.

This report presents a preliminary evaluation of the occurrence of natural attenuation (NA) of methylene chloride (MC), trichloroethene (TCE), and perchlorate present in the Shallow Zone and Wilcox Formation groundwater at LHAAP-18/24 (the site). This analysis is important if NA is to be considered as a remedial process applicable at the site.

The operation of the site groundwater extraction and treatment system distorts the natural groundwater flow patterns in the area and reduces chemicals of concern (CoC) concentrations by removing contaminated groundwater and causing clean or contaminated groundwater to flow in from the adjacent areas. For this reason, extraction wells, interception collection trenches (ICTs), and wells that are within the cone of depression of extraction wells and ICTs cannot be evaluated for NA. Any observed chemical attenuation at such locations is likely to be overshadowed by operation of the groundwater extraction system. Monitoring wells located outside the ICTs and extraction wells' direct radius of influence may be evaluated for evidence of NA. Monitoring wells in the Deep Zone may also be reasonably evaluated for evidence of NA because they are below the depth of the groundwater extraction wells and trenches and in the majority of the site areas are separated from the Shallow Zone by a Wilcox clay layer. Monitoring wells located outside the ICTs and extraction wells' direct radius of influence, but within the containment area, may also be evaluated for evidence of NA.

This evaluation of the NA processes at the site will serve as the basis to consider the application of Enhanced Attenuation (EA) processes at the site in the event NA combined with established site remedial approaches may not meet remediation goals within a reasonable timeframe.

1.1 LHAAP Background

LHAAP-18/24, also known as Burning Ground No. 3 and the Unlined Evaporation Pond (UEP), is located in the southeastern section of LHAAP and covers an area of approximately 34.5 acres. LHAAP-18/24 is located between Avenue Q to the southeast and Harrison Bayou to the northwest. LHAAP-17 (Burning Ground No. 2) is to the southwest. LHAAP-18/24 had been used since 1955 as a burial and burning ground for various industrial wastes and hazardous wastes generated at LHAAP. Burned wastes include solvents, oil, and red phosphorus. Buried wastes include rocket motor washout residues, illuminating mixtures, oxidizing agents, solvents, oils, and detergents. The former UEP was constructed in 1963 to collect water from the washout of rocket motor casings and the process waste sumps. The water contained solvents, explosive compounds, and metal residues. The UEP was no longer used after 1984, and was closed down under RCRA in 1986 with the removal of the sludge and the capping of the impoundment. As part of the LHAAP-18/24 Interim Remedial Action (IRA), approximately 32,000 cubic yards of soil was excavated and treated by low temperature thermal desorption. In addition to the contaminated soil removal, a groundwater extraction system and a groundwater treatment plant were installed in 1997 to control the migration of contaminated groundwater (Plexus, 2005).

Current operations at LHAAP-18/24 include the operation of the groundwater extraction and treatment system.

1.2 Site Geology and Hydrogeology

1.2.1 Surface Water Hydrology

Harrison Bayou flows within approximately 200 feet of the western corner of LHAAP-18/24. There are no surface water bodies or watercourses running through the Site. Surface drainage occurs in all directions, but flow is generally directed toward Harrison Bayou to the West and by both natural and manmade ditches and drainage swales to the north. Harrison Bayou drains into Caddo Lake, which is located approximately one mile northeast of LHAAP-18/24. The extreme western corner of the Site is located within the 100-year floodplain of Harrison Bayou.

1.2.2 Site Geology

LHAAP-18/24 site falls completely within the area mapped as undifferentiated Quaternary alluvium in the geologic maps compiled by Virgil Barnes (Texas Bureau of Economic Geology, 1992).

Site stratigraphy consists of a relatively thin (10 to approximately 45 feet (ft)) cover of unconsolidated Quaternary alluvium atop semi-consolidated sandstones (sands) and shales (clays and silts) of the Eocene Wilcox formation. The contact between the Quaternary and Eocene units represents a significant erosional unconformity in the local geologic record.

Structurally, the site is located on the northwest edge of the Sabine uplift, a roughly circular dome-like geologic structure. Due to this feature, the Wilcox formation locally dips gently toward the northwest and not to the southeast as it does in much of the Texas coastal plain.

The Quaternary alluvial deposits that cover the Site were generated by two main fluvial systems: the Big Cypress Bayou and the Harrison Bayou fluvial systems. Big Cypress Bayou alluvium comprises the majority of the Site Quaternary alluvium. Its thickness ranges from 20 to 50 ft (USACE, 1993) and thins toward the west, away from Caddo Lake and the modern alluvial valley. A smaller portion of the alluvium at the site owes its origins to the Harrison Bayou. The Harrison Bayou occupies a small valley on the immediate northwestern border of the site. It locally incises into the older portions of the undifferentiated Quaternary alluvium and upstream, it likely cuts into any exposed or thinly covered Wilcox units.

In general, alluvium deposited by fluvial systems such as the Big Cypress and Harrison Bayou is characterized by laterally heterogeneous deposits of clays, silts, and sands. The Quaternary fluvial systems are characterized by:

- isolated sandy zones of higher permeability (typically preserved relict channels, point bars, or levees) surrounded by silts and clays of the relict flood plain.
- fining upward grain size pattern (or sequences) of sediments ranging in size from gravel at the base to clays and silts at the top in the channel or point bar sediments.
- sand, silty sands, silts, and clays are generally orange, light brown/grey, yellow and light brown, respectively.

The underlying Wilcox Formation consists of semi-consolidated sands and clays deposited in a larger scale fluvial-deltaic setting. The Wilcox units are characterized as follows:

- sands are broadly lenticular in morphology and more massive and homogeneous than the overlying alluvium sands.
- sands tend to be grey, greenish grey fine sands, though they weather to a variety of colors including red, yellow and brown (Texas Bureau of Economic Geology, 1975).
- lignite (black carbonaceous seams) is common throughout.
- locally, the top of the Wilcox Formation was identified as dark grey or blue grey clay (USACE, 1993).

According to Xue (1997), the upper Wilcox sands were deposited in fluvio-deltaic settings under transgressive conditions. During deposition, rising local sea level altered delta position over time resulting in the back filling and infilling with sediment (a process called aggradation) of fluvial or distributary channels. An upward trend towards finer sediment grain size would occur.

1.2.3 Site Hydrogeology

The current understanding of site hydrogeology recognizes the existence of two hydrogeologic units: a shallow unit from surface to a depth of approximately 45 feet below ground surface (bgs) (Shallow Zone), and a deep unit below the Shallow Zone. The Shallow Zone is comprised of Quaternary alluvium deposits and the Deep Zone is comprised of Wilcox units. Generally, these two units are separated by a contiguous clay layer that is believed to be present across the entire site with the exception of the area to the west and northwest towards Harrison Bayou (i.e., within the floodplain of Harrison Bayou).

As interpreted from the shallow groundwater elevations collected in May 2013, the groundwater in the Shallow Zone flows outwardly, in a radial direction, from the site to the surroundings (**Figure 1-6**, main text**)**. The potentiometric surface map for the Wilcox Formation also indicates the direction of flow in the northern portion of the site is similar to the Shallow Zone (**Figure 1-7,** main text).

Groundwater in the Deep Zone near LHAAP is currently used as a drinking water source As of May 2015, six active water supply wells near the LHAAP were identified (**Figure 1-2,** main text). All of these public water supply wells are located greater than two miles from the LHAAP-18/24 site. Water removal from these wells is not expected to affect groundwater flow at the site because of the remote locations of these wells from LHAAP and their depth of completion. There are three water supply wells located within LHAAP, upgradient of LHAAP-18/24. These water wells supply water to buildings currently in use on the installation. None of these wells are close to LHAAP-18/24, and none of these wells are used for drinking water. Two additional wells that had previously supplied water to the installation have been plugged and abandoned. None of the water supply wells are associated with or are in imminent danger of impairment from the localized contaminated groundwater at LHAAP-18/24.

1.3 Site Conceptual Model

Industrial operations that heavily used chlorinated solvents, the systematic storage and handling of substantial volumes of the chlorinated solvents, the burial and burning of wastes, etc. at

LHAAP-18/24 from 1955 through 1984 was probably the source of the groundwater contamination. The soil is not a media of concern at LHAAP-18/24 since contaminants in the soil do not pose significant risk of human health effects, ecological effects, or groundwater contamination by leaching.

It is assumed most of the contaminant mass present in groundwater was likely released as high concentrated solutions. After their release, the contaminants travelled along preferential pathways through the vadose soils to the saturated zones. Since chlorinated solvents are denser than water, they sank vertically in the saturated zone with minimal influence by groundwater movement and little or no dilution. Accordingly, plumes of highly concentrated contaminants formed on top of confining layers. Significant contaminant mass moved into low permeability confining layers either by direct percolation or by diffusion from coarse-grained layers. Some mass was incorporated into groundwater by dilution and was transported outwardly, in a radial direction, from the release area to the surrounding areas. The potential existence of plumes of high concentration and the mass absorbed by the confining layers may serve as a long-term secondary source from which contaminants will be released to groundwater by diffusion.

The identified CoCs in the Shallow Zone groundwater at LHAAP-18/24 are: 1) nine organic compounds; 1,1,2-trichloroethane (1,1,2-TCA), , tetrachloroethene (PCE), TCE, cis-1,2-dichloroethene (DCE), vinyl chloride (VC), MC, bromodichloromethane, 1,3,5-trinitrobenzene, and benzene; 2) perchlorate, and 3) six metals (antimony, arsenic, barium, chromium, cobalt, and nickel), and 4) 1,4-dioxane. Based on historical documentation, risk assessment, and comparison of detected concentrations to cleanup levels, it is assumed that TCE, MC, and perchlorate are the most significant CoCs.

Groundwater analytical data collected in 2013 from existing and newly installed groundwater monitoring wells expanded the understanding of the presence and distribution within and outside the containment area of MC, TCE and perchlorate in the Shallow Zone and Wilcox water-bearing zones. The distribution of MC, TCE and perchlorate in the Shallow Zone and Wilcox water-bearing zones are presented in **Figures 1-9 to Figures 1-14** of the main text**.**

2 DESCRIPTION OF NATURAL ATTENUATION

Every natural system has a capacity to attenuate contaminants through a variety of physical, chemical, and biological processes. The effectiveness of the NA process is controlled by the physicochemical characteristics of the contaminants of concern, and the physical, chemical, biological and hydrogeological properties of the media. Consequently, characterization is needed to identify and estimate the contribution of the physical, chemical, and biological processes in the reduction of contaminants in the impacted media and properly evaluate the system's natural capacity to attenuate contaminants.

The NA processes, as recognized in the Office of Solid Waste and Emergency Response (OSWER) Monitored Natural Attenuation (MNA) Directive, are defined in the following quotation [USEPA, 1999]:

"*The "natural attenuation processes" that are at work in such a remediation approach* [MNA] *include a variety of physical, chemical, or biological processes that, under favorable conditions, act without human intervention to reduce the mass, toxicity, mobility, volume, or concentration of contaminants in soil or groundwater. These in-situ processes include biodegradation; dispersion; dilution; sorption; volatilization; radioactive decay; and chemical or biological stabilization, transformation, or destruction of contaminants.*

Monitored natural attenuation is appropriate as a remedial approach only when it can be demonstrated capable of achieving a site's remedial objectives within a time frame that is reasonable compared to that offered by other methods and where it meets the applicable remedy selection program for a particular OSWER program. EPA, therefore, expects that monitored natural attenuation typically will be used in conjunction with active remediation measures (e.g., source control), or as a follow-up to active remediation measures that have already been implemented"

The OSWER MNA Directive outlines a three-tiered approach for the evaluation of MNA as a remedy. This approach includes the use of three lines of evidence:

- Historical groundwater and/or soil chemistry data that demonstrate a clear and meaningful trend of decreasing contaminant mass and/or concentration over time at appropriate monitoring or sampling points that are not solely the result of plume migration.
- Hydrogeologic and geochemical data that can be used to demonstrate indirectly the type(s) of natural attenuation processes active at the site, and the rate at which such processes will reduce contaminant concentrations to required levels (e.g., characterization data may be used to quantify the rates of contaminant sorption, dilution, or volatilization, or to demonstrate and quantify the rates of biological degradation processes occurring at the site.)
- Data from field or laboratory microcosm studies which directly demonstrate the occurrence of a particular natural attenuation process at the site and its ability to degrade the contaminants of concern.

Specific steps for evaluating NA of chlorinated solvents are provided in the USEPA technical protocol, generally referred to as the "EPA MNA Protocol" (USEPA, 1998).

According to the EPA MNA Protocol, NA in ground-water systems results from the integration of several subsurface attenuation mechanisms that are classified as either destructive or

nondestructive. Biodegradation is the most important destructive attenuation mechanism, although abiotic destruction of some compounds does occur. Nondestructive attenuation mechanisms include sorption, dispersion, dilution from recharge, and volatilization (USEPA, 1998).

The OSWER MNA Directive was used as the main guidance during this natural attenuation evaluation.

2.1 Methylene Chloride

MC, also called dichloromethane, is a volatile, colorless liquid with a chloroform-like odor. MC is used in various industrial processes such as: paint stripping, pharmaceutical manufacturing, paint remover manufacturing, metal cleaning and degreasing, adhesives manufacturing and use, polyurethane foam production, film base manufacturing, polycarbonate resin production, and solvent distribution and formulation.

Industrial operations, with the potential to contribute to MC contamination, took place across the site for a number of years. These operations included the washing out of rocket motors to remove materials heavily laden with perchlorate and the storage of substantial volumes of the solvent.

It is assumed MC was likely released as free product and travelled along preferential pathways through the vadose soil until it reached the saturated zone. MC is also a byproduct of carbon tetrachloride and chloroform dechlorination. Chloroform is detected in site groundwater, but at concentrations much smaller and more sporadically than MC concentrations. Therefore, MC presence at the site is not attributed to the degradation of chloroform.

The general breakdown mechanism for MC through the kinetic reactions indicated below (Tanabe, 1961):

MC: $CH_2Cl_2 + 2e^- + H^+ \Longrightarrow CH_3Cl + Cl^-$

Chloromethane: $CH_3Cl + 2e^- + H^+ \Longrightarrow CH_4 + Cl^-$

2.1.1 Sorption, Dispersion, Dilution, and Volatilization of Methylene Chloride

MC is not strongly sorbed to soils or sediments (Dilling et al. 1975). Since MC has a low soil organic carbon partitioning coefficient (K_{oc} = 25), it is very highly mobile in soils (Bahnick and Doucette 1988) and easily leaches from soils into groundwater.

MC dissolves in water slowly. The experimental half-life reported for the hydrolysis reaction, at neutral conditions, is approximately 18 months at 25 °C. However, the rate of reaction varies greatly with changes in temperature and pH. A hydrolytic half-life of 14 days was reported for methylene chloride in acidic solutions at 80–150 °C ((Dilling et al. 1975).

Due to its high vapor pressure, most of the MC released to the environment will partition to the atmosphere, where it degrades by reaction with photochemically produced hydroxyl radicals

with a lifetime of 6 months. Its high Henry's law constant (0.002 atm/m^3/mol) indicates that volatilization from moist soil is also likely.

Under acidic and basic conditions and in the temperature range of 80-150°C, the hydrolysis of MC results in the formation of formaldehyde and HCl (Fells and Moelwyn-Hughes, 1958). Under site conditions, the hydrolysis of MC in the saturated zone is expected to be slow.

2.1.2 Methylene Chloride Biodegradation

Degradation of MC was found to occur in soils with a wide range of concentrations under both aerobic and anaerobic conditions. The rate of biodegradation was found to be dependent on soil type, substrate concentration, and redox state of the soil and appears to be accelerated by the presence of elevated levels of organic carbon.

In groundwater, MC can serve as a growth substrate for an extensive number of aerobic and anaerobic bacteria. In addition, various co-metabolic transformations have been documented under oxic and anoxic conditions (Brunner et al. 1980; Tabak et al.1981).

The *Acinetobacter* sp. has been shown to use oxygen or nitrate ion as the electron acceptor. These bacteria are able to efficiently utilize MC as a carbon and energy source. MC has been observed to undergo degradation at a rapid rate under aerobic conditions. Justicia-Leon, et al. (2012) was able to use a Dehalobacter sp. from river sediment to degrade 20 milligrams per liter (mg/L) of MC in four weeks with MC as the sole substrate. The culture developed after repeated cycles of MC dosing and degradation was able to consume MC at a rate of 4 mg/L/day and tolerated a concentration of at least 200 mg/L without apparent inhibition.

No reductive dehalogenation of MC in water has been observed in the presence of sodium sulfide and haematin, a common ferric iron porphyrin (Klecka & Gonsior, 1984). Also, the biodegradation of MC in contaminated groundwater can be strongly inhibited in the presence of other contaminants such as 1,2-dichloroethane, xylene and ethylbenzene (Scholz-Muramatsu et al., 1988). Therefore, introduction of organic substrate to enhance anaerobic degradation of contaminants could result in reduction in MC degradation rates under anaerobic conditions due to competition associated with introduced organic substrates.

2.2 Trichloroethene

In pure state, TCE is a colorless or blue liquid with a sweet, chloroform-like odor. TCE is used primarily as a solvent to remove grease from metal parts in the metal and automotive industries. It is also an ingredient in adhesives, paint and varnish removers, typewriter correction fluids, rug-cleaning fluids, spot removers, sheet vinyl flooring, and pepper sprays.

Industrial operations, with the potential to contribute to TCE contamination, took place across the site for a number of years. These operations included the degreasing of tank bottoms, cleaning operations, and the storage of substantial volumes of the solvent.

It is assumed TCE was likely released as free product and travelled along preferential pathways through the vadose soils until it reached the saturated zone. TCE is also a byproduct of PCE dechlorination. However, generally, PCE is not present in the site soil and groundwater.

The effective destruction of TCE generally involves the stepwise degradation of compounds through reductive dechlorination. The most robust pathway for treatment of TCE is:

TCE ⟹ DCE ⟹ VC ⟹ ethene

The generalized TCE and daughter products breakdown mechanisms are presented below:

TCE: $C_2HCl_3 + H^+ + 2e^- \Longrightarrow C_2Cl_2H_2 + Cl^-$

DCE: $C_2Cl_2H_2 + H^+ + 2e^- \Longrightarrow C_2ClH_3 + Cl^-$

VC: $C_2ClH_3 + H^+ + 2e^- \Longrightarrow C_2H_4 + Cl^-$

With each sequential stage, the TCE concentration and daughter products in groundwater change. Where destruction of TCE is complete, the results should mimic the theoretical chain, often described as a "cascade", of intermediates progressing from TCE through ethene. If the TCE destruction is incomplete, then one or more of the compounds undergoing treatment would build up. In fact, a crucial step in the above sequence is the reaction that causes transformation of DCE to VC. This step is slow or insignificant conversion occurs and DCE accumulates. This has been referred to as "stalling".

2.2.1 Sorption, Dispersion, Dilution, and Volatilization of TCE

Since TCE is dense and has a moderate solubility, adsorption to soil and dispersion have negligible effect in the overall transport through the unsaturated zone.

TCE is highly volatile, therefore it volatilizes as it moves in the unsaturated zone. Due to its moderate solubility, TCE vapors will not dissolve in the soil moisture but will eventually move upward, out of the soil matrix into the atmosphere.

Since TCE is very dense, a concentrated solution will tend to sink vertically with minimal influence by groundwater movement and little or no dilution. Accordingly, pools of highly concentrated TCE may form on top of confining layers. Significant mass may move into low permeability confining layers by diffusion. TCE pools and mass absorbed by the confining layers may serve as a long-term source from which TCE is released to the groundwater by diffusion.

2.2.2 TCE Abiotic Reduction

Abiotic degradation mechanisms involve chemical reactions to reduce the chlorinated hydrocarbon without biological processes. These mechanisms include hydrolysis, elimination, and abiotic reductive dechlorination.

Hydrolysis is a substitution reaction in which the chlorinated hydrocarbon reacts with water to substitute a chlorine atom with a hydroxyl group, producing organic alcohols, or acids. Elimination reactions involve the removal of a hydrogen and a chlorine atom (sometimes referred to as dehydrohalogenation) from a chlorinated hydrocarbon to form the corresponding daughter product (Vogel and McCarty 1985). Hydrolysis is more effective in less chlorinated

hydrocarbons (DCE and VC) while elimination reactions are more effective in more chlorinated hydrocarbons (PCE and TCE).

Abiotic reductive dechlorination is a process through which chlorinated ethenes such as PCE, TCE, DCE, and VC can break down in contact with some specific minerals. Abiotic reductive dechlorination of TCE can occur in the presence of natural Fe(II)- and S(II)-containing minerals, such as Pyrrhotite (FeS), greigite (Fe_3S_4), pyrite (FeS_2), magnetite (Fe_3O_4), and various green rusts such as Fougèrite $\{[Fe^{2+}{}_4Fe^{3+}{}_2(OH)_{12}][CO_3].3H_2O\}$ (Kriegman-King and Reinhard, 1994; Sivavec et al. 1995, and Sivavec and Horney 1997). In 2002, *cis*-1,2-DCE (*cis-1,2-DCE*) was shown to be abiotically degraded by magnetite at rates comparable to biological processes (Ferrey and Wilson, 2002).

At sites with naturally occurring reduced iron or at sites with iron-rich mineralogy and strong reducing conditions, ferrous iron minerals can degrade TCE without the corresponding production of common biological daughter products such as *cis-1,2-DCE* and VC. Some studies have shown that acetylene is the most common byproduct of abiotic degradation of PCE, TCE and DCE.

2.2.3 TCE Biodegradation

McCarty and Semprini, (1994) studies have revealed that three types of metabolic processes are generally involved in the biological degradation of TCE: 1) reductive dechlorination: an anaerobic process in which chlorinated ethenes are used as electron acceptors; 2) co-metabolism: chlorinated ethenes are anaerobically degraded as a result of biochemical interactions, which yield no benefit to bacteria; and 3) direct oxidation: an aerobic or anaerobic process in which sparsely chlorinated ethenes are used as electron donors.

Reductive Dechlorination

During reductive dechlorination, TCE undergoes complete sequential reductive dechlorination under anaerobic conditions, yielding ethene or ethane as final products (Maymo-Gatell et al., 1999).

The intermediate daughter products of reductive dechlorination are cis-1,2-DCE, *trans*-DCE, 1,1-DCE and VC. According to Bouwer (1994), cis-1,2-DCE is a more prevalent intermediate than *trans*-DCE, and 1,1-DCE is the least prevalent intermediate during reductive dechlorination.

For reductive dechlorination to occur, the presence of sufficient concentrations of electron donors for energy metabolism is necessary. The presence of other electron acceptors such as oxygen, nitrate/insoluble manganese, insoluble ferric iron, sulfate and carbon dioxide, respectively, in the order of bacterial preference, can negatively impact TCE dechlorination (Byl and Williams, 2000).

The microorganisms that participate in TCE reductive dechlorination differ significantly in their ability and potential to dechlorinate TCE. It has been found that not all TCE dechlorinating organisms can degrade TCE completely. *Dehalococcoides ethenogenes* strain 195 (Maymo-Gatell et al., 1997) and *D. ethenogenes* (Hendrickson et al., 2002) were reported to reduce TCE to ethene. However, other bacteria only partially dechlrorinate TCE producing intermediate product, such as cis-1,2-DCE and VC (e.g., *Dehalospirillium multivorans* (Neumann et al.,

1994), *Enterobacter agglomerans* (Sharma and McCarty, 1996) and *Desulfitobacterium* sp. strain PCE1 (Gerritse et al., 1996)).

Co-metabolism

It has been reported the degradation of TCE occurs by aerobic co-metabolism. According to Alvarez-Cohen and McCarty (1991), methane monooxygenase (MMO) produced by methanotrophs bacteria converts TCE into a TCE epoxide, which breaks down into carbon monoxide, formate, glyoxylate, and chlorinated acids in aqueous environment. These compounds are subsequently metabolized by methanotrophs and heterotrophs either collectively or individually, forming the final products (i.e., carbon dioxide and cell mass). Besides methane-oxidizing bacteria, other bacteria, such as toluene oxidizers and phenol oxidizers, can also produce oxygenases in response to phenol or toluene, which initiate the oxidative degradation and mineralization of TCE (Fan and Scow, 1993).

Not only TCE, but also its intermediates (DCE and VC) produced from reductive dechlorination can be co-metabolized.

Competition for the oxygenases among natural substrates (for example, CH_4, NH_3 or toluene) and chlorinated solvents has been documented by Semprini et al. (1991). Other environmental factors, such as temperature and soil moisture, also influence the co-metabolism activities.

Toluene-oxidizing bacteria (e.g., *Pseudomonas putida* F1) can produce a dioxygenase during toluene oxidation that co-metabolizes TCE (Wackett and Gibson, 1988). Winter et al. (1989) reported the complete TCE degradation by a toluene para-monooxygenase produced by *Pseudomonas mendocina* KR1 when vapor-phase toluene was supplied as a sole carbon source. *Pseudomonas cepacia* G4, *Pseudomonas cepacia* G4PR1, *Pseudmonas mendocina* KR1, *Pseudomonas putida* F1, and *Methylosinus trichosporium* OB3b have been proven to degrade TCE by co-metabolic processes (Sun and Wood, 1996).

Direct Oxidation

During the direct oxidation process, microorganisms obtain energy and organic carbon from the chlorinated ethenes that undergo oxidative biodegradation (i.e., DCE and VC). In a study with VC conducted in iron-reducing aquifer sediments, Bradley and Chapelle (1996) noted a complete mineralization of VC in the presence of Fe(III), which was attributed to the direct oxidation of chlorinated ethenes.

Closely related strains of Acinetobacter species, of Bacillus species (mainly Bacillus subtilis and Bacillus cereus), and strains of Achromobacter xylosoxidans, Klebsiella and Pseudomonas aeruginosa, have been reported to be able to degrade cis- and trans-DCE directly by using them as their energy source (Olaniran et al., 2008).

2.3 Perchlorate

Perchlorate (ClO_4^-) is a soluble anion typically found in the form of perchlorate acid and salts such as ammonium perchlorate, sodium perchlorate and potassium perchlorate. Among these chemicals, ammonium perchlorate (NH_4ClO_4) is the most prevalent form of this compound. Ammonium perchlorate is used as an energetic booster or oxidant in solid propellant for rockets and missiles, and was likely leached into site groundwater via leaks and spills during rocket motor washout activities at LHAAP-18/24.

Ammonium perchlorate is extremely soluble (200 g/L at 25°C) and very mobile in aqueous systems, and can persist in the environment for many decades under aerobic conditions because of its resistance to reaction with other available constituents.

However, perchlorate can be reduced to chlorate (ClO_3^-), which can be further reduced to chlorite (ClO_2^-), then to the innocuous final product as chloride (Cl^-) and oxygen (Rikken et al., 1996), as indicated in the following pathway:

$$ClO_4^- \Longrightarrow ClO_3^- \Longrightarrow ClO_2^- \Longrightarrow Cl^- + O_2$$

Perchlorate reduction occurs depending on the reductant through the kinetic reactions indicated below (Urbansky, 1998):

$$ClO_4^- + 8H^+ + 8e^- \Longleftrightarrow Cl^- + 4H_2O \qquad E^0 = 1.287V$$

$$ClO_4^- + 2H^+ + 2e^- \Longleftrightarrow ClO_3^- + H_2O \qquad E^0 = 1.201V$$

$$2H_2O \Longleftrightarrow 4H^+ + 2O^{-2} \qquad E^0 = -1.229V$$

2.3.1 Sorption, Dispersion, Dilution, and Volatilization of Perchlorate

Sorption into soils is not expected to attenuate perchlorate concentrations because it absorbs weakly to most soil minerals. Both, clay particles in the soil and perchlorate, are negatively charged and consequently they do not bond. However, sorption of perchlorate appears to occur in soils with appreciable anion-exchange capacities (AEC) (acidic soils). These soils act like anion exchangers, and perchlorate is sorbed by the replacement of other anions such as chloride, sulfate and nitrate.

Natural chemical reduction in soil is also not expected to be significant. Perchlorate is highly soluble; therefore, the movement of perchlorate in soil is largely a function of the amount of water present. If sufficient infiltration occurs, perchlorate will completely leach from the unsaturated zone and reach groundwater. No partitioning coefficients or degradation rates in the environment are reported in the literature for perchlorate.

Dilution and dispersion are considered to be the most important processes influencing the fate and transport of perchlorate once it reaches groundwater. In dilute concentrations, perchlorate behaves conservatively, with the center of mass of the plume moving at the same average velocity as the water. Dispersion will result in the contaminant front actually moving faster than the average groundwater velocity.

Since perchlorate ions are very dense, a concentrated solution will tend to sink vertically with minimal influence by groundwater movement and little or no dilution. Accordingly, brine pools may form on top of confining layers and significant perchlorate mass may move into low permeability confining layers by diffusion. The brine pools and perchlorate mass absorbed by the confining layers may serve as a long-term source of dissolved contaminant as perchlorate is

released to the groundwater by diffusion. Data from Post-Screening Investigation (PSI) and PSI Addendum conducted in 2013 and 2014 confirm this observation.

2.3.2 Percolate Reduction by Metal Cation

As referenced by Urbansky, 1998, titanium(III), vanadium(II), and chromium(II) have been shown to reduce perchlorate to chloride in acidic aqueous solution at ambient temperature. King and Garner (King and Garner, 1954) published the results of the first kinetic investigation of the reaction of vanadium(II) and vanadium(III) with perchlorate, as shown in the following reactions:

$$8V^{2+} + ClO_4^- + 8H^+ \Longrightarrow 8V^{3+} + Cl^- + 4H_2O$$

$$8V^{3+} + ClO_4^- + 4H_2O \Longrightarrow 8VO^{2+} + Cl^- + 8H^+$$

Of the tested percolate reducing metal cations, chromium is a recognized pollutant; consequently its use as percolate reducing agent is precluded.

2.3.3 Perchlorate Biodegradation

Perchlorate can be reduced to chlorite in the presence of indigenous perchlorate-reducing microbes under anaerobic conditions (Ground-Water Remediation Technologies Analysis Center [GWRTAC], 2001).

Perchlorate-degrading microorganisms have been found to be widespread in the subsurface environment at concentrations ranging from one to thousands of bacteria per gram of water, wastewater, sediment, and soil (Logan et al., 2001; Coates et al., 1999; and O'Connor et al., 2002). Approximately 70 percolate reducing bacteria have been tested in both pure and mixed cultures (Bruce et al., 1999; Coates et al., 1999; Wolterink et al., 2003). Logan (2001) tested seven bioreactor systems with different microorganism cultures and substrates. Logan concluded that a Wollinella succinogenes HAP-1 mixed culture in a protein substrate (aged brewer's yeast, cottonseed protein, or whey powder) effectively reduced a solution containing 7,750 ppm of perchlorate.

Effect of nitrate on perchlorate biodegradation

Previous research demonstrated that most perchlorate respiring bacteria such as *D. suillum* can utilize nitrate as a suitable electron acceptor. According to the observation of Chaudhuri, 2002 and Tipton, 2003, when a culture of *D. suillum* is inoculated into fresh medium containing equimolar amounts of both nitrate and perchlorate, no perchlorate reduction was observed until nitrate was completely consumed. These investigations concluded that nitrate is a competing ion in perchlorate reduction but co-reduction of both perchlorate and nitrate is possible.

Effect of oxygen on perchlorate biodegradation

According to the observation of Chaudhuri, 2002, when *D. suillum* was grown anaerobically with perchlorate as the only electron acceptor, perchlorate removal was rapid. However, if air was introduced, perchlorate reduction was immediately inhibited. This finding agreed with previous studies (Coates et al., 1999) that concluded perchlorate reduction is inhibited in aerobic conditions, even at low dissolved oxygen (DO) levels.

Effect of other electron donors on perchlorate biodegradation

Sulfur and Thiosulfate:

Bardiya and Bae, 2005, tested for perchlorate reduction with thiosulfate as an e- donor. Bardiya and Bae, 2005 assumed that since sulfur utilizing bacteria are capable of denitrification, and many perchlorate reducers are denitrifiers, then sulfur reducing bacteria may be capable of reducing perchlorate. In the Bardiya and Bae, 2005 experiment, the bacteria failed to grow and reduce perchlorate with thiosulfate as an e-donor, thus concluding that reduced sulfur compounds such as sulfur and thiosulfate could not serve as e- donors for perchlorate reduction.

Acetate:

Bardiya and Bae, 2005, also observed during the experimentation that in the presence of acetate, the reduction of perchlorate was stimulated. Also, the reduction of both perchlorate and nitrate was observed.

3 ATTENUATION EVALUATION RESULTS

This section presents the results of the attenuation evaluation performed at wells MW-1, MW-2, MW-4, MW-5, MW-7, MW-8, MW-14, MW-21, MW-23, AWD-1, 109, 120, and 18WW08. These wells represent the area inside the containment where influence of groundwater extraction is prominent and areas outside the containment where groundwater extraction influence is absent (MW-8 and 18WW08). The historical groundwater concentration data collected for these wells were examined for evidence of attenuation (for wells inside the containment) and NA (for wells outside the containment) such as declining contaminant concentrations and/or the presence of degradation products. For the purposes of this evaluation, only concentrations detected above the laboratory Sample Quantification Limit (SQL) are plotted in the graphs. Concentrations below the SQL are represented as gaps in the graphs and were not used in the estimation of the attenuation rates.

3.1 Limited Natural Attenuation Evaluation

In May 2013, AECOM collected NA data from three perimeter wells (MW8 in the southwest, 18WW08 in the northwest, and 18CPTMW18 in the northeast) to evaluate the site potential for NA. The collected NA data included dehalococcoides count, TCE and VC degradation genes, compound-specific isotope analysis (CSIA) for TCE and cis-DCE, degradation gases (ethane, ethene, and methane), ferrous iron, alkalinity, chloride, and sulfate. The results of the NA sampling are summarized in **Table A-1**.

The results of the 2013 sampling showed no microbial population or expressive genes were present in the collected samples. CSIA results for TCE did not show enrichment that would be associated with biodegradation, degradation gases were not present, and ferrous concentrations also indicate little reduction is occurring. Monitoring well 18CPTMW18 had positive oxidation reduction potential (ORP) (157 millivolt - mV) and no reduction in alkalinity, indicating absence of anaerobic biodegradation. 18WW08 had a positive ORP (164 mV) but reduced alkalinity with little concentration of ferrous iron, indicating slight anaerobic activity is occurring. Similarly, MW8 had a positive ORP at 298 mV and no discernible bioactivity, although alkalinity in the well appears to have been consumed along with sulfate which is present at much reduced levels compared to the other wells. MW8 had the highest contaminant concentration among the three wells. However, the pH in this well is 5.04 standard units, which makes conditions difficult for biological activity. Based on the obtained results, AECOM concludes that biodegradation was not occurring at any appreciable level in these selected wells.

Nevertheless, a preliminary review of the historical data showed clear indications of NA occurring throughout the MC, TCE, and perchlorate groundwater plumes. An evaluation of the NA evidence is presented below.

Table A-1: Monitored Natural Attenuation Parameters - LHAAP-18/24

Sample ID: Sample Date:	Units	18CPTMW18-051513 5/15/2013	18WW08-051513 5/15/2013	MW8-043013-FD 4/30/2013	MW8-051613 5/16/2013
Dechlorinating Bacteria					
Dehalococcoides	cells/mL	<5.00	<5.00	<5.00	NA
tceA Reductase	cells/mL	<5.00	<5.00	<5.00	NA
BAV1 Vinyl Chloride Reductase	cells/mL	<5.00	<5.00	<5.00	NA
Vinyl Chloride Reductase	cells/mL	<5.00	<5.00	<5.00	NA
Chlorinated Volatile Organic Compounds					
del ^{13C} cis-1,2-dichloroethene	‰	ND	ND	ND	NA
del ^{13C} trichloroethene	‰	-30.8	-30.4	-31	NA
Anions (9056)					
CHLORIDE	mg/L	3190	506	NA	525
SULFATE	mg/L	61.9	222	NA	15.6
Dissolved Gases (RSK-175)					
ETHANE	ug/L	<2 U	<2 U	NA	<2 U
ETHENE	ug/L	<2 U	<2 U	NA	<2 U
METHANE	ug/L	<2 U	<2 U	NA	<2 U
Alkalinity (RSK-176)					
ALKALINITY, TOTAL	mg/L	363	37.3	NA	<20 U
Ferrous Iron (RSK-178)					
FERROUS IRON	mg/L	<0.04 U	0.266	NA	<0.04 U

‰ - per thousand

cells/mL - cells per milliliter

mg/L - milligram per liter

NA - not available

ND - non detect

U - below detection limit

ug/L - microgram per liter

3.2 Attenuation Evaluation Process

The first-order decay rates of contaminants and the time it takes to achieve contaminant cleanup levels for selected wells were estimated using an Excel® based calculator developed by the Utah Leaking Underground Storage Tank program. The calculator is based on EPA's Ground Water Issue paper EPA/540/S-02/500, "Calculation and Use of First-Order Rate Constants for Monitored Natural Attenuation Studies," by Newell, Rifai, Wilson, Connor, Aziz and Suarez, November 2002.

The formula for calculating a first-order decay rate is:

$$\mathbf{t = - [\ln(CCL/Co)] / k_{point}}$$

t = time to achieve cleanup level, years

CCL = Cleanup level for contaminant of concern, mg/L

Co = Initial concentration of contaminant of concern, mg/L

k_{point} = First-order decay rate of contaminant of concern, $year^{-1}$

Values reported below the SQL were not used in the calculations. The historical concentrations of key wells inside and outside the containment were used in the construction of concentration trend graphs to assist in the interpretation of the data. The following presents the trend analysis for TCE, MC, and perchlorate for wells located inside (influenced directly by groundwater extraction) and outside (not influenced directly by groundwater extraction) the containment area.

The trend analysis for wells highly influenced by groundwater extraction provides information associated with contaminant removal rate associated with the extraction system and NA. However, it is believed that the dominant influence of concentration decrease, where it is observed, is associated with groundwater extraction. The rate of NA is likely orders of magnitude smaller than rate of mass extraction via the groundwater extraction system. For these wells, NA effects cannot be isolated from groundwater extraction influence. Changes in concentrations for wells outside the influence of groundwater extraction are associated with NA only. Similarly, former injections in ICT6 and ICT9 that had caused dilution of contaminant concentrations or that had pushed contaminants away from the injection zone influence NA calculations. In these locations under the influence of injection water, the majority of observed concentration changes is likely caused by injection rather than NA conditions. Generally, the influence of injection in ICT9 is observed in MW-22 and the influence of injection in ICT6 might have influenced concentrations in MW-1.

3.2.1 Perchlorate

The highest concentration of perchlorate was identified in June 2014 in plugged well outside the containment (18CPTMW22) at a concentration of 106,000 μg/L. In June 2016, the highest perchlorate concentrations in the Shallow Zone occur in monitoring wells 120 (32,700 ug/L), MW-23 (65,200 ug/L), MW-5 (31,300 μg/L), 18WW17 (82,900 μg/L), and MW-21 (26,100 ug/L). Concentrations decrease away from these locations (**Figure 1-9, main text)**. The following presents the trend analysis for perchlorate in wells inside and outside the containment area.

The evaluation of perchlorate degradation evidence via analysis of daughter products is complicated by the fact that the daughter products of perchlorate degradation are degraded faster than perchlorate and do not accumulate in groundwater.

3.2.1.1 MW-2 (Influenced by Groundwater Extraction)

Results from October 2000 to June 2016 show a decreasing trend in perchlorate concentrations in well MW-2 (see **Figure A-1**). Analysis of the concentration data from October 2000 to June 2016 shows an attenuation rate of 0.3312 per year (k_{point}) with a correlation coefficient (R^2) of 43%. At the most recently detected concentration (June 2016) of 33.3 μg/L and current degradation rate, the time to achieve the cleanup level for perchlorate of 17 μg/L (the Texas Risk Reduction Program [TRRP] Tier 1 Groundwater Residential Protective Concentration Level [PCL] hereafter referred to as the PCL) in well MW-2 is estimated to be approximately 2.1 years.

3.2.1.2 MW-1 (Influenced by Groundwater Extraction)

Results from October 2000 to June 2016 show a decreasing trend in perchlorate concentrations (**Figure A-2**). Analysis of the concentration data from October 2000 to June 2016 shows an attenuation rate of 0.0775 per year. At the most recent concentration in June 2016 of 14,800 μg/L and this degradation rate, the time to achieve the PCL in well MW-1 is estimated to be approximately 87 years.

3.2.1.3 MW-4 (Influenced by Groundwater Extraction)

Results from October 2000 to September 2012 show a slow decreasing trend in perchlorate concentrations (**Figure A-3**). Well MW-4 is located north of well MW-2 and south of ICT-14A. Analysis of the concentration data from October 2000 to September 2012 shows an attenuation rate of 0.0701 per year with a correlation coefficient of 20%. At the September 2012 concentration of 12,000 μg/L and this degradation rate, the time to achieve the PCL in well MW-4 is estimated to be approximately 94 years.

3.2.1.4 MW-5 (Influenced by Groundwater Extraction)

Results from October 2000 to June 2016 show an increasing trend in perchlorate concentrations (**Figure A-4**). Migration of perchlorate to MW-5 continues to occur. MW-5 is closest to ICT-7 and ICT-13F. **Table 2-12** of the main report indicates during the 1st quarter 2016 the removal rate of perchlorate from ICT-7 is 557 mg/day or 0.448 lbs per year and from ICT-13F, the perchlorate removal rate is 1.09 mg/day or 8.8 E-04 lbs per year. It appears that ICT-7 and ICT-13F are not extracting high groundwater perchlorate concentrations near MW-5. The perchlorate concentration in ICT-7 is 339 ug/L in February 2016 and the concentration in ICT-13F is 1.14 ug/L in February 2016. These are small concentrations, indicating that neither ICT is pulling groundwater from the vicinity of MW-5 or the majority of the groundwater is being extracted from low concentration areas.

3.2.1.5 MW-21 (Influenced by Groundwater Extraction)

Results from October 2000 to June 2016 show an increasing trend in perchlorate concentrations in well MW-21 (**Figure A-5)**. Migration of perchlorate to MW-21 continues to occur. MW-21 is closest to ICT-14D. **Table 2-12** of the main report indicates the perchlorate removal rate during

the 1st quarter 2016 from ICT-14D is 17.1 lbs per year. Although ICT-14D is extracting significant amounts of perchlorate per year, the mass of perchlorate in this area is high enough such that the influence of this extraction rate is not immediately pronounced.

3.2.1.6 109 (Influenced by Groundwater Extraction)

Results from October 2000 to June 2016 show an overall decreasing trend in perchlorate concentrations (**Figure A-6**). Analysis of the concentration data from October 2000 to June 2016 shows an attenuation rate of 0.0817 per year with a correlation coefficient of 20%. At the June 2016 concentration of 1,820 μg/L and this degradation rate, the time to achieve the PCL in well 109 is estimated to be approximately 57 years. This is a long time for this location considering that this well is located adjacent to ICT-14B and ICT-14C with perchlorate removal rates as determined during the 1st quarter 2016 of 4.4 and 56 lbs per year, respectively. These data imply that there is a very high mass of perchlorate in this area that is likely present in fine-grained soils at very high concentrations (concentrations measured in ICT-14B and ICT-14C were 5,800 ug/L and 9,850 ug/L, respectively in February 2016), with release occurring over time.

3.2.1.7 AWD-1 (Influenced by Groundwater Extraction)

Results from October 2000 to June 2016 show a decreasing trend in perchlorate concentrations (**Figure A-7**). Analysis of the concentration data from October 2000 to June 2016 shows an attenuation rate of 0.5169 per year with a correlation coefficient of 66%. The most recent concentration in this well is below the PCL. This well is located adjacent to ICT-12E with a 1st quarter 2016 perchlorate removal rate of 140 lbs per year. These data indicate that there is a very high rate of mass removal of perchlorate from ICT-12E and the reduction in perchlorate is reflected in AWD-1 concentration.

3.2.1.8 MW-7 (Influenced by Groundwater Extraction)

Results from October 2000 to June 2016 show a slow decreasing trend in perchlorate concentrations (**Figure A-8**). Analysis of the concentration data from October 2000 to June 2016 shows an attenuation rate of 0.0958 per year with a correlation coefficient of 65%. At this degradation rate and a June 2016 concentration of 22,200 ug/L, the time to achieve the PCL level in well MW-7 is estimated to be approximately 75 years. This well is located adjacent to ICT-12A and ICT-12B with perchlorate removal rates of 4.8 and 142 lbs per year, respectively. These data indicate that there is a very high rate of mass removal of perchlorate from ICT-12B and the reduction in perchlorate concentration in groundwater is reflected in MW-7 concentration.

3.2.1.9 MW-14 (Influenced by Groundwater Extraction)

Results from October 2000 to June 2016 show a decreasing trend in perchlorate concentration until year 6 but an increase is observed in the past 4 years with no data available between years 6 and 12 (**Figure A-9**). Because the overall trend is increasing, a half-life or attenuation rate constant could not be determined. MW-14 is in the Wilcox Formation with an absence of a fine-grained layer separating the Wilcox Formation from the Shallow Zone. The increase in perchlorate concentration was measured in September 2012 while the GWTP was not operating since May 2012. The GWTP was also not operating during the summer of 2009. These two

episodes likely caused the vertical gradient to be downward with ensuing migration of CoCs from the shallow zone to the Wilcox Formation.

3.2.1.10 120 (Influenced by Groundwater Extraction)

Results from October 2000 to June 2016 show a slight decreasing trend in perchlorate concentration until year 6, followed by a slight decrease in the past 3 years with no data between years 6 and 12 (**Figure A-10**). The overall trend is decreasing with an attenuation rate constant of 0.0421 per year with a correlation coefficient of 13%. At this degradation rate and a June 2016 concentration of 32,700 ug/L, the time to achieve the PCL in well 120 is estimated to be approximately 180 years. This well is located adjacent to ICT-12E and ICT-13A with 1st quarter 2016 perchlorate removal rates of 141 and 104 lbs per year, respectively. These data indicate that there is a very high rate of mass removal of perchlorate from these ICTs and the reduction in perchlorate concentration in groundwater is reflected in concentration in monitoring well 120. Monitoring well 120 is co-located with Wilcox well MW-14 and the high concentration exhibited in 120 is reflected in MW-14 in the absence of a clay layer.

3.2.1.11 MW-23 (Influenced by Groundwater Extraction)

Results from November 2001 to June 2016 show a steady increasing trend in perchlorate concentration (**Figure A-11**). Because the trend is increasing, a half-life or attenuation rate constant could not be determined. This well is located adjacent to ICT-10 which has not been operational since September 2007. Because no extraction occurred for the past 6 years adjacent to this well, the increasing trend implies that perchlorate is mobile or is leaching from fine-grained soils, and natural attenuation mechanisms, if occurring, are insignificant.

3.2.1.12 18WW08 (Not Influenced by Groundwater Extraction)

Results from May 2002 to June 2016 show a decreasing trend in perchlorate concentration (**Figure A-12**). Analysis of the concentration data shows an attenuation rate of 0.6239 per year with a correlation coefficient of 60%. The most recent concentration of perchlorate in this well was reported below detection (0.2 μg/L used in **Figure A-12**), which is below the PCL of 17 ug/L. This well is located in the northwest outside the direct influence of groundwater extraction but under the influence of Harrison Bayou. The decrease in perchlorate concentration in this well is certainly due to natural attenuation mechanisms of which dilution and biodegradation are the main mechanisms because perchlorate has high solubility and is not retarded by soil and it does not volatile. Therefore natural attenuation in the northeast of the site appears to be occurring.

3.2.1.13 MW-8 (Not Influenced by Groundwater Extraction)

Results from October 2000 to June 2016 showed an increasing trend in perchlorate concentration until May 2013, but was ensued with a decreasing concentration (**Figure A-13**) with an overall upward trend. A half-life or attenuation rate constant could not be determined for this well. This well is located in the southwest outside the direct influence of groundwater extraction. The increase in perchlorate concentration in this well is certainly due to perchlorate migration to the well and clearly indicates that natural attenuation mechanisms, even if occurring, are not important in this area of the site.

3.2.1.14 Summary of Perchlorate Concentration vs. Time Analysis

The evaluation of changes in perchlorate concentrations with time has shown slight evidence of the occurrence of attenuation. Of the analyzed wells, MW-1, MW-2, MW-4, MW-7, 109, AWD-1, 120, and 18WW08 show a decreasing trend in perchlorate concentration. Wells MW-5, MW-21, MW-14, MW-23, and MW-8 show increasing perchlorate concentrations.

The influence of the extraction of groundwater is pronounced in some areas such as in 109, AWD-1, and MW-2 and recently on 120. However, the influence of extraction is not observed in other areas such as MW-5 and MW-21. NA appears to be occurring to the northwest toward Harrison Bayou, but not in the southwest where high concentrations of perchlorate exist.

3.2.2 Trichloroethene

The distribution of TCE in the Shallow Zone is well defined in all directions with the highest concentrations identified in June 2016 in an approximately east-west axis between wells MW-2 (15,500 ug/L) and MW-21 (6,080 ug/L). High TCE concentrations were detected also in well 120 and AWD-1 (17,100 μg/L and 7,120 μg/L, respectively) in the western part of the site. Concentrations decrease away from these locations almost radially following groundwater flow directions (**Figure 1-11, main text)**. Well MW-2 is located near extraction well EW-1 and ICT-8 in the middle of LHAAP-18/24, well MW-21 is located near ICT-14D along the eastern edge of the site, and wells 120/AWD-1 are located near ICT-12E along the western edge of LHAAP-18/24. The following presents the trend analysis for TCE in wells inside and outside the containment area.

3.2.2.1 MW-2 (Influenced by Groundwater Extraction)

Results from May 2003 to June 2016 show a decreasing trend in TCE concentrations in well MW-2 (see **Figure A-14**). Analysis of the concentration data from May 2003 to June 2016 shows a decreasing trend with an attenuation rate of 0.1532 per year with a correlation coefficient of only 42%. At the most recent concentration of 15,500 μg/L in June 2016 and current degradation rate, the time to achieve the cleanup level (Maximum Contaminant Level [MCL] of 5 μg/L) in well MW-2 is estimated to be approximately 53 years.

Although MW-2 is located in close proximity to extraction well EW-1 (approximately 60 ft away) which may influence the TCE concentration trend, the concentration data of daughter products present a strong evidence of TCE degradation. As concentrations of TCE decrease in well MW-2, concentrations of cis-1,2-DCE, a byproduct of TCE degradation, have been increasing. **Figure A-15** indicates that cis-1,2-DCE has been observed with an increasing trend since 2007.

VC, a byproduct of cis-1,2-DCE degradation, has been detected above the SQL in MW-2 but in small concentrations. The low concentrations of VC in MW-2 (barely observed on **Figure A-15**) may be interpreted as the result of oxidizing conditions (high ORP and high DO) that support the degradation of VC and partial accumulation of cis-1,2-DCE, a term meaning cis-1,2-DCE stall (i.e., dechlorination stops at cis-1,2-DCE due to lack of appropriate bacteria in the formation). The low concentration of VC could also be associated with extremely high laboratory SQLs that make difficult the detection of VC at low concentrations.

3.2.2.2 MW-1 (Influenced by Groundwater Extraction)

Well MW-1 is located in the center of the site, between ICT-6 and ICT-8. Results from December 1996 to June 2016 show a decreasing trend in TCE concentrations (see **Figure A-16**). The analysis of the concentration data from December 1996 to June 2016 shows an attenuation rate of 0.1204 per year with a correlation coefficient of 60%. At the June 2016 concentration of 3,620 μg/L and the estimated degradation rate, the time to achieve the MCL in well MW-1 is estimated to be approximately 55 years. This is lower than the predicted duration for perchlorate at 87 year in MW-1.

As TCE concentrations decrease in well MW-1, the detection of cis-1,2-DCE and VC has been observed as far back as 1998 (**Figure A-17**). Low ORP and DO values have been measured in the field during several sampling events in well MW-1, indicating reducing conditions that are supportive of TCE and cis-1,2-DCE reductive dechlorination. These conditions may account for the decreasing trend in TCE concentrations and the appearance of cis-1,2-DCE and VC.

3.2.2.3 MW-4 (Influenced by Groundwater Extraction)

Similar to MW-1, well MW-4 shows evidence of TCE attenuation. Well MW-4 is located north of well MW-2 and south of ICT-14A in the peripheral of the TCE plume. Results from December 1996 to September 2012 show an increasing trend in TCE concentrations up to April 2000 and a decreasing trend since then (**Figure A-18**). The analysis of the concentration data from December 1996 to September 2012 shows an overall decreasing trend with an attenuation rate of 0.124 with a correlation coefficient of 45%. At the current degradation rate and concentration in September 2012 of 173 μg/L, the time to achieve the MCL in well MW-4 is estimated to be approximately 29 years.

As TCE concentrations decrease in well MW-4, the detection of cis-1,2-DCE has been sporadic while VC has been detected above the SQL more consistently (**Figure A-19**). The cis-1,2-DCE and VC concentrations seem to mimic the changes in TCE concentrations since 2009. The behavior of cis-1,2-DCE and VC does not follow the typical pattern for biotic degradation of TCE (i.e., decrease in TCE is accompanied by an increase in cis-1,2-DCE initially with subsequent decline as VC is formed) but it is more consistent with mass influxes of CoCs going through the well area under the influence of ICT-14A.

3.2.2.4 MW-5 (Influenced by Groundwater Extraction)

Results from January 1999 to June 2016 show a decreasing trend in TCE concentration (**Figure A-20**). MW-5 is closest to ICT-7 and ICT-13F. The analysis of the concentration data from January 1999 to June 2016 shows a decreasing trend with an attenuation rate of 0.0105 per year with a correlation coefficient of only 1.4%. At the current degradation rate and June 2016 concentration of 54 μg/L, the time to achieve the MCL in well MW-4 is estimated to be approximately 227 years.

As TCE concentrations decrease in well MW-5, the detection of cis-1,2-DCE and VC has been observed (**Figure A-21**) since 2007 at a concentration of greater than 10% of TCE concentration.

3.2.2.5 MW-21 (Influenced by Groundwater Extraction)

Results from September 1999 to June 2016 show a slow decreasing trend in TCE concentrations through September 2008 and a strong increasing trend from September 2008 to June 2016 in well MW-21 (**Figure A-22)**. The overall trend appears upward. It is possible that this trend is linked to the injection practice which occurred in September 2007 in ICT-9, which could have pushed CoCs outwardly towards MW-21 among other areas.

The presence of TCE degradation byproducts, namely cis-1,2-DCE and VC, is a clear indication that TCE degradation is occurring in the vicinity of well MW-21 (**Figure A-23**) or it is a result of withdrawing the TCE degradation products towards this area of the site due to the presence of ICT-14D. Nevertheless, the observed concentration trend does not follow a typical TCE reductive dechlorination pattern in which TCE is degraded and the daughter products are accumulated. The increasing trend in TCE and daughter products in well-21 is more likely to be attributable to the influence of groundwater extraction in ICT-14D than to NA. Under this scenario, mass influxes of TCE and daughter products are drawn toward MW-21 from surrounding vicinity by the groundwater extraction system.

3.2.2.6 109 (Influenced by Groundwater Extraction)

Results from January 1999 to June 2016 show an overall increasing trend in TCE concentrations (**Figure A-24**). This trend is the opposite of that observed for perchlorate, although the perchlorate concentrations are at least two orders of magnitude higher than TCE concentrations. This well is located adjacent to ICT-14B and ICT-14C with 1st quarter 2016 TCE removal rates of 0.14 and 63 lbs per year, respectively. These data imply that there is a very high mass of TCE migrating towards ICT-14C (concentration measured in ICT-14C was 11,100 ug/L in February 2016). The presence of cis-1,2-DCE indicates the occurrence of biodegradation (**Figure A-25)**, albeit, the source of cis-1,2-DCE may not be local to 109 due to effect of groundwater extraction adjacent to this well.

3.2.2.7 AWD-1 (Influenced by Groundwater Extraction)

AWD-1 is located near ICT-12E in the western boundary of LHAAP-18/24. Results from November 1994 to June 2016 show a decreasing trend in the TCE concentrations in this well (**Figure A-26)**. The analysis of the concentration data from November 1994 shows an attenuation rate of 0.0984 per year with a correlation coefficient of only 80%. At this degradation rate and a June 2016 concentration of 7,120 ug/L, the time to achieve the MCL in well AWD-1 is estimated to be approximately 4 years.

As TCE concentrations decrease in well AWD-1, cis-1,2-DCE and VC are observed in this well (**Figure A-27**). Substantial concentrations of cis-1,2-DCE seems to be accumulating since 2009 (as high as 90,000 ug/L). The concentrations of VC have been increasing since November 2001 and peaked at a concentration of 6,950 ug/L in September 2011. The decreasing trend in TCE concentration and the increase of cis-1,2-DCE and VC concentrations are clear indications that TCE degradation is occurring in the vicinity of well AWD-1.

3.2.2.8 MW-7 (Influenced by Groundwater Extraction)

Well MW-7 is located near ICT-12A along the western edge of LHAAP-18/24, outside of the containment area. Results from January 1999 to June 2016 show an overall decreasing trend in TCE concentrations (**Figure A-28**). The analysis of the concentration data from January 1999 shows an attenuation rate of 0.134 per year with a correlation coefficient of 71%. At this degradation rate and a June 2016 concentration of 1,740 μg/L, the time to achieve the MCL in well MW-7 is estimated to be approximately 44 years.

As TCE concentrations decrease in well MW-7, the detection of cis-1,2-DCE has been observed with one VC detection above the SQL in June 2015 at 0.322 μg/L (**Figure A29**). Cis-1,2-DCE began to appear consistently in this well since September 2001. The accumulation of cis-1,2-DCE and the absence of VC is consistent with cis-1,2-DCE stall.

3.2.2.9 MW-14 (Influenced by Groundwater Extraction)

Results from December 1996 to June 2016 show a slow decreasing trend in TCE concentration until year 9.5 (May 2006) but an increase is observed in year 13 and ensuing years (**Figure A-30**). The overall trend appears upward and the recent increase in concentration indicates that migration of CoCs from the shallow zone (vicinity of 120) to the upper Wilcox is occurring. The recent measurements indicating an increase in TCE concentration in this well were both collected after the GWTP system was down (i.e., summer of 2009 and summer of 2012).

Cis-1,2-DCE was detected as far back as 1998 and was reported in the eight most recent groundwater sampling results at 12 to 36% of the concentration of TCE (**Figure A-31**). VC was observed above the SQL in the four sampling events but at < 0.1% of TCE concentration. The appearance of cis-DCE indicates biodegradation is occurring. However, the concentration of cis-1,2-DCE in MW-14 is in line with cis-1,2-DCE concentration in 120 within the Shallow Zone which could also imply that cis-1,2-DCE in MW-14 may be sourced from the Shallow Zone. Further inspection of VC concentration in 120 indicated the presence of VC in 120 at much higher concentrations than in MW-14. Therefore, it is more plausible that cis-1,2-DCE is a result of biodegradation occurring in MW-14 (Wilcox Formation).

3.2.2.10 Monitoring Well 120 (Influenced by Groundwater Extraction)

Results from March 1998 to June 2016 show an overall slow decreasing trend in TCE concentrations (**Figure A-32**). The analysis of the concentration data from March 1998 to June 2016 shows a small attenuation rate 0.0107 per year with a correlation coefficient of 4%. The low correlation is observed because the concentration in this well fluctuates significantly. At this degradation rate and a June 2016 concentration of 17,100 μg/L, the time to achieve the MCL in well 120 is estimated to be more than 760 years. Although an attenuation rate was calculated, the severe fluctuation in concentration of TCE in this well precludes any reasonable conclusion to be drawn about concentration trends.

Cis-1,2-DCE was observed in this well since September 2008 at concentrations exceeding 2,000 μg/L (**Figure A-33**). VC was observed as back as May 2002 but only since May 2006 that VC concentration began to accumulate and reached a high of 336 ug/L in December 2013. Even though well 120 is located approximately 80 ft from ICT-12E, well 120 concentration data do

not show evidence of the potential influence of groundwater extraction as the TCE concentration is nearly unattenuated.

3.2.2.11 MW-23 (Influenced by Groundwater Extraction)

Results from January 1999 to June 2016 show an overall decreasing trend in TCE concentration (**Figure A-34**). Analysis of the concentration data shows an attenuation rate of 0.0185 per year with a correlation coefficient of 6.9%. At this degradation rate and a TCE concentration in June 2016 of 1,170 μg/L, the time to achieve the MCL in well MW-23 is estimated to be 295 years. Because no extraction occurred for the past 8 years adjacent to this well, the decreasing trend implies that TCE is naturally attenuating, although large swings in TCE concentrations is observed.

Cis-1,2-DCE was observed in this well since September 2008 at concentrations near 5 μg/L with very slight increase over time. VC was observed in May 2006, November 2009, December 2013, December 2014, and June 2015 but only at a concentration of about 1 μg/L or less. Therefore, the evidence for biodegradation in this well is not strong.

3.2.2.12 18WW08 (Not Influenced by Groundwater Extraction)

Results from November 2002 to June 2016 show a decreasing trend in TCE concentration (**Figure A-36**). Analysis of the concentration data shows an attenuation rate of 0.2345 per year with a correlation coefficient of 31.5%. The concentration in 18WW08 was < 0.5 ug/L in June 2016. This well is located in the northwest outside the direct influence of groundwater extraction but under the influence of Harrison Bayou. The decrease in TCE concentration in this well is certainly due to NA mechanisms. Therefore NA in the northeast of the site appears to be active.

Figure A-37 provides concentration profile for TCE, cis-1,2-DCE, and VC. Both cis-1,2-DCE and VC are detected in this well sporadically at low concentrations. However, since TCE concentration in this well is very low, with recent maximum concentration less than 10 ug/L, the presence of cis-1,2-DCE and VC indicates that attenuation is proportionally occurring in this well. TCE decreasing trend and observation of presence of attenuation in this well agree with the observation made for perchlorate. The absence of degrading bacteria or expressive gene to degrade TCE in this well is likely due to the non-detect or near non-detect levels of TCE observed in this well to support active biodegradation.

3.2.2.13 MW-8 (Not Influenced by Groundwater Extraction)

Results from March 1998 to June 2016 show a decreasing trend in TCE concentration (**Figure A-38**). Analysis of the concentration data shows an attenuation rate of 0.1269 per year with a correlation coefficient of 80%. At this degradation rate and a June 2016 concentration of 247 μg/L, the time to achieve the MCL in well MW-8 is estimated to be approximately 31 years. This well is located to the southwest outside the direct influence of groundwater extraction. The decrease in TCE concentration in this well is certainly due to natural attenuation mechanisms. The opposite was observed for perchlorate where the trend is upward. Perchlorate concentration in this well is also two orders of magnitude greater than TCE concentration.

Figure A-39 provides a concentration profile for TCE, cis-1,2-DCE, and VC. Cis-1,2-DCE but not VC is detected in this well at low concentrations, at a ratio of almost 1 to 100 of the TCE

concentration. Cis-1,2-DCE has a downward concentration trend is similar to TCE. Although degrading bacteria and expressive gene were not detected in this well, the presence of a TCE daughter product indicate some biodegradation is occurring in this well in addition to other attenuation mechanisms.

3.2.2.14 Summary of TCE Concentration vs. Time Analysis

The evaluation of changes in TCE concentrations with time has shown evidence of the occurrence of attenuation. The presence of TCE daughter products, cis 1,2-DCE and VC, are strong indicators supporting the occurrence of biodegradation at LHAAP-18/24.

Of the analyzed wells, MW-1, MW-2, MW-4, MW-5, MW-7, MW-08, MW-23, AWD-1, 18WW08, and MW-8 show a decreasing trend in TCE concentrations with selective accumulation of cis-1,2-DCE and VC in several wells. Wells MW-21 and 109 show an increasing TCE concentration trend while 120 exhibited a marginally decreasing trend with large concentration fluctuations likely influenced by extraction in ICT-12E. MW-14 in the Wilcox formation shows an increasing trend as represented by several recent values.

The results of TCE and perchlorate in MW-14 indicate that a closer look at this well is warranted to prevent further contamination of the Wilcox Formation in this area of the site where the clay layer is absent. Maintenance of extraction at ICT-12E and ICT-13A is important to create and maintain an upward gradient in this area of the site.

3.2.3 Methylene Chloride

MC distribution in the Shallow Zone reflects a high concentration (21,300 µg/L in June 2016) in well MW-2 with decreasing concentrations away from this location. Another area of detection of MC but at much lower concentrations occurs in the western corner of the site with the highest concentration reported in monitoring well AWD-1 at 95.1 ug/L in June 2016 (**Figure 1-13,** main text). The general trend of MC in the Shallow Zone indicates that the MC plume is very well contained in the vicinity of wells MW-2 and well 120/AWD-1.

Changes in MC concentrations not attributable to the operation of the groundwater extraction system are best indication of NA. The following reviews concentration trends of MC in various wells. Because MC is present in fewer wells than perchlorate and TCE, fewer wells are reviewed.

3.2.3.1 MW-2 (Influenced by Groundwater Extraction)

Results from May 2003 to June 2016 show a decreasing trend (**Figure A-40**). The analysis of the concentration data from May 2003 to June 2016 shows an attenuation rate of 0.227 per year with a correlation coefficient of 23%. MW-2 is located within an MC source area and the concentration in MW-2 has always been very high with implied presence of DNAPL in this well, although a decreasing trend by 1 to 3 orders of magnitude was observed in the past 12 months. At the attenuation rate observed and a June 2016 concentration of 21,300 µg/L, the time to achieve the MCL for MC (5 µg/L) in well MW-2 is estimated to be 37 years

3.2.3.2 MW-1 (Influenced by Groundwater Extraction)

Analytical data from December 1996 to June 2016 show a decreasing trend in MC concentrations (**Figure A-41**). The analysis of the concentration data from December 1996 to June 2016 shows an attenuation rate of 0.7013 per year with a correlation coefficient of 89%. The most recent concentration of MC in MW-1 is <0.5 ug/L, which is lower than the MCL.

3.2.3.3 MW-21 (Influenced by Groundwater Extraction)

Results from May 1998 to June 2016 show steady decreasing trend in MC concentrations in well MW-21 (**Figure A-42)**. The analysis of the concentration data from May 1998 to June 2016 shows an attenuation rate of 0.603 per year with a correlation coefficient of 84%. The concentration in June 2016 was < 25 μg/L (12.5 μg/L or one-half this value was listed on **Figure A-42**). At this attenuation rate and an assumed concentration of 12.5 μg/L, the time to achieve the MCL for MC in well MW-21 is estimated to be approximately 1.5 years.

3.2.3.4 AWD-1 (Influenced by Groundwater Extraction)

Analytical data from April 1994 to June 2016 show a decreasing trend in MC concentrations (**Figure A-43**). The analysis of the concentration data from December 1996 to June 2016 shows an attenuation rate of 0.2474 per year with a correlation coefficient of 50%. At this degradation rate at a June 2016 concentration of 95.1 ug/L, the time to achieve the MCL for MC in well AWD-1 is estimated to be approximately 12 years.

3.2.3.5 120 (Influenced by Groundwater Extraction)

Results from March 1998 to June 2016 show a decreasing trend in MC concentrations in well 120 (**Figure A-44**). The analysis of the concentration data from March 1998 to June 2016 shows an attenuation rate of 0.4809 per year with a correlation coefficient of 85%. The concentration in June 2016 was < 50 μg/L (25 μg/L or one-half this value was listed on **Figure A-44**). At this degradation rate and an assumed initial concentration of 25 μg/L, the time to achieve the MCL for MC in well 120 is estimated to be approximately 3.3 years.

3.2.3.6 Summary of MC Concentration vs. Time Analysis

The evaluation of changes in MC concentrations with time has shown strong evidence of the occurrence of attenuation in many wells including MW-2.

3.3 Summary and Conclusion

Table A-2 presents a summary of the trend analysis findings and presents comments associated with these findings.

Table A-2: Trend Analysis Summary

Monitoring Well	Chemical	Trend w/ Rate Constant	Finding Analysis
MW-2	Perchlorate	Downward/0.331 per year @ R^2 = 42%	MW-2 could be influenced by extraction from ICT8. MW-2 contained very high concentrations of MC at DNAPL levels; however a rapid decrease in MC concentration in MW-2 was observed since December 2015. This decrease is sudden and warrants additional data collection for verification. The observed decrease in perchlorate, TCE, and MC is small with half-lives of 2 years, 4.5 years, and 3 years and durations of 2.1, 53, and 37 years to achieve the PCL for perchlorate and the MCLs for TCE and MC. Low correlation coefficients indicate a weak trend. The presence of cis-1,2-DCE indicates biodegradation of TCE is occurring. Attenuation in the vicinity of MW-2 is higher for perchlorate than for TCE and MC.
	TCE	Downward/0.1532 per year @ R^2 = 42%	
	MC	Downward/0.227 per year @ R^2 = 23%	
MW-1	Perchlorate	Downward/0.0775 per year @ R^2 = 37%	MW-2 could have been influenced by injection in ICT6. MW-1 shows downward trends for all three chemicals with relatively high correlations for TCE and MC but a low correlation and low attenuation rate for perchlorate. The half-lives are 9, 5.8, and 0.99 years for perchlorate, TCE, and MC, respectively and durations of 87 and 55 years to achieve the PCL for perchlorate and MCL for TCE. MC concentration is already below the MCL in this well. The low correlation coefficient for perchlorate indicates a weak trend. The presence of cis-1,2-DCE and VC indicates biodegradation of TCE is occurring. Attenuation in the vicinity of MW-1 is occurring for TCE and MC but is not important for perchlorate.
	TCE	Downward/0.1204 per year @ R^2 = 60%	
	MC	Downward/0.7013 per year @ R^2 = 89%	
MW-4	Perchlorate	Downward/0.0701 per year @ R^2 = 20%	MW-4 could be influenced by extraction from ICT14A. MW-4 shows downward trends for perchlorate and TCE only. The half-lives are 10 and 5.6 years and durations of 94 and 29 years to achieve the PCL and MCL for perchlorate and TCE, respectively. MC concentration is already below the MCL in this well. The low correlation coefficient for perchlorate indicates a weak trend. The presence of cis-1,2-DCE and VC indicates biodegradation of TCE is occurring. Attenuation in the vicinity of MW-4 is more important for TCE but not for perchlorate.
	TCE	Downward/0.124 per year @ R^2 = 45%	
	MC	No MC detected in this well.	
MW-5	Perchlorate	Slightly increasing trend	MW-5 could be influenced by extraction from ICT7 and ICT13E. MW-5 shows a downward trend for TCE but an increasing trend for perchlorate. The half-life for TCE is 66 years and the duration to achieve the MCL is 227 years. MC concentration is already below the MCL in this well. The low correlation coefficient for TCE indicates a weak trend. The presence of cis-1,2-DCE and VC indicates biodegradation of TCE is occurring. Attenuation in the vicinity of MW-5 is not occurring for perchlorate and it is not important for TCE.
	TCE	Downward/0.0105 per year @ R^2 = 1.4%	
	MC	No MC detected in this well.	

Monitoring Well	Chemical	Trend w/ Rate Constant	Finding Analysis
MW-21	Perchlorate	Increasing trend	MW-21 could be influenced by extraction from ICT14D. MW-21 shows a downward trend for MC but an increasing trend for perchlorate and TCE. The half-life for MC is 1.15 years. The concentration in MW-21 for MC is < 25 µg/L but a concentration of 12.5 µg/L is used to determine duration to achieve the MCL. The duration to achieve the MCL is 1.5 years. The high correlation coefficient for MC indicates a strong downward trend. The presence of cis-1,2-DCE and VC indicates biodegradation of TCE is occurring. Attenuation in the vicinity of MW-21 is substantial for MC but not occurring for either perchlorate or TCE.
	TCE	Increasing overall trend.	
	MC	Downward/0.6026 per year @ R^2 = 84%	
109	Perchlorate	Downward/0.0817 per year @ R^2 = 20%	109 could be influenced by extraction from ICT14B and ICT14C. 109 shows a downward trend for perchlorate but an increasing trend for TCE. The half-life for perchlorate is 8.5 years and the duration to achieve the PCL is 57 years. The poor correlation coefficient for perchlorate indicates a weak downward trend. The presence of cis-1,2-DCE and VC indicates biodegradation of TCE is occurring, although the overall trend is upward. Attenuation in the vicinity of 109 is not important for perchlorate and not occurring for TCE.
	TCE	Increasing overall trend.	
	MC	No MC detected in this well.	
AWD-1	Perchlorate	Downward/0.5169 per year @ R^2 = 66%	AWD-1 could be influenced by extraction from ICT12E. AWD-1 shows a downward trend for all three chemicals. The half-lives for perchlorate, TCE, and MC are 1.34, 7, and 2.8 years, respectively. Monitor well AWD-1 is already below the PCL for perchlorate but will take 74 and 12 years, respectively to achieve the MCLs for TCE and MC. Good correlation for TCE and MC is observed. The presence of cis-1,2-DCE and VC indicates biodegradation of TCE is occurring. Attenuation in the vicinity of AWD-1 is less important for TCE compared to perchlorate and MC.
	TCE	Downward/0.09848 per year @ R^2 = 80%	
	MC	Downward/0.2474 per year @ R^2 = 50%	
MW-7	Perchlorate	Downward/0.0958 per year @ R^2 = 65%	MW-7 is unlikely influenced by extraction from ICT12B due to the presence of a liner. MW-7 shows a downward trend for perchlorate and TCE. The half-lives for perchlorate and TCE are 7.2 and 5.2, respectively. Monitor well MW-7 is already below the MCL for MC but will take 75 and 44 years, respectively to achieve the MCL for TCE and the PCL for perchlorate. The correlation coefficients for perchlorate and TCE indicate a reasonable downward trend for these chemicals. The presence of cis-1,2-DCE indicates biodegradation of TCE is occurring. Attenuation in the vicinity of MW-7 is somewhat important for perchlorate or TCE.
	TCE	Downward/0.134 per year @ R^2 = 71%	
	MC	Generally no MC detected in this well.	
MW-14	Perchlorate	Upward trend overall	MW-14 could be influenced by extraction from ICT12E. No trend analysis conducted for perchlorate or TCE due to a recent increase in concentrations in MW-14. Monitor well MW-14 is already below the MCL for MC, although June
	TCE	Upward trend overall	

Monitoring Well	Chemical	Trend w/ Rate Constant	Finding Analysis
MW-14	MC	MC below cleanup level, although June 2016 concentration was reported at 53.5 J µg/L.	2016 concentration was reported at 53.5 J µg/L. The presence of cis-1,2-DCE and VC indicates biodegradation of TCE is occurring. Attenuation in the vicinity of MW-14 is not important for perchlorate or TCE.
120	Perchlorate	Downward/0.0421 per year @ R^2 = 13%	120 could be influenced by extraction from ICT12E. 120 shows a downward trend for perchlorate, TCE, and MC. The half-lives for perchlorate, TCE, and MC are 16.5, 65, and 1.44, respectively. It will take 180, 761, and 3.3 years, respectively to achieve the PCL for perchlorate, and the MCLs for TCE and MC. The correlation coefficients for perchlorate and TCE are very poor indicating a very weak downward trend. The correlation coefficient for MC indicates a reasonable downward trend. The presence of cis-1,2-DCE and VC indicates biodegradation of TCE is occurring. Attenuation in the vicinity of 120 is not important for perchlorate or TCE but is important for MC.
	TCE	Downward/0.0107 per year @ R^2 = 4%	
	MC	Downward/0.4809 per year @ R^2 = 85%	
MW-23	Perchlorate	Upward overall trend	MW-23 is not influenced by any extraction trench. MW-23 shows a downward trend for TCE. The half-life for TCE is 37.5 years. Perchlorate trend is increasing. It will take 295 years to achieve MCL for TCE. MC is already below the MCL. The correlation coefficient for TCE is poor indicating a weak downward trend. Cis-1,2-DCE and VC were rarely reported above the reporting limit indicating that biodegradation of TCE is not occurring. Attenuation in the vicinity of MW-23 is not important for perchlorate or TCE.
	TCE	Downward/0.0185 per year @ R^2 = 7%	
	MC	MC below cleanup level.	
18WW08	Perchlorate	Downward/0.6239 per year @ R^2 = 60%	18WW08 is not influenced by any extraction trench. 18WW08 shows a downward trend for perchlorate and TCE. The half-lives for perchlorate and TCE are 1.1 and 3 years, respectively. Perchlorate in most recent result is below the PCL. TCE and MC are also already below their MCLs. The correlation coefficient for TCE is poor indicating a weak downward trend. The presence of occasional detection of cis-1,2-DCE and VC indicates biodegradation of TCE is occurring. Reliance on NA (this well is not influenced by the extraction system) in the vicinity of 18WW08 is important for perchlorate, noting that perchlorate, TCE and MC are below their PCL/MCLs.
	TCE	Downward/0.2345 per year @ R^2 = 31%	
	MC	No MC detected in this well.	
MW-8	Perchlorate	Upward overall trend	MW-8 is not influenced by any extraction trench. MW-8 shows a downward trend for TCE. The half-life for TCE is 5.5 years. It will take 31 years to achieve the MCL for TCE. MC is already below the MCL. Perchlorate is showing an overall increasing trend in the presence of very high perchlorate concentrations, although the recent trend is downward. The correlation coefficient for TCE is very strong indicating a strong downward trend. The presence of cis-1,2-DCE indicates biodegradation of TCE is occurring. Reliance on natural attenuation (this well is not influenced by the extraction system) in the vicinity of MW-8 is important for TCE but not for perchlorate.
	TCE	Downward/0.1269 per year @ R^2 = 79%	
	MC	No MC detected in this well.	

The natural attenuation analysis was done for wells inside the containment area and outside the containment area.

- The wells inside the containment area are influenced by the extraction of groundwater and the trend analysis includes the influence of extraction in addition to any NA that may be occurring (e.g., identified by the presence of daughter compounds such as cis-1,2-DCE for degradation of TCE). It is believed that extraction of groundwater removes a greater mass of CoCs compared to NA mechanisms. Additional analysis is required to determine NA rates for these wells using daughter compound concentrations and compound specific isotope analysis. The findings for the wells inside the containment can be summarized as follows:
    - Perchlorate attenuation is occurring in AWD-1 and MW-7 only.
    - TCE attenuation is occurring in MW-1, MW-4, MW-7, and MW-8 only.
    - MC attenuation is occurring in MW-1, MW-21, AWD-1, and 120 only.
- Two wells outside the containment were analyzed. The results are summarized as follows:
    - NA for perchlorate is occurring appreciably in 18WW08 (MC and TCE are below the MCL in this well).
    - NA for TCE is occurring appreciably in MW-8 (MC is below the MCL in this well and perchlorate concentration is increasing).

Another important aspect for attenuation of CoCs manifests itself with the decrease in the extent of CoCs in groundwater over time, particularly for MC.

4 REFERENCES

AECOM, Technical Services, Inc. 2013, Post-Screening Investigation Report, Longhorn Army Ammunition Plant (LHAAP)-18/24, Karnack, Texas, November.

Alvarez-Cohen, L.M., and P.L. McCarty, 1991. Product Toxicity and Cometabolic Competitive Inhibition Modeling of Chloroform and Trichloroethylene Transformation By Methanotrophic Resting Cells. Envirol. Microbiol. 57(4): 1031-1037.

Bahnick, D.A., and W.J. Doucette 1988. Use of Molecular Connectivity Indices to Estimate Soil Sorption Coefficients for Organic Chemicals. Chemosphere, 17(9): 1703-1715.

Bardiya, N., and Bae, J.H. (2005) Bioremediation Potential of a Perchlorate-enriched Sewage Sludge Consortium. *Chemosphere*, 58, 83.

Bouwer, E.J., 1994. Bioremediation of Chlorinated Solvents Using Alternate Electron Acceptors. In: Norris, R.D., R.E., Hinchee, R. Brown, P.L. McCarty, L. Simprini, J.T., Wilson, D.H. Kambell, M. Reinhard, E.J. Bouwer, R.C. Borden, T.M. Vogel, J.M., Thomas, and C.H. Ward, eds. Handbook of Bioremediation, Boca Raton, FL: Lewis Publisher.

Bradley, P.M., and F.H. Chapelle, 1996. Anaerobic Mineralization of Vinyl Chloride in Fe(II)-Reducing Aquifer Sediments. Environ. Sci. Technol. 30:2084-2086.

Bruce RA, Achenbach LA, Coates JD. Reduction of (per)chlorate by a novel organism isolated from paper mill waste. Environ Microbiol 1999;1:319–29.

Brunner W, Staub D., and Leisinger T., 1980. Bacterial Degradation of Dichloromethane: Appl. Environ. Microbial. , 40(5):950-958.

Byl, T.D., and S.D. Williams, 2000. Biodegradation of Chlorinated Ethenes at a Karst Site in Middle Tennessee. U.S. Geological Survey Water-Resources Investigations Report 00-4285.

Chaudhuri, S.K., O'Connor, S. M., Gustavson, R.L., Achenbach, L.A. and Coates, J.D. (2002) Environmental Factors That Control Microbial Perchlorate Reduction. *Appl. Envirn. Microbiol*., 68, 9, 4425.

Coates, J.D., Michaelidou, U., Bruce, R.A., O'Connor, S. M., Crespi, J.N., and Achenbach, L.A. (1999) Ubiquity and Diversity of Dissimilatory Perchlorate-Reducing Bacteria. *Appl. Environ. Microbiol.*, 65, 12, 5234.

Dilling, W.L., N.B., Tefertiller, and G.J. Kallos. 1975. Evaporation Rates of methylene chloride, chloroform, 1,1,1-trichloroethane, trichloroethylene, tetrachloroethylene, and other chlorinated compounds in dilute aqueous solutions. Environ Sci. Technol. 9(9):833-838.

Fan, S. and K.M. Scow, 1993. Biodegradation of Trichloroethylene and Toluene by Indigenous Microbial Populations in Soil. Appl. Environ. Microbiol. 59: 1911-1918.

Fells, I. and E.A. Moelwyn-Hughes, 1958. The Kinetics of Hydrolysis of Methylene Dichloride. J. Chem Soc. 268. 1326-1333.

Ferrey, M., and J.T. Wilson. 2002. "Complete Natural Attenuation of PCE and TCE without the Accumulation of Vinyl Chloride," Third International Conference on Remediation of Chlorinated and Recalcitrant Compounds, Monterey, CA.

Gerritse, J., Renard, V., Pedro Gomes, T.M., Lawson, P.A., Collins, M.D., and J.C., Gottschal, 1996. Desulfitobacterium sp. strain PCE1, an anaerobic bacterium that can grow by reductive dechlorination of tetrachloroethene or ortho-chlorinated phenols. Arch Microbiol. Feb; 165(2):132-40.

Ground-Water Remediation Technologies Analysis Center (GWRTAC), 2001. Technology Status Report – Perchlorate Treatment Technologies, by Diane S. Roote. Groundwater Remediation Technologies Analysis Center, Pittsburgh, PA.

Hendrickson, E.R., Payne, J.A., Young, R.M., Starr, M.G., Perry, M.P., Fahnestock, S., Ellis, D.E., and R.C. Ebersole, 2002. Molecular analysis of Dehalococcoides 16S ribosomal DNA from chloroethene-contaminated sites throughout North America and Europe., Appl. Environ. Microbiol. February; 68(2):485-95.

Justicia-Leon, S.D., K.M. Ritalahti, E.E. Mack, and F.E Loffler, 2012. Dichloromethane Fermentation by a *Dehalobacter* sp. in an Enrichment Culture Derived from Pristine River Sediment. Appl Environ Microbial. Feb, 1288-1291.

King, W.R., Jr., and Garner, C.S. (1954) Kinetics of the Oxidation of Vanadium(II) and Vanadium(III) Ions by Perchlorate Ion. *J. Phys. Chem*., 58, 29.

Klecka, G.M., and Gonsior, S.J., 1984. Reductive Dechlorination of Chlorinated Methanes and Ethanes by Reduce Iron(II) Porphyrins. Chemosphere 13(3), 391-402.

Kriegman-King, M.R. and M. Reinhard. 1994. "Transformation of Carbon Tetrachloride by Pyrite in Aqueous Solution," Environ. Sci. Technol., 28, 692-700.

Logan, B.E. (2001) Assessing the Outlook for Perchlorate Remediation. *Environ. Sci. & Technol*., 35, 482 A–7A.

Logan, B.E., Zhang, H.S., Mulvaney, P., Milner, M.G., Head, I.M., and Unz, R. (2001) Kinetics of Perchlorate and Chlorate Respiring Bacteria. *Appl. Environ. Microbiol*., 67, 6, 2499.

Maymo-Gatell X., Chien, Y.T., Gossett, J.M., Zinder, S.H., 1997. Isolation of a Bacterium that Reductively Dechlorinates Tetrachloroethene to Ethene. Sci 276: 1568-1571.

Maymo-Gatell X., Anguish, T., Zinder, S.H., 1999. Reductive Dechlorination of Chlorinated Ethenes and 1,2-Dichloroethane by Dehalococcoides ethenogenes, 195. Appl Environ Microbiol 65: 3108-3113.

McCarty, P.L., and L., Semprini, 1994. Ground-water Treatment for Chlorinated Solvents. In: Norris, R.D., R.E., Hinchee, R. Brown, P.L. McCarty, L. Simprini, J.T., Wilson, D.H. Kambell, M. Reinhard, E.J. Bouwer, R.C. Borden, T.M. Vogel, J.M., Thomas, and C.H. Ward, eds. Handbook of Bioremediation, Boca Raton, FL: Lewis Publisher.

Neumann, A., Sholz-Muramatsu, H., and G. Diekert, 1994. Tetrachloroethene metabolism of Dehalospirillum multivorans. Arch. Microbiol.; 162(4):295-301.

O'Connor, S. M., and Coates, J.D. (2002) Universal Immunoprobe for Perchlorate-Reducing Bacteria. *Appl. Envirn. Microbiol*., 68, 6, 3108.

Olaniran, A.O., Pillay, D., and B. Pillay, 2008. Aerobic Biodegradation of Dichloroethenes by Indigenous Bacteria Isolated from Contaminated Sites in Africa. Chemosphere 73:24.

Plexus Scientific Corporation, 2005, *Final Environmental Site Assessment, Phase I and II Report, Production Areas, Longhorn Ammunition Plant, Karnack, Texas,* Columbia, Maryland, February.

Rikken, G.B., Kroon, A.G.M.; van Ginkel, C.G., 1996, Transformation of (Per)chlorate into Chloride by a Newly Isolated Bacterium: Reduction and Dismutation, *Applied and Environmental Microbiology*, 45, 420-426.

Semprini, L. and P.L., McCarty, 1991. Comparison between Model Simulations and Field Results for In-Situ Biorestoration of Chlorinated Aliphatics: Part 1. Biostimulation of Methanotrophic Bacteria. Ground Water, 29:365-374.

Sharma, P. and P.L. McCarty, 1996. Isolation and Characterization of Facultative Aerobic Bacterium that Reductively Dehalogenates Tetrachloroethene to cis-1,2-dichloroethene. Appl. Environ. Microbiol. 62: 761-765.

Sholz-Muramatsu, H., V. Schneider, S. Gaiser, and D. Bardtke, 1988. Biological Elimination of Dichloromethane from Contaminated Groundwater - Interference by Components of Groundwater, 20(11-12), 393-397.

Sivavec, T. M., D. P. Horney, S. S. Baghel. 1995, Reductive Dechlorination of Chlorinated Ethenes by Iron Metal and Iron Sulfide Minerals. In Emerging Technologies in Hazardous Waste Management VII, ACS Special Symposium; American Chemical Society: Atlanta, GA, pp 42-45.

Sivavec, T. M. and Horney, D. P. Reduction of Chlorinated Solvents by Fe(II) Minerals. Preprints of Papers Presented at the 213th ACS National Meeting, April 13-17, 1997, San Francisco, California, Vol 37 (1), pp. 115-117.

Sun, A.K., and T.K. Wood, 1996. Trichloroethylene Degradation and Mineralization by Pseudomonas and *Methylosinus trichosporium* OB3b, Appl. Microbiol Biotechnol; 45:248-256.

Tabak, H.H., Quave, S.A., Mashni, C.I., and Barth, E.F., 1981. Biodegradability Studies with Organic Priority Pollutant Compounds. J. Water Pollut. Contr. Fed., 53: 1503-1518.

Texas Bureau of Economic Geology, 1975, Tyler sheet, Geologic Atlas of Texas, Bureau of Economic Geology, University of Texas at Austin, scale 1:250,000.

Texas Bureau of Economic Geology, 1992, Geologic Map of Texas: University of Texas at Austin, Virgil E. Barnes, project supervisor, Hartmann, B.M. and Scranton, D.F., cartography, scale 1:500,000

Tipton, D.K., Rolston, D.E., and Scow, K.M. (2003) Transport and Biodegradation of Perchlorate in Soils. *J. Environ. Qual*., 32, 40.

Tanabe, Kozo; Masayukimatsuda, 1961. The Mechanism of the Hydrolysis of Methylene Chloride. Journal of the research institute for catalysis, Hokkaido university, 9(3): 246-255

U.S. Army Corps of Engineers (USACE), 1993, *Final Analytical Data - Data Summary Report Of Investigation Results From 1976 Through 1992 For Burning Ground 3 & The Unlined Evaporation Pond*, U.S. Army Corps Of Engineer, Tulsa District, May.

U.S. Environmental Protection Agency (USEPA), 1998, *Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Groundwater*, U.S. EPA/600/R-98/128, Wiedemeier, T.H., M.A. Swanson, D.E. Moutoux, E.K. Gordon, J.T. Wilson, B.H. Wilson, D.H. Kampbell, P.E. Haas, R.N. Miller, J.E. Hansen, and F.H. Chapelle, Cincinnati, Ohio.

USEPA, 1999, Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites. OSWER Directive Number 9200.4-17P.

USEPA, 2002, Calculation and Use of First Order Rate Constants for Monitored Natural Attenuation Studies, November.

Urbansky, E.D. (1998) Perchlorate Chemistry: Implications for Analysis and Remediation. *Biorem. J*., 2, 2, 81.

Vogel, T. M., and P. L. McCarty. 1985. Biotransformation of tetrachloroethylene to trichloroethylene, dichloroethylene, vinyl chloride, and carbon dioxide under methanogenic conditions. Appl. Environ. Microbiol. 49:1080-1083.

Wackett, L.P., and D.T. Gibson, 1988. Degradation of Trichloroethylene by Toluene Dioxygenase in Whole-Cell Studies with *Pseudomonas putida* F1, Appl. Environ. Microbiol., 54:1703-1708.

Winter, R.B., Yen, K-M., and B.D., Ensley, 1989. Efficient Degradation of Trichloroethylene by a Recombinant *Escherichia coli*. Biotechnology 7:282-285.

Wolterink AFWM, Schiltz E, Hagedoorn P-L, Hagen WR, Dengen SWM, Stams AJM. Characterization of the chlorate reductase from *Pseudomonas chloritidismutans*. J Bacteriol. 2003;185:3210–3.

Xue, L., 1997, Depositional Cycles and Evolution of the Paleogene Wilcox Strata, Gulf of Mexico Basin, Texas. AAPG Bulletin, v.81 (6). Pg937-953.

FIGURES

AECOM

Figure A-1: First-Order Decay Rate Calculation for Attenuation Determination
LHAAP-18/24 Feasibility Study
Longhorn Army Ammunition Plant
Karnack, Texas

MW-2

Facility Name: LHAAP 18/24 Feasibility Study - Appendix A Evaluation of Perchlorate Attenuation

CoC Perchlorate

Facility Location and Address: Longhorn Army Ammunition Plant, Karnack Texas

Date: Oct-16

Sampling Date	Perc mg/L	Perc ug/L	ln Perc mg/L	Elapsed time since 5/1/03 years
01-Oct-00	32.20	32200	3.472	0.00
01-Apr-01	12.40	12400	2.518	0.50
01-Nov-01	27.50	27500	3.314	1.08
01-May-02	15.90	15900	2.766	1.58
01-Nov-02	13.50	13500	2.603	2.08
01-May-03	15.50	15500	2.741	2.58
01-Nov-03	14.10	14100	2.646	3.08
01-May-04	9.90	9900	2.293	3.58
01-Nov-04	12.90	12900	2.557	4.09
18-May-05	7.87	7870	2.063	4.63
17-Nov-05	5.97	5970	1.787	5.13
24-May-06	3.13	3130	1.141	5.65
08-Mar-07	4.90	4900	1.589	6.44
15-Sep-07	11.20	11200	2.416	6.96
13-Mar-08	9.18	9180	2.217	7.45
10-Sep-08	5.66	5660	1.733	7.95
03-Apr-09	14.00	14000	2.639	8.51
30-Sep-09	4.00	4000	1.386	9.00
08-Mar-10	3.20	3200	1.163	9.44
09-Sep-10	5.70	5700	1.740	9.95
16-Mar-11	11.90	11900	2.477	10.46
21-Sep-11	13.10	13100	2.573	10.98
13-Mar-12	8.47	8470	2.137	11.45
27-Sep-12	6.94	6940	1.937	12.00
09-May-13	4.78	4780	1.564	12.61
14-Dec-13	7.92	7920	2.069	13.21
10-Jun-14	2.90	2900	1.065	13.70
09-Dec-14	0.017	17	-4.104	14.20
12-Jun-15	0.43	428	-0.849	14.70
10-Dec-15	0.00085	0.85	-7.074	15.20
24-Jun-16	0.033	33.3	-3.402	15.74
TRRP PCL	*0.017*	*17*		

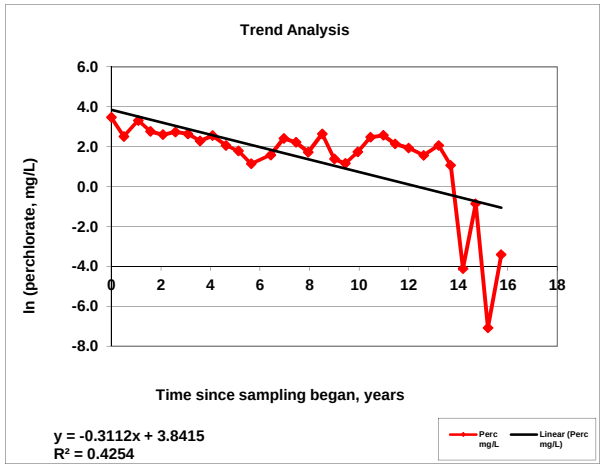

Solutions

Enter C_{CL}	⟹	17		
Enter C_o	⟹	33		
Enter k_{point}	⟹	0.3112		
Time to reach cleanup level			2.1	years

Formula $t = -[\ln(CCL/Co)] / kpoint$

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, µg/L

C_o = Initial concentration of contaminant of concern, µg/L

k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$

= slope of the line, y

AECOM

Figure A-2: First-Order Decay Rate Calculation for Attenuation Determination
LHAAP-18/24 Feasibility Study
Longhorn Army Ammunition Plant
Karnack, Texas

MW-1

Facility Name: LHAAP_18/24 Feasibility Study - Appendix A Evaluation of Perchlorate Attenuation

COC: Perchlorate

Facility Location and Address: _____ Longhorn Army Ammunition Plant, Karnack Texas

Date: Oct-16

Sampling Date	Perc mg/L	Perc ug/L	ln Perc mg/L	Elapsed time since 10/1/00 years
01-Oct-00	33.700	33700	3.517	0.00
01-Apr-01	19.200	19200	2.955	0.50
01-Nov-01	107.000	107000	4.673	1.08
01-May-02	87.400	87400	4.470	1.58
01-Nov-02	108.000	108000	4.682	2.08
01-May-03	88.900	88900	4.488	2.58
01-Nov-03	120.000	120000	4.787	3.08
01-May-04	56.000	56000	4.025	3.58
01-Nov-04	71.000	71000	4.263	4.09
17-May-05	49.800	49800	3.908	4.63
16-Nov-05	68.600	68600	4.228	5.13
24-May-06	63.100	63100	4.145	5.65
29-Sep-12	27.000	27000	3.296	12.00
10-Jun-14	46.000	46000	3.829	13.70
12-Jun-15	17.500	17500	2.862	14.70
24-Jun-16	14.800	14800	2.695	15.74
TRRPL PCL	0.017	*17*		

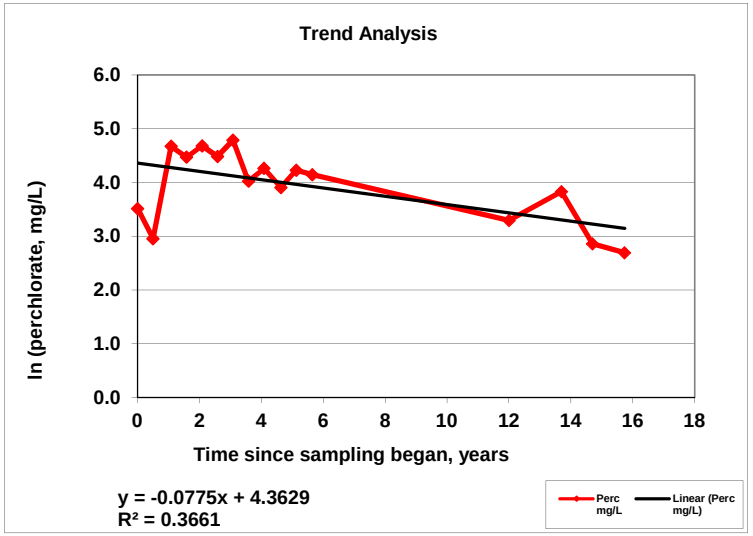

Solutions

Enter C_{CL}	⇨	17	
Enter C_o	⇨	14800	
Enter k_{point}	⇨	0.0775	
Time to reach cleanup level		87.3	years

Formula $t = -[\ln(CCL/Co)] / kpoint$

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, µg/L

C_o = Initial concentration of contaminant of concern, µg/L

k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$

= slope of the line, y

AECOM

Figure A-3: First-Order Decay Rate Calculation for Attenuation Determination
LHAAP-18/24 Feasibility Study
Longhorn Army Ammunition Plant
Karnack, Texas

MW-4

Facility Name: LHAAP_18/24 Feasibility Study - Appendix A Evaluation of Perchlorate Attenuation

COC: Perchlorate

Facility Location and Address: _____ Longhorn Army Ammunition Plant, Karnack Texas

Date: Oct-16

Sampling Date	Perc mg/L	Perc ug/L	ln Perc mg/L	Elapsed time since 10/1/00 years
01-Oct-00	27.900	27900	3.329	0.00
01-Apr-01	17.000	17000	2.833	0.50
01-Nov-01	59.100	59100	4.079	1.08
01-May-02	65.500	65500	4.182	1.58
01-Nov-02	51.600	51600	3.944	2.08
01-May-03	44.200	44200	3.789	2.58
01-Nov-03	42.800	42800	3.757	3.08
01-May-04	39.000	39000	3.664	3.58
01-Nov-04	41.600	41600	3.728	4.09
17-May-05	49.000	49000	3.892	4.63
16-Nov-05	47.500	47500	3.861	5.13
24-May-06	43.200	43200	3.766	5.65
29-Sep-12	12.000	12000	2.485	12.00
TRRP PCL	0.017	*17*		

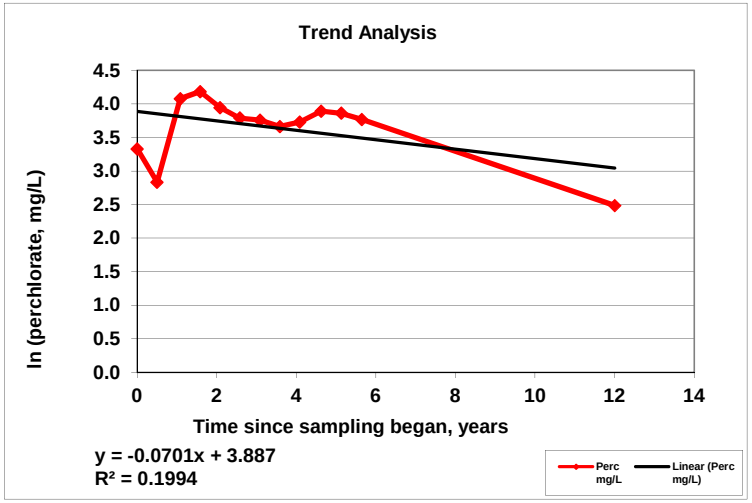

Solutions

Enter C_{CL}	⇨	17		
Enter C_o	⇨	12000		
Enter k_{point}	⇨	0.0701		
Time to reach cleanup level			93.6	years

Formula *t = -[ln(CCL/Co)] / kpoint*

where:
t = Time to achieve cleanup levels, years
C_{CL} = Cleanup level for contaminant of concern, µg/L
C_o = Initial concentration of contaminant of concern, µg/L
k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$
= slope of the line, y

AECOM

Figure A-4: First-Order Decay Rate Calculation for Attenuation Determination
LHAAP-18/24 Feasibility Study
Longhorn Army Ammunition Plant
Karnack, Texas

MW-5

Facility Name: LHAAP 18/24 Feasibility Study - Appendix A Evaluation of Perchlorate Attenuation

COC: Perchlorate

Facility Location and Address: _____ Longhorn Army Ammunition Plant, Karnack Texas

Date: Oct-16

Sampling Date	Perc mg/L	Perc ug/L	ln Perc mg/L	Elapsed time since 10/1/00 years
01-Oct-00	13.700	13700	2.617	0.00
01-Apr-01	18.500	18500	2.918	0.50
01-Nov-01	25.400	25400	3.235	1.08
01-May-02	29.300	29300	3.378	1.58
01-Nov-02	22.800	22800	3.127	2.08
01-May-03	32.200	32200	3.472	2.58
01-Nov-03	22.000	22000	3.091	3.08
01-May-04	29.900	29900	3.398	3.58
01-Nov-04	26.500	26500	3.277	4.09
16-May-05	24.400	24400	3.195	4.62
16-Nov-05	21.200	21200	3.054	5.13
24-May-06	24.500	24500	3.199	5.65
29-Sep-12	25.200	25200	3.227	12.00
13-May-13	27.600	27600	3.318	12.62
09-Dec-13	24.500	24500	3.199	13.20
13-May-13	27.600	27600	3.318	12.62
09-Dec-14	28.000	28000	3.332	14.20
08-Dec-15	26.900	26900	3.292	15.19
08-Jun-16	31.300	31300	3.444	15.70
TRRP PCL	0.017	*17*		

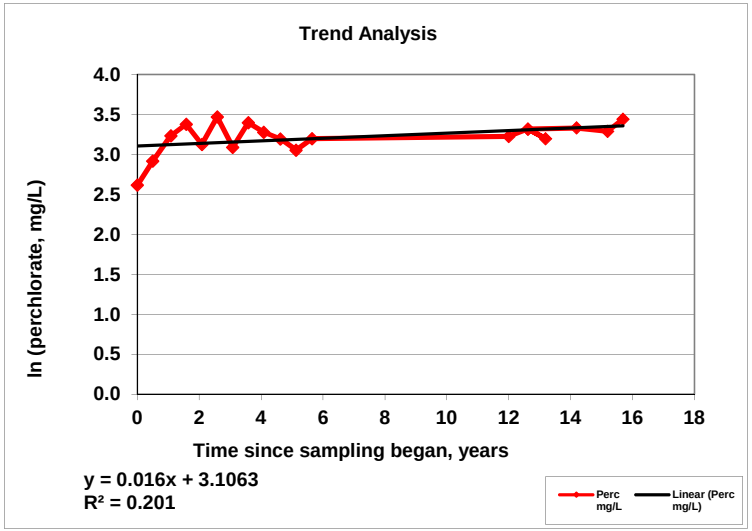

Formula *t = -[ln(CCL/Co)] / kpoint*

where:
t = Time to achieve cleanup levels, years
C_{CL} = Cleanup level for contaminant of concern, µg/L
C_o = Initial concentration of contaminant of concern, µg/L
k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$
= slope of the line, y

Solutions

Enter C_{CL}	⇨	17		
Enter C_o	⇨	24500		
Enter k_{point}	⇨	-0.0160		
Time to reach cleanup level			NA	years

AECOM

Figure A-5: First-Order Decay Rate Calculation for Attenuation Determination
LHAAP-18/24 Feasibility Study
Longhorn Army Ammunition Plant
Karnack, Texas

MW-21

Facility Name: LHAAP_18/24 Feasibility Study - Appendix A Evaluation of Perchlorate Attenuation

COC: Perchlorate

Facility Location and Address: Longhorn Army Ammunition Plant, Karnack Texas

Date: Oct-16

Sampling Date	Perc mg/L	Perc ug/L	ln Perc mg/L	Elapsed time since 10/1/00 years
01-Oct-00	10.100	10100	2.313	0.00
01-Apr-01	4.510	4510	1.506	0.50
01-Nov-01	15.200	15200	2.721	1.08
01-May-02	13.400	13400	2.595	1.58
01-Nov-02	20.000	20000	2.996	2.08
01-May-03	27.800	27800	3.325	2.58
01-Nov-03	33.600	33600	3.515	3.08
01-May-04	37.700	37700	3.630	3.58
01-Nov-04	39.000	39000	3.664	4.09
17-May-05	44.700	44700	3.800	4.63
16-Nov-05	45.900	45900	3.826	5.13
24-May-06	54.800	54800	4.004	5.65
21-Sep-11	31.500	31500	3.450	10.98
12-Mar-12	38.800	38800	3.658	11.45
25-Sep-12	28.900	28900	3.364	11.99
07-May-13	43.700	43700	3.777	12.61
14-Dec-13	49.200	49200	3.896	13.21
10-Jun-14	45.000	45000	3.807	13.70
19-Dec-14	43.800	43800	3.780	14.22
09-Jun-15	41.200	41200	3.718	14.70
02-Dec-15	46.200	46200	3.833	15.18
22-Jun-16	26.100	26100	3.262	15.73
TRRP PCL	0.017	*17*		

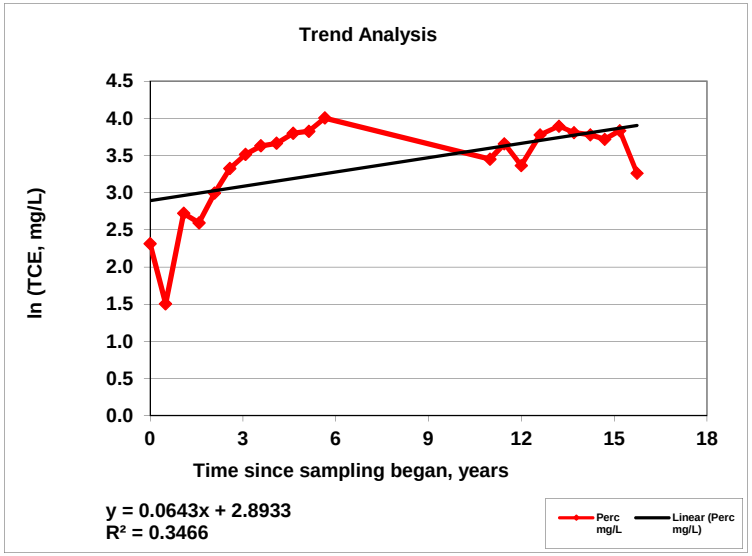

Formula *t = -[ln(CCL/Co)] / kpoint*

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, µg/L

C_o = Initial concentration of contaminant of concern, µg/L

k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$
= slope of the line, y

Solutions

Enter C_{CL}	⇨	17	
Enter C_o	⇨	26100	
Enter k_{point}	⇨	-0.0643	
Time to reach cleanup level		NA	years

AECOM

Figure A-6: First-Order Decay Rate Calculation for Attenuation Determination
LHAAP-18/24 Feasibility Study
Longhorn Army Ammunition Plant
Karnack, Texas

109

Facility Name: LHAAP 18/24 Feasibility Study - Appendix A Evaluation of Perchlorate Attenuation

COC: Perchlorate

Facility Location and Address: _____ Longhorn Army Ammunition Plant, Karnack Texas

Date: Oct-16

Sampling Date	Perc mg/L	Perc ug/L	ln Perc mg/L	Elapsed time since 10/1/00 years
01-Oct-00	46.500	46500	3.839	0.00
01-Apr-01	8.270	8270	2.113	0.50
01-Nov-01	54.300	54300	3.995	1.08
01-May-02	42.000	42000	3.738	1.58
01-Nov-02	65.800	65800	4.187	2.08
01-May-03	29.200	29200	3.374	2.58
01-Nov-03	12.300	12300	2.510	3.08
01-May-04	49.300	49300	3.898	3.58
01-Nov-04	53.400	53400	3.978	4.09
17-May-05	47.500	47500	3.861	4.63
17-Nov-05	78.300	78300	4.361	5.13
24-May-06	88.200	88200	4.480	5.65
21-Sep-11	16.700	16700	2.815	10.98
12-Mar-12	11.400	11400	2.434	11.45
26-Sep-12	16.200	16200	2.785	12.00
11-May-13	50.400	50400	3.920	12.62
14-Dec-13	85.300	85300	4.446	13.21
11-Jun-14	25.400	25400	3.235	13.70
18-Dec-14	22.100	22100	3.096	14.22
09-Jun-15	3.220	3220	1.169	14.70
03-Dec-15	20.600	20600	3.025	15.18
22-Jun-16	1.810	1810	0.593	15.73
TRRP PCL	0.017	*17*		

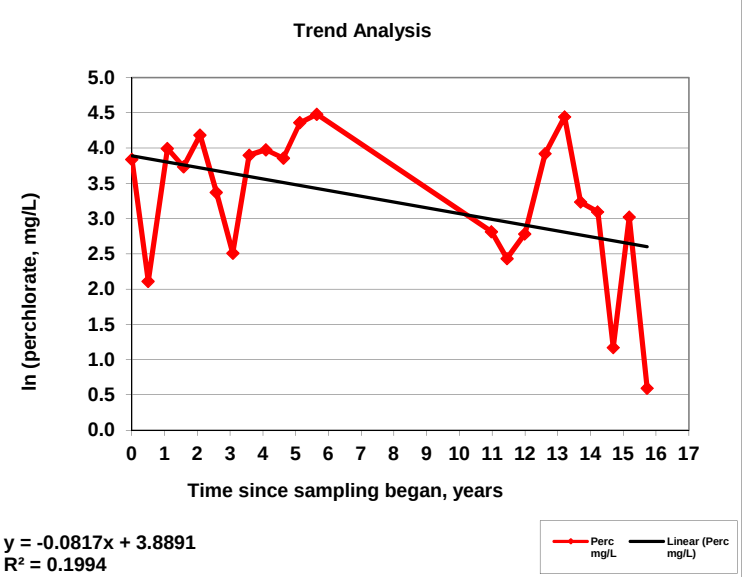

$y = -0.0817x + 3.8891$
$R^2 = 0.1994$

Solutions

Enter C_{CL}	⇨	17	
Enter C_o	⇨	1810	
Enter k_{point}	⇨	0.0817	
Time to reach cleanup level		57.1	years

Formula $t = -[\ln(CCL/Co)] / kpoint$

where:
t = Time to achieve cleanup levels, years
C_{CL} = Cleanup level for contaminant of concern, µg/L
C_o = Initial concentration of contaminant of concern, µg/L
k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$
= slope of the line, y

AECOM

Figure A-7: First-Order Decay Rate Calculation for Attenuation Determination
LHAAP-18/24 Feasibility Study
Longhorn Army Ammunition Plant
Karnack, Texas

AWD-1

Facility Name: LHAAP_18/24 Feasibility Study - Appendix A Evaluation of Perchlorate Attenuation

COC: Perchlorate

Facility Location and Address: _____ Longhorn Army Ammunition Plant, Karnack Texas

Date: Oct-16

Sampling Date	Perc mg/L	Perc ug/L	ln Perc mg/L	Elapsed time since 10/1/00 years
01-Oct-00	0.083	83	-2.494	0.00
01-Apr-01	0.150	150	-1.897	0.50
01-Nov-01	0.249	249	-1.390	1.08
01-May-02	0.479	479	-0.736	1.58
01-Nov-02	3.000	3000	1.099	2.08
01-May-03	2.480	2480	0.908	2.58
01-Nov-03	9.580	9580	2.260	3.08
01-May-04	2.260	2260	0.815	3.58
01-Nov-04	1.460	1460	0.378	4.09
17-May-05	0.793	793	-0.232	4.63
16-Nov-05	4.640	4640	1.535	5.13
24-May-06	1.910	1910	0.647	5.65
12-Mar-12	0.000	0.404	-7.814	11.45
05-Jun-14	0.000	0.287	-8.156	13.68
18-Dec-14	0.001	0.63	-7.378	14.22
10-Jun-15	0.005	5.24	-5.251	14.70
04-Dec-15	0.001	0.53	-7.537	15.18
07-Jun-16	0.005	4.92	-5.314	15.69
TRRP PCL	0.017	*17*		

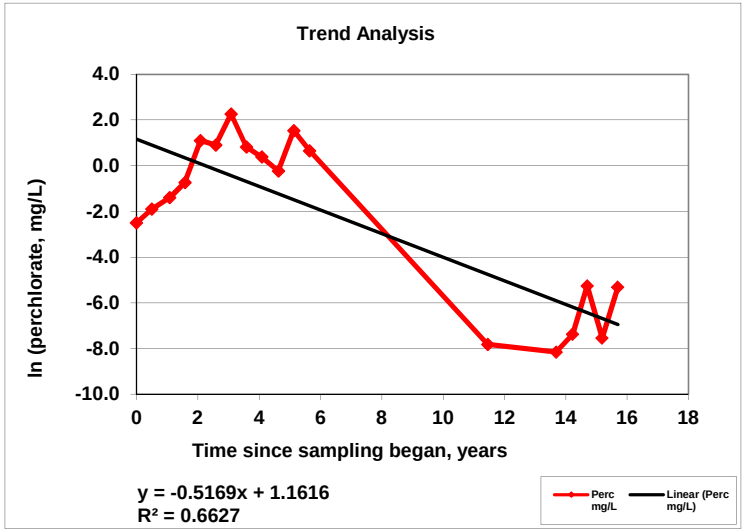

Formula $t = -[\ln(CCL/Co)] / kpoint$

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, µg/L

C_o = Initial concentration of contaminant of concern, µg/L

k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$
= slope of the line, y

Solutions

Enter C_{CL}	⇨	17	
Enter C_o	⇨	4.92	
Enter k_{point}	⇨	0.5169	
Time to reach cleanup level		NA	years

AECOM

Figure A-8: First-Order Decay Rate Calculation for Attenuation Determination
LHAAP-18/24 Feasibility Study
Longhorn Army Ammunition Plant
Karnack, Texas

MW-7

Facility Name: LHAAP_18/24 Feasibility Study - Appendix A Evaluation of Perchlorate Attenuation

COC: Perchlorate

Facility Location and Address: _____ Longhorn Army Ammunition Plant, Karnack Texas

Date: Oct-16

Sampling Date	Perc mg/L	Perc ug/L	ln Perc mg/L	Elapsed time since 10/1/00 years
01-Oct-00	52.700	52700	3.965	0.00
01-Apr-01	36.800	36800	3.605	0.50
01-Nov-01	138.000	138000	4.927	1.08
01-May-02	126.000	126000	4.836	1.58
01-Nov-02	118.000	118000	4.771	2.08
01-May-03	119.000	119000	4.779	2.58
01-Nov-03	157.000	157000	5.056	3.08
01-May-04	125.000	125000	4.828	3.58
01-Nov-04	99.000	99000	4.595	4.09
18-May-05	105.000	105000	4.654	4.63
17-Nov-05	100.000	100000	4.605	5.13
23-May-06	89.400	89400	4.493	5.64
20-Sep-11	49.600	49600	3.904	10.98
07-Mar-12	49.300	49300	3.898	11.44
26-Sep-12	34.100	34100	3.529	12.00
14-May-13	37.500	37500	3.624	12.63
14-Dec-13	36.7	36700	3.603	13.21
17-Dec-14	32.1	32100	3.469	14.22
17-Jun-15	26.8	26800	3.288	14.72
01-Dec-15	20.7	20700	3.030	15.18
24-Jun-16	22.2	22200	3.100	15.74
TRRP PCL	0.017	*17*		

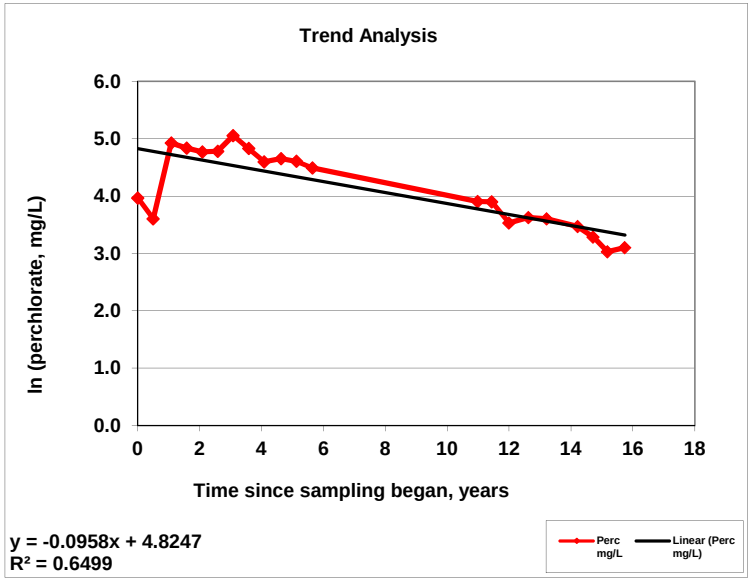

Solutions

Enter C_{CL}	⟹	17	
Enter C_o	⟹	22200	
Enter k_{point}	⟹	0.0958	
Time to reach cleanup level		74.9	years

Formula $t = -[\ln(CCL/Co)] / kpoint$

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, µg/L

C_o = Initial concentration of contaminant of concern, µg/L

k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$

= slope of the line, y

AECOM

Figure A-9: First-Order Decay Rate Calculation for Attenuation Determination
LHAAP-18/24 Feasibility Study
Longhorn Army Ammunition Plant
Karnack, Texas

MW-14

Facility Name: LHAAP_18/24 Feasibility Study - Appendix A Evaluation of Perchlorate Attenuation

COC: Perchlorate

Facility Location and Address: _____ Longhorn Army Ammunition Plant, Karnack Texas

Date: Oct-16

Sampling Date	Perc mg/L	Perc ug/L	ln Perc mg/L	Elapsed time since 10/1/00 years
01-Oct-00	6.680	6680	1.899	0.00
01-Apr-01	4.720	4720	1.552	0.50
01-Nov-01	10.00	10000	2.303	1.08
01-May-02	6.210	6210	1.826	1.58
01-Nov-02	4.740	4740	1.556	2.08
01-May-03	3.750	3750	1.322	2.58
01-Nov-03	2.700	2700	0.993	3.08
01-May-04	2.580	2580	0.948	3.58
01-Nov-04	2.180	2180	0.779	4.09
12-May-05	1.980	1980	0.683	4.61
15-Nov-05	1.850	1850	0.615	5.13
23-May-06	1.410	1410	0.344	5.64
29-Sep-12	173.0	173000	5.153	12.00
09-Dec-13	204.000	204000	5.318	13.20
05-Jun-14	247.000	247000	5.509	13.68
19-Dec-14	261.000	261000	5.565	14.22
10-Jun-15	248.000	248000	5.513	14.70
14-Dec-15	288.000	288000	5.663	15.21
07-Jun-16	229.000	229000	5.434	15.69
TRRP PCL	0.017	*17*		

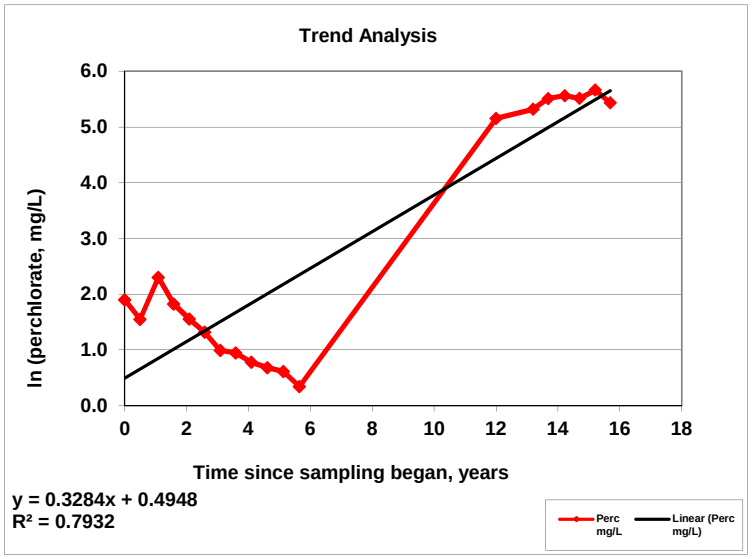

Solutions

Enter C_{CL}	⇨	17	
Enter C_o	⇨	229000	
Enter k_{point}	⇨	-0.3321	
Time to reach cleanup level		NA	years

Formula $t = -[\ln(CCL/Co)] / kpoint$

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, µg/L

C_o = Initial concentration of contaminant of concern, µg/L

k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$
= slope of the line, y

AECOM

Figure A-10: First-Order Decay Rate Calculation for Attenuation Determination
LHAAP-18/24 Feasibility Study
Longhorn Army Ammunition Plant
Karnack, Texas

MW-120

Facility Name: LHAAP_18/24 Feasibility Study - Appendix A Evaluation of Perchlorate Attenuation

COC: Perchlorate

Facility Location and Address: _____ Longhorn Army Ammunition Plant, Karnack Texas

Date: Oct-16

Sampling Date	Perc mg/L	Perc ug/L	In Perc mg/L	Elapsed time since 10/1/00 years
01-Oct-00	80.00	80000	4.382	0.00
01-Apr-01	27.30	27300	3.307	0.50
01-Nov-01	172.0	172000	5.147	1.08
01-May-02	127.0	127000	4.844	1.58
01-Nov-02	156.0	156000	5.050	2.08
01-May-03	131.0	131000	4.875	2.58
01-Nov-03	198.0	198000	5.288	3.08
01-May-04	167.0	167000	5.118	3.58
01-Nov-04	74.00	74000	4.304	4.09
18-May-05	210.0	210000	5.347	4.63
17-Nov-05	252.0	252000	5.529	5.13
23-May-06	177.0	177000	5.176	5.64
11-May-13	95.00	95000	4.554	12.62
14-Dec-13	124.000	124000	4.820	13.21
06-Jun-14	122.000	122000	4.804	13.69
19-Dec-14	105.000	105000	4.654	14.22
11-Jun-15	82.200	82200	4.409	14.70
03-Dec-15	24.100	24100	3.182	15.18
16-Jun-16	32.700	32700	3.487	15.72
TRRP PCL	0.017	*17*	*-4.074541935*	

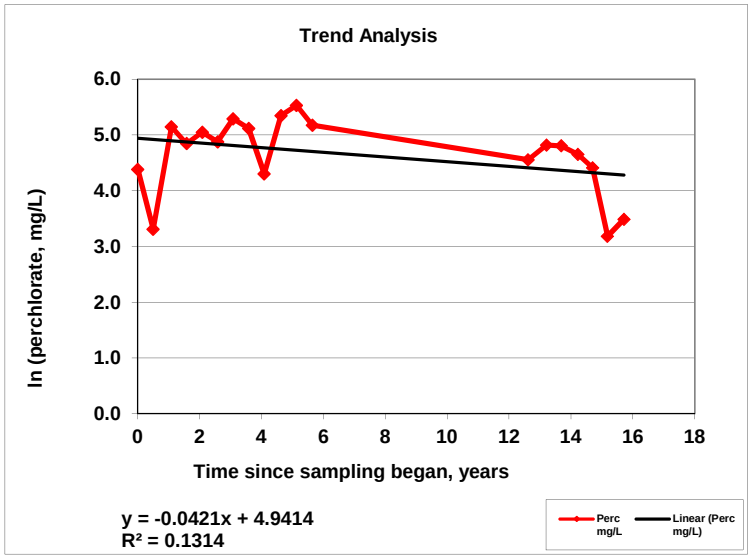

Solutions

Enter C_{CL}	⇨	17	
Enter C_o	⇨	32700	
Enter k_{point}	⇨	0.0421	
Time to reach cleanup level		179.6	years

Formula *t = -[ln(CCL/Co)] / kpoint*

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, µg/L

C_o = Initial concentration of contaminant of concern, µg/L

k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$
= slope of the line, y

AECOM

Figure A-11: First-Order Decay Rate Calculation for Attenuation Determination
LHAAP-18/24 Feasibility Study
Longhorn Army Ammunition Plant
Karnack, Texas

MW-23

Facility Name: LHAAP_18/24 Feasibility Study - Appendix A Evaluation of Perchlorate Attenuation

COC: Perchlorate

Facility Location and Address: _____ Longhorn Army Ammunition Plant, Karnack Texas

Date: Oct-16

Sampling Date	Perc mg/L	Perc ug/L	In Perc mg/L	Elapsed time since 11/1/01 years
01-Nov-01	37.300	37300	3.619	0.00
01-May-02	39.100	39100	3.666	0.50
01-Nov-02	38.500	38500	3.651	1.00
01-May-03	37.800	37800	3.632	1.50
01-Nov-03	43.000	43000	3.761	2.00
01-May-04	43.100	43100	3.764	2.50
01-Nov-04	40.400	40400	3.699	3.00
17-May-05	39.200	39200	3.669	3.54
16-Nov-05	36.500	36500	3.597	4.04
24-May-06	42.500	42500	3.750	4.56
21-Sep-11	48.300	48300	3.877	9.89
13-Mar-12	57.500	57500	4.052	10.37
25-Sep-12	53.100	53100	3.972	10.91
08-May-13	55.600	55600	4.018	11.53
12-Dec-13	58.000	58000	4.060	12.12
11-Jun-14	61.400	61400	4.117	12.62
19-Dec-14	76.600	76600	4.339	13.14
04-Dec-15	87.600	87600	4.473	14.10
18-Jun-15	75.300	75300	4.321	13.64
07-Jun-16	65.200	65200	4.177	14.61
TRRP PCL	0.017	*17*	*-4.074541935*	

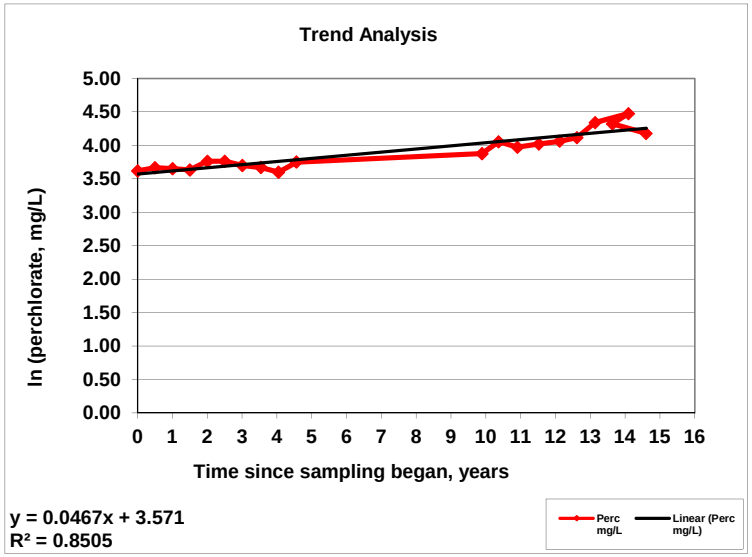

Solutions

Enter C_{CL}	⇨	17	
Enter C_o	⇨	65200	
Enter k_{point}	⇨	-0.0485	
Time to reach cleanup level		**NA**	**years**

Formula $t = -[\ln(CCL/Co)] / kpoint$

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, µg/L

C_o = Initial concentration of contaminant of concern, µg/L

k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$
= slope of the line, y

AECOM

Figure A-12: First-Order Decay Rate Calculation for Attenuation Determination
LHAAP-18/24 Feasibility Study
Longhorn Army Ammunition Plant
Karnack, Texas

18WW08

Facility Name: LHAAP_18/24 Feasibility Study - Appendix A Evaluation of Perchlorate Attenuation

COC: Perchlorate

Facility Location and Address: _____ Longhorn Army Ammunition Plant, Karnack Texas

Date: Oct-16

Sampling Date	Perc mg/L	Perc ug/L	ln Perc mg/L	Elapsed time since 10/1/00 years
01-May-02	19.800	19800	2.986	0.00
01-Nov-02	18.400	18400	2.912	0.50
01-May-03	16.400	16400	2.797	1.00
01-Nov-03	20.300	20300	3.011	1.50
01-May-04	14.000	14000	2.639	2.00
01-Nov-04	5.200	5200	1.649	2.51
11-May-05	0.046	45.7	-3.086	3.03
11-Nov-05	13.200	13200	2.580	3.53
18-May-06	4.500	4500	1.504	4.05
06-Mar-07	1.000	1000	0.000	4.85
15-Sep-07	2.750	2750	1.012	5.38
12-Mar-08	0.610	610	-0.494	5.87
01-Oct-08	1.920	1920	0.652	6.42
03-Apr-09	0.190	190	-1.661	6.93
16-Jul-09	0.220	220	-1.514	7.21
14-Aug-09	0.883	883	-0.124	7.29
23-Sep-09	0.020	20	-3.912	7.40
09-Mar-10	0.002	2	-6.502	7.86
07-Sep-10	2.700	2700	0.993	8.36
17-Mar-11	0.023	22.6	-3.790	8.88
15-Sep-11	2.500	2500	0.916	9.38
08-Mar-12	0.006	6.19	-5.085	9.86
26-Sep-12	2.080	2080	0.732	10.42
15-May-13	0.051	51.2	-2.972	11.05
19-Dec-13	0.304	304	-1.191	11.64
03-Jun-14	0.003	3.4	-5.696	12.10
10-Dec-14	0.012	12	-4.448	12.62
16-Jun-15	0.001	0.66	-7.331	13.13
17-Dec-15	0.031	31	-3.480	13.64
20-Jun-16	0.000	0.20	-8.517	14.15
TRRP PCL	*0.017*	*17*		

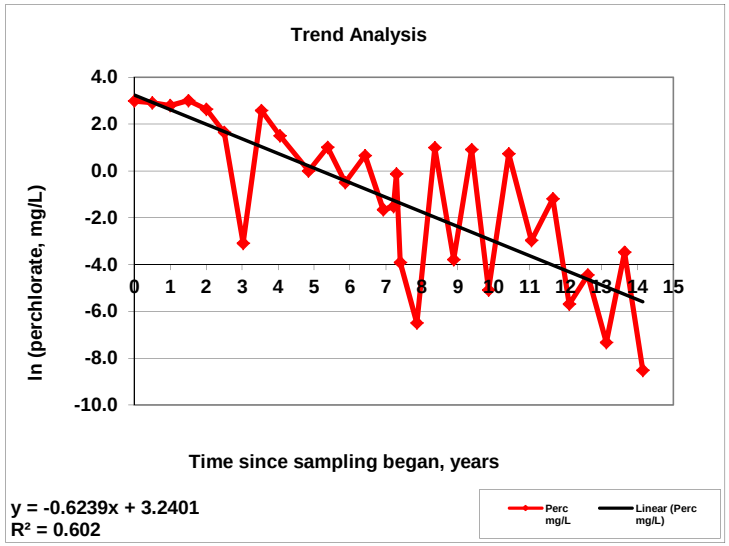

Solutions

Enter C_{CL}	⟹	17	
Enter C_o	⟹	0.2	
Enter k_{point}	⟹	0.6239	
Time to reach cleanup level		NA	years

Formula $t = -[\ln(CCL/Co)] / kpoint$

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, µg/L

C_o = Initial concentration of contaminant of concern, µg/L

k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$

= slope of the line, y

AECOM

Figure A-13: First-Order Decay Rate Calculation for Attenuation Determination
LHAAP-18/24 Feasibility Study
Longhorn Army Ammunition Plant
Karnack, Texas

MW-8

Facility Name: LHAAP 18/24 Feasibility Study - Appendix A Evaluation of Perchlorate Attenuation

COC: Perchlorate

Facility Location and Address: Longhorn Army Ammunition Plant, Karnack Texas

Date: Oct-16

Sampling Date	Perc mg/L	Perc ug/L	ln Perc mg/L	Elapsed time since 10/1/00 years
01-Oct-00	21.400	21400	3.063	0.00
01-Apr-01	48.600	48600	3.884	0.50
01-Nov-01	36.600	36600	3.600	1.08
11-Mar-02	41.500	41500	3.726	1.44
01-May-02	29.900	29900	3.398	1.58
01-Nov-02	22.900	22900	3.131	2.08
01-May-03	20.500	20500	3.020	2.58
01-Nov-03	17.000	17000	2.833	3.08
01-Nov-04	26.000	26000	3.258	4.09
16-May-05	27.500	27500	3.314	4.62
16-Nov-05	27.900	27900	3.329	5.13
23-May-06	47.500	47500	3.861	5.64
08-Mar-07	36.000	36000	3.584	6.44
11-Mar-08	35.200	35200	3.561	7.45
29-Sep-08	36.500	36500	3.597	8.00
01-Apr-09	35.000	35000	3.555	8.50
21-Sep-09	38.000	38000	3.638	8.98
09-Mar-10	34.000	34000	3.526	9.44
08-Sep-10	54.000	54000	3.989	9.94
17-Mar-11	53.200	53200	3.974	10.46
15-Sep-11	64.500	64500	4.167	10.96
08-Mar-12	78.000	78000	4.357	11.44
27-Sep-12	72.500	72500	4.284	12.00
16-May-13	72.000	72000	4.277	12.63
12-Dec-13	63.600	63600	4.153	13.21
10-Dec-14	53.200	53200	3.974	14.20
15-Jun-15	40.700	40700	3.706	14.71
07-Dec-15	13.000	13000	2.565	15.19
09-Jun-16	8.290	8290	2.115	15.70
TRRP PCL	0.017	*17*		

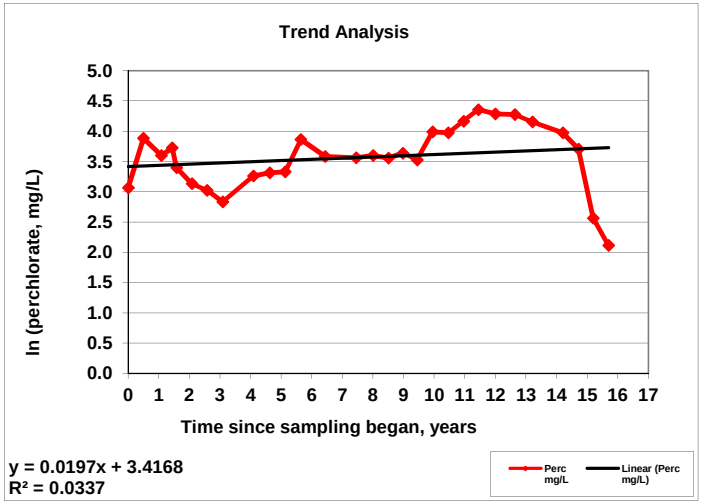

Enter C_{CL}	⇨	17	
Enter C_o	⇨	8290	
Enter k_{point}	⇨	-0.0635	
Time to reach cleanup level		NA	years

Formula $t = -[\ln(CCL/Co)] / kpoint$

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, µg/L

C_o = Initial concentration of contaminant of concern, µg/L

k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$

= slope of the line, y

AECOM

Figure A-14: First-Order Decay Rate Calculation for Attenuation Determination
LHAAP-18/24 Feasibility Study
Longhorn Army Ammunition Plant
Karnack, Texas

MW-2

Facility Name: LHAAP_18/24 Feasibility Study - Appendix A Evaluation of TCE Attenuation

CoC Trichloroethene

Facility Location and Address: Longhorn Army Ammunition Plant, Karnack Texas

Date: Oct-16

Sampling Date	TCE mg/L	TCE ug/L	ln TCE mg/L	Elapsed time since 5/1/03 years
01-May-03	160.000	160000	5.075	0.00
01-Nov-03	116.000	116000	4.754	0.50
01-May-04	129.000	129000	4.860	1.00
01-Nov-04	139.000	139000	4.934	1.51
18-May-05	71.700	71700	4.272	2.05
17-Nov-05	36.800	36800	3.605	2.55
24-May-06	47.000	47000	3.850	3.07
08-Mar-07	62.000	62000	4.127	3.85
15-Sep-07	98.700	98700	4.592	4.38
13-Mar-08	34.600	34600	3.544	4.87
10-Sep-08	95.100	95100	4.555	5.37
03-Apr-09	148.000	148000	4.997	5.93
30-Sep-09	44.800	44800	3.802	6.42
11-Nov-09	230.000	230000	5.438	6.54
08-Mar-10	46.600	46600	3.842	6.86
09-Sep-10	59.000	59000	4.078	7.36
16-Mar-11	57.700	57700	4.055	7.88
21-Sep-11	57.800	57800	4.057	8.40
13-Mar-12	99.500	99500	4.600	8.87
27-Sep-12	61.500	61500	4.119	9.42
09-May-13	68.400	68400	4.225	10.03
14-Dec-13	88.400	88400	4.482	10.63
10-Jun-14	30.100	30100	3.405	11.12
09-Dec-14	4.240	4240	1.445	11.62
12-Jun-15	6.760	6760	1.911	12.12
10-Dec-15	7.450	7450	2.008	12.62
24-Jun-16	15.50	15500	2.741	15.74
GW MCL	*0.005*	*5*		

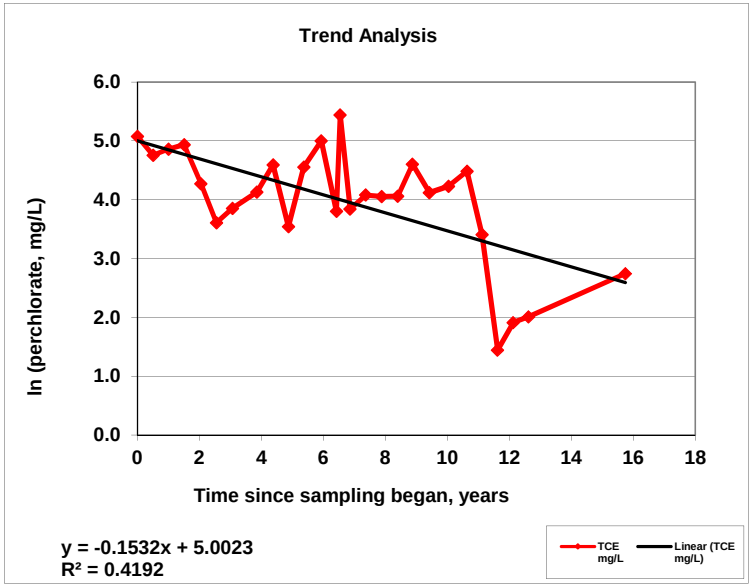

Solutions

Enter C_{CL}	⇨	5		
Enter C_o	⇨	15500		
Enter k_{point}	⇨	0.1532		
Time to reach cleanup level			52.5	years

Formula $t = -[\ln(CCL/Co)] / kpoint$

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, µg/L

C_o = Initial concentration of contaminant of concern, µg/L

k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$

= slope of the line, y

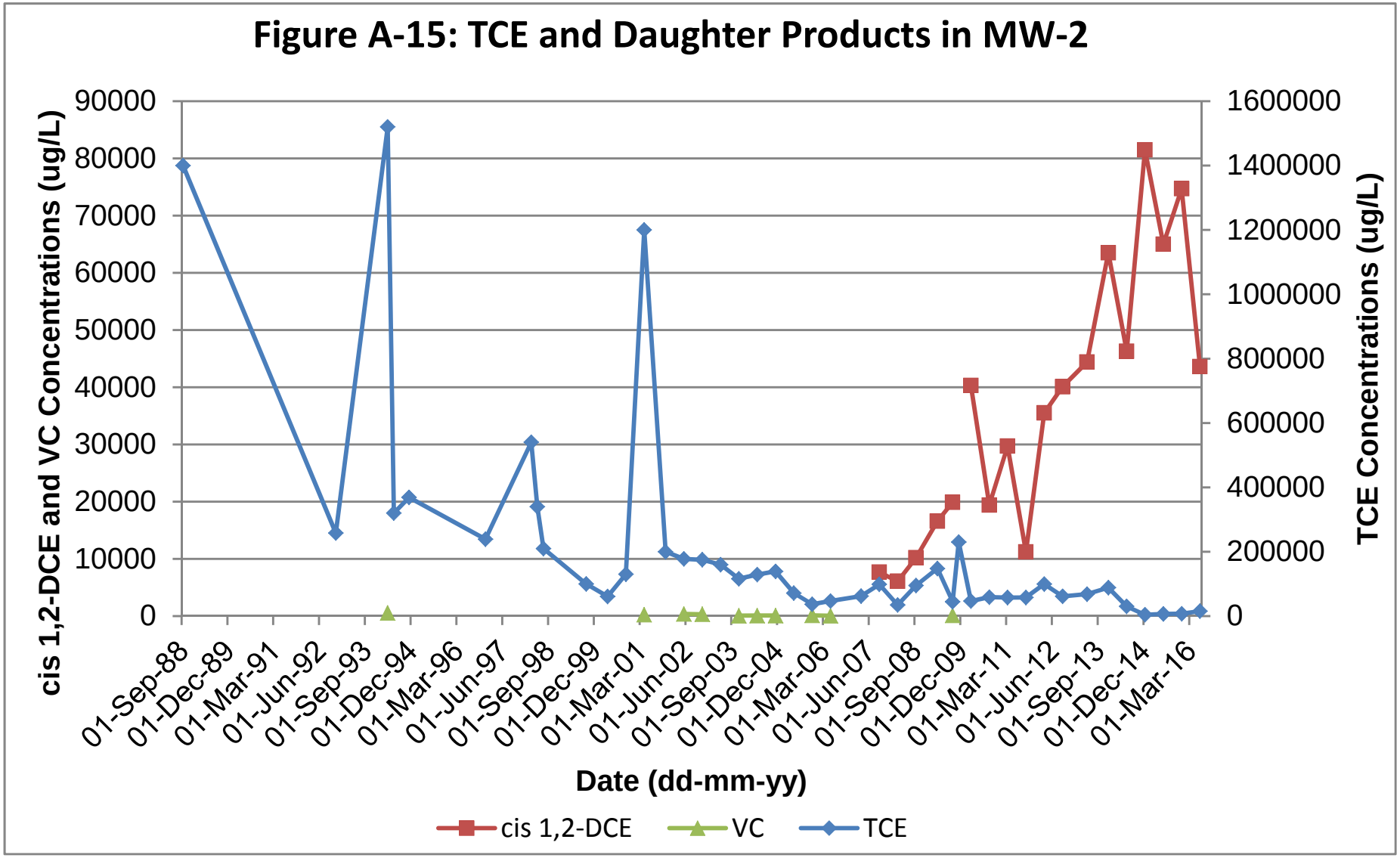
Figure A-15: TCE and Daughter Products in MW-2
cis 1,2-DCE and VC Concentrations (ug/L)
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
TCE Concentrations (ug/L)
1600000
1400000
1200000
1000000
800000
600000
400000
200000
0
01-Sep-88
01-Dec-89
01-Mar-91
01-Jun-92
01-Sep-93
01-Dec-94
01-Mar-96
01-Jun-97
01-Sep-98
01-Dec-99
01-Mar-01
01-Jun-02
01-Sep-03
01-Dec-04
01-Mar-06
01-Jun-07
01-Sep-08
01-Dec-09
01-Mar-11
01-Jun-12
01-Sep-13
01-Dec-14
01-Mar-16
Date (dd-mm-yy)
cis 1,2-DCE
VC
TCE

AECOM

Figure A-16: First-Order Decay Rate Calculation for Attenuation Determination
LHAAP-18/24 Feasibility Study
Longhorn Army Ammunition Plant
Karnack, Texas

MW-1

Facility Name: LHAAP_18/24 Feasibility Study - Appendix A Evaluation of TCE Attenuation

COC: Trichloroethene

Facility Location and Address: _____ Longhorn Army Ammunition Plant, Karnack Texas

Date: Oct-16

Sampling Date	Total mg/L	Total ug/L	ln Total mg/L	Elapsed time since 12/1/96 years
01-Dec-96	13.700	13700	2.617	0.00
01-Mar-98	9.600	9600	2.262	1.25
01-May-98	12.000	12000	2.485	1.41
23-Jul-98	14.200	14200	2.653	1.64
01-Sep-99	6.700	6700	1.902	2.75
01-Apr-00	2.200	2200	0.788	3.33
01-Oct-00	9.700	9700	2.272	3.84
01-Apr-01	7.600	7600	2.028	4.33
01-Nov-01	7.200	7200	1.974	4.92
01-May-02	16.100	16100	2.779	5.42
01-Nov-02	4.970	4970	1.603	5.92
01-May-03	11.500	11500	2.442	6.42
01-Nov-03	6.800	6800	1.917	6.92
01-May-04	8.180	8180	2.102	7.42
01-Nov-04	5.840	5840	1.765	7.92
17-May-05	8.020	8020	2.082	8.46
16-Nov-05	6.740	6740	1.908	8.96
24-May-06	2.330	2330	0.846	9.48
09-Sep-08	4.260	4260	1.449	11.78
11-Nov-09	2.700	2700	0.993	12.95
29-Sep-12	0.750	750	-0.288	15.84
10-Jun-14	0.788	788	-0.238	17.53
12-Jun-15	1.150	1150	0.140	18.54
24-Jun-16	3.620	3620	1.286	19.58
GW MCL	*0.005*	*5*		

Formula *t = -[ln(CCL/Co)] / kpoint*

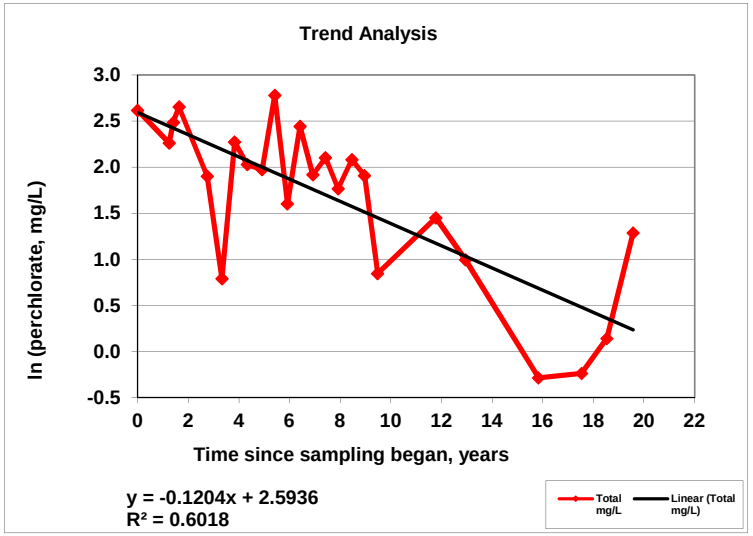

Solutions

Enter C_{CL}	⇨	5	
Enter C_o	⇨	3620	
Enter k_{point}	⇨	0.1204	
Time to reach cleanup level		54.7	years

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, µg/L

C_o = Initial concentration of contaminant of concern, µg/L

k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$

= slope of the line, y

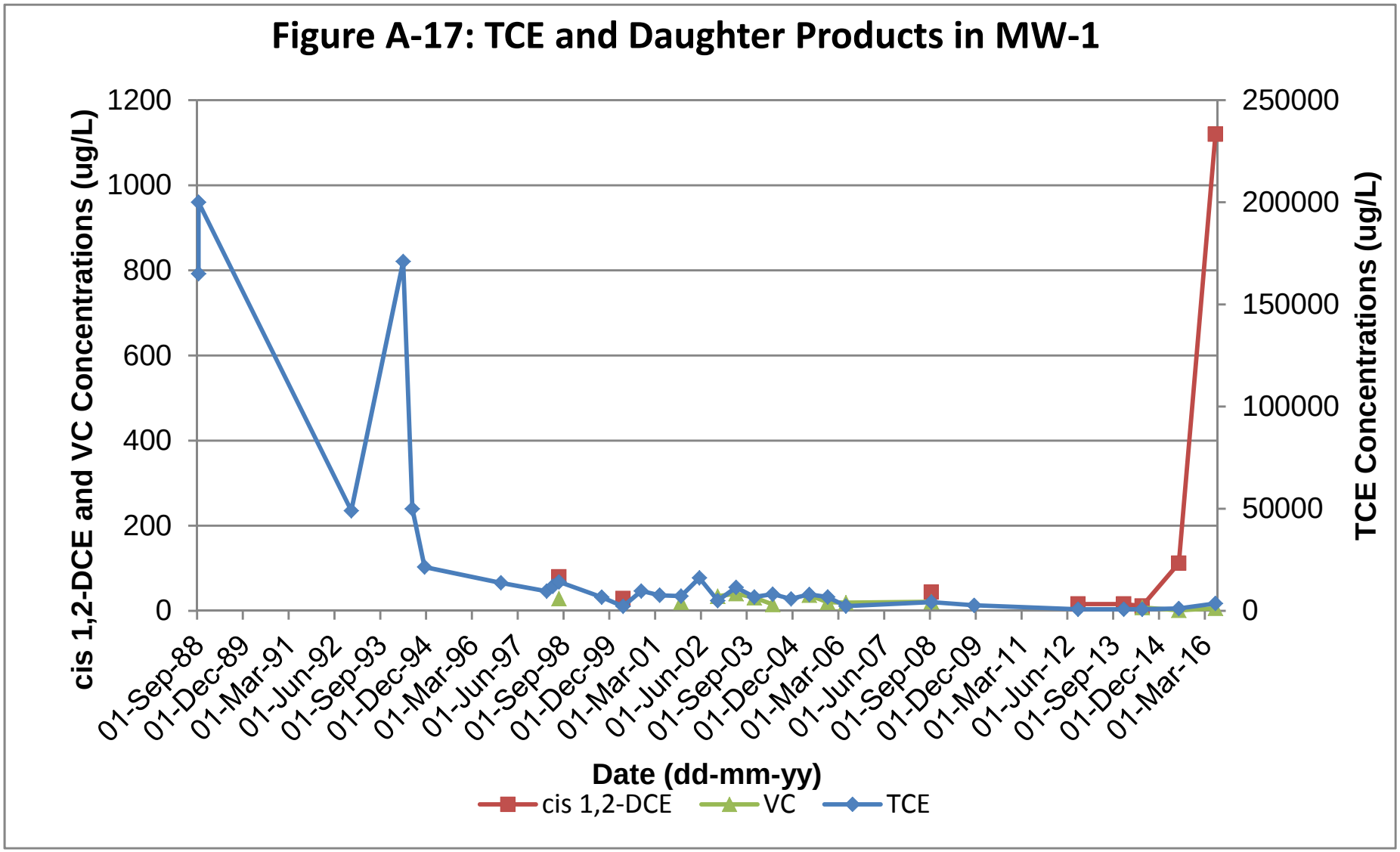
Figure A-17: TCE and Daughter Products in MW-1
cis 1,2-DCE and VC Concentrations (ug/L)
TCE Concentrations (ug/L)
1200
1000
800
600
400
200
0
250000
200000
150000
100000
50000
0
01-Sep-88
01-Dec-89
01-Mar-91
01-Jun-92
01-Sep-93
01-Dec-94
01-Mar-96
01-Jun-97
01-Sep-98
01-Dec-99
01-Mar-01
01-Jun-02
01-Sep-03
01-Dec-04
01-Mar-06
01-Jun-07
01-Sep-08
01-Dec-09
01-Mar-11
01-Jun-12
01-Sep-13
01-Dec-14
01-Mar-16
Date (dd-mm-yy)
cis 1,2-DCE
VC
TCE

AECOM

Figure A-18: First-Order Decay Rate Calculation for Attenuation Determination
LHAAP-18/24 Feasibility Study
Longhorn Army Ammunition Plant
Karnack, Texas

MW-4

Facility Name: LHAAP_18/24 Feasibility Study - Appendix A Evaluation of TCE Attenuation

COC: Trichloroethene

Facility Location and Address: _____ Longhorn Army Ammunition Plant, Karnack Texas

Date: Oct-16

Sampling Date	TCE mg/L	TCE ug/L	ln TCE mg/L	Elapsed time since 12/1/96 years
01-Dec-96	0.757	757	-0.278	0.00
01-Mar-98	1.200	1200	0.182	1.25
01-May-98	1.200	1200	0.182	1.41
21-Jan-99	1.090	1090	0.086	2.14
01-Sep-99	0.630	630	-0.462	2.75
01-Apr-00	3.100	3100	1.131	3.33
01-Oct-00	2.000	2000	0.693	3.84
01-Apr-01	0.570	570	-0.562	4.33
01-Nov-01	0.850	850	-0.163	4.92
01-May-02	0.517	517	-0.660	5.42
01-Nov-02	0.318	318	-1.146	5.92
01-May-03	0.572	572	-0.559	6.42
01-Nov-03	0.237	237	-1.440	6.92
01-May-04	0.302	302	-1.197	7.42
01-Nov-04	0.199	199	-1.614	7.92
17-May-05	0.331	331	-1.106	8.46
16-Nov-05	0.355	355	-1.036	8.96
24-May-06	0.419	419	-0.870	9.48
10-Sep-08	0.272	272	-1.302	11.78
10-Nov-09	0.690	690	-0.371	12.95
29-Sep-12	0.173	173	-1.757	15.84
GW MCL	*0.005*	*5*		

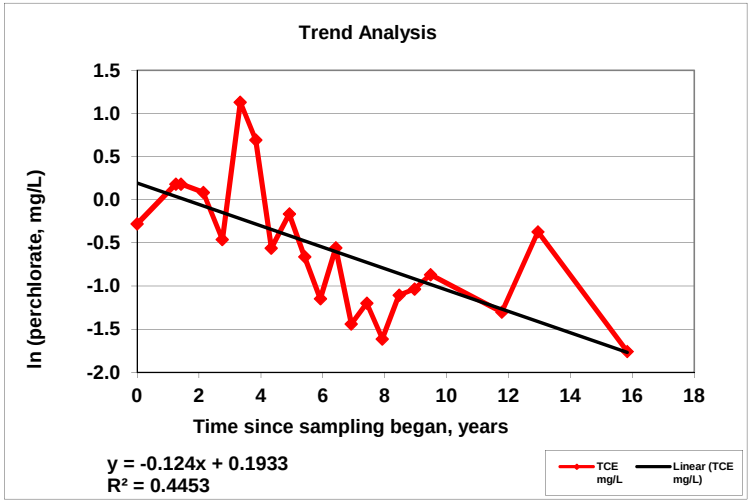

Solutions

Enter C_{CL}	⇨	5		
Enter C_o	⇨	173		
Enter k_{point}	⇨	0.1240		
Time to reach cleanup level			28.6	years

Formula *t = -[ln(CCL/Co)] / kpoint*

where:
t = Time to achieve cleanup levels, years
C_{CL} = Cleanup level for contaminant of concern, µg/L
C_o = Initial concentration of contaminant of concern, µg/L
k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$
= slope of the line, y

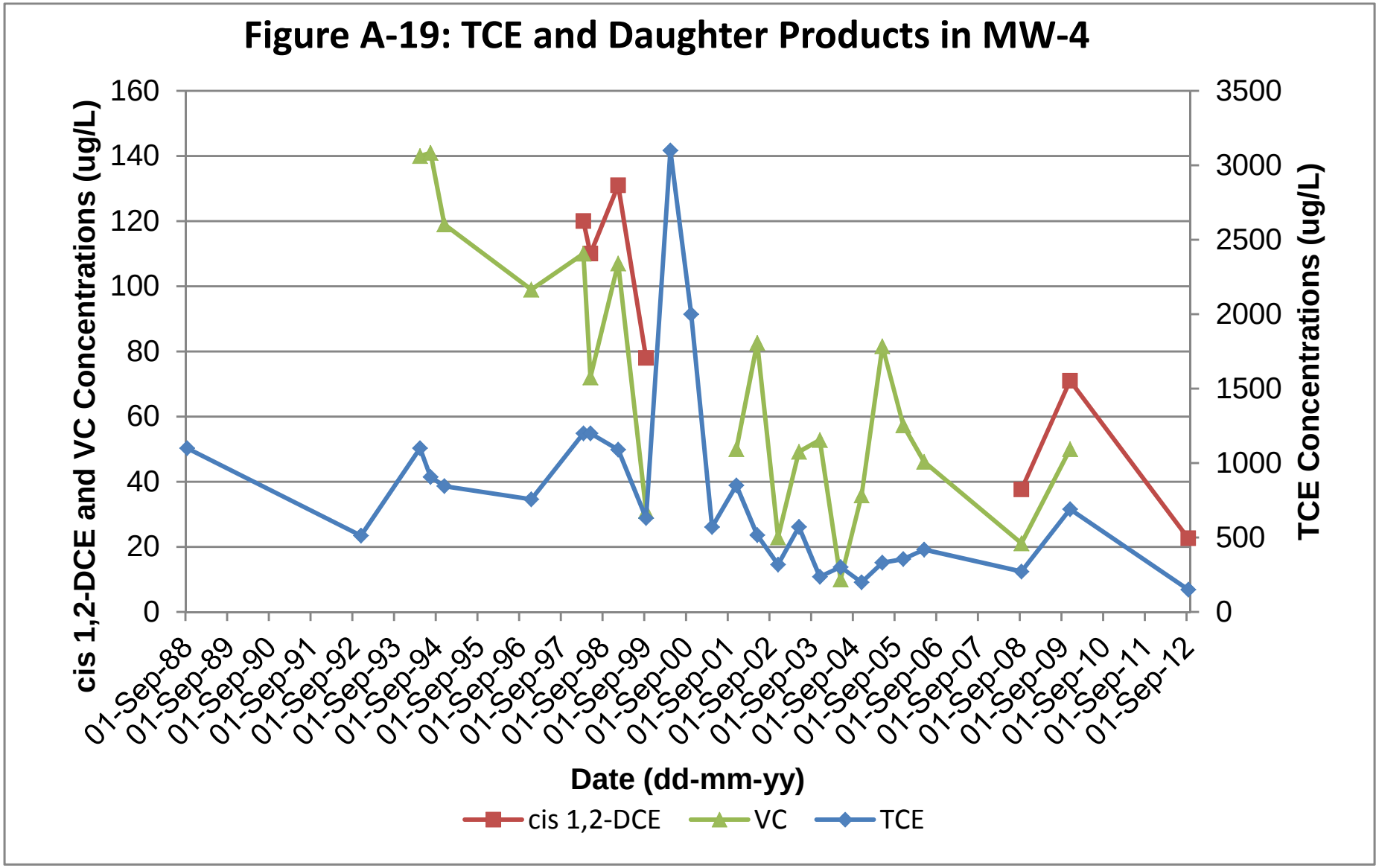
Figure A-19: TCE and Daughter Products in MW-4
cis 1,2-DCE and VC Concentrations (ug/L)
TCE Concentrations (ug/L)
160
140
120
100
80
60
40
20
0
3500
3000
2500
2000
1500
1000
500
0
01-Sep-88
01-Sep-89
01-Sep-90
01-Sep-91
01-Sep-92
01-Sep-93
01-Sep-94
01-Sep-95
01-Sep-96
01-Sep-97
01-Sep-98
01-Sep-99
01-Sep-00
01-Sep-01
01-Sep-02
01-Sep-03
01-Sep-04
01-Sep-05
01-Sep-06
01-Sep-07
01-Sep-08
01-Sep-09
01-Sep-10
01-Sep-11
01-Sep-12
Date (dd-mm-yy)
cis 1,2-DCE
VC
TCE

AECOM

Figure A-20: First-Order Decay Rate Calculation for Attenuation Determination
LHAAP-18/24 Feasibility Study
Longhorn Army Ammunition Plant
Karnack, Texas

MW-5

Facility Name: LHAAP 18/24 Feasibility Study - Appendix A Evaluation of TCE Attenuation

COC: Trichloroethene

Facility Location and Address: _____ Longhorn Army Ammunition Plant, Karnack Texas

Date: Oct-16

Sampling Date	TCE mg/L	TCE ug/L	ln TCE mg/L	Elapsed time since 1/21/99 years
21-Jan-99	0.062	62	-2.781	0.00
01-Sep-99	0.220	220	-1.514	0.61
01-Apr-00	0.085	85	-2.465	1.19
01-Oct-00	0.078	78	-2.551	1.70
01-Apr-01	0.067	67	-2.703	2.19
01-Nov-01	0.047	47	-3.058	2.78
01-May-02	0.035	35	-3.367	3.28
01-Nov-02	0.029	29	-3.554	3.78
01-May-03	0.049	49	-3.008	4.28
01-Nov-03	0.028	28	-3.568	4.78
01-May-04	0.088	88	-2.426	5.28
01-Nov-04	0.040	40	-3.221	5.78
16-May-05	0.029	29	-3.544	6.32
16-Nov-05	0.023	23	-3.794	6.82
24-May-06	0.048	48	-3.043	7.34
10-Sep-08	0.073	73	-2.616	9.64
10-Nov-09	0.086	86	-2.453	10.81
29-Sep-12	0.063	63	-2.761	13.70
13-May-13	0.056	56	-2.879	14.32
09-Dec-13	0.052	52	-2.958	14.89
09-Dec-14	0.054	54	-2.917	15.89
01-Dec-15	0.047	47	-3.055	16.87
08-Jun-16	0.054	54	-2.924	17.39
GW MCL	*0.005*	*5*		

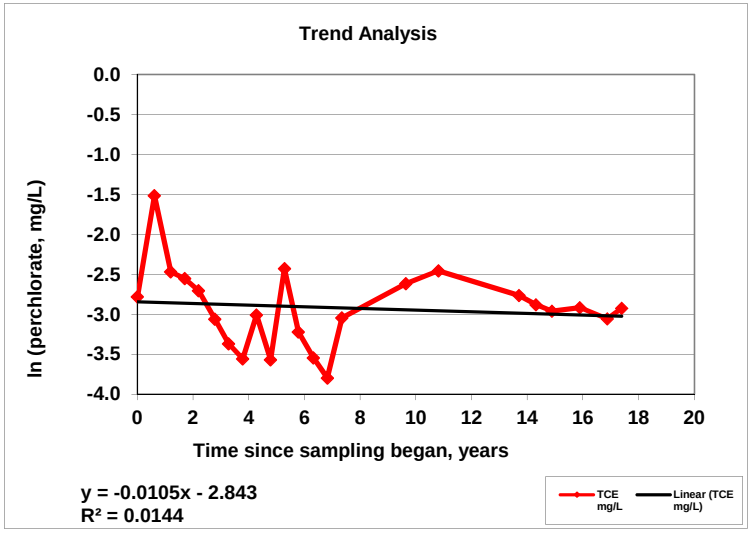

Solutions

Enter C_{CL}	⇨	5		
Enter C_o	⇨	54		
Enter k_{point}	⇨	0.0105		
Time to reach cleanup level			226.6	years

Formula $t = -[\ln(CCL/Co)] / kpoint$

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, µg/L

C_o = Initial concentration of contaminant of concern, µg/L

k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$

= slope of the line, y

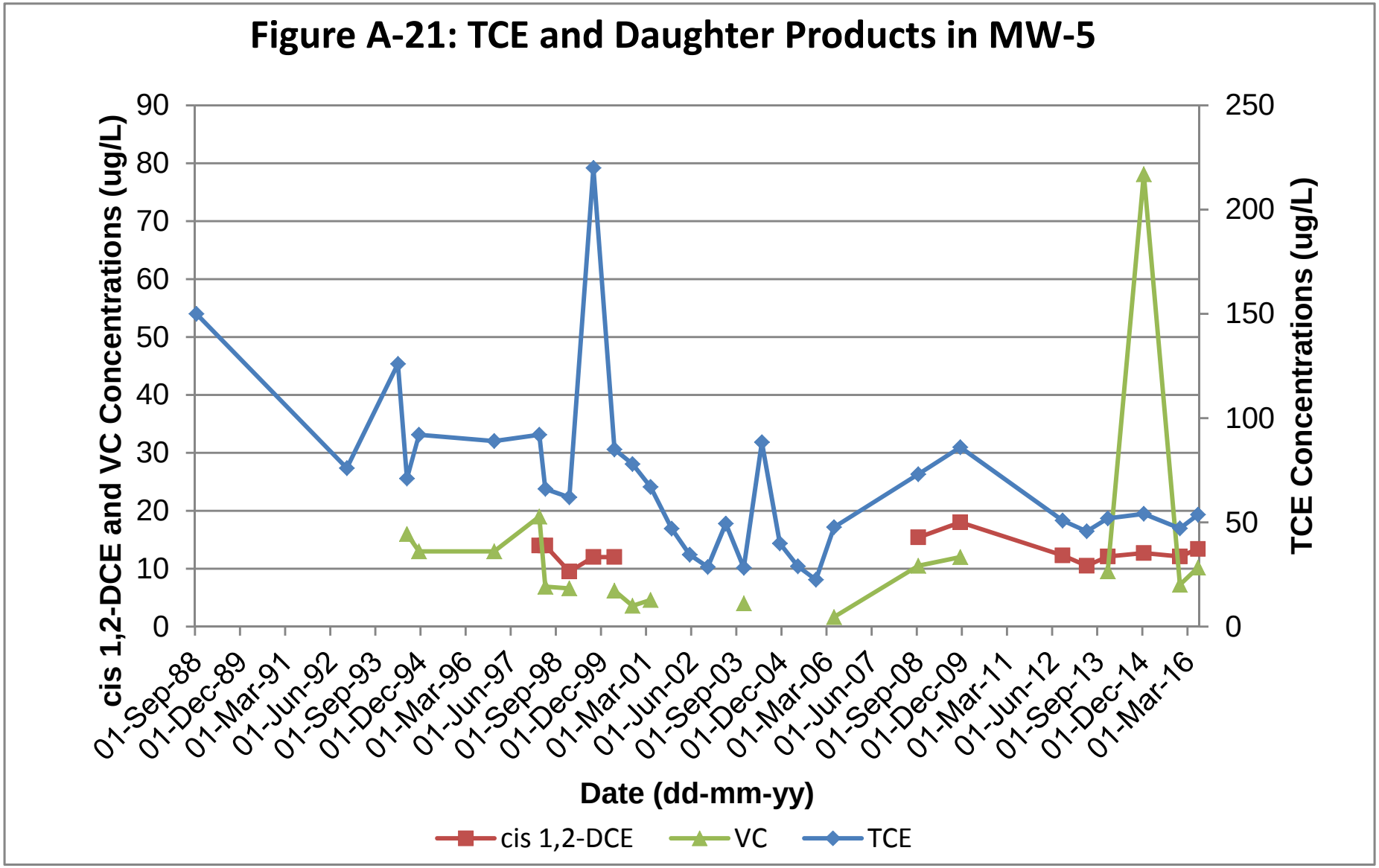
Figure A-21: TCE and Daughter Products in MW-5
cis 1,2-DCE and VC Concentrations (ug/L)
TCE Concentrations (ug/L)
90
80
70
60
50
40
30
20
10
0
250
200
150
100
50
0
01-Sep-88
01-Dec-89
01-Mar-91
01-Jun-92
01-Sep-93
01-Dec-94
01-Mar-96
01-Jun-97
01-Sep-98
01-Dec-99
01-Mar-01
01-Jun-02
01-Sep-03
01-Dec-04
01-Mar-06
01-Jun-07
01-Sep-08
01-Dec-09
01-Mar-11
01-Jun-12
01-Sep-13
01-Dec-14
01-Mar-16
Date (dd-mm-yy)
cis 1,2-DCE
VC
TCE

AECOM

Figure A-22: First-Order Decay Rate Calculation for Attenuation Determination
LHAAP-18/24 Feasibility Study
Longhorn Army Ammunition Plant
Karnack, Texas

MW-21

Facility Name: LHAAP_18/24 Feasibility Study - Appendix A Evaluation of TCE Attenuation

COC: Trichloroethene

Facility Location and Address: Longhorn Army Ammunition Plant, Karnack Texas

Date: Oct-16

Sampling Date	TCE mg/L	TCE ug/L	ln TCE mg/L	Elapsed time since 9/1/99 years
01-Sep-99	15.000	15000	2.708	0.00
01-Oct-00	3.300	3300	1.194	1.08
01-Apr-01	3.000	3000	1.099	1.58
01-Nov-01	5.000	5000	1.609	2.17
01-May-02	6.730	6730	1.907	2.67
01-Nov-02	6.260	6260	1.834	3.17
01-May-03	3.800	3800	1.335	3.67
01-Nov-03	0.965	965	-0.036	4.17
01-May-04	2.830	2830	1.040	4.67
01-Nov-04	3.110	3110	1.135	5.17
17-May-05	3.540	3540	1.264	5.71
16-Nov-05	3.040	3040	1.112	6.21
24-May-06	1.360	1360	0.307	6.73
10-Sep-08	0.518	518	-0.658	9.03
11-Nov-09	3.000	3000	1.099	10.20
21-Sep-11	5.600	5600	1.723	12.06
12-Mar-12	10.500	10500	2.351	12.54
25-Sep-12	5.100	5100	1.629	13.08
07-May-13	14.500	14500	2.674	13.69
14-Dec-13	14.600	14600	2.681	14.30
10-Jun-14	11.500	11500	2.442	14.78
19-Dec-14	12.000	12000	2.485	14.22
09-Jun-15	9.910	9910	2.294	14.70
02-Dec-15	15.400	15400	2.734	15.18
22-Jun-16	6.080	6080	1.805	15.73
GW MCL	*0.005*	*5*		

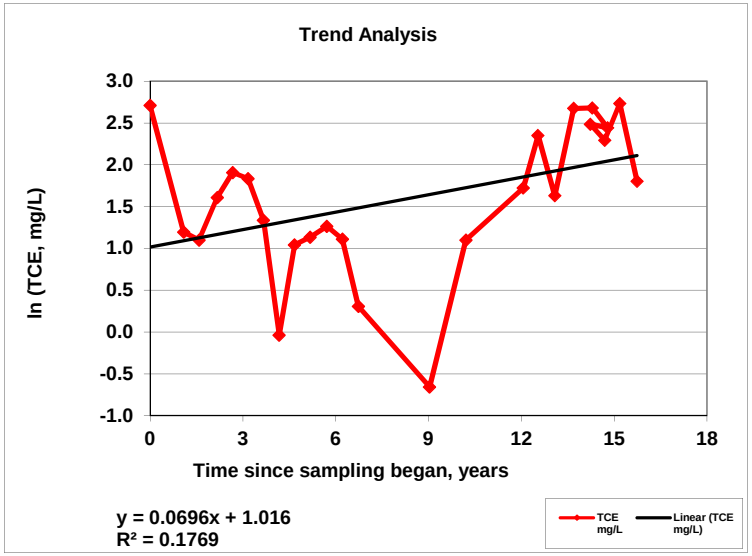

Solutions

Enter C_{CL}	⇨	5	
Enter C_o	⇨	6080	
Enter k_{point}	⇨	-0.0696	
Time to reach cleanup level		NA	years

Formula *t = -[ln(CCL/Co)] / kpoint*

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, µg/L

C_o = Initial concentration of contaminant of concern, µg/L

k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$

= slope of the line, y

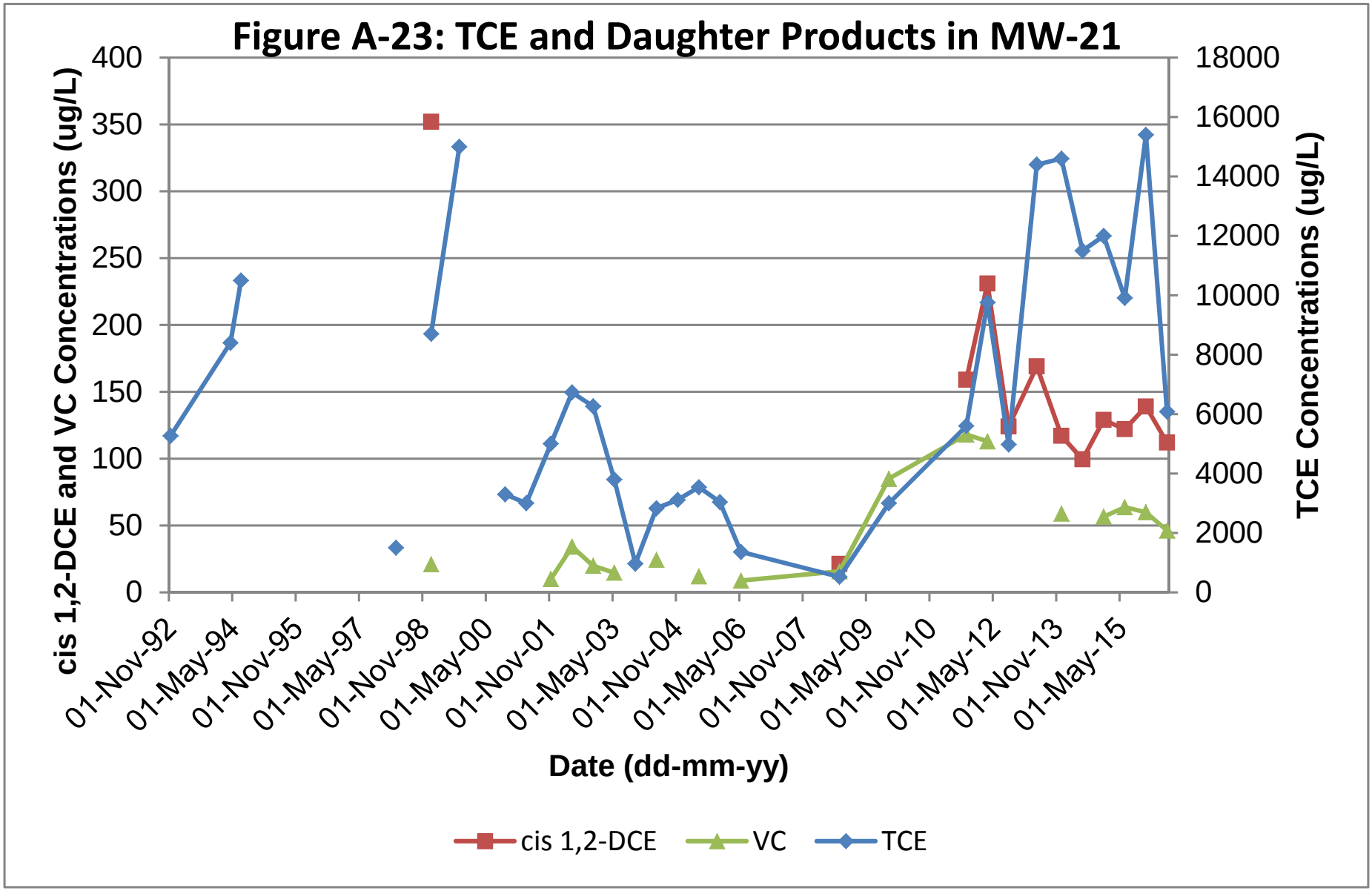
Figure A-23: TCE and Daughter Products in MW-21
cis 1,2-DCE and VC Concentrations (ug/L)
TCE Concentrations (ug/L)
400
350
300
250
200
150
100
50
0
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
01-Nov-92
01-May-94
01-Nov-95
01-May-97
01-Nov-98
01-May-00
01-Nov-01
01-May-03
01-Nov-04
01-May-06
01-Nov-07
01-May-09
01-Nov-10
01-May-12
01-Nov-13
01-May-15
Date (dd-mm-yy)
cis 1,2-DCE
VC
TCE

AECOM

Figure A-24: First-Order Decay Rate Calculation for Attenuation Determination
LHAAP-18/24 Feasibility Study
Longhorn Army Ammunition Plant
Karnack, Texas

109

Facility Name: LHAAP 18/24 Feasibility Study - Appendix A Evaluation of TCE Attenuation

COC: Trichloroethene

Facility Location and Address: _____ Longhorn Army Ammunition Plant, Karnack Texas

Date: Oct-16

Sampling Date	TCE mg/L	TCE ug/L	ln TCE mg/L	Elapsed time since 1/22/99 years
22-Jan-99	0.418	418	-0.872	0.00
01-Sep-99	0.500	500	-0.693	0.61
01-Apr-00	0.500	500	-0.693	1.19
01-Oct-00	0.590	590	-0.528	1.69
01-Apr-01	0.039	39	-3.244	2.19
01-Nov-01	0.320	320	-1.139	2.78
01-May-02	0.174	174	-1.749	3.27
01-Nov-02	0.249	249	-1.390	3.78
01-May-03	0.181	181	-1.709	4.27
01-Nov-03	0.189	189	-1.666	4.78
01-May-04	0.230	230	-1.470	5.28
01-Nov-04	0.349	349	-1.053	5.78
17-May-05	0.201	201	-1.604	6.32
17-Nov-05	0.244	244	-1.411	6.82
24-May-06	0.266	266	-1.324	7.34
09-Sep-08	0.391	391	-0.939	9.64
11-Nov-09	1.500	1500	0.405	10.81
21-Sep-11	1.490	1490	0.399	12.67
12-Mar-12	0.765	765	-0.268	13.15
26-Sep-12	1.597	1597	0.468	13.69
11-May-13	1.393	1393	0.331	14.31
14-Dec-13	1.280	1280	0.247	14.90
11-Jun-14	0.801	801	-0.222	15.39
18-Dec-14	1.190	1190	0.174	15.92
09-Jun-15	0.755	755	-0.281	16.39
03-Dec-15	1.250	1250	0.223	16.87
22-Jun-16	0.670	670	-0.400	17.43
GW MCL	*0.005*	*5*		

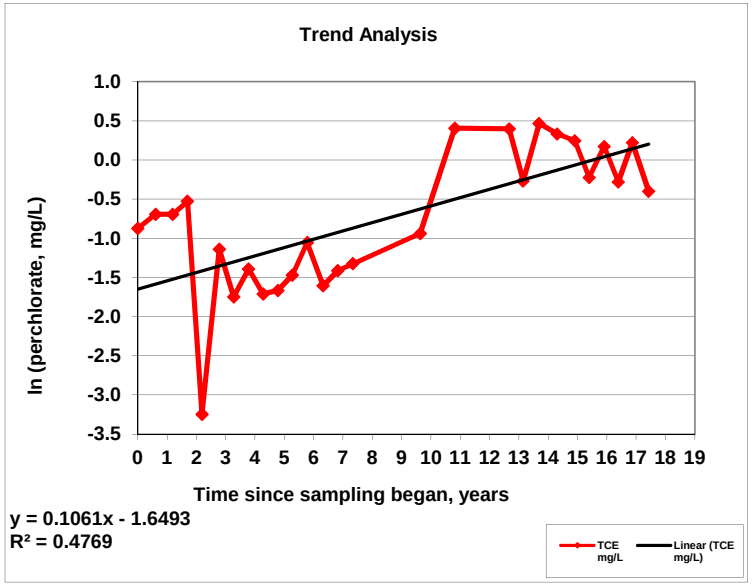

Solutions

Enter C_{CL}	⟹	5	
Enter C_o	⟹	670	
Enter k_{point}	⟹	-0.1061	
Time to reach cleanup level		NA	years

Formula $t = -[\ln(CCL/Co)] / kpoint$

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, µg/L

C_o = Initial concentration of contaminant of concern, µg/L

k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$

= slope of the line, y

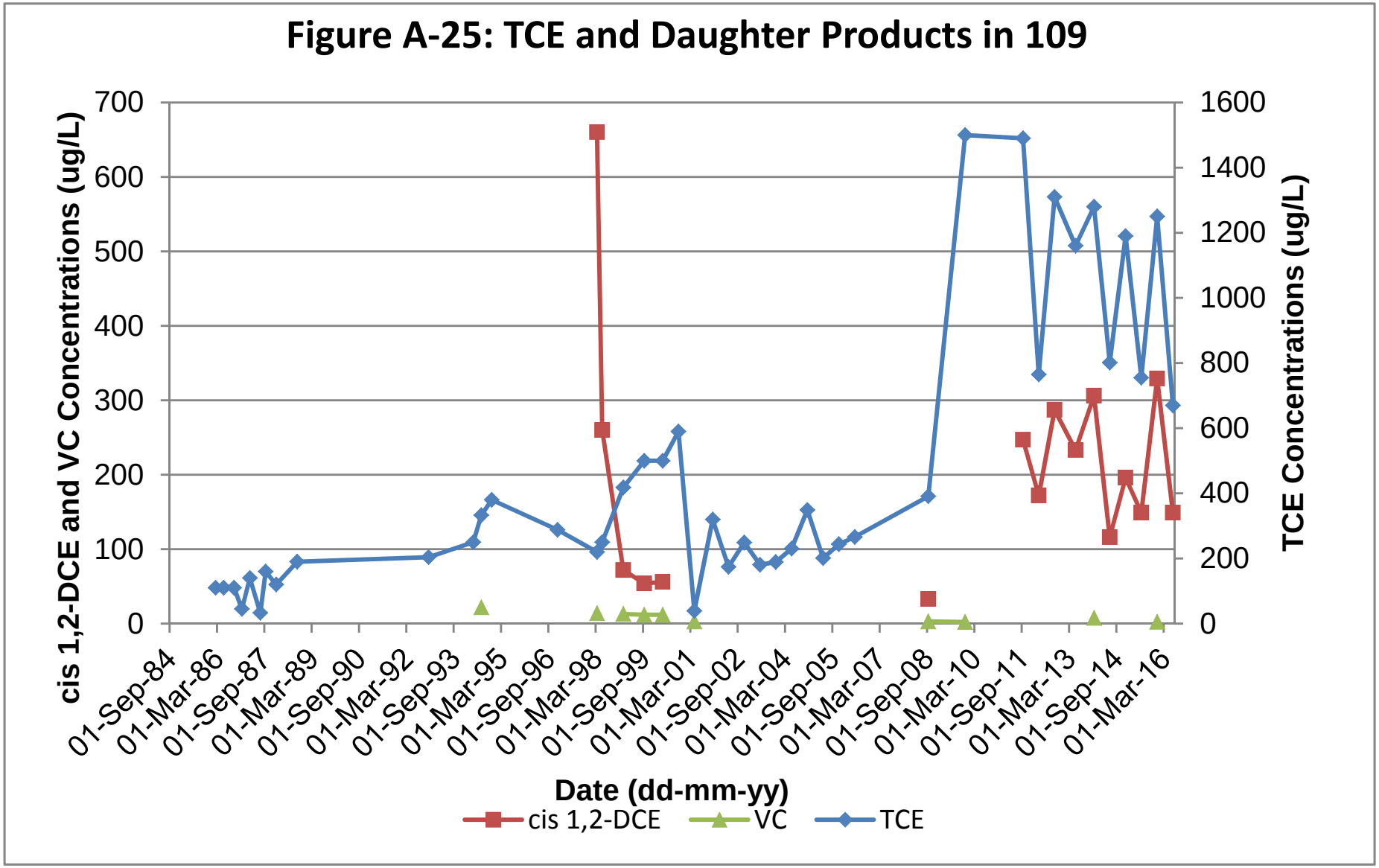
Figure A-25: TCE and Daughter Products in 109
cis 1,2-DCE and VC Concentrations (ug/L)
TCE Concentrations (ug/L)
700
600
500
400
300
200
100
0
1600
1400
1200
1000
800
600
400
200
0
01-Sep-84
01-Mar-86
01-Sep-87
01-Mar-89
01-Sep-90
01-Mar-92
01-Sep-93
01-Mar-95
01-Sep-96
01-Mar-98
01-Sep-99
01-Mar-01
01-Sep-02
01-Mar-04
01-Sep-05
01-Mar-07
01-Sep-08
01-Mar-10
01-Sep-11
01-Mar-13
01-Sep-14
01-Mar-16
Date (dd-mm-yy)
cis 1,2-DCE
VC
TCE

AECOM

Figure A-26: First-Order Decay Rate Calculation for Attenuation Determination
LHAAP-18/24 Feasibility Study
Longhorn Army Ammunition Plant
Karnack, Texas

AWD-1

Facility Name: LHAAP_18/24 Feasibility Study - Appendix A Evaluation of TCE Attenuation

COC: Trichloroethene

Facility Location and Address: _____ Longhorn Army Ammunition Plant, Karnack Texas

Date: Oct-16

Sampling Date	TCE mg/L	TCE ug/L	ln TCE mg/L	Elapsed time since 11/1/94 years
01-Nov-94	78.500	78500	4.363	0.00
01-Dec-96	75.000	75000	4.317	2.08
01-Mar-98	58.000	58000	4.060	3.33
26-Jan-99	129.000	129000	4.860	4.24
01-Sep-99	73.000	73000	4.290	4.84
01-Apr-00	67.000	67000	4.205	5.42
01-Oct-00	48.000	48000	3.871	5.92
01-Apr-01	34.000	34000	3.526	6.42
01-Nov-01	52.000	52000	3.951	7.01
01-May-02	56.100	56100	4.027	7.50
01-Nov-02	54.600	54600	4.000	8.01
01-May-03	59.200	59200	4.081	8.50
01-Nov-03	32.100	32100	3.469	9.01
01-May-04	55.100	55100	4.009	9.50
01-Nov-04	57.300	57300	4.048	10.01
17-May-05	38.900	38900	3.661	10.55
16-Nov-05	47.300	47300	3.857	11.05
24-May-06	29.000	29000	3.367	11.57
11-Nov-09	25.000	25000	3.219	15.04
13-Sep-11	16.200	16200	2.785	16.88
12-Mar-12	23.900	23900	3.174	17.37
05-Jun-14	20.800	20800	3.035	19.61
10-Jun-15	13.700	13700	2.617	20.62
07-Jun-16	7.120	7120	1.963	21.61
GW MCL	*0.005*	*5*		

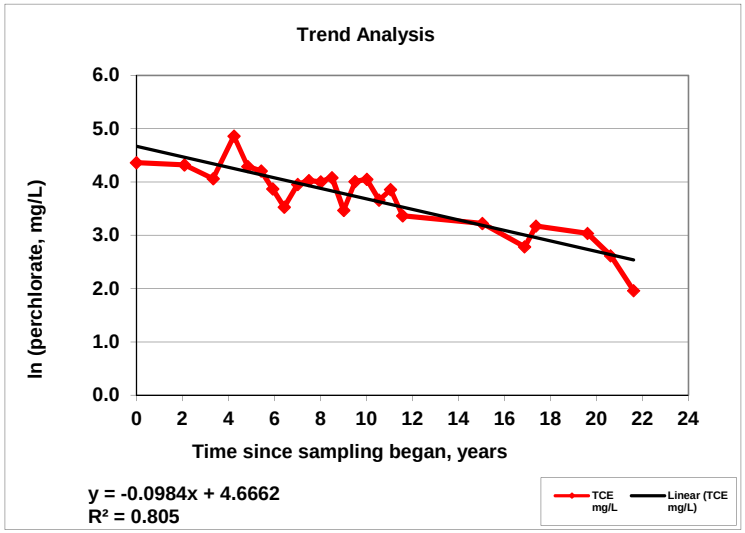

Solutions

Enter C_{CL}	⟹	5	
Enter C_o	⟹	7120	
Enter k_{point}	⟹	0.0984	
Time to reach cleanup level		73.8	years

Formula $t = -[\ln(CCL/Co)] / kpoint$

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, µg/L

C_o = Initial concentration of contaminant of concern, µg/L

k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$

= slope of the line, y

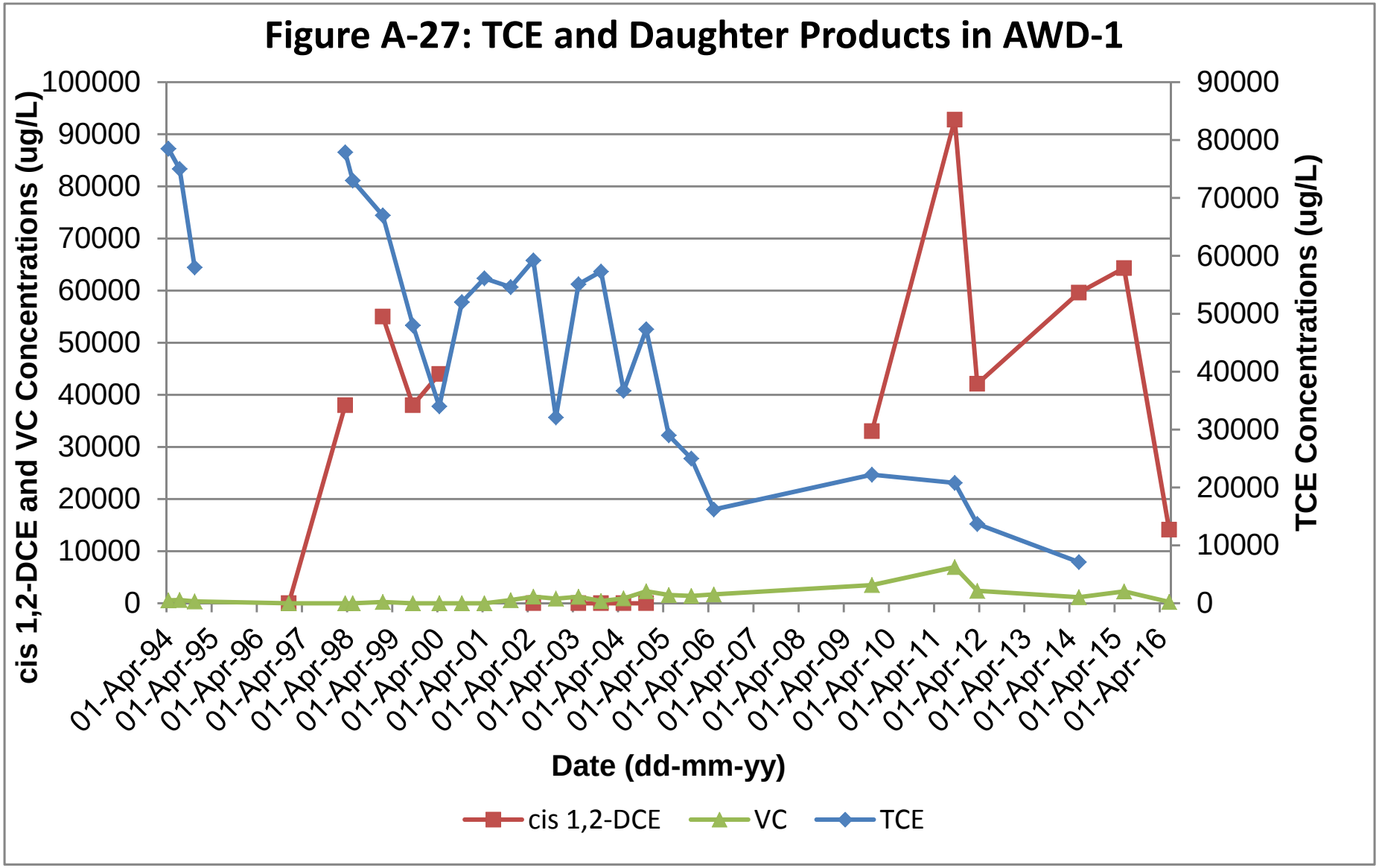
Figure A-27: TCE and Daughter Products in AWD-1
cis 1,2-DCE and VC Concentrations (ug/L)
TCE Concentrations (ug/L)
100000
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
01-Apr-94
01-Apr-95
01-Apr-96
01-Apr-97
01-Apr-98
01-Apr-99
01-Apr-00
01-Apr-01
01-Apr-02
01-Apr-03
01-Apr-04
01-Apr-05
01-Apr-06
01-Apr-07
01-Apr-08
01-Apr-09
01-Apr-10
01-Apr-11
01-Apr-12
01-Apr-13
01-Apr-14
01-Apr-15
01-Apr-16
Date (dd-mm-yy)
cis 1,2-DCE
VC
TCE

AECOM

Figure A-28: First-Order Decay Rate Calculation for Attenuation Determination
LHAAP-18/24 Feasibility Study
Longhorn Army Ammunition Plant
Karnack, Texas

MW-7

Facility Name: LHAAP_18/24 Feasibility Study - Appendix A Evaluation of TCE Attenuation

COC: Trichloroethene

Facility Location and Address: _____ Longhorn Army Ammunition Plant, Karnack Texas

Date: Oct-16

Sampling Date	Total mg/L	Total ug/L	ln Total mg/L	Elapsed time since 1/25/99 years
25-Jan-99	14.300	14300	2.660	0.00
01-Sep-99	11.000	11000	2.398	0.60
01-Apr-00	12.000	12000	2.485	1.18
01-Oct-00	8.500	8500	2.140	1.68
01-Apr-01	15.800	15800	2.760	2.18
01-Nov-01	21.000	21000	3.045	2.77
01-May-02	21.500	21500	3.068	3.27
01-Nov-02	6.070	6070	1.803	3.77
01-May-03	15.000	15000	2.708	4.27
01-Nov-03	19.500	19500	2.970	4.77
01-May-04	15.600	15600	2.747	5.27
01-Nov-04	22.300	22300	3.105	5.77
18-May-05	20.800	20800	3.035	6.32
17-Nov-05	15.500	15500	2.741	6.82
23-May-06	15.400	15400	2.734	7.33
10-Nov-09	12.000	12000	2.485	10.80
20-Sep-11	4.220	4220	1.440	12.66
07-Mar-12	4.640	4640	1.535	13.12
26-Sep-12	2.152	2152	0.766	13.68
14-May-13	2.712	2712	0.998	14.31
14-Dec-13	2.140	2140	0.761	14.90
17-Dec-14	1.880	1880	0.631	15.90
17-Jun-15	1.860	1860	0.621	16.40
01-Dec-15	2.730	2730	1.004	16.86
24-Jun-16	1.740	1740	0.554	17.42
GW MCL	*0.005*	*5*		

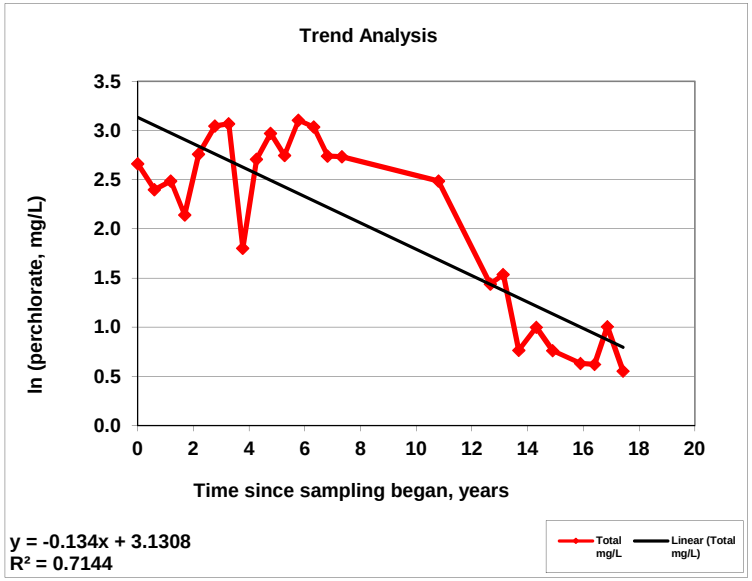

Solutions

Enter C_{CL}	⇨	5	
Enter C_o	⇨	1740	
Enter k_{point}	⇨	0.1340	
Time to reach cleanup level		**43.7**	**years**

Formula $t = -[\ln(CCL/Co)] / kpoint$

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, µg/L

C_o = Initial concentration of contaminant of concern, µg/L

k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$

= slope of the line, y

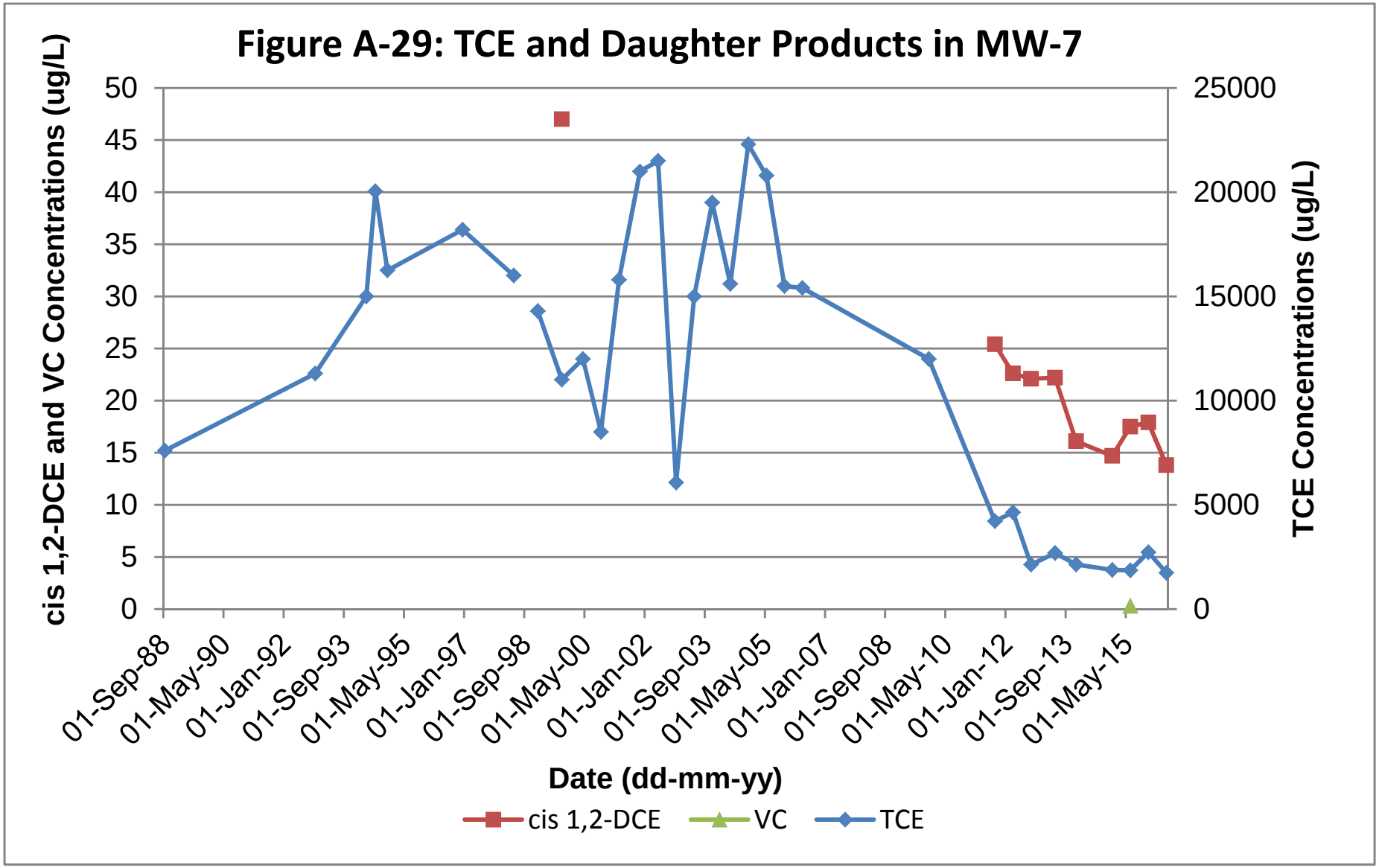
Figure A-29: TCE and Daughter Products in MW-7
cis 1,2-DCE and VC Concentrations (ug/L)
TCE Concentrations (ug/L)
50
45
40
35
30
25
20
15
10
5
0
25000
20000
15000
10000
5000
0
01-Sep-88
01-May-90
01-Jan-92
01-Sep-93
01-May-95
01-Jan-97
01-Sep-98
01-May-00
01-Jan-02
01-Sep-03
01-May-05
01-Jan-07
01-Sep-08
01-May-10
01-Jan-12
01-Sep-13
01-May-15
Date (dd-mm-yy)
cis 1,2-DCE
VC
TCE

AECOM

Figure A-30: First-Order Decay Rate Calculation for Attenuation Determination
LHAAP-18/24 Feasibility Study
Longhorn Army Ammunition Plant
Karnack, Texas

MW-14

Facility Name: LHAAP_18/24 Feasibility Study - Appendix A Evaluation of TCE Attenuation

COC: Trichloroethene

Facility Location and Address: _____ Longhorn Army Ammunition Plant, Karnack Texas

Date: Oct-16

Sampling Date	TCE mg/L	TCE ug/L	ln TCE mg/L	Elapsed time since 12/1/96 years
01-Dec-96	5.610	5610	1.725	0.00
01-Mar-98	11.000	11000	2.398	1.25
01-May-98	0.990	990	-0.010	1.41
23-Jul-98	1.400	1400	0.336	1.64
13-Mar-99	0.770	770	-0.261	2.28
01-Sep-99	1.800	1800	0.588	2.75
01-Apr-00	2.100	2100	0.742	3.33
01-Oct-00	1.100	1100	0.095	3.84
01-Apr-01	0.500	500	-0.693	4.33
01-Nov-01	0.800	800	-0.223	4.92
01-May-02	0.846	846	-0.167	5.42
01-Nov-02	0.411	411	-0.889	5.92
01-May-03	0.380	380	-0.968	6.42
01-Nov-03	1.130	1130	0.122	6.92
01-May-04	0.269	269	-1.313	7.42
01-Nov-04	0.224	224	-1.496	7.92
12-May-05	0.204	204	-1.590	8.45
15-Nov-05	0.189	189	-1.666	8.96
23-May-06	0.301	301	-1.201	9.48
10-Nov-09	6.400	6400	1.856	12.95
29-Sep-12	11.800	11800	2.468	15.84
09-Dec-13	12.500	12500	2.526	17.03
05-Jun-14	12.100	12100	2.493	17.52
19-Dec-14	16.800	16800	2.821	18.06
10-Jun-15	15.100	15100	2.715	18.53
14-Dec-15	15.500	15500	2.741	19.05
07-Jun-16	15.900	15900	2.766	19.53
GW MCL	*0.005*	*5*		

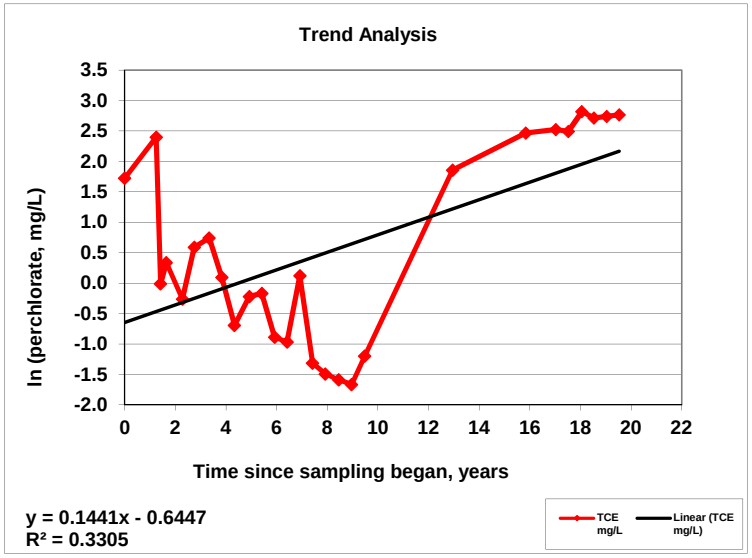

Solutions

Enter C_{CL}	⇨	5	
Enter C_o	⇨	15900	
Enter k_{point}	⇨	-0.1441	
Time to reach cleanup level		NA	years

Formula $t = -[\ln(CCL/Co)] / kpoint$

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, µg/L

C_o = Initial concentration of contaminant of concern, µg/L

k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$

= slope of the line, y

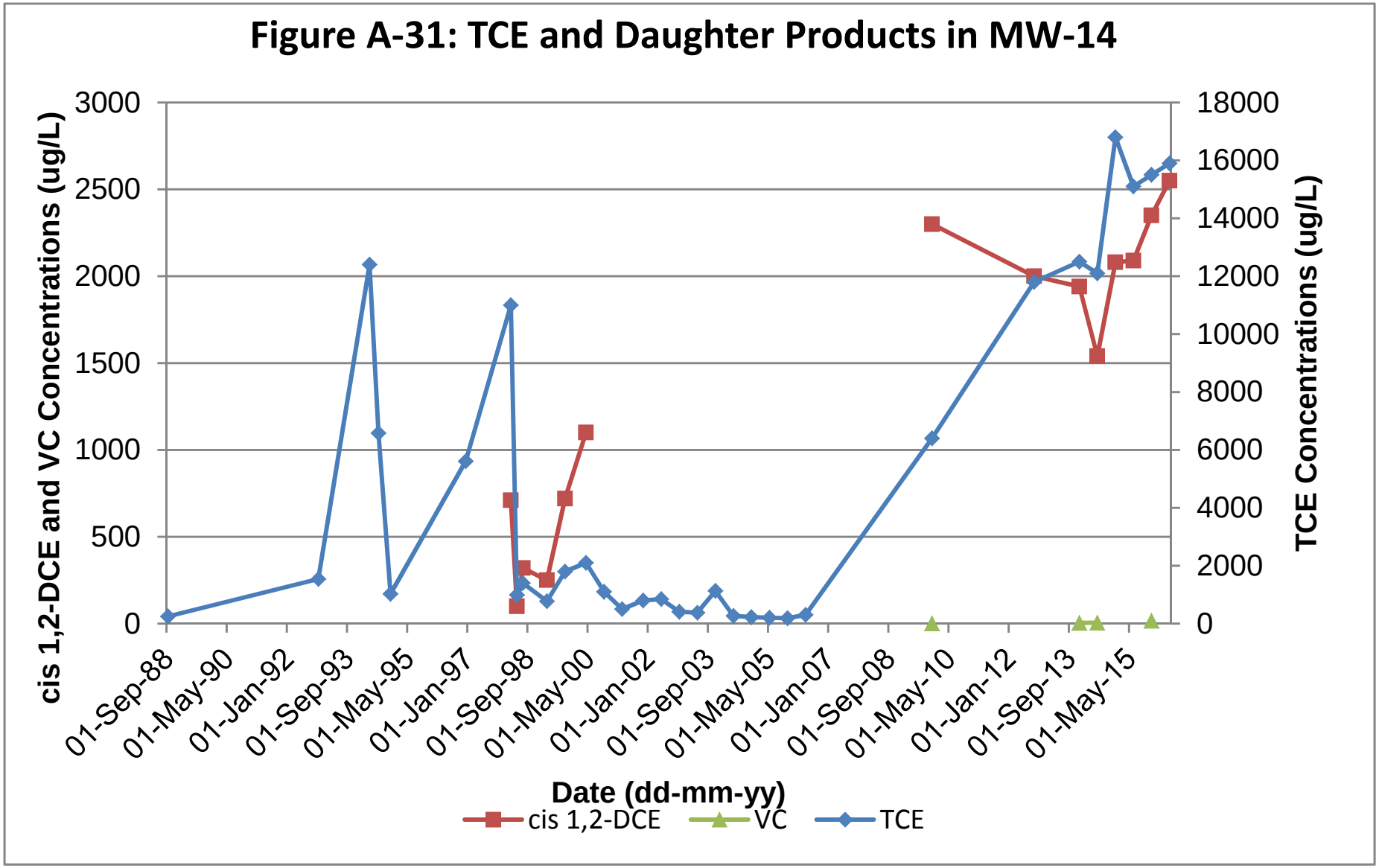
Figure A-31: TCE and Daughter Products in MW-14
cis 1,2-DCE and VC Concentrations (ug/L)
TCE Concentrations (ug/L)
3000
2500
2000
1500
1000
500
0
18000
16000
14000
12000
10000
8000
6000
4000
2000
0
01-Sep-88
01-May-90
01-Jan-92
01-Sep-93
01-May-95
01-Jan-97
01-Sep-98
01-May-00
01-Jan-02
01-Sep-03
01-May-05
01-Jan-07
01-Sep-08
01-May-10
01-Jan-12
01-Sep-13
01-May-15
Date (dd-mm-yy)
cis 1,2-DCE
VC
TCE

AECOM

Figure A-32: First-Order Decay Rate Calculation for Attenuation Determination
LHAAP-18/24 Feasibility Study
Longhorn Army Ammunition Plant
Karnack, Texas

MW-120

Facility Name: LHAAP_18/24 Feasibility Study - Appendix A Evaluation of TCE Attenuation

COC: Trichloroethene

Facility Location and Address: _____ Longhorn Army Ammunition Plant, Karnack Texas

Date: Oct-16

Sampling Date	TCE mg/L	TCE ug/L	ln TCE mg/L	Elapsed time since 3/1/98 years
01-Mar-98	26.000	26000	3.258	0.00
01-May-98	37.000	37000	3.611	0.17
22-Jan-99	32.700	32700	3.487	0.90
01-Sep-99	27.000	27000	3.296	1.50
01-Apr-00	37.000	37000	3.611	2.09
01-Oct-00	39.000	39000	3.664	2.59
01-Apr-01	17.900	17900	2.885	3.09
01-Nov-01	29.000	29000	3.367	3.67
01-May-02	18.100	18100	2.896	4.17
01-Nov-02	31.900	31900	3.463	4.67
01-May-03	18.700	18700	2.929	5.17
01-Nov-03	34.100	34100	3.529	5.67
01-May-04	38.600	38600	3.653	6.17
01-Nov-04	14.900	14900	2.701	6.68
18-May-05	37.700	37700	3.630	7.22
17-Nov-05	41.100	41100	3.716	7.72
23-May-06	39.600	39600	3.679	8.23
26-Sep-08	37.200	37200	3.616	10.58
09-Nov-09	16.000	16000	2.773	11.70
11-May-13	26.890	26890	3.292	15.21
14-Dec-13	32.200	32200	3.472	15.80
06-Jun-14	28.100	28100	3.336	16.28
19-Dec-14	36.200	36200	3.589	16.81
11-Jun-15	27.900	27900	3.329	17.29
03-Dec-15	17.200	17200	2.845	17.77
16-Jun-16	17.100	17100	2.839	18.31
GW MCL	*0.005*	*5*		

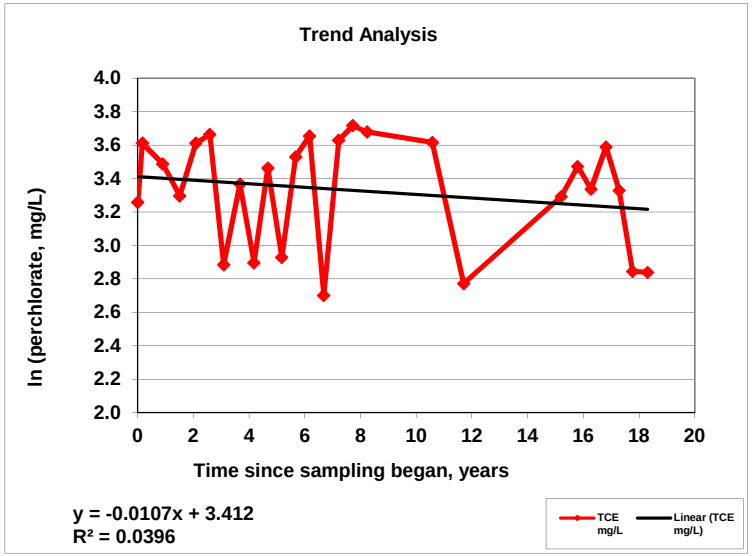

Solutions

Enter C_{CL}	⇨	5		
Enter C_o	⇨	17100		
Enter k_{point}	⇨	0.0107		
Time to reach cleanup level			760.5	years

Formula ***t = -[ln(CCL/Co)] / kpoint***

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, µg/L

C_o = Initial concentration of contaminant of concern, µg/L

k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$
= slope of the line, y

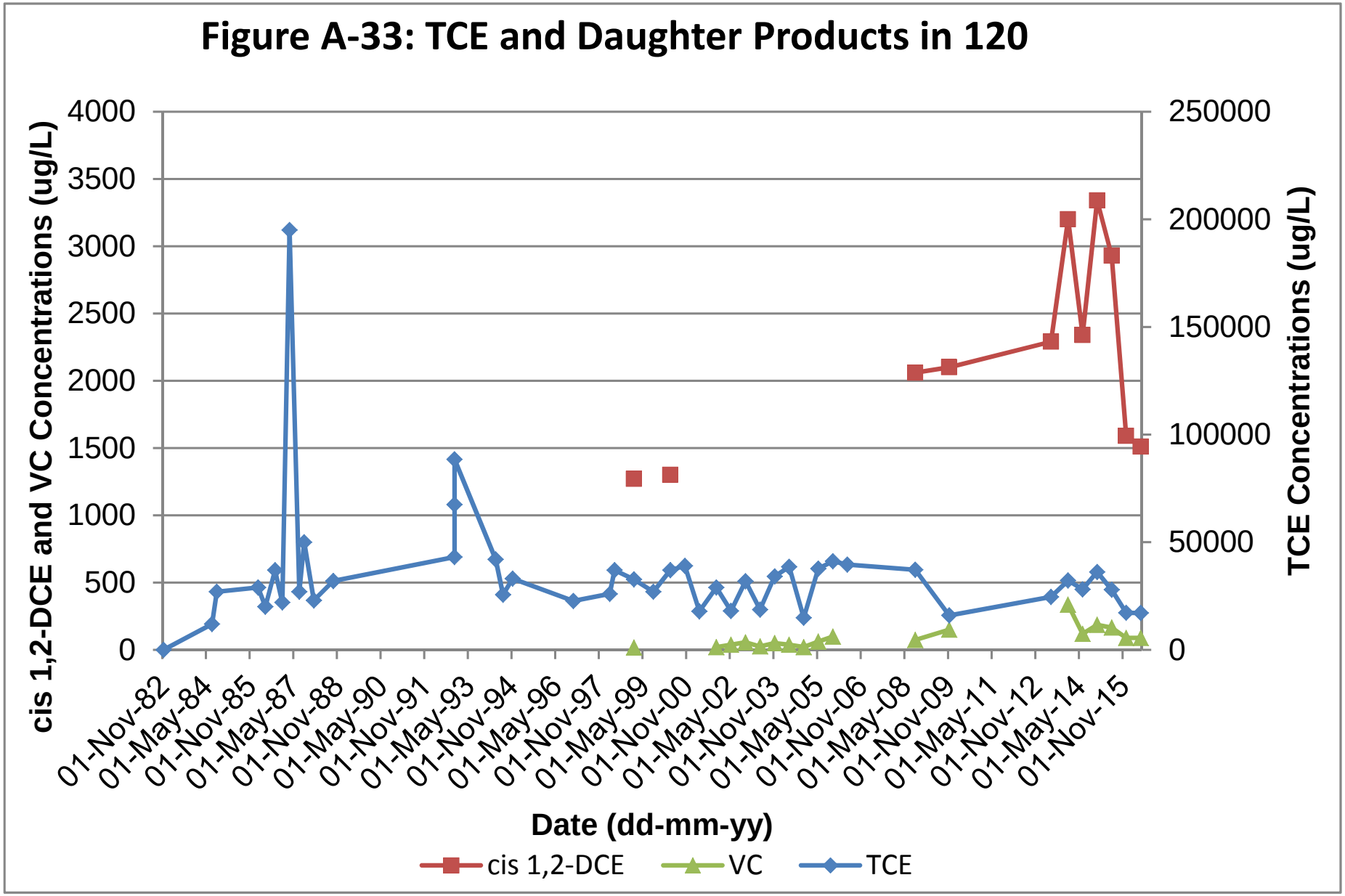
Figure A-33: TCE and Daughter Products in 120
cis 1,2-DCE and VC Concentrations (ug/L)
TCE Concentrations (ug/L)
4000
3500
3000
2500
2000
1500
1000
500
0
250000
200000
150000
100000
50000
0
01-Nov-82
01-May-84
01-Nov-85
01-May-87
01-Nov-88
01-May-90
01-Nov-91
01-May-93
01-Nov-94
01-May-96
01-Nov-97
01-May-99
01-Nov-00
01-May-02
01-Nov-03
01-May-05
01-Nov-06
01-May-08
01-Nov-09
01-May-11
01-Nov-12
01-May-14
01-Nov-15
Date (dd-mm-yy)
cis 1,2-DCE
VC
TCE

AECOM

Figure A-34: First-Order Decay Rate Calculation for Attenuation Determination
LHAAP-18/24 Feasibility Study
Longhorn Army Ammunition Plant
Karnack, Texas

MW-23

Facility Name: LHAAP_18/24 Feasibility Study - Appendix A Evaluation of TCE Attenuation

COC: Trichloroethene

Facility Location and Address: _____ Longhorn Army Ammunition Plant, Karnack Texas

Date: Oct-16

Sampling Date	TCE mg/L	TCE ug/L	ln TCE mg/L	Elapsed time since 1/25/99 years
25-Jan-99	1.005	1005	0.005	0.00
01-Sep-99	0.710	710	-0.342	0.60
01-Apr-00	1.200	1200	0.182	1.18
01-Oct-00	2.000	2000	0.693	1.68
01-Apr-01	2.200	2200	0.788	2.18
01-Nov-01	1.200	1200	0.182	2.77
01-May-02	0.756	756	-0.280	3.27
01-Nov-02	1.090	1090	0.086	3.77
01-May-03	1.180	1180	0.166	4.27
01-Nov-03	1.180	1180	0.166	4.77
01-May-04	1.700	1700	0.531	5.27
01-Nov-04	1.660	1660	0.507	5.77
18-May-05	1.590	1590	0.464	6.32
17-Nov-05	1.510	1510	0.412	6.82
23-May-06	1.890	1890	0.637	7.33
10-Nov-09	1.400	1400	0.336	10.80
20-Sep-11	1.130	1130	0.122	12.66
07-Mar-12	1.740	1740	0.554	13.12
26-Sep-12	0.733	733	-0.310	13.68
14-May-13	0.550	550	-0.599	14.31
12-Dec-13	0.703	703	-0.352	14.89
20-Dec-14	0.451	451	-0.796	15.91
18-Jun-15	1.270	1270	0.239	16.41
04-Dec-15	1.690	1690	0.525	16.87
17-Jun-16	1.170	1170	0.157	17.41
GW MCL	*0.005*	*5*		

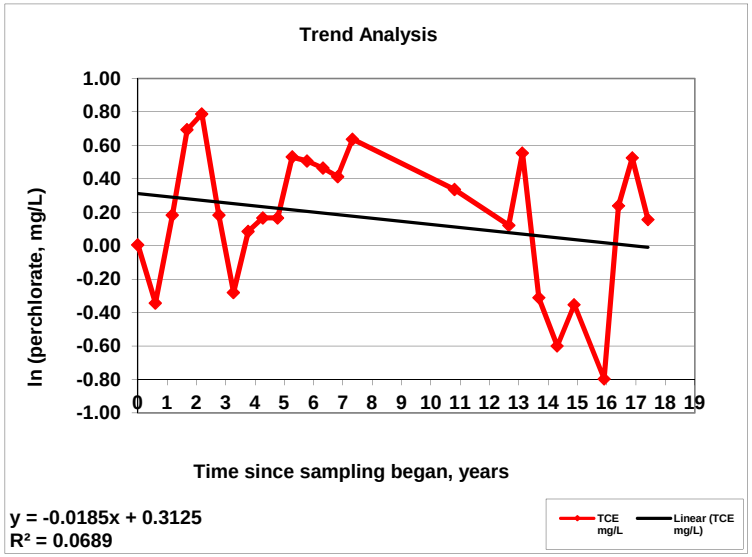

Solutions

Enter C_{CL}	⇨	5	
Enter C_o	⇨	1170	
Enter k_{point}	⇨	0.0185	
Time to reach cleanup level		294.9	years

Formula $t = -[\ln(CCL/Co)] / kpoint$

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, µg/L

C_o = Initial concentration of contaminant of concern, µg/L

k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$

= slope of the line, y

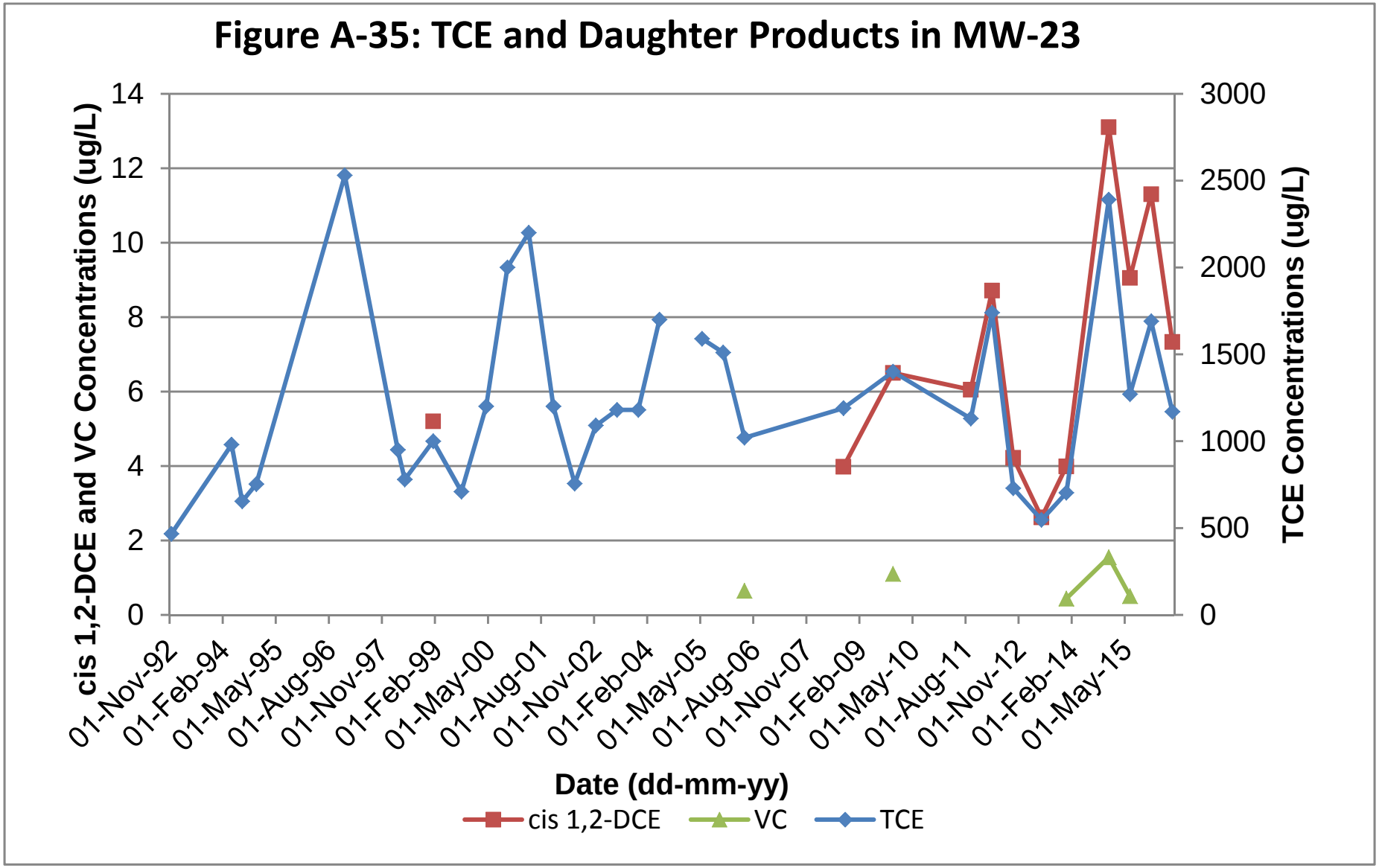
Figure A-35: TCE and Daughter Products in MW-23
cis 1,2-DCE and VC Concentrations (ug/L)
TCE Concentrations (ug/L)
0
2
4
6
8
10
12
14
0
500
1000
1500
2000
2500
3000
01-Nov-92
01-Feb-94
01-May-95
01-Aug-96
01-Nov-97
01-Feb-99
01-May-00
01-Aug-01
01-Nov-02
01-Feb-04
01-May-05
01-Aug-06
01-Nov-07
01-Feb-09
01-May-10
01-Aug-11
01-Nov-12
01-Feb-14
01-May-15
Date (dd-mm-yy)
cis 1,2-DCE
VC
TCE

AECOM

Figure A-36: First-Order Decay Rate Calculation for Attenuation Determination
LHAAP-18/24 Feasibility Study
Longhorn Army Ammunition Plant
Karnack, Texas

18WW08

Facility Name: LHAAP_18/24 Feasibility Study - Appendix A Evaluation of TCE Attenuation

COC: Trichloroethene

Facility Location and Address: Longhorn Army Ammunition Plant, Karnack Texas

Date: Oct-16

Sampling Date	TCE mg/L	TCE ug/L	ln TCE mg/L	Elapsed time since 5/01/03 years
01-Nov-02				
01-May-03	0.005	5.27	-5.246	0.00
01-Nov-03	0.001	1	-6.908	0.50
01-May-04	0.009	8.89	-4.723	1.00
01-Nov-04	0.005	5	-5.298	1.51
11-May-05	0.005	5	-5.298	2.03
11-Nov-05	0.106	106	-2.244	2.53
18-May-06	0.001	0.914	-6.998	3.05
06-Mar-07	0.001	1	-6.908	3.85
15-Sep-07	0.009	8.79	-4.734	4.38
12-Mar-08	0.000	0.405	-7.812	4.87
01-Oct-08	0.001	0.83	-7.094	5.42
03-Apr-09	0.000	0.25	-8.294	5.93
16-Jul-09	0.000	0.25	-8.294	6.21
14-Aug-09	0.000	0.25	-8.294	6.29
23-Sep-09	0.000	0.25	-8.294	6.40
12-Nov-09	0.001	1.0	-6.908	6.54
09-Mar-10	0.000	0.25	-8.294	6.86
07-Sep-10	0.004	4.09	-5.499	7.36
17-Mar-11	0.001	0.858	-7.061	7.88
15-Sep-11	0.006	6.12	-5.096	8.38
08-Mar-12	0.000	0.25	-8.294	8.86
26-Sep-12	0.005	5.09	-5.280	9.42
19-Dec-13	0.000	0.459	-7.686	10.64
03-Jun-14	0.000	0.250	-8.294	11.10
10-Dec-14	0.000	0.250	-8.294	11.62
06-Jun-15	0.000	0.250	-8.294	12.11
07-Dec-15	0.000	0.331	-8.013	12.61
20-Jun-16	0.000	0.250	-8.294	13.15
GW MCL	*0.005*	*5*		

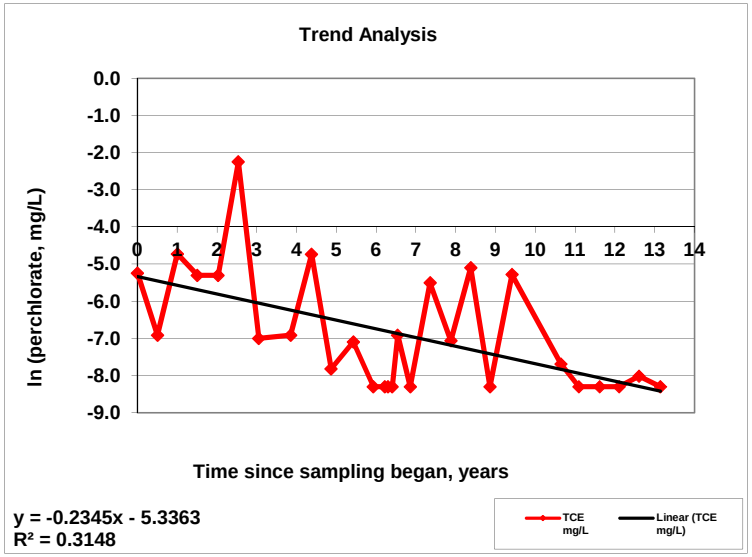

Solutions

Enter C_{CL}	⇨	5	
Enter C_o	⇨	0.25	
Enter k_{point}	⇨	0.2345	
Time to reach cleanup level		NA	years

Formula *t = -[ln(CCL/Co)] / kpoint*

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, µg/L

C_o = Initial concentration of contaminant of concern, µg/L

k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$

= slope of the line, y

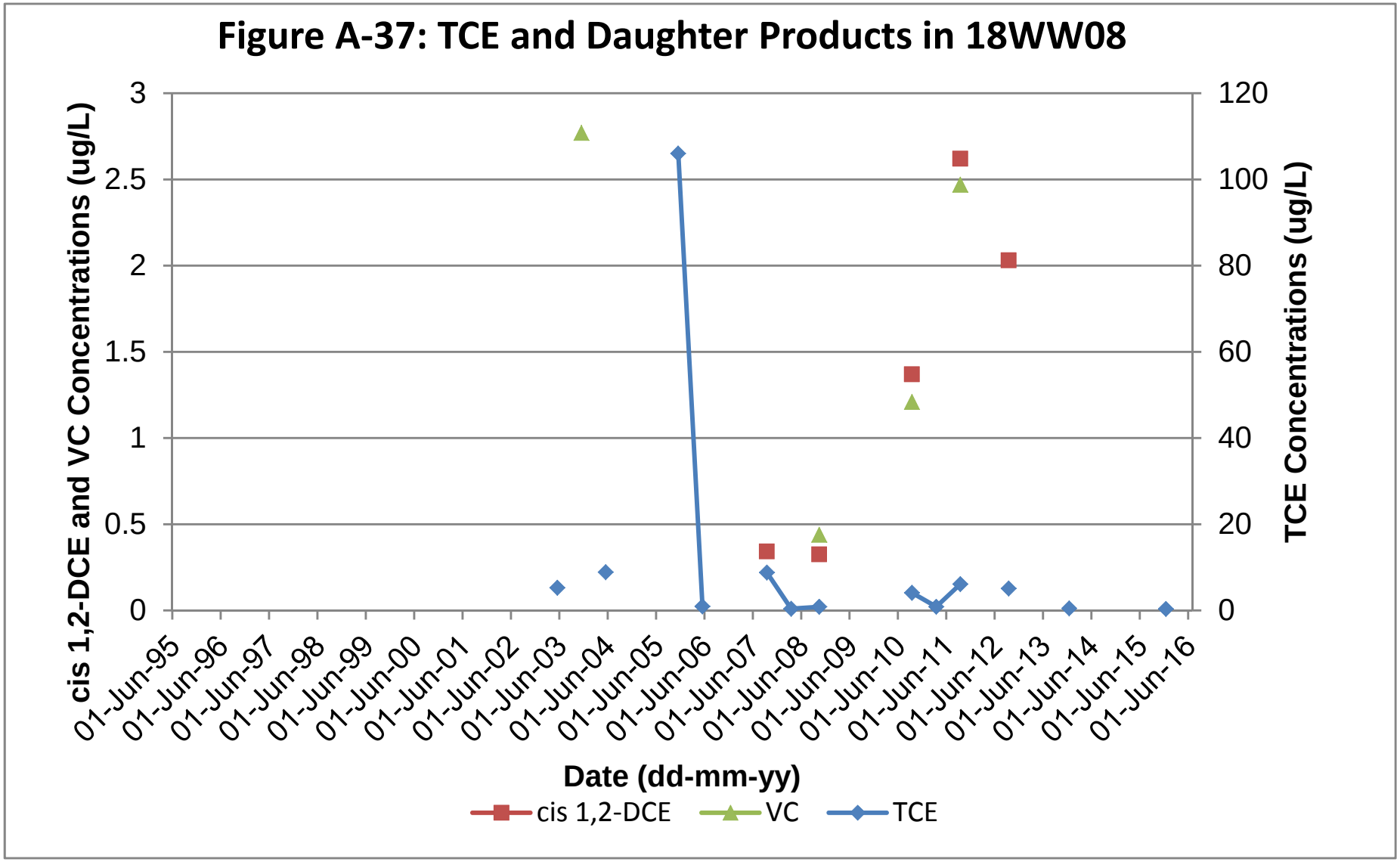
Figure A-37: TCE and Daughter Products in 18WW08
cis 1,2-DCE and VC Concentrations (ug/L)
TCE Concentrations (ug/L)
3
2.5
2
1.5
1
0.5
0
120
100
80
60
40
20
0
01-Jun-95
01-Jun-96
01-Jun-97
01-Jun-98
01-Jun-99
01-Jun-00
01-Jun-01
01-Jun-02
01-Jun-03
01-Jun-04
01-Jun-05
01-Jun-06
01-Jun-07
01-Jun-08
01-Jun-09
01-Jun-10
01-Jun-11
01-Jun-12
01-Jun-13
01-Jun-14
01-Jun-15
01-Jun-16
Date (dd-mm-yy)
cis 1,2-DCE
VC
TCE

AECOM

Figure A-38: First-Order Decay Rate Calculation for Attenuation Determination
LHAAP-18/24 Feasibility Study
Longhorn Army Ammunition Plant
Karnack, Texas

MW-8

Facility Name: LHAAP 18/24 Feasibility Study - Appendix A Evaluation of TCE Attenuation

COC: Trichloroethene

Facility Location and Address: Longhorn Army Ammunition Plant, Karnack Texas

Date: Oct-16

Sampling Date	TCE mg/L	TCE ug/L	ln TCE mg/L	Elapsed time since 1/25/99 years
01-Mar-98				0.00
25-Jan-99	5.880	5880	1.772	0.90
01-Sep-99	4.300	4300	1.459	1.50
01-Apr-00	7.400	7400	2.001	2.09
01-Oct-00	4.200	4200	1.435	2.59
01-Apr-01	5.300	5300	1.668	3.09
01-Nov-01	3.500	3500	1.253	3.67
01-May-02	3.840	3840	1.345	4.17
01-May-03	2.620	2620	0.963	5.17
01-Nov-04	2.770	2770	1.019	6.68
16-May-05	1.470	1470	0.385	7.21
16-Nov-05	1.780	1780	0.577	7.72
23-May-06	1.840	1840	0.610	8.23
08-Mar-07	1.600	1600	0.470	9.02
14-Sep-07	1.940	1940	0.663	9.55
11-Mar-08	1.390	1390	0.329	10.04
29-Sep-08	1.620	1620	0.482	10.59
01-Apr-09	1.790	1790	0.582	11.09
21-Sep-09	3.030	3030	1.109	11.57
12-Nov-09	2.300	2300	0.833	11.71
09-Mar-10	1.740	1740	0.554	12.03
08-Sep-10	1.840	1840	0.610	12.53
17-Mar-11	1.140	1140	0.131	13.05
15-Sep-11	1.120	1120	0.113	13.55
08-Mar-12	1.360	1360	0.307	14.03
27-Sep-12	0.959	959	-0.042	14.59
16-May-13	0.907	907	-0.098	15.22
19-Dec-13	1.430	1430	0.358	15.81
10-Dec-14	1.180	1180	0.166	16.79
15-Jun-15	0.575	575	-0.553	17.30
07-Dec-15	0.487	487	-0.719	17.78
09-Jun-16	0.247	247	-1.398	18.29
GW MCL	*0.005*	*5*		

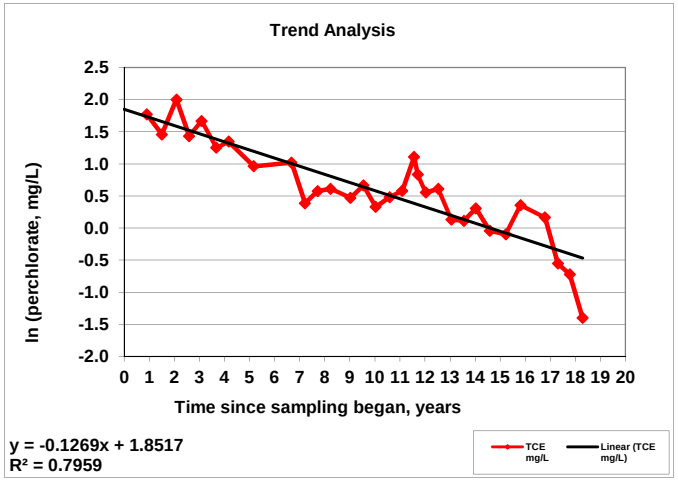

Enter C_{CL}	⟹	5		
Enter C_o	⟹	247		
Enter k_{point}	⟹	0.1269		
Time to reach cleanup level			30.7	years

Formula *t = -[ln(CCL/Co)] / kpoint*

where:
t = Time to achieve cleanup levels, years
C_{CL} = Cleanup level for contaminant of concern, µg/L
C_o = Initial concentration of contaminant of concern, µg/L
k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$
= slope of the line, y

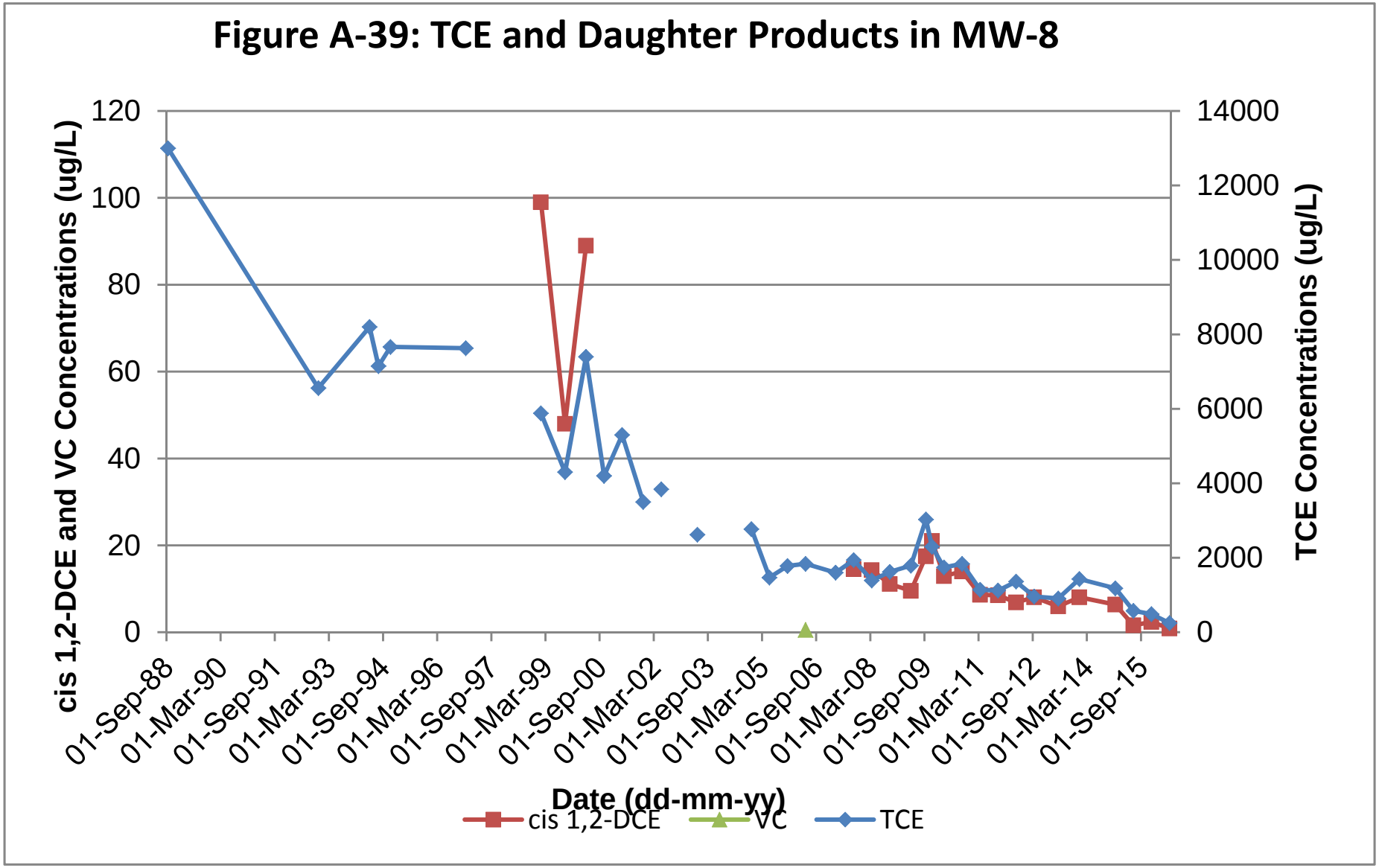
Figure A-39: TCE and Daughter Products in MW-8
cis 1,2-DCE and VC Concentrations (ug/L)
TCE Concentrations (ug/L)
120
100
80
60
40
20
0
14000
12000
10000
8000
6000
4000
2000
0
01-Sep-88
01-Mar-90
01-Sep-91
01-Mar-93
01-Sep-94
01-Mar-96
01-Sep-97
01-Mar-99
01-Sep-00
01-Mar-02
01-Sep-03
01-Mar-05
01-Sep-06
01-Mar-08
01-Sep-09
01-Mar-11
01-Sep-12
01-Mar-14
01-Sep-15
Date (dd-mm-yy)
cis 1,2-DCE
VC
TCE

AECOM

Figure A-40: First-Order Decay Rate Calculation for Attenuation Determination
LHAAP-18/24 Feasibility Study
Longhorn Army Ammunition Plant
Karnack, Texas

MW-2

Facility Name: LHAAP_18/24 Feasibility Study - Appendix A Evaluation of MC Attenuation

CoC Methylene Chloride

Facility Location and Address: Longhorn Army Ammunition Plant, Karnack Texas

Date: Oct-16

Sampling Date	MC mg/L	MC ug/L	ln MC mg/L	Elapsed time since 5/1/03 years
01-May-03	1080.0	1080000	6.985	0.00
01-Nov-03	1450.0	1450000	7.279	0.50
01-May-04	1150.0	1150000	7.048	1.00
01-Nov-04	1640.0	1640000	7.402	1.51
18-May-05	564.0	564000	6.335	2.05
17-Nov-05	384.0	384000	5.951	2.55
24-May-06	287.0	287000	5.659	3.07
08-Mar-07	620.0	620000	6.430	3.85
15-Sep-07	1240.0	1240000	7.123	4.38
13-Mar-08	974.0	974000	6.881	4.87
10-Sep-08	790.0	790000	6.672	5.37
03-Apr-09	2180.0	2180000	7.687	5.93
30-Sep-09	597.0	597000	6.392	6.42
11-Nov-09	3600.0	3600000	8.189	6.54
08-Mar-10	337.0	337000	5.820	6.86
09-Sep-10	533.0	533000	6.279	7.36
16-Mar-11	979.0	979000	6.887	7.88
21-Sep-11	1350.0	1350000	7.208	8.40
13-Mar-12	1470.0	1470000	7.293	8.87
27-Sep-12	1170.0	1170000	7.065	9.42
09-May-13	1050.0	1050000	6.957	10.03
14-Dec-13	1390.0	1390000	7.237	10.63
10-Jun-14	484.0	484000	6.182	11.12
09-Dec-14	167.0	167000	5.118	11.62
12-Jun-15	130.0	130000	4.868	12.12
10-Dec-15	0.2	189	-1.666	12.62
24-Jun-16	21.3	21300	3.059	13.16
GW MCL	*0.005*	*5*		

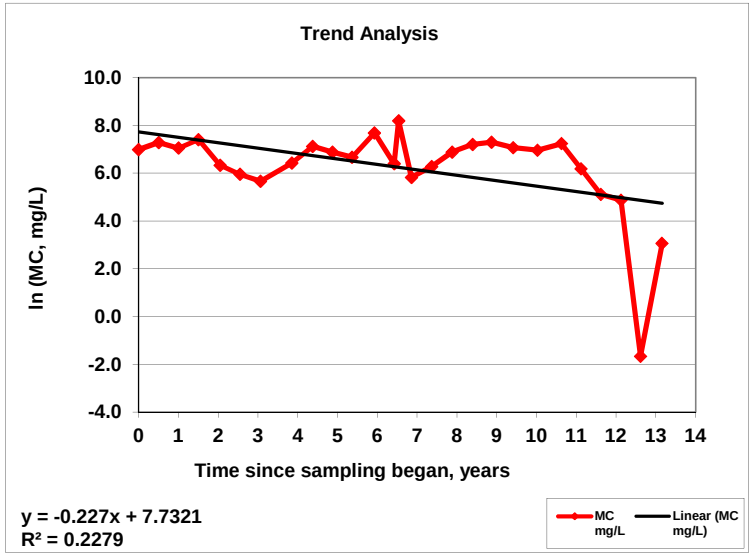

Solutions

Enter C_{CL}	⇨	5	
Enter C_o	⇨	21300	
Enter k_{point}	⇨	0.2270	
Time to reach cleanup level		36.8	years

Formula *t = -[ln(CCL/Co)] / kpoint*

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, µg/L

C_o = Initial concentration of contaminant of concern, µg/L

k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$

= slope of the line, y

AECOM

Figure A-41: First-Order Decay Rate Calculation for Attenuation Determination
LHAAP-18/24 Feasibility Study
Longhorn Army Ammunition Plant
Karnack, Texas

MW-1

Facility Name: LHAAP 18/24 Feasibility Study - Appendix A Evaluation of MC Attenuation

CoC Methylene Chloride

Facility Location and Address: _____ Longhorn Army Ammunition Plant, Karnack Texas

Date: Oct-16

Sampling Date	MC mg/L	MC ug/L	ln MC mg/L	Elapsed time since 12/1/96 years
01-Dec-96	88.200	88200	4.480	0.00
01-Mar-98	41.000	41000	3.714	1.25
23-Jul-98	28.000	28000	3.332	1.64
01-Sep-99	14.000	14000	2.639	2.75
01-Apr-00	1.300	1300	0.262	3.33
01-Oct-00	6.600	6600	1.887	3.84
01-Apr-01	1.300	1300	0.262	4.33
01-Nov-01	0.093	93	-2.375	4.92
01-May-03	41.900	41900	3.735	6.42
01-May-04	0.079	79	-2.535	7.42
24-May-06	0.007	7	-4.986	9.48
09-Sep-08	0.021	21	-3.873	11.78
29-Sep-12	0.00025	0.25	-8.286	15.84
14-Dec-13	0.00025	0.252	-8.286	17.05
10-Jun-14	0.00061	0.61	-7.402	17.53
11-Jun-15	0.00006	0.0625	-9.680	18.54
10-Jun-16	0.00025	0.25	-8.294	19.54
GW MCL	*0.005*	*5*		

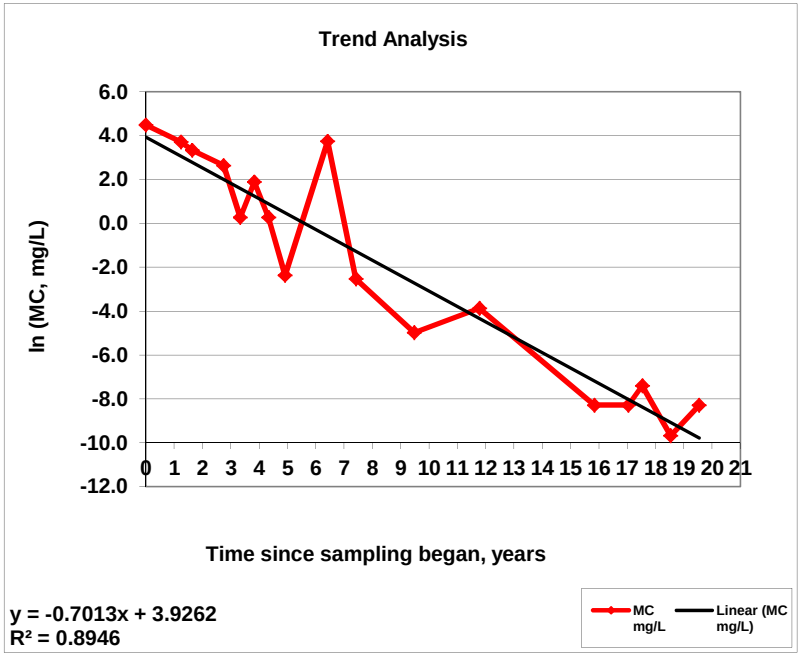

Formula $t = -[\ln(CCL/Co)] / kpoint$

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, µg/L

C_o = Initial concentration of contaminant of concern, µg/L

k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$

= slope of the line, y

Solutions

EPA Example MW-3, Benzene				
Enter C_{CL}	⇨	5		
Enter C_o	⇨	5		
Enter k_{point}	⇨	0.7013		
Time to reach cleanup level			0.0	years

AECOM

Figure A-42: First-Order Decay Rate Calculation for Attenuation Determination
LHAAP-18/24 Feasibility Study
Longhorn Army Ammunition Plant
Karnack, Texas

MW-21

Facility Name: LHAAP_18/24 Feasibility Study - Appendix A Evaluation of MC Attenuation

CoC Methylene Chloride

Facility Location and Address: _____ Longhorn Army Ammunition Plant, Karnack Texas

Date: Oct-16

Sampling Date	MC mg/L	MC ug/L	ln MC mg/L	Elapsed time since 5/1/03 years
01-May-98	520.000	520000	6.254	-5.00
22-Jan-99	324.000	324000	5.781	-4.27
01-Sep-99	470.000	470000	6.153	-3.67
01-Apr-00	180.000	180000	5.193	-3.08
01-Oct-00	80.000	80000	4.382	-2.58
01-Apr-01	26.000	26000	3.258	-2.08
01-Nov-01	91.000	91000	4.511	-1.50
01-May-02	116.000	116000	4.754	-1.00
01-Nov-02	54.000	54000	3.989	-0.50
01-May-03	9.770	9770	2.279	0.00
01-Nov-03	0.320	320	-1.139	0.50
01-May-04	2.740	2740	1.008	1.00
01-Nov-04	1.490	1490	0.399	1.51
17-May-05	1.370	1370	0.315	2.05
16-Nov-05	0.687	687	-0.375	2.55
24-May-06	0.060	60	-2.822	3.07
10-Sep-08	0.027	27	-3.623	5.37
11-Nov-09	0.014	14	-4.269	6.54
21-Sep-11	0.129	129	-2.048	8.40
25-Sep-12	0.012	11.9	-4.431	9.41
14-Dec-13	0.025	25	-3.689	10.63
10-Jun-14	0.025	25	-3.689	11.12
19-Dec-14	0.025	25	-3.689	11.64
09-Jun-15	0.025	25	-3.689	12.12
02-Dec-15	0.025	25	-3.689	12.60
22-Jun-16	0.013	12.5	-4.382	13.15
GW MCL	*0.005*	*5*		

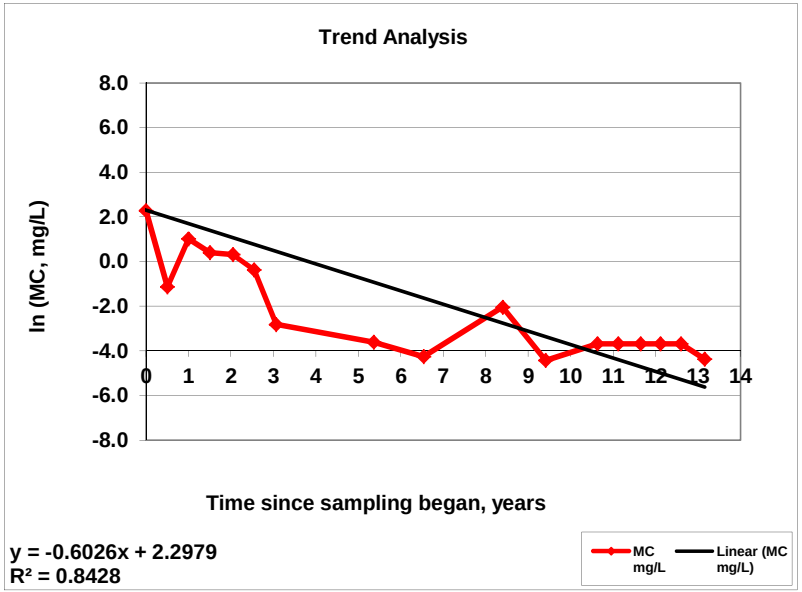

Solutions

EPA Example MW-3, Benzene				
Enter C_{CL}	⇨	5		
Enter C_o	⇨	12.5		
Enter k_{point}	⇨	0.6026		
Time to reach cleanup level			1.5	years

Formula $t = -[\ln(CCL/Co)] / kpoint$

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, µg/L

C_o = Initial concentration of contaminant of concern, µg/L

k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$

= slope of the line, y

AECOM

Figure A-43: First-Order Decay Rate Calculation for Attenuation Determination
LHAAP-18/24 Feasibility Study
Longhorn Army Ammunition Plant
Karnack, Texas

AWD-1

Facility Name: LHAAP_18/24 Feasibility Study - Appendix A Evaluation of MC Attenuation

CoC Methylene Chloride

Facility Location and Address: _____ Longhorn Army Ammunition Plant, Karnack Texas

Date: Oct-16

Sampling Date	MC mg/L	MC ug/L	ln MC mg/L	Elapsed time since 11/1/94 years
01-Nov-94	2.540	2540	0.932	0.00
01-Dec-96	29.000	29000	3.367	2.08
01-Mar-98	5.100	5100	1.629	3.33
26-Jan-99	5.920	5920	1.778	4.24
01-Sep-99	5.500	5500	1.705	4.84
01-Apr-00	10.000	10000	2.303	5.42
01-Oct-00	4.900	4900	1.589	5.92
01-Apr-01	2.000	2000	0.693	6.42
01-Nov-01	1.600	1600	0.470	7.01
01-May-02	3.050	3050	1.115	7.50
01-May-03	1.280	1280	0.247	8.50
01-Nov-03	1.080	1080	0.077	9.01
01-May-04	0.018	18	-4.046	9.50
01-Nov-04	0.013	13	-4.335	10.01
17-May-05	0.186	186	-1.682	10.55
24-May-06	0.206	206	-1.580	11.57
11-Nov-09	0.700	700	-0.357	15.04
12-Mar-12	0.094	94	-2.366	17.37
05-Jun-14	0.160	160	-1.833	19.61
10-Jun-15	0.069	69.2	-2.671	20.62
07-Jun-16	0.095	95.1	-2.353	21.61
GW MCL	*0.005*	*5*		

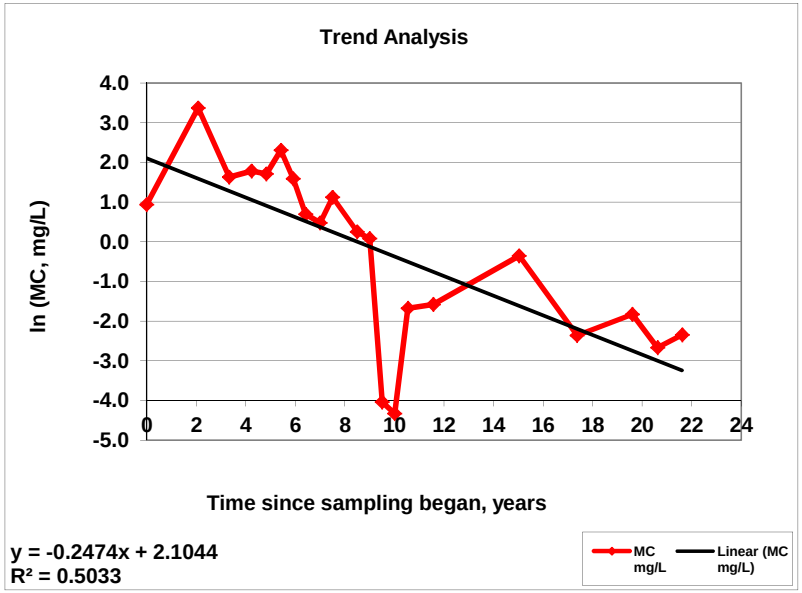

Solutions

EPA Example MW-3, Benzene				
Enter C_{CL}	⇨	5		
Enter C_o	⇨	95		
Enter k_{point}	⇨	0.2474		
Time to reach cleanup level			11.9	years

Formula $t = -[\ln(CCL/Co)] / kpoint$

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, µg/L

C_o = Initial concentration of contaminant of concern, µg/L

k_{point} = First-order decay rate constant at one monitoring point, $years^{-1}$
= slope of the line, y

AECOM

Figure A-44: First-Order Decay Rate Calculation for Attenuation Determination
LHAAP-18/24 Feasibility Study
Longhorn Army Ammunition Plant
Karnack, Texas

MW-120

Facility Name: LHAAP_18/24 Feasibility Study - Appendix A Evaluation of MC Attenuation

CoC Methylene Chloride

Facility Location and Address: _____ Longhorn Army Ammunition Plant, Karnack Texas

Date: Oct-16

Sampling Date	MC mg/L	MC ug/L	ln MC mg/L	Elapsed time since 3/1/98 years
01-Mar-98	100.000	100000	4.605	0.00
01-May-98	410.000	410000	6.016	0.17
22-Jan-99	241.000	241000	5.485	0.90
01-Sep-99	130.000	130000	4.868	1.50
01-Apr-00	340.000	340000	5.829	2.09
01-Oct-00	280.000	280000	5.635	2.59
01-Apr-01	17.200	17200	2.845	3.09
01-Nov-01	15.000	15000	2.708	3.67
01-May-02	18.900	18900	2.939	4.17
01-Nov-02	57.400	57400	4.050	4.67
01-May-03	13.600	13600	2.610	5.17
01-Nov-03	38.800	38800	3.658	5.67
01-May-04	151.000	151000	5.017	6.17
01-Nov-04	9.380	9380	2.239	6.68
18-May-05	152.000	152000	5.024	7.22
17-Nov-05	190.000	190000	5.247	7.72
23-May-06	87.100	87100	4.467	8.23
26-Sep-08	3.150	3150	1.147	10.58
11-May-13	0.170	170	-1.772	15.21
14-Dec-13	0.214	214	-1.542	15.80
06-Jun-14	0.363	363	-1.013	16.28
19-Dec-14	0.071	71	-2.644	16.81
11-Jun-15	0.125	125	-2.079	17.29
03-Dec-15	0.025	25	-3.689	17.77
06-Jun-16	0.025	25	-3.689	18.28
GW MCL	*0.005*	*5*		

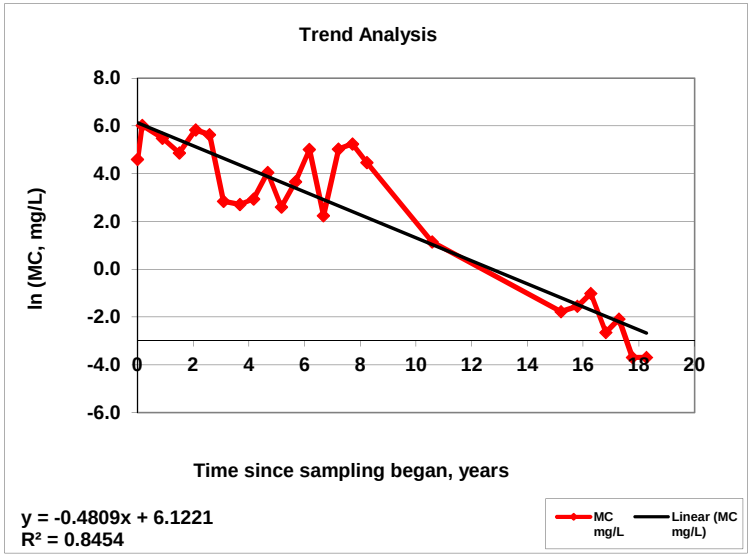

Formula *t = -[ln(CCL/Co)] / kpoint*

where:

t = Time to achieve cleanup levels, years

C_{CL} = Cleanup level for contaminant of concern, µg/L

C_o = Initial concentration of contaminant of concern, µg/L

k_{point} = First-order decay rate constant at one monitoring point, years^{-1}

= slope of the line, y

Solutions

EPA Example MW-3, Benzene				
Enter C_{CL}	⇨	5		
Enter C_o	⇨	25		
Enter k_{point}	⇨	0.4809		
Time to reach cleanup level			3.3	years

APPENDIX B: DRAFT FINAL SUPPLEMENTAL TO THE UPDATED POST-SCREENING INVESTIGATION REPORT

DEPARTMENT OF THE ARMY
LONGHORN ARMY AMMUNITION PLANT
POST OFFICE BOX 220
RATCLIFF, AR 72951

December 28, 2016

DAIM-ODB-LO

Mr. Rich Mayer
US Environmental Protection Agency
Federal Facilities Section R6
1445 Ross Avenue
Dallas, TX 75202-2733

Re: Draft Final Supplemental to the Updated Post-Screening Investigation Report for LHAAP-18/24, Burning Ground No. 3 and Unlined Evaporation Pond
Longhorn Army Ammunition Plant, Karnack, Texas

Dear Mr. Mayer,

The above-referenced document is being transmitted to you for your records and includes revisions based upon your comments on the Draft. In accordance with the FFA, the Draft Final will be considered Final after 30 days without further comment.

The document was prepared by AECOM on behalf of the Army as part of AECOMôs Performance Based Remediation contract for the facility. I ask that Debra Richmann, AECOMôs Project Manager, be copied on any communications related to the project.

The point of contact for this action is the undersigned. I may be contacted at 479-635-0110, or by email at rose.m.zeiler.civ@mail.mil.

Sincerely,

Rose M. Zeiler, Ph.D.
Longhorn AAP Site Manager

Copies furnished:
A. Palmie, TCEQ, Austin, TX
P. Bruckwicki, Caddo Lake NWR, TX
R. Smith, USACE, Tulsa District, OK
A. Williams, USACE, Tulsa District, OK
N. Smith, USAEC, San Antonio, TX
D. Richmann, AECOM ï San Antonio, TX (for project files)

DEPARTMENT OF THE ARMY
LONGHORN ARMY AMMUNITION PLANT
POST OFFICE BOX 220
RATCLIFF, AR 72951

December 28, 2016

DAIM-ODB-LO

Ms. April Palmie
Texas Commission on Environmental Quality Superfund Section, MC-136
12100 Park 35 Circle, Bldg D
Austin, TX 78753

Re: Draft Final Supplemental to the Updated Post-Screening Investigation Report for LHAAP-18/24, Burning Ground No. 3 and Unlined Evaporation Pond
Longhorn Army Ammunition Plant, Karnack, Texas

Dear Ms. Palmie,

The above-referenced document is being transmitted to you for your records and includes revisions based upon your comments on the Draft. In accordance with the FFA, the Draft Final will be considered Final after 30 days without further comment.

The document was prepared by AECOM on behalf of the Army as part of AECOMôs Performance Based Remediation contract for the facility. I ask that Debra Richmann, AECOMôs Project Manager, be copied on any communications related to the project.

The point of contact for this action is the undersigned. I may be contacted at 479-635-0110, or by email at rose.m.zeiler.civ@mail.mil.

Sincerely,

Rose M. Zeiler, Ph.D.
Longhorn AAP Site Manager

Copies furnished:
R. Mayer, USEPA Region 6, Dallas, TX
P. Bruckwicki, Caddo Lake NWR, TX
R. Smith, USACE, Tulsa District, OK
A. Williams, USACE, Tulsa District, OK
N. Smith, USAEC, San Antonio, TX
D. Richmann, AECOM, San Antonio, TX (for project files)

Responses to Comments on
Draft Supplemental to the Updated Post-Screening Investigation Report for LHAAP-18/24, Burning Ground No. 3 and Unlined Evaporation Pond
Longhorn Army Ammunition Plant, Karnack, Texas

September 2016

Reviewer: Rich Mayer, EPA

Respondent: Marwan Salameh and Debra Richmann, AECOM

1. Respondent Concurs (C), Does Not Concur (D), Takes Exception (E), or Delete (X).
2. Commentor Agrees (A) with response, or Does not Agree (D) with response.

Comment #	Page	Section/ Paragraph	Comment	C, D, E or X[1]	Response	A or D[2]
1	viii	Third Paragraph	The text states ñThe elevated concentrations of perchlorate may represent perchlorate migrating via groundwater to this location prior to installation of the groundwater extraction system.ò EPA recommends adding that injection and irrigation has affected the groundwater flow paths on the site and there is potential for migration of the perchlorate around and below the ICT system.	E	Elevated levels of perchlorate in groundwater were present before irrigation and/or injection occurred. For example, perchlorate concentrations in nearby wells MW-7 and MW-8 were 105,000 Õg/L and 27,500 Õg/L, respectively, in May 2005; 89,400 Õg/L and 47,500 Õg/L in 2006; 37,500 Õg/L and 72,000 Õg/L in May 2013; and 22,000 Õg/L and 8,290 Õg/L in June 2016. The data demonstrate that perchlorate contamination was present before installation of the extraction system and there has been a decrease in perchlorate concentrations as a result of the operation of the groundwater extraction system. The text on page viii has been modified to incorporate these examples.	
2	vii	Delineation of Contaminated Soil	EPA recommends a statement in the paragraph that the MSC standard was used for the vadose zone soil. There were a couple of concentrations that exceeded the 7,200 mg/kg MSC, but appear to be in a saturated zone.	C	Text was added to page viii to specify vadose zone and saturated zone perchlorate concentrations were compared to the GWP-Ind MSC of 7,200 Õg/kg.	
3		Figure 1-4	Is the southwest corner known to be LHAAP-39? If not, please remove label from figures.	C	The LHAAP-39 label was removed from figures throughout the report.	
4	3-1	Section 3.1.1, 1st Paragraph	Text indicates VOCs concentrations were mostly nondetects. Please note when EPA observed sampling of cores the sampling team often left cores out in the sun for long periods of time before collecting VOC samples from the core. During one observation, the VOC sample was not collected until almost a half hour after core extraction. EPA recommends that for further sampling the VOCs need to be collected as soon as possible and to use an EnCore sampling method to prevent loss of VOCs in soils during sampling.	C/E	Agree, the samples observed by EPA were not collected in accordance with the SOP Subsurface Soil Sampling by Split Spoon and Continuous Split Barrel Samplers from the IWWP (AECOM, 2014). This SOP states in Section 5.3.5 that to limit the possible loss of volatiles, the soil sample should be obtained as quickly as possible from the sampler. This is the protocol that is normally followed and future samples will be collected in accordance with this SOP.	

Responses to Comments on
Draft Supplemental to the Updated Post-Screening Investigation Report for LHAAP-18/24, Burning Ground No. 3 and Unlined Evaporation Pond
Longhorn Army Ammunition Plant, Karnack, Texas

September 2016

Reviewer: Rich Mayer, EPA

Respondent: Marwan Salameh and Debra Richmann, AECOM

1. Respondent Concurs (C), Does Not Concur (D), Takes Exception (E), or Delete (X).
2. Commentor Agrees (A) with response, or Does not Agree (D) with response.

Comment #	Page	Section/ Paragraph	Comment	C, D, E or X[1]	Response	A or D[2]
5	3-4	Section 3.2	EPA recommends adding an explanation on why well 18WW25 was not sampled.	E	Well 18WW25 was sampled and the results are presented in the report. The text was corrected to remove the incorrect statements that 18WW25 was not sampled in Section 3.2 and on page ix.	
6	3-4	Section 3.2.1, First Paragraph	Well MW-20 is known to be in a perched zone. The new well 18CPTMW22R appears to also be completed in that small perched zone. EPA recommends not using these wells for groundwater level contouring.	C	Section 3.2.1 text and Figure 3-1 were revised to indicate groundwater at wells MW-20 and 18CPTMW22R is perched.	
7	3-4	Section 3.2.1	How were elevations determined at the new wells since earlier in the text it is mentioned that the wells have not been surveyed?	E	The wells were surveyed. The text of Section 2.3 has been updated to include the surveying results.	
8	3-6	Top of Page	EPA agrees that the lateral extend of the perchlorate in the upper Wilcox is delineated. However vertical extend of perchlorate is not known in the northwest (1 location) and northeast corners (1 location) of the site. EPA assumes additional wells will be drilled in the future to determine vertical extend in these areas.	C	Text was added at the top of page 3-6 (Section 3.2.2.1) that provides information about the lack of vertical delineation at MW-14 and 18CPTMW08DW.	
9	3-6	Section 3.2.2.2, First Paragraph	EPA agrees for the most part that the TCE in the shallow zone is delineated; however, MW-18 to the west had a detection of 14.1 which is still above the MCL. EPA recommends mentioning this detection in text. Newly planned activities at LHAAP-17 may help delineate the plume (just a little further to the west). One note, figure 2-2 in the LHAAP-17 report shows a 2009 sample collected at MW-18 and it was a nondetect. The recent result may indicate that the TCE plume is expanding.	C/D	Text was added to Section 3.2.2.2, Section 4.1, and page X discussing detection of TCE in MW-18. TCE has been detected historically in MW-18 above the MCL/PCL. Examples include 100 µg/L in May 2000 and 17 µg/L in December 1996. Therefore, we do not believe the TCE plume is necessarily expanding in this area.	

Responses to Comments on
Draft Supplemental to the Updated Post-Screening Investigation Report for LHAAP-18/24, Burning Ground No. 3 and Unlined Evaporation Pond
Longhorn Army Ammunition Plant, Karnack, Texas

September 2016

Reviewer: Rich Mayer, EPA

Respondent: Marwan Salameh and Debra Richmann, AECOM

1. Respondent Concurs (C), Does Not Concur (D), Takes Exception (E), or Delete (X).
2. Commentor Agrees (A) with response, or Does not Agree (D) with response.

Comment #	Page	Section/ Paragraph	Comment	C, D, E or X[1]	Response	A or D[2]
10	3-7	First Paragraph	Please define PCL in text and add to acronym list.	C/D	Added definition of PCL in the text in Section 3.2.2.4. PCL and TRRP are included and defined in the acronym list.	
11		Table 3-4	Please update table 3-3 with new well elevations, since it appears this table contains the data needed.	C	Table 3-3 was updated with surveying data.	
12	4-2	Number 13	Please see comment 9 above.	C	Please see response to comment 9.	
13	4-3	Second Bullet	This sentence seems awkward. One can say that these areas do not appear to be a source of perchlorate for Site 17. EPA assumes the intent might be that perchlorate is not migrating via the groundwater towards Site 17. Additional investigations at Site 17 may determine if there are comingling plumes from the two sites.	C/D	The intent of the second bullet is that perchlorate is not migrating via groundwater to site 17 from 18/24. We do not believe there are commingled plumes from site 17 and site 18/24 because perchlorate concentrations in 18CPTMW26, 18CPTMW26SW, and 18DP08 located between the two sites were very low or non-detectable. Text was added to the second bullet to clarify the sentence.	
14	4-3	Fourth Bullet	EPA agrees that the lateral extent of the COCs is mostly defined. However, the vertical extent has not been determined in few locations (i.e. MW-14 and 18CPTMW08DW).	C	Text added to the fourth bullet that indicates where delineation is not complete.	
15	4-3	Fifth Bullet	EPA recommends deleting this bullet. The previous bullet makes the same statement.	C	The fifth bullet removed from Section 4.2.	

Responses to Comments on
Draft Supplemental to the Updated Post-Screening Investigation Report for LHAAP-18/24, Burning Ground No. 3 and Unlined Evaporation Pond
Longhorn Army Ammunition Plant, Karnack, Texas

September 2016

Reviewer: April Palmie, TCEQ

Respondent: Marwan Salameh and Debra Richmann, AECOM

1. Respondent Concurs (C), Does Not Concur (D), Takes Exception (E), or Delete (X).
2. Commentor Agrees (A) with response, or Does not Agree (D) with response.

Comment #	Page	Section/ Paragraph	Comment	C, D, E or X[1]	Response	A or D[2]
1		18CPTMW22 Replacement pages	This log is really difficult to get meaningful information out of. The log should be redone from scratch. A note could be included to indicate the log replaces previous version in the other report.	C	A new log was created that shows the correct well construction information with a note that clarifies the new log is a revision. The original log will remain included for recordkeeping purposes, but an ñXò is put through the log to make it clear the log is no longer valid.	
2		Relevant to that log	Could you also please revise the cross section from the other PSI report for D-Dô to indicate the actual screen interval from 18CPTMW22. It would be very helpful to also include the 18CPTMW22 well logs (SW and DW) in this cross section. A note could be included to indicate the cross-section replaces previous version in the other report.	C	Cross-section D-Dô is updated by correcting the well screen for 18CPTMW22 and adding logs for 18CPTM22SW/DW. A new Section 3.3 was added to the report referencing cross-section D-Dô and indicating that it replaces a previous version in the Updated PSI report (Feb 2016).	
3	1-3	Section 3.2.1 Groundwater elevation discussion	It is my understanding that the new wells were not surveyed at the time of writing. This narrative should include notes to indicate interpretation could change based on survey elevations, especially when discussing slight upward or downward gradients.	E	All new wells were surveyed. Section 2.3 has been updated by providing survey information for the new wells and borings. Accordingly, no changes are needed for Section 3.2.1.	
4		All relevant figures (groundwater potentiometric) and Table 3-4	Should have notes regarding new wells not surveyed.	E	Please see response to comment #3.	
5		Figure 3-1	MW-20 and 18CPTMW22R have comparable groundwater elevations. It is still relevant to discard MW-20 as a data point? If so, shouldnôt the new well also be discarded?	C	Section 3.2.1 text and Figure 3-1 were revised to indicate groundwater at wells MW-20 and 18CPTMW22R is perched, and groundwater elevations in MW-20 and 18CPTMW22R were not used in contouring the Shallow Zone groundwater surface.	

From: April Palmie <april.palmie@tceq.texas.gov>
Sent: Tuesday, January 24, 2017 9:17 AM
To: Snow, JoLynn; Mayer, Richard
Cc: Williams, Aaron K CIV USARMY CESWT (US); Zeiler, Rose M CIV (US); nicholas.b.smith56.civ@mail.mil; Smith, Richard P CIV USARMY CESWF (US); Richmann, Debra; Sharp, Elspeth
Subject: RE: LHAAP-18/24 Draft Final Supplemental PSI Addendum Report

Good morning. I've reviewed the Draft Final Supplemental PSI Addendum Report for LHAAP 18/24 and accept all edits and comment responses. Thank you for fixing the X on old well log pages.

Sincerely,

April Palmie
Project and Grant Manager
Superfund Section
Remediation Division
Texas Commission on Environmental Quality
Phone: (512) 239-4152
Email: April.Palmie@tceq.texas.gov

From: Snow, JoLynn [mailto:JoLynn.Snow@aecom.com]
Sent: Monday, January 23, 2017 3:16 PM
To: April Palmie <april.palmie@tceq.texas.gov>; Mayer, Richard <mayer.richard@epa.gov>
Cc: Williams, Aaron K CIV USARMY CESWT (US) <Aaron.K.Williams@usace.army.mil>; Zeiler, Rose M CIV (US) <rose.m.zeiler.civ@mail.mil>; nicholas.b.smith56.civ@mail.mil; Smith, Richard P CIV USARMY CESWF (US) <Richard.P.Smith@usace.army.mil>; Richmann, Debra <debra.richmann@aecom.com>; Sharp, Elspeth <elspeth.sharp@aecom.com>
Subject: RE: LHAAP-18/24 Draft Final Supplemental PSI Addendum Report

Good afternoon April,

Please see the attached pages you requested showing the red X's. The link below is to the full PDF with lab data with these pages showing the X's as well, in case you need it for your files. I will enter this file in the Admin Record once we receive acceptance as Final from you and Rich. Please let me know if you need anything else.

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If you have any questions, please contact your project manager.

Thank you,
JoLynn

JoLynn Snow
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From: Snow, JoLynn
Sent: Wednesday, December 28, 2016 1:37 PM
To: April Palmie; Mayer, Richard
Cc: Williams, Aaron K CIV USARMY CESWT (US); Zeiler, Rose M CIV (US); nicholas.b.smith56.civ@mail.mil; Smith, Richard P CIV USARMY CESWF (US); Richmann, Debra; Sharp, Elspeth
Subject: LHAAP-18/24 Draft Final Supplemental PSI Addendum Report

Good afternoon,

Please see the link below to the Draft Final Supplemental PSI Addendum Report for LHAAP-18/24. Hard copies will follow via FedEx. Also attached is the redline document to assist in review. Please let me know if you need anything else.

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Thank you,
JoLynn

JoLynn Snow
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From: Mayer, Richard <mayer.richard@epa.gov>
Sent: Thursday, January 26, 2017 8:47 AM
To: Zeiler, Rose M CIV USARMY HQDA ACSIM (US); Snow, JoLynn
Cc: Aaron.K.Williams@usace.army.mil; Smith, Nicholas B CIV USARMY IMCOM (US; 'Becher, Kent'; Tzhone, Stephen; 'Forsythe, Barry'; Burton, Terry; Turner, Philip; Richmann, Debra; Richard.P.Smith@usace.army.mil; April Palmie; paul_bruckwicki@fws.gov; Harrison, Dorelle; Sharp, Elspeth
Subject: EPA Approval of the Longhorn Site 18/24 Draft Final Supplemental PSI Addendum Report

Good Morning JoLynn/Rose, I've reviewed the Draft Final Supplemental PSI Addendum Report for Longhorn Site 18/24 and accept all edits and comment responses. Thank you for fixing Section 3.2. Also, EPA highly recommends that the EnCore sampling method be implemented during the next contracting period (for VOCs in soil).

From: April Palmie <april.palmie@tceq.texas.gov>
Sent: Thursday, January 26, 2017 9:01 AM
To: Mayer, Richard; Zeiler, Rose M CIV USARMY HQDA ACSIM (US); Snow, JoLynn
Cc: Aaron.K.Williams@usace.army.mil; Smith, Nicholas B CIV USARMY IMCOM (US; 'Becher, Kent'; Tzhone, Stephen; 'Forsythe, Barry'; Burton, Terry; Turner, Philip; Richmann, Debra; Richard.P.Smith@usace.army.mil; paul_bruckwicki@fws.gov; Harrison, Dorelle; Sharp, Elspeth
Subject: RE: EPA Approval of the Longhorn Site 18/24 Draft Final Supplemental PSI Addendum Report

TCEQ still accepts the document. Note on VOC sampling to follow under separate email.

From: Mayer, Richard [mailto:mayer.richard@epa.gov]
Sent: Thursday, January 26, 2017 8:47 AM
To: Zeiler, Rose M CIV USARMY HQDA ACSIM (US) <rose.m.zeiler.civ@mail.mil>; Snow, JoLynn <JoLynn.Snow@aecom.com>
Cc: Aaron.K.Williams@usace.army.mil; Smith, Nicholas B CIV USARMY IMCOM (US <nicholas.b.smith56.civ@mail.mil>; 'Becher, Kent' <kdbecher@usgs.gov>; Tzhone, Stephen <tzhone.stephen@epa.gov>; 'Forsythe, Barry' <barry_forsythe@fws.gov>; Burton, Terry <Burton.Terry@epa.gov>; Turner, Philip <Turner.Philip@epa.gov>; debra.richmann@aecom.com; Richard.P.Smith@usace.army.mil; April Palmie <april.palmie@tceq.texas.gov>; paul_bruckwicki@fws.gov; Harrison, Dorelle <harrison.dorelle@epa.gov>; Sharp, Elspeth <elspeth.sharp@aecom.com>
Subject: EPA Approval of the Longhorn Site 18/24 Draft Final Supplemental PSI Addendum Report

Good Morning JoLynn/Rose, I've reviewed the Draft Final Supplemental PSI Addendum Report for Longhorn Site 18/24 and accept all edits and comment responses. Thank you for fixing Section 3.2. Also, EPA highly recommends that the EnCore sampling method be implemented during the next contracting period (for VOCs in soil).

DRAFT FINAL

SUPPLEMENTAL TO THE UPDATED POST-SCREENING INVESTIGATION REPORT FOR

LHAAP-18/24, BURNING GROUND NO. 3 AND UNLINED EVAPORATION POND

LONGHORN ARMY AMMUNITION PLANT

KARNACK, TEXAS

Prepared For:

U.S. Army Corps of Engineers

Tulsa District

Prepared By:

AECOM Technical Services, Inc.

December 2016

DRAFT FINAL

SUPPLEMENTAL TO THE UPDATED POST-SCREENING INVESTIGATION REPORT FOR

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Tulsa District

Prepared By:

AECOM Technical Services, Inc.

Contract No. W912DY-09-D-0059

Task Order No. DS01

December 2016

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Acronyms and Abbreviations

Õg/kg	micrograms per kilogram
ACD	air curtain destructor
AEC	Army Environmental Command
AECOM	AECOM Technical Services, Inc.
amsl	above mean sea level
bgs	below ground surface
BRAC	Base Realignment and Closure
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COC	contaminant of concern
CSM	Conceptual Site Model
DPT	direct push technology
ft	foot/feet
FS	Feasibility Study
GWTP	groundwater treatment plant
HSA	hollow-stem auger
ICT	interception-collection trench
IRA	Interim Remedial Action
IRP	Installation Restoration Program
LHAAP	Longhorn Army Ammunition Plant
MCL	Maximum Contaminant Level
MS	matrix spike
MSD	matrix spike duplicate
MSC	Medium Specific Concentration
PCL	TRRP Tier 1 Groundwater Residential Protective Concentration Level
PID	photoionization detector
PSI	Post-Screening Investigation
QA/QC	Quality Control/Quality Assurance
RA	Remedial Action
RCRA	Resource Conservation and Recovery Act
TCEQ	Texas Commission on Environmental Quality
TRRP	Texas Risk Reduction Program
UEP	unlined evaporation pond
U.S.	United States
U.S. Army	U.S. Department of the Army
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
VOC	volatile organic compound
WP	Work Plan

EXECUTIVE SUMMARY

This Supplemental to the Updated Post-Screening Investigation (PSI) Report was prepared on behalf of the United States (U.S.) Army Corps of Engineers (USACE) for sites LHAAP-18 (Burning Ground No. 3) and LHAAP-24 (Unlined Evaporation Pond [UEP]/Rocket Motor Washout Facility) at the former Longhorn Army Ammunition Plant (LHAAP) in Karnack, Texas. The purpose of this report is to summarize the results of the environmental investigations conducted at LHAAP-18/24 by AECOM Technical Services, Inc. (AECOM) between February 2016 and June 2016. This information will be used to fill data gaps identified in the Updated Post-Screening Investigation (PSI) Report for LHAAP-18/24 (AECOM, 2016), to respond to comments from the U.S. Environmental Protection Agency (USEPA) and the Texas Commission on Environmental Quality (TCEQ) on the PSI report, and to complete a Revised Feasibility Study (FS) for LHAAP-18/24 that includes evaluation of contingency remedies for 1,4-dioxane.

The investigation work and the information presented in this report are based on the LHAAP-18/24 Supplemental PSI Work Plan (WP) (AECOM, 2015) that was developed by AECOM on behalf of the U.S. Department of the Army (U.S. Army). The WP was reviewed by and concurrence was received from the TCEQ and the USEPA.

Background

LHAAP-18/24 is a 34.5 acre fenced, cleared area located in the southeastern section of LHAAP. The area was used for the treatment, storage, and disposal of solid and liquid explosive, pyrotechnic, and combustible solvent waste by open burning/open detonation, incineration, evaporation, and burial. Burning Ground No. 3 operated between 1955 and 1998. Historical waste management units include open burn pits, the UEP, stockpiles of solvent-soaked sawdust, an air curtain destructor (ACD), and suspected waste burial pits. A groundwater extraction system incorporating approximately 5,000 feet (ft) of interceptor-collection trenches (ICTs) and a groundwater treatment plant (GWTP) was installed in 1997 to control the migration of contaminated groundwater. The area within the ICTs is considered the containment area.

Field Investigation Scope of Work

The purpose of this investigation was to provide better definition of the presence and extent of contamination in soil and groundwater within specific areas of the site, as discussed below.

The following specific objectives were identified for this work:

- Assess the extent of the potential perchlorate source in the southern corner of the site
    - Determine the presence and extent of a potential perchlorate source in the Shallow Zone soil and groundwater in the vicinity of MW-7 extending south toward 18CPTMW22SW.
    - Determine if perchlorate in Shallow Zone groundwater extends from LHAAP-18/24 to LHAAP-17 in the southern part of LHAAP-18/24.
- Delineate perchlorate in specific groundwater areas where data gaps were identified in the Updated PSI report (AECOM, 2016). These areas include the southern portion of the site near 18CPTMW22SW; the northwest area in the vicinity of 18CPTMW23 and near Harrison Bayou; and in proximity to 18CPTMW19.

To achieve these objectives, vertical soil profiling of perchlorate and volatile organic compound (VOC) concentrations was conducted utilizing direct push technology (DPT), sonic, and hollow stem auger (HSA) drilling methods to recover soil cores. Soil samples from each soil boring were obtained at approximately 10 foot intervals from the ground surface to borehole terminus. Lateral extent of contamination in the Shallow Zone was also determined from the samples collected from the DPT borings.

Delineation of Contaminated Soil

The scope of work included advancing DPT borings and collecting soil samples from up to 30 soil borings as deep as 45 ft below ground surface (bgs) in the southern corner of the site in proximity of MW-7 and 18CPTMW22SW. Five initial soil borings were advanced around 18CPTMW22SW, which is the location of known high perchlorate concentrations in the saturated soil and groundwater. Based on the analytical results from the initial borings, step out borings were advanced at progressively greater distances from the impacted initial soil borings until concentrations of perchlorate and VOCs were below levels protective of groundwater GWP-Ind Medium Specifc Concentration (MSC) of 7,200 micrograms per kilogram (Õg/kg) for perchlorate and 100 times the Maximum Contaminant Level (MCL) for VOCs. The GWP-Ind MSC for perchlorate was used for both saturated and vadose zone soil samples. Using this approach for delineating the lateral extent of contamination, a total of 17 shallow soil borings were advanced and sampled.

Shallow Zone Groundwater Monitoring Wells

The scope of work for Shallow Zone groundwater included the following activities:

- Installation of a 4-inch diameter monitoring well to replace former monitoring well 18CPTMW22, including vertical soil profiling for perchlorate and VOCs in the Shallow Zone and Wilcox clay.
- Installation of a 4-inch diameter monitoring well approximately 250 ft west/southwest of former monitoring well 18CPTMW22 for delineation of perchlorate extent in the direction of LHAAP-17. Vertical soil profiling for perchlorate and VOCs in the Shallow Zone and Wilcox clay was also performed.
- Installation of a 4-inch diameter monitoring well approximately 100 ft north of monitoring well 18CPTMW23 for delineation of perchlorate extent toward Harrison Bayou. Vertical soil profiling for perchlorate and VOCs in the Shallow Zone formation and Wilcox clay was also performed.

Wilcox Formation Groundwater Monitoring Wells

The scope of work for Wilcox Formation groundwater included the following activities:

- Installation of a deep Wilcox 4-inch diameter monitoring well in proximity of monitoring well 18CPTMW22SW, and vertical soil profiling for perchlorate and VOCs in the Wilcox Clay and Wilcox Formation.
- Installation of a 4-inch monitoring well adjacent to monitoring well 18CPTMW23 for lateral and vertical perchlorate and VOCs delineation in the Wilcox Formation. The work included completion of vertical soil profiling for perchlorate and VOCs in the Shallow

Zone and upper Wilcox Formation. This well was installed deeper than 18CPTMW23 in a clean soil interval in the Wilcox Formation.

- Installation of an upper Wilcox 4-inch diameter monitoring well approximately 100 ft north of monitoring well 18CPTMW08SW and adjacent to 18CPTMW19 for vertical and lateral delineation of perchlorate and VOCs. Vertical soil profiling for perchlorate and VOCs in the Wilcox Formation was also performed.
- Installation of an upper Wilcox 4-inch diameter monitoring well approximately 250 ft west/southwest of former monitoring well 18CPTMW22 for perchlorate delineation toward LHAAP-17. Vertical soil profiling for perchlorate and VOCs (combined with the Shallow Zone soil profiling discussed above) into the upper Wilcox Formation.

The Revised Updated PSI Addendum field investigation was initiated using a DPT rig between February 22 and March 15, 2016 for perchlorate assessment in the Shallow Zone of the southern portion of the site. Between April 18, 2016 and June 27, 2016, seven additional monitoring wells were installed, four of which are located in the southern portion as part of the perchlorate assessment. Three of the monitoring wells, 18CPTMW23SW, 18WW24, and 18CPTMW19SW, were installed on the north side of the site beyond the containment area to complete the delineation of perchlorate in this area of the site.

Seventeen shallow soil borings were advanced using DPT in the southern corner of the site for perchlorate delineation, soil characterization, and soil sampling. In this report, the Shallow Zone is defined as the unsaturated and saturated soil from the ground surface to a depth of up to 45 ft bgs, which typically overlies a clay layer (identified as the Wilcox clay) that separates the Shallow Zone (alluvial deposits) from groundwater in the Wilcox Formation.

Three monitoring wells were installed in the Shallow Zone to an approximate depth of 35 ft bgs, three wells were installed in the Intermediate Zone to an approximate depth of 65 ft bgs, and one well was installed in the Deep Zone to an approximate depth of 90 ft bgs. Six of the borings for the monitoring wells were drilled using sonic drilling techniques and one shallow well boring was drilled using an HSA drill rig. The shallow wells were completed in the Shallow Zone groundwater. The intermediate wells were completed in the upper Wilcox and the deep well was completed in the lower Wilcox.

Temporary steel surface casing was used to isolate the deeper groundwater (Intermediate and Deep Zones) from the Shallow Zone groundwater to reduce the potential for cross contamination. Discrete soil samples were obtained from the monitoring well boreholes at intervals up to approximately 10 ft for vertical profiling of perchlorate and VOCs.

Field Investigation Findings

Southern Corner of Site

High perchlorate concentrations were identified in the Shallow Zone and upper Wilcox Formation in wells 18CPTMW22 and 18CPTMW22SW in the area just outside the southern corner of the site; however, the source of this perchlorate is unknown. Therefore, this additional soil investigation in the southern corner of the site was conducted to further determine the presence and source of perchlorate in this area of the site. Eighty-five discrete soil samples from 17 DPT soil borings were collected in the Shallow Zone. In addition, 25 discrete soil samples (12

from the Shallow Zone and 13 from the Wilcox Formation) were obtained from the boreholes of four monitoring wells outside the southern corner of the site.

The perchlorate concentrations in the vadose zone in the six DPT boreholes collected inside the containment area in the southern portion of the site revealed low to nondetectable concentrations of perchlorate, with the highest concentration found in 18DPT04 at 5-5.5 ft bgs at 101 Õg/kg, located adjacent to the former building X-25. These perchlorate concentrations are less than the GWP-Ind MSC of 7,200 Õg/kg used for the vadose zone soil. In the saturated zone inside the containment area, the concentration of perchlorate was elevated particularly in the Wilcox clay. The highest concentration of perchlorate in the Wilcox Clay was detected in 18DPT04 at 36.5-37.0 ft bgs at 3,200 Õg/kg. These perchlorate concentrations however are still less than the GWP-Ind MSC of 7,200 Õg/kg, which was used for perchlorate in saturated soil. Therefore, there is no particular source of perchlorate identified in the Shallow Zone (vadose and saturated) in this area of the site.

Outside the southern corner of the site, the concentration of perchlorate in the vadose zone ranged from low (5.53 Õg/kg) to nondetect. The low to nondetectable concentrations of perchlorate in the vadose zone would indicate that perchlorate is not sourced from a surface release in this area.

In the saturated Shallow Zone, the concentrations of perchlorate were typically low increasing in depth the closer the samples were to the Wilcox clay. The higher concentrations of perchlorate in the shallow saturated zone were detected in 18DPT03 (3,290 Õg/kg at 14.5-15 ft bgs) , 18DPT15 (3,440 Õg/kg at 21-21.5 ft bgs), and 18DPT11 (3,940 Õg/kg at 20-20.5 ft bgs). These concentrations of perchlorate were found in the coarser materials (sand) just above the Wilcox clay. The highest perchlorate concentrations in the Wilcox clay were detected above the GWP-Ind MSC of 7,200 Õg/kg in the borehole of monitoring well 18CPTMW22DW at 9,440 Õg/kg at 29.5-30 ft bgs and in 18DPT12 at 15,900 Õg/kg at 18-18.5 ft bgs. These samples were collected from saturated soils. The elevated concentrations of perchlorate in the Wilcox clay may represent perchlorate migrating via groundwater to this location prior to installation of the groundwater extraction system. For example, perchlorate concentrations in nearby wells MW-7 and MW-8 were 105,000 Õg/L and 27,500 Õg/L, respectively, in May 2005; 89,400 Õg/L, and 47,500 Õg/L in 2006; 37,500 Õg/L and 72,000 Õg/L in May 2013; and 22,000 Õg/L and 8,290 Õg/L in June 2016. These data demonstrate that perchlorate contamination was present before installation of the extraction system and there has been a decrease in perchlorate concentrations as a result of the operation of the groundwater extraction system.

Perchlorate concentrations for the 18CPTMW22 stepout borings were considerably lower or nondetect. Therefore, using a perchlorate GWP-Ind MSC of 7,200 Õg/kg for industrial land use scenario, these low or nondetect perchlorate concentrations provide delineation of extent of perchlorate in the vadose and saturated zones of the Shallow Zone and indicate that a source does not exist in this area of the site.

Data Gaps Northwest of the Containment Area

Other locations where data gaps were identified include northwest of the site in proximity to 18CPTMW19, in proximity to 18CPTMW23, and farther to the northwest from 18CPTMW23 adjacent to Harrison Bayou. To address the data gaps identified at these locations, soil samples from the following boreholes were analyzed to delineate the perchlorate impact:

- 18CPTMW19SW – perchlorate concentrations were below the detection limits at 5-5.5 ft bgs and 10-10.5 ft bgs. At 20-20.5 ft bgs 8.74 µg/kg was detected followed by no detections at 30-30.5 ft bgs. At 40-40.5 and 50-50.5 perchlorate was detected at 124 µg/kg and 170 µg/kg, followed by no detections at 60-61 ft bgs. Saturation at this location was encountered at approximately 10 ft bgs. The Wilcox clay appears to extend from 20.3 ft bgs to 41.4 ft bgs.
- 18CPTMW23SW – relatively low concentrations of perchlorate were detected at 5-5.5 ft bgs, 10-10.5 ft bgs and 20-20.5 ft bgs at 19.6 µg/kg, 1,920 µg/kg, and 29.3 µg/kg, respectively. At depths of 30-30.4 ft bgs, 40-40.5 ft bgs, 50-50.5 ft bgs, and 60-60.5 ft bgs perchlorate concentrations were below the detection limits. Saturated conditions were observed at the surface and throughout the borehole as the area had previously been subjected to flooding due to heavy rains. The Wilcox clay was not identified at this location.
- 18WW25 near Harrison Bayou – no perchlorate was detected in any of the analyzed soil samples at 3.5-4 ft bgs 9.5-10 ft bgs 14.5-15 ft bgs, 19.5-20 ft bgs, 22-22.5 ft bgs. Saturation at this location was encountered at approximately 2 ft bgs during drilling. The Wilcox clay was not identified.

Groundwater Results

A comprehensive sampling event for groundwater was conducted in June 2016 after the monitoring wells were installed. A comprehensive groundwater level gauging event was conducted on June 9, 2016, except for monitoring well 18WW25, which was not installed until June 27, 2016, after the gauging event (well 18WW25 was however sampled on June 29, 2016 and analyzed for COCs). The Shallow Zone groundwater potentiometric results indicate the presence of a localized groundwater high in the northern portion of the site near monitoring wells AWD-1 and 123, as has been observed historically. The new monitoring well 18CPTMW22R, just outside the containment area to the south of the site, indicated the presence of a groundwater high. The Wilcox Formation potentiometric results indicate the presence of a groundwater high in the vicinity of MW-14 in the northwest area of the site, consistent with previous observations.

Shallow Zone monitoring well 18CPTMW26 had insufficient amount of water and was not sampled. Shallow Zone monitoring well 18CPTMW22R to the south of the site, which is screened between 4.8 ft bgs and 14.3 ft bgs, had a perchlorate concentration of 0.917 µg/L. The low perchlorate concentration in the groundwater corroborates the < 2.8 µg/kg of perchlorate in the soil samples collected at this location to a depth of 15.5 ft bgs. This low perchlorate result in 18CPTMW22R contrasts with the high perchlorate concentration in plugged Shallow Zone well 18CPTMW22, which had perchlorate of 106,000 µg/L in June 2014. Shallow Zone well 18CPTMW22 was screened between 19 and 28 ft bgs through a highly impacted Wilcox clay zone. Soil samples from 18CPTMW22DW drilled in April 2016 indicated the presence of perchlorate at 5,400 µg/kg at a depth of 20 to 20.5 ft bgs. Soil samples collected from 18CPTMW22SW had perchlorate concentrations of 10,600 µg/kg at a depth of 24 ft bgs and 10,200 µg/kg at a depth of 26.5 ft bgs. These high concentrations of perchlorate in soil across the screened interval of 18CPTMW22 coincide with the high groundwater perchlorate concentration reported in plugged well 18CPTMW22.

Perchlorate was not detected in new Shallow Zone monitoring well 18WW25 near Harrison Bayou to the northwest. Similarly, no detections of 1,4-dioxane (< 1 μg/L), TCE (< 0.5 μg/L), or MC (< 0.5 μg/L) were observed in this well. No detections of 1,4-dioxane (< 1 μg/L), TCE (< 0.5 μg/L), or MC (< 0.5 μg/L) were observed in new Shallow Zone monitoring well 18CPTMW22R.

Upper Wilcox Formation monitoring well 18CPTMW22SW, co-located with Shallow Zone well 18CPTMW22R and Lower Wilcox Formation well 18CPTMW22DW had a perchlorate concentration of 10,200 μg/L, a methylene chloride concentration of 0.534 J μg/L, a TCE concentration of 0.633 J μg/L, and a 1,4-dioxane concentration of < 0.5 μg/L. Monitoring well 18CPTMW26SW had a perchlorate concentration of 6.42 μg/L but no detections of 1,4-dioxane (< 1 μg/L), TCE (< 0.5 μg/L), or MC (< 0.5 μg/L). This well is located between LHAAP-18/24 and LHAAP-17 and indicates that little migration of perchlorate has occurred toward this location.

New upper Wilcox Formation wells, 18CPTMW19SW and 18CPTMW23SW, located in the northwest of the containment had no detection of 1,4-dioxane (< 1 μg/L), TCE (< 0.5 μg/L), or MC (< 0.5 μg/L) and low concentrations of perchlorate (1.25 μg/L in 18CPTMW19SW and 0.407 μg/L in 18CPTMW23SW). These wells provide delineation of these constituents in the north/northwest area of the site.

In general, the lateral extent of perchlorate, TCE, MC, and 1,4-dioxane in the Shallow Zone and in the Wilcox Formation has been determined with two exceptions. 1,4-Dioxane in MW-16 near Harrison Bayou had a concentration of 18 μg/L, exceeding the 1,4-dioxane Groundwater Residential Protective Concentration Level (PCL) of 9.1 μg/L. The TCE result of 14.1 μg/L at MW-18, located to the southwest of the site, exceeded the MCL of 5 μg/L.

1 INTRODUCTION

AECOM Technical Services, Inc. (AECOM) has been contracted by the USACE, Tulsa District, to complete the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Remedial Action (RA) at the Longhorn Army Ammunition (LHAAP) site LHAAP-18/24 (Burning Grounds #3 and Unlined Evaporation Pond [UEP]), located in Karnack, Texas. The U.S. Army Base Realignment and Closure (BRAC) Division received administrative control of LHAAP in October 2002. The U.S. Army Environmental Command (AEC) is responsible for funding the Installation Restoration Program (IRP) and Military Munitions Response Programs at LHAAP.

This document describes the targeted investigation activities at LHAAP-18/24 (site) to supplement the data collected under the Post-Screening Investigation (2013 investigation) (AECOM, 2013) and Updated PSI Report (2014 investigation) (AECOM, 2016). The purpose of this work is to fill data gaps at site LHAAP-18 (Burning Ground No. 3) in support of completing the Feasibility Study (FS) for the site. These data gaps were identified in the Final Updated PSI Report (AECOM, 2016), and from U. S. Environmental Protection Agency (USEPA) and Texas Commission on Environmental Quality (TCEQ) comments on the report. The scope of this work was developed during the monthly managers meeting held on October 29, 2015, documented in a Supplemental PSI Work Plan (WP) (AECOM, 2015), and approved by USEPA and TCEQ on December 21, 2015 and December 16, 2015, respectively.

1.1 LHAAP Background

The LHAAP is an inactive, government-owned, formerly contractor-operated and maintained industrial facility located in central-east Texas in the northeastern corner of Harrison County. The facility occupies approximately 1,400 of its former 8,416 acres located between State Highway 43 in Karnack, Texas, and the western shore of Caddo Lake as shown in **Figure 1-1**. LHAAP was listed as a National Priorities List site on August 9, 1990, due to threatened releases of hazardous substances, pollutants, or contaminants. The USEPA, the Texas Water Commission (now the TCEQ), and the U.S. Army signed a Federal Facilities Agreement on December 30, 1991.

The nearest cities are Marshall, Texas, approximately 14 miles to the southwest, and Shreveport, Louisiana, approximately 40 miles to the southeast.

1.2 LHAAP-18/24 Background

LHAAP-18/24 is a 34.5 acre fenced, cleared area (with an interim remedy that includes a containment area) located in the southeastern section of LHAAP (**Figure 1-2**). The site is between Avenue Q to the southeast and Harrison Bayou to the northwest. LHAAP-17 (Burning Ground No. 2) is to the southwest (**Figures 1-2** and **1-3**), and heavily wooded areas lie to the east and northeast. The area had been used for the treatment, storage, and disposal of solid and liquid explosive, pyrotechnic, and combustible solvent waste by open burning/open detonation, incineration, evaporation, and burial. LHAAP-18/24 encompasses a number of Defense Environmental Restoration Program Management Information System sites:

- Burning Ground No. 3;
- Rocket Motor Washout Pond;

- Former UEP;
- 24-X Holding Area;
- 25-X Washout Pad;
- Air Curtain Destructor;
- Three Open Burning Cages (003, 155, 156);
- Two Open Burning Pans (157, 158);
- Building 41-X; and
- Building 43-X.

The locations of these sites within LHAAP-18/24 are presented in the Environmental Site Assessment (Plexus, 2005) and identified in **Figure 1-3**. The former UEP/Rocket Motor Washout Facility is located within the northern corner of LHAAP-18/24.

LHAAP-18/24 is generally vegetated with grass and weeds and is crossed by a number of paved roads. It is situated on a natural topographic high slightly west of the crest of a small topographic divide between Harrison Bayou and Saunder's Branch. The topography of the site has been greatly altered by operations over the past 35 years. LHAAP- 18/24 is mostly level, with more relief near the western corner that contained the air-curtain destructor until 2003 and near the northern corner that contains the mounded surface of the former UEP. No signs of substantial erosion are visible.

Burning Ground No. 3 operated between 1955 and 1998. Historical waste management units include open burn pits, the UEP, stockpiles of solvent-soaked sawdust, and suspected waste burial pits. The UEP was constructed at the burning ground in 1963 as a holding pond to store explosive wastes resulting from the washout of rocket motor casings. In 1973, the pond also began receiving waste water containing solvent residues and solids. An air curtain destructor (ACD) was built in 1979 for the purpose of disposing of explosive and explosive-contaminated wastes by burning.

Use of burn pit and trenches was reportedly discontinued in 1984, and the use of the UEP was also discontinued in 1984 when it was discovered that the pond was contaminating groundwater beneath the site. The UEP was closed as a Resource Conservation and Recovery Act (RCRA) interim status surface impoundment in 1986 by removing all waste and capping the impoundment. The last burning cage was removed in 1998.

Wastes removed during the closure of the UEP were disposed of off-site at a RCRA certified disposal facility. As part of the LHAAP-18/24 Interim Remedial Action (IRA), approximately 32,000 cubic yards of source area soil were excavated and treated by low temperature thermal desorption. Some of the treated soil was placed at LHAAP-12 and LHAAP-16.

A groundwater extraction system incorporating approximately 5,000 ft of ICTs and a groundwater treatment plant (GWTP) was installed in 1997 to control the migration of contaminated groundwater in the shallow groundwater zone. The treated water is primarily planned to be released to Harrison Bayou with occasional release of treated water as irrigation water on LHAAP-18/24, or to a holding pond (INF Pond). However, due to drought conditions

between 2011 and 2014, flow in Harrison Bayou did not support discharge to Harrison Bayou. Instead, the majority of the treated water was released via irrigation.

1.2.1 Surface Water Hydrology

Harrison Bayou flows within approximately 200 ft of the western corner of LHAAP-18/24. There are no surface water bodies or watercourses running through the site. Surface drainage occurs in all directions, but flow is generally directed toward Harrison Bayou to the West and by both natural and manmade ditches and drainage swales to the north. Harrison Bayou drains into Caddo Lake, which is located approximately one mile northeast of LHAAP-18/24. The extreme western corner of the site is located within the 100-year floodplain of Harrison Bayou.

1.2.2 Hydrogeology

Until 2012, the existing Conceptual Site Model (CSM) described three groundwater zones at LHAAP-18/24: shallow, intermediate, and deep. The three groundwater zones were described as somewhat separated by non-uniform, non-contiguous clay or silty clay layers. The separation between aquifer zones is therefore primarily descriptive and defined by the intervals in which groups of monitoring wells have been completed. The depths of monitoring wells screened in the shallow groundwater zone are typically between 10 and 53 feet (ft) below ground surface (bgs). The depths of monitoring wells in the intermediate groundwater zone are typically between 44 and 80 ft bgs. The depths of monitoring wells in the deep groundwater zone are between 98 and 185 ft bgs.

The CSM was updated on October 18, 2012. The updated CSM describes the presence of two units at LHAAP-18/24: a shallow unit up to a depth of approximately 45 ft bgs (Shallow Zone), and a deep unit below the shallow zone (Wilcox Formation). Generally, these two units are separated by a contiguous clay layer which is believed to be present across the entire site with the exception of the area to the west and northwest towards Harrison Bayou (i.e., within the floodplain of Harrison Bayou). As an example, it appears that the Shallow Zone and Wilcox Formation are well separated beyond the eastern edge of the site (e.g., near 18WW17 and 18WW18), while there is no separation at all just beyond the western corner (i.e., in the vicinity of 18WW02 and 18WW06). In between, the clay layer beneath the shallow zone varies considerably in depth and thickness. Generally, based on the updated CSM, the shallow and shallow/intermediate-screened wells are identified in the Shallow Zone (up to a depth of 40 ft bgs) and the intermediate and deep-screened wells are identified in the Wilcox Formation (generally below approximately 45 ft bgs). The intermediate wells are generally screened in the upper (shallow) Wilcox Formation and the deep wells are generally screened in the lower (deep) Wilcox Formation. Upper Wilcox and shallow Wilcox are used interchangeably and refer to the portion of the Wilcox Formation just below the Wilcox clay at an approximate depth of 50 to 80 ft bgs. Similarly, lower Wilcox and deep Wilcox are used interchangeably and refer to the portion of the Wilcox Formation at approximately 80 ft or more bgs.

Figure 1-4 shows the shallow groundwater elevations for March 2016 (prior to the current investigation), indicating the groundwater flow in the shallow zone to occur outwardly from the site in a radial direction. Localized influence of groundwater extraction and reinjection can be observed in the shallow aquifer. The gradient and direction of flow in the Wilcox Formation in the northern portion of the site seem to be similar to the shallow zone; toward Harrison Bayou (**Figure 1-5**).

Groundwater in the deep zone near LHAAP is currently used as a drinking water source. As of May 2015, six active water supply wells near the LHAAP were identified (**Figure 1-2**). All these public water supply wells are located greater than two miles from the LHAAP-18/24 site. Karnack Water Supply Corporation operates two Public Water Supply Wells servicing the town of Karnack. These wells were completed in 1905 to depths of 287 and 285 ft bgs and are located hydraulically upgradient approximately one-quarter mile northwest and one-half mile southwest of the town center, respectively. Caddo Lake Water Supply Corporation operates three source wells located north and northwest of LHAAP that have been in use since 1905. These wells are hydraulically upgradient of LHAAP (Jacobs, 2002) with completion depths of 244, 185 and 310 ft bgs. Caddo Lake State Park operates one source well located approximately 1.6 miles northwest upgradient of LHAAP. This well was installed in 1905 with a total depth of 292 ft. Due to the large distance between these wells and LHAAP, water removal from these wells is not expected to affect groundwater flow at the site. In addition, there are several livestock and domestic wells (shown as Groundwater Wells on **Figure 1-2**) located in the vicinity of LHAAP with depths averaging 250 ft (**Figure 1-2**). There are three water supply wells located within LHAAP (see **Figure 1-2**) upgradient of LHAAP-18/24. These water wells supply water to buildings currently in use on the installation. Their approximate locations and depths are as follows:

- 150 ft south-southeast of the fire station approximately 2 miles from LHAAP-18/24; 128 ft deep
- İ mile southwest of the fire station approximately 2 miles from LHAAP-18/24; 195 ft deep
- At the U.S. Fish and Wildlife Service facility approximately 2.6 miles from LHAAP-18/24; 220 ft deep

None of these wells are close to LHAAP-18/24, and none of these wells are used for drinking water. Two additional wells that had previously supplied water to the installation have been plugged and abandoned. None of the water supply wells are associated with or are in imminent danger from the localized contaminated groundwater at LHAAP-18/24.

1.3 Previous Investigations and Remedial Actions

The environmental media (e.g., soil, groundwater, surface water, and sediment) at LHAAP-18/24 have been the subject of numerous investigations to identify potential contamination. Those investigations are summarized in the Updated PSI Report for LHAAP-18/24 (AECOM, 2016).

In addition to the IRAs described above, several remedial actions have been conducted at LHAAP-18/24. These are summarized in the Updated PSI Report for LHAAP-18/24 (AECOM, 2016).

1.4 Organization of Report

This report has been organized in the following sections:

- *Section 1: Introduction* - summarizes the site background including previous investigation and remediation activities, and provides the purpose, scope of work, and objectives of the WP

- *Section 2: Investigation Activities* - describes the completed scope of work and the sampling and analysis methodology to address the site data gaps. Deviations from the Supplemental PSI WP (AECOM, 2015) are presented in this Section
- *Section 3: Investigation Findings* ï provides a presentation of the data, updates to the CSM, analysis of the data gaps, and discussion of the findings
- *Section 4: Conclusions and Recommendations* ï Provides main conclusions and recommendations
- *Section 5: References* - provides a list of references cited in the document.

This Revised Updated PSI Addendum Report also includes a number of appendices supporting the main text:

- Appendix A: Field Boring Logs and Monitoring Well Construction Logs
- Appendix B: Quality Control Summary Report & Laboratory Analytical Reports.
- Appendix C: Groundwater Sampling Forms.

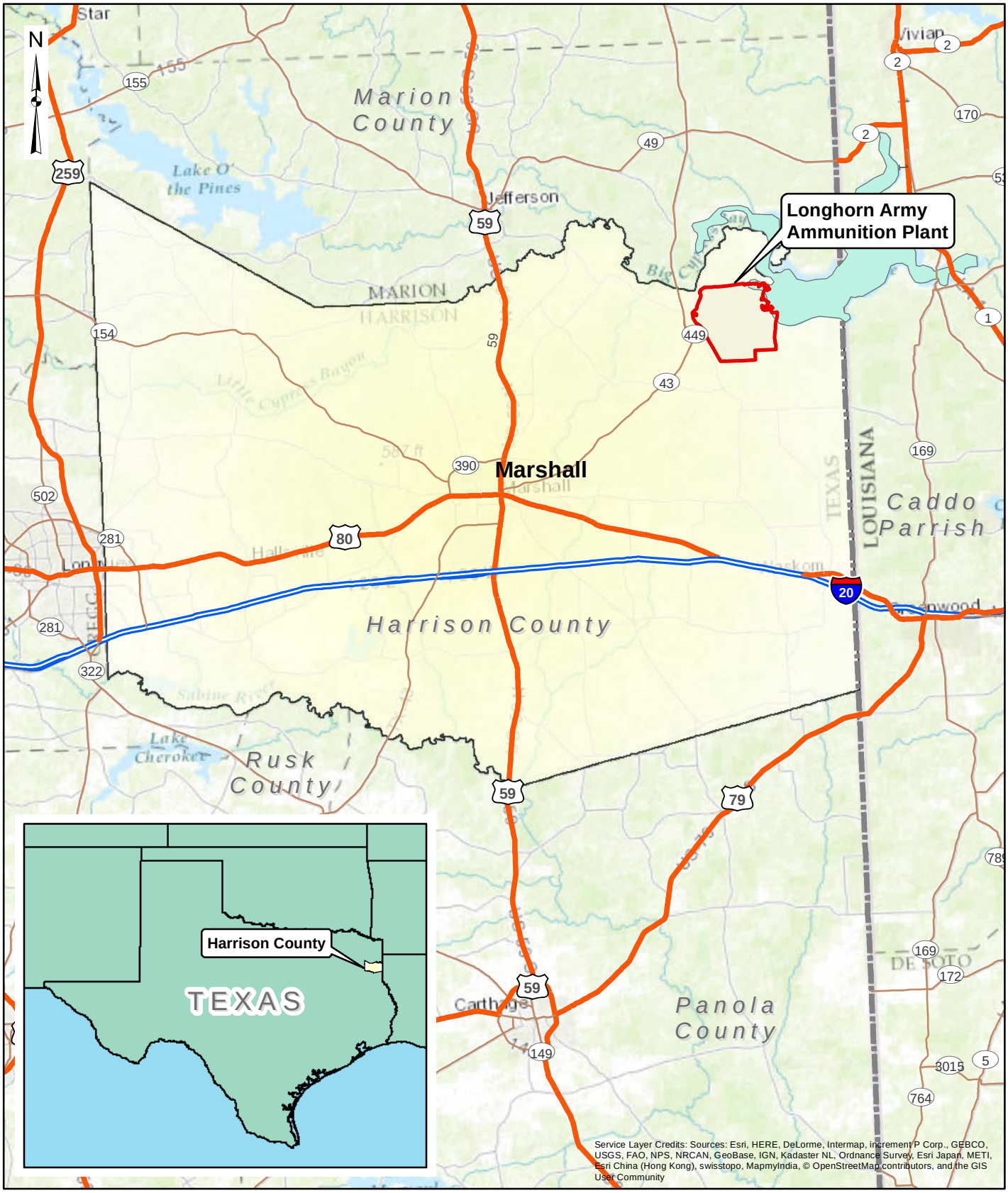

0 3.5 7 14 Miles

AECOM

Figure 1-1
LHAAP Location Map
LHAAP-18/24

Longhorn Army Ammunition Plant
60256135 Karnack, Texas December 2016

L:\AGEIGIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP18_24\PSI_Addendum\Fig 1-1 LHAAP Location.mxd

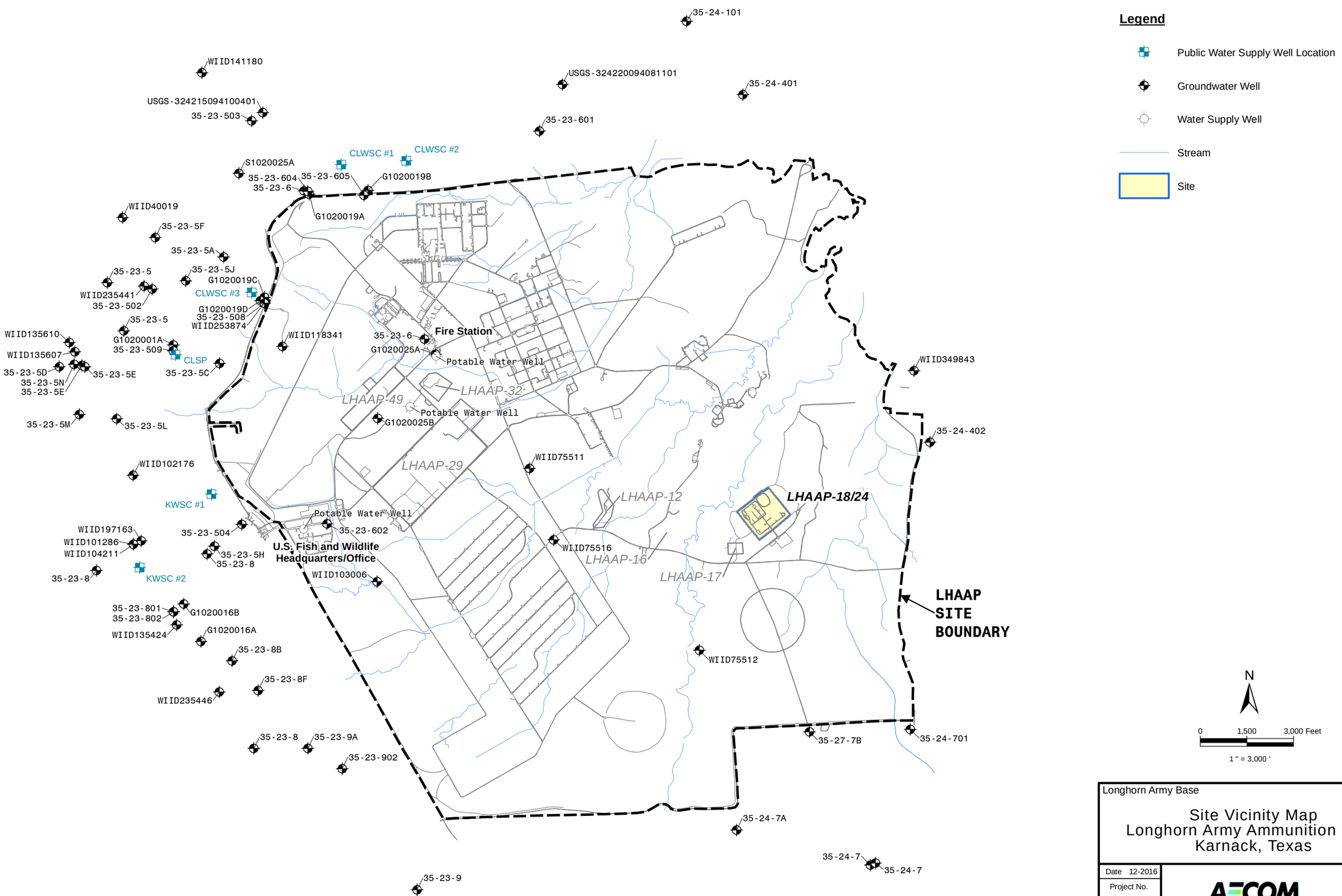

Longhorn Army Base

Site Vicinity Map
Longhorn Army Ammunition Plant
Karnack, Texas

Date 12-2016	AECOM	Figure
Project No. 60263702		1-2

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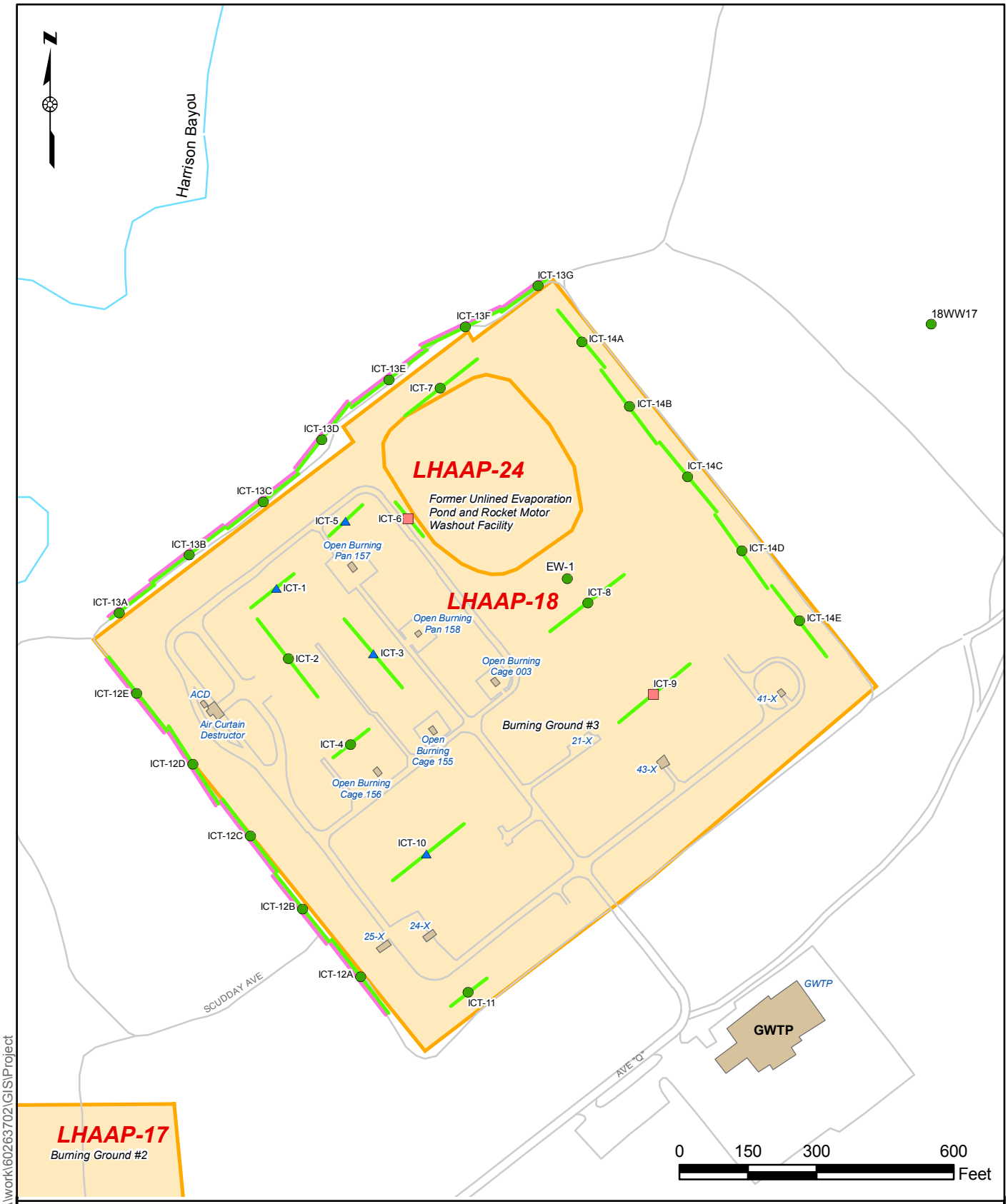

LEGEND

- Extraction Location
- Deactivated ICT Sump
- Injection Point
- ICT Location
- HDPE Liner Installed on the Outside of the ICT
- Stream
- Road
- Building or Pad
- Site

AECOM

U.S. ARMY CORPS OF ENGINEERS
TULSA DISTRICT
TULSA, OKLAHOMA

Figure 1-3
Site Layout
LHAAP-18/24
Longhorn Army Ammunition Plant, Karnack, TX

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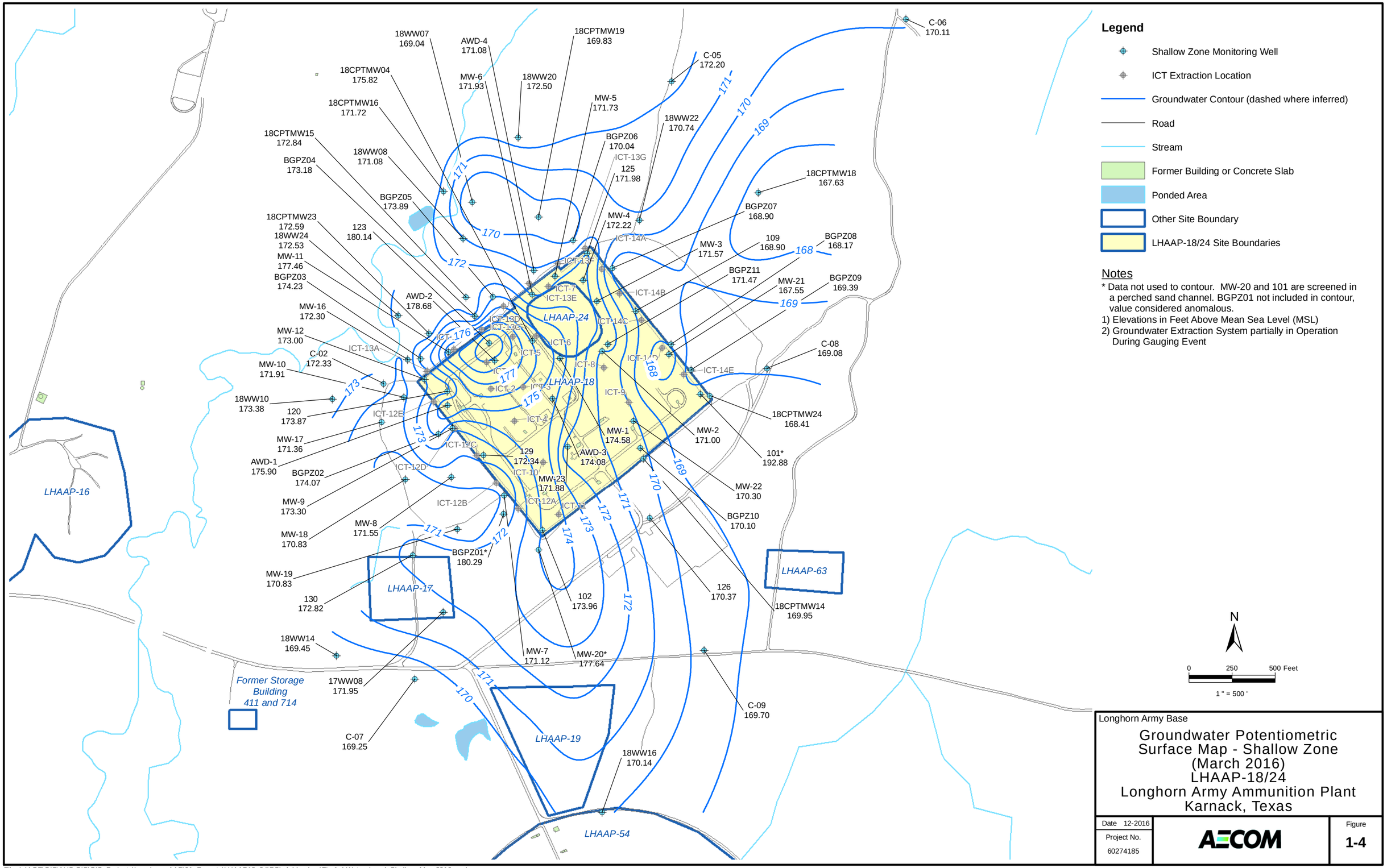

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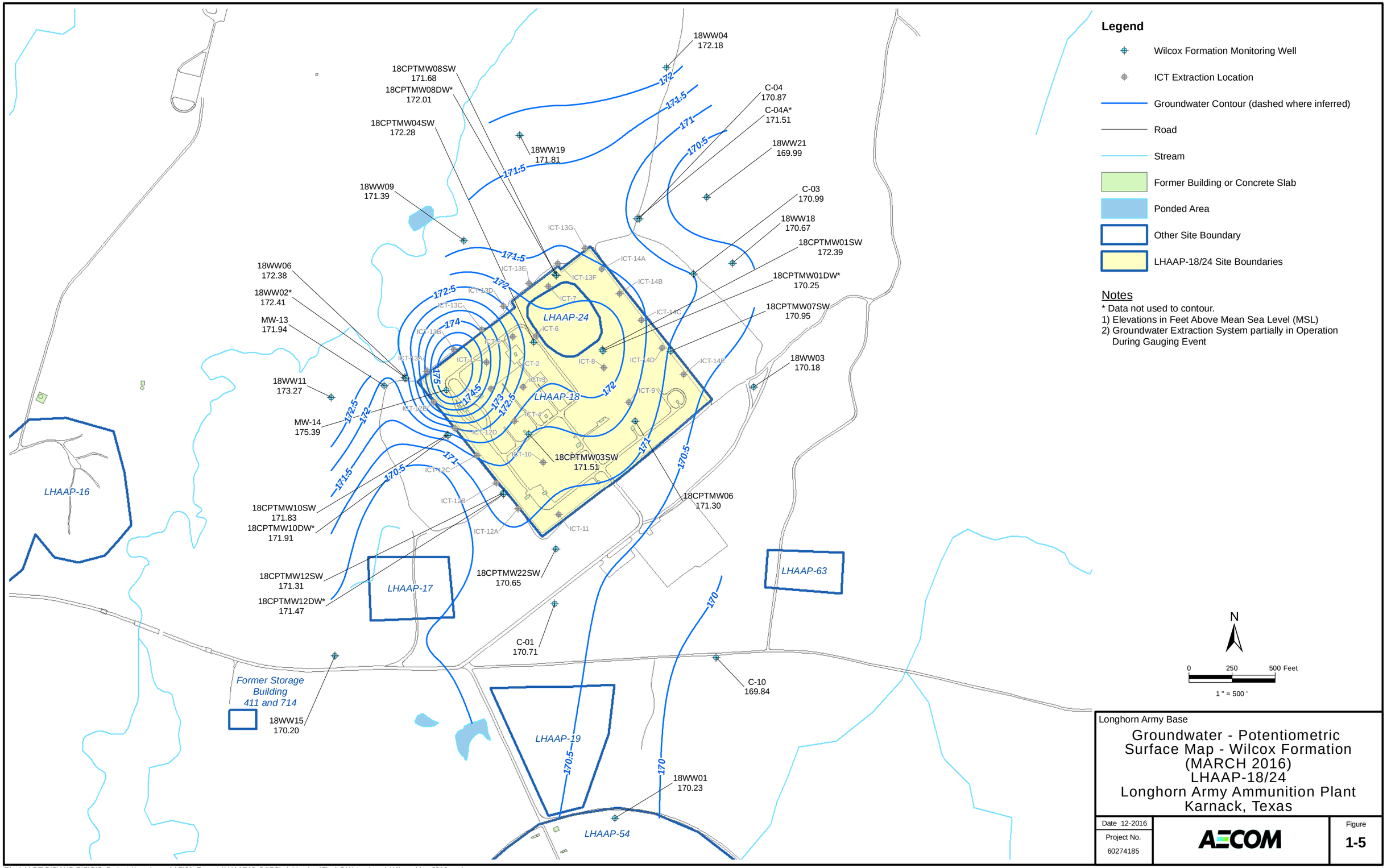

Longhorn Army Base

Groundwater - Potentiometric Surface Map - Wilcox Formation (MARCH 2016) LHAAP-18/24 Longhorn Army Ammunition Plant Karnack, Texas

Date 12-2016	AECOM	Figure
Project No. 60274185		1-5

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2 INVESTIGATION ACTIVITIES

This section presents the completed investigation scope of work, the sampling and analysis methodology, and deviations from the Supplemental PSI WP (AECOM, December 2015).

2.1 Data Gaps and Proposed Investigation Scope of Work

To address the data gaps identified in the Final Updated PSI Report (AECOM, 2016), the specific areas that were investigated are presented below.

2.1.1 Potential Perchlorate Source Extent Assessment in the Southern Corner of the Site

The following specific objectives were identified for this work:

- Determine the presence and extent of a potential perchlorate source in the Shallow Zone groundwater in the southern area of the site. This area is in the vicinity of MW-07 extending southeast to the vicinity of 18CPTMW22SW.
- Determine if perchlorate in Shallow Zone groundwater extends from LHAAP-18/24 to LHAAP-17 in the southern area of LHAAP-18/24.

2.1.2 Shallow Zone Groundwater Monitoring Wells

The scope of work in the Shallow Zone groundwater included the following activities:

- Installation of a 4-inch diameter monitoring well to replace former monitoring well 18CPTMW22, including completion of vertical soil profiling for perchlorate and volatile organic compounds (VOCs) in the shallow zone formation into the Wilcox clay.
- Installation of a 4-inch diameter monitoring well approximately 250 ft west/southwest of former monitoring well 18CPTMW22 for perchlorate delineation towards LHAAP-17 including completion of vertical soil profiling for perchlorate and VOCs in the Shallow Zone into the Wilcox clay.
- Installation of a 4-inch diameter monitoring well approximately 100 ft north of monitoring well 18CPTMW23 for perchlorate delineation towards Harrison Bayou including completion of vertical soil profiling for perchlorate and VOCs in the shallow zone formation into the Wilcox sand.

2.1.3 Wilcox Formation Groundwater Monitoring Wells

The scope of work in the Wilcox Formation groundwater included the following activities:

- Installation of a deep Wilcox 4-inch diameter monitoring well approximately 30 ft south of monitoring well 18CPTMW22SW including completion of vertical soil profiling for perchlorate and VOCs in the Wilcox Clay and Wilcox Formation.
- Installation of a 4-inch monitoring well adjacent to monitoring well 18CPTMW23 for lateral and vertical perchlorate and VOCs delineation in the Wilcox Formation including completion of vertical soil profiling for perchlorate and VOCs in the shallow zone formation and into the Wilcox Formation.

- Installation of an upper Wilcox 4-inch diameter monitoring well approximately 100 ft north of monitoring well 18CPTMW08SW and adjacent to 18CPTMW19 for vertical and lateral perchlorate and VOC delineation including completion of vertical soil profiling for perchlorate and VOCs in the Wilcox Formation.
- Installation of a 4-inch diameter monitoring well approximately 250 ft west/southwest of former monitoring well 18CPTMW22 for perchlorate delineation in the upper Wilcox Formation towards LHAAP-17 including completion of vertical soil profiling for perchlorate and VOCs (combined with the shallow zone formation profiling discussed above) into the upper Wilcox Formation.

Although the previous investigations identified data gaps in the soil and groundwater, this report discusses the data gaps identified in the soils. The groundwater data gaps, which included the installation of monitoring wells completed during this effort, will be addressed as part of the site semi-annual sampling program.

2.2 Summary of Site Investigation

The investigation activities completed to collect necessary data to address the identified data gaps are presented below.

The purpose of this investigation was to assess and potentially identify the source of perchlorate detected in the southern corner of the site and update the CSM in this area. The investigation involved the drilling and sampling of 17 soil boring locations using direct push technology (DPT) drilling techniques. The shallow subsurface field investigation was conducted between February 22 and March 15, 2016.

Additional investigation activities occurred between April 18 and June 27, 2016 involving the drilling and installation of 7 monitoring wells. Four of these monitoring wells (18CPTMW22R, 18CPTMW22DW, 18CPTMW26, and 18CPTMW26SW) were completed in the southern portion of the site to assist in the horizontal and vertical delineation of perchlorate in the subsurface. The other three monitoring wells were placed where data gaps were observed; 18CPTMW23SW, 18WW25, and 18CPTMW19SW were installed north-northwest of the site for lateral and vertical extent determination of perchlorate in groundwater.

Prior to conducting drilling and other subsurface activities during this investigation, the Texas One Call System was notified to locate underground utilities. The Texas One Call System was periodically updated during the course of the investigation.

2.2.1 Subsurface Soil Assessment

The Shallow Zone soils in the southern portion of the site were assessed by drilling and soil sampling using a DPT rig at the locations identified in the Supplemental PSI WP. The initial soil borings 18DPT01 through 18DPT05 were drilled, sampled, and analyzed for perchlorate and VOCs. Stepout soil borings in ordinate directions approximately 100 ft away from the impacted soil borings were completed in areas where contaminant of concern (COC) concentrations indicated the presence of contamination. Additional stepout soil borings were advanced and sampled until the concentrations of the COCs in soil were below soil GWP-Ind MSC or were below detection limits. The Shallow Zone soil borings terminated at the ñWilcox clay.ò During the course of this investigation, the Wilcox clay was interpreted to vary in depth from

approximately 11.5 to 36 ft bgs in the southern portion of the site. It was typically shallower in the soil borings located farther to the south. The proposed number of soil samples stated in the Supplemental PSI WP was five per borehole location; however due to the variations in borehole depths, the number of soil samples ranged between 4 soil samples and 7 soil samples. **Figure 2-1** presents the location of completed boreholes. The soil boring logs are provided in **Appendix A**.

Additional assessment in the southern portion of the site was accomplished by sampling the soil during the drilling and installation of monitoring wells 18CPTMW22R, 18CPTMW22DW, 18CPTMW26, and 18CPTMW26SW. Sonic drilling methods were used in the drilling and installation of these monitoring wells. 18CPTMW22R was drilled and completed as a replacement to plugged and abandoned monitoring well 18CPTMW22. Monitoring wells 18CPTMW26 and 18CPTMW26SW were drilled and sampled to delineate the COCs in the shallow and upper Wilcox zone, respectively to the west of LHAAP-18/24 towards LHAAP-17. Monitoring well 18CPTMW22DW was drilled to a depth of 90 ft bgs and used to vertically delineate the COCs in the lower Wilcox Formation. The borehole locations for these monitoring wells are presented in **Figure 2-1**.

A data gap existed with respect to the delineation of perchlorate and VOCs in the shallow zone, north of 18CPTMW23 near Harrison Bayou. To complete the vertical soil profile of perchlorate and VOCs in the shallow zone formation north of 18CPTMW23 towards Harrison Bayou, the borehole for monitoring well 18WW25 was drilled and sampled using a hollow stem auger drill rig near Harrison Bayou to a depth of 24 ft bgs. Soil samples were obtained at approximately 5-foot intervals. The Wilcox clay was not identified during drilling and sampling activities of this borehole. **Figure 2-2** provides the location of this well.

A data gap existed northwest of the site with respect to vertical delineation of perchlorate and VOC in the Wilcox Formation in proximity to monitoring well 18CPTMW23. Sonic drilling methods were used to drill and sample the soil boring and install monitoring well 18CPTMW23SW into the upper Wilcox Formation and complete the vertical soil profile for perchlorate and VOCs. Soil samples were obtained at approximately 10 ft intervals. The Wilcox clay was not identified during the drilling and sampling of the borehole. **Figure 2-2** provides the location of this well.

A data gap existed northwest of the site approximately 100 ft north of monitoring well 18CPTMW08SW adjacent to 18CPTMW19 in the Wilcox Formation. Sonic drilling methods were used to drill and sample the soil boring and install monitoring well 18CPTMW19SW into the upper Wilcox Formation and complete the vertical soil profile for perchlorate and VOCs. Soil samples were obtained at approximately 10 ft intervals. The Wilcox clay was identified at 20.3 ft bgs extending to a depth of 41.4 ft bgs. **Figure 2-2** provides the location of this well.

2.2.1.1 DPT

DPT drilling methods were used between February 22 and March 25, 2016 to drill 17 boreholes (18DPT01 through 18DPT17) located at the southern corner of the site to identify and delineate perchlorate in the Shallow Zone . The borehole locations are depicted in **Figure 2-1**.

Continuous soil samples were collected by pushing a 5-foot sample barrel at 5-foot increments. After the core barrel is advanced five ft (occasionally 2.5-ft increments were implemented due to flowing sands), the drill rods are removed from the borehole and the acetate sleeve containing the soil is removed from the sample barrel. Discrete soil samples were collected from each soil

boring location and analyzed for perchlorate and VOCs on an accelerated turnaround basis to allow rapid decisions on additional data collection. The discrete soil samples were collected at approximately 5-foot intervals, where significant photoionization detector (PID) readings were recorded, or at lithology changes. Samples were collected from the vadose zone, the saturated Shallow Zone, and in the Wilcox clay. In some instances where the Wilcox clay was not identified soil samples may have been obtained in the upper Wilcox sand. The general procedures used in DPT drilling are described in AECOM SOP 16 presented in the Final Installation-Wide Work Plan (AECOM, 2014).

A biased sampling approach was used to determine the source and extent of perchlorate in the Shallow Zone. Five borings were initially identified to start the investigation as shown in **Figure 2-1** by the orange-colored borehole symbols. Two initial DPT soil borings, one at the former Building 25-X (18DPT04) and one located midway between 18CPTMW22SW and 18DPT04 (18DPT05) were drilled and sampled to determine if building 25-X was contributing to the perchlorate in the subsurface. Since perchlorate was previously identified in 18CPTMW22SW, three initial DPT soil borings (18DPT01, 18DPT02, and 18DPT03) were drilled and sampled approximately 100 ft to the east, south, and west, respectively.

Based on the results of the five initial soil borings, additional soil borings at approximately 100 ft stepouts were advanced to the Wilcox Clay to delineate the perchlorate impact. The offset soil borings associated with each initial borehole are as follows:

- Initial boring 18DPT04; offset soil borings 18DPT06 (north), 18DPT07 (east), 18DPT15 (west), and 18DPT17 (south)
- Initial boring 18DPT05; offset soil boring 18DPT12 (southwest)
- Initial boring 18DPT01; offset soil borings 18DPT11 (north), 18DPT10 (east), and 18DPT14 (south)
- Initial borehole 18DPT02; offset soil borings 18DPT14 (east), 18DPT13 (south), 18DPT09 (west); and,
- Initial borehole 18DPT03; offset soil borings 18DPT09 (south), 18DPT08 (west), and 18DPT12 (north)

Per the direction of the USACE, soil borings 18DPT16, 18DPT15, and 18DPT17 were located in proximity to the former X-25 building location to determine if the former building is a source for perchlorate in the subsurface.

2.2.1.2 Sonic Drilling

Sonic drilling was primarily used to drill the boreholes beyond the reach of the DPT rig and for the installation of the monitoring wells. The well locations are depicted in **Figures 2-1 and 2-2**. Due to its versatility of using different diameter drill pipes, the sonic rig is able to install a temporary 8-inch surface casing in the shallow zone, to isolate the soil boring from the shallow zone while continuing to drill deeper into the subsurface. A 10-ft long 4-inch diameter core barrel was used to obtain the soil samples by advancing the core barrel into the subsurface by vibration which was followed with a 7-inch drill pipe to keep the hole from collapsing and isolating it from the surrounding lithology. Once the core barrel was advanced to a sufficient depth it was retrieved to the surface and the soil vibrated out into elongated plastic bags for

logging and sampling. When drilling below the Shallow Zone, a temporary 8-inch surface casing was installed into the clay to isolate the borehole from the Shallow Zone. Hydrated bentonite was used to seal the bottom of the temporary surface casing. The surface casing was then removed once the well was completed.

Further delineation south of the site was accomplished by sampling the soil during the drilling and installation of monitoring wells 18CPTMW22R, 18CPTMW22DW, 18CPTMW26, and 18CPTMW26SW. To address the other data gaps identified in the Final Updated PSI Report (AECOM, 2016), monitoring wells 18CPTMW19SW and 18CPTMW23SWwere drilled and sampled using a sonic drill rig; however, a hollow-stem auger (HSA) was used to drill Shallow Zone well 18WW25 as the area to the north of the site near Harrison Bayou was flooded and inaccessible at the time the sonic rig was available. Eight-and-a-quarter-inch diameter hollow stem augers were used to drill and install monitoring well 18WW25. A 5-foot long core barrel was used to continuously sample the borehole.

2.2.1.3 Subsurface Soil Samples

Seventy-eight discrete soil samples from 17 soil borings were collected for perchlorate and VOC analysis from the area on the south side of the site. During the investigation, the soil samples were obtained using DPT drilling techniques within the upper 45 ft of the subsurface (Shallow Zone groundwater). The soil samples were generally selected based on a combination of elevated PID results and soil type; however, soil samples were also selected where PID responses were low in various soil types to confirm non-detect/low concentrations of VOCs.

To augment the soil samples collected and analyzed during the DPT subsurface investigation, 23 discrete soil samples (12 shallow and 11 deep) were collected using the same criteria as the DPT investigation while drilling the soil borings for the monitoring wells. The soil samples from these soil borings further delineate the COCs horizontally as well as vertically (up to 90 ft bgs) in the southern portion of the site. Monitoring well 18CPTMW22R and 18CPTMW26 were drilled and installed in the Shallow Zone. 18CPTMW22R was drilled and installed as a replacement of plugged and abandoned well 18CPTMW22. Monitoring well 18CPTMW26SW was drilled and installed in the upper portion of the Wilcox sand; whereas 18SCPMW22DW was drilled and installed in the lower portion of the Wilcox sand. Eight-inch diameter temporary surface casing was used in both holes to isolate them from the Shallow Zone while drilling continued into the Wilcox sand.

North of the containment area soil borings for monitoring wells 18CPTMW19SW and 18CPTMW23SW were drilled and sampled to 64 ft bgs into the upper Wilcox Formation using sonic drilling techniques. A total of 14 soil samples, seven from 18CPTMW19SW and seven from 18CPTMW23SW were used to vertically profile the COCs in these soil borings. The soil boring for monitoring well 18WW25 was drilled and sampled within the shallow zone using a HSA drill rig. Five soil samples were obtained and analyzed to vertically profile the COCs within this soil boring. The methodology used to obtain subsurface soil samples followed the procedures described in AECOM SOP 05 presented in the Final Installation-Wide Work Plan (AECOM, 2014).

The soil samples were submitted to Microbac Laboratory, a Texas-licensed laboratory located in Marietta, Ohio for chemical analyses. The packaging and shipment of soil samples to the

laboratory followed the procedures described in AECOM SOP 08 presented in the Final Installation-Wide Work Plan (AECOM, 2014).

2.2.2 Groundwater Sampling

A comprehensive sampling event for groundwater was conducted in June 2016 after the monitoring wells were installed. A comprehensive groundwater gauging event was conducted on June 9, 2016 except for monitoring well 18WW25, which was not installed at the time the wells were gauged at the site on June 9, 2016. The gauging and sampling procedures followed the procedures described in the Installation-Wide Work Plan (AECOM, July 2014).

2.2.3 Field Quality Control Samples

2.2.3.1 Assessment of Field Procedures

As part of the Quality Control/Quality Assurance (QA/QC) procedures used during the field investigation, field quality control samples were obtained during sampling activities. The quality control samples included equipment blanks, trip blanks, and temperature blanks.

For each cooler containing samples for VOC analysis to be transported to the laboratory, a trip blank was included. The trip blank consisted of two laboratory-provided 40-milliliter VOA vials containing deionized water. This trip blank was used to determine whether the sample shipment may have been contaminated during transit from the field to the laboratory. The trip blanks were analyzed for VOCs.

A temperature blank was included in each cooler shipped to the laboratory. The temperature blank consists of a small laboratory-provided container containing water. It was used by the laboratory to confirm that the cooler arrived at the appropriate temperature.

2.2.3.2 Assessment of Field Variability

To evaluate or determine the source of measurement error arising from cumulative effects of both field and laboratory bias, duplicate samples were collected and submitted to the laboratory for analyses. One field duplicate was collected for approximately every 10 samples collected from each medium. The duplicate samples were analyzed for the same parameters as the media being sampled.

Laboratory control samples such as matrix spike (MS) and matrix spike duplicate (MSD) were collected during the sampling activities. These samples were evaluated by the laboratory to assess contamination introduced during sample preparation activities and/or from instrument contamination. One MS and MSD sample was collected approximately every 20 samples collected from each medium.

2.3 Surveying

The wells and boreholes were surveyed, and the results are presented in Exhibits 1 and 2.

Exhibit 1: New Monitoring Wells Surveying Information

Well ID	Northing	Easting	Latitude	Longitude	TOC Elevation (ft amsl)	Top of Concrete Elevation (ft amsl)	Natural Ground Elevation (ft amsl)
18CPTMW19SW	6,954,782.80ô	3,316,537,.88ô	32.6699222ô	94.1178376ô	193.29	190.89	190.83
18CPTMW22DW	6,952,861.64ô	3,316,563,.20ô	32.6646431ô	94.1180158ô	188.00	185.24	185.20
18CPTMW22R	6,952,856.90	3,316,555.70ô	32.6646309ô	94.1180408ô	187.23	185.08	185.00
18CPTMW23SW	6,954,099.96	3,315,914.48ô	32.6681183ô	94.1199543ô	177.43	175.10	174.77
18CPTMW26	6,952,788.65	3,316,359.05ô	32.6644660ô	94.1186885ô	182.80	180.14	180.06
18CPTMW26SW	6,952,797.18	3,316,360.70ô	32.6644660ô	94.1186820ô	182.00	179.53	179.62
18WW25	6,954,509.12	3,315,810.90ô	32.6692538ô	94.1202352ô	175.15	172.69	172.34

TOC ï top of casing
Ft amsl ï feet above mean sea level

Exhibit 2: New Borings Surveying Information

Boring ID	Northing	Easting	Latitude	Longitude	Natural Ground Elevation (ft amsl)
DPT01	6,952,853.46ô	3,316,640,.46ô	32.6646117ô	94.1177660ô	188.19
DPT02	6,952,750.33ô	3,316,538.61ô	32.6643402ô	94.1181107ô	184.85
DPT03	6,952,852.27ô	3,316,447,39ô	32.6646306ô	94.1183931ô	180.46
DPT04	6,953,151.50ô	3,316,473.73ô	32.6654494ô	94.1182670ô	190.719
DPT05	6,953,021.64ô	3,316,570,.25ô	32.6650878ô	94.1181433ô	188.67
DPT06	6,953,283.58ô	3,316,477.05ô	32.6658117ô	94.1182383ô	195.30
DPT07	6,953,152.22ô	3,316,567.82ô	32.6654406ô	94.1179614ô	192.50
DPT08	6,952,873.15ô	3,316,335.96ô	32.6647007ô	94.1187520ô	178.48
DPT09	6,952,758.80ô	3,316,443.40ô	32.6643744ô	94.1184187ô	181.22
DPT10	6,952,824.51ô	3,316,730.80	32.6645219ô	94.1174766ô	191.67
DPT11	6,952,953.18ô	3,316,644.72ô	32.6648851ô	94.1177387ô	192.62
DPT12	6,952,95182ô	3,316,444.33ô	32.6649044ô	94.1183895ô	181.26
DPT13	6,952,652.49ô	3,316,349,32ô	32.6640703ô	94.1180892ô	188.82
DPT14	6,952,753.32ô	3,316,644.45ô	32.6643363ô	94.1177666ô	187.26
DPT15	6,953,122.28ô	3,316,381.12ô	32.6653798ô	94.1185716ô	185.62
DPT16	6,953,134.12ô	3,316,487.64ô	32.6654001ô	94.1182242ô	190.80
DPT17	6,953,092.55ô	3,316,466.99ô	32.6652883ô	94.1182969ô	187.88

Ft amsl ï feet above mean sea level

2.4 Investigation Derived Waste

The investigation derived soil cuttings were placed in a roll-off box. The soil will be sampled, profiled and disposed in accordance with regulatory requirements. Water generated during drilling activities was added to the GWTP influent, treated, and disposed of accordingly. Other solid waste was disposed as municipal solid waste (i.e., trash).

2.5 Comparison of Planned and Actual Work Completed

There were no deviations from the Supplemental PSI WP.

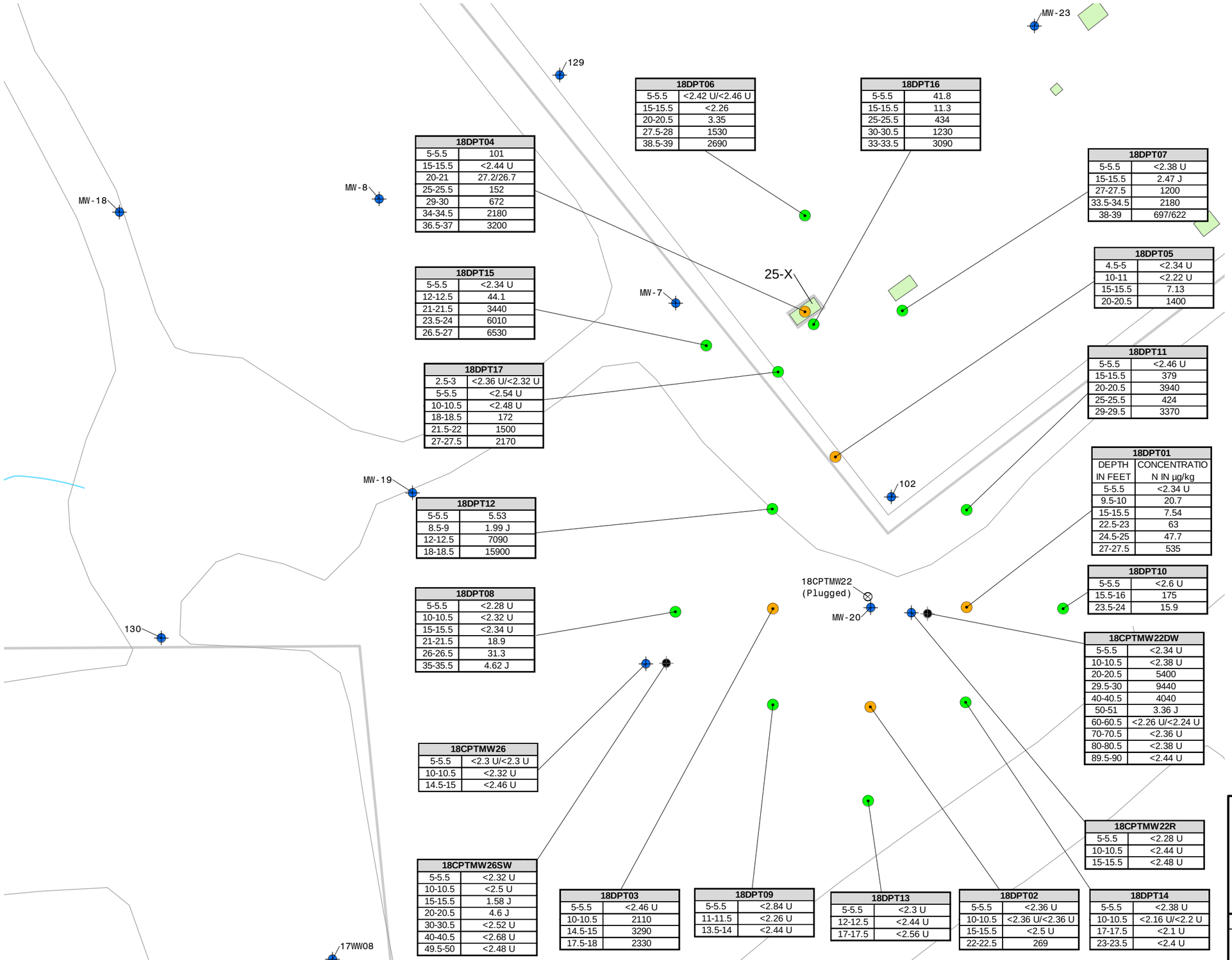

18DPT06	
5-5.5	<2.42 U/<2.46 U
15-15.5	<2.26
20-20.5	3.35
27.5-28	1530
38.5-39	2690

18DPT16	
5-5.5	41.8
15-15.5	11.3
25-25.5	434
30-30.5	1230
33-33.5	3090

18DPT04	
5-5.5	101
15-15.5	<2.44 U
20-21	27.2/26.7
25-25.5	152
29-30	672
34-34.5	2180
36.5-37	3200

18DPT07	
5-5.5	<2.38 U
15-15.5	2.47 J
27-27.5	1200
33.5-34.5	2180
38-39	697/622

18DPT05	
4.5-5	<2.34 U
10-11	<2.22 U
15-15.5	7.13
20-20.5	1400

18DPT15	
5-5.5	<2.34 U
12-12.5	44.1
21-21.5	3440
23.5-24	6010
26.5-27	6530

18DPT11	
5-5.5	<2.46 U
15-15.5	379
20-20.5	3940
25-25.5	424
29-29.5	3370

18DPT17	
2.5-3	<2.36 U/<2.32 U
5-5.5	<2.54 U
10-10.5	<2.48 U
18-18.5	172
21.5-22	1500
27-27.5	2170

18DPT01	
DEPTH IN FEET	CONCENTRATION IN µg/kg
5-5.5	<2.34 U
9.5-10	20.7
15-15.5	7.54
22.5-23	63
24.5-25	47.7
27-27.5	535

18DPT12	
5-5.5	5.53
8.5-9	1.99 J
12-12.5	7090
18-18.5	15900

18DPT10	
5-5.5	<2.6 U
15.5-16	175
23.5-24	15.9

18DPT08	
5-5.5	<2.28 U
10-10.5	<2.32 U
15-15.5	<2.34 U
21-21.5	18.9
26-26.5	31.3
35-35.5	4.62 J

18CPTMW22DW	
5-5.5	<2.34 U
10-10.5	<2.38 U
20-20.5	5400
29.5-30	9440
40-40.5	4040
50-51	3.36 J
60-60.5	<2.26 U/<2.24 U
70-70.5	<2.36 U
80-80.5	<2.38 U
89.5-90	<2.44 U

18CPTMW26	
5-5.5	<2.3 U/<2.3 U
10-10.5	<2.32 U
14.5-15	<2.46 U

18CPTMW22R	
5-5.5	<2.28 U
10-10.5	<2.44 U
15-15.5	<2.48 U

18CPTMW26SW	
5-5.5	<2.32 U
10-10.5	<2.5 U
15-15.5	1.58 J
20-20.5	4.6 J
30-30.5	<2.52 U
40-40.5	<2.68 U
49.5-50	<2.48 U

18DPT03	
5-5.5	<2.46 U
10-10.5	2110
14.5-15	3290
17.5-18	2330

18DPT09	
5-5.5	<2.84 U
11-11.5	<2.26 U
13.5-14	<2.44 U

18DPT13	
5-5.5	<2.3 U
12-12.5	<2.44 U
17-17.5	<2.56 U

18DPT02	
5-5.5	<2.36 U
10-10.5	<2.36 U/<2.36 U
15-15.5	<2.5 U
22-22.5	269

18DPT14	
5-5.5	<2.38 U
10-10.5	<2.16 U/<2.2 U
17-17.5	<2.1 U
23-23.5	<2.4 U

Legend

- Shallow Zone Monitoring Well
- Wilcox Formation Monitoring Well
- First Set of Direct Push Location
- Stepout Direct Push Location
- Plugged Monitoring Well
- Road
- Stream
- Former Building or Concrete Slab

Notes

- µg/kg — Micrograms per Kilogram
- < — Not Detected at or Above the Laboratory Reporting Limit
- / — Duplicate Sample
- J — Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
- U — Undetected: The analyte was analyzed for, but not detected.

N

0 50 100 Feet

1 " = 100 '

Longhorn Army Base

Concentration of Perchlorate in Soil with Depth LHAAP-18/24 Longhorn Army Ammunition Plant Karnack, Texas

Date 12-2016

Project No. 60274185

AECOM

Figure 2-1

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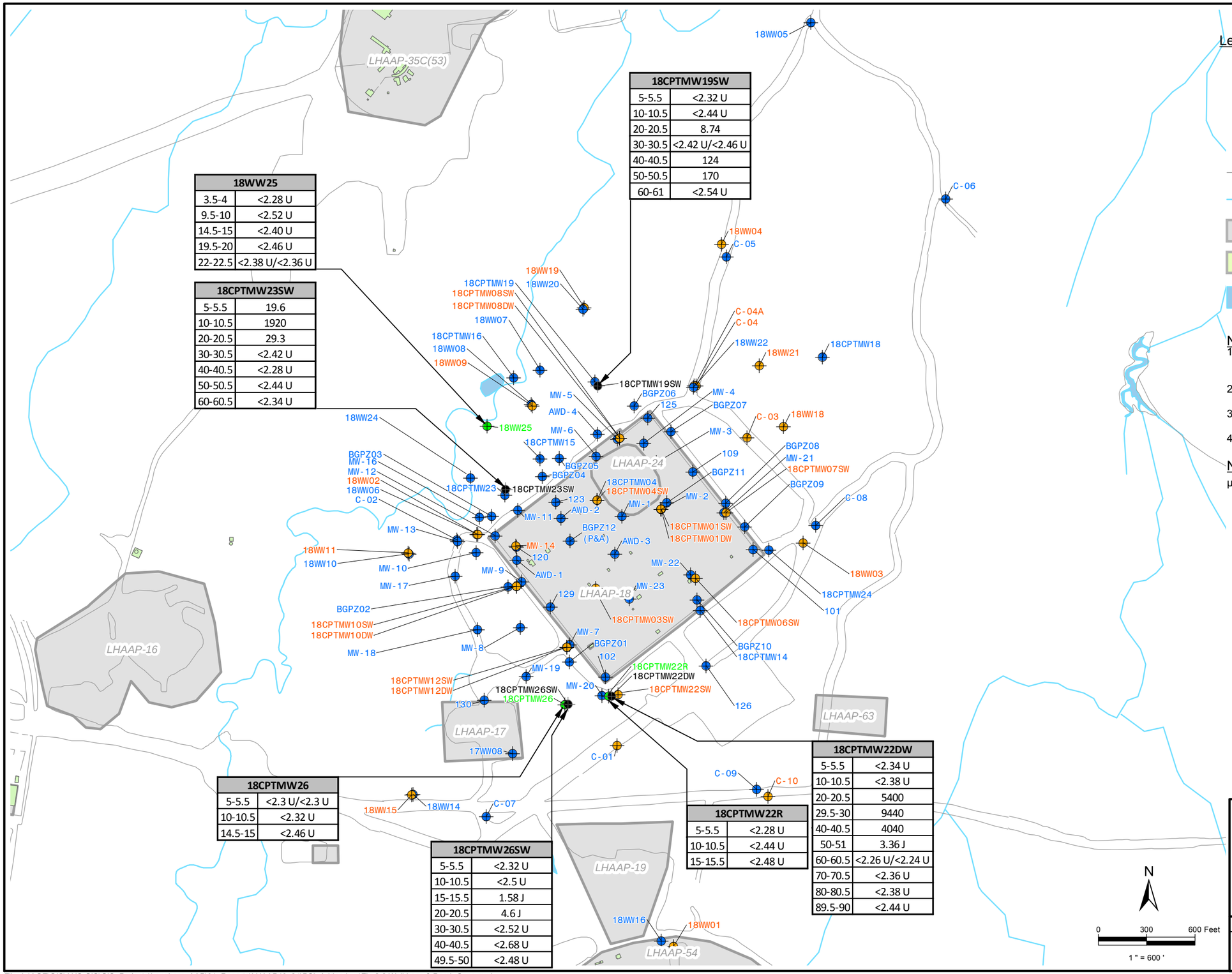

18WW25	
3.5-4	<2.28 U
9.5-10	<2.52 U
14.5-15	<2.40 U
19.5-20	<2.46 U
22-22.5	<2.38 U/<2.36 U

18CPTMW23SW	
5-5.5	19.6
10-10.5	1920
20-20.5	29.3
30-30.5	<2.42 U
40-40.5	<2.28 U
50-50.5	<2.44 U
60-60.5	<2.34 U

18CPTMW19SW	
5-5.5	<2.32 U
10-10.5	<2.44 U
20-20.5	8.74
30-30.5	<2.42 U/<2.46 U
40-40.5	124
50-50.5	170
60-61	<2.54 U

18CPTMW26	
5-5.5	<2.3 U/<2.3 U
10-10.5	<2.32 U
14.5-15	<2.46 U

18CPTMW26SW	
5-5.5	<2.32 U
10-10.5	<2.5 U
15-15.5	1.58 J
20-20.5	4.6 J
30-30.5	<2.52 U
40-40.5	<2.68 U
49.5-50	<2.48 U

18CPTMW22R	
5-5.5	<2.28 U
10-10.5	<2.44 U
15-15.5	<2.48 U

18CPTMW22DW	
5-5.5	<2.34 U
10-10.5	<2.38 U
20-20.5	5400
29.5-30	9440
40-40.5	4040
50-51	3.36 J
60-60.5	<2.26 U/<2.24 U
70-70.5	<2.36 U
80-80.5	<2.38 U
89.5-90	<2.44 U

Legend

- Shallow Zone Monitoring Well
- Wilcox Formation Monitoring Well
- New Shallow Zone Monitoring Well
- New Wilcox Formation Monitoring Well
- Road
- Stream
- Site
- Former Building or Concrete Slab
- Ponded Area

Notes

1) All monitoring wells installed in 2013 have nomenclature beginning with "18CPT" with the exception of 18WW22 which was also installed in 2013.
2) "SW" at the end of well nomenclature indicates a shallow Wilcox Formation monitoring well (i.e., to a depth of 70 feet bgs).
3) "DW" at the end of well nomenclature indicates a deep Wilcox Formation monitoring well (i.e., to a depth of 100 feet bgs).
4) "P&A" - Plugged and Abandoned

Notes

µg/kg	Micrograms per Kilogram
<	Not Detected at or Above the Laboratory Reporting Limit
/	Duplicate Sample
J	Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.
U	Undetected: The analyte was analyzed for, but not detected.

18CPTMW19SW	
DEPTH IN FEET	CONCENTRATION IN µg/kg
5-5.5	<2.32 U
10-10.5	<2.44 U
20-20.5	8.74
30-30.5	<2.42 U
40-40.5	124
50-50.5	170
60-61	<2.54 U

Longhorn Army Base

Well Location Map and Perchlorate Concentrations in Soil LHAAP-18/24 Longhorn Army Ammunition Plant Karnack, Texas

Date 12-2016

Project No. 60274185

AECOM

Figure 2-2

File: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP18_24\PSI_Addendum\Fig 2-2 Well Locs & Perch Conc.mxd
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3 INVESTIGATION FINDINGS

This section presents the data collected during this investigation in the context of addressing identified data gaps. This additional information is intended to improve the overall site conceptual model associated with hydrogeology, contaminant sources, and contaminant distribution in targeted areas of the site.

3.1 Hydrogeology

The subsurface investigation was conducted based on the LHAAP-18/24 Supplemental PSI WP (AECOM, 2015). Discrete soil samples were collected and tested for contaminant concentrations. Monitoring wells were installed in the shallow and Wilcox Formation to collect groundwater data.

3.1.1 Perchlorate Distribution in the Shallow Zone Soil at the Southern Area of Site

The soil data collected from DPT soil borings and the soil borings used to install the new groundwater monitoring wells for perchlorate, expanded the understanding of perchlorate presence and distribution within and outside the containment area in the Shallow Zone and Wilcox Formation. The location and concentration of perchlorate in these soil borings are depicted in **Figure 2-1**. The analytical results are presented in **Table 3-1**. **Table 3-1** also provides analytical results for VOCs. However, VOC concentrations were mostly nondetect with all concentrations reported above the detection limit below the MSC. **Table 3-1** also provides information about where the samples were collected from; the unsaturated Shallow Zone, saturated Shallow Zone, Wilcox clay, or Wilcox sand.

The perchlorate concentrations in the six DPT boreholes collected inside the containment area (18DPT04, 18DPT05, 18DPT06, 18DPT07, 18DPT16, and 18DPT17) in the southern portion of the site revealed perchlorate concentrations in the vadose zone were well below the MSC of 7,200 micrograms per kilogram (Õg/kg), with the highest concentration found in 18DPT04 at 5-5.5 ft bgs at 101 Õg/kg, followed by 18DPT16 at 5-5.5 ft bgs at 41.8 Õg/kg located adjacent to the former building X-25. These relatively low concentrations of perchlorate would indicate that perchlorate is not sourced from the surface release in this area or has since been flushed out of the shallow soil and no longer represent a source.

In the saturated zone within the containment area, the concentration of perchlorate was elevated particularly in the Wilcox clay, which is in direct contact with the base of the Shallow Zone soil. The highest concentration of perchlorate was detected in 18DPT04 at 36.5-37.0 ft bgs at 3,200 Õg/kg. This concentration is less than the GWP-Ind MSC of 7,200 Õg/kg. Therefore, there is no particular source of perchlorate identified in the Shallow Zone in this area of the site.

Outside the southern corner of the site, the concentration of perchlorate in the vadose zone ranged from a low 5.53 Õg/kg found in 18DPT12 at 5-5.5 ft bgs to nondetect found in all of the other soil borings. This lack of perchlorate in the vadose zone outside the containment indicates that perchlorate is not sourced from a surface release in this area.

Outside the southern corner in the shallow saturated zone, the concentrations of perchlorate were typically low, increasing in depth the closer the samples were to the Wilcox clay. The higher

concentrations of perchlorate in the shallow saturated zone were detected in 18DPT03 (3,290 Õg/kg at 14.5-15 ft bgs) , 18DPT15 (3,440 Õg/kg at 21-21.5 ft bgs), and 18DPT11 (3,940 Õg/kg at 20-20.5 ft bgs). These elevated concentrations of perchlorate were found in the coarser materials (sand) just above the Wilcox clay. The highest perchlorate concentrations in the Wilcox clay were detected in the borehole of monitoring well 18CPTMW22DW at 9,440 Õg/kg at 29.5-30 ft bgs and 18DPT12 at 15,900 Õg/kg at 18-18.5 ft bgs. These two results for perchlorate represent the only two soil samples exceeding the perchlorate MSC of 7,200 Õg/kg. The analytical results for the soil samples obtained from the boreholes of the monitoring wells are presented in **Table 3-2**. The elevated concentrations of perchlorate in 18DPT12 in the Wilcox clay may represent perchlorate that had migrated via groundwater to this location prior to installation of the groundwater extraction system.

The perchlorate concentrations for the stepout borings were considerably lower or nondetect. Therefore, the concentration of perchlorate in the Shallow Zone is considered delineated outside of the southern corner of the site to the southeast, south, and southwest. The results also support the absence of a perchlorate source in this area of the site. The soil boring data from the drilling and sampling of monitoring well 18CPTMW26 and boring 18DPT08 supported the delineation of perchlorate in the Shallow Zone to the southwest toward LHAAP-17.

The perchlorate concentration in the southern corner of the site is presented in **Figures 2-1.** A quality control summary and laboratory analytical reports (provided on compact disc) are presented in **Appendix B**.

3.1.2 Perchlorate Distribution in the Wilcox Formation Soil at Southern Area of Site

Soil samples from two borings drilled for the installation of Wilcox Zone monitoring wells (18CPTMW26SW and 18CPTMW22DW) were collected and analyzed to determine the extent of perchlorate in the Wilcox Formation. Additionally, due to the lack of Wilcox clay in boring 18DPT08, it would appear that soil samples obtained and analyzed at depth were from the Wilcox Formation.

The analytical results from 18CPTMW26SW and 18DPT08 reveal concentrations of perchlorate at low concentrations with the highest detected in 18DPT08 at 31.3 Õg/kg at a depth of 26-26.5 ft bgs. The highest concentration detected in 18CPTMW26SW was 4.6J Õg/kg at a depth of 20-20.5 ft bgs. The paucity of perchlorate concentrations in 18CPTMW26SW and 18DPT08 delineates the perchlorate in the Wilcox Zone to the southwest towards LHAAP-17.

The soil boring for 18CPTMW22DW was drilled and sampled to a depth of 90 ft bgs. The Wilcox clay appears to extend to a depth of 32.5 ft bgs, below which, sand with occasional thin clay layers are present. The highest concentration of perchlorate was detected in the Wilcox clay at 29.5-30 ft bgs at a concentration of 9,440 Õg/kg. Another soil sample obtained at 40-40.5 ft bgs in a small clay layer contained perchlorate at 4,040 Õg/kg. Perchlorate concentrations of samples obtained at depths of 50-51 ft revealed trace amounts of perchlorate (3.36J Õg/kg). Soil samples obtained at 60-60.5 ft, 70-70.5 ft, 80-80.5 ft and 89.5-90 ft bgs revealed no concentrations of perchlorate above the laboratory detection level, providing vertical extent determination of perchlorate in the Wilcox Formation. **Table 3-3** provides information about the monitoring wells. A quality control summary and laboratory analytical reports (provided on compact disc) are presented in **Appendix B**.

3.1.3 Perchlorate Data Gaps in the Soil Outside Containment Area to the Northwest

The soil boring locations for the monitoring wells as well as the concentration of perchlorate in the soils is presented in **Figure 2-2**. The boring logs are presented in **Appendix A**. The analytical results are summarized in **Table 3-2** and the analytical reports are presented in **Appendix B**. **Table 3-3** provides information about the monitoring wells.

Analytical results associated with locations near the southern corner are incorporated into the discussion in Section 3.1.2. Three monitoring well installations on the northwest side that included soil sampling and analysis are discussed below.

Monitoring Well 18CPTMW19SW

Saturated soil conditions were observed at approximately 10 ft bgs in the soil boring for monitoring well 18CPTMW19SW. This soil boring was drilled and sampled into the upper Wilcox Formation to a depth of 65 ft bgs. Perchlorate concentrations were below the detection limits in soil samples obtained at 5-5.5 ft bgs and 10-10.5 ft bgs. At 20-20.5 ft bgs perchlorate was present at 8.74 Õg/kg followed by no detection of perchlorate at 30-30.5 ft bgs. At 40-40.5 and 50-50.5 ft bgs perchlorate was detected at 124 Õg/kg and 170 Õg/kg, followed by no detections at 60-61 ft bgs (< 2.54 Õg/kg), providing vertical delineation of perchlorate at this location. The Wilcox clay appears to extend from 20.3 ft bgs to 41.4 ft bgs.

Monitoring Well 18CPTMW23SW

Saturated soil conditions were observed beginning at the surface in the soil boring for monitoring well 18CPTMW19SW as the area was subjected to flooding during this investigation associated with heavy rains. This soil boring was drilled and sampled into the upper Wilcox Formation to a depth of 65 ft bgs. Relatively low concentrations of perchlorate were detected in soil samples obtained at 5-5.5 ft bgs, 10-10.5 ft bgs and 20-20.5 ft bgs at 19.6 Õg/kg , 1,920 Õg/kg , and 29.3 Õg/kg, respectively. At depths of 30-30.4 ft bgs, 40-40.5 ft bgs, 50-50.5 ft bgs, and 60-60.5 ft bgs perchlorate concentrations were below the detection limits, providing vertical delineation of perchlorate at this location. The Wilcox clay was not identified in this soil boring.

Monitoring Well 18WW25

Soil was observed to be saturated at approximately 2 ft bgs within the soil boring for monitoring well 18WW25. Soil samples obtained and analyzed for perchlorate at 3.5-4 ft bgs 9.5-10 ft bgs, 14.5-15 ft bgs, 19.5-20 ft bgs, and 22-22.5 ft bgs were found to be below the laboratory detection limits, providing lateral delineation of perchlorate at this location. The Wilcox clay was not identified within the borehole at this location.

3.1.4 Soil VOC Results

The purpose of this work was mostly associated with perchlorate extent determination. However, VOC data was analyzed from the same soil samples collected for perchlorate analysis. The results indicated sporadic detection of VOCs with all concentrations below the VOC MSCs. **Tables 3-1 and 3-2** provide VOC results for the soil samples.

3.2 Groundwater Results

A comprehensive sampling event for groundwater was conducted in June 2016 after the monitoring wells were installed. A comprehensive groundwater level gauging event was conducted on June 9, 2016 except for well 18WW25, which was not installed until June 27, 2016, after the gauging event (well 18WW25 was however sampled on June 29, 2016 and analyzed for COCs). The results are described below.

3.2.1 Groundwater Elevation

Potentiometric surface maps for the Shallow Zone (**Figure 3-1**) and Wilcox Formation (**Figure 3-2**) were developed from monitoring well gauging data presented in **Table 3-4**. The Shallow Zone groundwater elevations indicate the presence of a localized groundwater high in the northern portion of the site, near monitoring wells AWD-1 and 123, similar to historical observations. The new monitoring well 18CPTMW22R, just outside the containment area to the south of the site, indicated the presence of a groundwater high. The groundwater elevation in 18CPTMW22R substantiates the historically high groundwater elevations observed in adjacent well MW-20, which represent the surface of a small perched groundwater. Therefore, the groundwater elevations in MW-20 and 18CPTMW22R were not used in contouring the Shallow Zone groundwater surface (Figure 3-1). New well 18CPTMW26 to the west of 18CPTMW22R had the lowest groundwater elevation in this area of the site at 167.08 ft above mean sea level (amsl).

The Wilcox Formation potentiometric results indicate the presence of a groundwater high in the vicinity of MW-14 in the northwest area of the site consistent with previous observations. New Wilcox Formation monitoring well 18CPTMW23SW north of MW-14 outside the containment has a groundwater elevation of 167.90 ft amsl, which is 5.76 lower than in MW-14 with a groundwater elevation of 173.66 ft amsl, indicating the presence of a horizontal gradient between MW-14 and 18CPTMW23SW. Groundwater elevation in new Wilcox Formation monitoring well 18CPTMW23SW is 2.18 ft lower than co-located monitoring Shallow Zone monitoring well 18CPTMW23, indicating the presence of a downward vertical gradient. A downward vertical gradient is also observed between Shallow Zone monitoring well 18CPTMW19 at an elevation of 171.70 ft amsl and new Wilcox Formation monitoring well 18CPTMW19SW at an elevation of 170.33 ft amsl.

To the south of the containment, new deep Wilcox Formation monitoring well 18CPTMW22DW has a groundwater elevation of 170.88 ft amsl, which is approximately 1 foot higher than the new upper Wilcox Formation monitoring well 18CPTMW22SW, indicating a slight upward gradient. The lateral gradient in the upper Wilcox Formation between new monitoring well 18CPTMW26SW and monitoring well 18CPTMW22SW appears to be to the east toward 18CPTMW22SW with an elevation difference between these wells of 0.42 ft. The vertical gradient appears to be upward between new upper Wilcox Formation monitoring well 18CPTMW26SW with a groundwater elevation of 170.29 ft amsl and new Shallow Zone monitoring well 18CPTMW26 with a groundwater elevation of 167.08 ft amsl.

3.2.2 Groundwater COC Concentrations

The June 2016 groundwater analytical results are presented in **Table 3-5**. A quality control summary and laboratory analytical reports (provided on compact disc) are presented in **Appendix B**. Groundwater sampling forms for June 2016 are presented in **Appendix C**.

3.2.2.1 Perchlorate

Figures 3-3 and 3-4 display the isoconcentration contours for perchlorate in the Shallow Zone and the Wilcox Formation, respectively. In the Shallow Zone, the highest concentrations of perchlorate occur in the vicinity of the UEP extending to the northeast outside the containment to 18WW17, which is bounded by non-detect results at wells 18CPTMW18 to the northeast and C-08 to the east. Monitoring well 18WW22, with a perchlorate concentration of 1.53 µg/L, defines the extent of this perchlorate hot spot to the north. Another area of high perchlorate extends from the ACD area to the south to include monitoring wells MW-7 and MW-23. The extent of perchlorate in the Shallow Zone groundwater is defined in all directions. To the south of the site outside the containment, new Shallow Zone monitoring well 18CPTMW22R had a low perchlorate concentration at 0.917 µg/L in contrast to the concentration in plugged monitoring well 18CPTMW22, which had a perchlorate concentration of 106,000 µg/L in June 2014. 18CPTMW22 was screened in the Wilcox clay between a depth of 19 and 28.5 ft bgs (see **Appendix A** for corrected 18CPTMW22 well log), where the highest concentrations of perchlorate occur, based on discrete soil sample data (see **Figure 2-2**). Wilcox clay in this area of the site occurs at a depth of approximately 12 feet bgs. New monitoring well 18CPTMW22R is screened between 4.8 ft and 14.3 ft bgs and partially penetrates Wilcox clay. Soil data from 18CPTMW22R indicates < 2.8 µg/kg of perchlorate in the soil to a depth of 15.5 ft bgs. The nondetect levels of perchlorate in the shallow soil reflect the very low concentration in 18CPTMW22 groundwater at 0.917 µg/L. In contrast, soil data from 18CPTMW22DW drilled in April 2016 indicates the presence of perchlorate at 5,400 µg/kg at a depth of 20 to 20.5 ft bgs. Soil samples collected from 18CPTMW22SW had perchlorate concentrations of 10,600 µg/kg at a depth of 24 ft bgs and 10,200 µg/kg at a depth of 26.5 ft bgs. These high concentrations of perchlorate in soil between 20 and 26.5 ft bgs coincide with the high perchlorate concentration reported in 18CPTMW22 screened across this soil interval.

New Shallow Zone monitoring well 18CPTMW26 located to the west of 18CPTMW22R between LHAAP-17 and LHAAP-18/24 had insufficient water to collect groundwater samples. New Shallow Zone monitoring well 18WW25 to the northwest adjacent to Harrison Bayou had a perchlorate concentration of < 0.20 µg/L, indicating that the perchlorate plume in this area of the site does not extend to Harrison Bayou.

In the Wilcox Formation, similar to previous results, the highest perchlorate concentrations were observed in the vicinity of 18CPTMW08SW (35,000 µg/L), near MW-5 to the north of the UEP, near the ACD in MW-14 (177,000 µg/L to 229,000 ug/L) northwest of the containment area, and to the south outside the containment in monitoring well 18CPTMW22SW (10,200 µg/L). All these wells are screened in the upper Wilcox Formation. New upper Wilcox Formation monitoring well 18CPTMW26SW, located to the west of 18CPTMW22SW (screen interval of 44.5 to 54.1 ft bgs) had a perchlorate concentration of 6.42 µg/L. This well defines the extent of perchlorate in the upper Wilcox Formation between sites LHAAP-17 and LHAAP-18/24. The perchlorate concentration in new deep Wilcox Formation monitoring well 18CPTMW22DW, screened between 72.7 to 82.3 ft bgs, was 1.21 J µg/L and defines the vertical extent of perchlorate at this location. New upper Wilcox Formation monitoring wells 18CPTMW19SW and 18CPTMW23SW in the northwest area had perchlorate concentrations of 1.25 µg/L and 0.407 µg/L, respectively. Along with wells 18WW19, 18WW09, and 18WW02, these wells provide lateral delineation of the extent of perchlorate in the upper Wilcox Formation. The extent

of perchlorate in the Wilcox Formation is defined in all directions. The extent of perchlorate is delineated vertically except at two locations in the Wilcox Formation at MW-14 and 18CPTMW08DW.

3.2.2.2 Trichloroethylene

Figures 3-5 and 3-6 display the isoconcentration contours for TCE in the Shallow Zone and the Wilcox Formation, respectively. In the Shallow Zone, the highest concentrations of TCE occur in the vicinity of the ACD in monitoring well 120 in the western area of the site, and in the area to the south of the UEP in monitoring well MW-2. TCE concentrations decrease with distance from MW-2 and 120, but remain above 1,000 µg/L in a large area of the site toward wells MW-21, 18CPTMW04, MW-23, MW-7, 129, MW-9, and AWD-1. The extent of TCE in the Shallow Zone is defined in all directions with the exception of TCE in MW-18 to the southwest of the site, which exceeded the Maximum Contaminant Level (MCL) of 5 µg/L with a concentration of 14.1 µg/L. To the south of the site outside the containment, new Shallow Zone monitoring well 18CPTMW22R had a TCE concentration < 0.2 µg/L in contrast to the concentration in plugged monitoring well 18CPTMW22, which had a TCE concentration of 58.9 µg/L in June 2014. 18CPTMW22 was screened in the Wilcox clay between a depth of 19 ft bgs and 28.5 feet bgs whereas new monitoring well 18CPTMW22R is screened to 14.3 ft bgs.

New Shallow Zone monitoring well 18CPTMW26, located to the west of 18CPTMW22R between LHAAP-17 and LHAAP-18/24, had insufficient water to collect a groundwater sample. New Shallow Zone monitoring well 18WW25 to the northwest adjacent to Harrison Bayou had a TCE concentration of < 0.5 µg/L, defining the extent of TCE in this area of the site and confirming that TCE from groundwater is not being released to Harrison Bayou.

In the Wilcox Formation, similar to previous results, the highest TCE concentrations were observed near the ACD in MW-14 (12,700 µg/L to 15,900 ug/L) northwest of the containment area, in the UEP area between 18CPTMW08SW (74.2 µg/L) and 18CPTMW01SW (46.5 µg/L), and in the central western portion of the site in 18CPTMW03SW. All these wells are screened in the upper Wilcox Formation. New upper Wilcox Formation monitoring well 18CPTMW26SW, located to the west of 18CPTMW22SW, had a TCE concentration of < 0.5 µg/L. This well defines the extent of TCE in the upper Wilcox Formation between sites LHAAP-17 and LHAAP-18/24. The TCE concentration in new deep Wilcox Formation monitoring well 18CPTMW22DW, screened between 72.7 to 82.3 ft bgs, was < 0.5 µg/L and defines the vertical extent of TCE at this location. New upper Wilcox Formation monitoring wells 18CPTMW19SW and 18CPTMW23SW in the northwest area had non-detectable TCE concentrations of < 0.5 µg/L. Along with wells 18WW19, 18WW09, and 18WW02, these wells define the lateral extent of TCE in the upper Wilcox Formation. The extent of TCE in the Wilcox Formation is defined in all directions.

3.2.2.3 Methylene Chloride

Figures 3-7 and 3-8 display the isoconcentration contours for MC in the Shallow Zone and the Wilcox Formation, respectively. In the Shallow Zone, the highest concentrations of MC occur in the vicinity of the ACD in monitoring well AWD-1 in the western area of the site, and in the area to the south of the UEP in monitoring well MW-2. MC concentrations decrease with distance from MW-2 and 120 to below detection levels in adjacent wells such as MW-21, MW-1,

18CPTMW04, MW-3, 109, MW-22, MW-9, and MW-12. The extent of MC in the Shallow Zone is defined in all directions. To the south of the site outside the containment, new Shallow Zone monitoring well 18CPTMW22R had an MC concentration < 0.2 μg/L, the same as the June 2014 concentration of MC in plugged monitoring well 18CPTMW22.

New Shallow Zone monitoring well 18CPTMW26, located to the west of 18CPTMW22R between LHAAP-17 and LHAAP-18/24, did not have sufficient water to collect a groundwater sample. New Shallow Zone monitoring well 18WW25, to the northwest adjacent to Harrison Bayou, had an MC concentration of < 0.5 μg/L, defining the lateral extent of MC in this area of the site and confirming that MC in Shallow Zone groundwater is not being released to Harrison Bayou.

In the Wilcox Formation, similar to previous results, the highest MC concentrations were observed near the ACD in MW-14 (53.5 J ug/L) northwest of the containment area, and to the south of the UEP area in 18CPTMW01SW (746 μg/L). These wells are screened in the upper Wilcox Formation. New upper Wilcox Formation monitoring well 18CPTMW26SW, located to the west of 18CPTMW22SW had an MC concentration of < 0.5 μg/L. This well defines the extent of MC in the upper Wilcox Formation between sites LHAAP-17 and LHAAP-18/24. The MC concentration in new deep Wilcox Formation monitoring well 18CPTMW22DW was < 0.5 μg/L and defines the vertical extent of MC at this location. New upper Wilcox Formation monitoring wells 18CPTMW19SW and 18CPTMW23SW in the northwest area had MC concentrations of < 0.5 μg/L. Along with wells 18WW19, 18WW09, and 18WW02, these wells define the lateral extent of MC in the upper Wilcox Formation. The extent of MC in the Wilcox Formation is defined in all directions.

3.2.2.4 1,4-Dioxane

Figures 3-9 and 3-10 display the isoconcentration contours for 1,4-dioxane in the Shallow Zone and the Wilcox Formation, respectively. In the Shallow Zone, the highest concentrations of 1,4-dioxane occur in the vicinity of the ACD in monitoring well 120 in the western area of the site, to the south of the ACD in monitoring well MW-7, and in the area to the south of the UEP in monitoring well MW-2. The maximum 1,4-dioxane concentration occurred in monitoring well 120 at a concentration 220 μg/L, and the second highest concentration was observed in MW-16 to the north of 120 toward Harrison Bayou at a concentration of 18 μg/L. MW-7 had a concentration of 13.4 μg/L, and 129 to the north of MW-7 had a 1,4-dioxane concentration of 6.52 μg/L. The 1,4-dioxane concentration in MW-2 was 7.58 μg/L. The extent of 1,4-dioxane in the Shallow Zone is defined in all directions, except for the area around MW-16, where the concentration of 1,4-dioxane exceeds the Texas Risk Reduction Program (TRRP) Tier 1 Groundwater Residential Protective Concentration Level (PCL) of 9.1 μg/L. To the south of the site outside the containment, new Shallow Zone monitoring well 18CPTMW22R had a 1,4-dioxane concentration < 1 μg/L.

New Shallow Zone monitoring well 18CPTMW26, located to the west of 18CPTMW22R between LHAAP-17 and LHAAP-18/24, did not have sufficient water to collect a groundwater sample. New Shallow Zone monitoring well 18WW25 to the northwest adjacent to Harrison Bayou had a 1,4-dioxane concentration of < 1 μg/L, defining the extent of 1,4-dioxane in this area of the site and confirming that 1,4-dioxane in Shallow Zone groundwater is not being released to Harrison Bayou at that location.

In the Wilcox Formation, similar to previous results, the highest 1,4-dioxane concentrations were observed near the ACD in MW-14 (390 to 412 ug/L) northwest of the containment area. MW-14 is screened in the upper Wilcox Formation. New upper Wilcox Formation monitoring well 18CPTMW26SW, located to the west of 18CPTMW22SW, had a 1,4-dioxane concentration of < 1 μg/L. This well defines the extent of 1,4-dioxane in the upper Wilcox Formation between sites LHAAP-17 and LHAAP-18/24. 1,4-Dioxane concentration in new deep Wilcox Formation monitoring well 18CPTMW22DW was < 1 μg/L, similar to the concentrations in co-located upper Wilcox Formation well 18CPTMW22SW. New upper Wilcox Formation monitoring wells 18CPTMW19SW and 18CPTMW23SW in the northwest area had 1,4-dioxane concentrations of < 1 μg/L. Along with wells 18WW09 and 18WW02, these wells define the lateral extent of 1,4-dioxane in the upper Wilcox Formation. The extent of 1,4-dioxane in the Wilcox Formation is defined in all directions.

3.2.2.5 Metals

Figures 3-11 and 3-12 display the metal exceedance concentrations in the Shallow Zone and the Wilcox Formation, respectively. In the Shallow Zone, the following metals were detected above the MCLs/PCLs in one or more monitoring wells: arsenic, barium, beryllium, cadmium, chromium, lead, manganese, and nickel. Fifteen monitoring wells were reported to have one or more metals above the MCLs/PCLs. The detections of metals above MCLs/PCLs in Shallow Zone groundwater is sporadic and does not suggest the presence of a source of metal COCs.

In the Wilcox Formation, three monitoring wells had metal concentrations above the MCL/PCL. Arsenic in 18CPTMW01SW and manganese in C-03 and 18WW18 were reported above the MCL/PCL.

3.3 Update to Cross-Section D-D’

An update to cross-section D-Dô that was originally presented in the *Final Updated Post-Screening Investigation Report for LHAAP-18/24, Burning Ground No. 3 and Unlined Evaporation Pond* (AECOM, 2016) is provided in **Appendix A**. The updated cross-section corrects the 18CPTMW22 well screen and adds information for boring/well logs 18CPTMW22SW and 18CPTMW22DW.

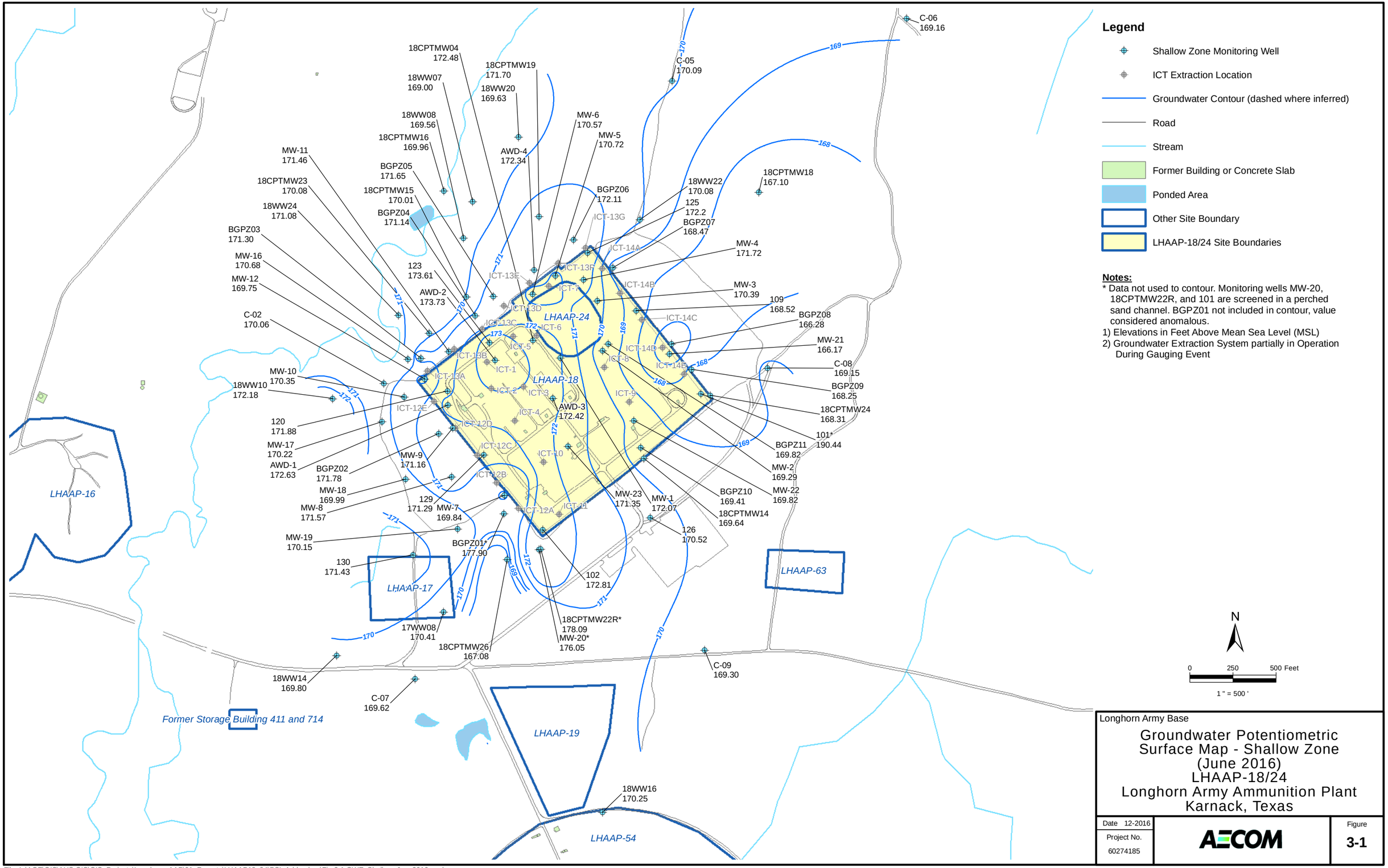

Longhorn Army Base

Groundwater Potentiometric Surface Map - Shallow Zone (June 2016) LHAAP-18/24 Longhorn Army Ammunition Plant Karnack, Texas

Date 12-2016	AECOM	Figure
Project No. 60274185		3-1

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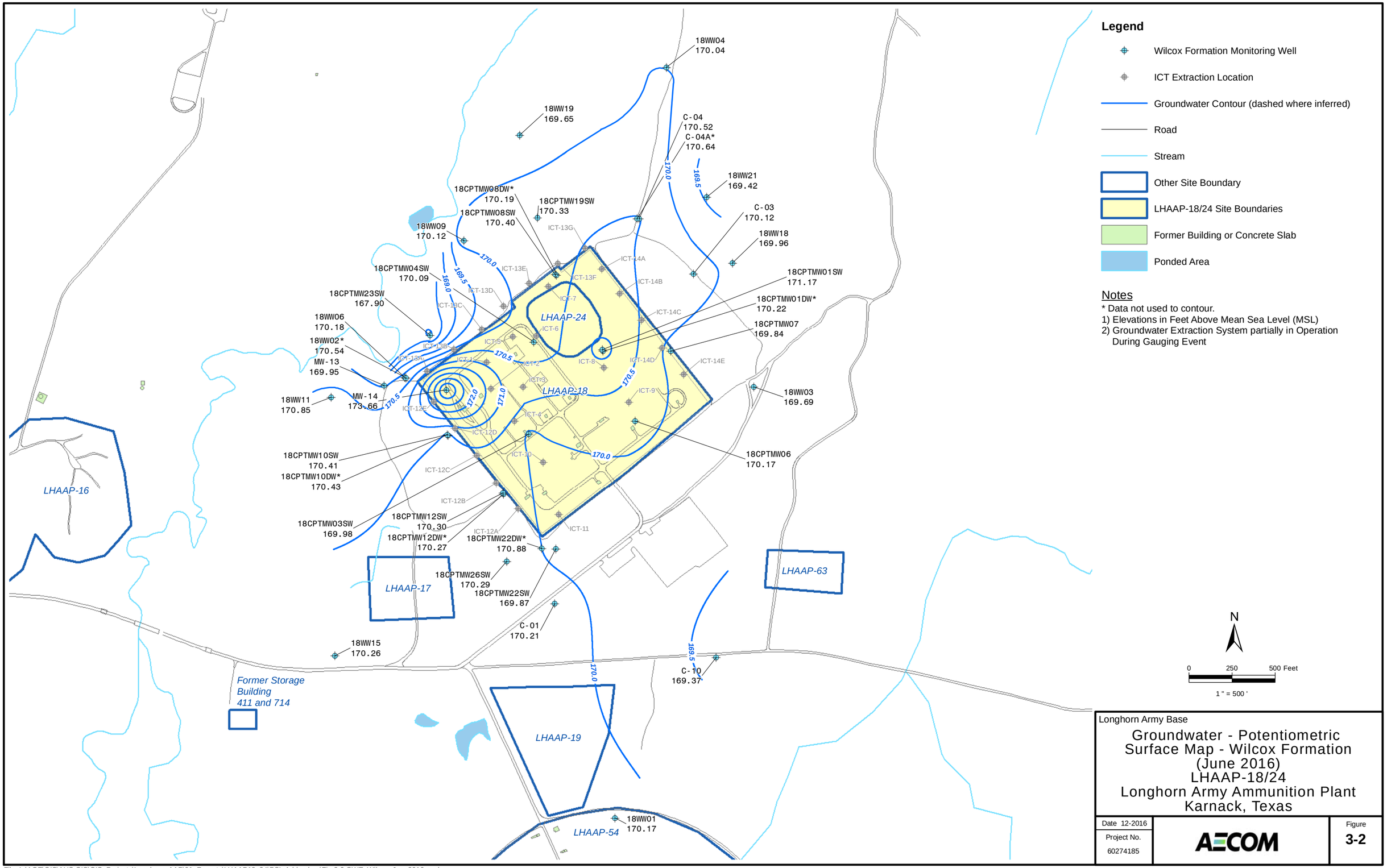

Longhorn Army Base

Groundwater - Potentiometric Surface Map - Wilcox Formation (June 2016)
LHAAP-18/24
Longhorn Army Ammunition Plant
Karnack, Texas

Date 12-2016	AECOM	Figure
Project No. 60274185		3-2

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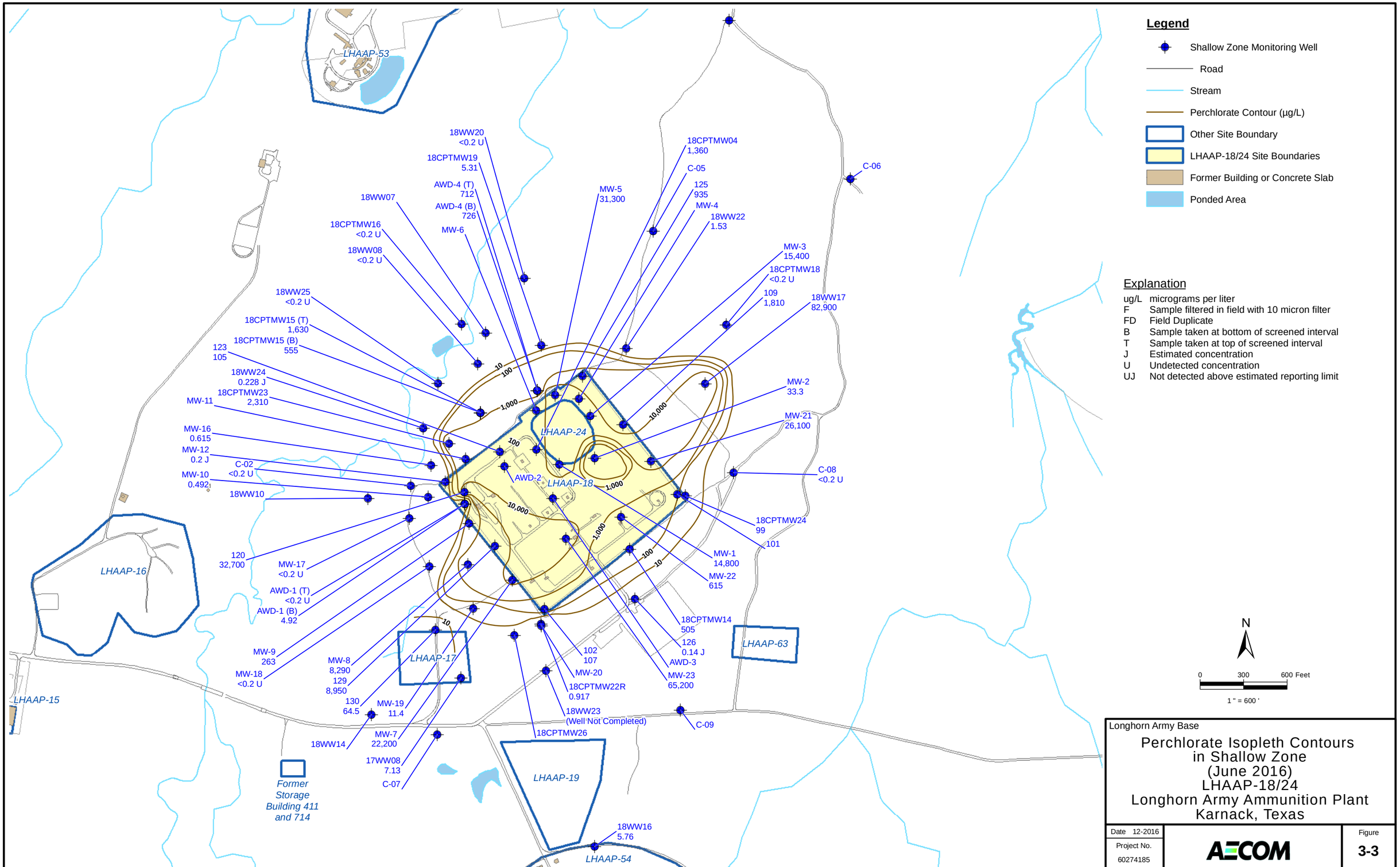

Longhorn Army Base

Perchlorate Isopleth Contours in Shallow Zone (June 2016) LHAAP-18/24 Longhorn Army Ammunition Plant Karnack, Texas

Date 12-2016	AECOM	Figure
Project No. 60274185		3-3

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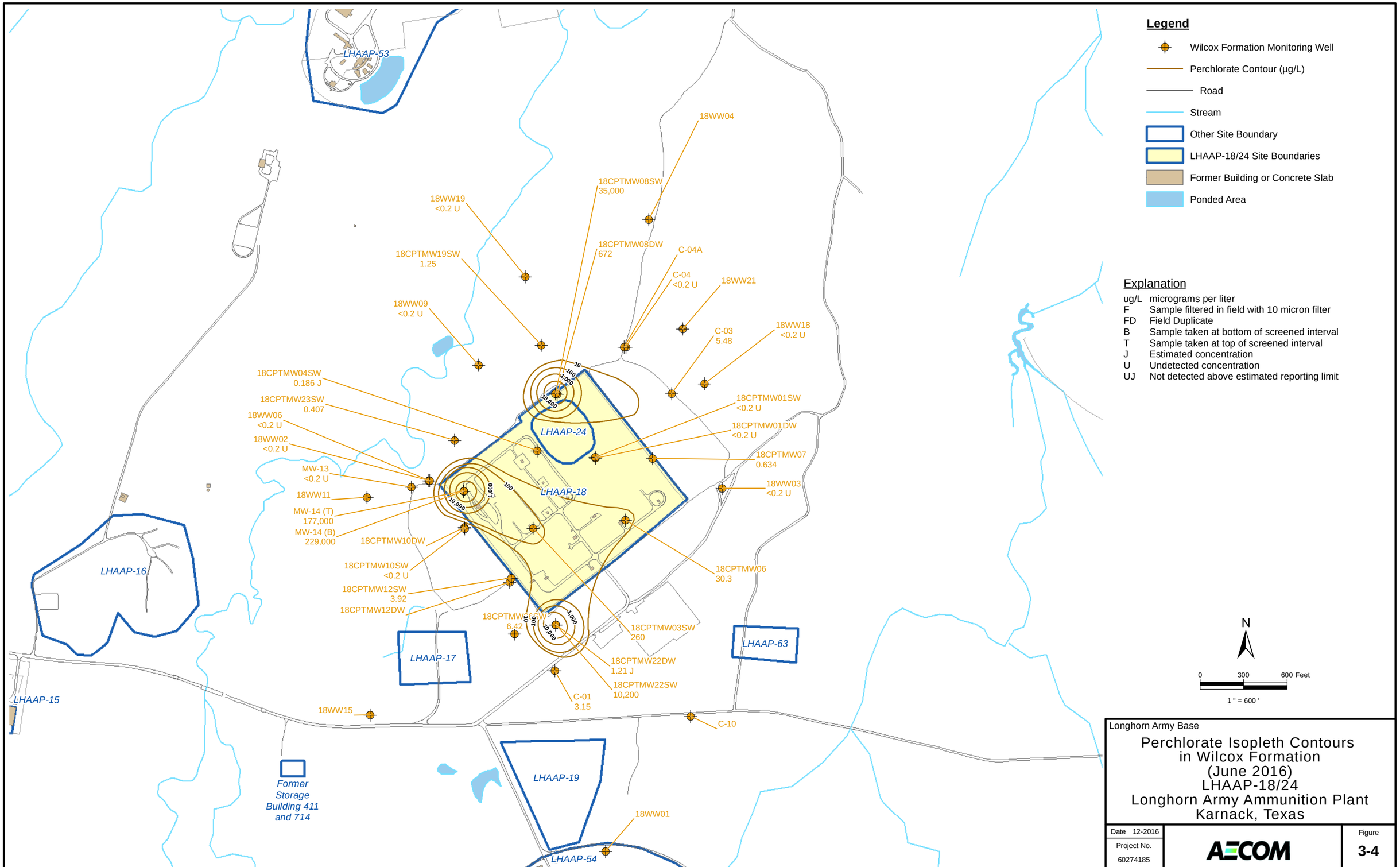

Longhorn Army Base

Perchlorate Isopleth Contours in Wilcox Formation (June 2016) LHAAP-18/24 Longhorn Army Ammunition Plant Karnack, Texas

Date 12-2016	AECOM	Figure
Project No. 60274185		3-4

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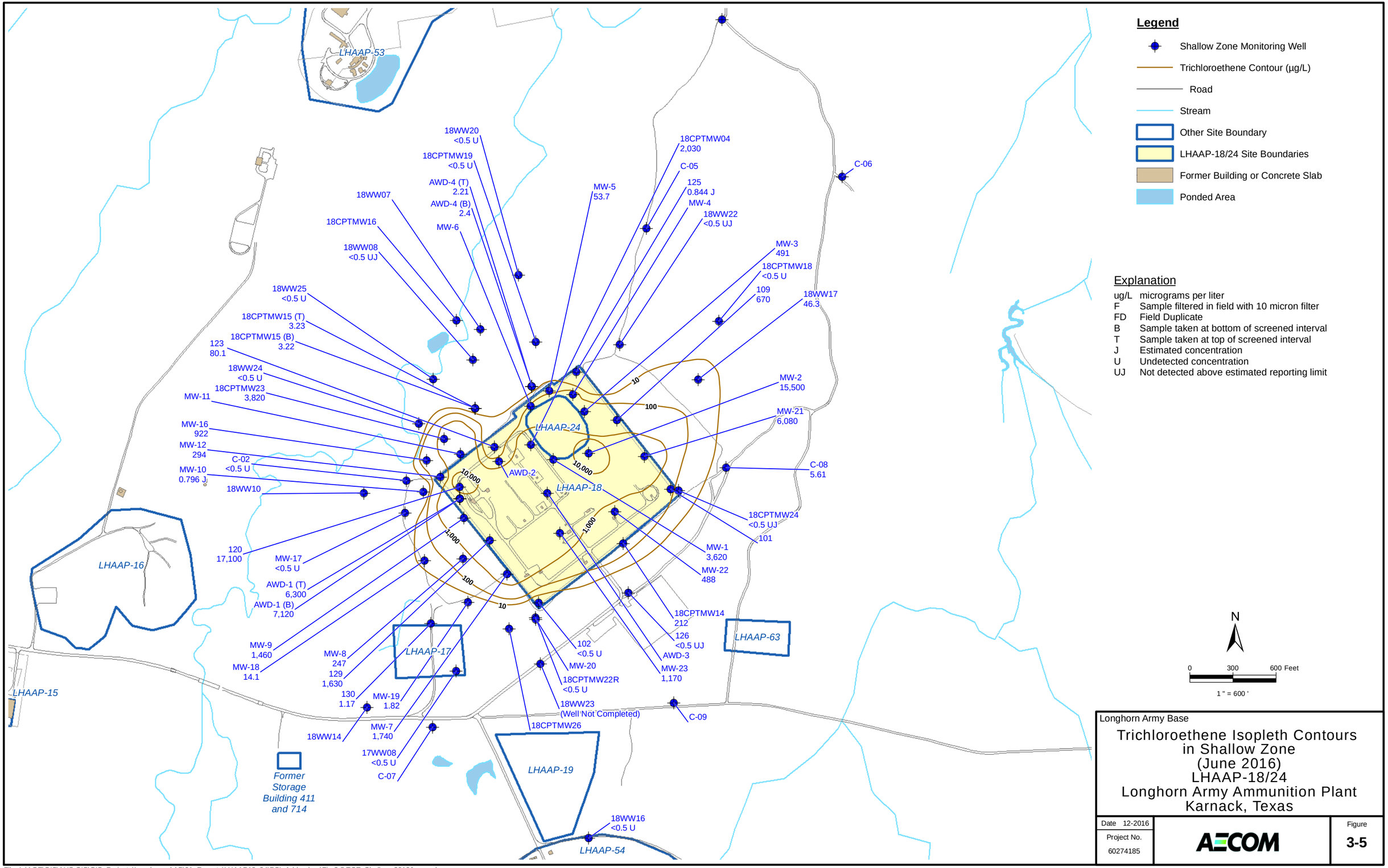

Longhorn Army Base

Trichloroethene Isopleth Contours in Shallow Zone (June 2016) LHAAP-18/24 Longhorn Army Ammunition Plant Karnack, Texas

Date 12-2016	AECOM	Figure
Project No. 60274185		3-5

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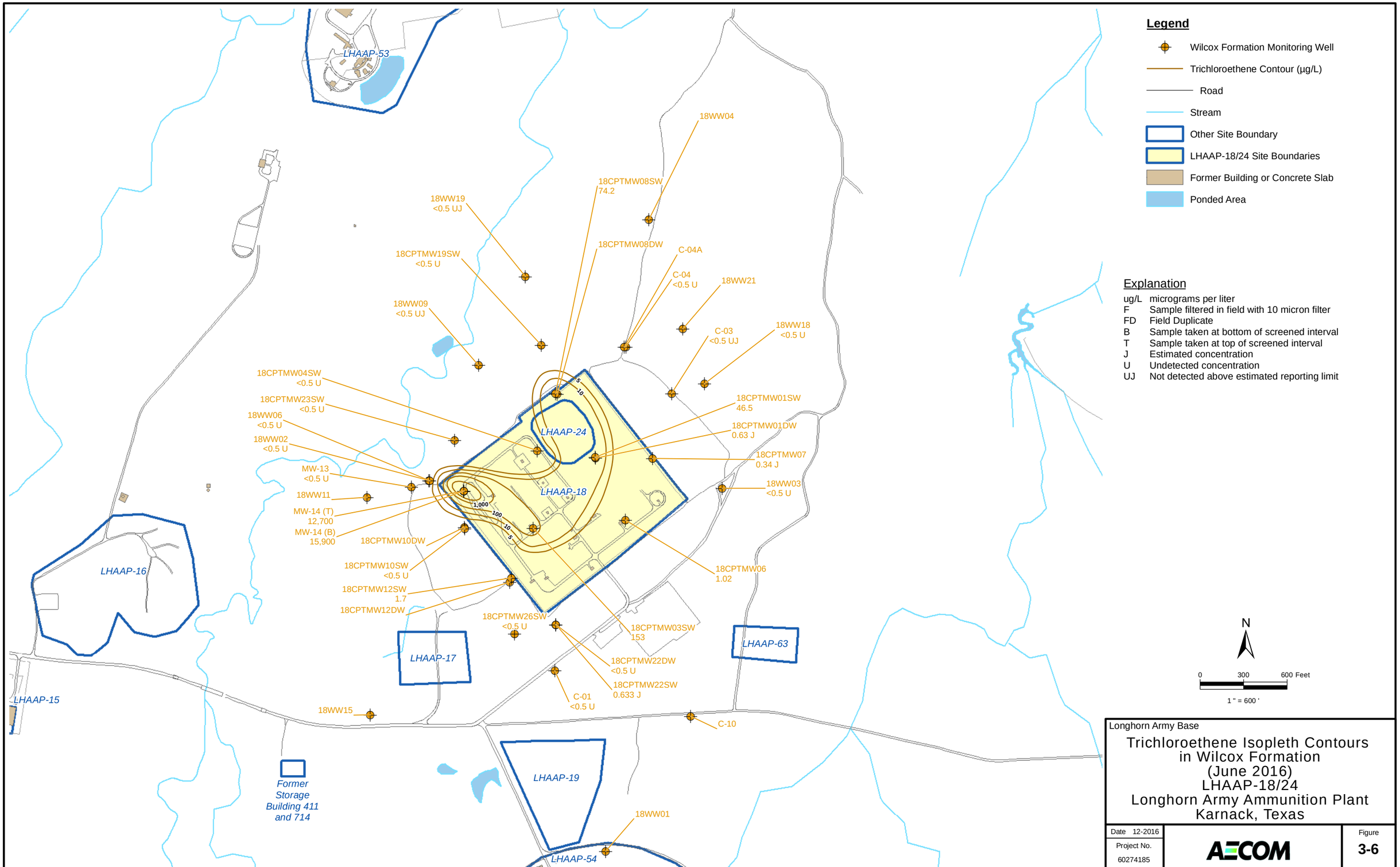

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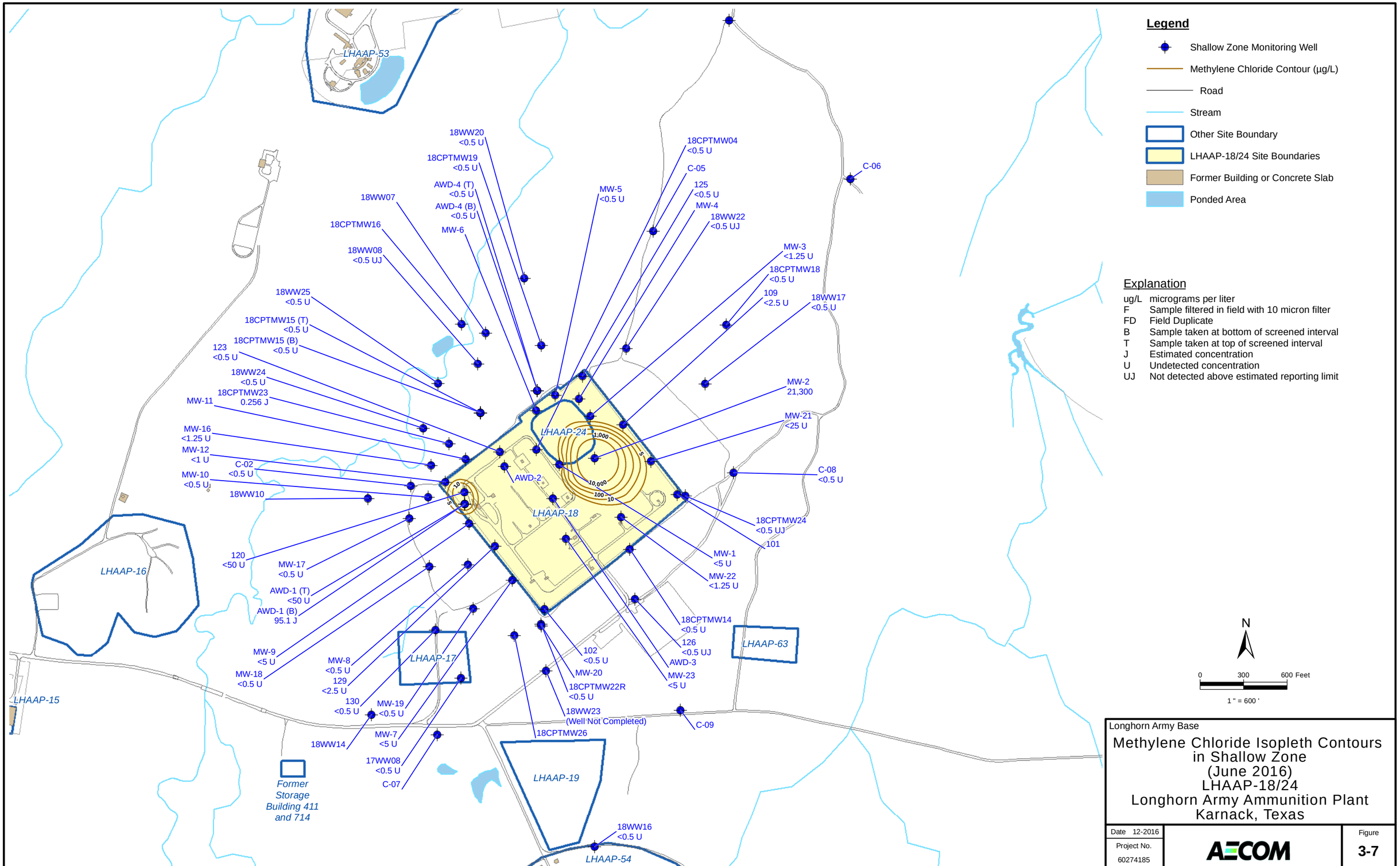

Longhorn Army Base

Methylene Chloride Isopleth Contours in Shallow Zone (June 2016) LHAAP-18/24 Longhorn Army Ammunition Plant Karnack, Texas

Date 12-2016	AECOM	Figure
Project No. 60274185		3-7

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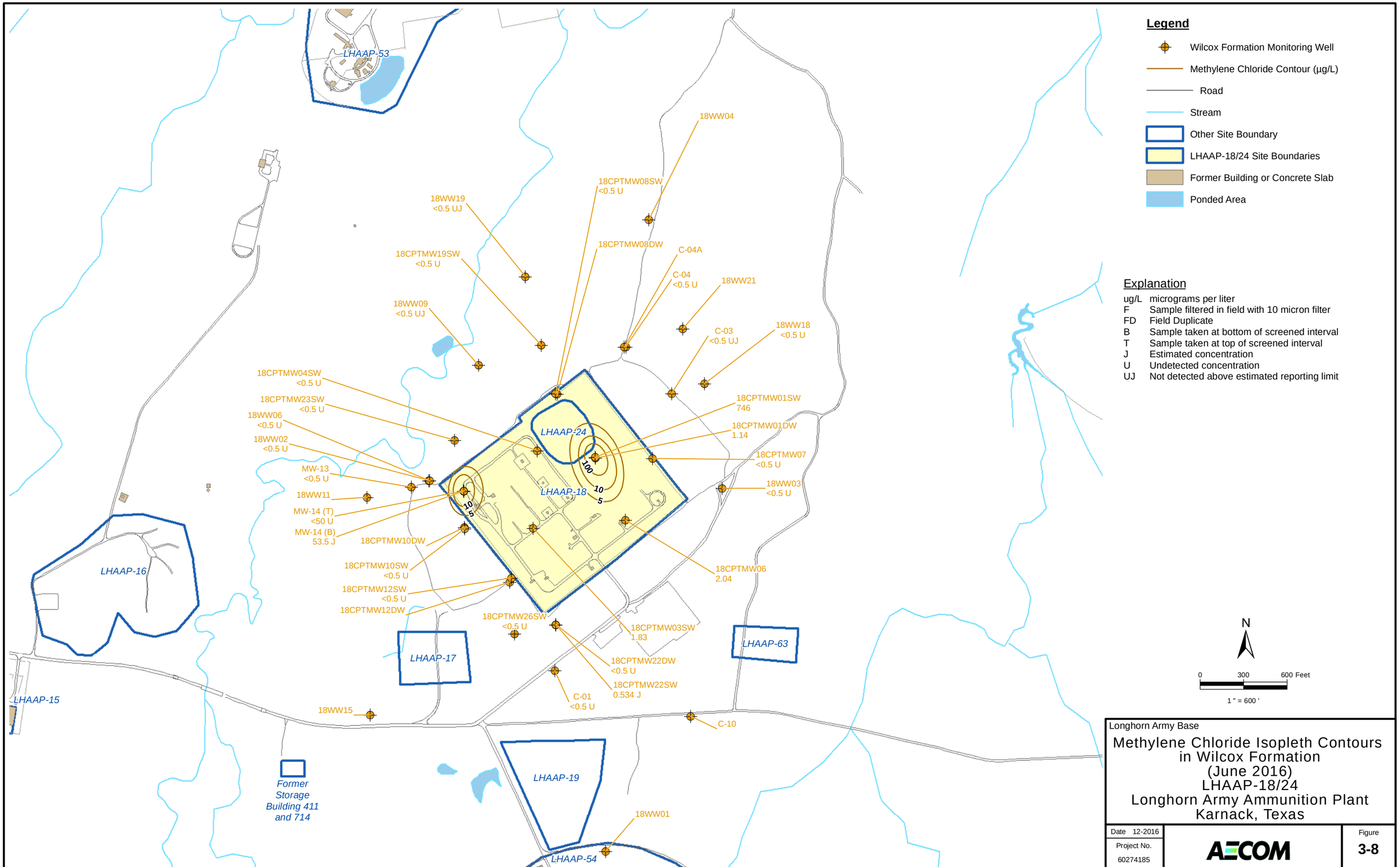

Longhorn Army Base

Methylene Chloride Isopleth Contours in Wilcox Formation (June 2016) LHAAP-18/24 Longhorn Army Ammunition Plant Karnack, Texas

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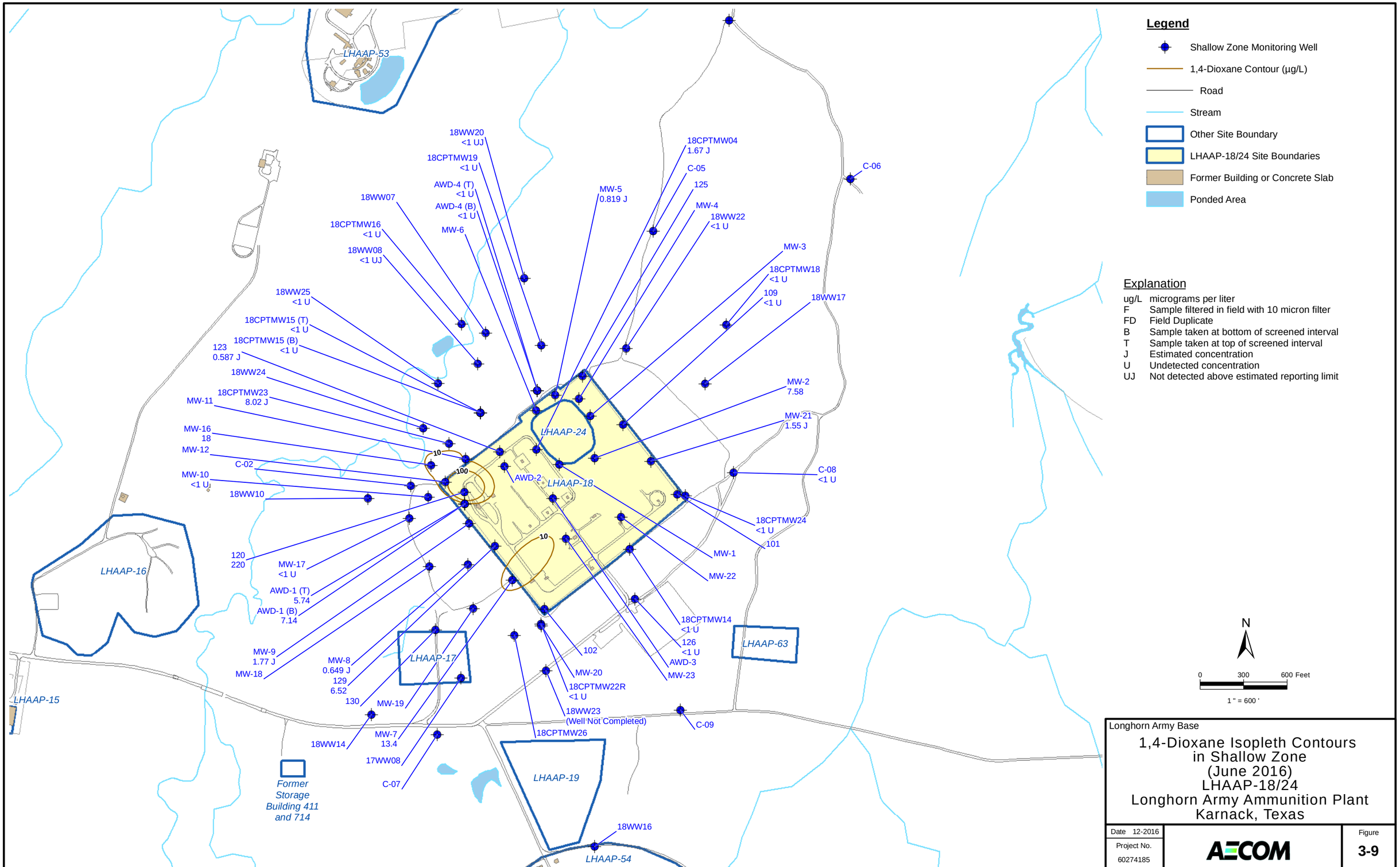

Longhorn Army Base

1,4-Dioxane Isopleth Contours in Shallow Zone (June 2016) LHAAP-18/24 Longhorn Army Ammunition Plant Karnack, Texas

Date 12-2016	AECOM	Figure
Project No. 60274185		3-9

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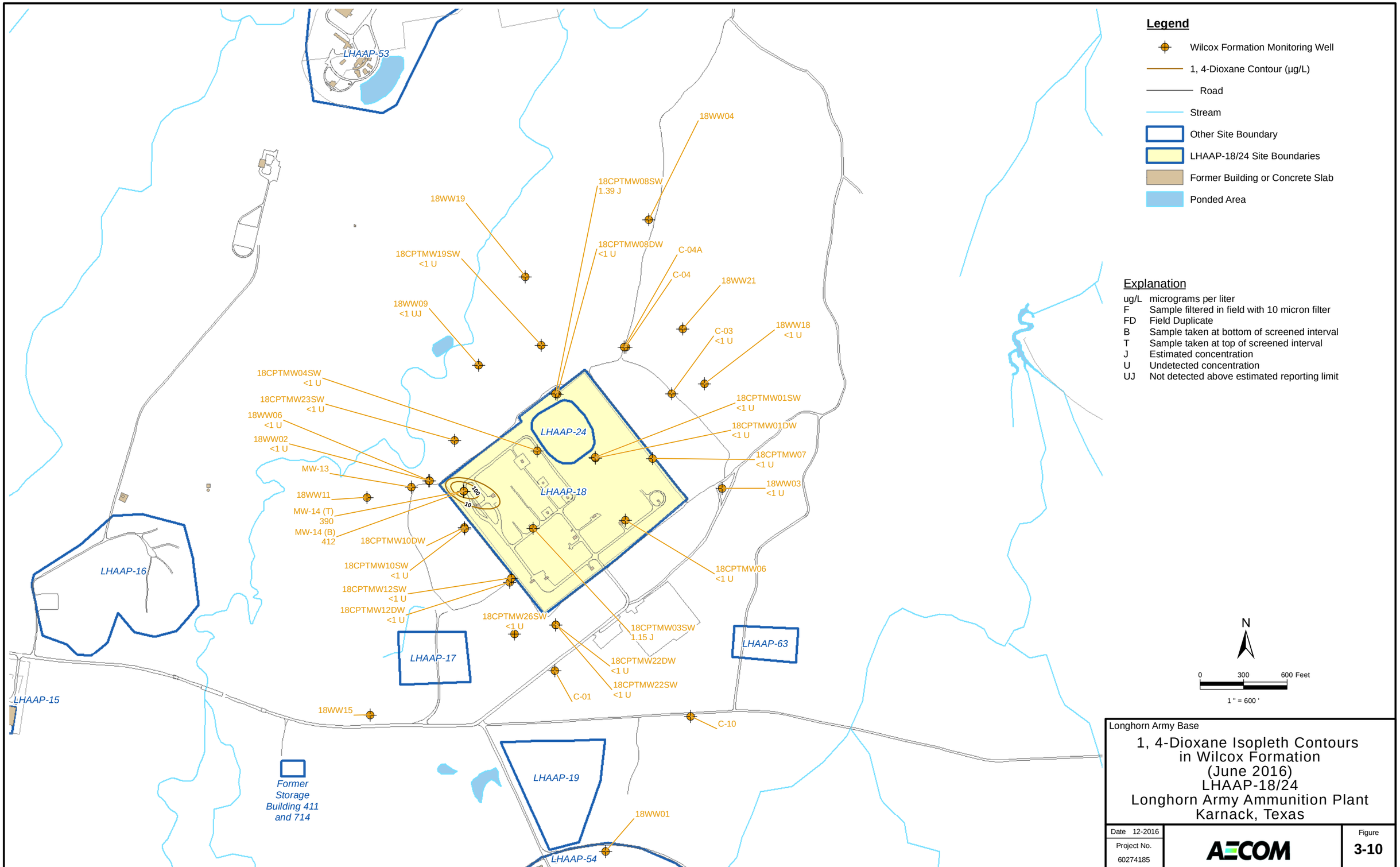

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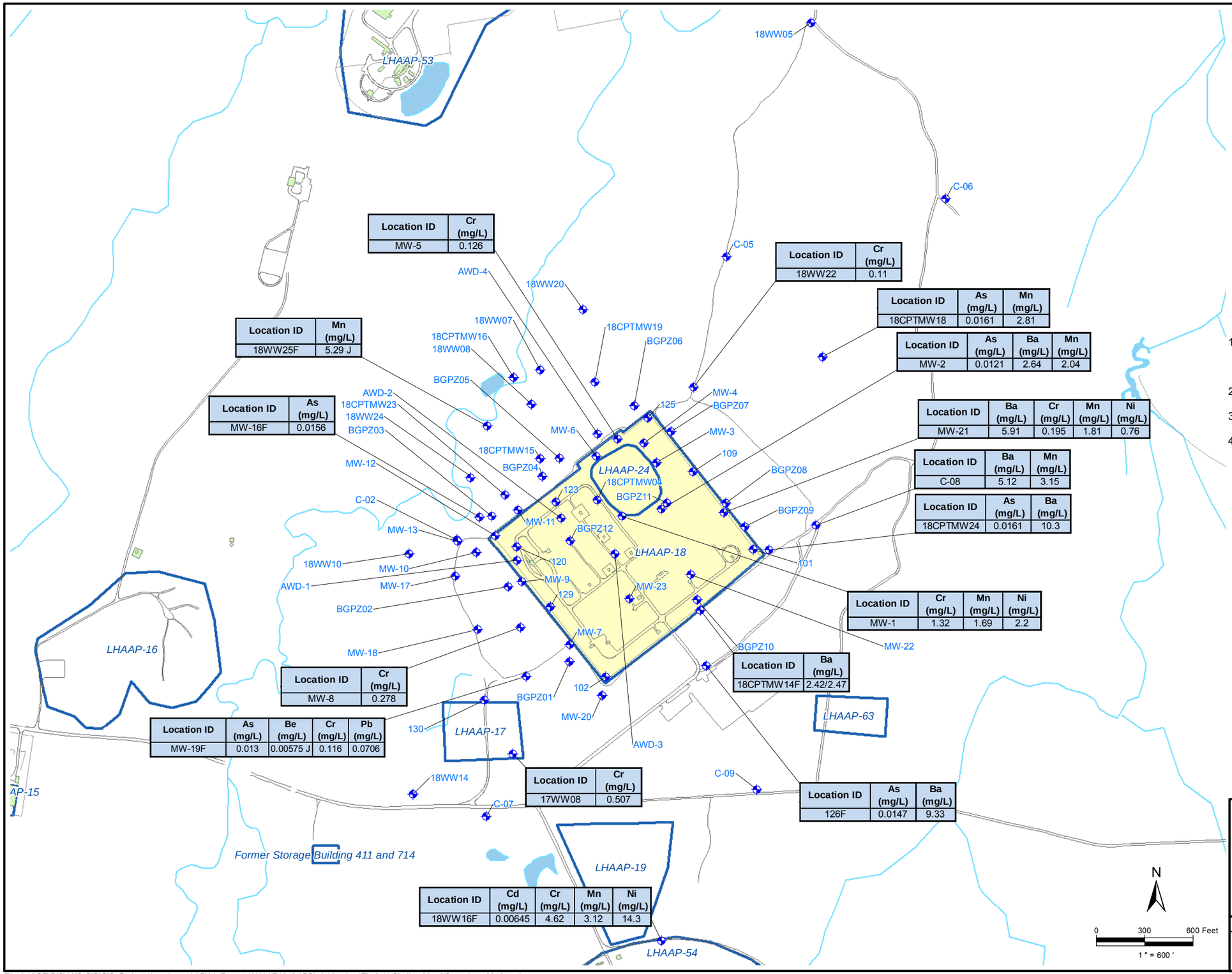

Location ID	Cr (mg/L)
MW-5	0.126

Location ID	Cr (mg/L)
18WW22	0.11

Location ID	As (mg/L)	Mn (mg/L)
18CPTMW18	0.0161	2.81

Location ID	As (mg/L)	Ba (mg/L)	Mn (mg/L)
MW-2	0.0121	2.64	2.04

Location ID	Mn (mg/L)
18WW25F	5.29 J

Location ID	As (mg/L)
MW-16F	0.0156

Location ID	Ba (mg/L)	Cr (mg/L)	Mn (mg/L)	Ni (mg/L)
MW-21	5.91	0.195	1.81	0.76

Location ID	Ba (mg/L)	Mn (mg/L)
C-08	5.12	3.15

Location ID	As (mg/L)	Ba (mg/L)
18CPTMW24	0.0161	10.3

Location ID	Cr (mg/L)	Mn (mg/L)	Ni (mg/L)
MW-1	1.32	1.69	2.2

Location ID	Ba (mg/L)
18CPTMW14F	2.42/2.47

Location ID	Cr (mg/L)
MW-8	0.278

Location ID	As (mg/L)	Be (mg/L)	Cr (mg/L)	Pb (mg/L)
MW-19F	0.013	0.00575 J	0.116	0.0706

Location ID	Cr (mg/L)
17WW08	0.507

Location ID	As (mg/L)	Ba (mg/L)
126F	0.0147	9.33

Location ID	Cd (mg/L)	Cr (mg/L)	Mn (mg/L)	Ni (mg/L)
18WW16F	0.00645	4.62	3.12	14.3

Legend

- Shallow Zone Monitoring Well
- Road
- Stream
- Other Site Boundary
- LHAAP-18/24 Site Boundaries
- Ponded Area
- Groundwater Result

Notes

1) All monitoring wells installed in 2013 and 2014 have nomenclature beginning with "18CPT" with the exception of 18WW22 and 18WW24 which were also installed in 2013 and 2014, respectively.
2) "SW" at the end of well nomenclature indicates a shallow Wilcox Formation monitoring well (i.e., to a depth of 70 feet bgs).
3) "DW" at the end of well nomenclature indicates a deep Wilcox Formation monitoring well (i.e., to a depth of 100 feet bgs).
4) Only values exceeding the MCL or MSC have been included. MSC for Ni = 2.0 mg/L.

Abbreviations

As	Arsenic
Ba	Barium
Be	Beryllium
Cd	Cadmium
Cr	Chromium
Mn	Manganese
Ni	Nickel
Pb	Lead
mg/L	milligrams per liter
MCL	Maximum Contaminant Level
PCL	Texas Residential Groundwater Protective Concentration Level
F	Filtered

Chemical	MCL/PCL (mg/L)
Arsenic	0.01
Barium	2
Beryllium	0.004
Cadmium	0.005
Chromium	0.1
Lead	0.015
Maganese	1.1
Nickel	0.49

Longhorn Army Base

Metal Exceedance Concentrations in Groundwater Shallow Zone (June 2016) LHAAP-18/24 Longhorn Army Ammunition Plant Karnack, Texas

Date 12-2016

Project No. 60274185

AECOM

Figure 3-11

File: L:\AGE\GIS\AUS GIS\GIS_Projects\Longhorn_AAP\01_Reports\LHAAP18_24\PSI_Addendum\Fig 3-11 Shallow Metal Conc June 2016.mxd
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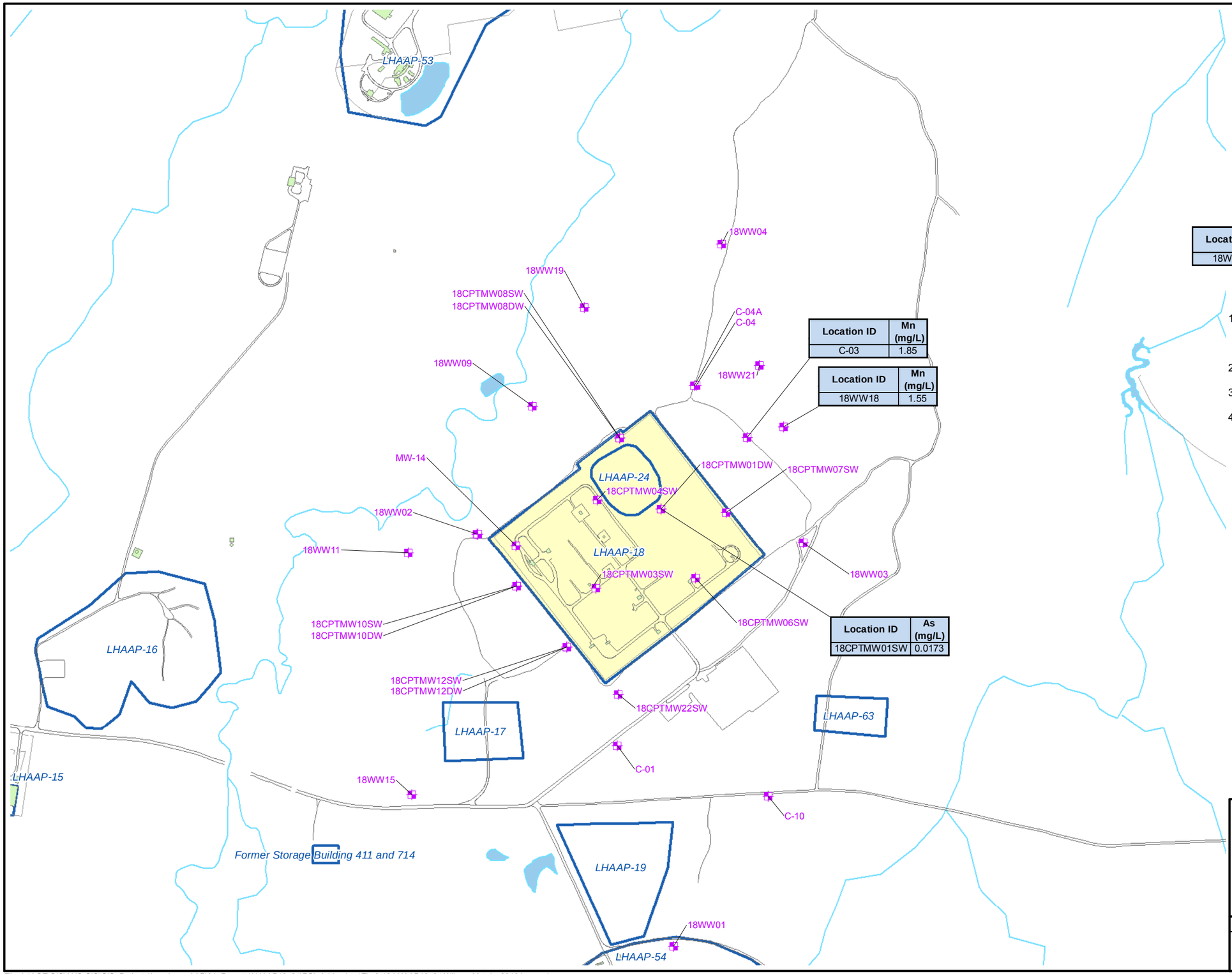

Location ID	Mn (mg/L)
C-03	1.85

Location ID	Mn (mg/L)
18WW18	1.55

Location ID	As (mg/L)
18CPTMW01SW	0.0173

Legend

- Wilcox Formation Monitoring Well
- Road
- Stream
- Other Site Boundary
- LHAAP-18/24 Site Boundaries
- Ponded Area
- Groundwater Result

Location ID	Mn (mg/L)
18WW18	1.55

Notes

1) All monitoring wells installed in 2013 and 2014 have nomenclature beginning with "18CPT" with the exception of 18WW22 and 18WW24 which were also installed in 2013 and 2014, respectively.
2) "SW" at the end of well nomenclature indicates a shallow Wilcox Formation monitoring well (i.e., to a depth of 70 feet bgs).
3) "DW" at the end of well nomenclature indicates a deep Wilcox Formation monitoring well (i.e., to a depth of 100 feet bgs).
4) Only values exceeding the MCL have been included.

Abbreviations

As	Arsenic
Mn	Manganese
mg/L	milligrams per liter
MCL	Maximum Contamimant Level
PCL	Texas Residential Groundwater Protective Concentration Level

Chemical	MCL/PCL (mg/L)
Arsenic	0.01
Maganese	1.1

N

0 300 600 Feet

1 " = 600 '

Longhorn Army Base

Metal Exceedance Concentrations in Groundwater Wilcox Formation (June 2016) LHAAP-18/24 Longhorn Army Ammunition Plant Karnack, Texas

Date 12-2016

Project No. 60274185

AECOM

Figure 3-12

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Table 3-1: LHAAP-18/24 DPT Soil Analytical Results - February/March 2016

Sample ID: / Sample Date:	Units	MSC	18DPT01 (5-5.5) 250216 2/25/2016	18DPT01 (9.5-10) 250216 2/25/2016	18DPT01 (15-15.5) 250216 2/25/2016	18DPT01 (22.5-23) 250216 2/25/2016	18DPT01 (24.5-25) 250216 2/25/2016	18DPT01 (27-27.5) 250216 2/25/2016	18DPT02 (5-5.5) 260216 2/26/2016	18DPT02 (10-10.5) 260216 2/26/2016	18DPT02 (10-10.5) 260216FD 2/26/2016	18DPT02 (15-15.5) 260216 2/26/2016	18DPT02 (22-22.5) 260216 2/26/2016
Sample Saturation:			**Unsaturated**	**Unsaturated**	**Unsaturated**	**Saturated**	**Saturated**	**Unsaturated**	**Unsaturated**	**Saturated**	**Saturated**	**Saturated**	**Unsaturated**
Formation:			**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Wilcox Clay**	**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Wilcox Clay**
Perchlorate (6850)													
PERCHLORATE	ug/kg	7200	<2.34 U	20.7	7.54	63	47.7	535	<2.36 U	<2.36 U	<2.36 U	<2.5 U	269
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/kg	11000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
1,1,1-TRICHLOROETHANE	ug/kg	20000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
1,1,2,2-TETRACHLOROETHANE	ug/kg	1400	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
1,1,2-TRICHLOROETHANE	ug/kg	500	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
1,1-DICHLOROETHANE	ug/kg	1000000	<2.5 U	<2.18 U	<2.22 U	<2.24 U	<2.22 U	<2.54 U	<2.48 U	<2.4 U	<2.48 U	<2.38 U	<2.68 U
1,1-DICHLOROETHENE	ug/kg	700	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
1,1-DICHLOROPROPENE	ug/kg	290	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
1,2,3-TRICHLOROBENZENE	ug/kg	31000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
1,2,3-TRICHLOROPROPANE	ug/kg	4.1	<2.5 U	<2.18 U	<2.22 U	<2.24 U	<2.22 U	<2.54 U	<2.48 U	<2.4 U	<2.48 U	<2.38 U	<2.68 U
1,2,4-TRICHLOROBENZENE	ug/kg	7000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
1,2,4-TRIMETHYLBENZENE	ug/kg	510000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/kg	20	<5 U	<4.34 U	<4.46 U	<4.46 U	<4.42 U	<5.08 U	<4.96 U	<4.82 U	<4.96 U	<4.76 U	<5.36 U
1,2-DIBROMOETHANE	ug/kg	5	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
1,2-DICHLOROBENZENE	ug/kg	60000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
1,2-DICHLOROETHANE	ug/kg	500	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
1,2-DICHLOROPROPANE	ug/kg	500	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
1,3,5-TRIMETHYLBENZENE	ug/kg	510000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
1,3-DICHLOROBENZENE	ug/kg	310000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
1,3-DICHLOROPROPANE	ug/kg	2900	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
1,4-DICHLOROBENZENE	ug/kg	7500	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
2,2-DICHLOROPROPANE	ug/kg	4200	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
2-BUTANONE	ug/kg	6100000	<6.24 U	<5.42 U	<5.58 U	<5.58 U	<5.52 U	<6.34 U	<6.18 U	<6.02 U	<6.2 U	<5.94 U	<6.7 U
2-CHLOROTOLUENE	ug/kg	200000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
2-HEXANONE	ug/kg	610000	<6.24 U	<5.42 U	<5.58 U	<5.58 U	<5.52 U	<6.34 U	<6.18 U	<6.02 U	<6.2 U	<5.94 U	<6.7 U
4-CHLOROTOLUENE	ug/kg	200000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
4-METHYL-2-PENTANONE	ug/kg	820000	<6.24 U	<5.42 U	<5.58 U	<5.58 U	<5.52 U	<6.34 U	<6.18 U	<6.02 U	<6.2 U	<5.94 U	<6.7 U
ACETONE	ug/kg	920000	7.78 J	<10.9 U	<11.1 U	9.77 J	<11.1 U	<12.7 U	22.8 J	7.17 J	17.3 J	8.14 J	<13.4 U
BENZENE	ug/kg	500	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
BROMOBENZENE	ug/kg	200000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
BROMOCHLOROMETHANE	ug/kg	410000	<2.5 U	<2.18 U	<2.22 U	<2.24 U	<2.22 U	<2.54 U	<2.48 U	<2.4 U	<2.48 U	<2.38 U	<2.68 U
BROMODICHLOROMETHANE	ug/kg	460	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
BROMOFORM	ug/kg	3600	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
BROMOMETHANE	ug/kg	14000	<2.5 U	<2.18 U	<2.22 U	<2.24 U	<2.22 U	<2.54 U	<2.48 U	<2.4 U	<2.48 U	<2.38 U	<2.68 U
CARBON DISULFIDE	ug/kg	1000000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
CARBON TETRACHLORIDE	ug/kg	500	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
CHLOROBENZENE	ug/kg	10000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
CHLOROETHANE	ug/kg	4100000	<2.5 U	<2.18 U	<2.22 U	<2.24 U	<2.22 U	<2.54 U	<2.48 U	<2.4 U	<2.48 U	<2.38 U	<2.68 U
CHLOROFORM	ug/kg	100000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
CHLOROMETHANE	ug/kg	22000	<5 U	<4.34 U	<4.46 U	<4.46 U	<4.42 U	<5.08 U	<4.96 U	<4.82 U	<4.96 U	<4.76 U	<5.36 U
CIS-1,2-DICHLOROETHENE	ug/kg	7000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
CIS-1,3-DICHLOROPROPENE	ug/kg	530	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
DIBROMOCHLOROMETHANE	ug/kg	3400	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
DIBROMOMETHANE	ug/kg	38000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
DICHLORODIFLUOROMETHANE	ug/kg	2000000	<2.5 U	<2.18 U	<2.22 U	<2.24 U	<2.22 U	<2.54 U	<2.48 U	<2.4 U	<2.48 U	<2.38 U	<2.68 U

Table 3-1: LHAAP-18/24 DPT Soil Analytical Results - February/March 2016

Sample ID: / Sample Date:	Units	MSC	18DPT01 (5-5.5) 250216 2/25/2016	18DPT01 (9.5-10) 250216 2/25/2016	18DPT01 (15-15.5) 250216 2/25/2016	18DPT01 (22.5-23) 250216 2/25/2016	18DPT01 (24.5-25) 250216 2/25/2016	18DPT01 (27-27.5) 250216 2/25/2016	18DPT02 (5-5.5) 260216 2/26/2016	18DPT02 (10-10.5) 260216 2/26/2016	18DPT02 (10-10.5) 260216FD 2/26/2016	18DPT02 (15-15.5) 260216 2/26/2016	18DPT02 (22-22.5) 260216 2/26/2016
ETHYLBENZENE	ug/kg	70000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
HEXACHLOROBUTADIENE	ug/kg	2000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
ISOPROPYLBENZENE	ug/kg	1000000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
M,P-XYLENE	ug/kg	1000000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
METHYLENE CHLORIDE	ug/kg	500	<2.5 U	<2.18 U	<2.22 U	<2.24 U	<2.22 U	<2.54 U	<2.48 U	<2.4 U	<2.48 U	<2.38 U	<2.68 U
NAPHTHALENE	ug/kg	200000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
N-BUTYLBENZENE	ug/kg	410000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
N-PROPYLBENZENE	ug/kg	410000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
O-XYLENE	ug/kg	1000000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
P-ISOPROPYLTOLUENE	ug/kg	1000000	21.8	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	1.98 J	<1.2 U	4.08 J	1.35 J	<1.34 U
SEC-BUTYLBENZENE	ug/kg	410000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
STYRENE	ug/kg	10000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
TERT-BUTYLBENZENE	ug/kg	410000	0.778 J	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
TETRACHLOROETHENE	ug/kg	500	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
TOLUENE	ug/kg	100000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
TRANS-1,2-DICHLOROETHENE	ug/kg	10000	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
TRANS-1,3-DICHLOROPROPENE	ug/kg	2900	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
TRICHLOROETHENE	ug/kg	500	<1.25 U	<1.09 U	<1.11 U	<1.12 U	<1.11 U	<1.27 U	<1.24 U	<1.2 U	<1.24 U	<1.19 U	<1.34 U
TRICHLOROFLUOROMETHANE	ug/kg	3100000	<2.5 U	<2.18 U	<2.22 U	<2.24 U	<2.22 U	<2.54 U	<2.48 U	<2.4 U	<2.48 U	<2.38 U	<2.68 U
VINYL CHLORIDE	ug/kg	200	<2.5 U	<2.18 U	<2.22 U	<2.24 U	<2.22 U	<2.54 U	<2.48 U	<2.4 U	<2.48 U	<2.38 U	<2.68 U

Blue Highlighting Indicates concentrations above the MSC

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MSC - Medium-Specific Concentrations

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

ug/kg - micrograms per kilogram

Table 3-1: LHAAP-18/24 DPT Soil Analytical Results - February/March 2016

Sample ID: / Sample Date:	Units	MSC	18DPT03 (5-5.5) 260216 2/26/2016	18DPT03 (10-10.5) 260216 2/26/2016	18DPT03 (14.5-15) 260216 2/26/2016	18DPT03 (17.5-18) 260216 2/26/2016	18DPT04 (5-5.5) 240216 2/24/2016	18DPT04 (15-15.5) 240216 2/24/2016	18DPT04 (20-21) 240216 2/24/2016	18DPT04 (20-21) 240216FD 2/24/2016	18DPT04 (25-25.5) 240216 2/24/2016	18DPT04 (29-30) 240216 2/24/2016	18DPT04 (34-34.5) 240216 2/24/2016
Sample Saturation:			**Unsaturated**	**Unsaturated**	**Saturated**	**Unsaturated**	**Unsaturated**	**Unsaturated**	**Saturated**	**Saturated**	**Saturated**	**Saturated**	**Saturated**
Formation:			**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Wilcox Clay**	**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Wilcox Clay**	**Wilcox Clay**
Perchlorate (6850)													
PERCHLORATE	ug/kg	7200	<2.46 U	2110	3290	2330	101	<2.44 U	27.2	26.7	152	672	2180
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/kg	11000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
1,1,1-TRICHLOROETHANE	ug/kg	20000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
1,1,2,2-TETRACHLOROETHANE	ug/kg	1400	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
1,1,2-TRICHLOROETHANE	ug/kg	500	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
1,1-DICHLOROETHANE	ug/kg	1000000	<2.5 U	<2.28 U	<2.42 U	<2.66 U	<2.7 U	<2.64 U	<2.56 U	<2.56 U	<2.5 U	<2.38 U	<2.5 U
1,1-DICHLOROETHENE	ug/kg	700	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
1,1-DICHLOROPROPENE	ug/kg	290	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
1,2,3-TRICHLOROBENZENE	ug/kg	31000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
1,2,3-TRICHLOROPROPANE	ug/kg	4.1	<2.5 U	<2.28 U	<2.42 U	<2.66 U	<2.7 U	<2.64 U	<2.56 U	<2.56 U	<2.5 U	<2.38 U	<2.5 U
1,2,4-TRICHLOROBENZENE	ug/kg	7000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
1,2,4-TRIMETHYLBENZENE	ug/kg	510000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/kg	20	<5 U	<4.56 U	<4.86 U	<5.34 U	<5.38 U	<5.3 U	<5.1 U	<5.12 U	<5 U	<4.76 U	<5.02 U
1,2-DIBROMOETHANE	ug/kg	5	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
1,2-DICHLOROBENZENE	ug/kg	60000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
1,2-DICHLOROETHANE	ug/kg	500	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
1,2-DICHLOROPROPANE	ug/kg	500	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
1,3,5-TRIMETHYLBENZENE	ug/kg	510000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
1,3-DICHLOROBENZENE	ug/kg	310000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
1,3-DICHLOROPROPANE	ug/kg	2900	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
1,4-DICHLOROBENZENE	ug/kg	7500	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
2,2-DICHLOROPROPANE	ug/kg	4200	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
2-BUTANONE	ug/kg	6100000	<6.26 U	<5.7 U	<6.08 U	<6.68 U	<6.72 U	<6.62 U	<6.38 U	<6.4 U	<6.24 U	<5.94 U	<6.28 U
2-CHLOROTOLUENE	ug/kg	200000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
2-HEXANONE	ug/kg	610000	<6.26 U	<5.7 U	<6.08 U	<6.68 U	<6.72 U	<6.62 U	<6.38 U	<6.4 U	<6.24 U	<5.94 U	<6.28 U
4-CHLOROTOLUENE	ug/kg	200000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
4-METHYL-2-PENTANONE	ug/kg	820000	<6.26 U	<5.7 U	<6.08 U	<6.68 U	<6.72 U	<6.62 U	<6.38 U	<6.4 U	<6.24 U	<5.94 U	<6.28 U
ACETONE	ug/kg	920000	<12.5 U	<11.4 U	<12.1 U	<13.3 U	<13.5 U	7.38 J	<12.8 U	<12.8 U	<12.5 U	<11.9 U	<12.5 U
BENZENE	ug/kg	500	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
BROMOBENZENE	ug/kg	200000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
BROMOCHLOROMETHANE	ug/kg	410000	<2.5 U	<2.28 U	<2.42 U	<2.66 U	<2.7 U	<2.64 U	<2.56 U	<2.56 U	<2.5 U	<2.38 U	<2.5 U
BROMODICHLOROMETHANE	ug/kg	460	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
BROMOFORM	ug/kg	3600	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
BROMOMETHANE	ug/kg	14000	<2.5 U	<2.28 U	<2.42 U	<2.66 U	<2.7 U	<2.64 U	<2.56 U	<2.56 U	<2.5 U	<2.38 U	<2.5 U
CARBON DISULFIDE	ug/kg	1000000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
CARBON TETRACHLORIDE	ug/kg	500	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
CHLOROBENZENE	ug/kg	10000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
CHLOROETHANE	ug/kg	4100000	<2.5 U	<2.28 U	<2.42 U	<2.66 U	<2.7 U	<2.64 U	<2.56 U	<2.56 U	<2.5 U	<2.38 U	<2.5 U
CHLOROFORM	ug/kg	100000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
CHLOROMETHANE	ug/kg	22000	<5 U	<4.56 U	<4.86 U	<5.34 U	<5.38 U	<5.3 U	<5.1 U	<5.12 U	<5 U	<4.76 U	<5.02 U
CIS-1,2-DICHLOROETHENE	ug/kg	7000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
CIS-1,3-DICHLOROPROPENE	ug/kg	530	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
DIBROMOCHLOROMETHANE	ug/kg	3400	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
DIBROMOMETHANE	ug/kg	38000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
DICHLORODIFLUOROMETHANE	ug/kg	2000000	<2.5 U	<2.28 U	<2.42 U	<2.66 U	<2.7 U	<2.64 U	<2.56 U	<2.56 U	<2.5 U	<2.38 U	<2.5 U

Table 3-1: LHAAP-18/24 DPT Soil Analytical Results - February/March 2016

Sample ID: / Sample Date:	Units	MSC	18DPT03 (5-5.5) 260216 2/26/2016	18DPT03 (10-10.5) 260216 2/26/2016	18DPT03 (14.5-15) 260216 2/26/2016	18DPT03 (17.5-18) 260216 2/26/2016	18DPT04 (5-5.5) 240216 2/24/2016	18DPT04 (15-15.5) 240216 2/24/2016	18DPT04 (20-21) 240216 2/24/2016	18DPT04 (20-21) 240216FD 2/24/2016	18DPT04 (25-25.5) 240216 2/24/2016	18DPT04 (29-30) 240216 2/24/2016	18DPT04 (34-34.5) 240216 2/24/2016
ETHYLBENZENE	ug/kg	70000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
HEXACHLOROBUTADIENE	ug/kg	2000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
ISOPROPYLBENZENE	ug/kg	1000000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
M,P-XYLENE	ug/kg	1000000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
METHYLENE CHLORIDE	ug/kg	500	<2.5 U	<2.28 U	<2.42 U	<2.66 U	<2.7 U	<2.64 U	<2.56 U	<2.56 U	<2.5 U	<2.38 U	<2.5 U
NAPHTHALENE	ug/kg	200000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
N-BUTYLBENZENE	ug/kg	410000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
N-PROPYLBENZENE	ug/kg	410000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
O-XYLENE	ug/kg	1000000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
P-ISOPROPYLTOLUENE	ug/kg	1000000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
SEC-BUTYLBENZENE	ug/kg	410000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
STYRENE	ug/kg	10000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
TERT-BUTYLBENZENE	ug/kg	410000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
TETRACHLOROETHENE	ug/kg	500	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
TOLUENE	ug/kg	100000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
TRANS-1,2-DICHLOROETHENE	ug/kg	10000	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
TRANS-1,3-DICHLOROPROPENE	ug/kg	2900	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
TRICHLOROETHENE	ug/kg	500	<1.25 U	<1.14 U	<1.21 U	<1.33 U	<1.35 U	<1.32 U	<1.28 U	<1.28 U	<1.25 U	<1.19 U	<1.25 U
TRICHLOROFLUOROMETHANE	ug/kg	3100000	<2.5 U	<2.28 U	<2.42 U	<2.66 U	<2.7 U	<2.64 U	<2.56 U	<2.56 U	<2.5 U	<2.38 U	<2.5 U
VINYL CHLORIDE	ug/kg	200	<2.5 U	<2.28 U	<2.42 U	<2.66 U	<2.7 U	<2.64 U	<2.56 U	<2.56 U	<2.5 U	<2.38 U	<2.5 U

Blue Highlighting Indicates concentrations above the MSC

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MSC - Medium-Specific Concentrations

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

ug/kg - micrograms per kilogram

Table 3-1: LHAAP-18/24 DPT Soil Analytical Results - February/March 2016

Sample ID: / Sample Date:	Units	MSC	18DPT04 (36.5-37) 240216 2/24/2016	18DPT05 (4.5-5) 250216 2/25/2016	18DPT05 (10-11) 250216 2/25/2016	18DPT05 (15-15.5) 250216 2/25/2016	18DPT05 (20-20.5) 250216 2/25/2016	18DPT06 (5-5.5) 020316 3/2/2016	18DPT06 (5-5.5) 020316FD 3/2/2016	18DPT06 (15-15.5) 020316 3/2/2016	18DPT06 (20-20.5) 020316 3/2/2016	18DPT06 (27.5-28) 020316 3/2/2016	18DPT06 (38.5-39) 020316 3/2/2016
Sample Saturation:			**Saturated**	**Unsaturated**	**Unsaturated**	**Saturated**	**Unsaturated**	**Unsaturated**	**Unsaturated**	**Saturated**	**Saturated**	**Saturated**	**Unsaturated**
Formation:			**Wilcox Sand**	**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Wilcox Clay**	**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Wilcox Clay**
Perchlorate (6850)													
PERCHLORATE	ug/kg	7200	3200	<2.34 U	<2.22 U	7.13	1400	<2.42 U	<2.46 U	<2.26 U	3.35 J	1530	2690
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/kg	11000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
1,1,1-TRICHLOROETHANE	ug/kg	20000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
1,1,2,2-TETRACHLOROETHANE	ug/kg	1400	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
1,1,2-TRICHLOROETHANE	ug/kg	500	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
1,1-DICHLOROETHANE	ug/kg	1000000	<2.42 U	<2.52 U	<2.4 U	<2.52 U	<2.44 U	<2.68 U	<2.4 U	<2.3 U	<2.56 U	<2.6 U	<2.62 U
1,1-DICHLOROETHENE	ug/kg	700	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
1,1-DICHLOROPROPENE	ug/kg	290	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
1,2,3-TRICHLOROBENZENE	ug/kg	31000	<1.21 U	<1.26 UJ	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
1,2,3-TRICHLOROPROPANE	ug/kg	4.1	<2.42 U	<2.52 U	<2.4 U	<2.52 U	<2.44 U	<2.68 U	<2.4 U	<2.3 U	<2.56 U	<2.6 U	<2.62 U
1,2,4-TRICHLOROBENZENE	ug/kg	7000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
1,2,4-TRIMETHYLBENZENE	ug/kg	510000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/kg	20	<4.84 U	<5.04 UJ	<4.78 U	<5.04 U	<4.9 U	<5.36 U	<4.78 U	<4.6 U	<5.12 U	<5.18 U	<5.24 U
1,2-DIBROMOETHANE	ug/kg	5	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
1,2-DICHLOROBENZENE	ug/kg	60000	<1.21 U	<1.26 UJ	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
1,2-DICHLOROETHANE	ug/kg	500	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	1.07 J	<1.31 U
1,2-DICHLOROPROPANE	ug/kg	500	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
1,3,5-TRIMETHYLBENZENE	ug/kg	510000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
1,3-DICHLOROBENZENE	ug/kg	310000	<1.21 U	<1.26 UJ	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
1,3-DICHLOROPROPANE	ug/kg	2900	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
1,4-DICHLOROBENZENE	ug/kg	7500	<1.21 U	<1.26 UJ	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
2,2-DICHLOROPROPANE	ug/kg	4200	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
2-BUTANONE	ug/kg	6100000	<6.04 U	<6.3 U	<5.98 U	<6.3 U	<6.12 U	<6.7 U	<5.98 U	<5.74 U	<6.4 U	<6.48 U	<6.54 U
2-CHLOROTOLUENE	ug/kg	200000	<1.21 U	<1.26 UJ	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
2-HEXANONE	ug/kg	610000	<6.04 U	<6.3 U	<5.98 U	<6.3 U	<6.12 U	<6.7 U	<5.98 U	<5.74 U	<6.4 U	<6.48 U	<6.54 U
4-CHLOROTOLUENE	ug/kg	200000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
4-METHYL-2-PENTANONE	ug/kg	820000	<6.04 U	<6.3 U	<5.98 U	<6.3 U	<6.12 U	<6.7 U	<5.98 U	<5.74 U	<6.4 U	<6.48 U	<6.54 U
ACETONE	ug/kg	920000	<12.1 U	<12.6 U	<12 U	<12.6 U	<12.2 U	<13.4 U	<12 U	<11.5 U	<12.8 U	<13 U	<13.1 U
BENZENE	ug/kg	500	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
BROMOBENZENE	ug/kg	200000	<1.21 U	<1.26 UJ	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
BROMOCHLOROMETHANE	ug/kg	410000	<2.42 U	<2.52 U	<2.4 U	<2.52 U	<2.44 U	<2.68 U	<2.4 U	<2.3 U	<2.56 U	<2.6 U	<2.62 U
BROMODICHLOROMETHANE	ug/kg	460	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
BROMOFORM	ug/kg	3600	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
BROMOMETHANE	ug/kg	14000	<2.42 U	<2.52 U	<2.4 U	<2.52 U	<2.44 U	<2.68 U	<2.4 U	<2.3 U	<2.56 U	<2.6 U	<2.62 U
CARBON DISULFIDE	ug/kg	1000000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
CARBON TETRACHLORIDE	ug/kg	500	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
CHLOROBENZENE	ug/kg	10000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
CHLOROETHANE	ug/kg	4100000	<2.42 U	<2.52 U	<2.4 U	<2.52 U	<2.44 U	<2.68 U	<2.4 U	<2.3 U	<2.56 U	<2.6 U	<2.62 U
CHLOROFORM	ug/kg	100000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
CHLOROMETHANE	ug/kg	22000	<4.84 U	<5.04 U	<4.78 U	<5.04 U	<4.9 U	<5.36 U	<4.78 U	<4.6 U	<5.12 U	<5.18 U	<5.24 U
CIS-1,2-DICHLOROETHENE	ug/kg	7000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
CIS-1,3-DICHLOROPROPENE	ug/kg	530	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
DIBROMOCHLOROMETHANE	ug/kg	3400	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
DIBROMOMETHANE	ug/kg	38000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
DICHLORODIFLUOROMETHANE	ug/kg	2000000	<2.42 U	<2.52 U	<2.4 U	<2.52 U	<2.44 U	<2.68 U	<2.4 U	<2.3 U	<2.56 U	<2.6 U	<2.62 U

Table 3-1: LHAAP-18/24 DPT Soil Analytical Results - February/March 2016

Sample ID: / Sample Date:	Units	MSC	18DPT04 (36.5-37) 240216 2/24/2016	18DPT05 (4.5-5) 250216 2/25/2016	18DPT05 (10-11) 250216 2/25/2016	18DPT05 (15-15.5) 250216 2/25/2016	18DPT05 (20-20.5) 250216 2/25/2016	18DPT06 (5-5.5) 020316 3/2/2016	18DPT06 (5-5.5) 020316FD 3/2/2016	18DPT06 (15-15.5) 020316 3/2/2016	18DPT06 (20-20.5) 020316 3/2/2016	18DPT06 (27.5-28) 020316 3/2/2016	18DPT06 (38.5-39) 020316 3/2/2016
ETHYLBENZENE	ug/kg	70000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
HEXACHLOROBUTADIENE	ug/kg	2000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
ISOPROPYLBENZENE	ug/kg	1000000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
M,P-XYLENE	ug/kg	1000000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
METHYLENE CHLORIDE	ug/kg	500	<2.42 U	<2.52 U	<2.4 U	<2.52 U	<2.44 U	<2.68 U	<2.4 U	<2.3 U	<2.56 U	<2.6 U	<2.62 U
NAPHTHALENE	ug/kg	200000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
N-BUTYLBENZENE	ug/kg	410000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
N-PROPYLBENZENE	ug/kg	410000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
O-XYLENE	ug/kg	1000000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
P-ISOPROPYLTOLUENE	ug/kg	1000000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
SEC-BUTYLBENZENE	ug/kg	410000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
STYRENE	ug/kg	10000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
TERT-BUTYLBENZENE	ug/kg	410000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
TETRACHLOROETHENE	ug/kg	500	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
TOLUENE	ug/kg	100000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
TRANS-1,2-DICHLOROETHENE	ug/kg	10000	<1.21 U	<1.26 U	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
TRANS-1,3-DICHLOROPROPENE	ug/kg	2900	<1.21 U	<1.26 UJ	<1.2 U	<1.26 U	<1.22 U	<1.34 U	<1.2 U	<1.15 U	<1.28 U	<1.3 U	<1.31 U
TRICHLOROETHENE	ug/kg	500	3.2 J	<1.26 U	<1.2 U	<1.26 U	1.17 J	<1.34 U	<1.2 U	<1.15 U	<1.28 U	57.1	0.747 J
TRICHLOROFLUOROMETHANE	ug/kg	3100000	<2.42 U	<2.52 U	<2.4 U	<2.52 U	<2.44 U	<2.68 U	<2.4 U	<2.3 U	<2.56 U	<2.6 U	<2.62 U
VINYL CHLORIDE	ug/kg	200	<2.42 U	<2.52 U	<2.4 U	<2.52 U	<2.44 U	<2.68 U	<2.4 U	<2.3 U	<2.56 U	<2.6 U	<2.62 U

Blue Highlighting Indicates concentrations above the MSC

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MSC - Medium-Specific Concentrations

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

ug/kg - micrograms per kilogram

Table 3-1: LHAAP-18/24 DPT Soil Analytical Results - February/March 2016

Sample ID: / Sample Date:	Units	MSC	18DPT07 (5-5.5) 020316 3/2/2016	18DPT07 (15-15.5) 020316 3/2/2016	18DPT07 (27-27.5) 030316 3/3/2016	18DPT07 (33.5-34.5) 030316 3/3/2016	18DPT07 (38-39) 030316 3/3/2016	18DPT07 (38-39) 030316FD 3/3/2016	18DPT08 (5-5.5) 030316 3/3/2016	18DPT08 (10-10.5) 030316 3/3/2016	18DPT08 (15-15.5) 030316 3/3/2016	18DPT08 (21-21.5) 030316 3/3/2016	18DPT08 (26-26.5) 030316 3/3/2016
Sample Saturation:			**Unsaturated**	**Unsaturated**	**Saturated**	**Saturated**	**Unsaturated**	**Unsaturated**	**Unsaturated**	**Unsaturated**	**Unsaturated**	**Saturated**	**Saturated**
Formation:			**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Wilcox Clay**	**Wilcox Clay**	**Shallow Zone**	**Shallow Zone**	**Wilcox Clay**	**Wilcox Sand**	**Wilcox Sand**
Perchlorate (6850)													
PERCHLORATE	ug/kg	7200	<2.38 U	2.47 J	1200	2180	697	622	<2.28 U	<2.32 U	<2.34 U	18.9	31.3
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/kg	11000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
1,1,1-TRICHLOROETHANE	ug/kg	20000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
1,1,2,2-TETRACHLOROETHANE	ug/kg	1400	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
1,1,2-TRICHLOROETHANE	ug/kg	500	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
1,1-DICHLOROETHANE	ug/kg	1000000	<2.46 U	<2.5 U	<2.3 U	<2.22 U	<2.56 U	<2.86 U	<2.6 U	<2.48 U	<2.58 U	<2.62 U	<2.5 U
1,1-DICHLOROETHENE	ug/kg	700	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
1,1-DICHLOROPROPENE	ug/kg	290	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
1,2,3-TRICHLOROBENZENE	ug/kg	31000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
1,2,3-TRICHLOROPROPANE	ug/kg	4.1	<2.46 U	<2.5 U	<2.3 U	<2.22 U	<2.56 U	<2.86 U	<2.6 U	<2.48 U	<2.58 U	<2.62 U	<2.5 U
1,2,4-TRICHLOROBENZENE	ug/kg	7000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
1,2,4-TRIMETHYLBENZENE	ug/kg	510000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/kg	20	<4.94 U	<4.98 U	<4.6 U	<4.44 U	<5.12 U	<5.7 U	<5.2 U	<4.94 U	<5.18 U	<5.26 U	<5 U
1,2-DIBROMOETHANE	ug/kg	5	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
1,2-DICHLOROBENZENE	ug/kg	60000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
1,2-DICHLOROETHANE	ug/kg	500	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
1,2-DICHLOROPROPANE	ug/kg	500	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
1,3,5-TRIMETHYLBENZENE	ug/kg	510000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
1,3-DICHLOROBENZENE	ug/kg	310000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
1,3-DICHLOROPROPANE	ug/kg	2900	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
1,4-DICHLOROBENZENE	ug/kg	7500	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
2,2-DICHLOROPROPANE	ug/kg	4200	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
2-BUTANONE	ug/kg	6100000	<6.18 U	<6.24 U	<5.74 U	<5.56 U	<6.4 U	<7.12 U	<6.5 U	<6.18 U	<6.46 U	<6.58 U	<6.24 U
2-CHLOROTOLUENE	ug/kg	200000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
2-HEXANONE	ug/kg	610000	<6.18 U	<6.24 U	<5.74 U	<5.56 U	<6.4 U	<7.12 U	<6.5 U	<6.18 U	<6.46 U	<6.58 U	<6.24 U
4-CHLOROTOLUENE	ug/kg	200000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
4-METHYL-2-PENTANONE	ug/kg	820000	<6.18 U	<6.24 U	<5.74 U	<5.56 U	<6.4 U	<7.12 U	<6.5 U	<6.18 U	<6.46 U	<6.58 U	<6.24 U
ACETONE	ug/kg	920000	20.8 J	<12.5 U	<11.5 U	<11.1 U	15.3 J	16 J	<13 U	<12.4 U	<12.9 U	<13.1 U	6.26 J
BENZENE	ug/kg	500	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
BROMOBENZENE	ug/kg	200000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
BROMOCHLOROMETHANE	ug/kg	410000	<2.46 U	<2.5 U	<2.3 U	<2.22 U	<2.56 U	<2.86 U	<2.6 U	<2.48 U	<2.58 U	<2.62 U	<2.5 U
BROMODICHLOROMETHANE	ug/kg	460	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
BROMOFORM	ug/kg	3600	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
BROMOMETHANE	ug/kg	14000	<2.46 U	<2.5 U	<2.3 U	<2.22 U	<2.56 U	<2.86 U	<2.6 U	<2.48 U	<2.58 U	<2.62 U	<2.5 U
CARBON DISULFIDE	ug/kg	1000000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
CARBON TETRACHLORIDE	ug/kg	500	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
CHLOROBENZENE	ug/kg	10000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
CHLOROETHANE	ug/kg	4100000	<2.46 U	<2.5 U	<2.3 U	<2.22 U	<2.56 U	<2.86 U	<2.6 U	<2.48 U	<2.58 U	<2.62 U	<2.5 U
CHLOROFORM	ug/kg	100000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
CHLOROMETHANE	ug/kg	22000	<4.94 U	<4.98 U	<4.6 U	<4.44 U	<5.12 U	<5.7 U	<5.2 U	<4.94 U	<5.18 U	<5.26 U	<5 U
CIS-1,2-DICHLOROETHENE	ug/kg	7000	<1.23 U	1.36 J	2.8 J	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
CIS-1,3-DICHLOROPROPENE	ug/kg	530	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
DIBROMOCHLOROMETHANE	ug/kg	3400	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
DIBROMOMETHANE	ug/kg	38000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
DICHLORODIFLUOROMETHANE	ug/kg	2000000	<2.46 U	<2.5 U	<2.3 U	<2.22 U	<2.56 U	<2.86 U	<2.6 U	<2.48 U	<2.58 U	<2.62 U	<2.5 U

Table 3-1: LHAAP-18/24 DPT Soil Analytical Results - February/March 2016

Sample ID: / Sample Date:	Units	MSC	18DPT07 (5-5.5) 020316 3/2/2016	18DPT07 (15-15.5) 020316 3/2/2016	18DPT07 (27-27.5) 030316 3/3/2016	18DPT07 (33.5-34.5) 030316 3/3/2016	18DPT07 (38-39) 030316 3/3/2016	18DPT07 (38-39) 030316FD 3/3/2016	18DPT08 (5-5.5) 030316 3/3/2016	18DPT08 (10-10.5) 030316 3/3/2016	18DPT08 (15-15.5) 030316 3/3/2016	18DPT08 (21-21.5) 030316 3/3/2016	18DPT08 (26-26.5) 030316 3/3/2016
ETHYLBENZENE	ug/kg	70000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
HEXACHLOROBUTADIENE	ug/kg	2000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
ISOPROPYLBENZENE	ug/kg	1000000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
M,P-XYLENE	ug/kg	1000000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
METHYLENE CHLORIDE	ug/kg	500	<2.46 U	<2.5 U	<2.3 U	<2.22 U	<2.56 U	<2.86 U	<2.6 U	<2.48 U	<2.58 U	<2.62 U	<2.5 U
NAPHTHALENE	ug/kg	200000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
N-BUTYLBENZENE	ug/kg	410000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
N-PROPYLBENZENE	ug/kg	410000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
O-XYLENE	ug/kg	1000000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
P-ISOPROPYLTOLUENE	ug/kg	1000000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
SEC-BUTYLBENZENE	ug/kg	410000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
STYRENE	ug/kg	10000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
TERT-BUTYLBENZENE	ug/kg	410000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
TETRACHLOROETHENE	ug/kg	500	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
TOLUENE	ug/kg	100000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
TRANS-1,2-DICHLOROETHENE	ug/kg	10000	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
TRANS-1,3-DICHLOROPROPENE	ug/kg	2900	<1.23 U	<1.25 U	<1.15 U	<1.11 U	<1.28 U	<1.43 U	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
TRICHLOROETHENE	ug/kg	500	<1.23 U	2.73 J	3 J	5.03 J	20.9	17.4	<1.3 U	<1.24 U	<1.29 U	<1.31 U	<1.25 U
TRICHLOROFLUOROMETHANE	ug/kg	3100000	<2.46 U	<2.5 U	<2.3 U	<2.22 U	<2.56 U	<2.86 U	<2.6 U	<2.48 U	<2.58 U	<2.62 U	<2.5 U
VINYL CHLORIDE	ug/kg	200	<2.46 U	<2.5 U	<2.3 U	<2.22 U	<2.56 U	<2.86 U	<2.6 U	<2.48 U	<2.58 U	<2.62 U	<2.5 U

Blue Highlighting Indicates concentrations above the MSC

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MSC - Medium-Specific Concentrations

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

ug/kg - micrograms per kilogram

Table 3-1: LHAAP-18/24 DPT Soil Analytical Results - February/March 2016

Sample ID: / Sample Date:	Units	MSC	18DPT08 (35-35.5) 030316 3/3/2016	18DPT09 (5-5.5) 040316 3/4/2016	18DPT09 (11-11.5) 040316 3/4/2016	18DPT09 (13.5-14) 040316 3/4/2016	18DPT10 (5-5.5) 040316 3/4/2016	18DPT10 (15.5-16) 040316 3/4/2016	18DPT10 (23.5-24) 040316 3/4/2016	18DPT11 (5-5.5) 040316 3/4/2016	18DPT11 (15-15.5) 040316 3/4/2016	18DPT11 (20-20.5) 070316 3/7/2016	18DPT11 (25-25.5) 070316 3/7/2016
Sample Saturation:			**Saturated**	**Unsaturated**	**Unsaturated**	**Unsaturated**	**Unsaturated**	**Unsaturated**	**Unsaturated**	**Unsaturated**	**Unsaturated**	**Unsaturated**	**Unsaturated**
Formation:			**Wilcox Sand**	**Shallow Zone**	**Shallow Zone**	**Wilcox Clay**	**Shallow Zone**	**Wilcox Clay**	**Wilcox Sand**	**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Wilcox Clay**
Perchlorate (6850)													
PERCHLORATE	ug/kg	7200	4.62 J	<2.84 U	<2.26 U	<2.44 U	<2.6 U	175	15.9	<2.46 U	379	3940	424
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/kg	11000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
1,1,1-TRICHLOROETHANE	ug/kg	20000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
1,1,2,2-TETRACHLOROETHANE	ug/kg	1400	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
1,1,2-TRICHLOROETHANE	ug/kg	500	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
1,1-DICHLOROETHANE	ug/kg	1000000	<2.48 U	<3.14 U	<2.5 U	<2.72 U	<2.62 U	<2.3 U	<2.28 U	<2.54 U	<2.66 U	<2.5 U	<2.74 U
1,1-DICHLOROETHENE	ug/kg	700	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
1,1-DICHLOROPROPENE	ug/kg	290	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
1,2,3-TRICHLOROBENZENE	ug/kg	31000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
1,2,3-TRICHLOROPROPANE	ug/kg	4.1	<2.48 U	<3.14 U	<2.5 U	<2.72 U	<2.62 U	<2.3 U	<2.28 U	<2.54 U	<2.66 U	<2.5 U	<2.74 U
1,2,4-TRICHLOROBENZENE	ug/kg	7000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
1,2,4-TRIMETHYLBENZENE	ug/kg	510000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/kg	20	<4.96 U	<6.28 U	<5 U	<5.42 U	<5.24 U	<4.58 U	<4.58 U	<5.08 U	<5.34 U	<5 U	<5.5 U
1,2-DIBROMOETHANE	ug/kg	5	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
1,2-DICHLOROBENZENE	ug/kg	60000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
1,2-DICHLOROETHANE	ug/kg	500	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
1,2-DICHLOROPROPANE	ug/kg	500	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
1,3,5-TRIMETHYLBENZENE	ug/kg	510000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
1,3-DICHLOROBENZENE	ug/kg	310000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
1,3-DICHLOROPROPANE	ug/kg	2900	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
1,4-DICHLOROBENZENE	ug/kg	7500	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
2,2-DICHLOROPROPANE	ug/kg	4200	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
2-BUTANONE	ug/kg	6100000	<6.2 U	<7.86 U	<6.24 U	<6.78 U	<6.56 U	<5.74 U	<5.72 U	<6.36 U	<6.66 U	<6.26 U	<6.88 U
2-CHLOROTOLUENE	ug/kg	200000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
2-HEXANONE	ug/kg	610000	<6.2 U	<7.86 U	<6.24 U	<6.78 U	<6.56 U	<5.74 U	<5.72 U	<6.36 U	<6.66 U	<6.26 U	<6.88 U
4-CHLOROTOLUENE	ug/kg	200000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
4-METHYL-2-PENTANONE	ug/kg	820000	<6.2 U	<7.86 U	<6.24 U	<6.78 U	<6.56 U	<5.74 U	<5.72 U	<6.36 U	<6.66 U	<6.26 U	<6.88 U
ACETONE	ug/kg	920000	<12.4 U	<15.7 U	<12.5 U	<13.6 U	<13.1 U	<11.5 U	<11.4 U	<12.7 U	<13.3 U	<12.5 U	<13.7 U
BENZENE	ug/kg	500	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
BROMOBENZENE	ug/kg	200000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
BROMOCHLOROMETHANE	ug/kg	410000	<2.48 U	<3.14 U	<2.5 U	<2.72 U	<2.62 U	<2.3 U	<2.28 U	<2.54 U	<2.66 U	<2.5 U	<2.74 U
BROMODICHLOROMETHANE	ug/kg	460	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
BROMOFORM	ug/kg	3600	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
BROMOMETHANE	ug/kg	14000	<2.48 U	<3.14 U	<2.5 U	<2.72 U	<2.62 U	<2.3 U	<2.28 U	<2.54 U	<2.66 U	<2.5 U	<2.74 U
CARBON DISULFIDE	ug/kg	1000000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
CARBON TETRACHLORIDE	ug/kg	500	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
CHLOROBENZENE	ug/kg	10000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
CHLOROETHANE	ug/kg	4100000	<2.48 U	<3.14 U	<2.5 U	<2.72 U	<2.62 U	<2.3 U	<2.28 U	<2.54 U	<2.66 U	<2.5 U	<2.74 U
CHLOROFORM	ug/kg	100000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
CHLOROMETHANE	ug/kg	22000	<4.96 U	<6.28 U	<5 U	<5.42 U	<5.24 U	<4.58 U	<4.58 U	<5.08 U	<5.34 U	<5 U	<5.5 U
CIS-1,2-DICHLOROETHENE	ug/kg	7000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
CIS-1,3-DICHLOROPROPENE	ug/kg	530	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
DIBROMOCHLOROMETHANE	ug/kg	3400	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
DIBROMOMETHANE	ug/kg	38000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
DICHLORODIFLUOROMETHANE	ug/kg	2000000	<2.48 U	<3.14 U	<2.5 U	<2.72 U	<2.62 U	<2.3 U	<2.28 U	<2.54 U	<2.66 U	<2.5 U	<2.74 U

Table 3-1: LHAAP-18/24 DPT Soil Analytical Results - February/March 2016

Sample ID: / Sample Date:	Units	MSC	18DPT08 (35-35.5) 030316 3/3/2016	18DPT09 (5-5.5) 040316 3/4/2016	18DPT09 (11-11.5) 040316 3/4/2016	18DPT09 (13.5-14) 040316 3/4/2016	18DPT10 (5-5.5) 040316 3/4/2016	18DPT10 (15.5-16) 040316 3/4/2016	18DPT10 (23.5-24) 040316 3/4/2016	18DPT11 (5-5.5) 040316 3/4/2016	18DPT11 (15-15.5) 040316 3/4/2016	18DPT11 (20-20.5) 070316 3/7/2016	18DPT11 (25-25.5) 070316 3/7/2016
ETHYLBENZENE	ug/kg	70000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
HEXACHLOROBUTADIENE	ug/kg	2000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
ISOPROPYLBENZENE	ug/kg	1000000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
M,P-XYLENE	ug/kg	1000000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
METHYLENE CHLORIDE	ug/kg	500	<2.48 U	<3.14 U	<2.5 U	<2.72 U	<2.62 U	<2.3 U	<2.28 U	<2.54 U	<2.66 U	<2.5 U	<2.74 U
NAPHTHALENE	ug/kg	200000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
N-BUTYLBENZENE	ug/kg	410000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
N-PROPYLBENZENE	ug/kg	410000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
O-XYLENE	ug/kg	1000000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
P-ISOPROPYLTOLUENE	ug/kg	1000000	<1.24 U	1.47 J	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
SEC-BUTYLBENZENE	ug/kg	410000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
STYRENE	ug/kg	10000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
TERT-BUTYLBENZENE	ug/kg	410000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
TETRACHLOROETHENE	ug/kg	500	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
TOLUENE	ug/kg	100000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
TRANS-1,2-DICHLOROETHENE	ug/kg	10000	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
TRANS-1,3-DICHLOROPROPENE	ug/kg	2900	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
TRICHLOROETHENE	ug/kg	500	<1.24 U	<1.57 U	<1.25 U	<1.36 U	<1.31 U	<1.15 U	<1.14 U	<1.27 U	<1.33 U	<1.25 U	<1.37 U
TRICHLOROFLUOROMETHANE	ug/kg	3100000	<2.48 U	<3.14 U	<2.5 U	<2.72 U	<2.62 U	<2.3 U	<2.28 U	<2.54 U	<2.66 U	<2.5 U	<2.74 U
VINYL CHLORIDE	ug/kg	200	<2.48 U	<3.14 U	<2.5 U	<2.72 U	<2.62 U	<2.3 U	<2.28 U	<2.54 U	<2.66 U	<2.5 U	<2.74 U

Blue Highlighting Indicates concentrations above the MSC

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MSC - Medium-Specific Concentrations

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

ug/kg - micrograms per kilogram

Table 3-1: LHAAP-18/24 DPT Soil Analytical Results - February/March 2016

Sample ID: / Sample Date:	Units	MSC	18DPT11 (29-29.5) 070316 3/7/2016	18DPT12 (5-5.5) 070316 3/7/2016	18DPT12 (8.5-9) 070316 3/7/2016	18DPT12 (12-12.5) 070316 3/7/2016	18DPT12 (18-18.5) 070316 3/7/2016	18DPT13 (5-5.5) 070316 3/7/2016	18DPT13 (12-12.5) 070316 3/7/2016	18DPT13 (17-17.5) 070316 3/7/2016	18DPT14 (5-5.5) 140316 3/14/2016	18DPT14 (10-10.5) 140316 3/14/2016	18DPT14 (10-10.5) 140316FD 3/14/2016
Sample Saturation:			**Unsaturated**	**Unsaturated**	**Unsaturated**	**Unsaturated**	**Unsaturated**	**Unsaturated**	**Saturated**	**Unsaturated**	**Unsaturated**	**Unsaturated**	**Unsaturated**
Formation:			**Wilcox Clay**	**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Wilcox Clay**	**Shallow Zone**	**Shallow Zone**	**Wilcox Clay**	**Shallow Zone**	**Shallow Zone**	**Shallow Zone**
Perchlorate (6850)													
PERCHLORATE	ug/kg	7200	3370	5.53	1.99 J	7090	15900	<2.3 U	<2.44 U	<2.56 U	<2.38 U	<2.16 U	<2.2 U
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/kg	11000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
1,1,1-TRICHLOROETHANE	ug/kg	20000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
1,1,2,2-TETRACHLOROETHANE	ug/kg	1400	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
1,1,2-TRICHLOROETHANE	ug/kg	500	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
1,1-DICHLOROETHANE	ug/kg	1000000	<2.6 U	<2.38 U	<2.62 U	<2.7 U	<2.66 U	<2.5 U	<2.26 U	<2.82 U	<2.56 U	<2.32 U	<2.36 U
1,1-DICHLOROETHENE	ug/kg	700	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
1,1-DICHLOROPROPENE	ug/kg	290	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
1,2,3-TRICHLOROBENZENE	ug/kg	31000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
1,2,3-TRICHLOROPROPANE	ug/kg	4.1	<2.6 U	<2.38 U	<2.62 U	<2.7 U	<2.66 U	<2.5 U	<2.26 U	<2.82 U	<2.56 U	<2.32 U	<2.36 U
1,2,4-TRICHLOROBENZENE	ug/kg	7000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
1,2,4-TRIMETHYLBENZENE	ug/kg	510000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	0.941 J
1,2-DIBROMO-3-CHLOROPROPANE	ug/kg	20	<5.22 U	<4.74 U	<5.26 U	<5.4 U	<5.34 U	<5 U	<4.52 U	<5.62 U	<5.14 U	<4.66 U	<4.7 U
1,2-DIBROMOETHANE	ug/kg	5	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
1,2-DICHLOROBENZENE	ug/kg	60000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
1,2-DICHLOROETHANE	ug/kg	500	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
1,2-DICHLOROPROPANE	ug/kg	500	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
1,3,5-TRIMETHYLBENZENE	ug/kg	510000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
1,3-DICHLOROBENZENE	ug/kg	310000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
1,3-DICHLOROPROPANE	ug/kg	2900	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
1,4-DICHLOROBENZENE	ug/kg	7500	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
2,2-DICHLOROPROPANE	ug/kg	4200	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
2-BUTANONE	ug/kg	6100000	<6.52 U	<5.94 U	<6.56 U	<6.76 U	<6.66 U	<6.24 U	<5.64 U	<7.04 U	<6.42 U	<5.82 U	<5.88 U
2-CHLOROTOLUENE	ug/kg	200000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
2-HEXANONE	ug/kg	610000	<6.52 U	<5.94 U	<6.56 U	<6.76 U	<6.66 U	<6.24 U	<5.64 U	<7.04 U	<6.42 U	<5.82 U	<5.88 U
4-CHLOROTOLUENE	ug/kg	200000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
4-METHYL-2-PENTANONE	ug/kg	820000	<6.52 U	<5.94 U	<6.56 U	<6.76 U	<6.66 U	<6.24 U	<5.64 U	<7.04 U	<6.42 U	<5.82 U	<5.88 U
ACETONE	ug/kg	920000	<13 U	<11.9 U	<13.1 U	<13.5 U	<13.3 U	<12.5 U	<11.3 U	<14.1 U	<12.8 U	<11.6 U	9.15 J
BENZENE	ug/kg	500	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
BROMOBENZENE	ug/kg	200000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
BROMOCHLOROMETHANE	ug/kg	410000	<2.6 U	<2.38 U	<2.62 U	<2.7 U	<2.66 U	<2.5 U	<2.26 U	<2.82 U	<2.56 U	<2.32 U	<2.36 U
BROMODICHLOROMETHANE	ug/kg	460	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
BROMOFORM	ug/kg	3600	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
BROMOMETHANE	ug/kg	14000	<2.6 U	<2.38 U	<2.62 U	<2.7 U	<2.66 U	<2.5 U	<2.26 U	<2.82 U	<2.56 U	<2.32 U	<2.36 U
CARBON DISULFIDE	ug/kg	1000000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
CARBON TETRACHLORIDE	ug/kg	500	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
CHLOROBENZENE	ug/kg	10000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
CHLOROETHANE	ug/kg	4100000	<2.6 U	<2.38 U	<2.62 U	<2.7 U	<2.66 U	<2.5 U	<2.26 U	<2.82 U	<2.56 U	<2.32 U	<2.36 U
CHLOROFORM	ug/kg	100000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
CHLOROMETHANE	ug/kg	22000	<5.22 U	<4.74 U	<5.26 U	<5.4 U	<5.34 U	<5 U	<4.52 U	<5.62 U	<5.14 UJ	<4.66 UJ	<4.7 UJ
CIS-1,2-DICHLOROETHENE	ug/kg	7000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
CIS-1,3-DICHLOROPROPENE	ug/kg	530	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
DIBROMOCHLOROMETHANE	ug/kg	3400	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
DIBROMOMETHANE	ug/kg	38000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
DICHLORODIFLUOROMETHANE	ug/kg	2000000	<2.6 U	<2.38 U	<2.62 U	<2.7 U	<2.66 U	<2.5 U	<2.26 U	<2.82 U	<2.56 U	<2.32 U	<2.36 U

Table 3-1: LHAAP-18/24 DPT Soil Analytical Results - February/March 2016

Sample ID: / Sample Date:	Units	MSC	18DPT11 (29-29.5) 070316 3/7/2016	18DPT12 (5-5.5) 070316 3/7/2016	18DPT12 (8.5-9) 070316 3/7/2016	18DPT12 (12-12.5) 070316 3/7/2016	18DPT12 (18-18.5) 070316 3/7/2016	18DPT13 (5-5.5) 070316 3/7/2016	18DPT13 (12-12.5) 070316 3/7/2016	18DPT13 (17-17.5) 070316 3/7/2016	18DPT14 (5-5.5) 140316 3/14/2016	18DPT14 (10-10.5) 140316 3/14/2016	18DPT14 (10-10.5) 140316FD 3/14/2016
ETHYLBENZENE	ug/kg	70000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
HEXACHLOROBUTADIENE	ug/kg	2000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
ISOPROPYLBENZENE	ug/kg	1000000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
M,P-XYLENE	ug/kg	1000000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
METHYLENE CHLORIDE	ug/kg	500	<2.6 U	<2.38 U	<2.62 U	<2.7 U	<2.66 U	<2.5 U	<2.26 U	<2.82 U	<2.56 U	<2.32 U	<2.36 U
NAPHTHALENE	ug/kg	200000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
N-BUTYLBENZENE	ug/kg	410000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
N-PROPYLBENZENE	ug/kg	410000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
O-XYLENE	ug/kg	1000000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
P-ISOPROPYLTOLUENE	ug/kg	1000000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
SEC-BUTYLBENZENE	ug/kg	410000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
STYRENE	ug/kg	10000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
TERT-BUTYLBENZENE	ug/kg	410000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
TETRACHLOROETHENE	ug/kg	500	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
TOLUENE	ug/kg	100000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
TRANS-1,2-DICHLOROETHENE	ug/kg	10000	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
TRANS-1,3-DICHLOROPROPENE	ug/kg	2900	<1.3 U	<1.19 U	<1.31 U	<1.35 U	<1.33 U	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
TRICHLOROETHENE	ug/kg	500	<1.3 U	<1.19 U	<1.31 U	6.14 J	50	<1.25 U	<1.13 U	<1.41 U	<1.28 U	<1.16 U	<1.18 U
TRICHLOROFLUOROMETHANE	ug/kg	3100000	<2.6 U	<2.38 U	<2.62 U	<2.7 U	<2.66 U	<2.5 U	<2.26 U	<2.82 U	<2.56 U	<2.32 U	<2.36 U
VINYL CHLORIDE	ug/kg	200	<2.6 U	<2.38 U	<2.62 U	<2.7 U	<2.66 U	<2.5 U	<2.26 U	<2.82 U	<2.56 U	<2.32 U	<2.36 U

Blue Highlighting Indicates concentrations above the MSC

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MSC - Medium-Specific Concentrations

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

ug/kg - micrograms per kilogram

Table 3-1: LHAAP-18/24 DPT Soil Analytical Results - February/March 2016

Sample ID: Sample Date:	Units	MSC	18DPT14 (17-17.5) 140316 3/14/2016	18DPT14 (23-23.5) 140316 3/14/2016	18DPT15 (5-5.5) 140316 3/14/2016	18DPT15 (12-12.5) 140316 3/14/2016	18DPT15 (21-21.5) 140316 3/14/2016	18DPT15 (23.5-24) 140316 3/14/2016	18DPT15 (26.5-27) 140316 3/14/2016	18DPT16 (5-5.5) 150316 3/15/2016	18DPT16 (15-15.5) 150316 3/15/2016	18DPT16 (25-25.5) 150316 3/15/2016	18DPT16 (30-30.5) 150316 3/15/2016
Sample Saturation:			**Saturated**	**Unsaturated**	**Unsaturated**	**Saturated**	**Saturated**	**Saturated**	**Unsaturated**	**Unsaturated**	**Saturated**	**Saturated**	**Saturated**
Formation:			**Shallow Zone**	**Wilcox Clay**	**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Wilcox Clay**	**Wilcox Clay**	**Shallow Zone**	**Shallow Zone**	**Wilcox Clay**	**Wilcox Sand**
Perchlorate (6850)													
PERCHLORATE	ug/kg	7200	<2.1 U	<2.4 U	<2.34 U	44.1	3440	6010	6530	41.8	11.3	434	1230
Volatile Organic Compounds (8260B)													
1,1,1,2-TETRACHLOROETHANE	ug/kg	11000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
1,1,1-TRICHLOROETHANE	ug/kg	20000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
1,1,2,2-TETRACHLOROETHANE	ug/kg	1400	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
1,1,2-TRICHLOROETHANE	ug/kg	500	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
1,1-DICHLOROETHANE	ug/kg	1000000	<2.16 U	<2.54 U	<2.22 U	<2.48 U	<2.38 U	<2.36 U	<2.56 U	<2.54 U	<2.34 U	<2.64 U	<2.48 U
1,1-DICHLOROETHENE	ug/kg	700	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
1,1-DICHLOROPROPENE	ug/kg	290	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
1,2,3-TRICHLOROBENZENE	ug/kg	31000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
1,2,3-TRICHLOROPROPANE	ug/kg	4.1	<2.16 U	<2.54 U	<2.22 U	<2.48 U	<2.38 U	<2.36 U	<2.56 U	<2.54 U	<2.34 U	<2.64 U	<2.48 U
1,2,4-TRICHLOROBENZENE	ug/kg	7000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
1,2,4-TRIMETHYLBENZENE	ug/kg	510000	<1.08 U	0.752 J	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/kg	20	<4.32 U	<5.08 U	<4.46 U	<4.98 U	<4.76 U	<4.7 U	<5.12 U	<5.08 U	<4.68 U	<5.26 U	<4.96 U
1,2-DIBROMOETHANE	ug/kg	5	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
1,2-DICHLOROBENZENE	ug/kg	60000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
1,2-DICHLOROETHANE	ug/kg	500	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	3.58 J	1.11 J	<1.27 U	<1.17 U	<1.32 U	<1.24 U
1,2-DICHLOROPROPANE	ug/kg	500	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
1,3,5-TRIMETHYLBENZENE	ug/kg	510000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
1,3-DICHLOROBENZENE	ug/kg	310000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
1,3-DICHLOROPROPANE	ug/kg	2900	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
1,4-DICHLOROBENZENE	ug/kg	7500	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
2,2-DICHLOROPROPANE	ug/kg	4200	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
2-BUTANONE	ug/kg	6100000	<5.38 U	<6.34 U	<5.58 U	<6.22 U	<5.94 U	<5.88 U	<6.38 U	<6.36 U	<5.84 U	<6.58 U	<6.2 U
2-CHLOROTOLUENE	ug/kg	200000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
2-HEXANONE	ug/kg	610000	<5.38 U	<6.34 U	<5.58 U	<6.22 U	<5.94 U	<5.88 U	<6.38 U	<6.36 U	<5.84 U	<6.58 U	<6.2 U
4-CHLOROTOLUENE	ug/kg	200000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
4-METHYL-2-PENTANONE	ug/kg	820000	<5.38 U	<6.34 U	<5.58 U	<6.22 U	<5.94 U	<5.88 U	<6.38 U	<6.36 U	<5.84 U	<6.58 U	<6.2 U
ACETONE	ug/kg	920000	5.95 J	12.9 J	<11.1 U	<12.4 U	<11.9 U	<11.8 U	<12.8 U	<12.7 U	6.34 J	<13.2 U	<12.4 U
BENZENE	ug/kg	500	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
BROMOBENZENE	ug/kg	200000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
BROMOCHLOROMETHANE	ug/kg	410000	<2.16 U	<2.54 U	<2.22 U	<2.48 U	<2.38 U	<2.36 U	<2.56 U	<2.54 U	<2.34 U	<2.64 U	<2.48 U
BROMODICHLOROMETHANE	ug/kg	460	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
BROMOFORM	ug/kg	3600	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
BROMOMETHANE	ug/kg	14000	<2.16 U	<2.54 U	<2.22 U	<2.48 U	<2.38 U	<2.36 U	<2.56 U	<2.54 U	<2.34 U	<2.64 U	<2.48 U
CARBON DISULFIDE	ug/kg	1000000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
CARBON TETRACHLORIDE	ug/kg	500	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
CHLOROBENZENE	ug/kg	10000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
CHLOROETHANE	ug/kg	4100000	<2.16 U	<2.54 U	<2.22 U	<2.48 U	<2.38 U	<2.36 U	<2.56 U	<2.54 U	<2.34 U	<2.64 U	<2.48 U
CHLOROFORM	ug/kg	100000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	0.714 J	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
CHLOROMETHANE	ug/kg	22000	<4.32 UJ	<5.08 U	<4.46 UJ	<4.98 UJ	<4.76 UJ	<4.7 UJ	<5.12 UJ	<5.08 UJ	<4.68 UJ	<5.26 UJ	<4.96 UJ
CIS-1,2-DICHLOROETHENE	ug/kg	7000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
CIS-1,3-DICHLOROPROPENE	ug/kg	530	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
DIBROMOCHLOROMETHANE	ug/kg	3400	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
DIBROMOMETHANE	ug/kg	38000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
DICHLORODIFLUOROMETHANE	ug/kg	2000000	<2.16 U	<2.54 U	<2.22 U	<2.48 U	<2.38 U	<2.36 U	<2.56 U	<2.54 U	<2.34 U	<2.64 U	<2.48 U

Table 3-1: LHAAP-18/24 DPT Soil Analytical Results - February/March 2016

Sample ID: / Sample Date:	Units	MSC	18DPT14 (17-17.5) 140316 3/14/2016	18DPT14 (23-23.5) 140316 3/14/2016	18DPT15 (5-5.5) 140316 3/14/2016	18DPT15 (12-12.5) 140316 3/14/2016	18DPT15 (21-21.5) 140316 3/14/2016	18DPT15 (23.5-24) 140316 3/14/2016	18DPT15 (26.5-27) 140316 3/14/2016	18DPT16 (5-5.5) 150316 3/15/2016	18DPT16 (15-15.5) 150316 3/15/2016	18DPT16 (25-25.5) 150316 3/15/2016	18DPT16 (30-30.5) 150316 3/15/2016
ETHYLBENZENE	ug/kg	70000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
HEXACHLOROBUTADIENE	ug/kg	2000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
ISOPROPYLBENZENE	ug/kg	1000000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
M,P-XYLENE	ug/kg	1000000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
METHYLENE CHLORIDE	ug/kg	500	<2.16 U	<2.54 U	<2.22 U	<2.48 U	<2.38 U	<2.36 U	<2.56 U	<2.54 U	<2.34 U	<2.64 U	<2.48 U
NAPHTHALENE	ug/kg	200000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
N-BUTYLBENZENE	ug/kg	410000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
N-PROPYLBENZENE	ug/kg	410000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
O-XYLENE	ug/kg	1000000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
P-ISOPROPYLTOLUENE	ug/kg	1000000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
SEC-BUTYLBENZENE	ug/kg	410000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
STYRENE	ug/kg	10000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
TERT-BUTYLBENZENE	ug/kg	410000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
TETRACHLOROETHENE	ug/kg	500	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
TOLUENE	ug/kg	100000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
TRANS-1,2-DICHLOROETHENE	ug/kg	10000	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
TRANS-1,3-DICHLOROPROPENE	ug/kg	2900	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	<1.18 U	<1.28 U	<1.27 U	<1.17 U	<1.32 U	<1.24 U
TRICHLOROETHENE	ug/kg	500	<1.08 U	<1.27 U	<1.11 U	<1.24 U	<1.19 U	58.8	18.9	<1.27 U	<1.17 U	<1.32 U	2.94 J
TRICHLOROFLUOROMETHANE	ug/kg	3100000	<2.16 U	<2.54 U	<2.22 U	<2.48 U	<2.38 U	<2.36 U	<2.56 U	<2.54 U	<2.34 U	<2.64 U	<2.48 U
VINYL CHLORIDE	ug/kg	200	<2.16 U	<2.54 U	<2.22 U	<2.48 U	<2.38 U	<2.36 U	<2.56 U	<2.54 U	<2.34 U	<2.64 U	<2.48 U

Blue Highlighting Indicates concentrations above the MSC

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MSC - Medium-Specific Concentrations

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

ug/kg - micrograms per kilogram

Table 3-1: LHAAP-18/24 DPT Soil Analytical Results - February/March 2016

Sample ID: Sample Date:	Units	MSC	18DPT16 (33-33.5) 150316 3/15/2016	18DPT17 (2.5-3) 150316 3/15/2016	18DPT17 (2.5-3) 150316FD 3/15/2016	18DPT17 (5-5.5) 150316 3/15/2016	18DPT17 (10-10.5) 150316 3/15/2016	18DPT17 (18-18.5) 150316 3/15/2016	18DPT17 (21.5-22) 150316 3/15/2016	18DPT17 (27-27.5) 150316 3/15/2016
Sample Saturation:			**Saturated**	**Unsaturated**	**Unsaturated**	**Unsaturated**	**Unsaturated**	**Unsaturated**	**Saturated**	**Saturated**
Formation:			**Wilcox Sand**	**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Wilcox Clay**	**Wilcox Sand**	**Wilcox Sand**
Perchlorate (6850)										
PERCHLORATE	ug/kg	7200	3090	<2.36 U	<2.32 U	<2.54 U	<2.48 U	172	1500	2170
Volatile Organic Compounds (8260B)										
1,1,1,2-TETRACHLOROETHANE	ug/kg	11000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
1,1,1-TRICHLOROETHANE	ug/kg	20000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
1,1,2,2-TETRACHLOROETHANE	ug/kg	1400	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
1,1,2-TRICHLOROETHANE	ug/kg	500	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
1,1-DICHLOROETHANE	ug/kg	1000000	<2.68 U	<2.2 U	<2.34 U	<2.62 U	<2.48 U	<2.38 U	<2.3 U	<2.48 U
1,1-DICHLOROETHENE	ug/kg	700	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
1,1-DICHLOROPROPENE	ug/kg	290	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
1,2,3-TRICHLOROBENZENE	ug/kg	31000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
1,2,3-TRICHLOROPROPANE	ug/kg	4.1	<2.68 U	<2.2 U	<2.34 U	<2.62 U	<2.48 U	<2.38 U	<2.3 U	<2.48 U
1,2,4-TRICHLOROBENZENE	ug/kg	7000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
1,2,4-TRIMETHYLBENZENE	ug/kg	510000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/kg	20	<5.38 U	<4.4 U	<4.66 U	<5.26 U	<4.94 U	<4.78 U	<4.58 U	<4.98 U
1,2-DIBROMOETHANE	ug/kg	5	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
1,2-DICHLOROBENZENE	ug/kg	60000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
1,2-DICHLOROETHANE	ug/kg	500	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
1,2-DICHLOROPROPANE	ug/kg	500	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
1,3,5-TRIMETHYLBENZENE	ug/kg	510000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
1,3-DICHLOROBENZENE	ug/kg	310000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
1,3-DICHLOROPROPANE	ug/kg	2900	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
1,4-DICHLOROBENZENE	ug/kg	7500	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
2,2-DICHLOROPROPANE	ug/kg	4200	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
2-BUTANONE	ug/kg	6100000	<6.72 U	<5.5 U	<5.82 U	<6.56 U	<6.18 U	<5.96 U	<5.72 U	<6.22 U
2-CHLOROTOLUENE	ug/kg	200000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
2-HEXANONE	ug/kg	610000	<6.72 U	<5.5 U	<5.82 U	<6.56 U	<6.18 U	<5.96 U	<5.72 U	<6.22 U
4-CHLOROTOLUENE	ug/kg	200000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
4-METHYL-2-PENTANONE	ug/kg	820000	<6.72 U	<5.5 U	<5.82 U	<6.56 U	<6.18 U	<5.96 U	<5.72 U	<6.22 U
ACETONE	ug/kg	920000	<13.4 U	<11 U	<11.7 U	<13.1 U	11.8 J	11.4 J	<11.5 U	6.75 J
BENZENE	ug/kg	500	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
BROMOBENZENE	ug/kg	200000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
BROMOCHLOROMETHANE	ug/kg	410000	<2.68 U	<2.2 U	<2.34 U	<2.62 U	<2.48 U	<2.38 U	<2.3 U	<2.48 U
BROMODICHLOROMETHANE	ug/kg	460	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
BROMOFORM	ug/kg	3600	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
BROMOMETHANE	ug/kg	14000	<2.68 U	<2.2 U	<2.34 U	<2.62 U	<2.48 U	<2.38 U	<2.3 U	<2.48 U
CARBON DISULFIDE	ug/kg	1000000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
CARBON TETRACHLORIDE	ug/kg	500	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
CHLOROBENZENE	ug/kg	10000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
CHLOROETHANE	ug/kg	4100000	<2.68 U	<2.2 U	<2.34 U	<2.62 U	<2.48 U	<2.38 U	<2.3 U	<2.48 U
CHLOROFORM	ug/kg	100000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
CHLOROMETHANE	ug/kg	22000	<5.38 UJ	<4.4 UJ	<4.66 UJ	<5.26 UJ	<4.94 UJ	<4.78 UJ	<4.58 UJ	<4.98 UJ
CIS-1,2-DICHLOROETHENE	ug/kg	7000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
CIS-1,3-DICHLOROPROPENE	ug/kg	530	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
DIBROMOCHLOROMETHANE	ug/kg	3400	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
DIBROMOMETHANE	ug/kg	38000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
DICHLORODIFLUOROMETHANE	ug/kg	2000000	<2.68 U	<2.2 U	<2.34 U	<2.62 U	<2.48 U	<2.38 U	<2.3 U	<2.48 U

Table 3-1: LHAAP-18/24 DPT Soil Analytical Results - February/March 2016

Sample ID: / Sample Date:	Units	MSC	18DPT16 (33-33.5) 150316 3/15/2016	18DPT17 (2.5-3) 150316 3/15/2016	18DPT17 (2.5-3) 150316FD 3/15/2016	18DPT17 (5-5.5) 150316 3/15/2016	18DPT17 (10-10.5) 150316 3/15/2016	18DPT17 (18-18.5) 150316 3/15/2016	18DPT17 (21.5-22) 150316 3/15/2016	18DPT17 (27-27.5) 150316 3/15/2016
ETHYLBENZENE	ug/kg	70000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
HEXACHLOROBUTADIENE	ug/kg	2000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
ISOPROPYLBENZENE	ug/kg	1000000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
M,P-XYLENE	ug/kg	1000000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
METHYLENE CHLORIDE	ug/kg	500	<2.68 U	<2.2 U	<2.34 U	<2.62 U	<2.48 U	<2.38 U	<2.3 U	<2.48 U
NAPHTHALENE	ug/kg	200000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
N-BUTYLBENZENE	ug/kg	410000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
N-PROPYLBENZENE	ug/kg	410000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
O-XYLENE	ug/kg	1000000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
P-ISOPROPYLTOLUENE	ug/kg	1000000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
SEC-BUTYLBENZENE	ug/kg	410000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
STYRENE	ug/kg	10000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
TERT-BUTYLBENZENE	ug/kg	410000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
TETRACHLOROETHENE	ug/kg	500	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
TOLUENE	ug/kg	100000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
TRANS-1,2-DICHLOROETHENE	ug/kg	10000	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
TRANS-1,3-DICHLOROPROPENE	ug/kg	2900	<1.34 U	<1.1 U	<1.17 U	<1.31 U	<1.24 U	<1.19 U	<1.15 U	<1.24 U
TRICHLOROETHENE	ug/kg	500	5.26 J	<1.1 U	<1.17 U	<1.31 U	<1.24 U	0.855 J	0.995 J	8.36
TRICHLOROFLUOROMETHANE	ug/kg	3100000	<2.68 U	<2.2 U	<2.34 U	<2.62 U	<2.48 U	<2.38 U	<2.3 U	<2.48 U
VINYL CHLORIDE	ug/kg	200	<2.68 U	<2.2 U	<2.34 U	<2.62 U	<2.48 U	<2.38 U	<2.3 U	<2.48 U

Blue Highlighting Indicates concentrations above the MSC

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MSC - Medium-Specific Concentrations

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analysis was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample. 'UJ' not detects are not definite; the analyte may be present.

ug/kg - micrograms per kilogram

Table 3-2: LHAAP-18/24 Soil Analytical Results from MW Boreholes - April 2016

Sample ID: Sample Date:	Units	MSC	18CPTMW19SW (5-5.5) 210416 4/21/2016	18CPTMW19SW (10-10.5) 210416 4/21/2016	18CPTMW19SW (20-20.5) 220416 4/21/2016	18CPTMW19SW (30-30.5) 220416 4/22/2016	18CPTMW19SW (30-30.5) 220416DUP 4/22/2016	18CPTMW19SW (40-40.5) 220416 4/22/2016	18CPTMW19SW (50-50.5) 220416 4/22/2016	18CPTMW19SW (60-61) 220416 4/22/2016	18CPTMW22DW (5-5.5) 260416 4/26/2016	18CPTMW22DW (10-10.5) 260416 4/26/2016
Sample Saturation:			**Unsaturated**	**Unsaturated**	**Unsaturated**	**Saturated**	**Saturated**	**Saturated**	**Saturated**	**Saturated**	**Unsaturated**	**Unsaturated**
Formation:			**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Wilcox Clay**	**Wilcox Clay**	**Wilcox Clay**	**Wilcox Formation**	**Wilcox Formation**	**Shallow Zone**	**Shallow Zone**
Perchlorate (6850)												
PERCHLORATE	ug/kg	7200	<2.32 U	<2.44 U	8.74	<2.42 U	<2.46 U	124	170	<2.54 U	<2.34 U	<2.38 U
Volatile Organic Compounds (8260B)												
1,1,1,2-TETRACHLOROETHANE	ug/kg	11000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
1,1,1-TRICHLOROETHANE	ug/kg	20000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
1,1,2,2-TETRACHLOROETHANE	ug/kg	1400	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
1,1,2-TRICHLOROETHANE	ug/kg	500	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
1,1-DICHLOROETHANE	ug/kg	1000000	<2.44 U	<2.34 U	<2.72 U	<2.54 U	<2.56 U	<2.32 U	<2.54 U	<2.6 U	<2.44 U	<2.48 U
1,1-DICHLOROETHENE	ug/kg	700	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
1,1-DICHLOROPROPENE	ug/kg	290	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
1,2,3-TRICHLOROBENZENE	ug/kg	31000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
1,2,3-TRICHLOROPROPANE	ug/kg	4.1	<2.44 U	<2.34 U	<2.72 U	<2.54 U	<2.56 U	<2.32 U	<2.54 U	<2.6 U	<2.44 U	<2.48 U
1,2,4-TRICHLOROBENZENE	ug/kg	7000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
1,2,4-TRIMETHYLBENZENE	ug/kg	510000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/kg	20	<4.86 U	<4.68 U	<5.46 U	<5.08 U	<5.12 U	<4.62 U	<5.08 U	<5.2 U	<4.9 U	<4.98 U
1,2-DIBROMOETHANE	ug/kg	5	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
1,2-DICHLOROBENZENE	ug/kg	60000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
1,2-DICHLOROETHANE	ug/kg	500	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
1,2-DICHLOROPROPANE	ug/kg	500	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
1,3,5-TRIMETHYLBENZENE	ug/kg	510000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
1,3-DICHLOROBENZENE	ug/kg	310000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
1,3-DICHLOROPROPANE	ug/kg	2900	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
1,4-DICHLOROBENZENE	ug/kg	7500	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
2,2-DICHLOROPROPANE	ug/kg	4200	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
2-BUTANONE	ug/kg	6100000	<6.08 U	4.2 J	<6.82 U	<6.34 U	<6.4 U	<5.78 U	<6.34 U	<6.5 U	<6.12 U	<6.22 U
2-CHLOROTOLUENE	ug/kg	200000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
2-HEXANONE	ug/kg	610000	<6.08 U	<5.84 U	<6.82 U	<6.34 U	<6.4 U	<5.78 U	<6.34 U	<6.5 U	<6.12 U	<6.22 U
4-CHLOROTOLUENE	ug/kg	200000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
4-METHYL-2-PENTANONE	ug/kg	820000	<6.08 U	<5.84 U	<6.82 U	<6.34 U	<6.4 U	<5.78 U	<6.34 U	<6.5 U	<6.12 U	<6.22 U
ACETONE	ug/kg	920000	<12.2 U	24.3	<13.6 U	<12.7 U	<12.8 U	<11.6 U	8.75 J	8.63 J	<12.2 U	<12.4 U
BENZENE	ug/kg	500	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
BROMOBENZENE	ug/kg	200000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
BROMOCHLOROMETHANE	ug/kg	410000	<2.44 U	<2.34 U	<2.72 U	<2.54 U	<2.56 U	<2.32 U	<2.54 U	<2.6 U	<2.44 U	<2.48 U
BROMODICHLOROMETHANE	ug/kg	460	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
BROMOFORM	ug/kg	3600	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
BROMOMETHANE	ug/kg	14000	<2.44 U	<2.34 U	<2.72 U	<2.54 U	<2.56 U	<2.32 U	<2.54 U	<2.6 U	<2.44 U	<2.48 U
CARBON DISULFIDE	ug/kg	1000000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
CARBON TETRACHLORIDE	ug/kg	500	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
CHLOROBENZENE	ug/kg	10000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
CHLOROETHANE	ug/kg	4100000	<2.44 U	<2.34 U	<2.72 U	<2.54 U	<2.56 U	<2.32 U	<2.54 U	<2.6 U	<2.44 U	<2.48 U
CHLOROFORM	ug/kg	100000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
CHLOROMETHANE	ug/kg	22000	<4.86 U	<4.68 U	<5.46 U	<5.08 U	<5.12 U	<4.62 U	<5.08 U	<5.2 U	<4.9 U	<4.98 U
CIS-1,2-DICHLOROETHENE	ug/kg	7000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
CIS-1,3-DICHLOROPROPENE	ug/kg	530	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
DIBROMOCHLOROMETHANE	ug/kg	3400	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
DIBROMOMETHANE	ug/kg	38000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
DICHLORODIFLUOROMETHANE	ug/kg	2000000	<2.44 U	<2.34 U	<2.72 U	<2.54 U	<2.56 U	<2.32 U	<2.54 U	<2.6 U	<2.44 U	<2.48 U
ETHYLBENZENE	ug/kg	70000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
HEXACHLOROBUTADIENE	ug/kg	2000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U

Table 3-2: LHAAP-18/24 Soil Analytical Results from MW Boreholes - April 2016

Sample ID: / Sample Date:	Units	MSC	18CPTMW19SW (5-5.5) 210416 4/21/2016	18CPTMW19SW (10-10.5) 210416 4/21/2016	18CPTMW19SW (20-20.5) 220416 4/21/2016	18CPTMW19SW (30-30.5) 220416 4/22/2016	18CPTMW19SW (30-30.5) 220416DUP 4/22/2016	18CPTMW19SW (40-40.5) 220416 4/22/2016	18CPTMW19SW (50-50.5) 220416 4/22/2016	18CPTMW19SW (60-61) 220416 4/22/2016	18CPTMW22DW (5-5.5) 260416 4/26/2016	18CPTMW22DW (10-10.5) 260416 4/26/2016
ISOPROPYLBENZENE	ug/kg	1000000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
M,P-XYLENE	ug/kg	1000000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
METHYLENE CHLORIDE	ug/kg	500	<2.44 U	<2.34 U	<2.72 U	<2.54 U	<2.56 U	<2.32 U	<2.54 U	<2.6 U	<2.44 U	<2.48 U
NAPHTHALENE	ug/kg	200000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
N-BUTYLBENZENE	ug/kg	410000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
N-PROPYLBENZENE	ug/kg	410000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
O-XYLENE	ug/kg	1000000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
P-ISOPROPYLTOLUENE	ug/kg	1000000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
SEC-BUTYLBENZENE	ug/kg	410000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
STYRENE	ug/kg	10000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
TERT-BUTYLBENZENE	ug/kg	410000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
TETRACHLOROETHENE	ug/kg	500	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
TOLUENE	ug/kg	100000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
TRANS-1,2-DICHLOROETHENE	ug/kg	10000	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
TRANS-1,3-DICHLOROPROPENE	ug/kg	2900	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
TRICHLOROETHENE	ug/kg	500	<1.22 U	<1.17 U	<1.36 U	<1.27 U	<1.28 U	<1.16 U	<1.27 U	<1.3 U	<1.22 U	<1.24 U
TRICHLOROFLUOROMETHANE	ug/kg	3100000	<2.44 U	<2.34 U	<2.72 U	<2.54 U	<2.56 U	<2.32 U	<2.54 U	<2.6 U	<2.44 U	<2.48 U
VINYL CHLORIDE	ug/kg	200	<2.44 U	<2.34 U	<2.72 U	<2.54 U	<2.56 U	<2.32 U	<2.54 U	<2.6 U	<2.44 U	<2.48 U

Blue Highlighting Indicates concentrations above the MSC

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MSC - Medium-Specific Concentrations

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/kg - micrograms per kilogram

Table 3-2: LHAAP-18/24 Soil Analytical Results from MW Boreholes - April 2016

Sample ID: / Sample Date:	Units	MSC	18CPTMW22DW (20-20.5) 260416 4/26/2016	18CPTMW22DW (29.5-30) 260416 4/26/2016	18CPTMW22DW (40-40.5) 260416 4/26/2016	18CPTMW22DW (50-51) 260416 4/26/2016	18CPTMW22DW (60-60.5) 260416 4/26/2016	18CPTMW22DW (60-60.5) 260416DUP 4/26/2016	18CPTMW22DW (70-70.5) 260416 4/26/2016	18CPTMW22DW (80-80.5) 260416 4/26/2016	18CPTMW22DW (89.5-90) 260416 4/26/2016	18CPTMW22R (5-5.5) 230416 4/23/2016
Sample Saturation:			**Saturated**	**Saturated**	**Saturated**	**Saturated**	**Saturated**	**Saturated**	**Saturated**	**Saturated**	**Saturated**	**Unsaturated**
Formation:			**Wilcox Clay**	**Wilcox Formation**	**Wilcox Formation**	**Wilcox Formation**	**Wilcox Formation**	**Wilcox Formation**	**Wilcox Formation**	**Wilcox Formation**	**Deep Wilcox**	**Shallow Zone**
Perchlorate (6850)												
PERCHLORATE	ug/kg	7200	5400	9440	4040	3.36 J	<2.26 U	<2.24 U	<2.36 U	<2.38 U	<2.44 U	<2.28 U
Volatile Organic Compounds (8260B)												
1,1,1,2-TETRACHLOROETHANE	ug/kg	11000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
1,1,1-TRICHLOROETHANE	ug/kg	20000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
1,1,2,2-TETRACHLOROETHANE	ug/kg	1400	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
1,1,2-TRICHLOROETHANE	ug/kg	500	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
1,1-DICHLOROETHANE	ug/kg	1000000	<2.7 U	<2.7 U	<2.4 U	<2.34 U	<2.42 U	<2.46 U	<2.42 U	<2.52 U	<2.54 U	<2.44 U
1,1-DICHLOROETHENE	ug/kg	700	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
1,1-DICHLOROPROPENE	ug/kg	290	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
1,2,3-TRICHLOROBENZENE	ug/kg	31000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
1,2,3-TRICHLOROPROPANE	ug/kg	4.1	<2.7 U	<2.7 U	<2.4 U	<2.34 U	<2.42 U	<2.46 U	<2.42 U	<2.52 U	<2.54 U	<2.44 U
1,2,4-TRICHLOROBENZENE	ug/kg	7000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
1,2,4-TRIMETHYLBENZENE	ug/kg	510000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/kg	20	<5.4 U	<5.38 U	<4.8 U	<4.66 U	<4.84 U	<4.94 U	<4.86 U	<5.04 U	<5.08 U	<4.86 U
1,2-DIBROMOETHANE	ug/kg	5	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
1,2-DICHLOROBENZENE	ug/kg	60000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
1,2-DICHLOROETHANE	ug/kg	500	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
1,2-DICHLOROPROPANE	ug/kg	500	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
1,3,5-TRIMETHYLBENZENE	ug/kg	510000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
1,3-DICHLOROBENZENE	ug/kg	310000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
1,3-DICHLOROPROPANE	ug/kg	2900	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
1,4-DICHLOROBENZENE	ug/kg	7500	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
2,2-DICHLOROPROPANE	ug/kg	4200	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
2-BUTANONE	ug/kg	6100000	<6.74 U	<6.74 U	<6 U	<5.82 U	<6.06 U	<6.18 U	<6.08 U	<6.3 U	<6.34 U	<6.08 U
2-CHLOROTOLUENE	ug/kg	200000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
2-HEXANONE	ug/kg	610000	<6.74 U	<6.74 U	<6 U	<5.82 U	<6.06 U	<6.18 U	<6.08 U	<6.3 U	<6.34 U	<6.08 U
4-CHLOROTOLUENE	ug/kg	200000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
4-METHYL-2-PENTANONE	ug/kg	820000	<6.74 U	<6.74 U	<6 U	<5.82 U	<6.06 U	<6.18 U	<6.08 U	<6.3 U	<6.34 U	<6.08 U
ACETONE	ug/kg	920000	<13.5 U	<13.5 U	<12 U	6.11 J	18.4 J	20.8 J	7.02 J	9.31 J	9.42 J	<12.2 U
BENZENE	ug/kg	500	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
BROMOBENZENE	ug/kg	200000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
BROMOCHLOROMETHANE	ug/kg	410000	<2.7 U	<2.7 U	<2.4 U	<2.34 U	<2.42 U	<2.46 U	<2.42 U	<2.52 U	<2.54 U	<2.44 U
BROMODICHLOROMETHANE	ug/kg	460	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
BROMOFORM	ug/kg	3600	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
BROMOMETHANE	ug/kg	14000	<2.7 U	<2.7 U	<2.4 U	<2.34 U	<2.42 U	<2.46 U	<2.42 U	<2.52 U	<2.54 U	<2.44 U
CARBON DISULFIDE	ug/kg	1000000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	0.638 J	<1.21 U	0.825 J	1.47 J	<1.22 U
CARBON TETRACHLORIDE	ug/kg	500	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
CHLOROBENZENE	ug/kg	10000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
CHLOROETHANE	ug/kg	4100000	<2.7 U	<2.7 U	<2.4 U	<2.34 U	<2.42 U	<2.46 U	<2.42 U	<2.52 U	<2.54 U	<2.44 U
CHLOROFORM	ug/kg	100000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
CHLOROMETHANE	ug/kg	22000	<5.4 U	<5.38 U	<4.8 U	<4.66 U	<4.84 U	<4.94 U	<4.86 U	<5.04 U	<5.08 U	<4.86 U
CIS-1,2-DICHLOROETHENE	ug/kg	7000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
CIS-1,3-DICHLOROPROPENE	ug/kg	530	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
DIBROMOCHLOROMETHANE	ug/kg	3400	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
DIBROMOMETHANE	ug/kg	38000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
DICHLORODIFLUOROMETHANE	ug/kg	2000000	<2.7 U	<2.7 U	<2.4 U	<2.34 U	<2.42 U	<2.46 U	<2.42 U	<2.52 U	<2.54 U	<2.44 U
ETHYLBENZENE	ug/kg	70000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
HEXACHLOROBUTADIENE	ug/kg	2000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U

Table 3-2: LHAAP-18/24 Soil Analytical Results from MW Boreholes - April 2016

Sample ID: / Sample Date:	Units	MSC	18CPTMW22DW (20-20.5) 260416 4/26/2016	18CPTMW22DW (29.5-30) 260416 4/26/2016	18CPTMW22DW (40-40.5) 260416 4/26/2016	18CPTMW22DW (50-51) 260416 4/26/2016	18CPTMW22DW (60-60.5) 260416 4/26/2016	18CPTMW22DW (60-60.5) 260416DUP 4/26/2016	18CPTMW22DW (70-70.5) 260416 4/26/2016	18CPTMW22DW (80-80.5) 260416 4/26/2016	18CPTMW22DW (89.5-90) 260416 4/26/2016	18CPTMW22R (5-5.5) 230416 4/23/2016
ISOPROPYLBENZENE	ug/kg	1000000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
M,P-XYLENE	ug/kg	1000000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
METHYLENE CHLORIDE	ug/kg	500	<2.7 U	<2.7 U	<2.4 U	<2.34 U	<2.42 U	<2.46 U	<2.42 U	<2.52 U	<2.54 U	<2.44 U
NAPHTHALENE	ug/kg	200000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
N-BUTYLBENZENE	ug/kg	410000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
N-PROPYLBENZENE	ug/kg	410000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
O-XYLENE	ug/kg	1000000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
P-ISOPROPYLTOLUENE	ug/kg	1000000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
SEC-BUTYLBENZENE	ug/kg	410000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
STYRENE	ug/kg	10000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
TERT-BUTYLBENZENE	ug/kg	410000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
TETRACHLOROETHENE	ug/kg	500	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
TOLUENE	ug/kg	100000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
TRANS-1,2-DICHLOROETHENE	ug/kg	10000	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
TRANS-1,3-DICHLOROPROPENE	ug/kg	2900	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
TRICHLOROETHENE	ug/kg	500	<1.35 U	<1.35 U	<1.2 U	<1.17 U	<1.21 U	<1.23 U	<1.21 U	<1.26 U	<1.27 U	<1.22 U
TRICHLOROFLUOROMETHANE	ug/kg	3100000	<2.7 U	<2.7 U	<2.4 U	<2.34 U	<2.42 U	<2.46 U	<2.42 U	<2.52 U	<2.54 U	<2.44 U
VINYL CHLORIDE	ug/kg	200	<2.7 U	<2.7 U	<2.4 U	<2.34 U	<2.42 U	<2.46 U	<2.42 U	<2.52 U	<2.54 U	<2.44 U

Blue Highlighting Indicates concentrations above the MSC

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MSC - Medium-Specific Concentrations

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/kg - micrograms per kilogram

Table 3-2: LHAAP-18/24 Soil Analytical Results from MW Boreholes - April 2016

Sample ID: / Sample Date:	Units	MSC	18CPTMW22R (10-10.5) 230416 4/23/2016	18CPTMW22R (15-15.5) 230416 4/23/2016	18CPTMW23SW (5-5.5) 4/27/2016	18CPTMW23SW (10-10.5) 4/27/2016	18CPTMW23SW (20-20.5) 4/27/2016	18CPTMW23SW (30-30.5) 4/27/2016	18CPTMW23SW (40-40.5) 4/27/2016	18CPTMW23SW (50-50.5) 4/27/2016	18CPTMW23SW (60-60.5) 4/27/2016	18CPTMW26 (5-5.5) 230416 4/23/2016
Sample Saturation:			**Unsaturated**	**Unsaturated**	**Unsaturated**	**Saturated**	**Saturated**	**Saturated**	**Saturated**	**Saturated**	**Saturated**	**Unsaturated**
Formation:			**Shallow Zone**	**Wilcox Clay**	**Upper Wilcox**	**Shallow Zone**	**Upper Wilcox**	**Upper Wilcox**	**Upper Wilcox**	**Upper Wilcox**	**Upper Wilcox**	**Shallow Zone**
Perchlorate (6850)												
PERCHLORATE	ug/kg	7200	<2.44 U	<2.48 U	19.6	1920	29.3	<2.42 U	<2.28 U	<2.44 U	<2.34 U	<2.3 U
Volatile Organic Compounds (8260B)												
1,1,1,2-TETRACHLOROETHANE	ug/kg	11000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
1,1,1-TRICHLOROETHANE	ug/kg	20000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
1,1,2,2-TETRACHLOROETHANE	ug/kg	1400	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
1,1,2-TRICHLOROETHANE	ug/kg	500	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
1,1-DICHLOROETHANE	ug/kg	1000000	<2.62 U	<2.66 U	<2.94 U	<2.48 U	<2.36 U	<2.58 U	<2.42 U	<2.48 U	<2.44 U	<2.62 U
1,1-DICHLOROETHENE	ug/kg	700	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
1,1-DICHLOROPROPENE	ug/kg	290	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
1,2,3-TRICHLOROBENZENE	ug/kg	31000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
1,2,3-TRICHLOROPROPANE	ug/kg	4.1	<2.62 U	<2.66 U	<2.94 U	<2.48 U	<2.36 U	<2.58 U	<2.42 U	<2.48 U	<2.44 U	<2.62 U
1,2,4-TRICHLOROBENZENE	ug/kg	7000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
1,2,4-TRIMETHYLBENZENE	ug/kg	510000	<1.31 U	<1.33 U	2.29 J	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/kg	20	<5.24 U	<5.3 U	<5.86 U	<4.96 U	<4.74 U	<5.18 U	<4.82 U	<4.96 U	<4.86 U	<5.24 U
1,2-DIBROMOETHANE	ug/kg	5	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
1,2-DICHLOROBENZENE	ug/kg	60000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
1,2-DICHLOROETHANE	ug/kg	500	<1.31 U	<1.33 U	4.13 J	26.3	1.64 J	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
1,2-DICHLOROPROPANE	ug/kg	500	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
1,3,5-TRIMETHYLBENZENE	ug/kg	510000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
1,3-DICHLOROBENZENE	ug/kg	310000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
1,3-DICHLOROPROPANE	ug/kg	2900	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
1,4-DICHLOROBENZENE	ug/kg	7500	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
2,2-DICHLOROPROPANE	ug/kg	4200	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
2-BUTANONE	ug/kg	6100000	<6.56 U	<6.64 U	<7.34 U	<6.2 U	<5.92 U	<6.48 U	<6.02 U	<6.2 U	<6.08 U	<6.56 U
2-CHLOROTOLUENE	ug/kg	200000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
2-HEXANONE	ug/kg	610000	<6.56 U	<6.64 U	<7.34 U	<6.2 U	<5.92 U	<6.48 U	<6.02 U	<6.2 U	<6.08 U	<6.56 U
4-CHLOROTOLUENE	ug/kg	200000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
4-METHYL-2-PENTANONE	ug/kg	820000	<6.56 U	<6.64 U	<7.34 UJ	<6.2 UJ	<5.92 UJ	<6.48 UJ	<6.02 UJ	<6.2 UJ	<6.08 UJ	<6.56 U
ACETONE	ug/kg	920000	<13.1 U	<13.3 U	<14.7 U	<12.4 U	13.1 J	18.9 J	15.4 J	8.65 J	9.75 J	<13.1 U
BENZENE	ug/kg	500	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
BROMOBENZENE	ug/kg	200000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
BROMOCHLOROMETHANE	ug/kg	410000	<2.62 U	<2.66 U	<2.94 U	<2.48 U	<2.36 U	<2.58 U	<2.42 U	<2.48 U	<2.44 U	<2.62 U
BROMODICHLOROMETHANE	ug/kg	460	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
BROMOFORM	ug/kg	3600	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
BROMOMETHANE	ug/kg	14000	<2.62 U	<2.66 U	<2.94 U	<2.48 U	<2.36 U	<2.58 U	<2.42 U	<2.48 U	<2.44 U	<2.62 U
CARBON DISULFIDE	ug/kg	1000000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	2.62 J	<1.21 U	<1.24 U	<1.22 U	<1.31 U
CARBON TETRACHLORIDE	ug/kg	500	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
CHLOROBENZENE	ug/kg	10000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
CHLOROETHANE	ug/kg	4100000	<2.62 U	<2.66 U	<2.94 U	<2.48 U	<2.36 U	<2.58 U	<2.42 U	<2.48 U	<2.44 U	<2.62 U
CHLOROFORM	ug/kg	100000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
CHLOROMETHANE	ug/kg	22000	<5.24 U	<5.3 U	<5.86 U	<4.96 U	<4.74 U	<5.18 U	<4.82 U	<4.96 U	<4.86 U	<5.24 U
CIS-1,2-DICHLOROETHENE	ug/kg	7000	<1.31 U	<1.33 U	9.99	10.9	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
CIS-1,3-DICHLOROPROPENE	ug/kg	530	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
DIBROMOCHLOROMETHANE	ug/kg	3400	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
DIBROMOMETHANE	ug/kg	38000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
DICHLORODIFLUOROMETHANE	ug/kg	2000000	<2.62 U	<2.66 U	<2.94 U	<2.48 U	<2.36 U	<2.58 U	<2.42 U	<2.48 U	<2.44 U	<2.62 U
ETHYLBENZENE	ug/kg	70000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
HEXACHLOROBUTADIENE	ug/kg	2000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U

Table 3-2: LHAAP-18/24 Soil Analytical Results from MW Boreholes - April 2016

Sample ID: Sample Date:	Units	MSC	18CPTMW22R (10-10.5) 230416 4/23/2016	18CPTMW22R (15-15.5) 230416 4/23/2016	18CPTMW23SW (5-5.5) 4/27/2016	18CPTMW23SW (10-10.5) 4/27/2016	18CPTMW23SW (20-20.5) 4/27/2016	18CPTMW23SW (30-30.5) 4/27/2016	18CPTMW23SW (40-40.5) 4/27/2016	18CPTMW23SW (50-50.5) 4/27/2016	18CPTMW23SW (60-60.5) 4/27/2016	18CPTMW26 (5-5.5) 230416 4/23/2016
ISOPROPYLBENZENE	ug/kg	1000000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
M,P-XYLENE	ug/kg	1000000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
METHYLENE CHLORIDE	ug/kg	500	<2.62 U	<2.66 U	<2.94 U	<2.48 U	<2.36 U	<2.58 U	<2.42 U	<2.48 U	<2.44 U	<2.62 U
NAPHTHALENE	ug/kg	200000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
N-BUTYLBENZENE	ug/kg	410000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
N-PROPYLBENZENE	ug/kg	410000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
O-XYLENE	ug/kg	1000000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
P-ISOPROPYLTOLUENE	ug/kg	1000000	<1.31 U	<1.33 U	4.51 J	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
SEC-BUTYLBENZENE	ug/kg	410000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
STYRENE	ug/kg	10000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
TERT-BUTYLBENZENE	ug/kg	410000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
TETRACHLOROETHENE	ug/kg	500	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
TOLUENE	ug/kg	100000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
TRANS-1,2-DICHLOROETHENE	ug/kg	10000	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
TRANS-1,3-DICHLOROPROPENE	ug/kg	2900	<1.31 U	<1.33 U	<1.47 U	<1.24 U	<1.18 U	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
TRICHLOROETHENE	ug/kg	500	<1.31 U	<1.33 U	47.6	187	11.7	<1.29 U	<1.21 U	<1.24 U	<1.22 U	<1.31 U
TRICHLOROFLUOROMETHANE	ug/kg	3100000	<2.62 U	<2.66 U	<2.94 U	<2.48 U	<2.36 U	<2.58 U	<2.42 U	<2.48 U	<2.44 U	<2.62 U
VINYL CHLORIDE	ug/kg	200	<2.62 U	<2.66 U	<2.94 U	<2.48 U	<2.36 U	<2.58 U	<2.42 U	<2.48 U	<2.44 U	<2.62 U

Blue Highlighting Indicates concentrations above the MSC

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MSC - Medium-Specific Concentrations

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/kg - micrograms per kilogram

Table 3-2: LHAAP-18/24 Soil Analytical Results from MW Boreholes - April 2016

Sample ID: / Sample Date:	Units	MSC	18CPTMW26 (5-5.5) 230416DUP 4/23/2016	18CPTMW26 (10-10.5) 230416 4/23/2016	18CPTMW26 (14.5-15) 230416 4/23/2016	18CPTMW26SW (5-5.5) 250416 4/25/2016	18CPTMW26SW (10-10.5) 250416 4/25/2016	18CPTMW26SW (15-15.5) 250416 4/25/2016	18CPTMW26SW (20-20.5) 250416 4/25/2016	18CPTMW26SW (30-30.5) 250416 4/25/2016	18CPTMW26SW (40-40.5) 250416 4/25/2016	18CPTMW26SW (49.5-50) 250416 4/25/2016
Sample Saturation:			**Unsaturated**	**Unsaturated**	**Unsaturated**	**Unsaturated**	**Unsaturated**	**Saturated**	**Saturated**	**Saturated**	**Saturated**	**Saturated**
Formation:			**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Upper Wilcox**	**Upper Wilcox**	**Upper Wilcox**	**Upper Wilcox**	**Upper Wilcox**
Perchlorate (6850)												
PERCHLORATE	ug/kg	7200	<2.3 U	<2.32 U	<2.46 U	<2.32 U	<2.5 U	1.58 J	4.6 J	<2.52 U	<2.68 U	<2.48 U
Volatile Organic Compounds (8260B)												
1,1,1,2-TETRACHLOROETHANE	ug/kg	11000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
1,1,1-TRICHLOROETHANE	ug/kg	20000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
1,1,2,2-TETRACHLOROETHANE	ug/kg	1400	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
1,1,2-TRICHLOROETHANE	ug/kg	500	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
1,1-DICHLOROETHANE	ug/kg	1000000	<2.5 U	<2.56 U	<2.42 U	<2.4 U	<2.78 U	<2.38 U	<2.58 U	<2.44 U	<2.96 U	<2.66 U
1,1-DICHLOROETHENE	ug/kg	700	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
1,1-DICHLOROPROPENE	ug/kg	290	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
1,2,3-TRICHLOROBENZENE	ug/kg	31000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
1,2,3-TRICHLOROPROPANE	ug/kg	4.1	<2.5 U	<2.56 U	<2.42 U	<2.4 U	<2.78 U	<2.38 U	<2.58 U	<2.44 U	<2.96 U	<2.66 U
1,2,4-TRICHLOROBENZENE	ug/kg	7000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
1,2,4-TRIMETHYLBENZENE	ug/kg	510000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/kg	20	<4.98 U	<5.1 U	<4.84 U	<4.8 U	<5.54 U	<4.76 U	<5.18 U	<4.88 U	<5.94 U	<5.32 U
1,2-DIBROMOETHANE	ug/kg	5	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
1,2-DICHLOROBENZENE	ug/kg	60000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
1,2-DICHLOROETHANE	ug/kg	500	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
1,2-DICHLOROPROPANE	ug/kg	500	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
1,3,5-TRIMETHYLBENZENE	ug/kg	510000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
1,3-DICHLOROBENZENE	ug/kg	310000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
1,3-DICHLOROPROPANE	ug/kg	2900	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
1,4-DICHLOROBENZENE	ug/kg	7500	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
2,2-DICHLOROPROPANE	ug/kg	4200	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
2-BUTANONE	ug/kg	6100000	<6.24 U	<6.38 U	<6.04 U	<6 U	<6.92 U	<5.94 U	<6.46 U	<6.12 U	<7.42 U	<6.64 U
2-CHLOROTOLUENE	ug/kg	200000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
2-HEXANONE	ug/kg	610000	<6.24 U	<6.38 U	<6.04 U	<6 U	<6.92 U	<5.94 U	<6.46 U	<6.12 U	<7.42 U	<6.64 U
4-CHLOROTOLUENE	ug/kg	200000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
4-METHYL-2-PENTANONE	ug/kg	820000	<6.24 U	<6.38 U	<6.04 U	<6 U	<6.92 U	<5.94 U	<6.46 U	<6.12 U	<7.42 U	<6.64 U
ACETONE	ug/kg	920000	<12.5 U	<12.8 U	<12.1 U	<12 U	<13.9 U	<11.9 U	<12.9 U	<12.2 U	<14.8 U	<13.3 U
BENZENE	ug/kg	500	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
BROMOBENZENE	ug/kg	200000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
BROMOCHLOROMETHANE	ug/kg	410000	<2.5 U	<2.56 U	<2.42 U	<2.4 U	<2.78 U	<2.38 U	<2.58 U	<2.44 U	<2.96 U	<2.66 U
BROMODICHLOROMETHANE	ug/kg	460	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
BROMOFORM	ug/kg	3600	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
BROMOMETHANE	ug/kg	14000	<2.5 U	<2.56 U	<2.42 U	<2.4 U	<2.78 U	<2.38 U	<2.58 U	<2.44 U	<2.96 U	<2.66 U
CARBON DISULFIDE	ug/kg	1000000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
CARBON TETRACHLORIDE	ug/kg	500	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
CHLOROBENZENE	ug/kg	10000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
CHLOROETHANE	ug/kg	4100000	<2.5 U	<2.56 U	<2.42 U	<2.4 U	<2.78 U	<2.38 U	<2.58 U	<2.44 U	<2.96 U	<2.66 U
CHLOROFORM	ug/kg	100000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
CHLOROMETHANE	ug/kg	22000	<4.98 U	<5.1 U	<4.84 U	<4.8 U	<5.54 U	<4.76 U	<5.18 U	<4.88 U	<5.94 U	<5.32 U
CIS-1,2-DICHLOROETHENE	ug/kg	7000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
CIS-1,3-DICHLOROPROPENE	ug/kg	530	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
DIBROMOCHLOROMETHANE	ug/kg	3400	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
DIBROMOMETHANE	ug/kg	38000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
DICHLORODIFLUOROMETHANE	ug/kg	2000000	<2.5 U	<2.56 U	<2.42 U	<2.4 U	<2.78 U	<2.38 U	<2.58 U	<2.44 U	<2.96 U	<2.66 U
ETHYLBENZENE	ug/kg	70000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
HEXACHLOROBUTADIENE	ug/kg	2000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U

Table 3-2: LHAAP-18/24 Soil Analytical Results from MW Boreholes - April 2016

Sample ID: Sample Date:	Units	MSC	18CPTMW26 (5-5.5) 230416DUP 4/23/2016	18CPTMW26 (10-10.5) 230416 4/23/2016	18CPTMW26 (14.5-15) 230416 4/23/2016	18CPTMW26SW (5-5.5) 250416 4/25/2016	18CPTMW26SW (10-10.5) 250416 4/25/2016	18CPTMW26SW (15-15.5) 250416 4/25/2016	18CPTMW26SW (20-20.5) 250416 4/25/2016	18CPTMW26SW (30-30.5) 250416 4/25/2016	18CPTMW26SW (40-40.5) 250416 4/25/2016	18CPTMW26SW (49.5-50) 250416 4/25/2016
ISOPROPYLBENZENE	ug/kg	1000000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
M,P-XYLENE	ug/kg	1000000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
METHYLENE CHLORIDE	ug/kg	500	<2.5 U	<2.56 U	<2.42 U	<2.4 U	<2.78 U	<2.38 U	<2.58 U	<2.44 U	<2.96 U	<2.66 U
NAPHTHALENE	ug/kg	200000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
N-BUTYLBENZENE	ug/kg	410000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
N-PROPYLBENZENE	ug/kg	410000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
O-XYLENE	ug/kg	1000000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
P-ISOPROPYLTOLUENE	ug/kg	1000000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
SEC-BUTYLBENZENE	ug/kg	410000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
STYRENE	ug/kg	10000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
TERT-BUTYLBENZENE	ug/kg	410000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
TETRACHLOROETHENE	ug/kg	500	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
TOLUENE	ug/kg	100000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
TRANS-1,2-DICHLOROETHENE	ug/kg	10000	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
TRANS-1,3-DICHLOROPROPENE	ug/kg	2900	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
TRICHLOROETHENE	ug/kg	500	<1.25 U	<1.28 U	<1.21 U	<1.2 U	<1.39 U	<1.19 U	<1.29 U	<1.22 U	<1.48 U	<1.33 U
TRICHLOROFLUOROMETHANE	ug/kg	3100000	<2.5 U	<2.56 U	<2.42 U	<2.4 U	<2.78 U	<2.38 U	<2.58 U	<2.44 U	<2.96 U	<2.66 U
VINYL CHLORIDE	ug/kg	200	<2.5 U	<2.56 U	<2.42 U	<2.4 U	<2.78 U	<2.38 U	<2.58 U	<2.44 U	<2.96 U	<2.66 U

Blue Highlighting Indicates concentrations above the MSC

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MSC - Medium-Specific Concentrations

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/kg - micrograms per kilogram

Table 3-2: LHAAP-18/24 Soil Analytical Results from MW Boreholes - April 2016

Sample ID: Sample Date:	Units	MSC	18WW25 (3.5-4) 270616 6/27/2016	18WW25 (9.5-10) 270616 6/27/2016	18WW25 (14.5-15) 270616 6/27/2016	18WW25 (19.5-20) 270616 6/27/2016	18WW25 (22-22.5) 270616 6/27/2016	18WW25 (22-22.5) 270616 DUP 6/27/2016
Sample Saturation:			**Saturated**	**Saturated**	**Saturated**	**Saturated**	**Saturated**	**Saturated**
Formation:			**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Shallow Zone**	**Shallow Zone**
Perchlorate (6850)								
PERCHLORATE	ug/kg	7200	<2.28 U	<2.52 U	<2.4 U	<2.46 U	<2.38 U	<2.36 U
Volatile Organic Compounds (8260B)								
1,1,1,2-TETRACHLOROETHANE	ug/kg	11000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
1,1,1-TRICHLOROETHANE	ug/kg	20000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
1,1,2,2-TETRACHLOROETHANE	ug/kg	1400	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
1,1,2-TRICHLOROETHANE	ug/kg	500	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
1,1-DICHLOROETHANE	ug/kg	1000000	<2.32 U	<2.52 U	<2.5 U	<2.44 U	<2.4 UJ	<2.3 U
1,1-DICHLOROETHENE	ug/kg	700	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
1,1-DICHLOROPROPENE	ug/kg	290	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
1,2,3-TRICHLOROBENZENE	ug/kg	31000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
1,2,3-TRICHLOROPROPANE	ug/kg	4.1	<2.32 U	<2.52 U	<2.5 U	<2.44 U	<2.4 UJ	<2.3 U
1,2,4-TRICHLOROBENZENE	ug/kg	7000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
1,2,4-TRIMETHYLBENZENE	ug/kg	510000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/kg	20	<4.64 U	<5.06 U	<4.98 U	<4.9 U	<4.8 UJ	<4.62 U
1,2-DIBROMOETHANE	ug/kg	5	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
1,2-DICHLOROBENZENE	ug/kg	60000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
1,2-DICHLOROETHANE	ug/kg	500	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
1,2-DICHLOROPROPANE	ug/kg	500	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
1,3,5-TRIMETHYLBENZENE	ug/kg	510000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
1,3-DICHLOROBENZENE	ug/kg	310000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
1,3-DICHLOROPROPANE	ug/kg	2900	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
1,4-DICHLOROBENZENE	ug/kg	7500	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
2,2-DICHLOROPROPANE	ug/kg	4200	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
2-BUTANONE	ug/kg	6100000	<5.8 U	<6.32 U	<6.24 U	<6.12 U	<6 UJ	<5.76 U
2-CHLOROTOLUENE	ug/kg	200000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
2-HEXANONE	ug/kg	610000	<5.8 U	<6.32 U	<6.24 U	<6.12 U	<6 UJ	<5.76 U
4-CHLOROTOLUENE	ug/kg	200000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
4-METHYL-2-PENTANONE	ug/kg	820000	<5.8 U	<6.32 U	<6.24 U	<6.12 U	<6 UJ	<5.76 U
ACETONE	ug/kg	920000	<11.6 U	<12.6 U	11.5 J	15.7 J	18.8 J	15.9 J
BENZENE	ug/kg	500	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
BROMOBENZENE	ug/kg	200000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
BROMOCHLOROMETHANE	ug/kg	410000	<2.32 U	<2.52 U	<2.5 U	<2.44 U	<2.4 UJ	<2.3 U
BROMODICHLOROMETHANE	ug/kg	460	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
BROMOFORM	ug/kg	3600	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
BROMOMETHANE	ug/kg	14000	<2.32 U	<2.52 U	<2.5 U	<2.44 U	<2.4 UJ	<2.3 U
CARBON DISULFIDE	ug/kg	1000000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
CARBON TETRACHLORIDE	ug/kg	500	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
CHLOROBENZENE	ug/kg	10000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
CHLOROETHANE	ug/kg	4100000	<2.32 U	<2.52 U	<2.5 U	<2.44 U	<2.4 UJ	<2.3 U
CHLOROFORM	ug/kg	100000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
CHLOROMETHANE	ug/kg	22000	<4.64 U	<5.06 U	<4.98 U	<4.9 U	<4.8 UJ	<4.62 U
CIS-1,2-DICHLOROETHENE	ug/kg	7000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
CIS-1,3-DICHLOROPROPENE	ug/kg	530	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
DIBROMOCHLOROMETHANE	ug/kg	3400	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
DIBROMOMETHANE	ug/kg	38000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
DICHLORODIFLUOROMETHANE	ug/kg	2000000	<2.32 U	<2.52 U	<2.5 U	<2.44 U	<2.4 UJ	<2.3 U
ETHYLBENZENE	ug/kg	70000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
HEXACHLOROBUTADIENE	ug/kg	2000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U

Table 3-2: LHAAP-18/24 Soil Analytical Results from MW Boreholes - April 2016

Sample ID: Sample Date:	Units	MSC	18WW25 (3.5-4) 270616 6/27/2016	18WW25 (9.5-10) 270616 6/27/2016	18WW25 (14.5-15) 270616 6/27/2016	18WW25 (19.5-20) 270616 6/27/2016	18WW25 (22-22.5) 270616 6/27/2016	18WW25 (22-22.5) 270616 DUP 6/27/2016
ISOPROPYLBENZENE	ug/kg	1000000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
M,P-XYLENE	ug/kg	1000000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
METHYLENE CHLORIDE	ug/kg	500	<2.32 U	<2.52 U	<2.5 U	<2.44 U	<2.4 UJ	<2.3 U
NAPHTHALENE	ug/kg	200000	0.612 J	<1.24 U	<1.17 U	<1.31 U	<1.23 U	<1.17 U
N-BUTYLBENZENE	ug/kg	410000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
N-PROPYLBENZENE	ug/kg	410000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
O-XYLENE	ug/kg	1000000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
P-ISOPROPYLTOLUENE	ug/kg	1000000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
SEC-BUTYLBENZENE	ug/kg	410000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
STYRENE	ug/kg	10000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
TERT-BUTYLBENZENE	ug/kg	410000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
TETRACHLOROETHENE	ug/kg	500	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
TOLUENE	ug/kg	100000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
TRANS-1,2-DICHLOROETHENE	ug/kg	10000	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
TRANS-1,3-DICHLOROPROPENE	ug/kg	2900	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
TRICHLOROETHENE	ug/kg	500	<1.16 U	<1.26 U	<1.25 U	<1.22 U	<1.2 UJ	<1.15 U
TRICHLOROFLUOROMETHANE	ug/kg	3100000	<2.32 U	<2.52 U	<2.5 U	<2.44 U	<2.4 UJ	<2.3 U
VINYL CHLORIDE	ug/kg	200	<2.32 U	<2.52 U	<2.5 U	<2.44 U	<2.4 UJ	<2.3 U

Blue Highlighting Indicates concentrations above the MSC

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MSC - Medium-Specific Concentrations

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/kg - micrograms per kilogram

Table 3-3: LHAAP-18/24 Monitoring Well Specifications

Monitoring Well	Formation Designation	Well Diameter (Inches)	Ground Surface Elevation (ft amsl)	Top of Casing Elevation (feet amsl)	Delta TOC and Ground Surface	Borehole Depth	Casing Depth	Screened Interval	Surface Casing
						(In Feet from Ground Surface)			
18CPTMW19SW	Upper Wilcox	4	190.83	193.29	2.46	65.0	65.0	55.0-64.6	None
18CPTMW22R	Shallow Zone	4	185	187.23	2.23	16.0	14.4	4.4-14.0	None
18CPTMW22DW	Lower Wilcox	4	185.2	188	2.8	90.0	83.0	72.7-82.3	29.5
18CPTMW23SW	Upper Wilcox	4	174.77	177.43	2.66	65.7	65.7	55.3-65.0	30.0
18CPTMW26	Shallow Zone	4	180.06	182.8	2.74	15.0	14.7	4.7-14.3	None
18CPTMW26SW	Upper Wilcox	4	179.62	182	2.38	50.1	50.1	40.1-49.7	15.0
18WW25	Shallow Zone	4	172.34	175.15	2.81	24.2	24.2	14.2-23.8	None

amsl - above mean sea level

NS - not surveyed

TOC - top of casing

Table 3-4: LHAAP-18/24 Groundwater Elevation Data - June 2016

PIEZOMETER LEVELS

Piezometers	Date	Reference Elevation (feet amsl)	Depth to Water (feet)	Groundwater Elevation (feet amsl)
BGPZ-1	06/09/2016	184.99	7.09	177.90
BGPZ-2	06/09/2016	184.39	12.61	171.78
BGPZ-3	06/09/2016	180.35	9.05	171.30
BGPZ-4	06/09/2016	177.77	6.63	171.14
BGPZ-5	06/09/2016	180.76	9.11	171.65
BGPZ-6	06/09/2016	197.82	25.71	172.11
BGPZ-7	06/09/2016	195.96	27.49	168.47
BGPZ-8	06/09/2016	197.08	30.80	166.28
BGPZ-9	06/09/2016	196.45	28.20	168.25
BGPZ-10	06/09/2016	197.00	27.59	169.41
BGPZ-11	06/09/2016	196.99	27.17	169.82
BGPZ-12	06/09/2016	188.17	NA	Plugged

MONITORING WELL LEVELS

Monitoring Wells	Date	Reference Elevation (feet amsl)	Depth to Water (feet)	Groundwater Elevation (feet amsl)
AWD-1	06/09/2016	182.27	9.64	172.63
AWD-2	06/09/2016	186.78	13.05	173.73
AWD-3	06/09/2016	200.13	27.71	172.42
AWD-4	06/09/2016	193.89	21.55	172.34
MW-1	06/09/2016	199.22	27.15	172.07
MW-2	06/09/2016	196.73	27.44	169.29
MW-3	06/09/2016	196.54	26.15	170.39
MW-4	06/09/2016	197.27	25.55	171.72
MW-5	06/09/2016	194.97	24.25	170.72
MW-6	06/09/2016	192.18	21.61	170.57
MW-7	06/09/2016	188.47	18.63	169.84
MW-8	06/09/2016	187.13	15.56	171.57
MW-9	06/09/2016	184.73	13.57	171.16
MW-10	06/09/2016	178.12	7.77	170.35
MW-11	06/09/2016	184.65	13.19	171.46
MW-12	06/09/2016	178.33	8.58	169.75
MW-13	06/09/2016	176.72	6.77	169.95
MW-14	06/09/2016	186.19	12.53	173.66
MW-16	06/09/2016	178.59	7.91	170.68
MW-17	06/09/2016	179.03	8.81	170.22
MW-18	06/09/2016	178.58	8.59	169.99
MW-19	06/09/2016	178.60	8.45	170.15
MW-20	06/09/2016	186.64	10.59	176.05
MW-21	06/09/2016	198.70	32.53	166.17
MW-22	06/09/2016	197.51	27.69	169.82
MW-23	06/09/2016	198.79	27.44	171.35
101	06/09/2016	197.53	7.09	190.44

Table 3-4: LHAAP-18/24 Groundwater Elevation Data - June 2016

Monitoring Wells	Date	Reference Elevation (feet amsl)	Depth to Water (feet)	Groundwater Elevation (feet amsl)
102	06/09/2016	193.94	21.13	172.81
109	06/09/2016	197.02	28.50	168.52
120	06/09/2016	184.19	12.31	171.88
123	06/09/2016	186.21	12.60	173.61
125	06/09/2016	196.28	24.08	172.20
126	06/09/2016	199.37	28.85	170.52
129	06/09/2016	197.24	25.95	171.29
130	06/09/2016	177.73	6.30	171.43
C-01	06/09/2016	193.89	23.68	170.21
C-02	06/09/2016	175.95	5.89	170.06
C-03	06/09/2016	196.34	26.22	170.12
C-04	06/09/2016	194.64	24.12	170.52
C-04A	06/09/2016	194.61	23.97	170.64
C-05	06/09/2016	180.74	10.65	170.09
C-06	06/09/2016	192.22	23.06	169.16
C-07	06/09/2016	196.80	27.18	169.62
C-08	06/09/2016	193.10	23.95	169.15
C-09	06/09/2016	202.35	33.05	169.30
C-10	06/09/2016	201.86	32.49	169.37
17WW08	06/09/2016	179.72	9.31	170.41
18WW01	06/09/2016	201.31	31.14	170.17
18WW02	06/09/2016	179.30	8.76	170.54
18WW03	06/09/2016	195.59	25.90	169.69
18WW04	06/09/2016	183.74	13.70	170.04
18WW05	06/09/2016	189.59	19.10	170.49
18WW06	06/09/2016	179.70	9.52	170.18
18WW07	06/09/2016	183.67	14.67	169.00
18WW08	06/09/2016	177.77	8.21	169.56
18WW09	06/09/2016	177.51	7.39	170.12
18WW10	06/09/2016	182.26	10.08	172.18
18WW11	06/09/2016	182.29	11.44	170.85
18WW14	06/09/2016	186.47	16.67	169.80
18WW15	06/09/2016	186.24	15.98	170.26
18WW16	06/09/2016	201.88	31.63	170.25
18WW18	06/09/2016	196.82	26.86	169.96
18WW19	06/09/2016	179.56	9.91	169.65
18WW20	06/09/2016	180.42	10.79	169.63
18WW21	06/09/2016	195.20	25.78	169.42
18WW22	06/09/2016	195.37	25.29	170.08
18WW24	06/09/2016	176.40	5.32	171.08
18CPTMW01SW	06/09/2016	198.20	27.03	171.17
18CPTMW01DW	06/09/2016	197.92	27.70	170.22
18CPTMW03SW	06/09/2016	198.53	28.55	169.98
18CPTMW04	06/09/2016	196.60	24.12	172.48

Table 3-4: LHAAP-18/24 Groundwater Elevation Data - June 2016

Monitoring Wells	Date	Reference Elevation (feet amsl)	Depth to Water (feet)	Groundwater Elevation (feet amsl)
18CPTMW04SW	06/09/2016	196.42	26.33	170.09
18CPTMW06	06/09/2016	198.12	27.95	170.17
18CPTMW07	06/09/2016	197.32	27.48	169.84
18CPTMW08SW	06/09/2016	196.38	25.98	170.40
18CPTMW08DW	06/09/2016	196.59	26.40	170.19
18CPTMW10SW	06/09/2016	186.98	16.57	170.41
18CPTMW10DW	06/09/2016	187.38	16.95	170.43
18CPTMW12SW	06/09/2016	190.90	20.60	170.30
18CPTMW12DW	06/09/2016	190.25	19.98	170.27
18CPTMW14	06/09/2016	196.69	27.05	169.64
18CPTMW15	06/09/2016	179.79	9.78	170.01
18CPTMW16	06/09/2016	175.37	5.41	169.96
18CPTMW18	06/09/2016	194.53	27.43	167.10
18CPTMW19	06/09/2016	193.59	21.89	171.70
18CPTMW19SW	06/09/2016	193.29	22.96	170.33
18CPTMW22SW	06/09/2016	187.79	17.92	169.87
18CPTMW22R	06/09/2016	187.23	9.14	178.09
18CPTMW22DW	06/09/2016	188.00	17.72	170.28
18CPTMW23	06/09/2016	177.47	7.39	170.08
18CPTMW23SW	06/09/2016	177.43	7.07	170.36
18CPTMW24	06/09/2016	194.89	26.58	168.31
18CPTMW26	06/09/2016	182.80	15.72	167.08
18CPTMW26SW	06/09/2016	182.00	11.71	170.29

Table 3-5: LHAAP-18/24 Semi-Annual Sampling - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	102-061616 6/16/2016	109-062216 6/22/2016	120-061616 6/16/2016	120F-061616 6/16/2016	123-061616 6/16/2016	125-062216 6/22/2016	126-061416 6/14/2016	126F-061416 6/14/2016	129-061616 6/16/2016	130-061016 6/10/2016	130FD-061016 6/10/2016	18CPTMW01DW-062416 6/24/2016	18CPTMW01SW-062416 6/24/2016	18CPTMW03SW-060816 6/8/2016
Metals (6010C)																
ALUMINUM	mg/L	100	NA	3.62	NA	1.53	1.42	NA	NA	<0.1 U	0.644	NA	NA	NA	<0.1 U	NA
BERYLLIUM	mg/L	0.004	NA	<0.01 U	NA	<0.01 U	<0.01 U	NA	NA	<0.01 U	<0.01 U	NA	NA	NA	<0.01 U	NA
CALCIUM	mg/L		NA	2.3	NA	6.89	8.16	NA	NA	296	13.2	NA	NA	NA	29.4	NA
IRON	mg/L		NA	3.98	NA	2.04	1.66	NA	NA	5.93	1.18	NA	NA	NA	54	NA
MAGNESIUM	mg/L		NA	1.9	NA	7.27	4.83	NA	NA	235	10.4	NA	NA	NA	20.1	NA
POTASSIUM	mg/L		NA	0.692 J	NA	1.55 J	0.713 J	NA	NA	4.36	0.716 J	NA	NA	NA	4.98	NA
SELENIUM	mg/L	0.05	NA	0.00538 J	NA	<0.01 U	<0.01 U	NA	NA	<0.01 U	<0.01 U	NA	NA	NA	<0.01 U	NA
SODIUM	mg/L		NA	33.8	NA	303	26	NA	NA	829	146	NA	NA	NA	102	NA
Metals (6020A)																
ANTIMONY	mg/L	0.006	NA	<0.001 U	NA	<0.001 U	<0.001 U	NA	NA	<0.001 U	<0.001 U	NA	NA	NA	<0.001 U	NA
ARSENIC	mg/L	0.01	NA	0.00137 J	NA	0.00356	0.000767 J	NA	NA	0.0147	0.0011 J	NA	NA	NA	0.0173	NA
BARIUM	mg/L	2	NA	0.0812	NA	0.0452	0.136	NA	NA	9.33	0.293	NA	NA	NA	0.894	NA
CADMIUM	mg/L	0.005	NA	<0.0006 U	NA	<0.0006 U	<0.0006 U	NA	NA	<0.0006 U	0.000383 J	NA	NA	NA	<0.0006 U	NA
CHROMIUM	mg/L	0.1	NA	0.00387 J	NA	0.012	0.00177 J	NA	NA	0.00231 J	0.00415	NA	NA	NA	0.00204 J	NA
COBALT	mg/L	6.1	NA	0.00149 J	NA	0.0151	0.0025	NA	NA	0.0656	0.00182 J	NA	NA	NA	0.00176 J	NA
COPPER	mg/L	1.3	NA	0.00212 J	NA	0.00476	0.00142 J	NA	NA	0.00314 J	0.00173 J	NA	NA	NA	<0.002 U	NA
LEAD	mg/L	0.015	NA	0.00176 J	NA	0.00162 J	0.00104 J	NA	NA	<0.001 U	0.000875 J	NA	NA	NA	<0.001 U	NA
MANGANESE	mg/L	1.1	NA	0.028	NA	0.186	0.0161	NA	NA	1.07	0.0478	NA	NA	NA	0.589	NA
NICKEL	mg/L	0.49	NA	0.00389 J	NA	0.0755	0.00319 J	NA	NA	0.0313	0.00956	NA	NA	NA	0.00341 J	NA
SILVER	mg/L	0.51	NA	<0.001 U	NA	<0.001 U	<0.001 U	NA	NA	<0.001 U	<0.001 U	NA	NA	NA	<0.001 U	NA
THALLIUM	mg/L	0.002	NA	<0.0002 U	NA	<0.0002 U	<0.0002 U	NA	NA	<0.0002 U	<0.0002 U	NA	NA	NA	<0.0002 U	NA
VANADIUM	mg/L	0.72	NA	0.00678	NA	0.0105	0.00241	NA	NA	0.000584 J	0.00246	NA	NA	NA	0.00094 J	NA
ZINC	mg/L	31	NA	0.0126 J	NA	0.0659	<0.025 U	NA	NA	0.0168 J	<0.025 U	NA	NA	NA	<0.025 U	NA
Perchlorate (6850)																
PERCHLORATE	ug/L	17	107	1810	32700	NA	105	935	0.14 J	NA	8950	64.5	62.5	<0.2 U	<0.2 U	260
Mercury (7470A)																
MERCURY	mg/L	0.002	NA	<0.0002 U	NA	<0.0002 U	<0.0002 U	NA	NA	<0.0002 U	<0.0002 U	NA	NA	NA	<0.0002 U	NA
Volatile Organic Compounds (8260B)																
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	<2 U	<40 U	NA	<0.4 U	<0.4 U	<0.4 UJ	NA	<2 U	<0.4 U	<0.4 U	<0.4 U	<4 U	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	0.884 J	<25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	NA	<1.25 U	<0.25 U	<0.25 U	<0.25 U	<2.5 U	0.304 J
1,1-DICHLOROETHENE	ug/L	7	<1 U	<5 U	134 J	NA	<1 U	<1 UJ	<1 UJ	NA	<5 U	<1 U	<1 U	<1 UJ	<10 U	<1 U
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	<1.5 U	<30 U	NA	<0.3 U	<0.3 U	<0.3 UJ	NA	<1.5 U	<0.3 U	<0.3 U	<0.3 U	<3 U	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	<5 U	<100 U	NA	<1 U	<1 U	<1 UJ	NA	<5 U	<1 U	<1 U	<1 U	<10 U	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	<2 U	<40 U	NA	<0.4 U	<0.4 U	<0.4 UJ	NA	<2 U	<0.4 U	<0.4 U	<0.4 U	<4 U	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	<10 UJ	<200 U	NA	<2 U	<2 U	<2 UJ	NA	<10 U	<2 U	<2 U	<2 U	<20 U	<2 UJ
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	<1.25 U	<25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	NA	<1.25 U	<0.25 U	<0.25 U	<0.25 U	<2.5 U	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<2.5 U	32.1 J	NA	1.2	<0.5 U	<0.5 UJ	NA	25.4	<0.5 U	<0.5 U	<0.5 U	<5 U	13
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	<2 U	<40 U	NA	<0.4 U	<0.4 U	<0.4 UJ	NA	<2 U	<0.4 U	<0.4 U	<0.4 U	<4 U	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	<2 U	<40 U	NA	<0.4 U	<0.4 U	<0.4 UJ	NA	<2 U	<0.4 U	<0.4 U	<0.4 U	<4 U	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	<1.25 U	<25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	NA	<1.25 U	<0.25 U	<0.25 U	<0.25 U	<2.5 U	<0.25 U
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	<2.5 UJ	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	<0.5 U
2-BUTANONE	ug/L	15000	<5 U	<25 U	<500 U	NA	<5 U	<5 UJ	<5 UJ	NA	<25 U	<5 U	<5 U	<5 UJ	<50 U	<5 UJ
2-CHLOROTOLUENE	ug/L	490	<0.25 U	<1.25 U	<25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	NA	<1.25 U	<0.25 U	<0.25 U	<0.25 U	<2.5 U	<0.25 U
2-HEXANONE	ug/L	120	<5 UJ	<25 UJ	<500 UJ	NA	<5 UJ	<5 U	<5 UJ	NA	<25 UJ	<5 U	<5 U	<5 U	<50 UJ	<5 UJ
4-CHLOROTOLUENE	ug/L	490	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	<25 U	<500 U	NA	<5 U	<5 U	<5 UJ	NA	<25 U	<5 U	<5 U	<5 U	<50 U	<5 U
ACETONE	ug/L	22000	<5 U	<25 UJ	<500 U	NA	<5 U	<5 UJ	<5 UJ	NA	<25 U	<5 U	<5 U	<5 UJ	<50 U	7.3 J
BENZENE	ug/L	5	<0.25 U	<1.25 U	<25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	NA	<1.25 U	<0.25 U	<0.25 U	<0.25 U	5.49 J	6.13
BROMOBENZENE	ug/L	200	<0.25 U	<1.25 U	<25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	NA	<1.25 U	<0.25 U	<0.25 U	<0.25 U	<2.5 U	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	<2 U	<40 U	NA	<0.4 U	<0.4 U	<0.4 UJ	NA	<2 U	<0.4 U	<0.4 U	<0.4 U	<4 U	<0.4 U

Table 3-5: LHAAP-18/24 Semi-Annual Sampling - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	102-061616 6/16/2016	109-062216 6/22/2016	120-061616 6/16/2016	120F-061616 6/16/2016	123-061616 6/16/2016	125-062216 6/22/2016	126-061416 6/14/2016	126F-061416 6/14/2016	129-061616 6/16/2016	130-061016 6/10/2016	130FD-061016 6/10/2016	18CPTMW01DW-062416 6/24/2016	18CPTMW01SW-062416 6/24/2016	18CPTMW03SW-060816 6/8/2016
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	<0.5 U
BROMOFORM	ug/L	120	<1 U	<5 U	<100 U	NA	<1 U	<1 U	<1 UJ	NA	<5 U	<1 U	<1 U	<1 U	<10 U	<1 U
BROMOMETHANE	ug/L	34	<1 U	<5 U	<100 U	NA	<1 U	<1 U	<1 UJ	NA	<5 U	<1 U	<1 U	<1 U	<10 U	<1 U
CARBON DISULFIDE	ug/L	2400	<1 U	<5 U	<100 U	NA	<1 U	<1 U	<1 UJ	NA	<5 U	<1 U	<1 U	1.27 J	<10 U	<1 U
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	<0.5 U
CHLOROBENZENE	ug/L	100	<0.25 U	<1.25 U	<25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	NA	<1.25 U	<0.25 U	<0.25 U	<0.25 U	<2.5 U	<0.25 U
CHLOROETHANE	ug/L	98000	<1 U	<5 U	<100 U	NA	<1 U	<1 U	<1 UJ	NA	<5 U	<1 U	<1 U	<1 U	<10 U	<1 U
CHLOROFORM	ug/L	240	<0.25 U	1.61 J	38 J	NA	<0.25 U	<0.25 U	<0.25 UJ	NA	3.28 J	<0.25 U	<0.25 U	<0.25 U	<2.5 U	<0.25 U
CHLOROMETHANE	ug/L	70	<1 U	<5 U	<100 U	NA	<1 U	<1 UJ	<1 UJ	NA	<5 U	<1 U	<1 U	<1 UJ	<10 U	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	149	1510	NA	14.4	<0.5 U	<0.5 UJ	NA	5.02	<0.5 U	<0.5 U	0.331 J	2.99 J	19.4
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	<0.5 U
DIBROMOMETHANE	ug/L	120	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 UJ	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 UJ	<5 U	<0.5 U
ETHYLBENZENE	ug/L	700	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	<0.5 U
M,P-XYLENE	ug/L	10000	<1 U	<5 U	<100 U	NA	<1 U	<1 U	<1 UJ	NA	<5 U	<1 U	<1 U	<1 U	<10 U	<1 U
METHYLENE CHLORIDE	ug/L	5	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	1.14	746	1.83
NAPHTHALENE	ug/L	490	<0.4 U	<2 U	<40 U	NA	<0.4 U	<0.4 U	<0.4 UJ	NA	<2 U	<0.4 U	<0.4 U	<0.4 U	<4 U	<0.4 U
N-BUTYLBENZENE	ug/L	1200	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	<0.5 U
N-PROPYLBENZENE	ug/L	980	<0.25 U	<1.25 U	<25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	NA	<1.25 U	<0.25 U	<0.25 U	<0.25 U	<2.5 U	<0.25 U
O-XYLENE	ug/L	10000	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	<0.5 U
STYRENE	ug/L	100	<0.25 U	<1.25 U	<25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	NA	<1.25 U	<0.25 U	<0.25 U	<0.25 U	<2.5 U	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	<0.5 U
TOLUENE	ug/L	1000	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	4.07 J	0.457 J
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	1.69 J	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	<5 U	4.5
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	<5 U	<100 U	NA	<1 U	<1 U	<1 UJ	NA	<5 U	<1 U	<1 U	<1 U	<10 U	<1 U
TRICHLOROETHENE	ug/L	5	<0.5 U	670	17100	NA	80.1	0.844 J	<0.5 UJ	NA	1630	1.17	1.19	0.63 J	46.5	153
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	<2.5 U	<50 U	NA	<0.5 U	<0.5 U	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 U	22.5	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	<2.5 U	88.7 J	NA	<0.5 U	<0.5 UJ	<0.5 UJ	NA	<2.5 U	<0.5 U	<0.5 U	<0.5 UJ	<5 U	1.12
1,4-Dioxane (8270D-SIM)																
1,4-DIOXANE	ug/L	9.1	NA	<1 U	220	NA	0.587 J	NA	<1 U	NA	6.52	NA	NA	<1 U	<1 U	1.15 J

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter.

Location IDs containing "FD" indicate duplicate samples.

Location IDs containing "B" indicate sample taken at bottom of screened interval and "T" indicate sample taken at top of screened interval.

Blue Highlighting Indicates Analyte Detected Above MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Level

mg/L - milligrams per liter

NA - not analyzed

PCL – Texas Residential Groundwater protective concentration level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 3-5: LHAAP-18/24 Semi-Annual Sampling - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	18CPTMW04-061416 6/14/2016	18CPTMW04FD-061416 6/14/2016	18CPTMW04SW-061416 6/14/2016	18CPTMW06-060816 6/8/2016	18CPTMW07-062216 6/22/2016	18CPTMW08DW-060816 6/8/2016	18CPTMW08SW-060816 6/8/2016	18CPTMW10SW-062216 6/22/2016	18CPTMW12DW-062416 6/24/2016	18CPTMW12SW-062416 6/24/2016	18CPTMW14-061316 6/13/2016	18CPTMW14FD-061316 6/13/2016	18CPTMW15B-060716 6/7/2016
Metals (6010C)															
ALUMINUM	mg/L	100	NA	NA	0.0639 J	NA	NA	NA	NA	NA	NA	0.0712 J	0.4	0.377	NA
BERYLLIUM	mg/L	0.004	NA	NA	<0.01 U	NA	NA	NA	NA	NA	NA	<0.01 U	<0.01 U	<0.01 U	NA
CALCIUM	mg/L		NA	NA	38.2	NA	NA	NA	NA	NA	NA	45.3	490	477	NA
IRON	mg/L		NA	NA	6.72	NA	NA	NA	NA	NA	NA	3.46	0.0599 J	0.0756 J	NA
MAGNESIUM	mg/L		NA	NA	19.1	NA	NA	NA	NA	NA	NA	32.8	12.5	13.5	NA
POTASSIUM	mg/L		NA	NA	64.8	NA	NA	NA	NA	NA	NA	82	33.5	33.6	NA
SELENIUM	mg/L	0.05	NA	NA	<0.01 U	NA	NA	NA	NA	NA	NA	<0.01 U	<0.01 U	<0.01 U	NA
SODIUM	mg/L		NA	NA	117	NA	NA	NA	NA	NA	NA	235	378	373	NA
Metals (6020A)															
ANTIMONY	mg/L	0.006	NA	NA	<0.001 U	NA	NA	NA	NA	NA	NA	<0.001 U	<0.001 U	<0.001 U	NA
ARSENIC	mg/L	0.01	NA	NA	0.00407	NA	NA	NA	NA	NA	NA	0.00647	0.00659	0.00731	NA
BARIUM	mg/L	2	NA	NA	0.936	NA	NA	NA	NA	NA	NA	0.667	2.42	2.47	NA
CADMIUM	mg/L	0.005	NA	NA	<0.0006 U	NA	NA	NA	NA	NA	NA	<0.0006 U	<0.0006 U	<0.0006 U	NA
CHROMIUM	mg/L	0.1	NA	NA	0.0095	NA	NA	NA	NA	NA	NA	0.00727	0.0803	0.0794	NA
COBALT	mg/L	6.1	NA	NA	0.00368	NA	NA	NA	NA	NA	NA	0.00964	0.00346	0.00333	NA
COPPER	mg/L	1.3	NA	NA	<0.002 U	NA	NA	NA	NA	NA	NA	<0.002 U	0.00404	0.0042	NA
LEAD	mg/L	0.015	NA	NA	<0.001 U	NA	NA	NA	NA	NA	NA	<0.001 U	<0.001 U	<0.001 U	NA
MANGANESE	mg/L	1.1	NA	NA	0.213	NA	NA	NA	NA	NA	NA	0.893	0.00644	0.00655	NA
NICKEL	mg/L	0.49	NA	NA	0.00574 J	NA	NA	NA	NA	NA	NA	0.00744 J	0.0116	0.0113	NA
SILVER	mg/L	0.51	NA	NA	<0.001 U	NA	NA	NA	NA	NA	NA	<0.001 U	<0.001 U	<0.001 U	NA
THALLIUM	mg/L	0.002	NA	NA	<0.0002 U	NA	NA	NA	NA	NA	NA	<0.0002 U	<0.0002 U	<0.0002 U	NA
VANADIUM	mg/L	0.72	NA	NA	<0.001 U	NA	NA	NA	NA	NA	NA	0.000779 J	0.00697	0.00668	NA
ZINC	mg/L	31	NA	NA	<0.025 U	NA	NA	NA	NA	NA	NA	0.0132 J	<0.025 U	<0.025 U	NA
Perchlorate (6850)															
PERCHLORATE	ug/L	17	1360	1380	0.186 J	30.3	0.634	672	35000	<0.2 U	NA	3.92	505	520	555
Mercury (7470A)															
MERCURY	mg/L	0.002	NA	NA	<0.0002 U	NA	NA	NA	NA	NA	NA	<0.0002 U	<0.0002 U	<0.0002 U	NA
Volatile Organic Compounds (8260B)															
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	0.314 J	0.311 J	<0.25 U	<0.25 U	<0.25 U	NA	4.43	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,1-DICHLOROETHENE	ug/L	7	5.87	5.76	<1 U	<1 U	<1 U	NA	0.989 J	<1 UJ	NA	<1 UJ	<1 U	<1 U	<1 U
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	NA	<0.3 U	<0.3 U	NA	<0.3 U	<0.3 U	<0.3 U	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	<1 U	<1 U	<1 U	<1 U	NA	<1 U	<1 U	NA	<1 U	<1 U	<1 U	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	<2 U	<2 U	<2 U	<2 UJ	NA	<2 UJ	<2 U	NA	<2 U	<2 U	<2 U	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	4.87	4.84	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	1.66	1.52	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	0.491 J	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
2-BUTANONE	ug/L	15000	<5 U	<5 U	<5 U	<5 U	<5 U	NA	<5 UJ	<5 U	NA	<5 UJ	<5 U	<5 U	<5 U
2-CHLOROTOLUENE	ug/L	490	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U
2-HEXANONE	ug/L	120	<5 U	<5 U	<5 U	<5 U	<5 UJ	NA	<5 UJ	<5 U	NA	<5 U	<5 U	<5 U	<5 U
4-CHLOROTOLUENE	ug/L	490	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	<5 U	<5 U	<5 U	<5 U	NA	<5 U	<5 U	NA	<5 U	<5 U	<5 U	<5 U
ACETONE	ug/L	22000	<5 U	<5 U	<5 U	<5 U	<5 UJ	NA	<5 UJ	<5 U	NA	<5 UJ	<5 U	<5 U	<5 U
BENZENE	ug/L	5	0.618 J	0.612 J	<0.25 U	<0.25 U	<0.25 U	NA	0.173 J	<0.25 U	NA	<0.25 U	0.524 J	0.509 J	<0.25 U
BROMOBENZENE	ug/L	200	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U

Table 3-5: LHAAP-18/24 Semi-Annual Sampling - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	18CPTMW04-061416 6/14/2016	18CPTMW04FD-061416 6/14/2016	18CPTMW04SW-061416 6/14/2016	18CPTMW06-060816 6/8/2016	18CPTMW07-062216 6/22/2016	18CPTMW08DW-060816 6/8/2016	18CPTMW08SW-060816 6/8/2016	18CPTMW10SW-062216 6/22/2016	18CPTMW12DW-062416 6/24/2016	18CPTMW12SW-062416 6/24/2016	18CPTMW14-061316 6/13/2016	18CPTMW14FD-061316 6/13/2016	18CPTMW15B-060716 6/7/2016
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
BROMOFORM	ug/L	120	<1 U	<1 U	<1 U	<1 U	<1 U	NA	<1 U	<1 U	NA	<1 U	<1 U	<1 U	<1 U
BROMOMETHANE	ug/L	34	<1 U	<1 U	<1 U	<1 U	<1 U	NA	<1 U	<1 U	NA	<1 U	<1 UJ	<1 UJ	<1 UJ
CARBON DISULFIDE	ug/L	2400	<1 U	<1 U	<1 U	<1 U	<1 U	NA	<1 U	<1 U	NA	<1 U	<1 U	<1 U	<1 U
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
CHLOROBENZENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U
CHLOROETHANE	ug/L	98000	<1 U	<1 U	<1 U	<1 U	<1 U	NA	<1 U	<1 U	NA	<1 U	<1 U	<1 U	<1 U
CHLOROFORM	ug/L	240	3.39	3.33	<0.25 U	<0.25 U	<0.25 U	NA	0.508 J	<0.25 U	NA	<0.25 U	2.2	2.13	<0.25 U
CHLOROMETHANE	ug/L	70	<1 U	<1 U	<1 U	<1 U	<1 U	NA	<1 U	<1 U	NA	<1 UJ	<1 U	<1 U	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	76.9	76.2	<0.5 U	<0.5 U	<0.5 U	NA	17.4	<0.5 U	NA	<0.5 U	25.7	25.1	0.532 J
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOMETHANE	ug/L	120	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 UJ	<0.5 U	<0.5 U	<0.5 U
ETHYLBENZENE	ug/L	700	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
M,P-XYLENE	ug/L	10000	<1 U	<1 U	<1 U	<1 U	<1 U	NA	<1 U	<1 U	NA	<1 U	<1 U	<1 U	<1 U
METHYLENE CHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 U	2.04	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
NAPHTHALENE	ug/L	490	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 UJ
N-BUTYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
N-PROPYLBENZENE	ug/L	980	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U
O-XYLENE	ug/L	10000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
STYRENE	ug/L	100	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	0.494 J	0.528 J	<0.5 U	<0.5 U	<0.5 U	NA	0.29 J	<0.5 U	NA	<0.5 U	0.422 J	0.464 J	<0.5 U
TOLUENE	ug/L	1000	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	0.593 J	0.671 J	<0.5 U	<0.5 U	<0.5 U	NA	0.347 J	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	<1 U	<1 U	<1 U	<1 U	NA	<1 U	<1 U	NA	<1 U	<1 U	<1 U	<1 U
TRICHLOROETHENE	ug/L	5	2030	1960	<0.5 U	1.02	0.34 J	NA	74.2	<0.5 U	NA	1.7	212	208	3.22
TRICHLOROFLUOROMETHANE	ug/L	7300	1.09	1.1	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	0.617 J	0.631 J	<0.5 U	<0.5 U	<0.5 U	NA	8.97	<0.5 U	NA	<0.5 UJ	<0.5 U	<0.5 U	0.319 J
1,4-Dioxane (8270D-SIM)															
1,4-DIOXANE	ug/L	9.1	1.67 J	2.01	<1 U	<1 U	<1 U	<1 U	1.39 J	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter.

Location IDs containing "FD" indicate duplicate samples.

Location IDs containing "B" indicate sample taken at bottom of screened interval and "T" indicate sample taken at top of screened interval.

Blue Highlighting Indicates Analyte Detected Above MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Level

mg/L - milligrams per liter

NA - not analyzed

PCL – Texas Residential Groundwater protective concentration level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 3-5: LHAAP-18/24 Semi-Annual Sampling - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	18CPTMW15T-060716 6/7/2016	18CPTMW16-062116 6/21/2016	18CPTMW18-062116 6/21/2016	18CPTMW19-061516 6/15/2016	18CPTMW19SW-061516 6/15/2016	18CPTMW22DW-060916 6/9/2016	18CPTMW22DW FD-060916 6/9/2016	18CPTMW22R-060916 6/9/2016	18CPTMW22SW-060916 6/9/2016	18CPTMW23-061516 6/15/2016	18CPTMW23SW-061516 6/15/2016	18CPTMW24-061316 6/13/2016	18CPTMW26SW-060916 6/9/2016
Metals (6010C)															
ALUMINUM	mg/L	100	NA	NA	<0.1 U	NA	NA	NA	NA	NA	NA	NA	NA	0.109 J	0.158 J
BERYLLIUM	mg/L	0.004	NA	NA	<0.01 U	NA	NA	NA	NA	NA	NA	NA	NA	<0.01 U	<0.01 U
CALCIUM	mg/L		NA	NA	337	NA	NA	NA	NA	NA	NA	NA	NA	431	61.4
IRON	mg/L		NA	NA	2.44	NA	NA	NA	NA	NA	NA	NA	NA	9.62	72.2
MAGNESIUM	mg/L		NA	NA	203	NA	NA	NA	NA	NA	NA	NA	NA	265	34.1
POTASSIUM	mg/L		NA	NA	7.88	NA	NA	NA	NA	NA	NA	NA	NA	5.86	3.46
SELENIUM	mg/L	0.05	NA	NA	0.0077 J	NA	NA	NA	NA	NA	NA	NA	NA	<0.01 U	0.00586 J
SODIUM	mg/L		NA	NA	849	NA	NA	NA	NA	NA	NA	NA	NA	1090	320
Metals (6020A)															
ANTIMONY	mg/L	0.006	NA	NA	<0.001 U	NA	NA	NA	NA	NA	NA	NA	NA	<0.001 U	<0.001 U
ARSENIC	mg/L	0.01	NA	NA	0.0161	NA	NA	NA	NA	NA	NA	NA	NA	0.0161	0.0064
BARIUM	mg/L	2	NA	NA	0.713	NA	NA	NA	NA	NA	NA	NA	NA	10.3	0.635
CADMIUM	mg/L	0.005	NA	NA	<0.0006 U	NA	NA	NA	NA	NA	NA	NA	NA	<0.0006 U	<0.0006 U
CHROMIUM	mg/L	0.1	NA	NA	0.013	NA	NA	NA	NA	NA	NA	NA	NA	0.00409	0.00237 J
COBALT	mg/L	6.1	NA	NA	0.0229	NA	NA	NA	NA	NA	NA	NA	NA	0.00662	0.000803 J
COPPER	mg/L	1.3	NA	NA	0.00266 J	NA	NA	NA	NA	NA	NA	NA	NA	0.00296 J	0.00116 J
LEAD	mg/L	0.015	NA	NA	<0.001 U	NA	NA	NA	NA	NA	NA	NA	NA	<0.001 U	<0.001 U
MANGANESE	mg/L	1.1	NA	NA	2.81	NA	NA	NA	NA	NA	NA	NA	NA	0.563	1.7
NICKEL	mg/L	0.49	NA	NA	0.027	NA	NA	NA	NA	NA	NA	NA	NA	0.0163	0.00238 J
SILVER	mg/L	0.51	NA	NA	<0.001 U	NA	NA	NA	NA	NA	NA	NA	NA	<0.001 U	<0.001 U
THALLIUM	mg/L	0.002	NA	NA	0.000115 J	NA	NA	NA	NA	NA	NA	NA	NA	<0.0002 U	<0.0002 U
VANADIUM	mg/L	0.72	NA	NA	0.00313	NA	NA	NA	NA	NA	NA	NA	NA	0.00192 J	0.00101 J
ZINC	mg/L	31	NA	NA	0.0175 J	NA	NA	NA	NA	NA	NA	NA	NA	<0.025 U	<0.025 U
Perchlorate (6850)															
PERCHLORATE	ug/L	17	1630	<0.2 U	<0.2 U	5.31	1.25	1.21 J	0.473 J	0.917	10200	2310	0.407	99	6.42
Mercury (7470A)															
MERCURY	mg/L	0.002	NA	NA	<0.0002 U	NA	NA	NA	NA	NA	NA	NA	NA	<0.0002 U	<0.0002 U
Volatile Organic Compounds (8260B)															
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 UJ	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	0.858 J	<0.5 U	<0.5 UJ	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	1.06	<0.25 U	<0.25 UJ	<0.25 U
1,1-DICHLOROETHENE	ug/L	7	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	10.1	<1 U	<1 UJ	<1 U
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	NA	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 U	<0.3 UJ	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 UJ	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	NA	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 U	<2 UJ	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	214	<0.5 U	<0.5 UJ	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 UJ	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 UJ	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
2-BUTANONE	ug/L	15000	<5 U	NA	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 UJ	<5 U
2-CHLOROTOLUENE	ug/L	490	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U
2-HEXANONE	ug/L	120	<5 U	NA	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 UJ	<5 U
4-CHLOROTOLUENE	ug/L	490	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	NA	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 UJ	<5 U
ACETONE	ug/L	22000	<5 U	NA	3.39 J	<5 U	<5 U	<5 U	<5 U	<5 U	15.4	<5 U	9.67 J	<5 UJ	7.39 J
BENZENE	ug/L	5	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	1.59	<0.25 U	<0.25 UJ	<0.25 U
BROMOBENZENE	ug/L	200	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	NA	<0.4 U	<0.4 U	0.388 J	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 UJ	<0.4 U

Table 3-5: LHAAP-18/24 Semi-Annual Sampling - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	18CPTMW15T-060716 6/7/2016	18CPTMW16-062116 6/21/2016	18CPTMW18-062116 6/21/2016	18CPTMW19-061516 6/15/2016	18CPTMW19SW-061516 6/15/2016	18CPTMW22DW-060916 6/9/2016	18CPTMW22DW FD-060916 6/9/2016	18CPTMW22R-060916 6/9/2016	18CPTMW22SW-060916 6/9/2016	18CPTMW23-061516 6/15/2016	18CPTMW23SW-061516 6/15/2016	18CPTMW24-061316 6/13/2016	18CPTMW26SW-060916 6/9/2016
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
BROMOFORM	ug/L	120	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 U
BROMOMETHANE	ug/L	34	<1 UJ	NA	<1 U	<1 UJ	<1 U	<1 UJ	<1 UJ	<1 UJ	<1 UJ	<1 U	<1 U	<1 UJ	<1 UJ
CARBON DISULFIDE	ug/L	2400	<1 U	NA	<1 U	<1 U	0.599 J	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 U
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
CHLOROBENZENE	ug/L	100	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U
CHLOROETHANE	ug/L	98000	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 U
CHLOROFORM	ug/L	240	<0.25 U	NA	<0.25 U	<0.25 U	0.25 J	<0.25 U	<0.25 U	<0.25 U	<0.25 U	5.45	<0.25 U	<0.25 UJ	<0.25 U
CHLOROMETHANE	ug/L	70	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	0.566 J	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	232	<0.5 U	<0.5 UJ	<0.5 U
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
DIBROMOMETHANE	ug/L	120	<0.5 U	NA	<0.5 U	<0.5 U	0.506 J	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
ETHYLBENZENE	ug/L	700	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
M,P-XYLENE	ug/L	10000	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 U
METHYLENE CHLORIDE	ug/L	5	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	0.534 J	0.256 J	<0.5 U	<0.5 UJ	<0.5 U
NAPHTHALENE	ug/L	490	<0.4 UJ	NA	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 U	<0.4 UJ	<0.4 U
N-BUTYLBENZENE	ug/L	1200	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
N-PROPYLBENZENE	ug/L	980	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U
O-XYLENE	ug/L	10000	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
STYRENE	ug/L	100	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	1.22	<0.5 U	<0.5 UJ	<0.5 U
TOLUENE	ug/L	1000	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	4.09	<0.5 U	<0.5 UJ	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	NA	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 UJ	<1 U
TRICHLOROETHENE	ug/L	5	3.23	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	0.633 J	3820	<0.5 U	<0.5 UJ	<0.5 U
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	NA	<0.5 U	<0.5 U	0.484 J	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U
VINYL CHLORIDE	ug/L	2	0.311 J	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	5.89	<0.5 U	<0.5 UJ	<0.5 U
1,4-Dioxane (8270D-SIM)															
1,4-DIOXANE	ug/L	9.1	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	8.02 J	<1 U	<1 U	<1 U

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter.

Location IDs containing "FD" indicate duplicate samples.

Location IDs containing "B" indicate sample taken at bottom of screened interval and "T" indicate sample taken at top of screened interval.

Blue Highlighting Indicates Analyte Detected Above MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Level

mg/L - milligrams per liter

NA - not analyzed

PCL – Texas Residential Groundwater protective concentration level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 3-5: LHAAP-18/24 Semi-Annual Sampling - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	17WW08-061016 6/10/2016	18WW02-062216 6/22/2016	18WW02F-062216 6/22/2016	18WW03-061416 6/14/2016	18WW03F-061416 6/14/2016	18WW06-062016 6/20/2016	18WW06FD-062016 6/20/2016	18WW08-062016 6/20/2016	18WW09-062016 6/20/2016	18WW16-061616 6/16/2016	18WW16F-061616 6/16/2016	18WW17-062116 6/21/2016	18WW18-062116 6/21/2016	18WW19-062016 6/20/2016
Metals (6010C)																
ALUMINUM	mg/L	100	1.01	NA	1.12	NA	<0.1 U	NA	NA	NA	NA	NA	0.331	NA	<0.1 U	NA
BERYLLIUM	mg/L	0.004	<0.01 U	NA	<0.01 U	NA	<0.01 U	NA	NA	NA	NA	NA	<0.01 U	NA	<0.01 U	NA
CALCIUM	mg/L		20.5	NA	7.09	NA	8.25	NA	NA	NA	NA	NA	195	NA	49.5	NA
IRON	mg/L		12.8	NA	1.61	NA	2.77	NA	NA	NA	NA	NA	21.5	NA	78	NA
MAGNESIUM	mg/L		12.3	NA	1.34	NA	5.84	NA	NA	NA	NA	NA	146	NA	34	NA
POTASSIUM	mg/L		1.94 J	NA	2.24	NA	2.16	NA	NA	NA	NA	NA	13	NA	3.75	NA
SELENIUM	mg/L	0.05	<0.01 U	NA	<0.01 U	NA	<0.01 U	NA	NA	NA	NA	NA	<0.01 U	NA	<0.01 U	NA
SODIUM	mg/L		136	NA	14.1	NA	109	NA	NA	NA	NA	NA	587	NA	146	NA
Metals (6020A)																
ANTIMONY	mg/L	0.006	<0.001 U	NA	<0.001 U	NA	<0.001 U	NA	NA	NA	NA	NA	0.00134 J	NA	<0.001 U	NA
ARSENIC	mg/L	0.01	0.00435	NA	0.000926 J	NA	0.000919 J	NA	NA	NA	NA	NA	0.00894	NA	0.00541	NA
BARIUM	mg/L	2	0.148	NA	0.0479	NA	0.173	NA	NA	NA	NA	NA	0.186	NA	1.01	NA
CADMIUM	mg/L	0.005	0.00131	NA	<0.0006 U	NA	<0.0006 U	NA	NA	NA	NA	NA	0.00645	NA	<0.0006 U	NA
CHROMIUM	mg/L	0.1	0.507	NA	0.00315 J	NA	<0.002 U	NA	NA	NA	NA	NA	4.62	NA	0.00126 J	NA
COBALT	mg/L	6.1	0.00709	NA	<0.001 U	NA	<0.001 U	NA	NA	NA	NA	NA	0.355	NA	<0.001 U	NA
COPPER	mg/L	1.3	0.017	NA	0.00608	NA	<0.002 U	NA	NA	NA	NA	NA	0.828	NA	0.00107 J	NA
LEAD	mg/L	0.015	0.00133 J	NA	0.00127 J	NA	<0.001 U	NA	NA	NA	NA	NA	<0.001 U	NA	<0.001 U	NA
MANGANESE	mg/L	1.1	0.422	NA	0.0851	NA	0.096	NA	NA	NA	NA	NA	3.12	NA	1.55	NA
NICKEL	mg/L	0.49	0.111	NA	0.00419 J	NA	<0.004 U	NA	NA	NA	NA	NA	14.3	NA	0.0497	NA
SILVER	mg/L	0.51	<0.001 U	NA	<0.001 U	NA	<0.001 U	NA	NA	NA	NA	NA	<0.001 U	NA	<0.001 U	NA
THALLIUM	mg/L	0.002	<0.0002 U	NA	<0.0002 U	NA	<0.0002 U	NA	NA	NA	NA	NA	<0.0002 U	NA	<0.0002 U	NA
VANADIUM	mg/L	0.72	<0.001 U	NA	0.00226	NA	<0.001 U	NA	NA	NA	NA	NA	<0.02 U	NA	<0.001 U	NA
ZINC	mg/L	31	0.0388 J	NA	<0.025 U	NA	<0.025 U	NA	NA	NA	NA	NA	0.158	NA	<0.025 U	NA
Perchlorate (6850)																
PERCHLORATE	ug/L	17	7.13	<0.2 U	NA	<0.2 U	NA	<0.2 U	<0.2 U	<0.2 U	<0.2 U	5.76	NA	82900	<0.2 U	<0.2 U
Mercury (7470A)																
MERCURY	mg/L	0.002	<0.0002 U	NA	<0.0002 U	NA	<0.0002 U	NA	NA	NA	NA	NA	<0.0002 U	NA	<0.0002 U	NA
Volatile Organic Compounds (8260B)																
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	<0.4 U	NA	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 UJ	<0.4 UJ	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 UJ
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	<0.25 UJ	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ
1,1-DICHLOROETHENE	ug/L	7	<1 U	<1 UJ	NA	<1 U	NA	<1 U	<1 U	<1 UJ	<1 UJ	<1 U	NA	<1 U	<1 U	<1 UJ
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	<0.3 U	NA	<0.3 U	NA	<0.3 U	<0.3 U	<0.3 UJ	<0.3 UJ	<0.3 U	NA	<0.3 U	<0.3 U	<0.3 UJ
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	<1 U	NA	<1 U	NA	<1 U	<1 U	<1 UJ	<1 UJ	<1 U	NA	<1 U	<1 U	<1 UJ
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	<0.4 U	NA	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 UJ	<0.4 UJ	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 UJ
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	<2 U	NA	<2 U	NA	<2 U	<2 U	<2 UJ	<2 UJ	<2 U	NA	<2 U	<2 U	<2 UJ
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	<0.25 UJ	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	<0.4 U	NA	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 UJ	<0.4 UJ	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 UJ
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	<0.4 U	NA	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 UJ	<0.4 UJ	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 UJ
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	<0.25 UJ	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
2-BUTANONE	ug/L	15000	<5 U	<5 U	NA	<5 U	NA	<5 U	<5 U	<5 UJ	<5 UJ	<5 U	NA	<5 U	<5 U	<5 UJ
2-CHLOROTOLUENE	ug/L	490	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	<0.25 UJ	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ
2-HEXANONE	ug/L	120	<5 U	<5 U	NA	<5 U	NA	<5 U	<5 U	<5 UJ	<5 UJ	<5 UJ	NA	<5 U	<5 U	<5 UJ
4-CHLOROTOLUENE	ug/L	490	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	<5 U	NA	<5 U	NA	<5 U	<5 U	<5 UJ	<5 UJ	<5 U	NA	<5 U	<5 U	<5 UJ
ACETONE	ug/L	22000	<5 U	4.31 J	NA	<5 U	NA	<5 U	<5 U	<5 UJ	<5 UJ	<5 U	NA	<5 U	4.41 J	<5 UJ
BENZENE	ug/L	5	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	<0.25 UJ	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ
BROMOBENZENE	ug/L	200	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	<0.25 UJ	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	<0.4 U	NA	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 UJ	<0.4 UJ	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 UJ

Table 3-5: LHAAP-18/24 Semi-Annual Sampling - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	17WW08-061016 6/10/2016	18WW02-062216 6/22/2016	18WW02F-062216 6/22/2016	18WW03-061416 6/14/2016	18WW03F-061416 6/14/2016	18WW06-062016 6/20/2016	18WW06FD-062016 6/20/2016	18WW08-062016 6/20/2016	18WW09-062016 6/20/2016	18WW16-061616 6/16/2016	18WW16F-061616 6/16/2016	18WW17-062116 6/21/2016	18WW18-062116 6/21/2016	18WW19-062016 6/20/2016
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
BROMOFORM	ug/L	120	<1 U	<1 U	NA	<1 U	NA	<1 U	<1 U	<1 UJ	<1 UJ	<1 U	NA	<1 U	<1 U	<1 UJ
BROMOMETHANE	ug/L	34	<1 U	<1 U	NA	<1 U	NA	<1 U	<1 U	<1 UJ	<1 UJ	<1 U	NA	<1 U	<1 U	<1 UJ
CARBON DISULFIDE	ug/L	2400	<1 U	<1 U	NA	<1 U	NA	<1 U	<1 U	<1 UJ	<1 UJ	<1 U	NA	<1 U	<1 U	<1 UJ
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
CHLOROBENZENE	ug/L	100	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	<0.25 UJ	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ
CHLOROETHANE	ug/L	98000	<1 U	<1 U	NA	<1 U	NA	<1 U	<1 U	<1 UJ	<1 UJ	<1 U	NA	<1 U	<1 U	<1 UJ
CHLOROFORM	ug/L	240	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	<0.25 UJ	<0.25 U	NA	0.275 J	<0.25 U	<0.25 UJ
CHLOROMETHANE	ug/L	70	<1 U	<1 U	NA	<1 U	NA	<1 U	<1 U	<1 UJ	<1 UJ	0.605 J	NA	<1 U	<1 U	<1 UJ
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	0.703 J	<0.5 U	<0.5 UJ
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
DIBROMOMETHANE	ug/L	120	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
ETHYLBENZENE	ug/L	700	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
M,P-XYLENE	ug/L	10000	<1 U	<1 U	NA	<1 U	NA	<1 U	<1 U	<1 UJ	<1 UJ	<1 U	NA	<1 U	<1 U	<1 UJ
METHYLENE CHLORIDE	ug/L	5	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
NAPHTHALENE	ug/L	490	<0.4 U	<0.4 U	NA	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 UJ	<0.4 UJ	<0.4 U	NA	<0.4 U	<0.4 U	<0.4 UJ
N-BUTYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
N-PROPYLBENZENE	ug/L	980	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	<0.25 UJ	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ
O-XYLENE	ug/L	10000	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
STYRENE	ug/L	100	<0.25 U	<0.25 U	NA	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ	<0.25 UJ	<0.25 U	NA	<0.25 U	<0.25 U	<0.25 UJ
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
TETRACHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
TOLUENE	ug/L	1000	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	<1 U	NA	<1 U	NA	<1 U	<1 U	<1 UJ	<1 UJ	<1 U	NA	<1 U	<1 U	<1 UJ
TRICHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	46.3	<0.5 U	<0.5 UJ
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ	<0.5 UJ	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 UJ
1,4-Dioxane (8270D-SIM)																
1,4-DIOXANE	ug/L	9.1	NA	<1 U	NA	<1 U	NA	<1 U	<1 U	<1 UJ	<1 UJ	NA	NA	NA	<1 U	NA

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter.

Location IDs containing "FD" indicate duplicate samples.

Location IDs containing "B" indicate sample taken at bottom of screened interval and "T" indicate sample taken at top of screened interval.

Blue Highlighting Indicates Analyte Detected Above MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Level

mg/L - milligrams per liter

NA - not analyzed

PCL – Texas Residential Groundwater protective concentration level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 3-5: LHAAP-18/24 Semi-Annual Sampling - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	18WW19F-062016 6/20/2016	18WW19FD-062016 6/20/2016	18WW19FFD-062016 6/20/2016	18WW20-062016 6/20/2016	18WW22-062116 6/21/2016	18WW24-061016 6/10/2016	18WW24F-061016 6/10/2016	18WW25-062916 6/29/2016	18WW25F-062916 6/29/2016	AWD1B-060716 6/7/2016	AWD1T-060716 6/7/2016	AWD4B-060716 6/7/2016	AWD4T-060716 6/7/2016	C01-061716 6/17/2016
Metals (6010C)																
ALUMINUM	mg/L	100	0.342	NA	0.369	0.0733 J	2.57	NA	0.466	NA	0.12 J	NA	NA	5.34	5.71	<0.1 U
BERYLLIUM	mg/L	0.004	<0.01 U	NA	<0.01 U	<0.01 U	<0.01 U	NA	<0.01 U	NA	<0.01 U	NA	NA	<0.01 U	<0.01 U	<0.01 U
CALCIUM	mg/L		8.66	NA	8.45	2.78	193	NA	6.94	NA	32	NA	NA	8.65	8.62	91
IRON	mg/L		4.86	NA	4.92	5.75	<0.1 U	NA	0.284	NA	19.6	NA	NA	4.64	5.13	0.189 J
MAGNESIUM	mg/L		1.59	NA	1.46	2.14	1.09	NA	4.4	NA	19.6	NA	NA	5.75	5.98	68.5
POTASSIUM	mg/L		1.85 J	NA	1.74 J	1.32 J	8.42	NA	1.58 J	NA	2.44	NA	NA	<1 U	<1 U	2.11
SELENIUM	mg/L	0.05	<0.01 U	NA	<0.01 U	<0.01 U	0.00528 J	NA	<0.01 U	NA	<0.01 U	NA	NA	<0.01 U	<0.01 U	<0.01 U
SODIUM	mg/L		5.07	NA	4.86	24.6	60.6	NA	131	NA	44	NA	NA	72	70.6	334
Metals (6020A)																
ANTIMONY	mg/L	0.006	<0.001 U	NA	<0.001 U	<0.001 U	<0.001 U	NA	<0.001 U	NA	<0.001 U	NA	NA	<0.001 U	<0.001 U	<0.001 U
ARSENIC	mg/L	0.01	0.000865 J	NA	0.00091 J	<0.001 U	0.00523	NA	0.00248	NA	0.00243	NA	NA	0.00124 J	0.0017 J	0.00438
BARIUM	mg/L	2	0.0557	NA	0.0588	0.0918	0.353	NA	0.0968	NA	0.391 J	NA	NA	0.195	0.205	0.441
CADMIUM	mg/L	0.005	<0.0006 U	NA	<0.0006 U	<0.0006 U	<0.0006 U	NA	<0.0006 U	NA	<0.0006 U	NA	NA	<0.0006 U	<0.0006 U	0.000345 J
CHROMIUM	mg/L	0.1	0.00184 J	NA	0.00219 J	0.00274 J	0.114	NA	0.00142 J	NA	<0.002 U	NA	NA	0.0892	0.0946	0.00251 J
COBALT	mg/L	6.1	0.00116 J	NA	0.00119 J	0.00808	0.0011 J	NA	0.00207	NA	0.0135	NA	NA	0.00687	0.0065	0.00101 J
COPPER	mg/L	1.3	0.00117 J	NA	0.00131 J	<0.002 U	0.00449	NA	0.002 J	NA	<0.002 U	NA	NA	0.00717	0.00851	0.00135 J
LEAD	mg/L	0.015	<0.001 U	NA	<0.001 U	<0.001 U	<0.001 U	NA	<0.001 U	NA	<0.001 U	NA	NA	0.00258	0.00305	<0.001 U
MANGANESE	mg/L	1.1	0.221	NA	0.221	0.279	0.00227 J	NA	0.609	NA	5.29 J	NA	NA	0.0529	0.0466	0.0324
NICKEL	mg/L	0.49	0.00429 J	NA	0.00449 J	0.00996	0.00569 J	NA	0.022	NA	0.00596 J	NA	NA	0.283	0.23	0.00428 J
SILVER	mg/L	0.51	<0.001 U	NA	<0.001 U	<0.001 U	<0.001 U	NA	<0.001 U	NA	<0.001 U	NA	NA	<0.001 U	<0.001 U	<0.001 U
THALLIUM	mg/L	0.002	<0.0002 U	NA	<0.0002 U	<0.0002 U	<0.0002 U	NA	<0.0002 U	NA	<0.0002 U	NA	NA	<0.0002 U	0.00012 J	<0.0002 U
VANADIUM	mg/L	0.72	0.0017 J	NA	0.00184 J	<0.001 U	0.0767	NA	0.00093 J	NA	<0.001 U	NA	NA	0.0124	0.0174	0.00242
ZINC	mg/L	31	<0.025 U	NA	<0.025 U	<0.025 U	<0.025 U	NA	0.075	NA	<0.025 U	NA	NA	0.026 J	0.0348 J	<0.025 U
Perchlorate (6850)																
PERCHLORATE	ug/L	17	NA	<0.2 U	NA	<0.2 U	1.53	0.228 J	NA	<0.2 U	NA	4.92	<0.2 U	726	712	3.15
Mercury (7470A)																
MERCURY	mg/L	0.002	<0.0002 U	NA	<0.0002 U	<0.0002 U	<0.0002 U	NA	<0.0002 U	NA	<0.0002 U	NA	NA	<0.0002 U	<0.0002 U	<0.0002 U
Volatile Organic Compounds (8260B)																
1,1,1,2-TETRACHLOROETHANE	ug/L	35	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	NA	<0.4 U	NA	<0.4 U	<0.4 UJ	<0.4 U	NA	<0.4 U	NA	<40 U	<40 U	<0.4 U	<0.4 U	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	NA	<0.25 U	NA	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U	NA	113	90.5 J	<0.25 U	<0.25 U	<0.25 U
1,1-DICHLOROETHENE	ug/L	7	NA	<1 U	NA	<1 U	<1 UJ	<1 U	NA	<1 U	NA	158 J	114 J	<1 U	<1 U	<1 U
1,1-DICHLOROPROPENE	ug/L	9.1	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	NA	<0.3 U	NA	<0.3 U	<0.3 UJ	<0.3 U	NA	<0.3 U	NA	<30 U	<30 U	<0.3 U	<0.3 U	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	NA	<1 U	NA	<1 U	<1 UJ	<1 U	NA	<1 U	NA	<100 U	<100 U	<1 U	<1 U	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	NA	<0.4 U	NA	<0.4 U	<0.4 UJ	<0.4 U	NA	<0.4 U	NA	<40 U	<40 U	<0.4 U	<0.4 U	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	NA	<2 U	NA	<2 U	<2 UJ	<2 U	NA	<2 U	NA	<200 U	<200 U	<2 U	<2 U	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	NA	<0.25 U	NA	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U	NA	<25 U	<25 U	<0.25 U	<0.25 U	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	158	143	<0.5 U	<0.5 U	<0.5 U
1,2-DICHLOROPROPANE	ug/L	5	NA	<0.4 U	NA	<0.4 U	<0.4 UJ	<0.4 U	NA	<0.4 U	NA	<40 U	<40 U	<0.4 U	<0.4 U	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	NA	<0.4 U	NA	<0.4 U	<0.4 UJ	<0.4 U	NA	<0.4 U	NA	<40 U	<40 U	<0.4 U	<0.4 U	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	NA	<0.25 U	NA	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U	NA	<25 U	<25 U	<0.25 U	<0.25 U	<0.25 U
2,2-DICHLOROPROPANE	ug/L	13	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
2-BUTANONE	ug/L	15000	NA	<5 U	NA	<5 U	<5 UJ	<5 U	NA	<5 U	NA	<500 U	<500 U	<5 U	<5 U	<5 U
2-CHLOROTOLUENE	ug/L	490	NA	<0.25 U	NA	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U	NA	<25 U	<25 U	<0.25 U	<0.25 U	<0.25 U
2-HEXANONE	ug/L	120	NA	<5 U	NA	<5 U	<5 UJ	<5 U	NA	<5 U	NA	<500 U	<500 U	<5 U	<5 U	<5 U
4-CHLOROTOLUENE	ug/L	490	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	NA	<5 U	NA	<5 U	<5 UJ	<5 U	NA	<5 U	NA	<500 U	<500 U	<5 U	<5 U	<5 U
ACETONE	ug/L	22000	NA	<5 U	NA	<5 U	<5 UJ	<5 U	NA	2.89 J	NA	<500 U	<500 U	<5 U	<5 U	<5 U
BENZENE	ug/L	5	NA	<0.25 U	NA	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U	NA	<25 U	<25 U	<0.25 U	<0.25 U	<0.25 U
BROMOBENZENE	ug/L	200	NA	<0.25 U	NA	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U	NA	<25 U	<25 U	<0.25 U	<0.25 U	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	NA	<0.4 U	NA	<0.4 U	<0.4 UJ	<0.4 U	NA	<0.4 U	NA	<40 U	<40 U	<0.4 U	<0.4 U	<0.4 U

Table 3-5: LHAAP-18/24 Semi-Annual Sampling - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	18WW19F-062016 6/20/2016	18WW19FD-062016 6/20/2016	18WW19FFD-062016 6/20/2016	18WW20-062016 6/20/2016	18WW22-062116 6/21/2016	18WW24-061016 6/10/2016	18WW24F-061016 6/10/2016	18WW25-062916 6/29/2016	18WW25F-062916 6/29/2016	AWD1B-060716 6/7/2016	AWD1T-060716 6/7/2016	AWD4B-060716 6/7/2016	AWD4T-060716 6/7/2016	C01-061716 6/17/2016
BROMODICHLOROMETHANE	ug/L	15	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
BROMOFORM	ug/L	120	NA	<1 U	NA	<1 U	<1 UJ	<1 U	NA	<1 U	NA	<100 U	<100 U	<1 U	<1 U	<1 U
BROMOMETHANE	ug/L	34	NA	<1 U	NA	<1 U	<1 UJ	<1 U	NA	<1 UJ	NA	<100 U	<100 U	<1 UJ	<1 UJ	<1 U
CARBON DISULFIDE	ug/L	2400	NA	<1 U	NA	<1 U	<1 UJ	<1 U	NA	<1 U	NA	<100 U	<100 U	<1 U	<1 U	<1 U
CARBON TETRACHLORIDE	ug/L	5	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
CHLOROBENZENE	ug/L	100	NA	<0.25 U	NA	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U	NA	<25 U	<25 U	<0.25 U	<0.25 U	<0.25 U
CHLOROETHANE	ug/L	98000	NA	<1 U	NA	<1 U	<1 UJ	<1 U	NA	<1 U	NA	<100 U	<100 U	<1 U	<1 U	<1 U
CHLOROFORM	ug/L	240	NA	<0.25 U	NA	<0.25 U	<0.25 UJ	<0.25 U	NA	0.45 J	NA	<25 U	<25 U	<0.25 U	<0.25 U	<0.25 U
CHLOROMETHANE	ug/L	70	NA	<1 U	NA	<1 U	<1 UJ	<1 U	NA	<1 U	NA	<100 U	<100 U	<1 U	<1 U	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	14100	12000	0.338 J	0.274 J	<0.5 U
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
DIBROMOMETHANE	ug/L	120	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
ETHYLBENZENE	ug/L	700	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
M,P-XYLENE	ug/L	10000	NA	<1 U	NA	<1 U	<1 UJ	<1 U	NA	<1 U	NA	<100 U	<100 U	<1 U	<1 U	<1 U
METHYLENE CHLORIDE	ug/L	5	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	95.1 J	<50 U	<0.5 U	<0.5 U	<0.5 U
NAPHTHALENE	ug/L	490	NA	<0.4 U	NA	<0.4 U	<0.4 UJ	<0.4 U	NA	<0.4 U	NA	<40 U	<40 U	<0.4 UJ	<0.4 UJ	<0.4 U
N-BUTYLBENZENE	ug/L	1200	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
N-PROPYLBENZENE	ug/L	980	NA	<0.25 U	NA	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U	NA	<25 U	<25 U	<0.25 U	<0.25 U	<0.25 U
O-XYLENE	ug/L	10000	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
STYRENE	ug/L	100	NA	<0.25 U	NA	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U	NA	<25 U	<25 U	<0.25 U	<0.25 U	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
TOLUENE	ug/L	1000	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	NA	<1 U	NA	<1 U	<1 UJ	<1 U	NA	<1 U	NA	<100 U	<100 U	<1 U	<1 U	<1 U
TRICHLOROETHENE	ug/L	5	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	7120	6300	2.4	2.21	<0.5 U
TRICHLOROFLUOROMETHANE	ug/L	7300	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<50 U	<50 U	<0.5 U	<0.5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	NA	<0.5 U	NA	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	256	177	<0.5 U	<0.5 U	<0.5 U
1,4-Dioxane (8270D-SIM)																
1,4-DIOXANE	ug/L	9.1	NA	NA	NA	<1 UJ	<1 U	NA	NA	<1 U	NA	7.14	5.74	<1 U	<1 U	NA

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter.

Location IDs containing "FD" indicate duplicate samples.

Location IDs containing "B" indicate sample taken at bottom of screened interval and "T" indicate sample taken at top of screened interval.

Blue Highlighting Indicates Analyte Detected Above MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Level

mg/L - milligrams per liter

NA - not analyzed

PCL – Texas Residential Groundwater protective concentration level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 3-5: LHAAP-18/24 Semi-Annual Sampling - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	C01FD-061716 6/17/2016	C02-061716 6/17/2016	C03-061416 6/14/2016	C04-062116 6/21/2016	C04F-062116 6/21/2016	C04FD-062116 6/21/2016	C04FFD-062116 6/21/2016	C08-061416 6/14/2016	MW1-061016 6/10/2016	MW2-062416 6/24/2016	MW3-061016 6/10/2016	MW5-060816 6/8/2016	MW7-062416 6/24/2016	MW8-060916 6/9/2016
Metals (6010C)																
ALUMINUM	mg/L	100	<0.1 U	NA	<0.1 U	NA	<0.1 U	NA	<0.1 U	0.114 J	0.0763 J	<0.1 U	<0.1 U	0.0635 J	NA	0.122 J
BERYLLIUM	mg/L	0.004	<0.01 U	NA	<0.01 U	NA	<0.01 U	NA	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	NA	<0.01 U
CALCIUM	mg/L		90.3	NA	55.4	NA	13.9	NA	14	239	47.2	41.9	30.2	24.9	NA	8.3
IRON	mg/L		0.18 J	NA	101	NA	7.76	NA	7.21	0.627	20.2	4.01	0.418	1	NA	0.888
MAGNESIUM	mg/L		66.6	NA	35.8	NA	7.73	NA	7.47	143	41.4	30.2	20.3	26.1	NA	7.45
POTASSIUM	mg/L		2.16	NA	4.01	NA	1.89 J	NA	1.89 J	2.18	3.24	3.43	2.1	2.42	NA	0.503 J
SELENIUM	mg/L	0.05	<0.01 U	NA	<0.01 U	NA	<0.01 U	NA	0.00539 J	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	NA	0.00533 J
SODIUM	mg/L		336	NA	169	NA	27.9	NA	27.5	761	299	118	260	124	NA	191
Metals (6020A)																
ANTIMONY	mg/L	0.006	<0.001 U	NA	<0.001 U	NA	<0.001 U	NA	<0.001 U	<0.001 U	<0.001 U	<0.001 U	<0.001 U	<0.001 U	NA	<0.001 U
ARSENIC	mg/L	0.01	0.00431	NA	0.00684	NA	0.000967 J	NA	0.000991 J	0.00829	<0.001 U	0.0121	<0.001 U	0.00122 J	NA	<0.001 U
BARIUM	mg/L	2	0.471	NA	1.56	NA	0.311	NA	0.288	5.12	1.35	2.64	0.445	0.96	NA	0.144
CADMIUM	mg/L	0.005	0.00034 J	NA	<0.0006 U	NA	<0.0006 U	NA	<0.0006 U	0.000385 J	0.000424 J	<0.0006 U	<0.0006 U	0.000758 J	NA	0.000344 J
CHROMIUM	mg/L	0.1	0.00247 J	NA	<0.002 U	NA	0.00355 J	NA	0.00186 J	0.00247 J	1.32	0.0145	0.00398 J	0.126	NA	0.278
COBALT	mg/L	6.1	0.000974 J	NA	0.000578 J	NA	<0.001 U	NA	<0.001 U	0.00683	0.0563	0.0571	0.00108 J	0.00267	NA	0.0414
COPPER	mg/L	1.3	0.00128 J	NA	<0.002 U	NA	<0.002 U	NA	<0.002 U	0.00295 J	0.00432	0.00159 J	0.00151 J	0.00218 J	NA	0.0107
LEAD	mg/L	0.015	<0.001 U	NA	<0.001 U	NA	<0.001 U	NA	<0.001 U	<0.001 U	<0.001 U	<0.001 U	<0.001 U	<0.001 U	NA	<0.001 U
MANGANESE	mg/L	1.1	0.0318	NA	1.85	NA	0.287	NA	0.247	3.15	1.69	2.04	0.52	0.102	NA	0.35
NICKEL	mg/L	0.49	0.00424 J	NA	<0.004 U	NA	<0.004 U	NA	<0.004 U	0.0138	2.2	0.0432	0.00463 J	0.0777	NA	0.447
SILVER	mg/L	0.51	<0.001 U	NA	<0.001 U	NA	<0.001 U	NA	<0.001 U	<0.001 U	<0.001 U	<0.001 U	<0.001 U	<0.001 U	NA	<0.001 U
THALLIUM	mg/L	0.002	<0.0002 U	NA	<0.0002 U	NA	<0.0002 U	NA	<0.0002 U	<0.0002 U	<0.0002 U	<0.0002 U	<0.0002 U	<0.0002 U	NA	0.000105 J
VANADIUM	mg/L	0.72	0.00266	NA	<0.001 U	NA	<0.001 U	NA	<0.001 U	0.00101 J	0.00922	0.00185 J	<0.001 U	0.00158 J	NA	<0.001 U
ZINC	mg/L	31	<0.025 U	NA	0.0153 J	NA	<0.025 U	NA	<0.025 U	<0.025 U	<0.025 U	0.127	<0.025 U	0.0231 J	NA	0.0267 J
Perchlorate (6850)																
PERCHLORATE	ug/L	17	3.02	<0.2 U	5.48	<0.2 U	NA	<0.2 U	NA	<0.2 U	14800	33.3	15400	31300	22200	8290
Mercury (7470A)																
MERCURY	mg/L	0.002	<0.0002 U	NA	<0.0002 U	NA	<0.0002 U	NA	<0.0002 U	<0.0002 U	<0.0002 U	<0.0002 U	<0.0002 U	<0.0002 U	NA	<0.0002 U
Volatile Organic Compounds (8260B)																
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<0.4 U	<0.4 U	<0.4 UJ	<0.4 U	NA	<0.4 U	NA	<0.4 U	<4 U	<100 U	<1 U	<0.4 U	<4 U	<0.4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U
1,1-DICHLOROETHANE	ug/L	4900	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U	NA	<0.25 U	<2.5 U	<62.6 U	4.57	3.44	<2.5 U	<0.25 U
1,1-DICHLOROETHENE	ug/L	7	<1 U	<1 U	<1 UJ	<1 U	NA	<1 U	NA	<1 U	7.5 J	505	32.8	1.01 J	5.8 J	<1 U
1,1-DICHLOROPROPENE	ug/L	9.1	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<0.3 U	<0.3 U	<0.3 UJ	<0.3 U	NA	<0.3 U	NA	<0.3 U	<3 U	<75 U	<0.75 U	<0.3 U	<3 U	<0.3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<1 U	<1 U	<1 UJ	<1 U	NA	<1 U	NA	<1 U	<10 U	<250 U	<2.5 U	<1 U	<10 U	<1 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<0.4 U	<0.4 U	<0.4 UJ	<0.4 U	NA	<0.4 U	NA	<0.4 U	<4 U	<100 U	<1 U	<0.4 U	<4 U	<0.4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<2 U	<2 U	<2 UJ	<2 U	NA	<2 U	NA	<2 U	<20 U	<500 U	<5 U	<2 UJ	<20 U	<2 U
1,2-DIBROMOETHANE	ug/L	0.05	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U
1,2-DICHLOROBENZENE	ug/L	600	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U	NA	<0.25 U	<2.5 U	<62.6 U	<0.626 U	<0.25 U	<2.5 U	<0.25 U
1,2-DICHLOROETHANE	ug/L	5	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	138	<125 U	<1.25 U	<0.5 U	28	0.592 J
1,2-DICHLOROPROPANE	ug/L	5	<0.4 U	<0.4 U	<0.4 UJ	<0.4 U	NA	<0.4 U	NA	<0.4 U	<4 U	<100 U	<1 U	<0.4 U	<4 U	<0.4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U
1,3-DICHLOROBENZENE	ug/L	730	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	<125 U	<1.25 U	0.565 J	<5 U	<0.5 U
1,3-DICHLOROPROPANE	ug/L	9.1	<0.4 U	<0.4 U	<0.4 UJ	<0.4 U	NA	<0.4 U	NA	<0.4 U	<4 U	<100 U	<1 U	<0.4 U	<4 U	<0.4 U
1,4-DICHLOROBENZENE	ug/L	75	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U	NA	<0.25 U	<2.5 U	<62.6 U	<0.626 U	<0.25 U	<2.5 U	<0.25 U
2,2-DICHLOROPROPANE	ug/L	13	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U
2-BUTANONE	ug/L	15000	<5 U	<5 U	<5 UJ	<5 U	NA	<5 U	NA	<5 U	<50 U	<1250 U	<12.5 U	<5 UJ	<50 UJ	<5 U
2-CHLOROTOLUENE	ug/L	490	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U	NA	<0.25 U	<2.5 U	<62.6 U	<0.626 U	<0.25 U	<2.5 U	<0.25 U
2-HEXANONE	ug/L	120	<5 U	<5 U	<5 UJ	<5 U	NA	<5 U	NA	<5 U	<50 UJ	<1250 UJ	<12.5 UJ	<5 UJ	<50 U	<5 U
4-CHLOROTOLUENE	ug/L	490	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U
4-METHYL-2-PENTANONE	ug/L	2000	<5 U	<5 U	<5 UJ	<5 U	NA	<5 U	NA	<5 U	<50 U	<1250 U	<12.5 U	<5 U	<50 U	<5 U
ACETONE	ug/L	22000	<5 U	<5 U	<5 UJ	3.24 J	NA	<5 U	NA	<5 U	<50 U	<1250 U	48.4	<5 UJ	<50 UJ	<5 U
BENZENE	ug/L	5	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U	NA	<0.25 U	2.09 J	<62.6 U	<0.626 U	<0.25 U	<2.5 U	<0.25 U
BROMOBENZENE	ug/L	200	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U	NA	<0.25 U	<2.5 U	<62.6 U	<0.626 U	<0.25 U	<2.5 U	<0.25 U
BROMOCHLOROMETHANE	ug/L	980	<0.4 U	<0.4 U	<0.4 UJ	<0.4 U	NA	<0.4 U	NA	<0.4 U	<4 U	<100 U	<1 U	<0.4 U	<4 U	<0.4 U

Table 3-5: LHAAP-18/24 Semi-Annual Sampling - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	C01FD-061716 6/17/2016	C02-061716 6/17/2016	C03-061416 6/14/2016	C04-062116 6/21/2016	C04F-062116 6/21/2016	C04FD-062116 6/21/2016	C04FFD-062116 6/21/2016	C08-061416 6/14/2016	MW1-061016 6/10/2016	MW2-062416 6/24/2016	MW3-061016 6/10/2016	MW5-060816 6/8/2016	MW7-062416 6/24/2016	MW8-060916 6/9/2016
BROMODICHLOROMETHANE	ug/L	15	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U
BROMOFORM	ug/L	120	<1 U	<1 U	<1 UJ	<1 U	NA	<1 U	NA	<1 U	<10 U	<250 U	<2.5 U	<1 U	<10 U	<1 U
BROMOMETHANE	ug/L	34	<1 U	<1 U	<1 UJ	<1 U	NA	<1 U	NA	<1 UJ	<10 U	<250 U	<2.5 U	<1 U	<10 U	<1 UJ
CARBON DISULFIDE	ug/L	2400	<1 U	<1 U	<1 UJ	<1 U	NA	<1 U	NA	<1 U	<10 U	<250 U	<2.5 U	<1 U	<10 U	<1 U
CARBON TETRACHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	2.77 J	<0.5 U
CHLOROBENZENE	ug/L	100	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U	NA	<0.25 U	<2.5 U	<62.6 U	<0.626 U	<0.25 U	<2.5 U	<0.25 U
CHLOROETHANE	ug/L	98000	<1 U	<1 U	<1 UJ	<1 U	NA	<1 U	NA	<1 U	<10 U	<250 U	<2.5 U	<1 U	<10 U	<1 U
CHLOROFORM	ug/L	240	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U	NA	<0.25 U	5.62 J	58.1 J	1.96 J	0.43 J	14.1	0.607 J
CHLOROMETHANE	ug/L	70	<1 U	<1 U	<1 UJ	<1 U	NA	<1 U	NA	<1 U	<10 U	<250 U	<2.5 U	<1 U	<10 UJ	<1 U
CIS-1,2-DICHLOROETHENE	ug/L	70	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	1120	43600	85.2	13.4	13.8	0.867 J
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U
DIBROMOCHLOROMETHANE	ug/L	11	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U
DIBROMOMETHANE	ug/L	120	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	<125 U	2.56	<0.5 U	<5 UJ	<0.5 U
ETHYLBENZENE	ug/L	700	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	159 J	<1.25 U	<0.5 U	<5 U	<0.5 U
HEXACHLOROBUTADIENE	ug/L	12	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U
ISOPROPYLBENZENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U
M,P-XYLENE	ug/L	10000	<1 U	<1 U	<1 UJ	<1 U	NA	<1 U	NA	<1 U	<10 U	<250 U	<2.5 U	<1 U	<10 U	<1 U
METHYLENE CHLORIDE	ug/L	5	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	21300	<1.25 U	<0.5 U	<5 U	<0.5 U
NAPHTHALENE	ug/L	490	<0.4 U	<0.4 U	<0.4 UJ	<0.4 U	NA	<0.4 U	NA	<0.4 U	<4 U	<100 U	<1 U	<0.4 U	<4 U	<0.4 U
N-BUTYLBENZENE	ug/L	1200	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U
N-PROPYLBENZENE	ug/L	980	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U	NA	<0.25 U	<2.5 U	<62.6 U	<0.626 U	<0.25 U	<2.5 U	<0.25 U
O-XYLENE	ug/L	10000	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U
SEC-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U
STYRENE	ug/L	100	<0.25 U	<0.25 U	<0.25 UJ	<0.25 U	NA	<0.25 U	NA	<0.25 U	<2.5 U	<62.6 U	<0.626 U	<0.25 U	<2.5 U	<0.25 U
TERT-BUTYLBENZENE	ug/L	980	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U
TETRACHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	85.1 J	0.992 J	<0.5 U	<5 U	<0.5 U
TOLUENE	ug/L	1000	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<5 U	<125 U	<1.25 U	<0.5 U	<5 U	<0.5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	3.11 J	80.2 J	3.3	0.254 J	<5 U	<0.5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<1 U	<1 U	<1 UJ	<1 U	NA	<1 U	NA	<1 U	<10 U	<250 U	<2.5 U	<1 U	<10 U	<1 U
TRICHLOROETHENE	ug/L	5	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	5.61	3620	15500	491	53.7	1740	247
TRICHLOROFLUOROMETHANE	ug/L	7300	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	<10 U	<125 U	0.74 J	<0.5 U	<5 U	<0.5 U
VINYL CHLORIDE	ug/L	2	<0.5 U	<0.5 U	<0.5 UJ	<0.5 U	NA	<0.5 U	NA	<0.5 U	6.08 J	<125 U	10.2	4.91	<5 UJ	<0.5 U
1,4-Dioxane (8270D-SIM)																
1,4-DIOXANE	ug/L	9.1	NA	NA	<1 U	NA	NA	NA	NA	<1 U	NA	7.58	NA	0.819 J	13.4	0.649 J

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter.

Location IDs containing "FD" indicate duplicate samples.

Location IDs containing "B" indicate sample taken at bottom of screened interval and "T" indicate sample taken at top of screened interval.

Blue Highlighting Indicates Analyte Detected Above MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Level

mg/L - milligrams per liter

NA - not analyzed

PCL – Texas Residential Groundwater protective concentration level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 3-5: LHAAP-18/24 Semi-Annual Sampling - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	MW9-062216 6/22/2016	MW10-060916 6/9/2016	MW10F-060916 6/9/2016	MW12-061016 6/10/2016	MW13-061716 6/17/2016	MW14B-060716 6/7/2016	MW14T-060716 6/7/2016	MW16-062116 6/21/2016	MW16F-062116 6/21/2016	MW17-062016 6/20/2016	MW18-061716 6/17/2016	MW18F-061716 6/17/2016	MW19-061716 6/17/2016	MW19F-061716 6/17/2016
Metals (6010C)																
ALUMINUM	mg/L	100	NA	NA	0.0804 J	NA	NA	NA	NA	NA	<0.1 U	NA	NA	1.91	NA	35.6
BERYLLIUM	mg/L	0.004	NA	NA	<0.01 U	NA	NA	NA	NA	NA	<0.01 U	NA	NA	<0.01 U	NA	0.00575 J
CALCIUM	mg/L		NA	NA	7.72	NA	NA	NA	NA	NA	23.7	NA	NA	14.1	NA	18.9
IRON	mg/L		NA	NA	5.73	NA	NA	NA	NA	NA	38.8	NA	NA	12.6	NA	50
MAGNESIUM	mg/L		NA	NA	2.22	NA	NA	NA	NA	NA	17.3	NA	NA	6.42	NA	9.83
POTASSIUM	mg/L		NA	NA	2.09	NA	NA	NA	NA	NA	4.1	NA	NA	2.19	NA	3.84
SELENIUM	mg/L	0.05	NA	NA	<0.01 U	NA	NA	NA	NA	NA	0.00641 J	NA	NA	<0.01 U	NA	<0.01 U
SODIUM	mg/L		NA	NA	9.56	NA	NA	NA	NA	NA	142	NA	NA	249 J	NA	20.5
Metals (6020A)																
ANTIMONY	mg/L	0.006	NA	NA	<0.001 U	NA	NA	NA	NA	NA	<0.001 U	NA	NA	0.00149 J	NA	<0.001 U
ARSENIC	mg/L	0.01	NA	NA	<0.001 U	NA	NA	NA	NA	NA	0.0156	NA	NA	0.00583	NA	0.013
BARIUM	mg/L	2	NA	NA	0.0526	NA	NA	NA	NA	NA	0.411	NA	NA	0.157 J	NA	0.695
CADMIUM	mg/L	0.005	NA	NA	0.000376 J	NA	NA	NA	NA	NA	0.000563 J	NA	NA	0.00225	NA	0.00495
CHROMIUM	mg/L	0.1	NA	NA	0.00283 J	NA	NA	NA	NA	NA	0.00236 J	NA	NA	0.0138 J	NA	0.116
COBALT	mg/L	6.1	NA	NA	0.00127 J	NA	NA	NA	NA	NA	0.00976	NA	NA	0.00915	NA	0.0274
COPPER	mg/L	1.3	NA	NA	0.00144 J	NA	NA	NA	NA	NA	<0.002 U	NA	NA	0.00447	NA	0.127
LEAD	mg/L	0.015	NA	NA	<0.001 U	NA	NA	NA	NA	NA	<0.001 U	NA	NA	0.00227	NA	0.0706
MANGANESE	mg/L	1.1	NA	NA	0.3	NA	NA	NA	NA	NA	0.659	NA	NA	0.36 J	NA	1.09
NICKEL	mg/L	0.49	NA	NA	0.00494 J	NA	NA	NA	NA	NA	0.0181	NA	NA	0.063	NA	0.0997
SILVER	mg/L	0.51	NA	NA	<0.001 U	NA	NA	NA	NA	NA	<0.001 U	NA	NA	<0.001 U	NA	<0.001 U
THALLIUM	mg/L	0.002	NA	NA	<0.0002 U	NA	NA	NA	NA	NA	<0.0002 U	NA	NA	0.000127 J	NA	0.000821
VANADIUM	mg/L	0.72	NA	NA	<0.001 U	NA	NA	NA	NA	NA	0.000902 J	NA	NA	0.0105	NA	0.152
ZINC	mg/L	31	NA	NA	<0.025 U	NA	NA	NA	NA	NA	0.0293 J	NA	NA	0.0491 J	NA	1.09
Perchlorate (6850)																
PERCHLORATE	ug/L	17	263	0.492	NA	0.2 J	<0.2 U	229000	177000	0.615	NA	<0.2 U	<0.2 U	NA	11.4	NA
Mercury (7470A)																
MERCURY	mg/L	0.002	NA	NA	<0.0002 U	NA	NA	NA	NA	NA	<0.0002 U	NA	NA	<0.0002 U	NA	0.000381 J
Volatile Organic Compounds (8260B)																
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
1,1,1-TRICHLOROETHANE	ug/L	200	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<4 U	<0.4 U	NA	<0.8 U	<0.4 U	<40 U	<40 U	<1 U	NA	<0.4 U	<0.4 U	NA	<0.4 U	NA
1,1,2-TRICHLOROETHANE	ug/L	5	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
1,1-DICHLOROETHANE	ug/L	4900	<2.5 U	<0.25 U	NA	1.71 J	<0.25 U	37.3 J	34.7 J	1.73 J	NA	<0.25 U	<0.25 U	NA	<0.25 U	NA
1,1-DICHLOROETHENE	ug/L	7	<10 UJ	<1 U	NA	3.41 J	<1 U	195 J	154 J	9	NA	<1 U	<1 U	NA	<1 U	NA
1,1-DICHLOROPROPENE	ug/L	9.1	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
1,2,3-TRICHLOROBENZENE	ug/L	73	<3 U	<0.3 U	NA	<0.6 U	<0.3 U	<30 U	<30 U	<0.75 U	NA	<0.3 U	<0.3 U	NA	<0.3 U	NA
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<10 U	<1 U	NA	<2 U	<1 U	<100 U	<100 U	<2.5 U	NA	<1 U	<1 U	NA	<1 U	NA
1,2,4-TRICHLOROBENZENE	ug/L	70	<4 U	<0.4 U	NA	<0.8 U	<0.4 U	<40 U	<40 U	<1 U	NA	<0.4 U	<0.4 U	NA	<0.4 U	NA
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<20 U	<2 U	NA	<4 U	<2 U	<200 U	<200 U	<5 UJ	NA	<2 U	<2 U	NA	<2 U	NA
1,2-DIBROMOETHANE	ug/L	0.05	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
1,2-DICHLOROBENZENE	ug/L	600	<2.5 U	<0.25 U	NA	<0.5 U	<0.25 U	<25 U	<25 U	<0.626 U	NA	<0.25 U	<0.25 U	NA	<0.25 U	NA
1,2-DICHLOROETHANE	ug/L	5	<5 U	<0.5 U	NA	1.82 J	<0.5 U	140	114	<1.25 UJ	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
1,2-DICHLOROPROPANE	ug/L	5	<4 U	<0.4 U	NA	<0.8 U	<0.4 U	<40 U	<40 U	<1 U	NA	<0.4 U	<0.4 U	NA	<0.4 U	NA
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
1,3-DICHLOROBENZENE	ug/L	730	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
1,3-DICHLOROPROPANE	ug/L	9.1	<4 U	<0.4 U	NA	<0.8 U	<0.4 U	<40 U	<40 U	<1 U	NA	<0.4 U	<0.4 U	NA	<0.4 U	NA
1,4-DICHLOROBENZENE	ug/L	75	<2.5 U	<0.25 U	NA	<0.5 U	<0.25 U	<25 U	<25 U	<0.626 U	NA	<0.25 U	<0.25 U	NA	<0.25 U	NA
2,2-DICHLOROPROPANE	ug/L	13	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 UJ	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
2-BUTANONE	ug/L	15000	<50 U	<5 U	NA	<10 U	<5 U	<500 U	<500 U	<12.5 UJ	NA	<5 U	<5 U	NA	<5 U	NA
2-CHLOROTOLUENE	ug/L	490	<2.5 U	<0.25 U	NA	<0.5 U	<0.25 U	<25 U	<25 U	<0.626 U	NA	<0.25 U	<0.25 U	NA	<0.25 U	NA
2-HEXANONE	ug/L	120	<50 U	<5 U	NA	<10 U	<5 U	<500 U	<500 U	<12.5 UJ	NA	<5 U	<5 U	NA	<5 U	NA
4-CHLOROTOLUENE	ug/L	490	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
4-METHYL-2-PENTANONE	ug/L	2000	<50 U	<5 U	NA	<10 U	<5 U	<500 U	<500 U	<12.5 U	NA	<5 U	<5 U	NA	<5 U	NA
ACETONE	ug/L	22000	<50 U	<5 U	NA	<10 U	<5 U	<500 U	<500 U	<12.5 UJ	NA	<5 U	<5 U	NA	<5 U	NA
BENZENE	ug/L	5	<2.5 U	<0.25 U	NA	<0.5 U	<0.25 U	<25 U	<25 U	0.352 J	NA	<0.25 U	<0.25 U	NA	<0.25 U	NA
BROMOBENZENE	ug/L	200	<2.5 U	<0.25 U	NA	<0.5 U	<0.25 U	<25 U	<25 U	<0.626 U	NA	<0.25 U	<0.25 U	NA	<0.25 U	NA
BROMOCHLOROMETHANE	ug/L	980	<4 U	<0.4 U	NA	<0.8 U	<0.4 U	<40 U	<40 U	<1 U	NA	<0.4 U	<0.4 U	NA	<0.4 U	NA

Table 3-5: LHAAP-18/24 Semi-Annual Sampling - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	MW9-062216 6/22/2016	MW10-060916 6/9/2016	MW10F-060916 6/9/2016	MW12-061016 6/10/2016	MW13-061716 6/17/2016	MW14B-060716 6/7/2016	MW14T-060716 6/7/2016	MW16-062116 6/21/2016	MW16F-062116 6/21/2016	MW17-062016 6/20/2016	MW18-061716 6/17/2016	MW18F-061716 6/17/2016	MW19-061716 6/17/2016	MW19F-061716 6/17/2016
BROMODICHLOROMETHANE	ug/L	15	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
BROMOFORM	ug/L	120	<10 U	<1 U	NA	<2 U	<1 U	<100 U	<100 U	<2.5 U	NA	<1 U	<1 U	NA	<1 U	NA
BROMOMETHANE	ug/L	34	<10 U	<1 UJ	NA	<2 U	<1 U	<100 U	<100 U	<2.5 U	NA	<1 U	<1 U	NA	<1 U	NA
CARBON DISULFIDE	ug/L	2400	<10 U	<1 U	NA	<2 U	<1 U	<100 U	<100 U	<2.5 U	NA	<1 U	<1 U	NA	<1 U	NA
CARBON TETRACHLORIDE	ug/L	5	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
CHLOROBENZENE	ug/L	100	<2.5 U	<0.25 U	NA	<0.5 U	<0.25 U	<25 U	<25 U	<0.626 U	NA	<0.25 U	<0.25 U	NA	<0.25 U	NA
CHLOROETHANE	ug/L	98000	<10 U	<1 U	NA	<2 U	<1 U	<100 U	<100 U	<2.5 U	NA	<1 U	<1 U	NA	<1 U	NA
CHLOROFORM	ug/L	240	3.97 J	<0.25 U	NA	<0.5 U	<0.25 U	13.2 J	<25 U	<0.626 U	NA	<0.25 U	<0.25 U	NA	<0.25 U	NA
CHLOROMETHANE	ug/L	70	<10 U	<1 U	NA	<2 U	<1 U	<100 U	<100 U	<2.5 U	NA	<1 U	<1 U	NA	<1 U	NA
CIS-1,2-DICHLOROETHENE	ug/L	70	64.7	<0.5 U	NA	42.6	<0.5 U	2550	2600	31.2	NA	0.41 J	1.11	NA	0.345 J	NA
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
DIBROMOCHLOROMETHANE	ug/L	11	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
DIBROMOMETHANE	ug/L	120	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
DICHLORODIFLUOROMETHANE	ug/L	4900	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
ETHYLBENZENE	ug/L	700	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
HEXACHLOROBUTADIENE	ug/L	12	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
ISOPROPYLBENZENE	ug/L	2400	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
M,P-XYLENE	ug/L	10000	<10 U	<1 U	NA	<2 U	<1 U	<100 U	<100 U	<2.5 U	NA	<1 U	<1 U	NA	<1 U	NA
METHYLENE CHLORIDE	ug/L	5	<5 U	<0.5 U	NA	<1 U	<0.5 U	53.5 J	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
NAPHTHALENE	ug/L	490	<4 U	<0.4 U	NA	<0.8 U	<0.4 U	<40 U	<40 U	<1 U	NA	<0.4 U	<0.4 U	NA	<0.4 U	NA
N-BUTYLBENZENE	ug/L	1200	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
N-PROPYLBENZENE	ug/L	980	<2.5 U	<0.25 U	NA	<0.5 U	<0.25 U	<25 U	<25 U	<0.626 U	NA	<0.25 U	<0.25 U	NA	<0.25 U	NA
O-XYLENE	ug/L	10000	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
P-ISOPROPYLTOLUENE	ug/L	2400	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
SEC-BUTYLBENZENE	ug/L	980	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
STYRENE	ug/L	100	<2.5 U	<0.25 U	NA	<0.5 U	<0.25 U	<25 U	<25 U	<0.626 U	NA	<0.25 U	<0.25 U	NA	<0.25 U	NA
TERT-BUTYLBENZENE	ug/L	980	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
TETRACHLOROETHENE	ug/L	5	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	0.786 J	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
TOLUENE	ug/L	1000	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
TRANS-1,2-DICHLOROETHENE	ug/L	100	<5 U	<0.5 U	NA	0.758 J	<0.5 U	<50 U	<50 U	0.747 J	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<10 U	<1 U	NA	<2 U	<1 U	<100 U	<100 U	<2.5 U	NA	<1 U	<1 U	NA	<1 U	NA
TRICHLOROETHENE	ug/L	5	1460	0.796 J	NA	294	<0.5 U	15900	12700	922	NA	<0.5 U	14.1	NA	1.82	NA
TRICHLOROFLUOROMETHANE	ug/L	7300	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
VINYL CHLORIDE	ug/L	2	<5 U	<0.5 U	NA	<1 U	<0.5 U	<50 U	<50 U	<1.25 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	NA
1,4-Dioxane (8270D-SIM)																
1,4-DIOXANE	ug/L	9.1	1.77 J	<1 U	NA	NA	NA	412	390	18	NA	<1 U	NA	NA	NA	NA

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter.

Location IDs containing "FD" indicate duplicate samples.

Location IDs containing "B" indicate sample taken at bottom of screened interval and "T" indicate sample taken at top of screened interval.

Blue Highlighting Indicates Analyte Detected Above MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Level

mg/L - milligrams per liter

NA - not analyzed

PCL – Texas Residential Groundwater protective concentration level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

Table 3-5: LHAAP-18/24 Semi-Annual Sampling - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	MW21-062216 6/22/2016	MW22-060816 6/8/2016	MW23-061716 6/17/2016
Metals (6010C)					
ALUMINUM	mg/L	100	<0.1 U	NA	NA
BERYLLIUM	mg/L	0.004	<0.01 U	NA	NA
CALCIUM	mg/L		213	NA	NA
IRON	mg/L		1.03	NA	NA
MAGNESIUM	mg/L		163	NA	NA
POTASSIUM	mg/L		2.61	NA	NA
SELENIUM	mg/L	0.05	<0.01 U	NA	NA
SODIUM	mg/L		580	NA	NA
Metals (6020A)					
ANTIMONY	mg/L	0.006	<0.001 U	NA	NA
ARSENIC	mg/L	0.01	0.00812	NA	NA
BARIUM	mg/L	2	5.91	NA	NA
CADMIUM	mg/L	0.005	0.00132	NA	NA
CHROMIUM	mg/L	0.1	0.195	NA	NA
COBALT	mg/L	6.1	0.0569	NA	NA
COPPER	mg/L	1.3	0.0261	NA	NA
LEAD	mg/L	0.015	<0.001 U	NA	NA
MANGANESE	mg/L	1.1	1.81	NA	NA
NICKEL	mg/L	0.49	0.76	NA	NA
SILVER	mg/L	0.51	<0.001 U	NA	NA
THALLIUM	mg/L	0.002	<0.0002 U	NA	NA
VANADIUM	mg/L	0.72	0.00262	NA	NA
ZINC	mg/L	31	0.023 J	NA	NA
Perchlorate (6850)					
PERCHLORATE	ug/L	17	26100	615	65200
Mercury (7470A)					
MERCURY	mg/L	0.002	<0.0002 U	NA	NA
Volatile Organic Compounds (8260B)					
1,1,1,2-TETRACHLOROETHANE	ug/L	35	<25 U	<1.25 U	<5 U
1,1,1-TRICHLOROETHANE	ug/L	200	<25 U	<1.25 U	<5 U
1,1,2,2-TETRACHLOROETHANE	ug/L	4.6	<20 U	<1 U	<4 U
1,1,2-TRICHLOROETHANE	ug/L	5	<25 U	<1.25 U	<5 U
1,1-DICHLOROETHANE	ug/L	4900	<12.5 U	<0.626 U	<2.5 U
1,1-DICHLOROETHENE	ug/L	7	<50 UJ	1.37 J	<10 U
1,1-DICHLOROPROPENE	ug/L	9.1	<25 U	<1.25 U	<5 U
1,2,3-TRICHLOROBENZENE	ug/L	73	<15 U	<0.75 U	<3 U
1,2,3-TRICHLOROPROPANE	ug/L	0.03	<50 U	<2.5 U	<10 U
1,2,4-TRICHLOROBENZENE	ug/L	70	<20 U	<1 U	<4 U
1,2,4-TRIMETHYLBENZENE	ug/L	1200	<25 U	<1.25 U	<5 U
1,2-DIBROMO-3-CHLOROPROPANE	ug/L	0.2	<100 U	<5 U	<20 U
1,2-DIBROMOETHANE	ug/L	0.05	<25 U	<1.25 U	<5 U
1,2-DICHLOROBENZENE	ug/L	600	<12.5 U	<0.626 U	<2.5 U
1,2-DICHLOROETHANE	ug/L	5	35.2 J	5.5	50.5
1,2-DICHLOROPROPANE	ug/L	5	<20 U	<1 U	<4 U
1,3,5-TRIMETHYLBENZENE	ug/L	1200	<25 U	<1.25 U	<5 U
1,3-DICHLOROBENZENE	ug/L	730	<25 U	<1.25 U	<5 U
1,3-DICHLOROPROPANE	ug/L	9.1	<20 U	<1 U	<4 U
1,4-DICHLOROBENZENE	ug/L	75	<12.5 U	<0.626 U	<2.5 U
2,2-DICHLOROPROPANE	ug/L	13	<25 U	<1.25 U	<5 U
2-BUTANONE	ug/L	15000	<250 U	<12.5 U	<50 U
2-CHLOROTOLUENE	ug/L	490	<12.5 U	<0.626 U	<2.5 U
2-HEXANONE	ug/L	120	<250 U	<12.5 U	<50 U
4-CHLOROTOLUENE	ug/L	490	<25 U	<1.25 U	<5 U
4-METHYL-2-PENTANONE	ug/L	2000	<250 U	<12.5 U	<50 U
ACETONE	ug/L	22000	<250 U	<12.5 U	<50 U
BENZENE	ug/L	5	<12.5 U	2.51	<2.5 U
BROMOBENZENE	ug/L	200	<12.5 U	<0.626 U	<2.5 U
BROMOCHLOROMETHANE	ug/L	980	<20 U	<1 U	<4 U

Table 3-5: LHAAP-18/24 Semi-Annual Sampling - June 2016

Location ID: / Sample Date:	Units	MCL/ PCL	MW21-062216 6/22/2016	MW22-060816 6/8/2016	MW23-061716 6/17/2016
BROMODICHLOROMETHANE	ug/L	15	<25 U	<1.25 U	<5 U
BROMOFORM	ug/L	120	<50 U	<2.5 U	<10 U
BROMOMETHANE	ug/L	34	<50 U	<2.5 U	<10 U
CARBON DISULFIDE	ug/L	2400	<50 U	<2.5 U	<10 U
CARBON TETRACHLORIDE	ug/L	5	<25 U	<1.25 U	<5 U
CHLOROBENZENE	ug/L	100	<12.5 U	<0.626 U	<2.5 U
CHLOROETHANE	ug/L	98000	<50 U	<2.5 U	<10 U
CHLOROFORM	ug/L	240	13.5 J	4.77	4.78 J
CHLOROMETHANE	ug/L	70	<50 U	<2.5 U	<10 U
CIS-1,2-DICHLOROETHENE	ug/L	70	112	5.7	7.33 J
CIS-1,3-DICHLOROPROPENE	ug/L	1.7	<25 U	<1.25 U	<5 U
DIBROMOCHLOROMETHANE	ug/L	11	<25 U	<1.25 U	<5 U
DIBROMOMETHANE	ug/L	120	<25 U	<1.25 U	<5 U
DICHLORODIFLUOROMETHANE	ug/L	4900	<25 U	<1.25 U	<5 U
ETHYLBENZENE	ug/L	700	<25 U	<1.25 U	<5 U
HEXACHLOROBUTADIENE	ug/L	12	<25 U	<1.25 U	<5 U
ISOPROPYLBENZENE	ug/L	2400	<25 U	<1.25 U	<5 U
M,P-XYLENE	ug/L	10000	<50 U	<2.5 U	<10 U
METHYLENE CHLORIDE	ug/L	5	<25 U	<1.25 U	<5 U
NAPHTHALENE	ug/L	490	<20 U	<1 U	<4 U
N-BUTYLBENZENE	ug/L	1200	<25 U	<1.25 U	<5 U
N-PROPYLBENZENE	ug/L	980	<12.5 U	<0.626 U	<2.5 U
O-XYLENE	ug/L	10000	<25 U	<1.25 U	<5 U
P-ISOPROPYLTOLUENE	ug/L	2400	<25 U	<1.25 U	<5 U
SEC-BUTYLBENZENE	ug/L	980	<25 U	<1.25 U	<5 U
STYRENE	ug/L	100	<12.5 U	<0.626 U	<2.5 U
TERT-BUTYLBENZENE	ug/L	980	<25 U	<1.25 U	<5 U
TETRACHLOROETHENE	ug/L	5	<25 U	<1.25 U	<5 U
TOLUENE	ug/L	1000	<25 U	<1.25 U	<5 U
TRANS-1,2-DICHLOROETHENE	ug/L	100	<25 U	<1.25 U	<5 U
TRANS-1,3-DICHLOROPROPENE	ug/L	9.1	<50 U	<2.5 U	<10 U
TRICHLOROETHENE	ug/L	5	6080	488	1170
TRICHLOROFLUOROMETHANE	ug/L	7300	<25 U	<1.25 U	<5 U
VINYL CHLORIDE	ug/L	2	46.2 J	<1.25 U	<5 U
1,4-Dioxane (8270D-SIM)					
1,4-DIOXANE	ug/L	9.1	1.55 J	NA	NA

Location IDs containing "F" indicate sample filtered in the field with 10 micron filter.

Location IDs containing "FD" indicate duplicate samples.

Location IDs containing "B" indicate sample taken at bottom of screened interval and "T" indicate sample taken at top of screened interval.

Blue Highlighting Indicates Analyte Detected Above MCL/PCL

Note: Some samples may have been diluted due to the concentration(s) of one or more analytes exceeding the upper limit of the calibration curve.

J - Estimated: The analyte was positively identified, the quantitation is an estimation due to discrepancies in meeting certain analyte-specific quality control criteria.

MCL - Maximum Contaminant Level

mg/L - milligrams per liter

NA - not analyzed

PCL – Texas Residential Groundwater protective concentration level

U - Undetected: The analyte was analyzed for, but not detected.

UJ - The analyte was not detected; however, the result is estimated due to discrepancies in meeting certain analyte-specific quality control criteria.

ug/L - micrograms per liter

4 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The information presented in this report was based on the LHAAP-18/24 Supplemental PSI WP (AECOM, 2015) that was reviewed by and concurrence was obtained from the TCEQ and the USEPA before implementation.

4.1 Summary

The following conclusions can be drawn from this investigation:

1. The information collected during this investigation achieved the objectives of the Supplemental PSI WP.
2. The lithology data collected in 2016 confirmed the updated CSM model and presence of Wilcox clay layer in the southern corner of the site, as well as northwest of the site in 18CPTMW19SW. The depth to the clay varied in the southern investigation area of the site from approximately 36 ft in the north (18DPT07) to 11.5 ft to the south (18DPT09). In the northwest area of the site in 18CPTMW23SW and 18WW25 in proximity to Harrison Bayou, the Wilcox clay layer was not encountered.
3. Discrete soil data in the southern portion of the site within the containment area revealed relatively low (101 Õg/kg in 18DPT04 at 5.5 ft bgs) to nondetectable concentrations of perchlorate in the vadose zone. In the shallow saturated zone, the highest concentration of perchlorate was detected in 18DPT04 at 36.5-37.0 ft bgs at 3,200 Õg/kg and below the MSC of 7,200 Õg/kg. Therefore, there is no particular source of perchlorate identified in the vadose or shallow saturated zone in the southern portion of the containment area.
4. Discrete soil data outside the southern portion of the containment area revealed relatively low (5.53 Õg/kg in 18DPT12 at 5-5.5 ft bgs) to nondetectable concentrations of perchlorate in the vadose zone. In the shallow saturated zone, the concentrations of perchlorate were typically low increasing in depth the closer the samples were to the Wilcox clay. The higher concentrations of perchlorate in the shallow saturated zone were detected in 18DPT03 (3,290 Õg/kg at 14.5-15 ft bgs), 18DPT15 (3,440 Õg/kg at 21-21.5 ft bgs), and 18DPT11 (3,940 Õg/kg at 20-20.5 ft bgs). These elevated concentrations of perchlorate were found in the coarser materials (sand) just above the Wilcox clay, but were below the MSC of 7,200 Õg/kg. Therefore, there is no particular source of perchlorate identified in the vadose or shallow saturated zone outside the southern portion of the containment area.
5. The highest perchlorate concentrations in the Wilcox clay were detected in the borehole of monitoring well 18CPTMW22DW at 9,440 Õg/kg at 29.5-30 ft bgs and 18DPT12 at 15,900 Õg/kg at 18-18.5 ft bgs (exceeding MSC of 7,200 Õg/kg). The elevated concentrations of perchlorate in 18DPT12 in the Wilcox clay may represent perchlorate that had migrated via groundwater to this location prior to installation of the groundwater extraction system.
6. Below the Wilcox clay and within the Wilcox sands in the southern portion of the site, the concentration of perchlorate generally decreases with the exception of 18DPT17 located within the containment area adjacent to the southwestern boundary.

7. Monitoring Well 18CPTMW19SW ï Low concentrations of perchlorate were reported in this boring with the highest concentration reported at 50-50.5 ft bgs at 170 Õg/kg in the Wilcox sand. The Wilcox clay appears to extend from 20.3 ft bgs to 41.4 ft bgs. The bottom soil sample at 60-61 ft bgs was < 2.54 Õg/kg for perchlorate providing vertical delineation.

8. Monitoring Well 18CPTMW23SW - relatively low concentrations of perchlorate were detected at 5-5.5 ft bgs, 10-10.5 ft bgs and 20-20.5 ft bgs at 19.6 Õg/kg , 1,920 Õg/kg, and 29.3 Õg/kg, respectively. At depths of 30-30.4 ft bgs, 40-40.5 ft bgs, 50-50.5 ft bgs, and 60-60.5 ft bgs perchlorate concentrations were below the detection limits, providing vertical delineation. Saturated conditions were observed at the surface and throughout the borehole as the area had previously been subjected to flooding due to heavy rains. Wilcox clay was not identified in this area of the site.

9. 18WW25 ï no perchlorate was detected in any of the analyzed soil samples at 3.5-4 ft bgs, 9.5-10 ft bgs, 14.5-15 ft bgs, 19.5-20 ft bgs, and 22-22.5 ft bgs. This well provides lateral extent delineation. Saturation at this location was encountered at approximately 2 ft bgs during drilling. The Wilcox clay was not identified.

10. VOC data was analyzed from the same soil samples collected for perchlorate analysis. The results indicated sporadic detection of VOCs with all concentrations below the VOC MSCs.

11. Groundwater elevation data in the Shallow Zone confirmed the presence of a groundwater high near AWD-2/123, similar to previous observations. Another groundwater high was identified to the south of the site in new Shallow Zone monitoring well 18CPTMW22R. This groundwater high substantiated the high historical groundwater elevations observed in adjacent well MW-20. The Wilcox Formation groundwater elevations indicate the presence of a groundwater high in the vicinity of MW-14 in the northwest area of the site, also consistent with previous observations.

12. New upper Wilcox Formation wells 18CPTMW19SW and 18CPTMW23SW and deep Wilcox Formation well 18CPTMW22DW provided additional vertical groundwater gradient information. Downward vertical gradients were observed between the Shallow Zone and upper Wilcox Formation in co-located wells 18CPTMW19/18CPTMW19SW and 18CPTMW23/18CPTMW23SW. However, an upward vertical gradient was observed between 18CPTMW22DW and new upper Wilcox Formation well 18CPTMW22SW.

13. Groundwater concentration data for perchlorate, TCE, MC, and 1,4-dioxane were collected and displayed as isoconcentration maps. The lateral extent of perchlorate, TCE, MC, and 1,4-dioxane in the Shallow Zone and in the Wilcox Formation has been determined with two exceptions. 1,4-Dioxane in MW-16 near Harrison Bayou had a concentration of 18 µg/L, exceeding the 1,4-dioxane PCL of 9.1 µg/L. The TCE result of 14.1 µg/L at MW-18, located to the southwest of the site, exceeded the MCL of 5 µg/L. New Shallow Zone monitoring well 18CPTMW26 located between LHAAP-18/24 and LHAAP-17 did not have sufficient water to collect a groundwater sample.

4.2 Conclusions

The following conclusions can be made based on the results of this investigation:

- No source of perchlorate was identified in the vadose zone soil or Shallow Zone groundwater outside or within the southern portion of the containment area.
- Perchlorate did not migrate to LHAAP-17 from LHAAP-18/24, based on low or non-detectable soil concentrations from 18CPTMW26, 18CPTMW26SW, and 18DP08.
- All VOC concentrations in soil were below the soil MSCs. Therefore, VOCs in the soil are not considered COCs in the southern area of the site.
- The Shallow Zone and Wilcox Formation wells define the lateral and vertical extent of perchlorate and VOCs above PCLs/MCLs in Shallow Zone and Wilcox Formation groundwater with the following exceptions: lateral extent of TCE in MW-18 in the Shallow Zone; vertical extent of perchlorate in the Wilcox Formation in MW-14 and 18CPTMW08DW.

4.3 Recommendations

The soil investigation results achieved the objectives of the work and no data gaps are identified. Accordingly, no further investigation of perchlorate concentrations in soil is recommended. The groundwater investigation results achieved the objectives of the work and provided lateral and vertical delineation of COCs in Shallow Zone and Wilcox Formation groundwater in the vicinity of the seven new wells. Groundwater samples will be collected from the site including monitoring well 18CPTMW26 during future semi-annual sampling events.

5 REFERENCES

AECOM, 2013. *Final Post-Screening Investigation Report, LHAAP-18/24, Longhorn Ammunition Plant, Karnack, Texas*, December.

AECOM, 2014. *Final Installation-Wide Work Plan for Longhorn Army Ammunition Plant, Karnack, Texas*, July.

AECOM, 2015. *Final LHAAP-18/24 Supplemental Post-Screening Investigation Work Plan, Longhorn Ammunition Plant, Karnack, Texas*, December.

AECOM, 2016. *Final Updated Post-Screening Investigation Report for LHAAP-18/24, Burning Ground No. 3 and Unlined Evaporation Pond, Longhorn Army Ammunition Plant, Karnack, Texas.* February.

Jacobs Engineering Corporation (Jacobs), 2002. *Baseline Risk Assessment Report for the Group 2 Sites Remedial Investigation (Sites 12, 17, 18/24, 29, and 32) at the Longhorn Army Ammunition Plant (LHAAP), Karnack, Texas, Final*, St. Louis, Missouri.

Plexus Scientific Corporation, 2005. *Final Environmental Site Assessment, Phase I and II Report, Production Areas, Longhorn Ammunition Plant, Karnack, Texas*, Columbia, Maryland, February.

APPENDIX A: Field Boring Logs & Well Construction Logs

AECOM

Client: USACE			BORING ID: 18DPT01
Project Number: 60274185			
Site Location: LHAAP Site 18/24			
Coordinates:	Elevation		Sheet 1 of 2
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' Core Barrel	Boring Diameter: 2 1/4"		Screened Interval:
Weather: Sunny 40's	Logged By: GH	Date/Time Started: 2/25/16	Depth of Boring: 28'
Drilling Contractor: FUGRO	Ground Elevation:	Date/Time Finished: 2/25/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
1						SM	SILTY FINE SAND, BROWN, WET		
2				48"/60"	6.2	CL	0.2' SILTY CLAY, MOTTLED REDDISH BROWN & GRAY, DAMP, MED. STIFF, MED. PLASTICITY		
3							3.7 SAA, INCREASE IN SILT, MOTTLED YELLOWISH ~~GRAY~~ & BROWN		
4									
5	X	5-5.5		—	7.3	X			
6							5.0 SILTY CLAY, MOTTLED YELLOWISH BROWN & GRAY, DAMP, STIFF, LOW-MED. PLASTICITY		
7				59"/60"	4.4	CL			
8									
9		9.5-10							
10	X			—	11.2				
11				21"/30"		ML/CL	10.0 CLAYEY SILT/SILTY CLAY, YELLOWISH BROWN & LT. GRAY, DAMP, MED. STIFF, LOW PLASTICITY		
12					4.8 ~~13.8~~	X			
13				26"/30"		CL	12.5 SILTY CLAY, YELLOWISH BROWN TO LT. GRAY, DAMP, MED. STIFF, LOW PLASTICITY		
14						SM	13.3 SILTY FINE SAND, LT GRAY & YELLOWISH BROWN, DAMP		
15					4.5	X			
16				23"/30"		SM	15.0 SAA, MOSTLY GRAY W/ Fe STAINING		
17						X	17.5 SILTY CLAY, BROWN W/ REDDISH BROWN STREAKS, DAMP, STIFF, MED. PLASTIC		
18				24"/30"	6.6	CL			
19						SM/SP	18.0 SILTY FINE SAND/FINE SAND, LT. GRAY W/ Fe STAINS MOIST		
20									

NOTES: TREMIED PORTLAND CEMENT W/ BENTONITE GEL TO 26' BGS

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18DPT01
Project Number: CHAAP SITE 18/24			
Site Location: 60274185			
Coordinates:	Elevation		Sheet 2 of 2
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' Core Barrel	Boring Diameter: 2 1/4"		Screened Interval:
Weather: Sunny, 40s	Logged By: GH	Date/Time Started: 2/25/16	Depth of Boring: 28'
Drilling Contractor: FUGRO	Ground Elevation:	Date/Time Finished:	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
21				30"/30"	9.0		SILTY FINE SAND, LT. GRAY w/ YELLOWISH BROWN ZONES, WET		
22		22.5–			4.0 ~~NA~~	SM			
23	X	23							
24				26"/30"					
25	X	24.5– 25			NA		25.0' SILTY CLAY, GRAY w/ YELLOWISH BROWN ~~wf~~ ZONES, ~DAMP VERY STIFF, LOW PLASTICITY		
26				36"/36"		CL			
27	X	27– 27.5			NA				
28							TD = 28'		
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18DPT02
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 1 of 2
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' Core Barrel	Boring Diameter: 2 1/4"		Screened Interval:
Weather: Sunny 30	Logged By: GH	Date/Time Started: 2/26/16	Depth of Boring: 25'
Drilling Contractor: FUGRO	Ground Elevation:	Date/Time Finished: 2/26/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
1						SM	SILTY FINE SAND, LT. BROWN, WET		
2				58"/60"			0.7 SILTY CLAY, REDDISH BROWN W/ SOME LT. GRAY MOTTLING, DAMP, STIFF, LOW-MED. PLASTICITY		
3					3.7	CL			
4									
5		5-5.5			20.1	X			
6							5.9 SILTY FINE SAND, MOTTLED REDDISH BROWN & LT. GRAY, DAMP, W/ OCCASIONAL SILTY CLAY (LT. GRAY) LAMINAE UP TO 1" THICK		
7				58"/60"					
8					4.3				
9									
10		10-10.5			9.3	SM	8.5 SAA, MOIST/WET		
11							10.0 SILTY FINE SAND, YELLOWISH BROWN W/ OCCASIONAL LT GRAY FINE SAND LAMINAE TO 1" THICK WET		
12				58"/60"					
13					4.1				
14									
15		15-15.5			3.6				
16									
17				56"/60"			16.7 SILTY CLAY, LT. GRAY, VERY STIFF, DAMP, MED. PLASTICITY		
18					4.3	CL	18.2 FINE SAND, LT. GRAY, WET		
19						SP	18.9 SILTY CLAY, LT. GRAY W/ YELLOWISH BROWN STREAKS, DAMP, STIFF		
20					1.1	CL			

NOTES: TREMIED PORTLAND CEMENT W/ BENTONITE GEL TO 25' BGS

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 1BDPT02
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 2 of 2
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' CONE BARREL	Boring Diameter: 2 1/4"		Screened Interval:
Weather: SUNNY, 30	Logged By: GH	Date/Time Started: 2/26/16	Depth of Boring: 25
Drilling Contractor: FUGRO	Ground Elevation:	Date/Time Finished: 2/26/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
21							SILTY CLAY, LT. GRAY & YELLOWISH BROWN, DAMP, VERY STIFF, LOW-MOD. PLASTICITY		
22	X	22-22.5		43"/60"	2.2	CL			
23						SM	22.9 SILTY FINE SAND, LT. GRAY & YELLOWISH BROWN, WET		
24						X			
25									
26									
27							TD = 25'		
28									
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18DPT03
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 1 of 2
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' Core Barrel	Boring Diameter: 2 1/4"		Screened Interval:
Weather: SUNNY 40	Logged By: GH	Date/Time Started: 2/26/16	Depth of Boring: 25
Drilling Contractor: FUGRO	Ground Elevation:	Date/Time Finished: 2/26/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
						SM	SILTY FINE SAND, BROWN, WET		
1							0.5 SILTY CLAY, MOTTLED GRAY & BROWN, SOFT, WET		
2				35"/60"		CL			
3					1.5				
4									
5		5-5.5			5.4		5.0 SILTY CLAY, GRAY TO LT. GRAY & YELLOWISH BROWN, DAMP, VERY STIFF LOW PLASTICITY, BROWNISH SANDING AT 6.5'		
6				57"/60"		CL			
7					8.5	ML/SM	7.0 SILTY FINE SAND / SANDY SILT W/ OCCASIONAL 1" CLAY LAYERS, MOTTLED GRAY & YELLOWISH BROWN, DAMP		
8									
9									
10		10-10.5			3.3		10.0 SILTY FINE SAND, BROWNISH GRAY, MOIST		
11				60"/60"					
12					5.4	SM			
13							13.5 SILT, YELLOWISH BROWN, MOIST/WET		
14		14.5-15				ML	14.2 SILTY FINE SAND, LT. GRAY, WET		
15					4.8	SM	15.0 SILTY CLAY, LT. GRAY W/ YELLOWISH BROWN MOTTLING, DAMP, VERY STIFF, LOW-MOD. PLASTICITY, OCCASIONAL SILTY FINE SAND TO 1/2"		
16				42"/60"		CL			
17		17.5-18			NA				
18									
19									
20									

NOTES: ORIGINALLY ONLY 24" RECOVERY FOR 15-20' SAMPLES, STEPPED OUT ~1' AND RESAMPLED 15-20' ZONE AND RECOVERED 42".

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18DPT03
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 2 of 2
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' CONS BARREL	Boring Diameter: 2 1/4"		Screened Interval:
Weather: SUNNY 40	Logged By: GH	Date/Time Started: 2/26/14	Depth of Boring: 25'
Drilling Contractor: MUGNO	Ground Elevation:	Date/Time Finished: 2/26/14	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
21				48"/60"	4.8	SM/SP	SILTY SAND / FINE SAND, YELLOWISH BROWN, WET, AREAS W/ FINE-MED. GRAINED SAND		
22									
23									
24						CL	23.9 SILTY CLAY, MOTTLED GRAY & YELLOWISH BROWN, MOIST, MED. STIFF		
25									
26									
27							TD = 25'		
28									
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									

NOTES: TREMIED PORTLAND CEMENT W/ BENTONITE GEL TO 20' BGS.

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18DPT04
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 1 of 2
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' CONS BARRER	Boring Diameter: 2 1/4"		Screened Interval:
Weather: SUNNY 40	Logged By: GH	Date/Time Started: 2/24/16	Depth of Boring: 40'
Drilling Contractor: FUGRO	Ground Elevation:	Date/Time Finished: 2/24/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
1						SM	SILTY FINE SAND, BROWN, MOIST TO WET		
2				48"/60"			1.5 SILTY CLAY, REDDISH BROWN, DAMP MOD. STIFF, PLASTIC		
3					4.0	CH			
4									
5		5-5.5			8.0		SAA		
6				60"/60"		CL			
7					6.0		7.0 SANDY CLAY, GRAY + YELLOWISH BROWN, DAMP, MOD. STIFF, LOW-MOD. PLASTICITY		
8									
9						CL	8.8 SILTY FINE SAND, MOTTLED REDDISH BROWN, GRAY + YELLOWISH BROWN		
10					NA	SM / CL	9.6 SILTY CLAY, MOTTLED YELLOWISH BROWN + GRAY, DAMP, STIFF, LOW PLASTICITY		
11									
12				6"/60"	NA		10.0-14.5 SLEEVE JAMMED COULD NOT RECOVER SAMPLE		
13									
14									
15		15-15.5			5.8	SM	14.5 SILTY FINE SAND, YELLOWISH BROWN, WET		
16				26"/30"		CL	15.0 SILTY CLAY W/ FINE SAND LAMINATIONS TO 1", DAMP, STIFF, LOW-MED. PLASTICITY		
17					5.9				
18				30"/30"		CL	17.5 SAA, LESS SAND LAMINATIONS		
19									
20					4.0				

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18DPT04
Project Number: 60274185			
Site Location: CHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 2 of 2
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' CONE BARREL	Boring Diameter: 2'4"		Screened Interval:
Weather: SUNNY 40'S	Logged By: GH	Date/Time Started: 2/24/16	Depth of Boring: 40'
Drilling Contractor: FUGRO	Ground Elevation:	Date/Time Finished: 2/24/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
21	X	20-21		30"/30"	3.2	ML/SM	SANDY SILT / SILTY FINE SAND, YELLOWISH BROWN, WET		
22									
23				24"/30"		CL	23.0 SANDY CLAY, YELLOWISH BROWN, DAMP, STIFF		
24						SM	24.0 SILTY FINE SAND, GRAY, WET		
25	X	25-25.5		30"/30"	6.3	SM	SAA		
26						CL	26.0 SILTY CLAY, MOTTLED GRAY & YELLOWISH BROWN, DAMP, V. STIFF		
27					6.8		26.5 SILTY FINE SAND, YELLOWISH BROWN, WET		
28				30"/30"		SM			
29	X	29-30			6.0		29.0 SAA, MOTTLED GRAY & YELLOWISH BROWN, WET		
30									
31				22"/30"					
32					4.0	X	32.5 SAA, W/ OCCASIONAL CLAY LAYERS TO 2"		
33				24"/30"		SM			
34	X	34-34.5			3.8	X	35.0 SILTY CLAY, GRAYISH BROWN, DAMP, MOD. STIFF, PLASTIC		
35				26"/30"		CH			
36	X	36.5-37			NA	X	37.0 SILTY FINE SAND, YELLOWISH BROWN, WET		
37				30"/30"	NA	SM			
38									
39									
40									

NOTES: TREMIED PORTLAND CEMENT W/ BENTONITE GEL TO 36' BGS.

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18DPT05
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 1 of 2
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' Cone Barrel	Boring Diameter: 2 1/4"		Screened Interval:
Weather: Sunny 30's	Logged By: GH	Date/Time Started: 2/25/16	Depth of Boring: 25
Drilling Contractor: FUGRO	Ground Elevation:	Date/Time Finished: 2/25/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
1				60"/60"		SM	SILTY FINE SAND, BROWN, MOIST-WET		
2							0.8 SILTY CLAY, MOTTLED, LT. GRAY & REDDISH BROWN, DAMP, MOD STIFF, MOD. PLASTIC		
3					5.2				
4		4.5-				CL	4.0 SAA, MORE LT. GRAY		
5	X	5.0			6.0				
6							6.6 INCREASE IN SAND		
7				53"/60"					
8					8.5				
9						SM	8.3 SILTY FINE SAND, YELLOWISH BROWN, MOIST		
10	X	10-			6.7	X			
11	X	11		36"/60"		SM/SP	10.0 SILTY FINE SAND / FINE SAND, YELLOWISH BROWN, MOIST, OCCASIONAL CLAY LAYERS TO 1", MOTTLED GRAY & ORANGE BROWN		
12					4.0				
13						X			
14									
15	X	15-15.5			11.0	SM/SP	SAA, WET		
16				60"/60"		CL	15.5 SILTY CLAY, LT. GRAY W/ ORANGE BROWN LAMINATIONS, DAMP, STIFF, LOW-MOD. PLASTICITY		
17						SM			
18					5.6		16.3 SILTY FINE SAND, MOTTLED LT. GRAY & YELLOWISH BROWN, WET		
19						CL	16.8 SILTY CLAY, MOTTLED LT. GRAY & YELLOWISH BROWN, DAMP, VERY STIFF, MOD. PLASTICITY		
20	X	19.5-20			11.0				

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18CPT05
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 2 of 2
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' Core Barrel	Boring Diameter: 2 1/4"		Screened Interval:
Weather: SUNNY, 30'S	Logged By: GF	Date/Time Started: 2/25/10	Depth of Boring: 25
Drilling Contractor: FUGRO	Ground Elevation:	Date/Time Finished: 2/25/10	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
21				42" / 60"	NA	CL	SILTY CLAY, MOTTLED LT. GRAY & YELLOWISH BROWN, DAMP, V. STIFF LOW-MOD. PLASTICITY		
22									
23						SM	21.8 SAA, LT. GRAY		
24							22.2 SILTY FINE SAND, GRADE TO YELLOWISH BROWN, WET		
25									
26									
27							TD = 25'		
28									
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									

NOTES: PROVIDED PORTLAND CEMENT W/ BENTONITE GEL TO 25' BGS

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18DPT06
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 1 of 2
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' Core Barrel	Boring Diameter: 2 1/4"		Screened Interval:
Weather: SUNNY 38	Logged By: GH	Date/Time Started: 3/2/16	Depth of Boring: 40'
Drilling Contractor: HGRO	Ground Elevation:	Date/Time Finished: 3/2/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
1						SM	SILTY FINE SAND, BROWN, MOIST		
				60"/60"			0.1 SILTY CLAY, REDDISH BROWN, DAMP, STIFF, MED. PLASTICITY		
2									
3					8.6		1.8 SAA, MOTTLED GRAY + REDDISH BROWN		
4									
5		5.0-5.5			5.4	CL	5.5 SANDY CLAY, YELLOWISH BROWN, DAMP, STIFF, MED. PLASTICITY OCCASIONAL SILTY FINE SAND TO 1" LAYERS		
6									
7				37"/60"					
8					6.3		7.9 SILTY FINE SAND, MOTTLED GRAY + LT BROWN + REDDISH BROWN, DAMP		
9									
10					0.0		10 SILTY CLAY, GRAY W/ YELLOWISH BROWN MOTTLING, DAMP, VERY STIFF, MED. PLASTICITY		
11				26"/30"		CL			
12						SM	11.5 INCREASE IN SAND		
13					3.0		11.7 SILTY FINE SAND, YELLOWISH BROWN, MOIST		
14				30"/30"		SM/SP	12.5 SILTY FINE SAND / FINE SAND, LT. GRAY + YELLOWISH BROWN, WET W/ OCCASIONAL SILTY CLAY LAYERS TO 1"		
15		15-15.5			5.7				
16				24"/30"		SM	14.2 SILTY FINE SAND, YELLOWISH BROWN, WET, W/ OCCASIONAL SILTY CLAY LAYERS TO 1".		
17					NA				
18				22"/30"	4.4	SM	SAA		
19									
20									

NOTES: SAMPLE BARREL JAMMED AT 10-15'. STEPPED RIG OVER @ 1' TO RESAMPLE 10-15' ZONE

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18DPT06
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 2 of 2
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' Core Barrel	Boring Diameter: 2 1/4"		Screened Interval:
Weather: Sunny 50's	Logged By: GH	Date/Time Started: 3/2/16	Depth of Boring: 40'
Drilling Contractor:	Ground Elevation:	Date/Time Finished: 3/2/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
		20							
21	X	20.5		24"/30"		SM	SILTY FINE SAND, YELLOWISH BROWN, WET		
22						CL	20.7 SILTY CLAY, GRAY W/ FEW YELLOWISH BROWN LAMINATIONS, DAMP, STIFF		
23				30"/30"	2.6	SM/SP	22.5 SILTY FINE SAND / FINE SAND, YELLOWISH BROWN, WET		
24						CL	24.0 SILTY CLAY, GRAY W/ YELLOWISH BROWN LAMINATIONS, DAMP, STIFF MED. PLASTICITY		
25					2.6	SM/SP	24.3 SILTY FINE SAND / FINE SAND, YELLOWISH BROWN WET		
26				30"/30"		CL/SC	25.2 SANDY CLAY / CLAYEY FINE SAND, GRAY, MOIST - WET		
27	X	27 - 27.5							
28				20"/30"	2.7	SM	28.2 SILTY FINE SAND, GRAY, WET W/ OCCASIONAL CLAYEY ZONES		
29									
30					0.7	SM	30 SILTY FINE SAND, YELLOWISH BROWN, WET, W/ OCCASIONAL CLAYEY ZONES		
31				26"/30"		CL	31.7 SILTY CLAY, LT. YELLOWISH BROWN, DAMP, STIFF, MED. PLASTICITY		
32					6.5	CL	32.5 SILTY CLAY, LT. YELLOWISH BROWN, MOIST - WET, STIFF LOW-MED. PLASTICITY W/ SOME LAMINATIONS OF FINE SAND		
33				24"/30"		SM	34.0 SILTY FINE SAND, YELLOWISH BROWN, WET		
34					5.3	SM	35.0 SILTY FINE SAND W/ TRACE OF CLAY, YELLOWISH BROWN, WET		
35				25"/30"		CL	36.2 SILTY CLAY, YELLOWISH BROWN MOIST - WET, MED. STIFF, MED. PLASTICITY		
36					2.0	CL	37.5 SILTY CLAY, GRAY W/ YELLOWISH BROWN, DAMP, STIFF, MED PLASTICITY		
37									
38	X	38.5 - 39		18"/30"	3.1				
39									
40									

NOTES: TREMIES PORTLAND CEMENT W/ BENTONITE GEL TO 40' BGS TD = 40'

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 68DPT07
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 1 of 2
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' CORE BARREL	Boring Diameter: 2 1/4"		Screened Interval:
Weather: SUNNY 50'S	Logged By: GH	Date/Time Started: 3/2/16	Depth of Boring: 40'
Drilling Contractor: FUGRO	Ground Elevation:	Date/Time Finished: 3/3/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
							ASPHALT		
1				38"/60"			0.5 SILTY CLAY, MOTTLED GRAY & YELLOWISH BROWN, DAMP, STIFF, MED. PLASTICITY		
2						CL			
3					0.3				
4									
5		5-5.5			4.0		5' SILTY CLAY, MOTTLED LT. GRAY & YELLOWISH BROWN, DAMP, STIFF, MED. PLASTICITY		
6				54"/60"		CL			
7									
8					2.3	SC	7.7' CLAYEY SAND, MOTTLED LT. GRAY & YELLOWISH BROWN, DAMP		
9						CL	8.1' SILTY CLAY, MOTTLED LT. GRAY & YELLOWISH BROWN, DAMP, STIFF, MED. PLASTICITY		
10					1.3				
11							SAA		
12				35"/60"		CL			
13					5.1				
14									
15		15-15.5			4.1	CL			
16						SM	15.8 SILTY FINE SAND, YELLOWISH BROWN, MOIST		
17				39"/60"		CL	16.4 SILTY CLAY, MOTTLED LT. GRAY & YELLOWISH, BROWN		
18					8.5	SM/SP	16.7 SILTY FINE SAND / FINE SAND, YELLOWISH BROWN, MOIST		
19						ML	17.7 SILT, YELLOWISH BROWN, DAMP		
20									

NOTES: @4:30 LOST CORE BARREL AT ~~18~~-20'.

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18DPT07
Project Number: 60274185			
Site Location: LHAAP Site 18/24			
Coordinates:	Elevation		Sheet 2 of 2
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' Cone Barrel	Boring Diameter: 2 1/4"		Screened Interval:
Weather: Drizzly 3/3/16	Logged By: GH	Date/Time Started: 3/2/16	Depth of Boring: 40'
Drilling Contractor: FUGRO	Ground Elevation:	Date/Time Finished: 3/3/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
21				12"/60"	14.2	SC	CLAYEY FINE SAND, YELLOWISH BROWN & LT. GRAY		
						CL	20.8 SILTY CLAY, YELLOWISH BROWN W/ LT. GRAY MOTTLING, DAMP, MED STIFF, MED. PLASTICITY		
22					NA				
23									
24									
25					5.2		25 SILTY CLAY, MOTTLED YELLOWISH BROWN & LT. GRAY, DAMP, MED-STIFF, MED. PLASTICITY		
26				36"/60"		CL			
27		27-27.5			4.2	SM/SP	26.7 SILTY FINE SAND/FINE SAND, YELLOWISH BROWN & LT. GRAY, WET		
28									
29									
30					9.6	SM	30 SILTY FINE SAND, YELLOWISH BROWN TO LT. BROWN, MOIST TO WET		
31				55"/60"		SP	31.0 FINE SAND, LT. BROWN TO YELLOWISH BROWN, WET		
32									
33					4.2	CH	32.5 SILTY CLAY, GRAYISH BROWN, DAMP, VERY STIFF, PLASTIC		
34		33.5-34.5				SP	32.8 FINE SAND, YELLOWISH BROWN TO LT. BROWN, WET		
35					3.5	SM & CL	35.0 INTERBEDDED SILTY FINE SAND & SILTY CLAY 1-2" THICK, YELLOWISH BROWN & GRAY		
36				48"/60"			36.0 SILTY CLAY, GRAY TO DARK GRAY, STIFF, DAMP, MED-HIGH PLASTICITY		
37					4.9	CL/CH			
38		38-39.0							
39									
40							TD = 40'		

NOTES: BEGAN DRILLING 3/3/16 STARTING AT 20'.
TREMIED PORTLAND CEMENT & BENTONITE GEL TO 36'

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18DPT08
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 1 of 2
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' Core Barrel	Boring Diameter: 2 1/4"		Screened Interval:
Weather: Sunny, 75	Logged By: GH	Date/Time Started: 3/3/16	Depth of Boring: 40
Drilling Contractor: Fugro	Ground Elevation:	Date/Time Finished: 3/3/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
1						ML	SANDY SILT, MOTTLED YELLOWISH BROWN & BROWN, WET		
2				42"/60"		ML	1.0 SILT, GRAY, MOIST		
3					1.6	CL	1.7 SILTY CLAY, DARK GRAY, DAMP, VERY STIFF, LOW PLASTICITY		
4									
5		5-5.5							
6					4.0		6.1 SILTY CLAY, DARK GRAYISH BROWN, DAMP, VERY STIFF, LOW PLASTICITY		
7				60"/60"					
8					4.1	CL			
9									
10		10-10.5							
11					3.3				
12				46"/60"		SC	12.0 CLAYEY FINE SAND, BROWN, MOIST-WET		
13					4.5	CL	12.4 SILTY CLAY, GRAY W/ ORANGE BROWN MOTTLES, DAMP, LOW PLASTICITY		
14									
15		15-15.5			8.3	CL	SAA		
16				46"/60"			15.5 CLAYEY SILT, MOTTLED LT. GRAY & YELLOWISH BROWN, MOIST TO WET, MOD. STIFF, LOW PLASTICITY		
17					6.6	ML			
18									
19									
20									

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18DPT08
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 2 of 2
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' Cons Barrel	Boring Diameter: 2 1/4"		Screened Interval:
Weather: Sunny 75	Logged By: GH	Date/Time Started: 3/3/16	Depth of Boring: 40'
Drilling Contractor: FUGRO	Ground Elevation:	Date/Time Finished: 3/3/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
21		21-21.5		46"/60"	2.3	ML	CLAYEY SILT, MOTTLED LT. GRAY & YELLOWISH BROWN, MOIST, MOD. STIFF, LOW PLASTICITY		
22					3.4	SM/SP	21.0 SILTY FINE SAND / FINE SAND, LT. GRAY, ~~WET~~ W/ OCCASIONAL YELLOWISH BROWN, WET		
23									
24									
25					2.1		25 SILTY FINE SAND, YELLOWISH BROWN, WET		
26		26-26.5		34"/60"		SM			
27					2.2				
28									
29									
30					2.0		30 SILTY FINE SAND, YELLOWISH BROWN, WET		
31				24"/60"		SM			
32					NA				
33									
34									
35		35-35.5		46"/60"	3.3		35 SILTY FINE SAND, LT. BROWN, WET, W/ OCCASIONAL SILTY CLAY, LT. GRAY TO 1".		
36						SM			
37					1.5				
38									
39									
40							TD = 40'		

NOTES: COULD NOT ACCESS BOREHOLE W/ TRACTOR & GROUT TRAILER DUE TO WET SOFT CONDITIONS. POURED PORTLAND CEMENT, W/ BENTONITE GEL IN OPEN HOLE TO 20' BGS.

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM			
Client: USACE			BORING ID: 18DPT09
Project Number: 60027 4185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 1 of 1
Drilling Method: DPT			Monitoring Well Installed: NO
Sample Type(s): 5' Core Barrel	Boring Diameter: 2 1/4"		Screened Interval:
Weather: Sunny 38°F	Logged By: GH	Date/Time Started: 3/4/16	Depth of Boring: 15'
Drilling Contractor: Fexro	Ground Elevation:	Date/Time Finished: 3/4/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
1				32"/60"			SILTY FINE SAND, BROWN, WET		
2							1.5 SILTY FINE SAND, MOTTLED LT. GRAY & ORANGE BROWN, WET		
3					9.9				
4									
5		5-5.5							
6				52"/60"	7.7	CL/SC	5.0 SANDY CLAY / CLAYEY SAND, MOTTLED GRAY, REDDISH BROWN & YELLOWISH BROWN, DAMP,		
7							6.8 SILTY FINE SAND, LT. GRAY & YELLOWISH BROWN, MOIST		
8					7.4	SM			
9									
10					2.1				
11		11-11.5		48"/60"		SM	SAA		
12							11.5 SILTY CLAY, MOTTLED LT. GRAY & YELLOWISH BROWN, DAMP, VERY STIFF, MOD. PLASTICITY		
13					5.6	CL			
14		13.5-14							
15									
16									
17							TD = 15'		
18									
19									
20									

NOTES:
TREMIED PORTLAND CEMENT & BENTONITE GEL TO 15' BGS

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18DPT10
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 1 of 2
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' CONE BREAKER	Boring Diameter: 2 1/4"		Screened Interval:
Weather: SUNNY ~60'S	Logged By: GH	Date/Time Started: 3/4/16	Depth of Boring: 25
Drilling Contractor: HGRO	Ground Elevation:	Date/Time Finished: 3/4/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
1							SILTY FINE SAND, BROWN, MOIST-WET		
2				54"/60"	2.5	SM			
3							1.7 SILTY CLAY, REDDISH BROWN DAMP, SOFT, LOW-MOD. PLASTICITY		
4						CL	3.5 SAA, MOTTLED REDDISH BROWN + GRAY, DAMP, MOD. STIFF, MOD. PLASTICITY		
5		5-5.5			5.0		5.0 SAA, MOTTLED YELLOWISH BROWN, + LT. GRAY		
6				54"/60"		CL			
7					2.4		7.4 SILTY FINE SAND, MOTTLED YELLOWISH BROWN + LT GRAY, DAMP		
8						SM			
9									
10					8.1		10.0 SANDY CLAY, LT. GRAY + YELLOWISH BROWN, DAMP TO DRY, HARD, LOW PLASTICITY		
11				24"/60"		CL			
12									
13					NA				
14									
15		15.5-16.0			6.3	CL	15.0' SILTY CLAY, MOTTLED ORANGE BROWN + LT. GRAY, DAMP, V. STIFF		
16				32"/60"		SM	15.3' SILTY FINE SAND, LT. GRAY W/ YELLOWISH BROWN LAMINATIONS, DAMP TO DRY		
17					4.5				
18									
19									
20									

NOTES: TREMIED PORTLAND CEMENT W/ BENTONITE GEL TO 25' BGS

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE		BORING ID: 18DPT10
Project Number: 60274185		
Site Location: LHAAP SITE 18/24		
Coordinates:	Elevation	Sheet 2 of 2
Drilling Method: DPT		Monitoring Well Installed:
Sample Type(s): 5' Core Barrel	Boring Diameter: 2 1/4"	Screened Interval:
Weather: SUNNY 60'S	Logged By: GH	Date/Time Started: 3/4/16
Drilling Contractor: FUGRO	Ground Elevation:	Date/Time Finished: 3/4/16
		Depth of Boring: 25
		Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
21				20"/30"	5.6	SM	SILTY FINE SAND, YELLOWISH BROWN, DAMP		
22						CL	20.8 SILTY CLAY, MOTTLED LT. GRAY & YELLOWISH BROWN & REDDISH BROWN, DAMP, VERY STIFF, MOD. PLASTICITY		
23		23.5		24"/30"	3.7	CL	22.5 SILTY CLAY, MOTTLED REDDISH BROWN & LT. GRAY, DAMP, VERY STIFF, MOD. PLASTICITY		
24		24				SM	23.9 SILTY FINE SAND, LT. GRAY W/ YELLOWISH BROWN MOTTLES, DAMP		
25						CL	24.3 SILTY CLAY, LT. GRAY W/ YELLOWISH BROWN MOTTLES, DAMP, VERY STIFF, MOD. ~~STIFF~~ PLASTICITY		
26									
27									
28							TD=25'		
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE		BORING ID: 18DPT11
Project Number: 60274185		
Site Location: LHAAP Site 18/24		
Coordinates:	Elevation	Sheet 1 of 2
Drilling Method: DPT		Monitoring Well Installed: No
Sample Type(s): 5' Core Barrel	Boring Diameter: 2 1/4"	Screened Interval:
Weather: Sunny 70's	Logged By: GM	Date/Time Started: 3/4/16	Depth of Boring: 30'
Drilling Contractor: Fugro	Ground Elevation:	Date Time Finished: 3/7/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
1				60"		FILL	SILTY CLAY, MOTTLED YELLOWISH BROWN & REDDISH BROWN, DAMP, STIFF, MED. PLASTIC		
2							1.7 - BLACK LINER		
3				60"	1.0		- INCREASE IN REDDISH BROWN		
4							3.5 SILTY ~~AND~~ CLAY, MOTTLED REDDISH BROWN & GRAY, DAMP, STIFF, MED. PLASTIC		
5		5-			1.5				
6		5.5					5.5 SILTY CLAY, MOTTLED LT. GRAY & YELLOWISH BROWN, DAMP, STIFF, MED. PLASTIC		
7				60"					
8					2.3	CL			
9				60"					
10					2.4		SAA		
11									
12				38"					
13					1.8				
14				60"					
15		15-					SILTY CLAY, MOTTLED LT. GRAY & YELLOWISH BROWN, DAMP, MEDIUM STIFF		
16		15.5				CL	-16.0 INCREASE IN SAND		
17				32"		SM	16.6 SILTY FINE SAND, YELLOWISH BROWN MOIST		
18						CL	17.0 SANDY CLAY, YELLOWISH BROWN & LT. GRAY LAYERS, MED. STIFF, LOW-MOD. PLASTICITY		
19				60"					
20									

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18DPT11
Project Number: 60274185			
Site Location: LHAAP Site 18/24			
Coordinates:	Elevation		Sheet 2 of 2
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' Cont Barrel	Boring Diameter: 2 1/4"		Screened Interval:
Weather: 3/7/16 - Cloudy 60's	Logged By: GH	Date/Time Started: 3/4/16	Depth of Boring: 30'
Drilling Contractor: Fugro	Ground Elevation:	Date/Time Finished: 3/7/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
21	X	20-20.5			1.0	SM	SILTY FINE SAND, MOTTLED GRAY & YELLOWISH BROWN, MOIST		
22				40"/60"		CL	20.9 SILTY CLAY, MOTTLED GRAY & YELLOWISH BROWN, DAMP, VERY STIFF, MOD. PLASTICITY W/ OCCASIONAL LAMINAS OF SILTY FINE SAND, MOIST		
						SM			
23					1.9	CL			
						SM			
24						CL			
25	X	25-25.5			2.4				
26						CL	SILTY CLAY, MOTTLED GRAY & YELLOWISH BROWN, DAMP, VERY STIFF, MOD PLASTIC W/ OCCASIONAL LAMINAS OF SILTY FINE SAND TO 1", GRAY, MOIST		
27				56"/60"					
28					1.7	SM			
						CL			
						SM			
29	X	29-29.5				CL			
30						X			
31									
32							TD = 30'		
33									
34									
35									
36									
37									
38									
39									
40									

NOTES: CONTINUED DRILLING ON 3/7/16 AT 20'

TREMIED PORTLAND CEMENT W/ BENTONITE GROUT TO 30'

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM	Client: USACE		BORING ID: 18DPT12
	Project Number: 60274185		
	Site Location: LHAAP SITE 18/24		
	Coordinates:	Elevation	Sheet 1 of 1
	Drilling Method: DPT		Monitoring Well Installed: No
	Sample Type(s): 5' CONS BARREL	Boring Diameter: 2 1/4"	Screened Interval
Weather: CLOUDY 60's	Logged By: GH	Date/Time Started: 3/7/16	Depth of Boring: 20'
Drilling Contractor: FUGRO	Ground Elevation	Date/Time Finished	Water Level

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
1						SM	SILTY FINE SAND W/TRACE OF CLAY, REDDISH BROWN, MOIST		
2				56"/60"	2.9				
3						ML	2.4 SILT, LT. BROWN, MOIST		
4						CL	2.7 SANDY CLAY, MOTTLED GRAY + YELLOWISH BROWN, DAMP, STIFF LOW-MED. PLASTICITY		
5		5-5.5			2.1				
6							SAA		
7				56"/60"	2.6	CL			
8							8.3 SILTY FINE SAND W/ TRACE OF CLAY, MOTTLED GRAY + YELLOWISH BROWN		
9		8.5-9.0				SM			
10					4.7		10 SILTY CLAY, YELLOWISH BROWN W/ GRAY LAYERS, DAMP, VERY STIFF, MED-HIGH PLASTICITY		
11						CL/CH			
12		12-12.5		30"/60"	4.2				
13									
14									
15							15 SILTY CLAY, GRAY W/ FEW YELLOWISH MOTTLES, DAMP, VERY STIFF, MED-HIGH PLASTICITY (SAMPLE BARREL IS WET)		
16				46"/60"		CL/CH			
17									
18		18-18.5							
19							TD = 20'		
20									

NOTES: TREMIED PORTLAND CEMENT W/ BENTONITE GEL TO 20' BGS

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18DPT13
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation:		Sheet 1 of
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5 CORE BARREL	Boring Diameter: 2 1/4"		Screened Interval:
Weather: CLOUDY 60'S	Logged By: GH	Date/Time Started: 3/7/16	Depth of Boring: 20'
Drilling Contractor: FUGRO	Ground Elevation:	Date/Time Finished: 3/7/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
1				56"/60"		CL	SILTY CLAY, MOTTLED REDDISH BROWN + GRAY, DAMP, MED. STIFF, LOW-MED. PLASTICITY		
2					0.9				
3							3.1 BECOMMING SANDIER		
4						SM	3.4 SILTY FINE SAND, REDDISH BROWN, DAMP		
5		5-5.5			2.7				
6				60"/60"		SM	SAA		
7						CL	6.1 SILTY CLAY, LT. GRAY W/ YELLOWISH BROWN MOTTLES, DAMP, STIFF, LOW-MED. PLASTICITY		
8					5.7	SM	6.7 SILTY FINE SAND, MOTTLED LT. GRAY + YELLOWISH BROWN, DAMP		
9						SP	7.0 FINE SAND, YELLOWISH BROWN, DAMP TO MOIST		
10					7.0				
11									
12		12-12.5		40"/60"	4.8	SP	12' SAA, WET		
13									
14									
15					2.8				
16				33"/60"		CL/CH	SILTY CLAY, PALE BROWN W/ GRAY STREAKS, DAMP, VERY STIFF, MED. TO HIGH PLASTICITY		
17		17-17.5			2.6				
18									
19									
20							TD = 20'		

NOTES: HOLE OPEN TO 15', POURED PORTLAND CEMENT W/ BENTONITE GEL.

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18DPT14
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 1 of 2
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' CORE BARREL	Boring Diameter: 2'/4"		Screened Interval:
Weather: SUNNY, UPPER 60's	Logged By: GH	Date/Time Started: 3/14/16	Depth of Boring: 25'
Drilling Contractor: FUGRO	Ground Elevation:	Date/Time Finished: 3/14/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
1–4				33"/60"	5.2	CL	SILTY CLAY, MOTTLED GRAY + REDDISH BROWN, DAMP, MOD. STIFF, MOD. PLASTICITY		
5–6	X	5-5.5			2.1	SC	CLAYEY SAND, MOTTLED YELLOWISH BROWN + LT. GRAY, MOIST		
7–8				45"/60"	1.6	SM	6.5 SILTY FINE SAND, MOTTLED YELLOWISH BROWN + LT. GRAY, WET		
9						CL	8.3 SILTY CLAY, MOTTLED YELLOWISH BROWN + GRAY, DAMP, VERY STIFF, LOW-MOD. PLASTICITY		
10–11	X	10-10.5			1.2	ML/SM	FINE SANDY SILT / SILTY FINE SAND, LT. GRAY W/ SOME YELLOWISH BROWN LAYERS, DAMP		
12–13				48"/60"	1.2				
14–15									
16–17				37"/60"	2.4	SP	FINE-MED. SAND, LT. GRAY W/ OCCASIONAL YELLOWISH BROWN ZONES, WET		
18	X	17-17.5			2.4		17.8 SAA, YELLOWISH BROWN		
19–20							18.0 SILTY CLAY, GRAY, DAMP, VERY STIFF, MOD-HIGH PLASTICITY		

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18DPT 14
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 2 of
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' CORE BARREL	Boring Diameter: 2 1/4"		Screened Interval:
Weather: SUNNY UPPER 60s	Logged By: GH	Date/Time Started: 3/14/16	Depth of Boring: 25'
Drilling Contractor: FUGRO	Ground Elevation:	Date/Time Finished: 3/14/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
21					2.7		SILTY CLAY, MOTTLED GRAY & YELLOWISH BROWN, DAMP, VERY STIFF, MED-HIGH PLASTICITY		
22				42"/60"		CH/CL			
23		23-23.5			2.4				
24	X					X			
25							TD = 25'		
26									
27									
28									
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									

NOTES: TREMIED PORTLAND CEMENT AND BENTONITE GEL TO 20' BGS.

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 1BDPT15
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 1 of 2
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' CONE BARREL	Boring Diameter: 2 1/4"		Screened Interval:
Weather: SUNNY, 80'S	Logged By: GH	Date/Time Started: 3/14/16	Depth of Boring: 30'
Drilling Contractor: FUGRO	Ground Elevation:	Date/Time Finished: 3/14/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
1						ML/SM	SANDY SILT / SILTY FINE SAND, MOTTLED BROWN, YELLOWISH BROWN + GRAY, MOIST	POSSIBLE FILL	
2				55"/60"					
3					1.1	CL	2.2 SILTY CLAY, REDDISH BROWN, DAMP, MED. STIFF, MED. PLASTICITY		
4							3.9 SAA, MOTTLED REDDISH BROWN + GRAY		
5		5-5.5							
6					0.8		SILTY CLAY, YELLOWISH BROWN W/ GRAY VEINS, DAMP, MED. STIFF, MED. PLASTICITY		
7				51"/60"		CL			
8					0.5				
9									
10					1.5		SAA, MED-HIGH PLASTICITY		
11						CH/CL			
12		12-12.5		30"/60"			11.9 SILTY FINE SAND, YELLOWISH BROWN, WET		
13					3.7	SM			
14									
15					1.0		SANDY CLAY / CLAYEY SAND, YELLOWISH BROWN W/ OCCASIONAL GRAY STREAKS, MOIST, MED. STIFF, LOW PLASTICITY		
16						CL/SC			
17				36"/60"			17.0' SILTY FINE SAND / FINE SAND, LT. GRAY W/ YELLOWISH BROWN ZONES, WET		
18					2.0	SM/SP			
19									
20									

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18DPT15
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 2 of
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' CONS BARREL	Boring Diameter: 2 1/4"		Screened Interval:
Weather: SUNNY 80'S	Logged By: GH	Date/Time Started: 3/14/16	Depth of Boring: 30'
Drilling Contractor: FUGRO	Ground Elevation:	Date/Time Finished: 3/14/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
21		21-21.5		48"/60"	2.8	SP	FINE-MED SAND, BROWN TO YELLOWISH BROWN, WET, W/ OCCASIONAL CLAY LAYER TO 1/2"		
22					15.0	CL	21.5 SILTY CLAY, GRAY W/ YELLOWISH BROWN ZONES, DAMP, VERY STIFF MOD-HIGH PLASTICITY, W/ OCCASIONAL FINE SAND LAYERS TO 1", WET		
23		23.5-24							
24									
25					10.1	CH/SM	2" INTERBEDDED SILTY CLAY, GRAY, STIFF, DAMP, MOD-HIGH PLASTICITY AND SILTY FINE SAND, YELLOWISH BROWN, MOIST TO WET		
26		26.5-27		48"/60"		CH	26.2 SILTY CLAY, GRAY & YELLOWISH BROWN, DAMP, VERY STIFF, PLASTIC		
27					6.0	CH & SM	27.2 INTERBEDDED (2") SILTY CLAY, GRAY, DAMP, VERY STIFF, PLASTIC, AND SILTY FINE SAND, YELLOWISH BROWN, WET		
28									
29									
30									
31							TD = 30'		
32									
33									
34									
35									
36									
37									
38									
39									
40									

NOTES: TREMIED PORTLAND CEMENT AND BENTONITE GRUT TO 30' BGS

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18DPT16
Project Number: 60274185			
Site Location: LHAAP Site 18/24			
Coordinates:	Elevation		Sheet 1 of 2
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' Core Barrel	Boring Diameter: 2 1/4"		Screened Interval:
Weather: Sunny 68°	Logged By: GH	Date/Time Started: 3/15/16	Depth of Boring: 35'
Drilling Contractor: Fugro	Ground Elevation:	Date/Time Finished: 3/15/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
1				49"/60"		ML/SM	SANDY SILT / SILTY FINE SAND, REDDISH BROWN TO BROWN, MOIST		
2							1.4 SILTY CLAY, MOTTLED REDDISH BROWN & GRAY, DAMP, MED. STIFF, LOW-MED. PLASTICITY		
3					0.1	CL			
4									
5		5-6.0					SAA		
6				58"/60"	1.5	CL	5.7 SILTY CLAY, MOTTLED YELLOWISH BROWN & GRAY, DAMP, STIFF, LOW-MED. PLASTICITY		
7									
8					1.8	SM	7.3 SILTY FINE SAND, YELLOWISH BROWN W/ SOME REDDISH BROWN MOTTLING, MOIST		
9									
10					1.2	CH/CL	SILTY CLAY, MOTTLED GRAY & YELLOWISH BROWN, DAMP, STIFF, MED-HIGH PLASTICITY		
11				37"/60"					
12						SM	10.8 SILTY FINE SAND, YELLOWISH BROWN, WET		
13					1.4				
14									
15		15-15.5							
16					1.6	SM	SAA		
17				42"/60"		CL	15.8 SILTY CLAY, MOTTLED GRAY & YELLOWISH BROWN, DAMP, MED. STIFF, MED. PLASTIC, W/ FINE SAND LAMINATIONS		
18					1.5				
19									
20									

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18DPT16
Project Number: 60274185			
Site Location: LHAAP Site 18/24			
Coordinates:	Elevation		Sheet 2 of 2
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' Core Barrel	Boring Diameter: 2 1/4"		Screened Interval:
Weather: Sunny 68°	Logged By: GH	Date/Time Started: 3/15/16	Depth of Boring: 35'
Drilling Contractor: FUGRO	Ground Elevation:	Date/Time Finished: 3/15/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
					2.2	SP	FINE-MED. SAND, YELLOWISH BROWN, WET		
21							20.3 SILTY CLAY, GRAY, DAMP, STIFF, MED. PLASTICITY		
22				38"/60"		CL	21.4 SAA, YELLOWISH BROWN		
							22.1 SAA, GRAY		
23					3.0		22.4 INCREASE IN SAND		
24						SM/SP	23.0 SILTY FINE SAND / FINE SAND, YELLOWISH BROWN, WET		
25		25-25.5			3.5	CL	SILTY CLAY W/ SAND SEAMS TO 1/4", YELLOWISH BROWN, MOIST-WET		
26						ML/SM	25.5 SANDY SILT / SILTY FINE SAND, YELLOWISH BROWN, WET		
27				49"/60"			27.0 INTERBEDDED (TO 2") SILTY CLAY GRAY & GRAYISH BROWN, DAMP, STIFF MED. PLASTICITY AND SILTY FINE SAND BROWN TO YELLOWISH BROWN, WET		
28					3.7	CL & SM			
29									
30		30-30.5			3.5	SM	SILTY FINE SAND, YELLOWISH BROWN, WET		
31									
32				42"/60"		CH & SM	31.6 INTERBEDDED (1") SILTY CLAY, GRAY TO BROWNISH GRAY, DAMP, STIFF, PLASTIC AND SILTY FINE SAND, YELLOWISH BROWN, WET		
33		33-33.5			3.1				
34									
35									
36							TD = 35		
37									
38									
39									
40									

NOTES: LOST CORE BARREL AT 25-30', OFFSET HOLE 1' AND CONTINUED DRILLING TO 35'

TREMIED PORTLAND CEMENT & BENTONITE GEL TO 32' BGS.

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18DPT17
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 1 of 2
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' CONS BARREL	Boring Diameter: 2 1/4"		Screened Interval:
Weather: SUNNY 70'S	Logged By: GAT	Date/Time Started: 3/15/16	Depth of Boring: 30'
Drilling Contractor: MUSRO	Ground Elevation:	Date/Time Finished: 3/15/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
1				54" / 60"		SM	SILTY FINE SAND W/ TRACE OF CLAY, BROWN, MOIST TO WET	POSSIBLE FILL TO 2.9'	
2						CL	1.5 SILTY CLAY, REDDISH BROWN W/ FEW SPECKS OF GRAY, DAMP, MED. STIFF LOW PLASTICITY		
3	X	2.5-3.0			2.5	SM	2.9 SILTY FINE SAND, BROWNISH GRAY, WET		
4						CH	3.4 SILTY CLAY, MOTTLED, BROWN, GRAY & REDDISH BROWN, MOIST, MED. STIFF, PLASTIC		
5	X	5-5.5			0.9	X			
6				59" / 60"		CL	SILTY CLAY, MOTTLED REDDISH BROWN & GRAY, MOIST, MED. STIFF, MED. PLASTIC		
7							7.1 CLAYEY FINE SAND, GRAY, MOIST		
8					1.9	CH	7.2 SILTY CLAY, MOTTLED YELLOWISH BROWN & GRAY, MED. STIFF, PLASTIC		
9									
10	X	10-10.5			3.6		SAA		
11						CH			
12				35" / 60"					
13					2.4				
14						X			
15									
16					2.0	CH	SAA		
17				44" / 60"		SM	15.7 SILTY FINE SAND, PALE BROWN & YELLOWISH BROWN, WET		
18	X	18-18.5			0.1	CL	16.8 SILTY CLAY, YELLOWISH BROWN W/ GRAY ZONES, DAMP, VERY STIFF, MED. PLASTIC		
19						X	18 SAA, GRAY W/ SOME YELLOWISH BROWN		
20									

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18DPT 17
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 2 of 2
Drilling Method: DPT			Monitoring Well Installed: No
Sample Type(s): 5' CONE BARREL	Boring Diameter: 2 1/4"		Screened Interval:
Weather: SUNNY 70'S	Logged By: GH	Date/Time Started: 3/15/16	Depth of Boring: 30'
Drilling Contractor: FUGRO	Ground Elevation:	Date/Time Finished: 3/15/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
21						SM	SILTY FINE SAND, YELLOWISH BROWN W/ SOME GRAY ZONES, WET		
22	X	21.5-22		54"/60"		CL	21.9 SILTY CLAY, GRAY W/ YELLOWISH BROWN MOTTLES, DAMP, VERY STIFF MED. PLASTICITY		
23					0.1	ML	22.4 SILT, BROWNISH GRAY, WET		
24						CL	23.3 SILTY CLAY, GRAY W/ YELLOWISH BROWN MOTTLES, DAMP, VERY STIFF, MED PLASTICITY		
						SP	24 FINE ~~SAND~~ TO MED. SAND, YELLOWISH BROWN, WET		
25					2.8	X			
26						SP	SAND		
27	X	27-29.5		35"/60'	1.0				
28						X			
29									
30							TD = 30'		
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									

NOTES: TREMIED PORTLAND CEMENT & BENTONITE GEL TO 27' BGS

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18CPTMW19SW
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 1 of 4
Drilling Method: SONIC DRILL RIG			Monitoring Well Installed:
Sample Type(s): SAMPLE BARREL	Boring Diameter: 8"		Screened Interval:
Weather: PARTLY SUNNY 70'S	Logged By: GH, SH	Date/Time Started: 4/21/16	Depth of Boring: 65'
Drilling Contractor: AEI	Ground Elevation:	Date/Time Finished: 4/22/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
1						SM	SILTY FINE SAND, BROWN, WET		
2				4.3'/5.0'		CL	1.1 SILTY CLAY, YELLOWISH BROWN, DAMP, MED. STIFF, MED. PLASTICITY		
3					0.8		1.6 SAA, LAMINATED REDDISH BROWN, STIFF		
4						SC/SM	3.0 CLAYEY SAND / SILTY FINE SAND, LAMINATED YELLOWISH BROWN + GRAY, DAMP, MED. STIFF, LOW-MED. PLASTICITY		
5	5-5.5								
6					0.4		5.0 SILTY FINE SAND, GRAY W/ YELLOWISH BROWN LAMINS, MOIST		
7				4.2'/5'		SM			
8					1.5				
9						CL-SM	8.8 INTERLAYERED SILTY CLAY (YELLOWISH BROWN) AND SILTY FINE SAND (GRAY)		
10	10-10.5				1.8				
11							10.0 SILTY FINE SAND, MOTTLED YELLOWISH BROWN + LIGHT GRAY, WET		
12									
13					1.6	SM	12.0' SAA, LIGHT GRAY W/ OCCASIONAL YELLOWISH BROWN		
14				7.5'/10'					
15					1.5				
16									
17							17.0'		
18					1.9	SP	FINE SAND, LIGHT BROWN, MOIST		
19									
20					2.7				

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18CPTMW19SW
Project Number: 60274185			
Site Location: LHAAP Site 18/24			
Coordinates:	Elevation		Sheet 2 of 4
Drilling Method: Sonic Drill Rig			Monitoring Well Installed:
Sample Type(s): Sample Barrel	Boring Diameter: 8"		Screened Interval:
Weather: Partly Sunny 70's	Logged By: GH, SH	Date/Time Started: 4/21/16	Depth of Boring: 65'
Drilling Contractor: AE1	Ground Elevation:	Date/Time Finished: 4/22/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
	X	20-20.5				SM	SILTY FINE SAND, LIGHT BROWN, MOIST		
21						CL	20.3 SILTY CLAY, LIGHT GRAY, MOIST, MED. STIFF, MED. PLASTIC		
22						SM	21.3 SILTY FINE-MED. SAND, BROWN, WET		
23					3.3		22.2 SILTY CLAY, MOTTLED LT. BROWN + LT. GRAY, MOIST, SOFT, MED. PLASTICITY		
24				9'/10'					
25					2.8	CL			
26									
27									
28					1.2				
29									
30	X	30-30.5			1.9	X	30.0 SILTY CLAY, YELLOWISH BROWN W/ LT. GRAY MOTTLES, DAMP, MED. STIFF, HIGH PLASTICITY		
31									
32									
33					1.1		31.4 SAA, GRAY + LT. BROWNISH GRAY		
34				10'/10'		CH			
35					1.1				
36							35.8 SAA, GRAY W/ YELLOWISH BROWN MOTTLING		
37									
38					2.2				
39									
40									

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18CPTMW19SW
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 3 of 4
Drilling Method: SONIC DRILL RIG			Monitoring Well Installed:
Sample Type(s): SAMPLE BARREL	Boring Diameter: 8"		Screened Interval.
Weather: PARTLY SUNNY, 70'S	Logged By: GH	Date/Time Started: 4/4/16	Depth of Boring: 65'
Drilling Contractor: AET	Ground Elevation:	Date/Time Finished: 4/22/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID
41	X	40-40.5			2.6	CH		
42							41.4 FINE SAND, YELLOWISH BROWN, WET	
43					1.9			
44				9.8'/10'				
45					1.9	SP		
46								
47								
48					1.3		47.7 FINE-MED. SAND, GRAY, WET	
49							49.3 1/2" CLAY LAYER, LT. GRAY	
50	X	50-50.5			2.1	X		
51						SP	50.7 FINE-MED. SAND, OLIVE GREEN, WET	
52							52.0 1/4" SANDSTONE LAYER, YELLOWISH BROWN	
53					1.6	CS	52.3 CLAYEY SAND, YELLOWISH BROWN, WET	
54				10'/10'		SP	53.0 FINE-MED. SAND, DARK GRAY, WET 54.4 2" SANDSTONE LAYER, YELLOWISH BROWN	
55					2.6	SM	54.6 SILTY FINE SAND, LT. GRAY, WET	
56						SP	55.6 FINE SAND, LT. GRAY, WET	
57					2.4			
58							57.4 SILTY FINE SAND, LT. GRAY, WET	
59						SM	0.01" SLOTTED SCREEN	
60					1.9			

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18CPTMW19SW
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 4 of 4
Drilling Method: SONIC DRILL RIG			Monitoring Well Installed:
Sample Type(s):	Boring Diameter: 8"		Screened Interval:
Weather: PARTLY SUNNY 70's	Logged By: GH SH	Date/Time Started: 4/21/16	Depth of Boring: 65'
Drilling Contractor:	Ground Elevation:	Date/Time Finished: 4/22/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
61	X	60-61		5'/5'	1.9	SM	60.8 FINE SAND, LT. GRAY, WET		
62						SP	62.2 SILTY FINE SAND, LT. GRAY, WET		
63					2.1	SM	62.7 FINE SAND W/ SILT LAMINATIONS, LT. GRAY + DK GRAY MOTTLING, WET		
64						SP			
65					0.8		TD = 65'		
66									
67									
68									
69									
70									
71									
72									
73									
74									
75									
76									
77									
78									
79									
80									

NOTES: MIXED 6 BAGS TYPE I/II PORTLAND CEMENT W/ 15# OF BENTONITE QUICKGEL FOR GROUT TOTALING 100 GALLONS
USED 6 BAGS OF 12/20 SILICA SAND + 1 1/2 BAGS OF BENTONITE CHIPS

Checked by: Date:

Date	Time	Depth to groundwater while drilling

AECOM

Client: USACE		BORING ID: 18CPTMW22
Project Number: 60274185		
Site Location: LHAAP SITE 18/24		
Coordinates:	Elevation	Sheet 1 of 2
Drilling Method: HSA		Monitoring Well Installed: Yes
Sample Type(s): NA	Boring Diameter: 10 1/4"	Screened Interval: 19-28.5
Weather:	Logged By:	Date/Time Started: 4/2/13
Drilling Contractor: ETTL	Ground Elevation:	Date/Time Finished: 4/2/13
		Depth of Boring: 29'
		Water Level: NA

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known) ~3' STICK UP	Lab Sample ID	Lab Sample Depth (ft)
1							FOR LITHOLOGY DESCRIPTION SEE 18CPT22		
2									
3									
4							4" DIAM. SCH 40 PVC CASING		
5									
6									
7							TYPE I/II PORTLAND CEMENT W/ BENTONITE GROUT		
8									
9									
10									
11									
12									
13									
14									14
15							3/8" BENTONITE PELLETS		
16									
17							20/40 SILICA SAND		17
18									
19							0.01" SCH 40 PVC SLOTTED SCREEN		19
20									

NOTES: Revision 1 corrects errors in well construction details on original log (attached). Correct well construction details for Revision 1 are from LHAAP-18/24 field logbook page 12, August 23, 2014, entry from Brian Ho. Field notes were recorded during abandonment of 18CPTMW22.

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE		BORING ID: 18CPTMW22
Project Number: 60274185		
Site Location: LHAAP SITE 18/24		
Coordinates:	Elevation	Sheet 2 of 2
Drilling Method: HSA		Monitoring Well Installed: YES
Sample Type(s): NA	Boring Diameter: 10 1/4"	Screened Interval: 19-28.5
Weather:	Logged By:	Date/Time Started: 4/2/13
Drilling Contractor: ETTL	Ground Elevation:	Date/Time Finished: 4/2/13
		Depth of Boring: 29'
		Water Level: NA

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
21									
22							20/40 SILICA SAND		
23									
24							0.01" SCH 40 PVC		
25							SLOTTED SCREEN		
26									
27									
28									28.5
29									29'
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									

NOTES:

Revision 1 corrects errors in well construction details on original log (attached). Correct well construction details for Revision 1 are from LHAAP-18/24 field logbook page 12, August 23, 2014, entry from Brian Ho. Field notes were recorded during abandonment of 18CPTMW22.

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18CPT MW 22
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation:		Sheet: 1 of 2
Drilling Method: HSA			Monitoring Well Installed: YES
Sample Type(s): NA	Boring Diameter: 10 1/4"		Screened Interval: 4-28.5
Weather:	Logged By:	Date/Time Started: 4/2/13	Depth of Boring: 29
Drilling Contractor: ETIL	Ground Elevation:	Date/Time Finished:	Water Level: NA

Depth (ft)	Geologic sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)	Lab Sample ID	Lab Sample Depth (Ft.)
1							FOR LITHOLOGY DESCRIPTION SEE BORING LOG FOR MW-22		
2									
3									
4							TYPE I/II PORTLAND CEMENT W/BENTONITE GROUT		4.0'
5									
6							3/8" BENTONITE PELLETS		
7									7.0'
8							20/40 SILICA SAND		
9									9.0'
10									
11							10 1/4" BORE HOLE		
12									
13									
14									
15							0.01" SCH. 40 PVC SLOTTED SCREEN		
16									
17									
18									
19									
20									

NOTES:

November 5, 2016 note: See Revision 1 for corrected log.

Date	Time	Depth to groundwater while drilling

Checked by Date:

AECOM

Client:	USACE
Project Number:	
Site Location:	
Coordinates:	Elevation:
Drilling Method:	
Sample Type(s):	Boring Diameter:
Weather:	Logged By: / Date/Time Started:
Drilling Contractor:	Ground Elevation: / Date/Time Finished:

BORING ID: 18CPT MW 22

Sheet: 2 of 2

Monitoring Well Installed: YES

Screened Interval: 9-28.5

Depth of Boring: 29

Water Level: NA

Depth (ft)	Geologic sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (If Known)	Lab Sample ID	Lab Sample Depth (Ft.)
20									
1							FOR LITHOLOGY DESCRIPTION SEE BORING LOG FOR MW-22		
2									
3									
4									
5									
6									
7									
8									
9									28.5
30									29'
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

NOTES: November 5, 2016 note: See Revision 1 for corrected log.

Date	Time	Depth to groundwater while drilling

Checked by Date:

CPT Data (Preliminary)

FUGRO

Job Number	04. 1013-0010	CPT Number	18cpt22	Location	Karnack,Tx
Operator	Albert Fonseca	Date and Time	28-Feb-2013	Cone Num	A15F2.5CKE2HAW2/B1519
Client	Aecom	Elevation:		Coridinates:	
Totol Depth :					

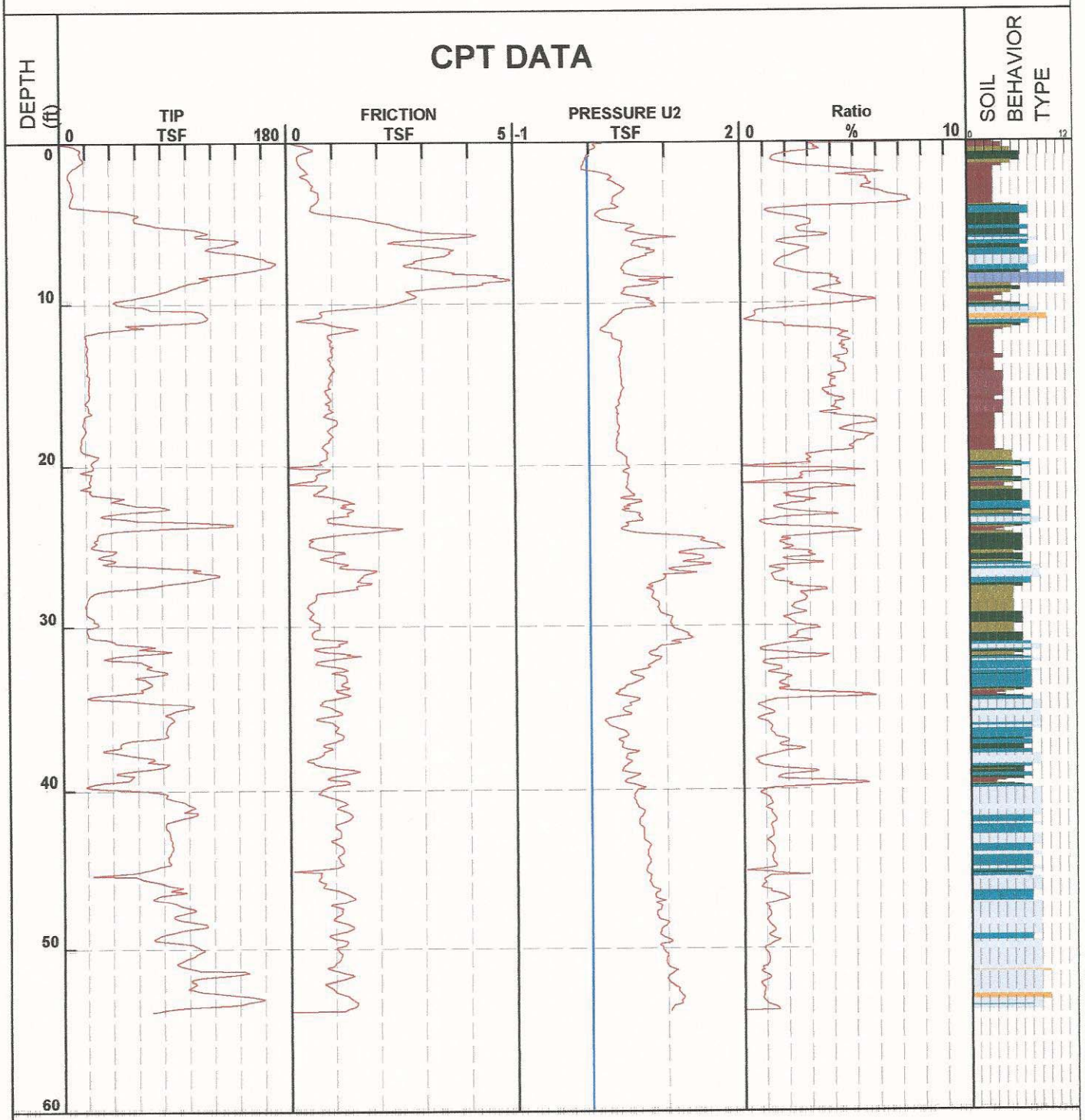

1 - sensitive fine grained	4 - silty clay to clay	7 - silty sand to sandy silt	10 - gravelly sand to sand
2 - organic material	5 - clayey silt to silty clay	8 - sand to silty sand	11 - very stiff fine grained (*)
3 - clay	6 - sandy silt to clayey silt	9 - sand	12 - sand to clayey sand (*)

Robertson et al. 1986 * Overconsolidated or Cemented

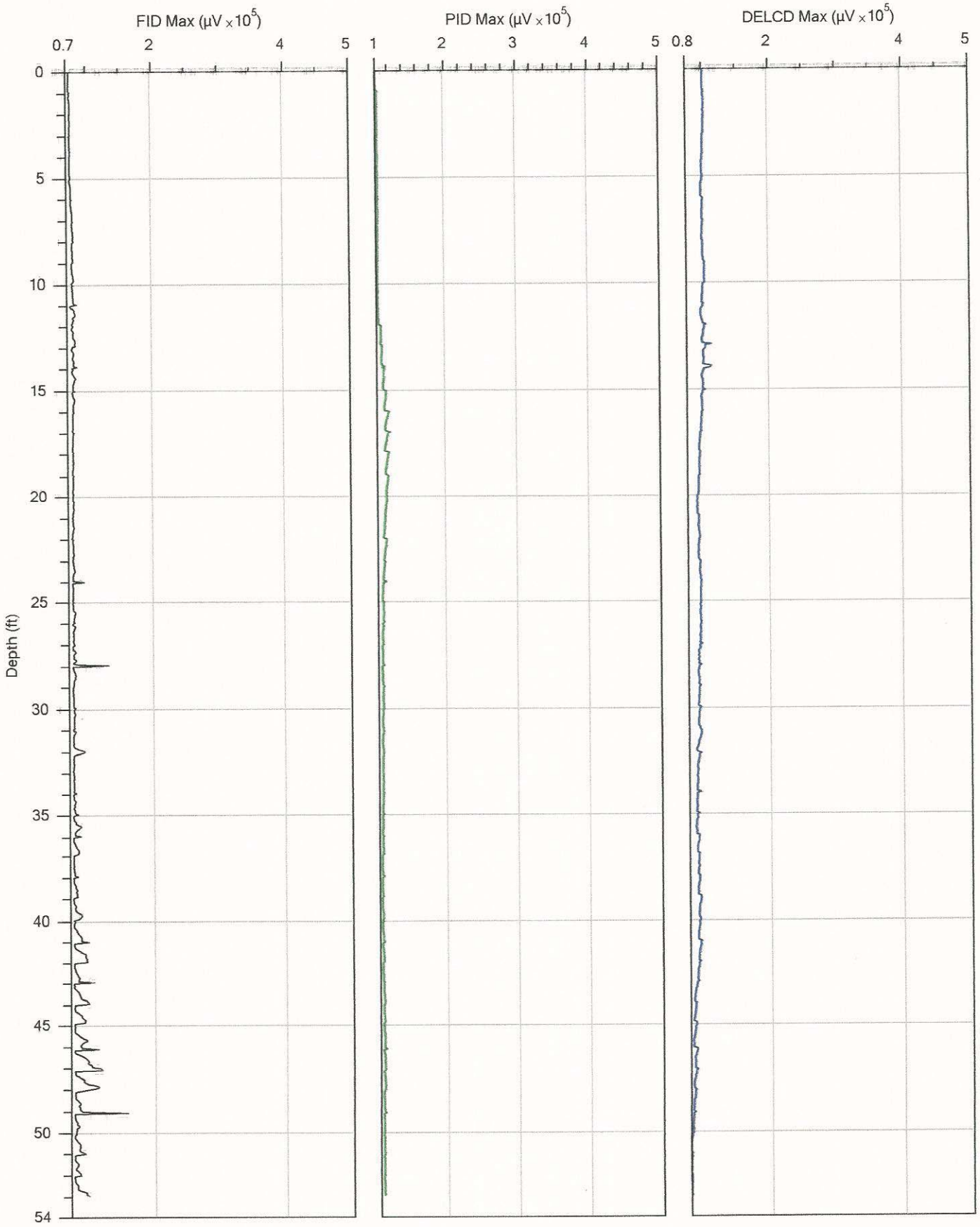

FUGRO			File: 18MIP22.MIP
Company: Fugro Consultants Inc.	Operator: Albert Fonseca		Date: 2/28/2013
Project ID: 04-1012-0050	Client: SSCI		Location:

Cross-Section D-D'

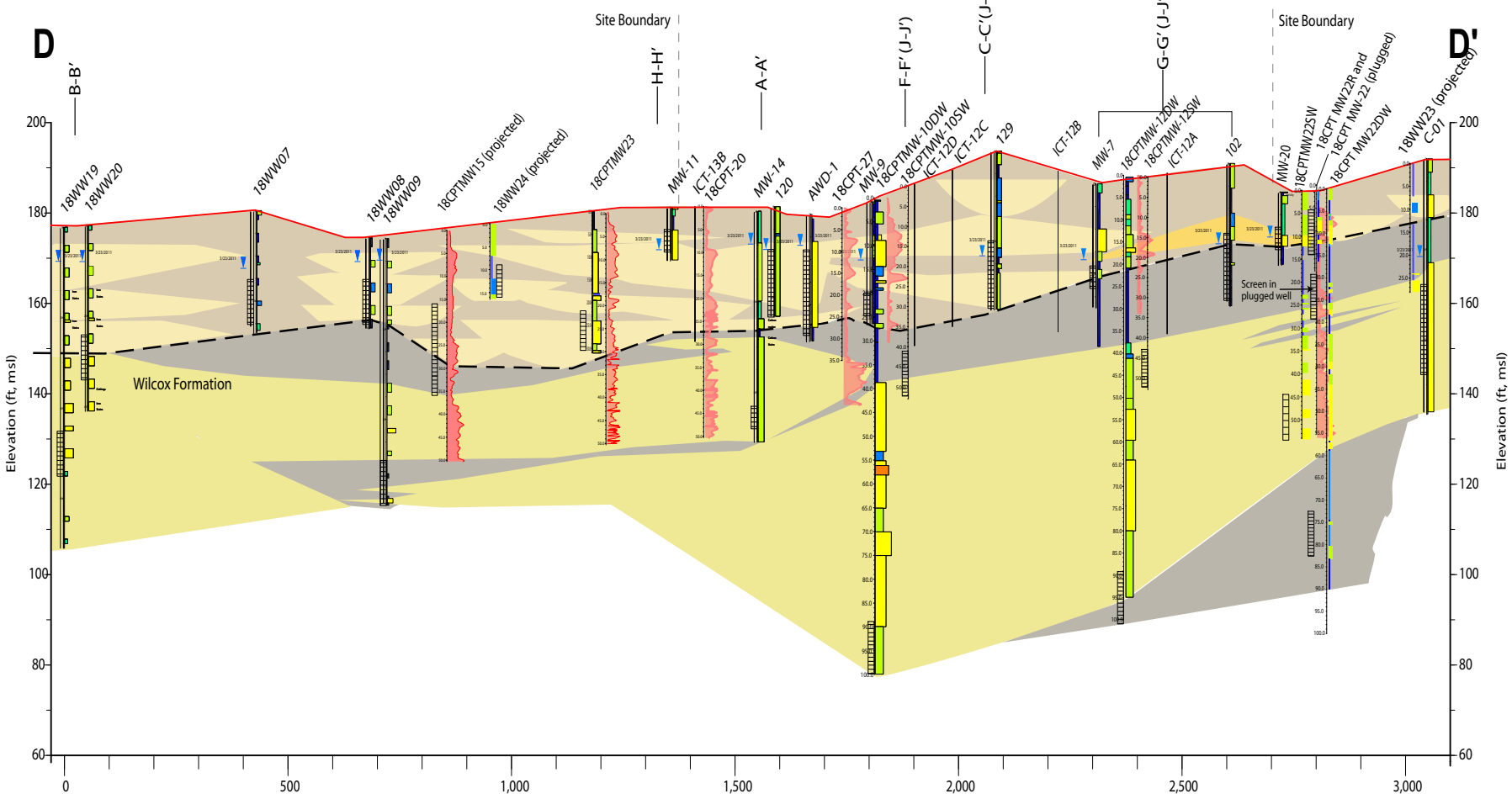

Down-hole Data Legend

Monitoring Well Data Explanation

Groundwater Level and Date Collected 3/23/2011

Monitoring Well Screen

CPT

Tip Resistance Curve

Lithofacies

Fill Material (coarse)

Sand Lithofacies

Channel and point bar deposits

Levee and splay deposits

Wilcox Fm.marine and deltaic sands (Eocene)

Silt/Clay Lithofacies

Fine overbank deposition (flood plain silts and clays)

Wilcox Fm.marine and deltaic clays and silts (Eocene)

Grain Size Log

Clay

Silt-Sandy Silt

Fine Sand w/fines

Fine Sand

Medium Sand w/fines

Medium Sand

Coarse Sand w/fines

Coarse Sand

Gravel

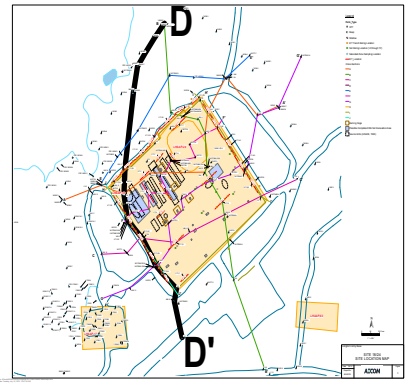

Erosional Contact alluvium and Wilcox

AECOM	Longhorn Army Ammunition Plant Marshall, TX		
LHAAP 18/24			
Cross Section D-D'			
PROJECT NO. 60274185	DRAWN BY: CPP	DATE: 12/09/2015	FIGURE C-4

AECOM

Client: USACE		BORING ID: 18CPTMW22R
Project Number: 60274185		
Site Location: LHAAP SITE 18/24		
Coordinates:	Elevation	Sheet 1 of 1
Drilling Method: SONIC DRILL RIG		Monitoring Well Installed:
Sample Type(s): SAMPLE BARREL	Boring Diameter: 8"	Screened Interval:
Weather: SUNNY	Logged By: GALSH	Date/Time Started: 4/23/16
Drilling Contractor: AEI	Ground Elevation:	Date/Time Finished: 4/23/16
		Depth of Boring: 16'
		Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
1						SC	CLAYEY FINE SAND, BROWN TO REDDISH BROWN, WET ABUNDANT ROOTS		
2					0.5				
3						CL	2.0 SANDY CLAY, MOTTLED LT. GRAY, REDDISH BROWN & YELLOWISH BROWN, DAMP, V. STIFF, MED. PLASTICITY		
4				9.2'/10'					
5	X	5-5.5			1.2		12/20 SILICA SAND		
6						SM	6.0' SILTY FINE SAND, MOTTLED LT. GRAY & YELLOWISH BROWN, DAMP		
7					1.7	SP	6.5 FINE SAND W/ TRACE OF SILT, MOTTLED LT. GRAY & YELLOWISH BROWN, DAMP TO MOIST		
8									
9									
10	X	10-10.5			1.9	CL	10.0' SILTY CLAY, MOTTLED LT. GRAY & YELLOWISH BROWN, STIFF-V. STIFF, MED. PLASTIC		
11						SM			
12						SP	10.9 SILTY FINE SAND, BROWN, WET		
13				6'/6'	2.5		11.3 FINE TO MED. SAND, BROWN, WET		
14						CL	12.0 SILTY CLAY, LT. GRAY, DAMP, MED. STIFF, MED. PLASTIC		
15	X	15-15.5			1.7		12.5 SAA, MOTTLED LT. GRAY & YELLOWISH BROWN, DAMP, MED. STIFF, MED. PLASTICITY		
16							TD = 16'		
17									
18									
19									
20									

NOTES: USED 1/2 BAG BENTONITE CHIPS
6 1/2 BAGS OF 12/20 SILICA SAND

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18CPTMWS22DW
Project Number: 60274185			
Site Location: LHAAP site 18/24			
Coordinates:	Elevation		Sheet 1 of 5
Drilling Method: Sonic			Monitoring Well Installed: yes
Sample Type(s): Sample Barrel	Boring Diameter: 8"		Screened Interval:
Weather: 80's, sunny	Logged By: GH, SH, KW	Date/Time Started: 4/26/16 810	Depth of Boring: 90'
Drilling Contractor: AEI	Ground Elevation:	Date/Time Finished: 4/27/16 930	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
							0.0'- silty fine sand, brown, damp 0.5'- SAA, reddish brown to red, damp		
1						SM	1.4'- SAA, brown, damp		
2				5'/5'	2.0	CL	2.5'- silty clay - mottled yellowish brown + reddish brown, moist, low plasticity, soft		
3									
4							3.5'- SAA, mottled gray + yellowish brown, damp, low to medium plasticity, stiff		
5		5'-5.5'			0.6	ML	5.5'- sandy silt - mottled lt. gray + yellowish brown, wet		
6						SC	6.2'- clayey sand - mottled lt. gray + yellowish brown, moist, trace black carbonaceous material 7.0'- SAA w/ trace sand w/ clay, mottled, sand is yellowish brown + clay is lt. gray, moist, medium stiff, black carbonaceous material to 7.5' (trace)		
7				5'/5'	1.9	SM	7.3'- silty fine sand w/ clay, mottled, sand is yellowish brown + clay is lt. gray, moist, medium stiff, black carbonaceous material to 7.5' (trace)		
8						SP	8.0'- fine sand, mostly yellowish brown w/ some lt. gray mottling, moist to wet		
9									
10		10'-10.5'			2.4				
11									
12					2.0	SC	12.5'- clayey sand - mottled brown + reddish brown, moist 12.8'- clay, mottled lt. gray + reddish brown, moist, medium stiff, low plasticity		
13				10'/10'		CL	13.7'- SAA, mottled lt. gray + yellowish brown		
14							14.1'- SAA, medium stiff, damp to moist		
15					2.0				
16									
17					2.3		19.0'- SAA, very stiff, w/ some black staining ~ 18.5'		
18									
19							19.5'- SAA, lt. greenish gray, moist		
20									

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by:

AECOM

Client: USACE		BORING ID: 18CPTMW22DW
Project Number: 60274185		
Site Location: LHAAP Site 18/24		
Coordinates:	Elevation	Sheet 2 of 5
Drilling Method: Sonic		Monitoring Well Installed: yes
Sample Type(s): Sample Barrel	Boring Diameter: 8" to 29.5' 7" 29.5'-90'	Screened Interval:
Weather: 80s, sunny	Logged By: GH, SH, KW	Date/Time Started: 4/26/16 810	Depth of Boring: 90'
Drilling Contractor: AEI	Ground Elevation:	Date/Time Finished: 930/4/27/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
		20-20.5'			3.1	CH	20.0' - Clay - mottled lt. greenish gray + yellowish brown, medium stiff, damp, high plasticity		
21						SM	21.0' - Silty fine sand, brown, wet		
22					3.9	CH	21.8' - clay - lt. greenish gray w/ yellowish brown staining, medium stiff, high plasticity, moist		
23						SP	22.4' - fine sand, pale brown, wet, w/ some clay inclusions btw 23 + 23.5', clay is yellowish brown, soft, high plasticity, moist		
24						CL	23.5' - clay - yellowish brown, medium stiff, low plasticity, moist		
						CL/ML	23.7' - silty clay/clayey silt, yellowish brown, moist, soft, low plasticity, w/ up to 1/4" clay layers, yellowish brown, medium stiff, damp, moist		
25				10'/10'	2.3	CL			
						CL/ML	24.0' - clay - very stiff, yellowish brown, damp, medium to high plasticity		
26						CL	24.8' - silty clay/clayey silt, yellowish brown, moist		
						SM	25.0' - clay - mottled lt. greenish gray + yellowish brown, stiff, damp, low plasticity		
						CS			
27					2.2	SM	25.5' - silty sand, brown, wet		
						CL	26.0' - sandy clay, mottled lt. greenish gray + yellowish brown, stiff, low plasticity, damp		
28						SP	26.2' - silty fine sand, yellowish brown, wet		
29						CL/ML	27.0' - clay, lt. greenish gray, medium stiff, high plasticity, moist		
						SM	27.25 - fine sand, brown, moist		
30		29.5'-30'			1.9	CH	27.5' - SAA w/ clay layers, lt. greenish gray, moist, soft, 28.5' - silty clay/clayey silt, yellowish brown, moist		
31							28.9' - concretion of silty sand ~1/8" thick, yellowish brown to reddish brown		
							29.0' - clay - pale brown to gray w/ some yellowish brown mottling, medium stiff, damp, high plasticity		
32									
33				7.5'/7.5'	1.6	SM	32.5' - silty fine sand, brown, wet		
34									
35					2.2				
36									
37					2.2		37.5' - silty sand/sandy silt, brown, wet		
38						SM			
39				2.5'/2.5'			38.8' - silty fine sand, yellowish brown, wet		
						SP	39.0' - SAA, pale brown, wet		
40					2.5				

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE		BORING ID: 18CPTMW22DW
Project Number: 60274185		
Site Location: LHAAP Site 18/24		
Coordinates:	Elevation	Sheet 3 of 5
Drilling Method: Sonic		Monitoring Well Installed: yes
Sample Type(s): Sonic & Barrel	Boring Diameter: 8" to 29.5' 7" 29.5'-90'	Screened Interval:
Weather: 80s, sunny	Logged By: GH, SH, KW / Date/Time Started: 4/26/16	Depth of Boring: 90'
Drilling Contractor: AEI	Ground Elevation: / Date/Time Finished: 930/4/27/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
		40-40.5'				SP CH	40.5'-clay-brown, moist, soft, highly plastic		
41									
42					0.3	SM	41.7'-silty fine sand, lt. yellowish brown, wet		
43									
44							44.0'-fine sand, lt. yellowish brown, wet		
45				10'/10'	2.2	SP			
46									
47					2.2				
48							48.2'-SAA, yellowish brown, wet		
49							48.9'-SAA, lt. gray, wet		
50		50'-51'			1.8		49.1'-SAA, yellowish brown, wet 49.8'-SAA, lt. gray, fine to medium grains, wet		
51									
52					1.6				
53									
54				10'/10'			54.1'-SAA, brown w/ occasional pebbles/concretions <0.25", wet		
55					1.2		55.2'-SAA, lt. gray, wet		
56							56.0'-SAA, brown, wet		
57					1.5	CH	56.5'-clay w/ some pebbles, gray, soft, high plasticity, moist, some black carbonaceous material		
58						SP	57.0'-fine to medium sand, brown, wet 57.5'-SAA, medium to coarse grains 58.0'-SAA w/ interbedded clays up to 1/4" thick, gray w/ black carbonaceous inclusions, some pebbles + cobbles of siltstone, wet, siltstone is brown		
59						CH	58.5'-clay, gray, moist, medium stiff, high plasticity w/ black carbonaceous material		
60					0.8	SC	59.0-clayey sand, fine grains, lt. gray, wet 59.5'-SAA, brown, medium grains w/ sandstone inclusions ~1/2" thick, wet, gravelly		

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE
Project Number: 60274185
Site Location: LHAAP Site 18/24
Coordinates:
Elevation
Drilling Method: Sonic
Sample Type(s): Sample Barrel
Boring Diameter: 8" to 29.5' / 7" 29.5'-90'
Weather: 80s Sunny
Logged By: GH, SH, KW
Date/Time Started: 8/0/4/26/16
Drilling Contractor: AGT
Ground Elevation:
Date/Time Finished: 930/4/27/16

BORING ID: 18CPTMW22DW
Sheet 4 of 5
Monitoring Well Installed: yes
Screened Interval:
Depth of Boring: 90'
Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
		60'-60.5'				SC SC/SM	60.5'- ~~silty fine sand & clayey sand, greenish~~ gray, appears as one unit, no variation in color or texture,		
61									
62					1.5				
63									
64				10'/10'					
65					1.7				
66									
67					1.9				
68									
69									
70		70'-70.5'			2.3				
71									
72					1.3				
73				10'/10'					
74						SM	73.7'-silty fine sand, greenish gray, wet		
						CL/ML	74.1'- silty clay to clayey silty-fine sand w/clay, greenish gray, wet		
75					1.5	SM	75.0'-silty fine sand, greenish gray, wet		
76						SC/SM	75.5'- clayey sand/silty-fine sand, greenish gray, wet		
77					1.9				
78									
79									
80					1.2				

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by:

Date:

AECOM

Client: USACE		BORING ID: 18CPT MW22 DW
Project Number: 60274185		
Site Location: LHAAP Site 18/24		
Coordinates:	Elevation	Sheet 5 of 5
Drilling Method: Sonic		Monitoring Well Installed: yes
Sample Type(s):	Boring Diameter: 8" to 29.5' + 7" 29.5'-90'	Screened Interval:
Weather: 80s Sunny	Logged By: GH, SH, KW	Date/Time Started: 816 / 4/26/16
Drilling Contractor:	Ground Elevation:	Date/Time Finished: 930/4/27/16
		Depth of Boring: 90'
		Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
		80.0'-80.5'				SM	80.0'- silty fine sand w/ clay, greenish gray, moist		
81									
82					1.6		- 82.0' - SAA, moist		
83							83.0' - silty clay, dark gray, moist, hard, fissile, low plasticity		
84						CL			
85				10'/10'	0.6		- 85.1' - SAA w/ silty laminations increasing w/ depth, silt is lt. gray, dry, low plasticity		
86									
87					1.4				
88									
89									
90		89.5'-90.0'			1.5				
91									
92									
93									
94									
95									
96									
97									
98									
99									
100									

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE		BORING ID: 18CPTMW23SW
Project Number: 60274185		
Site Location: LHAAP Site 18/24		
Coordinates:	Elevation	Sheet 1 of 4
Drilling Method: Sonic		Monitoring Well Installed: yes
Sample Type(s):	Boring Diameter: 8" to 30' 7" 30'-65'	Screened Interval:
Weather: Clear, 80s	Logged By: KW, SH	Date/Time Started: 11:00/4/27/16 Depth of Boring: ~65'
Drilling Contractor: AEI	Ground Elevation:	Date/Time Finished: 1125/4/28/16 Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
						SM	0.0'-silty fine sand, brown, wet, abundant roots		
							0.25' Clayey silt, mottled very dark gray + brown, wet, abundant roots		
1						ML	1.25'-silty clay, mottled yellowish brown + lt. gray, wet, low plasticity		
2				4'/4'	1.0	CL	2.5'-SAA w/ some black carbonaceous material + roots		
3							3.5'-silty fine sand, mottled lt. gray + yellowish brown, wet		
4						SM	4.0'-very fine sand, brown, wet		
						SP			
5		5.0-5.5'			1.0				
6									
7				6'/6'					
8					2.5				
9									
10		10.0-10.5'			2.7				
11									
12									
					2.8				
13							13.0'-SAA w/ some clay inclusions, ~1/2", gray, soft, wet		
14				8.5'/8.5'					
15					3.1				
16									
17							16.5'-SAA, lt. gray, wet		
18					NA	SC	17.5'-clayey sand, lt. gray, wet		
							18.5'-fine sand, mottled yellowish brown + lt. gray, wet		
19				1.5'/1.5'		SP	19.5'-silty fine sand, mottled lt. gray + yellowish brown, wet		
20						SM			

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by. Date:

AECOM

Client: USACE		BORING ID: 18CPTMW23SW
Project Number: 60274185		
Site Location: LHAAP Site 18/24		
Coordinates:	Elevation	Sheet 2 of 4
Drilling Method: Sonic		Monitoring Well Installed: yes
Sample Type(s):	Boring Diameter: 8" to 30' + 7" 30-65'	Screened Interval:
Weather: Clear, 80s	Logged By: KW, SH	Date/Time Started: 1100/4/27/16	Depth of Boring: ~65.3
Drilling Contractor: AEI	Ground Elevation:	Date/Time Finished: 1125/4/28/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
		20.0-20.5'			0.8		20.0'-SAA w/some clay, gray, w/some black streaks, wet		
21						SM			
22									
23					1.0	SP	22.5'-fine sand, lt brown w/ yellowish brown staining, wet 22.75'-SAA, fine to medium grains, w/some black streaks, wet		
24				10'/10'					
25					1.2		24.5'-SAA, dark gray, wet		
26							26.0'-SAA w/some black carbonaceous inclusions to ~26.5' wet		
27									
28					1.0				
29							28.75'-SAA, fine grains w/ >50% black carbonaceous material, dark gray, wet		
30		30.0-30.5'			0.1		30.0'-SAA - fine to medium grains, very dark brown, wet		
31				5'/5'					
32					0.0		32.5'-SAA, dark grayish brown, wet		
33									
34									
35					0.3				
36							36.0'-SAA, grayish brown w/ occasional quartz pebbles up to 1/4", moist		
37				5'/5'	0.6		37.0'-SAA w/ some black carbonaceous material, moist		
38									
39							39.0'-SAA, pale brown, moist		
40									

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18CPTMW23SW
Project Number: 60274185			
Site Location: LHAAP Site 18/24			
Coordinates:	Elevation		Sheet 3 of 4
Drilling Method: Sonic			Monitoring Well Installed: yes
Sample Type(s):	Boring Diameter: 8" to 30' & 7" 30'-65'		Screened Interval
Weather: Clear, 80s	Logged By: KW, SH	Date/Time Started: 1100/4/27/16	Depth of Boring: 65.3
Drilling Contractor: AEI	Ground Elevation:	Date/Time Finished: 1125/4/28/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
		40.0'-40.5'			0.1				
41							41.0'-SAA, fine to coarse grains w/some gravel, brown, wet		
42						GP			
					0.0		42.75'-silty clay, gray, wet, soft, low to medium plasticity		
43						CL	43.0'-fine to coarse gravel w/fine to coarse sand + clay chunks, angular gravel, brown, wet, clay is dark gray, soft, high plast., wet		
44						GC	43.25'-SAA w/some black carbonaceous material to ~43.75', wet		
45				10'/10'	0.8	SP	44.5'-fine to medium sand, brown, wet		
46						CL	45.5'-clay, dark gray, wet, soft, medium plasticity		
						SM	46.0'-silty fine sand, gray, wet		
47						GC	46.5'-fine to coarse gravel w/coarse sand + clay chunks angular to subangular gravel, cobble-sized clay chunks, brown, wet, clay is dark gray, soft, wet, high plasticity		
48					1.1				
						CL	48.0' ~1/4" black carbonaceous layer followed by silty clay, dark gray w/black streaks, medium stiff, medium to low plasticity, wet		
49						GC	48.4'-fine to coarse gravel w/coarse sand + clay chunks angular subangular gravel, cobble-sized clay chunks are dark gray, soft, wet, high plasticity, sand is reddish brown, wet		
50		50.0'-50.5'			0.9	SP	49.5'-fine sand, gray, moist 50.0'-SAA w/some black streaks ~50.5', wet		
51									
52									
53					1.3				
54				10'/10'					
55					1.6				
56									
57							56.75'-SAA, fine to medium grains, grayish brown, wet		
					0.7		57.25-SAA, fine grains, w/some black streaks, wet		
58									
59							58.5'-SAA, fine to medium grains, gray, wet 58.6'-SAA, fine grains w/some black streaks, ~59.0' wet 59.25'-SAA, fine to medium grains, wet		
60									

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18CPTMW23SW
Project Number: 60274185			
Site Location: LHAAP Site 18/24			
Coordinates:	Elevation		Sheet 4 of 4
Drilling Method: Sonic			Monitoring Well Installed: Yes
Sample Type(s):	Boring Diameter: 8" to 30'+ 7" 30'-65'		Screened Interval:
Weather: Clear, 80s	Logged By: KW, SH	Date/Time Started: 1100/4/27/16	Depth of Boring: 65.3
Drilling Contractor: AEI	Ground Elevation:	Date/Time Finished: 1125/4/28/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
		60'-60.5'			0.5				
61						SP	-61.25'-SAA w/ some clay		
62				5'/5'	0.5	SM	62.2'-silty fine sand, gray, wet		
63									
64						SP	63.75'-fine sand, gray, wet		
						SM/CL	64.0'-finely interbedded silty sand + silty clay, sand is lt gray + clay is dark gray, some black streaks, wet		
65					0.7	SP	64.5'-fine sand, gray, wet		
66									
67									
68									
69									
70									
71									
72									
73									
74									
75									
76									
77									
78									
79									
80									

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE		BORING ID: 18CPTMW26
Project Number: 60274185		
Site Location: LHAAP SITE 18/24		
Coordinates:	Elevation	Sheet 1 of 1
Drilling Method: SONIC DRILL RIG		Monitoring Well Installed:
Sample Type(s): SAMPLE BARREL	Boring Diameter: 8"	Screened Interval: 5.2-14.8
Weather: SUNNY 70S / Logged By: GH, SH	Date/Time Started: 4/23/16	Depth of Boring: 15.2'
Drilling Contractor: AEI / Ground Elevation:	Date/Time Finished: 4/23/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
1						SM	SILTY FINE SAND, DARK BROWN, MOIST, ABUNDANT ROOTS		
2				5'/5'			1.7' SILT, BROWN, WET		
3					0.6	ML			
4							3.2' SILTY CLAY, BROWN, MOIST TO WET, SOFT, LOW PLASTICITY		
5		5-5.5			1.7		3.9' SAA, GRAY, DAMP, MED. STIFF, LOW PLASTICITY		
6							5.0' SAA, VERY DARK GRAYISH BROWN, DAMP, MED. STIFF, LOW PLASTICITY		
7				5'/5'					
8					2.1		6.5' SAA, MOTTLED DARK GRAY, BROWN, AND YELLOWISH BROWN, DAMP, LOW PLASTICITY		
9						CL			
10		10-10.5			2.3		10' SAA, GRAY W/ REDDISH BROWN MOTTLING, DAMP, VERY STIFF, LOW PLASTICITY		
11									
12				5'/5'					
13					1.7		12' SAA, MOTTLED GRAY & YELLOWISH BROWN, DAMP, MED. PLASTICITY		
14									
15		14.5-15			2.7		13.5 SAA, MOTTLED YELLOWISH BROWN & GREENISH GRAY, DAMP, V. STIFF & MED. PLASTICITY		
16									
17									
18									
19									
20									

4" SCH 40 PVC WELL CASING

3/8" BENTONITE CHIPS

12/20 SILICA SAND

0.01" SLOTTED SCREEN

TD = 15.2

TD = 15.2

NOTES: USED 6 BAGS OF SILICA SAND (12/20)
1 BAG 3/8" BENTONITE CHIPS

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE		BORING ID: 18CPTMW26SW
Project Number: 60274185		
Site Location: LHAAP SITE 18/24		
Coordinates:	Elevation	Sheet 1 of 3
Drilling Method: Sonic Drill Rig		Monitoring Well Installed:
Sample Type(s): Sample Barrel	Boring Diameter: 7"x8"	Screened Interval:
Weather: Cloudy 60's	Logged By: GH/SH	Date/Time Started: 4/25/16
Drilling Contractor: AET	Ground Elevation:	Date/Time Finished: 4/25/16
		Depth of Boring: 50
		Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
1							SILT, BROWN, WET		
2				5'/5'		ML	1.2 SAA, MOTTLED LT. GRAY & YELLOWISH BROWN, DAMP		
3					0.3				
4							3.3' SILTY CLAY, DARK GRAY, DAMP, MED. STIFF, MED. PLASTICITY		
5		5-5.5							
6					0.6	CL	4.5 SAA, DARK BROWN		
7				5'/5'			6.0' SAA, BROWN, DAMP, V. STIFF, MED. PLASTICITY		
8					1.8				
9							8.0' SILTY CLAY, GRAY W/ YELLOWISH BROWN MOTTLING, DAMP, MED. STIFF, MED. TO HIGH PLASTICITY		
10		10-10.5			1.5	CL/CH	9.0' SAA, GREENISH GRAY W/ SOME YELLOWISH BROWN MOTTLING, DAMP, MED. STIFF TO V. STIFF, MED TO HIGH PLASTICITY		
11									
12				5'/5'					
13					2.6				
14							13.6' SILTY FINE SAND W/ TRACE OF CLAY, YELLOWISH BROWN, MOIST TO WET		
15		15-15.5			0.4		15' SAA, LESS CLAY		
16									
17				4'/5'	1.4	SM			
18									
19									
20									

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE		BORING ID: 18CPTMW26SW
Project Number: 60274185		
Site Location: LHAAP SITE 18/24		
Coordinates:	Elevation	Sheet 2 of 3
Drilling Method: SONIC DRILL RIG		Monitoring Well Installed:
Sample Type(s): SAMPLE BARREL	Boring Diameter: 7" x 8"	Screened Interval:
Weather: CLOUDY 60'S	Logged By: GH, SH	Date/Time Started: 4/25/16	Depth of Boring: 50'
Drilling Contractor: AET	Ground Elevation:	Date/Time Finished: 4/25/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
21	X	20-20.5			1.3	SM	SILTY FINE SAND, YELLOWISH BROWN, WET		
22									
23					1.9		22.8' SILT, YELLOWISH BROWN, WET		
24				10'/10'		ML / CH	23.2' SILTY CLAY, YELLOWISH BROWN, MOIST, SOFT-MOD. STIFF, HIGH PLASTICITY		
25					1.4	SM	23.9' SILTY FINE SAND, YELLOWISH BROWN, WET		
26	X	25-25.5 (HOLD)				SP	24.8 FINE SAND, YELLOWISH BROWN, WET		
27					1.7		26.5-28' LT. BROWN		
28									
29									
30	X	30-30.5			2.0	SM	30.0' SILTY FINE SAND, YELLOWISH BROWN, WET		
31									
32					2.1		31.7' FINE SAND, YELLOWISH BROWN, WET		
33									
34							33.8' SAA, LT. GRAY, WET, W/ OCCASIONAL 1" THICK LT. GRAY CLAY LAYERS		
35				10'/10'	1.8	SP			
36							34.8 1" CLAY LAYER		
37									
38					1.8				
39							39.2 1/2" CLAY LAYER		
40					1.5		39.5 1" CLAY LAYER		

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE			BORING ID: 18CPTMW26SW
Project Number: 60274185			
Site Location: LHAAP SITE 18/24			
Coordinates:	Elevation		Sheet 3 of 3
Drilling Method: SONIC DRILL RIG			Monitoring Well Installed:
Sample Type(s): SAMPLE BARREL	Boring Diameter: 7.8"		Screened Interval: ,
Weather: CLOUDY 60'S	Logged By: GA. SH	Date/Time Started: 4/25/16	Depth of Boring: 50'
Drilling Contractor: ACT	Ground Elevation:	Date/Time Finished: 4/25/16	Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
41	X	40-40.5					FINE SAND, BROWN, WET		
42									
43					2.5				
44				10'/10'			43.8' SAA, YELLOWISH BROWN		
45					2.8	SP	44.9' 1" GRAY CLAY LAYER		
46							45.0' FINE SAND, GRAY, WET		
47									
48					2.9		47.3' SAA, BROWN		
49							47.5' SAA, GRAY		
50	X	49.5-50.0			2.4		48.5 SAA, BROWN 49.5 SAA, GRAY		
51									
52							TD = 50'		
53									
54									
55									
56									
57									
58									
59									
60									

NOTES: USED 4 BAGS OF TYPE I/II PORTLAND CEMENT AND 12 lbs BENTONITE QUICKGEL FOR GROUT TOTALING ~ 50 GALLONS
3 1/2 BAGS OF 12/20 SAND + 3/4 BAG BENTONITE CHIPS

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE		BORING ID: 18WW25
Project Number: 60274185		
Site Location: LHAAP Site 18/24		
Coordinates:	Elevation	Sheet 1 of 2
Drilling Method: HSA		Monitoring Well Installed:
Sample Type(s): Split Spoon + Cone Barrel	Boring Diameter: 8"	Screened Interval: 14.2-23.8'
Weather: Sunny 90's / Logged By: SH	Date/Time Started: 6/27/16	Depth of Boring: 24.2'
Drilling Contractor: ETTL / Ground Elevation:	Date/Time Finished: 6/27/16	Water Level: NA

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
1				16"/24"		CL	SANDY CLAY, DARK BROWN, DAMP, W/ ORGANICS 0.3 - SILTY CLAY, BROWN W/ YELLOWISH RED MOTTLING, DAMP TO MOIST, SOFT, LOW PLASTICITY		
2							2.0 - SAA, WET		
3		3.5'-4.0'		24"/24"	13.1*	CL	3.0' - SILTY FINE SAND, GRAY, W/ VERY DARK BROWN CONCRETIONS, WET		
4						SM			
5				0"/60"	NM				
6									
7									
8					NM				
9							9.0' - FINE SAND, BROWN, WET		
10		9.5'-10.0'			0.0	SP	9.8' - FINE TO MEDIUM SAND, GRAY, WET		
11				25"/60"			10.8' - FINE SAND, LIGHT BROWN W/ GRAY, WET		
12					NM				
13									
14							14.0' - SAA,		
15		14.5'-15.0'			0.0	SP / SM	14.5' - SILTY FINE SAND, LIGHT BROWN, YELLOWISH BROWN + GRAY, WET		
16				36"/60"		SP	15.3' - FINE SAND, GRAY TO DARK GRAY, WET		
17									
18					NM				
19							19.0' - FINE SAND, GRAY, WET		
20		19.5'-20.0'				SP			

NOTES: USED 2' SPLIT SPOON TO SAMPLE UPPER 4' OF SOIL BORING, UTILIZED 5' CONE BARREL FROM 4' TO 24'

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE		BORING ID: 18WW25
Project Number: 60274185		
Site Location: LHAAP SITE 18/24		
Coordinates:	Elevation	Sheet 2 of 2
Drilling Method: HSA		Monitoring Well Installed:
Sample Type(s): SPLITSPOON & CONTINUOUS	Boring Diameter: 8"	Screened Interval: 14.2-23.8'
Weather: SUNNY 90's	Logged By: SH	Date/Time Started: 6/27/16
Drilling Contractor: ETTL	Ground Elevation:	Date/Time Finished: 6/27/16

Depth of Boring: 24.2
Water Level:

Depth (ft)	Geologic Sample ID	Sample Depth (ft)	Blows per 6"	Recovery (inches)	Headspace (ppm)	U.S.C.S.	MATERIALS: Color, size, range, MAIN COMPONENT, minor component(s), moisture content, structure, angularity, maximum grain size, odor, and Geologic Unit (if known)	Lab Sample ID	Lab Sample Depth (ft)
21				42"/60"		SP	FINE SAND, BROWN, WET		
22	X	22.0'-22.5'			3.7				
23						X			
24									
25							TD = 24.2'		
26									
27									
28									
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									

NOTES:

Date	Time	Depth to groundwater while drilling

Checked by: Date:

AECOM

Client: USACE		WELL ID: 18CPT MW19SW
Project Number: 60274185		
Site Location: LHAAP SITE 18/24		Date Installed: 4/21/16-4/22/16
Well Location:	Coords:	Borehole Diameter: 8"
Method: Sonic Drill Rig		Contractor: AEI

MONITORING WELL CONSTRUCTION DETAIL

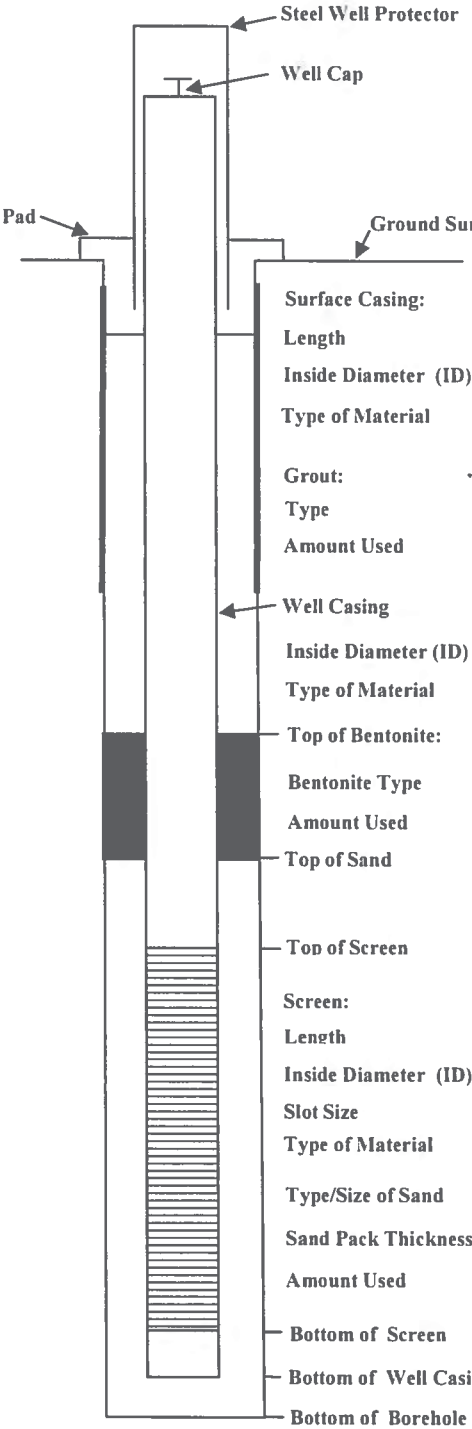

Depth from G.S. (feet)

Surface Casing:
- Length: NA
- Inside Diameter (ID): NA
- Type of Material: NA

Grout:
- Type: TYPE I & II PORTLAND & BENTONITE QUICKGEL
- Amount Used: 100 gallons

Well Casing
- Inside Diameter (ID): 4"
- Type of Material: SCH. 40 PVC

Top of Bentonite: 50'
- Bentonite Type: 3/8" CHIPS
- Amount Used: 1.5 BAGS

Top of Sand: 53'

Top of Screen: 55'

Screen:
- Length: 9.6'
- Inside Diameter (ID): 4"
- Slot Size: 0.01"
- Type of Material: SCH. 40 PVC
- Type/Size of Sand: 12/20
- Sand Pack Thickness: 12'
- Amount Used: 6 BAGS

Bottom of Screen: 64.6'

Bottom of Well Casing: 65.0'

Bottom of Borehole: 65.0'

Borehole Diameter: 8"

Comments:

Installation Observed By: B. Hilton

AECOM

Client: USACE	WELL ID: 18CPTMW22R
Project Number: 60274185	
Site Location: LHAAP SITE 18/24	Date Installed: 4/23/16
Well Location: Coords:	Borehole Diameter: 8"
Method: SONIC DRILL RIG	Contractor: AEI

MONITORING WELL CONSTRUCTION DETAIL

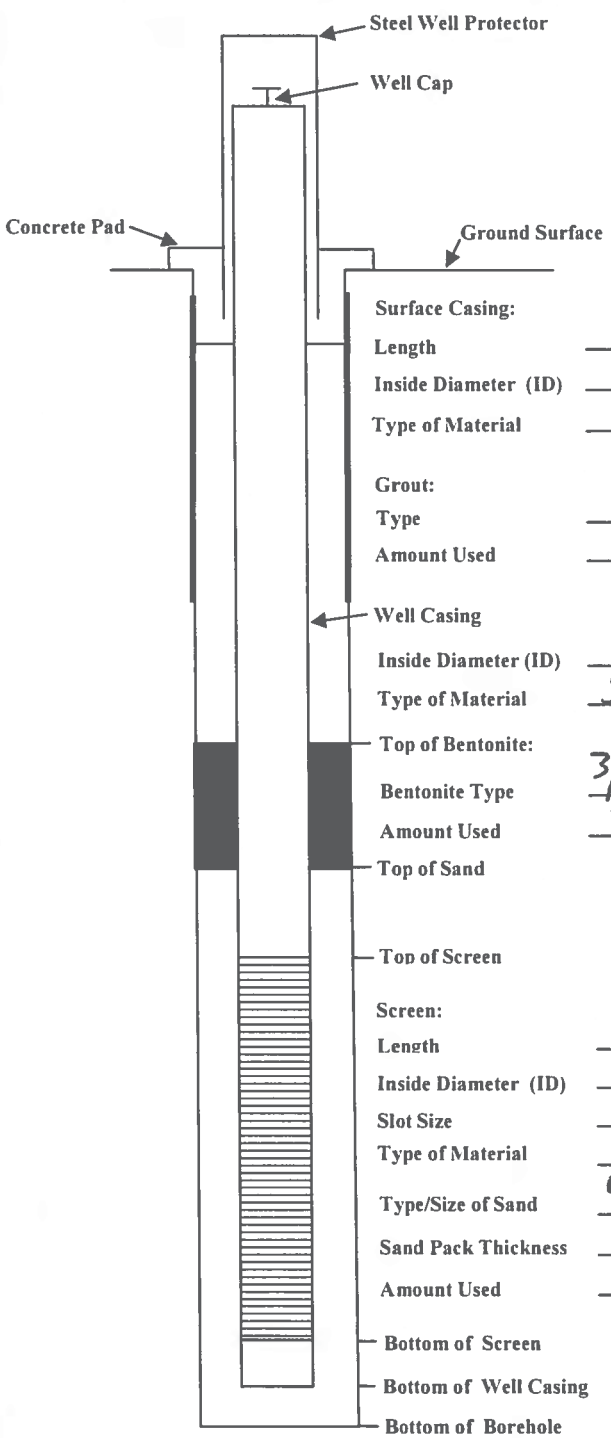

Depth from G.S. (feet)

Surface Casing:
- Length: NA
- Inside Diameter (ID): NA
- Type of Material: NA

Grout:
- Type: NA
- Amount Used: NA

Well Casing
- Inside Diameter (ID): 4"
- Type of Material: SCH. 40 PVC

Top of Bentonite: 1.0'
- Bentonite Type: 3/8" CHIPS
- Amount Used: 1/2 BAG

Top of Sand: 3.0'

Top of Screen: 4.4'

Screen:
- Length: 9.6'
- Inside Diameter (ID): 4"
- Slot Size: 0.01"
- Type of Material: SCH. 40 PVC
- Type/Size of Sand: 12/20 SILICA SAND
- Sand Pack Thickness: 11.4'
- Amount Used: 6.5 BAGS

Bottom of Screen: 14.0'

Bottom of Well Casing: 14.4'

Bottom of Borehole: 16'

Borehole Diameter: 8"

Comments: SLOUGH BETWEEN WELL CASING & BOREHOLE

Installation Observed By: G. HILTON

AECOM

Client: USACE	WELL ID: 18CPT MW22 DW
Project Number: 60274185	
Site Location: LHAAP SITE 18/24	Date Installed: 4/26/16
Well Location: Coords:	Borehole Diameter: 8" 0-29.5 7" 29.5-90
Method: SONIC DRILL RIG	Contractor: AEI

MONITORING WELL CONSTRUCTION DETAIL

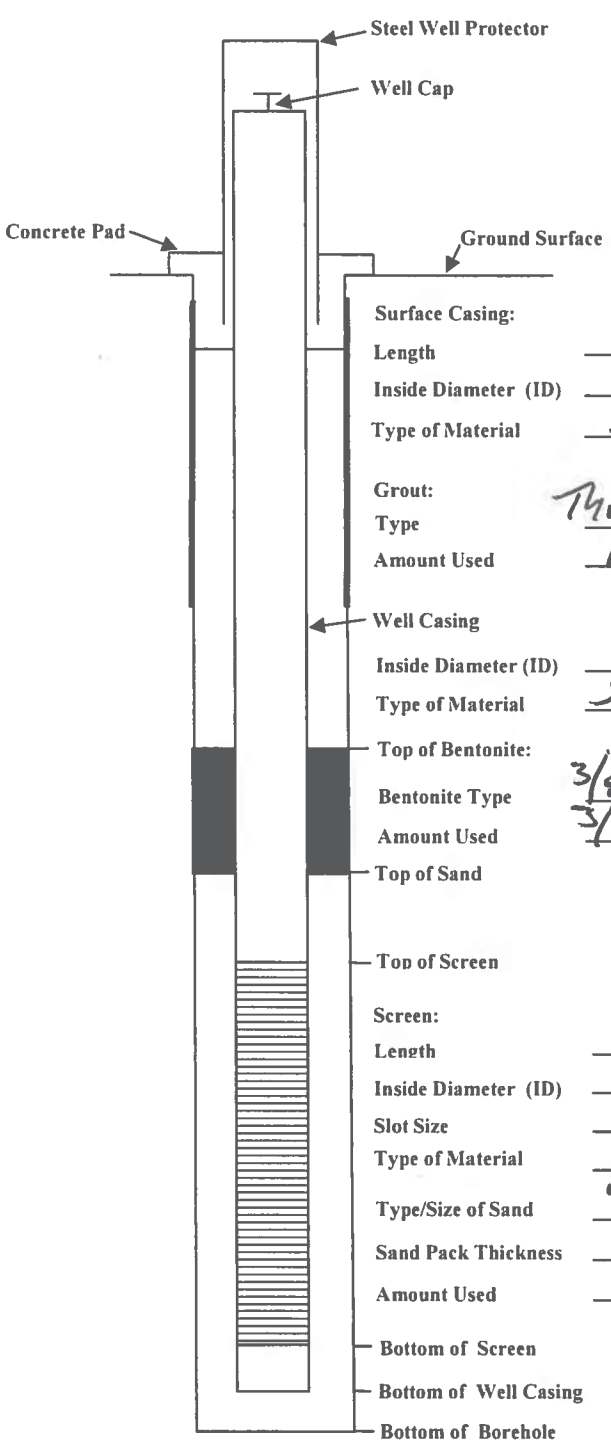

Depth from G.S. (feet)

Surface Casing:
- Length: 29.5'
- Inside Diameter (ID): 8"
- Type of Material: STEEL

TEMPORARY – REMOVED AFTER WELL SET

Grout:
- Type: TYPE I + II PORTLAND CEMENT + BENTONITE GEL
- Amount Used: 100 gal

Well Casing
- Inside Diameter (ID): 4.0"
- Type of Material: SCH. 40 PVC

Top of Bentonite: 68'
- Bentonite Type: 3/8" CHIPS
- Amount Used: 3/4 BAG (50# BAG)

Top of Sand: 71'

Top of Screen: 72.7'

Screen:
- Length: 9.6
- Inside Diameter (ID): 4"
- Slot Size: 0.01"
- Type of Material: SCH. 40 PVC
- Type/Size of Sand: 12/20 SILICA SAND
- Sand Pack Thickness: 13'
- Amount Used: 5 3/4 BAGS (94# BAGS)

Bottom of Screen: 82.3'

Bottom of Well Casing: 83.0'

Bottom of Borehole: 90'

Borehole Diameter: 7"

Comments: 3/8" BENTONITE CHIPS FROM 90 - 84
SAND FROM 84 - 71

Installation Observed By: KURT WEBBER

AECOM

Client: USACE		WELL ID: 18CPT MW23 SW
Project Number: 60274185		
Site Location: LHAAP SITE 18/24		Date Installed: 4/27/16
Well Location:	Coords:	Borehole Diameter: 8" 0-30', 7" 30-
Method: Sonic Drilling Rig		Contractor: AET

MONITORING WELL CONSTRUCTION DETAIL

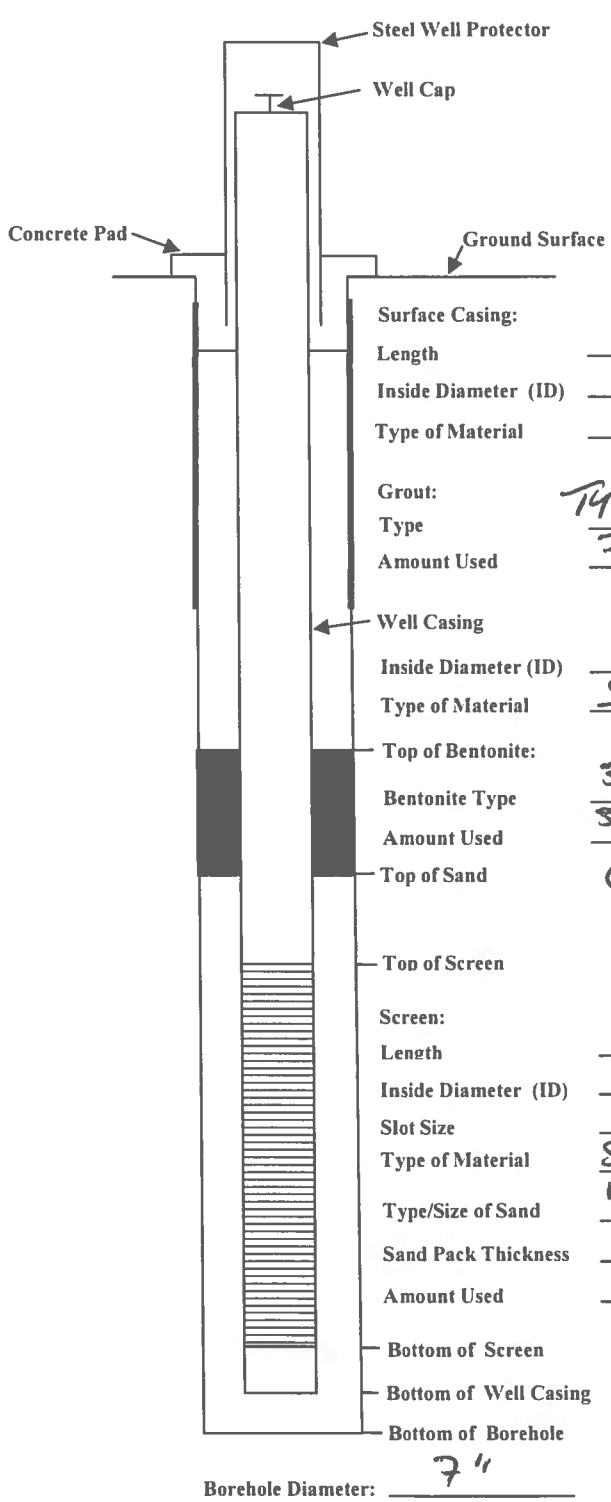

Depth from G.S. (feet)

Surface Casing:
- Length: 30'
- Inside Diameter (ID): 8"
- Type of Material: STEEL

TEMPORARY CASING USED WHILE DRILLING - REMOVED AFTER WELL SET

Grout:
- Type: TYPE I + II PORTLAND CEMENT & BENTONITE GEL
- Amount Used: 70 gal

Well Casing:
- Inside Diameter (ID): 4"
- Type of Material: SCH. 40 PVC

Top of Bentonite: 49.4
- Bentonite Type: 3/8" CHIPS
- Amount Used: 3/4 BAG (50# BAG)

Top of Sand: 52.4

Top of Screen: 55.3

Screen:
- Length: 9.7
- Inside Diameter (ID): 4"
- Slot Size: 0.01"
- Type of Material: SCH. 40 PVC
- Type/Size of Sand: 12/20 SILICA SAND
- Sand Pack Thickness: 13.3'
- Amount Used: 4.5 BAGS (94# BAGS)

Bottom of Screen: 65.0

Bottom of Well Casing: 65.7

Bottom of Borehole: 65.7

Borehole Diameter: 7"

Comments:

Installation Observed By: KURT WEBBER

AECOM	Client: USACE	WELL ID: 18CATMW26
	Project Number: 60274185	
	Site Location: LHAAP Site 18/24	Date Installed: 4/23/16
	Well Location: Coords:	Borehole Diameter: 8"
	Method: Sonic Drill Rig	Contractor: AEI

MONITORING WELL CONSTRUCTION DETAIL

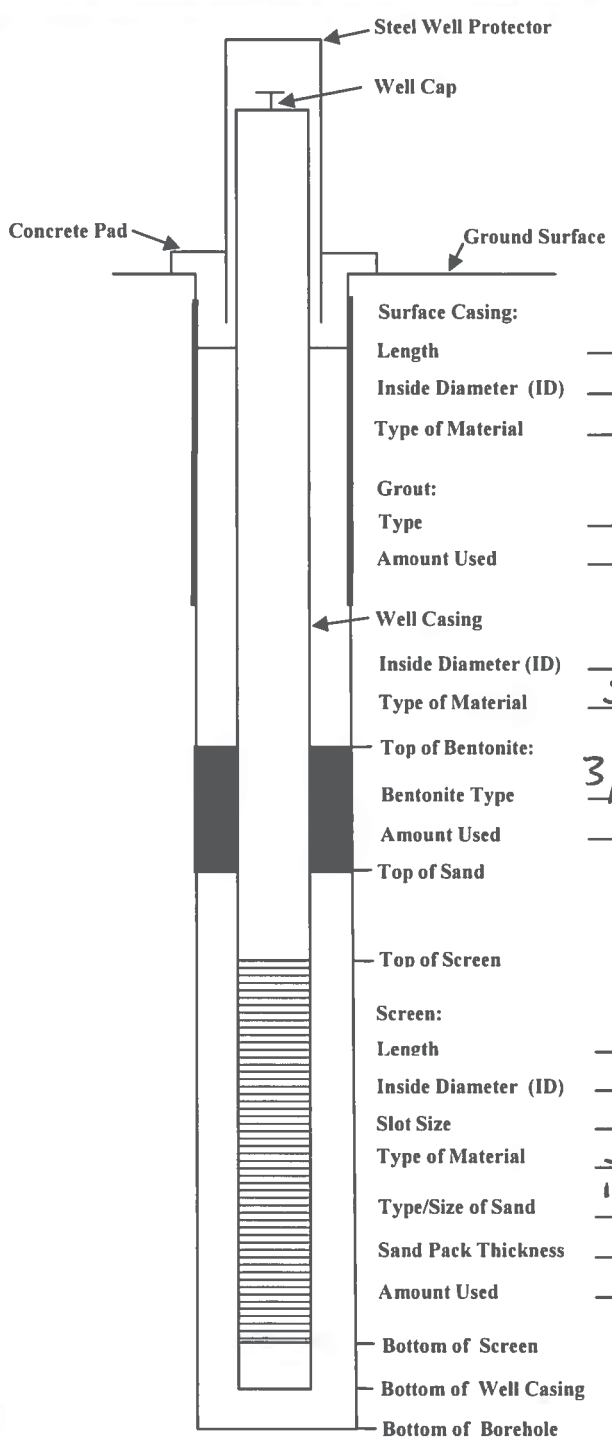

Depth from G.S. (feet)

Surface Casing:
- Length: NA
- Inside Diameter (ID): NA
- Type of Material: NA

Grout:
- Type: NA
- Amount Used: NA

Well Casing
- Inside Diameter (ID): 4"
- Type of Material: Sch. 40 PVC

Top of Bentonite: 2.0
- Bentonite Type: 3/8" CHIPS
- Amount Used: 1 BAG

Top of Sand: 4.5'

Top of Screen: 4.7'

Screen:
- Length: 9.6
- Inside Diameter (ID): 4"
- Slot Size: 0.01"
- Type of Material: Sch. 40 PVC
- Type/Size of Sand: 12/20 Silica Sand
- Sand Pack Thickness: 10.2'
- Amount Used: 6 BAGS

Bottom of Screen: 14.3'

Bottom of Well Casing: 14.7'

Bottom of Borehole: 15.0'

Borehole Diameter: 8"

Comments: Slough between bottom of casing and borehole

Installation Observed By: G. Hilton

AECOM

Client: USACE		WELL ID: 18CPT MW26 SW
Project Number: 60274185		
Site Location: LHAAP SITE 18/24		Date Installed: 4/25/16
Well Location:	Coords:	Borehole Diameter: 7"
Method: SONIC DRILL RIG		Contractor: AEI

MONITORING WELL CONSTRUCTION DETAIL

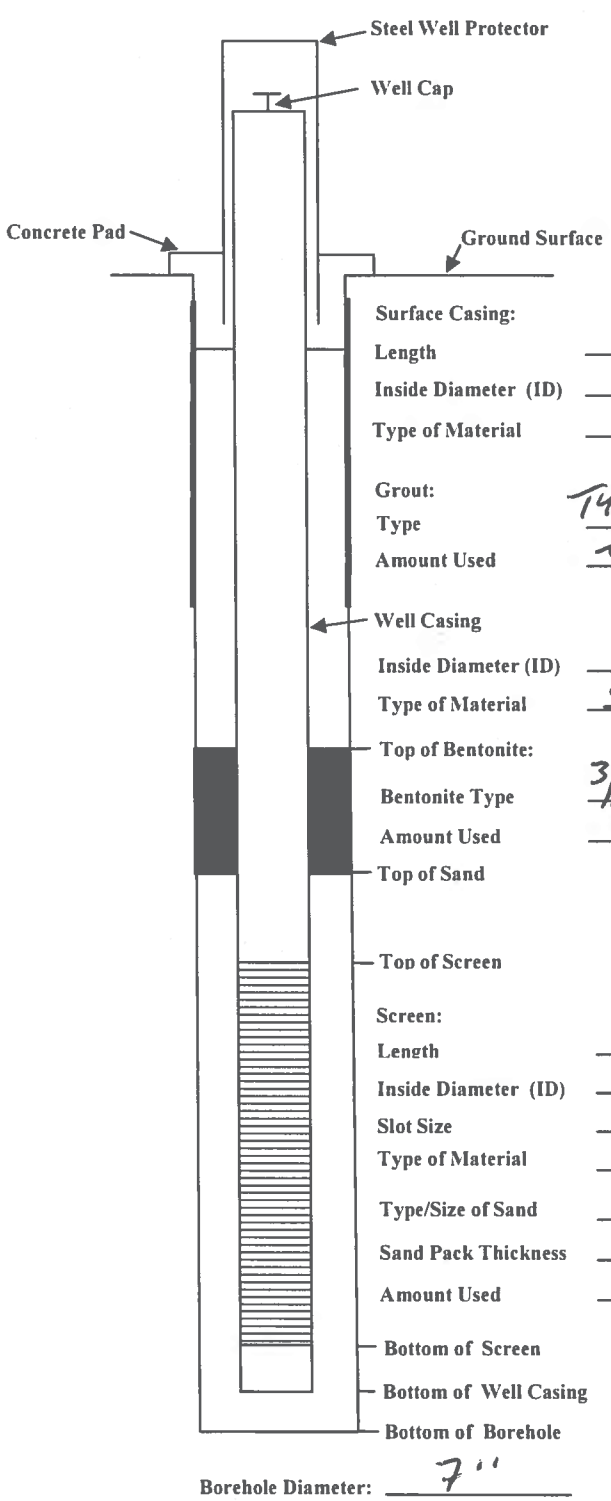

Depth from G.S. (feet)

Surface Casing:
- Length: 15'
- Inside Diameter (ID): 8"
- Type of Material: STEEL

TEMPORARY STEEL CASING USED DURING DRILLING

Grout:
- Type: TYPE I & II PORTLAND CEMENT & BENTONITE GEL
- Amount Used: ~50 gal

Well Casing
- Inside Diameter (ID): 4"
- Type of Material: SCH. 40 PVC

Top of Bentonite: 34'
- Bentonite Type: 3/8" CHIPS
- Amount Used: 3/4 BAG

Top of Sand 38'

Top of Screen 40.1'

Screen:
- Length: 9.6
- Inside Diameter (ID): 4"
- Slot Size: 0.01"
- Type of Material: SCH. 40 PVC
- Type/Size of Sand: 12/20 SILICA SAND
- Sand Pack Thickness: 12.1'
- Amount Used: 3 1/2 BAGS

Bottom of Screen 49.7

Bottom of Well Casing 50.1

Bottom of Borehole 50.1

Borehole Diameter: 7"

Comments:

Installation Observed By: G. HILTON

AECOM	Client: USACE	WELL ID: 18WW25
	Project Number: 60274185	
	Site Location: LHAAP SITE 18/24	Date Installed: 6/27/16
	Well Location: Coords:	Borehole Diameter: 8"
	Method: HOLLOW STEM AUGER	Contractor: ETR

MONITORING WELL CONSTRUCTION DETAIL

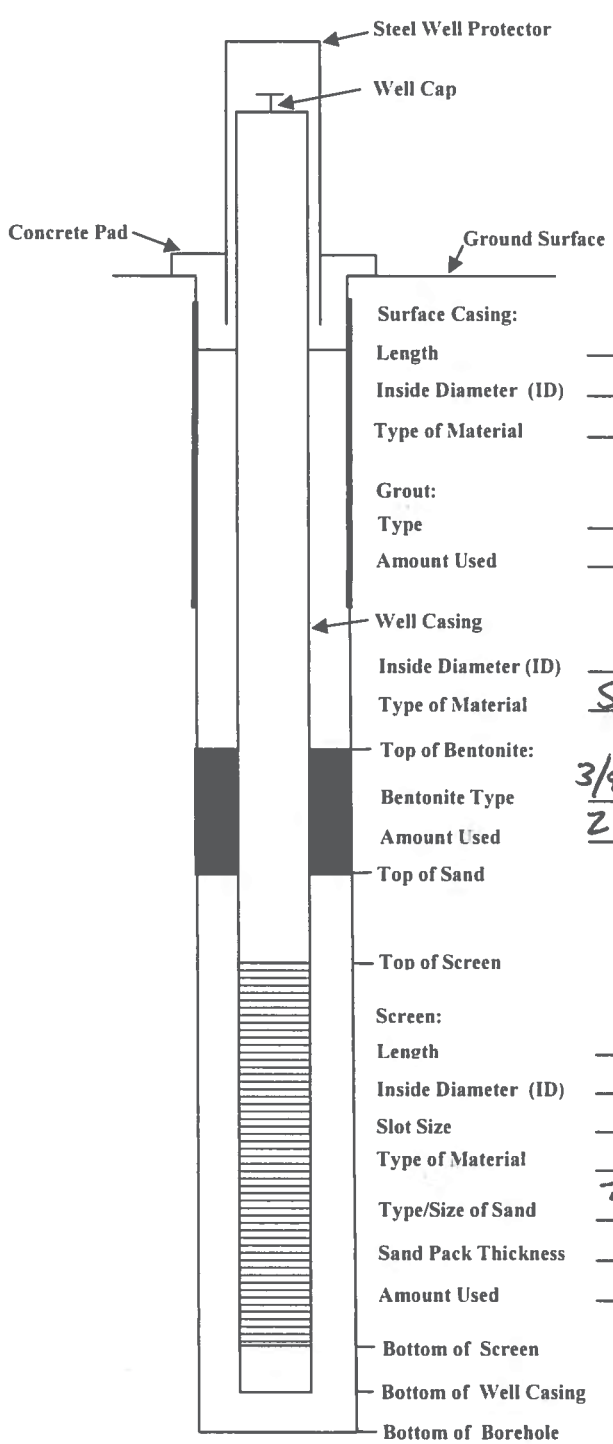

Depth from G.S. (feet)

Surface Casing:
- Length: NA
- Inside Diameter (ID): NA
- Type of Material: NA

Grout:
- Type: NA
- Amount Used: NA

Well Casing
- Inside Diameter (ID): 4"
- Type of Material: SCH. 40 PVC

Top of Bentonite: 1.0'
- Bentonite Type: 3/8" CHIPS + PELLETS
- Amount Used: 2 BAGS CHIPS + 1 BUCKET PELLETS

Top of Sand: 9.0'

Top of Screen: 14.2'

Screen:
- Length: 9.6'
- Inside Diameter (ID): 4"
- Slot Size: 0.01"
- Type of Material: SCH. 40 PVC
- Type/Size of Sand: 20/40 SILICA SAND
- Sand Pack Thickness: 15.2'
- Amount Used: 10 BAGS

Bottom of Screen: 23.8

Bottom of Well Casing: 24.2

Bottom of Borehole: 24.2

Borehole Diameter: 8"

Comments:

Installation Observed By: G. HILTON

APPENDIX B: Quality Control Summary Report & Laboratory Analytical Reports

QUALITY CONTROL SUMMARY REPORT
DPT Investigation and Quarterly Sampling
(February – June 2016)
FOR
LHAAP-18/24
LONGHORN ARMY AMMUNITION PLANT
KARNACK, TEXAS

Prepared For:

U.S. Army Corps of Engineers
Tulsa District

Prepared By:

AECOM Technical Services

September 2016

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1 INTRODUCTION

AECOM reviewed 37 data packages from Microbac Laboratory Services, Marietta, OH. Groundwater and soil samples were collected February 24 through June 29, 2016 at LHAAP-18/24 at Longhorn Army Ammunition Plant (LHAAP), Karnack, Texas. Data were reviewed for conformance to the requirements of the following guidance documents: Automated Data Review by Laboratory Data Consultants (ADR.net), United States Environmental Protection Agency (EPA) Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, (EPA, July 2002), and EPA Contract Laboratory Program National Functional Guidelines for Low Concentration Organic Data Review, (EPA, June 2001).

1.1 Intended Use of Data

The objective of this sampling event was to collect data to determine the extent of contaminants of concern at LHAAP-18/24.

Analyses requested included:

- SW6850 ï Perchlorates by LC/MS/MS
- SW8260- Volatiles by GC/MS
- SW6010 ï Al, Se, and Fe by ICP
- SW6020 ï As, Ba, Cd, Cr, Co, Pb, Mn, Ni, Ag, Se, V, Zn by ICP/MS
- 7470A- Hg by cold vapor atomic absorption
- SW8270- 1,4-dioxane by GC/MS

Table 2 lists the sample identifications and their associated laboratory identifications. **Table 3** lists qualified results with the associated quality control parameter that was exceeded.

1.2 Preservation and Holding Times

Sample identification data were evaluated for agreement with the chain-of-custody (COC). All samples were received in appropriate containers, within the proper temperature range, in good condition, and with the required signatures.

Sample L16061142-07 was analyzed 23 days after collection and therefore concentrations of all analytes are estimated (UJ/J).

Table 3 shows qualified analytical data.

1.3 Calibrations

Initial calibration criteria modification includes RSD< or = to 30%, two compounds allowed up to 40%. If the continuing calibration verification (CCV) compound exceeds 30% drift, the compound is checked in the LCS, if both are outside recovery limits, the compound is rejected, R. If only the CCV exceeds recovery criteria and is less than Ñ40% drift, then the compound is qualified J or UJ.

Table 3 shows qualified analytical data.

1.3.1 Continuing Calibration Verification (CCV)

1.3.1.1 SW8260

CCV WG572347-02 in SDG L16060411 has recoveries for bromomethane and naphthalene of 72% and 79.8%, respectively. These recoveries are below the 80% criteria for CCVs. The associated samples did not have reported concentrations of these analytes above the limit of detection (LOD) and therefore the concentrations are estimated (UJ).

CCV WG572507-02 in SDG L16060504 has recoveries for acetone, 2-butanone, 1,2-dibromo-3-chloropropane, and 2-hexanone of 65.4%, 70.8%, 69.6%, and 75.4%, respectively. These recoveries are below the 80% criteria for CCVs. The associated samples did not have reported concentrations of these analytes above the limit of detection (LOD) and therefore the concentrations are estimated (UJ).

CCV WG572735-02 in SDGs L16060615 and L16060616 has a recovery for bromomethane of 77.2%. This is below the 80% criteria for CCVs. The associated samples did not have reported concentrations of bromomethane above the limit of detection (LOD) and therefore the concentrations are estimated (UJ).

CCV WG573037-02 in SDGs L16060616, L16060730, and L16060823 has a recovery for bromomethane of 74%. This is below the 80% criteria for CCVs. The associated samples did not have reported concentrations of bromomethane above the limit of detection (LOD) and therefore the concentrations are estimated (UJ).

CCV WG573258-02 in SDG L16060650 has a recovery for 2-hexanone of 78.6%. This is below the 80% criteria for CCVs. The associated samples did not have reported concentrations of bromomethane above the limit of detection (LOD) and therefore the concentrations are estimated (UJ).

CCV WG573770-02 in SDG L16060927 has a recovery for bromomethane of 73.4%. This is below the 80% criteria for CCVs. The associated samples did not have reported concentrations of bromomethane above the limit of detection (LOD) and therefore the concentrations are estimated (UJ).

CCV WG573773-02 in SDG L16061026 has a recovery for 2-hexanone of 77.4%. This is below the 80% criteria for CCVs. The associated samples did not have reported concentrations of bromomethane above the limit of detection (LOD) and therefore the concentrations are estimated (UJ).

CCV WG575085-02 in SDG L16061290 has recoveries for acetone, 2-butanone, 1,2-dibromo-3-chloropropane, 1,2-dichloroethane and 2-hexanone of 66.6%, 71.4%, 74.6%, 78.8% and 71.8%, respectively. These recoveries are below the 80% criteria for CCVs. The associated samples did not have reported concentrations of these analytes above the limit of detection (LOD) and therefore the concentrations are estimated (UJ).

CCV WG575198-02 in SDGs L16061290, L16061452 and L16061453 has recoveries for acetone and 2-butanone of 78.8% and 79.4%, respectively. This is below the 80% criteria for CCVs. The associated samples did not have reported concentrations of bromomethane above the limit of detection (LOD) and therefore the concentrations are estimated (UJ).

CCV WG575663-02 in SDG L16061648 has a recovery for bromomethane of 79%. This is below the 80% criteria for CCVs. The associated samples did not have reported concentrations of bromomethane above the limit of detection (LOD) and therefore the concentrations are estimated (UJ).

Table 3 shows qualified analytical data.

1.4 Blanks

Where contamination by a target analyte of one of the various blanks was found, if the sample result for an associated sample was non-detect or less than 5X (10X for common laboratory contaminants) the analyte concentration in the blank, the corresponding sample result for the analyte was qualified B. Where the sample result for the affected analyte was greater than 5X the amount in the blank, no qualifier was applied.

All blanks are within criteria.

1.5 Surrogates

A recovery of 121% was reported for surrogate 1,2-dichloroethane-d4 in samples L16060730-03, L16060823-01, and L16060823-04 in SDGs L16060730 and L16060823. Recoveries are above the upper control limit of 120% and therefore reported concentrations for all analytes are estimated (UJ/J).

A recovery of 122% was reported for surrogate 1,2-dichloroethane-d4 in samples L16061142-02, L16061142-06 in SDGL16061142. Recoveries are above the upper control limit of 120% and therefore reported concentrations for all analytes are estimated (UJ/J).

A recovery of 123% was reported for surrogate 1,2-dichloroethane-d4 in sample L16061144-02 in SDG L16061144. Recoveries are above the upper control limit of 120% and therefore reported concentrations for all analytes are estimated (UJ/J).

Table 3 shows qualified analytical data.

1.6 Laboratory Control Sample (LCS)

The relative percent difference (RPD) for 1,4-dioxne between LCS WG573812-02 and LCSD WG573812-03 in SDGs L16061142 and L16061144 was 61.5% which is greater than the RPD limit of 30%. The associated samples reported concentrations below the LOD and therefore concentrations are estimated (UJ).

The percent recovery (%R) for 1,1-dichloroethene in LCS WG575129-02 was 69.5% in SDG L16061289. The lower control limit for 1,1-dichloroethene is 70% and the associated sample reported a concentration below the LOD, therefore the concentration is estimated (UJ).

The percent recoveries (%R) for 1,1-dichloroethene in LCS WG575199-02 and LCSD WG575199-03 were 54.9% and 54.7%, respectively, in SDGs L16061290, L16061452 and L1606143. The lower control limit for 1,1-dichloroethene is 70% and the associated samples reported concentrations below the LOD, therefore concentrations are estimated (UJ).

The percent recoveries (%R) for dichlorodifluoromethane in LCS WG575199-02 and LCSD WG575199-03 were 10.7% and 10.5%, respectively, in SDGs L16061290, L16061452 and

L1606143. The lower control limit for dichlorodifluoromethane is 30% and the associated samples reported concentrations below the LOD, therefore concentrations are estimated (UJ).

The percent recoveries (%R) for 2,2-dichloropropane in LCS WG575086-02 and LCSD WG575086-03 were 67.2% and 68.8%, respectively, in SDG L16061290. The lower control limit for 2,2-dichloropropane is 70% and the associated samples reported concentrations below the LOD, therefore concentrations are estimated (UJ).

The percent recoveries (%R) for chloromethane in LCS WG575199-02 and LCSD WG575199-03 were 31.1% and 30.9%, respectively, in SDGs L16061452 and L16061453. The lower control limit for chloromethane is 40% and the associated samples reported concentrations below the LOD, therefore concentrations are estimated (UJ).

The percent recoveries (%R) for vinyl chloride in LCS WG575199-02 and LCSD WG575199-03 were 31.1% and 30.9%, respectively, in SDGs L16061452 and L16061453. The lower control limit for vinyl chloride is 50% and the associated samples reported concentrations below the LOD, therefore concentrations are estimated (UJ).

Table 3 shows qualified analytical data.

1.7 Duplicates

Field duplicates were taken at a rate of 1 per every 20 samples. All duplicate recoveries were within the acceptable range of ≤30% for groundwater matrices and ≤50% for soil matrices.

1.7.1.1 Matrix Spike/Matrix Spike Duplicate (MS/MSD)

The MS/MSD for sample L16021306-02 in SDG L16021306 had RPDs that were outside of control limits for 1,1,2,2-tetrachloroethane, 1,2,3-trichlorobenzene, 1,2,4-trichlorobenzene, 1,2,4-trimethylbenzene, 1,2-dibromo-3-chloropropane, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 2-chlorotoluene and bromobenzene. L16021306-02 had concentrations of these analytes below the LOD and therefore the concentrations are estimated (UJ).

The MS/MSD for sample L16061068-13 in SDG L16061068 had RPDs that were outside of control limits for sodium, chromium, barium, and manganese and therefore reported concentrations are estimated (UJ/J).

Table 3 shows qualified analytical data.

2 DATA USABILITY SUMMARY

The data are usable for the intended purposes of the project. The data quality objectives have been met for the project.

Table 1: Completeness by Method

Method	No. of Rejected Results	% Completeness
SW6850	0	100
SW8260	0	100
SW6010	0	100
SW6020	0	100
7470A	0	100
SW8270	0	100

Table 2: Field Sample Identification and Laboratory Identification

ClientSampleID	LabSampleID	SW6850	SW8260	SW6010	SW6020	SW7470A	SW8270
L16021240-01	18DPT04(5-5.5)240216	X	X				
L16021240-02	18DPT04(15-15.5)240216	X	X				
L16021240-03	18DPT04(20-21)240216	X	X				
L16021240-04	18DPT04(20-21)240216FD	X	X				
L16021240-05	18DPT04(25-25.5)240216	X	X				
L16021240-06	18DPT04(29-30)240216	X	X				
L16021240-07	18DPT04(36.5-37)240216	X	X				
L16021240-08	18DPT04(34-34.5)240216	X	X				
L16021306-01	18DPT05(4.5-5)250216	X	X				
L16021306-02	18DPT05(10-11)250216	X	X				
L16021306-03	18DPT05(10-11)250216MS	X	X				
L16021306-04	18DPT05(10-11)250216MSD	X	X				
L16021306-05	18DPT05(15-15.5)250216	X	X				
L16021306-06	18DPT05(20-20.5)250216	X	X				
L16021357-01	18DPT01(5-5.5)250216	X	X				
L16021357-02	18DPT01(9.5-10)250216	X	X				
L16021357-03	18DPT01(15-15.5)250216	X	X				
L16021357-04	18DPT01(22.5-23)250216	X	X				
L16021357-05	18DPT01(24.5-25)250216	X	X				
L16021357-06	18DPT01(27-27.5)250216	X	X				
L16021358-01	18DPT02(5-5.5)260216	X	X				
L16021358-02	18DPT02(10-10.5)260216	X	X				
L16021358-03	18DPT02(10-10.5)260216FD	X	X				
L16021358-04	18DPT02(15-15.5)260216	X	X				
L16021358-05	18DPT02(22-22.5)260216	X	X				
L16021358-06	18DPT03(5-5.5)260216	X	X				
L16021358-07	18DPT03(10-10.5)260216	X	X				
L16021358-08	18DPT03(14.5-15)260216	X	X				
L16021358-09	18DPT03(17.5-18)260216	X	X				
L16030134-01	18DPT06(5-5.5)020316	X	X				
L16030134-02	18DPT06(5-5.5)020316FD	X	X				
L16030134-03	18DPT06(15-15.5)020316	X	X				
L16030134-04	18DPT06(20-20.5)020316	X	X				

ClientSampleID	LabSampleID	SW6850	SW8260	SW6010	SW6020	SW7470A	SW8270
L16030134-05	18DPT06(27.5-28)020316	X	X				
L16030134-06	18DPT06(38.5-39)020316	X	X				
L16030234-01	18DPT08(5-5.5)030316	X	X				
L16030234-02	18DPT08(15-15.5)030316	X	X				
L16030234-03	18DPT08(10-10.5)030316	X	X				
L16030234-04	18DPT08(21-21.5)030316	X	X				
L16030234-05	18DPT08(26-26.5)030316	X	X				
L16030234-06	18DPT08(35-35.5)030316	X	X				
L16030235-01	18DPT07(5-5.5)020316	X	X				
L16030235-02	18DPT07(15-15.5)020316	X	X				
L16030235-03	18DPT07(33.5-34.5)030316	X	X				
L16030235-04	18DPT07(33.5-34.5)030316MS	X	X				
L16030235-05	18DPT07(33.5-34.5)030316MSD	X	X				
L16030235-06	18DPT07(38-39)030316	X	X				
L16030235-07	18DPT07(38-39)030316FD	X	X				
L16030235-08	18DPT07(27-27.5)030316	X	X				
L16030323-01	18DPT09(5-5.5)040316	X	X				
L16030323-02	18DPT09(11-11.5)040316	X	X				
L16030323-03	18DPT09(13.5-14)040316	X	X				
L16030323-04	18DPT10(5-5.5)040316	X	X				
L16030323-05	18DPT10(15.5-16)040316	X	X				
L16030323-06	18DPT10(23.5-24)040316	X	X				
L16030366-01	18DPT11(5-5.5)040316	X	X				
L16030366-02	18DPT11(15-15.5)040316	X	X				
L16030366-03	18DPT11(20-20.5)070316	X	X				
L16030366-04	18DPT11(29-29.5)070316	X	X				
L16030366-05	18DPT11(25.25.5)070316	X	X				
L16030366-06	18DPT12(5-5.5)070316	X	X				
L16030366-07	18DPT12(8.5-9)070316	X	X				
L16030366-08	18DPT12(18-18.5)070316	X	X				
L16030366-09	18DPT12(12-12.5)070316	X	X				
L16030366-10	18DPT13(5-5.5)070316	X	X				
L16030366-11	18DPT13(12-12.5)070316	X	X				
L16030861-01	18DPT14(5-5.5)140316	X	X				

ClientSampleID	LabSampleID	SW6850	SW8260	SW6010	SW6020	SW7470A	SW8270
L16030861-02	18DPT14(10-10.5)140316	X	X				
L16030861-03	18DPT14(10-10.5)140316FD	X	X				
L16030861-04	18DPT14(17-17.5)140316	X	X				
L16030861-05	18DPT14(23-23.5)140316	X	X				
L16030861-06	18DPT15(5-5.5)140316	X	X				
L16030861-07	18DPT15(12-12.5)140316	X	X				
L16030861-08	18DPT15(21-21.5)140316	X	X				
L16030861-09	18DPT15(23.5-24)140316	X	X				
L16030861-10	18DPT15(26.5-27)140316	X	X				
L16030863-01	18DPT16(5-5.5)150316	X	X				
L16030863-02	18DPT16(5-5.5)150316MS	X	X				
L16030863-03	18DPT16(5-5.5)150316MSD	X	X				
L16030863-04	18DPT16(15-15.5)150316	X	X				
L16030863-05	18DPT16(25-25.5)150316	X	X				
L16030863-06	18DPT16(30-30.5)150316	X	X				
L16030863-07	18DPT16(33.33.5)150316	X	X				
L16030863-08	18DPT17(2.5-3)150316	X	X				
L16030863-09	18DPT17(2.5-3)150316FD	X	X				
L16030863-10	18DPT17(5-5.5)150316	X	X				
L16030863-11	18DPT17(10-10.5)150316	X	X				
L16030863-12	18DPT17(18-18.5)150316	X	X				
L16030863-13	18DPT17(27-27.5)150316	X	X				
L16030863-14	18DPT17(21.5-22)150316	X	X				
L16041344-01	18CPTMW22R(5-5.5)230416	X	X				
L16041344-02	18CPTMW22R(10-10.5)230416	X	X				
L16041344-03	18CPTMW22R(15-15.5)230416	X	X				
L16041344-04	18CPTMW26(5-5.5)230416	X	X				
L16041344-05	18CPTMW26(5-5.5)230416dup	X	X				
L16041344-06	18CPTMW26(10-10.5)230416	X	X				
L16041344-07	18CPTMW26(14.5-15)230416	X	X				
L16041344-08	18CPTMW26SW(5-5.5)250416	X	X				
L16041344-09	18CPTMW26SW(10-10.5)250416	X	X				
L16041344-10	18CPTMW26SW(15-15.5)250416	X	X				
L16041344-11	18CPTMW26SW(20-20.5)250416	X	X				

ClientSampleID	LabSampleID	SW6850	SW8260	SW6010	SW6020	SW7470A	SW8270
L16041344-12	18CPTMW26SW(30-30.5)250416	X	X				
L16041344-13	18CPTMW26SW(40-40.5)250416	X	X				
L16041344-14	18CPTMW26SW(49.5-50)250416	X	X				
L16041363-01	18CPTMW19SW(5-5.5)210416	X	X				
L16041363-02	18CPTMW19SW(10-10.5)210416	X	X				
L16041363-03	18CPTMW19SW(30-30.5)220416	X	X				
L16041363-04	18CPTMW19SW(30-30.5)220416Dup	X	X				
L16041363-05	18CPTMW19SW(40-40.5)220416	X	X				
L16041363-06	18CPTMW19SW(20-20.5)220416	X	X				
L16041363-07	18CPTMW19SW(60-61)220416	X	X				
L16041363-08	18CPTMW19SW(60-61)220416MS	X	X				
L16041363-09	18CPTMW19SW(60-61)220416MSD	X	X				
L16041363-10	18CPTMW19SW(50-50.5)220416	X	X				
L16041580-01	18CPTMW22DW(5-5.5)260416	X	X				
L16041580-02	18CPTMW22DW(10-10.5)260416	X	X				
L16041580-03	18CPTMW22DW(20-20.5)260416	X	X				
L16041580-04	18CPTMW22DW(29.5-30)260416	X	X				
L16041580-05	18CPTMW22DW(40-40.5)260416	X	X				
L16041580-06	18CPTMW22DW(50-51)260416	X	X				
L16041580-07	18CPTMW22DW(50-51)260416MS	X	X				
L16041580-08	18CPTMW22DW(50-51)260416MSD	X	X				
L16041580-09	18CPTMW22DW(60-60.5)260416	X	X				
L16041580-10	18CPTMW22DW(60-60.5)260416D	X	X				
L16041580-11	18CPTMW22DW(70-70.5)260416	X	X				
L16041580-12	18CPTMW22D(80-80.5)260416	X	X				
L16041580-13	18CPTMW22DW(89.5-90)260416	X	X				
L16041580-14	Equipment blank	X	X				
L16041582-01	18CPTMW23SW(5-5.5)	X	X				
L16041582-02	18CPTMW23SW(10-10.5)	X	X				
L16041582-03	18CPTMW23SW(20-20.5)	X	X				
L16041582-04	18CPTMW23SW(30-30.5)	X	X				
L16041582-05	18CPTMW23SW(40-40.5)	X	X				
L16041582-06	18CPTMW23SW(60-60.5)	X	X				
L16041582-07	18CPTMW23SW(50-50.5)	X	X				

ClientSampleID	LabSampleID	SW6850	SW8260	SW6010	SW6020	SW7470A	SW8270
L16060411-01	18CPTMW15T-060716	X	X				X
L16060411-02	18CPTMW15B-060716	X	X				X
L16060411-03	AWD4T-060716	X	X	X	X	X	X
L16060411-04	AWD4B-060716	X	X	X	X	X	X
L16060411-05	Trip blank		X				
L16060414-01	AWD1T-060716	X	X				X
L16060414-02	AWD1B-060716	X	X				X
L16060414-03	MW14T-060716	X	X				X
L16060414-04	MW14B-060716	X	X				X
L16060414-05	Trip blank		X				
L16060497-01	18CPTMW06-060816	X	X				X
L16060497-02	18CPTMW06MS-060816	X	X				X
L16060497-03	18CPTMW06MSD-060816	X	X				X
L16060497-04	MW22-060816	X	X				X
L16060497-05	Trip blank		X				
L16060504-01	18CPTMW08SW-060816	X	X				X
L16060504-02	18CPTMW08DW-060816	X					X
L16060504-03	MW5-060816	X	X	X	X	X	X
L16060504-04	18CPTMW03SW-060816	X	X				X
L16060504-05	Trip blank		X				
L16060615-01	18CPTMW22R-060916	X	X				X
L16060615-02	18CPTMW22DW-060916	X	X				X
L16060615-03	18CPTMW22DWFD-060916	X	X				X
L16060615-04	18CPTMW22SW-060916	X	X				X
L16060615-05	Trip blank		X				
L16060616-01	MW8-060916	X	X	X	X	X	X
L16060616-02	18CPTMW26SW-060916	X	X	X	X	X	X
L16060616-03	MW10-060916	X	X				X
L16060616-04	MW10F-060916			X	X	X	
L16060616-05	Trip blank		X				
L16060650-01	MW1-061016	X	X	X	X	X	
L16060650-02	MW3-061016	X	X	X	X	X	
L16060650-03	17WW08-061016	X	X	X	X	X	
L16060650-04	130-061016	X	X				

ClientSampleID	LabSampleID	SW6850	SW8260	SW6010	SW6020	SW7470A	SW8270
L16060650-05	130FD-061016	X	X				
L16060650-06	MW12-061016	X	X				
L16060650-07	18WW24-061016	X	X				
L16060650-08	18WW24F-061016	X	X				
L16060650-09	Trip blank		X				
L16060730-01	18CPTMW14-061316	X	X				X
L16060730-02	18CPTMW14FD-061316	X	X				X
L16060730-03	18CPTMW24-061316	X	X				X
L16060730-04	Trip blank		X				
L16060822-01	18WW03-061416	X	X				X
L16060822-02	18WW03F-061416			X	X	X	
L16060822-03	18CPTMW04SW-061416	X	X	X	X	X	X
L16060822-04	18CPTMW04-061416	X	X				X
L16060822-05	18CPTMW04FD-061416	X	X				X
L16060822-06	Trip blank		X				
L16060823-01	126-061416	X	X				X
L16060823-02	126F-061416			X	X	X	
L16060823-03	C08-061416	X	X	X	X	X	X
L16060823-04	C03-061416	X	X	X	X	X	X
L16060823-05	Trip blank		X				
L16060927-01	18CPTMW23SW-061516	X	X				X
L16060927-02	18CPTMW23-061516	X	X				X
L16060927-03	18CPTMW19SW-061516	X	X				X
L16060927-04	18CPTMW19-061516	X	X				X
L16060927-05	Trip blank		X				
L16061026-01	18WW16-061616	X	X				
L16061026-02	18WW16F-061616			X	X	X	
L16061026-03	102-061616	X	X				
L16061026-04	129-061616	X	X	X	X	X	X
L16061026-05	120-061616	X	X				X
L16061026-06	120F-061616			X	X	X	
L16061026-07	123-061616	X	X	X	X	X	X
L16061026-08	Trip blank		X				
L16061068-01	MW23-061716	X	X				

ClientSampleID	LabSampleID	SW6850	SW8260	SW6010	SW6020	SW7470A	SW8270
L16061068-02	MW23MS-061716	X	X				
L16061068-03	MW23MSD-061716	X	X				
L16061068-04	C01-061716	X	X	X	X	X	
L16061068-05	C01FD-061716	X	X	X	X	X	
L16061068-06	MW13-061716	X	X				
L16061068-07	C02-061716	X	X				
L16061068-08	C02MS-061716	X	X				
L16061068-09	C02MSD-061716	X	X				
L16061068-10	MW19-061716	X	X				
L16061068-11	MW19F-061716			X	X	X	
L16061068-12	MW18-061716	X	X				
L16061068-13	MW18F-061716			X	X	X	
L16061068-14	MW18MS-061716	X	X				
L16061068-15	MW18FMS-061716			X	X	X	
L16061068-16	MW18MSD-061716	X	X				
L16061068-17	MW18FMSD-061716			X	X	X	
L16061068-18	Trip blank		X				
L16061142-01	18WW20-062016	X	X	X	X	X	X
L16061142-02	18WW19-062016	X	X				
L16061142-03	18WW19F-062016			X	X	X	
L16061142-04	18WW19FD-062016	X	X				
L16061142-05	18WW19FFD-062016			X	X	X	
L16061142-06	18WW08-062016	X	X				X
L16061142-07	18WW09-062016	X	X				X
L16061142-08	Trip blank		X				
L16061144-01	18WW06-062016	X	X				X
L16061144-02	18WW06FD-062016	X	X				X
L16061144-03	MW17-062016	X	X				X
L16061144-04	Trip blank		X				
L16061227-01	18WW22-062116	X	X	X	X	X	X
L16061227-02	C04-062116	X	X				X
L16061227-03	C04F-062116			X	X	X	
L16061227-04	C04FD-062116	X	X				X
L16061227-05	C045FFD-062116			X	X	X	

ClientSampleID	LabSampleID	SW6850	SW8260	SW6010	SW6020	SW7470A	SW8270
L16061227-06	18CPTMW18-062116	X	X	X	X	X	X
L16061227-07	18WW18-062116	X	X	X	X	X	X
L16061227-08	18WW17-062116	X	X				
L16061227-09	Trip blank		X				
L16061289-01	MW21-062216	X	X	X	X	X	X
L16061289-02	MW9-062216	X	X				X
L16061289-03	18WW02-062216	X	X				X
L16061289-04	18WW02F-062216			X	X	X	
L16061289-05	18CPTMW10SW-062216	X	X				X
L16061289-06	Trip blank		X				
L16061290-01	18CPTMW16-062116		X				X
L16061290-02	MW16-062116		X				X
L16061290-03	MW16F-062116			X	X	X	
L16061290-04	125-062216	X	X				
L16061290-05	109-062216	X	X	X	X	X	X
L16061290-06	18CPTMW07-062216	X	X				X
L16061290-07	Trip blank		X				
L16061452-01	18CPTMW12SW-062416	X	X	X	X	X	X
L16061452-02	18CPTMW12DW-062416						X
L16061452-03	MW7-062416	X	X				X
L16061452-04	Trip blank		X				
L16061453-01	MW2-062416	X	X	X	X	X	X
L16061453-02	18CPTMW01DW-062416	X	X				X
L16061453-03	18CPTMW01SW-062416	X	X	X	X	X	X
L16061453-04	Trip blank		X				
L16061593-01	18WW25(3.5-4)270616	X	X				
L16061593-02	18WW25(9.5-10)270616	X	X				
L16061593-03	18WW25(14.5-15)270616	X	X				
L16061593-04	18WW25(19.5-20)270616	X	X				
L16061593-05	18WW25(22-22.5)270616	X	X				
L16061593-06	18WW25(22-22.5)270616Dup	X	X				
L16061648-01	18WW25-062916	X	X				X
L16061648-02	18WW25F-062916			X	X	X	
L16061648-03	Trip blank		X				

Table 3: Qualified Analytical Data

ClientSampleID	LabSampleID	Analyte Name	DVQualOverall	Reason
L16021306-02	18DPT05(10-11)250216	1,1,2,2-tetrachloroethane	UJ	MS/MSD RPD Failure
		1,2,3-trichlorobenzene	UJ	MS/MSD RPD Failure
		1,2,4-trichlorobenzene	UJ	MS/MSD RPD Failure
		1,2,4-trimethylbenzene	UJ	MS/MSD RPD Failure
		1,2-dibromo-3-chloropropane	UJ	MS/MSD RPD Failure
		1,2-dichlorobenzene	UJ	MS/MSD RPD Failure
		1,3-dichlorobenzene	UJ	MS/MSD RPD Failure
		1,4-dichlorobenzene	UJ	MS/MSD RPD Failure
		2-chlorotoluene	UJ	MS/MSD RPD Failure
		Bromobenzene.	UJ	MS/MSD RPD Failure
L16060411-01	18CPTMW15T-060716	Bromomethane	UJ	CCV %Recovery Failure
		Naphthalene	UJ	CCV %Recovery Failure
L16060411-02	18CPTMW15B-060716	Bromomethane	UJ	CCV %Recovery Failure
		Naphthalene	UJ	CCV %Recovery Failure
L16060411-03	AWD4T-060716	Bromomethane	UJ	CCV %Recovery Failure
		Naphthalene	UJ	CCV %Recovery Failure
L16060411-04	AWD4B-060716	Bromomethane	UJ	CCV %Recovery Failure
		Naphthalene	UJ	CCV %Recovery Failure
L16060504-01	18CPTMW08SW-060816	Acetone	UJ	CCV %Recovery Failure
		2-butanone	UJ	CCV %Recovery Failure
		1,2-dibromo-3-chloropropane	UJ	CCV %Recovery Failure
		2-hexanone	UJ	CCV %Recovery Failure
L16060504-02	18CPTMW08DW-060816	Acetone	UJ	CCV %Recovery Failure
		2-butanone	UJ	CCV %Recovery Failure
		1,2-dibromo-3-chloropropane	UJ	CCV %Recovery Failure
		2-hexanone	UJ	CCV %Recovery Failure

ClientSampleID	LabSampleID	Analyte Name	DVQualOverall	Reason
L16060504-03	MW5-060816	Acetone	UJ	CCV %Recovery Failure
		2-butanone	UJ	CCV %Recovery Failure
		1,2-dibromo-3-chloropropane	UJ	CCV %Recovery Failure
		2-hexanone	UJ	CCV %Recovery Failure
L16060504-04	18CPTMW03SW-060816	Acetone	UJ	CCV %Recovery Failure
		2-butanone	UJ	CCV %Recovery Failure
		1,2-dibromo-3-chloropropane	UJ	CCV %Recovery Failure
		2-hexanone	UJ	CCV %Recovery Failure
L16060615-01	18CPTMW22R-060916	Bromomethane	UJ	CCV %Recovery Failure
L16060615-02	18CPTMW22DW-060916	Bromomethane	UJ	CCV %Recovery Failure
L16060615-03	18CPTMW22DWFD-060916	Bromomethane	UJ	CCV %Recovery Failure
L16060615-04	18CPTMW22SW-060916	Bromomethane	UJ	CCV %Recovery Failure
L16060616-01	MW8-060916	Bromomethane	UJ	CCV %Recovery Failure
L16060616-02	18CPTMW26SW-060916	Bromomethane	UJ	CCV %Recovery Failure
L16060616-03	MW10-060916	Bromomethane	UJ	CCV %Recovery Failure
L16060650-01	MW1-061016	2-hexanone	UJ	CCV %Recovery Failure
L16060650-02	MW3-061016	2-hexanone	UJ	CCV %Recovery Failure
L16060730-01	18CPTMW14-061316	Bromomethane	UJ	CCV %Recovery Failure
L16060730-02	18CPTMW14FD-061316	Bromomethane	UJ	CCV %Recovery Failure
L16060730-03	18CPTMW24-061316	All VOCs	UJ/J	Surrogate Recovery Failure
L16060823-01	126-061416	All VOCs	UJ/J	Surrogate Recovery Failure
L16060823-03	C08-061416	Bromomethane	UJ	CCV %Recovery Failure
L16060823-04	C03-061416	All VOCs	UJ/J	Surrogate Recovery Failure
L16060927-02	18CPTMW23-061516	Bromomethane	UJ	CCV %Recovery Failure
L16061026-01	18WW16-061616	2-hexanone	UJ	CCV %Recovery Failure
L16061026-03	102-061616	2-hexanone	UJ	CCV %Recovery Failure
L16061026-04	129-061616	2-hexanone	UJ	CCV %Recovery Failure
L16061026-05	120-061616	2-hexanone	UJ	CCV %Recovery Failure

ClientSampleID	LabSampleID	Analyte Name	DVQualOverall	Reason
L16061026-07	123-061616	2-hexanone	UJ	CCV %Recovery Failure
L16061068-13	MW18F-061716	Sodium	UJ	MS/MSD RPD Failure
		Chromium	J	MS/MSD RPD Failure
		Barium	J	MS/MSD RPD Failure
		Manganese	J	MS/MSD RPD Failure
L16061142-01	18WW20-062016	1,4-dioxane	UJ	LCS/LCSD RPD Failure
L16061142-02	18WW19-062016	All VOCs	UJ/J	Surrogate Recovery Failure
L16061142-06	18WW08-062016	All VOCs	UJ/J	Surrogate Recovery Failure
		1,4-dioxane	UJ	LCS/LCSD RPD Failure
L16061142-07	18WW09-062016	All VOCs	UJ/J	Analyzed out of Hold
		1,4-dioxane	UJ	LCS/LCSD RPD Failure
L16061144-01	18WW06-062016	1,4-dioxane	UJ	LCS/LCSD RPD Failure
L16061144-02	18WW06FD-062016	1,4-dioxane	UJ	LCS/LCSD RPD Failure
L16061144-03	MW17-062016	1,4-dioxane	UJ	LCS/LCSD RPD Failure
L16061289-01	MW21-062216	1,1-dichloroethene	UJ	LCS %Recovery Failure
L16061290-02	MW16-062116	Acetone	UJ	CCV %Recovery Failure
		2-butanone	UJ	CCV %Recovery Failure
		1,2-dibromo-3-chloropropane	UJ	CCV %Recovery Failure
		1,2-dichloroethane	UJ	CCV %Recovery Failure
		2-hexanone	UJ	CCV %Recovery Failure
		2,2-dichloropropane	UJ	LCS %Recovery Failure
L16061290-04	125-062216	Acetone	UJ	CCV %Recovery Failure
		2-butanone	UJ	CCV %Recovery Failure
		1,1-dichloroethene	UJ	LCS %Recovery Failure
		dichlorodifluromethane	UJ	LCS %Recovery Failure
L16061290-05	109-062216	Acetone	UJ	CCV %Recovery Failure
		2-butanone	UJ	CCV %Recovery Failure
		1,2-dibromo-3-chloropropane	UJ	CCV %Recovery Failure

ClientSampleID	LabSampleID	Analyte Name	DVQualOverall	Reason
		1,2-dichloroethane	UJ	CCV %Recovery Failure
		2-hexanone	UJ	CCV %Recovery Failure
		2,2-dichloropropane	UJ	LCS %Recovery Failure
L16061452-01	18CPTMW12SW-062416	1,1-dichloroethene	UJ	LCS %Recovery Failure
		Chloromethane	UJ	LCS %Recovery Failure
		Dichlorodifluoromethane	UJ	LCS %Recovery Failure
		Vinyl Chloride	UJ	LCS %Recovery Failure
		Acetone	UJ	CCV %Recovery Failure
		2-butanone	UJ	CCV %Recovery Failure
L16061452-03	MW7-062416	1,1-dichloroethene	UJ	LCS %Recovery Failure
		Chloromethane	UJ	LCS %Recovery Failure
		Dichlorodifluoromethane	UJ	LCS %Recovery Failure
		Vinyl Chloride	UJ	LCS %Recovery Failure
		Acetone	UJ	CCV %Recovery Failure
		2-butanone	UJ	CCV %Recovery Failure
L16061453-02	18CPTMW01DW-062416	1,1-dichloroethene	UJ	LCS %Recovery Failure
		Chloromethane	UJ	LCS %Recovery Failure
		Dichlorodifluoromethane	UJ	LCS %Recovery Failure
		Vinyl Chloride	UJ	LCS %Recovery Failure
		Acetone	UJ	CCV %Recovery Failure
		2-butanone	UJ	CCV %Recovery Failure
L16061648-01	18WW25-062916	Bromomethane	UJ	CCV %Recovery Failure
L16061648-02	18WW25F-062916	Bromomethane	UJ	CCV %Recovery Failure

Microbac

Laboratory Report Number: L16021240

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on March 02 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00112730	I	0.0		J4599413984	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	NA
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	NA

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18CPT04(5-5.5)240216	L16021240-01	02/24/2016 10:00	02/25/2016 09:39
18DPT04(15-15.5)240216	L16021240-02	02/24/2016 10:28	02/25/2016 09:39
18CPT04(20-21)240216	L16021240-03	02/24/2016 10:55	02/25/2016 09:39
18CPT04(20-21)240216FD	L16021240-04	02/24/2016 10:55	02/25/2016 09:39
18DPT04(25-25.5)240216	L16021240-05	02/24/2016 11:22	02/25/2016 09:39
18DPT04(29-30)240216	L16021240-06	02/24/2016 12:00	02/25/2016 09:39
18DPT04(36.5-37)240216	L16021240-07	02/24/2016 15:15	02/25/2016 09:39
18DPT04(34-34.5)240216	L16021240-08	02/24/2016 15:15	02/25/2016 09:39

Microbac Laboratories ● Ohio Valley Division
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Microbac REPORT L16021240
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.0 Summary Data

1.1 Narratives

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021240
Project Name:		**Method:**	8260
Prep Batch Number(s):	558910,559002	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-02-29 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2016-02-29 22:30:48

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021240
Project Name:		**Method:**	8260
Prep Batch Number(s):	558910,559002	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-02-29 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				
Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021240
Project Name:		**Method:**	8260
Prep Batch Number(s):	558910,559002	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-02-29 00:00:00		

Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		X			1
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				
Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021240
Project Name:		**Method:**	8260
Prep Batch Number(s):	558910,559002	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-02-29 00:00:00		

Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?		X			2
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					
Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021240
Project Name:		**Method:**	8260
Prep Batch Number(s):	558910,559002	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-02-29 00:00:00		

Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1)Dichlorodifluoromethane and Vinyl chloride exceeded the UCL in the LCS/LCS2 analyzed 02/26/16 on HPMS9. Dichlorodifluoromethane exceeded the UCL in the LCS analyzed 02/28/16 on HPMS9.
2)Dichlorodifluoromethane exceeded the UCL in ICV analyzed 02/25/16 on HPMS9.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021240
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG558779	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-02-29 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-02-29 15:52:01

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021240
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG558779	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-02-29 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021240
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG558779	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-02-29 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			1
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021240
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG558779	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-02-29 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021240
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG558779	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-02-29 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021240
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG558779	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-02-29 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. The MS failed high and the MSD failed low, due to the presence of a large amount of perchlorate in the reference sample.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021240
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG558757	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-26 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2016-02-26 16:24:32

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021240
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG558757	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-26 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?			X		
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?			X		
Were sample detection limits reported for all analytes not detected?			X		
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?			X		
Were blanks analyzed at the appropriate frequency?			X		
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?			X		
Were blank concentrations < MQL?			X		
Laboratory control samples (LCS):			X		
Were all COCs included in the LCS?			X		

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021240
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG558757	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-26 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?			X		
Were LCSs analyzed at the required frequency?			X		
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?			X		
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?			X		
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?			X		
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?			X		
Are unadjusted MQLs and DCSs included in the laboratory data package?			X		
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?			X		
Were percent RSDs or correlation coefficient criteria met?			X		

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021240
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG558757	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-26 00:00:00		

Was the number of standards recommended in the method used for all analytes?			X		
Were all points generated between the lowest and highest standard used to calculate the curve?			X		
Are ICAL data available for all instruments used?			X		
Has the initial calibration curve been verified using an appropriate second source standard?			X		
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021240
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG558757	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-26 00:00:00		

Was a MDL study performed for each reported analyte?			X		
Is the MDL either adjusted or supported by the analysis of DCSs?			X		
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?			X		
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021240
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG558757	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-26 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021240-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPT04(5-5.5)240216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/26/2016 14:09
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG558910	**Analyst:**	ADC	**Run Date:**	02/26/2016 21:20
Collect Date:	02/24/2016 10:00	**Dilution:**	1	**File ID:**	9M972923
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.5	U	26.9	13.5	6.73
Benzene	71-43-2	1.35	U	6.73	1.35	0.673
Bromobenzene	108-86-1	1.35	U	6.73	1.35	0.673
Bromochloromethane	74-97-5	2.70	U	6.73	2.70	1.35
Bromodichloromethane	75-27-4	1.35	U	6.73	1.35	0.673
Bromoform	75-25-2	1.35	U	6.73	1.35	0.673
Bromomethane	74-83-9	2.70	U	6.73	2.70	1.35
2-Butanone	78-93-3	6.72	U	13.5	6.72	3.36
n-Butylbenzene	104-51-8	1.35	U	6.73	1.35	0.673
sec-Butylbenzene	135-98-8	1.35	U	6.73	1.35	0.673
tert-Butylbenzene	98-06-6	1.35	U	6.73	1.35	0.673
Carbon disulfide	75-15-0	1.35	U	6.73	1.35	0.673
Carbon tetrachloride	56-23-5	1.35	U	6.73	1.35	0.673
Chlorobenzene	108-90-7	1.35	U	6.73	1.35	0.673
Chlorodibromomethane	124-48-1	1.35	U	6.73	1.35	0.673
Chloroethane	75-00-3	2.70	U	6.73	2.70	1.35
Chloroform	67-66-3	1.35	U	6.73	1.35	0.673
Chloromethane	74-87-3	5.38	U	13.5	5.38	2.69
2-Chlorotoluene	95-49-8	1.35	U	6.73	1.35	0.673
4-Chlorotoluene	106-43-4	1.35	U	6.73	1.35	0.673
1,2-Dibromo-3-chloropropane	96-12-8	5.38	U	13.5	5.38	2.69
1,2-Dibromoethane	106-93-4	1.35	U	6.73	1.35	0.673
Dibromomethane	74-95-3	1.35	U	6.73	1.35	0.673
1,2-Dichlorobenzene	95-50-1	1.35	U	6.73	1.35	0.673
1,3-Dichlorobenzene	541-73-1	1.35	U	6.73	1.35	0.673
1,4-Dichlorobenzene	106-46-7	1.35	U	6.73	1.35	0.673
Dichlorodifluoromethane	75-71-8	2.70	U	6.73	2.70	1.35
1,1-Dichloroethane	75-34-3	2.70	U	6.73	2.70	1.35
1,2-Dichloroethane	107-06-2	1.35	U	6.73	1.35	0.673
1,1-Dichloroethene	75-35-4	1.35	U	6.73	1.35	0.673
cis-1,2-Dichloroethene	156-59-2	1.35	U	6.73	1.35	0.673
trans-1,2-Dichloroethene	156-60-5	1.35	U	6.73	1.35	0.673

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.35	U	6.73	1.35	0.673
1,3-Dichloropropane	142-28-9	1.35	U	6.73	1.35	0.673
2,2-Dichloropropane	594-20-7	1.35	U	6.73	1.35	0.673
cis-1,3-Dichloropropene	10061-01-5	1.35	U	6.73	1.35	0.673
trans-1,3-Dichloropropene	10061-02-6	1.35	U	6.73	1.35	0.673
1,1-Dichloropropene	563-58-6	1.35	U	6.73	1.35	0.673
Ethylbenzene	100-41-4	1.35	U	6.73	1.35	0.673
2-Hexanone	591-78-6	6.72	U	13.5	6.72	3.36
Hexachlorobutadiene	87-68-3	1.35	U	6.73	1.35	0.673
Isopropylbenzene	98-82-8	1.35	U	6.73	1.35	0.673
p-Isopropyltoluene	99-87-6	1.35	U	6.73	1.35	0.673
4-Methyl-2-pentanone	108-10-1	6.72	U	13.5	6.72	3.36
Methylene chloride	75-09-2	2.70	U	6.73	2.70	1.35
Naphthalene	91-20-3	1.35	U	6.73	1.35	0.673
n-Propylbenzene	103-65-1	1.35	U	6.73	1.35	0.673
Styrene	100-42-5	1.35	U	6.73	1.35	0.673
1,1,1,2-Tetrachloroethane	630-20-6	1.35	U	6.73	1.35	0.673
1,1,2,2-Tetrachloroethane	79-34-5	1.35	U	6.73	1.35	0.673
Tetrachloroethene	127-18-4	1.35	U	6.73	1.35	0.673
Toluene	108-88-3	1.35	U	6.73	1.35	0.673
1,2,3-Trichlorobenzene	87-61-6	1.35	U	6.73	1.35	0.673
1,2,4-Trichlorobenzene	120-82-1	1.35	U	6.73	1.35	0.673
1,1,1-Trichloroethane	71-55-6	1.35	U	6.73	1.35	0.673
1,1,2-Trichloroethane	79-00-5	1.35	U	6.73	1.35	0.673
Trichloroethene	79-01-6	1.35	U	6.73	1.35	0.673
Trichlorofluoromethane	75-69-4	2.70	U	6.73	2.70	1.35
1,2,3-Trichloropropane	96-18-4	2.70	U	6.73	2.70	1.35
1,2,4-Trimethylbenzene	95-63-6	1.35	U	6.73	1.35	0.673
1,3,5-Trimethylbenzene	108-67-8	1.35	U	6.73	1.35	0.673
Vinyl chloride	75-01-4	2.70	U	6.73	2.70	1.35
o-Xylene	95-47-6	1.35	U	6.73	1.35	0.673
m-,p-Xylene	179601-23-1	1.35	U	6.73	1.35	0.673

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.7	80	120	
1,2-Dichloroethane-d4	94.6	80	120	
Toluene-d8	108	85	115	
4-Bromofluorobenzene	111	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021240-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPT04(5-5.5)240216	**Prep Method:**	6850	**Prep Date:**	02/25/2016 14:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558779	**Analyst:**	JWR	**Run Date:**	02/25/2016 23:58
Collect Date:	02/24/2016 10:00	**Dilution:**	1	**File ID:**	1LM.LM33375
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	101		4.93	2.46	1.23

Certificate of Analysis

Sample #:	L16021240-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT04(15-15.5)240216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/26/2016 14:10
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG558910	**Analyst:**	ADC	**Run Date:**	02/26/2016 21:50
Collect Date:	02/24/2016 10:28	**Dilution:**	1	**File ID:**	9M972924
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	7.38	J	26.5	13.2	6.61
Benzene	71-43-2	1.32	U	6.61	1.32	0.661
Bromobenzene	108-86-1	1.32	U	6.61	1.32	0.661
Bromochloromethane	74-97-5	2.64	U	6.61	2.64	1.32
Bromodichloromethane	75-27-4	1.32	U	6.61	1.32	0.661
Bromoform	75-25-2	1.32	U	6.61	1.32	0.661
Bromomethane	74-83-9	2.64	U	6.61	2.64	1.32
2-Butanone	78-93-3	6.62	U	13.2	6.62	3.31
n-Butylbenzene	104-51-8	1.32	U	6.61	1.32	0.661
sec-Butylbenzene	135-98-8	1.32	U	6.61	1.32	0.661
tert-Butylbenzene	98-06-6	1.32	U	6.61	1.32	0.661
Carbon disulfide	75-15-0	1.32	U	6.61	1.32	0.661
Carbon tetrachloride	56-23-5	1.32	U	6.61	1.32	0.661
Chlorobenzene	108-90-7	1.32	U	6.61	1.32	0.661
Chlorodibromomethane	124-48-1	1.32	U	6.61	1.32	0.661
Chloroethane	75-00-3	2.64	U	6.61	2.64	1.32
Chloroform	67-66-3	1.32	U	6.61	1.32	0.661
Chloromethane	74-87-3	5.30	U	13.2	5.30	2.65
2-Chlorotoluene	95-49-8	1.32	U	6.61	1.32	0.661
4-Chlorotoluene	106-43-4	1.32	U	6.61	1.32	0.661

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	5.30	U	13.2	5.30	2.65
1,2-Dibromoethane	106-93-4	1.32	U	6.61	1.32	0.661
Dibromomethane	74-95-3	1.32	U	6.61	1.32	0.661
1,2-Dichlorobenzene	95-50-1	1.32	U	6.61	1.32	0.661
1,3-Dichlorobenzene	541-73-1	1.32	U	6.61	1.32	0.661
1,4-Dichlorobenzene	106-46-7	1.32	U	6.61	1.32	0.661
Dichlorodifluoromethane	75-71-8	2.64	U	6.61	2.64	1.32
1,1-Dichloroethane	75-34-3	2.64	U	6.61	2.64	1.32
1,2-Dichloroethane	107-06-2	1.32	U	6.61	1.32	0.661
1,1-Dichloroethene	75-35-4	1.32	U	6.61	1.32	0.661
cis-1,2-Dichloroethene	156-59-2	1.32	U	6.61	1.32	0.661
trans-1,2-Dichloroethene	156-60-5	1.32	U	6.61	1.32	0.661
1,2-Dichloropropane	78-87-5	1.32	U	6.61	1.32	0.661
1,3-Dichloropropane	142-28-9	1.32	U	6.61	1.32	0.661
2,2-Dichloropropane	594-20-7	1.32	U	6.61	1.32	0.661
cis-1,3-Dichloropropene	10061-01-5	1.32	U	6.61	1.32	0.661
trans-1,3-Dichloropropene	10061-02-6	1.32	U	6.61	1.32	0.661
1,1-Dichloropropene	563-58-6	1.32	U	6.61	1.32	0.661
Ethylbenzene	100-41-4	1.32	U	6.61	1.32	0.661
2-Hexanone	591-78-6	6.62	U	13.2	6.62	3.31
Hexachlorobutadiene	87-68-3	1.32	U	6.61	1.32	0.661
Isopropylbenzene	98-82-8	1.32	U	6.61	1.32	0.661
p-Isopropyltoluene	99-87-6	1.32	U	6.61	1.32	0.661
4-Methyl-2-pentanone	108-10-1	6.62	U	13.2	6.62	3.31
Methylene chloride	75-09-2	2.64	U	6.61	2.64	1.32
Naphthalene	91-20-3	1.32	U	6.61	1.32	0.661
n-Propylbenzene	103-65-1	1.32	U	6.61	1.32	0.661
Styrene	100-42-5	1.32	U	6.61	1.32	0.661
1,1,1,2-Tetrachloroethane	630-20-6	1.32	U	6.61	1.32	0.661
1,1,2,2-Tetrachloroethane	79-34-5	1.32	U	6.61	1.32	0.661
Tetrachloroethene	127-18-4	1.32	U	6.61	1.32	0.661
Toluene	108-88-3	1.32	U	6.61	1.32	0.661
1,2,3-Trichlorobenzene	87-61-6	1.32	U	6.61	1.32	0.661
1,2,4-Trichlorobenzene	120-82-1	1.32	U	6.61	1.32	0.661
1,1,1-Trichloroethane	71-55-6	1.32	U	6.61	1.32	0.661
1,1,2-Trichloroethane	79-00-5	1.32	U	6.61	1.32	0.661
Trichloroethene	79-01-6	1.32	U	6.61	1.32	0.661
Trichlorofluoromethane	75-69-4	2.64	U	6.61	2.64	1.32
1,2,3-Trichloropropane	96-18-4	2.64	U	6.61	2.64	1.32

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Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.32	U	6.61	1.32	0.661
1,3,5-Trimethylbenzene	108-67-8	1.32	U	6.61	1.32	0.661
Vinyl chloride	75-01-4	2.64	U	6.61	2.64	1.32
o-Xylene	95-47-6	1.32	U	6.61	1.32	0.661
m-,p-Xylene	179601-23-1	1.32	U	6.61	1.32	0.661

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.4	80	120	
1,2-Dichloroethane-d4	93.6	80	120	
Toluene-d8	111	85	115	
4-Bromofluorobenzene	114	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021240-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT04(15-15.5)240216	**Prep Method:**	6850	**Prep Date:**	02/25/2016 14:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558779	**Analyst:**	JWR	**Run Date:**	02/26/2016 00:17
Collect Date:	02/24/2016 10:28	**Dilution:**	1	**File ID:**	1LM.LM33376
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.44	U	4.90	2.44	1.22

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021240-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPT04(20-21)240216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/26/2016 14:10
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG558910	**Analyst:**	ADC	**Run Date:**	02/26/2016 22:21
Collect Date:	02/24/2016 10:55	**Dilution:**	1	**File ID:**	9M972925
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.8	U	25.5	12.8	6.38
Benzene	71-43-2	1.28	U	6.38	1.28	0.638
Bromobenzene	108-86-1	1.28	U	6.38	1.28	0.638
Bromochloromethane	74-97-5	2.56	U	6.38	2.56	1.28
Bromodichloromethane	75-27-4	1.28	U	6.38	1.28	0.638
Bromoform	75-25-2	1.28	U	6.38	1.28	0.638
Bromomethane	74-83-9	2.56	U	6.38	2.56	1.28
2-Butanone	78-93-3	6.38	U	12.8	6.38	3.19
n-Butylbenzene	104-51-8	1.28	U	6.38	1.28	0.638
sec-Butylbenzene	135-98-8	1.28	U	6.38	1.28	0.638
tert-Butylbenzene	98-06-6	1.28	U	6.38	1.28	0.638
Carbon disulfide	75-15-0	1.28	U	6.38	1.28	0.638
Carbon tetrachloride	56-23-5	1.28	U	6.38	1.28	0.638
Chlorobenzene	108-90-7	1.28	U	6.38	1.28	0.638
Chlorodibromomethane	124-48-1	1.28	U	6.38	1.28	0.638
Chloroethane	75-00-3	2.56	U	6.38	2.56	1.28
Chloroform	67-66-3	1.28	U	6.38	1.28	0.638
Chloromethane	74-87-3	5.10	U	12.8	5.10	2.55
2-Chlorotoluene	95-49-8	1.28	U	6.38	1.28	0.638
4-Chlorotoluene	106-43-4	1.28	U	6.38	1.28	0.638
1,2-Dibromo-3-chloropropane	96-12-8	5.10	U	12.8	5.10	2.55
1,2-Dibromoethane	106-93-4	1.28	U	6.38	1.28	0.638
Dibromomethane	74-95-3	1.28	U	6.38	1.28	0.638
1,2-Dichlorobenzene	95-50-1	1.28	U	6.38	1.28	0.638
1,3-Dichlorobenzene	541-73-1	1.28	U	6.38	1.28	0.638
1,4-Dichlorobenzene	106-46-7	1.28	U	6.38	1.28	0.638
Dichlorodifluoromethane	75-71-8	2.56	U	6.38	2.56	1.28
1,1-Dichloroethane	75-34-3	2.56	U	6.38	2.56	1.28
1,2-Dichloroethane	107-06-2	1.28	U	6.38	1.28	0.638
1,1-Dichloroethene	75-35-4	1.28	U	6.38	1.28	0.638
cis-1,2-Dichloroethene	156-59-2	1.28	U	6.38	1.28	0.638

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.28	U	6.38	1.28	0.638
1,2-Dichloropropane	78-87-5	1.28	U	6.38	1.28	0.638
1,3-Dichloropropane	142-28-9	1.28	U	6.38	1.28	0.638
2,2-Dichloropropane	594-20-7	1.28	U	6.38	1.28	0.638
cis-1,3-Dichloropropene	10061-01-5	1.28	U	6.38	1.28	0.638
trans-1,3-Dichloropropene	10061-02-6	1.28	U	6.38	1.28	0.638
1,1-Dichloropropene	563-58-6	1.28	U	6.38	1.28	0.638
Ethylbenzene	100-41-4	1.28	U	6.38	1.28	0.638
2-Hexanone	591-78-6	6.38	U	12.8	6.38	3.19
Hexachlorobutadiene	87-68-3	1.28	U	6.38	1.28	0.638
Isopropylbenzene	98-82-8	1.28	U	6.38	1.28	0.638
p-Isopropyltoluene	99-87-6	1.28	U	6.38	1.28	0.638
4-Methyl-2-pentanone	108-10-1	6.38	U	12.8	6.38	3.19
Methylene chloride	75-09-2	2.56	U	6.38	2.56	1.28
Naphthalene	91-20-3	1.28	U	6.38	1.28	0.638
n-Propylbenzene	103-65-1	1.28	U	6.38	1.28	0.638
Styrene	100-42-5	1.28	U	6.38	1.28	0.638
1,1,1,2-Tetrachloroethane	630-20-6	1.28	U	6.38	1.28	0.638
1,1,2,2-Tetrachloroethane	79-34-5	1.28	U	6.38	1.28	0.638
Tetrachloroethene	127-18-4	1.28	U	6.38	1.28	0.638
Toluene	108-88-3	1.28	U	6.38	1.28	0.638
1,2,3-Trichlorobenzene	87-61-6	1.28	U	6.38	1.28	0.638
1,2,4-Trichlorobenzene	120-82-1	1.28	U	6.38	1.28	0.638
1,1,1-Trichloroethane	71-55-6	1.28	U	6.38	1.28	0.638
1,1,2-Trichloroethane	79-00-5	1.28	U	6.38	1.28	0.638
Trichloroethene	79-01-6	1.28	U	6.38	1.28	0.638
Trichlorofluoromethane	75-69-4	2.56	U	6.38	2.56	1.28
1,2,3-Trichloropropane	96-18-4	2.56	U	6.38	2.56	1.28
1,2,4-Trimethylbenzene	95-63-6	1.28	U	6.38	1.28	0.638
1,3,5-Trimethylbenzene	108-67-8	1.28	U	6.38	1.28	0.638
Vinyl chloride	75-01-4	2.56	U	6.38	2.56	1.28
o-Xylene	95-47-6	1.28	U	6.38	1.28	0.638
m-,p-Xylene	179601-23-1	1.28	U	6.38	1.28	0.638

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	80	120	
1,2-Dichloroethane-d4	95.2	80	120	
Toluene-d8	113	85	115	
4-Bromofluorobenzene	114	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021240-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPT04(20-21)240216	**Prep Method:**	6850	**Prep Date:**	02/25/2016 14:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558779	**Analyst:**	JWR	**Run Date:**	02/26/2016 00:36
Collect Date:	02/24/2016 10:55	**Dilution:**	1	**File ID:**	1LM.LM33377
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	27.2		4.62	2.30	1.15

Certificate of Analysis

Sample #:	L16021240-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPT04(20-21)240216FD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/28/2016 12:34
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559002	**Analyst:**	FJB	**Run Date:**	02/28/2016 23:22
Collect Date:	02/24/2016 10:55	**Dilution:**	1	**File ID:**	9M972958
Sample Tag:	02	**Units:**	ug/kg	**Percent Solid:**	85.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.8	U	25.6	12.8	6.41
Benzene	71-43-2	1.28	U	6.41	1.28	0.641
Bromobenzene	108-86-1	1.28	U	6.41	1.28	0.641
Bromochloromethane	74-97-5	2.56	U	6.41	2.56	1.28
Bromodichloromethane	75-27-4	1.28	U	6.41	1.28	0.641
Bromoform	75-25-2	1.28	U	6.41	1.28	0.641
Bromomethane	74-83-9	2.56	U	6.41	2.56	1.28
2-Butanone	78-93-3	6.40	U	12.8	6.40	3.20
n-Butylbenzene	104-51-8	1.28	U	6.41	1.28	0.641
sec-Butylbenzene	135-98-8	1.28	U	6.41	1.28	0.641
tert-Butylbenzene	98-06-6	1.28	U	6.41	1.28	0.641
Carbon disulfide	75-15-0	1.28	U	6.41	1.28	0.641
Carbon tetrachloride	56-23-5	1.28	U	6.41	1.28	0.641
Chlorobenzene	108-90-7	1.28	U	6.41	1.28	0.641
Chlorodibromomethane	124-48-1	1.28	U	6.41	1.28	0.641
Chloroethane	75-00-3	2.56	U	6.41	2.56	1.28
Chloroform	67-66-3	1.28	U	6.41	1.28	0.641
Chloromethane	74-87-3	5.12	U	12.8	5.12	2.56
2-Chlorotoluene	95-49-8	1.28	U	6.41	1.28	0.641
4-Chlorotoluene	106-43-4	1.28	U	6.41	1.28	0.641

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Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	5.12	U	12.8	5.12	2.56
1,2-Dibromoethane	106-93-4	1.28	U	6.41	1.28	0.641
Dibromomethane	74-95-3	1.28	U	6.41	1.28	0.641
1,2-Dichlorobenzene	95-50-1	1.28	U	6.41	1.28	0.641
1,3-Dichlorobenzene	541-73-1	1.28	U	6.41	1.28	0.641
1,4-Dichlorobenzene	106-46-7	1.28	U	6.41	1.28	0.641
Dichlorodifluoromethane	75-71-8	2.56	U	6.41	2.56	1.28
1,1-Dichloroethane	75-34-3	2.56	U	6.41	2.56	1.28
1,2-Dichloroethane	107-06-2	1.28	U	6.41	1.28	0.641
1,1-Dichloroethene	75-35-4	1.28	U	6.41	1.28	0.641
cis-1,2-Dichloroethene	156-59-2	1.28	U	6.41	1.28	0.641
trans-1,2-Dichloroethene	156-60-5	1.28	U	6.41	1.28	0.641
1,2-Dichloropropane	78-87-5	1.28	U	6.41	1.28	0.641
1,3-Dichloropropane	142-28-9	1.28	U	6.41	1.28	0.641
2,2-Dichloropropane	594-20-7	1.28	U	6.41	1.28	0.641
cis-1,3-Dichloropropene	10061-01-5	1.28	U	6.41	1.28	0.641
trans-1,3-Dichloropropene	10061-02-6	1.28	U	6.41	1.28	0.641
1,1-Dichloropropene	563-58-6	1.28	U	6.41	1.28	0.641
Ethylbenzene	100-41-4	1.28	U	6.41	1.28	0.641
2-Hexanone	591-78-6	6.40	U	12.8	6.40	3.20
Hexachlorobutadiene	87-68-3	1.28	U	6.41	1.28	0.641
Isopropylbenzene	98-82-8	1.28	U	6.41	1.28	0.641
p-Isopropyltoluene	99-87-6	1.28	U	6.41	1.28	0.641
4-Methyl-2-pentanone	108-10-1	6.40	U	12.8	6.40	3.20
Methylene chloride	75-09-2	2.56	U	6.41	2.56	1.28
Naphthalene	91-20-3	1.28	U	6.41	1.28	0.641
n-Propylbenzene	103-65-1	1.28	U	6.41	1.28	0.641
Styrene	100-42-5	1.28	U	6.41	1.28	0.641
1,1,1,2-Tetrachloroethane	630-20-6	1.28	U	6.41	1.28	0.641
1,1,2,2-Tetrachloroethane	79-34-5	1.28	U	6.41	1.28	0.641
Tetrachloroethene	127-18-4	1.28	U	6.41	1.28	0.641
Toluene	108-88-3	1.28	U	6.41	1.28	0.641
1,2,3-Trichlorobenzene	87-61-6	1.28	U	6.41	1.28	0.641
1,2,4-Trichlorobenzene	120-82-1	1.28	U	6.41	1.28	0.641
1,1,1-Trichloroethane	71-55-6	1.28	U	6.41	1.28	0.641
1,1,2-Trichloroethane	79-00-5	1.28	U	6.41	1.28	0.641
Trichloroethene	79-01-6	1.28	U	6.41	1.28	0.641
Trichlorofluoromethane	75-69-4	2.56	U	6.41	2.56	1.28
1,2,3-Trichloropropane	96-18-4	2.56	U	6.41	2.56	1.28

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.28	U	6.41	1.28	0.641
1,3,5-Trimethylbenzene	108-67-8	1.28	U	6.41	1.28	0.641
Vinyl chloride	75-01-4	2.56	U	6.41	2.56	1.28
o-Xylene	95-47-6	1.28	U	6.41	1.28	0.641
m-,p-Xylene	179601-23-1	1.28	U	6.41	1.28	0.641

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.2	80	120	
1,2-Dichloroethane-d4	97.9	80	120	
Toluene-d8	110	85	115	
4-Bromofluorobenzene	114	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021240-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPT04(20-21)240216FD	**Prep Method:**	6850	**Prep Date:**	02/25/2016 14:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558779	**Analyst:**	JWR	**Run Date:**	02/26/2016 00:55
Collect Date:	02/24/2016 10:55	**Dilution:**	1	**File ID:**	1LM.LM33378
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	26.7		4.58	2.30	1.15

Certificate of Analysis

Sample #:	L16021240-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT04(25-25.5)240216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/26/2016 14:11
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG558910	**Analyst:**	ADC	**Run Date:**	02/26/2016 23:22
Collect Date:	02/24/2016 11:22	**Dilution:**	1	**File ID:**	9M972927
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	25.0	12.5	6.24
Benzene	71-43-2	1.25	U	6.24	1.25	0.624
Bromobenzene	108-86-1	1.25	U	6.24	1.25	0.624
Bromochloromethane	74-97-5	2.50	U	6.24	2.50	1.25
Bromodichloromethane	75-27-4	1.25	U	6.24	1.25	0.624
Bromoform	75-25-2	1.25	U	6.24	1.25	0.624
Bromomethane	74-83-9	2.50	U	6.24	2.50	1.25
2-Butanone	78-93-3	6.24	U	12.5	6.24	3.12
n-Butylbenzene	104-51-8	1.25	U	6.24	1.25	0.624
sec-Butylbenzene	135-98-8	1.25	U	6.24	1.25	0.624
tert-Butylbenzene	98-06-6	1.25	U	6.24	1.25	0.624
Carbon disulfide	75-15-0	1.25	U	6.24	1.25	0.624
Carbon tetrachloride	56-23-5	1.25	U	6.24	1.25	0.624
Chlorobenzene	108-90-7	1.25	U	6.24	1.25	0.624
Chlorodibromomethane	124-48-1	1.25	U	6.24	1.25	0.624
Chloroethane	75-00-3	2.50	U	6.24	2.50	1.25
Chloroform	67-66-3	1.25	U	6.24	1.25	0.624
Chloromethane	74-87-3	5.00	U	12.5	5.00	2.50
2-Chlorotoluene	95-49-8	1.25	U	6.24	1.25	0.624
4-Chlorotoluene	106-43-4	1.25	U	6.24	1.25	0.624

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Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	5.00	U	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	6.24	1.25	0.624
Dibromomethane	74-95-3	1.25	U	6.24	1.25	0.624
1,2-Dichlorobenzene	95-50-1	1.25	U	6.24	1.25	0.624
1,3-Dichlorobenzene	541-73-1	1.25	U	6.24	1.25	0.624
1,4-Dichlorobenzene	106-46-7	1.25	U	6.24	1.25	0.624
Dichlorodifluoromethane	75-71-8	2.50	U	6.24	2.50	1.25
1,1-Dichloroethane	75-34-3	2.50	U	6.24	2.50	1.25
1,2-Dichloroethane	107-06-2	1.25	U	6.24	1.25	0.624
1,1-Dichloroethene	75-35-4	1.25	U	6.24	1.25	0.624
cis-1,2-Dichloroethene	156-59-2	1.25	U	6.24	1.25	0.624
trans-1,2-Dichloroethene	156-60-5	1.25	U	6.24	1.25	0.624
1,2-Dichloropropane	78-87-5	1.25	U	6.24	1.25	0.624
1,3-Dichloropropane	142-28-9	1.25	U	6.24	1.25	0.624
2,2-Dichloropropane	594-20-7	1.25	U	6.24	1.25	0.624
cis-1,3-Dichloropropene	10061-01-5	1.25	U	6.24	1.25	0.624
trans-1,3-Dichloropropene	10061-02-6	1.25	U	6.24	1.25	0.624
1,1-Dichloropropene	563-58-6	1.25	U	6.24	1.25	0.624
Ethylbenzene	100-41-4	1.25	U	6.24	1.25	0.624
2-Hexanone	591-78-6	6.24	U	12.5	6.24	3.12
Hexachlorobutadiene	87-68-3	1.25	U	6.24	1.25	0.624
Isopropylbenzene	98-82-8	1.25	U	6.24	1.25	0.624
p-Isopropyltoluene	99-87-6	1.25	U	6.24	1.25	0.624
4-Methyl-2-pentanone	108-10-1	6.24	U	12.5	6.24	3.12
Methylene chloride	75-09-2	2.50	U	6.24	2.50	1.25
Naphthalene	91-20-3	1.25	U	6.24	1.25	0.624
n-Propylbenzene	103-65-1	1.25	U	6.24	1.25	0.624
Styrene	100-42-5	1.25	U	6.24	1.25	0.624
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	6.24	1.25	0.624
1,1,2,2-Tetrachloroethane	79-34-5	1.25	U	6.24	1.25	0.624
Tetrachloroethene	127-18-4	1.25	U	6.24	1.25	0.624
Toluene	108-88-3	1.25	U	6.24	1.25	0.624
1,2,3-Trichlorobenzene	87-61-6	1.25	U	6.24	1.25	0.624
1,2,4-Trichlorobenzene	120-82-1	1.25	U	6.24	1.25	0.624
1,1,1-Trichloroethane	71-55-6	1.25	U	6.24	1.25	0.624
1,1,2-Trichloroethane	79-00-5	1.25	U	6.24	1.25	0.624
Trichloroethene	79-01-6	1.25	U	6.24	1.25	0.624
Trichlorofluoromethane	75-69-4	2.50	U	6.24	2.50	1.25
1,2,3-Trichloropropane	96-18-4	2.50	U	6.24	2.50	1.25

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Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.25	U	6.24	1.25	0.624
1,3,5-Trimethylbenzene	108-67-8	1.25	U	6.24	1.25	0.624
Vinyl chloride	75-01-4	2.50	U	6.24	2.50	1.25
o-Xylene	95-47-6	1.25	U	6.24	1.25	0.624
m-,p-Xylene	179601-23-1	1.25	U	6.24	1.25	0.624

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	80	120	
1,2-Dichloroethane-d4	101	80	120	
Toluene-d8	109	85	115	
4-Bromofluorobenzene	111	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021240-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT04(25-25.5)240216	**Prep Method:**	6850	**Prep Date:**	02/25/2016 14:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558779	**Analyst:**	JWR	**Run Date:**	02/26/2016 13:21
Collect Date:	02/24/2016 11:22	**Dilution:**	5	**File ID:**	1LM.LM33394
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	83.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	152		23.2	11.6	5.80

Certificate of Analysis

Sample #:	L16021240-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT04(29-30)240216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/26/2016 14:12
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG558910	**Analyst:**	ADC	**Run Date:**	02/26/2016 23:53
Collect Date:	02/24/2016 12:00	**Dilution:**	1	**File ID:**	9M972928
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.9	U	23.8	11.9	5.94
Benzene	71-43-2	1.19	U	5.94	1.19	0.594
Bromobenzene	108-86-1	1.19	U	5.94	1.19	0.594
Bromochloromethane	74-97-5	2.38	U	5.94	2.38	1.19
Bromodichloromethane	75-27-4	1.19	U	5.94	1.19	0.594
Bromoform	75-25-2	1.19	U	5.94	1.19	0.594
Bromomethane	74-83-9	2.38	U	5.94	2.38	1.19
2-Butanone	78-93-3	5.94	U	11.9	5.94	2.97
n-Butylbenzene	104-51-8	1.19	U	5.94	1.19	0.594
sec-Butylbenzene	135-98-8	1.19	U	5.94	1.19	0.594
tert-Butylbenzene	98-06-6	1.19	U	5.94	1.19	0.594
Carbon disulfide	75-15-0	1.19	U	5.94	1.19	0.594
Carbon tetrachloride	56-23-5	1.19	U	5.94	1.19	0.594
Chlorobenzene	108-90-7	1.19	U	5.94	1.19	0.594
Chlorodibromomethane	124-48-1	1.19	U	5.94	1.19	0.594
Chloroethane	75-00-3	2.38	U	5.94	2.38	1.19
Chloroform	67-66-3	1.19	U	5.94	1.19	0.594
Chloromethane	74-87-3	4.76	U	11.9	4.76	2.38
2-Chlorotoluene	95-49-8	1.19	U	5.94	1.19	0.594
4-Chlorotoluene	106-43-4	1.19	U	5.94	1.19	0.594

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Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	4.76	U	11.9	4.76	2.38
1,2-Dibromoethane	106-93-4	1.19	U	5.94	1.19	0.594
Dibromomethane	74-95-3	1.19	U	5.94	1.19	0.594
1,2-Dichlorobenzene	95-50-1	1.19	U	5.94	1.19	0.594
1,3-Dichlorobenzene	541-73-1	1.19	U	5.94	1.19	0.594
1,4-Dichlorobenzene	106-46-7	1.19	U	5.94	1.19	0.594
Dichlorodifluoromethane	75-71-8	2.38	U	5.94	2.38	1.19
1,1-Dichloroethane	75-34-3	2.38	U	5.94	2.38	1.19
1,2-Dichloroethane	107-06-2	1.19	U	5.94	1.19	0.594
1,1-Dichloroethene	75-35-4	1.19	U	5.94	1.19	0.594
cis-1,2-Dichloroethene	156-59-2	1.19	U	5.94	1.19	0.594
trans-1,2-Dichloroethene	156-60-5	1.19	U	5.94	1.19	0.594
1,2-Dichloropropane	78-87-5	1.19	U	5.94	1.19	0.594
1,3-Dichloropropane	142-28-9	1.19	U	5.94	1.19	0.594
2,2-Dichloropropane	594-20-7	1.19	U	5.94	1.19	0.594
cis-1,3-Dichloropropene	10061-01-5	1.19	U	5.94	1.19	0.594
trans-1,3-Dichloropropene	10061-02-6	1.19	U	5.94	1.19	0.594
1,1-Dichloropropene	563-58-6	1.19	U	5.94	1.19	0.594
Ethylbenzene	100-41-4	1.19	U	5.94	1.19	0.594
2-Hexanone	591-78-6	5.94	U	11.9	5.94	2.97
Hexachlorobutadiene	87-68-3	1.19	U	5.94	1.19	0.594
Isopropylbenzene	98-82-8	1.19	U	5.94	1.19	0.594
p-Isopropyltoluene	99-87-6	1.19	U	5.94	1.19	0.594
4-Methyl-2-pentanone	108-10-1	5.94	U	11.9	5.94	2.97
Methylene chloride	75-09-2	2.38	U	5.94	2.38	1.19
Naphthalene	91-20-3	1.19	U	5.94	1.19	0.594
n-Propylbenzene	103-65-1	1.19	U	5.94	1.19	0.594
Styrene	100-42-5	1.19	U	5.94	1.19	0.594
1,1,1,2-Tetrachloroethane	630-20-6	1.19	U	5.94	1.19	0.594
1,1,2,2-Tetrachloroethane	79-34-5	1.19	U	5.94	1.19	0.594
Tetrachloroethene	127-18-4	1.19	U	5.94	1.19	0.594
Toluene	108-88-3	1.19	U	5.94	1.19	0.594
1,2,3-Trichlorobenzene	87-61-6	1.19	U	5.94	1.19	0.594
1,2,4-Trichlorobenzene	120-82-1	1.19	U	5.94	1.19	0.594
1,1,1-Trichloroethane	71-55-6	1.19	U	5.94	1.19	0.594
1,1,2-Trichloroethane	79-00-5	1.19	U	5.94	1.19	0.594
Trichloroethene	79-01-6	1.19	U	5.94	1.19	0.594
Trichlorofluoromethane	75-69-4	2.38	U	5.94	2.38	1.19
1,2,3-Trichloropropane	96-18-4	2.38	U	5.94	2.38	1.19

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Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.19	U	5.94	1.19	0.594
1,3,5-Trimethylbenzene	108-67-8	1.19	U	5.94	1.19	0.594
Vinyl chloride	75-01-4	2.38	U	5.94	2.38	1.19
o-Xylene	95-47-6	1.19	U	5.94	1.19	0.594
m-,p-Xylene	179601-23-1	1.19	U	5.94	1.19	0.594

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.7	80	120	
1,2-Dichloroethane-d4	93.4	80	120	
Toluene-d8	109	85	115	
4-Bromofluorobenzene	111	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021240-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT04(29-30)240216	**Prep Method:**	6850	**Prep Date:**	02/25/2016 14:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558779	**Analyst:**	JWR	**Run Date:**	02/26/2016 13:40
Collect Date:	02/24/2016 12:00	**Dilution:**	20	**File ID:**	1LM.LM33395
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	79.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	672		97.4	48.6	24.3

Certificate of Analysis

Sample #:	L16021240-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT04(36.5-37)240216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/26/2016 14:13
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG558910	**Analyst:**	ADC	**Run Date:**	02/27/2016 00:23
Collect Date:	02/24/2016 15:15	**Dilution:**	1	**File ID:**	9M972929
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.1	U	24.2	12.1	6.04
Benzene	71-43-2	1.21	U	6.04	1.21	0.604
Bromobenzene	108-86-1	1.21	U	6.04	1.21	0.604
Bromochloromethane	74-97-5	2.42	U	6.04	2.42	1.21
Bromodichloromethane	75-27-4	1.21	U	6.04	1.21	0.604
Bromoform	75-25-2	1.21	U	6.04	1.21	0.604
Bromomethane	74-83-9	2.42	U	6.04	2.42	1.21
2-Butanone	78-93-3	6.04	U	12.1	6.04	3.02
n-Butylbenzene	104-51-8	1.21	U	6.04	1.21	0.604
sec-Butylbenzene	135-98-8	1.21	U	6.04	1.21	0.604
tert-Butylbenzene	98-06-6	1.21	U	6.04	1.21	0.604
Carbon disulfide	75-15-0	1.21	U	6.04	1.21	0.604
Carbon tetrachloride	56-23-5	1.21	U	6.04	1.21	0.604
Chlorobenzene	108-90-7	1.21	U	6.04	1.21	0.604
Chlorodibromomethane	124-48-1	1.21	U	6.04	1.21	0.604
Chloroethane	75-00-3	2.42	U	6.04	2.42	1.21
Chloroform	67-66-3	1.21	U	6.04	1.21	0.604
Chloromethane	74-87-3	4.84	U	12.1	4.84	2.42
2-Chlorotoluene	95-49-8	1.21	U	6.04	1.21	0.604
4-Chlorotoluene	106-43-4	1.21	U	6.04	1.21	0.604

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Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	4.84	U	12.1	4.84	2.42
1,2-Dibromoethane	106-93-4	1.21	U	6.04	1.21	0.604
Dibromomethane	74-95-3	1.21	U	6.04	1.21	0.604
1,2-Dichlorobenzene	95-50-1	1.21	U	6.04	1.21	0.604
1,3-Dichlorobenzene	541-73-1	1.21	U	6.04	1.21	0.604
1,4-Dichlorobenzene	106-46-7	1.21	U	6.04	1.21	0.604
Dichlorodifluoromethane	75-71-8	2.42	U	6.04	2.42	1.21
1,1-Dichloroethane	75-34-3	2.42	U	6.04	2.42	1.21
1,2-Dichloroethane	107-06-2	1.21	U	6.04	1.21	0.604
1,1-Dichloroethene	75-35-4	1.21	U	6.04	1.21	0.604
cis-1,2-Dichloroethene	156-59-2	1.21	U	6.04	1.21	0.604
trans-1,2-Dichloroethene	156-60-5	1.21	U	6.04	1.21	0.604
1,2-Dichloropropane	78-87-5	1.21	U	6.04	1.21	0.604
1,3-Dichloropropane	142-28-9	1.21	U	6.04	1.21	0.604
2,2-Dichloropropane	594-20-7	1.21	U	6.04	1.21	0.604
cis-1,3-Dichloropropene	10061-01-5	1.21	U	6.04	1.21	0.604
trans-1,3-Dichloropropene	10061-02-6	1.21	U	6.04	1.21	0.604
1,1-Dichloropropene	563-58-6	1.21	U	6.04	1.21	0.604
Ethylbenzene	100-41-4	1.21	U	6.04	1.21	0.604
2-Hexanone	591-78-6	6.04	U	12.1	6.04	3.02
Hexachlorobutadiene	87-68-3	1.21	U	6.04	1.21	0.604
Isopropylbenzene	98-82-8	1.21	U	6.04	1.21	0.604
p-Isopropyltoluene	99-87-6	1.21	U	6.04	1.21	0.604
4-Methyl-2-pentanone	108-10-1	6.04	U	12.1	6.04	3.02
Methylene chloride	75-09-2	2.42	U	6.04	2.42	1.21
Naphthalene	91-20-3	1.21	U	6.04	1.21	0.604
n-Propylbenzene	103-65-1	1.21	U	6.04	1.21	0.604
Styrene	100-42-5	1.21	U	6.04	1.21	0.604
1,1,1,2-Tetrachloroethane	630-20-6	1.21	U	6.04	1.21	0.604
1,1,2,2-Tetrachloroethane	79-34-5	1.21	U	6.04	1.21	0.604
Tetrachloroethene	127-18-4	1.21	U	6.04	1.21	0.604
Toluene	108-88-3	1.21	U	6.04	1.21	0.604
1,2,3-Trichlorobenzene	87-61-6	1.21	U	6.04	1.21	0.604
1,2,4-Trichlorobenzene	120-82-1	1.21	U	6.04	1.21	0.604
1,1,1-Trichloroethane	71-55-6	1.21	U	6.04	1.21	0.604
1,1,2-Trichloroethane	79-00-5	1.21	U	6.04	1.21	0.604
Trichloroethene	79-01-6	3.20	J	6.04	1.21	0.604
Trichlorofluoromethane	75-69-4	2.42	U	6.04	2.42	1.21
1,2,3-Trichloropropane	96-18-4	2.42	U	6.04	2.42	1.21

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.21	U	6.04	1.21	0.604
1,3,5-Trimethylbenzene	108-67-8	1.21	U	6.04	1.21	0.604
Vinyl chloride	75-01-4	2.42	U	6.04	2.42	1.21
o-Xylene	95-47-6	1.21	U	6.04	1.21	0.604
m-,p-Xylene	179601-23-1	1.21	U	6.04	1.21	0.604

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	80	120	
1,2-Dichloroethane-d4	102	80	120	
Toluene-d8	106	85	115	
4-Bromofluorobenzene	110	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021240-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT04(36.5-37)240216	**Prep Method:**	6850	**Prep Date:**	02/25/2016 14:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558779	**Analyst:**	JWR	**Run Date:**	02/26/2016 13:59
Collect Date:	02/24/2016 15:15	**Dilution:**	50	**File ID:**	1LM.LM33396
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	79.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3200		248	124	62.0

Certificate of Analysis

Sample #:	L16021240-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT04(34-34.5)240216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/26/2016 14:13
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG558910	**Analyst:**	ADC	**Run Date:**	02/27/2016 00:53
Collect Date:	02/24/2016 15:15	**Dilution:**	1	**File ID:**	9M972930
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	25.1	12.5	6.27
Benzene	71-43-2	1.25	U	6.27	1.25	0.627
Bromobenzene	108-86-1	1.25	U	6.27	1.25	0.627
Bromochloromethane	74-97-5	2.50	U	6.27	2.50	1.25
Bromodichloromethane	75-27-4	1.25	U	6.27	1.25	0.627
Bromoform	75-25-2	1.25	U	6.27	1.25	0.627
Bromomethane	74-83-9	2.50	U	6.27	2.50	1.25
2-Butanone	78-93-3	6.28	U	12.5	6.28	3.14
n-Butylbenzene	104-51-8	1.25	U	6.27	1.25	0.627
sec-Butylbenzene	135-98-8	1.25	U	6.27	1.25	0.627
tert-Butylbenzene	98-06-6	1.25	U	6.27	1.25	0.627
Carbon disulfide	75-15-0	1.25	U	6.27	1.25	0.627
Carbon tetrachloride	56-23-5	1.25	U	6.27	1.25	0.627
Chlorobenzene	108-90-7	1.25	U	6.27	1.25	0.627
Chlorodibromomethane	124-48-1	1.25	U	6.27	1.25	0.627
Chloroethane	75-00-3	2.50	U	6.27	2.50	1.25
Chloroform	67-66-3	1.25	U	6.27	1.25	0.627
Chloromethane	74-87-3	5.02	U	12.5	5.02	2.51
2-Chlorotoluene	95-49-8	1.25	U	6.27	1.25	0.627
4-Chlorotoluene	106-43-4	1.25	U	6.27	1.25	0.627

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	5.02	U	12.5	5.02	2.51
1,2-Dibromoethane	106-93-4	1.25	U	6.27	1.25	0.627
Dibromomethane	74-95-3	1.25	U	6.27	1.25	0.627
1,2-Dichlorobenzene	95-50-1	1.25	U	6.27	1.25	0.627
1,3-Dichlorobenzene	541-73-1	1.25	U	6.27	1.25	0.627
1,4-Dichlorobenzene	106-46-7	1.25	U	6.27	1.25	0.627
Dichlorodifluoromethane	75-71-8	2.50	U	6.27	2.50	1.25
1,1-Dichloroethane	75-34-3	2.50	U	6.27	2.50	1.25
1,2-Dichloroethane	107-06-2	1.25	U	6.27	1.25	0.627
1,1-Dichloroethene	75-35-4	1.25	U	6.27	1.25	0.627
cis-1,2-Dichloroethene	156-59-2	1.25	U	6.27	1.25	0.627
trans-1,2-Dichloroethene	156-60-5	1.25	U	6.27	1.25	0.627
1,2-Dichloropropane	78-87-5	1.25	U	6.27	1.25	0.627
1,3-Dichloropropane	142-28-9	1.25	U	6.27	1.25	0.627
2,2-Dichloropropane	594-20-7	1.25	U	6.27	1.25	0.627
cis-1,3-Dichloropropene	10061-01-5	1.25	U	6.27	1.25	0.627
trans-1,3-Dichloropropene	10061-02-6	1.25	U	6.27	1.25	0.627
1,1-Dichloropropene	563-58-6	1.25	U	6.27	1.25	0.627
Ethylbenzene	100-41-4	1.25	U	6.27	1.25	0.627
2-Hexanone	591-78-6	6.28	U	12.5	6.28	3.14
Hexachlorobutadiene	87-68-3	1.25	U	6.27	1.25	0.627
Isopropylbenzene	98-82-8	1.25	U	6.27	1.25	0.627
p-Isopropyltoluene	99-87-6	1.25	U	6.27	1.25	0.627
4-Methyl-2-pentanone	108-10-1	6.28	U	12.5	6.28	3.14
Methylene chloride	75-09-2	2.50	U	6.27	2.50	1.25
Naphthalene	91-20-3	1.25	U	6.27	1.25	0.627
n-Propylbenzene	103-65-1	1.25	U	6.27	1.25	0.627
Styrene	100-42-5	1.25	U	6.27	1.25	0.627
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	6.27	1.25	0.627
1,1,2,2-Tetrachloroethane	79-34-5	1.25	U	6.27	1.25	0.627
Tetrachloroethene	127-18-4	1.25	U	6.27	1.25	0.627
Toluene	108-88-3	1.25	U	6.27	1.25	0.627
1,2,3-Trichlorobenzene	87-61-6	1.25	U	6.27	1.25	0.627
1,2,4-Trichlorobenzene	120-82-1	1.25	U	6.27	1.25	0.627
1,1,1-Trichloroethane	71-55-6	1.25	U	6.27	1.25	0.627
1,1,2-Trichloroethane	79-00-5	1.25	U	6.27	1.25	0.627
Trichloroethene	79-01-6	1.25	U	6.27	1.25	0.627
Trichlorofluoromethane	75-69-4	2.50	U	6.27	2.50	1.25
1,2,3-Trichloropropane	96-18-4	2.50	U	6.27	2.50	1.25

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Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.25	U	6.27	1.25	0.627
1,3,5-Trimethylbenzene	108-67-8	1.25	U	6.27	1.25	0.627
Vinyl chloride	75-01-4	2.50	U	6.27	2.50	1.25
o-Xylene	95-47-6	1.25	U	6.27	1.25	0.627
m-,p-Xylene	179601-23-1	1.25	U	6.27	1.25	0.627

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.0	80	120	
1,2-Dichloroethane-d4	95.6	80	120	
Toluene-d8	107	85	115	
4-Bromofluorobenzene	110	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021240-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT04(34-34.5)240216	**Prep Method:**	6850	**Prep Date:**	02/25/2016 14:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558779	**Analyst:**	JWR	**Run Date:**	02/26/2016 12:24
Collect Date:	02/24/2016 15:15	**Dilution:**	50	**File ID:**	1LM.LM33391
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	84.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2180		232	116	57.9

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #: L16021240-01 **Client ID:** 18CPT04(5-5.5)240216 **Matrix:** Soil **Collect Date:** 02/24/2016 10:00

Analyte	Result	Units	Qualifier
Percent Solids	79.9	weight %	

Sample #: L16021240-02 **Client ID:** 18DPT04(15-15.5)240216 **Matrix:** Soil **Collect Date:** 02/24/2016 10:28

Analyte	Result	Units	Qualifier
Percent Solids	80.1	weight %	

Sample #: L16021240-03 **Client ID:** 18CPT04(20-21)240216 **Matrix:** Soil **Collect Date:** 02/24/2016 10:55

Analyte	Result	Units	Qualifier
Percent Solids	84.5	weight %	

Sample #: L16021240-04 **Client ID:** 18CPT04(20-21)240216FD **Matrix:** Soil **Collect Date:** 02/24/2016 10:55

Analyte	Result	Units	Qualifier
Percent Solids	85.0	weight %	

Sample #: L16021240-05 **Client ID:** 18DPT04(25-25.5)240216 **Matrix:** Soil **Collect Date:** 02/24/2016 11:22

Analyte	Result	Units	Qualifier
Percent Solids	83.6	weight %	

Sample #: L16021240-06 **Client ID:** 18DPT04(29-30)240216 **Matrix:** Soil **Collect Date:** 02/24/2016 12:00

Analyte	Result	Units	Qualifier
Percent Solids	79.2	weight %	

Sample #: L16021240-07 **Client ID:** 18DPT04(36.5-37)240216 **Matrix:** Soil **Collect Date:** 02/24/2016 15:15

Analyte	Result	Units	Qualifier
Percent Solids	79.7	weight %	

Sample #: L16021240-08 **Client ID:** 18DPT04(34-34.5)240216 **Matrix:** Soil **Collect Date:** 02/24/2016 15:15

Analyte	Result	Units	Qualifier
Percent Solids	84.6	weight %	

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021240-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPT04(5-5.5)240216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/26/2016 14:09
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG558910	**Analyst:**	ADC	**Run Date:**	02/26/2016 21:20
Collect Date:	02/24/2016 10:00	**Dilution:**	1	**File ID:**	9M972923
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.5	U	26.9	13.5	6.73
Benzene	71-43-2	1.35	U	6.73	1.35	0.673
Bromobenzene	108-86-1	1.35	U	6.73	1.35	0.673
Bromochloromethane	74-97-5	2.70	U	6.73	2.70	1.35
Bromodichloromethane	75-27-4	1.35	U	6.73	1.35	0.673
Bromoform	75-25-2	1.35	U	6.73	1.35	0.673
Bromomethane	74-83-9	2.70	U	6.73	2.70	1.35
2-Butanone	78-93-3	6.72	U	13.5	6.72	3.36
n-Butylbenzene	104-51-8	1.35	U	6.73	1.35	0.673
sec-Butylbenzene	135-98-8	1.35	U	6.73	1.35	0.673
tert-Butylbenzene	98-06-6	1.35	U	6.73	1.35	0.673
Carbon disulfide	75-15-0	1.35	U	6.73	1.35	0.673
Carbon tetrachloride	56-23-5	1.35	U	6.73	1.35	0.673
Chlorobenzene	108-90-7	1.35	U	6.73	1.35	0.673
Chlorodibromomethane	124-48-1	1.35	U	6.73	1.35	0.673
Chloroethane	75-00-3	2.70	U	6.73	2.70	1.35
Chloroform	67-66-3	1.35	U	6.73	1.35	0.673
Chloromethane	74-87-3	5.38	U	13.5	5.38	2.69
2-Chlorotoluene	95-49-8	1.35	U	6.73	1.35	0.673
4-Chlorotoluene	106-43-4	1.35	U	6.73	1.35	0.673
1,2-Dibromo-3-chloropropane	96-12-8	5.38	U	13.5	5.38	2.69
1,2-Dibromoethane	106-93-4	1.35	U	6.73	1.35	0.673
Dibromomethane	74-95-3	1.35	U	6.73	1.35	0.673
1,2-Dichlorobenzene	95-50-1	1.35	U	6.73	1.35	0.673
1,3-Dichlorobenzene	541-73-1	1.35	U	6.73	1.35	0.673
1,4-Dichlorobenzene	106-46-7	1.35	U	6.73	1.35	0.673
Dichlorodifluoromethane	75-71-8	2.70	U	6.73	2.70	1.35
1,1-Dichloroethane	75-34-3	2.70	U	6.73	2.70	1.35
1,2-Dichloroethane	107-06-2	1.35	U	6.73	1.35	0.673
1,1-Dichloroethene	75-35-4	1.35	U	6.73	1.35	0.673
cis-1,2-Dichloroethene	156-59-2	1.35	U	6.73	1.35	0.673
trans-1,2-Dichloroethene	156-60-5	1.35	U	6.73	1.35	0.673

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Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.35	U	6.73	1.35	0.673
1,3-Dichloropropane	142-28-9	1.35	U	6.73	1.35	0.673
2,2-Dichloropropane	594-20-7	1.35	U	6.73	1.35	0.673
cis-1,3-Dichloropropene	10061-01-5	1.35	U	6.73	1.35	0.673
trans-1,3-Dichloropropene	10061-02-6	1.35	U	6.73	1.35	0.673
1,1-Dichloropropene	563-58-6	1.35	U	6.73	1.35	0.673
Ethylbenzene	100-41-4	1.35	U	6.73	1.35	0.673
2-Hexanone	591-78-6	6.72	U	13.5	6.72	3.36
Hexachlorobutadiene	87-68-3	1.35	U	6.73	1.35	0.673
Isopropylbenzene	98-82-8	1.35	U	6.73	1.35	0.673
p-Isopropyltoluene	99-87-6	1.35	U	6.73	1.35	0.673
4-Methyl-2-pentanone	108-10-1	6.72	U	13.5	6.72	3.36
Methylene chloride	75-09-2	2.70	U	6.73	2.70	1.35
Naphthalene	91-20-3	1.35	U	6.73	1.35	0.673
n-Propylbenzene	103-65-1	1.35	U	6.73	1.35	0.673
Styrene	100-42-5	1.35	U	6.73	1.35	0.673
1,1,1,2-Tetrachloroethane	630-20-6	1.35	U	6.73	1.35	0.673
1,1,2,2-Tetrachloroethane	79-34-5	1.35	U	6.73	1.35	0.673
Tetrachloroethene	127-18-4	1.35	U	6.73	1.35	0.673
Toluene	108-88-3	1.35	U	6.73	1.35	0.673
1,2,3-Trichlorobenzene	87-61-6	1.35	U	6.73	1.35	0.673
1,2,4-Trichlorobenzene	120-82-1	1.35	U	6.73	1.35	0.673
1,1,1-Trichloroethane	71-55-6	1.35	U	6.73	1.35	0.673
1,1,2-Trichloroethane	79-00-5	1.35	U	6.73	1.35	0.673
Trichloroethene	79-01-6	1.35	U	6.73	1.35	0.673
Trichlorofluoromethane	75-69-4	2.70	U	6.73	2.70	1.35
1,2,3-Trichloropropane	96-18-4	2.70	U	6.73	2.70	1.35
1,2,4-Trimethylbenzene	95-63-6	1.35	U	6.73	1.35	0.673
1,3,5-Trimethylbenzene	108-67-8	1.35	U	6.73	1.35	0.673
Vinyl chloride	75-01-4	2.70	U	6.73	2.70	1.35
o-Xylene	95-47-6	1.35	U	6.73	1.35	0.673
m-,p-Xylene	179601-23-1	1.35	U	6.73	1.35	0.673

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.7	80	120	
1,2-Dichloroethane-d4	94.6	80	120	
Toluene-d8	108	85	115	
4-Bromofluorobenzene	111	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021240-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT04(15-15.5)240216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/26/2016 14:10
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG558910	**Analyst:**	ADC	**Run Date:**	02/26/2016 21:50
Collect Date:	02/24/2016 10:28	**Dilution:**	1	**File ID:**	9M972924
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	7.38	J	26.5	13.2	6.61
Benzene	71-43-2	1.32	U	6.61	1.32	0.661
Bromobenzene	108-86-1	1.32	U	6.61	1.32	0.661
Bromochloromethane	74-97-5	2.64	U	6.61	2.64	1.32
Bromodichloromethane	75-27-4	1.32	U	6.61	1.32	0.661
Bromoform	75-25-2	1.32	U	6.61	1.32	0.661
Bromomethane	74-83-9	2.64	U	6.61	2.64	1.32
2-Butanone	78-93-3	6.62	U	13.2	6.62	3.31
n-Butylbenzene	104-51-8	1.32	U	6.61	1.32	0.661
sec-Butylbenzene	135-98-8	1.32	U	6.61	1.32	0.661
tert-Butylbenzene	98-06-6	1.32	U	6.61	1.32	0.661
Carbon disulfide	75-15-0	1.32	U	6.61	1.32	0.661
Carbon tetrachloride	56-23-5	1.32	U	6.61	1.32	0.661
Chlorobenzene	108-90-7	1.32	U	6.61	1.32	0.661
Chlorodibromomethane	124-48-1	1.32	U	6.61	1.32	0.661
Chloroethane	75-00-3	2.64	U	6.61	2.64	1.32
Chloroform	67-66-3	1.32	U	6.61	1.32	0.661
Chloromethane	74-87-3	5.30	U	13.2	5.30	2.65
2-Chlorotoluene	95-49-8	1.32	U	6.61	1.32	0.661
4-Chlorotoluene	106-43-4	1.32	U	6.61	1.32	0.661
1,2-Dibromo-3-chloropropane	96-12-8	5.30	U	13.2	5.30	2.65
1,2-Dibromoethane	106-93-4	1.32	U	6.61	1.32	0.661
Dibromomethane	74-95-3	1.32	U	6.61	1.32	0.661
1,2-Dichlorobenzene	95-50-1	1.32	U	6.61	1.32	0.661
1,3-Dichlorobenzene	541-73-1	1.32	U	6.61	1.32	0.661
1,4-Dichlorobenzene	106-46-7	1.32	U	6.61	1.32	0.661
Dichlorodifluoromethane	75-71-8	2.64	U	6.61	2.64	1.32
1,1-Dichloroethane	75-34-3	2.64	U	6.61	2.64	1.32
1,2-Dichloroethane	107-06-2	1.32	U	6.61	1.32	0.661
1,1-Dichloroethene	75-35-4	1.32	U	6.61	1.32	0.661
cis-1,2-Dichloroethene	156-59-2	1.32	U	6.61	1.32	0.661

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Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.32	U	6.61	1.32	0.661
1,2-Dichloropropane	78-87-5	1.32	U	6.61	1.32	0.661
1,3-Dichloropropane	142-28-9	1.32	U	6.61	1.32	0.661
2,2-Dichloropropane	594-20-7	1.32	U	6.61	1.32	0.661
cis-1,3-Dichloropropene	10061-01-5	1.32	U	6.61	1.32	0.661
trans-1,3-Dichloropropene	10061-02-6	1.32	U	6.61	1.32	0.661
1,1-Dichloropropene	563-58-6	1.32	U	6.61	1.32	0.661
Ethylbenzene	100-41-4	1.32	U	6.61	1.32	0.661
2-Hexanone	591-78-6	6.62	U	13.2	6.62	3.31
Hexachlorobutadiene	87-68-3	1.32	U	6.61	1.32	0.661
Isopropylbenzene	98-82-8	1.32	U	6.61	1.32	0.661
p-Isopropyltoluene	99-87-6	1.32	U	6.61	1.32	0.661
4-Methyl-2-pentanone	108-10-1	6.62	U	13.2	6.62	3.31
Methylene chloride	75-09-2	2.64	U	6.61	2.64	1.32
Naphthalene	91-20-3	1.32	U	6.61	1.32	0.661
n-Propylbenzene	103-65-1	1.32	U	6.61	1.32	0.661
Styrene	100-42-5	1.32	U	6.61	1.32	0.661
1,1,1,2-Tetrachloroethane	630-20-6	1.32	U	6.61	1.32	0.661
1,1,2,2-Tetrachloroethane	79-34-5	1.32	U	6.61	1.32	0.661
Tetrachloroethene	127-18-4	1.32	U	6.61	1.32	0.661
Toluene	108-88-3	1.32	U	6.61	1.32	0.661
1,2,3-Trichlorobenzene	87-61-6	1.32	U	6.61	1.32	0.661
1,2,4-Trichlorobenzene	120-82-1	1.32	U	6.61	1.32	0.661
1,1,1-Trichloroethane	71-55-6	1.32	U	6.61	1.32	0.661
1,1,2-Trichloroethane	79-00-5	1.32	U	6.61	1.32	0.661
Trichloroethene	79-01-6	1.32	U	6.61	1.32	0.661
Trichlorofluoromethane	75-69-4	2.64	U	6.61	2.64	1.32
1,2,3-Trichloropropane	96-18-4	2.64	U	6.61	2.64	1.32
1,2,4-Trimethylbenzene	95-63-6	1.32	U	6.61	1.32	0.661
1,3,5-Trimethylbenzene	108-67-8	1.32	U	6.61	1.32	0.661
Vinyl chloride	75-01-4	2.64	U	6.61	2.64	1.32
o-Xylene	95-47-6	1.32	U	6.61	1.32	0.661
m-,p-Xylene	179601-23-1	1.32	U	6.61	1.32	0.661

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.4	80	120	
1,2-Dichloroethane-d4	93.6	80	120	
Toluene-d8	111	85	115	
4-Bromofluorobenzene	114	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021240-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPT04(20-21)240216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/26/2016 14:10
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG558910	**Analyst:**	ADC	**Run Date:**	02/26/2016 22:21
Collect Date:	02/24/2016 10:55	**Dilution:**	1	**File ID:**	9M972925
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.8	U	25.5	12.8	6.38
Benzene	71-43-2	1.28	U	6.38	1.28	0.638
Bromobenzene	108-86-1	1.28	U	6.38	1.28	0.638
Bromochloromethane	74-97-5	2.56	U	6.38	2.56	1.28
Bromodichloromethane	75-27-4	1.28	U	6.38	1.28	0.638
Bromoform	75-25-2	1.28	U	6.38	1.28	0.638
Bromomethane	74-83-9	2.56	U	6.38	2.56	1.28
2-Butanone	78-93-3	6.38	U	12.8	6.38	3.19
n-Butylbenzene	104-51-8	1.28	U	6.38	1.28	0.638
sec-Butylbenzene	135-98-8	1.28	U	6.38	1.28	0.638
tert-Butylbenzene	98-06-6	1.28	U	6.38	1.28	0.638
Carbon disulfide	75-15-0	1.28	U	6.38	1.28	0.638
Carbon tetrachloride	56-23-5	1.28	U	6.38	1.28	0.638
Chlorobenzene	108-90-7	1.28	U	6.38	1.28	0.638
Chlorodibromomethane	124-48-1	1.28	U	6.38	1.28	0.638
Chloroethane	75-00-3	2.56	U	6.38	2.56	1.28
Chloroform	67-66-3	1.28	U	6.38	1.28	0.638
Chloromethane	74-87-3	5.10	U	12.8	5.10	2.55
2-Chlorotoluene	95-49-8	1.28	U	6.38	1.28	0.638
4-Chlorotoluene	106-43-4	1.28	U	6.38	1.28	0.638
1,2-Dibromo-3-chloropropane	96-12-8	5.10	U	12.8	5.10	2.55
1,2-Dibromoethane	106-93-4	1.28	U	6.38	1.28	0.638
Dibromomethane	74-95-3	1.28	U	6.38	1.28	0.638
1,2-Dichlorobenzene	95-50-1	1.28	U	6.38	1.28	0.638
1,3-Dichlorobenzene	541-73-1	1.28	U	6.38	1.28	0.638
1,4-Dichlorobenzene	106-46-7	1.28	U	6.38	1.28	0.638
Dichlorodifluoromethane	75-71-8	2.56	U	6.38	2.56	1.28
1,1-Dichloroethane	75-34-3	2.56	U	6.38	2.56	1.28
1,2-Dichloroethane	107-06-2	1.28	U	6.38	1.28	0.638
1,1-Dichloroethene	75-35-4	1.28	U	6.38	1.28	0.638
cis-1,2-Dichloroethene	156-59-2	1.28	U	6.38	1.28	0.638

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Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.28	U	6.38	1.28	0.638
1,2-Dichloropropane	78-87-5	1.28	U	6.38	1.28	0.638
1,3-Dichloropropane	142-28-9	1.28	U	6.38	1.28	0.638
2,2-Dichloropropane	594-20-7	1.28	U	6.38	1.28	0.638
cis-1,3-Dichloropropene	10061-01-5	1.28	U	6.38	1.28	0.638
trans-1,3-Dichloropropene	10061-02-6	1.28	U	6.38	1.28	0.638
1,1-Dichloropropene	563-58-6	1.28	U	6.38	1.28	0.638
Ethylbenzene	100-41-4	1.28	U	6.38	1.28	0.638
2-Hexanone	591-78-6	6.38	U	12.8	6.38	3.19
Hexachlorobutadiene	87-68-3	1.28	U	6.38	1.28	0.638
Isopropylbenzene	98-82-8	1.28	U	6.38	1.28	0.638
p-Isopropyltoluene	99-87-6	1.28	U	6.38	1.28	0.638
4-Methyl-2-pentanone	108-10-1	6.38	U	12.8	6.38	3.19
Methylene chloride	75-09-2	2.56	U	6.38	2.56	1.28
Naphthalene	91-20-3	1.28	U	6.38	1.28	0.638
n-Propylbenzene	103-65-1	1.28	U	6.38	1.28	0.638
Styrene	100-42-5	1.28	U	6.38	1.28	0.638
1,1,1,2-Tetrachloroethane	630-20-6	1.28	U	6.38	1.28	0.638
1,1,2,2-Tetrachloroethane	79-34-5	1.28	U	6.38	1.28	0.638
Tetrachloroethene	127-18-4	1.28	U	6.38	1.28	0.638
Toluene	108-88-3	1.28	U	6.38	1.28	0.638
1,2,3-Trichlorobenzene	87-61-6	1.28	U	6.38	1.28	0.638
1,2,4-Trichlorobenzene	120-82-1	1.28	U	6.38	1.28	0.638
1,1,1-Trichloroethane	71-55-6	1.28	U	6.38	1.28	0.638
1,1,2-Trichloroethane	79-00-5	1.28	U	6.38	1.28	0.638
Trichloroethene	79-01-6	1.28	U	6.38	1.28	0.638
Trichlorofluoromethane	75-69-4	2.56	U	6.38	2.56	1.28
1,2,3-Trichloropropane	96-18-4	2.56	U	6.38	2.56	1.28
1,2,4-Trimethylbenzene	95-63-6	1.28	U	6.38	1.28	0.638
1,3,5-Trimethylbenzene	108-67-8	1.28	U	6.38	1.28	0.638
Vinyl chloride	75-01-4	2.56	U	6.38	2.56	1.28
o-Xylene	95-47-6	1.28	U	6.38	1.28	0.638
m-,p-Xylene	179601-23-1	1.28	U	6.38	1.28	0.638

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	80	120	
1,2-Dichloroethane-d4	95.2	80	120	
Toluene-d8	113	85	115	
4-Bromofluorobenzene	114	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021240-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPT04(20-21)240216FD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/28/2016 12:34
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559002	**Analyst:**	FJB	**Run Date:**	02/28/2016 23:22
Collect Date:	02/24/2016 10:55	**Dilution:**	1	**File ID:**	9M972958
Sample Tag:	02	**Units:**	ug/kg	**Percent Solid:**	85.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.8	U	25.6	12.8	6.41
Benzene	71-43-2	1.28	U	6.41	1.28	0.641
Bromobenzene	108-86-1	1.28	U	6.41	1.28	0.641
Bromochloromethane	74-97-5	2.56	U	6.41	2.56	1.28
Bromodichloromethane	75-27-4	1.28	U	6.41	1.28	0.641
Bromoform	75-25-2	1.28	U	6.41	1.28	0.641
Bromomethane	74-83-9	2.56	U	6.41	2.56	1.28
2-Butanone	78-93-3	6.40	U	12.8	6.40	3.20
n-Butylbenzene	104-51-8	1.28	U	6.41	1.28	0.641
sec-Butylbenzene	135-98-8	1.28	U	6.41	1.28	0.641
tert-Butylbenzene	98-06-6	1.28	U	6.41	1.28	0.641
Carbon disulfide	75-15-0	1.28	U	6.41	1.28	0.641
Carbon tetrachloride	56-23-5	1.28	U	6.41	1.28	0.641
Chlorobenzene	108-90-7	1.28	U	6.41	1.28	0.641
Chlorodibromomethane	124-48-1	1.28	U	6.41	1.28	0.641
Chloroethane	75-00-3	2.56	U	6.41	2.56	1.28
Chloroform	67-66-3	1.28	U	6.41	1.28	0.641
Chloromethane	74-87-3	5.12	U	12.8	5.12	2.56
2-Chlorotoluene	95-49-8	1.28	U	6.41	1.28	0.641
4-Chlorotoluene	106-43-4	1.28	U	6.41	1.28	0.641
1,2-Dibromo-3-chloropropane	96-12-8	5.12	U	12.8	5.12	2.56
1,2-Dibromoethane	106-93-4	1.28	U	6.41	1.28	0.641
Dibromomethane	74-95-3	1.28	U	6.41	1.28	0.641
1,2-Dichlorobenzene	95-50-1	1.28	U	6.41	1.28	0.641
1,3-Dichlorobenzene	541-73-1	1.28	U	6.41	1.28	0.641
1,4-Dichlorobenzene	106-46-7	1.28	U	6.41	1.28	0.641
Dichlorodifluoromethane	75-71-8	2.56	U	6.41	2.56	1.28
1,1-Dichloroethane	75-34-3	2.56	U	6.41	2.56	1.28
1,2-Dichloroethane	107-06-2	1.28	U	6.41	1.28	0.641
1,1-Dichloroethene	75-35-4	1.28	U	6.41	1.28	0.641
cis-1,2-Dichloroethene	156-59-2	1.28	U	6.41	1.28	0.641

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Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.28	U	6.41	1.28	0.641
1,2-Dichloropropane	78-87-5	1.28	U	6.41	1.28	0.641
1,3-Dichloropropane	142-28-9	1.28	U	6.41	1.28	0.641
2,2-Dichloropropane	594-20-7	1.28	U	6.41	1.28	0.641
cis-1,3-Dichloropropene	10061-01-5	1.28	U	6.41	1.28	0.641
trans-1,3-Dichloropropene	10061-02-6	1.28	U	6.41	1.28	0.641
1,1-Dichloropropene	563-58-6	1.28	U	6.41	1.28	0.641
Ethylbenzene	100-41-4	1.28	U	6.41	1.28	0.641
2-Hexanone	591-78-6	6.40	U	12.8	6.40	3.20
Hexachlorobutadiene	87-68-3	1.28	U	6.41	1.28	0.641
Isopropylbenzene	98-82-8	1.28	U	6.41	1.28	0.641
p-Isopropyltoluene	99-87-6	1.28	U	6.41	1.28	0.641
4-Methyl-2-pentanone	108-10-1	6.40	U	12.8	6.40	3.20
Methylene chloride	75-09-2	2.56	U	6.41	2.56	1.28
Naphthalene	91-20-3	1.28	U	6.41	1.28	0.641
n-Propylbenzene	103-65-1	1.28	U	6.41	1.28	0.641
Styrene	100-42-5	1.28	U	6.41	1.28	0.641
1,1,1,2-Tetrachloroethane	630-20-6	1.28	U	6.41	1.28	0.641
1,1,2,2-Tetrachloroethane	79-34-5	1.28	U	6.41	1.28	0.641
Tetrachloroethene	127-18-4	1.28	U	6.41	1.28	0.641
Toluene	108-88-3	1.28	U	6.41	1.28	0.641
1,2,3-Trichlorobenzene	87-61-6	1.28	U	6.41	1.28	0.641
1,2,4-Trichlorobenzene	120-82-1	1.28	U	6.41	1.28	0.641
1,1,1-Trichloroethane	71-55-6	1.28	U	6.41	1.28	0.641
1,1,2-Trichloroethane	79-00-5	1.28	U	6.41	1.28	0.641
Trichloroethene	79-01-6	1.28	U	6.41	1.28	0.641
Trichlorofluoromethane	75-69-4	2.56	U	6.41	2.56	1.28
1,2,3-Trichloropropane	96-18-4	2.56	U	6.41	2.56	1.28
1,2,4-Trimethylbenzene	95-63-6	1.28	U	6.41	1.28	0.641
1,3,5-Trimethylbenzene	108-67-8	1.28	U	6.41	1.28	0.641
Vinyl chloride	75-01-4	2.56	U	6.41	2.56	1.28
o-Xylene	95-47-6	1.28	U	6.41	1.28	0.641
m-,p-Xylene	179601-23-1	1.28	U	6.41	1.28	0.641

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.2	80	120	
1,2-Dichloroethane-d4	97.9	80	120	
Toluene-d8	110	85	115	
4-Bromofluorobenzene	114	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021240-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT04(25-25.5)240216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/26/2016 14:11
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG558910	**Analyst:**	ADC	**Run Date:**	02/26/2016 23:22
Collect Date:	02/24/2016 11:22	**Dilution:**	1	**File ID:**	9M972927
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	25.0	12.5	6.24
Benzene	71-43-2	1.25	U	6.24	1.25	0.624
Bromobenzene	108-86-1	1.25	U	6.24	1.25	0.624
Bromochloromethane	74-97-5	2.50	U	6.24	2.50	1.25
Bromodichloromethane	75-27-4	1.25	U	6.24	1.25	0.624
Bromoform	75-25-2	1.25	U	6.24	1.25	0.624
Bromomethane	74-83-9	2.50	U	6.24	2.50	1.25
2-Butanone	78-93-3	6.24	U	12.5	6.24	3.12
n-Butylbenzene	104-51-8	1.25	U	6.24	1.25	0.624
sec-Butylbenzene	135-98-8	1.25	U	6.24	1.25	0.624
tert-Butylbenzene	98-06-6	1.25	U	6.24	1.25	0.624
Carbon disulfide	75-15-0	1.25	U	6.24	1.25	0.624
Carbon tetrachloride	56-23-5	1.25	U	6.24	1.25	0.624
Chlorobenzene	108-90-7	1.25	U	6.24	1.25	0.624
Chlorodibromomethane	124-48-1	1.25	U	6.24	1.25	0.624
Chloroethane	75-00-3	2.50	U	6.24	2.50	1.25
Chloroform	67-66-3	1.25	U	6.24	1.25	0.624
Chloromethane	74-87-3	5.00	U	12.5	5.00	2.50
2-Chlorotoluene	95-49-8	1.25	U	6.24	1.25	0.624
4-Chlorotoluene	106-43-4	1.25	U	6.24	1.25	0.624
1,2-Dibromo-3-chloropropane	96-12-8	5.00	U	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	6.24	1.25	0.624
Dibromomethane	74-95-3	1.25	U	6.24	1.25	0.624
1,2-Dichlorobenzene	95-50-1	1.25	U	6.24	1.25	0.624
1,3-Dichlorobenzene	541-73-1	1.25	U	6.24	1.25	0.624
1,4-Dichlorobenzene	106-46-7	1.25	U	6.24	1.25	0.624
Dichlorodifluoromethane	75-71-8	2.50	U	6.24	2.50	1.25
1,1-Dichloroethane	75-34-3	2.50	U	6.24	2.50	1.25
1,2-Dichloroethane	107-06-2	1.25	U	6.24	1.25	0.624
1,1-Dichloroethene	75-35-4	1.25	U	6.24	1.25	0.624
cis-1,2-Dichloroethene	156-59-2	1.25	U	6.24	1.25	0.624

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Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.25	U	6.24	1.25	0.624
1,2-Dichloropropane	78-87-5	1.25	U	6.24	1.25	0.624
1,3-Dichloropropane	142-28-9	1.25	U	6.24	1.25	0.624
2,2-Dichloropropane	594-20-7	1.25	U	6.24	1.25	0.624
cis-1,3-Dichloropropene	10061-01-5	1.25	U	6.24	1.25	0.624
trans-1,3-Dichloropropene	10061-02-6	1.25	U	6.24	1.25	0.624
1,1-Dichloropropene	563-58-6	1.25	U	6.24	1.25	0.624
Ethylbenzene	100-41-4	1.25	U	6.24	1.25	0.624
2-Hexanone	591-78-6	6.24	U	12.5	6.24	3.12
Hexachlorobutadiene	87-68-3	1.25	U	6.24	1.25	0.624
Isopropylbenzene	98-82-8	1.25	U	6.24	1.25	0.624
p-Isopropyltoluene	99-87-6	1.25	U	6.24	1.25	0.624
4-Methyl-2-pentanone	108-10-1	6.24	U	12.5	6.24	3.12
Methylene chloride	75-09-2	2.50	U	6.24	2.50	1.25
Naphthalene	91-20-3	1.25	U	6.24	1.25	0.624
n-Propylbenzene	103-65-1	1.25	U	6.24	1.25	0.624
Styrene	100-42-5	1.25	U	6.24	1.25	0.624
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	6.24	1.25	0.624
1,1,2,2-Tetrachloroethane	79-34-5	1.25	U	6.24	1.25	0.624
Tetrachloroethene	127-18-4	1.25	U	6.24	1.25	0.624
Toluene	108-88-3	1.25	U	6.24	1.25	0.624
1,2,3-Trichlorobenzene	87-61-6	1.25	U	6.24	1.25	0.624
1,2,4-Trichlorobenzene	120-82-1	1.25	U	6.24	1.25	0.624
1,1,1-Trichloroethane	71-55-6	1.25	U	6.24	1.25	0.624
1,1,2-Trichloroethane	79-00-5	1.25	U	6.24	1.25	0.624
Trichloroethene	79-01-6	1.25	U	6.24	1.25	0.624
Trichlorofluoromethane	75-69-4	2.50	U	6.24	2.50	1.25
1,2,3-Trichloropropane	96-18-4	2.50	U	6.24	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	6.24	1.25	0.624
1,3,5-Trimethylbenzene	108-67-8	1.25	U	6.24	1.25	0.624
Vinyl chloride	75-01-4	2.50	U	6.24	2.50	1.25
o-Xylene	95-47-6	1.25	U	6.24	1.25	0.624
m-,p-Xylene	179601-23-1	1.25	U	6.24	1.25	0.624

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	80	120	
1,2-Dichloroethane-d4	101	80	120	
Toluene-d8	109	85	115	
4-Bromofluorobenzene	111	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021240-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT04(29-30)240216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/26/2016 14:12
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG558910	**Analyst:**	ADC	**Run Date:**	02/26/2016 23:53
Collect Date:	02/24/2016 12:00	**Dilution:**	1	**File ID:**	9M972928
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.9	U	23.8	11.9	5.94
Benzene	71-43-2	1.19	U	5.94	1.19	0.594
Bromobenzene	108-86-1	1.19	U	5.94	1.19	0.594
Bromochloromethane	74-97-5	2.38	U	5.94	2.38	1.19
Bromodichloromethane	75-27-4	1.19	U	5.94	1.19	0.594
Bromoform	75-25-2	1.19	U	5.94	1.19	0.594
Bromomethane	74-83-9	2.38	U	5.94	2.38	1.19
2-Butanone	78-93-3	5.94	U	11.9	5.94	2.97
n-Butylbenzene	104-51-8	1.19	U	5.94	1.19	0.594
sec-Butylbenzene	135-98-8	1.19	U	5.94	1.19	0.594
tert-Butylbenzene	98-06-6	1.19	U	5.94	1.19	0.594
Carbon disulfide	75-15-0	1.19	U	5.94	1.19	0.594
Carbon tetrachloride	56-23-5	1.19	U	5.94	1.19	0.594
Chlorobenzene	108-90-7	1.19	U	5.94	1.19	0.594
Chlorodibromomethane	124-48-1	1.19	U	5.94	1.19	0.594
Chloroethane	75-00-3	2.38	U	5.94	2.38	1.19
Chloroform	67-66-3	1.19	U	5.94	1.19	0.594
Chloromethane	74-87-3	4.76	U	11.9	4.76	2.38
2-Chlorotoluene	95-49-8	1.19	U	5.94	1.19	0.594
4-Chlorotoluene	106-43-4	1.19	U	5.94	1.19	0.594
1,2-Dibromo-3-chloropropane	96-12-8	4.76	U	11.9	4.76	2.38
1,2-Dibromoethane	106-93-4	1.19	U	5.94	1.19	0.594
Dibromomethane	74-95-3	1.19	U	5.94	1.19	0.594
1,2-Dichlorobenzene	95-50-1	1.19	U	5.94	1.19	0.594
1,3-Dichlorobenzene	541-73-1	1.19	U	5.94	1.19	0.594
1,4-Dichlorobenzene	106-46-7	1.19	U	5.94	1.19	0.594
Dichlorodifluoromethane	75-71-8	2.38	U	5.94	2.38	1.19
1,1-Dichloroethane	75-34-3	2.38	U	5.94	2.38	1.19
1,2-Dichloroethane	107-06-2	1.19	U	5.94	1.19	0.594
1,1-Dichloroethene	75-35-4	1.19	U	5.94	1.19	0.594
cis-1,2-Dichloroethene	156-59-2	1.19	U	5.94	1.19	0.594

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Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.19	U	5.94	1.19	0.594
1,2-Dichloropropane	78-87-5	1.19	U	5.94	1.19	0.594
1,3-Dichloropropane	142-28-9	1.19	U	5.94	1.19	0.594
2,2-Dichloropropane	594-20-7	1.19	U	5.94	1.19	0.594
cis-1,3-Dichloropropene	10061-01-5	1.19	U	5.94	1.19	0.594
trans-1,3-Dichloropropene	10061-02-6	1.19	U	5.94	1.19	0.594
1,1-Dichloropropene	563-58-6	1.19	U	5.94	1.19	0.594
Ethylbenzene	100-41-4	1.19	U	5.94	1.19	0.594
2-Hexanone	591-78-6	5.94	U	11.9	5.94	2.97
Hexachlorobutadiene	87-68-3	1.19	U	5.94	1.19	0.594
Isopropylbenzene	98-82-8	1.19	U	5.94	1.19	0.594
p-Isopropyltoluene	99-87-6	1.19	U	5.94	1.19	0.594
4-Methyl-2-pentanone	108-10-1	5.94	U	11.9	5.94	2.97
Methylene chloride	75-09-2	2.38	U	5.94	2.38	1.19
Naphthalene	91-20-3	1.19	U	5.94	1.19	0.594
n-Propylbenzene	103-65-1	1.19	U	5.94	1.19	0.594
Styrene	100-42-5	1.19	U	5.94	1.19	0.594
1,1,1,2-Tetrachloroethane	630-20-6	1.19	U	5.94	1.19	0.594
1,1,2,2-Tetrachloroethane	79-34-5	1.19	U	5.94	1.19	0.594
Tetrachloroethene	127-18-4	1.19	U	5.94	1.19	0.594
Toluene	108-88-3	1.19	U	5.94	1.19	0.594
1,2,3-Trichlorobenzene	87-61-6	1.19	U	5.94	1.19	0.594
1,2,4-Trichlorobenzene	120-82-1	1.19	U	5.94	1.19	0.594
1,1,1-Trichloroethane	71-55-6	1.19	U	5.94	1.19	0.594
1,1,2-Trichloroethane	79-00-5	1.19	U	5.94	1.19	0.594
Trichloroethene	79-01-6	1.19	U	5.94	1.19	0.594
Trichlorofluoromethane	75-69-4	2.38	U	5.94	2.38	1.19
1,2,3-Trichloropropane	96-18-4	2.38	U	5.94	2.38	1.19
1,2,4-Trimethylbenzene	95-63-6	1.19	U	5.94	1.19	0.594
1,3,5-Trimethylbenzene	108-67-8	1.19	U	5.94	1.19	0.594
Vinyl chloride	75-01-4	2.38	U	5.94	2.38	1.19
o-Xylene	95-47-6	1.19	U	5.94	1.19	0.594
m-,p-Xylene	179601-23-1	1.19	U	5.94	1.19	0.594

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.7	80	120	
1,2-Dichloroethane-d4	93.4	80	120	
Toluene-d8	109	85	115	
4-Bromofluorobenzene	111	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021240-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT04(36.5-37)240216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/26/2016 14:13
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG558910	**Analyst:**	ADC	**Run Date:**	02/27/2016 00:23
Collect Date:	02/24/2016 15:15	**Dilution:**	1	**File ID:**	9M972929
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.1	U	24.2	12.1	6.04
Benzene	71-43-2	1.21	U	6.04	1.21	0.604
Bromobenzene	108-86-1	1.21	U	6.04	1.21	0.604
Bromochloromethane	74-97-5	2.42	U	6.04	2.42	1.21
Bromodichloromethane	75-27-4	1.21	U	6.04	1.21	0.604
Bromoform	75-25-2	1.21	U	6.04	1.21	0.604
Bromomethane	74-83-9	2.42	U	6.04	2.42	1.21
2-Butanone	78-93-3	6.04	U	12.1	6.04	3.02
n-Butylbenzene	104-51-8	1.21	U	6.04	1.21	0.604
sec-Butylbenzene	135-98-8	1.21	U	6.04	1.21	0.604
tert-Butylbenzene	98-06-6	1.21	U	6.04	1.21	0.604
Carbon disulfide	75-15-0	1.21	U	6.04	1.21	0.604
Carbon tetrachloride	56-23-5	1.21	U	6.04	1.21	0.604
Chlorobenzene	108-90-7	1.21	U	6.04	1.21	0.604
Chlorodibromomethane	124-48-1	1.21	U	6.04	1.21	0.604
Chloroethane	75-00-3	2.42	U	6.04	2.42	1.21
Chloroform	67-66-3	1.21	U	6.04	1.21	0.604
Chloromethane	74-87-3	4.84	U	12.1	4.84	2.42
2-Chlorotoluene	95-49-8	1.21	U	6.04	1.21	0.604
4-Chlorotoluene	106-43-4	1.21	U	6.04	1.21	0.604
1,2-Dibromo-3-chloropropane	96-12-8	4.84	U	12.1	4.84	2.42
1,2-Dibromoethane	106-93-4	1.21	U	6.04	1.21	0.604
Dibromomethane	74-95-3	1.21	U	6.04	1.21	0.604
1,2-Dichlorobenzene	95-50-1	1.21	U	6.04	1.21	0.604
1,3-Dichlorobenzene	541-73-1	1.21	U	6.04	1.21	0.604
1,4-Dichlorobenzene	106-46-7	1.21	U	6.04	1.21	0.604
Dichlorodifluoromethane	75-71-8	2.42	U	6.04	2.42	1.21
1,1-Dichloroethane	75-34-3	2.42	U	6.04	2.42	1.21
1,2-Dichloroethane	107-06-2	1.21	U	6.04	1.21	0.604
1,1-Dichloroethene	75-35-4	1.21	U	6.04	1.21	0.604
cis-1,2-Dichloroethene	156-59-2	1.21	U	6.04	1.21	0.604

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Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.21	U	6.04	1.21	0.604
1,2-Dichloropropane	78-87-5	1.21	U	6.04	1.21	0.604
1,3-Dichloropropane	142-28-9	1.21	U	6.04	1.21	0.604
2,2-Dichloropropane	594-20-7	1.21	U	6.04	1.21	0.604
cis-1,3-Dichloropropene	10061-01-5	1.21	U	6.04	1.21	0.604
trans-1,3-Dichloropropene	10061-02-6	1.21	U	6.04	1.21	0.604
1,1-Dichloropropene	563-58-6	1.21	U	6.04	1.21	0.604
Ethylbenzene	100-41-4	1.21	U	6.04	1.21	0.604
2-Hexanone	591-78-6	6.04	U	12.1	6.04	3.02
Hexachlorobutadiene	87-68-3	1.21	U	6.04	1.21	0.604
Isopropylbenzene	98-82-8	1.21	U	6.04	1.21	0.604
p-Isopropyltoluene	99-87-6	1.21	U	6.04	1.21	0.604
4-Methyl-2-pentanone	108-10-1	6.04	U	12.1	6.04	3.02
Methylene chloride	75-09-2	2.42	U	6.04	2.42	1.21
Naphthalene	91-20-3	1.21	U	6.04	1.21	0.604
n-Propylbenzene	103-65-1	1.21	U	6.04	1.21	0.604
Styrene	100-42-5	1.21	U	6.04	1.21	0.604
1,1,1,2-Tetrachloroethane	630-20-6	1.21	U	6.04	1.21	0.604
1,1,2,2-Tetrachloroethane	79-34-5	1.21	U	6.04	1.21	0.604
Tetrachloroethene	127-18-4	1.21	U	6.04	1.21	0.604
Toluene	108-88-3	1.21	U	6.04	1.21	0.604
1,2,3-Trichlorobenzene	87-61-6	1.21	U	6.04	1.21	0.604
1,2,4-Trichlorobenzene	120-82-1	1.21	U	6.04	1.21	0.604
1,1,1-Trichloroethane	71-55-6	1.21	U	6.04	1.21	0.604
1,1,2-Trichloroethane	79-00-5	1.21	U	6.04	1.21	0.604
Trichloroethene	79-01-6	3.20	J	6.04	1.21	0.604
Trichlorofluoromethane	75-69-4	2.42	U	6.04	2.42	1.21
1,2,3-Trichloropropane	96-18-4	2.42	U	6.04	2.42	1.21
1,2,4-Trimethylbenzene	95-63-6	1.21	U	6.04	1.21	0.604
1,3,5-Trimethylbenzene	108-67-8	1.21	U	6.04	1.21	0.604
Vinyl chloride	75-01-4	2.42	U	6.04	2.42	1.21
o-Xylene	95-47-6	1.21	U	6.04	1.21	0.604
m-,p-Xylene	179601-23-1	1.21	U	6.04	1.21	0.604

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	80	120	
1,2-Dichloroethane-d4	102	80	120	
Toluene-d8	106	85	115	
4-Bromofluorobenzene	110	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

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Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021240-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT04(34-34.5)240216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/26/2016 14:13
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG558910	**Analyst:**	ADC	**Run Date:**	02/27/2016 00:53
Collect Date:	02/24/2016 15:15	**Dilution:**	1	**File ID:**	9M972930
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	25.1	12.5	6.27
Benzene	71-43-2	1.25	U	6.27	1.25	0.627
Bromobenzene	108-86-1	1.25	U	6.27	1.25	0.627
Bromochloromethane	74-97-5	2.50	U	6.27	2.50	1.25
Bromodichloromethane	75-27-4	1.25	U	6.27	1.25	0.627
Bromoform	75-25-2	1.25	U	6.27	1.25	0.627
Bromomethane	74-83-9	2.50	U	6.27	2.50	1.25
2-Butanone	78-93-3	6.28	U	12.5	6.28	3.14
n-Butylbenzene	104-51-8	1.25	U	6.27	1.25	0.627
sec-Butylbenzene	135-98-8	1.25	U	6.27	1.25	0.627
tert-Butylbenzene	98-06-6	1.25	U	6.27	1.25	0.627
Carbon disulfide	75-15-0	1.25	U	6.27	1.25	0.627
Carbon tetrachloride	56-23-5	1.25	U	6.27	1.25	0.627
Chlorobenzene	108-90-7	1.25	U	6.27	1.25	0.627
Chlorodibromomethane	124-48-1	1.25	U	6.27	1.25	0.627
Chloroethane	75-00-3	2.50	U	6.27	2.50	1.25
Chloroform	67-66-3	1.25	U	6.27	1.25	0.627
Chloromethane	74-87-3	5.02	U	12.5	5.02	2.51
2-Chlorotoluene	95-49-8	1.25	U	6.27	1.25	0.627
4-Chlorotoluene	106-43-4	1.25	U	6.27	1.25	0.627
1,2-Dibromo-3-chloropropane	96-12-8	5.02	U	12.5	5.02	2.51
1,2-Dibromoethane	106-93-4	1.25	U	6.27	1.25	0.627
Dibromomethane	74-95-3	1.25	U	6.27	1.25	0.627
1,2-Dichlorobenzene	95-50-1	1.25	U	6.27	1.25	0.627
1,3-Dichlorobenzene	541-73-1	1.25	U	6.27	1.25	0.627
1,4-Dichlorobenzene	106-46-7	1.25	U	6.27	1.25	0.627
Dichlorodifluoromethane	75-71-8	2.50	U	6.27	2.50	1.25
1,1-Dichloroethane	75-34-3	2.50	U	6.27	2.50	1.25
1,2-Dichloroethane	107-06-2	1.25	U	6.27	1.25	0.627
1,1-Dichloroethene	75-35-4	1.25	U	6.27	1.25	0.627
cis-1,2-Dichloroethene	156-59-2	1.25	U	6.27	1.25	0.627

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Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.25	U	6.27	1.25	0.627
1,2-Dichloropropane	78-87-5	1.25	U	6.27	1.25	0.627
1,3-Dichloropropane	142-28-9	1.25	U	6.27	1.25	0.627
2,2-Dichloropropane	594-20-7	1.25	U	6.27	1.25	0.627
cis-1,3-Dichloropropene	10061-01-5	1.25	U	6.27	1.25	0.627
trans-1,3-Dichloropropene	10061-02-6	1.25	U	6.27	1.25	0.627
1,1-Dichloropropene	563-58-6	1.25	U	6.27	1.25	0.627
Ethylbenzene	100-41-4	1.25	U	6.27	1.25	0.627
2-Hexanone	591-78-6	6.28	U	12.5	6.28	3.14
Hexachlorobutadiene	87-68-3	1.25	U	6.27	1.25	0.627
Isopropylbenzene	98-82-8	1.25	U	6.27	1.25	0.627
p-Isopropyltoluene	99-87-6	1.25	U	6.27	1.25	0.627
4-Methyl-2-pentanone	108-10-1	6.28	U	12.5	6.28	3.14
Methylene chloride	75-09-2	2.50	U	6.27	2.50	1.25
Naphthalene	91-20-3	1.25	U	6.27	1.25	0.627
n-Propylbenzene	103-65-1	1.25	U	6.27	1.25	0.627
Styrene	100-42-5	1.25	U	6.27	1.25	0.627
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	6.27	1.25	0.627
1,1,2,2-Tetrachloroethane	79-34-5	1.25	U	6.27	1.25	0.627
Tetrachloroethene	127-18-4	1.25	U	6.27	1.25	0.627
Toluene	108-88-3	1.25	U	6.27	1.25	0.627
1,2,3-Trichlorobenzene	87-61-6	1.25	U	6.27	1.25	0.627
1,2,4-Trichlorobenzene	120-82-1	1.25	U	6.27	1.25	0.627
1,1,1-Trichloroethane	71-55-6	1.25	U	6.27	1.25	0.627
1,1,2-Trichloroethane	79-00-5	1.25	U	6.27	1.25	0.627
Trichloroethene	79-01-6	1.25	U	6.27	1.25	0.627
Trichlorofluoromethane	75-69-4	2.50	U	6.27	2.50	1.25
1,2,3-Trichloropropane	96-18-4	2.50	U	6.27	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	6.27	1.25	0.627
1,3,5-Trimethylbenzene	108-67-8	1.25	U	6.27	1.25	0.627
Vinyl chloride	75-01-4	2.50	U	6.27	2.50	1.25
o-Xylene	95-47-6	1.25	U	6.27	1.25	0.627
m-,p-Xylene	179601-23-1	1.25	U	6.27	1.25	0.627

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.0	80	120	
1,2-Dichloroethane-d4	95.6	80	120	
Toluene-d8	107	85	115	
4-Bromofluorobenzene	110	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.
VOA Preparation/Preservation/Extraction Log

Batch #: WG558996
Analyst: AWE
Method: 5030B/5030C/5035
Run Date: 02/28/2016 12:31
Product: 8260
Purge and trap methanol COA18540
Purified Lab Sand Lot # COA18552

SAMPLE #	Fraction	Collected	Preserved	PCT-S	Tare Wt	Total Wt	Sample Wt	Water	MeOH	Vt	Comments
L16021186-01	A	02/24/16 08:30	02/28/16 12:31	100			0.98	5		5	
L16021186-02	A	02/24/16 08:30	02/28/16 12:32	100			4.57	5		5	
L16021236-01	A	02/11/16 11:50	02/28/16 12:33	85.7			5.45	5		5	
L16021240-04	A	02/24/16 10:55	02/28/16 12:34	85.0			4.59	5		5	

Comments:
1 = improperly sealed cap
2 = preserved out of hold
3 = effervesced
4 = preserved with NaHSO4
5 = preserved by freezing
6 = preserved in field

Analyst: Andrew Baird

VOA_EXT - Modified 05/22/2008
PDF ID: 4649636
Report generated: 02/28/2016 12:34

Microbac Laboratories Inc.
VOA Preparation/Preservation/Extraction Log

Batch #: WG558938
Method: 5030B/5030C/5035
Product: 8260

Analyst: AWE
Run Date: 02/26/2016 14:06
Purge and trap methanol COA18540
Purified Lab Sand Lot # COA18552

SAMPLE #	Fraction	Collected	Preserved	PCT-S	Tare Wt	Total Wt	Sample Wt	Water	MeOH	Vt	Comments
L16021186-01	A	02/24/16 08:30	02/26/16 14:06	100			4.68	5		5	
L16021186-02	A	02/24/16 08:30	02/26/16 14:07	100			5.01	5		5	
L16021236-01	A	02/11/16 11:50	02/26/16 14:08	85.7			4.64	5		5	
L16021240-01	A	02/24/16 10:00	02/26/16 14:09	79.9			4.65	5		5	
L16021240-02	A	02/24/16 10:28	02/26/16 14:10	80.1			4.72	5		5	
L16021240-03	A	02/24/16 10:55	02/26/16 14:10	84.5			4.64	5		5	
L16021240-04	A	02/24/16 10:55	02/26/16 14:11	85.0			4.54	5		5	
L16021240-05	A	02/24/16 11:22	02/26/16 14:11	83.6			4.79	5		5	
L16021240-06	A	02/24/16 12:00	02/26/16 14:12	79.2			5.31	5		5	
L16021240-07	A	02/24/16 15:15	02/26/16 14:13	79.7			5.19	5		5	
L16021240-08	A	02/24/16 15:15	02/26/16 14:13	84.6			4.71	5		5	
WG558938-01	A		02/26/16 14:13	79.9			4.71	5		5	
WG558938-02	A		02/26/16 14:14	79.9			5.31	5		5	
WG558938-03	A		02/26/16 14:14	79.9			5.49	5		5	

Comments:
1 = improperly sealed cap
2 = preserved out of hold
3 = effervesced
4 = preserved with NaHSO4
5 = preserved by freezing
6 = preserved in field

Analyst: Andrew Baeg

VOA_EXT - Modified 05/22/2008
PDF ID: 4648955
Report generated: 02/26/2016 14:15

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 012516
Analyst1: ADC Analyst2: NA
Method: 8260B/8260C SOP: MSV01(-C) Rev: 23 (2)
Method: 5030B/5030C/5035 SOP: PAT01 Rev: 18
Method: 624 SOP: MSV10 Rev: 12
Maintenance Log ID:

Internal Standard: STD74414 Surrogate Standard: STD74126
CCV: STD74488 LCS: STD74459 MS/MSD: STD74459

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG555000 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M972470	WG555000-01 BFB 50ng A9	NA	7	1	STD74202	01/25/16 10:27
9M972471	RINSE	NA	7	1		01/25/16 10:52
9M972472	WG555000-02 5ug/Kg STD A9	NA	7	1	STD74406	01/25/16 11:22
9M972473	WG555000-03 20ug/Kg STD A9	NA	7	1	STD74406	01/25/16 11:52
9M972474	WG555000-04 50ug/Kg STD A9	NA	7	1	STD74406	01/25/16 12:23
9M972475	WG555000-05 100ug/Kg STD A9	NA	7	1	STD74406	01/25/16 12:53
9M972476	WG555000-06 200ug/Kg STD A9	NA	7	1	STD74406	01/25/16 13:23
9M972477	WG555000-07 300ug/Kg STD A9	NA	7	1	STD74406	01/25/16 13:54
9M972478	WG555000-08 400ug/Kg STD A9	NA	7	1	STD74406	01/25/16 14:25
9M972479	WG555000-09 500ug/Kg STD A9	NA	7	1	STD74406	01/25/16 14:56
9M972480	RINSE	NA	7	1		01/25/16 15:26
9M972481	WG555000-10 100ug/Kg ICV A9	NA	7	1	STD74461	01/25/16 15:56
9M972482	RINSE	NA	7	1		01/25/16 16:28

Approved: January 29, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 022516
Analyst1: ADC Analyst2: NA
Method: 8260 SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD74726 Surrogate Standard: STD74815
CCV: STD74488 LCS: STD74755 MS/MSD: STD74755

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG558732 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M972892	WG558732-01 BFB 50ng	NA	7	1	STD74773	02/25/16 14:26
9M972894	WG558732-01 BFB 50ng	NA	7	1	STD74773	02/25/16 14:45
9M972895	WG558732-02 50ug/L CCV 8260C	NA	7	1	STD74773	02/25/16 15:11
9M972896	WG558732-02 50ug/L CCV 8260C	NA	7	1	STD74773	02/25/16 15:48
9M972897	RINSE	NA	7	1		02/25/16 16:25
9M972898	WG558732-03 0.5ug/kg STD	NA	7	1	STD74773	02/25/16 16:55
9M972899	WG558732-04 1.0ug/kg STD	NA	7	1	STD74773	02/25/16 17:27
9M972900	WG558732-05 2.0ug/kg STD	NA	7	1	STD74773	02/25/16 17:57
9M972901	WG558732-06 5.0ug/kg STD	NA	7	1	STD74773	02/25/16 18:28
9M972902	WG558732-07 20.0ug/kg STD	NA	7	1	STD74773	02/25/16 18:59
9M972903	WG558732-08 100.0ug/kg STD	NA	7	1	STD74773	02/25/16 19:29
9M972904	WG558732-09 200.0ug/kg STD	NA	7	1	STD74773	02/25/16 20:00
9M972905	WG558732-10 300.0ug/kg STD	NA	7	1	STD74773	02/25/16 20:30
9M972906	RINSE	NA	7	1	STD74773	02/25/16 21:01
9M972907	WG558732-11 50.0ug/kg ALTSRC	NA	7	1	STD74755	02/25/16 21:31

Approved: February 29, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 022616
Analyst1: ADC Analyst2: NA
Method: 8260 SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD74726 Surrogate Standard: STD74815
CCV: STD74488 LCS: STD74755 MS/MSD: STD74755

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG558910

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M972908	WG558909-01 BFB 50ng	NA	7	1	STD74202	02/26/16 13:44
9M972909	WG558909-02 50ug/L CCV 8260C	NA	7	1	STD74773	02/26/16 14:10
9M972910	WG558909-02 50ug/L CCV 8260C	NA	7	1	STD74773	02/26/16 14:40
9M972911	WGXXXXXX-01 100.0ug/kg A9FOO	NA	7	1	STD74755	02/26/16 15:11
9M972912	WG558910-01 VBLK 8260	NA	7	1		02/26/16 15:42
9M972913	WG558910-02 20.0ug/kg LCS	NA	7	1	STD74755	02/26/16 16:13
9M972914	WG558910-03 20.0ug/kg LCSDUP	NA	7	1	STD74755	02/26/16 16:43
9M972915	WG558910-04 20.0ug/kg LCSP\&A	NA	7	1	STD74755	02/26/16 17:14
9M972916	WG558910-05 20.0ug/kg LCSP\&A	NA	7	1	STD74755	02/26/16 17:45
9M972917	L16021186-01 A 8260 4.68g	NA	7	1		02/26/16 18:16
9M972918	L16021186-02 A 8260 5.01g	NA	7	1		02/26/16 18:47
9M972919	L16021162-02 A 8260	NA	7	1		02/26/16 19:17
9M972920	L16021162-03 A 8260	NA	7	1		02/26/16 19:47
9M972921	L16021162-04 A 8260	NA	7	1		02/26/16 20:18
9M972922	L16021162-05 A 8260	NA	7	1		02/26/16 20:49
9M972923	L16021240-01 A 8260 4.65g	NA	7	1		02/26/16 21:20
9M972924	L16021240-02 A 8260 4.72g	NA	7	1		02/26/16 21:50
9M972925	L16021240-03 A 8260 4.64g	NA	7	1		02/26/16 22:21
9M972926	L16021240-04 A 8260 4.54g	NA	7	1		02/26/16 22:51
9M972927	L16021240-05 A 8260 4.79g	NA	7	1		02/26/16 23:22
9M972928	L16021240-06 A 8260 5.31g	NA	7	1		02/26/16 23:53
9M972929	L16021240-07 A 8260 5.19g	NA	7	1		02/27/16 00:23
9M972930	WG558938-01 L16021240-08 A 8260 4.71g	NA	7	1		02/27/16 00:53
9M972931	L16021236-01 A 8260 4.64g	NA	7	1		02/27/16 01:24
9M972932	WG558938-02 A MS 8260 5.31g	NA	7	1		02/27/16 01:53
9M972933	WG558938-03 A MSD 8260 5.49g	NA	7	1		02/27/16 02:24
9M972934	RINSE	NA	7	1		02/27/16 02:54
9M972935	SCREEN 100X 1306-01	NA	7	1		02/27/16 03:25
9M972936	SCREEN 100X 1306-02	NA	7	1		02/27/16 03:55
9M972937	SCREEN 100X 1306-03	NA	7	1		02/27/16 04:25
9M972938	SCREEN 100X 1306-04	NA	7	1		02/27/16 04:55
9M972939	SCREEN 100X 1306-05	NA	7	1		02/27/16 05:27
9M972940	SCREEN 100X 1306-06	NA	7	1		02/27/16 05:57
9M972941	RINSE	NA	7	1		02/27/16 06:27

Approved: February 29, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 022616
Analyst1: ADC Analyst2: NA
Method: 8260 SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD74726 Surrogate Standard: STD74815
CCV: STD74488 LCS: STD74755 MS/MSD: STD74755

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG558910

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
10	X	5	Over Calibration Range	acetone, 2-butanone
File ID: 9M972917				
	L16021186-01 IS/SS out as well			
11	X	1	Carry-over contamination	
File ID: 9M972918				
	L16021186-02			
12	X	1	Carry-over contamination	
File ID: 9M972919				
	L16021162-02			
15	X	1	Internal standard and surrogate standard failure	
File ID: 9M972922				
	L16021162-05			
19	X	1	Internal standard failure	
File ID: 9M972926				
	L16021240-04			
24	X	1	Surrogate standard failure	
File ID: 9M972931				
	L16021236-01			

Approved: February 29, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 022816
Analyst1: ADC Analyst2: NA
Method: 8260 SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD74726 Surrogate Standard: STD74815
CCV: STD74488 LCS: STD74755 MS/MSD: STD74755

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG559002

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M972942	WG559001-01 BFB 50ng 8260	NA	7	1	STD74606	02/28/16 15:15
9M972943	WG559001-02 50ug/Kg CCV 8260	NA	7	1	STD74773	02/28/16 15:39
9M972944	RINSE	NA	7	1		02/28/16 16:09
9M972945	WG559002-01 VBLK0228 BLANK 8260	NA	7	1		02/28/16 16:39
9M972946	WG559002-02 20ug/Kg LCS 8260	NA	7	1	STD74755	02/28/16 17:10
9M972947	L16021306-03 MS 8260 5.35g	NA	7	1	STD74755	02/28/16 17:41
9M972948	L16021306-04 MSD 8260 5.38g	NA	7	1	STD74755	02/28/16 18:12
9M972949	RINSE	NA	7	1		02/28/16 18:42
9M972950	L16020640-06 A 826-REF-BLK	NA	7	1		02/28/16 19:13
9M972951	L16020640-07 A 826-REF-BLK	NA	7	1		02/28/16 19:44
9M972952	L16020640-08 A 826-REF-BLK	NA	7	1		02/28/16 20:15
9M972953	L16020640-09 A 826-REF-BLK	NA	7	1		02/28/16 20:47
9M972954	L16021162-02 B 8260	NA	7	1		02/28/16 21:18
9M972955	L16021162-05 B 8260	NA	7	1		02/28/16 21:49
9M972956	L16021186-02 8260 4.57g	NA	7	1		02/28/16 22:21
9M972957	L16021236-01 8260 5.45g	NA	7	1		02/28/16 22:51
9M972958	L16021240-04 8260 4.59g	NA	7	1		02/28/16 23:22
9M972959	L16021306-01 8260 4.73g	NA	7	1		02/28/16 23:54
9M972960	L16021306-02 REF 8260 4.75g	NA	7	1		02/29/16 00:25
9M972961	L16021306-05 8260 4.66g	NA	7	1		02/29/16 00:57
9M972962	L16021306-06 8260 5.11g	NA	7	1		02/29/16 01:29
9M972963	L16021186-01 8260 0.98g	NA	7	1		02/29/16 02:00
9M972964	RINSE	NA	7	1		02/29/16 02:30
9M972965	RINSE	NA	7	1		02/29/16 03:01

Approved: February 29, 2016

Page: 1

Microbac Laboratories Inc.

Data Checklist

Date: 25-JAN-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 72995
Analytical Workgroups: WG555000

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
28-JAN-2016

Secondary Reviewer:
29-JAN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JAN-29-2016 16:00:23

Microbac Laboratories Inc.

Data Checklist

Date: 25-FEB-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 73547
Analytical Workgroups: WG558732

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
29-FEB-2016

Secondary Reviewer:
29-FEB-2016

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-29-2016 15:30:51

Microbac Laboratories Inc.

Data Checklist

Date: 29-FEB-2016
Analyst: ADC
Analyst: NA
Method: 8260B
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 73540
Analytical Workgroups: WG558910

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	X
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
29-FEB-2016

Secondary Reviewer:
29-FEB-2016

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-29-2016 15:20:17

Microbac Laboratories Inc.

Data Checklist

Date: 28-FEB-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 73549
Analytical Workgroups: WG559002

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
29-FEB-2016

Secondary Reviewer:
29-FEB-2016

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-29-2016 15:49:00

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG558910

Login Number: L16021240

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPT04(5-5.5)240216	01	02/24/16					02/26/2016	2.2	14		02/26/16	2.5	14	
18DPT04(15-15.5)240216	02	02/24/16					02/26/2016	2.2	14		02/26/16	2.5	14	
18CPT04(20-21)240216	03	02/24/16					02/26/2016	2.1	14		02/26/16	2.5	14	
18DPT04(25-25.5)240216	05	02/24/16					02/26/2016	2.1	14		02/26/16	2.5	14	
18DPT04(29-30)240216	06	02/24/16					02/26/2016	2.1	14		02/26/16	2.5	14	
18DPT04(36.5-37)240216	07	02/24/16					02/26/2016	2	14		02/27/16	2.4	14	
18DPT04(34-34.5)240216	08	02/24/16					02/26/2016	2	14		02/27/16	2.4	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4651867
Report generated 02/29/2016 16:47

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG559002

Login Number: L16021240

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPT04(20-21)240216FD	04	02/24/16					02/28/2016	4.1	14		02/28/16	4.5	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4651867
Report generated 02/29/2016 16:47

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16021240
Instrument Id: HPMS9
Workgroup (AAB#): WG558910

Method: 8260
CAL ID: HPMS9-25-FEB-16
Matrix: Soil

Sample Number	Dilution	Tag	1	2	3	4
L16021240-01	1.00	01	94.6	99.7	111	108
L16021240-02	1.00	01	93.6	99.4	114	111
L16021240-03	1.00	01	95.2	102	114	113
L16021240-05	1.00	01	101	102	111	109
L16021240-06	1.00	01	93.4	98.7	111	109
L16021240-07	1.00	01	102	102	110	106
L16021240-08	1.00	01	95.6	97.0	110	107
WG558910-01	1.00	01	99.8	102	114	111
WG558910-02	1.00	01	96.1	102	112	107
WG558910-03	1.00	01	101	103	112	108
WG558910-04	1.00	01	98.7	103	112	107
WG558910-05	1.00	01	96.7	102	111	108

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	80	-	120
2 - Dibromofluoromethane	80	-	120
3 - 4-Bromofluorobenzene	85	-	120
4 - Toluene-d8	85	-	115

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4651875
Report generated: 02/29/2016 16:47

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16021240
Instrument Id: HPMS9
Workgroup (AAB#): WG559002

Method: 8260
CAL ID: HPMS9-25-FEB-16
Matrix: Soil

Sample Number	Dilution	Tag	1	2	3	4
L16021240-04	1.00	02	97.9	99.2	114	110
WG559002-01	1.00	01	104	102	113	111
WG559002-02	1.00	01	100	100	111	108

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	80	-	120
2 - Dibromofluoromethane	80	-	120
3 - 4-Bromofluorobenzene	85	-	120
4 - Toluene-d8	85	-	115

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4651875
Report generated: 02/29/2016 16:47

METHOD BLANK SUMMARY

Login Number: L16021240
Blank File ID: 9M972912
Prep Date: 02/26/16 15:42
Analyzed Date: 02/26/16 15:42
Analyst: ADC

Work Group: WG558910
Blank Sample ID: WG558910-01
Instrument ID: HPMS9
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG558910-02	9M972913	02/26/16 16:13	01
LCS2	WG558910-03	9M972914	02/26/16 16:43	01
LCS-P_A	WG558910-04	9M972915	02/26/16 17:14	01
LCS-P_A	WG558910-05	9M972916	02/26/16 17:45	01
18CPT04(5-5.5)240216	L16021240-01	9M972923	02/26/16 21:20	01
18DPT04(15-15.5)240216	L16021240-02	9M972924	02/26/16 21:50	01
18CPT04(20-21)240216	L16021240-03	9M972925	02/26/16 22:21	01
18DPT04(25-25.5)240216	L16021240-05	9M972927	02/26/16 23:22	01
18DPT04(29-30)240216	L16021240-06	9M972928	02/26/16 23:53	01
18DPT04(36.5-37)240216	L16021240-07	9M972929	02/27/16 00:23	01
18DPT04(34-34.5)240216	L16021240-08	9M972930	02/27/16 00:53	01

Report Name: BLANK_SUMMARY
PDF File ID: 4651868
Report generated 02/29/2016 16:47

METHOD BLANK SUMMARY

Login Number: L16021240
Blank File ID: 9M972945
Prep Date: 02/28/16 16:39
Analyzed Date: 02/28/16 16:39
Analyst: FJB

Work Group: WG559002
Blank Sample ID: WG559002-01
Instrument ID: HPMS9
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG559002-02	9M972946	02/28/16 17:10	01
18CPT04(20-21)240216FD	L16021240-04	9M972958	02/28/16 23:22	02

Report Name: BLANK_SUMMARY
PDF File ID: 4651868
Report generated 02/29/2016 16:47

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16021240 Prep Date: 02/26/16 15:42 Sample ID: WG558910-01
Instrument ID: HPMS9 Run Date: 02/26/16 15:42 Prep Method: 5030B/5030C/503
File ID: 9M972912 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG558910 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-25-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	5.00	20.0	5.00	1	U
Benzene	0.500	5.00	0.500	1	U
Bromobenzene	0.500	5.00	0.500	1	U
Bromochloromethane	1.00	5.00	1.00	1	U
Bromodichloromethane	0.500	5.00	0.500	1	U
Bromoform	0.500	5.00	0.500	1	U
Bromomethane	1.00	5.00	1.00	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.500	5.00	0.500	1	U
sec-Butylbenzene	0.500	5.00	0.500	1	U
tert-Butylbenzene	0.500	5.00	0.500	1	U
Carbon disulfide	0.500	5.00	0.500	1	U
Carbon tetrachloride	0.500	5.00	0.500	1	U
Chlorobenzene	0.500	5.00	0.500	1	U
Chlorodibromomethane	0.500	5.00	0.500	1	U
Chloroethane	1.00	5.00	1.00	1	U
Chloroform	0.500	5.00	0.500	1	U
Chloromethane	2.00	10.0	2.00	1	U
2-Chlorotoluene	0.500	5.00	0.500	1	U
4-Chlorotoluene	0.500	5.00	0.500	1	U
1,2-Dibromo-3-chloropropane	2.00	10.0	2.00	1	U
1,2-Dibromoethane	0.500	5.00	0.500	1	U
Dibromomethane	0.500	5.00	0.500	1	U
1,2-Dichlorobenzene	0.500	5.00	0.500	1	U
1,3-Dichlorobenzene	0.500	5.00	0.500	1	U
1,4-Dichlorobenzene	0.500	5.00	0.500	1	U
Dichlorodifluoromethane	1.00	5.00	1.00	1	U
1,1-Dichloroethane	1.00	5.00	1.00	1	U
1,2-Dichloroethane	0.500	5.00	0.500	1	U
1,1-Dichloroethene	0.500	5.00	0.500	1	U
cis-1,2-Dichloroethene	0.500	5.00	0.500	1	U
trans-1,2-Dichloroethene	0.500	5.00	0.500	1	U
1,2-Dichloropropane	0.500	5.00	0.500	1	U
1,3-Dichloropropane	0.500	5.00	0.500	1	U
2,2-Dichloropropane	0.500	5.00	0.500	1	U
cis-1,3-Dichloropropene	0.500	5.00	0.500	1	U
trans-1,3-Dichloropropene	0.500	5.00	0.500	1	U
1,1-Dichloropropene	0.500	5.00	0.500	1	U
Ethylbenzene	0.500	5.00	0.500	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.500	5.00	0.500	1	U
Isopropylbenzene	0.500	5.00	0.500	1	U

Report Name: BLANK
PDF ID: 4651869
29-FEB-2016 16:47

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16021240 Prep Date: 02/26/16 15:42 Sample ID: WG558910-01
Instrument ID: HPMS9 Run Date: 02/26/16 15:42 Prep Method: 5030B/5030C/503
File ID: 9M972912 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG558910 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-25-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.500	5.00	0.500	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	1.00	5.00	1.00	1	U
Naphthalene	0.500	5.00	0.683	1	J
n-Propylbenzene	0.500	5.00	0.500	1	U
Styrene	0.500	5.00	0.500	1	U
1,1,1,2-Tetrachloroethane	0.500	5.00	0.500	1	U
1,1,2,2-Tetrachloroethane	0.500	5.00	0.500	1	U
Tetrachloroethene	0.500	5.00	0.500	1	U
Toluene	0.500	5.00	0.500	1	U
1,2,3-Trichlorobenzene	0.500	5.00	0.604	1	J
1,2,4-Trichlorobenzene	0.500	5.00	0.645	1	J
1,1,1-Trichloroethane	0.500	5.00	0.500	1	U
1,1,2-Trichloroethane	0.500	5.00	0.500	1	U
Trichloroethene	0.500	5.00	0.500	1	U
Trichlorofluoromethane	1.00	5.00	1.00	1	U
1,2,3-Trichloropropane	1.00	5.00	1.00	1	U
1,2,4-Trimethylbenzene	0.500	5.00	0.500	1	U
1,3,5-Trimethylbenzene	0.500	5.00	0.500	1	U
Vinyl chloride	1.00	5.00	1.00	1	U
o-Xylene	0.500	5.00	0.500	1	U
m-,p-Xylene	0.500	5.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	102	80 - 120	PASS
1,2-Dichloroethane-d4	99.8	80 - 120	PASS
Toluene-d8	111	85 - 115	PASS
4-Bromofluorobenzene	114	85 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4651869
29-FEB-2016 16:47

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16021240 Prep Date: 02/28/16 16:39 Sample ID: WG559002-01
Instrument ID: HPMS9 Run Date: 02/28/16 16:39 Prep Method: 5030B/5030C/503
File ID: 9M972945 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG559002 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-25-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	5.00	20.0	5.00	1	U
Benzene	0.500	5.00	0.500	1	U
Bromobenzene	0.500	5.00	0.500	1	U
Bromochloromethane	1.00	5.00	1.00	1	U
Bromodichloromethane	0.500	5.00	0.500	1	U
Bromoform	0.500	5.00	0.500	1	U
Bromomethane	1.00	5.00	1.00	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.500	5.00	0.500	1	U
sec-Butylbenzene	0.500	5.00	0.500	1	U
tert-Butylbenzene	0.500	5.00	0.500	1	U
Carbon disulfide	0.500	5.00	0.500	1	U
Carbon tetrachloride	0.500	5.00	0.500	1	U
Chlorobenzene	0.500	5.00	0.500	1	U
Chlorodibromomethane	0.500	5.00	0.500	1	U
Chloroethane	1.00	5.00	1.00	1	U
Chloroform	0.500	5.00	0.500	1	U
Chloromethane	2.00	10.0	2.00	1	U
2-Chlorotoluene	0.500	5.00	0.500	1	U
4-Chlorotoluene	0.500	5.00	0.500	1	U
1,2-Dibromo-3-chloropropane	2.00	10.0	2.00	1	U
1,2-Dibromoethane	0.500	5.00	0.500	1	U
Dibromomethane	0.500	5.00	0.500	1	U
1,2-Dichlorobenzene	0.500	5.00	0.500	1	U
1,3-Dichlorobenzene	0.500	5.00	0.500	1	U
1,4-Dichlorobenzene	0.500	5.00	0.500	1	U
Dichlorodifluoromethane	1.00	5.00	1.00	1	U
1,1-Dichloroethane	1.00	5.00	1.00	1	U
1,2-Dichloroethane	0.500	5.00	0.500	1	U
1,1-Dichloroethene	0.500	5.00	0.500	1	U
cis-1,2-Dichloroethene	0.500	5.00	0.500	1	U
trans-1,2-Dichloroethene	0.500	5.00	0.500	1	U
1,2-Dichloropropane	0.500	5.00	0.500	1	U
1,3-Dichloropropane	0.500	5.00	0.500	1	U
2,2-Dichloropropane	0.500	5.00	0.500	1	U
cis-1,3-Dichloropropene	0.500	5.00	0.500	1	U
trans-1,3-Dichloropropene	0.500	5.00	0.500	1	U
1,1-Dichloropropene	0.500	5.00	0.500	1	U
Ethylbenzene	0.500	5.00	0.500	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.500	5.00	0.500	1	U
Isopropylbenzene	0.500	5.00	0.500	1	U

Report Name: BLANK
PDF ID: 4651869
29-FEB-2016 16:47

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16021240 Prep Date: 02/28/16 16:39 Sample ID: WG559002-01
Instrument ID: HPMS9 Run Date: 02/28/16 16:39 Prep Method: 5030B/5030C/503
File ID: 9M972945 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG559002 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-25-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.500	5.00	0.500	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	1.00	5.00	1.00	1	U
Naphthalene	0.500	5.00	0.500	1	U
n-Propylbenzene	0.500	5.00	0.500	1	U
Styrene	0.500	5.00	0.500	1	U
1,1,1,2-Tetrachloroethane	0.500	5.00	0.500	1	U
1,1,2,2-Tetrachloroethane	0.500	5.00	0.500	1	U
Tetrachloroethene	0.500	5.00	0.500	1	U
Toluene	0.500	5.00	0.500	1	U
1,2,3-Trichlorobenzene	0.500	5.00	0.500	1	U
1,2,4-Trichlorobenzene	0.500	5.00	0.500	1	U
1,1,1-Trichloroethane	0.500	5.00	0.500	1	U
1,1,2-Trichloroethane	0.500	5.00	0.500	1	U
Trichloroethene	0.500	5.00	0.500	1	U
Trichlorofluoromethane	1.00	5.00	1.00	1	U
1,2,3-Trichloropropane	1.00	5.00	1.00	1	U
1,2,4-Trimethylbenzene	0.500	5.00	0.500	1	U
1,3,5-Trimethylbenzene	0.500	5.00	0.500	1	U
Vinyl chloride	1.00	5.00	1.00	1	U
o-Xylene	0.500	5.00	0.500	1	U
m-,p-Xylene	0.500	5.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	102	80 - 120	PASS
1,2-Dichloroethane-d4	104	80 - 120	PASS
Toluene-d8	111	85 - 115	PASS
4-Bromofluorobenzene	113	85 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4651869
29-FEB-2016 16:47

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16021240 | Run Date: 02/28/2016 | Sample ID: WG559002-02
Instrument ID: HPMS9 | Run Time: 17:10 | Prep Method: 5030B/5030C/503
File ID: 9M972946 | Analyst: FJB | Method: 8260B
Workgroup (AAB#): WG559002 | Matrix: Soil | Units: ug/kg
QC Key: DOD4 | Lot#: STD74755 | Cal ID: HPMS9-25-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	20.1	101	20 - 160	
Benzene	20.0	21.9	110	75 - 125	
Bromobenzene	20.0	22.1	111	65 - 120	
Bromochloromethane	20.0	21.6	108	70 - 125	
Bromodichloromethane	20.0	20.8	104	70 - 130	
Bromoform	20.0	19.0	94.8	55 - 135	
Bromomethane	20.0	21.0	105	30 - 160	
2-Butanone	20.0	20.6	103	30 - 160	
n-Butylbenzene	20.0	20.6	103	65 - 140	
sec-Butylbenzene	20.0	22.2	111	65 - 130	
tert-Butylbenzene	20.0	23.1	116	65 - 130	
Carbon disulfide	20.0	19.5	97.6	45 - 160	
Carbon tetrachloride	20.0	19.9	99.4	65 - 135	
Chlorobenzene	20.0	22.7	114	75 - 125	
Chlorodibromomethane	20.0	20.6	103	65 - 130	
Chloroethane	20.0	22.5	112	40 - 155	
Chloroform	20.0	20.0	100	70 - 125	
Chloromethane	20.0	22.8	114	50 - 130	
2-Chlorotoluene	20.0	23.8	119	70 - 130	
4-Chlorotoluene	20.0	21.8	109	75 - 125	
1,2-Dibromo-3-chloropropane	20.0	20.7	104	40 - 135	
1,2-Dibromoethane	20.0	22.0	110	70 - 125	
Dibromomethane	20.0	20.6	103	75 - 130	
1,2-Dichlorobenzene	20.0	22.2	111	75 - 120	
1,3-Dichlorobenzene	20.0	21.3	107	70 - 125	
1,4-Dichlorobenzene	20.0	21.6	108	70 - 125	
Dichlorodifluoromethane	20.0	28.6	143	35 - 135	*
1,1-Dichloroethane	20.0	20.6	103	75 - 125	
1,2-Dichloroethane	20.0	21.9	109	70 - 135	
1,1-Dichloroethene	20.0	21.2	106	65 - 135	
cis-1,2-Dichloroethene	20.0	22.6	113	65 - 125	
trans-1,2-Dichloroethene	20.0	22.8	114	65 - 135	
1,2-Dichloropropane	20.0	23.2	116	70 - 120	
1,3-Dichloropropane	20.0	23.4	117	75 - 125	
2,2-Dichloropropane	20.0	21.6	108	65 - 135	
cis-1,3-Dichloropropene	20.0	23.1	115	70 - 125	
trans-1,3-Dichloropropene	20.0	22.2	111	65 - 125	
1,1-Dichloropropene	20.0	20.6	103	70 - 135	
Ethylbenzene	20.0	22.9	115	75 - 125	
2-Hexanone	20.0	21.9	109	45 - 145	
Hexachlorobutadiene	20.0	18.4	92.0	55 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4651877
Report generated: 02/29/2016 15:27

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16021240 | Run Date: 02/28/2016 | Sample ID: WG559002-02
Instrument ID: HPMS9 | Run Time: 17:10 | Prep Method: 5030B/5030C/503
File ID: 9M972946 | Analyst: FJB | Method: 8260B
Workgroup (AAB#): WG559002 | Matrix: Soil | Units: ug/kg
QC Key: DOD4 | Lot#: STD74755 | Cal ID: HPMS9-25-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	22.6	113	75 - 130	
p-Isopropyltoluene	20.0	22.0	110	75 - 135	
4-Methyl-2-pentanone	20.0	22.0	110	45 - 145	
Methylene chloride	20.0	21.6	108	55 - 140	
Naphthalene	20.0	19.8	99.1	40 - 125	
n-Propylbenzene	20.0	23.3	116	65 - 135	
Styrene	20.0	22.7	113	75 - 125	
1,1,1,2-Tetrachloroethane	20.0	21.4	107	75 - 125	
1,1,2,2-Tetrachloroethane	20.0	21.5	107	55 - 130	
Tetrachloroethene	20.0	21.4	107	65 - 140	
Toluene	20.0	22.4	112	70 - 125	
1,2,3-Trichlorobenzene	20.0	20.3	102	60 - 135	
1,2,4-Trichlorobenzene	20.0	19.5	97.7	65 - 130	
1,1,1-Trichloroethane	20.0	20.7	103	70 - 135	
1,1,2-Trichloroethane	20.0	23.1	115	60 - 125	
Trichloroethene	20.0	22.1	111	75 - 125	
Trichlorofluoromethane	20.0	20.9	105	25 - 185	
1,2,3-Trichloropropane	20.0	23.5	117	65 - 130	
1,2,4-Trimethylbenzene	20.0	21.4	107	65 - 135	
1,3,5-Trimethylbenzene	20.0	23.1	115	65 - 135	
Vinyl chloride	20.0	23.8	119	60 - 125	
o-Xylene	20.0	23.2	116	75 - 125	
m-,p-Xylene	40.0	44.8	112	80 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	100	80 - 120	PASS
1,2-Dichloroethane-d4	100	80 - 120	PASS
Toluene-d8	108	85 - 115	PASS
4-Bromofluorobenzene	111	85 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4651877
Report generated: 02/29/2016 15:27

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16021240 Analyst: ADC Prep Method: 5030B/5030C/503
Instrument ID: HPMS9 Matrix: Soil Method: 8260B
Workgroup (AAB#): WG558910 Units: ug/kg
QC Key: DOD4 Lot #:

Sample ID: WG558910-02 LCS File ID: 9M972913 Run Date: 02/26/2016 16:13
Sample ID: WG558910-03 LCS2 File ID: 9M972914 Run Date: 02/26/2016 16:43

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	21.4	107	20.0	21.4	107	0.201	75 - 125	30	
1,1,1-Trichloroethane	20.0	20.6	103	20.0	19.7	98.5	4.63	70 - 135	30	
1,1,2,2-Tetrachloroethane	20.0	21.7	109	20.0	21.8	109	0.552	55 - 130	30	
1,1,2-Trichloroethane	20.0	22.1	110	20.0	21.7	109	1.51	60 - 125	30	
1,1-Dichloroethane	20.0	20.4	102	20.0	19.4	97.2	4.72	75 - 125	30	
1,1-Dichloroethene	20.0	20.1	101	20.0	19.2	96.2	4.57	65 - 135	30	
1,1-Dichloropropene	20.0	20.6	103	20.0	19.7	98.4	4.57	70 - 135	30	
1,2,3-Trichlorobenzene	20.0	20.6	103	20.0	19.3	96.4	6.55	60 - 135	30	
1,2,3-Trichloropropane	20.0	21.9	109	20.0	21.3	106	2.84	65 - 130	30	
1,2,4-Trichlorobenzene	20.0	20.8	104	20.0	20.1	101	3.15	65 - 130	30	
1,2,4-Trimethylbenzene	20.0	22.4	112	20.0	21.7	109	2.96	65 - 135	30	
1,2-Dibromo-3-chloropropane	20.0	20.1	101	20.0	19.2	95.9	4.86	40 - 135	30	
1,2-Dibromoethane	20.0	21.0	105	20.0	20.7	103	1.27	70 - 125	30	
1,2-Dichlorobenzene	20.0	22.2	111	20.0	21.5	108	3.16	75 - 120	30	
1,2-Dichloroethane	20.0	20.9	105	20.0	19.8	99.2	5.19	70 - 135	30	
1,2-Dichloropropane	20.0	22.1	110	20.0	22.3	111	0.967	70 - 120	30	
1,3,5-Trimethylbenzene	20.0	23.8	119	20.0	22.8	114	4.18	65 - 135	30	
1,3-Dichlorobenzene	20.0	22.3	111	20.0	21.0	105	5.80	70 - 125	30	
1,3-Dichloropropane	20.0	22.7	114	20.0	22.0	110	3.40	75 - 125	30	
1,4-Dichlorobenzene	20.0	22.8	114	20.0	21.7	109	4.75	70 - 125	30	
2,2-Dichloropropane	20.0	20.8	104	20.0	19.9	99.4	4.66	65 - 135	30	
2-Butanone	20.0	19.3	96.7	20.0	20.4	102	5.39	30 - 160	30	
2-Chlorotoluene	20.0	24.5	123	20.0	23.2	116	5.31	70 - 130	30	
2-Hexanone	20.0	20.1	100	20.0	19.7	98.7	1.78	45 - 145	30	
4-Chlorotoluene	20.0	22.7	114	20.0	22.5	112	1.15	75 - 125	30	
4-Methyl-2-pentanone	20.0	20.5	102	20.0	20.0	100	2.18	45 - 145	30	
Acetone	20.0	17.9	89.7	20.0	18.9	94.7	5.35	20 - 160	30	
Benzene	20.0	21.1	105	20.0	20.8	104	1.17	75 - 125	30	
Bromobenzene	20.0	21.8	109	20.0	21.5	107	1.58	65 - 120	30	
Bromochloromethane	20.0	21.5	107	20.0	20.5	102	4.74	70 - 125	30	
Bromodichloromethane	20.0	19.8	98.9	20.0	19.7	98.7	0.168	70 - 130	30	
Bromoform	20.0	18.1	90.6	20.0	19.0	94.9	4.67	55 - 135	30	
Bromomethane	20.0	21.1	106	20.0	20.0	100	5.52	30 - 160	30	
Carbon disulfide	20.0	19.4	97.1	20.0	18.9	94.6	2.59	45 - 160	30	
Carbon tetrachloride	20.0	19.7	98.3	20.0	19.1	95.3	3.11	65 - 135	30	
Chlorobenzene	20.0	22.3	111	20.0	22.2	111	0.369	75 - 125	30	
Chloroethane	20.0	22.6	113	20.0	21.0	105	7.22	40 - 155	30	
Chloroform	20.0	20.5	102	20.0	20.1	101	1.80	70 - 125	30	
Chloromethane	20.0	22.4	112	20.0	21.1	106	6.08	50 - 130	30	
cis-1,2-Dichloroethene	20.0	22.6	113	20.0	22.2	111	1.64	65 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4651870
Report generated: 02/29/2016 16:47

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16021240 Analyst: ADC Prep Method: 5030B/5030C/503
Instrument ID: HPMS9 Matrix: Soil Method: 8260B
Workgroup (AAB#): WG558910 Units: ug/kg
QC Key: DOD4 Lot #:

Sample ID: WG558910-02 LCS File ID: 9M972913 Run Date: 02/26/2016 16:13
Sample ID: WG558910-03 LCS2 File ID: 9M972914 Run Date: 02/26/2016 16:43

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	22.6	113	20.0	22.2	111	1.83	70 - 125	30	
Chlorodibromomethane	20.0	19.8	98.8	20.0	19.4	96.9	1.97	65 - 130	30	
Dibromomethane	20.0	19.9	99.3	20.0	20.1	100	1.13	75 - 130	30	
Dichlorodifluoromethane	20.0	27.5	138	20.0	23.6	118	15.2	35 - 135	30	*
Ethylbenzene	20.0	22.7	114	20.0	22.3	111	1.94	75 - 125	30	
Hexachlorobutadiene	20.0	20.6	103	20.0	19.2	95.9	7.19	55 - 140	30	
Isopropylbenzene	20.0	22.7	113	20.0	21.9	110	3.36	75 - 130	30	
m-,p-Xylene	40.0	45.1	113	40.0	45.0	113	0.0482	80 - 125	30	
Methylene chloride	20.0	20.6	103	20.0	20.3	102	1.31	55 - 140	30	
n-Butylbenzene	20.0	21.7	108	20.0	20.2	101	7.21	65 - 140	30	
n-Propylbenzene	20.0	24.0	120	20.0	23.0	115	3.98	65 - 135	30	
Naphthalene	20.0	19.1	95.5	20.0	18.7	93.4	2.27	40 - 125	30	
o-Xylene	20.0	23.2	116	20.0	23.0	115	1.02	75 - 125	30	
p-Isopropyltoluene	20.0	23.4	117	20.0	21.6	108	7.75	75 - 135	30	
sec-Butylbenzene	20.0	23.4	117	20.0	22.1	111	5.40	65 - 130	30	
Styrene	20.0	22.6	113	20.0	21.8	109	3.43	75 - 125	30	
tert-Butylbenzene	20.0	25.0	125	20.0	23.6	118	5.54	65 - 130	30	
Tetrachloroethene	20.0	21.6	108	20.0	20.7	103	4.51	65 - 140	30	
Toluene	20.0	22.4	112	20.0	21.7	109	2.87	70 - 125	30	
trans-1,2-Dichloroethene	20.0	21.9	109	20.0	20.8	104	4.86	65 - 135	30	
trans-1,3-Dichloropropene	20.0	21.1	106	20.0	20.5	102	3.21	65 - 125	30	
Trichloroethene	20.0	21.8	109	20.0	20.5	102	6.44	75 - 125	30	
Trichlorofluoromethane	20.0	20.5	103	20.0	18.9	94.4	8.30	25 - 185	30	
Vinyl chloride	20.0	25.7	129	20.0	23.5	118	8.97	60 - 125	30	*

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	96.1	101	80 - 120	PASS
Dibromofluoromethane	102	103	80 - 120	PASS
4-Bromofluorobenzene	112	112	85 - 120	PASS
Toluene-d8	107	108	85 - 115	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4651870
Report generated: 02/29/2016 16:47

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16021240
Instrument: HPMS9
Analyst: FJB
Workgroup: WG555000

Tune ID: WG555000-01
Run Date: 01/25/2016
Run Time: 10:27
File ID: 9M972470
Cal ID: HPMS9 - 25-JAN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	23.0	10289	PASS
75.0	95.0	30.0	60.0	49.3	22030	PASS
95.0	95.0	100	100	100	44728	PASS
96.0	95.0	5.00	9.00	6.98	3122	PASS
173	174	0	2.00	0.381	160	PASS
174	95.0	50.0	100	93.9	41989	PASS
175	174	5.00	9.00	6.62	2778	PASS
176	174	95.0	101	95.6	40133	PASS
177	176	5.00	9.00	6.39	2564	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG555000-02	STD-S	01	01/25/2016 11:22	
WG555000-03	STD-S	01	01/25/2016 11:52	
WG555000-04	STD-S	01	01/25/2016 12:23	
WG555000-05	STD-CCV-S	01	01/25/2016 12:53	
WG555000-06	STD-S	01	01/25/2016 13:23	
WG555000-07	STD-S	01	01/25/2016 13:54	
WG555000-08	STD-S	01	01/25/2016 14:25	
WG555000-09	STD-S	01	01/25/2016 14:56	
WG555000-10	SSCV-S	01	01/25/2016 15:56	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4651872
Report generated 02/29/2016 16:47

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16021240
Instrument: HPMS9
Analyst: ADC
Workgroup: WG558732

Tune ID: WG558732-01
Run Date: 02/25/2016
Run Time: 14:45
File ID: 9M972894
Cal ID: HPMS9 - 25-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.2	5378	PASS
75.0	95.0	30.0	60.0	49.1	13067	PASS
95.0	95.0	100	100	100	26621	PASS
96.0	95.0	5.00	9.00	6.32	1683	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	85.8	22851	PASS
175	174	5.00	9.00	6.50	1485	PASS
176	174	95.0	101	98.3	22461	PASS
177	176	5.00	9.00	7.21	1619	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG558732-02	STD-CCV-S	01	02/25/2016 15:48	
WG558732-03	STD-S	01	02/25/2016 16:55	
WG558732-04	STD-S	01	02/25/2016 17:27	
WG558732-05	STD-S	01	02/25/2016 17:57	
WG558732-06	STD-S	01	02/25/2016 18:28	
WG558732-07	STD-S	01	02/25/2016 18:59	
WG558732-08	STD-S	01	02/25/2016 19:29	
WG558732-09	STD-S	01	02/25/2016 20:00	
WG558732-10	STD-S	01	02/25/2016 20:30	
WG558732-11	SSCV-S	01	02/25/2016 21:31	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4651872
Report generated 02/29/2016 16:47

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16021240
Instrument: HPMS9
Analyst: ADC
Workgroup: WG558909

Tune ID: WG558909-01
Run Date: 02/26/2016
Run Time: 13:44
File ID: 9M972908
Cal ID: HPMS9 - 25-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.5	7293	PASS
75.0	95.0	30.0	60.0	50.4	16315	PASS
95.0	95.0	100	100	100	32352	PASS
96.0	95.0	5.00	9.00	7.11	2301	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	78.1	25282	PASS
175	174	5.00	9.00	6.70	1693	PASS
176	174	95.0	101	98.1	24798	PASS
177	176	5.00	9.00	5.66	1403	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG558909-02	CCV-S	01	02/26/2016 14:40	
WG558910-01	BLANK	01	02/26/2016 15:42	
WG558910-02	LCS	01	02/26/2016 16:13	
WG558910-03	LCS2	01	02/26/2016 16:43	
WG558910-04	LCS-P_A	01	02/26/2016 17:14	
WG558910-05	LCS-P_A	01	02/26/2016 17:45	
L16021240-01	18CPT04(5-5.5)240216	01	02/26/2016 21:20	
L16021240-02	18DPT04(15-15.5)240216	01	02/26/2016 21:50	
L16021240-03	18CPT04(20-21)240216	01	02/26/2016 22:21	
L16021240-05	18DPT04(25-25.5)240216	01	02/26/2016 23:22	
L16021240-06	18DPT04(29-30)240216	01	02/26/2016 23:53	
L16021240-07	18DPT04(36.5-37)240216	01	02/27/2016 00:23	
L16021240-08	18DPT04(34-34.5)240216	01	02/27/2016 00:53	
WG558938-02	MS	01	02/27/2016 01:53	*
WG558938-03	MSD	01	02/27/2016 02:24	*

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4651872
Report generated 02/29/2016 16:47

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16021240
Instrument: HPMS9
Analyst: FJB
Workgroup: WG559001

Tune ID: WG559001-01
Run Date: 02/28/2016
Run Time: 15:15
File ID: 9M972942
Cal ID: HPMS9 - 25-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.8	9950	PASS
75.0	95.0	30.0	60.0	48.0	22972	PASS
95.0	95.0	100	100	100	47813	PASS
96.0	95.0	5.00	9.00	6.60	3156	PASS
173	174	0	2.00	0.277	115	PASS
174	95.0	50.0	100	86.9	41573	PASS
175	174	5.00	9.00	6.30	2621	PASS
176	174	95.0	101	95.5	39704	PASS
177	176	5.00	9.00	6.04	2399	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG559001-02	CCV-S	01	02/28/2016 15:39	
WG559002-01	BLANK	01	02/28/2016 16:39	
WG559002-02	LCS	01	02/28/2016 17:10	
L16021240-04	18CPT04(20-21)240216FD	02	02/28/2016 23:22	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4651872
Report generated 02/29/2016 16:47

Calibration Table Report
Method: A9FOO_SL.M
Title: FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Calibration: Wed Jan 27 09:49:02 2016
Curve: WG555000
Calibration Files

Compound	5 9M972472.D	20 9M972473.D	50 9M972474.D	100 9M972475.D	200 9M972476.D	300 9M972477.D	400 9M972478.D	500 9M972479.D	Avg	%RSD	R^2 Linear
Fluorobenzene	ISTD										
Acetonitrile		0.053	0.046	0.048	0.052	0.046	0.052	0.054	0.050	6.657	
3-Chloro-1-propene	0.498	0.524	0.450	0.519	0.514	0.434	0.507	0.503	0.494	6.719	
2-Chloro-1,3-butadiene	0.534	0.576	0.519	0.592	0.585	0.509	0.593	0.584	0.561	6.202	
Ethyl Acetate		0.333	0.313	0.339	0.338	0.300	0.341	0.344	0.330	5.124	
Methacrylonitrile	0.102	0.109	0.101	0.112	0.110	0.096	0.112	0.112	0.107	5.912	
Isobutyl Alcohol	0.014	0.018	0.018	0.021	0.024	0.021	0.025	0.025	0.021	18.016	0.993
1-Butanol		0.010	0.013	0.015	0.017	0.015	0.018	0.018	0.015	17.838	0.992
Methyl methacrylate	0.236	0.246	0.231	0.265	0.265	0.231	0.271	0.269	0.252	7.005	
2-Nitropropane	0.069	0.073	0.074	0.083	0.089	0.079	0.093	0.095	0.082	12.090	
Chlorobenzene-d5	ISTD										
Cyclohexanone		0.020	0.022	0.025	0.028	0.023	0.027	0.028	0.025	12.963	
1,4-Dichlorobenzene-d4	ISTD										

Wed Jan 27 10:01:56 2016

Calibration Table Report
Method: 8260SL.M
Title: 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Calibration: Fri Feb 26 11:38:33 2016
Curve: WG558732
Calibration Files

Compound	0.5 9M972898.D	1 9M972899.D	2 9M972900.D	5 9M972901.D	20 9M972902.D	50 9M972896.D	100 9M972903.D	200 9M972904.D	300 9M972905.D	Avg	%RSD	R^2 Linear	Quadratic
Fluorobenzene	ISTD												
Dichlorodifluoromethane			0.338	0.271	0.399	0.396	0.318	0.357	0.307	0.341	13.734		
Chloromethane			0.372	0.280	0.331	0.361	0.296	0.346	0.304	0.327	10.674		
Vinyl Chloride		0.250	0.318	0.314	0.373	0.372	0.342	0.355	0.296	0.327	12.768		
1,3-Butadiene			0.347	0.266	0.328	0.330	0.297	0.321	0.293	0.312	8.837		
Bromomethane		0.236	0.267	0.181	0.206	0.208	0.186	0.217	0.199	0.213	13.250		
Chloroethane			0.127	0.116	0.142	0.165	0.139	0.173	0.160	0.146	14.271		
Trichlorofluoromethane		0.519	0.518	0.416	0.503	0.514	0.470	0.517	0.473	0.491	7.357		
Diethyl ether		0.215	0.246	0.217	0.243	0.241	0.214		0.231	0.230	6.215		
Isoprene			0.302	0.251	0.303	0.302	0.282	0.318	0.295	0.293	7.364		
Acrolein		0.041	0.046	0.045	0.046	0.048	0.046		0.050	0.046	6.212		
1,1,2-Trichloro-1,2,2-Trifluoroethane			0.252	0.234	0.255	0.261	0.248	0.273	0.251	0.253	4.699		
Acetone				0.179	0.138	0.128	0.119	0.124		0.138	17.810	0.999	
1,1-Dichloroethene		0.464	0.511	0.400	0.482	0.471	0.454	0.500	0.456	0.467	7.277		
Tert-Butyl Alcohol			0.057	0.046	0.055	0.051	0.047			0.051	8.698		
Dimethyl Sulfide		0.150	0.203	0.186	0.207	0.211	0.196	0.224	0.203	0.197	11.169		
Iodomethane				0.076	0.109	0.154	0.126	0.157	0.142	0.127	24.315	0.993	
Methyl acetate			0.282	0.223	0.279	0.262	0.240	0.258	0.234	0.254	8.867		
Methylene Chloride			0.271	0.217	0.263	0.261	0.240	0.280	0.249	0.254	8.252		
Carbon Disulfide			0.795	0.626	0.740	0.737	0.678	0.761	0.702	0.720	7.788		
Acrylonitrile		0.117	0.127	0.114	0.130	0.135	0.123		0.134	0.126	6.412		
Methyl Tert Butyl Ether		0.669	0.722	0.642	0.760	0.786	0.713	0.788	0.718	0.725	7.239		
trans-1,2-Dichloroethene		0.400	0.422	0.377	0.430	0.438	0.407	0.446	0.412	0.416	5.376		
n-Hexane			0.456	0.385	0.420	0.424	0.429	0.464	0.428	0.430	5.986		
Diisopropyl ether		0.938	1.068	0.928	1.071	1.051	0.931		0.995	0.998	6.627		
Vinyl Acetate			0.593	0.519	0.545	0.602	0.554	0.608	0.558	0.569	5.855		
1,1-Dichloroethane		0.548	0.558	0.445	0.532	0.549	0.499	0.553	0.500	0.523	7.454		
Ethyl-Tert-Butyl ether		0.871	0.992	0.852	0.990	0.988	0.865		0.934	0.928	6.918		
2-Butanone			0.177	0.152	0.156	0.166	0.156	0.172	0.149	0.161	6.650		
Propionitrile		0.042	0.055	0.048	0.053	0.051	0.048		0.049	0.049	8.494		
2,2-Dichloropropane			0.428	0.330	0.377	0.415	0.383	0.417	0.383	0.390	8.575		
cis-1,2-Dichloroethene		0.247	0.257	0.248	0.287	0.297	0.273	0.299	0.277	0.273	7.647		
Chloroform		0.473	0.530	0.432	0.482	0.509	0.459	0.505	0.454	0.480	6.746		
1-Bromopropane			0.011	0.041	0.042	0.043	0.040	0.045	0.041	0.038	31.434	0.997	
Bromochloromethane		0.131	0.173	0.169	0.194	0.199	0.179	0.197	0.178	0.177	12.275		
Tetrahydrofuran			0.111	0.099	0.110	0.110	0.097		0.097	0.104	6.802		
Dibromofluoromethane				0.267	0.243	0.286	0.286	0.274		0.271	6.547		
1,1,1-Trichloroethane		0.426	0.436	0.385	0.438	0.470	0.425	0.470	0.427	0.434	6.319		
Cyclohexane		0.465	0.495	0.425	0.494	0.478	0.465	0.503	0.464	0.474	5.302		
1,1-Dichloropropene		0.353	0.359	0.300	0.344	0.352	0.333	0.360	0.335	0.342	5.748		
Tert-Amyl-Methyl ether		0.631	0.709	0.631	0.716	0.716	0.632		0.684	0.674	6.133		
Carbon Tetrachloride			0.41939	0.34041	0.40512	0.42742	0.39181	0.43819	0.39737	0.40282	7.96886		
1,2-Dichloroethane-d4				0.34995	0.30686	0.35494	0.35835	0.33017		0.34005	6.33015		
Heptane										0	0		
1,2-Dichloroethane		0.36551	0.44947	0.39601	0.44224	0.45938	0.41291	0.4496	0.40581	0.42262	7.76179		
Benzene	1.14079	0.92872	1.03015	0.83328	0.97121	0.9721	0.88431	0.97127	0.88279	0.95718	9.53654		
Trichloroethene		0.30364	0.32158	0.26212	0.31219	0.31666	0.29597	0.321	0.29314	0.30329	6.54492		
Methylcyclohexane		0.31249	0.39837	0.32203	0.40419	0.39506	0.39323	0.42525	0.39247	0.38039	10.6291		
1,2-Dichloropropane		0.23004	0.27101	0.24016	0.27676	0.28593	0.2555	0.28277	0.26062	0.26285	7.66268		
1,4-Dioxane			0.0041	0.00361	0.00449	0.00376	0.00356		0.00414	0.00394	9.17892		
Bromodichloromethane			0.37851	0.33087	0.3725	0.39384	0.35929	0.397	0.36103	0.37044	6.13725		
Dibromomethane		0.15103	0.18915	0.16523	0.1825	0.18519	0.16707	0.1849	0.1682	0.17416	7.61692		
2-Chloroethyl Vinyl Ether				0.04535	0.05625	0.07439	0.06667	0.08013	0.07633	0.06652	20.1377	0.996	
4-Methyl-2-Pentanone				0.08933	0.11327	0.12554	0.11786	0.12977	0.11644	0.11537	12.2612		
cis-1,3-Dichloropropene			0.37321	0.33699	0.39477	0.41098	0.38072	0.42291	0.38195	0.38594	7.23123		
Dimethyl Disulfide			0.30882	0.3269	0.39409	0.4245	0.40234	0.4579	0.40032	0.38784	13.5683		
Chlorobenzene-d5	ISTD												
Toluene-d8				1.21266	1.14503	1.34974	1.34798	1.26813		1.26471	6.98417		
Toluene	1.57001	1.40445	1.51648	1.23448	1.46732	1.48749	1.3712	1.4823	1.3236	1.42859	7.34792		
Ethyl Methacrylate				0.31749	0.4112	0.4195	0.39758	0.44016	0.38999	0.39599	10.6751		
trans-1,3-Dichloropropene			0.50304	0.44978	0.5157	0.56049	0.50648	0.56248	0.50379	0.51454	7.49294		
1,1,2-Trichloroethane		0.27692	0.29584	0.27194	0.31787	0.32454	0.3	0.32173	0.292	0.3001	6.65768		
2-Hexanone				0.26013	0.28088	0.31451	0.30524	0.34734	0.28972	0.29964	10.056		
1,3-Dichloropropane		0.46617	0.55761	0.45639	0.51068	0.53187	0.47698	0.53043	0.47034	0.50006	7.49429		
Tetrachloroethene		0.33351	0.31568	0.26327	0.31051	0.30894	0.30156	0.32634	0.29026	0.30626	7.18201		
Dibromochloromethane			0.45014	0.36113	0.41394	0.44566	0.40515	0.45572	0.40415	0.41941	8.03547		
1,2-Dibromoethane				0.31086	0.34005	0.35035	0.32626	0.35324	0.31647	0.33287	5.32182		
1-Chlorohexane		0.39643	0.40929	0.33097	0.45098	0.44465	0.43807	0.477	0.42289	0.42128	10.5148		
Chlorobenzene		1.02904	1.08596	0.91908	1.05295	1.05625	0.95434	1.02465	0.91009	1.00405	6.67004		
1,1,1,2-Tetrachloroethane			0.37536	0.32525	0.38767	0.40783	0.37127	0.40937	0.36265	0.37706	7.67975		
Ethylbenzene	0.5157	0.51658	0.53164	0.45493	0.54391	0.54636	0.50916	0.54884	0.48836	0.51728	5.93862		
m-,p-Xylene	0.67213	0.61926	0.69794	0.58569	0.67162	0.65634	0.61182	0.65803	0.57657	0.63882	6.58722		
o-Xylene	0.61273	0.56415	0.61379	0.55512	0.6465	0.65334	0.60899	0.67127	0.59158	0.61305	6.41073		
Styrene		0.95813	1.06028	0.90308	1.08018	1.12326	1.04689	1.15897	1.02088	1.04396	8.002		
Bromoform			0.22872	0.23892	0.27832	0.30617	0.27263	0.32232	0.28054	0.27538	12.1348		
Isopropylbenzene		1.53891	1.69742	1.42189	1.74341	1.73716	1.64433	1.81019	1.57289	1.64577	7.76922		
1,4-Dichlorobenzene-d4	ISTD												
1,1,2,2-Tetrachloroethane		0.61571	0.83634	0.73739	0.79769	0.80854	0.74616	0.78083	0.74513	0.75847	8.88143		
p-Bromofluorobenzene				0.91653	0.87561	1.04735	1.0775	0.95104		0.97361	8.83571		
1,2,3-Trichloropropane		0.24645	0.29476	0.28329	0.29208	0.30442	0.29453	0.30315	0.28248	0.28764	6.41284		

trans-1,4-Dichloro-2-Butene		0.22501	0.23725	0.31415	0.3034	0.3105	0.33164	0.30766	0.28994	14.2446
n-Propylbenzene	3.98718	4.09811	3.61454	4.21971	4.10826	3.88939	3.82307	3.70205	3.93029	5.36989
Bromobenzene	0.84385	1.11565	0.86076	0.97118	0.9688	0.89248	0.89548	0.87446	0.92783	9.59949
1,3,5-Trimethylbenzene			2.76735	3.16086	3.10843	2.93606	2.91239	2.81635	2.95024	5.30322
2-Chlorotoluene		2.99265	2.31448	2.81057	2.64897	2.50142	2.61378	2.57101	2.63612	8.25378
4-Chlorotoluene	2.56339	2.5861	2.29006	2.55177	2.63031	2.41864	2.2799	2.17747	2.4372	6.98222
a-Methylstyrene			1.12025	1.41688	1.39756	1.35572	1.41986	1.35543	1.34428	8.43365
tert-Butylbenzene			0.56026	0.65003	0.66483	0.62531	0.61977	0.59094	0.61853	6.19423
1,2,4-Trimethylbenzene	3.41485	3.20381	2.86379	3.24429	3.17284	3.0014	2.96997	2.8463	3.08966	6.49589
sec-Butylbenzene	3.92127	3.95846	3.39254	3.98281	3.96896	3.8029	3.77812	3.59297	3.79976	5.54855
p-Isopropyltoluene			2.97918	3.35219	3.3501	3.24235	3.24339	3.07285	3.20668	4.70949
1,3-Dichlorobenzene	2.09668	2.18083	1.63464	1.82169	1.84149	1.71899	1.77783	1.67989	1.84401	10.6223
1,4-Dichlorobenzene	2.13498	2.06617	1.68605	1.85221	1.83159	1.72549	1.79434	1.65691	1.84347	9.41157
n-Butylbenzene	3.12981	3.1425	2.56827	2.96652	3.08072	3.01911	3.06733	2.87744	2.98146	6.31771
1,2-Dichlorobenzene	1.80685	1.84212	1.52596	1.70901	1.74915	1.66133	1.78603	1.60751	1.71099	6.28256
1,2-Dibromo-3-Chloropropane			0.17584	0.21007	0.23479	0.23723	0.24208	0.21787	0.21965	11.2549
1,2,4-Trichlorobenzene	1.3714	1.33063	1.02655	1.15029	1.2163	1.24479	1.25089	1.12609	1.21462	9.21088
Hexachlorobutadiene	0.57233	0.7279	0.53741	0.61674	0.64289	0.67353	0.72181	0.62948	0.64026	10.4449
Naphthalene		3.19632	2.63671	3.04494	3.29135	3.2233	3.14196	2.79099	3.04651	7.99534
1,2,3-Trichlorobenzene	1.32324	1.26566	0.99788	1.12352	1.21351	1.21702	1.20507	1.0788	1.17809	8.93408

Fri Feb 26 11:40:14 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16021240 Run Date: 02/25/2016 Sample ID: WG558732-11
Instrument ID: HPMS9 Run Time: 21:31 Method: 8260B
File ID: 9M972907 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG558732 Cal ID: HPMS9 - 25-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	48.0	ug/kg	0.461	4.00	20	
1,1-Dichloroethene	CCC	50.0	48.6	ug/kg	0.454	2.90	20	
1,2-Dichloropropane	CCC	50.0	52.3	ug/kg	0.275	4.60	20	
Ethylbenzene	CCC	50.0	51.3	ug/kg	0.531	2.60	20	
Toluene	CCC	50.0	50.7	ug/kg	1.45	1.50	20	
Vinyl Chloride	CCC	50.0	59.8	ug/kg	0.392	19.7	20	
Bromoform	SPCC	50.0	47.3	ug/kg	0.261	5.40	20	
Chlorobenzene	SPCC	50.0	51.2	ug/kg	1.03	2.40	20	
Chloromethane	SPCC	50.0	52.7	ug/kg	0.345	5.40	20	
1,1-Dichloroethane	SPCC	50.0	46.4	ug/kg	0.485	7.20	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	52.0	ug/kg	0.789	4.00	20	
Acetone		50.0	43.9	ug/kg	0.112	12.2	20	
Benzene		50.0	49.0	ug/kg	0.937	2.10	20	
Bromobenzene		50.0	52.2	ug/kg	0.968	4.40	20	
Bromochloromethane		50.0	51.5	ug/kg	0.183	3.00	20	
Bromodichloromethane		50.0	47.6	ug/kg	0.352	4.90	20	
Bromomethane		50.0	49.0	ug/kg	0.208	2.10	20	
2-Butanone		50.0	47.4	ug/kg	0.153	5.20	20	
n-Butylbenzene		50.0	52.5	ug/kg	3.13	4.90	20	
sec-Butylbenzene		50.0	54.7	ug/kg	4.16	9.50	20	
tert-Butylbenzene		50.0	55.4	ug/kg	0.685	10.8	20	
Carbon Disulfide		50.0	44.1	ug/kg	0.635	11.7	20	
Carbon Tetrachloride		50.0	46.5	ug/kg	0.375	7.00	20	
Dibromochloromethane		50.0	48.5	ug/kg	0.407	3.10	20	
Chloroethane		50.0	54.2	ug/kg	0.158	8.30	20	
2-Chlorotoluene		50.0	54.2	ug/kg	2.86	8.40	20	
4-Chlorotoluene		50.0	53.0	ug/kg	2.59	6.10	20	
1,2-Dibromo-3-Chloropropane		50.0	54.5	ug/kg	0.239	8.90	20	
1,2-Dibromoethane		50.0	50.8	ug/kg	0.338	1.50	20	
Dibromomethane		50.0	47.0	ug/kg	0.164	6.10	20	
1,2-Dichlorobenzene		50.0	52.7	ug/kg	1.81	5.50	20	
1,3-Dichlorobenzene		50.0	50.8	ug/kg	1.87	1.60	20	
1,4-Dichlorobenzene		50.0	51.1	ug/kg	1.88	2.20	20	
Dichlorodifluoromethane		50.0	63.4	ug/kg	0.432	26.7	20	*
1,2-Dichloroethane		50.0	49.2	ug/kg	0.416	1.60	20	
cis-1,2-Dichloroethene		50.0	52.6	ug/kg	0.287	5.20	20	
trans-1,2-Dichloroethene		50.0	50.6	ug/kg	0.422	1.20	20	
1,3-Dichloropropane		50.0	53.8	ug/kg	0.538	7.60	20	
2,2-Dichloropropane		50.0	47.1	ug/kg	0.368	5.90	20	
cis-1,3-Dichloropropene		50.0	53.2	ug/kg	0.411	6.40	20	
trans-1,3-Dichloropropene		50.0	50.0	ug/kg	0.515	0.100	20	
1,1-Dichloropropene		50.0	48.5	ug/kg	0.332	2.90	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4651871
Report generated 02/29/2016 16:47

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16021240 Run Date: 02/25/2016 Sample ID: WG558732-11
Instrument ID: HPMS9 Run Time: 21:31 Method: 8260B
File ID: 9M972907 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG558732 Cal ID: HPMS9 - 25-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	48.2	ug/kg	0.289	3.60	20	
Hexachlorobutadiene		50.0	54.5	ug/kg	0.698	9.00	20	
Isopropylbenzene		50.0	52.0	ug/kg	1.71	4.00	20	
p-Isopropyltoluene		50.0	54.1	ug/kg	3.47	8.10	20	
4-Methyl-2-Pentanone		50.0	47.8	ug/kg	0.110	4.40	20	
Methylene Chloride		50.0	49.8	ug/kg	0.254	0.400	20	
Naphthalene		50.0	50.8	ug/kg	3.10	1.70	20	
n-Propylbenzene		50.0	54.9	ug/kg	4.32	9.80	20	
Styrene		50.0	52.8	ug/kg	1.10	5.60	20	
1,1,1,2-Tetrachloroethane		50.0	49.7	ug/kg	0.375	0.600	20	
Tetrachloroethene		50.0	49.8	ug/kg	0.305	0.400	20	
1,2,3-Trichlorobenzene		50.0	52.6	ug/kg	1.24	5.20	20	
1,2,4-Trichlorobenzene		50.0	51.7	ug/kg	1.26	3.40	20	
1,1,1-Trichloroethane		50.0	46.7	ug/kg	0.406	6.50	20	
1,1,2-Trichloroethane		50.0	51.5	ug/kg	0.309	3.00	20	
Trichloroethene		50.0	49.4	ug/kg	0.300	1.20	20	
Trichlorofluoromethane		50.0	47.6	ug/kg	0.467	4.90	20	
1,2,3-Trichloropropane		50.0	54.2	ug/kg	0.312	8.40	20	
1,2,4-Trimethylbenzene		50.0	51.5	ug/kg	3.18	3.10	20	
1,3,5-Trimethylbenzene		50.0	54.3	ug/kg	3.21	8.60	20	
o-Xylene		50.0	53.6	ug/kg	0.657	7.10	20	
m-,p-Xylene		100	103	ug/kg	0.655	2.60	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
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Report generated 02/29/2016 16:47

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021240 Run Date: 02/26/2016 Sample ID: WG558909-02
Instrument ID: HPMS9 Run Time: 14:40 Method: 8260B
File ID: 9M972910 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG558910 Cal ID: HPMS9 - 25-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	45.3	ug/kg	0.436	9.36	20	
1,1-Dichloroethene	CCC	50.0	46.5	ug/kg	0.435	6.93	20	
1,2-Dichloropropane	CCC	50.0	47.8	ug/kg	0.251	4.45	20	
Ethylbenzene	CCC	50.0	49.6	ug/kg	0.513	0.744	20	
Toluene	CCC	50.0	48.0	ug/kg	1.37	3.95	20	
Vinyl Chloride	CCC	50.0	52.7	ug/kg	0.345	5.46	20	
Bromoform	SPCC	50.0	46.7	ug/kg	0.257	6.68	20	
Chlorobenzene	SPCC	50.0	47.1	ug/kg	0.946	5.78	20	
Chloromethane	SPCC	50.0	46.5	ug/kg	0.304	6.97	20	
1,1-Dichloroethane	SPCC	50.0	46.7	ug/kg	0.488	6.68	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	47.5	ug/kg	0.721	4.95	20	
Xylenes		150	145	ug/kg	0.607	3.43	40	
Acetone		50.0	42.3	ug/kg	0.108	15.3	20	
Benzene		50.0	46.5	ug/kg	0.890	7.00	20	
Bromobenzene		50.0	46.8	ug/kg	0.868	6.41	20	
Bromochloromethane		50.0	48.9	ug/kg	0.174	2.16	20	
Bromodichloromethane		50.0	45.5	ug/kg	0.337	9.07	20	
Bromomethane		50.0	44.4	ug/kg	0.189	11.1	20	
2-Butanone		50.0	45.6	ug/kg	0.147	8.86	20	
n-Butylbenzene		50.0	50.0	ug/kg	2.98	0.0836	20	
sec-Butylbenzene		50.0	49.2	ug/kg	3.74	1.60	20	
tert-Butylbenzene		50.0	48.6	ug/kg	0.601	2.76	20	
Carbon Disulfide		50.0	52.0	ug/kg	0.749	4.04	20	
Carbon Tetrachloride		50.0	46.3	ug/kg	0.373	7.42	20	
Dibromochloromethane		50.0	46.2	ug/kg	0.388	7.54	20	
Chloroethane		50.0	49.6	ug/kg	0.145	0.796	20	
2-Chlorotoluene		50.0	49.9	ug/kg	2.63	0.114	20	
4-Chlorotoluene		50.0	46.0	ug/kg	2.24	8.00	20	
1,2-Dibromo-3-Chloropropane		50.0	44.4	ug/kg	0.195	11.2	20	
1,2-Dibromoethane		50.0	46.8	ug/kg	0.312	6.36	20	
Dibromomethane		50.0	47.6	ug/kg	0.166	4.80	20	
1,2-Dichlorobenzene		50.0	46.2	ug/kg	1.58	7.70	20	
1,3-Dichlorobenzene		50.0	45.7	ug/kg	1.69	8.52	20	
1,4-Dichlorobenzene		50.0	45.7	ug/kg	1.68	8.70	20	
Dichlorodifluoromethane		50.0	52.8	ug/kg	0.360	5.56	20	
1,2-Dichloroethane		50.0	46.7	ug/kg	0.394	6.68	20	
cis-1,2-Dichloroethene		50.0	48.7	ug/kg	0.266	2.60	20	
trans-1,2-Dichloroethene		50.0	47.5	ug/kg	0.395	5.04	20	
1,3-Dichloropropane		50.0	46.8	ug/kg	0.468	6.32	20	
2,2-Dichloropropane		50.0	48.3	ug/kg	0.377	3.39	20	
cis-1,3-Dichloropropene		50.0	47.8	ug/kg	0.369	4.41	20	
trans-1,3-Dichloropropene		50.0	48.1	ug/kg	0.495	3.86	20	

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021240 Run Date: 02/26/2016 Sample ID: WG558909-02
Instrument ID: HPMS9 Run Time: 14:40 Method: 8260B
File ID: 9M972910 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG558910 Cal ID: HPMS9 - 25-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	47.6	ug/kg	0.326	4.75	20	
2-Hexanone		50.0	46.6	ug/kg	0.279	6.83	20	
Hexachlorobutadiene		50.0	48.2	ug/kg	0.617	3.68	20	
Isopropylbenzene		50.0	49.3	ug/kg	1.62	1.41	20	
p-Isopropyltoluene		50.0	50.0	ug/kg	3.20	0.0922	20	
4-Methyl-2-Pentanone		50.0	48.3	ug/kg	0.111	3.41	20	
Methylene Chloride		50.0	47.0	ug/kg	0.239	6.06	20	
Naphthalene		50.0	48.6	ug/kg	2.96	2.72	20	
n-Propylbenzene		50.0	49.8	ug/kg	3.92	0.363	20	
Styrene		50.0	49.1	ug/kg	1.03	1.72	20	
1,1,1,2-Tetrachloroethane		50.0	46.9	ug/kg	0.354	6.18	20	
Tetrachloroethene		50.0	48.5	ug/kg	0.297	2.94	20	
1,2,3-Trichlorobenzene		50.0	46.8	ug/kg	1.10	6.47	20	
1,2,4-Trichlorobenzene		50.0	47.3	ug/kg	1.15	5.32	20	
1,1,1-Trichloroethane		50.0	46.8	ug/kg	0.407	6.32	20	
1,1,2-Trichloroethane		50.0	48.0	ug/kg	0.288	3.93	20	
Trichloroethene		50.0	47.3	ug/kg	0.287	5.42	20	
Trichlorofluoromethane		50.0	47.3	ug/kg	0.465	5.43	20	
1,2,3-Trichloropropane		50.0	47.4	ug/kg	0.273	5.14	20	
1,2,4-Trimethylbenzene		50.0	48.0	ug/kg	2.97	4.03	20	
1,3,5-Trimethylbenzene		50.0	49.1	ug/kg	2.90	1.74	20	
o-Xylene		50.0	49.0	ug/kg	0.601	1.96	20	
m-,p-Xylene		100	95.8	ug/kg	0.612	4.17	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4651873
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Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021240 Run Date: 02/28/2016 Sample ID: WG559001-02
Instrument ID: HPMS9 Run Time: 15:39 Method: 8260B
File ID: 9M972943 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG559002 Cal ID: HPMS9 - 25-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.8	ug/kg	0.488	1.66	20	
1,1-Dichloroethene	CCC	50.0	51.1	ug/kg	0.478	2.26	20	
1,2-Dichloropropane	CCC	50.0	53.6	ug/kg	0.282	7.20	20	
Ethylbenzene	CCC	50.0	54.8	ug/kg	0.567	9.67	20	
Toluene	CCC	50.0	52.7	ug/kg	1.51	5.37	20	
Vinyl Chloride	CCC	50.0	58.7	ug/kg	0.384	17.4	20	
Bromoform	SPCC	50.0	50.7	ug/kg	0.279	1.36	20	
Chlorobenzene	SPCC	50.0	51.9	ug/kg	1.04	3.70	20	
Chloromethane	SPCC	50.0	49.6	ug/kg	0.325	0.769	20	
1,1-Dichloroethane	SPCC	50.0	52.8	ug/kg	0.552	5.62	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	51.3	ug/kg	0.779	2.65	20	
Xylenes		150	157	ug/kg	0.658	4.90	40	
Acetone		50.0	44.5	ug/kg	0.113	10.9	20	
Benzene		50.0	51.9	ug/kg	0.993	3.70	20	
Bromobenzene		50.0	52.4	ug/kg	0.973	4.89	20	
Bromochloromethane		50.0	52.6	ug/kg	0.187	5.20	20	
Bromodichloromethane		50.0	49.7	ug/kg	0.368	0.545	20	
Bromomethane		50.0	46.4	ug/kg	0.197	7.27	20	
2-Butanone		50.0	46.4	ug/kg	0.150	7.26	20	
n-Butylbenzene		50.0	54.5	ug/kg	3.25	9.02	20	
sec-Butylbenzene		50.0	55.7	ug/kg	4.23	11.4	20	
tert-Butylbenzene		50.0	56.8	ug/kg	0.702	13.6	20	
Carbon Disulfide		50.0	54.1	ug/kg	0.778	8.13	20	
Carbon Tetrachloride		50.0	51.9	ug/kg	0.418	3.86	20	
Dibromochloromethane		50.0	49.2	ug/kg	0.412	1.68	20	
Chloroethane		50.0	56.7	ug/kg	0.166	13.4	20	
2-Chlorotoluene		50.0	52.3	ug/kg	2.76	4.60	20	
4-Chlorotoluene		50.0	55.6	ug/kg	2.71	11.2	20	
1,2-Dibromo-3-Chloropropane		50.0	47.2	ug/kg	0.207	5.63	20	
1,2-Dibromoethane		50.0	49.4	ug/kg	0.329	1.19	20	
Dibromomethane		50.0	50.4	ug/kg	0.176	0.750	20	
1,2-Dichlorobenzene		50.0	51.4	ug/kg	1.76	2.80	20	
1,3-Dichlorobenzene		50.0	51.5	ug/kg	1.90	2.94	20	
1,4-Dichlorobenzene		50.0	51.0	ug/kg	1.88	1.96	20	
Dichlorodifluoromethane		50.0	51.2	ug/kg	0.349	2.38	20	
1,2-Dichloroethane		50.0	51.2	ug/kg	0.433	2.43	20	
cis-1,2-Dichloroethene		50.0	53.7	ug/kg	0.293	7.31	20	
trans-1,2-Dichloroethene		50.0	54.7	ug/kg	0.455	9.32	20	
1,3-Dichloropropane		50.0	51.7	ug/kg	0.517	3.35	20	
2,2-Dichloropropane		50.0	55.9	ug/kg	0.436	11.8	20	
cis-1,3-Dichloropropene		50.0	52.2	ug/kg	0.403	4.31	20	
trans-1,3-Dichloropropene		50.0	51.7	ug/kg	0.532	3.37	20	

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021240 Run Date: 02/28/2016 Sample ID: WG559001-02
Instrument ID: HPMS9 Run Time: 15:39 Method: 8260B
File ID: 9M972943 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG559002 Cal ID: HPMS9 - 25-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	53.5	ug/kg	0.366	6.98	20	
2-Hexanone		50.0	49.1	ug/kg	0.294	1.82	20	
Hexachlorobutadiene		50.0	52.5	ug/kg	0.672	4.92	20	
Isopropylbenzene		50.0	53.6	ug/kg	1.76	7.24	20	
p-Isopropyltoluene		50.0	55.0	ug/kg	3.53	9.95	20	
4-Methyl-2-Pentanone		50.0	49.0	ug/kg	0.113	2.01	20	
Methylene Chloride		50.0	51.6	ug/kg	0.262	3.10	20	
Naphthalene		50.0	48.5	ug/kg	2.96	2.90	20	
n-Propylbenzene		50.0	56.0	ug/kg	4.40	12.0	20	
Styrene		50.0	53.6	ug/kg	1.12	7.30	20	
1,1,1,2-Tetrachloroethane		50.0	52.0	ug/kg	0.392	3.96	20	
Tetrachloroethene		50.0	52.9	ug/kg	0.324	5.75	20	
1,2,3-Trichlorobenzene		50.0	50.5	ug/kg	1.19	1.07	20	
1,2,4-Trichlorobenzene		50.0	51.1	ug/kg	1.24	2.15	20	
1,1,1-Trichloroethane		50.0	52.5	ug/kg	0.457	5.06	20	
1,1,2-Trichloroethane		50.0	51.7	ug/kg	0.310	3.33	20	
Trichloroethene		50.0	54.1	ug/kg	0.328	8.14	20	
Trichlorofluoromethane		50.0	52.5	ug/kg	0.516	5.04	20	
1,2,3-Trichloropropane		50.0	52.2	ug/kg	0.301	4.50	20	
1,2,4-Trimethylbenzene		50.0	53.4	ug/kg	3.30	6.83	20	
1,3,5-Trimethylbenzene		50.0	55.3	ug/kg	3.26	10.6	20	
o-Xylene		50.0	53.1	ug/kg	0.651	6.13	20	
m-,p-Xylene		100	104	ug/kg	0.666	4.29	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4651873
Report generated 02/29/2016 16:47

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16021240
Instrument ID: HPMS9
Workgroup (AAB#): WG558910

ICAL CCV Number: WG558732-02
CAL ID: HPMS9-25-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558732-02	NA	NA	183008	378926	517775
Upper Limit	NA	NA	366016	757852	1035550
Lower Limit	NA	NA	91504	189463	258888
L16021240-01	1.00	01	174094	374087	525422
L16021240-02	1.00	01	188921	421343	602019
L16021240-03	1.00	01	167533	366928	524643
L16021240-05	1.00	01	173557	379210	528471
L16021240-06	1.00	01	165690	375738	535463
L16021240-07	1.00	01	191119	411796	569241
L16021240-08	1.00	01	197692	430665	612123
WG558910-01	1.00	01	194102	423405	602902
WG558910-02	1.00	01	184187	403042	563717
WG558910-03	1.00	01	205574	445879	620699

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4651874
Report generated 02/29/2016 16:47

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16021240
Instrument ID: HPMS9
Workgroup (AAB#): WG559002

ICAL CCV Number: WG558732-02
CAL ID: HPMS9 - 25-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558732-02	NA	NA	183008	378926	517775
Upper Limit	NA	NA	366016	757852	1035550
Lower Limit	NA	NA	91504	189463	258888
L16021240-04	1.00	02	129736	287238	408640
WG559002-01	1.00	01	204353	441195	620113
WG559002-02	1.00	01	193426	413544	577816

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4651874
Report generated 02/29/2016 16:47

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16021240
Instrument ID: HPMS9
Workgroup (AAB#): WG558910

ICAL CCV Number: WG558732-02
CAL ID: HPMS9-25-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558732-02	NA	NA	17.76	14.73	10.85
Upper Limit	NA	NA	18.26	15.23	11.35
Lower Limit	NA	NA	17.26	14.23	10.35
L16021240-01	1.00	01	17.75	14.72	10.85
L16021240-02	1.00	01	17.75	14.72	10.85
L16021240-03	1.00	01	17.75	14.72	10.85
L16021240-05	1.00	01	17.75	14.72	10.85
L16021240-06	1.00	01	17.75	14.72	10.85
L16021240-07	1.00	01	17.75	14.72	10.85
L16021240-08	1.00	01	17.75	14.72	10.85
WG558910-01	1.00	01	17.75	14.72	10.85
WG558910-02	1.00	01	17.75	14.72	10.85
WG558910-03	1.00	01	17.75	14.72	10.85

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4651876
Report generated: 02/29/2016 16:47

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16021240
Instrument ID: HPMS9
Workgroup (AAB#): WG559002

ICAL CCV Number: WG558732-02
CAL ID: HPMS9 - 25-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558732-02	NA	NA	17.76	14.73	10.85
Upper Limit	NA	NA	18.26	15.23	11.35
Lower Limit	NA	NA	17.26	14.23	10.35
L16021240-04	1.00	02	17.75	14.73	10.85
WG559002-01	1.00	01	17.75	14.72	10.85
WG559002-02	1.00	01	17.75	14.72	10.85

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
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2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\9M972923.D Vial: 14
Acq On : 26 Feb 2016 21:20 Operator: ADC
Sample : L16021240-01 A 8260 4.65g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 11:43:13 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	525422	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	374087	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	174094	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	142010	49.8621 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.72%		
43) 1,2-Dichloroethane-d4	10.45	65	169036	47.3034 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.60%		
58) Toluene-d8	12.82	98	510240	53.9240 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 107.84%		
79) p-Bromofluorobenzene	16.23	95	188940	55.7349 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 111.46%		

Target Compounds

					Qvalue
13) Acetone	6.42	43	4993	1.4360 ug/kg	99
17) Iodomethane	7.14	142	214	2.9368 ug/kg#	34
56) Dimethyl Disulfide	12.82	94	15293	3.7523 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972923.D 8260SL.M Mon Feb 29 11:43:13 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\9M972923.D Vial: 14
Acq On : 26 Feb 2016 21:20 Operator: ADC
Sample : L16021240-01 A 8260 4.65g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 11:43 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

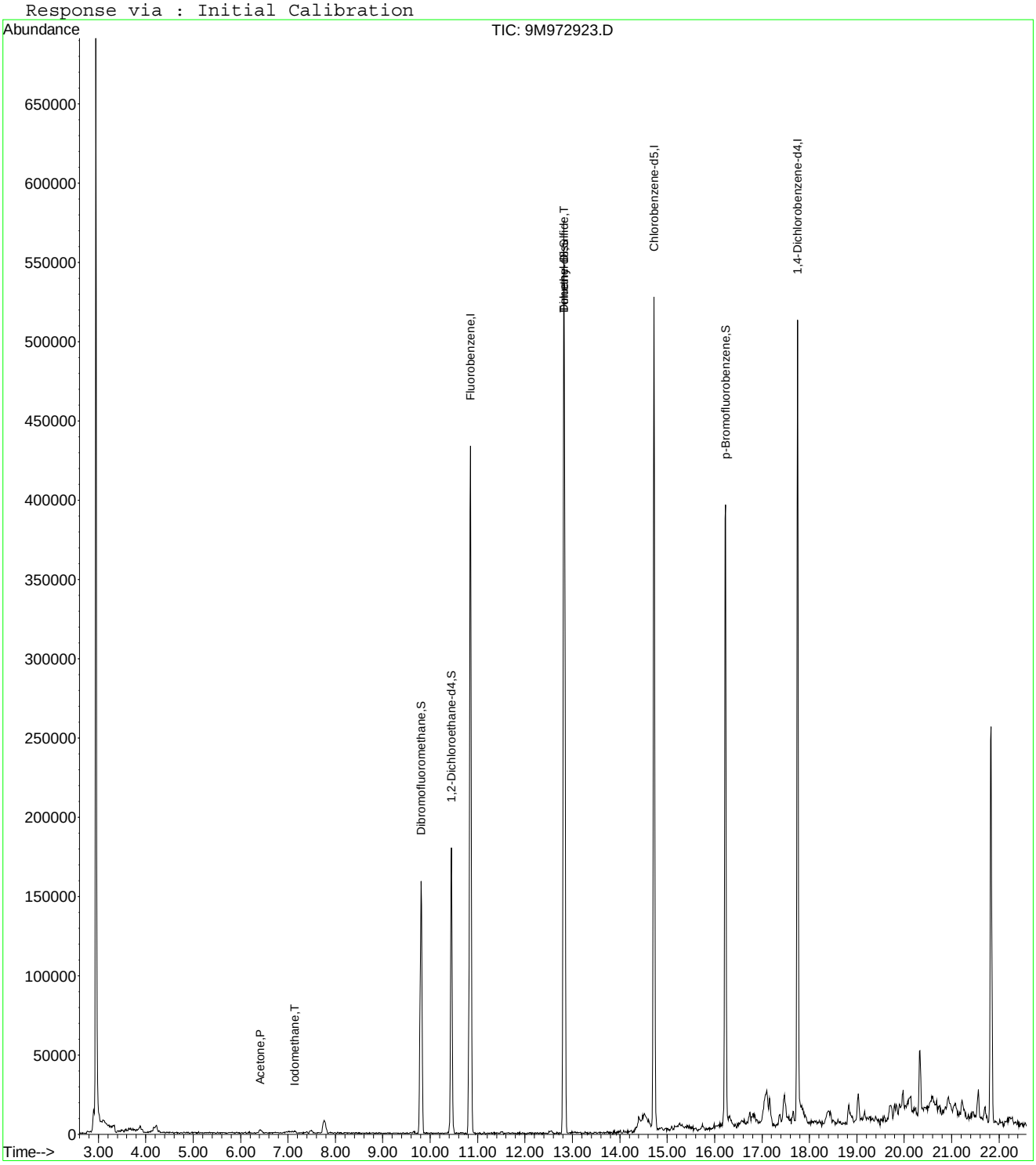

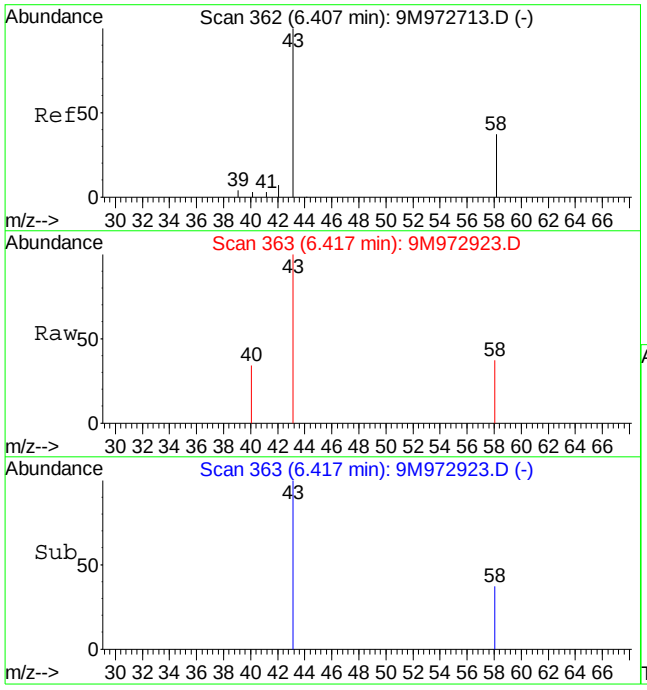

#13
Acetone
Concen: 1.44 ug/kg
RT: 6.42 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M972923.D
Acq: 26 Feb 2016 21:20

Tgt Ion: 43 Resp: 4993

Ion	Ratio	Lower	Upper
43	100		
58	28.5	16.9	39.3

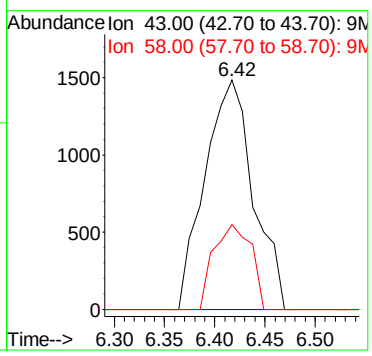

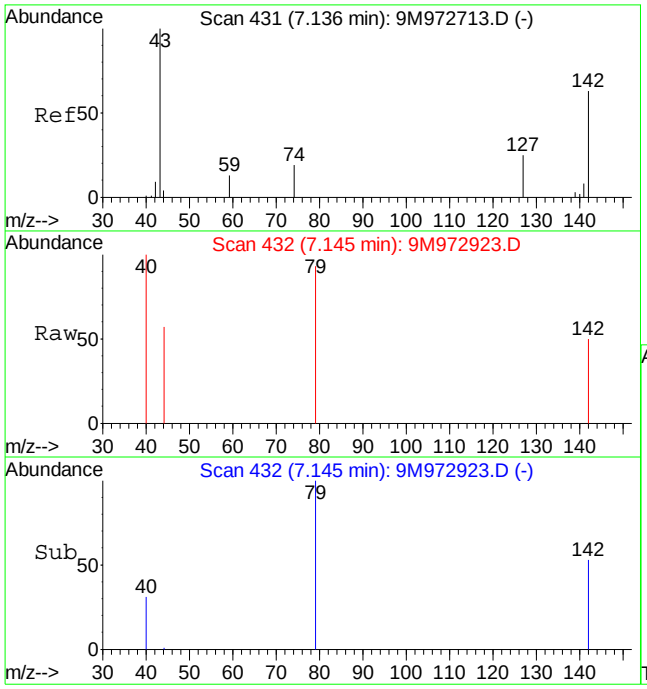

#17
Iodomethane
Concen: 2.94 ug/kg
RT: 7.14 min Scan# 432
Delta R.T. 0.01 min
Lab File: 9M972923.D
Acq: 26 Feb 2016 21:20

Tgt Ion:142 Resp: 214

Ion	Ratio	Lower	Upper
142	100		
127	0.0	25.1	58.7#

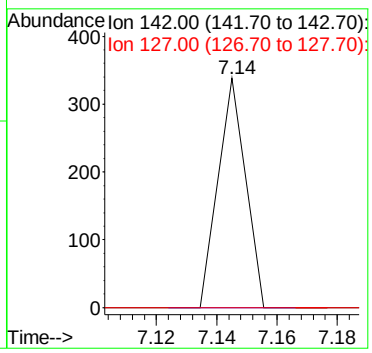

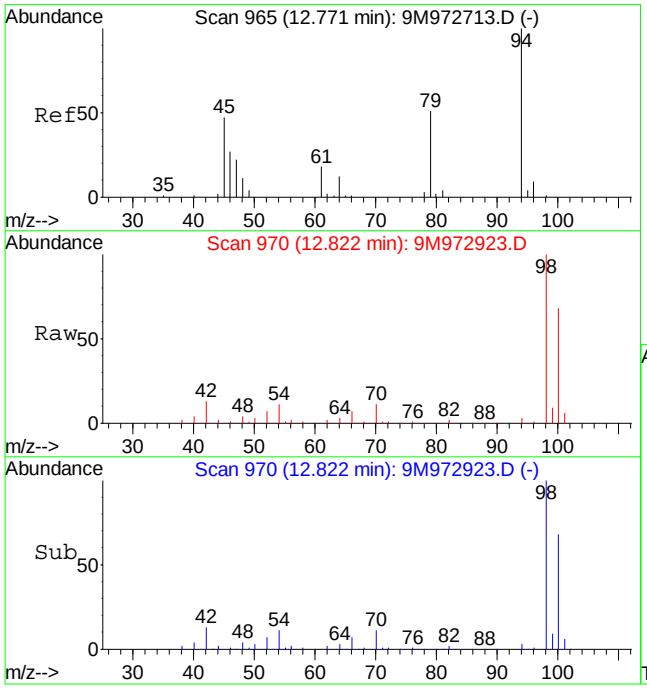

#56
Dimethyl Disulfide
Concen: 3.75 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M972923.D
Acq: 26 Feb 2016 21:20

Tgt Ion: 94 Resp: 15293

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

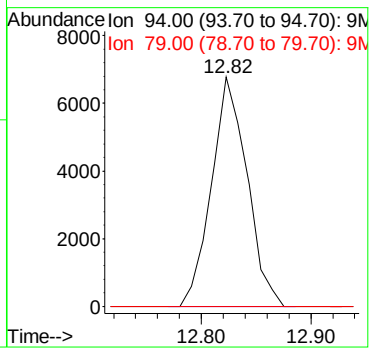

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\9M972924.D Vial: 15
Acq On : 26 Feb 2016 21:50 Operator: ADC
Sample : L16021240-02 A 8260 4.72g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 11:43:14 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	602019	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	421343	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.75	152	188921	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	162227	49.7133 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.42%		
43) 1,2-Dichloroethane-d4	10.45	65	191658	46.8100 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.62%		
58) Toluene-d8	12.83	98	592622	55.6060 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 111.22%		
79) p-Bromofluorobenzene	16.23	95	209156	56.8562 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 113.72%		

Target Compounds					Qvalue
6) Bromomethane	4.89	94	1044	0.4077 ug/kg	68
13) Acetone	6.41	43	11726	5.5811 ug/kg	89
17) Iodomethane	7.14	142	1250	3.5042 ug/kg#	34
29) 2-Butanone	9.03	43	1234	0.6356 ug/kg#	58
56) Dimethyl Disulfide	12.82	94	15717	3.3657 ug/kg#	29
91) p-Isopropyltoluene	17.46	119	5247	0.4331 ug/kg	98

(#) = qualifier out of range (m) = manual integration
9M972924.D 8260SL.M Mon Feb 29 11:43:14 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\9M972924.D Vial: 15
Acq On : 26 Feb 2016 21:50 Operator: ADC
Sample : L16021240-02 A 8260 4.72g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 11:43 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

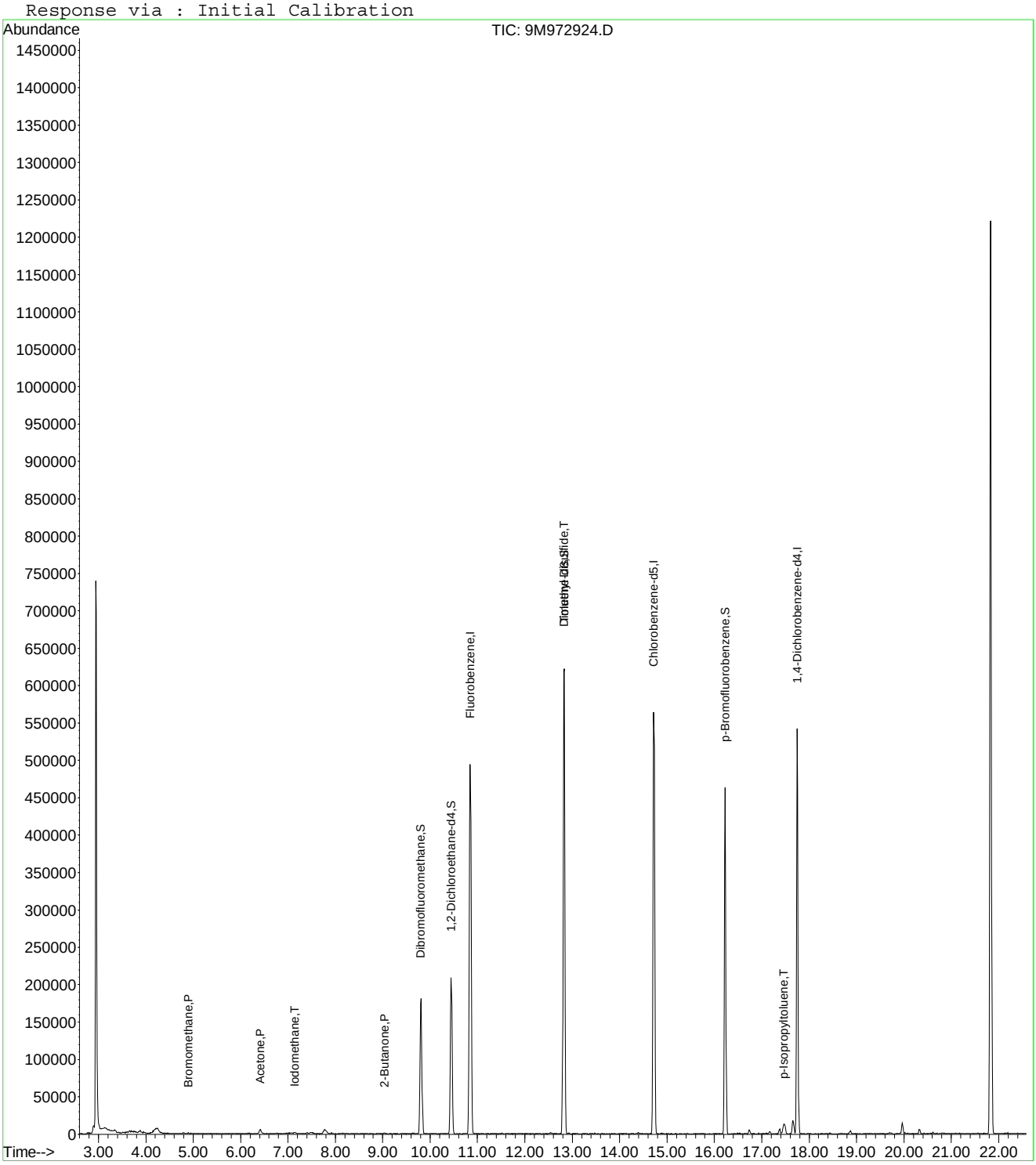

9M972924.D 8260SL.M Mon Feb 29 11:43:14 2016 Page 2

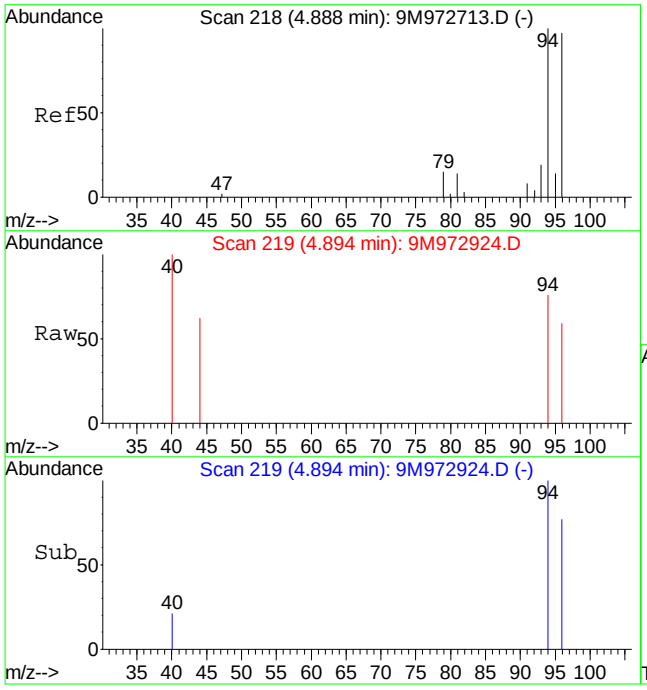

#6
Bromomethane
Concen: 0.41 ug/kg
RT: 4.89 min Scan# 219
Delta R.T. 0.01 min
Lab File: 9M972924.D
Acq: 26 Feb 2016 21:50

Tgt Ion: 94 Resp: 1044

Ion	Ratio	Lower	Upper
94	100		
96	64.4	57.2	133.6

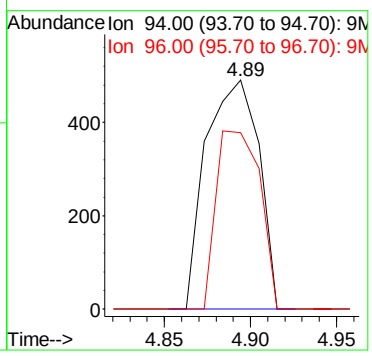

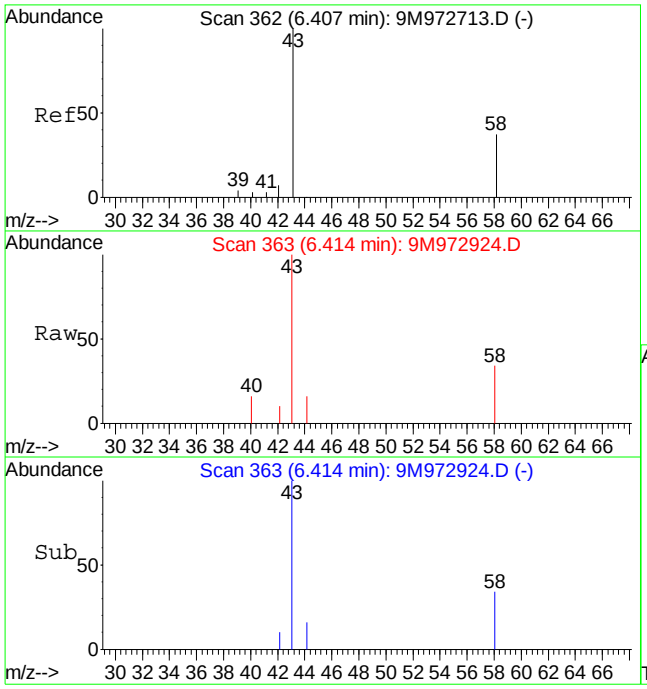

#13
Acetone
Concen: 5.58 ug/kg
RT: 6.41 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M972924.D
Acq: 26 Feb 2016 21:50

Tgt Ion: 43 Resp: 11726

Ion	Ratio	Lower	Upper
43	100		
58	33.8	16.9	39.3

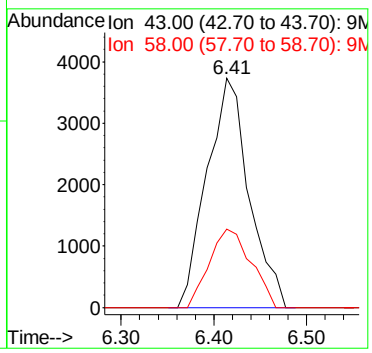

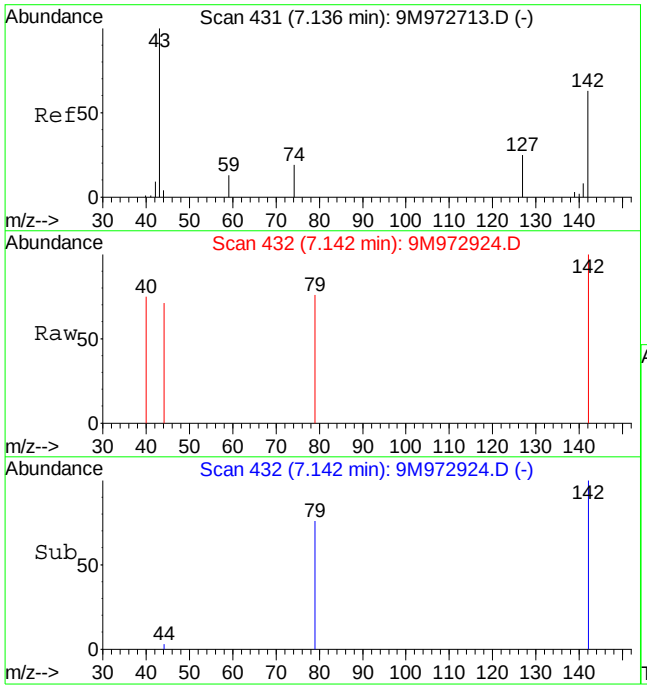

#17
Iodomethane
Concen: 3.50 ug/kg
RT: 7.14 min Scan# 432
Delta R.T. 0.01 min
Lab File: 9M972924.D
Acq: 26 Feb 2016 21:50

Tgt Ion:142 Resp: 1250

Ion	Ratio	Lower	Upper
142	100		
127	0.0	25.1	58.7#

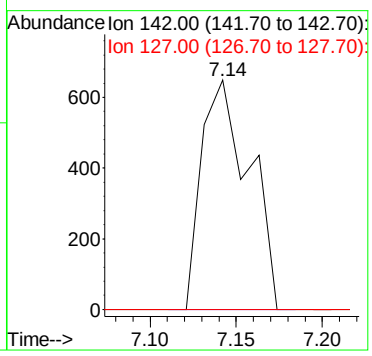

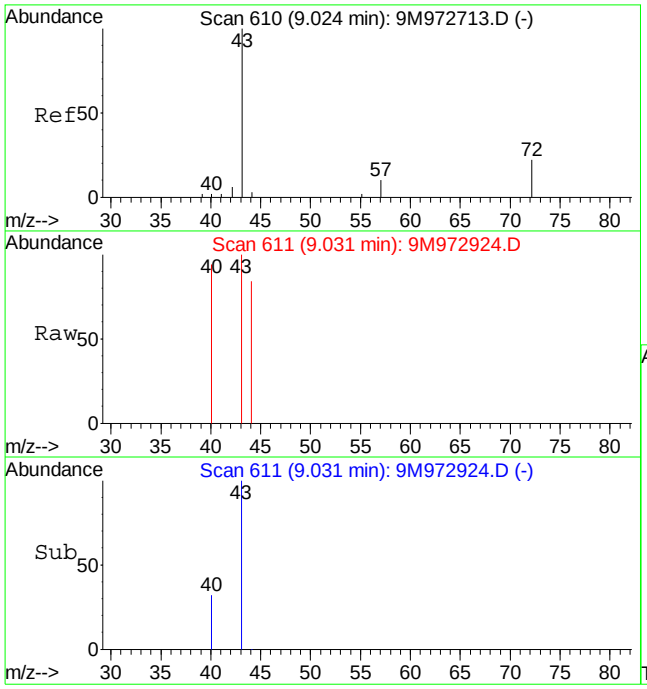

#29
2-Butanone
Concen: 0.64 ug/kg
RT: 9.03 min Scan# 611
Delta R.T. 0.00 min
Lab File: 9M972924.D
Acq: 26 Feb 2016 21:50

Tgt Ion: 43 Resp: 1234

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

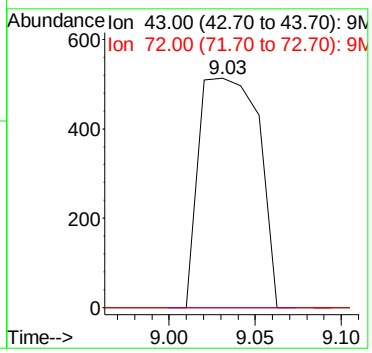

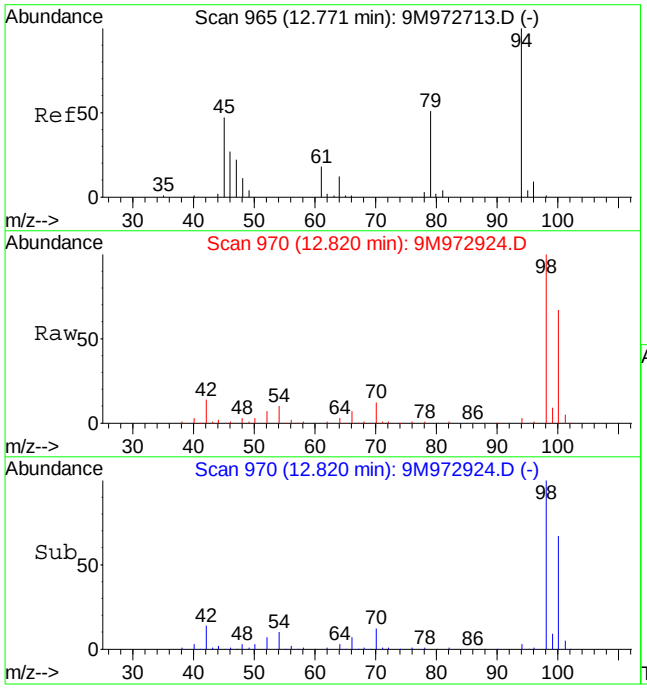

#56
Dimethyl Disulfide
Concen: 3.37 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M972924.D
Acq: 26 Feb 2016 21:50

Tgt Ion: 94 Resp: 15717

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

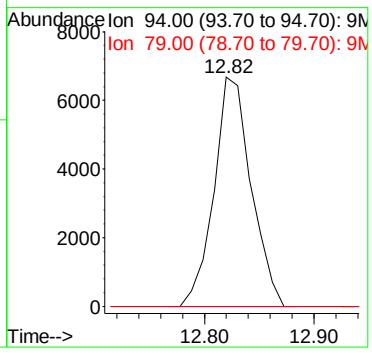

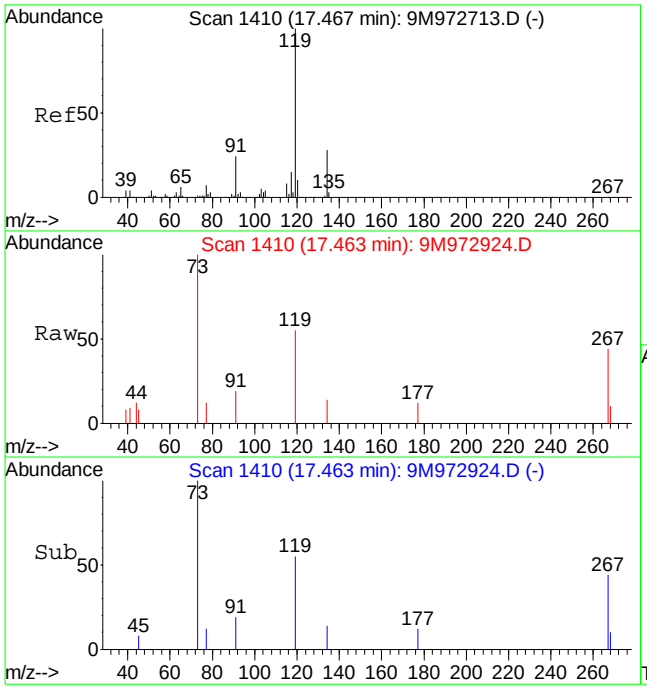

#91
p-Isopropyltoluene
Concen: 0.43 ug/kg
RT: 17.46 min Scan# 1410
Delta R.T. 0.00 min
Lab File: 9M972924.D
Acq: 26 Feb 2016 21:50

Tgt Ion:119 Resp: 5247

Ion	Ratio	Lower	Upper
119	100		
134	24.9	15.7	36.5

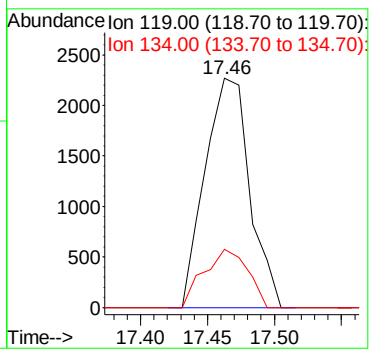

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\9M972925.D Vial: 16
Acq On : 26 Feb 2016 22:21 Operator: ADC
Sample : L16021240-03 A 8260 4.64g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 11:43:15 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	524643	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	366928	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	167533	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	145657	51.2185 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 102.44%		
43) 1,2-Dichloroethane-d4	10.45	65	169760	47.5766 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.16%		
58) Toluene-d8	12.82	98	522422	56.2886 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 112.58%		
79) p-Bromofluorobenzene	16.23	95	185717	56.9297 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 113.86%		

Target Compounds

					Qvalue
13) Acetone	6.41	43	4946	1.4047 ug/kg	98
17) Iodomethane	7.13	142	458	3.0951 ug/kg#	34
56) Dimethyl Disulfide	12.83	94	13467	3.3092 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972925.D 8260SL.M Mon Feb 29 11:43:15 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\9M972925.D Vial: 16
Acq On : 26 Feb 2016 22:21 Operator: ADC
Sample : L16021240-03 A 8260 4.64g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 11:43 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

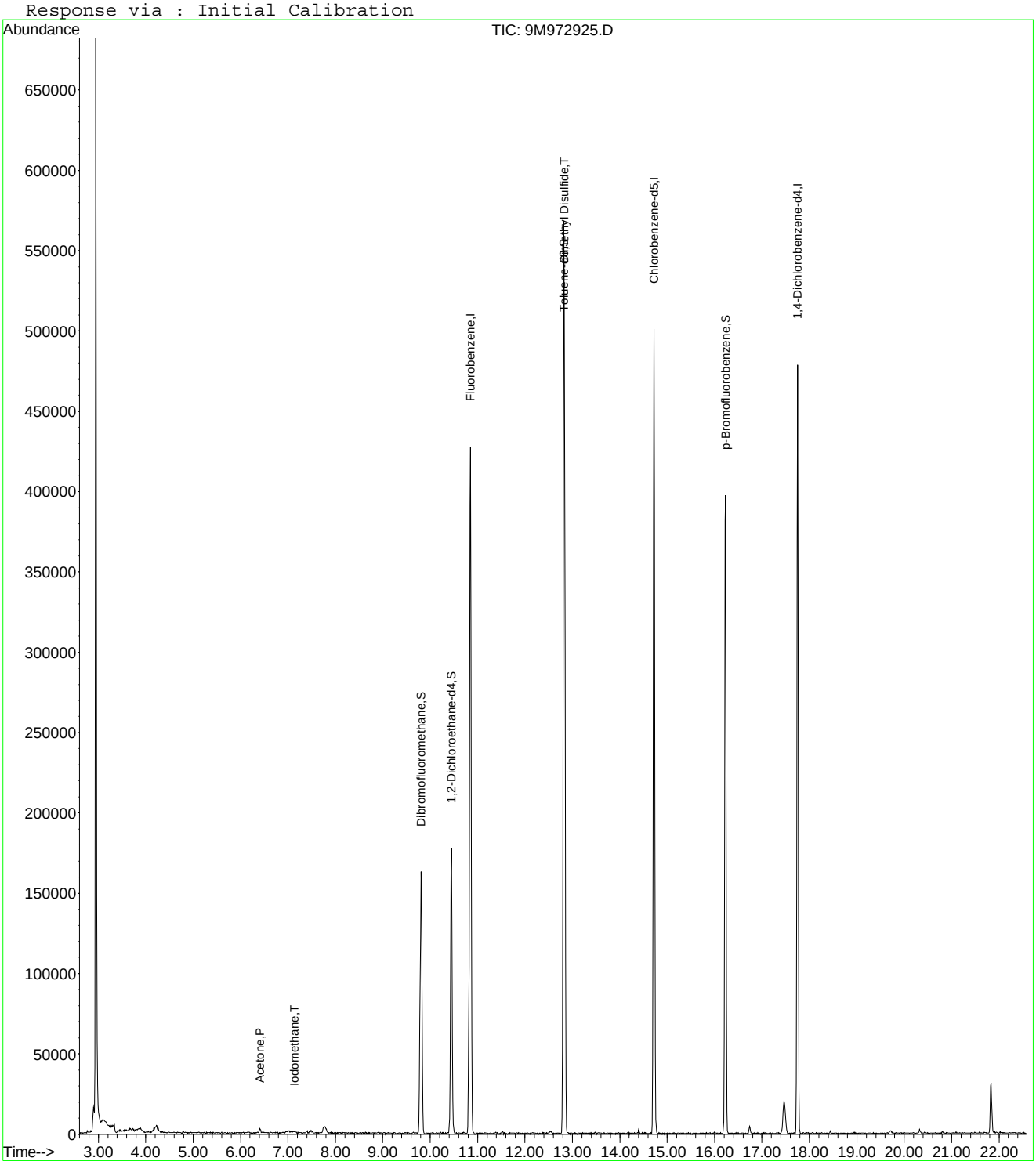

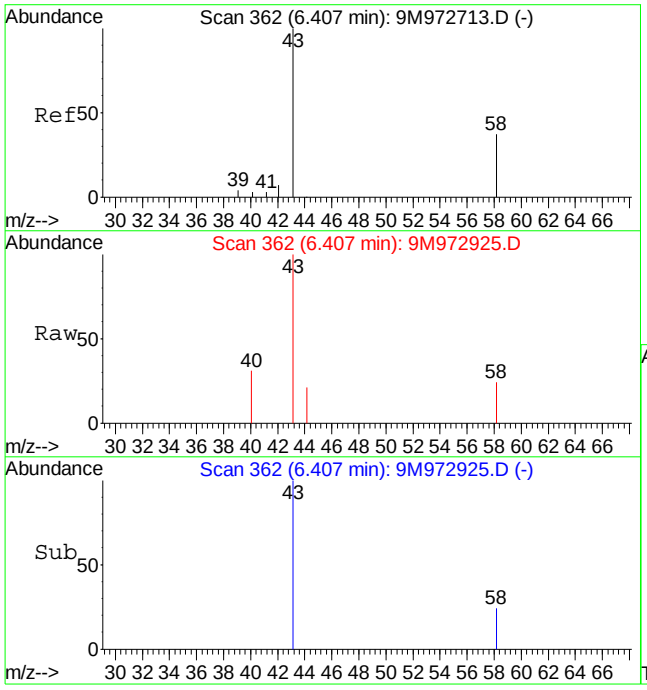

#13
Acetone
Concen: 1.40 ug/kg
RT: 6.41 min Scan# 362
Delta R.T. -0.01 min
Lab File: 9M972925.D
Acq: 26 Feb 2016 22:21

Tgt Ion: 43 Resp: 4946

Ion	Ratio	Lower	Upper
43	100		
58	29.2	16.9	39.3

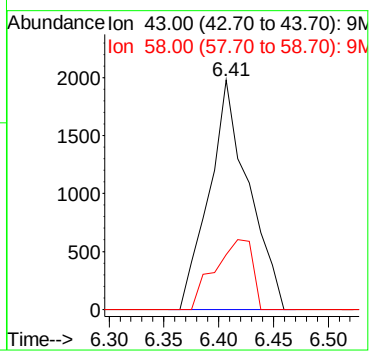

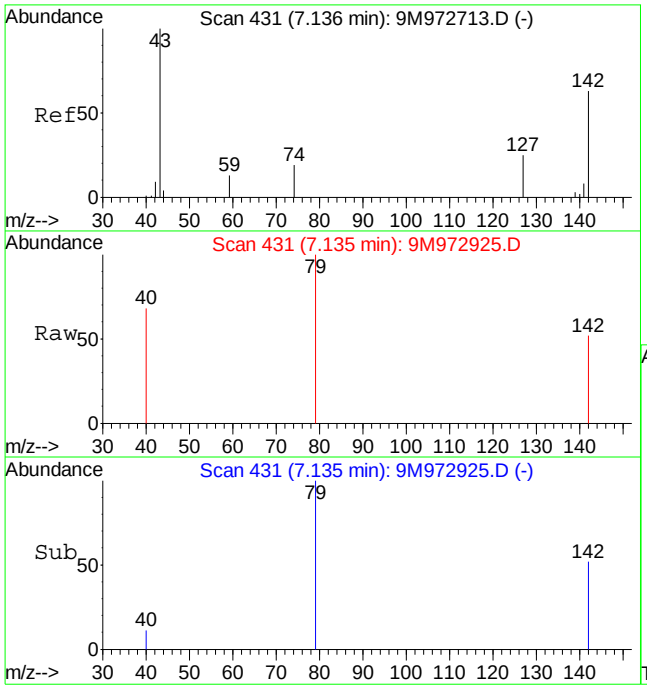

#17
Iodomethane
Concen: 3.10 ug/kg
RT: 7.13 min Scan# 431
Delta R.T. 0.00 min
Lab File: 9M972925.D
Acq: 26 Feb 2016 22:21

Tgt Ion:142 Resp: 458

Ion	Ratio	Lower	Upper
142	100		
127	0.0	25.1	58.7#

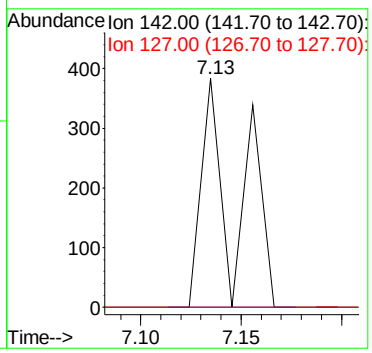

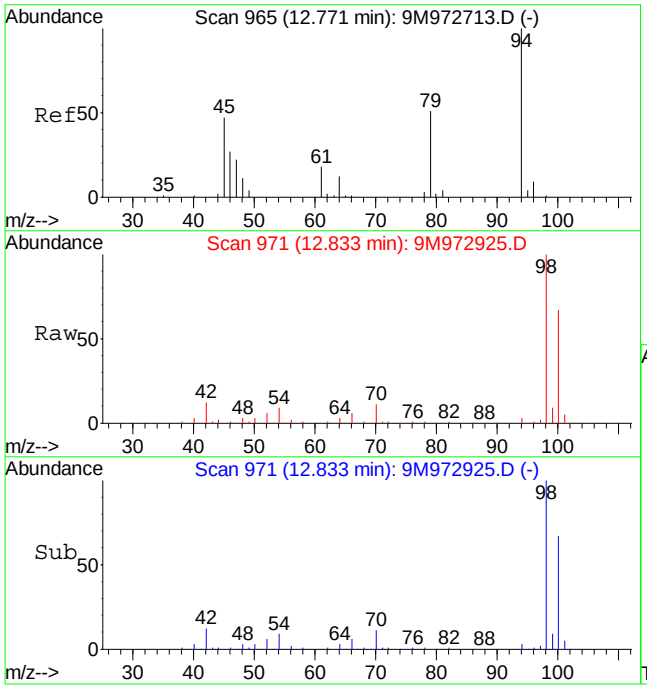

#56
Dimethyl Disulfide
Concen: 3.31 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.07 min
Lab File: 9M972925.D
Acq: 26 Feb 2016 22:21

Tgt Ion: 94 Resp: 13467

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

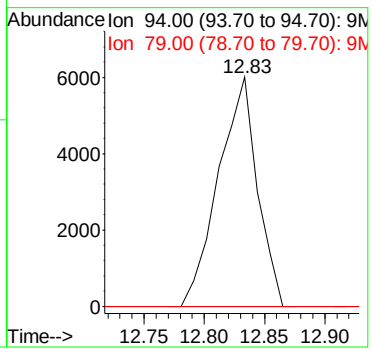

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022816\9M972958.D Vial: 16
Acq On : 28 Feb 2016 23:22 Operator: FJB
Sample : L16021240-04 8260 4.59g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 13:25:59 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	408640	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.73	117	287238	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	129736	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	109892	49.6118 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.22%		
43) 1,2-Dichloroethane-d4	10.45	65	135988	48.9307 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.86%		
58) Toluene-d8	12.83	98	398839	54.8954 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 109.80%		
79) p-Bromofluorobenzene	16.23	95	144353	57.1416 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 114.28%		

Target Compounds					Qvalue
13) Acetone	6.39	43	3611	1.1592 ug/kg#	70
56) Dimethyl Disulfide	12.82	94	10528	3.3214 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972958.D 8260SL.M Mon Feb 29 13:26:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022816\9M972958.D Vial: 16
Acq On : 28 Feb 2016 23:22 Operator: FJB
Sample : L16021240-04 8260 4.59g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 13:26 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

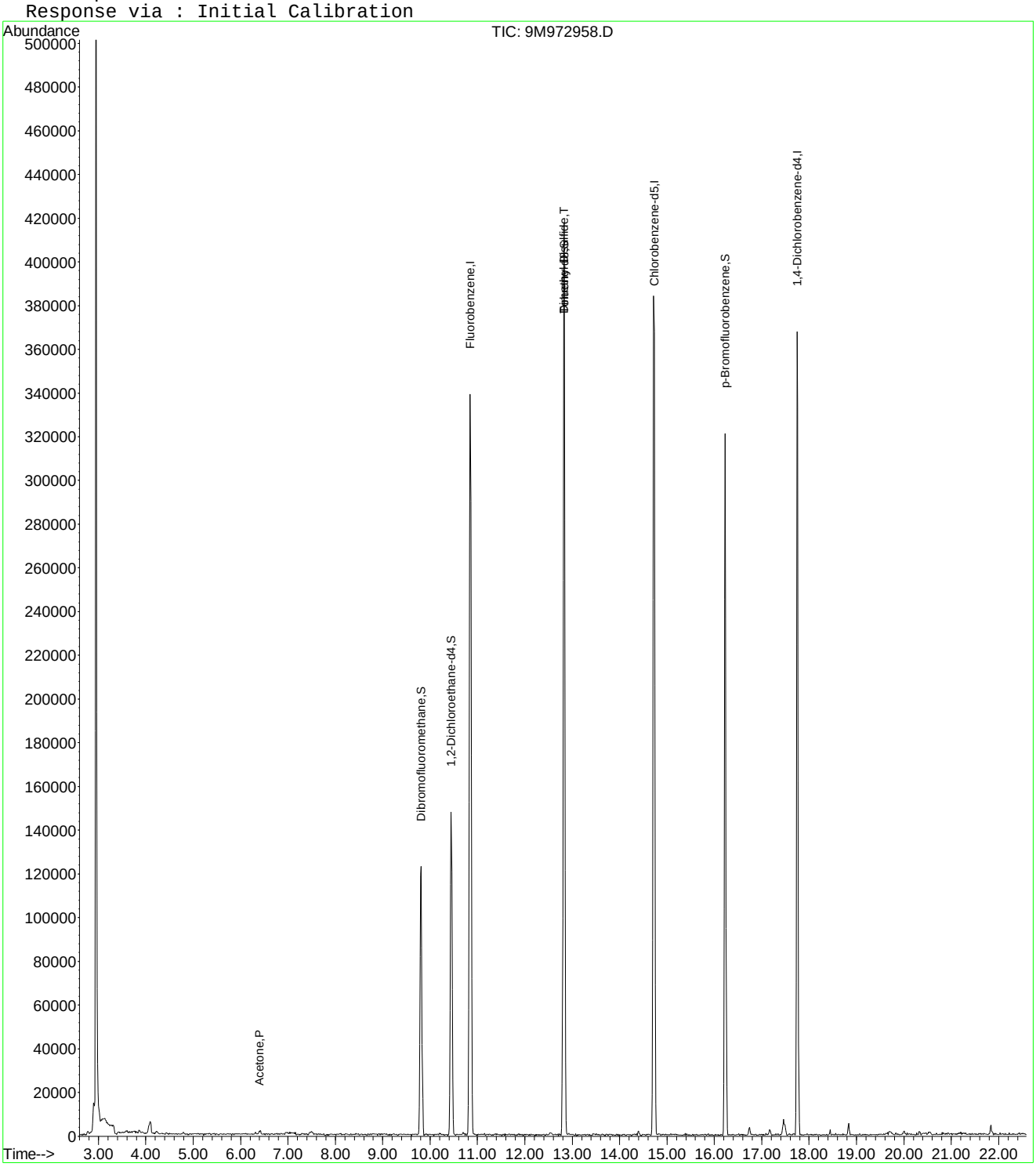

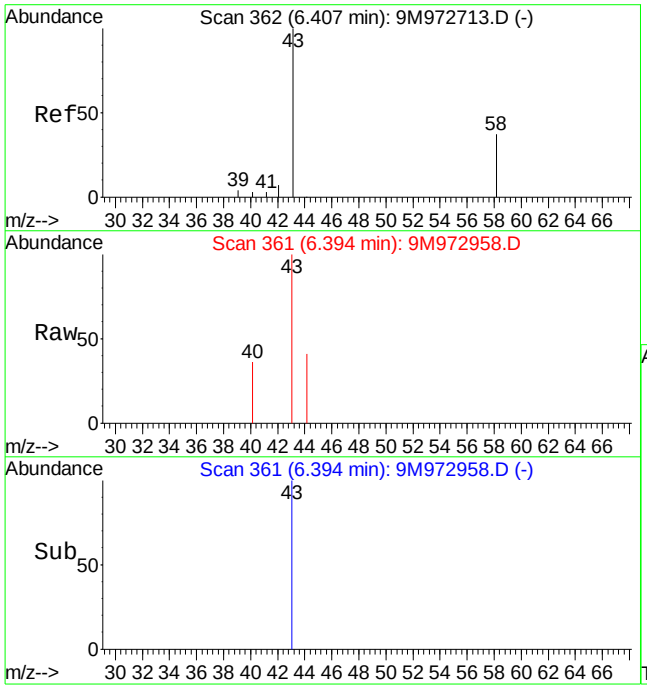

#13
Acetone
Concen: 1.16 ug/kg
RT: 6.39 min Scan# 361
Delta R.T. -0.02 min
Lab File: 9M972958.D
Acq: 28 Feb 2016 23:22

Tgt Ion: 43 Resp: 3611

Ion	Ratio	Lower	Upper
43	100		
58	12.5	16.9	39.3#

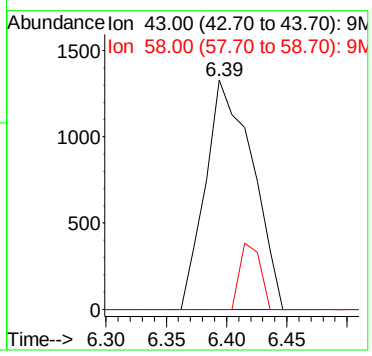

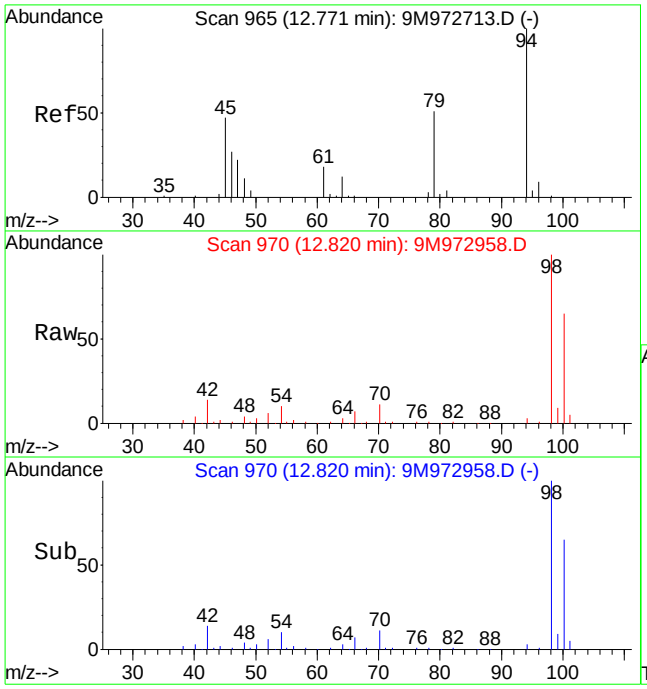

#56
Dimethyl Disulfide
Concen: 3.32 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M972958.D
Acq: 28 Feb 2016 23:22

Tgt Ion: 94 Resp: 10528

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

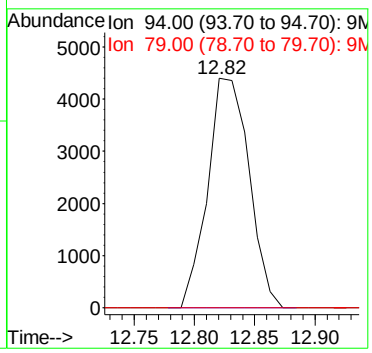

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\9M972927.D Vial: 18
Acq On : 26 Feb 2016 23:22 Operator: ADC
Sample : L16021240-05 A 8260 4.79g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 11:43:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	528471	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	379210	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	173557	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	146305	51.0737 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 102.14%		
43) 1,2-Dichloroethane-d4	10.45	65	182371	50.7407 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 101.48%		
58) Toluene-d8	12.83	98	521393	54.3582 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 108.72%		
79) p-Bromofluorobenzene	16.23	95	188387	55.7437 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 111.48%		

Target Compounds

					Qvalue
13) Acetone	6.41	43	4711	1.1915 ug/kg	99
17) Iodomethane	7.14	142	640	3.2100 ug/kg#	34
56) Dimethyl Disulfide	12.83	94	15170	3.7007 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972927.D 8260SL.M Mon Feb 29 11:43:17 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\9M972927.D Vial: 18
Acq On : 26 Feb 2016 23:22 Operator: ADC
Sample : L16021240-05 A 8260 4.79g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 11:43 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

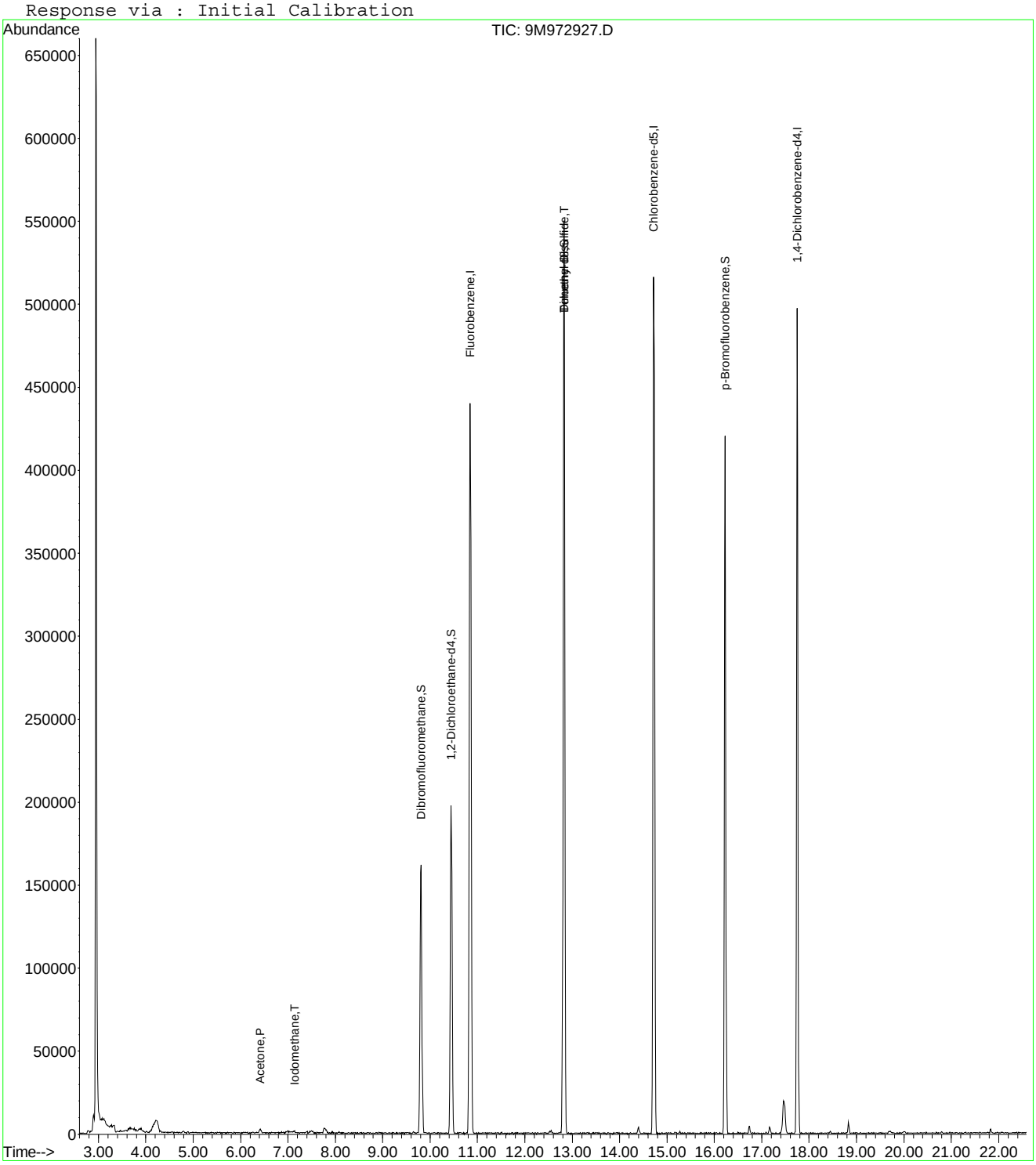

9M972927.D 8260SL.M Mon Feb 29 11:43:17 2016 Page 2

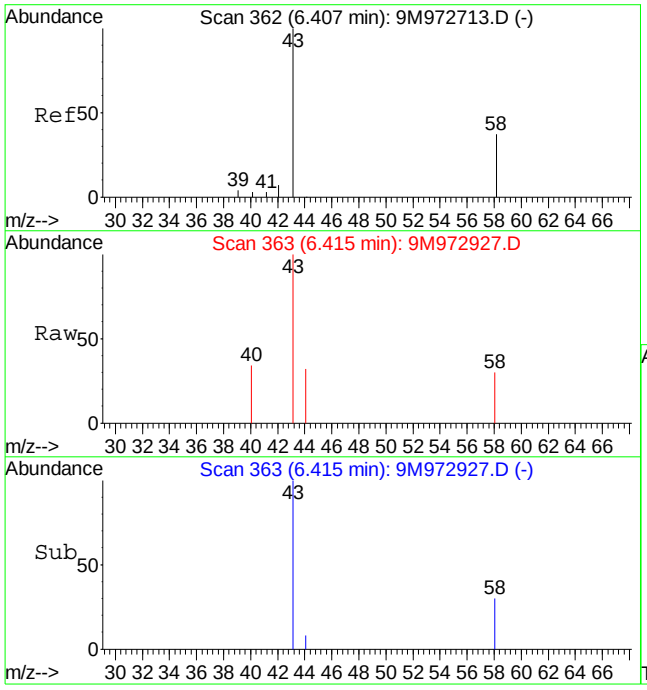

#13
Acetone
Concen: 1.19 ug/kg
RT: 6.41 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M972927.D
Acq: 26 Feb 2016 23:22

Tgt Ion: 43 Resp: 4711

Ion	Ratio	Lower	Upper
43	100		
58	27.7	16.9	39.3

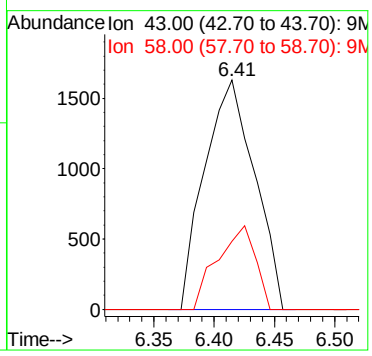

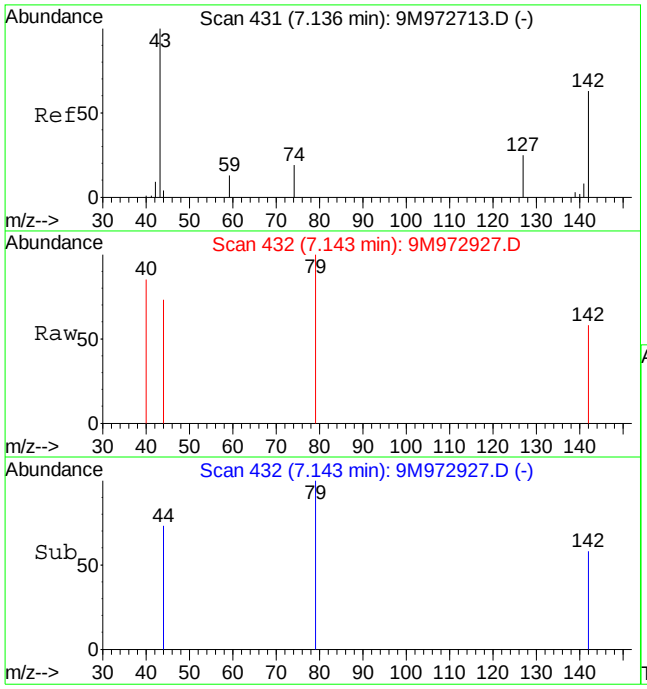

#17
Iodomethane
Concen: 3.21 ug/kg
RT: 7.14 min Scan# 432
Delta R.T. 0.01 min
Lab File: 9M972927.D
Acq: 26 Feb 2016 23:22

Tgt Ion:142 Resp: 640

Ion	Ratio	Lower	Upper
142	100		
127	0.0	25.1	58.7#

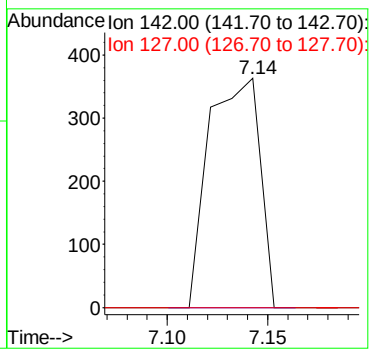

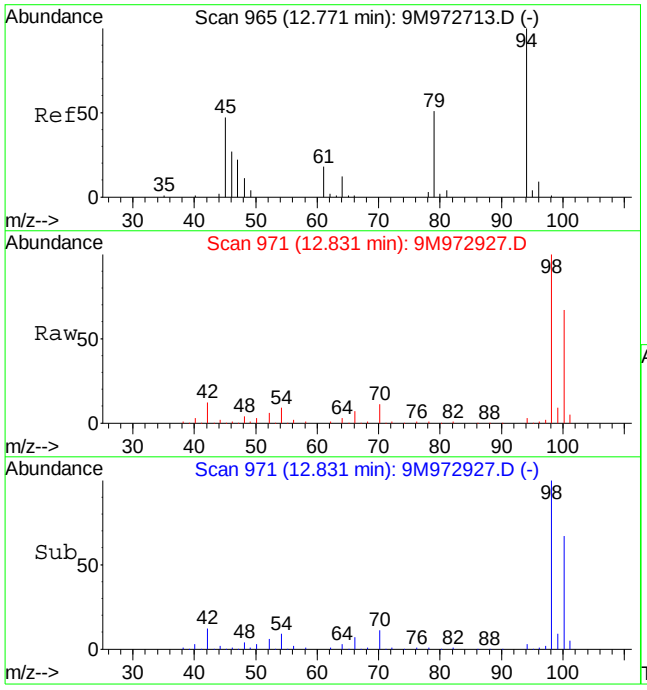

#56
Dimethyl Disulfide
Concen: 3.70 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.06 min
Lab File: 9M972927.D
Acq: 26 Feb 2016 23:22

Tgt Ion: 94 Resp: 15170

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

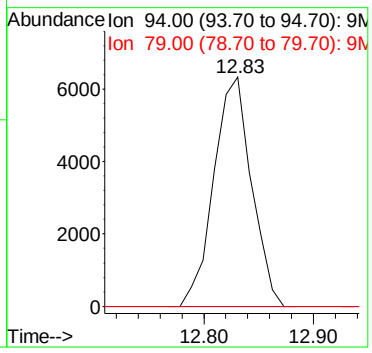

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\9M972928.D Vial: 19
Acq On : 26 Feb 2016 23:53 Operator: ADC
Sample : L16021240-06 A 8260 5.31g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 11:43:17 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	535463	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	375738	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	165690	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	143273	49.3622 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.72%		
43) 1,2-Dichloroethane-d4	10.45	65	170021	46.6869 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.38%		
58) Toluene-d8	12.82	98	517496	54.4505 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 108.90%		
79) p-Bromofluorobenzene	16.23	95	178455	55.3121 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 110.62%		

Target Compounds

					Qvalue
13) Acetone	6.43	43	6779	2.7480 ug/kg	95
17) Iodomethane	7.14	142	404	3.0548 ug/kg#	34
36) Tetrahydrofuran	9.78	42	476	0.4277 ug/kg#	43
56) Dimethyl Disulfide	12.82	94	15158	3.6495 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972928.D 8260SL.M Mon Feb 29 11:43:18 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\9M972928.D Vial: 19
Acq On : 26 Feb 2016 23:53 Operator: ADC
Sample : L16021240-06 A 8260 5.31g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 11:43 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

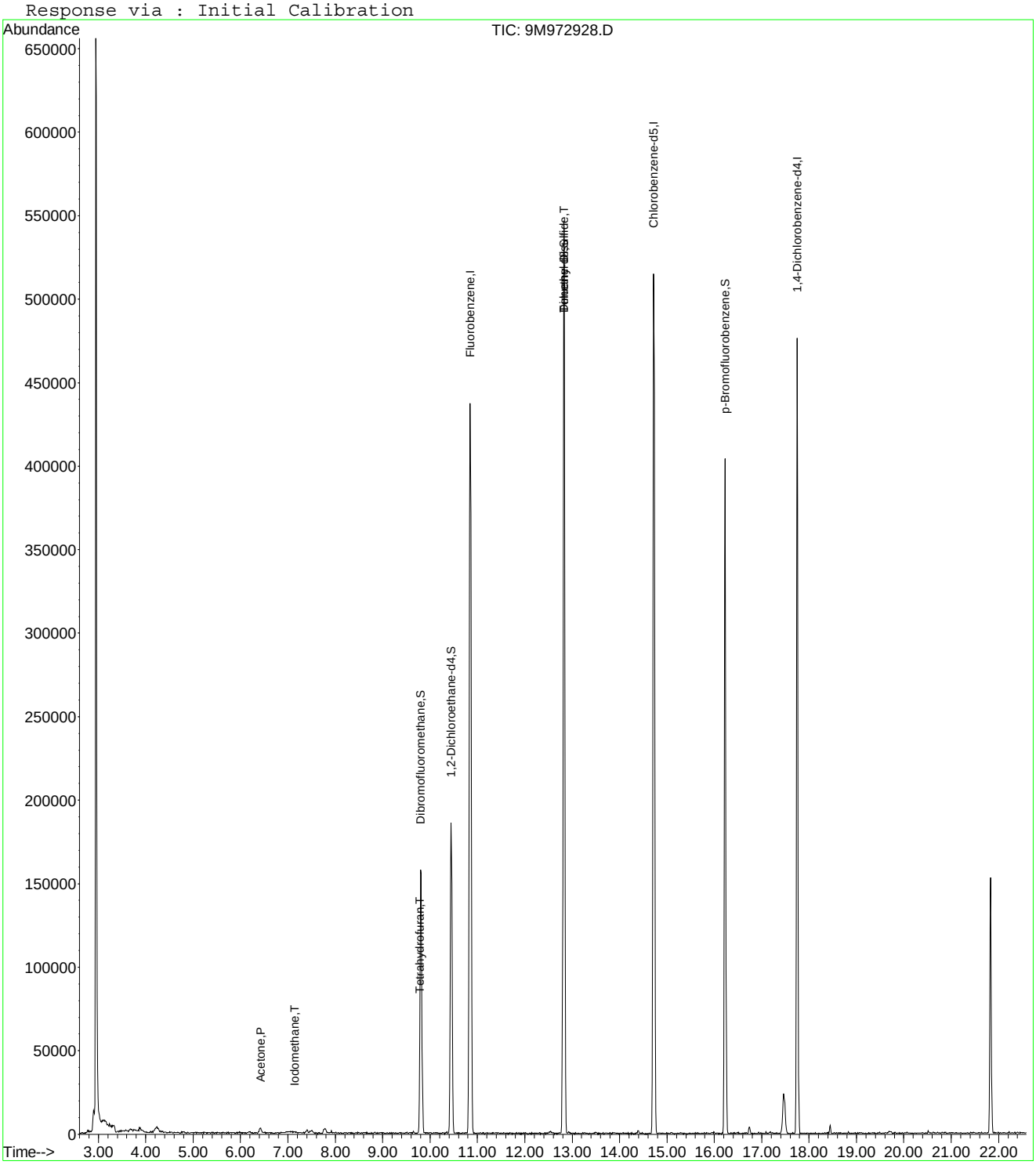

9M972928.D 8260SL.M Mon Feb 29 11:43:18 2016 Page 2

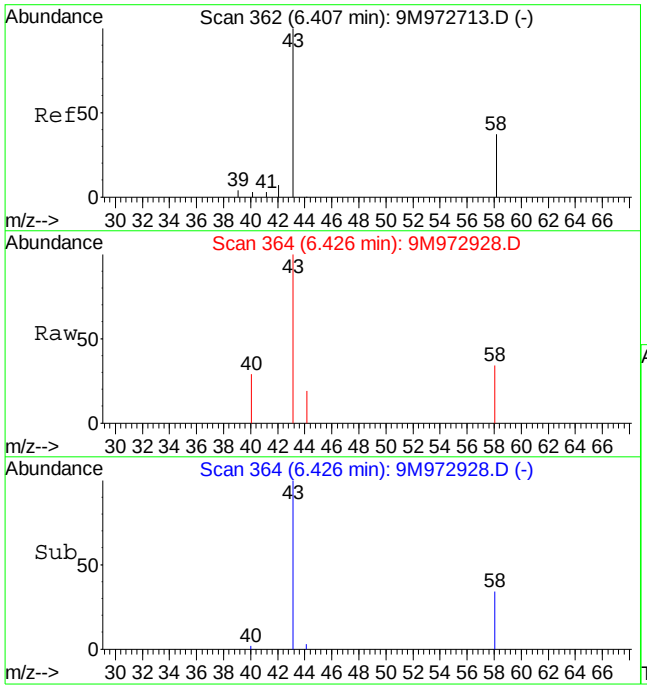

#13
Acetone
Concen: 2.75 ug/kg
RT: 6.43 min Scan# 364
Delta R.T. 0.01 min
Lab File: 9M972928.D
Acq: 26 Feb 2016 23:53

Tgt Ion: 43 Resp: 6779

Ion	Ratio	Lower	Upper
43	100		
58	30.6	16.9	39.3

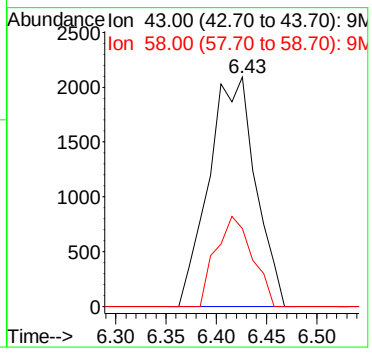

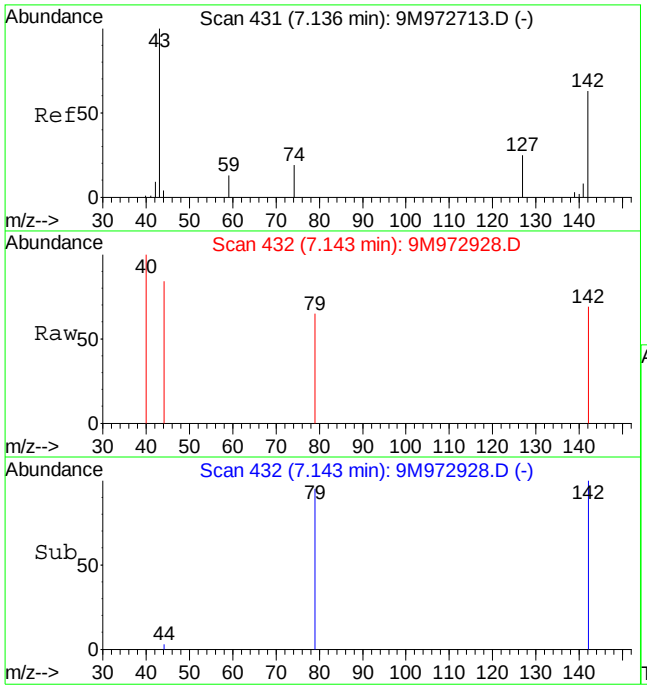

#17
Iodomethane
Concen: 3.05 ug/kg
RT: 7.14 min Scan# 432
Delta R.T. 0.01 min
Lab File: 9M972928.D
Acq: 26 Feb 2016 23:53

Tgt Ion:142 Resp: 404

Ion	Ratio	Lower	Upper
142	100		
127	0.0	25.1	58.7#

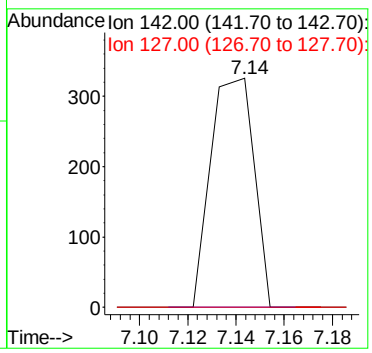

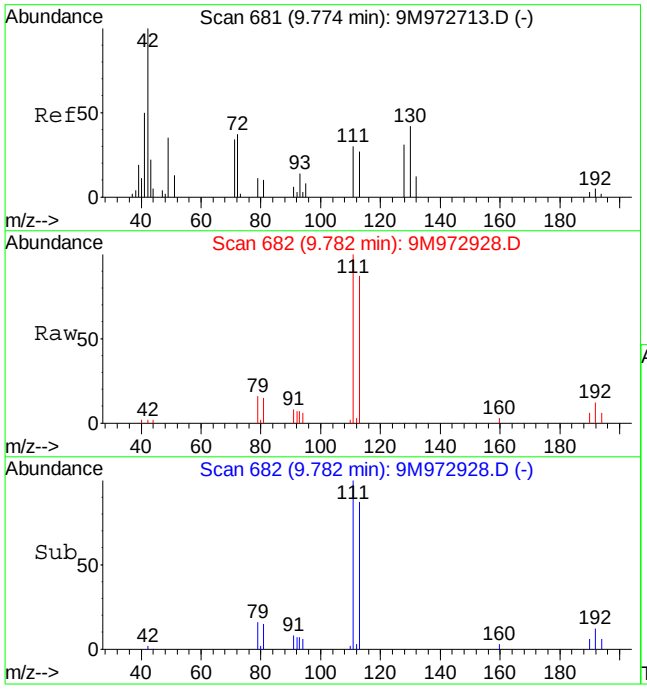

#36
Tetrahydrofuran
Concen: 0.43 ug/kg
RT: 9.78 min Scan# 682
Delta R.T. 0.00 min
Lab File: 9M972928.D
Acq: 26 Feb 2016 23:53

Tgt Ion: 42 Resp: 476

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

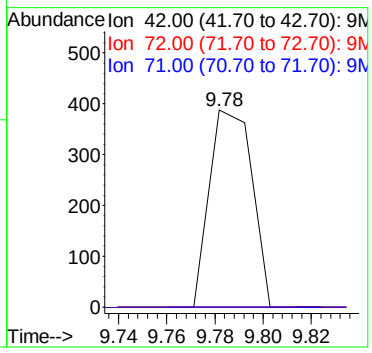

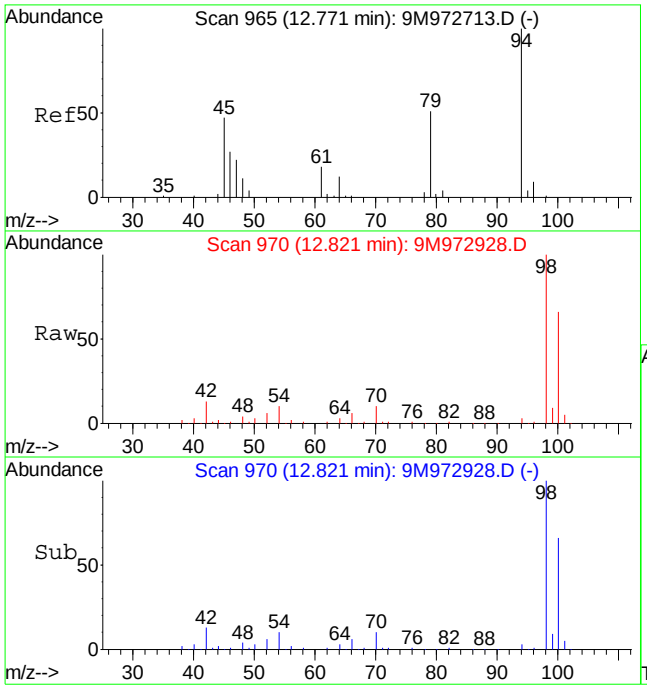

#56
Dimethyl Disulfide
Concen: 3.65 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M972928.D
Acq: 26 Feb 2016 23:53

Tgt Ion: 94 Resp: 15158

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

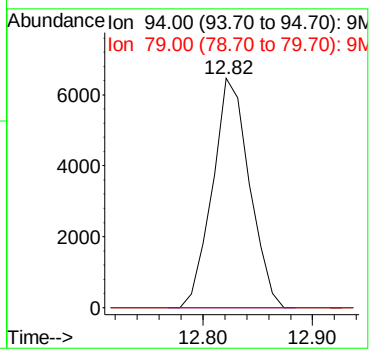

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\9M972929.D Vial: 20
Acq On : 27 Feb 2016 00:23 Operator: ADC
Sample : L16021240-07 A 8260 5.19g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 11:43:18 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	569241	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	411796	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	191119	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	156666	50.7736 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 101.54%		
43) 1,2-Dichloroethane-d4	10.45	65	197703	51.0668 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 102.14%		
58) Toluene-d8	12.82	98	552567	53.0497 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.10%		
79) p-Bromofluorobenzene	16.23	95	204573	54.9708 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 109.94%		

Target Compounds

					Qvalue
13) Acetone	6.42	43	6045	1.9000 ug/kg#	72
17) Iodomethane	7.15	142	643	3.1823 ug/kg#	34
47) Trichloroethene	11.36	130	9131	2.6445 ug/kg	98
56) Dimethyl Disulfide	12.82	94	15245	3.4526 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972929.D 8260SL.M Mon Feb 29 11:43:19 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\9M972929.D Vial: 20
Acq On : 27 Feb 2016 00:23 Operator: ADC
Sample : L16021240-07 A 8260 5.19g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 11:43 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

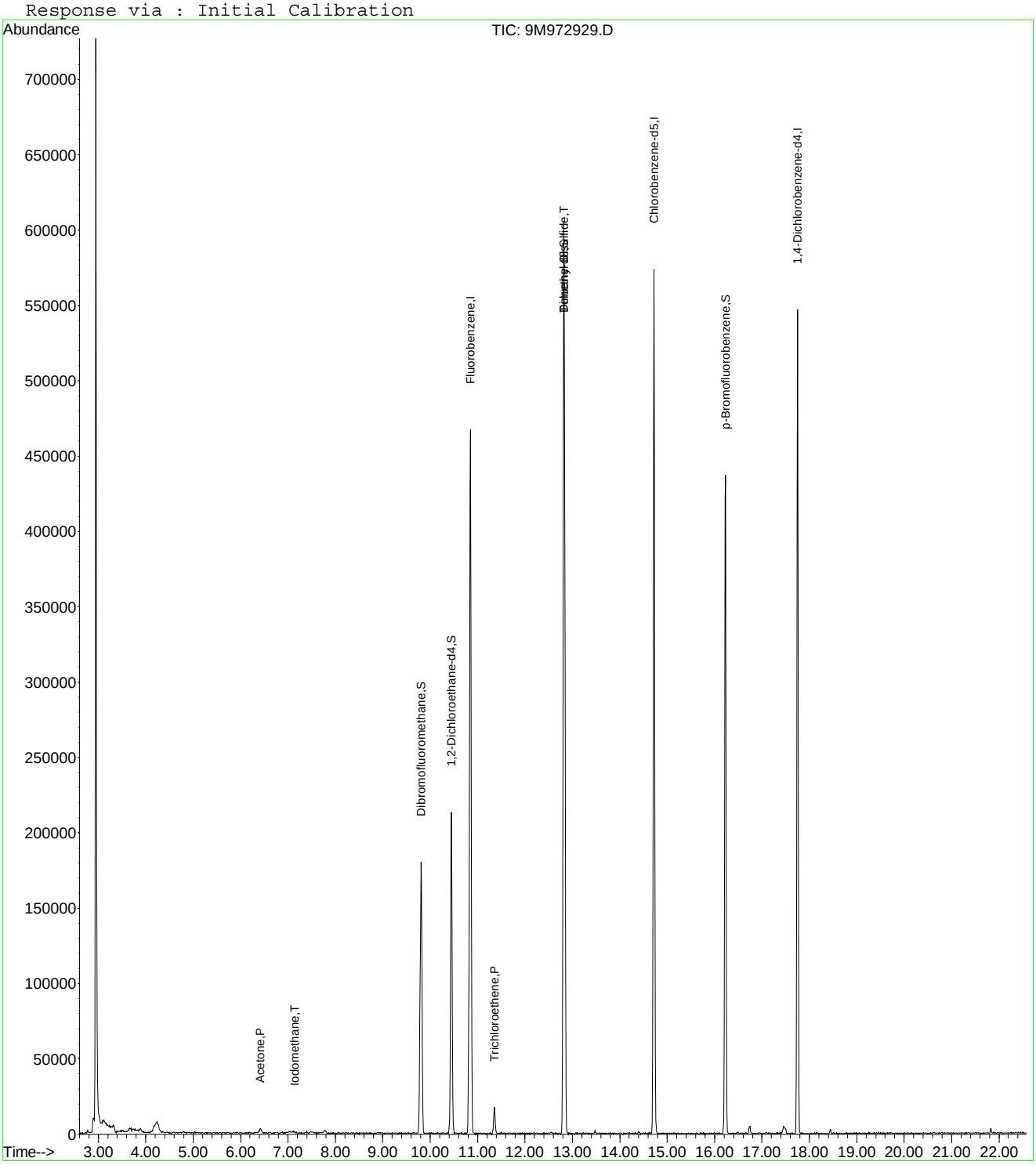

9M972929.D 8260SL.M Mon Feb 29 11:43:19 2016 Page 2

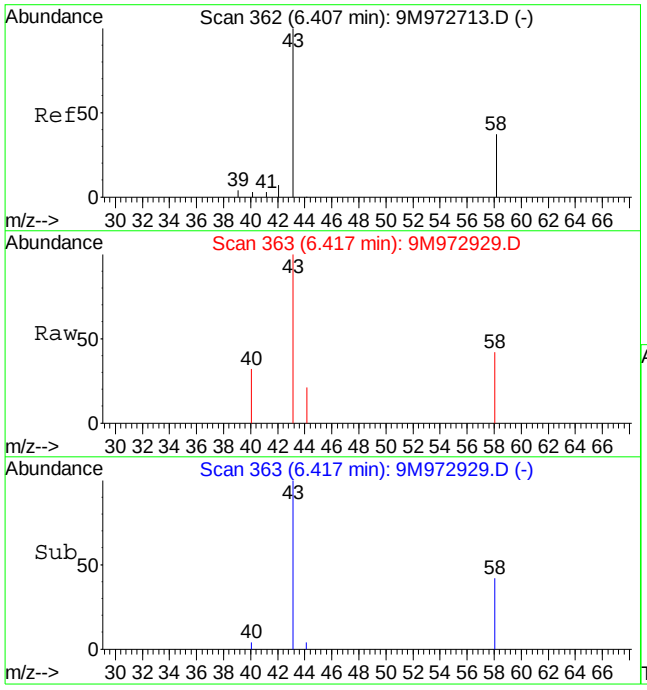

#13
Acetone
Concen: 1.90 ug/kg
RT: 6.42 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M972929.D
Acq: 27 Feb 2016 00:23

Tgt Ion: 43 Resp: 6045

Ion	Ratio	Lower	Upper
43	100		
58	42.8	16.9	39.3#

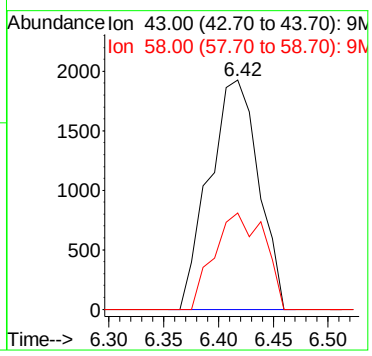

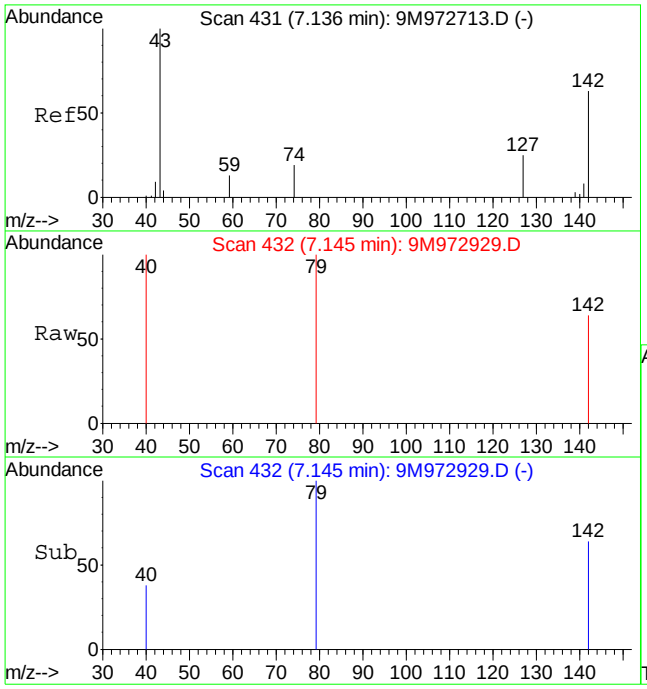

#17
Iodomethane
Concen: 3.18 ug/kg
RT: 7.15 min Scan# 432
Delta R.T. 0.01 min
Lab File: 9M972929.D
Acq: 27 Feb 2016 00:23

Tgt Ion:142 Resp: 643

Ion	Ratio	Lower	Upper
142	100		
127	0.0	25.1	58.7#

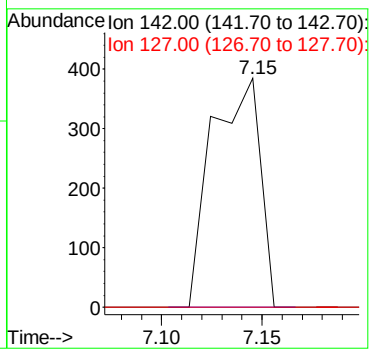

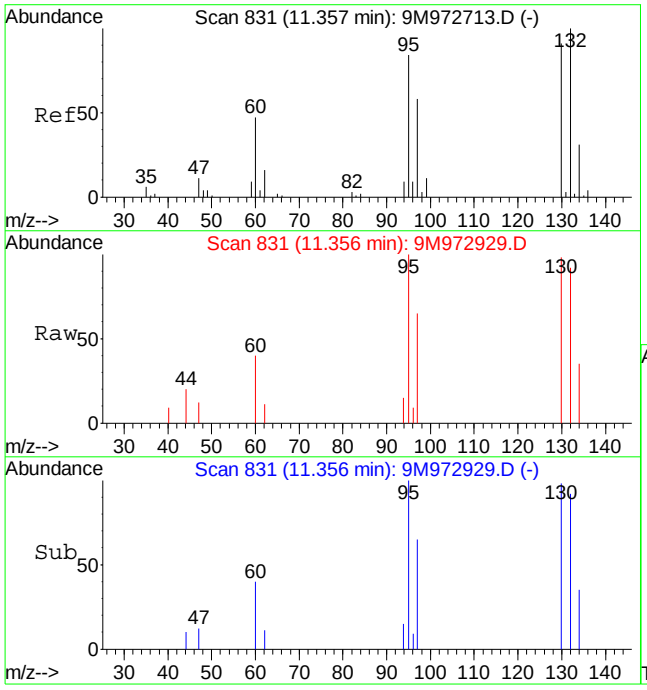

#47
Trichloroethene
Concen: 2.64 ug/kg
RT: 11.36 min Scan# 831
Delta R.T. 0.00 min
Lab File: 9M972929.D
Acq: 27 Feb 2016 00:23

Tgt Ion:130 Resp: 9131

Ion	Ratio	Lower	Upper
130	100		
132	90.8	56.5	131.7
95	93.7	55.4	129.4

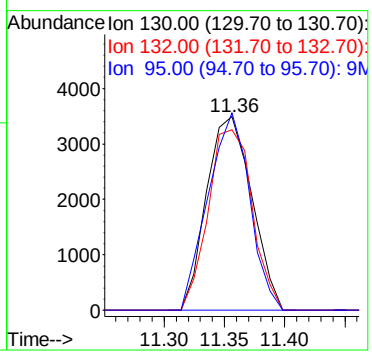

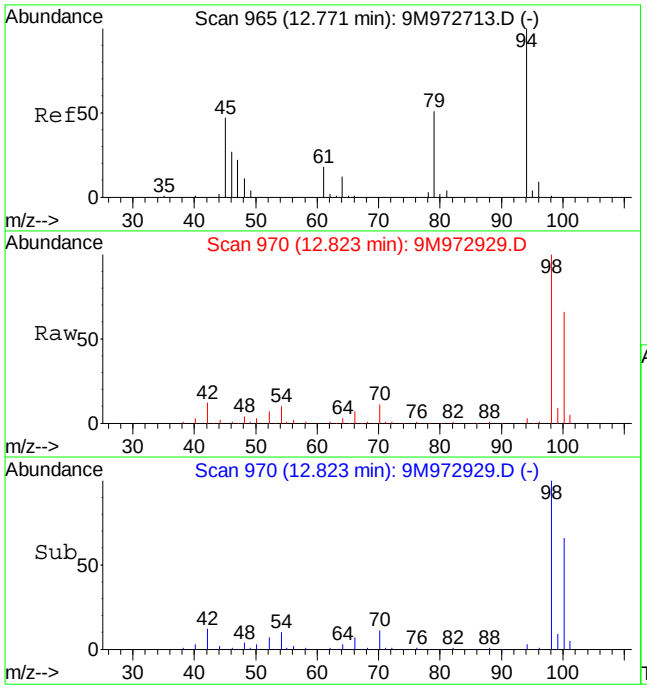

#56
Dimethyl Disulfide
Concen: 3.45 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M972929.D
Acq: 27 Feb 2016 00:23

Tgt Ion: 94 Resp: 15245

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

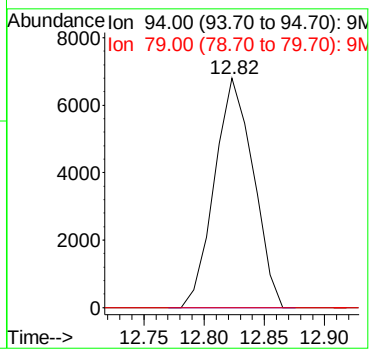

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\9M972930.D Vial: 21
Acq On : 27 Feb 2016 00:53 Operator: ADC
Sample : WG558938-01 L16021240-08 A 8260 4.71g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 11:43:19 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	612123	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	430665	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	197692	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	160913	48.4967 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.00%		
43) 1,2-Dichloroethane-d4	10.45	65	199077	47.8194 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.64%		
58) Toluene-d8	12.82	98	583376	53.5536 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 107.10%		
79) p-Bromofluorobenzene	16.23	95	211856	55.0350 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 110.08%		

Target Compounds

					Qvalue
13) Acetone	6.42	43	5554	1.2575 ug/kg	83
17) Iodomethane	7.13	142	257	2.9410 ug/kg#	34
56) Dimethyl Disulfide	12.83	94	16023	3.3746 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972930.D 8260SL.M Mon Feb 29 11:43:20 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\9M972930.D Vial: 21
Acq On : 27 Feb 2016 00:53 Operator: ADC
Sample : WG558938-01 L16021240-08 A 8260 4.71g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 11:43 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

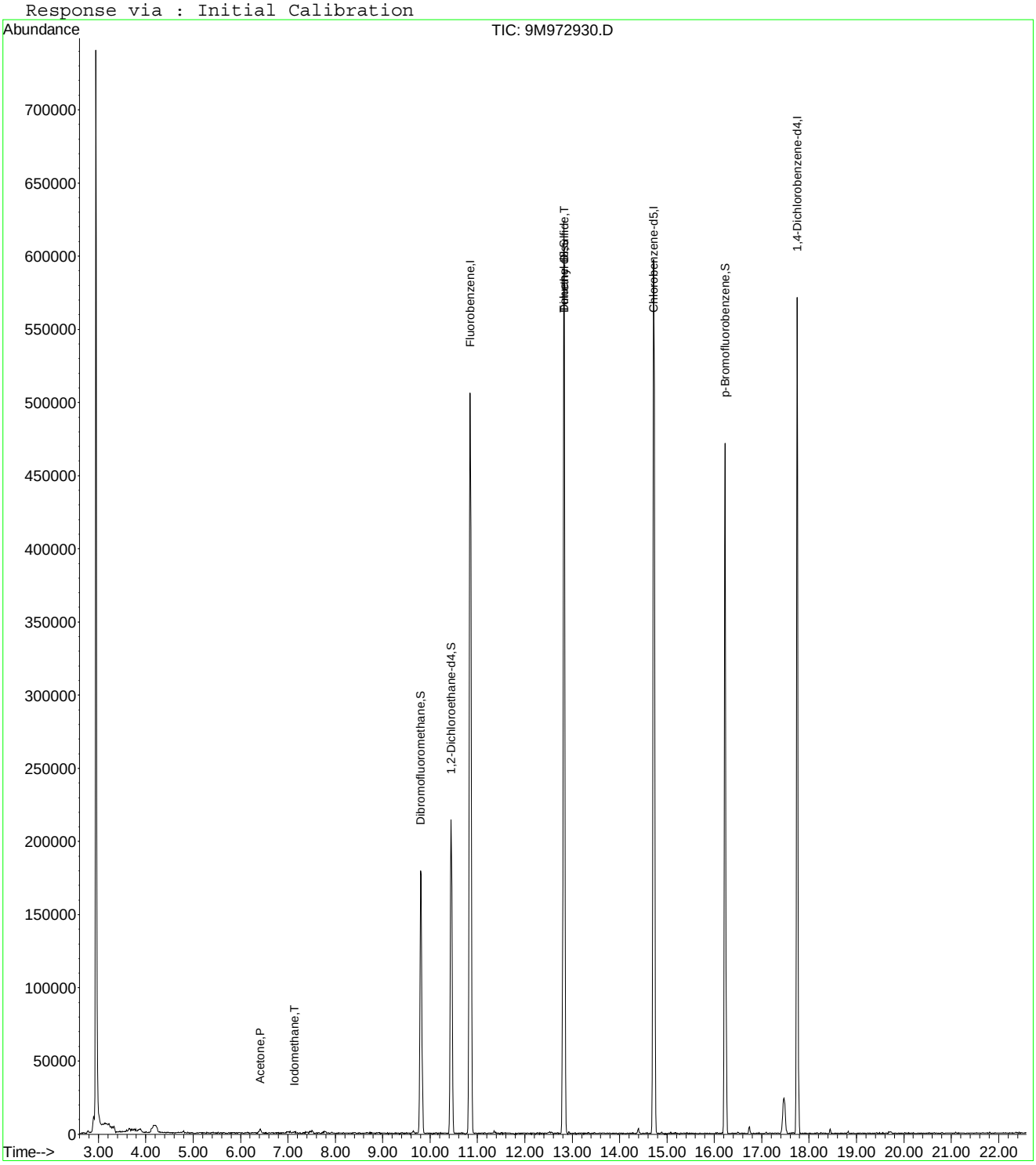

9M972930.D 8260SL.M Mon Feb 29 11:43:20 2016 Page 2

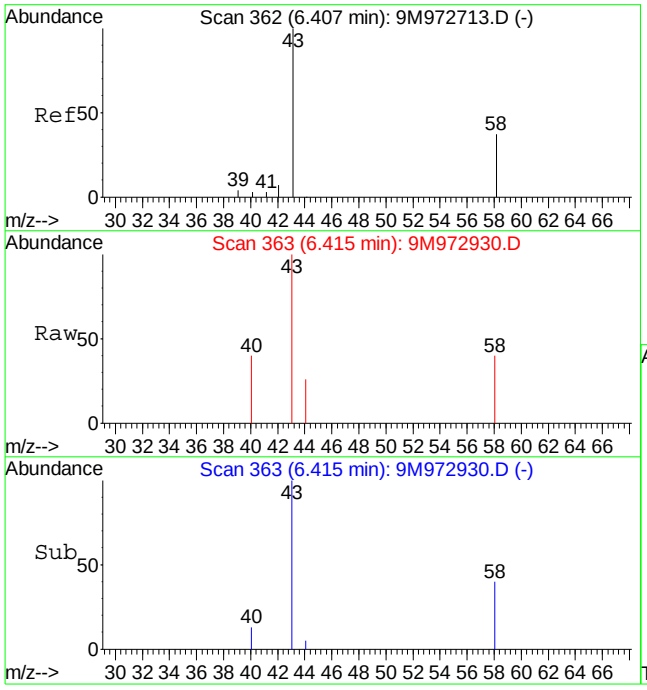

#13
Acetone
Concen: 1.26 ug/kg
RT: 6.42 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M972930.D
Acq: 27 Feb 2016 00:53

Tgt Ion: 43 Resp: 5554

Ion	Ratio	Lower	Upper
43	100		
58	37.3	16.9	39.3

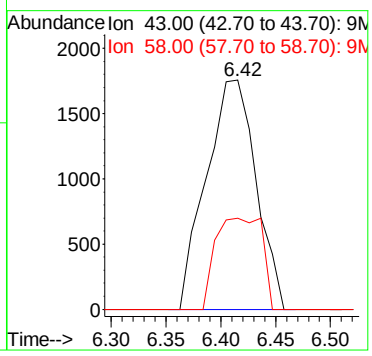

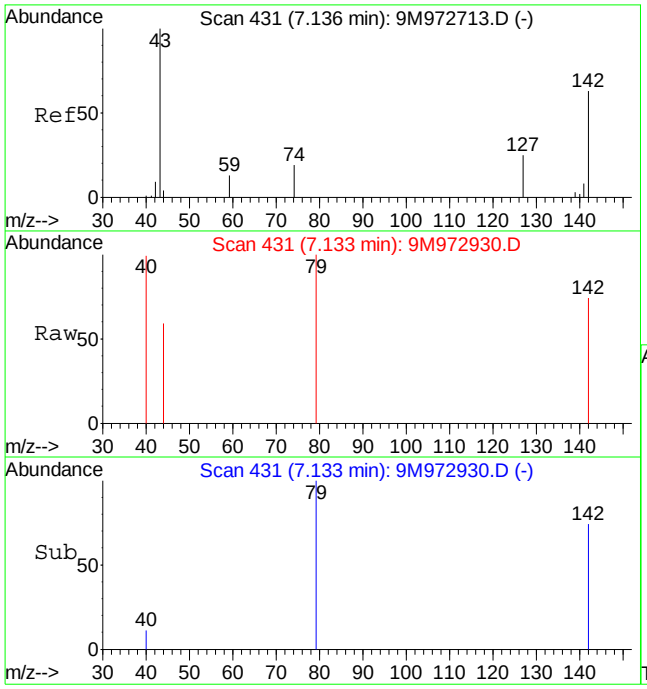

#17
Iodomethane
Concen: 2.94 ug/kg
RT: 7.13 min Scan# 431
Delta R.T. 0.00 min
Lab File: 9M972930.D
Acq: 27 Feb 2016 00:53

Tgt Ion:142 Resp: 257

Ion	Ratio	Lower	Upper
142	100		
127	0.0	25.1	58.7#

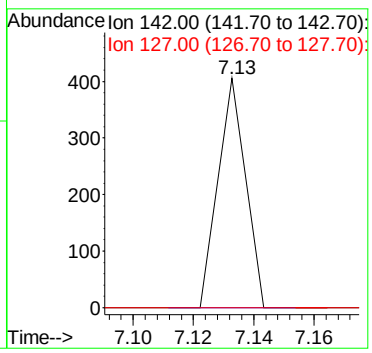

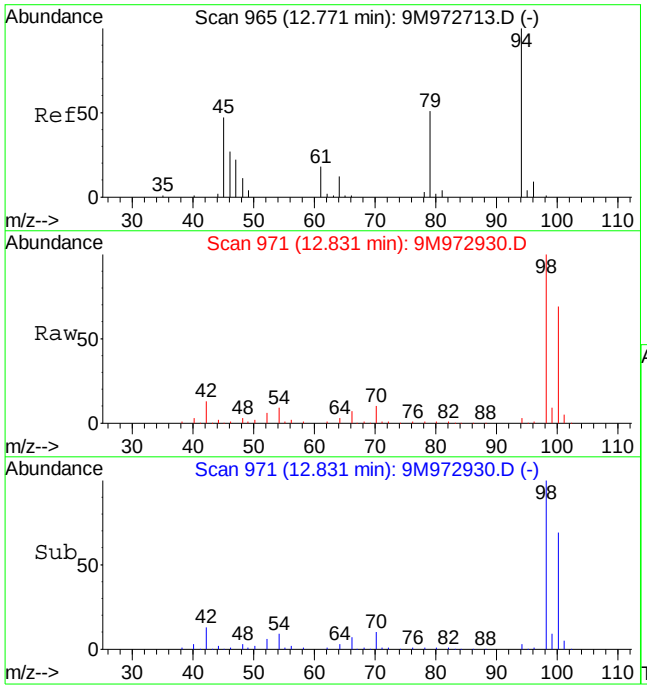

#56
Dimethyl Disulfide
Concen: 3.37 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.07 min
Lab File: 9M972930.D
Acq: 27 Feb 2016 00:53

Tgt Ion: 94 Resp: 16023

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

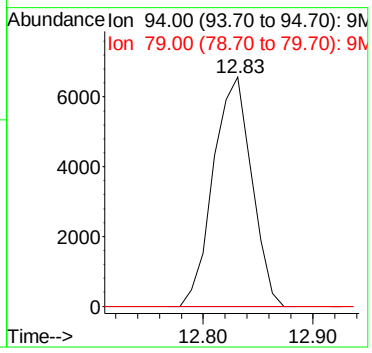

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972472.D Vial: 3
Acq On : 25 Jan 2016 11:22 Operator: FJB
Sample : WG555000-02 5ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:05 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	367739	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	266763	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.77	152	148882	50.00 ug/kg	0.01

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	1974	5.3580 ug/kg#	1
3) 3-Chloro-1-propene	7.23	41	18322	5.0468 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	19639	4.7564 ug/kg	98
5) Ethyl Acetate	9.24	43	12755	5.2595 ug/kg	91
6) Methacrylonitrile	9.40	67	3744	4.7691 ug/kg	95
7) Isobutyl Alcohol	9.42	43	1055	12.9700 ug/kg#	62
8) 1-Butanol	10.36	56	203	11.8711 ug/kg#	26
9) Methyl methacrylate	11.56	41	8689	4.6908 ug/kg	95
10) 2-Nitropropane	11.90	43	2531	4.2058 ug/kg	96

(#) = qualifier out of range (m) = manual integration
9M972472.D A9FOO_SL.M Wed Jan 27 11:22:42 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972472.D Vial: 3
Acq On : 25 Jan 2016 11:22 Operator: FJB
Sample : WG555000-02 5ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

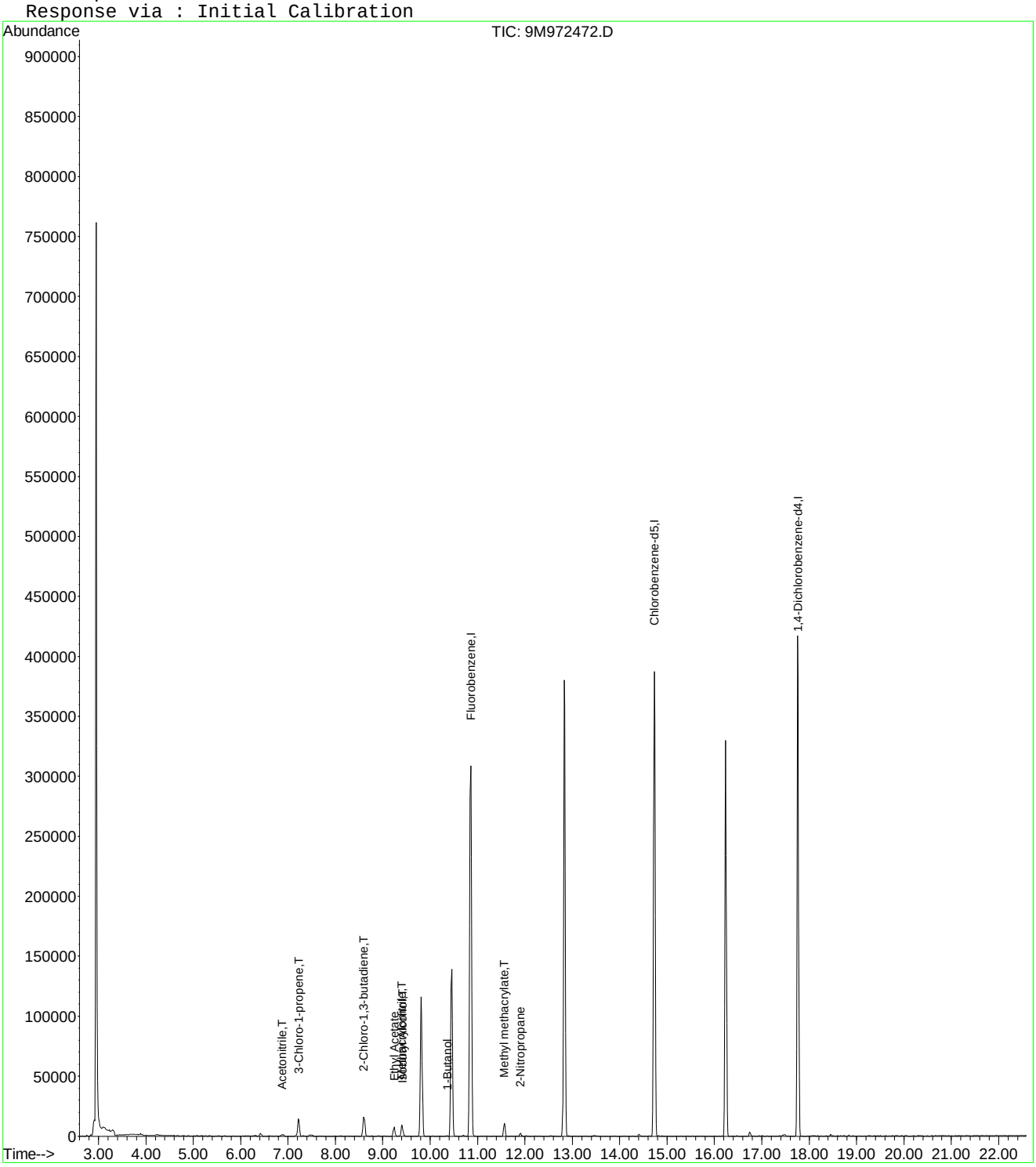

9M972472.D A9FOO_SL.M Wed Jan 27 11:22:42 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972473.D Vial: 4
Acq On : 25 Jan 2016 11:52 Operator: FJB
Sample : WG555000-03 20ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:05 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	359691	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	265773	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	149223	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	7669	21.2815 ug/kg#	77
3) 3-Chloro-1-propene	7.23	41	75360	21.2224 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	82865	20.5181 ug/kg	100
5) Ethyl Acetate	9.23	43	47912	20.1986 ug/kg	97
6) Methacrylonitrile	9.40	67	15740	20.4980 ug/kg	98
7) Isobutyl Alcohol	9.42	43	5287	37.9280 ug/kg	95
8) 1-Butanol	10.35	56	1509	22.3153 ug/kg#	81
9) Methyl methacrylate	11.56	41	35437	19.5588 ug/kg	98
10) 2-Nitropropane	11.90	43	10433	17.7247 ug/kg	98
12) Cyclohexanone	16.01	55	2157	16.3929 ug/kg#	86

(#) = qualifier out of range (m) = manual integration
9M972473.D A9FOO_SL.M Wed Jan 27 11:22:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972473.D Vial: 4
Acq On : 25 Jan 2016 11:52 Operator: FJB
Sample : WG555000-03 20ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

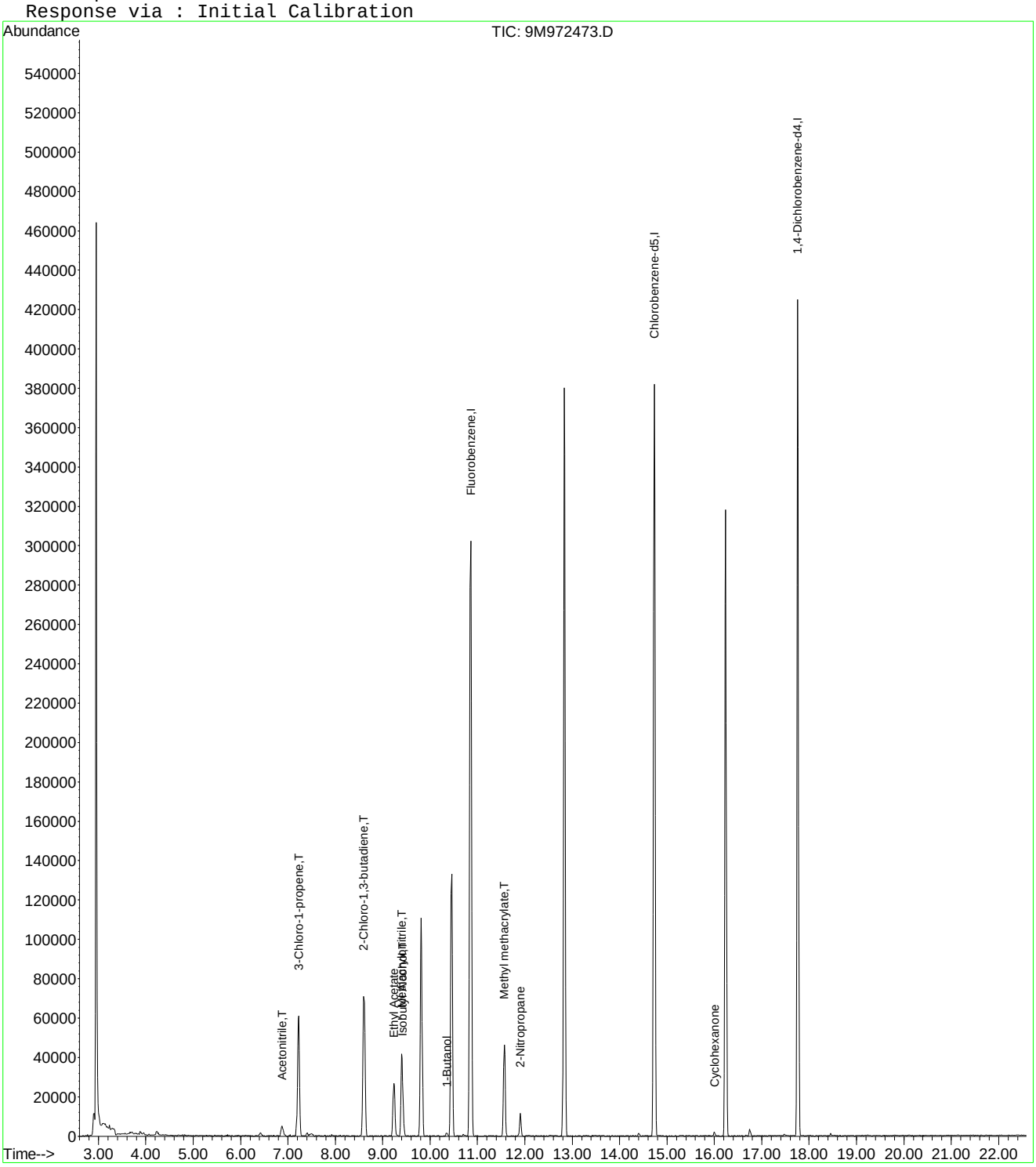

9M972473.D A9FOO_SL.M Wed Jan 27 11:22:46 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972474.D Vial: 5
Acq On : 25 Jan 2016 12:23 Operator: FJB
Sample : WG555000-04 50ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:06 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	356886	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	259679	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	147334	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	16583	46.3795 ug/kg#	94
3) 3-Chloro-1-propene	7.23	41	160601	45.5828 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.61	53	185316	46.2464 ug/kg	99
5) Ethyl Acetate	9.23	43	111538	47.3915 ug/kg	99
6) Methacrylonitrile	9.40	67	36081	47.3572 ug/kg	99
7) Isobutyl Alcohol	9.42	43	12624	81.5447 ug/kg	95
8) 1-Butanol	10.35	56	4707	48.0983 ug/kg#	50
9) Methyl methacrylate	11.56	41	82406	45.8400 ug/kg	99
10) 2-Nitropropane	11.90	43	26302	45.0359 ug/kg	97
12) Cyclohexanone	16.01	55	5625	43.7525 ug/kg	93

(#) = qualifier out of range (m) = manual integration
9M972474.D A9FOO_SL.M Wed Jan 27 11:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972474.D Vial: 5
Acq On : 25 Jan 2016 12:23 Operator: FJB
Sample : WG555000-04 50ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

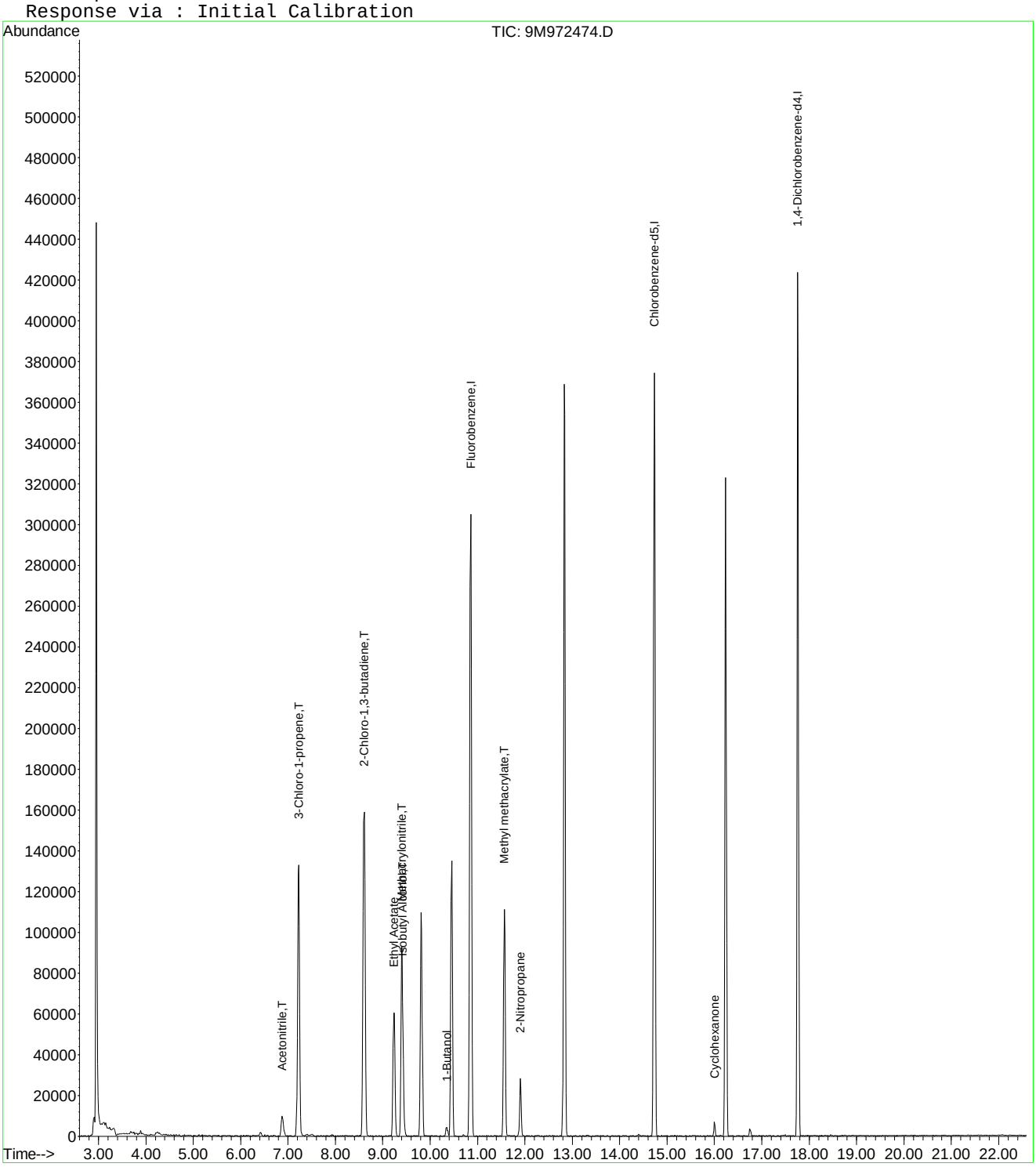

9M972474.D A9FOO_SL.M Wed Jan 27 11:22:51 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972475.D Vial: 6
Acq On : 25 Jan 2016 12:53 Operator: FJB
Sample : WG555000-05 100ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:06 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	394669	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	285851	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	161505	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	37767	95.5151	ug/kg#	100
3) 3-Chloro-1-propene	7.23	41	409870	105.1952	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.61	53	467514	105.5010	ug/kg	100
5) Ethyl Acetate	9.23	43	267513	102.7824	ug/kg	100
6) Methacrylonitrile	9.40	67	88054	104.5088	ug/kg	100
7) Isobutyl Alcohol	9.42	43	33721	187.1766	ug/kg	100
8) 1-Butanol	10.36	56	11671	95.0627	ug/kg	100
9) Methyl methacrylate	11.56	41	209503	105.3834	ug/kg	100
10) 2-Nitropropane	11.90	43	65435	101.3157	ug/kg	100
12) Cyclohexanone	16.01	55	14062	99.3630	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972475.D A9FOO_SL.M Wed Jan 27 11:22:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972475.D Vial: 6
Acq On : 25 Jan 2016 12:53 Operator: FJB
Sample : WG555000-05 100ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

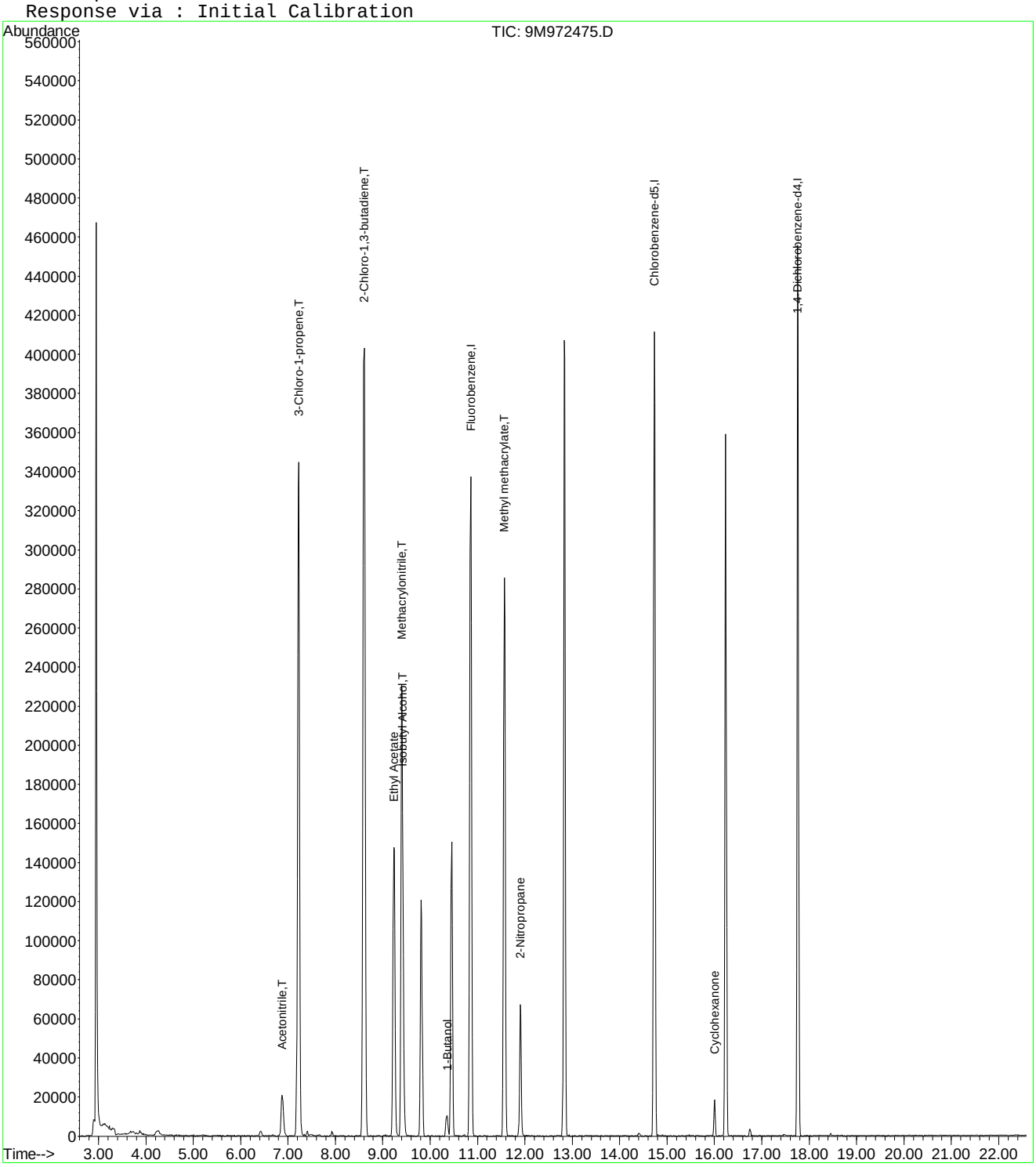

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972476.D Vial: 7
Acq On : 25 Jan 2016 13:23 Operator: FJB
Sample : WG555000-06 200ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 09:51:10 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	361792	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	264283	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	150478	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.87	41	75099	207.1896	ug/kg#	94
3) 3-Chloro-1-propene	7.22	41	743262	208.0969	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	846271	208.3269	ug/kg	100
5) Ethyl Acetate	9.23	43	489855	205.3125	ug/kg	100
6) Methacrylonitrile	9.40	67	159879	206.9995	ug/kg	100
7) Isobutyl Alcohol	9.42	43	68551	406.6640	ug/kg	99
8) 1-Butanol	10.35	56	24111	201.3375	ug/kg	97
9) Methyl methacrylate	11.57	41	382820	210.0636	ug/kg	99
10) 2-Nitropropane	11.90	43	129000	217.8866	ug/kg	95
12) Cyclohexanone	16.00	55	30065	229.7785	ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972476.D A9FOO_SL.M Wed Jan 27 09:51:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972476.D Vial: 7
Acq On : 25 Jan 2016 13:23 Operator: FJB
Sample : WG555000-06 200ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 9:51 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

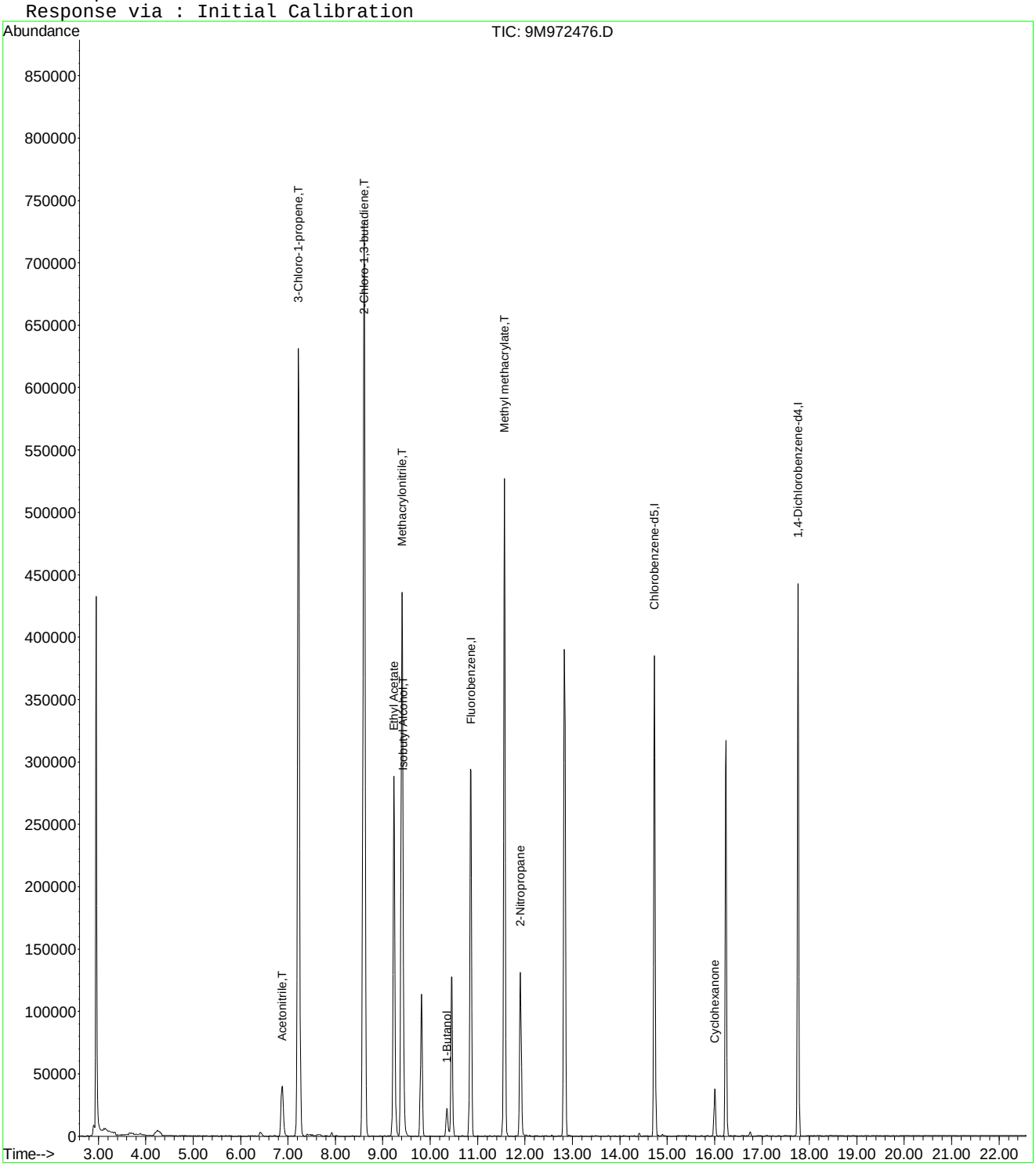

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972477.D Vial: 8
Acq On : 25 Jan 2016 13:54 Operator: FJB
Sample : WG555000-07 300ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:07 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.85	96	362779	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	265659	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	153468	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	99618	274.0870	ug/kg#	97
3) 3-Chloro-1-propene	7.22	41	944879	263.8255	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	1107217	271.8226	ug/kg	99
5) Ethyl Acetate	9.24	43	652386	272.6900	ug/kg	99
6) Methacrylonitrile	9.40	67	208153	268.7679	ug/kg	98
7) Isobutyl Alcohol	9.43	43	89707	528.6093	ug/kg#	99
8) 1-Butanol	10.35	56	31640	260.3131	ug/kg	98
9) Methyl methacrylate	11.57	41	502506	274.9883	ug/kg	98
10) 2-Nitropropane	11.90	43	172692	290.8907	ug/kg	95
12) Cyclohexanone	16.00	55	36951	280.9436	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972477.D A9FOO_SL.M Wed Jan 27 11:23:05 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972477.D Vial: 8
Acq On : 25 Jan 2016 13:54 Operator: FJB
Sample : WG555000-07 300ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

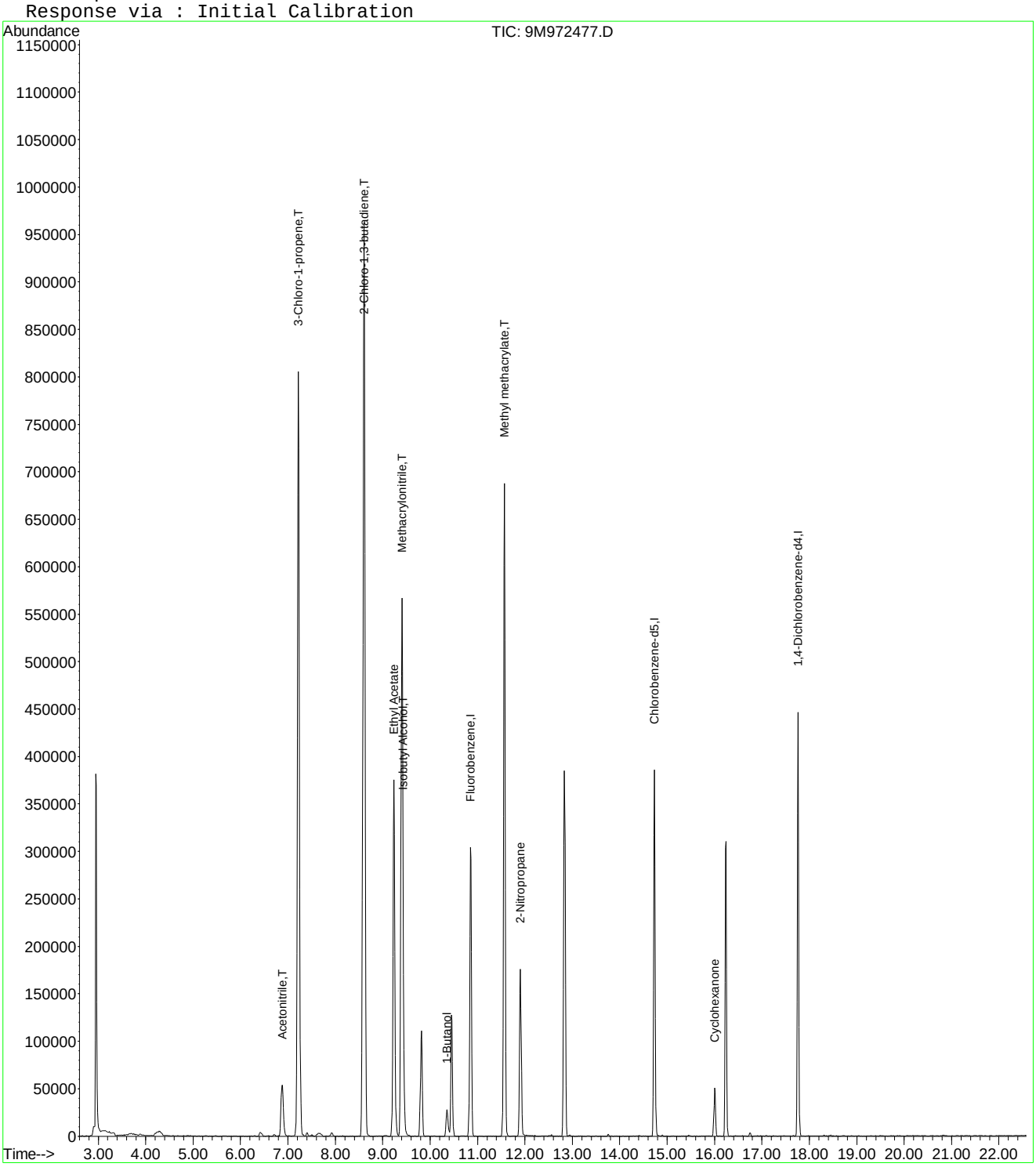

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972478.D Vial: 9
Acq On : 25 Jan 2016 14:25 Operator: FJB
Sample : WG555000-08 400ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 09:51:10 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	359343	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	261674	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	149058	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.89	41	148074	411.3034	ug/kg#	96
3) 3-Chloro-1-propene	7.22	41	1457717	410.9100	ug/kg	99
4) 2-Chloro-1,3-butadiene	8.61	53	1703971	422.3261	ug/kg	100
5) Ethyl Acetate	9.23	43	980479	413.7480	ug/kg	100
6) Methacrylonitrile	9.40	67	321602	419.2243	ug/kg	99
7) Isobutyl Alcohol	9.43	43	142361	842.7355	ug/kg#	98
8) 1-Butanol	10.36	56	51732	422.9922	ug/kg	99
9) Methyl methacrylate	11.56	41	779879	430.8570	ug/kg	98
10) 2-Nitropropane	11.90	43	267565	455.0088	ug/kg	96
12) Cyclohexanone	16.01	55	56623	437.0688	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972478.D A9FOO_SL.M Wed Jan 27 09:51:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972478.D Vial: 9
Acq On : 25 Jan 2016 14:25 Operator: FJB
Sample : WG555000-08 400ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 9:51 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

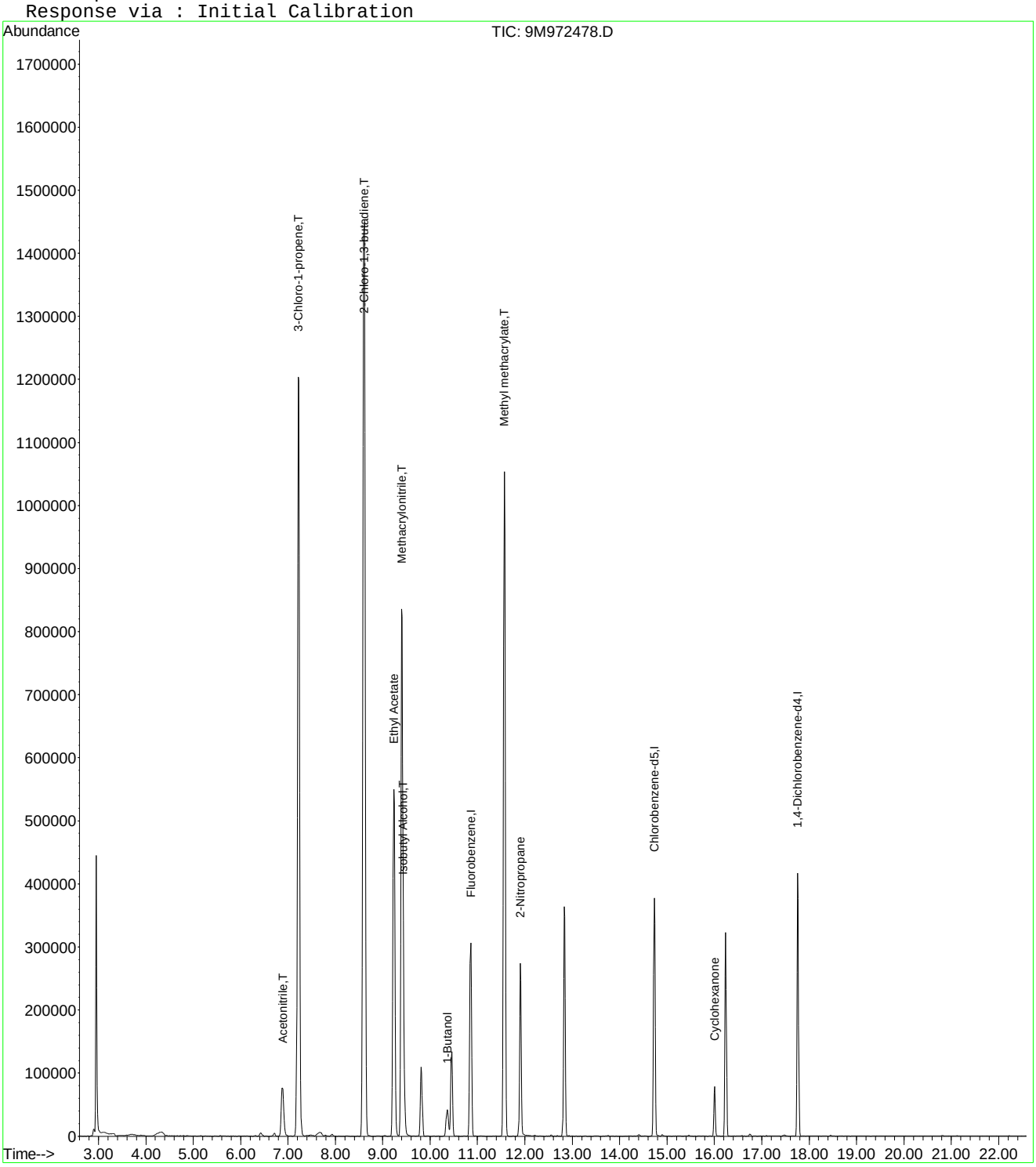

9M972478.D A9FOO_SL.M Wed Jan 27 09:51:11 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972479.D Vial: 10
Acq On : 25 Jan 2016 14:56 Operator: FJB
Sample : WG555000-09 500ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:08 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	364474	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	266311	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	151707	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	196334	537.6773	ug/kg#	94
3) 3-Chloro-1-propene	7.22	41	1832802	509.3680	ug/kg	99
4) 2-Chloro-1,3-butadiene	8.60	53	2126710	519.6807	ug/kg	100
5) Ethyl Acetate	9.23	43	1255294	522.2587	ug/kg	100
6) Methacrylonitrile	9.40	67	408537	525.0513	ug/kg	100
7) Isobutyl Alcohol	9.43	43	180610	1052.3719	ug/kg	98
8) 1-Butanol	10.36	56	64789	519.8809	ug/kg	97
9) Methyl methacrylate	11.56	41	981460	534.5904	ug/kg	100
10) 2-Nitropropane	11.90	43	346571	581.0659	ug/kg	97
12) Cyclohexanone	16.01	55	74733	566.8143	ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972479.D A9FOO_SL.M Wed Jan 27 11:30:29 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972479.D Vial: 10
Acq On : 25 Jan 2016 14:56 Operator: FJB
Sample : WG555000-09 500ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

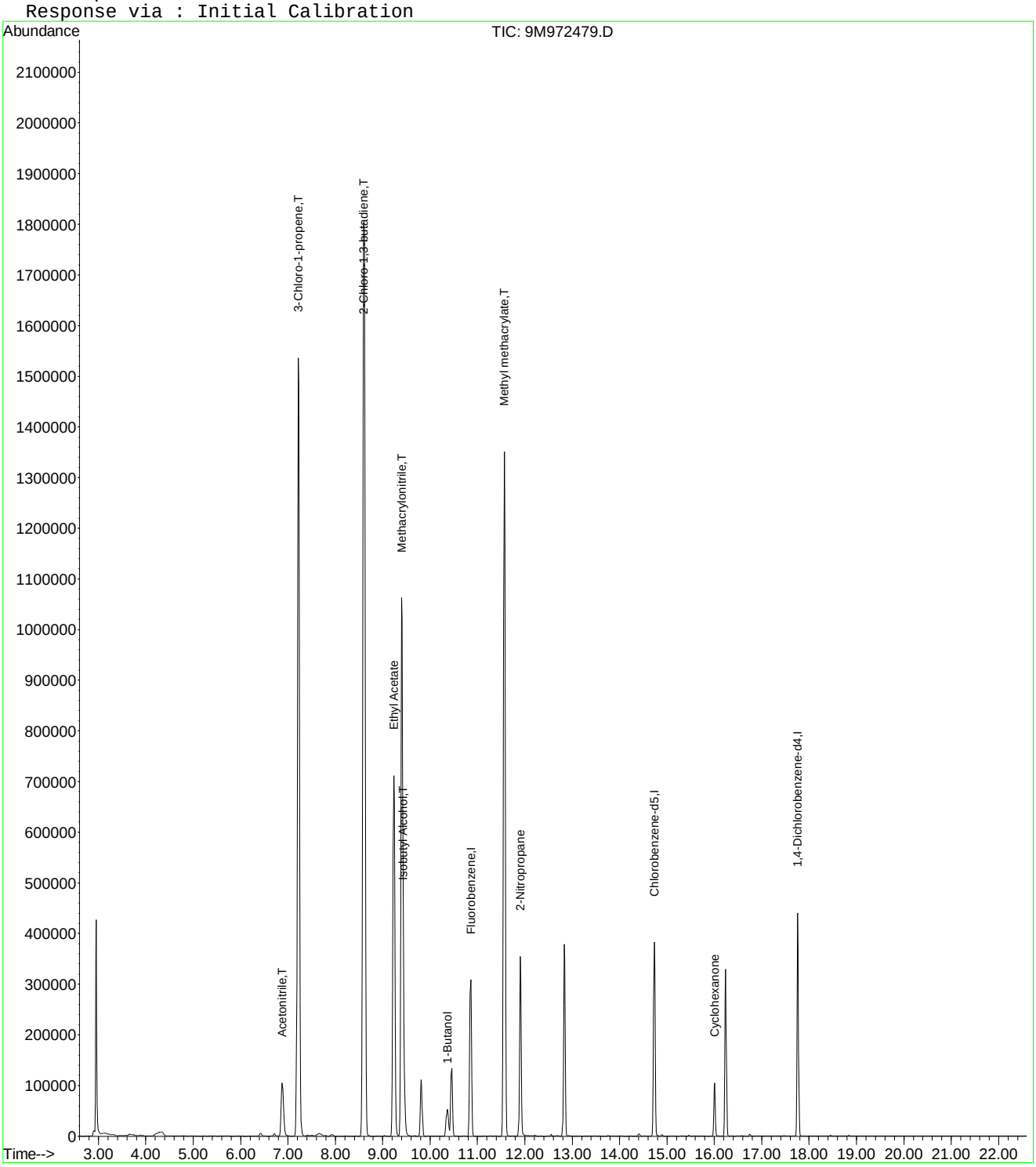

9M972479.D A9FOO_SL.M Wed Jan 27 11:30:29 2016 Page 2

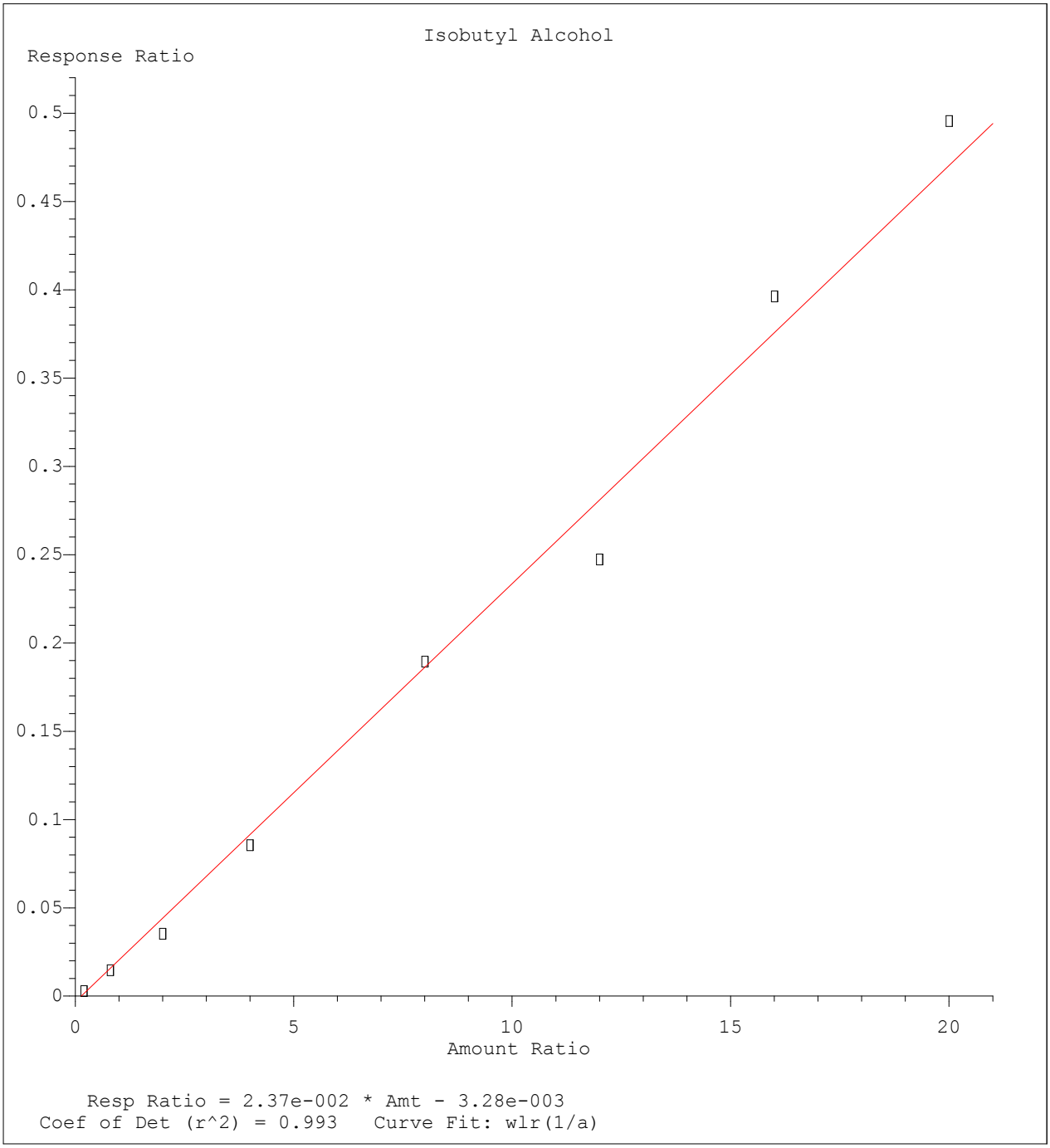

Method Name: C:\MSDCHEM\1\METHODS\A9FOO_SL.M
Calibration Table Last Updated: Wed Jan 27 09:49:02 2016

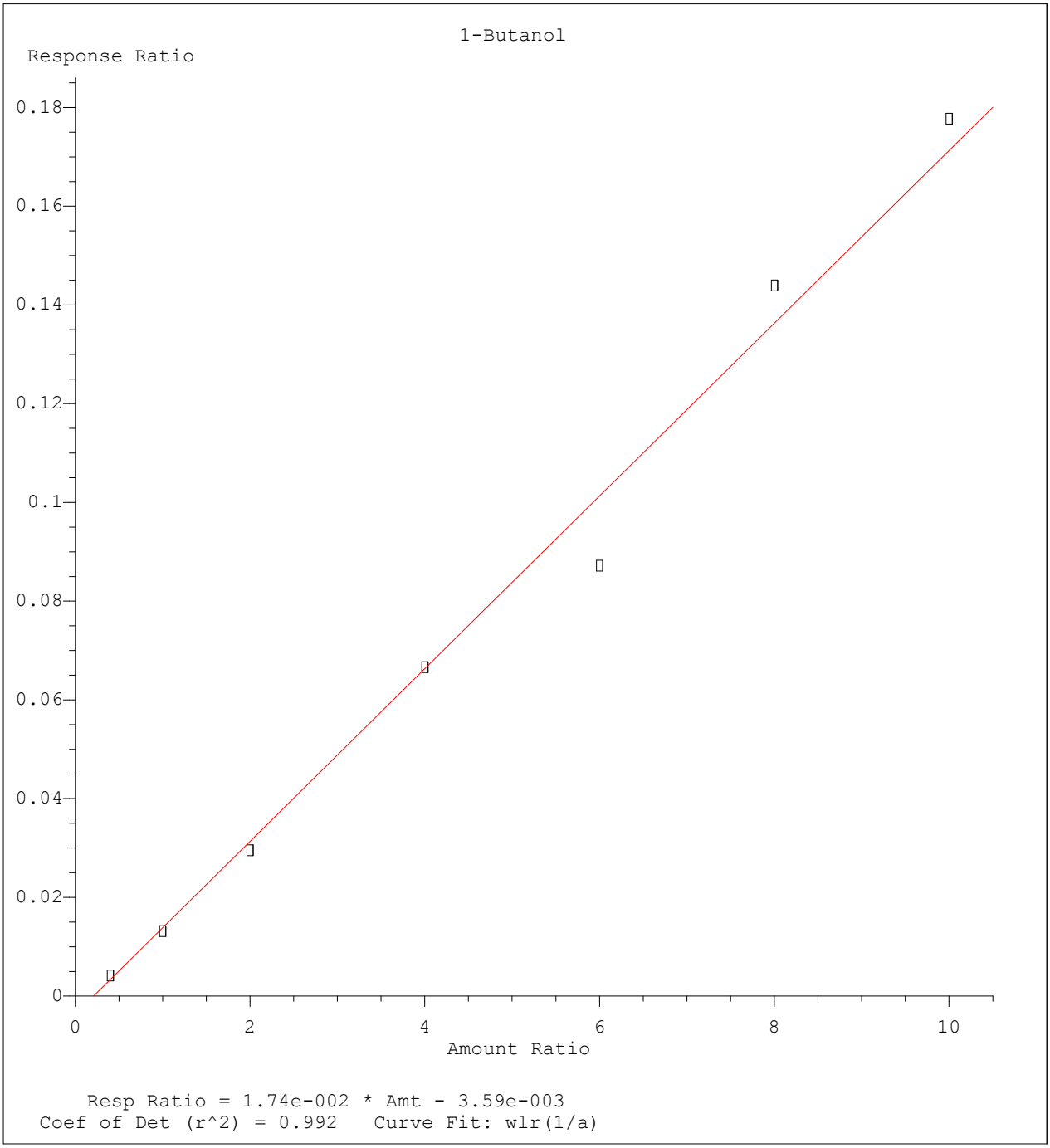

Method Name: C:\MSDCHEM\1\METHODS\A9FOO_SL.M
Calibration Table Last Updated: Wed Jan 27 09:49:02 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:09 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	394765	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	285754	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	159586	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	40054	101.2745 ug/kg#	100
3) 3-Chloro-1-propene	7.22	41	402890	103.3786 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	572568	129.1764 ug/kg	99
5) Ethyl Acetate	9.23	43	275962	106.0028 ug/kg	99
6) Methacrylonitrile	9.40	67	90289	107.1354 ug/kg	96
7) Isobutyl Alcohol	9.42	43	34031	188.7895 ug/kg	99
8) 1-Butanol	10.35	56	12038	97.7072 ug/kg	97
9) Methyl methacrylate	11.56	41	219363	110.3163 ug/kg	100
10) 2-Nitropropane	11.90	43	69288	107.2554 ug/kg	93
12) Cyclohexanone	16.01	55	14203	100.3934 ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972481.D A9FOO_SL.M Wed Jan 27 11:15:09 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

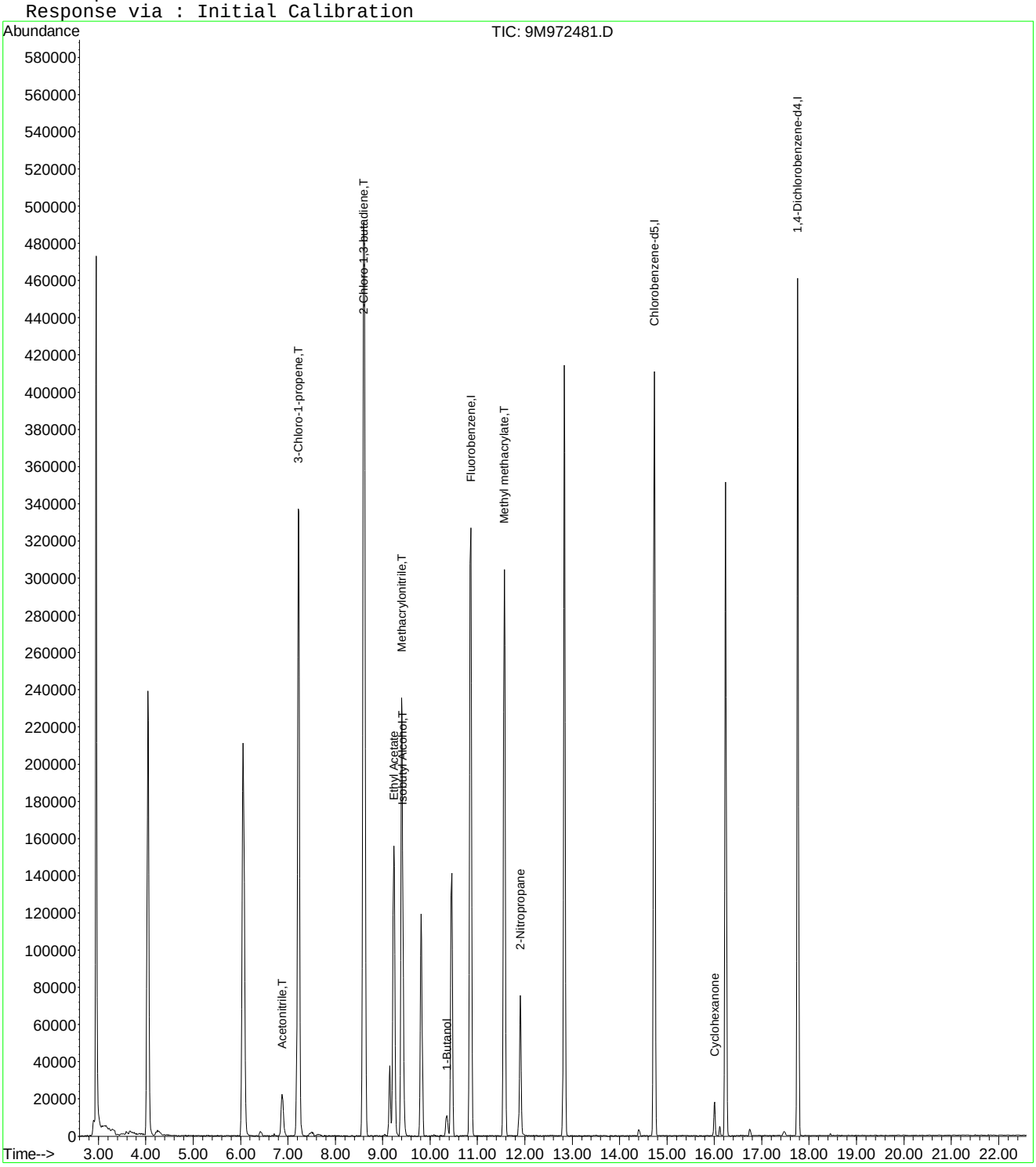

9M972481.D A9FOO_SL.M Wed Jan 27 11:15:09 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	101.2745	-1.3	106	0.00
3	T	3-Chloro-1-propene	100.0000	103.3786	-3.4	98	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	129.1764	-29.2	122	0.00
5		Ethyl Acetate	100.0000	106.0028	-6.0	103	0.00
6	T	Methacrylonitrile	100.0000	107.1354	-7.1	103	0.00
7	T	Isobutyl Alcohol	200.0000	188.7895	5.6	101	0.00
8		1-Butanol	100.0000	97.7072	2.3	103	0.00
9	T	Methyl methacrylate	100.0000	110.3163	-10.3	105	0.00
10		2-Nitropropane	100.0000	107.2554	-7.3	106	0.00
11	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
12		Cyclohexanone	100.0000	100.3934	-0.4	101	0.00
13	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	99	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972481.D A9FOO_SL.M Wed Jan 27 11:32:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972896.D Vial: 3
Acq On : 25 Feb 2016 15:48 Operator: ADC
Sample : WG558732-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:54 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260B_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	517775	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.73	117	378926	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.76	152	183008	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	147955	52.7167 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.44%		
43) 1,2-Dichloroethane-d4	10.44	65	183779	52.1887 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.38%		
58) Toluene-d8	12.83	98	511451	53.3617 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.72%		
79) p-Bromofluorobenzene	16.23	95	191673	53.7871 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 107.58%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	204882	57.9763 ug/kg	100
3) Chloromethane	3.74	50	183152	54.0664 ug/kg	100
4) Vinyl Chloride	3.99	62	192536	56.7764 ug/kg	100
5) 1,3-Butadiene	4.04	54	170907	52.9740 ug/kg	100
6) Bromomethane	4.88	94	107911	48.9956 ug/kg	100
7) Chloroethane	5.04	64	85391	56.5213 ug/kg	100
8) Trichlorofluoromethane	5.53	101	265962	52.2923 ug/kg	100
9) Diethyl ether	6.04	59	249400	104.8955 ug/kg	100
10) Isoprene	6.09	67	156373	51.4980 ug/kg	100
11) Acrolein	6.30	56	24630	51.9520 ug/kg	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	135036	51.4825 ug/kg	100
13) Acetone	6.41	43	66195	50.6135 ug/kg	100
14) 1,1-Dichloroethene	6.61	61	244051	50.4389 ug/kg	100
15) Tert-Butyl Alcohol	6.76	59	110494	208.7036 ug/kg	98
16) Dimethyl Sulfide	6.88	62	109294	53.4455 ug/kg	100
17) Iodomethane	7.13	142	79749	55.1586 ug/kg	100
18) Methyl acetate	7.14	43	135648	51.5699 ug/kg	100
19) Methylene Chloride	7.40	84	135280	51.3362 ug/kg	100
20) Carbon Disulfide	7.45	76	381814	51.2249 ug/kg	100
21) Acrylonitrile	7.59	53	69697	53.5624 ug/kg	100
22) Methyl Tert Butyl Ether	7.61	73	407131	54.2460 ug/kg	100
23) trans-1,2-Dichloroethene	7.85	61	226890	52.6160 ug/kg	100
24) n-Hexane	7.91	57	219597	49.3729 ug/kg	100
25) Diisopropyl ether	8.26	45	1088740	105.3973 ug/kg	100
26) Vinyl Acetate	8.43	43	311838	52.9553 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	284391	52.5076 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	1023392	106.5502 ug/kg	100
29) 2-Butanone	9.03	43	86123	51.5803 ug/kg	100
30) Propionitrile	9.14	54	53253	104.2214 ug/kg	100
31) 2,2-Dichloropropane	9.24	77	215042	53.1943 ug/kg	100
32) cis-1,2-Dichloroethene	9.31	96	153722	54.3532 ug/kg	100
33) Chloroform	9.52	83	263571	52.9749 ug/kg	100
34) 1-Bromopropane	9.65	122	22164	51.3817 ug/kg	100
35) Bromochloromethane	9.75	130	102780	55.9453 ug/kg	100
36) Tetrahydrofuran	9.78	42	113791	105.7289 ug/kg	100
38) 1,1,1-Trichloroethane	10.04	97	243452	54.1074 ug/kg	100
39) Cyclohexane	10.08	56	247641	50.4821 ug/kg	100
40) 1,1-Dichloropropene	10.24	75	182199	51.4612 ug/kg	100
41) Tert-Amyl-Methyl ether	10.34	73	741165	106.1603 ug/kg	100
42) Carbon Tetrachloride	10.39	117	221306	53.0537 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972896.D Vial: 3
Acq On : 25 Feb 2016 15:48 Operator: ADC
Sample : WG558732-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:54 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260B_SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	237857	54.3500	ug/kg	100
46)	Benzene	10.60	78	503328	50.7793	ug/kg	100
47)	Trichloroethene	11.35	130	163959	52.2047	ug/kg	100
48)	Methylcyclohexane	11.44	83	204551	51.9284	ug/kg	100
49)	1,2-Dichloropropane	11.56	63	148045	54.3898	ug/kg	100
50)	1,4-Dioxane	11.88	88	7789	190.7454	ug/kg	100
51)	Bromodichloromethane	11.87	83	203922	53.1595	ug/kg	100
52)	Dibromomethane	11.96	174	95887	53.1673	ug/kg	100
53)	2-Chloroethyl Vinyl Ether	12.17	63	38515	51.1377	ug/kg	100
54)	4-Methyl-2-Pentanone	12.19	58	64999	54.4056	ug/kg	100
55)	cis-1,3-Dichloropropene	12.50	75	212797	53.2452	ug/kg	100
56)	Dimethyl Disulfide	12.77	94	219798	54.7267	ug/kg	100
59)	Toluene	12.92	91	563647	52.0613	ug/kg	100
60)	Ethyl Methacrylate	13.02	69	158958	52.9687	ug/kg	100
61)	trans-1,3-Dichloropropene	13.10	75	212386	54.4657	ug/kg	100
62)	1,1,2-Trichloroethane	13.33	97	122975	54.0706	ug/kg	100
63)	2-Hexanone	13.25	43	119176	52.4822	ug/kg	100
64)	1,3-Dichloropropane	13.63	76	201541	53.1810	ug/kg	100
65)	Tetrachloroethene	13.75	164	117066	50.4378	ug/kg	100
66)	Dibromochloromethane	14.01	129	168874	53.1294	ug/kg	100
67)	1,2-Dibromoethane	14.28	107	132755	52.6249	ug/kg	100
68)	1-Chlorohexane	14.35	91	168490	52.7733	ug/kg	100
69)	Chlorobenzene	14.77	112	400241	52.5998	ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.80	131	154536	54.0800	ug/kg	100
71)	Ethylbenzene	14.80	106	207031	52.8117	ug/kg	100
72)	m-,p-Xylene	14.89	106	497405	102.7415	ug/kg	100
73)	o-Xylene	15.45	106	247567	53.2858	ug/kg	100
74)	Styrene	15.49	104	425634	53.7983	ug/kg	100
75)	Bromoform	16.00	173	116015	55.5910	ug/kg	100
76)	Isopropylbenzene	15.88	105	658255	52.7764	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.10	83	147970	53.3007	ug/kg	100
80)	1,2,3-Trichloropropane	16.29	110	55711	52.9159	ug/kg	100
81)	trans-1,4-Dichloro-2-Buten	16.33	53	55525	52.3210	ug/kg	100
82)	n-Propylbenzene	16.39	91	751844	52.2641	ug/kg	100
83)	Bromobenzene	16.52	156	177299	52.2079	ug/kg	100
84)	1,3,5-Trimethylbenzene	16.58	105	568867	52.6809	ug/kg	100
85)	2-Chlorotoluene	16.66	91	484783	50.2437	ug/kg	100
86)	4-Chlorotoluene	16.70	91	481367	53.9615	ug/kg	100
87)	a-Methylstyrene	16.98	118	255765	51.9817	ug/kg	100
88)	tert-Butylbenzene	17.04	134	121669	53.7430	ug/kg	100
89)	1,2,4-Trimethylbenzene	17.09	105	580656	51.3463	ug/kg	100
90)	sec-Butylbenzene	17.30	105	726352	52.2266	ug/kg	100
91)	p-Isopropyltoluene	17.46	119	613096	52.2364	ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	337008	49.9319	ug/kg	100
93)	1,4-Dichlorobenzene	17.80	146	335195	49.6777	ug/kg	100
94)	n-Butylbenzene	17.99	91	563797	51.6647	ug/kg	100
95)	1,2-Dichlorobenzene	18.30	146	320108	51.1150	ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.30	157	42968	53.4468	ug/kg	100
97)	1,2,4-Trichlorobenzene	20.44	180	222592	50.0691	ug/kg	100
98)	Hexachlorobutadiene	20.59	225	117654	50.2053	ug/kg	100
99)	Naphthalene	20.81	128	602344	54.0184	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	222082	51.5034	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972896.D 8260SL.M Fri Feb 26 11:21:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972896.D Vial: 3
Acq On : 25 Feb 2016 15:48 Operator: ADC
Sample : WG558732-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

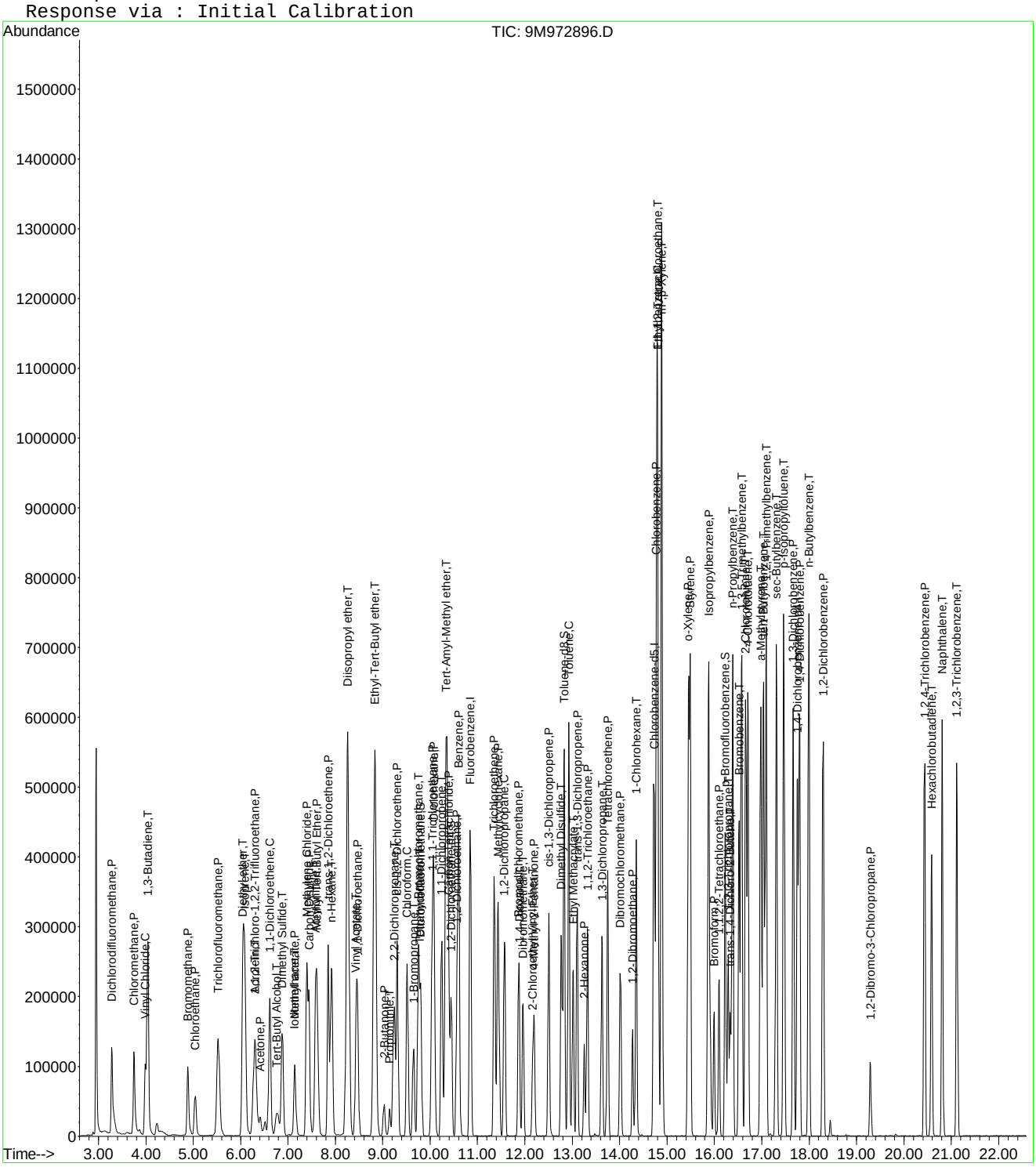

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:15 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	491503	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	353502	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	169028	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.83	98	923	0.1032 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.20%#	
79) p-Bromofluorobenzene	16.22	95	770	0.2339 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.46%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	1359	0.4051 ug/kg#	69
3) Chloromethane	3.75	50	2926	0.9099 ug/kg	95
4) Vinyl Chloride	3.98	62	1474	0.4579 ug/kg#	67
5) 1,3-Butadiene	4.03	54	1519	0.4960 ug/kg	82
6) Bromomethane	4.89	94	2071	0.9906 ug/kg	100
8) Trichlorofluoromethane	5.53	101	2609	0.5404 ug/kg#	51
10) Isoprene	6.08	67	1239	0.4298 ug/kg	70
13) Acetone	6.43	43	4251	5.5216 ug/kg#	75
14) 1,1-Dichloroethene	6.63	61	2149	0.4679 ug/kg#	66
17) Iodomethane	7.14	142	943	3.4505 ug/kg#	34
18) Methyl acetate	7.16	43	1334	0.5343 ug/kg#	45
19) Methylene Chloride	7.40	84	1287	0.5145 ug/kg	81
20) Carbon Disulfide	7.44	76	6762	0.9557 ug/kg#	76
23) trans-1,2-Dichloroethene	7.84	61	2196	0.5365 ug/kg	86
24) n-Hexane	7.92	57	2239	0.5303 ug/kg#	62
26) Vinyl Acetate	8.44	43	2494	0.4462 ug/kg#	78
27) 1,1-Dichloroethane	8.48	63	2396	0.4660 ug/kg#	63
29) 2-Butanone	9.02	43	778	0.4909 ug/kg#	58
31) 2,2-Dichloropropane	9.24	77	1877	0.4891 ug/kg#	42
32) cis-1,2-Dichloroethene	9.32	96	1178	0.4388 ug/kg	74
33) Chloroform	9.52	83	2007	0.4249 ug/kg	81
35) Bromochloromethane	9.74	130	828	0.4748 ug/kg#	68
36) Tetrahydrofuran	9.76	42	1603	1.5690 ug/kg#	57
38) 1,1,1-Trichloroethane	10.05	97	1773	0.4151 ug/kg	92
40) 1,1-Dichloropropene	10.25	75	1521	0.4526 ug/kg#	38
42) Carbon Tetrachloride	10.40	117	1765	0.4457 ug/kg#	85
45) 1,2-Dichloroethane	10.57	62	1885	0.4537 ug/kg#	68
46) Benzene	10.61	78	5607	0.5959 ug/kg#	83
47) Trichloroethene	11.36	130	1808	0.6064 ug/kg	88
48) Methylcyclohexane	11.44	83	1930	0.5161 ug/kg	96
55) cis-1,3-Dichloropropene	12.51	75	1714	0.4518 ug/kg#	51
59) Toluene	12.93	91	5550	0.5495 ug/kg	88
61) trans-1,3-Dichloropropene	13.10	75	1920	0.5278 ug/kg#	51
63) 2-Hexanone	13.25	43	877	0.4140 ug/kg#	63
64) 1,3-Dichloropropane	13.63	76	1615	0.4568 ug/kg	91
65) Tetrachloroethene	13.75	164	1154	0.5330 ug/kg#	74
67) 1,2-Dibromoethane	14.27	107	988	0.4198 ug/kg	87
68) 1-Chlorohexane	14.35	91	1436	0.4821 ug/kg	83
69) Chlorobenzene	14.78	112	4578	0.6449 ug/kg	87
70) 1,1,1,2-Tetrachloroethane	14.81	131	1078	0.4044 ug/kg	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:15 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
71)	Ethylbenzene	14.80	106	1823	0.4985 ug/kg	68
72)	m-,p-Xylene	14.88	106	4752	1.0521 ug/kg	95
73)	o-Xylene	15.44	106	2166	0.4997 ug/kg	94
74)	Styrene	15.49	104	3544	0.4802 ug/kg	91
76)	Isopropylbenzene	15.87	105	6349	0.5456 ug/kg	97
78)	1,1,2,2-Tetrachloroethane	16.09	83	1326	0.5171 ug/kg#	89
82)	n-Propylbenzene	16.38	91	7679	0.5780 ug/kg	98
83)	Bromobenzene	16.52	156	1798	0.5732 ug/kg	88
84)	1,3,5-Trimethylbenzene	16.57	105	4554	0.4566 ug/kg	92
85)	2-Chlorotoluene	16.66	91	5237	0.5877 ug/kg	84
86)	4-Chlorotoluene	16.71	91	5645	0.6851 ug/kg	93
87)	a-Methylstyrene	16.97	118	2091	0.4601 ug/kg	93
89)	1,2,4-Trimethylbenzene	17.09	105	6291	0.6023 ug/kg	84
90)	sec-Butylbenzene	17.31	105	7013	0.5460 ug/kg	93
91)	p-Isopropyltoluene	17.47	119	5681	0.5241 ug/kg	95
92)	1,3-Dichlorobenzene	17.67	146	4446	0.7132 ug/kg	91
93)	1,4-Dichlorobenzene	17.79	146	4603	0.7386 ug/kg#	73
94)	n-Butylbenzene	17.99	91	6750	0.6697 ug/kg#	90
95)	1,2-Dichlorobenzene	18.29	146	3889	0.6724 ug/kg	82
97)	1,2,4-Trichlorobenzene	20.43	180	3506	0.8539 ug/kg	94
98)	Hexachlorobutadiene	20.58	225	1493	0.6898 ug/kg#	70
99)	Naphthalene	20.81	128	10277	0.9979 ug/kg	93
100)	1,2,3-Trichlorobenzene	21.12	180	3961	0.9946 ug/kg	80

(#) = qualifier out of range (m) = manual integration
9M972898.D 8260SL.M Fri Feb 26 11:11:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration

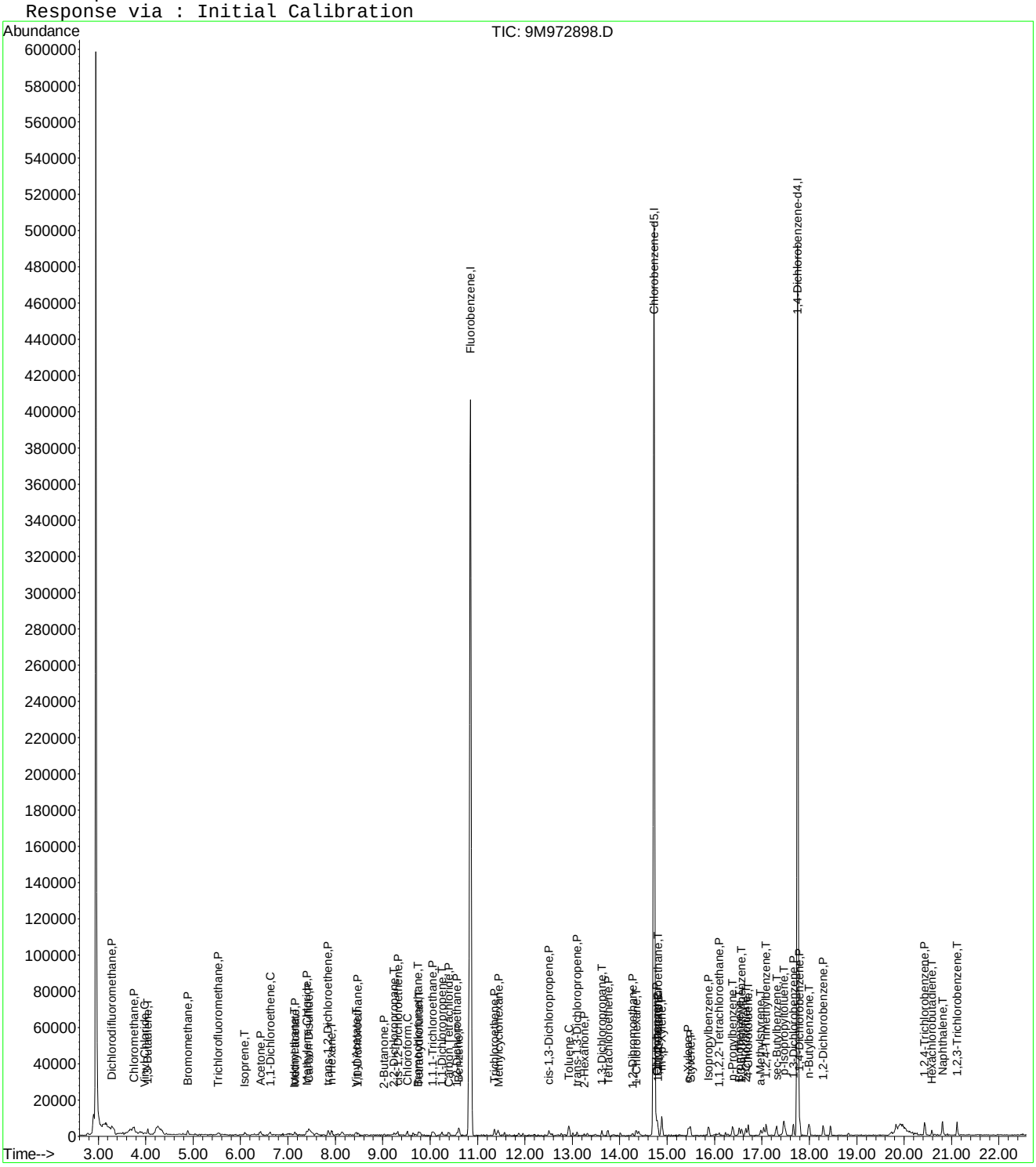

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	0.4051	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.9099	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.4579	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	0.4960	0.0	0	0.00
6	P	Bromomethane	-1.0000	0.9906	0.0	100	0.00
7	P	Chloroethane	-1.0000	0.2845	0.0	100	0.01
8	P	Trichlorofluoromethane	-1.0000	0.5404	0.0	100	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.04#
10	T	Isoprene	-1.0000	0.4298	0.0	0	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.30#
12	P	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.0779	0.0	100	0.00
13	P	Acetone	-1.0000	5.5216	0.0	0	0.02
14	C	1,1-Dichloroethene	-1.0000	0.4679	0.0	100	0.01
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.76#
16	T	Dimethyl Sulfide	-1.0000	0.1242	0.0	0	0.01
17	T	Iodomethane	-1.0000	3.4505	0.0	0	0.00
18	P	Methyl acetate	-1.0000	0.5343	0.0	0	0.02
19	P	Methylene Chloride	-1.0000	0.5145	0.0	100	0.00
20	P	Carbon Disulfide	-1.0000	0.9557	0.0	0	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.59#
22	P	Methyl Tert Butyl Ether	-1.0000	0.3878	0.0	100	0.00
23	P	trans-1,2-Dichloroethene	-1.0000	0.5365	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.5303	0.0	0	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.26#
26	T	Vinyl Acetate	-1.0000	0.4462	0.0	100	0.01
27	P	1,1-Dichloroethane	-1.0000	0.4660	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.83#
29	P	2-Butanone	-1.0000	0.4909	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.14#
31	T	2,2-Dichloropropane	-1.0000	0.4891	0.0	100	0.00
32	P	cis-1,2-Dichloroethene	-1.0000	0.4388	0.0	100	0.01
33	C	Chloroform	-1.0000	0.4249	0.0	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.65#
35	T	Bromochloromethane	-1.0000	0.4748	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	1.5690	0.0	100	-0.02
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	-1.0000	0.4151	0.0	100	0.00
39	P	Cyclohexane	-1.0000	0.3314	0.0	0	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4526	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.34#
42	P	Carbon Tetrachloride	-1.0000	0.4457	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	-1.0000	0.4537	0.0	100	0.00
46	P	Benzene	0.5000	0.5959	-19.2	100	0.00
47	P	Trichloroethene	-1.0000	0.6064	0.0	100	0.00
48	P	Methylcyclohexane	-1.0000	0.5161	0.0	0	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2930	0.0	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.88#
51	P	Bromodichloromethane	-1.0000	0.3238	0.0	100	0.00
52	T	Dibromomethane	-1.0000	0.1630	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.0000	0.0	0	-12.16#
54	P	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.19#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	-1.0000	0.4518	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2529	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.1032	0.0	100	0.00
59	C	Toluene	0.5000	0.5495	-9.9	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2340	0.0	0	0.00
61	P	trans-1,3-Dichloropropene	-1.0000	0.5278	0.0	100	0.00
62	P	1,1,2-Trichloroethane	-1.0000	0.3964	0.0	100	0.00
63	P	2-Hexanone	-1.0000	0.4140	0.0	100	0.00
64	T	1,3-Dichloropropane	-1.0000	0.4568	0.0	100	0.00
65	P	Tetrachloroethene	-1.0000	0.5330	0.0	100	0.00
66	P	Dibromochloromethane	-1.0000	0.3541	0.0	100	0.00
67	P	1,2-Dibromoethane	-1.0000	0.4198	0.0	100	0.00
68	T	1-Chlorohexane	-1.0000	0.4821	0.0	0	0.00
69	P	Chlorobenzene	-1.0000	0.6449	0.0	100	0.00
70	T	1,1,1,2-Tetrachloroethane	-1.0000	0.4044	0.0	100	0.00
71	C	Ethylbenzene	0.5000	0.4985	0.3	100	0.00
72	P	m-,p-Xylene	1.0000	1.0521	-5.2	100	0.00
73	P	o-Xylene	0.5000	0.4997	0.1	100	0.00
74	P	Styrene	-1.0000	0.4802	0.0	100	0.00
75	P	Bromoform	-1.0000	0.3955	0.0	100	0.00
76	P	Isopropylbenzene	-1.0000	0.5456	0.0	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	-1.0000	0.5171	0.0	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.2339	0.0	100	0.00
80	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.29#
81	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.33#
82	T	n-Propylbenzene	-1.0000	0.5780	0.0	100	0.00
83	T	Bromobenzene	-1.0000	0.5732	0.0	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	0.4566	0.0	100	0.00
85	T	2-Chlorotoluene	-1.0000	0.5877	0.0	100	0.00
86	T	4-Chlorotoluene	-1.0000	0.6851	0.0	100	0.00
87	T	a-Methylstyrene	-1.0000	0.4601	0.0	0	0.00
88	T	tert-Butylbenzene	-1.0000	0.2860	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	-1.0000	0.6023	0.0	100	0.00
90	T	sec-Butylbenzene	-1.0000	0.5460	0.0	100	0.00
91	T	p-Isopropyltoluene	-1.0000	0.5241	0.0	100	0.00
92	P	1,3-Dichlorobenzene	-1.0000	0.7132	0.0	100	0.00
93	P	1,4-Dichlorobenzene	-1.0000	0.7386	0.0	100	0.00
94	T	n-Butylbenzene	-1.0000	0.6697	0.0	100	0.00
95	P	1,2-Dichlorobenzene	-1.0000	0.6724	0.0	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.30#
97	P	1,2,4-Trichlorobenzene	-1.0000	0.8539	0.0	100	0.00
98	T	Hexachlorobutadiene	-1.0000	0.6898	0.0	100	0.00
99	T	Naphthalene	-1.0000	0.9979	0.0	100	0.00
100	T	1,2,3-Trichlorobenzene	-1.0000	0.9946	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972898.D 8260SL.M Fri Feb 26 11:11:52 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	536651	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	387839	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	177519	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.82	98	959	0.0978 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.20%#	
79) p-Bromofluorobenzene	16.22	95	467	0.1351 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	3486	0.9518 ug/kg#	85
3) Chloromethane	3.74	50	4175	1.1891 ug/kg	88
4) Vinyl Chloride	3.98	62	2686	0.7642 ug/kg	80
5) 1,3-Butadiene	4.03	54	3056	0.9139 ug/kg	91
6) Bromomethane	4.89	94	2537	1.1114 ug/kg	94
7) Chloroethane	5.05	64	1264	0.8072 ug/kg#	45
8) Trichlorofluoromethane	5.53	101	5567	1.0561 ug/kg#	93
9) Diethyl ether	6.05	59	11529	4.6784 ug/kg	97
10) Isoprene	6.08	67	2965	0.9421 ug/kg	97
11) Acrolein	6.29	56	1087	2.2122 ug/kg#	35
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	1939	0.7132 ug/kg	88
13) Acetone	6.41	43	5231	5.8863 ug/kg	95
14) 1,1-Dichloroethene	6.62	61	4981	0.9932 ug/kg	92
15) Tert-Butyl Alcohol	6.77	59	5682	10.3548 ug/kg#	63
16) Dimethyl Sulfide	6.88	62	1614	0.7615 ug/kg	91
17) Iodomethane	7.15	142	941	3.3944 ug/kg#	66
18) Methyl acetate	7.16	43	2553	0.9364 ug/kg#	65
19) Methylene Chloride	7.40	84	2963	1.0849 ug/kg	92
20) Carbon Disulfide	7.45	76	9749	1.2619 ug/kg	95
21) Acrylonitrile	7.58	53	3140	2.3282 ug/kg	85
22) Methyl Tert Butyl Ether	7.61	73	7179	0.9229 ug/kg	83
23) trans-1,2-Dichloroethene	7.85	61	4296	0.9612 ug/kg	95
24) n-Hexane	7.93	57	4481	0.9720 ug/kg	95
25) Diisopropyl ether	8.26	45	50344	4.7022 ug/kg	98
26) Vinyl Acetate	8.43	43	5247	0.8597 ug/kg#	90
27) 1,1-Dichloroethane	8.48	63	5885	1.0483 ug/kg#	85
28) Ethyl-Tert-Butyl ether	8.83	59	46767	4.6979 ug/kg	99
29) 2-Butanone	9.03	43	1776	1.0263 ug/kg#	58
30) Propionitrile	9.14	54	2256	4.2599 ug/kg#	60
31) 2,2-Dichloropropane	9.24	77	4402	1.0506 ug/kg#	71
32) cis-1,2-Dichloroethene	9.31	96	2650	0.9040 ug/kg	94
33) Chloroform	9.51	83	5072	0.9836 ug/kg	96
35) Bromochloromethane	9.75	130	1408	0.7394 ug/kg	86
36) Tetrahydrofuran	9.77	42	6699	6.0054 ug/kg	95
38) 1,1,1-Trichloroethane	10.05	97	4567	0.9793 ug/kg	91
39) Cyclohexane	10.08	56	4992	0.9818 ug/kg#	85
40) 1,1-Dichloropropene	10.24	75	3785	1.0315 ug/kg	90
41) Tert-Amyl-Methyl ether	10.34	73	33850	4.6779 ug/kg	95
42) Carbon Tetrachloride	10.40	117	4297	0.9939 ug/kg#	90
45) 1,2-Dichloroethane	10.55	62	3923	0.8649 ug/kg	93

(#) = qualifier out of range (m) = manual integration
9M972899.D 8260SL.M Fri Feb 26 11:12:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
46)	Benzene	10.61	78	9968	0.9703 ug/kg	96
47)	Trichloroethene	11.36	130	3259	1.0012 ug/kg	99
48)	Methylcyclohexane	11.43	83	3354	0.8215 ug/kg	76
49)	1,2-Dichloropropane	11.57	63	2469	0.8752 ug/kg	94
51)	Bromodichloromethane	11.87	83	3657	0.9198 ug/kg#	94
52)	Dibromomethane	11.96	174	1621	0.8672 ug/kg	93
53)	2-Chloroethyl Vinyl Ether	12.16	63	210	3.0851 ug/kg#	47
54)	4-Methyl-2-Pentanone	12.20	58	738	0.5960 ug/kg#	40
55)	cis-1,3-Dichloropropene	12.51	75	3714	0.8966 ug/kg	86
56)	Dimethyl Disulfide	12.77	94	3075	0.7387 ug/kg	83
59)	Toluene	12.93	91	10894	0.9831 ug/kg	97
60)	Ethyl Methacrylate	13.01	69	1966	0.6401 ug/kg#	53
61)	trans-1,3-Dichloropropene	13.11	75	3837	0.9614 ug/kg#	79
62)	1,1,2-Trichloroethane	13.32	97	2148	0.9227 ug/kg	94
63)	2-Hexanone	13.26	43	1796	0.7727 ug/kg#	80
64)	1,3-Dichloropropane	13.63	76	3616	0.9322 ug/kg	99
65)	Tetrachloroethene	13.75	164	2587	1.0890 ug/kg	79
66)	Dibromochloromethane	14.02	129	3318	1.0199 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	2336	0.9047 ug/kg	97
68)	1-Chlorohexane	14.34	91	3075	0.9410 ug/kg	85
69)	Chlorobenzene	14.78	112	7982	1.0249 ug/kg	88
70)	1,1,1,2-Tetrachloroethane	14.81	131	2589	0.8852 ug/kg	86
71)	Ethylbenzene	14.80	106	4007	0.9987 ug/kg	89
72)	m-,p-Xylene	14.88	106	9607	1.9388 ug/kg	98
73)	o-Xylene	15.45	106	4376	0.9202 ug/kg	99
74)	Styrene	15.49	104	7432	0.9178 ug/kg	92
75)	Bromoform	16.00	173	1759	0.8235 ug/kg#	79
76)	Isopropylbenzene	15.87	105	11937	0.9351 ug/kg	98
78)	1,1,2,2-Tetrachloroethane	16.09	83	2186	0.8118 ug/kg#	83
80)	1,2,3-Trichloropropane	16.28	110	875	0.8568 ug/kg#	81
81)	trans-1,4-Dichloro-2-Buten	16.34	53	831	0.8073 ug/kg#	74
82)	n-Propylbenzene	16.38	91	14156	1.0145 ug/kg	99
83)	Bromobenzene	16.53	156	2996	0.9095 ug/kg#	39
84)	1,3,5-Trimethylbenzene	16.57	105	11008	1.0509 ug/kg	88
85)	2-Chlorotoluene	16.65	91	10606	1.1332 ug/kg	84
86)	4-Chlorotoluene	16.71	91	9101	1.0518 ug/kg	95
87)	a-Methylstyrene	16.98	118	4078	0.8544 ug/kg	85
88)	tert-Butylbenzene	17.03	134	2095	0.9540 ug/kg	74
89)	1,2,4-Trimethylbenzene	17.09	105	12124	1.1053 ug/kg	83
90)	sec-Butylbenzene	17.31	105	13922	1.0320 ug/kg	100
91)	p-Isopropyltoluene	17.47	119	10153	0.8918 ug/kg	98
92)	1,3-Dichlorobenzene	17.67	146	7444	1.1370 ug/kg	90
93)	1,4-Dichlorobenzene	17.79	146	7580	1.1581 ug/kg	92
94)	n-Butylbenzene	17.99	91	11112	1.0498 ug/kg	91
95)	1,2-Dichlorobenzene	18.29	146	6415	1.0560 ug/kg	97
97)	1,2,4-Trichlorobenzene	20.43	180	4869	1.1291 ug/kg	98
98)	Hexachlorobutadiene	20.59	225	2032	0.8939 ug/kg	87
99)	Naphthalene	20.81	128	11710	1.0826 ug/kg	92
100)	1,2,3-Trichlorobenzene	21.12	180	4698	1.1232 ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972899.D 8260SL.M Fri Feb 26 11:12:33 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration

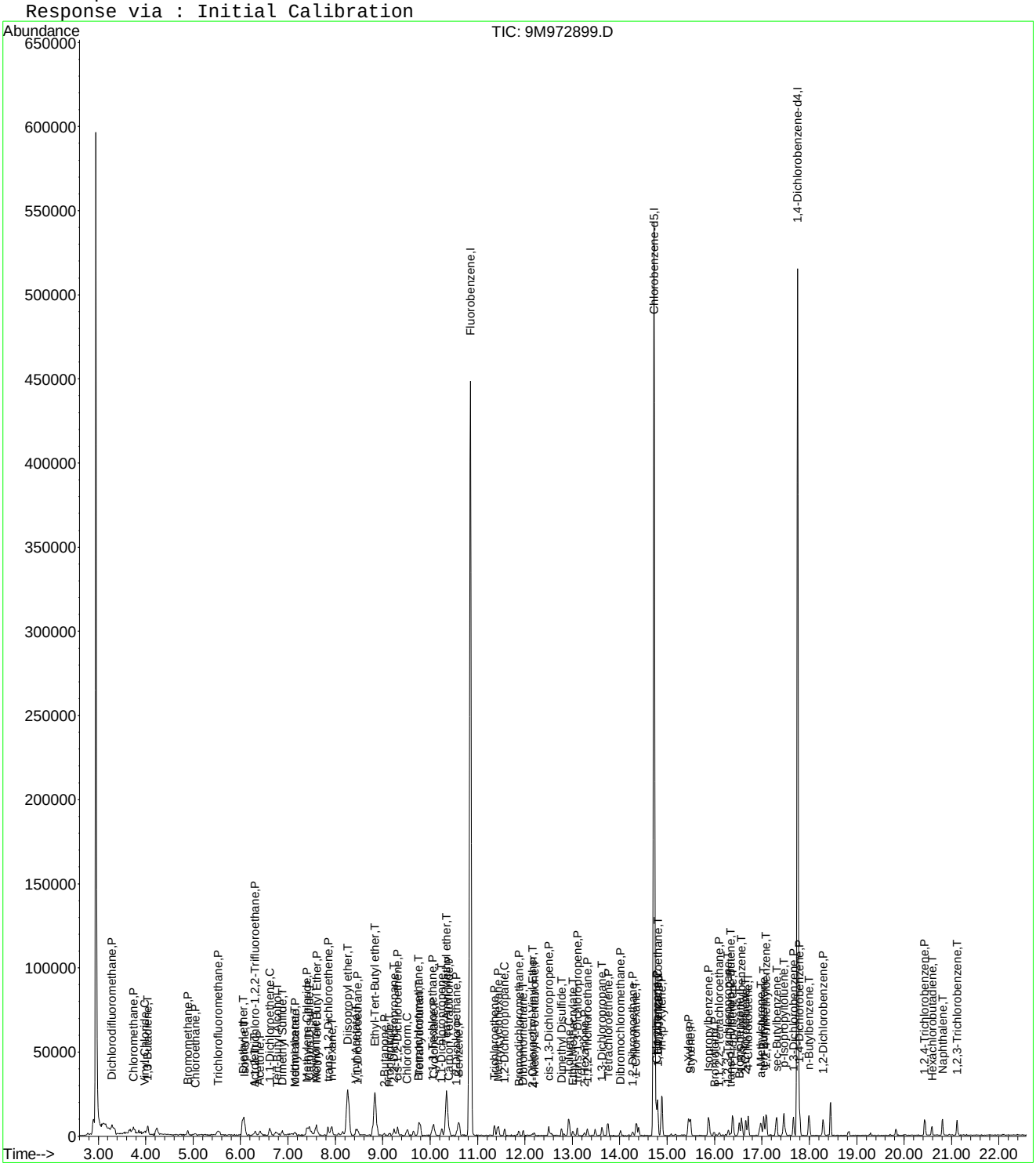

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	0.9518	0.0	100	0.00
3	P	Chloromethane	-1.0000	1.1891	0.0	100	0.00
4	C	Vinyl Chloride	1.0000	0.7642	23.6#	100	0.00
5	T	1,3-Butadiene	-1.0000	0.9139	0.0	0	0.00
6	P	Bromomethane	1.0000	1.1114	-11.1	100	0.00
7	P	Chloroethane	-1.0000	0.8072	0.0	100	0.00
8	P	Trichlorofluoromethane	1.0000	1.0561	-5.6	100	0.00
9	T	Diethyl ether	5.0000	4.6784	6.4	100	0.00
10	T	Isoprene	-1.0000	0.9421	0.0	0	0.00
11	T	Acrolein	2.5000	2.2122	11.5	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.7132	0.0	100	0.00
13	P	Acetone	-1.0000	5.8863	0.0	0	0.00
14	C	1,1-Dichloroethene	1.0000	0.9932	0.7	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	10.3548	0.0	100	0.00
16	T	Dimethyl Sulfide	1.0000	0.7615	23.9	100	0.00
17	T	Iodomethane	-1.0000	3.3944	0.0	0	0.01
18	P	Methyl acetate	-1.0000	0.9364	0.0	0	0.02
19	P	Methylene Chloride	-1.0000	1.0849	0.0	100	0.00
20	P	Carbon Disulfide	-1.0000	1.2619	0.0	0	0.00
21	T	Acrylonitrile	2.5000	2.3282	6.9	100	0.00
22	P	Methyl Tert Butyl Ether	1.0000	0.9229	7.7	100	0.00
23	P	trans-1,2-Dichloroethene	1.0000	0.9612	3.9	100	0.00
24	T	n-Hexane	-1.0000	0.9720	0.0	0	0.01
25	T	Diisopropyl ether	5.0000	4.7022	6.0	100	0.00
26	T	Vinyl Acetate	-1.0000	0.8597	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0483	-4.8	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.6979	6.0	100	0.00
29	P	2-Butanone	-1.0000	1.0263	0.0	100	0.00
30	T	Propionitrile	5.0000	4.2599	14.8	100	0.00
31	T	2,2-Dichloropropane	-1.0000	1.0506	0.0	100	0.00
32	P	cis-1,2-Dichloroethene	1.0000	0.9040	9.6	100	0.00
33	C	Chloroform	1.0000	0.9836	1.6	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.65#
35	T	Bromochloromethane	1.0000	0.7395	26.1#	100	0.00
36	T	Tetrahydrofuran	-1.0000	6.0054	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	1.0000	0.9793	2.1	100	0.00
39	P	Cyclohexane	1.0000	0.9818	1.8	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0315	-3.1	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	4.6780	6.4	100	0.00
42	P	Carbon Tetrachloride	-1.0000	0.9939	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	1.0000	0.8649	13.5	100	0.00
46	P	Benzene	1.0000	0.9703	3.0	100	0.00
47	P	Trichloroethene	1.0000	1.0012	-0.1	100	0.00
48	P	Methylcyclohexane	1.0000	0.8215	17.8	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.8752	12.5	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.88#
51	P	Bromodichloromethane	-1.0000	0.9198	0.0	100	0.00
52	T	Dibromomethane	1.0000	0.8672	13.3	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	3.0851	0.0	0	0.00
54	P	4-Methyl-2-Pentanone	-1.0000	0.5960	0.0	100	0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	-1.0000	0.8966	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.7387	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0978	0.0	100	0.00
59	C	Toluene	1.0000	0.9831	1.7	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.6401	0.0	0	0.00
61	P	trans-1,3-Dichloropropene	-1.0000	0.9614	0.0	100	0.00
62	P	1,1,2-Trichloroethane	1.0000	0.9227	7.7	100	0.00
63	P	2-Hexanone	-1.0000	0.7727	0.0	100	0.00
64	T	1,3-Dichloropropane	1.0000	0.9322	6.8	100	0.00
65	P	Tetrachloroethene	1.0000	1.0890	-8.9	100	0.00
66	P	Dibromochloromethane	-1.0000	1.0199	0.0	100	0.00
67	P	1,2-Dibromoethane	-1.0000	0.9047	0.0	100	0.00
68	T	1-Chlorohexane	1.0000	0.9410	5.9	100	0.00
69	P	Chlorobenzene	1.0000	1.0249	-2.5	100	0.00
70	T	1,1,1,2-Tetrachloroethane	-1.0000	0.8852	0.0	100	0.00
71	C	Ethylbenzene	1.0000	0.9987	0.1	100	0.00
72	P	m-,p-Xylene	2.0000	1.9388	3.1	100	0.00
73	P	o-Xylene	1.0000	0.9202	8.0	100	0.00
74	P	Styrene	1.0000	0.9178	8.2	100	0.00
75	P	Bromoform	-1.0000	0.8235	0.0	100	0.00
76	P	Isopropylbenzene	1.0000	0.9351	6.5	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	1.0000	0.8118	18.8	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.1351	0.0	100	0.00
80	T	1,2,3-Trichloropropane	1.0000	0.8568	14.3	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.8073	0.0	0	0.00
82	T	n-Propylbenzene	1.0000	1.0145	-1.4	100	0.00
83	T	Bromobenzene	1.0000	0.9095	9.1	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	1.0509	0.0	100	0.00
85	T	2-Chlorotoluene	-1.0000	1.1332	0.0	100	0.00
86	T	4-Chlorotoluene	1.0000	1.0518	-5.2	100	0.00
87	T	a-Methylstyrene	-1.0000	0.8544	0.0	0	0.00
88	T	tert-Butylbenzene	-1.0000	0.9540	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	1.0000	1.1053	-10.5	100	0.00
90	T	sec-Butylbenzene	1.0000	1.0320	-3.2	100	0.00
91	T	p-Isopropyltoluene	-1.0000	0.8918	0.0	100	0.00
92	P	1,3-Dichlorobenzene	1.0000	1.1370	-13.7	100	0.00
93	P	1,4-Dichlorobenzene	1.0000	1.1581	-15.8	100	0.00
94	T	n-Butylbenzene	1.0000	1.0498	-5.0	100	0.00
95	P	1,2-Dichlorobenzene	1.0000	1.0560	-5.6	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	0.3514	0.0	100	0.00
97	P	1,2,4-Trichlorobenzene	1.0000	1.1291	-12.9	100	0.00
98	T	Hexachlorobutadiene	1.0000	0.8939	10.6	100	0.00
99	T	Naphthalene	-1.0000	1.0826	0.0	100	0.00
100	T	1,2,3-Trichlorobenzene	1.0000	1.1232	-12.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1
9M972899.D 8260SL.M Fri Feb 26 11:12:31 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	472115	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	342668	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	156993	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.83	98	772	0.0891 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.18%#	
79) p-Bromofluorobenzene	16.23	95	570	0.1865 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.38%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.29	85	6383	1.9809 ug/kg#	78
3) Chloromethane	3.74	50	7027	2.2750 ug/kg	100
4) Vinyl Chloride	4.00	62	6001	1.9408 ug/kg	97
5) 1,3-Butadiene	4.04	54	6545	2.2249 ug/kg	95
6) Bromomethane	4.90	94	5050	2.5146 ug/kg	81
7) Chloroethane	5.04	64	2391	1.7357 ug/kg#	70
8) Trichlorofluoromethane	5.54	101	9777	2.1082 ug/kg#	94
9) Diethyl ether	6.06	59	58156	26.8255 ug/kg	97
10) Isoprene	6.09	67	5698	2.0580 ug/kg	89
11) Acrolein	6.30	56	5427	12.5543 ug/kg	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	4756	1.9886 ug/kg	93
13) Acetone	6.40	43	6167	6.9886 ug/kg	93
14) 1,1-Dichloroethene	6.62	61	9652	2.1877 ug/kg	91
15) Tert-Butyl Alcohol	6.75	59	26757	55.4271 ug/kg#	91
16) Dimethyl Sulfide	6.89	62	3840	2.0594 ug/kg	97
17) Iodomethane	7.14	142	1541	3.9079 ug/kg#	56
18) Methyl acetate	7.15	43	5334	2.2240 ug/kg#	69
19) Methylene Chloride	7.40	84	5116	2.1292 ug/kg	98
20) Carbon Disulfide	7.44	76	15010	2.2085 ug/kg	94
21) Acrylonitrile	7.59	53	14961	12.6096 ug/kg	100
22) Methyl Tert Butyl Ether	7.61	73	13630	1.9917 ug/kg	93
23) trans-1,2-Dichloroethene	7.85	61	7964	2.0255 ug/kg	100
24) n-Hexane	7.92	57	8619	2.1253 ug/kg	100
25) Diisopropyl ether	8.26	45	252190	26.7748 ug/kg	99
26) Vinyl Acetate	8.43	43	11207	2.0872 ug/kg	95
27) 1,1-Dichloroethane	8.47	63	10529	2.1320 ug/kg#	93
28) Ethyl-Tert-Butyl ether	8.83	59	234163	26.7377 ug/kg	99
29) 2-Butanone	9.03	43	3346	2.1978 ug/kg#	76
30) Propionitrile	9.14	54	12899	27.6861 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	8085	2.1934 ug/kg	88
32) cis-1,2-Dichloroethene	9.32	96	4861	1.8850 ug/kg	98
33) Chloroform	9.53	83	10005	2.2054 ug/kg	95
34) 1-Bromopropane	9.64	122	209	1.5465 ug/kg	96
35) Bromochloromethane	9.75	130	3273	1.9539 ug/kg	81
36) Tetrahydrofuran	9.78	42	26192	26.6900 ug/kg	94
38) 1,1,1-Trichloroethane	10.04	97	8229	2.0058 ug/kg	97
39) Cyclohexane	10.09	56	9354	2.0912 ug/kg	96
40) 1,1-Dichloropropene	10.23	75	6787	2.1024 ug/kg	88
41) Tert-Amyl-Methyl ether	10.34	73	167275	26.2768 ug/kg	98
42) Carbon Tetrachloride	10.39	117	7920	2.0823 ug/kg#	95

(#) = qualifier out of range (m) = manual integration
9M972900.D 8260SL.M Fri Feb 26 11:13:39 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	8488	2.1271 ug/kg	89
46)	Benzene	10.60	78	19454	2.1525 ug/kg	96
47)	Trichloroethene	11.35	130	6073	2.1207 ug/kg	96
48)	Methylcyclohexane	11.44	83	7523	2.0945 ug/kg	95
49)	1,2-Dichloropropane	11.58	63	5118	2.0621 ug/kg	93
50)	1,4-Dioxane	11.88	88	1938	52.0499 ug/kg	84
51)	Bromodichloromethane	11.87	83	7148	2.0436 ug/kg#	95
52)	Dibromomethane	11.97	174	3572	2.1721 ug/kg	91
53)	2-Chloroethyl Vinyl Ether	12.17	63	474	3.4830 ug/kg#	47
54)	4-Methyl-2-Pentanone	12.19	58	2111	1.9378 ug/kg#	64
55)	cis-1,3-Dichloropropene	12.50	75	7048	1.9341 ug/kg	92
56)	Dimethyl Disulfide	12.77	94	5832	1.5925 ug/kg	95
59)	Toluene	12.93	91	20786	2.1230 ug/kg	97
60)	Ethyl Methacrylate	13.01	69	4184	1.5417 ug/kg	98
61)	trans-1,3-Dichloropropene	13.11	75	6895	1.9553 ug/kg	92
62)	1,1,2-Trichloroethane	13.33	97	4055	1.9716 ug/kg	86
63)	2-Hexanone	13.25	43	3773	1.8373 ug/kg#	82
64)	1,3-Dichloropropane	13.62	76	7643	2.2302 ug/kg	97
65)	Tetrachloroethene	13.75	164	4327	2.0615 ug/kg	94
66)	Dibromochloromethane	14.01	129	6170	2.1465 ug/kg	87
67)	1,2-Dibromoethane	14.28	107	4656	2.0410 ug/kg	88
68)	1-Chlorohexane	14.35	91	5610	1.9430 ug/kg	97
69)	Chlorobenzene	14.77	112	14885	2.1632 ug/kg	95
70)	1,1,1,2-Tetrachloroethane	14.80	131	5145	1.9910 ug/kg	86
71)	Ethylbenzene	14.79	106	7287	2.0555 ug/kg	99
72)	m-,p-Xylene	14.89	106	19133	4.3702 ug/kg	93
73)	o-Xylene	15.45	106	8413	2.0024 ug/kg	94
74)	Styrene	15.49	104	14533	2.0313 ug/kg	97
75)	Bromoform	15.99	173	3135	1.6611 ug/kg	97
76)	Isopropylbenzene	15.87	105	23266	2.0628 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	5252	2.2053 ug/kg#	89
80)	1,2,3-Trichloropropane	16.28	110	1851	2.0495 ug/kg#	89
81)	trans-1,4-Dichloro-2-Buten	16.33	53	1413	1.5521 ug/kg	47
82)	n-Propylbenzene	16.38	91	25735	2.0854 ug/kg	99
83)	Bromobenzene	16.52	156	7006	2.4049 ug/kg	83
84)	1,3,5-Trimethylbenzene	16.57	105	18571	2.0048 ug/kg	99
85)	2-Chlorotoluene	16.66	91	18793	2.2705 ug/kg	97
86)	4-Chlorotoluene	16.70	91	16240	2.1222 ug/kg	96
87)	a-Methylstyrene	16.98	118	7524	1.7826 ug/kg	97
88)	tert-Butylbenzene	17.04	134	3654	1.8815 ug/kg	64
89)	1,2,4-Trimethylbenzene	17.09	105	20119	2.0739 ug/kg	99
90)	sec-Butylbenzene	17.31	105	24858	2.0835 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	20956	2.0813 ug/kg	96
92)	1,3-Dichlorobenzene	17.66	146	13695	2.3653 ug/kg	94
93)	1,4-Dichlorobenzene	17.79	146	12975	2.2416 ug/kg	82
94)	n-Butylbenzene	17.99	91	19734	2.1080 ug/kg	95
95)	1,2-Dichlorobenzene	18.30	146	11568	2.1533 ug/kg	91
96)	1,2-Dibromo-3-Chloropropan	19.30	157	941	1.3644 ug/kg	84
97)	1,2,4-Trichlorobenzene	20.44	180	8356	2.1910 ug/kg	98
98)	Hexachlorobutadiene	20.59	225	4571	2.2738 ug/kg	87
99)	Naphthalene	20.81	128	20072	2.0983 ug/kg	96
100)	1,2,3-Trichlorobenzene	21.11	180	7948	2.1487 ug/kg	96

(#) = qualifier out of range (m) = manual integration
9M972900.D 8260SL.M Fri Feb 26 11:13:39 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration

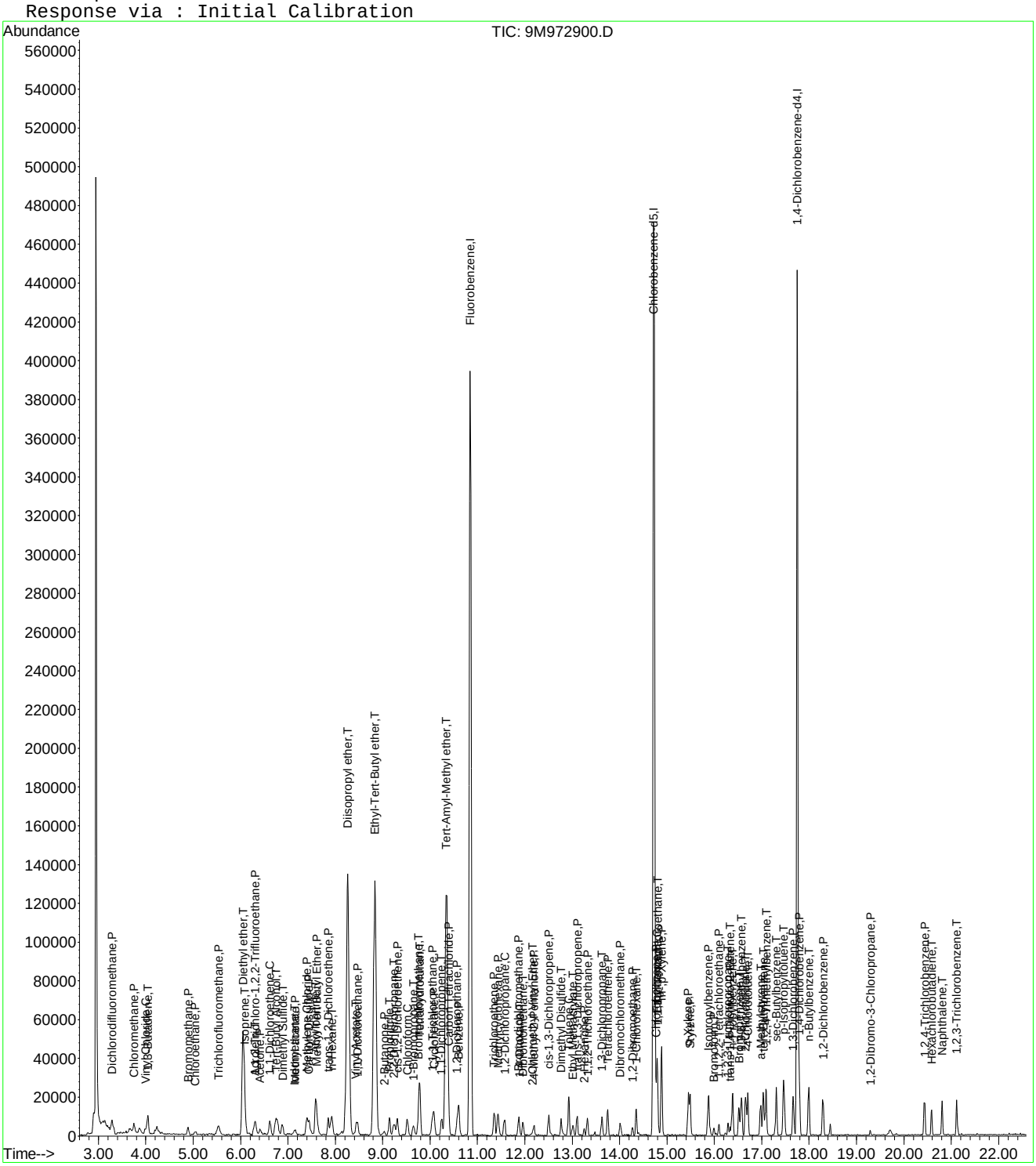

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	1.9809	0.0	100	0.01
3	P	Chloromethane	2.0000	2.2750	-13.7	100	0.00
4	C	Vinyl Chloride	2.0000	1.9408	3.0	100	0.01
5	T	1,3-Butadiene	2.0000	2.2249	-11.2	100	0.00
6	P	Bromomethane	2.0000	2.5146	-25.7#	100	0.01
7	P	Chloroethane	2.0000	1.7357	13.2	100	0.00
8	P	Trichlorofluoromethane	2.0000	2.1082	-5.4	100	0.01
9	T	Diethyl ether	25.0000	26.8255	-7.3	100	0.01
10	T	Isoprene	2.0000	2.0580	-2.9	100	0.00
11	T	Acrolein	12.5000	12.5543	-0.4	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.9886	0.6	100	0.01
13	P	Acetone	-1.0000	6.9886	0.0	0	0.00
14	C	1,1-Dichloroethene	2.0000	2.1877	-9.4	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	55.4271	-10.9	100	0.00
16	T	Dimethyl Sulfide	2.0000	2.0594	-3.0	100	0.01
17	T	Iodomethane	-1.0000	3.9079	0.0	0	0.01
18	P	Methyl acetate	2.0000	2.2240	-11.2	100	0.01
19	P	Methylene Chloride	2.0000	2.1292	-6.5	100	0.00
20	P	Carbon Disulfide	2.0000	2.2085	-10.4	100	0.00
21	T	Acrylonitrile	12.5000	12.6096	-0.9	100	0.00
22	P	Methyl Tert Butyl Ether	2.0000	1.9917	0.4	100	0.00
23	P	trans-1,2-Dichloroethene	2.0000	2.0255	-1.3	100	0.00
24	T	n-Hexane	2.0000	2.1253	-6.3	100	0.01
25	T	Diisopropyl ether	25.0000	26.7748	-7.1	100	0.00
26	T	Vinyl Acetate	2.0000	2.0872	-4.4	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.1320	-6.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	26.7377	-7.0	100	0.00
29	P	2-Butanone	2.0000	2.1978	-9.9	100	0.00
30	T	Propionitrile	25.0000	27.6861	-10.7	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1934	-9.7	100	0.00
32	P	cis-1,2-Dichloroethene	2.0000	1.8850	5.8	100	0.01
33	C	Chloroform	2.0000	2.2054	-10.3	100	0.01
34	T	1-Bromopropane	2.0000	1.5465	22.7	100	0.00
35	T	Bromochloromethane	2.0000	1.9539	2.3	100	0.00
36	T	Tetrahydrofuran	25.0000	26.6900	-6.8	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	2.0000	2.0058	-0.3	100	0.00
39	P	Cyclohexane	2.0000	2.0913	-4.6	100	0.01
40	T	1,1-Dichloropropene	2.0000	2.1023	-5.1	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	26.2768	-5.1	100	0.00
42	P	Carbon Tetrachloride	2.0000	2.0823	-4.1	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	2.0000	2.1271	-6.4	100	0.00
46	P	Benzene	2.0000	2.1525	-7.6	100	0.00
47	P	Trichloroethene	2.0000	2.1207	-6.0	100	0.00
48	P	Methylcyclohexane	2.0000	2.0945	-4.7	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0621	-3.1	100	0.01
50	T	1,4-Dioxane	50.0000	52.0499	-4.1	100	0.00
51	P	Bromodichloromethane	2.0000	2.0436	-2.2	100	0.00
52	T	Dibromomethane	2.0000	2.1721	-8.6	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	3.4830	0.0	0	0.00
54	P	4-Methyl-2-Pentanone	-1.0000	1.9378	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	2.0000	1.9341	3.3	100	0.00
56	T	Dimethyl Disulfide	2.0000	1.5925	20.4	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0891	0.0	100	0.00
59	C	Toluene	2.0000	2.1230	-6.2	100	0.00
60	T	Ethyl Methacrylate	-1.0000	1.5417	0.0	0	0.00
61	P	trans-1,3-Dichloropropene	2.0000	1.9553	2.2	100	0.00
62	P	1,1,2-Trichloroethane	2.0000	1.9716	1.4	100	0.00
63	P	2-Hexanone	-1.0000	1.8373	0.0	100	0.00
64	T	1,3-Dichloropropane	2.0000	2.2302	-11.5	100	0.00
65	P	Tetrachloroethene	2.0000	2.0616	-3.1	100	0.00
66	P	Dibromochloromethane	2.0000	2.1465	-7.3	100	0.00
67	P	1,2-Dibromoethane	-1.0000	2.0410	0.0	100	0.00
68	T	1-Chlorohexane	2.0000	1.9430	2.8	100	0.00
69	P	Chlorobenzene	2.0000	2.1632	-8.2	100	0.00
70	T	1,1,1,2-Tetrachloroethane	2.0000	1.9910	0.4	100	0.00
71	C	Ethylbenzene	2.0000	2.0555	-2.8	100	0.00
72	P	m-,p-Xylene	4.0000	4.3702	-9.3	100	0.00
73	P	o-Xylene	2.0000	2.0024	-0.1	100	0.00
74	P	Styrene	2.0000	2.0313	-1.6	100	0.00
75	P	Bromoform	2.0000	1.6611	16.9	100	0.00
76	P	Isopropylbenzene	2.0000	2.0628	-3.1	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	2.0000	2.2053	-10.3	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.1865	0.0	100	0.00
80	T	1,2,3-Trichloropropane	2.0000	2.0495	-2.5	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	2.0000	1.5521	22.4	100	0.00
82	T	n-Propylbenzene	2.0000	2.0854	-4.3	100	0.00
83	T	Bromobenzene	2.0000	2.4049	-20.2	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	2.0048	0.0	100	0.00
85	T	2-Chlorotoluene	2.0000	2.2705	-13.5	100	0.00
86	T	4-Chlorotoluene	2.0000	2.1222	-6.1	100	0.00
87	T	a-Methylstyrene	-1.0000	1.7826	0.0	0	0.00
88	T	tert-Butylbenzene	-1.0000	1.8815	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	2.0000	2.0739	-3.7	100	0.00
90	T	sec-Butylbenzene	2.0000	2.0835	-4.2	100	0.00
91	T	p-Isopropyltoluene	-1.0000	2.0813	0.0	100	0.00
92	P	1,3-Dichlorobenzene	2.0000	2.3653	-18.3	100	0.00
93	P	1,4-Dichlorobenzene	2.0000	2.2416	-12.1	100	0.00
94	T	n-Butylbenzene	2.0000	2.1080	-5.4	100	0.00
95	P	1,2-Dichlorobenzene	2.0000	2.1533	-7.7	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	1.3644	0.0	100	0.00
97	P	1,2,4-Trichlorobenzene	2.0000	2.1910	-9.6	100	0.00
98	T	Hexachlorobutadiene	2.0000	2.2738	-13.7	100	0.00
99	T	Naphthalene	2.0000	2.0983	-4.9	100	0.00
100	T	1,2,3-Trichlorobenzene	2.0000	2.1487	-7.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972900.D 8260SL.M Fri Feb 26 11:13:36 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	544259	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	391881	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.76	152	178969	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	29036	9.8422 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 19.68%#		
43) 1,2-Dichloroethane-d4	10.44	65	38093	10.2911 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 20.58%#		
58) Toluene-d8	12.83	98	95044	9.5885 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 19.18%#		
79) p-Bromofluorobenzene	16.23	95	32806	9.4138 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 18.82%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	14756	3.9724 ug/kg	92
3) Chloromethane	3.74	50	15227	4.2763 ug/kg	91
4) Vinyl Chloride	3.99	62	17097	4.7964 ug/kg	89
5) 1,3-Butadiene	4.04	54	14484	4.2710 ug/kg	97
6) Bromomethane	4.89	94	9847	4.2533 ug/kg	95
7) Chloroethane	5.04	64	6311	3.9741 ug/kg	93
8) Trichlorofluoromethane	5.53	101	22668	4.2400 ug/kg	100
9) Diethyl ether	6.05	59	118004	47.2164 ug/kg	99
10) Isoprene	6.10	67	13644	4.2747 ug/kg	95
11) Acrolein	6.30	56	12131	24.3428 ug/kg	84
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	12752	4.6251 ug/kg	95
13) Acetone	6.41	43	9765	4.9429 ug/kg	94
14) 1,1-Dichloroethene	6.62	61	21760	4.2784 ug/kg	99
15) Tert-Butyl Alcohol	6.76	59	50500	90.7440 ug/kg	98
16) Dimethyl Sulfide	6.88	62	10098	4.6977 ug/kg	87
17) Iodomethane	7.13	142	4147	5.3886 ug/kg	97
18) Methyl acetate	7.15	43	12159	4.3976 ug/kg#	87
19) Methylene Chloride	7.41	84	11825	4.2690 ug/kg	99
20) Carbon Disulfide	7.45	76	34078	4.3495 ug/kg	94
21) Acrylonitrile	7.58	53	31012	22.6731 ug/kg	100
22) Methyl Tert Butyl Ether	7.61	73	34936	4.4284 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	20503	4.5233 ug/kg	95
24) n-Hexane	7.92	57	20970	4.4853 ug/kg	98
25) Diisopropyl ether	8.26	45	505084	46.5162 ug/kg	100
26) Vinyl Acetate	8.44	43	28253	4.5644 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	24239	4.2575 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	463447	45.9037 ug/kg	99
29) 2-Butanone	9.03	43	8265	4.7092 ug/kg	88
30) Propionitrile	9.15	54	25938	48.2931 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	17954	4.2251 ug/kg	91
32) cis-1,2-Dichloroethene	9.32	96	13479	4.5340 ug/kg	84
33) Chloroform	9.52	83	23525	4.4982 ug/kg	95
34) 1-Bromopropane	9.65	122	2239	5.8652 ug/kg	90
35) Bromochloromethane	9.75	130	9205	4.7667 ug/kg	97
36) Tetrahydrofuran	9.78	42	53635	47.4100 ug/kg	99
38) 1,1,1-Trichloroethane	10.04	97	20945	4.4285 ug/kg	91
39) Cyclohexane	10.09	56	23110	4.4818 ug/kg	98
40) 1,1-Dichloropropene	10.24	75	16349	4.3930 ug/kg	99
41) Tert-Amyl-Methyl ether	10.35	73	343692	46.8330 ug/kg	98
42) Carbon Tetrachloride	10.39	117	18527	4.2254 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	21553	4.6852 ug/kg	99
46)	Benzene	10.60	78	45352	4.3528 ug/kg	99
47)	Trichloroethene	11.35	130	14266	4.3213 ug/kg	97
48)	Methylcyclohexane	11.44	83	17527	4.2330 ug/kg	97
49)	1,2-Dichloropropane	11.56	63	13071	4.5684 ug/kg	100
50)	1,4-Dioxane	11.88	88	3926	91.4657 ug/kg	99
51)	Bromodichloromethane	11.87	83	18008	4.4660 ug/kg	97
52)	Dibromomethane	11.96	174	8993	4.7438 ug/kg	95
53)	2-Chloroethyl Vinyl Ether	12.16	63	2468	5.7758 ug/kg#	66
54)	4-Methyl-2-Pentanone	12.19	58	4862	3.8716 ug/kg	95
55)	cis-1,3-Dichloropropene	12.50	75	18341	4.3659 ug/kg	96
56)	Dimethyl Disulfide	12.77	94	17792	4.2144 ug/kg	91
59)	Toluene	12.92	91	48377	4.3206 ug/kg	96
60)	Ethyl Methacrylate	13.02	69	12442	4.0089 ug/kg	96
61)	trans-1,3-Dichloropropene	13.10	75	17626	4.3707 ug/kg	95
62)	1,1,2-Trichloroethane	13.33	97	10657	4.5308 ug/kg	99
63)	2-Hexanone	13.25	43	10194	4.3408 ug/kg	96
64)	1,3-Dichloropropane	13.62	76	17885	4.5633 ug/kg	100
65)	Tetrachloroethene	13.75	164	10317	4.2981 ug/kg	97
66)	Dibromochloromethane	14.01	129	14152	4.3052 ug/kg	98
67)	1,2-Dibromoethane	14.28	107	12182	4.6694 ug/kg	99
68)	1-Chlorohexane	14.35	91	12970	3.9281 ug/kg	87
69)	Chlorobenzene	14.77	112	36017	4.5769 ug/kg	85
70)	1,1,1,2-Tetrachloroethane	14.80	131	12746	4.3130 ug/kg	95
71)	Ethylbenzene	14.80	106	17828	4.3974 ug/kg	92
72)	m-,p-Xylene	14.89	106	45904	9.1683 ug/kg	95
73)	o-Xylene	15.46	106	21754	4.5275 ug/kg	91
74)	Styrene	15.49	104	35390	4.3253 ug/kg	98
75)	Bromoform	15.98	173	9363	4.3382 ug/kg	96
76)	Isopropylbenzene	15.88	105	55721	4.3198 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	13197	4.8610 ug/kg	97
80)	1,2,3-Trichloropropane	16.29	110	5070	4.9243 ug/kg#	28
81)	trans-1,4-Dichloro-2-Buten	16.33	53	4246	4.0913 ug/kg#	39
82)	n-Propylbenzene	16.39	91	64689	4.5983 ug/kg	100
83)	Bromobenzene	16.52	156	15405	4.6386 ug/kg	90
84)	1,3,5-Trimethylbenzene	16.58	105	49527	4.6900 ug/kg	98
85)	2-Chlorotoluene	16.66	91	41422	4.3899 ug/kg	97
86)	4-Chlorotoluene	16.70	91	40985	4.6981 ug/kg	99
87)	a-Methylstyrene	16.98	118	20049	4.1667 ug/kg	90
88)	tert-Butylbenzene	17.04	134	10027	4.5290 ug/kg	84
89)	1,2,4-Trimethylbenzene	17.09	105	51253	4.6345 ug/kg	98
90)	sec-Butylbenzene	17.30	105	60716	4.4642 ug/kg	98
91)	p-Isopropyltoluene	17.46	119	53318	4.6453 ug/kg	98
92)	1,3-Dichlorobenzene	17.66	146	29255	4.4323 ug/kg	98
93)	1,4-Dichlorobenzene	17.79	146	30175	4.5730 ug/kg	91
94)	n-Butylbenzene	17.99	91	45964	4.3071 ug/kg	98
95)	1,2-Dichlorobenzene	18.30	146	27310	4.4593 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.30	157	3147	4.0028 ug/kg	87
97)	1,2,4-Trichlorobenzene	20.44	180	18372	4.2258 ug/kg	95
98)	Hexachlorobutadiene	20.59	225	9618	4.1968 ug/kg	90
99)	Naphthalene	20.81	128	47189	4.3274 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.11	180	17859	4.2352 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972901.D 8260SL.M Fri Feb 26 11:21:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

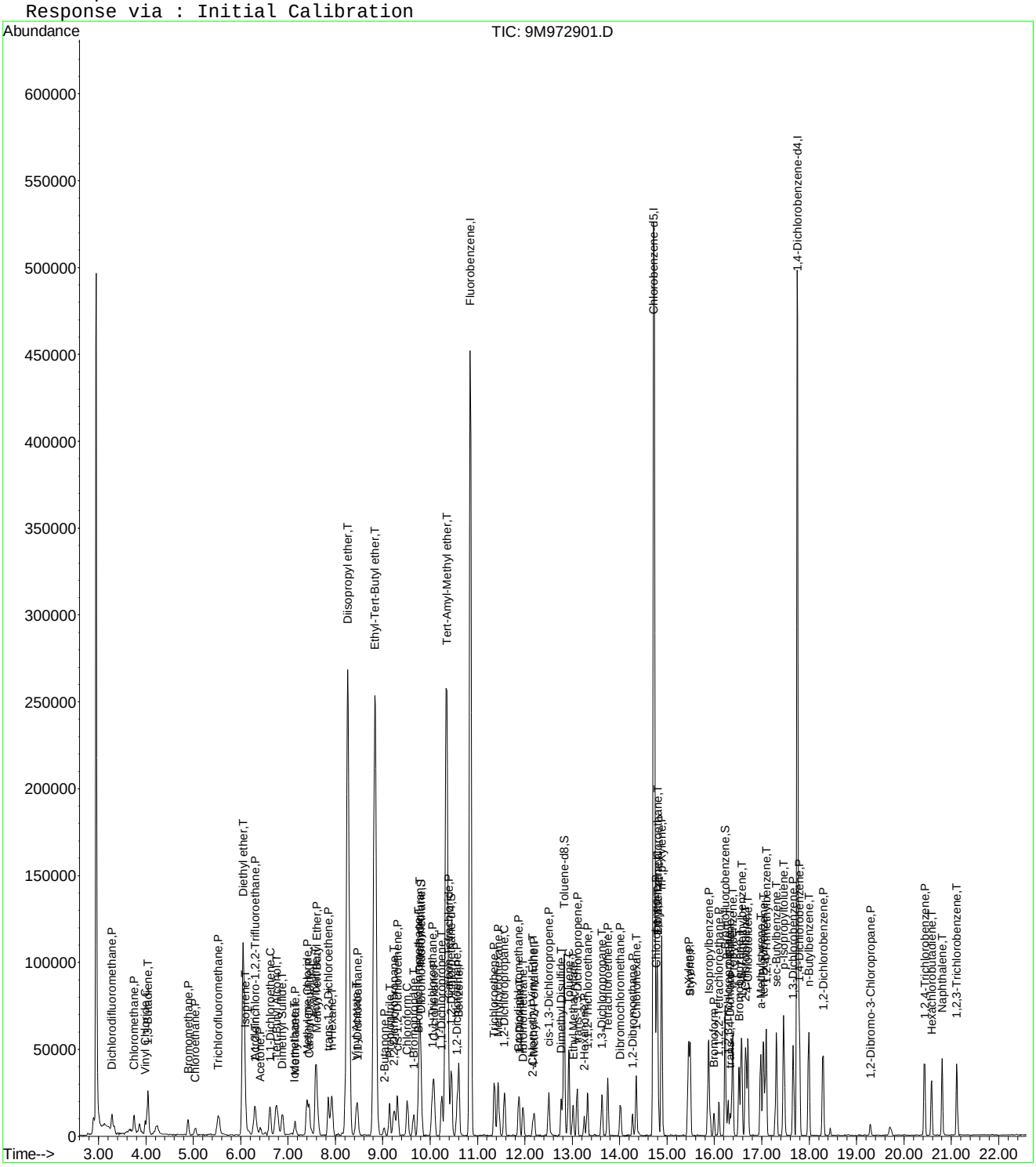

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	5.0000	3.9724	20.6	100	0.00
3	P	Chloromethane	5.0000	4.2763	14.5	100	0.00
4	C	Vinyl Chloride	5.0000	4.7964	4.1	100	0.00
5	T	1,3-Butadiene	5.0000	4.2710	14.6	100	0.00
6	P	Bromomethane	5.0000	4.2534	14.9	100	0.00
7	P	Chloroethane	5.0000	3.9741	20.5	100	0.00
8	P	Trichlorofluoromethane	5.0000	4.2400	15.2	100	0.00
9	T	Diethyl ether	50.0000	47.2164	5.6	100	0.00
10	T	Isoprene	5.0000	4.2747	14.5	100	0.01
11	T	Acrolein	25.0000	24.3428	2.6	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.6251	7.5	100	0.00
13	P	Acetone	5.0000	4.9429	1.1	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.2784	14.4	100	0.01
15	T	Tert-Butyl Alcohol	100.0000	90.7440	9.3	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.6977	6.0	100	0.00
17	T	Iodomethane	5.0000	5.3886	-7.8	100	0.00
18	P	Methyl acetate	5.0000	4.3976	12.0	100	0.01
19	P	Methylene Chloride	5.0000	4.2690	14.6	100	0.00
20	P	Carbon Disulfide	5.0000	4.3495	13.0	100	0.00
21	T	Acrylonitrile	25.0000	22.6731	9.3	100	0.00
22	P	Methyl Tert Butyl Ether	5.0000	4.4284	11.4	100	0.00
23	P	trans-1,2-Dichloroethene	5.0000	4.5233	9.5	100	0.00
24	T	n-Hexane	5.0000	4.4854	10.3	100	0.01
25	T	Diisopropyl ether	50.0000	46.5162	7.0	100	0.00
26	T	Vinyl Acetate	5.0000	4.5644	8.7	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.2575	14.8	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	45.9037	8.2	100	0.00
29	P	2-Butanone	5.0000	4.7092	5.8	100	0.00
30	T	Propionitrile	50.0000	48.2931	3.4	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.2251	15.5	100	-0.01
32	P	cis-1,2-Dichloroethene	5.0000	4.5340	9.3	100	0.00
33	C	Chloroform	5.0000	4.4982	10.0	100	0.00
34	T	1-Bromopropane	5.0000	5.8651	-17.3	100	0.00
35	T	Bromochloromethane	5.0000	4.7667	4.7	100	0.00
36	T	Tetrahydrofuran	50.0000	47.4100	5.2	100	0.00
37	S	Dibromofluoromethane	10.0000	9.8422	1.6	100	0.00
38	P	1,1,1-Trichloroethane	5.0000	4.4285	11.4	100	0.00
39	P	Cyclohexane	5.0000	4.4818	10.4	100	0.01
40	T	1,1-Dichloropropene	5.0000	4.3930	12.1	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	46.8330	6.3	100	0.00
42	P	Carbon Tetrachloride	5.0000	4.2254	15.5	100	0.00
43	S	1,2-Dichloroethane-d4	10.0000	10.2911	-2.9	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	5.0000	4.6852	6.3	100	0.00
46	P	Benzene	5.0000	4.3528	12.9	100	0.00
47	P	Trichloroethene	5.0000	4.3213	13.6	100	0.00
48	P	Methylcyclohexane	5.0000	4.2330	15.3	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.5684	8.6	100	0.00
50	T	1,4-Dioxane	100.0000	91.4657	8.5	100	0.00
51	P	Bromodichloromethane	5.0000	4.4660	10.7	100	0.00
52	T	Dibromomethane	5.0000	4.7438	5.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	5.7758	-15.5	100	0.00
54	P	4-Methyl-2-Pentanone	5.0000	3.8716	22.6	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	5.0000	4.3659	12.7	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.2144	15.7	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	-0.01
58	S	Toluene-d8	10.0000	9.5885	4.1	100	0.00
59	C	Toluene	5.0000	4.3206	13.6	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.0089	19.8	100	0.00
61	P	trans-1,3-Dichloropropene	5.0000	4.3707	12.6	100	0.00
62	P	1,1,2-Trichloroethane	5.0000	4.5309	9.4	100	0.00
63	P	2-Hexanone	5.0000	4.3408	13.2	100	0.00
64	T	1,3-Dichloropropane	5.0000	4.5633	8.7	100	-0.01
65	P	Tetrachloroethene	5.0000	4.2981	14.0	100	0.00
66	P	Dibromochloromethane	5.0000	4.3052	13.9	100	0.00
67	P	1,2-Dibromoethane	5.0000	4.6694	6.6	100	0.00
68	T	1-Chlorohexane	5.0000	3.9281	21.4	100	0.00
69	P	Chlorobenzene	5.0000	4.5769	8.5	100	0.00
70	T	1,1,1,2-Tetrachloroethane	5.0000	4.3130	13.7	100	0.00
71	C	Ethylbenzene	5.0000	4.3974	12.1	100	0.00
72	P	m-,p-Xylene	10.0000	9.1683	8.3	100	0.00
73	P	o-Xylene	5.0000	4.5275	9.5	100	0.00
74	P	Styrene	5.0000	4.3253	13.5	100	0.00
75	P	Bromoform	5.0000	4.3382	13.2	100	-0.01
76	P	Isopropylbenzene	5.0000	4.3198	13.6	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	5.0000	4.8610	2.8	100	-0.01
79	S	p-Bromofluorobenzene	10.0000	9.4138	5.9	100	0.00
80	T	1,2,3-Trichloropropane	5.0000	4.9243	1.5	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	5.0000	4.0913	18.2	100	0.00
82	T	n-Propylbenzene	5.0000	4.5983	8.0	100	0.00
83	T	Bromobenzene	5.0000	4.6386	7.2	100	0.00
84	T	1,3,5-Trimethylbenzene	5.0000	4.6900	6.2	100	0.00
85	T	2-Chlorotoluene	5.0000	4.3899	12.2	100	0.00
86	T	4-Chlorotoluene	5.0000	4.6981	6.0	100	0.00
87	T	a-Methylstyrene	5.0000	4.1667	16.7	100	0.00
88	T	tert-Butylbenzene	5.0000	4.5290	9.4	100	0.00
89	T	1,2,4-Trimethylbenzene	5.0000	4.6345	7.3	100	0.00
90	T	sec-Butylbenzene	5.0000	4.4642	10.7	100	0.00
91	T	p-Isopropyltoluene	5.0000	4.6453	7.1	100	0.00
92	P	1,3-Dichlorobenzene	5.0000	4.4323	11.4	100	0.00
93	P	1,4-Dichlorobenzene	5.0000	4.5730	8.5	100	-0.01
94	T	n-Butylbenzene	5.0000	4.3071	13.9	100	0.00
95	P	1,2-Dichlorobenzene	5.0000	4.4593	10.8	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	5.0000	4.0028	19.9	100	0.00
97	P	1,2,4-Trichlorobenzene	5.0000	4.2258	15.5	100	0.00
98	T	Hexachlorobutadiene	5.0000	4.1968	16.1	100	0.00
99	T	Naphthalene	5.0000	4.3274	13.5	100	0.00
100	T	1,2,3-Trichlorobenzene	5.0000	4.2352	15.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972901.D 8260SL.M Fri Feb 26 11:21:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972902.D Vial: 7
Acq On : 25 Feb 2016 18:59 Operator: ADC
Sample : WG558732-07 20.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	491006	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	357658	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	168257	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	47666	17.9094 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 35.82%#		
43) 1,2-Dichloroethane-d4	10.45	65	60269	18.0480 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 36.10%#		
58) Toluene-d8	12.82	98	163811	18.1074 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 36.22%#		
79) p-Bromofluorobenzene	16.23	95	58931	17.9870 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 35.98%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	78283	23.3598 ug/kg	99
3) Chloromethane	3.75	50	64951	20.2188 ug/kg	98
4) Vinyl Chloride	3.99	62	73167	22.7523 ug/kg	97
5) 1,3-Butadiene	4.04	54	64372	21.0404 ug/kg	98
6) Bromomethane	4.88	94	40556	19.4178 ug/kg	97
7) Chloroethane	5.04	64	27981	19.5307 ug/kg	97
8) Trichlorofluoromethane	5.53	101	98871	20.4994 ug/kg	98
9) Diethyl ether	6.06	59	191078	84.7472 ug/kg	99
10) Isoprene	6.10	67	59437	20.6414 ug/kg	98
11) Acrolein	6.30	56	18057	40.1641 ug/kg	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	50002	20.1026 ug/kg	100
13) Acetone	6.42	43	27164	20.4768 ug/kg	100
14) 1,1-Dichloroethene	6.62	61	94732	20.6460 ug/kg	98
15) Tert-Butyl Alcohol	6.75	59	85695	170.6872 ug/kg	97
16) Dimethyl Sulfide	6.88	62	40580	20.9258 ug/kg	99
17) Iodomethane	7.13	142	21330	17.5663 ug/kg	96
18) Methyl acetate	7.15	43	54770	21.9573 ug/kg	99
19) Methylene Chloride	7.41	84	51619	20.6564 ug/kg	95
20) Carbon Disulfide	7.45	76	145286	20.5545 ug/kg	97
21) Acrylonitrile	7.59	53	50918	41.2640 ug/kg	97
22) Methyl Tert Butyl Ether	7.61	73	149271	20.9731 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	84416	20.6434 ug/kg	98
24) n-Hexane	7.92	57	82582	19.5795 ug/kg	98
25) Diisopropyl ether	8.26	45	841729	85.9275 ug/kg	99
26) Vinyl Acetate	8.44	43	107114	19.1814 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	104490	20.3440 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	777976	85.4147 ug/kg	99
29) 2-Butanone	9.02	43	30691	19.3834 ug/kg	100
30) Propionitrile	9.14	54	41719	86.0996 ug/kg	99
31) 2,2-Dichloropropane	9.24	77	73960	19.2927 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	56404	21.0307 ug/kg	100
33) Chloroform	9.52	83	94621	20.0546 ug/kg	98
34) 1-Bromopropane	9.65	122	8251	20.7938 ug/kg	98
35) Bromochloromethane	9.75	130	38059	21.8457 ug/kg	99
36) Tetrahydrofuran	9.77	42	86589	84.8405 ug/kg	100
38) 1,1,1-Trichloroethane	10.05	97	85938	20.1411 ug/kg	99
39) Cyclohexane	10.09	56	96933	20.8373 ug/kg	98
40) 1,1-Dichloropropene	10.25	75	67544	20.1175 ug/kg	96
41) Tert-Amyl-Methyl ether	10.34	73	562826	85.0111 ug/kg	99
42) Carbon Tetrachloride	10.39	117	79566	20.1143 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972902.D Vial: 7
Acq On : 25 Feb 2016 18:59 Operator: ADC
Sample : WG558732-07 20.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	86857	20.9287 ug/kg	98
46)	Benzene	10.60	78	190747	20.2931 ug/kg	98
47)	Trichloroethene	11.35	130	61315	20.5871 ug/kg	99
48)	Methylcyclohexane	11.44	83	79384	21.2516 ug/kg	99
49)	1,2-Dichloropropane	11.56	63	54356	21.0584 ug/kg	98
50)	1,4-Dioxane	11.88	88	7054	182.1639 ug/kg	93
51)	Bromodichloromethane	11.87	83	73160	20.1115 ug/kg	99
52)	Dibromomethane	11.97	174	35844	20.9583 ug/kg	97
53)	2-Chloroethyl Vinyl Ether	12.17	63	11048	17.4432 ug/kg	94
54)	4-Methyl-2-Pentanone	12.20	58	22247	19.6364 ug/kg	96
55)	cis-1,3-Dichloropropene	12.50	75	77533	20.4577 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	77400	20.3222 ug/kg	99
59)	Toluene	12.93	91	209919	20.5421 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	58827	20.7683 ug/kg	99
61)	trans-1,3-Dichloropropene	13.11	75	73778	20.0452 ug/kg	98
62)	1,1,2-Trichloroethane	13.32	97	45475	21.1838 ug/kg	98
63)	2-Hexanone	13.25	43	40183	18.7479 ug/kg	97
64)	1,3-Dichloropropane	13.62	76	73060	20.4249 ug/kg	95
65)	Tetrachloroethene	13.75	164	44423	20.2778 ug/kg	96
66)	Dibromochloromethane	14.01	129	59220	19.7391 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	48648	20.4311 ug/kg	97
68)	1-Chlorohexane	14.35	91	64519	21.4099 ug/kg	96
69)	Chlorobenzene	14.77	112	150639	20.9742 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	55462	20.5631 ug/kg	99
71)	Ethylbenzene	14.79	106	77813	21.0297 ug/kg	100
72)	m-,p-Xylene	14.89	106	192168	42.0536 ug/kg	98
73)	o-Xylene	15.45	106	92490	21.0911 ug/kg	98
74)	Styrene	15.49	104	154534	20.6939 ug/kg	100
75)	Bromoform	16.00	173	39818	20.2142 ug/kg	98
76)	Isopropylbenzene	15.87	105	249418	21.1865 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	53687	21.0342 ug/kg	98
80)	1,2,3-Trichloropropane	16.28	110	19658	20.3087 ug/kg	98
81)	trans-1,4-Dichloro-2-Buten	16.33	53	21143	21.6696 ug/kg	89
82)	n-Propylbenzene	16.39	91	283998	21.4728 ug/kg	98
83)	Bromobenzene	16.52	156	65363	20.9343 ug/kg	95
84)	1,3,5-Trimethylbenzene	16.57	105	212735	21.4278 ug/kg	99
85)	2-Chlorotoluene	16.66	91	189159	21.3235 ug/kg	99
86)	4-Chlorotoluene	16.70	91	171741	20.9401 ug/kg	99
87)	a-Methylstyrene	16.98	118	95360	21.0801 ug/kg	99
88)	tert-Butylbenzene	17.03	134	43749	21.0188 ug/kg	90
89)	1,2,4-Trimethylbenzene	17.08	105	218350	21.0010 ug/kg	99
90)	sec-Butylbenzene	17.31	105	268054	20.9635 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	225612	20.9076 ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	122605	19.7580 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	124659	20.0949 ug/kg	99
94)	n-Butylbenzene	17.99	91	199655	19.8998 ug/kg	99
95)	1,2-Dichlorobenzene	18.30	146	115021	19.9768 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	14138	19.1277 ug/kg	95
97)	1,2,4-Trichlorobenzene	20.43	180	77418	18.9408 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	41508	19.2651 ug/kg	96
99)	Naphthalene	20.81	128	204933	19.9897 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.12	180	75616	19.0736 ug/kg	98

(#) = qualifier out of range (m) = manual integration
9M972902.D 8260SL.M Fri Feb 26 11:21:57 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972902.D Vial: 7
Acq On : 25 Feb 2016 18:59 Operator: ADC
Sample : WG558732-07 20.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

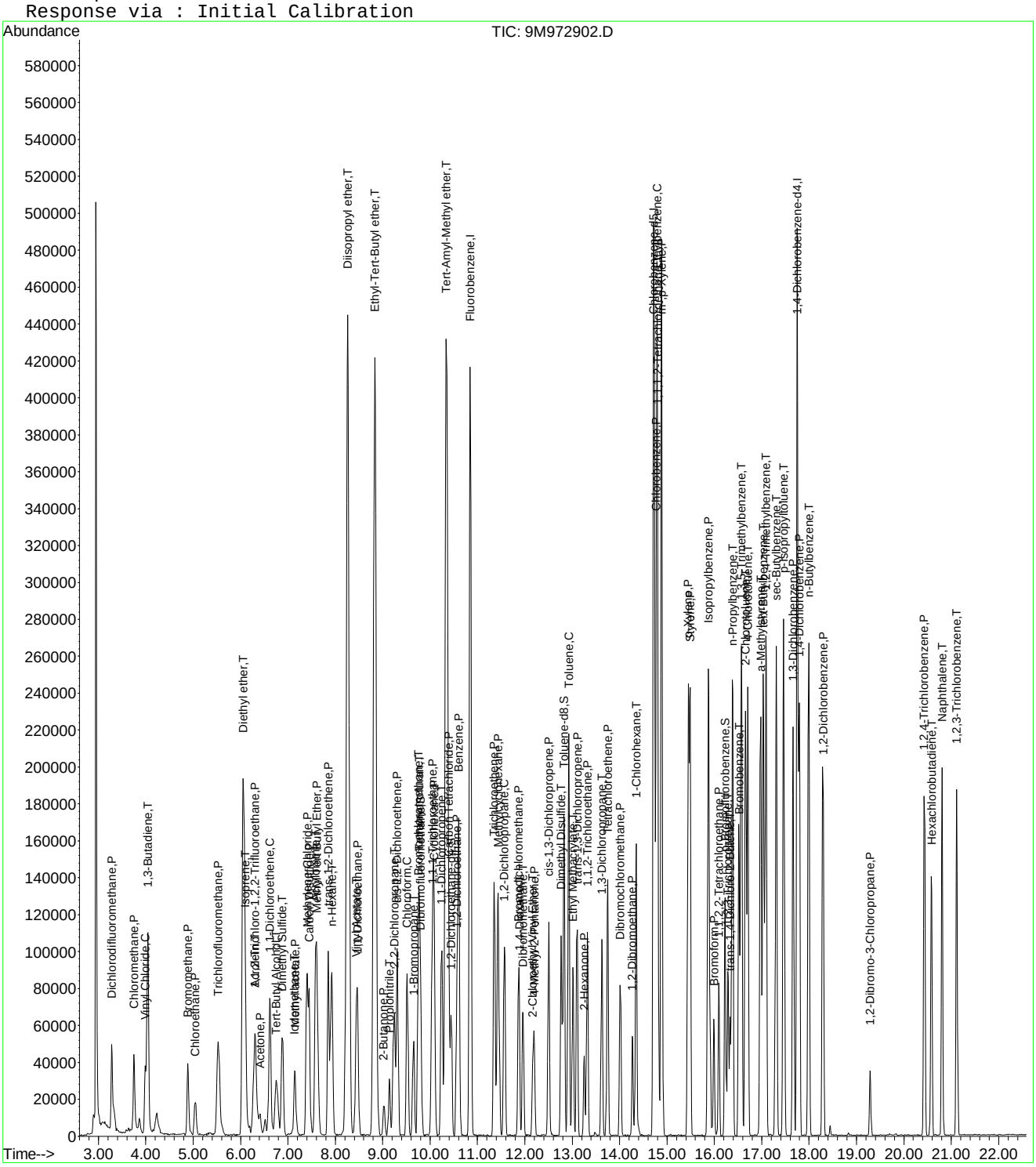

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972903.D Vial: 8
Acq On : 25 Feb 2016 19:29 Operator: ADC
Sample : WG558732-08 100.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:57 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	535022	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	390279	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.75	152	187456	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	305515	105.3466 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 210.70%#		
43) 1,2-Dichloroethane-d4	10.45	65	383447	105.3793 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 210.76%#		
58) Toluene-d8	12.83	98	1052175	106.5842 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 213.16%#		
79) p-Bromofluorobenzene	16.23	95	403966	110.6707 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 221.34%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	340079	93.1314 ug/kg	98
3) Chloromethane	3.74	50	316834	90.5143 ug/kg	100
4) Vinyl Chloride	3.99	62	366384	104.5591 ug/kg	99
5) 1,3-Butadiene	4.04	54	317949	95.3739 ug/kg	98
6) Bromomethane	4.88	94	198493	87.2180 ug/kg	99
7) Chloroethane	5.04	64	148539	95.1503 ug/kg	96
8) Trichlorofluoromethane	5.53	101	502703	95.6532 ug/kg	99
9) Diethyl ether	6.06	59	457873	186.3696 ug/kg	99
10) Isoprene	6.09	67	302269	96.3367 ug/kg	100
11) Acrolein	6.30	56	49319	100.6749 ug/kg	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	264925	97.7467 ug/kg	100
13) Acetone	6.41	43	126959	96.0965 ug/kg	97
14) 1,1-Dichloroethene	6.61	61	485466	97.0986 ug/kg	99
15) Tert-Butyl Alcohol	6.77	59	202804	370.7125 ug/kg	97
16) Dimethyl Sulfide	6.88	62	209613	99.1979 ug/kg	97
17) Iodomethane	7.14	142	134789	88.4431 ug/kg	96
18) Methyl acetate	7.15	43	256770	94.4705 ug/kg	99
19) Methylene Chloride	7.40	84	256919	94.3530 ug/kg	100
20) Carbon Disulfide	7.45	76	725343	94.1764 ug/kg	99
21) Acrylonitrile	7.59	53	131913	98.1077 ug/kg	97
22) Methyl Tert Butyl Ether	7.61	73	763125	98.4009 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	435514	97.7404 ug/kg	99
24) n-Hexane	7.92	57	458951	99.8615 ug/kg	98
25) Diisopropyl ether	8.26	45	1991599	186.5850 ug/kg	99
26) Vinyl Acetate	8.44	43	593217	97.4908 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	533571	95.3384 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	1850360	186.4394 ug/kg	100
29) 2-Butanone	9.03	43	167064	96.8316 ug/kg	99
30) Propionitrile	9.14	54	102467	194.0735 ug/kg	99
31) 2,2-Dichloropropane	9.24	77	409808	98.1051 ug/kg	98
32) cis-1,2-Dichloroethene	9.31	96	291782	99.8428 ug/kg	100
33) Chloroform	9.52	83	491651	95.6310 ug/kg	100
34) 1-Bromopropane	9.65	122	43084	95.7559 ug/kg	98
35) Bromochloromethane	9.75	130	191150	100.6929 ug/kg	97
36) Tetrahydrofuran	9.78	42	206962	186.0999 ug/kg	99
38) 1,1,1-Trichloroethane	10.04	97	454248	97.7025 ug/kg	99
39) Cyclohexane	10.08	56	497594	98.1657 ug/kg	99
40) 1,1-Dichloropropene	10.24	75	355996	97.3080 ug/kg	98
41) Tert-Amyl-Methyl ether	10.35	73	1353122	187.5659 ug/kg	99
42) Carbon Tetrachloride	10.39	117	419252	97.2674 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972903.D 8260SL.M Fri Feb 26 11:21:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972903.D Vial: 8
Acq On : 25 Feb 2016 19:29 Operator: ADC
Sample : WG558732-08 100.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:57 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	441828	97.7027	ug/kg	98
46)	Benzene	10.60	78	946247	92.3868	ug/kg	100
47)	Trichloroethene	11.35	130	316701	97.5872	ug/kg	98
48)	Methylcyclohexane	11.44	83	420776	103.3770	ug/kg	100
49)	1,2-Dichloropropane	11.56	63	273398	97.2049	ug/kg	97
50)	1,4-Dioxane	11.89	88	15240	361.1826	ug/kg	95
51)	Bromodichloromethane	11.87	83	384453	96.9905	ug/kg	100
52)	Dibromomethane	11.96	174	178770	95.9288	ug/kg	100
53)	2-Chloroethyl Vinyl Ether	12.17	63	71336	89.4187	ug/kg	97
54)	4-Methyl-2-Pentanone	12.19	58	126118	102.1606	ug/kg	99
55)	cis-1,3-Dichloropropene	12.50	75	407392	98.6500	ug/kg	99
56)	Dimethyl Disulfide	12.77	94	430523	103.7388	ug/kg	99
59)	Toluene	12.93	91	1070303	95.9828	ug/kg	100
60)	Ethyl Methacrylate	13.01	69	310336	100.4033	ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	395340	98.4345	ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	234168	99.9657	ug/kg	97
63)	2-Hexanone	13.25	43	238254	101.8692	ug/kg	99
64)	1,3-Dichloropropane	13.62	76	372307	95.3836	ug/kg	98
65)	Tetrachloroethene	13.75	164	235384	98.4650	ug/kg	97
66)	Dibromochloromethane	14.01	129	316240	96.5980	ug/kg	100
67)	1,2-Dibromoethane	14.28	107	254663	98.0133	ug/kg	98
68)	1-Chlorohexane	14.35	91	341938	103.9841	ug/kg	98
69)	Chlorobenzene	14.77	112	744916	95.0493	ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.80	131	289798	98.4650	ug/kg	98
71)	Ethylbenzene	14.79	106	397428	98.4311	ug/kg	99
72)	m-,p-Xylene	14.89	106	955121	191.5462	ug/kg	97
73)	o-Xylene	15.45	106	475355	99.3381	ug/kg	100
74)	Styrene	15.49	104	817155	100.2803	ug/kg	100
75)	Bromoform	15.99	173	212807	99.0046	ug/kg	98
76)	Isopropylbenzene	15.88	105	1283494	99.9122	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	279744	98.3764	ug/kg	100
80)	1,2,3-Trichloropropane	16.29	110	110421	102.3924	ug/kg	94
81)	trans-1,4-Dichloro-2-Buten	16.33	53	116410	107.0899	ug/kg	87
82)	n-Propylbenzene	16.39	91	1458178	98.9594	ug/kg	99
83)	Bromobenzene	16.52	156	334600	96.1892	ug/kg	97
84)	1,3,5-Trimethylbenzene	16.57	105	1100766	99.5195	ug/kg	99
85)	2-Chlorotoluene	16.66	91	937812	94.8900	ug/kg	100
86)	4-Chlorotoluene	16.70	91	906777	99.2383	ug/kg	100
87)	a-Methylstyrene	16.98	118	508276	100.8508	ug/kg	99
88)	tert-Butylbenzene	17.04	134	234437	101.0972	ug/kg	99
89)	1,2,4-Trimethylbenzene	17.09	105	1125260	97.1435	ug/kg	99
90)	sec-Butylbenzene	17.30	105	1425754	100.0828	ug/kg	100
91)	p-Isopropyltoluene	17.46	119	1215596	101.1125	ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	644471	93.2206	ug/kg	100
93)	1,4-Dichlorobenzene	17.79	146	646907	93.6002	ug/kg	99
94)	n-Butylbenzene	17.99	91	1131901	101.2628	ug/kg	99
95)	1,2-Dichlorobenzene	18.30	146	622851	97.0971	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.30	157	88939	108.0040	ug/kg	99
97)	1,2,4-Trichlorobenzene	20.44	180	466688	102.4843	ug/kg	99
98)	Hexachlorobutadiene	20.59	225	252514	105.1960	ug/kg	99
99)	Naphthalene	20.81	128	1208454	105.8030	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	456274	103.3044	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972903.D 8260SL.M Fri Feb 26 11:21:58 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972903.D Vial: 8
Acq On : 25 Feb 2016 19:29 Operator: ADC
Sample : WG558732-08 100.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

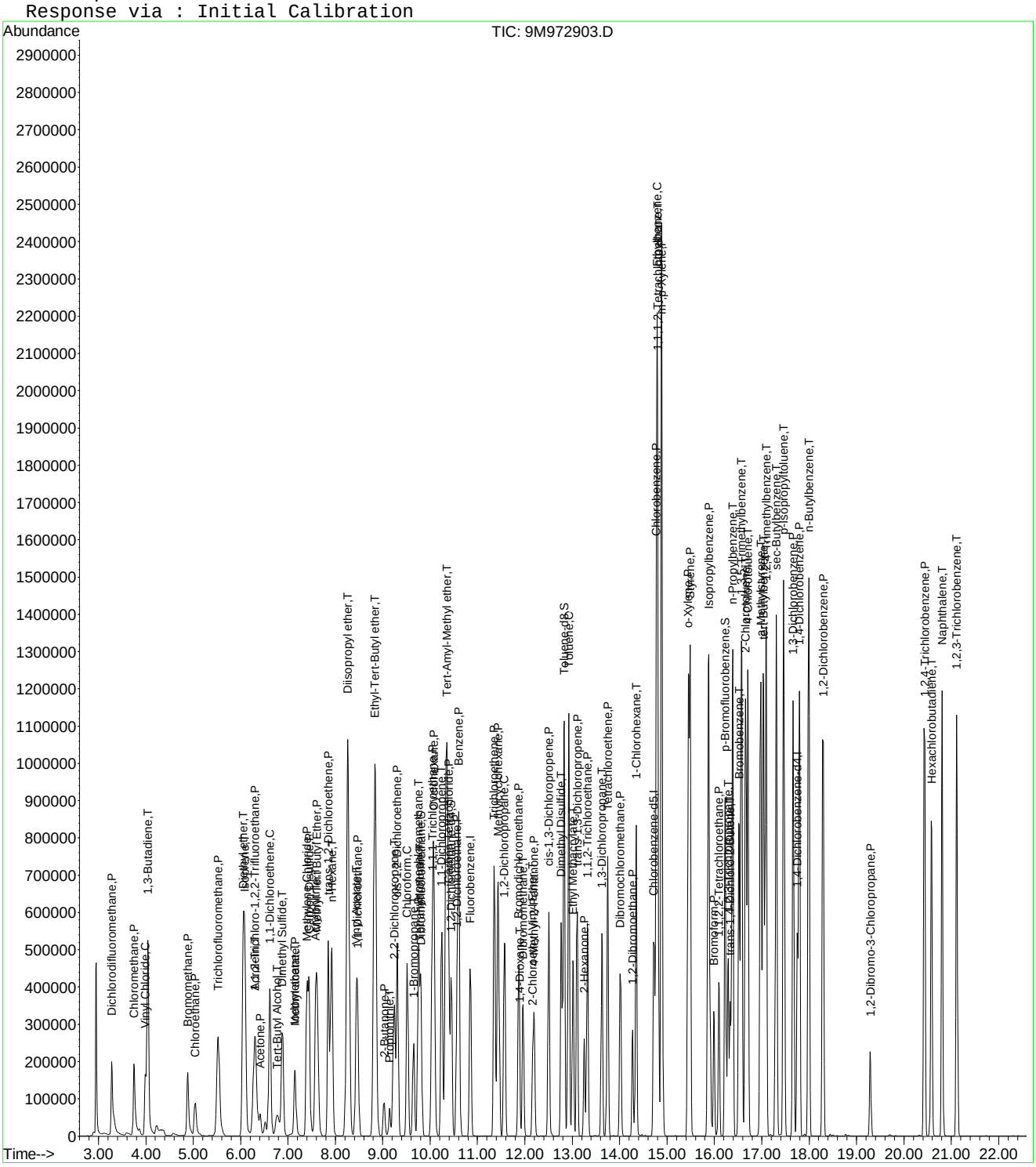

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972904.D Vial: 9
Acq On : 25 Feb 2016 20:00 Operator: ADC
Sample : WG558732-09 200.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:58 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	542388	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	396894	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	212175	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	595362	202.5026 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 405.00%#		
43) 1,2-Dichloroethane-d4	10.45	65	716316	194.1852 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 388.38%#		
58) Toluene-d8	12.82	98	2013255	200.5415 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 401.08%#		
79) p-Bromofluorobenzene	16.23	95	807150	195.3653 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 390.74%#		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.28	85	774894	209.3245 ug/kg	100
3) Chloromethane	3.75	50	750862	211.5959 ug/kg	100
4) Vinyl Chloride	3.99	62	770550	216.9141 ug/kg	100
5) 1,3-Butadiene	4.04	54	695631	205.8318 ug/kg	99
6) Bromomethane	4.88	94	470946	204.1239 ug/kg	97
7) Chloroethane	5.04	64	374502	236.6386 ug/kg	98
8) Trichlorofluoromethane	5.52	101	1120886	210.3832 ug/kg	99
10) Isoprene	6.09	67	690766	217.1654 ug/kg	97
11) Acrolein	6.31	56	2288	4.6071 ug/kg	86
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	592415	215.6090 ug/kg	100
13) Acetone	6.42	43	268070	202.8703 ug/kg	99
14) 1,1-Dichloroethene	6.62	61	1084122	213.8917 ug/kg	99
15) Tert-Butyl Alcohol	6.78	59	290	0.5229 ug/kg#	58
16) Dimethyl Sulfide	6.88	62	486231	226.9805 ug/kg	99
17) Iodomethane	7.14	142	341644	216.9305 ug/kg	98
18) Methyl acetate	7.15	43	558766	202.7886 ug/kg	97
19) Methylene Chloride	7.40	84	606998	219.8913 ug/kg	98
20) Carbon Disulfide	7.44	76	1650167	211.3432 ug/kg	98
21) Acrylonitrile	7.61	53	18860	13.8363 ug/kg#	28
22) Methyl Tert Butyl Ether	7.61	73	1710517	217.5666 ug/kg	99
23) trans-1,2-Dichloroethene	7.84	61	967656	214.2173 ug/kg	99
24) n-Hexane	7.92	57	1006142	215.9497 ug/kg	97
26) Vinyl Acetate	8.43	43	1320060	213.9959 ug/kg	98
27) 1,1-Dichloroethane	8.46	63	1199515	211.4185 ug/kg	100
29) 2-Butanone	9.02	43	373284	213.4201 ug/kg	100
31) 2,2-Dichloropropane	9.24	77	904865	213.6764 ug/kg	100
32) cis-1,2-Dichloroethene	9.31	96	649726	219.3058 ug/kg	100
33) Chloroform	9.52	83	1094765	210.0507 ug/kg	100
34) 1-Bromopropane	9.66	122	98189	213.9851 ug/kg	100
35) Bromochloromethane	9.75	130	427351	222.0603 ug/kg	99
36) Tetrahydrofuran	9.77	42	2491	2.2095 ug/kg	93
38) 1,1,1-Trichloroethane	10.05	97	1020636	216.5435 ug/kg	100
39) Cyclohexane	10.08	56	1092323	212.5677 ug/kg	98
40) 1,1-Dichloropropene	10.24	75	780375	210.4109 ug/kg	98
42) Carbon Tetrachloride	10.39	117	950685	217.5657 ug/kg	100
45) 1,2-Dichloroethane	10.56	62	975428	212.7698 ug/kg	98
46) Benzene	10.61	78	2107212	202.9435 ug/kg	100
47) Trichloroethene	11.36	130	696420	211.6783 ug/kg	98
48) Methylcyclohexane	11.43	83	922594	223.5862 ug/kg	100
49) 1,2-Dichloropropane	11.57	63	613480	215.1567 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972904.D Vial: 9
Acq On : 25 Feb 2016 20:00 Operator: ADC
Sample : WG558732-09 200.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:58 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
50)	1,4-Dioxane	11.86	88	821	19.1932 ug/kg#	7
51)	Bromodichloromethane	11.87	83	861318	214.3439 ug/kg	99
52)	Dibromomethane	11.96	174	401145	212.3328 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	173854	210.9891 ug/kg	98
54)	4-Methyl-2-Pentanone	12.19	58	281550	224.9694 ug/kg	99
55)	cis-1,3-Dichloropropene	12.51	75	917528	219.1621 ug/kg	100
56)	Dimethyl Disulfide	12.77	94	993447	236.1300 ug/kg	99
59)	Toluene	12.93	91	2353264	207.5190 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	698780	222.3090 ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	892986	218.6361 ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	510766	214.4105 ug/kg	98
63)	2-Hexanone	13.26	43	551431	231.8433 ug/kg	99
64)	1,3-Dichloropropane	13.63	76	842104	212.1481 ug/kg	99
65)	Tetrachloroethene	13.75	164	518091	213.1138 ug/kg	97
66)	Dibromochloromethane	14.02	129	723489	217.3121 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	560802	212.2411 ug/kg	99
68)	1-Chlorohexane	14.35	91	757279	226.4519 ug/kg	100
69)	Chlorobenzene	14.78	112	1626715	204.1050 ug/kg	98
70)	1,1,1,2-Tetrachloroethane	14.81	131	649903	217.1378 ug/kg	97
71)	Ethylbenzene	14.80	106	871321	212.2035 ug/kg	99
72)	m-,p-Xylene	14.89	106	2089330	412.0243 ug/kg	98
73)	o-Xylene	15.45	106	1065692	218.9929 ug/kg	98
74)	Styrene	15.49	104	1839951	222.0334 ug/kg	100
75)	Bromoform	15.99	173	511700	234.0915 ug/kg	99
76)	Isopropylbenzene	15.87	105	2873816	219.9805 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	662688	205.8943 ug/kg	99
80)	1,2,3-Trichloropropane	16.29	110	257281	210.7797 ug/kg	98
81)	trans-1,4-Dichloro-2-Buten	16.34	53	281460	228.7601 ug/kg	90
82)	n-Propylbenzene	16.38	91	3244636	194.5439 ug/kg	100
83)	Bromobenzene	16.52	156	759998	193.0269 ug/kg	95
84)	1,3,5-Trimethylbenzene	16.57	105	2471747	197.4342 ug/kg	99
85)	2-Chlorotoluene	16.66	91	2218317	198.3049 ug/kg	100
86)	4-Chlorotoluene	16.71	91	1934954	187.0917 ug/kg	100
87)	a-Methylstyrene	16.98	118	1205032	211.2436 ug/kg	99
88)	tert-Butylbenzene	17.03	134	526001	200.4032 ug/kg	87
89)	1,2,4-Trimethylbenzene	17.09	105	2520611	192.2523 ug/kg	100
90)	sec-Butylbenzene	17.31	105	3206494	198.8615 ug/kg	100
91)	p-Isopropyltoluene	17.47	119	2752661	202.2895 ug/kg	100
92)	1,3-Dichlorobenzene	17.67	146	1508843	192.8225 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	1522857	194.6701 ug/kg	99
94)	n-Butylbenzene	17.99	91	2603240	205.7600 ug/kg	100
95)	1,2-Dichlorobenzene	18.29	146	1515803	208.7710 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	205456	220.4304 ug/kg	98
97)	1,2,4-Trichlorobenzene	20.43	180	1061631	205.9726 ug/kg	99
98)	Hexachlorobutadiene	20.58	225	612598	225.4729 ug/kg	100
99)	Naphthalene	20.81	128	2666581	206.2661 ug/kg	99
100)	1,2,3-Trichlorobenzene	21.12	180	1022740	204.5802 ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972904.D 8260SL.M Fri Feb 26 11:21:58 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972904.D Vial: 9
Acq On : 25 Feb 2016 20:00 Operator: ADC
Sample : WG558732-09 200.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

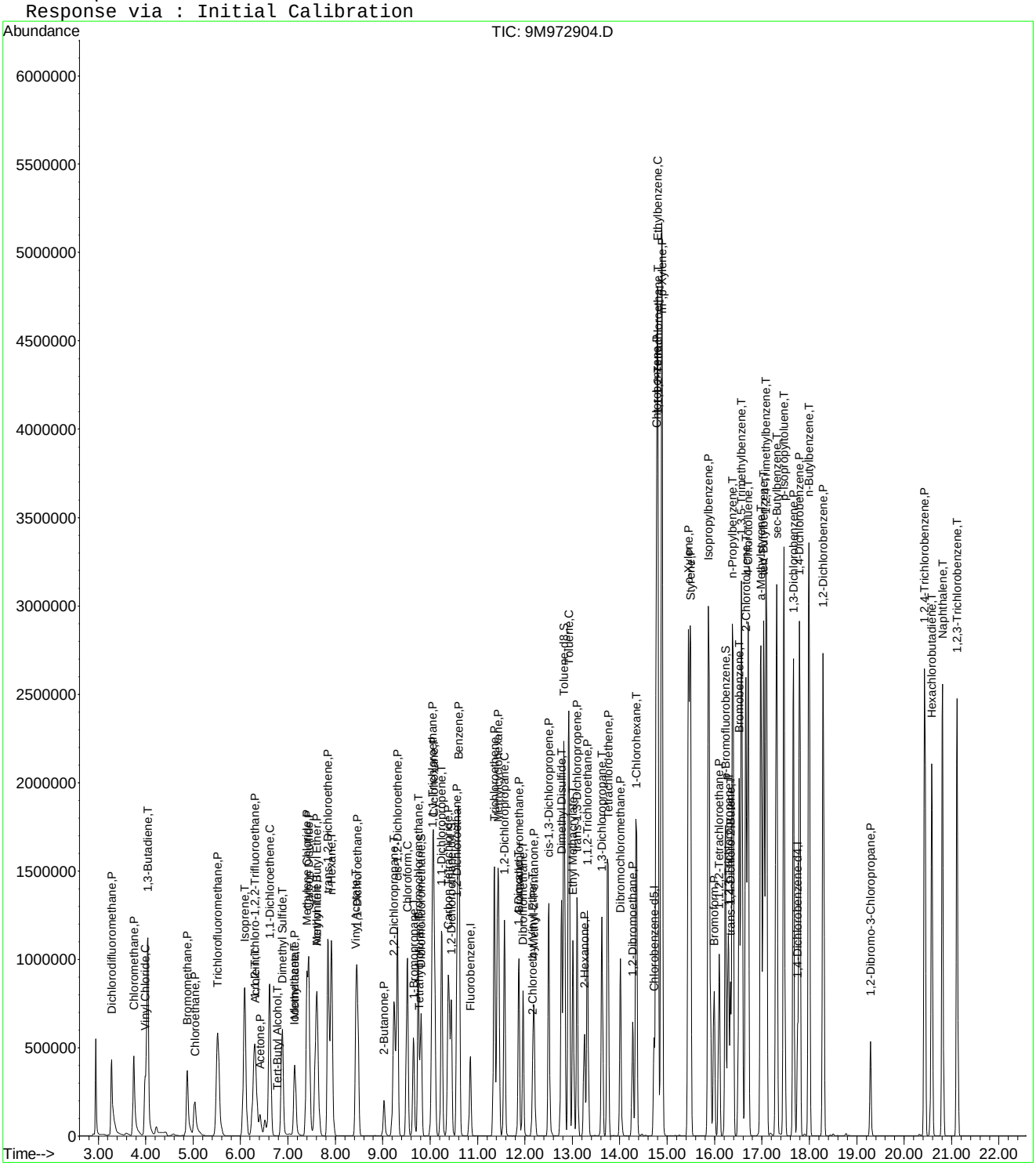

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972905.D Vial: 10
Acq On : 25 Feb 2016 20:30 Operator: ADC
Sample : WG558732-10 300.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:59 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	626979	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	468521	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	224223	50.00 ug/kg	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.81	111	520	0.1530 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.30%#	
43) 1,2-Dichloroethane-d4	10.45	65	1794	0.4207 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.84%#	
58) Toluene-d8	12.82	98	7789	0.6573 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	1.32%#	
79) p-Bromofluorobenzene	16.23	95	6216	1.4237 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	2.84%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	1155483	270.0216 ug/kg	98
3) Chloromethane	3.75	50	1142773	278.5891 ug/kg	100
4) Vinyl Chloride	3.98	62	1112221	270.8539 ug/kg	99
5) 1,3-Butadiene	4.03	54	1100483	281.6917 ug/kg	98
6) Bromomethane	4.87	94	749711	281.1083 ug/kg	98
7) Chloroethane	5.04	64	601337	328.7051 ug/kg	98
8) Trichlorofluoromethane	5.52	101	1778447	288.7670 ug/kg	99
9) Diethyl ether	6.06	59	869609	302.0457 ug/kg	99
10) Isoprene	6.08	67	1108410	301.4513 ug/kg	98
11) Acrolein	6.30	56	93621	163.0794 ug/kg	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	943691	297.1172 ug/kg	99
13) Acetone	6.42	43	369915	242.6618 ug/kg	95
14) 1,1-Dichloroethene	6.61	61	1715009	292.7111 ug/kg	98
15) Tert-Butyl Alcohol	6.80	59	188151	293.4850 ug/kg	89
16) Dimethyl Sulfide	6.88	62	763075	308.1557 ug/kg	99
17) Iodomethane	7.14	142	532480	291.5128 ug/kg	99
18) Methyl acetate	7.15	43	879657	276.1748 ug/kg	98
19) Methylene Chloride	7.40	84	937262	293.7237 ug/kg	96
20) Carbon Disulfide	7.44	76	2640380	292.5391 ug/kg	98
21) Acrylonitrile	7.59	53	252681	160.3640 ug/kg	94
22) Methyl Tert Butyl Ether	7.61	73	2699681	297.0533 ug/kg	98
23) trans-1,2-Dichloroethene	7.84	61	1548353	296.5245 ug/kg	100
24) n-Hexane	7.92	57	1608467	298.6501 ug/kg	98
25) Diisopropyl ether	8.26	45	3742238	299.1747 ug/kg	100
26) Vinyl Acetate	8.43	43	2097407	294.1383 ug/kg	99
27) 1,1-Dichloroethane	8.47	63	1881635	286.8995 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	3515202	302.2390 ug/kg	99
29) 2-Butanone	9.02	43	559900	276.9258 ug/kg	100
30) Propionitrile	9.14	54	182998	295.7653 ug/kg	100
31) 2,2-Dichloropropane	9.24	77	1439671	294.0988 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	1040893	303.9366 ug/kg	99
33) Chloroform	9.52	83	1708608	283.5977 ug/kg	99
34) 1-Bromopropane	9.65	122	152776	287.6719 ug/kg	98
35) Bromochloromethane	9.75	130	668631	300.5590 ug/kg	98
36) Tetrahydrofuran	9.77	42	365915	280.7723 ug/kg	97
38) 1,1,1-Trichloroethane	10.05	97	1606962	294.9423 ug/kg	100
39) Cyclohexane	10.08	56	1746722	294.0540 ug/kg	99
40) 1,1-Dichloropropene	10.24	75	1258569	293.5615 ug/kg	98
41) Tert-Amyl-Methyl ether	10.34	73	2573262	304.3824 ug/kg	98
42) Carbon Tetrachloride	10.39	117	1494872	295.9476 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972905.D Vial: 10
Acq On : 25 Feb 2016 20:30 Operator: ADC
Sample : WG558732-10 300.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:59 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.57	62	1526616	288.0725 ug/kg	98
46)	Benzene	10.61	78	3320959	276.6861 ug/kg	99
47)	Trichloroethene	11.36	130	1102750	289.9607 ug/kg	98
48)	Methylcyclohexane	11.43	83	1476436	309.5324 ug/kg	98
49)	1,2-Dichloropropane	11.57	63	980423	297.4576 ug/kg	99
50)	1,4-Dioxane	11.89	88	31126	629.4828 ug/kg	81
51)	Bromodichloromethane	11.87	83	1358159	292.3851 ug/kg	99
52)	Dibromomethane	11.96	174	632731	289.7290 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	287132	300.2354 ug/kg	96
54)	4-Methyl-2-Pentanone	12.19	58	438042	302.7895 ug/kg	99
55)	cis-1,3-Dichloropropene	12.51	75	1436858	296.9047 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	1505953	309.6528 ug/kg	95
59)	Toluene	12.93	91	3720819	277.9530 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	1096301	295.4554 ug/kg	100
61)	trans-1,3-Dichloropropene	13.10	75	1416217	293.7329 ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	820836	291.8946 ug/kg	99
63)	2-Hexanone	13.26	43	814427	290.0688 ug/kg	100
64)	1,3-Dichloropropane	13.63	76	1322191	282.1714 ug/kg	100
65)	Tetrachloroethene	13.75	164	815946	284.3233 ug/kg	98
66)	Dibromochloromethane	14.02	129	1136128	289.0845 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	889642	285.2204 ug/kg	99
68)	1-Chlorohexane	14.34	91	1188786	301.1405 ug/kg	99
69)	Chlorobenzene	14.78	112	2558374	271.9265 ug/kg	97
70)	1,1,1,2-Tetrachloroethane	14.81	131	1019464	288.5389 ug/kg	97
71)	Ethylbenzene	14.80	106	1372834	283.2291 ug/kg	97
72)	m-,p-Xylene	14.89	106	3241616	541.5304 ug/kg	97
73)	o-Xylene	15.45	106	1663016	289.4945 ug/kg	99
74)	Styrene	15.49	104	2869824	293.3680 ug/kg	99
75)	Bromoform	15.99	173	788638	305.6282 ug/kg	99
76)	Isopropylbenzene	15.87	105	4421589	286.7141 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	1002445	294.7201 ug/kg	99
80)	1,2,3-Trichloropropane	16.28	110	380025	294.6098 ug/kg	66
81)	trans-1,4-Dichloro-2-Buten	16.34	53	413901	318.3274 ug/kg	57
82)	n-Propylbenzene	16.38	91	4980503	282.5783 ug/kg	99
83)	Bromobenzene	16.52	156	1176440	282.7414 ug/kg	93
84)	1,3,5-Trimethylbenzene	16.57	105	3788936	286.3846 ug/kg	99
85)	2-Chlorotoluene	16.66	91	3458872	292.5892 ug/kg	100
86)	4-Chlorotoluene	16.71	91	2929432	268.0287 ug/kg	100
87)	a-Methylstyrene	16.98	118	1823514	302.4880 ug/kg	100
88)	tert-Butylbenzene	17.03	134	795019	286.6221 ug/kg	86
89)	1,2,4-Trimethylbenzene	17.09	105	3829230	276.3702 ug/kg	100
90)	sec-Butylbenzene	17.31	105	4833765	283.6742 ug/kg	99
91)	p-Isopropyltoluene	17.47	119	4134027	287.4802 ug/kg	99
92)	1,3-Dichlorobenzene	17.67	146	2260017	273.2999 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	2229106	269.6404 ug/kg	99
94)	n-Butylbenzene	17.99	91	3871124	289.5329 ug/kg	100
95)	1,2-Dichlorobenzene	18.29	146	2162642	281.8552 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	293112	297.5776 ug/kg	98
97)	1,2,4-Trichlorobenzene	20.43	180	1514973	278.1345 ug/kg	100
98)	Hexachlorobutadiene	20.58	225	846867	294.9498 ug/kg	99
99)	Naphthalene	20.81	128	3754823	274.8379 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.12	180	1451357	274.7177 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972905.D 8260SL.M Fri Feb 26 11:21:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972905.D Vial: 10
Acq On : 25 Feb 2016 20:30 Operator: ADC
Sample : WG558732-10 300.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

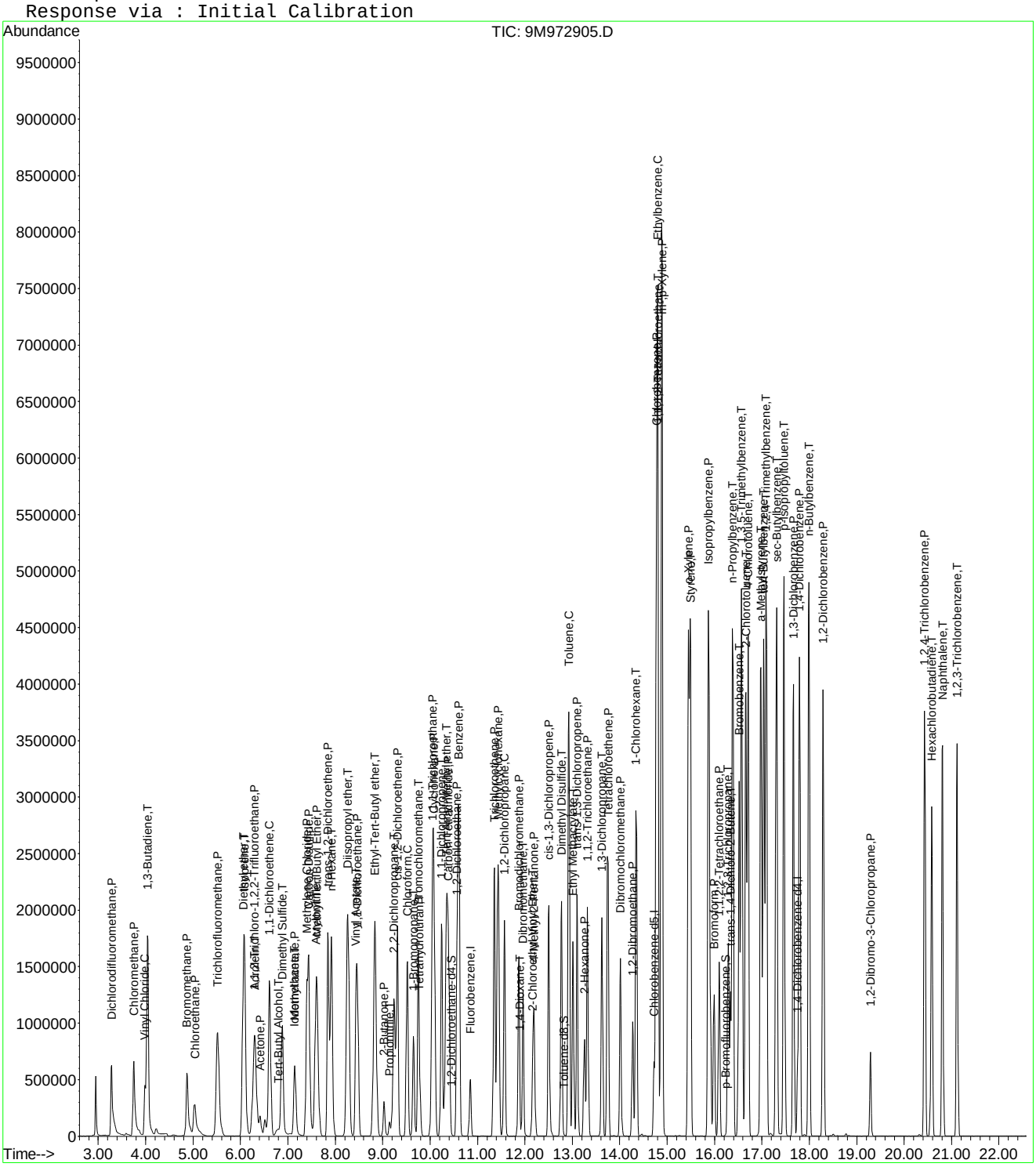

9M972905.D 8260SL.M Fri Feb 26 11:21:59 2016 Page 3

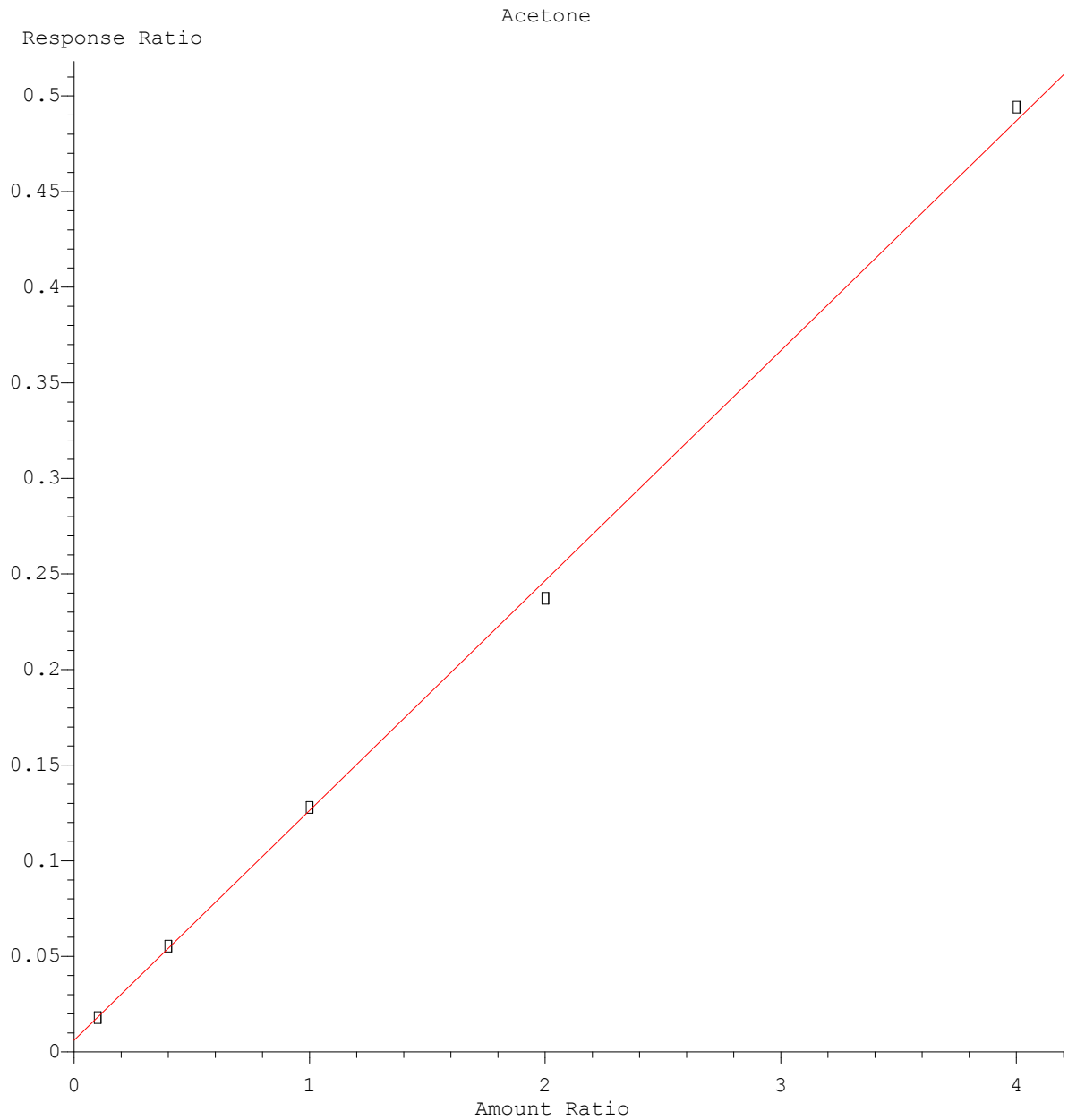

Resp Ratio = 1.20e-001 * Amt + 6.05e-003
Coef of Det (r^2) = 0.999 Curve Fit: wlr(1/a)

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

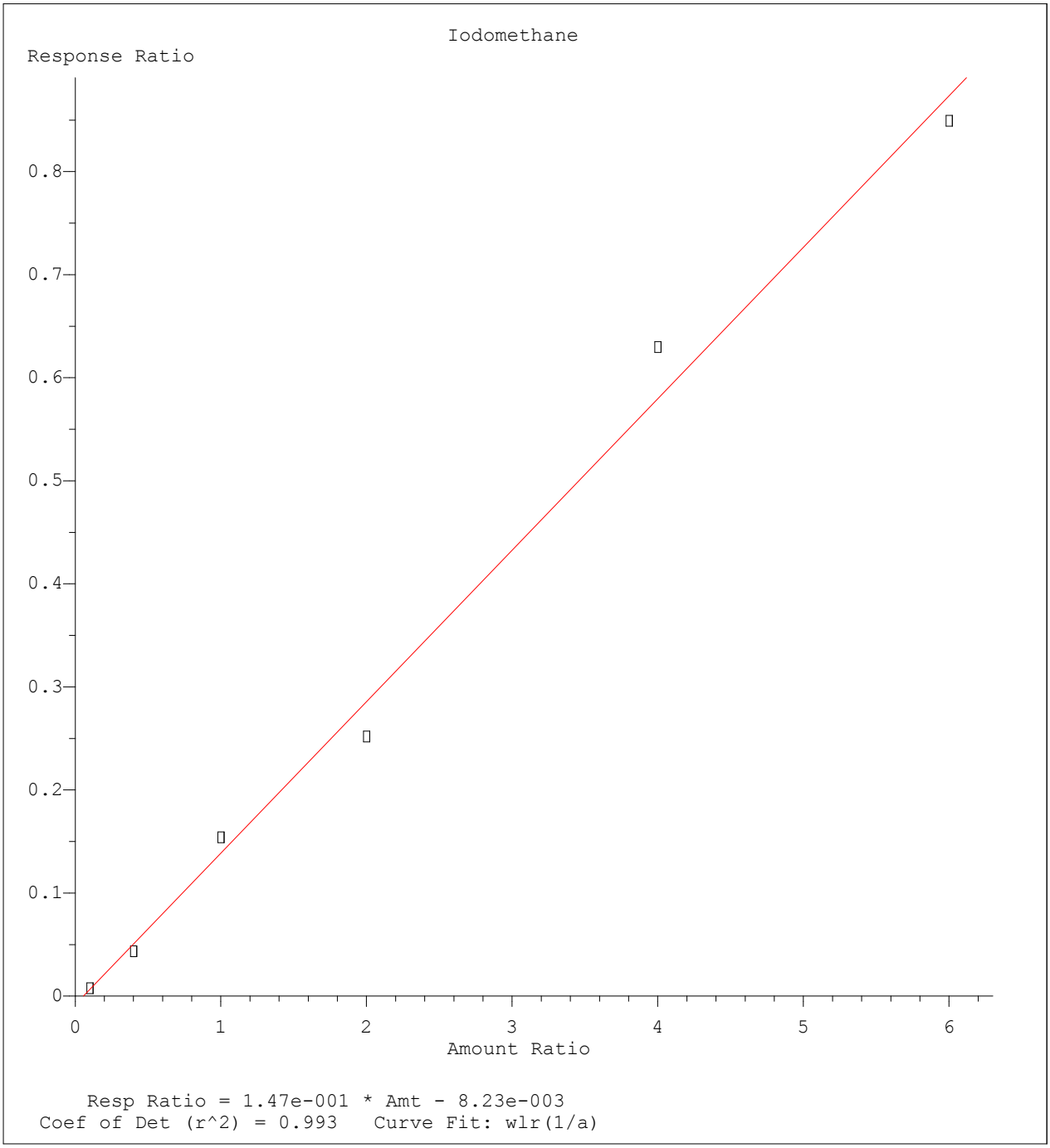

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

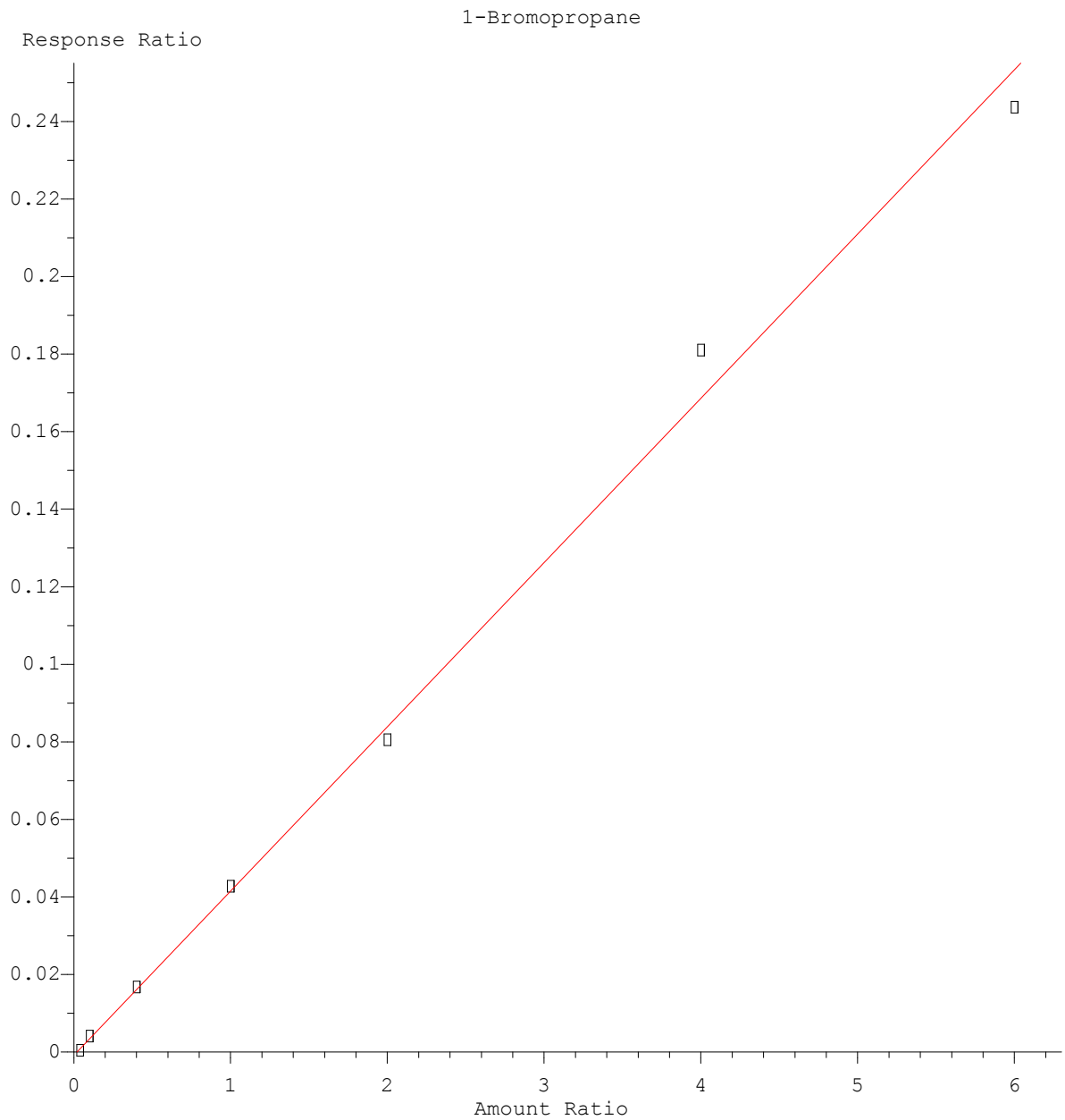

Resp Ratio = 4.25e-002 * Amt - 8.72e-004
Coef of Det (r^2) = 0.997 Curve Fit: wlr(1/a)

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

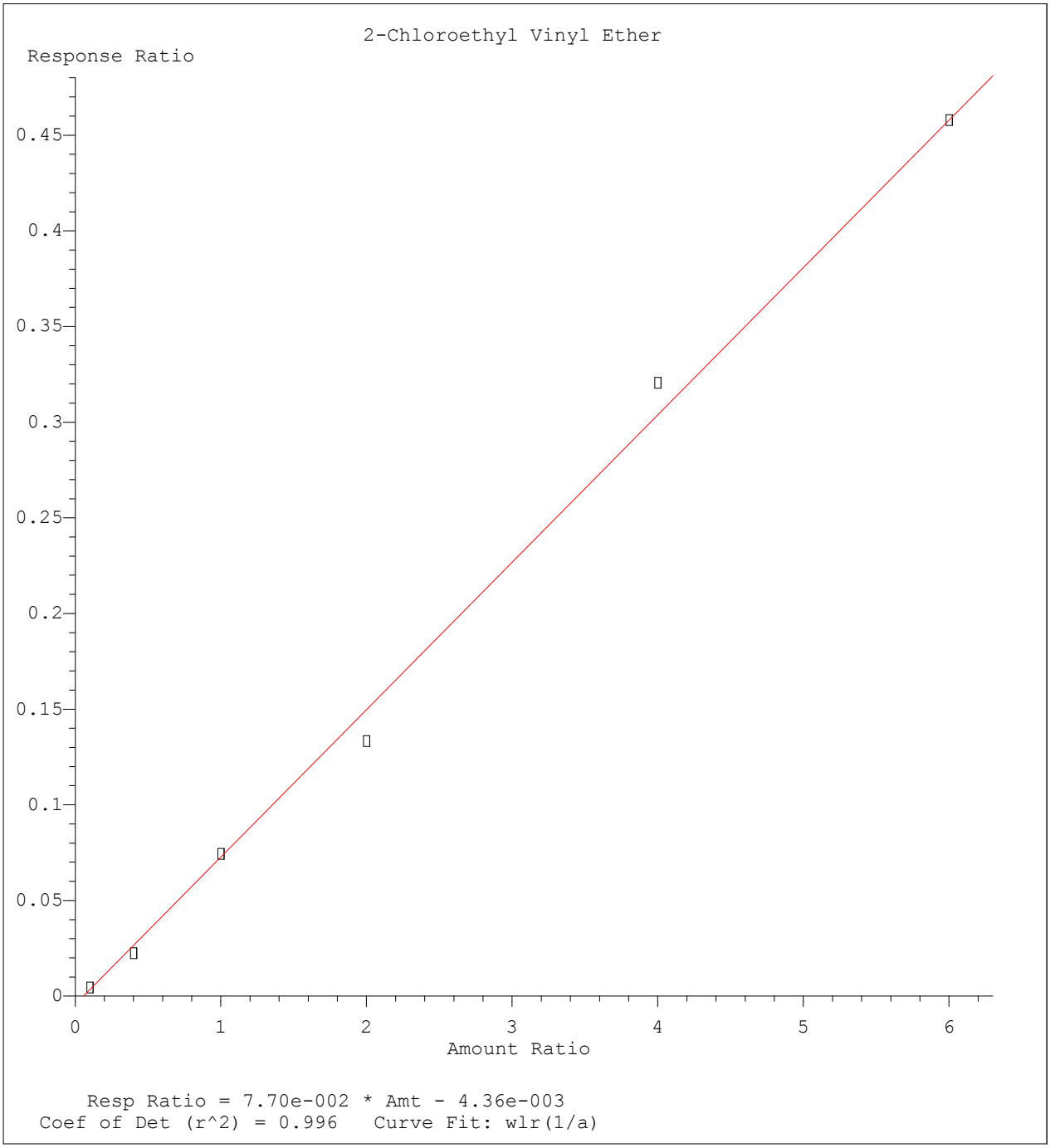

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:39:12 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	582126	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	421408	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	194909	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	163260	51.7395 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 103.48%		
43) 1,2-Dichloroethane-d4	10.45	65	197344	49.8458 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.70%		
58) Toluene-d8	12.82	98	564883	52.9951 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.00%		
79) p-Bromofluorobenzene	16.23	95	212358	55.9531 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 111.90%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	251431	63.3698 ug/kg	100
3) Chloromethane	3.74	50	200793	52.7216 ug/kg	100
4) Vinyl Chloride	3.99	62	228101	59.8284 ug/kg	99
5) 1,3-Butadiene	4.04	54	19055	5.2533 ug/kg	94
6) Bromomethane	4.88	94	121270	48.9744 ug/kg	100
7) Chloroethane	5.04	64	92003	54.1660 ug/kg	100
8) Trichlorofluoromethane	5.52	101	271981	47.5643 ug/kg	98
9) Diethyl ether	6.06	59	198146	74.1259 ug/kg	98
10) Isoprene	6.09	67	201645	59.0663 ug/kg	95
11) Acrolein	6.30	56	34569	64.8558 ug/kg	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	151498	51.3737 ug/kg	99
13) Acetone	6.41	43	65044	43.9190 ug/kg	98
14) 1,1-Dichloroethene	6.62	61	264179	48.5632 ug/kg	99
15) Tert-Butyl Alcohol	6.77	59	122141	205.1997 ug/kg	96
16) Dimethyl Sulfide	6.88	62	168266	73.1872 ug/kg	98
17) Iodomethane	7.13	142	81070	50.1419 ug/kg	99
18) Methyl acetate	7.15	43	155780	52.6767 ug/kg	99
19) Methylene Chloride	7.41	84	147546	49.8014 ug/kg	97
20) Carbon Disulfide	7.45	76	369798	44.1284 ug/kg	98
21) Acrylonitrile	7.59	53	71462	48.8478 ug/kg	99
22) Methyl Tert Butyl Ether	7.61	73	402298	47.6767 ug/kg	100
23) trans-1,2-Dichloroethene	7.85	61	245432	50.6242 ug/kg	100
24) n-Hexane	7.91	57	240056	48.0064 ug/kg	97
25) Diisopropyl ether	8.26	45	951889	81.9626 ug/kg	100
26) Vinyl Acetate	8.44	43	224385	33.8921 ug/kg	98
27) 1,1-Dichloroethane	8.47	63	282537	46.3987 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	854399	79.1219 ug/kg	99
29) 2-Butanone	9.03	43	88970	47.3950 ug/kg	99
30) Propionitrile	9.14	54	53106	92.4444 ug/kg	97
31) 2,2-Dichloropropane	9.24	77	213921	47.0673 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	167198	52.5828 ug/kg	96
33) Chloroform	9.52	83	268532	48.0056 ug/kg	99
34) 1-Bromopropane	9.65	122	36381	74.5451 ug/kg	96
35) Bromochloromethane	9.75	130	106386	51.5067 ug/kg	96
36) Tetrahydrofuran	9.78	42	101921	84.2313 ug/kg	98
38) 1,1,1-Trichloroethane	10.04	97	236420	46.7360 ug/kg	100
39) Cyclohexane	10.08	56	267623	48.5247 ug/kg	98
40) 1,1-Dichloropropene	10.25	75	193208	48.5381 ug/kg	99
41) Tert-Amyl-Methyl ether	10.34	73	688412	87.7041 ug/kg	100
42) Carbon Tetrachloride	10.39	117	218086	46.5023 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:39:12 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	241996	49.1831 ug/kg	99
46)	Benzene	10.60	78	545692	48.9674 ug/kg	99
47)	Trichloroethene	11.35	130	174371	49.3824 ug/kg	96
48)	Methylcyclohexane	11.44	83	228572	51.6120 ug/kg	98
49)	1,2-Dichloropropane	11.56	63	160075	52.3084 ug/kg	99
50)	1,4-Dioxane	11.88	88	7749	168.7883 ug/kg	88
51)	Bromodichloromethane	11.87	83	205164	47.5709 ug/kg	100
52)	Dibromomethane	11.96	174	95223	46.9624 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	36447	43.4907 ug/kg	97
54)	4-Methyl-2-Pentanone	12.19	58	64228	47.8173 ug/kg	96
55)	cis-1,3-Dichloropropene	12.50	75	238969	53.1840 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	243519	53.9302 ug/kg	99
59)	Toluene	12.93	91	610944	50.7412 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	172650	51.7315 ug/kg	99
61)	trans-1,3-Dichloropropene	13.11	75	216958	50.0293 ug/kg	98
62)	1,1,2-Trichloroethane	13.32	97	130293	51.5130 ug/kg	96
63)	2-Hexanone	13.25	43	121727	48.2017 ug/kg	99
64)	1,3-Dichloropropane	13.62	76	226811	53.8157 ug/kg	99
65)	Tetrachloroethene	13.75	164	128602	49.8224 ug/kg	96
66)	Dibromochloromethane	14.01	129	171284	48.4552 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	142409	50.7609 ug/kg	97
68)	1-Chlorohexane	14.35	91	184711	52.0217 ug/kg	98
69)	Chlorobenzene	14.77	112	433181	51.1898 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	157986	49.7138 ug/kg	100
71)	Ethylbenzene	14.79	106	223582	51.2841 ug/kg	100
72)	m-,p-Xylene	14.89	106	552299	102.5798 ug/kg	98
73)	o-Xylene	15.45	106	276739	53.5600 ug/kg	99
74)	Styrene	15.49	104	464515	52.7939 ug/kg	99
75)	Bromoform	15.99	173	109809	47.3129 ug/kg	99
76)	Isopropylbenzene	15.87	105	721376	52.0066 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	153818	52.0241 ug/kg	97
80)	1,2,3-Trichloropropane	16.29	110	60794	54.2181 ug/kg	92
81)	trans-1,4-Dichloro-2-Buten	16.33	53	48561	42.9649 ug/kg	74
82)	n-Propylbenzene	16.39	91	841260	54.9091 ug/kg	100
83)	Bromobenzene	16.52	156	188730	52.1806 ug/kg	96
84)	1,3,5-Trimethylbenzene	16.57	105	624761	54.3244 ug/kg	99
85)	2-Chlorotoluene	16.66	91	556729	54.1771 ug/kg	100
86)	4-Chlorotoluene	16.70	91	503918	53.0403 ug/kg	99
87)	a-Methylstyrene	16.98	118	305038	58.2105 ug/kg	98
88)	tert-Butylbenzene	17.03	134	133555	55.3912 ug/kg	90
89)	1,2,4-Trimethylbenzene	17.08	105	620621	51.5293 ug/kg	99
90)	sec-Butylbenzene	17.31	105	810765	54.7366 ug/kg	99
91)	p-Isopropyltoluene	17.46	119	675672	54.0529 ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	365216	50.8073 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	367190	51.0968 ug/kg	99
94)	n-Butylbenzene	17.99	91	609687	52.4585 ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	351826	52.7494 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	46623	54.4522 ug/kg	96
97)	1,2,4-Trichlorobenzene	20.43	180	244804	51.7031 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	136025	54.5004 ug/kg	99
99)	Naphthalene	20.81	128	603753	50.8387 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	241600	52.6087 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972907.D 8260SL.M Fri Feb 26 11:39:13 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:39 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

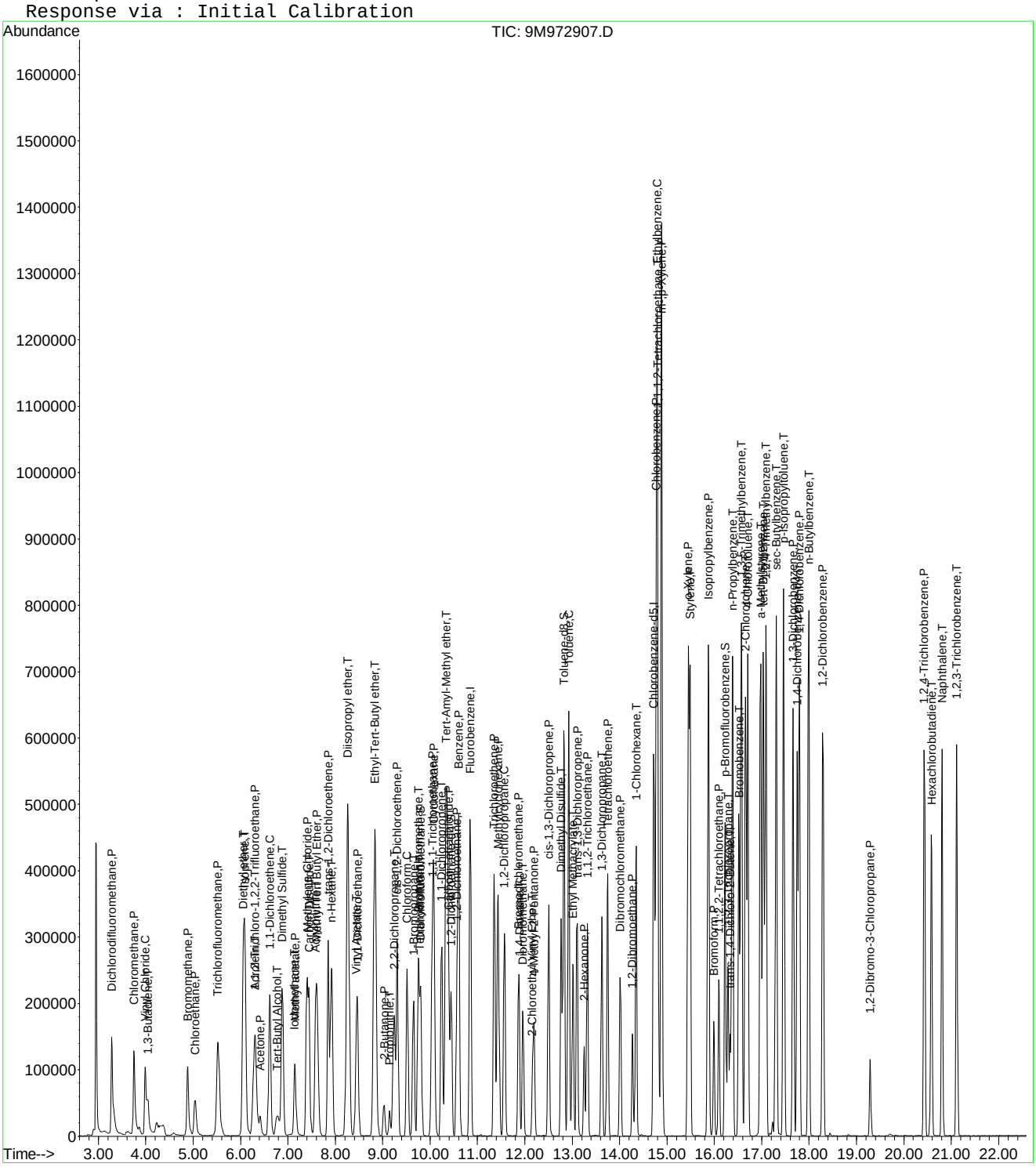

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	112	0.00
2	P	Dichlorodifluoromethane	50.0000	63.3698	-26.7#	123	0.00
3	P	Chloromethane	50.0000	52.7216	-5.4	107	0.00
4	C	Vinyl Chloride	50.0000	59.8284	-19.7	118	0.00
5	T	1,3-Butadiene	50.0000	5.2533	89.5#	11	0.00
6	P	Bromomethane	50.0000	48.9744	2.1	112	0.00
7	P	Chloroethane	50.0000	54.1660	-8.3	108	0.00
8	P	Trichlorofluoromethane	50.0000	47.5643	4.9	102	0.00
9	T	Diethyl ether	100.0000	74.1259	25.9#	79	0.01
10	T	Isoprene	50.0000	59.0664	-18.1	129	0.00
11	T	Acrolein	50.0000	64.8558	-29.7#	140	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	51.3737	-2.7	112	0.00
13	P	Acetone	50.0000	43.9190	12.2	98	0.00
14	C	1,1-Dichloroethene	50.0000	48.5632	2.9	108	0.00
15	T	Tert-Butyl Alcohol	200.0000	205.1997	-2.6	116	0.01
16	T	Dimethyl Sulfide	50.0000	73.1872	-46.4#	154	0.00
17	T	Iodomethane	50.0000	50.1419	-0.3	102	0.00
18	P	Methyl acetate	50.0000	52.6767	-5.4	115	0.01
19	P	Methylene Chloride	50.0000	49.8014	0.4	109	0.01
20	P	Carbon Disulfide	50.0000	44.1284	11.7	97	0.00
21	T	Acrylonitrile	50.0000	48.8478	2.3	103	0.00
22	P	Methyl Tert Butyl Ether	50.0000	47.6767	4.6	99	0.00
23	P	trans-1,2-Dichloroethene	50.0000	50.6242	-1.2	108	0.00
24	T	n-Hexane	50.0000	48.0064	4.0	109	0.00
25	T	Diisopropyl ether	100.0000	81.9626	18.0	87	0.00
26	T	Vinyl Acetate	50.0000	33.8921	32.2#	72	0.01
27	P	1,1-Dichloroethane	50.0000	46.3987	7.2	99	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	79.1219	20.9	83	0.00
29	P	2-Butanone	50.0000	47.3950	5.2	103	0.00
30	T	Propionitrile	100.0000	92.4444	7.6	100	0.00
31	T	2,2-Dichloropropane	50.0000	47.0673	5.9	99	0.00
32	P	cis-1,2-Dichloroethene	50.0000	52.5828	-5.2	109	0.00
33	C	Chloroform	50.0000	48.0057	4.0	102	0.00
34	T	1-Bromopropane	50.0000	74.5451	-49.1#	164	0.00
35	T	Bromochloromethane	50.0000	51.5067	-3.0	104	0.00
36	T	Tetrahydrofuran	100.0000	84.2314	15.8	90	0.00
37	S	Dibromofluoromethane	50.0000	51.7395	-3.5	110	0.00
38	P	1,1,1-Trichloroethane	50.0000	46.7360	6.5	97	0.00
39	P	Cyclohexane	50.0000	48.5247	3.0	108	0.00
40	T	1,1-Dichloropropene	50.0000	48.5381	2.9	106	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	87.7041	12.3	93	0.00
42	P	Carbon Tetrachloride	50.0000	46.5023	7.0	99	0.00
43	S	1,2-Dichloroethane-d4	50.0000	49.8458	0.3	107	0.00
44		Heptane	-1.0000	0.0000	0.0	104	0.00
45	P	1,2-Dichloroethane	50.0000	49.1831	1.6	102	0.00
46	P	Benzene	50.0000	48.9674	2.1	108	0.00
47	P	Trichloroethene	50.0000	49.3824	1.2	106	0.00
48	P	Methylcyclohexane	50.0000	51.6120	-3.2	112	0.00
49	C	1,2-Dichloropropane	50.0000	52.3083	-4.6	108	0.00
50	T	1,4-Dioxane	200.0000	168.7883	15.6	99	0.00
51	P	Bromodichloromethane	50.0000	47.5710	4.9	101	0.00
52	T	Dibromomethane	50.0000	46.9624	6.1	99	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	43.4907	13.0	95	0.00
54	P	4-Methyl-2-Pentanone	50.0000	47.8173	4.4	99	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	53.1840	-6.4	112	0.00
56	T	Dimethyl Disulfide	50.0000	53.9302	-7.9	111	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	111	0.00
58	S	Toluene-d8	50.0000	52.9951	-6.0	110	0.00
59	C	Toluene	50.0000	50.7412	-1.5	108	0.00
60	T	Ethyl Methacrylate	50.0000	51.7315	-3.5	109	0.00
61	P	trans-1,3-Dichloropropene	50.0000	50.0293	-0.1	102	0.00
62	P	1,1,2-Trichloroethane	50.0000	51.5130	-3.0	106	0.00
63	P	2-Hexanone	50.0000	48.2017	3.6	102	0.00
64	T	1,3-Dichloropropane	50.0000	53.8157	-7.6	113	0.00
65	P	Tetrachloroethene	50.0000	49.8224	0.4	110	0.00
66	P	Dibromochloromethane	50.0000	48.4552	3.1	101	0.00
67	P	1,2-Dibromoethane	50.0000	50.7609	-1.5	107	0.00
68	T	1-Chlorohexane	50.0000	52.0217	-4.0	110	0.00
69	P	Chlorobenzene	50.0000	51.1898	-2.4	108	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	49.7138	0.6	102	0.00
71	C	Ethylbenzene	50.0000	51.2841	-2.6	108	0.00
72	P	m-,p-Xylene	100.0000	102.5798	-2.6	111	0.00
73	P	o-Xylene	50.0000	53.5600	-7.1	112	0.00
74	P	Styrene	50.0000	52.7939	-5.6	109	0.00
75	P	Bromoform	50.0000	47.3129	5.4	95	0.00
76	P	Isopropylbenzene	50.0000	52.0066	-4.0	110	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	107	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	52.0241	-4.0	104	0.00
79	S	p-Bromofluorobenzene	50.0000	55.9531	-11.9	111	0.00
80	T	1,2,3-Trichloropropane	50.0000	54.2181	-8.4	109	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	42.9649	14.1	87	0.00
82	T	n-Propylbenzene	50.0000	54.9091	-9.8	112	0.00
83	T	Bromobenzene	50.0000	52.1806	-4.4	106	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	54.3244	-8.6	110	0.00
85	T	2-Chlorotoluene	50.0000	54.1771	-8.4	115	0.00
86	T	4-Chlorotoluene	50.0000	53.0403	-6.1	105	0.00
87	T	a-Methylstyrene	50.0000	58.2105	-16.4	119	0.00
88	T	tert-Butylbenzene	50.0000	55.3912	-10.8	110	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	51.5293	-3.1	107	0.00
90	T	sec-Butylbenzene	50.0000	54.7366	-9.5	112	0.00
91	T	p-Isopropyltoluene	50.0000	54.0529	-8.1	110	0.00
92	P	1,3-Dichlorobenzene	50.0000	50.8073	-1.6	108	0.00
93	P	1,4-Dichlorobenzene	50.0000	51.0968	-2.2	110	0.00
94	T	n-Butylbenzene	50.0000	52.4585	-4.9	108	0.00
95	P	1,2-Dichlorobenzene	50.0000	52.7494	-5.5	110	0.00
96	P	1,2-Dibromo-3-Chloropropane	50.0000	54.4522	-8.9	109	0.00
97	P	1,2,4-Trichlorobenzene	50.0000	51.7031	-3.4	110	0.00
98	T	Hexachlorobutadiene	50.0000	54.5004	-9.0	116	0.00
99	T	Naphthalene	50.0000	50.8387	-1.7	100	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	52.6087	-5.2	109	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022616\9M972910.D Vial: 2
Acq On : 26 Feb 2016 14:40 Operator: ADC
Sample : WG558909-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 15:03:22 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	579320	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	423745	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	203129	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	165876	52.8232 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.64%		
43) 1,2-Dichloroethane-d4	10.45	65	201046	51.0268 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 102.06%		
58) Toluene-d8	12.82	98	572554	53.4185 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.84%		
79) p-Bromofluorobenzene	16.23	95	217246	54.9246 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 109.84%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.28	85	208404	52.7798 ug/kg	100
3) Chloromethane	3.75	50	176303	46.5156 ug/kg	98
4) Vinyl Chloride	3.99	62	200066	52.7293 ug/kg	100
5) 1,3-Butadiene	4.04	54	193448	53.5907 ug/kg	99
6) Bromomethane	4.89	94	109502	44.4361 ug/kg	96
7) Chloroethane	5.04	64	83845	49.6021 ug/kg	98
8) Trichlorofluoromethane	5.53	101	269086	47.2860 ug/kg	98
9) Diethyl ether	6.06	59	259115	97.4037 ug/kg	99
10) Isoprene	6.09	67	191872	56.4758 ug/kg	96
11) Acrolein	6.30	56	27653	52.1318 ug/kg	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	145784	49.6755 ug/kg	98
13) Acetone	6.40	43	62522	42.3349 ug/kg	99
14) 1,1-Dichloroethene	6.62	61	251920	46.5339 ug/kg	98
15) Tert-Butyl Alcohol	6.74	59	110106	185.8766 ug/kg	98
16) Dimethyl Sulfide	6.88	62	107705	47.0732 ug/kg	99
17) Iodomethane	7.14	142	80770	50.1952 ug/kg	99
18) Methyl acetate	7.14	43	145340	49.3845 ug/kg	97
19) Methylene Chloride	7.40	84	138494	46.9725 ug/kg	97
20) Carbon Disulfide	7.45	76	433809	52.0176 ug/kg	98
21) Acrylonitrile	7.58	53	73741	50.6498 ug/kg	99
22) Methyl Tert Butyl Ether	7.60	73	406940	48.4604 ug/kg	100
23) trans-1,2-Dichloroethene	7.85	61	229090	47.4822 ug/kg	98
24) n-Hexane	7.92	57	270051	54.2664 ug/kg	98
25) Diisopropyl ether	8.26	45	1121933	97.0722 ug/kg	99
26) Vinyl Acetate	8.43	43	315737	47.9213 ug/kg	98
27) 1,1-Dichloroethane	8.47	63	282758	46.6599 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	1039087	96.6911 ug/kg	99
29) 2-Butanone	9.02	43	85136	45.5723 ug/kg	99
30) Propionitrile	9.14	54	56493	98.8166 ug/kg	98
31) 2,2-Dichloropropane	9.24	77	218493	48.3061 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	154105	48.6999 ug/kg	100
33) Chloroform	9.52	83	252292	45.3209 ug/kg	99
34) 1-Bromopropane	9.66	122	22686	47.0920 ug/kg	95
35) Bromochloromethane	9.75	130	100561	48.9224 ug/kg	98
36) Tetrahydrofuran	9.77	42	114829	95.3587 ug/kg	95
38) 1,1,1-Trichloroethane	10.05	97	235806	46.8404 ug/kg	99
39) Cyclohexane	10.08	56	283343	51.6238 ug/kg	99
40) 1,1-Dichloropropene	10.25	75	188663	47.6259 ug/kg	99
41) Tert-Amyl-Methyl ether	10.34	73	765322	97.9747 ug/kg	99
42) Carbon Tetrachloride	10.39	117	216043	46.2898 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022616\9M972910.D Vial: 2
Acq On : 26 Feb 2016 14:40 Operator: ADC
Sample : WG558909-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 15:03:22 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	228467	46.6584 ug/kg	99
46)	Benzene	10.61	78	515702	46.5005 ug/kg	99
47)	Trichloroethene	11.36	130	166184	47.2918 ug/kg	98
48)	Methylcyclohexane	11.43	83	241086	54.7013 ug/kg	99
49)	1,2-Dichloropropane	11.57	63	145495	47.7743 ug/kg	100
50)	1,4-Dioxane	11.87	88	9798	214.4532 ug/kg	92
51)	Bromodichloromethane	11.87	83	195143	45.4666 ug/kg	99
52)	Dibromomethane	11.96	174	96052	47.6007 ug/kg	98
53)	2-Chloroethyl Vinyl Ether	12.17	63	34237	41.2102 ug/kg	94
54)	4-Methyl-2-Pentanone	12.19	58	64556	48.2943 ug/kg	97
55)	cis-1,3-Dichloropropene	12.51	75	213726	47.7964 ug/kg	100
56)	Dimethyl Disulfide	12.77	94	243395	54.1639 ug/kg	99
59)	Toluene	12.93	91	581459	48.0260 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	172427	51.3797 ug/kg	100
61)	trans-1,3-Dichloropropene	13.10	75	209619	48.0704 ug/kg	99
62)	1,1,2-Trichloroethane	13.32	97	122172	48.0359 ug/kg	98
63)	2-Hexanone	13.25	43	118296	46.5847 ug/kg	100
64)	1,3-Dichloropropane	13.62	76	198499	46.8384 ug/kg	100
65)	Tetrachloroethene	13.75	164	125963	48.5309 ug/kg	96
66)	Dibromochloromethane	14.01	129	164319	46.2285 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	132086	46.8216 ug/kg	99
68)	1-Chlorohexane	14.35	91	195947	54.8818 ug/kg	98
69)	Chlorobenzene	14.77	112	400876	47.1110 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.81	131	149901	46.9096 ug/kg	99
71)	Ethylbenzene	14.80	106	217561	49.6278 ug/kg	97
72)	m-,p-Xylene	14.89	106	518841	95.8341 ug/kg	98
73)	o-Xylene	15.45	106	254692	49.0212 ug/kg	99
74)	Styrene	15.49	104	434759	49.1395 ug/kg	100
75)	Bromoform	15.99	173	108889	46.6578 ug/kg	99
76)	Isopropylbenzene	15.87	105	687539	49.2938 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	146443	47.5254 ug/kg	99
80)	1,2,3-Trichloropropane	16.28	110	55427	47.4313 ug/kg#	35
81)	trans-1,4-Dichloro-2-Buten	16.34	53	62270	52.8646 ug/kg#	1
82)	n-Propylbenzene	16.38	91	795455	49.8184 ug/kg	99
83)	Bromobenzene	16.52	156	176392	46.7958 ug/kg	75
84)	1,3,5-Trimethylbenzene	16.57	105	588851	49.1299 ug/kg	99
85)	2-Chlorotoluene	16.66	91	534863	49.9430 ug/kg	99
86)	4-Chlorotoluene	16.71	91	455474	46.0013 ug/kg	99
87)	a-Methylstyrene	16.98	118	291760	53.4236 ug/kg	98
88)	tert-Butylbenzene	17.03	134	122167	48.6177 ug/kg	87
89)	1,2,4-Trimethylbenzene	17.09	105	602308	47.9851 ug/kg	99
90)	sec-Butylbenzene	17.31	105	759463	49.1982 ug/kg	100
91)	p-Isopropyltoluene	17.47	119	650769	49.9539 ug/kg	100
92)	1,3-Dichlorobenzene	17.67	146	342670	45.7417 ug/kg	100
93)	1,4-Dichlorobenzene	17.79	146	341897	45.6518 ug/kg	99
94)	n-Butylbenzene	17.99	91	606127	50.0418 ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	320791	46.1500 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	39616	44.3962 ug/kg	96
97)	1,2,4-Trichlorobenzene	20.43	180	233609	47.3421 ug/kg	99
98)	Hexachlorobutadiene	20.58	225	125274	48.1617 ug/kg	99
99)	Naphthalene	20.81	128	601976	48.6379 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.12	180	223814	46.7636 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972910.D 8260SL.M Fri Feb 26 15:03:23 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022616\9M972910.D Vial: 2
Acq On : 26 Feb 2016 14:40 Operator: ADC
Sample : WG558909-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 15:03 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

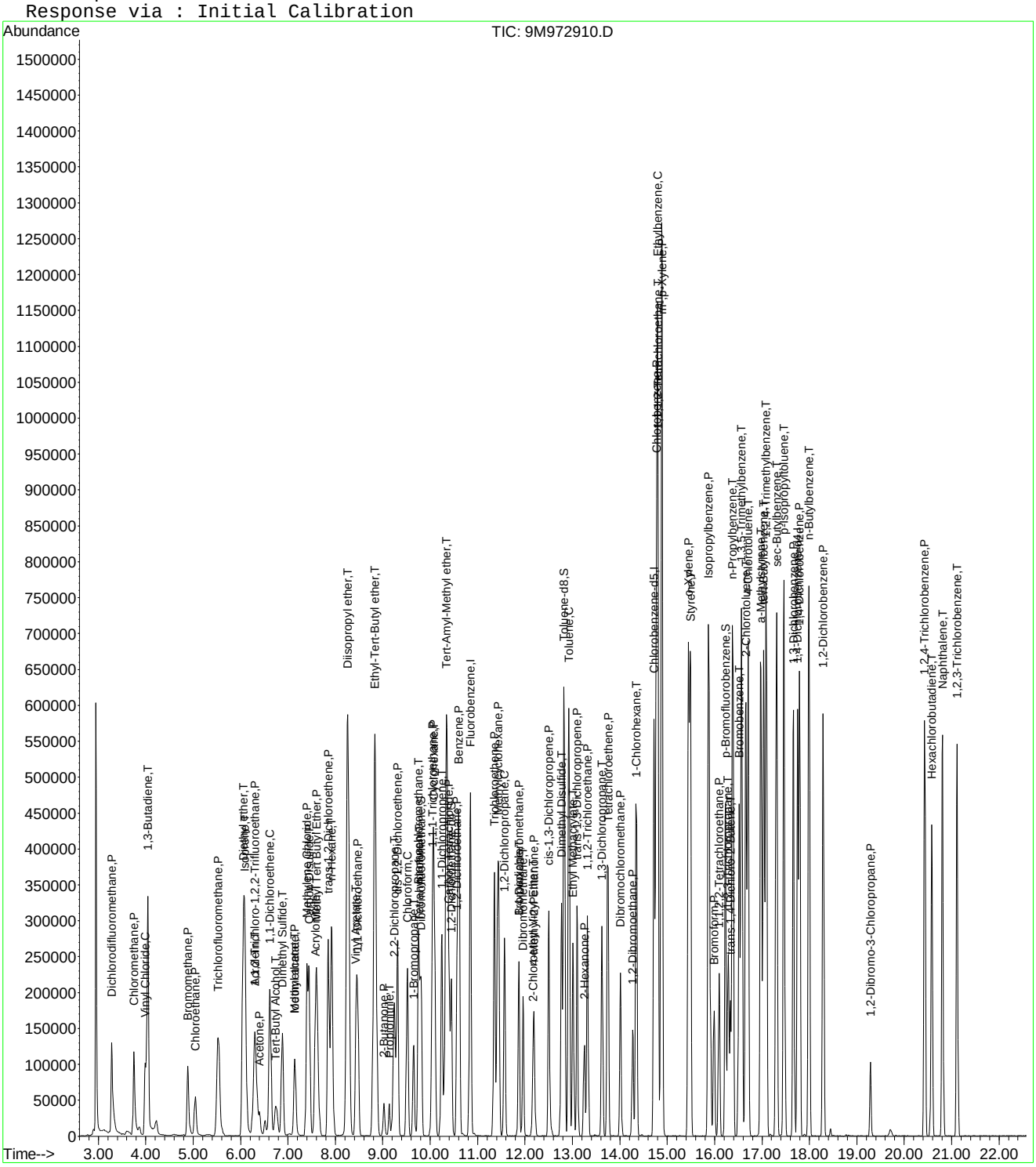

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\9M972910.D Vial: 2
Acq On : 26 Feb 2016 14:40 Operator: ADC
Sample : WG558909-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	112	0.00
2	P	Dichlorodifluoromethane	0.3408	0.3597	-5.6	102	0.00
3	P	Chloromethane	0.3271	0.3043	7.0	94	0.00
4	C	Vinyl Chloride	0.3275	0.3453	-5.5	104	0.00
5	T	1,3-Butadiene	0.3115	0.3339	-7.2	113	0.00
6	P	Bromomethane	0.2127	0.1890	11.1	101	0.00
7	P	Chloroethane	0.1459	0.1447	0.8	98	0.00
8	P	Trichlorofluoromethane	0.4911	0.4645	5.4	101	0.00
9	T	Diethyl ether	0.2296	0.2236	2.6	104	0.01
10	T	Isoprene	0.2932	0.3312	-13.0	123	0.00
11	T	Acrolein	0.0458	0.0477	-4.3	112	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	0.2533	0.2516	0.6	108	0.00
13	P	Acetone	0.1376	0.1079	21.5	94	-0.02
14	C	1,1-Dichloroethene	0.4672	0.4349	6.9	103	0.00
15	T	Tert-Butyl Alcohol	0.0511	0.0475	7.1	105	-0.02
16	T	Dimethyl Sulfide	0.1975	0.1859	5.9	99	0.00
17	T	Iodomethane	0.1273	0.1394	-9.5	101	0.01
18	P	Methyl acetate	0.2540	0.2509	1.2	107	0.00
19	P	Methylene Chloride	0.2545	0.2391	6.1	102	0.00
20	P	Carbon Disulfide	0.7198	0.7488	-4.0	114	0.00
21	T	Acrylonitrile	0.1257	0.1273	-1.3	106	0.00
22	P	Methyl Tert Butyl Ether	0.7248	0.7024	3.1	100	0.00
23	P	trans-1,2-Dichloroethene	0.4164	0.3955	5.0	101	0.00
24	T	n-Hexane	0.4295	0.4662	-8.5	123	0.00
25	T	Diisopropyl ether	0.9975	0.9683	2.9	103	0.00
26	T	Vinyl Acetate	0.5686	0.5450	4.2	101	0.00
27	P	1,1-Dichloroethane	0.5230	0.4881	6.7	99	0.00
28	T	Ethyl-Tert-Butyl ether	0.9275	0.8968	3.3	102	0.00
29	P	2-Butanone	0.1612	0.1470	8.9	99	0.00
30	T	Propionitrile	0.0493	0.0488	1.2	106	0.00
31	T	2,2-Dichloropropane	0.3904	0.3771	3.4	102	0.00
32	P	cis-1,2-Dichloroethene	0.2731	0.2660	2.6	100	0.00
33	C	Chloroform	0.4805	0.4355	9.4	96	0.00
34	T	1-Bromopropane	0.0376	0.0392	-4.2	102	0.00
35	T	Bromochloromethane	0.1774	0.1736	2.2	98	0.00
36	T	Tetrahydrofuran	0.1039	0.0991	4.6	101	0.00
37	S	Dibromofluoromethane	0.2710	0.2863	-5.6	112	0.00
38	P	1,1,1-Trichloroethane	0.4345	0.4070	6.3	97	0.00
39	P	Cyclohexane	0.4737	0.4891	-3.2	114	0.00
40	T	1,1-Dichloropropene	0.3419	0.3257	4.7	104	0.00
41	T	Tert-Amyl-Methyl ether	0.6742	0.6605	2.0	103	0.00
42	P	Carbon Tetrachloride	0.4028	0.3729	7.4	98	0.00
43	S	1,2-Dichloroethane-d4	0.3401	0.3470	-2.1	109	0.00
44		Heptane	0.0000	0.0000	0.0	109	0.00
45	P	1,2-Dichloroethane	0.4226	0.3944	6.7	96	0.00
46	P	Benzene	0.9572	0.8902	7.0	102	0.00
47	P	Trichloroethene	0.3033	0.2869	5.4	101	0.00
48	P	Methylcyclohexane	0.3804	0.4162	-9.4	118	0.00
49	C	1,2-Dichloropropane	0.2628	0.2511	4.5	98	0.00
50	T	1,4-Dioxane	0.0039	0.0042	-7.4	126	0.00
51	P	Bromodichloromethane	0.3704	0.3368	9.1	96	0.00
52	T	Dibromomethane	0.1742	0.1658	4.8	100	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0665	0.0591	11.2	89	0.00
54	P	4-Methyl-2-Pentanone	0.1154	0.1114	3.4	99	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\9M972910.D Vial: 2
Acq On : 26 Feb 2016 14:40 Operator: ADC
Sample : WG558909-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	0.3859	0.3689	4.4	100	0.00
56	T	Dimethyl Disulfide	0.3878	0.4201	-8.3	111	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	112	0.00
58	S	Toluene-d8	1.2647	1.3512	-6.8	112	0.00
59	C	Toluene	1.4286	1.3722	3.9	103	0.00
60	T	Ethyl Methacrylate	0.3960	0.4069	-2.8	108	0.00
61	P	trans-1,3-Dichloropropene	0.5145	0.4947	3.9	99	0.00
62	P	1,1,2-Trichloroethane	0.3001	0.2883	3.9	99	0.00
63	P	2-Hexanone	0.2996	0.2792	6.8	99	0.00
64	T	1,3-Dichloropropane	0.5001	0.4684	6.3	98	0.00
65	P	Tetrachloroethene	0.3063	0.2973	2.9	108	0.00
66	P	Dibromochloromethane	0.4194	0.3878	7.5	97	0.00
67	P	1,2-Dibromoethane	0.3329	0.3117	6.4	99	0.00
68	T	1-Chlorohexane	0.4213	0.4624	-9.8	116	0.00
69	P	Chlorobenzene	1.0041	0.9460	5.8	100	0.00
70	T	1,1,1,2-Tetrachloroethane	0.3771	0.3538	6.2	97	0.00
71	C	Ethylbenzene	0.5173	0.5134	0.7	105	0.00
72	P	m-,p-Xylene	0.6388	0.6122	4.2	104	0.00
73	P	o-Xylene	0.6130	0.6010	2.0	103	0.00
74	P	Styrene	1.0440	1.0260	1.7	102	0.00
75	P	Bromoform	0.2754	0.2570	6.7	94	0.00
76	P	Isopropylbenzene	1.6458	1.6225	1.4	104	0.00
77	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	111	0.00
78	P	1,1,2,2-Tetrachloroethane	0.7585	0.7209	4.9	99	0.00
79	S	p-Bromofluorobenzene	0.9736	1.0695	-9.9	113	0.00
80	T	1,2,3-Trichloropropane	0.2876	0.2729	5.1	99	0.00
81	T	trans-1,4-Dichloro-2-Butene	0.2899	0.3065	-5.7	112	0.00
82	T	n-Propylbenzene	3.9303	3.9160	0.4	106	0.00
83	T	Bromobenzene	0.9278	0.8684	6.4	99	0.00
84	T	1,3,5-Trimethylbenzene	2.9502	2.8989	1.7	104	0.00
85	T	2-Chlorotoluene	2.6361	2.6331	0.1	110	0.00
86	T	4-Chlorotoluene	2.4372	2.2423	8.0	95	0.00
87	T	a-Methylstyrene	1.3443	1.4363	-6.8	114	0.00
88	T	tert-Butylbenzene	0.6185	0.6014	2.8	100	0.00
89	T	1,2,4-Trimethylbenzene	3.0897	2.9652	4.0	104	0.00
90	T	sec-Butylbenzene	3.7998	3.7388	1.6	105	0.00
91	T	p-Isopropyltoluene	3.2067	3.2037	0.1	106	0.00
92	P	1,3-Dichlorobenzene	1.8440	1.6870	8.5	102	0.00
93	P	1,4-Dichlorobenzene	1.8435	1.6831	8.7	102	0.00
94	T	n-Butylbenzene	2.9815	2.9840	-0.1	108	0.00
95	P	1,2-Dichlorobenzene	1.7110	1.5793	7.7	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	0.2197	0.1950	11.2	92	0.00
97	P	1,2,4-Trichlorobenzene	1.2146	1.1501	5.3	105	0.00
98	T	Hexachlorobutadiene	0.6403	0.6167	3.7	106	0.00
99	T	Naphthalene	3.0465	2.9635	2.7	100	0.00
100	T	1,2,3-Trichlorobenzene	1.1781	1.1018	6.5	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972910.D 8260SL.M Sun Feb 28 11:48:37 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\9M972910.D Vial: 2
Acq On : 26 Feb 2016 14:40 Operator: ADC
Sample : WG558909-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	112	0.00
2	P	Dichlorodifluoromethane	50.0000	52.7798	-5.6	102	0.00
3	P	Chloromethane	50.0000	46.5156	7.0	94	0.00
4	C	Vinyl Chloride	50.0000	52.7293	-5.5	104	0.00
5	T	1,3-Butadiene	50.0000	53.5907	-7.2	113	0.00
6	P	Bromomethane	50.0000	44.4361	11.1	101	0.00
7	P	Chloroethane	50.0000	49.6021	0.8	98	0.00
8	P	Trichlorofluoromethane	50.0000	47.2860	5.4	101	0.00
9	T	Diethyl ether	100.0000	97.4037	2.6	104	0.01
10	T	Isoprene	50.0000	56.4758	-13.0	123	0.00
11	T	Acrolein	50.0000	52.1318	-4.3	112	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	49.6755	0.6	108	0.00
13	P	Acetone	50.0000	42.3349	15.3	94	-0.02
14	C	1,1-Dichloroethene	50.0000	46.5339	6.9	103	0.00
15	T	Tert-Butyl Alcohol	200.0000	185.8766	7.1	105	-0.02
16	T	Dimethyl Sulfide	50.0000	47.0732	5.9	99	0.00
17	T	Iodomethane	50.0000	50.1952	-0.4	101	0.01
18	P	Methyl acetate	50.0000	49.3845	1.2	107	0.00
19	P	Methylene Chloride	50.0000	46.9725	6.1	102	0.00
20	P	Carbon Disulfide	50.0000	52.0176	-4.0	114	0.00
21	T	Acrylonitrile	50.0000	50.6498	-1.3	106	0.00
22	P	Methyl Tert Butyl Ether	50.0000	48.4604	3.1	100	0.00
23	P	trans-1,2-Dichloroethene	50.0000	47.4823	5.0	101	0.00
24	T	n-Hexane	50.0000	54.2664	-8.5	123	0.00
25	T	Diisopropyl ether	100.0000	97.0722	2.9	103	0.00
26	T	Vinyl Acetate	50.0000	47.9213	4.2	101	0.00
27	P	1,1-Dichloroethane	50.0000	46.6599	6.7	99	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	96.6911	3.3	102	0.00
29	P	2-Butanone	50.0000	45.5723	8.9	99	0.00
30	T	Propionitrile	100.0000	98.8166	1.2	106	0.00
31	T	2,2-Dichloropropane	50.0000	48.3061	3.4	102	0.00
32	P	cis-1,2-Dichloroethene	50.0000	48.6999	2.6	100	0.00
33	C	Chloroform	50.0000	45.3209	9.4	96	0.00
34	T	1-Bromopropane	50.0000	47.0920	5.8	102	0.00
35	T	Bromochloromethane	50.0000	48.9224	2.2	98	0.00
36	T	Tetrahydrofuran	100.0000	95.3587	4.6	101	0.00
37	S	Dibromofluoromethane	50.0000	52.8232	-5.6	112	0.00
38	P	1,1,1-Trichloroethane	50.0000	46.8404	6.3	97	0.00
39	P	Cyclohexane	50.0000	51.6238	-3.2	114	0.00
40	T	1,1-Dichloropropene	50.0000	47.6259	4.7	104	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	97.9748	2.0	103	0.00
42	P	Carbon Tetrachloride	50.0000	46.2898	7.4	98	0.00
43	S	1,2-Dichloroethane-d4	50.0000	51.0268	-2.1	109	0.00
44		Heptane	-1.0000	0.0000	0.0	109	0.00
45	P	1,2-Dichloroethane	50.0000	46.6584	6.7	96	0.00
46	P	Benzene	50.0000	46.5005	7.0	102	0.00
47	P	Trichloroethene	50.0000	47.2918	5.4	101	0.00
48	P	Methylcyclohexane	50.0000	54.7013	-9.4	118	0.00
49	C	1,2-Dichloropropane	50.0000	47.7743	4.5	98	0.00
50	T	1,4-Dioxane	200.0000	214.4532	-7.2	126	0.00
51	P	Bromodichloromethane	50.0000	45.4666	9.1	96	0.00
52	T	Dibromomethane	50.0000	47.6007	4.8	100	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	41.2102	17.6	89	0.00
54	P	4-Methyl-2-Pentanone	50.0000	48.2943	3.4	99	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\9M972910.D Vial: 2
Acq On : 26 Feb 2016 14:40 Operator: ADC
Sample : WG558909-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	47.7964	4.4	100	0.00
56	T	Dimethyl Disulfide	50.0000	54.1639	-8.3	111	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	112	0.00
58	S	Toluene-d8	50.0000	53.4185	-6.8	112	0.00
59	C	Toluene	50.0000	48.0260	3.9	103	0.00
60	T	Ethyl Methacrylate	50.0000	51.3797	-2.8	108	0.00
61	P	trans-1,3-Dichloropropene	50.0000	48.0704	3.9	99	0.00
62	P	1,1,2-Trichloroethane	50.0000	48.0359	3.9	99	0.00
63	P	2-Hexanone	50.0000	46.5847	6.8	99	0.00
64	T	1,3-Dichloropropane	50.0000	46.8383	6.3	98	0.00
65	P	Tetrachloroethene	50.0000	48.5309	2.9	108	0.00
66	P	Dibromochloromethane	50.0000	46.2285	7.5	97	0.00
67	P	1,2-Dibromoethane	50.0000	46.8216	6.4	99	0.00
68	T	1-Chlorohexane	50.0000	54.8818	-9.8	116	0.00
69	P	Chlorobenzene	50.0000	47.1110	5.8	100	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	46.9096	6.2	97	0.00
71	C	Ethylbenzene	50.0000	49.6278	0.7	105	0.00
72	P	m-,p-Xylene	100.0000	95.8341	4.2	104	0.00
73	P	o-Xylene	50.0000	49.0212	2.0	103	0.00
74	P	Styrene	50.0000	49.1395	1.7	102	0.00
75	P	Bromoform	50.0000	46.6578	6.7	94	0.00
76	P	Isopropylbenzene	50.0000	49.2938	1.4	104	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	111	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	47.5254	4.9	99	0.00
79	S	p-Bromofluorobenzene	50.0000	54.9246	-9.8	113	0.00
80	T	1,2,3-Trichloropropane	50.0000	47.4313	5.1	99	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	52.8646	-5.7	112	0.00
82	T	n-Propylbenzene	50.0000	49.8184	0.4	106	0.00
83	T	Bromobenzene	50.0000	46.7958	6.4	99	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	49.1299	1.7	104	0.00
85	T	2-Chlorotoluene	50.0000	49.9430	0.1	110	0.00
86	T	4-Chlorotoluene	50.0000	46.0013	8.0	95	0.00
87	T	a-Methylstyrene	50.0000	53.4236	-6.8	114	0.00
88	T	tert-Butylbenzene	50.0000	48.6177	2.8	100	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	47.9851	4.0	104	0.00
90	T	sec-Butylbenzene	50.0000	49.1982	1.6	105	0.00
91	T	p-Isopropyltoluene	50.0000	49.9539	0.1	106	0.00
92	P	1,3-Dichlorobenzene	50.0000	45.7417	8.5	102	0.00
93	P	1,4-Dichlorobenzene	50.0000	45.6518	8.7	102	0.00
94	T	n-Butylbenzene	50.0000	50.0418	-0.1	108	0.00
95	P	1,2-Dichlorobenzene	50.0000	46.1500	7.7	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	50.0000	44.3962	11.2	92	0.00
97	P	1,2,4-Trichlorobenzene	50.0000	47.3421	5.3	105	0.00
98	T	Hexachlorobutadiene	50.0000	48.1617	3.7	106	0.00
99	T	Naphthalene	50.0000	48.6379	2.7	100	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	46.7636	6.5	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972910.D 8260SL.M Sun Feb 28 11:48:39 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022816\9M972943.D Vial: 1
Acq On : 28 Feb 2016 15:39 Operator: FJB
Sample : WG559001-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 28 16:01:54 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	732812	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.73	117	530822	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.76	152	244479	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	195655	49.2559 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.52%		
43) 1,2-Dichloroethane-d4	10.45	65	235275	47.2068 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.42%		
58) Toluene-d8	12.83	98	679948	50.6415 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.28%		
79) p-Bromofluorobenzene	16.23	95	253762	53.3055 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 106.62%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	255669	51.1877 ug/kg	98
3) Chloromethane	3.74	50	237878	49.6157 ug/kg	99
4) Vinyl Chloride	3.99	62	281647	58.6826 ug/kg	97
5) 1,3-Butadiene	4.04	54	277289	60.7273 ug/kg	100
6) Bromomethane	4.88	94	144526	46.3646 ug/kg	97
7) Chloroethane	5.03	64	121259	56.7104 ug/kg	100
8) Trichlorofluoromethane	5.53	101	378043	52.5180 ug/kg	98
9) Diethyl ether	6.05	59	347080	103.1427 ug/kg	98
10) Isoprene	6.09	67	252186	58.6811 ug/kg	98
11) Acrolein	6.30	56	35961	53.5942 ug/kg	89
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	206090	55.5156 ug/kg	97
13) Acetone	6.40	43	82979	44.5417 ug/kg	96
14) 1,1-Dichloroethene	6.61	61	350129	51.1283 ug/kg	100
15) Tert-Butyl Alcohol	6.75	59	129255	172.4992 ug/kg	100
16) Dimethyl Sulfide	6.88	62	153089	52.8941 ug/kg	100
17) Iodomethane	7.13	142	119269	58.1274 ug/kg	99
18) Methyl acetate	7.14	43	189178	50.8161 ug/kg	98
19) Methylene Chloride	7.40	84	192261	51.5501 ug/kg	100
20) Carbon Disulfide	7.44	76	570333	54.0638 ug/kg	99
21) Acrylonitrile	7.59	53	93884	50.9784 ug/kg	100
22) Methyl Tert Butyl Ether	7.60	73	550471	51.8223 ug/kg	98
23) trans-1,2-Dichloroethene	7.85	61	333591	54.6595 ug/kg	99
24) n-Hexane	7.91	57	329962	52.4173 ug/kg	99
25) Diisopropyl ether	8.26	45	1547882	105.8746 ug/kg	100
26) Vinyl Acetate	8.43	43	415947	49.9077 ug/kg	99
27) 1,1-Dichloroethane	8.46	63	404833	52.8118 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	1414220	104.0345 ug/kg	99
29) 2-Butanone	9.02	43	109584	46.3725 ug/kg	99
30) Propionitrile	9.14	54	69360	95.9114 ug/kg	99
31) 2,2-Dichloropropane	9.24	77	319816	55.8973 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	214776	53.6566 ug/kg	100
33) Chloroform	9.52	83	357914	50.8276 ug/kg	100
34) 1-Bromopropane	9.65	122	29428	48.2660 ug/kg	94
35) Bromochloromethane	9.75	130	136766	52.5995 ug/kg	95
36) Tetrahydrofuran	9.77	42	143735	94.3620 ug/kg	98
38) 1,1,1-Trichloroethane	10.04	97	334516	52.5302 ug/kg	97
39) Cyclohexane	10.08	56	363229	52.3172 ug/kg	98
40) 1,1-Dichloropropene	10.25	75	268036	53.4904 ug/kg	99
41) Tert-Amyl-Methyl ether	10.34	73	1012333	102.4517 ug/kg	99
42) Carbon Tetrachloride	10.39	117	306580	51.9296 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022816\9M972943.D Vial: 1
Acq On : 28 Feb 2016 15:39 Operator: FJB
Sample : WG559001-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 28 16:01:54 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	317216	51.2139 ug/kg	98
46)	Benzene	10.60	78	727414	51.8521 ug/kg	99
47)	Trichloroethene	11.35	130	240348	54.0708 ug/kg	100
48)	Methylcyclohexane	11.44	83	300727	53.9417 ug/kg	99
49)	1,2-Dichloropropane	11.56	63	206485	53.5995 ug/kg	100
50)	1,4-Dioxane	11.88	88	12097	209.3142 ug/kg	87
51)	Bromodichloromethane	11.87	83	269979	49.7273 ug/kg	100
52)	Dibromomethane	11.97	174	128582	50.3748 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.17	63	43438	41.3253 ug/kg	100
54)	4-Methyl-2-Pentanone	12.19	58	82842	48.9932 ug/kg	98
55)	cis-1,3-Dichloropropene	12.50	75	295012	52.1559 ug/kg	100
56)	Dimethyl Disulfide	12.77	94	315072	55.4286 ug/kg	99
59)	Toluene	12.93	91	799044	52.6846 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	221989	52.8048 ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	282331	51.6846 ug/kg	98
62)	1,1,2-Trichloroethane	13.32	97	164612	51.6668 ug/kg	97
63)	2-Hexanone	13.25	43	156155	49.0891 ug/kg	100
64)	1,3-Dichloropropane	13.62	76	274333	51.6746 ug/kg	99
65)	Tetrachloroethene	13.75	164	171910	52.8728 ug/kg	98
66)	Dibromochloromethane	14.01	129	218895	49.1602 ug/kg	100
67)	1,2-Dibromoethane	14.28	107	174593	49.4052 ug/kg	100
68)	1-Chlorohexane	14.35	91	249869	55.8673 ug/kg	99
69)	Chlorobenzene	14.77	112	552693	51.8503 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	208071	51.9786 ug/kg	96
71)	Ethylbenzene	14.79	106	301134	54.8352 ug/kg	96
72)	m-,p-Xylene	14.89	106	707295	104.2898 ug/kg	98
73)	o-Xylene	15.46	106	345370	53.0651 ug/kg	98
74)	Styrene	15.49	104	594591	53.6483 ug/kg	99
75)	Bromoform	16.00	173	148169	50.6819 ug/kg	99
76)	Isopropylbenzene	15.88	105	936851	53.6193 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.10	83	190339	51.3234 ug/kg	99
80)	1,2,3-Trichloropropane	16.29	110	73485	52.2483 ug/kg	99
81)	trans-1,4-Dichloro-2-Buten	16.33	53	81443	57.4473 ug/kg	87
82)	n-Propylbenzene	16.39	91	1076349	56.0089 ug/kg	100
83)	Bromobenzene	16.52	156	237935	52.4465 ug/kg	96
84)	1,3,5-Trimethylbenzene	16.58	105	797381	55.2760 ug/kg	99
85)	2-Chlorotoluene	16.66	91	674103	52.2984 ug/kg	99
86)	4-Chlorotoluene	16.70	91	662318	55.5780 ug/kg	99
87)	a-Methylstyrene	16.98	118	384287	58.4646 ug/kg	100
88)	tert-Butylbenzene	17.04	134	171725	56.7812 ug/kg	98
89)	1,2,4-Trimethylbenzene	17.09	105	806963	53.4161 ug/kg	100
90)	sec-Butylbenzene	17.30	105	1035118	55.7138 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	862001	54.9770 ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	464056	51.4679 ug/kg	99
93)	1,4-Dichlorobenzene	17.80	146	459544	50.9824 ug/kg	100
94)	n-Butylbenzene	17.99	91	794680	54.5119 ug/kg	99
95)	1,2-Dichlorobenzene	18.30	146	430011	51.3996 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	50673	47.1826 ug/kg	98
97)	1,2,4-Trichlorobenzene	20.44	180	303332	51.0748 ug/kg	100
98)	Hexachlorobutadiene	20.59	225	164229	52.4592 ug/kg	100
99)	Naphthalene	20.81	128	723204	48.5497 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	291110	50.5368 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972943.D 8260SL.M Sun Feb 28 16:01:54 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022816\9M972943.D Vial: 1
Acq On : 28 Feb 2016 15:39 Operator: FJB
Sample : WG559001-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 28 16:01 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

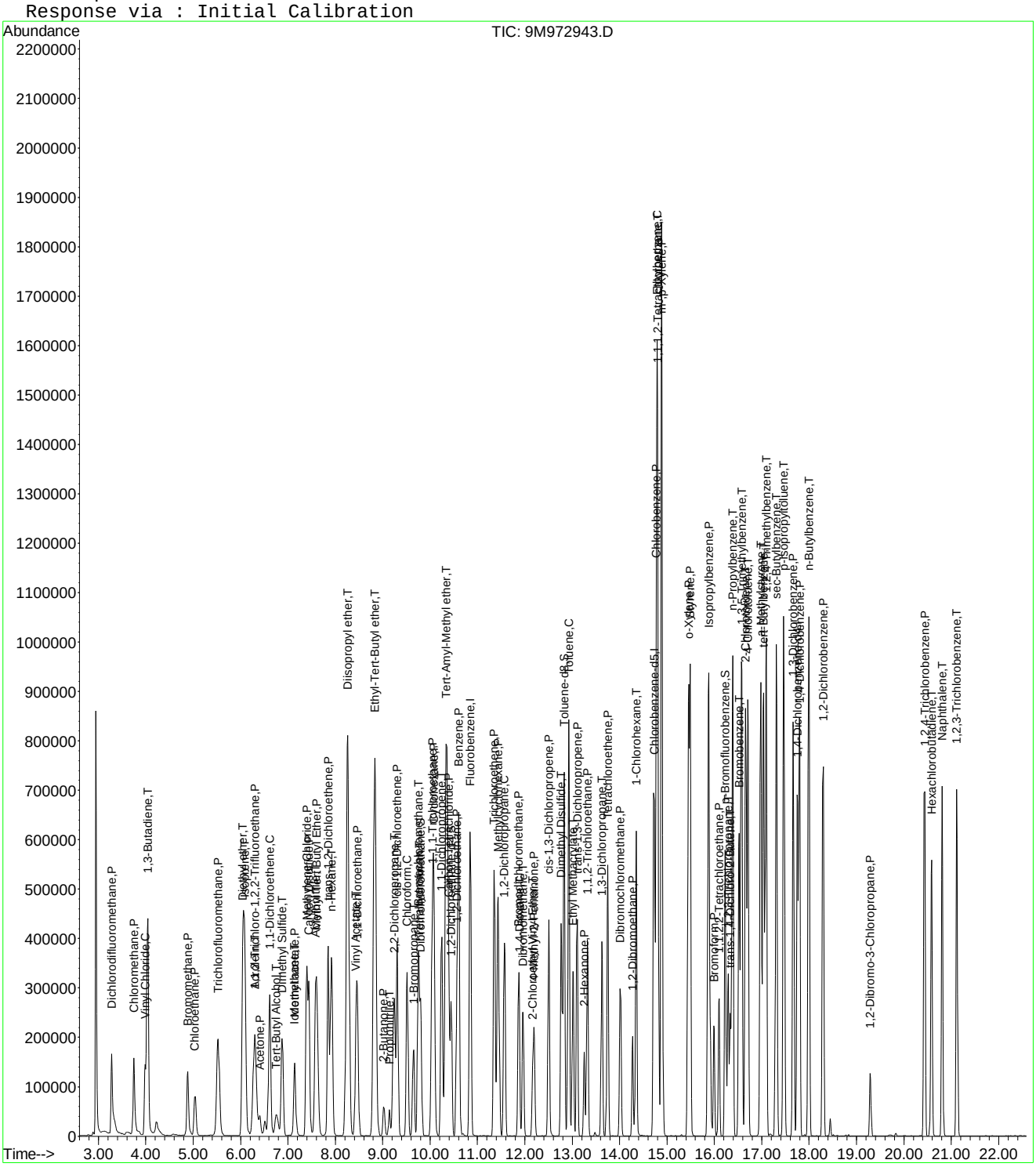

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022816\9M972943.D Vial: 1
Acq On : 28 Feb 2016 15:39 Operator: FJB
Sample : WG559001-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	142	0.00
2	P	Dichlorodifluoromethane	0.3408	0.3489	-2.4	125	0.00
3	P	Chloromethane	0.3271	0.3246	0.8	127	0.00
4	C	Vinyl Chloride	0.3275	0.3843	-17.4	146	0.00
5	T	1,3-Butadiene	0.3115	0.3784	-21.5	162	0.00
6	P	Bromomethane	0.2127	0.1972	7.3	134	0.00
7	P	Chloroethane	0.1459	0.1655	-13.4	142	0.00
8	P	Trichlorofluoromethane	0.4911	0.5159	-5.0	142	0.00
9	T	Diethyl ether	0.2296	0.2368	-3.1	139	0.00
10	T	Isoprene	0.2932	0.3441	-17.4	161	0.00
11	T	Acrolein	0.0458	0.0491	-7.2	146	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	0.2533	0.2812	-11.0	153	0.00
13	P	Acetone	0.1376	0.1132	17.7	125	0.00
14	C	1,1-Dichloroethene	0.4672	0.4778	-2.3	143	0.00
15	T	Tert-Butyl Alcohol	0.0511	0.0441	13.7	123	0.00
16	T	Dimethyl Sulfide	0.1975	0.2089	-5.8	140	0.00
17	T	Iodomethane	0.1273	0.1628	-27.9#	150	0.00
18	P	Methyl acetate	0.2540	0.2581	-1.6	139	0.00
19	P	Methylene Chloride	0.2545	0.2624	-3.1	142	0.00
20	P	Carbon Disulfide	0.7198	0.7783	-8.1	149	0.00
21	T	Acrylonitrile	0.1257	0.1281	-1.9	135	0.00
22	P	Methyl Tert Butyl Ether	0.7248	0.7512	-3.6	135	0.00
23	P	trans-1,2-Dichloroethene	0.4164	0.4552	-9.3	147	0.00
24	T	n-Hexane	0.4295	0.4503	-4.8	150	0.00
25	T	Diisopropyl ether	0.9975	1.0561	-5.9	142	0.00
26	T	Vinyl Acetate	0.5686	0.5676	0.2	133	0.00
27	P	1,1-Dichloroethane	0.5230	0.5524	-5.6	142	0.00
28	T	Ethyl-Tert-Butyl ether	0.9275	0.9649	-4.0	138	0.00
29	P	2-Butanone	0.1612	0.1495	7.3	127	0.00
30	T	Propionitrile	0.0493	0.0473	4.1	130	0.00
31	T	2,2-Dichloropropane	0.3904	0.4364	-11.8	149	0.00
32	P	cis-1,2-Dichloroethene	0.2731	0.2931	-7.3	140	0.00
33	C	Chloroform	0.4805	0.4884	-1.7	136	0.00
34	T	1-Bromopropane	0.0376	0.0402	-6.8	133	0.00
35	T	Bromochloromethane	0.1774	0.1866	-5.2	133	0.00
36	T	Tetrahydrofuran	0.1039	0.0981	5.6	126	0.00
37	S	Dibromofluoromethane	0.2710	0.2670	1.5	132	0.00
38	P	1,1,1-Trichloroethane	0.4345	0.4565	-5.1	137	0.00
39	P	Cyclohexane	0.4737	0.4957	-4.6	147	0.00
40	T	1,1-Dichloropropene	0.3419	0.3658	-7.0	147	0.00
41	T	Tert-Amyl-Methyl ether	0.6742	0.6907	-2.5	137	0.00
42	P	Carbon Tetrachloride	0.4028	0.4184	-3.9	139	0.00
43	S	1,2-Dichloroethane-d4	0.3401	0.3211	5.6	128	0.00
44		Heptane	0.0000	0.0000	0.0	139	0.00
45	P	1,2-Dichloroethane	0.4226	0.4329	-2.4	133	0.00
46	P	Benzene	0.9572	0.9926	-3.7	145	0.00
47	P	Trichloroethene	0.3033	0.3280	-8.1	147	0.00
48	P	Methylcyclohexane	0.3804	0.4104	-7.9	147	0.00
49	C	1,2-Dichloropropane	0.2628	0.2818	-7.2	139	0.00
50	T	1,4-Dioxane	0.0039	0.0041	-4.8	155	0.00
51	P	Bromodichloromethane	0.3704	0.3684	0.5	132	0.00
52	T	Dibromomethane	0.1742	0.1755	-0.7	134	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0665	0.0593	10.9	113	0.00
54	P	4-Methyl-2-Pentanone	0.1154	0.1131	2.0	127	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022816\9M972943.D Vial: 1
Acq On : 28 Feb 2016 15:39 Operator: FJB
Sample : WG559001-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	0.3859	0.4026	-4.3	139	0.00
56	T	Dimethyl Disulfide	0.3878	0.4300	-10.9	143	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	140	0.00
58	S	Toluene-d8	1.2647	1.2809	-1.3	133	0.00
59	C	Toluene	1.4286	1.5053	-5.4	142	0.00
60	T	Ethyl Methacrylate	0.3960	0.4182	-5.6	140	0.00
61	P	trans-1,3-Dichloropropene	0.5145	0.5319	-3.4	133	0.00
62	P	1,1,2-Trichloroethane	0.3001	0.3101	-3.3	134	0.00
63	P	2-Hexanone	0.2996	0.2942	1.8	131	0.00
64	T	1,3-Dichloropropane	0.5001	0.5168	-3.3	136	0.00
65	P	Tetrachloroethene	0.3063	0.3239	-5.7	147	0.00
66	P	Dibromochloromethane	0.4194	0.4124	1.7	130	0.00
67	P	1,2-Dibromoethane	0.3329	0.3289	1.2	132	0.00
68	T	1-Chlorohexane	0.4213	0.4707	-11.7	148	0.00
69	P	Chlorobenzene	1.0041	1.0412	-3.7	138	0.00
70	T	1,1,1,2-Tetrachloroethane	0.3771	0.3920	-4.0	135	0.00
71	C	Ethylbenzene	0.5173	0.5673	-9.7	145	0.00
72	P	m-,p-Xylene	0.6388	0.6662	-4.3	142	0.00
73	P	o-Xylene	0.6130	0.6506	-6.1	140	0.01
74	P	Styrene	1.0440	1.1201	-7.3	140	0.00
75	P	Bromoform	0.2754	0.2791	-1.4	128	0.00
76	P	Isopropylbenzene	1.6458	1.7649	-7.2	142	0.00
77	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	134	0.00
78	P	1,1,2,2-Tetrachloroethane	0.7585	0.7785	-2.6	129	0.00
79	S	p-Bromofluorobenzene	0.9736	1.0380	-6.6	132	0.00
80	T	1,2,3-Trichloropropane	0.2876	0.3006	-4.5	132	0.00
81	T	trans-1,4-Dichloro-2-Butene	0.2899	0.3331	-14.9	147	0.00
82	T	n-Propylbenzene	3.9303	4.4026	-12.0	143	0.00
83	T	Bromobenzene	0.9278	0.9732	-4.9	134	0.00
84	T	1,3,5-Trimethylbenzene	2.9502	3.2616	-10.6	140	0.00
85	T	2-Chlorotoluene	2.6361	2.7573	-4.6	139	0.00
86	T	4-Chlorotoluene	2.4372	2.7091	-11.2	138	0.00
87	T	a-Methylstyrene	1.3443	1.5719	-16.9	150	0.00
88	T	tert-Butylbenzene	0.6185	0.7024	-13.6	141	0.00
89	T	1,2,4-Trimethylbenzene	3.0897	3.3007	-6.8	139	0.00
90	T	sec-Butylbenzene	3.7998	4.2340	-11.4	143	0.00
91	T	p-Isopropyltoluene	3.2067	3.5259	-10.0	141	0.00
92	P	1,3-Dichlorobenzene	1.8440	1.8981	-2.9	138	0.00
93	P	1,4-Dichlorobenzene	1.8435	1.8797	-2.0	137	0.00
94	T	n-Butylbenzene	2.9815	3.2505	-9.0	141	0.00
95	P	1,2-Dichlorobenzene	1.7110	1.7589	-2.8	134	0.00
96	P	1,2-Dibromo-3-Chloropropane	0.2197	0.2073	5.6	118	0.00
97	P	1,2,4-Trichlorobenzene	1.2146	1.2407	-2.1	136	0.00
98	T	Hexachlorobutadiene	0.6403	0.6717	-4.9	140	0.00
99	T	Naphthalene	3.0465	2.9581	2.9	120	0.00
100	T	1,2,3-Trichlorobenzene	1.1781	1.1907	-1.1	131	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972943.D 8260SL.M Mon Feb 29 09:26:19 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022816\9M972943.D Vial: 1
Acq On : 28 Feb 2016 15:39 Operator: FJB
Sample : WG559001-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	142	0.00
2	P	Dichlorodifluoromethane	50.0000	51.1877	-2.4	125	0.00
3	P	Chloromethane	50.0000	49.6157	0.8	127	0.00
4	C	Vinyl Chloride	50.0000	58.6826	-17.4	146	0.00
5	T	1,3-Butadiene	50.0000	60.7273	-21.5	162	0.00
6	P	Bromomethane	50.0000	46.3646	7.3	134	0.00
7	P	Chloroethane	50.0000	56.7104	-13.4	142	0.00
8	P	Trichlorofluoromethane	50.0000	52.5180	-5.0	142	0.00
9	T	Diethyl ether	100.0000	103.1427	-3.1	139	0.00
10	T	Isoprene	50.0000	58.6811	-17.4	161	0.00
11	T	Acrolein	50.0000	53.5942	-7.2	146	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	55.5156	-11.0	153	0.00
13	P	Acetone	50.0000	44.5417	10.9	125	0.00
14	C	1,1-Dichloroethene	50.0000	51.1283	-2.3	143	0.00
15	T	Tert-Butyl Alcohol	200.0000	172.4992	13.8	123	0.00
16	T	Dimethyl Sulfide	50.0000	52.8941	-5.8	140	0.00
17	T	Iodomethane	50.0000	58.1274	-16.3	150	0.00
18	P	Methyl acetate	50.0000	50.8161	-1.6	139	0.00
19	P	Methylene Chloride	50.0000	51.5501	-3.1	142	0.00
20	P	Carbon Disulfide	50.0000	54.0638	-8.1	149	0.00
21	T	Acrylonitrile	50.0000	50.9784	-2.0	135	0.00
22	P	Methyl Tert Butyl Ether	50.0000	51.8223	-3.6	135	0.00
23	P	trans-1,2-Dichloroethene	50.0000	54.6595	-9.3	147	0.00
24	T	n-Hexane	50.0000	52.4173	-4.8	150	0.00
25	T	Diisopropyl ether	100.0000	105.8746	-5.9	142	0.00
26	T	Vinyl Acetate	50.0000	49.9077	0.2	133	0.00
27	P	1,1-Dichloroethane	50.0000	52.8118	-5.6	142	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	104.0346	-4.0	138	0.00
29	P	2-Butanone	50.0000	46.3725	7.3	127	0.00
30	T	Propionitrile	100.0000	95.9114	4.1	130	0.00
31	T	2,2-Dichloropropane	50.0000	55.8973	-11.8	149	0.00
32	P	cis-1,2-Dichloroethene	50.0000	53.6566	-7.3	140	0.00
33	C	Chloroform	50.0000	50.8276	-1.7	136	0.00
34	T	1-Bromopropane	50.0000	48.2660	3.5	133	0.00
35	T	Bromochloromethane	50.0000	52.5995	-5.2	133	0.00
36	T	Tetrahydrofuran	100.0000	94.3620	5.6	126	0.00
37	S	Dibromofluoromethane	50.0000	49.2559	1.5	132	0.00
38	P	1,1,1-Trichloroethane	50.0000	52.5302	-5.1	137	0.00
39	P	Cyclohexane	50.0000	52.3172	-4.6	147	0.00
40	T	1,1-Dichloropropene	50.0000	53.4904	-7.0	147	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	102.4517	-2.5	137	0.00
42	P	Carbon Tetrachloride	50.0000	51.9296	-3.9	139	0.00
43	S	1,2-Dichloroethane-d4	50.0000	47.2068	5.6	128	0.00
44		Heptane	-1.0000	0.0000	0.0	139	0.00
45	P	1,2-Dichloroethane	50.0000	51.2139	-2.4	133	0.00
46	P	Benzene	50.0000	51.8521	-3.7	145	0.00
47	P	Trichloroethene	50.0000	54.0708	-8.1	147	0.00
48	P	Methylcyclohexane	50.0000	53.9417	-7.9	147	0.00
49	C	1,2-Dichloropropane	50.0000	53.5995	-7.2	139	0.00
50	T	1,4-Dioxane	200.0000	209.3142	-4.7	155	0.00
51	P	Bromodichloromethane	50.0000	49.7273	0.5	132	0.00
52	T	Dibromomethane	50.0000	50.3748	-0.7	134	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	41.3253	17.3	113	0.00
54	P	4-Methyl-2-Pentanone	50.0000	48.9932	2.0	127	0.00

(#) = Out of Range
9M972943.D 8260SL.M Mon Feb 29 09:26:18 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022816\9M972943.D Vial: 1
Acq On : 28 Feb 2016 15:39 Operator: FJB
Sample : WG559001-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	52.1559	-4.3	139	0.00
56	T	Dimethyl Disulfide	50.0000	55.4286	-10.9	143	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	140	0.00
58	S	Toluene-d8	50.0000	50.6415	-1.3	133	0.00
59	C	Toluene	50.0000	52.6846	-5.4	142	0.00
60	T	Ethyl Methacrylate	50.0000	52.8048	-5.6	140	0.00
61	P	trans-1,3-Dichloropropene	50.0000	51.6846	-3.4	133	0.00
62	P	1,1,2-Trichloroethane	50.0000	51.6668	-3.3	134	0.00
63	P	2-Hexanone	50.0000	49.0891	1.8	131	0.00
64	T	1,3-Dichloropropane	50.0000	51.6746	-3.3	136	0.00
65	P	Tetrachloroethene	50.0000	52.8728	-5.7	147	0.00
66	P	Dibromochloromethane	50.0000	49.1602	1.7	130	0.00
67	P	1,2-Dibromoethane	50.0000	49.4052	1.2	132	0.00
68	T	1-Chlorohexane	50.0000	55.8674	-11.7	148	0.00
69	P	Chlorobenzene	50.0000	51.8503	-3.7	138	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	51.9785	-4.0	135	0.00
71	C	Ethylbenzene	50.0000	54.8352	-9.7	145	0.00
72	P	m-,p-Xylene	100.0000	104.2899	-4.3	142	0.00
73	P	o-Xylene	50.0000	53.0650	-6.1	140	0.01
74	P	Styrene	50.0000	53.6483	-7.3	140	0.00
75	P	Bromoform	50.0000	50.6819	-1.4	128	0.00
76	P	Isopropylbenzene	50.0000	53.6193	-7.2	142	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	134	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	51.3234	-2.6	129	0.00
79	S	p-Bromofluorobenzene	50.0000	53.3055	-6.6	132	0.00
80	T	1,2,3-Trichloropropane	50.0000	52.2483	-4.5	132	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	57.4474	-14.9	147	0.00
82	T	n-Propylbenzene	50.0000	56.0089	-12.0	143	0.00
83	T	Bromobenzene	50.0000	52.4465	-4.9	134	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	55.2760	-10.6	140	0.00
85	T	2-Chlorotoluene	50.0000	52.2984	-4.6	139	0.00
86	T	4-Chlorotoluene	50.0000	55.5780	-11.2	138	0.00
87	T	a-Methylstyrene	50.0000	58.4646	-16.9	150	0.00
88	T	tert-Butylbenzene	50.0000	56.7811	-13.6	141	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	53.4161	-6.8	139	0.00
90	T	sec-Butylbenzene	50.0000	55.7138	-11.4	143	0.00
91	T	p-Isopropyltoluene	50.0000	54.9770	-10.0	141	0.00
92	P	1,3-Dichlorobenzene	50.0000	51.4679	-2.9	138	0.00
93	P	1,4-Dichlorobenzene	50.0000	50.9824	-2.0	137	0.00
94	T	n-Butylbenzene	50.0000	54.5119	-9.0	141	0.00
95	P	1,2-Dichlorobenzene	50.0000	51.3996	-2.8	134	0.00
96	P	1,2-Dibromo-3-Chloropropane	50.0000	47.1826	5.6	118	0.00
97	P	1,2,4-Trichlorobenzene	50.0000	51.0748	-2.1	136	0.00
98	T	Hexachlorobutadiene	50.0000	52.4592	-4.9	140	0.00
99	T	Naphthalene	50.0000	48.5497	2.9	120	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	50.5368	-1.1	131	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972943.D 8260SL.M Mon Feb 29 09:26:18 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\1\DATA\022516\9M972894.D          Vial: 3
Acq On    : 25 Feb 2016  14:45                       Operator: ADC
Sample    : WG558732-01 BFB 50ng                     Inst    : hpms9
Misc      : 7,1 STD74773                             Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 02/15/16  HPMS9
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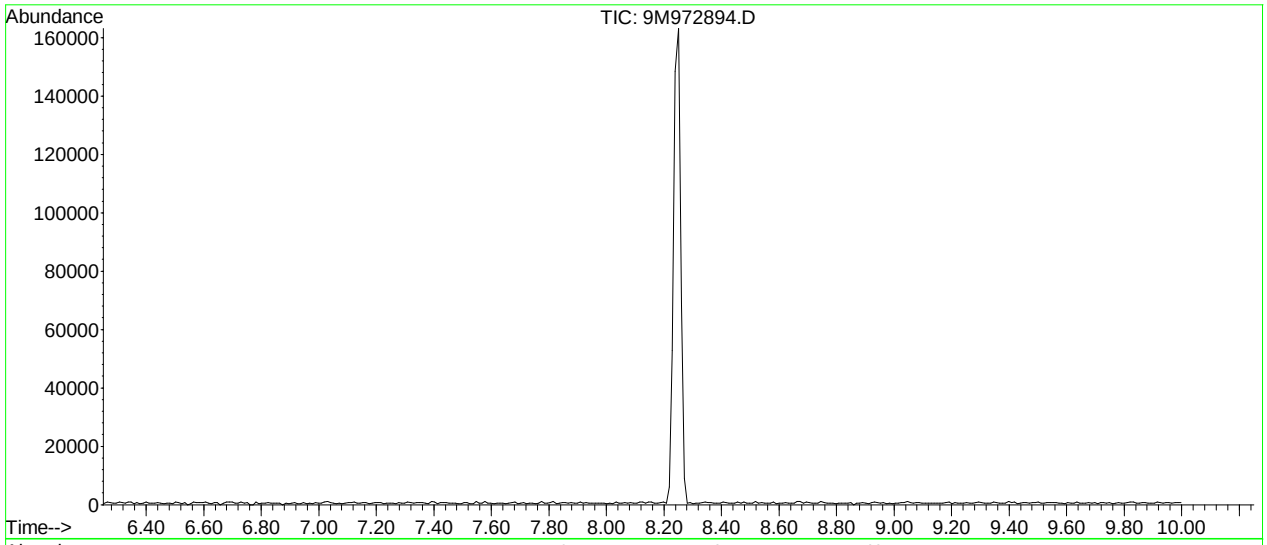

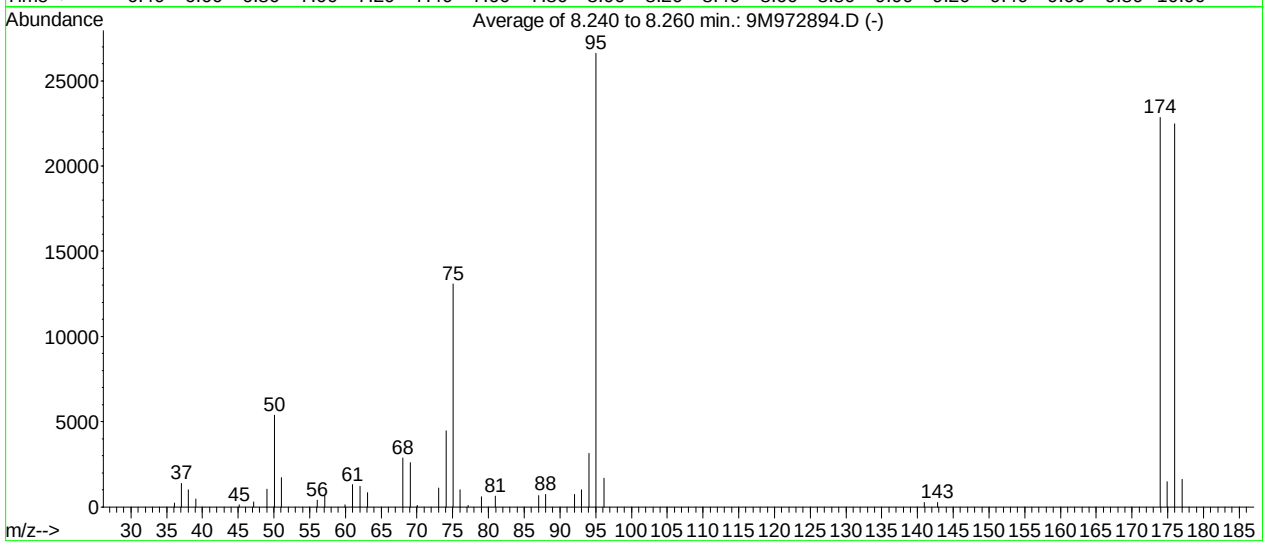

AutoFind: Scans 305, 306, 307; Background Corrected with Scan 300

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.2	5378	PASS
75	95	30	60	49.1	13067	PASS
95	95	100	100	100.0	26621	PASS
96	95	5	9	6.3	1683	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	85.8	22851	PASS
175	174	5	9	6.5	1485	PASS
176	174	95	101	98.3	22461	PASS
177	176	5	9	7.2	1619	PASS

9M972894.D 8260SL.M Fri Feb 26 11:11:03 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\022616\9M972908.D          Vial: 1
Acq On    : 26 Feb 2016  13:44                       Operator: ADC
Sample    : WG558909-01 BFB 50ng                     Inst    : hpms9
Misc      : 7,1 STD74202                             Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 02/15/16  HPMS9
```

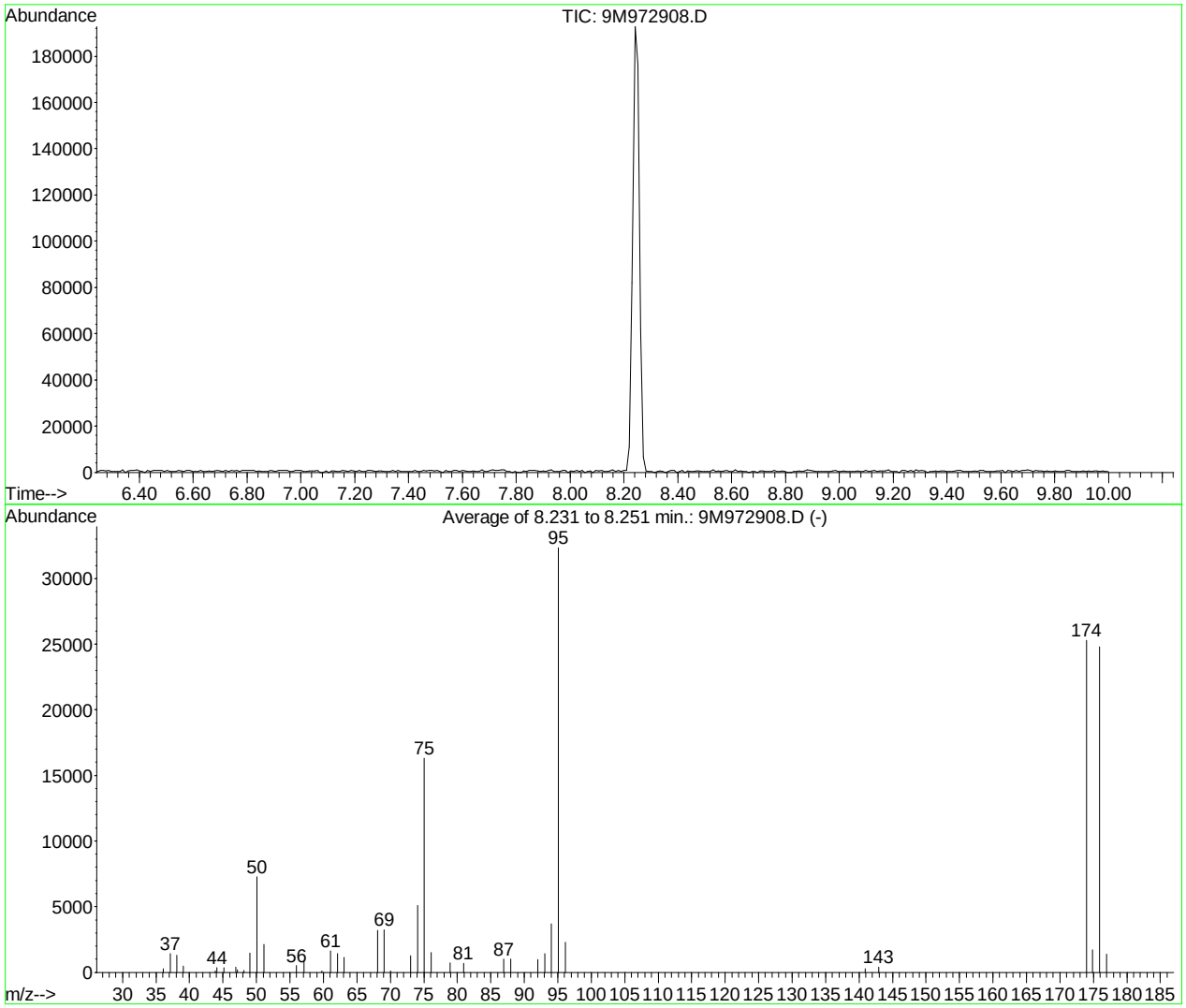

AutoFind: Scans 304, 305, 306; Background Corrected with Scan 300

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.5	7293	PASS
75	95	30	60	50.4	16315	PASS
95	95	100	100	100.0	32352	PASS
96	95	5	9	7.1	2301	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	78.1	25282	PASS
175	174	5	9	6.7	1693	PASS
176	174	95	101	98.1	24798	PASS
177	176	5	9	5.7	1403	PASS

9M972908.D 8260SL.M Sun Feb 28 11:48:21 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\022816\9M972942.D          Vial: 1
Acq On    : 28 Feb 2016  15:15                        Operator: FJB
Sample    : WG559001-01 BFB 50ng 8260                 Inst    : hpms9
Misc      : 7,1 STD74606                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 02/25/16  HPMS9
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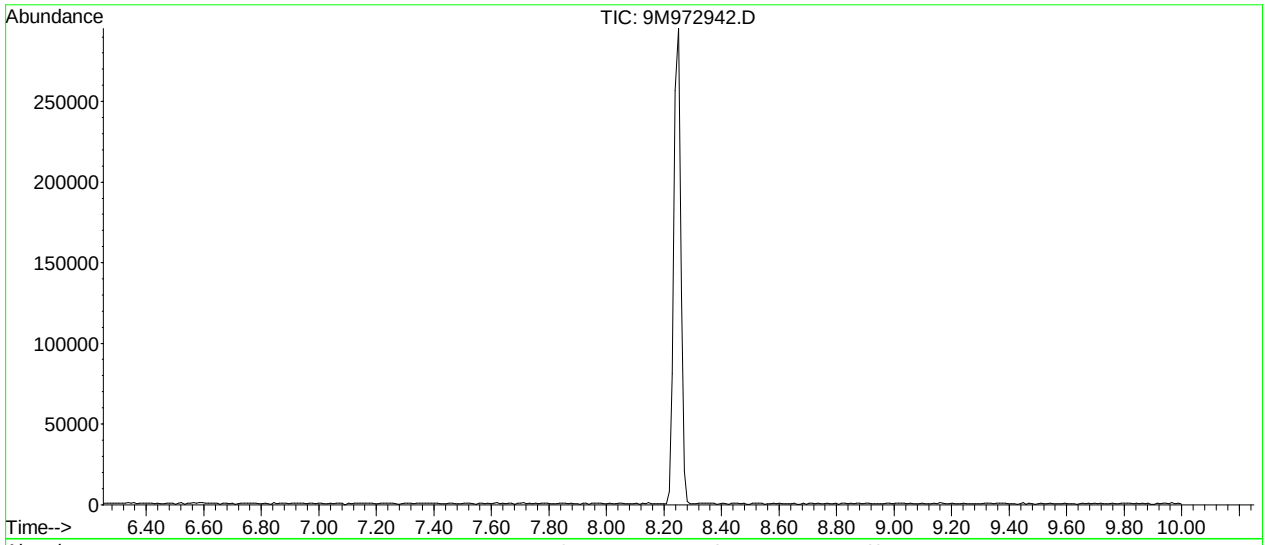

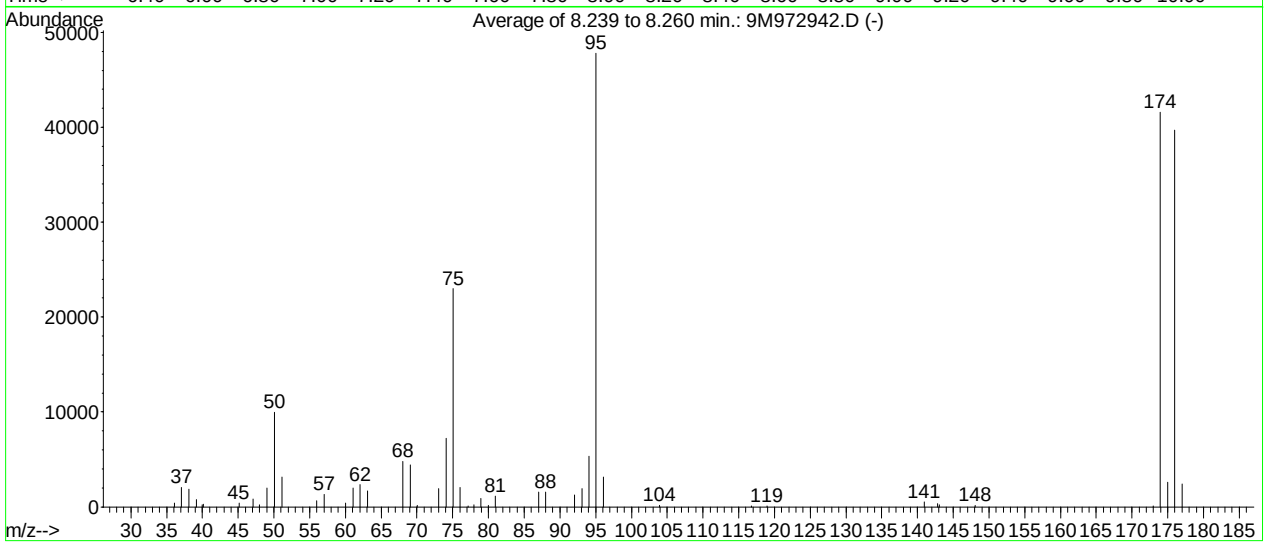

AutoFind: Scans 305, 306, 307; Background Corrected with Scan 300

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.8	9950	PASS
75	95	30	60	48.0	22972	PASS
95	95	100	100	100.0	47813	PASS
96	95	5	9	6.6	3156	PASS
173	174	0.00	2	0.3	115	PASS
174	95	50	100	86.9	41573	PASS
175	174	5	9	6.3	2621	PASS
176	174	95	101	95.5	39704	PASS
177	176	5	9	6.0	2399	PASS

9M972942.D 8260SL.M Mon Feb 29 09:26:07 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\9M972912.D Vial: 3
Acq On : 26 Feb 2016 15:42 Operator: ADC
Sample : WG558910-01 VBLK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 11:43:01 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	602902	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	423405	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	194102	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	167287	51.1888 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 102.38%		
43) 1,2-Dichloroethane-d4	10.45	65	204591	49.8955 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.80%		
58) Toluene-d8	12.83	98	592942	55.3651 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 110.74%		
79) p-Bromofluorobenzene	16.23	95	215903	57.1237 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 114.24%		

Target Compounds

					Qvalue
13) Acetone	6.41	43	5153	1.0388 ug/kg	96
17) Iodomethane	7.13	142	771	3.2330 ug/kg#	34
19) Methylene Chloride	7.41	84	1411	0.4598 ug/kg	74
56) Dimethyl Disulfide	12.82	94	16454	3.5184 ug/kg#	29
97) 1,2,4-Trichlorobenzene	20.43	180	3039	0.6445 ug/kg#	86
99) Naphthalene	20.81	128	8079	0.6831 ug/kg	96
100) 1,2,3-Trichlorobenzene	21.11	180	2762	0.6039 ug/kg	92

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\9M972912.D Vial: 3
Acq On : 26 Feb 2016 15:42 Operator: ADC
Sample : WG558910-01 VBLK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 11:43 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

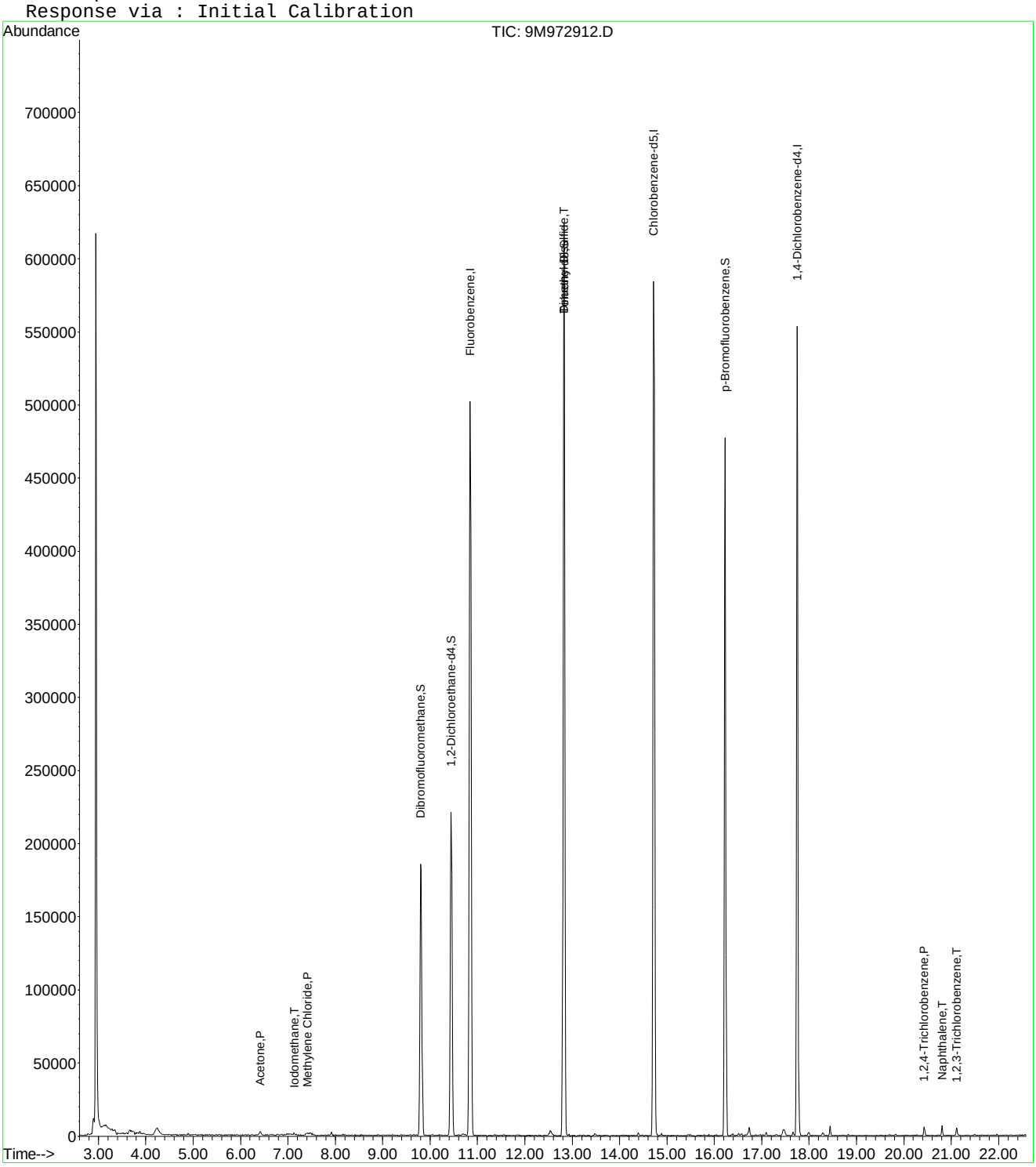

9M972912.D 8260SL.M Mon Feb 29 11:43:01 2016 Page 2

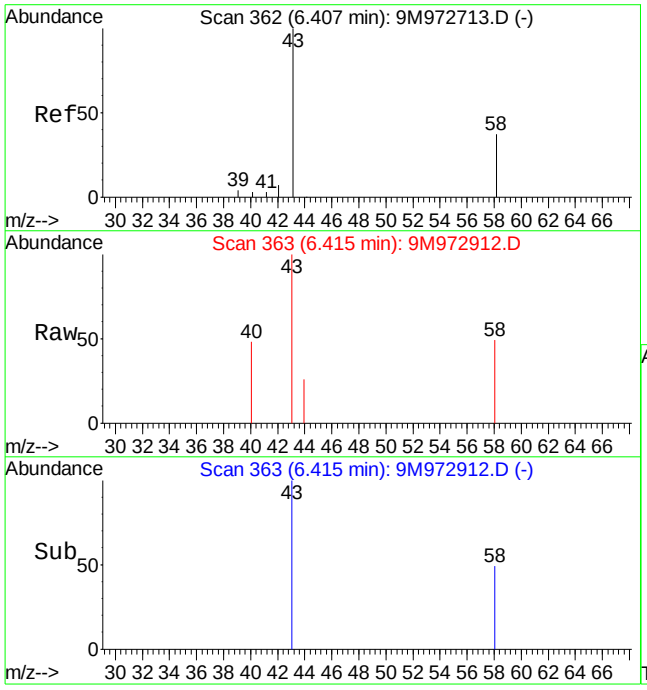

#13
Acetone
Concen: 1.04 ug/kg
RT: 6.41 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M972912.D
Acq: 26 Feb 2016 15:42

Tgt Ion: 43 Resp: 5153

Ion	Ratio	Lower	Upper
43	100		
58	30.3	16.9	39.3

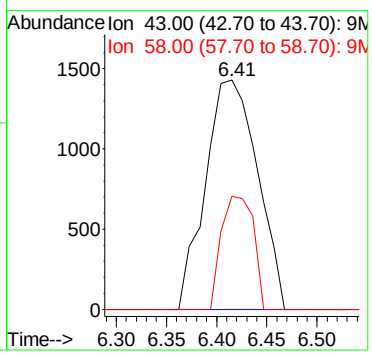

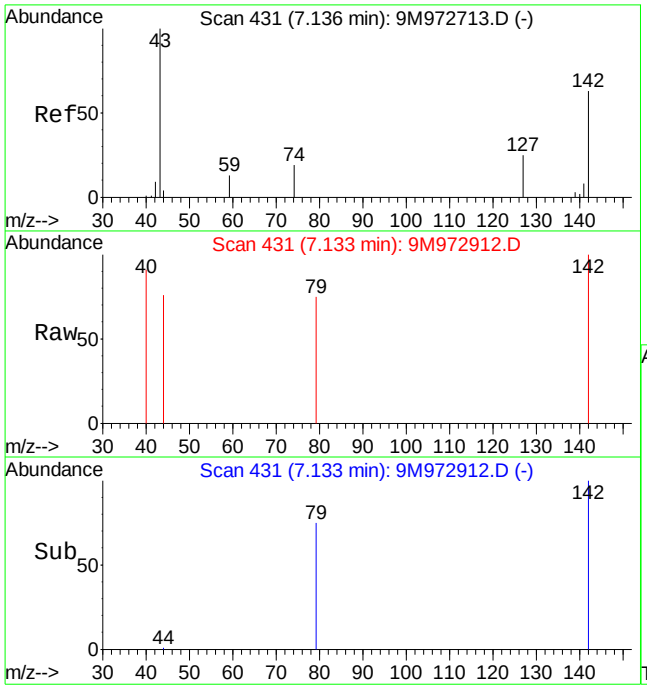

#17
Iodomethane
Concen: 3.23 ug/kg
RT: 7.13 min Scan# 431
Delta R.T. 0.00 min
Lab File: 9M972912.D
Acq: 26 Feb 2016 15:42

Tgt Ion:142 Resp: 771

Ion	Ratio	Lower	Upper
142	100		
127	0.0	25.1	58.7#

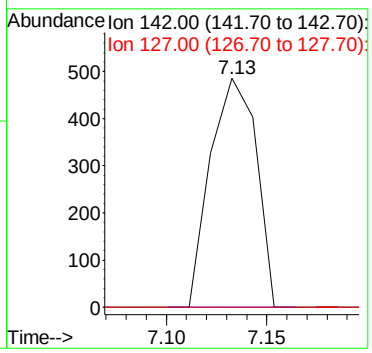

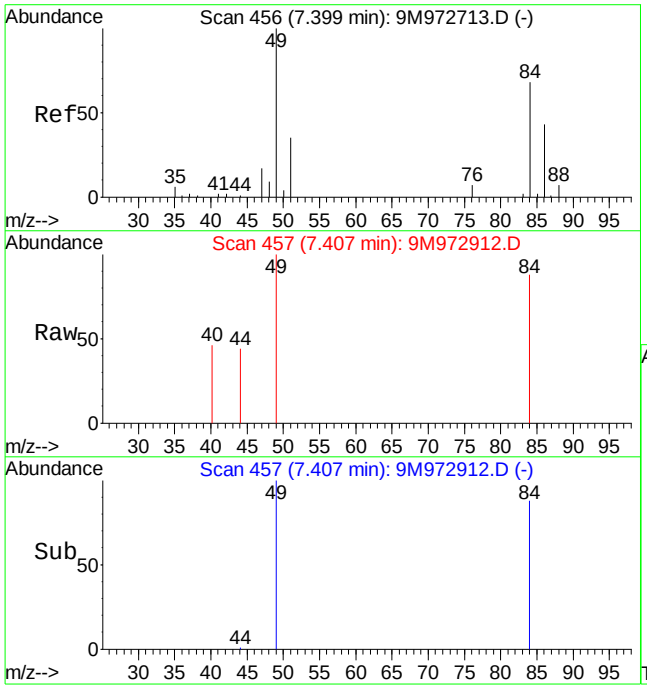

#19
Methylene Chloride
Concen: 0.46 ug/kg
RT: 7.41 min Scan# 457
Delta R.T. 0.01 min
Lab File: 9M972912.D
Acq: 26 Feb 2016 15:42

Tgt Ion: 84 Resp: 1411

Ion	Ratio	Lower	Upper
84	100		
49	134.4	101.8	237.4

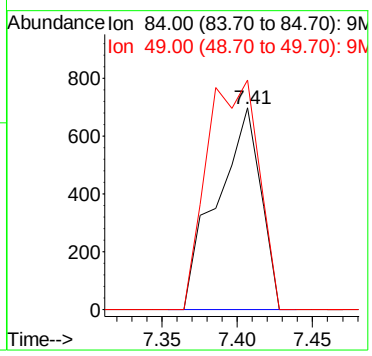

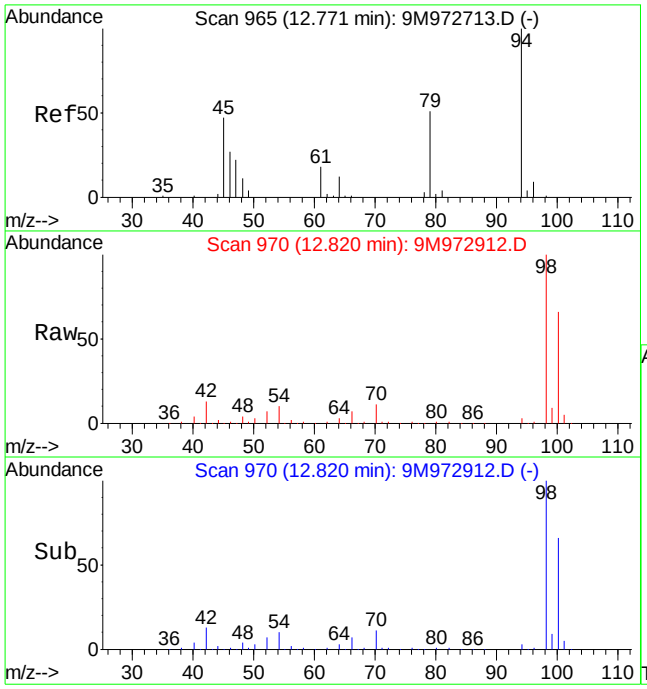

#56
Dimethyl Disulfide
Concen: 3.52 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M972912.D
Acq: 26 Feb 2016 15:42

Tgt Ion: 94 Resp: 16454

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

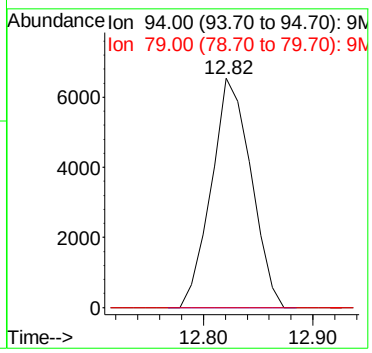

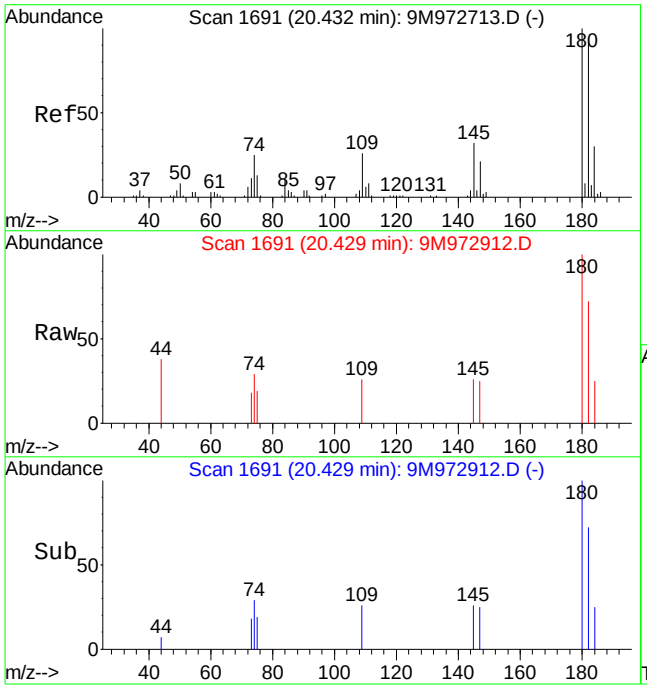

#97
1,2,4-Trichlorobenzene
Concen: 0.64 ug/kg
RT: 20.43 min Scan# 1691
Delta R.T. -0.01 min
Lab File: 9M972912.D
Acq: 26 Feb 2016 15:42

Tgt Ion:180 Resp: 3039

Ion	Ratio	Lower	Upper
180	100		
182	87.4	57.5	134.1
145	15.6	19.3	45.1#

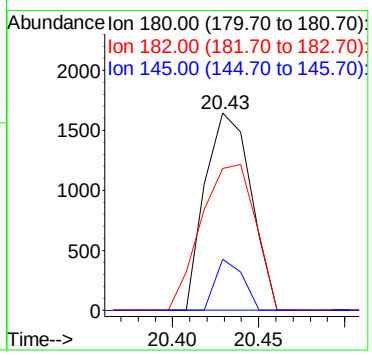

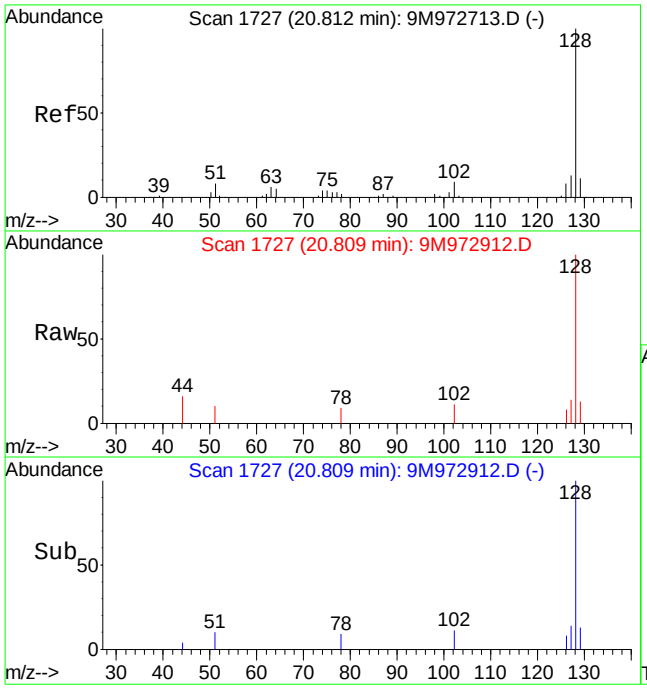

#99
Naphthalene
Concen: 0.68 ug/kg
RT: 20.81 min Scan# 1727
Delta R.T. 0.00 min
Lab File: 9M972912.D
Acq: 26 Feb 2016 15:42

Tgt Ion:128 Resp: 8079

Ion	Ratio	Lower	Upper
128	100		
127	11.1	7.7	17.9

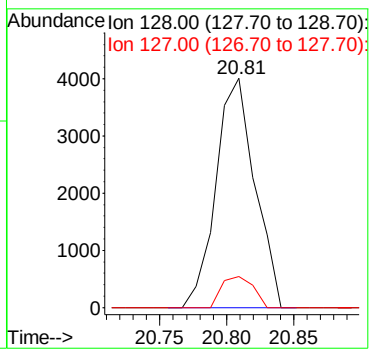

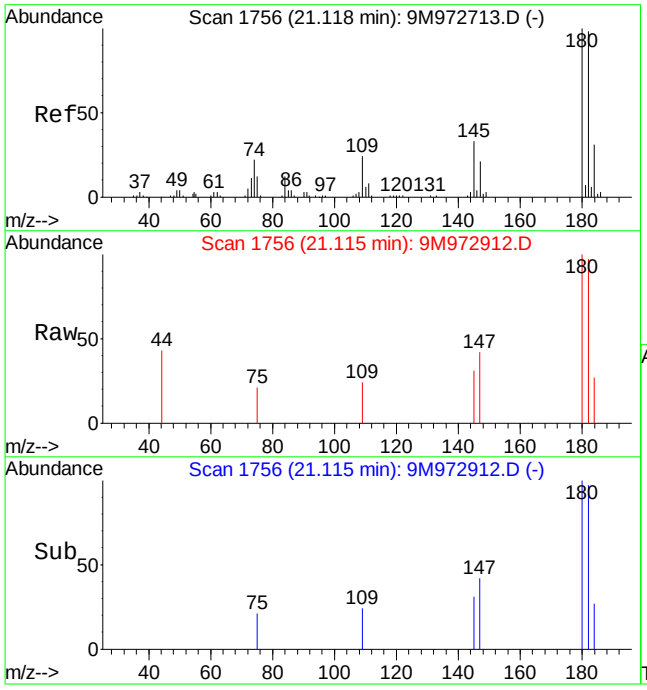

#100
1,2,3-Trichlorobenzene
Concen: 0.60 ug/kg
RT: 21.11 min Scan# 1756
Delta R.T. 0.00 min
Lab File: 9M972912.D
Acq: 26 Feb 2016 15:42

Tgt Ion:180 Resp: 2762

Ion	Ratio	Lower	Upper
180	100		
182	106.1	57.6	134.4
145	34.9	20.2	47.0

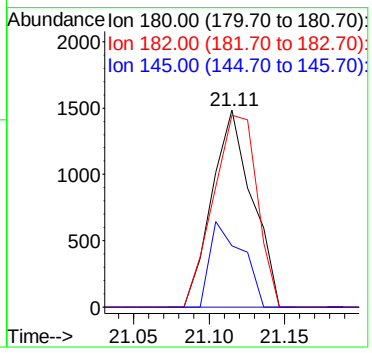

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022816\9M972945.D Vial: 3
Acq On : 28 Feb 2016 16:39 Operator: FJB
Sample : WG559002-01 VBLK0228 BLANK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 13:25:49 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	620113	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	441195	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	204353	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	171981	51.1646 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 102.32%		
43) 1,2-Dichloroethane-d4	10.45	65	220352	52.2478 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.50%		
58) Toluene-d8	12.83	98	616842	55.2743 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 110.54%		
79) p-Bromofluorobenzene	16.23	95	224016	56.2970 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 112.60%		

Target Compounds

					Qvalue
6) Bromomethane	4.90	94	1094	0.4147 ug/kg#	52
13) Acetone	6.42	43	3635	Below Cal	95
17) Iodomethane	7.13	142	1078	3.3893 ug/kg#	34
36) Tetrahydrofuran	9.78	42	581	0.4507 ug/kg#	65
56) Dimethyl Disulfide	12.83	94	18043	3.7511 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972945.D 8260SL.M Mon Feb 29 13:25:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022816\9M972945.D Vial: 3
Acq On : 28 Feb 2016 16:39 Operator: FJB
Sample : WG559002-01 VBLK0228 BLANK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 13:25 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

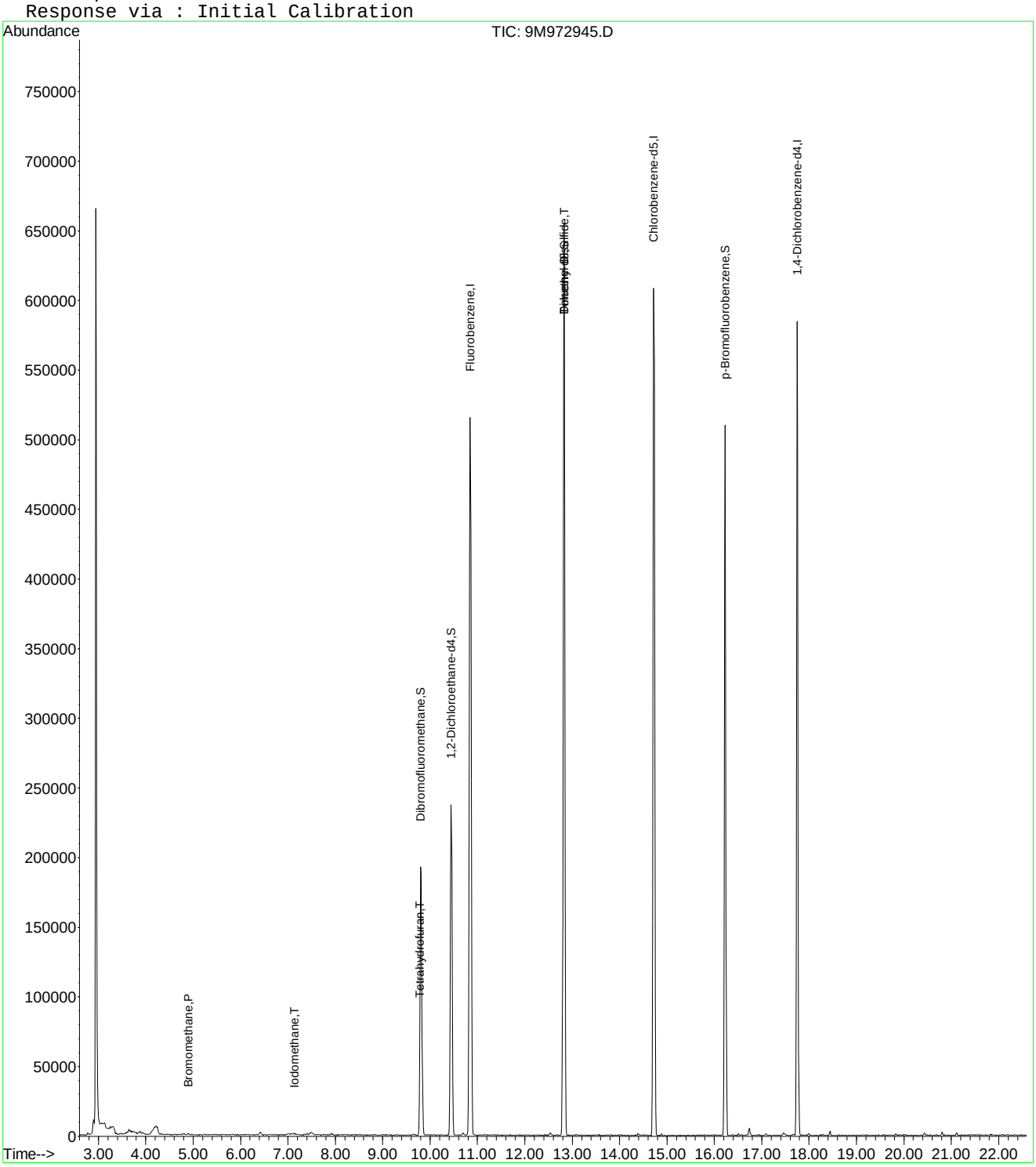

9M972945.D 8260SL.M Mon Feb 29 13:25:49 2016 Page 2

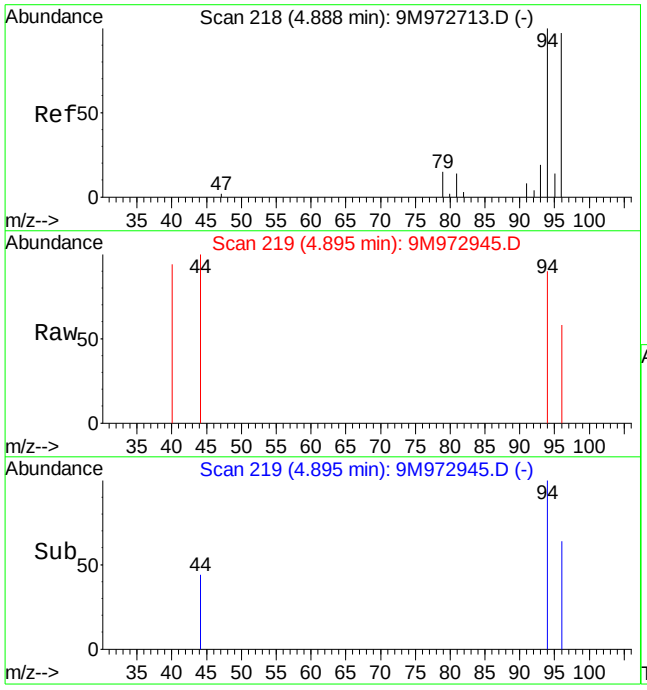

#6
Bromomethane
Concen: 0.41 ug/kg
RT: 4.90 min Scan# 219
Delta R.T. 0.01 min
Lab File: 9M972945.D
Acq: 28 Feb 2016 16:39

Tgt Ion: 94 Resp: 1094

Ion	Ratio	Lower	Upper
94	100		
96	48.9	57.2	133.6#

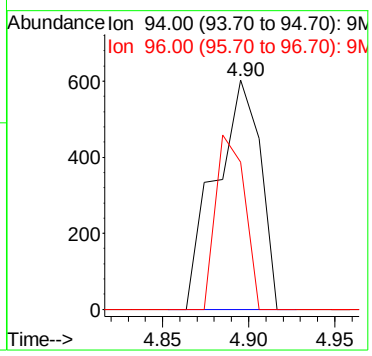

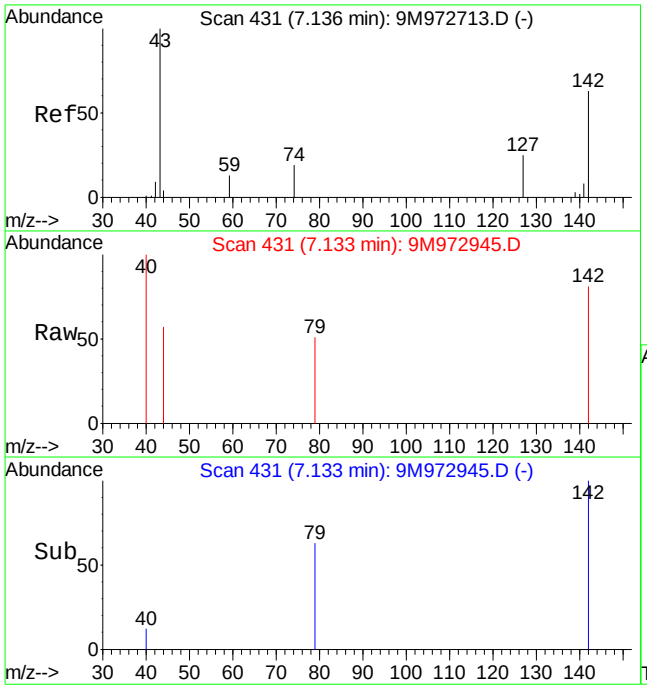

#17
Iodomethane
Concen: 3.39 ug/kg
RT: 7.13 min Scan# 431
Delta R.T. 0.00 min
Lab File: 9M972945.D
Acq: 28 Feb 2016 16:39

Tgt Ion:142 Resp: 1078

Ion	Ratio	Lower	Upper
142	100		
127	0.0	25.1	58.7#

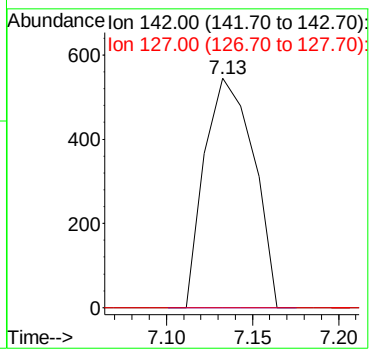

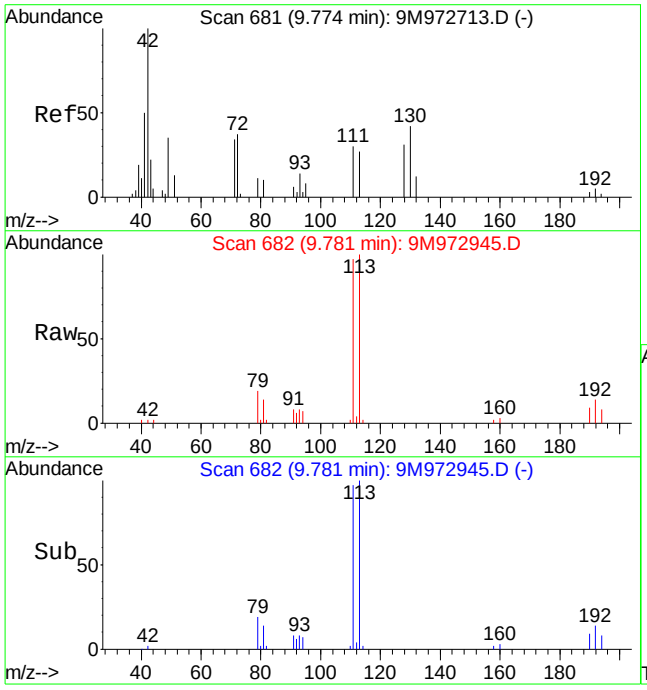

#36
Tetrahydrofuran
Concen: 0.45 ug/kg
RT: 9.78 min Scan# 682
Delta R.T. 0.00 min
Lab File: 9M972945.D
Acq: 28 Feb 2016 16:39

Tgt Ion: 42 Resp: 581

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	35.3	18.3	42.7

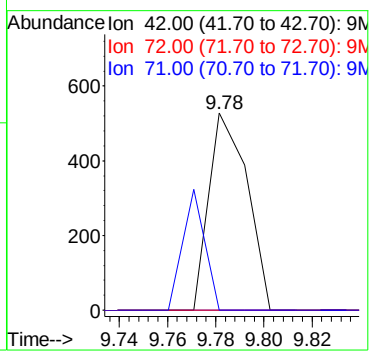

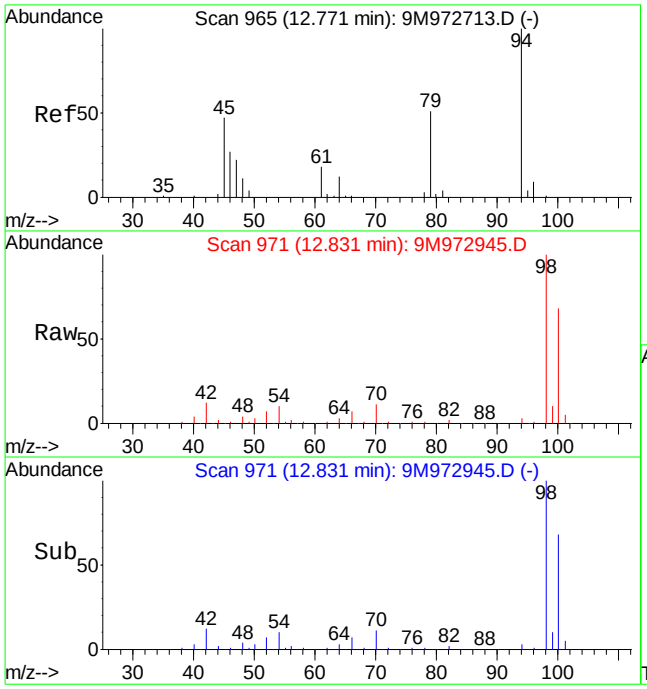

#56
Dimethyl Disulfide
Concen: 3.75 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.07 min
Lab File: 9M972945.D
Acq: 28 Feb 2016 16:39

Tgt Ion: 94 Resp: 18043

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

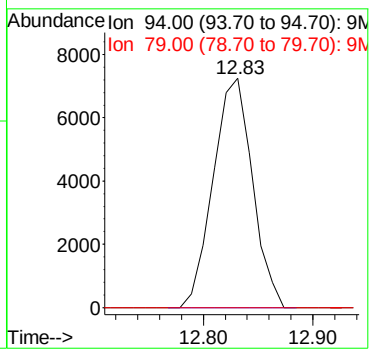

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022616\9M972913.D Vial: 4
Acq On : 26 Feb 2016 16:13 Operator: JDS
Sample : WG558910-02 20.0ug/kg LCS Inst : hpms9
Misc : 7,1 STD74755 JDS Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 16:35:46 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	563717	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	403042	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	184187	50.00 ug/kg	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.80	111	155107	50.7610 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 101.52%		
43) 1,2-Dichloroethane-d4	10.45	65	184204	48.0462 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.10%		
58) Toluene-d8	12.82	98	544647	53.4250 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.86%		
79) p-Bromofluorobenzene	16.23	95	200617	55.9366 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 111.88%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	105712	27.5134 ug/kg	98
3) Chloromethane	3.75	50	82721	22.4291 ug/kg	99
4) Vinyl Chloride	3.99	62	95032	25.7398 ug/kg	98
5) 1,3-Butadiene	4.04	54	6679	1.9015 ug/kg	92
6) Bromomethane	4.89	94	50663	21.1282 ug/kg	98
7) Chloroethane	5.04	64	37167	22.5963 ug/kg	97
8) Trichlorofluoromethane	5.53	101	113636	20.5218 ug/kg	99
9) Diethyl ether	6.06	59	206005	79.5826 ug/kg	99
10) Isoprene	6.09	67	86797	26.2551 ug/kg	97
11) Acrolein	6.30	56	40280	78.0382 ug/kg	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	65014	22.7665 ug/kg	96
13) Acetone	6.41	43	27758	17.9493 ug/kg	96
14) 1,1-Dichloroethene	6.62	61	106072	20.1356 ug/kg	98
15) Tert-Butyl Alcohol	6.75	59	118823	206.1445 ug/kg	97
16) Dimethyl Sulfide	6.88	62	71025	31.9011 ug/kg	98
17) Iodomethane	7.13	142	32777	22.5647 ug/kg	96
18) Methyl acetate	7.14	43	63383	22.1327 ug/kg	99
19) Methylene Chloride	7.40	84	59152	20.6177 ug/kg	99
20) Carbon Disulfide	7.44	76	157544	19.4138 ug/kg	99
21) Acrylonitrile	7.59	53	28352	20.0129 ug/kg	97
22) Methyl Tert Butyl Ether	7.61	73	170647	20.8839 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	102602	21.8544 ug/kg	99
24) n-Hexane	7.91	57	101184	20.8956 ug/kg	96
25) Diisopropyl ether	8.26	45	1083613	96.3517 ug/kg	99
26) Vinyl Acetate	8.43	43	93225	14.5410 ug/kg	98
27) 1,1-Dichloroethane	8.46	63	120116	20.3698 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	957331	91.5491 ug/kg	100
29) 2-Butanone	9.02	43	35175	19.3499 ug/kg	100
30) Propionitrile	9.14	54	53309	95.8282 ug/kg	97
31) 2,2-Dichloropropane	9.23	77	91646	20.8226 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	69599	22.6033 ug/kg	97
33) Chloroform	9.52	83	110961	20.4844 ug/kg	100
34) 1-Bromopropane	9.66	122	15633	33.6488 ug/kg	98
35) Bromochloromethane	9.75	130	42986	21.4913 ug/kg	96
36) Tetrahydrofuran	9.77	42	102538	87.5086 ug/kg	99
38) 1,1,1-Trichloroethane	10.05	97	101099	20.6381 ug/kg	100
39) Cyclohexane	10.08	56	118425	22.1737 ug/kg	99
40) 1,1-Dichloropropene	10.25	75	79418	20.6031 ug/kg	98
41) Tert-Amyl-Methyl ether	10.34	73	784257	103.1777 ug/kg	99
42) Carbon Tetrachloride	10.38	117	89302	19.6636 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022616\9M972913.D Vial: 4
Acq On : 26 Feb 2016 16:13 Operator: JDS
Sample : WG558910-02 20.0ug/kg LCS Inst : hpms9
Misc : 7,1 STD74755 JDS Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 16:35:46 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	99612	20.9062	ug/kg	98
46)	Benzene	10.61	78	227484	21.0798	ug/kg	98
47)	Trichloroethene	11.36	130	74656	21.8333	ug/kg	97
48)	Methylcyclohexane	11.44	83	96736	22.5565	ug/kg	100
49)	1,2-Dichloropropane	11.57	63	65398	22.0682	ug/kg	100
50)	1,4-Dioxane	11.87	88	9920	223.1331	ug/kg	98
51)	Bromodichloromethane	11.87	83	82575	19.7717	ug/kg	99
52)	Dibromomethane	11.96	174	39009	19.8669	ug/kg	97
53)	2-Chloroethyl Vinyl Ether	12.16	63	12886	17.6759	ug/kg	93
54)	4-Methyl-2-Pentanone	12.19	58	26612	20.4595	ug/kg	97
55)	cis-1,3-Dichloropropene	12.51	75	98506	22.6390	ug/kg	99
56)	Dimethyl Disulfide	12.77	94	106980	24.4657	ug/kg	95
59)	Toluene	12.93	91	257564	22.3664	ug/kg	99
60)	Ethyl Methacrylate	13.01	69	71529	22.4090	ug/kg	98
61)	trans-1,3-Dichloropropene	13.10	75	87681	21.1401	ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	53372	22.0629	ug/kg	100
63)	2-Hexanone	13.25	43	48511	20.0848	ug/kg	98
64)	1,3-Dichloropropane	13.62	76	91607	22.7262	ug/kg	98
65)	Tetrachloroethene	13.75	164	53411	21.6352	ug/kg	98
66)	Dibromochloromethane	14.01	129	66795	19.7570	ug/kg	99
67)	1,2-Dibromoethane	14.27	107	56221	20.9528	ug/kg	96
68)	1-Chlorohexane	14.34	91	77468	22.8122	ug/kg	98
69)	Chlorobenzene	14.77	112	180461	22.2972	ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.81	131	65121	21.4256	ug/kg	97
71)	Ethylbenzene	14.80	106	94652	22.7001	ug/kg	100
72)	m-,p-Xylene	14.89	106	232073	45.0676	ug/kg	100
73)	o-Xylene	15.45	106	114788	23.2284	ug/kg	98
74)	Styrene	15.49	104	190224	22.6048	ug/kg	99
75)	Bromoform	15.99	173	40222	18.1200	ug/kg	98
76)	Isopropylbenzene	15.87	105	301087	22.6956	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	60648	21.7064	ug/kg	100
80)	1,2,3-Trichloropropane	16.29	110	23203	21.8978	ug/kg	85
81)	trans-1,4-Dichloro-2-Buten	16.34	53	19942	18.6710	ug/kg	93
82)	n-Propylbenzene	16.38	91	346958	23.9642	ug/kg	99
83)	Bromobenzene	16.52	156	74550	21.8116	ug/kg	72
84)	1,3,5-Trimethylbenzene	16.57	105	258707	23.8046	ug/kg	98
85)	2-Chlorotoluene	16.66	91	237943	24.5029	ug/kg	99
86)	4-Chlorotoluene	16.71	91	204226	22.7473	ug/kg	98
87)	a-Methylstyrene	16.98	118	132527	26.7624	ug/kg	95
88)	tert-Butylbenzene	17.03	134	56856	24.9534	ug/kg	90
89)	1,2,4-Trimethylbenzene	17.09	105	254741	22.3821	ug/kg	99
90)	sec-Butylbenzene	17.31	105	327123	23.3704	ug/kg	99
91)	p-Isopropyltoluene	17.47	119	276196	23.3815	ug/kg	99
92)	1,3-Dichlorobenzene	17.67	146	151266	22.2685	ug/kg	98
93)	1,4-Dichlorobenzene	17.79	146	154634	22.7709	ug/kg	99
94)	n-Butylbenzene	17.99	91	238041	21.6737	ug/kg	98
95)	1,2-Dichlorobenzene	18.29	146	140172	22.2394	ug/kg	98
96)	1,2-Dibromo-3-Chloropropan	19.29	157	16295	20.1392	ug/kg	96
97)	1,2,4-Trichlorobenzene	20.43	180	92876	20.7575	ug/kg	100
98)	Hexachlorobutadiene	20.58	225	48600	20.6058	ug/kg	98
99)	Naphthalene	20.81	128	214410	19.1053	ug/kg	99
100)	1,2,3-Trichlorobenzene	21.12	180	89314	20.5804	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022616\9M972913.D Vial: 4
Acq On : 26 Feb 2016 16:13 Operator: JDS
Sample : WG558910-02 20.0ug/kg LCS Inst : hpms9
Misc : 7,1 STD74755 JDS Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 16:35 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

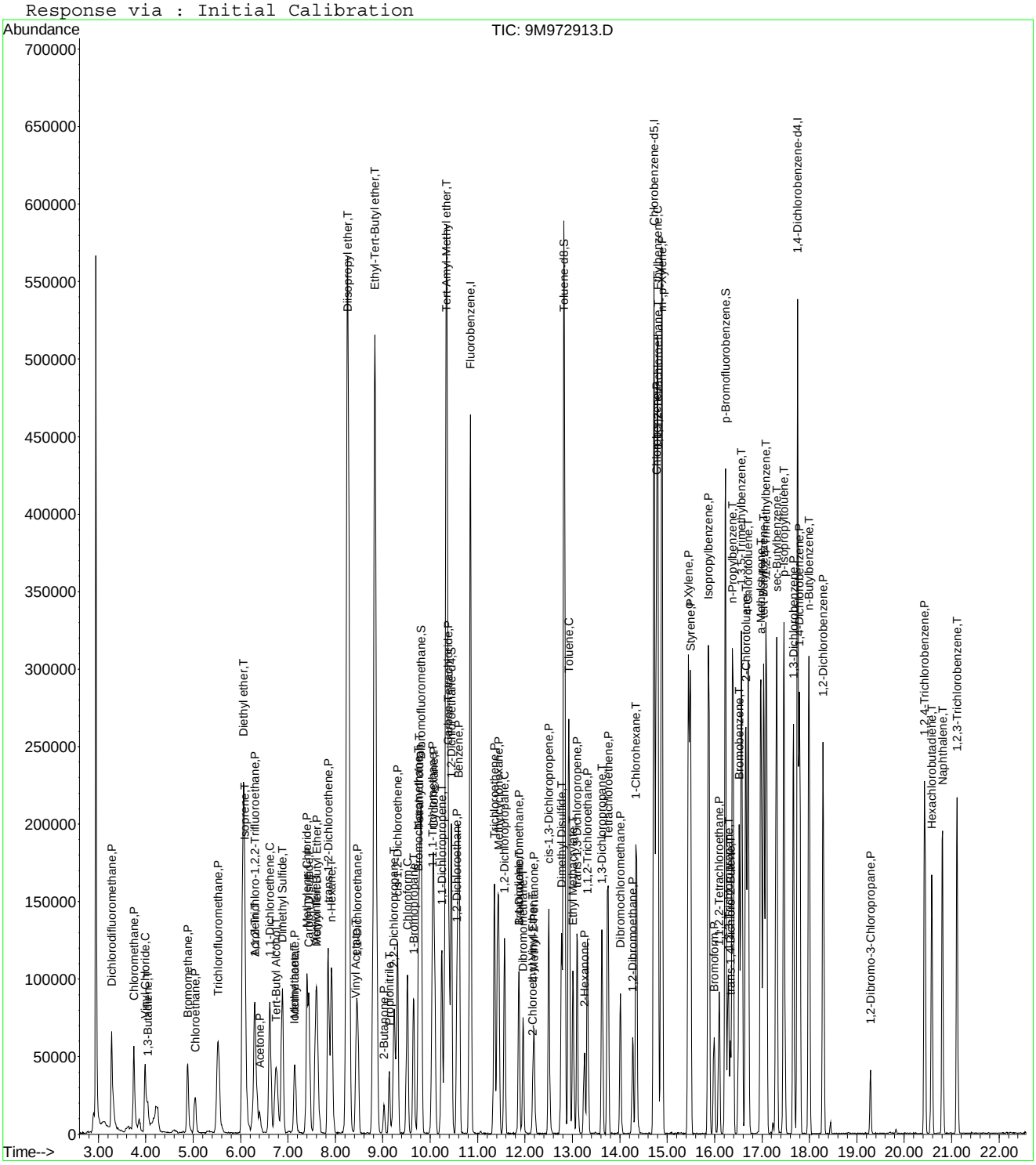

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022816\9M972946.D Vial: 4
Acq On : 28 Feb 2016 17:10 Operator: FJB
Sample : WG559002-02 20ug/Kg LCS 8260 Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 28 17:33:06 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	577816	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	413544	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	193426	50.00 ug/kg	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.80	111	157266	50.2117 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.42%		
43) 1,2-Dichloroethane-d4	10.45	65	196539	50.0127 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.02%		
58) Toluene-d8	12.82	98	565274	54.0402 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 108.08%		
79) p-Bromofluorobenzene	16.23	95	208942	55.4751 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 110.96%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	112624	28.5971 ug/kg	97
3) Chloromethane	3.75	50	86254	22.8164 ug/kg	100
4) Vinyl Chloride	3.98	62	89993	23.7802 ug/kg	97
5) 1,3-Butadiene	4.03	54	80500	22.3589 ug/kg	95
6) Bromomethane	4.88	94	51594	20.9914 ug/kg	99
7) Chloroethane	5.03	64	37911	22.4863 ug/kg	97
8) Trichlorofluoromethane	5.52	101	118730	20.9185 ug/kg	100
9) Diethyl ether	6.05	59	195802	73.7954 ug/kg	99
10) Isoprene	6.08	67	93338	27.5447 ug/kg	96
11) Acrolein	6.30	56	38044	71.9077 ug/kg	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	69258	23.6609 ug/kg	96
13) Acetone	6.42	43	31456	20.1096 ug/kg	95
14) 1,1-Dichloroethene	6.62	61	114583	21.2205 ug/kg	99
15) Tert-Butyl Alcohol	6.75	59	142519	241.2212 ug/kg	100
16) Dimethyl Sulfide	6.88	62	74435	32.6170 ug/kg	98
17) Iodomethane	7.13	142	31651	21.4199 ug/kg	98
18) Methyl acetate	7.15	43	59108	20.1363 ug/kg	99
19) Methylene Chloride	7.40	84	63387	21.5547 ug/kg	98
20) Carbon Disulfide	7.44	76	162423	19.5267 ug/kg	100
21) Acrylonitrile	7.58	53	32005	22.0402 ug/kg	94
22) Methyl Tert Butyl Ether	7.60	73	180961	21.6058 ug/kg	100
23) trans-1,2-Dichloroethene	7.84	61	109495	22.7535 ug/kg	99
24) n-Hexane	7.92	57	109240	22.0088 ug/kg	98
25) Diisopropyl ether	8.26	45	1088401	94.4160 ug/kg	100
26) Vinyl Acetate	8.43	43	146654	22.3165 ug/kg	99
27) 1,1-Dichloroethane	8.46	63	124545	20.6055 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	967839	90.2956 ug/kg	99
29) 2-Butanone	9.02	43	38299	20.5544 ug/kg	97
30) Propionitrile	9.14	54	59759	104.8015 ug/kg	100
31) 2,2-Dichloropropane	9.23	77	97470	21.6055 ug/kg	97
32) cis-1,2-Dichloroethene	9.31	96	71396	22.6211 ug/kg	99
33) Chloroform	9.52	83	111216	20.0305 ug/kg	96
34) 1-Bromopropane	9.66	122	16414	34.4428 ug/kg	98
35) Bromochloromethane	9.75	130	44238	21.5776 ug/kg	96
36) Tetrahydrofuran	9.77	42	114876	95.6460 ug/kg	99
38) 1,1,1-Trichloroethane	10.05	97	103902	20.6928 ug/kg	98
39) Cyclohexane	10.08	56	123492	22.5583 ug/kg	98
40) 1,1-Dichloropropene	10.24	75	81491	20.6251 ug/kg	95
41) Tert-Amyl-Methyl ether	10.34	73	787695	101.1014 ug/kg	100
42) Carbon Tetrachloride	10.38	117	92585	19.8891 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022816\9M972946.D Vial: 4
Acq On : 28 Feb 2016 17:10 Operator: FJB
Sample : WG559002-02 20ug/Kg LCS 8260 Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 28 17:33:06 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	106774	21.8626 ug/kg	99
46)	Benzene	10.61	78	242250	21.9004 ug/kg	99
47)	Trichloroethene	11.36	130	77578	22.1342 ug/kg	98
48)	Methylcyclohexane	11.44	83	102065	23.2184 ug/kg	99
49)	1,2-Dichloropropane	11.57	63	70388	23.1725 ug/kg	100
50)	1,4-Dioxane	11.87	88	13650	299.5413 ug/kg	94
51)	Bromodichloromethane	11.87	83	88989	20.7876 ug/kg	100
52)	Dibromomethane	11.96	174	41532	20.6357 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	15982	20.7933 ug/kg	93
54)	4-Methyl-2-Pentanone	12.19	58	29277	21.9591 ug/kg	97
55)	cis-1,3-Dichloropropene	12.51	75	102855	23.0617 ug/kg	100
56)	Dimethyl Disulfide	12.77	94	108953	24.3089 ug/kg	92
59)	Toluene	12.93	91	264634	22.3968 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	75270	22.9822 ug/kg	98
61)	trans-1,3-Dichloropropene	13.10	75	94311	22.1612 ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	57316	23.0915 ug/kg	95
63)	2-Hexanone	13.26	43	54235	21.8845 ug/kg	100
64)	1,3-Dichloropropane	13.62	76	96660	23.3708 ug/kg	99
65)	Tetrachloroethene	13.75	164	54221	21.4055 ug/kg	97
66)	Dibromochloromethane	14.02	129	71622	20.6467 ug/kg	98
67)	1,2-Dibromoethane	14.27	107	60635	22.0240 ug/kg	96
68)	1-Chlorohexane	14.34	91	77741	22.3112 ug/kg	96
69)	Chlorobenzene	14.77	112	188889	22.7458 ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.81	131	66825	21.4279 ug/kg	100
71)	Ethylbenzene	14.80	106	97995	22.9050 ug/kg	98
72)	m-,p-Xylene	14.89	106	236799	44.8176 ug/kg	100
73)	o-Xylene	15.45	106	117789	23.2304 ug/kg	99
74)	Styrene	15.49	104	195725	22.6679 ug/kg	100
75)	Bromoform	15.99	173	43183	18.9599 ug/kg	98
76)	Isopropylbenzene	15.87	105	307619	22.5991 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	63025	21.4797 ug/kg	99
80)	1,2,3-Trichloropropane	16.28	110	26129	23.4814 ug/kg	83
81)	trans-1,4-Dichloro-2-Buten	16.34	53	21991	19.6060 ug/kg	92
82)	n-Propylbenzene	16.38	91	353827	23.2714 ug/kg	99
83)	Bromobenzene	16.52	156	79402	22.1216 ug/kg	74
84)	1,3,5-Trimethylbenzene	16.57	105	263372	23.0764 ug/kg	99
85)	2-Chlorotoluene	16.66	91	242282	23.7580 ug/kg	100
86)	4-Chlorotoluene	16.71	91	205505	21.7964 ug/kg	99
87)	a-Methylstyrene	16.98	118	130025	25.0029 ug/kg	97
88)	tert-Butylbenzene	17.03	134	55352	23.1329 ug/kg	89
89)	1,2,4-Trimethylbenzene	17.09	105	256289	21.4425 ug/kg	100
90)	sec-Butylbenzene	17.31	105	326775	22.2305 ug/kg	99
91)	p-Isopropyltoluene	17.47	119	272853	21.9952 ug/kg	100
92)	1,3-Dichlorobenzene	17.67	146	151965	21.3028 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	153934	21.5851 ug/kg	99
94)	n-Butylbenzene	17.99	91	237969	20.6322 ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	146690	22.1619 ug/kg	98
96)	1,2-Dibromo-3-Chloropropan	19.29	157	17591	20.7025 ug/kg	96
97)	1,2,4-Trichlorobenzene	20.43	180	91846	19.5468 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	45592	18.4072 ug/kg	100
99)	Naphthalene	20.81	128	233516	19.8139 ug/kg	99
100)	1,2,3-Trichlorobenzene	21.12	180	92739	20.3489 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022816\9M972946.D Vial: 4
Acq On : 28 Feb 2016 17:10 Operator: FJB
Sample : WG559002-02 20ug/Kg LCS 8260 Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 28 17:33 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

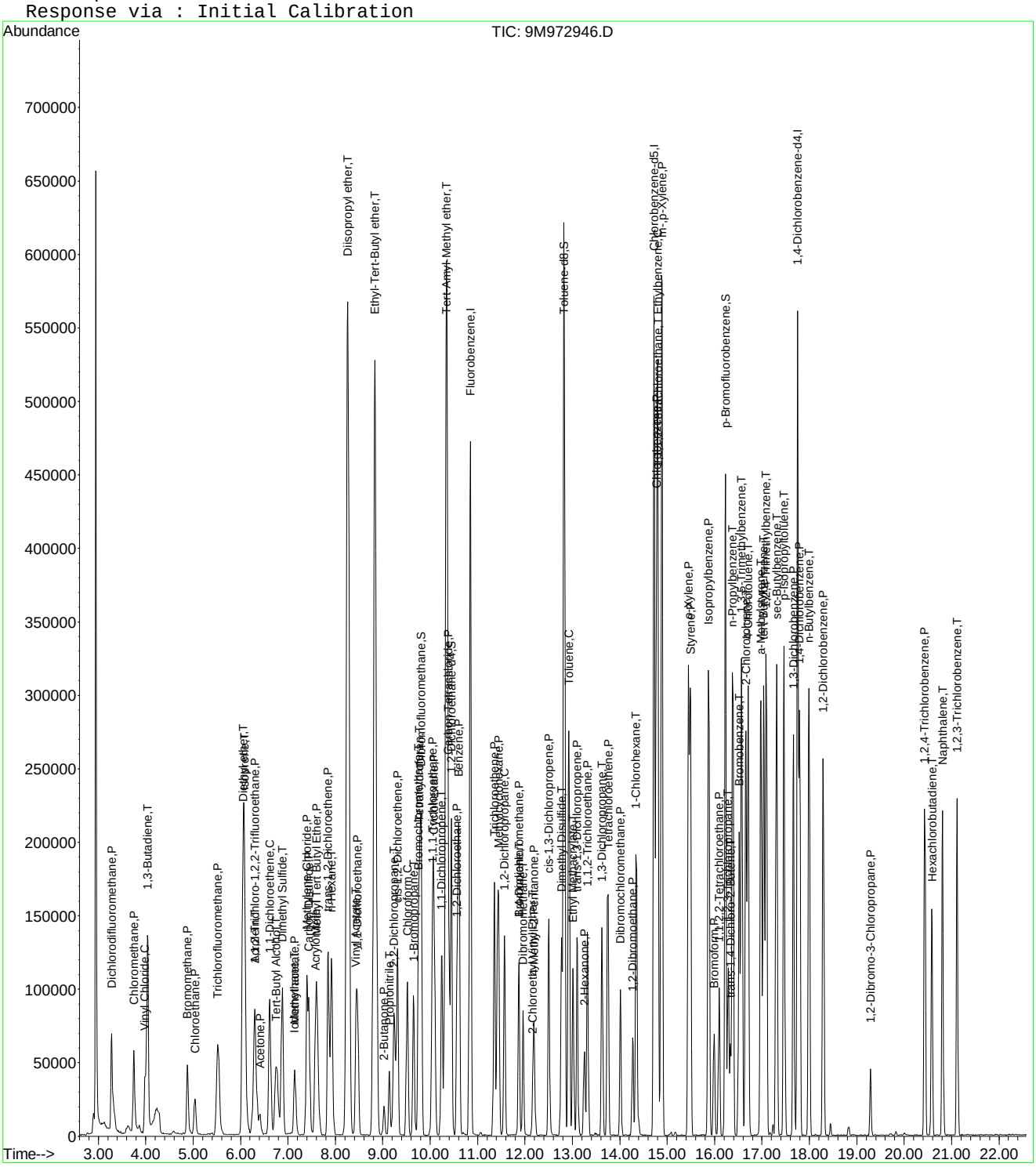

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022616\9M972915.D Vial: 6
Acq On : 26 Feb 2016 17:14 Operator: JDS
Sample : WG558910-04 20.0ug/kg LCSP&A Inst : hpms9
Misc : 7,1 STD74755 JDS Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 17:37:35 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	636072	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	455148	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	207360	50.00 ug/kg	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.80	111	177540	51.4932 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 102.98%		
43) 1,2-Dichloroethane-d4	10.45	65	213450	49.3414 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.68%		
58) Toluene-d8	12.82	98	614569	53.3824 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.76%		
79) p-Bromofluorobenzene	16.23	95	226963	56.2105 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 112.42%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	112096	25.8562 ug/kg	100
3) Chloromethane	3.75	50	88944	21.3731 ug/kg	99
4) Vinyl Chloride	3.99	62	101417	24.3445 ug/kg	98
5) 1,3-Butadiene	4.04	54	6562	1.6557 ug/kg	89
6) Bromomethane	4.89	94	53330	19.7105 ug/kg	97
7) Chloroethane	5.05	64	39165	21.1025 ug/kg	96
8) Trichlorofluoromethane	5.52	101	123594	19.7811 ug/kg	99
9) Diethyl ether	6.06	59	230519	78.9227 ug/kg	98
10) Isoprene	6.09	67	96401	25.8431 ug/kg	97
11) Acrolein	6.30	56	43510	74.7070 ug/kg	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	69004	21.4150 ug/kg	98
13) Acetone	6.41	43	31091	17.7992 ug/kg	97
14) 1,1-Dichloroethene	6.62	61	117918	19.8381 ug/kg	97
15) Tert-Butyl Alcohol	6.75	59	133190	204.7848 ug/kg	98
16) Dimethyl Sulfide	6.88	62	79993	31.8421 ug/kg	97
17) Iodomethane	7.13	142	36451	22.2798 ug/kg	96
18) Methyl acetate	7.15	43	69914	21.6362 ug/kg	97
19) Methylene Chloride	7.40	84	67518	20.8566 ug/kg	95
20) Carbon Disulfide	7.44	76	178775	19.5241 ug/kg	98
21) Acrylonitrile	7.59	53	31948	19.9859 ug/kg	96
22) Methyl Tert Butyl Ether	7.61	73	191918	20.8154 ug/kg	98
23) trans-1,2-Dichloroethene	7.85	61	112156	21.1719 ug/kg	98
24) n-Hexane	7.92	57	112175	20.5302 ug/kg	94
25) Diisopropyl ether	8.26	45	1188590	93.6639 ug/kg	99
26) Vinyl Acetate	8.43	43	111646	15.4333 ug/kg	99
27) 1,1-Dichloroethane	8.47	63	130788	19.6566 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	1071549	90.8153 ug/kg	100
29) 2-Butanone	9.02	43	38875	18.9527 ug/kg	97
30) Propionitrile	9.14	54	57776	92.0439 ug/kg	98
31) 2,2-Dichloropropane	9.25	77	100068	20.1499 ug/kg	100
32) cis-1,2-Dichloroethene	9.31	96	75581	21.7539 ug/kg	100
33) Chloroform	9.52	83	120804	19.7646 ug/kg	98
34) 1-Bromopropane	9.66	122	16884	32.2515 ug/kg	95
35) Bromochloromethane	9.75	130	46093	20.4233 ug/kg	97
36) Tetrahydrofuran	9.78	42	111919	84.6495 ug/kg	95
38) 1,1,1-Trichloroethane	10.05	97	111705	20.2093 ug/kg	97
39) Cyclohexane	10.08	56	132168	21.9319 ug/kg	99
40) 1,1-Dichloropropene	10.25	75	87562	20.1319 ug/kg	99
41) Tert-Amyl-Methyl ether	10.34	73	880028	102.6074 ug/kg	99
42) Carbon Tetrachloride	10.40	117	96966	18.9224 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022616\9M972915.D Vial: 6
Acq On : 26 Feb 2016 17:14 Operator: JDS
Sample : WG558910-04 20.0ug/kg LCSP&A Inst : hpms9
Misc : 7,1 STD74755 JDS Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 17:37:35 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	110350	20.5254 ug/kg	98
46)	Benzene	10.61	78	253594	20.8262 ug/kg	97
47)	Trichloroethene	11.36	130	81482	21.1189 ug/kg	99
48)	Methylcyclohexane	11.44	83	108819	22.4876 ug/kg	98
49)	1,2-Dichloropropane	11.57	63	74685	22.3353 ug/kg	98
50)	1,4-Dioxane	11.88	88	9690	193.1662 ug/kg	94
51)	Bromodichloromethane	11.87	83	91667	19.4520 ug/kg	99
52)	Dibromomethane	11.96	174	41869	18.8978 ug/kg	98
53)	2-Chloroethyl Vinyl Ether	12.16	63	14168	17.2961 ug/kg	98
54)	4-Methyl-2-Pentanone	12.19	58	28891	19.6850 ug/kg	96
55)	cis-1,3-Dichloropropene	12.51	75	108559	22.1114 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	118783	24.0749 ug/kg	95
59)	Toluene	12.93	91	277871	21.3674 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	80461	22.3215 ug/kg	100
61)	trans-1,3-Dichloropropene	13.11	75	98722	21.0772 ug/kg	99
62)	1,1,2-Trichloroethane	13.32	97	58025	21.2403 ug/kg	96
63)	2-Hexanone	13.26	43	51503	18.8824 ug/kg	97
64)	1,3-Dichloropropane	13.62	76	100841	22.1530 ug/kg	100
65)	Tetrachloroethene	13.75	164	55939	20.0651 ug/kg	99
66)	Dibromochloromethane	14.01	129	75147	19.6827 ug/kg	98
67)	1,2-Dibromoethane	14.27	107	62201	20.5276 ug/kg	100
68)	1-Chlorohexane	14.35	91	84940	22.1490 ug/kg	99
69)	Chlorobenzene	14.77	112	197926	21.6554 ug/kg	98
70)	1,1,1,2-Tetrachloroethane	14.81	131	72784	21.2053 ug/kg	98
71)	Ethylbenzene	14.80	106	101895	21.6396 ug/kg	99
72)	m-,p-Xylene	14.88	106	253894	43.6606 ug/kg	98
73)	o-Xylene	15.45	106	125573	22.5018 ug/kg	100
74)	Styrene	15.49	104	205688	21.6443 ug/kg	100
75)	Bromoform	15.99	173	45838	18.2860 ug/kg	99
76)	Isopropylbenzene	15.87	105	330738	22.0766 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	65833	20.9290 ug/kg	96
80)	1,2,3-Trichloropropane	16.28	110	27203	22.8038 ug/kg	80
81)	trans-1,4-Dichloro-2-Buten	16.34	53	22448	18.6685 ug/kg	93
82)	n-Propylbenzene	16.38	91	379144	23.2608 ug/kg	99
83)	Bromobenzene	16.52	156	83993	21.8282 ug/kg	74
84)	1,3,5-Trimethylbenzene	16.57	105	284247	23.2318 ug/kg	99
85)	2-Chlorotoluene	16.66	91	261289	23.9001 ug/kg	100
86)	4-Chlorotoluene	16.71	91	218365	21.6041 ug/kg	98
87)	a-Methylstyrene	16.98	118	139914	25.0966 ug/kg	97
88)	tert-Butylbenzene	17.03	134	59513	23.2006 ug/kg	89
89)	1,2,4-Trimethylbenzene	17.09	105	280301	21.8756 ug/kg	99
90)	sec-Butylbenzene	17.31	105	356068	22.5955 ug/kg	100
91)	p-Isopropyltoluene	17.47	119	287341	21.6066 ug/kg	98
92)	1,3-Dichlorobenzene	17.67	146	159369	20.8395 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	162461	21.2500 ug/kg	98
94)	n-Butylbenzene	17.99	91	252563	20.4261 ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	155360	21.8945 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	17506	19.2180 ug/kg	96
97)	1,2,4-Trichlorobenzene	20.43	180	97899	19.4349 ug/kg	99
98)	Hexachlorobutadiene	20.58	225	54416	20.4934 ug/kg	99
99)	Naphthalene	20.81	128	233492	18.4805 ug/kg	99
100)	1,2,3-Trichlorobenzene	21.12	180	95571	19.5611 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022616\9M972915.D Vial: 6
Acq On : 26 Feb 2016 17:14 Operator: JDS
Sample : WG558910-04 20.0ug/kg LCSP&A Inst : hpms9
Misc : 7,1 STD74755 JDS Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 17:37 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

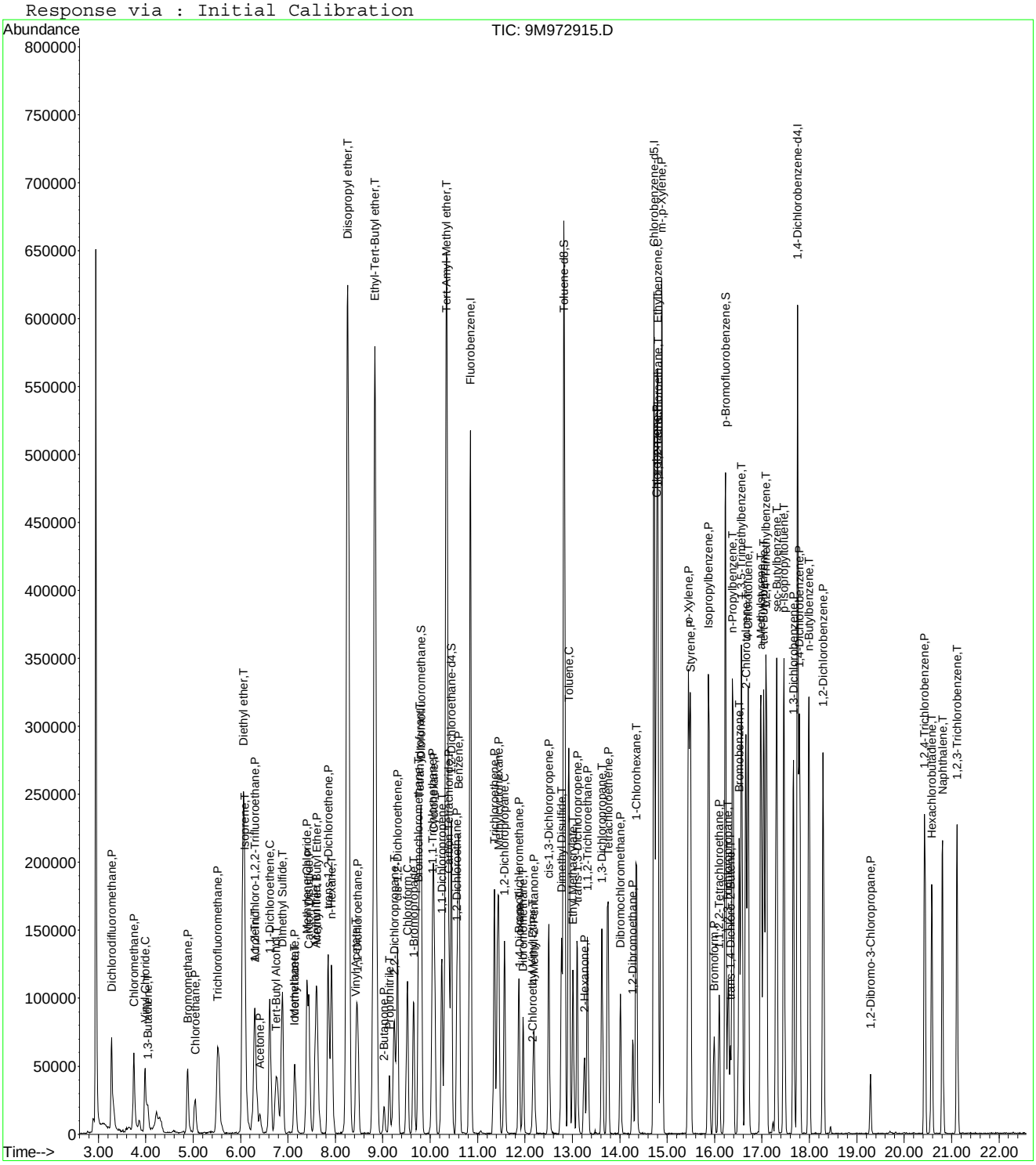

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022616\9M972916.D Vial: 7
Acq On : 26 Feb 2016 17:45 Operator: JDS
Sample : WG558910-05 20.0ug/kg LCSP&A Inst : hpms9
Misc : 7,1 STD74755 JDS Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 18:08:03 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	521516	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	368969	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.75	152	171493	50.00 ug/kg	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.80	111	143998	50.9388 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 101.88%		
43) 1,2-Dichloroethane-d4	10.45	65	171526	48.3597 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.72%		
58) Toluene-d8	12.83	98	503824	53.9845 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 107.96%		
79) p-Bromofluorobenzene	16.23	95	185163	55.4492 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 110.90%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	97237	27.3555 ug/kg	99
3) Chloromethane	3.74	50	75833	22.2253 ug/kg	97
4) Vinyl Chloride	3.99	62	77764	22.7671 ug/kg	98
5) 1,3-Butadiene	4.03	54	3674	1.1306 ug/kg	91
6) Bromomethane	4.88	94	45606	20.5583 ug/kg	97
7) Chloroethane	5.04	64	32487	21.3493 ug/kg	99
8) Trichlorofluoromethane	5.52	101	97315	18.9964 ug/kg	97
9) Diethyl ether	6.06	59	189076	78.9533 ug/kg	99
10) Isoprene	6.09	67	77916	25.4758 ug/kg	96
11) Acrolein	6.30	56	30981	64.8794 ug/kg	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	54177	20.5068 ug/kg	99
13) Acetone	6.40	43	24387	16.9191 ug/kg	100
14) 1,1-Dichloroethene	6.61	61	96191	19.7375 ug/kg	97
15) Tert-Butyl Alcohol	6.73	59	106856	200.3842 ug/kg	96
16) Dimethyl Sulfide	6.88	62	66318	32.1973 ug/kg	97
17) Iodomethane	7.13	142	31194	23.1323 ug/kg	96
18) Methyl acetate	7.14	43	55878	21.0910 ug/kg	99
19) Methylene Chloride	7.41	84	56261	21.1968 ug/kg	95
20) Carbon Disulfide	7.44	76	142548	18.9873 ug/kg	98
21) Acrylonitrile	7.59	53	27348	20.8663 ug/kg	93
22) Methyl Tert Butyl Ether	7.61	73	156161	20.6576 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	93304	21.4821 ug/kg	99
24) n-Hexane	7.92	57	88400	19.7328 ug/kg	98
25) Diisopropyl ether	8.26	45	977581	93.9575 ug/kg	99
26) Vinyl Acetate	8.43	43	80421	13.5589 ug/kg	99
27) 1,1-Dichloroethane	8.47	63	107418	19.6905 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	876768	90.6296 ug/kg	100
29) 2-Butanone	9.02	43	31975	19.0129 ug/kg	99
30) Propionitrile	9.13	54	46691	90.7234 ug/kg	97
31) 2,2-Dichloropropane	9.24	77	79635	19.5578 ug/kg	98
32) cis-1,2-Dichloroethene	9.31	96	61035	21.4260 ug/kg	99
33) Chloroform	9.52	83	100313	20.0172 ug/kg	98
34) 1-Bromopropane	9.65	122	15045	34.9624 ug/kg	97
35) Bromochloromethane	9.75	130	38587	20.8531 ug/kg	98
36) Tetrahydrofuran	9.77	42	91871	84.7496 ug/kg	96
38) 1,1,1-Trichloroethane	10.04	97	89052	19.6499 ug/kg	99
39) Cyclohexane	10.08	56	104443	21.1382 ug/kg	98
40) 1,1-Dichloropropene	10.24	75	69180	19.3994 ug/kg	99
41) Tert-Amyl-Methyl ether	10.34	73	706405	100.4557 ug/kg	99
42) Carbon Tetrachloride	10.39	117	79480	18.9171 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972916.D 8260SL.M Fri Feb 26 18:08:03 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022616\9M972916.D Vial: 7
Acq On : 26 Feb 2016 17:45 Operator: JDS
Sample : WG558910-05 20.0ug/kg LCSP&A Inst : hpms9
Misc : 7,1 STD74755 JDS Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 18:08:03 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	90527	20.5369 ug/kg	98
46)	Benzene	10.60	78	208333	20.8674 ug/kg	99
47)	Trichloroethene	11.35	130	66997	21.1789 ug/kg	99
48)	Methylcyclohexane	11.44	83	86526	21.8084 ug/kg	99
49)	1,2-Dichloropropane	11.56	63	60434	22.0434 ug/kg	98
50)	1,4-Dioxane	11.86	88	9895	240.5812 ug/kg	93
51)	Bromodichloromethane	11.87	83	75135	19.4461 ug/kg	97
52)	Dibromomethane	11.95	174	35322	19.4448 ug/kg	97
53)	2-Chloroethyl Vinyl Ether	12.17	63	12091	17.8871 ug/kg	95
54)	4-Methyl-2-Pentanone	12.19	58	24115	20.0400 ug/kg	96
55)	cis-1,3-Dichloropropene	12.50	75	87149	21.6497 ug/kg	100
56)	Dimethyl Disulfide	12.77	94	98494	24.3477 ug/kg	93
59)	Toluene	12.93	91	232488	22.0532 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	64697	22.1404 ug/kg	98
61)	trans-1,3-Dichloropropene	13.10	75	82572	21.7468 ug/kg	99
62)	1,1,2-Trichloroethane	13.32	97	48550	21.9229 ug/kg	99
63)	2-Hexanone	13.25	43	44207	19.9930 ug/kg	98
64)	1,3-Dichloropropane	13.62	76	81263	22.0217 ug/kg	100
65)	Tetrachloroethene	13.75	164	45917	20.3172 ug/kg	98
66)	Dibromochloromethane	14.01	129	61015	19.7139 ug/kg	98
67)	1,2-Dibromoethane	14.28	107	51513	20.9711 ug/kg	96
68)	1-Chlorohexane	14.35	91	70095	22.5472 ug/kg	96
69)	Chlorobenzene	14.77	112	163223	22.0297 ug/kg	98
70)	1,1,1,2-Tetrachloroethane	14.80	131	59305	21.3139 ug/kg	97
71)	Ethylbenzene	14.79	106	86657	22.7019 ug/kg	97
72)	m-,p-Xylene	14.89	106	210062	44.5603 ug/kg	98
73)	o-Xylene	15.45	106	101843	22.5120 ug/kg	99
74)	Styrene	15.49	104	171375	22.2456 ug/kg	98
75)	Bromoform	15.99	173	38784	19.0857 ug/kg	98
76)	Isopropylbenzene	15.87	105	270256	22.2528 ug/kg	98
78)	1,1,2,2-Tetrachloroethane	16.09	83	55165	21.2054 ug/kg	99
80)	1,2,3-Trichloropropane	16.29	110	21260	21.5492 ug/kg	86
81)	trans-1,4-Dichloro-2-Buten	16.33	53	18165	18.2661 ug/kg	90
82)	n-Propylbenzene	16.39	91	310578	23.0393 ug/kg	99
83)	Bromobenzene	16.52	156	68613	21.5605 ug/kg	95
84)	1,3,5-Trimethylbenzene	16.57	105	233562	23.0817 ug/kg	100
85)	2-Chlorotoluene	16.66	91	209939	23.2194 ug/kg	100
86)	4-Chlorotoluene	16.70	91	187859	22.4731 ug/kg	99
87)	a-Methylstyrene	16.98	118	114587	24.8524 ug/kg	99
88)	tert-Butylbenzene	17.03	134	50773	23.9331 ug/kg	94
89)	1,2,4-Trimethylbenzene	17.08	105	234903	22.1668 ug/kg	100
90)	sec-Butylbenzene	17.30	105	293208	22.4980 ug/kg	99
91)	p-Isopropyltoluene	17.46	119	241644	21.9707 ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	133680	21.1362 ug/kg	100
93)	1,4-Dichlorobenzene	17.79	146	139858	22.1195 ug/kg	98
94)	n-Butylbenzene	17.99	91	214899	21.0150 ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	127494	21.7253 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	14709	19.5247 ug/kg	98
97)	1,2,4-Trichlorobenzene	20.43	180	84305	20.2366 ug/kg	97
98)	Hexachlorobutadiene	20.59	225	43374	19.7513 ug/kg	98
99)	Naphthalene	20.81	128	209756	20.0741 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	83450	20.6525 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022616\9M972916.D Vial: 7
Acq On : 26 Feb 2016 17:45 Operator: JDS
Sample : WG558910-05 20.0ug/kg LCSP&A Inst : hpms9
Misc : 7,1 STD74755 JDS Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 18:08 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

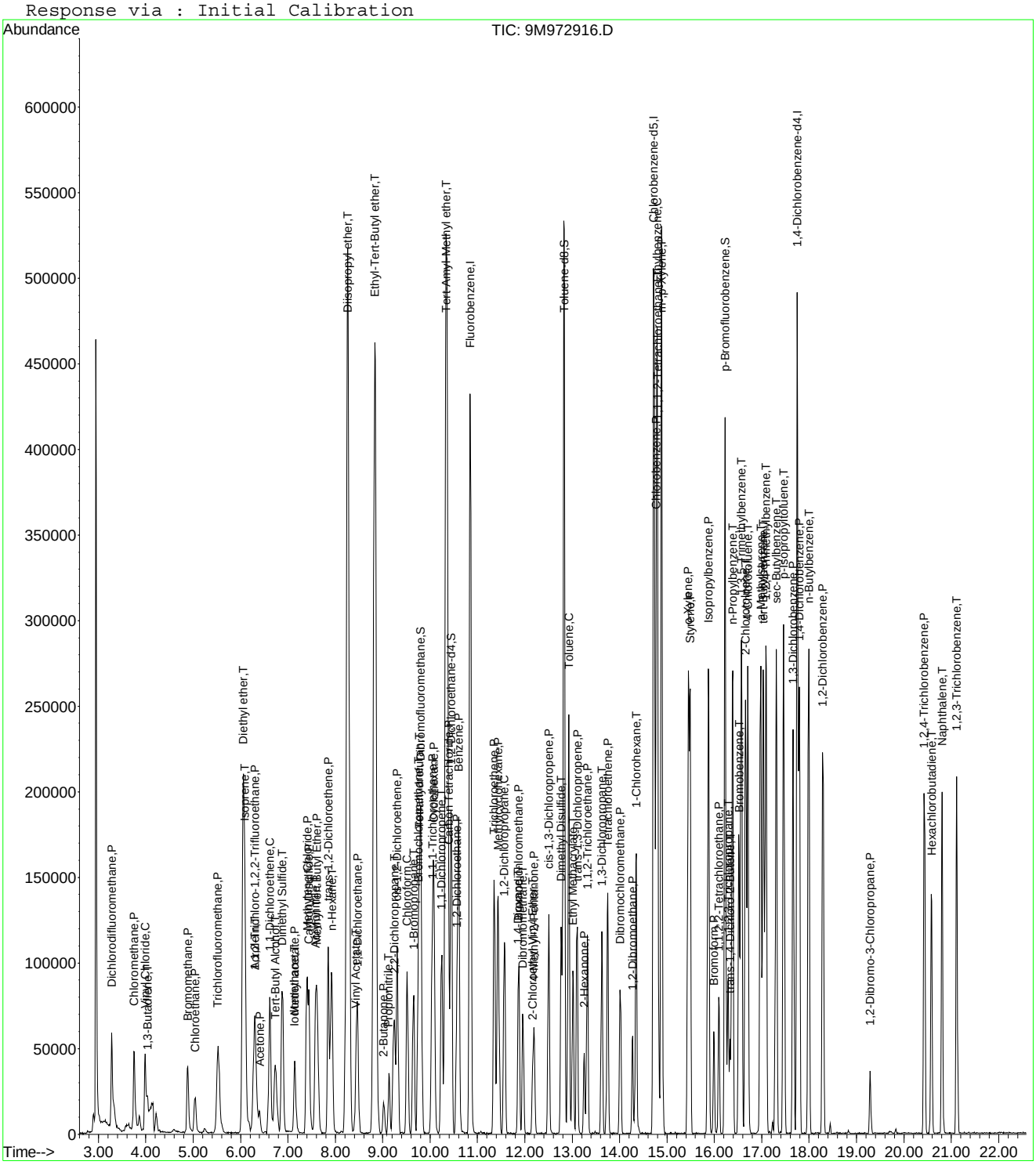

9M972916.D 8260SL.M Fri Feb 26 18:08:03 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022616\9M972914.D Vial: 5
Acq On : 26 Feb 2016 16:43 Operator: JDS
Sample : WG558910-03 20.0ug/kg LCSDUP Inst : hpms9
Misc : 7,1 STD74755 JDS Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 17:06:08 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	620699	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	445879	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	205574	50.00 ug/kg	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.80	111	172594	51.2984 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 102.60%		
43) 1,2-Dichloroethane-d4	10.45	65	212529	50.3453 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.70%		
58) Toluene-d8	12.82	98	607918	53.9024 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 107.80%		
79) p-Bromofluorobenzene	16.23	95	223309	55.7860 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 111.58%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	99939	23.6230 ug/kg	99
3) Chloromethane	3.75	50	85710	21.1061 ug/kg	100
4) Vinyl Chloride	3.99	62	95655	23.5301 ug/kg	99
5) 1,3-Butadiene	4.04	54	6449	1.6675 ug/kg	90
6) Bromomethane	4.89	94	52788	19.9934 ug/kg	96
7) Chloroethane	5.04	64	38071	21.0211 ug/kg	100
8) Trichlorofluoromethane	5.53	101	115147	18.8856 ug/kg	100
9) Diethyl ether	6.06	59	222627	78.1085 ug/kg	99
10) Isoprene	6.10	67	89636	24.6247 ug/kg	97
11) Acrolein	6.30	56	41070	72.2641 ug/kg	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	62864	19.9927 ug/kg	99
13) Acetone	6.42	43	32039	18.9369 ug/kg	96
14) 1,1-Dichloroethene	6.62	61	111575	19.2359 ug/kg	95
15) Tert-Butyl Alcohol	6.76	59	132205	208.3047 ug/kg	98
16) Dimethyl Sulfide	6.88	62	76954	31.3911 ug/kg	97
17) Iodomethane	7.14	142	34256	21.5601 ug/kg	97
18) Methyl acetate	7.14	43	70940	22.4975 ug/kg	98
19) Methylene Chloride	7.40	84	64281	20.3485 ug/kg	98
20) Carbon Disulfide	7.44	76	169037	18.9178 ug/kg	98
21) Acrylonitrile	7.59	53	32296	20.7040 ug/kg	94
22) Methyl Tert Butyl Ether	7.61	73	189118	21.0197 ug/kg	100
23) trans-1,2-Dichloroethene	7.85	61	107612	20.8172 ug/kg	99
24) n-Hexane	7.92	57	103017	19.3211 ug/kg	98
25) Diisopropyl ether	8.26	45	1147560	92.6704 ug/kg	100
26) Vinyl Acetate	8.43	43	110640	15.6730 ug/kg	97
27) 1,1-Dichloroethane	8.46	63	126159	19.4305 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	1032372	89.6620 ug/kg	100
29) 2-Butanone	9.02	43	40878	20.4228 ug/kg	94
30) Propionitrile	9.14	54	57186	93.3604 ug/kg	97
31) 2,2-Dichloropropane	9.24	77	96311	19.8737 ug/kg	97
32) cis-1,2-Dichloroethene	9.31	96	75389	22.2360 ug/kg	85
33) Chloroform	9.52	83	119994	20.1183 ug/kg	100
34) 1-Bromopropane	9.66	122	15993	31.3362 ug/kg	85
35) Bromochloromethane	9.75	130	45138	20.4955 ug/kg	98
36) Tetrahydrofuran	9.78	42	111940	86.7624 ug/kg	96
38) 1,1,1-Trichloroethane	10.05	97	106279	19.7038 ug/kg	99
39) Cyclohexane	10.08	56	121871	20.7241 ug/kg	100
40) 1,1-Dichloropropene	10.25	75	83540	19.6829 ug/kg	98
41) Tert-Amyl-Methyl ether	10.34	73	839148	100.2642 ug/kg	99
42) Carbon Tetrachloride	10.39	117	95316	19.0611 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022616\9M972914.D Vial: 5
Acq On : 26 Feb 2016 16:43 Operator: JDS
Sample : WG558910-03 20.0ug/kg LCSDUP Inst : hpms9
Misc : 7,1 STD74755 JDS Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 17:06:08 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	104129	19.8479	ug/kg	95
46)	Benzene	10.61	78	247574	20.8354	ug/kg	98
47)	Trichloroethene	11.35	130	77072	20.4706	ug/kg	96
48)	Methylcyclohexane	11.44	83	98136	20.7822	ug/kg	99
49)	1,2-Dichloropropane	11.57	63	72708	22.2826	ug/kg	95
50)	1,4-Dioxane	11.88	88	9609	196.2957	ug/kg	94
51)	Bromodichloromethane	11.87	83	90769	19.7385	ug/kg	100
52)	Dibromomethane	11.96	174	43439	20.0921	ug/kg	96
53)	2-Chloroethyl Vinyl Ether	12.17	63	15040	18.5667	ug/kg	93
54)	4-Methyl-2-Pentanone	12.20	58	28669	20.0175	ug/kg	96
55)	cis-1,3-Dichloropropene	12.50	75	106495	22.2282	ug/kg	100
56)	Dimethyl Disulfide	12.77	94	119669	24.8552	ug/kg	93
59)	Toluene	12.93	91	276879	21.7338	ug/kg	99
60)	Ethyl Methacrylate	13.01	69	79838	22.6091	ug/kg	97
61)	trans-1,3-Dichloropropene	13.11	75	93938	20.4727	ug/kg	96
62)	1,1,2-Trichloroethane	13.32	97	58157	21.7312	ug/kg	100
63)	2-Hexanone	13.25	43	52720	19.7304	ug/kg	99
64)	1,3-Dichloropropane	13.62	76	97955	21.9663	ug/kg	100
65)	Tetrachloroethene	13.75	164	56482	20.6811	ug/kg	94
66)	Dibromochloromethane	14.01	129	72452	19.3714	ug/kg	100
67)	1,2-Dibromoethane	14.27	107	61409	20.6876	ug/kg	100
68)	1-Chlorohexane	14.35	91	82008	21.8290	ug/kg	98
69)	Chlorobenzene	14.77	112	198906	22.2151	ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.81	131	71898	21.3826	ug/kg	98
71)	Ethylbenzene	14.79	106	102700	22.2640	ug/kg	97
72)	m-,p-Xylene	14.89	106	256615	45.0459	ug/kg	96
73)	o-Xylene	15.45	106	125697	22.9922	ug/kg	97
74)	Styrene	15.49	104	203346	21.8426	ug/kg	100
75)	Bromoform	15.99	173	46626	18.9870	ug/kg	98
76)	Isopropylbenzene	15.87	105	322074	21.9451	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	68065	21.8265	ug/kg	100
80)	1,2,3-Trichloropropane	16.28	110	25173	21.2854	ug/kg	87
81)	trans-1,4-Dichloro-2-Buten	16.34	53	21611	18.1286	ug/kg	90
82)	n-Propylbenzene	16.38	91	372144	23.0297	ug/kg	99
83)	Bromobenzene	16.53	156	81902	21.4697	ug/kg	94
84)	1,3,5-Trimethylbenzene	16.57	105	276918	22.8295	ug/kg	98
85)	2-Chlorotoluene	16.66	91	251839	23.2359	ug/kg	99
86)	4-Chlorotoluene	16.70	91	225336	22.4875	ug/kg	98
87)	a-Methylstyrene	16.98	118	138841	25.1205	ug/kg	99
88)	tert-Butylbenzene	17.03	134	60038	23.6086	ug/kg	98
89)	1,2,4-Trimethylbenzene	17.08	105	276017	21.7284	ug/kg	87
90)	sec-Butylbenzene	17.31	105	345899	22.1409	ug/kg	100
91)	p-Isopropyltoluene	17.46	119	285280	21.6380	ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	159315	21.0134	ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	164589	21.7154	ug/kg	100
94)	n-Butylbenzene	17.99	91	247203	20.1663	ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	151576	21.5469	ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	17324	19.1835	ug/kg	97
97)	1,2,4-Trichlorobenzene	20.43	180	100441	20.1128	ug/kg	96
98)	Hexachlorobutadiene	20.58	225	50480	19.1763	ug/kg	98
99)	Naphthalene	20.81	128	233927	18.6758	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.12	180	93358	19.2742	ug/kg	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022616\9M972914.D Vial: 5
Acq On : 26 Feb 2016 16:43 Operator: JDS
Sample : WG558910-03 20.0ug/kg LCSDUP Inst : hpms9
Misc : 7,1 STD74755 JDS Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 17:06 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

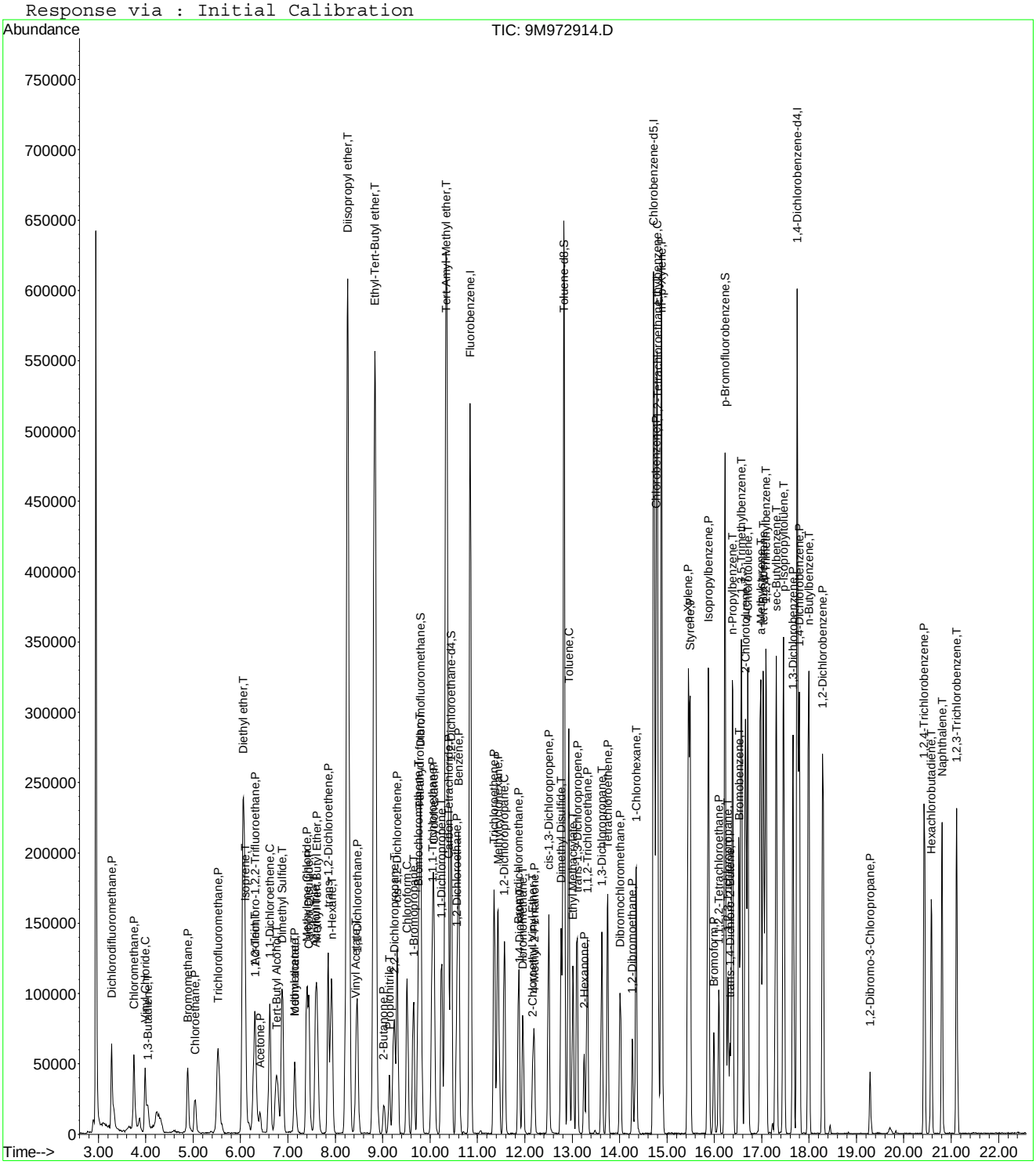

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022616\9M972932.D Vial: 23
Acq On : 27 Feb 2016 1:53 Operator: ADC
Sample : WG558938-02 A MS 8260 5.31g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 27 02:16:32 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	631535	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	451174	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	208227	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	170064	49.6792 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.36%		
43) 1,2-Dichloroethane-d4	10.45	65	199896	46.5402 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.08%		
58) Toluene-d8	12.83	98	615442	53.9291 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 107.86%		
79) p-Bromofluorobenzene	16.23	95	224331	55.3273 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 110.66%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	70009	16.2644 ug/kg	99
3) Chloromethane	3.74	50	74151	17.9464 ug/kg	100
4) Vinyl Chloride	3.99	62	90151	21.7957 ug/kg	100
6) Bromomethane	4.88	94	49224	18.3237 ug/kg	98
7) Chloroethane	5.04	64	36552	19.8360 ug/kg	99
8) Trichlorofluoromethane	5.53	101	114319	18.4281 ug/kg	100
9) Diethyl ether	6.07	59	1660	0.5724 ug/kg	83
10) Isoprene	6.09	67	87114	23.5212 ug/kg	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	66379	20.7484 ug/kg	98
13) Acetone	6.40	43	26066	14.6386 ug/kg	93
14) 1,1-Dichloroethene	6.62	61	109011	18.4714 ug/kg	95
16) Dimethyl Sulfide	6.88	62	69955	28.0464 ug/kg	99
17) Iodomethane	7.14	142	29539	18.6990 ug/kg	100
18) Methyl acetate	7.14	43	47733	14.8780 ug/kg	98
19) Methylene Chloride	7.40	84	61692	19.1939 ug/kg	99
20) Carbon Disulfide	7.45	76	159618	17.5572 ug/kg	100
21) Acrylonitrile	7.59	53	27359	17.2381 ug/kg	93
22) Methyl Tert Butyl Ether	7.61	73	166294	18.1658 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	106127	20.1777 ug/kg	99
24) n-Hexane	7.91	57	109688	20.2193 ug/kg	96
27) 1,1-Dichloroethane	8.46	63	124186	18.7985 ug/kg	99
29) 2-Butanone	9.03	43	30135	14.7972 ug/kg	99
31) 2,2-Dichloropropane	9.24	77	87582	17.7623 ug/kg	100
32) cis-1,2-Dichloroethene	9.31	96	71379	20.6920 ug/kg	99
33) Chloroform	9.52	83	114180	18.8151 ug/kg	99
34) 1-Bromopropane	9.64	122	16797	32.3138 ug/kg	92
35) Bromochloromethane	9.75	130	43279	19.3142 ug/kg	98
38) 1,1,1-Trichloroethane	10.04	97	105757	19.2706 ug/kg	98
39) Cyclohexane	10.08	56	125682	21.0054 ug/kg	98
40) 1,1-Dichloropropene	10.25	75	81569	18.8887 ug/kg	97
42) Carbon Tetrachloride	10.39	117	92282	18.1378 ug/kg	100
45) 1,2-Dichloroethane	10.56	62	103038	19.3030 ug/kg	97
46) Benzene	10.60	78	245004	20.2653 ug/kg	98
47) Trichloroethene	11.35	130	78638	20.5282 ug/kg	97
48) Methylcyclohexane	11.44	83	102507	21.3354 ug/kg	99
49) 1,2-Dichloropropane	11.56	63	68070	20.5033 ug/kg	98
51) Bromodichloromethane	11.87	83	86499	18.4872 ug/kg	99
52) Dibromomethane	11.95	174	38551	17.5252 ug/kg	98
53) 2-Chloroethyl Vinyl Ether	12.17	63	12149	15.3239 ug/kg	96
54) 4-Methyl-2-Pentanone	12.19	58	23691	16.2579 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022616\9M972932.D Vial: 23
Acq On : 27 Feb 2016 1:53 Operator: ADC
Sample : WG558938-02 A MS 8260 5.31g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 27 02:16:32 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
55)	cis-1,3-Dichloropropene	12.50	75	97668	20.0360 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	104475	21.3271 ug/kg	94
59)	Toluene	12.93	91	270827	21.0092 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	66337	18.5653 ug/kg	99
61)	trans-1,3-Dichloropropene	13.11	75	86274	18.5818 ug/kg	99
62)	1,1,2-Trichloroethane	13.32	97	54211	20.0190 ug/kg	96
63)	2-Hexanone	13.25	43	43054	15.9238 ug/kg	98
64)	1,3-Dichloropropane	13.62	76	91149	20.2002 ug/kg	99
65)	Tetrachloroethene	13.75	164	54071	19.5659 ug/kg	98
66)	Dibromochloromethane	14.01	129	68811	18.1819 ug/kg	100
67)	1,2-Dibromoethane	14.28	107	56886	18.9389 ug/kg	98
68)	1-Chlorohexane	14.35	91	82783	21.7767 ug/kg	98
69)	Chlorobenzene	14.77	112	189796	20.9488 ug/kg	98
70)	1,1,1,2-Tetrachloroethane	14.80	131	70003	20.5747 ug/kg	98
71)	Ethylbenzene	14.79	106	98799	21.1669 ug/kg	98
72)	m-,p-Xylene	14.89	106	242456	42.0610 ug/kg	99
73)	o-Xylene	15.45	106	120574	21.7963 ug/kg	98
74)	Styrene	15.49	104	194038	20.5982 ug/kg	99
75)	Bromoform	15.99	173	41284	16.6143 ug/kg	99
76)	Isopropylbenzene	15.87	105	318244	21.4297 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	58358	18.4754 ug/kg	99
80)	1,2,3-Trichloropropane	16.28	110	23169	19.3413 ug/kg	84
81)	trans-1,4-Dichloro-2-Buten	16.33	53	18671	15.4628 ug/kg	83
82)	n-Propylbenzene	16.39	91	365150	22.3090 ug/kg	100
83)	Bromobenzene	16.52	156	77057	19.9423 ug/kg	93
84)	1,3,5-Trimethylbenzene	16.57	105	271192	22.0725 ug/kg	98
85)	2-Chlorotoluene	16.66	91	239286	21.7964 ug/kg	99
86)	4-Chlorotoluene	16.70	91	212963	20.9819 ug/kg	99
87)	a-Methylstyrene	16.98	118	128436	22.9419 ug/kg	94
88)	tert-Butylbenzene	17.03	134	60171	23.3594 ug/kg	89
89)	1,2,4-Trimethylbenzene	17.08	105	258593	20.0974 ug/kg	98
90)	sec-Butylbenzene	17.31	105	354301	22.3898 ug/kg	98
91)	p-Isopropyltoluene	17.46	119	283489	21.2282 ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	148859	19.3841 ug/kg	100
93)	1,4-Dichlorobenzene	17.79	146	150065	19.5468 ug/kg	100
94)	n-Butylbenzene	17.99	91	245050	19.7360 ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	140837	19.7652 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	14138	15.4560 ug/kg	96
97)	1,2,4-Trichlorobenzene	20.43	180	83999	16.6061 ug/kg	98
98)	Hexachlorobutadiene	20.58	225	53375	20.0177 ug/kg	97
99)	Naphthalene	20.81	128	196510	15.4887 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	82254	16.7653 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022616\9M972932.D Vial: 23
Acq On : 27 Feb 2016 1:53 Operator: ADC
Sample : WG558938-02 A MS 8260 5.31g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 27 2:16 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

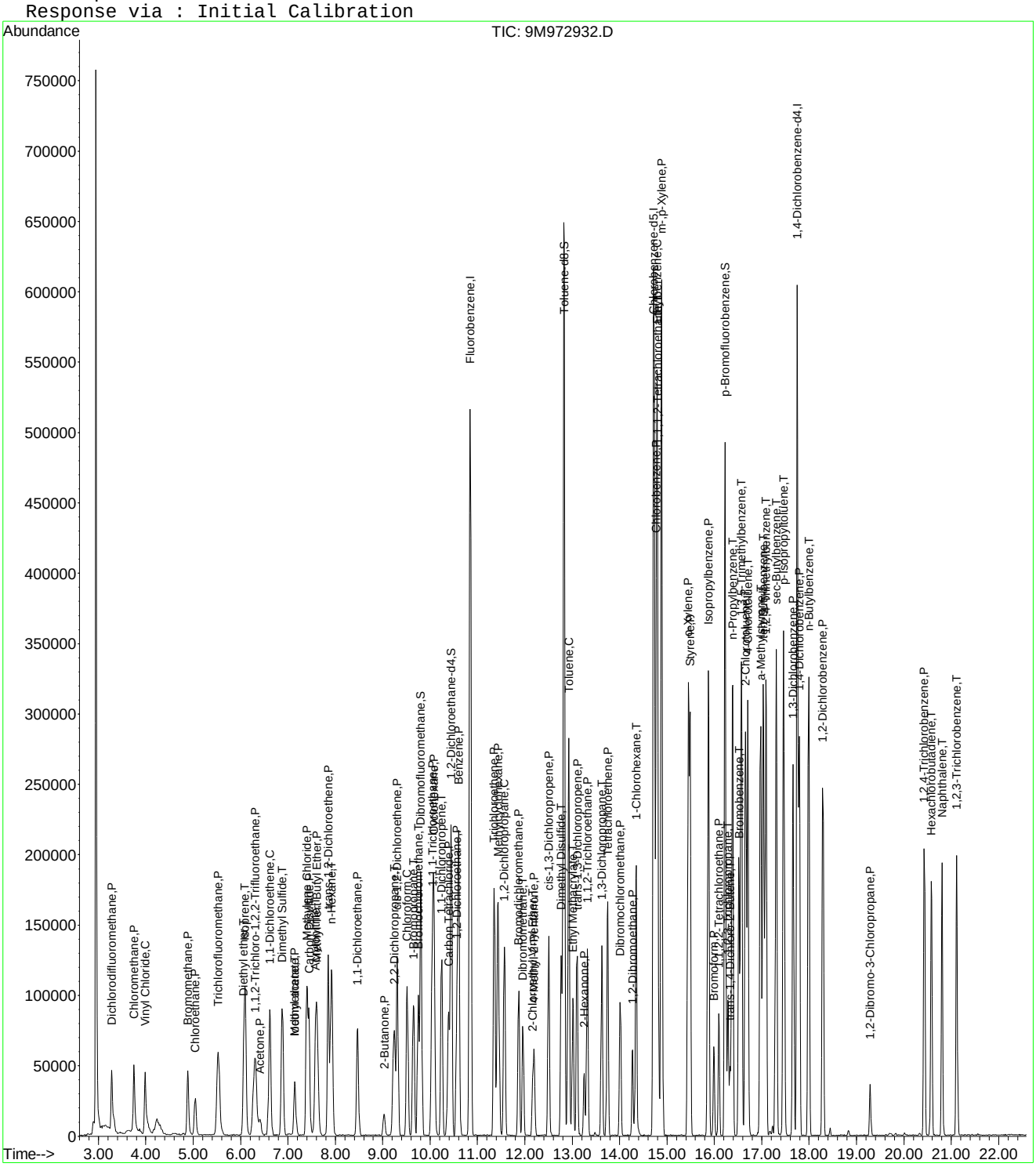

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022616\9M972933.D Vial: 24
Acq On : 27 Feb 2016 2:24 Operator: ADC
Sample : WG558938-03 A MSD 8260 5.49g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 27 02:46:42 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	638726	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	458671	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	210888	50.00 ug/kg	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.80	111	170571	49.2663 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.54%		
43) 1,2-Dichloroethane-d4	10.45	65	202689	46.6592 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.32%		
58) Toluene-d8	12.83	98	621690	53.5861 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 107.18%		
79) p-Bromofluorobenzene	16.23	95	230416	56.1110 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 112.22%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	76780	17.6366 ug/kg	97
3) Chloromethane	3.74	50	74954	17.9365 ug/kg	98
4) Vinyl Chloride	3.99	62	95152	22.7458 ug/kg	98
6) Bromomethane	4.88	94	50954	18.7541 ug/kg	98
7) Chloroethane	5.04	64	38928	20.8876 ug/kg	98
8) Trichlorofluoromethane	5.53	101	121904	19.4296 ug/kg	97
9) Diethyl ether	6.07	59	1471	0.5015 ug/kg	93
10) Isoprene	6.09	67	97144	25.9341 ug/kg	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	70390	21.7544 ug/kg	96
13) Acetone	6.40	43	28367	15.9426 ug/kg	96
14) 1,1-Dichloroethene	6.61	61	120025	20.1086 ug/kg	99
16) Dimethyl Sulfide	6.88	62	78814	31.2424 ug/kg	98
17) Iodomethane	7.14	142	35673	21.7847 ug/kg	97
18) Methyl acetate	7.15	43	52104	16.0576 ug/kg	97
19) Methylene Chloride	7.41	84	70100	21.5642 ug/kg	92
20) Carbon Disulfide	7.45	76	174164	18.9415 ug/kg	98
21) Acrylonitrile	7.59	53	28310	17.6365 ug/kg	97
22) Methyl Tert Butyl Ether	7.61	73	185396	20.0245 ug/kg	97
23) trans-1,2-Dichloroethene	7.85	61	114404	21.5065 ug/kg	100
24) n-Hexane	7.92	57	117482	21.4121 ug/kg	98
27) 1,1-Dichloroethane	8.47	63	132767	19.8711 ug/kg	99
29) 2-Butanone	9.02	43	33430	16.2303 ug/kg	99
31) 2,2-Dichloropropane	9.24	77	91975	18.4433 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	76867	22.0321 ug/kg	98
33) Chloroform	9.52	83	122334	19.9318 ug/kg	99
34) 1-Bromopropane	9.65	122	18272	34.6781 ug/kg	99
35) Bromochloromethane	9.75	130	45787	20.2034 ug/kg	98
38) 1,1,1-Trichloroethane	10.04	97	111673	20.1195 ug/kg	99
39) Cyclohexane	10.08	56	135265	22.3526 ug/kg	99
40) 1,1-Dichloropropene	10.25	75	88334	20.2250 ug/kg	99
41) Tert-Amyl-Methyl ether	10.25	73	12174	1.4135 ug/kg#	45
42) Carbon Tetrachloride	10.39	117	98217	19.0869 ug/kg	100
45) 1,2-Dichloroethane	10.56	62	108338	20.0674 ug/kg	97
46) Benzene	10.60	78	257261	21.0395 ug/kg	100
47) Trichloroethene	11.35	130	82861	21.3870 ug/kg	95
48) Methylcyclohexane	11.44	83	114418	23.5464 ug/kg	98
49) 1,2-Dichloropropane	11.57	63	74762	22.2654 ug/kg	99
51) Bromodichloromethane	11.87	83	92743	19.5986 ug/kg	100
52) Dibromomethane	11.97	174	41551	18.6764 ug/kg	99
53) 2-Chloroethyl Vinyl Ether	12.17	63	12352	15.3896 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022616\9M972933.D Vial: 24
Acq On : 27 Feb 2016 2:24 Operator: ADC
Sample : WG558938-03 A MSD 8260 5.49g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 27 02:46:42 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
54)	4-Methyl-2-Pentanone	12.20	58	27242	18.4843 ug/kg	97
55)	cis-1,3-Dichloropropene	12.50	75	105474	21.3938 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	118286	23.8746 ug/kg	93
59)	Toluene	12.93	91	290794	22.1894 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	76622	21.0932 ug/kg	96
61)	trans-1,3-Dichloropropene	13.10	75	93455	19.7994 ug/kg	99
62)	1,1,2-Trichloroethane	13.32	97	57942	21.0470 ug/kg	99
63)	2-Hexanone	13.25	43	47470	17.2701 ug/kg	97
64)	1,3-Dichloropropane	13.62	76	97469	21.2478 ug/kg	98
65)	Tetrachloroethene	13.75	164	58895	20.9632 ug/kg	96
66)	Dibromochloromethane	14.01	129	75217	19.5498 ug/kg	96
67)	1,2-Dibromoethane	14.28	107	59512	19.4894 ug/kg	98
68)	1-Chlorohexane	14.35	91	88582	22.9213 ug/kg	96
69)	Chlorobenzene	14.77	112	202605	21.9971 ug/kg	97
70)	1,1,1,2-Tetrachloroethane	14.80	131	73554	21.2651 ug/kg	100
71)	Ethylbenzene	14.79	106	106043	22.3475 ug/kg	99
72)	m-,p-Xylene	14.89	106	260166	44.3956 ug/kg	100
73)	o-Xylene	15.45	106	129463	23.0206 ug/kg	99
74)	Styrene	15.49	104	211472	22.0820 ug/kg	99
75)	Bromoform	15.99	173	44620	17.6633 ug/kg	98
76)	Isopropylbenzene	15.87	105	341455	22.6168 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	64159	20.0556 ug/kg	100
80)	1,2,3-Trichloropropane	16.29	110	23681	19.5193 ug/kg	90
81)	trans-1,4-Dichloro-2-Buten	16.33	53	18895	15.4509 ug/kg	76
82)	n-Propylbenzene	16.38	91	390630	23.5646 ug/kg	99
83)	Bromobenzene	16.52	156	83303	21.2867 ug/kg	95
84)	1,3,5-Trimethylbenzene	16.57	105	291936	23.4611 ug/kg	99
85)	2-Chlorotoluene	16.66	91	253697	22.8175 ug/kg	100
86)	4-Chlorotoluene	16.70	91	228339	22.2130 ug/kg	98
87)	a-Methylstyrene	16.98	118	140119	24.7129 ug/kg	99
88)	tert-Butylbenzene	17.03	134	62957	24.1326 ug/kg	88
89)	1,2,4-Trimethylbenzene	17.08	105	286312	21.9709 ug/kg	100
90)	sec-Butylbenzene	17.30	105	375502	23.4301 ug/kg	99
91)	p-Isopropyltoluene	17.46	119	303793	22.4616 ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	159501	20.5078 ug/kg	98
93)	1,4-Dichlorobenzene	17.79	146	160929	20.6974 ug/kg	98
94)	n-Butylbenzene	17.99	91	264921	21.0671 ug/kg	99
95)	1,2-Dichlorobenzene	18.30	146	153811	21.3136 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.30	157	15097	16.2962 ug/kg	99
97)	1,2,4-Trichlorobenzene	20.44	180	95403	18.6226 ug/kg	98
98)	Hexachlorobutadiene	20.59	225	58935	21.8240 ug/kg	98
99)	Naphthalene	20.81	128	219097	17.0511 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	92847	18.6857 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022616\9M972933.D Vial: 24
Acq On : 27 Feb 2016 2:24 Operator: ADC
Sample : WG558938-03 A MSD 8260 5.49g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 27 2:46 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

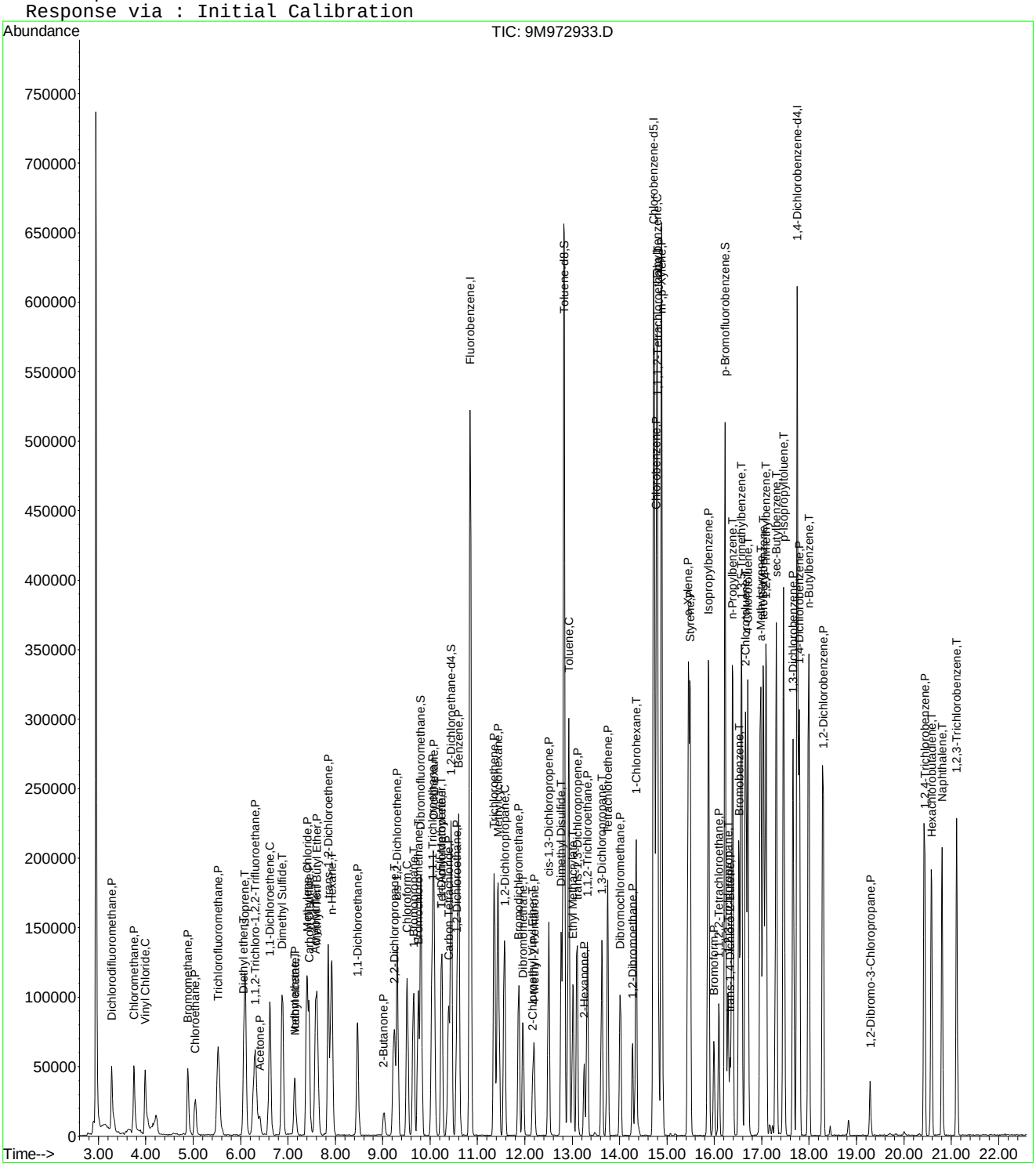

2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021240-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPT04(5-5.5)240216	**Prep Method:**	6850	**Prep Date:**	02/25/2016 14:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558779	**Analyst:**	JWR	**Run Date:**	02/25/2016 23:58
Collect Date:	02/24/2016 10:00	**Dilution:**	1	**File ID:**	1LM.LM33375
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	101		4.93	2.46	1.23

Certificate of Analysis

Sample #:	L16021240-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT04(15-15.5)240216	**Prep Method:**	6850	**Prep Date:**	02/25/2016 14:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558779	**Analyst:**	JWR	**Run Date:**	02/26/2016 00:17
Collect Date:	02/24/2016 10:28	**Dilution:**	1	**File ID:**	1LM.LM33376
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.44	U	4.90	2.44	1.22

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021240-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPT04(20-21)240216	**Prep Method:**	6850	**Prep Date:**	02/25/2016 14:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558779	**Analyst:**	JWR	**Run Date:**	02/26/2016 00:36
Collect Date:	02/24/2016 10:55	**Dilution:**	1	**File ID:**	1LM.LM33377
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	27.2		4.62	2.30	1.15

Certificate of Analysis

Sample #:	L16021240-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPT04(20-21)240216FD	**Prep Method:**	6850	**Prep Date:**	02/25/2016 14:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558779	**Analyst:**	JWR	**Run Date:**	02/26/2016 00:55
Collect Date:	02/24/2016 10:55	**Dilution:**	1	**File ID:**	1LM.LM33378
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	26.7		4.58	2.30	1.15

Certificate of Analysis

Sample #:	L16021240-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT04(25-25.5)240216	**Prep Method:**	6850	**Prep Date:**	02/25/2016 14:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558779	**Analyst:**	JWR	**Run Date:**	02/26/2016 13:21
Collect Date:	02/24/2016 11:22	**Dilution:**	5	**File ID:**	1LM.LM33394
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	83.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	152		23.2	11.6	5.80

Certificate of Analysis

Microbac

Lab Report #: L16021240
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L16021240-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT04(29-30)240216	**Prep Method:**	6850	**Prep Date:**	02/25/2016 14:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558779	**Analyst:**	JWR	**Run Date:**	02/26/2016 13:40
Collect Date:	02/24/2016 12:00	**Dilution:**	20	**File ID:**	1LM.LM33395
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	79.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	672		97.4	48.6	24.3

Certificate of Analysis

Sample #:	L16021240-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT04(36.5-37)240216	**Prep Method:**	6850	**Prep Date:**	02/25/2016 14:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558779	**Analyst:**	JWR	**Run Date:**	02/26/2016 13:59
Collect Date:	02/24/2016 15:15	**Dilution:**	50	**File ID:**	1LM.LM33396
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	79.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3200		248	124	62.0

Certificate of Analysis

Sample #:	L16021240-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT04(34-34.5)240216	**Prep Method:**	6850	**Prep Date:**	02/25/2016 14:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558779	**Analyst:**	JWR	**Run Date:**	02/26/2016 12:24
Collect Date:	02/24/2016 15:15	**Dilution:**	50	**File ID:**	1LM.LM33391
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	84.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2180		232	116	57.9

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

MICROBAC

Semivolatile Sample Extract Log

Parameter: Perchlorate
SOP #: HPLC 06
Analyst: JWR
Spike/Surrogate analyst: JWR, ~~MD~~, ADC
Surrogate #: NA
Spike # A: STD72686
Ext Solvent: DI-H2O
Ext Solvent: NA
Ext Disk: NA

Matrix: Soils
Rev #: 07
Date/Time Extracted: 02/25/16/1430
Witness:
Spike # B: NA
Lot #: NA
Lot #: NA
Lot #: NA

Extraction Work Group: WG558774
Analytical Work Group: WG558779
Run ID: R4473230
Pipetter(s): Eppendorf #403
Analytical Balance ID: BAL017
Reagent: Tubes Lot #: RGT34011
Reagent: Sand Lot #: C0A16150
Other: IS Lot #: C0A18071

Color Code
T = Transparent
C = Colored
O = Opaque

	Sample ID	Test Code	pH	Initial Wt / Vol	JWR ~~Surrogate~~ Amount IS	Amount Spike	Final Volume	Extract Color	Comments
1	WG558774-01	6850		5.004 g	0.250 ml	1.0 ml	50 ml		MCT (2 ug/kg) (10,000 us)
2	WG558774-02			5.018 g		NA			Blank
3	WG558774-03			5.012 g		1.0 ml			LCS (2 ug/kg)
4	L16021240-01			5.078 g		NA			
5	-02			5.099 g		NA			
6	-03			5.128 g		NA			
7	-04			5.134 g		NA			
8	-05			5.153 g		NA			
9	-06			5.183 g		NA			
10	-07			5.056 g		NA			
11	Ref -08			5.101 g		NA			WG558774-04 Ref
12	MS -08			5.109 g		1.0 ml			WG558774-05 MS (@2 ug/kg)
13	MSD -08			5.108 g		1.0 ml			WG558774-06 MSD (@2 ug/kg)
14	L16021061-01			5.090 g	0.250 mL	1.0 mL	50 mL		P&A-ADC (2 ug/kg)
15	-02			5.057 g					P&A-ADC (2 ug/kg)
16	-03			5.006 g					P&A-ADC (2 ug/kg)
17	-04			5.007 g					P&A-ADC (2 ug/kg)
18	L16021192-01			5.033 g	0.250 ml	1.0 ml	50 ml		P&A-WTD (2 ug/kg)
19	-02			5.003 g					P&A-WTD (2 ug/kg)
20	-03			5.079 g					P&A-WTD (2 ug/kg)
21	-04			5.069 g					P&A-WTD (2 ug/kg)
22									
23									
24									

Reviewed by: [signature]

Analytical WG558779 (soils)

Perchlorate Conductivity Check

(perchlorate1)

Conductivity Probe Calibration Check: 1374 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG558774-01 MCT	9,770.	
-02 Blank	1.23	
-03 LCS	1.22	
L16021061-01 P&A-ADC	5.41	
-02 P&A-ADC	5.92	
-03 P&A-ADC	5.96	
-04 P&A-ADC	5.68	
L16021192-01 P&A-WTD	5.83	
-02 P&A-WTD	5.47	
-03 P&A-WTD	5.61	
-04 P&A-WTD	5.57	
L16021240-01	14.91	
-02	3.75	
-03	4.37	
-04	4.28	
-05	4.44	
-06	5.31	
-07	9.37	
-08 Ref	6.50	
-08 MS	6.62	
-08 MSD	6.02	

Analyst: John Richards

Date/Time: 02/26/16 / 1400

DCN#116897

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 021716_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG557864 (waters)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 MS/MSD STD: NA

Comments: ICAL WG557856 : Alternate Source STD72685
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM33244	WG557856-01 CCB	1	1		02/17/16 19:12
2	1LM.LM33245	WG557856-02 STD (0.1 ug/L)	1	1	STD72683	02/17/16 19:31
3	1LM.LM33246	WG557856-03 STD (0.2 ug/L)	1	1	STD72683	02/17/16 19:50
4	1LM.LM33247	WG557856-04 STD (0.5 ug/L)	1	1	STD72683	02/17/16 20:08
5	1LM.LM33248	WG557856-05 STD (1.0 ug/L)	1	1	STD72683	02/17/16 20:27
6	1LM.LM33249	WG557856-06 STD (2.0 ug/L)	1	1	STD72683	02/17/16 20:46
7	1LM.LM33250	WG557856-07 STD (5.0 ug/L)	1	1	STD72683	02/17/16 21:05
8	1LM.LM33251	WG557856-08 STD (10 ug/L)	1	1	STD72683	02/17/16 21:24
9	1LM.LM33252	WG557856-09 SSCV (1.0 ug/L)	1	1	STD72685	02/17/16 21:43
10	1LM.LM33253	WG557868-01 CCB	1	1		02/17/16 22:02
11	1LM.LM33254	WG557868-02 CCV (1.0ug/L)	1	1	STD72683	02/17/16 22:21
12	1LM.LM33255	WG557864-05 MRL (0.2ug/L)	1	1	STD72683	02/17/16 22:40
13	1LM.LM33256	WG557864-01 MCT (0.2ug/L)	1	1	STD72685	02/17/16 22:59
14	1LM.LM33257	WG557864-02 BLANK	1	1		02/17/16 23:18
15	1LM.LM33258	WG557864-03 LCS (0.2ug/L)	1	1	STD72685	02/17/16 23:37
16	1LM.LM33259	WG557864-04 LCS2 (0.2ug/L)	1	1	STD72685	02/17/16 23:56
17	1LM.LM33260	L16020819-01 (1000x) (NR)	1	1000		02/18/16 00:15
18	1LM.LM33261	L16020819-01 (100x) (NR)	1	100		02/18/16 00:34
19	1LM.LM33262	L16020819-01 (10x) (NR)	1	10		02/18/16 00:53
20	1LM.LM33263	L16020819-01 Neat	1	1		02/18/16 01:11
21	1LM.LM33264	Blank Rinse	1	1		02/18/16 01:30
22	1LM.LM33265	Blank Rinse	1	1		02/18/16 01:49
23	1LM.LM33266	WG557868-03 CCV (1.0ug/L)	1	1	STD72683	02/18/16 02:08
24	1LM.LM33267	WG557864-06 MRL (0.2ug/L)	1	1	STD72683	02/18/16 02:27
25	1LM.LM33268	WG557868-04 CCB	1	1		02/18/16 02:46

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17	X	1	Analyzed too dilute	
	L16020819-01 (1000x) (NR) : Results from this sample at this dilution are not needed.			
18	X	1	Analyzed too dilute	
	L16020819-01 (100x) (NR) : Results from this sample at this dilution are not needed.			
19	X	1	Analyzed too dilute	

Page: 1 Approved: 18-FEB-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 021716_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG557864 (waters)

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 NA

Comments

Seq.	Rerun	Dil.	Reason	Analytes
	L16020819-01 (10x) (NR) : Results from this sample at this dilution are not needed.			

Page: 2 Approved: 18-FEB-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 022516_JWR.TXT
Analyst1: JWR Analyst2: WTD/ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG558779 (SOILS)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 MS/MSD STD: STD72685

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM33355	WG558803-01 CCB	1	1		02/25/16 17:40
2	1LM.LM33356	WG558803-02 CCV (1.0ug/L)	1	1	STD72683	02/25/16 17:58
3	1LM.LM33357	WG558779-07 MRL (2.0ug/kg)	7	1	STD72683	02/25/16 18:17
4	1LM.LM33358	WG558779-01 MCT (2.0ug/kg)	7	1	STD72685	02/25/16 18:36
5	1LM.LM33359	WG558779-02 BLANK	7	1		02/25/16 18:55
6	1LM.LM33360	WG558779-03 LCS (2.0ug/kg)	7	1	STD72685	02/25/16 19:14
7	1LM.LM33361	L16021061-01 ADC-P\&A (2.0ug/kg)	7	1	STD72685	02/25/16 19:33
8	1LM.LM33362	L16021061-02 ADC-P\&A (2.0ug/kg)	7	1	STD72685	02/25/16 19:52
9	1LM.LM33363	L16021061-03 ADC-P\&A (2.0ug/kg)	7	1	STD72685	02/25/16 20:11
10	1LM.LM33364	L16021061-04 ADC-P\&A (2.0ug/kg)	7	1	STD72685	02/25/16 20:30
11	1LM.LM33365	L16021192-01 WTD-P\&A (2.0ug/kg)	7	1	STD72685	02/25/16 20:49
12	1LM.LM33366	L16021192-02 WTD-P\&A (2.0ug/kg)	7	1	STD72685	02/25/16 21:08
13	1LM.LM33367	L16021192-03 WTD-P\&A (2.0ug/kg)	7	1	STD72685	02/25/16 21:27
14	1LM.LM33368	WG558803-03 CCV (1.0ug/L)	1	1	STD72683	02/25/16 21:46
15	1LM.LM33369	WG558779-08 MRL (2.0ug/kg)	7	1	STD72683	02/25/16 22:05
16	1LM.LM33370	WG558803-04 CCB	1	1		02/25/16 22:24
17	1LM.LM33371	L16021192-04 WTD-P\&A (2.0ug/kg)	7	1	STD72685	02/25/16 22:42
18	1LM.LM33372	L16021240-08 REF (NR)	7	1		02/25/16 23:01
19	1LM.LM33373	L16021240-08 MS (NR)	7	1	STD72685	02/25/16 23:20
20	1LM.LM33374	L16021240-08 MSD (NR)	7	1	STD72685	02/25/16 23:39
21	1LM.LM33375	L16021240-01	7	1		02/25/16 23:58
22	1LM.LM33376	L16021240-02	7	1		02/26/16 00:17
23	1LM.LM33377	L16021240-03	7	1		02/26/16 00:36
24	1LM.LM33378	L16021240-04	7	1		02/26/16 00:55
25	1LM.LM33379	L16021240-05 (NR)	7	1		02/26/16 01:14
26	1LM.LM33380	L16021240-06 (NR)	7	1		02/26/16 01:33
27	1LM.LM33381	WG558803-05 CCV (1.0ug/L)	1	1	STD72683	02/26/16 01:52
28	1LM.LM33382	WG558779-09 MRL (2.0ug/kg)	7	1	STD72683	02/26/16 02:11
29	1LM.LM33383	WG558803-06 CCB	1	1		02/26/16 02:30
30	1LM.LM33384	L16021240-07 (NR)	7	1		02/26/16 02:49
31	1LM.LM33385	WG558803-07 CCV (1.0ug/L)	1	1	STD72683	02/26/16 03:08
32	1LM.LM33386	WG558779-10 MRL (2.0ug/kg)	7	1	STD72683	02/26/16 03:26
33	1LM.LM33387	WG558803-08 CCB	1	1		02/26/16 03:45

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Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 022516_JWR.TXT
Analyst1: JWR Analyst2: WTD/ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG558779 (SOILS)

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM33388	WG558803-09 CCV (1.0ug/L)	1	1	STD72683	02/26/16 11:27
35	1LM.LM33389	WG558779-11 MRL (2.0ug/kg)	7	1	STD72683	02/26/16 11:46
36	1LM.LM33390	WG558803-10 CCB	1	1		02/26/16 12:05
37	1LM.LM33391	L16021240-08 REF (RR 50x)	7	50		02/26/16 12:24
38	1LM.LM33392	L16021240-08 MS (RR 50x)	7	50	STD72685	02/26/16 12:43
39	1LM.LM33393	L16021240-08 MSD (RR 50x)	7	50	STD72685	02/26/16 13:02
40	1LM.LM33394	L16021240-05 (RR 5x)	7	5		02/26/16 13:21
41	1LM.LM33395	L16021240-06 (RR 20x)	7	20		02/26/16 13:40
42	1LM.LM33396	L16021240-07 (RR 50x)	7	50		02/26/16 13:59
43	1LM.LM33397	WG558803-11 CCV (1.0ug/L)	1	1	STD72683	02/26/16 14:18
44	1LM.LM33398	WG558779-12 MRL (2.0ug/kg)	7	1	STD72683	02/26/16 14:36
45	1LM.LM33399	WG558803-12 CCB	1	1		02/26/16 14:55

Comments

Seq.	Rerun	Dil.	Reason	Analytes
38				
	L16021240-08 MS (RR 50x) : The MS %Rec is above the advisory limit. The parent sample for this MS had a perchlorate result greater than 10 times that of the spiked amount.			
39				
	L16021240-08 MSD (RR 50x) : The MSD %Rec is below the advisory limit. The parent sample for this MSD had a perchlorate result greater than 10 times that of the spiked amount.			

Page: 2 Approved: 29-FEB-16

Wadei D

Microbac Laboratories Inc.

Data Checklist

Date: 17-FEB-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG557856
Runlog ID: 73366
Analytical Workgroups: L16020819

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 18-FEB-2016 John Richards

Secondary Reviewer: 18-FEB-2016 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-18-2016 16:36:00

Microbac Laboratories Inc.

Data Checklist

Date: 25-FEB-2016
Analyst: JWR
Analyst: WTD/ADC
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 73514
Analytical Workgroups: L16021061(ADC-DOC'S), 1192(WTD-DOC'S), 1240 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 26-FEB-2016 John Richards

Secondary Reviewer: 29-FEB-2016 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-29-2016 07:26:57

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG558779

Login Number: L16021240

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPT04(5-5.5)240216	01	02/24/16					02/25/2016	1.2	28		02/25/16	.4	28	
18DPT04(15-15.5)240216	02	02/24/16					02/25/2016	1.2	28		02/26/16	.4	28	
18CPT04(20-21)240216	03	02/24/16					02/25/2016	1.1	28		02/26/16	.4	28	
18CPT04(20-21)240216FD	04	02/24/16					02/25/2016	1.1	28		02/26/16	.4	28	
18DPT04(25-25.5)240216	05	02/24/16					02/25/2016	1.1	28		02/26/16	1	28	
18DPT04(29-30)240216	06	02/24/16					02/25/2016	1.1	28		02/26/16	1	28	
18DPT04(36.5-37)240216	07	02/24/16					02/25/2016	1	28		02/26/16	1	28	
18DPT04(34-34.5)240216	08	02/24/16					02/25/2016	1	28		02/26/16	.9	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4649479
Report generated 02/29/2016 08:28

METHOD BLANK SUMMARY

Login Number: L16021240
Blank File ID: 1LM.LM33359
Prep Date: 02/25/16 14:30
Analyzed Date: 02/25/16 18:55
Analyst: JWR

Work Group: WG558779
Blank Sample ID: WG558779-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG558779-07	1LM.LM33357	02/25/16 18:17	01
MCT	WG558779-01	1LM.LM33358	02/25/16 18:36	01
LCS	WG558779-03	1LM.LM33360	02/25/16 19:14	01
QCMRL	WG558779-08	1LM.LM33369	02/25/16 22:05	01
18CPT04(5-5.5)240216	L16021240-01	1LM.LM33375	02/25/16 23:58	01
18DPT04(15-15.5)240216	L16021240-02	1LM.LM33376	02/26/16 00:17	01
18CPT04(20-21)240216	L16021240-03	1LM.LM33377	02/26/16 00:36	01
18CPT04(20-21)240216FD	L16021240-04	1LM.LM33378	02/26/16 00:55	01
QCMRL	WG558779-09	1LM.LM33382	02/26/16 02:11	01
QCMRL	WG558779-10	1LM.LM33386	02/26/16 03:26	01
QCMRL	WG558779-11	1LM.LM33389	02/26/16 11:46	01
18DPT04(34-34.5)240216	L16021240-08	1LM.LM33391	02/26/16 12:24	DL01
18DPT04(25-25.5)240216	L16021240-05	1LM.LM33394	02/26/16 13:21	DL01
18DPT04(29-30)240216	L16021240-06	1LM.LM33395	02/26/16 13:40	DL01
18DPT04(36.5-37)240216	L16021240-07	1LM.LM33396	02/26/16 13:59	DL01
QCMRL	WG558779-12	1LM.LM33398	02/26/16 14:36	01

Report Name: BLANK_SUMMARY
PDF File ID: 4649480
Report generated 02/29/2016 08:28

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16021240 Prep Date: 02/25/16 14:30 Sample ID: WG558779-02
Instrument ID: LCMS1 Run Date: 02/25/16 18:55 Prep Method: 6850
File ID: 1LM.LM33359 Analyst: JWR Method: 6850
Workgroup (AAB#): WG558779 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-17-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.996	3.99	0.996	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4649481
29-FEB-2016 08:28

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16021240 Run Date: 02/25/2016 Sample ID: WG558779-03
Instrument ID: LCMS1 Run Time: 19:14 Prep Method: 6850
File ID: 1LM.LM33360 Analyst: JWR Method: 6850
Workgroup (AAB#): WG558779 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD72685 Cal ID: LCMS1-17-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	2.00	2.04	102	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4649482
Report generated: 02/29/2016 08:28

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16021240 Cal ID: LCMS1 - Worknum: WG558779
Instrument ID: LCMS1 Contract #: Method: 6850
Parent ID: WG558779-04 File ID: 1LM.LM33391 Dil: 50 Matrix: SOLID
Sample ID: WG558779-05 MS File ID: 1LM.LM33392 Dil: 50 Units: ug/kg
Sample ID: WG558779-06 MSD File ID: 1LM.LM33393 Dil: 50 Percent Solid: 84.6

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Perchlorate	2180	2.31	2360	7850	2.31	2090	-4130	12.4	80 - 120	15	*

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4649483
Report generated 02/29/2016 08:28

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16021240
Analytical Method: 6850
ICAL Workgroup: WG557856

Instrument ID: LCMS1
Initial Calibration Date: 17-FEB-16 21:24
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.628	7.83	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4649689
Report generated 02/29/2016 08:29

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16021240

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 17-FEB-16 21:24

Column ID: F

Analyte	WG557856-02			WG557856-03			WG557856-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	18800.0000	1.692	0.200	38700.0000	1.755	0.500	91400.0000	1.644

INT_CAL - Modified 03/06/2008
PDF File ID: 4649689
Report generated 02/29/2016 08:29

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16021240

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 17-FEB-16 21:24

Column ID: F

Analyte	WG557856-05			WG557856-06			WG557856-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	178000.000	1.625	2.00	350000.000	1.604	5.00	826000.000	1.554

INT_CAL - Modified 03/06/2008
PDF File ID: 4649689
Report generated 02/29/2016 08:29

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16021240

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 17-FEB-16 21:24

Column ID: F

Analyte	WG557856-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.521

INT_CAL - Modified 03/06/2008

PDF File ID: 4649689

Report generated 02/29/2016 08:29

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16021240 Run Date: 02/17/2016 Sample ID: WG557856-09
Instrument ID: LCMS1 Run Time: 21:43 Method: 6850
File ID: 1LM.LM33252 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG557856 Cal ID: LCMS1 - 17-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	1.05	ug/L	1.65	5.00	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4649690
Report generated 02/29/2016 08:29

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16021240
Run Date: 02/25/2016
Sample ID: WG558803-01
Instrument ID: LCMS1
Run Time: 17:40
Method: 6850
File ID: 1LM.LM33355
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG558779
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4649486
Report generated 02/29/2016 08:29

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16021240
Run Date: 02/25/2016
Sample ID: WG558803-04
Instrument ID: LCMS1
Run Time: 22:24
Method: 6850
File ID: 1LM.LM33370
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG558779
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4649486
Report generated 02/29/2016 08:29

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16021240
Run Date: 02/26/2016
Sample ID: WG558803-06
Instrument ID: LCMS1
Run Time: 02:30
Method: 6850
File ID: 1LM.LM33383
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG558779
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4649486
Report generated 02/29/2016 08:29

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16021240
Run Date: 02/26/2016
Sample ID: WG558803-08
Instrument ID: LCMS1
Run Time: 03:45
Method: 6850
File ID: 1LM.LM33387
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG558779
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4649486
Report generated 02/29/2016 08:29

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16021240
Run Date: 02/26/2016
Sample ID: WG558803-10
Instrument ID: LCMS1
Run Time: 12:05
Method: 6850
File ID: 1LM.LM33390
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG558779
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4649486
Report generated 02/29/2016 08:29

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16021240
Run Date: 02/26/2016
Sample ID: WG558803-12
Instrument ID: LCMS1
Run Time: 14:55
Method: 6850
File ID: 1LM.LM33399
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG558779
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4649486
Report generated 02/29/2016 08:29

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021240 Run Date: 02/25/2016 Sample ID: WG558803-02
Instrument ID: LCMS1 Run Time: 17:58 Method: 6850
File ID: 1LM.LM33356 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG558779 Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.07	ug/kg	1.68	7.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4649485
Report generated 02/29/2016 08:29

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021240
Run Date: 02/25/2016
Sample ID: WG558803-03
Instrument ID: LCMS1
Run Time: 21:46
Method: 6850
File ID: 1LM.LM33368
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG558779
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.11	ug/kg	1.74	11.0	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4649485
Report generated 02/29/2016 08:29

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021240
Run Date: 02/26/2016
Sample ID: WG558803-05
Instrument ID: LCMS1
Run Time: 01:52
Method: 6850
File ID: 1LM.LM33381
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG558779
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.09	ug/kg	1.71	9.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4649485
Report generated 02/29/2016 08:29

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021240
Run Date: 02/26/2016
Sample ID: WG558803-07
Instrument ID: LCMS1
Run Time: 03:08
Method: 6850
File ID: 1LM.LM33385
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG558779
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.08	ug/kg	1.69	8.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4649485
Report generated 02/29/2016 08:29

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021240
Run Date: 02/26/2016
Sample ID: WG558803-09
Instrument ID: LCMS1
Run Time: 11:27
Method: 6850
File ID: 1LM.LM33388
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG558779
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.09	ug/kg	1.71	9.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4649485
Report generated 02/29/2016 08:29

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021240
Run Date: 02/26/2016
Sample ID: WG558803-11
Instrument ID: LCMS1
Run Time: 14:18
Method: 6850
File ID: 1LM.LM33397
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG558779
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.12	ug/kg	1.76	12.0	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4649485
Report generated 02/29/2016 08:29

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16021240 Run Date: 02/25/2016 Sample ID: WG558779-07
Instrument ID: LCMS1 Run Time: 18:17 Prep Method: 6850
File ID: 1LM.LM33357 Analyst: JWR Method: 6850
Workgroup (AAB#): WG558779 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-17-FEB-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.02	101	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4649484
Report generated 02/29/2016 08:29

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16021240 Run Date: 02/25/2016 Sample ID: WG558779-08
Instrument ID: LCMS1 Run Time: 22:05 Prep Method: 6850
File ID: 1LM.LM33369 Analyst: JWR Method: 6850
Workgroup (AAB#): WG558779 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-17-FEB-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.15	108	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4649484
Report generated 02/29/2016 08:29

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16021240 Run Date: 02/26/2016 Sample ID: WG558779-09
Instrument ID: LCMS1 Run Time: 02:11 Prep Method: 6850
File ID: 1LM.LM33382 Analyst: JWR Method: 6850
Workgroup (AAB#): WG558779 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-17-FEB-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.14	107	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4649484
Report generated 02/29/2016 08:29

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16021240 Run Date: 02/26/2016 Sample ID: WG558779-10
Instrument ID: LCMS1 Run Time: 03:26 Prep Method: 6850
File ID: 1LM.LM33386 Analyst: JWR Method: 6850
Workgroup (AAB#): WG558779 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-17-FEB-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.11	106	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4649484
Report generated 02/29/2016 08:29

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16021240 Run Date: 02/26/2016 Sample ID: WG558779-11
Instrument ID: LCMS1 Run Time: 11:46 Prep Method: 6850
File ID: 1LM.LM33389 Analyst: JWR Method: 6850
Workgroup (AAB#): WG558779 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-17-FEB-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.06	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4649484
Report generated 02/29/2016 08:29

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16021240 Run Date: 02/26/2016 Sample ID: WG558779-12
Instrument ID: LCMS1 Run Time: 14:36 Prep Method: 6850
File ID: 1LM.LM33398 Analyst: JWR Method: 6850
Workgroup (AAB#): WG558779 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-17-FEB-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.20	110	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4649484
Report generated 02/29/2016 08:29

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16021240
Instrument ID: LCMS1
Workgroup (AAB#): WG558779

ICAL CCV Number: WG557856-05
CAL ID: LCMS1-17-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1
WG557856	NA	NA	542000
Upper Limit	NA	NA	813000
Lower Limit	NA	NA	271000
L16021240-01	1.00	01	469000
L16021240-02	1.00	01	515000
L16021240-03	1.00	01	512000
L16021240-04	1.00	01	511000
L16021240-05	5.00	DL01	495000
L16021240-06	20.0	DL01	503000
L16021240-07	50.0	DL01	499000
L16021240-08	50.0	DL01	479000
WG558779-02	1.00	01	492000
WG558779-03	1.00	01	500000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4649487
Report generated 02/29/2016 08:29

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**	6850	**Samplenum:**	L16021240-01
Instrument:	LCMS1	**Prep Date:**	02/25/2016 14:30	**File ID:**	1LM.LM33375
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558779	**Analysis Date:**	02/25/2016 23:58	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1190000	395000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**	6850	**Samplenum:**	L16021240-02
Instrument:	LCMS1	**Prep Date:**	02/25/2016 14:30	**File ID:**	1LM.LM33376
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558779	**Analysis Date:**	02/26/2016 00:17	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	12700	4460	2.85	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**	6850	**Samplenum:**	L16021240-03
Instrument:	LCMS1	**Prep Date:**	02/25/2016 14:30	**File ID:**	1LM.LM33377
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558779	**Analysis Date:**	02/26/2016 00:36	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	375000	122000	3.07	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**	6850	**Samplenum:**	L16021240-04
Instrument:	LCMS1	**Prep Date:**	02/25/2016 14:30	**File ID:**	1LM.LM33378
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558779	**Analysis Date:**	02/26/2016 00:55	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	369000	118000	3.13	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**	6850	**Samplenum:**	L16021240-05
Instrument:	LCMS1	**Prep Date:**	02/25/2016 14:30	**File ID:**	1LM.LM33394
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558779	**Analysis Date:**	02/26/2016 13:21	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	403000	136000	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**	6850	**Samplenum:**	L16021240-06
Instrument:	LCMS1	**Prep Date:**	02/25/2016 14:30	**File ID:**	1LM.LM33395
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558779	**Analysis Date:**	02/26/2016 13:40	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	429000	146000	2.94	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**	6850	**Samplenum:**	L16021240-07
Instrument:	LCMS1	**Prep Date:**	02/25/2016 14:30	**File ID:**	1LM.LM33396
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558779	**Analysis Date:**	02/26/2016 13:59	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	796000	264000	3.02	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**	6850	**Samplenum:**	L16021240-08
Instrument:	LCMS1	**Prep Date:**	02/25/2016 14:30	**File ID:**	1LM.LM33391
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558779	**Analysis Date:**	02/26/2016 12:24	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	558000	184000	3.03	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**		**Samplenum:**	WG557856-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33245
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558779	**Analysis Date:**	02/17/2016 19:31	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	18800	6990	2.69	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**		**Samplenum:**	WG557856-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33246
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558779	**Analysis Date:**	02/17/2016 19:50	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38700	14200	2.73	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**		**Samplenum:**	WG557856-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33247
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558779	**Analysis Date:**	02/17/2016 20:08	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	91400	32900	2.78	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**		**Samplenum:**	WG557856-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33248
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558779	**Analysis Date:**	02/17/2016 20:27	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	178000	63900	2.79	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**		**Samplenum:**	WG557856-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33249
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558779	**Analysis Date:**	02/17/2016 20:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	350000	126000	2.78	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**		**Samplenum:**	WG557856-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33250
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558779	**Analysis Date:**	02/17/2016 21:05	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	826000	293000	2.82	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**		**Samplenum:**	WG557856-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33251
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558779	**Analysis Date:**	02/17/2016 21:24	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	562000	2.72	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**		**Samplenum:**	WG557856-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33252
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558779	**Analysis Date:**	02/17/2016 21:43	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	179000	63600	2.81	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**	6850	**Samplenum:**	WG558779-01
Instrument:	LCMS1	**Prep Date:**	02/25/2016 14:30	**File ID:**	1LM.LM33358
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558779	**Analysis Date:**	02/25/2016 18:36	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	33300	11900	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**	6850	**Samplenum:**	WG558779-02
Instrument:	LCMS1	**Prep Date:**	02/25/2016 14:30	**File ID:**	1LM.LM33359
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558779	**Analysis Date:**	02/25/2016 18:55	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	780	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**	6850	**Samplenum:**	WG558779-03
Instrument:	LCMS1	**Prep Date:**	02/25/2016 14:30	**File ID:**	1LM.LM33360
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558779	**Analysis Date:**	02/25/2016 19:14	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34600	11800	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**	6850	**Samplenum:**	WG558779-05
Instrument:	LCMS1	**Prep Date:**	02/25/2016 14:30	**File ID:**	1LM.LM33392
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558779	**Analysis Date:**	02/26/2016 12:43	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	607000	200000	3.04	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**	6850	**Samplenum:**	WG558779-06
Instrument:	LCMS1	**Prep Date:**	02/25/2016 14:30	**File ID:**	1LM.LM33393
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558779	**Analysis Date:**	02/26/2016 13:02	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	548000	182000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**	6850	**Samplenum:**	WG558779-07
Instrument:	LCMS1	**Prep Date:**	02/25/2016 14:30	**File ID:**	1LM.LM33357
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558779	**Analysis Date:**	02/25/2016 18:17	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	33900	12500	2.71	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**	6850	**Samplenum:**	WG558779-08
Instrument:	LCMS1	**Prep Date:**	02/25/2016 14:30	**File ID:**	1LM.LM33369
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558779	**Analysis Date:**	02/25/2016 22:05	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	39400	12500	3.15	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**	6850	**Samplenum:**	WG558779-09
Instrument:	LCMS1	**Prep Date:**	02/25/2016 14:30	**File ID:**	1LM.LM33382
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558779	**Analysis Date:**	02/26/2016 02:11	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	39300	13400	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**	6850	**Samplenum:**	WG558779-10
Instrument:	LCMS1	**Prep Date:**	02/25/2016 14:30	**File ID:**	1LM.LM33386
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558779	**Analysis Date:**	02/26/2016 03:26	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38300	12800	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**	6850	**Samplenum:**	WG558779-11
Instrument:	LCMS1	**Prep Date:**	02/25/2016 14:30	**File ID:**	1LM.LM33389
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558779	**Analysis Date:**	02/26/2016 11:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34700	12400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**	6850	**Samplenum:**	WG558779-12
Instrument:	LCMS1	**Prep Date:**	02/25/2016 14:30	**File ID:**	1LM.LM33398
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558779	**Analysis Date:**	02/26/2016 14:36	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	41100	13300	3.09	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**		**Samplenum:**	WG558803-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33355
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558779	**Analysis Date:**	02/25/2016 17:40	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**		**Samplenum:**	WG558803-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33356
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558779	**Analysis Date:**	02/25/2016 17:58	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	164000	54100	3.03	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**		**Samplenum:**	WG558803-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33368
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558779	**Analysis Date:**	02/25/2016 21:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	187000	62100	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**		**Samplenum:**	WG558803-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33370
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558779	**Analysis Date:**	02/25/2016 22:24	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	495	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**		**Samplenum:**	WG558803-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33381
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558779	**Analysis Date:**	02/26/2016 01:52	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	185000	59000	3.14	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**		**Samplenum:**	WG558803-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33383
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558779	**Analysis Date:**	02/26/2016 02:30	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**		**Samplenum:**	WG558803-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33385
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558779	**Analysis Date:**	02/26/2016 03:08	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	183000	61000	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**		**Samplenum:**	WG558803-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33387
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558779	**Analysis Date:**	02/26/2016 03:45	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	571	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**		**Samplenum:**	WG558803-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33388
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558779	**Analysis Date:**	02/26/2016 11:27	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	163000	54400	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**		**Samplenum:**	WG558803-10
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33390
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558779	**Analysis Date:**	02/26/2016 12:05	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**		**Samplenum:**	WG558803-11
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33397
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558779	**Analysis Date:**	02/26/2016 14:18	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	195000	62900	3.10	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021240	**Prep Method:**		**Samplenum:**	WG558803-12
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33399
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558779	**Analysis Date:**	02/26/2016 14:55	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	973	0.000	2.3	3.8	*

2.2.1.3 Sample Data

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Data File	LM33375.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/25/2016 11:58:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021240-01	**Injection Vial**	18.00
Data File	LM33375.wiff	**Injection Volume**	10.00
Acquisition Date	2/25/2016 11:58:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	L16021240-01	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.690e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.190e+06	9.96	N/A	8.23
Perchlorate conf	3.950e+05	9.94	N/A	7.52

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

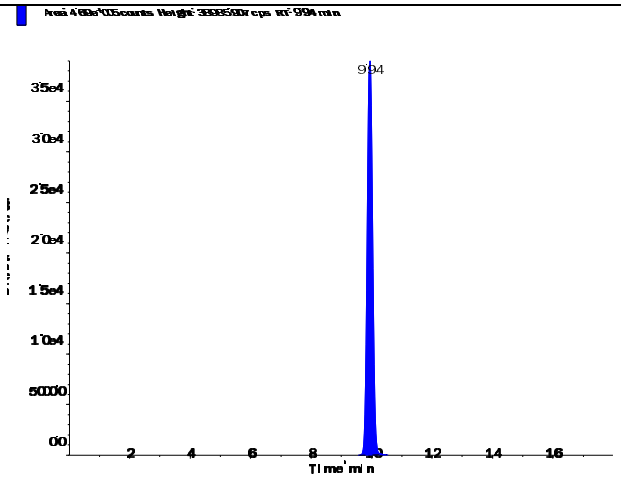

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.96 (9.94) min Calculated conc: 8.23 ng/ml Area Ratio: 2.54 Sample Type: (Unknown)	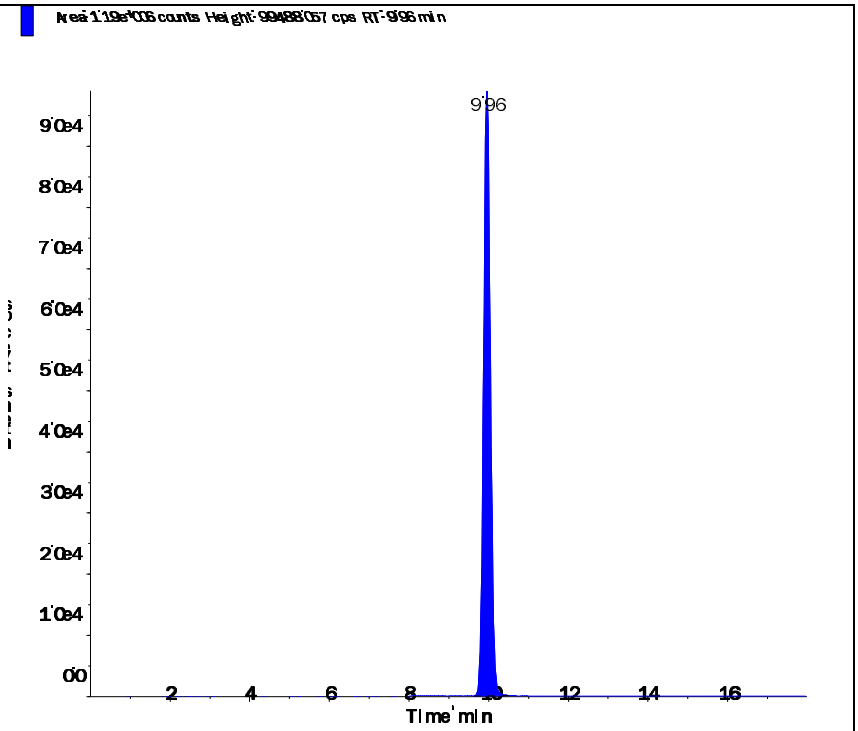
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.94 (9.92) min Calculated conc: 7.52 ng/ml Area Ratio: 0.841 Sample Type: (Unknown)	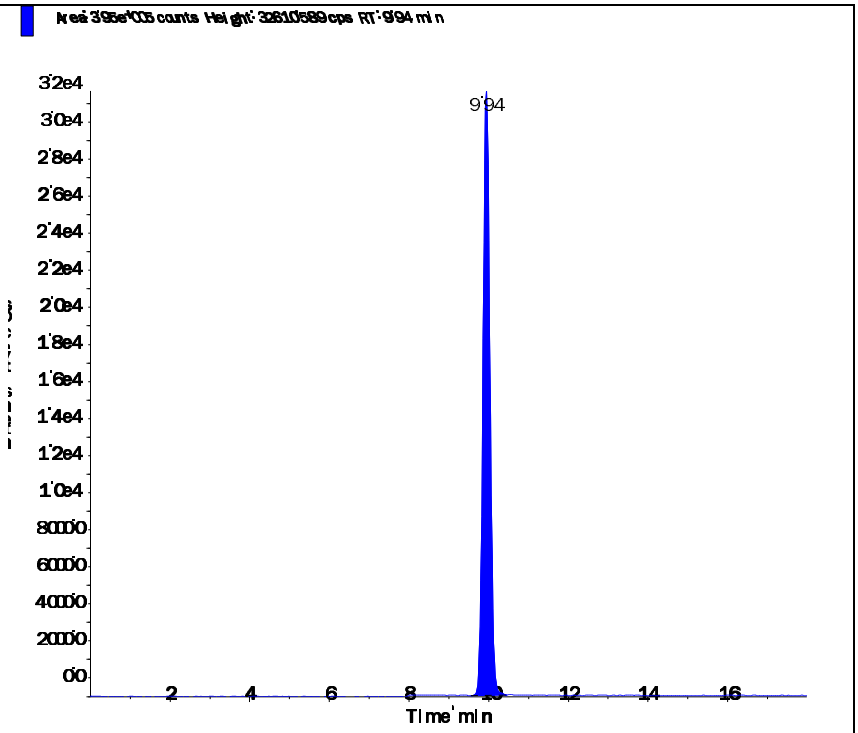

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Data File	LM33376.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/26/2016 12:17:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021240-02	**Injection Vial**	19.00
Data File	LM33376.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 12:17:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	L16021240-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.150e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.270e+04	9.99	N/A	0.0586
Perchlorate conf	4.460e+03	9.97	N/A	0.0553

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

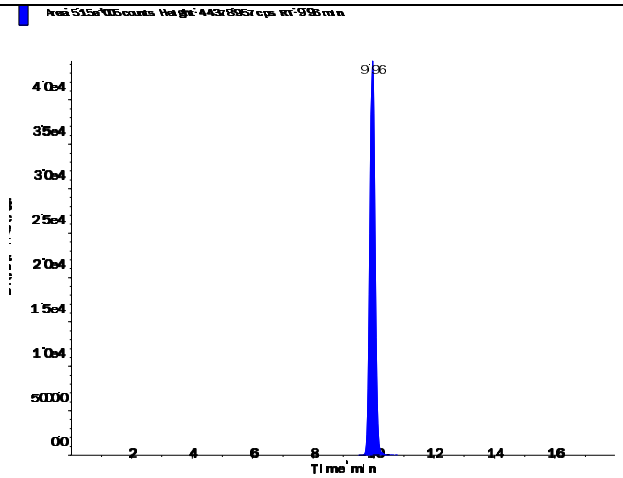

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.99 (9.94) min Calculated conc: 0.0586 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	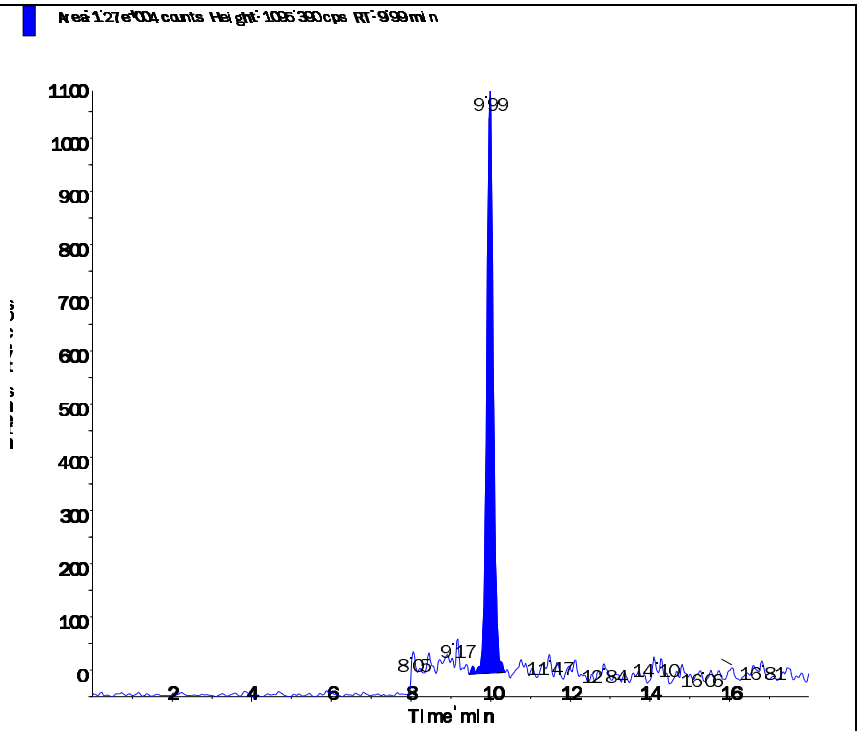
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.97 (9.92) min Calculated conc: 0.0553 ng/ml Area Ratio: 0.009 Sample Type: (Unknown)	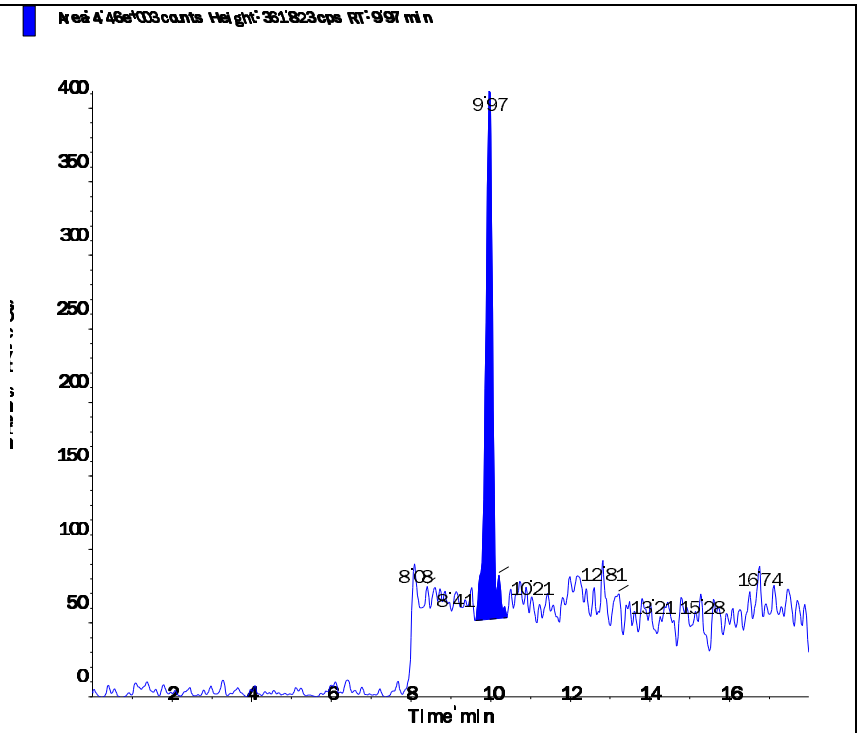

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Data File	LM33377.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/26/2016 12:36:34 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021240-03	**Injection Vial**	20.00
Data File	LM33377.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 12:36:34 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	L16021240-03	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.120e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.750e+05	9.96	N/A	2.36
Perchlorate conf	1.220e+05	9.95	N/A	2.11

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

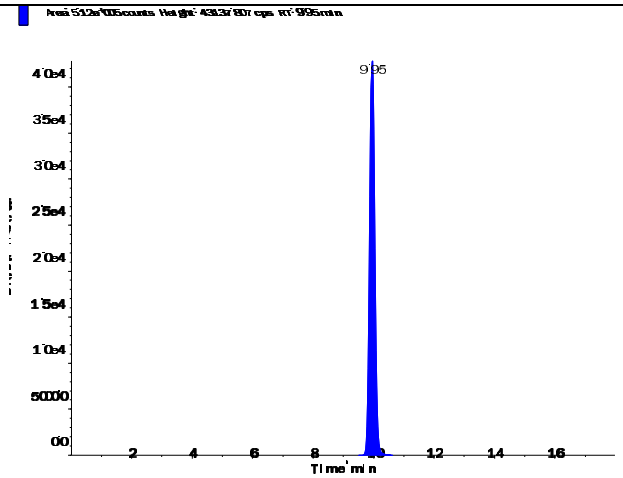

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.96 (9.94) min Calculated conc: 2.36 ng/ml Area Ratio: 0.731 Sample Type: (Unknown)	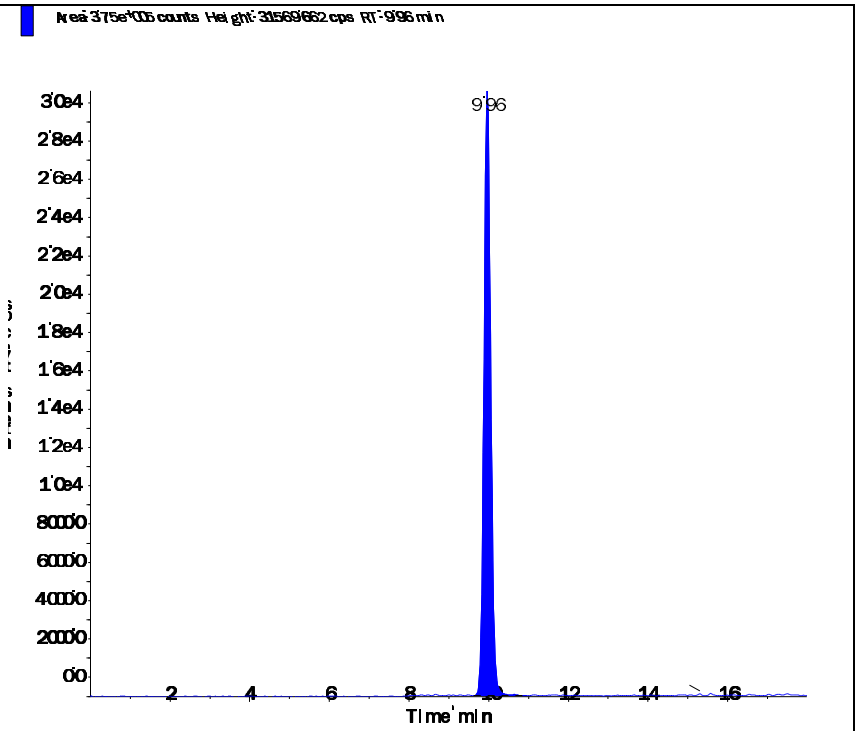
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.95 (9.92) min Calculated conc: 2.11 ng/ml Area Ratio: 0.238 Sample Type: (Unknown)	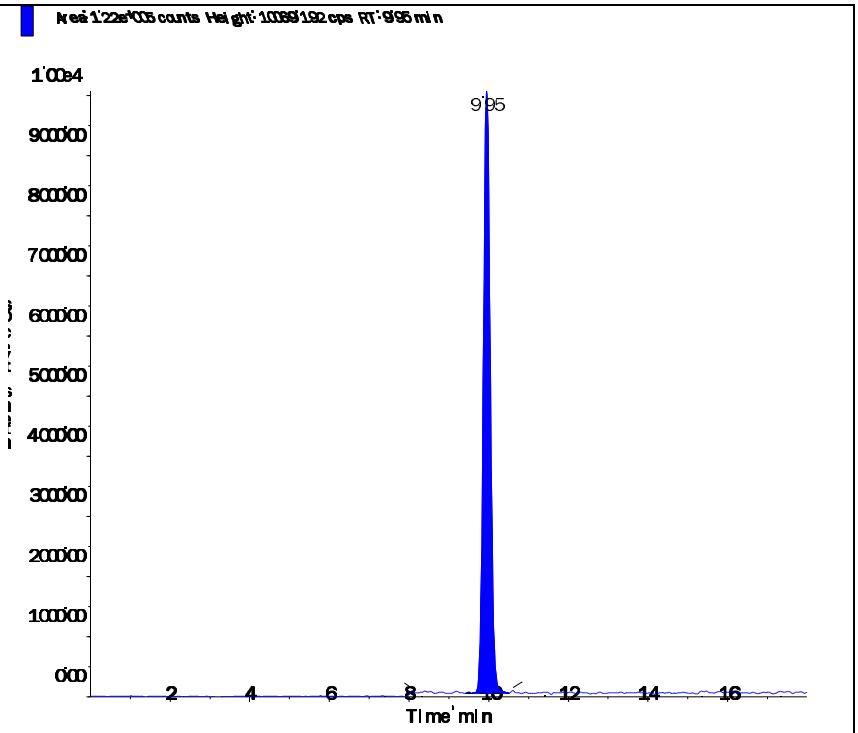

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Data File	LM33378.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/26/2016 12:55:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021240-04	**Injection Vial**	21.00
Data File	LM33378.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 12:55:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	L16021240-04	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.690e+05	9.98	N/A	2.33
Perchlorate conf	1.180e+05	9.96	N/A	2.05

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

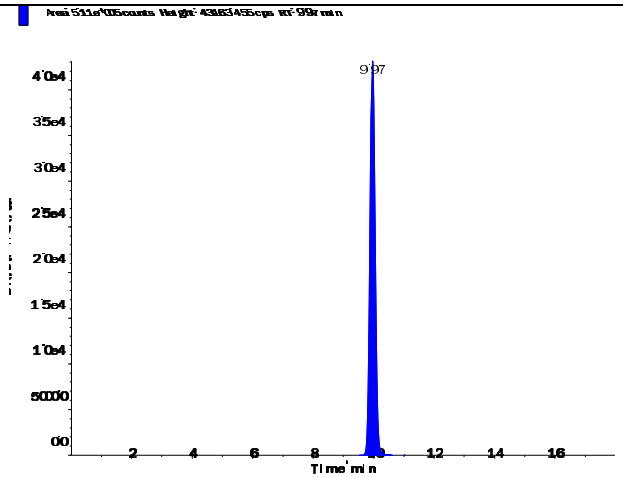

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.98 (9.94) min
Calculated conc:	2.33 ng/ml
Area Ratio:	0.722
Sample Type:	(Unknown)

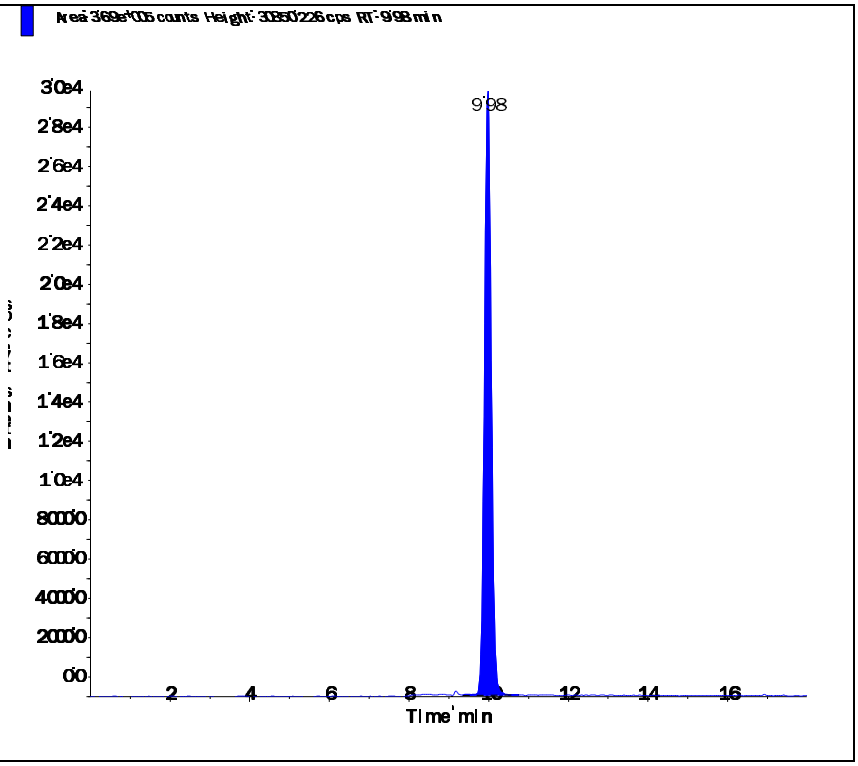

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.96 (9.92) min
Calculated conc:	2.05 ng/ml
Area Ratio:	0.232
Sample Type:	(Unknown)

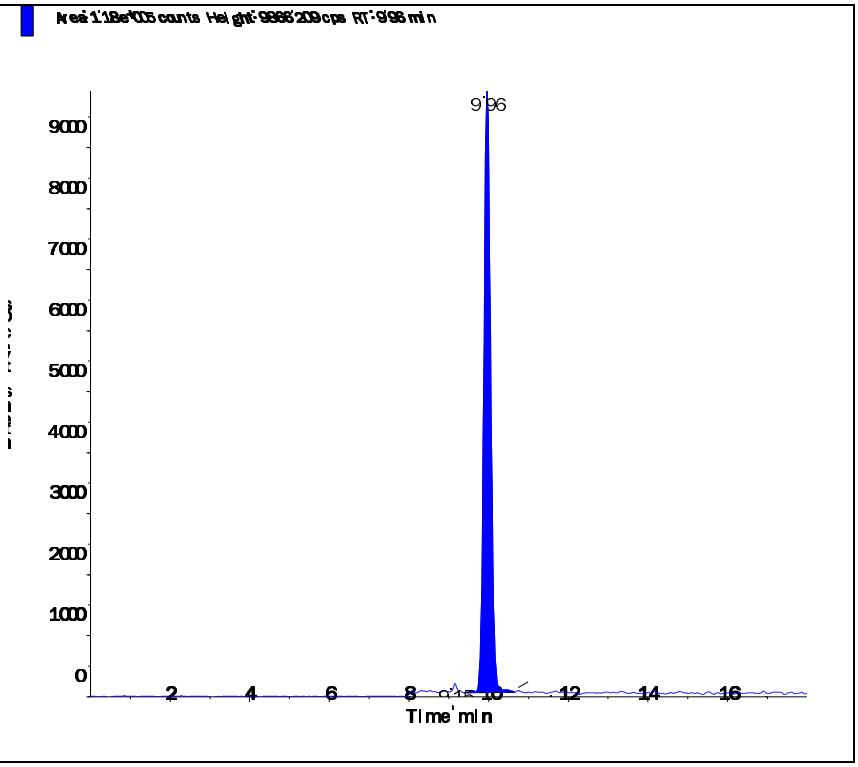

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Data File	LM33394.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/26/2016 1:21:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021240-05 (RR 5x)	**Injection Vial**	28.00
Data File	LM33394.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 1:21:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	L16021240-05	**Dilution Factor**	1.00
Sample Comment	75.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.030e+05	9.96	N/A	2.62
Perchlorate conf	1.360e+05	9.95	N/A	2.44

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

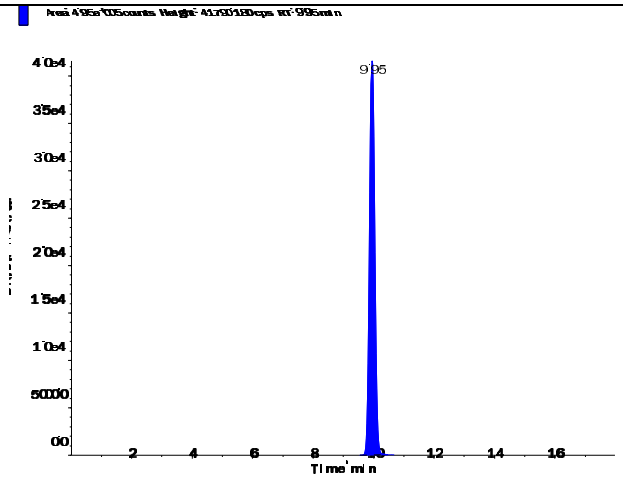

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	2.62 ng/ml
Area Ratio:	0.813
Sample Type:	(Unknown)

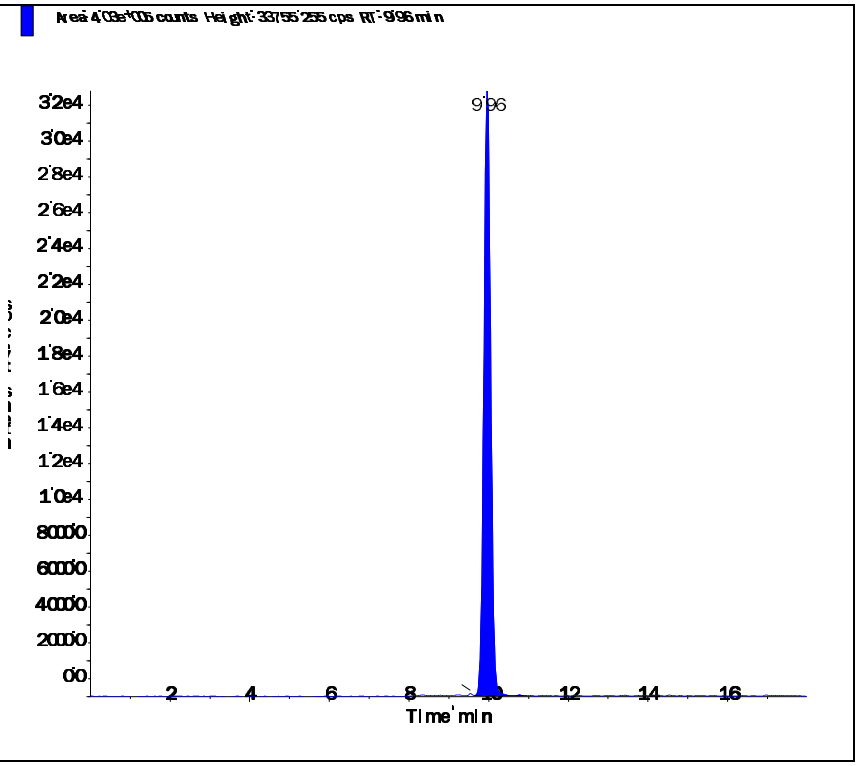

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.95 (9.92) min
Calculated conc:	2.44 ng/ml
Area Ratio:	0.275
Sample Type:	(Unknown)

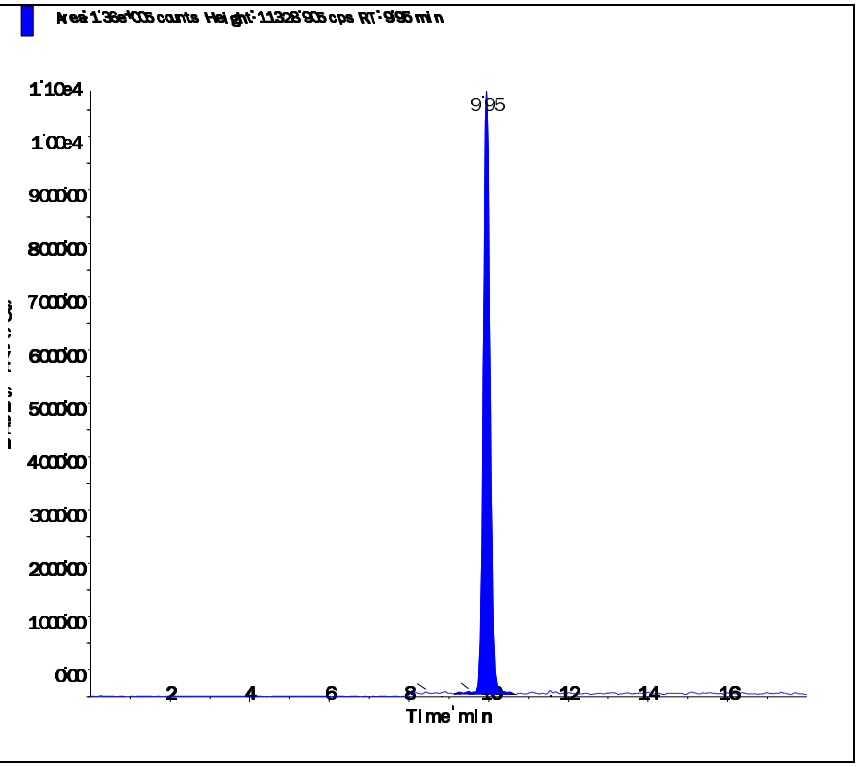

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Printed: 2/26/2016 4:10 PM

Data File	LM33395.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/26/2016 1:40:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021240-06 (RR 20x)	**Injection Vial**	29.00
Data File	LM33395.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 1:40:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	L16021240-06	**Dilution Factor**	1.00
Sample Comment	720.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.030e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.290e+05	9.97	N/A	2.76
Perchlorate conf	1.460e+05	9.96	N/A	2.58

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

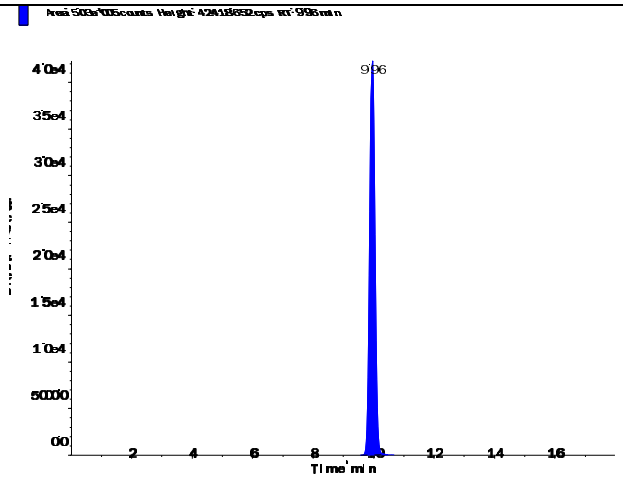

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.97 (9.94) min
Calculated conc:	2.76 ng/ml
Area Ratio:	0.854
Sample Type:	(Unknown)

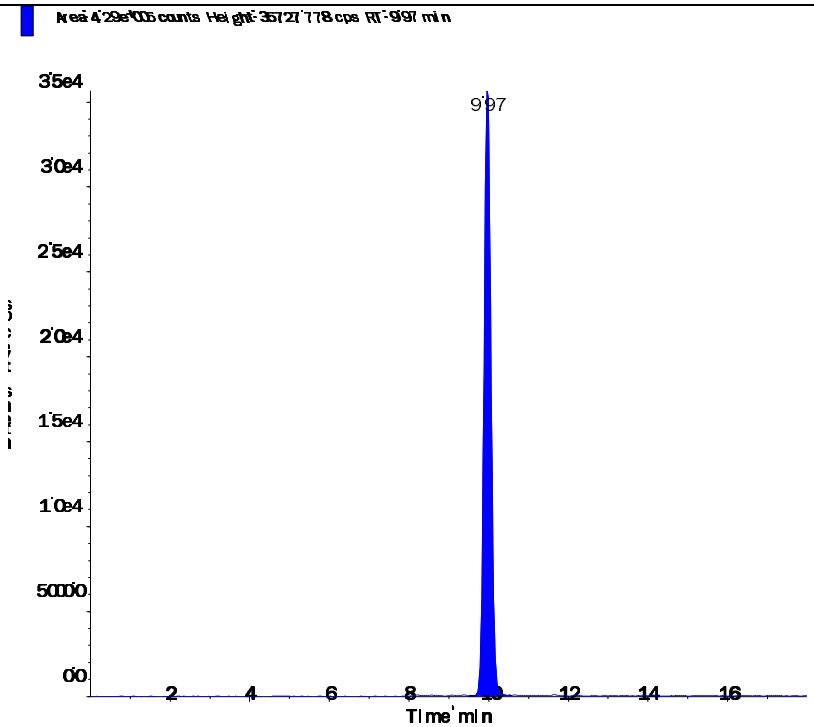

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.96 (9.92) min
Calculated conc:	2.58 ng/ml
Area Ratio:	0.29
Sample Type:	(Unknown)

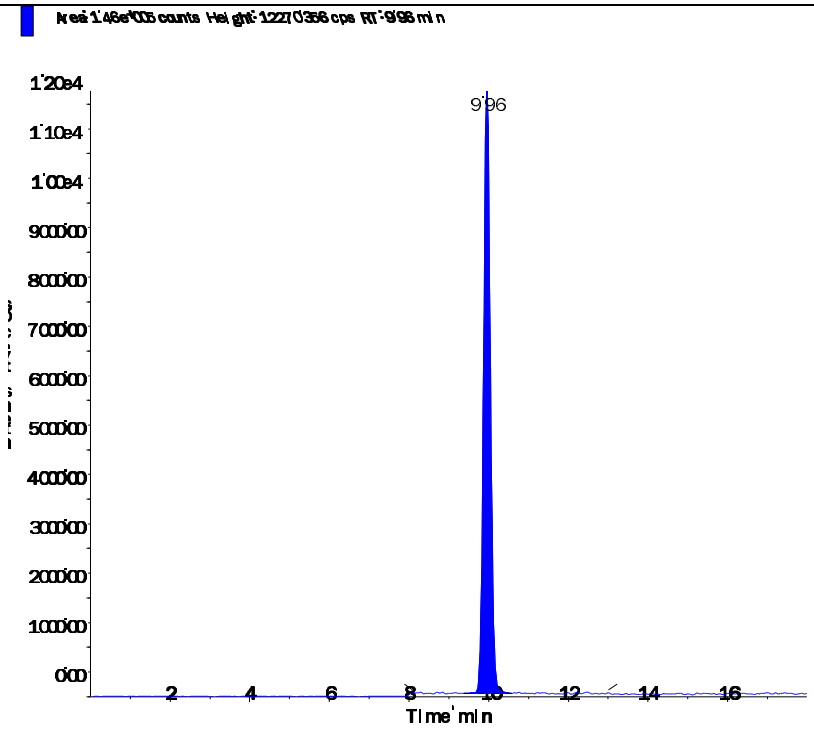

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Printed: 2/26/2016 4:10 PM

Data File	LM33396.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/26/2016 1:59:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021240-07 (RR 50x)	**Injection Vial**	30.00
Data File	LM33396.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 1:59:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	L16021240-07	**Dilution Factor**	1.00
Sample Comment	750.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.990e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.960e+05	9.97	N/A	5.16
Perchlorate conf	2.640e+05	9.95	N/A	4.73

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

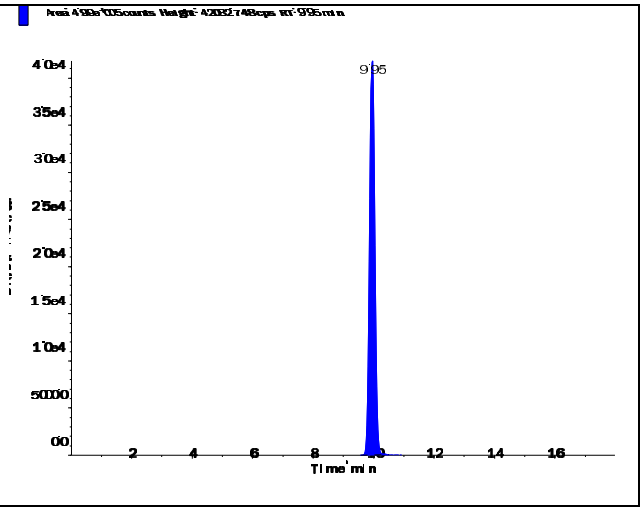

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.97 (9.94) min
Calculated conc:	5.16 ng/ml
Area Ratio:	1.594
Sample Type:	(Unknown)

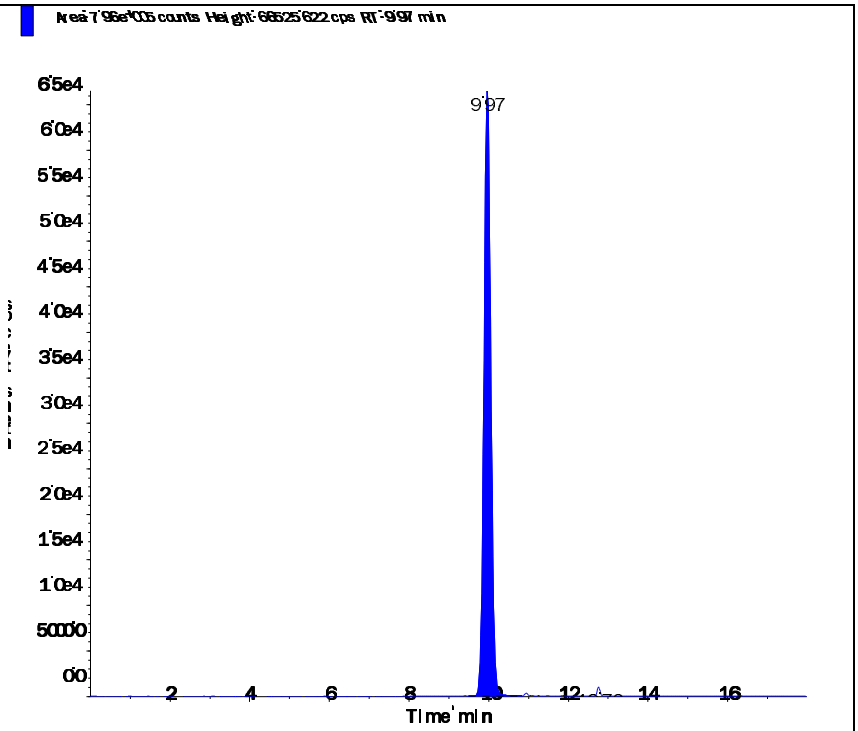

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.95 (9.92) min
Calculated conc:	4.73 ng/ml
Area Ratio:	0.53
Sample Type:	(Unknown)

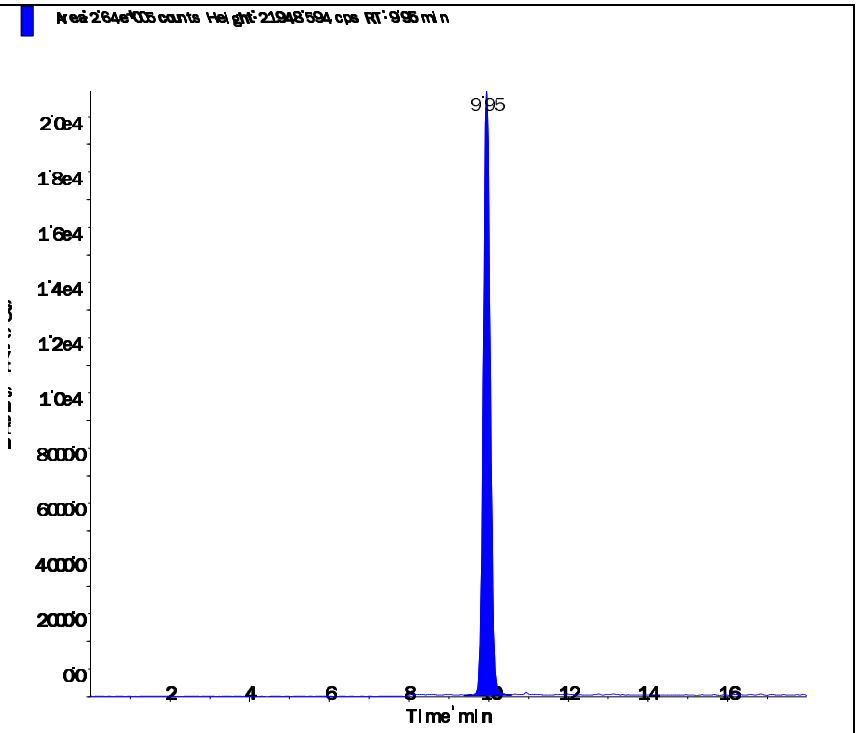

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Data File	LM33391.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/26/2016 12:24:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021240-08 REF (RR 50x)	**Injection Vial**	25.00
Data File	LM33391.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 12:24:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	WG558779-04	**Dilution Factor**	1.00
Sample Comment	750.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.790e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.580e+05	9.97	N/A	3.77
Perchlorate conf	1.840e+05	9.96	N/A	3.42

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

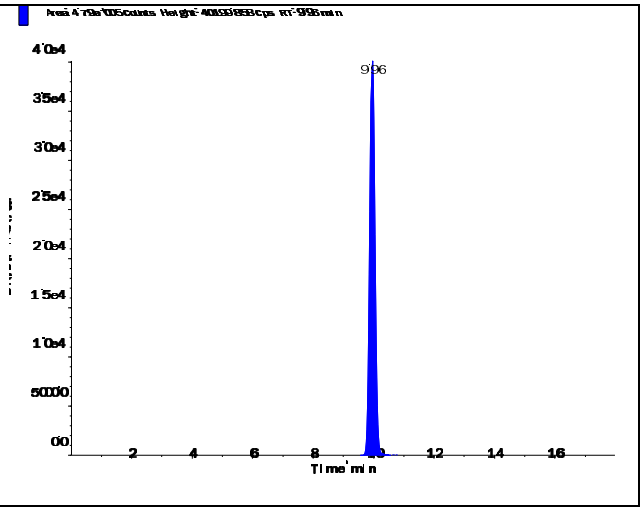

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.97 (9.94) min
Calculated conc:	3.77 ng/ml
Area Ratio:	1.166
Sample Type:	(Unknown)

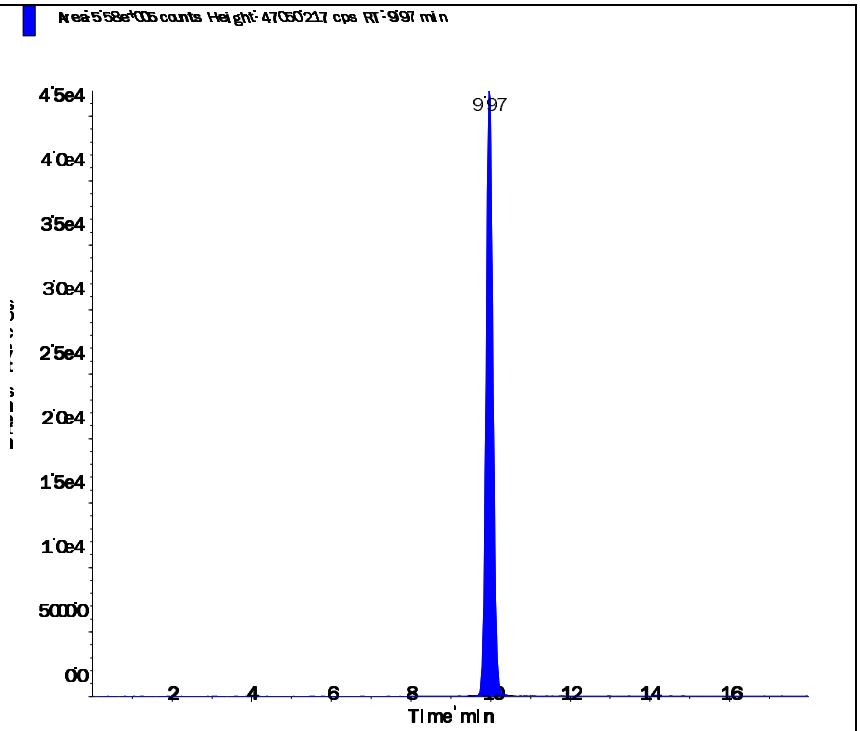

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.96 (9.92) min
Calculated conc:	3.42 ng/ml
Area Ratio:	0.383
Sample Type:	(Unknown)

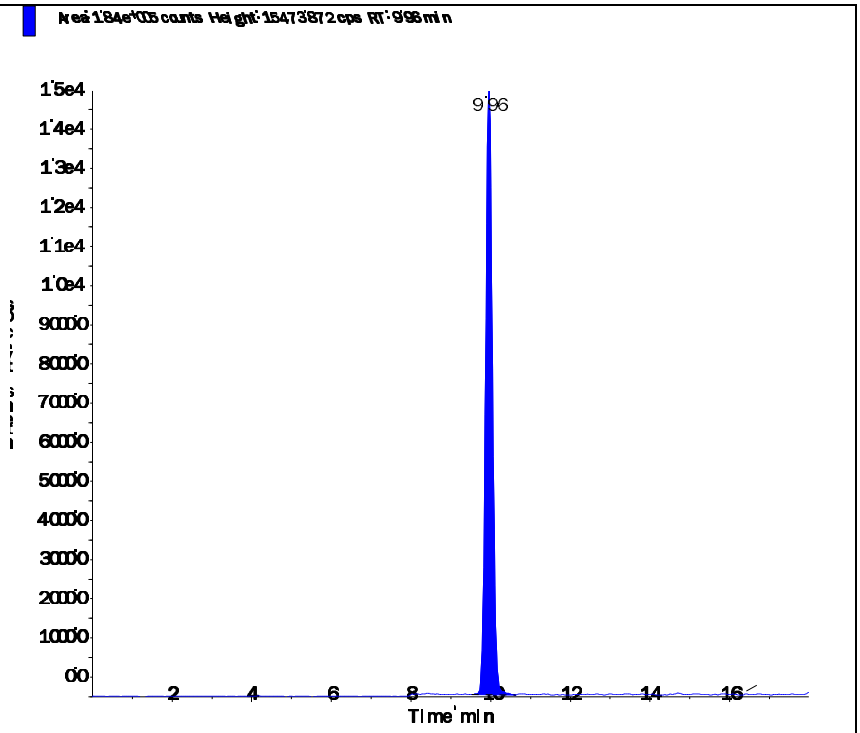

2.2.1.4 Standards Data

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Data File	LM33244.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/17/2016 7:12:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-01 CCB	**Injection Vial**	1.00
Data File	LM33244.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 7:12:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG557856-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.570e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.560e+03	9.97	N/A	< 0
Perchlorate conf	1.050e+03	9.97	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

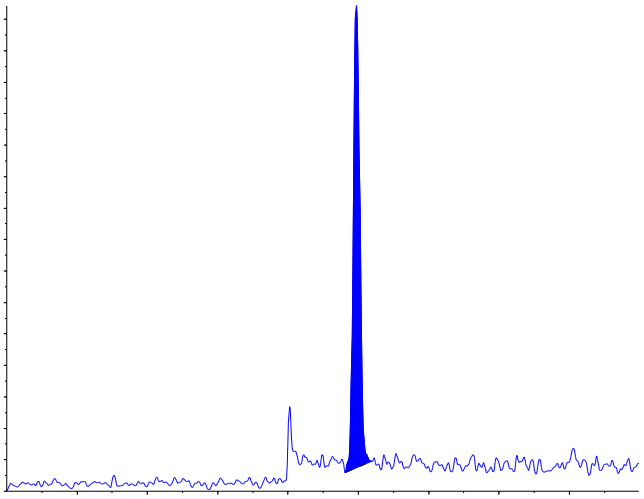

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.97 (9.94) min Calculated conc: < 0 ng/ml Area Ratio: 0.005 Sample Type: (Unknown)	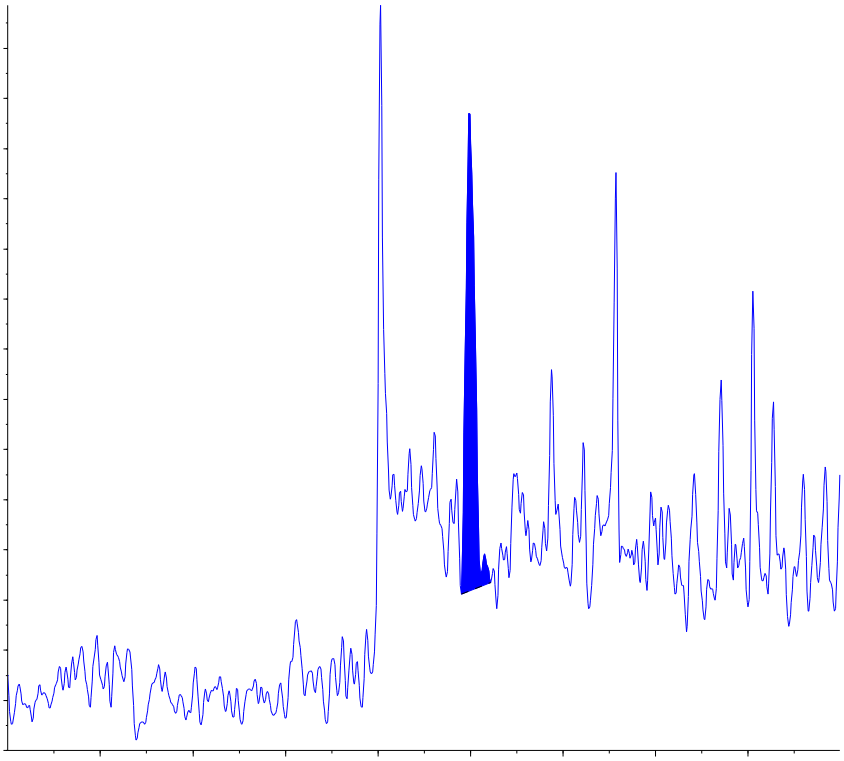
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.97 (9.92) min Calculated conc: < 0 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	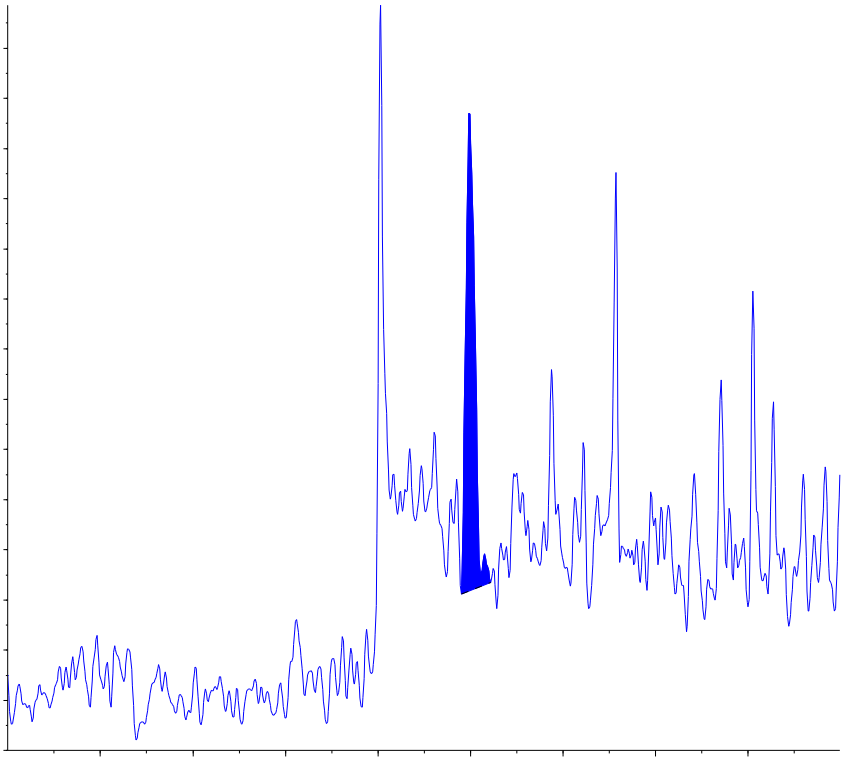

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Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM33244.wiff	**Result Table**	021716_JWR.rdb
Acquisition Date	2/17/2016 7:12:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.54 x + 0.00666 (r = 0.9998)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	88.4	N/A	N/A
0.20	1	0.21	103.3	N/A	N/A
0.50	1	0.51	102.6	N/A	N/A
1.00	1	1.03	103.4	N/A	N/A
2.00	1	2.06	103.1	N/A	N/A
5.00	1	5.03	100.6	N/A	N/A
10.00	1	9.87	98.7	N/A	N/A

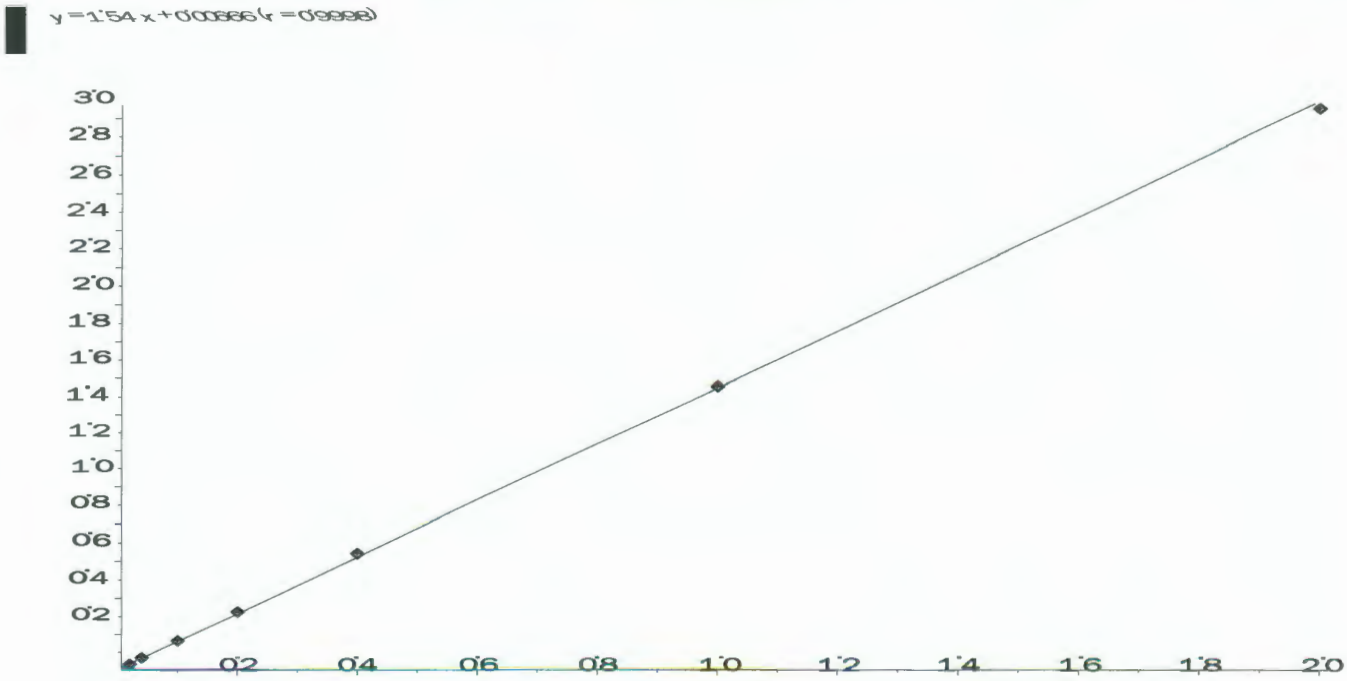

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Printed: 2/18/2016 2:15 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM33244.wiff	**Result Table**	021716_JWR.rdb
Acquisition Date	2/17/2016 7:12:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.557 x + 0.00249 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	90.6	N/A	N/A
0.20	1	0.21	104.9	N/A	N/A
0.50	1	0.51	101.7	N/A	N/A
1.00	1	1.02	102.2	N/A	N/A
2.00	1	2.04	102.1	N/A	N/A
5.00	1	4.93	98.6	N/A	N/A
10.00	1	10.00	100.0	N/A	N/A

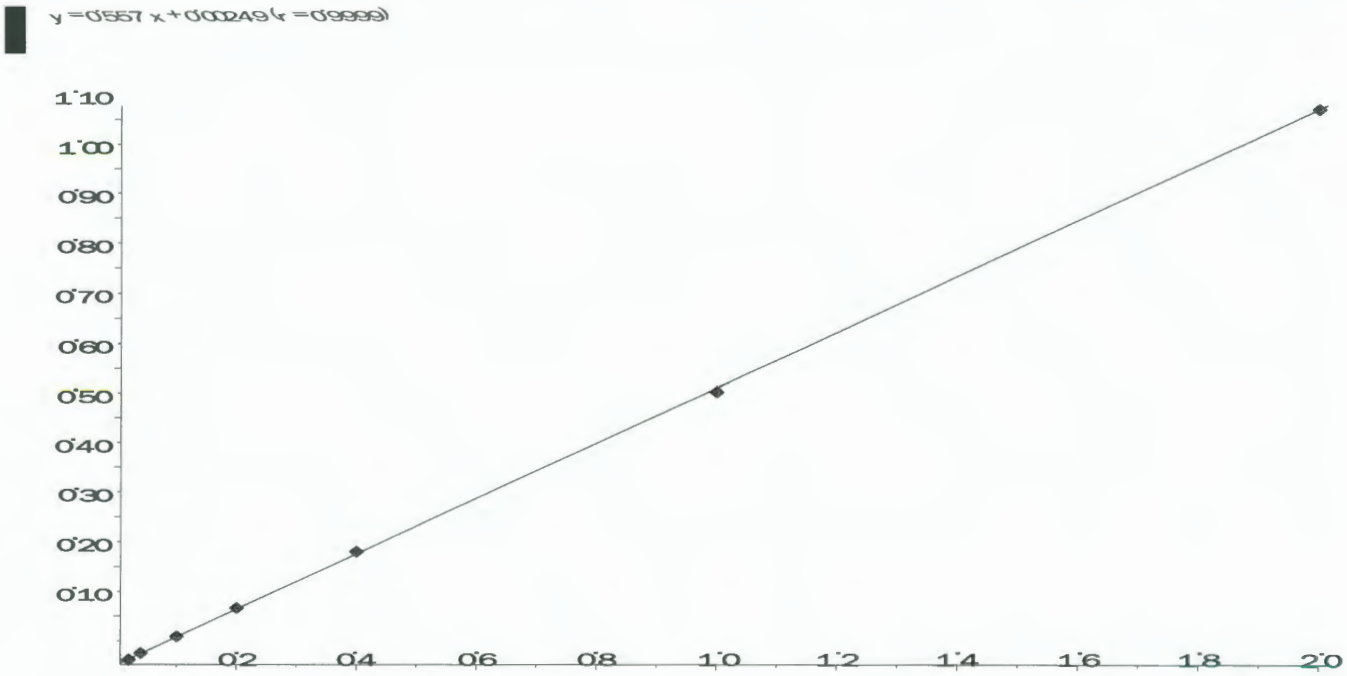

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Data File	LM33245.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/17/2016 7:31:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM33245.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 7:31:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG557856-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.550e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.880e+04	9.94	0.10	0.0884
Perchlorate conf	6.990e+03	9.93	0.10	0.0906

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

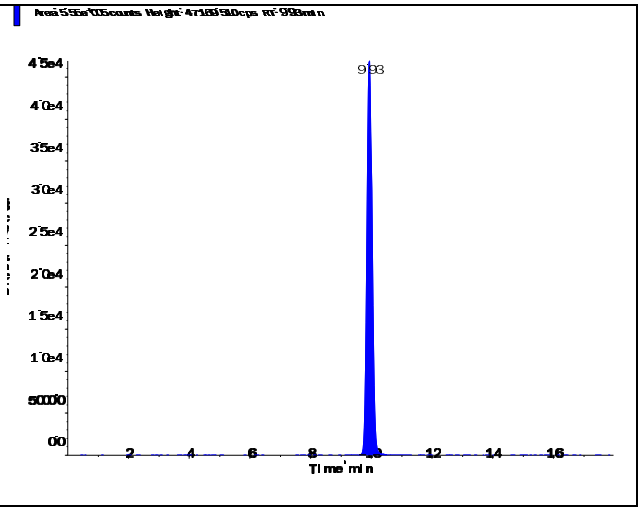

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.0884 ng/ml
Area Ratio:	0.034
Sample Type:	(Standard)

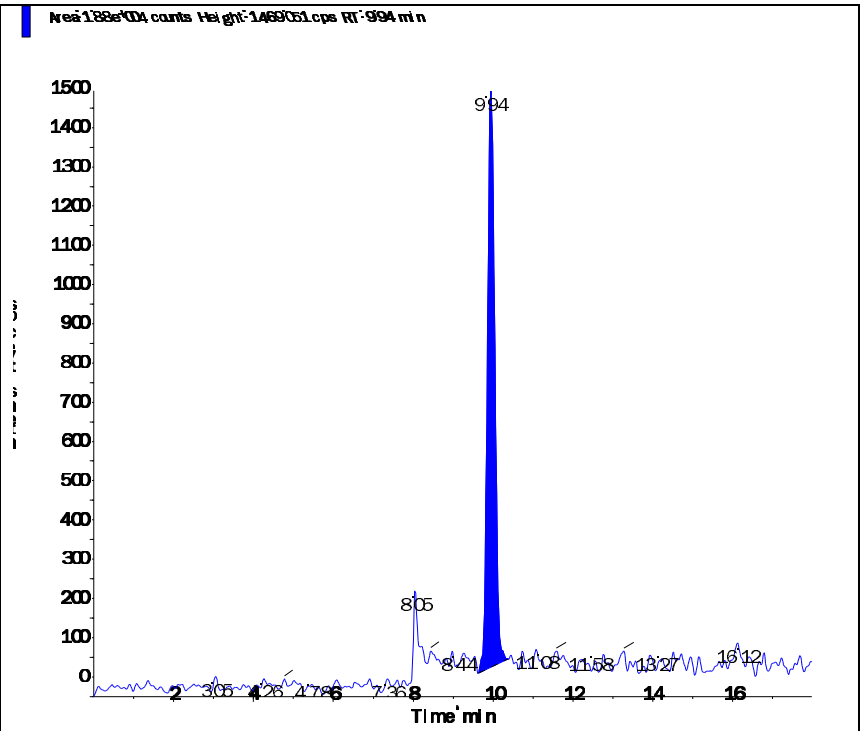

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	0.0906 ng/ml
Area Ratio:	0.013
Sample Type:	(Standard)

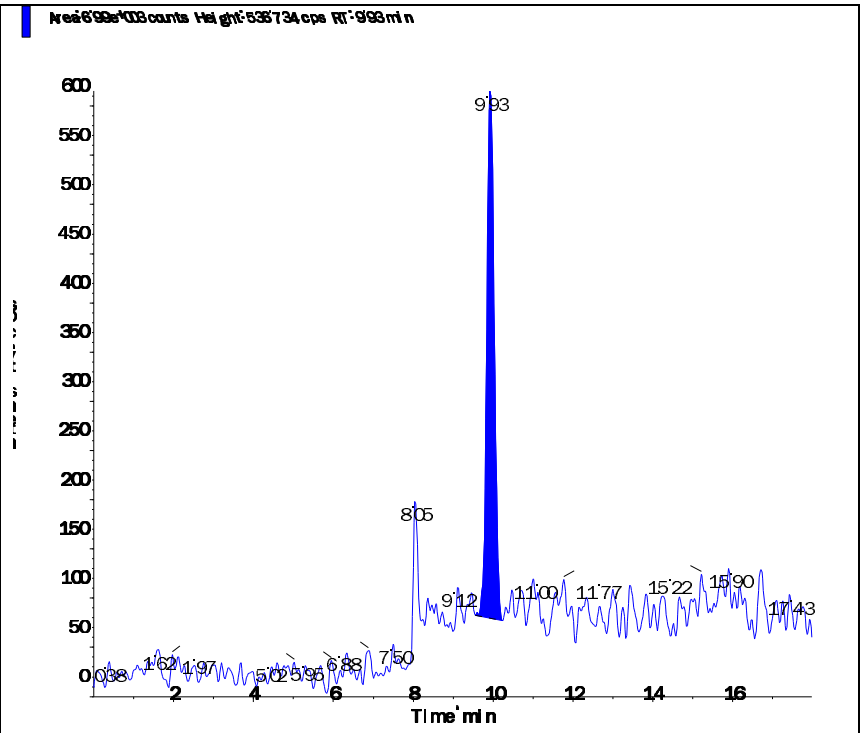

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Data File	LM33246.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/17/2016 7:50:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM33246.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 7:50:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG557856-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.510e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.870e+04	9.94	0.20	0.207
Perchlorate conf	1.420e+04	9.93	0.20	0.21

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

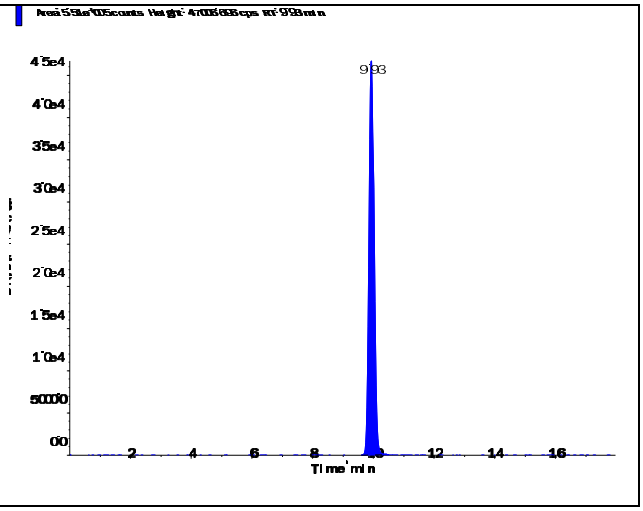

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.07
Sample Type:	(Standard)

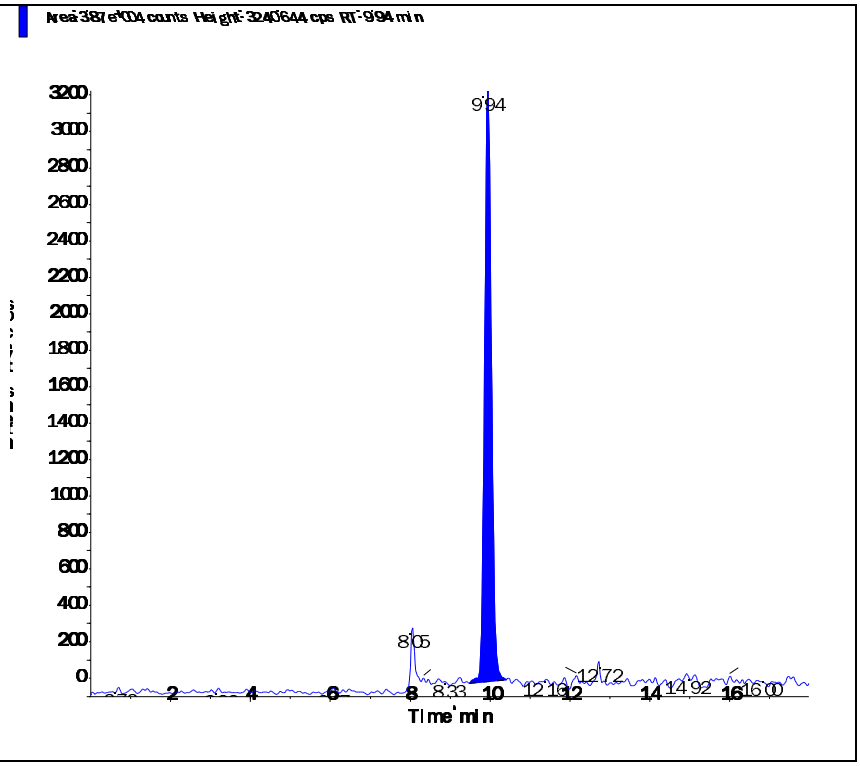

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.026
Sample Type:	(Standard)

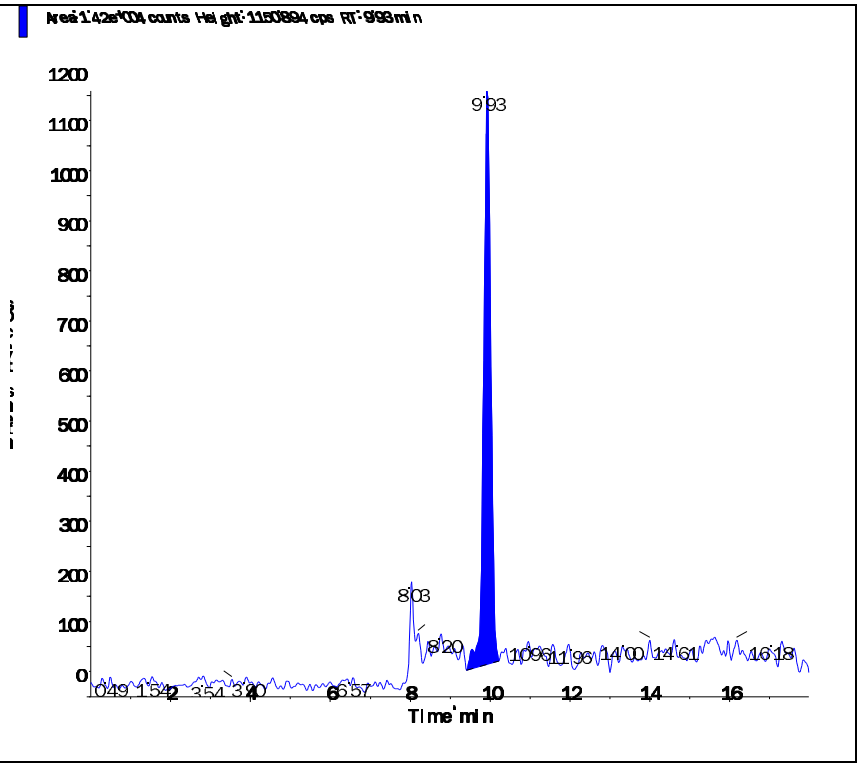

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Data File	LM33247.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/17/2016 8:08:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM33247.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 8:08:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG557856-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.560e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	9.140e+04	9.94	0.50	0.513
Perchlorate conf	3.290e+04	9.93	0.50	0.508

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

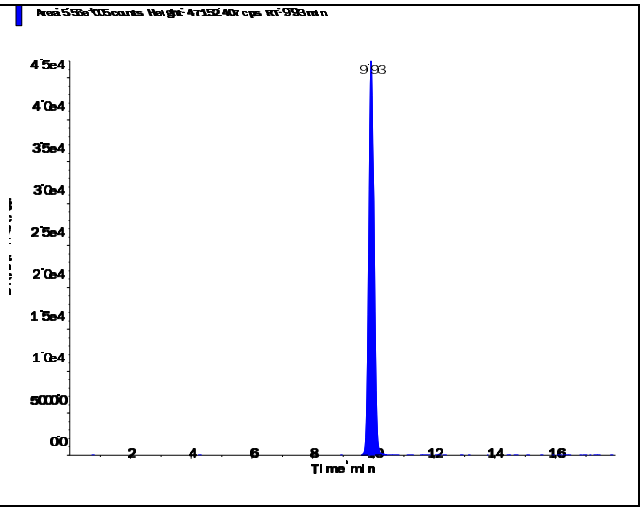

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.513 ng/ml
Area Ratio:	0.164
Sample Type:	(Standard)

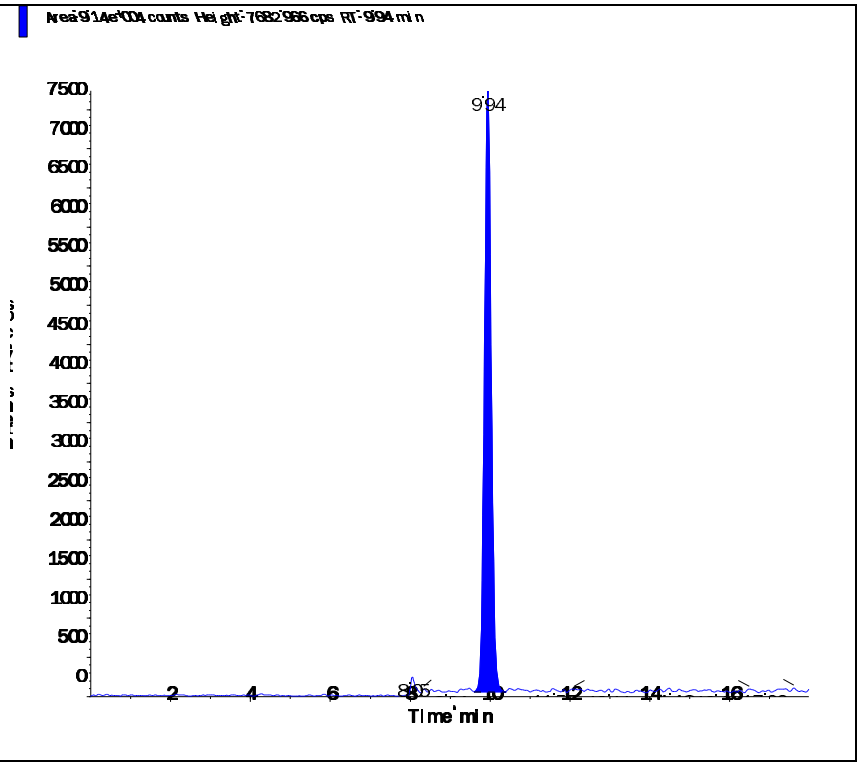

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	0.508 ng/ml
Area Ratio:	0.059
Sample Type:	(Standard)

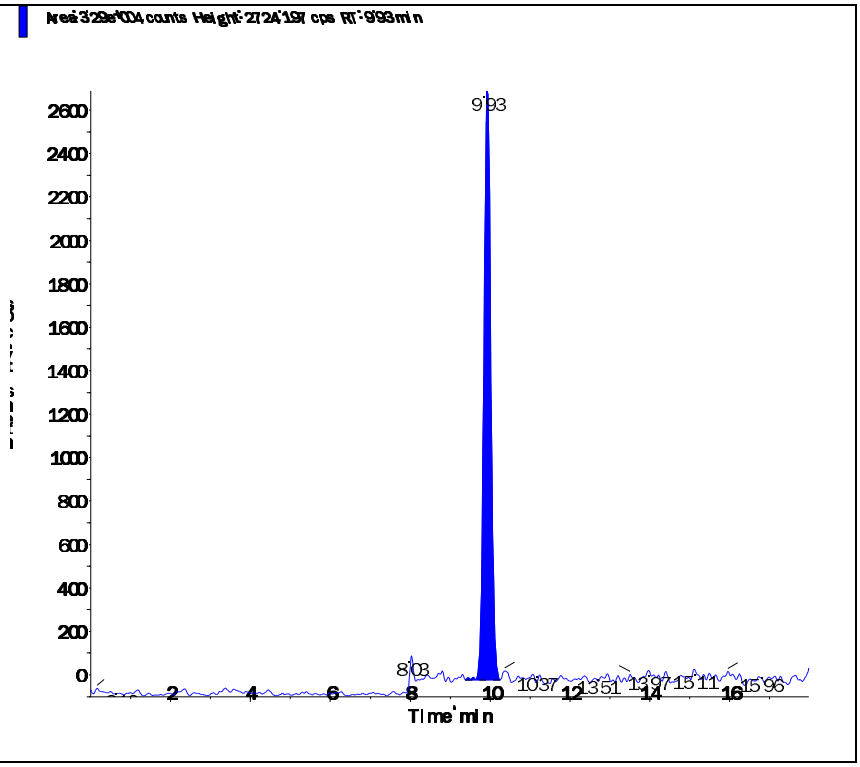

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Data File	LM33248.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/17/2016 8:27:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM33248.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 8:27:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG557856-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.490e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.780e+05	9.95	1.00	1.03
Perchlorate conf	6.390e+04	9.94	1.00	1.02

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

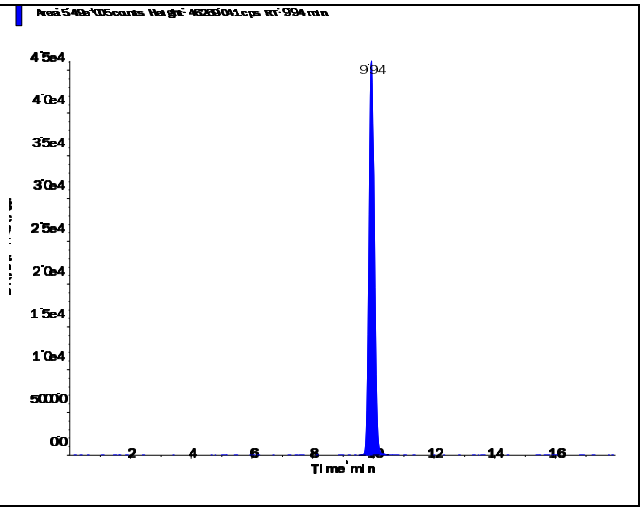

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.325
Sample Type:	(Standard)

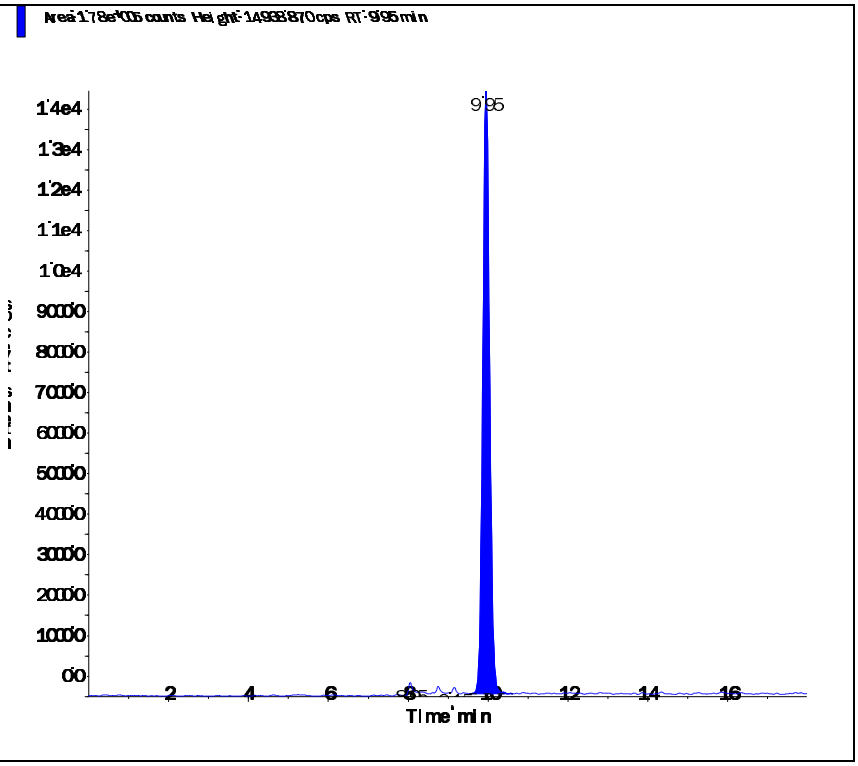

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.116
Sample Type:	(Standard)

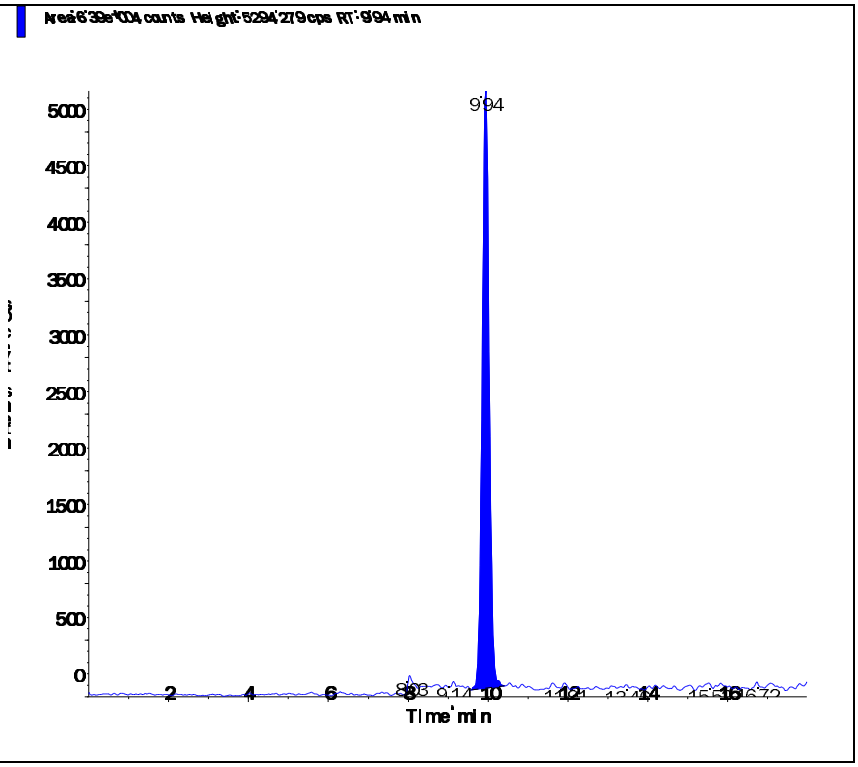

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Data File	LM33249.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/17/2016 8:46:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM33249.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 8:46:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG557856-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.460e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.500e+05	9.94	2.00	2.06
Perchlorate conf	1.260e+05	9.93	2.00	2.04

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

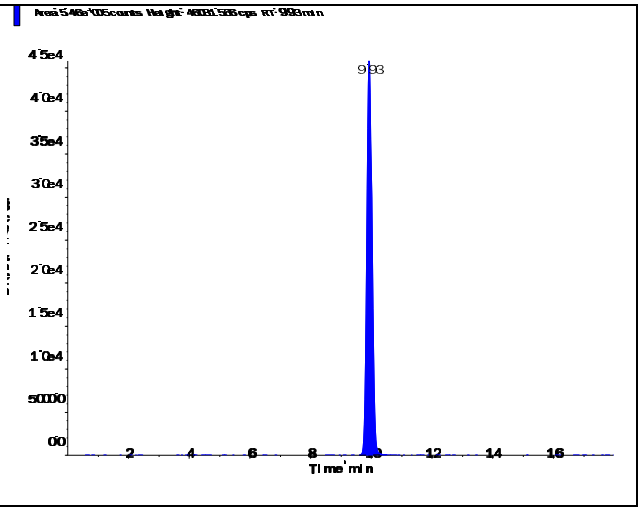

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	2.06 ng/ml
Area Ratio:	0.641
Sample Type:	(Standard)

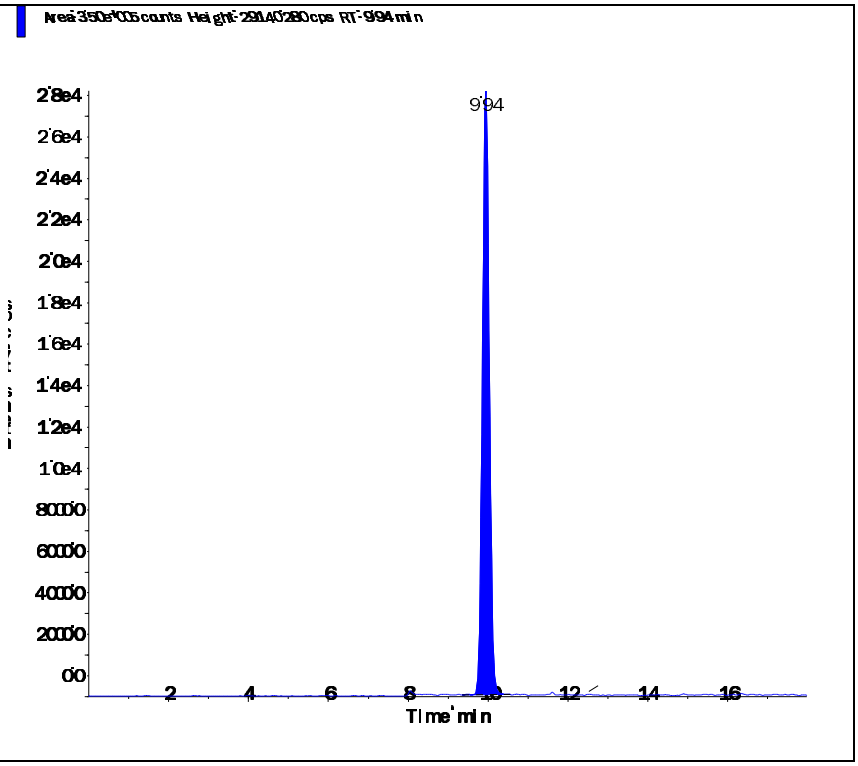

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	2.04 ng/ml
Area Ratio:	0.23
Sample Type:	(Standard)

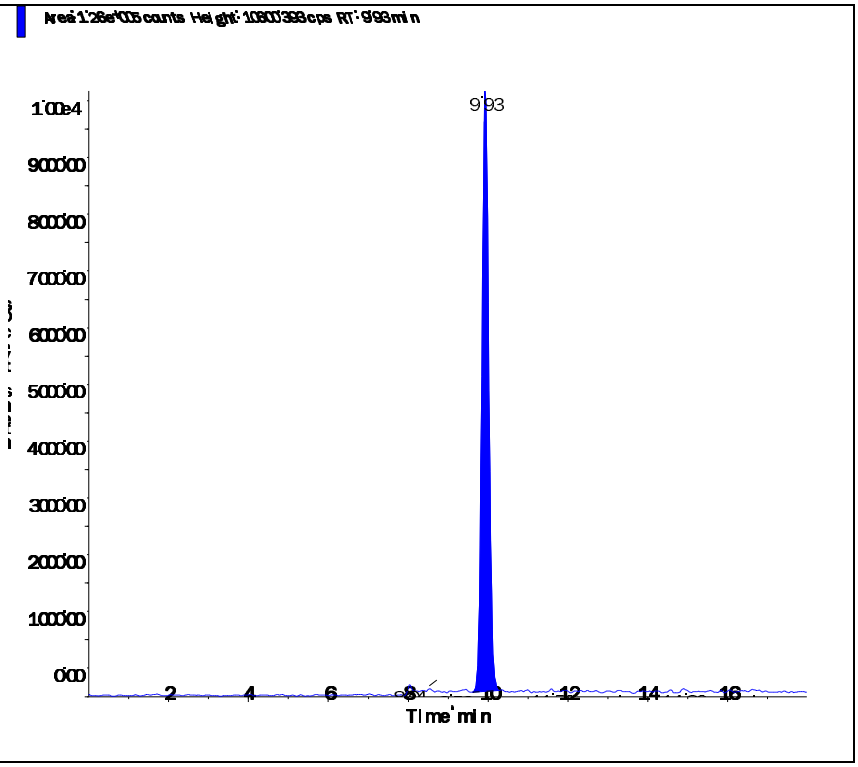

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Data File	LM33250.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/17/2016 9:05:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM33250.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 9:05:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG557856-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.320e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.260e+05	9.96	5.00	5.03
Perchlorate conf	2.930e+05	9.94	5.00	4.93

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

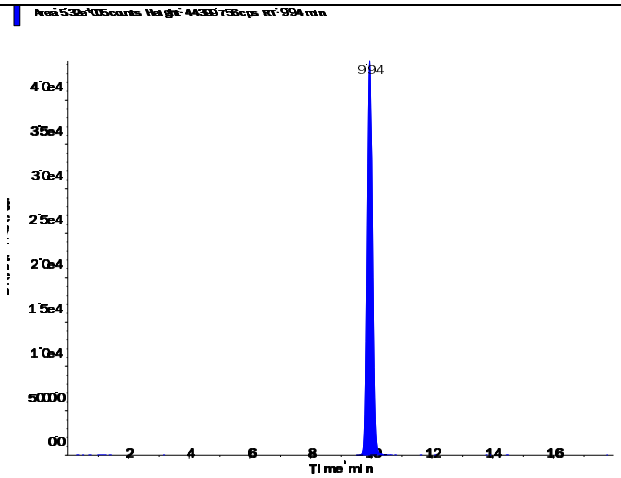

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	5.03 ng/ml
Area Ratio:	1.554
Sample Type:	(Standard)

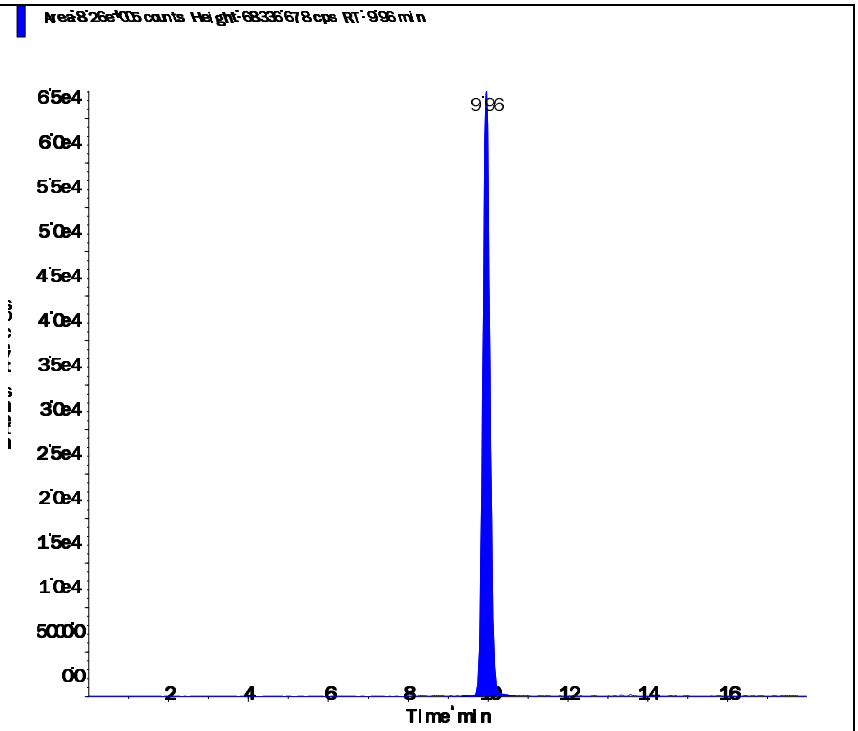

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	4.93 ng/ml
Area Ratio:	0.552
Sample Type:	(Standard)

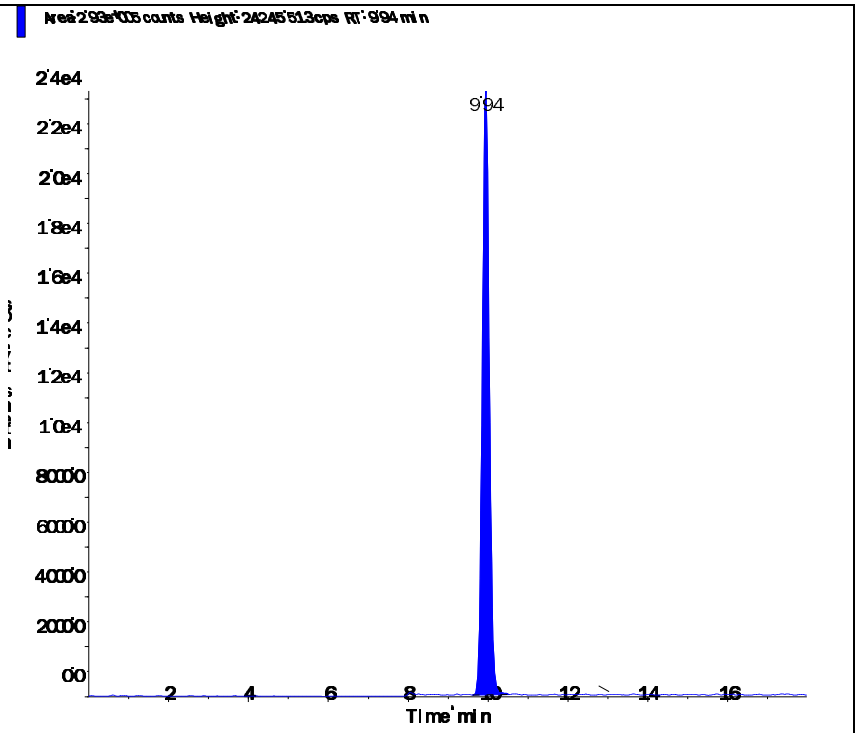

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Data File	LM33251.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/17/2016 9:24:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM33251.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 9:24:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG557856-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.030e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.94	10.00	9.87
Perchlorate conf	5.620e+05	9.93	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

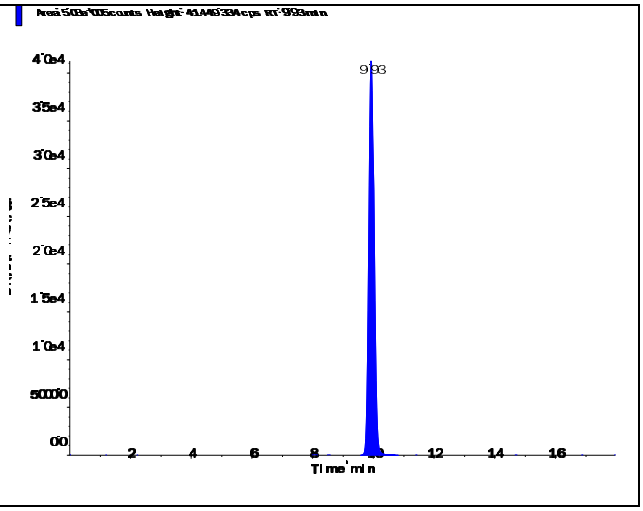

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	9.87 ng/ml
Area Ratio:	3.043
Sample Type:	(Standard)

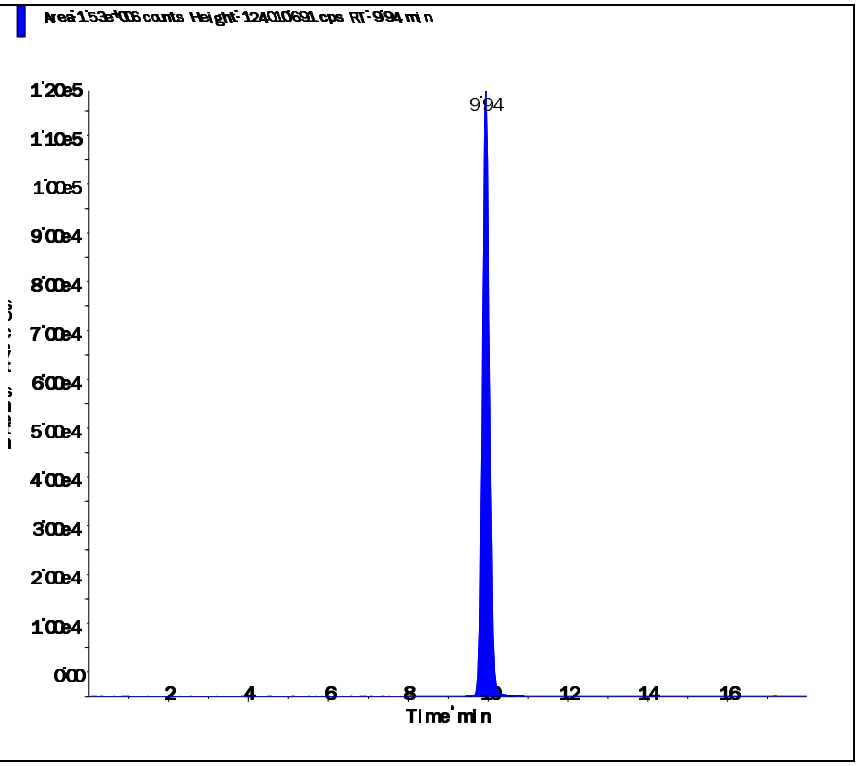

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	10.00 ng/ml
Area Ratio:	1.117
Sample Type:	(Standard)

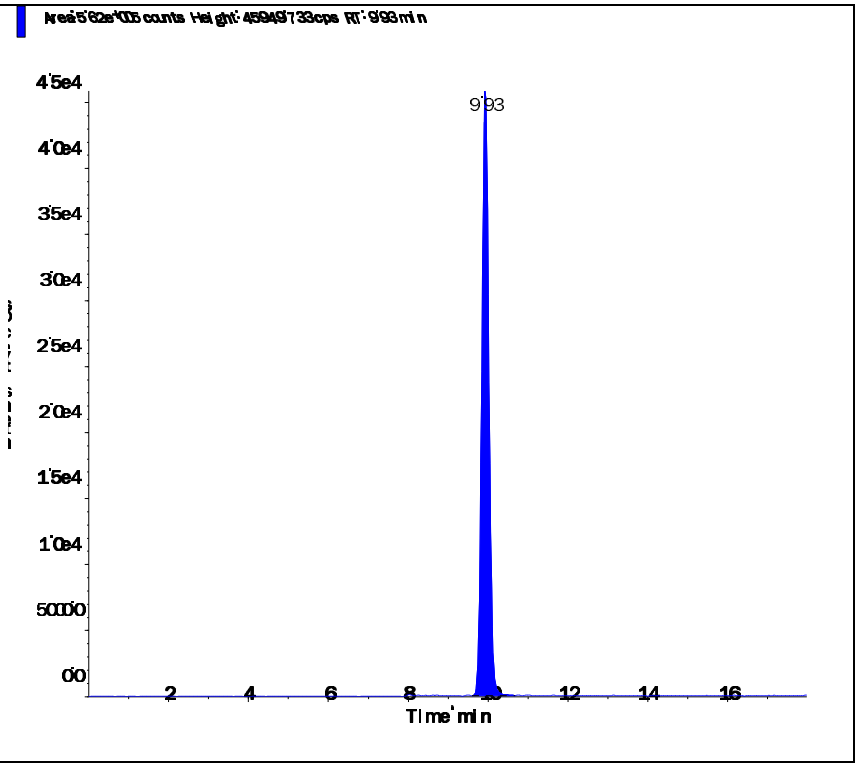

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Data File	LM33252.wiff	**Result Table**	021716_JWR.rdb
Acquisition Date	2/17/2016 9:43:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM33252.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 9:43:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	021716_JWR.rdb
Sample ID	WG557856-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.420e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+05	9.93	1.00	1.05
Perchlorate conf	6.360e+04	9.92	1.00	1.03

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

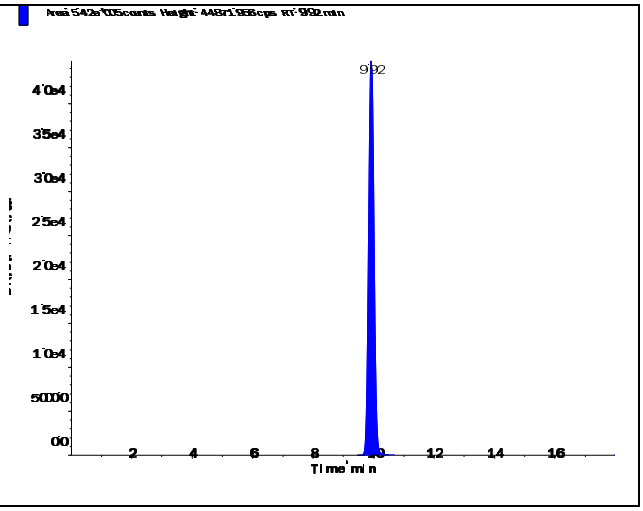

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.33
Sample Type:	(Quality Control)

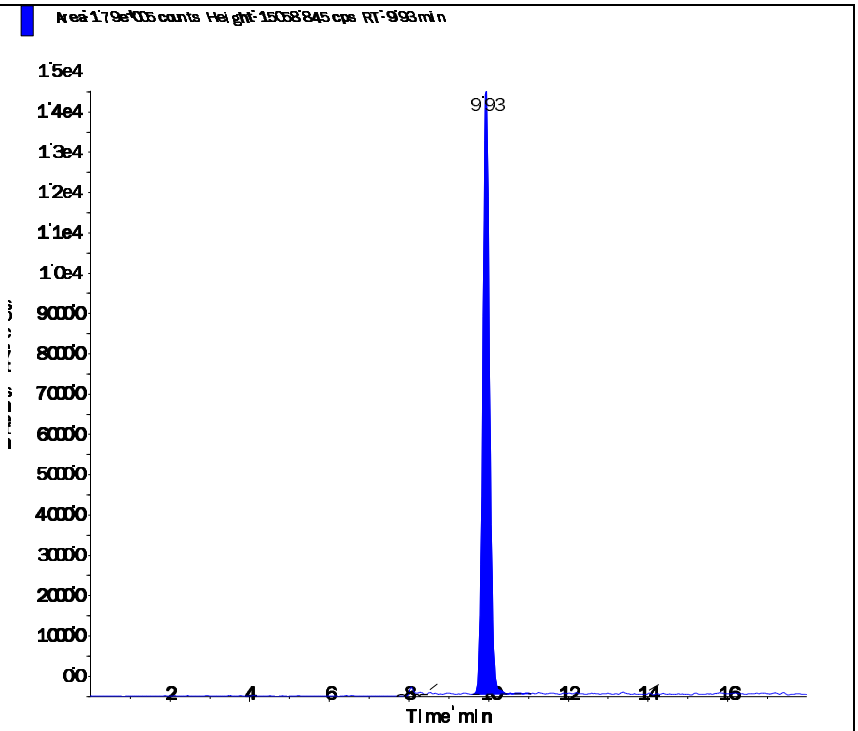

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.117
Sample Type:	(Quality Control)

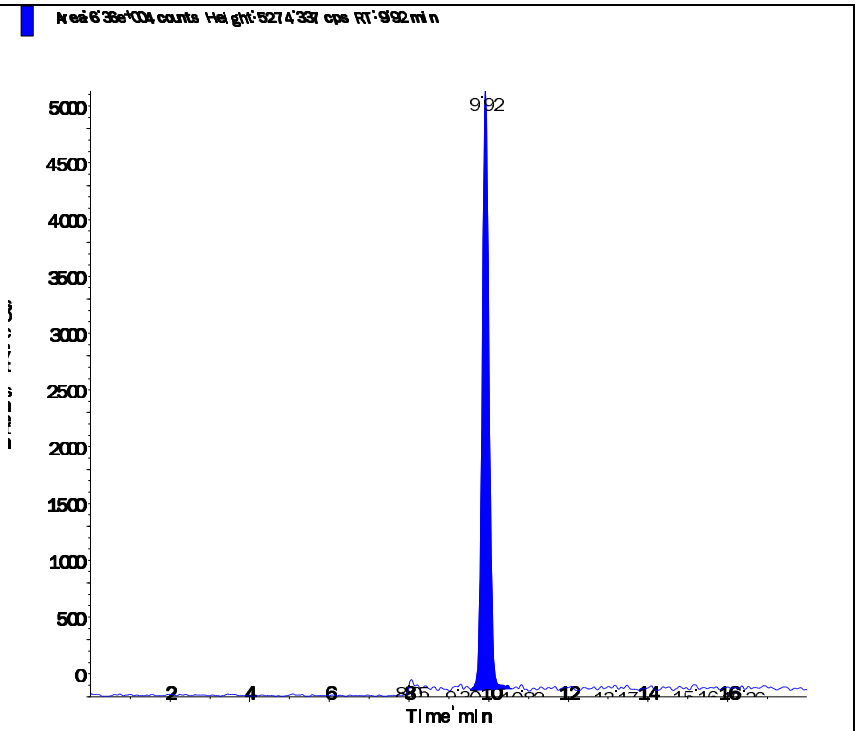

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Data File	LM33356.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/25/2016 5:58:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558803-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33356.wiff	**Injection Volume**	10.00
Acquisition Date	2/25/2016 5:58:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	WG558803-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.890e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.640e+05	9.95	1.00	1.07
Perchlorate conf	5.410e+04	9.93	1.00	0.971

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

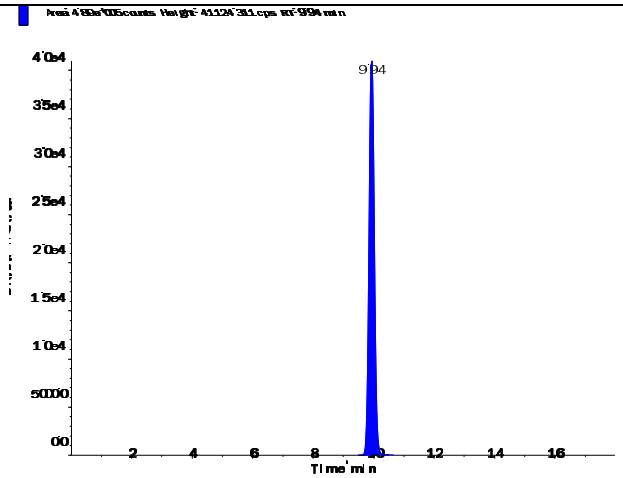

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	1.07 ng/ml
Area Ratio:	0.335
Sample Type:	(Quality Control)

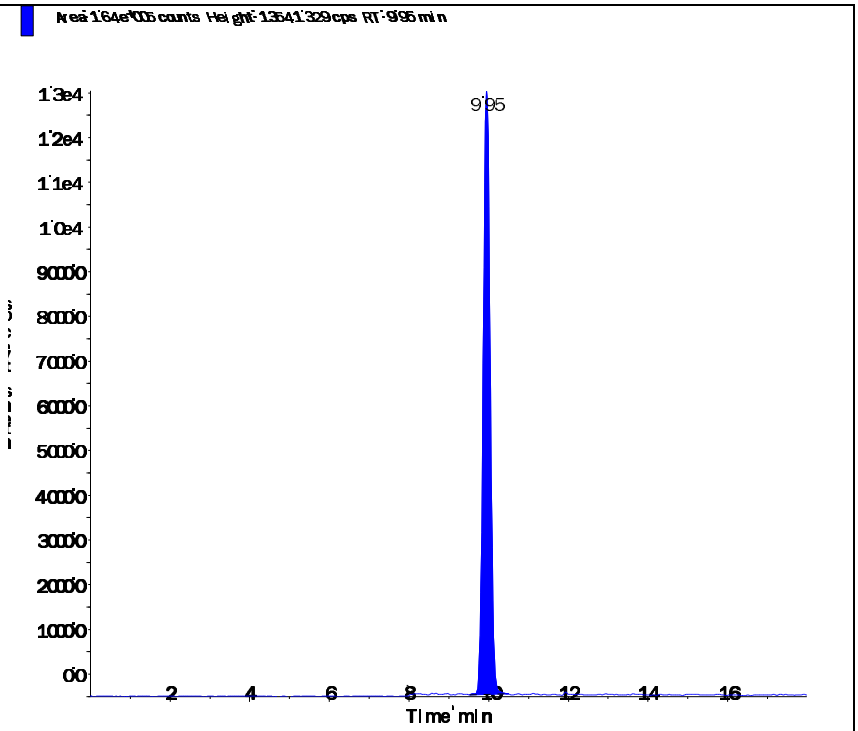

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	0.971 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

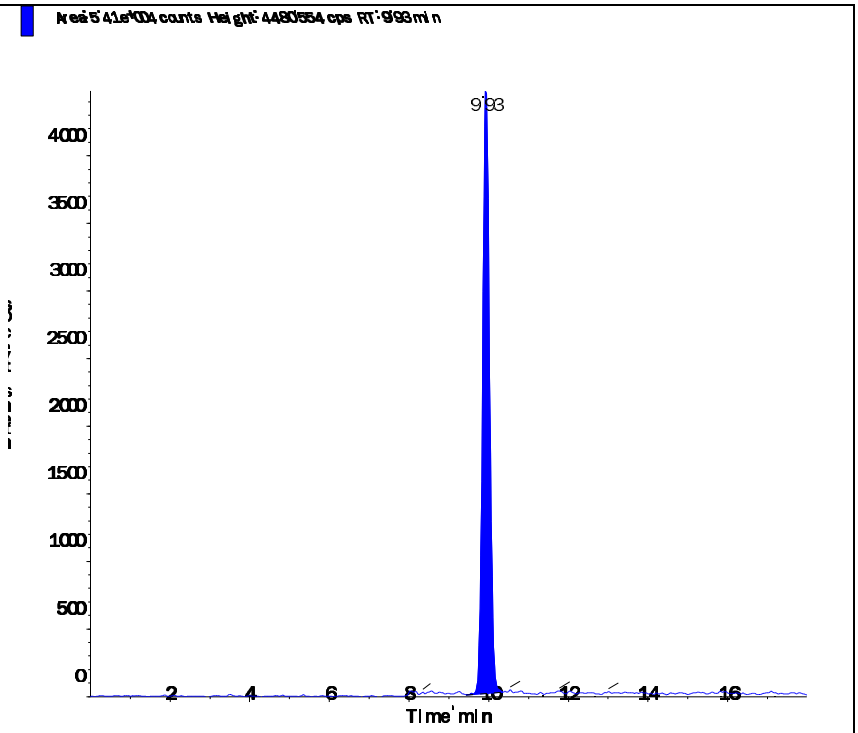

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Data File	LM33368.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/25/2016 9:46:07 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558803-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33368.wiff	**Injection Volume**	10.00
Acquisition Date	2/25/2016 9:46:07 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	WG558803-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.350e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.870e+05	9.96	1.00	1.11
Perchlorate conf	6.210e+04	9.95	1.00	1.02

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

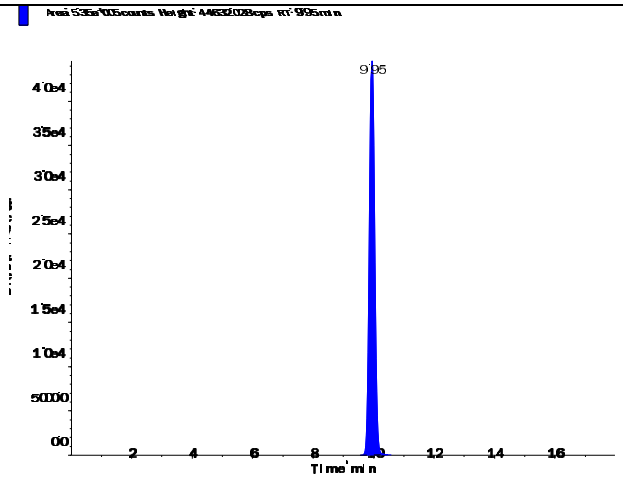

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	1.11 ng/ml
Area Ratio:	0.349
Sample Type:	(Quality Control)

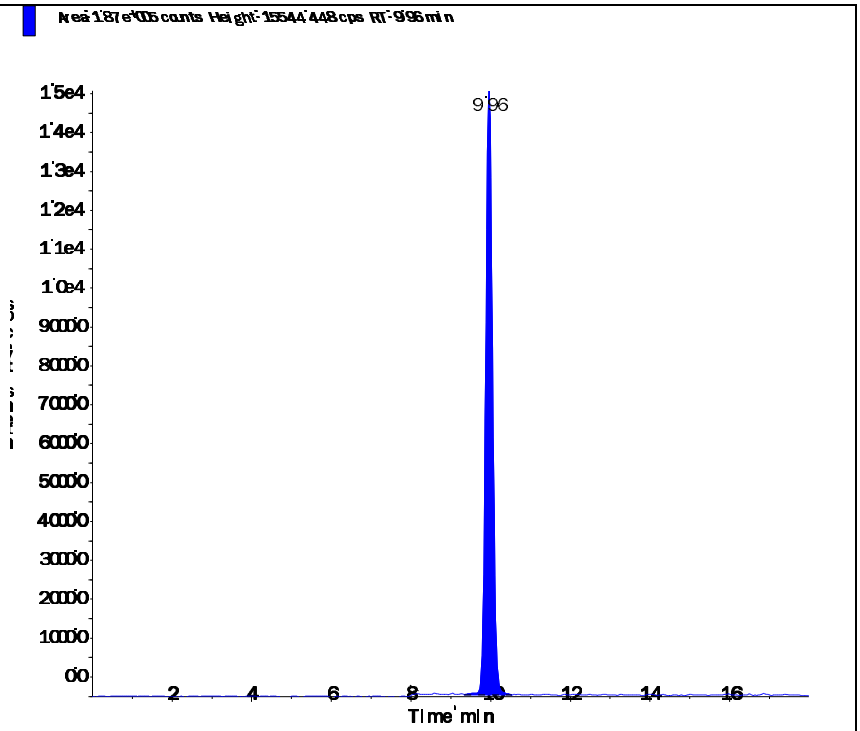

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.95 (9.92) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.116
Sample Type:	(Quality Control)

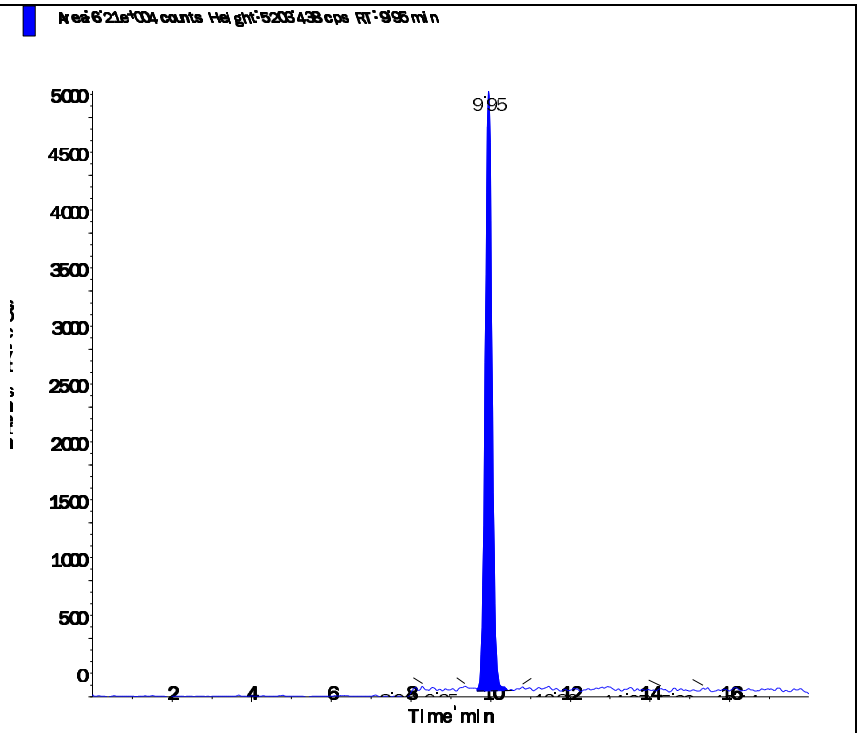

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Data File	LM33381.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/26/2016 1:52:18 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558803-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33381.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 1:52:18 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	WG558803-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.410e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.850e+05	9.95	1.00	1.09
Perchlorate conf	5.900e+04	9.94	1.00	0.955

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

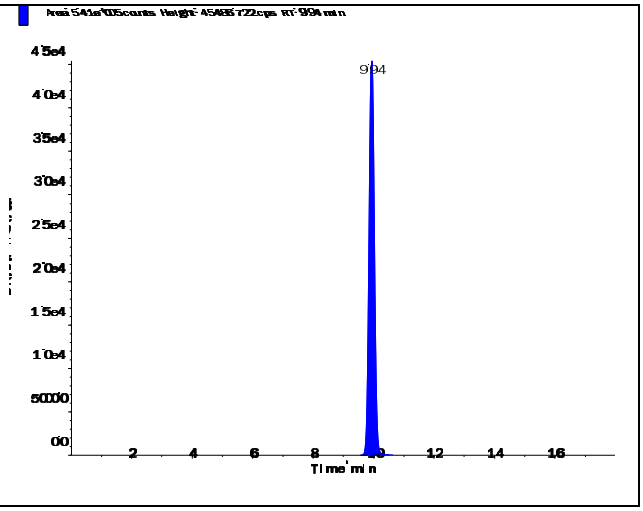

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	1.09 ng/ml
Area Ratio:	0.343
Sample Type:	(Quality Control)

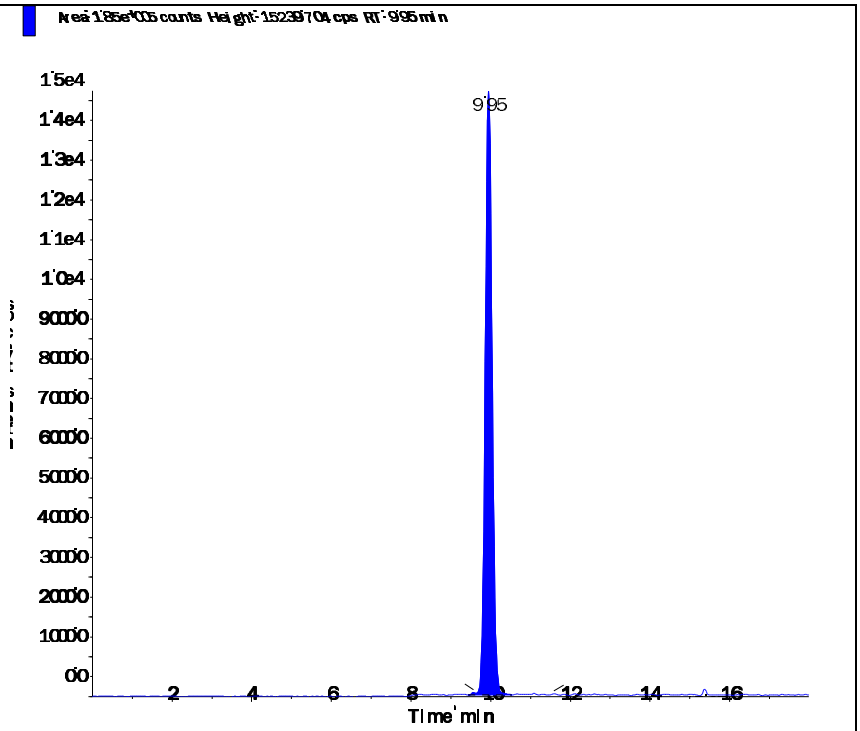

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.955 ng/ml
Area Ratio:	0.109
Sample Type:	(Quality Control)

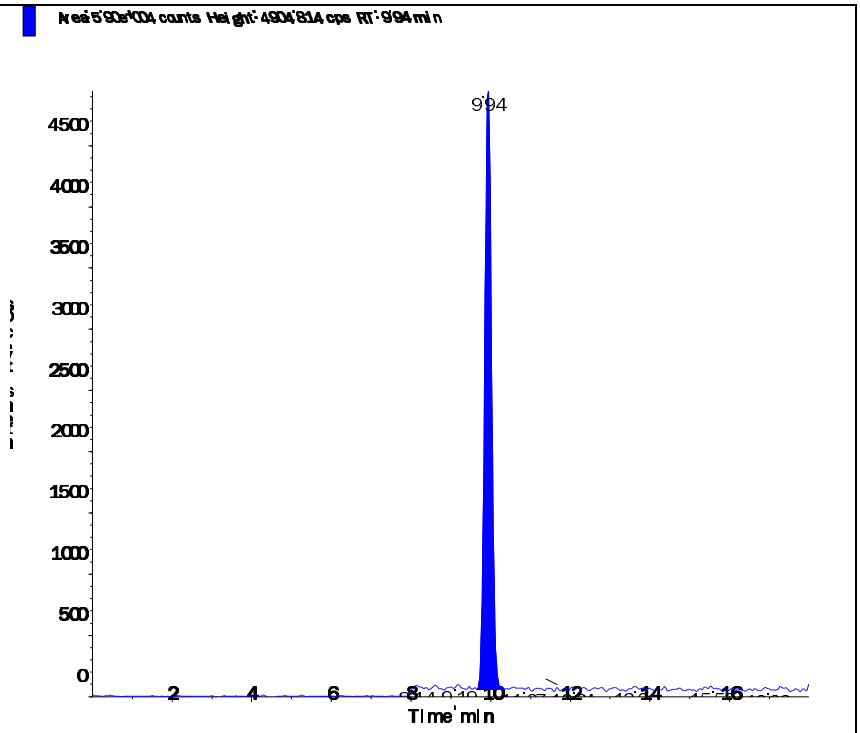

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Data File	LM33385.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/26/2016 3:08:02 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558803-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33385.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 3:08:02 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	WG558803-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.400e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.830e+05	9.95	1.00	1.08
Perchlorate conf	6.100e+04	9.94	1.00	0.99

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

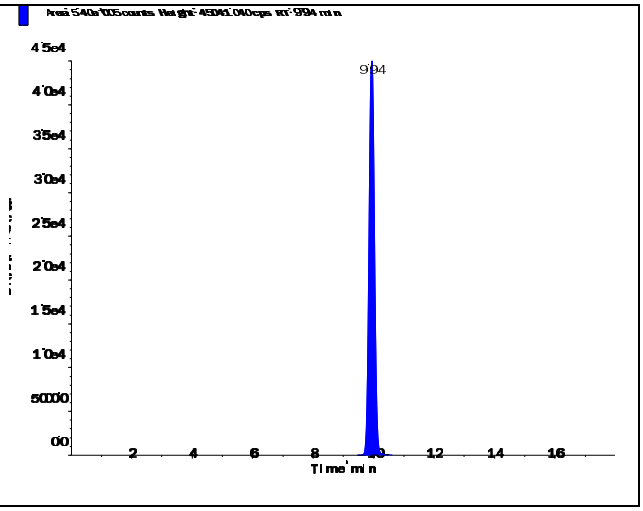

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	1.08 ng/ml
Area Ratio:	0.338
Sample Type:	(Quality Control)

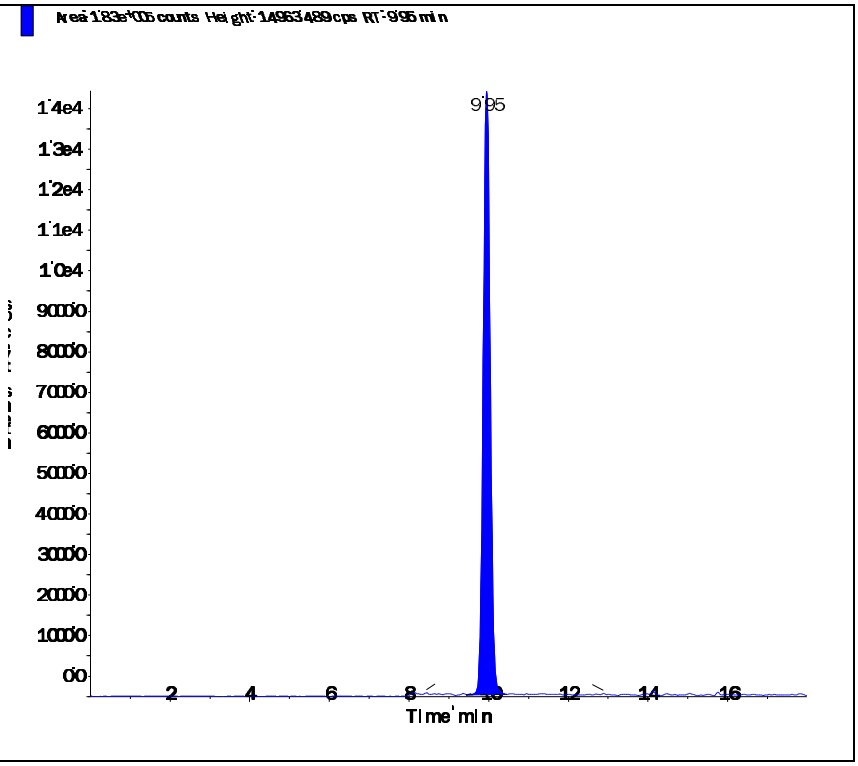

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.99 ng/ml
Area Ratio:	0.113
Sample Type:	(Quality Control)

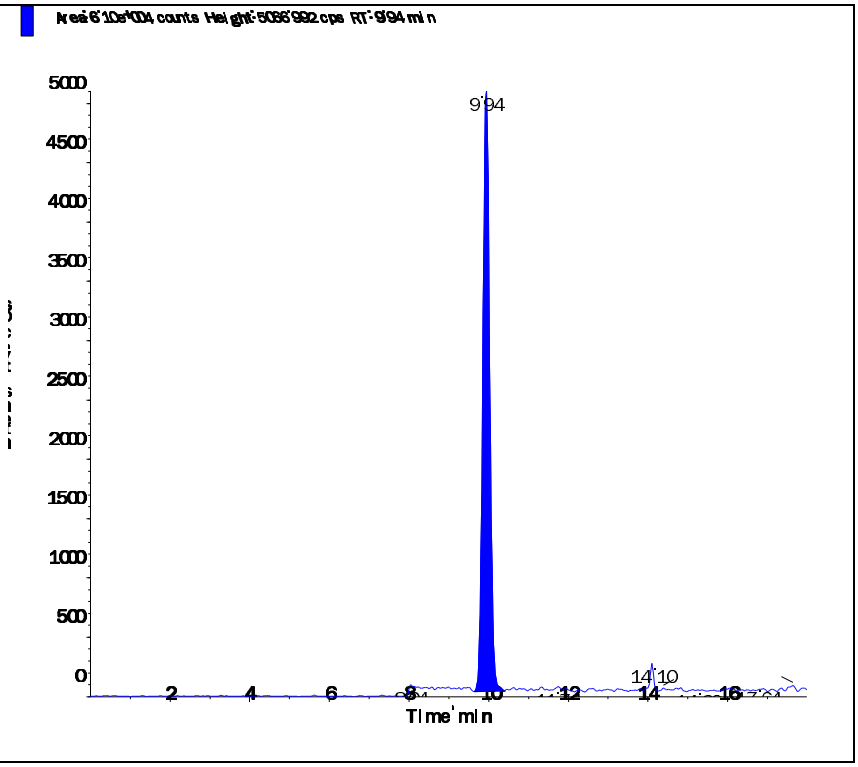

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Data File	LM33388.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/26/2016 11:27:35 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558803-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33388.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 11:27:35 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	WG558803-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.760e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.630e+05	9.97	1.00	1.09
Perchlorate conf	5.440e+04	9.96	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

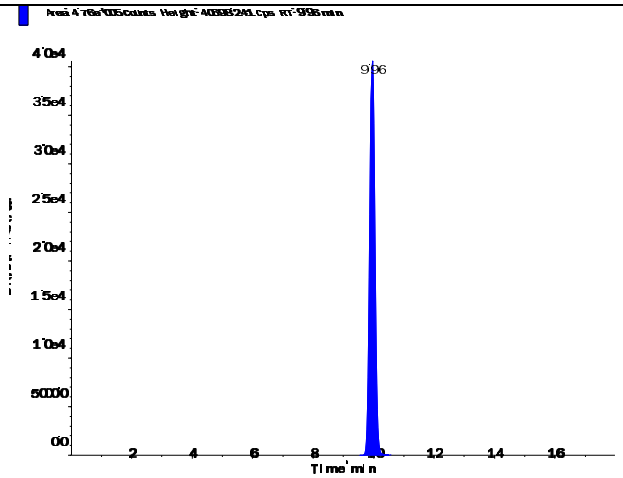

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.97 (9.94) min
Calculated conc:	1.09 ng/ml
Area Ratio:	0.342
Sample Type:	(Quality Control)

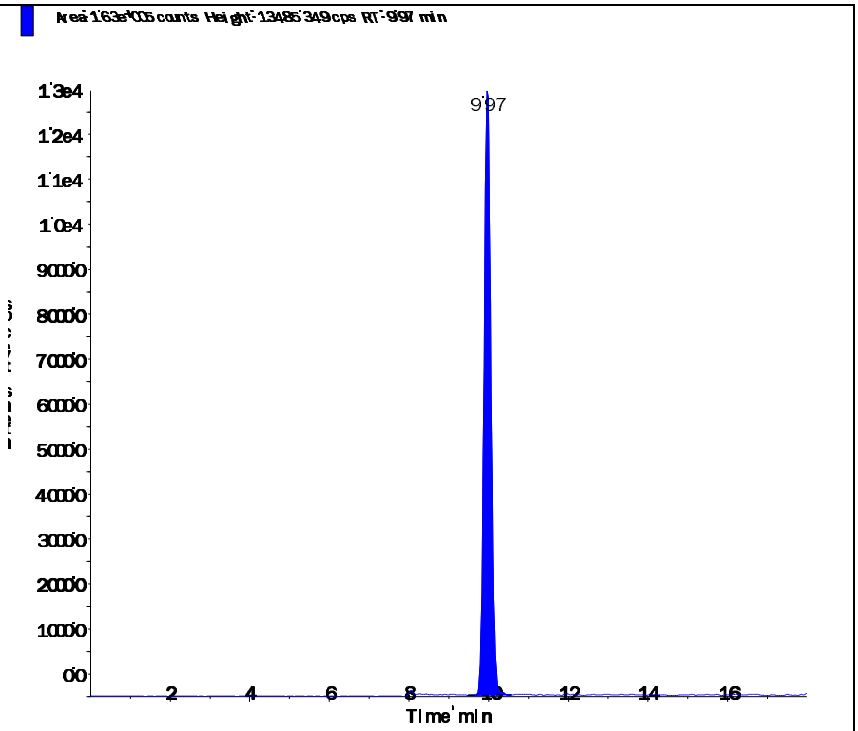

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.96 (9.92) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Quality Control)

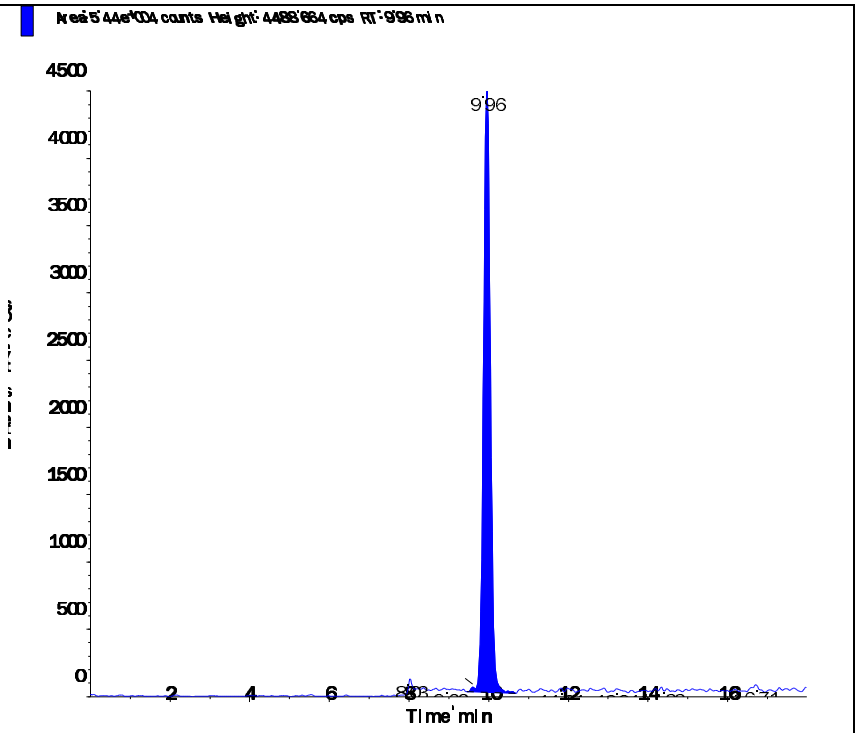

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Data File	LM33397.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/26/2016 2:18:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558803-11 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33397.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 2:18:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	WG558803-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.520e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.950e+05	9.96	1.00	1.12
Perchlorate conf	6.290e+04	9.94	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

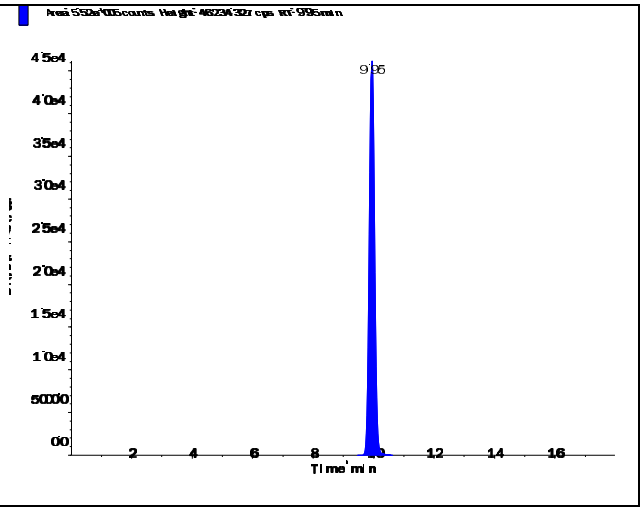

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	1.12 ng/ml
Area Ratio:	0.353
Sample Type:	(Quality Control)

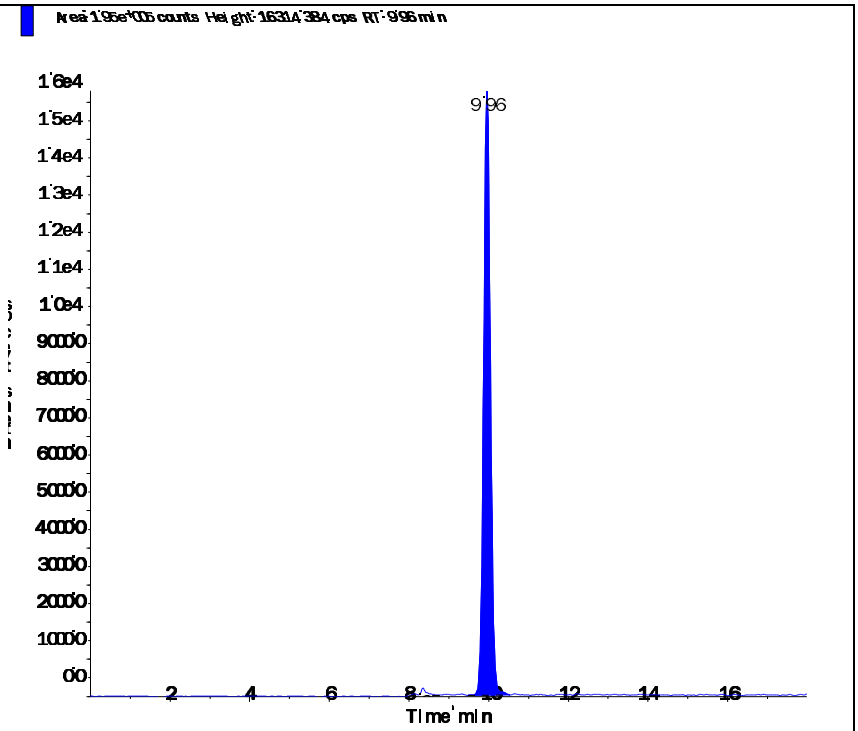

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Quality Control)

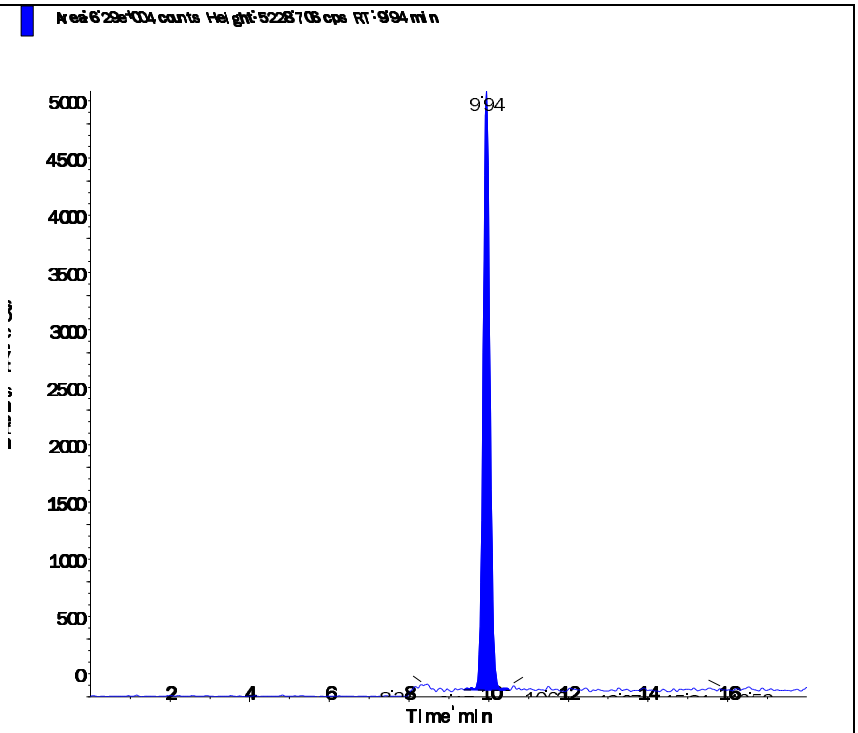

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Data File	LM33357.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/25/2016 6:17:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558779-07 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33357.wiff	**Injection Volume**	10.00
Acquisition Date	2/25/2016 6:17:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	WG558779-07	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.390e+04	9.95	N/A	0.202
Perchlorate conf	1.250e+04	9.94	N/A	0.205

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

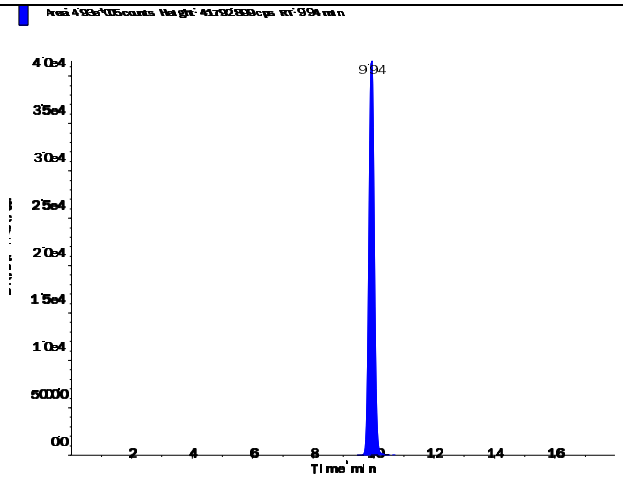

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	0.202 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

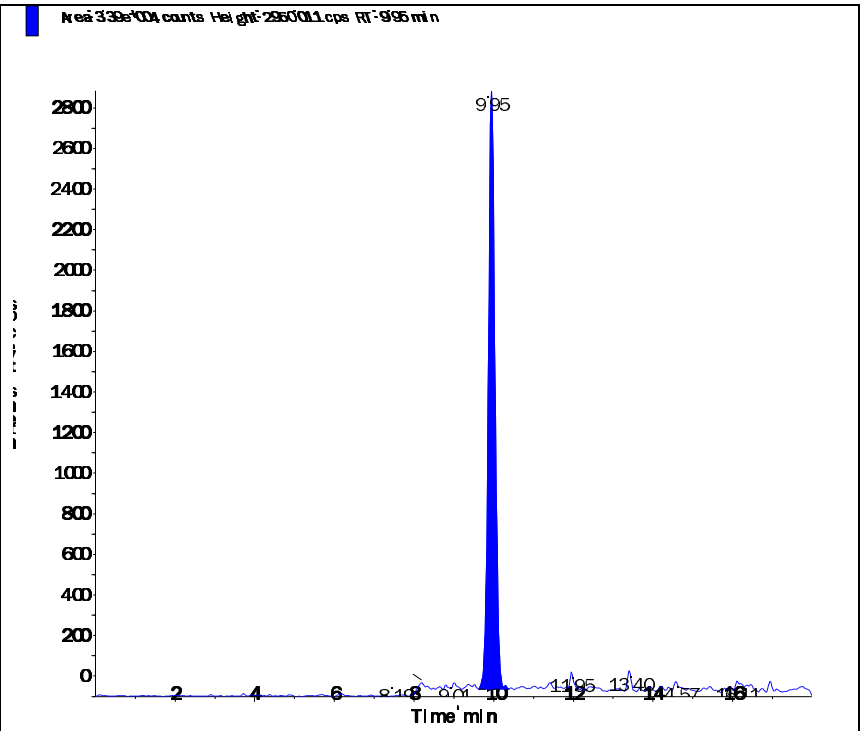

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.205 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

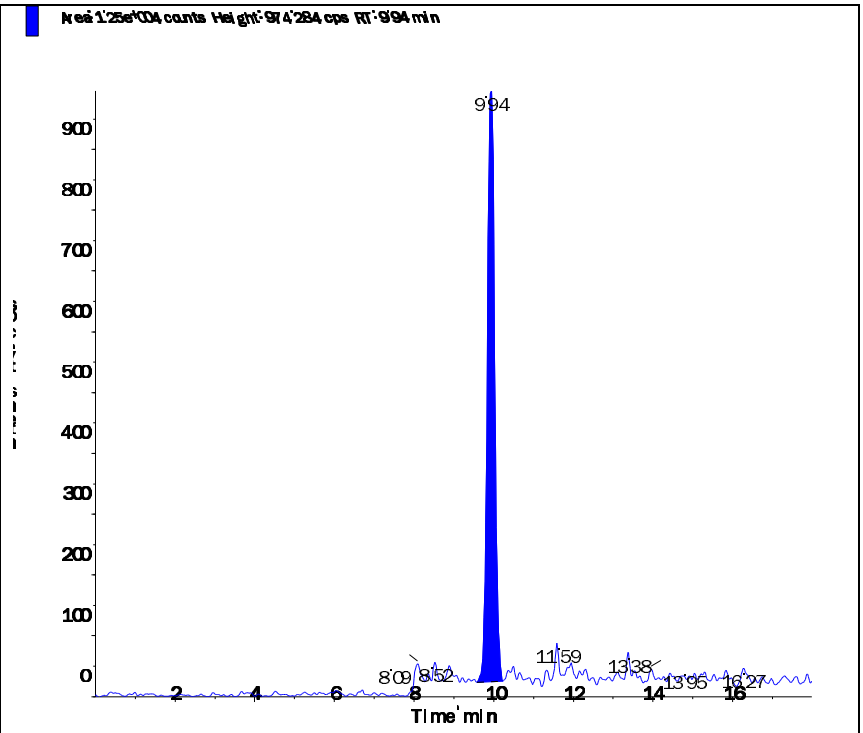

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Data File	LM33369.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/25/2016 10:05:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558779-08 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33369.wiff	**Injection Volume**	10.00
Acquisition Date	2/25/2016 10:05:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	WG558779-08	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.410e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.940e+04	9.97	N/A	0.215
Perchlorate conf	1.250e+04	9.95	N/A	0.185

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

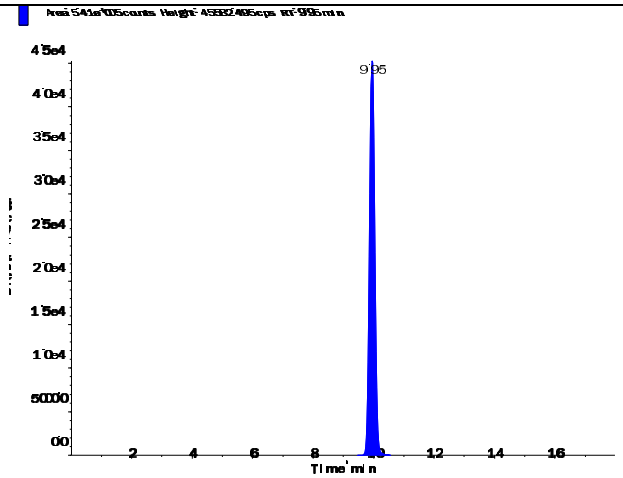

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.97 (9.94) min
Calculated conc:	0.215 ng/ml
Area Ratio:	0.073
Sample Type:	(Unknown)

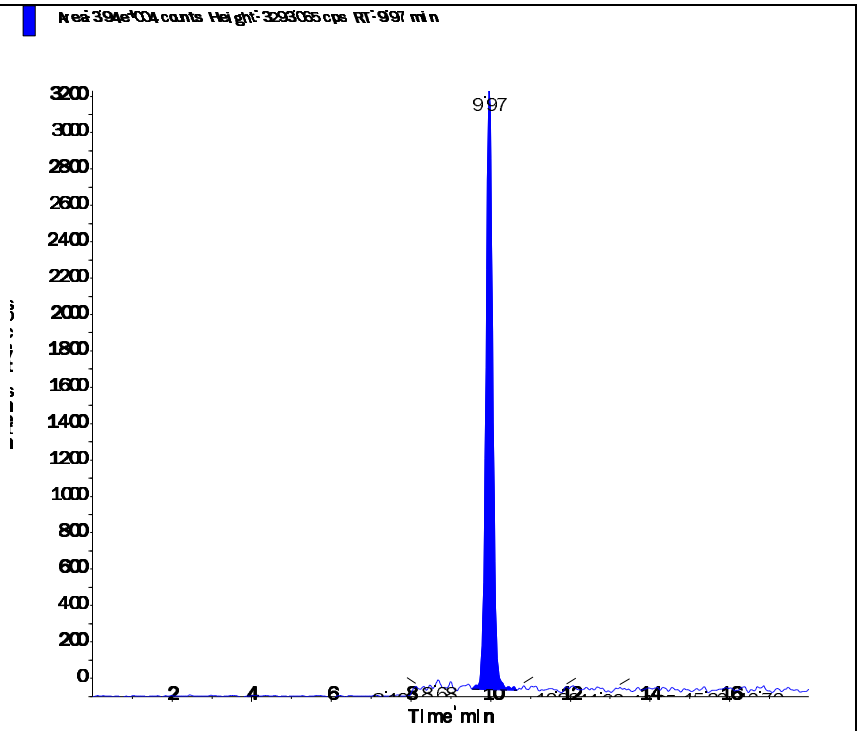

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.95 (9.92) min
Calculated conc:	0.185 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

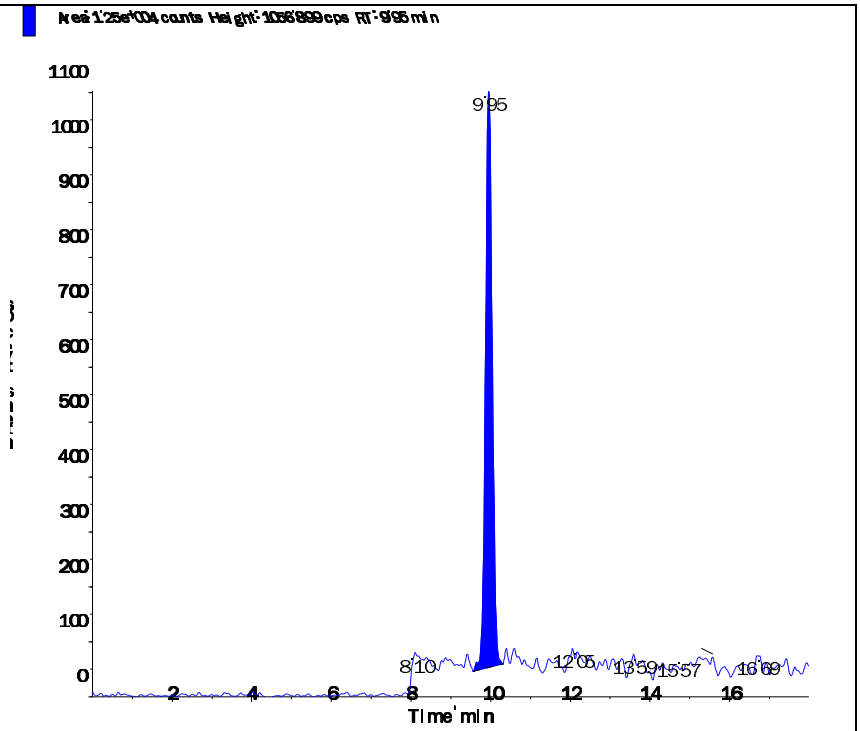

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Data File	LM33382.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/26/2016 2:11:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558779-09 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33382.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 2:11:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	WG558779-09	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.410e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.930e+04	9.95	N/A	0.214
Perchlorate conf	1.340e+04	9.94	N/A	0.20

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

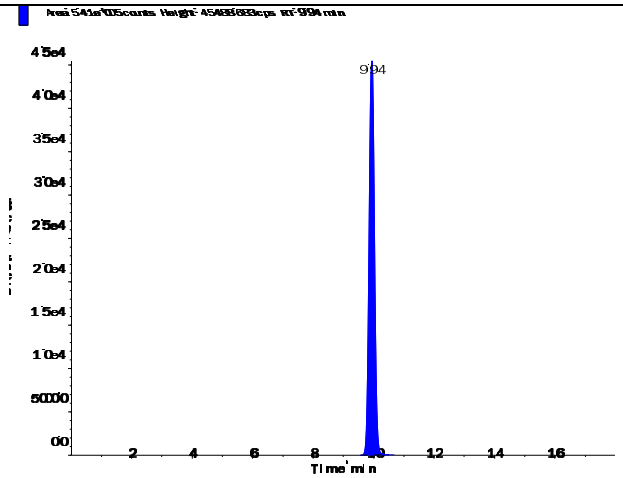

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	0.214 ng/ml
Area Ratio:	0.073
Sample Type:	(Unknown)

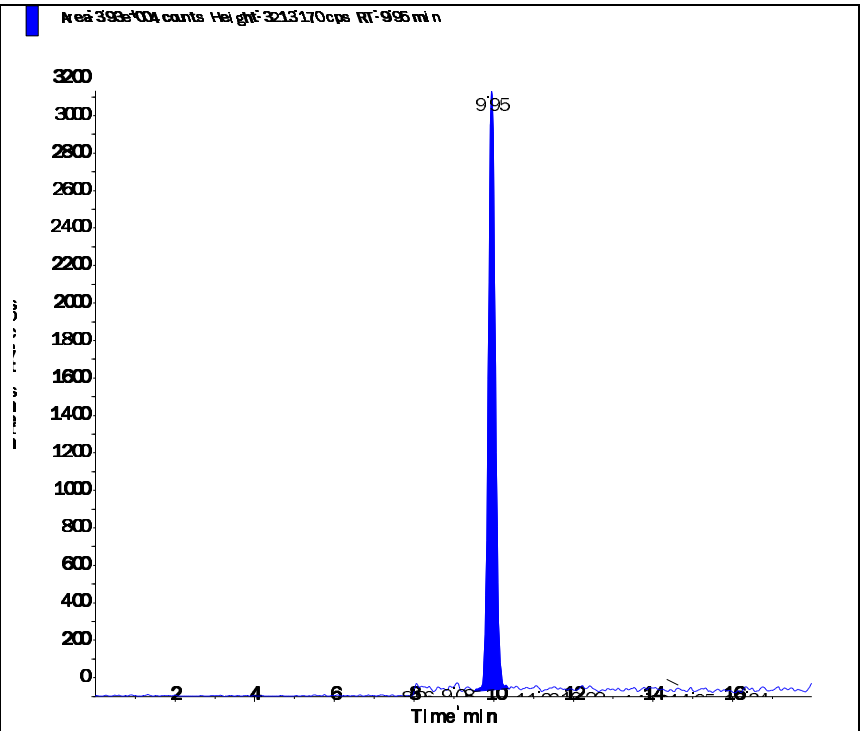

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.20 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

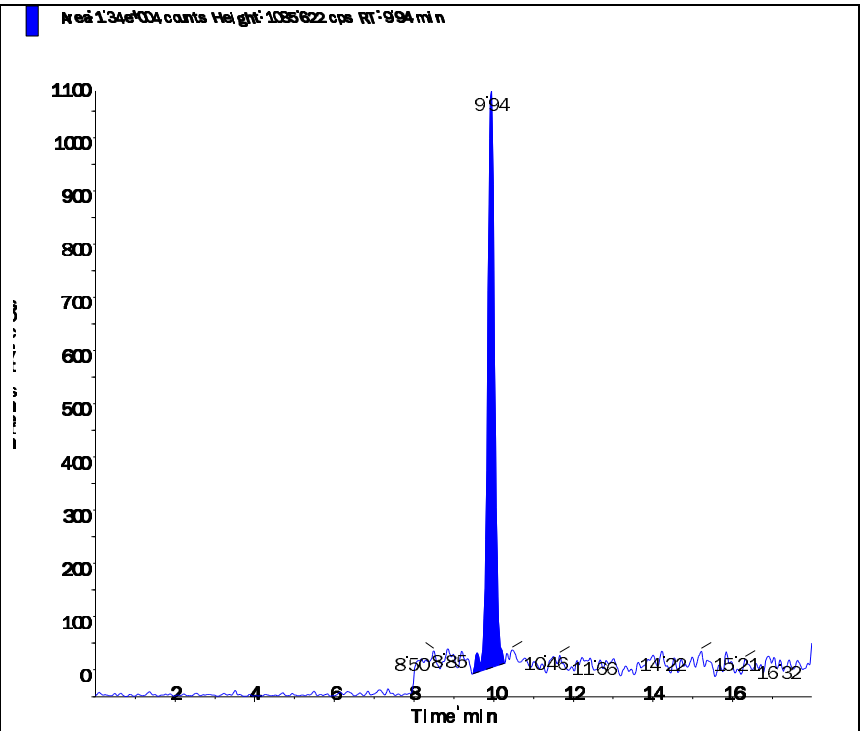

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Data File	LM33386.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/26/2016 3:26:59 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558779-10 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33386.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 3:26:59 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	WG558779-10	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.340e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.830e+04	9.96	N/A	0.211
Perchlorate conf	1.280e+04	9.95	N/A	0.193

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

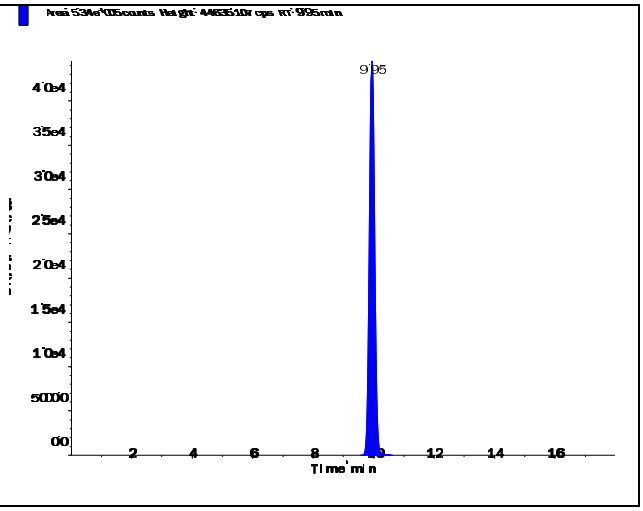

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	0.211 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

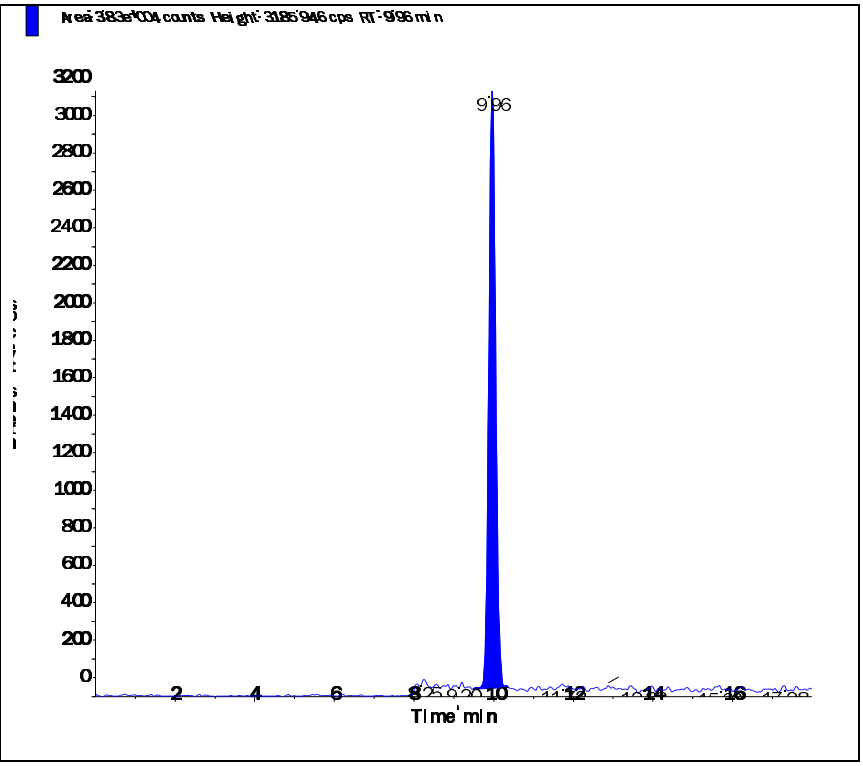

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.95 (9.92) min
Calculated conc:	0.193 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

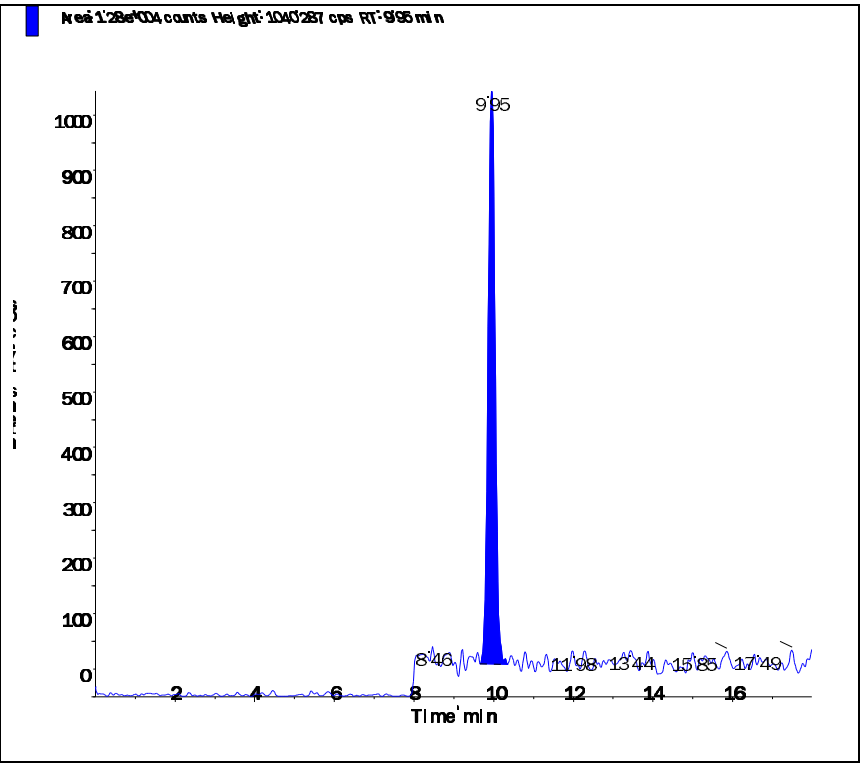

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Data File	LM33389.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/26/2016 11:46:27 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558779-11 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33389.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 11:46:27 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	WG558779-11	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.940e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.470e+04	9.96	N/A	0.206
Perchlorate conf	1.240e+04	9.95	N/A	0.202

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

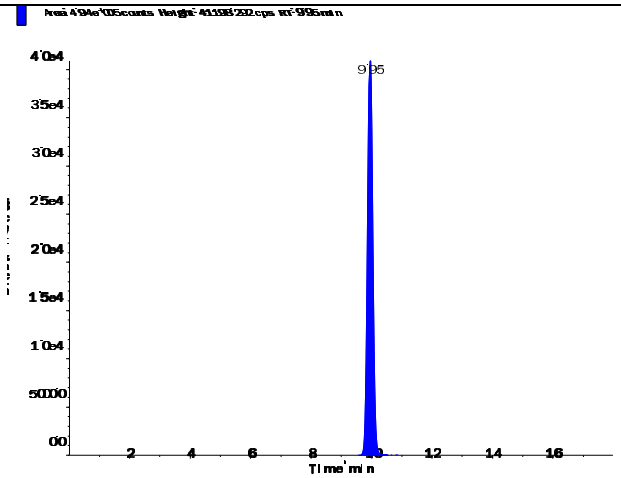

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

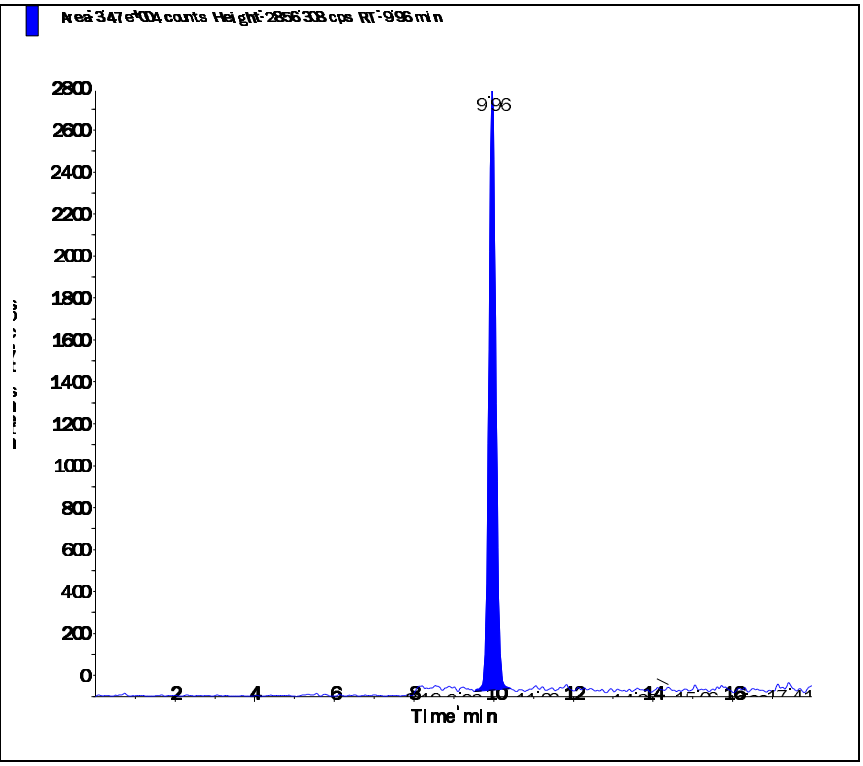

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.95 (9.92) min
Calculated conc:	0.202 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

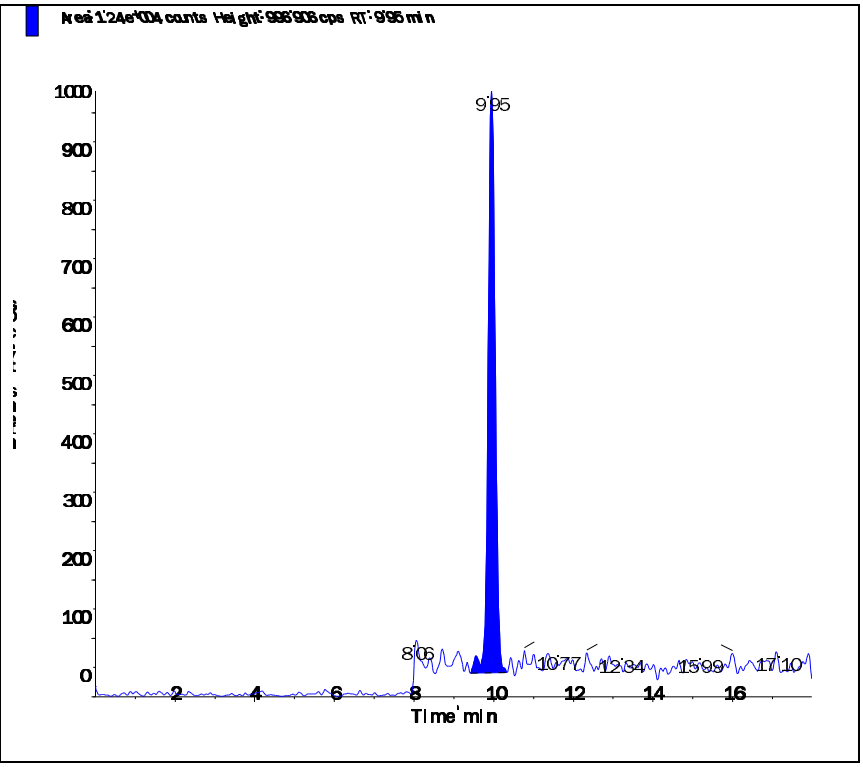

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Data File	LM33398.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/26/2016 2:36:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558779-12 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33398.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 2:36:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	WG558779-12	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.530e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.110e+04	9.96	N/A	0.22
Perchlorate conf	1.330e+04	9.94	N/A	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

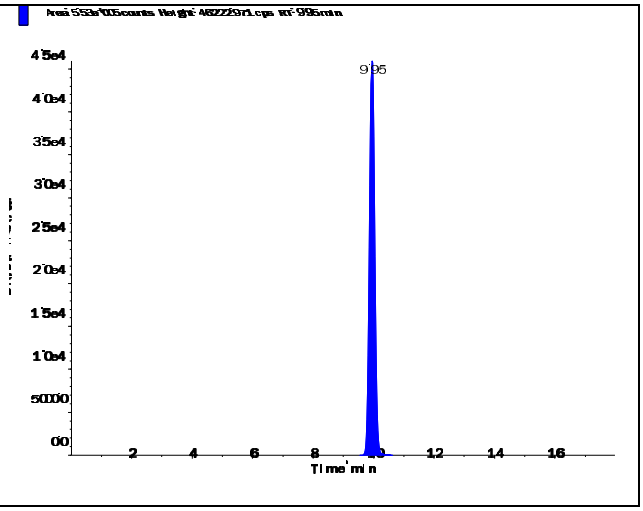

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	0.22 ng/ml
Area Ratio:	0.074
Sample Type:	(Unknown)

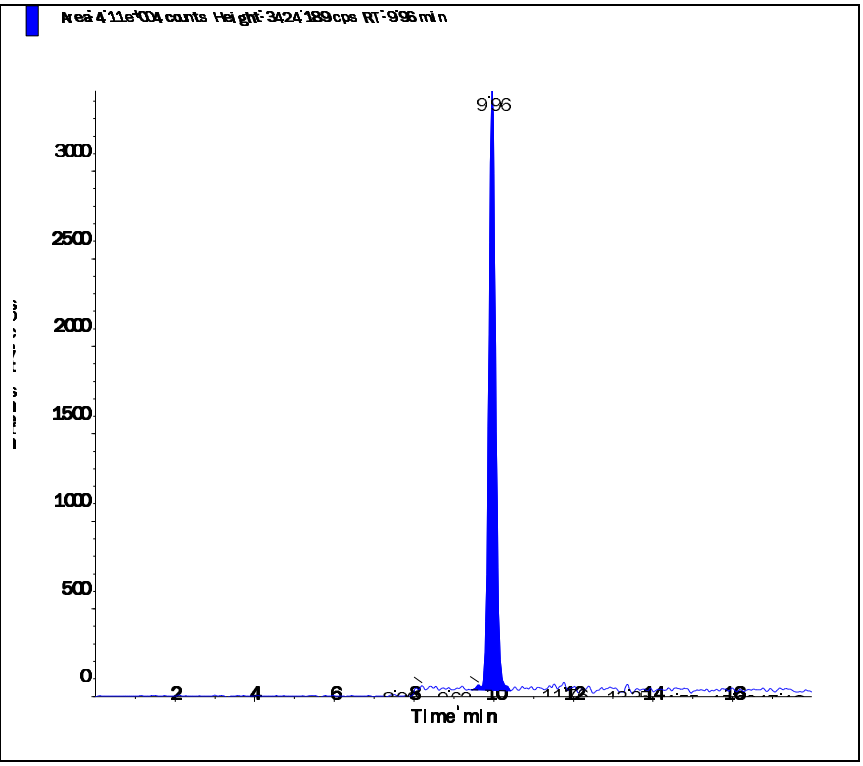

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

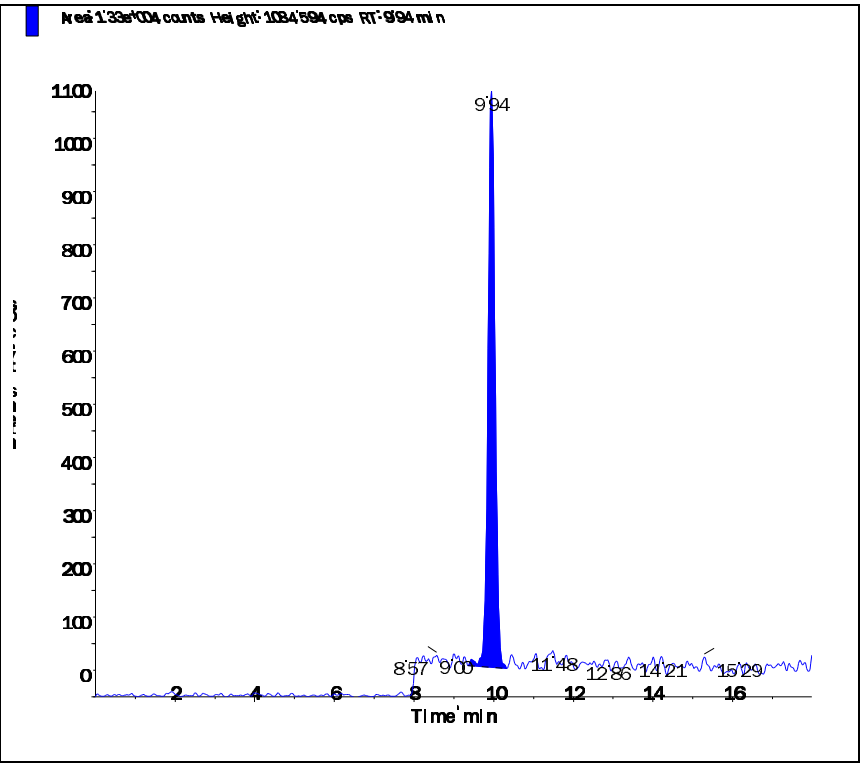

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Data File	LM33355.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/25/2016 5:40:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558803-01 CCB	**Injection Vial**	1.00
Data File	LM33355.wiff	**Injection Volume**	10.00
Acquisition Date	2/25/2016 5:40:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	WG558803-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

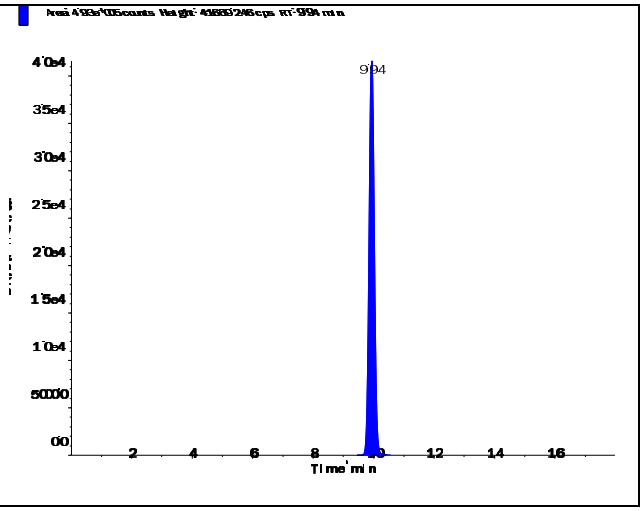

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

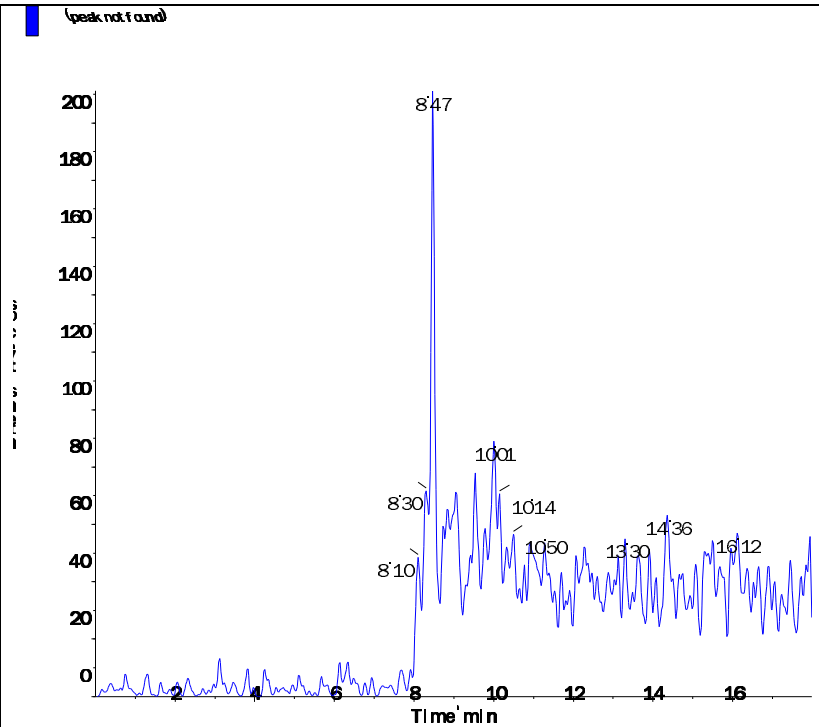

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

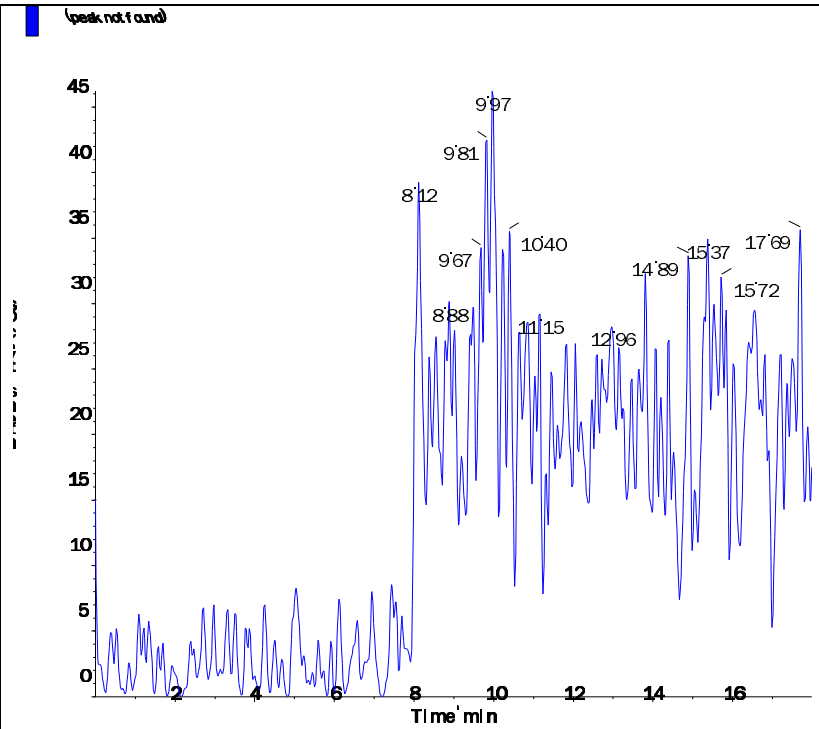

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Data File	LM33370.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/25/2016 10:24:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558803-04 CCB	**Injection Vial**	1.00
Data File	LM33370.wiff	**Injection Volume**	10.00
Acquisition Date	2/25/2016 10:24:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	WG558803-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.560e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	4.950e+02	10.10	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

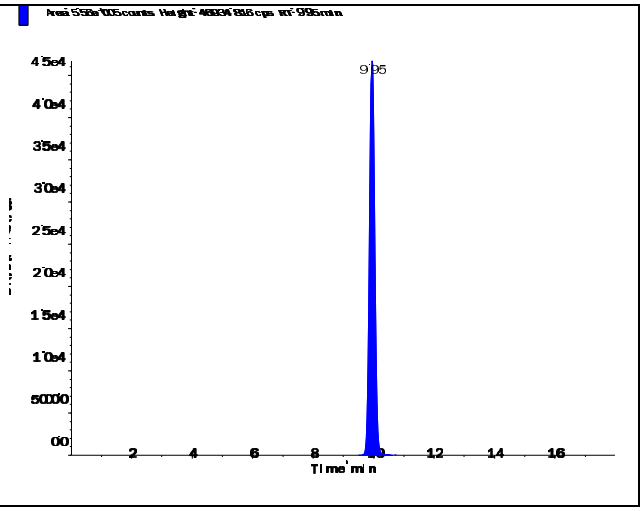

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

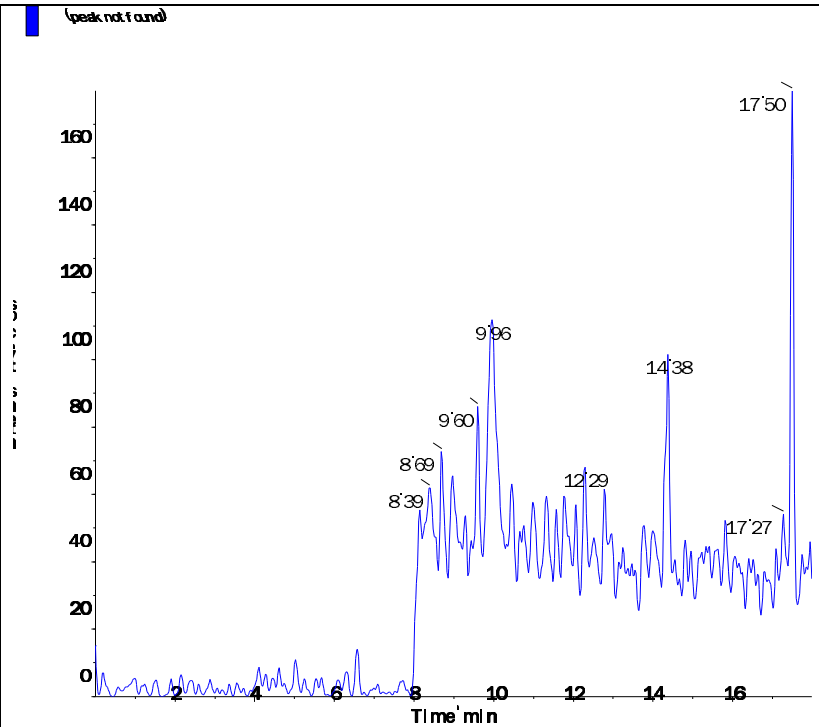

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.10 (9.92) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

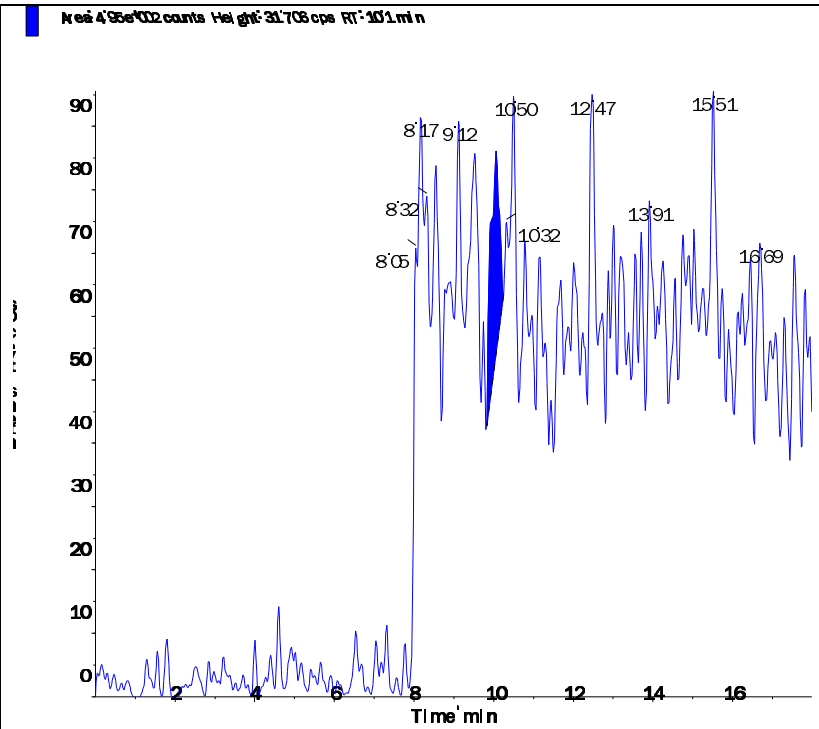

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Data File	LM33383.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/26/2016 2:30:10 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558803-06 CCB	**Injection Vial**	1.00
Data File	LM33383.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 2:30:10 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	WG558803-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.560e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

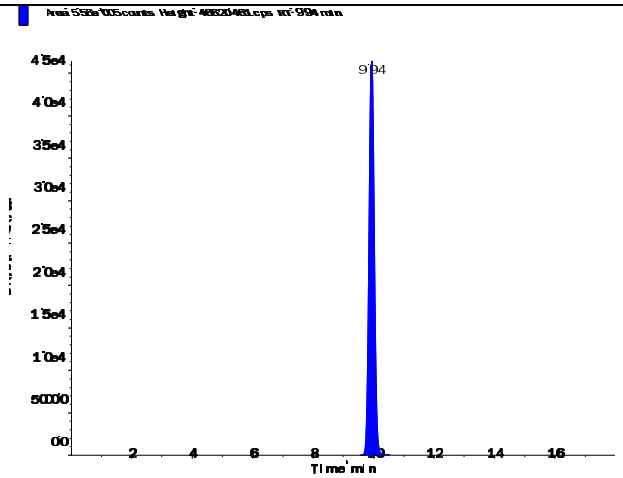

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

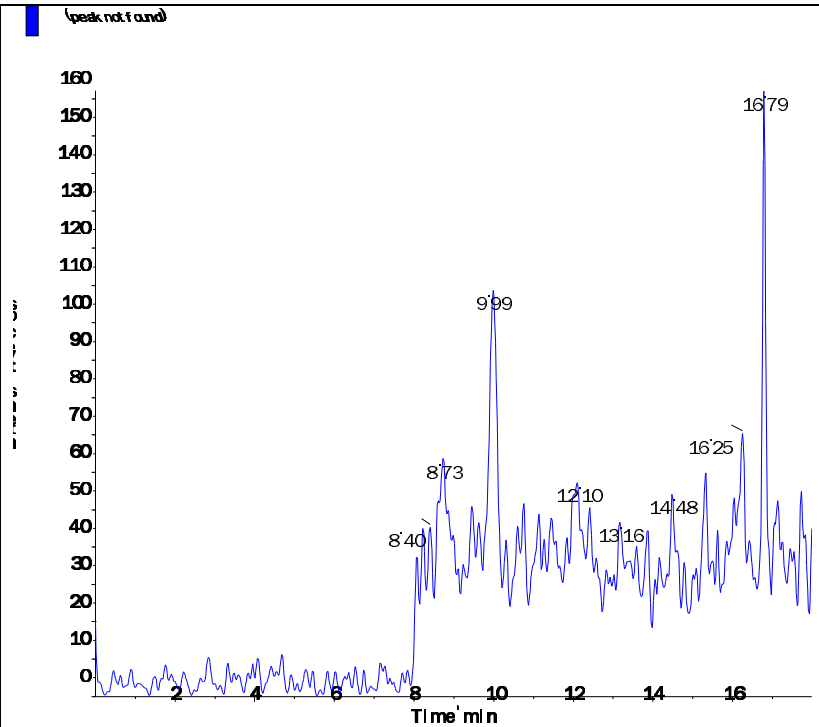

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

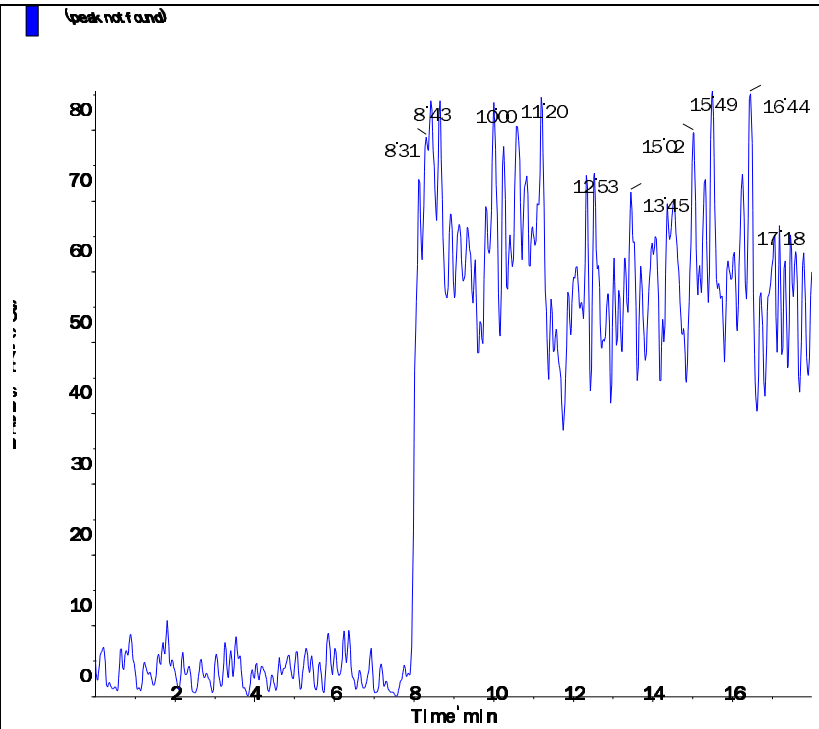

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Data File	LM33387.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/26/2016 3:45:55 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558803-08 CCB	**Injection Vial**	1.00
Data File	LM33387.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 3:45:55 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	WG558803-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.490e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	5.710e+02	9.96	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

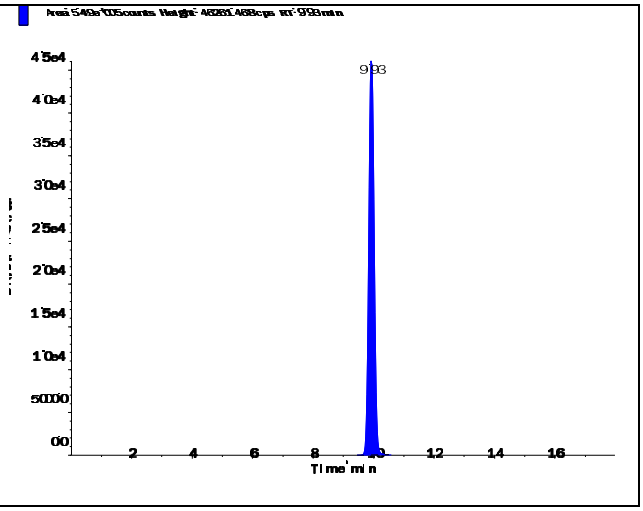

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

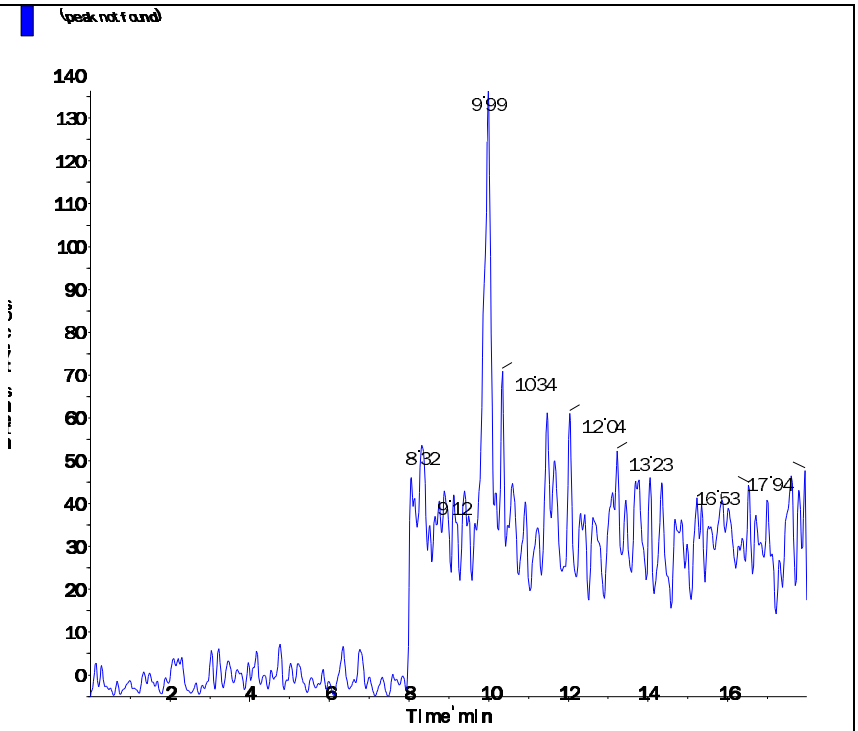

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.96 (9.92) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

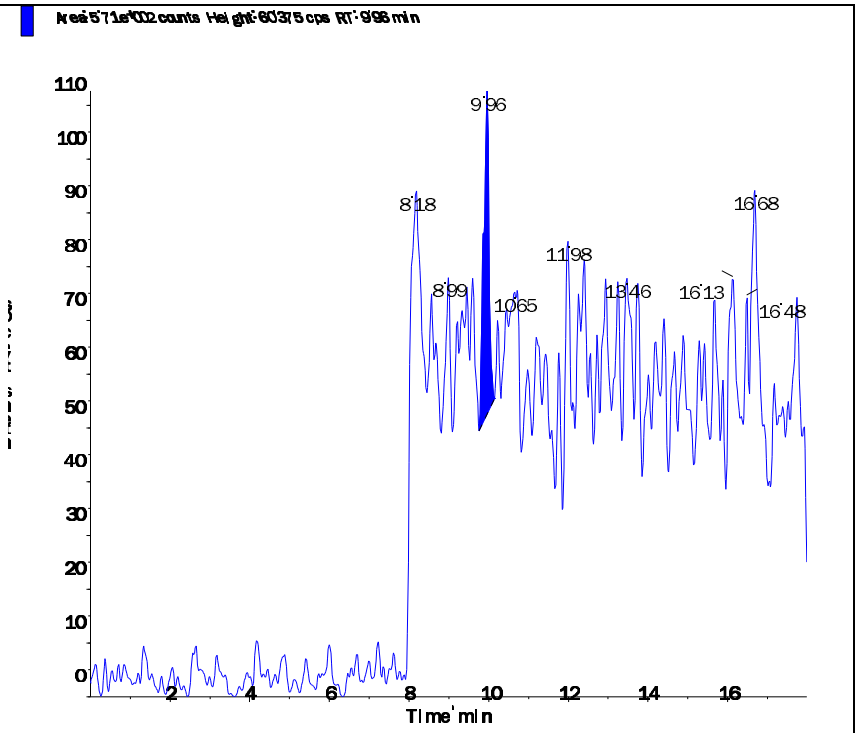

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Data File	LM33390.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/26/2016 12:05:23 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558803-10 CCB	**Injection Vial**	1.00
Data File	LM33390.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 12:05:23 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	WG558803-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.090e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

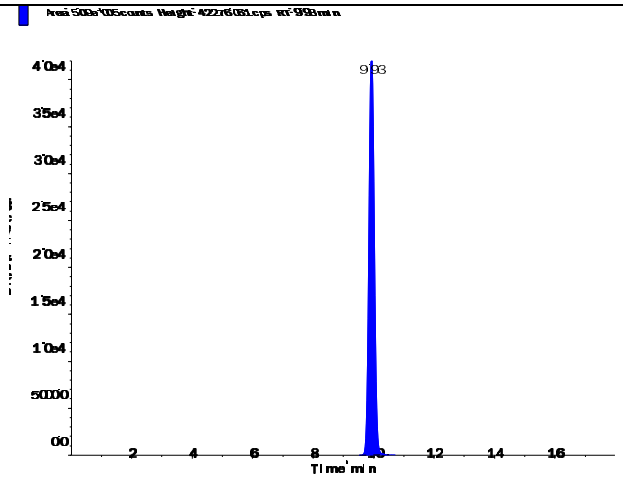

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

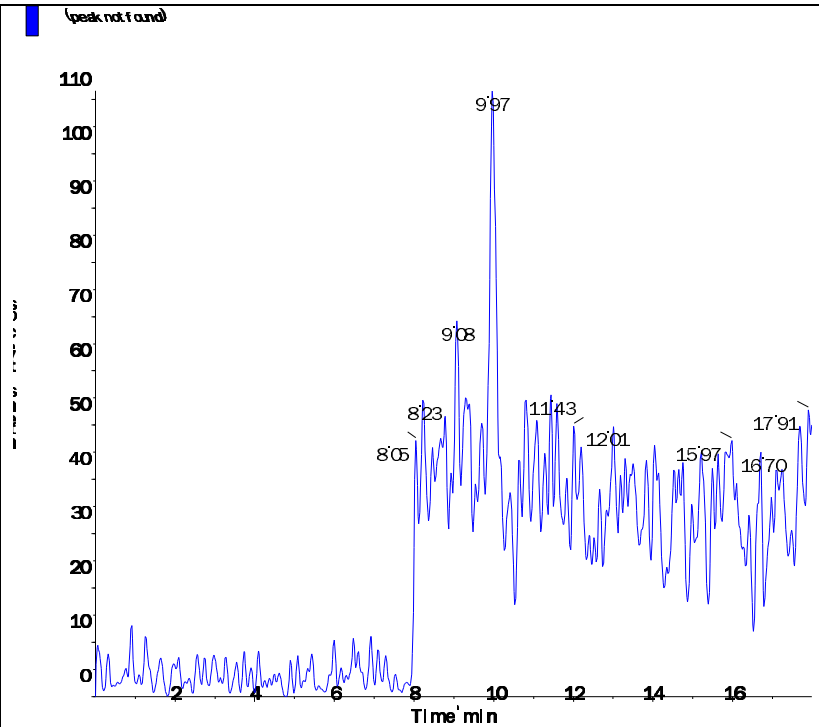

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

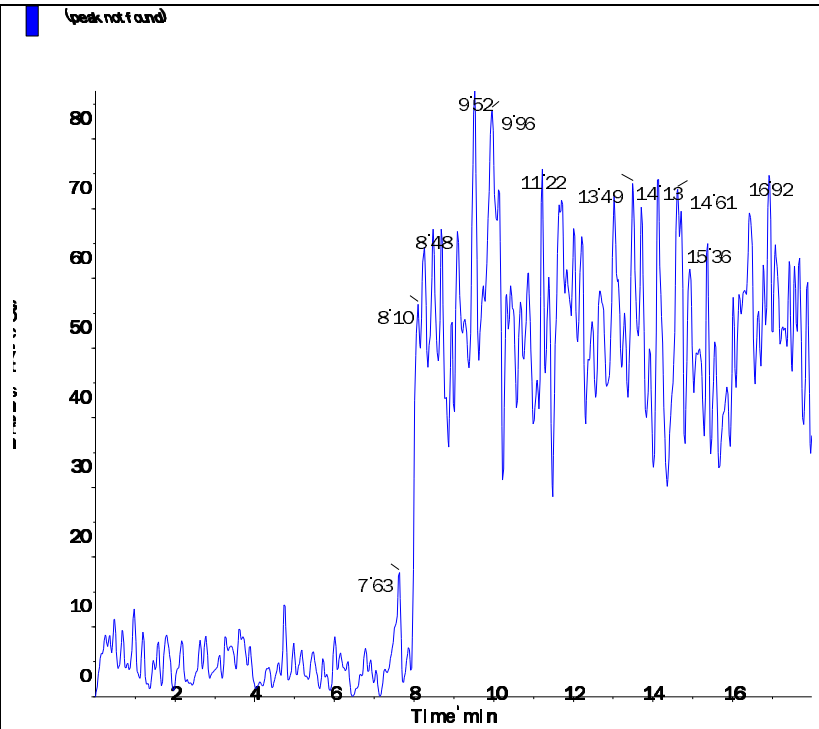

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Data File	LM33399.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/26/2016 2:55:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558803-12 CCB	**Injection Vial**	1.00
Data File	LM33399.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 2:55:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	WG558803-12	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.580e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	9.730e+02	9.98	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

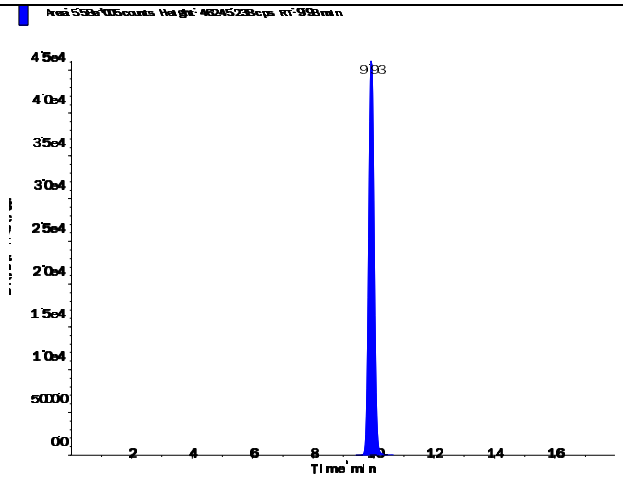

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

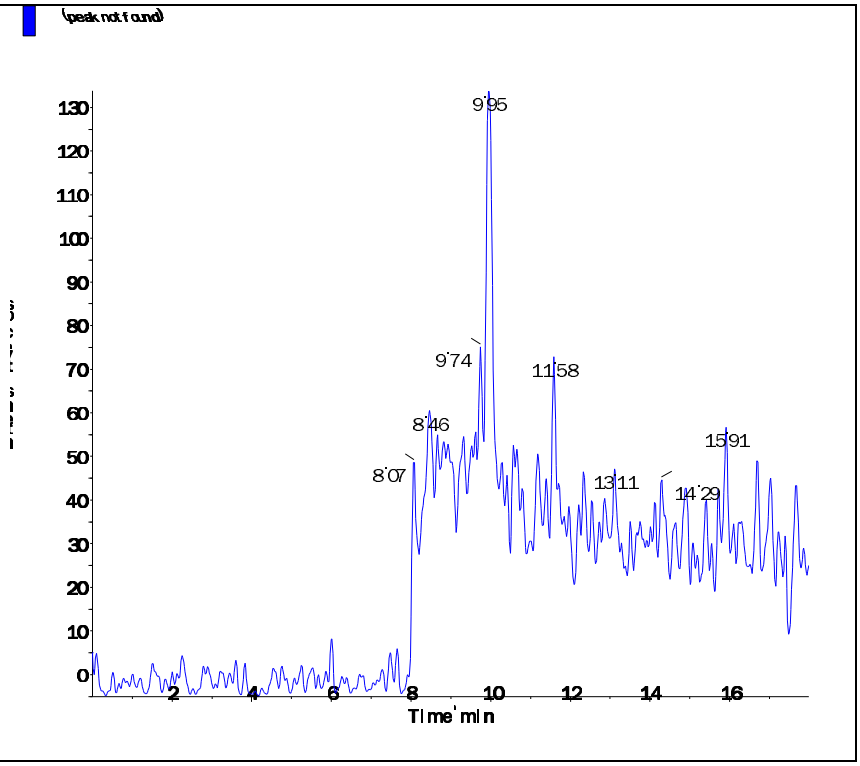

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.98 (9.92) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

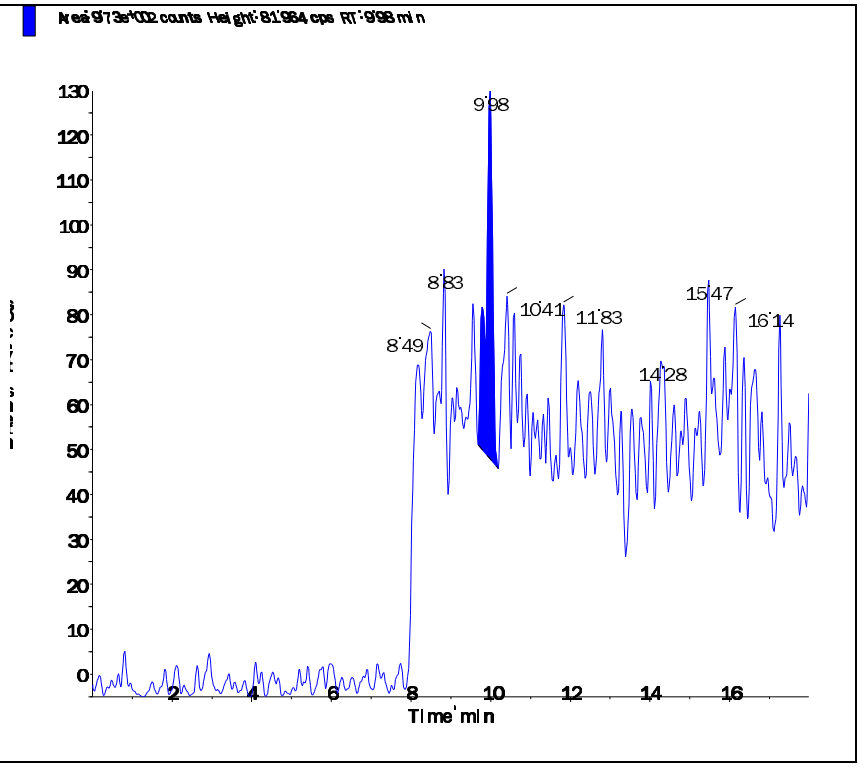

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Data File	LM33358.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/25/2016 6:36:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558779-01 MCT (2.0ug/kg)	**Injection Vial**	4.00
Data File	LM33358.wiff	**Injection Volume**	10.00
Acquisition Date	2/25/2016 6:36:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	WG558779-01	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.870e+05	9.55	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.330e+04	9.56	N/A	0.20
Perchlorate conf	1.190e+04	9.54	N/A	0.197

O18LP (Internal Standard)

RT (Exp. RT): 9.55(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

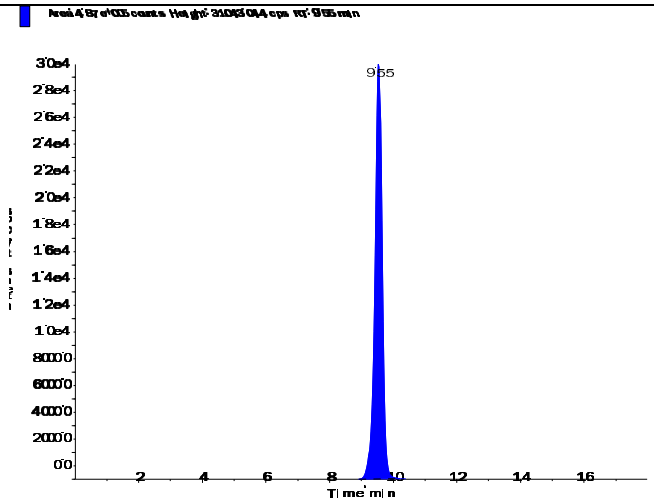

s.dataFile Page 1 of 2

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Printed: 2/26/2016 3:57 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.56 (9.94) min
Calculated conc:	0.20 ng/ml
Area Ratio:	0.068
Sample Type:	(Unknown)

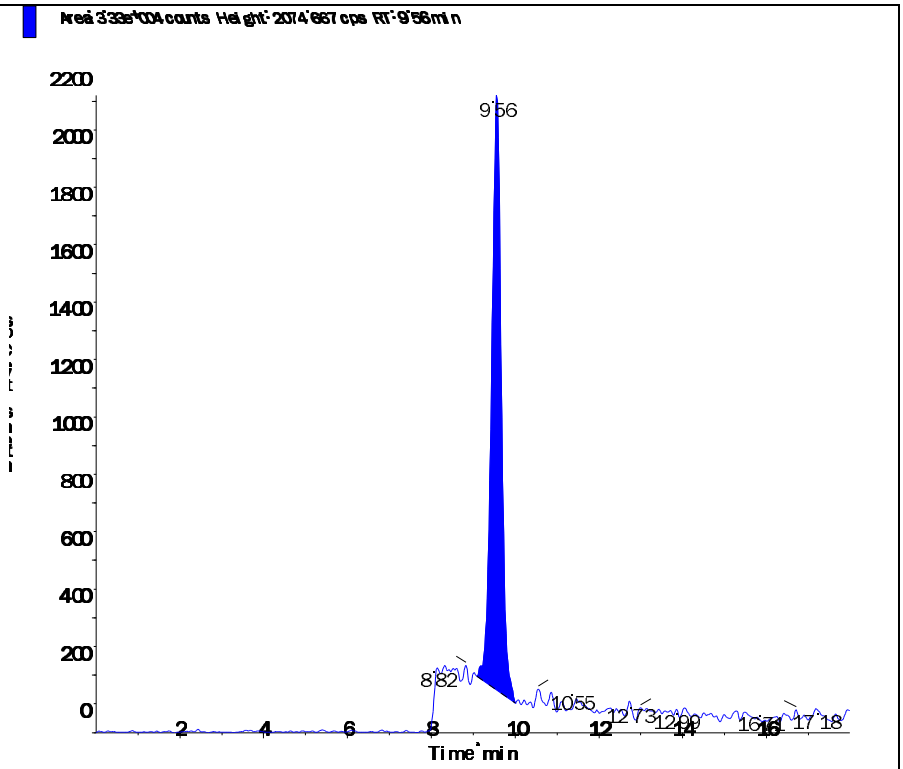

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.54 (9.92) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

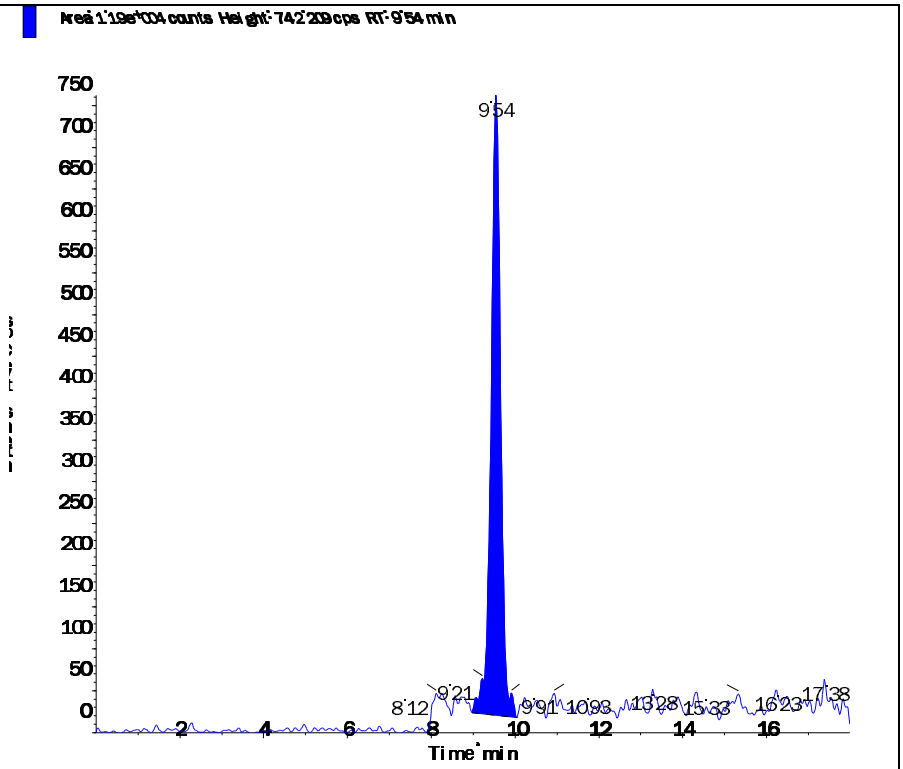

s.dataFile Page 2 of 2

Printing Time: 4:47:26 PM
Printing Date: Friday, February 26, 2016

Sample Name: "WG558779-01 MCT (2.0ug/kg)" Sample ID: "WG558779-01" File: "LM33358.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "7,1 STD72685" Annotation: ""

Sample Index:	2	
Sample Type:	Unknown	
Concentration:	N/A	
Calculated Conc:	0.238	ug/L
Acq. Date:	2/25/2016	
Acq. Time:	6:36:46 PM	
Modified:	No	
Proc. Algorithm:	Analyst Classic	
Bunching Factor:	3	
Noise Threshold:	18.48	cps
Area Threshold:	92.40	cps
Num. Smooths:	5	
Sep. Width:	0.20	
Sep. Height:	0.01	
Exp. Peak Ratio:	5.00	
Exp. Adj. Ratio:	4.00	
Exp. Val. Ratio:	3.00	
RT Window:	30.000	sec
Expected RT:	9.94	min
Use Relative RT:	Yes	
Int. Type:	Valley	
Retention Time:	9.56	min
Area:	3.88e+004	counts
Height:	2146.971	cps
Start Time:	8.831	min
End Time:	10.126	min

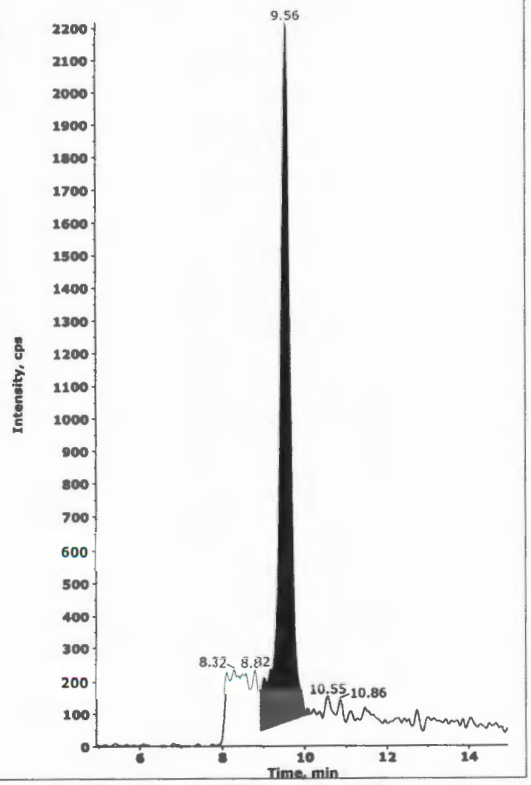

Collected by: N/A
Electronic Signature: no
Operator: lcms1

Printing Time: 4:46:41 PM
Printing Date: Friday, February 26, 2016

Sample Name: "WG558779-01 MCT (2.0ug/kg)" Sample ID: "WG558779-01" File: "LM33358.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "7,1 STD72685" Annotation: ""

Sample Index:	2
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.200 ug/L
Acq. Date:	2/25/2016
Acq. Time:	6:36:46 PM
Modified:	Yes
Proc. Algorithm:	Analyst Classic
Bunching Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Sep. Width:	0.20
Sep. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.54 min
Use Relative RT:	Yes
Int. Type:	Base To Base
Retention Time:	9.56 min
Area:	3.33e+004 counts
Height:	2074.667 cps
Start Time:	9.083 min
End Time:	10.004 min

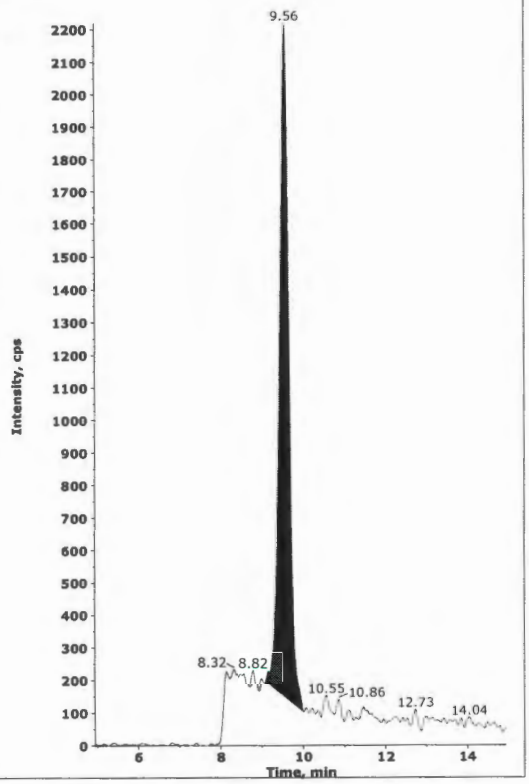

#4
JWR/02/26/16

✓ WP
2-29-16

ollected by: N/A
lectronic Signature: no
perator: lcmsl

2.2.1.5 Raw QC Data

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Data File	LM33359.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/25/2016 6:55:41 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558779-02 BLANK	**Injection Vial**	5.00
Data File	LM33359.wiff	**Injection Volume**	10.00
Acquisition Date	2/25/2016 6:55:41 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	WG558779-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.920e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	7.800e+02	10.00	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

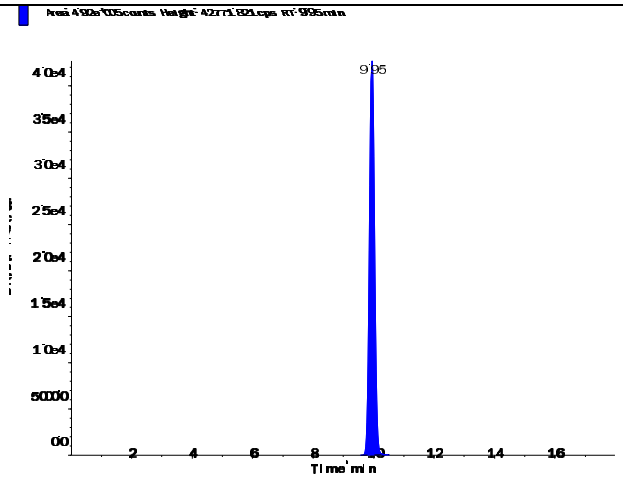

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Printed: 2/26/2016 3:57 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

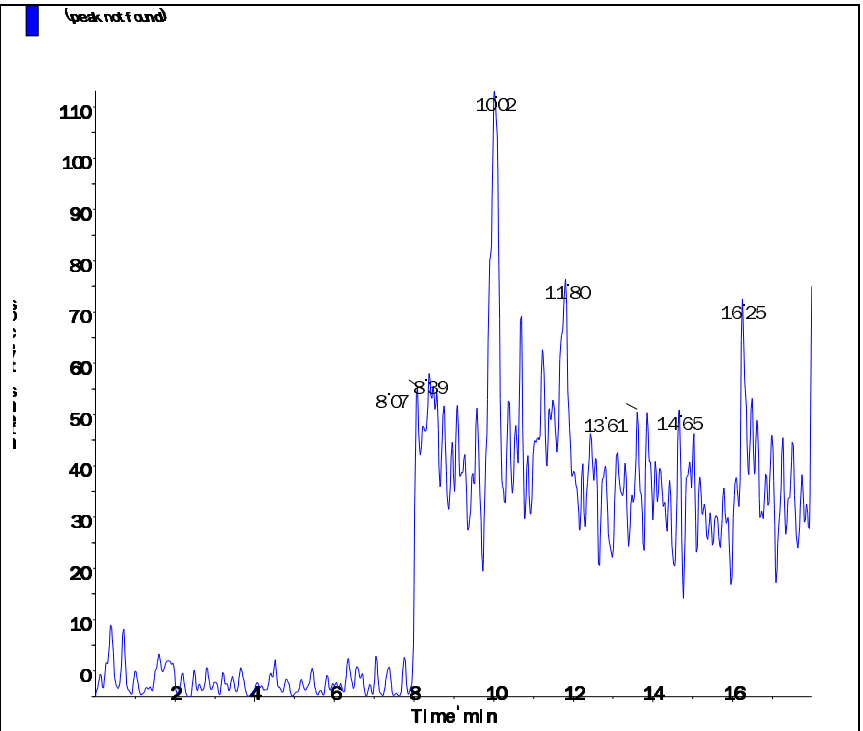

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.00 (9.92) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

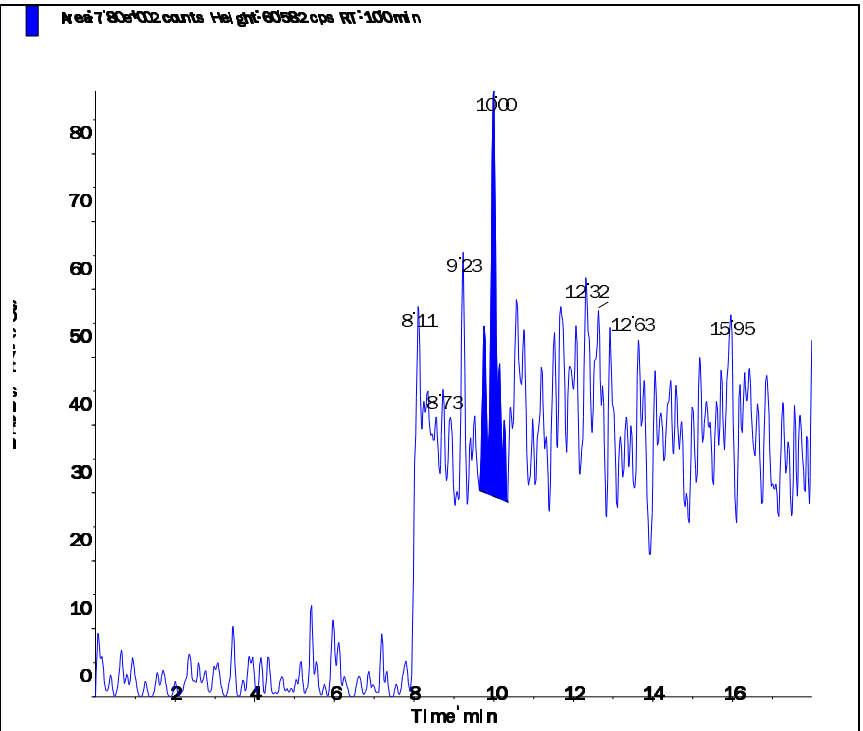

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Printed: 2/26/2016 3:57 PM

Data File	LM33360.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/25/2016 7:14:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558779-03 LCS (2.0ug/kg)	**Injection Vial**	6.00
Data File	LM33360.wiff	**Injection Volume**	10.00
Acquisition Date	2/25/2016 7:14:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	WG558779-03	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.460e+04	9.96	N/A	0.204
Perchlorate conf	1.180e+04	9.95	N/A	0.189

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

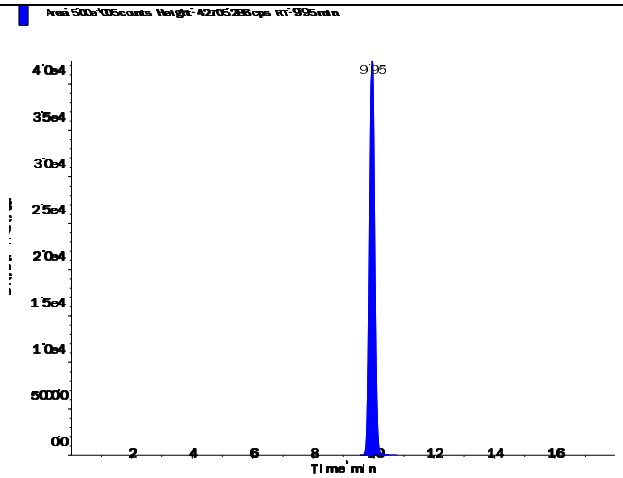

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Printed: 2/26/2016 3:57 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	0.204 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

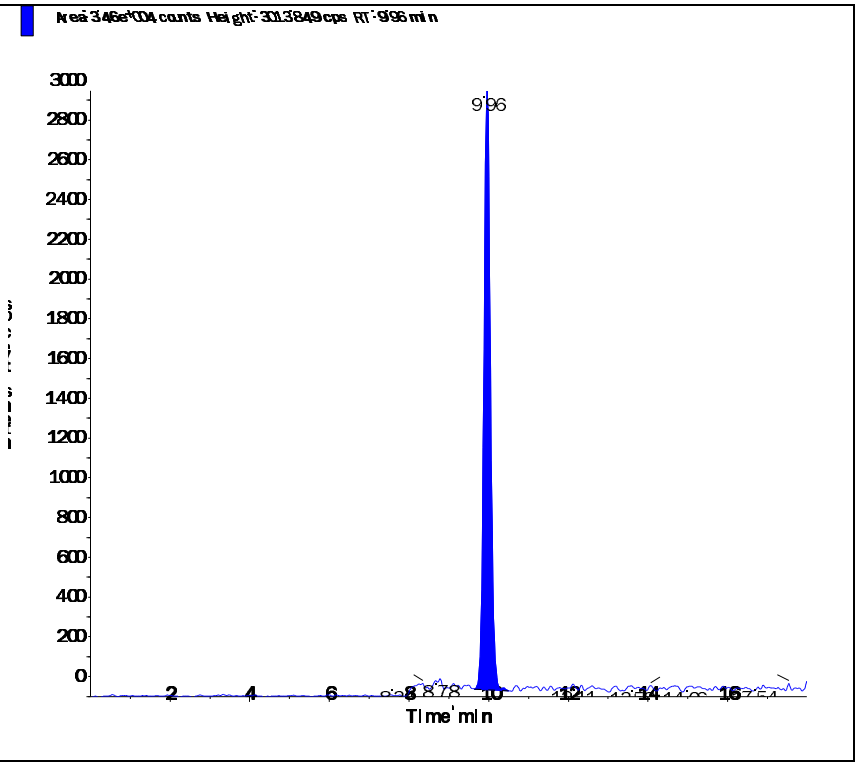

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.95 (9.92) min
Calculated conc:	0.189 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

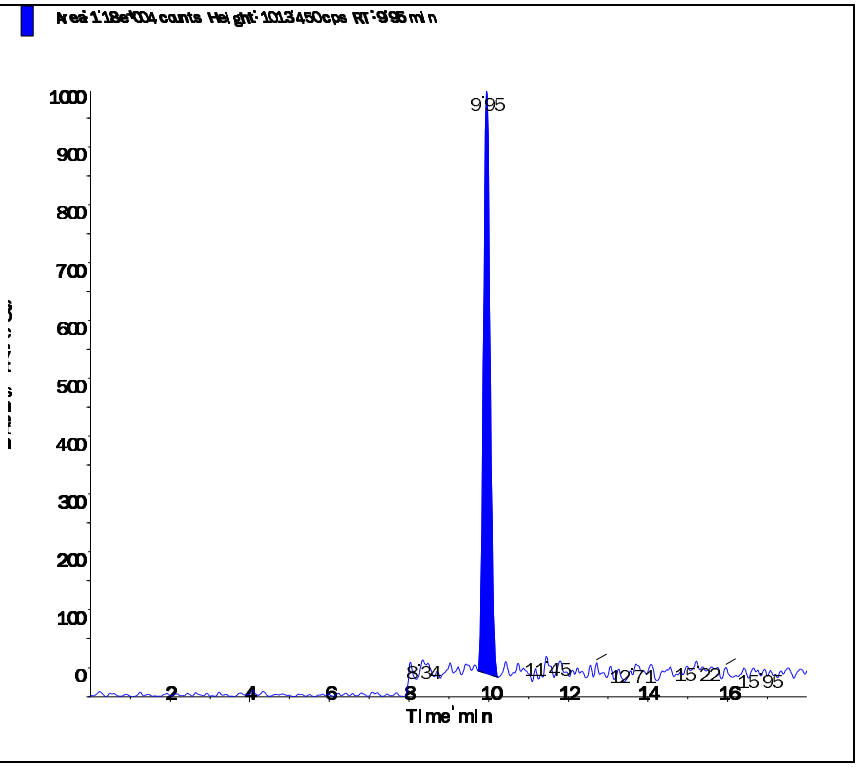

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Printed: 2/26/2016 4:09 PM

Data File	LM33392.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/26/2016 12:43:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021240-08 MS (RR 50x)	**Injection Vial**	26.00
Data File	LM33392.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 12:43:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	WG558779-05	**Dilution Factor**	1.00
Sample Comment	7,50 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.800e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	6.070e+05	9.98	N/A	4.09
Perchlorate conf	2.000e+05	9.96	N/A	3.72

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

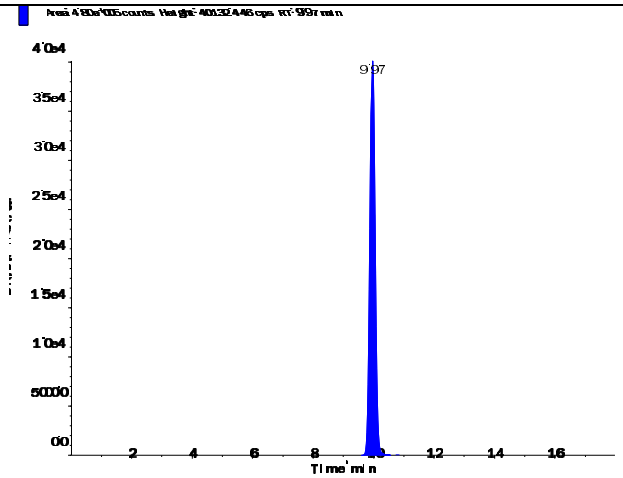

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Applied Biosystems | MDS SCIEX

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Printed: 2/26/2016 4:09 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.98 (9.94) min Calculated conc: 4.09 ng/ml Area Ratio: 1.265 Sample Type: (Unknown)	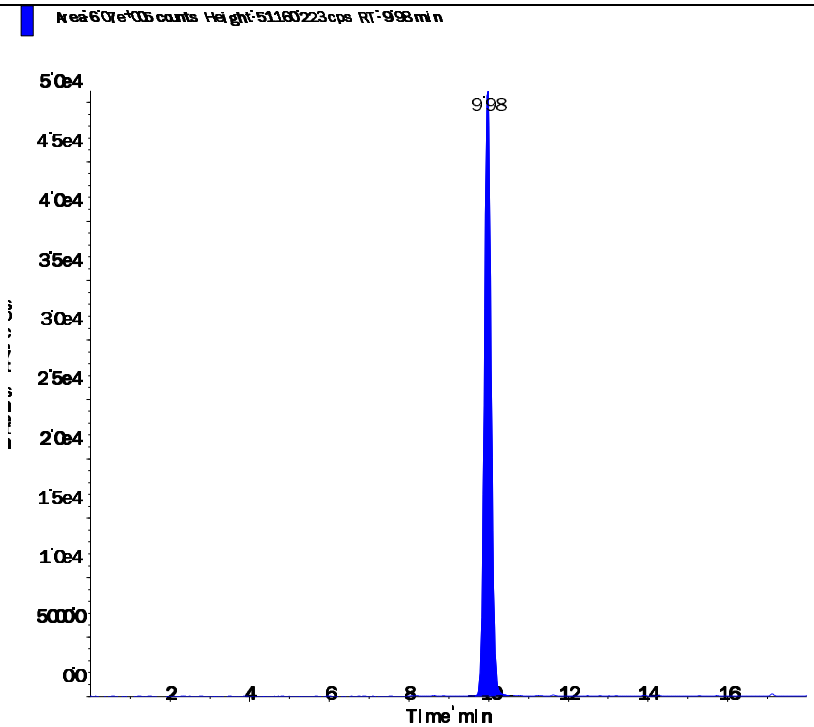
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.96 (9.92) min Calculated conc: 3.72 ng/ml Area Ratio: 0.417 Sample Type: (Unknown)	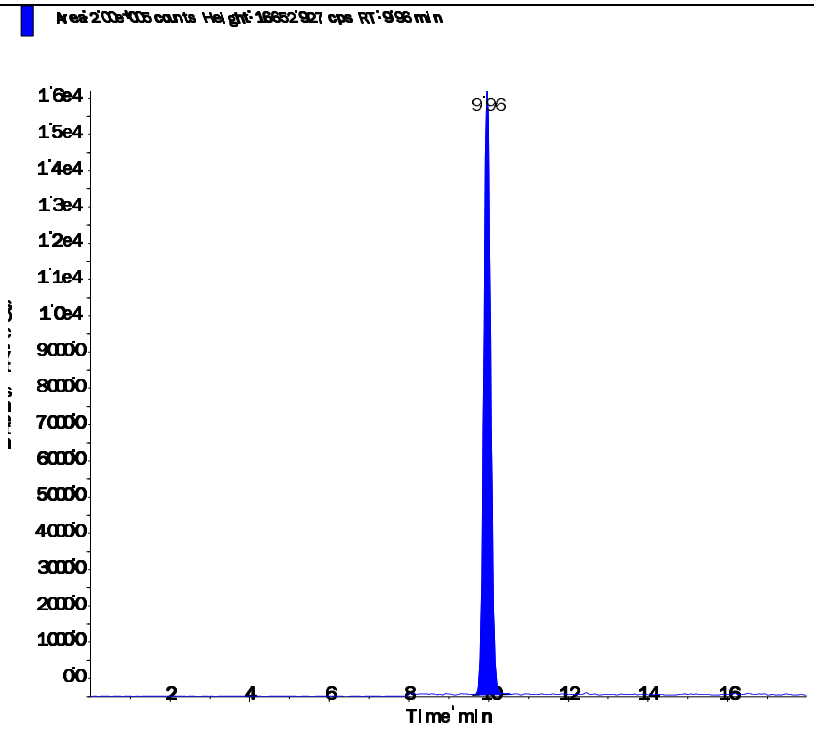

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 2/26/2016 4:09 PM

Data File	LM33393.wiff	**Result Table**	022516_JWR.rdb
Acquisition Date	2/26/2016 1:02:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021240-08 MSD (RR 50x)	**Injection Vial**	27.00
Data File	LM33393.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 1:02:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022516_JWR.rdb
Sample ID	WG558779-06	**Dilution Factor**	1.00
Sample Comment	7,50 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.900e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.480e+05	9.97	N/A	3.61
Perchlorate conf	1.820e+05	9.96	N/A	3.31

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

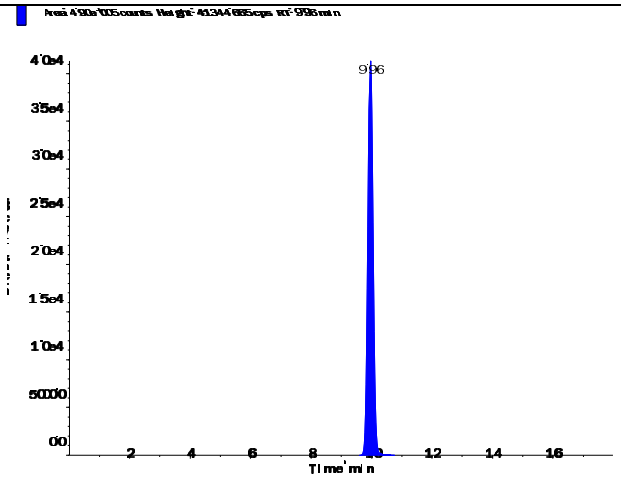

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 2/26/2016 4:09 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.97 (9.94) min Calculated conc: 3.61 ng/ml Area Ratio: 1.118 Sample Type: (Unknown)	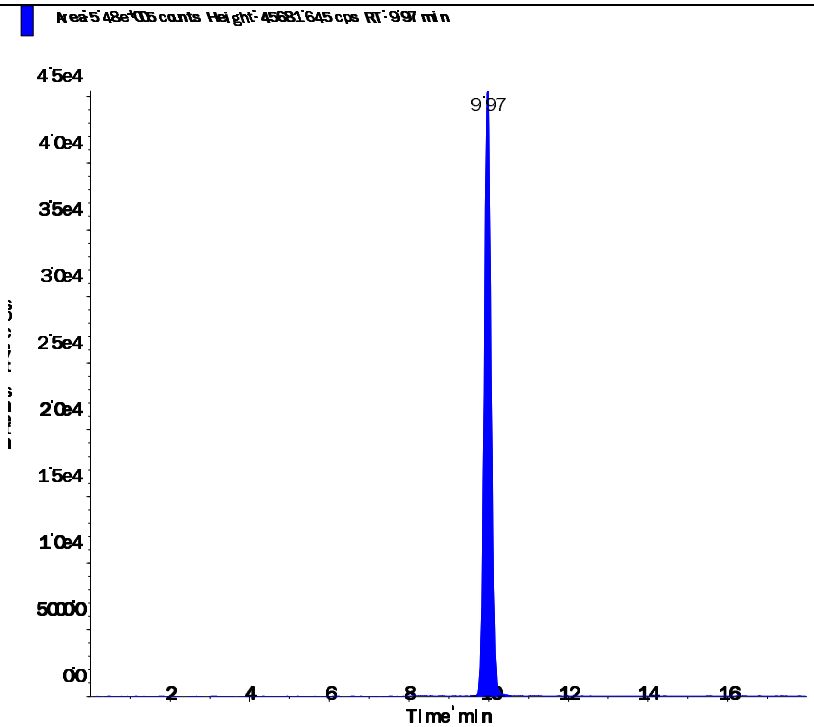
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.96 (9.92) min Calculated conc: 3.31 ng/ml Area Ratio: 0.372 Sample Type: (Unknown)	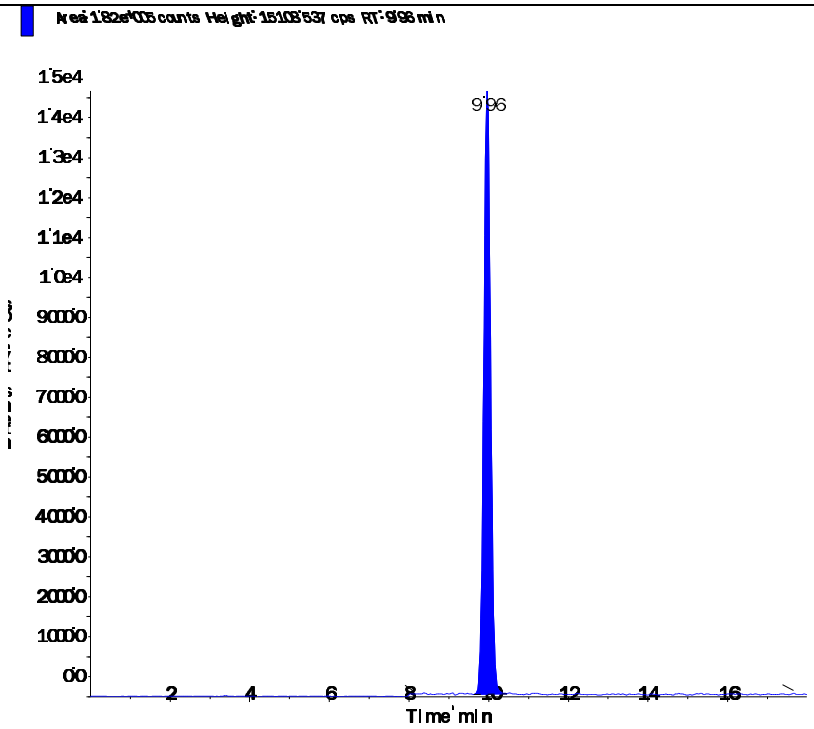

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2.3 General Chemistry Data

2.3.1 Percent Solids Data

2.3.1.1 Raw Data

Example Percent Solids Calculations

1.0 Calculating the percent solids of a sample.

$$\%Solids = \frac{WT3 - WT1}{WT2 - WT1} \times F$$

Where:	
WT1 = Weight, in grams, of the empty container	1.30 g
WT2 = Weight, in grams, of the container and wet sample	21.274 g
WT3 = Weight, in grams, of the container and dried sample	5.21 g
F = Factor to get units as percent weight	100
%Solids = Percent solids present in sample.	19.58%

2.0 Calculating the percent moisture of a sample.

% Moisture = 100 - % Solids from 1.0 calculation

Microbac Laboratories Inc.

PERCENT SOLIDS

Workgroup (AAB#): WG558757 Analyst: AC ADT(on): 02/25/2016 13:48
Method: D2216-90 Instrument: BAL021 ADT(off): 02/26/2016 07:36
SOP: K0003 Rev: 14

SAMPLE NUMBER	EMPTY PAN WT 1	WET WT 2	DRY WT 3A	DRY WT 3B	DRY WT 3C	PERCENT SOLID	PERCENT MOISTURE
L16021194-01	1.297	26.131	22.846			86.77	
L16021194-02	1.289	28.802	25.034			86.30	
L16021194-03	1.299	24.745	21.532			86.30	
L16021194-04	1.3	22.871	19.972			86.56	
L16021194-05	1.289	30.636	27.814			90.38	
L16021194-06	1.292	23.804	21.094			87.96	
L16021194-07	1.288	27.456	24.389			88.28	
L16021194-08	1.281	23.842	21.019			87.49	
L16021194-09	1.297	22.232	19.909			88.90	
L16021194-10	1.297	22.232	19.909			88.90	
L16021194-11	1.297	22.232	19.909			88.90	
L16021206-01	1.296	21.241	18.101			84.26	
L16021206-02	1.304	24.449	20.714			83.86	
L16021207-01	1.301	16.743	1.699			2.577	
L16021236-01	1.298	30.587	26.394			85.68	
L16021240-01	1.296	22.3	18.086			79.94	
L16021240-02	1.285	20.179	16.417			80.09	
L16021240-03	1.292	21.64	18.487			84.50	
L16021240-04	1.289	20.242	17.4			85.01	
L16021240-05	1.296	21.709	18.36			83.59	
L16021240-06	1.293	24.752	19.882			79.24	
L16021240-07	1.293	20.235	16.397			79.74	
L16021240-08	1.291	22.73	19.434			84.63	
WG558757-01	1.281	23.842	21.019			87.49	12.51
WG558757-02	1.293	20.235	16.397			79.74	20.26
WG558757-03	1.3	23.135	20.3			87.02	12.98
WG558757-04	1.293	23.439	18.371			77.12	22.88

Analyst: [signature]

PERCENT_SOLIDS - Modified 04/24/2008
PDF ID: 4647248
Report generated: 02/26/2016 07:42

Microbac

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
March 2, 2016

001 - BIO-CHEM TESTING WVDEP 220	002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental	004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES	006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES	008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND	AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER	ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS	ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG	AZH - AFTER HOURS
BJO - BRIAN J. OGDEN	BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT	BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN	CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES	CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD	CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS	CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL	DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE	DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON	DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE	DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR	ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK	ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN	JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON	JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE	JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG	JLL - JOHN L. LENT
JMW - JEANA M. WHITE	JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS	JWS - JACK W. SHEAVES
JYH - JI Y. HU	KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER	KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES	KHR - KIM H. RHODES
KKB - KERRI K. BUCK	KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER	KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER	LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS	LSB - LESLIE S. BUCINA
MBK - MORGAN B. KNOWLTON	MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN	MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE	MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR	MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS	PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB	PSW - PEGGY S. WEBB
QX - QIN XU	RAH - ROY A. HALSTEAD
REK - BOB E. KYER	RLB - BOB BUCHANAN
RM - RAYMOND MALEKE	RNP - RICK N. PETTY
RST - ROBIN S. TURNER	SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN	SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG	SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE	TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY	TMM - TAMMY M. MORRIS
VC - VICKI COLLIER	WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS	WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT	

Microbac Laboratories Inc.
List of Valid Qualifiers
March 02, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
March 02, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Stephanie Mossburg	Project Manager: Debra Richmon	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): KAYLA DALLANES	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Kayla Dallanes	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205			
Turn Around Time: STANDARD	pH:	Program:	
Project Name/Location: Longhorn			
Project Number: 60274185 . 0013BM418Z4			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp-	Grab	Matrix	Number of Containers	VOC 8260	PERCHLORATE 6850	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
	18DPT04(5-5.5)240216			2/24/16	1000		X	S	2	X	X					
	18DPT04(15-15.5)240216			2/24/16	1028		X	S	2	X	X					
	18DPT04(20-21)240216			2/24/16	1055		X	S	2	X	X					
	18DPT04(20-21)240216FD			2/24/16	1055		X	S	2	X	X					
	18DPT04(25-25.5)240216			2/24/16	1122		X	S	2	X	X					
	18DPT04(29-30)240216			2/24/16	1200		X	S	2	X	X					
	~~18DPT04(34.5-35)240216~~			~~2/24/16~~	~~0315~~		~~X~~	~~S~~	~~2~~	~~X~~	~~X~~					
	~~18DPT04(37-37.5)240216~~			~~2/24/16~~	~~0315~~		~~X~~	~~S~~	~~2~~	~~X~~	~~X~~					
	18DPT04(36.5-37)240216			2/24/16	1515		X	S	2	X	X					
	18DPT04(34-34.5)240216			2/24/16	1515		X	S	2	X	X					

Comments: ~~STANDARD TAT~~ 48HRTAT

	Date	Time	Received by: (Signature)	Time	Relinquished by: (Signature)
Relinquished by: (Signature) Kayla Dallanes	2/24/16	1600			
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Time	Remarks:

Microbac OVD
Received: 02/25/2016 09:39
By: BRENDA GREGORY
221000082443

Brenda Gregory

•Homogenize all composite samples prior to analysis

...ger, Pink QA/QC Manager

00694046

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16021240
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 29-FEB-2016

Samplenum	Container ID	Products
L16021240-01	705510	8260 G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	25-FEB-2016 10:00	CLS		
2	ANALYZ	V1	ORG4	25-FEB-2016 11:31	JDS	CLS	

Samplenum	Container ID	Products
L16021240-01	705511	PCT-S 6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	25-FEB-2016 10:00	CLS		
2	ANALYZ	W1	SEM	25-FEB-2016 11:43	JWR	CLS	
3	STORE	SEM	A1	26-FEB-2016 15:01	CLS	JWR	

Samplenum	Container ID	Products
L16021240-02	705512	8260 G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	25-FEB-2016 10:00	CLS		
2	ANALYZ	V1	ORG4	25-FEB-2016 11:31	JDS	CLS	

Samplenum	Container ID	Products
L16021240-02	705513	6850 PCT-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	25-FEB-2016 10:00	CLS		
2	ANALYZ	W1	SEM	25-FEB-2016 11:43	JWR	CLS	
3	STORE	SEM	A1	26-FEB-2016 15:01	CLS	JWR	

Samplenum	Container ID	Products
L16021240-03	705514	8260 G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	25-FEB-2016 10:00	CLS		
2	ANALYZ	V1	ORG4	25-FEB-2016 11:31	JDS	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16021240
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 29-FEB-2016

Samplenum	Container ID	Products
L16021240-03	705515	6850 PCT-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	25-FEB-2016 10:00	CLS		
2	ANALYZ	W1	SEM	25-FEB-2016 11:43	JWR	CLS	
3	STORE	SEM	A1	26-FEB-2016 15:01	CLS	JWR	

Samplenum	Container ID	Products
L16021240-04	705516	8260 G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	25-FEB-2016 10:00	CLS		
2	ANALYZ	V1	ORG4	25-FEB-2016 11:31	JDS	CLS	

Samplenum	Container ID	Products
L16021240-04	705517	6850 PCT-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	25-FEB-2016 10:00	CLS		
2	ANALYZ	W1	SEM	25-FEB-2016 11:43	JWR	CLS	
3	STORE	SEM	A1	26-FEB-2016 15:01	CLS	JWR	

Samplenum	Container ID	Products
L16021240-05	705518	8260 G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	25-FEB-2016 10:00	CLS		
2	ANALYZ	V1	ORG4	25-FEB-2016 11:31	JDS	CLS	

Samplenum	Container ID	Products
L16021240-05	705519	6850 PCT-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	25-FEB-2016 10:00	CLS		
2	ANALYZ	W1	SEM	25-FEB-2016 11:43	JWR	CLS	
3	STORE	SEM	A1	26-FEB-2016 15:01	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16021240
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 29-FEB-2016

Samplenum	Container ID	Products
L16021240-06	705520	8260 G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	25-FEB-2016 10:00	CLS		
2	ANALYZ	V1	ORG4	25-FEB-2016 11:31	JDS	CLS	

Samplenum	Container ID	Products
L16021240-06	705521	6850 PCT-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	25-FEB-2016 10:00	CLS		
2	ANALYZ	W1	SEM	25-FEB-2016 11:43	JWR	CLS	
3	STORE	SEM	A1	26-FEB-2016 15:01	CLS	JWR	

Samplenum	Container ID	Products
L16021240-07	705522	8260 G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	25-FEB-2016 10:00	CLS		
2	ANALYZ	V1	ORG4	25-FEB-2016 11:30	JDS	CLS	

Samplenum	Container ID	Products
L16021240-07	705523	6850 PCT-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	25-FEB-2016 10:00	CLS		
2	ANALYZ	W1	SEM	25-FEB-2016 11:43	JWR	CLS	
3	STORE	SEM	A1	26-FEB-2016 15:01	CLS	JWR	

Samplenum	Container ID	Products
L16021240-08	705524	8260 G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	25-FEB-2016 10:00	CLS		
2	ANALYZ	V1	ORG4	25-FEB-2016 11:30	JDS	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16021240
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 29-FEB-2016

Samplenum	Container ID	Products
L16021240-08	705525	6850 PCT-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	25-FEB-2016 10:00	CLS		
2	ANALYZ	W1	SEM	25-FEB-2016 11:43	JWR	CLS	
3	STORE	SEM	A1	26-FEB-2016 15:01	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16021306

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on March 02 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

The following discrepancies were noted:

Discrepancy	Resolution
18DPT05(20-20.5)250216 on the chain of custody, but the labels says (19.5-20). CLS	Please log per the COC. SLM

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00112756	I	0.0		J2317165947	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	No
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	NA
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	NA

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18DPT05(4.5-5)250216	L16021306-01	02/25/2016 09:30	02/26/2016 09:52
18DPT05(10-11)250216	L16021306-02	02/25/2016 09:40	02/26/2016 09:52
18DPT05(10-11)250216 MS	L16021306-03	02/25/2016 09:40	02/26/2016 09:52
18DPT05(10-11)250216 MSD	L16021306-04	02/25/2016 09:40	02/26/2016 09:52
18DPT05(15-15.5)250216	L16021306-05	02/25/2016 09:50	02/26/2016 09:52
18DPT05(20-20.5)250216	L16021306-06	02/25/2016 09:45	02/26/2016 09:52

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16021306
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

1.0 Summary Data 5
1.1 Narratives 6
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2.0 Full Sample Data Package 45
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2.1.1.2 QC Summary Data 63
2.1.1.3 Sample Data 94
2.1.1.4 Standards Data 117
2.1.1.5 Raw QC Data 190
2.2 General Chromatography Data 200
2.2.1 6850 LC/MS Data 201
2.2.1.1 Summary Data 202
2.2.1.2 QC Summary Data 208
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1.0 Summary Data

1.1 Narratives

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021306
Project Name:		**Method:**	8260
Prep Batch Number(s):	559002	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-02-29 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2016-02-29 22:12:03

RG-366/TRRP-13 May 2010 **ID:** 7089

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021306
Project Name:		**Method:**	8260
Prep Batch Number(s):	559002	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-02-29 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021306
Project Name:		**Method:**	8260
Prep Batch Number(s):	559002	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-02-29 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		X			1
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data			X		
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			2
Were MS/MSD RPDs within laboratory QC limits?		X			3
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021306
Project Name:		**Method:**	8260
Prep Batch Number(s):	559002	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-02-29 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?		X			4
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021306
Project Name:		**Method:**	8260
Prep Batch Number(s):	559002	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-02-29 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021306
Project Name:		**Method:**	8260
Prep Batch Number(s):	559002	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-02-29 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1)Dichlorodifluoromethane excceded the UCL in the LCS.
2)Dichlorodifluoromethane and Vinyl chloride exceeded the percent recovery in the MS/MSD.
3)1,1,2,2-Tetrachloroethane, 1,2,4-Trichlorobenzene, 1,2,4-Trimethylbenzene, 1,2-Dibromo-3-chloropropane, 1,2,3-Trichlorobenzene, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 2-Chlorotoluene, Bromobenzene, trans-1,3-Dichloropropene exceeds RPD limits in the MS/MSD.
4)Dichlorodifluoromethane exceeded the UCL in the ICV.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021306
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG558991	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-02-29 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-02-29 15:44:30

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021306
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG558991	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-02-29 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021306
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG558991	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-02-29 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			1
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021306
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG558991	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-02-29 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021306
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG558991	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-02-29 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021306
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG558991	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-02-29 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. The MSD yielded a recovery for perchlorate that was marginally above the acceptance limit.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021306
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG558918	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-29 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2016-02-29 16:54:21

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021306
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG558918	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-29 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?			X		
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?			X		
Were sample detection limits reported for all analytes not detected?			X		
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?			X		
Were blanks analyzed at the appropriate frequency?			X		
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?			X		
Were blank concentrations < MQL?			X		
Laboratory control samples (LCS):			X		
Were all COCs included in the LCS?			X		

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021306
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG558918	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-29 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?			X		
Were LCSs analyzed at the required frequency?			X		
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?			X		
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?			X		
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?			X		
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?			X		
Are unadjusted MQLs and DCSs included in the laboratory data package?			X		
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?			X		
Were percent RSDs or correlation coefficient criteria met?			X		

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021306
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG558918	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-29 00:00:00		

Was the number of standards recommended in the method used for all analytes?			X		
Were all points generated between the lowest and highest standard used to calculate the curve?			X		
Are ICAL data available for all instruments used?			X		
Has the initial calibration curve been verified using an appropriate second source standard?			X		
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021306
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG558918	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-29 00:00:00		

Was a MDL study performed for each reported analyte?			X		
Is the MDL either adjusted or supported by the analysis of DCSs?			X		
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?			X		
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021306
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG558918	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-02-29 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021306-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT05(4.5-5)250216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/28/2016 13:09
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559002	**Analyst:**	FJB	**Run Date:**	02/28/2016 23:54
Collect Date:	02/25/2016 09:30	**Dilution:**	1	**File ID:**	9M972959
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.6	U	25.2	12.6	6.29
Benzene	71-43-2	1.26	U	6.29	1.26	0.629
Bromobenzene	108-86-1	1.26	U	6.29	1.26	0.629
Bromochloromethane	74-97-5	2.52	U	6.29	2.52	1.26
Bromodichloromethane	75-27-4	1.26	U	6.29	1.26	0.629
Bromoform	75-25-2	1.26	U	6.29	1.26	0.629
Bromomethane	74-83-9	2.52	U	6.29	2.52	1.26
2-Butanone	78-93-3	6.30	U	12.6	6.30	3.15
n-Butylbenzene	104-51-8	1.26	U	6.29	1.26	0.629
sec-Butylbenzene	135-98-8	1.26	U	6.29	1.26	0.629
tert-Butylbenzene	98-06-6	1.26	U	6.29	1.26	0.629
Carbon disulfide	75-15-0	1.26	U	6.29	1.26	0.629
Carbon tetrachloride	56-23-5	1.26	U	6.29	1.26	0.629
Chlorobenzene	108-90-7	1.26	U	6.29	1.26	0.629
Chlorodibromomethane	124-48-1	1.26	U	6.29	1.26	0.629
Chloroethane	75-00-3	2.52	U	6.29	2.52	1.26
Chloroform	67-66-3	1.26	U	6.29	1.26	0.629
Chloromethane	74-87-3	5.04	U	12.6	5.04	2.52
2-Chlorotoluene	95-49-8	1.26	U	6.29	1.26	0.629
4-Chlorotoluene	106-43-4	1.26	U	6.29	1.26	0.629
1,2-Dibromo-3-chloropropane	96-12-8	5.04	U	12.6	5.04	2.52
1,2-Dibromoethane	106-93-4	1.26	U	6.29	1.26	0.629
Dibromomethane	74-95-3	1.26	U	6.29	1.26	0.629
1,2-Dichlorobenzene	95-50-1	1.26	U	6.29	1.26	0.629
1,3-Dichlorobenzene	541-73-1	1.26	U	6.29	1.26	0.629
1,4-Dichlorobenzene	106-46-7	1.26	U	6.29	1.26	0.629
Dichlorodifluoromethane	75-71-8	2.52	U	6.29	2.52	1.26
1,1-Dichloroethane	75-34-3	2.52	U	6.29	2.52	1.26
1,2-Dichloroethane	107-06-2	1.26	U	6.29	1.26	0.629
1,1-Dichloroethene	75-35-4	1.26	U	6.29	1.26	0.629
cis-1,2-Dichloroethene	156-59-2	1.26	U	6.29	1.26	0.629
trans-1,2-Dichloroethene	156-60-5	1.26	U	6.29	1.26	0.629

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.26	U	6.29	1.26	0.629
1,3-Dichloropropane	142-28-9	1.26	U	6.29	1.26	0.629
2,2-Dichloropropane	594-20-7	1.26	U	6.29	1.26	0.629
cis-1,3-Dichloropropene	10061-01-5	1.26	U	6.29	1.26	0.629
trans-1,3-Dichloropropene	10061-02-6	1.26	U	6.29	1.26	0.629
1,1-Dichloropropene	563-58-6	1.26	U	6.29	1.26	0.629
Ethylbenzene	100-41-4	1.26	U	6.29	1.26	0.629
2-Hexanone	591-78-6	6.30	U	12.6	6.30	3.15
Hexachlorobutadiene	87-68-3	1.26	U	6.29	1.26	0.629
Isopropylbenzene	98-82-8	1.26	U	6.29	1.26	0.629
p-Isopropyltoluene	99-87-6	1.26	U	6.29	1.26	0.629
4-Methyl-2-pentanone	108-10-1	6.30	U	12.6	6.30	3.15
Methylene chloride	75-09-2	2.52	U	6.29	2.52	1.26
Naphthalene	91-20-3	1.26	U	6.29	1.26	0.629
n-Propylbenzene	103-65-1	1.26	U	6.29	1.26	0.629
Styrene	100-42-5	1.26	U	6.29	1.26	0.629
1,1,1,2-Tetrachloroethane	630-20-6	1.26	U	6.29	1.26	0.629
1,1,2,2-Tetrachloroethane	79-34-5	1.26	U	6.29	1.26	0.629
Tetrachloroethene	127-18-4	1.26	U	6.29	1.26	0.629
Toluene	108-88-3	1.26	U	6.29	1.26	0.629
1,2,3-Trichlorobenzene	87-61-6	1.26	U	6.29	1.26	0.629
1,2,4-Trichlorobenzene	120-82-1	1.26	U	6.29	1.26	0.629
1,1,1-Trichloroethane	71-55-6	1.26	U	6.29	1.26	0.629
1,1,2-Trichloroethane	79-00-5	1.26	U	6.29	1.26	0.629
Trichloroethene	79-01-6	1.26	U	6.29	1.26	0.629
Trichlorofluoromethane	75-69-4	2.52	U	6.29	2.52	1.26
1,2,3-Trichloropropane	96-18-4	2.52	U	6.29	2.52	1.26
1,2,4-Trimethylbenzene	95-63-6	1.26	U	6.29	1.26	0.629
1,3,5-Trimethylbenzene	108-67-8	1.26	U	6.29	1.26	0.629
Vinyl chloride	75-01-4	2.52	U	6.29	2.52	1.26
o-Xylene	95-47-6	1.26	U	6.29	1.26	0.629
m-,p-Xylene	179601-23-1	1.26	U	6.29	1.26	0.629

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.9	80	120	
1,2-Dichloroethane-d4	95.6	80	120	
Toluene-d8	107	85	115	
4-Bromofluorobenzene	112	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021306-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT05(4.5-5)250216	**Prep Method:**	6850	**Prep Date:**	02/26/2016 17:44
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558991	**Analyst:**	JWR	**Run Date:**	02/27/2016 01:40
Collect Date:	02/25/2016 09:30	**Dilution:**	1	**File ID:**	1LM.LM33425
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.34	U	4.67	2.34	1.17

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021306-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT05(10-11)250216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/28/2016 13:09
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559002	**Analyst:**	FJB	**Run Date:**	02/29/2016 00:25
Collect Date:	02/25/2016 09:40	**Dilution:**	1	**File ID:**	9M972960
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	88.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.0	U	23.9	12.0	5.98
Benzene	71-43-2	1.20	U	5.98	1.20	0.598
Bromobenzene	108-86-1	1.20	U	5.98	1.20	0.598
Bromochloromethane	74-97-5	2.40	U	5.98	2.40	1.20
Bromodichloromethane	75-27-4	1.20	U	5.98	1.20	0.598
Bromoform	75-25-2	1.20	U	5.98	1.20	0.598
Bromomethane	74-83-9	2.40	U	5.98	2.40	1.20
2-Butanone	78-93-3	5.98	U	12.0	5.98	2.99
n-Butylbenzene	104-51-8	1.20	U	5.98	1.20	0.598
sec-Butylbenzene	135-98-8	1.20	U	5.98	1.20	0.598
tert-Butylbenzene	98-06-6	1.20	U	5.98	1.20	0.598
Carbon disulfide	75-15-0	1.20	U	5.98	1.20	0.598
Carbon tetrachloride	56-23-5	1.20	U	5.98	1.20	0.598
Chlorobenzene	108-90-7	1.20	U	5.98	1.20	0.598
Chlorodibromomethane	124-48-1	1.20	U	5.98	1.20	0.598
Chloroethane	75-00-3	2.40	U	5.98	2.40	1.20
Chloroform	67-66-3	1.20	U	5.98	1.20	0.598
Chloromethane	74-87-3	4.78	U	12.0	4.78	2.39
2-Chlorotoluene	95-49-8	1.20	U	5.98	1.20	0.598
4-Chlorotoluene	106-43-4	1.20	U	5.98	1.20	0.598
1,2-Dibromo-3-chloropropane	96-12-8	4.78	U	12.0	4.78	2.39
1,2-Dibromoethane	106-93-4	1.20	U	5.98	1.20	0.598
Dibromomethane	74-95-3	1.20	U	5.98	1.20	0.598
1,2-Dichlorobenzene	95-50-1	1.20	U	5.98	1.20	0.598
1,3-Dichlorobenzene	541-73-1	1.20	U	5.98	1.20	0.598
1,4-Dichlorobenzene	106-46-7	1.20	U	5.98	1.20	0.598
Dichlorodifluoromethane	75-71-8	2.40	U	5.98	2.40	1.20
1,1-Dichloroethane	75-34-3	2.40	U	5.98	2.40	1.20
1,2-Dichloroethane	107-06-2	1.20	U	5.98	1.20	0.598
1,1-Dichloroethene	75-35-4	1.20	U	5.98	1.20	0.598
cis-1,2-Dichloroethene	156-59-2	1.20	U	5.98	1.20	0.598

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.20	U	5.98	1.20	0.598
1,2-Dichloropropane	78-87-5	1.20	U	5.98	1.20	0.598
1,3-Dichloropropane	142-28-9	1.20	U	5.98	1.20	0.598
2,2-Dichloropropane	594-20-7	1.20	U	5.98	1.20	0.598
cis-1,3-Dichloropropene	10061-01-5	1.20	U	5.98	1.20	0.598
trans-1,3-Dichloropropene	10061-02-6	1.20	U	5.98	1.20	0.598
1,1-Dichloropropene	563-58-6	1.20	U	5.98	1.20	0.598
Ethylbenzene	100-41-4	1.20	U	5.98	1.20	0.598
2-Hexanone	591-78-6	5.98	U	12.0	5.98	2.99
Hexachlorobutadiene	87-68-3	1.20	U	5.98	1.20	0.598
Isopropylbenzene	98-82-8	1.20	U	5.98	1.20	0.598
p-Isopropyltoluene	99-87-6	1.20	U	5.98	1.20	0.598
4-Methyl-2-pentanone	108-10-1	5.98	U	12.0	5.98	2.99
Methylene chloride	75-09-2	2.40	U	5.98	2.40	1.20
Naphthalene	91-20-3	1.20	U	5.98	1.20	0.598
n-Propylbenzene	103-65-1	1.20	U	5.98	1.20	0.598
Styrene	100-42-5	1.20	U	5.98	1.20	0.598
1,1,1,2-Tetrachloroethane	630-20-6	1.20	U	5.98	1.20	0.598
1,1,2,2-Tetrachloroethane	79-34-5	1.20	U	5.98	1.20	0.598
Tetrachloroethene	127-18-4	1.20	U	5.98	1.20	0.598
Toluene	108-88-3	1.20	U	5.98	1.20	0.598
1,2,3-Trichlorobenzene	87-61-6	1.20	U	5.98	1.20	0.598
1,2,4-Trichlorobenzene	120-82-1	1.20	U	5.98	1.20	0.598
1,1,1-Trichloroethane	71-55-6	1.20	U	5.98	1.20	0.598
1,1,2-Trichloroethane	79-00-5	1.20	U	5.98	1.20	0.598
Trichloroethene	79-01-6	1.20	U	5.98	1.20	0.598
Trichlorofluoromethane	75-69-4	2.40	U	5.98	2.40	1.20
1,2,3-Trichloropropane	96-18-4	2.40	U	5.98	2.40	1.20
1,2,4-Trimethylbenzene	95-63-6	1.20	U	5.98	1.20	0.598
1,3,5-Trimethylbenzene	108-67-8	1.20	U	5.98	1.20	0.598
Vinyl chloride	75-01-4	2.40	U	5.98	2.40	1.20
o-Xylene	95-47-6	1.20	U	5.98	1.20	0.598
m-,p-Xylene	179601-23-1	1.20	U	5.98	1.20	0.598

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.7	80	120	
1,2-Dichloroethane-d4	97.1	80	120	
Toluene-d8	106	85	115	
4-Bromofluorobenzene	111	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021306-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT05(10-11)250216	**Prep Method:**	6850	**Prep Date:**	02/26/2016 17:44
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558991	**Analyst:**	JWR	**Run Date:**	02/27/2016 00:43
Collect Date:	02/25/2016 09:40	**Dilution:**	1	**File ID:**	1LM.LM33422
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	88.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.22	U	4.42	2.22	1.11

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021306-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT05(10-11)250216 MS	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/28/2016 13:09
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559002	**Analyst:**	FJB	**Run Date:**	02/28/2016 17:41
Collect Date:	02/25/2016 09:40	**Dilution:**	1	**File ID:**	9M972947
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	88.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	20.4	J	21.2	10.6	5.31
Benzene	71-43-2	23.2		5.31	1.06	0.531
Bromobenzene	108-86-1	23.6		5.31	1.06	0.531
Bromochloromethane	74-97-5	22.0		5.31	2.12	1.06
Bromodichloromethane	75-27-4	21.3		5.31	1.06	0.531
Bromoform	75-25-2	18.0		5.31	1.06	0.531
Bromomethane	74-83-9	22.8		5.31	2.12	1.06
2-Butanone	78-93-3	18.9		10.6	5.30	2.65
n-Butylbenzene	104-51-8	24.1		5.31	1.06	0.531
sec-Butylbenzene	135-98-8	25.5		5.31	1.06	0.531
tert-Butylbenzene	98-06-6	26.6		5.31	1.06	0.531
Carbon disulfide	75-15-0	20.5		5.31	1.06	0.531
Carbon tetrachloride	56-23-5	21.9		5.31	1.06	0.531
Chlorobenzene	108-90-7	23.9		5.31	1.06	0.531
Chlorodibromomethane	124-48-1	20.6		5.31	1.06	0.531
Chloroethane	75-00-3	24.0		5.31	2.12	1.06
Chloroform	67-66-3	22.1		5.31	1.06	0.531
Chloromethane	74-87-3	24.4		10.6	4.24	2.12
2-Chlorotoluene	95-49-8	25.8		5.31	1.06	0.531
4-Chlorotoluene	106-43-4	24.0		5.31	1.06	0.531
1,2-Dibromo-3-chloropropane	96-12-8	20.8		10.6	4.24	2.12
1,2-Dibromoethane	106-93-4	21.7		5.31	1.06	0.531
Dibromomethane	74-95-3	20.2		5.31	1.06	0.531
1,2-Dichlorobenzene	95-50-1	23.1		5.31	1.06	0.531
1,3-Dichlorobenzene	541-73-1	22.6		5.31	1.06	0.531
1,4-Dichlorobenzene	106-46-7	22.9		5.31	1.06	0.531
Dichlorodifluoromethane	75-71-8	31.3		5.31	2.12	1.06
1,1-Dichloroethane	75-34-3	21.4		5.31	2.12	1.06
1,2-Dichloroethane	107-06-2	21.5		5.31	1.06	0.531
1,1-Dichloroethene	75-35-4	21.9		5.31	1.06	0.531
cis-1,2-Dichloroethene	156-59-2	24.2		5.31	1.06	0.531

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	24.0		5.31	1.06	0.531
1,2-Dichloropropane	78-87-5	24.0		5.31	1.06	0.531
1,3-Dichloropropane	142-28-9	23.5		5.31	1.06	0.531
2,2-Dichloropropane	594-20-7	23.2		5.31	1.06	0.531
cis-1,3-Dichloropropene	10061-01-5	23.4		5.31	1.06	0.531
trans-1,3-Dichloropropene	10061-02-6	22.3		5.31	1.06	0.531
1,1-Dichloropropene	563-58-6	22.9		5.31	1.06	0.531
Ethylbenzene	100-41-4	24.4		5.31	1.06	0.531
2-Hexanone	591-78-6	19.9		10.6	5.30	2.65
Hexachlorobutadiene	87-68-3	22.4		5.31	1.06	0.531
Isopropylbenzene	98-82-8	24.3		5.31	1.06	0.531
p-Isopropyltoluene	99-87-6	25.0		5.31	1.06	0.531
4-Methyl-2-pentanone	108-10-1	20.2		10.6	5.30	2.65
Methylene chloride	75-09-2	22.8		5.31	2.12	1.06
Naphthalene	91-20-3	19.8		5.31	1.06	0.531
n-Propylbenzene	103-65-1	26.4		5.31	1.06	0.531
Styrene	100-42-5	23.4		5.31	1.06	0.531
1,1,1,2-Tetrachloroethane	630-20-6	22.4		5.31	1.06	0.531
1,1,2,2-Tetrachloroethane	79-34-5	22.7		5.31	1.06	0.531
Tetrachloroethene	127-18-4	24.0		5.31	1.06	0.531
Toluene	108-88-3	23.9		5.31	1.06	0.531
1,2,3-Trichlorobenzene	87-61-6	21.0		5.31	1.06	0.531
1,2,4-Trichlorobenzene	120-82-1	21.1		5.31	1.06	0.531
1,1,1-Trichloroethane	71-55-6	22.5		5.31	1.06	0.531
1,1,2-Trichloroethane	79-00-5	22.5		5.31	1.06	0.531
Trichloroethene	79-01-6	23.2		5.31	1.06	0.531
Trichlorofluoromethane	75-69-4	22.5		5.31	2.12	1.06
1,2,3-Trichloropropane	96-18-4	23.1		5.31	2.12	1.06
1,2,4-Trimethylbenzene	95-63-6	24.0		5.31	1.06	0.531
1,3,5-Trimethylbenzene	108-67-8	25.2		5.31	1.06	0.531
Vinyl chloride	75-01-4	27.5		5.31	2.12	1.06
o-Xylene	95-47-6	24.3		5.31	1.06	0.531
m-,p-Xylene	179601-23-1	48.6		5.31	1.06	0.531

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	80	120	
1,2-Dichloroethane-d4	95.7	80	120	
Toluene-d8	107	85	115	
4-Bromofluorobenzene	114	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021306-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT05(10-11)250216 MS	**Prep Method:**	6850	**Prep Date:**	02/26/2016 17:44
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558991	**Analyst:**	JWR	**Run Date:**	02/27/2016 01:02
Collect Date:	02/25/2016 09:40	**Dilution:**	1	**File ID:**	1LM.LM33423
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	88.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.57	J	4.42	2.20	1.10

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021306-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT05(10-11)250216 MSD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/28/2016 13:10
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559002	**Analyst:**	FJB	**Run Date:**	02/28/2016 18:12
Collect Date:	02/25/2016 09:40	**Dilution:**	1	**File ID:**	9M972948
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	88.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	18.5	J	21.1	10.6	5.28
Benzene	71-43-2	18.9		5.28	1.06	0.528
Bromobenzene	108-86-1	16.8		5.28	1.06	0.528
Bromochloromethane	74-97-5	17.4		5.28	2.12	1.06
Bromodichloromethane	75-27-4	16.4		5.28	1.06	0.528
Bromoform	75-25-2	14.4		5.28	1.06	0.528
Bromomethane	74-83-9	17.8		5.28	2.12	1.06
2-Butanone	78-93-3	16.3		10.6	5.28	2.64
n-Butylbenzene	104-51-8	17.2		5.28	1.06	0.528
sec-Butylbenzene	135-98-8	19.7		5.28	1.06	0.528
tert-Butylbenzene	98-06-6	20.4		5.28	1.06	0.528
Carbon disulfide	75-15-0	16.5		5.28	1.06	0.528
Carbon tetrachloride	56-23-5	17.7		5.28	1.06	0.528
Chlorobenzene	108-90-7	18.5		5.28	1.06	0.528
Chlorodibromomethane	124-48-1	15.3		5.28	1.06	0.528
Chloroethane	75-00-3	19.7		5.28	2.12	1.06
Chloroform	67-66-3	17.6		5.28	1.06	0.528
Chloromethane	74-87-3	19.9		10.6	4.22	2.11
2-Chlorotoluene	95-49-8	18.4		5.28	1.06	0.528
4-Chlorotoluene	106-43-4	18.8		5.28	1.06	0.528
1,2-Dibromo-3-chloropropane	96-12-8	15.2		10.6	4.22	2.11
1,2-Dibromoethane	106-93-4	16.2		5.28	1.06	0.528
Dibromomethane	74-95-3	16.0		5.28	1.06	0.528
1,2-Dichlorobenzene	95-50-1	16.7		5.28	1.06	0.528
1,3-Dichlorobenzene	541-73-1	16.4		5.28	1.06	0.528
1,4-Dichlorobenzene	106-46-7	16.5		5.28	1.06	0.528
Dichlorodifluoromethane	75-71-8	26.7		5.28	2.12	1.06
1,1-Dichloroethane	75-34-3	17.5		5.28	2.12	1.06
1,2-Dichloroethane	107-06-2	17.0		5.28	1.06	0.528
1,1-Dichloroethene	75-35-4	19.7		5.28	1.06	0.528
cis-1,2-Dichloroethene	156-59-2	19.1		5.28	1.06	0.528

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	20.5		5.28	1.06	0.528
1,2-Dichloropropane	78-87-5	18.8		5.28	1.06	0.528
1,3-Dichloropropane	142-28-9	18.3		5.28	1.06	0.528
2,2-Dichloropropane	594-20-7	19.4		5.28	1.06	0.528
cis-1,3-Dichloropropene	10061-01-5	18.5		5.28	1.06	0.528
trans-1,3-Dichloropropene	10061-02-6	16.5		5.28	1.06	0.528
1,1-Dichloropropene	563-58-6	19.3		5.28	1.06	0.528
Ethylbenzene	100-41-4	18.8		5.28	1.06	0.528
2-Hexanone	591-78-6	15.9		10.6	5.28	2.64
Hexachlorobutadiene	87-68-3	16.0		5.28	1.06	0.528
Isopropylbenzene	98-82-8	19.2		5.28	1.06	0.528
p-Isopropyltoluene	99-87-6	18.8		5.28	1.06	0.528
4-Methyl-2-pentanone	108-10-1	16.6		10.6	5.28	2.64
Methylene chloride	75-09-2	18.0		5.28	2.12	1.06
Naphthalene	91-20-3	13.7		5.28	1.06	0.528
n-Propylbenzene	103-65-1	19.7		5.28	1.06	0.528
Styrene	100-42-5	17.8		5.28	1.06	0.528
1,1,1,2-Tetrachloroethane	630-20-6	17.2		5.28	1.06	0.528
1,1,2,2-Tetrachloroethane	79-34-5	16.3		5.28	1.06	0.528
Tetrachloroethene	127-18-4	18.9		5.28	1.06	0.528
Toluene	108-88-3	19.1		5.28	1.06	0.528
1,2,3-Trichlorobenzene	87-61-6	13.6		5.28	1.06	0.528
1,2,4-Trichlorobenzene	120-82-1	14.0		5.28	1.06	0.528
1,1,1-Trichloroethane	71-55-6	18.4		5.28	1.06	0.528
1,1,2-Trichloroethane	79-00-5	17.4		5.28	1.06	0.528
Trichloroethene	79-01-6	18.9		5.28	1.06	0.528
Trichlorofluoromethane	75-69-4	19.6		5.28	2.12	1.06
1,2,3-Trichloropropane	96-18-4	17.9		5.28	2.12	1.06
1,2,4-Trimethylbenzene	95-63-6	17.5		5.28	1.06	0.528
1,3,5-Trimethylbenzene	108-67-8	18.8		5.28	1.06	0.528
Vinyl chloride	75-01-4	24.1		5.28	2.12	1.06
o-Xylene	95-47-6	19.2		5.28	1.06	0.528
m-,p-Xylene	179601-23-1	38.5		5.28	1.06	0.528

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	80	120	
1,2-Dichloroethane-d4	101	80	120	
Toluene-d8	106	85	115	
4-Bromofluorobenzene	113	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021306-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT05(10-11)250216 MSD	**Prep Method:**	6850	**Prep Date:**	02/26/2016 17:44
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558991	**Analyst:**	JWR	**Run Date:**	02/27/2016 01:21
Collect Date:	02/25/2016 09:40	**Dilution:**	1	**File ID:**	1LM.LM33424
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	88.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.67	J	4.42	2.20	1.10

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021306-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT05(15-15.5)250216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/28/2016 13:10
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559002	**Analyst:**	FJB	**Run Date:**	02/29/2016 00:57
Collect Date:	02/25/2016 09:50	**Dilution:**	1	**File ID:**	9M972961
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.6	U	25.2	12.6	6.30
Benzene	71-43-2	1.26	U	6.30	1.26	0.630
Bromobenzene	108-86-1	1.26	U	6.30	1.26	0.630
Bromochloromethane	74-97-5	2.52	U	6.30	2.52	1.26
Bromodichloromethane	75-27-4	1.26	U	6.30	1.26	0.630
Bromoform	75-25-2	1.26	U	6.30	1.26	0.630
Bromomethane	74-83-9	2.52	U	6.30	2.52	1.26
2-Butanone	78-93-3	6.30	U	12.6	6.30	3.15
n-Butylbenzene	104-51-8	1.26	U	6.30	1.26	0.630
sec-Butylbenzene	135-98-8	1.26	U	6.30	1.26	0.630
tert-Butylbenzene	98-06-6	1.26	U	6.30	1.26	0.630
Carbon disulfide	75-15-0	1.26	U	6.30	1.26	0.630
Carbon tetrachloride	56-23-5	1.26	U	6.30	1.26	0.630
Chlorobenzene	108-90-7	1.26	U	6.30	1.26	0.630
Chlorodibromomethane	124-48-1	1.26	U	6.30	1.26	0.630
Chloroethane	75-00-3	2.52	U	6.30	2.52	1.26
Chloroform	67-66-3	1.26	U	6.30	1.26	0.630
Chloromethane	74-87-3	5.04	U	12.6	5.04	2.52
2-Chlorotoluene	95-49-8	1.26	U	6.30	1.26	0.630
4-Chlorotoluene	106-43-4	1.26	U	6.30	1.26	0.630
1,2-Dibromo-3-chloropropane	96-12-8	5.04	U	12.6	5.04	2.52
1,2-Dibromoethane	106-93-4	1.26	U	6.30	1.26	0.630
Dibromomethane	74-95-3	1.26	U	6.30	1.26	0.630
1,2-Dichlorobenzene	95-50-1	1.26	U	6.30	1.26	0.630
1,3-Dichlorobenzene	541-73-1	1.26	U	6.30	1.26	0.630
1,4-Dichlorobenzene	106-46-7	1.26	U	6.30	1.26	0.630
Dichlorodifluoromethane	75-71-8	2.52	U	6.30	2.52	1.26
1,1-Dichloroethane	75-34-3	2.52	U	6.30	2.52	1.26
1,2-Dichloroethane	107-06-2	1.26	U	6.30	1.26	0.630
1,1-Dichloroethene	75-35-4	1.26	U	6.30	1.26	0.630
cis-1,2-Dichloroethene	156-59-2	1.26	U	6.30	1.26	0.630

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.26	U	6.30	1.26	0.630
1,2-Dichloropropane	78-87-5	1.26	U	6.30	1.26	0.630
1,3-Dichloropropane	142-28-9	1.26	U	6.30	1.26	0.630
2,2-Dichloropropane	594-20-7	1.26	U	6.30	1.26	0.630
cis-1,3-Dichloropropene	10061-01-5	1.26	U	6.30	1.26	0.630
trans-1,3-Dichloropropene	10061-02-6	1.26	U	6.30	1.26	0.630
1,1-Dichloropropene	563-58-6	1.26	U	6.30	1.26	0.630
Ethylbenzene	100-41-4	1.26	U	6.30	1.26	0.630
2-Hexanone	591-78-6	6.30	U	12.6	6.30	3.15
Hexachlorobutadiene	87-68-3	1.26	U	6.30	1.26	0.630
Isopropylbenzene	98-82-8	1.26	U	6.30	1.26	0.630
p-Isopropyltoluene	99-87-6	1.26	U	6.30	1.26	0.630
4-Methyl-2-pentanone	108-10-1	6.30	U	12.6	6.30	3.15
Methylene chloride	75-09-2	2.52	U	6.30	2.52	1.26
Naphthalene	91-20-3	1.26	U	6.30	1.26	0.630
n-Propylbenzene	103-65-1	1.26	U	6.30	1.26	0.630
Styrene	100-42-5	1.26	U	6.30	1.26	0.630
1,1,1,2-Tetrachloroethane	630-20-6	1.26	U	6.30	1.26	0.630
1,1,2,2-Tetrachloroethane	79-34-5	1.26	U	6.30	1.26	0.630
Tetrachloroethene	127-18-4	1.26	U	6.30	1.26	0.630
Toluene	108-88-3	1.26	U	6.30	1.26	0.630
1,2,3-Trichlorobenzene	87-61-6	1.26	U	6.30	1.26	0.630
1,2,4-Trichlorobenzene	120-82-1	1.26	U	6.30	1.26	0.630
1,1,1-Trichloroethane	71-55-6	1.26	U	6.30	1.26	0.630
1,1,2-Trichloroethane	79-00-5	1.26	U	6.30	1.26	0.630
Trichloroethene	79-01-6	1.26	U	6.30	1.26	0.630
Trichlorofluoromethane	75-69-4	2.52	U	6.30	2.52	1.26
1,2,3-Trichloropropane	96-18-4	2.52	U	6.30	2.52	1.26
1,2,4-Trimethylbenzene	95-63-6	1.26	U	6.30	1.26	0.630
1,3,5-Trimethylbenzene	108-67-8	1.26	U	6.30	1.26	0.630
Vinyl chloride	75-01-4	2.52	U	6.30	2.52	1.26
o-Xylene	95-47-6	1.26	U	6.30	1.26	0.630
m-,p-Xylene	179601-23-1	1.26	U	6.30	1.26	0.630

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.8	80	120	
1,2-Dichloroethane-d4	97.9	80	120	
Toluene-d8	107	85	115	
4-Bromofluorobenzene	117	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021306-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT05(15-15.5)250216	**Prep Method:**	6850	**Prep Date:**	02/26/2016 17:44
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558991	**Analyst:**	JWR	**Run Date:**	02/27/2016 01:59
Collect Date:	02/25/2016 09:50	**Dilution:**	1	**File ID:**	1LM.LM33426
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	7.13		4.56	2.28	1.14

Certificate of Analysis

Sample #:	L16021306-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT05(20-20.5)250216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/28/2016 13:12
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559002	**Analyst:**	FJB	**Run Date:**	02/29/2016 01:29
Collect Date:	02/25/2016 09:45	**Dilution:**	1	**File ID:**	9M972962
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.2	U	24.5	12.2	6.12
Benzene	71-43-2	1.22	U	6.12	1.22	0.612
Bromobenzene	108-86-1	1.22	U	6.12	1.22	0.612
Bromochloromethane	74-97-5	2.44	U	6.12	2.44	1.22
Bromodichloromethane	75-27-4	1.22	U	6.12	1.22	0.612
Bromoform	75-25-2	1.22	U	6.12	1.22	0.612
Bromomethane	74-83-9	2.44	U	6.12	2.44	1.22
2-Butanone	78-93-3	6.12	U	12.2	6.12	3.06
n-Butylbenzene	104-51-8	1.22	U	6.12	1.22	0.612
sec-Butylbenzene	135-98-8	1.22	U	6.12	1.22	0.612
tert-Butylbenzene	98-06-6	1.22	U	6.12	1.22	0.612
Carbon disulfide	75-15-0	1.22	U	6.12	1.22	0.612
Carbon tetrachloride	56-23-5	1.22	U	6.12	1.22	0.612
Chlorobenzene	108-90-7	1.22	U	6.12	1.22	0.612
Chlorodibromomethane	124-48-1	1.22	U	6.12	1.22	0.612
Chloroethane	75-00-3	2.44	U	6.12	2.44	1.22
Chloroform	67-66-3	1.22	U	6.12	1.22	0.612
Chloromethane	74-87-3	4.90	U	12.2	4.90	2.45
2-Chlorotoluene	95-49-8	1.22	U	6.12	1.22	0.612
4-Chlorotoluene	106-43-4	1.22	U	6.12	1.22	0.612

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Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	4.90	U	12.2	4.90	2.45
1,2-Dibromoethane	106-93-4	1.22	U	6.12	1.22	0.612
Dibromomethane	74-95-3	1.22	U	6.12	1.22	0.612
1,2-Dichlorobenzene	95-50-1	1.22	U	6.12	1.22	0.612
1,3-Dichlorobenzene	541-73-1	1.22	U	6.12	1.22	0.612
1,4-Dichlorobenzene	106-46-7	1.22	U	6.12	1.22	0.612
Dichlorodifluoromethane	75-71-8	2.44	U	6.12	2.44	1.22
1,1-Dichloroethane	75-34-3	2.44	U	6.12	2.44	1.22
1,2-Dichloroethane	107-06-2	1.22	U	6.12	1.22	0.612
1,1-Dichloroethene	75-35-4	1.22	U	6.12	1.22	0.612
cis-1,2-Dichloroethene	156-59-2	1.22	U	6.12	1.22	0.612
trans-1,2-Dichloroethene	156-60-5	1.22	U	6.12	1.22	0.612
1,2-Dichloropropane	78-87-5	1.22	U	6.12	1.22	0.612
1,3-Dichloropropane	142-28-9	1.22	U	6.12	1.22	0.612
2,2-Dichloropropane	594-20-7	1.22	U	6.12	1.22	0.612
cis-1,3-Dichloropropene	10061-01-5	1.22	U	6.12	1.22	0.612
trans-1,3-Dichloropropene	10061-02-6	1.22	U	6.12	1.22	0.612
1,1-Dichloropropene	563-58-6	1.22	U	6.12	1.22	0.612
Ethylbenzene	100-41-4	1.22	U	6.12	1.22	0.612
2-Hexanone	591-78-6	6.12	U	12.2	6.12	3.06
Hexachlorobutadiene	87-68-3	1.22	U	6.12	1.22	0.612
Isopropylbenzene	98-82-8	1.22	U	6.12	1.22	0.612
p-Isopropyltoluene	99-87-6	1.22	U	6.12	1.22	0.612
4-Methyl-2-pentanone	108-10-1	6.12	U	12.2	6.12	3.06
Methylene chloride	75-09-2	2.44	U	6.12	2.44	1.22
Naphthalene	91-20-3	1.22	U	6.12	1.22	0.612
n-Propylbenzene	103-65-1	1.22	U	6.12	1.22	0.612
Styrene	100-42-5	1.22	U	6.12	1.22	0.612
1,1,1,2-Tetrachloroethane	630-20-6	1.22	U	6.12	1.22	0.612
1,1,2,2-Tetrachloroethane	79-34-5	1.22	U	6.12	1.22	0.612
Tetrachloroethene	127-18-4	1.22	U	6.12	1.22	0.612
Toluene	108-88-3	1.22	U	6.12	1.22	0.612
1,2,3-Trichlorobenzene	87-61-6	1.22	U	6.12	1.22	0.612
1,2,4-Trichlorobenzene	120-82-1	1.22	U	6.12	1.22	0.612
1,1,1-Trichloroethane	71-55-6	1.22	U	6.12	1.22	0.612
1,1,2-Trichloroethane	79-00-5	1.22	U	6.12	1.22	0.612
Trichloroethene	79-01-6	1.17	J	6.12	1.22	0.612
Trichlorofluoromethane	75-69-4	2.44	U	6.12	2.44	1.22
1,2,3-Trichloropropane	96-18-4	2.44	U	6.12	2.44	1.22

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.22	U	6.12	1.22	0.612
1,3,5-Trimethylbenzene	108-67-8	1.22	U	6.12	1.22	0.612
Vinyl chloride	75-01-4	2.44	U	6.12	2.44	1.22
o-Xylene	95-47-6	1.22	U	6.12	1.22	0.612
m-,p-Xylene	179601-23-1	1.22	U	6.12	1.22	0.612

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.5	80	120	
1,2-Dichloroethane-d4	106	80	120	
Toluene-d8	104	85	115	
4-Bromofluorobenzene	107	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021306-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT05(20-20.5)250216	**Prep Method:**	6850	**Prep Date:**	02/26/2016 17:44
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558991	**Analyst:**	JWR	**Run Date:**	02/27/2016 11:35
Collect Date:	02/25/2016 09:45	**Dilution:**	50	**File ID:**	1LM.LM33435
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	80.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1400		243	121	60.7

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #: L16021306-01 **Client ID:** 18DPT05(4.5-5)250216 **Matrix:** Soil **Collect Date:** 02/25/2016 09:30

Analyte	Result	Units	Qualifier
Percent Solids	84.0	weight %	

Sample #: L16021306-02 **Client ID:** 18DPT05(10-11)250216 **Matrix:** Soil **Collect Date:** 02/25/2016 09:40

Analyte	Result	Units	Qualifier
Percent Solids	88.0	weight %	

Sample #: L16021306-03 **Client ID:** 18DPT05(10-11)250216 MS **Matrix:** Soil **Collect Date:** 02/25/2016 09:40

Analyte	Result	Units	Qualifier
Percent Solids	88.0	weight %	

Sample #: L16021306-04 **Client ID:** 18DPT05(10-11)250216 MSD **Matrix:** Soil **Collect Date:** 02/25/2016 09:40

Analyte	Result	Units	Qualifier
Percent Solids	88.0	weight %	

Sample #: L16021306-05 **Client ID:** 18DPT05(15-15.5)250216 **Matrix:** Soil **Collect Date:** 02/25/2016 09:50

Analyte	Result	Units	Qualifier
Percent Solids	85.2	weight %	

Sample #: L16021306-06 **Client ID:** 18DPT05(20-20.5)250216 **Matrix:** Soil **Collect Date:** 02/25/2016 09:45

Analyte	Result	Units	Qualifier
Percent Solids	80.0	weight %	

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021306-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT05(4.5-5)250216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/28/2016 13:09
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559002	**Analyst:**	FJB	**Run Date:**	02/28/2016 23:54
Collect Date:	02/25/2016 09:30	**Dilution:**	1	**File ID:**	9M972959
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.6	U	25.2	12.6	6.29
Benzene	71-43-2	1.26	U	6.29	1.26	0.629
Bromobenzene	108-86-1	1.26	U	6.29	1.26	0.629
Bromochloromethane	74-97-5	2.52	U	6.29	2.52	1.26
Bromodichloromethane	75-27-4	1.26	U	6.29	1.26	0.629
Bromoform	75-25-2	1.26	U	6.29	1.26	0.629
Bromomethane	74-83-9	2.52	U	6.29	2.52	1.26
2-Butanone	78-93-3	6.30	U	12.6	6.30	3.15
n-Butylbenzene	104-51-8	1.26	U	6.29	1.26	0.629
sec-Butylbenzene	135-98-8	1.26	U	6.29	1.26	0.629
tert-Butylbenzene	98-06-6	1.26	U	6.29	1.26	0.629
Carbon disulfide	75-15-0	1.26	U	6.29	1.26	0.629
Carbon tetrachloride	56-23-5	1.26	U	6.29	1.26	0.629
Chlorobenzene	108-90-7	1.26	U	6.29	1.26	0.629
Chlorodibromomethane	124-48-1	1.26	U	6.29	1.26	0.629
Chloroethane	75-00-3	2.52	U	6.29	2.52	1.26
Chloroform	67-66-3	1.26	U	6.29	1.26	0.629
Chloromethane	74-87-3	5.04	U	12.6	5.04	2.52
2-Chlorotoluene	95-49-8	1.26	U	6.29	1.26	0.629
4-Chlorotoluene	106-43-4	1.26	U	6.29	1.26	0.629
1,2-Dibromo-3-chloropropane	96-12-8	5.04	U	12.6	5.04	2.52
1,2-Dibromoethane	106-93-4	1.26	U	6.29	1.26	0.629
Dibromomethane	74-95-3	1.26	U	6.29	1.26	0.629
1,2-Dichlorobenzene	95-50-1	1.26	U	6.29	1.26	0.629
1,3-Dichlorobenzene	541-73-1	1.26	U	6.29	1.26	0.629
1,4-Dichlorobenzene	106-46-7	1.26	U	6.29	1.26	0.629
Dichlorodifluoromethane	75-71-8	2.52	U	6.29	2.52	1.26
1,1-Dichloroethane	75-34-3	2.52	U	6.29	2.52	1.26
1,2-Dichloroethane	107-06-2	1.26	U	6.29	1.26	0.629
1,1-Dichloroethene	75-35-4	1.26	U	6.29	1.26	0.629
cis-1,2-Dichloroethene	156-59-2	1.26	U	6.29	1.26	0.629
trans-1,2-Dichloroethene	156-60-5	1.26	U	6.29	1.26	0.629

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Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.26	U	6.29	1.26	0.629
1,3-Dichloropropane	142-28-9	1.26	U	6.29	1.26	0.629
2,2-Dichloropropane	594-20-7	1.26	U	6.29	1.26	0.629
cis-1,3-Dichloropropene	10061-01-5	1.26	U	6.29	1.26	0.629
trans-1,3-Dichloropropene	10061-02-6	1.26	U	6.29	1.26	0.629
1,1-Dichloropropene	563-58-6	1.26	U	6.29	1.26	0.629
Ethylbenzene	100-41-4	1.26	U	6.29	1.26	0.629
2-Hexanone	591-78-6	6.30	U	12.6	6.30	3.15
Hexachlorobutadiene	87-68-3	1.26	U	6.29	1.26	0.629
Isopropylbenzene	98-82-8	1.26	U	6.29	1.26	0.629
p-Isopropyltoluene	99-87-6	1.26	U	6.29	1.26	0.629
4-Methyl-2-pentanone	108-10-1	6.30	U	12.6	6.30	3.15
Methylene chloride	75-09-2	2.52	U	6.29	2.52	1.26
Naphthalene	91-20-3	1.26	U	6.29	1.26	0.629
n-Propylbenzene	103-65-1	1.26	U	6.29	1.26	0.629
Styrene	100-42-5	1.26	U	6.29	1.26	0.629
1,1,1,2-Tetrachloroethane	630-20-6	1.26	U	6.29	1.26	0.629
1,1,2,2-Tetrachloroethane	79-34-5	1.26	U	6.29	1.26	0.629
Tetrachloroethene	127-18-4	1.26	U	6.29	1.26	0.629
Toluene	108-88-3	1.26	U	6.29	1.26	0.629
1,2,3-Trichlorobenzene	87-61-6	1.26	U	6.29	1.26	0.629
1,2,4-Trichlorobenzene	120-82-1	1.26	U	6.29	1.26	0.629
1,1,1-Trichloroethane	71-55-6	1.26	U	6.29	1.26	0.629
1,1,2-Trichloroethane	79-00-5	1.26	U	6.29	1.26	0.629
Trichloroethene	79-01-6	1.26	U	6.29	1.26	0.629
Trichlorofluoromethane	75-69-4	2.52	U	6.29	2.52	1.26
1,2,3-Trichloropropane	96-18-4	2.52	U	6.29	2.52	1.26
1,2,4-Trimethylbenzene	95-63-6	1.26	U	6.29	1.26	0.629
1,3,5-Trimethylbenzene	108-67-8	1.26	U	6.29	1.26	0.629
Vinyl chloride	75-01-4	2.52	U	6.29	2.52	1.26
o-Xylene	95-47-6	1.26	U	6.29	1.26	0.629
m-,p-Xylene	179601-23-1	1.26	U	6.29	1.26	0.629

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.9	80	120	
1,2-Dichloroethane-d4	95.6	80	120	
Toluene-d8	107	85	115	
4-Bromofluorobenzene	112	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021306-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT05(10-11)250216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/28/2016 13:09
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559002	**Analyst:**	FJB	**Run Date:**	02/29/2016 00:25
Collect Date:	02/25/2016 09:40	**Dilution:**	1	**File ID:**	9M972960
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	88.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.0	U	23.9	12.0	5.98
Benzene	71-43-2	1.20	U	5.98	1.20	0.598
Bromobenzene	108-86-1	1.20	U	5.98	1.20	0.598
Bromochloromethane	74-97-5	2.40	U	5.98	2.40	1.20
Bromodichloromethane	75-27-4	1.20	U	5.98	1.20	0.598
Bromoform	75-25-2	1.20	U	5.98	1.20	0.598
Bromomethane	74-83-9	2.40	U	5.98	2.40	1.20
2-Butanone	78-93-3	5.98	U	12.0	5.98	2.99
n-Butylbenzene	104-51-8	1.20	U	5.98	1.20	0.598
sec-Butylbenzene	135-98-8	1.20	U	5.98	1.20	0.598
tert-Butylbenzene	98-06-6	1.20	U	5.98	1.20	0.598
Carbon disulfide	75-15-0	1.20	U	5.98	1.20	0.598
Carbon tetrachloride	56-23-5	1.20	U	5.98	1.20	0.598
Chlorobenzene	108-90-7	1.20	U	5.98	1.20	0.598
Chlorodibromomethane	124-48-1	1.20	U	5.98	1.20	0.598
Chloroethane	75-00-3	2.40	U	5.98	2.40	1.20
Chloroform	67-66-3	1.20	U	5.98	1.20	0.598
Chloromethane	74-87-3	4.78	U	12.0	4.78	2.39
2-Chlorotoluene	95-49-8	1.20	U	5.98	1.20	0.598
4-Chlorotoluene	106-43-4	1.20	U	5.98	1.20	0.598
1,2-Dibromo-3-chloropropane	96-12-8	4.78	U	12.0	4.78	2.39
1,2-Dibromoethane	106-93-4	1.20	U	5.98	1.20	0.598
Dibromomethane	74-95-3	1.20	U	5.98	1.20	0.598
1,2-Dichlorobenzene	95-50-1	1.20	U	5.98	1.20	0.598
1,3-Dichlorobenzene	541-73-1	1.20	U	5.98	1.20	0.598
1,4-Dichlorobenzene	106-46-7	1.20	U	5.98	1.20	0.598
Dichlorodifluoromethane	75-71-8	2.40	U	5.98	2.40	1.20
1,1-Dichloroethane	75-34-3	2.40	U	5.98	2.40	1.20
1,2-Dichloroethane	107-06-2	1.20	U	5.98	1.20	0.598
1,1-Dichloroethene	75-35-4	1.20	U	5.98	1.20	0.598
cis-1,2-Dichloroethene	156-59-2	1.20	U	5.98	1.20	0.598

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Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.20	U	5.98	1.20	0.598
1,2-Dichloropropane	78-87-5	1.20	U	5.98	1.20	0.598
1,3-Dichloropropane	142-28-9	1.20	U	5.98	1.20	0.598
2,2-Dichloropropane	594-20-7	1.20	U	5.98	1.20	0.598
cis-1,3-Dichloropropene	10061-01-5	1.20	U	5.98	1.20	0.598
trans-1,3-Dichloropropene	10061-02-6	1.20	U	5.98	1.20	0.598
1,1-Dichloropropene	563-58-6	1.20	U	5.98	1.20	0.598
Ethylbenzene	100-41-4	1.20	U	5.98	1.20	0.598
2-Hexanone	591-78-6	5.98	U	12.0	5.98	2.99
Hexachlorobutadiene	87-68-3	1.20	U	5.98	1.20	0.598
Isopropylbenzene	98-82-8	1.20	U	5.98	1.20	0.598
p-Isopropyltoluene	99-87-6	1.20	U	5.98	1.20	0.598
4-Methyl-2-pentanone	108-10-1	5.98	U	12.0	5.98	2.99
Methylene chloride	75-09-2	2.40	U	5.98	2.40	1.20
Naphthalene	91-20-3	1.20	U	5.98	1.20	0.598
n-Propylbenzene	103-65-1	1.20	U	5.98	1.20	0.598
Styrene	100-42-5	1.20	U	5.98	1.20	0.598
1,1,1,2-Tetrachloroethane	630-20-6	1.20	U	5.98	1.20	0.598
1,1,2,2-Tetrachloroethane	79-34-5	1.20	U	5.98	1.20	0.598
Tetrachloroethene	127-18-4	1.20	U	5.98	1.20	0.598
Toluene	108-88-3	1.20	U	5.98	1.20	0.598
1,2,3-Trichlorobenzene	87-61-6	1.20	U	5.98	1.20	0.598
1,2,4-Trichlorobenzene	120-82-1	1.20	U	5.98	1.20	0.598
1,1,1-Trichloroethane	71-55-6	1.20	U	5.98	1.20	0.598
1,1,2-Trichloroethane	79-00-5	1.20	U	5.98	1.20	0.598
Trichloroethene	79-01-6	1.20	U	5.98	1.20	0.598
Trichlorofluoromethane	75-69-4	2.40	U	5.98	2.40	1.20
1,2,3-Trichloropropane	96-18-4	2.40	U	5.98	2.40	1.20
1,2,4-Trimethylbenzene	95-63-6	1.20	U	5.98	1.20	0.598
1,3,5-Trimethylbenzene	108-67-8	1.20	U	5.98	1.20	0.598
Vinyl chloride	75-01-4	2.40	U	5.98	2.40	1.20
o-Xylene	95-47-6	1.20	U	5.98	1.20	0.598
m-,p-Xylene	179601-23-1	1.20	U	5.98	1.20	0.598

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.7	80	120	
1,2-Dichloroethane-d4	97.1	80	120	
Toluene-d8	106	85	115	
4-Bromofluorobenzene	111	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021306-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT05(10-11)250216 MS	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/28/2016 13:09
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559002	**Analyst:**	FJB	**Run Date:**	02/28/2016 17:41
Collect Date:	02/25/2016 09:40	**Dilution:**	1	**File ID:**	9M972947
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	88.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	20.4	J	21.2	10.6	5.31
Benzene	71-43-2	23.2		5.31	1.06	0.531
Bromobenzene	108-86-1	23.6		5.31	1.06	0.531
Bromochloromethane	74-97-5	22.0		5.31	2.12	1.06
Bromodichloromethane	75-27-4	21.3		5.31	1.06	0.531
Bromoform	75-25-2	18.0		5.31	1.06	0.531
Bromomethane	74-83-9	22.8		5.31	2.12	1.06
2-Butanone	78-93-3	18.9		10.6	5.30	2.65
n-Butylbenzene	104-51-8	24.1		5.31	1.06	0.531
sec-Butylbenzene	135-98-8	25.5		5.31	1.06	0.531
tert-Butylbenzene	98-06-6	26.6		5.31	1.06	0.531
Carbon disulfide	75-15-0	20.5		5.31	1.06	0.531
Carbon tetrachloride	56-23-5	21.9		5.31	1.06	0.531
Chlorobenzene	108-90-7	23.9		5.31	1.06	0.531
Chlorodibromomethane	124-48-1	20.6		5.31	1.06	0.531
Chloroethane	75-00-3	24.0		5.31	2.12	1.06
Chloroform	67-66-3	22.1		5.31	1.06	0.531
Chloromethane	74-87-3	24.4		10.6	4.24	2.12
2-Chlorotoluene	95-49-8	25.8		5.31	1.06	0.531
4-Chlorotoluene	106-43-4	24.0		5.31	1.06	0.531
1,2-Dibromo-3-chloropropane	96-12-8	20.8		10.6	4.24	2.12
1,2-Dibromoethane	106-93-4	21.7		5.31	1.06	0.531
Dibromomethane	74-95-3	20.2		5.31	1.06	0.531
1,2-Dichlorobenzene	95-50-1	23.1		5.31	1.06	0.531
1,3-Dichlorobenzene	541-73-1	22.6		5.31	1.06	0.531
1,4-Dichlorobenzene	106-46-7	22.9		5.31	1.06	0.531
Dichlorodifluoromethane	75-71-8	31.3		5.31	2.12	1.06
1,1-Dichloroethane	75-34-3	21.4		5.31	2.12	1.06
1,2-Dichloroethane	107-06-2	21.5		5.31	1.06	0.531
1,1-Dichloroethene	75-35-4	21.9		5.31	1.06	0.531
cis-1,2-Dichloroethene	156-59-2	24.2		5.31	1.06	0.531

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Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	24.0		5.31	1.06	0.531
1,2-Dichloropropane	78-87-5	24.0		5.31	1.06	0.531
1,3-Dichloropropane	142-28-9	23.5		5.31	1.06	0.531
2,2-Dichloropropane	594-20-7	23.2		5.31	1.06	0.531
cis-1,3-Dichloropropene	10061-01-5	23.4		5.31	1.06	0.531
trans-1,3-Dichloropropene	10061-02-6	22.3		5.31	1.06	0.531
1,1-Dichloropropene	563-58-6	22.9		5.31	1.06	0.531
Ethylbenzene	100-41-4	24.4		5.31	1.06	0.531
2-Hexanone	591-78-6	19.9		10.6	5.30	2.65
Hexachlorobutadiene	87-68-3	22.4		5.31	1.06	0.531
Isopropylbenzene	98-82-8	24.3		5.31	1.06	0.531
p-Isopropyltoluene	99-87-6	25.0		5.31	1.06	0.531
4-Methyl-2-pentanone	108-10-1	20.2		10.6	5.30	2.65
Methylene chloride	75-09-2	22.8		5.31	2.12	1.06
Naphthalene	91-20-3	19.8		5.31	1.06	0.531
n-Propylbenzene	103-65-1	26.4		5.31	1.06	0.531
Styrene	100-42-5	23.4		5.31	1.06	0.531
1,1,1,2-Tetrachloroethane	630-20-6	22.4		5.31	1.06	0.531
1,1,2,2-Tetrachloroethane	79-34-5	22.7		5.31	1.06	0.531
Tetrachloroethene	127-18-4	24.0		5.31	1.06	0.531
Toluene	108-88-3	23.9		5.31	1.06	0.531
1,2,3-Trichlorobenzene	87-61-6	21.0		5.31	1.06	0.531
1,2,4-Trichlorobenzene	120-82-1	21.1		5.31	1.06	0.531
1,1,1-Trichloroethane	71-55-6	22.5		5.31	1.06	0.531
1,1,2-Trichloroethane	79-00-5	22.5		5.31	1.06	0.531
Trichloroethene	79-01-6	23.2		5.31	1.06	0.531
Trichlorofluoromethane	75-69-4	22.5		5.31	2.12	1.06
1,2,3-Trichloropropane	96-18-4	23.1		5.31	2.12	1.06
1,2,4-Trimethylbenzene	95-63-6	24.0		5.31	1.06	0.531
1,3,5-Trimethylbenzene	108-67-8	25.2		5.31	1.06	0.531
Vinyl chloride	75-01-4	27.5		5.31	2.12	1.06
o-Xylene	95-47-6	24.3		5.31	1.06	0.531
m-,p-Xylene	179601-23-1	48.6		5.31	1.06	0.531

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	80	120	
1,2-Dichloroethane-d4	95.7	80	120	
Toluene-d8	107	85	115	
4-Bromofluorobenzene	114	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

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Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021306-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT05(10-11)250216 MSD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/28/2016 13:10
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559002	**Analyst:**	FJB	**Run Date:**	02/28/2016 18:12
Collect Date:	02/25/2016 09:40	**Dilution:**	1	**File ID:**	9M972948
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	88.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	18.5	J	21.1	10.6	5.28
Benzene	71-43-2	18.9		5.28	1.06	0.528
Bromobenzene	108-86-1	16.8		5.28	1.06	0.528
Bromochloromethane	74-97-5	17.4		5.28	2.12	1.06
Bromodichloromethane	75-27-4	16.4		5.28	1.06	0.528
Bromoform	75-25-2	14.4		5.28	1.06	0.528
Bromomethane	74-83-9	17.8		5.28	2.12	1.06
2-Butanone	78-93-3	16.3		10.6	5.28	2.64
n-Butylbenzene	104-51-8	17.2		5.28	1.06	0.528
sec-Butylbenzene	135-98-8	19.7		5.28	1.06	0.528
tert-Butylbenzene	98-06-6	20.4		5.28	1.06	0.528
Carbon disulfide	75-15-0	16.5		5.28	1.06	0.528
Carbon tetrachloride	56-23-5	17.7		5.28	1.06	0.528
Chlorobenzene	108-90-7	18.5		5.28	1.06	0.528
Chlorodibromomethane	124-48-1	15.3		5.28	1.06	0.528
Chloroethane	75-00-3	19.7		5.28	2.12	1.06
Chloroform	67-66-3	17.6		5.28	1.06	0.528
Chloromethane	74-87-3	19.9		10.6	4.22	2.11
2-Chlorotoluene	95-49-8	18.4		5.28	1.06	0.528
4-Chlorotoluene	106-43-4	18.8		5.28	1.06	0.528
1,2-Dibromo-3-chloropropane	96-12-8	15.2		10.6	4.22	2.11
1,2-Dibromoethane	106-93-4	16.2		5.28	1.06	0.528
Dibromomethane	74-95-3	16.0		5.28	1.06	0.528
1,2-Dichlorobenzene	95-50-1	16.7		5.28	1.06	0.528
1,3-Dichlorobenzene	541-73-1	16.4		5.28	1.06	0.528
1,4-Dichlorobenzene	106-46-7	16.5		5.28	1.06	0.528
Dichlorodifluoromethane	75-71-8	26.7		5.28	2.12	1.06
1,1-Dichloroethane	75-34-3	17.5		5.28	2.12	1.06
1,2-Dichloroethane	107-06-2	17.0		5.28	1.06	0.528
1,1-Dichloroethene	75-35-4	19.7		5.28	1.06	0.528
cis-1,2-Dichloroethene	156-59-2	19.1		5.28	1.06	0.528

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Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	20.5		5.28	1.06	0.528
1,2-Dichloropropane	78-87-5	18.8		5.28	1.06	0.528
1,3-Dichloropropane	142-28-9	18.3		5.28	1.06	0.528
2,2-Dichloropropane	594-20-7	19.4		5.28	1.06	0.528
cis-1,3-Dichloropropene	10061-01-5	18.5		5.28	1.06	0.528
trans-1,3-Dichloropropene	10061-02-6	16.5		5.28	1.06	0.528
1,1-Dichloropropene	563-58-6	19.3		5.28	1.06	0.528
Ethylbenzene	100-41-4	18.8		5.28	1.06	0.528
2-Hexanone	591-78-6	15.9		10.6	5.28	2.64
Hexachlorobutadiene	87-68-3	16.0		5.28	1.06	0.528
Isopropylbenzene	98-82-8	19.2		5.28	1.06	0.528
p-Isopropyltoluene	99-87-6	18.8		5.28	1.06	0.528
4-Methyl-2-pentanone	108-10-1	16.6		10.6	5.28	2.64
Methylene chloride	75-09-2	18.0		5.28	2.12	1.06
Naphthalene	91-20-3	13.7		5.28	1.06	0.528
n-Propylbenzene	103-65-1	19.7		5.28	1.06	0.528
Styrene	100-42-5	17.8		5.28	1.06	0.528
1,1,1,2-Tetrachloroethane	630-20-6	17.2		5.28	1.06	0.528
1,1,2,2-Tetrachloroethane	79-34-5	16.3		5.28	1.06	0.528
Tetrachloroethene	127-18-4	18.9		5.28	1.06	0.528
Toluene	108-88-3	19.1		5.28	1.06	0.528
1,2,3-Trichlorobenzene	87-61-6	13.6		5.28	1.06	0.528
1,2,4-Trichlorobenzene	120-82-1	14.0		5.28	1.06	0.528
1,1,1-Trichloroethane	71-55-6	18.4		5.28	1.06	0.528
1,1,2-Trichloroethane	79-00-5	17.4		5.28	1.06	0.528
Trichloroethene	79-01-6	18.9		5.28	1.06	0.528
Trichlorofluoromethane	75-69-4	19.6		5.28	2.12	1.06
1,2,3-Trichloropropane	96-18-4	17.9		5.28	2.12	1.06
1,2,4-Trimethylbenzene	95-63-6	17.5		5.28	1.06	0.528
1,3,5-Trimethylbenzene	108-67-8	18.8		5.28	1.06	0.528
Vinyl chloride	75-01-4	24.1		5.28	2.12	1.06
o-Xylene	95-47-6	19.2		5.28	1.06	0.528
m-,p-Xylene	179601-23-1	38.5		5.28	1.06	0.528

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	80	120	
1,2-Dichloroethane-d4	101	80	120	
Toluene-d8	106	85	115	
4-Bromofluorobenzene	113	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

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Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021306-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT05(15-15.5)250216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/28/2016 13:10
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559002	**Analyst:**	FJB	**Run Date:**	02/29/2016 00:57
Collect Date:	02/25/2016 09:50	**Dilution:**	1	**File ID:**	9M972961
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.6	U	25.2	12.6	6.30
Benzene	71-43-2	1.26	U	6.30	1.26	0.630
Bromobenzene	108-86-1	1.26	U	6.30	1.26	0.630
Bromochloromethane	74-97-5	2.52	U	6.30	2.52	1.26
Bromodichloromethane	75-27-4	1.26	U	6.30	1.26	0.630
Bromoform	75-25-2	1.26	U	6.30	1.26	0.630
Bromomethane	74-83-9	2.52	U	6.30	2.52	1.26
2-Butanone	78-93-3	6.30	U	12.6	6.30	3.15
n-Butylbenzene	104-51-8	1.26	U	6.30	1.26	0.630
sec-Butylbenzene	135-98-8	1.26	U	6.30	1.26	0.630
tert-Butylbenzene	98-06-6	1.26	U	6.30	1.26	0.630
Carbon disulfide	75-15-0	1.26	U	6.30	1.26	0.630
Carbon tetrachloride	56-23-5	1.26	U	6.30	1.26	0.630
Chlorobenzene	108-90-7	1.26	U	6.30	1.26	0.630
Chlorodibromomethane	124-48-1	1.26	U	6.30	1.26	0.630
Chloroethane	75-00-3	2.52	U	6.30	2.52	1.26
Chloroform	67-66-3	1.26	U	6.30	1.26	0.630
Chloromethane	74-87-3	5.04	U	12.6	5.04	2.52
2-Chlorotoluene	95-49-8	1.26	U	6.30	1.26	0.630
4-Chlorotoluene	106-43-4	1.26	U	6.30	1.26	0.630
1,2-Dibromo-3-chloropropane	96-12-8	5.04	U	12.6	5.04	2.52
1,2-Dibromoethane	106-93-4	1.26	U	6.30	1.26	0.630
Dibromomethane	74-95-3	1.26	U	6.30	1.26	0.630
1,2-Dichlorobenzene	95-50-1	1.26	U	6.30	1.26	0.630
1,3-Dichlorobenzene	541-73-1	1.26	U	6.30	1.26	0.630
1,4-Dichlorobenzene	106-46-7	1.26	U	6.30	1.26	0.630
Dichlorodifluoromethane	75-71-8	2.52	U	6.30	2.52	1.26
1,1-Dichloroethane	75-34-3	2.52	U	6.30	2.52	1.26
1,2-Dichloroethane	107-06-2	1.26	U	6.30	1.26	0.630
1,1-Dichloroethene	75-35-4	1.26	U	6.30	1.26	0.630
cis-1,2-Dichloroethene	156-59-2	1.26	U	6.30	1.26	0.630

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Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.26	U	6.30	1.26	0.630
1,2-Dichloropropane	78-87-5	1.26	U	6.30	1.26	0.630
1,3-Dichloropropane	142-28-9	1.26	U	6.30	1.26	0.630
2,2-Dichloropropane	594-20-7	1.26	U	6.30	1.26	0.630
cis-1,3-Dichloropropene	10061-01-5	1.26	U	6.30	1.26	0.630
trans-1,3-Dichloropropene	10061-02-6	1.26	U	6.30	1.26	0.630
1,1-Dichloropropene	563-58-6	1.26	U	6.30	1.26	0.630
Ethylbenzene	100-41-4	1.26	U	6.30	1.26	0.630
2-Hexanone	591-78-6	6.30	U	12.6	6.30	3.15
Hexachlorobutadiene	87-68-3	1.26	U	6.30	1.26	0.630
Isopropylbenzene	98-82-8	1.26	U	6.30	1.26	0.630
p-Isopropyltoluene	99-87-6	1.26	U	6.30	1.26	0.630
4-Methyl-2-pentanone	108-10-1	6.30	U	12.6	6.30	3.15
Methylene chloride	75-09-2	2.52	U	6.30	2.52	1.26
Naphthalene	91-20-3	1.26	U	6.30	1.26	0.630
n-Propylbenzene	103-65-1	1.26	U	6.30	1.26	0.630
Styrene	100-42-5	1.26	U	6.30	1.26	0.630
1,1,1,2-Tetrachloroethane	630-20-6	1.26	U	6.30	1.26	0.630
1,1,2,2-Tetrachloroethane	79-34-5	1.26	U	6.30	1.26	0.630
Tetrachloroethene	127-18-4	1.26	U	6.30	1.26	0.630
Toluene	108-88-3	1.26	U	6.30	1.26	0.630
1,2,3-Trichlorobenzene	87-61-6	1.26	U	6.30	1.26	0.630
1,2,4-Trichlorobenzene	120-82-1	1.26	U	6.30	1.26	0.630
1,1,1-Trichloroethane	71-55-6	1.26	U	6.30	1.26	0.630
1,1,2-Trichloroethane	79-00-5	1.26	U	6.30	1.26	0.630
Trichloroethene	79-01-6	1.26	U	6.30	1.26	0.630
Trichlorofluoromethane	75-69-4	2.52	U	6.30	2.52	1.26
1,2,3-Trichloropropane	96-18-4	2.52	U	6.30	2.52	1.26
1,2,4-Trimethylbenzene	95-63-6	1.26	U	6.30	1.26	0.630
1,3,5-Trimethylbenzene	108-67-8	1.26	U	6.30	1.26	0.630
Vinyl chloride	75-01-4	2.52	U	6.30	2.52	1.26
o-Xylene	95-47-6	1.26	U	6.30	1.26	0.630
m-,p-Xylene	179601-23-1	1.26	U	6.30	1.26	0.630

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.8	80	120	
1,2-Dichloroethane-d4	97.9	80	120	
Toluene-d8	107	85	115	
4-Bromofluorobenzene	117	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021306-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT05(20-20.5)250216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/28/2016 13:12
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559002	**Analyst:**	FJB	**Run Date:**	02/29/2016 01:29
Collect Date:	02/25/2016 09:45	**Dilution:**	1	**File ID:**	9M972962
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.2	U	24.5	12.2	6.12
Benzene	71-43-2	1.22	U	6.12	1.22	0.612
Bromobenzene	108-86-1	1.22	U	6.12	1.22	0.612
Bromochloromethane	74-97-5	2.44	U	6.12	2.44	1.22
Bromodichloromethane	75-27-4	1.22	U	6.12	1.22	0.612
Bromoform	75-25-2	1.22	U	6.12	1.22	0.612
Bromomethane	74-83-9	2.44	U	6.12	2.44	1.22
2-Butanone	78-93-3	6.12	U	12.2	6.12	3.06
n-Butylbenzene	104-51-8	1.22	U	6.12	1.22	0.612
sec-Butylbenzene	135-98-8	1.22	U	6.12	1.22	0.612
tert-Butylbenzene	98-06-6	1.22	U	6.12	1.22	0.612
Carbon disulfide	75-15-0	1.22	U	6.12	1.22	0.612
Carbon tetrachloride	56-23-5	1.22	U	6.12	1.22	0.612
Chlorobenzene	108-90-7	1.22	U	6.12	1.22	0.612
Chlorodibromomethane	124-48-1	1.22	U	6.12	1.22	0.612
Chloroethane	75-00-3	2.44	U	6.12	2.44	1.22
Chloroform	67-66-3	1.22	U	6.12	1.22	0.612
Chloromethane	74-87-3	4.90	U	12.2	4.90	2.45
2-Chlorotoluene	95-49-8	1.22	U	6.12	1.22	0.612
4-Chlorotoluene	106-43-4	1.22	U	6.12	1.22	0.612
1,2-Dibromo-3-chloropropane	96-12-8	4.90	U	12.2	4.90	2.45
1,2-Dibromoethane	106-93-4	1.22	U	6.12	1.22	0.612
Dibromomethane	74-95-3	1.22	U	6.12	1.22	0.612
1,2-Dichlorobenzene	95-50-1	1.22	U	6.12	1.22	0.612
1,3-Dichlorobenzene	541-73-1	1.22	U	6.12	1.22	0.612
1,4-Dichlorobenzene	106-46-7	1.22	U	6.12	1.22	0.612
Dichlorodifluoromethane	75-71-8	2.44	U	6.12	2.44	1.22
1,1-Dichloroethane	75-34-3	2.44	U	6.12	2.44	1.22
1,2-Dichloroethane	107-06-2	1.22	U	6.12	1.22	0.612
1,1-Dichloroethene	75-35-4	1.22	U	6.12	1.22	0.612
cis-1,2-Dichloroethene	156-59-2	1.22	U	6.12	1.22	0.612

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Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.22	U	6.12	1.22	0.612
1,2-Dichloropropane	78-87-5	1.22	U	6.12	1.22	0.612
1,3-Dichloropropane	142-28-9	1.22	U	6.12	1.22	0.612
2,2-Dichloropropane	594-20-7	1.22	U	6.12	1.22	0.612
cis-1,3-Dichloropropene	10061-01-5	1.22	U	6.12	1.22	0.612
trans-1,3-Dichloropropene	10061-02-6	1.22	U	6.12	1.22	0.612
1,1-Dichloropropene	563-58-6	1.22	U	6.12	1.22	0.612
Ethylbenzene	100-41-4	1.22	U	6.12	1.22	0.612
2-Hexanone	591-78-6	6.12	U	12.2	6.12	3.06
Hexachlorobutadiene	87-68-3	1.22	U	6.12	1.22	0.612
Isopropylbenzene	98-82-8	1.22	U	6.12	1.22	0.612
p-Isopropyltoluene	99-87-6	1.22	U	6.12	1.22	0.612
4-Methyl-2-pentanone	108-10-1	6.12	U	12.2	6.12	3.06
Methylene chloride	75-09-2	2.44	U	6.12	2.44	1.22
Naphthalene	91-20-3	1.22	U	6.12	1.22	0.612
n-Propylbenzene	103-65-1	1.22	U	6.12	1.22	0.612
Styrene	100-42-5	1.22	U	6.12	1.22	0.612
1,1,1,2-Tetrachloroethane	630-20-6	1.22	U	6.12	1.22	0.612
1,1,2,2-Tetrachloroethane	79-34-5	1.22	U	6.12	1.22	0.612
Tetrachloroethene	127-18-4	1.22	U	6.12	1.22	0.612
Toluene	108-88-3	1.22	U	6.12	1.22	0.612
1,2,3-Trichlorobenzene	87-61-6	1.22	U	6.12	1.22	0.612
1,2,4-Trichlorobenzene	120-82-1	1.22	U	6.12	1.22	0.612
1,1,1-Trichloroethane	71-55-6	1.22	U	6.12	1.22	0.612
1,1,2-Trichloroethane	79-00-5	1.22	U	6.12	1.22	0.612
Trichloroethene	79-01-6	1.17	J	6.12	1.22	0.612
Trichlorofluoromethane	75-69-4	2.44	U	6.12	2.44	1.22
1,2,3-Trichloropropane	96-18-4	2.44	U	6.12	2.44	1.22
1,2,4-Trimethylbenzene	95-63-6	1.22	U	6.12	1.22	0.612
1,3,5-Trimethylbenzene	108-67-8	1.22	U	6.12	1.22	0.612
Vinyl chloride	75-01-4	2.44	U	6.12	2.44	1.22
o-Xylene	95-47-6	1.22	U	6.12	1.22	0.612
m-,p-Xylene	179601-23-1	1.22	U	6.12	1.22	0.612

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.5	80	120	
1,2-Dichloroethane-d4	106	80	120	
Toluene-d8	104	85	115	
4-Bromofluorobenzene	107	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.
VOA Preparation/Preservation/Extraction Log

Batch #: WG559000
Method: 5030B/5030C/5035
Product: 8260

Analyst: AWE
Run Date: 02/28/2016 13:09
Purge and trap methanol COA18540
Purified Lab Sand Lot # COA18552

SAMPLE #	Fraction	Collected	Preserved	PCT-S	Tare Wt	Total Wt	Sample Wt	Water	MeOH	Vt	Comments
L16021306-01	A	02/25/16 09:30	02/28/16 13:09	666			4.73	5		5	
L16021306-02	A	02/25/16 09:40	02/28/16 13:09	666			4.75	5		5	
L16021306-03	A	02/25/16 09:40	02/28/16 13:09	666			5.35	5		5	
L16021306-04	A	02/25/16 09:40	02/28/16 13:10	666			5.38	5		5	
L16021306-05	A	02/25/16 09:50	02/28/16 13:10	666			4.66	5		5	
L16021306-06	A	02/25/16 09:45	02/28/16 13:12	666			5.11	5		5	

Comments:
1 = improperly sealed cap
2 = preserved out of hold
3 = effervesced
4 = preserved with NaHSO4
5 = preserved by freezing
6 = preserved in field

Analyst: Andrew Casey

VOA_EXT - Modified 05/22/2008
PDF ID: 4649669
Report generated: 02/28/2016 13:12

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 012516
Analyst1: ADC Analyst2: NA
Method: 8260B/8260C SOP: MSV01(-C) Rev: 23 (2)
Method: 5030B/5030C/5035 SOP: PAT01 Rev: 18
Method: 624 SOP: MSV10 Rev: 12
Maintenance Log ID:

Internal Standard: STD74414 Surrogate Standard: STD74126
CCV: STD74488 LCS: STD74459 MS/MSD: STD74459

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG555000 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M972470	WG555000-01 BFB 50ng A9	NA	7	1	STD74202	01/25/16 10:27
9M972471	RINSE	NA	7	1		01/25/16 10:52
9M972472	WG555000-02 5ug/Kg STD A9	NA	7	1	STD74406	01/25/16 11:22
9M972473	WG555000-03 20ug/Kg STD A9	NA	7	1	STD74406	01/25/16 11:52
9M972474	WG555000-04 50ug/Kg STD A9	NA	7	1	STD74406	01/25/16 12:23
9M972475	WG555000-05 100ug/Kg STD A9	NA	7	1	STD74406	01/25/16 12:53
9M972476	WG555000-06 200ug/Kg STD A9	NA	7	1	STD74406	01/25/16 13:23
9M972477	WG555000-07 300ug/Kg STD A9	NA	7	1	STD74406	01/25/16 13:54
9M972478	WG555000-08 400ug/Kg STD A9	NA	7	1	STD74406	01/25/16 14:25
9M972479	WG555000-09 500ug/Kg STD A9	NA	7	1	STD74406	01/25/16 14:56
9M972480	RINSE	NA	7	1		01/25/16 15:26
9M972481	WG555000-10 100ug/Kg ICV A9	NA	7	1	STD74461	01/25/16 15:56
9M972482	RINSE	NA	7	1		01/25/16 16:28

Approved: January 29, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 022516
Analyst1: ADC Analyst2: NA
Method: 8260 SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD74726 Surrogate Standard: STD74815
CCV: STD74488 LCS: STD74755 MS/MSD: STD74755

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG558732 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M972892	WG558732-01 BFB 50ng	NA	7	1	STD74773	02/25/16 14:26
9M972894	WG558732-01 BFB 50ng	NA	7	1	STD74773	02/25/16 14:45
9M972895	WG558732-02 50ug/L CCV 8260C	NA	7	1	STD74773	02/25/16 15:11
9M972896	WG558732-02 50ug/L CCV 8260C	NA	7	1	STD74773	02/25/16 15:48
9M972897	RINSE	NA	7	1		02/25/16 16:25
9M972898	WG558732-03 0.5ug/kg STD	NA	7	1	STD74773	02/25/16 16:55
9M972899	WG558732-04 1.0ug/kg STD	NA	7	1	STD74773	02/25/16 17:27
9M972900	WG558732-05 2.0ug/kg STD	NA	7	1	STD74773	02/25/16 17:57
9M972901	WG558732-06 5.0ug/kg STD	NA	7	1	STD74773	02/25/16 18:28
9M972902	WG558732-07 20.0ug/kg STD	NA	7	1	STD74773	02/25/16 18:59
9M972903	WG558732-08 100.0ug/kg STD	NA	7	1	STD74773	02/25/16 19:29
9M972904	WG558732-09 200.0ug/kg STD	NA	7	1	STD74773	02/25/16 20:00
9M972905	WG558732-10 300.0ug/kg STD	NA	7	1	STD74773	02/25/16 20:30
9M972906	RINSE	NA	7	1	STD74773	02/25/16 21:01
9M972907	WG558732-11 50.0ug/kg ALTSRC	NA	7	1	STD74755	02/25/16 21:31

Approved: February 29, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 022816
Analyst1: ADC Analyst2: NA
Method: 8260 SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD74726 Surrogate Standard: STD74815
CCV: STD74488 LCS: STD74755 MS/MSD: STD74755

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG559002

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M972942	WG559001-01 BFB 50ng 8260	NA	7	1	STD74606	02/28/16 15:15
9M972943	WG559001-02 50ug/Kg CCV 8260	NA	7	1	STD74773	02/28/16 15:39
9M972944	RINSE	NA	7	1		02/28/16 16:09
9M972945	WG559002-01 VBLK0228 BLANK 8260	NA	7	1		02/28/16 16:39
9M972946	WG559002-02 20ug/Kg LCS 8260	NA	7	1	STD74755	02/28/16 17:10
9M972947	L16021306-03 MS 8260 5.35g	NA	7	1	STD74755	02/28/16 17:41
9M972948	L16021306-04 MSD 8260 5.38g	NA	7	1	STD74755	02/28/16 18:12
9M972949	RINSE	NA	7	1		02/28/16 18:42
9M972950	L16020640-06 A 826-REF-BLK	NA	7	1		02/28/16 19:13
9M972951	L16020640-07 A 826-REF-BLK	NA	7	1		02/28/16 19:44
9M972952	L16020640-08 A 826-REF-BLK	NA	7	1		02/28/16 20:15
9M972953	L16020640-09 A 826-REF-BLK	NA	7	1		02/28/16 20:47
9M972954	L16021162-02 B 8260	NA	7	1		02/28/16 21:18
9M972955	L16021162-05 B 8260	NA	7	1		02/28/16 21:49
9M972956	L16021186-02 8260 4.57g	NA	7	1		02/28/16 22:21
9M972957	L16021236-01 8260 5.45g	NA	7	1		02/28/16 22:51
9M972958	L16021240-04 8260 4.59g	NA	7	1		02/28/16 23:22
9M972959	L16021306-01 8260 4.73g	NA	7	1		02/28/16 23:54
9M972960	L16021306-02 REF 8260 4.75g	NA	7	1		02/29/16 00:25
9M972961	L16021306-05 8260 4.66g	NA	7	1		02/29/16 00:57
9M972962	L16021306-06 8260 5.11g	NA	7	1		02/29/16 01:29
9M972963	L16021186-01 8260 0.98g	NA	7	1		02/29/16 02:00
9M972964	RINSE	NA	7	1		02/29/16 02:30
9M972965	RINSE	NA	7	1		02/29/16 03:01

Approved: February 29, 2016

Page: 1

Microbac Laboratories Inc.

Data Checklist

Date: 25-JAN-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 72995
Analytical Workgroups: WG555000

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
28-JAN-2016

Secondary Reviewer:
29-JAN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JAN-29-2016 16:00:23

Microbac Laboratories Inc.

Data Checklist

Date: 25-FEB-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 73547
Analytical Workgroups: WG558732

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
29-FEB-2016

Secondary Reviewer:
29-FEB-2016

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-29-2016 15:30:51

Microbac Laboratories Inc.

Data Checklist

Date: 28-FEB-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 73549
Analytical Workgroups: WG559002

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
29-FEB-2016

Secondary Reviewer:
29-FEB-2016

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-29-2016 15:49:00

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG559002

Login Number: L16021306

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18DPT05(4.5-5)250216	01	02/25/16					02/28/2016	3.2	14		02/28/16	3.6	14	
18DPT05(10-11)250216	02	02/25/16					02/28/2016	3.1	14		02/29/16	3.6	14	
18DPT05(10-11)250216 MS	03	02/25/16					02/28/2016	3.1	14		02/28/16	3.3	14	
18DPT05(10-11)250216 MS	04	02/25/16					02/28/2016	3.1	14		02/28/16	3.4	14	
18DPT05(15-15.5)250216	05	02/25/16					02/28/2016	3.1	14		02/29/16	3.6	14	
18DPT05(20-20.5)250216	06	02/25/16					02/28/2016	3.1	14		02/29/16	3.7	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4651854
Report generated 02/29/2016 16:46

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16021306
Instrument Id: HPMS9
Workgroup (AAB#): WG559002

Method: 8260
CAL ID: HPMS9-25-FEB-16
Matrix: Soil

Sample Number	Dilution	Tag	1	2	3	4
L16021306-01	1.00	01	95.6	97.9	112	107
L16021306-02	1.00	01	97.1	97.7	111	106
L16021306-03	1.00	01	95.7	100	114	107
L16021306-04	1.00	01	101	100	113	106
L16021306-05	1.00	01	97.9	98.8	117	107
L16021306-06	1.00	01	106	98.5	107	104
WG559002-01	1.00	01	104	102	113	111
WG559002-02	1.00	01	100	100	111	108

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	80	-	120
2 - Dibromofluoromethane	80	-	120
3 - 4-Bromofluorobenzene	85	-	120
4 - Toluene-d8	85	-	115

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4651863
Report generated: 02/29/2016 16:46

METHOD BLANK SUMMARY

Login Number: L16021306
Blank File ID: 9M972945
Prep Date: 02/28/16 16:39
Analyzed Date: 02/28/16 16:39
Analyst: FJB

Work Group: WG559002
Blank Sample ID: WG559002-01
Instrument ID: HPMS9
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG559002-02	9M972946	02/28/16 17:10	01
18DPT05(10-11)250216 MS	L16021306-03	9M972947	02/28/16 17:41	01
18DPT05(10-11)250216 MSD	L16021306-04	9M972948	02/28/16 18:12	01
18DPT05(4.5-5)250216	L16021306-01	9M972959	02/28/16 23:54	01
18DPT05(10-11)250216	L16021306-02	9M972960	02/29/16 00:25	01
18DPT05(15-15.5)250216	L16021306-05	9M972961	02/29/16 00:57	01
18DPT05(20-20.5)250216	L16021306-06	9M972962	02/29/16 01:29	01

Report Name: BLANK_SUMMARY
PDF File ID: 4651855
Report generated 02/29/2016 16:46

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16021306 Prep Date: 02/28/16 16:39 Sample ID: WG559002-01
Instrument ID: HPMS9 Run Date: 02/28/16 16:39 Prep Method: 5030B/5030C/503
File ID: 9M972945 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG559002 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-25-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	5.00	20.0	5.00	1	U
Benzene	0.500	5.00	0.500	1	U
Bromobenzene	0.500	5.00	0.500	1	U
Bromochloromethane	1.00	5.00	1.00	1	U
Bromodichloromethane	0.500	5.00	0.500	1	U
Bromoform	0.500	5.00	0.500	1	U
Bromomethane	1.00	5.00	1.00	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.500	5.00	0.500	1	U
sec-Butylbenzene	0.500	5.00	0.500	1	U
tert-Butylbenzene	0.500	5.00	0.500	1	U
Carbon disulfide	0.500	5.00	0.500	1	U
Carbon tetrachloride	0.500	5.00	0.500	1	U
Chlorobenzene	0.500	5.00	0.500	1	U
Chlorodibromomethane	0.500	5.00	0.500	1	U
Chloroethane	1.00	5.00	1.00	1	U
Chloroform	0.500	5.00	0.500	1	U
Chloromethane	2.00	10.0	2.00	1	U
2-Chlorotoluene	0.500	5.00	0.500	1	U
4-Chlorotoluene	0.500	5.00	0.500	1	U
1,2-Dibromo-3-chloropropane	2.00	10.0	2.00	1	U
1,2-Dibromoethane	0.500	5.00	0.500	1	U
Dibromomethane	0.500	5.00	0.500	1	U
1,2-Dichlorobenzene	0.500	5.00	0.500	1	U
1,3-Dichlorobenzene	0.500	5.00	0.500	1	U
1,4-Dichlorobenzene	0.500	5.00	0.500	1	U
Dichlorodifluoromethane	1.00	5.00	1.00	1	U
1,1-Dichloroethane	1.00	5.00	1.00	1	U
1,2-Dichloroethane	0.500	5.00	0.500	1	U
1,1-Dichloroethene	0.500	5.00	0.500	1	U
cis-1,2-Dichloroethene	0.500	5.00	0.500	1	U
trans-1,2-Dichloroethene	0.500	5.00	0.500	1	U
1,2-Dichloropropane	0.500	5.00	0.500	1	U
1,3-Dichloropropane	0.500	5.00	0.500	1	U
2,2-Dichloropropane	0.500	5.00	0.500	1	U
cis-1,3-Dichloropropene	0.500	5.00	0.500	1	U
trans-1,3-Dichloropropene	0.500	5.00	0.500	1	U
1,1-Dichloropropene	0.500	5.00	0.500	1	U
Ethylbenzene	0.500	5.00	0.500	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.500	5.00	0.500	1	U
Isopropylbenzene	0.500	5.00	0.500	1	U

Report Name: BLANK
PDF ID: 4651856
29-FEB-2016 16:46

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16021306 Prep Date: 02/28/16 16:39 Sample ID: WG559002-01
Instrument ID: HPMS9 Run Date: 02/28/16 16:39 Prep Method: 5030B/5030C/503
File ID: 9M972945 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG559002 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-25-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.500	5.00	0.500	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	1.00	5.00	1.00	1	U
Naphthalene	0.500	5.00	0.500	1	U
n-Propylbenzene	0.500	5.00	0.500	1	U
Styrene	0.500	5.00	0.500	1	U
1,1,1,2-Tetrachloroethane	0.500	5.00	0.500	1	U
1,1,2,2-Tetrachloroethane	0.500	5.00	0.500	1	U
Tetrachloroethene	0.500	5.00	0.500	1	U
Toluene	0.500	5.00	0.500	1	U
1,2,3-Trichlorobenzene	0.500	5.00	0.500	1	U
1,2,4-Trichlorobenzene	0.500	5.00	0.500	1	U
1,1,1-Trichloroethane	0.500	5.00	0.500	1	U
1,1,2-Trichloroethane	0.500	5.00	0.500	1	U
Trichloroethene	0.500	5.00	0.500	1	U
Trichlorofluoromethane	1.00	5.00	1.00	1	U
1,2,3-Trichloropropane	1.00	5.00	1.00	1	U
1,2,4-Trimethylbenzene	0.500	5.00	0.500	1	U
1,3,5-Trimethylbenzene	0.500	5.00	0.500	1	U
Vinyl chloride	1.00	5.00	1.00	1	U
o-Xylene	0.500	5.00	0.500	1	U
m-,p-Xylene	0.500	5.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	102	80 - 120	PASS
1,2-Dichloroethane-d4	104	80 - 120	PASS
Toluene-d8	111	85 - 115	PASS
4-Bromofluorobenzene	113	85 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4651856
29-FEB-2016 16:46

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16021306 | Run Date: 02/28/2016 | Sample ID: WG559002-02
Instrument ID: HPMS9 | Run Time: 17:10 | Prep Method: 5030B/5030C/503
File ID: 9M972946 | Analyst: FJB | Method: 8260B
Workgroup (AAB#): WG559002 | Matrix: Soil | Units: ug/kg
QC Key: DOD4 | Lot#: STD74755 | Cal ID: HPMS9-25-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	20.1	101	20 - 160	
Benzene	20.0	21.9	110	75 - 125	
Bromobenzene	20.0	22.1	111	65 - 120	
Bromochloromethane	20.0	21.6	108	70 - 125	
Bromodichloromethane	20.0	20.8	104	70 - 130	
Bromoform	20.0	19.0	94.8	55 - 135	
Bromomethane	20.0	21.0	105	30 - 160	
2-Butanone	20.0	20.6	103	30 - 160	
n-Butylbenzene	20.0	20.6	103	65 - 140	
sec-Butylbenzene	20.0	22.2	111	65 - 130	
tert-Butylbenzene	20.0	23.1	116	65 - 130	
Carbon disulfide	20.0	19.5	97.6	45 - 160	
Carbon tetrachloride	20.0	19.9	99.4	65 - 135	
Chlorobenzene	20.0	22.7	114	75 - 125	
Chlorodibromomethane	20.0	20.6	103	65 - 130	
Chloroethane	20.0	22.5	112	40 - 155	
Chloroform	20.0	20.0	100	70 - 125	
Chloromethane	20.0	22.8	114	50 - 130	
2-Chlorotoluene	20.0	23.8	119	70 - 130	
4-Chlorotoluene	20.0	21.8	109	75 - 125	
1,2-Dibromo-3-chloropropane	20.0	20.7	104	40 - 135	
1,2-Dibromoethane	20.0	22.0	110	70 - 125	
Dibromomethane	20.0	20.6	103	75 - 130	
1,2-Dichlorobenzene	20.0	22.2	111	75 - 120	
1,3-Dichlorobenzene	20.0	21.3	107	70 - 125	
1,4-Dichlorobenzene	20.0	21.6	108	70 - 125	
Dichlorodifluoromethane	20.0	28.6	143	35 - 135	*
1,1-Dichloroethane	20.0	20.6	103	75 - 125	
1,2-Dichloroethane	20.0	21.9	109	70 - 135	
1,1-Dichloroethene	20.0	21.2	106	65 - 135	
cis-1,2-Dichloroethene	20.0	22.6	113	65 - 125	
trans-1,2-Dichloroethene	20.0	22.8	114	65 - 135	
1,2-Dichloropropane	20.0	23.2	116	70 - 120	
1,3-Dichloropropane	20.0	23.4	117	75 - 125	
2,2-Dichloropropane	20.0	21.6	108	65 - 135	
cis-1,3-Dichloropropene	20.0	23.1	115	70 - 125	
trans-1,3-Dichloropropene	20.0	22.2	111	65 - 125	
1,1-Dichloropropene	20.0	20.6	103	70 - 135	
Ethylbenzene	20.0	22.9	115	75 - 125	
2-Hexanone	20.0	21.9	109	45 - 145	
Hexachlorobutadiene	20.0	18.4	92.0	55 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4651857
Report generated: 02/29/2016 16:46

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16021306 | Run Date: 02/28/2016 | Sample ID: WG559002-02
Instrument ID: HPMS9 | Run Time: 17:10 | Prep Method: 5030B/5030C/503
File ID: 9M972946 | Analyst: FJB | Method: 8260B
Workgroup (AAB#): WG559002 | Matrix: Soil | Units: ug/kg
QC Key: DOD4 | Lot#: STD74755 | Cal ID: HPMS9-25-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	22.6	113	75 - 130	
p-Isopropyltoluene	20.0	22.0	110	75 - 135	
4-Methyl-2-pentanone	20.0	22.0	110	45 - 145	
Methylene chloride	20.0	21.6	108	55 - 140	
Naphthalene	20.0	19.8	99.1	40 - 125	
n-Propylbenzene	20.0	23.3	116	65 - 135	
Styrene	20.0	22.7	113	75 - 125	
1,1,1,2-Tetrachloroethane	20.0	21.4	107	75 - 125	
1,1,2,2-Tetrachloroethane	20.0	21.5	107	55 - 130	
Tetrachloroethene	20.0	21.4	107	65 - 140	
Toluene	20.0	22.4	112	70 - 125	
1,2,3-Trichlorobenzene	20.0	20.3	102	60 - 135	
1,2,4-Trichlorobenzene	20.0	19.5	97.7	65 - 130	
1,1,1-Trichloroethane	20.0	20.7	103	70 - 135	
1,1,2-Trichloroethane	20.0	23.1	115	60 - 125	
Trichloroethene	20.0	22.1	111	75 - 125	
Trichlorofluoromethane	20.0	20.9	105	25 - 185	
1,2,3-Trichloropropane	20.0	23.5	117	65 - 130	
1,2,4-Trimethylbenzene	20.0	21.4	107	65 - 135	
1,3,5-Trimethylbenzene	20.0	23.1	115	65 - 135	
Vinyl chloride	20.0	23.8	119	60 - 125	
o-Xylene	20.0	23.2	116	75 - 125	
m-,p-Xylene	40.0	44.8	112	80 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	100	80 - 120	PASS
1,2-Dichloroethane-d4	100	80 - 120	PASS
Toluene-d8	108	85 - 115	PASS
4-Bromofluorobenzene	111	85 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4651857
Report generated: 02/29/2016 16:46

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16021306 Cal ID: HPMS9- 25-FEB-16 Worknum: WG559002

Instrument ID: HPMS9 Contract #: Prep Method: 5030B/5030C/

Parent ID: L16021306-02 File ID: 9M972960 Dil: 1 Method: 5035A

Sample ID: L16021306-03 MS File ID: 9M972947 Dil: 1 Matrix: 8260B

Sample ID: L16021306-04 MSD File ID: 9M972948 Dil: 1 Units: Soil

Percent Solid: ug/kg

88.0

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,1,1,2-Tetrachloroethane	U	21.2	22.4	106	21.1	17.2	81.4	26.4	75 - 125	30	
1,1,1-Trichloroethane	U	21.2	22.5	106	21.1	18.4	87.4	19.9	70 - 135	30	
1,1,2,2-Tetrachloroethane	U	21.2	22.7	107	21.1	16.3	77.1	32.7	55 - 130	30	#
1,1,2-Trichloroethane	U	21.2	22.5	106	21.1	17.4	82.3	25.8	60 - 125	30	
1,1-Dichloroethane	U	21.2	21.4	101	21.1	17.5	82.9	20.2	75 - 125	30	
1,1-Dichloroethene	U	21.2	21.9	103	21.1	19.7	93.2	10.9	65 - 135	30	
1,1-Dichloropropene	U	21.2	22.9	108	21.1	19.3	91.2	17.1	70 - 135	30	
1,2,3-Trichlorobenzene	U	21.2	21.0	98.8	21.1	13.6	64.3	42.8	60 - 135	30	#
1,2,3-Trichloropropane	U	21.2	23.1	109	21.1	17.9	84.7	25.5	65 - 130	30	
1,2,4-Trichlorobenzene	U	21.2	21.1	99.2	21.1	14.0	66.5	40.0	65 - 130	30	#
1,2,4-Trimethylbenzene	U	21.2	24.0	113	21.1	17.5	82.8	31.5	65 - 135	30	#
1,2-Dibromo-3-chloropropane	U	21.2	20.8	97.8	21.1	15.2	71.9	31.1	40 - 135	30	#
1,2-Dibromoethane	U	21.2	21.7	102	21.1	16.2	76.6	29.4	70 - 125	30	
1,2-Dichlorobenzene	U	21.2	23.1	109	21.1	16.7	79.2	31.9	75 - 120	30	#
1,2-Dichloroethane	U	21.2	21.5	101	21.1	17.0	80.4	23.6	70 - 135	30	
1,2-Dichloropropane	U	21.2	24.0	113	21.1	18.8	89.2	24.0	70 - 120	30	
1,3,5-Trimethylbenzene	U	21.2	25.2	119	21.1	18.8	89.1	29.2	65 - 135	30	
1,3-Dichlorobenzene	U	21.2	22.6	106	21.1	16.4	77.8	31.6	70 - 125	30	#
1,3-Dichloropropane	U	21.2	23.5	111	21.1	18.3	86.8	24.8	75 - 125	30	
1,4-Dichlorobenzene	U	21.2	22.9	108	21.1	16.5	78.1	32.6	70 - 125	30	#
2,2-Dichloropropane	U	21.2	23.2	109	21.1	19.4	91.7	17.8	65 - 135	30	
2-Butanone	U	21.2	18.9	88.8	21.1	16.3	77	14.9	30 - 160	30	
2-Chlorotoluene	U	21.2	25.8	122	21.1	18.4	87.1	33.7	70 - 130	30	#
2-Hexanone	U	21.2	19.9	93.5	21.1	15.9	75.1	22.3	45 - 145	30	
4-Chlorotoluene	U	21.2	24.0	113	21.1	18.8	89	24.5	75 - 125	30	
4-Methyl-2-pentanone	U	21.2	20.2	95.2	21.1	16.6	78.5	19.8	45 - 145	30	
Acetone	U	21.2	20.4	96.2	21.1	18.5	87.5	9.97	20 - 160	30	
Benzene	U	21.2	23.2	109	21.1	18.9	89.3	20.4	75 - 125	30	
Bromobenzene	U	21.2	23.6	111	21.1	16.8	79.7	33.4	65 - 120	30	#
Bromochloromethane	U	21.2	22.0	103	21.1	17.4	82.5	23.1	70 - 125	30	
Bromodichloromethane	U	21.2	21.3	100	21.1	16.4	77.5	26.2	70 - 130	30	
Bromoform	U	21.2	18.0	84.8	21.1	14.4	68.2	22.2	55 - 135	30	
Bromomethane	U	21.2	22.8	108	21.1	17.8	84.5	24.6	30 - 160	30	
Carbon disulfide	U	21.2	20.5	96.6	21.1	16.5	78	21.9	45 - 160	30	
Carbon tetrachloride	U	21.2	21.9	103	21.1	17.7	83.8	21.3	65 - 135	30	
Chlorobenzene	U	21.2	23.9	112	21.1	18.5	87.8	25.0	75 - 125	30	
Chloroethane	U	21.2	24.0	113	21.1	19.7	93.2	19.9	40 - 155	30	
Chloroform	U	21.2	22.1	104	21.1	17.6	83.1	22.8	70 - 125	30	
Chloromethane	U	21.2	24.4	115	21.1	19.9	94.2	20.1	50 - 130	30	
cis-1,2-Dichloroethene	U	21.2	24.2	114	21.1	19.1	90.4	23.8	65 - 125	30	
cis-1,3-Dichloropropene	U	21.2	23.4	110	21.1	18.5	87.6	23.3	70 - 125	30	

MS_MSD - Modified 03/06/2008
PDF File ID: 4651858
Report generated 02/29/2016 16:46

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16021306 Cal ID: HPMS9 25-FEB-16 Worknum: WG559002

Instrument ID: HPMS9 Contract #: Prep Method: 5030B/5030C/

Parent ID: L16021306-02 File ID: 9M972960 Dil: 1 Method: 5035A

Sample ID: L16021306-03 MS File ID: 9M972947 Dil: 1 Matrix: 8260B

Sample ID: L16021306-04 MSD File ID: 9M972948 Dil: 1 Units: Soil

Percent Solid: ug/kg 88.0

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chlorodibromomethane	U	21.2	20.6	96.9	21.1	15.3	72.7	29.2	65 - 130	30	
Dibromomethane	U	21.2	20.2	95.2	21.1	16.0	76	23.0	75 - 130	30	
Dichlorodifluoromethane	U	21.2	31.3	147	21.1	26.7	127	15.6	35 - 135	30	*
Ethylbenzene	U	21.2	24.4	115	21.1	18.8	88.9	26.2	75 - 125	30	
Hexachlorobutadiene	U	21.2	22.4	106	21.1	16.0	75.5	33.7	55 - 140	30	#
Isopropylbenzene	U	21.2	24.3	115	21.1	19.2	90.9	23.7	75 - 130	30	
m-,p-Xylene	U	42.5	48.6	114	42.2	38.5	91.2	23.2	80 - 125	30	
Methylene chloride	U	21.2	22.8	107	21.1	18.0	85.4	23.3	55 - 140	30	
n-Butylbenzene	U	21.2	24.1	114	21.1	17.2	81.4	33.6	65 - 140	30	#
n-Propylbenzene	U	21.2	26.4	124	21.1	19.7	93.5	28.9	65 - 135	30	
Naphthalene	U	21.2	19.8	93.2	21.1	13.7	65	36.2	40 - 125	30	#
o-Xylene	U	21.2	24.3	114	21.1	19.2	90.9	23.3	75 - 125	30	
p-Isopropyltoluene	U	21.2	25.0	118	21.1	18.8	88.9	28.4	75 - 135	30	
sec-Butylbenzene	U	21.2	25.5	120	21.1	19.7	93.2	25.8	65 - 130	30	
Styrene	U	21.2	23.4	110	21.1	17.8	84.1	27.5	75 - 125	30	
tert-Butylbenzene	U	21.2	26.6	125	21.1	20.4	96.4	26.6	65 - 130	30	
Tetrachloroethene	U	21.2	24.0	113	21.1	18.9	89.5	23.7	65 - 140	30	
Toluene	U	21.2	23.9	113	21.1	19.1	90.4	22.5	70 - 125	30	
trans-1,2-Dichloroethene	U	21.2	24.0	113	21.1	20.5	97.3	15.7	65 - 135	30	
trans-1,3-Dichloropropene	U	21.2	22.3	105	21.1	16.5	77.9	30.2	65 - 125	30	#
Trichloroethene	U	21.2	23.2	109	21.1	18.9	89.3	20.5	75 - 125	30	
Trichlorofluoromethane	U	21.2	22.5	106	21.1	19.6	92.7	14.1	25 - 185	30	
Vinyl chloride	U	21.2	27.5	130	21.1	24.1	114	13.4	60 - 125	30	*

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4651858
Report generated 02/29/2016 16:46

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16021306
Instrument: HPMS9
Analyst: FJB
Workgroup: WG555000

Tune ID: WG555000-01
Run Date: 01/25/2016
Run Time: 10:27
File ID: 9M972470
Cal ID: HPMS9 - 25-JAN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	23.0	10289	PASS
75.0	95.0	30.0	60.0	49.3	22030	PASS
95.0	95.0	100	100	100	44728	PASS
96.0	95.0	5.00	9.00	6.98	3122	PASS
173	174	0	2.00	0.381	160	PASS
174	95.0	50.0	100	93.9	41989	PASS
175	174	5.00	9.00	6.62	2778	PASS
176	174	95.0	101	95.6	40133	PASS
177	176	5.00	9.00	6.39	2564	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG555000-02	STD-S	01	01/25/2016 11:22	
WG555000-03	STD-S	01	01/25/2016 11:52	
WG555000-04	STD-S	01	01/25/2016 12:23	
WG555000-05	STD-CCV-S	01	01/25/2016 12:53	
WG555000-06	STD-S	01	01/25/2016 13:23	
WG555000-07	STD-S	01	01/25/2016 13:54	
WG555000-08	STD-S	01	01/25/2016 14:25	
WG555000-09	STD-S	01	01/25/2016 14:56	
WG555000-10	SSCV-S	01	01/25/2016 15:56	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4651860
Report generated 02/29/2016 16:46

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16021306
Instrument: HPMS9
Analyst: ADC
Workgroup: WG558732

Tune ID: WG558732-01
Run Date: 02/25/2016
Run Time: 14:45
File ID: 9M972894
Cal ID: HPMS9 - 25-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.2	5378	PASS
75.0	95.0	30.0	60.0	49.1	13067	PASS
95.0	95.0	100	100	100	26621	PASS
96.0	95.0	5.00	9.00	6.32	1683	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	85.8	22851	PASS
175	174	5.00	9.00	6.50	1485	PASS
176	174	95.0	101	98.3	22461	PASS
177	176	5.00	9.00	7.21	1619	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG558732-02	STD-CCV-S	01	02/25/2016 15:48	
WG558732-03	STD-S	01	02/25/2016 16:55	
WG558732-04	STD-S	01	02/25/2016 17:27	
WG558732-05	STD-S	01	02/25/2016 17:57	
WG558732-06	STD-S	01	02/25/2016 18:28	
WG558732-07	STD-S	01	02/25/2016 18:59	
WG558732-08	STD-S	01	02/25/2016 19:29	
WG558732-09	STD-S	01	02/25/2016 20:00	
WG558732-10	STD-S	01	02/25/2016 20:30	
WG558732-11	SSCV-S	01	02/25/2016 21:31	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4651860
Report generated 02/29/2016 16:46

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16021306
Instrument: HPMS9
Analyst: FJB
Workgroup: WG559001

Tune ID: WG559001-01
Run Date: 02/28/2016
Run Time: 15:15
File ID: 9M972942
Cal ID: HPMS9 - 25-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.8	9950	PASS
75.0	95.0	30.0	60.0	48.0	22972	PASS
95.0	95.0	100	100	100	47813	PASS
96.0	95.0	5.00	9.00	6.60	3156	PASS
173	174	0	2.00	0.277	115	PASS
174	95.0	50.0	100	86.9	41573	PASS
175	174	5.00	9.00	6.30	2621	PASS
176	174	95.0	101	95.5	39704	PASS
177	176	5.00	9.00	6.04	2399	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG559001-02	CCV-S	01	02/28/2016 15:39	
WG559002-01	BLANK	01	02/28/2016 16:39	
WG559002-02	LCS	01	02/28/2016 17:10	
L16021306-03	18DPT05(10-11)250216 MS	01	02/28/2016 17:41	
L16021306-04	18DPT05(10-11)250216 MSD	01	02/28/2016 18:12	
L16021306-01	18DPT05(4.5-5)250216	01	02/28/2016 23:54	
L16021306-02	18DPT05(10-11)250216	01	02/29/2016 00:25	
L16021306-05	18DPT05(15-15.5)250216	01	02/29/2016 00:57	
L16021306-06	18DPT05(20-20.5)250216	01	02/29/2016 01:29	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4651860
Report generated 02/29/2016 16:46

Calibration Table Report
Method: A9FOO_SL.M
Title: FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Calibration: Wed Jan 27 09:49:02 2016
Curve: WG555000
Calibration Files

Compound	5 9M972472.D	20 9M972473.D	50 9M972474.D	100 9M972475.D	200 9M972476.D	300 9M972477.D	400 9M972478.D	500 9M972479.D	Avg	%RSD	R^2 Linear
Fluorobenzene	ISTD										
Acetonitrile		0.053	0.046	0.048	0.052	0.046	0.052	0.054	0.050	6.657	
3-Chloro-1-propene	0.498	0.524	0.450	0.519	0.514	0.434	0.507	0.503	0.494	6.719	
2-Chloro-1,3-butadiene	0.534	0.576	0.519	0.592	0.585	0.509	0.593	0.584	0.561	6.202	
Ethyl Acetate		0.333	0.313	0.339	0.338	0.300	0.341	0.344	0.330	5.124	
Methacrylonitrile	0.102	0.109	0.101	0.112	0.110	0.096	0.112	0.112	0.107	5.912	
Isobutyl Alcohol	0.014	0.018	0.018	0.021	0.024	0.021	0.025	0.025	0.021	18.016	0.993
1-Butanol		0.010	0.013	0.015	0.017	0.015	0.018	0.018	0.015	17.838	0.992
Methyl methacrylate	0.236	0.246	0.231	0.265	0.265	0.231	0.271	0.269	0.252	7.005	
2-Nitropropane	0.069	0.073	0.074	0.083	0.089	0.079	0.093	0.095	0.082	12.090	
Chlorobenzene-d5	ISTD										
Cyclohexanone		0.020	0.022	0.025	0.028	0.023	0.027	0.028	0.025	12.963	
1,4-Dichlorobenzene-d4	ISTD										

Wed Jan 27 10:01:56 2016

Calibration Table Report
Method: 8260SL.M
Title: 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Calibration: Fri Feb 26 11:38:33 2016
Curve: WG558732
Calibration Files

Compound	0.5 9M972898.D	1 9M972899.D	2 9M972900.D	5 9M972901.D	20 9M972902.D	50 9M972896.D	100 9M972903.D	200 9M972904.D	300 9M972905.D	Avg	%RSD	R^2 Linear	Quadratic
Fluorobenzene	ISTD												
Dichlorodifluoromethane			0.338	0.271	0.399	0.396	0.318	0.357	0.307	0.341	13.734		
Chloromethane			0.372	0.280	0.331	0.361	0.296	0.346	0.304	0.327	10.674		
Vinyl Chloride		0.250	0.318	0.314	0.373	0.372	0.342	0.355	0.296	0.327	12.768		
1,3-Butadiene			0.347	0.266	0.328	0.330	0.297	0.321	0.293	0.312	8.837		
Bromomethane		0.236	0.267	0.181	0.206	0.208	0.186	0.217	0.199	0.213	13.250		
Chloroethane			0.127	0.116	0.142	0.165	0.139	0.173	0.160	0.146	14.271		
Trichlorofluoromethane		0.519	0.518	0.416	0.503	0.514	0.470	0.517	0.473	0.491	7.357		
Diethyl ether		0.215	0.246	0.217	0.243	0.241	0.214		0.231	0.230	6.215		
Isoprene			0.302	0.251	0.303	0.302	0.282	0.318	0.295	0.293	7.364		
Acrolein		0.041	0.046	0.045	0.046	0.048	0.046		0.050	0.046	6.212		
1,1,2-Trichloro-1,2,2-Trifluoroethane			0.252	0.234	0.255	0.261	0.248	0.273	0.251	0.253	4.699		
Acetone				0.179	0.138	0.128	0.119	0.124		0.138	17.810	0.999	
1,1-Dichloroethene		0.464	0.511	0.400	0.482	0.471	0.454	0.500	0.456	0.467	7.277		
Tert-Butyl Alcohol			0.057	0.046	0.055	0.051	0.047			0.051	8.698		
Dimethyl Sulfide		0.150	0.203	0.186	0.207	0.211	0.196	0.224	0.203	0.197	11.169		
Iodomethane				0.076	0.109	0.154	0.126	0.157	0.142	0.127	24.315	0.993	
Methyl acetate			0.282	0.223	0.279	0.262	0.240	0.258	0.234	0.254	8.867		
Methylene Chloride			0.271	0.217	0.263	0.261	0.240	0.280	0.249	0.254	8.252		
Carbon Disulfide			0.795	0.626	0.740	0.737	0.678	0.761	0.702	0.720	7.788		
Acrylonitrile		0.117	0.127	0.114	0.130	0.135	0.123		0.134	0.126	6.412		
Methyl Tert Butyl Ether		0.669	0.722	0.642	0.760	0.786	0.713	0.788	0.718	0.725	7.239		
trans-1,2-Dichloroethene		0.400	0.422	0.377	0.430	0.438	0.407	0.446	0.412	0.416	5.376		
n-Hexane			0.456	0.385	0.420	0.424	0.429	0.464	0.428	0.430	5.986		
Diisopropyl ether		0.938	1.068	0.928	1.071	1.051	0.931		0.995	0.998	6.627		
Vinyl Acetate			0.593	0.519	0.545	0.602	0.554	0.608	0.558	0.569	5.855		
1,1-Dichloroethane		0.548	0.558	0.445	0.532	0.549	0.499	0.553	0.500	0.523	7.454		
Ethyl-Tert-Butyl ether		0.871	0.992	0.852	0.990	0.988	0.865		0.934	0.928	6.918		
2-Butanone			0.177	0.152	0.156	0.166	0.156	0.172	0.149	0.161	6.650		
Propionitrile		0.042	0.055	0.048	0.053	0.051	0.048		0.049	0.049	8.494		
2,2-Dichloropropane			0.428	0.330	0.377	0.415	0.383	0.417	0.383	0.390	8.575		
cis-1,2-Dichloroethene		0.247	0.257	0.248	0.287	0.297	0.273	0.299	0.277	0.273	7.647		
Chloroform		0.473	0.530	0.432	0.482	0.509	0.459	0.505	0.454	0.480	6.746		
1-Bromopropane			0.011	0.041	0.042	0.043	0.040	0.045	0.041	0.038	31.434	0.997	
Bromochloromethane		0.131	0.173	0.169	0.194	0.199	0.179	0.197	0.178	0.177	12.275		
Tetrahydrofuran			0.111	0.099	0.110	0.110	0.097		0.097	0.104	6.802		
Dibromofluoromethane				0.267	0.243	0.286	0.286	0.274		0.271	6.547		
1,1,1-Trichloroethane		0.426	0.436	0.385	0.438	0.470	0.425	0.470	0.427	0.434	6.319		
Cyclohexane		0.465	0.495	0.425	0.494	0.478	0.465	0.503	0.464	0.474	5.302		
1,1-Dichloropropene		0.353	0.359	0.300	0.344	0.352	0.333	0.360	0.335	0.342	5.748		
Tert-Amyl-Methyl ether		0.631	0.709	0.631	0.716	0.716	0.632		0.684	0.674	6.133		
Carbon Tetrachloride			0.41939	0.34041	0.40512	0.42742	0.39181	0.43819	0.39737	0.40282	7.96886		
1,2-Dichloroethane-d4				0.34995	0.30686	0.35494	0.35835	0.33017		0.34005	6.33015		
Heptane										0	0		
1,2-Dichloroethane		0.36551	0.44947	0.39601	0.44224	0.45938	0.41291	0.4496	0.40581	0.42262	7.76179		
Benzene	1.14079	0.92872	1.03015	0.83328	0.97121	0.9721	0.88431	0.97127	0.88279	0.95718	9.53654		
Trichloroethene		0.30364	0.32158	0.26212	0.31219	0.31666	0.29597	0.321	0.29314	0.30329	6.54492		
Methylcyclohexane		0.31249	0.39837	0.32203	0.40419	0.39506	0.39323	0.42525	0.39247	0.38039	10.6291		
1,2-Dichloropropane		0.23004	0.27101	0.24016	0.27676	0.28593	0.2555	0.28277	0.26062	0.26285	7.66268		
1,4-Dioxane			0.0041	0.00361	0.00449	0.00376	0.00356		0.00414	0.00394	9.17892		
Bromodichloromethane			0.37851	0.33087	0.3725	0.39384	0.35929	0.397	0.36103	0.37044	6.13725		
Dibromomethane		0.15103	0.18915	0.16523	0.1825	0.18519	0.16707	0.1849	0.1682	0.17416	7.61692		
2-Chloroethyl Vinyl Ether				0.04535	0.05625	0.07439	0.06667	0.08013	0.07633	0.06652	20.1377	0.996	
4-Methyl-2-Pentanone				0.08933	0.11327	0.12554	0.11786	0.12977	0.11644	0.11537	12.2612		
cis-1,3-Dichloropropene			0.37321	0.33699	0.39477	0.41098	0.38072	0.42291	0.38195	0.38594	7.23123		
Dimethyl Disulfide			0.30882	0.3269	0.39409	0.4245	0.40234	0.4579	0.40032	0.38784	13.5683		
Chlorobenzene-d5	ISTD												
Toluene-d8				1.21266	1.14503	1.34974	1.34798	1.26813		1.26471	6.98417		
Toluene	1.57001	1.40445	1.51648	1.23448	1.46732	1.48749	1.3712	1.4823	1.3236	1.42859	7.34792		
Ethyl Methacrylate				0.31749	0.4112	0.4195	0.39758	0.44016	0.38999	0.39599	10.6751		
trans-1,3-Dichloropropene			0.50304	0.44978	0.5157	0.56049	0.50648	0.56248	0.50379	0.51454	7.49294		
1,1,2-Trichloroethane		0.27692	0.29584	0.27194	0.31787	0.32454	0.3	0.32173	0.292	0.3001	6.65768		
2-Hexanone				0.26013	0.28088	0.31451	0.30524	0.34734	0.28972	0.29964	10.056		
1,3-Dichloropropane		0.46617	0.55761	0.45639	0.51068	0.53187	0.47698	0.53043	0.47034	0.50006	7.49429		
Tetrachloroethene		0.33351	0.31568	0.26327	0.31051	0.30894	0.30156	0.32634	0.29026	0.30626	7.18201		
Dibromochloromethane			0.45014	0.36113	0.41394	0.44566	0.40515	0.45572	0.40415	0.41941	8.03547		
1,2-Dibromoethane				0.31086	0.34005	0.35035	0.32626	0.35324	0.31647	0.33287	5.32182		
1-Chlorohexane		0.39643	0.40929	0.33097	0.45098	0.44465	0.43807	0.477	0.42289	0.42128	10.5148		
Chlorobenzene		1.02904	1.08596	0.91908	1.05295	1.05625	0.95434	1.02465	0.91009	1.00405	6.67004		
1,1,1,2-Tetrachloroethane			0.37536	0.32525	0.38767	0.40783	0.37127	0.40937	0.36265	0.37706	7.67975		
Ethylbenzene	0.5157	0.51658	0.53164	0.45493	0.54391	0.54636	0.50916	0.54884	0.48836	0.51728	5.93862		
m-,p-Xylene	0.67213	0.61926	0.69794	0.58569	0.67162	0.65634	0.61182	0.65803	0.57657	0.63882	6.58722		
o-Xylene	0.61273	0.56415	0.61379	0.55512	0.6465	0.65334	0.60899	0.67127	0.59158	0.61305	6.41073		
Styrene		0.95813	1.06028	0.90308	1.08018	1.12326	1.04689	1.15897	1.02088	1.04396	8.002		
Bromoform			0.22872	0.23892	0.27832	0.30617	0.27263	0.32232	0.28054	0.27538	12.1348		
Isopropylbenzene		1.53891	1.69742	1.42189	1.74341	1.73716	1.64433	1.81019	1.57289	1.64577	7.76922		
1,4-Dichlorobenzene-d4	ISTD												
1,1,2,2-Tetrachloroethane		0.61571	0.83634	0.73739	0.79769	0.80854	0.74616	0.78083	0.74513	0.75847	8.88143		
p-Bromofluorobenzene				0.91653	0.87561	1.04735	1.0775	0.95104		0.97361	8.83571		
1,2,3-Trichloropropane		0.24645	0.29476	0.28329	0.29208	0.30442	0.29453	0.30315	0.28248	0.28764	6.41284		

trans-1,4-Dichloro-2-Butene		0.22501	0.23725	0.31415	0.3034	0.3105	0.33164	0.30766	0.28994	14.2446
n-Propylbenzene	3.98718	4.09811	3.61454	4.21971	4.10826	3.88939	3.82307	3.70205	3.93029	5.36989
Bromobenzene	0.84385	1.11565	0.86076	0.97118	0.9688	0.89248	0.89548	0.87446	0.92783	9.59949
1,3,5-Trimethylbenzene			2.76735	3.16086	3.10843	2.93606	2.91239	2.81635	2.95024	5.30322
2-Chlorotoluene		2.99265	2.31448	2.81057	2.64897	2.50142	2.61378	2.57101	2.63612	8.25378
4-Chlorotoluene	2.56339	2.5861	2.29006	2.55177	2.63031	2.41864	2.2799	2.17747	2.4372	6.98222
a-Methylstyrene			1.12025	1.41688	1.39756	1.35572	1.41986	1.35543	1.34428	8.43365
tert-Butylbenzene			0.56026	0.65003	0.66483	0.62531	0.61977	0.59094	0.61853	6.19423
1,2,4-Trimethylbenzene	3.41485	3.20381	2.86379	3.24429	3.17284	3.0014	2.96997	2.8463	3.08966	6.49589
sec-Butylbenzene	3.92127	3.95846	3.39254	3.98281	3.96896	3.8029	3.77812	3.59297	3.79976	5.54855
p-Isopropyltoluene			2.97918	3.35219	3.3501	3.24235	3.24339	3.07285	3.20668	4.70949
1,3-Dichlorobenzene	2.09668	2.18083	1.63464	1.82169	1.84149	1.71899	1.77783	1.67989	1.84401	10.6223
1,4-Dichlorobenzene	2.13498	2.06617	1.68605	1.85221	1.83159	1.72549	1.79434	1.65691	1.84347	9.41157
n-Butylbenzene	3.12981	3.1425	2.56827	2.96652	3.08072	3.01911	3.06733	2.87744	2.98146	6.31771
1,2-Dichlorobenzene	1.80685	1.84212	1.52596	1.70901	1.74915	1.66133	1.78603	1.60751	1.71099	6.28256
1,2-Dibromo-3-Chloropropane			0.17584	0.21007	0.23479	0.23723	0.24208	0.21787	0.21965	11.2549
1,2,4-Trichlorobenzene	1.3714	1.33063	1.02655	1.15029	1.2163	1.24479	1.25089	1.12609	1.21462	9.21088
Hexachlorobutadiene	0.57233	0.7279	0.53741	0.61674	0.64289	0.67353	0.72181	0.62948	0.64026	10.4449
Naphthalene		3.19632	2.63671	3.04494	3.29135	3.2233	3.14196	2.79099	3.04651	7.99534
1,2,3-Trichlorobenzene	1.32324	1.26566	0.99788	1.12352	1.21351	1.21702	1.20507	1.0788	1.17809	8.93408

Fri Feb 26 11:40:14 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16021306 Run Date: 02/25/2016 Sample ID: WG558732-11
Instrument ID: HPMS9 Run Time: 21:31 Method: 8260B
File ID: 9M972907 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG558732 Cal ID: HPMS9 - 25-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	48.0	ug/kg	0.461	4.00	20	
1,1-Dichloroethene	CCC	50.0	48.6	ug/kg	0.454	2.90	20	
1,2-Dichloropropane	CCC	50.0	52.3	ug/kg	0.275	4.60	20	
Ethylbenzene	CCC	50.0	51.3	ug/kg	0.531	2.60	20	
Toluene	CCC	50.0	50.7	ug/kg	1.45	1.50	20	
Vinyl Chloride	CCC	50.0	59.8	ug/kg	0.392	19.7	20	
Bromoform	SPCC	50.0	47.3	ug/kg	0.261	5.40	20	
Chlorobenzene	SPCC	50.0	51.2	ug/kg	1.03	2.40	20	
Chloromethane	SPCC	50.0	52.7	ug/kg	0.345	5.40	20	
1,1-Dichloroethane	SPCC	50.0	46.4	ug/kg	0.485	7.20	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	52.0	ug/kg	0.789	4.00	20	
Acetone		50.0	43.9	ug/kg	0.112	12.2	20	
Benzene		50.0	49.0	ug/kg	0.937	2.10	20	
Bromobenzene		50.0	52.2	ug/kg	0.968	4.40	20	
Bromochloromethane		50.0	51.5	ug/kg	0.183	3.00	20	
Bromodichloromethane		50.0	47.6	ug/kg	0.352	4.90	20	
Bromomethane		50.0	49.0	ug/kg	0.208	2.10	20	
2-Butanone		50.0	47.4	ug/kg	0.153	5.20	20	
n-Butylbenzene		50.0	52.5	ug/kg	3.13	4.90	20	
sec-Butylbenzene		50.0	54.7	ug/kg	4.16	9.50	20	
tert-Butylbenzene		50.0	55.4	ug/kg	0.685	10.8	20	
Carbon Disulfide		50.0	44.1	ug/kg	0.635	11.7	20	
Carbon Tetrachloride		50.0	46.5	ug/kg	0.375	7.00	20	
Dibromochloromethane		50.0	48.5	ug/kg	0.407	3.10	20	
Chloroethane		50.0	54.2	ug/kg	0.158	8.30	20	
2-Chlorotoluene		50.0	54.2	ug/kg	2.86	8.40	20	
4-Chlorotoluene		50.0	53.0	ug/kg	2.59	6.10	20	
1,2-Dibromo-3-Chloropropane		50.0	54.5	ug/kg	0.239	8.90	20	
1,2-Dibromoethane		50.0	50.8	ug/kg	0.338	1.50	20	
Dibromomethane		50.0	47.0	ug/kg	0.164	6.10	20	
1,2-Dichlorobenzene		50.0	52.7	ug/kg	1.81	5.50	20	
1,3-Dichlorobenzene		50.0	50.8	ug/kg	1.87	1.60	20	
1,4-Dichlorobenzene		50.0	51.1	ug/kg	1.88	2.20	20	
Dichlorodifluoromethane		50.0	63.4	ug/kg	0.432	26.7	20	*
1,2-Dichloroethane		50.0	49.2	ug/kg	0.416	1.60	20	
cis-1,2-Dichloroethene		50.0	52.6	ug/kg	0.287	5.20	20	
trans-1,2-Dichloroethene		50.0	50.6	ug/kg	0.422	1.20	20	
1,3-Dichloropropane		50.0	53.8	ug/kg	0.538	7.60	20	
2,2-Dichloropropane		50.0	47.1	ug/kg	0.368	5.90	20	
cis-1,3-Dichloropropene		50.0	53.2	ug/kg	0.411	6.40	20	
trans-1,3-Dichloropropene		50.0	50.0	ug/kg	0.515	0.100	20	
1,1-Dichloropropene		50.0	48.5	ug/kg	0.332	2.90	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4651859
Report generated 02/29/2016 16:46

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16021306 Run Date: 02/25/2016 Sample ID: WG558732-11
Instrument ID: HPMS9 Run Time: 21:31 Method: 8260B
File ID: 9M972907 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG558732 Cal ID: HPMS9 - 25-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	48.2	ug/kg	0.289	3.60	20	
Hexachlorobutadiene		50.0	54.5	ug/kg	0.698	9.00	20	
Isopropylbenzene		50.0	52.0	ug/kg	1.71	4.00	20	
p-Isopropyltoluene		50.0	54.1	ug/kg	3.47	8.10	20	
4-Methyl-2-Pentanone		50.0	47.8	ug/kg	0.110	4.40	20	
Methylene Chloride		50.0	49.8	ug/kg	0.254	0.400	20	
Naphthalene		50.0	50.8	ug/kg	3.10	1.70	20	
n-Propylbenzene		50.0	54.9	ug/kg	4.32	9.80	20	
Styrene		50.0	52.8	ug/kg	1.10	5.60	20	
1,1,1,2-Tetrachloroethane		50.0	49.7	ug/kg	0.375	0.600	20	
Tetrachloroethene		50.0	49.8	ug/kg	0.305	0.400	20	
1,2,3-Trichlorobenzene		50.0	52.6	ug/kg	1.24	5.20	20	
1,2,4-Trichlorobenzene		50.0	51.7	ug/kg	1.26	3.40	20	
1,1,1-Trichloroethane		50.0	46.7	ug/kg	0.406	6.50	20	
1,1,2-Trichloroethane		50.0	51.5	ug/kg	0.309	3.00	20	
Trichloroethene		50.0	49.4	ug/kg	0.300	1.20	20	
Trichlorofluoromethane		50.0	47.6	ug/kg	0.467	4.90	20	
1,2,3-Trichloropropane		50.0	54.2	ug/kg	0.312	8.40	20	
1,2,4-Trimethylbenzene		50.0	51.5	ug/kg	3.18	3.10	20	
1,3,5-Trimethylbenzene		50.0	54.3	ug/kg	3.21	8.60	20	
o-Xylene		50.0	53.6	ug/kg	0.657	7.10	20	
m-,p-Xylene		100	103	ug/kg	0.655	2.60	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4651859
Report generated 02/29/2016 16:46

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021306 Run Date: 02/28/2016 Sample ID: WG559001-02
Instrument ID: HPMS9 Run Time: 15:39 Method: 8260B
File ID: 9M972943 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG559002 Cal ID: HPMS9 - 25-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.8	ug/kg	0.488	1.66	20	
1,1-Dichloroethene	CCC	50.0	51.1	ug/kg	0.478	2.26	20	
1,2-Dichloropropane	CCC	50.0	53.6	ug/kg	0.282	7.20	20	
Ethylbenzene	CCC	50.0	54.8	ug/kg	0.567	9.67	20	
Toluene	CCC	50.0	52.7	ug/kg	1.51	5.37	20	
Vinyl Chloride	CCC	50.0	58.7	ug/kg	0.384	17.4	20	
Bromoform	SPCC	50.0	50.7	ug/kg	0.279	1.36	20	
Chlorobenzene	SPCC	50.0	51.9	ug/kg	1.04	3.70	20	
Chloromethane	SPCC	50.0	49.6	ug/kg	0.325	0.769	20	
1,1-Dichloroethane	SPCC	50.0	52.8	ug/kg	0.552	5.62	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	51.3	ug/kg	0.779	2.65	20	
Xylenes		150	157	ug/kg	0.658	4.90	40	
Acetone		50.0	44.5	ug/kg	0.113	10.9	20	
Benzene		50.0	51.9	ug/kg	0.993	3.70	20	
Bromobenzene		50.0	52.4	ug/kg	0.973	4.89	20	
Bromochloromethane		50.0	52.6	ug/kg	0.187	5.20	20	
Bromodichloromethane		50.0	49.7	ug/kg	0.368	0.545	20	
Bromomethane		50.0	46.4	ug/kg	0.197	7.27	20	
2-Butanone		50.0	46.4	ug/kg	0.150	7.26	20	
n-Butylbenzene		50.0	54.5	ug/kg	3.25	9.02	20	
sec-Butylbenzene		50.0	55.7	ug/kg	4.23	11.4	20	
tert-Butylbenzene		50.0	56.8	ug/kg	0.702	13.6	20	
Carbon Disulfide		50.0	54.1	ug/kg	0.778	8.13	20	
Carbon Tetrachloride		50.0	51.9	ug/kg	0.418	3.86	20	
Dibromochloromethane		50.0	49.2	ug/kg	0.412	1.68	20	
Chloroethane		50.0	56.7	ug/kg	0.166	13.4	20	
2-Chlorotoluene		50.0	52.3	ug/kg	2.76	4.60	20	
4-Chlorotoluene		50.0	55.6	ug/kg	2.71	11.2	20	
1,2-Dibromo-3-Chloropropane		50.0	47.2	ug/kg	0.207	5.63	20	
1,2-Dibromoethane		50.0	49.4	ug/kg	0.329	1.19	20	
Dibromomethane		50.0	50.4	ug/kg	0.176	0.750	20	
1,2-Dichlorobenzene		50.0	51.4	ug/kg	1.76	2.80	20	
1,3-Dichlorobenzene		50.0	51.5	ug/kg	1.90	2.94	20	
1,4-Dichlorobenzene		50.0	51.0	ug/kg	1.88	1.96	20	
Dichlorodifluoromethane		50.0	51.2	ug/kg	0.349	2.38	20	
1,2-Dichloroethane		50.0	51.2	ug/kg	0.433	2.43	20	
cis-1,2-Dichloroethene		50.0	53.7	ug/kg	0.293	7.31	20	
trans-1,2-Dichloroethene		50.0	54.7	ug/kg	0.455	9.32	20	
1,3-Dichloropropane		50.0	51.7	ug/kg	0.517	3.35	20	
2,2-Dichloropropane		50.0	55.9	ug/kg	0.436	11.8	20	
cis-1,3-Dichloropropene		50.0	52.2	ug/kg	0.403	4.31	20	
trans-1,3-Dichloropropene		50.0	51.7	ug/kg	0.532	3.37	20	

CCV - Modified 03/05/2008
PDF File ID: 4651861
Report generated 02/29/2016 16:46

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021306 Run Date: 02/28/2016 Sample ID: WG559001-02
Instrument ID: HPMS9 Run Time: 15:39 Method: 8260B
File ID: 9M972943 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG559002 Cal ID: HPMS9 - 25-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	53.5	ug/kg	0.366	6.98	20	
2-Hexanone		50.0	49.1	ug/kg	0.294	1.82	20	
Hexachlorobutadiene		50.0	52.5	ug/kg	0.672	4.92	20	
Isopropylbenzene		50.0	53.6	ug/kg	1.76	7.24	20	
p-Isopropyltoluene		50.0	55.0	ug/kg	3.53	9.95	20	
4-Methyl-2-Pentanone		50.0	49.0	ug/kg	0.113	2.01	20	
Methylene Chloride		50.0	51.6	ug/kg	0.262	3.10	20	
Naphthalene		50.0	48.5	ug/kg	2.96	2.90	20	
n-Propylbenzene		50.0	56.0	ug/kg	4.40	12.0	20	
Styrene		50.0	53.6	ug/kg	1.12	7.30	20	
1,1,1,2-Tetrachloroethane		50.0	52.0	ug/kg	0.392	3.96	20	
Tetrachloroethene		50.0	52.9	ug/kg	0.324	5.75	20	
1,2,3-Trichlorobenzene		50.0	50.5	ug/kg	1.19	1.07	20	
1,2,4-Trichlorobenzene		50.0	51.1	ug/kg	1.24	2.15	20	
1,1,1-Trichloroethane		50.0	52.5	ug/kg	0.457	5.06	20	
1,1,2-Trichloroethane		50.0	51.7	ug/kg	0.310	3.33	20	
Trichloroethene		50.0	54.1	ug/kg	0.328	8.14	20	
Trichlorofluoromethane		50.0	52.5	ug/kg	0.516	5.04	20	
1,2,3-Trichloropropane		50.0	52.2	ug/kg	0.301	4.50	20	
1,2,4-Trimethylbenzene		50.0	53.4	ug/kg	3.30	6.83	20	
1,3,5-Trimethylbenzene		50.0	55.3	ug/kg	3.26	10.6	20	
o-Xylene		50.0	53.1	ug/kg	0.651	6.13	20	
m-,p-Xylene		100	104	ug/kg	0.666	4.29	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4651861
Report generated 02/29/2016 16:46

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16021306
Instrument ID: HPMS9
Workgroup (AAB#): WG559002

ICAL CCV Number: WG558732-02
CAL ID: HPMS9 - 25-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558732-02	NA	NA	183008	378926	517775
Upper Limit	NA	NA	366016	757852	1035550
Lower Limit	NA	NA	91504	189463	258888
L16021306-01	1.00	01	181702	408222	580060
L16021306-02	1.00	01	183801	397433	563140
L16021306-03	1.00	01	186900	410018	573788
L16021306-04	1.00	01	204939	447518	618731
L16021306-05	1.00	01	182401	410583	586020
L16021306-06	1.00	01	182910	389043	533603
WG559002-01	1.00	01	204353	441195	620113
WG559002-02	1.00	01	193426	413544	577816

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4651862
Report generated 02/29/2016 16:46

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16021306
Instrument ID: HPMS9
Workgroup (AAB#): WG559002

ICAL CCV Number: WG558732-02
CAL ID: HPMS9 - 25-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558732-02	NA	NA	17.76	14.73	10.85
Upper Limit	NA	NA	18.26	15.23	11.35
Lower Limit	NA	NA	17.26	14.23	10.35
L16021306-01	1.00	01	17.75	14.72	10.85
L16021306-02	1.00	01	17.75	14.73	10.85
L16021306-03	1.00	01	17.75	14.72	10.85
L16021306-04	1.00	01	17.76	14.72	10.85
L16021306-05	1.00	01	17.76	14.73	10.85
L16021306-06	1.00	01	17.75	14.72	10.85
WG559002-01	1.00	01	17.75	14.72	10.85
WG559002-02	1.00	01	17.75	14.72	10.85

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4651864
Report generated: 02/29/2016 16:46

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022816\9M972959.D Vial: 17
Acq On : 28 Feb 2016 23:54 Operator: FJB
Sample : L16021306-01 8260 4.73g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 13:26:00 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	580060	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	408222	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	181702	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	153832	48.9253 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.86%		
43) 1,2-Dichloroethane-d4	10.45	65	188617	47.8112 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.62%		
58) Toluene-d8	12.82	98	551993	53.4585 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.92%		
79) p-Bromofluorobenzene	16.23	95	198493	56.1013 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 112.20%		

Target Compounds					Qvalue
13) Acetone	6.41	43	8331	3.4554 ug/kg	99
17) Iodomethane	7.12	142	241	2.9395 ug/kg#	34
56) Dimethyl Disulfide	12.82	94	15379	3.4180 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972959.D 8260SL.M Mon Feb 29 13:26:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022816\9M972959.D Vial: 17
Acq On : 28 Feb 2016 23:54 Operator: FJB
Sample : L16021306-01 8260 4.73g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 13:26 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

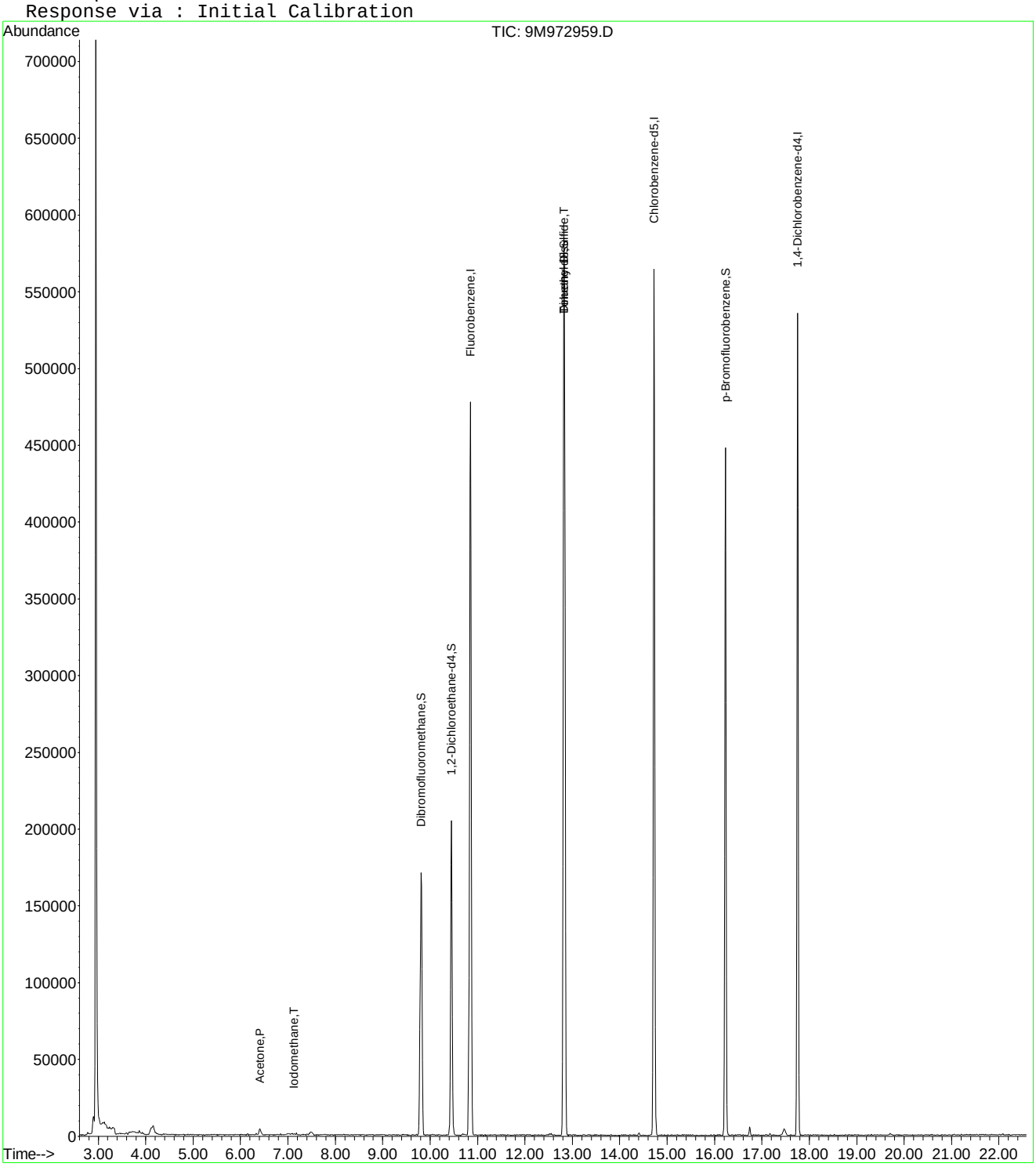

9M972959.D 8260SL.M Mon Feb 29 13:26:01 2016 Page 2

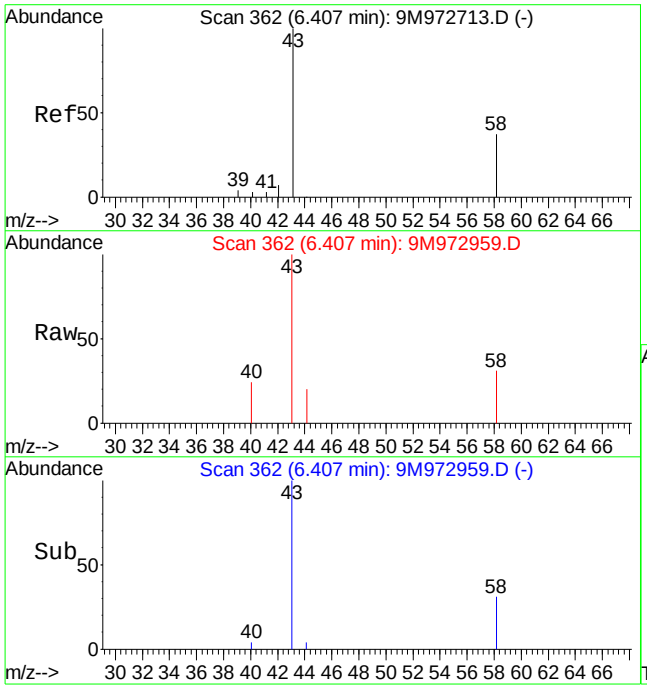

#13
Acetone
Concen: 3.46 ug/kg
RT: 6.41 min Scan# 362
Delta R.T. -0.01 min
Lab File: 9M972959.D
Acq: 28 Feb 2016 23:54

Tgt Ion: 43 Resp: 8331

Ion	Ratio	Lower	Upper
43	100		
58	27.6	16.9	39.3

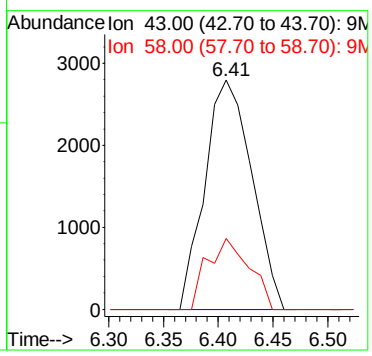

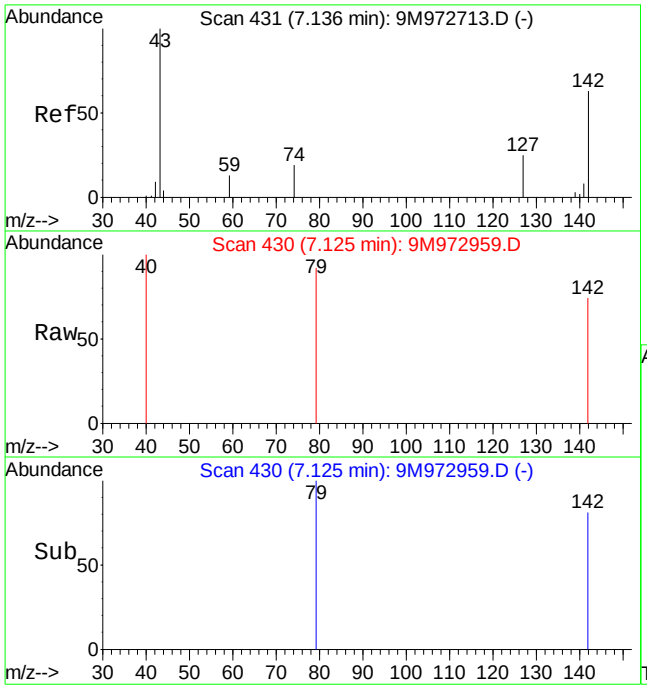

#17
Iodomethane
Concen: 2.94 ug/kg
RT: 7.12 min Scan# 430
Delta R.T. -0.01 min
Lab File: 9M972959.D
Acq: 28 Feb 2016 23:54

Tgt Ion:142 Resp: 241

Ion	Ratio	Lower	Upper
142	100		
127	0.0	25.1	58.7#

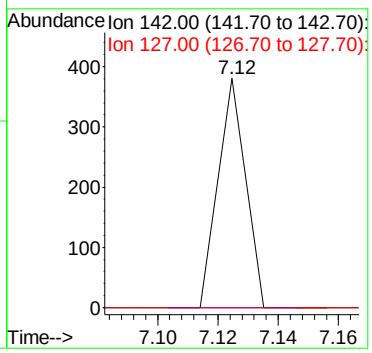

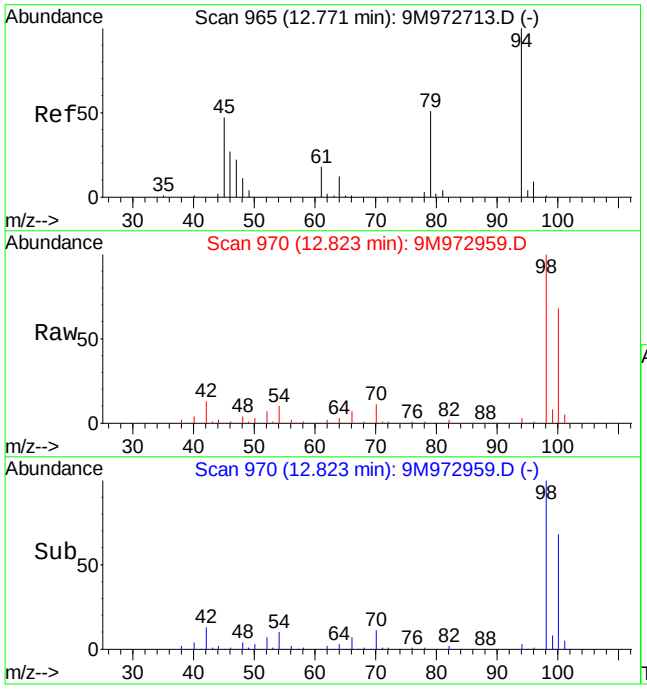

#56
Dimethyl Disulfide
Concen: 3.42 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M972959.D
Acq: 28 Feb 2016 23:54

Tgt Ion: 94 Resp: 15379

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

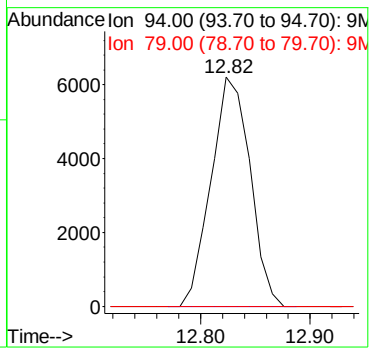

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022816\9M972960.D Vial: 18
Acq On : 29 Feb 2016 00:25 Operator: FJB
Sample : L16021306-02 REF 8260 4.75g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 13:26:01 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	563140	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.73	117	397433	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	183801	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	149180	48.8713 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.74%		
43) 1,2-Dichloroethane-d4	10.45	65	186033	48.5730 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.14%		
58) Toluene-d8	12.83	98	534564	53.1760 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.36%		
79) p-Bromofluorobenzene	16.23	95	198244	55.3910 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 110.78%		

Target Compounds

					Qvalue
13) Acetone	6.42	43	8026	3.4096 ug/kg	89
17) Iodomethane	7.13	142	227	2.9353 ug/kg#	34
29) 2-Butanone	9.02	43	837	0.4609 ug/kg#	58
56) Dimethyl Disulfide	12.83	94	15033	3.4415 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972960.D 8260SL.M Mon Feb 29 13:26:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022816\9M972960.D Vial: 18
Acq On : 29 Feb 2016 00:25 Operator: FJB
Sample : L16021306-02 REF 8260 4.75g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 13:26 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

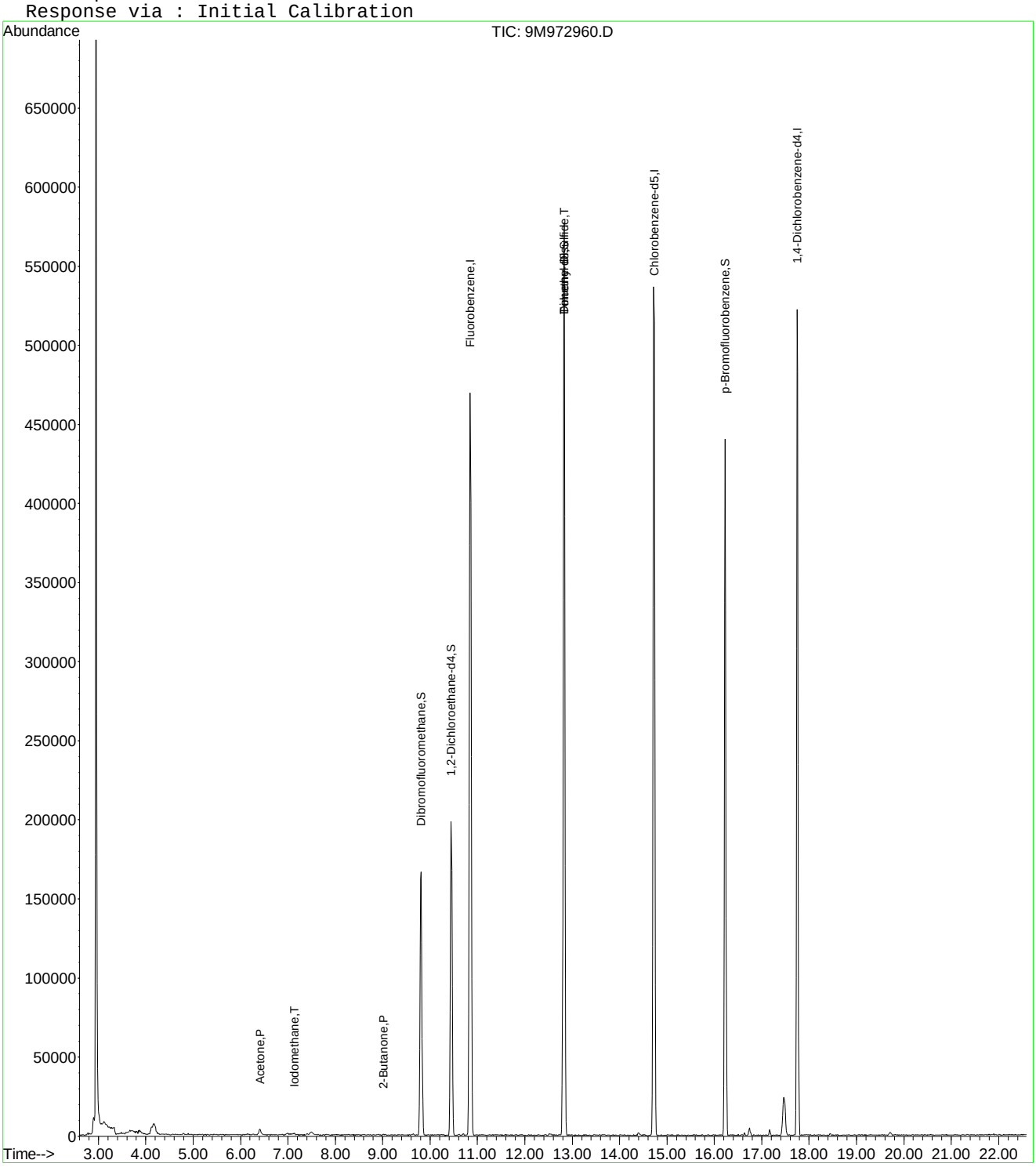

9M972960.D 8260SL.M Mon Feb 29 13:26:02 2016 Page 2

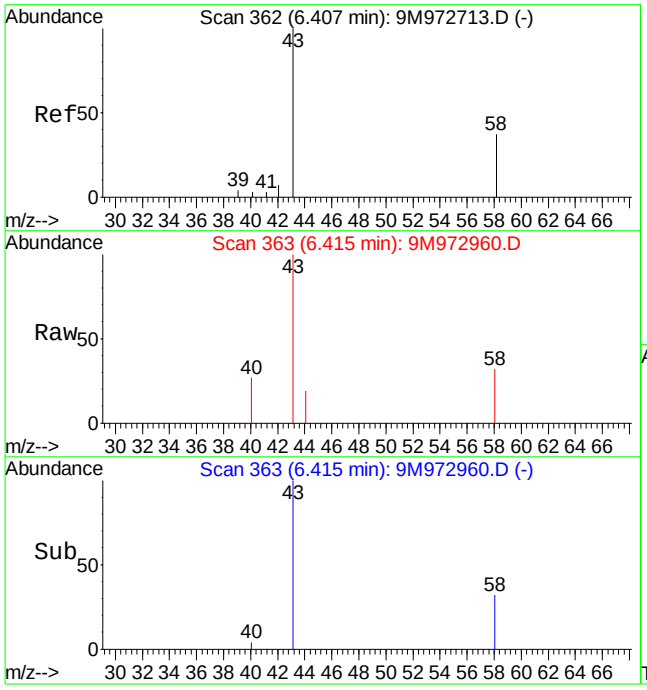

#13
Acetone
Concen: 3.41 ug/kg
RT: 6.42 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M972960.D
Acq: 29 Feb 2016 00:25

Tgt Ion: 43 Resp: 8026

Ion	Ratio	Lower	Upper
43	100		
58	33.9	16.9	39.3

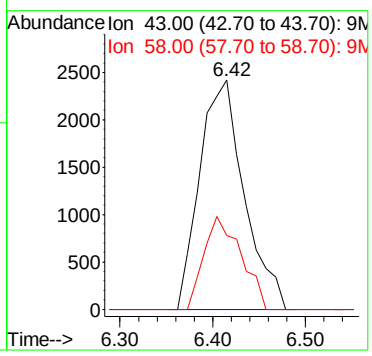

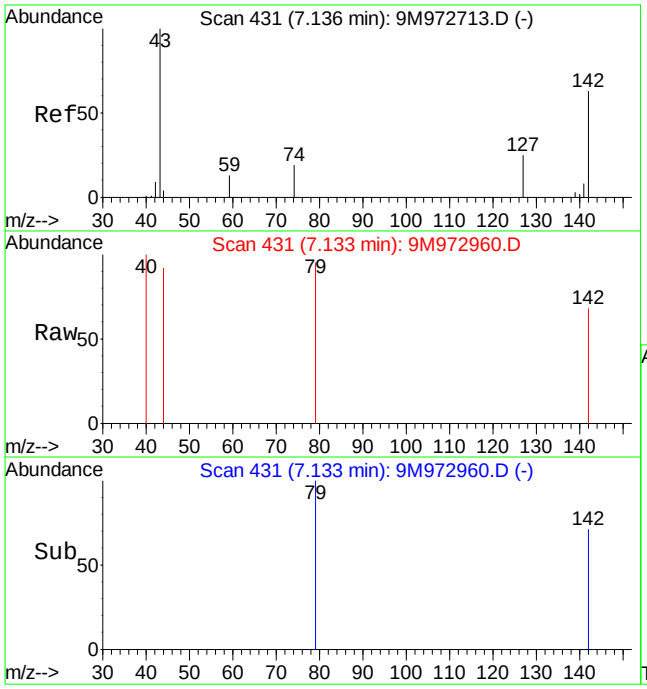

#17
Iodomethane
Concen: 2.94 ug/kg
RT: 7.13 min Scan# 431
Delta R.T. 0.00 min
Lab File: 9M972960.D
Acq: 29 Feb 2016 00:25

Tgt Ion:142 Resp: 227

Ion	Ratio	Lower	Upper
142	100		
127	0.0	25.1	58.7#

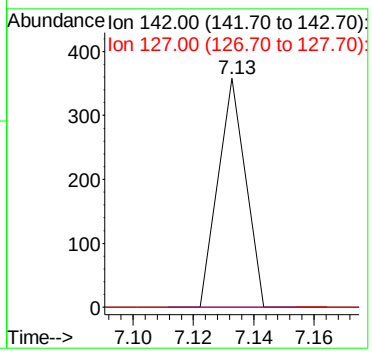

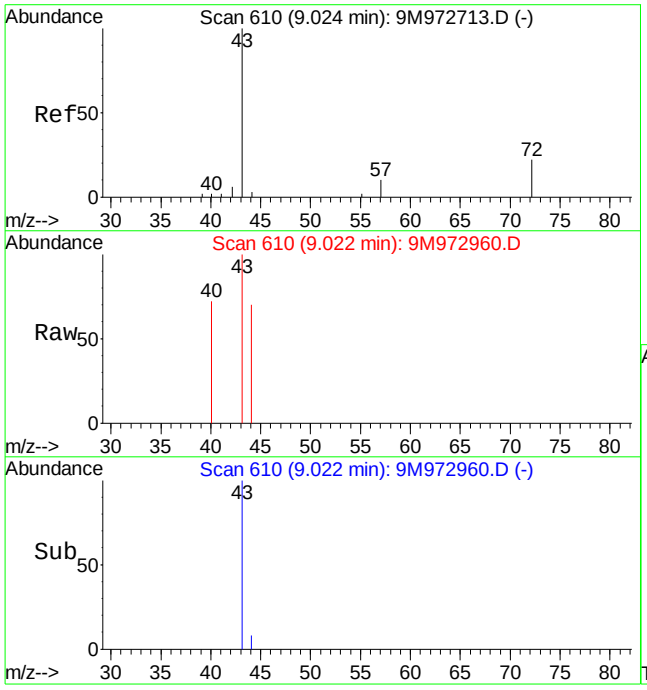

#29
2-Butanone
Concen: 0.46 ug/kg
RT: 9.02 min Scan# 610
Delta R.T. -0.01 min
Lab File: 9M972960.D
Acq: 29 Feb 2016 00:25

Tgt Ion: 43 Resp: 837

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

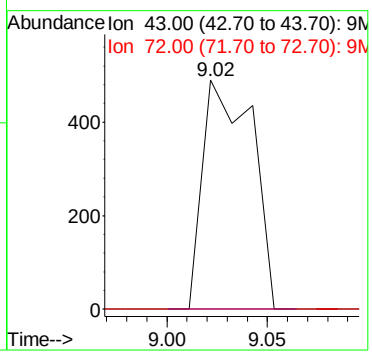

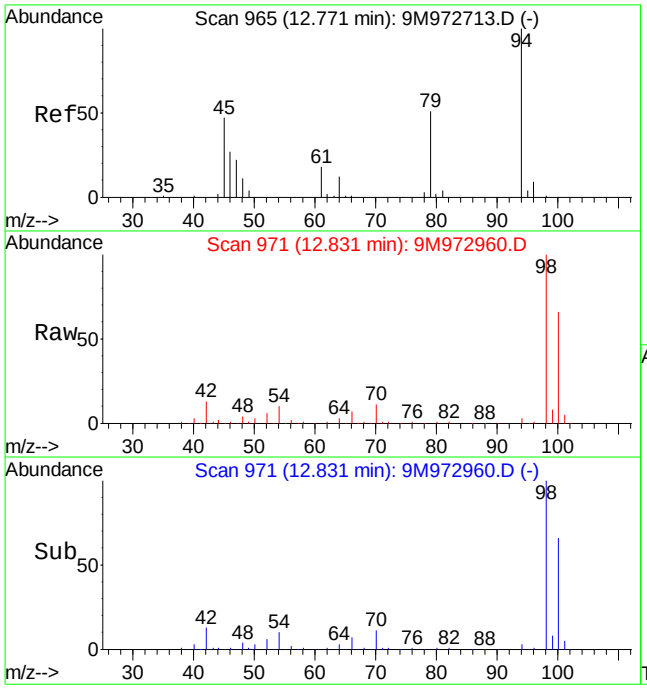

#56
Dimethyl Disulfide
Concen: 3.44 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.07 min
Lab File: 9M972960.D
Acq: 29 Feb 2016 00:25

Tgt Ion: 94 Resp: 15033

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

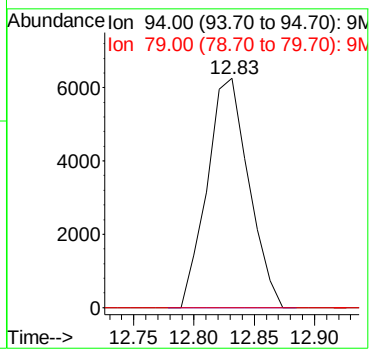

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022816\9M972947.D Vial: 5
Acq On : 28 Feb 2016 17:41 Operator: FJB
Sample : L16021306-03 MS 8260 5.35g Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 28 18:03:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	573788	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	410018	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	186900	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	156097	50.1883 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.38%		
43) 1,2-Dichloroethane-d4	10.45	65	186711	47.8454 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.70%		
58) Toluene-d8	12.82	98	556297	53.6394 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 107.28%		
79) p-Bromofluorobenzene	16.23	95	206994	56.8769 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 113.76%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	115195	29.4552 ug/kg	99
3) Chloromethane	3.75	50	86106	22.9371 ug/kg	98
4) Vinyl Chloride	3.99	62	97498	25.9443 ug/kg	99
5) 1,3-Butadiene	4.04	54	83533	23.3642 ug/kg	98
6) Bromomethane	4.88	94	52484	21.5035 ug/kg	98
7) Chloroethane	5.03	64	37879	22.6250 ug/kg	98
8) Trichlorofluoromethane	5.52	101	119669	21.2319 ug/kg	100
9) Diethyl ether	6.06	59	178822	67.8689 ug/kg	99
10) Isoprene	6.09	67	94523	28.0903 ug/kg	95
11) Acrolein	6.29	56	32131	61.1578 ug/kg	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	67828	23.3350 ug/kg	100
13) Acetone	6.41	43	30026	19.2327 ug/kg	89
14) 1,1-Dichloroethene	6.62	61	110830	20.6696 ug/kg	95
15) Tert-Butyl Alcohol	6.75	59	120736	205.7869 ug/kg	96
16) Dimethyl Sulfide	6.88	62	70011	30.8938 ug/kg	99
17) Iodomethane	7.13	142	33360	22.5631 ug/kg	97
18) Methyl acetate	7.15	43	60710	20.8273 ug/kg	99
19) Methylene Chloride	7.40	84	62646	21.4522 ug/kg	95
20) Carbon Disulfide	7.44	76	159584	19.3201 ug/kg	98
21) Acrylonitrile	7.58	53	28300	19.6256 ug/kg	98
22) Methyl Tert Butyl Ether	7.61	73	163008	19.5989 ug/kg	97
23) trans-1,2-Dichloroethene	7.85	61	108187	22.6395 ug/kg	99
24) n-Hexane	7.92	57	111446	22.6108 ug/kg	98
25) Diisopropyl ether	8.26	45	1029985	89.9758 ug/kg	99
26) Vinyl Acetate	8.43	43	90588	13.8816 ug/kg	100
27) 1,1-Dichloroethane	8.46	63	121149	20.1844 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	898879	84.4506 ug/kg	99
29) 2-Butanone	9.02	43	32868	17.7635 ug/kg	98
30) Propionitrile	9.14	54	49313	87.0891 ug/kg	97
31) 2,2-Dichloropropane	9.23	77	97722	21.8134 ug/kg	96
32) cis-1,2-Dichloroethene	9.31	96	71563	22.8332 ug/kg	100
33) Chloroform	9.52	83	114615	20.7875 ug/kg	96
34) 1-Bromopropane	9.66	122	15310	32.4140 ug/kg	94
35) Bromochloromethane	9.75	130	42127	20.6921 ug/kg	96
36) Tetrahydrofuran	9.77	42	95779	80.3056 ug/kg	99
38) 1,1,1-Trichloroethane	10.05	97	105837	21.2261 ug/kg	97
39) Cyclohexane	10.08	56	126314	23.2357 ug/kg	99
40) 1,1-Dichloropropene	10.25	75	84550	21.5495 ug/kg	99
41) Tert-Amyl-Methyl ether	10.34	73	724773	93.6783 ug/kg	100
42) Carbon Tetrachloride	10.38	117	95406	20.6390 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972947.D 8260SL.M Sun Feb 28 18:03:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022816\9M972947.D Vial: 5
Acq On : 28 Feb 2016 17:41 Operator: FJB
Sample : L16021306-03 MS 8260 5.35g Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 28 18:03:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	98378	20.2848 ug/kg	97
46)	Benzene	10.61	78	239490	21.8028 ug/kg	98
47)	Trichloroethene	11.36	130	75922	21.8138 ug/kg	96
48)	Methylcyclohexane	11.44	83	102973	23.5894 ug/kg	100
49)	1,2-Dichloropropane	11.57	63	68070	22.5667 ug/kg	98
50)	1,4-Dioxane	11.87	88	11363	251.1048 ug/kg	94
51)	Bromodichloromethane	11.87	83	85285	20.0622 ug/kg	99
52)	Dibromomethane	11.96	174	38042	19.0343 ug/kg	97
53)	2-Chloroethyl Vinyl Ether	12.16	63	9780	13.9000 ug/kg	93
54)	4-Methyl-2-Pentanone	12.19	58	25205	19.0376 ug/kg	99
55)	cis-1,3-Dichloropropene	12.51	75	97539	22.0233 ug/kg	98
56)	Dimethyl Disulfide	12.77	94	99935	22.4534 ug/kg	92
59)	Toluene	12.93	91	264119	22.5454 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	65044	20.0307 ug/kg	96
61)	trans-1,3-Dichloropropene	13.11	75	88598	20.9978 ug/kg	99
62)	1,1,2-Trichloroethane	13.32	97	52231	21.2238 ug/kg	97
63)	2-Hexanone	13.26	43	45939	18.6963 ug/kg	99
64)	1,3-Dichloropropane	13.62	76	90826	22.1491 ug/kg	97
65)	Tetrachloroethene	13.75	164	56705	22.5787 ug/kg	96
66)	Dibromochloromethane	14.02	129	66660	19.3816 ug/kg	98
67)	1,2-Dibromoethane	14.27	107	55914	20.4839 ug/kg	99
68)	1-Chlorohexane	14.35	91	82370	23.8430 ug/kg	98
69)	Chlorobenzene	14.77	112	184959	22.4641 ug/kg	97
70)	1,1,1,2-Tetrachloroethane	14.81	131	65292	21.1163 ug/kg	98
71)	Ethylbenzene	14.80	106	97595	23.0077 ug/kg	98
72)	m-,p-Xylene	14.88	106	239748	45.7659 ug/kg	99
73)	o-Xylene	15.45	106	114914	22.8582 ug/kg	98
74)	Styrene	15.49	104	188831	22.0575 ug/kg	98
75)	Bromoform	15.99	173	38278	16.9508 ug/kg	98
76)	Isopropylbenzene	15.87	105	309422	22.9270 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	60491	21.3359 ug/kg	100
80)	1,2,3-Trichloropropane	16.28	110	23399	21.7622 ug/kg	84
81)	trans-1,4-Dichloro-2-Buten	16.34	53	19632	18.1139 ug/kg	89
82)	n-Propylbenzene	16.38	91	365141	24.8540 ug/kg	99
83)	Bromobenzene	16.52	156	77031	22.2104 ug/kg	73
84)	1,3,5-Trimethylbenzene	16.57	105	262152	23.7715 ug/kg	98
85)	2-Chlorotoluene	16.66	91	239817	24.3374 ug/kg	100
86)	4-Chlorotoluene	16.71	91	206238	22.6380 ug/kg	98
87)	a-Methylstyrene	16.98	118	124893	24.8547 ug/kg	100
88)	tert-Butylbenzene	17.03	134	57904	25.0445 ug/kg	90
89)	1,2,4-Trimethylbenzene	17.09	105	261337	22.6283 ug/kg	99
90)	sec-Butylbenzene	17.31	105	341315	24.0304 ug/kg	99
91)	p-Isopropyltoluene	17.47	119	282025	23.5284 ug/kg	99
92)	1,3-Dichlorobenzene	17.67	146	146617	21.2708 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	148663	21.5739 ug/kg	98
94)	n-Butylbenzene	17.99	91	253427	22.7397 ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	138956	21.7265 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	16067	19.5692 ug/kg	94
97)	1,2,4-Trichlorobenzene	20.43	180	90087	19.8419 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	50549	21.1211 ug/kg	98
99)	Naphthalene	20.81	128	212379	18.6496 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.12	180	87057	19.7691 ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972947.D 8260SL.M Sun Feb 28 18:03:57 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022816\9M972947.D Vial: 5
Acq On : 28 Feb 2016 17:41 Operator: FJB
Sample : L16021306-03 MS 8260 5.35g Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 28 18:03 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

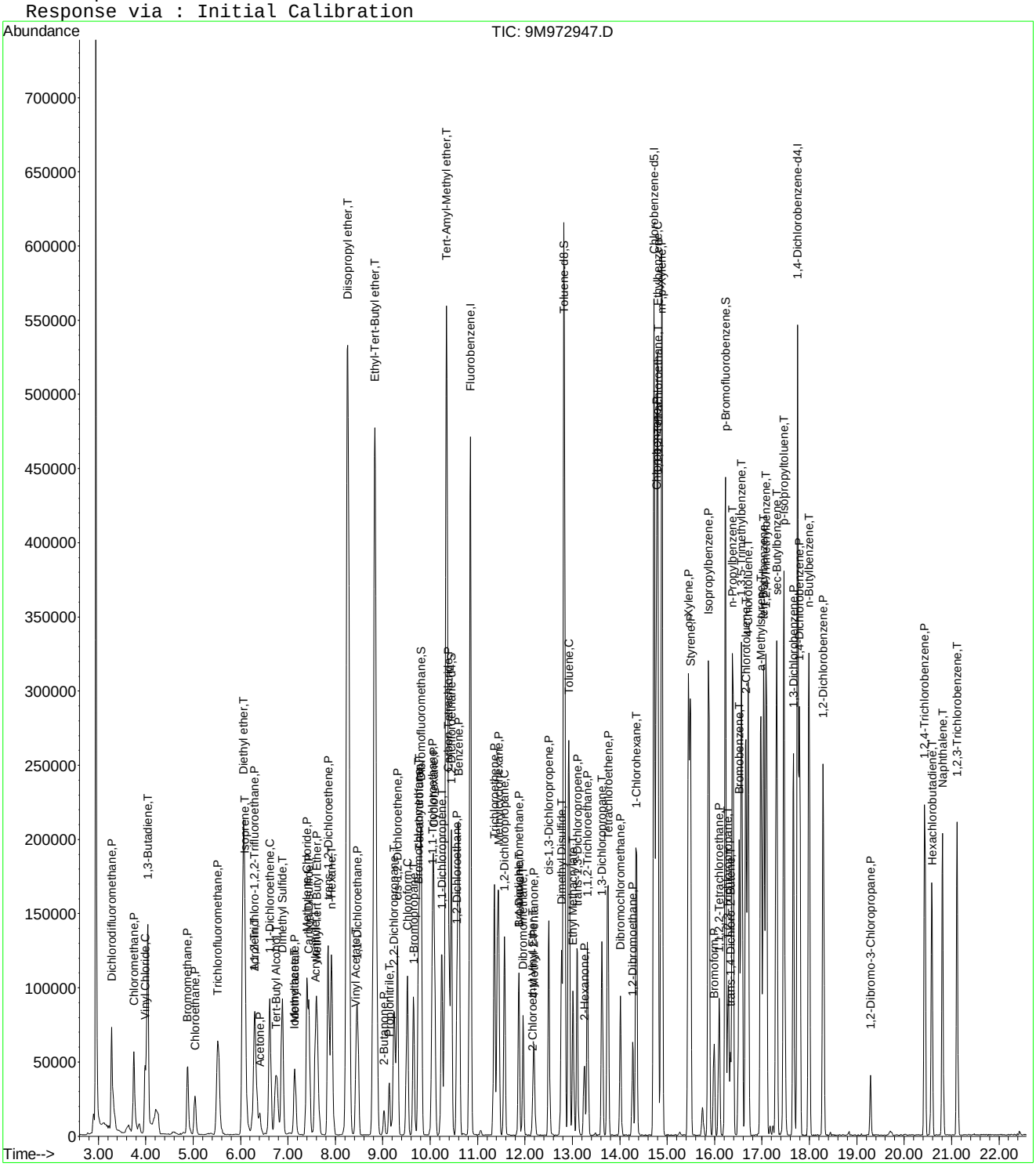

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022816\9M972948.D Vial: 6
Acq On : 28 Feb 2016 18:12 Operator: FJB
Sample : L16021306-04 MSD 8260 5.38g Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 28 18:34:36 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	618731	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	447518	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.76	152	204939	50.00 ug/kg	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.80	111	168419	50.2168 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.44%		
43) 1,2-Dichloroethane-d4	10.45	65	212147	50.4146 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.82%		
58) Toluene-d8	12.83	98	597797	52.8108 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 105.62%		
79) p-Bromofluorobenzene	16.23	95	226240	56.6934 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 113.38%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	106838	25.3340 ug/kg	99
3) Chloromethane	3.74	50	76289	18.8459 ug/kg	100
4) Vinyl Chloride	3.99	62	92419	22.8064 ug/kg	98
5) 1,3-Butadiene	4.04	54	77021	19.9779 ug/kg	97
6) Bromomethane	4.88	94	44459	16.8924 ug/kg	99
7) Chloroethane	5.04	64	33639	18.6330 ug/kg	97
8) Trichlorofluoromethane	5.53	101	112679	18.5396 ug/kg	99
9) Diethyl ether	6.06	59	149433	52.5952 ug/kg	99
10) Isoprene	6.09	67	79917	22.0245 ug/kg	99
11) Acrolein	6.30	56	31593	55.7658 ug/kg	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	63417	20.2327 ug/kg	100
13) Acetone	6.41	43	29803	17.5034 ug/kg	96
14) 1,1-Dichloroethene	6.61	61	107757	18.6367 ug/kg	97
15) Tert-Butyl Alcohol	6.75	59	110105	174.0354 ug/kg	95
16) Dimethyl Sulfide	6.88	62	57993	23.7317 ug/kg	98
17) Iodomethane	7.14	142	27717	18.0270 ug/kg	98
18) Methyl acetate	7.15	43	48293	15.3641 ug/kg	99
19) Methylene Chloride	7.40	84	53756	17.0709 ug/kg	97
20) Carbon Disulfide	7.45	76	138934	15.5983 ug/kg	97
21) Acrylonitrile	7.59	53	25570	16.4443 ug/kg	95
22) Methyl Tert Butyl Ether	7.61	73	137238	15.3020 ug/kg	97
23) trans-1,2-Dichloroethene	7.85	61	100243	19.4534 ug/kg	99
24) n-Hexane	7.92	57	91844	17.2803 ug/kg	100
25) Diisopropyl ether	8.26	45	876572	71.0121 ug/kg	99
26) Vinyl Acetate	8.44	43	103878	14.7619 ug/kg	99
27) 1,1-Dichloroethane	8.47	63	107275	16.5746 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.84	59	755671	65.8391 ug/kg	99
29) 2-Butanone	9.02	43	30712	15.3926 ug/kg	100
30) Propionitrile	9.14	54	44478	72.8446 ug/kg	95
31) 2,2-Dichloropropane	9.24	77	88638	18.3485 ug/kg	98
32) cis-1,2-Dichloroethene	9.32	96	61095	18.0773 ug/kg	96
33) Chloroform	9.52	83	98846	16.6253 ug/kg	98
34) 1-Bromopropane	9.65	122	13681	27.0369 ug/kg	98
35) Bromochloromethane	9.75	130	36214	16.4957 ug/kg	98
36) Tetrahydrofuran	9.78	42	81021	62.9974 ug/kg	97
38) 1,1,1-Trichloroethane	10.04	97	93948	17.4731 ug/kg	98
39) Cyclohexane	10.08	56	106296	18.1331 ug/kg	99
40) 1,1-Dichloropropene	10.25	75	77207	18.2486 ug/kg	99
41) Tert-Amyl-Methyl ether	10.34	73	603910	72.3867 ug/kg	99
42) Carbon Tetrachloride	10.39	117	83528	16.7569 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972948.D 8260SL.M Sun Feb 28 18:34:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022816\9M972948.D Vial: 6
Acq On : 28 Feb 2016 18:12 Operator: FJB
Sample : L16021306-04 MSD 8260 5.38g Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 28 18:34:36 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	84143	16.0894	ug/kg	96
46)	Benzene	10.60	78	211543	17.8597	ug/kg	99
47)	Trichloroethene	11.35	130	67043	17.8635	ug/kg	95
48)	Methylcyclohexane	11.44	83	89732	19.0629	ug/kg	99
49)	1,2-Dichloropropane	11.57	63	58025	17.8393	ug/kg	100
50)	1,4-Dioxane	11.87	88	10835	222.0448	ug/kg	96
51)	Bromodichloromethane	11.87	83	71037	15.4967	ug/kg	97
52)	Dibromomethane	11.97	174	32751	15.1967	ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.17	63	9119	12.4022	ug/kg	91
54)	4-Methyl-2-Pentanone	12.20	58	22403	15.6921	ug/kg	96
55)	cis-1,3-Dichloropropene	12.50	75	83665	17.5186	ug/kg	98
56)	Dimethyl Disulfide	12.77	94	72957	15.2013	ug/kg	98
59)	Toluene	12.93	91	231147	18.0775	ug/kg	99
60)	Ethyl Methacrylate	13.01	69	56537	15.9519	ug/kg	97
61)	trans-1,3-Dichloropropene	13.10	75	71760	15.5820	ug/kg	98
62)	1,1,2-Trichloroethane	13.32	97	44231	16.4670	ug/kg	97
63)	2-Hexanone	13.25	43	40304	15.0285	ug/kg	98
64)	1,3-Dichloropropane	13.62	76	77681	17.3561	ug/kg	99
65)	Tetrachloroethene	13.75	164	49075	17.9032	ug/kg	97
66)	Dibromochloromethane	14.01	129	54548	14.5310	ug/kg	99
67)	1,2-Dibromoethane	14.28	107	45648	15.3217	ug/kg	97
68)	1-Chlorohexane	14.35	91	63496	16.8395	ug/kg	94
69)	Chlorobenzene	14.77	112	157876	17.5680	ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	54932	16.2771	ug/kg	96
71)	Ethylbenzene	14.79	106	82312	17.7788	ug/kg	98
72)	m-,p-Xylene	14.89	106	208499	36.4656	ug/kg	97
73)	o-Xylene	15.45	106	99793	18.1871	ug/kg	96
74)	Styrene	15.49	104	157215	16.8256	ug/kg	97
75)	Bromoform	15.99	173	33632	13.6454	ug/kg	99
76)	Isopropylbenzene	15.88	105	267689	18.1727	ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	47960	15.4271	ug/kg	99
80)	1,2,3-Trichloropropane	16.29	110	19961	16.9306	ug/kg	84
81)	trans-1,4-Dichloro-2-Buten	16.33	53	16092	13.5408	ug/kg	83
82)	n-Propylbenzene	16.39	91	301086	18.6901	ug/kg	100
83)	Bromobenzene	16.52	156	60635	15.9440	ug/kg	96
84)	1,3,5-Trimethylbenzene	16.57	105	215491	17.8204	ug/kg	97
85)	2-Chlorotoluene	16.66	91	188134	17.4119	ug/kg	99
86)	4-Chlorotoluene	16.70	91	177747	17.7933	ug/kg	99
87)	a-Methylstyrene	16.98	118	95709	17.3703	ug/kg	99
88)	tert-Butylbenzene	17.04	134	48876	19.2789	ug/kg	90
89)	1,2,4-Trimethylbenzene	17.09	105	209651	16.5551	ug/kg	98
90)	sec-Butylbenzene	17.30	105	290347	18.6426	ug/kg	100
91)	p-Isopropyltoluene	17.46	119	233678	17.7790	ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	117547	15.5523	ug/kg	98
93)	1,4-Dichlorobenzene	17.79	146	117953	15.6106	ug/kg	99
94)	n-Butylbenzene	17.99	91	198978	16.2825	ug/kg	99
95)	1,2-Dichlorobenzene	18.30	146	111018	15.8303	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	12952	14.3866	ug/kg	100
97)	1,2,4-Trichlorobenzene	20.44	180	66235	13.3043	ug/kg	99
98)	Hexachlorobutadiene	20.59	225	39652	15.1096	ug/kg	99
99)	Naphthalene	20.81	128	162393	13.0050	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	62145	12.8699	ug/kg	96

(#) = qualifier out of range (m) = manual integration
9M972948.D 8260SL.M Sun Feb 28 18:34:36 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022816\9M972948.D Vial: 6
Acq On : 28 Feb 2016 18:12 Operator: FJB
Sample : L16021306-04 MSD 8260 5.38g Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 28 18:34 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

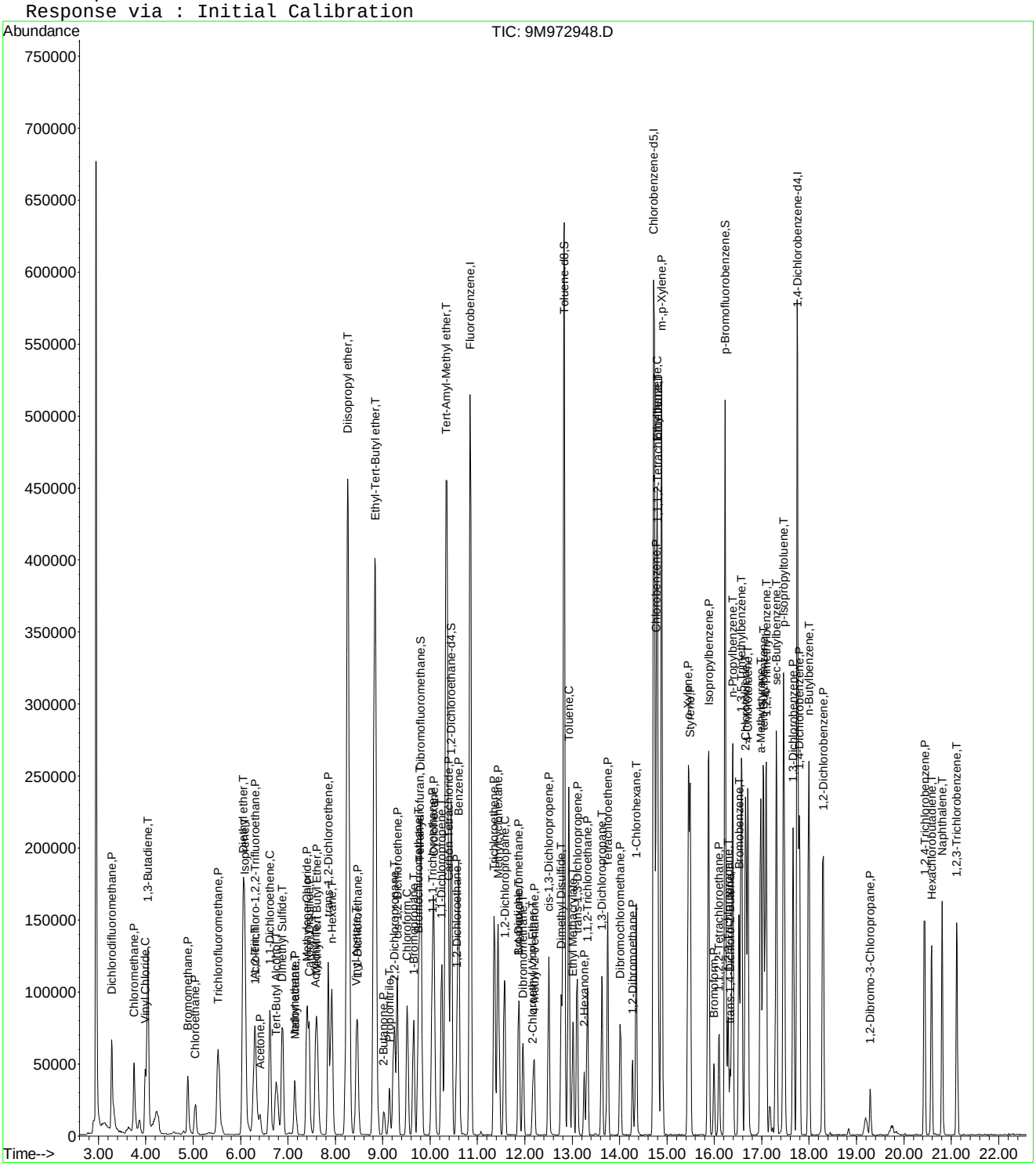

9M972948.D 8260SL.M Sun Feb 28 18:34:37 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022816\9M972961.D Vial: 19
Acq On : 29 Feb 2016 00:57 Operator: FJB
Sample : L16021306-05 8260 4.66g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 13:26:02 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	586020	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.73	117	410583	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.76	152	182401	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	156866	49.3828 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.76%		
43) 1,2-Dichloroethane-d4	10.45	65	195100	48.9515 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.90%		
58) Toluene-d8	12.83	98	556316	53.5674 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 107.14%		
79) p-Bromofluorobenzene	16.23	95	207062	58.2989 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 116.60%		

Target Compounds

					Qvalue
13) Acetone	6.41	43	8792	3.7216 ug/kg	96
29) 2-Butanone	9.02	43	1032	0.5461 ug/kg#	58
36) Tetrahydrofuran	9.78	42	503	0.4129 ug/kg#	43
56) Dimethyl Disulfide	12.83	94	15210	3.3461 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972961.D 8260SL.M Mon Feb 29 13:26:02 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022816\9M972961.D Vial: 19
Acq On : 29 Feb 2016 00:57 Operator: FJB
Sample : L16021306-05 8260 4.66g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 13:26 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

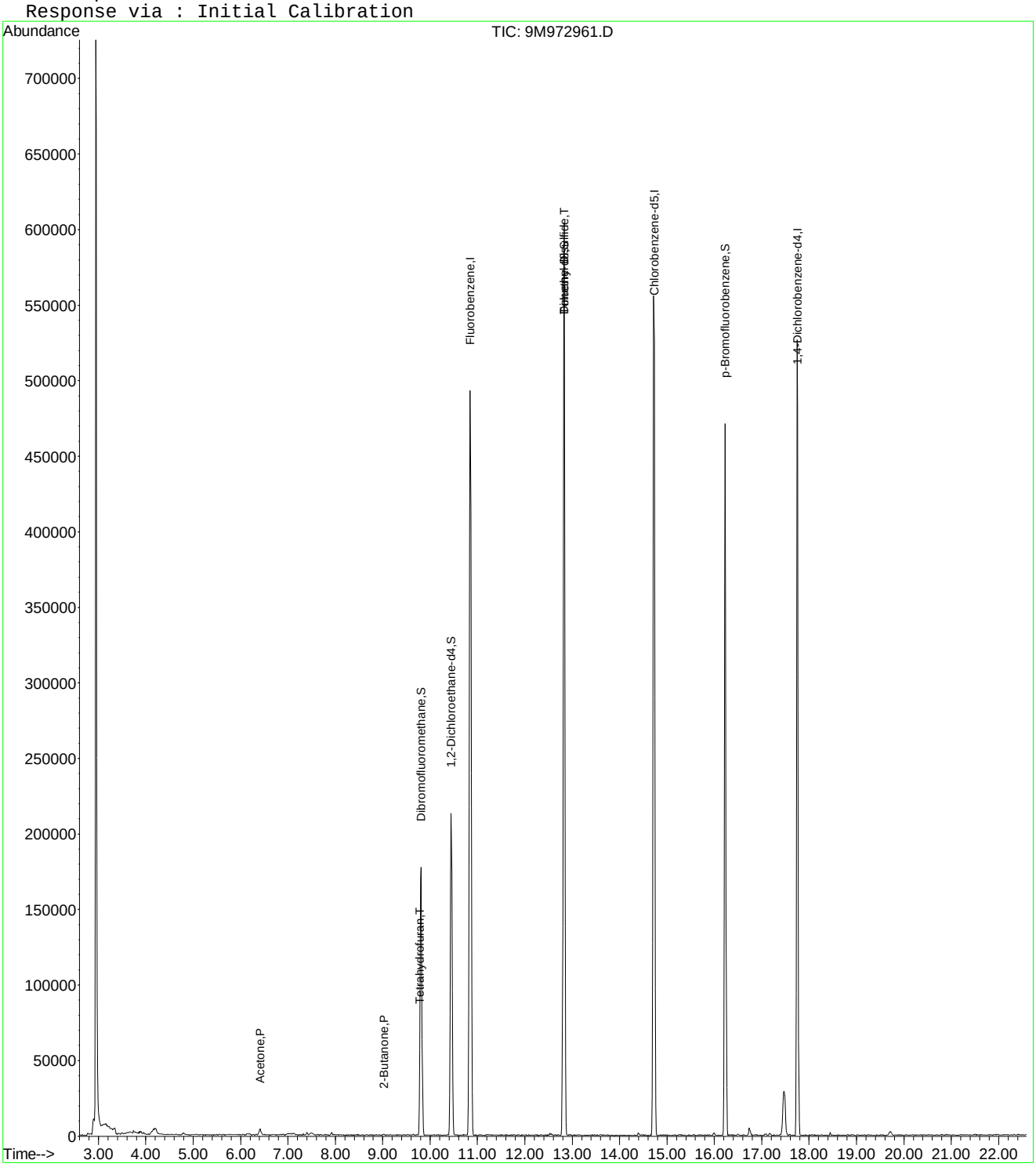

9M972961.D 8260SL.M Mon Feb 29 13:26:02 2016 Page 2

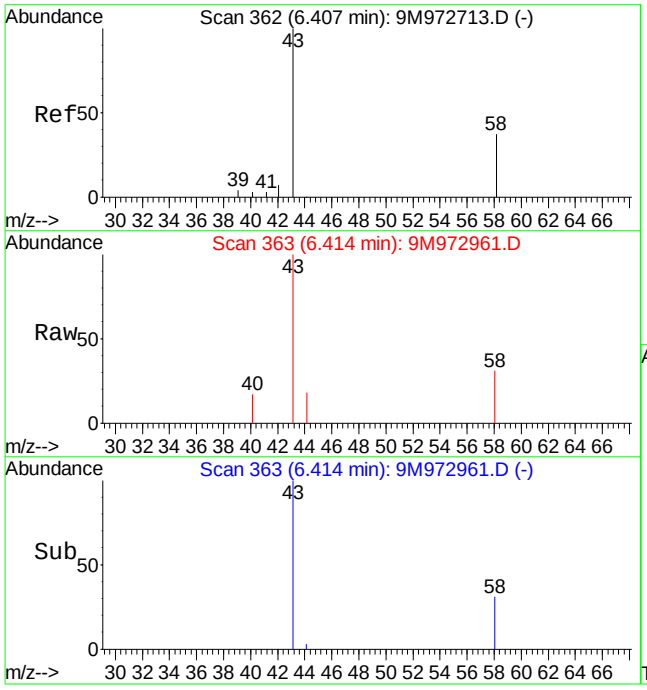

#13
Acetone
Concen: 3.72 ug/kg
RT: 6.41 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M972961.D
Acq: 29 Feb 2016 00:57

Tgt Ion: 43 Resp: 8792

Ion	Ratio	Lower	Upper
43	100		
58	30.0	16.9	39.3

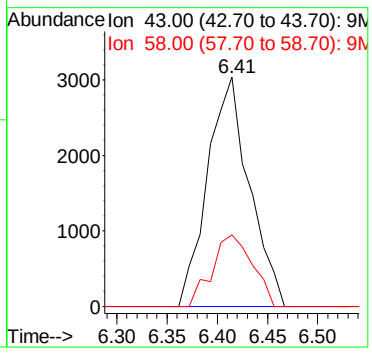

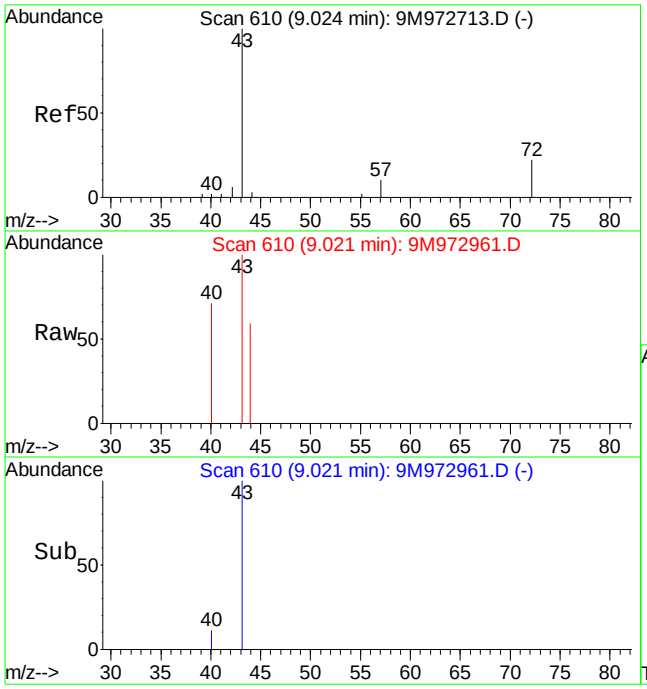

#29
2-Butanone
Concen: 0.55 ug/kg
RT: 9.02 min Scan# 610
Delta R.T. -0.01 min
Lab File: 9M972961.D
Acq: 29 Feb 2016 00:57

Tgt Ion: 43 Resp: 1032

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

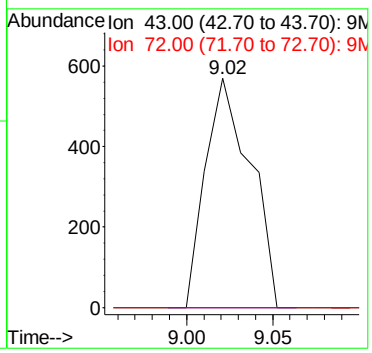

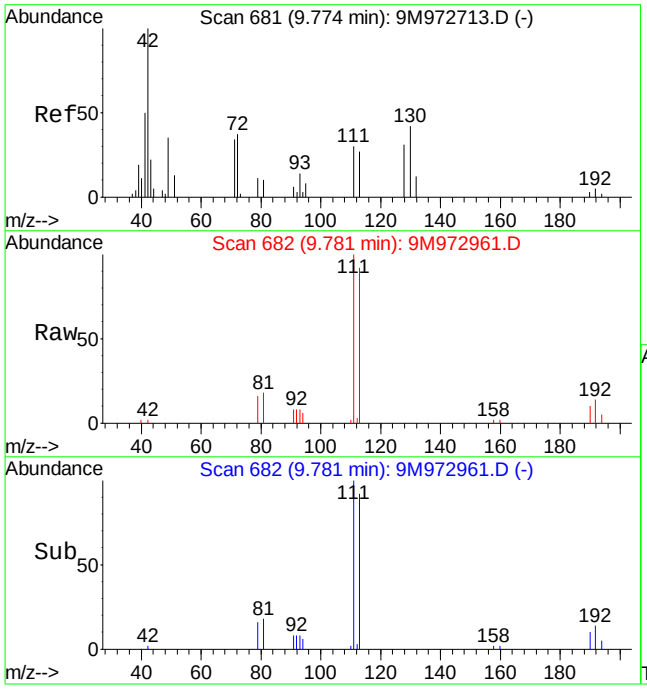

#36
Tetrahydrofuran
Concen: 0.41 ug/kg
RT: 9.78 min Scan# 682
Delta R.T. 0.00 min
Lab File: 9M972961.D
Acq: 29 Feb 2016 00:57

Tgt Ion: 42 Resp: 503

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

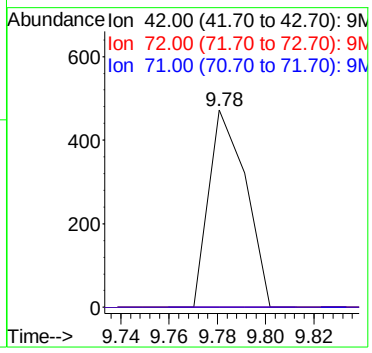

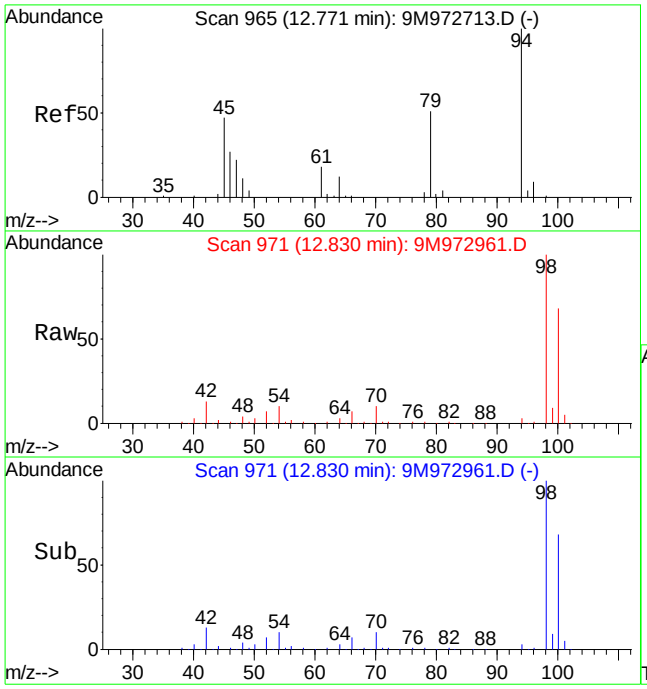

#56
Dimethyl Disulfide
Concen: 3.35 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.06 min
Lab File: 9M972961.D
Acq: 29 Feb 2016 00:57

Tgt Ion: 94 Resp: 15210

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

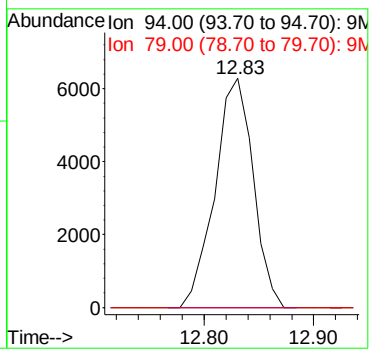

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022816\9M972962.D Vial: 20
Acq On : 29 Feb 2016 1:29 Operator: FJB
Sample : L16021306-06 8260 5.11g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 13:26:03 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	533603	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	389043	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	182910	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	142391	49.2293 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.46%		
43) 1,2-Dichloroethane-d4	10.45	65	192245	52.9735 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.94%		
58) Toluene-d8	12.82	98	511655	51.9948 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 103.98%		
79) p-Bromofluorobenzene	16.23	95	191306	53.7129 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 107.42%		

Target Compounds

					Qvalue
13) Acetone	6.41	43	5478	1.7532 ug/kg	94
15) Tert-Butyl Alcohol	6.77	59	389	0.7130 ug/kg#	58
47) Trichloroethene	11.36	130	3097	0.9568 ug/kg	92
56) Dimethyl Disulfide	12.83	94	14615	3.5310 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972962.D 8260SL.M Mon Feb 29 13:26:03 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022816\9M972962.D Vial: 20
Acq On : 29 Feb 2016 1:29 Operator: FJB
Sample : L16021306-06 8260 5.11g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 13:26 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

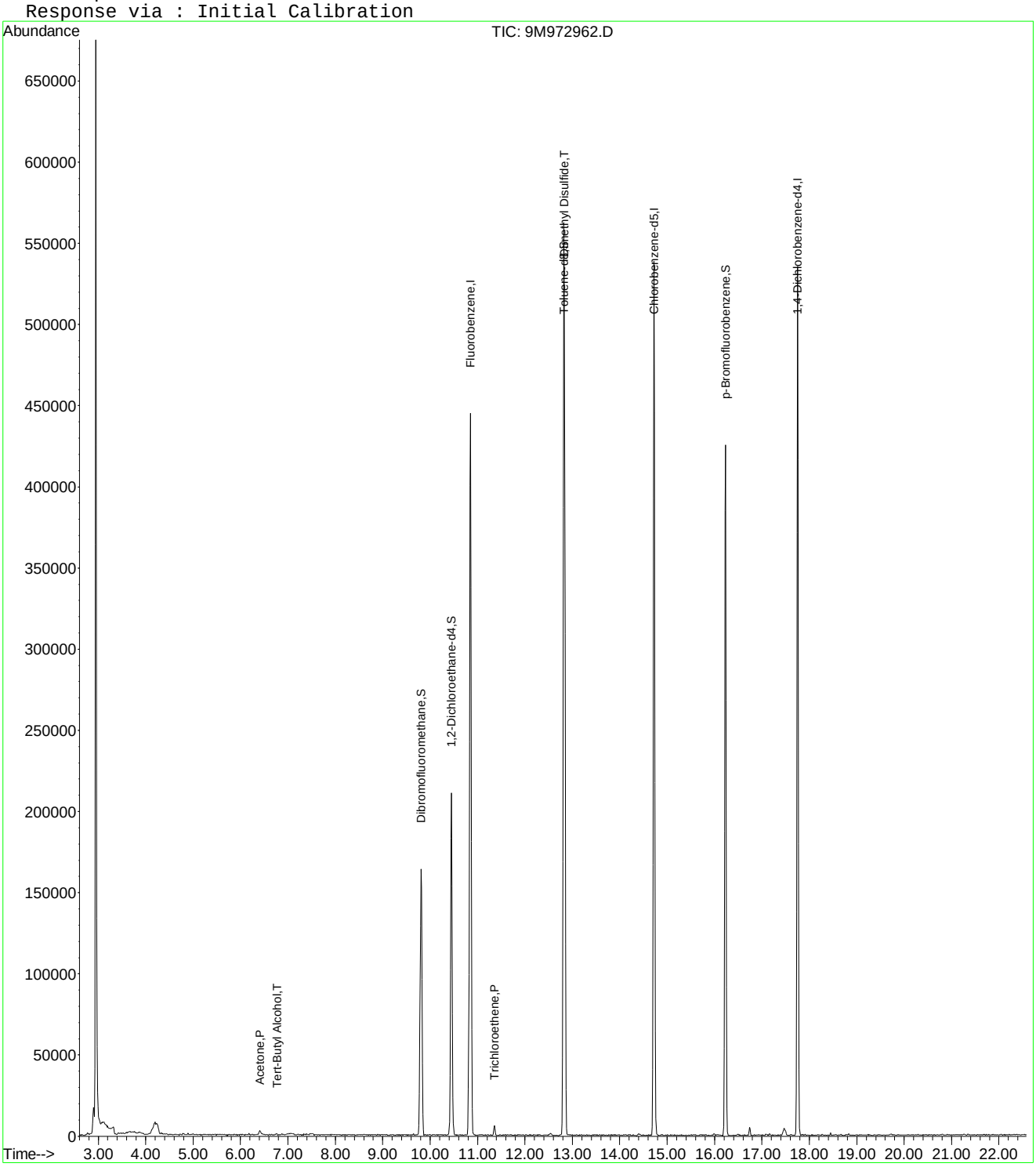

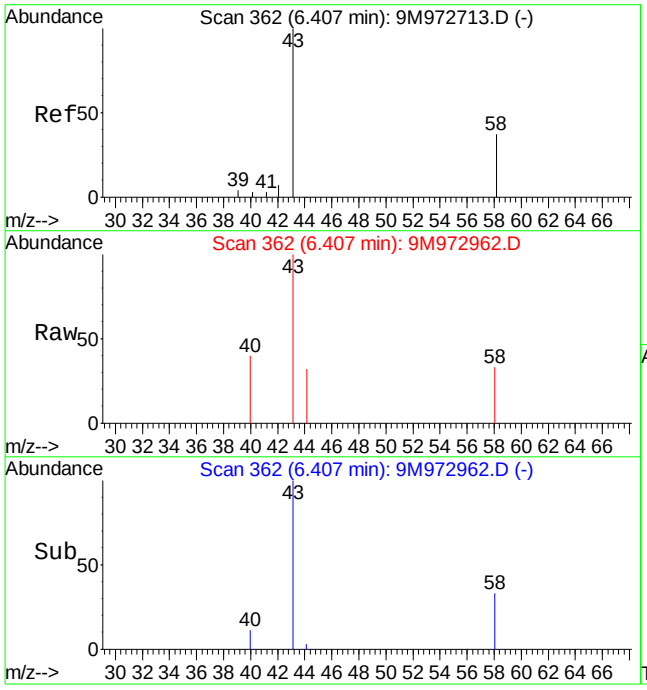

#13
Acetone
Concen: 1.75 ug/kg
RT: 6.41 min Scan# 362
Delta R.T. -0.01 min
Lab File: 9M972962.D
Acq: 29 Feb 2016 1:29

Tgt Ion: 43 Resp: 5478

Ion	Ratio	Lower	Upper
43	100		
58	24.9	16.9	39.3

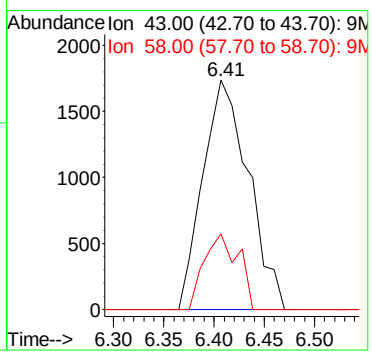

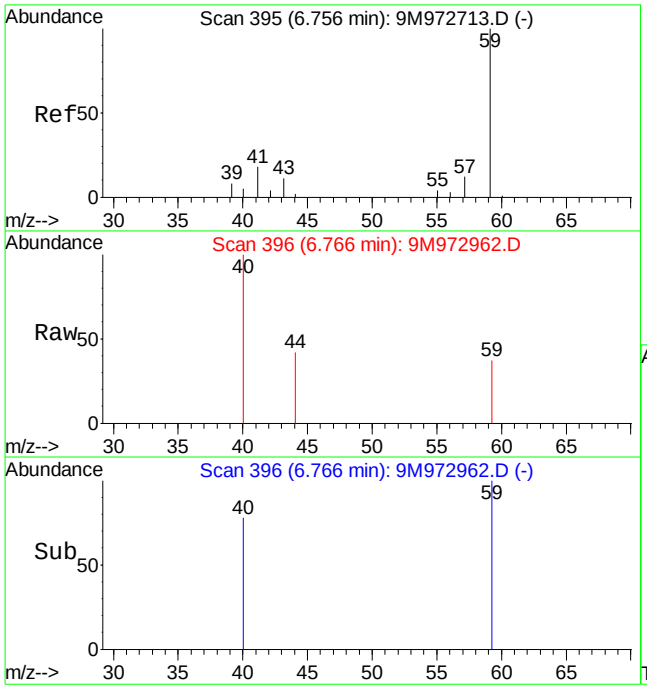

#15
Tert-Butyl Alcohol
Concen: 0.71 ug/kg
RT: 6.77 min Scan# 396
Delta R.T. 0.00 min
Lab File: 9M972962.D
Acq: 29 Feb 2016 1:29

Tgt Ion: 59 Resp: 389

Ion	Ratio	Lower	Upper
59	100		
41	0.0	14.1	32.9#
57	0.0	6.4	15.0#

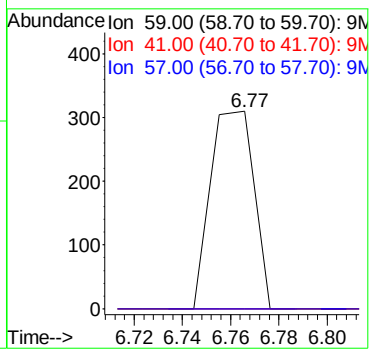

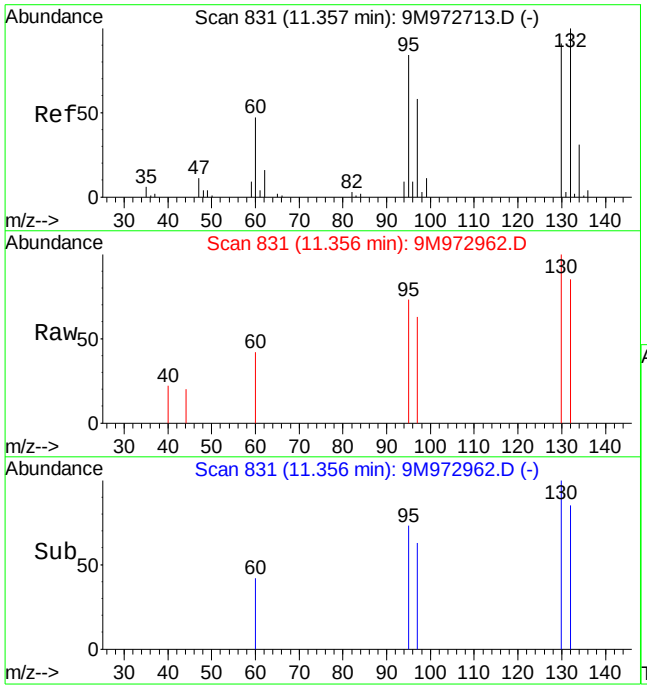

#47
Trichloroethene
Concen: 0.96 ug/kg
RT: 11.36 min Scan# 831
Delta R.T. 0.00 min
Lab File: 9M972962.D
Acq: 29 Feb 2016 1:29

Tgt Ion:130 Resp: 3097

Ion	Ratio	Lower	Upper
130	100		
132	84.4	56.5	131.7
95	97.7	55.4	129.4

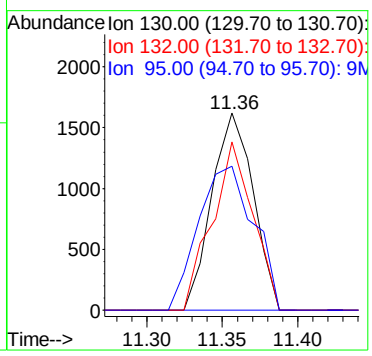

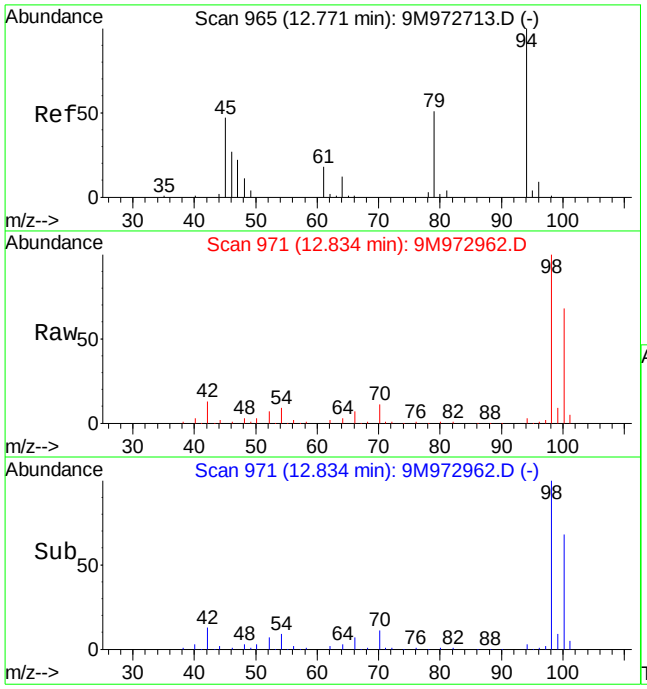

#56
Dimethyl Disulfide
Concen: 3.53 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.07 min
Lab File: 9M972962.D
Acq: 29 Feb 2016 1:29

Tgt Ion: 94 Resp: 14615

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

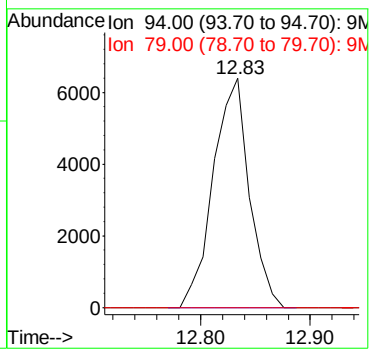

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972472.D Vial: 3
Acq On : 25 Jan 2016 11:22 Operator: FJB
Sample : WG555000-02 5ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:05 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	367739	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	266763	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.77	152	148882	50.00 ug/kg	0.01

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	1974	5.3580 ug/kg#	1
3) 3-Chloro-1-propene	7.23	41	18322	5.0468 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	19639	4.7564 ug/kg	98
5) Ethyl Acetate	9.24	43	12755	5.2595 ug/kg	91
6) Methacrylonitrile	9.40	67	3744	4.7691 ug/kg	95
7) Isobutyl Alcohol	9.42	43	1055	12.9700 ug/kg#	62
8) 1-Butanol	10.36	56	203	11.8711 ug/kg#	26
9) Methyl methacrylate	11.56	41	8689	4.6908 ug/kg	95
10) 2-Nitropropane	11.90	43	2531	4.2058 ug/kg	96

(#) = qualifier out of range (m) = manual integration
9M972472.D A9FOO_SL.M Wed Jan 27 11:22:42 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972472.D Vial: 3
Acq On : 25 Jan 2016 11:22 Operator: FJB
Sample : WG555000-02 5ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

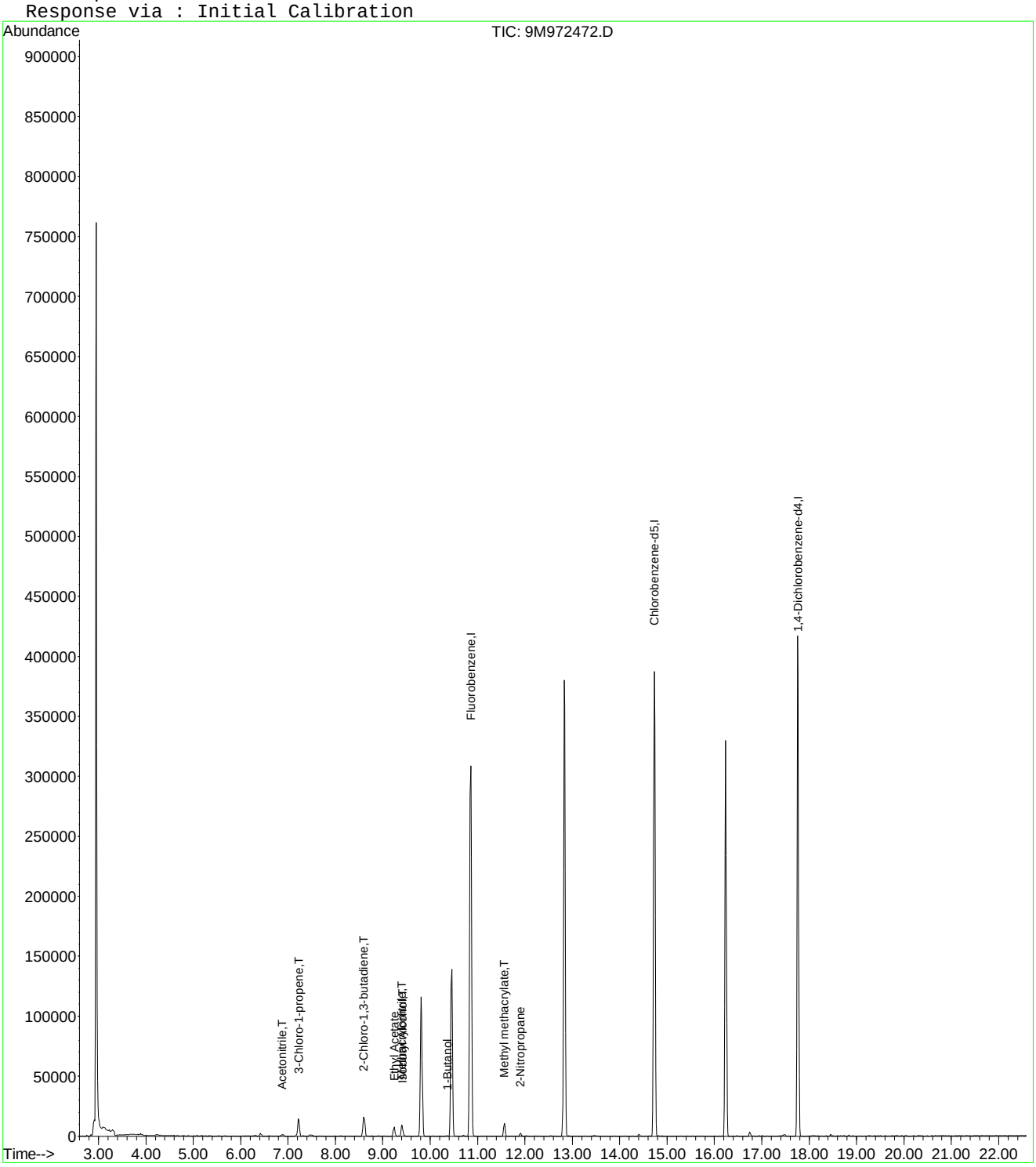

9M972472.D A9FOO_SL.M Wed Jan 27 11:22:42 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972473.D Vial: 4
Acq On : 25 Jan 2016 11:52 Operator: FJB
Sample : WG555000-03 20ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:05 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	359691	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	265773	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	149223	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	7669	21.2815 ug/kg#	77
3) 3-Chloro-1-propene	7.23	41	75360	21.2224 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	82865	20.5181 ug/kg	100
5) Ethyl Acetate	9.23	43	47912	20.1986 ug/kg	97
6) Methacrylonitrile	9.40	67	15740	20.4980 ug/kg	98
7) Isobutyl Alcohol	9.42	43	5287	37.9280 ug/kg	95
8) 1-Butanol	10.35	56	1509	22.3153 ug/kg#	81
9) Methyl methacrylate	11.56	41	35437	19.5588 ug/kg	98
10) 2-Nitropropane	11.90	43	10433	17.7247 ug/kg	98
12) Cyclohexanone	16.01	55	2157	16.3929 ug/kg#	86

(#) = qualifier out of range (m) = manual integration
9M972473.D A9FOO_SL.M Wed Jan 27 11:22:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972473.D Vial: 4
Acq On : 25 Jan 2016 11:52 Operator: FJB
Sample : WG555000-03 20ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

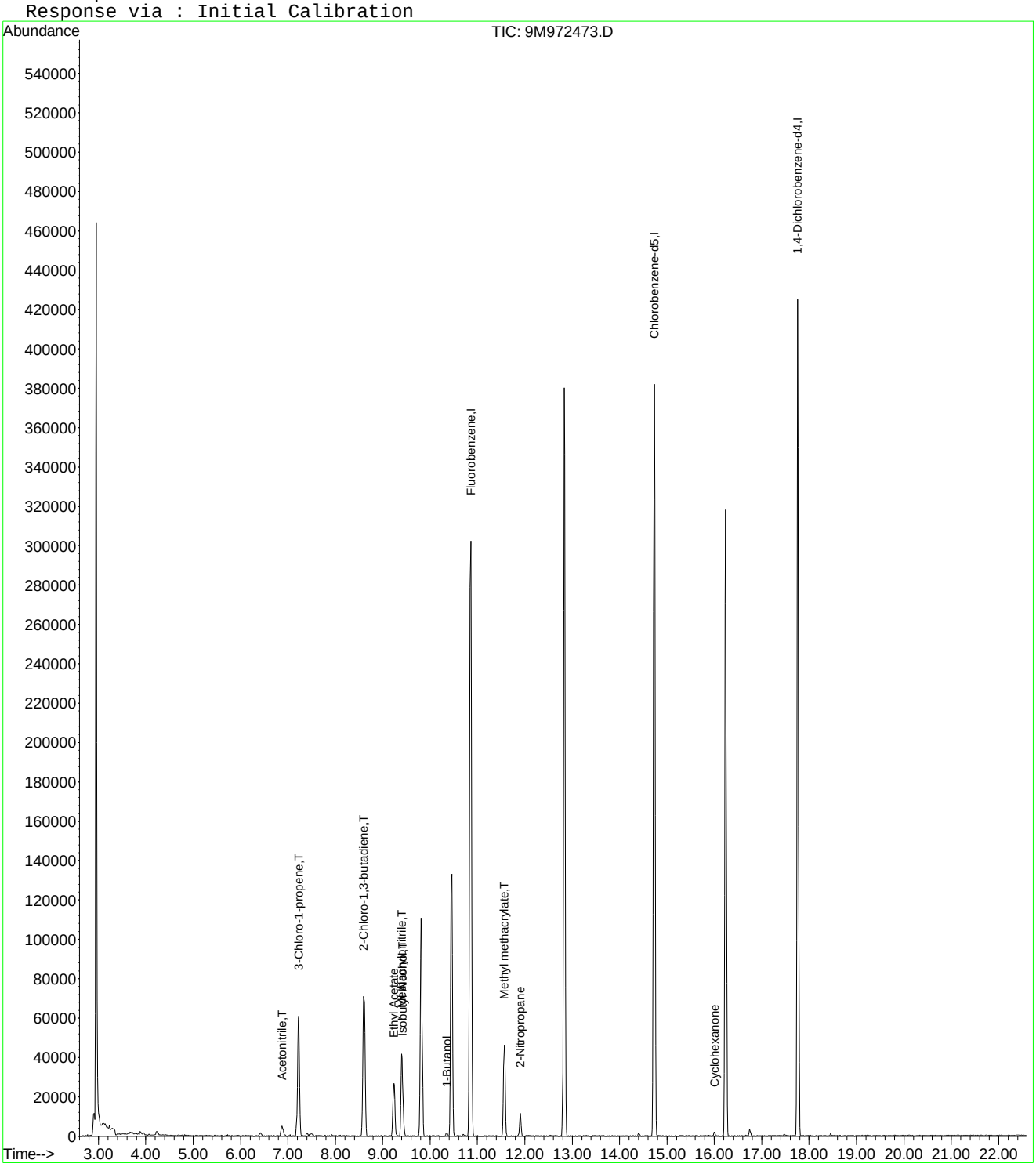

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972474.D Vial: 5
Acq On : 25 Jan 2016 12:23 Operator: FJB
Sample : WG555000-04 50ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:06 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	356886	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	259679	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	147334	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	16583	46.3795 ug/kg#	94
3) 3-Chloro-1-propene	7.23	41	160601	45.5828 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.61	53	185316	46.2464 ug/kg	99
5) Ethyl Acetate	9.23	43	111538	47.3915 ug/kg	99
6) Methacrylonitrile	9.40	67	36081	47.3572 ug/kg	99
7) Isobutyl Alcohol	9.42	43	12624	81.5447 ug/kg	95
8) 1-Butanol	10.35	56	4707	48.0983 ug/kg#	50
9) Methyl methacrylate	11.56	41	82406	45.8400 ug/kg	99
10) 2-Nitropropane	11.90	43	26302	45.0359 ug/kg	97
12) Cyclohexanone	16.01	55	5625	43.7525 ug/kg	93

(#) = qualifier out of range (m) = manual integration
9M972474.D A9FOO_SL.M Wed Jan 27 11:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972474.D Vial: 5
Acq On : 25 Jan 2016 12:23 Operator: FJB
Sample : WG555000-04 50ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

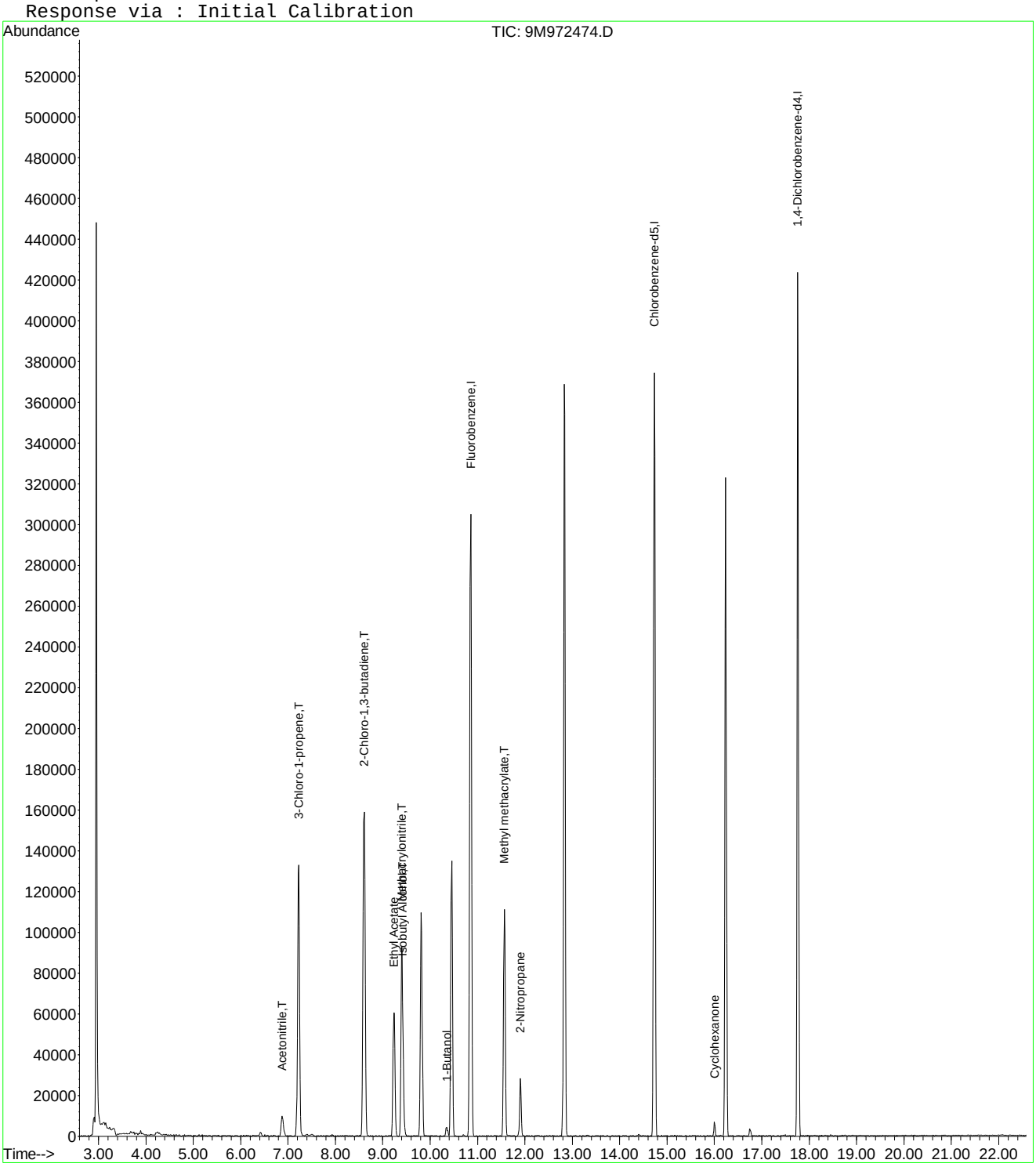

9M972474.D A9FOO_SL.M Wed Jan 27 11:22:51 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972475.D Vial: 6
Acq On : 25 Jan 2016 12:53 Operator: FJB
Sample : WG555000-05 100ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:06 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	394669	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	285851	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	161505	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	37767	95.5151	ug/kg#	100
3) 3-Chloro-1-propene	7.23	41	409870	105.1952	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.61	53	467514	105.5010	ug/kg	100
5) Ethyl Acetate	9.23	43	267513	102.7824	ug/kg	100
6) Methacrylonitrile	9.40	67	88054	104.5088	ug/kg	100
7) Isobutyl Alcohol	9.42	43	33721	187.1766	ug/kg	100
8) 1-Butanol	10.36	56	11671	95.0627	ug/kg	100
9) Methyl methacrylate	11.56	41	209503	105.3834	ug/kg	100
10) 2-Nitropropane	11.90	43	65435	101.3157	ug/kg	100
12) Cyclohexanone	16.01	55	14062	99.3630	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972475.D A9FOO_SL.M Wed Jan 27 11:22:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972475.D Vial: 6
Acq On : 25 Jan 2016 12:53 Operator: FJB
Sample : WG555000-05 100ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

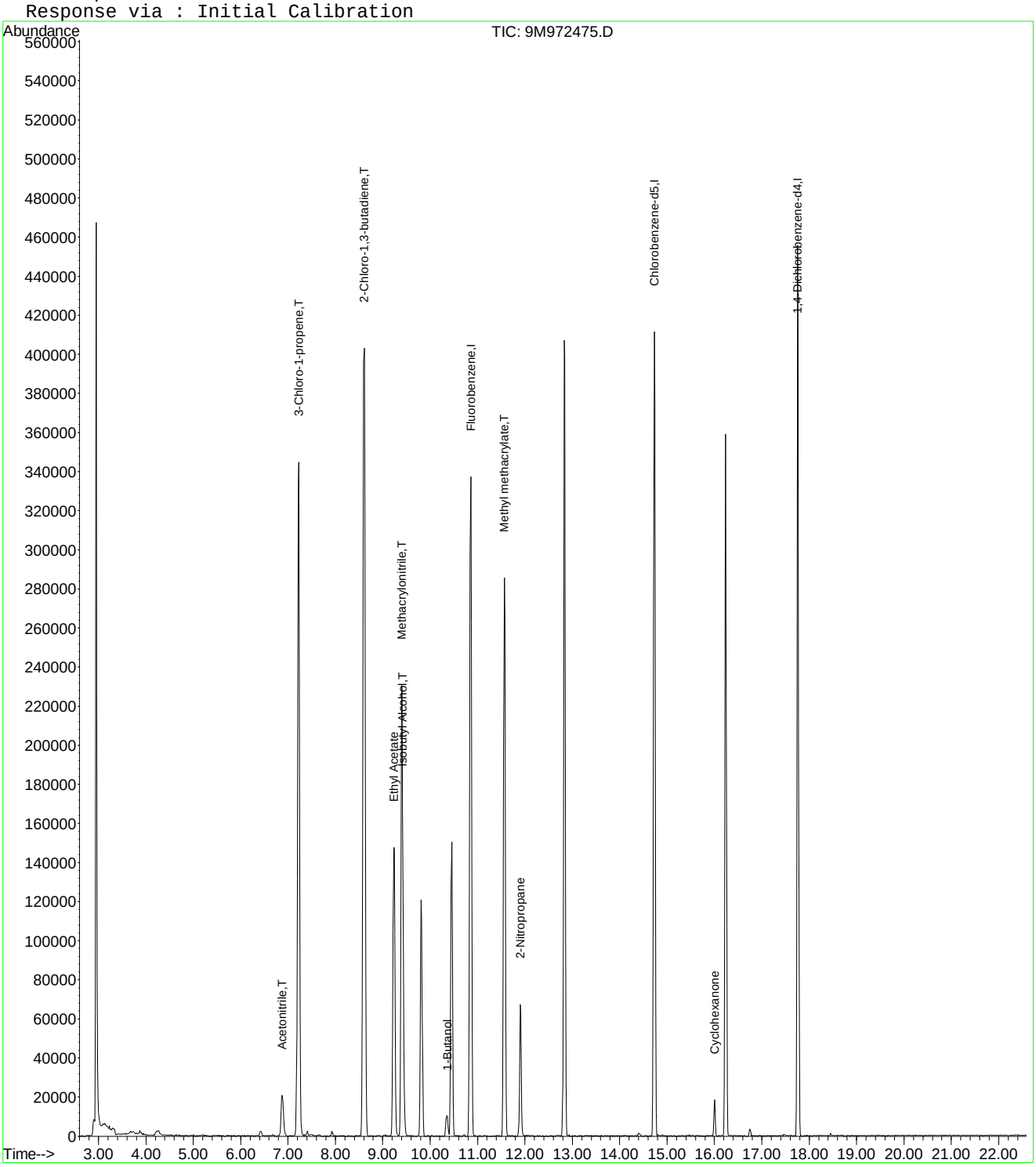

9M972475.D A9FOO_SL.M Wed Jan 27 11:22:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972476.D Vial: 7
Acq On : 25 Jan 2016 13:23 Operator: FJB
Sample : WG555000-06 200ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 09:51:10 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	361792	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	264283	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	150478	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.87	41	75099	207.1896	ug/kg#	94
3) 3-Chloro-1-propene	7.22	41	743262	208.0969	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	846271	208.3269	ug/kg	100
5) Ethyl Acetate	9.23	43	489855	205.3125	ug/kg	100
6) Methacrylonitrile	9.40	67	159879	206.9995	ug/kg	100
7) Isobutyl Alcohol	9.42	43	68551	406.6640	ug/kg	99
8) 1-Butanol	10.35	56	24111	201.3375	ug/kg	97
9) Methyl methacrylate	11.57	41	382820	210.0636	ug/kg	99
10) 2-Nitropropane	11.90	43	129000	217.8866	ug/kg	95
12) Cyclohexanone	16.00	55	30065	229.7785	ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972476.D A9FOO_SL.M Wed Jan 27 09:51:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972476.D Vial: 7
Acq On : 25 Jan 2016 13:23 Operator: FJB
Sample : WG555000-06 200ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 9:51 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

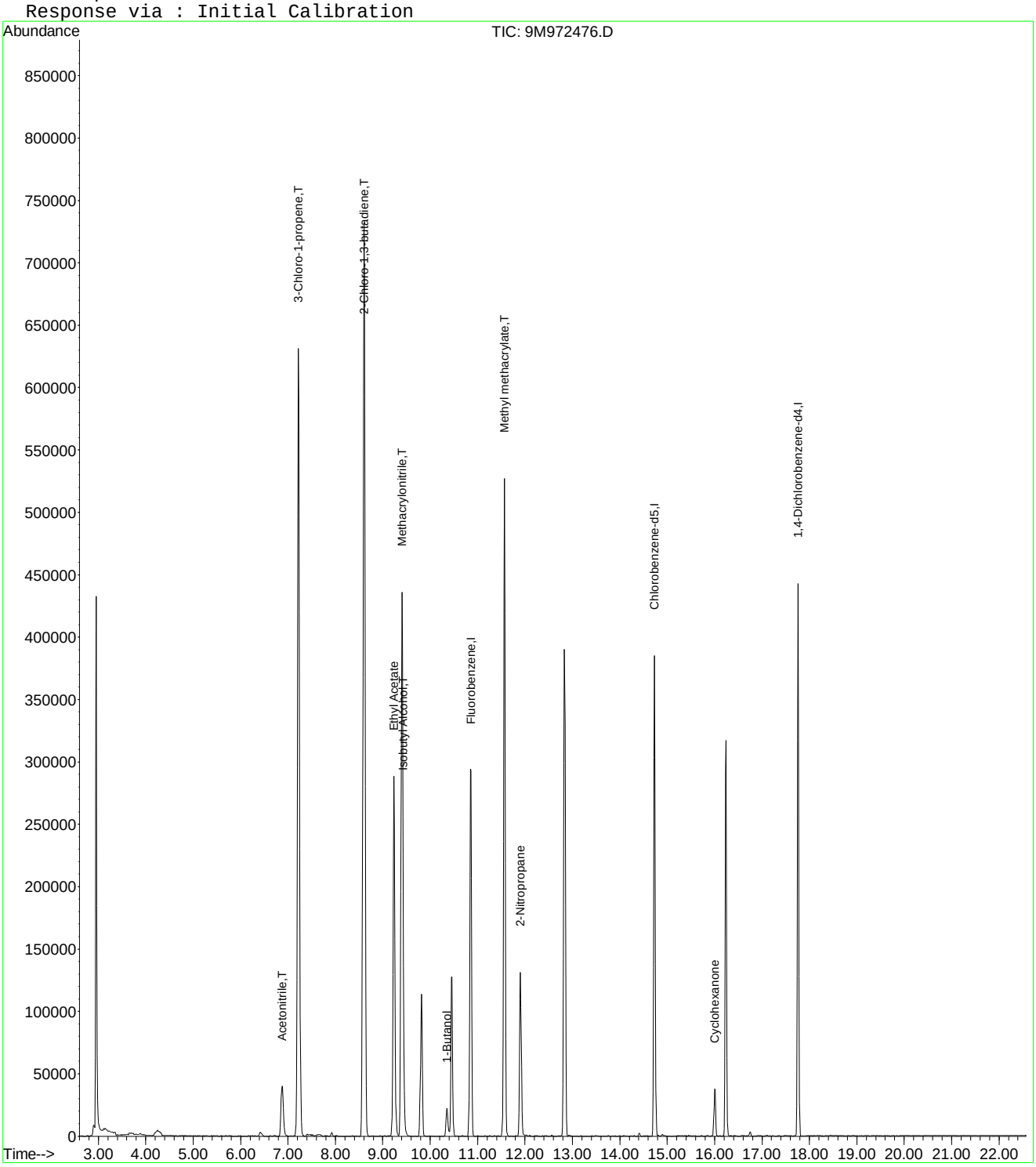

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972477.D Vial: 8
Acq On : 25 Jan 2016 13:54 Operator: FJB
Sample : WG555000-07 300ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:07 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.85	96	362779	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	265659	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	153468	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	99618	274.0870	ug/kg#	97
3) 3-Chloro-1-propene	7.22	41	944879	263.8255	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	1107217	271.8226	ug/kg	99
5) Ethyl Acetate	9.24	43	652386	272.6900	ug/kg	99
6) Methacrylonitrile	9.40	67	208153	268.7679	ug/kg	98
7) Isobutyl Alcohol	9.43	43	89707	528.6093	ug/kg#	99
8) 1-Butanol	10.35	56	31640	260.3131	ug/kg	98
9) Methyl methacrylate	11.57	41	502506	274.9883	ug/kg	98
10) 2-Nitropropane	11.90	43	172692	290.8907	ug/kg	95
12) Cyclohexanone	16.00	55	36951	280.9436	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972477.D A9FOO_SL.M Wed Jan 27 11:23:05 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972477.D Vial: 8
Acq On : 25 Jan 2016 13:54 Operator: FJB
Sample : WG555000-07 300ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

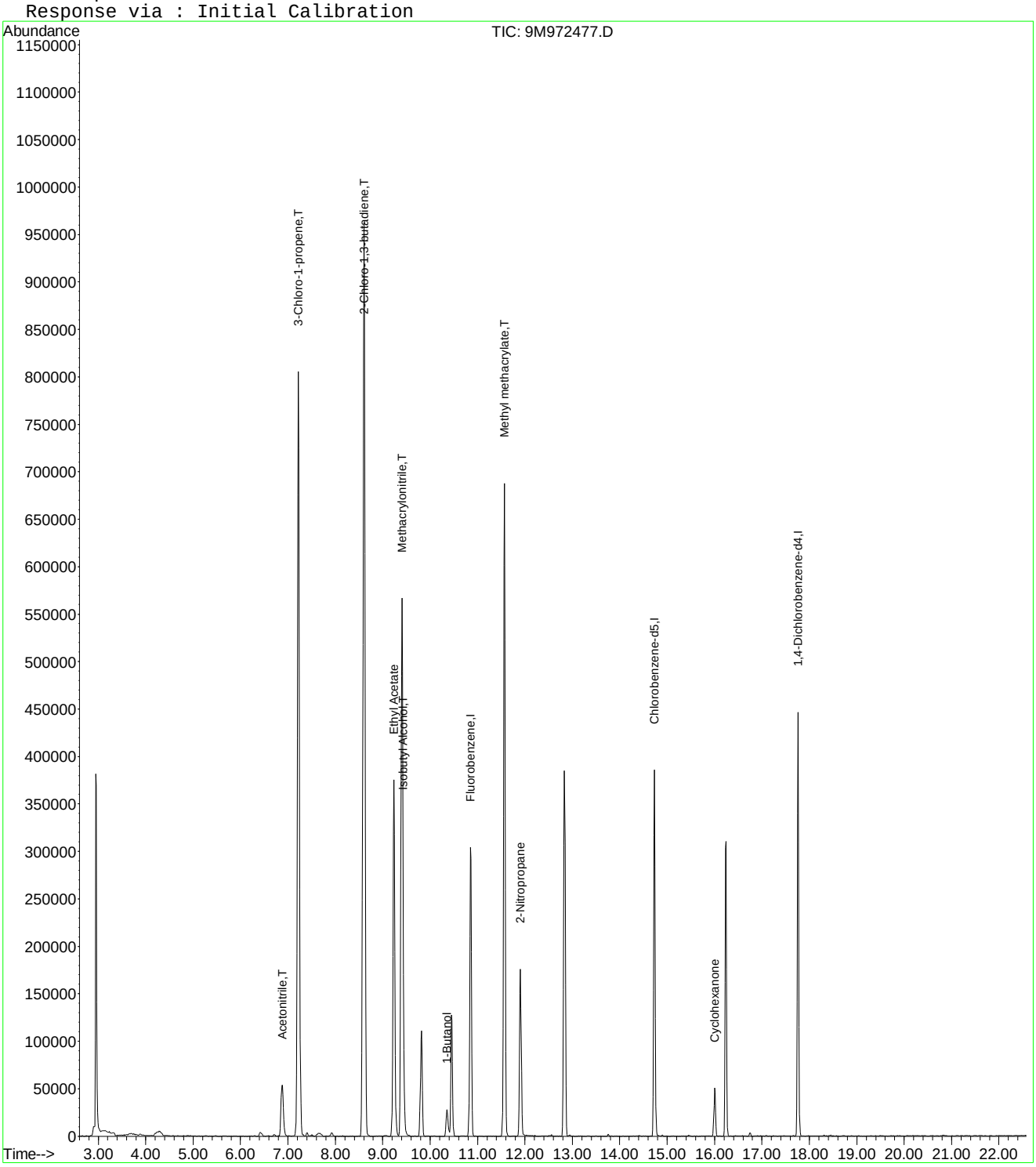

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972478.D Vial: 9
Acq On : 25 Jan 2016 14:25 Operator: FJB
Sample : WG555000-08 400ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 09:51:10 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	359343	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	261674	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	149058	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.89	41	148074	411.3034	ug/kg#	96
3) 3-Chloro-1-propene	7.22	41	1457717	410.9100	ug/kg	99
4) 2-Chloro-1,3-butadiene	8.61	53	1703971	422.3261	ug/kg	100
5) Ethyl Acetate	9.23	43	980479	413.7480	ug/kg	100
6) Methacrylonitrile	9.40	67	321602	419.2243	ug/kg	99
7) Isobutyl Alcohol	9.43	43	142361	842.7355	ug/kg#	98
8) 1-Butanol	10.36	56	51732	422.9922	ug/kg	99
9) Methyl methacrylate	11.56	41	779879	430.8570	ug/kg	98
10) 2-Nitropropane	11.90	43	267565	455.0088	ug/kg	96
12) Cyclohexanone	16.01	55	56623	437.0688	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972478.D A9FOO_SL.M Wed Jan 27 09:51:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972478.D Vial: 9
Acq On : 25 Jan 2016 14:25 Operator: FJB
Sample : WG555000-08 400ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 9:51 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

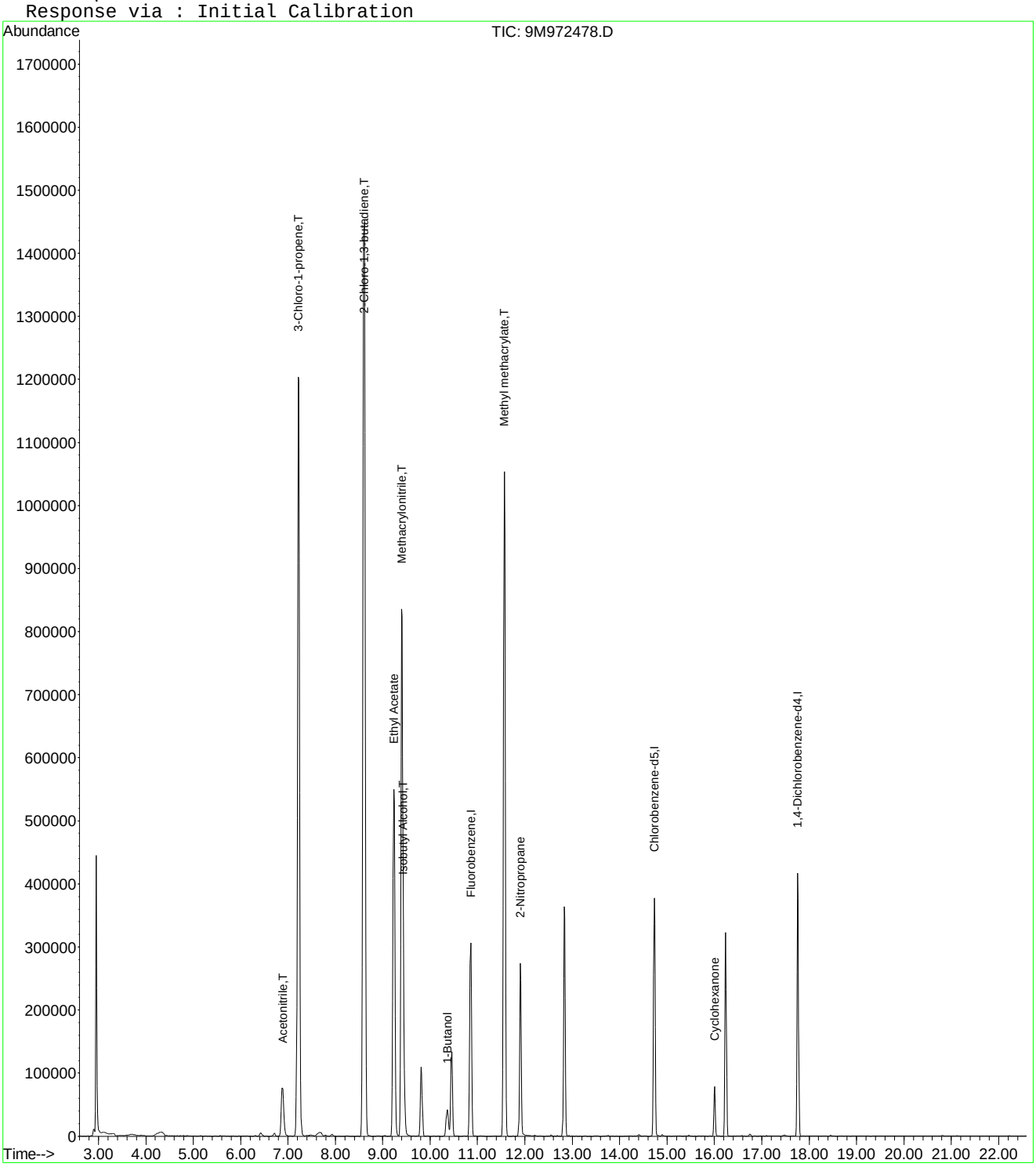

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972479.D Vial: 10
Acq On : 25 Jan 2016 14:56 Operator: FJB
Sample : WG555000-09 500ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:08 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	364474	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	266311	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	151707	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	196334	537.6773	ug/kg#	94
3) 3-Chloro-1-propene	7.22	41	1832802	509.3680	ug/kg	99
4) 2-Chloro-1,3-butadiene	8.60	53	2126710	519.6807	ug/kg	100
5) Ethyl Acetate	9.23	43	1255294	522.2587	ug/kg	100
6) Methacrylonitrile	9.40	67	408537	525.0513	ug/kg	100
7) Isobutyl Alcohol	9.43	43	180610	1052.3719	ug/kg	98
8) 1-Butanol	10.36	56	64789	519.8809	ug/kg	97
9) Methyl methacrylate	11.56	41	981460	534.5904	ug/kg	100
10) 2-Nitropropane	11.90	43	346571	581.0659	ug/kg	97
12) Cyclohexanone	16.01	55	74733	566.8143	ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972479.D A9FOO_SL.M Wed Jan 27 11:30:29 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972479.D Vial: 10
Acq On : 25 Jan 2016 14:56 Operator: FJB
Sample : WG555000-09 500ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

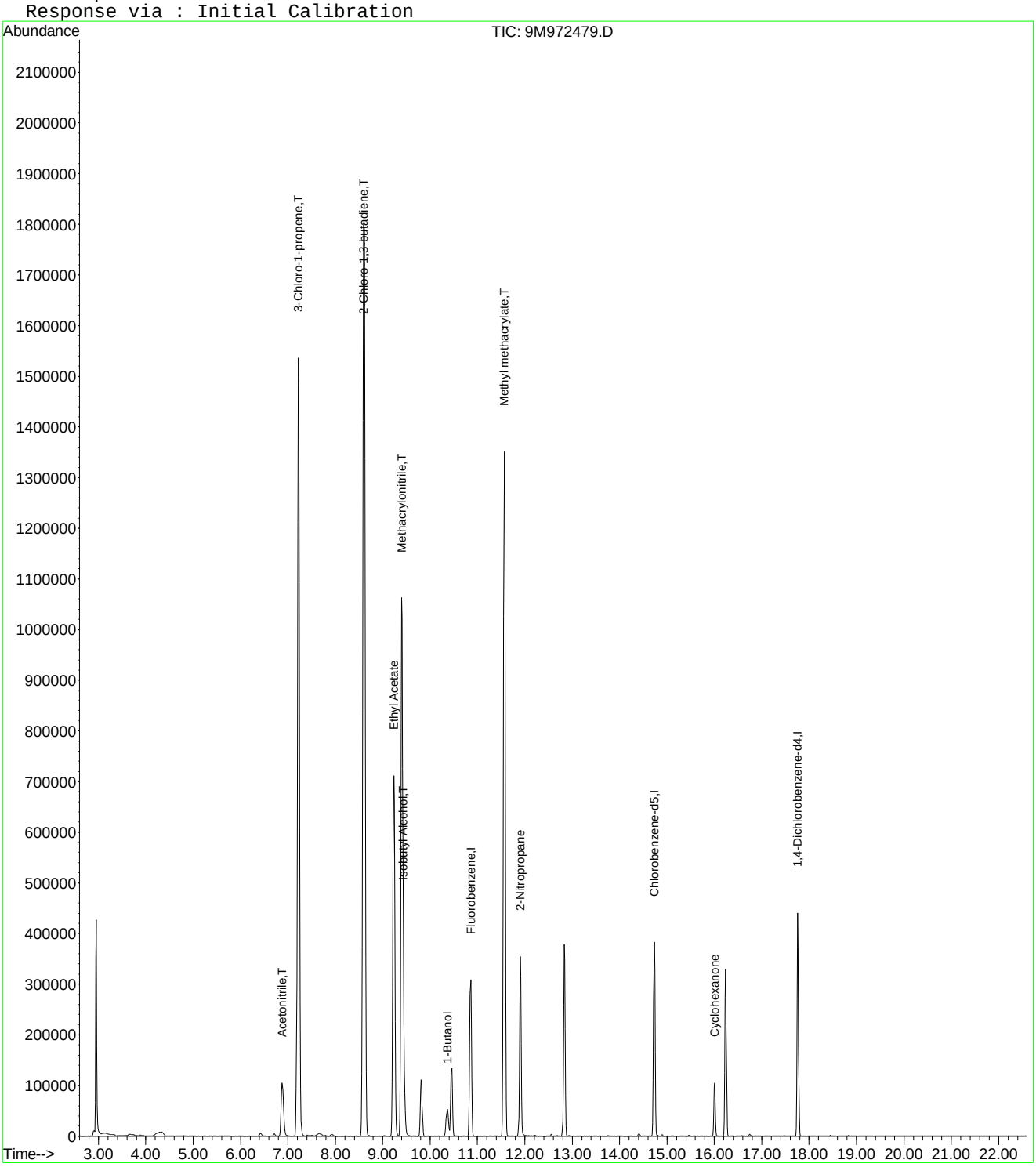

9M972479.D A9FOO_SL.M Wed Jan 27 11:30:29 2016 Page 2

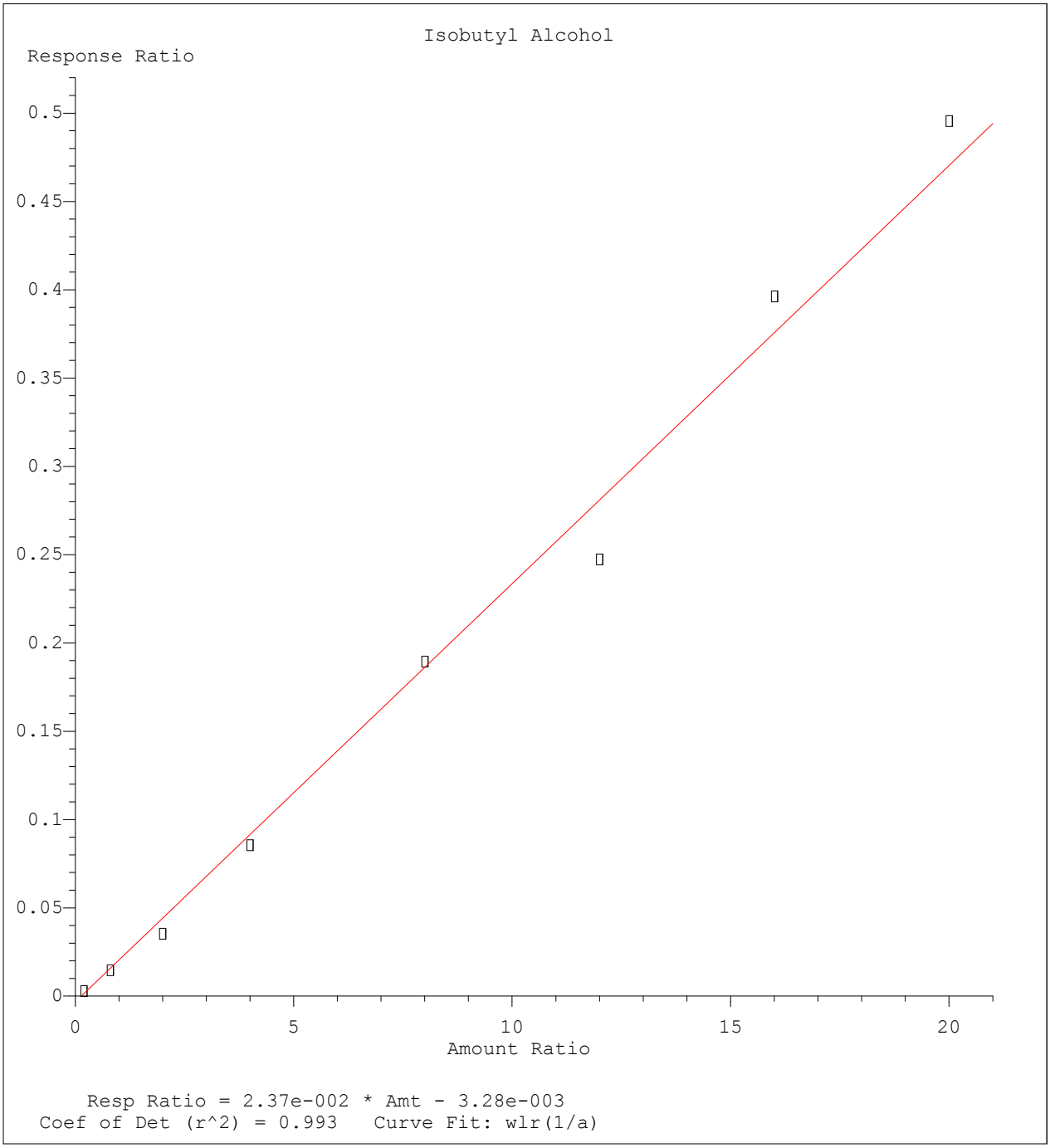

Method Name: C:\MSDCHEM\1\METHODS\A9FOO_SL.M
Calibration Table Last Updated: Wed Jan 27 09:49:02 2016

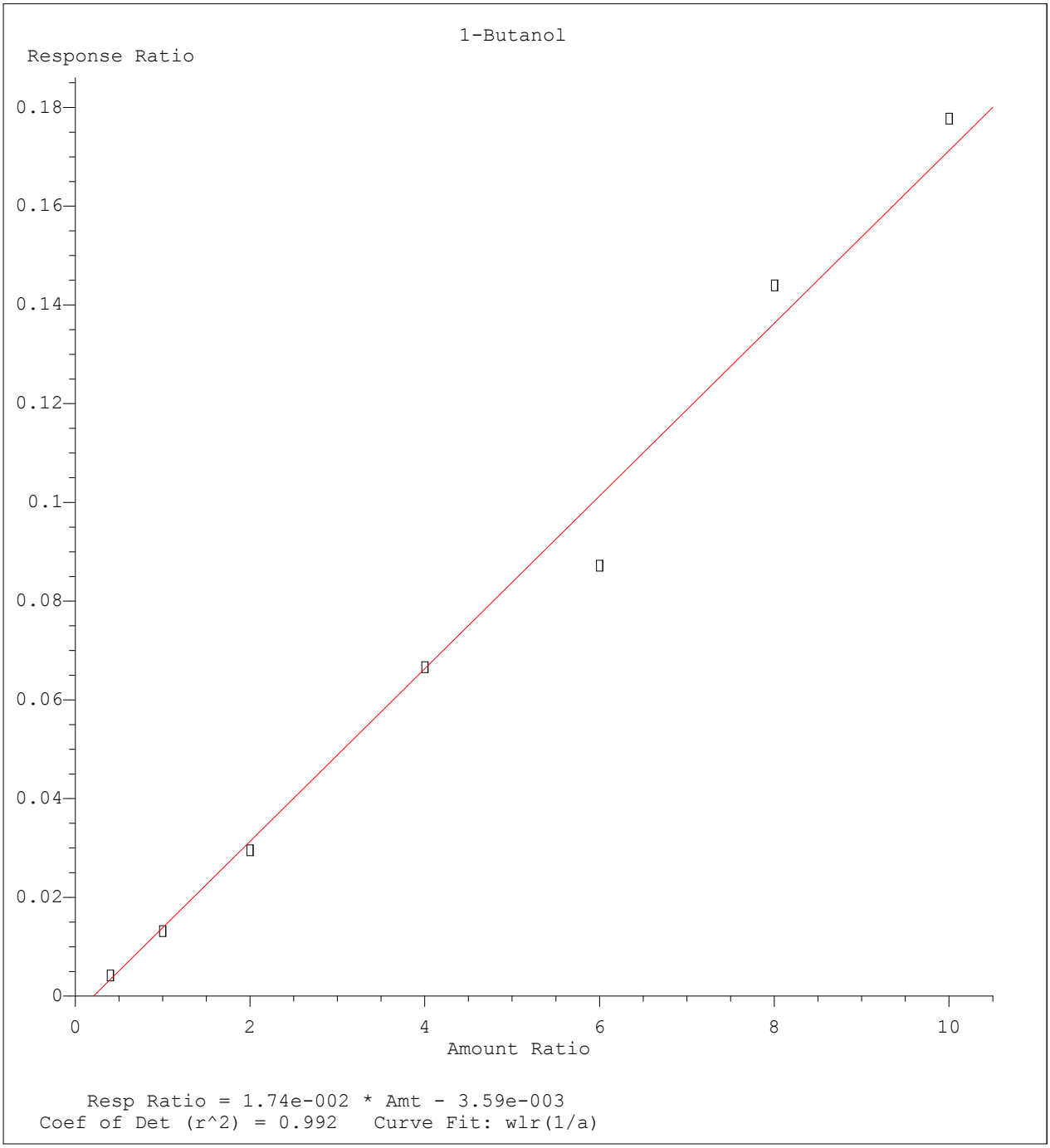

Method Name: C:\MSDCHEM\1\METHODS\A9FOO_SL.M
Calibration Table Last Updated: Wed Jan 27 09:49:02 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:09 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	394765	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	285754	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	159586	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	40054	101.2745 ug/kg#	100
3) 3-Chloro-1-propene	7.22	41	402890	103.3786 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	572568	129.1764 ug/kg	99
5) Ethyl Acetate	9.23	43	275962	106.0028 ug/kg	99
6) Methacrylonitrile	9.40	67	90289	107.1354 ug/kg	96
7) Isobutyl Alcohol	9.42	43	34031	188.7895 ug/kg	99
8) 1-Butanol	10.35	56	12038	97.7072 ug/kg	97
9) Methyl methacrylate	11.56	41	219363	110.3163 ug/kg	100
10) 2-Nitropropane	11.90	43	69288	107.2554 ug/kg	93
12) Cyclohexanone	16.01	55	14203	100.3934 ug/kg	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

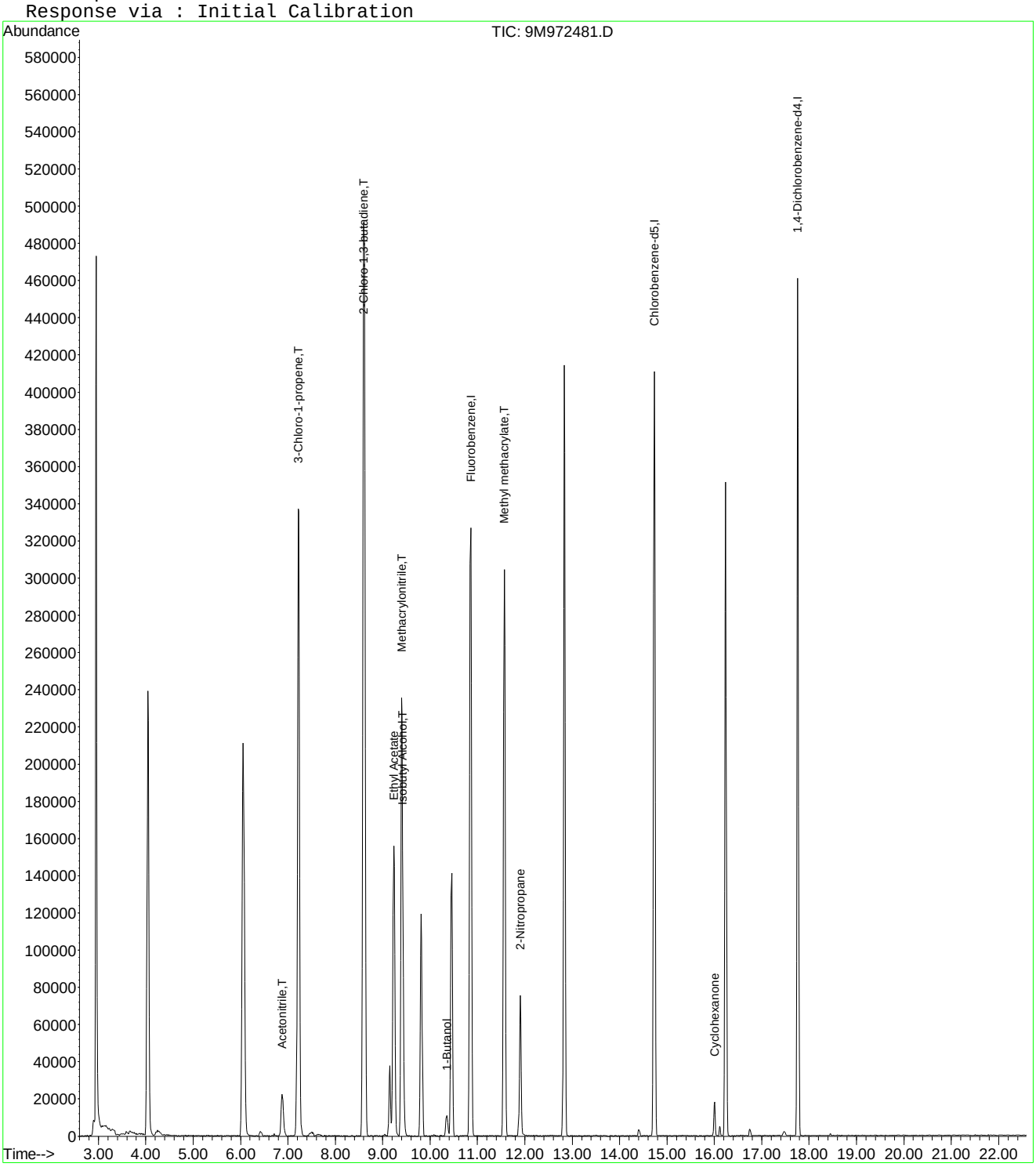

9M972481.D A9FOO_SL.M Wed Jan 27 11:15:09 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	101.2745	-1.3	106	0.00
3	T	3-Chloro-1-propene	100.0000	103.3786	-3.4	98	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	129.1764	-29.2	122	0.00
5		Ethyl Acetate	100.0000	106.0028	-6.0	103	0.00
6	T	Methacrylonitrile	100.0000	107.1354	-7.1	103	0.00
7	T	Isobutyl Alcohol	200.0000	188.7895	5.6	101	0.00
8		1-Butanol	100.0000	97.7072	2.3	103	0.00
9	T	Methyl methacrylate	100.0000	110.3163	-10.3	105	0.00
10		2-Nitropropane	100.0000	107.2554	-7.3	106	0.00
11	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
12		Cyclohexanone	100.0000	100.3934	-0.4	101	0.00
13	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	99	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972481.D A9FOO_SL.M Wed Jan 27 11:32:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972896.D Vial: 3
Acq On : 25 Feb 2016 15:48 Operator: ADC
Sample : WG558732-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:54 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260B_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	517775	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.73	117	378926	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.76	152	183008	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	147955	52.7167 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.44%		
43) 1,2-Dichloroethane-d4	10.44	65	183779	52.1887 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.38%		
58) Toluene-d8	12.83	98	511451	53.3617 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.72%		
79) p-Bromofluorobenzene	16.23	95	191673	53.7871 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 107.58%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.28	85	204882	57.9763 ug/kg	100
3) Chloromethane	3.74	50	183152	54.0664 ug/kg	100
4) Vinyl Chloride	3.99	62	192536	56.7764 ug/kg	100
5) 1,3-Butadiene	4.04	54	170907	52.9740 ug/kg	100
6) Bromomethane	4.88	94	107911	48.9956 ug/kg	100
7) Chloroethane	5.04	64	85391	56.5213 ug/kg	100
8) Trichlorofluoromethane	5.53	101	265962	52.2923 ug/kg	100
9) Diethyl ether	6.04	59	249400	104.8955 ug/kg	100
10) Isoprene	6.09	67	156373	51.4980 ug/kg	100
11) Acrolein	6.30	56	24630	51.9520 ug/kg	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	135036	51.4825 ug/kg	100
13) Acetone	6.41	43	66195	50.6135 ug/kg	100
14) 1,1-Dichloroethene	6.61	61	244051	50.4389 ug/kg	100
15) Tert-Butyl Alcohol	6.76	59	110494	208.7036 ug/kg	98
16) Dimethyl Sulfide	6.88	62	109294	53.4455 ug/kg	100
17) Iodomethane	7.13	142	79749	55.1586 ug/kg	100
18) Methyl acetate	7.14	43	135648	51.5699 ug/kg	100
19) Methylene Chloride	7.40	84	135280	51.3362 ug/kg	100
20) Carbon Disulfide	7.45	76	381814	51.2249 ug/kg	100
21) Acrylonitrile	7.59	53	69697	53.5624 ug/kg	100
22) Methyl Tert Butyl Ether	7.61	73	407131	54.2460 ug/kg	100
23) trans-1,2-Dichloroethene	7.85	61	226890	52.6160 ug/kg	100
24) n-Hexane	7.91	57	219597	49.3729 ug/kg	100
25) Diisopropyl ether	8.26	45	1088740	105.3973 ug/kg	100
26) Vinyl Acetate	8.43	43	311838	52.9553 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	284391	52.5076 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	1023392	106.5502 ug/kg	100
29) 2-Butanone	9.03	43	86123	51.5803 ug/kg	100
30) Propionitrile	9.14	54	53253	104.2214 ug/kg	100
31) 2,2-Dichloropropane	9.24	77	215042	53.1943 ug/kg	100
32) cis-1,2-Dichloroethene	9.31	96	153722	54.3532 ug/kg	100
33) Chloroform	9.52	83	263571	52.9749 ug/kg	100
34) 1-Bromopropane	9.65	122	22164	51.3817 ug/kg	100
35) Bromochloromethane	9.75	130	102780	55.9453 ug/kg	100
36) Tetrahydrofuran	9.78	42	113791	105.7289 ug/kg	100
38) 1,1,1-Trichloroethane	10.04	97	243452	54.1074 ug/kg	100
39) Cyclohexane	10.08	56	247641	50.4821 ug/kg	100
40) 1,1-Dichloropropene	10.24	75	182199	51.4612 ug/kg	100
41) Tert-Amyl-Methyl ether	10.34	73	741165	106.1603 ug/kg	100
42) Carbon Tetrachloride	10.39	117	221306	53.0537 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972896.D Vial: 3
Acq On : 25 Feb 2016 15:48 Operator: ADC
Sample : WG558732-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:54 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260B_SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	237857	54.3500	ug/kg	100
46)	Benzene	10.60	78	503328	50.7793	ug/kg	100
47)	Trichloroethene	11.35	130	163959	52.2047	ug/kg	100
48)	Methylcyclohexane	11.44	83	204551	51.9284	ug/kg	100
49)	1,2-Dichloropropane	11.56	63	148045	54.3898	ug/kg	100
50)	1,4-Dioxane	11.88	88	7789	190.7454	ug/kg	100
51)	Bromodichloromethane	11.87	83	203922	53.1595	ug/kg	100
52)	Dibromomethane	11.96	174	95887	53.1673	ug/kg	100
53)	2-Chloroethyl Vinyl Ether	12.17	63	38515	51.1377	ug/kg	100
54)	4-Methyl-2-Pentanone	12.19	58	64999	54.4056	ug/kg	100
55)	cis-1,3-Dichloropropene	12.50	75	212797	53.2452	ug/kg	100
56)	Dimethyl Disulfide	12.77	94	219798	54.7267	ug/kg	100
59)	Toluene	12.92	91	563647	52.0613	ug/kg	100
60)	Ethyl Methacrylate	13.02	69	158958	52.9687	ug/kg	100
61)	trans-1,3-Dichloropropene	13.10	75	212386	54.4657	ug/kg	100
62)	1,1,2-Trichloroethane	13.33	97	122975	54.0706	ug/kg	100
63)	2-Hexanone	13.25	43	119176	52.4822	ug/kg	100
64)	1,3-Dichloropropane	13.63	76	201541	53.1810	ug/kg	100
65)	Tetrachloroethene	13.75	164	117066	50.4378	ug/kg	100
66)	Dibromochloromethane	14.01	129	168874	53.1294	ug/kg	100
67)	1,2-Dibromoethane	14.28	107	132755	52.6249	ug/kg	100
68)	1-Chlorohexane	14.35	91	168490	52.7733	ug/kg	100
69)	Chlorobenzene	14.77	112	400241	52.5998	ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.80	131	154536	54.0800	ug/kg	100
71)	Ethylbenzene	14.80	106	207031	52.8117	ug/kg	100
72)	m-,p-Xylene	14.89	106	497405	102.7415	ug/kg	100
73)	o-Xylene	15.45	106	247567	53.2858	ug/kg	100
74)	Styrene	15.49	104	425634	53.7983	ug/kg	100
75)	Bromoform	16.00	173	116015	55.5910	ug/kg	100
76)	Isopropylbenzene	15.88	105	658255	52.7764	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.10	83	147970	53.3007	ug/kg	100
80)	1,2,3-Trichloropropane	16.29	110	55711	52.9159	ug/kg	100
81)	trans-1,4-Dichloro-2-Buten	16.33	53	55525	52.3210	ug/kg	100
82)	n-Propylbenzene	16.39	91	751844	52.2641	ug/kg	100
83)	Bromobenzene	16.52	156	177299	52.2079	ug/kg	100
84)	1,3,5-Trimethylbenzene	16.58	105	568867	52.6809	ug/kg	100
85)	2-Chlorotoluene	16.66	91	484783	50.2437	ug/kg	100
86)	4-Chlorotoluene	16.70	91	481367	53.9615	ug/kg	100
87)	a-Methylstyrene	16.98	118	255765	51.9817	ug/kg	100
88)	tert-Butylbenzene	17.04	134	121669	53.7430	ug/kg	100
89)	1,2,4-Trimethylbenzene	17.09	105	580656	51.3463	ug/kg	100
90)	sec-Butylbenzene	17.30	105	726352	52.2266	ug/kg	100
91)	p-Isopropyltoluene	17.46	119	613096	52.2364	ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	337008	49.9319	ug/kg	100
93)	1,4-Dichlorobenzene	17.80	146	335195	49.6777	ug/kg	100
94)	n-Butylbenzene	17.99	91	563797	51.6647	ug/kg	100
95)	1,2-Dichlorobenzene	18.30	146	320108	51.1150	ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.30	157	42968	53.4468	ug/kg	100
97)	1,2,4-Trichlorobenzene	20.44	180	222592	50.0691	ug/kg	100
98)	Hexachlorobutadiene	20.59	225	117654	50.2053	ug/kg	100
99)	Naphthalene	20.81	128	602344	54.0184	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	222082	51.5034	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972896.D 8260SL.M Fri Feb 26 11:21:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972896.D Vial: 3
Acq On : 25 Feb 2016 15:48 Operator: ADC
Sample : WG558732-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

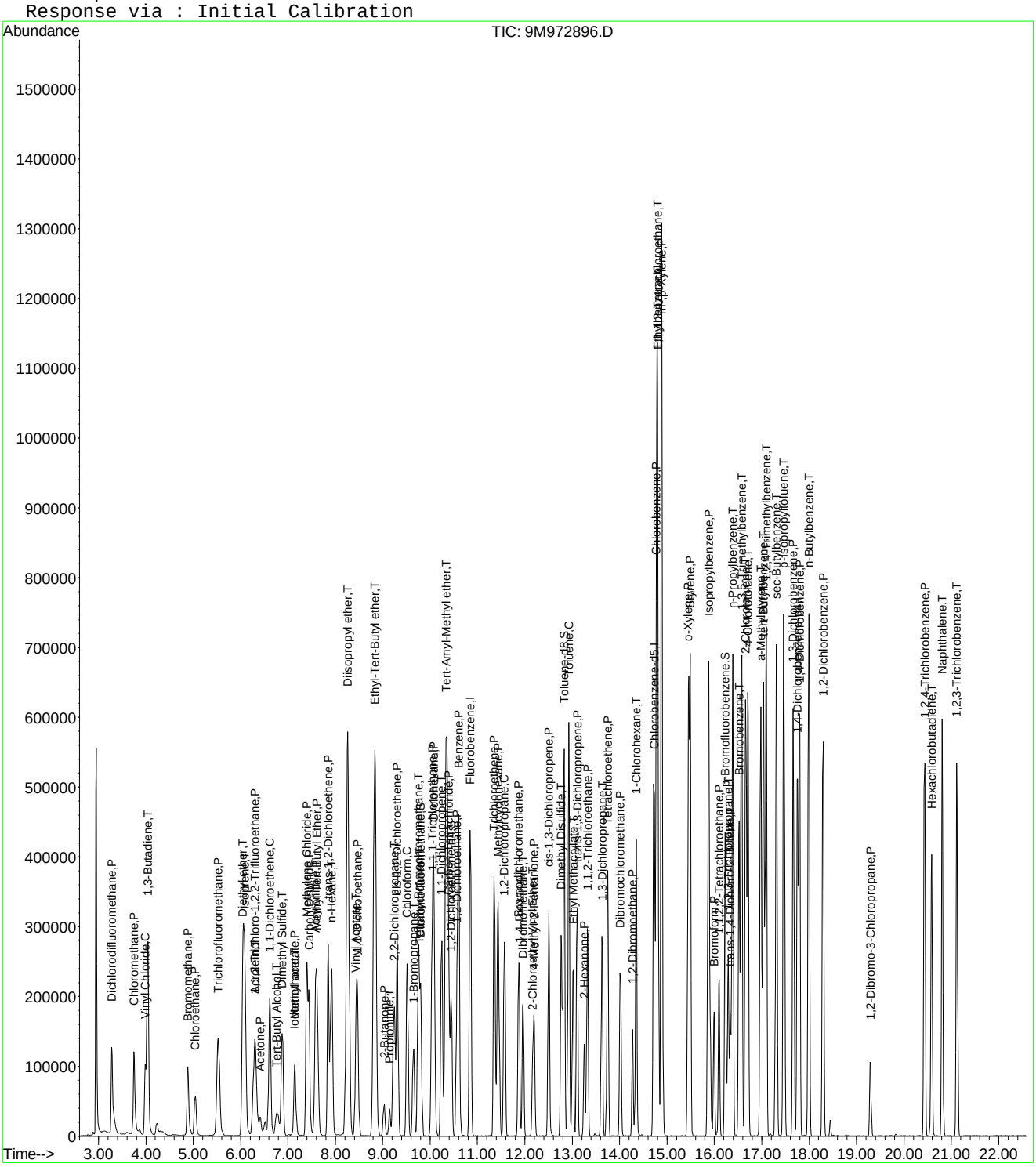

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:15 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	491503	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	353502	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	169028	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.83	98	923	0.1032 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.20%#	
79) p-Bromofluorobenzene	16.22	95	770	0.2339 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.46%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	1359	0.4051 ug/kg#	69
3) Chloromethane	3.75	50	2926	0.9099 ug/kg	95
4) Vinyl Chloride	3.98	62	1474	0.4579 ug/kg#	67
5) 1,3-Butadiene	4.03	54	1519	0.4960 ug/kg	82
6) Bromomethane	4.89	94	2071	0.9906 ug/kg	100
8) Trichlorofluoromethane	5.53	101	2609	0.5404 ug/kg#	51
10) Isoprene	6.08	67	1239	0.4298 ug/kg	70
13) Acetone	6.43	43	4251	5.5216 ug/kg#	75
14) 1,1-Dichloroethene	6.63	61	2149	0.4679 ug/kg#	66
17) Iodomethane	7.14	142	943	3.4505 ug/kg#	34
18) Methyl acetate	7.16	43	1334	0.5343 ug/kg#	45
19) Methylene Chloride	7.40	84	1287	0.5145 ug/kg	81
20) Carbon Disulfide	7.44	76	6762	0.9557 ug/kg#	76
23) trans-1,2-Dichloroethene	7.84	61	2196	0.5365 ug/kg	86
24) n-Hexane	7.92	57	2239	0.5303 ug/kg#	62
26) Vinyl Acetate	8.44	43	2494	0.4462 ug/kg#	78
27) 1,1-Dichloroethane	8.48	63	2396	0.4660 ug/kg#	63
29) 2-Butanone	9.02	43	778	0.4909 ug/kg#	58
31) 2,2-Dichloropropane	9.24	77	1877	0.4891 ug/kg#	42
32) cis-1,2-Dichloroethene	9.32	96	1178	0.4388 ug/kg	74
33) Chloroform	9.52	83	2007	0.4249 ug/kg	81
35) Bromochloromethane	9.74	130	828	0.4748 ug/kg#	68
36) Tetrahydrofuran	9.76	42	1603	1.5690 ug/kg#	57
38) 1,1,1-Trichloroethane	10.05	97	1773	0.4151 ug/kg	92
40) 1,1-Dichloropropene	10.25	75	1521	0.4526 ug/kg#	38
42) Carbon Tetrachloride	10.40	117	1765	0.4457 ug/kg#	85
45) 1,2-Dichloroethane	10.57	62	1885	0.4537 ug/kg#	68
46) Benzene	10.61	78	5607	0.5959 ug/kg#	83
47) Trichloroethene	11.36	130	1808	0.6064 ug/kg	88
48) Methylcyclohexane	11.44	83	1930	0.5161 ug/kg	96
55) cis-1,3-Dichloropropene	12.51	75	1714	0.4518 ug/kg#	51
59) Toluene	12.93	91	5550	0.5495 ug/kg	88
61) trans-1,3-Dichloropropene	13.10	75	1920	0.5278 ug/kg#	51
63) 2-Hexanone	13.25	43	877	0.4140 ug/kg#	63
64) 1,3-Dichloropropane	13.63	76	1615	0.4568 ug/kg	91
65) Tetrachloroethene	13.75	164	1154	0.5330 ug/kg#	74
67) 1,2-Dibromoethane	14.27	107	988	0.4198 ug/kg	87
68) 1-Chlorohexane	14.35	91	1436	0.4821 ug/kg	83
69) Chlorobenzene	14.78	112	4578	0.6449 ug/kg	87
70) 1,1,1,2-Tetrachloroethane	14.81	131	1078	0.4044 ug/kg	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:15 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
71)	Ethylbenzene	14.80	106	1823	0.4985 ug/kg	68
72)	m-,p-Xylene	14.88	106	4752	1.0521 ug/kg	95
73)	o-Xylene	15.44	106	2166	0.4997 ug/kg	94
74)	Styrene	15.49	104	3544	0.4802 ug/kg	91
76)	Isopropylbenzene	15.87	105	6349	0.5456 ug/kg	97
78)	1,1,2,2-Tetrachloroethane	16.09	83	1326	0.5171 ug/kg#	89
82)	n-Propylbenzene	16.38	91	7679	0.5780 ug/kg	98
83)	Bromobenzene	16.52	156	1798	0.5732 ug/kg	88
84)	1,3,5-Trimethylbenzene	16.57	105	4554	0.4566 ug/kg	92
85)	2-Chlorotoluene	16.66	91	5237	0.5877 ug/kg	84
86)	4-Chlorotoluene	16.71	91	5645	0.6851 ug/kg	93
87)	a-Methylstyrene	16.97	118	2091	0.4601 ug/kg	93
89)	1,2,4-Trimethylbenzene	17.09	105	6291	0.6023 ug/kg	84
90)	sec-Butylbenzene	17.31	105	7013	0.5460 ug/kg	93
91)	p-Isopropyltoluene	17.47	119	5681	0.5241 ug/kg	95
92)	1,3-Dichlorobenzene	17.67	146	4446	0.7132 ug/kg	91
93)	1,4-Dichlorobenzene	17.79	146	4603	0.7386 ug/kg#	73
94)	n-Butylbenzene	17.99	91	6750	0.6697 ug/kg#	90
95)	1,2-Dichlorobenzene	18.29	146	3889	0.6724 ug/kg	82
97)	1,2,4-Trichlorobenzene	20.43	180	3506	0.8539 ug/kg	94
98)	Hexachlorobutadiene	20.58	225	1493	0.6898 ug/kg#	70
99)	Naphthalene	20.81	128	10277	0.9979 ug/kg	93
100)	1,2,3-Trichlorobenzene	21.12	180	3961	0.9946 ug/kg	80

(#) = qualifier out of range (m) = manual integration
9M972898.D 8260SL.M Fri Feb 26 11:11:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration

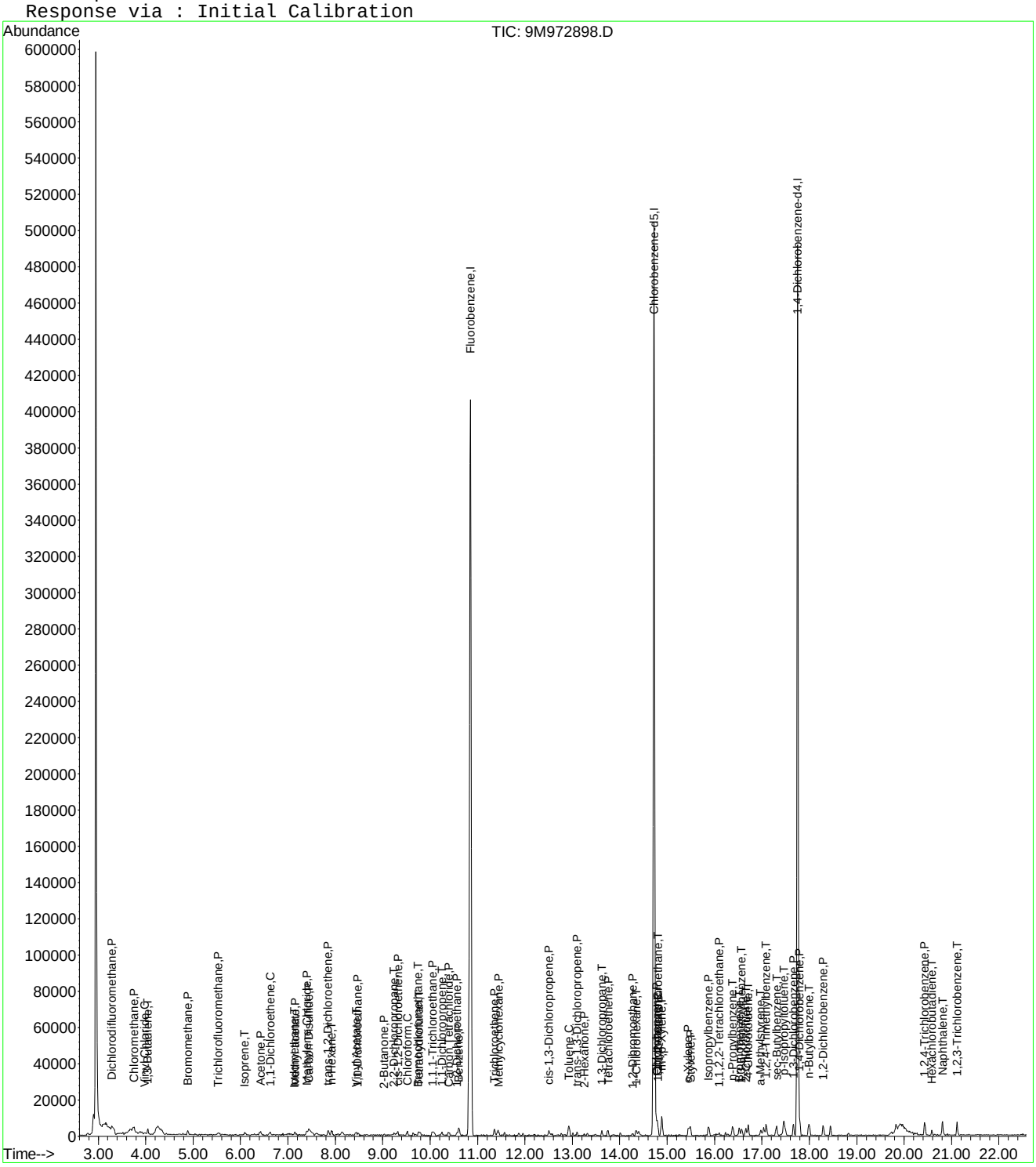

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	0.4051	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.9099	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.4579	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	0.4960	0.0	0	0.00
6	P	Bromomethane	-1.0000	0.9906	0.0	100	0.00
7	P	Chloroethane	-1.0000	0.2845	0.0	100	0.01
8	P	Trichlorofluoromethane	-1.0000	0.5404	0.0	100	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.04#
10	T	Isoprene	-1.0000	0.4298	0.0	0	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.30#
12	P	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.0779	0.0	100	0.00
13	P	Acetone	-1.0000	5.5216	0.0	0	0.02
14	C	1,1-Dichloroethene	-1.0000	0.4679	0.0	100	0.01
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.76#
16	T	Dimethyl Sulfide	-1.0000	0.1242	0.0	0	0.01
17	T	Iodomethane	-1.0000	3.4505	0.0	0	0.00
18	P	Methyl acetate	-1.0000	0.5343	0.0	0	0.02
19	P	Methylene Chloride	-1.0000	0.5145	0.0	100	0.00
20	P	Carbon Disulfide	-1.0000	0.9557	0.0	0	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.59#
22	P	Methyl Tert Butyl Ether	-1.0000	0.3878	0.0	100	0.00
23	P	trans-1,2-Dichloroethene	-1.0000	0.5365	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.5303	0.0	0	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.26#
26	T	Vinyl Acetate	-1.0000	0.4462	0.0	100	0.01
27	P	1,1-Dichloroethane	-1.0000	0.4660	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.83#
29	P	2-Butanone	-1.0000	0.4909	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.14#
31	T	2,2-Dichloropropane	-1.0000	0.4891	0.0	100	0.00
32	P	cis-1,2-Dichloroethene	-1.0000	0.4388	0.0	100	0.01
33	C	Chloroform	-1.0000	0.4249	0.0	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.65#
35	T	Bromochloromethane	-1.0000	0.4748	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	1.5690	0.0	100	-0.02
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	-1.0000	0.4151	0.0	100	0.00
39	P	Cyclohexane	-1.0000	0.3314	0.0	0	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4526	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.34#
42	P	Carbon Tetrachloride	-1.0000	0.4457	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	-1.0000	0.4537	0.0	100	0.00
46	P	Benzene	0.5000	0.5959	-19.2	100	0.00
47	P	Trichloroethene	-1.0000	0.6064	0.0	100	0.00
48	P	Methylcyclohexane	-1.0000	0.5161	0.0	0	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2930	0.0	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.88#
51	P	Bromodichloromethane	-1.0000	0.3238	0.0	100	0.00
52	T	Dibromomethane	-1.0000	0.1630	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.0000	0.0	0	-12.16#
54	P	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.19#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	-1.0000	0.4518	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2529	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.1032	0.0	100	0.00
59	C	Toluene	0.5000	0.5495	-9.9	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2340	0.0	0	0.00
61	P	trans-1,3-Dichloropropene	-1.0000	0.5278	0.0	100	0.00
62	P	1,1,2-Trichloroethane	-1.0000	0.3964	0.0	100	0.00
63	P	2-Hexanone	-1.0000	0.4140	0.0	100	0.00
64	T	1,3-Dichloropropane	-1.0000	0.4568	0.0	100	0.00
65	P	Tetrachloroethene	-1.0000	0.5330	0.0	100	0.00
66	P	Dibromochloromethane	-1.0000	0.3541	0.0	100	0.00
67	P	1,2-Dibromoethane	-1.0000	0.4198	0.0	100	0.00
68	T	1-Chlorohexane	-1.0000	0.4821	0.0	0	0.00
69	P	Chlorobenzene	-1.0000	0.6449	0.0	100	0.00
70	T	1,1,1,2-Tetrachloroethane	-1.0000	0.4044	0.0	100	0.00
71	C	Ethylbenzene	0.5000	0.4985	0.3	100	0.00
72	P	m-,p-Xylene	1.0000	1.0521	-5.2	100	0.00
73	P	o-Xylene	0.5000	0.4997	0.1	100	0.00
74	P	Styrene	-1.0000	0.4802	0.0	100	0.00
75	P	Bromoform	-1.0000	0.3955	0.0	100	0.00
76	P	Isopropylbenzene	-1.0000	0.5456	0.0	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	-1.0000	0.5171	0.0	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.2339	0.0	100	0.00
80	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.29#
81	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.33#
82	T	n-Propylbenzene	-1.0000	0.5780	0.0	100	0.00
83	T	Bromobenzene	-1.0000	0.5732	0.0	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	0.4566	0.0	100	0.00
85	T	2-Chlorotoluene	-1.0000	0.5877	0.0	100	0.00
86	T	4-Chlorotoluene	-1.0000	0.6851	0.0	100	0.00
87	T	a-Methylstyrene	-1.0000	0.4601	0.0	0	0.00
88	T	tert-Butylbenzene	-1.0000	0.2860	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	-1.0000	0.6023	0.0	100	0.00
90	T	sec-Butylbenzene	-1.0000	0.5460	0.0	100	0.00
91	T	p-Isopropyltoluene	-1.0000	0.5241	0.0	100	0.00
92	P	1,3-Dichlorobenzene	-1.0000	0.7132	0.0	100	0.00
93	P	1,4-Dichlorobenzene	-1.0000	0.7386	0.0	100	0.00
94	T	n-Butylbenzene	-1.0000	0.6697	0.0	100	0.00
95	P	1,2-Dichlorobenzene	-1.0000	0.6724	0.0	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.30#
97	P	1,2,4-Trichlorobenzene	-1.0000	0.8539	0.0	100	0.00
98	T	Hexachlorobutadiene	-1.0000	0.6898	0.0	100	0.00
99	T	Naphthalene	-1.0000	0.9979	0.0	100	0.00
100	T	1,2,3-Trichlorobenzene	-1.0000	0.9946	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972898.D 8260SL.M Fri Feb 26 11:11:52 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	536651	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	387839	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	177519	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.82	98	959	0.0978 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.20%#	
79) p-Bromofluorobenzene	16.22	95	467	0.1351 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	3486	0.9518 ug/kg#	85
3) Chloromethane	3.74	50	4175	1.1891 ug/kg	88
4) Vinyl Chloride	3.98	62	2686	0.7642 ug/kg	80
5) 1,3-Butadiene	4.03	54	3056	0.9139 ug/kg	91
6) Bromomethane	4.89	94	2537	1.1114 ug/kg	94
7) Chloroethane	5.05	64	1264	0.8072 ug/kg#	45
8) Trichlorofluoromethane	5.53	101	5567	1.0561 ug/kg#	93
9) Diethyl ether	6.05	59	11529	4.6784 ug/kg	97
10) Isoprene	6.08	67	2965	0.9421 ug/kg	97
11) Acrolein	6.29	56	1087	2.2122 ug/kg#	35
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	1939	0.7132 ug/kg	88
13) Acetone	6.41	43	5231	5.8863 ug/kg	95
14) 1,1-Dichloroethene	6.62	61	4981	0.9932 ug/kg	92
15) Tert-Butyl Alcohol	6.77	59	5682	10.3548 ug/kg#	63
16) Dimethyl Sulfide	6.88	62	1614	0.7615 ug/kg	91
17) Iodomethane	7.15	142	941	3.3944 ug/kg#	66
18) Methyl acetate	7.16	43	2553	0.9364 ug/kg#	65
19) Methylene Chloride	7.40	84	2963	1.0849 ug/kg	92
20) Carbon Disulfide	7.45	76	9749	1.2619 ug/kg	95
21) Acrylonitrile	7.58	53	3140	2.3282 ug/kg	85
22) Methyl Tert Butyl Ether	7.61	73	7179	0.9229 ug/kg	83
23) trans-1,2-Dichloroethene	7.85	61	4296	0.9612 ug/kg	95
24) n-Hexane	7.93	57	4481	0.9720 ug/kg	95
25) Diisopropyl ether	8.26	45	50344	4.7022 ug/kg	98
26) Vinyl Acetate	8.43	43	5247	0.8597 ug/kg#	90
27) 1,1-Dichloroethane	8.48	63	5885	1.0483 ug/kg#	85
28) Ethyl-Tert-Butyl ether	8.83	59	46767	4.6979 ug/kg	99
29) 2-Butanone	9.03	43	1776	1.0263 ug/kg#	58
30) Propionitrile	9.14	54	2256	4.2599 ug/kg#	60
31) 2,2-Dichloropropane	9.24	77	4402	1.0506 ug/kg#	71
32) cis-1,2-Dichloroethene	9.31	96	2650	0.9040 ug/kg	94
33) Chloroform	9.51	83	5072	0.9836 ug/kg	96
35) Bromochloromethane	9.75	130	1408	0.7394 ug/kg	86
36) Tetrahydrofuran	9.77	42	6699	6.0054 ug/kg	95
38) 1,1,1-Trichloroethane	10.05	97	4567	0.9793 ug/kg	91
39) Cyclohexane	10.08	56	4992	0.9818 ug/kg#	85
40) 1,1-Dichloropropene	10.24	75	3785	1.0315 ug/kg	90
41) Tert-Amyl-Methyl ether	10.34	73	33850	4.6779 ug/kg	95
42) Carbon Tetrachloride	10.40	117	4297	0.9939 ug/kg#	90
45) 1,2-Dichloroethane	10.55	62	3923	0.8649 ug/kg	93

(#) = qualifier out of range (m) = manual integration
9M972899.D 8260SL.M Fri Feb 26 11:12:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
46)	Benzene	10.61	78	9968	0.9703 ug/kg	96
47)	Trichloroethene	11.36	130	3259	1.0012 ug/kg	99
48)	Methylcyclohexane	11.43	83	3354	0.8215 ug/kg	76
49)	1,2-Dichloropropane	11.57	63	2469	0.8752 ug/kg	94
51)	Bromodichloromethane	11.87	83	3657	0.9198 ug/kg#	94
52)	Dibromomethane	11.96	174	1621	0.8672 ug/kg	93
53)	2-Chloroethyl Vinyl Ether	12.16	63	210	3.0851 ug/kg#	47
54)	4-Methyl-2-Pentanone	12.20	58	738	0.5960 ug/kg#	40
55)	cis-1,3-Dichloropropene	12.51	75	3714	0.8966 ug/kg	86
56)	Dimethyl Disulfide	12.77	94	3075	0.7387 ug/kg	83
59)	Toluene	12.93	91	10894	0.9831 ug/kg	97
60)	Ethyl Methacrylate	13.01	69	1966	0.6401 ug/kg#	53
61)	trans-1,3-Dichloropropene	13.11	75	3837	0.9614 ug/kg#	79
62)	1,1,2-Trichloroethane	13.32	97	2148	0.9227 ug/kg	94
63)	2-Hexanone	13.26	43	1796	0.7727 ug/kg#	80
64)	1,3-Dichloropropane	13.63	76	3616	0.9322 ug/kg	99
65)	Tetrachloroethene	13.75	164	2587	1.0890 ug/kg	79
66)	Dibromochloromethane	14.02	129	3318	1.0199 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	2336	0.9047 ug/kg	97
68)	1-Chlorohexane	14.34	91	3075	0.9410 ug/kg	85
69)	Chlorobenzene	14.78	112	7982	1.0249 ug/kg	88
70)	1,1,1,2-Tetrachloroethane	14.81	131	2589	0.8852 ug/kg	86
71)	Ethylbenzene	14.80	106	4007	0.9987 ug/kg	89
72)	m-,p-Xylene	14.88	106	9607	1.9388 ug/kg	98
73)	o-Xylene	15.45	106	4376	0.9202 ug/kg	99
74)	Styrene	15.49	104	7432	0.9178 ug/kg	92
75)	Bromoform	16.00	173	1759	0.8235 ug/kg#	79
76)	Isopropylbenzene	15.87	105	11937	0.9351 ug/kg	98
78)	1,1,2,2-Tetrachloroethane	16.09	83	2186	0.8118 ug/kg#	83
80)	1,2,3-Trichloropropane	16.28	110	875	0.8568 ug/kg#	81
81)	trans-1,4-Dichloro-2-Buten	16.34	53	831	0.8073 ug/kg#	74
82)	n-Propylbenzene	16.38	91	14156	1.0145 ug/kg	99
83)	Bromobenzene	16.53	156	2996	0.9095 ug/kg#	39
84)	1,3,5-Trimethylbenzene	16.57	105	11008	1.0509 ug/kg	88
85)	2-Chlorotoluene	16.65	91	10606	1.1332 ug/kg	84
86)	4-Chlorotoluene	16.71	91	9101	1.0518 ug/kg	95
87)	a-Methylstyrene	16.98	118	4078	0.8544 ug/kg	85
88)	tert-Butylbenzene	17.03	134	2095	0.9540 ug/kg	74
89)	1,2,4-Trimethylbenzene	17.09	105	12124	1.1053 ug/kg	83
90)	sec-Butylbenzene	17.31	105	13922	1.0320 ug/kg	100
91)	p-Isopropyltoluene	17.47	119	10153	0.8918 ug/kg	98
92)	1,3-Dichlorobenzene	17.67	146	7444	1.1370 ug/kg	90
93)	1,4-Dichlorobenzene	17.79	146	7580	1.1581 ug/kg	92
94)	n-Butylbenzene	17.99	91	11112	1.0498 ug/kg	91
95)	1,2-Dichlorobenzene	18.29	146	6415	1.0560 ug/kg	97
97)	1,2,4-Trichlorobenzene	20.43	180	4869	1.1291 ug/kg	98
98)	Hexachlorobutadiene	20.59	225	2032	0.8939 ug/kg	87
99)	Naphthalene	20.81	128	11710	1.0826 ug/kg	92
100)	1,2,3-Trichlorobenzene	21.12	180	4698	1.1232 ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972899.D 8260SL.M Fri Feb 26 11:12:33 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration

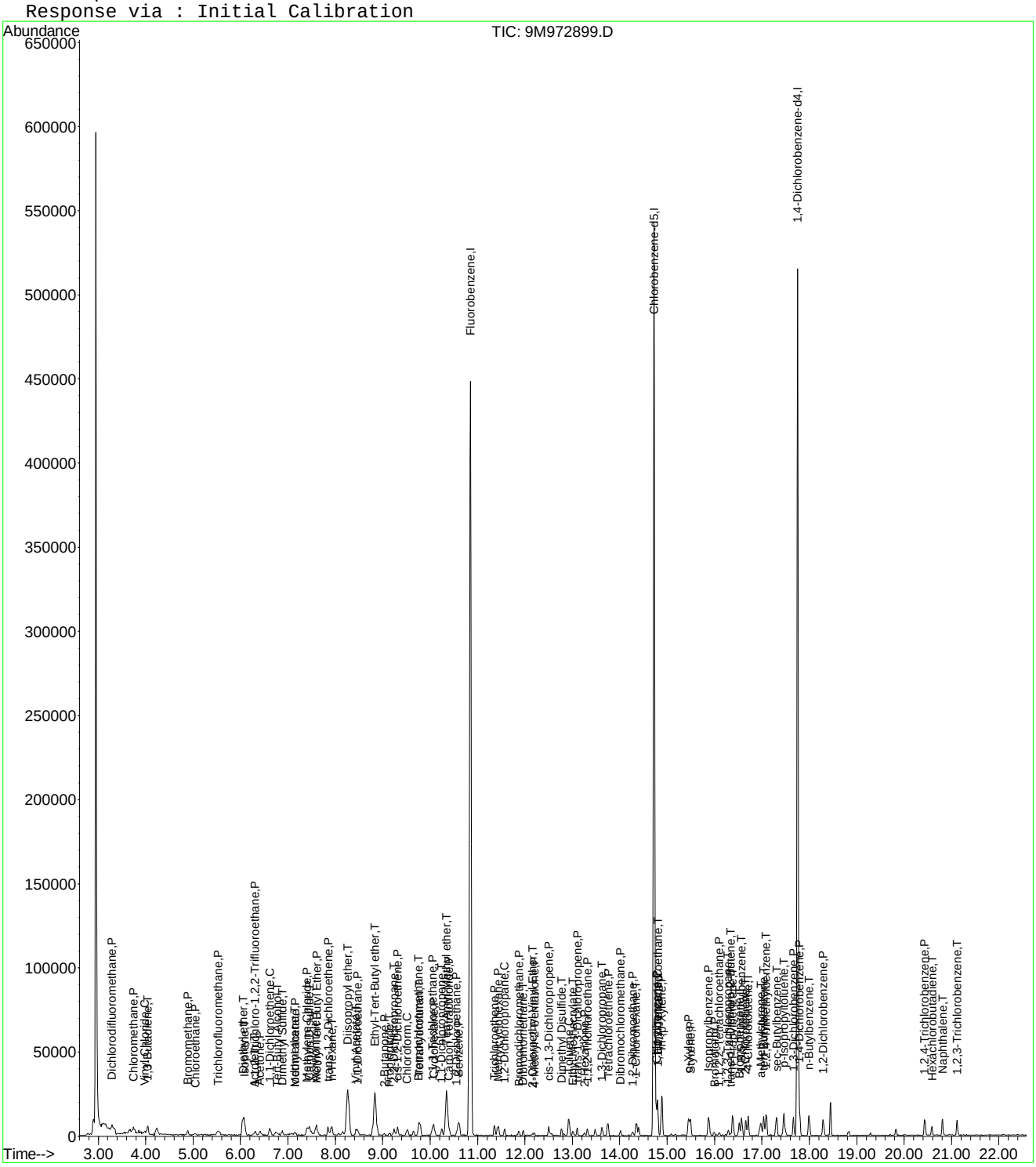

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	0.9518	0.0	100	0.00
3	P	Chloromethane	-1.0000	1.1891	0.0	100	0.00
4	C	Vinyl Chloride	1.0000	0.7642	23.6#	100	0.00
5	T	1,3-Butadiene	-1.0000	0.9139	0.0	0	0.00
6	P	Bromomethane	1.0000	1.1114	-11.1	100	0.00
7	P	Chloroethane	-1.0000	0.8072	0.0	100	0.00
8	P	Trichlorofluoromethane	1.0000	1.0561	-5.6	100	0.00
9	T	Diethyl ether	5.0000	4.6784	6.4	100	0.00
10	T	Isoprene	-1.0000	0.9421	0.0	0	0.00
11	T	Acrolein	2.5000	2.2122	11.5	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.7132	0.0	100	0.00
13	P	Acetone	-1.0000	5.8863	0.0	0	0.00
14	C	1,1-Dichloroethene	1.0000	0.9932	0.7	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	10.3548	0.0	100	0.00
16	T	Dimethyl Sulfide	1.0000	0.7615	23.9	100	0.00
17	T	Iodomethane	-1.0000	3.3944	0.0	0	0.01
18	P	Methyl acetate	-1.0000	0.9364	0.0	0	0.02
19	P	Methylene Chloride	-1.0000	1.0849	0.0	100	0.00
20	P	Carbon Disulfide	-1.0000	1.2619	0.0	0	0.00
21	T	Acrylonitrile	2.5000	2.3282	6.9	100	0.00
22	P	Methyl Tert Butyl Ether	1.0000	0.9229	7.7	100	0.00
23	P	trans-1,2-Dichloroethene	1.0000	0.9612	3.9	100	0.00
24	T	n-Hexane	-1.0000	0.9720	0.0	0	0.01
25	T	Diisopropyl ether	5.0000	4.7022	6.0	100	0.00
26	T	Vinyl Acetate	-1.0000	0.8597	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0483	-4.8	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.6979	6.0	100	0.00
29	P	2-Butanone	-1.0000	1.0263	0.0	100	0.00
30	T	Propionitrile	5.0000	4.2599	14.8	100	0.00
31	T	2,2-Dichloropropane	-1.0000	1.0506	0.0	100	0.00
32	P	cis-1,2-Dichloroethene	1.0000	0.9040	9.6	100	0.00
33	C	Chloroform	1.0000	0.9836	1.6	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.65#
35	T	Bromochloromethane	1.0000	0.7395	26.1#	100	0.00
36	T	Tetrahydrofuran	-1.0000	6.0054	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	1.0000	0.9793	2.1	100	0.00
39	P	Cyclohexane	1.0000	0.9818	1.8	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0315	-3.1	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	4.6780	6.4	100	0.00
42	P	Carbon Tetrachloride	-1.0000	0.9939	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	1.0000	0.8649	13.5	100	0.00
46	P	Benzene	1.0000	0.9703	3.0	100	0.00
47	P	Trichloroethene	1.0000	1.0012	-0.1	100	0.00
48	P	Methylcyclohexane	1.0000	0.8215	17.8	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.8752	12.5	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.88#
51	P	Bromodichloromethane	-1.0000	0.9198	0.0	100	0.00
52	T	Dibromomethane	1.0000	0.8672	13.3	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	3.0851	0.0	0	0.00
54	P	4-Methyl-2-Pentanone	-1.0000	0.5960	0.0	100	0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	-1.0000	0.8966	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.7387	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0978	0.0	100	0.00
59	C	Toluene	1.0000	0.9831	1.7	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.6401	0.0	0	0.00
61	P	trans-1,3-Dichloropropene	-1.0000	0.9614	0.0	100	0.00
62	P	1,1,2-Trichloroethane	1.0000	0.9227	7.7	100	0.00
63	P	2-Hexanone	-1.0000	0.7727	0.0	100	0.00
64	T	1,3-Dichloropropane	1.0000	0.9322	6.8	100	0.00
65	P	Tetrachloroethene	1.0000	1.0890	-8.9	100	0.00
66	P	Dibromochloromethane	-1.0000	1.0199	0.0	100	0.00
67	P	1,2-Dibromoethane	-1.0000	0.9047	0.0	100	0.00
68	T	1-Chlorohexane	1.0000	0.9410	5.9	100	0.00
69	P	Chlorobenzene	1.0000	1.0249	-2.5	100	0.00
70	T	1,1,1,2-Tetrachloroethane	-1.0000	0.8852	0.0	100	0.00
71	C	Ethylbenzene	1.0000	0.9987	0.1	100	0.00
72	P	m-,p-Xylene	2.0000	1.9388	3.1	100	0.00
73	P	o-Xylene	1.0000	0.9202	8.0	100	0.00
74	P	Styrene	1.0000	0.9178	8.2	100	0.00
75	P	Bromoform	-1.0000	0.8235	0.0	100	0.00
76	P	Isopropylbenzene	1.0000	0.9351	6.5	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	1.0000	0.8118	18.8	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.1351	0.0	100	0.00
80	T	1,2,3-Trichloropropane	1.0000	0.8568	14.3	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.8073	0.0	0	0.00
82	T	n-Propylbenzene	1.0000	1.0145	-1.4	100	0.00
83	T	Bromobenzene	1.0000	0.9095	9.1	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	1.0509	0.0	100	0.00
85	T	2-Chlorotoluene	-1.0000	1.1332	0.0	100	0.00
86	T	4-Chlorotoluene	1.0000	1.0518	-5.2	100	0.00
87	T	a-Methylstyrene	-1.0000	0.8544	0.0	0	0.00
88	T	tert-Butylbenzene	-1.0000	0.9540	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	1.0000	1.1053	-10.5	100	0.00
90	T	sec-Butylbenzene	1.0000	1.0320	-3.2	100	0.00
91	T	p-Isopropyltoluene	-1.0000	0.8918	0.0	100	0.00
92	P	1,3-Dichlorobenzene	1.0000	1.1370	-13.7	100	0.00
93	P	1,4-Dichlorobenzene	1.0000	1.1581	-15.8	100	0.00
94	T	n-Butylbenzene	1.0000	1.0498	-5.0	100	0.00
95	P	1,2-Dichlorobenzene	1.0000	1.0560	-5.6	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	0.3514	0.0	100	0.00
97	P	1,2,4-Trichlorobenzene	1.0000	1.1291	-12.9	100	0.00
98	T	Hexachlorobutadiene	1.0000	0.8939	10.6	100	0.00
99	T	Naphthalene	-1.0000	1.0826	0.0	100	0.00
100	T	1,2,3-Trichlorobenzene	1.0000	1.1232	-12.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1
9M972899.D 8260SL.M Fri Feb 26 11:12:31 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	472115	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	342668	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	156993	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.83	98	772	0.0891 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.18%#	
79) p-Bromofluorobenzene	16.23	95	570	0.1865 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.38%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.29	85	6383	1.9809 ug/kg#	78
3) Chloromethane	3.74	50	7027	2.2750 ug/kg	100
4) Vinyl Chloride	4.00	62	6001	1.9408 ug/kg	97
5) 1,3-Butadiene	4.04	54	6545	2.2249 ug/kg	95
6) Bromomethane	4.90	94	5050	2.5146 ug/kg	81
7) Chloroethane	5.04	64	2391	1.7357 ug/kg#	70
8) Trichlorofluoromethane	5.54	101	9777	2.1082 ug/kg#	94
9) Diethyl ether	6.06	59	58156	26.8255 ug/kg	97
10) Isoprene	6.09	67	5698	2.0580 ug/kg	89
11) Acrolein	6.30	56	5427	12.5543 ug/kg	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	4756	1.9886 ug/kg	93
13) Acetone	6.40	43	6167	6.9886 ug/kg	93
14) 1,1-Dichloroethene	6.62	61	9652	2.1877 ug/kg	91
15) Tert-Butyl Alcohol	6.75	59	26757	55.4271 ug/kg#	91
16) Dimethyl Sulfide	6.89	62	3840	2.0594 ug/kg	97
17) Iodomethane	7.14	142	1541	3.9079 ug/kg#	56
18) Methyl acetate	7.15	43	5334	2.2240 ug/kg#	69
19) Methylene Chloride	7.40	84	5116	2.1292 ug/kg	98
20) Carbon Disulfide	7.44	76	15010	2.2085 ug/kg	94
21) Acrylonitrile	7.59	53	14961	12.6096 ug/kg	100
22) Methyl Tert Butyl Ether	7.61	73	13630	1.9917 ug/kg	93
23) trans-1,2-Dichloroethene	7.85	61	7964	2.0255 ug/kg	100
24) n-Hexane	7.92	57	8619	2.1253 ug/kg	100
25) Diisopropyl ether	8.26	45	252190	26.7748 ug/kg	99
26) Vinyl Acetate	8.43	43	11207	2.0872 ug/kg	95
27) 1,1-Dichloroethane	8.47	63	10529	2.1320 ug/kg#	93
28) Ethyl-Tert-Butyl ether	8.83	59	234163	26.7377 ug/kg	99
29) 2-Butanone	9.03	43	3346	2.1978 ug/kg#	76
30) Propionitrile	9.14	54	12899	27.6861 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	8085	2.1934 ug/kg	88
32) cis-1,2-Dichloroethene	9.32	96	4861	1.8850 ug/kg	98
33) Chloroform	9.53	83	10005	2.2054 ug/kg	95
34) 1-Bromopropane	9.64	122	209	1.5465 ug/kg	96
35) Bromochloromethane	9.75	130	3273	1.9539 ug/kg	81
36) Tetrahydrofuran	9.78	42	26192	26.6900 ug/kg	94
38) 1,1,1-Trichloroethane	10.04	97	8229	2.0058 ug/kg	97
39) Cyclohexane	10.09	56	9354	2.0912 ug/kg	96
40) 1,1-Dichloropropene	10.23	75	6787	2.1024 ug/kg	88
41) Tert-Amyl-Methyl ether	10.34	73	167275	26.2768 ug/kg	98
42) Carbon Tetrachloride	10.39	117	7920	2.0823 ug/kg#	95

(#) = qualifier out of range (m) = manual integration
9M972900.D 8260SL.M Fri Feb 26 11:13:39 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	8488	2.1271 ug/kg	89
46)	Benzene	10.60	78	19454	2.1525 ug/kg	96
47)	Trichloroethene	11.35	130	6073	2.1207 ug/kg	96
48)	Methylcyclohexane	11.44	83	7523	2.0945 ug/kg	95
49)	1,2-Dichloropropane	11.58	63	5118	2.0621 ug/kg	93
50)	1,4-Dioxane	11.88	88	1938	52.0499 ug/kg	84
51)	Bromodichloromethane	11.87	83	7148	2.0436 ug/kg#	95
52)	Dibromomethane	11.97	174	3572	2.1721 ug/kg	91
53)	2-Chloroethyl Vinyl Ether	12.17	63	474	3.4830 ug/kg#	47
54)	4-Methyl-2-Pentanone	12.19	58	2111	1.9378 ug/kg#	64
55)	cis-1,3-Dichloropropene	12.50	75	7048	1.9341 ug/kg	92
56)	Dimethyl Disulfide	12.77	94	5832	1.5925 ug/kg	95
59)	Toluene	12.93	91	20786	2.1230 ug/kg	97
60)	Ethyl Methacrylate	13.01	69	4184	1.5417 ug/kg	98
61)	trans-1,3-Dichloropropene	13.11	75	6895	1.9553 ug/kg	92
62)	1,1,2-Trichloroethane	13.33	97	4055	1.9716 ug/kg	86
63)	2-Hexanone	13.25	43	3773	1.8373 ug/kg#	82
64)	1,3-Dichloropropane	13.62	76	7643	2.2302 ug/kg	97
65)	Tetrachloroethene	13.75	164	4327	2.0615 ug/kg	94
66)	Dibromochloromethane	14.01	129	6170	2.1465 ug/kg	87
67)	1,2-Dibromoethane	14.28	107	4656	2.0410 ug/kg	88
68)	1-Chlorohexane	14.35	91	5610	1.9430 ug/kg	97
69)	Chlorobenzene	14.77	112	14885	2.1632 ug/kg	95
70)	1,1,1,2-Tetrachloroethane	14.80	131	5145	1.9910 ug/kg	86
71)	Ethylbenzene	14.79	106	7287	2.0555 ug/kg	99
72)	m-,p-Xylene	14.89	106	19133	4.3702 ug/kg	93
73)	o-Xylene	15.45	106	8413	2.0024 ug/kg	94
74)	Styrene	15.49	104	14533	2.0313 ug/kg	97
75)	Bromoform	15.99	173	3135	1.6611 ug/kg	97
76)	Isopropylbenzene	15.87	105	23266	2.0628 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	5252	2.2053 ug/kg#	89
80)	1,2,3-Trichloropropane	16.28	110	1851	2.0495 ug/kg#	89
81)	trans-1,4-Dichloro-2-Buten	16.33	53	1413	1.5521 ug/kg	47
82)	n-Propylbenzene	16.38	91	25735	2.0854 ug/kg	99
83)	Bromobenzene	16.52	156	7006	2.4049 ug/kg	83
84)	1,3,5-Trimethylbenzene	16.57	105	18571	2.0048 ug/kg	99
85)	2-Chlorotoluene	16.66	91	18793	2.2705 ug/kg	97
86)	4-Chlorotoluene	16.70	91	16240	2.1222 ug/kg	96
87)	a-Methylstyrene	16.98	118	7524	1.7826 ug/kg	97
88)	tert-Butylbenzene	17.04	134	3654	1.8815 ug/kg	64
89)	1,2,4-Trimethylbenzene	17.09	105	20119	2.0739 ug/kg	99
90)	sec-Butylbenzene	17.31	105	24858	2.0835 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	20956	2.0813 ug/kg	96
92)	1,3-Dichlorobenzene	17.66	146	13695	2.3653 ug/kg	94
93)	1,4-Dichlorobenzene	17.79	146	12975	2.2416 ug/kg	82
94)	n-Butylbenzene	17.99	91	19734	2.1080 ug/kg	95
95)	1,2-Dichlorobenzene	18.30	146	11568	2.1533 ug/kg	91
96)	1,2-Dibromo-3-Chloropropan	19.30	157	941	1.3644 ug/kg	84
97)	1,2,4-Trichlorobenzene	20.44	180	8356	2.1910 ug/kg	98
98)	Hexachlorobutadiene	20.59	225	4571	2.2738 ug/kg	87
99)	Naphthalene	20.81	128	20072	2.0983 ug/kg	96
100)	1,2,3-Trichlorobenzene	21.11	180	7948	2.1487 ug/kg	96

(#) = qualifier out of range (m) = manual integration
9M972900.D 8260SL.M Fri Feb 26 11:13:39 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration

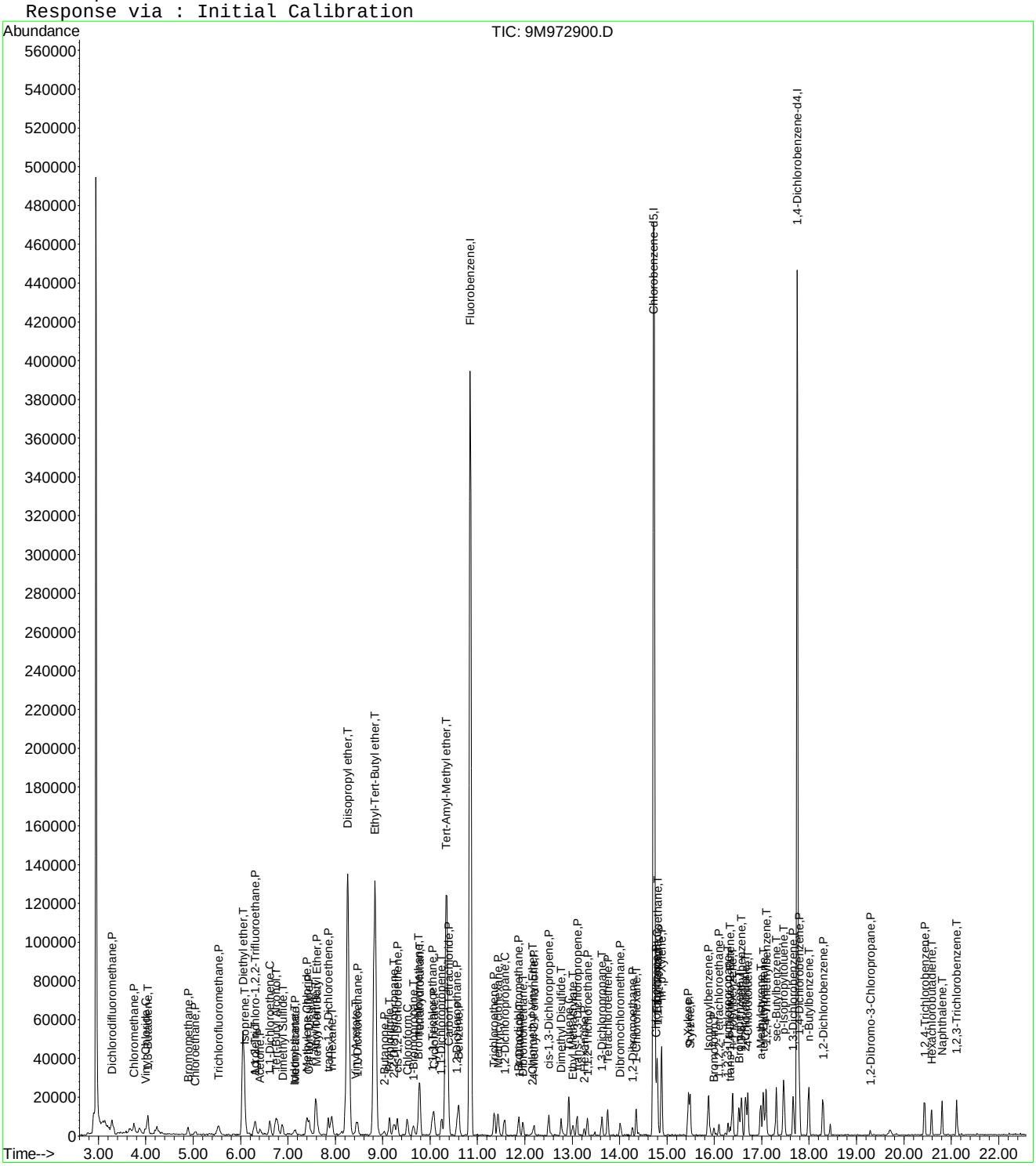

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	1.9809	0.0	100	0.01
3	P	Chloromethane	2.0000	2.2750	-13.7	100	0.00
4	C	Vinyl Chloride	2.0000	1.9408	3.0	100	0.01
5	T	1,3-Butadiene	2.0000	2.2249	-11.2	100	0.00
6	P	Bromomethane	2.0000	2.5146	-25.7#	100	0.01
7	P	Chloroethane	2.0000	1.7357	13.2	100	0.00
8	P	Trichlorofluoromethane	2.0000	2.1082	-5.4	100	0.01
9	T	Diethyl ether	25.0000	26.8255	-7.3	100	0.01
10	T	Isoprene	2.0000	2.0580	-2.9	100	0.00
11	T	Acrolein	12.5000	12.5543	-0.4	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.9886	0.6	100	0.01
13	P	Acetone	-1.0000	6.9886	0.0	0	0.00
14	C	1,1-Dichloroethene	2.0000	2.1877	-9.4	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	55.4271	-10.9	100	0.00
16	T	Dimethyl Sulfide	2.0000	2.0594	-3.0	100	0.01
17	T	Iodomethane	-1.0000	3.9079	0.0	0	0.01
18	P	Methyl acetate	2.0000	2.2240	-11.2	100	0.01
19	P	Methylene Chloride	2.0000	2.1292	-6.5	100	0.00
20	P	Carbon Disulfide	2.0000	2.2085	-10.4	100	0.00
21	T	Acrylonitrile	12.5000	12.6096	-0.9	100	0.00
22	P	Methyl Tert Butyl Ether	2.0000	1.9917	0.4	100	0.00
23	P	trans-1,2-Dichloroethene	2.0000	2.0255	-1.3	100	0.00
24	T	n-Hexane	2.0000	2.1253	-6.3	100	0.01
25	T	Diisopropyl ether	25.0000	26.7748	-7.1	100	0.00
26	T	Vinyl Acetate	2.0000	2.0872	-4.4	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.1320	-6.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	26.7377	-7.0	100	0.00
29	P	2-Butanone	2.0000	2.1978	-9.9	100	0.00
30	T	Propionitrile	25.0000	27.6861	-10.7	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1934	-9.7	100	0.00
32	P	cis-1,2-Dichloroethene	2.0000	1.8850	5.8	100	0.01
33	C	Chloroform	2.0000	2.2054	-10.3	100	0.01
34	T	1-Bromopropane	2.0000	1.5465	22.7	100	0.00
35	T	Bromochloromethane	2.0000	1.9539	2.3	100	0.00
36	T	Tetrahydrofuran	25.0000	26.6900	-6.8	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	2.0000	2.0058	-0.3	100	0.00
39	P	Cyclohexane	2.0000	2.0913	-4.6	100	0.01
40	T	1,1-Dichloropropene	2.0000	2.1023	-5.1	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	26.2768	-5.1	100	0.00
42	P	Carbon Tetrachloride	2.0000	2.0823	-4.1	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	2.0000	2.1271	-6.4	100	0.00
46	P	Benzene	2.0000	2.1525	-7.6	100	0.00
47	P	Trichloroethene	2.0000	2.1207	-6.0	100	0.00
48	P	Methylcyclohexane	2.0000	2.0945	-4.7	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0621	-3.1	100	0.01
50	T	1,4-Dioxane	50.0000	52.0499	-4.1	100	0.00
51	P	Bromodichloromethane	2.0000	2.0436	-2.2	100	0.00
52	T	Dibromomethane	2.0000	2.1721	-8.6	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	3.4830	0.0	0	0.00
54	P	4-Methyl-2-Pentanone	-1.0000	1.9378	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	2.0000	1.9341	3.3	100	0.00
56	T	Dimethyl Disulfide	2.0000	1.5925	20.4	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0891	0.0	100	0.00
59	C	Toluene	2.0000	2.1230	-6.2	100	0.00
60	T	Ethyl Methacrylate	-1.0000	1.5417	0.0	0	0.00
61	P	trans-1,3-Dichloropropene	2.0000	1.9553	2.2	100	0.00
62	P	1,1,2-Trichloroethane	2.0000	1.9716	1.4	100	0.00
63	P	2-Hexanone	-1.0000	1.8373	0.0	100	0.00
64	T	1,3-Dichloropropane	2.0000	2.2302	-11.5	100	0.00
65	P	Tetrachloroethene	2.0000	2.0616	-3.1	100	0.00
66	P	Dibromochloromethane	2.0000	2.1465	-7.3	100	0.00
67	P	1,2-Dibromoethane	-1.0000	2.0410	0.0	100	0.00
68	T	1-Chlorohexane	2.0000	1.9430	2.8	100	0.00
69	P	Chlorobenzene	2.0000	2.1632	-8.2	100	0.00
70	T	1,1,1,2-Tetrachloroethane	2.0000	1.9910	0.4	100	0.00
71	C	Ethylbenzene	2.0000	2.0555	-2.8	100	0.00
72	P	m-,p-Xylene	4.0000	4.3702	-9.3	100	0.00
73	P	o-Xylene	2.0000	2.0024	-0.1	100	0.00
74	P	Styrene	2.0000	2.0313	-1.6	100	0.00
75	P	Bromoform	2.0000	1.6611	16.9	100	0.00
76	P	Isopropylbenzene	2.0000	2.0628	-3.1	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	2.0000	2.2053	-10.3	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.1865	0.0	100	0.00
80	T	1,2,3-Trichloropropane	2.0000	2.0495	-2.5	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	2.0000	1.5521	22.4	100	0.00
82	T	n-Propylbenzene	2.0000	2.0854	-4.3	100	0.00
83	T	Bromobenzene	2.0000	2.4049	-20.2	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	2.0048	0.0	100	0.00
85	T	2-Chlorotoluene	2.0000	2.2705	-13.5	100	0.00
86	T	4-Chlorotoluene	2.0000	2.1222	-6.1	100	0.00
87	T	a-Methylstyrene	-1.0000	1.7826	0.0	0	0.00
88	T	tert-Butylbenzene	-1.0000	1.8815	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	2.0000	2.0739	-3.7	100	0.00
90	T	sec-Butylbenzene	2.0000	2.0835	-4.2	100	0.00
91	T	p-Isopropyltoluene	-1.0000	2.0813	0.0	100	0.00
92	P	1,3-Dichlorobenzene	2.0000	2.3653	-18.3	100	0.00
93	P	1,4-Dichlorobenzene	2.0000	2.2416	-12.1	100	0.00
94	T	n-Butylbenzene	2.0000	2.1080	-5.4	100	0.00
95	P	1,2-Dichlorobenzene	2.0000	2.1533	-7.7	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	1.3644	0.0	100	0.00
97	P	1,2,4-Trichlorobenzene	2.0000	2.1910	-9.6	100	0.00
98	T	Hexachlorobutadiene	2.0000	2.2738	-13.7	100	0.00
99	T	Naphthalene	2.0000	2.0983	-4.9	100	0.00
100	T	1,2,3-Trichlorobenzene	2.0000	2.1487	-7.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972900.D 8260SL.M Fri Feb 26 11:13:36 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	544259	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	391881	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.76	152	178969	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	29036	9.8422 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 19.68%#		
43) 1,2-Dichloroethane-d4	10.44	65	38093	10.2911 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 20.58%#		
58) Toluene-d8	12.83	98	95044	9.5885 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 19.18%#		
79) p-Bromofluorobenzene	16.23	95	32806	9.4138 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 18.82%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	14756	3.9724 ug/kg	92
3) Chloromethane	3.74	50	15227	4.2763 ug/kg	91
4) Vinyl Chloride	3.99	62	17097	4.7964 ug/kg	89
5) 1,3-Butadiene	4.04	54	14484	4.2710 ug/kg	97
6) Bromomethane	4.89	94	9847	4.2533 ug/kg	95
7) Chloroethane	5.04	64	6311	3.9741 ug/kg	93
8) Trichlorofluoromethane	5.53	101	22668	4.2400 ug/kg	100
9) Diethyl ether	6.05	59	118004	47.2164 ug/kg	99
10) Isoprene	6.10	67	13644	4.2747 ug/kg	95
11) Acrolein	6.30	56	12131	24.3428 ug/kg	84
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	12752	4.6251 ug/kg	95
13) Acetone	6.41	43	9765	4.9429 ug/kg	94
14) 1,1-Dichloroethene	6.62	61	21760	4.2784 ug/kg	99
15) Tert-Butyl Alcohol	6.76	59	50500	90.7440 ug/kg	98
16) Dimethyl Sulfide	6.88	62	10098	4.6977 ug/kg	87
17) Iodomethane	7.13	142	4147	5.3886 ug/kg	97
18) Methyl acetate	7.15	43	12159	4.3976 ug/kg#	87
19) Methylene Chloride	7.41	84	11825	4.2690 ug/kg	99
20) Carbon Disulfide	7.45	76	34078	4.3495 ug/kg	94
21) Acrylonitrile	7.58	53	31012	22.6731 ug/kg	100
22) Methyl Tert Butyl Ether	7.61	73	34936	4.4284 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	20503	4.5233 ug/kg	95
24) n-Hexane	7.92	57	20970	4.4853 ug/kg	98
25) Diisopropyl ether	8.26	45	505084	46.5162 ug/kg	100
26) Vinyl Acetate	8.44	43	28253	4.5644 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	24239	4.2575 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	463447	45.9037 ug/kg	99
29) 2-Butanone	9.03	43	8265	4.7092 ug/kg	88
30) Propionitrile	9.15	54	25938	48.2931 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	17954	4.2251 ug/kg	91
32) cis-1,2-Dichloroethene	9.32	96	13479	4.5340 ug/kg	84
33) Chloroform	9.52	83	23525	4.4982 ug/kg	95
34) 1-Bromopropane	9.65	122	2239	5.8652 ug/kg	90
35) Bromochloromethane	9.75	130	9205	4.7667 ug/kg	97
36) Tetrahydrofuran	9.78	42	53635	47.4100 ug/kg	99
38) 1,1,1-Trichloroethane	10.04	97	20945	4.4285 ug/kg	91
39) Cyclohexane	10.09	56	23110	4.4818 ug/kg	98
40) 1,1-Dichloropropene	10.24	75	16349	4.3930 ug/kg	99
41) Tert-Amyl-Methyl ether	10.35	73	343692	46.8330 ug/kg	98
42) Carbon Tetrachloride	10.39	117	18527	4.2254 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	21553	4.6852 ug/kg	99
46)	Benzene	10.60	78	45352	4.3528 ug/kg	99
47)	Trichloroethene	11.35	130	14266	4.3213 ug/kg	97
48)	Methylcyclohexane	11.44	83	17527	4.2330 ug/kg	97
49)	1,2-Dichloropropane	11.56	63	13071	4.5684 ug/kg	100
50)	1,4-Dioxane	11.88	88	3926	91.4657 ug/kg	99
51)	Bromodichloromethane	11.87	83	18008	4.4660 ug/kg	97
52)	Dibromomethane	11.96	174	8993	4.7438 ug/kg	95
53)	2-Chloroethyl Vinyl Ether	12.16	63	2468	5.7758 ug/kg#	66
54)	4-Methyl-2-Pentanone	12.19	58	4862	3.8716 ug/kg	95
55)	cis-1,3-Dichloropropene	12.50	75	18341	4.3659 ug/kg	96
56)	Dimethyl Disulfide	12.77	94	17792	4.2144 ug/kg	91
59)	Toluene	12.92	91	48377	4.3206 ug/kg	96
60)	Ethyl Methacrylate	13.02	69	12442	4.0089 ug/kg	96
61)	trans-1,3-Dichloropropene	13.10	75	17626	4.3707 ug/kg	95
62)	1,1,2-Trichloroethane	13.33	97	10657	4.5308 ug/kg	99
63)	2-Hexanone	13.25	43	10194	4.3408 ug/kg	96
64)	1,3-Dichloropropane	13.62	76	17885	4.5633 ug/kg	100
65)	Tetrachloroethene	13.75	164	10317	4.2981 ug/kg	97
66)	Dibromochloromethane	14.01	129	14152	4.3052 ug/kg	98
67)	1,2-Dibromoethane	14.28	107	12182	4.6694 ug/kg	99
68)	1-Chlorohexane	14.35	91	12970	3.9281 ug/kg	87
69)	Chlorobenzene	14.77	112	36017	4.5769 ug/kg	85
70)	1,1,1,2-Tetrachloroethane	14.80	131	12746	4.3130 ug/kg	95
71)	Ethylbenzene	14.80	106	17828	4.3974 ug/kg	92
72)	m-,p-Xylene	14.89	106	45904	9.1683 ug/kg	95
73)	o-Xylene	15.46	106	21754	4.5275 ug/kg	91
74)	Styrene	15.49	104	35390	4.3253 ug/kg	98
75)	Bromoform	15.98	173	9363	4.3382 ug/kg	96
76)	Isopropylbenzene	15.88	105	55721	4.3198 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	13197	4.8610 ug/kg	97
80)	1,2,3-Trichloropropane	16.29	110	5070	4.9243 ug/kg#	28
81)	trans-1,4-Dichloro-2-Buten	16.33	53	4246	4.0913 ug/kg#	39
82)	n-Propylbenzene	16.39	91	64689	4.5983 ug/kg	100
83)	Bromobenzene	16.52	156	15405	4.6386 ug/kg	90
84)	1,3,5-Trimethylbenzene	16.58	105	49527	4.6900 ug/kg	98
85)	2-Chlorotoluene	16.66	91	41422	4.3899 ug/kg	97
86)	4-Chlorotoluene	16.70	91	40985	4.6981 ug/kg	99
87)	a-Methylstyrene	16.98	118	20049	4.1667 ug/kg	90
88)	tert-Butylbenzene	17.04	134	10027	4.5290 ug/kg	84
89)	1,2,4-Trimethylbenzene	17.09	105	51253	4.6345 ug/kg	98
90)	sec-Butylbenzene	17.30	105	60716	4.4642 ug/kg	98
91)	p-Isopropyltoluene	17.46	119	53318	4.6453 ug/kg	98
92)	1,3-Dichlorobenzene	17.66	146	29255	4.4323 ug/kg	98
93)	1,4-Dichlorobenzene	17.79	146	30175	4.5730 ug/kg	91
94)	n-Butylbenzene	17.99	91	45964	4.3071 ug/kg	98
95)	1,2-Dichlorobenzene	18.30	146	27310	4.4593 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.30	157	3147	4.0028 ug/kg	87
97)	1,2,4-Trichlorobenzene	20.44	180	18372	4.2258 ug/kg	95
98)	Hexachlorobutadiene	20.59	225	9618	4.1968 ug/kg	90
99)	Naphthalene	20.81	128	47189	4.3274 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.11	180	17859	4.2352 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972901.D 8260SL.M Fri Feb 26 11:21:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

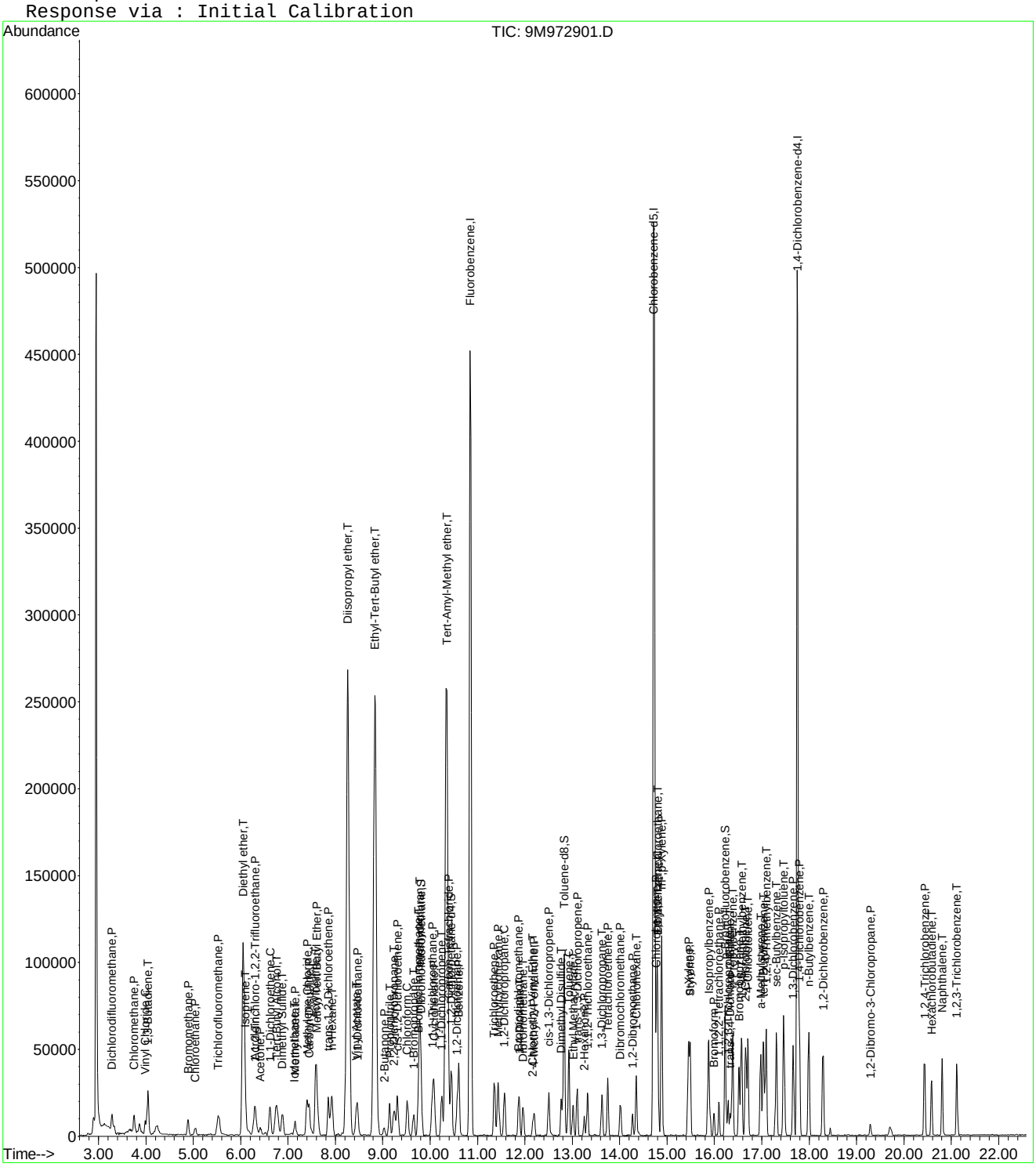

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	5.0000	3.9724	20.6	100	0.00
3	P	Chloromethane	5.0000	4.2763	14.5	100	0.00
4	C	Vinyl Chloride	5.0000	4.7964	4.1	100	0.00
5	T	1,3-Butadiene	5.0000	4.2710	14.6	100	0.00
6	P	Bromomethane	5.0000	4.2534	14.9	100	0.00
7	P	Chloroethane	5.0000	3.9741	20.5	100	0.00
8	P	Trichlorofluoromethane	5.0000	4.2400	15.2	100	0.00
9	T	Diethyl ether	50.0000	47.2164	5.6	100	0.00
10	T	Isoprene	5.0000	4.2747	14.5	100	0.01
11	T	Acrolein	25.0000	24.3428	2.6	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.6251	7.5	100	0.00
13	P	Acetone	5.0000	4.9429	1.1	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.2784	14.4	100	0.01
15	T	Tert-Butyl Alcohol	100.0000	90.7440	9.3	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.6977	6.0	100	0.00
17	T	Iodomethane	5.0000	5.3886	-7.8	100	0.00
18	P	Methyl acetate	5.0000	4.3976	12.0	100	0.01
19	P	Methylene Chloride	5.0000	4.2690	14.6	100	0.00
20	P	Carbon Disulfide	5.0000	4.3495	13.0	100	0.00
21	T	Acrylonitrile	25.0000	22.6731	9.3	100	0.00
22	P	Methyl Tert Butyl Ether	5.0000	4.4284	11.4	100	0.00
23	P	trans-1,2-Dichloroethene	5.0000	4.5233	9.5	100	0.00
24	T	n-Hexane	5.0000	4.4854	10.3	100	0.01
25	T	Diisopropyl ether	50.0000	46.5162	7.0	100	0.00
26	T	Vinyl Acetate	5.0000	4.5644	8.7	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.2575	14.8	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	45.9037	8.2	100	0.00
29	P	2-Butanone	5.0000	4.7092	5.8	100	0.00
30	T	Propionitrile	50.0000	48.2931	3.4	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.2251	15.5	100	-0.01
32	P	cis-1,2-Dichloroethene	5.0000	4.5340	9.3	100	0.00
33	C	Chloroform	5.0000	4.4982	10.0	100	0.00
34	T	1-Bromopropane	5.0000	5.8651	-17.3	100	0.00
35	T	Bromochloromethane	5.0000	4.7667	4.7	100	0.00
36	T	Tetrahydrofuran	50.0000	47.4100	5.2	100	0.00
37	S	Dibromofluoromethane	10.0000	9.8422	1.6	100	0.00
38	P	1,1,1-Trichloroethane	5.0000	4.4285	11.4	100	0.00
39	P	Cyclohexane	5.0000	4.4818	10.4	100	0.01
40	T	1,1-Dichloropropene	5.0000	4.3930	12.1	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	46.8330	6.3	100	0.00
42	P	Carbon Tetrachloride	5.0000	4.2254	15.5	100	0.00
43	S	1,2-Dichloroethane-d4	10.0000	10.2911	-2.9	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	5.0000	4.6852	6.3	100	0.00
46	P	Benzene	5.0000	4.3528	12.9	100	0.00
47	P	Trichloroethene	5.0000	4.3213	13.6	100	0.00
48	P	Methylcyclohexane	5.0000	4.2330	15.3	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.5684	8.6	100	0.00
50	T	1,4-Dioxane	100.0000	91.4657	8.5	100	0.00
51	P	Bromodichloromethane	5.0000	4.4660	10.7	100	0.00
52	T	Dibromomethane	5.0000	4.7438	5.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	5.7758	-15.5	100	0.00
54	P	4-Methyl-2-Pentanone	5.0000	3.8716	22.6	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	5.0000	4.3659	12.7	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.2144	15.7	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	-0.01
58	S	Toluene-d8	10.0000	9.5885	4.1	100	0.00
59	C	Toluene	5.0000	4.3206	13.6	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.0089	19.8	100	0.00
61	P	trans-1,3-Dichloropropene	5.0000	4.3707	12.6	100	0.00
62	P	1,1,2-Trichloroethane	5.0000	4.5309	9.4	100	0.00
63	P	2-Hexanone	5.0000	4.3408	13.2	100	0.00
64	T	1,3-Dichloropropane	5.0000	4.5633	8.7	100	-0.01
65	P	Tetrachloroethene	5.0000	4.2981	14.0	100	0.00
66	P	Dibromochloromethane	5.0000	4.3052	13.9	100	0.00
67	P	1,2-Dibromoethane	5.0000	4.6694	6.6	100	0.00
68	T	1-Chlorohexane	5.0000	3.9281	21.4	100	0.00
69	P	Chlorobenzene	5.0000	4.5769	8.5	100	0.00
70	T	1,1,1,2-Tetrachloroethane	5.0000	4.3130	13.7	100	0.00
71	C	Ethylbenzene	5.0000	4.3974	12.1	100	0.00
72	P	m-,p-Xylene	10.0000	9.1683	8.3	100	0.00
73	P	o-Xylene	5.0000	4.5275	9.5	100	0.00
74	P	Styrene	5.0000	4.3253	13.5	100	0.00
75	P	Bromoform	5.0000	4.3382	13.2	100	-0.01
76	P	Isopropylbenzene	5.0000	4.3198	13.6	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	5.0000	4.8610	2.8	100	-0.01
79	S	p-Bromofluorobenzene	10.0000	9.4138	5.9	100	0.00
80	T	1,2,3-Trichloropropane	5.0000	4.9243	1.5	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	5.0000	4.0913	18.2	100	0.00
82	T	n-Propylbenzene	5.0000	4.5983	8.0	100	0.00
83	T	Bromobenzene	5.0000	4.6386	7.2	100	0.00
84	T	1,3,5-Trimethylbenzene	5.0000	4.6900	6.2	100	0.00
85	T	2-Chlorotoluene	5.0000	4.3899	12.2	100	0.00
86	T	4-Chlorotoluene	5.0000	4.6981	6.0	100	0.00
87	T	a-Methylstyrene	5.0000	4.1667	16.7	100	0.00
88	T	tert-Butylbenzene	5.0000	4.5290	9.4	100	0.00
89	T	1,2,4-Trimethylbenzene	5.0000	4.6345	7.3	100	0.00
90	T	sec-Butylbenzene	5.0000	4.4642	10.7	100	0.00
91	T	p-Isopropyltoluene	5.0000	4.6453	7.1	100	0.00
92	P	1,3-Dichlorobenzene	5.0000	4.4323	11.4	100	0.00
93	P	1,4-Dichlorobenzene	5.0000	4.5730	8.5	100	-0.01
94	T	n-Butylbenzene	5.0000	4.3071	13.9	100	0.00
95	P	1,2-Dichlorobenzene	5.0000	4.4593	10.8	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	5.0000	4.0028	19.9	100	0.00
97	P	1,2,4-Trichlorobenzene	5.0000	4.2258	15.5	100	0.00
98	T	Hexachlorobutadiene	5.0000	4.1968	16.1	100	0.00
99	T	Naphthalene	5.0000	4.3274	13.5	100	0.00
100	T	1,2,3-Trichlorobenzene	5.0000	4.2352	15.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972901.D 8260SL.M Fri Feb 26 11:21:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972902.D Vial: 7
Acq On : 25 Feb 2016 18:59 Operator: ADC
Sample : WG558732-07 20.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	491006	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	357658	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	168257	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	47666	17.9094 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 35.82%#		
43) 1,2-Dichloroethane-d4	10.45	65	60269	18.0480 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 36.10%#		
58) Toluene-d8	12.82	98	163811	18.1074 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 36.22%#		
79) p-Bromofluorobenzene	16.23	95	58931	17.9870 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 35.98%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	78283	23.3598 ug/kg	99
3) Chloromethane	3.75	50	64951	20.2188 ug/kg	98
4) Vinyl Chloride	3.99	62	73167	22.7523 ug/kg	97
5) 1,3-Butadiene	4.04	54	64372	21.0404 ug/kg	98
6) Bromomethane	4.88	94	40556	19.4178 ug/kg	97
7) Chloroethane	5.04	64	27981	19.5307 ug/kg	97
8) Trichlorofluoromethane	5.53	101	98871	20.4994 ug/kg	98
9) Diethyl ether	6.06	59	191078	84.7472 ug/kg	99
10) Isoprene	6.10	67	59437	20.6414 ug/kg	98
11) Acrolein	6.30	56	18057	40.1641 ug/kg	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	50002	20.1026 ug/kg	100
13) Acetone	6.42	43	27164	20.4768 ug/kg	100
14) 1,1-Dichloroethene	6.62	61	94732	20.6460 ug/kg	98
15) Tert-Butyl Alcohol	6.75	59	85695	170.6872 ug/kg	97
16) Dimethyl Sulfide	6.88	62	40580	20.9258 ug/kg	99
17) Iodomethane	7.13	142	21330	17.5663 ug/kg	96
18) Methyl acetate	7.15	43	54770	21.9573 ug/kg	99
19) Methylene Chloride	7.41	84	51619	20.6564 ug/kg	95
20) Carbon Disulfide	7.45	76	145286	20.5545 ug/kg	97
21) Acrylonitrile	7.59	53	50918	41.2640 ug/kg	97
22) Methyl Tert Butyl Ether	7.61	73	149271	20.9731 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	84416	20.6434 ug/kg	98
24) n-Hexane	7.92	57	82582	19.5795 ug/kg	98
25) Diisopropyl ether	8.26	45	841729	85.9275 ug/kg	99
26) Vinyl Acetate	8.44	43	107114	19.1814 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	104490	20.3440 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	777976	85.4147 ug/kg	99
29) 2-Butanone	9.02	43	30691	19.3834 ug/kg	100
30) Propionitrile	9.14	54	41719	86.0996 ug/kg	99
31) 2,2-Dichloropropane	9.24	77	73960	19.2927 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	56404	21.0307 ug/kg	100
33) Chloroform	9.52	83	94621	20.0546 ug/kg	98
34) 1-Bromopropane	9.65	122	8251	20.7938 ug/kg	98
35) Bromochloromethane	9.75	130	38059	21.8457 ug/kg	99
36) Tetrahydrofuran	9.77	42	86589	84.8405 ug/kg	100
38) 1,1,1-Trichloroethane	10.05	97	85938	20.1411 ug/kg	99
39) Cyclohexane	10.09	56	96933	20.8373 ug/kg	98
40) 1,1-Dichloropropene	10.25	75	67544	20.1175 ug/kg	96
41) Tert-Amyl-Methyl ether	10.34	73	562826	85.0111 ug/kg	99
42) Carbon Tetrachloride	10.39	117	79566	20.1143 ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972902.D 8260SL.M Fri Feb 26 11:21:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972902.D Vial: 7
Acq On : 25 Feb 2016 18:59 Operator: ADC
Sample : WG558732-07 20.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	86857	20.9287 ug/kg	98
46)	Benzene	10.60	78	190747	20.2931 ug/kg	98
47)	Trichloroethene	11.35	130	61315	20.5871 ug/kg	99
48)	Methylcyclohexane	11.44	83	79384	21.2516 ug/kg	99
49)	1,2-Dichloropropane	11.56	63	54356	21.0584 ug/kg	98
50)	1,4-Dioxane	11.88	88	7054	182.1639 ug/kg	93
51)	Bromodichloromethane	11.87	83	73160	20.1115 ug/kg	99
52)	Dibromomethane	11.97	174	35844	20.9583 ug/kg	97
53)	2-Chloroethyl Vinyl Ether	12.17	63	11048	17.4432 ug/kg	94
54)	4-Methyl-2-Pentanone	12.20	58	22247	19.6364 ug/kg	96
55)	cis-1,3-Dichloropropene	12.50	75	77533	20.4577 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	77400	20.3222 ug/kg	99
59)	Toluene	12.93	91	209919	20.5421 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	58827	20.7683 ug/kg	99
61)	trans-1,3-Dichloropropene	13.11	75	73778	20.0452 ug/kg	98
62)	1,1,2-Trichloroethane	13.32	97	45475	21.1838 ug/kg	98
63)	2-Hexanone	13.25	43	40183	18.7479 ug/kg	97
64)	1,3-Dichloropropane	13.62	76	73060	20.4249 ug/kg	95
65)	Tetrachloroethene	13.75	164	44423	20.2778 ug/kg	96
66)	Dibromochloromethane	14.01	129	59220	19.7391 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	48648	20.4311 ug/kg	97
68)	1-Chlorohexane	14.35	91	64519	21.4099 ug/kg	96
69)	Chlorobenzene	14.77	112	150639	20.9742 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	55462	20.5631 ug/kg	99
71)	Ethylbenzene	14.79	106	77813	21.0297 ug/kg	100
72)	m-,p-Xylene	14.89	106	192168	42.0536 ug/kg	98
73)	o-Xylene	15.45	106	92490	21.0911 ug/kg	98
74)	Styrene	15.49	104	154534	20.6939 ug/kg	100
75)	Bromoform	16.00	173	39818	20.2142 ug/kg	98
76)	Isopropylbenzene	15.87	105	249418	21.1865 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	53687	21.0342 ug/kg	98
80)	1,2,3-Trichloropropane	16.28	110	19658	20.3087 ug/kg	98
81)	trans-1,4-Dichloro-2-Buten	16.33	53	21143	21.6696 ug/kg	89
82)	n-Propylbenzene	16.39	91	283998	21.4728 ug/kg	98
83)	Bromobenzene	16.52	156	65363	20.9343 ug/kg	95
84)	1,3,5-Trimethylbenzene	16.57	105	212735	21.4278 ug/kg	99
85)	2-Chlorotoluene	16.66	91	189159	21.3235 ug/kg	99
86)	4-Chlorotoluene	16.70	91	171741	20.9401 ug/kg	99
87)	a-Methylstyrene	16.98	118	95360	21.0801 ug/kg	99
88)	tert-Butylbenzene	17.03	134	43749	21.0188 ug/kg	90
89)	1,2,4-Trimethylbenzene	17.08	105	218350	21.0010 ug/kg	99
90)	sec-Butylbenzene	17.31	105	268054	20.9635 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	225612	20.9076 ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	122605	19.7580 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	124659	20.0949 ug/kg	99
94)	n-Butylbenzene	17.99	91	199655	19.8998 ug/kg	99
95)	1,2-Dichlorobenzene	18.30	146	115021	19.9768 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	14138	19.1277 ug/kg	95
97)	1,2,4-Trichlorobenzene	20.43	180	77418	18.9408 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	41508	19.2651 ug/kg	96
99)	Naphthalene	20.81	128	204933	19.9897 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.12	180	75616	19.0736 ug/kg	98

(#) = qualifier out of range (m) = manual integration
9M972902.D 8260SL.M Fri Feb 26 11:21:57 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972902.D Vial: 7
Acq On : 25 Feb 2016 18:59 Operator: ADC
Sample : WG558732-07 20.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

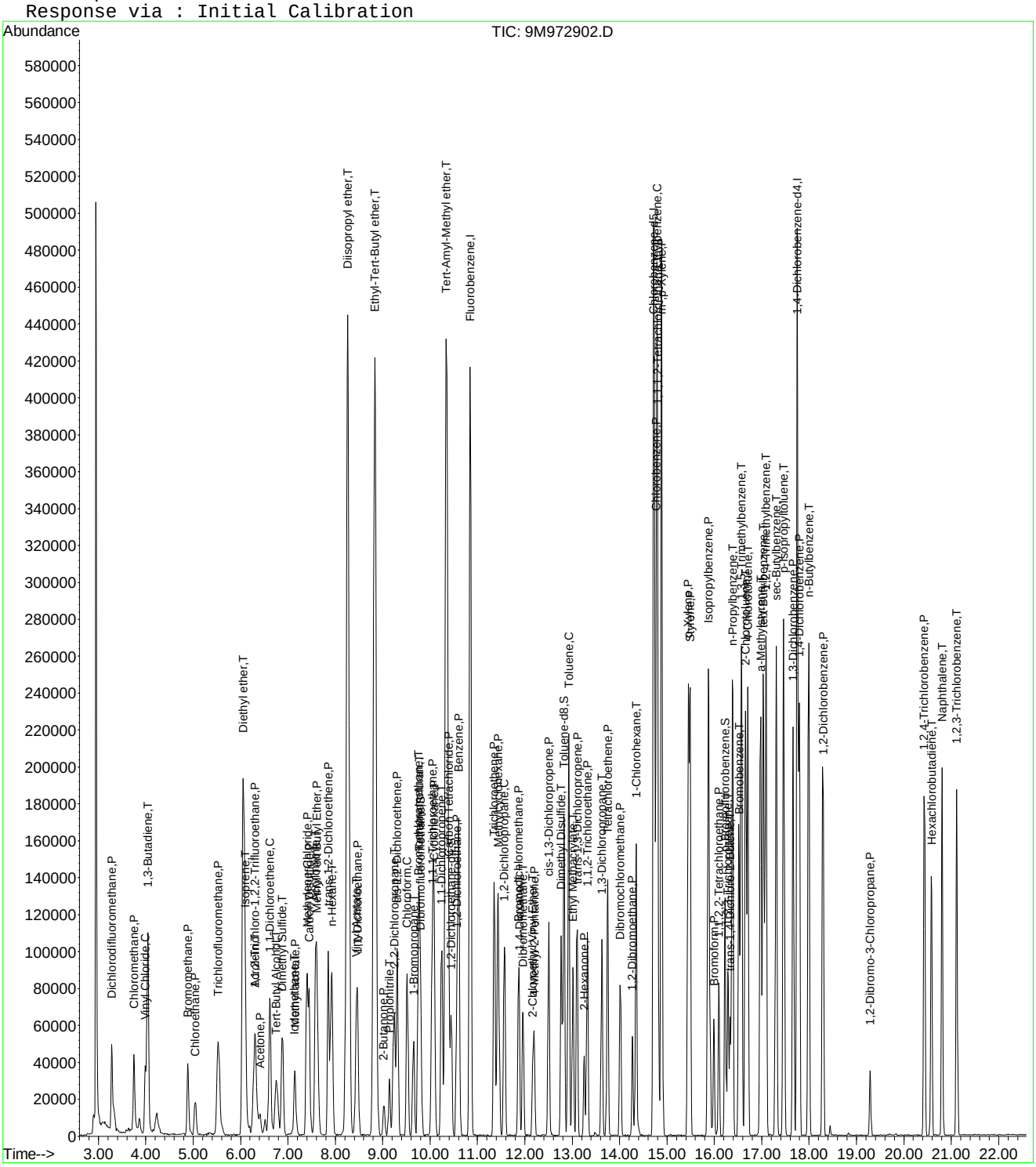

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972903.D Vial: 8
Acq On : 25 Feb 2016 19:29 Operator: ADC
Sample : WG558732-08 100.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:57 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	535022	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	390279	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.75	152	187456	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	305515	105.3466 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 210.70%#		
43) 1,2-Dichloroethane-d4	10.45	65	383447	105.3793 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 210.76%#		
58) Toluene-d8	12.83	98	1052175	106.5842 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 213.16%#		
79) p-Bromofluorobenzene	16.23	95	403966	110.6707 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 221.34%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	340079	93.1314 ug/kg	98
3) Chloromethane	3.74	50	316834	90.5143 ug/kg	100
4) Vinyl Chloride	3.99	62	366384	104.5591 ug/kg	99
5) 1,3-Butadiene	4.04	54	317949	95.3739 ug/kg	98
6) Bromomethane	4.88	94	198493	87.2180 ug/kg	99
7) Chloroethane	5.04	64	148539	95.1503 ug/kg	96
8) Trichlorofluoromethane	5.53	101	502703	95.6532 ug/kg	99
9) Diethyl ether	6.06	59	457873	186.3696 ug/kg	99
10) Isoprene	6.09	67	302269	96.3367 ug/kg	100
11) Acrolein	6.30	56	49319	100.6749 ug/kg	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	264925	97.7467 ug/kg	100
13) Acetone	6.41	43	126959	96.0965 ug/kg	97
14) 1,1-Dichloroethene	6.61	61	485466	97.0986 ug/kg	99
15) Tert-Butyl Alcohol	6.77	59	202804	370.7125 ug/kg	97
16) Dimethyl Sulfide	6.88	62	209613	99.1979 ug/kg	97
17) Iodomethane	7.14	142	134789	88.4431 ug/kg	96
18) Methyl acetate	7.15	43	256770	94.4705 ug/kg	99
19) Methylene Chloride	7.40	84	256919	94.3530 ug/kg	100
20) Carbon Disulfide	7.45	76	725343	94.1764 ug/kg	99
21) Acrylonitrile	7.59	53	131913	98.1077 ug/kg	97
22) Methyl Tert Butyl Ether	7.61	73	763125	98.4009 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	435514	97.7404 ug/kg	99
24) n-Hexane	7.92	57	458951	99.8615 ug/kg	98
25) Diisopropyl ether	8.26	45	1991599	186.5850 ug/kg	99
26) Vinyl Acetate	8.44	43	593217	97.4908 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	533571	95.3384 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	1850360	186.4394 ug/kg	100
29) 2-Butanone	9.03	43	167064	96.8316 ug/kg	99
30) Propionitrile	9.14	54	102467	194.0735 ug/kg	99
31) 2,2-Dichloropropane	9.24	77	409808	98.1051 ug/kg	98
32) cis-1,2-Dichloroethene	9.31	96	291782	99.8428 ug/kg	100
33) Chloroform	9.52	83	491651	95.6310 ug/kg	100
34) 1-Bromopropane	9.65	122	43084	95.7559 ug/kg	98
35) Bromochloromethane	9.75	130	191150	100.6929 ug/kg	97
36) Tetrahydrofuran	9.78	42	206962	186.0999 ug/kg	99
38) 1,1,1-Trichloroethane	10.04	97	454248	97.7025 ug/kg	99
39) Cyclohexane	10.08	56	497594	98.1657 ug/kg	99
40) 1,1-Dichloropropene	10.24	75	355996	97.3080 ug/kg	98
41) Tert-Amyl-Methyl ether	10.35	73	1353122	187.5659 ug/kg	99
42) Carbon Tetrachloride	10.39	117	419252	97.2674 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972903.D 8260SL.M Fri Feb 26 11:21:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972903.D Vial: 8
Acq On : 25 Feb 2016 19:29 Operator: ADC
Sample : WG558732-08 100.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:57 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	441828	97.7027	ug/kg	98
46)	Benzene	10.60	78	946247	92.3868	ug/kg	100
47)	Trichloroethene	11.35	130	316701	97.5872	ug/kg	98
48)	Methylcyclohexane	11.44	83	420776	103.3770	ug/kg	100
49)	1,2-Dichloropropane	11.56	63	273398	97.2049	ug/kg	97
50)	1,4-Dioxane	11.89	88	15240	361.1826	ug/kg	95
51)	Bromodichloromethane	11.87	83	384453	96.9905	ug/kg	100
52)	Dibromomethane	11.96	174	178770	95.9288	ug/kg	100
53)	2-Chloroethyl Vinyl Ether	12.17	63	71336	89.4187	ug/kg	97
54)	4-Methyl-2-Pentanone	12.19	58	126118	102.1606	ug/kg	99
55)	cis-1,3-Dichloropropene	12.50	75	407392	98.6500	ug/kg	99
56)	Dimethyl Disulfide	12.77	94	430523	103.7388	ug/kg	99
59)	Toluene	12.93	91	1070303	95.9828	ug/kg	100
60)	Ethyl Methacrylate	13.01	69	310336	100.4033	ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	395340	98.4345	ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	234168	99.9657	ug/kg	97
63)	2-Hexanone	13.25	43	238254	101.8692	ug/kg	99
64)	1,3-Dichloropropane	13.62	76	372307	95.3836	ug/kg	98
65)	Tetrachloroethene	13.75	164	235384	98.4650	ug/kg	97
66)	Dibromochloromethane	14.01	129	316240	96.5980	ug/kg	100
67)	1,2-Dibromoethane	14.28	107	254663	98.0133	ug/kg	98
68)	1-Chlorohexane	14.35	91	341938	103.9841	ug/kg	98
69)	Chlorobenzene	14.77	112	744916	95.0493	ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.80	131	289798	98.4650	ug/kg	98
71)	Ethylbenzene	14.79	106	397428	98.4311	ug/kg	99
72)	m-,p-Xylene	14.89	106	955121	191.5462	ug/kg	97
73)	o-Xylene	15.45	106	475355	99.3381	ug/kg	100
74)	Styrene	15.49	104	817155	100.2803	ug/kg	100
75)	Bromoform	15.99	173	212807	99.0046	ug/kg	98
76)	Isopropylbenzene	15.88	105	1283494	99.9122	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	279744	98.3764	ug/kg	100
80)	1,2,3-Trichloropropane	16.29	110	110421	102.3924	ug/kg	94
81)	trans-1,4-Dichloro-2-Buten	16.33	53	116410	107.0899	ug/kg	87
82)	n-Propylbenzene	16.39	91	1458178	98.9594	ug/kg	99
83)	Bromobenzene	16.52	156	334600	96.1892	ug/kg	97
84)	1,3,5-Trimethylbenzene	16.57	105	1100766	99.5195	ug/kg	99
85)	2-Chlorotoluene	16.66	91	937812	94.8900	ug/kg	100
86)	4-Chlorotoluene	16.70	91	906777	99.2383	ug/kg	100
87)	a-Methylstyrene	16.98	118	508276	100.8508	ug/kg	99
88)	tert-Butylbenzene	17.04	134	234437	101.0972	ug/kg	99
89)	1,2,4-Trimethylbenzene	17.09	105	1125260	97.1435	ug/kg	99
90)	sec-Butylbenzene	17.30	105	1425754	100.0828	ug/kg	100
91)	p-Isopropyltoluene	17.46	119	1215596	101.1125	ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	644471	93.2206	ug/kg	100
93)	1,4-Dichlorobenzene	17.79	146	646907	93.6002	ug/kg	99
94)	n-Butylbenzene	17.99	91	1131901	101.2628	ug/kg	99
95)	1,2-Dichlorobenzene	18.30	146	622851	97.0971	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.30	157	88939	108.0040	ug/kg	99
97)	1,2,4-Trichlorobenzene	20.44	180	466688	102.4843	ug/kg	99
98)	Hexachlorobutadiene	20.59	225	252514	105.1960	ug/kg	99
99)	Naphthalene	20.81	128	1208454	105.8030	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	456274	103.3044	ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972903.D Vial: 8
Acq On : 25 Feb 2016 19:29 Operator: ADC
Sample : WG558732-08 100.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

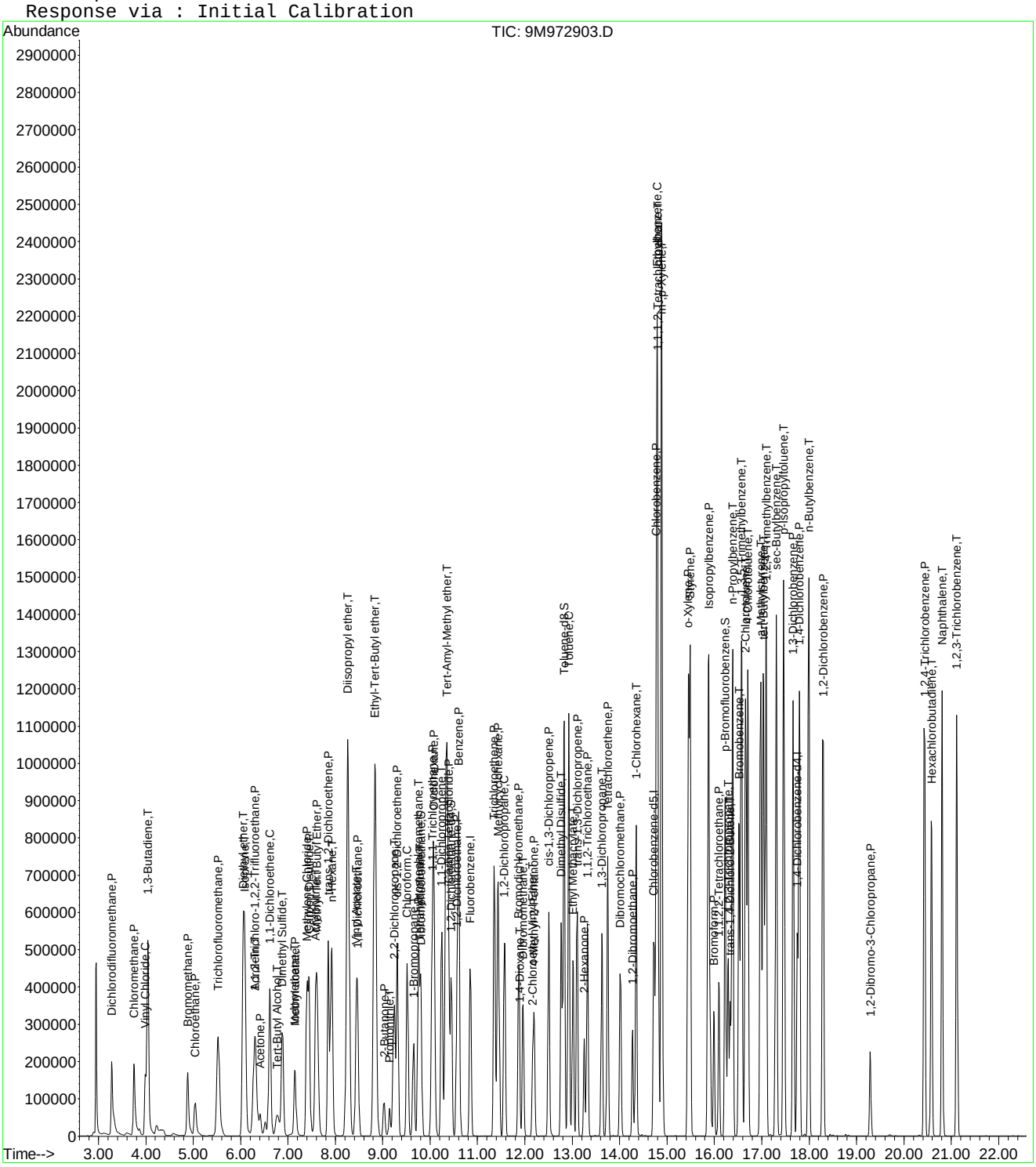

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972904.D Vial: 9
Acq On : 25 Feb 2016 20:00 Operator: ADC
Sample : WG558732-09 200.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:58 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	542388	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	396894	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	212175	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	595362	202.5026 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 405.00%#		
43) 1,2-Dichloroethane-d4	10.45	65	716316	194.1852 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 388.38%#		
58) Toluene-d8	12.82	98	2013255	200.5415 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 401.08%#		
79) p-Bromofluorobenzene	16.23	95	807150	195.3653 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 390.74%#		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.28	85	774894	209.3245 ug/kg	100
3) Chloromethane	3.75	50	750862	211.5959 ug/kg	100
4) Vinyl Chloride	3.99	62	770550	216.9141 ug/kg	100
5) 1,3-Butadiene	4.04	54	695631	205.8318 ug/kg	99
6) Bromomethane	4.88	94	470946	204.1239 ug/kg	97
7) Chloroethane	5.04	64	374502	236.6386 ug/kg	98
8) Trichlorofluoromethane	5.52	101	1120886	210.3832 ug/kg	99
10) Isoprene	6.09	67	690766	217.1654 ug/kg	97
11) Acrolein	6.31	56	2288	4.6071 ug/kg	86
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	592415	215.6090 ug/kg	100
13) Acetone	6.42	43	268070	202.8703 ug/kg	99
14) 1,1-Dichloroethene	6.62	61	1084122	213.8917 ug/kg	99
15) Tert-Butyl Alcohol	6.78	59	290	0.5229 ug/kg#	58
16) Dimethyl Sulfide	6.88	62	486231	226.9805 ug/kg	99
17) Iodomethane	7.14	142	341644	216.9305 ug/kg	98
18) Methyl acetate	7.15	43	558766	202.7886 ug/kg	97
19) Methylene Chloride	7.40	84	606998	219.8913 ug/kg	98
20) Carbon Disulfide	7.44	76	1650167	211.3432 ug/kg	98
21) Acrylonitrile	7.61	53	18860	13.8363 ug/kg#	28
22) Methyl Tert Butyl Ether	7.61	73	1710517	217.5666 ug/kg	99
23) trans-1,2-Dichloroethene	7.84	61	967656	214.2173 ug/kg	99
24) n-Hexane	7.92	57	1006142	215.9497 ug/kg	97
26) Vinyl Acetate	8.43	43	1320060	213.9959 ug/kg	98
27) 1,1-Dichloroethane	8.46	63	1199515	211.4185 ug/kg	100
29) 2-Butanone	9.02	43	373284	213.4201 ug/kg	100
31) 2,2-Dichloropropane	9.24	77	904865	213.6764 ug/kg	100
32) cis-1,2-Dichloroethene	9.31	96	649726	219.3058 ug/kg	100
33) Chloroform	9.52	83	1094765	210.0507 ug/kg	100
34) 1-Bromopropane	9.66	122	98189	213.9851 ug/kg	100
35) Bromochloromethane	9.75	130	427351	222.0603 ug/kg	99
36) Tetrahydrofuran	9.77	42	2491	2.2095 ug/kg	93
38) 1,1,1-Trichloroethane	10.05	97	1020636	216.5435 ug/kg	100
39) Cyclohexane	10.08	56	1092323	212.5677 ug/kg	98
40) 1,1-Dichloropropene	10.24	75	780375	210.4109 ug/kg	98
42) Carbon Tetrachloride	10.39	117	950685	217.5657 ug/kg	100
45) 1,2-Dichloroethane	10.56	62	975428	212.7698 ug/kg	98
46) Benzene	10.61	78	2107212	202.9435 ug/kg	100
47) Trichloroethene	11.36	130	696420	211.6783 ug/kg	98
48) Methylcyclohexane	11.43	83	922594	223.5862 ug/kg	100
49) 1,2-Dichloropropane	11.57	63	613480	215.1567 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972904.D Vial: 9
Acq On : 25 Feb 2016 20:00 Operator: ADC
Sample : WG558732-09 200.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:58 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
50)	1,4-Dioxane	11.86	88	821	19.1932	ug/kg#	7
51)	Bromodichloromethane	11.87	83	861318	214.3439	ug/kg	99
52)	Dibromomethane	11.96	174	401145	212.3328	ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	173854	210.9891	ug/kg	98
54)	4-Methyl-2-Pentanone	12.19	58	281550	224.9694	ug/kg	99
55)	cis-1,3-Dichloropropene	12.51	75	917528	219.1621	ug/kg	100
56)	Dimethyl Disulfide	12.77	94	993447	236.1300	ug/kg	99
59)	Toluene	12.93	91	2353264	207.5190	ug/kg	100
60)	Ethyl Methacrylate	13.01	69	698780	222.3090	ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	892986	218.6361	ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	510766	214.4105	ug/kg	98
63)	2-Hexanone	13.26	43	551431	231.8433	ug/kg	99
64)	1,3-Dichloropropane	13.63	76	842104	212.1481	ug/kg	99
65)	Tetrachloroethene	13.75	164	518091	213.1138	ug/kg	97
66)	Dibromochloromethane	14.02	129	723489	217.3121	ug/kg	99
67)	1,2-Dibromoethane	14.27	107	560802	212.2411	ug/kg	99
68)	1-Chlorohexane	14.35	91	757279	226.4519	ug/kg	100
69)	Chlorobenzene	14.78	112	1626715	204.1050	ug/kg	98
70)	1,1,1,2-Tetrachloroethane	14.81	131	649903	217.1378	ug/kg	97
71)	Ethylbenzene	14.80	106	871321	212.2035	ug/kg	99
72)	m-,p-Xylene	14.89	106	2089330	412.0243	ug/kg	98
73)	o-Xylene	15.45	106	1065692	218.9929	ug/kg	98
74)	Styrene	15.49	104	1839951	222.0334	ug/kg	100
75)	Bromoform	15.99	173	511700	234.0915	ug/kg	99
76)	Isopropylbenzene	15.87	105	2873816	219.9805	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	662688	205.8943	ug/kg	99
80)	1,2,3-Trichloropropane	16.29	110	257281	210.7797	ug/kg	98
81)	trans-1,4-Dichloro-2-Buten	16.34	53	281460	228.7601	ug/kg	90
82)	n-Propylbenzene	16.38	91	3244636	194.5439	ug/kg	100
83)	Bromobenzene	16.52	156	759998	193.0269	ug/kg	95
84)	1,3,5-Trimethylbenzene	16.57	105	2471747	197.4342	ug/kg	99
85)	2-Chlorotoluene	16.66	91	2218317	198.3049	ug/kg	100
86)	4-Chlorotoluene	16.71	91	1934954	187.0917	ug/kg	100
87)	a-Methylstyrene	16.98	118	1205032	211.2436	ug/kg	99
88)	tert-Butylbenzene	17.03	134	526001	200.4032	ug/kg	87
89)	1,2,4-Trimethylbenzene	17.09	105	2520611	192.2523	ug/kg	100
90)	sec-Butylbenzene	17.31	105	3206494	198.8615	ug/kg	100
91)	p-Isopropyltoluene	17.47	119	2752661	202.2895	ug/kg	100
92)	1,3-Dichlorobenzene	17.67	146	1508843	192.8225	ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	1522857	194.6701	ug/kg	99
94)	n-Butylbenzene	17.99	91	2603240	205.7600	ug/kg	100
95)	1,2-Dichlorobenzene	18.29	146	1515803	208.7710	ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	205456	220.4304	ug/kg	98
97)	1,2,4-Trichlorobenzene	20.43	180	1061631	205.9726	ug/kg	99
98)	Hexachlorobutadiene	20.58	225	612598	225.4729	ug/kg	100
99)	Naphthalene	20.81	128	2666581	206.2661	ug/kg	99
100)	1,2,3-Trichlorobenzene	21.12	180	1022740	204.5802	ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972904.D Vial: 9
Acq On : 25 Feb 2016 20:00 Operator: ADC
Sample : WG558732-09 200.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

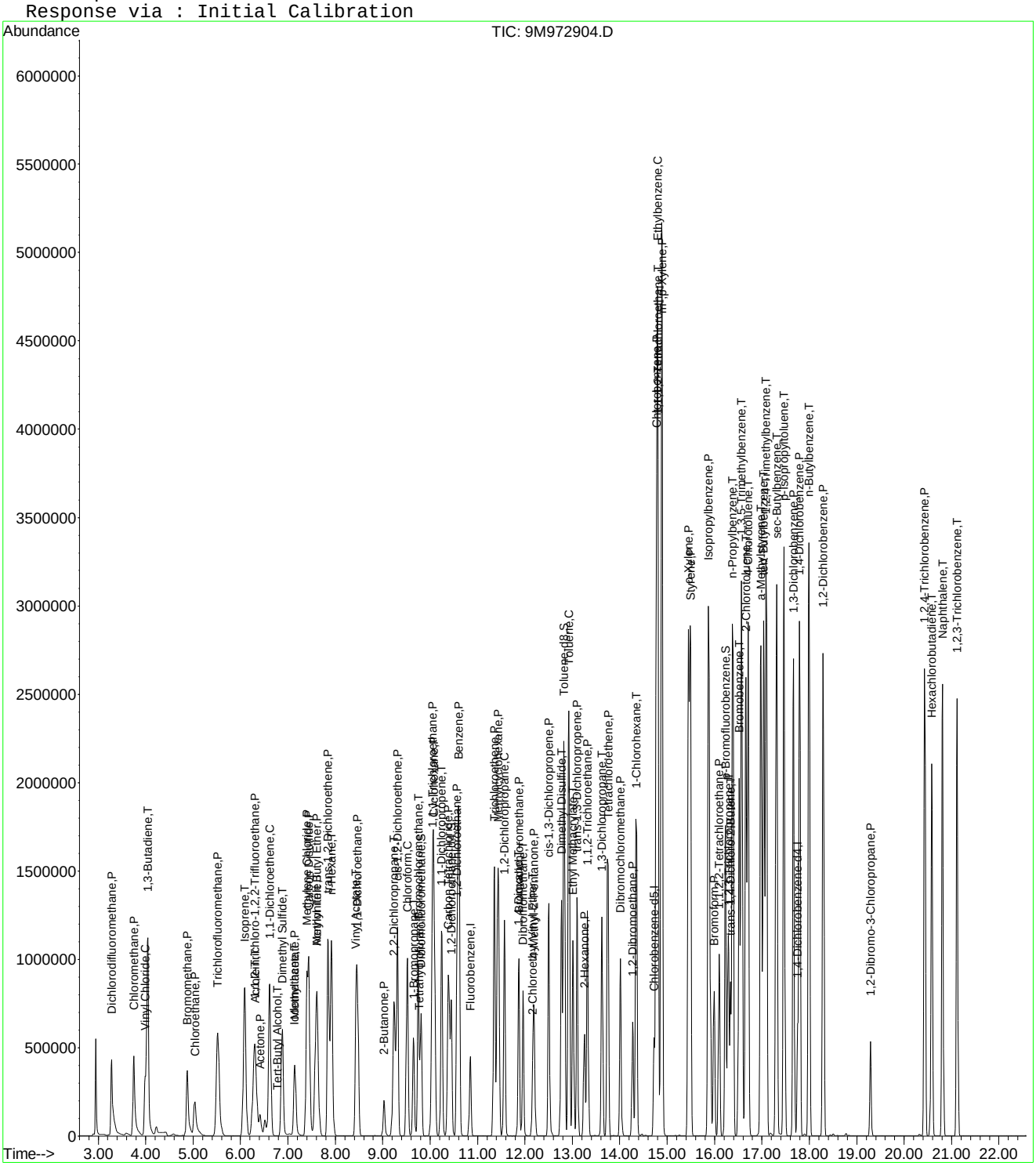

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972905.D Vial: 10
Acq On : 25 Feb 2016 20:30 Operator: ADC
Sample : WG558732-10 300.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:59 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	626979	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	468521	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	224223	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	520	0.1530 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.30%#	
43) 1,2-Dichloroethane-d4	10.45	65	1794	0.4207 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.84%#	
58) Toluene-d8	12.82	98	7789	0.6573 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	1.32%#	
79) p-Bromofluorobenzene	16.23	95	6216	1.4237 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	2.84%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	1155483	270.0216 ug/kg	98
3) Chloromethane	3.75	50	1142773	278.5891 ug/kg	100
4) Vinyl Chloride	3.98	62	1112221	270.8539 ug/kg	99
5) 1,3-Butadiene	4.03	54	1100483	281.6917 ug/kg	98
6) Bromomethane	4.87	94	749711	281.1083 ug/kg	98
7) Chloroethane	5.04	64	601337	328.7051 ug/kg	98
8) Trichlorofluoromethane	5.52	101	1778447	288.7670 ug/kg	99
9) Diethyl ether	6.06	59	869609	302.0457 ug/kg	99
10) Isoprene	6.08	67	1108410	301.4513 ug/kg	98
11) Acrolein	6.30	56	93621	163.0794 ug/kg	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	943691	297.1172 ug/kg	99
13) Acetone	6.42	43	369915	242.6618 ug/kg	95
14) 1,1-Dichloroethene	6.61	61	1715009	292.7111 ug/kg	98
15) Tert-Butyl Alcohol	6.80	59	188151	293.4850 ug/kg	89
16) Dimethyl Sulfide	6.88	62	763075	308.1557 ug/kg	99
17) Iodomethane	7.14	142	532480	291.5128 ug/kg	99
18) Methyl acetate	7.15	43	879657	276.1748 ug/kg	98
19) Methylene Chloride	7.40	84	937262	293.7237 ug/kg	96
20) Carbon Disulfide	7.44	76	2640380	292.5391 ug/kg	98
21) Acrylonitrile	7.59	53	252681	160.3640 ug/kg	94
22) Methyl Tert Butyl Ether	7.61	73	2699681	297.0533 ug/kg	98
23) trans-1,2-Dichloroethene	7.84	61	1548353	296.5245 ug/kg	100
24) n-Hexane	7.92	57	1608467	298.6501 ug/kg	98
25) Diisopropyl ether	8.26	45	3742238	299.1747 ug/kg	100
26) Vinyl Acetate	8.43	43	2097407	294.1383 ug/kg	99
27) 1,1-Dichloroethane	8.47	63	1881635	286.8995 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	3515202	302.2390 ug/kg	99
29) 2-Butanone	9.02	43	559900	276.9258 ug/kg	100
30) Propionitrile	9.14	54	182998	295.7653 ug/kg	100
31) 2,2-Dichloropropane	9.24	77	1439671	294.0988 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	1040893	303.9366 ug/kg	99
33) Chloroform	9.52	83	1708608	283.5977 ug/kg	99
34) 1-Bromopropane	9.65	122	152776	287.6719 ug/kg	98
35) Bromochloromethane	9.75	130	668631	300.5590 ug/kg	98
36) Tetrahydrofuran	9.77	42	365915	280.7723 ug/kg	97
38) 1,1,1-Trichloroethane	10.05	97	1606962	294.9423 ug/kg	100
39) Cyclohexane	10.08	56	1746722	294.0540 ug/kg	99
40) 1,1-Dichloropropene	10.24	75	1258569	293.5615 ug/kg	98
41) Tert-Amyl-Methyl ether	10.34	73	2573262	304.3824 ug/kg	98
42) Carbon Tetrachloride	10.39	117	1494872	295.9476 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972905.D Vial: 10
Acq On : 25 Feb 2016 20:30 Operator: ADC
Sample : WG558732-10 300.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:59 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.57	62	1526616	288.0725 ug/kg	98
46)	Benzene	10.61	78	3320959	276.6861 ug/kg	99
47)	Trichloroethene	11.36	130	1102750	289.9607 ug/kg	98
48)	Methylcyclohexane	11.43	83	1476436	309.5324 ug/kg	98
49)	1,2-Dichloropropane	11.57	63	980423	297.4576 ug/kg	99
50)	1,4-Dioxane	11.89	88	31126	629.4828 ug/kg	81
51)	Bromodichloromethane	11.87	83	1358159	292.3851 ug/kg	99
52)	Dibromomethane	11.96	174	632731	289.7290 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	287132	300.2354 ug/kg	96
54)	4-Methyl-2-Pentanone	12.19	58	438042	302.7895 ug/kg	99
55)	cis-1,3-Dichloropropene	12.51	75	1436858	296.9047 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	1505953	309.6528 ug/kg	95
59)	Toluene	12.93	91	3720819	277.9530 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	1096301	295.4554 ug/kg	100
61)	trans-1,3-Dichloropropene	13.10	75	1416217	293.7329 ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	820836	291.8946 ug/kg	99
63)	2-Hexanone	13.26	43	814427	290.0688 ug/kg	100
64)	1,3-Dichloropropane	13.63	76	1322191	282.1714 ug/kg	100
65)	Tetrachloroethene	13.75	164	815946	284.3233 ug/kg	98
66)	Dibromochloromethane	14.02	129	1136128	289.0845 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	889642	285.2204 ug/kg	99
68)	1-Chlorohexane	14.34	91	1188786	301.1405 ug/kg	99
69)	Chlorobenzene	14.78	112	2558374	271.9265 ug/kg	97
70)	1,1,1,2-Tetrachloroethane	14.81	131	1019464	288.5389 ug/kg	97
71)	Ethylbenzene	14.80	106	1372834	283.2291 ug/kg	97
72)	m-,p-Xylene	14.89	106	3241616	541.5304 ug/kg	97
73)	o-Xylene	15.45	106	1663016	289.4945 ug/kg	99
74)	Styrene	15.49	104	2869824	293.3680 ug/kg	99
75)	Bromoform	15.99	173	788638	305.6282 ug/kg	99
76)	Isopropylbenzene	15.87	105	4421589	286.7141 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	1002445	294.7201 ug/kg	99
80)	1,2,3-Trichloropropane	16.28	110	380025	294.6098 ug/kg	66
81)	trans-1,4-Dichloro-2-Buten	16.34	53	413901	318.3274 ug/kg	57
82)	n-Propylbenzene	16.38	91	4980503	282.5783 ug/kg	99
83)	Bromobenzene	16.52	156	1176440	282.7414 ug/kg	93
84)	1,3,5-Trimethylbenzene	16.57	105	3788936	286.3846 ug/kg	99
85)	2-Chlorotoluene	16.66	91	3458872	292.5892 ug/kg	100
86)	4-Chlorotoluene	16.71	91	2929432	268.0287 ug/kg	100
87)	a-Methylstyrene	16.98	118	1823514	302.4880 ug/kg	100
88)	tert-Butylbenzene	17.03	134	795019	286.6221 ug/kg	86
89)	1,2,4-Trimethylbenzene	17.09	105	3829230	276.3702 ug/kg	100
90)	sec-Butylbenzene	17.31	105	4833765	283.6742 ug/kg	99
91)	p-Isopropyltoluene	17.47	119	4134027	287.4802 ug/kg	99
92)	1,3-Dichlorobenzene	17.67	146	2260017	273.2999 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	2229106	269.6404 ug/kg	99
94)	n-Butylbenzene	17.99	91	3871124	289.5329 ug/kg	100
95)	1,2-Dichlorobenzene	18.29	146	2162642	281.8552 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	293112	297.5776 ug/kg	98
97)	1,2,4-Trichlorobenzene	20.43	180	1514973	278.1345 ug/kg	100
98)	Hexachlorobutadiene	20.58	225	846867	294.9498 ug/kg	99
99)	Naphthalene	20.81	128	3754823	274.8379 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.12	180	1451357	274.7177 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972905.D 8260SL.M Fri Feb 26 11:21:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972905.D Vial: 10
Acq On : 25 Feb 2016 20:30 Operator: ADC
Sample : WG558732-10 300.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

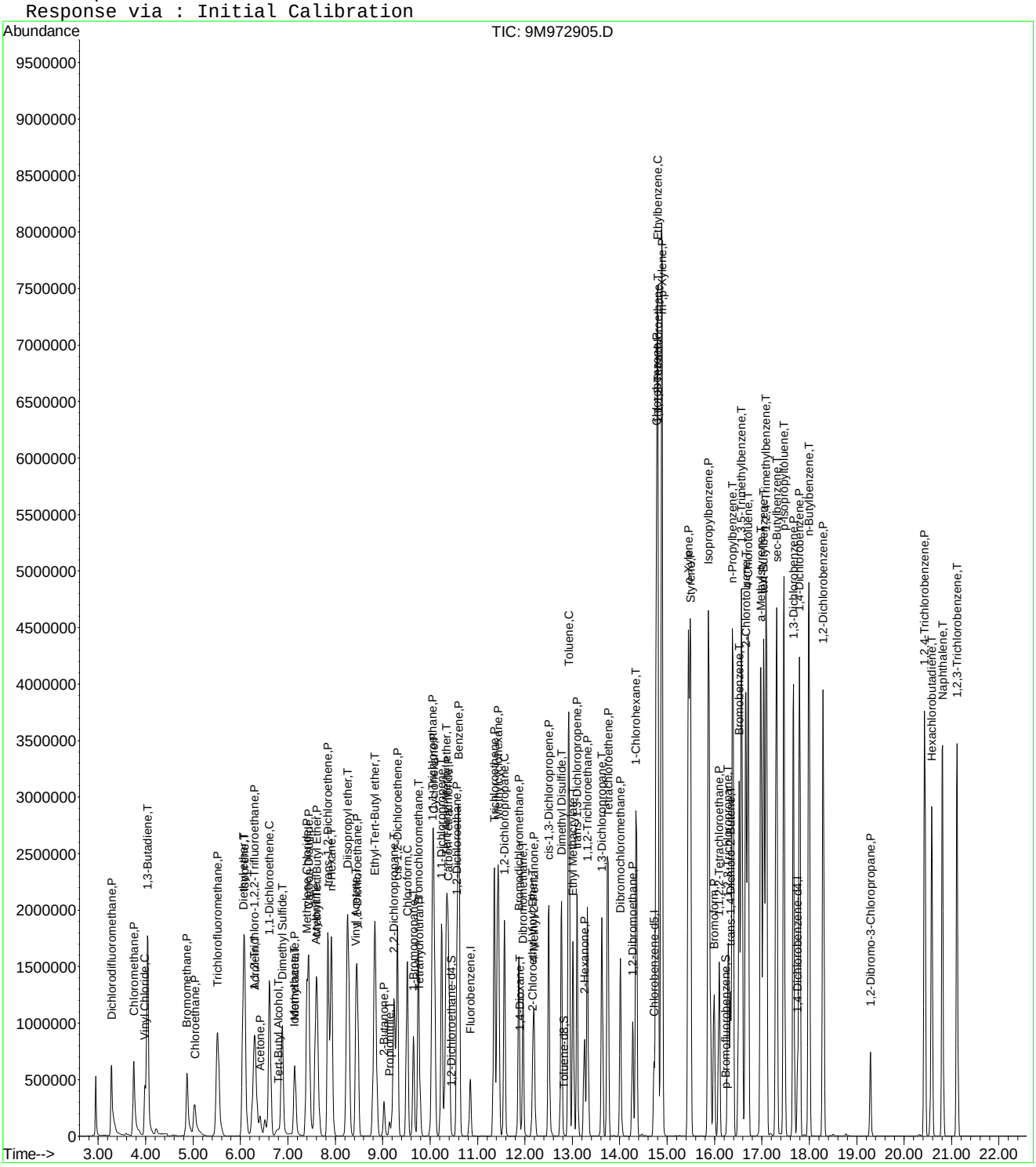

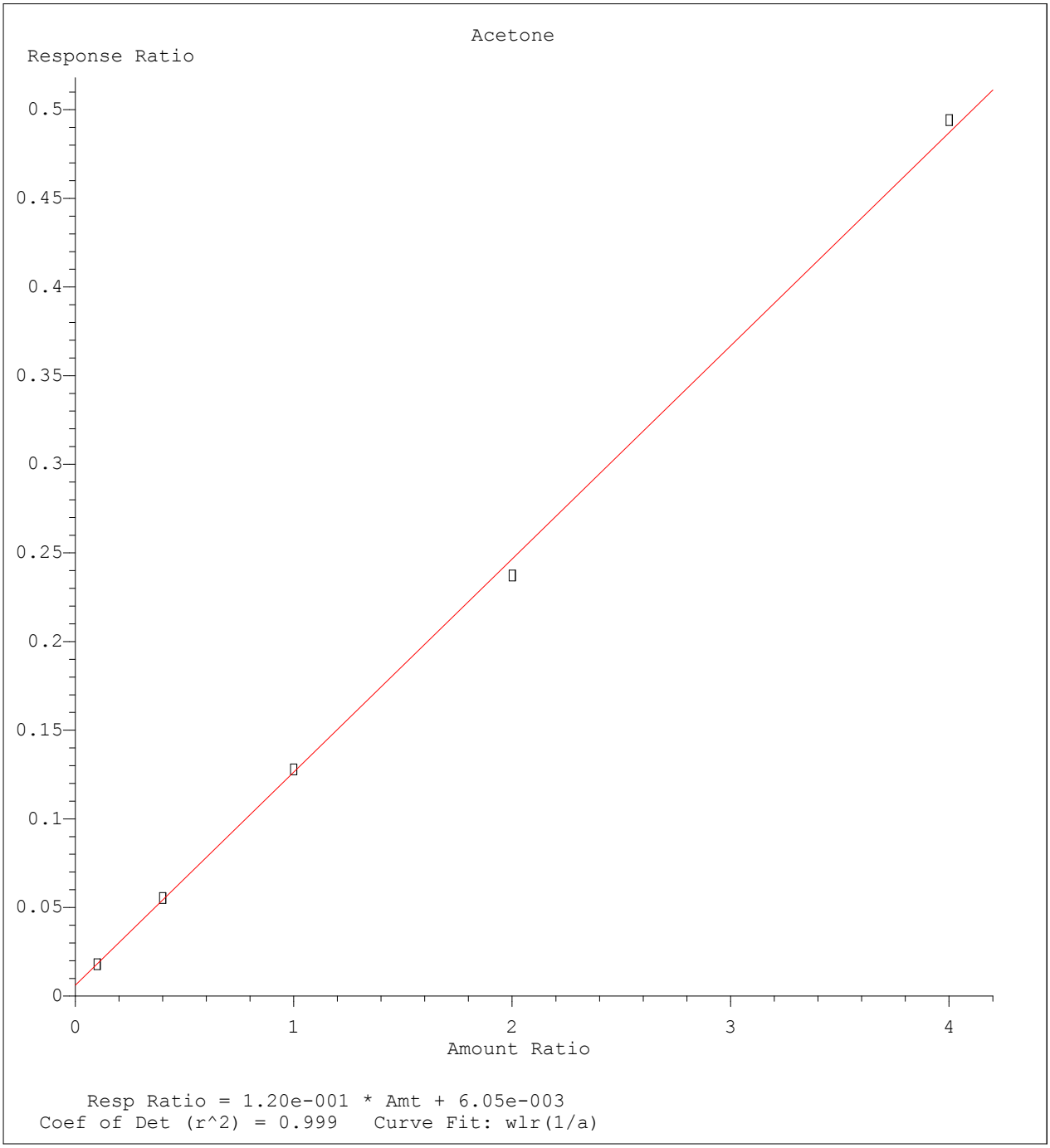

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

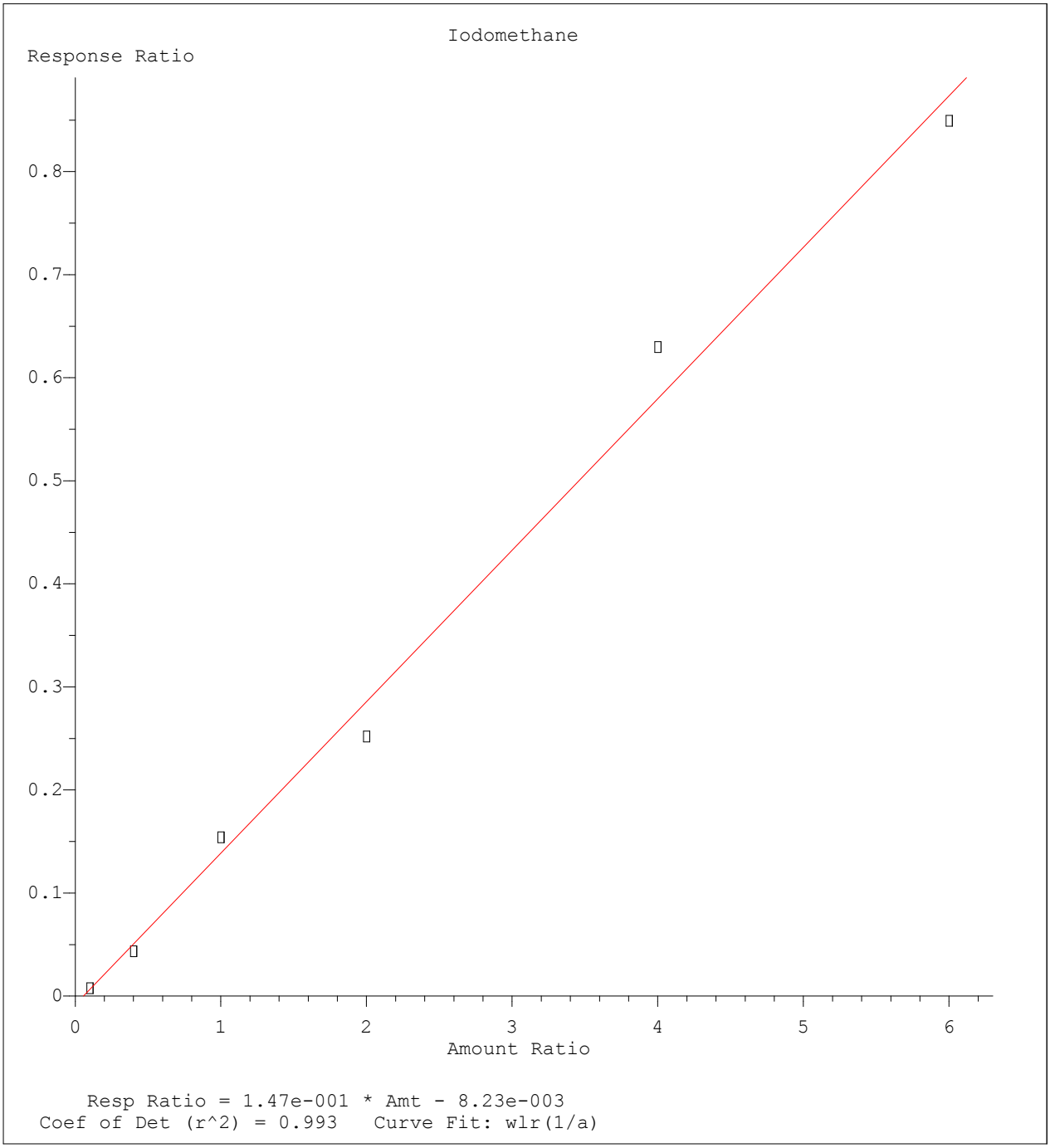

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

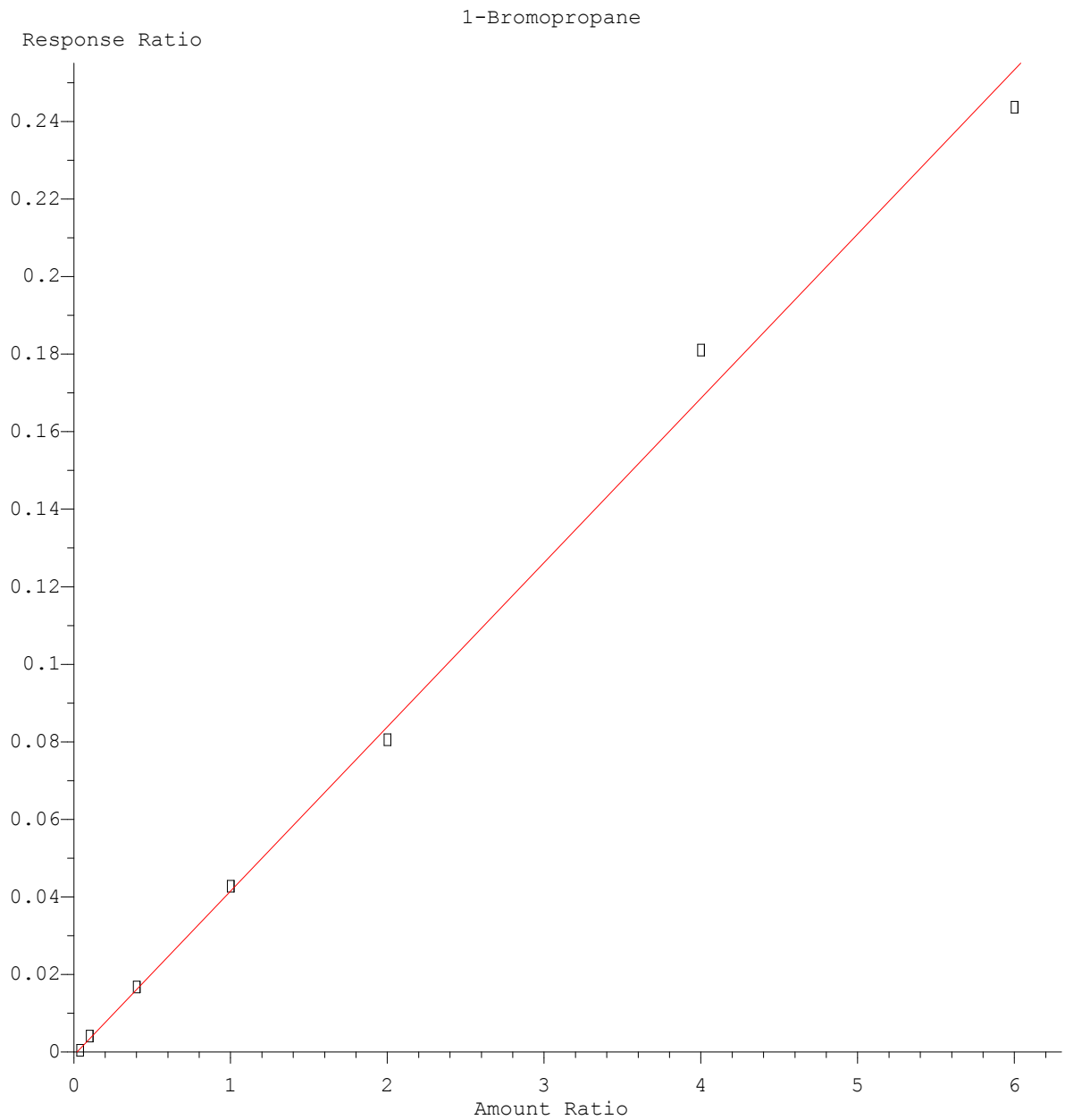

Resp Ratio = 4.25e-002 * Amt - 8.72e-004
Coef of Det (r^2) = 0.997 Curve Fit: wlr(1/a)

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

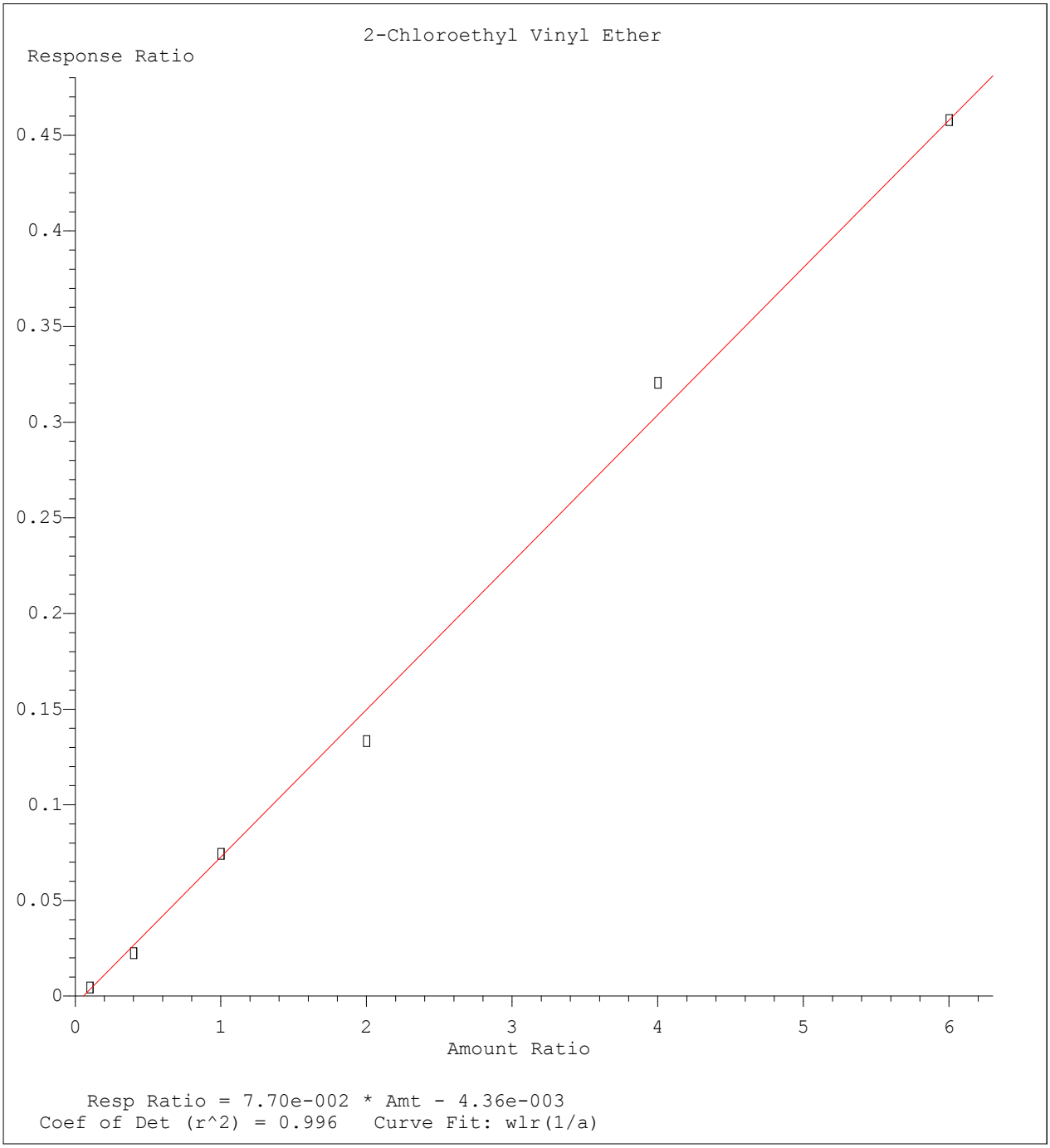

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:39:12 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	582126	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	421408	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	194909	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	163260	51.7395 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 103.48%		
43) 1,2-Dichloroethane-d4	10.45	65	197344	49.8458 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.70%		
58) Toluene-d8	12.82	98	564883	52.9951 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.00%		
79) p-Bromofluorobenzene	16.23	95	212358	55.9531 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 111.90%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	251431	63.3698 ug/kg	100
3) Chloromethane	3.74	50	200793	52.7216 ug/kg	100
4) Vinyl Chloride	3.99	62	228101	59.8284 ug/kg	99
5) 1,3-Butadiene	4.04	54	19055	5.2533 ug/kg	94
6) Bromomethane	4.88	94	121270	48.9744 ug/kg	100
7) Chloroethane	5.04	64	92003	54.1660 ug/kg	100
8) Trichlorofluoromethane	5.52	101	271981	47.5643 ug/kg	98
9) Diethyl ether	6.06	59	198146	74.1259 ug/kg	98
10) Isoprene	6.09	67	201645	59.0663 ug/kg	95
11) Acrolein	6.30	56	34569	64.8558 ug/kg	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	151498	51.3737 ug/kg	99
13) Acetone	6.41	43	65044	43.9190 ug/kg	98
14) 1,1-Dichloroethene	6.62	61	264179	48.5632 ug/kg	99
15) Tert-Butyl Alcohol	6.77	59	122141	205.1997 ug/kg	96
16) Dimethyl Sulfide	6.88	62	168266	73.1872 ug/kg	98
17) Iodomethane	7.13	142	81070	50.1419 ug/kg	99
18) Methyl acetate	7.15	43	155780	52.6767 ug/kg	99
19) Methylene Chloride	7.41	84	147546	49.8014 ug/kg	97
20) Carbon Disulfide	7.45	76	369798	44.1284 ug/kg	98
21) Acrylonitrile	7.59	53	71462	48.8478 ug/kg	99
22) Methyl Tert Butyl Ether	7.61	73	402298	47.6767 ug/kg	100
23) trans-1,2-Dichloroethene	7.85	61	245432	50.6242 ug/kg	100
24) n-Hexane	7.91	57	240056	48.0064 ug/kg	97
25) Diisopropyl ether	8.26	45	951889	81.9626 ug/kg	100
26) Vinyl Acetate	8.44	43	224385	33.8921 ug/kg	98
27) 1,1-Dichloroethane	8.47	63	282537	46.3987 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	854399	79.1219 ug/kg	99
29) 2-Butanone	9.03	43	88970	47.3950 ug/kg	99
30) Propionitrile	9.14	54	53106	92.4444 ug/kg	97
31) 2,2-Dichloropropane	9.24	77	213921	47.0673 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	167198	52.5828 ug/kg	96
33) Chloroform	9.52	83	268532	48.0056 ug/kg	99
34) 1-Bromopropane	9.65	122	36381	74.5451 ug/kg	96
35) Bromochloromethane	9.75	130	106386	51.5067 ug/kg	96
36) Tetrahydrofuran	9.78	42	101921	84.2313 ug/kg	98
38) 1,1,1-Trichloroethane	10.04	97	236420	46.7360 ug/kg	100
39) Cyclohexane	10.08	56	267623	48.5247 ug/kg	98
40) 1,1-Dichloropropene	10.25	75	193208	48.5381 ug/kg	99
41) Tert-Amyl-Methyl ether	10.34	73	688412	87.7041 ug/kg	100
42) Carbon Tetrachloride	10.39	117	218086	46.5023 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:39:12 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	241996	49.1831 ug/kg	99
46)	Benzene	10.60	78	545692	48.9674 ug/kg	99
47)	Trichloroethene	11.35	130	174371	49.3824 ug/kg	96
48)	Methylcyclohexane	11.44	83	228572	51.6120 ug/kg	98
49)	1,2-Dichloropropane	11.56	63	160075	52.3084 ug/kg	99
50)	1,4-Dioxane	11.88	88	7749	168.7883 ug/kg	88
51)	Bromodichloromethane	11.87	83	205164	47.5709 ug/kg	100
52)	Dibromomethane	11.96	174	95223	46.9624 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	36447	43.4907 ug/kg	97
54)	4-Methyl-2-Pentanone	12.19	58	64228	47.8173 ug/kg	96
55)	cis-1,3-Dichloropropene	12.50	75	238969	53.1840 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	243519	53.9302 ug/kg	99
59)	Toluene	12.93	91	610944	50.7412 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	172650	51.7315 ug/kg	99
61)	trans-1,3-Dichloropropene	13.11	75	216958	50.0293 ug/kg	98
62)	1,1,2-Trichloroethane	13.32	97	130293	51.5130 ug/kg	96
63)	2-Hexanone	13.25	43	121727	48.2017 ug/kg	99
64)	1,3-Dichloropropane	13.62	76	226811	53.8157 ug/kg	99
65)	Tetrachloroethene	13.75	164	128602	49.8224 ug/kg	96
66)	Dibromochloromethane	14.01	129	171284	48.4552 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	142409	50.7609 ug/kg	97
68)	1-Chlorohexane	14.35	91	184711	52.0217 ug/kg	98
69)	Chlorobenzene	14.77	112	433181	51.1898 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	157986	49.7138 ug/kg	100
71)	Ethylbenzene	14.79	106	223582	51.2841 ug/kg	100
72)	m-,p-Xylene	14.89	106	552299	102.5798 ug/kg	98
73)	o-Xylene	15.45	106	276739	53.5600 ug/kg	99
74)	Styrene	15.49	104	464515	52.7939 ug/kg	99
75)	Bromoform	15.99	173	109809	47.3129 ug/kg	99
76)	Isopropylbenzene	15.87	105	721376	52.0066 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	153818	52.0241 ug/kg	97
80)	1,2,3-Trichloropropane	16.29	110	60794	54.2181 ug/kg	92
81)	trans-1,4-Dichloro-2-Buten	16.33	53	48561	42.9649 ug/kg	74
82)	n-Propylbenzene	16.39	91	841260	54.9091 ug/kg	100
83)	Bromobenzene	16.52	156	188730	52.1806 ug/kg	96
84)	1,3,5-Trimethylbenzene	16.57	105	624761	54.3244 ug/kg	99
85)	2-Chlorotoluene	16.66	91	556729	54.1771 ug/kg	100
86)	4-Chlorotoluene	16.70	91	503918	53.0403 ug/kg	99
87)	a-Methylstyrene	16.98	118	305038	58.2105 ug/kg	98
88)	tert-Butylbenzene	17.03	134	133555	55.3912 ug/kg	90
89)	1,2,4-Trimethylbenzene	17.08	105	620621	51.5293 ug/kg	99
90)	sec-Butylbenzene	17.31	105	810765	54.7366 ug/kg	99
91)	p-Isopropyltoluene	17.46	119	675672	54.0529 ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	365216	50.8073 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	367190	51.0968 ug/kg	99
94)	n-Butylbenzene	17.99	91	609687	52.4585 ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	351826	52.7494 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	46623	54.4522 ug/kg	96
97)	1,2,4-Trichlorobenzene	20.43	180	244804	51.7031 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	136025	54.5004 ug/kg	99
99)	Naphthalene	20.81	128	603753	50.8387 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	241600	52.6087 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972907.D 8260SL.M Fri Feb 26 11:39:13 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:39 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

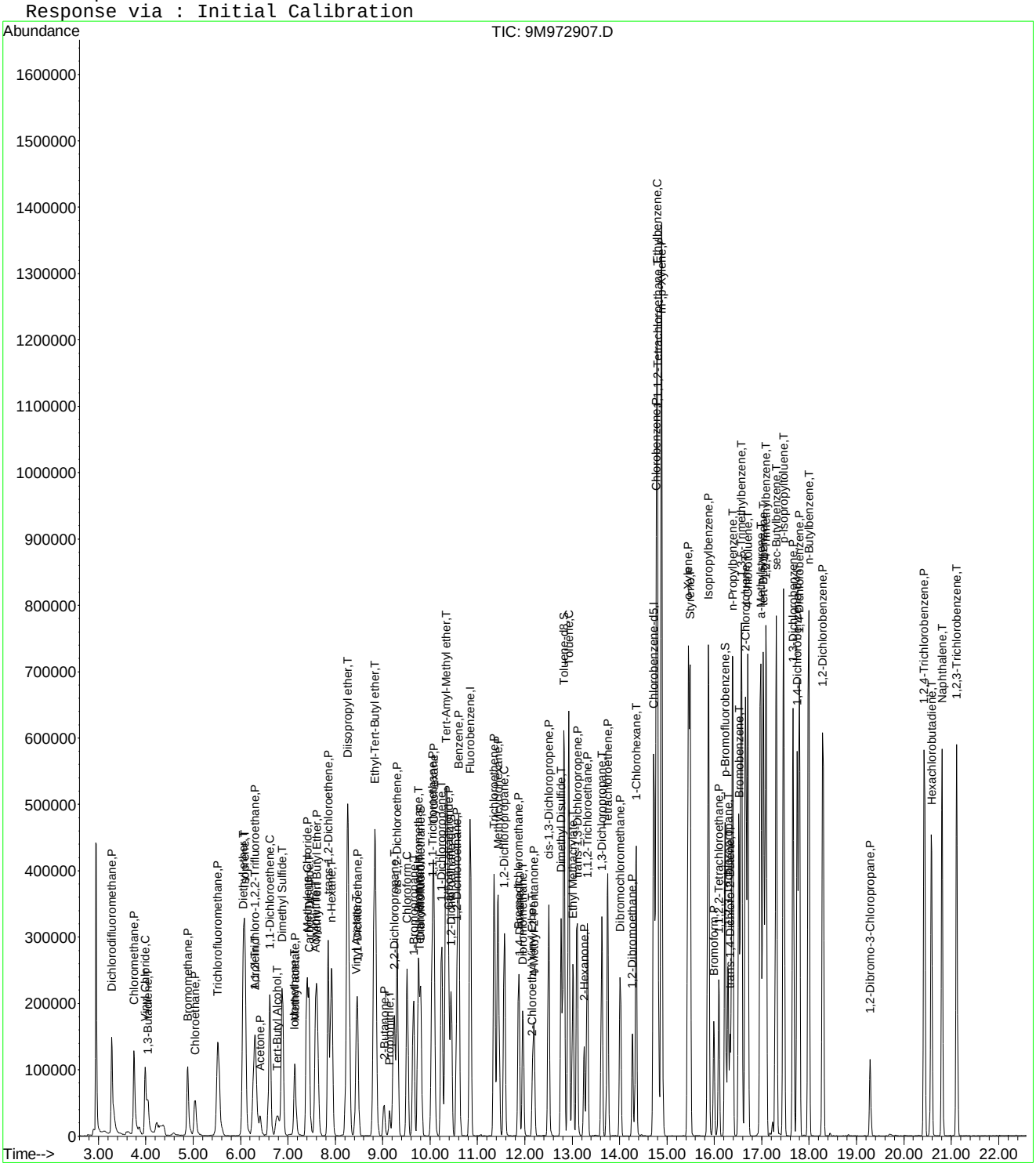

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	112	0.00
2	P	Dichlorodifluoromethane	50.0000	63.3698	-26.7#	123	0.00
3	P	Chloromethane	50.0000	52.7216	-5.4	107	0.00
4	C	Vinyl Chloride	50.0000	59.8284	-19.7	118	0.00
5	T	1,3-Butadiene	50.0000	5.2533	89.5#	11	0.00
6	P	Bromomethane	50.0000	48.9744	2.1	112	0.00
7	P	Chloroethane	50.0000	54.1660	-8.3	108	0.00
8	P	Trichlorofluoromethane	50.0000	47.5643	4.9	102	0.00
9	T	Diethyl ether	100.0000	74.1259	25.9#	79	0.01
10	T	Isoprene	50.0000	59.0664	-18.1	129	0.00
11	T	Acrolein	50.0000	64.8558	-29.7#	140	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	51.3737	-2.7	112	0.00
13	P	Acetone	50.0000	43.9190	12.2	98	0.00
14	C	1,1-Dichloroethene	50.0000	48.5632	2.9	108	0.00
15	T	Tert-Butyl Alcohol	200.0000	205.1997	-2.6	116	0.01
16	T	Dimethyl Sulfide	50.0000	73.1872	-46.4#	154	0.00
17	T	Iodomethane	50.0000	50.1419	-0.3	102	0.00
18	P	Methyl acetate	50.0000	52.6767	-5.4	115	0.01
19	P	Methylene Chloride	50.0000	49.8014	0.4	109	0.01
20	P	Carbon Disulfide	50.0000	44.1284	11.7	97	0.00
21	T	Acrylonitrile	50.0000	48.8478	2.3	103	0.00
22	P	Methyl Tert Butyl Ether	50.0000	47.6767	4.6	99	0.00
23	P	trans-1,2-Dichloroethene	50.0000	50.6242	-1.2	108	0.00
24	T	n-Hexane	50.0000	48.0064	4.0	109	0.00
25	T	Diisopropyl ether	100.0000	81.9626	18.0	87	0.00
26	T	Vinyl Acetate	50.0000	33.8921	32.2#	72	0.01
27	P	1,1-Dichloroethane	50.0000	46.3987	7.2	99	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	79.1219	20.9	83	0.00
29	P	2-Butanone	50.0000	47.3950	5.2	103	0.00
30	T	Propionitrile	100.0000	92.4444	7.6	100	0.00
31	T	2,2-Dichloropropane	50.0000	47.0673	5.9	99	0.00
32	P	cis-1,2-Dichloroethene	50.0000	52.5828	-5.2	109	0.00
33	C	Chloroform	50.0000	48.0057	4.0	102	0.00
34	T	1-Bromopropane	50.0000	74.5451	-49.1#	164	0.00
35	T	Bromochloromethane	50.0000	51.5067	-3.0	104	0.00
36	T	Tetrahydrofuran	100.0000	84.2314	15.8	90	0.00
37	S	Dibromofluoromethane	50.0000	51.7395	-3.5	110	0.00
38	P	1,1,1-Trichloroethane	50.0000	46.7360	6.5	97	0.00
39	P	Cyclohexane	50.0000	48.5247	3.0	108	0.00
40	T	1,1-Dichloropropene	50.0000	48.5381	2.9	106	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	87.7041	12.3	93	0.00
42	P	Carbon Tetrachloride	50.0000	46.5023	7.0	99	0.00
43	S	1,2-Dichloroethane-d4	50.0000	49.8458	0.3	107	0.00
44		Heptane	-1.0000	0.0000	0.0	104	0.00
45	P	1,2-Dichloroethane	50.0000	49.1831	1.6	102	0.00
46	P	Benzene	50.0000	48.9674	2.1	108	0.00
47	P	Trichloroethene	50.0000	49.3824	1.2	106	0.00
48	P	Methylcyclohexane	50.0000	51.6120	-3.2	112	0.00
49	C	1,2-Dichloropropane	50.0000	52.3083	-4.6	108	0.00
50	T	1,4-Dioxane	200.0000	168.7883	15.6	99	0.00
51	P	Bromodichloromethane	50.0000	47.5710	4.9	101	0.00
52	T	Dibromomethane	50.0000	46.9624	6.1	99	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	43.4907	13.0	95	0.00
54	P	4-Methyl-2-Pentanone	50.0000	47.8173	4.4	99	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	53.1840	-6.4	112	0.00
56	T	Dimethyl Disulfide	50.0000	53.9302	-7.9	111	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	111	0.00
58	S	Toluene-d8	50.0000	52.9951	-6.0	110	0.00
59	C	Toluene	50.0000	50.7412	-1.5	108	0.00
60	T	Ethyl Methacrylate	50.0000	51.7315	-3.5	109	0.00
61	P	trans-1,3-Dichloropropene	50.0000	50.0293	-0.1	102	0.00
62	P	1,1,2-Trichloroethane	50.0000	51.5130	-3.0	106	0.00
63	P	2-Hexanone	50.0000	48.2017	3.6	102	0.00
64	T	1,3-Dichloropropane	50.0000	53.8157	-7.6	113	0.00
65	P	Tetrachloroethene	50.0000	49.8224	0.4	110	0.00
66	P	Dibromochloromethane	50.0000	48.4552	3.1	101	0.00
67	P	1,2-Dibromoethane	50.0000	50.7609	-1.5	107	0.00
68	T	1-Chlorohexane	50.0000	52.0217	-4.0	110	0.00
69	P	Chlorobenzene	50.0000	51.1898	-2.4	108	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	49.7138	0.6	102	0.00
71	C	Ethylbenzene	50.0000	51.2841	-2.6	108	0.00
72	P	m-,p-Xylene	100.0000	102.5798	-2.6	111	0.00
73	P	o-Xylene	50.0000	53.5600	-7.1	112	0.00
74	P	Styrene	50.0000	52.7939	-5.6	109	0.00
75	P	Bromoform	50.0000	47.3129	5.4	95	0.00
76	P	Isopropylbenzene	50.0000	52.0066	-4.0	110	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	107	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	52.0241	-4.0	104	0.00
79	S	p-Bromofluorobenzene	50.0000	55.9531	-11.9	111	0.00
80	T	1,2,3-Trichloropropane	50.0000	54.2181	-8.4	109	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	42.9649	14.1	87	0.00
82	T	n-Propylbenzene	50.0000	54.9091	-9.8	112	0.00
83	T	Bromobenzene	50.0000	52.1806	-4.4	106	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	54.3244	-8.6	110	0.00
85	T	2-Chlorotoluene	50.0000	54.1771	-8.4	115	0.00
86	T	4-Chlorotoluene	50.0000	53.0403	-6.1	105	0.00
87	T	a-Methylstyrene	50.0000	58.2105	-16.4	119	0.00
88	T	tert-Butylbenzene	50.0000	55.3912	-10.8	110	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	51.5293	-3.1	107	0.00
90	T	sec-Butylbenzene	50.0000	54.7366	-9.5	112	0.00
91	T	p-Isopropyltoluene	50.0000	54.0529	-8.1	110	0.00
92	P	1,3-Dichlorobenzene	50.0000	50.8073	-1.6	108	0.00
93	P	1,4-Dichlorobenzene	50.0000	51.0968	-2.2	110	0.00
94	T	n-Butylbenzene	50.0000	52.4585	-4.9	108	0.00
95	P	1,2-Dichlorobenzene	50.0000	52.7494	-5.5	110	0.00
96	P	1,2-Dibromo-3-Chloropropane	50.0000	54.4522	-8.9	109	0.00
97	P	1,2,4-Trichlorobenzene	50.0000	51.7031	-3.4	110	0.00
98	T	Hexachlorobutadiene	50.0000	54.5004	-9.0	116	0.00
99	T	Naphthalene	50.0000	50.8387	-1.7	100	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	52.6087	-5.2	109	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972907.D 8260SL.M Fri Feb 26 11:39:16 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022816\9M972943.D Vial: 1
Acq On : 28 Feb 2016 15:39 Operator: FJB
Sample : WG559001-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 28 16:01:54 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	732812	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.73	117	530822	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.76	152	244479	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	195655	49.2559 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.52%		
43) 1,2-Dichloroethane-d4	10.45	65	235275	47.2068 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.42%		
58) Toluene-d8	12.83	98	679948	50.6415 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.28%		
79) p-Bromofluorobenzene	16.23	95	253762	53.3055 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 106.62%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	255669	51.1877 ug/kg	98
3) Chloromethane	3.74	50	237878	49.6157 ug/kg	99
4) Vinyl Chloride	3.99	62	281647	58.6826 ug/kg	97
5) 1,3-Butadiene	4.04	54	277289	60.7273 ug/kg	100
6) Bromomethane	4.88	94	144526	46.3646 ug/kg	97
7) Chloroethane	5.03	64	121259	56.7104 ug/kg	100
8) Trichlorofluoromethane	5.53	101	378043	52.5180 ug/kg	98
9) Diethyl ether	6.05	59	347080	103.1427 ug/kg	98
10) Isoprene	6.09	67	252186	58.6811 ug/kg	98
11) Acrolein	6.30	56	35961	53.5942 ug/kg	89
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	206090	55.5156 ug/kg	97
13) Acetone	6.40	43	82979	44.5417 ug/kg	96
14) 1,1-Dichloroethene	6.61	61	350129	51.1283 ug/kg	100
15) Tert-Butyl Alcohol	6.75	59	129255	172.4992 ug/kg	100
16) Dimethyl Sulfide	6.88	62	153089	52.8941 ug/kg	100
17) Iodomethane	7.13	142	119269	58.1274 ug/kg	99
18) Methyl acetate	7.14	43	189178	50.8161 ug/kg	98
19) Methylene Chloride	7.40	84	192261	51.5501 ug/kg	100
20) Carbon Disulfide	7.44	76	570333	54.0638 ug/kg	99
21) Acrylonitrile	7.59	53	93884	50.9784 ug/kg	100
22) Methyl Tert Butyl Ether	7.60	73	550471	51.8223 ug/kg	98
23) trans-1,2-Dichloroethene	7.85	61	333591	54.6595 ug/kg	99
24) n-Hexane	7.91	57	329962	52.4173 ug/kg	99
25) Diisopropyl ether	8.26	45	1547882	105.8746 ug/kg	100
26) Vinyl Acetate	8.43	43	415947	49.9077 ug/kg	99
27) 1,1-Dichloroethane	8.46	63	404833	52.8118 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	1414220	104.0345 ug/kg	99
29) 2-Butanone	9.02	43	109584	46.3725 ug/kg	99
30) Propionitrile	9.14	54	69360	95.9114 ug/kg	99
31) 2,2-Dichloropropane	9.24	77	319816	55.8973 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	214776	53.6566 ug/kg	100
33) Chloroform	9.52	83	357914	50.8276 ug/kg	100
34) 1-Bromopropane	9.65	122	29428	48.2660 ug/kg	94
35) Bromochloromethane	9.75	130	136766	52.5995 ug/kg	95
36) Tetrahydrofuran	9.77	42	143735	94.3620 ug/kg	98
38) 1,1,1-Trichloroethane	10.04	97	334516	52.5302 ug/kg	97
39) Cyclohexane	10.08	56	363229	52.3172 ug/kg	98
40) 1,1-Dichloropropene	10.25	75	268036	53.4904 ug/kg	99
41) Tert-Amyl-Methyl ether	10.34	73	1012333	102.4517 ug/kg	99
42) Carbon Tetrachloride	10.39	117	306580	51.9296 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022816\9M972943.D Vial: 1
Acq On : 28 Feb 2016 15:39 Operator: FJB
Sample : WG559001-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 28 16:01:54 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	317216	51.2139 ug/kg	98
46)	Benzene	10.60	78	727414	51.8521 ug/kg	99
47)	Trichloroethene	11.35	130	240348	54.0708 ug/kg	100
48)	Methylcyclohexane	11.44	83	300727	53.9417 ug/kg	99
49)	1,2-Dichloropropane	11.56	63	206485	53.5995 ug/kg	100
50)	1,4-Dioxane	11.88	88	12097	209.3142 ug/kg	87
51)	Bromodichloromethane	11.87	83	269979	49.7273 ug/kg	100
52)	Dibromomethane	11.97	174	128582	50.3748 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.17	63	43438	41.3253 ug/kg	100
54)	4-Methyl-2-Pentanone	12.19	58	82842	48.9932 ug/kg	98
55)	cis-1,3-Dichloropropene	12.50	75	295012	52.1559 ug/kg	100
56)	Dimethyl Disulfide	12.77	94	315072	55.4286 ug/kg	99
59)	Toluene	12.93	91	799044	52.6846 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	221989	52.8048 ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	282331	51.6846 ug/kg	98
62)	1,1,2-Trichloroethane	13.32	97	164612	51.6668 ug/kg	97
63)	2-Hexanone	13.25	43	156155	49.0891 ug/kg	100
64)	1,3-Dichloropropane	13.62	76	274333	51.6746 ug/kg	99
65)	Tetrachloroethene	13.75	164	171910	52.8728 ug/kg	98
66)	Dibromochloromethane	14.01	129	218895	49.1602 ug/kg	100
67)	1,2-Dibromoethane	14.28	107	174593	49.4052 ug/kg	100
68)	1-Chlorohexane	14.35	91	249869	55.8673 ug/kg	99
69)	Chlorobenzene	14.77	112	552693	51.8503 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	208071	51.9786 ug/kg	96
71)	Ethylbenzene	14.79	106	301134	54.8352 ug/kg	96
72)	m-,p-Xylene	14.89	106	707295	104.2898 ug/kg	98
73)	o-Xylene	15.46	106	345370	53.0651 ug/kg	98
74)	Styrene	15.49	104	594591	53.6483 ug/kg	99
75)	Bromoform	16.00	173	148169	50.6819 ug/kg	99
76)	Isopropylbenzene	15.88	105	936851	53.6193 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.10	83	190339	51.3234 ug/kg	99
80)	1,2,3-Trichloropropane	16.29	110	73485	52.2483 ug/kg	99
81)	trans-1,4-Dichloro-2-Buten	16.33	53	81443	57.4473 ug/kg	87
82)	n-Propylbenzene	16.39	91	1076349	56.0089 ug/kg	100
83)	Bromobenzene	16.52	156	237935	52.4465 ug/kg	96
84)	1,3,5-Trimethylbenzene	16.58	105	797381	55.2760 ug/kg	99
85)	2-Chlorotoluene	16.66	91	674103	52.2984 ug/kg	99
86)	4-Chlorotoluene	16.70	91	662318	55.5780 ug/kg	99
87)	a-Methylstyrene	16.98	118	384287	58.4646 ug/kg	100
88)	tert-Butylbenzene	17.04	134	171725	56.7812 ug/kg	98
89)	1,2,4-Trimethylbenzene	17.09	105	806963	53.4161 ug/kg	100
90)	sec-Butylbenzene	17.30	105	1035118	55.7138 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	862001	54.9770 ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	464056	51.4679 ug/kg	99
93)	1,4-Dichlorobenzene	17.80	146	459544	50.9824 ug/kg	100
94)	n-Butylbenzene	17.99	91	794680	54.5119 ug/kg	99
95)	1,2-Dichlorobenzene	18.30	146	430011	51.3996 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	50673	47.1826 ug/kg	98
97)	1,2,4-Trichlorobenzene	20.44	180	303332	51.0748 ug/kg	100
98)	Hexachlorobutadiene	20.59	225	164229	52.4592 ug/kg	100
99)	Naphthalene	20.81	128	723204	48.5497 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	291110	50.5368 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972943.D 8260SL.M Sun Feb 28 16:01:54 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022816\9M972943.D Vial: 1
Acq On : 28 Feb 2016 15:39 Operator: FJB
Sample : WG559001-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 28 16:01 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

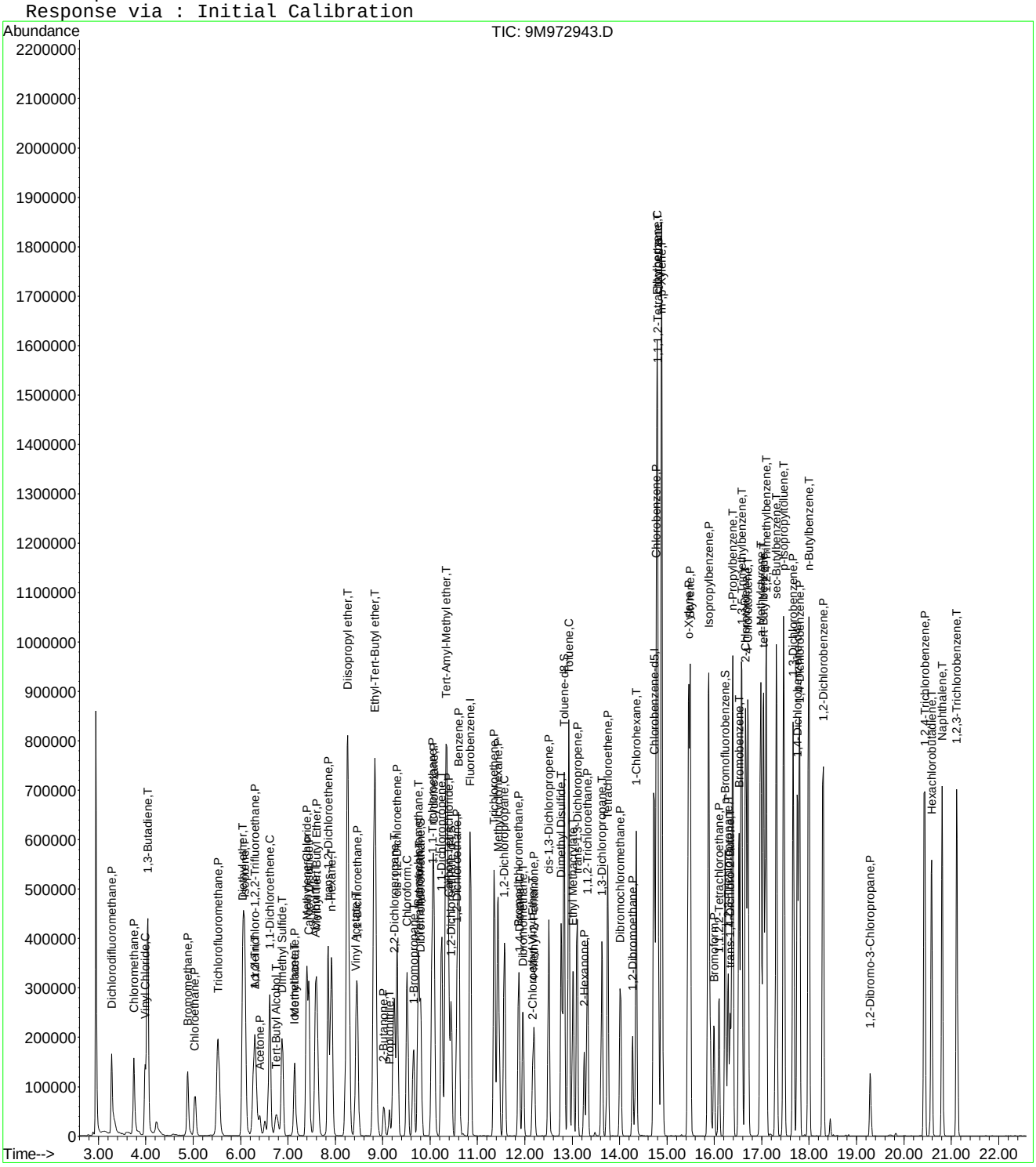

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022816\9M972943.D Vial: 1
Acq On : 28 Feb 2016 15:39 Operator: FJB
Sample : WG559001-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	142	0.00
2	P	Dichlorodifluoromethane	0.3408	0.3489	-2.4	125	0.00
3	P	Chloromethane	0.3271	0.3246	0.8	127	0.00
4	C	Vinyl Chloride	0.3275	0.3843	-17.4	146	0.00
5	T	1,3-Butadiene	0.3115	0.3784	-21.5	162	0.00
6	P	Bromomethane	0.2127	0.1972	7.3	134	0.00
7	P	Chloroethane	0.1459	0.1655	-13.4	142	0.00
8	P	Trichlorofluoromethane	0.4911	0.5159	-5.0	142	0.00
9	T	Diethyl ether	0.2296	0.2368	-3.1	139	0.00
10	T	Isoprene	0.2932	0.3441	-17.4	161	0.00
11	T	Acrolein	0.0458	0.0491	-7.2	146	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	0.2533	0.2812	-11.0	153	0.00
13	P	Acetone	0.1376	0.1132	17.7	125	0.00
14	C	1,1-Dichloroethene	0.4672	0.4778	-2.3	143	0.00
15	T	Tert-Butyl Alcohol	0.0511	0.0441	13.7	123	0.00
16	T	Dimethyl Sulfide	0.1975	0.2089	-5.8	140	0.00
17	T	Iodomethane	0.1273	0.1628	-27.9#	150	0.00
18	P	Methyl acetate	0.2540	0.2581	-1.6	139	0.00
19	P	Methylene Chloride	0.2545	0.2624	-3.1	142	0.00
20	P	Carbon Disulfide	0.7198	0.7783	-8.1	149	0.00
21	T	Acrylonitrile	0.1257	0.1281	-1.9	135	0.00
22	P	Methyl Tert Butyl Ether	0.7248	0.7512	-3.6	135	0.00
23	P	trans-1,2-Dichloroethene	0.4164	0.4552	-9.3	147	0.00
24	T	n-Hexane	0.4295	0.4503	-4.8	150	0.00
25	T	Diisopropyl ether	0.9975	1.0561	-5.9	142	0.00
26	T	Vinyl Acetate	0.5686	0.5676	0.2	133	0.00
27	P	1,1-Dichloroethane	0.5230	0.5524	-5.6	142	0.00
28	T	Ethyl-Tert-Butyl ether	0.9275	0.9649	-4.0	138	0.00
29	P	2-Butanone	0.1612	0.1495	7.3	127	0.00
30	T	Propionitrile	0.0493	0.0473	4.1	130	0.00
31	T	2,2-Dichloropropane	0.3904	0.4364	-11.8	149	0.00
32	P	cis-1,2-Dichloroethene	0.2731	0.2931	-7.3	140	0.00
33	C	Chloroform	0.4805	0.4884	-1.7	136	0.00
34	T	1-Bromopropane	0.0376	0.0402	-6.8	133	0.00
35	T	Bromochloromethane	0.1774	0.1866	-5.2	133	0.00
36	T	Tetrahydrofuran	0.1039	0.0981	5.6	126	0.00
37	S	Dibromofluoromethane	0.2710	0.2670	1.5	132	0.00
38	P	1,1,1-Trichloroethane	0.4345	0.4565	-5.1	137	0.00
39	P	Cyclohexane	0.4737	0.4957	-4.6	147	0.00
40	T	1,1-Dichloropropene	0.3419	0.3658	-7.0	147	0.00
41	T	Tert-Amyl-Methyl ether	0.6742	0.6907	-2.5	137	0.00
42	P	Carbon Tetrachloride	0.4028	0.4184	-3.9	139	0.00
43	S	1,2-Dichloroethane-d4	0.3401	0.3211	5.6	128	0.00
44		Heptane	0.0000	0.0000	0.0	139	0.00
45	P	1,2-Dichloroethane	0.4226	0.4329	-2.4	133	0.00
46	P	Benzene	0.9572	0.9926	-3.7	145	0.00
47	P	Trichloroethene	0.3033	0.3280	-8.1	147	0.00
48	P	Methylcyclohexane	0.3804	0.4104	-7.9	147	0.00
49	C	1,2-Dichloropropane	0.2628	0.2818	-7.2	139	0.00
50	T	1,4-Dioxane	0.0039	0.0041	-4.8	155	0.00
51	P	Bromodichloromethane	0.3704	0.3684	0.5	132	0.00
52	T	Dibromomethane	0.1742	0.1755	-0.7	134	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0665	0.0593	10.9	113	0.00
54	P	4-Methyl-2-Pentanone	0.1154	0.1131	2.0	127	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022816\9M972943.D Vial: 1
Acq On : 28 Feb 2016 15:39 Operator: FJB
Sample : WG559001-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	0.3859	0.4026	-4.3	139	0.00
56	T	Dimethyl Disulfide	0.3878	0.4300	-10.9	143	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	140	0.00
58	S	Toluene-d8	1.2647	1.2809	-1.3	133	0.00
59	C	Toluene	1.4286	1.5053	-5.4	142	0.00
60	T	Ethyl Methacrylate	0.3960	0.4182	-5.6	140	0.00
61	P	trans-1,3-Dichloropropene	0.5145	0.5319	-3.4	133	0.00
62	P	1,1,2-Trichloroethane	0.3001	0.3101	-3.3	134	0.00
63	P	2-Hexanone	0.2996	0.2942	1.8	131	0.00
64	T	1,3-Dichloropropane	0.5001	0.5168	-3.3	136	0.00
65	P	Tetrachloroethene	0.3063	0.3239	-5.7	147	0.00
66	P	Dibromochloromethane	0.4194	0.4124	1.7	130	0.00
67	P	1,2-Dibromoethane	0.3329	0.3289	1.2	132	0.00
68	T	1-Chlorohexane	0.4213	0.4707	-11.7	148	0.00
69	P	Chlorobenzene	1.0041	1.0412	-3.7	138	0.00
70	T	1,1,1,2-Tetrachloroethane	0.3771	0.3920	-4.0	135	0.00
71	C	Ethylbenzene	0.5173	0.5673	-9.7	145	0.00
72	P	m-,p-Xylene	0.6388	0.6662	-4.3	142	0.00
73	P	o-Xylene	0.6130	0.6506	-6.1	140	0.01
74	P	Styrene	1.0440	1.1201	-7.3	140	0.00
75	P	Bromoform	0.2754	0.2791	-1.4	128	0.00
76	P	Isopropylbenzene	1.6458	1.7649	-7.2	142	0.00
77	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	134	0.00
78	P	1,1,2,2-Tetrachloroethane	0.7585	0.7785	-2.6	129	0.00
79	S	p-Bromofluorobenzene	0.9736	1.0380	-6.6	132	0.00
80	T	1,2,3-Trichloropropane	0.2876	0.3006	-4.5	132	0.00
81	T	trans-1,4-Dichloro-2-Butene	0.2899	0.3331	-14.9	147	0.00
82	T	n-Propylbenzene	3.9303	4.4026	-12.0	143	0.00
83	T	Bromobenzene	0.9278	0.9732	-4.9	134	0.00
84	T	1,3,5-Trimethylbenzene	2.9502	3.2616	-10.6	140	0.00
85	T	2-Chlorotoluene	2.6361	2.7573	-4.6	139	0.00
86	T	4-Chlorotoluene	2.4372	2.7091	-11.2	138	0.00
87	T	a-Methylstyrene	1.3443	1.5719	-16.9	150	0.00
88	T	tert-Butylbenzene	0.6185	0.7024	-13.6	141	0.00
89	T	1,2,4-Trimethylbenzene	3.0897	3.3007	-6.8	139	0.00
90	T	sec-Butylbenzene	3.7998	4.2340	-11.4	143	0.00
91	T	p-Isopropyltoluene	3.2067	3.5259	-10.0	141	0.00
92	P	1,3-Dichlorobenzene	1.8440	1.8981	-2.9	138	0.00
93	P	1,4-Dichlorobenzene	1.8435	1.8797	-2.0	137	0.00
94	T	n-Butylbenzene	2.9815	3.2505	-9.0	141	0.00
95	P	1,2-Dichlorobenzene	1.7110	1.7589	-2.8	134	0.00
96	P	1,2-Dibromo-3-Chloropropane	0.2197	0.2073	5.6	118	0.00
97	P	1,2,4-Trichlorobenzene	1.2146	1.2407	-2.1	136	0.00
98	T	Hexachlorobutadiene	0.6403	0.6717	-4.9	140	0.00
99	T	Naphthalene	3.0465	2.9581	2.9	120	0.00
100	T	1,2,3-Trichlorobenzene	1.1781	1.1907	-1.1	131	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972943.D 8260SL.M Mon Feb 29 09:26:19 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022816\9M972943.D Vial: 1
Acq On : 28 Feb 2016 15:39 Operator: FJB
Sample : WG559001-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	142	0.00
2	P	Dichlorodifluoromethane	50.0000	51.1877	-2.4	125	0.00
3	P	Chloromethane	50.0000	49.6157	0.8	127	0.00
4	C	Vinyl Chloride	50.0000	58.6826	-17.4	146	0.00
5	T	1,3-Butadiene	50.0000	60.7273	-21.5	162	0.00
6	P	Bromomethane	50.0000	46.3646	7.3	134	0.00
7	P	Chloroethane	50.0000	56.7104	-13.4	142	0.00
8	P	Trichlorofluoromethane	50.0000	52.5180	-5.0	142	0.00
9	T	Diethyl ether	100.0000	103.1427	-3.1	139	0.00
10	T	Isoprene	50.0000	58.6811	-17.4	161	0.00
11	T	Acrolein	50.0000	53.5942	-7.2	146	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	55.5156	-11.0	153	0.00
13	P	Acetone	50.0000	44.5417	10.9	125	0.00
14	C	1,1-Dichloroethene	50.0000	51.1283	-2.3	143	0.00
15	T	Tert-Butyl Alcohol	200.0000	172.4992	13.8	123	0.00
16	T	Dimethyl Sulfide	50.0000	52.8941	-5.8	140	0.00
17	T	Iodomethane	50.0000	58.1274	-16.3	150	0.00
18	P	Methyl acetate	50.0000	50.8161	-1.6	139	0.00
19	P	Methylene Chloride	50.0000	51.5501	-3.1	142	0.00
20	P	Carbon Disulfide	50.0000	54.0638	-8.1	149	0.00
21	T	Acrylonitrile	50.0000	50.9784	-2.0	135	0.00
22	P	Methyl Tert Butyl Ether	50.0000	51.8223	-3.6	135	0.00
23	P	trans-1,2-Dichloroethene	50.0000	54.6595	-9.3	147	0.00
24	T	n-Hexane	50.0000	52.4173	-4.8	150	0.00
25	T	Diisopropyl ether	100.0000	105.8746	-5.9	142	0.00
26	T	Vinyl Acetate	50.0000	49.9077	0.2	133	0.00
27	P	1,1-Dichloroethane	50.0000	52.8118	-5.6	142	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	104.0346	-4.0	138	0.00
29	P	2-Butanone	50.0000	46.3725	7.3	127	0.00
30	T	Propionitrile	100.0000	95.9114	4.1	130	0.00
31	T	2,2-Dichloropropane	50.0000	55.8973	-11.8	149	0.00
32	P	cis-1,2-Dichloroethene	50.0000	53.6566	-7.3	140	0.00
33	C	Chloroform	50.0000	50.8276	-1.7	136	0.00
34	T	1-Bromopropane	50.0000	48.2660	3.5	133	0.00
35	T	Bromochloromethane	50.0000	52.5995	-5.2	133	0.00
36	T	Tetrahydrofuran	100.0000	94.3620	5.6	126	0.00
37	S	Dibromofluoromethane	50.0000	49.2559	1.5	132	0.00
38	P	1,1,1-Trichloroethane	50.0000	52.5302	-5.1	137	0.00
39	P	Cyclohexane	50.0000	52.3172	-4.6	147	0.00
40	T	1,1-Dichloropropene	50.0000	53.4904	-7.0	147	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	102.4517	-2.5	137	0.00
42	P	Carbon Tetrachloride	50.0000	51.9296	-3.9	139	0.00
43	S	1,2-Dichloroethane-d4	50.0000	47.2068	5.6	128	0.00
44		Heptane	-1.0000	0.0000	0.0	139	0.00
45	P	1,2-Dichloroethane	50.0000	51.2139	-2.4	133	0.00
46	P	Benzene	50.0000	51.8521	-3.7	145	0.00
47	P	Trichloroethene	50.0000	54.0708	-8.1	147	0.00
48	P	Methylcyclohexane	50.0000	53.9417	-7.9	147	0.00
49	C	1,2-Dichloropropane	50.0000	53.5995	-7.2	139	0.00
50	T	1,4-Dioxane	200.0000	209.3142	-4.7	155	0.00
51	P	Bromodichloromethane	50.0000	49.7273	0.5	132	0.00
52	T	Dibromomethane	50.0000	50.3748	-0.7	134	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	41.3253	17.3	113	0.00
54	P	4-Methyl-2-Pentanone	50.0000	48.9932	2.0	127	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022816\9M972943.D Vial: 1
Acq On : 28 Feb 2016 15:39 Operator: FJB
Sample : WG559001-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	52.1559	-4.3	139	0.00
56	T	Dimethyl Disulfide	50.0000	55.4286	-10.9	143	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	140	0.00
58	S	Toluene-d8	50.0000	50.6415	-1.3	133	0.00
59	C	Toluene	50.0000	52.6846	-5.4	142	0.00
60	T	Ethyl Methacrylate	50.0000	52.8048	-5.6	140	0.00
61	P	trans-1,3-Dichloropropene	50.0000	51.6846	-3.4	133	0.00
62	P	1,1,2-Trichloroethane	50.0000	51.6668	-3.3	134	0.00
63	P	2-Hexanone	50.0000	49.0891	1.8	131	0.00
64	T	1,3-Dichloropropane	50.0000	51.6746	-3.3	136	0.00
65	P	Tetrachloroethene	50.0000	52.8728	-5.7	147	0.00
66	P	Dibromochloromethane	50.0000	49.1602	1.7	130	0.00
67	P	1,2-Dibromoethane	50.0000	49.4052	1.2	132	0.00
68	T	1-Chlorohexane	50.0000	55.8674	-11.7	148	0.00
69	P	Chlorobenzene	50.0000	51.8503	-3.7	138	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	51.9785	-4.0	135	0.00
71	C	Ethylbenzene	50.0000	54.8352	-9.7	145	0.00
72	P	m-,p-Xylene	100.0000	104.2899	-4.3	142	0.00
73	P	o-Xylene	50.0000	53.0650	-6.1	140	0.01
74	P	Styrene	50.0000	53.6483	-7.3	140	0.00
75	P	Bromoform	50.0000	50.6819	-1.4	128	0.00
76	P	Isopropylbenzene	50.0000	53.6193	-7.2	142	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	134	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	51.3234	-2.6	129	0.00
79	S	p-Bromofluorobenzene	50.0000	53.3055	-6.6	132	0.00
80	T	1,2,3-Trichloropropane	50.0000	52.2483	-4.5	132	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	57.4474	-14.9	147	0.00
82	T	n-Propylbenzene	50.0000	56.0089	-12.0	143	0.00
83	T	Bromobenzene	50.0000	52.4465	-4.9	134	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	55.2760	-10.6	140	0.00
85	T	2-Chlorotoluene	50.0000	52.2984	-4.6	139	0.00
86	T	4-Chlorotoluene	50.0000	55.5780	-11.2	138	0.00
87	T	a-Methylstyrene	50.0000	58.4646	-16.9	150	0.00
88	T	tert-Butylbenzene	50.0000	56.7811	-13.6	141	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	53.4161	-6.8	139	0.00
90	T	sec-Butylbenzene	50.0000	55.7138	-11.4	143	0.00
91	T	p-Isopropyltoluene	50.0000	54.9770	-10.0	141	0.00
92	P	1,3-Dichlorobenzene	50.0000	51.4679	-2.9	138	0.00
93	P	1,4-Dichlorobenzene	50.0000	50.9824	-2.0	137	0.00
94	T	n-Butylbenzene	50.0000	54.5119	-9.0	141	0.00
95	P	1,2-Dichlorobenzene	50.0000	51.3996	-2.8	134	0.00
96	P	1,2-Dibromo-3-Chloropropane	50.0000	47.1826	5.6	118	0.00
97	P	1,2,4-Trichlorobenzene	50.0000	51.0748	-2.1	136	0.00
98	T	Hexachlorobutadiene	50.0000	52.4592	-4.9	140	0.00
99	T	Naphthalene	50.0000	48.5497	2.9	120	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	50.5368	-1.1	131	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972943.D 8260SL.M Mon Feb 29 09:26:18 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\1\DATA\022516\9M972894.D          Vial: 3
Acq On    : 25 Feb 2016  14:45                       Operator: ADC
Sample    : WG558732-01 BFB 50ng                     Inst    : hpms9
Misc      : 7,1 STD74773                             Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 02/15/16  HPMS9
```

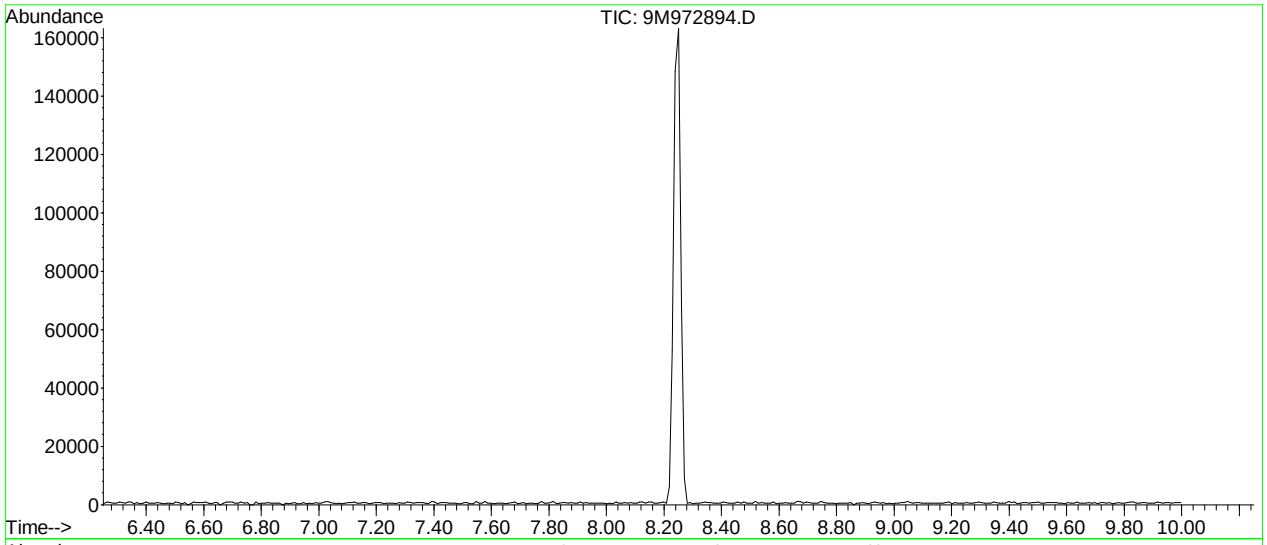

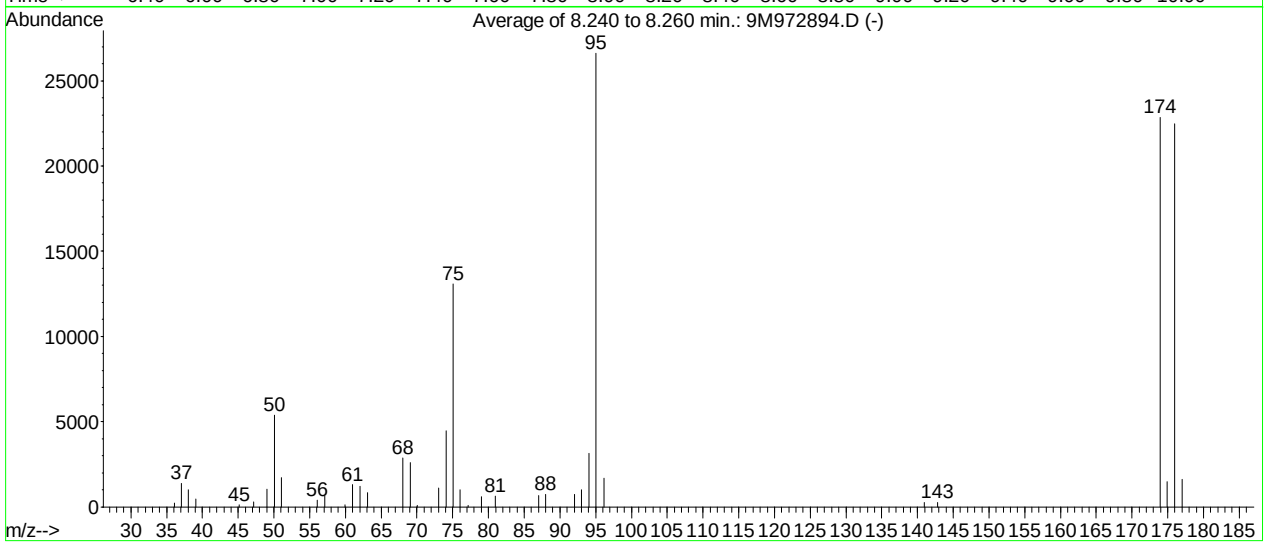

AutoFind: Scans 305, 306, 307; Background Corrected with Scan 300

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.2	5378	PASS
75	95	30	60	49.1	13067	PASS
95	95	100	100	100.0	26621	PASS
96	95	5	9	6.3	1683	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	85.8	22851	PASS
175	174	5	9	6.5	1485	PASS
176	174	95	101	98.3	22461	PASS
177	176	5	9	7.2	1619	PASS

9M972894.D 8260SL.M Fri Feb 26 11:11:03 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\022816\9M972942.D          Vial: 1
Acq On    : 28 Feb 2016  15:15                       Operator: FJB
Sample    : WG559001-01 BFB 50ng 8260                Inst    : hpms9
Misc      : 7,1 STD74606                             Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 02/25/16  HPMS9
```

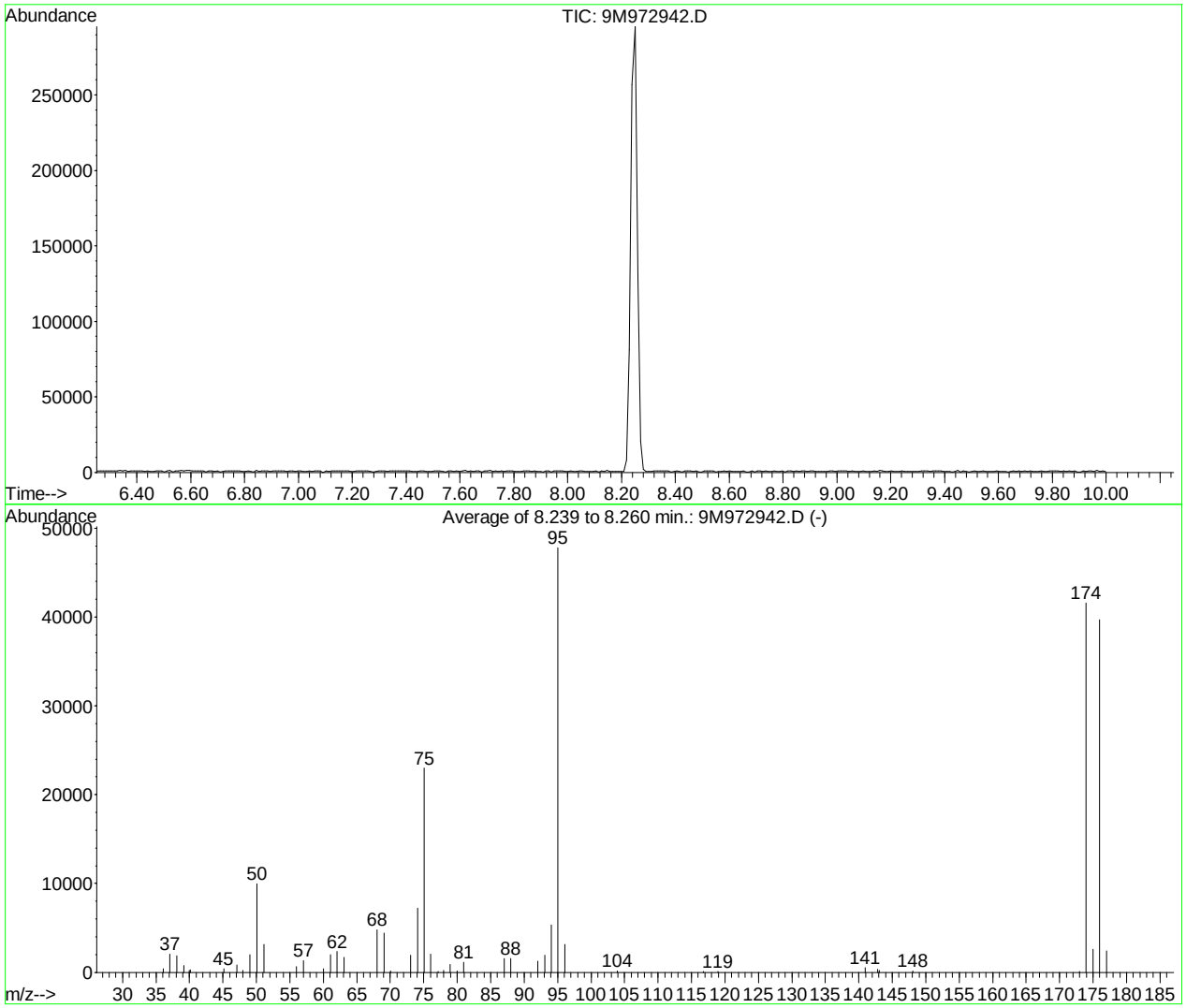

AutoFind: Scans 305, 306, 307; Background Corrected with Scan 300

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.8	9950	PASS
75	95	30	60	48.0	22972	PASS
95	95	100	100	100.0	47813	PASS
96	95	5	9	6.6	3156	PASS
173	174	0.00	2	0.3	115	PASS
174	95	50	100	86.9	41573	PASS
175	174	5	9	6.3	2621	PASS
176	174	95	101	95.5	39704	PASS
177	176	5	9	6.0	2399	PASS

9M972942.D 8260SL.M Mon Feb 29 09:26:07 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022816\9M972945.D Vial: 3
Acq On : 28 Feb 2016 16:39 Operator: FJB
Sample : WG559002-01 VBLK0228 BLANK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 13:25:49 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	620113	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	441195	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	204353	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	171981	51.1646 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 102.32%		
43) 1,2-Dichloroethane-d4	10.45	65	220352	52.2478 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.50%		
58) Toluene-d8	12.83	98	616842	55.2743 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 110.54%		
79) p-Bromofluorobenzene	16.23	95	224016	56.2970 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 112.60%		

Target Compounds

					Qvalue
6) Bromomethane	4.90	94	1094	0.4147 ug/kg#	52
13) Acetone	6.42	43	3635	Below Cal	95
17) Iodomethane	7.13	142	1078	3.3893 ug/kg#	34
36) Tetrahydrofuran	9.78	42	581	0.4507 ug/kg#	65
56) Dimethyl Disulfide	12.83	94	18043	3.7511 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972945.D 8260SL.M Mon Feb 29 13:25:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022816\9M972945.D Vial: 3
Acq On : 28 Feb 2016 16:39 Operator: FJB
Sample : WG559002-01 VBLK0228 BLANK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 13:25 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

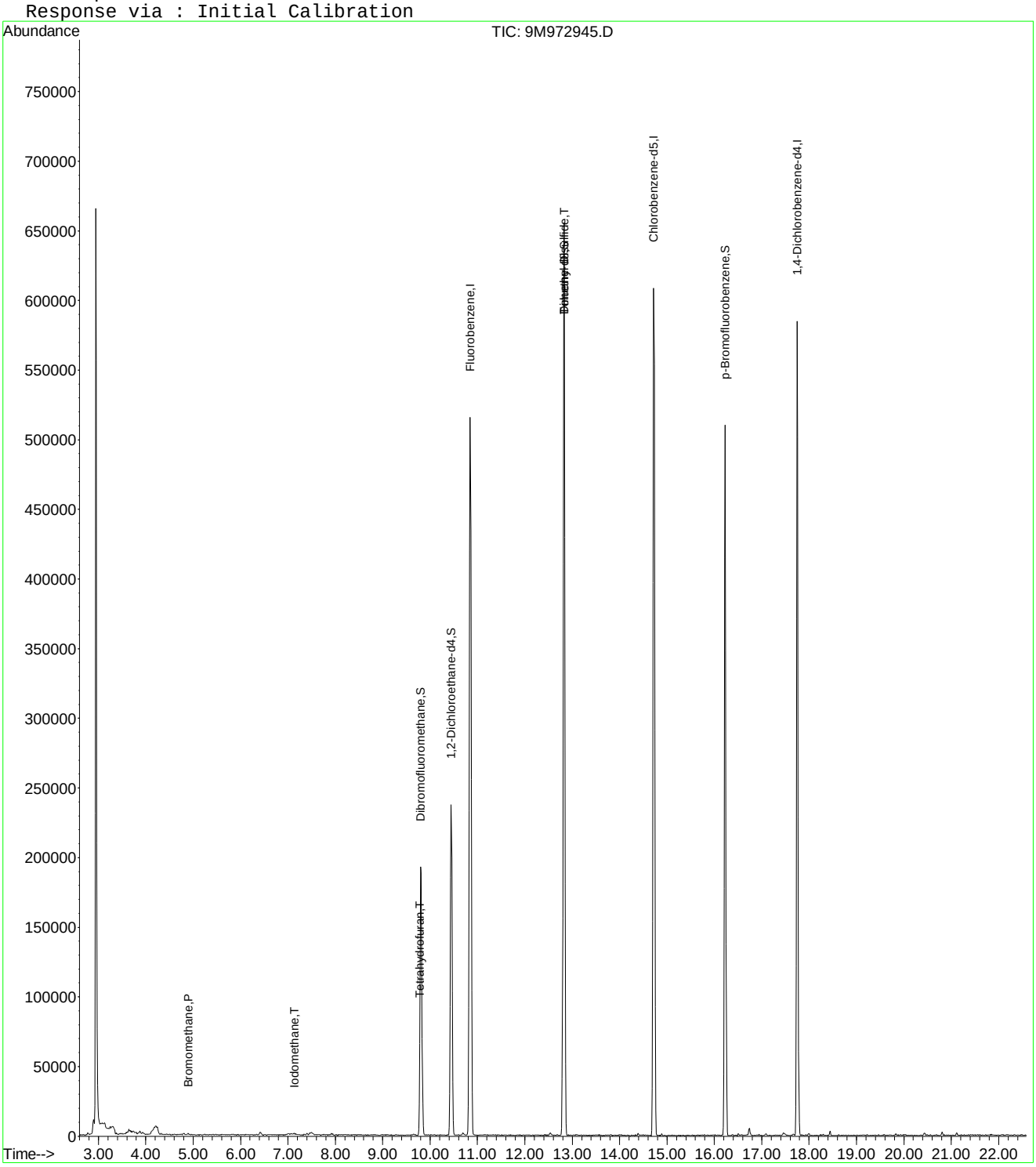

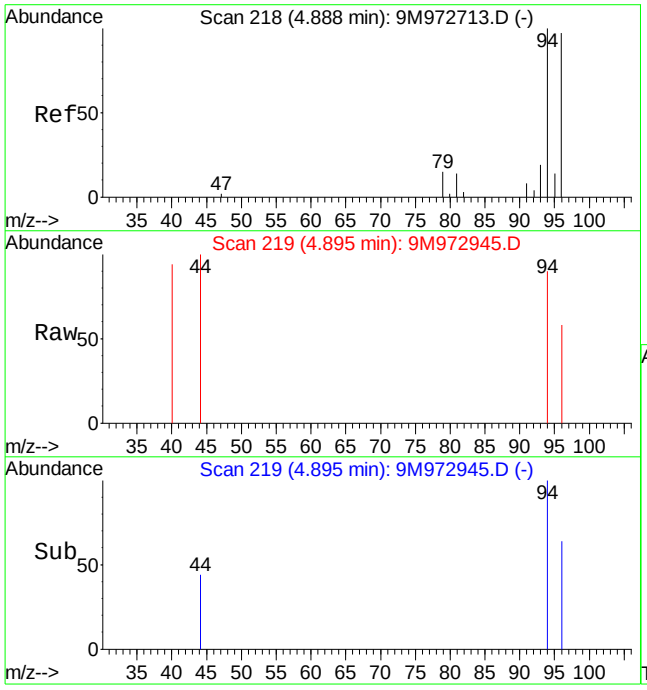

#6
Bromomethane
Concen: 0.41 ug/kg
RT: 4.90 min Scan# 219
Delta R.T. 0.01 min
Lab File: 9M972945.D
Acq: 28 Feb 2016 16:39

Tgt Ion: 94 Resp: 1094

Ion	Ratio	Lower	Upper
94	100		
96	48.9	57.2	133.6#

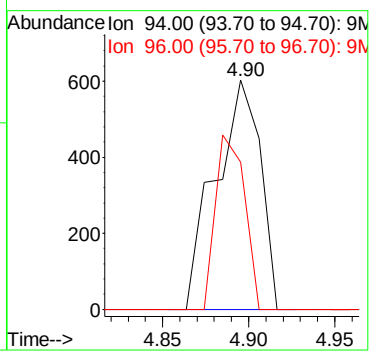

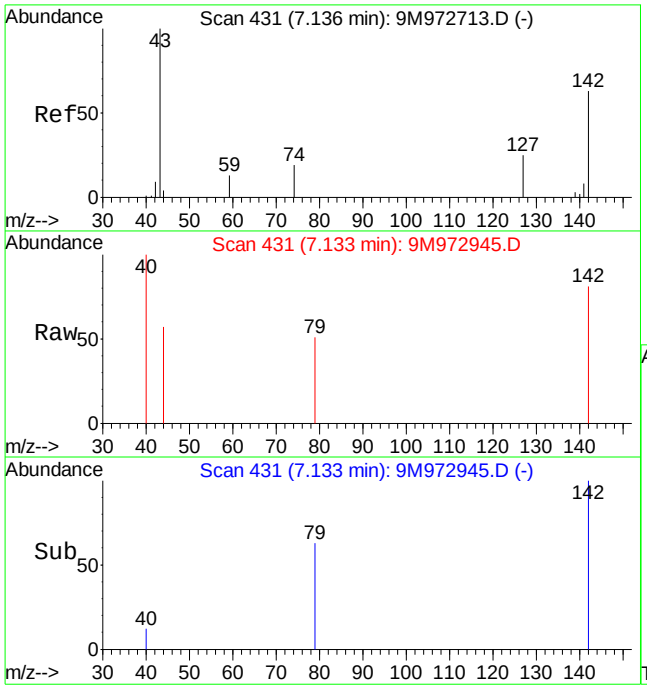

#17
Iodomethane
Concen: 3.39 ug/kg
RT: 7.13 min Scan# 431
Delta R.T. 0.00 min
Lab File: 9M972945.D
Acq: 28 Feb 2016 16:39

Tgt Ion:142 Resp: 1078

Ion	Ratio	Lower	Upper
142	100		
127	0.0	25.1	58.7#

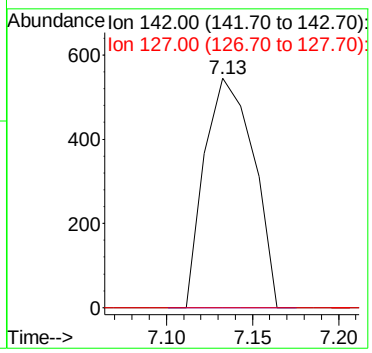

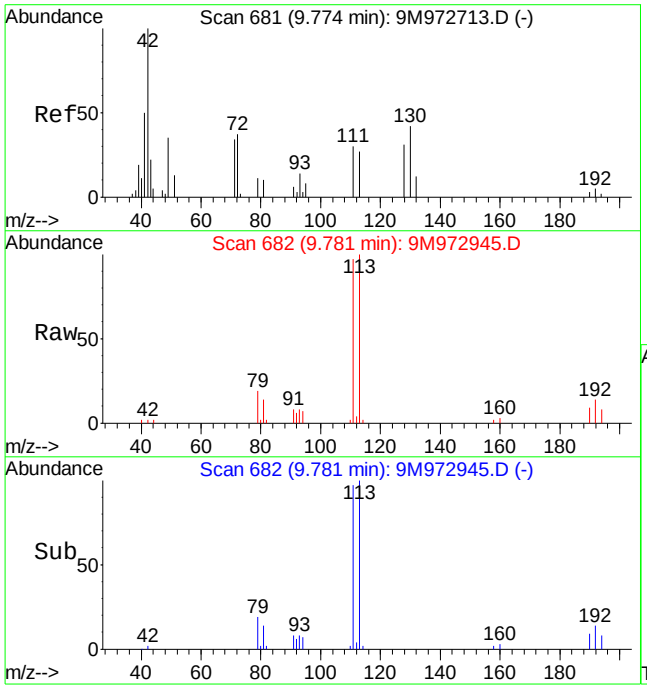

#36
Tetrahydrofuran
Concen: 0.45 ug/kg
RT: 9.78 min Scan# 682
Delta R.T. 0.00 min
Lab File: 9M972945.D
Acq: 28 Feb 2016 16:39

Tgt Ion: 42 Resp: 581

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	35.3	18.3	42.7

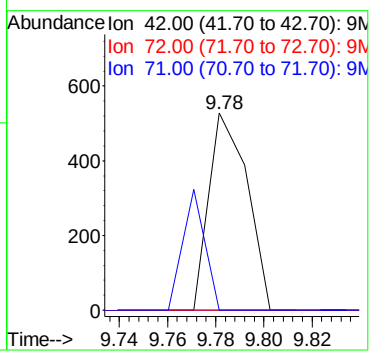

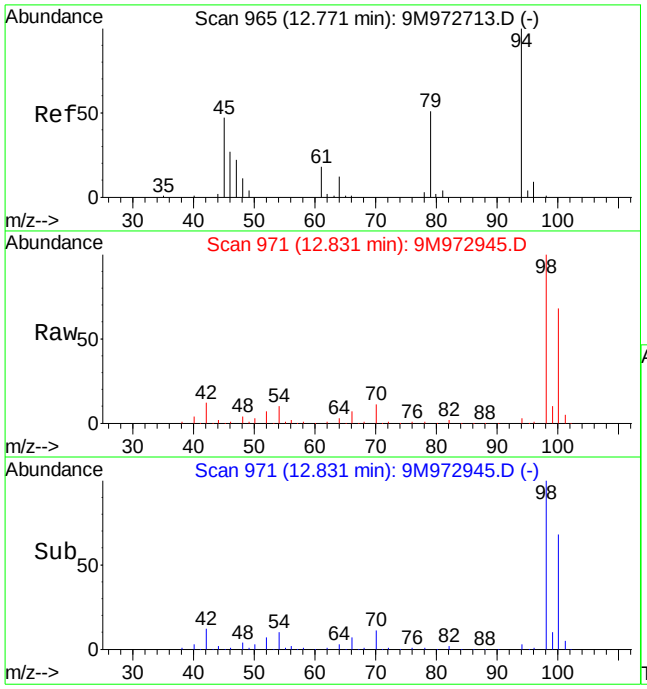

#56
Dimethyl Disulfide
Concen: 3.75 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.07 min
Lab File: 9M972945.D
Acq: 28 Feb 2016 16:39

Tgt Ion: 94 Resp: 18043

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

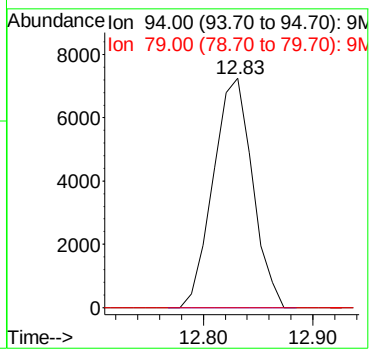

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022816\9M972946.D Vial: 4
Acq On : 28 Feb 2016 17:10 Operator: FJB
Sample : WG559002-02 20ug/Kg LCS 8260 Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 28 17:33:06 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	577816	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	413544	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	193426	50.00 ug/kg	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.80	111	157266	50.2117 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.42%		
43) 1,2-Dichloroethane-d4	10.45	65	196539	50.0127 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.02%		
58) Toluene-d8	12.82	98	565274	54.0402 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 108.08%		
79) p-Bromofluorobenzene	16.23	95	208942	55.4751 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 110.96%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	112624	28.5971 ug/kg	97
3) Chloromethane	3.75	50	86254	22.8164 ug/kg	100
4) Vinyl Chloride	3.98	62	89993	23.7802 ug/kg	97
5) 1,3-Butadiene	4.03	54	80500	22.3589 ug/kg	95
6) Bromomethane	4.88	94	51594	20.9914 ug/kg	99
7) Chloroethane	5.03	64	37911	22.4863 ug/kg	97
8) Trichlorofluoromethane	5.52	101	118730	20.9185 ug/kg	100
9) Diethyl ether	6.05	59	195802	73.7954 ug/kg	99
10) Isoprene	6.08	67	93338	27.5447 ug/kg	96
11) Acrolein	6.30	56	38044	71.9077 ug/kg	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	69258	23.6609 ug/kg	96
13) Acetone	6.42	43	31456	20.1096 ug/kg	95
14) 1,1-Dichloroethene	6.62	61	114583	21.2205 ug/kg	99
15) Tert-Butyl Alcohol	6.75	59	142519	241.2212 ug/kg	100
16) Dimethyl Sulfide	6.88	62	74435	32.6170 ug/kg	98
17) Iodomethane	7.13	142	31651	21.4199 ug/kg	98
18) Methyl acetate	7.15	43	59108	20.1363 ug/kg	99
19) Methylene Chloride	7.40	84	63387	21.5547 ug/kg	98
20) Carbon Disulfide	7.44	76	162423	19.5267 ug/kg	100
21) Acrylonitrile	7.58	53	32005	22.0402 ug/kg	94
22) Methyl Tert Butyl Ether	7.60	73	180961	21.6058 ug/kg	100
23) trans-1,2-Dichloroethene	7.84	61	109495	22.7535 ug/kg	99
24) n-Hexane	7.92	57	109240	22.0088 ug/kg	98
25) Diisopropyl ether	8.26	45	1088401	94.4160 ug/kg	100
26) Vinyl Acetate	8.43	43	146654	22.3165 ug/kg	99
27) 1,1-Dichloroethane	8.46	63	124545	20.6055 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	967839	90.2956 ug/kg	99
29) 2-Butanone	9.02	43	38299	20.5544 ug/kg	97
30) Propionitrile	9.14	54	59759	104.8015 ug/kg	100
31) 2,2-Dichloropropane	9.23	77	97470	21.6055 ug/kg	97
32) cis-1,2-Dichloroethene	9.31	96	71396	22.6211 ug/kg	99
33) Chloroform	9.52	83	111216	20.0305 ug/kg	96
34) 1-Bromopropane	9.66	122	16414	34.4428 ug/kg	98
35) Bromochloromethane	9.75	130	44238	21.5776 ug/kg	96
36) Tetrahydrofuran	9.77	42	114876	95.6460 ug/kg	99
38) 1,1,1-Trichloroethane	10.05	97	103902	20.6928 ug/kg	98
39) Cyclohexane	10.08	56	123492	22.5583 ug/kg	98
40) 1,1-Dichloropropene	10.24	75	81491	20.6251 ug/kg	95
41) Tert-Amyl-Methyl ether	10.34	73	787695	101.1014 ug/kg	100
42) Carbon Tetrachloride	10.38	117	92585	19.8891 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972946.D 8260SL.M Sun Feb 28 17:33:07 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022816\9M972946.D Vial: 4
Acq On : 28 Feb 2016 17:10 Operator: FJB
Sample : WG559002-02 20ug/Kg LCS 8260 Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 28 17:33:06 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	106774	21.8626 ug/kg	99
46)	Benzene	10.61	78	242250	21.9004 ug/kg	99
47)	Trichloroethene	11.36	130	77578	22.1342 ug/kg	98
48)	Methylcyclohexane	11.44	83	102065	23.2184 ug/kg	99
49)	1,2-Dichloropropane	11.57	63	70388	23.1725 ug/kg	100
50)	1,4-Dioxane	11.87	88	13650	299.5413 ug/kg	94
51)	Bromodichloromethane	11.87	83	88989	20.7876 ug/kg	100
52)	Dibromomethane	11.96	174	41532	20.6357 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	15982	20.7933 ug/kg	93
54)	4-Methyl-2-Pentanone	12.19	58	29277	21.9591 ug/kg	97
55)	cis-1,3-Dichloropropene	12.51	75	102855	23.0617 ug/kg	100
56)	Dimethyl Disulfide	12.77	94	108953	24.3089 ug/kg	92
59)	Toluene	12.93	91	264634	22.3968 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	75270	22.9822 ug/kg	98
61)	trans-1,3-Dichloropropene	13.10	75	94311	22.1612 ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	57316	23.0915 ug/kg	95
63)	2-Hexanone	13.26	43	54235	21.8845 ug/kg	100
64)	1,3-Dichloropropane	13.62	76	96660	23.3708 ug/kg	99
65)	Tetrachloroethene	13.75	164	54221	21.4055 ug/kg	97
66)	Dibromochloromethane	14.02	129	71622	20.6467 ug/kg	98
67)	1,2-Dibromoethane	14.27	107	60635	22.0240 ug/kg	96
68)	1-Chlorohexane	14.34	91	77741	22.3112 ug/kg	96
69)	Chlorobenzene	14.77	112	188889	22.7458 ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.81	131	66825	21.4279 ug/kg	100
71)	Ethylbenzene	14.80	106	97995	22.9050 ug/kg	98
72)	m-,p-Xylene	14.89	106	236799	44.8176 ug/kg	100
73)	o-Xylene	15.45	106	117789	23.2304 ug/kg	99
74)	Styrene	15.49	104	195725	22.6679 ug/kg	100
75)	Bromoform	15.99	173	43183	18.9599 ug/kg	98
76)	Isopropylbenzene	15.87	105	307619	22.5991 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	63025	21.4797 ug/kg	99
80)	1,2,3-Trichloropropane	16.28	110	26129	23.4814 ug/kg	83
81)	trans-1,4-Dichloro-2-Buten	16.34	53	21991	19.6060 ug/kg	92
82)	n-Propylbenzene	16.38	91	353827	23.2714 ug/kg	99
83)	Bromobenzene	16.52	156	79402	22.1216 ug/kg	74
84)	1,3,5-Trimethylbenzene	16.57	105	263372	23.0764 ug/kg	99
85)	2-Chlorotoluene	16.66	91	242282	23.7580 ug/kg	100
86)	4-Chlorotoluene	16.71	91	205505	21.7964 ug/kg	99
87)	a-Methylstyrene	16.98	118	130025	25.0029 ug/kg	97
88)	tert-Butylbenzene	17.03	134	55352	23.1329 ug/kg	89
89)	1,2,4-Trimethylbenzene	17.09	105	256289	21.4425 ug/kg	100
90)	sec-Butylbenzene	17.31	105	326775	22.2305 ug/kg	99
91)	p-Isopropyltoluene	17.47	119	272853	21.9952 ug/kg	100
92)	1,3-Dichlorobenzene	17.67	146	151965	21.3028 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	153934	21.5851 ug/kg	99
94)	n-Butylbenzene	17.99	91	237969	20.6322 ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	146690	22.1619 ug/kg	98
96)	1,2-Dibromo-3-Chloropropan	19.29	157	17591	20.7025 ug/kg	96
97)	1,2,4-Trichlorobenzene	20.43	180	91846	19.5468 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	45592	18.4072 ug/kg	100
99)	Naphthalene	20.81	128	233516	19.8139 ug/kg	99
100)	1,2,3-Trichlorobenzene	21.12	180	92739	20.3489 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972946.D 8260SL.M Sun Feb 28 17:33:07 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022816\9M972946.D Vial: 4
Acq On : 28 Feb 2016 17:10 Operator: FJB
Sample : WG559002-02 20ug/Kg LCS 8260 Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 28 17:33 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

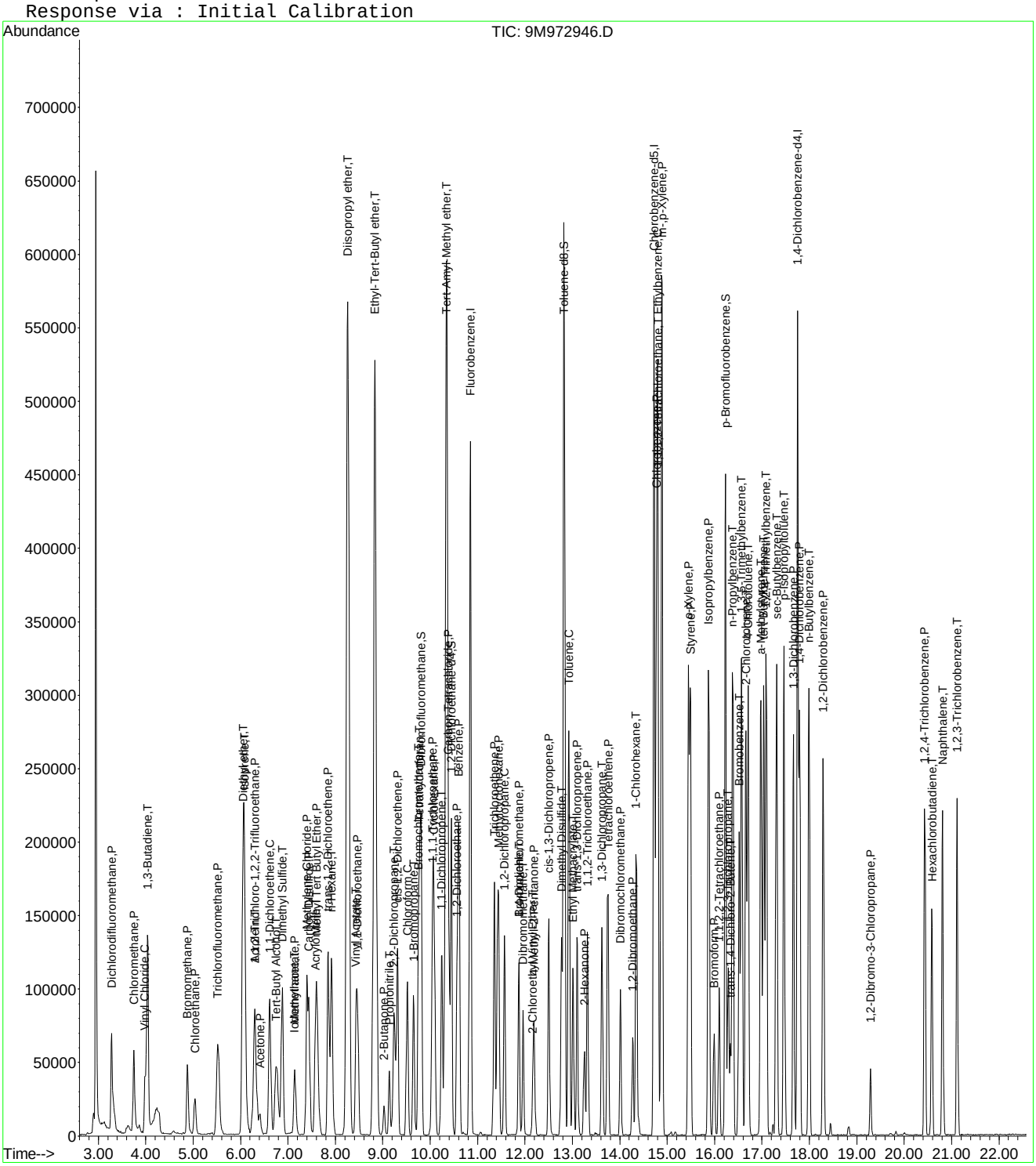

9M972946.D 8260SL.M Sun Feb 28 17:33:07 2016 Page 3

2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021306-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT05(4.5-5)250216	**Prep Method:**	6850	**Prep Date:**	02/26/2016 17:44
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558991	**Analyst:**	JWR	**Run Date:**	02/27/2016 01:40
Collect Date:	02/25/2016 09:30	**Dilution:**	1	**File ID:**	1LM.LM33425
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.34	U	4.67	2.34	1.17

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021306-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT05(10-11)250216	**Prep Method:**	6850	**Prep Date:**	02/26/2016 17:44
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558991	**Analyst:**	JWR	**Run Date:**	02/27/2016 00:43
Collect Date:	02/25/2016 09:40	**Dilution:**	1	**File ID:**	1LM.LM33422
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	88.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.22	U	4.42	2.22	1.11

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021306-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT05(10-11)250216 MS	**Prep Method:**	6850	**Prep Date:**	02/26/2016 17:44
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558991	**Analyst:**	JWR	**Run Date:**	02/27/2016 01:02
Collect Date:	02/25/2016 09:40	**Dilution:**	1	**File ID:**	1LM.LM33423
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	88.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.57	J	4.42	2.20	1.10

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021306-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT05(10-11)250216 MSD	**Prep Method:**	6850	**Prep Date:**	02/26/2016 17:44
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558991	**Analyst:**	JWR	**Run Date:**	02/27/2016 01:21
Collect Date:	02/25/2016 09:40	**Dilution:**	1	**File ID:**	1LM.LM33424
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	88.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.67	J	4.42	2.20	1.10

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16021306
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021306-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT05(15-15.5)250216	**Prep Method:**	6850	**Prep Date:**	02/26/2016 17:44
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558991	**Analyst:**	JWR	**Run Date:**	02/27/2016 01:59
Collect Date:	02/25/2016 09:50	**Dilution:**	1	**File ID:**	1LM.LM33426
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	7.13		4.56	2.28	1.14

Certificate of Analysis

Sample #:	L16021306-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT05(20-20.5)250216	**Prep Method:**	6850	**Prep Date:**	02/26/2016 17:44
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG558991	**Analyst:**	JWR	**Run Date:**	02/27/2016 11:35
Collect Date:	02/25/2016 09:45	**Dilution:**	50	**File ID:**	1LM.LM33435
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	80.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1400		243	121	60.7

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

MICROBAC

Semivolatile Sample Extract Log

Parameter: Perchlorate
SOP #: HPLC06
Analyst: JWR
Spike/Surrogate analyst: JWR
Surrogate #: NA
Spike # A: STD72686
Ext Solvent: DI-H_2O
Ext Solvent: NA
Ext Disk: NA

Matrix: Soils
Rev #: 07
Date/Time Extracted: JWR/02/26/16/1744
Witness:

Spike # B: NA
Lot #: NA
Lot #: NA
Lot #: NA

Extraction Work Group: WG558990
Analytical Work Group: WG558991
Run ID: R4476215

Pipetter(s): Eppendorf #403
Analytical Balance ID: BAL017
Reagent: Tubes Lot #: RGT34011
Reagent: Sand Lot #: COA16150
Other: IS Lot #: COA18071

Color Code
T = Transparent
C = Colored
O = Opaque

	Sample ID	Test Code	pH	Initial Wt / Vol	JWR ~~Surrogate~~ Amount	IS Amount Spike	Final Volume	Extract Color	Comments
1	WG558990-01	6850		5.031g	0.250ml	1.0ml	50ml		MCT (2ug/kg) (10,000us)
2	WG558990-02			5.029g		NA			Blank
3	WG558990-03			5.012g		1.0ml			LCS (2ug/kg)
4	L16021306-01			5.102g		NA			
5	-02 RS			5.137g		NA			WG558990-04 Ref
6	-03 MS			5.142g		1.0ml			WG558990-05 MS (@2ug/kg)
7	-04 MSD			5.145g		1.0ml			WG558990-06 MSD (@2ug/kg)
8	-05			5.146g		NA			
9	-06			5.149g		NA			
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									

Reviewed by:

Analytical WG558991 (soils)

Perchlorate Conductivity Check

(perchlorate1)

Conductivity Probe Calibration Check: 1385 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG558990-01 MCT	9,920.	
WG558990-02 Blank	1.19 ~~5.029~~ JWR	02/26/16
WG558990-03 LCS	1.07	
L16021306-01	3.08	
-02 RS	3.86	
-03 MS	3.55	
-04 MSD	3.34	
-05	5.54	
-06	8.83	

Analyst: John Richards

Date/Time: 02/26/16 / 1930

DCN#116907

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 021716_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG557864 (waters)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 MS/MSD STD: NA

Comments: ICAL WG557856 : Alternate Source STD72685
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM33244	WG557856-01 CCB	1	1		02/17/16 19:12
2	1LM.LM33245	WG557856-02 STD (0.1 ug/L)	1	1	STD72683	02/17/16 19:31
3	1LM.LM33246	WG557856-03 STD (0.2 ug/L)	1	1	STD72683	02/17/16 19:50
4	1LM.LM33247	WG557856-04 STD (0.5 ug/L)	1	1	STD72683	02/17/16 20:08
5	1LM.LM33248	WG557856-05 STD (1.0 ug/L)	1	1	STD72683	02/17/16 20:27
6	1LM.LM33249	WG557856-06 STD (2.0 ug/L)	1	1	STD72683	02/17/16 20:46
7	1LM.LM33250	WG557856-07 STD (5.0 ug/L)	1	1	STD72683	02/17/16 21:05
8	1LM.LM33251	WG557856-08 STD (10 ug/L)	1	1	STD72683	02/17/16 21:24
9	1LM.LM33252	WG557856-09 SSCV (1.0 ug/L)	1	1	STD72685	02/17/16 21:43
10	1LM.LM33253	WG557868-01 CCB	1	1		02/17/16 22:02
11	1LM.LM33254	WG557868-02 CCV (1.0ug/L)	1	1	STD72683	02/17/16 22:21
12	1LM.LM33255	WG557864-05 MRL (0.2ug/L)	1	1	STD72683	02/17/16 22:40
13	1LM.LM33256	WG557864-01 MCT (0.2ug/L)	1	1	STD72685	02/17/16 22:59
14	1LM.LM33257	WG557864-02 BLANK	1	1		02/17/16 23:18
15	1LM.LM33258	WG557864-03 LCS (0.2ug/L)	1	1	STD72685	02/17/16 23:37
16	1LM.LM33259	WG557864-04 LCS2 (0.2ug/L)	1	1	STD72685	02/17/16 23:56
17	1LM.LM33260	L16020819-01 (1000x) (NR)	1	1000		02/18/16 00:15
18	1LM.LM33261	L16020819-01 (100x) (NR)	1	100		02/18/16 00:34
19	1LM.LM33262	L16020819-01 (10x) (NR)	1	10		02/18/16 00:53
20	1LM.LM33263	L16020819-01 Neat	1	1		02/18/16 01:11
21	1LM.LM33264	Blank Rinse	1	1		02/18/16 01:30
22	1LM.LM33265	Blank Rinse	1	1		02/18/16 01:49
23	1LM.LM33266	WG557868-03 CCV (1.0ug/L)	1	1	STD72683	02/18/16 02:08
24	1LM.LM33267	WG557864-06 MRL (0.2ug/L)	1	1	STD72683	02/18/16 02:27
25	1LM.LM33268	WG557868-04 CCB	1	1		02/18/16 02:46

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17	X	1	Analyzed too dilute	
	L16020819-01 (1000x) (NR) : Results from this sample at this dilution are not needed.			
18	X	1	Analyzed too dilute	
	L16020819-01 (100x) (NR) : Results from this sample at this dilution are not needed.			
19	X	1	Analyzed too dilute	

Page: 1 Approved: 18-FEB-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 021716_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG557864 (waters)

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 NA

Comments

Seq.	Rerun	Dil.	Reason	Analytes
	L16020819-01 (10x) (NR) : Results from this sample at this dilution are not needed.			

Page: 2 Approved: 18-FEB-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 022616_JWR.TXT
Analyst1: JWR Analyst2: WTD
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG558988 (waters) Analytical WG558991 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 MS/MSD STD: STD72685

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM33402	WG558989-01 CCB	1	1		02/26/16 18:24
2	1LM.LM33403	WG558989-02 CCV (1.0ug/L)	1	1	STD72683	02/26/16 18:43
3	1LM.LM33404	WG558988-05 MRL (0.2ug/L)	1	1	STD72683	02/26/16 19:02
4	1LM.LM33405	WG558988-01 MCT (0.2ug/L)	1	1	STD72685	02/26/16 19:21
5	1LM.LM33406	WG558988-02 BLANK	1	1		02/26/16 19:40
6	1LM.LM33407	WG558988-03 LCS (0.2ug/L)	1	1	STD72685	02/26/16 19:59
7	1LM.LM33408	WG558988-04 LCS2 (0.2ug/L)	1	1	STD72685	02/26/16 20:18
8	1LM.LM33409	L16021190-01 WTD-P\&A (0.2ug/L)	1	1	STD72685	02/26/16 20:37
9	1LM.LM33410	L16021190-02 WTD-P\&A (0.2ug/L)	1	1	STD72685	02/26/16 20:56
10	1LM.LM33411	L16021190-03 WTD-P\&A (0.2ug/L)	1	1	STD72685	02/26/16 21:15
11	1LM.LM33412	L16021190-04 WTD-P\&A (0.2ug/L)	1	1	STD72685	02/26/16 21:34
12	1LM.LM33413	L16021193-01	1	1		02/26/16 21:52
13	1LM.LM33414	L16021193-02	1	1		02/26/16 22:11
14	1LM.LM33415	WG558989-03 CCV (1.0ug/L)	1	1	STD72683	02/26/16 22:30
15	1LM.LM33416	WG558988-06 MRL (0.2ug/L)	1	1	STD72683	02/26/16 22:49
16	1LM.LM33417	WG558989-04 CCB	1	1		02/26/16 23:08
17	1LM.LM33418	WG558991-07 MRL (2.0ug/kg)	7	1	STD72683	02/26/16 23:27
18	1LM.LM33419	WG558991-01 MCT (2.0ug/kg)	7	1	STD72685	02/26/16 23:46
19	1LM.LM33420	WG558991-02 BLANK	7	1		02/27/16 00:05
20	1LM.LM33421	WG558991-03 LCS (2.0ug/kg)	7	1	STD72685	02/27/16 00:24
21	1LM.LM33422	L16021306-02 RS	7	1		02/27/16 00:43
22	1LM.LM33423	L16021306-03 MS	7	1	STD72685	02/27/16 01:02
23	1LM.LM33424	L16021306-04 MSD	7	1	STD72685	02/27/16 01:21
24	1LM.LM33425	L16021306-01	7	1		02/27/16 01:40
25	1LM.LM33426	L16021306-05	7	1		02/27/16 01:59
26	1LM.LM33427	L16021306-06 (NR)	7	1		02/27/16 02:17
27	1LM.LM33428	Diluent	7	1		02/27/16 02:36
28	1LM.LM33429	WG558989-05 CCV (1.0ug/L)	1	1	STD72683	02/27/16 02:55
29	1LM.LM33430	WG558991-08 MRL (2.0ug/kg)	7	1	STD72683	02/27/16 03:14
30	1LM.LM33431	WG558989-06 CCB	1	1		02/27/16 03:33
31	1LM.LM33432	WG558989-07 CCV (1.0ug/L)	1	1	STD72683	02/27/16 10:38
32	1LM.LM33433	WG558991-09 MRL (2.0ug/kg)	7	1	STD72683	02/27/16 10:57
33	1LM.LM33434	WG558989-08 CCB	1	1		02/27/16 11:16

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 022616_JWR.TXT
Analyst1: JWR Analyst2: WTD
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG558988 (waters) Analytical WG558991 (soils)

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM33435	L16021306-06 (RR 50x)	7	50		02/27/16 11:35
35	1LM.LM33436	WG558989-09 CCV (1.0ug/L)	1	1	STD72683	02/27/16 11:54
36	1LM.LM33437	WG558991-10 MRL (2.0ug/kg)	7	1	STD72683	02/27/16 12:13
37	1LM.LM33438	WG558989-10 CCB	1	1		02/27/16 12:32

Comments

Seq.	Rerun	Dil.	Reason	Analytes
23				
	L16021306-04 MSD : The MSD %Rec is marginally (<5%) above its upper control limit.			

Page: 2 Approved: 29-FEB-16

Microbac Laboratories Inc.

Data Checklist

Date: 17-FEB-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG557856
Runlog ID: 73366
Analytical Workgroups: L16020819

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
18-FEB-2016
John Richards

Secondary Reviewer:
18-FEB-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-18-2016 16:36:00

Microbac Laboratories Inc.

Data Checklist

Date: 26-FEB-2016
Analyst: JWR
Analyst: WTD
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 73516
Analytical Workgroups: L16021190(WTD-DOC'S), 1193 (WATERS) L16021306 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	MCT(SOIL)-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
27-FEB-2016
John Richards

Secondary Reviewer:
29-FEB-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-29-2016 07:37:58

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG558991

Login Number: L16021306

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18DPT05(4.5-5)250216	01	02/25/16					02/26/2016	1.3	28		02/27/16	.3	28	
18DPT05(10-11)250216	02	02/25/16					02/26/2016	1.3	28		02/27/16	.3	28	
18DPT05(10-11)250216 MS	03	02/25/16					02/26/2016	1.3	28		02/27/16	.3	28	
18DPT05(10-11)250216 MS	04	02/25/16					02/26/2016	1.3	28		02/27/16	.3	28	
18DPT05(15-15.5)250216	05	02/25/16					02/26/2016	1.3	28		02/27/16	.3	28	
18DPT05(20-20.5)250216	06	02/25/16					02/26/2016	1.3	28		02/27/16	.7	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4649626
Report generated 02/29/2016 09:06

METHOD BLANK SUMMARY

Login Number: L16021306
Blank File ID: 1LM.LM33420
Prep Date: 02/26/16 17:44
Analyzed Date: 02/27/16 00:05
Analyst: JWR

Work Group: WG558991
Blank Sample ID: WG558991-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG558991-07	1LM.LM33418	02/26/16 23:27	01
MCT	WG558991-01	1LM.LM33419	02/26/16 23:46	01
LCS	WG558991-03	1LM.LM33421	02/27/16 00:24	01
18DPT05(10-11)250216	L16021306-02	1LM.LM33422	02/27/16 00:43	01
18DPT05(10-11)250216 MS	L16021306-03	1LM.LM33423	02/27/16 01:02	01
18DPT05(10-11)250216 MSD	L16021306-04	1LM.LM33424	02/27/16 01:21	01
18DPT05(4.5-5)250216	L16021306-01	1LM.LM33425	02/27/16 01:40	01
18DPT05(15-15.5)250216	L16021306-05	1LM.LM33426	02/27/16 01:59	01
QCMRL	WG558991-08	1LM.LM33430	02/27/16 03:14	01
QCMRL	WG558991-09	1LM.LM33433	02/27/16 10:57	01
18DPT05(20-20.5)250216	L16021306-06	1LM.LM33435	02/27/16 11:35	DL01
QCMRL	WG558991-10	1LM.LM33437	02/27/16 12:13	01

Report Name: BLANK_SUMMARY
PDF File ID: 4649627
Report generated 02/29/2016 09:06

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16021306 Prep Date: 02/26/16 17:44 Sample ID: WG558991-02
Instrument ID: LCMS1 Run Date: 02/27/16 00:05 Prep Method: 6850
File ID: 1LM.LM33420 Analyst: JWR Method: 6850
Workgroup (AAB#): WG558991 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-17-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.994	3.98	0.994	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4649628
29-FEB-2016 09:06

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16021306 Run Date: 02/27/2016 Sample ID: WG558991-03
Instrument ID: LCMS1 Run Time: 00:24 Prep Method: 6850
File ID: 1LM.LM33421 Analyst: JWR Method: 6850
Workgroup (AAB#): WG558991 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD72685 Cal ID: LCMS1-17-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	2.00	2.19	110	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4649629
Report generated: 02/29/2016 09:06

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16021306 Cal ID: LCMS1- 17-FEB-16 Worknum: WG558991
Instrument ID: LCMS1 Contract #: Prep Method: 6850
Parent ID: L16021306-02 File ID: 1LM.LM33422 Dil: 1 Method: 6850
Sample ID: L16021306-03 MS File ID: 1LM.LM33423 Dil: 1 Matrix: Soil
Sample ID: L16021306-04 MSD File ID: 1LM.LM33424 Dil: 1 Units: ug/kg
Percent Solid: 88.0

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Perchlorate	U	2.21	2.57	117	2.21	2.67	121	3.73	80 - 120	15	*

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4649630
Report generated 02/29/2016 09:57

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16021306
Analytical Method: 6850
ICAL Workgroup: WG557856

Instrument ID: LCMS1
Initial Calibration Date: 17-FEB-16 21:24
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.628	7.83	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4649693
Report generated 02/29/2016 09:06

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16021306

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 17-FEB-16 21:24

Column ID: F

Analyte	WG557856-02			WG557856-03			WG557856-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	18800.0000	1.692	0.200	38700.0000	1.755	0.500	91400.0000	1.644

INT_CAL - Modified 03/06/2008
PDF File ID: 4649693
Report generated 02/29/2016 09:06

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16021306

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 17-FEB-16 21:24

Column ID: F

Analyte	WG557856-05			WG557856-06			WG557856-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	178000.000	1.625	2.00	350000.000	1.604	5.00	826000.000	1.554

INT_CAL - Modified 03/06/2008
PDF File ID: 4649693
Report generated 02/29/2016 09:06

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16021306

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 17-FEB-16 21:24

Column ID: F

Analyte	WG557856-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.521

INT_CAL - Modified 03/06/2008

PDF File ID: 4649693

Report generated 02/29/2016 09:06

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16021306 Run Date: 02/17/2016 Sample ID: WG557856-09
Instrument ID: LCMS1 Run Time: 21:43 Method: 6850
File ID: 1LM.LM33252 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG557856 Cal ID: LCMS1 - 17-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	1.05	ug/L	1.65	5.00	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4649694
Report generated 02/29/2016 09:06

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16021306
Run Date: 02/26/2016
Sample ID: WG558989-04
Instrument ID: LCMS1
Run Time: 23:08
Method: 6850
File ID: 1LM.LM33417
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG558991
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4649633
Report generated 02/29/2016 09:06

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16021306
Run Date: 02/27/2016
Sample ID: WG558989-06
Instrument ID: LCMS1
Run Time: 03:33
Method: 6850
File ID: 1LM.LM33431
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG558991
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4649633
Report generated 02/29/2016 09:06

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16021306
Run Date: 02/27/2016
Sample ID: WG558989-08
Instrument ID: LCMS1
Run Time: 11:16
Method: 6850
File ID: 1LM.LM33434
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG558991
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4649633
Report generated 02/29/2016 09:06

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16021306
Run Date: 02/27/2016
Sample ID: WG558989-10
Instrument ID: LCMS1
Run Time: 12:32
Method: 6850
File ID: 1LM.LM33438
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG558991
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4649633
Report generated 02/29/2016 09:06

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021306
Run Date: 02/26/2016
Sample ID: WG558989-03
Instrument ID: LCMS1
Run Time: 22:30
Method: 6850
File ID: 1LM.LM33415
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG558991
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.10	ug/kg	1.72	10.0	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4649632
Report generated 02/29/2016 09:06

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021306
Run Date: 02/27/2016
Sample ID: WG558989-05
Instrument ID: LCMS1
Run Time: 02:55
Method: 6850
File ID: 1LM.LM33429
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG558991
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.10	ug/kg	1.72	10.0	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4649632
Report generated 02/29/2016 09:06

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021306 Run Date: 02/27/2016 Sample ID: WG558989-07
Instrument ID: LCMS1 Run Time: 10:38 Method: 6850
File ID: 1LM.LM33432 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG558991 Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/kg	1.61	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4649632
Report generated 02/29/2016 09:06

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021306
Run Date: 02/27/2016
Sample ID: WG558989-09
Instrument ID: LCMS1
Run Time: 11:54
Method: 6850
File ID: 1LM.LM33436
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG558991
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.05	ug/kg	1.64	5.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4649632
Report generated 02/29/2016 09:06

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16021306 Run Date: 02/26/2016 Sample ID: WG558991-07
Instrument ID: LCMS1 Run Time: 23:27 Prep Method: 6850
File ID: 1LM.LM33418 Analyst: JWR Method: 6850
Workgroup (AAB#): WG558991 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-17-FEB-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.11	106	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4649631
Report generated 02/29/2016 09:06

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16021306 Run Date: 02/27/2016 Sample ID: WG558991-08
Instrument ID: LCMS1 Run Time: 03:14 Prep Method: 6850
File ID: 1LM.LM33430 Analyst: JWR Method: 6850
Workgroup (AAB#): WG558991 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-17-FEB-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.15	108	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4649631
Report generated 02/29/2016 09:06

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16021306 Run Date: 02/27/2016 Sample ID: WG558991-09
Instrument ID: LCMS1 Run Time: 10:57 Prep Method: 6850
File ID: 1LM.LM33433 Analyst: JWR Method: 6850
Workgroup (AAB#): WG558991 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-17-FEB-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.10	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4649631
Report generated 02/29/2016 09:06

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16021306 Run Date: 02/27/2016 Sample ID: WG558991-10

Instrument ID: LCMS1 Run Time: 12:13 Prep Method: 6850

File ID: 1LM.LM33437 Analyst: JWR Method: 6850

Workgroup (AAB#): WG558991 Matrix: Soil Units: ug/kg

Contract #: Cal ID: LCMS1-17-FEB-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.12	106	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4649631
Report generated 02/29/2016 09:06

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16021306
Instrument ID: LCMS1
Workgroup (AAB#): WG558991

ICAL CCV Number: WG557856-05
CAL ID: LCMS1-17-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1
WG557856	NA	NA	542000
Upper Limit	NA	NA	813000
Lower Limit	NA	NA	271000
L16021306-01	1.00	01	543000
L16021306-02	1.00	01	523000
L16021306-03	1.00	01	527000
L16021306-04	1.00	01	529000
L16021306-05	1.00	01	539000
L16021306-06	50.0	DL01	496000
WG558991-02	1.00	01	538000
WG558991-03	1.00	01	524000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4649634
Report generated 02/29/2016 09:07

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**	6850	**Samplenum:**	L16021306-01
Instrument:	LCMS1	**Prep Date:**	02/26/2016 17:44	**File ID:**	1LM.LM33425
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558991	**Analysis Date:**	02/27/2016 01:40	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	2270	959	2.37	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**	6850	**Samplenum:**	L16021306-02
Instrument:	LCMS1	**Prep Date:**	02/26/2016 17:44	**File ID:**	1LM.LM33422
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558991	**Analysis Date:**	02/27/2016 00:43	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	3610	1990	1.81	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**	6850	**Samplenum:**	L16021306-03
Instrument:	LCMS1	**Prep Date:**	02/26/2016 17:44	**File ID:**	1LM.LM33423
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558991	**Analysis Date:**	02/27/2016 01:02	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	41300	14100	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**	6850	**Samplenum:**	L16021306-04
Instrument:	LCMS1	**Prep Date:**	02/26/2016 17:44	**File ID:**	1LM.LM33424
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558991	**Analysis Date:**	02/27/2016 01:21	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	42900	13300	3.23	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**	6850	**Samplenum:**	L16021306-05
Instrument:	LCMS1	**Prep Date:**	02/26/2016 17:44	**File ID:**	1LM.LM33426
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558991	**Analysis Date:**	02/27/2016 01:59	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	107000	35900	2.98	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**	6850	**Samplenum:**	L16021306-06
Instrument:	LCMS1	**Prep Date:**	02/26/2016 17:44	**File ID:**	1LM.LM33435
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558991	**Analysis Date:**	02/27/2016 11:35	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	355000	116000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**		**Samplenum:**	WG557856-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33245
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558991	**Analysis Date:**	02/17/2016 19:31	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	18800	6990	2.69	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**		**Samplenum:**	WG557856-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33246
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558991	**Analysis Date:**	02/17/2016 19:50	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38700	14200	2.73	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**		**Samplenum:**	WG557856-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33247
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558991	**Analysis Date:**	02/17/2016 20:08	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	91400	32900	2.78	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**		**Samplenum:**	WG557856-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33248
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558991	**Analysis Date:**	02/17/2016 20:27	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	178000	63900	2.79	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**		**Samplenum:**	WG557856-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33249
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558991	**Analysis Date:**	02/17/2016 20:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	350000	126000	2.78	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**		**Samplenum:**	WG557856-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33250
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558991	**Analysis Date:**	02/17/2016 21:05	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	826000	293000	2.82	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**		**Samplenum:**	WG557856-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33251
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558991	**Analysis Date:**	02/17/2016 21:24	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	562000	2.72	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**		**Samplenum:**	WG557856-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33252
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558991	**Analysis Date:**	02/17/2016 21:43	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	179000	63600	2.81	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**		**Samplenum:**	WG558989-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33415
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558991	**Analysis Date:**	02/26/2016 22:30	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	184000	60700	3.03	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**		**Samplenum:**	WG558989-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33417
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558991	**Analysis Date:**	02/26/2016 23:08	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	491	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**		**Samplenum:**	WG558989-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33429
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558991	**Analysis Date:**	02/27/2016 02:55	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	193000	63000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**		**Samplenum:**	WG558989-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33431
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558991	**Analysis Date:**	02/27/2016 03:33	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	754	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**		**Samplenum:**	WG558989-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33432
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558991	**Analysis Date:**	02/27/2016 10:38	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	55900	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**		**Samplenum:**	WG558989-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33434
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558991	**Analysis Date:**	02/27/2016 11:16	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	219	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**		**Samplenum:**	WG558989-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33436
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558991	**Analysis Date:**	02/27/2016 11:54	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	178000	57700	3.08	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**		**Samplenum:**	WG558989-10
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33438
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG558991	**Analysis Date:**	02/27/2016 12:32	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1430	542	2.64	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**	6850	**Samplenum:**	WG558991-01
Instrument:	LCMS1	**Prep Date:**	02/26/2016 17:44	**File ID:**	1LM.LM33419
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558991	**Analysis Date:**	02/26/2016 23:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38600	12500	3.09	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**	6850	**Samplenum:**	WG558991-02
Instrument:	LCMS1	**Prep Date:**	02/26/2016 17:44	**File ID:**	1LM.LM33420
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558991	**Analysis Date:**	02/27/2016 00:05	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	595	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**	6850	**Samplenum:**	WG558991-03
Instrument:	LCMS1	**Prep Date:**	02/26/2016 17:44	**File ID:**	1LM.LM33421
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558991	**Analysis Date:**	02/27/2016 00:24	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	39000	12500	3.12	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**	6850	**Samplenum:**	WG558991-07
Instrument:	LCMS1	**Prep Date:**	02/26/2016 17:44	**File ID:**	1LM.LM33418
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558991	**Analysis Date:**	02/26/2016 23:27	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	39200	12900	3.04	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**	6850	**Samplenum:**	WG558991-08
Instrument:	LCMS1	**Prep Date:**	02/26/2016 17:44	**File ID:**	1LM.LM33430
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558991	**Analysis Date:**	02/27/2016 03:14	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	41600	14200	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**	6850	**Samplenum:**	WG558991-09
Instrument:	LCMS1	**Prep Date:**	02/26/2016 17:44	**File ID:**	1LM.LM33433
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558991	**Analysis Date:**	02/27/2016 10:57	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38000	12700	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021306	**Prep Method:**	6850	**Samplenum:**	WG558991-10
Instrument:	LCMS1	**Prep Date:**	02/26/2016 17:44	**File ID:**	1LM.LM33437
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG558991	**Analysis Date:**	02/27/2016 12:13	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38300	12900	2.97	2.3	3.8	

2.2.1.3 Sample Data

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Data File	LM33425.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/27/2016 1:40:08 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021306-01	**Injection Vial**	20.00
Data File	LM33425.wiff	**Injection Volume**	10.00
Acquisition Date	2/27/2016 1:40:08 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	L16021306-01	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.430e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.270e+03	9.95	N/A	< 0
Perchlorate conf	9.590e+02	9.94	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

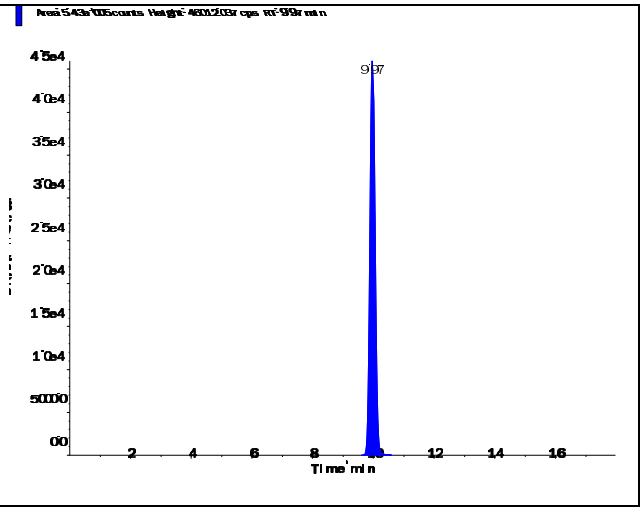

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)

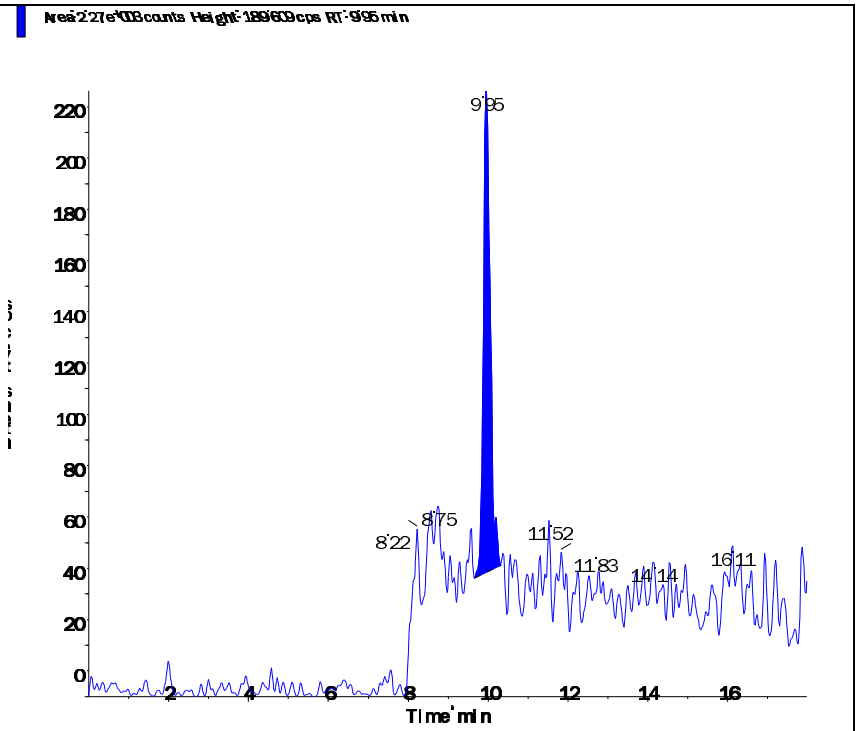

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

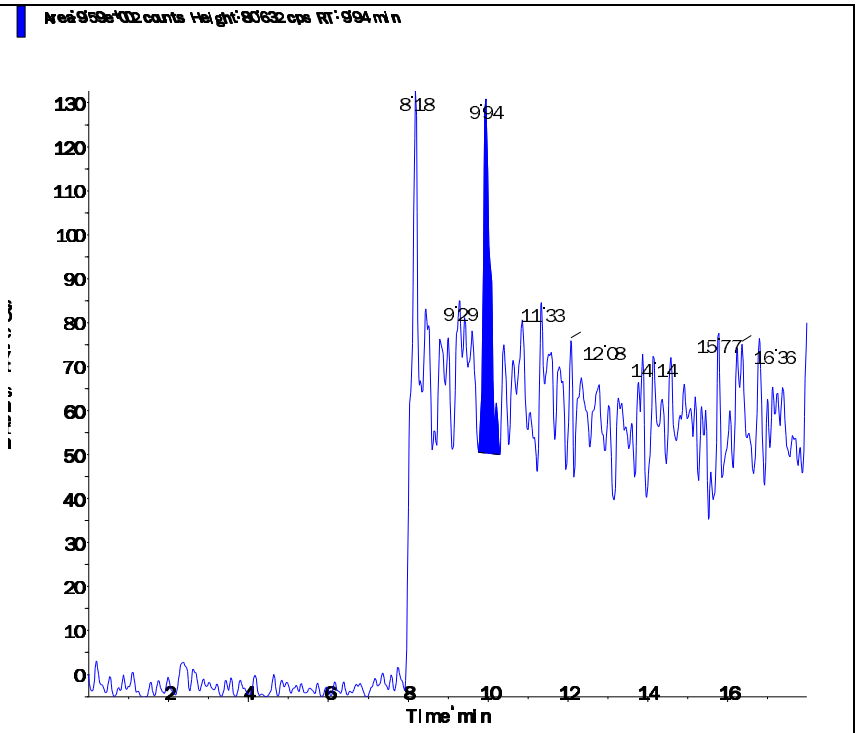

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Data File	LM33422.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/27/2016 12:43:18 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021306-02 RS	**Injection Vial**	17.00
Data File	LM33422.wiff	**Injection Volume**	10.00
Acquisition Date	2/27/2016 12:43:18 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG558991-04	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.230e+05	9.99	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.610e+03	10.00	N/A	0.0008
Perchlorate conf	1.990e+03	10.00	N/A	0.0118

O18LP (Internal Standard)

RT (Exp. RT): 9.99(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

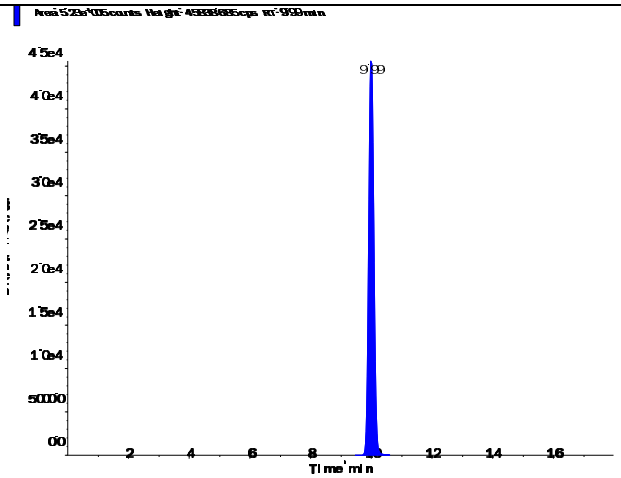

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.00 (9.94) min
Calculated conc:	0.0008 ng/ml
Area Ratio:	0.007
Sample Type:	(Unknown)

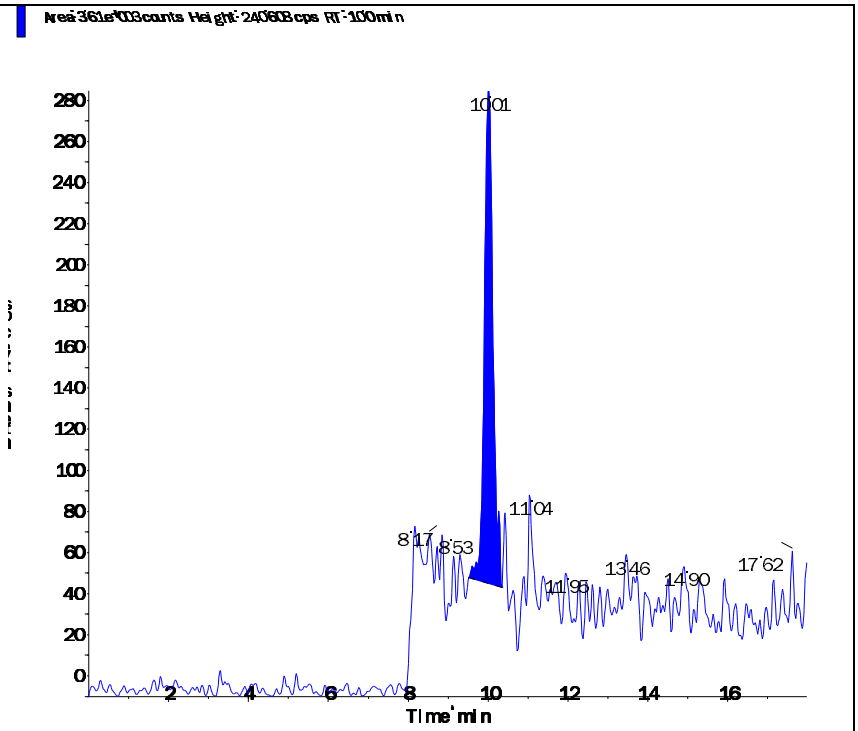

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.00 (9.92) min
Calculated conc:	0.0118 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)

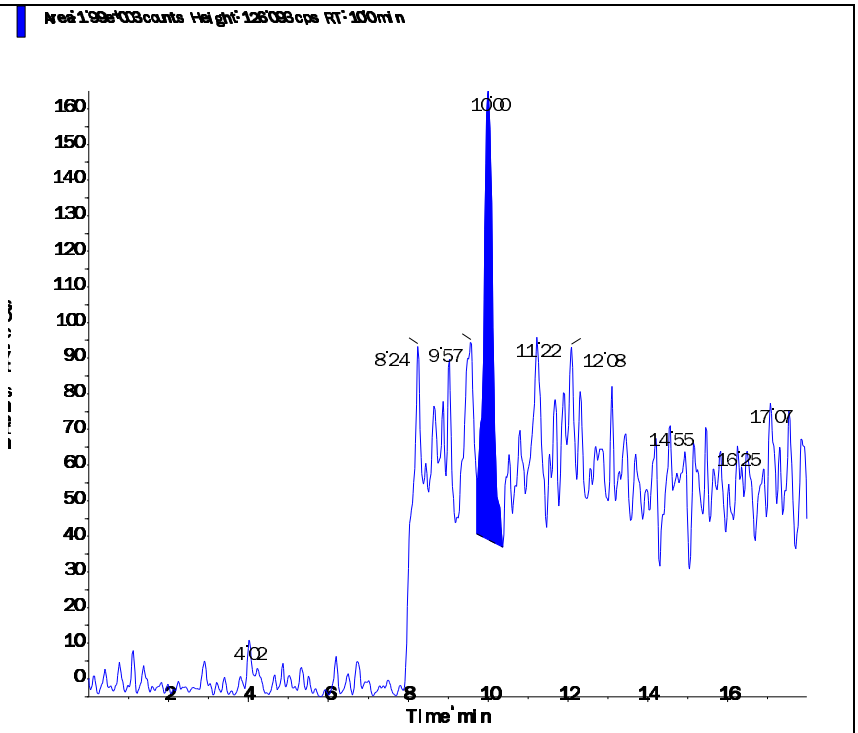

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Data File	LM33423.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/27/2016 1:02:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021306-03 MS	**Injection Vial**	18.00
Data File	LM33423.wiff	**Injection Volume**	10.00
Acquisition Date	2/27/2016 1:02:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG558991-05	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.270e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.130e+04	9.97	N/A	0.233
Perchlorate conf	1.410e+04	9.95	N/A	0.218

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

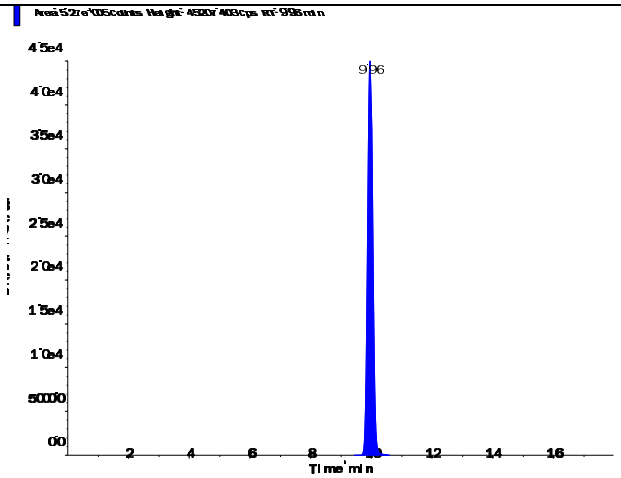

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.97 (9.94) min
Calculated conc:	0.233 ng/ml
Area Ratio:	0.078
Sample Type:	(Unknown)

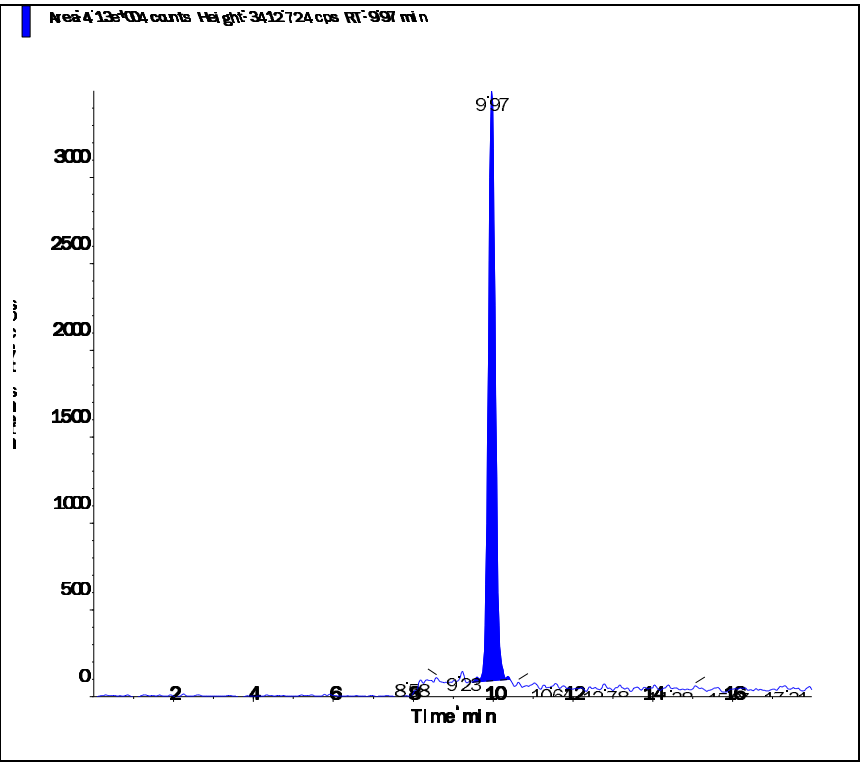

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.95 (9.92) min
Calculated conc:	0.218 ng/ml
Area Ratio:	0.027
Sample Type:	(Unknown)

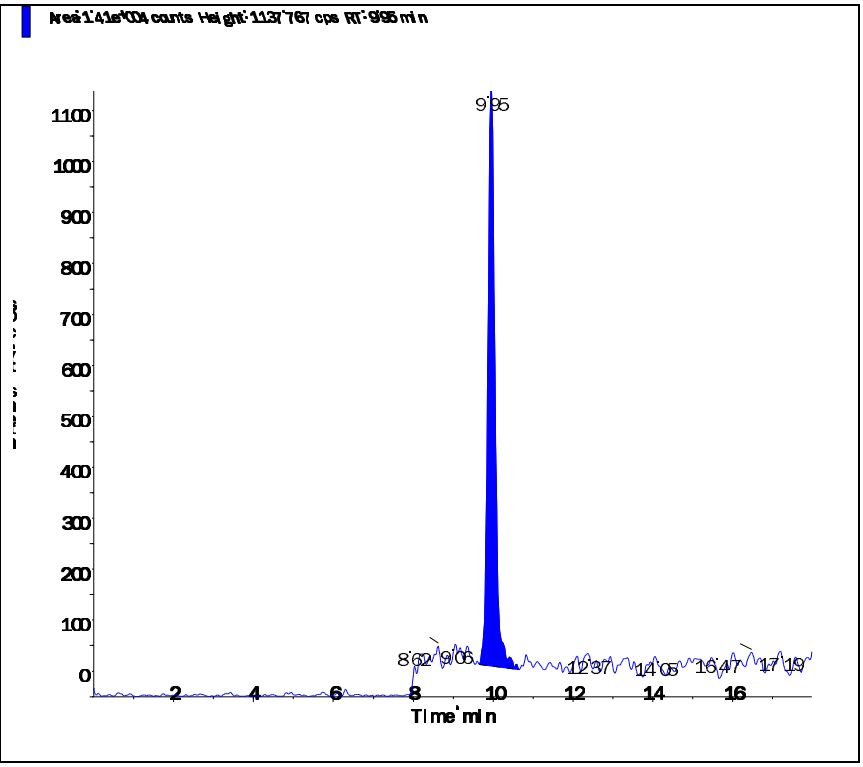

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Data File	LM33424.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/27/2016 1:21:13 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021306-04 MSD	**Injection Vial**	19.00
Data File	LM33424.wiff	**Injection Volume**	10.00
Acquisition Date	2/27/2016 1:21:13 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG558991-06	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.290e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.290e+04	9.98	N/A	0.242
Perchlorate conf	1.330e+04	9.97	N/A	0.203

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

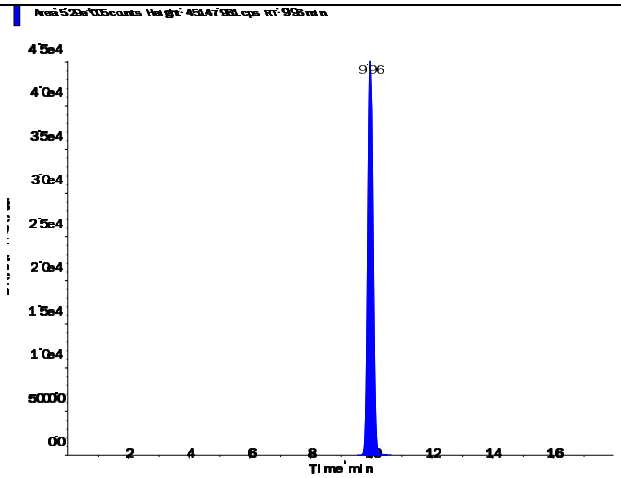

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.98 (9.94) min Calculated conc: 0.242 ng/ml Area Ratio: 0.081 Sample Type: (Unknown)	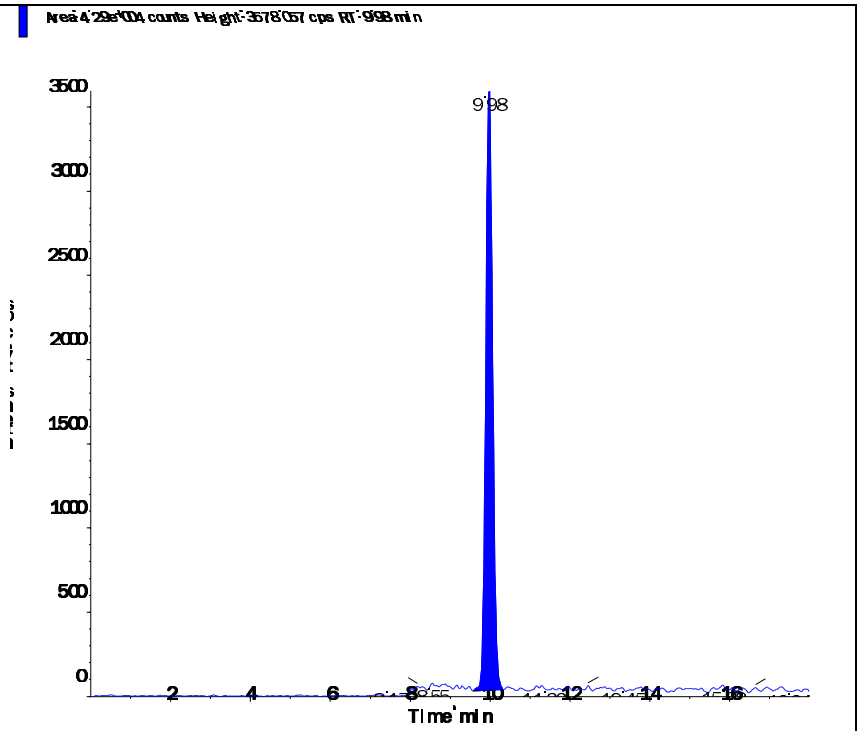
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.97 (9.92) min Calculated conc: 0.203 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	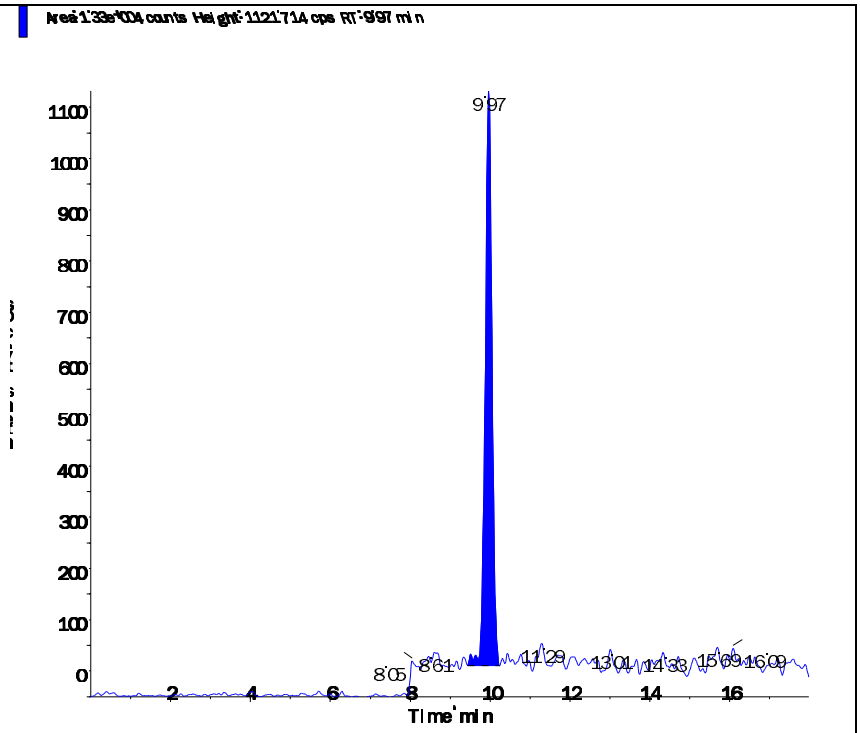

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Data File	LM33426.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/27/2016 1:59:04 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021306-05	**Injection Vial**	21.00
Data File	LM33426.wiff	**Injection Volume**	10.00
Acquisition Date	2/27/2016 1:59:04 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	L16021306-05	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.390e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.070e+05	9.97	N/A	0.625
Perchlorate conf	3.590e+04	9.96	N/A	0.575

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

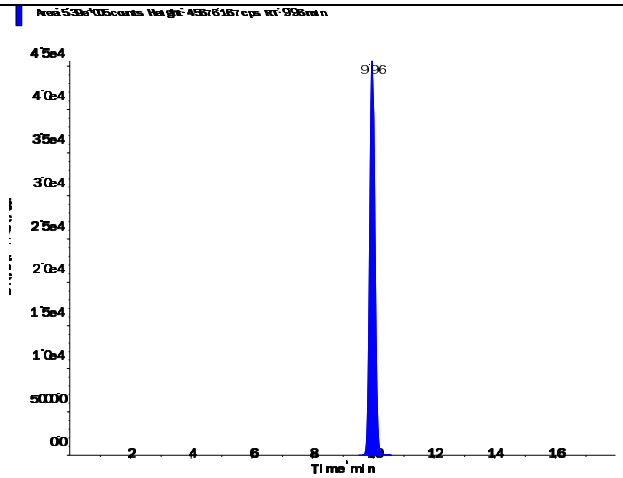

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.97 (9.94) min
Calculated conc:	0.625 ng/ml
Area Ratio:	0.199
Sample Type:	(Unknown)

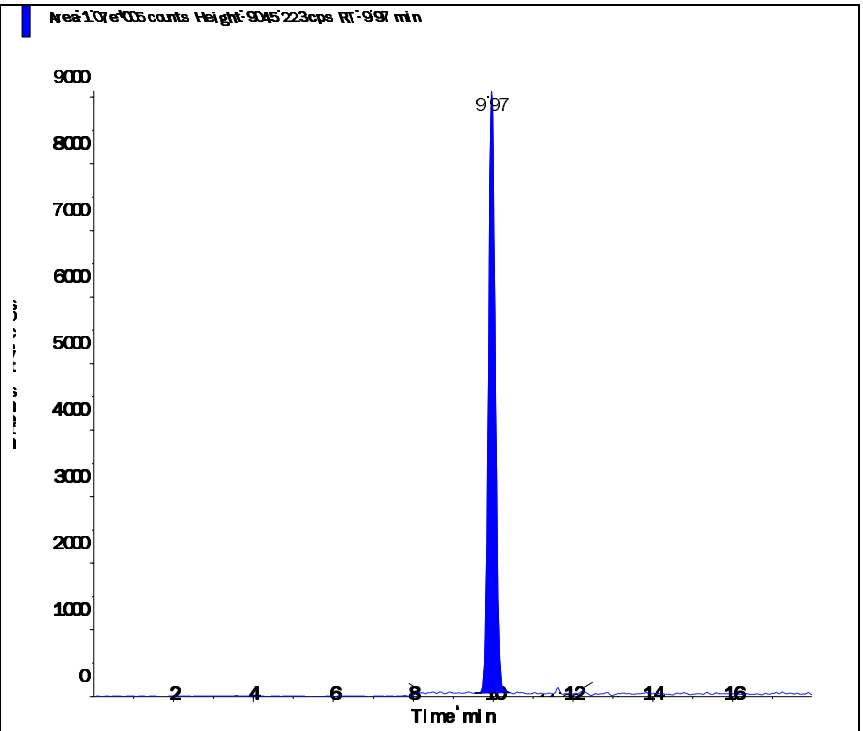

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.96 (9.92) min
Calculated conc:	0.575 ng/ml
Area Ratio:	0.067
Sample Type:	(Unknown)

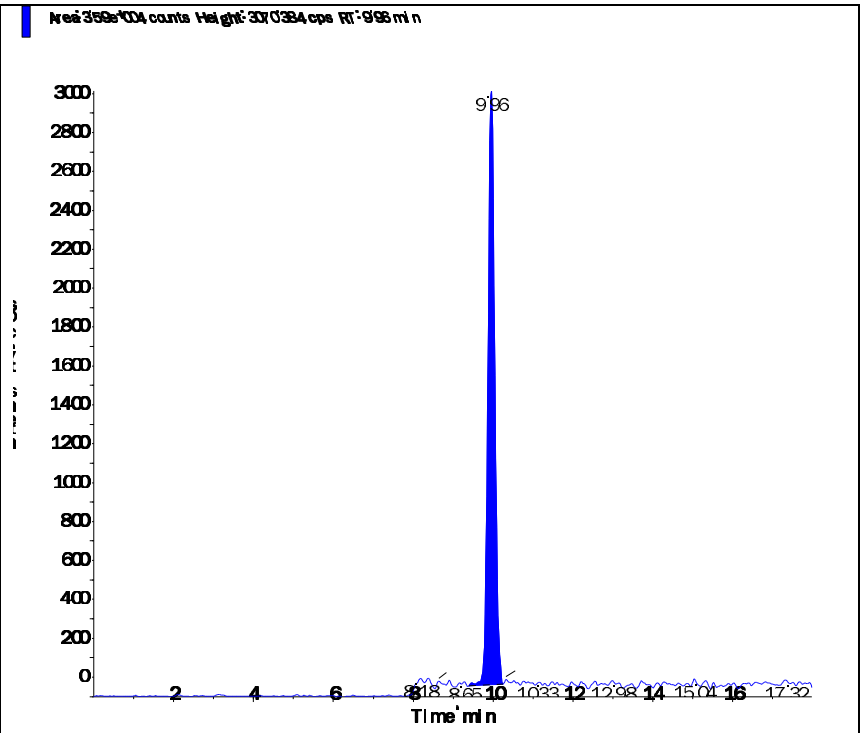

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Printed: 2/27/2016 2:08 PM

Data File	LM33435.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/27/2016 11:35:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021306-06 (RR 50x)	**Injection Vial**	24.00
Data File	LM33435.wiff	**Injection Volume**	10.00
Acquisition Date	2/27/2016 11:35:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	L16021306-06	**Dilution Factor**	1.00
Sample Comment	750.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.960e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.550e+05	9.96	N/A	2.30
Perchlorate conf	1.160e+05	9.95	N/A	2.07

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

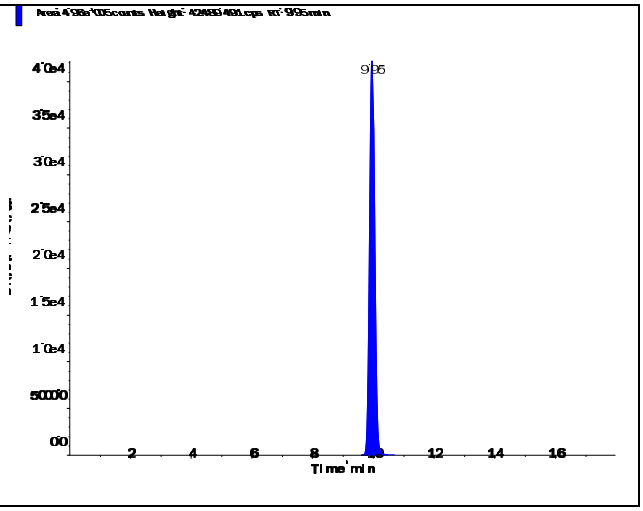

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.96 (9.94) min Calculated conc: 2.30 ng/ml Area Ratio: 0.715 Sample Type: (Unknown)	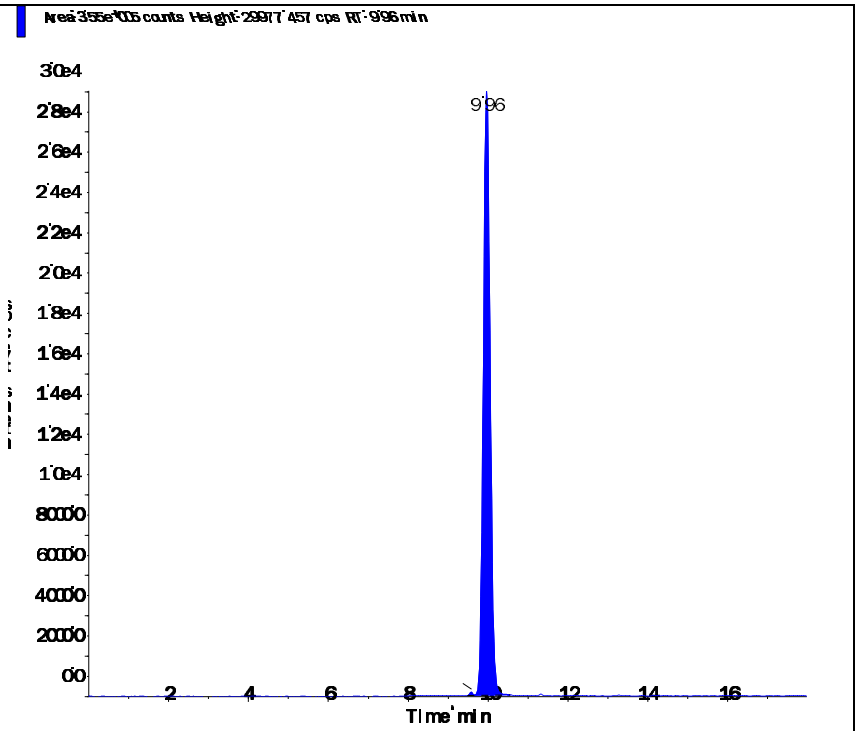
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.95 (9.92) min Calculated conc: 2.07 ng/ml Area Ratio: 0.233 Sample Type: (Unknown)	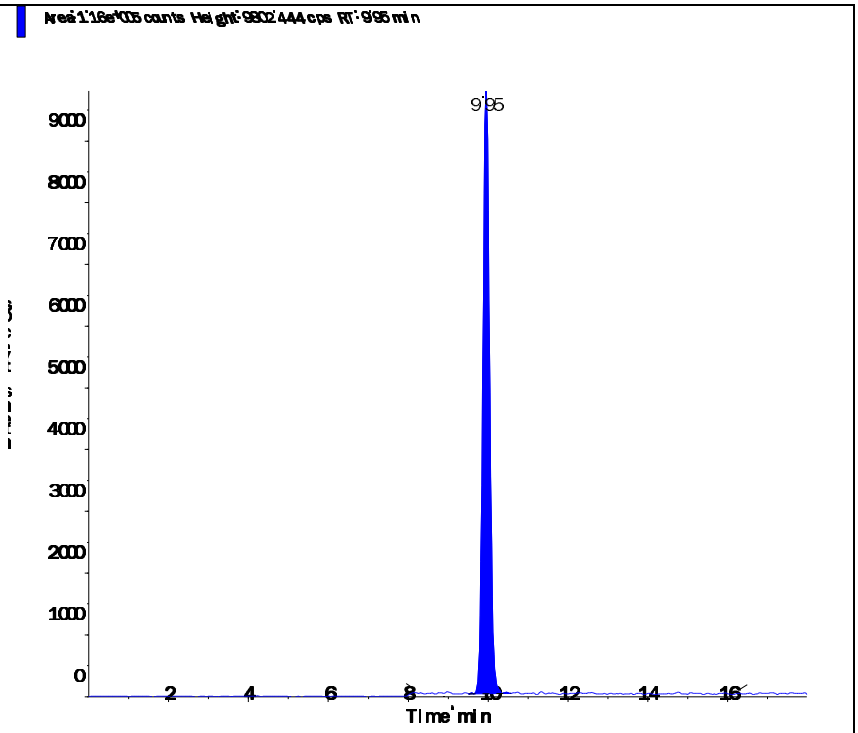

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2.2.1.4 Standards Data

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Data File	LM33244.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/17/2016 7:12:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-01 CCB	**Injection Vial**	1.00
Data File	LM33244.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 7:12:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG557856-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.570e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.560e+03	9.97	N/A	< 0
Perchlorate conf	1.050e+03	9.97	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

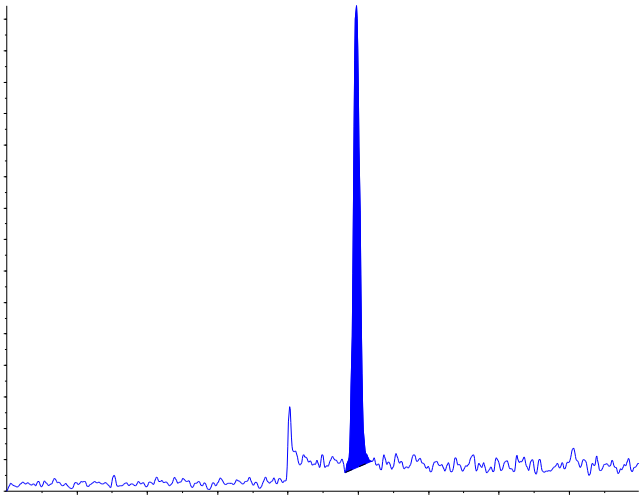

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Created with Analyst Reporter
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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.97 (9.94) min Calculated conc: < 0 ng/ml Area Ratio: 0.005 Sample Type: (Unknown)	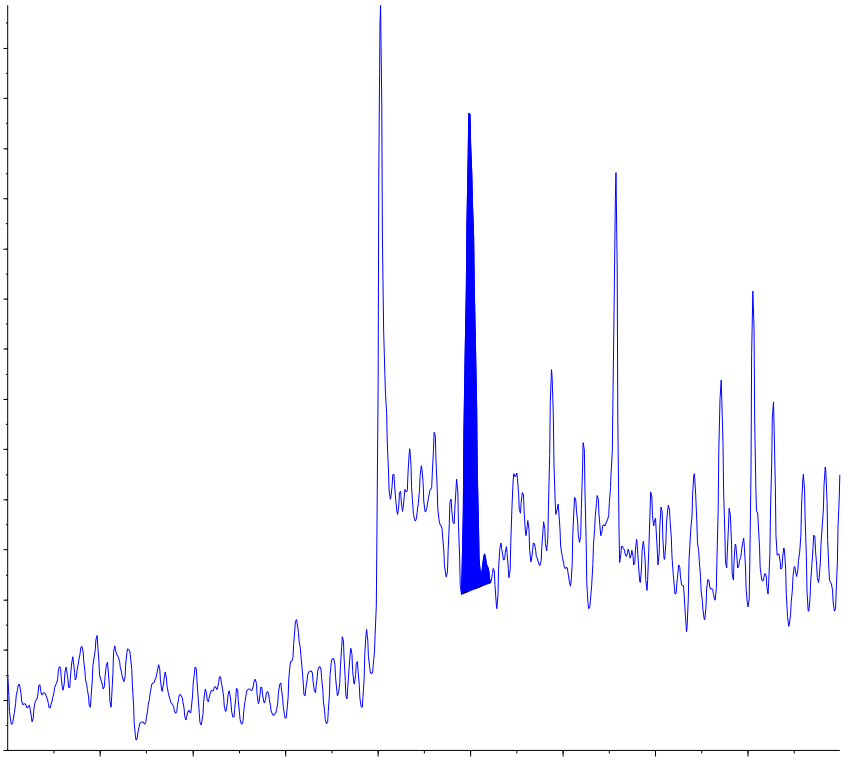
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.97 (9.92) min Calculated conc: < 0 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	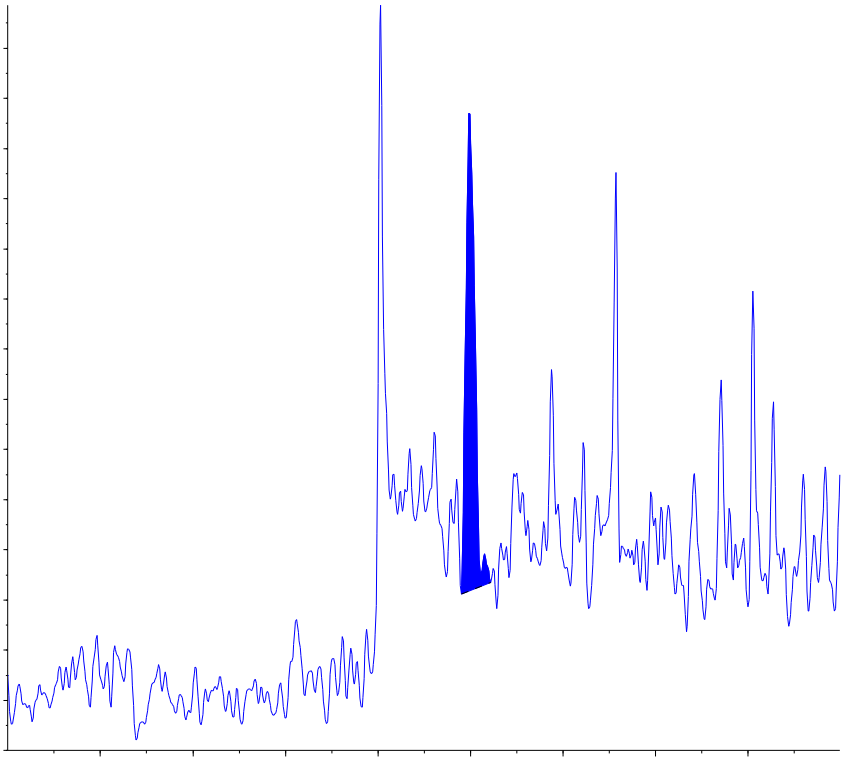

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Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM33244.wiff	**Result Table**	021716_JWR.rdb
Acquisition Date	2/17/2016 7:12:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.54 x + 0.00666 (r = 0.9998)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	88.4	N/A	N/A
0.20	1	0.21	103.3	N/A	N/A
0.50	1	0.51	102.6	N/A	N/A
1.00	1	1.03	103.4	N/A	N/A
2.00	1	2.06	103.1	N/A	N/A
5.00	1	5.03	100.6	N/A	N/A
10.00	1	9.87	98.7	N/A	N/A

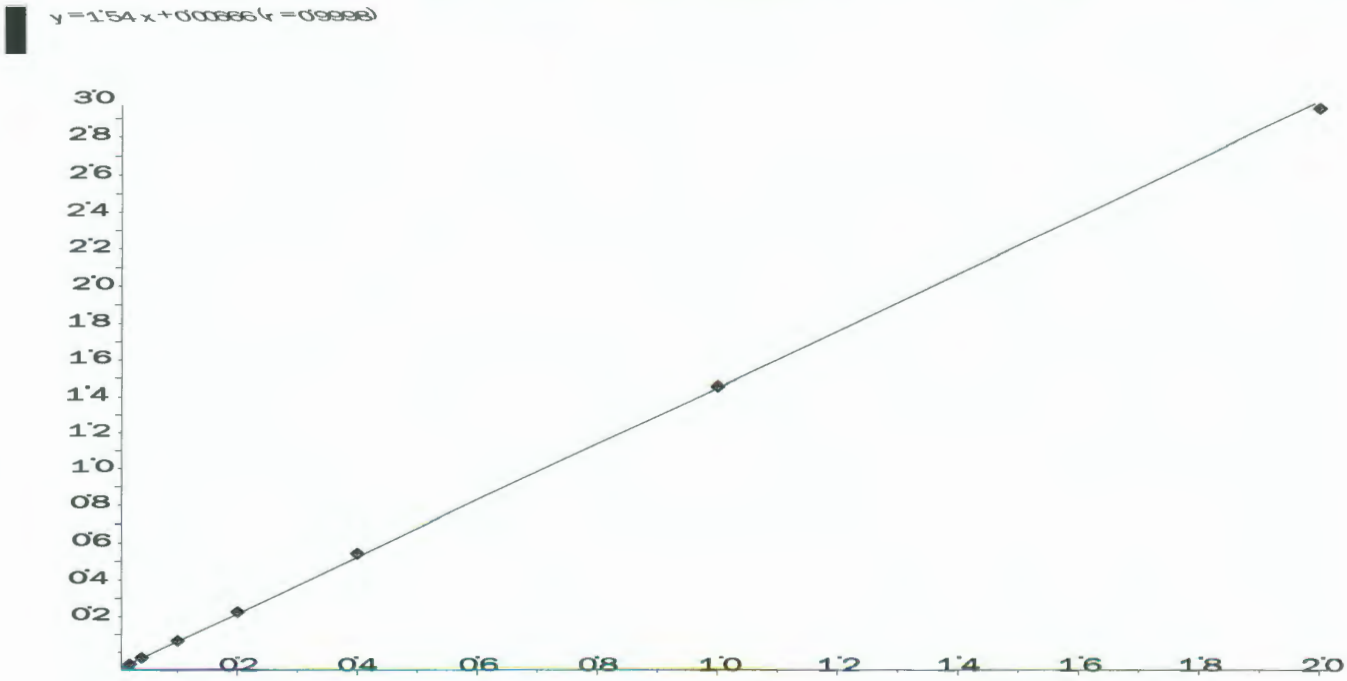

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Created with Analyst Reporter
Printed: 2/18/2016 2:15 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM33244.wiff	**Result Table**	021716_JWR.rdb
Acquisition Date	2/17/2016 7:12:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.557 x + 0.00249 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	90.6	N/A	N/A
0.20	1	0.21	104.9	N/A	N/A
0.50	1	0.51	101.7	N/A	N/A
1.00	1	1.02	102.2	N/A	N/A
2.00	1	2.04	102.1	N/A	N/A
5.00	1	4.93	98.6	N/A	N/A
10.00	1	10.00	100.0	N/A	N/A

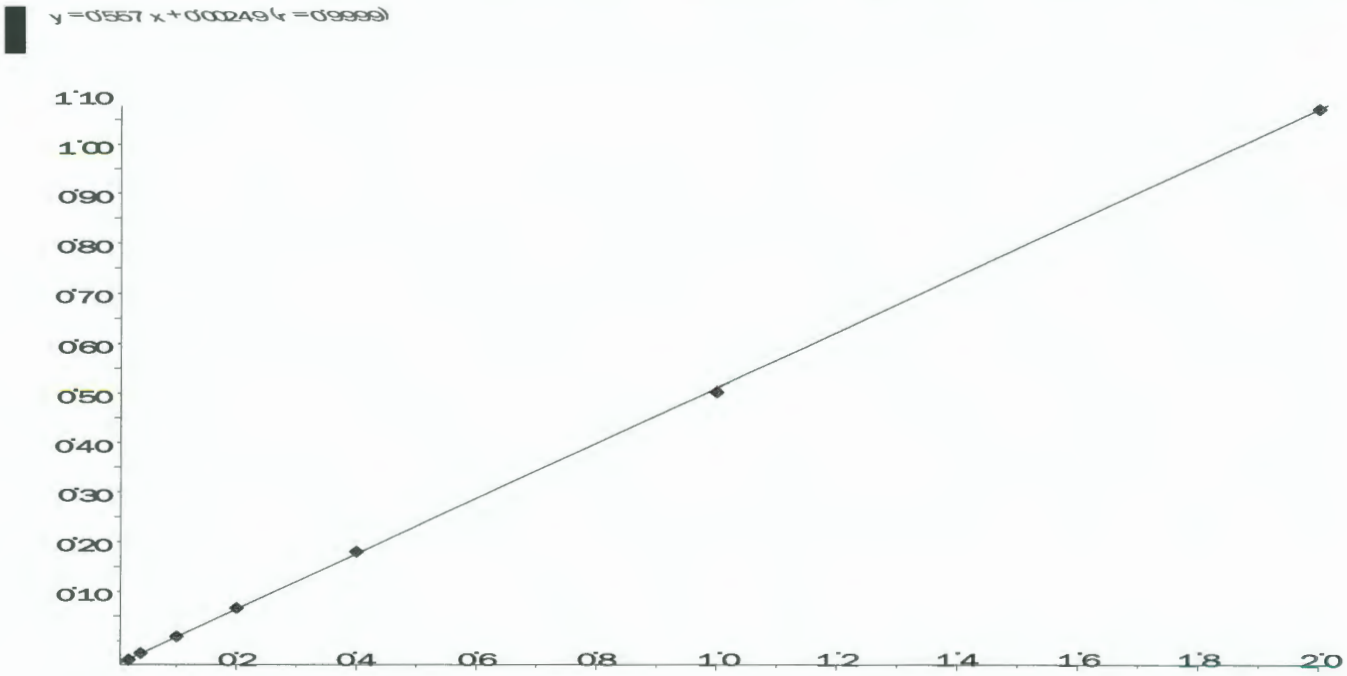

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Printed: 2/27/2016 1:54 PM

Data File	LM33245.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/17/2016 7:31:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM33245.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 7:31:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG557856-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.550e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.880e+04	9.94	0.10	0.0884
Perchlorate conf	6.990e+03	9.93	0.10	0.0906

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

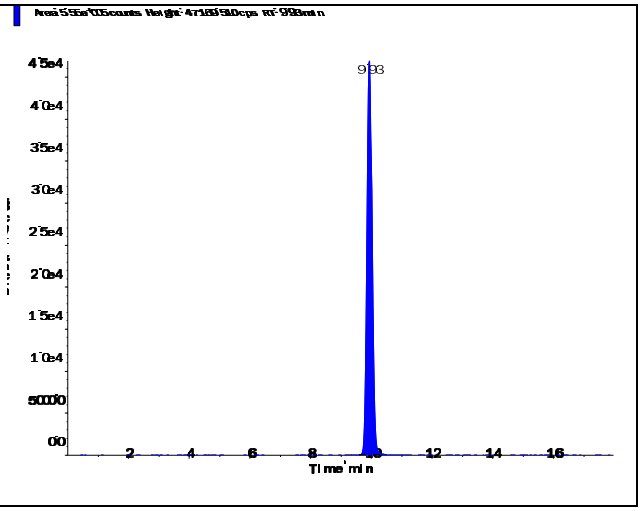

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.0884 ng/ml
Area Ratio:	0.034
Sample Type:	(Standard)

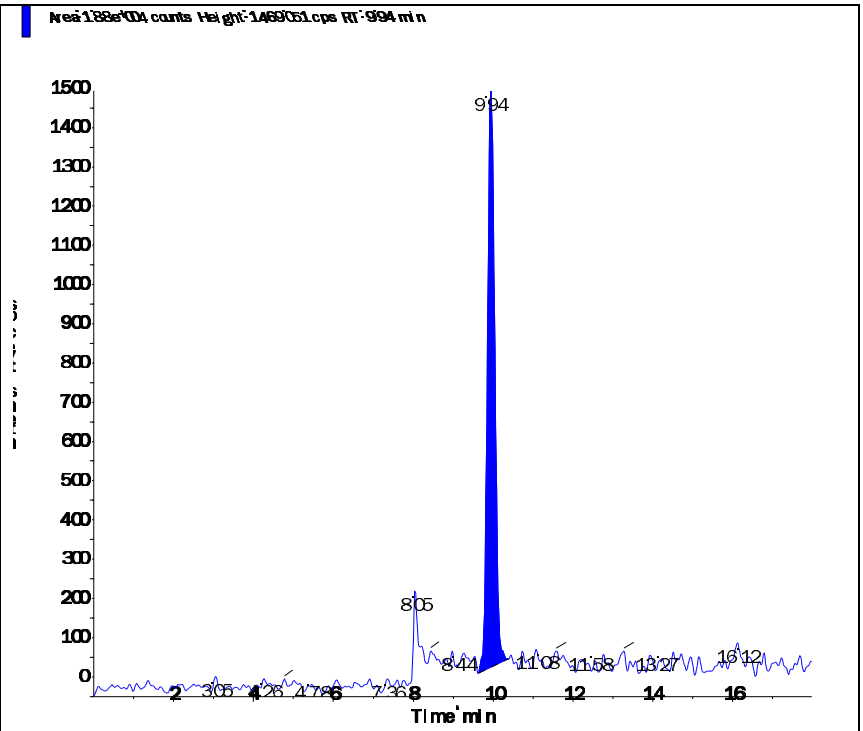

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	0.0906 ng/ml
Area Ratio:	0.013
Sample Type:	(Standard)

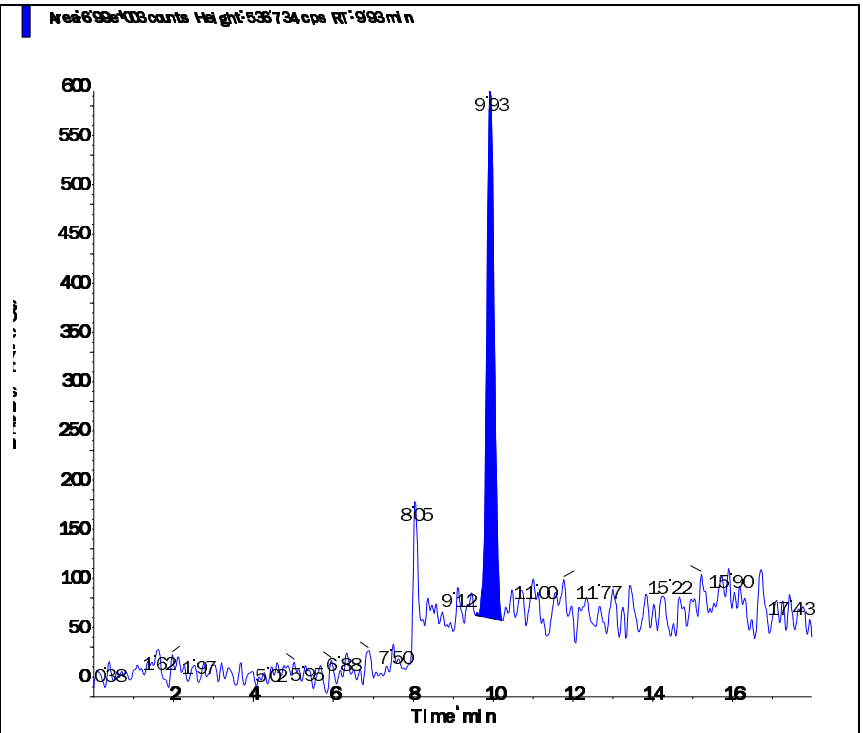

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Data File	LM33246.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/17/2016 7:50:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM33246.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 7:50:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG557856-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.510e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.870e+04	9.94	0.20	0.207
Perchlorate conf	1.420e+04	9.93	0.20	0.21

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

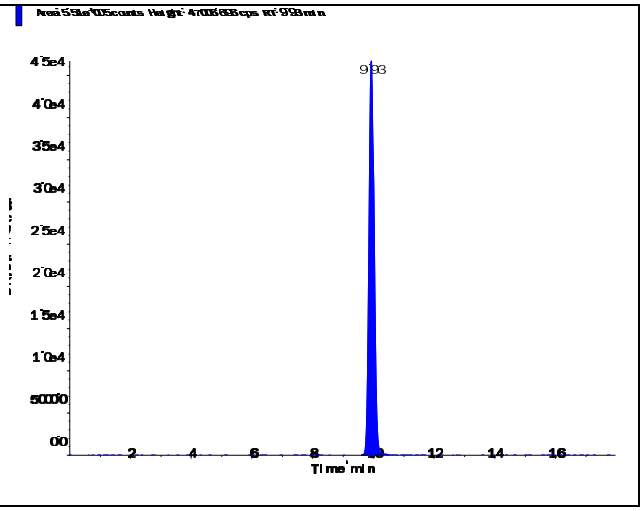

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.07
Sample Type:	(Standard)

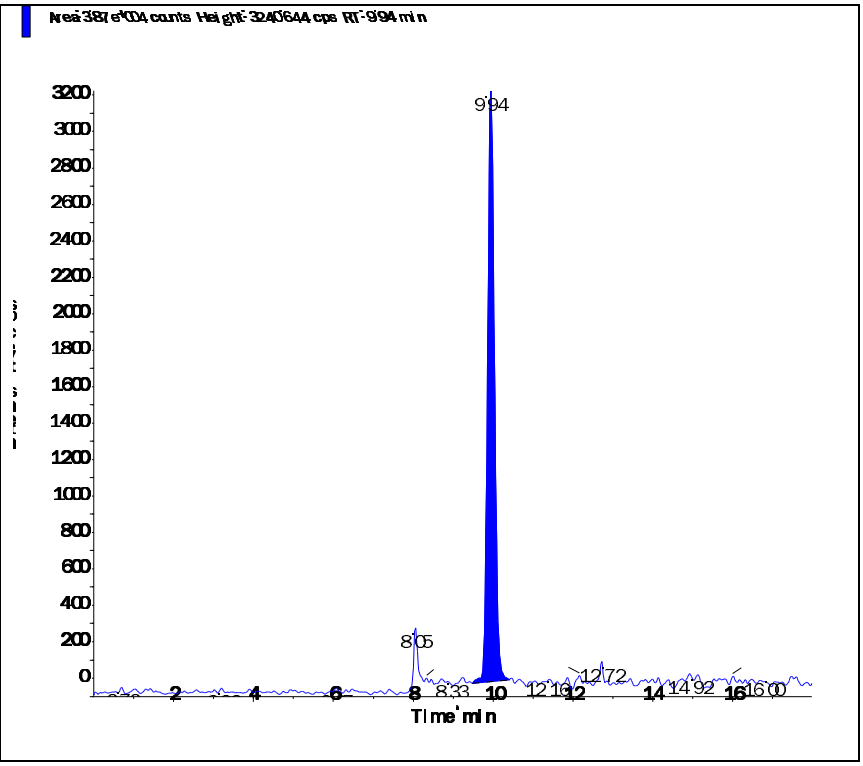

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.026
Sample Type:	(Standard)

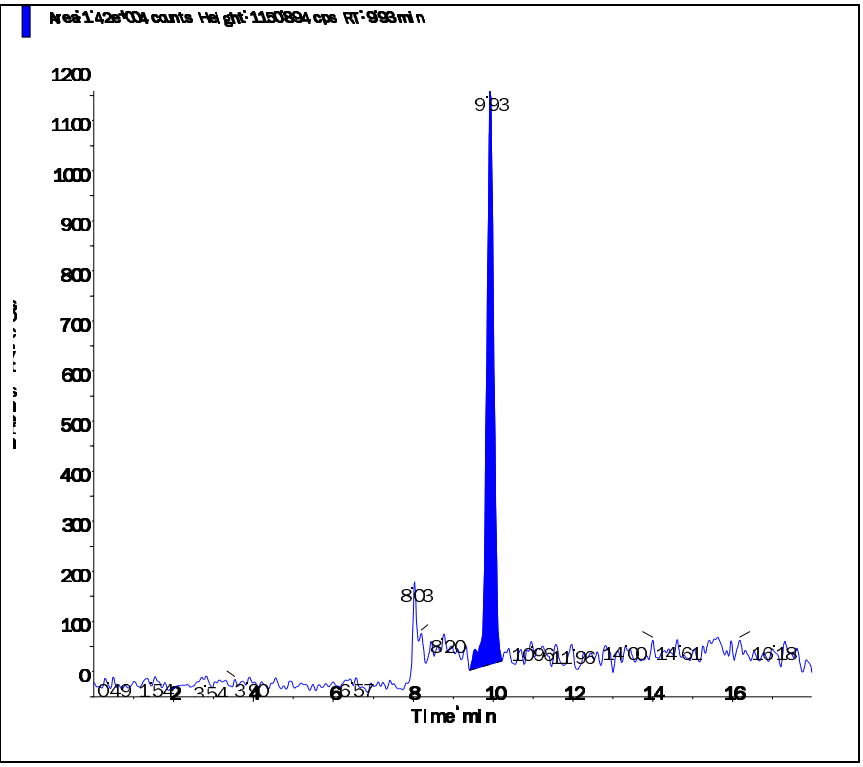

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Data File	LM33247.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/17/2016 8:08:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM33247.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 8:08:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG557856-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.560e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	9.140e+04	9.94	0.50	0.513
Perchlorate conf	3.290e+04	9.93	0.50	0.508

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

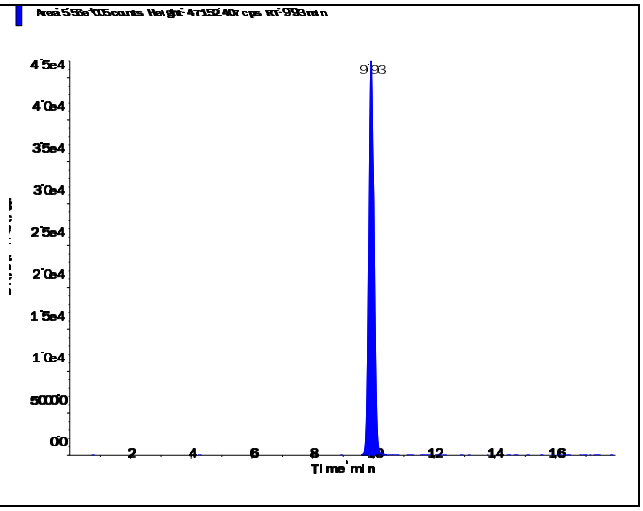

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.513 ng/ml
Area Ratio:	0.164
Sample Type:	(Standard)

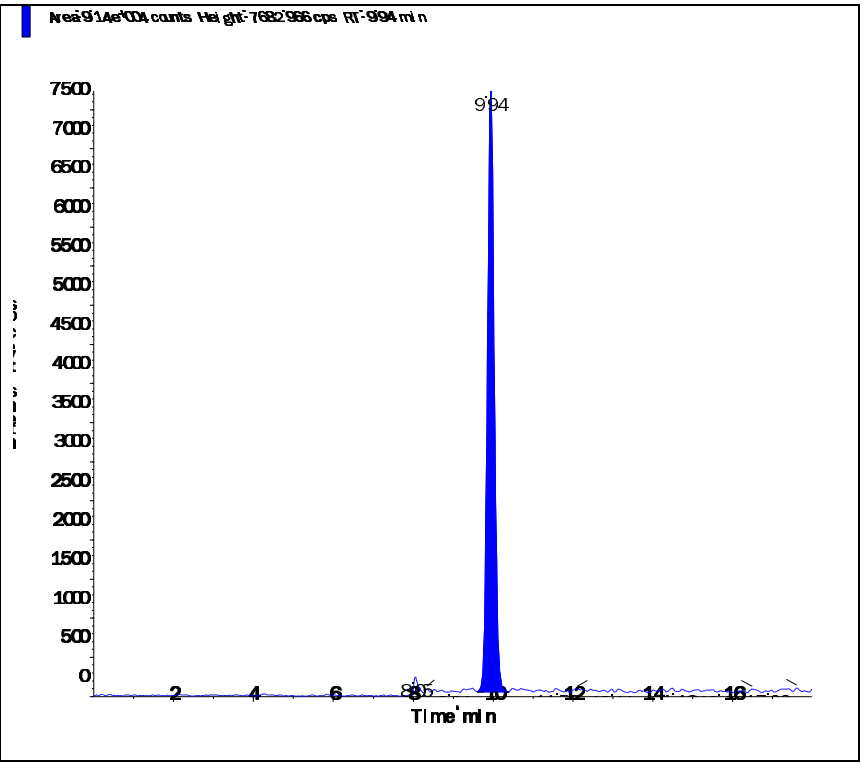

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	0.508 ng/ml
Area Ratio:	0.059
Sample Type:	(Standard)

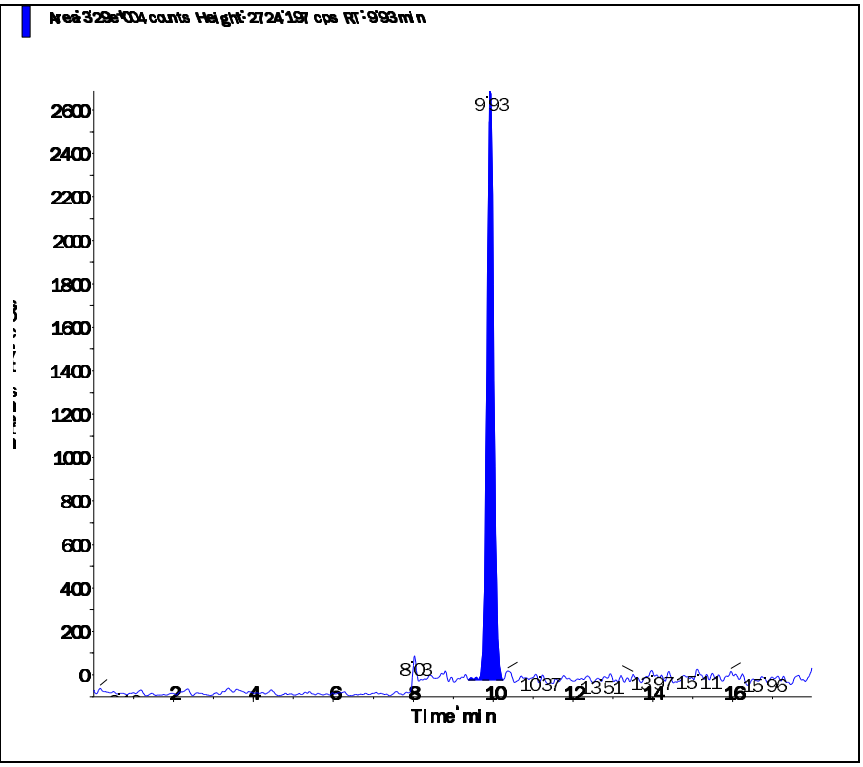

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Data File	LM33248.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/17/2016 8:27:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM33248.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 8:27:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG557856-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.490e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.780e+05	9.95	1.00	1.03
Perchlorate conf	6.390e+04	9.94	1.00	1.02

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

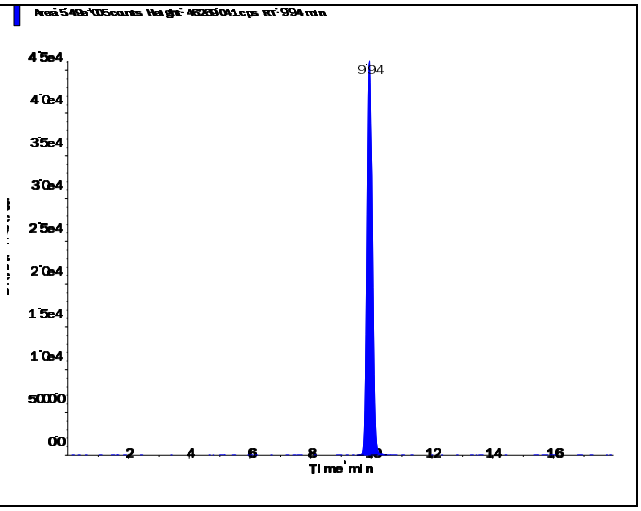

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.95 (9.94) min Calculated conc: 1.03 ng/ml Area Ratio: 0.325 Sample Type: (Standard)	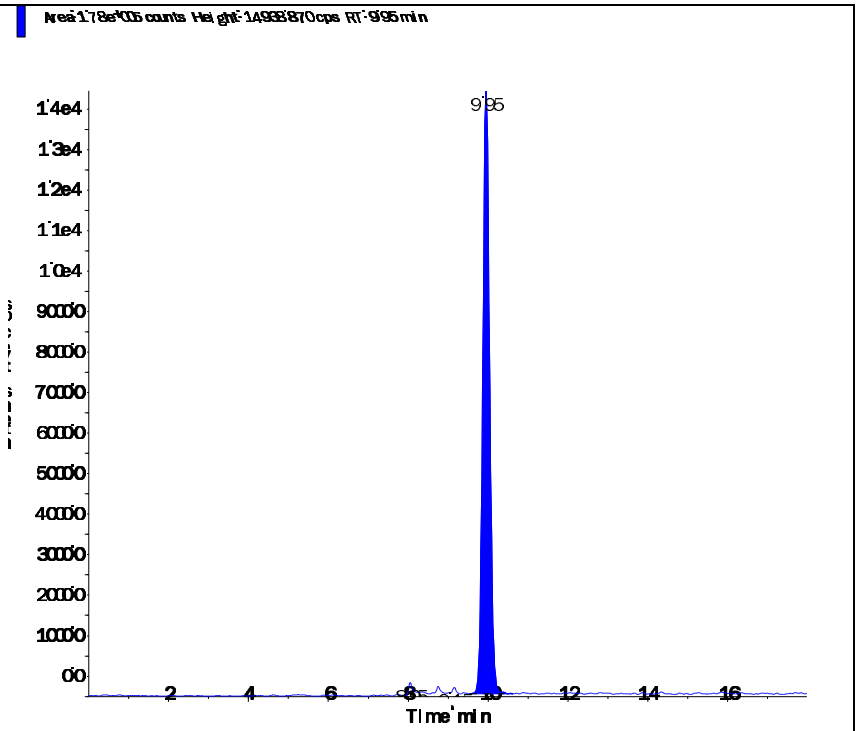
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.94 (9.92) min Calculated conc: 1.02 ng/ml Area Ratio: 0.116 Sample Type: (Standard)	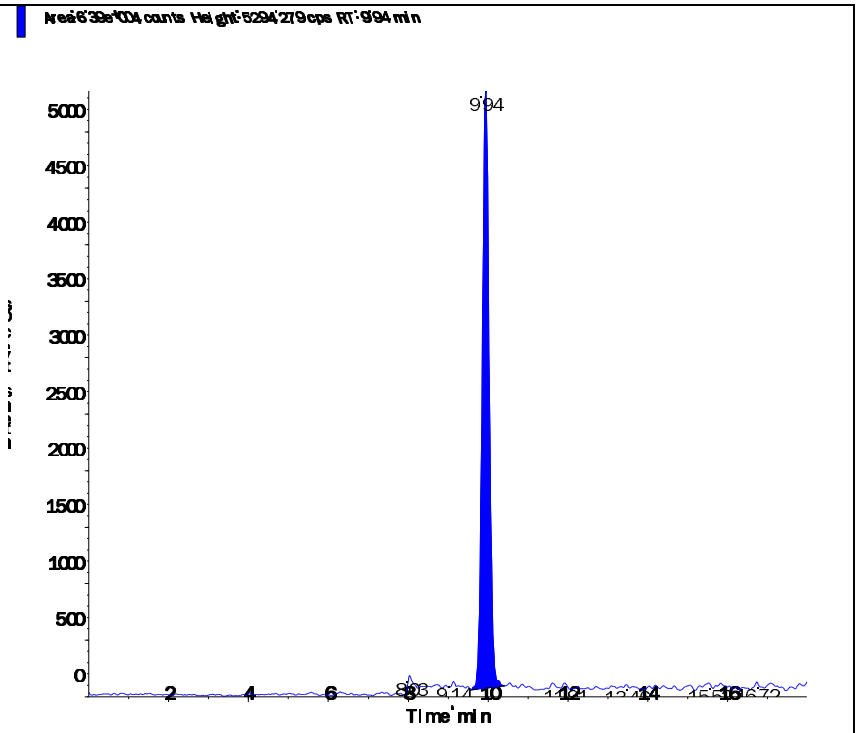

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Data File	LM33249.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/17/2016 8:46:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM33249.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 8:46:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG557856-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.460e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.500e+05	9.94	2.00	2.06
Perchlorate conf	1.260e+05	9.93	2.00	2.04

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

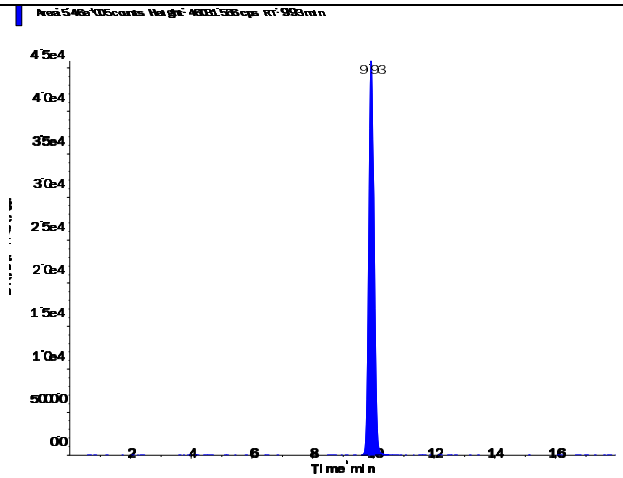

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	2.06 ng/ml
Area Ratio:	0.641
Sample Type:	(Standard)

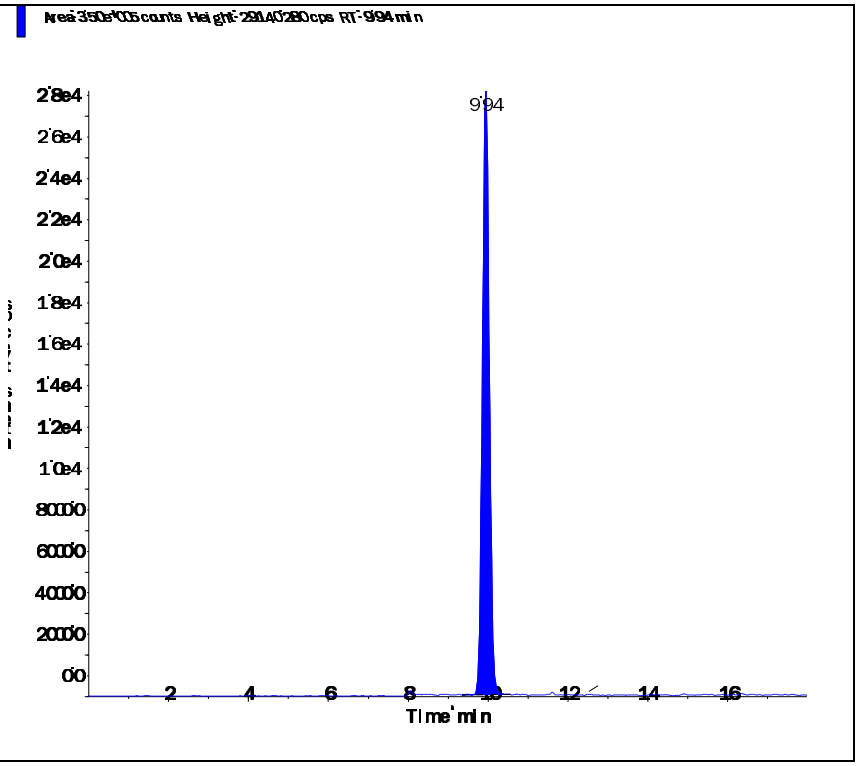

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	2.04 ng/ml
Area Ratio:	0.23
Sample Type:	(Standard)

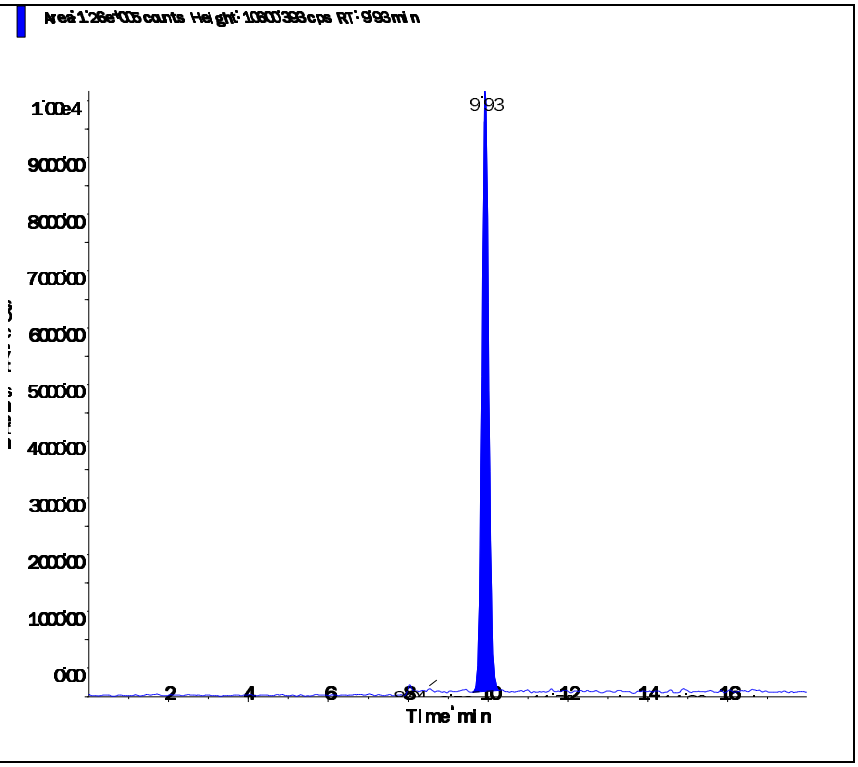

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Data File	LM33250.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/17/2016 9:05:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM33250.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 9:05:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG557856-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.320e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.260e+05	9.96	5.00	5.03
Perchlorate conf	2.930e+05	9.94	5.00	4.93

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

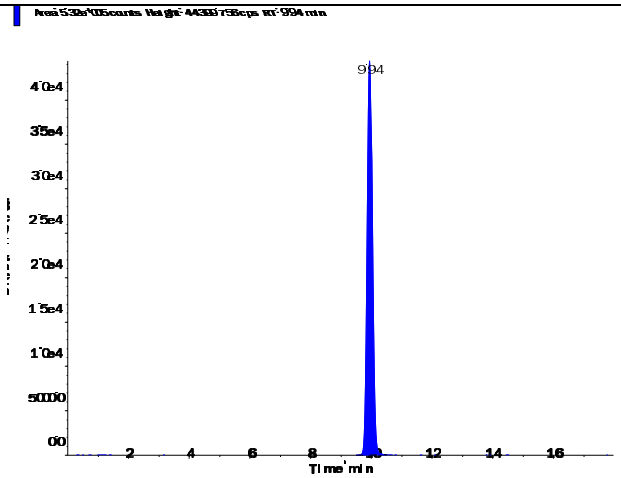

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	5.03 ng/ml
Area Ratio:	1.554
Sample Type:	(Standard)

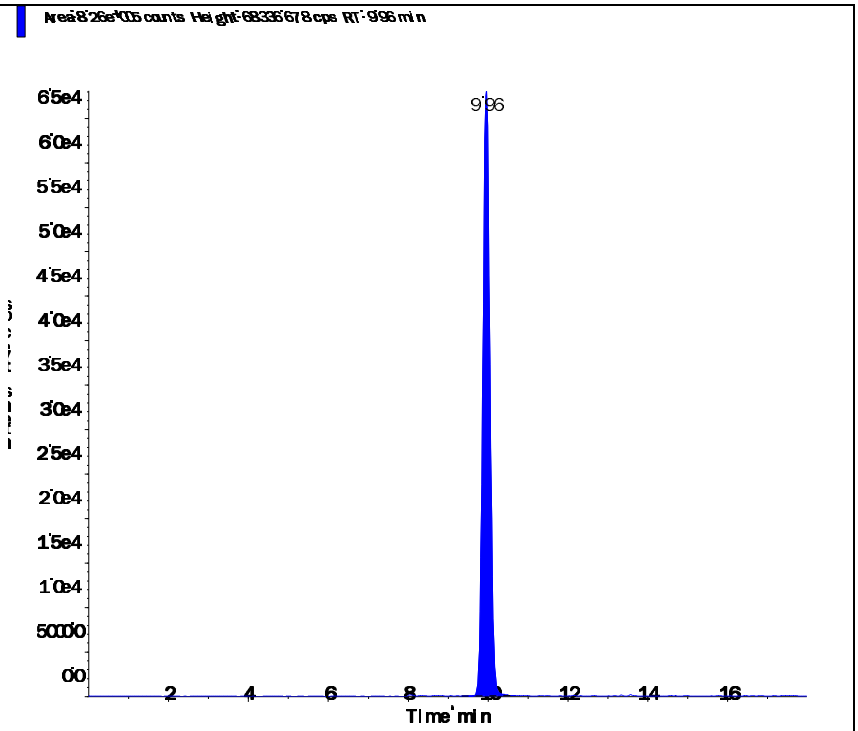

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	4.93 ng/ml
Area Ratio:	0.552
Sample Type:	(Standard)

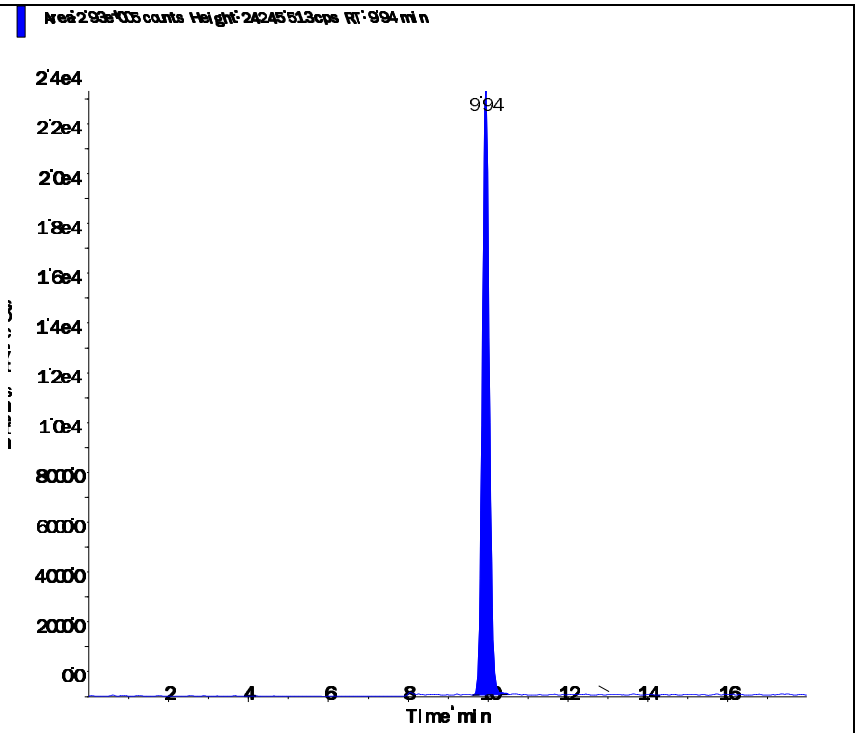

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Data File	LM33251.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/17/2016 9:24:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM33251.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 9:24:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG557856-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.030e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.94	10.00	9.87
Perchlorate conf	5.620e+05	9.93	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

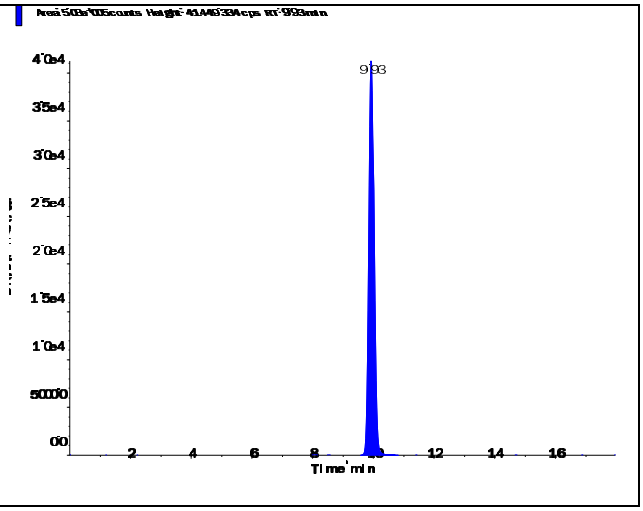

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	9.87 ng/ml
Area Ratio:	3.043
Sample Type:	(Standard)

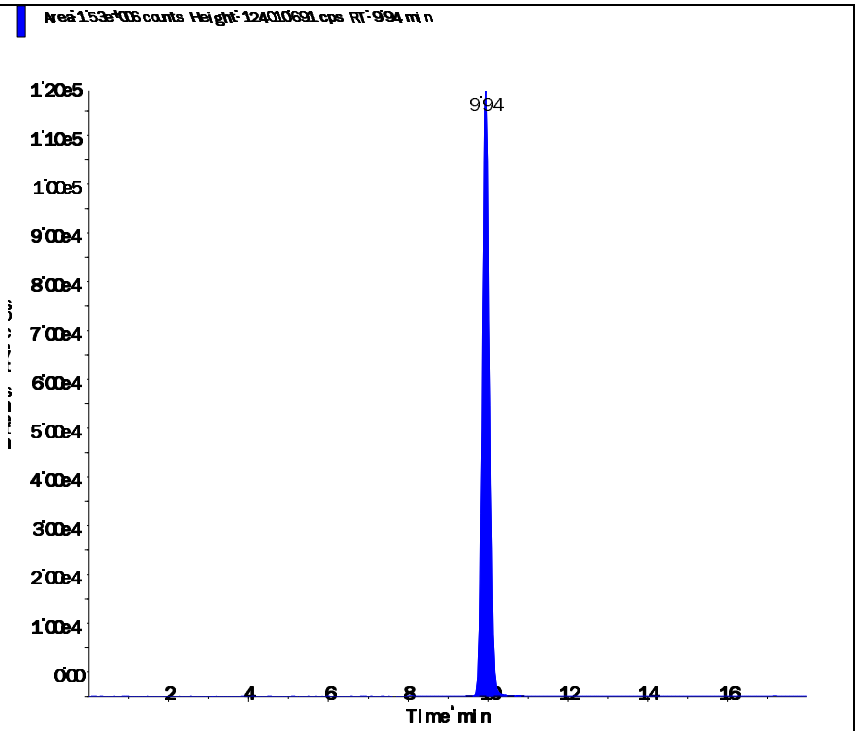

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	10.00 ng/ml
Area Ratio:	1.117
Sample Type:	(Standard)

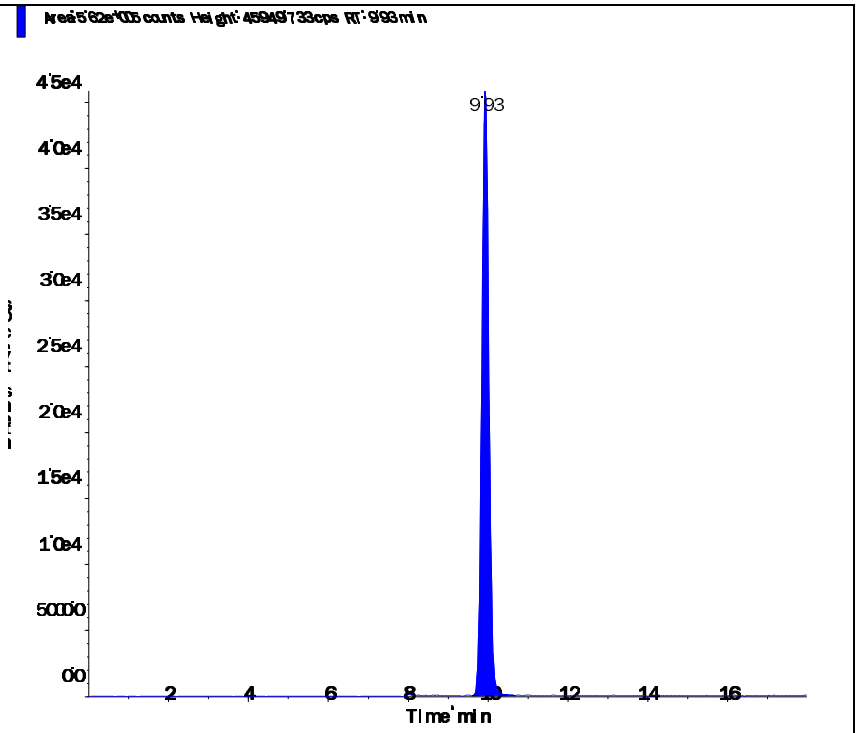

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Data File	LM33252.wiff	**Result Table**	021716_JWR.rdb
Acquisition Date	2/17/2016 9:43:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM33252.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 9:43:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	021716_JWR.rdb
Sample ID	WG557856-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.420e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+05	9.93	1.00	1.05
Perchlorate conf	6.360e+04	9.92	1.00	1.03

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

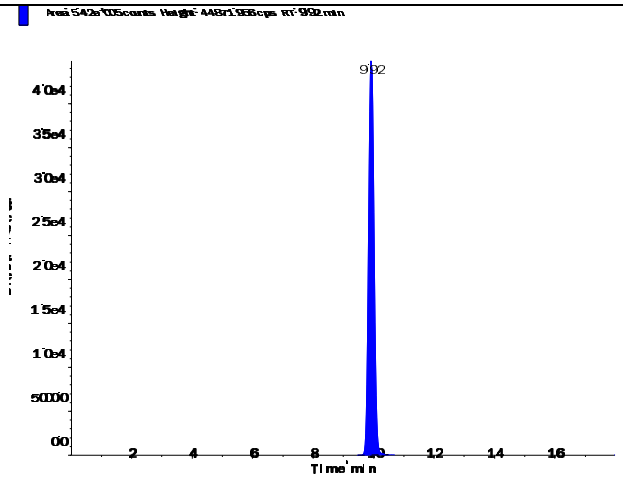

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.33
Sample Type:	(Quality Control)

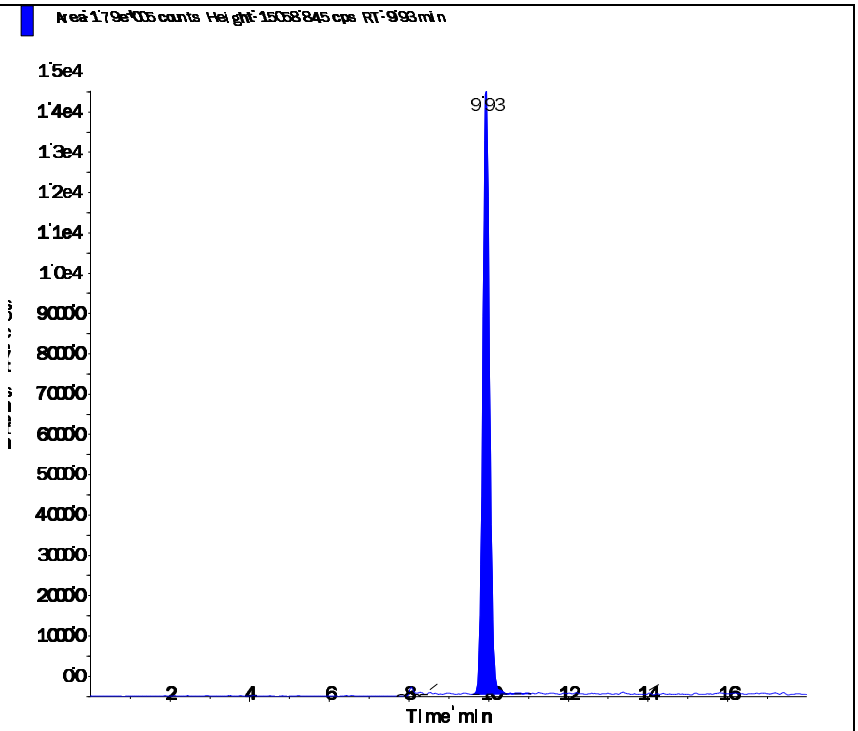

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.117
Sample Type:	(Quality Control)

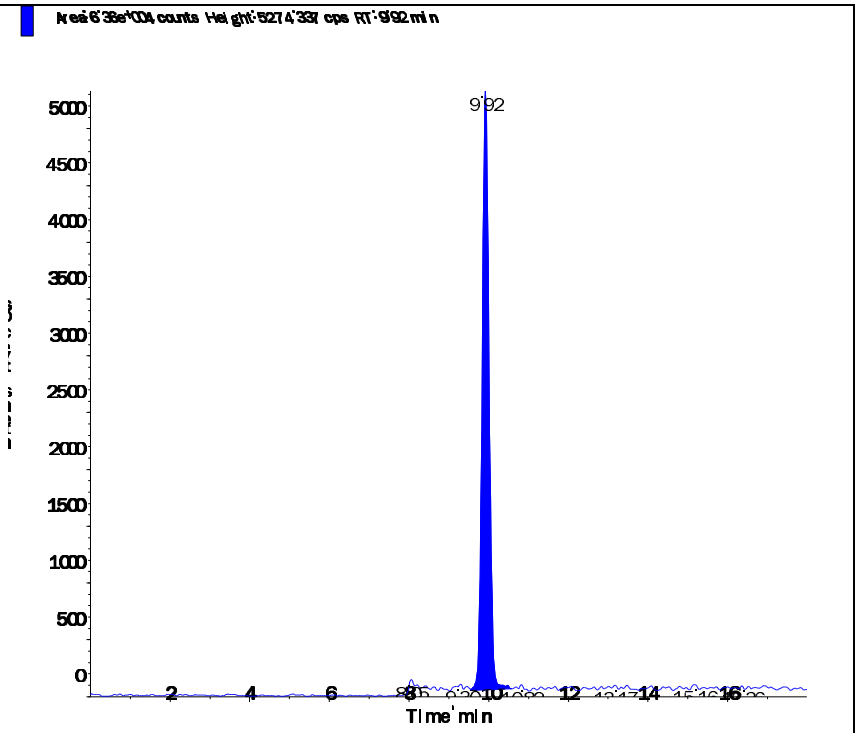

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Data File	LM33415.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/26/2016 10:30:47 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558989-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33415.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 10:30:47 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG558989-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.340e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.840e+05	9.99	1.00	1.10
Perchlorate conf	6.070e+04	9.98	1.00	0.996

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

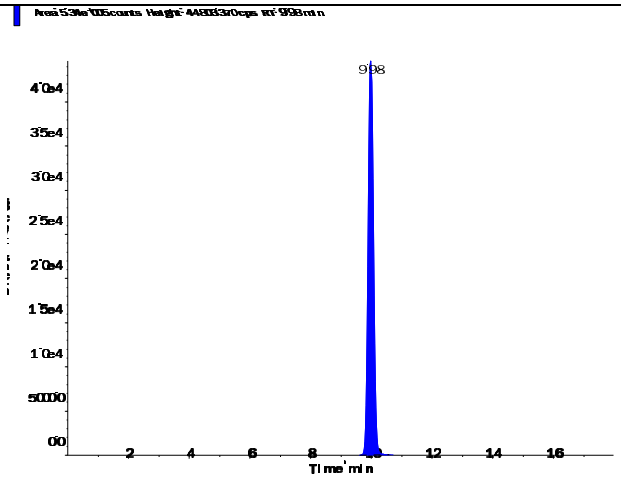

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.99 (9.94) min Calculated conc: 1.10 ng/ml Area Ratio: 0.344 Sample Type: (Quality Control)	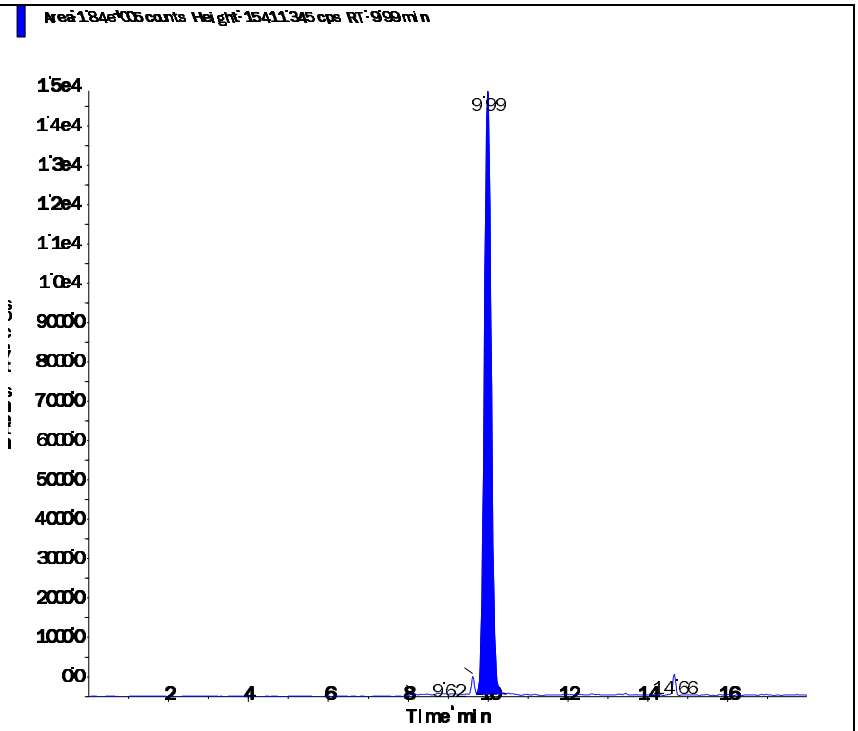
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.98 (9.92) min Calculated conc: 0.996 ng/ml Area Ratio: 0.114 Sample Type: (Quality Control)	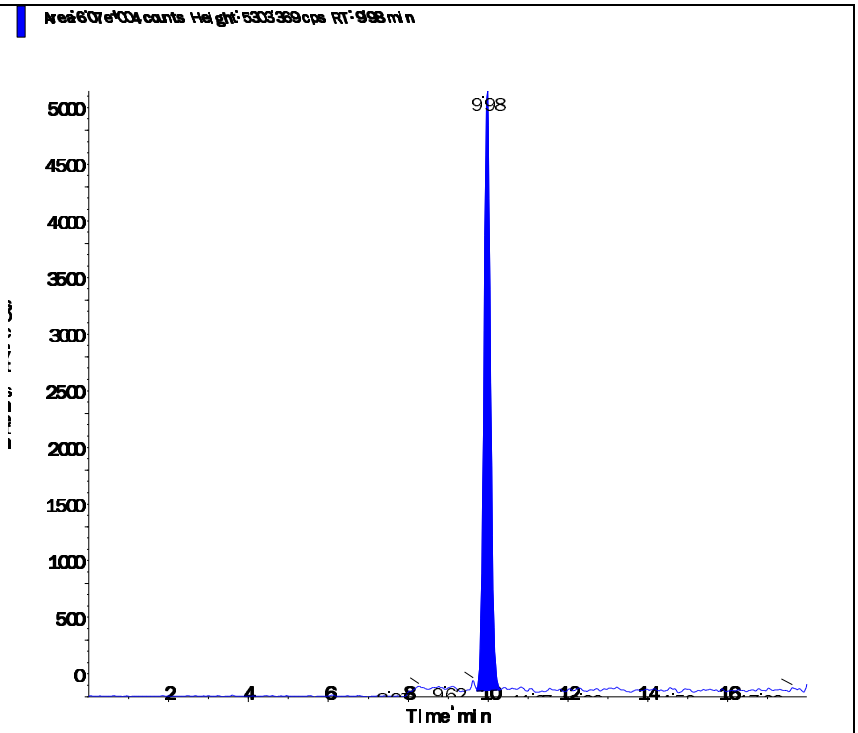

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Data File	LM33429.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/27/2016 2:55:51 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558989-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33429.wiff	**Injection Volume**	10.00
Acquisition Date	2/27/2016 2:55:51 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG558989-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.620e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.930e+05	9.98	1.00	1.10
Perchlorate conf	6.300e+04	9.96	1.00	0.983

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

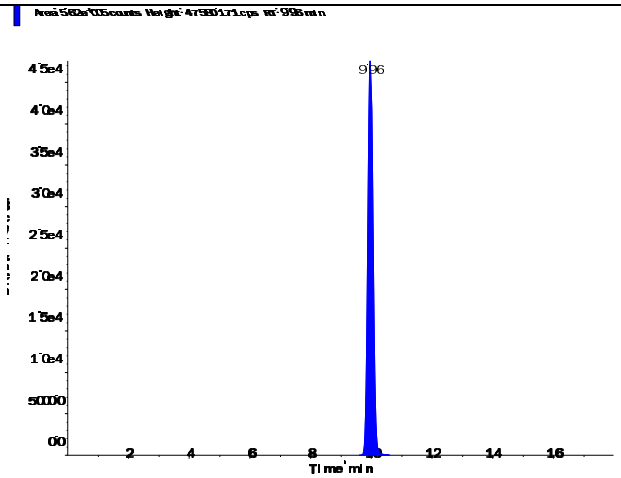

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.98 (9.94) min
Calculated conc:	1.10 ng/ml
Area Ratio:	0.344
Sample Type:	(Quality Control)

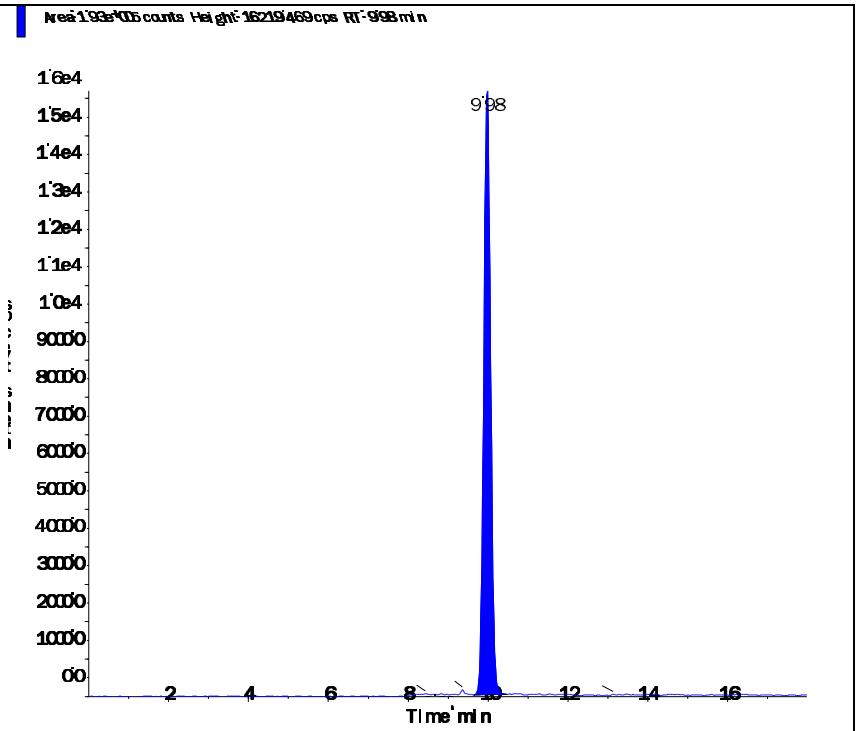

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.96 (9.92) min
Calculated conc:	0.983 ng/ml
Area Ratio:	0.112
Sample Type:	(Quality Control)

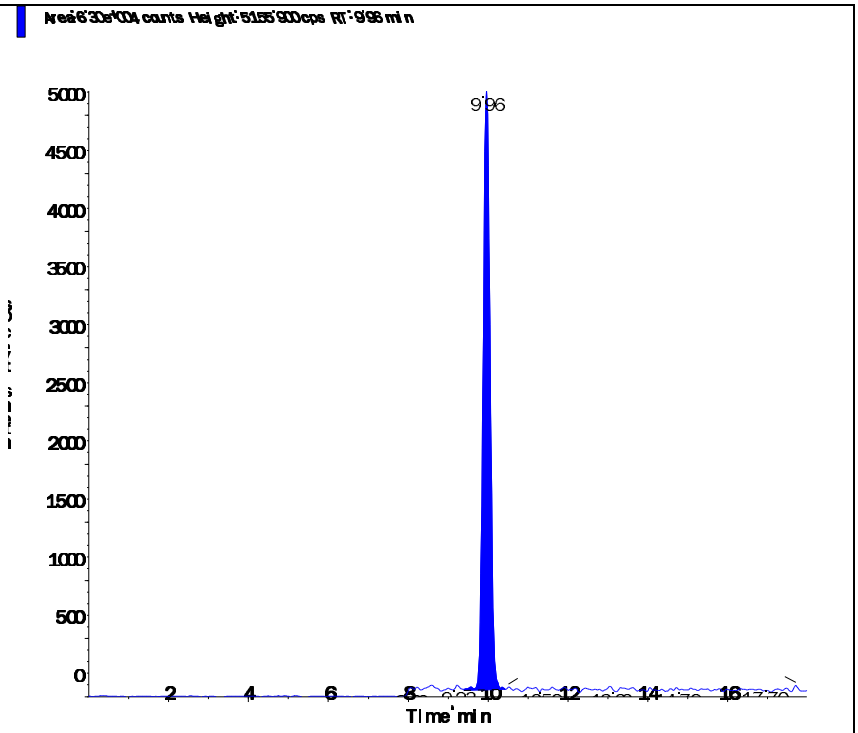

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Data File	LM33432.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/27/2016 10:38:29 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558989-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33432.wiff	**Injection Volume**	10.00
Acquisition Date	2/27/2016 10:38:29 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG558989-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.230e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.95	1.00	1.02
Perchlorate conf	5.590e+04	9.93	1.00	0.935

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

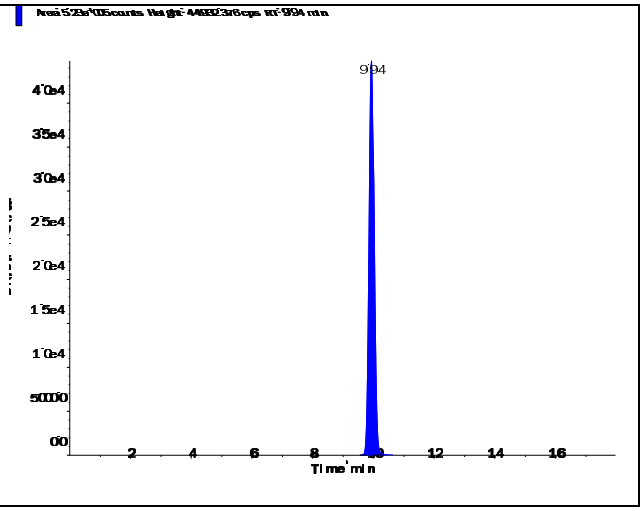

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.95 (9.94) min Calculated conc: 1.02 ng/ml Area Ratio: 0.321 Sample Type: (Quality Control)	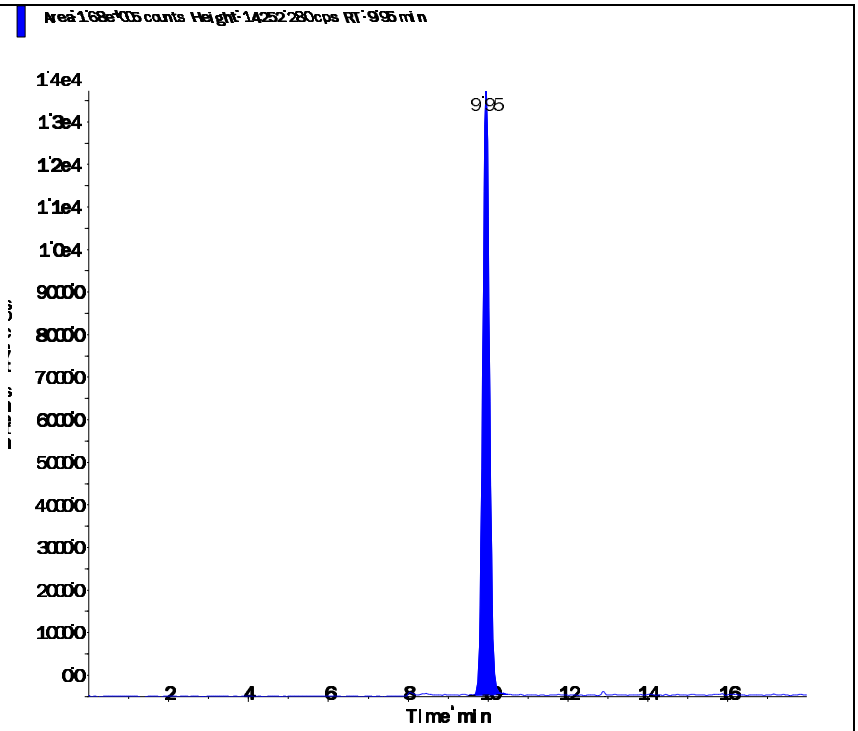
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.93 (9.92) min Calculated conc: 0.935 ng/ml Area Ratio: 0.107 Sample Type: (Quality Control)	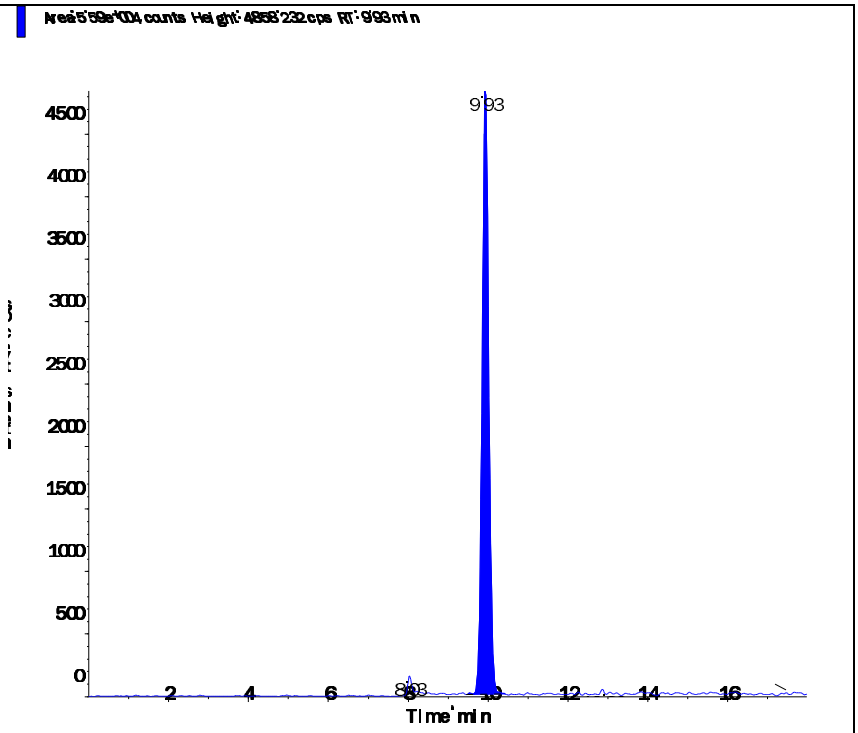

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Data File	LM33436.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/27/2016 11:54:11 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558989-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33436.wiff	**Injection Volume**	10.00
Acquisition Date	2/27/2016 11:54:11 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG558989-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.420e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.780e+05	9.97	1.00	1.05
Perchlorate conf	5.770e+04	9.96	1.00	0.931

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

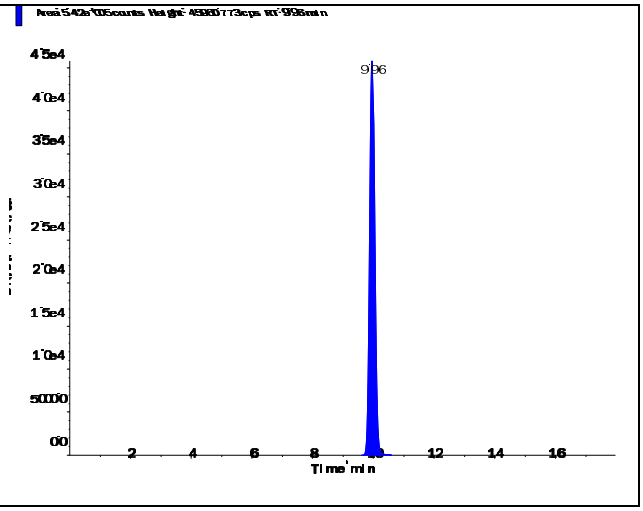

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.97 (9.94) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.329
Sample Type:	(Quality Control)

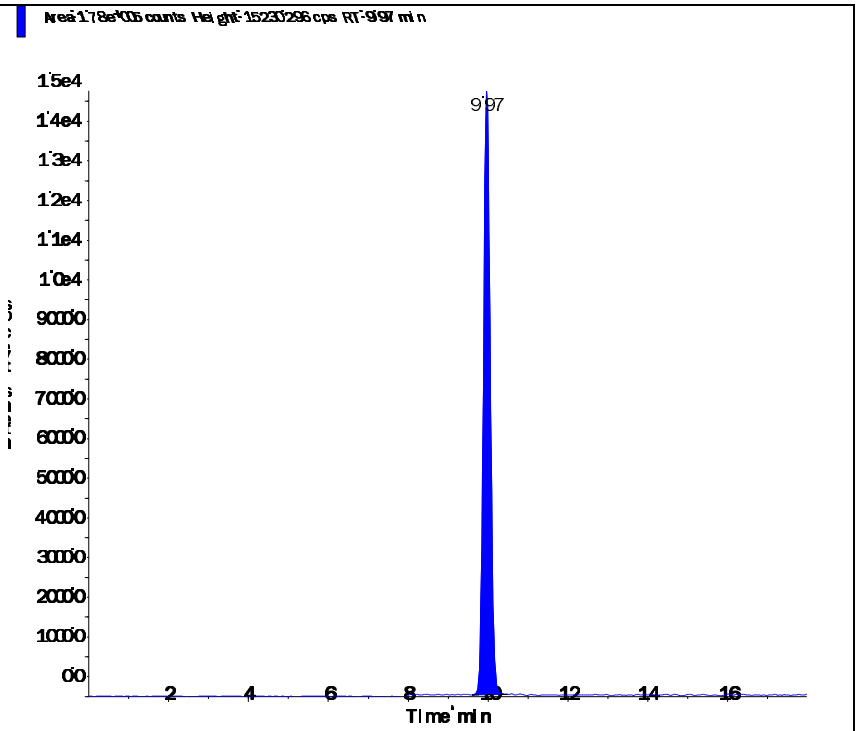

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.96 (9.92) min
Calculated conc:	0.931 ng/ml
Area Ratio:	0.106
Sample Type:	(Quality Control)

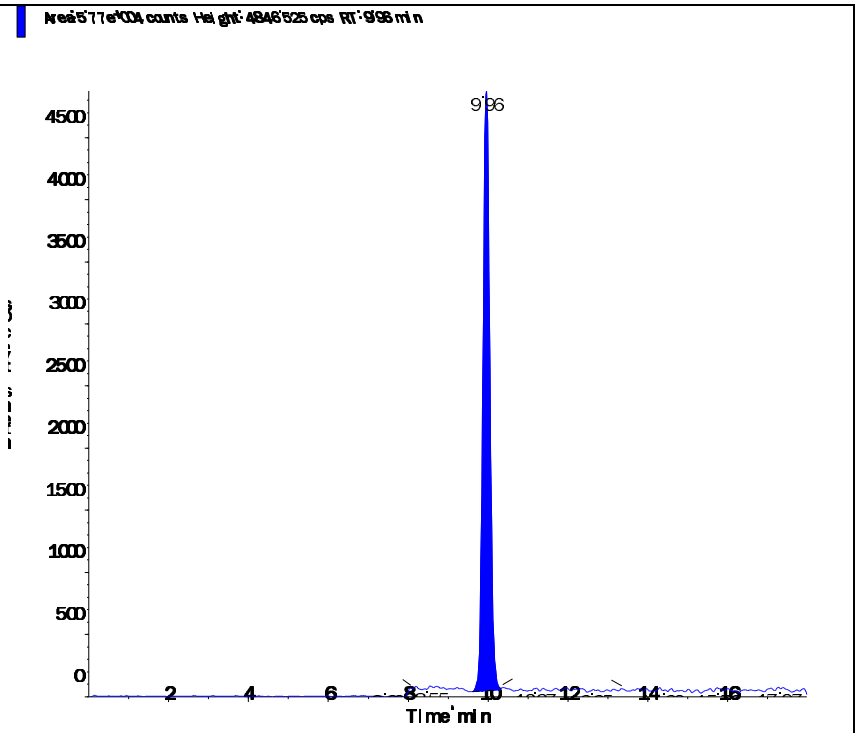

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Data File	LM33418.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/26/2016 11:27:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558991-07 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33418.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 11:27:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG558991-07	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.480e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.920e+04	9.99	N/A	0.211
Perchlorate conf	1.290e+04	9.97	N/A	0.188

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

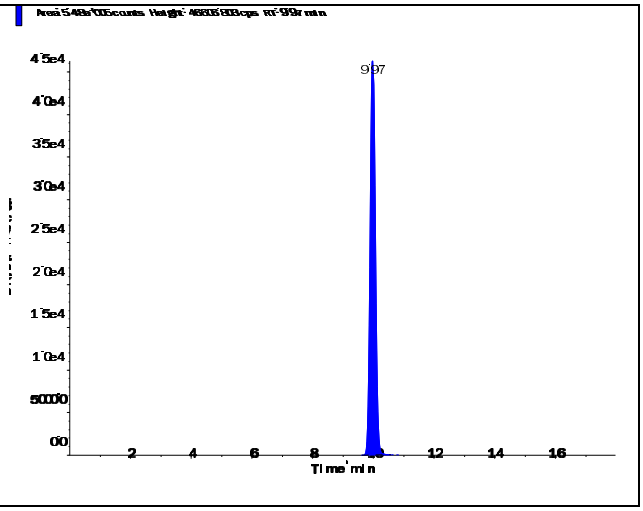

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.99 (9.94) min
Calculated conc:	0.211 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

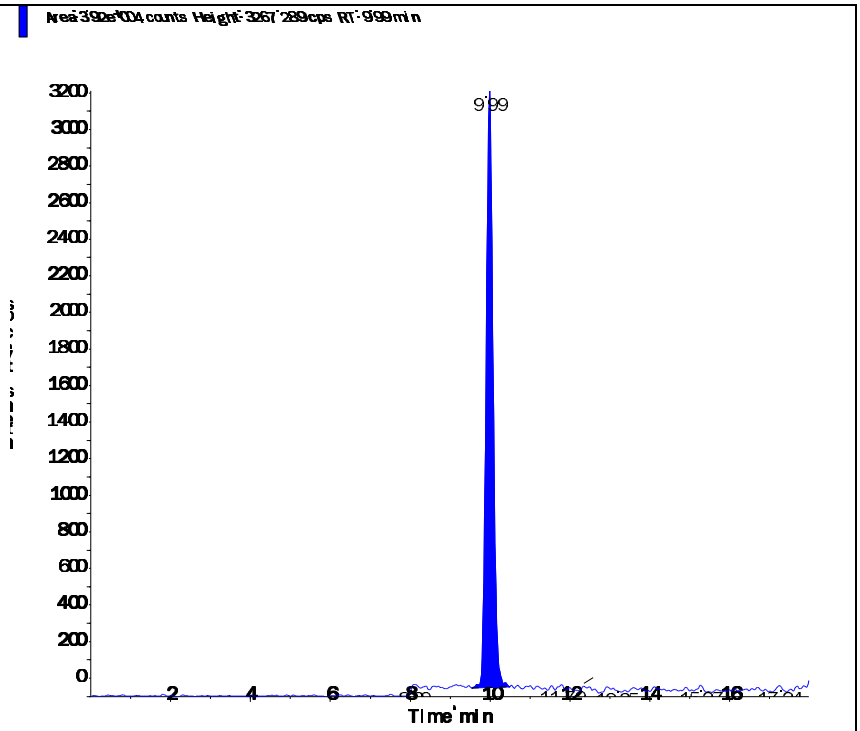

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.97 (9.92) min
Calculated conc:	0.188 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

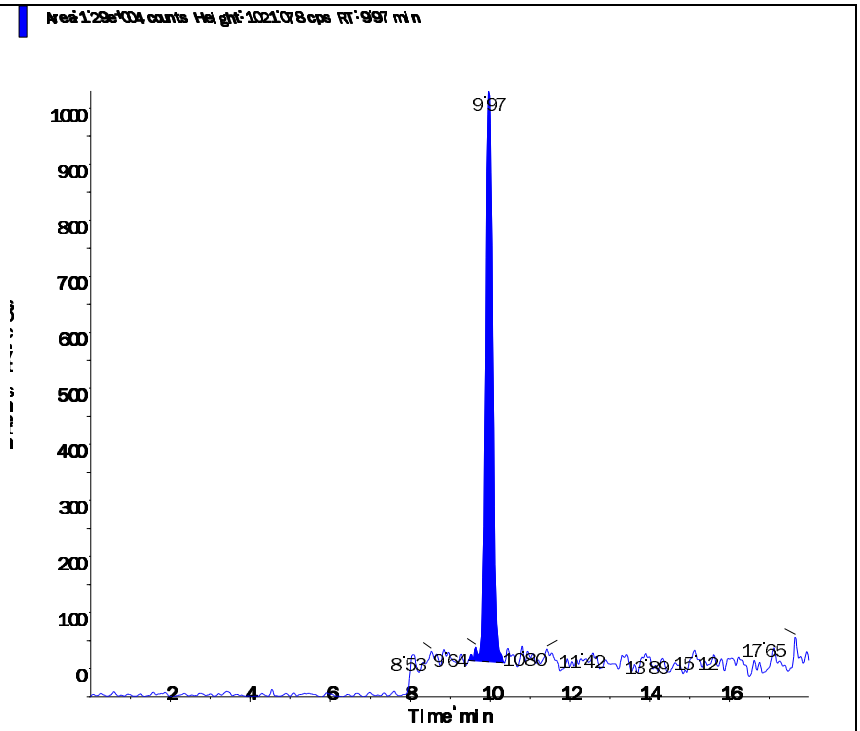

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Data File	LM33430.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/27/2016 3:14:47 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558991-08 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33430.wiff	**Injection Volume**	10.00
Acquisition Date	2/27/2016 3:14:47 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG558991-08	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.700e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.160e+04	9.96	N/A	0.215
Perchlorate conf	1.420e+04	9.94	N/A	0.201

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

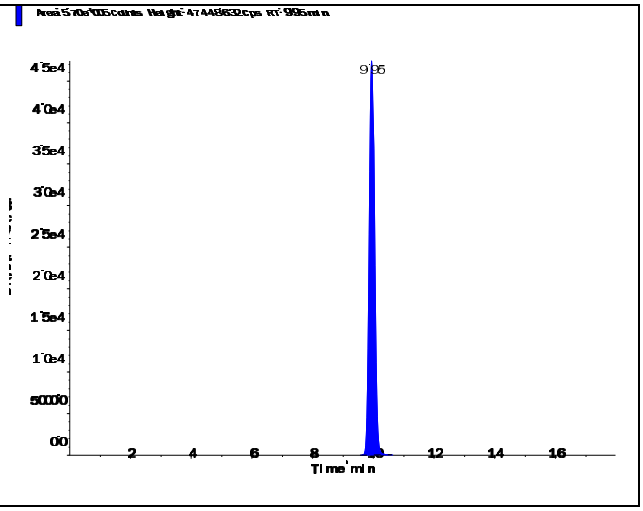

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.96 (9.94) min Calculated conc: 0.215 ng/ml Area Ratio: 0.073 Sample Type: (Unknown)	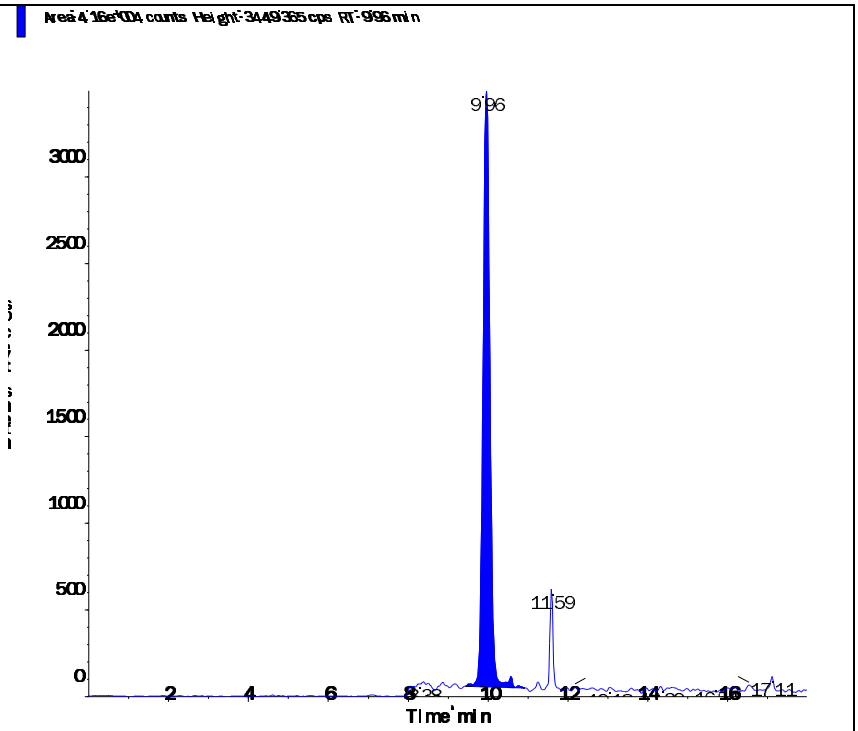
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.94 (9.92) min Calculated conc: 0.201 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	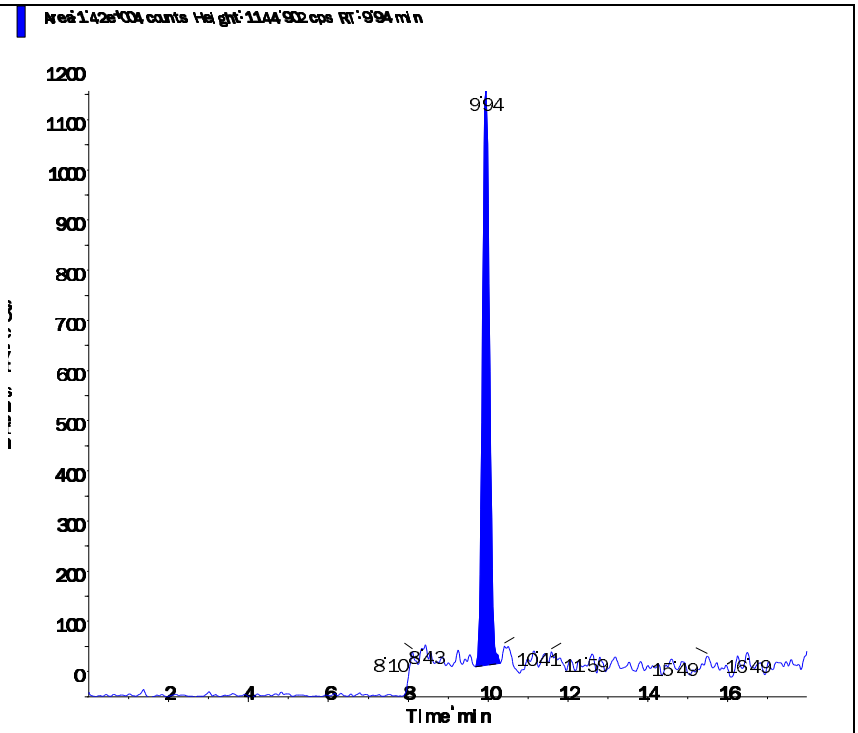

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Data File	LM33433.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/27/2016 10:57:24 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558991-09 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33433.wiff	**Injection Volume**	10.00
Acquisition Date	2/27/2016 10:57:24 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG558991-09	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.320e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.800e+04	9.95	N/A	0.21
Perchlorate conf	1.270e+04	9.94	N/A	0.192

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

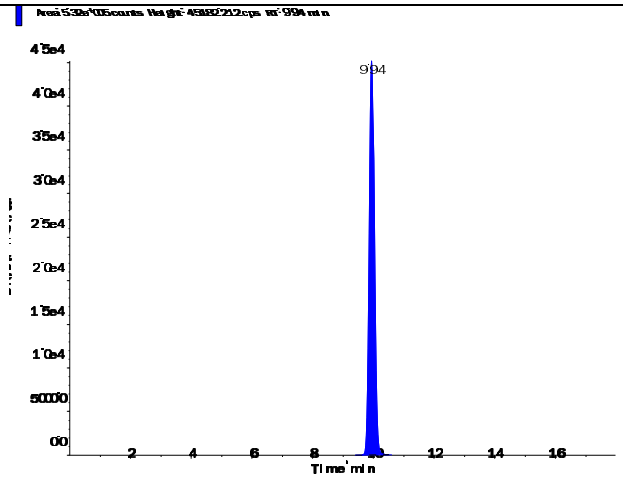

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

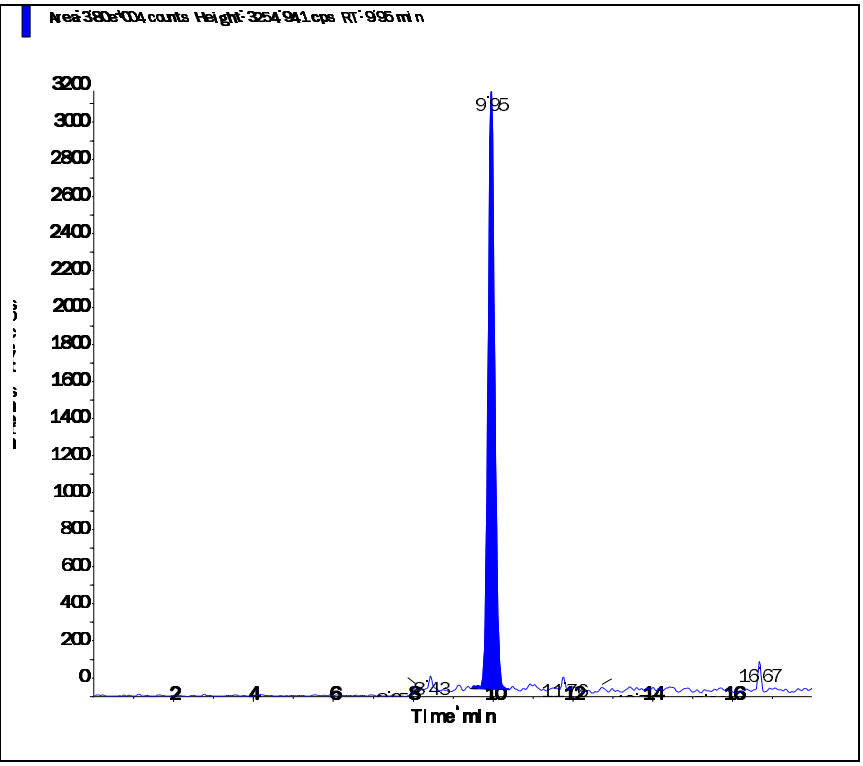

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.192 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

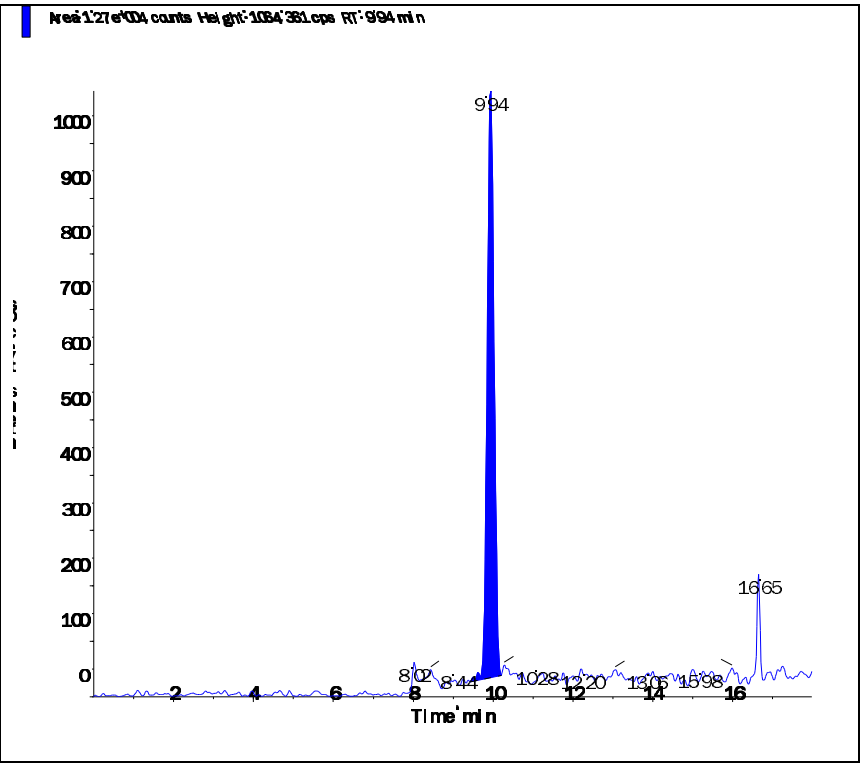

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Data File	LM33437.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/27/2016 12:13:07 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558991-10 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33437.wiff	**Injection Volume**	10.00
Acquisition Date	2/27/2016 12:13:07 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG558991-10	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.330e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.830e+04	9.97	N/A	0.212
Perchlorate conf	1.290e+04	9.95	N/A	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

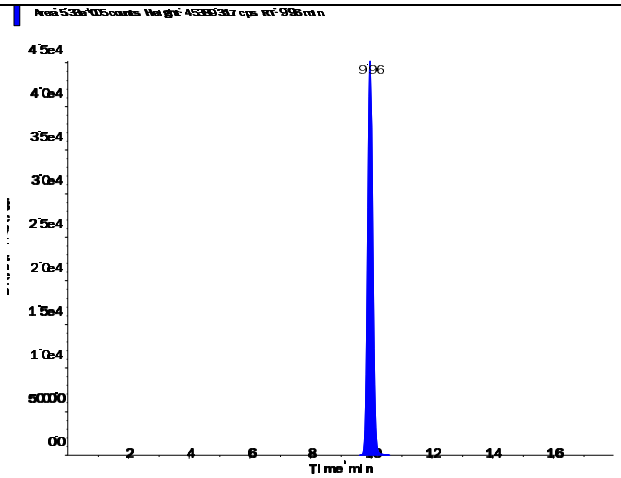

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.97 (9.94) min
Calculated conc:	0.212 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

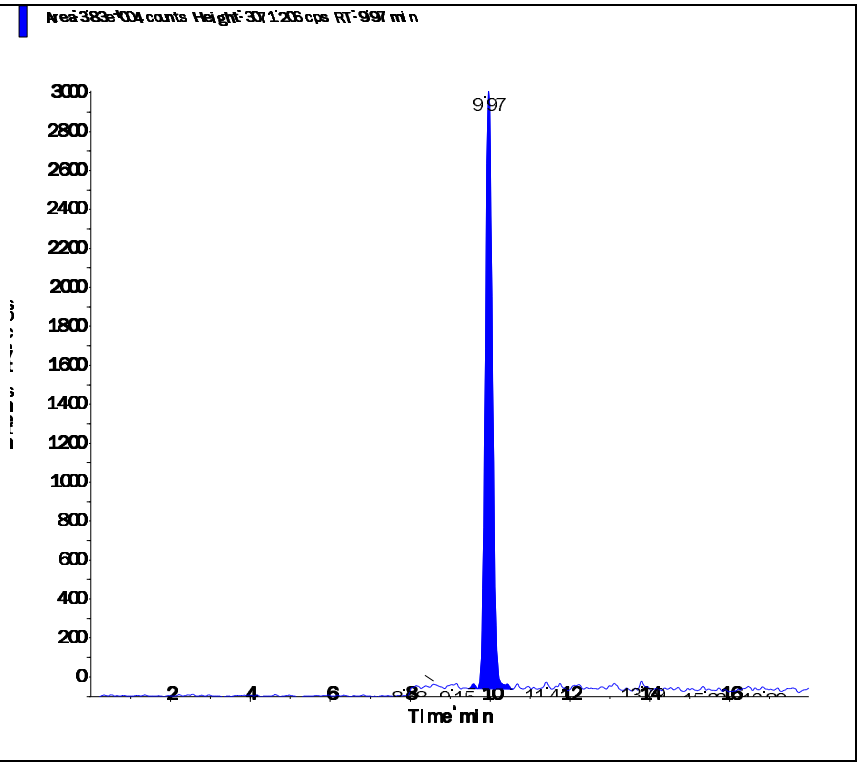

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.95 (9.92) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

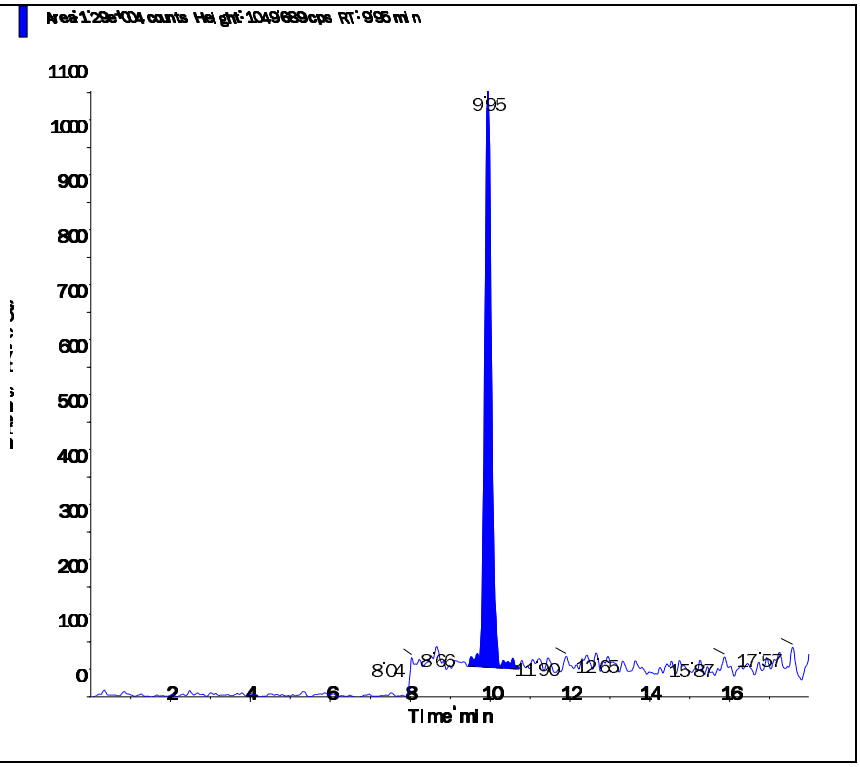

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Data File	LM33417.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/26/2016 11:08:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558989-04 CCB	**Injection Vial**	1.00
Data File	LM33417.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 11:08:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG558989-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.560e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	4.910e+02	9.96	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

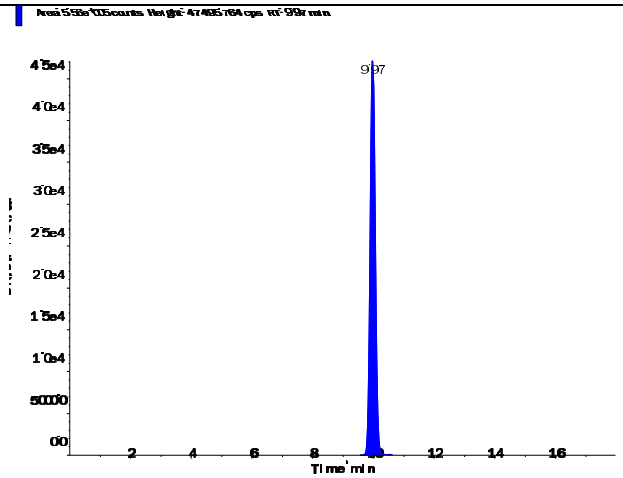

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.94) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	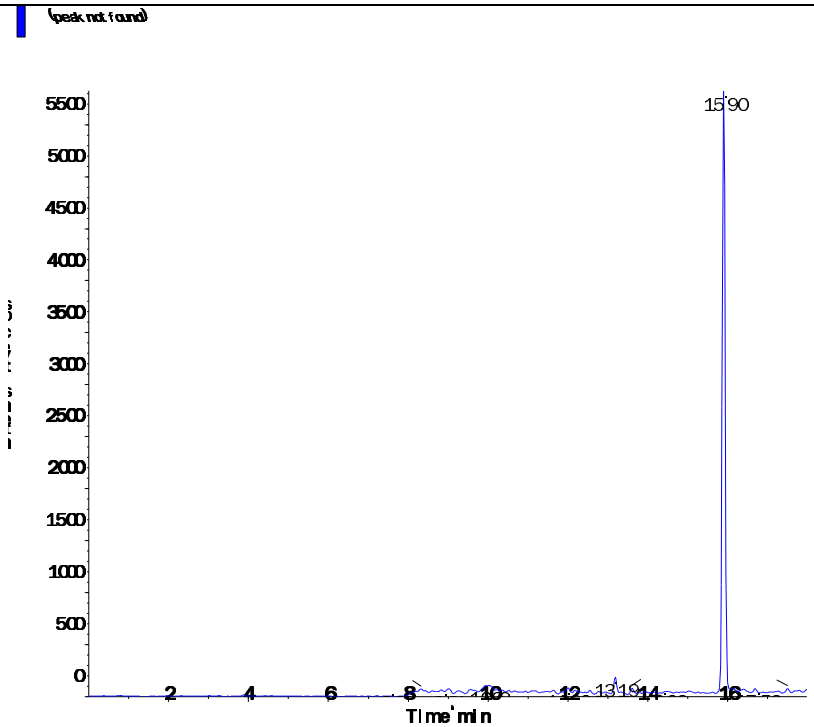
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.96 (9.92) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	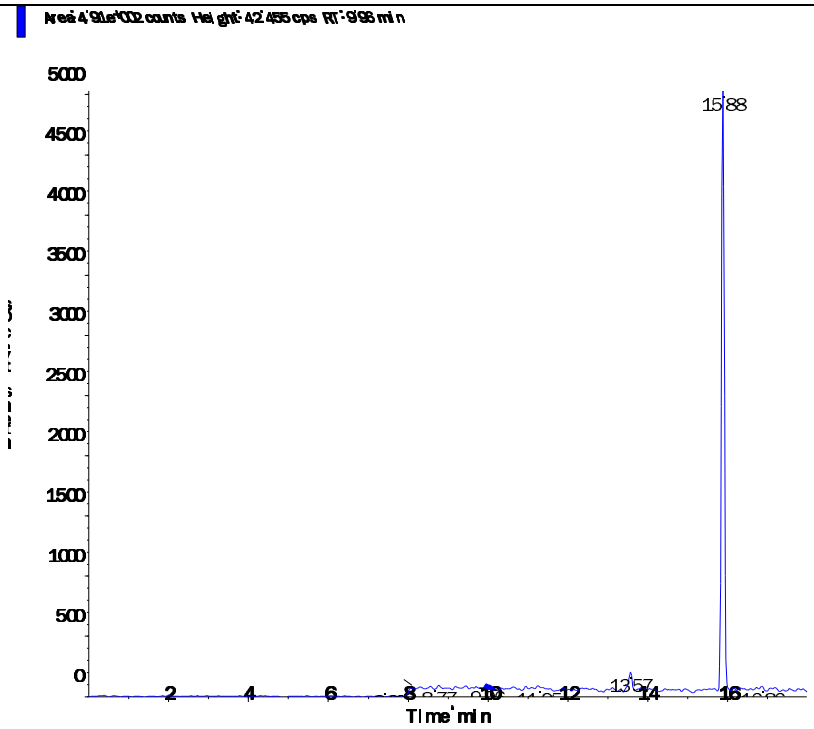

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Data File	LM33431.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/27/2016 3:33:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558989-06 CCB	**Injection Vial**	1.00
Data File	LM33431.wiff	**Injection Volume**	10.00
Acquisition Date	2/27/2016 3:33:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG558989-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.780e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	7.540e+02	10.00	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

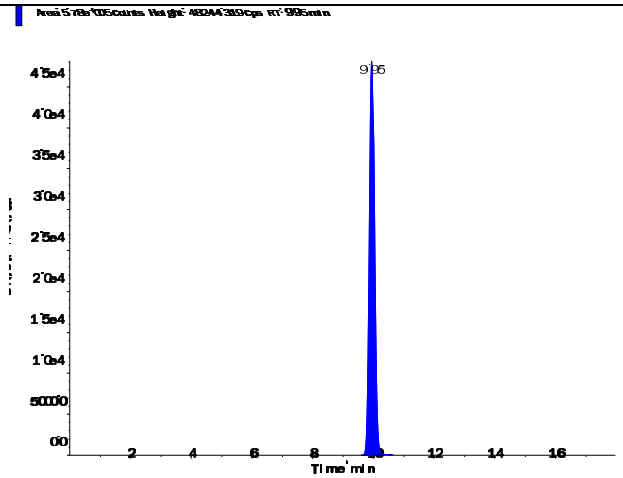

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

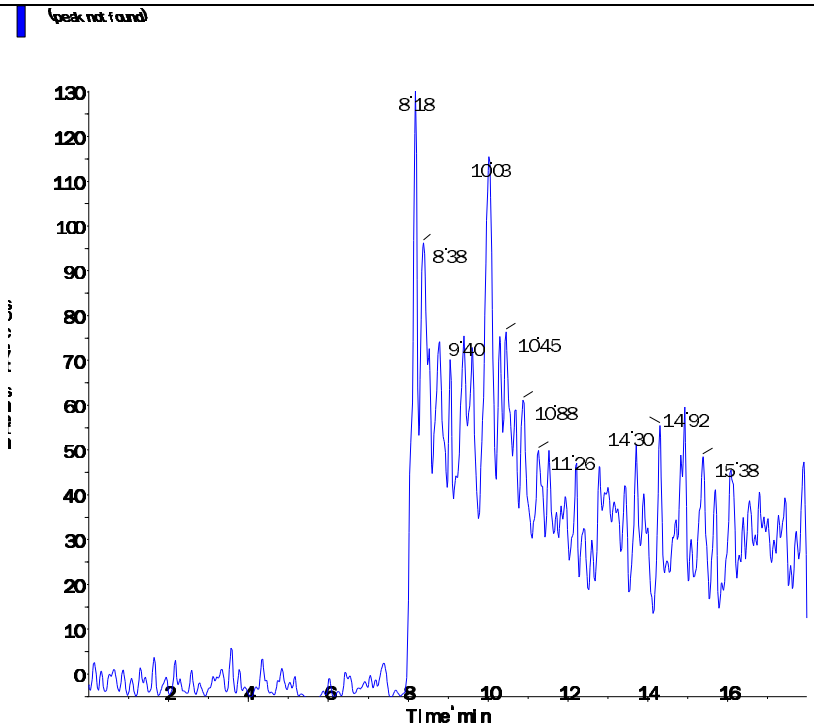

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.00 (9.92) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

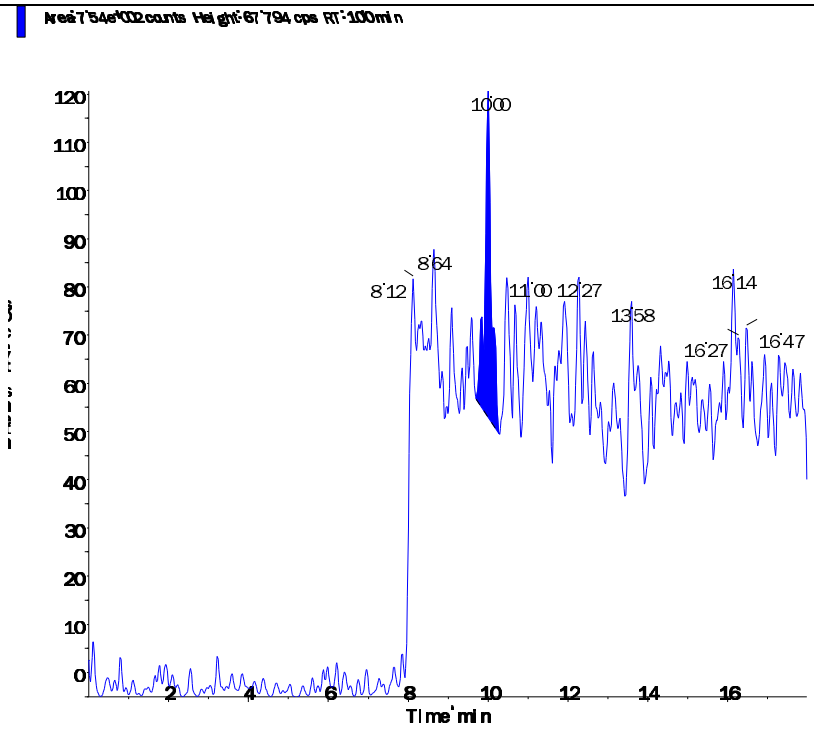

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Data File	LM33434.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/27/2016 11:16:19 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558989-08 CCB	**Injection Vial**	1.00
Data File	LM33434.wiff	**Injection Volume**	10.00
Acquisition Date	2/27/2016 11:16:19 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG558989-08	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.440e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	2.190e+02	9.68	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

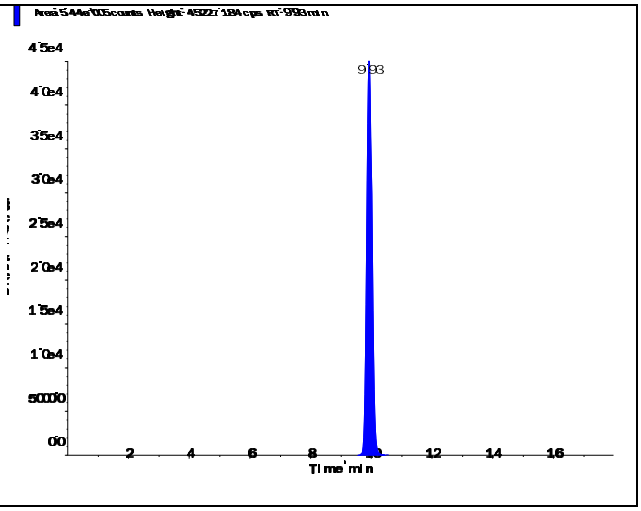

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

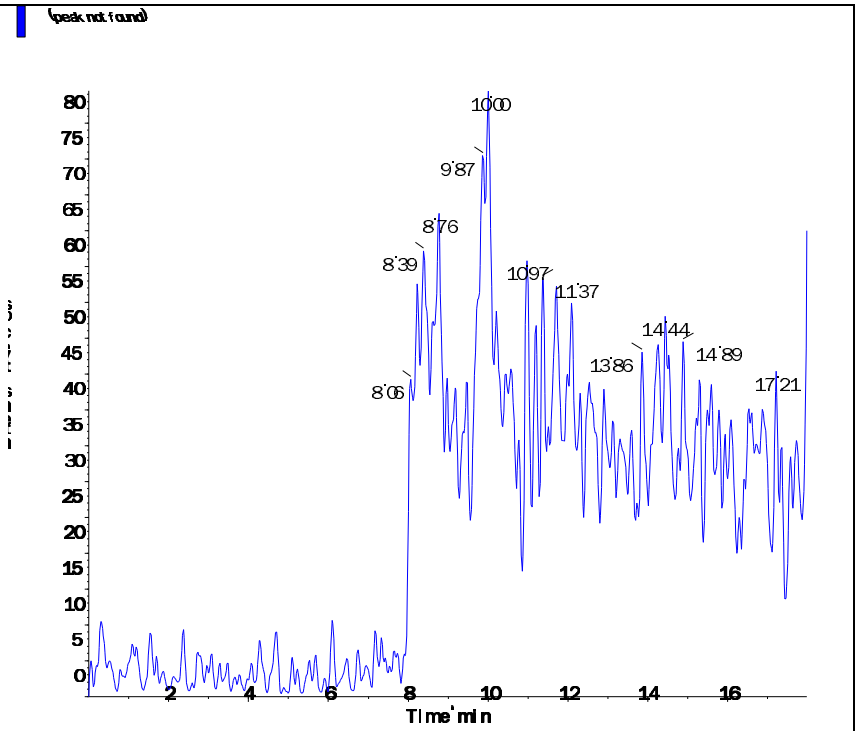

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.68 (9.92) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

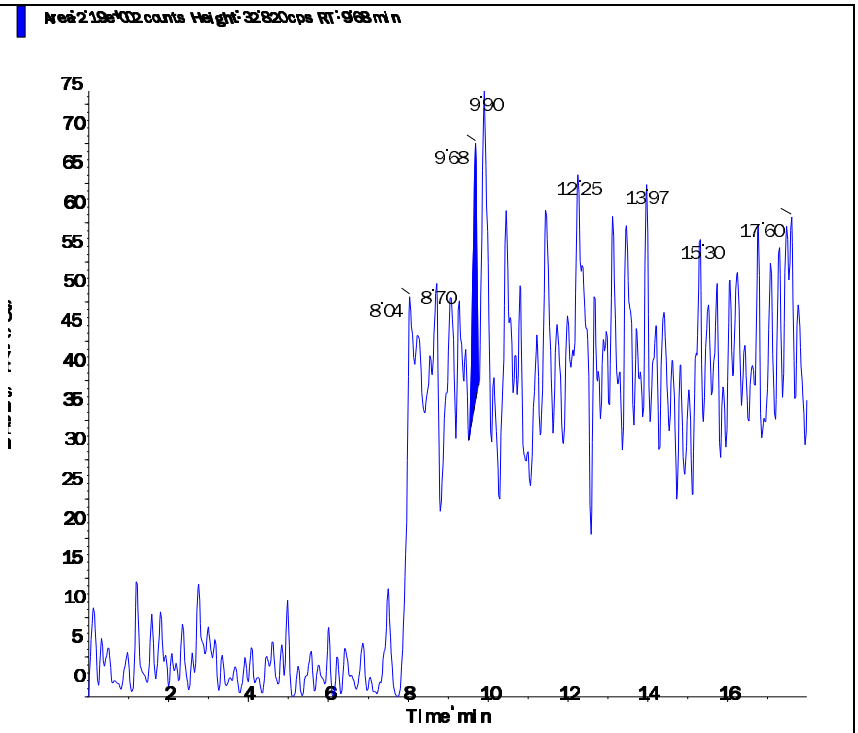

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Data File	LM33438.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/27/2016 12:32:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558989-10 CCB	**Injection Vial**	1.00
Data File	LM33438.wiff	**Injection Volume**	10.00
Acquisition Date	2/27/2016 12:32:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG558989-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.510e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.430e+03	9.93	N/A	< 0
Perchlorate conf	5.420e+02	9.98	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

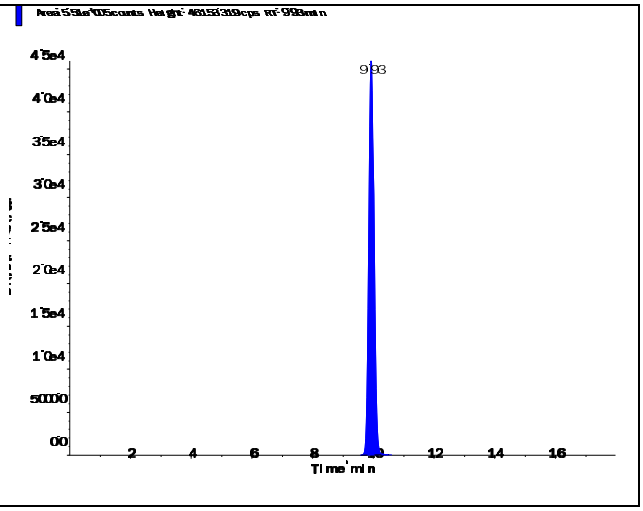

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.003
Sample Type:	(Unknown)

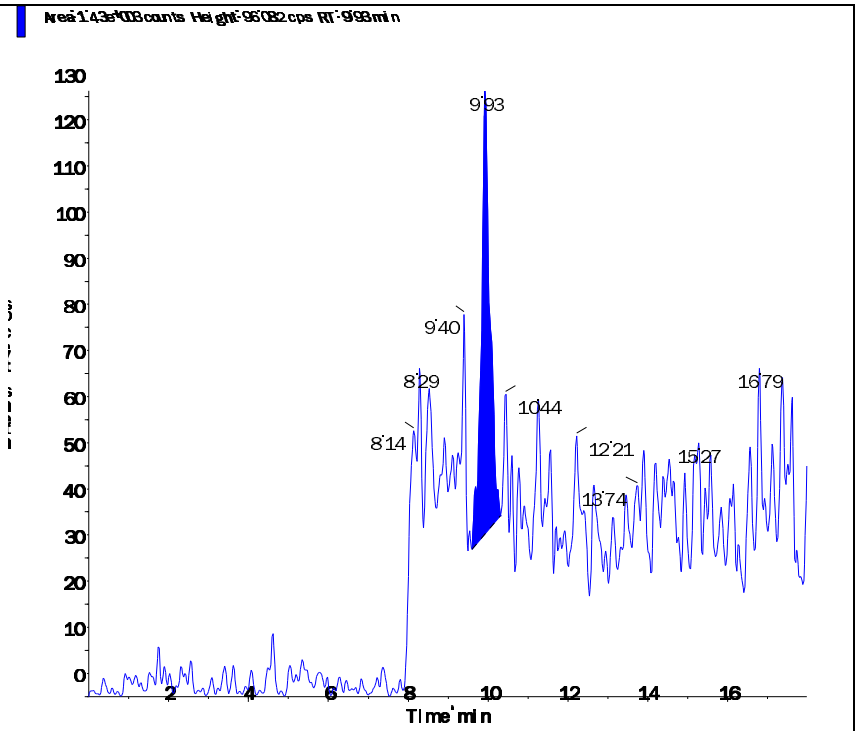

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.98 (9.92) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

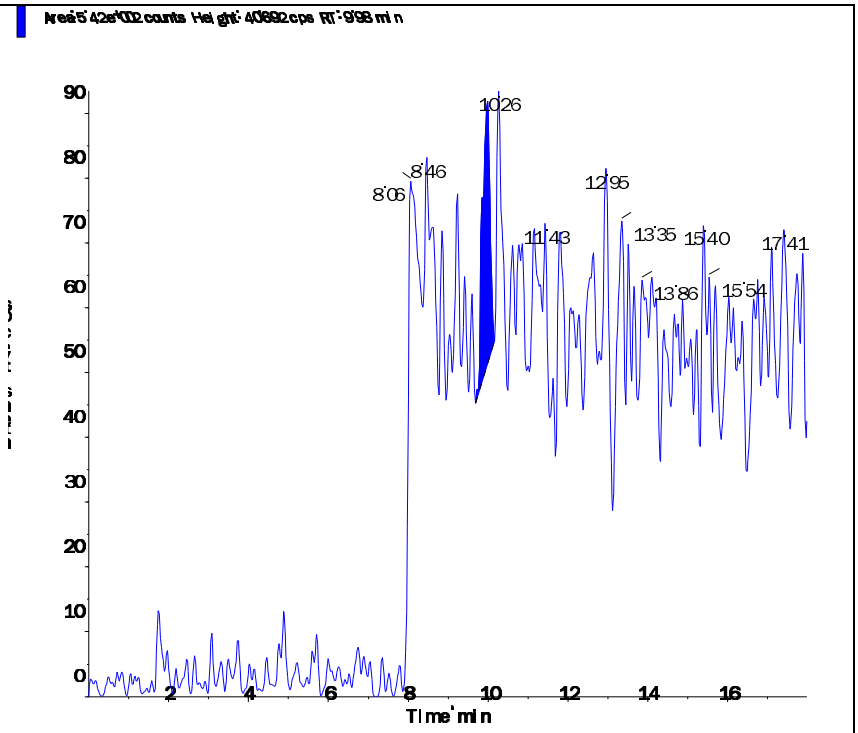

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Data File	LM33419.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/26/2016 11:46:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558991-01 MCT (2.0ug/kg)	**Injection Vial**	14.00
Data File	LM33419.wiff	**Injection Volume**	10.00
Acquisition Date	2/26/2016 11:46:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG558991-01	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.890e+05	9.56	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.860e+04	9.57	N/A	0.235
Perchlorate conf	1.250e+04	9.54	N/A	0.208

O18LP (Internal Standard)

RT (Exp. RT): 9.56(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

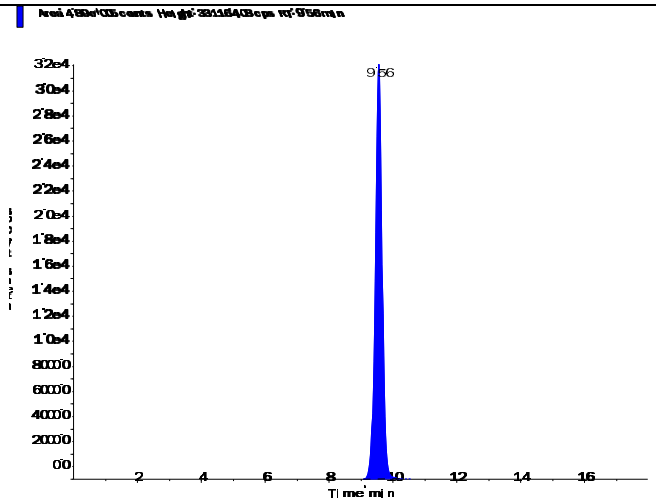

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Printed: 2/27/2016 2:03 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.57 (9.94) min
Calculated conc:	0.235 ng/ml
Area Ratio:	0.079
Sample Type:	(Unknown)

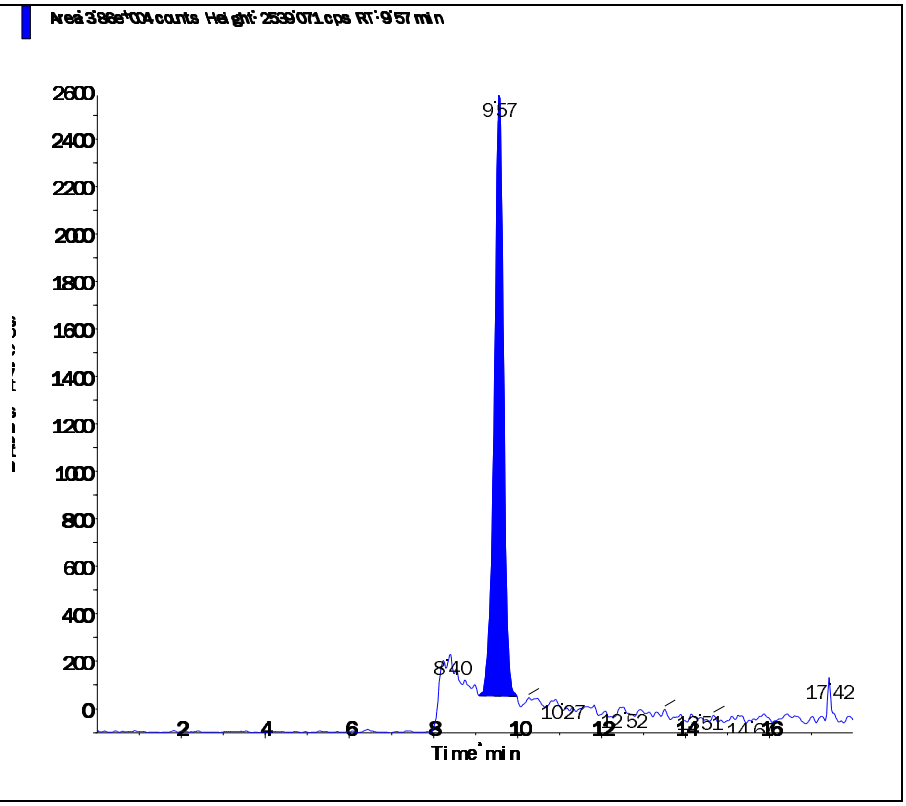

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.54 (9.92) min
Calculated conc:	0.208 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

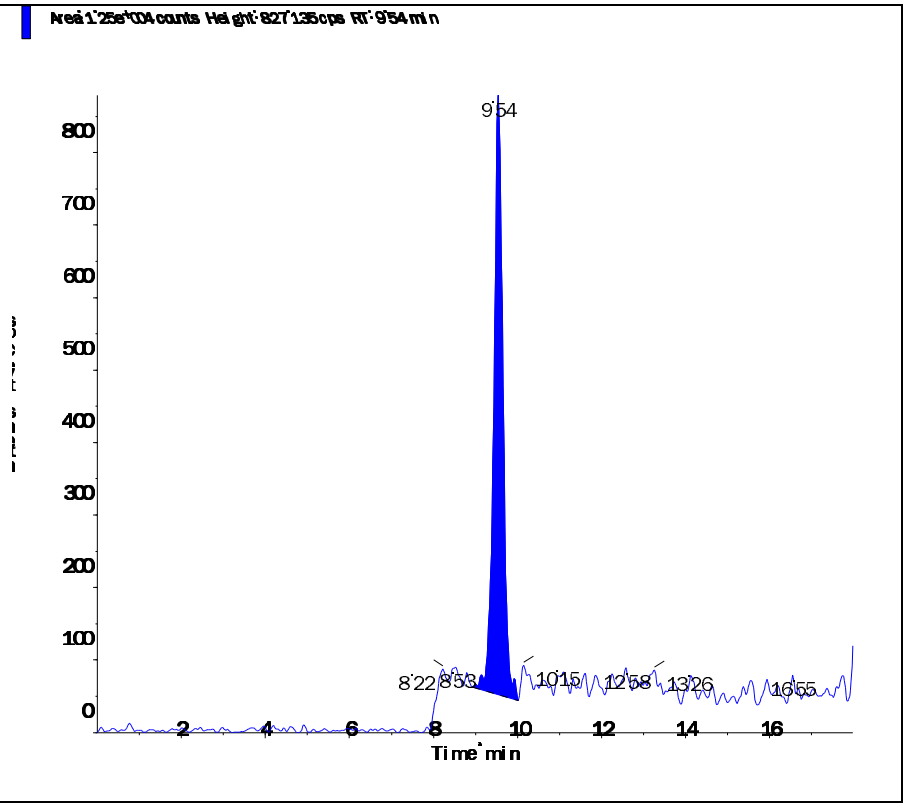

Printing Time: 9:06:21 AM
Printing Date: Saturday, February 27, 2016

Sample Name: "WG558991-01 MCT (2.0ug/kg)" Sample ID: "WG558991-01" File: "LM33419.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "7,1 STD72685" Annotation: ""

Sample Index:	1	
Sample Type:	Unknown	
Concentration:	N/A	
Calculated Conc:	0.273	ug/L
Acq. Date:	2/26/2016	
Acq. Time:	11:46:30 PM	
Modified:	No	
Proc. Algorithm:	Analyst Classic	
Bunching Factor:	3	
Noise Threshold:	18.48	cps
Area Threshold:	92.40	cps
Num. Smooths:	5	
Sep. Width:	0.20	
Sep. Height:	0.01	
Exp. Peak Ratio:	5.00	
Exp. Adj. Ratio:	4.00	
Exp. Val. Ratio:	3.00	
RT Window:	30.000	sec
Expected RT:	9.94	min
Use Relative RT:	Yes	
Int. Type:	Valley	
Retention Time:	9.57	min
Area:	4.42e+004	counts
Height:	2622.273	cps
Start Time:	9.093	min
End Time:	10.612	min

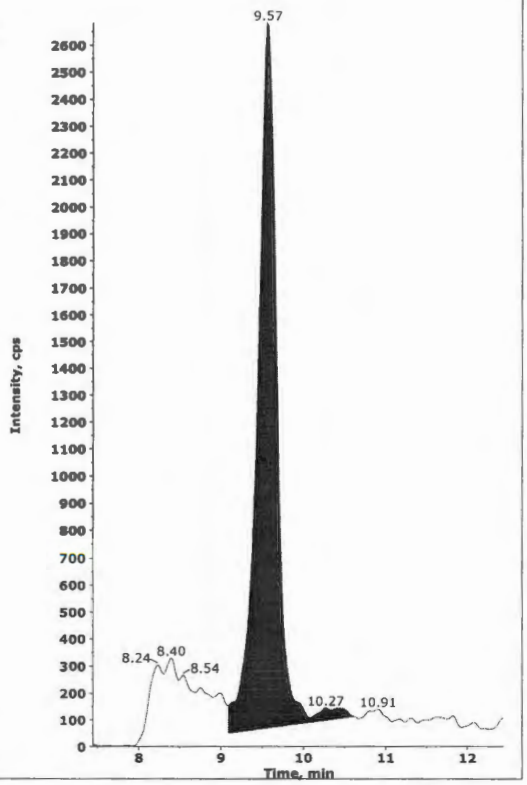

Collected by: N/A
Electronic Signature: no
Operator: lcms1

Printing Time: 9:07:18 AM
Printing Date: Saturday, February 27, 2016

Sample Name: "WG558991-01 MCT (2.0ug/kg)" Sample ID: "WG558991-01" File: "LM33419.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "7,1 STD72685" Annotation: ""

Sample Index:	1	
Sample Type:	Unknown	
Concentration:	N/A	
Calculated Conc:	0.235	ug/L
Acq. Date:	2/26/2016	
Acq. Time:	11:46:30 PM	
Modified:	Yes	
Proc. Algorithm:	Analyst Classic	
Punching Factor:	2	
Noise Threshold:	18.48	cps
Area Threshold:	92.40	cps
Num. Smooths:	5	
Sep. Width:	0.20	
Sep. Height:	0.01	
Exp. Peak Ratio:	5.00	
Exp. Adj. Ratio:	4.00	
Exp. Val. Ratio:	3.00	
RT Window:	30.000	sec
Expected RT:	9.94	min
Use Relative RT:	Yes	
Int. Type:	Base To Base	
Retention Time:	9.57	min
Area:	3.86e+004	counts
Height:	2539.071	cps
Start Time:	9.093	min
End Time:	9.984	min

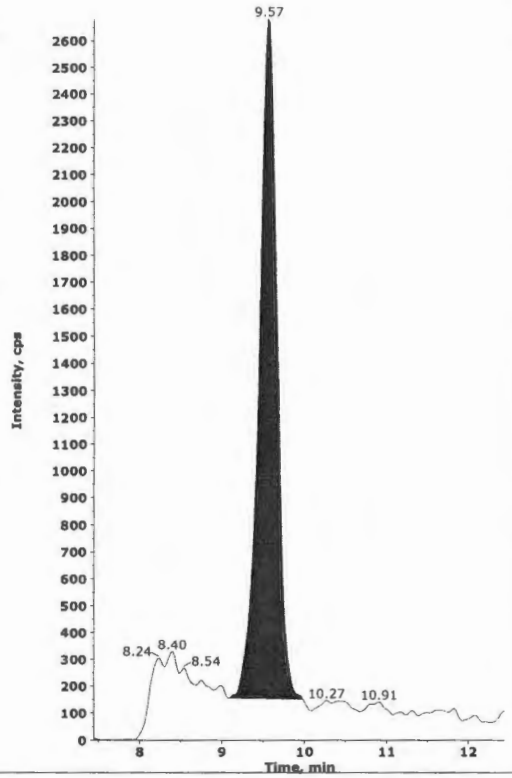

#4
JWR 02/27/14

2.29.16

Collected by: N/A
Electronic Signature: no
Operator: lcmsl

2.2.1.5 Raw QC Data

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Printed: 2/27/2016 2:03 PM

Data File	LM33420.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/27/2016 12:05:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558991-02 BLANK	**Injection Vial**	15.00
Data File	LM33420.wiff	**Injection Volume**	10.00
Acquisition Date	2/27/2016 12:05:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG558991-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.380e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	5.950e+02	9.93	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

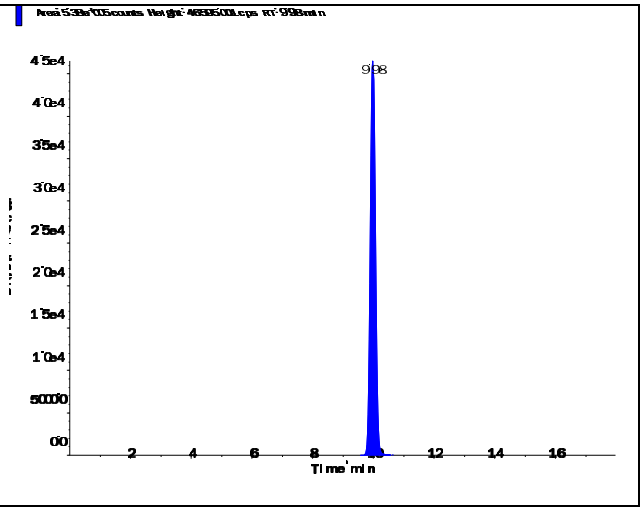

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

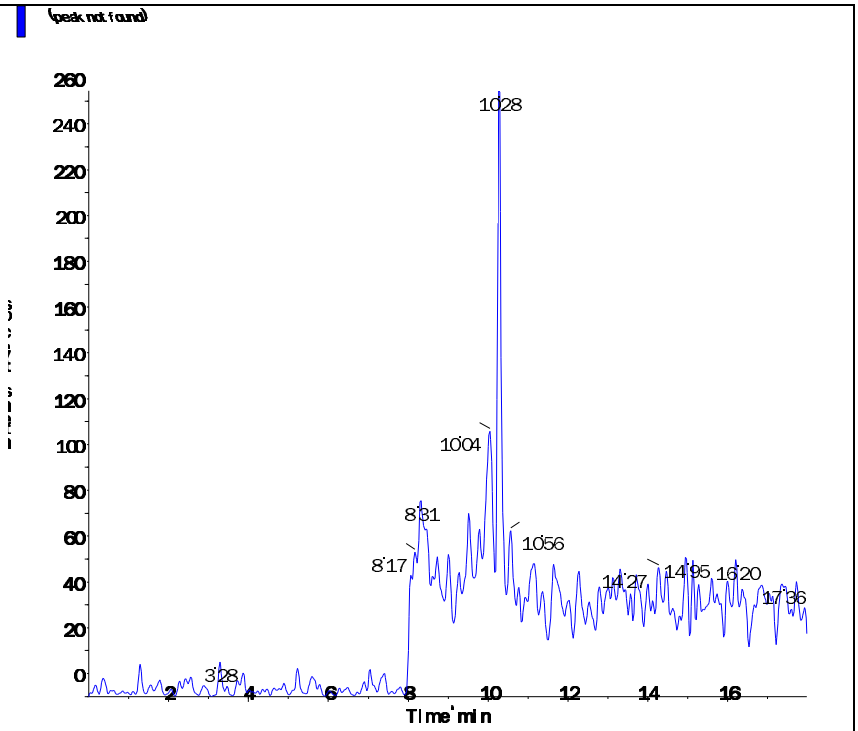

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

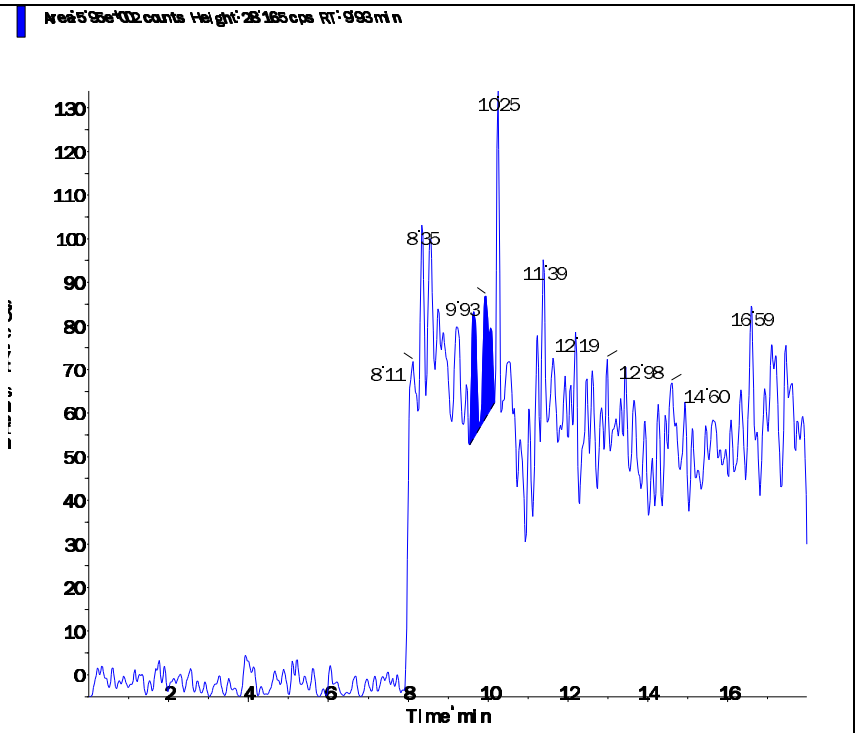

s.dataFile Page 2 of 2

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Data File	LM33421.wiff	**Result Table**	022616_JWR.rdb
Acquisition Date	2/27/2016 12:24:22 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG558991-03 LCS (2.0ug/kg)	**Injection Vial**	16.00
Data File	LM33421.wiff	**Injection Volume**	10.00
Acquisition Date	2/27/2016 12:24:22 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022616_JWR.rdb
Sample ID	WG558991-03	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.240e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.900e+04	9.98	N/A	0.22
Perchlorate conf	1.250e+04	9.97	N/A	0.192

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

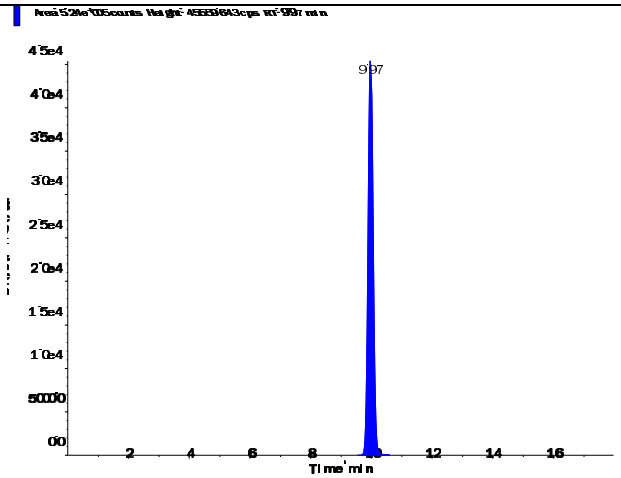

s.dataFile Page 1 of 2

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Printed: 2/27/2016 2:03 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.98 (9.94) min Calculated conc: 0.22 ng/ml Area Ratio: 0.074 Sample Type: (Unknown)	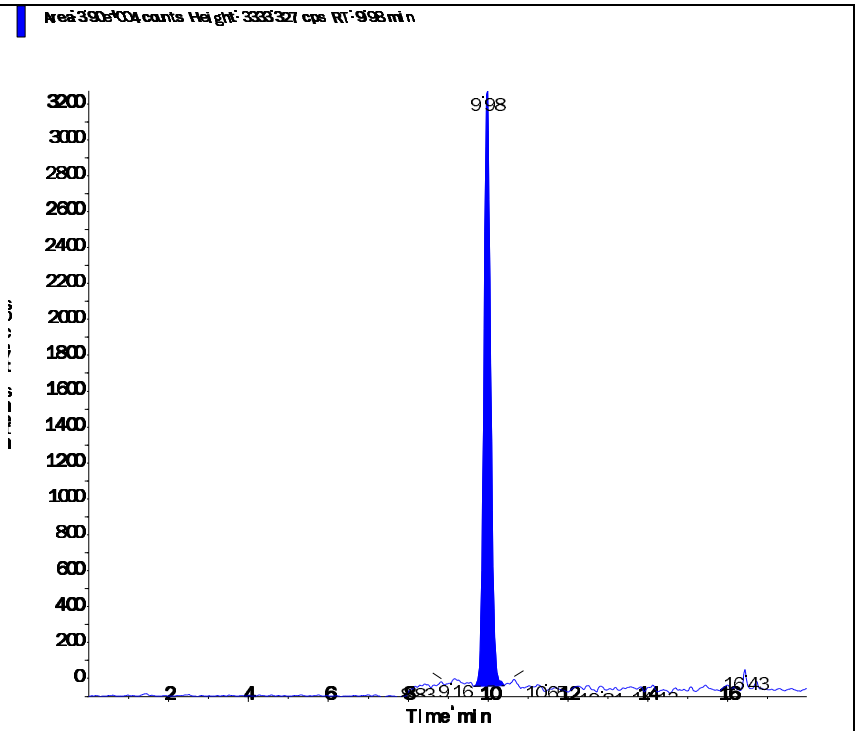
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.97 (9.92) min Calculated conc: 0.192 ng/ml Area Ratio: 0.024 Sample Type: (Unknown)	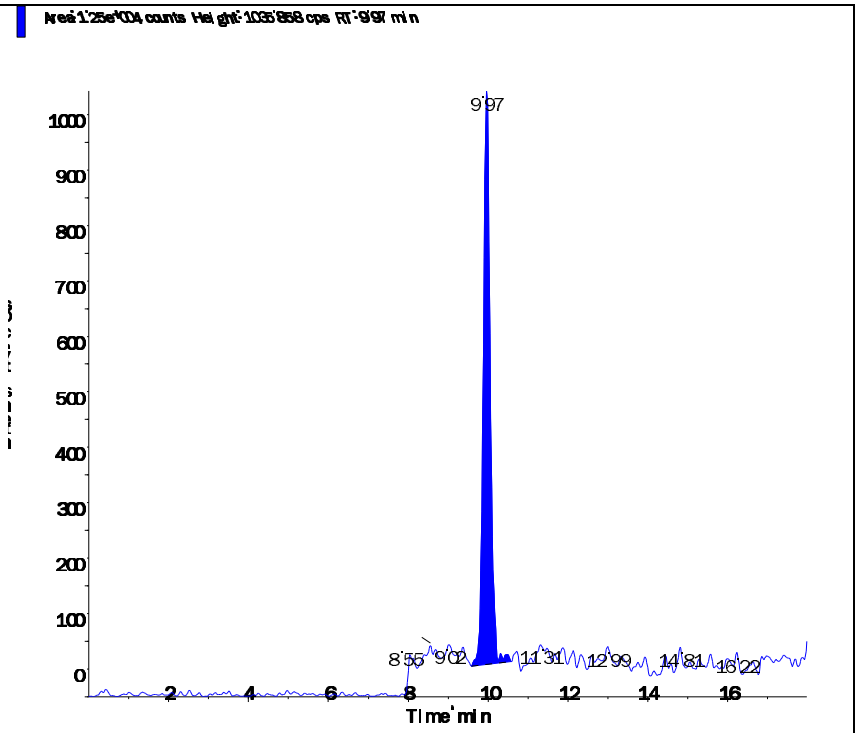

s.dataFile Page 2 of 2

2.3 General Chemistry Data

2.3.1 Percent Solids Data

2.3.1.1 Raw Data

Example Percent Solids Calculations

1.0 Calculating the percent solids of a sample.

$$\%Solids = \frac{WT3 - WT1}{WT2 - WT1} \times F$$

Where:	
WT1 = Weight, in grams, of the empty container	1.30 g
WT2 = Weight, in grams, of the container and wet sample	21.274 g
WT3 = Weight, in grams, of the container and dried sample	5.21 g
F = Factor to get units as percent weight	100
%Solids = Percent solids present in sample.	19.58%

2.0 Calculating the percent moisture of a sample.

% Moisture = 100 - % Solids from 1.0 calculation

Microbac Laboratories Inc.

PERCENT SOLIDS

Workgroup (AAB#): WG558918 Analyst: AC ADT(on): 02/26/2016 13:03
Method: D2216-90 Instrument: BAL021 ADT(off): 02/29/2016 08:13
SOP: K0003 Rev: 14

SAMPLE NUMBER	EMPTY PAN WT 1	WET WT 2	DRY WT 3A	DRY WT 3B	DRY WT 3C	PERCENT SOLID	PERCENT MOISTURE
L16021267-01	1.297	18.221	18.118			99.39	
L16021268-01	1.296	20.281	20.249			99.83	
L16021268-02	1.296	20.436	20.388			99.75	
L16021306-01	1.296	24.066	20.429			84.03	
L16021306-02	1.299	20.487	18.188			88.02	
L16021306-03	1.299	20.487	18.188			88.02	
L16021306-04	1.299	20.487	18.188			88.02	
L16021306-05	1.298	22.77	19.592			85.20	
L16021306-06	1.299	21.483	17.438			79.96	
L16021343-01	1.295	20.168	2.875			8.372	
WG558918-01	1.299	21.483	17.438			79.96	20.04
WG558918-02	1.297	21.166	17.153			79.80	20.20

Analyst: Andrea R Cochran

PERCENT_SOLIDS - Modified 04/24/2008
PDF ID: 4649704
Report generated: 02/29/2016 08:16

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
March 2, 2016

---

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
March 02, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
March 02, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Stephanie Mossburg	Project Manager: Debra Richmon	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): Kayla Pallanes	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Kayla Pallanes	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205			
Turn Around Time: STANDARD	pH:	Program:	
Project Name/Location: Longhorn			
Project Number: 60274185 0013B m41824			

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOCS 8260	PERCHLORATE 6850	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
	18DPT05(4.5-5)250216			2/25/16	0930		X	S	2	X	X					
	18DPT05(10-11)250216				0940		X	S	2	X	X					
	18DPT05(10-11)250216MS				0940		X	S	2	X	X					
	18DPT05(10-11)250216MSD				0940		X	S	2	X	X					
	18DPT05(15-15.5)250216				0950		X	S	2	X	X					
	18DPT05(20-20.5)250216			2/25/16	0945		X	S	2	X	X					

Comments: ~~STANDARD TAT~~ 48 HR TAT

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Kayla Pallanes	2/25/16	1630					
Relinquished by: (Signature)	Date	Time	Re (Si			Time	Remarks:

Microbac OVD
Received: 02/26/2016 09:52
By: BRENDA GREGORY 221000082494
Brenda Gregory

*Homogenize all composite samples prior to analysis

...anager, Pink QA/QC Manager

00694399

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16021306
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 01-MAR-2016

Samplenum	Container ID	Products
L16021306-01	706049	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-FEB-2016 10:28	CLS		
2	ANALYZ	V1	ORG4	26-FEB-2016 11:26	TMB	CLS	

Samplenum	Container ID	Products
L16021306-01	706050	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-FEB-2016 10:28	CLS		
2	PREP	W1	DIG	26-FEB-2016 12:59	CLS	AC	
3	STORE	DIG	W1	26-FEB-2016 13:11	CLS	AC	
4	ANALYZ	W1	SEM	26-FEB-2016 15:03	JWR	CLS	
5	STORE	SEM	A1	26-FEB-2016 22:11	AZH	JWR	
6	ANALYZ*	DIG	SEMI	27-FEB-2016 14:54	JWR	CLS	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16021306-02	706051	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-FEB-2016 10:28	CLS		
2	ANALYZ	V1	ORG4	26-FEB-2016 11:26	TMB	CLS	

Samplenum	Container ID	Products
L16021306-02	706052	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-FEB-2016 10:28	CLS		
2	PREP	W1	DIG	26-FEB-2016 12:59	CLS	AC	
3	STORE	DIG	W1	26-FEB-2016 13:11	CLS	AC	
4	ANALYZ	W1	SEM	26-FEB-2016 15:03	JWR	CLS	
5	STORE	SEM	A1	26-FEB-2016 22:11	AZH	JWR	
6	ANALYZ*	DIG	SEMI	27-FEB-2016 14:54	JWR	CLS	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16021306
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 01-MAR-2016

Samplenum	Container ID	Products
L16021306-03	706053	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-FEB-2016 10:28	CLS		
2	ANALYZ	V1	ORG4	26-FEB-2016 11:26	TMB	CLS	

Samplenum	Container ID	Products
L16021306-03	706054	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-FEB-2016 10:28	CLS		
2	PREP	W1	DIG	26-FEB-2016 12:59	CLS	AC	
3	STORE	DIG	W1	26-FEB-2016 13:11	CLS	AC	
4	ANALYZ	W1	SEM	26-FEB-2016 15:03	JWR	CLS	
5	STORE	SEM	A1	26-FEB-2016 22:11	AZH	JWR	
6	ANALYZ*	DIG	SEMI	27-FEB-2016 14:54	JWR	CLS	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16021306-04	706055	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-FEB-2016 10:28	CLS		
2	ANALYZ	V1	ORG4	26-FEB-2016 11:26	TMB	CLS	

Samplenum	Container ID	Products
L16021306-04	706056	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-FEB-2016 10:28	CLS		
2	PREP	W1	DIG	26-FEB-2016 12:59	CLS	AC	
3	STORE	DIG	W1	26-FEB-2016 13:11	CLS	AC	
4	ANALYZ	W1	SEM	26-FEB-2016 15:04	JWR	CLS	
5	STORE	SEM	A1	26-FEB-2016 22:11	AZH	JWR	
6	ANALYZ*	DIG	SEMI	27-FEB-2016 14:54	JWR	CLS	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16021306
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 01-MAR-2016

Samplenum	Container ID	Products
L16021306-05	706057	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-FEB-2016 10:28	CLS		
2	ANALYZ	V1	ORG4	26-FEB-2016 11:26	TMB	CLS	

Samplenum	Container ID	Products
L16021306-05	706058	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-FEB-2016 10:28	CLS		
2	PREP	W1	DIG	26-FEB-2016 12:59	CLS	AC	
3	STORE	DIG	W1	26-FEB-2016 13:11	CLS	AC	
4	ANALYZ	W1	SEM	26-FEB-2016 15:04	JWR	CLS	
5	STORE	SEM	A1	26-FEB-2016 22:11	AZH	JWR	
6	ANALYZ*	DIG	SEMI	27-FEB-2016 14:54	JWR	CLS	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16021306-06	706059	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-FEB-2016 10:28	CLS		
2	ANALYZ	V1	ORG4	26-FEB-2016 11:26	TMB	CLS	

Samplenum	Container ID	Products
L16021306-06	706060	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-FEB-2016 10:28	CLS		
2	PREP	W1	DIG	26-FEB-2016 12:59	CLS	AC	
3	STORE	DIG	W1	26-FEB-2016 13:11	CLS	AC	
4	ANALYZ	W1	SEM	26-FEB-2016 15:04	JWR	CLS	
5	STORE	SEM	A1	26-FEB-2016 22:11	AZH	JWR	
6	ANALYZ*	DIG	SEMI	27-FEB-2016 14:54	JWR	CLS	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16021357

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on March 03 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00110635	H	2.0		J2317165938	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	NA
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	NA

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18DPT01(5-5.5)250216	L16021357-01	02/25/2016 11:30	02/27/2016 10:39
18DPT01(9.5-10)250216	L16021357-02	02/25/2016 11:37	02/27/2016 10:39
18DPT01(15-15.5)250216	L16021357-03	02/25/2016 14:23	02/27/2016 10:39
18DPT01(22.5-23)250216	L16021357-04	02/25/2016 16:00	02/27/2016 10:39
18DPT01(24.5-25)250216	L16021357-05	02/25/2016 16:30	02/27/2016 10:39
18DPT01(27-27.5)250216	L16021357-06	02/25/2016 16:35	02/27/2016 10:39

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16021357
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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2.1.1.3 Sample Data 92
2.1.1.4 Standards Data 117
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1.0 Summary Data

1.1 Narratives

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021357
Project Name:		**Method:**	8260
Prep Batch Number(s):	559151	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-01 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2016-03-01 19:49:43

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021357
Project Name:		**Method:**	8260
Prep Batch Number(s):	559151	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-01 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021357
Project Name:		**Method:**	8260
Prep Batch Number(s):	559151	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-01 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021357
Project Name:		**Method:**	8260
Prep Batch Number(s):	559151	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-01 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?		X			1
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021357
Project Name:		**Method:**	8260
Prep Batch Number(s):	559151	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-01 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021357
Project Name:		**Method:**	8260
Prep Batch Number(s):	559151	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-01 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1)Dichlorodifluoromethane exceeded the UCL in the ICV.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021357
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559142	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-02 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-03-02 15:38:40

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021357
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559142	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-02 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021357
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559142	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-02 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021357
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559142	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-02 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021357
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559142	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-02 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021357
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559142	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-02 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021357
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559108	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-01 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2016-03-01 18:48:24

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021357
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559108	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-01 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?			X		
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?			X		
Were sample detection limits reported for all analytes not detected?			X		
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?			X		
Were blanks analyzed at the appropriate frequency?			X		
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?			X		
Were blank concentrations < MQL?			X		
Laboratory control samples (LCS):			X		
Were all COCs included in the LCS?			X		

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021357
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559108	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-01 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?			X		
Were LCSs analyzed at the required frequency?			X		
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?			X		
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?			X		
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?			X		
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?			X		
Are unadjusted MQLs and DCSs included in the laboratory data package?			X		
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?			X		
Were percent RSDs or correlation coefficient criteria met?			X		

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021357
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559108	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-01 00:00:00		

Was the number of standards recommended in the method used for all analytes?			X		
Were all points generated between the lowest and highest standard used to calculate the curve?			X		
Are ICAL data available for all instruments used?			X		
Has the initial calibration curve been verified using an appropriate second source standard?			X		
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021357
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559108	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-01 00:00:00		

Was a MDL study performed for each reported analyte?			X		
Is the MDL either adjusted or supported by the analysis of DCSs?			X		
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?			X		
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021357
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559108	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-01 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021357-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT01(5-5.5)250216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:19
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	02/29/2016 21:00
Collect Date:	02/25/2016 11:30	**Dilution:**	1	**File ID:**	9M972974
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	7.78	J	25.0	12.5	6.24
Benzene	71-43-2	1.25	U	6.24	1.25	0.624
Bromobenzene	108-86-1	1.25	U	6.24	1.25	0.624
Bromochloromethane	74-97-5	2.50	U	6.24	2.50	1.25
Bromodichloromethane	75-27-4	1.25	U	6.24	1.25	0.624
Bromoform	75-25-2	1.25	U	6.24	1.25	0.624
Bromomethane	74-83-9	2.50	U	6.24	2.50	1.25
2-Butanone	78-93-3	6.24	U	12.5	6.24	3.12
n-Butylbenzene	104-51-8	1.25	U	6.24	1.25	0.624
sec-Butylbenzene	135-98-8	1.25	U	6.24	1.25	0.624
tert-Butylbenzene	98-06-6	0.778	J	6.24	1.25	0.624
Carbon disulfide	75-15-0	1.25	U	6.24	1.25	0.624
Carbon tetrachloride	56-23-5	1.25	U	6.24	1.25	0.624
Chlorobenzene	108-90-7	1.25	U	6.24	1.25	0.624
Chlorodibromomethane	124-48-1	1.25	U	6.24	1.25	0.624
Chloroethane	75-00-3	2.50	U	6.24	2.50	1.25
Chloroform	67-66-3	1.25	U	6.24	1.25	0.624
Chloromethane	74-87-3	5.00	U	12.5	5.00	2.50
2-Chlorotoluene	95-49-8	1.25	U	6.24	1.25	0.624
4-Chlorotoluene	106-43-4	1.25	U	6.24	1.25	0.624
1,2-Dibromo-3-chloropropane	96-12-8	5.00	U	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	6.24	1.25	0.624
Dibromomethane	74-95-3	1.25	U	6.24	1.25	0.624
1,2-Dichlorobenzene	95-50-1	1.25	U	6.24	1.25	0.624
1,3-Dichlorobenzene	541-73-1	1.25	U	6.24	1.25	0.624
1,4-Dichlorobenzene	106-46-7	1.25	U	6.24	1.25	0.624
Dichlorodifluoromethane	75-71-8	2.50	U	6.24	2.50	1.25
1,1-Dichloroethane	75-34-3	2.50	U	6.24	2.50	1.25
1,2-Dichloroethane	107-06-2	1.25	U	6.24	1.25	0.624
1,1-Dichloroethene	75-35-4	1.25	U	6.24	1.25	0.624
cis-1,2-Dichloroethene	156-59-2	1.25	U	6.24	1.25	0.624
trans-1,2-Dichloroethene	156-60-5	1.25	U	6.24	1.25	0.624

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.25	U	6.24	1.25	0.624
1,3-Dichloropropane	142-28-9	1.25	U	6.24	1.25	0.624
2,2-Dichloropropane	594-20-7	1.25	U	6.24	1.25	0.624
cis-1,3-Dichloropropene	10061-01-5	1.25	U	6.24	1.25	0.624
trans-1,3-Dichloropropene	10061-02-6	1.25	U	6.24	1.25	0.624
1,1-Dichloropropene	563-58-6	1.25	U	6.24	1.25	0.624
Ethylbenzene	100-41-4	1.25	U	6.24	1.25	0.624
2-Hexanone	591-78-6	6.24	U	12.5	6.24	3.12
Hexachlorobutadiene	87-68-3	1.25	U	6.24	1.25	0.624
Isopropylbenzene	98-82-8	1.25	U	6.24	1.25	0.624
p-Isopropyltoluene	99-87-6	21.8		6.24	1.25	0.624
4-Methyl-2-pentanone	108-10-1	6.24	U	12.5	6.24	3.12
Methylene chloride	75-09-2	2.50	U	6.24	2.50	1.25
Naphthalene	91-20-3	1.25	U	6.24	1.25	0.624
n-Propylbenzene	103-65-1	1.25	U	6.24	1.25	0.624
Styrene	100-42-5	1.25	U	6.24	1.25	0.624
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	6.24	1.25	0.624
1,1,2,2-Tetrachloroethane	79-34-5	1.25	U	6.24	1.25	0.624
Tetrachloroethene	127-18-4	1.25	U	6.24	1.25	0.624
Toluene	108-88-3	1.25	U	6.24	1.25	0.624
1,2,3-Trichlorobenzene	87-61-6	1.25	U	6.24	1.25	0.624
1,2,4-Trichlorobenzene	120-82-1	1.25	U	6.24	1.25	0.624
1,1,1-Trichloroethane	71-55-6	1.25	U	6.24	1.25	0.624
1,1,2-Trichloroethane	79-00-5	1.25	U	6.24	1.25	0.624
Trichloroethene	79-01-6	1.25	U	6.24	1.25	0.624
Trichlorofluoromethane	75-69-4	2.50	U	6.24	2.50	1.25
1,2,3-Trichloropropane	96-18-4	2.50	U	6.24	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	6.24	1.25	0.624
1,3,5-Trimethylbenzene	108-67-8	1.25	U	6.24	1.25	0.624
Vinyl chloride	75-01-4	2.50	U	6.24	2.50	1.25
o-Xylene	95-47-6	1.25	U	6.24	1.25	0.624
m-,p-Xylene	179601-23-1	1.25	U	6.24	1.25	0.624

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.7	80	120	
1,2-Dichloroethane-d4	102	80	120	
Toluene-d8	107	85	115	
4-Bromofluorobenzene	113	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021357-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT01(5-5.5)250216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	02/29/2016 22:50
Collect Date:	02/25/2016 11:30	**Dilution:**	1	**File ID:**	1LM.LM33483
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.34	U	4.66	2.34	1.17

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021357-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT01(9.5-10)250216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:21
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	02/29/2016 21:30
Collect Date:	02/25/2016 11:37	**Dilution:**	1	**File ID:**	9M972975
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	88.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	10.9	U	21.7	10.9	5.43
Benzene	71-43-2	1.09	U	5.43	1.09	0.543
Bromobenzene	108-86-1	1.09	U	5.43	1.09	0.543
Bromochloromethane	74-97-5	2.18	U	5.43	2.18	1.09
Bromodichloromethane	75-27-4	1.09	U	5.43	1.09	0.543
Bromoform	75-25-2	1.09	U	5.43	1.09	0.543
Bromomethane	74-83-9	2.18	U	5.43	2.18	1.09
2-Butanone	78-93-3	5.42	U	10.9	5.42	2.71
n-Butylbenzene	104-51-8	1.09	U	5.43	1.09	0.543
sec-Butylbenzene	135-98-8	1.09	U	5.43	1.09	0.543
tert-Butylbenzene	98-06-6	1.09	U	5.43	1.09	0.543
Carbon disulfide	75-15-0	1.09	U	5.43	1.09	0.543
Carbon tetrachloride	56-23-5	1.09	U	5.43	1.09	0.543
Chlorobenzene	108-90-7	1.09	U	5.43	1.09	0.543
Chlorodibromomethane	124-48-1	1.09	U	5.43	1.09	0.543
Chloroethane	75-00-3	2.18	U	5.43	2.18	1.09
Chloroform	67-66-3	1.09	U	5.43	1.09	0.543
Chloromethane	74-87-3	4.34	U	10.9	4.34	2.17
2-Chlorotoluene	95-49-8	1.09	U	5.43	1.09	0.543
4-Chlorotoluene	106-43-4	1.09	U	5.43	1.09	0.543
1,2-Dibromo-3-chloropropane	96-12-8	4.34	U	10.9	4.34	2.17
1,2-Dibromoethane	106-93-4	1.09	U	5.43	1.09	0.543
Dibromomethane	74-95-3	1.09	U	5.43	1.09	0.543
1,2-Dichlorobenzene	95-50-1	1.09	U	5.43	1.09	0.543
1,3-Dichlorobenzene	541-73-1	1.09	U	5.43	1.09	0.543
1,4-Dichlorobenzene	106-46-7	1.09	U	5.43	1.09	0.543
Dichlorodifluoromethane	75-71-8	2.18	U	5.43	2.18	1.09
1,1-Dichloroethane	75-34-3	2.18	U	5.43	2.18	1.09
1,2-Dichloroethane	107-06-2	1.09	U	5.43	1.09	0.543
1,1-Dichloroethene	75-35-4	1.09	U	5.43	1.09	0.543
cis-1,2-Dichloroethene	156-59-2	1.09	U	5.43	1.09	0.543

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.09	U	5.43	1.09	0.543
1,2-Dichloropropane	78-87-5	1.09	U	5.43	1.09	0.543
1,3-Dichloropropane	142-28-9	1.09	U	5.43	1.09	0.543
2,2-Dichloropropane	594-20-7	1.09	U	5.43	1.09	0.543
cis-1,3-Dichloropropene	10061-01-5	1.09	U	5.43	1.09	0.543
trans-1,3-Dichloropropene	10061-02-6	1.09	U	5.43	1.09	0.543
1,1-Dichloropropene	563-58-6	1.09	U	5.43	1.09	0.543
Ethylbenzene	100-41-4	1.09	U	5.43	1.09	0.543
2-Hexanone	591-78-6	5.42	U	10.9	5.42	2.71
Hexachlorobutadiene	87-68-3	1.09	U	5.43	1.09	0.543
Isopropylbenzene	98-82-8	1.09	U	5.43	1.09	0.543
p-Isopropyltoluene	99-87-6	1.09	U	5.43	1.09	0.543
4-Methyl-2-pentanone	108-10-1	5.42	U	10.9	5.42	2.71
Methylene chloride	75-09-2	2.18	U	5.43	2.18	1.09
Naphthalene	91-20-3	1.09	U	5.43	1.09	0.543
n-Propylbenzene	103-65-1	1.09	U	5.43	1.09	0.543
Styrene	100-42-5	1.09	U	5.43	1.09	0.543
1,1,1,2-Tetrachloroethane	630-20-6	1.09	U	5.43	1.09	0.543
1,1,2,2-Tetrachloroethane	79-34-5	1.09	U	5.43	1.09	0.543
Tetrachloroethene	127-18-4	1.09	U	5.43	1.09	0.543
Toluene	108-88-3	1.09	U	5.43	1.09	0.543
1,2,3-Trichlorobenzene	87-61-6	1.09	U	5.43	1.09	0.543
1,2,4-Trichlorobenzene	120-82-1	1.09	U	5.43	1.09	0.543
1,1,1-Trichloroethane	71-55-6	1.09	U	5.43	1.09	0.543
1,1,2-Trichloroethane	79-00-5	1.09	U	5.43	1.09	0.543
Trichloroethene	79-01-6	1.09	U	5.43	1.09	0.543
Trichlorofluoromethane	75-69-4	2.18	U	5.43	2.18	1.09
1,2,3-Trichloropropane	96-18-4	2.18	U	5.43	2.18	1.09
1,2,4-Trimethylbenzene	95-63-6	1.09	U	5.43	1.09	0.543
1,3,5-Trimethylbenzene	108-67-8	1.09	U	5.43	1.09	0.543
Vinyl chloride	75-01-4	2.18	U	5.43	2.18	1.09
o-Xylene	95-47-6	1.09	U	5.43	1.09	0.543
m-,p-Xylene	179601-23-1	1.09	U	5.43	1.09	0.543

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	80	120	
1,2-Dichloroethane-d4	99.4	80	120	
Toluene-d8	109	85	115	
4-Bromofluorobenzene	111	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021357-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT01(9.5-10)250216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	02/29/2016 23:46
Collect Date:	02/25/2016 11:37	**Dilution:**	1	**File ID:**	1LM.LM33486
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	88.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	20.7		4.35	2.18	1.09

Certificate of Analysis

Sample #:	L16021357-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT01(15-15.5)250216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:22
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	02/29/2016 22:01
Collect Date:	02/25/2016 14:23	**Dilution:**	1	**File ID:**	9M972976
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	90.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.1	U	22.3	11.1	5.57
Benzene	71-43-2	1.11	U	5.57	1.11	0.557
Bromobenzene	108-86-1	1.11	U	5.57	1.11	0.557
Bromochloromethane	74-97-5	2.22	U	5.57	2.22	1.11
Bromodichloromethane	75-27-4	1.11	U	5.57	1.11	0.557
Bromoform	75-25-2	1.11	U	5.57	1.11	0.557
Bromomethane	74-83-9	2.22	U	5.57	2.22	1.11
2-Butanone	78-93-3	5.58	U	11.1	5.58	2.79
n-Butylbenzene	104-51-8	1.11	U	5.57	1.11	0.557
sec-Butylbenzene	135-98-8	1.11	U	5.57	1.11	0.557
tert-Butylbenzene	98-06-6	1.11	U	5.57	1.11	0.557
Carbon disulfide	75-15-0	1.11	U	5.57	1.11	0.557
Carbon tetrachloride	56-23-5	1.11	U	5.57	1.11	0.557
Chlorobenzene	108-90-7	1.11	U	5.57	1.11	0.557
Chlorodibromomethane	124-48-1	1.11	U	5.57	1.11	0.557
Chloroethane	75-00-3	2.22	U	5.57	2.22	1.11
Chloroform	67-66-3	1.11	U	5.57	1.11	0.557
Chloromethane	74-87-3	4.46	U	11.1	4.46	2.23
2-Chlorotoluene	95-49-8	1.11	U	5.57	1.11	0.557
4-Chlorotoluene	106-43-4	1.11	U	5.57	1.11	0.557

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	4.46	U	11.1	4.46	2.23
1,2-Dibromoethane	106-93-4	1.11	U	5.57	1.11	0.557
Dibromomethane	74-95-3	1.11	U	5.57	1.11	0.557
1,2-Dichlorobenzene	95-50-1	1.11	U	5.57	1.11	0.557
1,3-Dichlorobenzene	541-73-1	1.11	U	5.57	1.11	0.557
1,4-Dichlorobenzene	106-46-7	1.11	U	5.57	1.11	0.557
Dichlorodifluoromethane	75-71-8	2.22	U	5.57	2.22	1.11
1,1-Dichloroethane	75-34-3	2.22	U	5.57	2.22	1.11
1,2-Dichloroethane	107-06-2	1.11	U	5.57	1.11	0.557
1,1-Dichloroethene	75-35-4	1.11	U	5.57	1.11	0.557
cis-1,2-Dichloroethene	156-59-2	1.11	U	5.57	1.11	0.557
trans-1,2-Dichloroethene	156-60-5	1.11	U	5.57	1.11	0.557
1,2-Dichloropropane	78-87-5	1.11	U	5.57	1.11	0.557
1,3-Dichloropropane	142-28-9	1.11	U	5.57	1.11	0.557
2,2-Dichloropropane	594-20-7	1.11	U	5.57	1.11	0.557
cis-1,3-Dichloropropene	10061-01-5	1.11	U	5.57	1.11	0.557
trans-1,3-Dichloropropene	10061-02-6	1.11	U	5.57	1.11	0.557
1,1-Dichloropropene	563-58-6	1.11	U	5.57	1.11	0.557
Ethylbenzene	100-41-4	1.11	U	5.57	1.11	0.557
2-Hexanone	591-78-6	5.58	U	11.1	5.58	2.79
Hexachlorobutadiene	87-68-3	1.11	U	5.57	1.11	0.557
Isopropylbenzene	98-82-8	1.11	U	5.57	1.11	0.557
p-Isopropyltoluene	99-87-6	1.11	U	5.57	1.11	0.557
4-Methyl-2-pentanone	108-10-1	5.58	U	11.1	5.58	2.79
Methylene chloride	75-09-2	2.22	U	5.57	2.22	1.11
Naphthalene	91-20-3	1.11	U	5.57	1.11	0.557
n-Propylbenzene	103-65-1	1.11	U	5.57	1.11	0.557
Styrene	100-42-5	1.11	U	5.57	1.11	0.557
1,1,1,2-Tetrachloroethane	630-20-6	1.11	U	5.57	1.11	0.557
1,1,2,2-Tetrachloroethane	79-34-5	1.11	U	5.57	1.11	0.557
Tetrachloroethene	127-18-4	1.11	U	5.57	1.11	0.557
Toluene	108-88-3	1.11	U	5.57	1.11	0.557
1,2,3-Trichlorobenzene	87-61-6	1.11	U	5.57	1.11	0.557
1,2,4-Trichlorobenzene	120-82-1	1.11	U	5.57	1.11	0.557
1,1,1-Trichloroethane	71-55-6	1.11	U	5.57	1.11	0.557
1,1,2-Trichloroethane	79-00-5	1.11	U	5.57	1.11	0.557
Trichloroethene	79-01-6	1.11	U	5.57	1.11	0.557
Trichlorofluoromethane	75-69-4	2.22	U	5.57	2.22	1.11
1,2,3-Trichloropropane	96-18-4	2.22	U	5.57	2.22	1.11

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.11	U	5.57	1.11	0.557
1,3,5-Trimethylbenzene	108-67-8	1.11	U	5.57	1.11	0.557
Vinyl chloride	75-01-4	2.22	U	5.57	2.22	1.11
o-Xylene	95-47-6	1.11	U	5.57	1.11	0.557
m-,p-Xylene	179601-23-1	1.11	U	5.57	1.11	0.557

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.5	80	120	
1,2-Dichloroethane-d4	99.4	80	120	
Toluene-d8	109	85	115	
4-Bromofluorobenzene	111	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021357-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT01(15-15.5)250216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 00:05
Collect Date:	02/25/2016 14:23	**Dilution:**	1	**File ID:**	1LM.LM33487
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	90.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	7.54		4.32	2.16	1.08

Certificate of Analysis

Sample #:	L16021357-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT01(22.5-23)250216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:22
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	02/29/2016 22:32
Collect Date:	02/25/2016 16:00	**Dilution:**	1	**File ID:**	9M972977
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	9.77	J	22.3	11.2	5.58
Benzene	71-43-2	1.12	U	5.58	1.12	0.558
Bromobenzene	108-86-1	1.12	U	5.58	1.12	0.558
Bromochloromethane	74-97-5	2.24	U	5.58	2.24	1.12
Bromodichloromethane	75-27-4	1.12	U	5.58	1.12	0.558
Bromoform	75-25-2	1.12	U	5.58	1.12	0.558
Bromomethane	74-83-9	2.24	U	5.58	2.24	1.12
2-Butanone	78-93-3	5.58	U	11.2	5.58	2.79
n-Butylbenzene	104-51-8	1.12	U	5.58	1.12	0.558
sec-Butylbenzene	135-98-8	1.12	U	5.58	1.12	0.558
tert-Butylbenzene	98-06-6	1.12	U	5.58	1.12	0.558
Carbon disulfide	75-15-0	1.12	U	5.58	1.12	0.558
Carbon tetrachloride	56-23-5	1.12	U	5.58	1.12	0.558
Chlorobenzene	108-90-7	1.12	U	5.58	1.12	0.558
Chlorodibromomethane	124-48-1	1.12	U	5.58	1.12	0.558
Chloroethane	75-00-3	2.24	U	5.58	2.24	1.12
Chloroform	67-66-3	1.12	U	5.58	1.12	0.558
Chloromethane	74-87-3	4.46	U	11.2	4.46	2.23
2-Chlorotoluene	95-49-8	1.12	U	5.58	1.12	0.558
4-Chlorotoluene	106-43-4	1.12	U	5.58	1.12	0.558

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Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	4.46	U	11.2	4.46	2.23
1,2-Dibromoethane	106-93-4	1.12	U	5.58	1.12	0.558
Dibromomethane	74-95-3	1.12	U	5.58	1.12	0.558
1,2-Dichlorobenzene	95-50-1	1.12	U	5.58	1.12	0.558
1,3-Dichlorobenzene	541-73-1	1.12	U	5.58	1.12	0.558
1,4-Dichlorobenzene	106-46-7	1.12	U	5.58	1.12	0.558
Dichlorodifluoromethane	75-71-8	2.24	U	5.58	2.24	1.12
1,1-Dichloroethane	75-34-3	2.24	U	5.58	2.24	1.12
1,2-Dichloroethane	107-06-2	1.12	U	5.58	1.12	0.558
1,1-Dichloroethene	75-35-4	1.12	U	5.58	1.12	0.558
cis-1,2-Dichloroethene	156-59-2	1.12	U	5.58	1.12	0.558
trans-1,2-Dichloroethene	156-60-5	1.12	U	5.58	1.12	0.558
1,2-Dichloropropane	78-87-5	1.12	U	5.58	1.12	0.558
1,3-Dichloropropane	142-28-9	1.12	U	5.58	1.12	0.558
2,2-Dichloropropane	594-20-7	1.12	U	5.58	1.12	0.558
cis-1,3-Dichloropropene	10061-01-5	1.12	U	5.58	1.12	0.558
trans-1,3-Dichloropropene	10061-02-6	1.12	U	5.58	1.12	0.558
1,1-Dichloropropene	563-58-6	1.12	U	5.58	1.12	0.558
Ethylbenzene	100-41-4	1.12	U	5.58	1.12	0.558
2-Hexanone	591-78-6	5.58	U	11.2	5.58	2.79
Hexachlorobutadiene	87-68-3	1.12	U	5.58	1.12	0.558
Isopropylbenzene	98-82-8	1.12	U	5.58	1.12	0.558
p-Isopropyltoluene	99-87-6	1.12	U	5.58	1.12	0.558
4-Methyl-2-pentanone	108-10-1	5.58	U	11.2	5.58	2.79
Methylene chloride	75-09-2	2.24	U	5.58	2.24	1.12
Naphthalene	91-20-3	1.12	U	5.58	1.12	0.558
n-Propylbenzene	103-65-1	1.12	U	5.58	1.12	0.558
Styrene	100-42-5	1.12	U	5.58	1.12	0.558
1,1,1,2-Tetrachloroethane	630-20-6	1.12	U	5.58	1.12	0.558
1,1,2,2-Tetrachloroethane	79-34-5	1.12	U	5.58	1.12	0.558
Tetrachloroethene	127-18-4	1.12	U	5.58	1.12	0.558
Toluene	108-88-3	1.12	U	5.58	1.12	0.558
1,2,3-Trichlorobenzene	87-61-6	1.12	U	5.58	1.12	0.558
1,2,4-Trichlorobenzene	120-82-1	1.12	U	5.58	1.12	0.558
1,1,1-Trichloroethane	71-55-6	1.12	U	5.58	1.12	0.558
1,1,2-Trichloroethane	79-00-5	1.12	U	5.58	1.12	0.558
Trichloroethene	79-01-6	1.12	U	5.58	1.12	0.558
Trichlorofluoromethane	75-69-4	2.24	U	5.58	2.24	1.12
1,2,3-Trichloropropane	96-18-4	2.24	U	5.58	2.24	1.12

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.12	U	5.58	1.12	0.558
1,3,5-Trimethylbenzene	108-67-8	1.12	U	5.58	1.12	0.558
Vinyl chloride	75-01-4	2.24	U	5.58	2.24	1.12
o-Xylene	95-47-6	1.12	U	5.58	1.12	0.558
m-,p-Xylene	179601-23-1	1.12	U	5.58	1.12	0.558

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.6	80	120	
1,2-Dichloroethane-d4	98.7	80	120	
Toluene-d8	106	85	115	
4-Bromofluorobenzene	116	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021357-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT01(22.5-23)250216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 00:24
Collect Date:	02/25/2016 16:00	**Dilution:**	1	**File ID:**	1LM.LM33488
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	63.0		4.54	2.28	1.14

Certificate of Analysis

Sample #:	L16021357-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT01(24.5-25)250216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:23
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	02/29/2016 23:03
Collect Date:	02/25/2016 16:30	**Dilution:**	1	**File ID:**	9M972978
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	87.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.1	U	22.1	11.1	5.53
Benzene	71-43-2	1.11	U	5.53	1.11	0.553
Bromobenzene	108-86-1	1.11	U	5.53	1.11	0.553
Bromochloromethane	74-97-5	2.22	U	5.53	2.22	1.11
Bromodichloromethane	75-27-4	1.11	U	5.53	1.11	0.553
Bromoform	75-25-2	1.11	U	5.53	1.11	0.553
Bromomethane	74-83-9	2.22	U	5.53	2.22	1.11
2-Butanone	78-93-3	5.52	U	11.1	5.52	2.76
n-Butylbenzene	104-51-8	1.11	U	5.53	1.11	0.553
sec-Butylbenzene	135-98-8	1.11	U	5.53	1.11	0.553
tert-Butylbenzene	98-06-6	1.11	U	5.53	1.11	0.553
Carbon disulfide	75-15-0	1.11	U	5.53	1.11	0.553
Carbon tetrachloride	56-23-5	1.11	U	5.53	1.11	0.553
Chlorobenzene	108-90-7	1.11	U	5.53	1.11	0.553
Chlorodibromomethane	124-48-1	1.11	U	5.53	1.11	0.553
Chloroethane	75-00-3	2.22	U	5.53	2.22	1.11
Chloroform	67-66-3	1.11	U	5.53	1.11	0.553
Chloromethane	74-87-3	4.42	U	11.1	4.42	2.21
2-Chlorotoluene	95-49-8	1.11	U	5.53	1.11	0.553
4-Chlorotoluene	106-43-4	1.11	U	5.53	1.11	0.553

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	4.42	U	11.1	4.42	2.21
1,2-Dibromoethane	106-93-4	1.11	U	5.53	1.11	0.553
Dibromomethane	74-95-3	1.11	U	5.53	1.11	0.553
1,2-Dichlorobenzene	95-50-1	1.11	U	5.53	1.11	0.553
1,3-Dichlorobenzene	541-73-1	1.11	U	5.53	1.11	0.553
1,4-Dichlorobenzene	106-46-7	1.11	U	5.53	1.11	0.553
Dichlorodifluoromethane	75-71-8	2.22	U	5.53	2.22	1.11
1,1-Dichloroethane	75-34-3	2.22	U	5.53	2.22	1.11
1,2-Dichloroethane	107-06-2	1.11	U	5.53	1.11	0.553
1,1-Dichloroethene	75-35-4	1.11	U	5.53	1.11	0.553
cis-1,2-Dichloroethene	156-59-2	1.11	U	5.53	1.11	0.553
trans-1,2-Dichloroethene	156-60-5	1.11	U	5.53	1.11	0.553
1,2-Dichloropropane	78-87-5	1.11	U	5.53	1.11	0.553
1,3-Dichloropropane	142-28-9	1.11	U	5.53	1.11	0.553
2,2-Dichloropropane	594-20-7	1.11	U	5.53	1.11	0.553
cis-1,3-Dichloropropene	10061-01-5	1.11	U	5.53	1.11	0.553
trans-1,3-Dichloropropene	10061-02-6	1.11	U	5.53	1.11	0.553
1,1-Dichloropropene	563-58-6	1.11	U	5.53	1.11	0.553
Ethylbenzene	100-41-4	1.11	U	5.53	1.11	0.553
2-Hexanone	591-78-6	5.52	U	11.1	5.52	2.76
Hexachlorobutadiene	87-68-3	1.11	U	5.53	1.11	0.553
Isopropylbenzene	98-82-8	1.11	U	5.53	1.11	0.553
p-Isopropyltoluene	99-87-6	1.11	U	5.53	1.11	0.553
4-Methyl-2-pentanone	108-10-1	5.52	U	11.1	5.52	2.76
Methylene chloride	75-09-2	2.22	U	5.53	2.22	1.11
Naphthalene	91-20-3	1.11	U	5.53	1.11	0.553
n-Propylbenzene	103-65-1	1.11	U	5.53	1.11	0.553
Styrene	100-42-5	1.11	U	5.53	1.11	0.553
1,1,1,2-Tetrachloroethane	630-20-6	1.11	U	5.53	1.11	0.553
1,1,2,2-Tetrachloroethane	79-34-5	1.11	U	5.53	1.11	0.553
Tetrachloroethene	127-18-4	1.11	U	5.53	1.11	0.553
Toluene	108-88-3	1.11	U	5.53	1.11	0.553
1,2,3-Trichlorobenzene	87-61-6	1.11	U	5.53	1.11	0.553
1,2,4-Trichlorobenzene	120-82-1	1.11	U	5.53	1.11	0.553
1,1,1-Trichloroethane	71-55-6	1.11	U	5.53	1.11	0.553
1,1,2-Trichloroethane	79-00-5	1.11	U	5.53	1.11	0.553
Trichloroethene	79-01-6	1.11	U	5.53	1.11	0.553
Trichlorofluoromethane	75-69-4	2.22	U	5.53	2.22	1.11
1,2,3-Trichloropropane	96-18-4	2.22	U	5.53	2.22	1.11

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.11	U	5.53	1.11	0.553
1,3,5-Trimethylbenzene	108-67-8	1.11	U	5.53	1.11	0.553
Vinyl chloride	75-01-4	2.22	U	5.53	2.22	1.11
o-Xylene	95-47-6	1.11	U	5.53	1.11	0.553
m-,p-Xylene	179601-23-1	1.11	U	5.53	1.11	0.553

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.5	80	120	
1,2-Dichloroethane-d4	95.8	80	120	
Toluene-d8	109	85	115	
4-Bromofluorobenzene	115	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021357-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT01(24.5-25)250216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 00:43
Collect Date:	02/25/2016 16:30	**Dilution:**	1	**File ID:**	1LM.LM33489
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	87.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	47.7		4.48	2.24	1.12

Certificate of Analysis

Sample #:	L16021357-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT01(27-27.5)250216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:23
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	02/29/2016 23:33
Collect Date:	02/25/2016 16:35	**Dilution:**	1	**File ID:**	9M972979
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.7	U	25.4	12.7	6.35
Benzene	71-43-2	1.27	U	6.35	1.27	0.635
Bromobenzene	108-86-1	1.27	U	6.35	1.27	0.635
Bromochloromethane	74-97-5	2.54	U	6.35	2.54	1.27
Bromodichloromethane	75-27-4	1.27	U	6.35	1.27	0.635
Bromoform	75-25-2	1.27	U	6.35	1.27	0.635
Bromomethane	74-83-9	2.54	U	6.35	2.54	1.27
2-Butanone	78-93-3	6.34	U	12.7	6.34	3.17
n-Butylbenzene	104-51-8	1.27	U	6.35	1.27	0.635
sec-Butylbenzene	135-98-8	1.27	U	6.35	1.27	0.635
tert-Butylbenzene	98-06-6	1.27	U	6.35	1.27	0.635
Carbon disulfide	75-15-0	1.27	U	6.35	1.27	0.635
Carbon tetrachloride	56-23-5	1.27	U	6.35	1.27	0.635
Chlorobenzene	108-90-7	1.27	U	6.35	1.27	0.635
Chlorodibromomethane	124-48-1	1.27	U	6.35	1.27	0.635
Chloroethane	75-00-3	2.54	U	6.35	2.54	1.27
Chloroform	67-66-3	1.27	U	6.35	1.27	0.635
Chloromethane	74-87-3	5.08	U	12.7	5.08	2.54
2-Chlorotoluene	95-49-8	1.27	U	6.35	1.27	0.635
4-Chlorotoluene	106-43-4	1.27	U	6.35	1.27	0.635

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Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	5.08	U	12.7	5.08	2.54
1,2-Dibromoethane	106-93-4	1.27	U	6.35	1.27	0.635
Dibromomethane	74-95-3	1.27	U	6.35	1.27	0.635
1,2-Dichlorobenzene	95-50-1	1.27	U	6.35	1.27	0.635
1,3-Dichlorobenzene	541-73-1	1.27	U	6.35	1.27	0.635
1,4-Dichlorobenzene	106-46-7	1.27	U	6.35	1.27	0.635
Dichlorodifluoromethane	75-71-8	2.54	U	6.35	2.54	1.27
1,1-Dichloroethane	75-34-3	2.54	U	6.35	2.54	1.27
1,2-Dichloroethane	107-06-2	1.27	U	6.35	1.27	0.635
1,1-Dichloroethene	75-35-4	1.27	U	6.35	1.27	0.635
cis-1,2-Dichloroethene	156-59-2	1.27	U	6.35	1.27	0.635
trans-1,2-Dichloroethene	156-60-5	1.27	U	6.35	1.27	0.635
1,2-Dichloropropane	78-87-5	1.27	U	6.35	1.27	0.635
1,3-Dichloropropane	142-28-9	1.27	U	6.35	1.27	0.635
2,2-Dichloropropane	594-20-7	1.27	U	6.35	1.27	0.635
cis-1,3-Dichloropropene	10061-01-5	1.27	U	6.35	1.27	0.635
trans-1,3-Dichloropropene	10061-02-6	1.27	U	6.35	1.27	0.635
1,1-Dichloropropene	563-58-6	1.27	U	6.35	1.27	0.635
Ethylbenzene	100-41-4	1.27	U	6.35	1.27	0.635
2-Hexanone	591-78-6	6.34	U	12.7	6.34	3.17
Hexachlorobutadiene	87-68-3	1.27	U	6.35	1.27	0.635
Isopropylbenzene	98-82-8	1.27	U	6.35	1.27	0.635
p-Isopropyltoluene	99-87-6	1.27	U	6.35	1.27	0.635
4-Methyl-2-pentanone	108-10-1	6.34	U	12.7	6.34	3.17
Methylene chloride	75-09-2	2.54	U	6.35	2.54	1.27
Naphthalene	91-20-3	1.27	U	6.35	1.27	0.635
n-Propylbenzene	103-65-1	1.27	U	6.35	1.27	0.635
Styrene	100-42-5	1.27	U	6.35	1.27	0.635
1,1,1,2-Tetrachloroethane	630-20-6	1.27	U	6.35	1.27	0.635
1,1,2,2-Tetrachloroethane	79-34-5	1.27	U	6.35	1.27	0.635
Tetrachloroethene	127-18-4	1.27	U	6.35	1.27	0.635
Toluene	108-88-3	1.27	U	6.35	1.27	0.635
1,2,3-Trichlorobenzene	87-61-6	1.27	U	6.35	1.27	0.635
1,2,4-Trichlorobenzene	120-82-1	1.27	U	6.35	1.27	0.635
1,1,1-Trichloroethane	71-55-6	1.27	U	6.35	1.27	0.635
1,1,2-Trichloroethane	79-00-5	1.27	U	6.35	1.27	0.635
Trichloroethene	79-01-6	1.27	U	6.35	1.27	0.635
Trichlorofluoromethane	75-69-4	2.54	U	6.35	2.54	1.27
1,2,3-Trichloropropane	96-18-4	2.54	U	6.35	2.54	1.27

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Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.27	U	6.35	1.27	0.635
1,3,5-Trimethylbenzene	108-67-8	1.27	U	6.35	1.27	0.635
Vinyl chloride	75-01-4	2.54	U	6.35	2.54	1.27
o-Xylene	95-47-6	1.27	U	6.35	1.27	0.635
m-,p-Xylene	179601-23-1	1.27	U	6.35	1.27	0.635

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.7	80	120	
1,2-Dichloroethane-d4	101	80	120	
Toluene-d8	108	85	115	
4-Bromofluorobenzene	117	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021357-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT01(27-27.5)250216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 10:32
Collect Date:	02/25/2016 16:35	**Dilution:**	10	**File ID:**	1LM.LM33511
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	79.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	535		48.6	24.4	12.2

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #: L16021357-01 **Client ID:** 18DPT01(5-5.5)250216 **Matrix:** Soil **Collect Date:** 02/25/2016 11:30

Analyte	Result	Units	Qualifier
Percent Solids	81.7	weight %	

Sample #: L16021357-02 **Client ID:** 18DPT01(9.5-10)250216 **Matrix:** Soil **Collect Date:** 02/25/2016 11:37

Analyte	Result	Units	Qualifier
Percent Solids	88.2	weight %	

Sample #: L16021357-03 **Client ID:** 18DPT01(15-15.5)250216 **Matrix:** Soil **Collect Date:** 02/25/2016 14:23

Analyte	Result	Units	Qualifier
Percent Solids	90.1	weight %	

Sample #: L16021357-04 **Client ID:** 18DPT01(22.5-23)250216 **Matrix:** Soil **Collect Date:** 02/25/2016 16:00

Analyte	Result	Units	Qualifier
Percent Solids	84.1	weight %	

Sample #: L16021357-05 **Client ID:** 18DPT01(24.5-25)250216 **Matrix:** Soil **Collect Date:** 02/25/2016 16:30

Analyte	Result	Units	Qualifier
Percent Solids	87.2	weight %	

Sample #: L16021357-06 **Client ID:** 18DPT01(27-27.5)250216 **Matrix:** Soil **Collect Date:** 02/25/2016 16:35

Analyte	Result	Units	Qualifier
Percent Solids	79.1	weight %	

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021357-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT01(5-5.5)250216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:19
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	02/29/2016 21:00
Collect Date:	02/25/2016 11:30	**Dilution:**	1	**File ID:**	9M972974
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	7.78	J	25.0	12.5	6.24
Benzene	71-43-2	1.25	U	6.24	1.25	0.624
Bromobenzene	108-86-1	1.25	U	6.24	1.25	0.624
Bromochloromethane	74-97-5	2.50	U	6.24	2.50	1.25
Bromodichloromethane	75-27-4	1.25	U	6.24	1.25	0.624
Bromoform	75-25-2	1.25	U	6.24	1.25	0.624
Bromomethane	74-83-9	2.50	U	6.24	2.50	1.25
2-Butanone	78-93-3	6.24	U	12.5	6.24	3.12
n-Butylbenzene	104-51-8	1.25	U	6.24	1.25	0.624
sec-Butylbenzene	135-98-8	1.25	U	6.24	1.25	0.624
tert-Butylbenzene	98-06-6	0.778	J	6.24	1.25	0.624
Carbon disulfide	75-15-0	1.25	U	6.24	1.25	0.624
Carbon tetrachloride	56-23-5	1.25	U	6.24	1.25	0.624
Chlorobenzene	108-90-7	1.25	U	6.24	1.25	0.624
Chlorodibromomethane	124-48-1	1.25	U	6.24	1.25	0.624
Chloroethane	75-00-3	2.50	U	6.24	2.50	1.25
Chloroform	67-66-3	1.25	U	6.24	1.25	0.624
Chloromethane	74-87-3	5.00	U	12.5	5.00	2.50
2-Chlorotoluene	95-49-8	1.25	U	6.24	1.25	0.624
4-Chlorotoluene	106-43-4	1.25	U	6.24	1.25	0.624
1,2-Dibromo-3-chloropropane	96-12-8	5.00	U	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	6.24	1.25	0.624
Dibromomethane	74-95-3	1.25	U	6.24	1.25	0.624
1,2-Dichlorobenzene	95-50-1	1.25	U	6.24	1.25	0.624
1,3-Dichlorobenzene	541-73-1	1.25	U	6.24	1.25	0.624
1,4-Dichlorobenzene	106-46-7	1.25	U	6.24	1.25	0.624
Dichlorodifluoromethane	75-71-8	2.50	U	6.24	2.50	1.25
1,1-Dichloroethane	75-34-3	2.50	U	6.24	2.50	1.25
1,2-Dichloroethane	107-06-2	1.25	U	6.24	1.25	0.624
1,1-Dichloroethene	75-35-4	1.25	U	6.24	1.25	0.624
cis-1,2-Dichloroethene	156-59-2	1.25	U	6.24	1.25	0.624
trans-1,2-Dichloroethene	156-60-5	1.25	U	6.24	1.25	0.624

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Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.25	U	6.24	1.25	0.624
1,3-Dichloropropane	142-28-9	1.25	U	6.24	1.25	0.624
2,2-Dichloropropane	594-20-7	1.25	U	6.24	1.25	0.624
cis-1,3-Dichloropropene	10061-01-5	1.25	U	6.24	1.25	0.624
trans-1,3-Dichloropropene	10061-02-6	1.25	U	6.24	1.25	0.624
1,1-Dichloropropene	563-58-6	1.25	U	6.24	1.25	0.624
Ethylbenzene	100-41-4	1.25	U	6.24	1.25	0.624
2-Hexanone	591-78-6	6.24	U	12.5	6.24	3.12
Hexachlorobutadiene	87-68-3	1.25	U	6.24	1.25	0.624
Isopropylbenzene	98-82-8	1.25	U	6.24	1.25	0.624
p-Isopropyltoluene	99-87-6	21.8		6.24	1.25	0.624
4-Methyl-2-pentanone	108-10-1	6.24	U	12.5	6.24	3.12
Methylene chloride	75-09-2	2.50	U	6.24	2.50	1.25
Naphthalene	91-20-3	1.25	U	6.24	1.25	0.624
n-Propylbenzene	103-65-1	1.25	U	6.24	1.25	0.624
Styrene	100-42-5	1.25	U	6.24	1.25	0.624
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	6.24	1.25	0.624
1,1,2,2-Tetrachloroethane	79-34-5	1.25	U	6.24	1.25	0.624
Tetrachloroethene	127-18-4	1.25	U	6.24	1.25	0.624
Toluene	108-88-3	1.25	U	6.24	1.25	0.624
1,2,3-Trichlorobenzene	87-61-6	1.25	U	6.24	1.25	0.624
1,2,4-Trichlorobenzene	120-82-1	1.25	U	6.24	1.25	0.624
1,1,1-Trichloroethane	71-55-6	1.25	U	6.24	1.25	0.624
1,1,2-Trichloroethane	79-00-5	1.25	U	6.24	1.25	0.624
Trichloroethene	79-01-6	1.25	U	6.24	1.25	0.624
Trichlorofluoromethane	75-69-4	2.50	U	6.24	2.50	1.25
1,2,3-Trichloropropane	96-18-4	2.50	U	6.24	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	6.24	1.25	0.624
1,3,5-Trimethylbenzene	108-67-8	1.25	U	6.24	1.25	0.624
Vinyl chloride	75-01-4	2.50	U	6.24	2.50	1.25
o-Xylene	95-47-6	1.25	U	6.24	1.25	0.624
m-,p-Xylene	179601-23-1	1.25	U	6.24	1.25	0.624

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.7	80	120	
1,2-Dichloroethane-d4	102	80	120	
Toluene-d8	107	85	115	
4-Bromofluorobenzene	113	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021357-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT01(9.5-10)250216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:21
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	02/29/2016 21:30
Collect Date:	02/25/2016 11:37	**Dilution:**	1	**File ID:**	9M972975
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	88.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	10.9	U	21.7	10.9	5.43
Benzene	71-43-2	1.09	U	5.43	1.09	0.543
Bromobenzene	108-86-1	1.09	U	5.43	1.09	0.543
Bromochloromethane	74-97-5	2.18	U	5.43	2.18	1.09
Bromodichloromethane	75-27-4	1.09	U	5.43	1.09	0.543
Bromoform	75-25-2	1.09	U	5.43	1.09	0.543
Bromomethane	74-83-9	2.18	U	5.43	2.18	1.09
2-Butanone	78-93-3	5.42	U	10.9	5.42	2.71
n-Butylbenzene	104-51-8	1.09	U	5.43	1.09	0.543
sec-Butylbenzene	135-98-8	1.09	U	5.43	1.09	0.543
tert-Butylbenzene	98-06-6	1.09	U	5.43	1.09	0.543
Carbon disulfide	75-15-0	1.09	U	5.43	1.09	0.543
Carbon tetrachloride	56-23-5	1.09	U	5.43	1.09	0.543
Chlorobenzene	108-90-7	1.09	U	5.43	1.09	0.543
Chlorodibromomethane	124-48-1	1.09	U	5.43	1.09	0.543
Chloroethane	75-00-3	2.18	U	5.43	2.18	1.09
Chloroform	67-66-3	1.09	U	5.43	1.09	0.543
Chloromethane	74-87-3	4.34	U	10.9	4.34	2.17
2-Chlorotoluene	95-49-8	1.09	U	5.43	1.09	0.543
4-Chlorotoluene	106-43-4	1.09	U	5.43	1.09	0.543
1,2-Dibromo-3-chloropropane	96-12-8	4.34	U	10.9	4.34	2.17
1,2-Dibromoethane	106-93-4	1.09	U	5.43	1.09	0.543
Dibromomethane	74-95-3	1.09	U	5.43	1.09	0.543
1,2-Dichlorobenzene	95-50-1	1.09	U	5.43	1.09	0.543
1,3-Dichlorobenzene	541-73-1	1.09	U	5.43	1.09	0.543
1,4-Dichlorobenzene	106-46-7	1.09	U	5.43	1.09	0.543
Dichlorodifluoromethane	75-71-8	2.18	U	5.43	2.18	1.09
1,1-Dichloroethane	75-34-3	2.18	U	5.43	2.18	1.09
1,2-Dichloroethane	107-06-2	1.09	U	5.43	1.09	0.543
1,1-Dichloroethene	75-35-4	1.09	U	5.43	1.09	0.543
cis-1,2-Dichloroethene	156-59-2	1.09	U	5.43	1.09	0.543

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Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.09	U	5.43	1.09	0.543
1,2-Dichloropropane	78-87-5	1.09	U	5.43	1.09	0.543
1,3-Dichloropropane	142-28-9	1.09	U	5.43	1.09	0.543
2,2-Dichloropropane	594-20-7	1.09	U	5.43	1.09	0.543
cis-1,3-Dichloropropene	10061-01-5	1.09	U	5.43	1.09	0.543
trans-1,3-Dichloropropene	10061-02-6	1.09	U	5.43	1.09	0.543
1,1-Dichloropropene	563-58-6	1.09	U	5.43	1.09	0.543
Ethylbenzene	100-41-4	1.09	U	5.43	1.09	0.543
2-Hexanone	591-78-6	5.42	U	10.9	5.42	2.71
Hexachlorobutadiene	87-68-3	1.09	U	5.43	1.09	0.543
Isopropylbenzene	98-82-8	1.09	U	5.43	1.09	0.543
p-Isopropyltoluene	99-87-6	1.09	U	5.43	1.09	0.543
4-Methyl-2-pentanone	108-10-1	5.42	U	10.9	5.42	2.71
Methylene chloride	75-09-2	2.18	U	5.43	2.18	1.09
Naphthalene	91-20-3	1.09	U	5.43	1.09	0.543
n-Propylbenzene	103-65-1	1.09	U	5.43	1.09	0.543
Styrene	100-42-5	1.09	U	5.43	1.09	0.543
1,1,1,2-Tetrachloroethane	630-20-6	1.09	U	5.43	1.09	0.543
1,1,2,2-Tetrachloroethane	79-34-5	1.09	U	5.43	1.09	0.543
Tetrachloroethene	127-18-4	1.09	U	5.43	1.09	0.543
Toluene	108-88-3	1.09	U	5.43	1.09	0.543
1,2,3-Trichlorobenzene	87-61-6	1.09	U	5.43	1.09	0.543
1,2,4-Trichlorobenzene	120-82-1	1.09	U	5.43	1.09	0.543
1,1,1-Trichloroethane	71-55-6	1.09	U	5.43	1.09	0.543
1,1,2-Trichloroethane	79-00-5	1.09	U	5.43	1.09	0.543
Trichloroethene	79-01-6	1.09	U	5.43	1.09	0.543
Trichlorofluoromethane	75-69-4	2.18	U	5.43	2.18	1.09
1,2,3-Trichloropropane	96-18-4	2.18	U	5.43	2.18	1.09
1,2,4-Trimethylbenzene	95-63-6	1.09	U	5.43	1.09	0.543
1,3,5-Trimethylbenzene	108-67-8	1.09	U	5.43	1.09	0.543
Vinyl chloride	75-01-4	2.18	U	5.43	2.18	1.09
o-Xylene	95-47-6	1.09	U	5.43	1.09	0.543
m-,p-Xylene	179601-23-1	1.09	U	5.43	1.09	0.543

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	80	120	
1,2-Dichloroethane-d4	99.4	80	120	
Toluene-d8	109	85	115	
4-Bromofluorobenzene	111	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021357-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT01(15-15.5)250216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:22
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	02/29/2016 22:01
Collect Date:	02/25/2016 14:23	**Dilution:**	1	**File ID:**	9M972976
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	90.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.1	U	22.3	11.1	5.57
Benzene	71-43-2	1.11	U	5.57	1.11	0.557
Bromobenzene	108-86-1	1.11	U	5.57	1.11	0.557
Bromochloromethane	74-97-5	2.22	U	5.57	2.22	1.11
Bromodichloromethane	75-27-4	1.11	U	5.57	1.11	0.557
Bromoform	75-25-2	1.11	U	5.57	1.11	0.557
Bromomethane	74-83-9	2.22	U	5.57	2.22	1.11
2-Butanone	78-93-3	5.58	U	11.1	5.58	2.79
n-Butylbenzene	104-51-8	1.11	U	5.57	1.11	0.557
sec-Butylbenzene	135-98-8	1.11	U	5.57	1.11	0.557
tert-Butylbenzene	98-06-6	1.11	U	5.57	1.11	0.557
Carbon disulfide	75-15-0	1.11	U	5.57	1.11	0.557
Carbon tetrachloride	56-23-5	1.11	U	5.57	1.11	0.557
Chlorobenzene	108-90-7	1.11	U	5.57	1.11	0.557
Chlorodibromomethane	124-48-1	1.11	U	5.57	1.11	0.557
Chloroethane	75-00-3	2.22	U	5.57	2.22	1.11
Chloroform	67-66-3	1.11	U	5.57	1.11	0.557
Chloromethane	74-87-3	4.46	U	11.1	4.46	2.23
2-Chlorotoluene	95-49-8	1.11	U	5.57	1.11	0.557
4-Chlorotoluene	106-43-4	1.11	U	5.57	1.11	0.557
1,2-Dibromo-3-chloropropane	96-12-8	4.46	U	11.1	4.46	2.23
1,2-Dibromoethane	106-93-4	1.11	U	5.57	1.11	0.557
Dibromomethane	74-95-3	1.11	U	5.57	1.11	0.557
1,2-Dichlorobenzene	95-50-1	1.11	U	5.57	1.11	0.557
1,3-Dichlorobenzene	541-73-1	1.11	U	5.57	1.11	0.557
1,4-Dichlorobenzene	106-46-7	1.11	U	5.57	1.11	0.557
Dichlorodifluoromethane	75-71-8	2.22	U	5.57	2.22	1.11
1,1-Dichloroethane	75-34-3	2.22	U	5.57	2.22	1.11
1,2-Dichloroethane	107-06-2	1.11	U	5.57	1.11	0.557
1,1-Dichloroethene	75-35-4	1.11	U	5.57	1.11	0.557
cis-1,2-Dichloroethene	156-59-2	1.11	U	5.57	1.11	0.557

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Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.11	U	5.57	1.11	0.557
1,2-Dichloropropane	78-87-5	1.11	U	5.57	1.11	0.557
1,3-Dichloropropane	142-28-9	1.11	U	5.57	1.11	0.557
2,2-Dichloropropane	594-20-7	1.11	U	5.57	1.11	0.557
cis-1,3-Dichloropropene	10061-01-5	1.11	U	5.57	1.11	0.557
trans-1,3-Dichloropropene	10061-02-6	1.11	U	5.57	1.11	0.557
1,1-Dichloropropene	563-58-6	1.11	U	5.57	1.11	0.557
Ethylbenzene	100-41-4	1.11	U	5.57	1.11	0.557
2-Hexanone	591-78-6	5.58	U	11.1	5.58	2.79
Hexachlorobutadiene	87-68-3	1.11	U	5.57	1.11	0.557
Isopropylbenzene	98-82-8	1.11	U	5.57	1.11	0.557
p-Isopropyltoluene	99-87-6	1.11	U	5.57	1.11	0.557
4-Methyl-2-pentanone	108-10-1	5.58	U	11.1	5.58	2.79
Methylene chloride	75-09-2	2.22	U	5.57	2.22	1.11
Naphthalene	91-20-3	1.11	U	5.57	1.11	0.557
n-Propylbenzene	103-65-1	1.11	U	5.57	1.11	0.557
Styrene	100-42-5	1.11	U	5.57	1.11	0.557
1,1,1,2-Tetrachloroethane	630-20-6	1.11	U	5.57	1.11	0.557
1,1,2,2-Tetrachloroethane	79-34-5	1.11	U	5.57	1.11	0.557
Tetrachloroethene	127-18-4	1.11	U	5.57	1.11	0.557
Toluene	108-88-3	1.11	U	5.57	1.11	0.557
1,2,3-Trichlorobenzene	87-61-6	1.11	U	5.57	1.11	0.557
1,2,4-Trichlorobenzene	120-82-1	1.11	U	5.57	1.11	0.557
1,1,1-Trichloroethane	71-55-6	1.11	U	5.57	1.11	0.557
1,1,2-Trichloroethane	79-00-5	1.11	U	5.57	1.11	0.557
Trichloroethene	79-01-6	1.11	U	5.57	1.11	0.557
Trichlorofluoromethane	75-69-4	2.22	U	5.57	2.22	1.11
1,2,3-Trichloropropane	96-18-4	2.22	U	5.57	2.22	1.11
1,2,4-Trimethylbenzene	95-63-6	1.11	U	5.57	1.11	0.557
1,3,5-Trimethylbenzene	108-67-8	1.11	U	5.57	1.11	0.557
Vinyl chloride	75-01-4	2.22	U	5.57	2.22	1.11
o-Xylene	95-47-6	1.11	U	5.57	1.11	0.557
m-,p-Xylene	179601-23-1	1.11	U	5.57	1.11	0.557

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.5	80	120	
1,2-Dichloroethane-d4	99.4	80	120	
Toluene-d8	109	85	115	
4-Bromofluorobenzene	111	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021357-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT01(22.5-23)250216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:22
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	02/29/2016 22:32
Collect Date:	02/25/2016 16:00	**Dilution:**	1	**File ID:**	9M972977
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	9.77	J	22.3	11.2	5.58
Benzene	71-43-2	1.12	U	5.58	1.12	0.558
Bromobenzene	108-86-1	1.12	U	5.58	1.12	0.558
Bromochloromethane	74-97-5	2.24	U	5.58	2.24	1.12
Bromodichloromethane	75-27-4	1.12	U	5.58	1.12	0.558
Bromoform	75-25-2	1.12	U	5.58	1.12	0.558
Bromomethane	74-83-9	2.24	U	5.58	2.24	1.12
2-Butanone	78-93-3	5.58	U	11.2	5.58	2.79
n-Butylbenzene	104-51-8	1.12	U	5.58	1.12	0.558
sec-Butylbenzene	135-98-8	1.12	U	5.58	1.12	0.558
tert-Butylbenzene	98-06-6	1.12	U	5.58	1.12	0.558
Carbon disulfide	75-15-0	1.12	U	5.58	1.12	0.558
Carbon tetrachloride	56-23-5	1.12	U	5.58	1.12	0.558
Chlorobenzene	108-90-7	1.12	U	5.58	1.12	0.558
Chlorodibromomethane	124-48-1	1.12	U	5.58	1.12	0.558
Chloroethane	75-00-3	2.24	U	5.58	2.24	1.12
Chloroform	67-66-3	1.12	U	5.58	1.12	0.558
Chloromethane	74-87-3	4.46	U	11.2	4.46	2.23
2-Chlorotoluene	95-49-8	1.12	U	5.58	1.12	0.558
4-Chlorotoluene	106-43-4	1.12	U	5.58	1.12	0.558
1,2-Dibromo-3-chloropropane	96-12-8	4.46	U	11.2	4.46	2.23
1,2-Dibromoethane	106-93-4	1.12	U	5.58	1.12	0.558
Dibromomethane	74-95-3	1.12	U	5.58	1.12	0.558
1,2-Dichlorobenzene	95-50-1	1.12	U	5.58	1.12	0.558
1,3-Dichlorobenzene	541-73-1	1.12	U	5.58	1.12	0.558
1,4-Dichlorobenzene	106-46-7	1.12	U	5.58	1.12	0.558
Dichlorodifluoromethane	75-71-8	2.24	U	5.58	2.24	1.12
1,1-Dichloroethane	75-34-3	2.24	U	5.58	2.24	1.12
1,2-Dichloroethane	107-06-2	1.12	U	5.58	1.12	0.558
1,1-Dichloroethene	75-35-4	1.12	U	5.58	1.12	0.558
cis-1,2-Dichloroethene	156-59-2	1.12	U	5.58	1.12	0.558

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Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.12	U	5.58	1.12	0.558
1,2-Dichloropropane	78-87-5	1.12	U	5.58	1.12	0.558
1,3-Dichloropropane	142-28-9	1.12	U	5.58	1.12	0.558
2,2-Dichloropropane	594-20-7	1.12	U	5.58	1.12	0.558
cis-1,3-Dichloropropene	10061-01-5	1.12	U	5.58	1.12	0.558
trans-1,3-Dichloropropene	10061-02-6	1.12	U	5.58	1.12	0.558
1,1-Dichloropropene	563-58-6	1.12	U	5.58	1.12	0.558
Ethylbenzene	100-41-4	1.12	U	5.58	1.12	0.558
2-Hexanone	591-78-6	5.58	U	11.2	5.58	2.79
Hexachlorobutadiene	87-68-3	1.12	U	5.58	1.12	0.558
Isopropylbenzene	98-82-8	1.12	U	5.58	1.12	0.558
p-Isopropyltoluene	99-87-6	1.12	U	5.58	1.12	0.558
4-Methyl-2-pentanone	108-10-1	5.58	U	11.2	5.58	2.79
Methylene chloride	75-09-2	2.24	U	5.58	2.24	1.12
Naphthalene	91-20-3	1.12	U	5.58	1.12	0.558
n-Propylbenzene	103-65-1	1.12	U	5.58	1.12	0.558
Styrene	100-42-5	1.12	U	5.58	1.12	0.558
1,1,1,2-Tetrachloroethane	630-20-6	1.12	U	5.58	1.12	0.558
1,1,2,2-Tetrachloroethane	79-34-5	1.12	U	5.58	1.12	0.558
Tetrachloroethene	127-18-4	1.12	U	5.58	1.12	0.558
Toluene	108-88-3	1.12	U	5.58	1.12	0.558
1,2,3-Trichlorobenzene	87-61-6	1.12	U	5.58	1.12	0.558
1,2,4-Trichlorobenzene	120-82-1	1.12	U	5.58	1.12	0.558
1,1,1-Trichloroethane	71-55-6	1.12	U	5.58	1.12	0.558
1,1,2-Trichloroethane	79-00-5	1.12	U	5.58	1.12	0.558
Trichloroethene	79-01-6	1.12	U	5.58	1.12	0.558
Trichlorofluoromethane	75-69-4	2.24	U	5.58	2.24	1.12
1,2,3-Trichloropropane	96-18-4	2.24	U	5.58	2.24	1.12
1,2,4-Trimethylbenzene	95-63-6	1.12	U	5.58	1.12	0.558
1,3,5-Trimethylbenzene	108-67-8	1.12	U	5.58	1.12	0.558
Vinyl chloride	75-01-4	2.24	U	5.58	2.24	1.12
o-Xylene	95-47-6	1.12	U	5.58	1.12	0.558
m-,p-Xylene	179601-23-1	1.12	U	5.58	1.12	0.558

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.6	80	120	
1,2-Dichloroethane-d4	98.7	80	120	
Toluene-d8	106	85	115	
4-Bromofluorobenzene	116	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

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Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021357-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT01(24.5-25)250216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:23
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	02/29/2016 23:03
Collect Date:	02/25/2016 16:30	**Dilution:**	1	**File ID:**	9M972978
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	87.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.1	U	22.1	11.1	5.53
Benzene	71-43-2	1.11	U	5.53	1.11	0.553
Bromobenzene	108-86-1	1.11	U	5.53	1.11	0.553
Bromochloromethane	74-97-5	2.22	U	5.53	2.22	1.11
Bromodichloromethane	75-27-4	1.11	U	5.53	1.11	0.553
Bromoform	75-25-2	1.11	U	5.53	1.11	0.553
Bromomethane	74-83-9	2.22	U	5.53	2.22	1.11
2-Butanone	78-93-3	5.52	U	11.1	5.52	2.76
n-Butylbenzene	104-51-8	1.11	U	5.53	1.11	0.553
sec-Butylbenzene	135-98-8	1.11	U	5.53	1.11	0.553
tert-Butylbenzene	98-06-6	1.11	U	5.53	1.11	0.553
Carbon disulfide	75-15-0	1.11	U	5.53	1.11	0.553
Carbon tetrachloride	56-23-5	1.11	U	5.53	1.11	0.553
Chlorobenzene	108-90-7	1.11	U	5.53	1.11	0.553
Chlorodibromomethane	124-48-1	1.11	U	5.53	1.11	0.553
Chloroethane	75-00-3	2.22	U	5.53	2.22	1.11
Chloroform	67-66-3	1.11	U	5.53	1.11	0.553
Chloromethane	74-87-3	4.42	U	11.1	4.42	2.21
2-Chlorotoluene	95-49-8	1.11	U	5.53	1.11	0.553
4-Chlorotoluene	106-43-4	1.11	U	5.53	1.11	0.553
1,2-Dibromo-3-chloropropane	96-12-8	4.42	U	11.1	4.42	2.21
1,2-Dibromoethane	106-93-4	1.11	U	5.53	1.11	0.553
Dibromomethane	74-95-3	1.11	U	5.53	1.11	0.553
1,2-Dichlorobenzene	95-50-1	1.11	U	5.53	1.11	0.553
1,3-Dichlorobenzene	541-73-1	1.11	U	5.53	1.11	0.553
1,4-Dichlorobenzene	106-46-7	1.11	U	5.53	1.11	0.553
Dichlorodifluoromethane	75-71-8	2.22	U	5.53	2.22	1.11
1,1-Dichloroethane	75-34-3	2.22	U	5.53	2.22	1.11
1,2-Dichloroethane	107-06-2	1.11	U	5.53	1.11	0.553
1,1-Dichloroethene	75-35-4	1.11	U	5.53	1.11	0.553
cis-1,2-Dichloroethene	156-59-2	1.11	U	5.53	1.11	0.553

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.11	U	5.53	1.11	0.553
1,2-Dichloropropane	78-87-5	1.11	U	5.53	1.11	0.553
1,3-Dichloropropane	142-28-9	1.11	U	5.53	1.11	0.553
2,2-Dichloropropane	594-20-7	1.11	U	5.53	1.11	0.553
cis-1,3-Dichloropropene	10061-01-5	1.11	U	5.53	1.11	0.553
trans-1,3-Dichloropropene	10061-02-6	1.11	U	5.53	1.11	0.553
1,1-Dichloropropene	563-58-6	1.11	U	5.53	1.11	0.553
Ethylbenzene	100-41-4	1.11	U	5.53	1.11	0.553
2-Hexanone	591-78-6	5.52	U	11.1	5.52	2.76
Hexachlorobutadiene	87-68-3	1.11	U	5.53	1.11	0.553
Isopropylbenzene	98-82-8	1.11	U	5.53	1.11	0.553
p-Isopropyltoluene	99-87-6	1.11	U	5.53	1.11	0.553
4-Methyl-2-pentanone	108-10-1	5.52	U	11.1	5.52	2.76
Methylene chloride	75-09-2	2.22	U	5.53	2.22	1.11
Naphthalene	91-20-3	1.11	U	5.53	1.11	0.553
n-Propylbenzene	103-65-1	1.11	U	5.53	1.11	0.553
Styrene	100-42-5	1.11	U	5.53	1.11	0.553
1,1,1,2-Tetrachloroethane	630-20-6	1.11	U	5.53	1.11	0.553
1,1,2,2-Tetrachloroethane	79-34-5	1.11	U	5.53	1.11	0.553
Tetrachloroethene	127-18-4	1.11	U	5.53	1.11	0.553
Toluene	108-88-3	1.11	U	5.53	1.11	0.553
1,2,3-Trichlorobenzene	87-61-6	1.11	U	5.53	1.11	0.553
1,2,4-Trichlorobenzene	120-82-1	1.11	U	5.53	1.11	0.553
1,1,1-Trichloroethane	71-55-6	1.11	U	5.53	1.11	0.553
1,1,2-Trichloroethane	79-00-5	1.11	U	5.53	1.11	0.553
Trichloroethene	79-01-6	1.11	U	5.53	1.11	0.553
Trichlorofluoromethane	75-69-4	2.22	U	5.53	2.22	1.11
1,2,3-Trichloropropane	96-18-4	2.22	U	5.53	2.22	1.11
1,2,4-Trimethylbenzene	95-63-6	1.11	U	5.53	1.11	0.553
1,3,5-Trimethylbenzene	108-67-8	1.11	U	5.53	1.11	0.553
Vinyl chloride	75-01-4	2.22	U	5.53	2.22	1.11
o-Xylene	95-47-6	1.11	U	5.53	1.11	0.553
m-,p-Xylene	179601-23-1	1.11	U	5.53	1.11	0.553

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.5	80	120	
1,2-Dichloroethane-d4	95.8	80	120	
Toluene-d8	109	85	115	
4-Bromofluorobenzene	115	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021357-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT01(27-27.5)250216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:23
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	02/29/2016 23:33
Collect Date:	02/25/2016 16:35	**Dilution:**	1	**File ID:**	9M972979
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.7	U	25.4	12.7	6.35
Benzene	71-43-2	1.27	U	6.35	1.27	0.635
Bromobenzene	108-86-1	1.27	U	6.35	1.27	0.635
Bromochloromethane	74-97-5	2.54	U	6.35	2.54	1.27
Bromodichloromethane	75-27-4	1.27	U	6.35	1.27	0.635
Bromoform	75-25-2	1.27	U	6.35	1.27	0.635
Bromomethane	74-83-9	2.54	U	6.35	2.54	1.27
2-Butanone	78-93-3	6.34	U	12.7	6.34	3.17
n-Butylbenzene	104-51-8	1.27	U	6.35	1.27	0.635
sec-Butylbenzene	135-98-8	1.27	U	6.35	1.27	0.635
tert-Butylbenzene	98-06-6	1.27	U	6.35	1.27	0.635
Carbon disulfide	75-15-0	1.27	U	6.35	1.27	0.635
Carbon tetrachloride	56-23-5	1.27	U	6.35	1.27	0.635
Chlorobenzene	108-90-7	1.27	U	6.35	1.27	0.635
Chlorodibromomethane	124-48-1	1.27	U	6.35	1.27	0.635
Chloroethane	75-00-3	2.54	U	6.35	2.54	1.27
Chloroform	67-66-3	1.27	U	6.35	1.27	0.635
Chloromethane	74-87-3	5.08	U	12.7	5.08	2.54
2-Chlorotoluene	95-49-8	1.27	U	6.35	1.27	0.635
4-Chlorotoluene	106-43-4	1.27	U	6.35	1.27	0.635
1,2-Dibromo-3-chloropropane	96-12-8	5.08	U	12.7	5.08	2.54
1,2-Dibromoethane	106-93-4	1.27	U	6.35	1.27	0.635
Dibromomethane	74-95-3	1.27	U	6.35	1.27	0.635
1,2-Dichlorobenzene	95-50-1	1.27	U	6.35	1.27	0.635
1,3-Dichlorobenzene	541-73-1	1.27	U	6.35	1.27	0.635
1,4-Dichlorobenzene	106-46-7	1.27	U	6.35	1.27	0.635
Dichlorodifluoromethane	75-71-8	2.54	U	6.35	2.54	1.27
1,1-Dichloroethane	75-34-3	2.54	U	6.35	2.54	1.27
1,2-Dichloroethane	107-06-2	1.27	U	6.35	1.27	0.635
1,1-Dichloroethene	75-35-4	1.27	U	6.35	1.27	0.635
cis-1,2-Dichloroethene	156-59-2	1.27	U	6.35	1.27	0.635

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Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.27	U	6.35	1.27	0.635
1,2-Dichloropropane	78-87-5	1.27	U	6.35	1.27	0.635
1,3-Dichloropropane	142-28-9	1.27	U	6.35	1.27	0.635
2,2-Dichloropropane	594-20-7	1.27	U	6.35	1.27	0.635
cis-1,3-Dichloropropene	10061-01-5	1.27	U	6.35	1.27	0.635
trans-1,3-Dichloropropene	10061-02-6	1.27	U	6.35	1.27	0.635
1,1-Dichloropropene	563-58-6	1.27	U	6.35	1.27	0.635
Ethylbenzene	100-41-4	1.27	U	6.35	1.27	0.635
2-Hexanone	591-78-6	6.34	U	12.7	6.34	3.17
Hexachlorobutadiene	87-68-3	1.27	U	6.35	1.27	0.635
Isopropylbenzene	98-82-8	1.27	U	6.35	1.27	0.635
p-Isopropyltoluene	99-87-6	1.27	U	6.35	1.27	0.635
4-Methyl-2-pentanone	108-10-1	6.34	U	12.7	6.34	3.17
Methylene chloride	75-09-2	2.54	U	6.35	2.54	1.27
Naphthalene	91-20-3	1.27	U	6.35	1.27	0.635
n-Propylbenzene	103-65-1	1.27	U	6.35	1.27	0.635
Styrene	100-42-5	1.27	U	6.35	1.27	0.635
1,1,1,2-Tetrachloroethane	630-20-6	1.27	U	6.35	1.27	0.635
1,1,2,2-Tetrachloroethane	79-34-5	1.27	U	6.35	1.27	0.635
Tetrachloroethene	127-18-4	1.27	U	6.35	1.27	0.635
Toluene	108-88-3	1.27	U	6.35	1.27	0.635
1,2,3-Trichlorobenzene	87-61-6	1.27	U	6.35	1.27	0.635
1,2,4-Trichlorobenzene	120-82-1	1.27	U	6.35	1.27	0.635
1,1,1-Trichloroethane	71-55-6	1.27	U	6.35	1.27	0.635
1,1,2-Trichloroethane	79-00-5	1.27	U	6.35	1.27	0.635
Trichloroethene	79-01-6	1.27	U	6.35	1.27	0.635
Trichlorofluoromethane	75-69-4	2.54	U	6.35	2.54	1.27
1,2,3-Trichloropropane	96-18-4	2.54	U	6.35	2.54	1.27
1,2,4-Trimethylbenzene	95-63-6	1.27	U	6.35	1.27	0.635
1,3,5-Trimethylbenzene	108-67-8	1.27	U	6.35	1.27	0.635
Vinyl chloride	75-01-4	2.54	U	6.35	2.54	1.27
o-Xylene	95-47-6	1.27	U	6.35	1.27	0.635
m-,p-Xylene	179601-23-1	1.27	U	6.35	1.27	0.635

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.7	80	120	
1,2-Dichloroethane-d4	101	80	120	
Toluene-d8	108	85	115	
4-Bromofluorobenzene	117	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.
VOA Preparation/Preservation/Extraction Log

Batch #: WG559084
Analyst: AWE
Method: 5030B/5030C/5035
Run Date: 02/29/2016 12:19
Product: 8260
Purge and trap methanol COA18540
Purified Lab Sand Lot #COA18552

SAMPLE #	Fraction	Collected	Preserved	PCT-S	Tare Wt	Total Wt	Sample Wt	Water	MeOH	Vt	Comments
L16021357-01	A	02/25/16 11:30	02/29/16 12:19	81.7			4.90	5		5	
L16021357-02	A	02/25/16 11:37	02/29/16 12:21	88.2			5.22	5		5	
L16021357-03	A	02/25/16 14:23	02/29/16 12:22	90.1			4.98	5		5	
L16021357-04	A	02/25/16 16:00	02/29/16 12:22	84.1			5.33	5		5	
L16021357-05	A	02/25/16 16:30	02/29/16 12:23	87.2			5.19	5		5	
L16021357-06	A	02/25/16 16:35	02/29/16 12:23	79.1			4.98	5		5	
L16021358-01	A	02/26/16 08:35	02/29/16 12:24	82.1			4.92	5		5	
L16021358-02	A	02/26/16 08:42	02/29/16 12:25	83.6			4.97	5		5	
L16021358-03	A	02/26/16 08:42	02/29/16 12:25	83.4			4.83	5		5	
L16021358-04	A	02/26/16 09:00	02/29/16 12:26	78.3			5.37	5		5	
L16021358-05	A	02/26/16 09:15	02/29/16 12:26	81.6			4.57	5		5	
L16021358-06	A	02/26/16 11:15	02/29/16 12:08	79.9			5.00	5		5	
L16021358-07	A	02/26/16 11:17	02/29/16 12:28	87.6			5.01	5		5	
L16021358-08	A	02/26/16 11:19	02/29/16 12:29	85.1			4.84	5		5	
L16021358-09	A	02/26/16 11:21	02/29/16 12:29	81.4			4.60	5		5	
WG559084-01	A		02/29/16 12:19	81.7			4.90	5		5	
WG559084-02	A		02/29/16 12:20	81.7			4.93	5		5	
WG559084-03	A		02/29/16 12:20	81.7			4.98	5		5	

Comments:
1 = improperly sealed cap
2 = preserved out of hold
3 = effervesced
4 = preserved with NaHSO4
5 = preserved by freezing
6 = preserved in field

Analyst: Andrew Casey

VOA_EXT - Modified 05/22/2008
PDF ID: 4651350
Report generated: 03/01/2016 11:17

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 012516
Analyst1: ADC Analyst2: NA
Method: 8260B/8260C SOP: MSV01(-C) Rev: 23 (2)
Method: 5030B/5030C/5035 SOP: PAT01 Rev: 18
Method: 624 SOP: MSV10 Rev: 12
Maintenance Log ID:

Internal Standard: STD74414 Surrogate Standard: STD74126
CCV: STD74488 LCS: STD74459 MS/MSD: STD74459

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG555000 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M972470	WG555000-01 BFB 50ng A9	NA	7	1	STD74202	01/25/16 10:27
9M972471	RINSE	NA	7	1		01/25/16 10:52
9M972472	WG555000-02 5ug/Kg STD A9	NA	7	1	STD74406	01/25/16 11:22
9M972473	WG555000-03 20ug/Kg STD A9	NA	7	1	STD74406	01/25/16 11:52
9M972474	WG555000-04 50ug/Kg STD A9	NA	7	1	STD74406	01/25/16 12:23
9M972475	WG555000-05 100ug/Kg STD A9	NA	7	1	STD74406	01/25/16 12:53
9M972476	WG555000-06 200ug/Kg STD A9	NA	7	1	STD74406	01/25/16 13:23
9M972477	WG555000-07 300ug/Kg STD A9	NA	7	1	STD74406	01/25/16 13:54
9M972478	WG555000-08 400ug/Kg STD A9	NA	7	1	STD74406	01/25/16 14:25
9M972479	WG555000-09 500ug/Kg STD A9	NA	7	1	STD74406	01/25/16 14:56
9M972480	RINSE	NA	7	1		01/25/16 15:26
9M972481	WG555000-10 100ug/Kg ICV A9	NA	7	1	STD74461	01/25/16 15:56
9M972482	RINSE	NA	7	1		01/25/16 16:28

Approved: January 29, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 022516
Analyst1: ADC Analyst2: NA
Method: 8260 SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD74726 Surrogate Standard: STD74815
CCV: STD74488 LCS: STD74755 MS/MSD: STD74755

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG558732 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M972892	WG558732-01 BFB 50ng	NA	7	1	STD74773	02/25/16 14:26
9M972894	WG558732-01 BFB 50ng	NA	7	1	STD74773	02/25/16 14:45
9M972895	WG558732-02 50ug/L CCV 8260C	NA	7	1	STD74773	02/25/16 15:11
9M972896	WG558732-02 50ug/L CCV 8260C	NA	7	1	STD74773	02/25/16 15:48
9M972897	RINSE	NA	7	1		02/25/16 16:25
9M972898	WG558732-03 0.5ug/kg STD	NA	7	1	STD74773	02/25/16 16:55
9M972899	WG558732-04 1.0ug/kg STD	NA	7	1	STD74773	02/25/16 17:27
9M972900	WG558732-05 2.0ug/kg STD	NA	7	1	STD74773	02/25/16 17:57
9M972901	WG558732-06 5.0ug/kg STD	NA	7	1	STD74773	02/25/16 18:28
9M972902	WG558732-07 20.0ug/kg STD	NA	7	1	STD74773	02/25/16 18:59
9M972903	WG558732-08 100.0ug/kg STD	NA	7	1	STD74773	02/25/16 19:29
9M972904	WG558732-09 200.0ug/kg STD	NA	7	1	STD74773	02/25/16 20:00
9M972905	WG558732-10 300.0ug/kg STD	NA	7	1	STD74773	02/25/16 20:30
9M972906	RINSE	NA	7	1	STD74773	02/25/16 21:01
9M972907	WG558732-11 50.0ug/kg ALTSRC	NA	7	1	STD74755	02/25/16 21:31

Approved: February 29, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 022916
Analyst1: FJB Analyst2: JDS
Method: 8260 SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD74726 Surrogate Standard: STD74815
CCV: STD74773 LCS: STD74900 MS/MSD: STD74900

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG559151

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M972966	WG559150-01 BFB 50ng 8260	NA	7	1	STD74606	02/29/16 16:59
9M972967	WG559150-02 50ug/Kg CCV 8260	NA	7	1	STD74773	02/29/16 17:23
9M972968	WG000000-01 50ug/Kg A9-CCV 8260	NA	7	1	STD74831	02/29/16 17:54
9M972969	WG559151-01 VBLK0229 BLANK 8260	NA	7	1		02/29/16 18:25
9M972970	WG559151-02 20ug/Kg LCS 8260	NA	7	1	STD74900	02/29/16 18:56
9M972971	WG559084-02 MS 4.93g 8260	NA	7	1	STD74900	02/29/16 19:28
9M972972	WG559084-03 MSD 4.98g 8260	NA	7	1	STD74900	02/29/16 19:59
9M972973	RINSE	NA	7	1		02/29/16 20:29
9M972974	WG559084-01 L16021357-01 REF 4.90g 82	NA	7	1		02/29/16 21:00
9M972975	L16021357-02 5.22g 8260	NA	7	1		02/29/16 21:30
9M972976	L16021357-03 4.98g 8260	NA	7	1		02/29/16 22:01
9M972977	L16021357-04 5.33g 8260	NA	7	1		02/29/16 22:32
9M972978	L16021357-05 5.19g 8260	NA	7	1		02/29/16 23:03
9M972979	L16021357-06 4.98g 8260	NA	7	1		02/29/16 23:33
9M972980	L16021358-01 4.92g 8260	NA	7	1		03/01/16 00:04
9M972981	L16021358-02 4.97g 8260	NA	7	1		03/01/16 00:34
9M972982	L16021358-03 4.83g 8260	NA	7	1		03/01/16 01:04
9M972983	L16021358-04 5.37g 8260	NA	7	1		03/01/16 01:36
9M972984	L16021358-05 4.57g 8260	NA	7	1		03/01/16 02:06
9M972985	L16021358-06 5.00g 8260	NA	7	1		03/01/16 02:36
9M972986	L16021358-07 5.01g 8260	NA	7	1		03/01/16 03:06
9M972987	L16021358-08 4.84g 8260	NA	7	1		03/01/16 03:37
9M972988	L16021358-09 4.60g 8260	NA	7	1		03/01/16 04:07
9M972989	CCV	NA	7	1		03/01/16 04:37
9M972990	RINSE	NA	7	1		03/01/16 05:07
9M972991	RINSE	NA	7	1		03/01/16 05:38

Approved: March 01, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Data Checklist

Date: 25-JAN-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 72995
Analytical Workgroups: WG555000

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
28-JAN-2016

Secondary Reviewer:
29-JAN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JAN-29-2016 16:00:23

Microbac Laboratories Inc.

Data Checklist

Date: 25-FEB-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 73547
Analytical Workgroups: WG558732

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
29-FEB-2016

Secondary Reviewer:
29-FEB-2016

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-29-2016 15:30:51

Microbac Laboratories Inc.

Data Checklist

Date: 29-FEB-2016
Analyst: FJB
Analyst: JDS
Method: 8260B
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 73561
Analytical Workgroups: WG559151

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	FJB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	X
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	FJB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
01-MAR-2016

Secondary Reviewer:
01-MAR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-01-2016 14:48:08

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG559151

Login Number: L16021357

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18DPT01(5-5.5)250216	01	02/25/16					02/29/2016	4	14		02/29/16	4.4	14	
18DPT01(9.5-10)250216	02	02/25/16					02/29/2016	4	14		02/29/16	4.4	14	
18DPT01(15-15.5)250216	03	02/25/16					02/29/2016	3.9	14		02/29/16	4.3	14	
18DPT01(22.5-23)250216	04	02/25/16					02/29/2016	3.8	14		02/29/16	4.3	14	
18DPT01(24.5-25)250216	05	02/25/16					02/29/2016	3.8	14		02/29/16	4.3	14	
18DPT01(27-27.5)250216	06	02/25/16					02/29/2016	3.8	14		02/29/16	4.3	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4652659
Report generated 03/01/2016 14:46

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16021357
Instrument Id: HPMS9
Workgroup (AAB#): WG559151

Method: 8260
CAL ID: HPMS9-25-FEB-16
Matrix: Soil

Sample Number	Dilution	Tag	1	2	3	4
L16021357-01	1.00	01	102	96.7	113	107
L16021357-02	1.00	01	99.4	100	111	109
L16021357-03	1.00	01	99.4	97.5	111	109
L16021357-04	1.00	01	98.7	98.6	116	106
L16021357-05	1.00	01	95.8	96.5	115	109
L16021357-06	1.00	01	101	97.7	117	108
WG559151-01	1.00	01	97.5	98.6	113	106
WG559151-02	1.00	01	97.0	99.0	105	102

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	80	-	120
2 - Dibromofluoromethane	80	-	120
3 - 4-Bromofluorobenzene	85	-	120
4 - Toluene-d8	85	-	115

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4652667
Report generated: 03/01/2016 14:46

METHOD BLANK SUMMARY

Login Number: L16021357
Blank File ID: 9M972969
Prep Date: 02/29/16 18:25
Analyzed Date: 02/29/16 18:25
Analyst: FJB/JDS

Work Group: WG559151
Blank Sample ID: WG559151-01
Instrument ID: HPMS9
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG559151-02	9M972970	02/29/16 18:56	01
18DPT01(5-5.5)250216	L16021357-01	9M972974	02/29/16 21:00	01
18DPT01(9.5-10)250216	L16021357-02	9M972975	02/29/16 21:30	01
18DPT01(15-15.5)250216	L16021357-03	9M972976	02/29/16 22:01	01
18DPT01(22.5-23)250216	L16021357-04	9M972977	02/29/16 22:32	01
18DPT01(24.5-25)250216	L16021357-05	9M972978	02/29/16 23:03	01
18DPT01(27-27.5)250216	L16021357-06	9M972979	02/29/16 23:33	01

Report Name: BLANK_SUMMARY
PDF File ID: 4652660
Report generated 03/01/2016 14:46

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16021357 Prep Date: 02/29/16 18:25 Sample ID: WG559151-01
Instrument ID: HPMS9 Run Date: 02/29/16 18:25 Prep Method: 5030B/5030C/503
File ID: 9M972969 Analyst: FJB/JDS Method: 8260B
Workgroup (AAB#): WG559151 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-25-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	5.00	20.0	5.00	1	U
Benzene	0.500	5.00	0.500	1	U
Bromobenzene	0.500	5.00	0.500	1	U
Bromochloromethane	1.00	5.00	1.00	1	U
Bromodichloromethane	0.500	5.00	0.500	1	U
Bromoform	0.500	5.00	0.500	1	U
Bromomethane	1.00	5.00	1.00	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.500	5.00	0.500	1	U
sec-Butylbenzene	0.500	5.00	0.500	1	U
tert-Butylbenzene	0.500	5.00	0.500	1	U
Carbon disulfide	0.500	5.00	0.500	1	U
Carbon tetrachloride	0.500	5.00	0.500	1	U
Chlorobenzene	0.500	5.00	0.500	1	U
Chlorodibromomethane	0.500	5.00	0.500	1	U
Chloroethane	1.00	5.00	1.00	1	U
Chloroform	0.500	5.00	0.500	1	U
Chloromethane	2.00	10.0	2.00	1	U
2-Chlorotoluene	0.500	5.00	0.500	1	U
4-Chlorotoluene	0.500	5.00	0.500	1	U
1,2-Dibromo-3-chloropropane	2.00	10.0	2.00	1	U
1,2-Dibromoethane	0.500	5.00	0.500	1	U
Dibromomethane	0.500	5.00	0.500	1	U
1,2-Dichlorobenzene	0.500	5.00	0.500	1	U
1,3-Dichlorobenzene	0.500	5.00	0.500	1	U
1,4-Dichlorobenzene	0.500	5.00	0.500	1	U
Dichlorodifluoromethane	1.00	5.00	1.00	1	U
1,1-Dichloroethane	1.00	5.00	1.00	1	U
1,2-Dichloroethane	0.500	5.00	0.500	1	U
1,1-Dichloroethene	0.500	5.00	0.500	1	U
cis-1,2-Dichloroethene	0.500	5.00	0.500	1	U
trans-1,2-Dichloroethene	0.500	5.00	0.500	1	U
1,2-Dichloropropane	0.500	5.00	0.500	1	U
1,3-Dichloropropane	0.500	5.00	0.500	1	U
2,2-Dichloropropane	0.500	5.00	0.500	1	U
cis-1,3-Dichloropropene	0.500	5.00	0.500	1	U
trans-1,3-Dichloropropene	0.500	5.00	0.500	1	U
1,1-Dichloropropene	0.500	5.00	0.500	1	U
Ethylbenzene	0.500	5.00	0.500	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.500	5.00	0.500	1	U
Isopropylbenzene	0.500	5.00	0.500	1	U

Report Name:BLANK
PDF ID: 4652661
01-MAR-2016 14:46

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16021357 Prep Date: 02/29/16 18:25 Sample ID: WG559151-01
Instrument ID: HPMS9 Run Date: 02/29/16 18:25 Prep Method: 5030B/5030C/503
File ID: 9M972969 Analyst: FJB/JDS Method: 8260B
Workgroup (AAB#): WG559151 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-25-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.500	5.00	0.500	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	1.00	5.00	1.00	1	U
Naphthalene	0.500	5.00	0.500	1	U
n-Propylbenzene	0.500	5.00	0.500	1	U
Styrene	0.500	5.00	0.500	1	U
1,1,1,2-Tetrachloroethane	0.500	5.00	0.500	1	U
1,1,2,2-Tetrachloroethane	0.500	5.00	0.500	1	U
Tetrachloroethene	0.500	5.00	0.500	1	U
Toluene	0.500	5.00	0.500	1	U
1,2,3-Trichlorobenzene	0.500	5.00	0.500	1	U
1,2,4-Trichlorobenzene	0.500	5.00	0.500	1	U
1,1,1-Trichloroethane	0.500	5.00	0.500	1	U
1,1,2-Trichloroethane	0.500	5.00	0.500	1	U
Trichloroethene	0.500	5.00	0.500	1	U
Trichlorofluoromethane	1.00	5.00	1.00	1	U
1,2,3-Trichloropropane	1.00	5.00	1.00	1	U
1,2,4-Trimethylbenzene	0.500	5.00	0.500	1	U
1,3,5-Trimethylbenzene	0.500	5.00	0.500	1	U
Vinyl chloride	1.00	5.00	1.00	1	U
o-Xylene	0.500	5.00	0.500	1	U
m-,p-Xylene	0.500	5.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	98.6	80 - 120	PASS
1,2-Dichloroethane-d4	97.5	80 - 120	PASS
Toluene-d8	106	85 - 115	PASS
4-Bromofluorobenzene	113	85 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4652661
01-MAR-2016 14:46

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16021357 | Run Date: 02/29/2016 | Sample ID: WG559151-02
Instrument ID: HPMS9 | Run Time: 18:56 | Prep Method: 5030B/5030C/503
File ID: 9M972970 | Analyst: FJB/JDS | Method: 8260B
Workgroup (AAB#): WG559151 | Matrix: Soil | Units: ug/kg
QC Key: DOD4 | Lot#: STD74900 | Cal ID: HPMS9-25-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	21.0	105	20 - 160	
Benzene	20.0	19.8	98.8	75 - 125	
Bromobenzene	20.0	19.1	95.5	65 - 120	
Bromochloromethane	20.0	19.8	99.0	70 - 125	
Bromodichloromethane	20.0	18.3	91.4	70 - 130	
Bromoform	20.0	16.9	84.7	55 - 135	
Bromomethane	20.0	18.9	94.3	30 - 160	
2-Butanone	20.0	20.6	103	30 - 160	
n-Butylbenzene	20.0	18.4	92.2	65 - 140	
sec-Butylbenzene	20.0	19.9	99.7	65 - 130	
tert-Butylbenzene	20.0	20.6	103	65 - 130	
Carbon disulfide	20.0	17.9	89.3	45 - 160	
Carbon tetrachloride	20.0	17.9	89.7	65 - 135	
Chlorobenzene	20.0	20.0	99.8	75 - 125	
Chlorodibromomethane	20.0	18.2	90.8	65 - 130	
Chloroethane	20.0	20.0	100	40 - 155	
Chloroform	20.0	18.8	94.0	70 - 125	
Chloromethane	20.0	19.9	99.4	50 - 130	
2-Chlorotoluene	20.0	19.6	97.9	70 - 130	
4-Chlorotoluene	20.0	20.7	104	75 - 125	
1,2-Dibromo-3-chloropropane	20.0	17.8	88.9	40 - 135	
1,2-Dibromoethane	20.0	18.8	94.2	70 - 125	
Dibromomethane	20.0	17.6	87.9	75 - 130	
1,2-Dichlorobenzene	20.0	19.5	97.5	75 - 120	
1,3-Dichlorobenzene	20.0	18.6	92.8	70 - 125	
1,4-Dichlorobenzene	20.0	19.0	95.1	70 - 125	
Dichlorodifluoromethane	20.0	25.5	127	35 - 135	
1,1-Dichloroethane	20.0	19.0	95.0	75 - 125	
1,2-Dichloroethane	20.0	19.5	97.3	70 - 135	
1,1-Dichloroethene	20.0	18.8	94.0	65 - 135	
cis-1,2-Dichloroethene	20.0	20.3	102	65 - 125	
trans-1,2-Dichloroethene	20.0	20.3	101	65 - 135	
1,2-Dichloropropane	20.0	20.8	104	70 - 120	
1,3-Dichloropropane	20.0	20.7	104	75 - 125	
2,2-Dichloropropane	20.0	19.2	95.9	65 - 135	
cis-1,3-Dichloropropene	20.0	20.8	104	70 - 125	
trans-1,3-Dichloropropene	20.0	19.7	98.3	65 - 125	
1,1-Dichloropropene	20.0	18.5	92.7	70 - 135	
Ethylbenzene	20.0	21.2	106	75 - 125	
2-Hexanone	20.0	20.5	103	45 - 145	
Hexachlorobutadiene	20.0	16.7	83.7	55 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4652662
Report generated: 03/01/2016 14:46

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16021357 | Run Date: 02/29/2016 | Sample ID: WG559151-02
Instrument ID: HPMS9 | Run Time: 18:56 | Prep Method: 5030B/5030C/503
File ID: 9M972970 | Analyst: FJB/JDS | Method: 8260B
Workgroup (AAB#): WG559151 | Matrix: Soil | Units: ug/kg
QC Key: DOD4 | Lot#: STD74900 | Cal ID: HPMS9-25-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	20.3	102	75 - 130	
p-Isopropyltoluene	20.0	19.2	96.0	75 - 135	
4-Methyl-2-pentanone	20.0	21.5	108	45 - 145	
Methylene chloride	20.0	19.3	96.7	55 - 140	
Naphthalene	20.0	17.6	87.8	40 - 125	
n-Propylbenzene	20.0	20.7	104	65 - 135	
Styrene	20.0	20.2	101	75 - 125	
1,1,1,2-Tetrachloroethane	20.0	19.3	96.4	75 - 125	
1,1,2,2-Tetrachloroethane	20.0	18.4	92.0	55 - 130	
Tetrachloroethene	20.0	18.8	94.2	65 - 140	
Toluene	20.0	20.3	102	70 - 125	
1,2,3-Trichlorobenzene	20.0	18.2	91.2	60 - 135	
1,2,4-Trichlorobenzene	20.0	17.5	87.7	65 - 130	
1,1,1-Trichloroethane	20.0	18.9	94.6	70 - 135	
1,1,2-Trichloroethane	20.0	20.4	102	60 - 125	
Trichloroethene	20.0	20.3	101	75 - 125	
Trichlorofluoromethane	20.0	18.4	92.2	25 - 185	
1,2,3-Trichloropropane	20.0	19.9	99.3	65 - 130	
1,2,4-Trimethylbenzene	20.0	19.3	96.5	65 - 135	
1,3,5-Trimethylbenzene	20.0	20.3	102	65 - 135	
Vinyl chloride	20.0	21.6	108	60 - 125	
o-Xylene	20.0	20.9	104	75 - 125	
m-,p-Xylene	40.0	40.7	102	80 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	99.0	80 - 120	PASS
1,2-Dichloroethane-d4	97.0	80 - 120	PASS
Toluene-d8	102	85 - 115	PASS
4-Bromofluorobenzene	105	85 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4652662
Report generated: 03/01/2016 14:46

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16021357
Instrument: HPMS9
Analyst: FJB
Workgroup: WG555000

Tune ID: WG555000-01
Run Date: 01/25/2016
Run Time: 10:27
File ID: 9M972470
Cal ID: HPMS9 - 25-JAN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	23.0	10289	PASS
75.0	95.0	30.0	60.0	49.3	22030	PASS
95.0	95.0	100	100	100	44728	PASS
96.0	95.0	5.00	9.00	6.98	3122	PASS
173	174	0	2.00	0.381	160	PASS
174	95.0	50.0	100	93.9	41989	PASS
175	174	5.00	9.00	6.62	2778	PASS
176	174	95.0	101	95.6	40133	PASS
177	176	5.00	9.00	6.39	2564	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG555000-02	STD-S	01	01/25/2016 11:22	
WG555000-03	STD-S	01	01/25/2016 11:52	
WG555000-04	STD-S	01	01/25/2016 12:23	
WG555000-05	STD-CCV-S	01	01/25/2016 12:53	
WG555000-06	STD-S	01	01/25/2016 13:23	
WG555000-07	STD-S	01	01/25/2016 13:54	
WG555000-08	STD-S	01	01/25/2016 14:25	
WG555000-09	STD-S	01	01/25/2016 14:56	
WG555000-10	SSCV-S	01	01/25/2016 15:56	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4652664
Report generated 03/01/2016 14:46

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16021357
Instrument: HPMS9
Analyst: ADC
Workgroup: WG558732

Tune ID: WG558732-01
Run Date: 02/25/2016
Run Time: 14:45
File ID: 9M972894
Cal ID: HPMS9 - 25-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.2	5378	PASS
75.0	95.0	30.0	60.0	49.1	13067	PASS
95.0	95.0	100	100	100	26621	PASS
96.0	95.0	5.00	9.00	6.32	1683	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	85.8	22851	PASS
175	174	5.00	9.00	6.50	1485	PASS
176	174	95.0	101	98.3	22461	PASS
177	176	5.00	9.00	7.21	1619	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG558732-02	STD-CCV-S	01	02/25/2016 15:48	
WG558732-03	STD-S	01	02/25/2016 16:55	
WG558732-04	STD-S	01	02/25/2016 17:27	
WG558732-05	STD-S	01	02/25/2016 17:57	
WG558732-06	STD-S	01	02/25/2016 18:28	
WG558732-07	STD-S	01	02/25/2016 18:59	
WG558732-08	STD-S	01	02/25/2016 19:29	
WG558732-09	STD-S	01	02/25/2016 20:00	
WG558732-10	STD-S	01	02/25/2016 20:30	
WG558732-11	SSCV-S	01	02/25/2016 21:31	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4652664
Report generated 03/01/2016 14:46

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16021357
Instrument: HPMS9
Analyst: FJB/JDS
Workgroup: WG559150

Tune ID: WG559150-01
Run Date: 02/29/2016
Run Time: 16:59
File ID: 9M972966
Cal ID: HPMS9 - 25-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.9	11703	PASS
75.0	95.0	30.0	60.0	49.4	25229	PASS
95.0	95.0	100	100	100	51056	PASS
96.0	95.0	5.00	9.00	6.77	3456	PASS
173	174	0	2.00	0.437	169	PASS
174	95.0	50.0	100	75.7	38650	PASS
175	174	5.00	9.00	6.65	2572	PASS
176	174	95.0	101	95.5	36914	PASS
177	176	5.00	9.00	6.11	2255	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG559150-02	CCV-S	01	02/29/2016 17:23	
WG559151-01	BLANK	01	02/29/2016 18:25	
WG559151-02	LCS	01	02/29/2016 18:56	
WG559084-02	MS	01	02/29/2016 19:28	
WG559084-03	MSD	01	02/29/2016 19:59	
L16021357-01	18DPT01(5-5.5)250216	01	02/29/2016 21:00	
L16021357-02	18DPT01(9.5-10)250216	01	02/29/2016 21:30	
L16021357-03	18DPT01(15-15.5)250216	01	02/29/2016 22:01	
L16021357-04	18DPT01(22.5-23)250216	01	02/29/2016 22:32	
L16021357-05	18DPT01(24.5-25)250216	01	02/29/2016 23:03	
L16021357-06	18DPT01(27-27.5)250216	01	02/29/2016 23:33	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4652664
Report generated 03/01/2016 14:46

Calibration Table Report
Method: A9FOO_SL.M
Title: FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Calibration: Wed Jan 27 09:49:02 2016
Curve: WG555000
Calibration Files

Compound	5 9M972472.D	20 9M972473.D	50 9M972474.D	100 9M972475.D	200 9M972476.D	300 9M972477.D	400 9M972478.D	500 9M972479.D	Avg	%RSD	R^2 Linear
Fluorobenzene	ISTD										
Acetonitrile		0.053	0.046	0.048	0.052	0.046	0.052	0.054	0.050	6.657	
3-Chloro-1-propene	0.498	0.524	0.450	0.519	0.514	0.434	0.507	0.503	0.494	6.719	
2-Chloro-1,3-butadiene	0.534	0.576	0.519	0.592	0.585	0.509	0.593	0.584	0.561	6.202	
Ethyl Acetate		0.333	0.313	0.339	0.338	0.300	0.341	0.344	0.330	5.124	
Methacrylonitrile	0.102	0.109	0.101	0.112	0.110	0.096	0.112	0.112	0.107	5.912	
Isobutyl Alcohol	0.014	0.018	0.018	0.021	0.024	0.021	0.025	0.025	0.021	18.016	0.993
1-Butanol		0.010	0.013	0.015	0.017	0.015	0.018	0.018	0.015	17.838	0.992
Methyl methacrylate	0.236	0.246	0.231	0.265	0.265	0.231	0.271	0.269	0.252	7.005	
2-Nitropropane	0.069	0.073	0.074	0.083	0.089	0.079	0.093	0.095	0.082	12.090	
Chlorobenzene-d5	ISTD										
Cyclohexanone		0.020	0.022	0.025	0.028	0.023	0.027	0.028	0.025	12.963	
1,4-Dichlorobenzene-d4	ISTD										

Wed Jan 27 10:01:56 2016

Calibration Table Report
Method: 8260SL.M
Title: 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Calibration: Fri Feb 26 11:38:33 2016
Curve: WG558732
Calibration Files

Compound	0.5 9M972898.D	1 9M972899.D	2 9M972900.D	5 9M972901.D	20 9M972902.D	50 9M972896.D	100 9M972903.D	200 9M972904.D	300 9M972905.D	Avg	%RSD	R^2 Linear	Quadratic
Fluorobenzene	ISTD												
Dichlorodifluoromethane			0.338	0.271	0.399	0.396	0.318	0.357	0.307	0.341	13.734		
Chloromethane			0.372	0.280	0.331	0.361	0.296	0.346	0.304	0.327	10.674		
Vinyl Chloride		0.250	0.318	0.314	0.373	0.372	0.342	0.355	0.296	0.327	12.768		
1,3-Butadiene			0.347	0.266	0.328	0.330	0.297	0.321	0.293	0.312	8.837		
Bromomethane		0.236	0.267	0.181	0.206	0.208	0.186	0.217	0.199	0.213	13.250		
Chloroethane			0.127	0.116	0.142	0.165	0.139	0.173	0.160	0.146	14.271		
Trichlorofluoromethane		0.519	0.518	0.416	0.503	0.514	0.470	0.517	0.473	0.491	7.357		
Diethyl ether		0.215	0.246	0.217	0.243	0.241	0.214		0.231	0.230	6.215		
Isoprene			0.302	0.251	0.303	0.302	0.282	0.318	0.295	0.293	7.364		
Acrolein		0.041	0.046	0.045	0.046	0.048	0.046		0.050	0.046	6.212		
1,1,2-Trichloro-1,2,2-Trifluoroethane			0.252	0.234	0.255	0.261	0.248	0.273	0.251	0.253	4.699		
Acetone				0.179	0.138	0.128	0.119	0.124		0.138	17.810	0.999	
1,1-Dichloroethene		0.464	0.511	0.400	0.482	0.471	0.454	0.500	0.456	0.467	7.277		
Tert-Butyl Alcohol			0.057	0.046	0.055	0.051	0.047			0.051	8.698		
Dimethyl Sulfide		0.150	0.203	0.186	0.207	0.211	0.196	0.224	0.203	0.197	11.169		
Iodomethane				0.076	0.109	0.154	0.126	0.157	0.142	0.127	24.315	0.993	
Methyl acetate			0.282	0.223	0.279	0.262	0.240	0.258	0.234	0.254	8.867		
Methylene Chloride			0.271	0.217	0.263	0.261	0.240	0.280	0.249	0.254	8.252		
Carbon Disulfide			0.795	0.626	0.740	0.737	0.678	0.761	0.702	0.720	7.788		
Acrylonitrile		0.117	0.127	0.114	0.130	0.135	0.123		0.134	0.126	6.412		
Methyl Tert Butyl Ether		0.669	0.722	0.642	0.760	0.786	0.713	0.788	0.718	0.725	7.239		
trans-1,2-Dichloroethene		0.400	0.422	0.377	0.430	0.438	0.407	0.446	0.412	0.416	5.376		
n-Hexane			0.456	0.385	0.420	0.424	0.429	0.464	0.428	0.430	5.986		
Diisopropyl ether		0.938	1.068	0.928	1.071	1.051	0.931		0.995	0.998	6.627		
Vinyl Acetate			0.593	0.519	0.545	0.602	0.554	0.608	0.558	0.569	5.855		
1,1-Dichloroethane		0.548	0.558	0.445	0.532	0.549	0.499	0.553	0.500	0.523	7.454		
Ethyl-Tert-Butyl ether		0.871	0.992	0.852	0.990	0.988	0.865		0.934	0.928	6.918		
2-Butanone			0.177	0.152	0.156	0.166	0.156	0.172	0.149	0.161	6.650		
Propionitrile		0.042	0.055	0.048	0.053	0.051	0.048		0.049	0.049	8.494		
2,2-Dichloropropane			0.428	0.330	0.377	0.415	0.383	0.417	0.383	0.390	8.575		
cis-1,2-Dichloroethene		0.247	0.257	0.248	0.287	0.297	0.273	0.299	0.277	0.273	7.647		
Chloroform		0.473	0.530	0.432	0.482	0.509	0.459	0.505	0.454	0.480	6.746		
1-Bromopropane			0.011	0.041	0.042	0.043	0.040	0.045	0.041	0.038	31.434	0.997	
Bromochloromethane		0.131	0.173	0.169	0.194	0.199	0.179	0.197	0.178	0.177	12.275		
Tetrahydrofuran			0.111	0.099	0.110	0.110	0.097		0.097	0.104	6.802		
Dibromofluoromethane				0.267	0.243	0.286	0.286	0.274		0.271	6.547		
1,1,1-Trichloroethane		0.426	0.436	0.385	0.438	0.470	0.425	0.470	0.427	0.434	6.319		
Cyclohexane		0.465	0.495	0.425	0.494	0.478	0.465	0.503	0.464	0.474	5.302		
1,1-Dichloropropene		0.353	0.359	0.300	0.344	0.352	0.333	0.360	0.335	0.342	5.748		
Tert-Amyl-Methyl ether		0.631	0.709	0.631	0.716	0.716	0.632		0.684	0.674	6.133		
Carbon Tetrachloride			0.41939	0.34041	0.40512	0.42742	0.39181	0.43819	0.39737	0.40282	7.96886		
1,2-Dichloroethane-d4				0.34995	0.30686	0.35494	0.35835	0.33017		0.34005	6.33015		
Heptane										0	0		
1,2-Dichloroethane		0.36551	0.44947	0.39601	0.44224	0.45938	0.41291	0.4496	0.40581	0.42262	7.76179		
Benzene	1.14079	0.92872	1.03015	0.83328	0.97121	0.9721	0.88431	0.97127	0.88279	0.95718	9.53654		
Trichloroethene		0.30364	0.32158	0.26212	0.31219	0.31666	0.29597	0.321	0.29314	0.30329	6.54492		
Methylcyclohexane		0.31249	0.39837	0.32203	0.40419	0.39506	0.39323	0.42525	0.39247	0.38039	10.6291		
1,2-Dichloropropane		0.23004	0.27101	0.24016	0.27676	0.28593	0.2555	0.28277	0.26062	0.26285	7.66268		
1,4-Dioxane			0.0041	0.00361	0.00449	0.00376	0.00356		0.00414	0.00394	9.17892		
Bromodichloromethane			0.37851	0.33087	0.3725	0.39384	0.35929	0.397	0.36103	0.37044	6.13725		
Dibromomethane		0.15103	0.18915	0.16523	0.1825	0.18519	0.16707	0.1849	0.1682	0.17416	7.61692		
2-Chloroethyl Vinyl Ether				0.04535	0.05625	0.07439	0.06667	0.08013	0.07633	0.06652	20.1377	0.996	
4-Methyl-2-Pentanone				0.08933	0.11327	0.12554	0.11786	0.12977	0.11644	0.11537	12.2612		
cis-1,3-Dichloropropene			0.37321	0.33699	0.39477	0.41098	0.38072	0.42291	0.38195	0.38594	7.23123		
Dimethyl Disulfide			0.30882	0.3269	0.39409	0.4245	0.40234	0.4579	0.40032	0.38784	13.5683		
Chlorobenzene-d5	ISTD												
Toluene-d8				1.21266	1.14503	1.34974	1.34798	1.26813		1.26471	6.98417		
Toluene	1.57001	1.40445	1.51648	1.23448	1.46732	1.48749	1.3712	1.4823	1.3236	1.42859	7.34792		
Ethyl Methacrylate				0.31749	0.4112	0.4195	0.39758	0.44016	0.38999	0.39599	10.6751		
trans-1,3-Dichloropropene			0.50304	0.44978	0.5157	0.56049	0.50648	0.56248	0.50379	0.51454	7.49294		
1,1,2-Trichloroethane		0.27692	0.29584	0.27194	0.31787	0.32454	0.3	0.32173	0.292	0.3001	6.65768		
2-Hexanone				0.26013	0.28088	0.31451	0.30524	0.34734	0.28972	0.29964	10.056		
1,3-Dichloropropane		0.46617	0.55761	0.45639	0.51068	0.53187	0.47698	0.53043	0.47034	0.50006	7.49429		
Tetrachloroethene		0.33351	0.31568	0.26327	0.31051	0.30894	0.30156	0.32634	0.29026	0.30626	7.18201		
Dibromochloromethane			0.45014	0.36113	0.41394	0.44566	0.40515	0.45572	0.40415	0.41941	8.03547		
1,2-Dibromoethane				0.31086	0.34005	0.35035	0.32626	0.35324	0.31647	0.33287	5.32182		
1-Chlorohexane		0.39643	0.40929	0.33097	0.45098	0.44465	0.43807	0.477	0.42289	0.42128	10.5148		
Chlorobenzene		1.02904	1.08596	0.91908	1.05295	1.05625	0.95434	1.02465	0.91009	1.00405	6.67004		
1,1,1,2-Tetrachloroethane			0.37536	0.32525	0.38767	0.40783	0.37127	0.40937	0.36265	0.37706	7.67975		
Ethylbenzene	0.5157	0.51658	0.53164	0.45493	0.54391	0.54636	0.50916	0.54884	0.48836	0.51728	5.93862		
m-,p-Xylene	0.67213	0.61926	0.69794	0.58569	0.67162	0.65634	0.61182	0.65803	0.57657	0.63882	6.58722		
o-Xylene	0.61273	0.56415	0.61379	0.55512	0.6465	0.65334	0.60899	0.67127	0.59158	0.61305	6.41073		
Styrene		0.95813	1.06028	0.90308	1.08018	1.12326	1.04689	1.15897	1.02088	1.04396	8.002		
Bromoform			0.22872	0.23892	0.27832	0.30617	0.27263	0.32232	0.28054	0.27538	12.1348		
Isopropylbenzene		1.53891	1.69742	1.42189	1.74341	1.73716	1.64433	1.81019	1.57289	1.64577	7.76922		
1,4-Dichlorobenzene-d4	ISTD												
1,1,2,2-Tetrachloroethane		0.61571	0.83634	0.73739	0.79769	0.80854	0.74616	0.78083	0.74513	0.75847	8.88143		
p-Bromofluorobenzene				0.91653	0.87561	1.04735	1.0775	0.95104		0.97361	8.83571		
1,2,3-Trichloropropane		0.24645	0.29476	0.28329	0.29208	0.30442	0.29453	0.30315	0.28248	0.28764	6.41284		

trans-1,4-Dichloro-2-Butene		0.22501	0.23725	0.31415	0.3034	0.3105	0.33164	0.30766	0.28994	14.2446
n-Propylbenzene	3.98718	4.09811	3.61454	4.21971	4.10826	3.88939	3.82307	3.70205	3.93029	5.36989
Bromobenzene	0.84385	1.11565	0.86076	0.97118	0.9688	0.89248	0.89548	0.87446	0.92783	9.59949
1,3,5-Trimethylbenzene			2.76735	3.16086	3.10843	2.93606	2.91239	2.81635	2.95024	5.30322
2-Chlorotoluene		2.99265	2.31448	2.81057	2.64897	2.50142	2.61378	2.57101	2.63612	8.25378
4-Chlorotoluene	2.56339	2.5861	2.29006	2.55177	2.63031	2.41864	2.2799	2.17747	2.4372	6.98222
a-Methylstyrene			1.12025	1.41688	1.39756	1.35572	1.41986	1.35543	1.34428	8.43365
tert-Butylbenzene			0.56026	0.65003	0.66483	0.62531	0.61977	0.59094	0.61853	6.19423
1,2,4-Trimethylbenzene	3.41485	3.20381	2.86379	3.24429	3.17284	3.0014	2.96997	2.8463	3.08966	6.49589
sec-Butylbenzene	3.92127	3.95846	3.39254	3.98281	3.96896	3.8029	3.77812	3.59297	3.79976	5.54855
p-Isopropyltoluene			2.97918	3.35219	3.3501	3.24235	3.24339	3.07285	3.20668	4.70949
1,3-Dichlorobenzene	2.09668	2.18083	1.63464	1.82169	1.84149	1.71899	1.77783	1.67989	1.84401	10.6223
1,4-Dichlorobenzene	2.13498	2.06617	1.68605	1.85221	1.83159	1.72549	1.79434	1.65691	1.84347	9.41157
n-Butylbenzene	3.12981	3.1425	2.56827	2.96652	3.08072	3.01911	3.06733	2.87744	2.98146	6.31771
1,2-Dichlorobenzene	1.80685	1.84212	1.52596	1.70901	1.74915	1.66133	1.78603	1.60751	1.71099	6.28256
1,2-Dibromo-3-Chloropropane			0.17584	0.21007	0.23479	0.23723	0.24208	0.21787	0.21965	11.2549
1,2,4-Trichlorobenzene	1.3714	1.33063	1.02655	1.15029	1.2163	1.24479	1.25089	1.12609	1.21462	9.21088
Hexachlorobutadiene	0.57233	0.7279	0.53741	0.61674	0.64289	0.67353	0.72181	0.62948	0.64026	10.4449
Naphthalene		3.19632	2.63671	3.04494	3.29135	3.2233	3.14196	2.79099	3.04651	7.99534
1,2,3-Trichlorobenzene	1.32324	1.26566	0.99788	1.12352	1.21351	1.21702	1.20507	1.0788	1.17809	8.93408

Fri Feb 26 11:40:14 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16021357 Run Date: 02/25/2016 Sample ID: WG558732-11
Instrument ID: HPMS9 Run Time: 21:31 Method: 8260B
File ID: 9M972907 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG558732 Cal ID: HPMS9 - 25-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	48.0	ug/kg	0.461	4.00	20	
1,1-Dichloroethene	CCC	50.0	48.6	ug/kg	0.454	2.90	20	
1,2-Dichloropropane	CCC	50.0	52.3	ug/kg	0.275	4.60	20	
Ethylbenzene	CCC	50.0	51.3	ug/kg	0.531	2.60	20	
Toluene	CCC	50.0	50.7	ug/kg	1.45	1.50	20	
Vinyl Chloride	CCC	50.0	59.8	ug/kg	0.392	19.7	20	
Bromoform	SPCC	50.0	47.3	ug/kg	0.261	5.40	20	
Chlorobenzene	SPCC	50.0	51.2	ug/kg	1.03	2.40	20	
Chloromethane	SPCC	50.0	52.7	ug/kg	0.345	5.40	20	
1,1-Dichloroethane	SPCC	50.0	46.4	ug/kg	0.485	7.20	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	52.0	ug/kg	0.789	4.00	20	
Acetone		50.0	43.9	ug/kg	0.112	12.2	20	
Benzene		50.0	49.0	ug/kg	0.937	2.10	20	
Bromobenzene		50.0	52.2	ug/kg	0.968	4.40	20	
Bromochloromethane		50.0	51.5	ug/kg	0.183	3.00	20	
Bromodichloromethane		50.0	47.6	ug/kg	0.352	4.90	20	
Bromomethane		50.0	49.0	ug/kg	0.208	2.10	20	
2-Butanone		50.0	47.4	ug/kg	0.153	5.20	20	
n-Butylbenzene		50.0	52.5	ug/kg	3.13	4.90	20	
sec-Butylbenzene		50.0	54.7	ug/kg	4.16	9.50	20	
tert-Butylbenzene		50.0	55.4	ug/kg	0.685	10.8	20	
Carbon Disulfide		50.0	44.1	ug/kg	0.635	11.7	20	
Carbon Tetrachloride		50.0	46.5	ug/kg	0.375	7.00	20	
Dibromochloromethane		50.0	48.5	ug/kg	0.407	3.10	20	
Chloroethane		50.0	54.2	ug/kg	0.158	8.30	20	
2-Chlorotoluene		50.0	54.2	ug/kg	2.86	8.40	20	
4-Chlorotoluene		50.0	53.0	ug/kg	2.59	6.10	20	
1,2-Dibromo-3-Chloropropane		50.0	54.5	ug/kg	0.239	8.90	20	
1,2-Dibromoethane		50.0	50.8	ug/kg	0.338	1.50	20	
Dibromomethane		50.0	47.0	ug/kg	0.164	6.10	20	
1,2-Dichlorobenzene		50.0	52.7	ug/kg	1.81	5.50	20	
1,3-Dichlorobenzene		50.0	50.8	ug/kg	1.87	1.60	20	
1,4-Dichlorobenzene		50.0	51.1	ug/kg	1.88	2.20	20	
Dichlorodifluoromethane		50.0	63.4	ug/kg	0.432	26.7	20	*
1,2-Dichloroethane		50.0	49.2	ug/kg	0.416	1.60	20	
cis-1,2-Dichloroethene		50.0	52.6	ug/kg	0.287	5.20	20	
trans-1,2-Dichloroethene		50.0	50.6	ug/kg	0.422	1.20	20	
1,3-Dichloropropane		50.0	53.8	ug/kg	0.538	7.60	20	
2,2-Dichloropropane		50.0	47.1	ug/kg	0.368	5.90	20	
cis-1,3-Dichloropropene		50.0	53.2	ug/kg	0.411	6.40	20	
trans-1,3-Dichloropropene		50.0	50.0	ug/kg	0.515	0.100	20	
1,1-Dichloropropene		50.0	48.5	ug/kg	0.332	2.90	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4652663
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Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16021357 Run Date: 02/25/2016 Sample ID: WG558732-11
Instrument ID: HPMS9 Run Time: 21:31 Method: 8260B
File ID: 9M972907 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG558732 Cal ID: HPMS9 - 25-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	48.2	ug/kg	0.289	3.60	20	
Hexachlorobutadiene		50.0	54.5	ug/kg	0.698	9.00	20	
Isopropylbenzene		50.0	52.0	ug/kg	1.71	4.00	20	
p-Isopropyltoluene		50.0	54.1	ug/kg	3.47	8.10	20	
4-Methyl-2-Pentanone		50.0	47.8	ug/kg	0.110	4.40	20	
Methylene Chloride		50.0	49.8	ug/kg	0.254	0.400	20	
Naphthalene		50.0	50.8	ug/kg	3.10	1.70	20	
n-Propylbenzene		50.0	54.9	ug/kg	4.32	9.80	20	
Styrene		50.0	52.8	ug/kg	1.10	5.60	20	
1,1,1,2-Tetrachloroethane		50.0	49.7	ug/kg	0.375	0.600	20	
Tetrachloroethene		50.0	49.8	ug/kg	0.305	0.400	20	
1,2,3-Trichlorobenzene		50.0	52.6	ug/kg	1.24	5.20	20	
1,2,4-Trichlorobenzene		50.0	51.7	ug/kg	1.26	3.40	20	
1,1,1-Trichloroethane		50.0	46.7	ug/kg	0.406	6.50	20	
1,1,2-Trichloroethane		50.0	51.5	ug/kg	0.309	3.00	20	
Trichloroethene		50.0	49.4	ug/kg	0.300	1.20	20	
Trichlorofluoromethane		50.0	47.6	ug/kg	0.467	4.90	20	
1,2,3-Trichloropropane		50.0	54.2	ug/kg	0.312	8.40	20	
1,2,4-Trimethylbenzene		50.0	51.5	ug/kg	3.18	3.10	20	
1,3,5-Trimethylbenzene		50.0	54.3	ug/kg	3.21	8.60	20	
o-Xylene		50.0	53.6	ug/kg	0.657	7.10	20	
m-,p-Xylene		100	103	ug/kg	0.655	2.60	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4652663
Report generated 03/01/2016 14:46

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021357 Run Date: 02/29/2016 Sample ID: WG559150-02
Instrument ID: HPMS9 Run Time: 17:23 Method: 8260B
File ID: 9M972967 Analyst: FJB/JDS QC Key: DOD4
Workgroup (AAB#): WG559151 Cal ID: HPMS9 - 25-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.0	ug/kg	0.480	0.0136	20	
1,1-Dichloroethene	CCC	50.0	50.3	ug/kg	0.470	0.656	20	
1,2-Dichloropropane	CCC	50.0	54.5	ug/kg	0.287	9.07	20	
Ethylbenzene	CCC	50.0	54.8	ug/kg	0.567	9.62	20	
Toluene	CCC	50.0	53.2	ug/kg	1.52	6.47	20	
Vinyl Chloride	CCC	50.0	57.3	ug/kg	0.375	14.5	20	
Bromoform	SPCC	50.0	49.9	ug/kg	0.275	0.188	20	
Chlorobenzene	SPCC	50.0	52.5	ug/kg	1.06	5.09	20	
Chloromethane	SPCC	50.0	44.7	ug/kg	0.292	10.6	20	
1,1-Dichloroethane	SPCC	50.0	52.1	ug/kg	0.545	4.16	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.9	ug/kg	0.757	0.242	20	
Xylenes		150	163	ug/kg	0.681	8.56	40	
Acetone		50.0	46.0	ug/kg	0.117	8.05	20	
Benzene		50.0	50.9	ug/kg	0.974	1.71	20	
Bromobenzene		50.0	53.0	ug/kg	0.984	6.00	20	
Bromochloromethane		50.0	52.4	ug/kg	0.186	4.72	20	
Bromodichloromethane		50.0	50.1	ug/kg	0.371	0.216	20	
Bromomethane		50.0	45.8	ug/kg	0.195	8.34	20	
2-Butanone		50.0	47.2	ug/kg	0.152	5.54	20	
n-Butylbenzene		50.0	56.2	ug/kg	3.35	12.4	20	
sec-Butylbenzene		50.0	56.9	ug/kg	4.33	13.8	20	
tert-Butylbenzene		50.0	57.2	ug/kg	0.708	14.5	20	
Carbon Disulfide		50.0	58.8	ug/kg	0.847	17.7	20	
Carbon Tetrachloride		50.0	51.1	ug/kg	0.412	2.18	20	
Dibromochloromethane		50.0	50.5	ug/kg	0.423	0.949	20	
Chloroethane		50.0	54.1	ug/kg	0.158	8.17	20	
2-Chlorotoluene		50.0	53.7	ug/kg	2.83	7.36	20	
4-Chlorotoluene		50.0	56.2	ug/kg	2.74	12.4	20	
1,2-Dibromo-3-Chloropropane		50.0	45.8	ug/kg	0.201	8.44	20	
1,2-Dibromoethane		50.0	49.8	ug/kg	0.331	0.443	20	
Dibromomethane		50.0	50.8	ug/kg	0.177	1.54	20	
1,2-Dichlorobenzene		50.0	51.9	ug/kg	1.78	3.77	20	
1,3-Dichlorobenzene		50.0	51.4	ug/kg	1.89	2.72	20	
1,4-Dichlorobenzene		50.0	51.4	ug/kg	1.89	2.70	20	
Dichlorodifluoromethane		50.0	45.8	ug/kg	0.312	8.33	20	
1,2-Dichloroethane		50.0	50.4	ug/kg	0.426	0.802	20	
cis-1,2-Dichloroethene		50.0	53.3	ug/kg	0.291	6.56	20	
trans-1,2-Dichloroethene		50.0	54.2	ug/kg	0.452	8.49	20	
1,3-Dichloropropane		50.0	51.0	ug/kg	0.510	2.07	20	
2,2-Dichloropropane		50.0	55.8	ug/kg	0.436	11.7	20	
cis-1,3-Dichloropropene		50.0	52.9	ug/kg	0.408	5.79	20	
trans-1,3-Dichloropropene		50.0	53.4	ug/kg	0.550	6.86	20	

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021357 Run Date: 02/29/2016 Sample ID: WG559150-02
Instrument ID: HPMS9 Run Time: 17:23 Method: 8260B
File ID: 9M972967 Analyst: FJB/JDS QC Key: DOD4
Workgroup (AAB#): WG559151 Cal ID: HPMS9 - 25-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	53.3	ug/kg	0.365	6.61	20	
2-Hexanone		50.0	49.6	ug/kg	0.297	0.827	20	
Hexachlorobutadiene		50.0	54.2	ug/kg	0.695	8.48	20	
Isopropylbenzene		50.0	55.0	ug/kg	1.81	10.1	20	
p-Isopropyltoluene		50.0	56.6	ug/kg	3.63	13.2	20	
4-Methyl-2-Pentanone		50.0	50.1	ug/kg	0.116	0.238	20	
Methylene Chloride		50.0	50.3	ug/kg	0.256	0.504	20	
Naphthalene		50.0	47.7	ug/kg	2.90	4.70	20	
n-Propylbenzene		50.0	57.0	ug/kg	4.48	14.0	20	
Styrene		50.0	54.9	ug/kg	1.15	9.79	20	
1,1,1,2-Tetrachloroethane		50.0	52.1	ug/kg	0.393	4.12	20	
Tetrachloroethene		50.0	53.9	ug/kg	0.330	7.82	20	
1,2,3-Trichlorobenzene		50.0	50.2	ug/kg	1.18	0.361	20	
1,2,4-Trichlorobenzene		50.0	50.8	ug/kg	1.23	1.54	20	
1,1,1-Trichloroethane		50.0	52.6	ug/kg	0.457	5.20	20	
1,1,2-Trichloroethane		50.0	52.5	ug/kg	0.315	5.05	20	
Trichloroethene		50.0	52.9	ug/kg	0.321	5.82	20	
Trichlorofluoromethane		50.0	52.3	ug/kg	0.513	4.50	20	
1,2,3-Trichloropropane		50.0	50.0	ug/kg	0.288	0.0332	20	
1,2,4-Trimethylbenzene		50.0	54.4	ug/kg	3.36	8.70	20	
1,3,5-Trimethylbenzene		50.0	56.7	ug/kg	3.35	13.5	20	
o-Xylene		50.0	54.9	ug/kg	0.674	9.89	20	
m-,p-Xylene		100	108	ug/kg	0.689	7.89	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4652665
Report generated 03/01/2016 14:46

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16021357
Instrument ID: HPMS9
Workgroup (AAB#): WG559151

ICAL CCV Number: WG558732-02
CAL ID: HPMS9 - 25-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558732-02	NA	NA	183008	378926	517775
Upper Limit	NA	NA	366016	757852	1035550
Lower Limit	NA	NA	91504	189463	258888
L16021357-01	1.00	01	169769	363029	513071
L16021357-02	1.00	01	132036	286025	402912
L16021357-03	1.00	01	164775	349231	499404
L16021357-04	1.00	01	176954	394836	554674
L16021357-05	1.00	01	175728	381852	549980
L16021357-06	1.00	01	183109	417877	595721
WG559151-01	1.00	01	183902	403206	567751
WG559151-02	1.00	01	203058	426907	583985

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4652666
Report generated 03/01/2016 14:46

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16021357
Instrument ID: HPMS9
Workgroup (AAB#): WG559151

ICAL CCV Number: WG558732-02
CAL ID: HPMS9 - 25-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558732-02	NA	NA	17.76	14.73	10.85
Upper Limit	NA	NA	18.26	15.23	11.35
Lower Limit	NA	NA	17.26	14.23	10.35
L16021357-01	1.00	01	17.75	14.72	10.85
L16021357-02	1.00	01	17.75	14.72	10.85
L16021357-03	1.00	01	17.75	14.72	10.85
L16021357-04	1.00	01	17.75	14.72	10.85
L16021357-05	1.00	01	17.75	14.72	10.85
L16021357-06	1.00	01	17.75	14.72	10.85
WG559151-01	1.00	01	17.75	14.72	10.85
WG559151-02	1.00	01	17.76	14.73	10.85

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4652668
Report generated: 03/01/2016 14:46

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972974.D Vial: 8
Acq On : 29 Feb 2016 21:00 Operator: FJB/JDS
Sample : WG559084-01 L16021357-01 REF 4.90g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 01 09:27:15 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	513071	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	363029	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	169769	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	134429	48.3365 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.68%		
43) 1,2-Dichloroethane-d4	10.45	65	177621	50.9024 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 101.80%		
58) Toluene-d8	12.82	98	489347	53.2912 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.58%		
79) p-Bromofluorobenzene	16.23	95	187457	56.7062 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 113.42%		

Target Compounds

					Qvalue
13) Acetone	6.41	43	10794	6.2295 ug/kg	97
29) 2-Butanone	9.03	43	807	0.4878 ug/kg#	58
56) Dimethyl Disulfide	12.82	94	13775	3.4612 ug/kg#	29
88) tert-Butylbenzene	17.00	134	1308	0.6228 ug/kg#	1
91) p-Isopropyltoluene	17.47	119	190344	17.4822 ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972974.D 8260SL.M Tue Mar 01 09:27:16 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972974.D Vial: 8
Acq On : 29 Feb 2016 21:00 Operator: FJB/JDS
Sample : WG559084-01 L16021357-01 REF 4.90g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 1 9:27 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

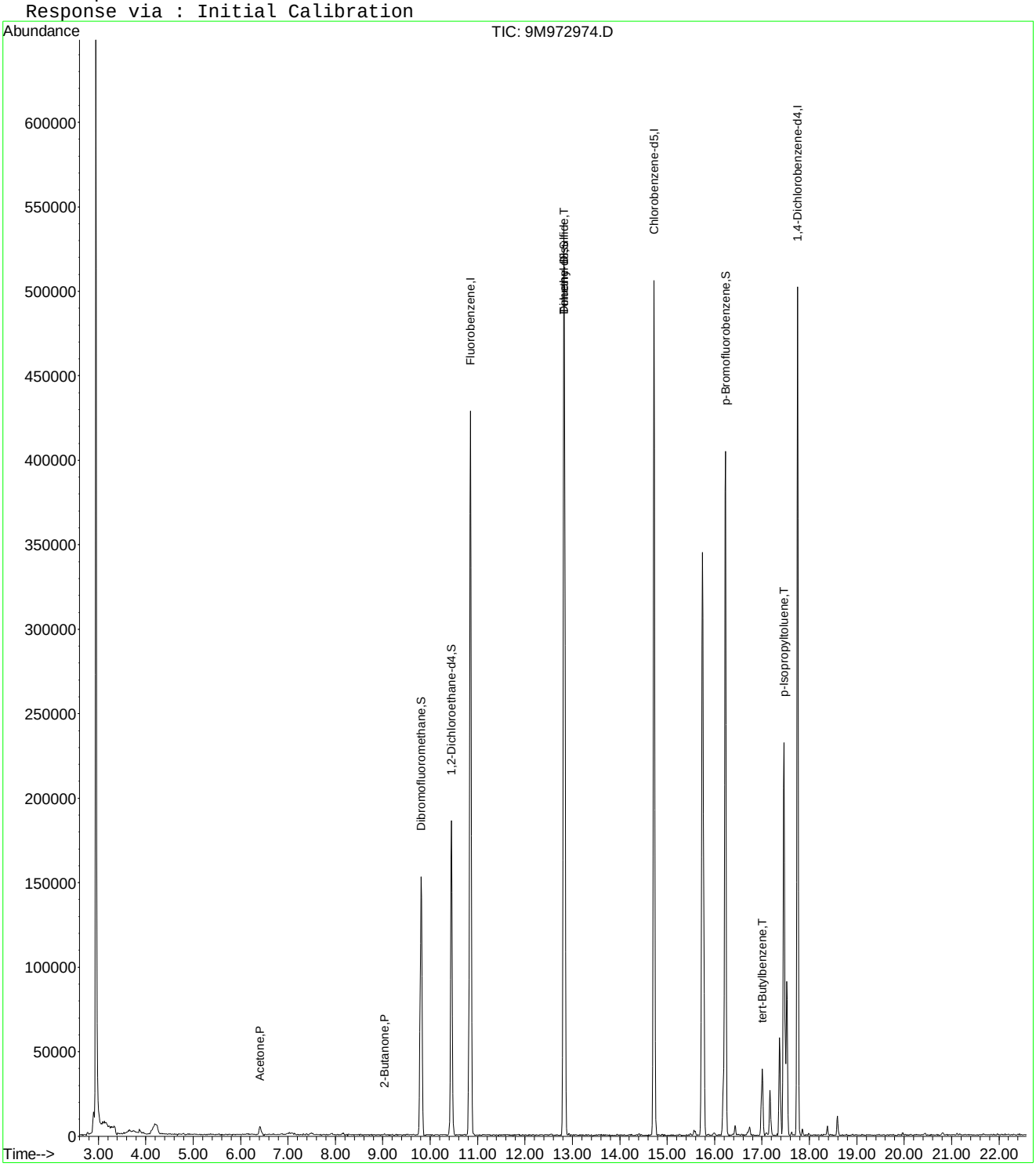

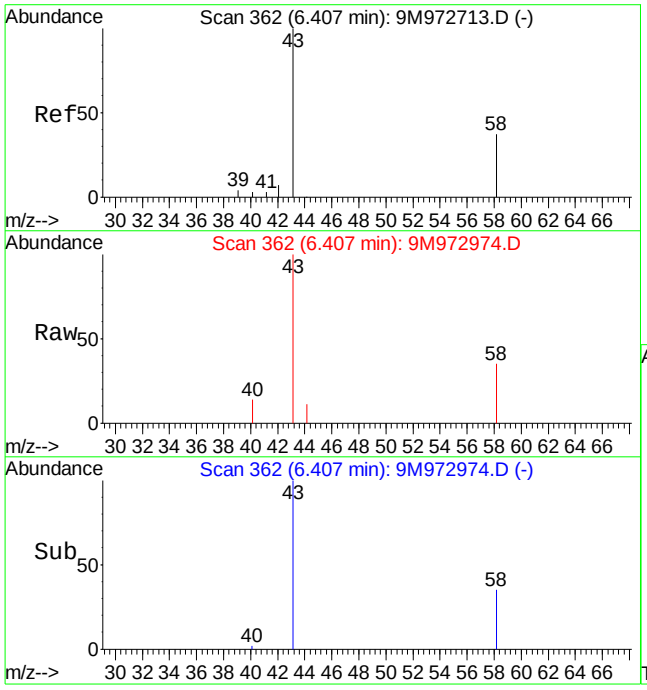

#13
Acetone
Concen: 6.23 ug/kg
RT: 6.41 min Scan# 362
Delta R.T. -0.01 min
Lab File: 9M972974.D
Acq: 29 Feb 2016 21:00

Tgt Ion: 43 Resp: 10794

Ion	Ratio	Lower	Upper
43	100		
58	29.8	16.9	39.3

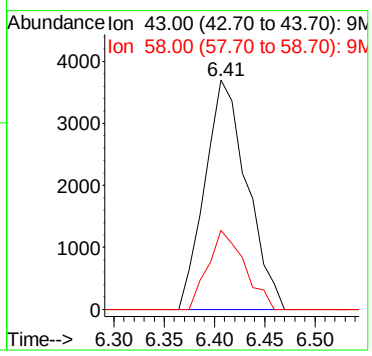

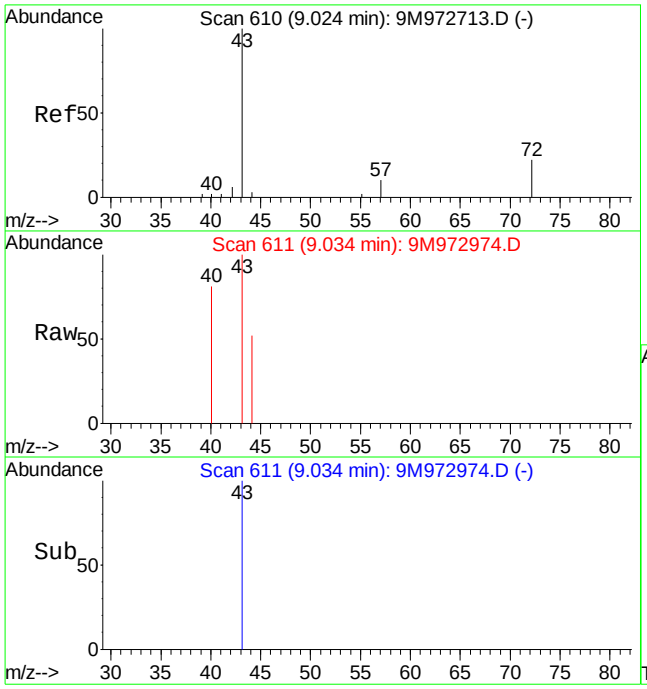

#29
2-Butanone
Concen: 0.49 ug/kg
RT: 9.03 min Scan# 611
Delta R.T. 0.00 min
Lab File: 9M972974.D
Acq: 29 Feb 2016 21:00

Tgt Ion: 43 Resp: 807

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

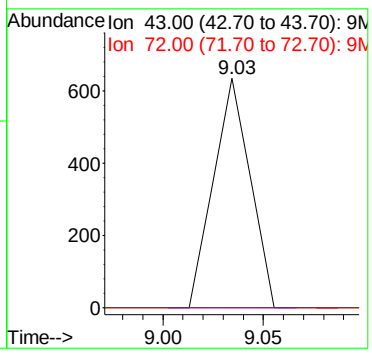

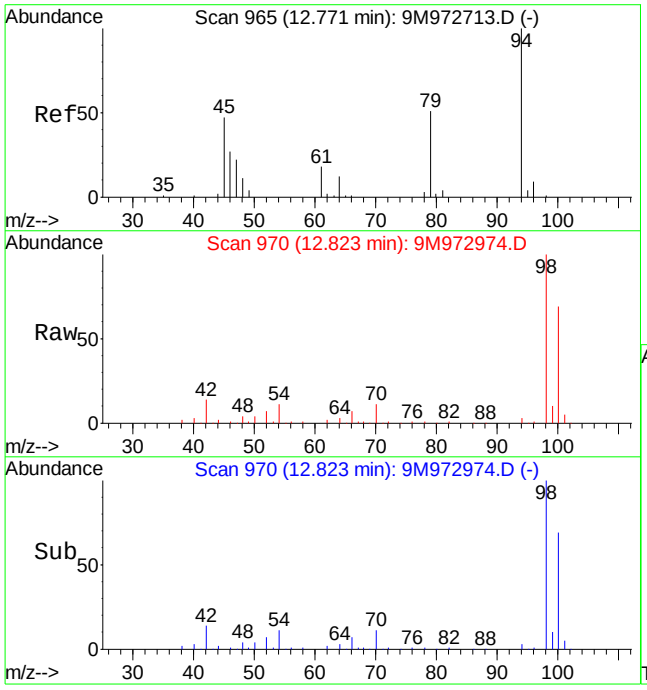

#56
Dimethyl Disulfide
Concen: 3.46 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M972974.D
Acq: 29 Feb 2016 21:00

Tgt Ion: 94 Resp: 13775

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

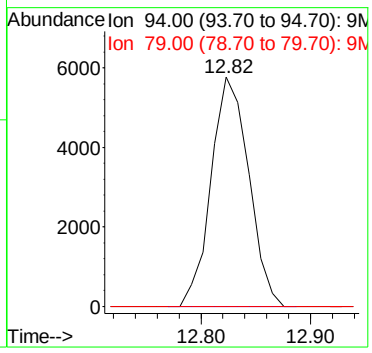

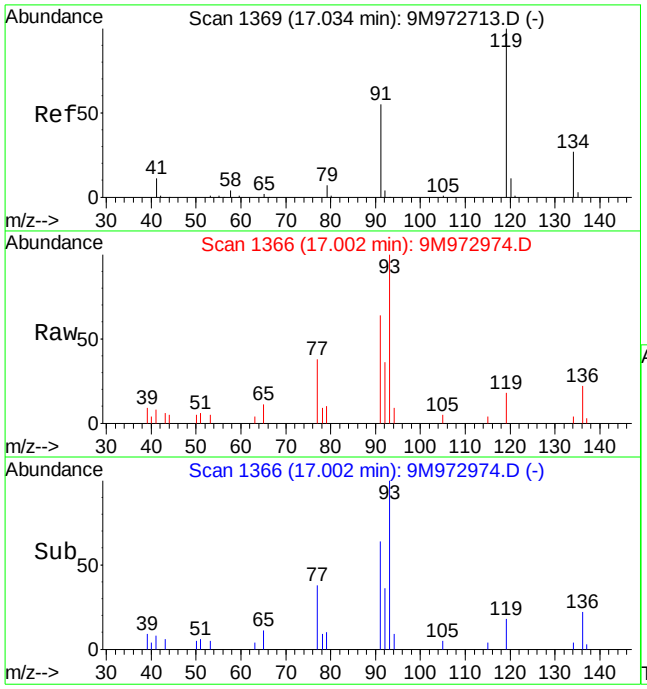

#88
tert-Butylbenzene
Concen: 0.62 ug/kg
RT: 17.00 min Scan# 1366
Delta R.T. -0.04 min
Lab File: 9M972974.D
Acq: 29 Feb 2016 21:00

Tgt Ion:134 Resp: 1308

Ion	Ratio	Lower	Upper
134	100		
119	390.8	291.4	680.0
91	1251.4	193.3	451.1#

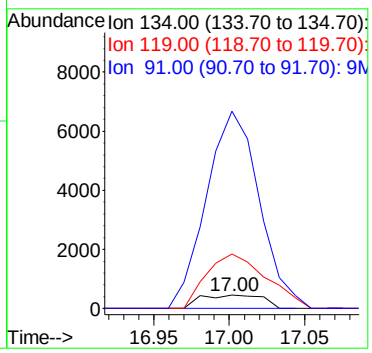

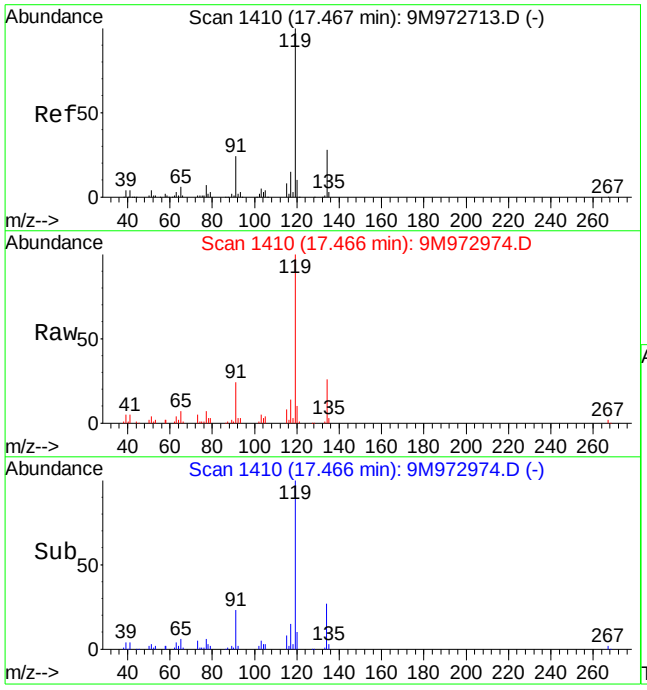

#91
p-Isopropyltoluene
Concen: 17.48 ug/kg
RT: 17.47 min Scan# 1410
Delta R.T. 0.00 min
Lab File: 9M972974.D
Acq: 29 Feb 2016 21:00

Tgt Ion:119 Resp: 190344

Ion	Ratio	Lower	Upper
119	100		
134	26.2	15.7	36.5

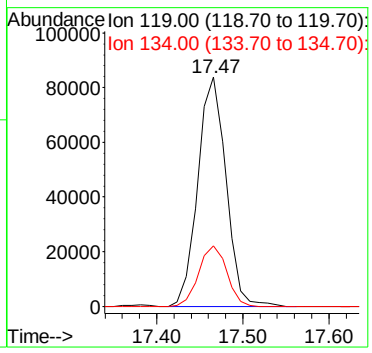

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972975.D Vial: 9
Acq On : 29 Feb 2016 21:30 Operator: FJB/JDS
Sample : L16021357-02 5.22g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 01 09:27:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	402912	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	286025	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.75	152	132036	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	109232	50.0149 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.02%		
43) 1,2-Dichloroethane-d4	10.45	65	136137	49.6807 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.36%		
58) Toluene-d8	12.83	98	393499	54.3901 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 108.78%		
79) p-Bromofluorobenzene	16.23	95	143326	55.7468 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 111.50%		

Target Compounds					Qvalue
6) Bromomethane	4.89	94	948	0.5531 ug/kg#	48
13) Acetone	6.42	43	5735	3.4020 ug/kg	98
17) Iodomethane	7.14	142	440	3.1696 ug/kg#	34
56) Dimethyl Disulfide	12.83	94	11335	3.6268 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972975.D 8260SL.M Tue Mar 01 09:27:17 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972975.D Vial: 9
Acq On : 29 Feb 2016 21:30 Operator: FJB/JDS
Sample : L16021357-02 5.22g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 1 9:27 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

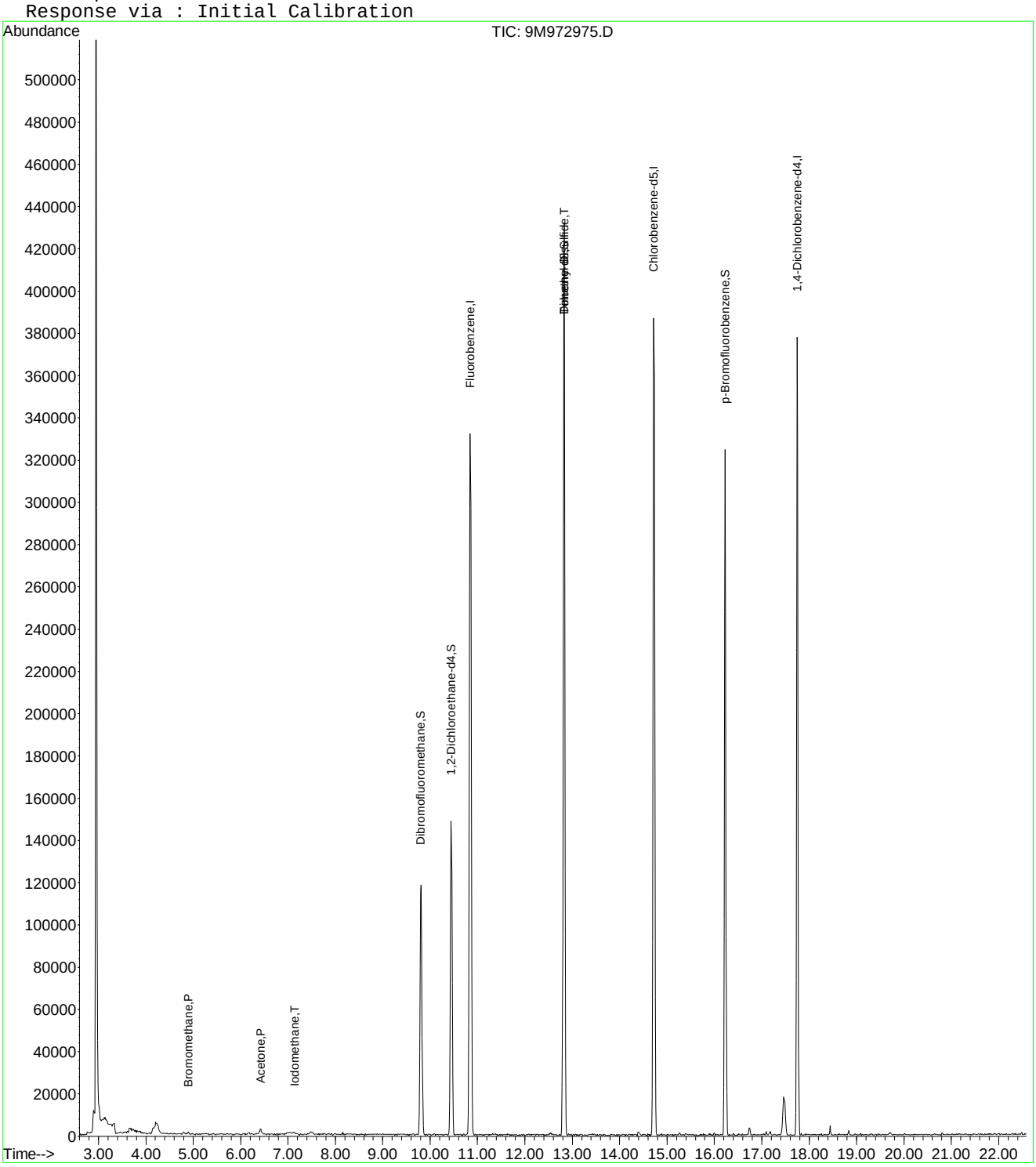

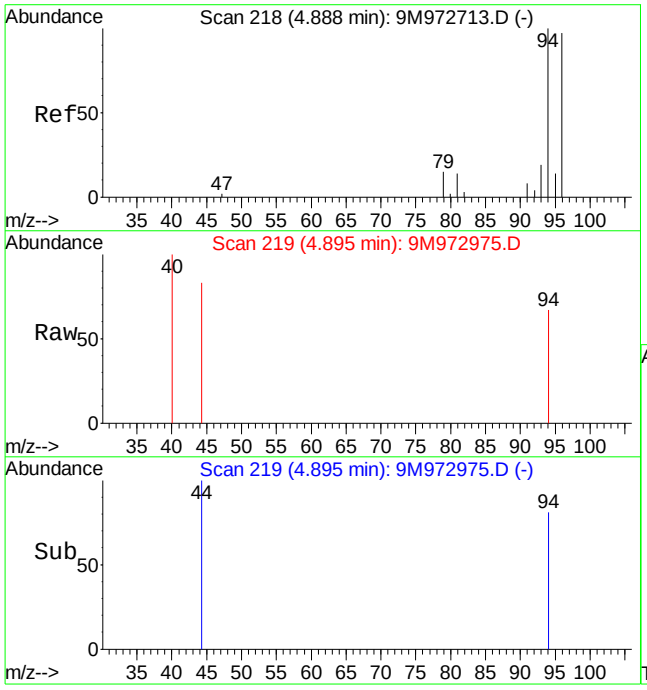

#6
Bromomethane
Concen: 0.55 ug/kg
RT: 4.89 min Scan# 219
Delta R.T. 0.01 min
Lab File: 9M972975.D
Acq: 29 Feb 2016 21:30

Tgt Ion: 94 Resp: 948

Ion	Ratio	Lower	Upper
94	100		
96	44.8	57.2	133.6#

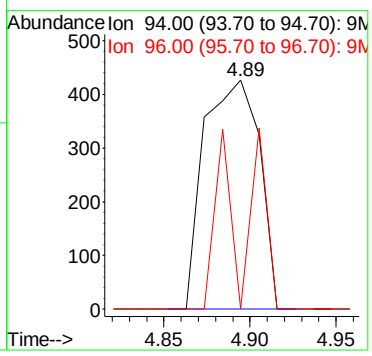

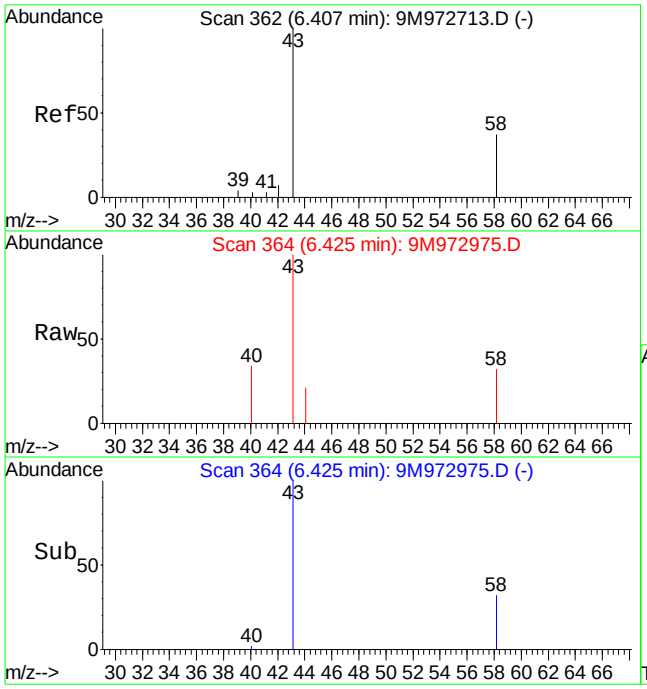

#13
Acetone
Concen: 3.40 ug/kg
RT: 6.42 min Scan# 364
Delta R.T. 0.01 min
Lab File: 9M972975.D
Acq: 29 Feb 2016 21:30

Tgt Ion: 43 Resp: 5735

Ion	Ratio	Lower	Upper
43	100		
58	26.9	16.9	39.3

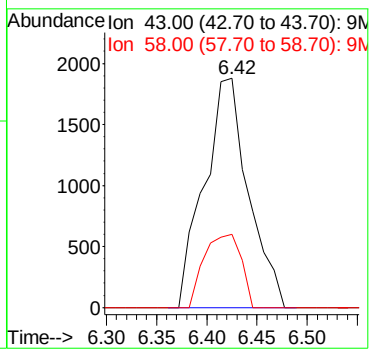

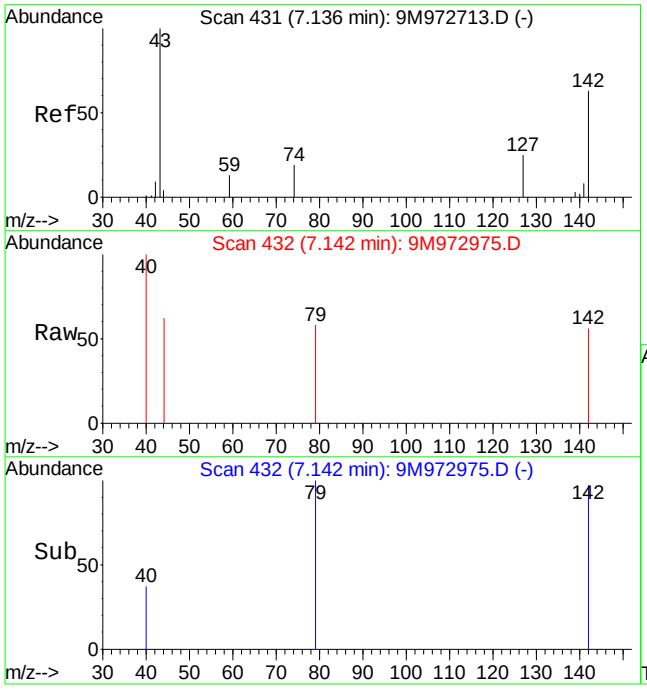

#17
Iodomethane
Concen: 3.17 ug/kg
RT: 7.14 min Scan# 432
Delta R.T. 0.01 min
Lab File: 9M972975.D
Acq: 29 Feb 2016 21:30

Tgt Ion:142 Resp: 440

Ion	Ratio	Lower	Upper
142	100		
127	0.0	25.1	58.7#

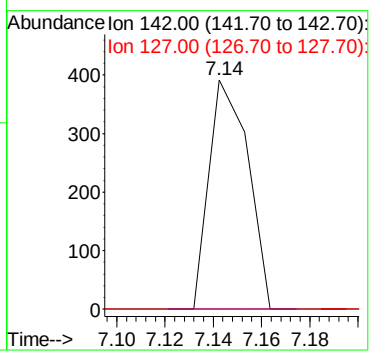

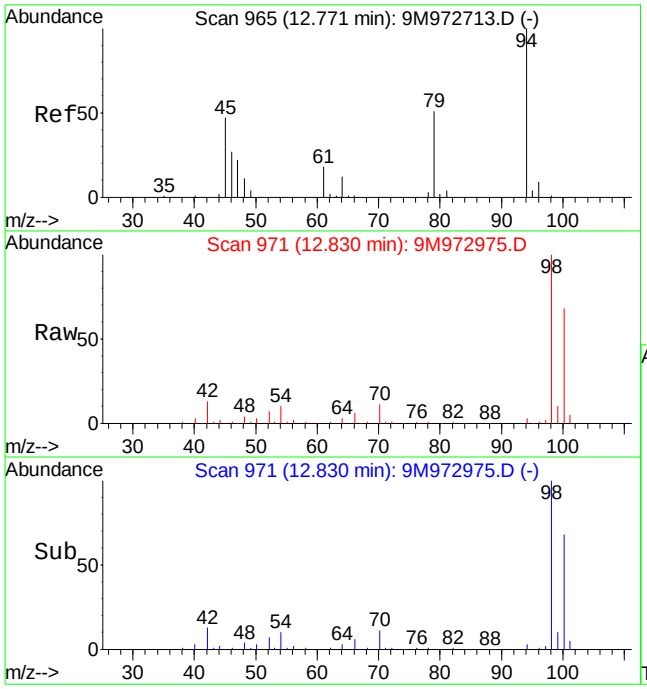

#56
Dimethyl Disulfide
Concen: 3.63 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.06 min
Lab File: 9M972975.D
Acq: 29 Feb 2016 21:30

Tgt Ion: 94 Resp: 11335

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

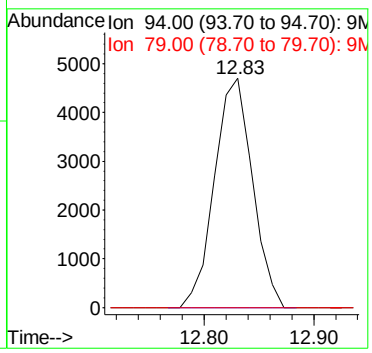

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972976.D Vial: 10
Acq On : 29 Feb 2016 22:01 Operator: FJB/JDS
Sample : L16021357-03 4.98g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 01 09:27:17 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	499404	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	349231	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	164775	50.00 ug/kg	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.80	111	131956	48.7457 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.50%		
43) 1,2-Dichloroethane-d4	10.45	65	168856	49.7148 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.42%		
58) Toluene-d8	12.82	98	482110	54.5775 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 109.16%		
79) p-Bromofluorobenzene	16.23	95	178083	55.5033 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 111.00%		
Target Compounds					Qvalue
13) Acetone	6.40	43	8767	4.7821 ug/kg	98
17) Iodomethane	7.14	142	411	3.0781 ug/kg#	34
29) 2-Butanone	9.03	43	670	0.4160 ug/kg#	58
56) Dimethyl Disulfide	12.83	94	13863	3.5787 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972976.D 8260SL.M Tue Mar 01 09:27:18 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972976.D Vial: 10
Acq On : 29 Feb 2016 22:01 Operator: FJB/JDS
Sample : L16021357-03 4.98g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 1 9:27 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

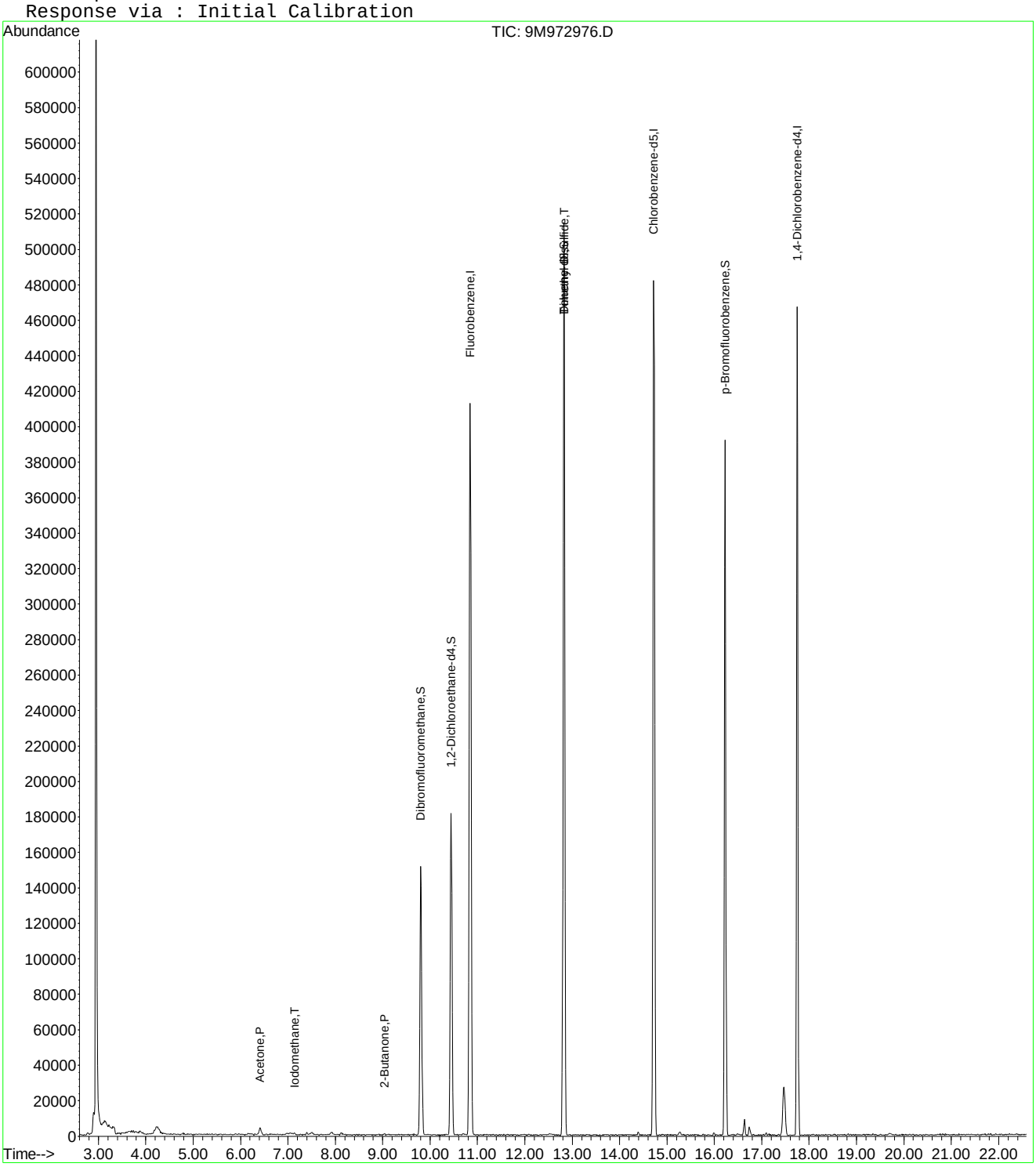

9M972976.D 8260SL.M Tue Mar 01 09:27:18 2016 Page 2

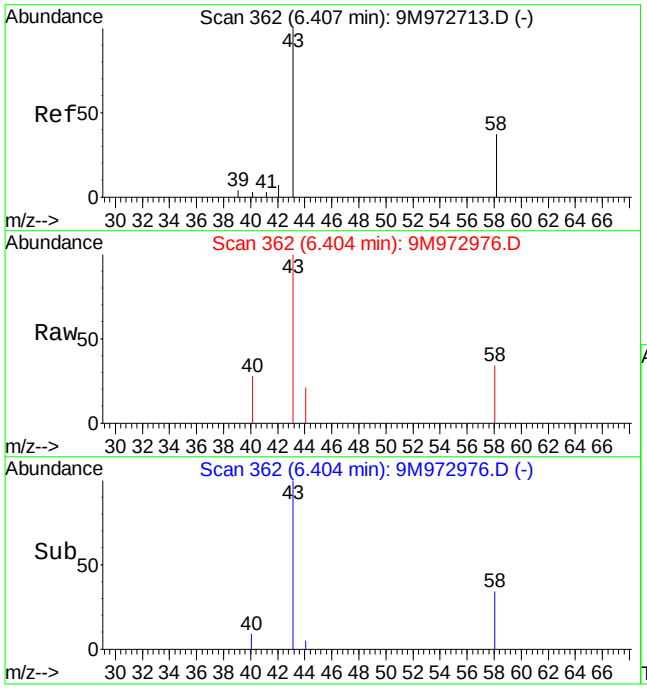

#13
Acetone
Concen: 4.78 ug/kg
RT: 6.40 min Scan# 362
Delta R.T. -0.01 min
Lab File: 9M972976.D
Acq: 29 Feb 2016 22:01

Tgt Ion: 43 Resp: 8767

Ion	Ratio	Lower	Upper
43	100		
58	29.4	16.9	39.3

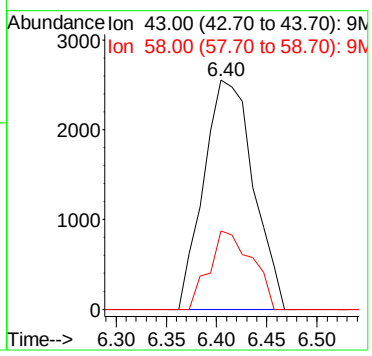

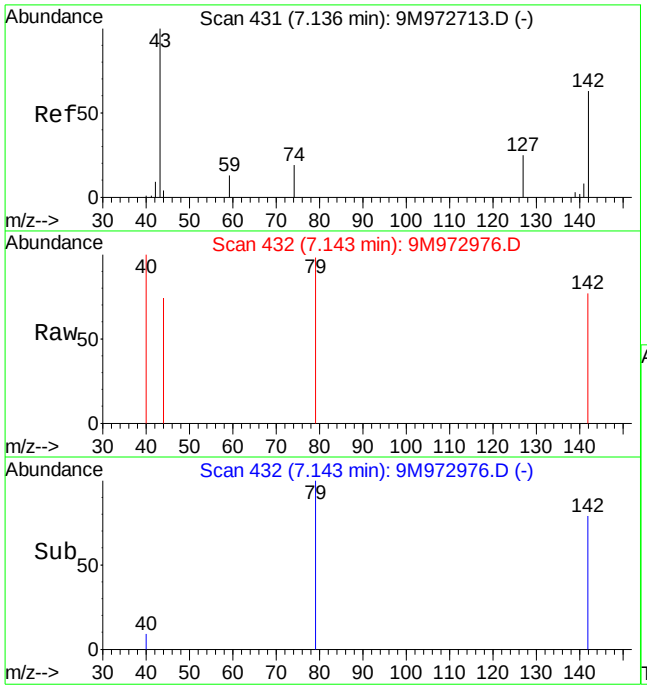

#17
Iodomethane
Concen: 3.08 ug/kg
RT: 7.14 min Scan# 432
Delta R.T. 0.01 min
Lab File: 9M972976.D
Acq: 29 Feb 2016 22:01

Tgt Ion:142 Resp: 411

Ion	Ratio	Lower	Upper
142	100		
127	0.0	25.1	58.7#

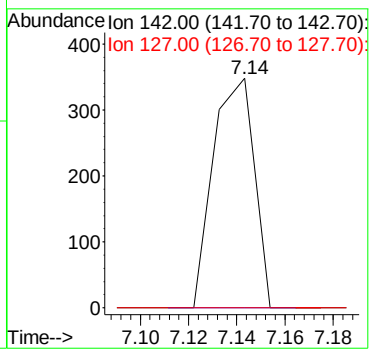

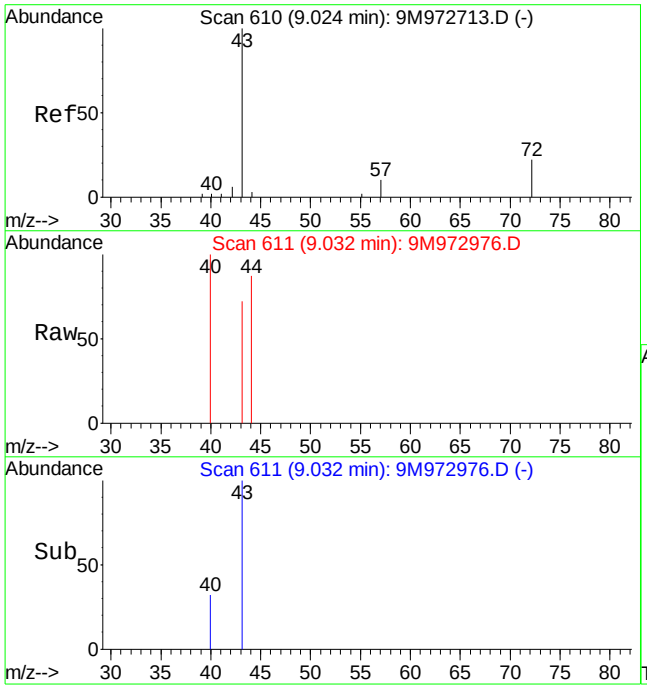

#29
2-Butanone
Concen: 0.42 ug/kg
RT: 9.03 min Scan# 611
Delta R.T. 0.00 min
Lab File: 9M972976.D
Acq: 29 Feb 2016 22:01

Tgt Ion: 43 Resp: 670

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

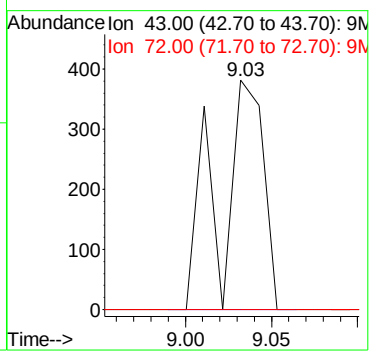

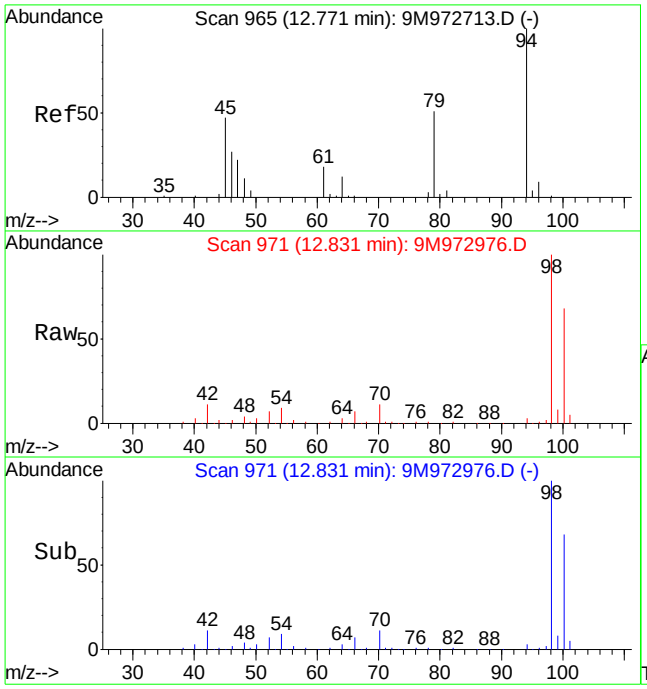

#56
Dimethyl Disulfide
Concen: 3.58 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.07 min
Lab File: 9M972976.D
Acq: 29 Feb 2016 22:01

Tgt Ion: 94 Resp: 13863

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

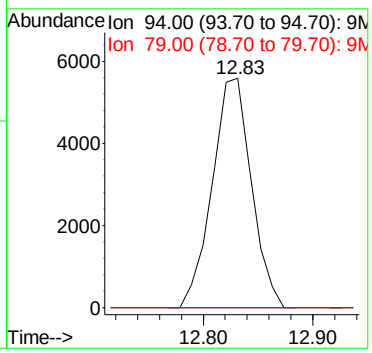

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972977.D Vial: 11
Acq On : 29 Feb 2016 22:32 Operator: FJB/JDS
Sample : L16021357-04 5.33g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 01 09:27:18 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	554674	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	394836	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	176954	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	148274	49.3159 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.64%		
43) 1,2-Dichloroethane-d4	10.45	65	186097	49.3314 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.66%		
58) Toluene-d8	12.82	98	527750	52.8435 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 105.68%		
79) p-Bromofluorobenzene	16.22	95	199665	57.9467 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 115.90%		

Target Compounds					Qvalue
13) Acetone	6.41	43	15047	8.7601 ug/kg	85
17) Iodomethane	7.16	142	209	2.9264 ug/kg#	34
29) 2-Butanone	9.03	43	1990	1.1126 ug/kg#	58
56) Dimethyl Disulfide	12.82	94	14988	3.4836 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972977.D 8260SL.M Tue Mar 01 09:27:19 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972977.D Vial: 11
Acq On : 29 Feb 2016 22:32 Operator: FJB/JDS
Sample : L16021357-04 5.33g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 1 9:27 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

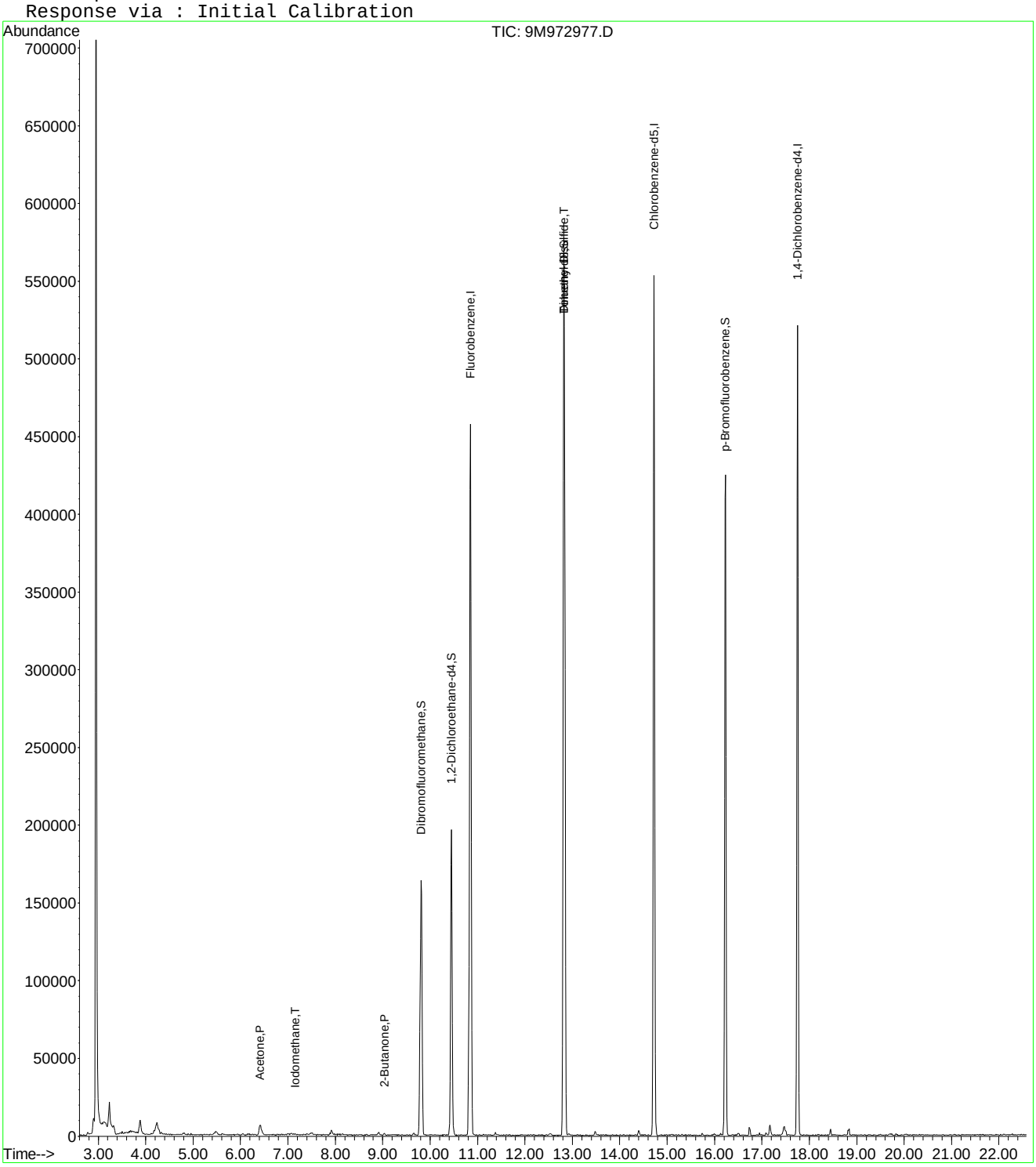

9M972977.D 8260SL.M Tue Mar 01 09:27:19 2016 Page 2

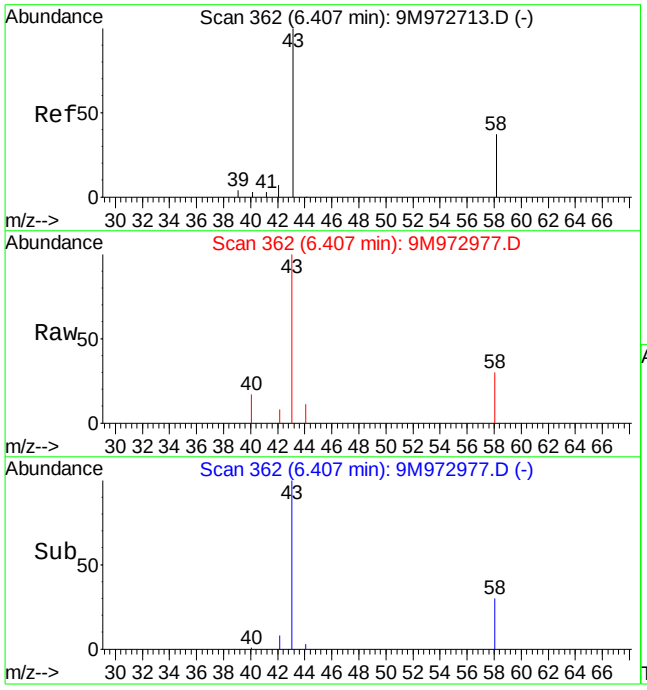

#13
Acetone
Concen: 8.76 ug/kg
RT: 6.41 min Scan# 362
Delta R.T. -0.01 min
Lab File: 9M972977.D
Acq: 29 Feb 2016 22:32

Tgt Ion: 43 Resp: 15047

Ion	Ratio	Lower	Upper
43	100		
58	35.8	16.9	39.3

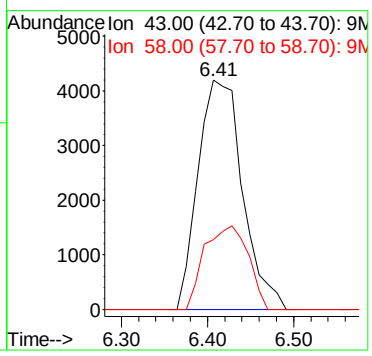

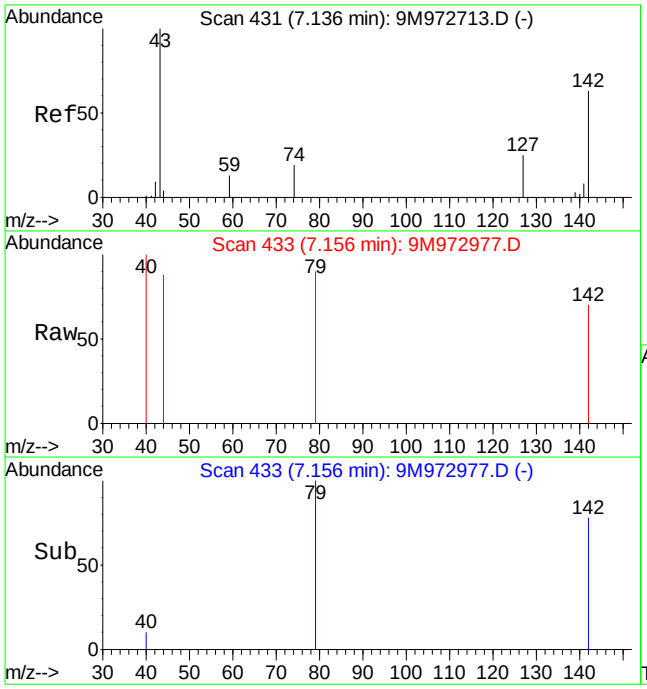

#17
Iodomethane
Concen: 2.93 ug/kg
RT: 7.16 min Scan# 433
Delta R.T. 0.03 min
Lab File: 9M972977.D
Acq: 29 Feb 2016 22:32

Tgt Ion:142 Resp: 209

Ion	Ratio	Lower	Upper
142	100		
127	0.0	25.1	58.7#

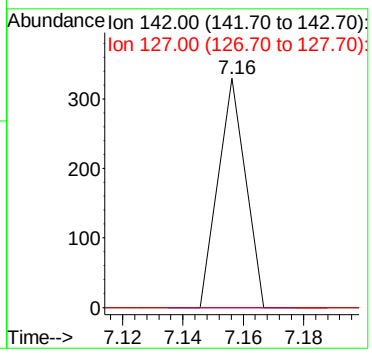

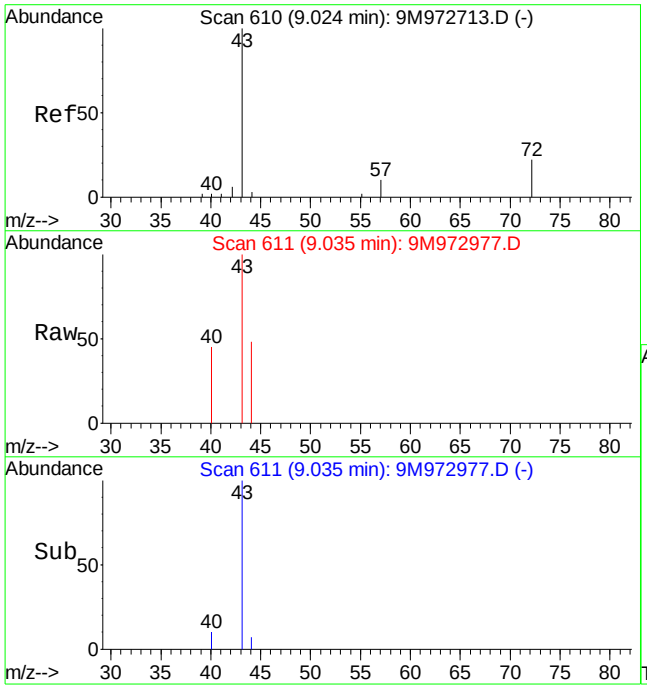

#29
2-Butanone
Concen: 1.11 ug/kg
RT: 9.03 min Scan# 611
Delta R.T. 0.00 min
Lab File: 9M972977.D
Acq: 29 Feb 2016 22:32

Tgt Ion: 43 Resp: 1990

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

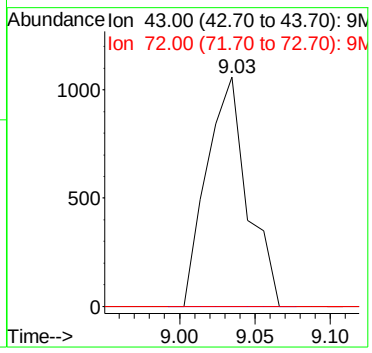

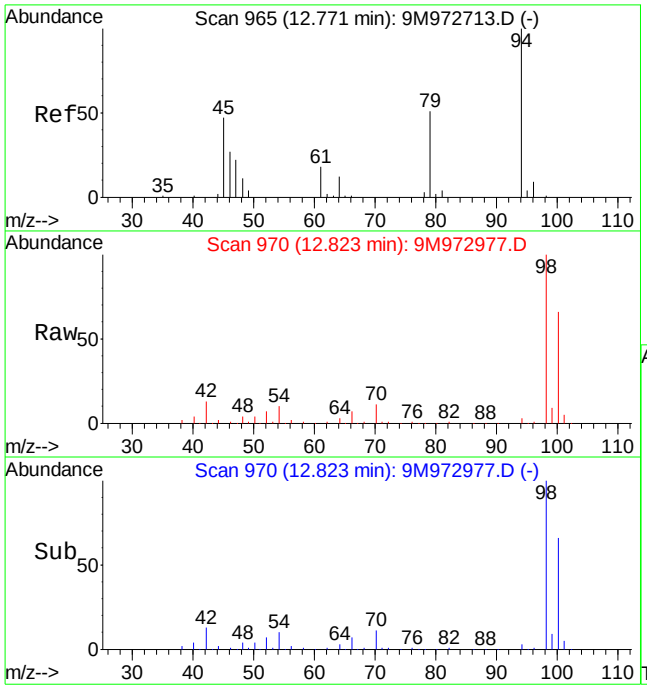

#56
Dimethyl Disulfide
Concen: 3.48 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M972977.D
Acq: 29 Feb 2016 22:32

Tgt Ion: 94 Resp: 14988

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

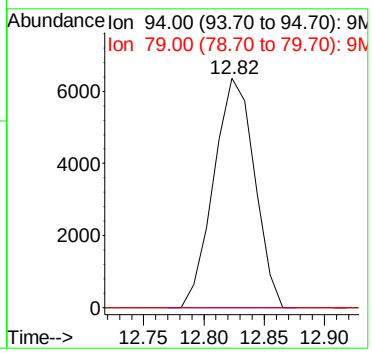

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972978.D Vial: 12
Acq On : 29 Feb 2016 23:03 Operator: FJB/JDS
Sample : L16021357-05 5.19g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 01 09:27:19 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	549980	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	381852	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	175728	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	143828	48.2454 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.50%		
43) 1,2-Dichloroethane-d4	10.45	65	179104	47.8828 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.76%		
58) Toluene-d8	12.82	98	524877	54.3428 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 108.68%		
79) p-Bromofluorobenzene	16.23	95	196467	57.4164 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 114.84%		

Target Compounds					Qvalue
13) Acetone	6.42	43	8814	4.1468 ug/kg	95
17) Iodomethane	7.13	142	662	3.2075 ug/kg	81
29) 2-Butanone	9.02	43	1221	0.6885 ug/kg#	58
56) Dimethyl Disulfide	12.83	94	14696	3.4448 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972978.D 8260SL.M Tue Mar 01 09:27:20 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972978.D Vial: 12
Acq On : 29 Feb 2016 23:03 Operator: FJB/JDS
Sample : L16021357-05 5.19g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 1 9:27 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

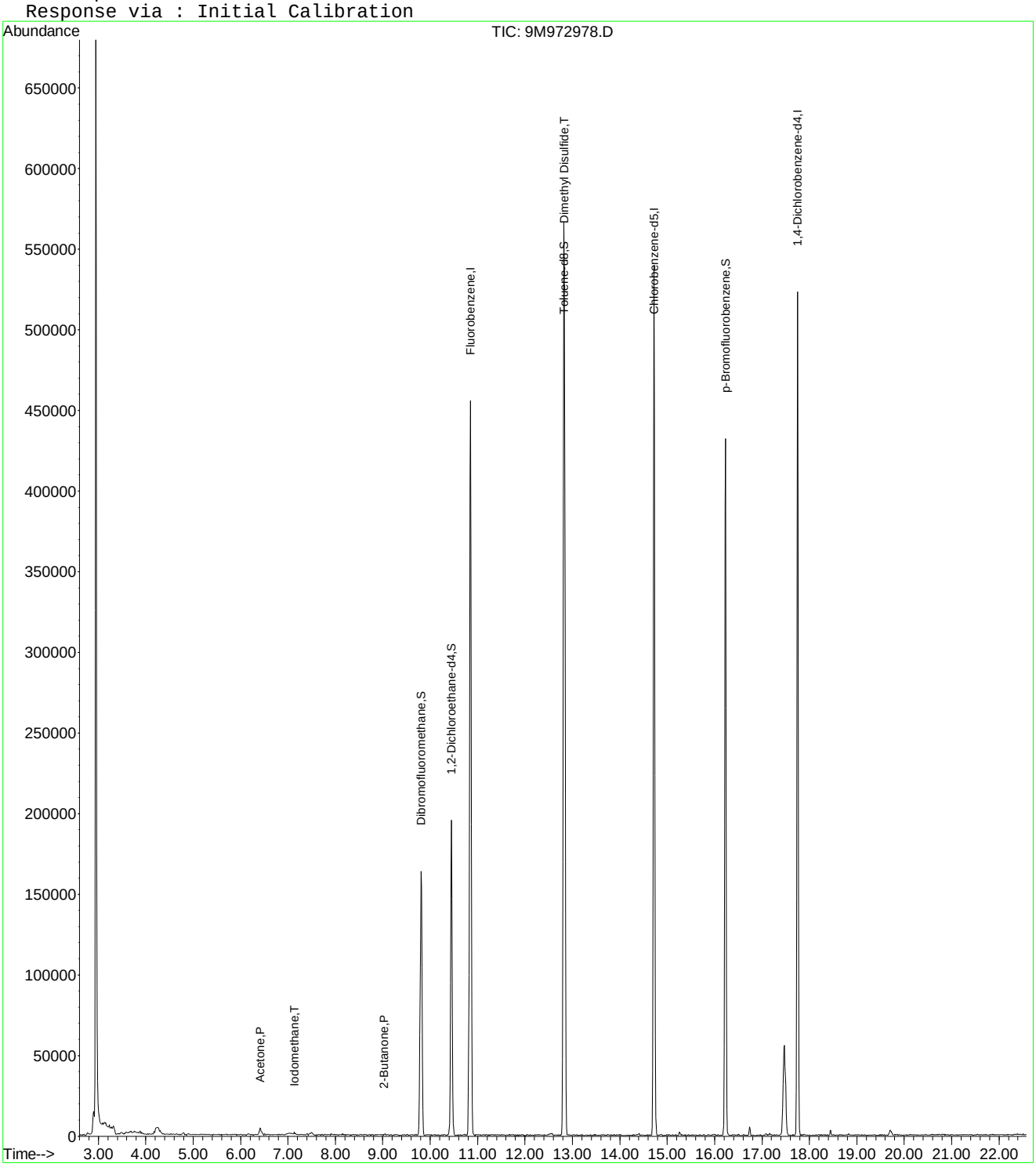

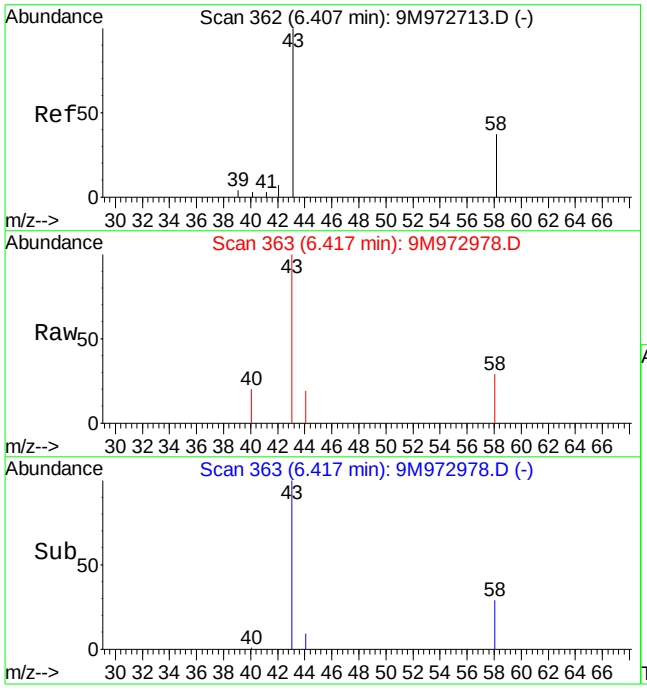

#13
Acetone
Concen: 4.15 ug/kg
RT: 6.42 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M972978.D
Acq: 29 Feb 2016 23:03

Tgt Ion: 43 Resp: 8814

Ion	Ratio	Lower	Upper
43	100		
58	30.9	16.9	39.3

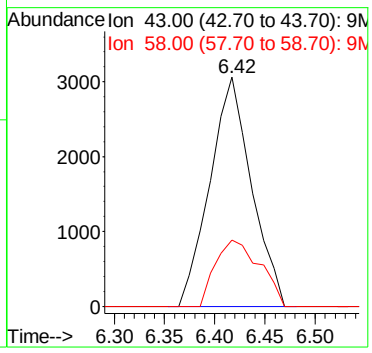

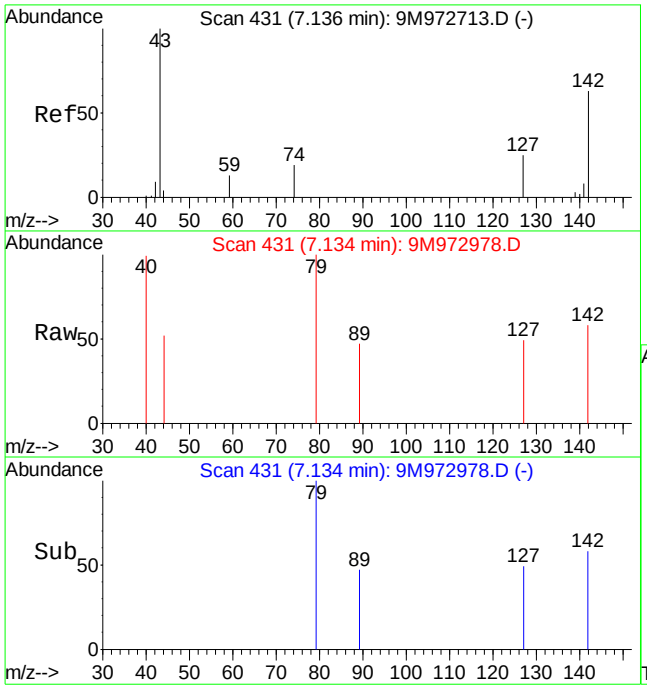

#17
Iodomethane
Concen: 3.21 ug/kg
RT: 7.13 min Scan# 431
Delta R.T. 0.00 min
Lab File: 9M972978.D
Acq: 29 Feb 2016 23:03

Tgt Ion:142 Resp: 662

Ion	Ratio	Lower	Upper
142	100		
127	29.9	25.1	58.7

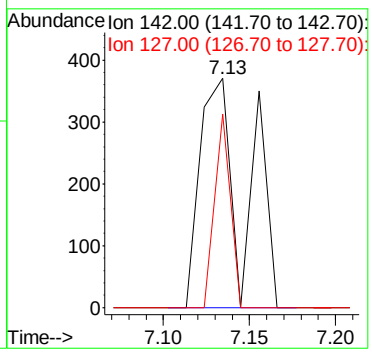

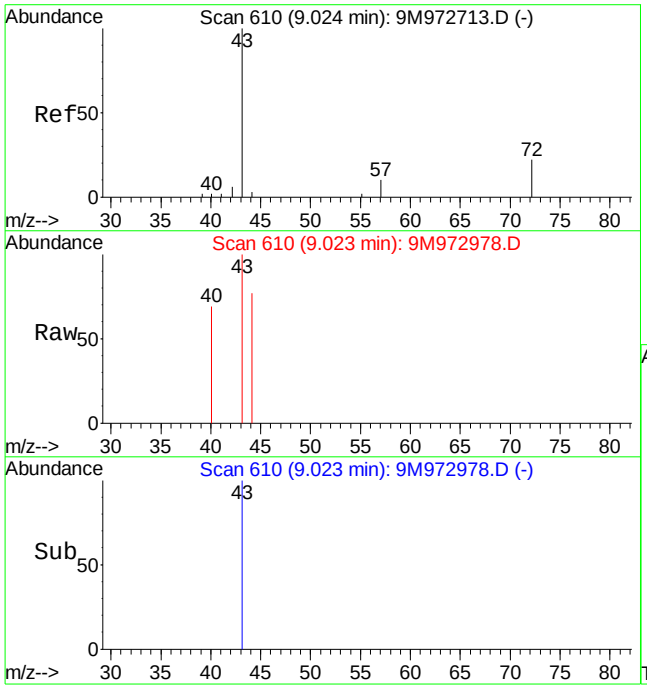

#29
2-Butanone
Concen: 0.69 ug/kg
RT: 9.02 min Scan# 610
Delta R.T. -0.01 min
Lab File: 9M972978.D
Acq: 29 Feb 2016 23:03

Tgt Ion: 43 Resp: 1221

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

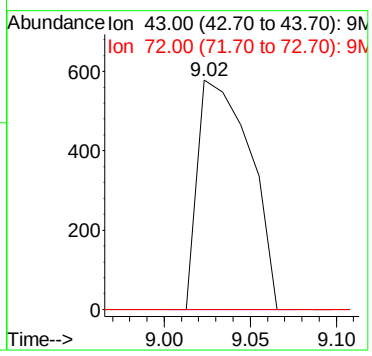

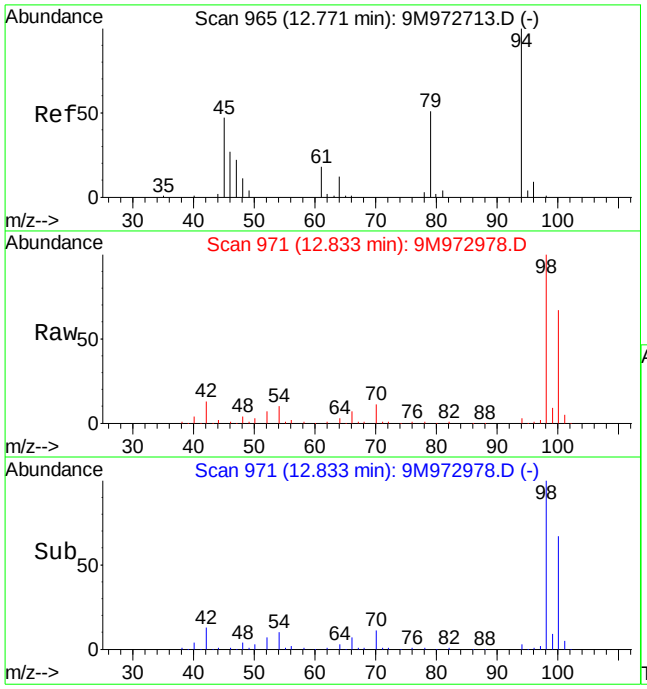

#56
Dimethyl Disulfide
Concen: 3.44 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.07 min
Lab File: 9M972978.D
Acq: 29 Feb 2016 23:03

Tgt Ion: 94 Resp: 14696

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

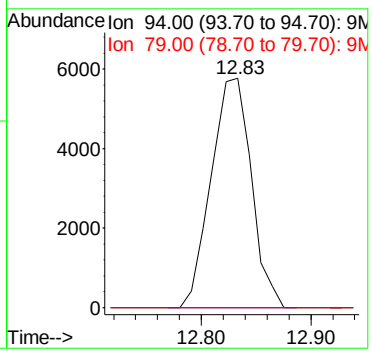

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972979.D Vial: 13
Acq On : 29 Feb 2016 23:33 Operator: FJB/JDS
Sample : L16021357-06 4.98g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 01 09:27:20 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	595721	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	417877	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	183109	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	157764	48.8567 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.72%		
43) 1,2-Dichloroethane-d4	10.45	65	204937	50.5823 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 101.16%		
58) Toluene-d8	12.83	98	570232	53.9490 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 107.90%		
79) p-Bromofluorobenzene	16.23	95	208121	58.3705 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 116.74%		

Target Compounds					Qvalue
13) Acetone	6.40	43	6577	2.0750 ug/kg	92
56) Dimethyl Disulfide	12.83	94	15539	3.3628 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972979.D 8260SL.M Tue Mar 01 09:27:21 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972979.D Vial: 13
Acq On : 29 Feb 2016 23:33 Operator: FJB/JDS
Sample : L16021357-06 4.98g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 1 9:27 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

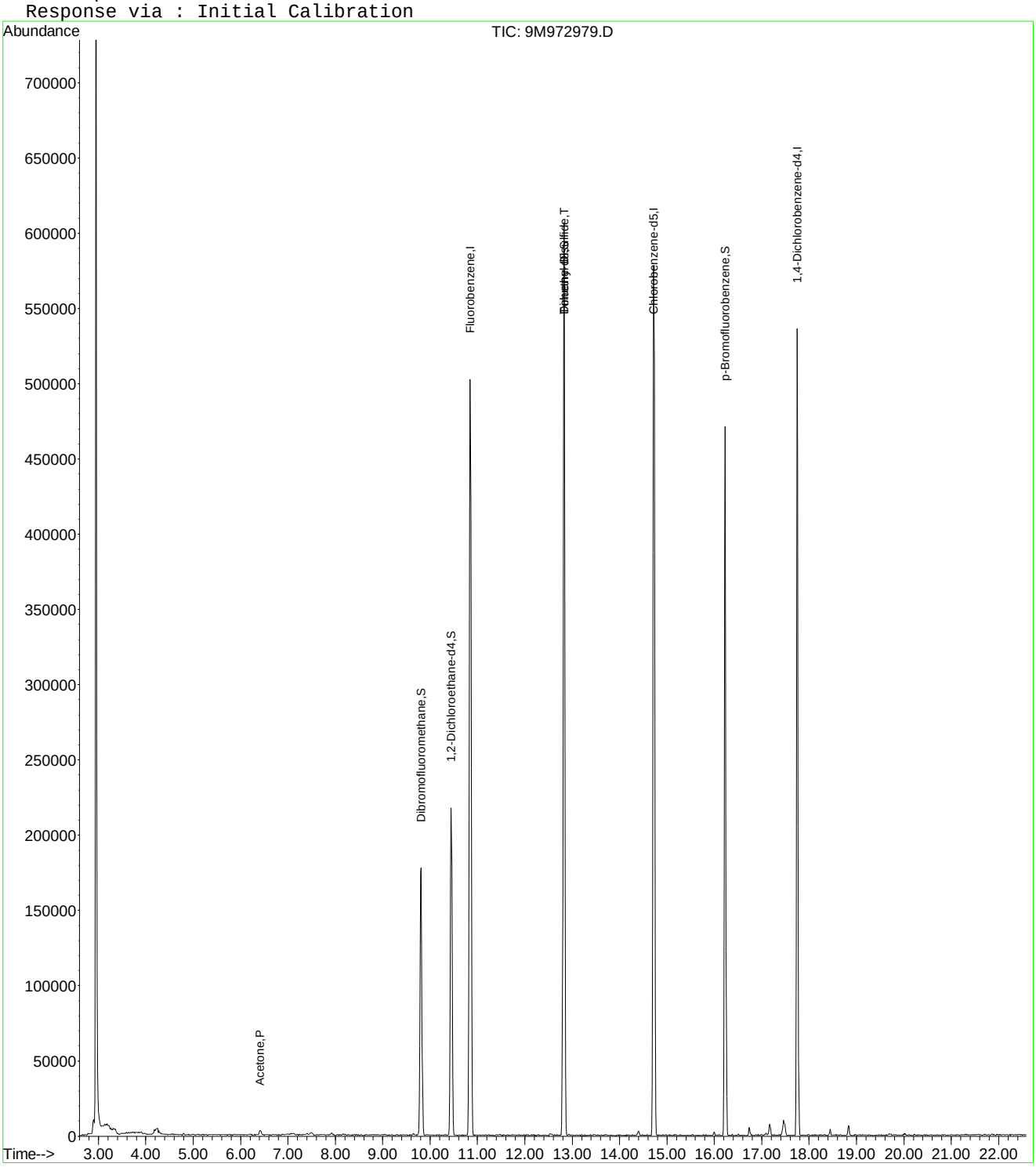

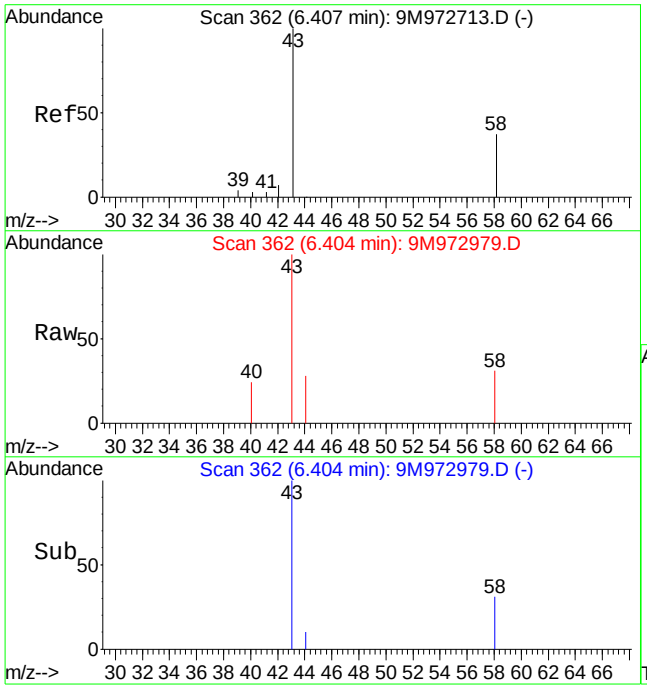

#13
Acetone
Concen: 2.07 ug/kg
RT: 6.40 min Scan# 362
Delta R.T. -0.01 min
Lab File: 9M972979.D
Acq: 29 Feb 2016 23:33

Tgt Ion: 43 Resp: 6577

Ion	Ratio	Lower	Upper
43	100		
58	32.1	16.9	39.3

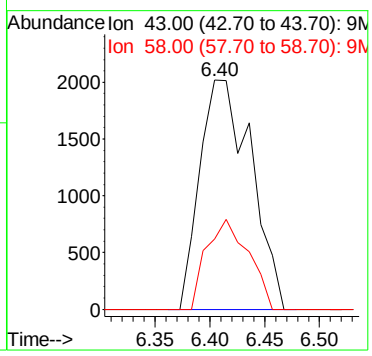

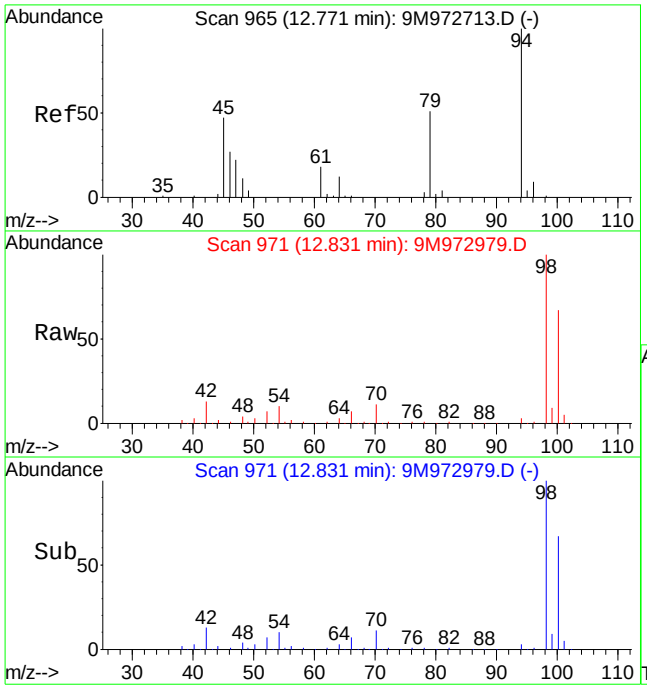

#56
Dimethyl Disulfide
Concen: 3.36 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.06 min
Lab File: 9M972979.D
Acq: 29 Feb 2016 23:33

Tgt Ion: 94 Resp: 15539

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

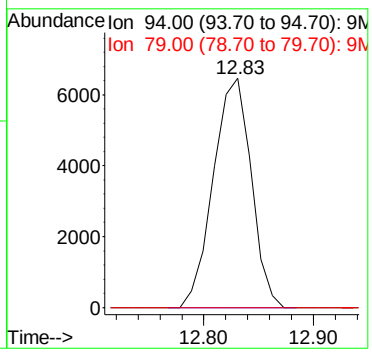

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972472.D Vial: 3
Acq On : 25 Jan 2016 11:22 Operator: FJB
Sample : WG555000-02 5ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:05 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	367739	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	266763	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.77	152	148882	50.00 ug/kg	0.01

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	1974	5.3580 ug/kg#	1
3) 3-Chloro-1-propene	7.23	41	18322	5.0468 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	19639	4.7564 ug/kg	98
5) Ethyl Acetate	9.24	43	12755	5.2595 ug/kg	91
6) Methacrylonitrile	9.40	67	3744	4.7691 ug/kg	95
7) Isobutyl Alcohol	9.42	43	1055	12.9700 ug/kg#	62
8) 1-Butanol	10.36	56	203	11.8711 ug/kg#	26
9) Methyl methacrylate	11.56	41	8689	4.6908 ug/kg	95
10) 2-Nitropropane	11.90	43	2531	4.2058 ug/kg	96

(#) = qualifier out of range (m) = manual integration
9M972472.D A9FOO_SL.M Wed Jan 27 11:22:42 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972472.D Vial: 3
Acq On : 25 Jan 2016 11:22 Operator: FJB
Sample : WG555000-02 5ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

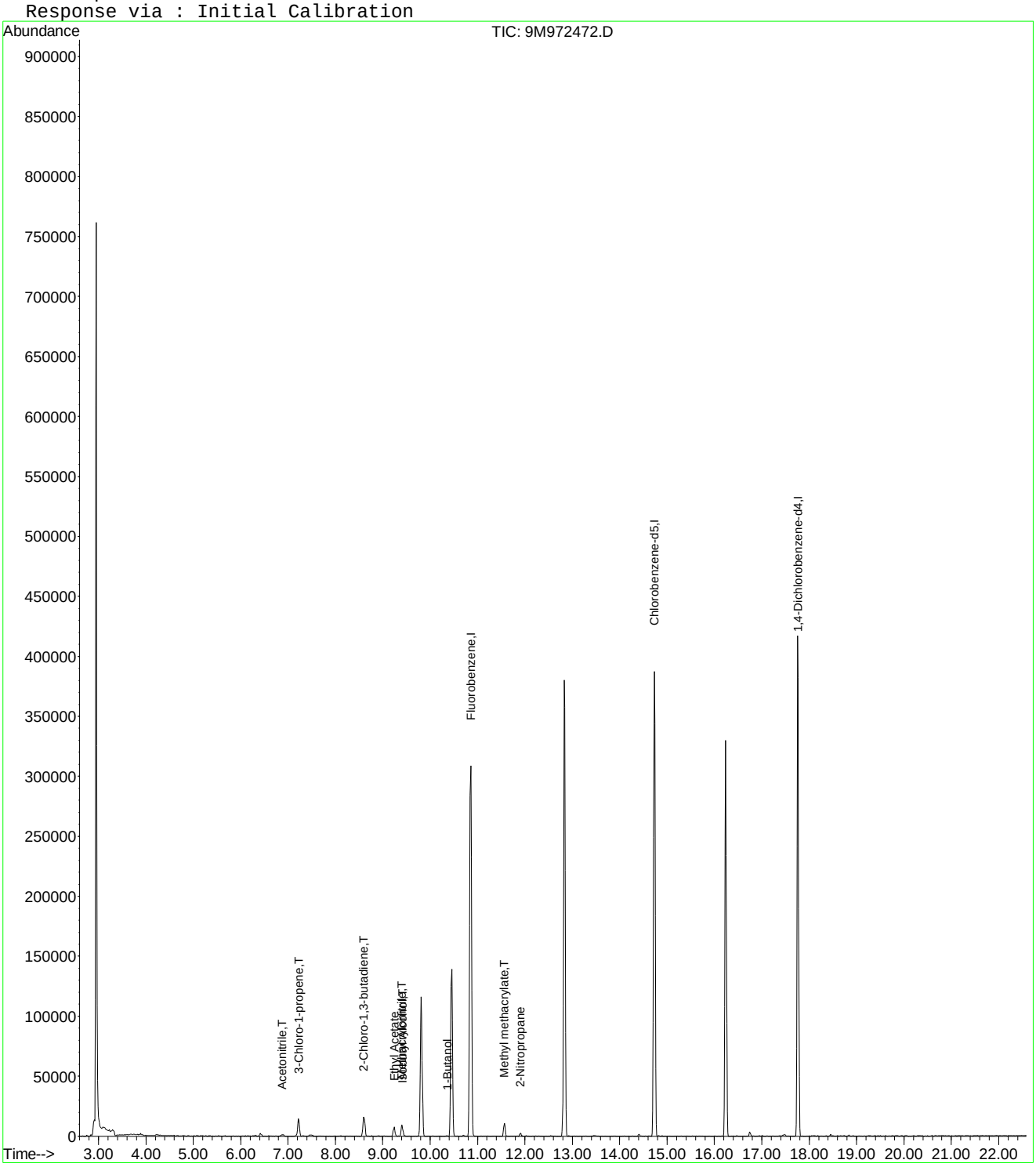

9M972472.D A9FOO_SL.M Wed Jan 27 11:22:42 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972473.D Vial: 4
Acq On : 25 Jan 2016 11:52 Operator: FJB
Sample : WG555000-03 20ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:05 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	359691	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	265773	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	149223	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	7669	21.2815 ug/kg#	77
3) 3-Chloro-1-propene	7.23	41	75360	21.2224 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	82865	20.5181 ug/kg	100
5) Ethyl Acetate	9.23	43	47912	20.1986 ug/kg	97
6) Methacrylonitrile	9.40	67	15740	20.4980 ug/kg	98
7) Isobutyl Alcohol	9.42	43	5287	37.9280 ug/kg	95
8) 1-Butanol	10.35	56	1509	22.3153 ug/kg#	81
9) Methyl methacrylate	11.56	41	35437	19.5588 ug/kg	98
10) 2-Nitropropane	11.90	43	10433	17.7247 ug/kg	98
12) Cyclohexanone	16.01	55	2157	16.3929 ug/kg#	86

(#) = qualifier out of range (m) = manual integration
9M972473.D A9FOO_SL.M Wed Jan 27 11:22:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972473.D Vial: 4
Acq On : 25 Jan 2016 11:52 Operator: FJB
Sample : WG555000-03 20ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

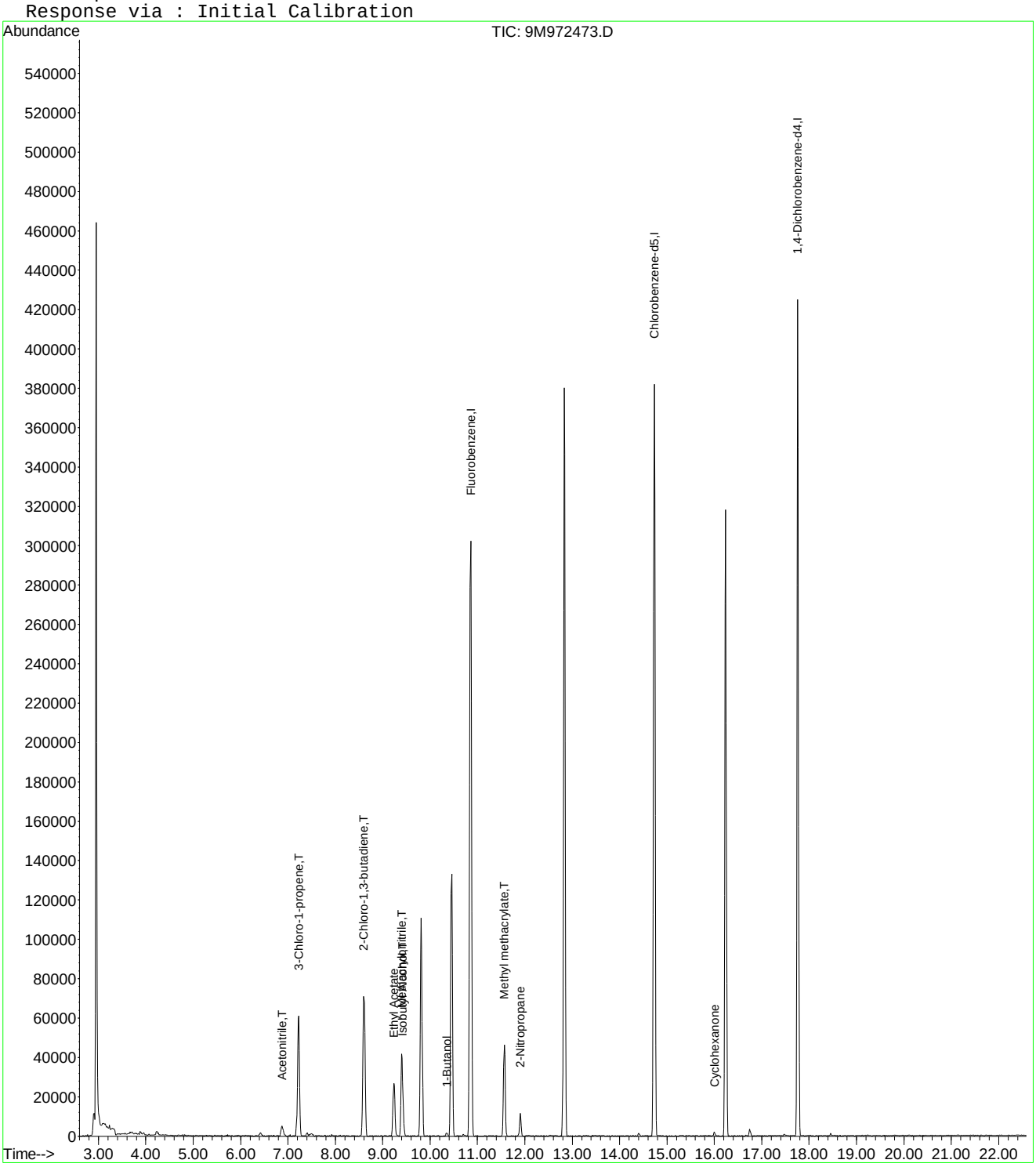

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972474.D Vial: 5
Acq On : 25 Jan 2016 12:23 Operator: FJB
Sample : WG555000-04 50ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:06 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	356886	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	259679	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	147334	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	16583	46.3795 ug/kg#	94
3) 3-Chloro-1-propene	7.23	41	160601	45.5828 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.61	53	185316	46.2464 ug/kg	99
5) Ethyl Acetate	9.23	43	111538	47.3915 ug/kg	99
6) Methacrylonitrile	9.40	67	36081	47.3572 ug/kg	99
7) Isobutyl Alcohol	9.42	43	12624	81.5447 ug/kg	95
8) 1-Butanol	10.35	56	4707	48.0983 ug/kg#	50
9) Methyl methacrylate	11.56	41	82406	45.8400 ug/kg	99
10) 2-Nitropropane	11.90	43	26302	45.0359 ug/kg	97
12) Cyclohexanone	16.01	55	5625	43.7525 ug/kg	93

(#) = qualifier out of range (m) = manual integration
9M972474.D A9FOO_SL.M Wed Jan 27 11:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972474.D Vial: 5
Acq On : 25 Jan 2016 12:23 Operator: FJB
Sample : WG555000-04 50ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

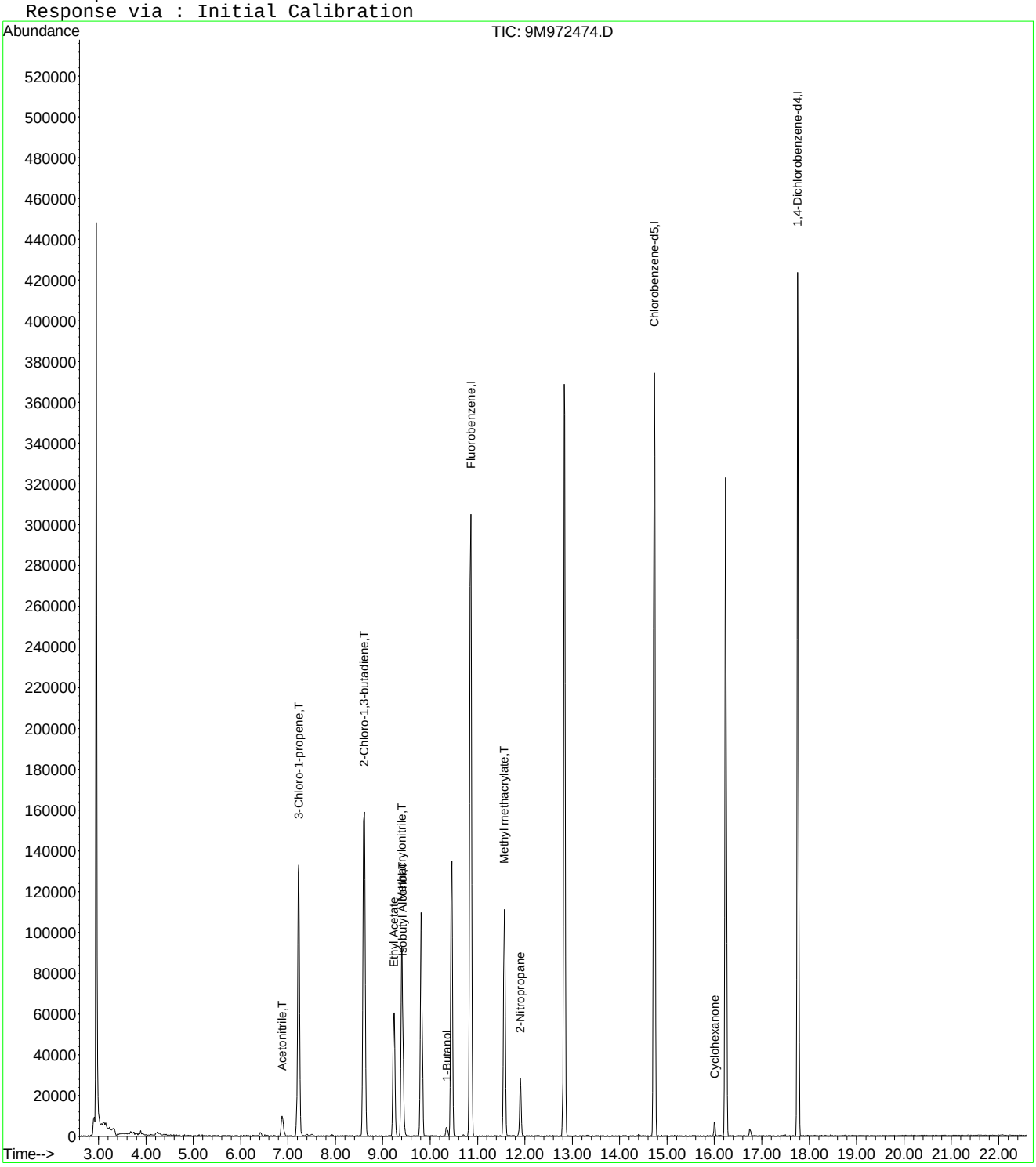

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972475.D Vial: 6
Acq On : 25 Jan 2016 12:53 Operator: FJB
Sample : WG555000-05 100ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:06 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	394669	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	285851	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	161505	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	37767	95.5151	ug/kg#	100
3) 3-Chloro-1-propene	7.23	41	409870	105.1952	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.61	53	467514	105.5010	ug/kg	100
5) Ethyl Acetate	9.23	43	267513	102.7824	ug/kg	100
6) Methacrylonitrile	9.40	67	88054	104.5088	ug/kg	100
7) Isobutyl Alcohol	9.42	43	33721	187.1766	ug/kg	100
8) 1-Butanol	10.36	56	11671	95.0627	ug/kg	100
9) Methyl methacrylate	11.56	41	209503	105.3834	ug/kg	100
10) 2-Nitropropane	11.90	43	65435	101.3157	ug/kg	100
12) Cyclohexanone	16.01	55	14062	99.3630	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972475.D A9FOO_SL.M Wed Jan 27 11:22:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972475.D Vial: 6
Acq On : 25 Jan 2016 12:53 Operator: FJB
Sample : WG555000-05 100ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

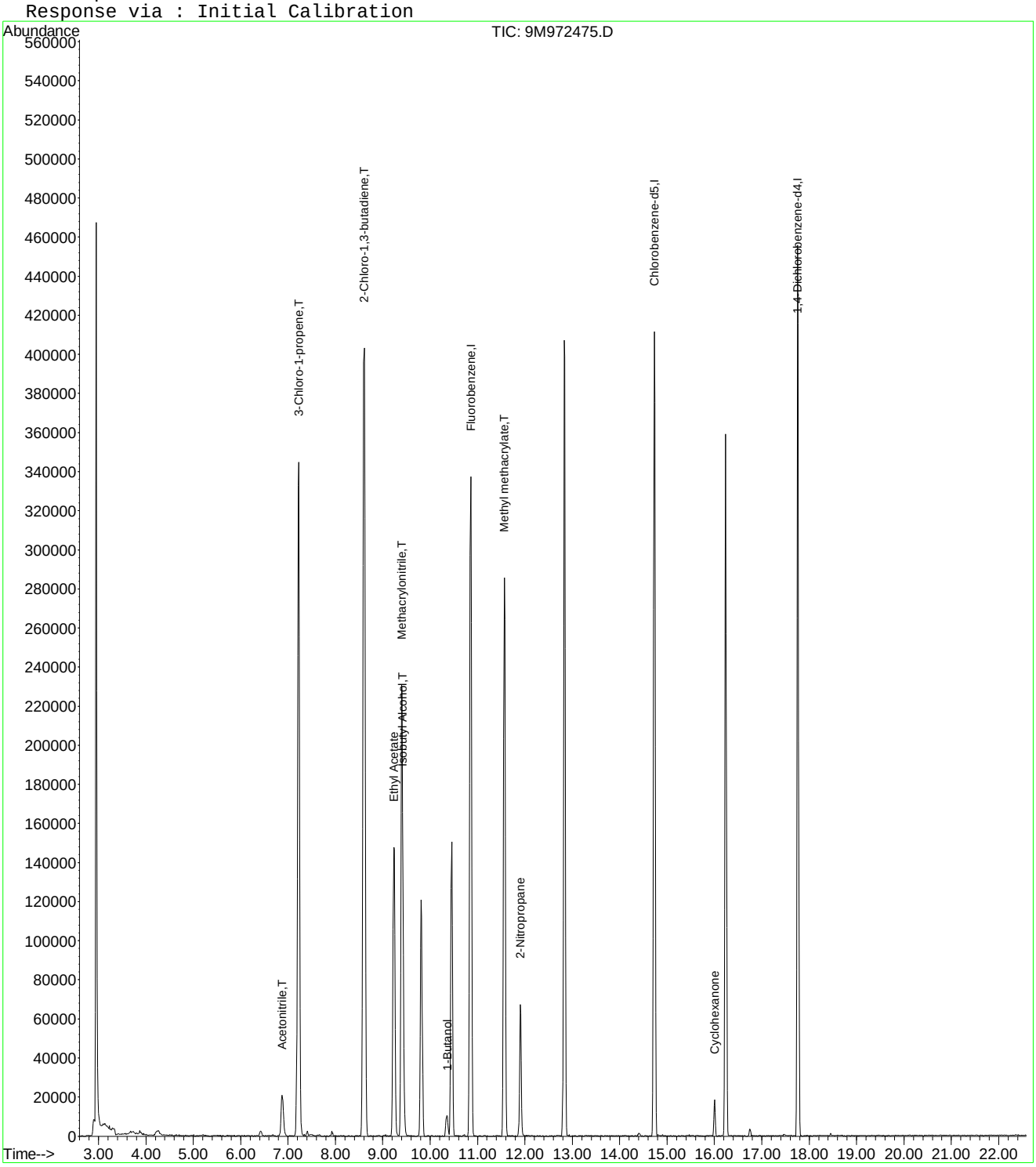

9M972475.D A9FOO_SL.M Wed Jan 27 11:22:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972476.D Vial: 7
Acq On : 25 Jan 2016 13:23 Operator: FJB
Sample : WG555000-06 200ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 09:51:10 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	361792	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	264283	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	150478	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.87	41	75099	207.1896	ug/kg#	94
3) 3-Chloro-1-propene	7.22	41	743262	208.0969	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	846271	208.3269	ug/kg	100
5) Ethyl Acetate	9.23	43	489855	205.3125	ug/kg	100
6) Methacrylonitrile	9.40	67	159879	206.9995	ug/kg	100
7) Isobutyl Alcohol	9.42	43	68551	406.6640	ug/kg	99
8) 1-Butanol	10.35	56	24111	201.3375	ug/kg	97
9) Methyl methacrylate	11.57	41	382820	210.0636	ug/kg	99
10) 2-Nitropropane	11.90	43	129000	217.8866	ug/kg	95
12) Cyclohexanone	16.00	55	30065	229.7785	ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972476.D A9FOO_SL.M Wed Jan 27 09:51:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972476.D Vial: 7
Acq On : 25 Jan 2016 13:23 Operator: FJB
Sample : WG555000-06 200ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 9:51 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

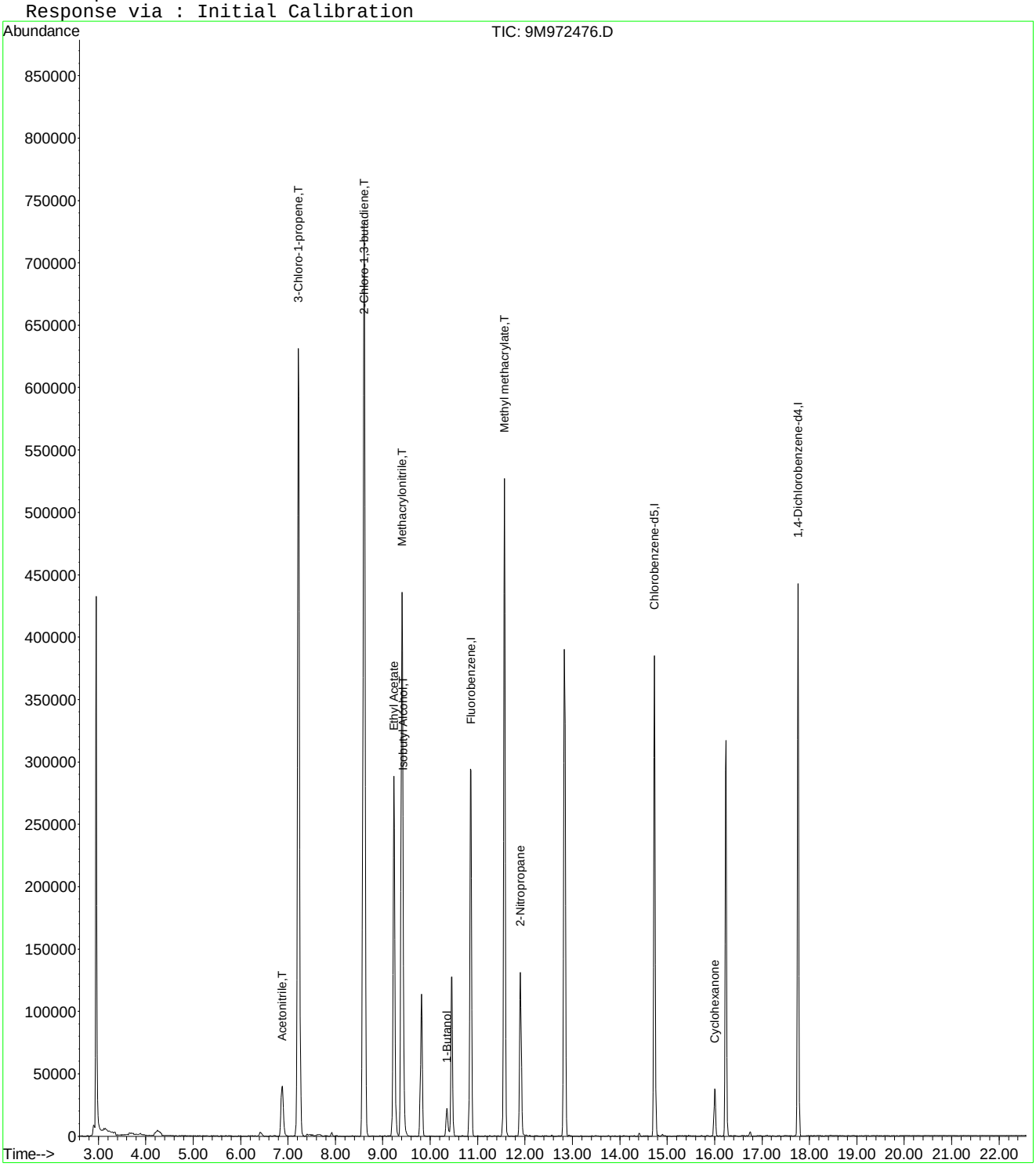

9M972476.D A9FOO_SL.M Wed Jan 27 09:51:10 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972477.D Vial: 8
Acq On : 25 Jan 2016 13:54 Operator: FJB
Sample : WG555000-07 300ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:07 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.85	96	362779	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	265659	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	153468	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	99618	274.0870	ug/kg#	97
3) 3-Chloro-1-propene	7.22	41	944879	263.8255	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	1107217	271.8226	ug/kg	99
5) Ethyl Acetate	9.24	43	652386	272.6900	ug/kg	99
6) Methacrylonitrile	9.40	67	208153	268.7679	ug/kg	98
7) Isobutyl Alcohol	9.43	43	89707	528.6093	ug/kg#	99
8) 1-Butanol	10.35	56	31640	260.3131	ug/kg	98
9) Methyl methacrylate	11.57	41	502506	274.9883	ug/kg	98
10) 2-Nitropropane	11.90	43	172692	290.8907	ug/kg	95
12) Cyclohexanone	16.00	55	36951	280.9436	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972477.D A9FOO_SL.M Wed Jan 27 11:23:05 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972477.D Vial: 8
Acq On : 25 Jan 2016 13:54 Operator: FJB
Sample : WG555000-07 300ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

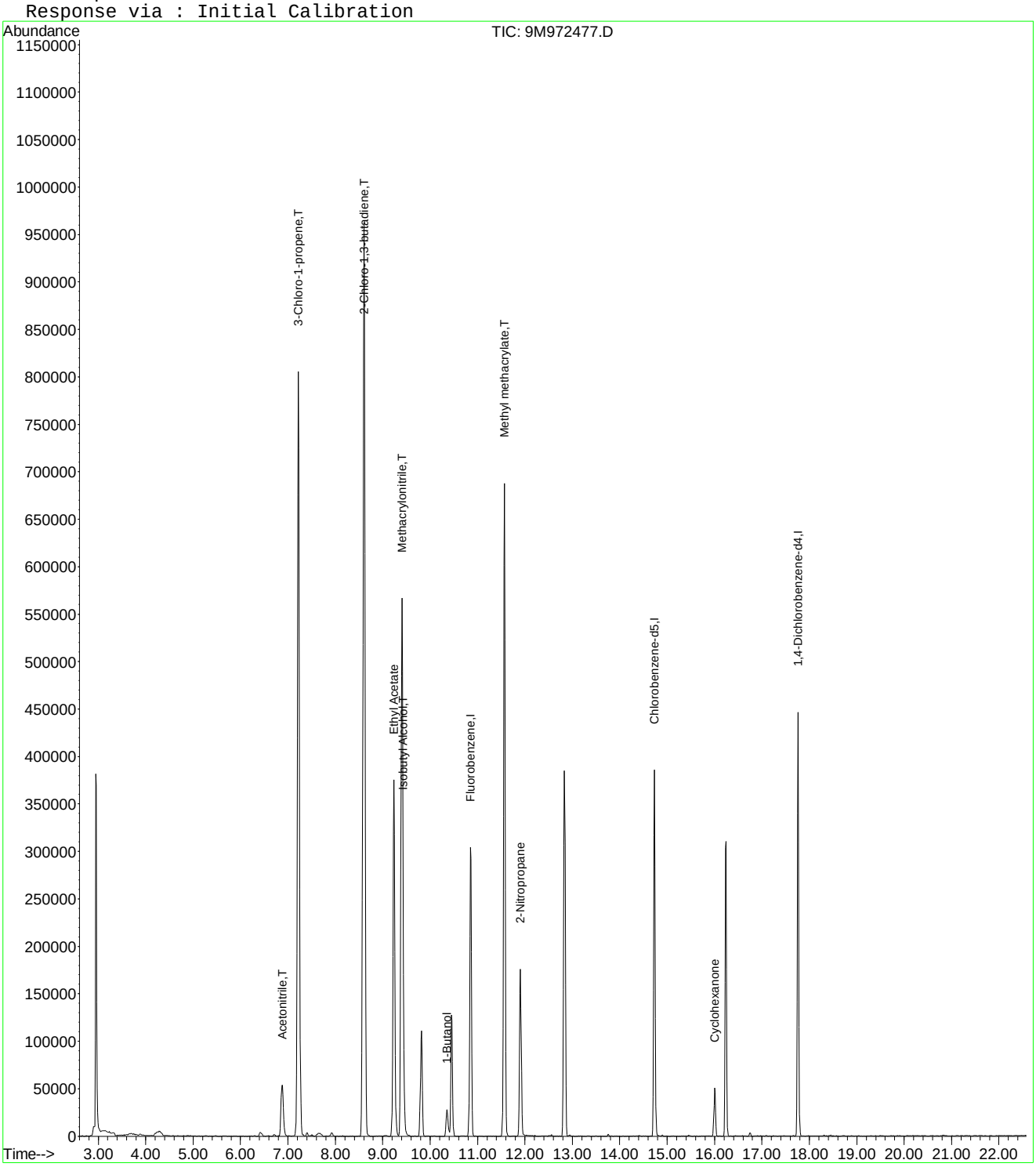

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972478.D Vial: 9
Acq On : 25 Jan 2016 14:25 Operator: FJB
Sample : WG555000-08 400ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 09:51:10 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	359343	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	261674	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	149058	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.89	41	148074	411.3034	ug/kg#	96
3) 3-Chloro-1-propene	7.22	41	1457717	410.9100	ug/kg	99
4) 2-Chloro-1,3-butadiene	8.61	53	1703971	422.3261	ug/kg	100
5) Ethyl Acetate	9.23	43	980479	413.7480	ug/kg	100
6) Methacrylonitrile	9.40	67	321602	419.2243	ug/kg	99
7) Isobutyl Alcohol	9.43	43	142361	842.7355	ug/kg#	98
8) 1-Butanol	10.36	56	51732	422.9922	ug/kg	99
9) Methyl methacrylate	11.56	41	779879	430.8570	ug/kg	98
10) 2-Nitropropane	11.90	43	267565	455.0088	ug/kg	96
12) Cyclohexanone	16.01	55	56623	437.0688	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972478.D A9FOO_SL.M Wed Jan 27 09:51:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972478.D Vial: 9
Acq On : 25 Jan 2016 14:25 Operator: FJB
Sample : WG555000-08 400ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 9:51 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

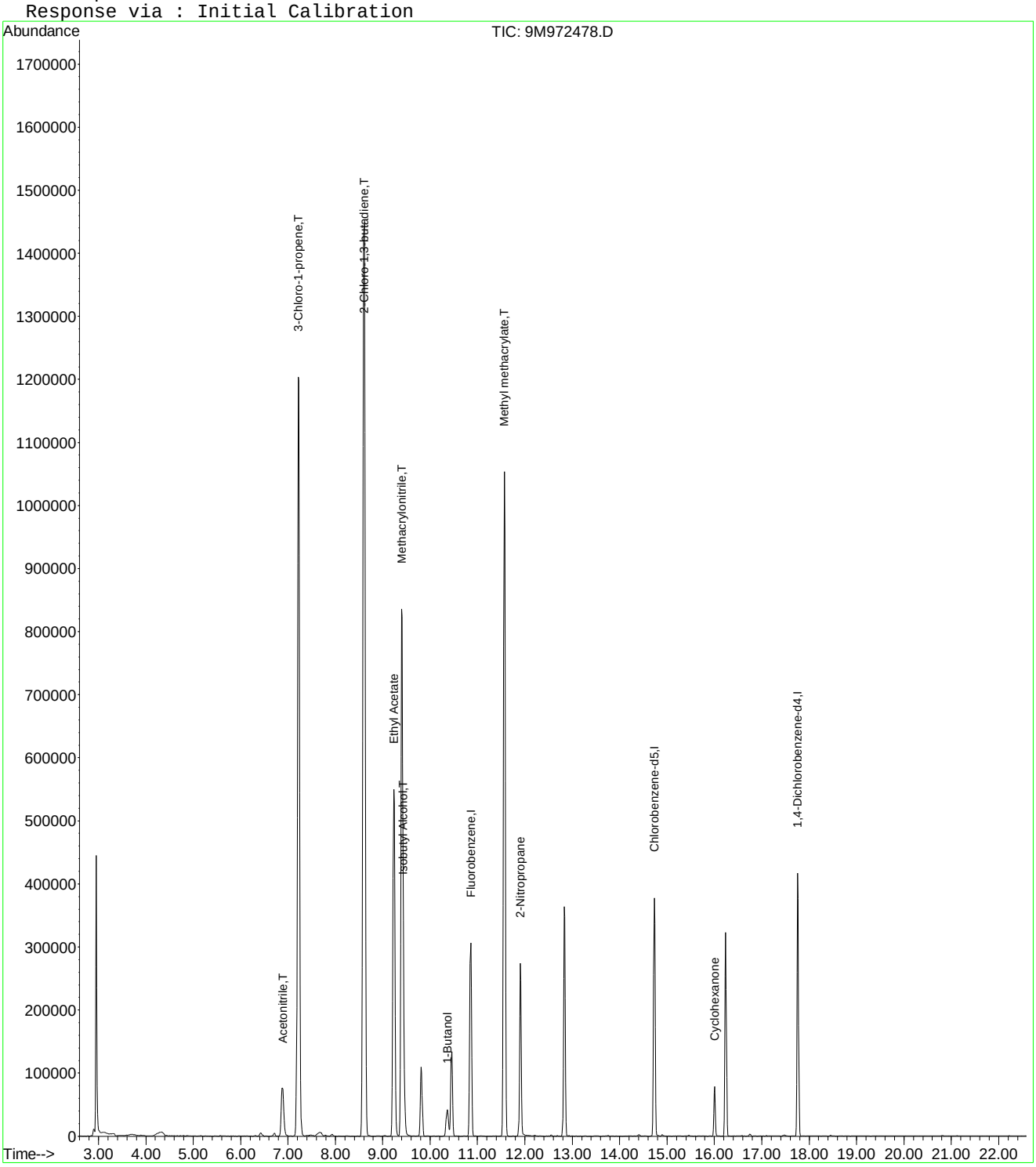

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972479.D Vial: 10
Acq On : 25 Jan 2016 14:56 Operator: FJB
Sample : WG555000-09 500ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:08 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	364474	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	266311	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	151707	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	196334	537.6773	ug/kg#	94
3) 3-Chloro-1-propene	7.22	41	1832802	509.3680	ug/kg	99
4) 2-Chloro-1,3-butadiene	8.60	53	2126710	519.6807	ug/kg	100
5) Ethyl Acetate	9.23	43	1255294	522.2587	ug/kg	100
6) Methacrylonitrile	9.40	67	408537	525.0513	ug/kg	100
7) Isobutyl Alcohol	9.43	43	180610	1052.3719	ug/kg	98
8) 1-Butanol	10.36	56	64789	519.8809	ug/kg	97
9) Methyl methacrylate	11.56	41	981460	534.5904	ug/kg	100
10) 2-Nitropropane	11.90	43	346571	581.0659	ug/kg	97
12) Cyclohexanone	16.01	55	74733	566.8143	ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972479.D A9FOO_SL.M Wed Jan 27 11:30:29 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972479.D Vial: 10
Acq On : 25 Jan 2016 14:56 Operator: FJB
Sample : WG555000-09 500ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

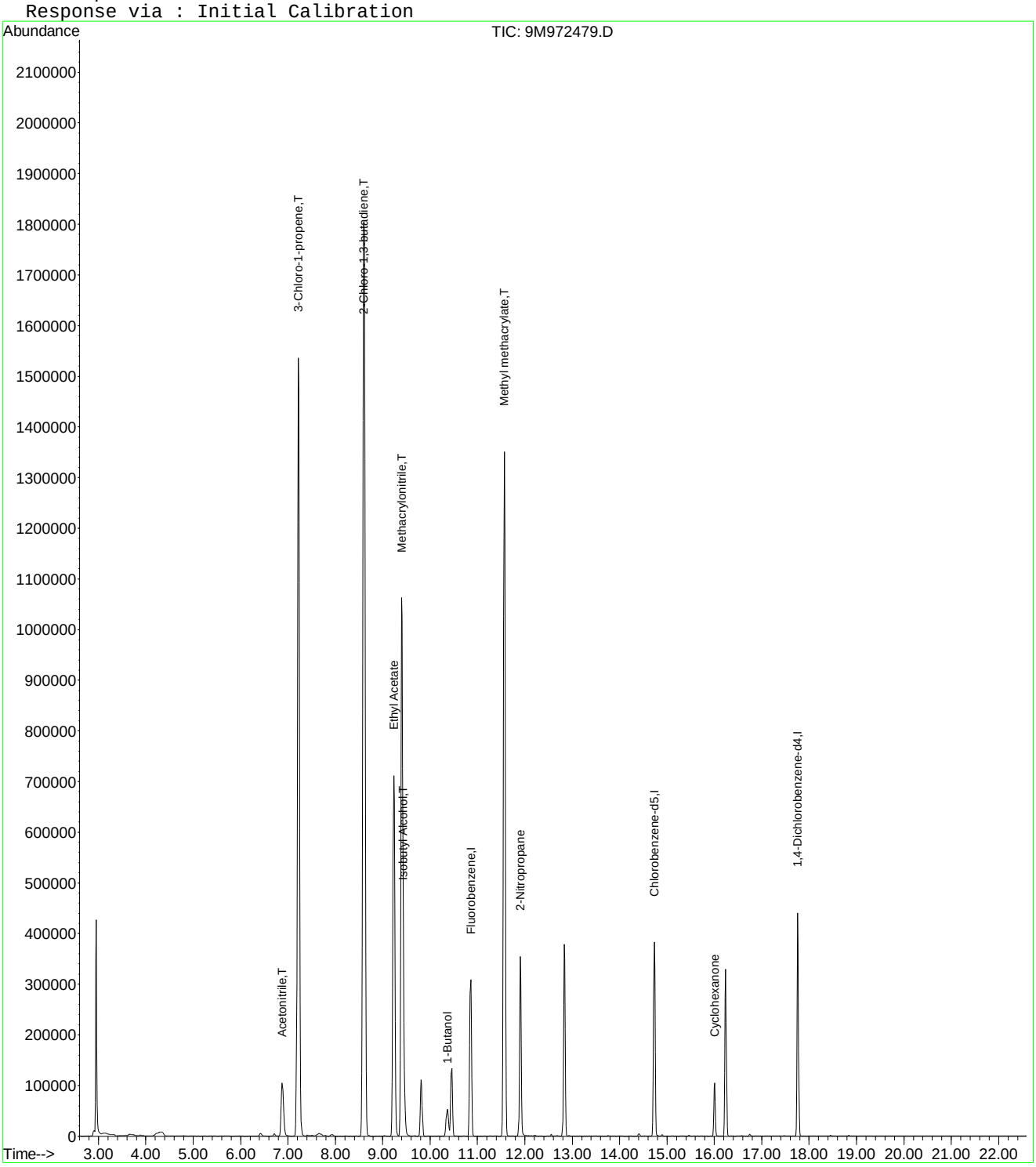

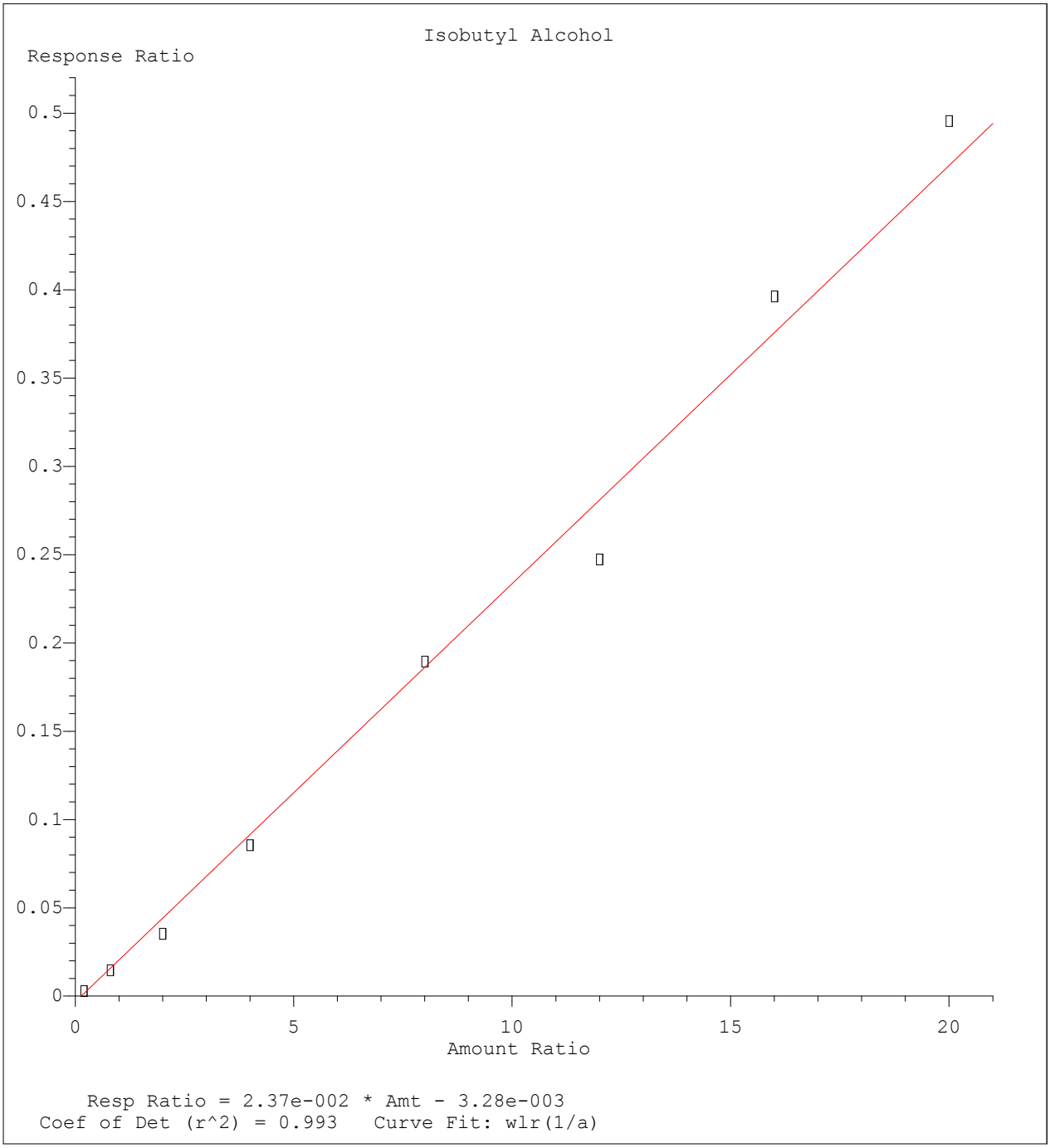

Method Name: C:\MSDCHEM\1\METHODS\A9FOO_SL.M
Calibration Table Last Updated: Wed Jan 27 09:49:02 2016

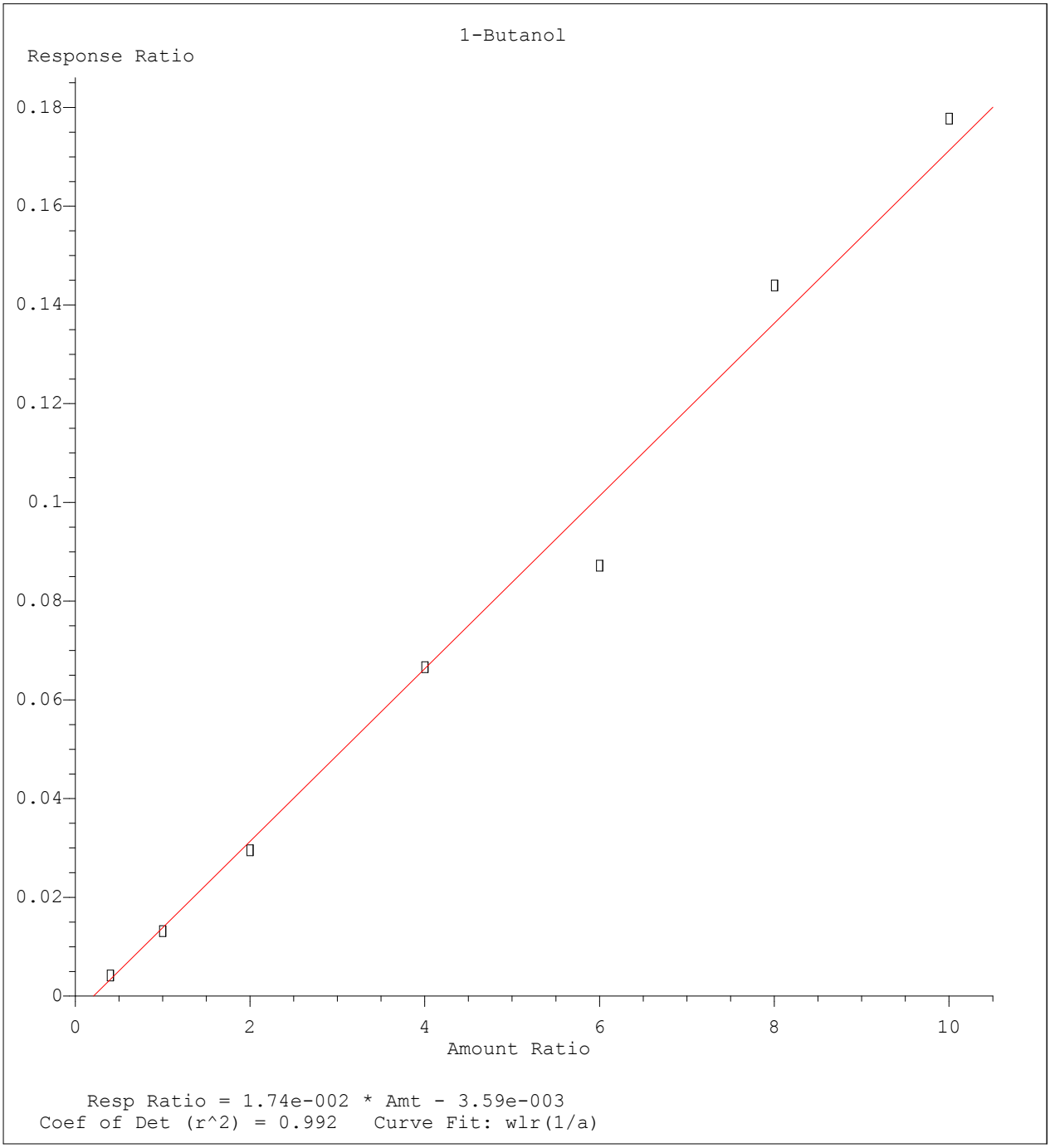

Method Name: C:\MSDCHEM\1\METHODS\A9FOO_SL.M
Calibration Table Last Updated: Wed Jan 27 09:49:02 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:09 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	394765	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	285754	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	159586	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	40054	101.2745 ug/kg#	100
3) 3-Chloro-1-propene	7.22	41	402890	103.3786 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	572568	129.1764 ug/kg	99
5) Ethyl Acetate	9.23	43	275962	106.0028 ug/kg	99
6) Methacrylonitrile	9.40	67	90289	107.1354 ug/kg	96
7) Isobutyl Alcohol	9.42	43	34031	188.7895 ug/kg	99
8) 1-Butanol	10.35	56	12038	97.7072 ug/kg	97
9) Methyl methacrylate	11.56	41	219363	110.3163 ug/kg	100
10) 2-Nitropropane	11.90	43	69288	107.2554 ug/kg	93
12) Cyclohexanone	16.01	55	14203	100.3934 ug/kg	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

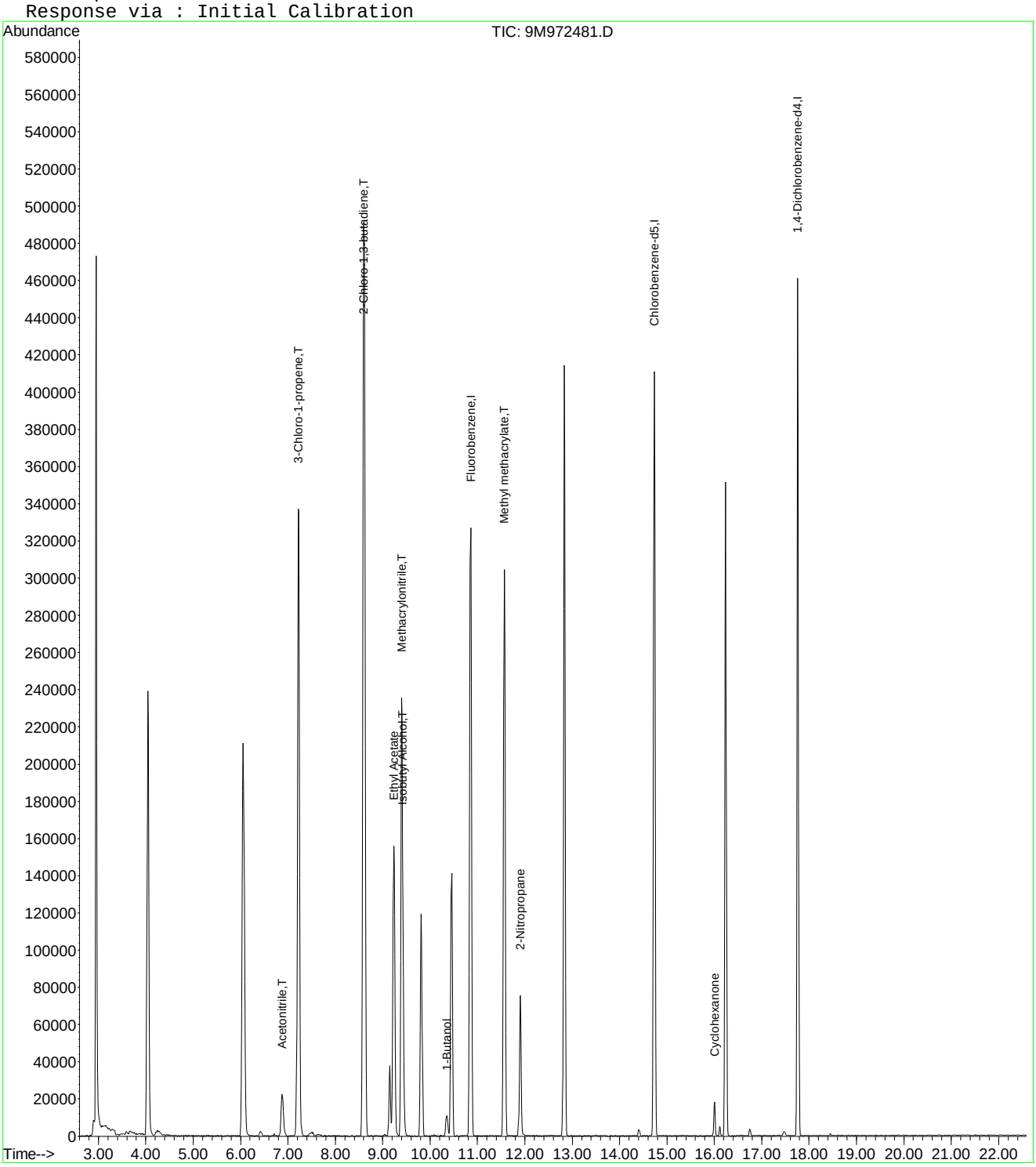

9M972481.D A9FOO_SL.M Wed Jan 27 11:15:09 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	101.2745	-1.3	106	0.00
3	T	3-Chloro-1-propene	100.0000	103.3786	-3.4	98	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	129.1764	-29.2	122	0.00
5		Ethyl Acetate	100.0000	106.0028	-6.0	103	0.00
6	T	Methacrylonitrile	100.0000	107.1354	-7.1	103	0.00
7	T	Isobutyl Alcohol	200.0000	188.7895	5.6	101	0.00
8		1-Butanol	100.0000	97.7072	2.3	103	0.00
9	T	Methyl methacrylate	100.0000	110.3163	-10.3	105	0.00
10		2-Nitropropane	100.0000	107.2554	-7.3	106	0.00
11	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
12		Cyclohexanone	100.0000	100.3934	-0.4	101	0.00
13	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	99	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972481.D A9FOO_SL.M Wed Jan 27 11:32:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972896.D Vial: 3
Acq On : 25 Feb 2016 15:48 Operator: ADC
Sample : WG558732-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:54 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260B_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	517775	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.73	117	378926	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.76	152	183008	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	147955	52.7167 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.44%		
43) 1,2-Dichloroethane-d4	10.44	65	183779	52.1887 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.38%		
58) Toluene-d8	12.83	98	511451	53.3617 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.72%		
79) p-Bromofluorobenzene	16.23	95	191673	53.7871 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 107.58%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.28	85	204882	57.9763 ug/kg	100
3) Chloromethane	3.74	50	183152	54.0664 ug/kg	100
4) Vinyl Chloride	3.99	62	192536	56.7764 ug/kg	100
5) 1,3-Butadiene	4.04	54	170907	52.9740 ug/kg	100
6) Bromomethane	4.88	94	107911	48.9956 ug/kg	100
7) Chloroethane	5.04	64	85391	56.5213 ug/kg	100
8) Trichlorofluoromethane	5.53	101	265962	52.2923 ug/kg	100
9) Diethyl ether	6.04	59	249400	104.8955 ug/kg	100
10) Isoprene	6.09	67	156373	51.4980 ug/kg	100
11) Acrolein	6.30	56	24630	51.9520 ug/kg	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	135036	51.4825 ug/kg	100
13) Acetone	6.41	43	66195	50.6135 ug/kg	100
14) 1,1-Dichloroethene	6.61	61	244051	50.4389 ug/kg	100
15) Tert-Butyl Alcohol	6.76	59	110494	208.7036 ug/kg	98
16) Dimethyl Sulfide	6.88	62	109294	53.4455 ug/kg	100
17) Iodomethane	7.13	142	79749	55.1586 ug/kg	100
18) Methyl acetate	7.14	43	135648	51.5699 ug/kg	100
19) Methylene Chloride	7.40	84	135280	51.3362 ug/kg	100
20) Carbon Disulfide	7.45	76	381814	51.2249 ug/kg	100
21) Acrylonitrile	7.59	53	69697	53.5624 ug/kg	100
22) Methyl Tert Butyl Ether	7.61	73	407131	54.2460 ug/kg	100
23) trans-1,2-Dichloroethene	7.85	61	226890	52.6160 ug/kg	100
24) n-Hexane	7.91	57	219597	49.3729 ug/kg	100
25) Diisopropyl ether	8.26	45	1088740	105.3973 ug/kg	100
26) Vinyl Acetate	8.43	43	311838	52.9553 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	284391	52.5076 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	1023392	106.5502 ug/kg	100
29) 2-Butanone	9.03	43	86123	51.5803 ug/kg	100
30) Propionitrile	9.14	54	53253	104.2214 ug/kg	100
31) 2,2-Dichloropropane	9.24	77	215042	53.1943 ug/kg	100
32) cis-1,2-Dichloroethene	9.31	96	153722	54.3532 ug/kg	100
33) Chloroform	9.52	83	263571	52.9749 ug/kg	100
34) 1-Bromopropane	9.65	122	22164	51.3817 ug/kg	100
35) Bromochloromethane	9.75	130	102780	55.9453 ug/kg	100
36) Tetrahydrofuran	9.78	42	113791	105.7289 ug/kg	100
38) 1,1,1-Trichloroethane	10.04	97	243452	54.1074 ug/kg	100
39) Cyclohexane	10.08	56	247641	50.4821 ug/kg	100
40) 1,1-Dichloropropene	10.24	75	182199	51.4612 ug/kg	100
41) Tert-Amyl-Methyl ether	10.34	73	741165	106.1603 ug/kg	100
42) Carbon Tetrachloride	10.39	117	221306	53.0537 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972896.D Vial: 3
Acq On : 25 Feb 2016 15:48 Operator: ADC
Sample : WG558732-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:54 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260B_SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	237857	54.3500	ug/kg	100
46)	Benzene	10.60	78	503328	50.7793	ug/kg	100
47)	Trichloroethene	11.35	130	163959	52.2047	ug/kg	100
48)	Methylcyclohexane	11.44	83	204551	51.9284	ug/kg	100
49)	1,2-Dichloropropane	11.56	63	148045	54.3898	ug/kg	100
50)	1,4-Dioxane	11.88	88	7789	190.7454	ug/kg	100
51)	Bromodichloromethane	11.87	83	203922	53.1595	ug/kg	100
52)	Dibromomethane	11.96	174	95887	53.1673	ug/kg	100
53)	2-Chloroethyl Vinyl Ether	12.17	63	38515	51.1377	ug/kg	100
54)	4-Methyl-2-Pentanone	12.19	58	64999	54.4056	ug/kg	100
55)	cis-1,3-Dichloropropene	12.50	75	212797	53.2452	ug/kg	100
56)	Dimethyl Disulfide	12.77	94	219798	54.7267	ug/kg	100
59)	Toluene	12.92	91	563647	52.0613	ug/kg	100
60)	Ethyl Methacrylate	13.02	69	158958	52.9687	ug/kg	100
61)	trans-1,3-Dichloropropene	13.10	75	212386	54.4657	ug/kg	100
62)	1,1,2-Trichloroethane	13.33	97	122975	54.0706	ug/kg	100
63)	2-Hexanone	13.25	43	119176	52.4822	ug/kg	100
64)	1,3-Dichloropropane	13.63	76	201541	53.1810	ug/kg	100
65)	Tetrachloroethene	13.75	164	117066	50.4378	ug/kg	100
66)	Dibromochloromethane	14.01	129	168874	53.1294	ug/kg	100
67)	1,2-Dibromoethane	14.28	107	132755	52.6249	ug/kg	100
68)	1-Chlorohexane	14.35	91	168490	52.7733	ug/kg	100
69)	Chlorobenzene	14.77	112	400241	52.5998	ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.80	131	154536	54.0800	ug/kg	100
71)	Ethylbenzene	14.80	106	207031	52.8117	ug/kg	100
72)	m-,p-Xylene	14.89	106	497405	102.7415	ug/kg	100
73)	o-Xylene	15.45	106	247567	53.2858	ug/kg	100
74)	Styrene	15.49	104	425634	53.7983	ug/kg	100
75)	Bromoform	16.00	173	116015	55.5910	ug/kg	100
76)	Isopropylbenzene	15.88	105	658255	52.7764	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.10	83	147970	53.3007	ug/kg	100
80)	1,2,3-Trichloropropane	16.29	110	55711	52.9159	ug/kg	100
81)	trans-1,4-Dichloro-2-Buten	16.33	53	55525	52.3210	ug/kg	100
82)	n-Propylbenzene	16.39	91	751844	52.2641	ug/kg	100
83)	Bromobenzene	16.52	156	177299	52.2079	ug/kg	100
84)	1,3,5-Trimethylbenzene	16.58	105	568867	52.6809	ug/kg	100
85)	2-Chlorotoluene	16.66	91	484783	50.2437	ug/kg	100
86)	4-Chlorotoluene	16.70	91	481367	53.9615	ug/kg	100
87)	a-Methylstyrene	16.98	118	255765	51.9817	ug/kg	100
88)	tert-Butylbenzene	17.04	134	121669	53.7430	ug/kg	100
89)	1,2,4-Trimethylbenzene	17.09	105	580656	51.3463	ug/kg	100
90)	sec-Butylbenzene	17.30	105	726352	52.2266	ug/kg	100
91)	p-Isopropyltoluene	17.46	119	613096	52.2364	ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	337008	49.9319	ug/kg	100
93)	1,4-Dichlorobenzene	17.80	146	335195	49.6777	ug/kg	100
94)	n-Butylbenzene	17.99	91	563797	51.6647	ug/kg	100
95)	1,2-Dichlorobenzene	18.30	146	320108	51.1150	ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.30	157	42968	53.4468	ug/kg	100
97)	1,2,4-Trichlorobenzene	20.44	180	222592	50.0691	ug/kg	100
98)	Hexachlorobutadiene	20.59	225	117654	50.2053	ug/kg	100
99)	Naphthalene	20.81	128	602344	54.0184	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	222082	51.5034	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972896.D 8260SL.M Fri Feb 26 11:21:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972896.D Vial: 3
Acq On : 25 Feb 2016 15:48 Operator: ADC
Sample : WG558732-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

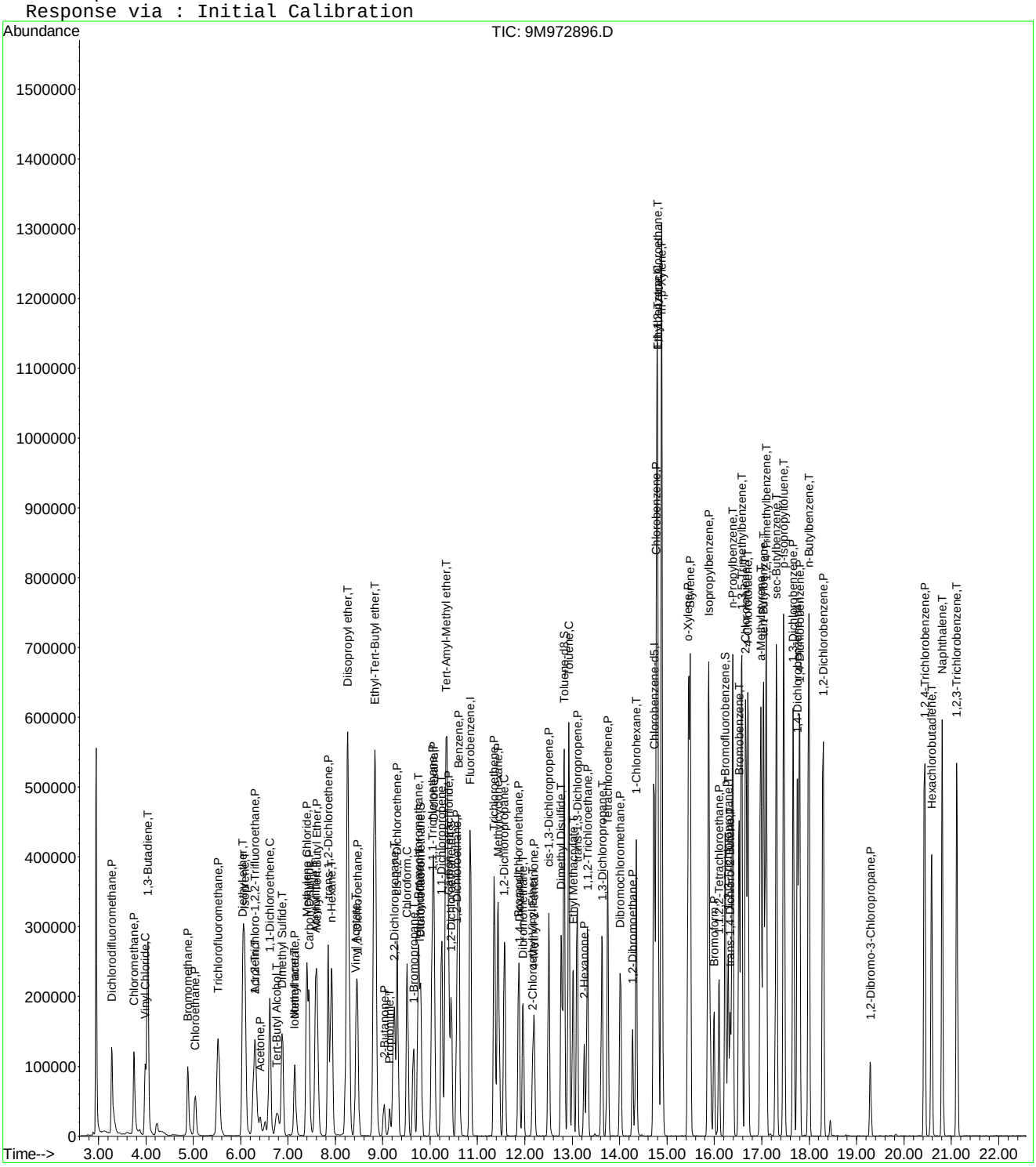

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:15 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	491503	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	353502	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	169028	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.83	98	923	0.1032 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.20%#	
79) p-Bromofluorobenzene	16.22	95	770	0.2339 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.46%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	1359	0.4051 ug/kg#	69
3) Chloromethane	3.75	50	2926	0.9099 ug/kg	95
4) Vinyl Chloride	3.98	62	1474	0.4579 ug/kg#	67
5) 1,3-Butadiene	4.03	54	1519	0.4960 ug/kg	82
6) Bromomethane	4.89	94	2071	0.9906 ug/kg	100
8) Trichlorofluoromethane	5.53	101	2609	0.5404 ug/kg#	51
10) Isoprene	6.08	67	1239	0.4298 ug/kg	70
13) Acetone	6.43	43	4251	5.5216 ug/kg#	75
14) 1,1-Dichloroethene	6.63	61	2149	0.4679 ug/kg#	66
17) Iodomethane	7.14	142	943	3.4505 ug/kg#	34
18) Methyl acetate	7.16	43	1334	0.5343 ug/kg#	45
19) Methylene Chloride	7.40	84	1287	0.5145 ug/kg	81
20) Carbon Disulfide	7.44	76	6762	0.9557 ug/kg#	76
23) trans-1,2-Dichloroethene	7.84	61	2196	0.5365 ug/kg	86
24) n-Hexane	7.92	57	2239	0.5303 ug/kg#	62
26) Vinyl Acetate	8.44	43	2494	0.4462 ug/kg#	78
27) 1,1-Dichloroethane	8.48	63	2396	0.4660 ug/kg#	63
29) 2-Butanone	9.02	43	778	0.4909 ug/kg#	58
31) 2,2-Dichloropropane	9.24	77	1877	0.4891 ug/kg#	42
32) cis-1,2-Dichloroethene	9.32	96	1178	0.4388 ug/kg	74
33) Chloroform	9.52	83	2007	0.4249 ug/kg	81
35) Bromochloromethane	9.74	130	828	0.4748 ug/kg#	68
36) Tetrahydrofuran	9.76	42	1603	1.5690 ug/kg#	57
38) 1,1,1-Trichloroethane	10.05	97	1773	0.4151 ug/kg	92
40) 1,1-Dichloropropene	10.25	75	1521	0.4526 ug/kg#	38
42) Carbon Tetrachloride	10.40	117	1765	0.4457 ug/kg#	85
45) 1,2-Dichloroethane	10.57	62	1885	0.4537 ug/kg#	68
46) Benzene	10.61	78	5607	0.5959 ug/kg#	83
47) Trichloroethene	11.36	130	1808	0.6064 ug/kg	88
48) Methylcyclohexane	11.44	83	1930	0.5161 ug/kg	96
55) cis-1,3-Dichloropropene	12.51	75	1714	0.4518 ug/kg#	51
59) Toluene	12.93	91	5550	0.5495 ug/kg	88
61) trans-1,3-Dichloropropene	13.10	75	1920	0.5278 ug/kg#	51
63) 2-Hexanone	13.25	43	877	0.4140 ug/kg#	63
64) 1,3-Dichloropropane	13.63	76	1615	0.4568 ug/kg	91
65) Tetrachloroethene	13.75	164	1154	0.5330 ug/kg#	74
67) 1,2-Dibromoethane	14.27	107	988	0.4198 ug/kg	87
68) 1-Chlorohexane	14.35	91	1436	0.4821 ug/kg	83
69) Chlorobenzene	14.78	112	4578	0.6449 ug/kg	87
70) 1,1,1,2-Tetrachloroethane	14.81	131	1078	0.4044 ug/kg	95

(#) = qualifier out of range (m) = manual integration
9M972898.D 8260SL.M Fri Feb 26 11:11:55 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:15 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
71)	Ethylbenzene	14.80	106	1823	0.4985 ug/kg	68
72)	m-,p-Xylene	14.88	106	4752	1.0521 ug/kg	95
73)	o-Xylene	15.44	106	2166	0.4997 ug/kg	94
74)	Styrene	15.49	104	3544	0.4802 ug/kg	91
76)	Isopropylbenzene	15.87	105	6349	0.5456 ug/kg	97
78)	1,1,2,2-Tetrachloroethane	16.09	83	1326	0.5171 ug/kg#	89
82)	n-Propylbenzene	16.38	91	7679	0.5780 ug/kg	98
83)	Bromobenzene	16.52	156	1798	0.5732 ug/kg	88
84)	1,3,5-Trimethylbenzene	16.57	105	4554	0.4566 ug/kg	92
85)	2-Chlorotoluene	16.66	91	5237	0.5877 ug/kg	84
86)	4-Chlorotoluene	16.71	91	5645	0.6851 ug/kg	93
87)	a-Methylstyrene	16.97	118	2091	0.4601 ug/kg	93
89)	1,2,4-Trimethylbenzene	17.09	105	6291	0.6023 ug/kg	84
90)	sec-Butylbenzene	17.31	105	7013	0.5460 ug/kg	93
91)	p-Isopropyltoluene	17.47	119	5681	0.5241 ug/kg	95
92)	1,3-Dichlorobenzene	17.67	146	4446	0.7132 ug/kg	91
93)	1,4-Dichlorobenzene	17.79	146	4603	0.7386 ug/kg#	73
94)	n-Butylbenzene	17.99	91	6750	0.6697 ug/kg#	90
95)	1,2-Dichlorobenzene	18.29	146	3889	0.6724 ug/kg	82
97)	1,2,4-Trichlorobenzene	20.43	180	3506	0.8539 ug/kg	94
98)	Hexachlorobutadiene	20.58	225	1493	0.6898 ug/kg#	70
99)	Naphthalene	20.81	128	10277	0.9979 ug/kg	93
100)	1,2,3-Trichlorobenzene	21.12	180	3961	0.9946 ug/kg	80

(#) = qualifier out of range (m) = manual integration
9M972898.D 8260SL.M Fri Feb 26 11:11:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration

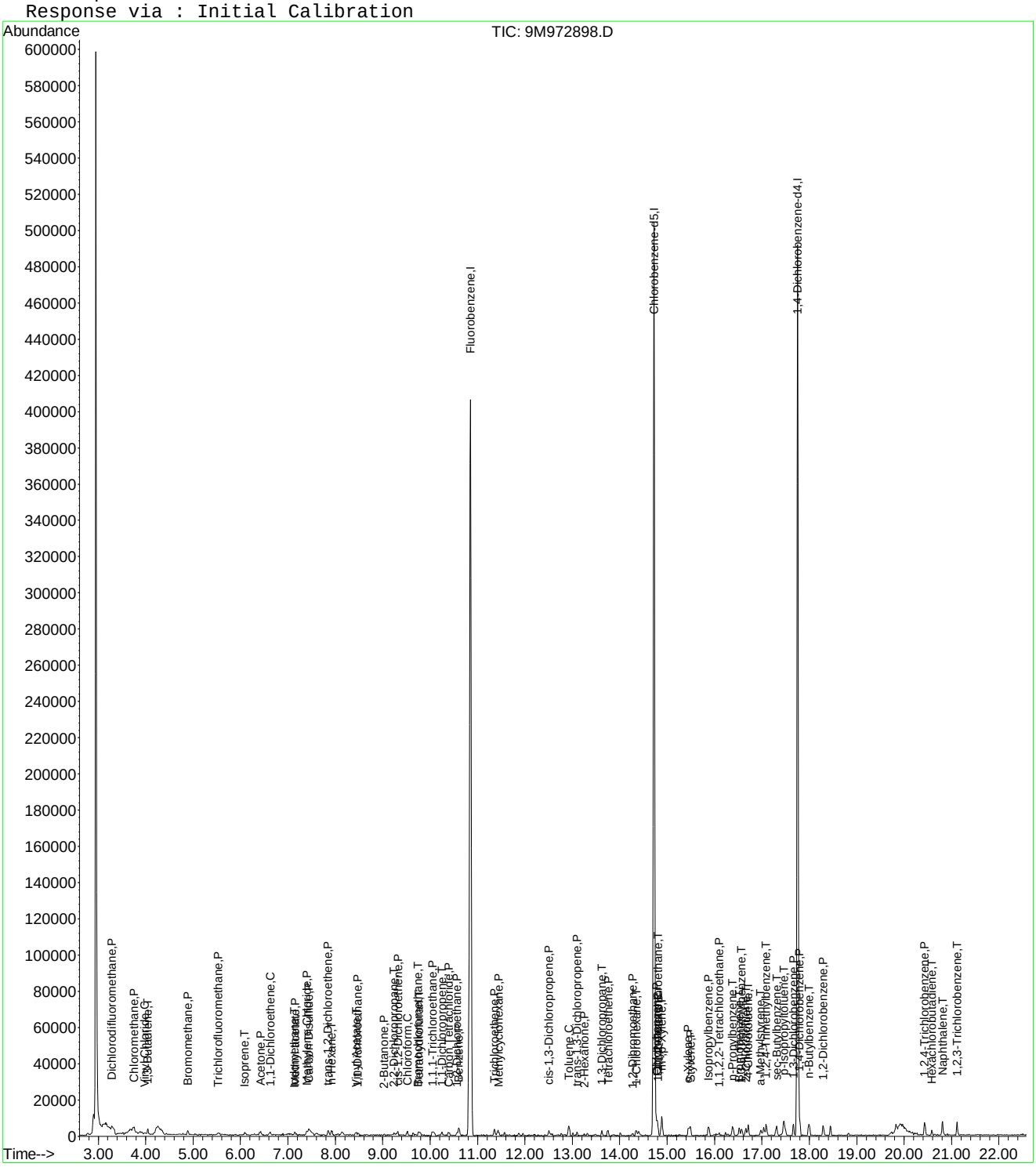

9M972898.D 8260SL.M Fri Feb 26 11:11:55 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	0.4051	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.9099	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.4579	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	0.4960	0.0	0	0.00
6	P	Bromomethane	-1.0000	0.9906	0.0	100	0.00
7	P	Chloroethane	-1.0000	0.2845	0.0	100	0.01
8	P	Trichlorofluoromethane	-1.0000	0.5404	0.0	100	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.04#
10	T	Isoprene	-1.0000	0.4298	0.0	0	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.30#
12	P	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.0779	0.0	100	0.00
13	P	Acetone	-1.0000	5.5216	0.0	0	0.02
14	C	1,1-Dichloroethene	-1.0000	0.4679	0.0	100	0.01
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.76#
16	T	Dimethyl Sulfide	-1.0000	0.1242	0.0	0	0.01
17	T	Iodomethane	-1.0000	3.4505	0.0	0	0.00
18	P	Methyl acetate	-1.0000	0.5343	0.0	0	0.02
19	P	Methylene Chloride	-1.0000	0.5145	0.0	100	0.00
20	P	Carbon Disulfide	-1.0000	0.9557	0.0	0	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.59#
22	P	Methyl Tert Butyl Ether	-1.0000	0.3878	0.0	100	0.00
23	P	trans-1,2-Dichloroethene	-1.0000	0.5365	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.5303	0.0	0	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.26#
26	T	Vinyl Acetate	-1.0000	0.4462	0.0	100	0.01
27	P	1,1-Dichloroethane	-1.0000	0.4660	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.83#
29	P	2-Butanone	-1.0000	0.4909	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.14#
31	T	2,2-Dichloropropane	-1.0000	0.4891	0.0	100	0.00
32	P	cis-1,2-Dichloroethene	-1.0000	0.4388	0.0	100	0.01
33	C	Chloroform	-1.0000	0.4249	0.0	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.65#
35	T	Bromochloromethane	-1.0000	0.4748	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	1.5690	0.0	100	-0.02
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	-1.0000	0.4151	0.0	100	0.00
39	P	Cyclohexane	-1.0000	0.3314	0.0	0	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4526	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.34#
42	P	Carbon Tetrachloride	-1.0000	0.4457	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	-1.0000	0.4537	0.0	100	0.00
46	P	Benzene	0.5000	0.5959	-19.2	100	0.00
47	P	Trichloroethene	-1.0000	0.6064	0.0	100	0.00
48	P	Methylcyclohexane	-1.0000	0.5161	0.0	0	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2930	0.0	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.88#
51	P	Bromodichloromethane	-1.0000	0.3238	0.0	100	0.00
52	T	Dibromomethane	-1.0000	0.1630	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.0000	0.0	0	-12.16#
54	P	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.19#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	-1.0000	0.4518	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2529	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.1032	0.0	100	0.00
59	C	Toluene	0.5000	0.5495	-9.9	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2340	0.0	0	0.00
61	P	trans-1,3-Dichloropropene	-1.0000	0.5278	0.0	100	0.00
62	P	1,1,2-Trichloroethane	-1.0000	0.3964	0.0	100	0.00
63	P	2-Hexanone	-1.0000	0.4140	0.0	100	0.00
64	T	1,3-Dichloropropane	-1.0000	0.4568	0.0	100	0.00
65	P	Tetrachloroethene	-1.0000	0.5330	0.0	100	0.00
66	P	Dibromochloromethane	-1.0000	0.3541	0.0	100	0.00
67	P	1,2-Dibromoethane	-1.0000	0.4198	0.0	100	0.00
68	T	1-Chlorohexane	-1.0000	0.4821	0.0	0	0.00
69	P	Chlorobenzene	-1.0000	0.6449	0.0	100	0.00
70	T	1,1,1,2-Tetrachloroethane	-1.0000	0.4044	0.0	100	0.00
71	C	Ethylbenzene	0.5000	0.4985	0.3	100	0.00
72	P	m-,p-Xylene	1.0000	1.0521	-5.2	100	0.00
73	P	o-Xylene	0.5000	0.4997	0.1	100	0.00
74	P	Styrene	-1.0000	0.4802	0.0	100	0.00
75	P	Bromoform	-1.0000	0.3955	0.0	100	0.00
76	P	Isopropylbenzene	-1.0000	0.5456	0.0	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	-1.0000	0.5171	0.0	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.2339	0.0	100	0.00
80	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.29#
81	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.33#
82	T	n-Propylbenzene	-1.0000	0.5780	0.0	100	0.00
83	T	Bromobenzene	-1.0000	0.5732	0.0	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	0.4566	0.0	100	0.00
85	T	2-Chlorotoluene	-1.0000	0.5877	0.0	100	0.00
86	T	4-Chlorotoluene	-1.0000	0.6851	0.0	100	0.00
87	T	a-Methylstyrene	-1.0000	0.4601	0.0	0	0.00
88	T	tert-Butylbenzene	-1.0000	0.2860	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	-1.0000	0.6023	0.0	100	0.00
90	T	sec-Butylbenzene	-1.0000	0.5460	0.0	100	0.00
91	T	p-Isopropyltoluene	-1.0000	0.5241	0.0	100	0.00
92	P	1,3-Dichlorobenzene	-1.0000	0.7132	0.0	100	0.00
93	P	1,4-Dichlorobenzene	-1.0000	0.7386	0.0	100	0.00
94	T	n-Butylbenzene	-1.0000	0.6697	0.0	100	0.00
95	P	1,2-Dichlorobenzene	-1.0000	0.6724	0.0	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.30#
97	P	1,2,4-Trichlorobenzene	-1.0000	0.8539	0.0	100	0.00
98	T	Hexachlorobutadiene	-1.0000	0.6898	0.0	100	0.00
99	T	Naphthalene	-1.0000	0.9979	0.0	100	0.00
100	T	1,2,3-Trichlorobenzene	-1.0000	0.9946	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972898.D 8260SL.M Fri Feb 26 11:11:52 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	536651	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	387839	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	177519	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.82	98	959	0.0978 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.20%#	
79) p-Bromofluorobenzene	16.22	95	467	0.1351 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	3486	0.9518 ug/kg#	85
3) Chloromethane	3.74	50	4175	1.1891 ug/kg	88
4) Vinyl Chloride	3.98	62	2686	0.7642 ug/kg	80
5) 1,3-Butadiene	4.03	54	3056	0.9139 ug/kg	91
6) Bromomethane	4.89	94	2537	1.1114 ug/kg	94
7) Chloroethane	5.05	64	1264	0.8072 ug/kg#	45
8) Trichlorofluoromethane	5.53	101	5567	1.0561 ug/kg#	93
9) Diethyl ether	6.05	59	11529	4.6784 ug/kg	97
10) Isoprene	6.08	67	2965	0.9421 ug/kg	97
11) Acrolein	6.29	56	1087	2.2122 ug/kg#	35
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	1939	0.7132 ug/kg	88
13) Acetone	6.41	43	5231	5.8863 ug/kg	95
14) 1,1-Dichloroethene	6.62	61	4981	0.9932 ug/kg	92
15) Tert-Butyl Alcohol	6.77	59	5682	10.3548 ug/kg#	63
16) Dimethyl Sulfide	6.88	62	1614	0.7615 ug/kg	91
17) Iodomethane	7.15	142	941	3.3944 ug/kg#	66
18) Methyl acetate	7.16	43	2553	0.9364 ug/kg#	65
19) Methylene Chloride	7.40	84	2963	1.0849 ug/kg	92
20) Carbon Disulfide	7.45	76	9749	1.2619 ug/kg	95
21) Acrylonitrile	7.58	53	3140	2.3282 ug/kg	85
22) Methyl Tert Butyl Ether	7.61	73	7179	0.9229 ug/kg	83
23) trans-1,2-Dichloroethene	7.85	61	4296	0.9612 ug/kg	95
24) n-Hexane	7.93	57	4481	0.9720 ug/kg	95
25) Diisopropyl ether	8.26	45	50344	4.7022 ug/kg	98
26) Vinyl Acetate	8.43	43	5247	0.8597 ug/kg#	90
27) 1,1-Dichloroethane	8.48	63	5885	1.0483 ug/kg#	85
28) Ethyl-Tert-Butyl ether	8.83	59	46767	4.6979 ug/kg	99
29) 2-Butanone	9.03	43	1776	1.0263 ug/kg#	58
30) Propionitrile	9.14	54	2256	4.2599 ug/kg#	60
31) 2,2-Dichloropropane	9.24	77	4402	1.0506 ug/kg#	71
32) cis-1,2-Dichloroethene	9.31	96	2650	0.9040 ug/kg	94
33) Chloroform	9.51	83	5072	0.9836 ug/kg	96
35) Bromochloromethane	9.75	130	1408	0.7394 ug/kg	86
36) Tetrahydrofuran	9.77	42	6699	6.0054 ug/kg	95
38) 1,1,1-Trichloroethane	10.05	97	4567	0.9793 ug/kg	91
39) Cyclohexane	10.08	56	4992	0.9818 ug/kg#	85
40) 1,1-Dichloropropene	10.24	75	3785	1.0315 ug/kg	90
41) Tert-Amyl-Methyl ether	10.34	73	33850	4.6779 ug/kg	95
42) Carbon Tetrachloride	10.40	117	4297	0.9939 ug/kg#	90
45) 1,2-Dichloroethane	10.55	62	3923	0.8649 ug/kg	93

(#) = qualifier out of range (m) = manual integration
9M972899.D 8260SL.M Fri Feb 26 11:12:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
46)	Benzene	10.61	78	9968	0.9703 ug/kg	96
47)	Trichloroethene	11.36	130	3259	1.0012 ug/kg	99
48)	Methylcyclohexane	11.43	83	3354	0.8215 ug/kg	76
49)	1,2-Dichloropropane	11.57	63	2469	0.8752 ug/kg	94
51)	Bromodichloromethane	11.87	83	3657	0.9198 ug/kg#	94
52)	Dibromomethane	11.96	174	1621	0.8672 ug/kg	93
53)	2-Chloroethyl Vinyl Ether	12.16	63	210	3.0851 ug/kg#	47
54)	4-Methyl-2-Pentanone	12.20	58	738	0.5960 ug/kg#	40
55)	cis-1,3-Dichloropropene	12.51	75	3714	0.8966 ug/kg	86
56)	Dimethyl Disulfide	12.77	94	3075	0.7387 ug/kg	83
59)	Toluene	12.93	91	10894	0.9831 ug/kg	97
60)	Ethyl Methacrylate	13.01	69	1966	0.6401 ug/kg#	53
61)	trans-1,3-Dichloropropene	13.11	75	3837	0.9614 ug/kg#	79
62)	1,1,2-Trichloroethane	13.32	97	2148	0.9227 ug/kg	94
63)	2-Hexanone	13.26	43	1796	0.7727 ug/kg#	80
64)	1,3-Dichloropropane	13.63	76	3616	0.9322 ug/kg	99
65)	Tetrachloroethene	13.75	164	2587	1.0890 ug/kg	79
66)	Dibromochloromethane	14.02	129	3318	1.0199 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	2336	0.9047 ug/kg	97
68)	1-Chlorohexane	14.34	91	3075	0.9410 ug/kg	85
69)	Chlorobenzene	14.78	112	7982	1.0249 ug/kg	88
70)	1,1,1,2-Tetrachloroethane	14.81	131	2589	0.8852 ug/kg	86
71)	Ethylbenzene	14.80	106	4007	0.9987 ug/kg	89
72)	m-,p-Xylene	14.88	106	9607	1.9388 ug/kg	98
73)	o-Xylene	15.45	106	4376	0.9202 ug/kg	99
74)	Styrene	15.49	104	7432	0.9178 ug/kg	92
75)	Bromoform	16.00	173	1759	0.8235 ug/kg#	79
76)	Isopropylbenzene	15.87	105	11937	0.9351 ug/kg	98
78)	1,1,2,2-Tetrachloroethane	16.09	83	2186	0.8118 ug/kg#	83
80)	1,2,3-Trichloropropane	16.28	110	875	0.8568 ug/kg#	81
81)	trans-1,4-Dichloro-2-Buten	16.34	53	831	0.8073 ug/kg#	74
82)	n-Propylbenzene	16.38	91	14156	1.0145 ug/kg	99
83)	Bromobenzene	16.53	156	2996	0.9095 ug/kg#	39
84)	1,3,5-Trimethylbenzene	16.57	105	11008	1.0509 ug/kg	88
85)	2-Chlorotoluene	16.65	91	10606	1.1332 ug/kg	84
86)	4-Chlorotoluene	16.71	91	9101	1.0518 ug/kg	95
87)	a-Methylstyrene	16.98	118	4078	0.8544 ug/kg	85
88)	tert-Butylbenzene	17.03	134	2095	0.9540 ug/kg	74
89)	1,2,4-Trimethylbenzene	17.09	105	12124	1.1053 ug/kg	83
90)	sec-Butylbenzene	17.31	105	13922	1.0320 ug/kg	100
91)	p-Isopropyltoluene	17.47	119	10153	0.8918 ug/kg	98
92)	1,3-Dichlorobenzene	17.67	146	7444	1.1370 ug/kg	90
93)	1,4-Dichlorobenzene	17.79	146	7580	1.1581 ug/kg	92
94)	n-Butylbenzene	17.99	91	11112	1.0498 ug/kg	91
95)	1,2-Dichlorobenzene	18.29	146	6415	1.0560 ug/kg	97
97)	1,2,4-Trichlorobenzene	20.43	180	4869	1.1291 ug/kg	98
98)	Hexachlorobutadiene	20.59	225	2032	0.8939 ug/kg	87
99)	Naphthalene	20.81	128	11710	1.0826 ug/kg	92
100)	1,2,3-Trichlorobenzene	21.12	180	4698	1.1232 ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972899.D 8260SL.M Fri Feb 26 11:12:33 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration

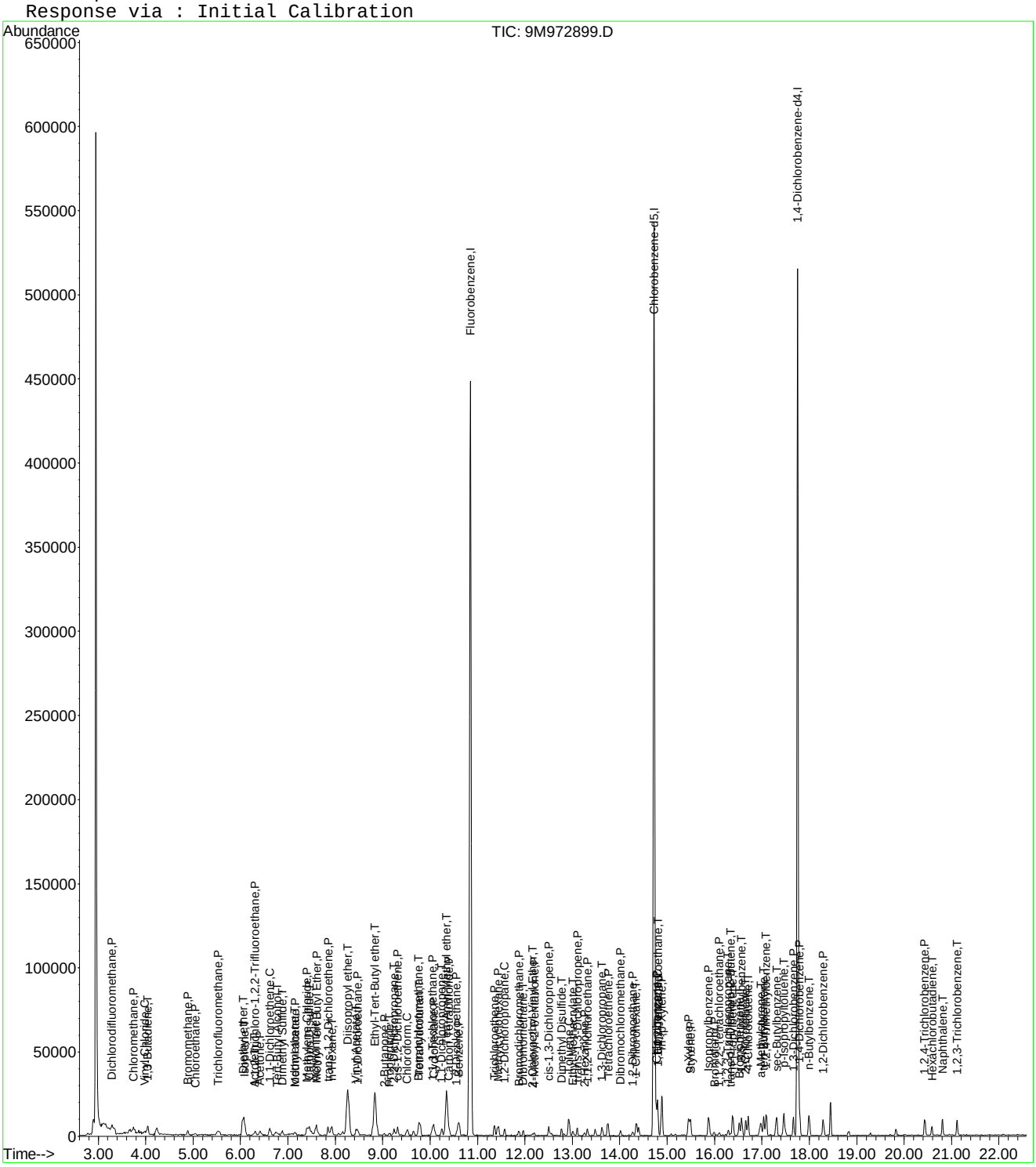

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	0.9518	0.0	100	0.00
3	P	Chloromethane	-1.0000	1.1891	0.0	100	0.00
4	C	Vinyl Chloride	1.0000	0.7642	23.6#	100	0.00
5	T	1,3-Butadiene	-1.0000	0.9139	0.0	0	0.00
6	P	Bromomethane	1.0000	1.1114	-11.1	100	0.00
7	P	Chloroethane	-1.0000	0.8072	0.0	100	0.00
8	P	Trichlorofluoromethane	1.0000	1.0561	-5.6	100	0.00
9	T	Diethyl ether	5.0000	4.6784	6.4	100	0.00
10	T	Isoprene	-1.0000	0.9421	0.0	0	0.00
11	T	Acrolein	2.5000	2.2122	11.5	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.7132	0.0	100	0.00
13	P	Acetone	-1.0000	5.8863	0.0	0	0.00
14	C	1,1-Dichloroethene	1.0000	0.9932	0.7	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	10.3548	0.0	100	0.00
16	T	Dimethyl Sulfide	1.0000	0.7615	23.9	100	0.00
17	T	Iodomethane	-1.0000	3.3944	0.0	0	0.01
18	P	Methyl acetate	-1.0000	0.9364	0.0	0	0.02
19	P	Methylene Chloride	-1.0000	1.0849	0.0	100	0.00
20	P	Carbon Disulfide	-1.0000	1.2619	0.0	0	0.00
21	T	Acrylonitrile	2.5000	2.3282	6.9	100	0.00
22	P	Methyl Tert Butyl Ether	1.0000	0.9229	7.7	100	0.00
23	P	trans-1,2-Dichloroethene	1.0000	0.9612	3.9	100	0.00
24	T	n-Hexane	-1.0000	0.9720	0.0	0	0.01
25	T	Diisopropyl ether	5.0000	4.7022	6.0	100	0.00
26	T	Vinyl Acetate	-1.0000	0.8597	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0483	-4.8	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.6979	6.0	100	0.00
29	P	2-Butanone	-1.0000	1.0263	0.0	100	0.00
30	T	Propionitrile	5.0000	4.2599	14.8	100	0.00
31	T	2,2-Dichloropropane	-1.0000	1.0506	0.0	100	0.00
32	P	cis-1,2-Dichloroethene	1.0000	0.9040	9.6	100	0.00
33	C	Chloroform	1.0000	0.9836	1.6	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.65#
35	T	Bromochloromethane	1.0000	0.7395	26.1#	100	0.00
36	T	Tetrahydrofuran	-1.0000	6.0054	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	1.0000	0.9793	2.1	100	0.00
39	P	Cyclohexane	1.0000	0.9818	1.8	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0315	-3.1	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	4.6780	6.4	100	0.00
42	P	Carbon Tetrachloride	-1.0000	0.9939	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	1.0000	0.8649	13.5	100	0.00
46	P	Benzene	1.0000	0.9703	3.0	100	0.00
47	P	Trichloroethene	1.0000	1.0012	-0.1	100	0.00
48	P	Methylcyclohexane	1.0000	0.8215	17.8	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.8752	12.5	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.88#
51	P	Bromodichloromethane	-1.0000	0.9198	0.0	100	0.00
52	T	Dibromomethane	1.0000	0.8672	13.3	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	3.0851	0.0	0	0.00
54	P	4-Methyl-2-Pentanone	-1.0000	0.5960	0.0	100	0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	-1.0000	0.8966	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.7387	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0978	0.0	100	0.00
59	C	Toluene	1.0000	0.9831	1.7	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.6401	0.0	0	0.00
61	P	trans-1,3-Dichloropropene	-1.0000	0.9614	0.0	100	0.00
62	P	1,1,2-Trichloroethane	1.0000	0.9227	7.7	100	0.00
63	P	2-Hexanone	-1.0000	0.7727	0.0	100	0.00
64	T	1,3-Dichloropropane	1.0000	0.9322	6.8	100	0.00
65	P	Tetrachloroethene	1.0000	1.0890	-8.9	100	0.00
66	P	Dibromochloromethane	-1.0000	1.0199	0.0	100	0.00
67	P	1,2-Dibromoethane	-1.0000	0.9047	0.0	100	0.00
68	T	1-Chlorohexane	1.0000	0.9410	5.9	100	0.00
69	P	Chlorobenzene	1.0000	1.0249	-2.5	100	0.00
70	T	1,1,1,2-Tetrachloroethane	-1.0000	0.8852	0.0	100	0.00
71	C	Ethylbenzene	1.0000	0.9987	0.1	100	0.00
72	P	m-,p-Xylene	2.0000	1.9388	3.1	100	0.00
73	P	o-Xylene	1.0000	0.9202	8.0	100	0.00
74	P	Styrene	1.0000	0.9178	8.2	100	0.00
75	P	Bromoform	-1.0000	0.8235	0.0	100	0.00
76	P	Isopropylbenzene	1.0000	0.9351	6.5	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	1.0000	0.8118	18.8	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.1351	0.0	100	0.00
80	T	1,2,3-Trichloropropane	1.0000	0.8568	14.3	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.8073	0.0	0	0.00
82	T	n-Propylbenzene	1.0000	1.0145	-1.4	100	0.00
83	T	Bromobenzene	1.0000	0.9095	9.1	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	1.0509	0.0	100	0.00
85	T	2-Chlorotoluene	-1.0000	1.1332	0.0	100	0.00
86	T	4-Chlorotoluene	1.0000	1.0518	-5.2	100	0.00
87	T	a-Methylstyrene	-1.0000	0.8544	0.0	0	0.00
88	T	tert-Butylbenzene	-1.0000	0.9540	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	1.0000	1.1053	-10.5	100	0.00
90	T	sec-Butylbenzene	1.0000	1.0320	-3.2	100	0.00
91	T	p-Isopropyltoluene	-1.0000	0.8918	0.0	100	0.00
92	P	1,3-Dichlorobenzene	1.0000	1.1370	-13.7	100	0.00
93	P	1,4-Dichlorobenzene	1.0000	1.1581	-15.8	100	0.00
94	T	n-Butylbenzene	1.0000	1.0498	-5.0	100	0.00
95	P	1,2-Dichlorobenzene	1.0000	1.0560	-5.6	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	0.3514	0.0	100	0.00
97	P	1,2,4-Trichlorobenzene	1.0000	1.1291	-12.9	100	0.00
98	T	Hexachlorobutadiene	1.0000	0.8939	10.6	100	0.00
99	T	Naphthalene	-1.0000	1.0826	0.0	100	0.00
100	T	1,2,3-Trichlorobenzene	1.0000	1.1232	-12.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1
9M972899.D 8260SL.M Fri Feb 26 11:12:31 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	472115	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	342668	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	156993	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.83	98	772	0.0891 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.18%#	
79) p-Bromofluorobenzene	16.23	95	570	0.1865 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.38%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.29	85	6383	1.9809 ug/kg#	78
3) Chloromethane	3.74	50	7027	2.2750 ug/kg	100
4) Vinyl Chloride	4.00	62	6001	1.9408 ug/kg	97
5) 1,3-Butadiene	4.04	54	6545	2.2249 ug/kg	95
6) Bromomethane	4.90	94	5050	2.5146 ug/kg	81
7) Chloroethane	5.04	64	2391	1.7357 ug/kg#	70
8) Trichlorofluoromethane	5.54	101	9777	2.1082 ug/kg#	94
9) Diethyl ether	6.06	59	58156	26.8255 ug/kg	97
10) Isoprene	6.09	67	5698	2.0580 ug/kg	89
11) Acrolein	6.30	56	5427	12.5543 ug/kg	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	4756	1.9886 ug/kg	93
13) Acetone	6.40	43	6167	6.9886 ug/kg	93
14) 1,1-Dichloroethene	6.62	61	9652	2.1877 ug/kg	91
15) Tert-Butyl Alcohol	6.75	59	26757	55.4271 ug/kg#	91
16) Dimethyl Sulfide	6.89	62	3840	2.0594 ug/kg	97
17) Iodomethane	7.14	142	1541	3.9079 ug/kg#	56
18) Methyl acetate	7.15	43	5334	2.2240 ug/kg#	69
19) Methylene Chloride	7.40	84	5116	2.1292 ug/kg	98
20) Carbon Disulfide	7.44	76	15010	2.2085 ug/kg	94
21) Acrylonitrile	7.59	53	14961	12.6096 ug/kg	100
22) Methyl Tert Butyl Ether	7.61	73	13630	1.9917 ug/kg	93
23) trans-1,2-Dichloroethene	7.85	61	7964	2.0255 ug/kg	100
24) n-Hexane	7.92	57	8619	2.1253 ug/kg	100
25) Diisopropyl ether	8.26	45	252190	26.7748 ug/kg	99
26) Vinyl Acetate	8.43	43	11207	2.0872 ug/kg	95
27) 1,1-Dichloroethane	8.47	63	10529	2.1320 ug/kg#	93
28) Ethyl-Tert-Butyl ether	8.83	59	234163	26.7377 ug/kg	99
29) 2-Butanone	9.03	43	3346	2.1978 ug/kg#	76
30) Propionitrile	9.14	54	12899	27.6861 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	8085	2.1934 ug/kg	88
32) cis-1,2-Dichloroethene	9.32	96	4861	1.8850 ug/kg	98
33) Chloroform	9.53	83	10005	2.2054 ug/kg	95
34) 1-Bromopropane	9.64	122	209	1.5465 ug/kg	96
35) Bromochloromethane	9.75	130	3273	1.9539 ug/kg	81
36) Tetrahydrofuran	9.78	42	26192	26.6900 ug/kg	94
38) 1,1,1-Trichloroethane	10.04	97	8229	2.0058 ug/kg	97
39) Cyclohexane	10.09	56	9354	2.0912 ug/kg	96
40) 1,1-Dichloropropene	10.23	75	6787	2.1024 ug/kg	88
41) Tert-Amyl-Methyl ether	10.34	73	167275	26.2768 ug/kg	98
42) Carbon Tetrachloride	10.39	117	7920	2.0823 ug/kg#	95

(#) = qualifier out of range (m) = manual integration
9M972900.D 8260SL.M Fri Feb 26 11:13:39 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	8488	2.1271 ug/kg	89
46)	Benzene	10.60	78	19454	2.1525 ug/kg	96
47)	Trichloroethene	11.35	130	6073	2.1207 ug/kg	96
48)	Methylcyclohexane	11.44	83	7523	2.0945 ug/kg	95
49)	1,2-Dichloropropane	11.58	63	5118	2.0621 ug/kg	93
50)	1,4-Dioxane	11.88	88	1938	52.0499 ug/kg	84
51)	Bromodichloromethane	11.87	83	7148	2.0436 ug/kg#	95
52)	Dibromomethane	11.97	174	3572	2.1721 ug/kg	91
53)	2-Chloroethyl Vinyl Ether	12.17	63	474	3.4830 ug/kg#	47
54)	4-Methyl-2-Pentanone	12.19	58	2111	1.9378 ug/kg#	64
55)	cis-1,3-Dichloropropene	12.50	75	7048	1.9341 ug/kg	92
56)	Dimethyl Disulfide	12.77	94	5832	1.5925 ug/kg	95
59)	Toluene	12.93	91	20786	2.1230 ug/kg	97
60)	Ethyl Methacrylate	13.01	69	4184	1.5417 ug/kg	98
61)	trans-1,3-Dichloropropene	13.11	75	6895	1.9553 ug/kg	92
62)	1,1,2-Trichloroethane	13.33	97	4055	1.9716 ug/kg	86
63)	2-Hexanone	13.25	43	3773	1.8373 ug/kg#	82
64)	1,3-Dichloropropane	13.62	76	7643	2.2302 ug/kg	97
65)	Tetrachloroethene	13.75	164	4327	2.0615 ug/kg	94
66)	Dibromochloromethane	14.01	129	6170	2.1465 ug/kg	87
67)	1,2-Dibromoethane	14.28	107	4656	2.0410 ug/kg	88
68)	1-Chlorohexane	14.35	91	5610	1.9430 ug/kg	97
69)	Chlorobenzene	14.77	112	14885	2.1632 ug/kg	95
70)	1,1,1,2-Tetrachloroethane	14.80	131	5145	1.9910 ug/kg	86
71)	Ethylbenzene	14.79	106	7287	2.0555 ug/kg	99
72)	m-,p-Xylene	14.89	106	19133	4.3702 ug/kg	93
73)	o-Xylene	15.45	106	8413	2.0024 ug/kg	94
74)	Styrene	15.49	104	14533	2.0313 ug/kg	97
75)	Bromoform	15.99	173	3135	1.6611 ug/kg	97
76)	Isopropylbenzene	15.87	105	23266	2.0628 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	5252	2.2053 ug/kg#	89
80)	1,2,3-Trichloropropane	16.28	110	1851	2.0495 ug/kg#	89
81)	trans-1,4-Dichloro-2-Buten	16.33	53	1413	1.5521 ug/kg	47
82)	n-Propylbenzene	16.38	91	25735	2.0854 ug/kg	99
83)	Bromobenzene	16.52	156	7006	2.4049 ug/kg	83
84)	1,3,5-Trimethylbenzene	16.57	105	18571	2.0048 ug/kg	99
85)	2-Chlorotoluene	16.66	91	18793	2.2705 ug/kg	97
86)	4-Chlorotoluene	16.70	91	16240	2.1222 ug/kg	96
87)	a-Methylstyrene	16.98	118	7524	1.7826 ug/kg	97
88)	tert-Butylbenzene	17.04	134	3654	1.8815 ug/kg	64
89)	1,2,4-Trimethylbenzene	17.09	105	20119	2.0739 ug/kg	99
90)	sec-Butylbenzene	17.31	105	24858	2.0835 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	20956	2.0813 ug/kg	96
92)	1,3-Dichlorobenzene	17.66	146	13695	2.3653 ug/kg	94
93)	1,4-Dichlorobenzene	17.79	146	12975	2.2416 ug/kg	82
94)	n-Butylbenzene	17.99	91	19734	2.1080 ug/kg	95
95)	1,2-Dichlorobenzene	18.30	146	11568	2.1533 ug/kg	91
96)	1,2-Dibromo-3-Chloropropan	19.30	157	941	1.3644 ug/kg	84
97)	1,2,4-Trichlorobenzene	20.44	180	8356	2.1910 ug/kg	98
98)	Hexachlorobutadiene	20.59	225	4571	2.2738 ug/kg	87
99)	Naphthalene	20.81	128	20072	2.0983 ug/kg	96
100)	1,2,3-Trichlorobenzene	21.11	180	7948	2.1487 ug/kg	96

(#) = qualifier out of range (m) = manual integration
9M972900.D 8260SL.M Fri Feb 26 11:13:39 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration

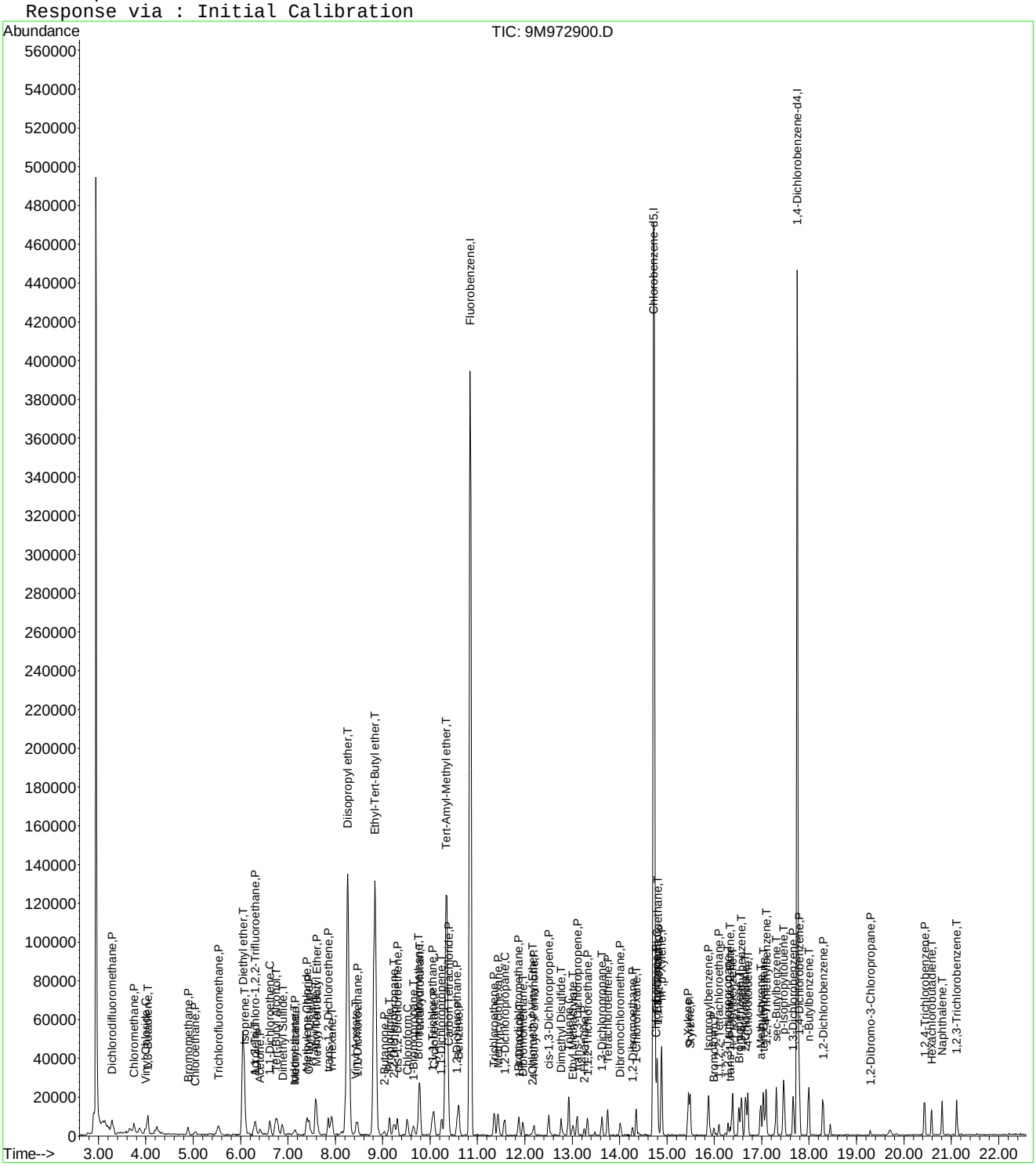

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	1.9809	0.0	100	0.01
3	P	Chloromethane	2.0000	2.2750	-13.7	100	0.00
4	C	Vinyl Chloride	2.0000	1.9408	3.0	100	0.01
5	T	1,3-Butadiene	2.0000	2.2249	-11.2	100	0.00
6	P	Bromomethane	2.0000	2.5146	-25.7#	100	0.01
7	P	Chloroethane	2.0000	1.7357	13.2	100	0.00
8	P	Trichlorofluoromethane	2.0000	2.1082	-5.4	100	0.01
9	T	Diethyl ether	25.0000	26.8255	-7.3	100	0.01
10	T	Isoprene	2.0000	2.0580	-2.9	100	0.00
11	T	Acrolein	12.5000	12.5543	-0.4	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.9886	0.6	100	0.01
13	P	Acetone	-1.0000	6.9886	0.0	0	0.00
14	C	1,1-Dichloroethene	2.0000	2.1877	-9.4	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	55.4271	-10.9	100	0.00
16	T	Dimethyl Sulfide	2.0000	2.0594	-3.0	100	0.01
17	T	Iodomethane	-1.0000	3.9079	0.0	0	0.01
18	P	Methyl acetate	2.0000	2.2240	-11.2	100	0.01
19	P	Methylene Chloride	2.0000	2.1292	-6.5	100	0.00
20	P	Carbon Disulfide	2.0000	2.2085	-10.4	100	0.00
21	T	Acrylonitrile	12.5000	12.6096	-0.9	100	0.00
22	P	Methyl Tert Butyl Ether	2.0000	1.9917	0.4	100	0.00
23	P	trans-1,2-Dichloroethene	2.0000	2.0255	-1.3	100	0.00
24	T	n-Hexane	2.0000	2.1253	-6.3	100	0.01
25	T	Diisopropyl ether	25.0000	26.7748	-7.1	100	0.00
26	T	Vinyl Acetate	2.0000	2.0872	-4.4	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.1320	-6.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	26.7377	-7.0	100	0.00
29	P	2-Butanone	2.0000	2.1978	-9.9	100	0.00
30	T	Propionitrile	25.0000	27.6861	-10.7	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1934	-9.7	100	0.00
32	P	cis-1,2-Dichloroethene	2.0000	1.8850	5.8	100	0.01
33	C	Chloroform	2.0000	2.2054	-10.3	100	0.01
34	T	1-Bromopropane	2.0000	1.5465	22.7	100	0.00
35	T	Bromochloromethane	2.0000	1.9539	2.3	100	0.00
36	T	Tetrahydrofuran	25.0000	26.6900	-6.8	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	2.0000	2.0058	-0.3	100	0.00
39	P	Cyclohexane	2.0000	2.0913	-4.6	100	0.01
40	T	1,1-Dichloropropene	2.0000	2.1023	-5.1	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	26.2768	-5.1	100	0.00
42	P	Carbon Tetrachloride	2.0000	2.0823	-4.1	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	2.0000	2.1271	-6.4	100	0.00
46	P	Benzene	2.0000	2.1525	-7.6	100	0.00
47	P	Trichloroethene	2.0000	2.1207	-6.0	100	0.00
48	P	Methylcyclohexane	2.0000	2.0945	-4.7	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0621	-3.1	100	0.01
50	T	1,4-Dioxane	50.0000	52.0499	-4.1	100	0.00
51	P	Bromodichloromethane	2.0000	2.0436	-2.2	100	0.00
52	T	Dibromomethane	2.0000	2.1721	-8.6	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	3.4830	0.0	0	0.00
54	P	4-Methyl-2-Pentanone	-1.0000	1.9378	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	2.0000	1.9341	3.3	100	0.00
56	T	Dimethyl Disulfide	2.0000	1.5925	20.4	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0891	0.0	100	0.00
59	C	Toluene	2.0000	2.1230	-6.2	100	0.00
60	T	Ethyl Methacrylate	-1.0000	1.5417	0.0	0	0.00
61	P	trans-1,3-Dichloropropene	2.0000	1.9553	2.2	100	0.00
62	P	1,1,2-Trichloroethane	2.0000	1.9716	1.4	100	0.00
63	P	2-Hexanone	-1.0000	1.8373	0.0	100	0.00
64	T	1,3-Dichloropropane	2.0000	2.2302	-11.5	100	0.00
65	P	Tetrachloroethene	2.0000	2.0616	-3.1	100	0.00
66	P	Dibromochloromethane	2.0000	2.1465	-7.3	100	0.00
67	P	1,2-Dibromoethane	-1.0000	2.0410	0.0	100	0.00
68	T	1-Chlorohexane	2.0000	1.9430	2.8	100	0.00
69	P	Chlorobenzene	2.0000	2.1632	-8.2	100	0.00
70	T	1,1,1,2-Tetrachloroethane	2.0000	1.9910	0.4	100	0.00
71	C	Ethylbenzene	2.0000	2.0555	-2.8	100	0.00
72	P	m-,p-Xylene	4.0000	4.3702	-9.3	100	0.00
73	P	o-Xylene	2.0000	2.0024	-0.1	100	0.00
74	P	Styrene	2.0000	2.0313	-1.6	100	0.00
75	P	Bromoform	2.0000	1.6611	16.9	100	0.00
76	P	Isopropylbenzene	2.0000	2.0628	-3.1	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	2.0000	2.2053	-10.3	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.1865	0.0	100	0.00
80	T	1,2,3-Trichloropropane	2.0000	2.0495	-2.5	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	2.0000	1.5521	22.4	100	0.00
82	T	n-Propylbenzene	2.0000	2.0854	-4.3	100	0.00
83	T	Bromobenzene	2.0000	2.4049	-20.2	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	2.0048	0.0	100	0.00
85	T	2-Chlorotoluene	2.0000	2.2705	-13.5	100	0.00
86	T	4-Chlorotoluene	2.0000	2.1222	-6.1	100	0.00
87	T	a-Methylstyrene	-1.0000	1.7826	0.0	0	0.00
88	T	tert-Butylbenzene	-1.0000	1.8815	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	2.0000	2.0739	-3.7	100	0.00
90	T	sec-Butylbenzene	2.0000	2.0835	-4.2	100	0.00
91	T	p-Isopropyltoluene	-1.0000	2.0813	0.0	100	0.00
92	P	1,3-Dichlorobenzene	2.0000	2.3653	-18.3	100	0.00
93	P	1,4-Dichlorobenzene	2.0000	2.2416	-12.1	100	0.00
94	T	n-Butylbenzene	2.0000	2.1080	-5.4	100	0.00
95	P	1,2-Dichlorobenzene	2.0000	2.1533	-7.7	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	1.3644	0.0	100	0.00
97	P	1,2,4-Trichlorobenzene	2.0000	2.1910	-9.6	100	0.00
98	T	Hexachlorobutadiene	2.0000	2.2738	-13.7	100	0.00
99	T	Naphthalene	2.0000	2.0983	-4.9	100	0.00
100	T	1,2,3-Trichlorobenzene	2.0000	2.1487	-7.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972900.D 8260SL.M Fri Feb 26 11:13:36 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	544259	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	391881	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.76	152	178969	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	29036	9.8422 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 19.68%#		
43) 1,2-Dichloroethane-d4	10.44	65	38093	10.2911 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 20.58%#		
58) Toluene-d8	12.83	98	95044	9.5885 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 19.18%#		
79) p-Bromofluorobenzene	16.23	95	32806	9.4138 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 18.82%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	14756	3.9724 ug/kg	92
3) Chloromethane	3.74	50	15227	4.2763 ug/kg	91
4) Vinyl Chloride	3.99	62	17097	4.7964 ug/kg	89
5) 1,3-Butadiene	4.04	54	14484	4.2710 ug/kg	97
6) Bromomethane	4.89	94	9847	4.2533 ug/kg	95
7) Chloroethane	5.04	64	6311	3.9741 ug/kg	93
8) Trichlorofluoromethane	5.53	101	22668	4.2400 ug/kg	100
9) Diethyl ether	6.05	59	118004	47.2164 ug/kg	99
10) Isoprene	6.10	67	13644	4.2747 ug/kg	95
11) Acrolein	6.30	56	12131	24.3428 ug/kg	84
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	12752	4.6251 ug/kg	95
13) Acetone	6.41	43	9765	4.9429 ug/kg	94
14) 1,1-Dichloroethene	6.62	61	21760	4.2784 ug/kg	99
15) Tert-Butyl Alcohol	6.76	59	50500	90.7440 ug/kg	98
16) Dimethyl Sulfide	6.88	62	10098	4.6977 ug/kg	87
17) Iodomethane	7.13	142	4147	5.3886 ug/kg	97
18) Methyl acetate	7.15	43	12159	4.3976 ug/kg#	87
19) Methylene Chloride	7.41	84	11825	4.2690 ug/kg	99
20) Carbon Disulfide	7.45	76	34078	4.3495 ug/kg	94
21) Acrylonitrile	7.58	53	31012	22.6731 ug/kg	100
22) Methyl Tert Butyl Ether	7.61	73	34936	4.4284 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	20503	4.5233 ug/kg	95
24) n-Hexane	7.92	57	20970	4.4853 ug/kg	98
25) Diisopropyl ether	8.26	45	505084	46.5162 ug/kg	100
26) Vinyl Acetate	8.44	43	28253	4.5644 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	24239	4.2575 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	463447	45.9037 ug/kg	99
29) 2-Butanone	9.03	43	8265	4.7092 ug/kg	88
30) Propionitrile	9.15	54	25938	48.2931 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	17954	4.2251 ug/kg	91
32) cis-1,2-Dichloroethene	9.32	96	13479	4.5340 ug/kg	84
33) Chloroform	9.52	83	23525	4.4982 ug/kg	95
34) 1-Bromopropane	9.65	122	2239	5.8652 ug/kg	90
35) Bromochloromethane	9.75	130	9205	4.7667 ug/kg	97
36) Tetrahydrofuran	9.78	42	53635	47.4100 ug/kg	99
38) 1,1,1-Trichloroethane	10.04	97	20945	4.4285 ug/kg	91
39) Cyclohexane	10.09	56	23110	4.4818 ug/kg	98
40) 1,1-Dichloropropene	10.24	75	16349	4.3930 ug/kg	99
41) Tert-Amyl-Methyl ether	10.35	73	343692	46.8330 ug/kg	98
42) Carbon Tetrachloride	10.39	117	18527	4.2254 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	21553	4.6852 ug/kg	99
46)	Benzene	10.60	78	45352	4.3528 ug/kg	99
47)	Trichloroethene	11.35	130	14266	4.3213 ug/kg	97
48)	Methylcyclohexane	11.44	83	17527	4.2330 ug/kg	97
49)	1,2-Dichloropropane	11.56	63	13071	4.5684 ug/kg	100
50)	1,4-Dioxane	11.88	88	3926	91.4657 ug/kg	99
51)	Bromodichloromethane	11.87	83	18008	4.4660 ug/kg	97
52)	Dibromomethane	11.96	174	8993	4.7438 ug/kg	95
53)	2-Chloroethyl Vinyl Ether	12.16	63	2468	5.7758 ug/kg#	66
54)	4-Methyl-2-Pentanone	12.19	58	4862	3.8716 ug/kg	95
55)	cis-1,3-Dichloropropene	12.50	75	18341	4.3659 ug/kg	96
56)	Dimethyl Disulfide	12.77	94	17792	4.2144 ug/kg	91
59)	Toluene	12.92	91	48377	4.3206 ug/kg	96
60)	Ethyl Methacrylate	13.02	69	12442	4.0089 ug/kg	96
61)	trans-1,3-Dichloropropene	13.10	75	17626	4.3707 ug/kg	95
62)	1,1,2-Trichloroethane	13.33	97	10657	4.5308 ug/kg	99
63)	2-Hexanone	13.25	43	10194	4.3408 ug/kg	96
64)	1,3-Dichloropropane	13.62	76	17885	4.5633 ug/kg	100
65)	Tetrachloroethene	13.75	164	10317	4.2981 ug/kg	97
66)	Dibromochloromethane	14.01	129	14152	4.3052 ug/kg	98
67)	1,2-Dibromoethane	14.28	107	12182	4.6694 ug/kg	99
68)	1-Chlorohexane	14.35	91	12970	3.9281 ug/kg	87
69)	Chlorobenzene	14.77	112	36017	4.5769 ug/kg	85
70)	1,1,1,2-Tetrachloroethane	14.80	131	12746	4.3130 ug/kg	95
71)	Ethylbenzene	14.80	106	17828	4.3974 ug/kg	92
72)	m-,p-Xylene	14.89	106	45904	9.1683 ug/kg	95
73)	o-Xylene	15.46	106	21754	4.5275 ug/kg	91
74)	Styrene	15.49	104	35390	4.3253 ug/kg	98
75)	Bromoform	15.98	173	9363	4.3382 ug/kg	96
76)	Isopropylbenzene	15.88	105	55721	4.3198 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	13197	4.8610 ug/kg	97
80)	1,2,3-Trichloropropane	16.29	110	5070	4.9243 ug/kg#	28
81)	trans-1,4-Dichloro-2-Buten	16.33	53	4246	4.0913 ug/kg#	39
82)	n-Propylbenzene	16.39	91	64689	4.5983 ug/kg	100
83)	Bromobenzene	16.52	156	15405	4.6386 ug/kg	90
84)	1,3,5-Trimethylbenzene	16.58	105	49527	4.6900 ug/kg	98
85)	2-Chlorotoluene	16.66	91	41422	4.3899 ug/kg	97
86)	4-Chlorotoluene	16.70	91	40985	4.6981 ug/kg	99
87)	a-Methylstyrene	16.98	118	20049	4.1667 ug/kg	90
88)	tert-Butylbenzene	17.04	134	10027	4.5290 ug/kg	84
89)	1,2,4-Trimethylbenzene	17.09	105	51253	4.6345 ug/kg	98
90)	sec-Butylbenzene	17.30	105	60716	4.4642 ug/kg	98
91)	p-Isopropyltoluene	17.46	119	53318	4.6453 ug/kg	98
92)	1,3-Dichlorobenzene	17.66	146	29255	4.4323 ug/kg	98
93)	1,4-Dichlorobenzene	17.79	146	30175	4.5730 ug/kg	91
94)	n-Butylbenzene	17.99	91	45964	4.3071 ug/kg	98
95)	1,2-Dichlorobenzene	18.30	146	27310	4.4593 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.30	157	3147	4.0028 ug/kg	87
97)	1,2,4-Trichlorobenzene	20.44	180	18372	4.2258 ug/kg	95
98)	Hexachlorobutadiene	20.59	225	9618	4.1968 ug/kg	90
99)	Naphthalene	20.81	128	47189	4.3274 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.11	180	17859	4.2352 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972901.D 8260SL.M Fri Feb 26 11:21:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

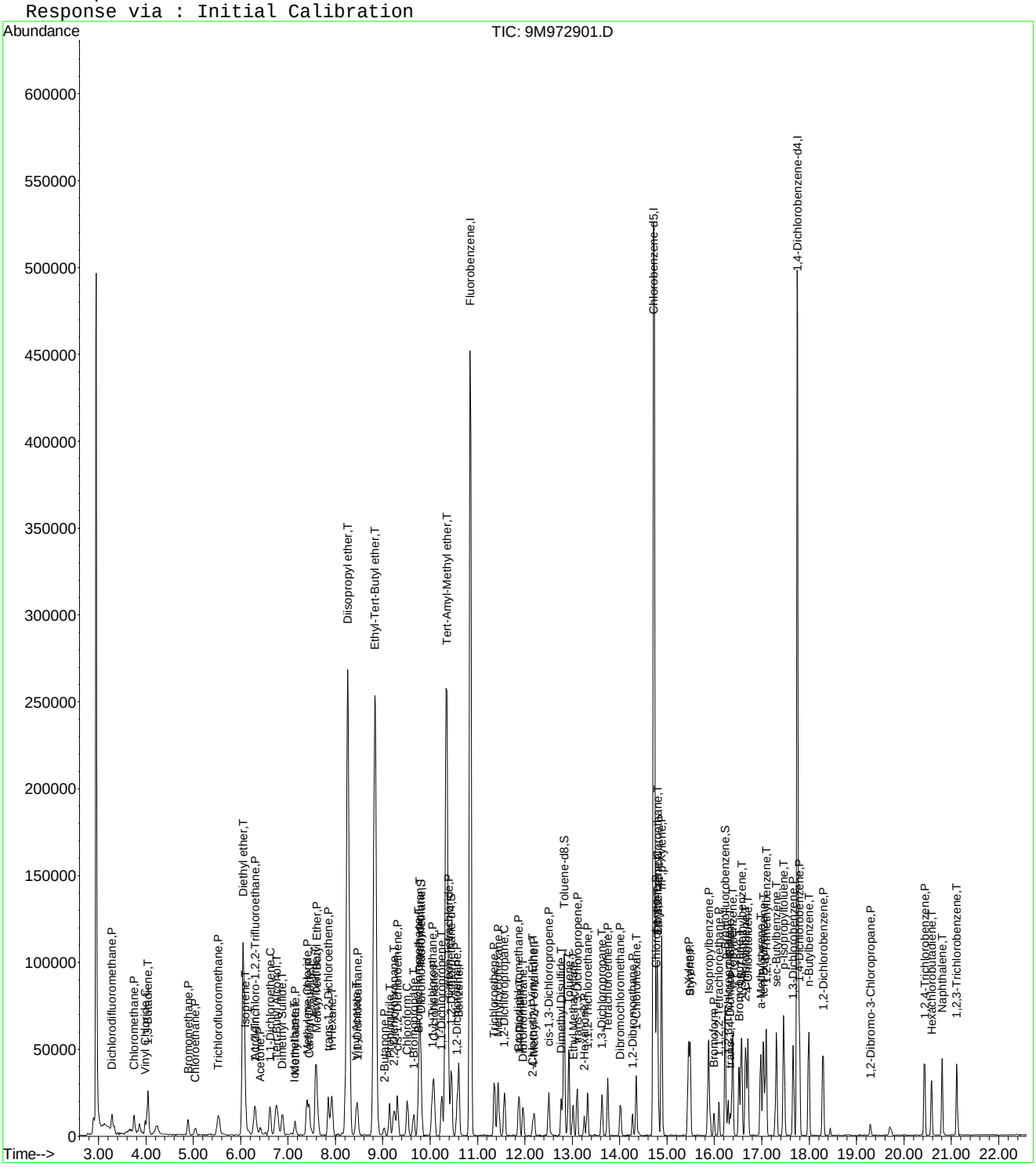

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	5.0000	3.9724	20.6	100	0.00
3	P	Chloromethane	5.0000	4.2763	14.5	100	0.00
4	C	Vinyl Chloride	5.0000	4.7964	4.1	100	0.00
5	T	1,3-Butadiene	5.0000	4.2710	14.6	100	0.00
6	P	Bromomethane	5.0000	4.2534	14.9	100	0.00
7	P	Chloroethane	5.0000	3.9741	20.5	100	0.00
8	P	Trichlorofluoromethane	5.0000	4.2400	15.2	100	0.00
9	T	Diethyl ether	50.0000	47.2164	5.6	100	0.00
10	T	Isoprene	5.0000	4.2747	14.5	100	0.01
11	T	Acrolein	25.0000	24.3428	2.6	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.6251	7.5	100	0.00
13	P	Acetone	5.0000	4.9429	1.1	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.2784	14.4	100	0.01
15	T	Tert-Butyl Alcohol	100.0000	90.7440	9.3	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.6977	6.0	100	0.00
17	T	Iodomethane	5.0000	5.3886	-7.8	100	0.00
18	P	Methyl acetate	5.0000	4.3976	12.0	100	0.01
19	P	Methylene Chloride	5.0000	4.2690	14.6	100	0.00
20	P	Carbon Disulfide	5.0000	4.3495	13.0	100	0.00
21	T	Acrylonitrile	25.0000	22.6731	9.3	100	0.00
22	P	Methyl Tert Butyl Ether	5.0000	4.4284	11.4	100	0.00
23	P	trans-1,2-Dichloroethene	5.0000	4.5233	9.5	100	0.00
24	T	n-Hexane	5.0000	4.4854	10.3	100	0.01
25	T	Diisopropyl ether	50.0000	46.5162	7.0	100	0.00
26	T	Vinyl Acetate	5.0000	4.5644	8.7	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.2575	14.8	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	45.9037	8.2	100	0.00
29	P	2-Butanone	5.0000	4.7092	5.8	100	0.00
30	T	Propionitrile	50.0000	48.2931	3.4	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.2251	15.5	100	-0.01
32	P	cis-1,2-Dichloroethene	5.0000	4.5340	9.3	100	0.00
33	C	Chloroform	5.0000	4.4982	10.0	100	0.00
34	T	1-Bromopropane	5.0000	5.8651	-17.3	100	0.00
35	T	Bromochloromethane	5.0000	4.7667	4.7	100	0.00
36	T	Tetrahydrofuran	50.0000	47.4100	5.2	100	0.00
37	S	Dibromofluoromethane	10.0000	9.8422	1.6	100	0.00
38	P	1,1,1-Trichloroethane	5.0000	4.4285	11.4	100	0.00
39	P	Cyclohexane	5.0000	4.4818	10.4	100	0.01
40	T	1,1-Dichloropropene	5.0000	4.3930	12.1	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	46.8330	6.3	100	0.00
42	P	Carbon Tetrachloride	5.0000	4.2254	15.5	100	0.00
43	S	1,2-Dichloroethane-d4	10.0000	10.2911	-2.9	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	5.0000	4.6852	6.3	100	0.00
46	P	Benzene	5.0000	4.3528	12.9	100	0.00
47	P	Trichloroethene	5.0000	4.3213	13.6	100	0.00
48	P	Methylcyclohexane	5.0000	4.2330	15.3	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.5684	8.6	100	0.00
50	T	1,4-Dioxane	100.0000	91.4657	8.5	100	0.00
51	P	Bromodichloromethane	5.0000	4.4660	10.7	100	0.00
52	T	Dibromomethane	5.0000	4.7438	5.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	5.7758	-15.5	100	0.00
54	P	4-Methyl-2-Pentanone	5.0000	3.8716	22.6	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	5.0000	4.3659	12.7	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.2144	15.7	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	-0.01
58	S	Toluene-d8	10.0000	9.5885	4.1	100	0.00
59	C	Toluene	5.0000	4.3206	13.6	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.0089	19.8	100	0.00
61	P	trans-1,3-Dichloropropene	5.0000	4.3707	12.6	100	0.00
62	P	1,1,2-Trichloroethane	5.0000	4.5309	9.4	100	0.00
63	P	2-Hexanone	5.0000	4.3408	13.2	100	0.00
64	T	1,3-Dichloropropane	5.0000	4.5633	8.7	100	-0.01
65	P	Tetrachloroethene	5.0000	4.2981	14.0	100	0.00
66	P	Dibromochloromethane	5.0000	4.3052	13.9	100	0.00
67	P	1,2-Dibromoethane	5.0000	4.6694	6.6	100	0.00
68	T	1-Chlorohexane	5.0000	3.9281	21.4	100	0.00
69	P	Chlorobenzene	5.0000	4.5769	8.5	100	0.00
70	T	1,1,1,2-Tetrachloroethane	5.0000	4.3130	13.7	100	0.00
71	C	Ethylbenzene	5.0000	4.3974	12.1	100	0.00
72	P	m-,p-Xylene	10.0000	9.1683	8.3	100	0.00
73	P	o-Xylene	5.0000	4.5275	9.5	100	0.00
74	P	Styrene	5.0000	4.3253	13.5	100	0.00
75	P	Bromoform	5.0000	4.3382	13.2	100	-0.01
76	P	Isopropylbenzene	5.0000	4.3198	13.6	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	5.0000	4.8610	2.8	100	-0.01
79	S	p-Bromofluorobenzene	10.0000	9.4138	5.9	100	0.00
80	T	1,2,3-Trichloropropane	5.0000	4.9243	1.5	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	5.0000	4.0913	18.2	100	0.00
82	T	n-Propylbenzene	5.0000	4.5983	8.0	100	0.00
83	T	Bromobenzene	5.0000	4.6386	7.2	100	0.00
84	T	1,3,5-Trimethylbenzene	5.0000	4.6900	6.2	100	0.00
85	T	2-Chlorotoluene	5.0000	4.3899	12.2	100	0.00
86	T	4-Chlorotoluene	5.0000	4.6981	6.0	100	0.00
87	T	a-Methylstyrene	5.0000	4.1667	16.7	100	0.00
88	T	tert-Butylbenzene	5.0000	4.5290	9.4	100	0.00
89	T	1,2,4-Trimethylbenzene	5.0000	4.6345	7.3	100	0.00
90	T	sec-Butylbenzene	5.0000	4.4642	10.7	100	0.00
91	T	p-Isopropyltoluene	5.0000	4.6453	7.1	100	0.00
92	P	1,3-Dichlorobenzene	5.0000	4.4323	11.4	100	0.00
93	P	1,4-Dichlorobenzene	5.0000	4.5730	8.5	100	-0.01
94	T	n-Butylbenzene	5.0000	4.3071	13.9	100	0.00
95	P	1,2-Dichlorobenzene	5.0000	4.4593	10.8	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	5.0000	4.0028	19.9	100	0.00
97	P	1,2,4-Trichlorobenzene	5.0000	4.2258	15.5	100	0.00
98	T	Hexachlorobutadiene	5.0000	4.1968	16.1	100	0.00
99	T	Naphthalene	5.0000	4.3274	13.5	100	0.00
100	T	1,2,3-Trichlorobenzene	5.0000	4.2352	15.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972901.D 8260SL.M Fri Feb 26 11:21:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972902.D Vial: 7
Acq On : 25 Feb 2016 18:59 Operator: ADC
Sample : WG558732-07 20.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	491006	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	357658	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	168257	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	47666	17.9094 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 35.82%#		
43) 1,2-Dichloroethane-d4	10.45	65	60269	18.0480 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 36.10%#		
58) Toluene-d8	12.82	98	163811	18.1074 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 36.22%#		
79) p-Bromofluorobenzene	16.23	95	58931	17.9870 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 35.98%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	78283	23.3598 ug/kg	99
3) Chloromethane	3.75	50	64951	20.2188 ug/kg	98
4) Vinyl Chloride	3.99	62	73167	22.7523 ug/kg	97
5) 1,3-Butadiene	4.04	54	64372	21.0404 ug/kg	98
6) Bromomethane	4.88	94	40556	19.4178 ug/kg	97
7) Chloroethane	5.04	64	27981	19.5307 ug/kg	97
8) Trichlorofluoromethane	5.53	101	98871	20.4994 ug/kg	98
9) Diethyl ether	6.06	59	191078	84.7472 ug/kg	99
10) Isoprene	6.10	67	59437	20.6414 ug/kg	98
11) Acrolein	6.30	56	18057	40.1641 ug/kg	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	50002	20.1026 ug/kg	100
13) Acetone	6.42	43	27164	20.4768 ug/kg	100
14) 1,1-Dichloroethene	6.62	61	94732	20.6460 ug/kg	98
15) Tert-Butyl Alcohol	6.75	59	85695	170.6872 ug/kg	97
16) Dimethyl Sulfide	6.88	62	40580	20.9258 ug/kg	99
17) Iodomethane	7.13	142	21330	17.5663 ug/kg	96
18) Methyl acetate	7.15	43	54770	21.9573 ug/kg	99
19) Methylene Chloride	7.41	84	51619	20.6564 ug/kg	95
20) Carbon Disulfide	7.45	76	145286	20.5545 ug/kg	97
21) Acrylonitrile	7.59	53	50918	41.2640 ug/kg	97
22) Methyl Tert Butyl Ether	7.61	73	149271	20.9731 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	84416	20.6434 ug/kg	98
24) n-Hexane	7.92	57	82582	19.5795 ug/kg	98
25) Diisopropyl ether	8.26	45	841729	85.9275 ug/kg	99
26) Vinyl Acetate	8.44	43	107114	19.1814 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	104490	20.3440 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	777976	85.4147 ug/kg	99
29) 2-Butanone	9.02	43	30691	19.3834 ug/kg	100
30) Propionitrile	9.14	54	41719	86.0996 ug/kg	99
31) 2,2-Dichloropropane	9.24	77	73960	19.2927 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	56404	21.0307 ug/kg	100
33) Chloroform	9.52	83	94621	20.0546 ug/kg	98
34) 1-Bromopropane	9.65	122	8251	20.7938 ug/kg	98
35) Bromochloromethane	9.75	130	38059	21.8457 ug/kg	99
36) Tetrahydrofuran	9.77	42	86589	84.8405 ug/kg	100
38) 1,1,1-Trichloroethane	10.05	97	85938	20.1411 ug/kg	99
39) Cyclohexane	10.09	56	96933	20.8373 ug/kg	98
40) 1,1-Dichloropropene	10.25	75	67544	20.1175 ug/kg	96
41) Tert-Amyl-Methyl ether	10.34	73	562826	85.0111 ug/kg	99
42) Carbon Tetrachloride	10.39	117	79566	20.1143 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972902.D Vial: 7
Acq On : 25 Feb 2016 18:59 Operator: ADC
Sample : WG558732-07 20.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	86857	20.9287 ug/kg	98
46)	Benzene	10.60	78	190747	20.2931 ug/kg	98
47)	Trichloroethene	11.35	130	61315	20.5871 ug/kg	99
48)	Methylcyclohexane	11.44	83	79384	21.2516 ug/kg	99
49)	1,2-Dichloropropane	11.56	63	54356	21.0584 ug/kg	98
50)	1,4-Dioxane	11.88	88	7054	182.1639 ug/kg	93
51)	Bromodichloromethane	11.87	83	73160	20.1115 ug/kg	99
52)	Dibromomethane	11.97	174	35844	20.9583 ug/kg	97
53)	2-Chloroethyl Vinyl Ether	12.17	63	11048	17.4432 ug/kg	94
54)	4-Methyl-2-Pentanone	12.20	58	22247	19.6364 ug/kg	96
55)	cis-1,3-Dichloropropene	12.50	75	77533	20.4577 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	77400	20.3222 ug/kg	99
59)	Toluene	12.93	91	209919	20.5421 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	58827	20.7683 ug/kg	99
61)	trans-1,3-Dichloropropene	13.11	75	73778	20.0452 ug/kg	98
62)	1,1,2-Trichloroethane	13.32	97	45475	21.1838 ug/kg	98
63)	2-Hexanone	13.25	43	40183	18.7479 ug/kg	97
64)	1,3-Dichloropropane	13.62	76	73060	20.4249 ug/kg	95
65)	Tetrachloroethene	13.75	164	44423	20.2778 ug/kg	96
66)	Dibromochloromethane	14.01	129	59220	19.7391 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	48648	20.4311 ug/kg	97
68)	1-Chlorohexane	14.35	91	64519	21.4099 ug/kg	96
69)	Chlorobenzene	14.77	112	150639	20.9742 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	55462	20.5631 ug/kg	99
71)	Ethylbenzene	14.79	106	77813	21.0297 ug/kg	100
72)	m-,p-Xylene	14.89	106	192168	42.0536 ug/kg	98
73)	o-Xylene	15.45	106	92490	21.0911 ug/kg	98
74)	Styrene	15.49	104	154534	20.6939 ug/kg	100
75)	Bromoform	16.00	173	39818	20.2142 ug/kg	98
76)	Isopropylbenzene	15.87	105	249418	21.1865 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	53687	21.0342 ug/kg	98
80)	1,2,3-Trichloropropane	16.28	110	19658	20.3087 ug/kg	98
81)	trans-1,4-Dichloro-2-Buten	16.33	53	21143	21.6696 ug/kg	89
82)	n-Propylbenzene	16.39	91	283998	21.4728 ug/kg	98
83)	Bromobenzene	16.52	156	65363	20.9343 ug/kg	95
84)	1,3,5-Trimethylbenzene	16.57	105	212735	21.4278 ug/kg	99
85)	2-Chlorotoluene	16.66	91	189159	21.3235 ug/kg	99
86)	4-Chlorotoluene	16.70	91	171741	20.9401 ug/kg	99
87)	a-Methylstyrene	16.98	118	95360	21.0801 ug/kg	99
88)	tert-Butylbenzene	17.03	134	43749	21.0188 ug/kg	90
89)	1,2,4-Trimethylbenzene	17.08	105	218350	21.0010 ug/kg	99
90)	sec-Butylbenzene	17.31	105	268054	20.9635 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	225612	20.9076 ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	122605	19.7580 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	124659	20.0949 ug/kg	99
94)	n-Butylbenzene	17.99	91	199655	19.8998 ug/kg	99
95)	1,2-Dichlorobenzene	18.30	146	115021	19.9768 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	14138	19.1277 ug/kg	95
97)	1,2,4-Trichlorobenzene	20.43	180	77418	18.9408 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	41508	19.2651 ug/kg	96
99)	Naphthalene	20.81	128	204933	19.9897 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.12	180	75616	19.0736 ug/kg	98

(#) = qualifier out of range (m) = manual integration
9M972902.D 8260SL.M Fri Feb 26 11:21:57 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972902.D Vial: 7
Acq On : 25 Feb 2016 18:59 Operator: ADC
Sample : WG558732-07 20.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

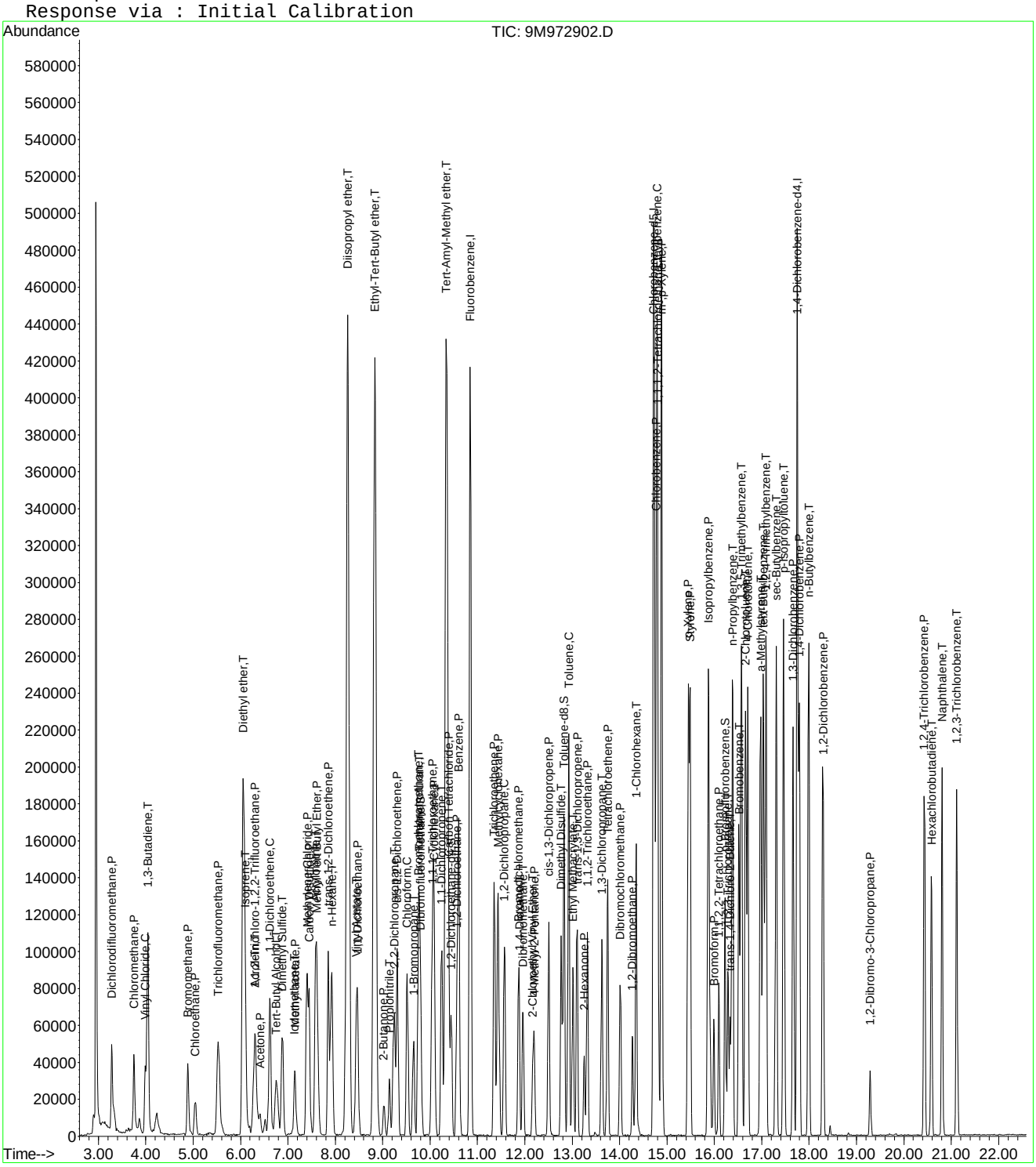

9M972902.D 8260SL.M Fri Feb 26 11:21:57 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972903.D Vial: 8
Acq On : 25 Feb 2016 19:29 Operator: ADC
Sample : WG558732-08 100.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:57 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	535022	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	390279	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.75	152	187456	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	305515	105.3466 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 210.70%#		
43) 1,2-Dichloroethane-d4	10.45	65	383447	105.3793 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 210.76%#		
58) Toluene-d8	12.83	98	1052175	106.5842 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 213.16%#		
79) p-Bromofluorobenzene	16.23	95	403966	110.6707 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 221.34%#		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.28	85	340079	93.1314 ug/kg	98
3) Chloromethane	3.74	50	316834	90.5143 ug/kg	100
4) Vinyl Chloride	3.99	62	366384	104.5591 ug/kg	99
5) 1,3-Butadiene	4.04	54	317949	95.3739 ug/kg	98
6) Bromomethane	4.88	94	198493	87.2180 ug/kg	99
7) Chloroethane	5.04	64	148539	95.1503 ug/kg	96
8) Trichlorofluoromethane	5.53	101	502703	95.6532 ug/kg	99
9) Diethyl ether	6.06	59	457873	186.3696 ug/kg	99
10) Isoprene	6.09	67	302269	96.3367 ug/kg	100
11) Acrolein	6.30	56	49319	100.6749 ug/kg	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	264925	97.7467 ug/kg	100
13) Acetone	6.41	43	126959	96.0965 ug/kg	97
14) 1,1-Dichloroethene	6.61	61	485466	97.0986 ug/kg	99
15) Tert-Butyl Alcohol	6.77	59	202804	370.7125 ug/kg	97
16) Dimethyl Sulfide	6.88	62	209613	99.1979 ug/kg	97
17) Iodomethane	7.14	142	134789	88.4431 ug/kg	96
18) Methyl acetate	7.15	43	256770	94.4705 ug/kg	99
19) Methylene Chloride	7.40	84	256919	94.3530 ug/kg	100
20) Carbon Disulfide	7.45	76	725343	94.1764 ug/kg	99
21) Acrylonitrile	7.59	53	131913	98.1077 ug/kg	97
22) Methyl Tert Butyl Ether	7.61	73	763125	98.4009 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	435514	97.7404 ug/kg	99
24) n-Hexane	7.92	57	458951	99.8615 ug/kg	98
25) Diisopropyl ether	8.26	45	1991599	186.5850 ug/kg	99
26) Vinyl Acetate	8.44	43	593217	97.4908 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	533571	95.3384 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	1850360	186.4394 ug/kg	100
29) 2-Butanone	9.03	43	167064	96.8316 ug/kg	99
30) Propionitrile	9.14	54	102467	194.0735 ug/kg	99
31) 2,2-Dichloropropane	9.24	77	409808	98.1051 ug/kg	98
32) cis-1,2-Dichloroethene	9.31	96	291782	99.8428 ug/kg	100
33) Chloroform	9.52	83	491651	95.6310 ug/kg	100
34) 1-Bromopropane	9.65	122	43084	95.7559 ug/kg	98
35) Bromochloromethane	9.75	130	191150	100.6929 ug/kg	97
36) Tetrahydrofuran	9.78	42	206962	186.0999 ug/kg	99
38) 1,1,1-Trichloroethane	10.04	97	454248	97.7025 ug/kg	99
39) Cyclohexane	10.08	56	497594	98.1657 ug/kg	99
40) 1,1-Dichloropropene	10.24	75	355996	97.3080 ug/kg	98
41) Tert-Amyl-Methyl ether	10.35	73	1353122	187.5659 ug/kg	99
42) Carbon Tetrachloride	10.39	117	419252	97.2674 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972903.D 8260SL.M Fri Feb 26 11:21:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972903.D Vial: 8
Acq On : 25 Feb 2016 19:29 Operator: ADC
Sample : WG558732-08 100.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:57 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	441828	97.7027	ug/kg	98
46)	Benzene	10.60	78	946247	92.3868	ug/kg	100
47)	Trichloroethene	11.35	130	316701	97.5872	ug/kg	98
48)	Methylcyclohexane	11.44	83	420776	103.3770	ug/kg	100
49)	1,2-Dichloropropane	11.56	63	273398	97.2049	ug/kg	97
50)	1,4-Dioxane	11.89	88	15240	361.1826	ug/kg	95
51)	Bromodichloromethane	11.87	83	384453	96.9905	ug/kg	100
52)	Dibromomethane	11.96	174	178770	95.9288	ug/kg	100
53)	2-Chloroethyl Vinyl Ether	12.17	63	71336	89.4187	ug/kg	97
54)	4-Methyl-2-Pentanone	12.19	58	126118	102.1606	ug/kg	99
55)	cis-1,3-Dichloropropene	12.50	75	407392	98.6500	ug/kg	99
56)	Dimethyl Disulfide	12.77	94	430523	103.7388	ug/kg	99
59)	Toluene	12.93	91	1070303	95.9828	ug/kg	100
60)	Ethyl Methacrylate	13.01	69	310336	100.4033	ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	395340	98.4345	ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	234168	99.9657	ug/kg	97
63)	2-Hexanone	13.25	43	238254	101.8692	ug/kg	99
64)	1,3-Dichloropropane	13.62	76	372307	95.3836	ug/kg	98
65)	Tetrachloroethene	13.75	164	235384	98.4650	ug/kg	97
66)	Dibromochloromethane	14.01	129	316240	96.5980	ug/kg	100
67)	1,2-Dibromoethane	14.28	107	254663	98.0133	ug/kg	98
68)	1-Chlorohexane	14.35	91	341938	103.9841	ug/kg	98
69)	Chlorobenzene	14.77	112	744916	95.0493	ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.80	131	289798	98.4650	ug/kg	98
71)	Ethylbenzene	14.79	106	397428	98.4311	ug/kg	99
72)	m-,p-Xylene	14.89	106	955121	191.5462	ug/kg	97
73)	o-Xylene	15.45	106	475355	99.3381	ug/kg	100
74)	Styrene	15.49	104	817155	100.2803	ug/kg	100
75)	Bromoform	15.99	173	212807	99.0046	ug/kg	98
76)	Isopropylbenzene	15.88	105	1283494	99.9122	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	279744	98.3764	ug/kg	100
80)	1,2,3-Trichloropropane	16.29	110	110421	102.3924	ug/kg	94
81)	trans-1,4-Dichloro-2-Buten	16.33	53	116410	107.0899	ug/kg	87
82)	n-Propylbenzene	16.39	91	1458178	98.9594	ug/kg	99
83)	Bromobenzene	16.52	156	334600	96.1892	ug/kg	97
84)	1,3,5-Trimethylbenzene	16.57	105	1100766	99.5195	ug/kg	99
85)	2-Chlorotoluene	16.66	91	937812	94.8900	ug/kg	100
86)	4-Chlorotoluene	16.70	91	906777	99.2383	ug/kg	100
87)	a-Methylstyrene	16.98	118	508276	100.8508	ug/kg	99
88)	tert-Butylbenzene	17.04	134	234437	101.0972	ug/kg	99
89)	1,2,4-Trimethylbenzene	17.09	105	1125260	97.1435	ug/kg	99
90)	sec-Butylbenzene	17.30	105	1425754	100.0828	ug/kg	100
91)	p-Isopropyltoluene	17.46	119	1215596	101.1125	ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	644471	93.2206	ug/kg	100
93)	1,4-Dichlorobenzene	17.79	146	646907	93.6002	ug/kg	99
94)	n-Butylbenzene	17.99	91	1131901	101.2628	ug/kg	99
95)	1,2-Dichlorobenzene	18.30	146	622851	97.0971	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.30	157	88939	108.0040	ug/kg	99
97)	1,2,4-Trichlorobenzene	20.44	180	466688	102.4843	ug/kg	99
98)	Hexachlorobutadiene	20.59	225	252514	105.1960	ug/kg	99
99)	Naphthalene	20.81	128	1208454	105.8030	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	456274	103.3044	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972903.D 8260SL.M Fri Feb 26 11:21:58 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972903.D Vial: 8
Acq On : 25 Feb 2016 19:29 Operator: ADC
Sample : WG558732-08 100.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

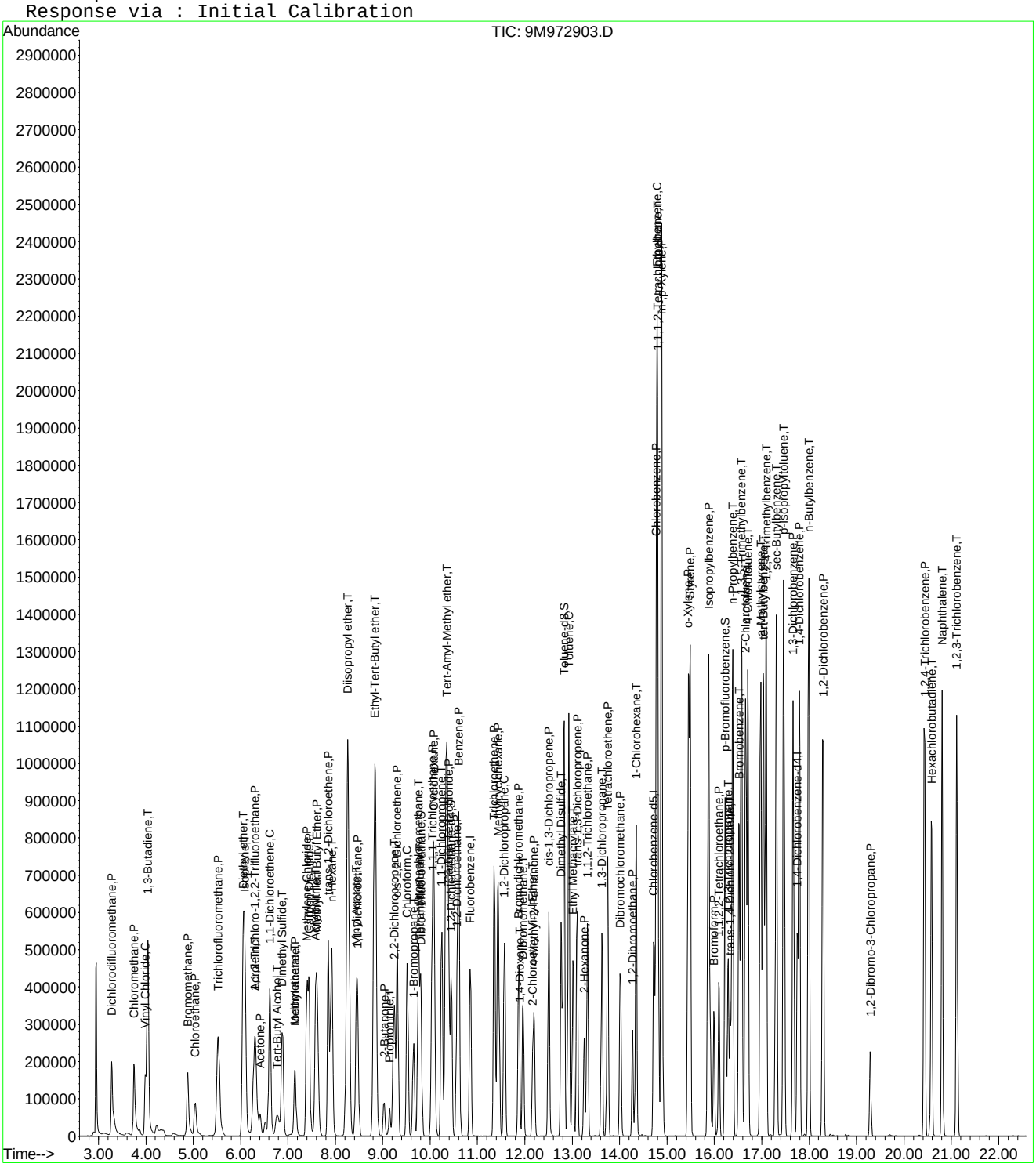

9M972903.D 8260SL.M Fri Feb 26 11:21:58 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972904.D Vial: 9
Acq On : 25 Feb 2016 20:00 Operator: ADC
Sample : WG558732-09 200.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:58 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	542388	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	396894	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	212175	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	595362	202.5026 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery	= 405.00%#	
43) 1,2-Dichloroethane-d4	10.45	65	716316	194.1852 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery	= 388.38%#	
58) Toluene-d8	12.82	98	2013255	200.5415 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery	= 401.08%#	
79) p-Bromofluorobenzene	16.23	95	807150	195.3653 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery	= 390.74%#	

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.28	85	774894	209.3245 ug/kg	100
3) Chloromethane	3.75	50	750862	211.5959 ug/kg	100
4) Vinyl Chloride	3.99	62	770550	216.9141 ug/kg	100
5) 1,3-Butadiene	4.04	54	695631	205.8318 ug/kg	99
6) Bromomethane	4.88	94	470946	204.1239 ug/kg	97
7) Chloroethane	5.04	64	374502	236.6386 ug/kg	98
8) Trichlorofluoromethane	5.52	101	1120886	210.3832 ug/kg	99
10) Isoprene	6.09	67	690766	217.1654 ug/kg	97
11) Acrolein	6.31	56	2288	4.6071 ug/kg	86
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	592415	215.6090 ug/kg	100
13) Acetone	6.42	43	268070	202.8703 ug/kg	99
14) 1,1-Dichloroethene	6.62	61	1084122	213.8917 ug/kg	99
15) Tert-Butyl Alcohol	6.78	59	290	0.5229 ug/kg#	58
16) Dimethyl Sulfide	6.88	62	486231	226.9805 ug/kg	99
17) Iodomethane	7.14	142	341644	216.9305 ug/kg	98
18) Methyl acetate	7.15	43	558766	202.7886 ug/kg	97
19) Methylene Chloride	7.40	84	606998	219.8913 ug/kg	98
20) Carbon Disulfide	7.44	76	1650167	211.3432 ug/kg	98
21) Acrylonitrile	7.61	53	18860	13.8363 ug/kg#	28
22) Methyl Tert Butyl Ether	7.61	73	1710517	217.5666 ug/kg	99
23) trans-1,2-Dichloroethene	7.84	61	967656	214.2173 ug/kg	99
24) n-Hexane	7.92	57	1006142	215.9497 ug/kg	97
26) Vinyl Acetate	8.43	43	1320060	213.9959 ug/kg	98
27) 1,1-Dichloroethane	8.46	63	1199515	211.4185 ug/kg	100
29) 2-Butanone	9.02	43	373284	213.4201 ug/kg	100
31) 2,2-Dichloropropane	9.24	77	904865	213.6764 ug/kg	100
32) cis-1,2-Dichloroethene	9.31	96	649726	219.3058 ug/kg	100
33) Chloroform	9.52	83	1094765	210.0507 ug/kg	100
34) 1-Bromopropane	9.66	122	98189	213.9851 ug/kg	100
35) Bromochloromethane	9.75	130	427351	222.0603 ug/kg	99
36) Tetrahydrofuran	9.77	42	2491	2.2095 ug/kg	93
38) 1,1,1-Trichloroethane	10.05	97	1020636	216.5435 ug/kg	100
39) Cyclohexane	10.08	56	1092323	212.5677 ug/kg	98
40) 1,1-Dichloropropene	10.24	75	780375	210.4109 ug/kg	98
42) Carbon Tetrachloride	10.39	117	950685	217.5657 ug/kg	100
45) 1,2-Dichloroethane	10.56	62	975428	212.7698 ug/kg	98
46) Benzene	10.61	78	2107212	202.9435 ug/kg	100
47) Trichloroethene	11.36	130	696420	211.6783 ug/kg	98
48) Methylcyclohexane	11.43	83	922594	223.5862 ug/kg	100
49) 1,2-Dichloropropane	11.57	63	613480	215.1567 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972904.D Vial: 9
Acq On : 25 Feb 2016 20:00 Operator: ADC
Sample : WG558732-09 200.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:58 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
50)	1,4-Dioxane	11.86	88	821	19.1932	ug/kg#	7
51)	Bromodichloromethane	11.87	83	861318	214.3439	ug/kg	99
52)	Dibromomethane	11.96	174	401145	212.3328	ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	173854	210.9891	ug/kg	98
54)	4-Methyl-2-Pentanone	12.19	58	281550	224.9694	ug/kg	99
55)	cis-1,3-Dichloropropene	12.51	75	917528	219.1621	ug/kg	100
56)	Dimethyl Disulfide	12.77	94	993447	236.1300	ug/kg	99
59)	Toluene	12.93	91	2353264	207.5190	ug/kg	100
60)	Ethyl Methacrylate	13.01	69	698780	222.3090	ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	892986	218.6361	ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	510766	214.4105	ug/kg	98
63)	2-Hexanone	13.26	43	551431	231.8433	ug/kg	99
64)	1,3-Dichloropropane	13.63	76	842104	212.1481	ug/kg	99
65)	Tetrachloroethene	13.75	164	518091	213.1138	ug/kg	97
66)	Dibromochloromethane	14.02	129	723489	217.3121	ug/kg	99
67)	1,2-Dibromoethane	14.27	107	560802	212.2411	ug/kg	99
68)	1-Chlorohexane	14.35	91	757279	226.4519	ug/kg	100
69)	Chlorobenzene	14.78	112	1626715	204.1050	ug/kg	98
70)	1,1,1,2-Tetrachloroethane	14.81	131	649903	217.1378	ug/kg	97
71)	Ethylbenzene	14.80	106	871321	212.2035	ug/kg	99
72)	m-,p-Xylene	14.89	106	2089330	412.0243	ug/kg	98
73)	o-Xylene	15.45	106	1065692	218.9929	ug/kg	98
74)	Styrene	15.49	104	1839951	222.0334	ug/kg	100
75)	Bromoform	15.99	173	511700	234.0915	ug/kg	99
76)	Isopropylbenzene	15.87	105	2873816	219.9805	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	662688	205.8943	ug/kg	99
80)	1,2,3-Trichloropropane	16.29	110	257281	210.7797	ug/kg	98
81)	trans-1,4-Dichloro-2-Buten	16.34	53	281460	228.7601	ug/kg	90
82)	n-Propylbenzene	16.38	91	3244636	194.5439	ug/kg	100
83)	Bromobenzene	16.52	156	759998	193.0269	ug/kg	95
84)	1,3,5-Trimethylbenzene	16.57	105	2471747	197.4342	ug/kg	99
85)	2-Chlorotoluene	16.66	91	2218317	198.3049	ug/kg	100
86)	4-Chlorotoluene	16.71	91	1934954	187.0917	ug/kg	100
87)	a-Methylstyrene	16.98	118	1205032	211.2436	ug/kg	99
88)	tert-Butylbenzene	17.03	134	526001	200.4032	ug/kg	87
89)	1,2,4-Trimethylbenzene	17.09	105	2520611	192.2523	ug/kg	100
90)	sec-Butylbenzene	17.31	105	3206494	198.8615	ug/kg	100
91)	p-Isopropyltoluene	17.47	119	2752661	202.2895	ug/kg	100
92)	1,3-Dichlorobenzene	17.67	146	1508843	192.8225	ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	1522857	194.6701	ug/kg	99
94)	n-Butylbenzene	17.99	91	2603240	205.7600	ug/kg	100
95)	1,2-Dichlorobenzene	18.29	146	1515803	208.7710	ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	205456	220.4304	ug/kg	98
97)	1,2,4-Trichlorobenzene	20.43	180	1061631	205.9726	ug/kg	99
98)	Hexachlorobutadiene	20.58	225	612598	225.4729	ug/kg	100
99)	Naphthalene	20.81	128	2666581	206.2661	ug/kg	99
100)	1,2,3-Trichlorobenzene	21.12	180	1022740	204.5802	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972904.D 8260SL.M Fri Feb 26 11:21:58 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972904.D Vial: 9
Acq On : 25 Feb 2016 20:00 Operator: ADC
Sample : WG558732-09 200.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

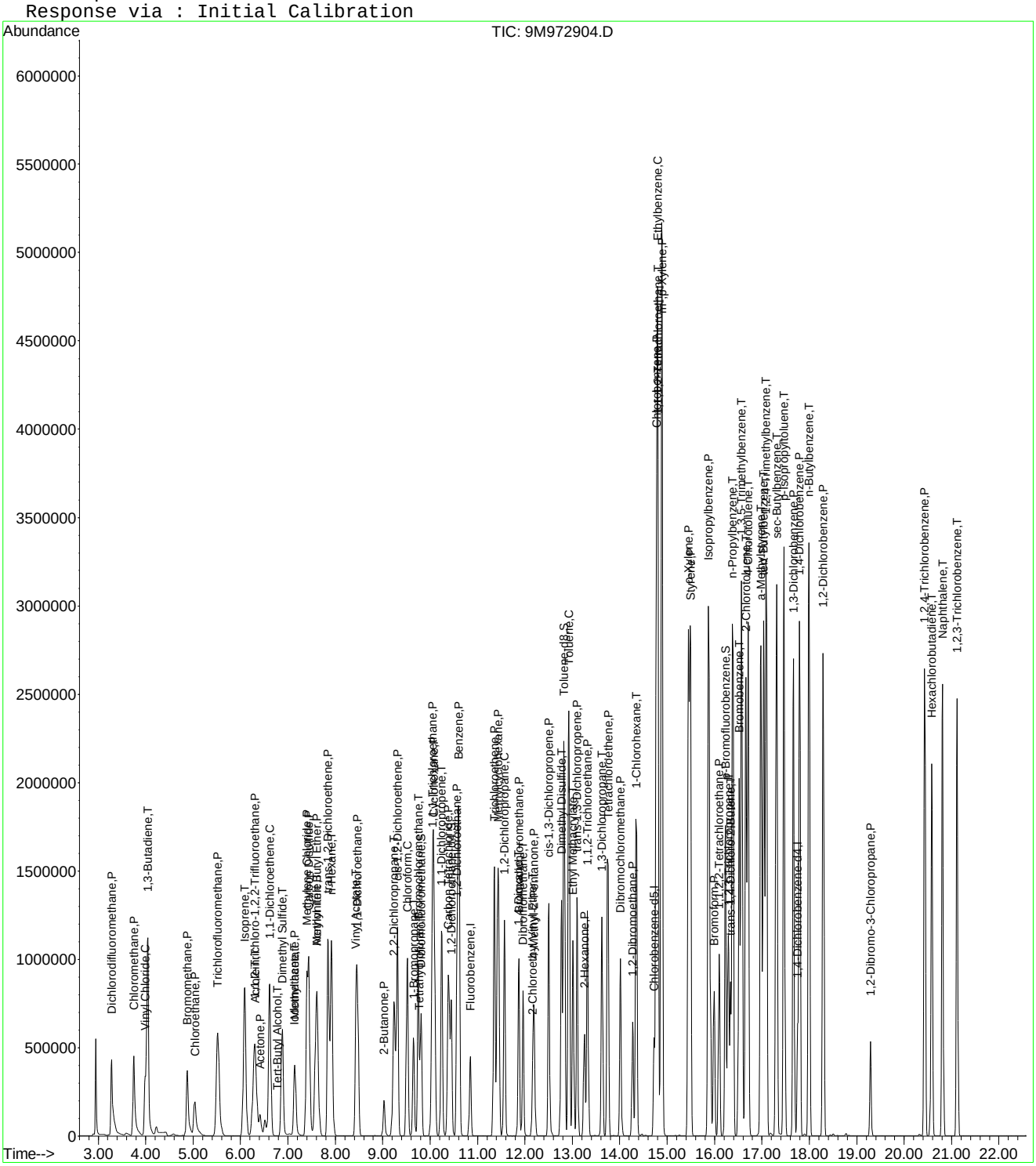

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972905.D Vial: 10
Acq On : 25 Feb 2016 20:30 Operator: ADC
Sample : WG558732-10 300.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:59 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	626979	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	468521	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	224223	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	520	0.1530 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.30%#	
43) 1,2-Dichloroethane-d4	10.45	65	1794	0.4207 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.84%#	
58) Toluene-d8	12.82	98	7789	0.6573 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	1.32%#	
79) p-Bromofluorobenzene	16.23	95	6216	1.4237 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	2.84%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	1155483	270.0216 ug/kg	98
3) Chloromethane	3.75	50	1142773	278.5891 ug/kg	100
4) Vinyl Chloride	3.98	62	1112221	270.8539 ug/kg	99
5) 1,3-Butadiene	4.03	54	1100483	281.6917 ug/kg	98
6) Bromomethane	4.87	94	749711	281.1083 ug/kg	98
7) Chloroethane	5.04	64	601337	328.7051 ug/kg	98
8) Trichlorofluoromethane	5.52	101	1778447	288.7670 ug/kg	99
9) Diethyl ether	6.06	59	869609	302.0457 ug/kg	99
10) Isoprene	6.08	67	1108410	301.4513 ug/kg	98
11) Acrolein	6.30	56	93621	163.0794 ug/kg	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	943691	297.1172 ug/kg	99
13) Acetone	6.42	43	369915	242.6618 ug/kg	95
14) 1,1-Dichloroethene	6.61	61	1715009	292.7111 ug/kg	98
15) Tert-Butyl Alcohol	6.80	59	188151	293.4850 ug/kg	89
16) Dimethyl Sulfide	6.88	62	763075	308.1557 ug/kg	99
17) Iodomethane	7.14	142	532480	291.5128 ug/kg	99
18) Methyl acetate	7.15	43	879657	276.1748 ug/kg	98
19) Methylene Chloride	7.40	84	937262	293.7237 ug/kg	96
20) Carbon Disulfide	7.44	76	2640380	292.5391 ug/kg	98
21) Acrylonitrile	7.59	53	252681	160.3640 ug/kg	94
22) Methyl Tert Butyl Ether	7.61	73	2699681	297.0533 ug/kg	98
23) trans-1,2-Dichloroethene	7.84	61	1548353	296.5245 ug/kg	100
24) n-Hexane	7.92	57	1608467	298.6501 ug/kg	98
25) Diisopropyl ether	8.26	45	3742238	299.1747 ug/kg	100
26) Vinyl Acetate	8.43	43	2097407	294.1383 ug/kg	99
27) 1,1-Dichloroethane	8.47	63	1881635	286.8995 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	3515202	302.2390 ug/kg	99
29) 2-Butanone	9.02	43	559900	276.9258 ug/kg	100
30) Propionitrile	9.14	54	182998	295.7653 ug/kg	100
31) 2,2-Dichloropropane	9.24	77	1439671	294.0988 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	1040893	303.9366 ug/kg	99
33) Chloroform	9.52	83	1708608	283.5977 ug/kg	99
34) 1-Bromopropane	9.65	122	152776	287.6719 ug/kg	98
35) Bromochloromethane	9.75	130	668631	300.5590 ug/kg	98
36) Tetrahydrofuran	9.77	42	365915	280.7723 ug/kg	97
38) 1,1,1-Trichloroethane	10.05	97	1606962	294.9423 ug/kg	100
39) Cyclohexane	10.08	56	1746722	294.0540 ug/kg	99
40) 1,1-Dichloropropene	10.24	75	1258569	293.5615 ug/kg	98
41) Tert-Amyl-Methyl ether	10.34	73	2573262	304.3824 ug/kg	98
42) Carbon Tetrachloride	10.39	117	1494872	295.9476 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972905.D Vial: 10
Acq On : 25 Feb 2016 20:30 Operator: ADC
Sample : WG558732-10 300.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:59 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.57	62	1526616	288.0725 ug/kg	98
46)	Benzene	10.61	78	3320959	276.6861 ug/kg	99
47)	Trichloroethene	11.36	130	1102750	289.9607 ug/kg	98
48)	Methylcyclohexane	11.43	83	1476436	309.5324 ug/kg	98
49)	1,2-Dichloropropane	11.57	63	980423	297.4576 ug/kg	99
50)	1,4-Dioxane	11.89	88	31126	629.4828 ug/kg	81
51)	Bromodichloromethane	11.87	83	1358159	292.3851 ug/kg	99
52)	Dibromomethane	11.96	174	632731	289.7290 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	287132	300.2354 ug/kg	96
54)	4-Methyl-2-Pentanone	12.19	58	438042	302.7895 ug/kg	99
55)	cis-1,3-Dichloropropene	12.51	75	1436858	296.9047 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	1505953	309.6528 ug/kg	95
59)	Toluene	12.93	91	3720819	277.9530 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	1096301	295.4554 ug/kg	100
61)	trans-1,3-Dichloropropene	13.10	75	1416217	293.7329 ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	820836	291.8946 ug/kg	99
63)	2-Hexanone	13.26	43	814427	290.0688 ug/kg	100
64)	1,3-Dichloropropane	13.63	76	1322191	282.1714 ug/kg	100
65)	Tetrachloroethene	13.75	164	815946	284.3233 ug/kg	98
66)	Dibromochloromethane	14.02	129	1136128	289.0845 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	889642	285.2204 ug/kg	99
68)	1-Chlorohexane	14.34	91	1188786	301.1405 ug/kg	99
69)	Chlorobenzene	14.78	112	2558374	271.9265 ug/kg	97
70)	1,1,1,2-Tetrachloroethane	14.81	131	1019464	288.5389 ug/kg	97
71)	Ethylbenzene	14.80	106	1372834	283.2291 ug/kg	97
72)	m-,p-Xylene	14.89	106	3241616	541.5304 ug/kg	97
73)	o-Xylene	15.45	106	1663016	289.4945 ug/kg	99
74)	Styrene	15.49	104	2869824	293.3680 ug/kg	99
75)	Bromoform	15.99	173	788638	305.6282 ug/kg	99
76)	Isopropylbenzene	15.87	105	4421589	286.7141 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	1002445	294.7201 ug/kg	99
80)	1,2,3-Trichloropropane	16.28	110	380025	294.6098 ug/kg	66
81)	trans-1,4-Dichloro-2-Buten	16.34	53	413901	318.3274 ug/kg	57
82)	n-Propylbenzene	16.38	91	4980503	282.5783 ug/kg	99
83)	Bromobenzene	16.52	156	1176440	282.7414 ug/kg	93
84)	1,3,5-Trimethylbenzene	16.57	105	3788936	286.3846 ug/kg	99
85)	2-Chlorotoluene	16.66	91	3458872	292.5892 ug/kg	100
86)	4-Chlorotoluene	16.71	91	2929432	268.0287 ug/kg	100
87)	a-Methylstyrene	16.98	118	1823514	302.4880 ug/kg	100
88)	tert-Butylbenzene	17.03	134	795019	286.6221 ug/kg	86
89)	1,2,4-Trimethylbenzene	17.09	105	3829230	276.3702 ug/kg	100
90)	sec-Butylbenzene	17.31	105	4833765	283.6742 ug/kg	99
91)	p-Isopropyltoluene	17.47	119	4134027	287.4802 ug/kg	99
92)	1,3-Dichlorobenzene	17.67	146	2260017	273.2999 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	2229106	269.6404 ug/kg	99
94)	n-Butylbenzene	17.99	91	3871124	289.5329 ug/kg	100
95)	1,2-Dichlorobenzene	18.29	146	2162642	281.8552 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	293112	297.5776 ug/kg	98
97)	1,2,4-Trichlorobenzene	20.43	180	1514973	278.1345 ug/kg	100
98)	Hexachlorobutadiene	20.58	225	846867	294.9498 ug/kg	99
99)	Naphthalene	20.81	128	3754823	274.8379 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.12	180	1451357	274.7177 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972905.D 8260SL.M Fri Feb 26 11:21:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972905.D Vial: 10
Acq On : 25 Feb 2016 20:30 Operator: ADC
Sample : WG558732-10 300.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

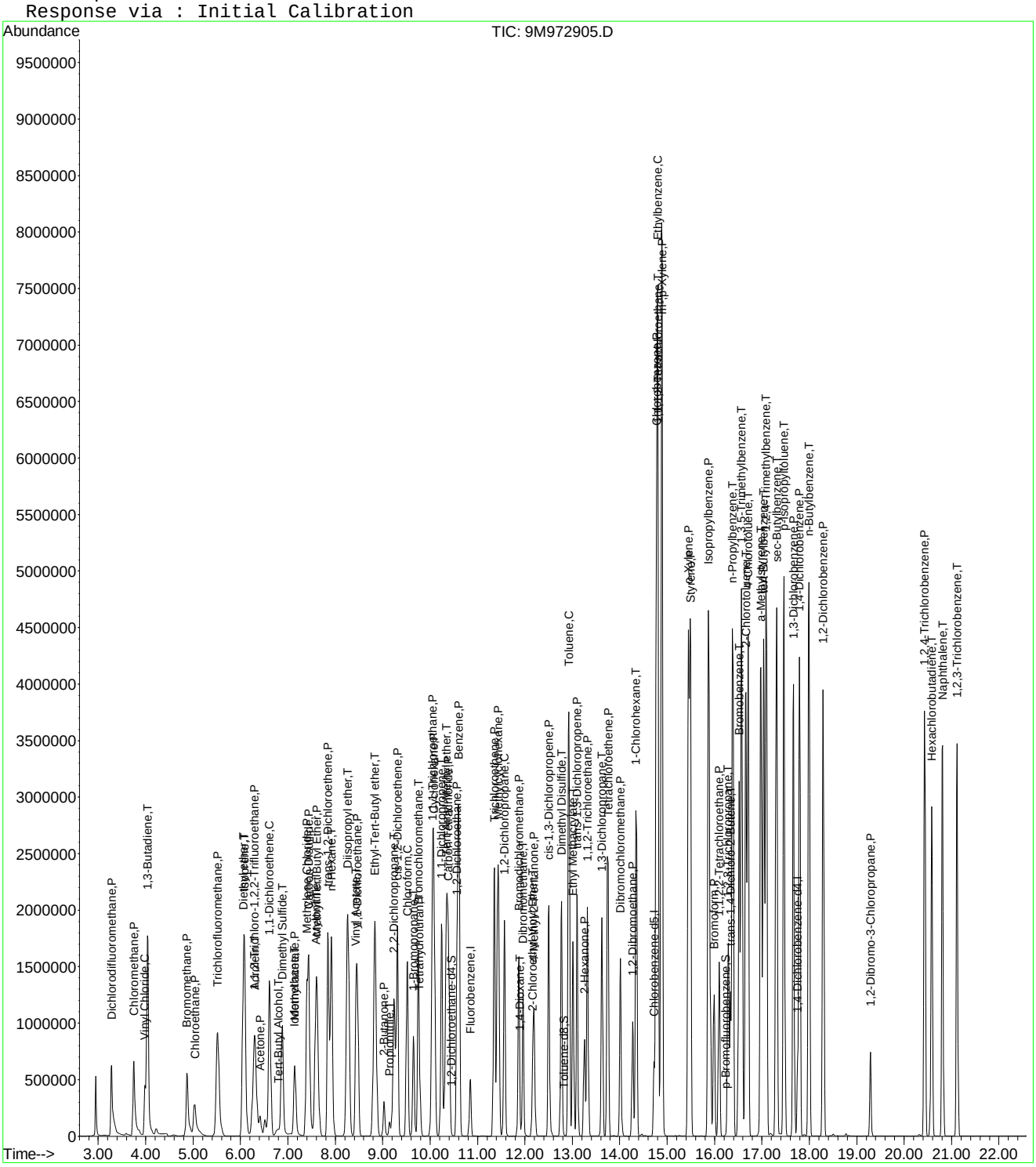

9M972905.D 8260SL.M Fri Feb 26 11:21:59 2016 Page 3

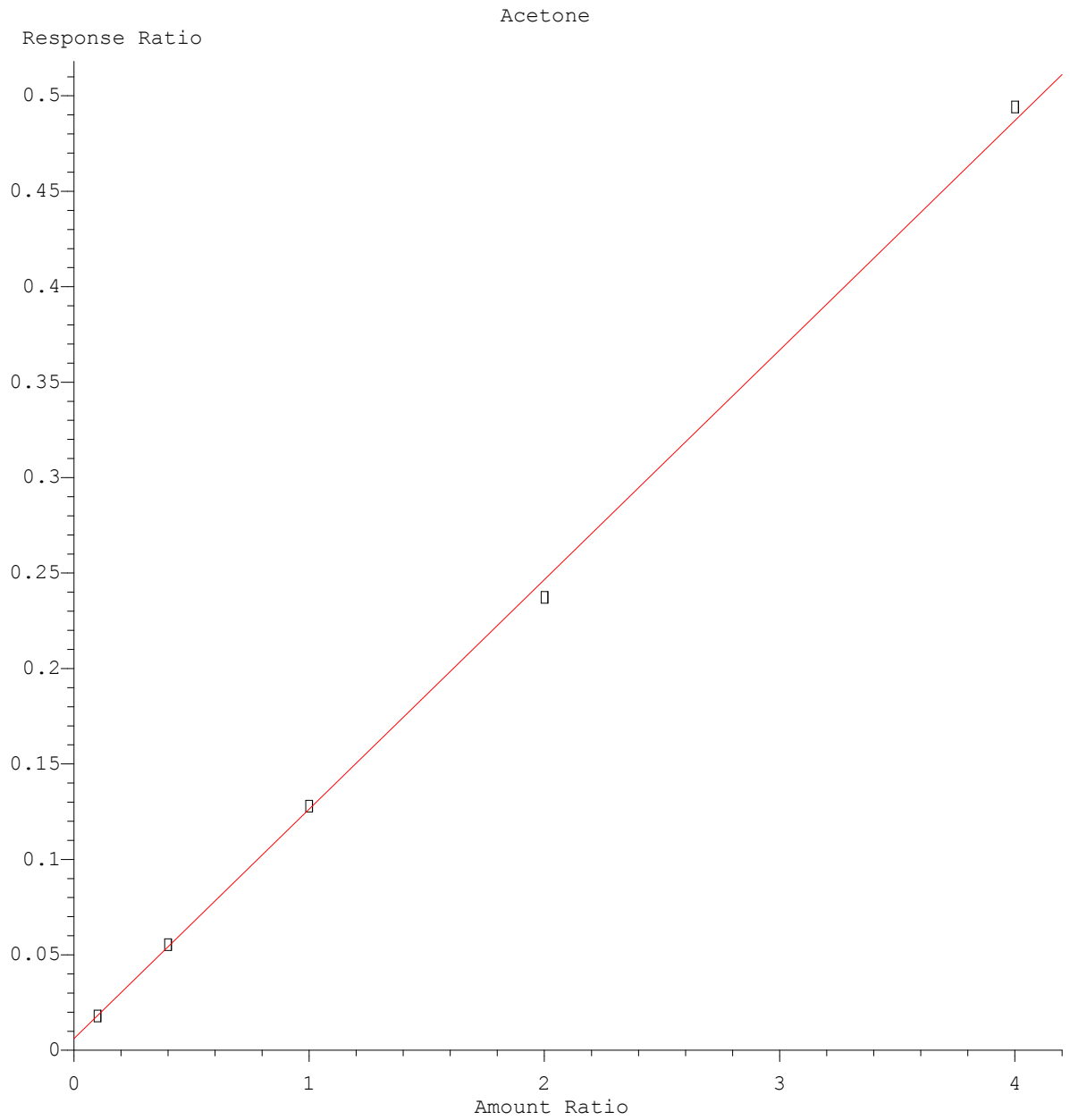

Resp Ratio = 1.20e-001 * Amt + 6.05e-003
Coef of Det (r^2) = 0.999 Curve Fit: wlr(1/a)

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

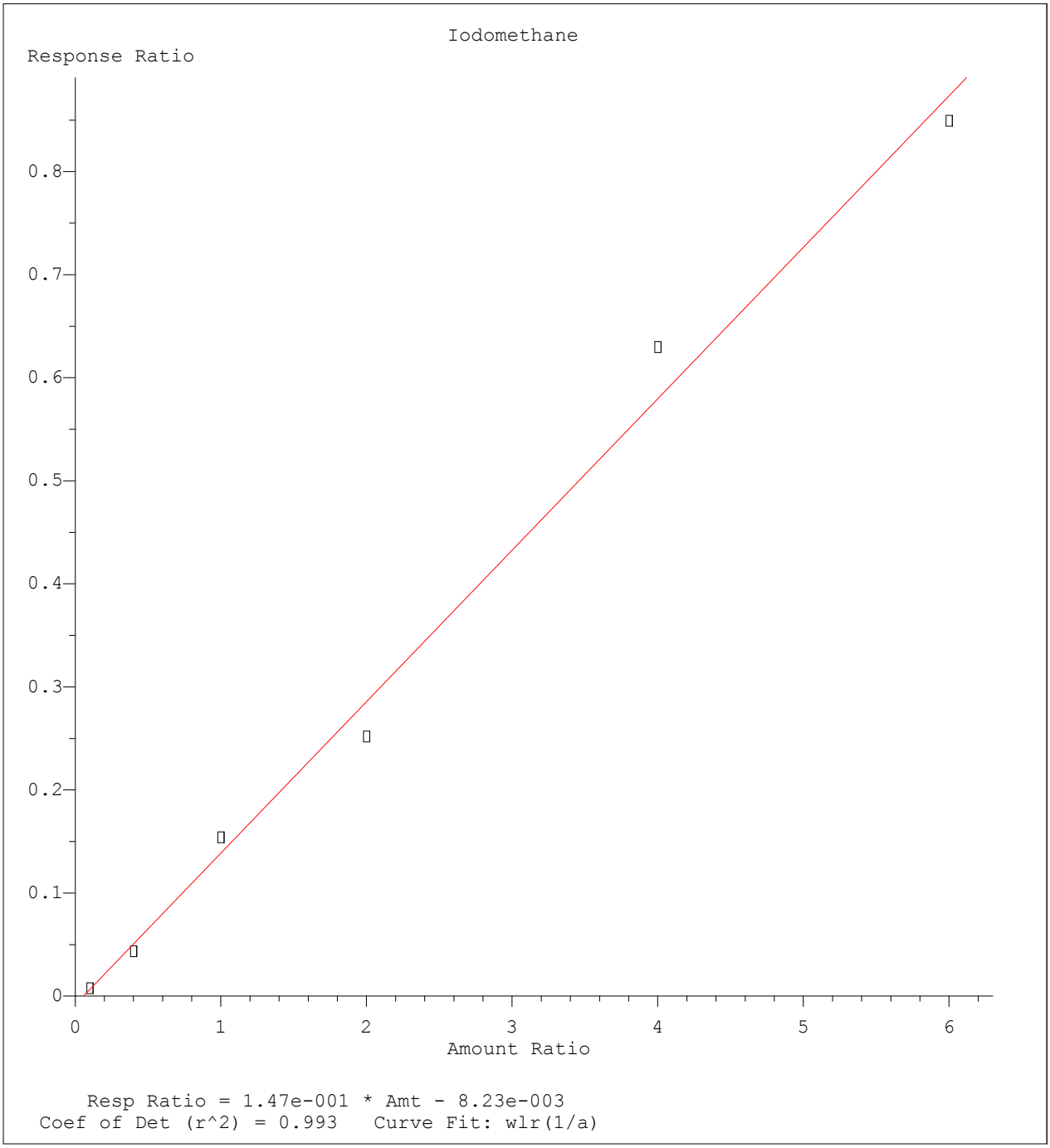

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

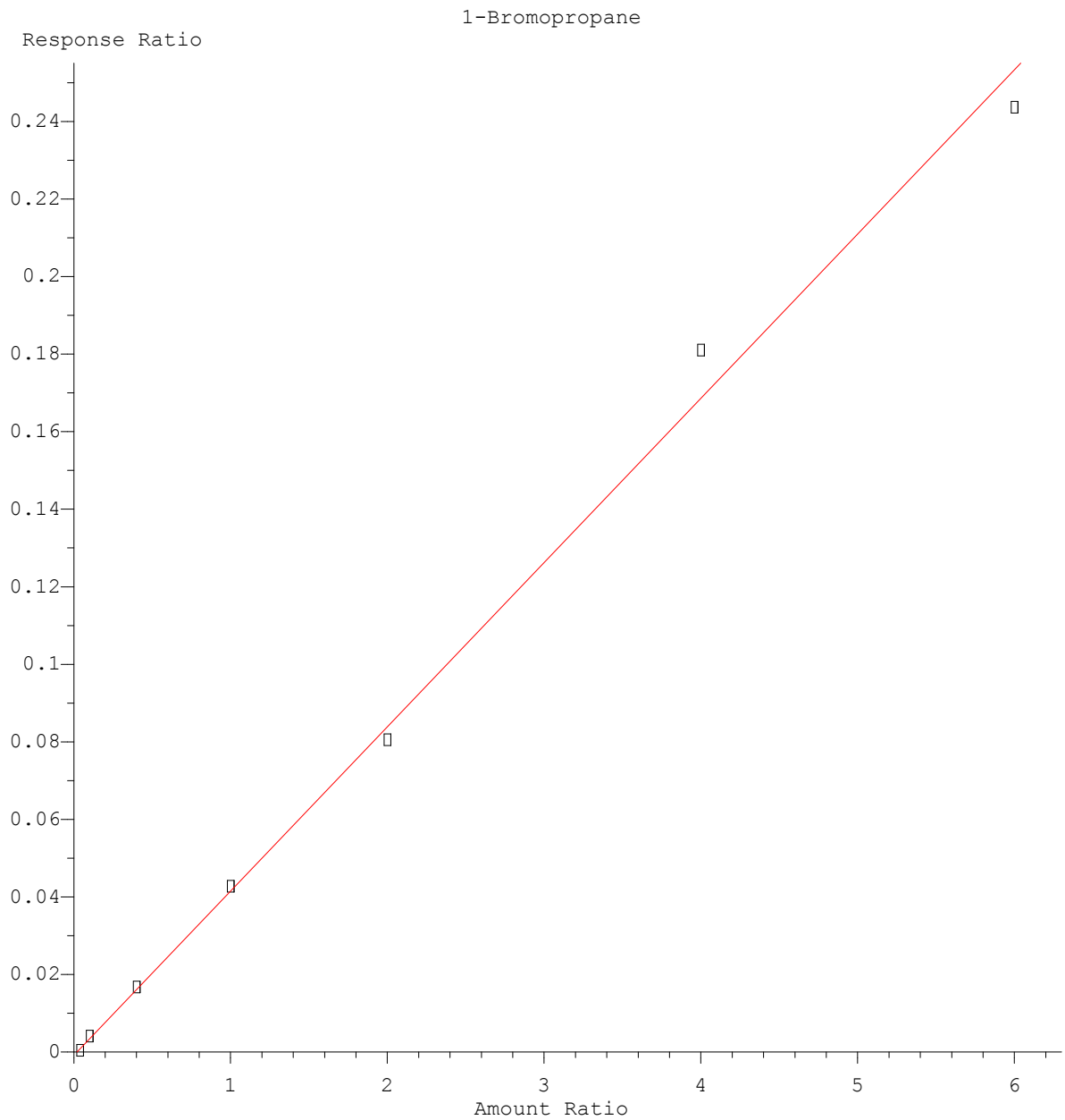

Resp Ratio = 4.25e-002 * Amt - 8.72e-004
Coef of Det (r^2) = 0.997 Curve Fit: wlr(1/a)

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

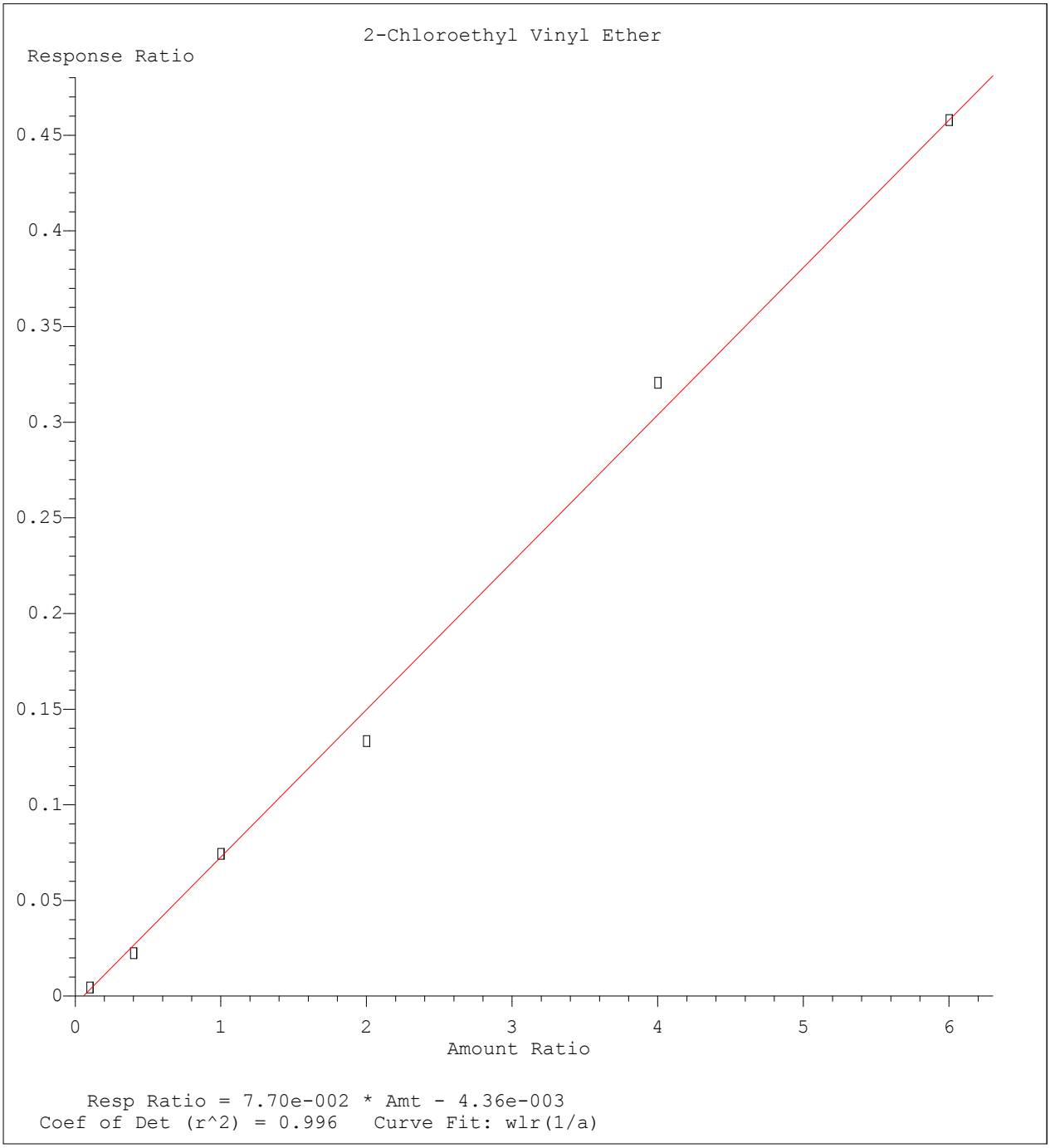

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:39:12 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	582126	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	421408	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	194909	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	163260	51.7395 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 103.48%		
43) 1,2-Dichloroethane-d4	10.45	65	197344	49.8458 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.70%		
58) Toluene-d8	12.82	98	564883	52.9951 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.00%		
79) p-Bromofluorobenzene	16.23	95	212358	55.9531 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 111.90%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	251431	63.3698 ug/kg	100
3) Chloromethane	3.74	50	200793	52.7216 ug/kg	100
4) Vinyl Chloride	3.99	62	228101	59.8284 ug/kg	99
5) 1,3-Butadiene	4.04	54	19055	5.2533 ug/kg	94
6) Bromomethane	4.88	94	121270	48.9744 ug/kg	100
7) Chloroethane	5.04	64	92003	54.1660 ug/kg	100
8) Trichlorofluoromethane	5.52	101	271981	47.5643 ug/kg	98
9) Diethyl ether	6.06	59	198146	74.1259 ug/kg	98
10) Isoprene	6.09	67	201645	59.0663 ug/kg	95
11) Acrolein	6.30	56	34569	64.8558 ug/kg	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	151498	51.3737 ug/kg	99
13) Acetone	6.41	43	65044	43.9190 ug/kg	98
14) 1,1-Dichloroethene	6.62	61	264179	48.5632 ug/kg	99
15) Tert-Butyl Alcohol	6.77	59	122141	205.1997 ug/kg	96
16) Dimethyl Sulfide	6.88	62	168266	73.1872 ug/kg	98
17) Iodomethane	7.13	142	81070	50.1419 ug/kg	99
18) Methyl acetate	7.15	43	155780	52.6767 ug/kg	99
19) Methylene Chloride	7.41	84	147546	49.8014 ug/kg	97
20) Carbon Disulfide	7.45	76	369798	44.1284 ug/kg	98
21) Acrylonitrile	7.59	53	71462	48.8478 ug/kg	99
22) Methyl Tert Butyl Ether	7.61	73	402298	47.6767 ug/kg	100
23) trans-1,2-Dichloroethene	7.85	61	245432	50.6242 ug/kg	100
24) n-Hexane	7.91	57	240056	48.0064 ug/kg	97
25) Diisopropyl ether	8.26	45	951889	81.9626 ug/kg	100
26) Vinyl Acetate	8.44	43	224385	33.8921 ug/kg	98
27) 1,1-Dichloroethane	8.47	63	282537	46.3987 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	854399	79.1219 ug/kg	99
29) 2-Butanone	9.03	43	88970	47.3950 ug/kg	99
30) Propionitrile	9.14	54	53106	92.4444 ug/kg	97
31) 2,2-Dichloropropane	9.24	77	213921	47.0673 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	167198	52.5828 ug/kg	96
33) Chloroform	9.52	83	268532	48.0056 ug/kg	99
34) 1-Bromopropane	9.65	122	36381	74.5451 ug/kg	96
35) Bromochloromethane	9.75	130	106386	51.5067 ug/kg	96
36) Tetrahydrofuran	9.78	42	101921	84.2313 ug/kg	98
38) 1,1,1-Trichloroethane	10.04	97	236420	46.7360 ug/kg	100
39) Cyclohexane	10.08	56	267623	48.5247 ug/kg	98
40) 1,1-Dichloropropene	10.25	75	193208	48.5381 ug/kg	99
41) Tert-Amyl-Methyl ether	10.34	73	688412	87.7041 ug/kg	100
42) Carbon Tetrachloride	10.39	117	218086	46.5023 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:39:12 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	241996	49.1831 ug/kg	99
46)	Benzene	10.60	78	545692	48.9674 ug/kg	99
47)	Trichloroethene	11.35	130	174371	49.3824 ug/kg	96
48)	Methylcyclohexane	11.44	83	228572	51.6120 ug/kg	98
49)	1,2-Dichloropropane	11.56	63	160075	52.3084 ug/kg	99
50)	1,4-Dioxane	11.88	88	7749	168.7883 ug/kg	88
51)	Bromodichloromethane	11.87	83	205164	47.5709 ug/kg	100
52)	Dibromomethane	11.96	174	95223	46.9624 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	36447	43.4907 ug/kg	97
54)	4-Methyl-2-Pentanone	12.19	58	64228	47.8173 ug/kg	96
55)	cis-1,3-Dichloropropene	12.50	75	238969	53.1840 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	243519	53.9302 ug/kg	99
59)	Toluene	12.93	91	610944	50.7412 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	172650	51.7315 ug/kg	99
61)	trans-1,3-Dichloropropene	13.11	75	216958	50.0293 ug/kg	98
62)	1,1,2-Trichloroethane	13.32	97	130293	51.5130 ug/kg	96
63)	2-Hexanone	13.25	43	121727	48.2017 ug/kg	99
64)	1,3-Dichloropropane	13.62	76	226811	53.8157 ug/kg	99
65)	Tetrachloroethene	13.75	164	128602	49.8224 ug/kg	96
66)	Dibromochloromethane	14.01	129	171284	48.4552 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	142409	50.7609 ug/kg	97
68)	1-Chlorohexane	14.35	91	184711	52.0217 ug/kg	98
69)	Chlorobenzene	14.77	112	433181	51.1898 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	157986	49.7138 ug/kg	100
71)	Ethylbenzene	14.79	106	223582	51.2841 ug/kg	100
72)	m-,p-Xylene	14.89	106	552299	102.5798 ug/kg	98
73)	o-Xylene	15.45	106	276739	53.5600 ug/kg	99
74)	Styrene	15.49	104	464515	52.7939 ug/kg	99
75)	Bromoform	15.99	173	109809	47.3129 ug/kg	99
76)	Isopropylbenzene	15.87	105	721376	52.0066 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	153818	52.0241 ug/kg	97
80)	1,2,3-Trichloropropane	16.29	110	60794	54.2181 ug/kg	92
81)	trans-1,4-Dichloro-2-Buten	16.33	53	48561	42.9649 ug/kg	74
82)	n-Propylbenzene	16.39	91	841260	54.9091 ug/kg	100
83)	Bromobenzene	16.52	156	188730	52.1806 ug/kg	96
84)	1,3,5-Trimethylbenzene	16.57	105	624761	54.3244 ug/kg	99
85)	2-Chlorotoluene	16.66	91	556729	54.1771 ug/kg	100
86)	4-Chlorotoluene	16.70	91	503918	53.0403 ug/kg	99
87)	a-Methylstyrene	16.98	118	305038	58.2105 ug/kg	98
88)	tert-Butylbenzene	17.03	134	133555	55.3912 ug/kg	90
89)	1,2,4-Trimethylbenzene	17.08	105	620621	51.5293 ug/kg	99
90)	sec-Butylbenzene	17.31	105	810765	54.7366 ug/kg	99
91)	p-Isopropyltoluene	17.46	119	675672	54.0529 ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	365216	50.8073 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	367190	51.0968 ug/kg	99
94)	n-Butylbenzene	17.99	91	609687	52.4585 ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	351826	52.7494 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	46623	54.4522 ug/kg	96
97)	1,2,4-Trichlorobenzene	20.43	180	244804	51.7031 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	136025	54.5004 ug/kg	99
99)	Naphthalene	20.81	128	603753	50.8387 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	241600	52.6087 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972907.D 8260SL.M Fri Feb 26 11:39:13 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:39 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

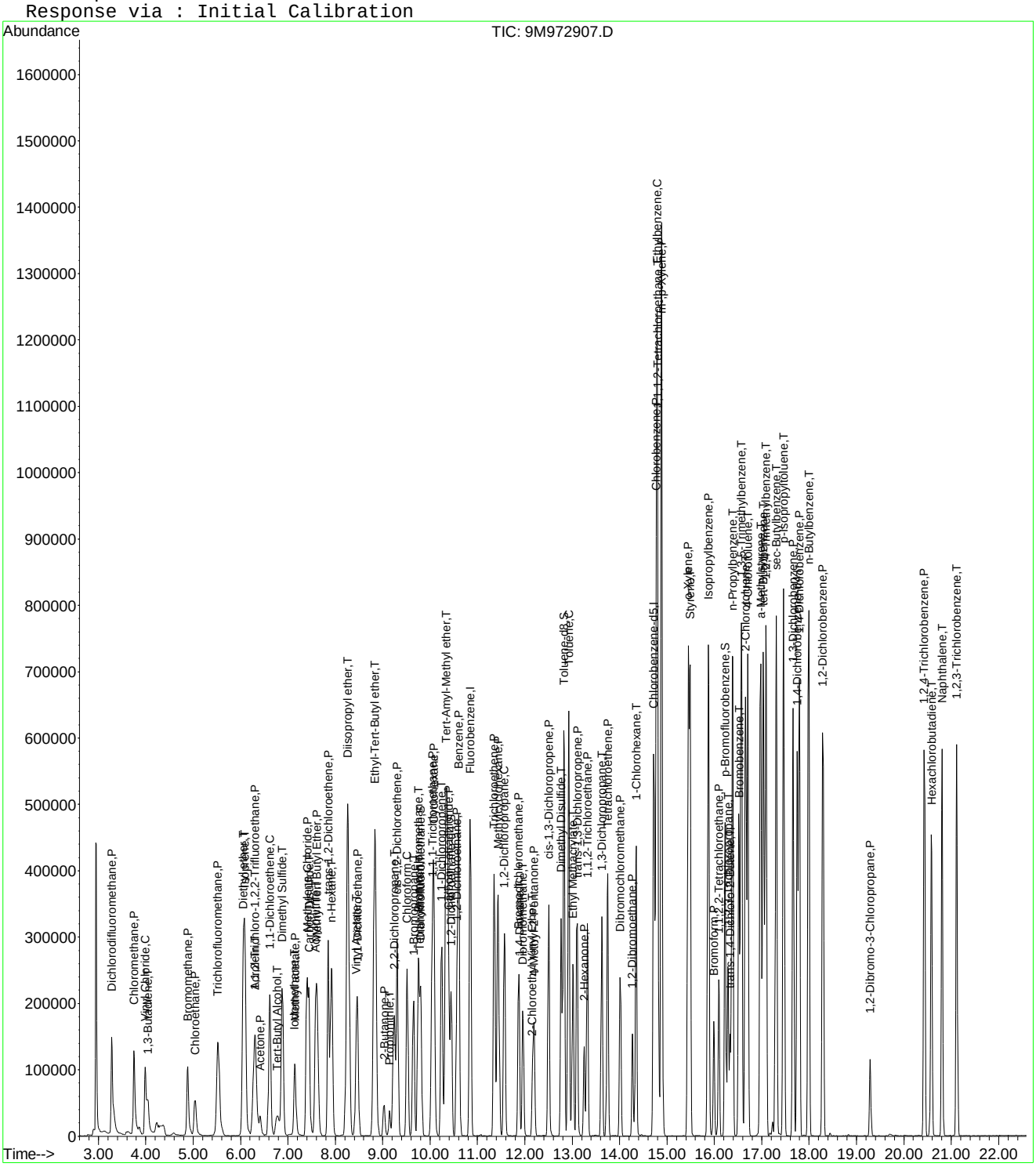

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	112	0.00
2	P	Dichlorodifluoromethane	50.0000	63.3698	-26.7#	123	0.00
3	P	Chloromethane	50.0000	52.7216	-5.4	107	0.00
4	C	Vinyl Chloride	50.0000	59.8284	-19.7	118	0.00
5	T	1,3-Butadiene	50.0000	5.2533	89.5#	11	0.00
6	P	Bromomethane	50.0000	48.9744	2.1	112	0.00
7	P	Chloroethane	50.0000	54.1660	-8.3	108	0.00
8	P	Trichlorofluoromethane	50.0000	47.5643	4.9	102	0.00
9	T	Diethyl ether	100.0000	74.1259	25.9#	79	0.01
10	T	Isoprene	50.0000	59.0664	-18.1	129	0.00
11	T	Acrolein	50.0000	64.8558	-29.7#	140	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	51.3737	-2.7	112	0.00
13	P	Acetone	50.0000	43.9190	12.2	98	0.00
14	C	1,1-Dichloroethene	50.0000	48.5632	2.9	108	0.00
15	T	Tert-Butyl Alcohol	200.0000	205.1997	-2.6	116	0.01
16	T	Dimethyl Sulfide	50.0000	73.1872	-46.4#	154	0.00
17	T	Iodomethane	50.0000	50.1419	-0.3	102	0.00
18	P	Methyl acetate	50.0000	52.6767	-5.4	115	0.01
19	P	Methylene Chloride	50.0000	49.8014	0.4	109	0.01
20	P	Carbon Disulfide	50.0000	44.1284	11.7	97	0.00
21	T	Acrylonitrile	50.0000	48.8478	2.3	103	0.00
22	P	Methyl Tert Butyl Ether	50.0000	47.6767	4.6	99	0.00
23	P	trans-1,2-Dichloroethene	50.0000	50.6242	-1.2	108	0.00
24	T	n-Hexane	50.0000	48.0064	4.0	109	0.00
25	T	Diisopropyl ether	100.0000	81.9626	18.0	87	0.00
26	T	Vinyl Acetate	50.0000	33.8921	32.2#	72	0.01
27	P	1,1-Dichloroethane	50.0000	46.3987	7.2	99	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	79.1219	20.9	83	0.00
29	P	2-Butanone	50.0000	47.3950	5.2	103	0.00
30	T	Propionitrile	100.0000	92.4444	7.6	100	0.00
31	T	2,2-Dichloropropane	50.0000	47.0673	5.9	99	0.00
32	P	cis-1,2-Dichloroethene	50.0000	52.5828	-5.2	109	0.00
33	C	Chloroform	50.0000	48.0057	4.0	102	0.00
34	T	1-Bromopropane	50.0000	74.5451	-49.1#	164	0.00
35	T	Bromochloromethane	50.0000	51.5067	-3.0	104	0.00
36	T	Tetrahydrofuran	100.0000	84.2314	15.8	90	0.00
37	S	Dibromofluoromethane	50.0000	51.7395	-3.5	110	0.00
38	P	1,1,1-Trichloroethane	50.0000	46.7360	6.5	97	0.00
39	P	Cyclohexane	50.0000	48.5247	3.0	108	0.00
40	T	1,1-Dichloropropene	50.0000	48.5381	2.9	106	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	87.7041	12.3	93	0.00
42	P	Carbon Tetrachloride	50.0000	46.5023	7.0	99	0.00
43	S	1,2-Dichloroethane-d4	50.0000	49.8458	0.3	107	0.00
44		Heptane	-1.0000	0.0000	0.0	104	0.00
45	P	1,2-Dichloroethane	50.0000	49.1831	1.6	102	0.00
46	P	Benzene	50.0000	48.9674	2.1	108	0.00
47	P	Trichloroethene	50.0000	49.3824	1.2	106	0.00
48	P	Methylcyclohexane	50.0000	51.6120	-3.2	112	0.00
49	C	1,2-Dichloropropane	50.0000	52.3083	-4.6	108	0.00
50	T	1,4-Dioxane	200.0000	168.7883	15.6	99	0.00
51	P	Bromodichloromethane	50.0000	47.5710	4.9	101	0.00
52	T	Dibromomethane	50.0000	46.9624	6.1	99	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	43.4907	13.0	95	0.00
54	P	4-Methyl-2-Pentanone	50.0000	47.8173	4.4	99	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	53.1840	-6.4	112	0.00
56	T	Dimethyl Disulfide	50.0000	53.9302	-7.9	111	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	111	0.00
58	S	Toluene-d8	50.0000	52.9951	-6.0	110	0.00
59	C	Toluene	50.0000	50.7412	-1.5	108	0.00
60	T	Ethyl Methacrylate	50.0000	51.7315	-3.5	109	0.00
61	P	trans-1,3-Dichloropropene	50.0000	50.0293	-0.1	102	0.00
62	P	1,1,2-Trichloroethane	50.0000	51.5130	-3.0	106	0.00
63	P	2-Hexanone	50.0000	48.2017	3.6	102	0.00
64	T	1,3-Dichloropropane	50.0000	53.8157	-7.6	113	0.00
65	P	Tetrachloroethene	50.0000	49.8224	0.4	110	0.00
66	P	Dibromochloromethane	50.0000	48.4552	3.1	101	0.00
67	P	1,2-Dibromoethane	50.0000	50.7609	-1.5	107	0.00
68	T	1-Chlorohexane	50.0000	52.0217	-4.0	110	0.00
69	P	Chlorobenzene	50.0000	51.1898	-2.4	108	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	49.7138	0.6	102	0.00
71	C	Ethylbenzene	50.0000	51.2841	-2.6	108	0.00
72	P	m-,p-Xylene	100.0000	102.5798	-2.6	111	0.00
73	P	o-Xylene	50.0000	53.5600	-7.1	112	0.00
74	P	Styrene	50.0000	52.7939	-5.6	109	0.00
75	P	Bromoform	50.0000	47.3129	5.4	95	0.00
76	P	Isopropylbenzene	50.0000	52.0066	-4.0	110	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	107	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	52.0241	-4.0	104	0.00
79	S	p-Bromofluorobenzene	50.0000	55.9531	-11.9	111	0.00
80	T	1,2,3-Trichloropropane	50.0000	54.2181	-8.4	109	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	42.9649	14.1	87	0.00
82	T	n-Propylbenzene	50.0000	54.9091	-9.8	112	0.00
83	T	Bromobenzene	50.0000	52.1806	-4.4	106	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	54.3244	-8.6	110	0.00
85	T	2-Chlorotoluene	50.0000	54.1771	-8.4	115	0.00
86	T	4-Chlorotoluene	50.0000	53.0403	-6.1	105	0.00
87	T	a-Methylstyrene	50.0000	58.2105	-16.4	119	0.00
88	T	tert-Butylbenzene	50.0000	55.3912	-10.8	110	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	51.5293	-3.1	107	0.00
90	T	sec-Butylbenzene	50.0000	54.7366	-9.5	112	0.00
91	T	p-Isopropyltoluene	50.0000	54.0529	-8.1	110	0.00
92	P	1,3-Dichlorobenzene	50.0000	50.8073	-1.6	108	0.00
93	P	1,4-Dichlorobenzene	50.0000	51.0968	-2.2	110	0.00
94	T	n-Butylbenzene	50.0000	52.4585	-4.9	108	0.00
95	P	1,2-Dichlorobenzene	50.0000	52.7494	-5.5	110	0.00
96	P	1,2-Dibromo-3-Chloropropane	50.0000	54.4522	-8.9	109	0.00
97	P	1,2,4-Trichlorobenzene	50.0000	51.7031	-3.4	110	0.00
98	T	Hexachlorobutadiene	50.0000	54.5004	-9.0	116	0.00
99	T	Naphthalene	50.0000	50.8387	-1.7	100	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	52.6087	-5.2	109	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972907.D 8260SL.M Fri Feb 26 11:39:16 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022916\9M972967.D Vial: 1
Acq On : 29 Feb 2016 17:23 Operator: FJB/JDS
Sample : WG559150-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 17:45:41 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	717529	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.73	117	517165	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	238402	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	191450	49.2238 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.44%		
43) 1,2-Dichloroethane-d4	10.45	65	235993	48.3594 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.72%		
58) Toluene-d8	12.83	98	664282	50.7812 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.56%		
79) p-Bromofluorobenzene	16.23	95	254634	54.8522 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 109.70%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	224161	45.8354 ug/kg	95
3) Chloromethane	3.74	50	209740	44.6785 ug/kg	99
4) Vinyl Chloride	3.99	62	269057	57.2535 ug/kg	99
5) 1,3-Butadiene	4.04	54	305677	68.3702 ug/kg	99
6) Bromomethane	4.88	94	139881	45.8302 ug/kg	96
7) Chloroethane	5.04	64	113232	54.0843 ug/kg	98
8) Trichlorofluoromethane	5.53	101	368283	52.2519 ug/kg	99
9) Diethyl ether	6.06	59	339394	103.0069 ug/kg	99
10) Isoprene	6.09	67	270591	64.3048 ug/kg	99
11) Acrolein	6.30	56	34446	52.4298 ug/kg	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	197562	54.3519 ug/kg	99
13) Acetone	6.40	43	83723	45.9748 ug/kg	97
14) 1,1-Dichloroethene	6.61	61	337460	50.3279 ug/kg	98
15) Tert-Butyl Alcohol	6.75	59	123383	168.1699 ug/kg	98
16) Dimethyl Sulfide	6.88	62	157653	55.6312 ug/kg	98
17) Iodomethane	7.13	142	114641	57.1132 ug/kg	98
18) Methyl acetate	7.14	43	193963	53.2112 ug/kg	98
19) Methylene Chloride	7.40	84	183510	50.2518 ug/kg	98
20) Carbon Disulfide	7.45	76	607619	58.8251 ug/kg	99
21) Acrylonitrile	7.59	53	92377	51.2285 ug/kg	99
22) Methyl Tert Butyl Ether	7.61	73	527557	50.7230 ug/kg	98
23) trans-1,2-Dichloroethene	7.85	61	324146	54.2431 ug/kg	97
24) n-Hexane	7.92	57	370697	60.1427 ug/kg	98
25) Diisopropyl ether	8.26	45	1544159	107.8696 ug/kg	99
26) Vinyl Acetate	8.43	43	418695	51.3074 ug/kg	99
27) 1,1-Dichloroethane	8.46	63	390904	52.0808 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	1407574	105.7511 ug/kg	99
29) 2-Butanone	9.02	43	109282	47.2297 ug/kg	99
30) Propionitrile	9.14	54	67587	95.4504 ug/kg	100
31) 2,2-Dichloropropane	9.24	77	312822	55.8394 ug/kg	100
32) cis-1,2-Dichloroethene	9.31	96	208818	53.2793 ug/kg	96
33) Chloroform	9.52	83	344697	49.9932 ug/kg	99
34) 1-Bromopropane	9.65	122	32395	54.1365 ug/kg	100
35) Bromochloromethane	9.75	130	133300	52.3585 ug/kg	95
36) Tetrahydrofuran	9.78	42	144902	97.1543 ug/kg	100
38) 1,1,1-Trichloroethane	10.04	97	327988	52.6021 ug/kg	98
39) Cyclohexane	10.08	56	404884	59.5590 ug/kg	99
40) 1,1-Dichloropropene	10.24	75	261534	53.3045 ug/kg	100
41) Tert-Amyl-Methyl ether	10.34	73	995534	102.8976 ug/kg	99
42) Carbon Tetrachloride	10.39	117	295327	51.0890 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022916\9M972967.D Vial: 1
Acq On : 29 Feb 2016 17:23 Operator: FJB/JDS
Sample : WG559150-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 17:45:41 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	305670	50.4009 ug/kg	97
46)	Benzene	10.60	78	698526	50.8534 ug/kg	100
47)	Trichloroethene	11.35	130	230291	52.9118 ug/kg	97
48)	Methylcyclohexane	11.44	83	332449	60.9018 ug/kg	100
49)	1,2-Dichloropropane	11.56	63	205707	54.5349 ug/kg	98
50)	1,4-Dioxane	11.88	88	11862	209.6197 ug/kg	97
51)	Bromodichloromethane	11.87	83	266373	50.1082 ug/kg	99
52)	Dibromomethane	11.96	174	126894	50.7724 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.17	63	43935	42.5950 ug/kg	100
54)	4-Methyl-2-Pentanone	12.20	58	82978	50.1189 ug/kg	99
55)	cis-1,3-Dichloropropene	12.50	75	292953	52.8950 ug/kg	100
56)	Dimethyl Disulfide	12.77	94	318733	57.2670 ug/kg	99
59)	Toluene	12.93	91	786633	53.2359 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	229430	56.0160 ug/kg	96
61)	trans-1,3-Dichloropropene	13.10	75	284368	53.4322 ug/kg	99
62)	1,1,2-Trichloroethane	13.33	97	163037	52.5238 ug/kg	96
63)	2-Hexanone	13.25	43	153679	49.5865 ug/kg	98
64)	1,3-Dichloropropane	13.62	76	263969	51.0354 ug/kg	97
65)	Tetrachloroethene	13.75	164	170776	53.9110 ug/kg	97
66)	Dibromochloromethane	14.01	129	218964	50.4743 ug/kg	99
67)	1,2-Dibromoethane	14.28	107	171387	49.7787 ug/kg	99
68)	1-Chlorohexane	14.35	91	270956	62.1819 ug/kg	100
69)	Chlorobenzene	14.77	112	545712	52.5474 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	203041	52.0614 ug/kg	98
71)	Ethylbenzene	14.79	106	293242	54.8082 ug/kg	100
72)	m-,p-Xylene	14.89	106	712906	107.8931 ug/kg	96
73)	o-Xylene	15.45	106	348413	54.9463 ug/kg	97
74)	Styrene	15.49	104	592775	54.8968 ug/kg	99
75)	Bromoform	16.00	173	142147	49.9061 ug/kg	100
76)	Isopropylbenzene	15.88	105	937009	55.0446 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.10	83	180384	49.8790 ug/kg	97
80)	1,2,3-Trichloropropane	16.29	110	68552	49.9834 ug/kg	95
81)	trans-1,4-Dichloro-2-Buten	16.33	53	80928	58.5392 ug/kg	82
82)	n-Propylbenzene	16.39	91	1067940	56.9879 ug/kg	100
83)	Bromobenzene	16.52	156	234464	52.9988 ug/kg	96
84)	1,3,5-Trimethylbenzene	16.58	105	797971	56.7270 ug/kg	98
85)	2-Chlorotoluene	16.66	91	674685	53.6779 ug/kg	99
86)	4-Chlorotoluene	16.70	91	653058	56.1979 ug/kg	99
87)	a-Methylstyrene	16.98	118	400282	62.4504 ug/kg	99
88)	tert-Butylbenzene	17.04	134	168830	57.2469 ug/kg	100
89)	1,2,4-Trimethylbenzene	17.09	105	800671	54.3506 ug/kg	99
90)	sec-Butylbenzene	17.30	105	1031272	56.9217 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	865022	56.5760 ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	451554	51.3579 ug/kg	99
93)	1,4-Dichlorobenzene	17.80	146	451360	51.3508 ug/kg	100
94)	n-Butylbenzene	17.99	91	798632	56.1795 ug/kg	99
95)	1,2-Dichlorobenzene	18.30	146	423274	51.8840 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.30	157	47947	45.7824 ug/kg	98
97)	1,2,4-Trichlorobenzene	20.44	180	294038	50.7719 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	165585	54.2406 ug/kg	99
99)	Naphthalene	20.81	128	692181	47.6516 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	281873	50.1806 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972967.D 8260SL.M Mon Feb 29 17:45:41 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022916\9M972967.D Vial: 1
Acq On : 29 Feb 2016 17:23 Operator: FJB/JDS
Sample : WG559150-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 17:45 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

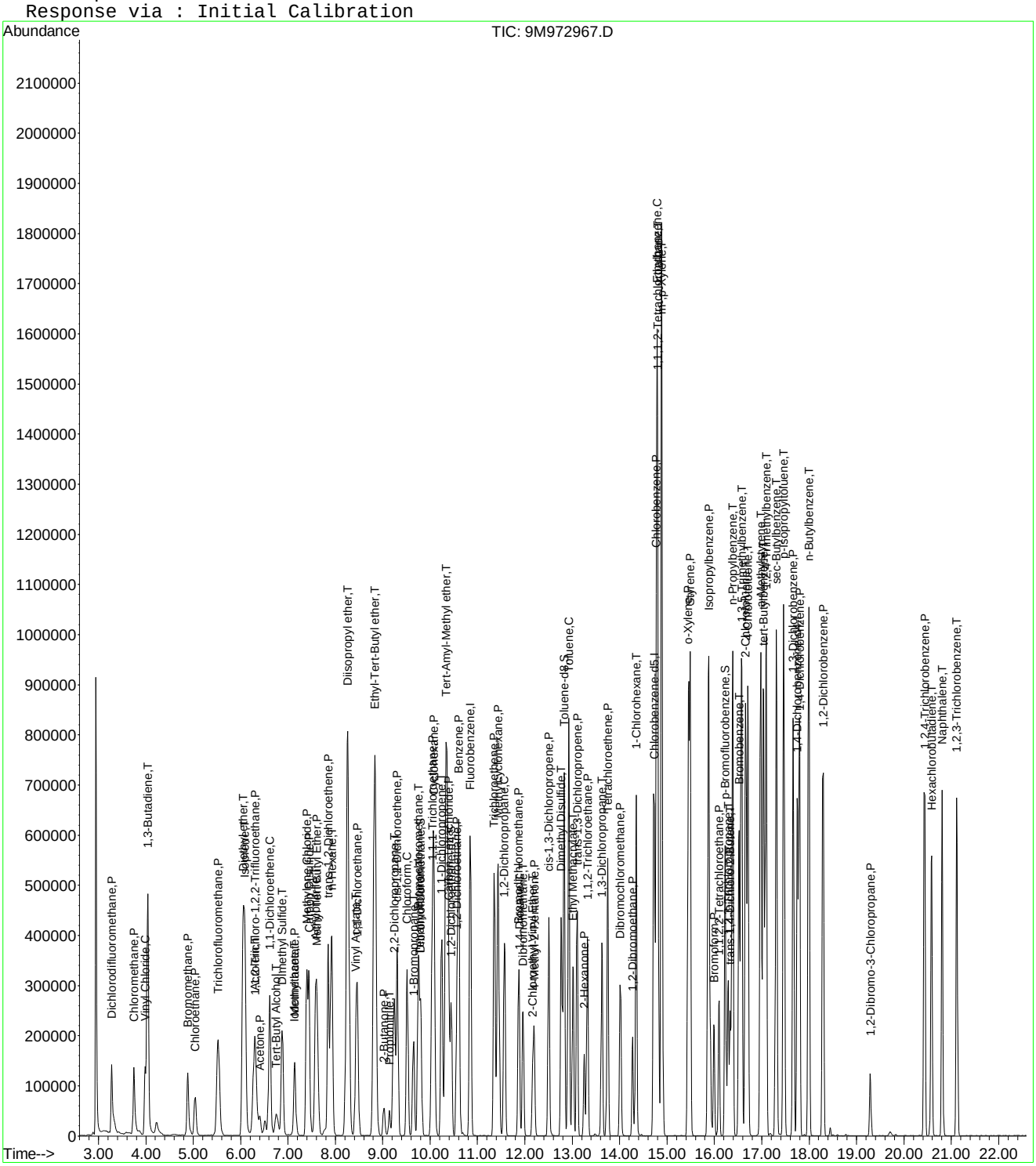

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022916\9M972967.D Vial: 1
Acq On : 29 Feb 2016 17:23 Operator: FJB/JDS
Sample : WG559150-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	139	0.00
2	P	Dichlorodifluoromethane	0.3408	0.3124	8.3	109	0.00
3	P	Chloromethane	0.3271	0.2923	10.6	112	0.00
4	C	Vinyl Chloride	0.3275	0.3750	-14.5	140	0.00
5	T	1,3-Butadiene	0.3115	0.4260	-36.7#	179	0.00
6	P	Bromomethane	0.2127	0.1950	8.3	130	0.00
7	P	Chloroethane	0.1459	0.1578	-8.2	133	0.00
8	P	Trichlorofluoromethane	0.4911	0.5133	-4.5	138	0.00
9	T	Diethyl ether	0.2296	0.2365	-3.0	136	0.01
10	T	Isoprene	0.2932	0.3771	-28.6#	173	0.00
11	T	Acrolein	0.0458	0.0480	-4.9	140	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	0.2533	0.2753	-8.7	146	0.01
13	P	Acetone	0.1376	0.1167	15.2	126	0.00
14	C	1,1-Dichloroethene	0.4672	0.4703	-0.7	138	0.00
15	T	Tert-Butyl Alcohol	0.0511	0.0430	15.9	118	-0.01
16	T	Dimethyl Sulfide	0.1975	0.2197	-11.3	144	0.00
17	T	Iodomethane	0.1273	0.1598	-25.5#	144	0.00
18	P	Methyl acetate	0.2540	0.2703	-6.4	143	0.00
19	P	Methylene Chloride	0.2545	0.2557	-0.5	136	0.00
20	P	Carbon Disulfide	0.7198	0.8468	-17.6	159	0.00
21	T	Acrylonitrile	0.1257	0.1287	-2.5	133	0.00
22	P	Methyl Tert Butyl Ether	0.7248	0.7352	-1.4	130	0.00
23	P	trans-1,2-Dichloroethene	0.4164	0.4517	-8.5	143	0.00
24	T	n-Hexane	0.4295	0.5166	-20.3	169	0.01
25	T	Diisopropyl ether	0.9975	1.0760	-7.9	142	0.00
26	T	Vinyl Acetate	0.5686	0.5835	-2.6	134	0.00
27	P	1,1-Dichloroethane	0.5230	0.5448	-4.2	137	-0.01
28	T	Ethyl-Tert-Butyl ether	0.9275	0.9809	-5.8	138	0.00
29	P	2-Butanone	0.1612	0.1523	5.5	127	-0.01
30	T	Propionitrile	0.0493	0.0471	4.5	127	0.00
31	T	2,2-Dichloropropane	0.3904	0.4360	-11.7	145	0.00
32	P	cis-1,2-Dichloroethene	0.2731	0.2910	-6.6	136	0.00
33	C	Chloroform	0.4805	0.4804	0.0	131	0.00
34	T	1-Bromopropane	0.0376	0.0452	-20.1	146	0.00
35	T	Bromochloromethane	0.1774	0.1858	-4.7	130	0.00
36	T	Tetrahydrofuran	0.1039	0.1010	2.8	127	0.00
37	S	Dibromofluoromethane	0.2710	0.2668	1.6	129	0.00
38	P	1,1,1-Trichloroethane	0.4345	0.4571	-5.2	135	0.00
39	P	Cyclohexane	0.4737	0.5643	-19.1	163	0.00
40	T	1,1-Dichloropropene	0.3419	0.3645	-6.6	144	0.00
41	T	Tert-Amyl-Methyl ether	0.6742	0.6937	-2.9	134	0.00
42	P	Carbon Tetrachloride	0.4028	0.4116	-2.2	133	0.00
43	S	1,2-Dichloroethane-d4	0.3401	0.3289	3.3	128	0.00
44		Heptane	0.0000	0.0000	0.0	134	0.00
45	P	1,2-Dichloroethane	0.4226	0.4260	-0.8	129	0.00
46	P	Benzene	0.9572	0.9735	-1.7	139	0.00
47	P	Trichloroethene	0.3033	0.3210	-5.8	140	0.00
48	P	Methylcyclohexane	0.3804	0.4633	-21.8	163	0.00
49	C	1,2-Dichloropropane	0.2628	0.2867	-9.1	139	0.00
50	T	1,4-Dioxane	0.0039	0.0041	-4.8	152	0.00
51	P	Bromodichloromethane	0.3704	0.3712	-0.2	131	0.00
52	T	Dibromomethane	0.1742	0.1769	-1.5	132	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0665	0.0612	8.0	114	0.00
54	P	4-Methyl-2-Pentanone	0.1154	0.1156	-0.2	128	0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022916\9M972967.D Vial: 1
Acq On : 29 Feb 2016 17:23 Operator: FJB/JDS
Sample : WG559150-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	0.3859	0.4083	-5.8	138	0.00
56	T	Dimethyl Disulfide	0.3878	0.4442	-14.5	145	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	136	0.00
58	S	Toluene-d8	1.2647	1.2845	-1.6	130	0.00
59	C	Toluene	1.4286	1.5211	-6.5	140	0.00
60	T	Ethyl Methacrylate	0.3960	0.4436	-12.0	144	0.00
61	P	trans-1,3-Dichloropropene	0.5145	0.5499	-6.9	134	0.00
62	P	1,1,2-Trichloroethane	0.3001	0.3152	-5.0	133	0.00
63	P	2-Hexanone	0.2996	0.2972	0.8	129	0.00
64	T	1,3-Dichloropropane	0.5001	0.5104	-2.1	131	-0.01
65	P	Tetrachloroethene	0.3063	0.3302	-7.8	146	0.00
66	P	Dibromochloromethane	0.4194	0.4234	-0.9	130	0.00
67	P	1,2-Dibromoethane	0.3329	0.3314	0.4	129	0.00
68	T	1-Chlorohexane	0.4213	0.5239	-24.4	161	0.00
69	P	Chlorobenzene	1.0041	1.0552	-5.1	136	0.00
70	T	1,1,1,2-Tetrachloroethane	0.3771	0.3926	-4.1	131	0.00
71	C	Ethylbenzene	0.5173	0.5670	-9.6	142	-0.01
72	P	m-,p-Xylene	0.6388	0.6892	-7.9	143	0.00
73	P	o-Xylene	0.6130	0.6737	-9.9	141	0.00
74	P	Styrene	1.0440	1.1462	-9.8	139	0.00
75	P	Bromoform	0.2754	0.2749	0.2	123	0.00
76	P	Isopropylbenzene	1.6458	1.8118	-10.1	142	0.00
77	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	130	-0.01
78	P	1,1,2,2-Tetrachloroethane	0.7585	0.7566	0.2	122	0.00
79	S	p-Bromofluorobenzene	0.9736	1.0681	-9.7	133	0.00
80	T	1,2,3-Trichloropropane	0.2876	0.2875	0.0	123	0.00
81	T	trans-1,4-Dichloro-2-Butene	0.2899	0.3395	-17.1	146	0.00
82	T	n-Propylbenzene	3.9303	4.4796	-14.0	142	0.00
83	T	Bromobenzene	0.9278	0.9835	-6.0	132	0.00
84	T	1,3,5-Trimethylbenzene	2.9502	3.3472	-13.5	140	0.00
85	T	2-Chlorotoluene	2.6361	2.8300	-7.4	139	0.00
86	T	4-Chlorotoluene	2.4372	2.7393	-12.4	136	0.00
87	T	a-Methylstyrene	1.3443	1.6790	-24.9	157	0.00
88	T	tert-Butylbenzene	0.6185	0.7082	-14.5	139	0.00
89	T	1,2,4-Trimethylbenzene	3.0897	3.3585	-8.7	138	0.00
90	T	sec-Butylbenzene	3.7998	4.3258	-13.8	142	0.00
91	T	p-Isopropyltoluene	3.2067	3.6284	-13.2	141	0.00
92	P	1,3-Dichlorobenzene	1.8440	1.8941	-2.7	134	0.00
93	P	1,4-Dichlorobenzene	1.8435	1.8933	-2.7	135	0.00
94	T	n-Butylbenzene	2.9815	3.3499	-12.4	142	0.00
95	P	1,2-Dichlorobenzene	1.7110	1.7755	-3.8	132	0.00
96	P	1,2-Dibromo-3-Chloropropane	0.2197	0.2011	8.4	112	0.00
97	P	1,2,4-Trichlorobenzene	1.2146	1.2334	-1.5	132	0.00
98	T	Hexachlorobutadiene	0.6403	0.6946	-8.5	141	0.00
99	T	Naphthalene	3.0465	2.9034	4.7	115	0.00
100	T	1,2,3-Trichlorobenzene	1.1781	1.1823	-0.4	127	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972967.D 8260SL.M Mon Feb 29 17:53:08 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022916\9M972967.D Vial: 1
Acq On : 29 Feb 2016 17:23 Operator: FJB/JDS
Sample : WG559150-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	139	0.00
2	P	Dichlorodifluoromethane	50.0000	45.8354	8.3	109	0.00
3	P	Chloromethane	50.0000	44.6785	10.6	112	0.00
4	C	Vinyl Chloride	50.0000	57.2535	-14.5	140	0.00
5	T	1,3-Butadiene	50.0000	68.3702	-36.7#	179	0.00
6	P	Bromomethane	50.0000	45.8302	8.3	130	0.00
7	P	Chloroethane	50.0000	54.0843	-8.2	133	0.00
8	P	Trichlorofluoromethane	50.0000	52.2519	-4.5	138	0.00
9	T	Diethyl ether	100.0000	103.0069	-3.0	136	0.01
10	T	Isoprene	50.0000	64.3048	-28.6#	173	0.00
11	T	Acrolein	50.0000	52.4298	-4.9	140	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	54.3519	-8.7	146	0.01
13	P	Acetone	50.0000	45.9748	8.1	126	0.00
14	C	1,1-Dichloroethene	50.0000	50.3279	-0.7	138	0.00
15	T	Tert-Butyl Alcohol	200.0000	168.1699	15.9	118	-0.01
16	T	Dimethyl Sulfide	50.0000	55.6313	-11.3	144	0.00
17	T	Iodomethane	50.0000	57.1132	-14.2	144	0.00
18	P	Methyl acetate	50.0000	53.2112	-6.4	143	0.00
19	P	Methylene Chloride	50.0000	50.2518	-0.5	136	0.00
20	P	Carbon Disulfide	50.0000	58.8251	-17.7	159	0.00
21	T	Acrylonitrile	50.0000	51.2285	-2.5	133	0.00
22	P	Methyl Tert Butyl Ether	50.0000	50.7230	-1.4	130	0.00
23	P	trans-1,2-Dichloroethene	50.0000	54.2432	-8.5	143	0.00
24	T	n-Hexane	50.0000	60.1427	-20.3	169	0.01
25	T	Diisopropyl ether	100.0000	107.8696	-7.9	142	0.00
26	T	Vinyl Acetate	50.0000	51.3074	-2.6	134	0.00
27	P	1,1-Dichloroethane	50.0000	52.0808	-4.2	137	-0.01
28	T	Ethyl-Tert-Butyl ether	100.0000	105.7511	-5.8	138	0.00
29	P	2-Butanone	50.0000	47.2297	5.5	127	-0.01
30	T	Propionitrile	100.0000	95.4504	4.5	127	0.00
31	T	2,2-Dichloropropane	50.0000	55.8394	-11.7	145	0.00
32	P	cis-1,2-Dichloroethene	50.0000	53.2793	-6.6	136	0.00
33	C	Chloroform	50.0000	49.9932	0.0	131	0.00
34	T	1-Bromopropane	50.0000	54.1365	-8.3	146	0.00
35	T	Bromochloromethane	50.0000	52.3585	-4.7	130	0.00
36	T	Tetrahydrofuran	100.0000	97.1543	2.8	127	0.00
37	S	Dibromofluoromethane	50.0000	49.2238	1.6	129	0.00
38	P	1,1,1-Trichloroethane	50.0000	52.6021	-5.2	135	0.00
39	P	Cyclohexane	50.0000	59.5590	-19.1	163	0.00
40	T	1,1-Dichloropropene	50.0000	53.3045	-6.6	144	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	102.8976	-2.9	134	0.00
42	P	Carbon Tetrachloride	50.0000	51.0890	-2.2	133	0.00
43	S	1,2-Dichloroethane-d4	50.0000	48.3594	3.3	128	0.00
44		Heptane	-1.0000	0.0000	0.0	134	0.00
45	P	1,2-Dichloroethane	50.0000	50.4009	-0.8	129	0.00
46	P	Benzene	50.0000	50.8534	-1.7	139	0.00
47	P	Trichloroethene	50.0000	52.9118	-5.8	140	0.00
48	P	Methylcyclohexane	50.0000	60.9018	-21.8	163	0.00
49	C	1,2-Dichloropropane	50.0000	54.5348	-9.1	139	0.00
50	T	1,4-Dioxane	200.0000	209.6197	-4.8	152	0.00
51	P	Bromodichloromethane	50.0000	50.1082	-0.2	131	0.00
52	T	Dibromomethane	50.0000	50.7724	-1.5	132	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	42.5950	14.8	114	0.00
54	P	4-Methyl-2-Pentanone	50.0000	50.1189	-0.2	128	0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022916\9M972967.D Vial: 1
Acq On : 29 Feb 2016 17:23 Operator: FJB/JDS
Sample : WG559150-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	52.8950	-5.8	138	0.00
56	T	Dimethyl Disulfide	50.0000	57.2670	-14.5	145	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	136	0.00
58	S	Toluene-d8	50.0000	50.7812	-1.6	130	0.00
59	C	Toluene	50.0000	53.2359	-6.5	140	0.00
60	T	Ethyl Methacrylate	50.0000	56.0160	-12.0	144	0.00
61	P	trans-1,3-Dichloropropene	50.0000	53.4323	-6.9	134	0.00
62	P	1,1,2-Trichloroethane	50.0000	52.5238	-5.0	133	0.00
63	P	2-Hexanone	50.0000	49.5865	0.8	129	0.00
64	T	1,3-Dichloropropane	50.0000	51.0354	-2.1	131	-0.01
65	P	Tetrachloroethene	50.0000	53.9111	-7.8	146	0.00
66	P	Dibromochloromethane	50.0000	50.4743	-0.9	130	0.00
67	P	1,2-Dibromoethane	50.0000	49.7787	0.4	129	0.00
68	T	1-Chlorohexane	50.0000	62.1819	-24.4	161	0.00
69	P	Chlorobenzene	50.0000	52.5474	-5.1	136	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	52.0614	-4.1	131	0.00
71	C	Ethylbenzene	50.0000	54.8083	-9.6	142	-0.01
72	P	m-,p-Xylene	100.0000	107.8931	-7.9	143	0.00
73	P	o-Xylene	50.0000	54.9463	-9.9	141	0.00
74	P	Styrene	50.0000	54.8968	-9.8	139	0.00
75	P	Bromoform	50.0000	49.9061	0.2	123	0.00
76	P	Isopropylbenzene	50.0000	55.0446	-10.1	142	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	130	-0.01
78	P	1,1,2,2-Tetrachloroethane	50.0000	49.8790	0.2	122	0.00
79	S	p-Bromofluorobenzene	50.0000	54.8522	-9.7	133	0.00
80	T	1,2,3-Trichloropropane	50.0000	49.9834	0.0	123	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	58.5392	-17.1	146	0.00
82	T	n-Propylbenzene	50.0000	56.9879	-14.0	142	0.00
83	T	Bromobenzene	50.0000	52.9988	-6.0	132	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	56.7270	-13.5	140	0.00
85	T	2-Chlorotoluene	50.0000	53.6779	-7.4	139	0.00
86	T	4-Chlorotoluene	50.0000	56.1979	-12.4	136	0.00
87	T	a-Methylstyrene	50.0000	62.4504	-24.9	157	0.00
88	T	tert-Butylbenzene	50.0000	57.2469	-14.5	139	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	54.3506	-8.7	138	0.00
90	T	sec-Butylbenzene	50.0000	56.9217	-13.8	142	0.00
91	T	p-Isopropyltoluene	50.0000	56.5760	-13.2	141	0.00
92	P	1,3-Dichlorobenzene	50.0000	51.3580	-2.7	134	0.00
93	P	1,4-Dichlorobenzene	50.0000	51.3508	-2.7	135	0.00
94	T	n-Butylbenzene	50.0000	56.1795	-12.4	142	0.00
95	P	1,2-Dichlorobenzene	50.0000	51.8840	-3.8	132	0.00
96	P	1,2-Dibromo-3-Chloropropane	50.0000	45.7824	8.4	112	0.00
97	P	1,2,4-Trichlorobenzene	50.0000	50.7719	-1.5	132	0.00
98	T	Hexachlorobutadiene	50.0000	54.2405	-8.5	141	0.00
99	T	Naphthalene	50.0000	47.6516	4.7	115	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	50.1806	-0.4	127	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972967.D 8260SL.M Mon Feb 29 17:53:10 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\1\DATA\022516\9M972894.D          Vial: 3
Acq On    : 25 Feb 2016  14:45                       Operator: ADC
Sample    : WG558732-01 BFB 50ng                     Inst    : hpms9
Misc      : 7,1 STD74773                             Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 02/15/16  HPMS9
```

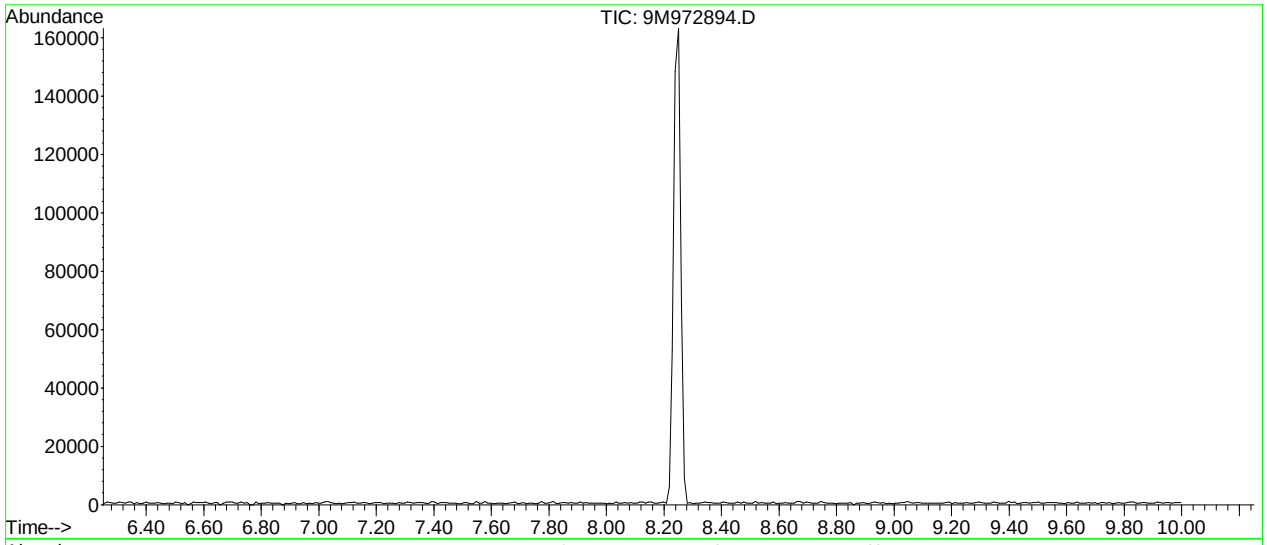

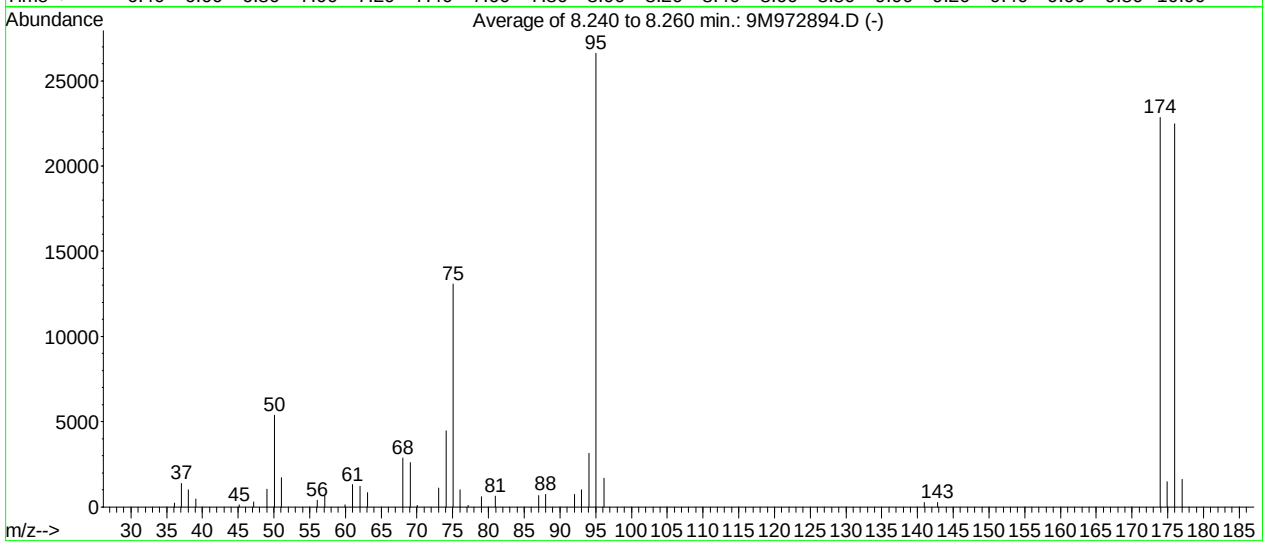

AutoFind: Scans 305, 306, 307; Background Corrected with Scan 300

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.2	5378	PASS
75	95	30	60	49.1	13067	PASS
95	95	100	100	100.0	26621	PASS
96	95	5	9	6.3	1683	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	85.8	22851	PASS
175	174	5	9	6.5	1485	PASS
176	174	95	101	98.3	22461	PASS
177	176	5	9	7.2	1619	PASS

9M972894.D 8260SL.M Fri Feb 26 11:11:03 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\022916\9M972966.D          Vial: 1
Acq On    : 29 Feb 2016  16:59                        Operator: FJB/JDS
Sample    : WG559150-01 BFB 50ng 8260                 Inst    : hpms9
Misc      : 7,1 STD74606                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 02/25/16  HPMS9
```

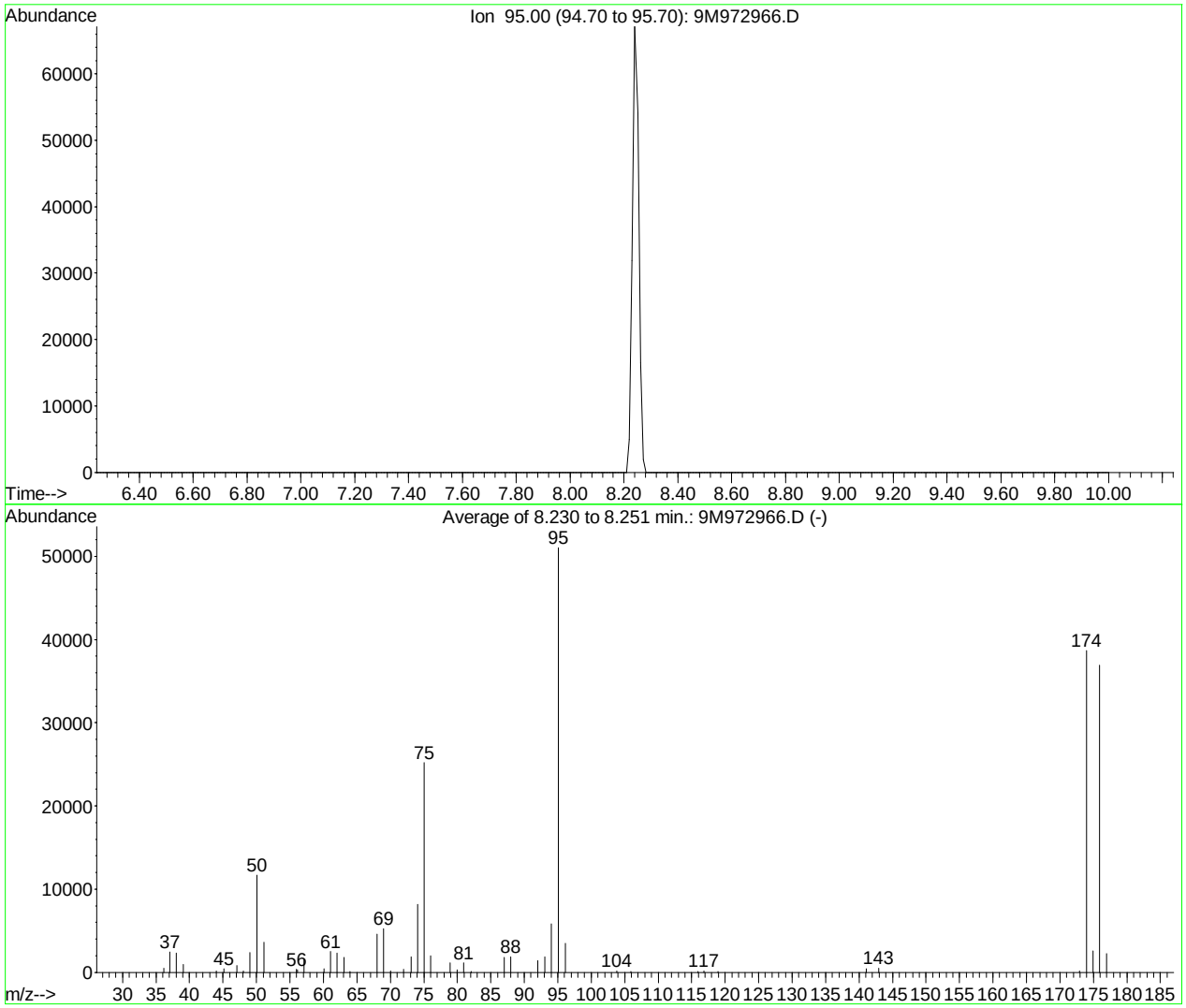

AutoFind: Scans 304, 305, 306; Background Corrected with Scan 300

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.9	11703	PASS
75	95	30	60	49.4	25229	PASS
95	95	100	100	100.0	51056	PASS
96	95	5	9	6.8	3456	PASS
173	174	0.00	2	0.4	169	PASS
174	95	50	100	75.7	38650	PASS
175	174	5	9	6.7	2572	PASS
176	174	95	101	95.5	36914	PASS
177	176	5	9	6.1	2255	PASS

9M972966.D 8260SL.M Tue Mar 01 09:17:35 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972969.D Vial: 3
Acq On : 29 Feb 2016 18:25 Operator: FJB/JDS
Sample : WG559151-01 VBLK0229 BLANK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 01 09:27:14 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	567751	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	403206	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	183902	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	151694	49.2913 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.58%		
43) 1,2-Dichloroethane-d4	10.45	65	188281	48.7607 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.52%		
58) Toluene-d8	12.83	98	538243	52.7754 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 105.56%		
79) p-Bromofluorobenzene	16.23	95	201972	56.4017 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 112.80%		

Target Compounds					Qvalue
13) Acetone	6.40	43	6092	1.9460 ug/kg#	78
56) Dimethyl Disulfide	12.82	94	14641	3.3245 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972969.D 8260SL.M Tue Mar 01 09:27:15 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972969.D Vial: 3
Acq On : 29 Feb 2016 18:25 Operator: FJB/JDS
Sample : WG559151-01 VBLK0229 BLANK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 1 9:27 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

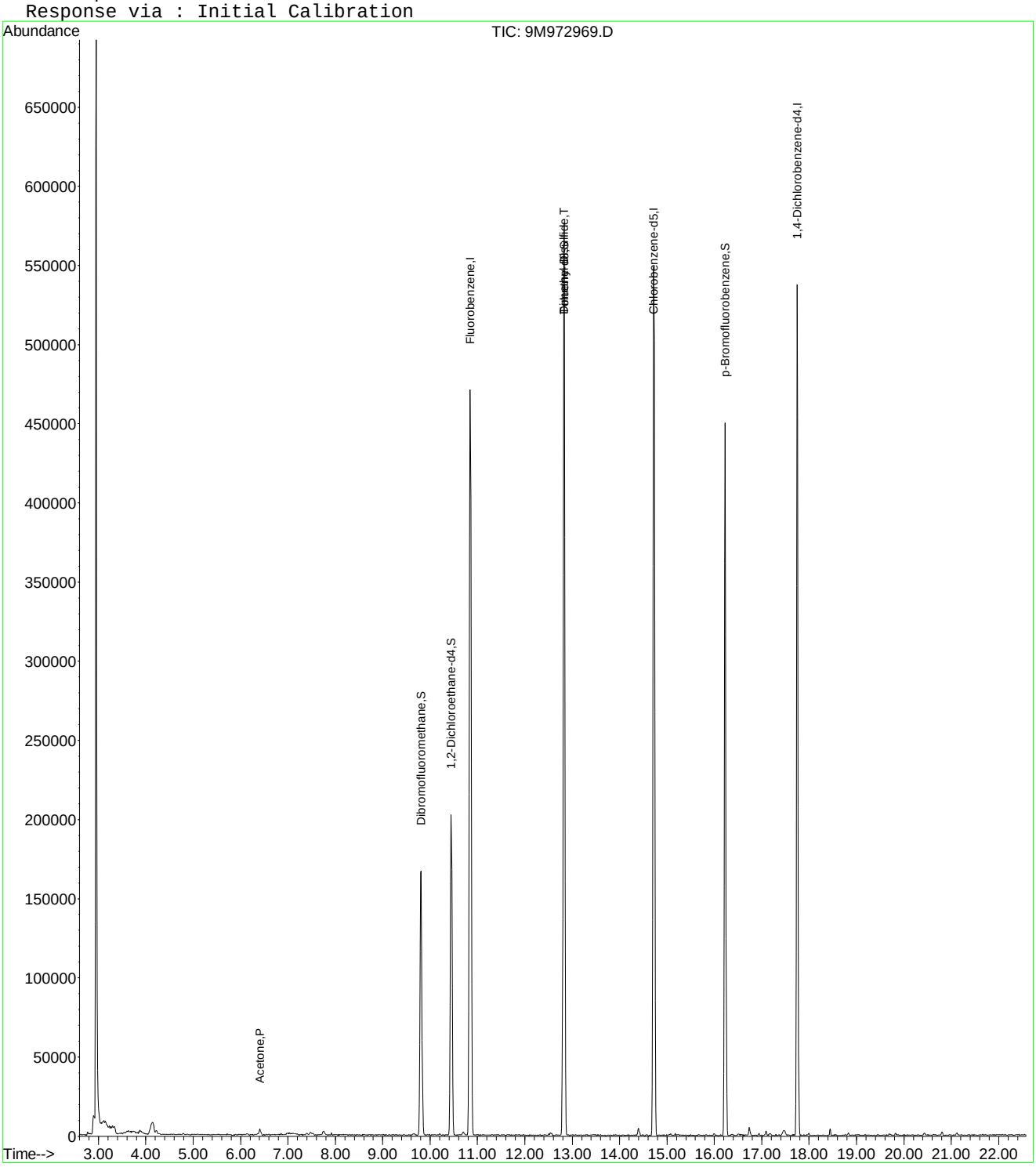

9M972969.D 8260SL.M Tue Mar 01 09:27:15 2016 Page 2

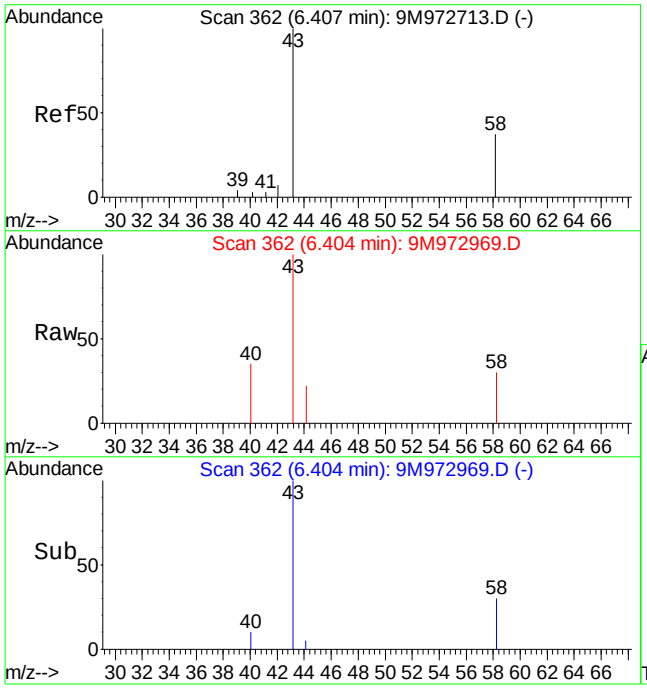

#13
Acetone
Concen: 1.95 ug/kg
RT: 6.40 min Scan# 362
Delta R.T. -0.01 min
Lab File: 9M972969.D
Acq: 29 Feb 2016 18:25

Tgt Ion: 43 Resp: 6092

Ion	Ratio	Lower	Upper
43	100		
58	39.6	16.9	39.3#

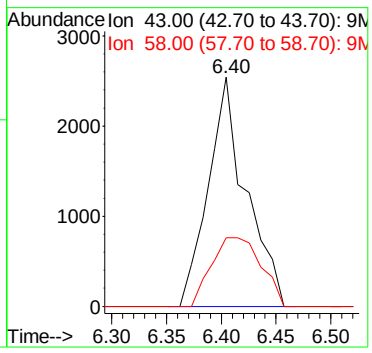

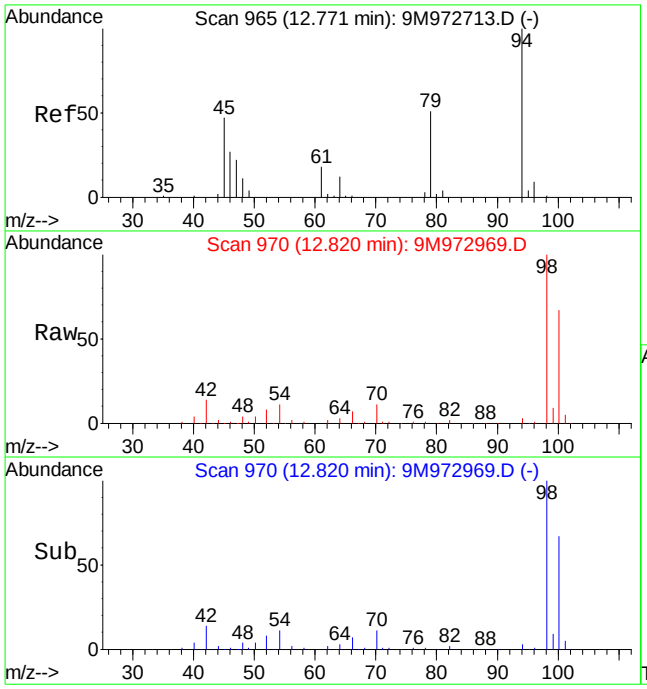

#56
Dimethyl Disulfide
Concen: 3.32 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M972969.D
Acq: 29 Feb 2016 18:25

Tgt Ion: 94 Resp: 14641

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

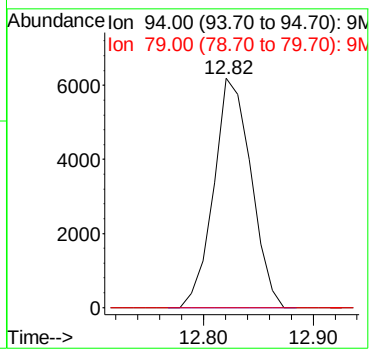

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022916\9M972970.D Vial: 4
Acq On : 29 Feb 2016 18:56 Operator: FJB/JDS
Sample : WG559151-02 20ug/Kg LCS 8260 Inst : hpms9
Misc : 7,1 STD74900 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 19:19:22 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	583985	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.73	117	426907	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.76	152	203058	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	156696	49.5012 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.00%		
43) 1,2-Dichloroethane-d4	10.44	65	192546	48.4791 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.96%		
58) Toluene-d8	12.83	98	549357	50.8746 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.74%		
79) p-Bromofluorobenzene	16.23	95	206720	52.2817 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 104.56%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	101334	25.4586 ug/kg	99
3) Chloromethane	3.74	50	75969	19.8835 ug/kg	100
4) Vinyl Chloride	3.99	62	82664	21.6128 ug/kg	99
5) 1,3-Butadiene	4.04	54	77329	21.2512 ug/kg	98
6) Bromomethane	4.88	94	46861	18.8644 ug/kg	98
7) Chloroethane	5.03	64	34093	20.0081 ug/kg	99
8) Trichlorofluoromethane	5.53	101	105806	18.4446 ug/kg	98
9) Diethyl ether	6.05	59	151224	56.3924 ug/kg	98
10) Isoprene	6.10	67	81952	23.9292 ug/kg	99
11) Acrolein	6.30	56	33255	62.1919 ug/kg	89
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	60735	20.5300 ug/kg	94
13) Acetone	6.40	43	32992	20.9636 ug/kg	99
14) 1,1-Dichloroethene	6.61	61	102623	18.8048 ug/kg	99
15) Tert-Butyl Alcohol	6.76	59	154055	257.9921 ug/kg	99
16) Dimethyl Sulfide	6.88	62	69525	30.1436 ug/kg	100
17) Iodomethane	7.13	142	28057	19.1310 ug/kg	99
18) Methyl acetate	7.14	43	57004	19.2144 ug/kg	98
19) Methylene Chloride	7.41	84	57477	19.3385 ug/kg	99
20) Carbon Disulfide	7.45	76	150130	17.8581 ug/kg	98
21) Acrylonitrile	7.58	53	29946	20.4044 ug/kg	98
22) Methyl Tert Butyl Ether	7.62	73	171070	20.2091 ug/kg	100
23) trans-1,2-Dichloroethene	7.85	61	98554	20.2636 ug/kg	97
24) n-Hexane	7.92	57	95889	19.1148 ug/kg	97
25) Diisopropyl ether	8.26	45	989869	84.9616 ug/kg	99
26) Vinyl Acetate	8.44	43	147777	22.2498 ug/kg	99
27) 1,1-Dichloroethane	8.47	63	116120	19.0087 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	875293	80.7988 ug/kg	99
29) 2-Butanone	9.02	43	38857	20.6335 ug/kg	98
30) Propionitrile	9.14	54	57762	100.2292 ug/kg	99
31) 2,2-Dichloropropane	9.24	77	87495	19.1895 ug/kg	96
32) cis-1,2-Dichloroethene	9.31	96	64843	20.3278 ug/kg	100
33) Chloroform	9.52	83	105458	18.7928 ug/kg	100
34) 1-Bromopropane	9.65	122	15268	31.7814 ug/kg	92
35) Bromochloromethane	9.75	130	41010	19.7918 ug/kg	97
36) Tetrahydrofuran	9.78	42	106319	87.5863 ug/kg	98
38) 1,1,1-Trichloroethane	10.04	97	95970	18.9112 ug/kg	98
39) Cyclohexane	10.08	56	116345	21.0282 ug/kg	98
40) 1,1-Dichloropropene	10.24	75	74028	18.5383 ug/kg	98
41) Tert-Amyl-Methyl ether	10.34	73	740185	93.9998 ug/kg	100
42) Carbon Tetrachloride	10.39	117	84392	17.9376 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972970.D 8260SL.M Mon Feb 29 19:19:23 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022916\9M972970.D Vial: 4
Acq On : 29 Feb 2016 18:56 Operator: FJB/JDS
Sample : WG559151-02 20ug/Kg LCS 8260 Inst : hpms9
Misc : 7,1 STD74900 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 19:19:22 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	96010	19.4509 ug/kg	97
46)	Benzene	10.60	78	220888	19.7582 ug/kg	100
47)	Trichloroethene	11.35	130	71807	20.2712 ug/kg	97
48)	Methylcyclohexane	11.44	83	94356	21.2379 ug/kg	98
49)	1,2-Dichloropropane	11.56	63	63876	20.8066 ug/kg	99
50)	1,4-Dioxane	11.87	88	11081	240.5973 ug/kg	100
51)	Bromodichloromethane	11.87	83	79058	18.2727 ug/kg	99
52)	Dibromomethane	11.96	174	35780	17.5899 ug/kg	93
53)	2-Chloroethyl Vinyl Ether	12.16	63	13942	18.3350 ug/kg	91
54)	4-Methyl-2-Pentanone	12.20	58	29035	21.5476 ug/kg	96
55)	cis-1,3-Dichloropropene	12.50	75	93709	20.7891 ug/kg	100
56)	Dimethyl Disulfide	12.78	94	101791	22.4711 ug/kg	94
59)	Toluene	12.92	91	247646	20.3030 ug/kg	98
60)	Ethyl Methacrylate	13.02	69	71469	21.1386 ug/kg	100
61)	trans-1,3-Dichloropropene	13.10	75	86392	19.6649 ug/kg	98
62)	1,1,2-Trichloroethane	13.33	97	52262	20.3963 ug/kg	96
63)	2-Hexanone	13.25	43	52495	20.5193 ug/kg	98
64)	1,3-Dichloropropane	13.62	76	88405	20.7058 ug/kg	96
65)	Tetrachloroethene	13.75	164	49274	18.8436 ug/kg	98
66)	Dibromochloromethane	14.01	129	65001	18.1515 ug/kg	99
67)	1,2-Dibromoethane	14.28	107	53571	18.8491 ug/kg	100
68)	1-Chlorohexane	14.35	91	75778	21.0671 ug/kg	100
69)	Chlorobenzene	14.77	112	171132	19.9625 ug/kg	96
70)	1,1,1,2-Tetrachloroethane	14.80	131	62080	19.2832 ug/kg	96
71)	Ethylbenzene	14.79	106	93576	21.1875 ug/kg	95
72)	m-,p-Xylene	14.89	106	222100	40.7198 ug/kg	98
73)	o-Xylene	15.46	106	109315	20.8843 ug/kg	100
74)	Styrene	15.49	104	180106	20.2061 ug/kg	98
75)	Bromoform	16.00	173	39845	16.9467 ug/kg	99
76)	Isopropylbenzene	15.88	105	285427	20.3124 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	56665	18.3960 ug/kg	96
80)	1,2,3-Trichloropropane	16.29	110	23191	19.8525 ug/kg	91
81)	trans-1,4-Dichloro-2-Buten	16.33	53	20358	17.2891 ug/kg	90
82)	n-Propylbenzene	16.39	91	330501	20.7061 ug/kg	100
83)	Bromobenzene	16.52	156	72004	19.1089 ug/kg	93
84)	1,3,5-Trimethylbenzene	16.58	105	243261	20.3032 ug/kg	99
85)	2-Chlorotoluene	16.66	91	209662	19.5841 ug/kg	99
86)	4-Chlorotoluene	16.70	91	205369	20.7488 ug/kg	100
87)	a-Methylstyrene	16.98	118	125141	22.9223 ug/kg	98
88)	tert-Butylbenzene	17.04	134	51846	20.6399 ug/kg	98
89)	1,2,4-Trimethylbenzene	17.09	105	242157	19.2991 ug/kg	100
90)	sec-Butylbenzene	17.30	105	307726	19.9415 ug/kg	99
91)	p-Isopropyltoluene	17.46	119	249999	19.1970 ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	138985	18.5590 ug/kg	99
93)	1,4-Dichlorobenzene	17.80	146	142369	19.0165 ug/kg	99
94)	n-Butylbenzene	17.99	91	223292	18.4414 ug/kg	100
95)	1,2-Dichlorobenzene	18.30	146	135532	19.5049 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	15855	17.7743 ug/kg	97
97)	1,2,4-Trichlorobenzene	20.44	180	86505	17.5368 ug/kg	98
98)	Hexachlorobutadiene	20.59	225	43540	16.7449 ug/kg	99
99)	Naphthalene	20.81	128	217141	17.5505 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.11	180	87309	18.2487 ug/kg	98

(#) = qualifier out of range (m) = manual integration
9M972970.D 8260SL.M Mon Feb 29 19:19:23 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022916\9M972970.D Vial: 4
Acq On : 29 Feb 2016 18:56 Operator: FJB/JDS
Sample : WG559151-02 20ug/Kg LCS 8260 Inst : hpms9
Misc : 7,1 STD74900 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 19:19 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

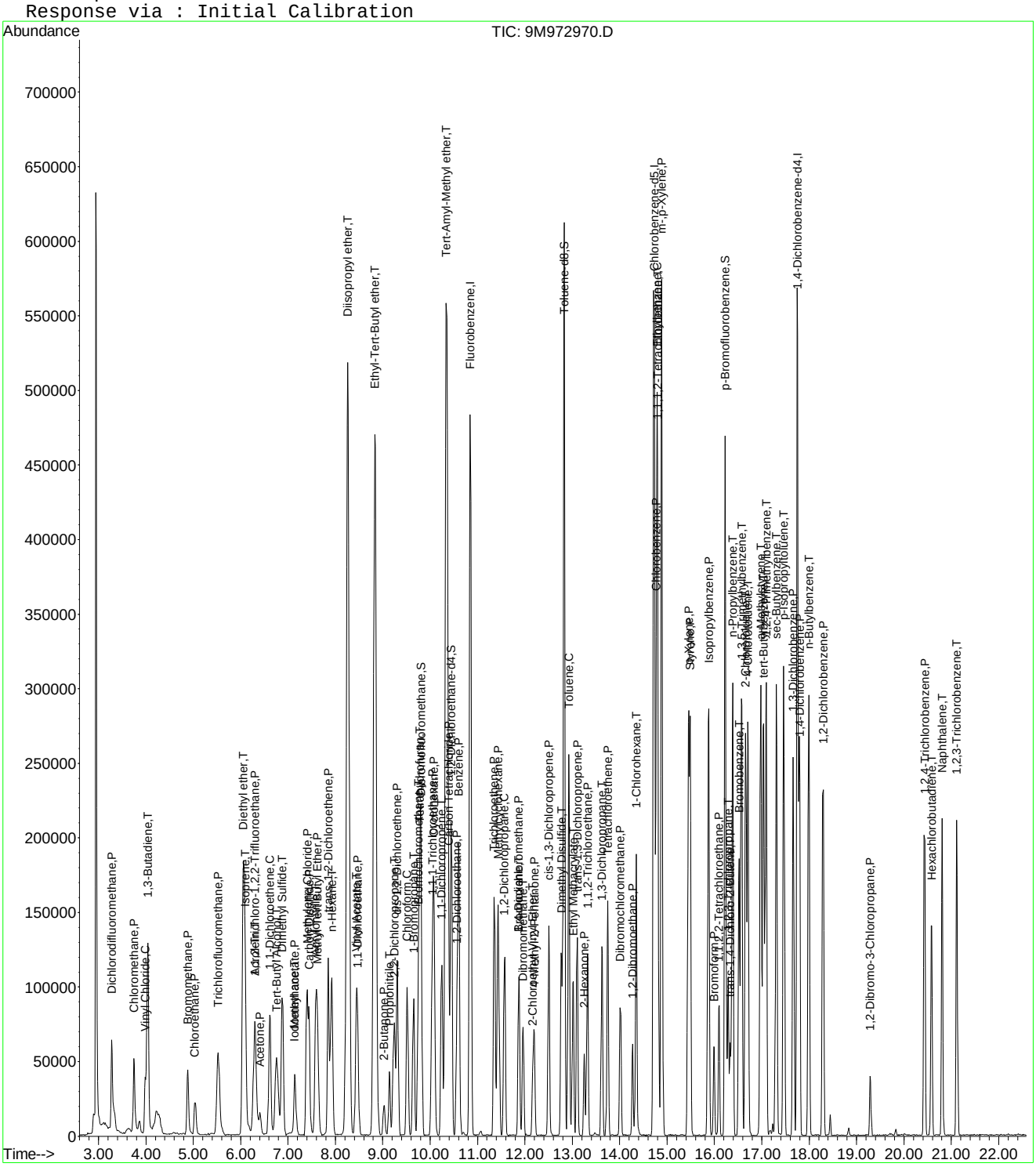

9M972970.D 8260SL.M Mon Feb 29 19:19:23 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022916\9M972971.D Vial: 5
Acq On : 29 Feb 2016 19:28 Operator: FJB/JDS
Sample : WG559084-02 MS 4.93g 8260 Inst : hpms9
Misc : 7,1 STD74900 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 19:50:39 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	518832	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	368099	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.75	152	172921	50.00 ug/kg	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.81	111	143909	51.1706 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 102.34%		
43) 1,2-Dichloroethane-d4	10.45	65	183661	52.0489 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.10%		
58) Toluene-d8	12.83	98	503613	54.0894 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 108.18%		
79) p-Bromofluorobenzene	16.23	95	197493	58.6531 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 117.30%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	110039	31.1172 ug/kg	100
3) Chloromethane	3.74	50	78136	23.0187 ug/kg	99
4) Vinyl Chloride	3.99	62	94321	27.7574 ug/kg	100
5) 1,3-Butadiene	4.04	54	78756	24.3613 ug/kg	97
6) Bromomethane	4.88	94	45173	20.4684 ug/kg	96
7) Chloroethane	5.03	64	34620	22.8687 ug/kg	98
8) Trichlorofluoromethane	5.52	101	114564	22.4792 ug/kg	99
9) Diethyl ether	6.06	59	173358	72.7644 ug/kg	99
10) Isoprene	6.09	67	86819	28.5337 ug/kg	95
11) Acrolein	6.30	56	27159	57.1697 ug/kg	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	66911	25.4578 ug/kg	96
13) Acetone	6.41	43	40730	30.1094 ug/kg	96
14) 1,1-Dichloroethene	6.61	61	110225	22.7342 ug/kg	97
15) Tert-Butyl Alcohol	6.76	59	142457	268.5279 ug/kg	99
16) Dimethyl Sulfide	6.88	62	60702	29.6232 ug/kg	98
17) Iodomethane	7.13	142	27166	20.5982 ug/kg	98
18) Methyl acetate	7.15	43	73724	27.9709 ug/kg	98
19) Methylene Chloride	7.41	84	54386	20.5964 ug/kg	98
20) Carbon Disulfide	7.45	76	143146	19.1656 ug/kg	98
21) Acrylonitrile	7.59	53	28241	21.6591 ug/kg	98
22) Methyl Tert Butyl Ether	7.62	73	152298	20.2508 ug/kg	97
23) trans-1,2-Dichloroethene	7.85	61	100250	23.2007 ug/kg	97
24) n-Hexane	7.92	57	106645	23.9286 ug/kg	97
25) Diisopropyl ether	8.26	45	1065021	102.8911 ug/kg	100
26) Vinyl Acetate	8.44	43	65198	11.0492 ug/kg	99
27) 1,1-Dichloroethane	8.47	63	109618	20.1977 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	914286	94.9967 ug/kg	99
29) 2-Butanone	9.03	43	38241	22.8564 ug/kg	100
30) Propionitrile	9.14	54	63492	124.0070 ug/kg	99
31) 2,2-Dichloropropane	9.24	77	88059	21.7385 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	64185	22.6484 ug/kg	99
33) Chloroform	9.52	83	102738	20.6071 ug/kg	98
34) 1-Bromopropane	9.65	122	15183	35.4508 ug/kg	98
35) Bromochloromethane	9.75	130	37597	20.4232 ug/kg	96
36) Tetrahydrofuran	9.78	42	121686	112.8342 ug/kg	99
38) 1,1,1-Trichloroethane	10.04	97	94231	20.9003 ug/kg	98
39) Cyclohexane	10.08	56	115591	23.5155 ug/kg	99
40) 1,1-Dichloropropene	10.24	75	76651	21.6056 ug/kg	98
41) Tert-Amyl-Methyl ether	10.34	73	738117	105.5084 ug/kg	99
42) Carbon Tetrachloride	10.39	117	85257	20.3970 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022916\9M972971.D Vial: 5
Acq On : 29 Feb 2016 19:28 Operator: FJB/JDS
Sample : WG559084-02 MS 4.93g 8260 Inst : hpms9
Misc : 7,1 STD74900 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 19:50:39 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	89455	20.3987 ug/kg	97
46)	Benzene	10.60	78	215032	21.6498 ug/kg	98
47)	Trichloroethene	11.35	130	69721	22.1540 ug/kg	97
48)	Methylcyclohexane	11.44	83	96691	24.4965 ug/kg	99
49)	1,2-Dichloropropane	11.56	63	60762	22.2777 ug/kg	98
50)	1,4-Dioxane	11.88	88	11497	280.9774 ug/kg	97
51)	Bromodichloromethane	11.87	83	75228	19.5709 ug/kg	99
52)	Dibromomethane	11.96	174	34485	19.0822 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.17	63	10319	15.7471 ug/kg	95
54)	4-Methyl-2-Pentanone	12.20	58	25126	20.9882 ug/kg	96
55)	cis-1,3-Dichloropropene	12.50	75	83596	20.8744 ug/kg	100
56)	Dimethyl Disulfide	12.77	94	88205	21.9171 ug/kg	93
59)	Toluene	12.93	91	228417	21.7183 ug/kg	99
60)	Ethyl Methacrylate	13.02	69	55664	19.0942 ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	75309	19.8808 ug/kg	99
62)	1,1,2-Trichloroethane	13.32	97	46865	21.2121 ug/kg	94
63)	2-Hexanone	13.25	43	50961	23.1021 ug/kg	96
64)	1,3-Dichloropropane	13.62	76	81749	22.2058 ug/kg	98
65)	Tetrachloroethene	13.75	164	47458	21.0487 ug/kg	99
66)	Dibromochloromethane	14.01	129	58777	19.0357 ug/kg	96
67)	1,2-Dibromoethane	14.28	107	49507	20.2021 ug/kg	100
68)	1-Chlorohexane	14.35	91	67971	21.9156 ug/kg	98
69)	Chlorobenzene	14.77	112	153880	20.8178 ug/kg	97
70)	1,1,1,2-Tetrachloroethane	14.80	131	56030	20.1845 ug/kg	95
71)	Ethylbenzene	14.80	106	82663	21.7068 ug/kg	99
72)	m-,p-Xylene	14.89	106	198234	42.1506 ug/kg	98
73)	o-Xylene	15.45	106	96028	21.2768 ug/kg	97
74)	Styrene	15.49	104	156285	20.3348 ug/kg	99
75)	Bromoform	15.99	173	37091	18.2957 ug/kg	97
76)	Isopropylbenzene	15.88	105	258010	21.2947 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	54697	20.8519 ug/kg	99
80)	1,2,3-Trichloropropane	16.29	110	22624	22.7424 ug/kg	87
81)	trans-1,4-Dichloro-2-Buten	16.33	53	18551	18.5002 ug/kg	84
82)	n-Propylbenzene	16.39	91	286356	21.0671 ug/kg	99
83)	Bromobenzene	16.52	156	61092	19.0387 ug/kg	95
84)	1,3,5-Trimethylbenzene	16.57	105	208691	20.4535 ug/kg	100
85)	2-Chlorotoluene	16.66	91	178527	19.5821 ug/kg	98
86)	4-Chlorotoluene	16.70	91	166754	19.7837 ug/kg	99
87)	a-Methylstyrene	16.98	118	94822	20.3958 ug/kg	100
88)	tert-Butylbenzene	17.04	134	47657	22.2788 ug/kg	84
89)	1,2,4-Trimethylbenzene	17.09	105	204757	19.1624 ug/kg	100
90)	sec-Butylbenzene	17.30	105	269834	20.5335 ug/kg	99
91)	p-Isopropyltoluene	17.46	119	339455	30.6090 ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	113351	17.7740 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	113863	17.8595 ug/kg	98
94)	n-Butylbenzene	17.99	91	185284	17.9693 ug/kg	99
95)	1,2-Dichlorobenzene	18.30	146	109863	18.5663 ug/kg	97
96)	1,2-Dibromo-3-Chloropropan	19.30	157	16051	21.1301 ug/kg	98
97)	1,2,4-Trichlorobenzene	20.43	180	69508	16.5469 ug/kg	97
98)	Hexachlorobutadiene	20.59	225	37957	17.1418 ug/kg	98
99)	Naphthalene	20.81	128	192603	18.2803 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	68902	16.9113 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972971.D 8260SL.M Mon Feb 29 19:50:39 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022916\9M972971.D Vial: 5
Acq On : 29 Feb 2016 19:28 Operator: FJB/JDS
Sample : WG559084-02 MS 4.93g 8260 Inst : hpms9
Misc : 7,1 STD74900 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 19:50 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

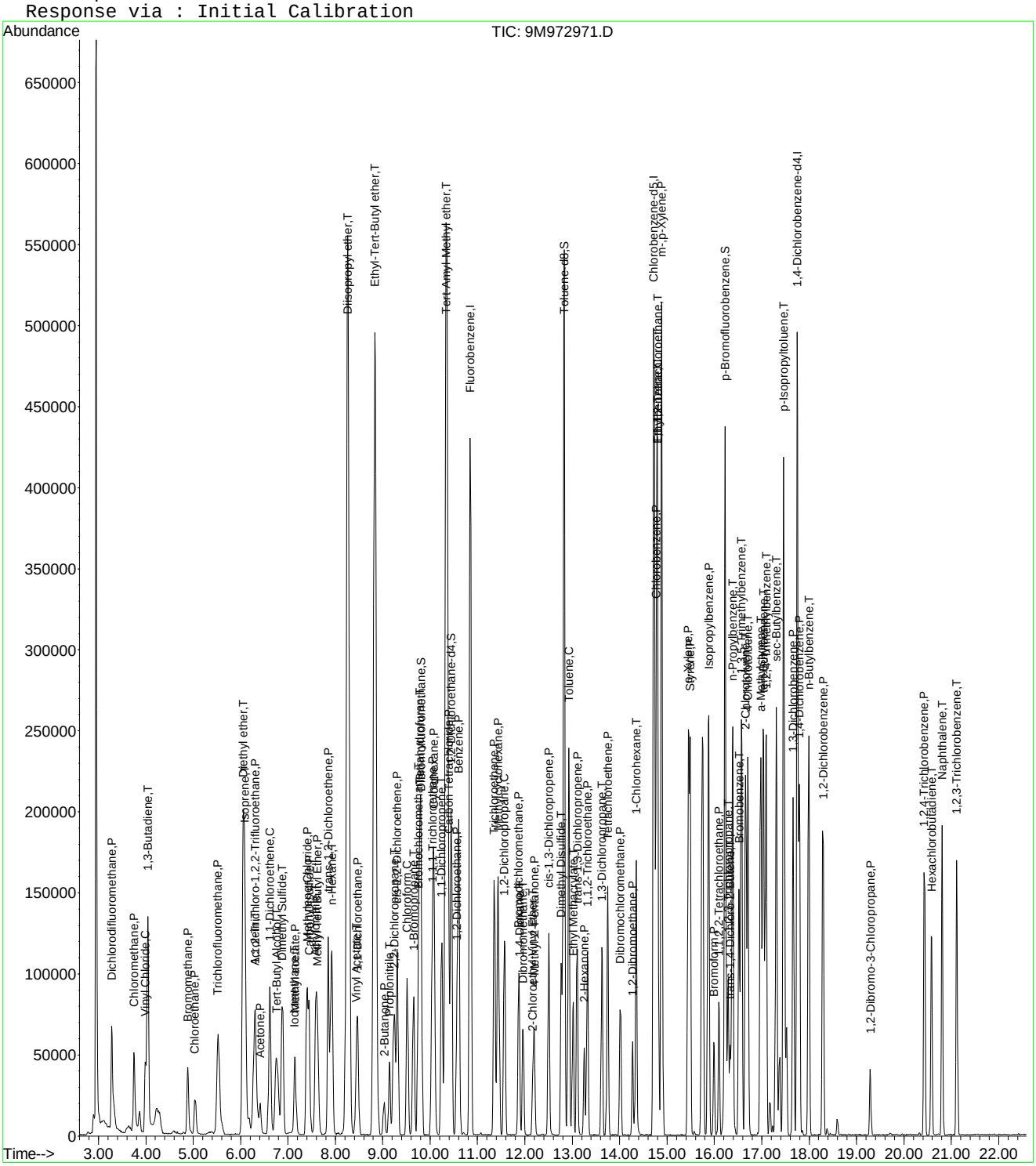

9M972971.D 8260SL.M Mon Feb 29 19:50:40 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022916\9M972972.D Vial: 6
Acq On : 29 Feb 2016 19:59 Operator: FJB/JDS
Sample : WG559084-03 MSD 4.98g 8260 Inst : hpms9
Misc : 7,1 STD74900 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 20:21:42 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	580822	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.73	117	416742	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	195602	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	157381	49.9883 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.98%		
43) 1,2-Dichloroethane-d4	10.44	65	198383	50.2207 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.44%		
58) Toluene-d8	12.83	98	559406	53.0689 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.14%		
79) p-Bromofluorobenzene	16.23	95	215279	56.5218 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 113.04%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	119216	30.1142 ug/kg	99
3) Chloromethane	3.74	50	89296	23.4988 ug/kg	100
4) Vinyl Chloride	3.99	62	98181	25.8096 ug/kg	98
5) 1,3-Butadiene	4.04	54	86407	23.8753 ug/kg	98
6) Bromomethane	4.88	94	50748	20.5404 ug/kg	99
7) Chloroethane	5.04	64	38146	22.5085 ug/kg	98
8) Trichlorofluoromethane	5.53	101	129114	22.6303 ug/kg	100
9) Diethyl ether	6.05	59	176361	66.1243 ug/kg	99
10) Isoprene	6.09	67	94412	27.7175 ug/kg	100
11) Acrolein	6.30	56	28437	53.4711 ug/kg	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	75948	25.8122 ug/kg	97
13) Acetone	6.41	43	42723	28.0536 ug/kg	94
14) 1,1-Dichloroethene	6.61	61	125322	23.0893 ug/kg	98
15) Tert-Butyl Alcohol	6.75	59	139055	234.1401 ug/kg	100
16) Dimethyl Sulfide	6.89	62	65930	28.7406 ug/kg	97
17) Iodomethane	7.14	142	29993	20.3531 ug/kg	99
18) Methyl acetate	7.14	43	75015	25.4231 ug/kg	100
19) Methylene Chloride	7.41	84	63030	21.3224 ug/kg	94
20) Carbon Disulfide	7.45	76	163488	19.5530 ug/kg	99
21) Acrylonitrile	7.58	53	31897	21.8521 ug/kg	97
22) Methyl Tert Butyl Ether	7.61	73	167494	19.8944 ug/kg	100
23) trans-1,2-Dichloroethene	7.85	61	113826	23.5311 ug/kg	100
24) n-Hexane	7.92	57	116861	23.4223 ug/kg	98
25) Diisopropyl ether	8.26	45	1105439	95.3978 ug/kg	100
26) Vinyl Acetate	8.43	43	77014	11.6587 ug/kg	99
27) 1,1-Dichloroethane	8.46	63	125305	20.6240 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	947597	87.9496 ug/kg	99
29) 2-Butanone	9.03	43	40521	21.6343 ug/kg	100
30) Propionitrile	9.14	54	60577	105.6863 ug/kg	99
31) 2,2-Dichloropropane	9.24	77	100969	22.2653 ug/kg	97
32) cis-1,2-Dichloroethene	9.30	96	72804	22.9479 ug/kg	99
33) Chloroform	9.52	83	119845	21.4729 ug/kg	97
34) 1-Bromopropane	9.65	122	16437	34.3165 ug/kg	95
35) Bromochloromethane	9.75	130	42499	20.6221 ug/kg	97
36) Tetrahydrofuran	9.78	42	119586	99.0522 ug/kg	98
38) 1,1,1-Trichloroethane	10.05	97	108178	21.4329 ug/kg	98
39) Cyclohexane	10.08	56	132646	24.1050 ug/kg	98
40) 1,1-Dichloropropene	10.24	75	93084	23.4373 ug/kg	98
41) Tert-Amyl-Methyl ether	10.34	73	755325	96.4449 ug/kg	99
42) Carbon Tetrachloride	10.39	117	96816	20.6904 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022916\9M972972.D Vial: 6
Acq On : 29 Feb 2016 19:59 Operator: FJB/JDS
Sample : WG559084-03 MSD 4.98g 8260 Inst : hpms9
Misc : 7,1 STD74900 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 20:21:42 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	103644	21.1118 ug/kg	98
46)	Benzene	10.60	78	248359	22.3364 ug/kg	99
47)	Trichloroethene	11.35	130	84080	23.8652 ug/kg	98
48)	Methylcyclohexane	11.44	83	112982	25.5688 ug/kg	98
49)	1,2-Dichloropropane	11.56	63	70138	22.9707 ug/kg	98
50)	1,4-Dioxane	11.88	88	10123	220.9936 ug/kg	97
51)	Bromodichloromethane	11.87	83	84333	19.5980 ug/kg	96
52)	Dibromomethane	11.96	174	39178	19.3653 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.15	63	10937	15.0595 ug/kg	95
54)	4-Methyl-2-Pentanone	12.20	58	29575	22.0678 ug/kg	97
55)	cis-1,3-Dichloropropene	12.50	75	99539	22.2027 ug/kg	98
56)	Dimethyl Disulfide	12.77	94	100887	22.3928 ug/kg	91
59)	Toluene	12.92	91	281968	23.6807 ug/kg	99
60)	Ethyl Methacrylate	13.02	69	65418	19.8208 ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	88815	20.7096 ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	55519	22.1959 ug/kg	97
63)	2-Hexanone	13.25	43	53827	21.5532 ug/kg	99
64)	1,3-Dichloropropane	13.62	76	95231	22.8486 ug/kg	99
65)	Tetrachloroethene	13.75	164	60438	23.6768 ug/kg	97
66)	Dibromochloromethane	14.01	129	67164	19.2130 ug/kg	100
67)	1,2-Dibromoethane	14.28	107	58739	21.1716 ug/kg	97
68)	1-Chlorohexane	14.35	91	87133	24.8148 ug/kg	98
69)	Chlorobenzene	14.77	112	187785	22.4393 ug/kg	96
70)	1,1,1,2-Tetrachloroethane	14.80	131	66976	21.3115 ug/kg	98
71)	Ethylbenzene	14.80	106	103117	23.9173 ug/kg	99
72)	m-,p-Xylene	14.89	106	253582	47.6257 ug/kg	96
73)	o-Xylene	15.46	106	119898	23.4648 ug/kg	99
74)	Styrene	15.49	104	194537	22.3574 ug/kg	100
75)	Bromoform	16.00	173	42273	18.4179 ug/kg	96
76)	Isopropylbenzene	15.88	105	333373	24.3032 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	63287	21.3290 ug/kg	100
80)	1,2,3-Trichloropropane	16.29	110	25092	22.2986 ug/kg	87
81)	trans-1,4-Dichloro-2-Buten	16.33	53	20364	17.9534 ug/kg	82
82)	n-Propylbenzene	16.39	91	386942	25.1662 ug/kg	99
83)	Bromobenzene	16.52	156	77856	21.4496 ug/kg	97
84)	1,3,5-Trimethylbenzene	16.57	105	281461	24.3870 ug/kg	99
85)	2-Chlorotoluene	16.66	91	234670	22.7556 ug/kg	99
86)	4-Chlorotoluene	16.70	91	228924	24.0102 ug/kg	99
87)	a-Methylstyrene	16.98	118	126397	24.0349 ug/kg	99
88)	tert-Butylbenzene	17.03	134	63395	26.1996 ug/kg	82
89)	1,2,4-Trimethylbenzene	17.09	105	272777	22.5681 ug/kg	98
90)	sec-Butylbenzene	17.30	105	374729	25.2092 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	518809	41.3570 ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	152163	21.0933 ug/kg	100
93)	1,4-Dichlorobenzene	17.80	146	151668	21.0308 ug/kg	99
94)	n-Butylbenzene	17.99	91	272650	23.3762 ug/kg	99
95)	1,2-Dichlorobenzene	18.30	146	141071	21.0759 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.30	157	17981	20.9261 ug/kg	99
97)	1,2,4-Trichlorobenzene	20.44	180	90409	19.0269 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	57832	23.0891 ug/kg	98
99)	Naphthalene	20.81	128	225877	18.9525 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	89461	19.4112 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972972.D 8260SL.M Mon Feb 29 20:21:43 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022916\9M972972.D Vial: 6
Acq On : 29 Feb 2016 19:59 Operator: FJB/JDS
Sample : WG559084-03 MSD 4.98g 8260 Inst : hpms9
Misc : 7,1 STD74900 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 20:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

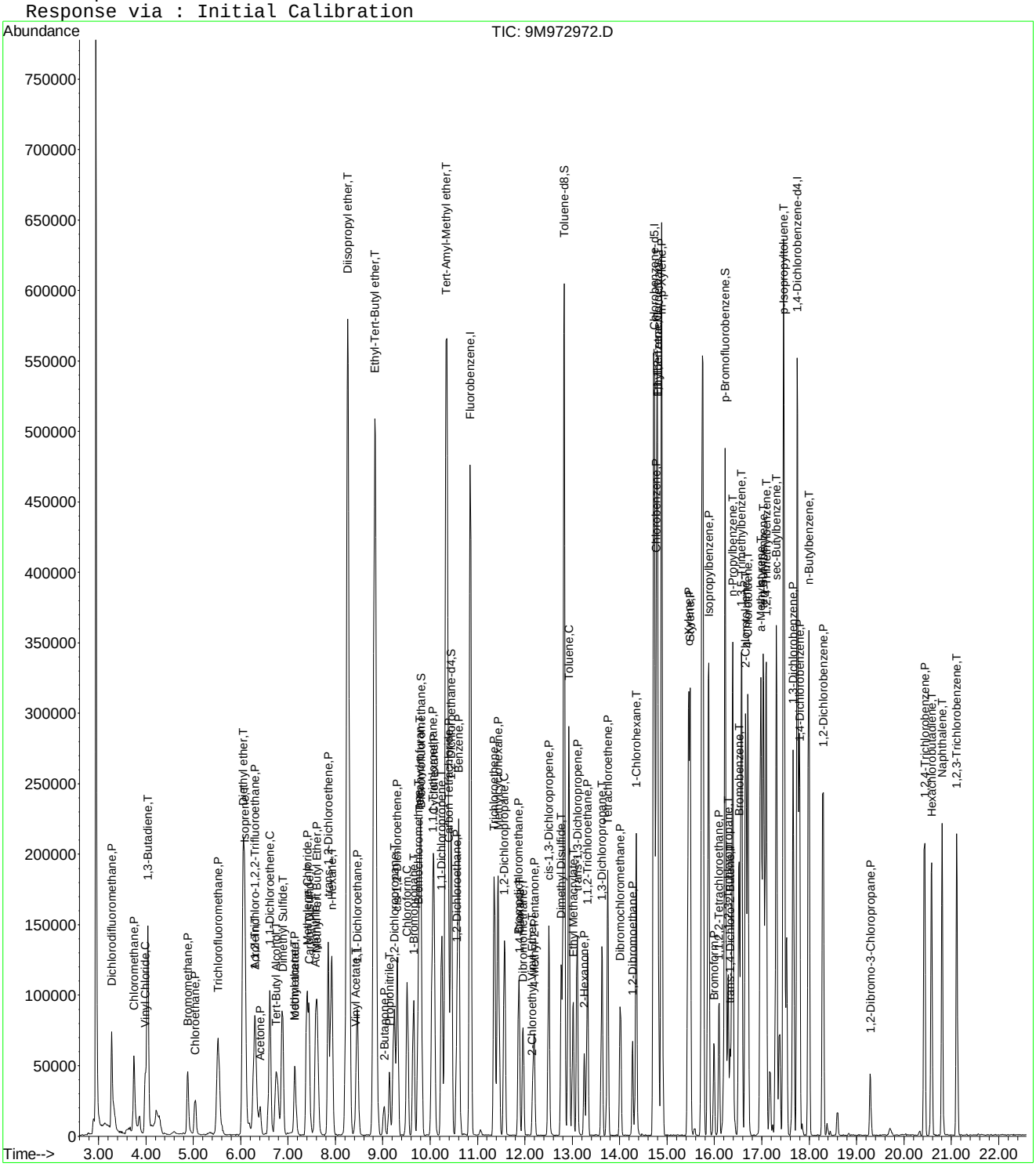

9M972972.D 8260SL.M Mon Feb 29 20:21:43 2016 Page 3

2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021357-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT01(5-5.5)250216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	02/29/2016 22:50
Collect Date:	02/25/2016 11:30	**Dilution:**	1	**File ID:**	1LM.LM33483
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.34	U	4.66	2.34	1.17

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021357-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT01(9.5-10)250216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	02/29/2016 23:46
Collect Date:	02/25/2016 11:37	**Dilution:**	1	**File ID:**	1LM.LM33486
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	88.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	20.7		4.35	2.18	1.09

Certificate of Analysis

Sample #:	L16021357-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT01(15-15.5)250216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 00:05
Collect Date:	02/25/2016 14:23	**Dilution:**	1	**File ID:**	1LM.LM33487
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	90.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	7.54		4.32	2.16	1.08

Certificate of Analysis

Sample #:	L16021357-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT01(22.5-23)250216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 00:24
Collect Date:	02/25/2016 16:00	**Dilution:**	1	**File ID:**	1LM.LM33488
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	63.0		4.54	2.28	1.14

Certificate of Analysis

Microbac

Lab Report #: L16021357
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L16021357-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT01(24.5-25)250216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 00:43
Collect Date:	02/25/2016 16:30	**Dilution:**	1	**File ID:**	1LM.LM33489
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	87.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	47.7		4.48	2.24	1.12

Certificate of Analysis

Sample #:	L16021357-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT01(27-27.5)250216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 10:32
Collect Date:	02/25/2016 16:35	**Dilution:**	10	**File ID:**	1LM.LM33511
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	79.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	535		48.6	24.4	12.2

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

MICROBAC

Semivolatile Sample Extract Log

Parameter: Perchlorate
SOP #: HPLC 06
Analyst: ADC / AWE
Spike/Surrogate analyst: ADC
Surrogate #: NA
Spike # A: STD 72686
Ext Solvent: DI-H2O
Ext Solvent: NA
Ext Disk: NA

Matrix: SOILS
Rev #: 07
Date/Time Extracted: ADC 2/29/16 12:30
Witness:
Spike # B: NA
Lot #: NA
Lot #: NA
Lot #: NA

Extraction Work Group: WG 559140
Analytical Work Group: WG 559142
Run ID: R4478798
Pipetter(s): Eppendorf #403
Analytical Balance ID: BAL 014
Reagent: Tubes Lot #: R6134011
Reagent: Spa Lot #: COA 16150
Other: DS Lot #: COA 18071

Color Code
T = Transparent
C = Colored
O = Opaque

	Sample ID	Test Code	pH	Initial Wt / Vol	IS Amount ~~Surrogate~~ ADC	Amount Spike	Final Volume	Extract Color	Comments
1	WG -01	6850	NA	5.003	0.250 mL	1.0 mL	50.0 mL	NA	MCP (2mg/kg) (10,000 ug/kg)
2	-02			5.006		NA			Blank
3	-03			5.009		1.0 mL			LCS (2mg/kg)
4	L16021352-01			5.250		NA			RPA
5	WG -05			5.241		1.0 mL			MS
6	-06			5.248		1.0 mL			MSD
7	1357-02			5.210		NA			
8	-03			5.143					
9	-04			5.239					
10	-05			5.120					
11	-06			5.199					
12	L16021358-01			5.165					
13	-02			5.088					
14	-03			5.087					
15	-04			5.129					
16	-05			5.186					
17	-06			5.066					
18	-07			5.222					
19	-08			5.059					
20	-09			5.075					
21									
22									
23									
24									

Reviewed by: [signature] 3-1-16

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe
Calibration Check: 1412 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG559142-01 MCT	~~4,056~~ 9,560	
-02 BLK	6.51	
-03 LCS	6.57	
L16021357-01 208	~~1527~~ 15.27	
MS	18.06	
MSD	14.16	
1357-02	~~25.8~~ 258	
-03	190.2	
-04	182.7	
-05	155.6	
-06	96.2	
L16021358-01	6.58	
-02	19.11	
-03	16.73	
-04	7.87	
-05	28.4	
-06	5.76	
-07	68.9	
-08	37.9	
-09	26.3	

Analyst: Andrew Ewing

Date/Time: 3-1-16 / 1310

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 021716_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG557864 (waters)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 MS/MSD STD: NA

Comments: ICAL WG557856 : Alternate Source STD72685
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM33244	WG557856-01 CCB	1	1		02/17/16 19:12
2	1LM.LM33245	WG557856-02 STD (0.1 ug/L)	1	1	STD72683	02/17/16 19:31
3	1LM.LM33246	WG557856-03 STD (0.2 ug/L)	1	1	STD72683	02/17/16 19:50
4	1LM.LM33247	WG557856-04 STD (0.5 ug/L)	1	1	STD72683	02/17/16 20:08
5	1LM.LM33248	WG557856-05 STD (1.0 ug/L)	1	1	STD72683	02/17/16 20:27
6	1LM.LM33249	WG557856-06 STD (2.0 ug/L)	1	1	STD72683	02/17/16 20:46
7	1LM.LM33250	WG557856-07 STD (5.0 ug/L)	1	1	STD72683	02/17/16 21:05
8	1LM.LM33251	WG557856-08 STD (10 ug/L)	1	1	STD72683	02/17/16 21:24
9	1LM.LM33252	WG557856-09 SSCV (1.0 ug/L)	1	1	STD72685	02/17/16 21:43
10	1LM.LM33253	WG557868-01 CCB	1	1		02/17/16 22:02
11	1LM.LM33254	WG557868-02 CCV (1.0ug/L)	1	1	STD72683	02/17/16 22:21
12	1LM.LM33255	WG557864-05 MRL (0.2ug/L)	1	1	STD72683	02/17/16 22:40
13	1LM.LM33256	WG557864-01 MCT (0.2ug/L)	1	1	STD72685	02/17/16 22:59
14	1LM.LM33257	WG557864-02 BLANK	1	1		02/17/16 23:18
15	1LM.LM33258	WG557864-03 LCS (0.2ug/L)	1	1	STD72685	02/17/16 23:37
16	1LM.LM33259	WG557864-04 LCS2 (0.2ug/L)	1	1	STD72685	02/17/16 23:56
17	1LM.LM33260	L16020819-01 (1000x) (NR)	1	1000		02/18/16 00:15
18	1LM.LM33261	L16020819-01 (100x) (NR)	1	100		02/18/16 00:34
19	1LM.LM33262	L16020819-01 (10x) (NR)	1	10		02/18/16 00:53
20	1LM.LM33263	L16020819-01 Neat	1	1		02/18/16 01:11
21	1LM.LM33264	Blank Rinse	1	1		02/18/16 01:30
22	1LM.LM33265	Blank Rinse	1	1		02/18/16 01:49
23	1LM.LM33266	WG557868-03 CCV (1.0ug/L)	1	1	STD72683	02/18/16 02:08
24	1LM.LM33267	WG557864-06 MRL (0.2ug/L)	1	1	STD72683	02/18/16 02:27
25	1LM.LM33268	WG557868-04 CCB	1	1		02/18/16 02:46

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17	X	1	Analyzed too dilute	
	L16020819-01 (1000x) (NR) : Results from this sample at this dilution are not needed.			
18	X	1	Analyzed too dilute	
	L16020819-01 (100x) (NR) : Results from this sample at this dilution are not needed.			
19	X	1	Analyzed too dilute	

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 021716_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG557864 (waters)

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 NA

Comments

Seq.	Rerun	Dil.	Reason	Analytes
	L16020819-01 (10x) (NR) : Results from this sample at this dilution are not needed.			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 022916_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015 (Water) WG559142 (Soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 MS/MSD STD: STD72685

Comments: L16021262s were analyzed initially at dilutions based on historical data. Fraction 03 required further dilution to obtain results within the calibration range. Seq No.s 4 through 26 need re-analyzed due to CCV failure.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM33446	WG559066-01 CCB	1	1		02/29/16 11:09
2	1LM.LM33447	WG559066-02 CCV (1.0ug/L)	1	1	STD72683	02/29/16 11:28
3	1LM.LM33448	WG559015-05 MRL (0.2ug/L)	1	1	STD72683	02/29/16 11:47
4	1LM.LM33449	WG559015-01 MCT (0.2ug/L)	1	1	STD72685	02/29/16 12:06
5	1LM.LM33450	WG559015-02 BLANK	1	1		02/29/16 12:25
6	1LM.LM33451	WG559015-03 LCS (0.2ug/L)	1	1	STD72685	02/29/16 12:44
7	1LM.LM33452	WG559015-04 LCS2 (0.2ug/L)	1	1	STD72685	02/29/16 13:02
8	1LM.LM33453	L16021060-01 ADC	1	1	STD72685	02/29/16 13:21
9	1LM.LM33454	L16021060-02 ADC	1	1	STD72685	02/29/16 13:40
10	1LM.LM33455	L16021060-03 ADC	1	1	STD72685	02/29/16 13:59
11	1LM.LM33456	L16021060-04 ADC	1	1	STD72685	02/29/16 14:18
12	1LM.LM33457	L16021262-01 (20x)	1	20		02/29/16 14:37
13	1LM.LM33458	L16021262-02 (5000x)	1	5000		02/29/16 14:56
14	1LM.LM33459	WG559066-03 CCV (1.0ug/L)	1	1	STD72683	02/29/16 15:15
15	1LM.LM33460	WG559015-06 MRL (0.2ug/L)	1	1	STD72683	02/29/16 15:34
16	1LM.LM33461	WG559066-04 CCB	1	1		02/29/16 15:53
17	1LM.LM33462	L16021262-03 (20X)	1	20		02/29/16 16:12
18	1LM.LM33463	L16021262-04 (2000X)	1	2000		02/29/16 16:31
19	1LM.LM33464	L16021262-05 (1000X)	1	1000		02/29/16 16:50
20	1LM.LM33465	L16021262-06 (10,000X)	1	10000		02/29/16 17:09
21	1LM.LM33466	L16021262-07 (10,000X)	1	10000		02/29/16 17:28
22	1LM.LM33467	L16021262-08 (5000X)	1	5000		02/29/16 17:47
23	1LM.LM33468	L16021262-09 (5000X)	1	5000		02/29/16 18:06
24	1LM.LM33469	L16021262-10 (100,000X)	1	100000		02/29/16 18:24
25	1LM.LM33470	L16021262-11 (10,000X)	1	10000		02/29/16 18:43
26	1LM.LM33471	L16021262-12 (10,000X)	1	10000		02/29/16 19:02
27	1LM.LM33472	WG559066-05 CCV (1.0ug/L)	1	1	STD72683	02/29/16 19:21
28	1LM.LM33473	WG559015-07 MRL (0.2ug/L)	1	1	STD72683	02/29/16 19:40
29	1LM.LM33474	WG559066-06 CCB	1	1		02/29/16 19:59
30	1LM.LM33475	L16021262-13 (10,000X)	1	10000		02/29/16 20:18
31	1LM.LM33476	L16021262-14 (10,000X)	1	10000		02/29/16 20:37
32	1LM.LM33477	WG559066-07 CCV (1.0ug/L)	1	1	STD72683	02/29/16 20:56
75	1LM.LM33478	WG559142-07 MRL (0.2ug/L)	7	1	STD72683	02/29/16 21:15

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 022916_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015 (Water) WG559142 (Soils)

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM33479	WG559066-08 CCB	1	1		02/29/16 21:34
35	1LM.LM33480	WG559142-01 MCT (2.0ug/kg)	7	1	STD72685	02/29/16 21:53
36	1LM.LM33481	WG559142-02 BLANK	7	1		02/29/16 22:12
37	1LM.LM33482	WG559142-03 LCS (2.0ug/kg)	7	1	STD72685	02/29/16 22:31
76	1LM.LM33483	L16021357-01 REF	7	1		02/29/16 22:50
39	1LM.LM33484	L16021357-01 MS	7	1		02/29/16 23:09
40	1LM.LM33485	L16021357-01 MSD	7	1		02/29/16 23:27
41	1LM.LM33486	L16021357-02	7	1		02/29/16 23:46
42	1LM.LM33487	L16021357-03	7	1		03/01/16 00:05
43	1LM.LM33488	L16021357-04	7	1		03/01/16 00:24
44	1LM.LM33489	L16021357-05	7	1		03/01/16 00:43
45	1LM.LM33490	WG559066-09 CCV (1.0ug/L)	1	1	STD72685	03/01/16 01:02
46	1LM.LM33491	WG559142-08 MRL (2.0ug/kg)	7	1	STD72685	03/01/16 01:21
47	1LM.LM33492	WG559066-10 CCB	1	1		03/01/16 01:40
48	1LM.LM33493	L16021357-06	7	1		03/01/16 01:59
49	1LM.LM33494	L16021358-01	7	1		03/01/16 02:18
50	1LM.LM33495	L16021358-02	7	1		03/01/16 02:37
51	1LM.LM33496	L16021358-03	7	1		03/01/16 02:56
52	1LM.LM33497	L16021358-04	7	1		03/01/16 03:15
53	1LM.LM33498	L16021358-05	7	1		03/01/16 03:34
54	1LM.LM33499	L16021358-06	7	1		03/01/16 03:53
55	1LM.LM33500	L16021358-07	7	1		03/01/16 04:12
56	1LM.LM33501	L16021358-08	7	1		03/01/16 04:30
57	1LM.LM33502	L16021358-09	7	1		03/01/16 04:49
58	1LM.LM33503	WG559066-11 CCV (1.0ug/L)	1	1	STD72685	03/01/16 05:08
59	1LM.LM33504	WG559142-09 MRL (2.0ug/kg)	7	1	STD72685	03/01/16 05:27
60	1LM.LM33505	WG559066-12 CCB	1	1		03/01/16 05:46
61	1LM.LM33506	WG559015-09 MRL (0.2ug/L)	1	1	STD72683	03/01/16 08:58
62	1LM.LM33507	L16021262-03 (100X)	1	100		03/01/16 09:17
63	1LM.LM33508	WG559066-13 CCV (1.0ug/L)	1	1	STD72683	03/01/16 09:35
64	1LM.LM33509	WG559015-10 MRL (0.2ug/L)	1	1	STD72683	03/01/16 09:54
65	1LM.LM33510	WG559066-14 CCB	1	1		03/01/16 10:13
66	1LM.LM33511	L16021357-06 (10X)	7	10		03/01/16 10:32
67	1LM.LM33512	L16021358-05 (10X)	7	10		03/01/16 10:51
68	1LM.LM33513	L16021358-07 (100X)	7	100		03/01/16 11:10
69	1LM.LM33514	L16021358-08 (100X)	7	100		03/01/16 11:29

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 022916_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015 (Water) WG559142 (Soils)

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
70	1LM.LM33515	L16021358-09 (100X)	7	100		03/01/16 11:48
71	1LM.LM33516	WG559066-15 CCV (1.0ug/L)	1	1	STD72685	03/01/16 12:07
72	1LM.LM33517	WG559142-10 MRL (2.0ug/kg)	7	1	STD72685	03/01/16 12:26
73	1LM.LM33518	WG559066-16 CCB	1	1		03/01/16 12:45

Comments

Seq.	Rerun	Dil.	Reason	Analytes
14				
	WG559066-03 CCV fails high. Affected samples will need re-analyzed.			
30				
	L16021262-13 not reporting per WTD.			
31				
	L16021262-14 not reporting per WTD.			
48	X	10	Over Calibration Range	perchlorate
	L16021357-06			
53	X	10	Over Calibration Range	Perchlorate
	L16021358-05			
55	X	100	Over Calibration Range	Perchlorate
	L16021358-07			
56	X	100	Over Calibration Range	Perchlorate
	L16021358-08			
57	X	100	Over Calibration Range	Perchlorate
	L16021358-09			

Page: 3 Approved: 01-MAR-16

Microbac Laboratories Inc.

Data Checklist

Date: 17-FEB-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG557856
Runlog ID: 73366
Analytical Workgroups: L16020819

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
18-FEB-2016
John Richards

Secondary Reviewer:
18-FEB-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-18-2016 16:36:00

Microbac Laboratories Inc.

Data Checklist

Date: 29-FEB-2016
Analyst: WTD
Analyst: ADC
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 73569
Analytical Workgroups: L16021262,L16021060,L16021357,L16021358

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	WTD
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MES

Primary Reviewer: 01-MAR-2016

Secondary Reviewer: 01-MAR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-02-2016 08:38:17

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG559142

Login Number: L16021357

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18DPT01(5-5.5)250216	01	02/25/16					02/29/2016	4	28		02/29/16	.4	28	
18DPT01(9.5-10)250216	02	02/25/16					02/29/2016	4	28		02/29/16	.5	28	
18DPT01(15-15.5)250216	03	02/25/16					02/29/2016	3.9	28		03/01/16	.5	28	
18DPT01(22.5-23)250216	04	02/25/16					02/29/2016	3.9	28		03/01/16	.5	28	
18DPT01(24.5-25)250216	05	02/25/16					02/29/2016	3.8	28		03/01/16	.5	28	
18DPT01(27-27.5)250216	06	02/25/16					02/29/2016	3.8	28		03/01/16	.9	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4653176
Report generated 03/02/2016 08:15

METHOD BLANK SUMMARY

Login Number: L16021357
Blank File ID: 1LM.LM33481
Prep Date: 02/29/16 12:30
Analyzed Date: 02/29/16 22:12
Analyst: WTD

Work Group: WG559142
Blank Sample ID: WG559142-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG559142-07	1LM.LM33478	02/29/16 21:15	01
MCT	WG559142-01	1LM.LM33480	02/29/16 21:53	01
LCS	WG559142-03	1LM.LM33482	02/29/16 22:31	01
18DPT01(5-5.5)250216	L16021357-01	1LM.LM33483	02/29/16 22:50	01
18DPT01(9.5-10)250216	L16021357-02	1LM.LM33486	02/29/16 23:46	01
18DPT01(15-15.5)250216	L16021357-03	1LM.LM33487	03/01/16 00:05	01
18DPT01(22.5-23)250216	L16021357-04	1LM.LM33488	03/01/16 00:24	01
18DPT01(24.5-25)250216	L16021357-05	1LM.LM33489	03/01/16 00:43	01
QCMRL	WG559142-08	1LM.LM33491	03/01/16 01:21	01
QCMRL	WG559142-09	1LM.LM33504	03/01/16 05:27	01
18DPT01(27-27.5)250216	L16021357-06	1LM.LM33511	03/01/16 10:32	DL01
QCMRL	WG559142-10	1LM.LM33517	03/01/16 12:26	01

Report Name: BLANK_SUMMARY
PDF File ID: 4653177
Report generated 03/02/2016 08:15

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16021357 Prep Date: 02/29/16 12:30 Sample ID: WG559142-02
Instrument ID: LCMS1 Run Date: 02/29/16 22:12 Prep Method: 6850
File ID: 1LM.LM33481 Analyst: WTD Method: 6850
Workgroup (AAB#): WG559142 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-17-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.999	4.00	0.999	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4653178
02-MAR-2016 08:15

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16021357 Run Date: 02/29/2016 Sample ID: WG559142-03
Instrument ID: LCMS1 Run Time: 22:31 Prep Method: 6850
File ID: 1LM.LM33482 Analyst: WTD Method: 6850
Workgroup (AAB#): WG559142 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD72685 Cal ID: LCMS1-17-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	2.00	2.07	104	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4653179
Report generated: 03/02/2016 08:16

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16021357 Cal ID: LCMS1 - Worknum: WG559142
Instrument ID: LCMS1 Contract #: Method: 6850
Parent ID: WG559142-04 File ID: 1LM.LM33483 Dil: 1 Matrix: SOLID
Sample ID: WG559142-05 MS File ID: 1LM.LM33484 Dil: 1 Units: ug/kg
Sample ID: WG559142-06 MSD File ID: 1LM.LM33485 Dil: 1 Percent Solid: 81.7

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Perchlorate	ND	2.33	2.44	105	2.33	2.37	102	3.05	80 - 120	15	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4653180
Report generated 03/02/2016 08:16

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16021357
Analytical Method: 6850
ICAL Workgroup: WG557856

Instrument ID: LCMS1
Initial Calibration Date: 17-FEB-16 21:24
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.628	7.83	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4653182
Report generated 03/02/2016 08:16

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16021357

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 17-FEB-16 21:24

Column ID: F

Analyte	WG557856-02			WG557856-03			WG557856-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	18800.0000	1.692	0.200	38700.0000	1.755	0.500	91400.0000	1.644

INT_CAL - Modified 03/06/2008
PDF File ID: 4653182
Report generated 03/02/2016 08:16

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16021357

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 17-FEB-16 21:24

Column ID: F

Analyte	WG557856-05			WG557856-06			WG557856-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	178000.000	1.625	2.00	350000.000	1.604	5.00	826000.000	1.554

INT_CAL - Modified 03/06/2008
PDF File ID: 4653182
Report generated 03/02/2016 08:16

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16021357

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 17-FEB-16 21:24

Column ID: F

Analyte	WG557856-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.521

INT_CAL - Modified 03/06/2008
PDF File ID: 4653182
Report generated 03/02/2016 08:16

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16021357 Run Date: 02/17/2016 Sample ID: WG557856-09
Instrument ID: LCMS1 Run Time: 21:43 Method: 6850
File ID: 1LM.LM33252 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG557856 Cal ID: LCMS1 - 17-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	1.05	ug/L	1.65	5.00	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4653183
Report generated 03/02/2016 08:16

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16021357
Run Date: 02/29/2016
Sample ID: WG559066-08
Instrument ID: LCMS1
Run Time: 21:34
Method: 6850
File ID: 1LM.LM33479
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG559142
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4653185
Report generated 03/02/2016 08:20

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16021357
Run Date: 03/01/2016
Sample ID: WG559066-10
Instrument ID: LCMS1
Run Time: 01:40
Method: 6850
File ID: 1LM.LM33492
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG559142
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4653185
Report generated 03/02/2016 08:20

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16021357
Run Date: 03/01/2016
Sample ID: WG559066-12
Instrument ID: LCMS1
Run Time: 05:46
Method: 6850
File ID: 1LM.LM33505
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG559142
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4653185
Report generated 03/02/2016 08:20

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16021357
Run Date: 03/01/2016
Sample ID: WG559066-14
Instrument ID: LCMS1
Run Time: 10:13
Method: 6850
File ID: 1LM.LM33510
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG559142
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4653185
Report generated 03/02/2016 08:20

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16021357
Run Date: 03/01/2016
Sample ID: WG559066-16
Instrument ID: LCMS1
Run Time: 12:45
Method: 6850
File ID: 1LM.LM33518
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG559142
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4653185
Report generated 03/02/2016 08:20

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021357
Run Date: 02/29/2016
Sample ID: WG559066-07
Instrument ID: LCMS1
Run Time: 20:56
Method: 6850
File ID: 1LM.LM33477
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG559142
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.06	ug/kg	1.66	6.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4653184
Report generated 03/02/2016 08:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021357
Run Date: 03/01/2016
Sample ID: WG559066-09
Instrument ID: LCMS1
Run Time: 01:02
Method: 6850
File ID: 1LM.LM33490
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG559142
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/kg	1.61	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4653184
Report generated 03/02/2016 08:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021357
Run Date: 03/01/2016
Sample ID: WG559066-11
Instrument ID: LCMS1
Run Time: 05:08
Method: 6850
File ID: 1LM.LM33503
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG559142
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/kg	1.62	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4653184
Report generated 03/02/2016 08:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021357
Run Date: 03/01/2016
Sample ID: WG559066-13
Instrument ID: LCMS1
Run Time: 09:35
Method: 6850
File ID: 1LM.LM33508
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG559142
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/kg	1.62	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4653184
Report generated 03/02/2016 08:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021357
Run Date: 03/01/2016
Sample ID: WG559066-15
Instrument ID: LCMS1
Run Time: 12:07
Method: 6850
File ID: 1LM.LM33516
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG559142
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.05	ug/kg	1.65	5.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4653184
Report generated 03/02/2016 08:16

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16021357 Run Date: 02/29/2016 Sample ID: WG559142-07
Instrument ID: LCMS1 Run Time: 21:15 Prep Method: 6850
File ID: 1LM.LM33478 Analyst: WTD Method: 6850
Workgroup (AAB#): WG559142 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-17-FEB-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.18	109	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4653181
Report generated 03/02/2016 08:16

Login Number: L16021357
Run Date: 03/01/2016
Sample ID: WG559142-08
Instrument ID: LCMS1
Run Time: 01:21
Prep Method: 6850
File ID: 1LM.LM33491
Analyst: WTD
Method: 6850
Workgroup (AAB#): WG559142
Matrix: Soil
Units: ug/kg
Contract #:
Cal ID: LCMS1-17-FEB-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.02	101	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4653181
Report generated 03/02/2016 08:16

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16021357 Run Date: 03/01/2016 Sample ID: WG559142-09
Instrument ID: LCMS1 Run Time: 05:27 Prep Method: 6850
File ID: 1LM.LM33504 Analyst: WTD Method: 6850
Workgroup (AAB#): WG559142 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-17-FEB-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.05	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4653181
Report generated 03/02/2016 08:16

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16021357 Run Date: 03/01/2016 Sample ID: WG559142-10
Instrument ID: LCMS1 Run Time: 12:26 Prep Method: 6850
File ID: 1LM.LM33517 Analyst: WTD Method: 6850
Workgroup (AAB#): WG559142 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-17-FEB-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.07	104	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4653181
Report generated 03/02/2016 08:16

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16021357
Instrument ID: LCMS1
Workgroup (AAB#): WG559142

ICAL CCV Number: WG557856-05
CAL ID: LCMS1-17-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1
WG557856	NA	NA	542000
Upper Limit	NA	NA	813000
Lower Limit	NA	NA	271000
L16021357-01	1.00	01	523000
L16021357-02	1.00	01	514000
L16021357-03	1.00	01	497000
L16021357-04	1.00	01	483000
L16021357-05	1.00	01	499000
L16021357-06	10.0	DL01	444000
WG559142-02	1.00	01	515000
WG559142-03	1.00	01	508000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4653186
Report generated 03/02/2016 08:17

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**	6850	**Samplenum:**	L16021357-01
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33483
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	02/29/2016 22:50	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	3140	1090	2.88	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**	6850	**Samplenum:**	L16021357-02
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33486
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	02/29/2016 23:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	304000	99400	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**	6850	**Samplenum:**	L16021357-03
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33487
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	03/01/2016 00:05	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	110000	36900	2.98	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**	6850	**Samplenum:**	L16021357-04
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33488
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	03/01/2016 00:24	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	829000	269000	3.08	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**	6850	**Samplenum:**	L16021357-05
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33489
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	03/01/2016 00:43	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	657000	218000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**	6850	**Samplenum:**	L16021357-06
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33511
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	03/01/2016 10:32	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	604000	199000	3.04	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**		**Samplenum:**	WG557856-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33245
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	02/17/2016 19:31	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	18800	6990	2.69	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**		**Samplenum:**	WG557856-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33246
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	02/17/2016 19:50	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38700	14200	2.73	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**		**Samplenum:**	WG557856-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33247
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	02/17/2016 20:08	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	91400	32900	2.78	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**		**Samplenum:**	WG557856-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33248
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	02/17/2016 20:27	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	178000	63900	2.79	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**		**Samplenum:**	WG557856-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33249
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	02/17/2016 20:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	350000	126000	2.78	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**		**Samplenum:**	WG557856-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33250
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	02/17/2016 21:05	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	826000	293000	2.82	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**		**Samplenum:**	WG557856-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33251
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	02/17/2016 21:24	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	562000	2.72	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**		**Samplenum:**	WG557856-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33252
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	02/17/2016 21:43	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	179000	63600	2.81	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**		**Samplenum:**	WG559066-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33474
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	02/29/2016 19:59	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	890	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**		**Samplenum:**	WG559066-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33477
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	02/29/2016 20:56	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	176000	58300	3.02	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**		**Samplenum:**	WG559066-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33479
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	02/29/2016 21:34	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	840	230	3.65	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**		**Samplenum:**	WG559066-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33490
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	03/01/2016 01:02	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	173000	55900	3.09	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**		**Samplenum:**	WG559066-10
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33492
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	03/01/2016 01:40	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	490	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**		**Samplenum:**	WG559066-11
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33503
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	03/01/2016 05:08	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	163000	53400	3.05	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**		**Samplenum:**	WG559066-12
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33505
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	03/01/2016 05:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**		**Samplenum:**	WG559066-13
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33508
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	03/01/2016 09:35	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	156000	51400	3.04	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**		**Samplenum:**	WG559066-14
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33510
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	03/01/2016 10:13	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**		**Samplenum:**	WG559066-15
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33516
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	03/01/2016 12:07	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	162000	53000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**		**Samplenum:**	WG559066-16
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33518
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	03/01/2016 12:45	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1320	1400	0.943	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**	6850	**Samplenum:**	WG559142-01
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33480
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	02/29/2016 21:53	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	33200	11500	2.89	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**	6850	**Samplenum:**	WG559142-02
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33481
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	02/29/2016 22:12	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	776	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**	6850	**Samplenum:**	WG559142-03
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33482
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	02/29/2016 22:31	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35800	12800	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**	6850	**Samplenum:**	WG559142-05
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33484
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	02/29/2016 23:09	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	39200	14300	2.74	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**	6850	**Samplenum:**	WG559142-06
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33485
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	02/29/2016 23:27	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36400	13100	2.78	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**	6850	**Samplenum:**	WG559142-07
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33478
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	02/29/2016 21:15	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	39100	13500	2.90	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**	6850	**Samplenum:**	WG559142-08
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33491
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	03/01/2016 01:21	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36300	12600	2.88	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**	6850	**Samplenum:**	WG559142-09
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33504
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	03/01/2016 05:27	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35000	11800	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021357	**Prep Method:**	6850	**Samplenum:**	WG559142-10
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33517
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	03/01/2016 12:26	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34300	11800	2.91	2.3	3.8	

2.2.1.3 Sample Data

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Printed: 3/1/2016 2:33 PM

Data File	LM33483.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/29/2016 10:50:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021357-01 REF	**Injection Vial**	29.00
Data File	LM33483.wiff	**Injection Volume**	10.00
Acquisition Date	2/29/2016 10:50:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559142-04	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.230e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.140e+03	9.96	N/A	< 0
Perchlorate conf	1.090e+03	9.94	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

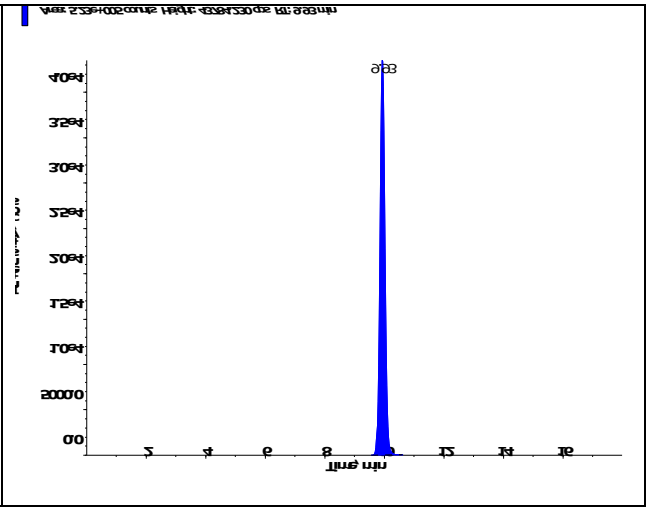

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.96 (9.94) min Calculated conc: < 0 ng/ml Area Ratio: 0.006 Sample Type: (Unknown)	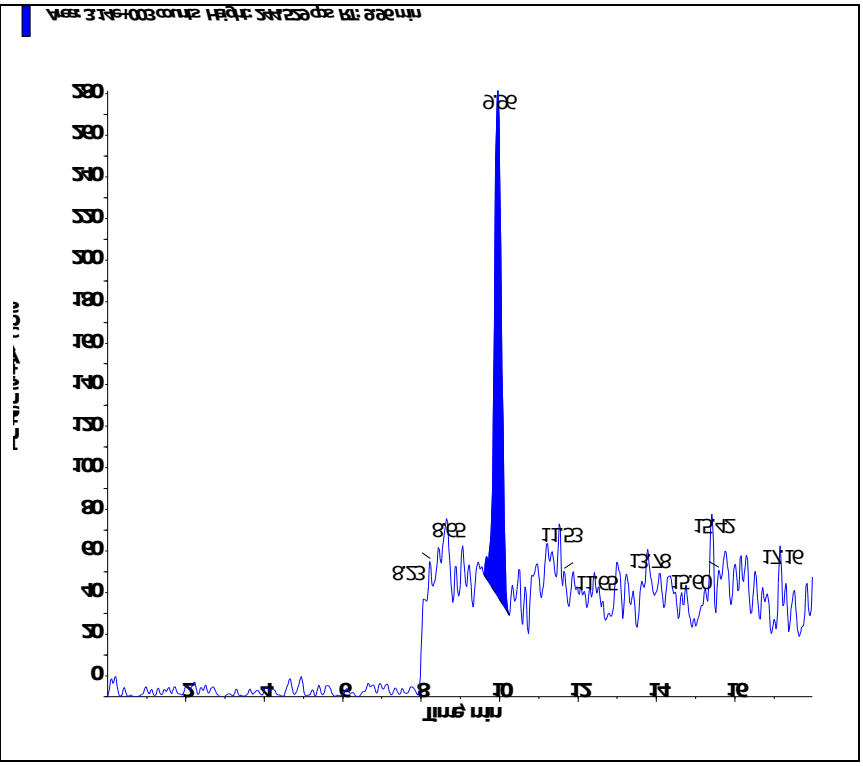
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.94 (9.92) min Calculated conc: < 0 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	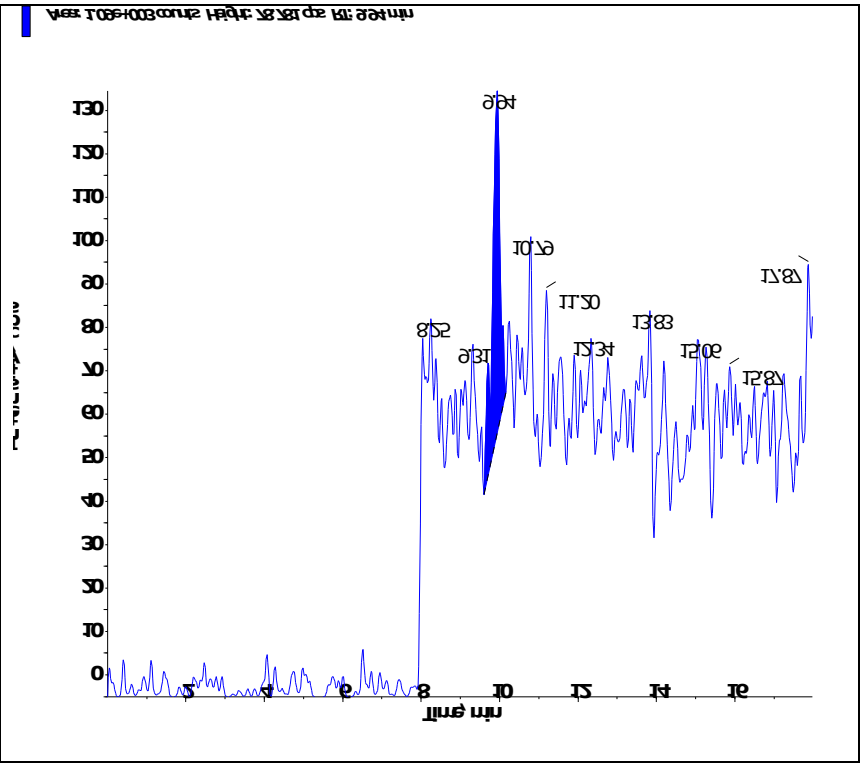

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Printed: 3/1/2016 2:34 PM

Data File	LM33486.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/29/2016 11:46:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021357-02	**Injection Vial**	32.00
Data File	LM33486.wiff	**Injection Volume**	10.00
Acquisition Date	2/29/2016 11:46:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	L16021357-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.140e+05	9.86	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.040e+05	9.87	N/A	1.90
Perchlorate conf	9.940e+04	9.86	N/A	1.71

O18LP (Internal Standard)

RT (Exp. RT): 9.86(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

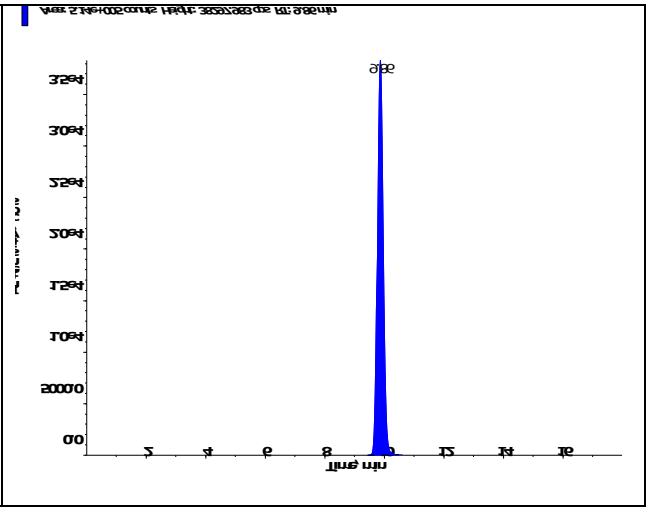

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.87 (9.94) min Calculated conc: 1.90 ng/ml Area Ratio: 0.593 Sample Type: (Unknown)	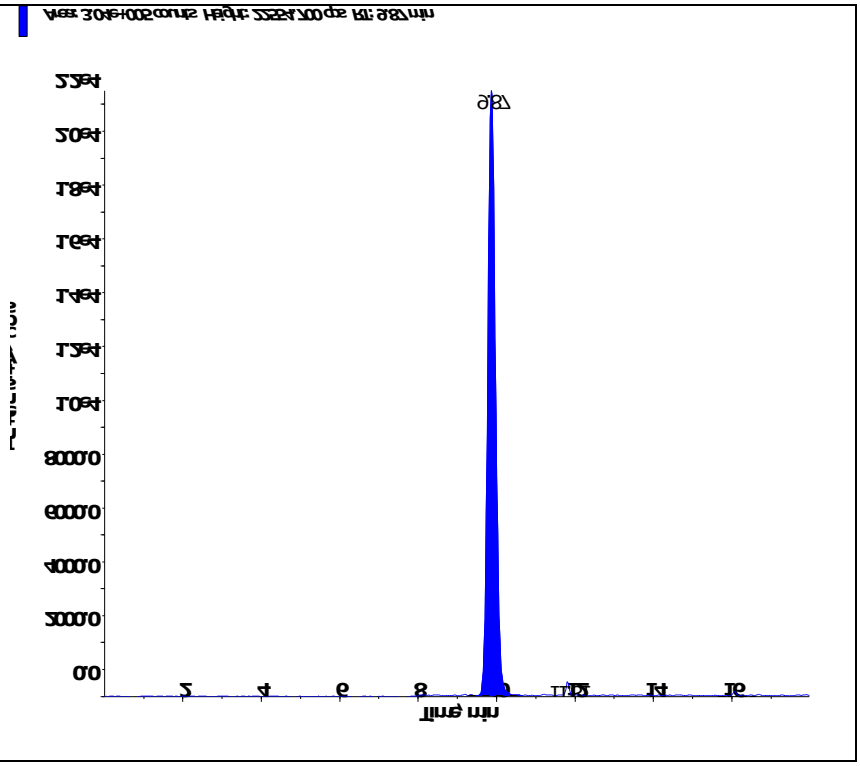
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.86 (9.92) min Calculated conc: 1.71 ng/ml Area Ratio: 0.194 Sample Type: (Unknown)	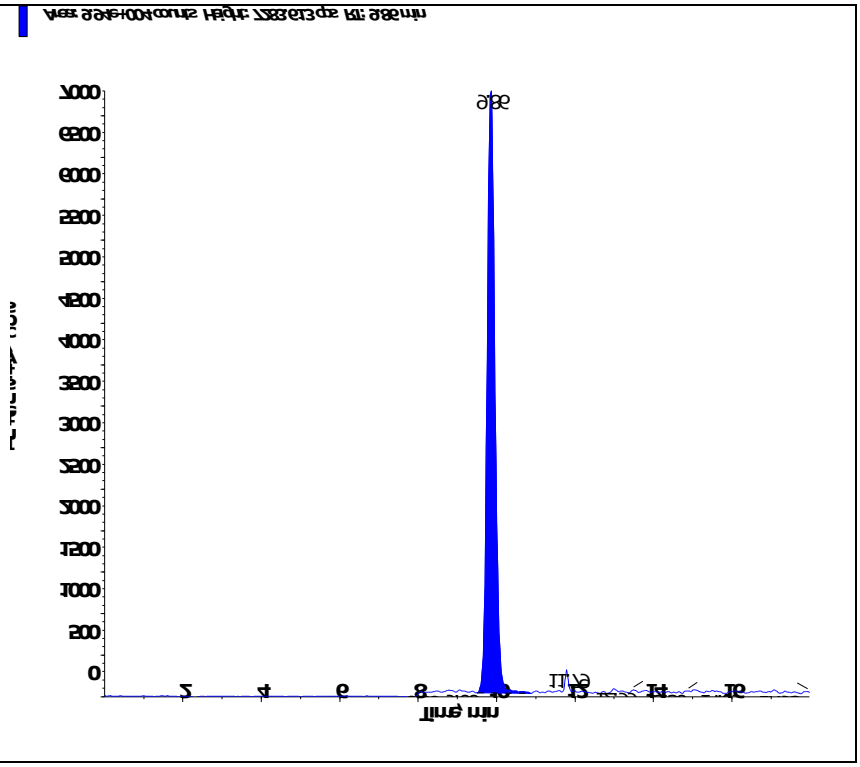

s.dataFile Page 2 of 2

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Printed: 3/1/2016 2:34 PM

Data File	LM33487.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 12:05:49 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021357-03	**Injection Vial**	33.00
Data File	LM33487.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 12:05:49 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	L16021357-03	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.87	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.100e+05	9.88	N/A	0.699
Perchlorate conf	3.690e+04	9.87	N/A	0.643

O18LP (Internal Standard)

RT (Exp. RT): 9.87(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

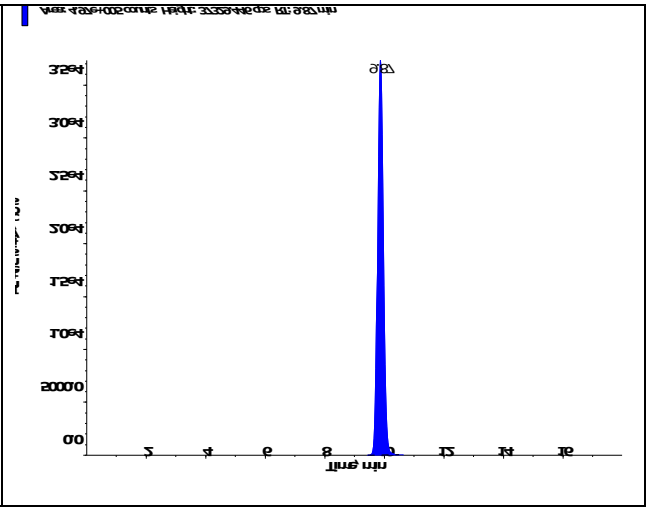

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.88 (9.94) min Calculated conc: 0.699 ng/ml Area Ratio: 0.222 Sample Type: (Unknown)	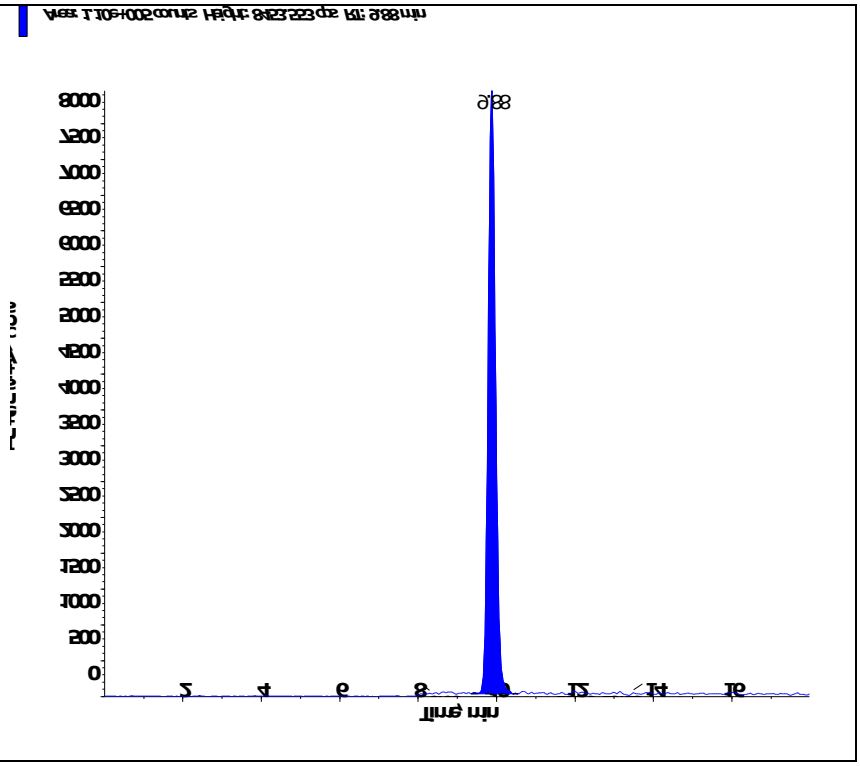
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.87 (9.92) min Calculated conc: 0.643 ng/ml Area Ratio: 0.074 Sample Type: (Unknown)	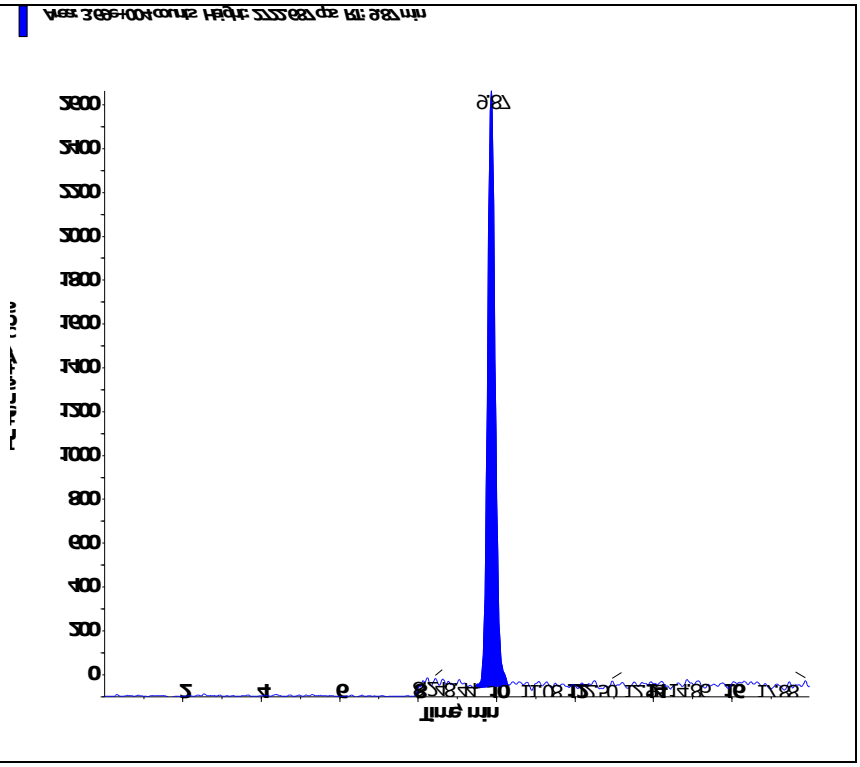

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Data File	LM33488.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 12:24:44 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021357-04	**Injection Vial**	34.00
Data File	LM33488.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 12:24:44 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	L16021357-04	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.830e+05	9.86	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.290e+05	9.88	N/A	5.55
Perchlorate conf	2.690e+05	9.86	N/A	4.97

O18LP (Internal Standard)

RT (Exp. RT): 9.86(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

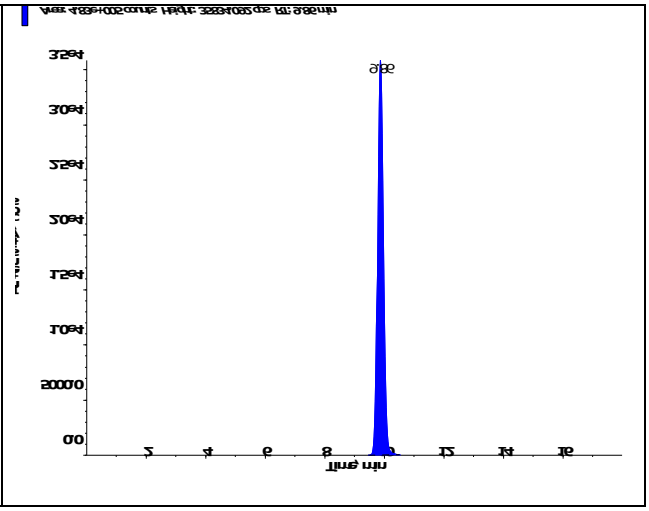

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.88 (9.94) min Calculated conc: 5.55 ng/ml Area Ratio: 1.715 Sample Type: (Unknown)	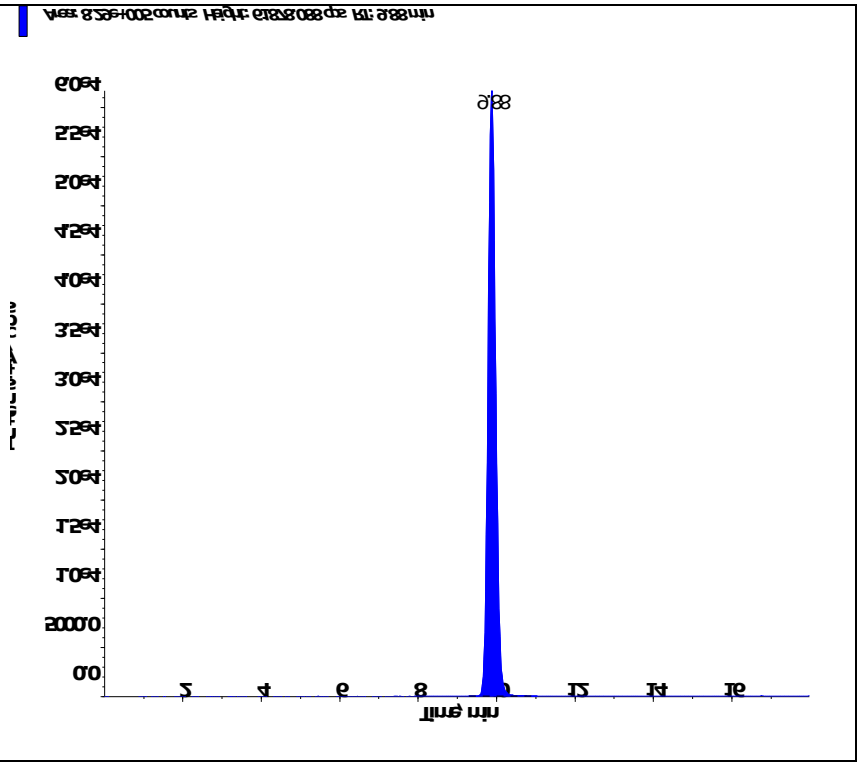
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.86 (9.92) min Calculated conc: 4.97 ng/ml Area Ratio: 0.557 Sample Type: (Unknown)	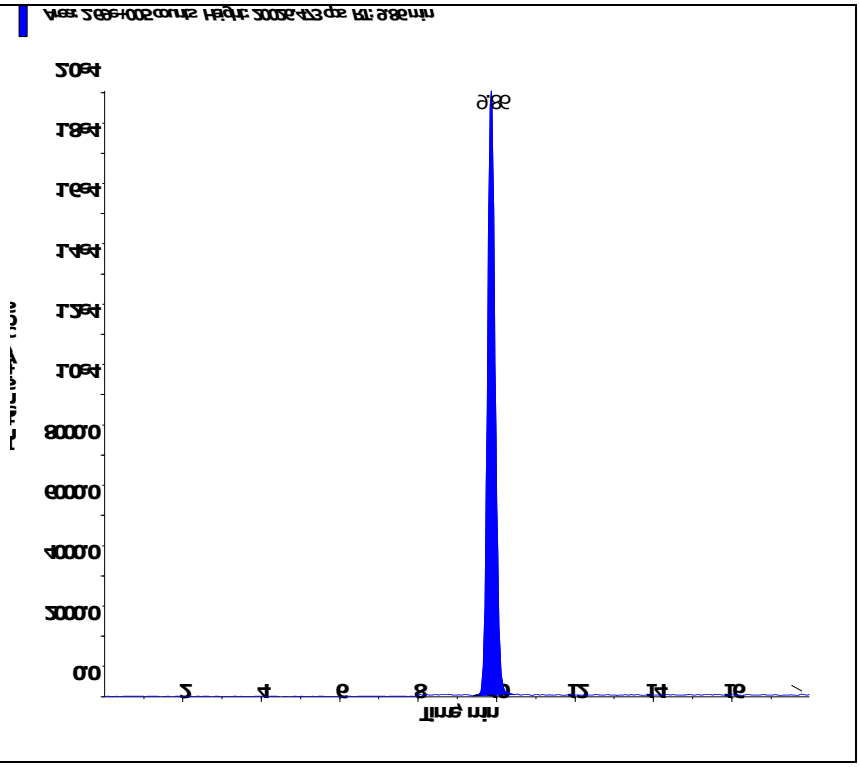

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Data File	LM33489.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 12:43:43 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021357-05	**Injection Vial**	35.00
Data File	LM33489.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 12:43:43 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	L16021357-05	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.990e+05	9.89	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	6.570e+05	9.90	N/A	4.26
Perchlorate conf	2.180e+05	9.88	N/A	3.90

O18LP (Internal Standard)

RT (Exp. RT): 9.89(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

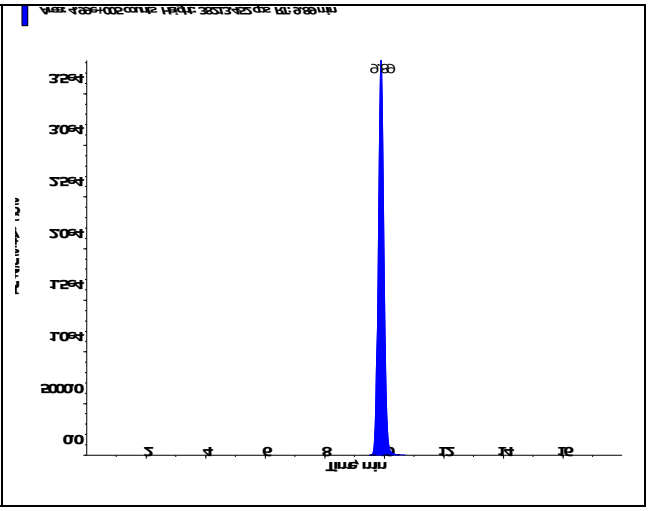

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.90 (9.94) min Calculated conc: 4.26 ng/ml Area Ratio: 1.317 Sample Type: (Unknown)	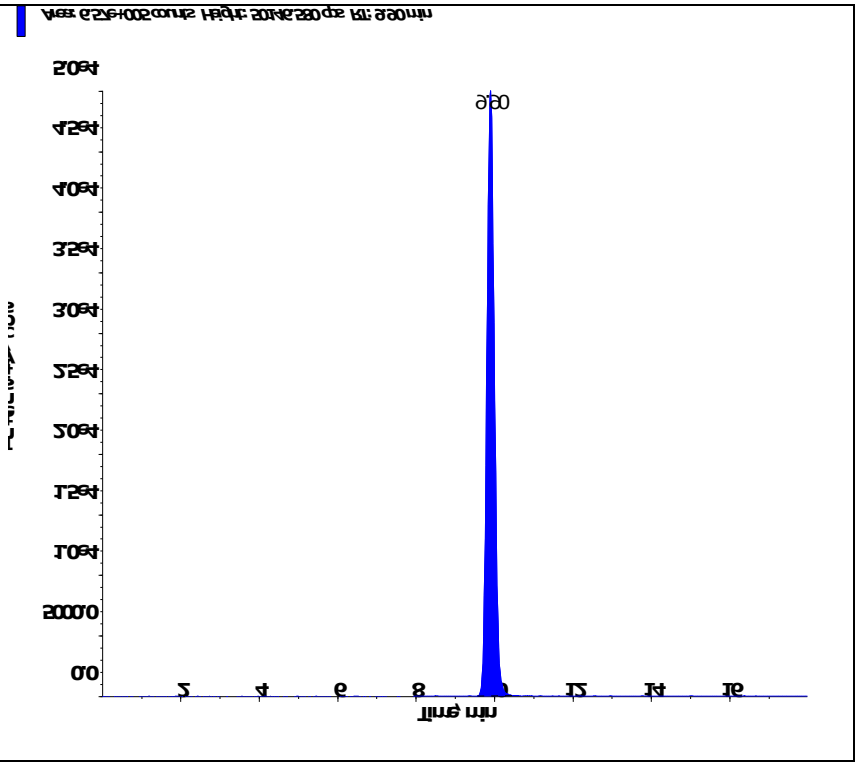
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.88 (9.92) min Calculated conc: 3.90 ng/ml Area Ratio: 0.437 Sample Type: (Unknown)	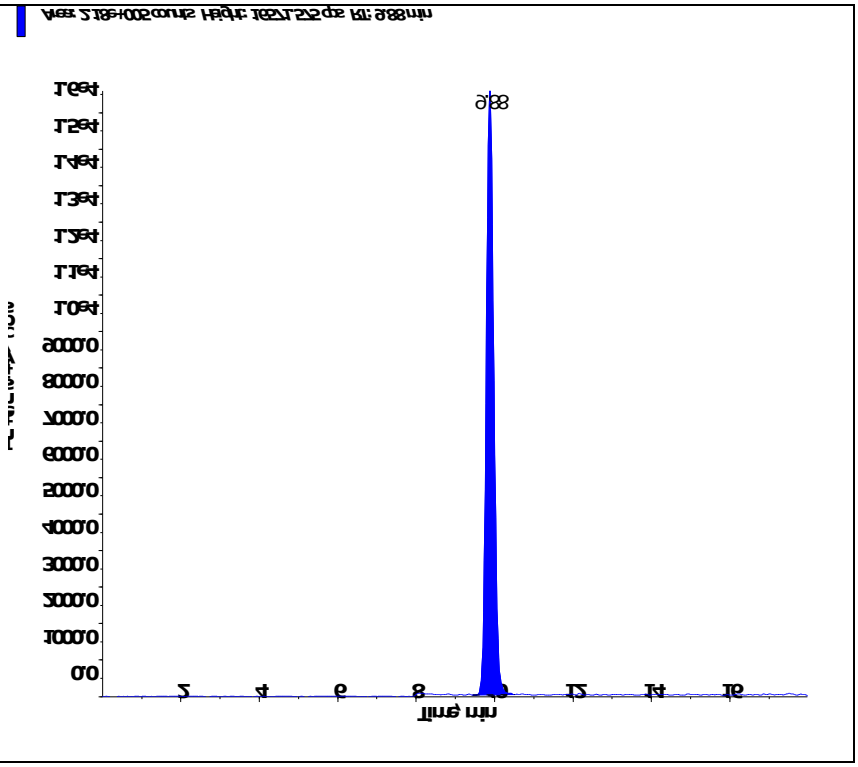

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Data File	LM33511.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 10:32:46 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021357-06 (10X)	**Injection Vial**	47.00
Data File	LM33511.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 10:32:46 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	L16021357-06	**Dilution Factor**	1.00
Sample Comment	710.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.440e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	6.040e+05	9.98	N/A	4.40
Perchlorate conf	1.990e+05	9.97	N/A	4.00

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

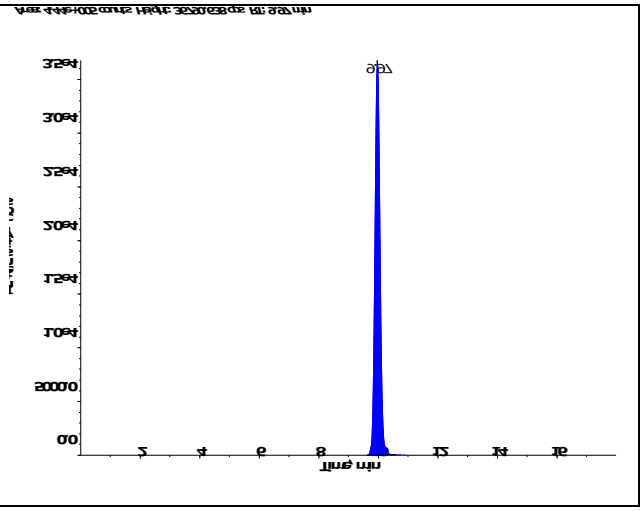

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.98 (9.94) min Calculated conc: 4.40 ng/ml Area Ratio: 1.362 Sample Type: (Unknown)	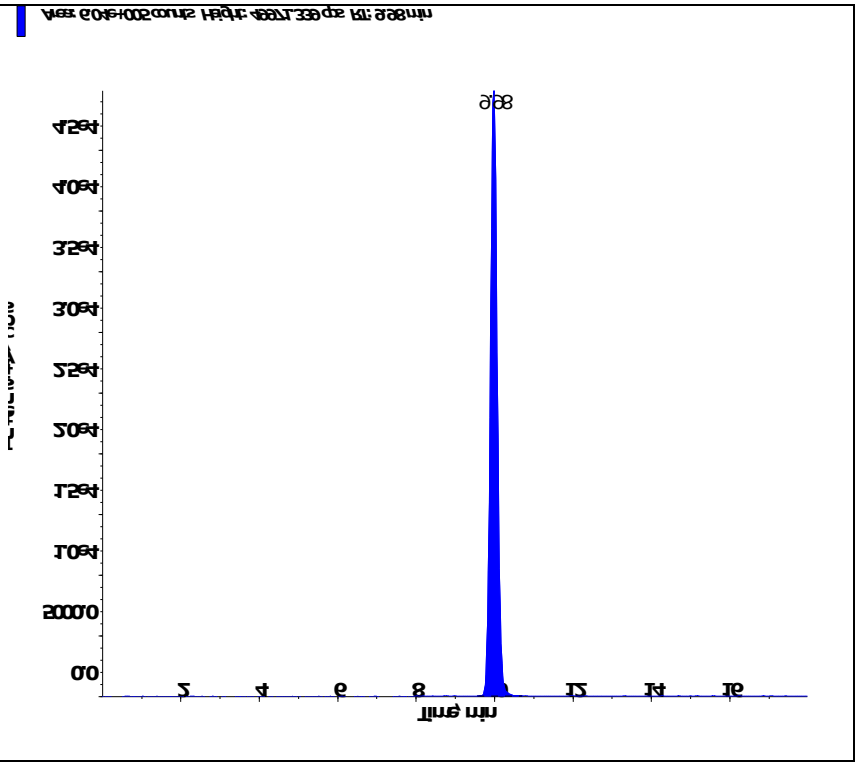
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.97 (9.92) min Calculated conc: 4.00 ng/ml Area Ratio: 0.448 Sample Type: (Unknown)	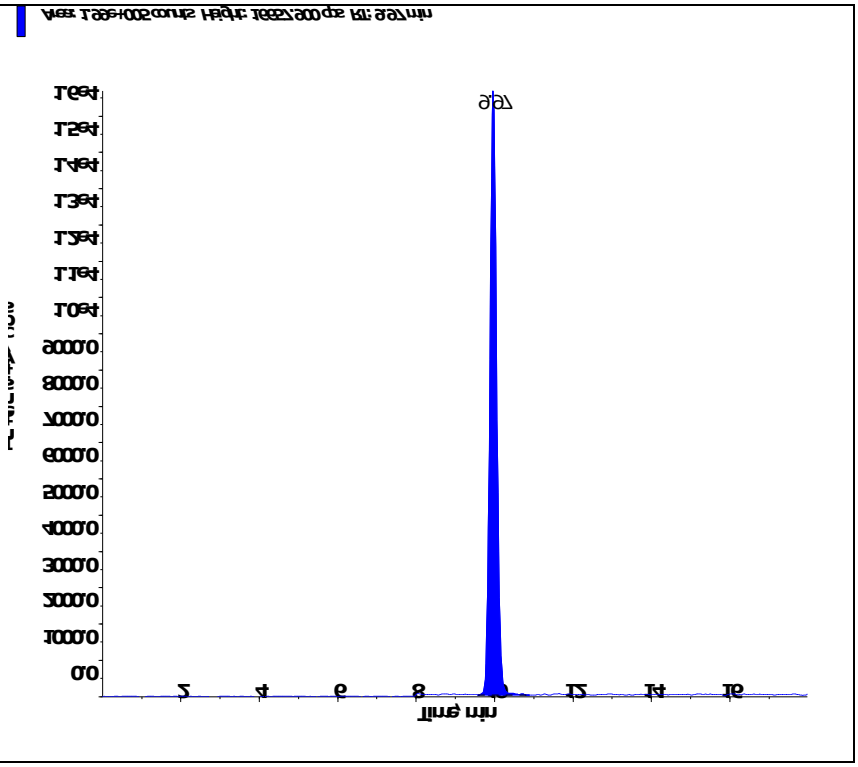

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2.2.1.4 Standards Data

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Data File	LM33244.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/17/2016 7:12:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-01 CCB	**Injection Vial**	1.00
Data File	LM33244.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 7:12:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG557856-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.570e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.560e+03	9.97	N/A	< 0
Perchlorate conf	1.050e+03	9.97	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

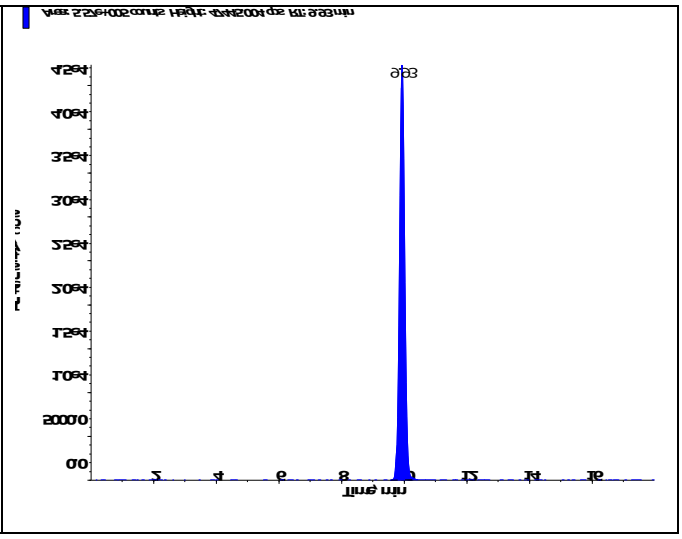

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.97 (9.94) min Calculated conc: < 0 ng/ml Area Ratio: 0.005 Sample Type: (Unknown)	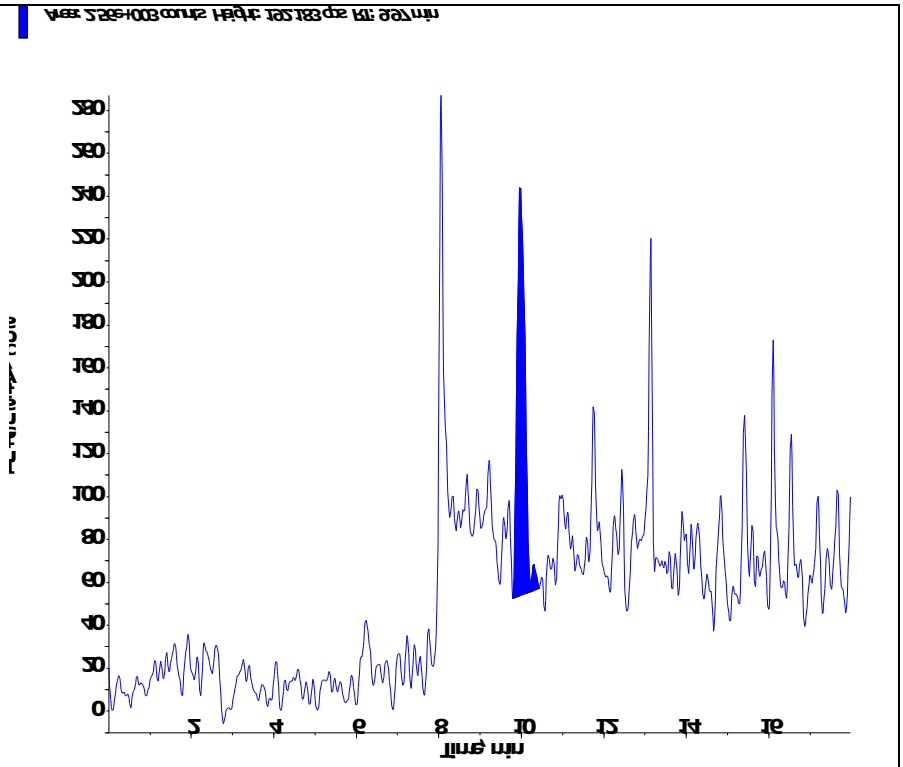
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.97 (9.92) min Calculated conc: < 0 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	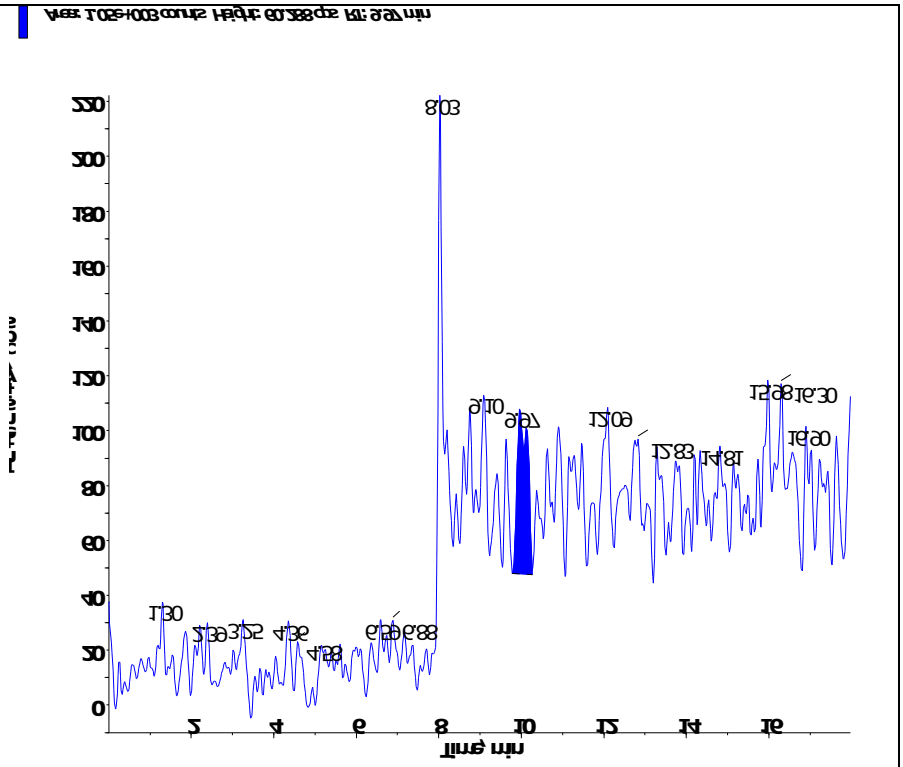

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Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM33244.wiff	**Result Table**	021716_JWR.rdb
Acquisition Date	2/17/2016 7:12:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.54 x + 0.00666 (r = 0.9998)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	88.4	N/A	N/A
0.20	1	0.21	103.3	N/A	N/A
0.50	1	0.51	102.6	N/A	N/A
1.00	1	1.03	103.4	N/A	N/A
2.00	1	2.06	103.1	N/A	N/A
5.00	1	5.03	100.6	N/A	N/A
10.00	1	9.87	98.7	N/A	N/A

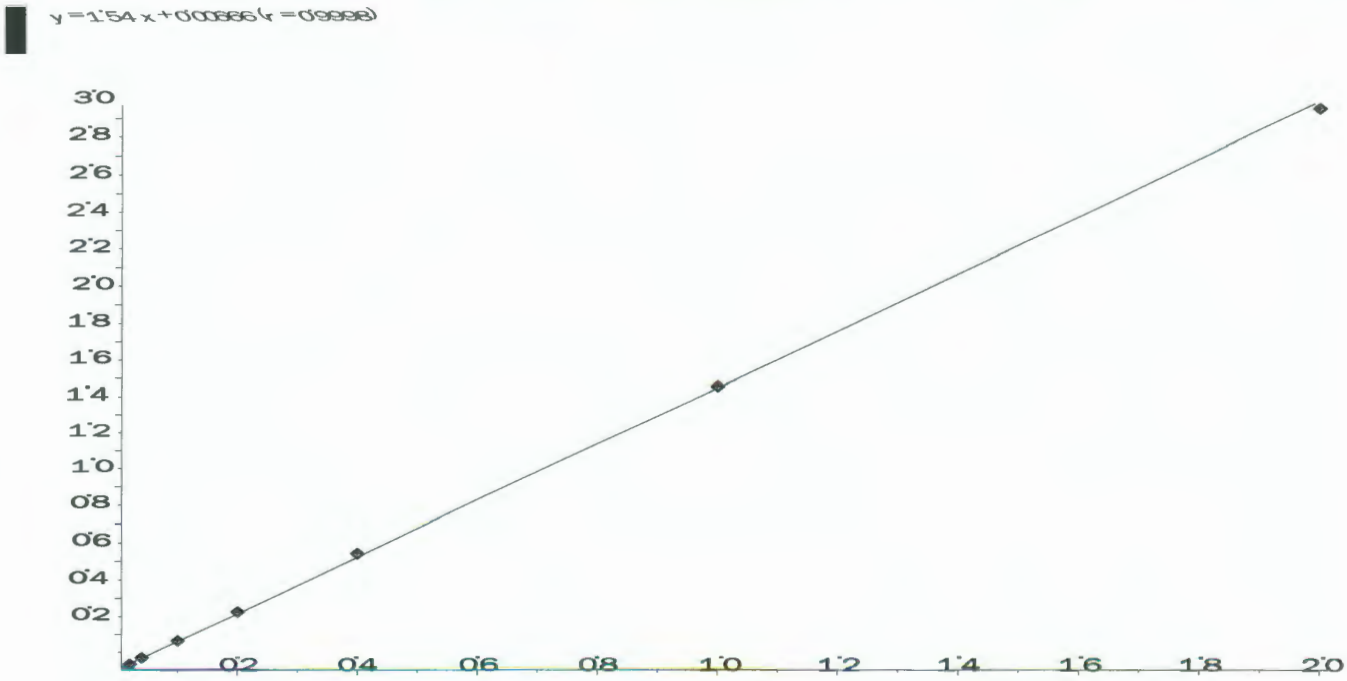

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Printed: 2/18/2016 2:15 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM33244.wiff	**Result Table**	021716_JWR.rdb
Acquisition Date	2/17/2016 7:12:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.557 x + 0.00249 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	90.6	N/A	N/A
0.20	1	0.21	104.9	N/A	N/A
0.50	1	0.51	101.7	N/A	N/A
1.00	1	1.02	102.2	N/A	N/A
2.00	1	2.04	102.1	N/A	N/A
5.00	1	4.93	98.6	N/A	N/A
10.00	1	10.00	100.0	N/A	N/A

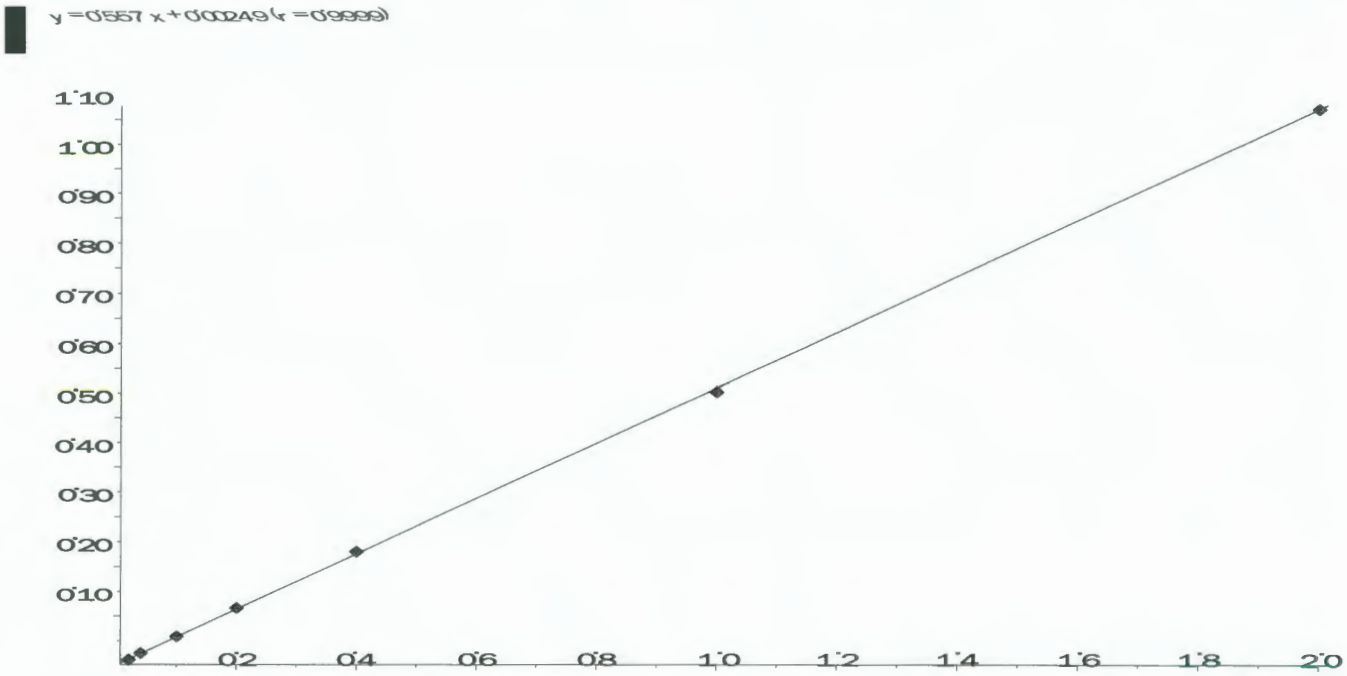

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Data File	LM33245.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/17/2016 7:31:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM33245.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 7:31:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG557856-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.550e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.880e+04	9.94	0.10	0.0884
Perchlorate conf	6.990e+03	9.93	0.10	0.0906

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

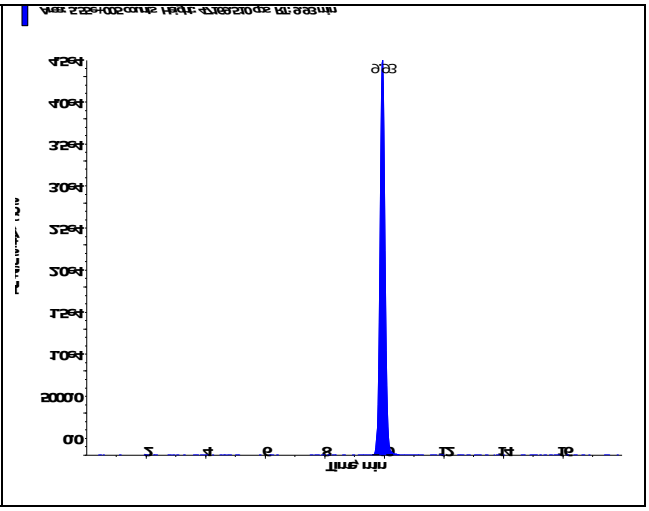

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.94 (9.94) min Calculated conc: 0.0884 ng/ml Area Ratio: 0.034 Sample Type: (Standard)	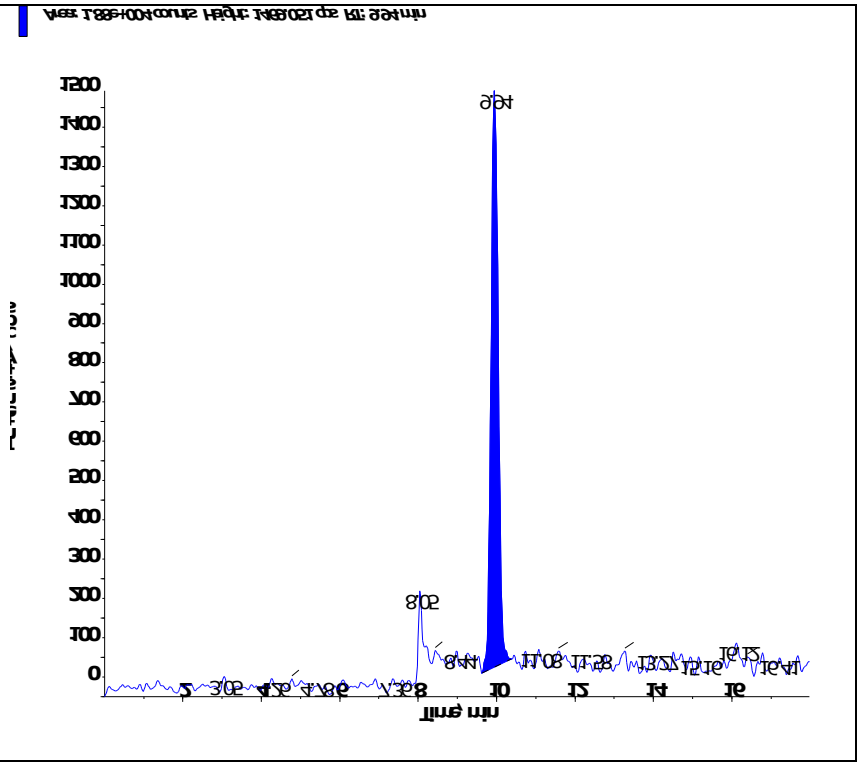
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.93 (9.92) min Calculated conc: 0.0906 ng/ml Area Ratio: 0.013 Sample Type: (Standard)	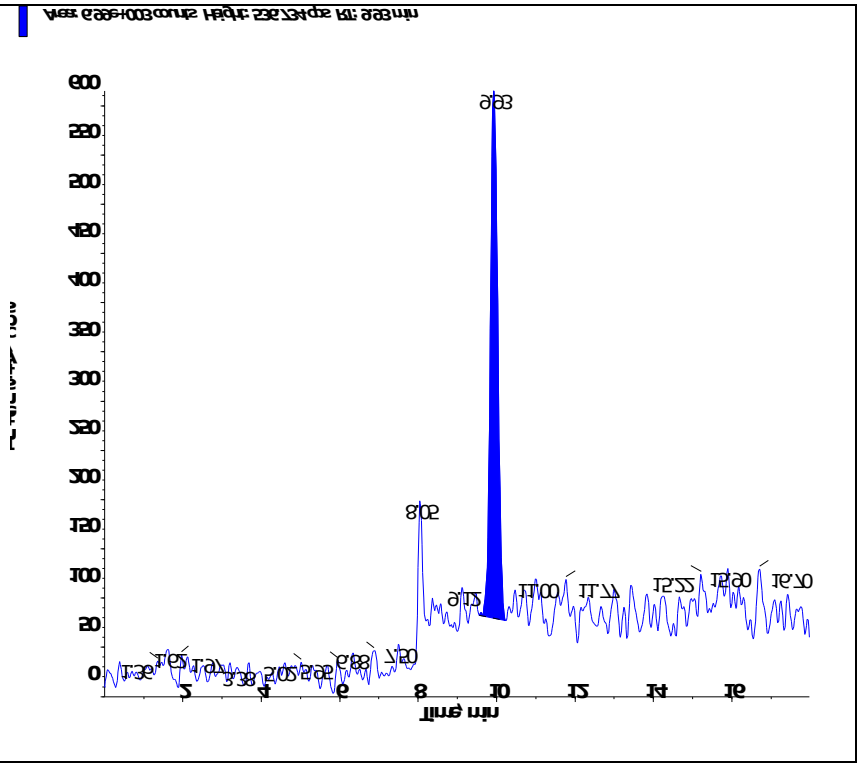

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Data File	LM33246.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/17/2016 7:50:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM33246.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 7:50:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG557856-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.510e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.870e+04	9.94	0.20	0.207
Perchlorate conf	1.420e+04	9.93	0.20	0.21

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

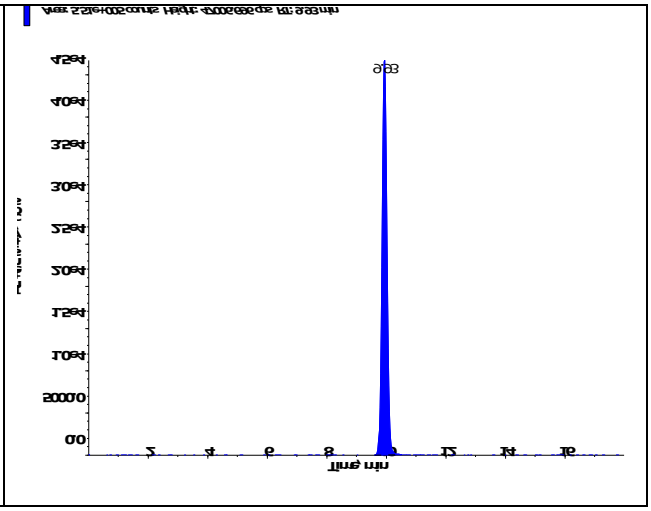

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.94 (9.94) min Calculated conc: 0.207 ng/ml Area Ratio: 0.07 Sample Type: (Standard)	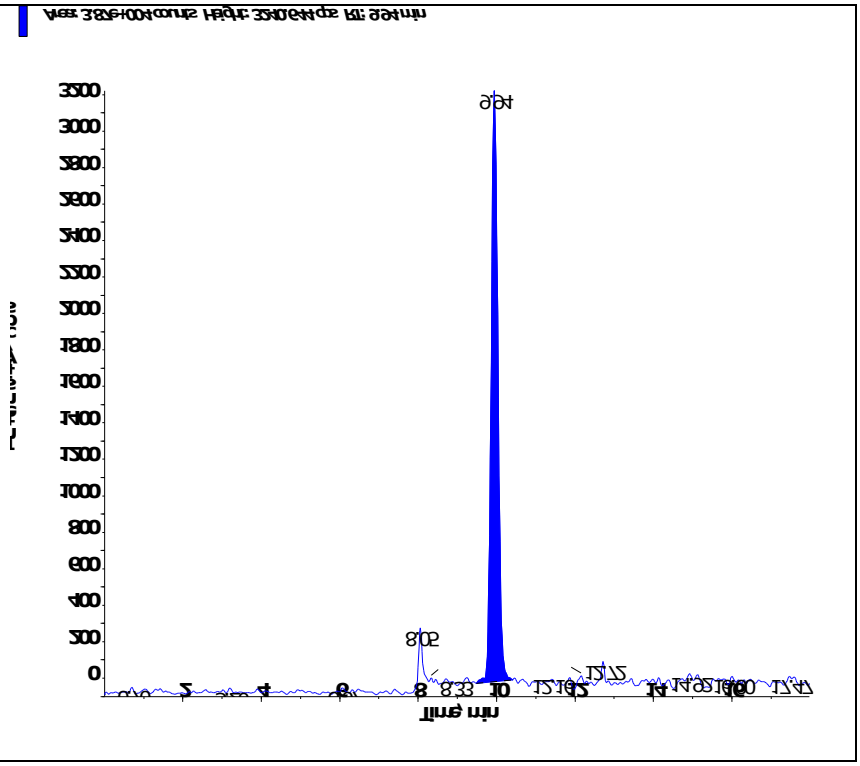
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.93 (9.92) min Calculated conc: 0.21 ng/ml Area Ratio: 0.026 Sample Type: (Standard)	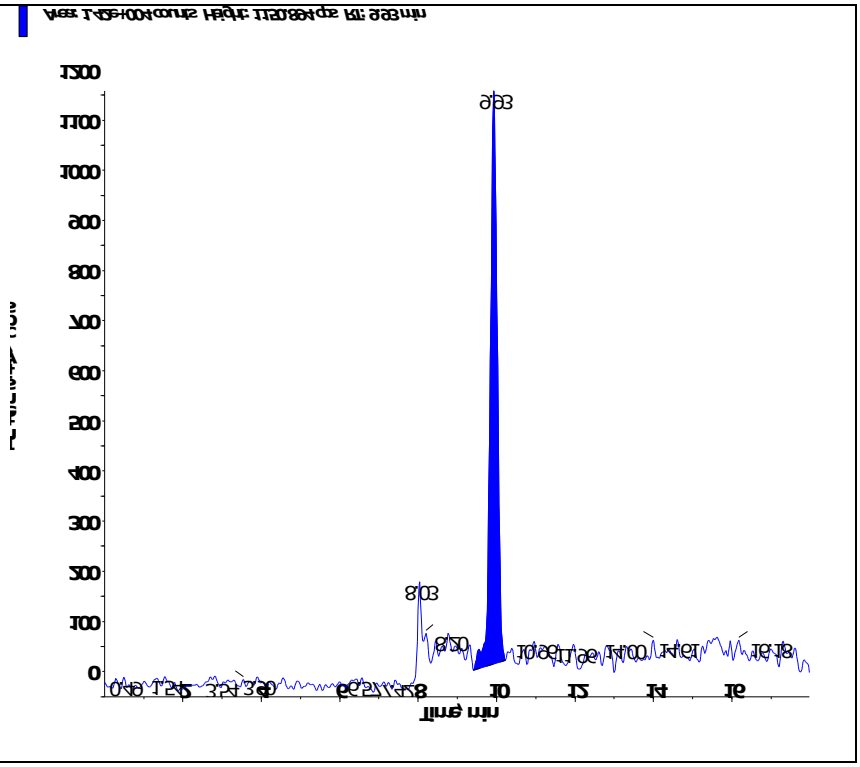

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Data File	LM33247.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/17/2016 8:08:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM33247.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 8:08:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG557856-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.560e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	9.140e+04	9.94	0.50	0.513
Perchlorate conf	3.290e+04	9.93	0.50	0.508

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

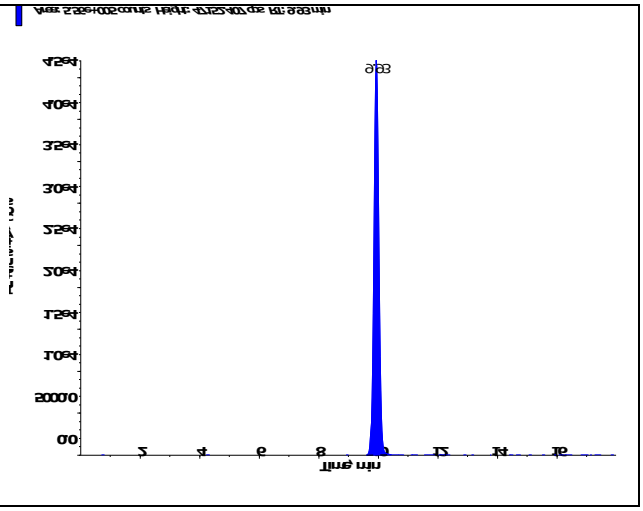

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.94 (9.94) min Calculated conc: 0.513 ng/ml Area Ratio: 0.164 Sample Type: (Standard)	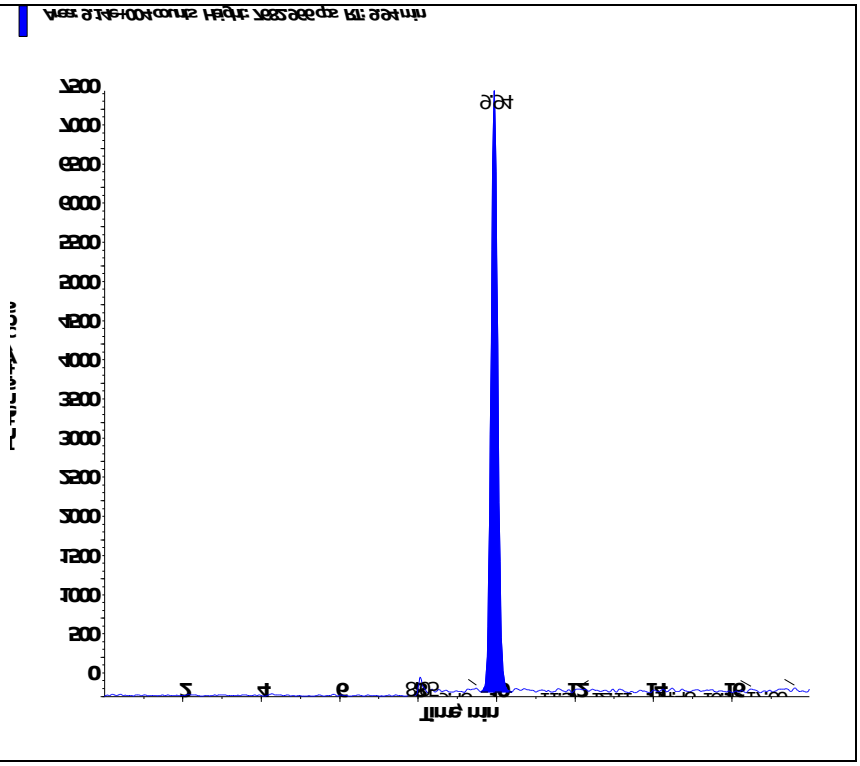
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.93 (9.92) min Calculated conc: 0.508 ng/ml Area Ratio: 0.059 Sample Type: (Standard)	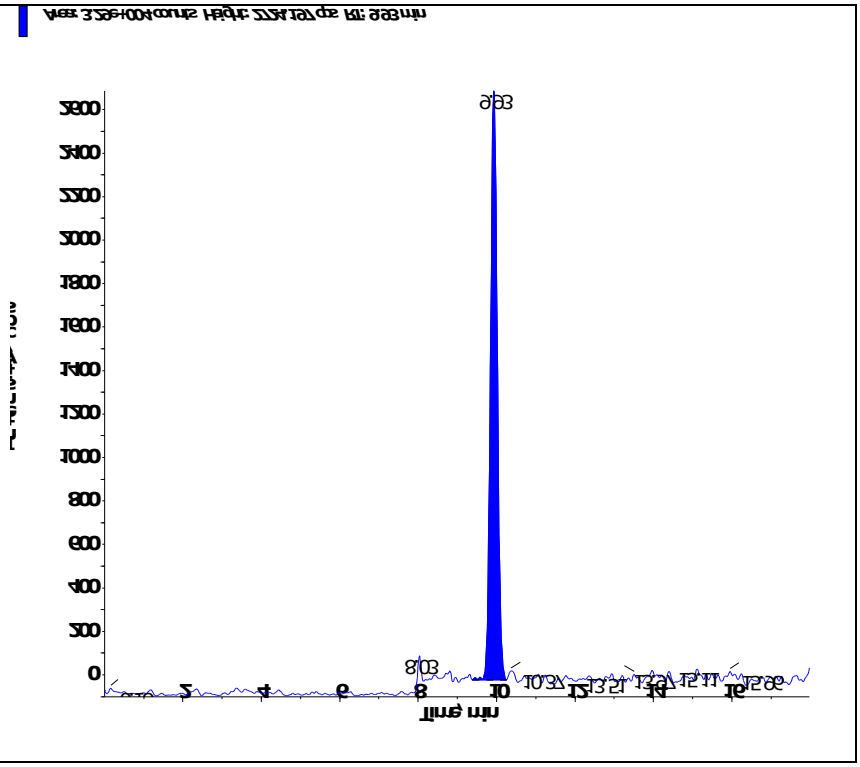

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Data File	LM33248.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/17/2016 8:27:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM33248.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 8:27:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG557856-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.490e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.780e+05	9.95	1.00	1.03
Perchlorate conf	6.390e+04	9.94	1.00	1.02

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

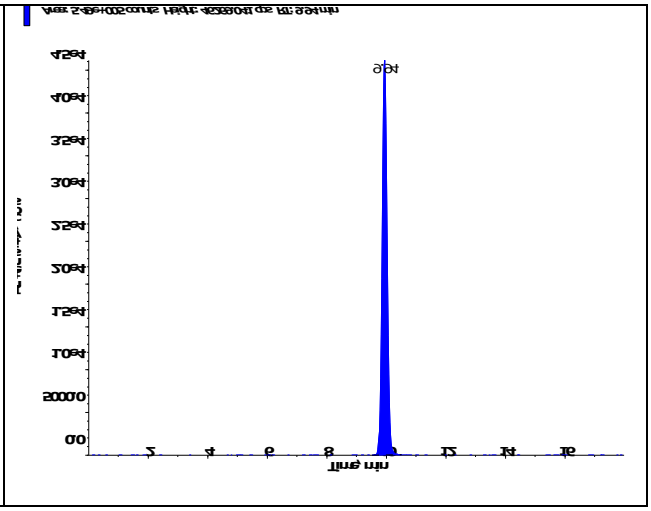

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.95 (9.94) min Calculated conc: 1.03 ng/ml Area Ratio: 0.325 Sample Type: (Standard)	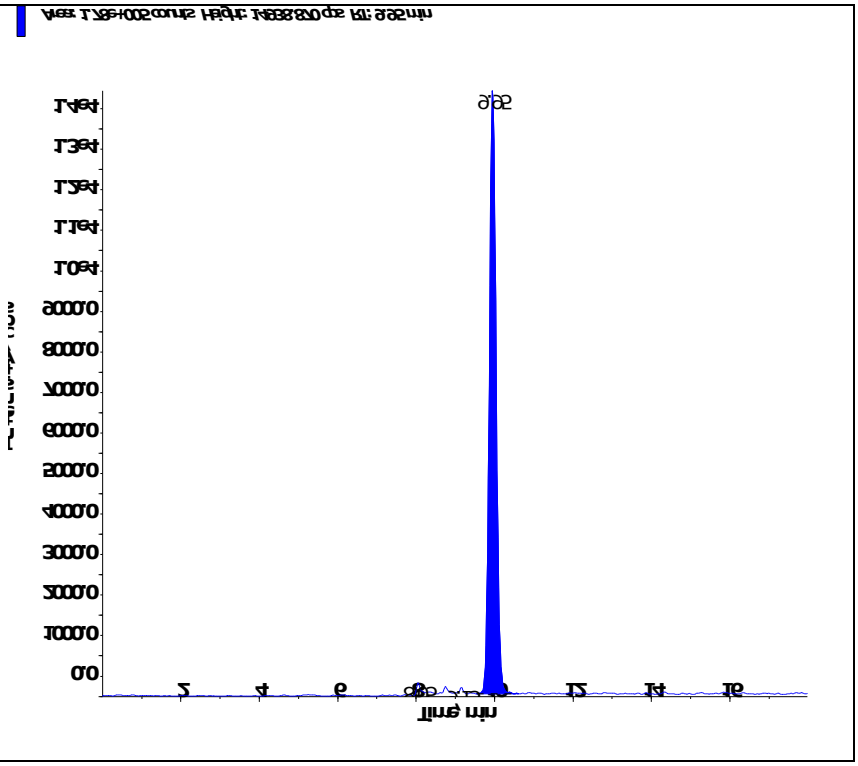
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.94 (9.92) min Calculated conc: 1.02 ng/ml Area Ratio: 0.116 Sample Type: (Standard)	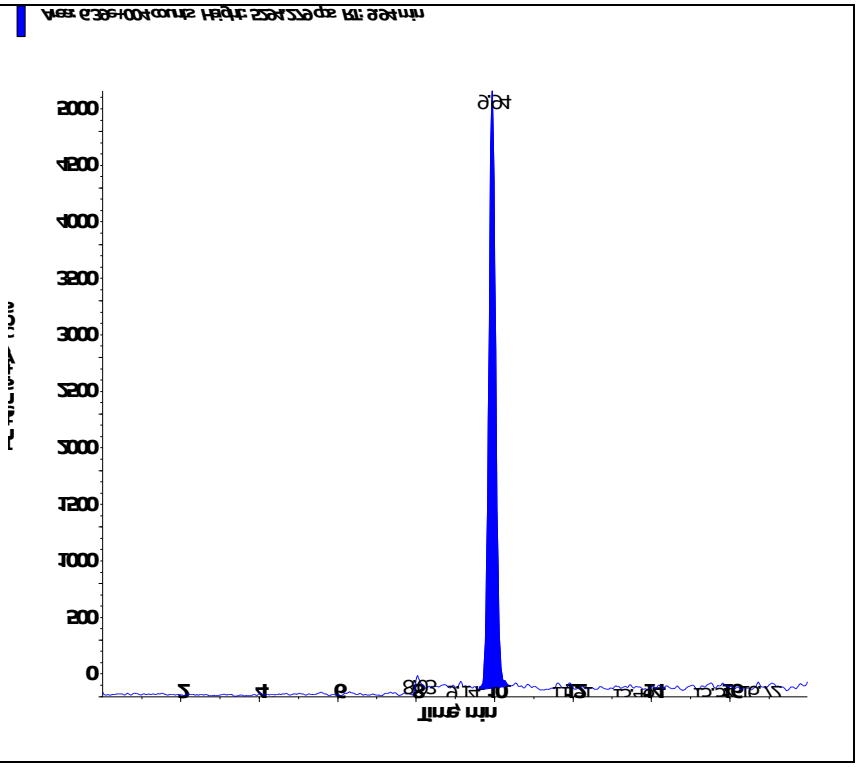

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Data File	LM33249.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/17/2016 8:46:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM33249.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 8:46:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG557856-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.460e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.500e+05	9.94	2.00	2.06
Perchlorate conf	1.260e+05	9.93	2.00	2.04

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

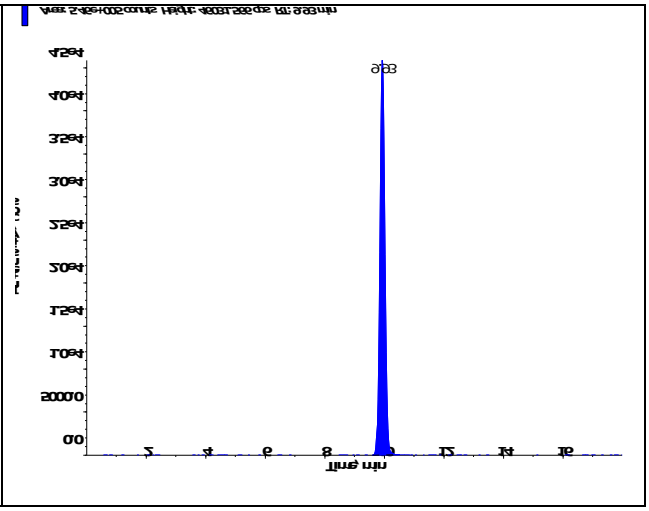

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.94 (9.94) min Calculated conc: 2.06 ng/ml Area Ratio: 0.641 Sample Type: (Standard)	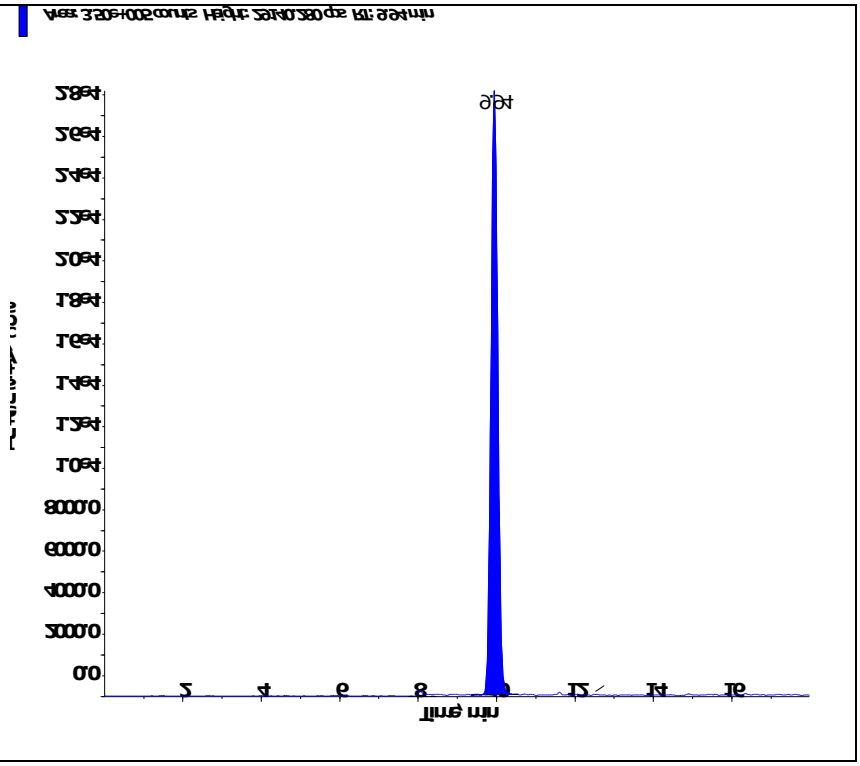
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.93 (9.92) min Calculated conc: 2.04 ng/ml Area Ratio: 0.23 Sample Type: (Standard)	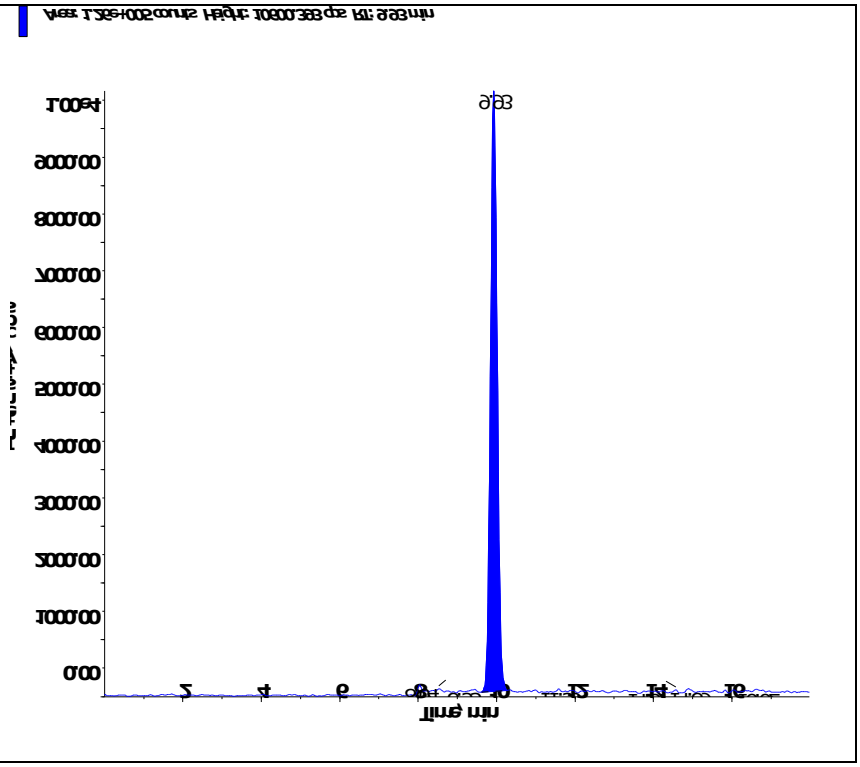

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Data File	LM33250.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/17/2016 9:05:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM33250.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 9:05:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG557856-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.320e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.260e+05	9.96	5.00	5.03
Perchlorate conf	2.930e+05	9.94	5.00	4.93

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

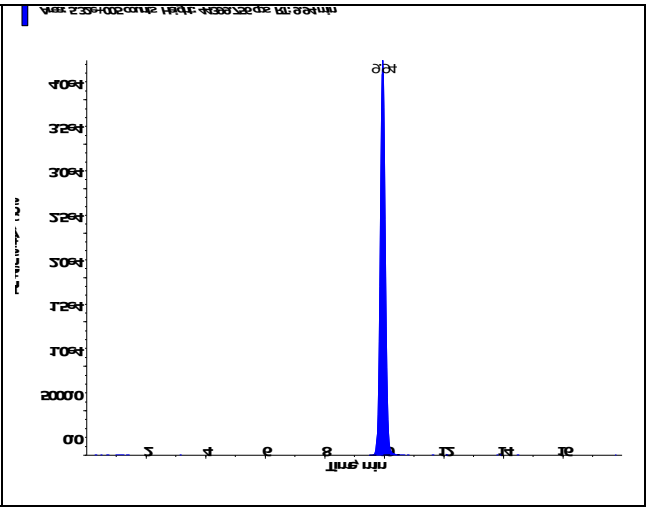

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.96 (9.94) min Calculated conc: 5.03 ng/ml Area Ratio: 1.554 Sample Type: (Standard)	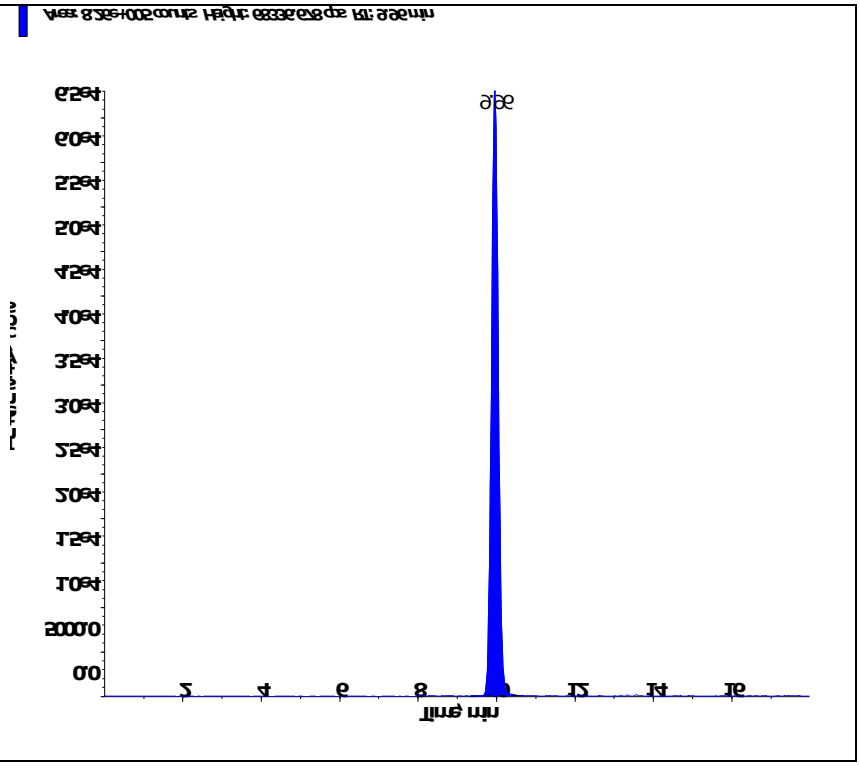
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.94 (9.92) min Calculated conc: 4.93 ng/ml Area Ratio: 0.552 Sample Type: (Standard)	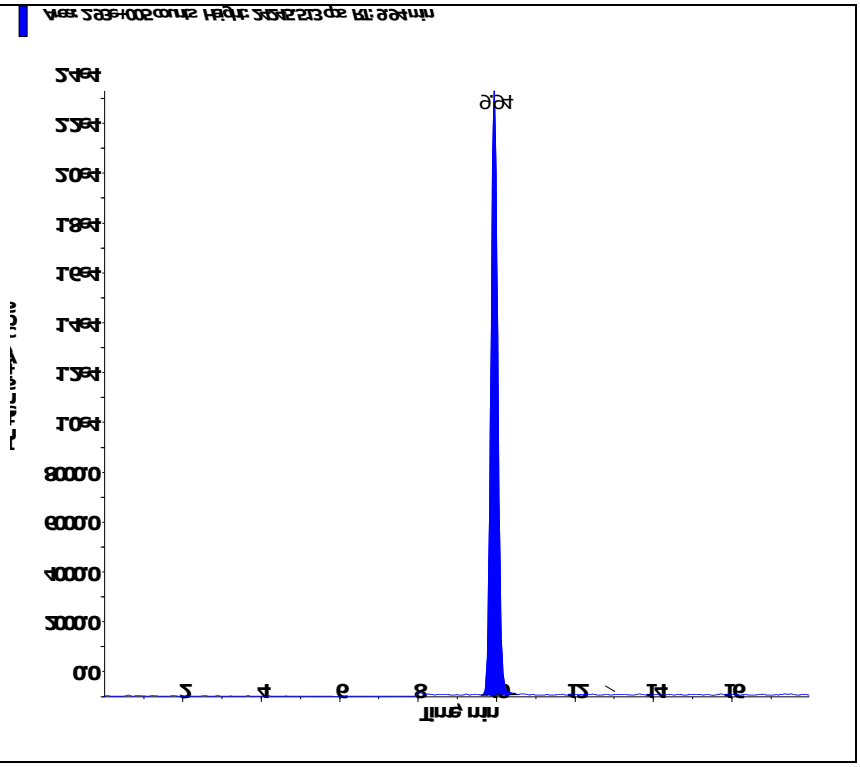

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Data File	LM33251.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/17/2016 9:24:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM33251.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 9:24:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG557856-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.030e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.94	10.00	9.87
Perchlorate conf	5.620e+05	9.93	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

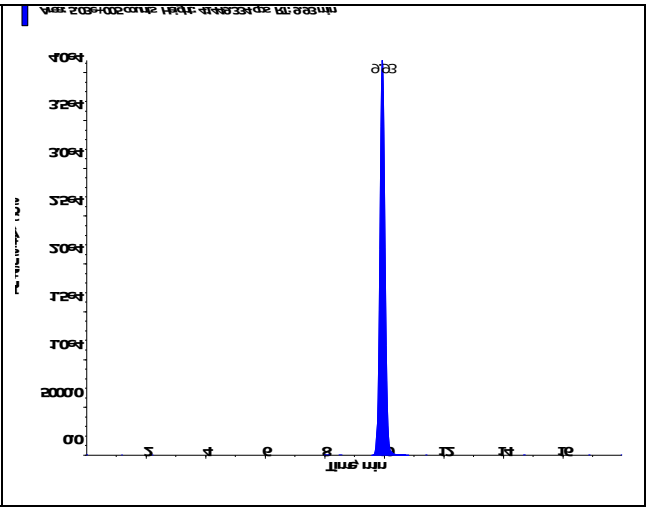

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.94 (9.94) min Calculated conc: 9.87 ng/ml Area Ratio: 3.043 Sample Type: (Standard)	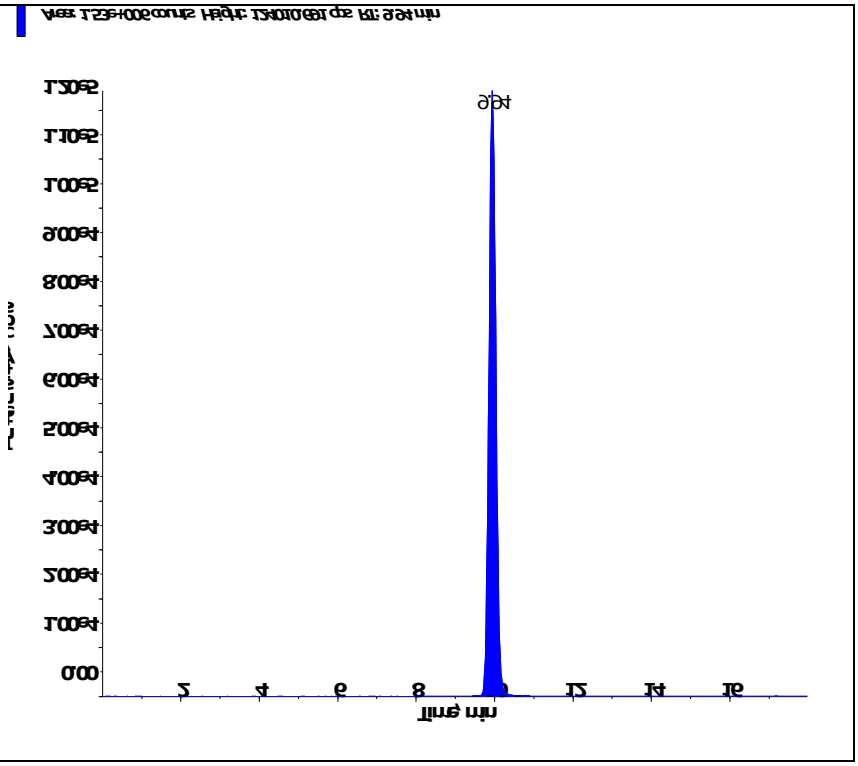
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.93 (9.92) min Calculated conc: 10.00 ng/ml Area Ratio: 1.117 Sample Type: (Standard)	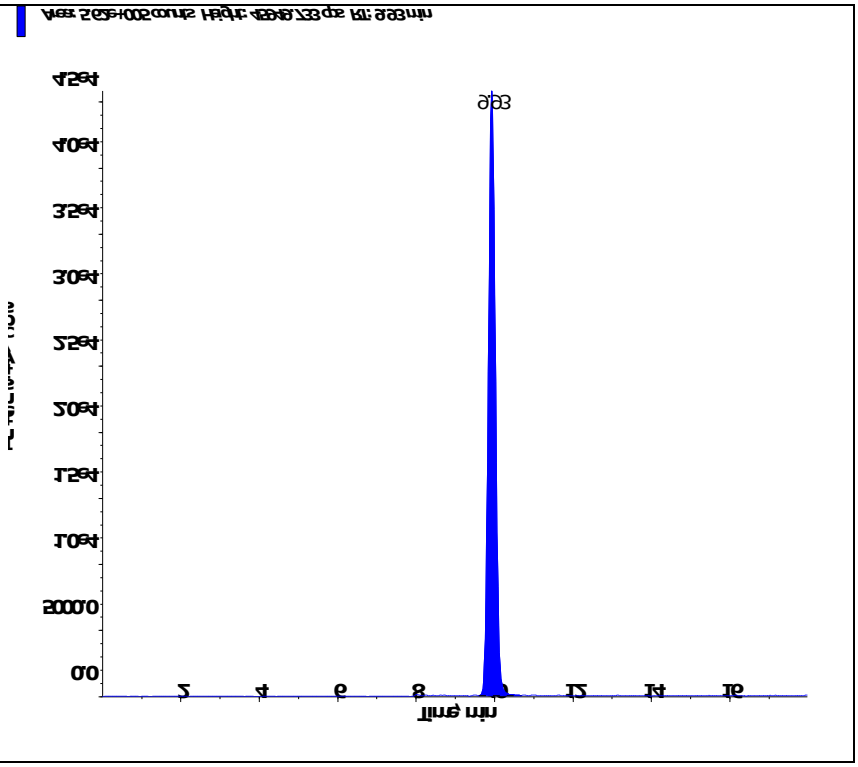

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Data File	LM33252.wiff	**Result Table**	021716_JWR.rdb
Acquisition Date	2/17/2016 9:43:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM33252.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 9:43:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	021716_JWR.rdb
Sample ID	WG557856-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.420e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+05	9.93	1.00	1.05
Perchlorate conf	6.360e+04	9.92	1.00	1.03

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

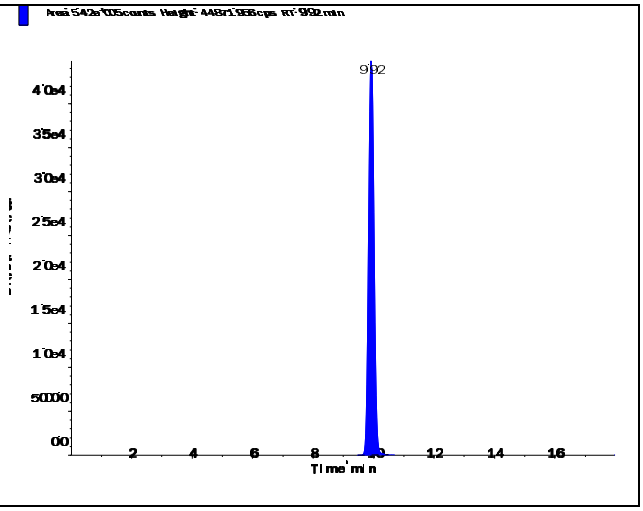

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.33
Sample Type:	(Quality Control)

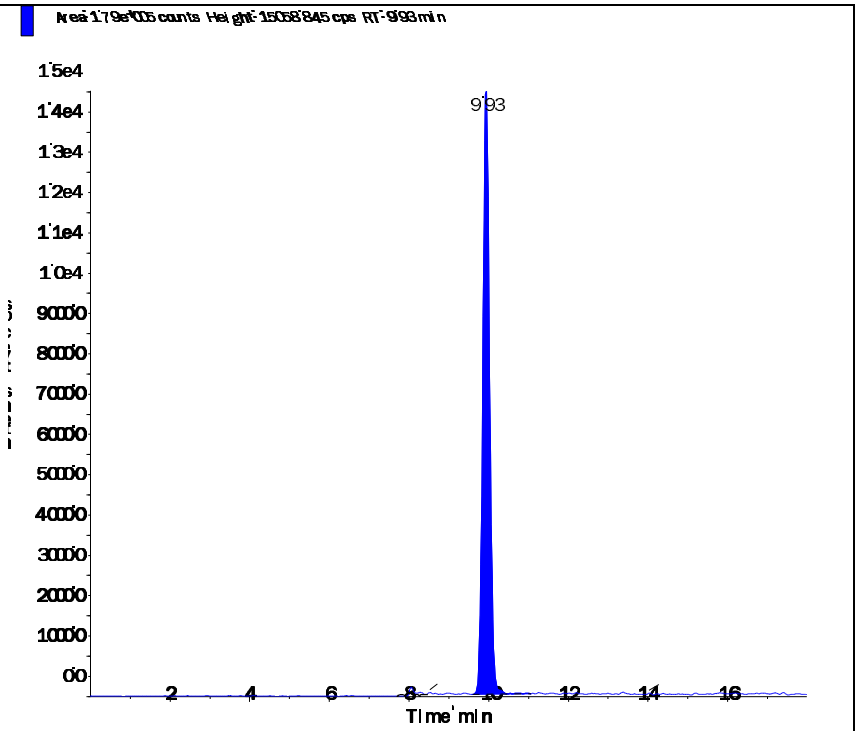

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.117
Sample Type:	(Quality Control)

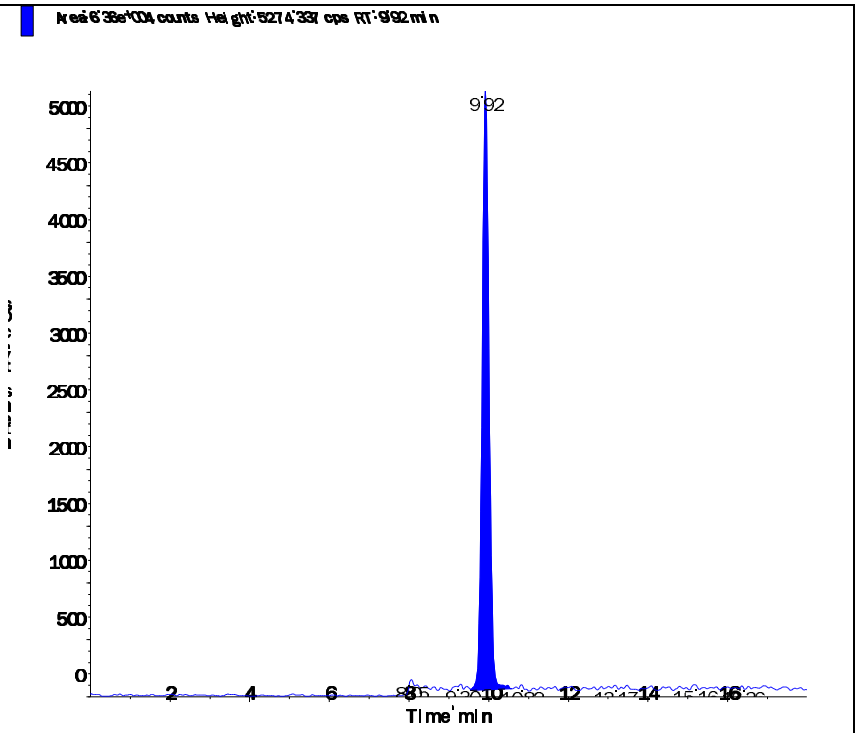

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Data File	LM33477.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/29/2016 8:56:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559066-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33477.wiff	**Injection Volume**	10.00
Acquisition Date	2/29/2016 8:56:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559066-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.320e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.760e+05	9.97	1.00	1.06
Perchlorate conf	5.830e+04	9.96	1.00	0.962

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

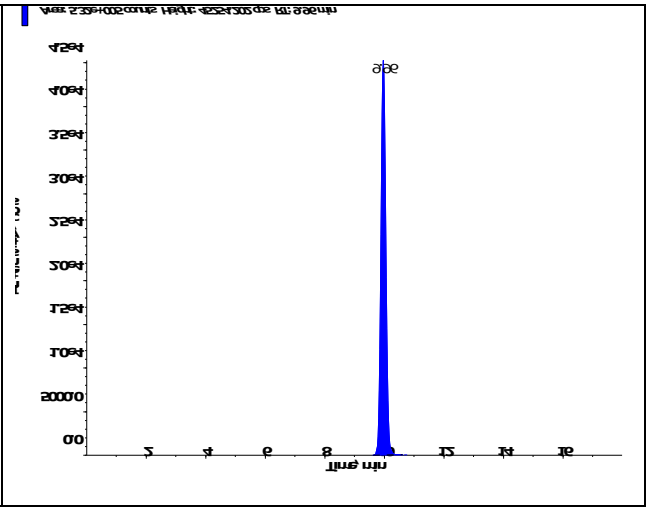

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.97 (9.94) min Calculated conc: 1.06 ng/ml Area Ratio: 0.332 Sample Type: (Quality Control)	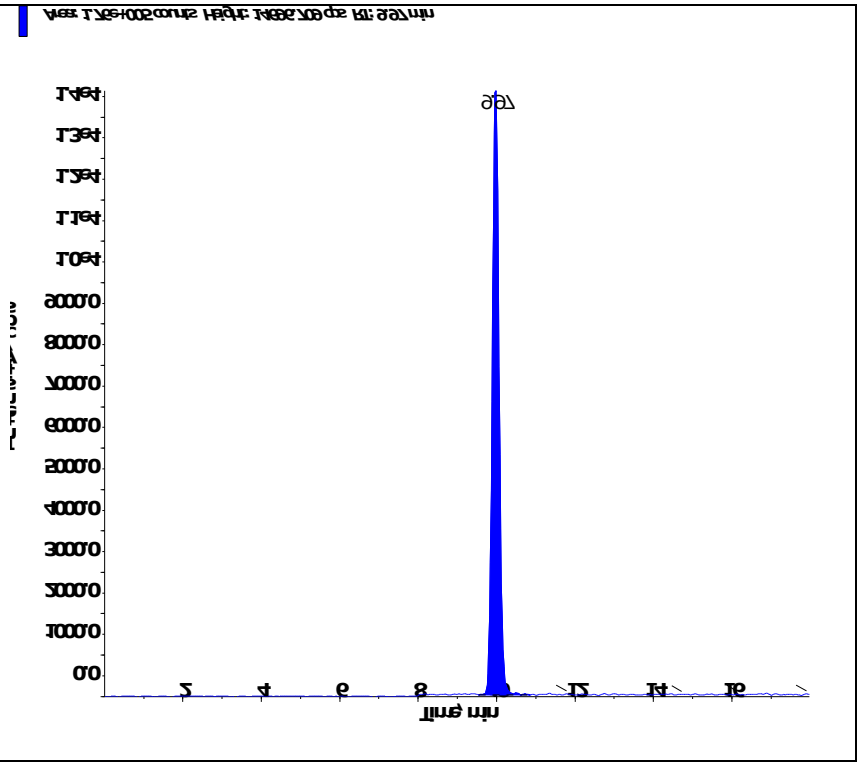
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.96 (9.92) min Calculated conc: 0.962 ng/ml Area Ratio: 0.11 Sample Type: (Quality Control)	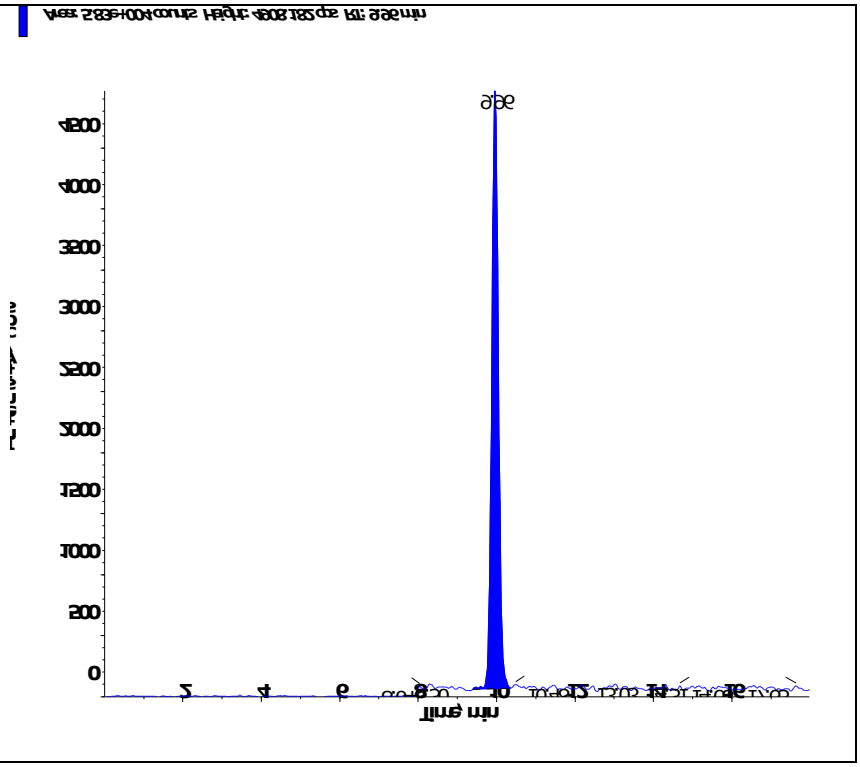

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Data File	LM33490.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 1:02:38 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG599066-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33490.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 1:02:38 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG599066-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.380e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.730e+05	9.97	1.00	1.02
Perchlorate conf	5.590e+04	9.95	1.00	0.91

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

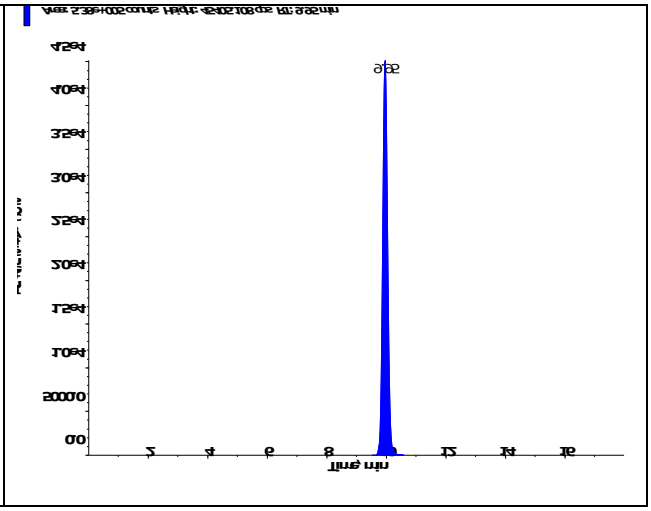

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.97 (9.94) min Calculated conc: 1.02 ng/ml Area Ratio: 0.322 Sample Type: (Quality Control)	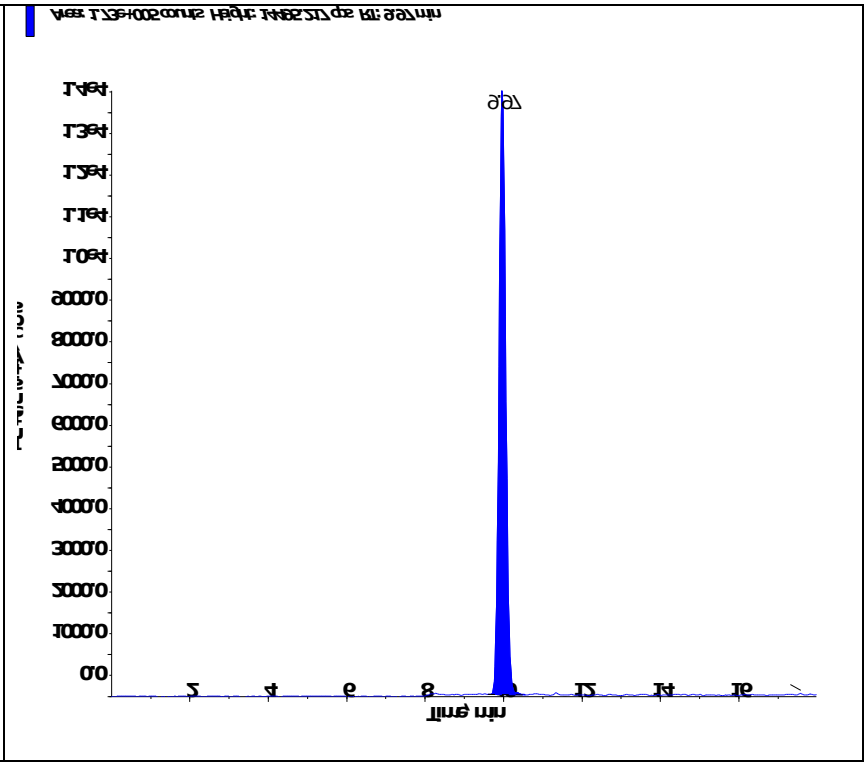
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.95 (9.92) min Calculated conc: 0.91 ng/ml Area Ratio: 0.104 Sample Type: (Quality Control)	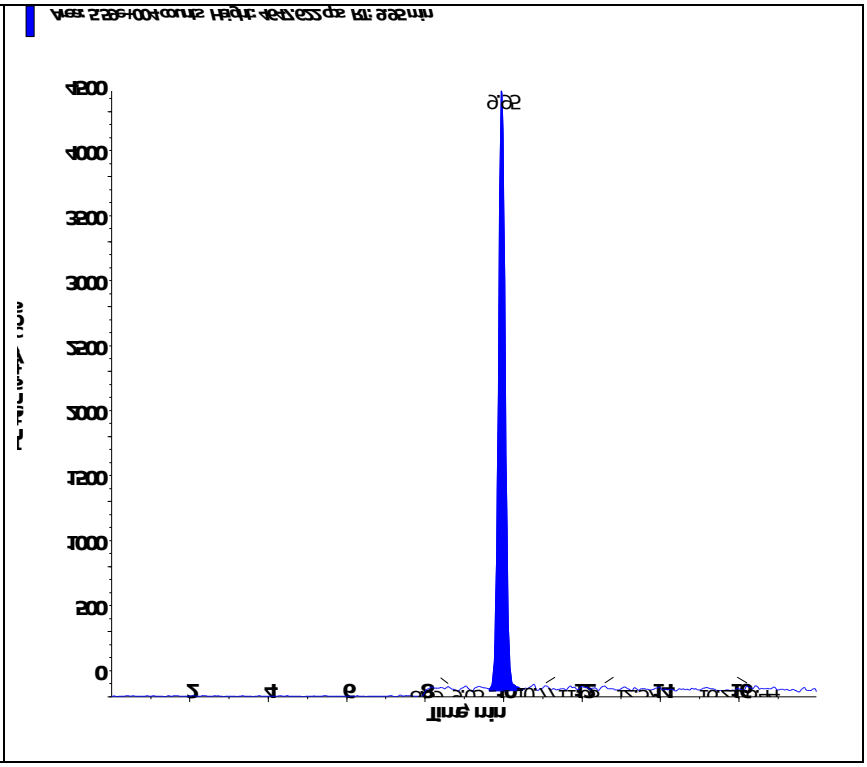

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Data File	LM33503.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 5:08:49 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG599066-11 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33503.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 5:08:49 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG599066-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.040e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.630e+05	9.96	1.00	1.03
Perchlorate conf	5.340e+04	9.94	1.00	0.929

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

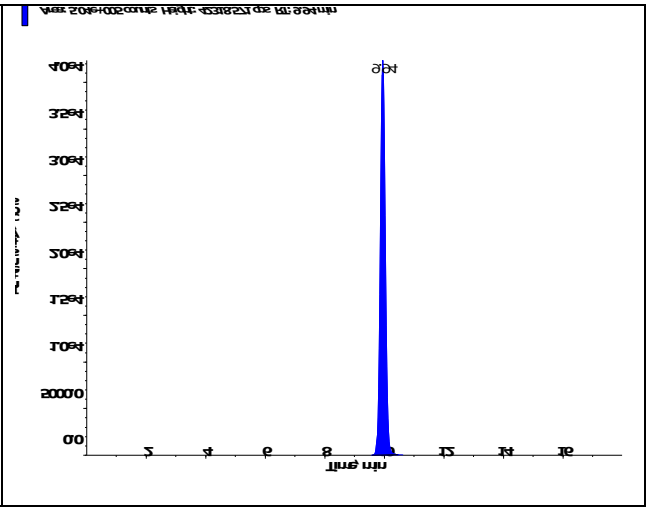

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.96 (9.94) min Calculated conc: 1.03 ng/ml Area Ratio: 0.323 Sample Type: (Quality Control)	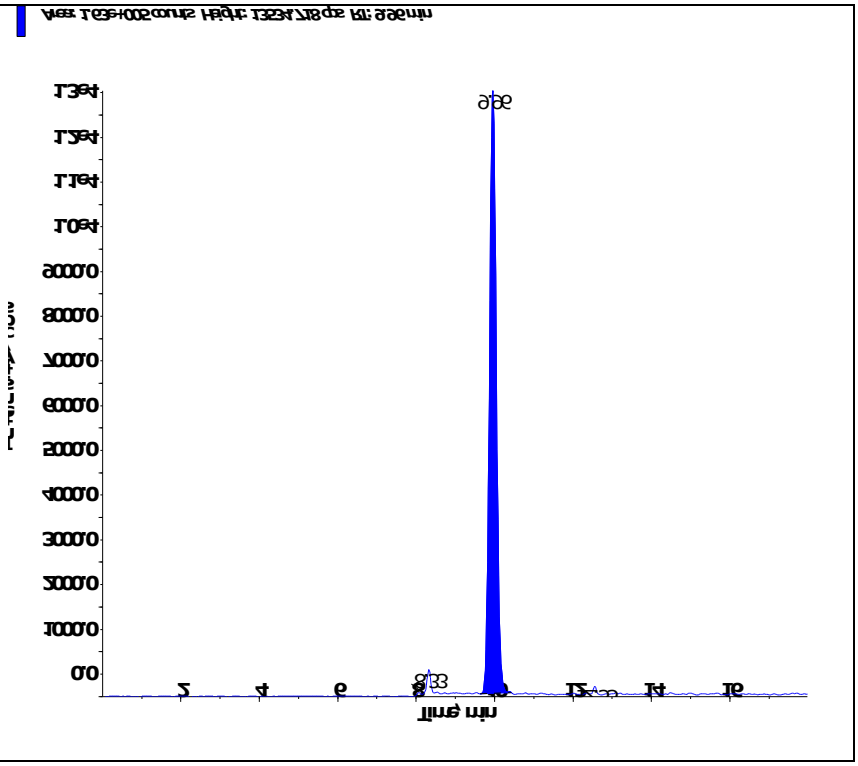
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.94 (9.92) min Calculated conc: 0.929 ng/ml Area Ratio: 0.106 Sample Type: (Quality Control)	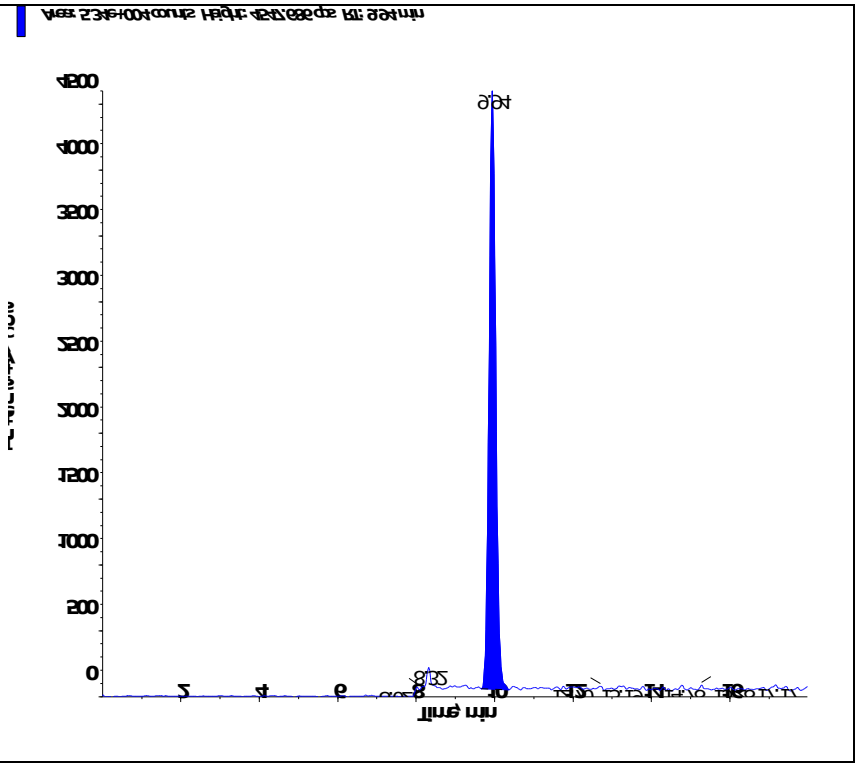

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Data File	LM33508.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 9:35:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559066-13 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33508.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 9:35:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559066-13	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.810e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.560e+05	9.97	1.00	1.03
Perchlorate conf	5.140e+04	9.96	1.00	0.936

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

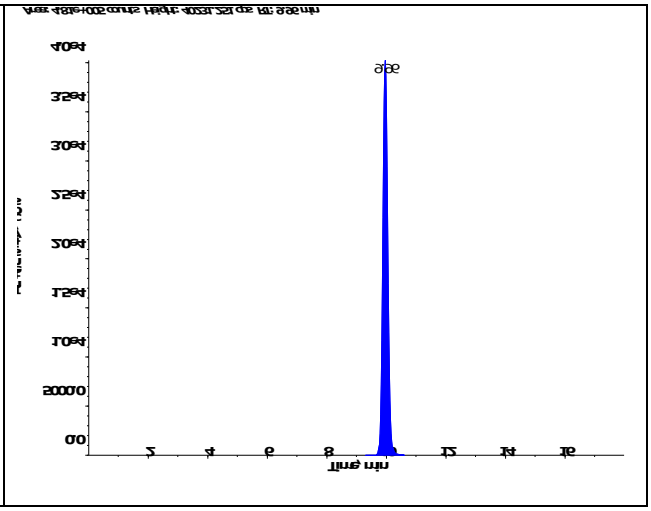

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.97 (9.94) min Calculated conc: 1.03 ng/ml Area Ratio: 0.324 Sample Type: (Quality Control)	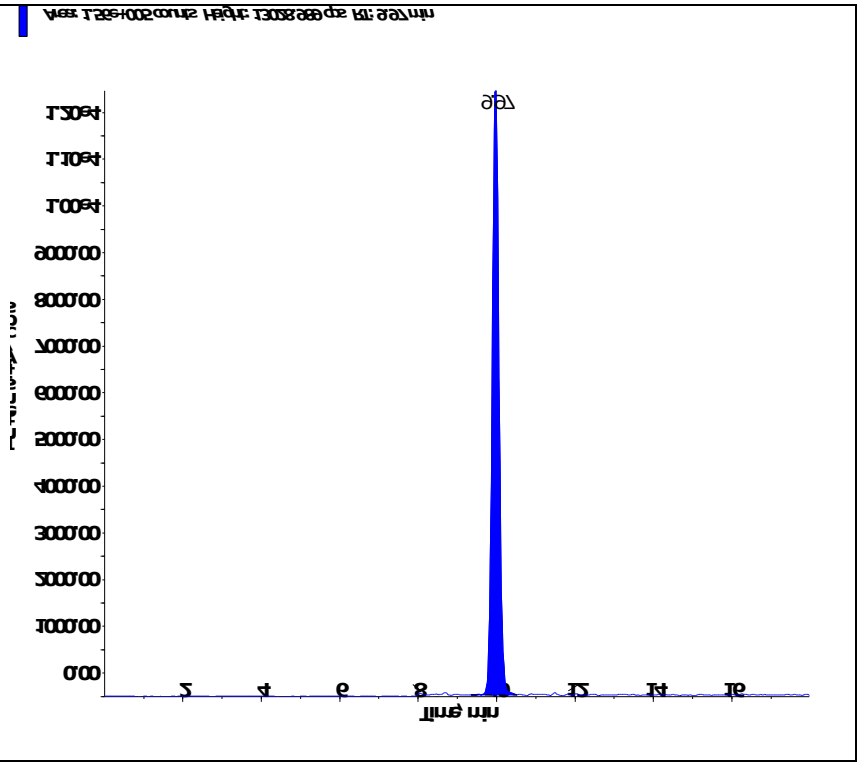
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.96 (9.92) min Calculated conc: 0.936 ng/ml Area Ratio: 0.107 Sample Type: (Quality Control)	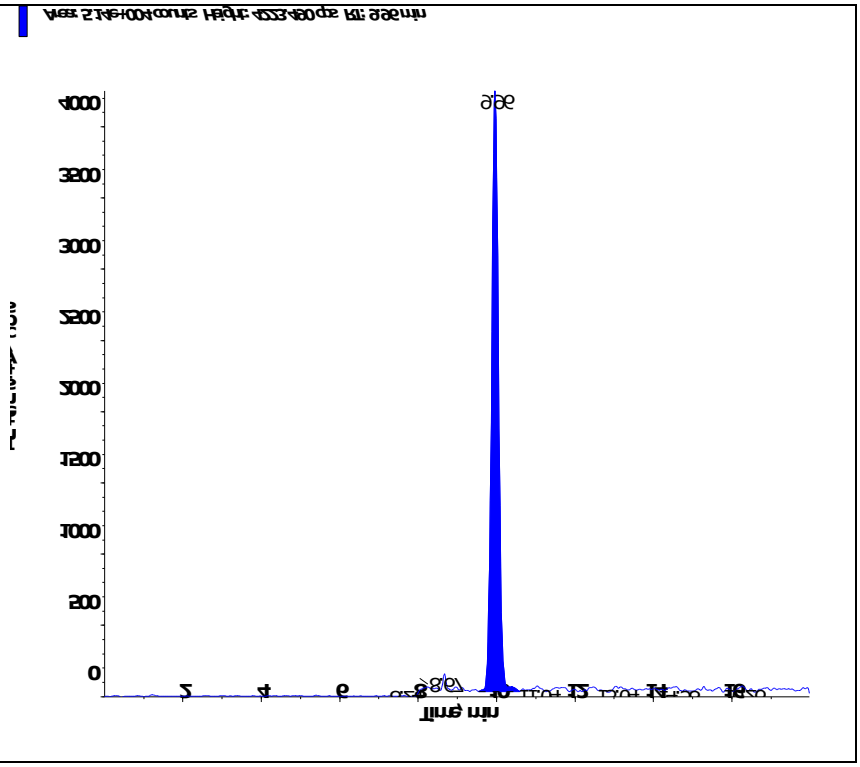

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Data File	LM33516.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 12:07:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG599066-15 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33516.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 12:07:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG599066-15	**Dilution Factor**	1.00
Sample Comment	1,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.910e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.620e+05	10.00	1.00	1.05
Perchlorate conf	5.300e+04	9.98	1.00	0.945

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

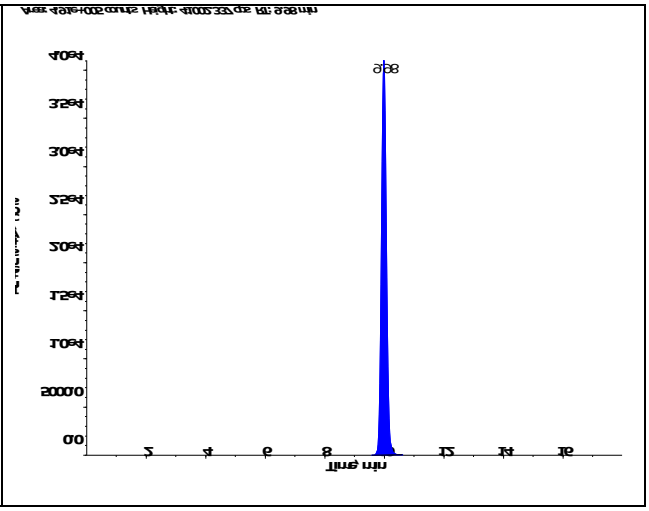

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.00 (9.94) min Calculated conc: 1.05 ng/ml Area Ratio: 0.33 Sample Type: (Quality Control)	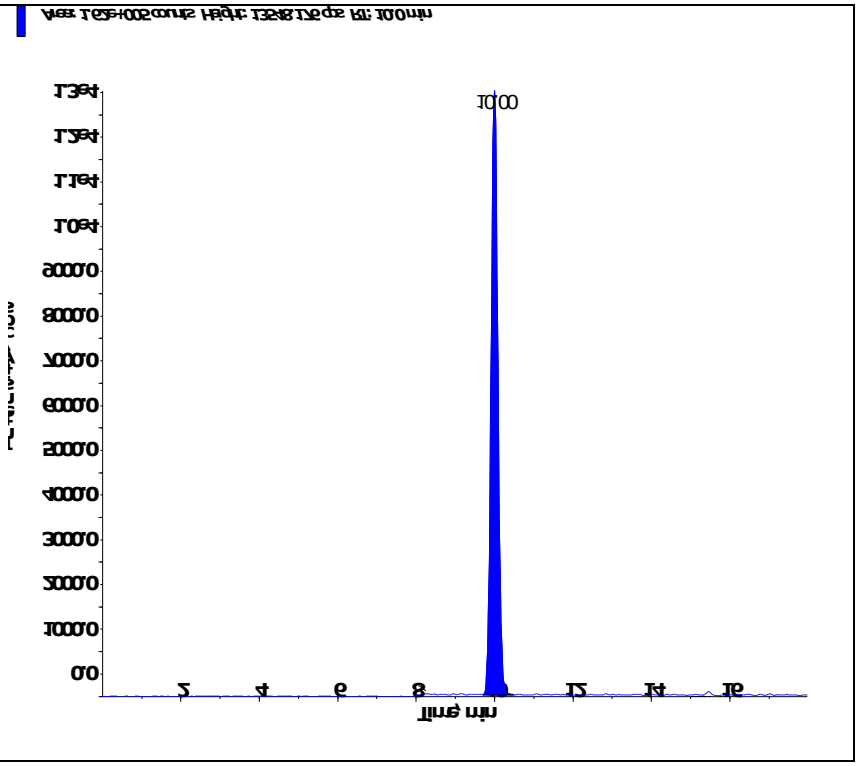
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.98 (9.92) min Calculated conc: 0.945 ng/ml Area Ratio: 0.108 Sample Type: (Quality Control)	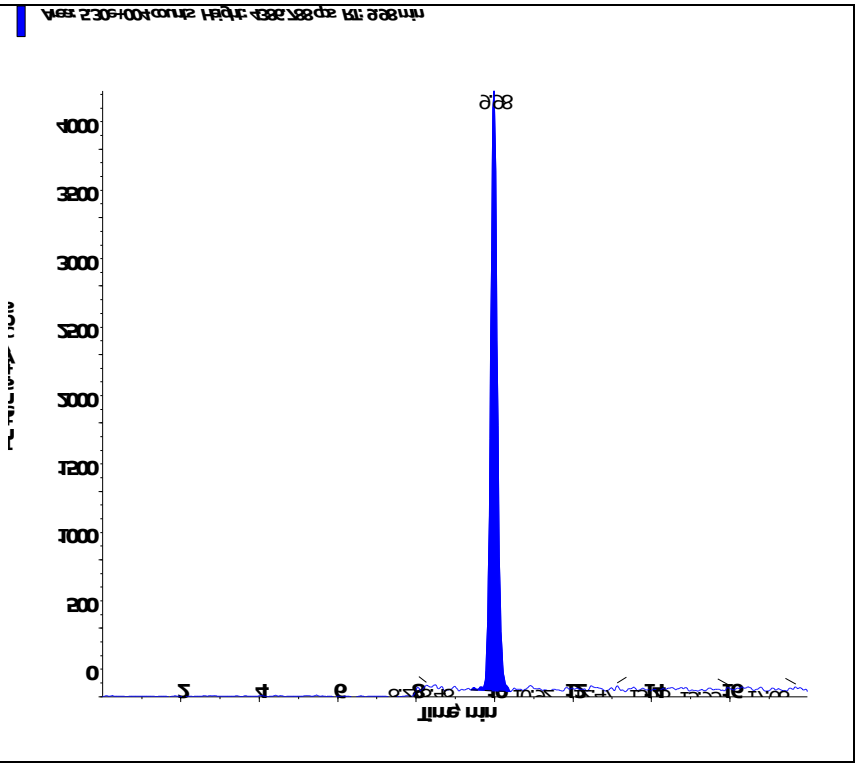

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Data File	LM33478.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/29/2016 9:15:23 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559015-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM33478.wiff	**Injection Volume**	10.00
Acquisition Date	2/29/2016 9:15:23 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559015-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.310e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.910e+04	9.98	N/A	0.218
Perchlorate conf	1.350e+04	9.96	N/A	0.205

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

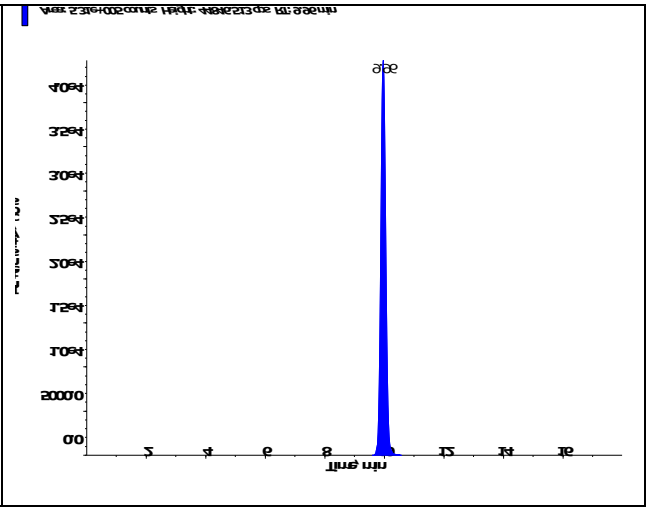

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.98 (9.94) min Calculated conc: 0.218 ng/ml Area Ratio: 0.074 Sample Type: (Unknown)	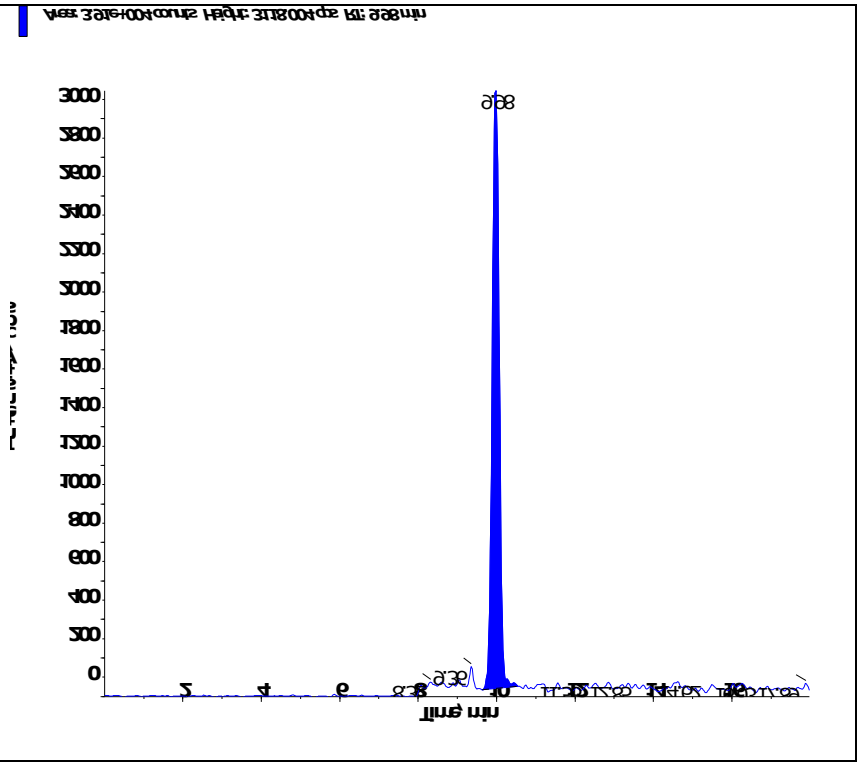
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.96 (9.92) min Calculated conc: 0.205 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	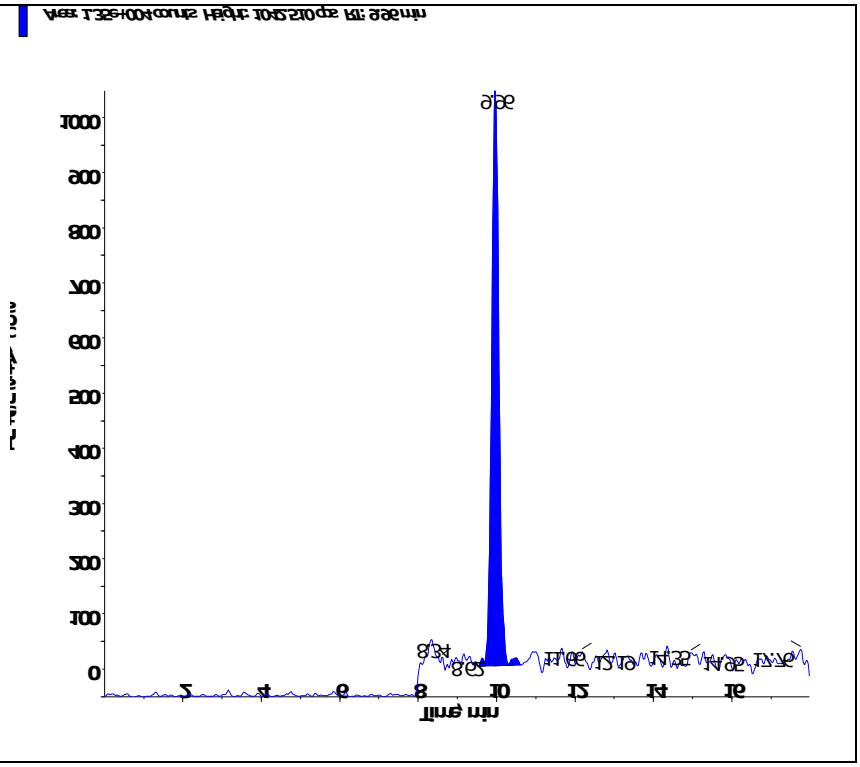

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Data File	LM33491.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 1:21:34 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559142-08 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33491.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 1:21:34 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559142-08	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.260e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.630e+04	9.98	N/A	0.202
Perchlorate conf	1.260e+04	9.97	N/A	0.192

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

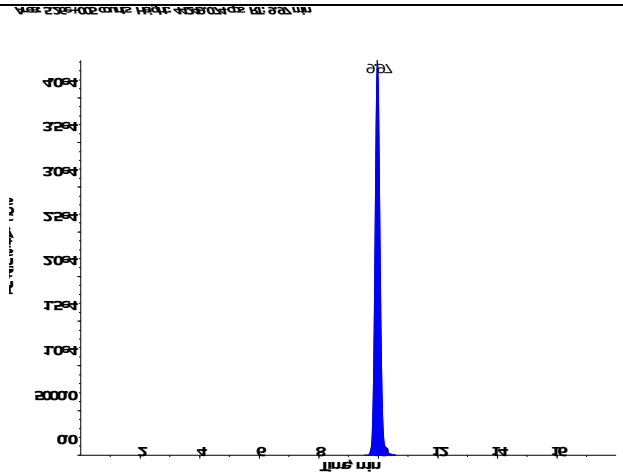

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.98 (9.94) min Calculated conc: 0.202 ng/ml Area Ratio: 0.069 Sample Type: (Unknown)	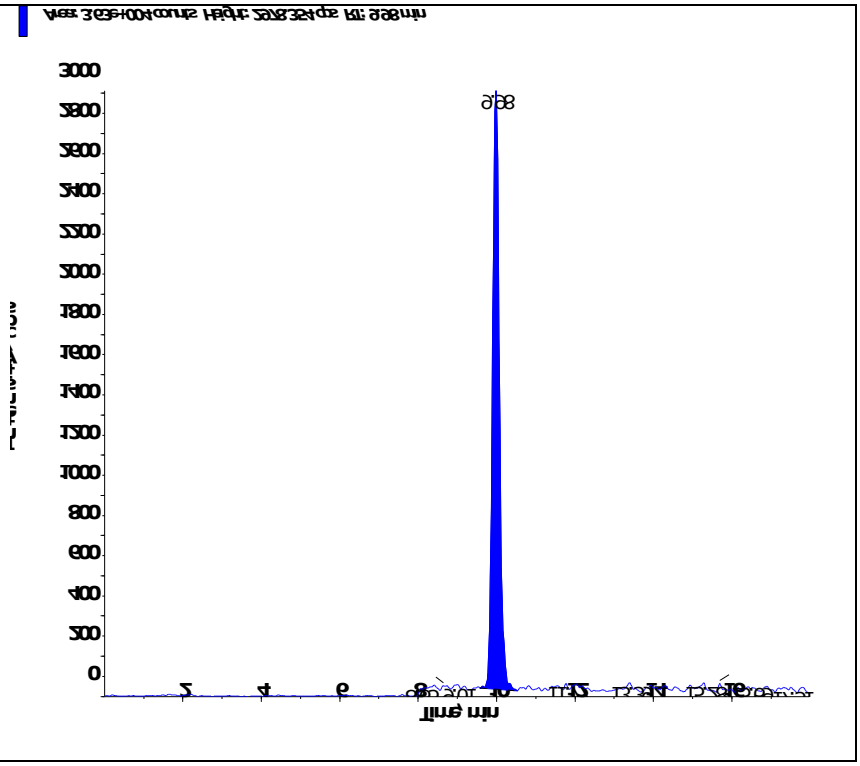
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.97 (9.92) min Calculated conc: 0.192 ng/ml Area Ratio: 0.024 Sample Type: (Unknown)	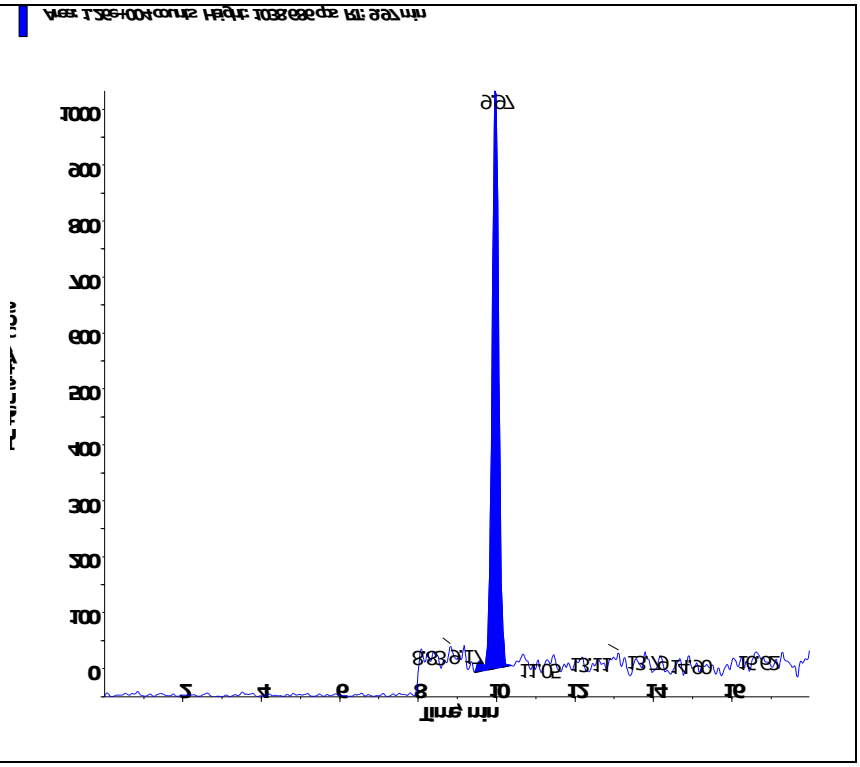

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Data File	LM33504.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 5:27:44 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559142-09 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33504.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 5:27:44 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559142-09	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.500e+04	9.96	N/A	0.205
Perchlorate conf	1.180e+04	9.95	N/A	0.188

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

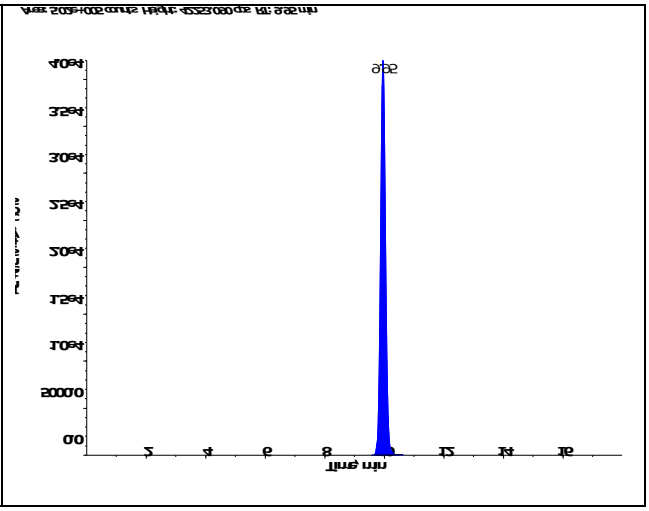

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.96 (9.94) min Calculated conc: 0.205 ng/ml Area Ratio: 0.07 Sample Type: (Unknown)	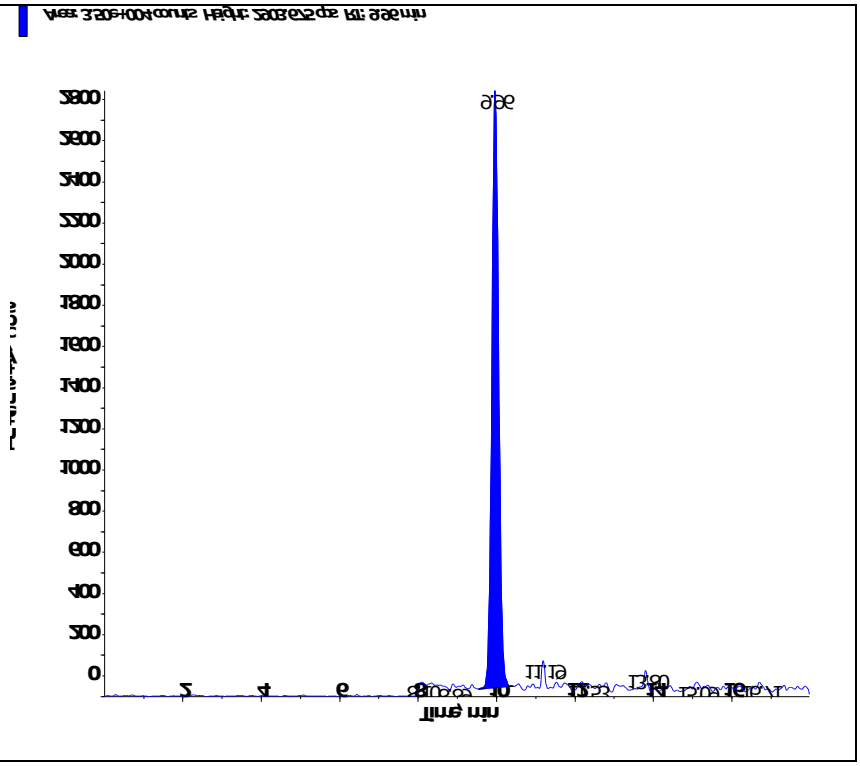
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.95 (9.92) min Calculated conc: 0.188 ng/ml Area Ratio: 0.023 Sample Type: (Unknown)	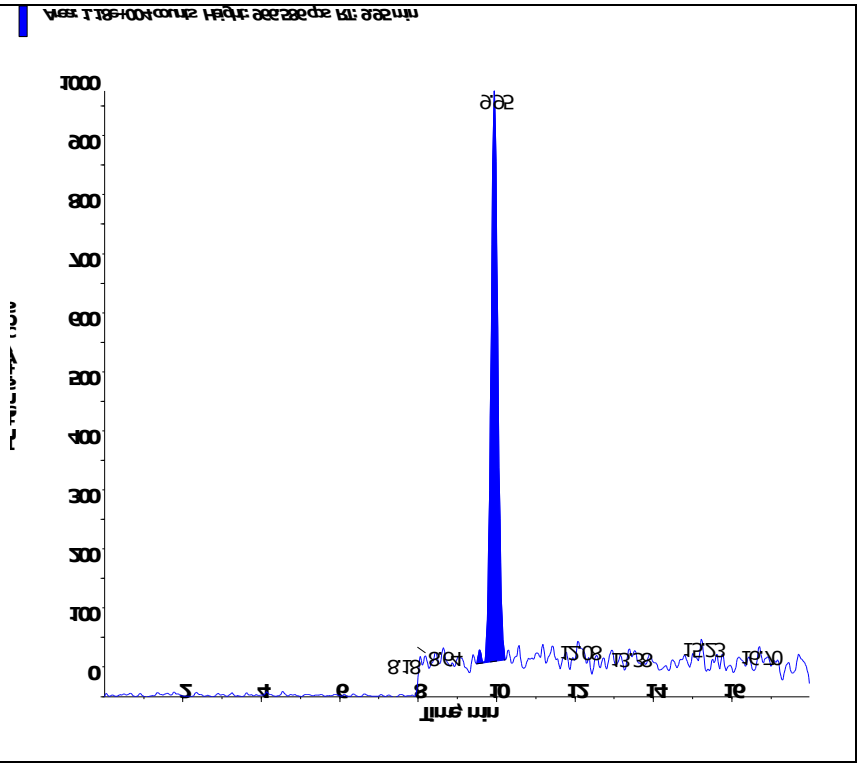

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Data File	LM33517.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 12:26:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559142-10 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33517.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 12:26:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559142-10	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.860e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.430e+04	10.00	N/A	0.207
Perchlorate conf	1.180e+04	9.98	N/A	0.196

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

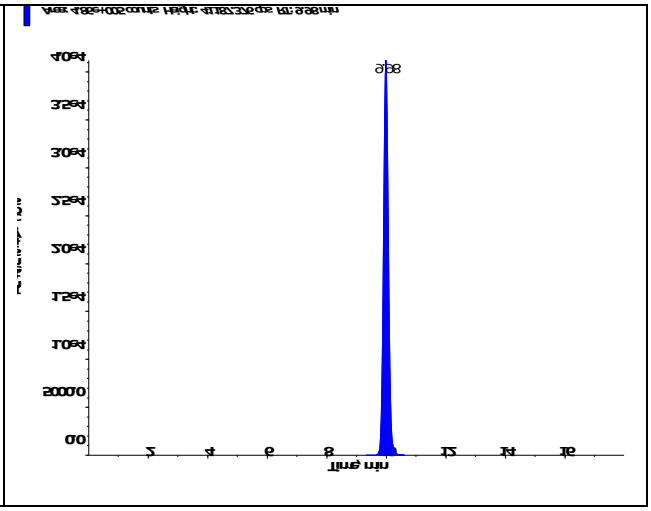

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.00 (9.94) min Calculated conc: 0.207 ng/ml Area Ratio: 0.07 Sample Type: (Unknown)	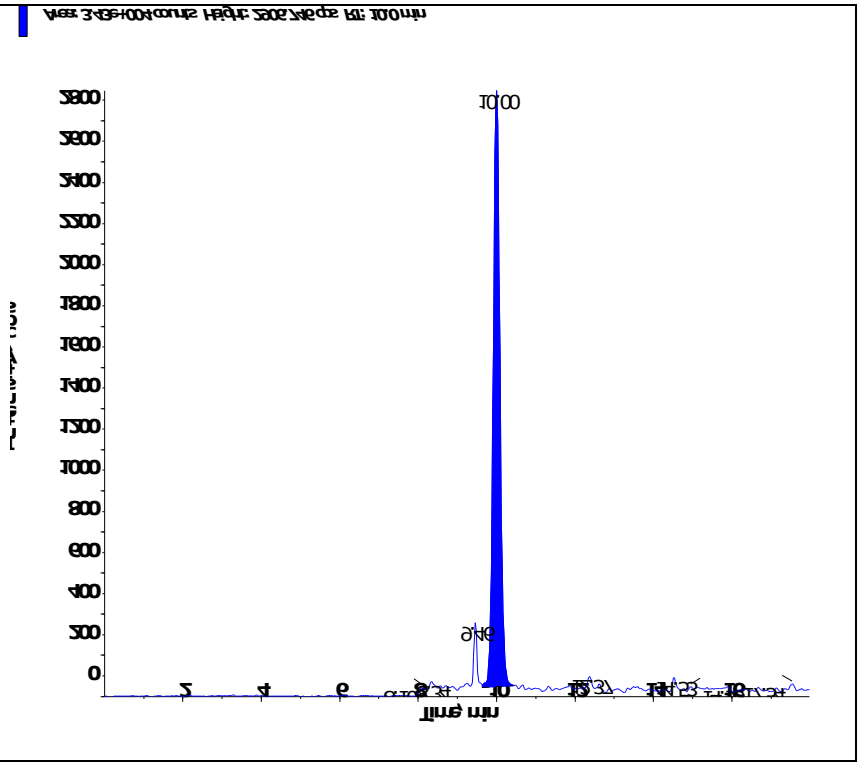
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.98 (9.92) min Calculated conc: 0.196 ng/ml Area Ratio: 0.024 Sample Type: (Unknown)	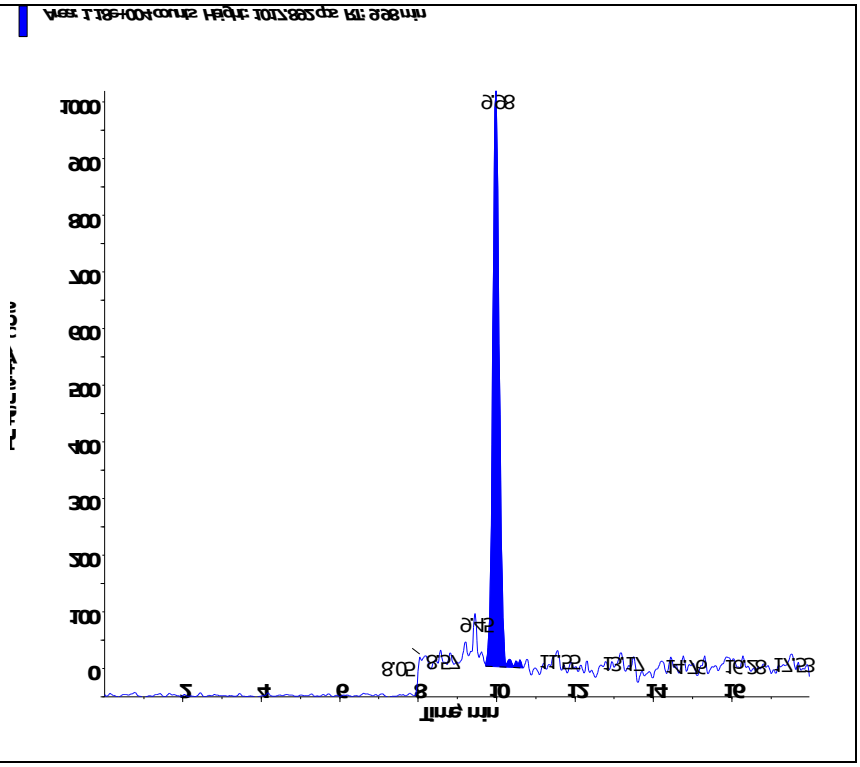

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Data File	LM33479.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/29/2016 9:34:19 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559066-08 CCB	**Injection Vial**	1.00
Data File	LM33479.wiff	**Injection Volume**	10.00
Acquisition Date	2/29/2016 9:34:19 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559066-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.400e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.400e+02	9.92	N/A	< 0
Perchlorate conf	2.300e+02	9.95	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

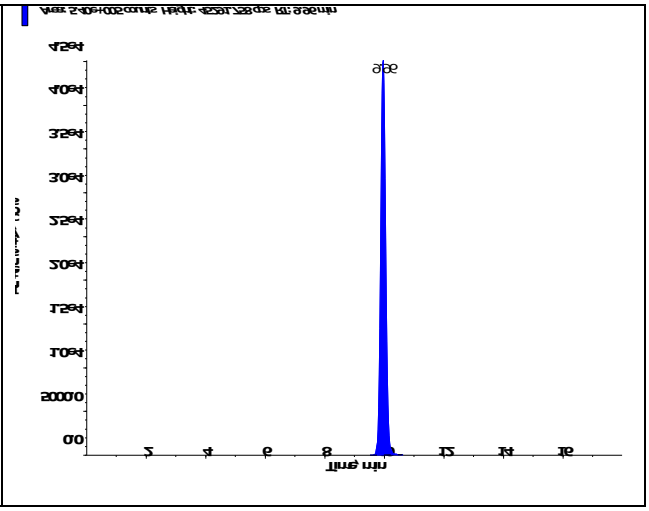

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.92 (9.94) min Calculated conc: < 0 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	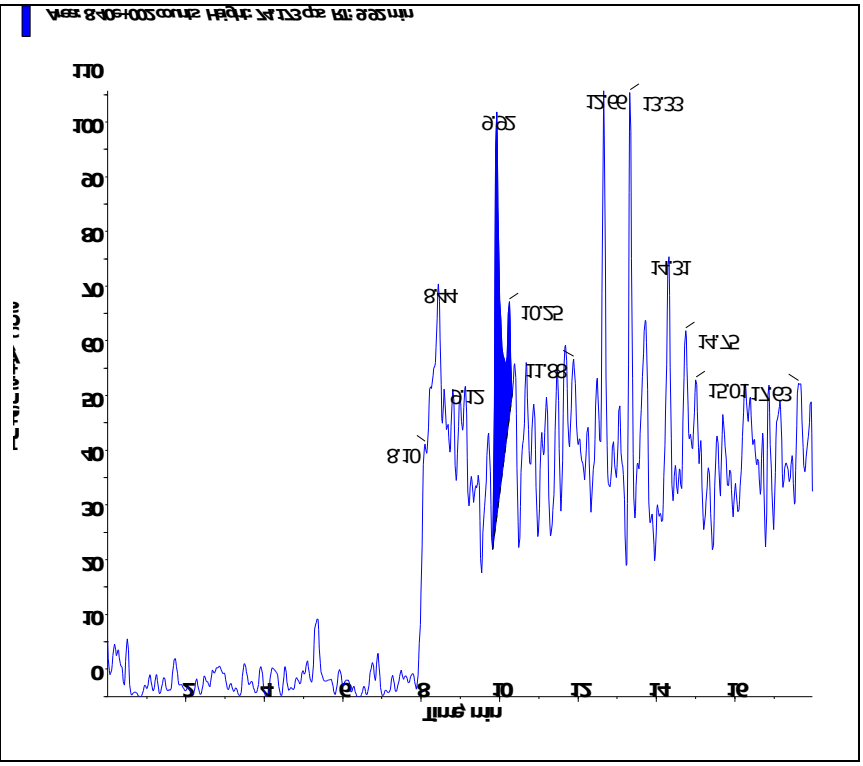
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.95 (9.92) min Calculated conc: < 0 ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	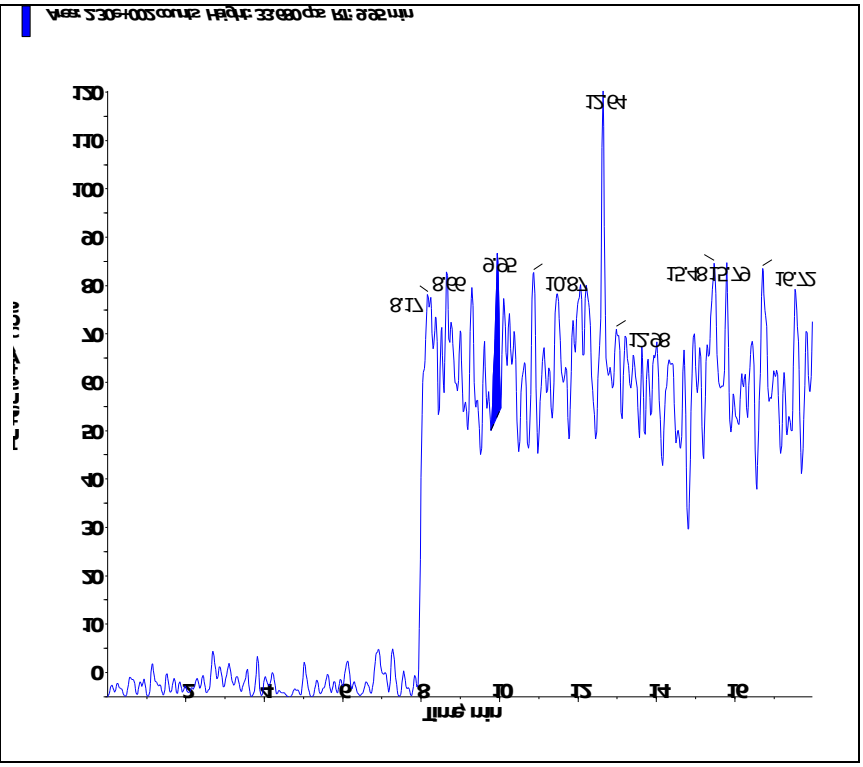

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Data File	LM33492.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 1:40:30 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG599066-10 CCB	**Injection Vial**	1.00
Data File	LM33492.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 1:40:30 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG599066-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.310e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	4.900e+02	9.88	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

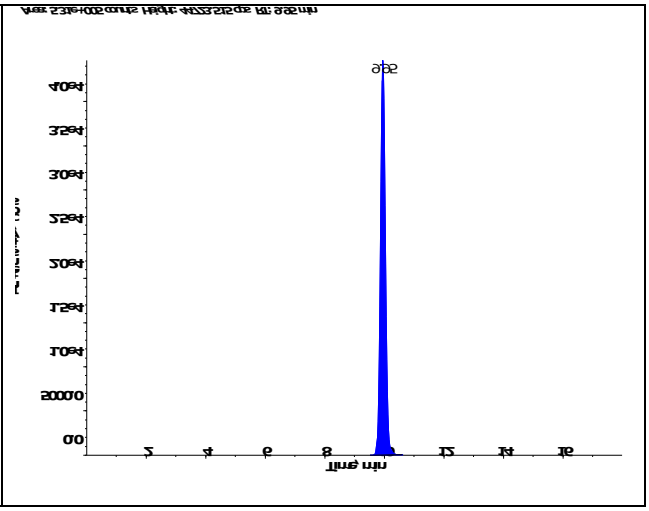

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.94) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	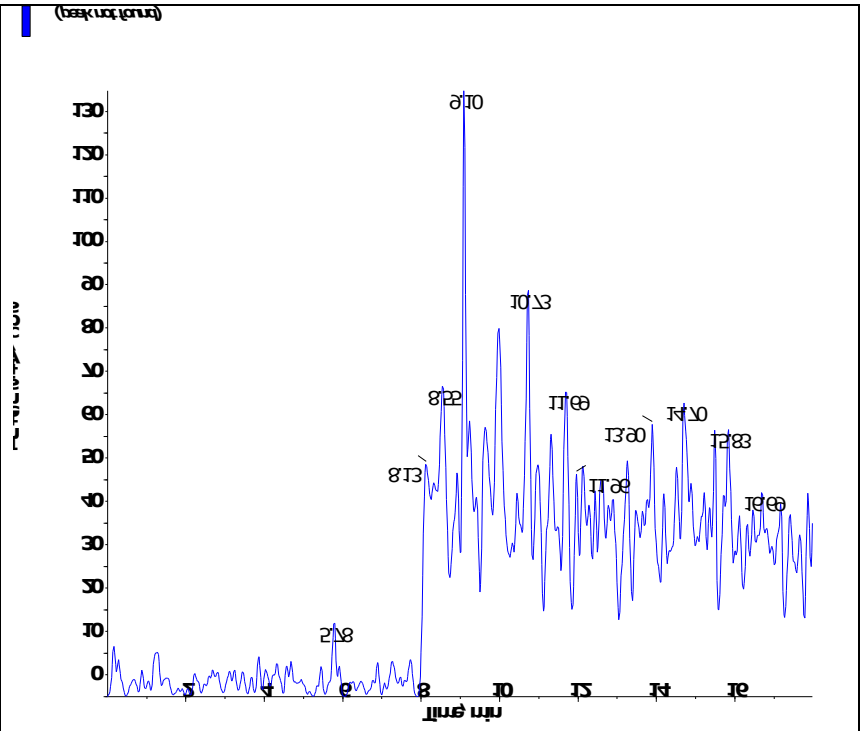
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.88 (9.92) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	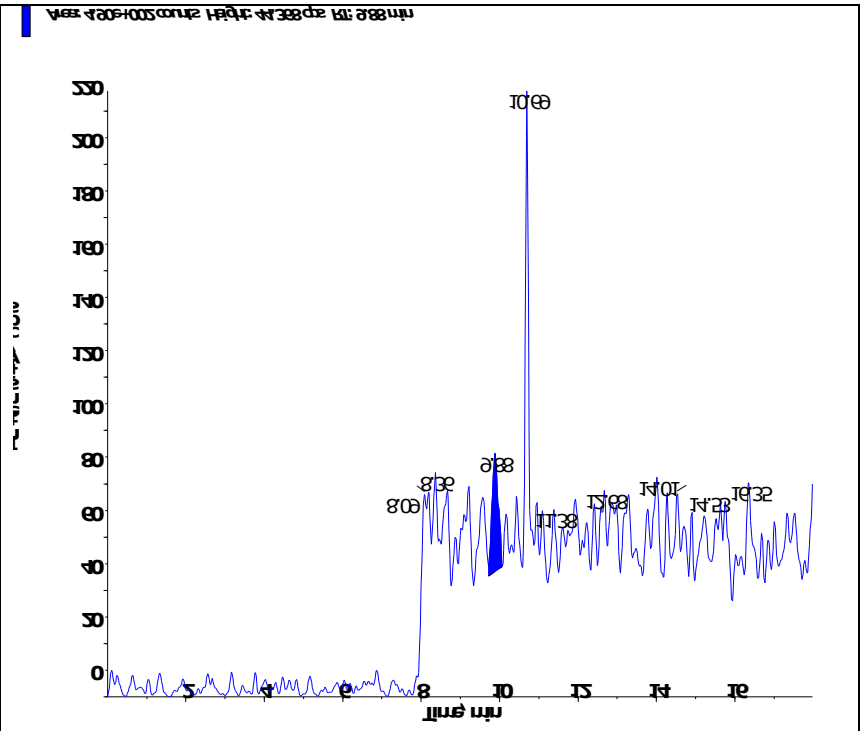

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Printed: 3/1/2016 2:43 PM

Data File	LM33505.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 5:46:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG599066-12 CCB	**Injection Vial**	1.00
Data File	LM33505.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 5:46:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG599066-12	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

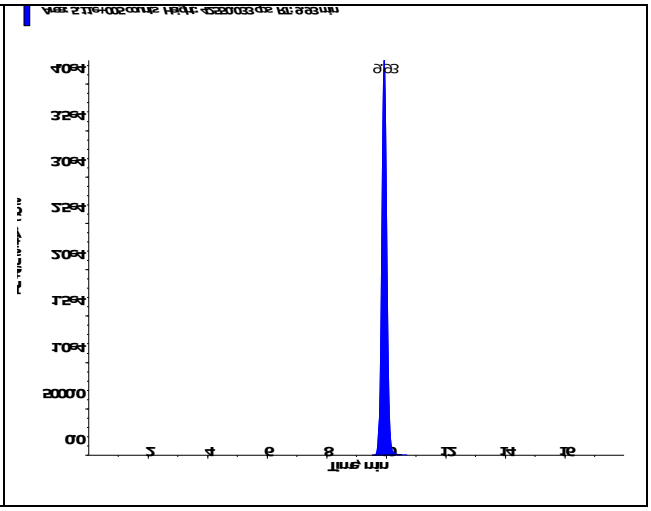

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.94) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	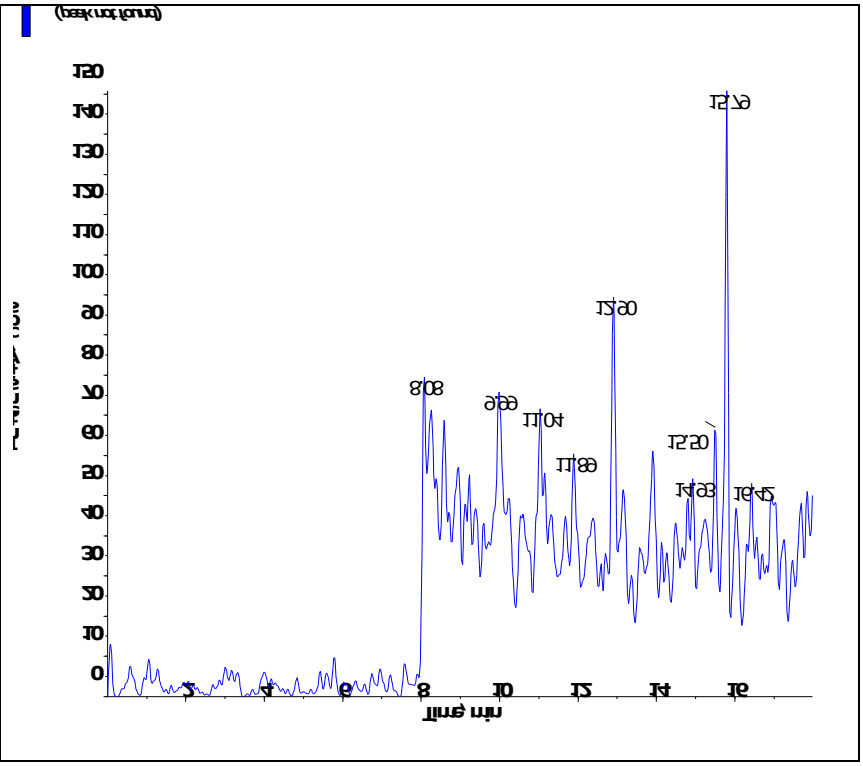
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.92) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	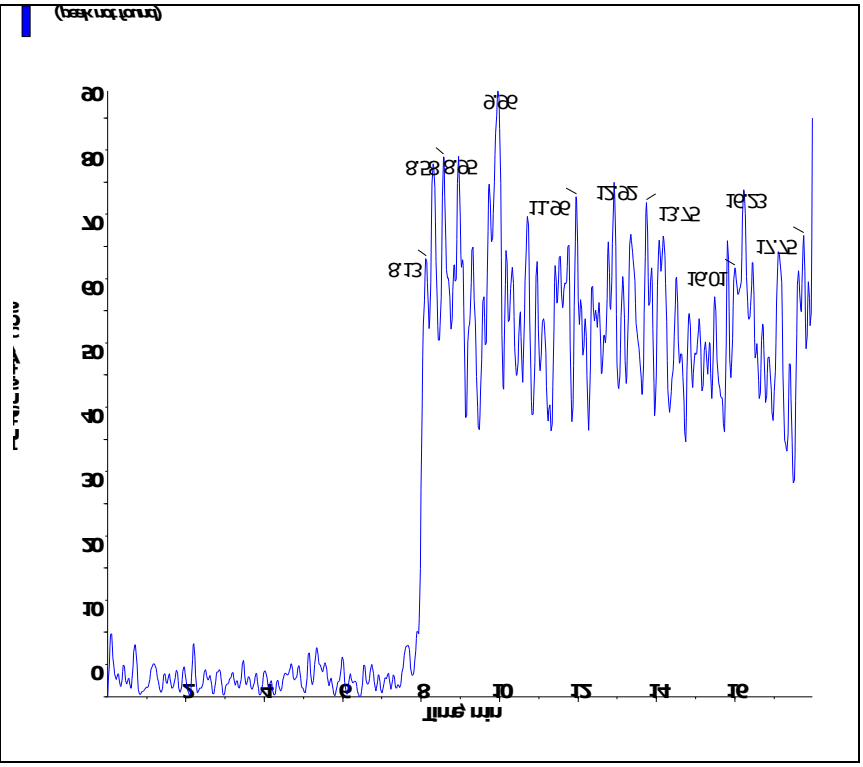

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Data File	LM33510.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 10:13:50 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559066-14 CCB	**Injection Vial**	1.00
Data File	LM33510.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 10:13:50 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559066-14	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.980e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

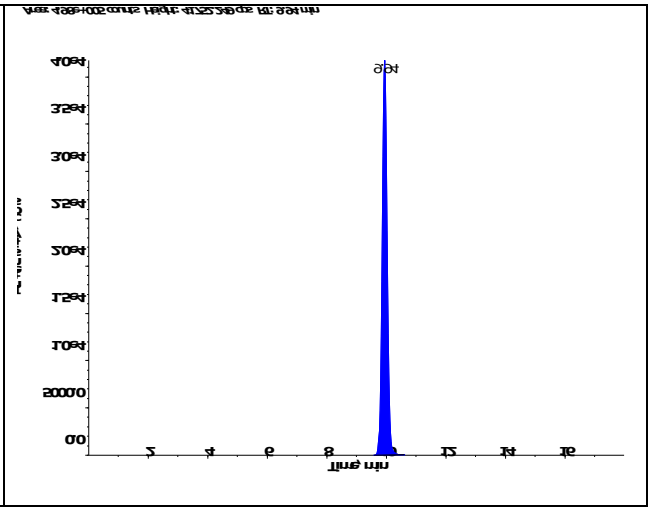

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Printed: 3/1/2016 2:44 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.94) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	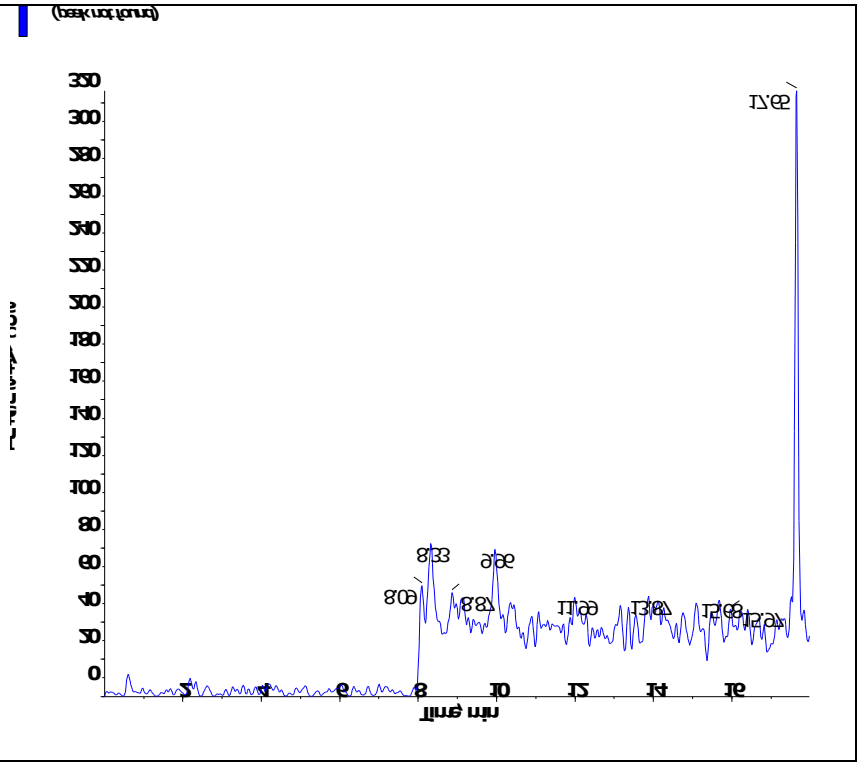
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.92) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	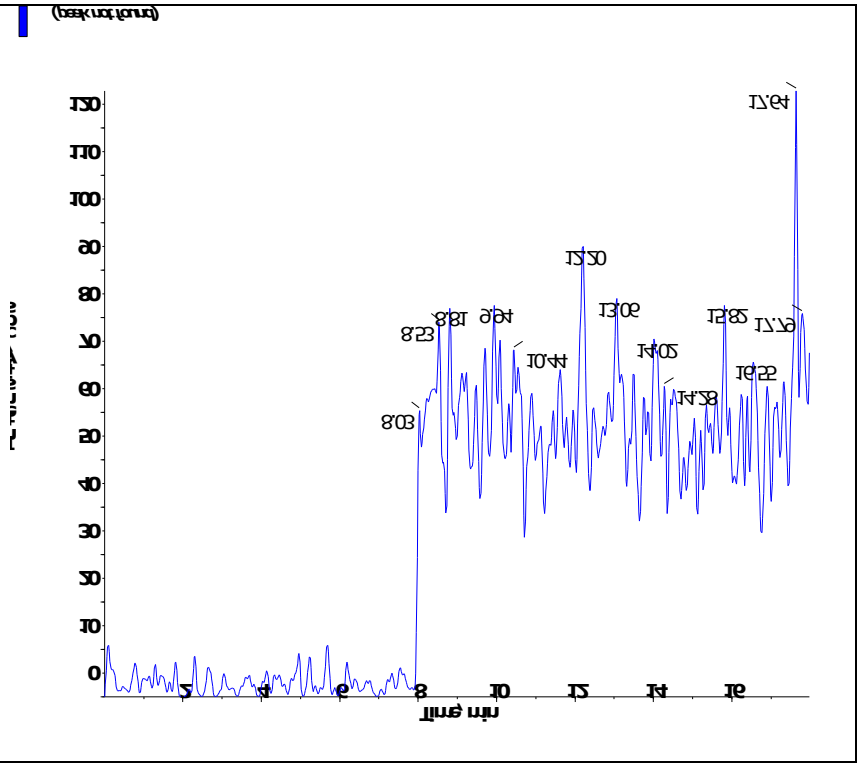

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Data File	LM33518.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 12:45:23 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG599066-16 CCB	**Injection Vial**	1.00
Data File	LM33518.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 12:45:23 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG599066-16	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.870e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.320e+03	10.10	N/A	< 0
Perchlorate conf	1.400e+03	10.10	N/A	0.0035

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

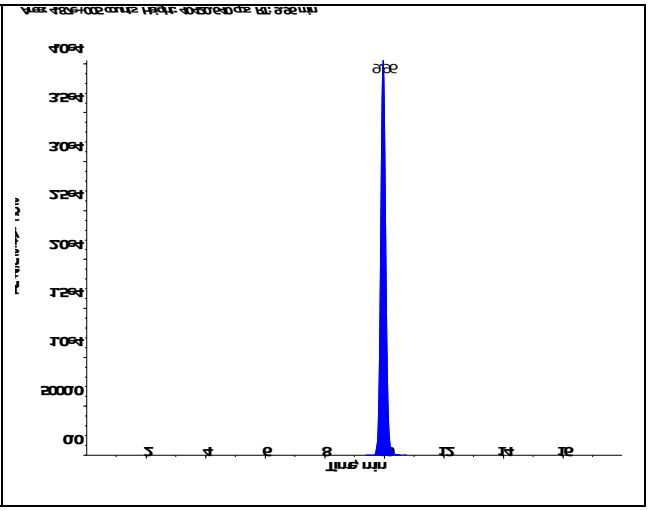

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.10 (9.94) min Calculated conc: < 0 ng/ml Area Ratio: 0.003 Sample Type: (Unknown)	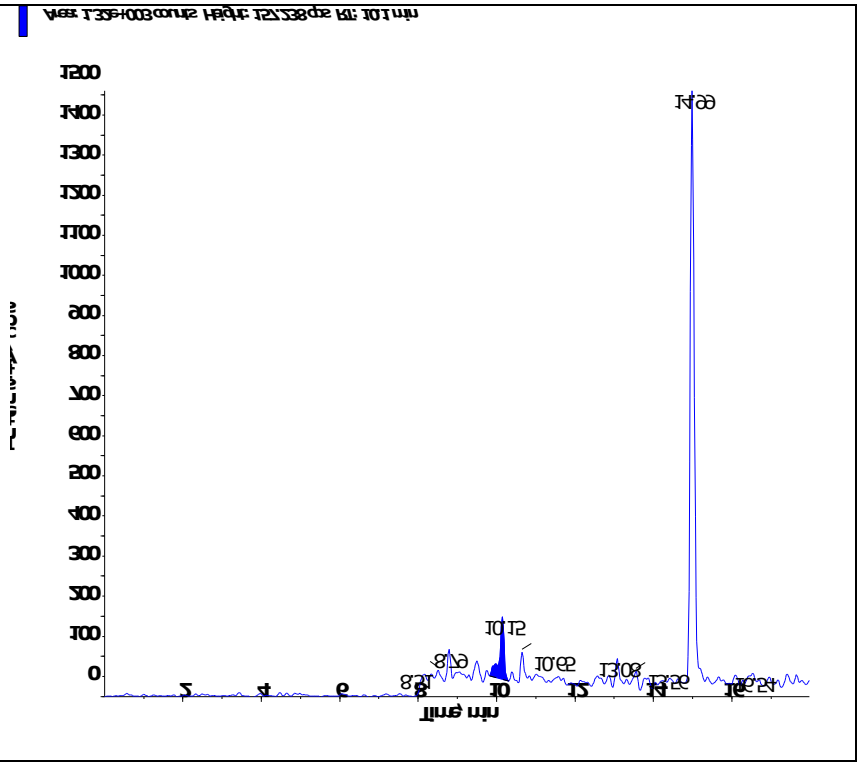
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 10.10 (9.92) min Calculated conc: 0.0035 ng/ml Area Ratio: 0.003 Sample Type: (Unknown)	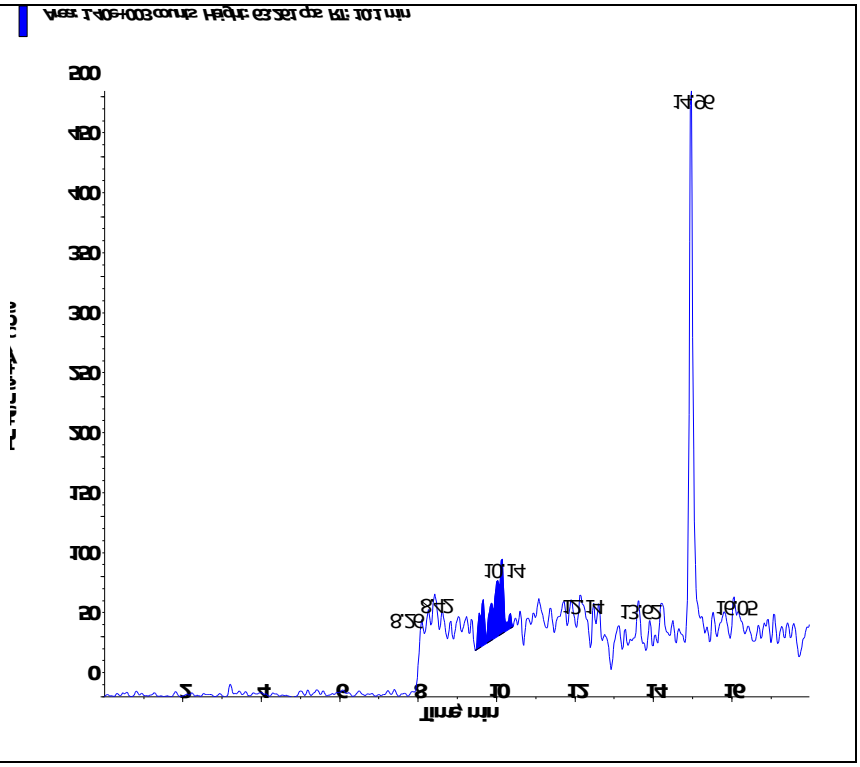

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Data File	LM33480.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/29/2016 9:53:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559142-01 MCT (2.0ug/kg)	**Injection Vial**	26.00
Data File	LM33480.wiff	**Injection Volume**	10.00
Acquisition Date	2/29/2016 9:53:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559142-01	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.060e+05	9.56	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.320e+04	9.57	N/A	0.191
Perchlorate conf	1.150e+04	9.55	N/A	0.181

O18LP (Internal Standard)

RT (Exp. RT): 9.56(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

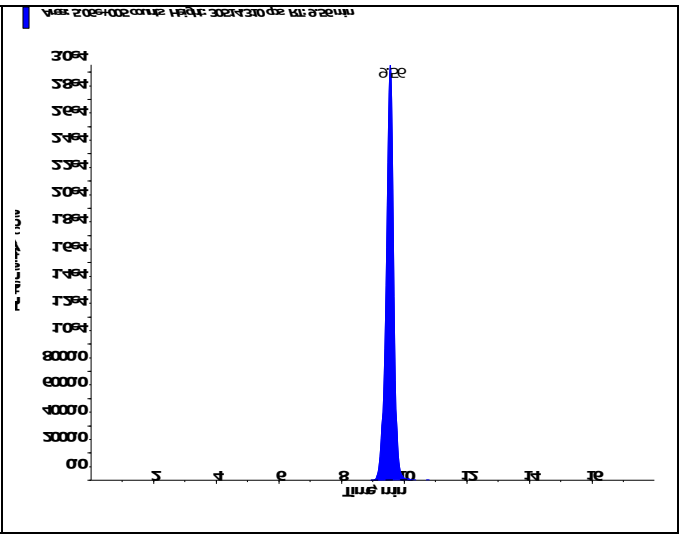

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.57 (9.94) min Calculated conc: 0.191 ng/ml Area Ratio: 0.066 Sample Type: (Unknown)	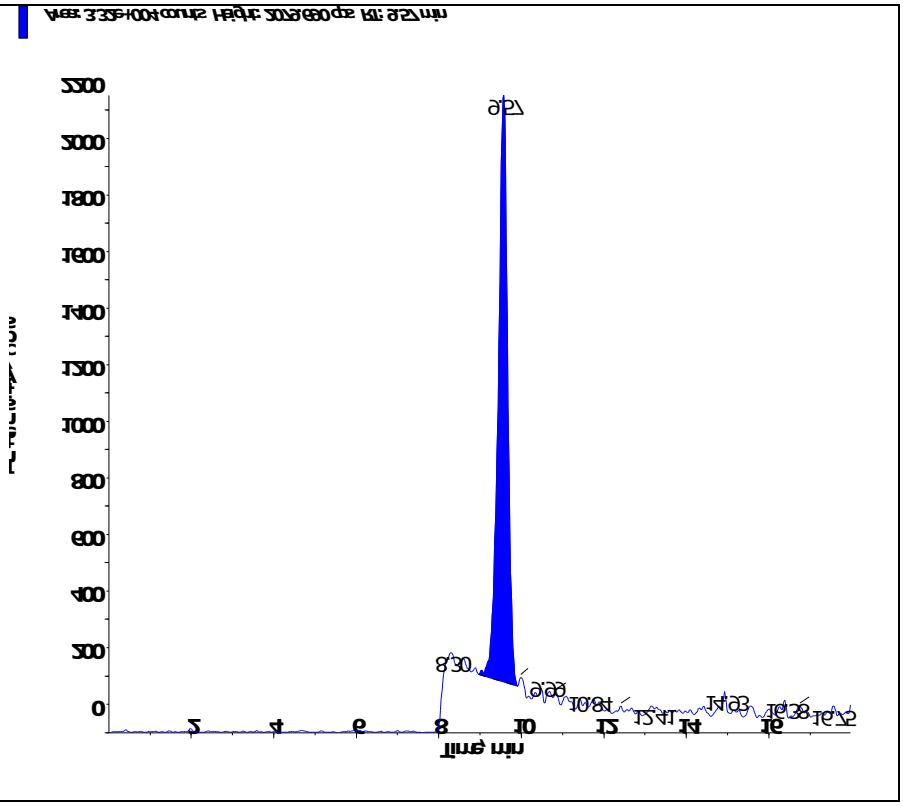
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.55 (9.92) min Calculated conc: 0.181 ng/ml Area Ratio: 0.023 Sample Type: (Unknown)	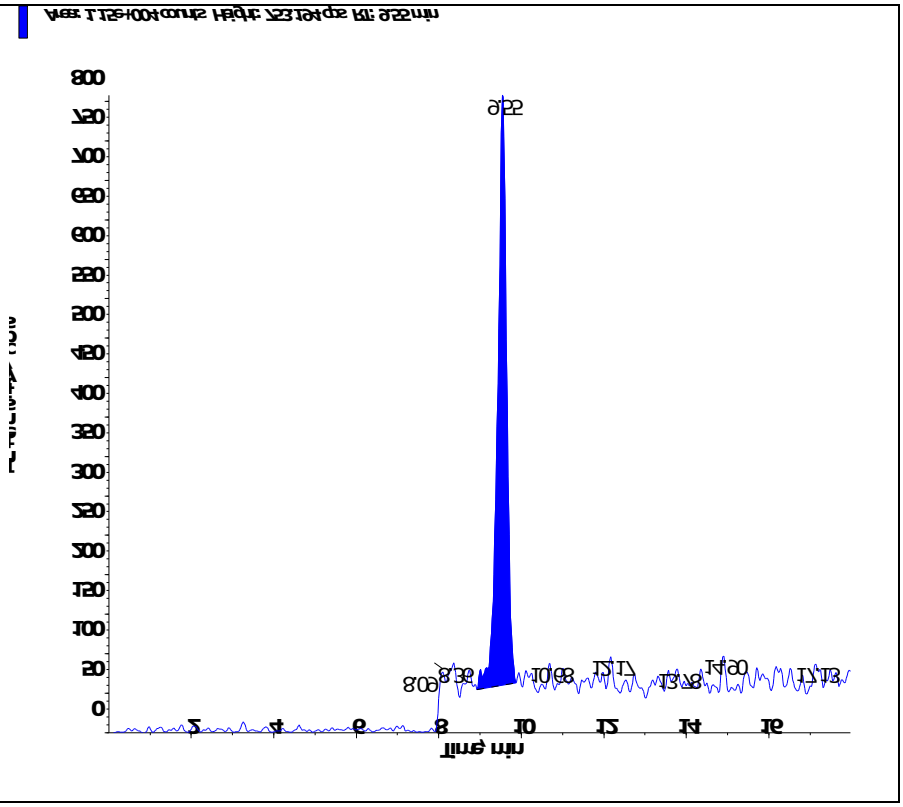

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2.2.1.5 Raw QC Data

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Data File	LM33481.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/29/2016 10:12:12 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559142-02 BLANK	**Injection Vial**	27.00
Data File	LM33481.wiff	**Injection Volume**	10.00
Acquisition Date	2/29/2016 10:12:12 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559142-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.150e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	7.760e+02	9.92	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

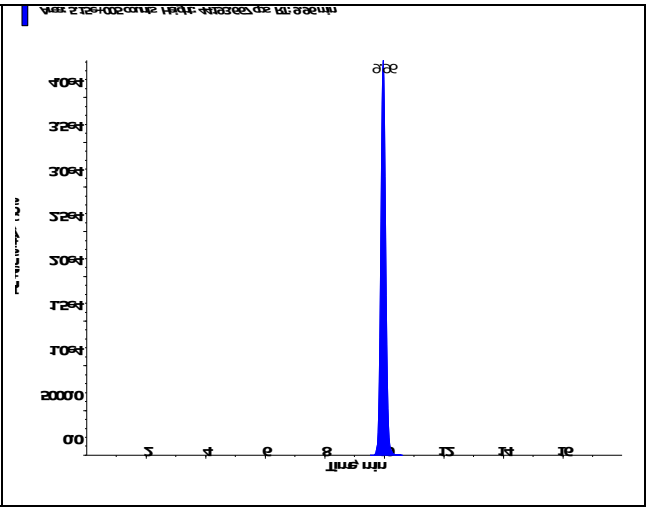

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.94) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	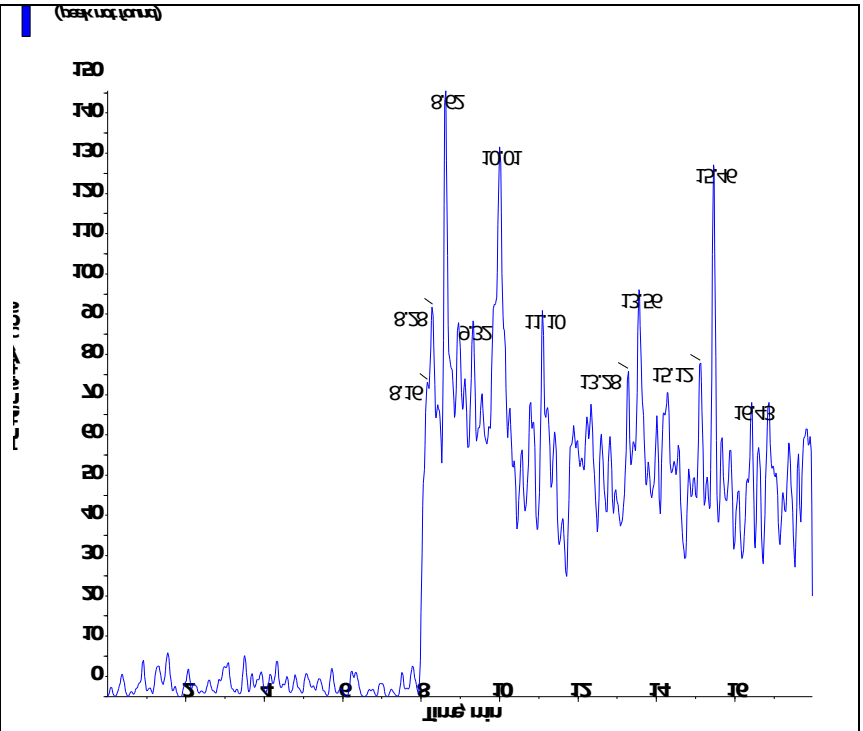
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.92 (9.92) min Calculated conc: < 0 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	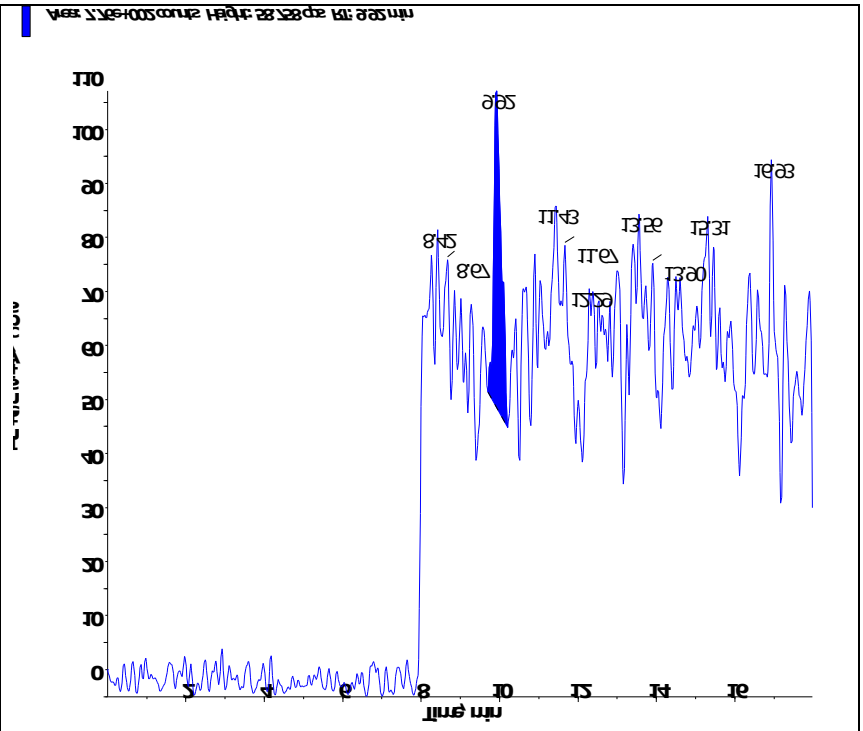

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Data File	LM33482.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/29/2016 10:31:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559142-03 LCS (2.0ug/kg)	**Injection Vial**	28.00
Data File	LM33482.wiff	**Injection Volume**	10.00
Acquisition Date	2/29/2016 10:31:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559142-03	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.580e+04	9.97	N/A	0.207
Perchlorate conf	1.280e+04	9.96	N/A	0.204

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

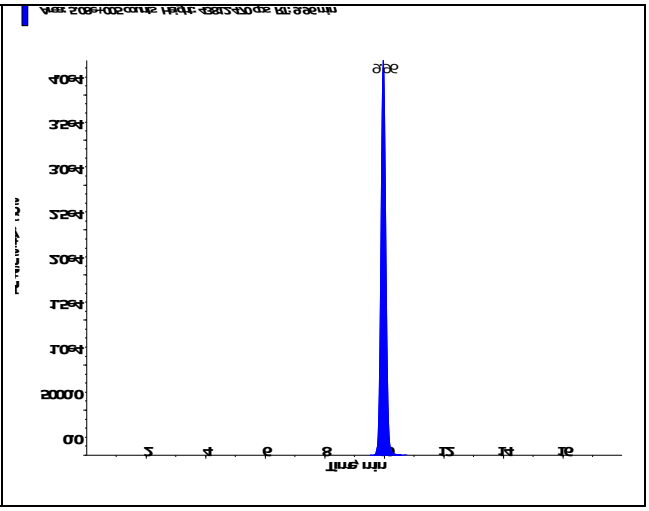

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.97 (9.94) min Calculated conc: 0.207 ng/ml Area Ratio: 0.07 Sample Type: (Unknown)	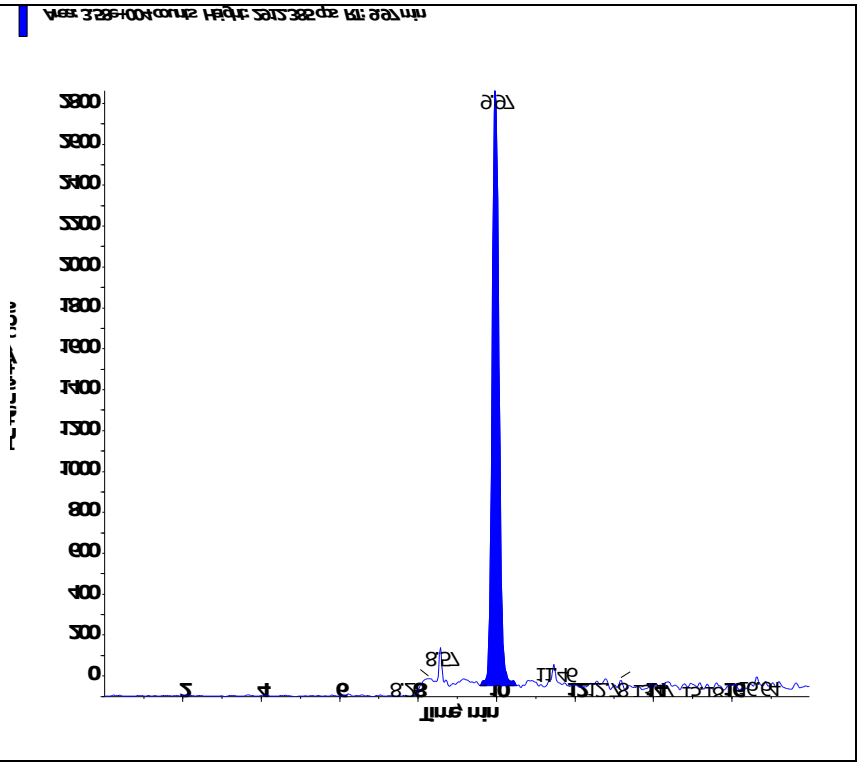
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.96 (9.92) min Calculated conc: 0.204 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	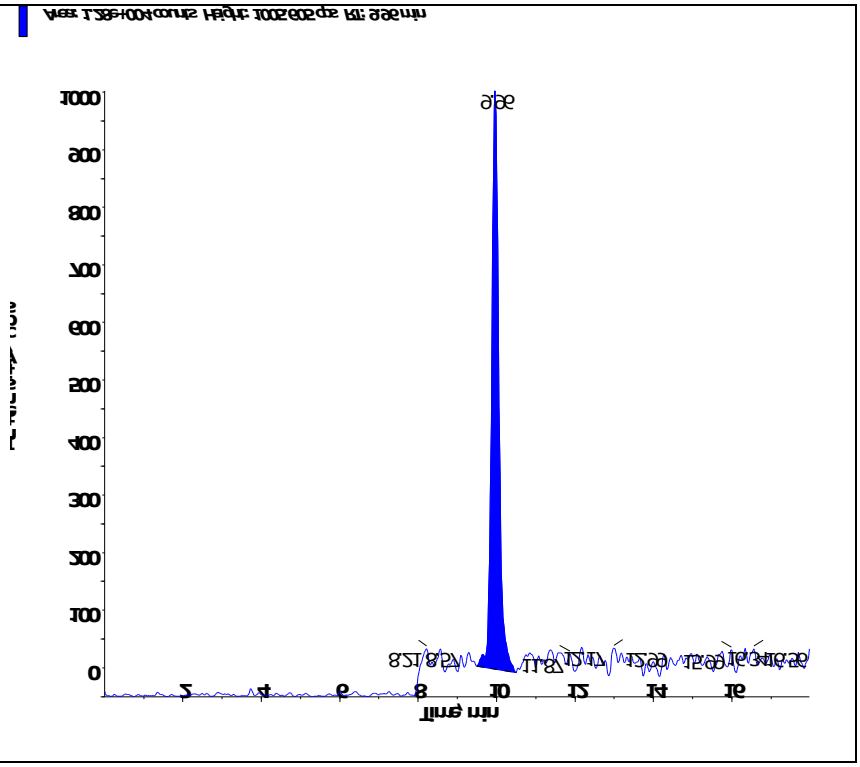

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Data File	LM33484.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/29/2016 11:09:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021357-01 MS	**Injection Vial**	30.00
Data File	LM33484.wiff	**Injection Volume**	10.00
Acquisition Date	2/29/2016 11:09:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559142-05	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.520e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.920e+04	9.97	N/A	0.209
Perchlorate conf	1.430e+04	9.95	N/A	0.209

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

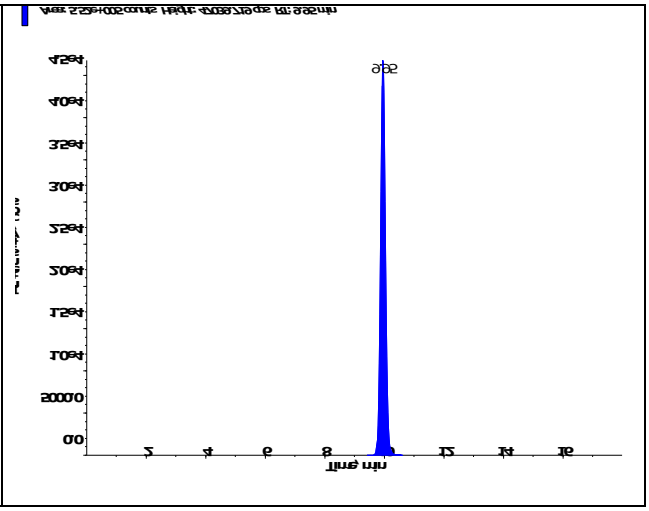

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.97 (9.94) min Calculated conc: 0.209 ng/ml Area Ratio: 0.071 Sample Type: (Unknown)	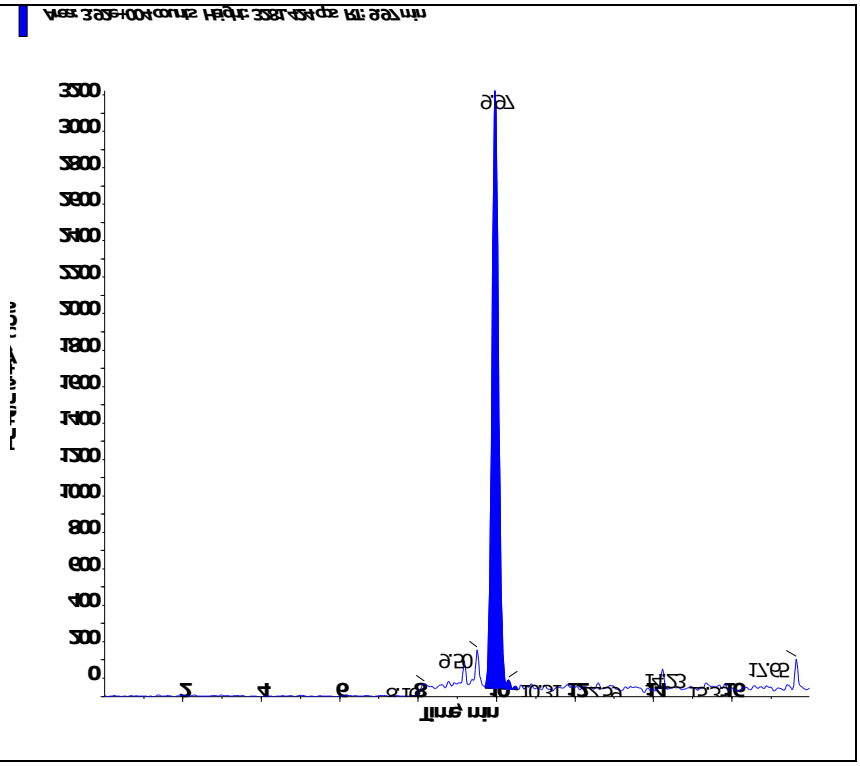
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.95 (9.92) min Calculated conc: 0.209 ng/ml Area Ratio: 0.026 Sample Type: (Unknown)	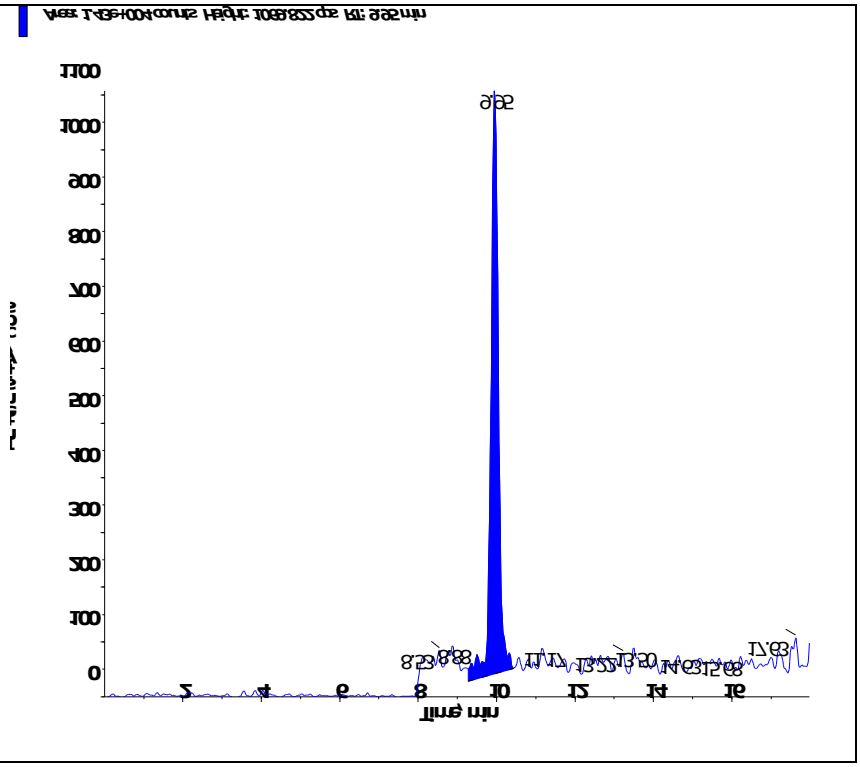

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 3/1/2016 2:34 PM

Data File	LM33485.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/29/2016 11:27:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021357-01 MSD	**Injection Vial**	31.00
Data File	LM33485.wiff	**Injection Volume**	10.00
Acquisition Date	2/29/2016 11:27:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559142-06	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.270e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.640e+04	9.96	N/A	0.203
Perchlorate conf	1.310e+04	9.96	N/A	0.201

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

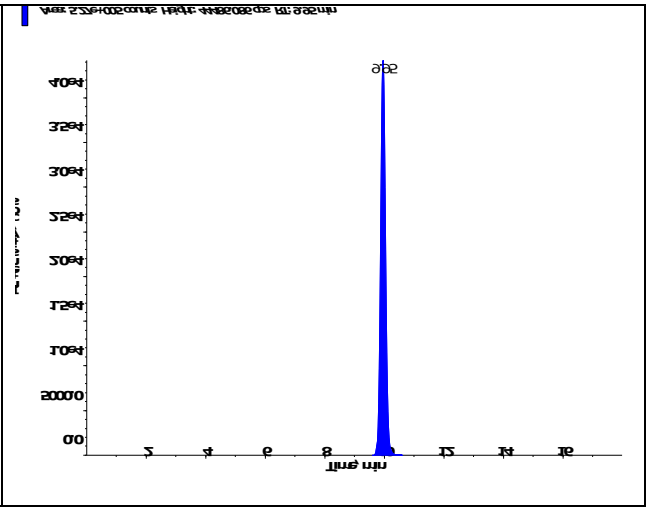

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.96 (9.94) min Calculated conc: 0.203 ng/ml Area Ratio: 0.069 Sample Type: (Unknown)	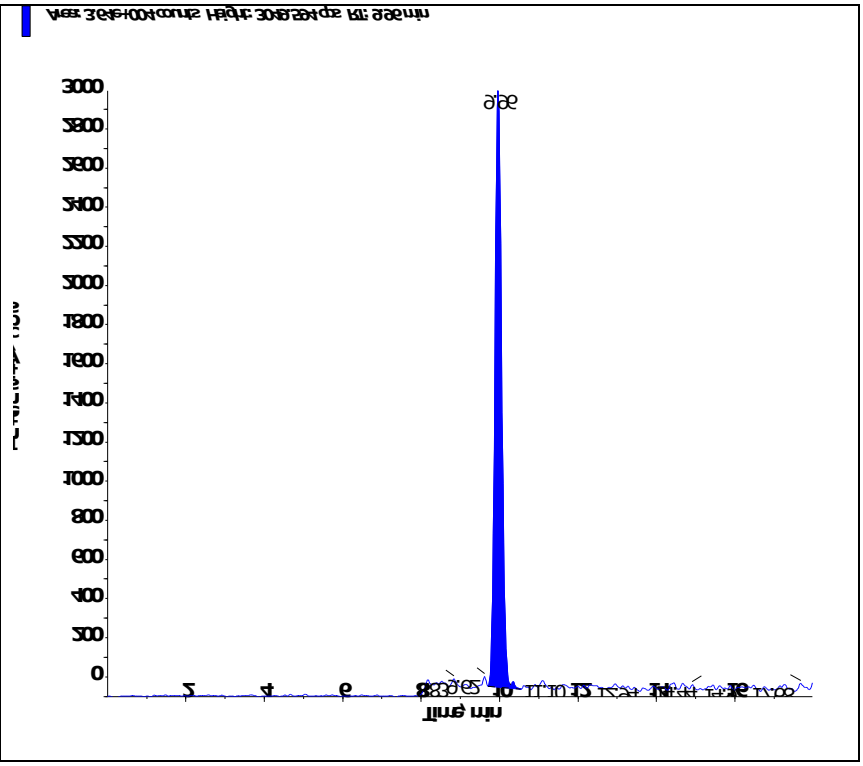
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.96 (9.92) min Calculated conc: 0.201 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	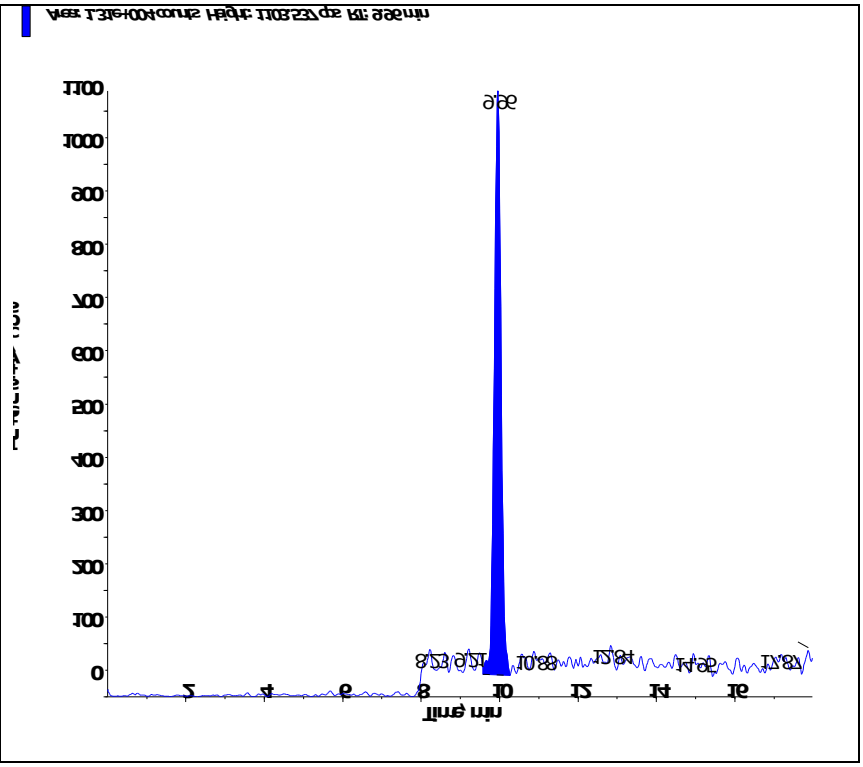

s.dataFile Page 2 of 2

2.3 General Chemistry Data

2.3.1 Percent Solids Data

2.3.1.1 Raw Data

Example Percent Solids Calculations

1.0 Calculating the percent solids of a sample.

$$\%Solids = \frac{WT3 - WT1}{WT2 - WT1} \times F$$

Where:	
WT1 = Weight, in grams, of the empty container	1.30 g
WT2 = Weight, in grams, of the container and wet sample	21.274 g
WT3 = Weight, in grams, of the container and dried sample	5.21 g
F = Factor to get units as percent weight	100
%Solids = Percent solids present in sample.	19.58%

2.0 Calculating the percent moisture of a sample.

% Moisture = 100 - % Solids from 1.0 calculation

Microbac Laboratories Inc.

PERCENT SOLIDS

Workgroup (AAB#): WG559108 Analyst: AC ADT(on): 02/29/2016 13:53
Method: D2216-90 Instrument: BAL021 ADT(off): 03/01/2016 08:01
SOP: K0003 Rev: 14

SAMPLE NUMBER	EMPTY PAN WT 1	WET WT 2	DRY WT 3A	DRY WT 3B	DRY WT 3C	PERCENT SOLID	PERCENT MOISTURE
L16021354-02	1.295	16.623	12.281			71.67	
L16021354-03	1.289	16.412	13.157			78.48	
L16021354-04	1.299	17.74	12.93			70.74	
L16021354-05	1.294	18.333	14.899			79.85	
L16021354-06	1.295	16.451	12.716			75.36	
L16021354-07	1.295	16.451	12.716			75.36	
L16021354-08	1.295	16.451	12.716			75.36	
L16021354-09	1.293	18.074	13.136			70.57	
L16021357-01	1.296	25.752	21.282			81.72	
L16021357-02	1.287	20.884	18.578			88.23	
L16021357-03	1.293	25.373	22.987			90.09	
L16021357-04	1.3	23.612	20.061			84.08	
L16021357-05	1.288	25.903	22.745			87.17	
L16021357-06	1.28	22.506	18.069			79.10	
L16021358-01	1.284	21.033	17.498			82.10	
L16021358-02	1.295	26.216	22.134			83.62	
L16021358-03	1.293	21.007	17.744			83.45	
L16021358-04	1.282	28.108	22.283			78.29	
L16021358-05	1.28	24.692	20.383			81.59	
L16021358-06	1.289	24.186	19.593			79.94	
L16021358-07	1.293	25.604	22.599			87.64	
L16021358-08	1.297	27.046	23.197			85.05	
L16021358-09	1.291	24.875	20.497			81.44	
WG559108-01	1.287	20.884	18.578			88.23	11.77
WG559108-02	1.297	27.046	23.197			85.05	14.95
WG559108-03	1.289	20.044	17.36			85.69	14.31
WG559108-04	1.295	21.346	18.385			85.23	14.77

Analyst: [signature]

PERCENT_SOLIDS - Modified 04/24/2008
PDF ID: 4652107
Report generated: 03/01/2016 08:06

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
March 3, 2016

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001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
March 03, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
March 03, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Stephanie Mossburg	Project Manager: Debra Richmon	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): KAYLA PALLANES	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Kayla Pallanes	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205	pH:	Program:	
Turn Around Time: STANDARD			
Project Name/Location: Longhorn			
Project Number:			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOCs 8260	PERCHLORATE 6850							SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
	18DPT01(5-5.5)250216			2/25/16	1130		X	S	2	X	X											
	18DPT01(9.5-10)250216			2/25/16	1137		X	S	2	X	X											
	18DPT01(15-15.5)250216			2/25/16	1423		X	S	2	X	X											
	18DPT01(22.5-23)250216			2/25/16	1600		X	S	2	X	X											
	18DPT01(24.5-25)250216			2/25/16	1630		X	S	2	X	X											
	18DPT01(27-27.5)250216			2/25/16	1625		X	S	2	X	X											

ERPIMS REQUIRED FIELDS

Comments: ~~STANDARD TAT~~ 48HR TAT

Relinquished by: (Signature) Kayla Pallanes	Date 2/26/16	Time 1200	Received by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)

Microbac OVD
Received: 02/27/2016 10:39
By: CARA STRICKLER 221000082532
Cara Strickler

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16021357
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 02-MAR-2016

Samplenum	Container ID	Products
L16021357-01	706575	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-FEB-2016 11:02	CLS		
2	ANALYZ	V1	ORG4	28-FEB-2016 11:22	AWE	CLS	

Samplenum	Container ID	Products
L16021357-01	706576	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-FEB-2016 11:02	CLS		
2	ANALYZ	W1	SEM	29-FEB-2016 11:09	AWE	CLS	
3	STORE	DIG	A1	29-FEB-2016 15:12	BRG	ERP	

Samplenum	Container ID	Products
L16021357-02	706577	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-FEB-2016 11:02	CLS		
2	ANALYZ	V1	ORG4	28-FEB-2016 11:22	AWE	CLS	

Samplenum	Container ID	Products
L16021357-02	706578	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-FEB-2016 11:02	CLS		
2	ANALYZ	W1	SEM	29-FEB-2016 11:09	AWE	CLS	
3	STORE	DIG	A1	29-FEB-2016 15:12	BRG	ERP	

Samplenum	Container ID	Products
L16021357-03	706579	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-FEB-2016 11:02	CLS		
2	ANALYZ	V1	ORG4	28-FEB-2016 11:22	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16021357
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 02-MAR-2016

Samplenum	Container ID	Products
L16021357-03	706580	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-FEB-2016 11:02	CLS		
2	ANALYZ	W1	SEM	29-FEB-2016 11:09	AWE	CLS	
3	STORE	DIG	A1	29-FEB-2016 15:12	BRG	ERP	

Samplenum	Container ID	Products
L16021357-04	706581	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-FEB-2016 11:02	CLS		
2	ANALYZ	V1	ORG4	28-FEB-2016 11:22	AWE	CLS	

Samplenum	Container ID	Products
L16021357-04	706582	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-FEB-2016 11:02	CLS		
2	ANALYZ	W1	SEM	29-FEB-2016 11:09	AWE	CLS	
3	STORE	DIG	A1	29-FEB-2016 15:12	BRG	ERP	

Samplenum	Container ID	Products
L16021357-05	706583	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-FEB-2016 11:02	CLS		
2	ANALYZ	V1	ORG4	28-FEB-2016 11:22	AWE	CLS	

Samplenum	Container ID	Products
L16021357-05	706584	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	DIG	27-FEB-2016 11:02	CLS		
2	STORE	DIG	A1	29-FEB-2016 15:12	BRG	ERP	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16021357
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 02-MAR-2016

Samplenum	Container ID	Products
L16021357-06	706585	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-FEB-2016 11:02	CLS		
2	ANALYZ	V1	ORG4	28-FEB-2016 11:22	AWE	CLS	

Samplenum	Container ID	Products
L16021357-06	706586	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-FEB-2016 11:02	CLS		
2	ANALYZ	W1	SEM	29-FEB-2016 11:09	AWE	CLS	
3	STORE	DIG	A1	29-FEB-2016 15:12	BRG	ERP	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16021358

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on March 03 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00110635	H	2.0		J2317165938	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	NA
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	NA

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18DPT02(5-5.5)260216	L16021358-01	02/26/2016 08:35	02/27/2016 10:39
18DPT02(10-10.5)260216	L16021358-02	02/26/2016 08:42	02/27/2016 10:39
18DPT02(10-10.5)260216FD	L16021358-03	02/26/2016 08:42	02/27/2016 10:39
18DPT02(15-15.5)260216	L16021358-04	02/26/2016 09:00	02/27/2016 10:39
18DPT02(22-22.5)260216	L16021358-05	02/26/2016 09:15	02/27/2016 10:39
18DPT03(5-5.5)260216	L16021358-06	02/26/2016 11:15	02/27/2016 10:39
18DPT03(10-10.5)260216	L16021358-07	02/26/2016 11:17	02/27/2016 10:39
18DPT03(14.5-15)260216	L16021358-08	02/26/2016 11:19	02/27/2016 10:39
18DPT03(17.5-18)260216	L16021358-09	02/26/2016 11:21	02/27/2016 10:39

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16021358
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021358
Project Name:		**Method:**	8260
Prep Batch Number(s):	559151	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-01 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2016-03-01 19:56:56

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021358
Project Name:		**Method:**	8260
Prep Batch Number(s):	559151	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-01 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021358
Project Name:		**Method:**	8260
Prep Batch Number(s):	559151	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-01 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021358
Project Name:		**Method:**	8260
Prep Batch Number(s):	559151	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-01 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?		X			1
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021358
Project Name:		**Method:**	8260
Prep Batch Number(s):	559151	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-01 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021358
Project Name:		**Method:**	8260
Prep Batch Number(s):	559151	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-01 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1)Dichlorodifluoromethane exceeded the UCL in the ICV.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021358
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559142	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-02 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-03-02 15:58:20

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021358
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559142	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-02 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021358
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559142	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-02 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021358
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559142	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-02 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021358
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559142	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-02 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021358
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559142	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-02 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021358
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559108	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-01 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2016-03-01 18:49:29

Texas Risk Reduction Program (TRRP) Checklist

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Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559108	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-01 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?			X		
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?			X		
Were sample detection limits reported for all analytes not detected?			X		
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?			X		
Were blanks analyzed at the appropriate frequency?			X		
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?			X		
Were blank concentrations < MQL?			X		
Laboratory control samples (LCS):			X		
Were all COCs included in the LCS?			X		

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LRC Date:	2016-03-01 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?			X		
Were LCSs analyzed at the required frequency?			X		
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?			X		
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?			X		
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?			X		
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?			X		
Are unadjusted MQLs and DCSs included in the laboratory data package?			X		
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?			X		
Were percent RSDs or correlation coefficient criteria met?			X		

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LRC Date:	2016-03-01 00:00:00		

Was the number of standards recommended in the method used for all analytes?			X		
Were all points generated between the lowest and highest standard used to calculate the curve?			X		
Are ICAL data available for all instruments used?			X		
Has the initial calibration curve been verified using an appropriate second source standard?			X		
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

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Was a MDL study performed for each reported analyte?			X		
Is the MDL either adjusted or supported by the analysis of DCSs?			X		
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?			X		
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16021358
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559108	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-01 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT02(5-5.5)260216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:24
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	03/01/2016 00:04
Collect Date:	02/26/2016 08:35	**Dilution:**	1	**File ID:**	9M972980
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	22.8	J	24.8	12.4	6.19
Benzene	71-43-2	1.24	U	6.19	1.24	0.619
Bromobenzene	108-86-1	1.24	U	6.19	1.24	0.619
Bromochloromethane	74-97-5	2.48	U	6.19	2.48	1.24
Bromodichloromethane	75-27-4	1.24	U	6.19	1.24	0.619
Bromoform	75-25-2	1.24	U	6.19	1.24	0.619
Bromomethane	74-83-9	2.48	U	6.19	2.48	1.24
2-Butanone	78-93-3	6.18	U	12.4	6.18	3.09
n-Butylbenzene	104-51-8	1.24	U	6.19	1.24	0.619
sec-Butylbenzene	135-98-8	1.24	U	6.19	1.24	0.619
tert-Butylbenzene	98-06-6	1.24	U	6.19	1.24	0.619
Carbon disulfide	75-15-0	1.24	U	6.19	1.24	0.619
Carbon tetrachloride	56-23-5	1.24	U	6.19	1.24	0.619
Chlorobenzene	108-90-7	1.24	U	6.19	1.24	0.619
Chlorodibromomethane	124-48-1	1.24	U	6.19	1.24	0.619
Chloroethane	75-00-3	2.48	U	6.19	2.48	1.24
Chloroform	67-66-3	1.24	U	6.19	1.24	0.619
Chloromethane	74-87-3	4.96	U	12.4	4.96	2.48
2-Chlorotoluene	95-49-8	1.24	U	6.19	1.24	0.619
4-Chlorotoluene	106-43-4	1.24	U	6.19	1.24	0.619
1,2-Dibromo-3-chloropropane	96-12-8	4.96	U	12.4	4.96	2.48
1,2-Dibromoethane	106-93-4	1.24	U	6.19	1.24	0.619
Dibromomethane	74-95-3	1.24	U	6.19	1.24	0.619
1,2-Dichlorobenzene	95-50-1	1.24	U	6.19	1.24	0.619
1,3-Dichlorobenzene	541-73-1	1.24	U	6.19	1.24	0.619
1,4-Dichlorobenzene	106-46-7	1.24	U	6.19	1.24	0.619
Dichlorodifluoromethane	75-71-8	2.48	U	6.19	2.48	1.24
1,1-Dichloroethane	75-34-3	2.48	U	6.19	2.48	1.24
1,2-Dichloroethane	107-06-2	1.24	U	6.19	1.24	0.619
1,1-Dichloroethene	75-35-4	1.24	U	6.19	1.24	0.619
cis-1,2-Dichloroethene	156-59-2	1.24	U	6.19	1.24	0.619
trans-1,2-Dichloroethene	156-60-5	1.24	U	6.19	1.24	0.619

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.24	U	6.19	1.24	0.619
1,3-Dichloropropane	142-28-9	1.24	U	6.19	1.24	0.619
2,2-Dichloropropane	594-20-7	1.24	U	6.19	1.24	0.619
cis-1,3-Dichloropropene	10061-01-5	1.24	U	6.19	1.24	0.619
trans-1,3-Dichloropropene	10061-02-6	1.24	U	6.19	1.24	0.619
1,1-Dichloropropene	563-58-6	1.24	U	6.19	1.24	0.619
Ethylbenzene	100-41-4	1.24	U	6.19	1.24	0.619
2-Hexanone	591-78-6	6.18	U	12.4	6.18	3.09
Hexachlorobutadiene	87-68-3	1.24	U	6.19	1.24	0.619
Isopropylbenzene	98-82-8	1.24	U	6.19	1.24	0.619
p-Isopropyltoluene	99-87-6	1.98	J	6.19	1.24	0.619
4-Methyl-2-pentanone	108-10-1	6.18	U	12.4	6.18	3.09
Methylene chloride	75-09-2	2.48	U	6.19	2.48	1.24
Naphthalene	91-20-3	1.24	U	6.19	1.24	0.619
n-Propylbenzene	103-65-1	1.24	U	6.19	1.24	0.619
Styrene	100-42-5	1.24	U	6.19	1.24	0.619
1,1,1,2-Tetrachloroethane	630-20-6	1.24	U	6.19	1.24	0.619
1,1,2,2-Tetrachloroethane	79-34-5	1.24	U	6.19	1.24	0.619
Tetrachloroethene	127-18-4	1.24	U	6.19	1.24	0.619
Toluene	108-88-3	1.24	U	6.19	1.24	0.619
1,2,3-Trichlorobenzene	87-61-6	1.24	U	6.19	1.24	0.619
1,2,4-Trichlorobenzene	120-82-1	1.24	U	6.19	1.24	0.619
1,1,1-Trichloroethane	71-55-6	1.24	U	6.19	1.24	0.619
1,1,2-Trichloroethane	79-00-5	1.24	U	6.19	1.24	0.619
Trichloroethene	79-01-6	1.24	U	6.19	1.24	0.619
Trichlorofluoromethane	75-69-4	2.48	U	6.19	2.48	1.24
1,2,3-Trichloropropane	96-18-4	2.48	U	6.19	2.48	1.24
1,2,4-Trimethylbenzene	95-63-6	1.24	U	6.19	1.24	0.619
1,3,5-Trimethylbenzene	108-67-8	1.24	U	6.19	1.24	0.619
Vinyl chloride	75-01-4	2.48	U	6.19	2.48	1.24
o-Xylene	95-47-6	1.24	U	6.19	1.24	0.619
m-,p-Xylene	179601-23-1	1.24	U	6.19	1.24	0.619

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.8	80	120	
1,2-Dichloroethane-d4	95.0	80	120	
Toluene-d8	106	85	115	
4-Bromofluorobenzene	110	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT02(5-5.5)260216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 02:18
Collect Date:	02/26/2016 08:35	**Dilution:**	1	**File ID:**	1LM.LM33494
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.36	U	4.72	2.36	1.18

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT02(10-10.5)260216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:25
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	03/01/2016 00:34
Collect Date:	02/26/2016 08:42	**Dilution:**	1	**File ID:**	9M972981
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	7.17	J	24.1	12.0	6.02
Benzene	71-43-2	1.20	U	6.02	1.20	0.602
Bromobenzene	108-86-1	1.20	U	6.02	1.20	0.602
Bromochloromethane	74-97-5	2.40	U	6.02	2.40	1.20
Bromodichloromethane	75-27-4	1.20	U	6.02	1.20	0.602
Bromoform	75-25-2	1.20	U	6.02	1.20	0.602
Bromomethane	74-83-9	2.40	U	6.02	2.40	1.20
2-Butanone	78-93-3	6.02	U	12.0	6.02	3.01
n-Butylbenzene	104-51-8	1.20	U	6.02	1.20	0.602
sec-Butylbenzene	135-98-8	1.20	U	6.02	1.20	0.602
tert-Butylbenzene	98-06-6	1.20	U	6.02	1.20	0.602
Carbon disulfide	75-15-0	1.20	U	6.02	1.20	0.602
Carbon tetrachloride	56-23-5	1.20	U	6.02	1.20	0.602
Chlorobenzene	108-90-7	1.20	U	6.02	1.20	0.602
Chlorodibromomethane	124-48-1	1.20	U	6.02	1.20	0.602
Chloroethane	75-00-3	2.40	U	6.02	2.40	1.20
Chloroform	67-66-3	1.20	U	6.02	1.20	0.602
Chloromethane	74-87-3	4.82	U	12.0	4.82	2.41
2-Chlorotoluene	95-49-8	1.20	U	6.02	1.20	0.602
4-Chlorotoluene	106-43-4	1.20	U	6.02	1.20	0.602
1,2-Dibromo-3-chloropropane	96-12-8	4.82	U	12.0	4.82	2.41
1,2-Dibromoethane	106-93-4	1.20	U	6.02	1.20	0.602
Dibromomethane	74-95-3	1.20	U	6.02	1.20	0.602
1,2-Dichlorobenzene	95-50-1	1.20	U	6.02	1.20	0.602
1,3-Dichlorobenzene	541-73-1	1.20	U	6.02	1.20	0.602
1,4-Dichlorobenzene	106-46-7	1.20	U	6.02	1.20	0.602
Dichlorodifluoromethane	75-71-8	2.40	U	6.02	2.40	1.20
1,1-Dichloroethane	75-34-3	2.40	U	6.02	2.40	1.20
1,2-Dichloroethane	107-06-2	1.20	U	6.02	1.20	0.602
1,1-Dichloroethene	75-35-4	1.20	U	6.02	1.20	0.602
cis-1,2-Dichloroethene	156-59-2	1.20	U	6.02	1.20	0.602

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.20	U	6.02	1.20	0.602
1,2-Dichloropropane	78-87-5	1.20	U	6.02	1.20	0.602
1,3-Dichloropropane	142-28-9	1.20	U	6.02	1.20	0.602
2,2-Dichloropropane	594-20-7	1.20	U	6.02	1.20	0.602
cis-1,3-Dichloropropene	10061-01-5	1.20	U	6.02	1.20	0.602
trans-1,3-Dichloropropene	10061-02-6	1.20	U	6.02	1.20	0.602
1,1-Dichloropropene	563-58-6	1.20	U	6.02	1.20	0.602
Ethylbenzene	100-41-4	1.20	U	6.02	1.20	0.602
2-Hexanone	591-78-6	6.02	U	12.0	6.02	3.01
Hexachlorobutadiene	87-68-3	1.20	U	6.02	1.20	0.602
Isopropylbenzene	98-82-8	1.20	U	6.02	1.20	0.602
p-Isopropyltoluene	99-87-6	1.20	U	6.02	1.20	0.602
4-Methyl-2-pentanone	108-10-1	6.02	U	12.0	6.02	3.01
Methylene chloride	75-09-2	2.40	U	6.02	2.40	1.20
Naphthalene	91-20-3	1.20	U	6.02	1.20	0.602
n-Propylbenzene	103-65-1	1.20	U	6.02	1.20	0.602
Styrene	100-42-5	1.20	U	6.02	1.20	0.602
1,1,1,2-Tetrachloroethane	630-20-6	1.20	U	6.02	1.20	0.602
1,1,2,2-Tetrachloroethane	79-34-5	1.20	U	6.02	1.20	0.602
Tetrachloroethene	127-18-4	1.20	U	6.02	1.20	0.602
Toluene	108-88-3	1.20	U	6.02	1.20	0.602
1,2,3-Trichlorobenzene	87-61-6	1.20	U	6.02	1.20	0.602
1,2,4-Trichlorobenzene	120-82-1	1.20	U	6.02	1.20	0.602
1,1,1-Trichloroethane	71-55-6	1.20	U	6.02	1.20	0.602
1,1,2-Trichloroethane	79-00-5	1.20	U	6.02	1.20	0.602
Trichloroethene	79-01-6	1.20	U	6.02	1.20	0.602
Trichlorofluoromethane	75-69-4	2.40	U	6.02	2.40	1.20
1,2,3-Trichloropropane	96-18-4	2.40	U	6.02	2.40	1.20
1,2,4-Trimethylbenzene	95-63-6	1.20	U	6.02	1.20	0.602
1,3,5-Trimethylbenzene	108-67-8	1.20	U	6.02	1.20	0.602
Vinyl chloride	75-01-4	2.40	U	6.02	2.40	1.20
o-Xylene	95-47-6	1.20	U	6.02	1.20	0.602
m-,p-Xylene	179601-23-1	1.20	U	6.02	1.20	0.602

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.8	80	120	
1,2-Dichloroethane-d4	97.2	80	120	
Toluene-d8	104	85	115	
4-Bromofluorobenzene	108	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT02(10-10.5)260216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 02:37
Collect Date:	02/26/2016 08:42	**Dilution:**	1	**File ID:**	1LM.LM33495
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.36	U	4.70	2.36	1.18

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT02(10-10.5)260216FD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:25
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	03/01/2016 01:04
Collect Date:	02/26/2016 08:42	**Dilution:**	1	**File ID:**	9M972982
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	17.3	J	24.8	12.4	6.20
Benzene	71-43-2	1.24	U	6.20	1.24	0.620
Bromobenzene	108-86-1	1.24	U	6.20	1.24	0.620
Bromochloromethane	74-97-5	2.48	U	6.20	2.48	1.24
Bromodichloromethane	75-27-4	1.24	U	6.20	1.24	0.620
Bromoform	75-25-2	1.24	U	6.20	1.24	0.620
Bromomethane	74-83-9	2.48	U	6.20	2.48	1.24
2-Butanone	78-93-3	6.20	U	12.4	6.20	3.10
n-Butylbenzene	104-51-8	1.24	U	6.20	1.24	0.620
sec-Butylbenzene	135-98-8	1.24	U	6.20	1.24	0.620
tert-Butylbenzene	98-06-6	1.24	U	6.20	1.24	0.620
Carbon disulfide	75-15-0	1.24	U	6.20	1.24	0.620
Carbon tetrachloride	56-23-5	1.24	U	6.20	1.24	0.620
Chlorobenzene	108-90-7	1.24	U	6.20	1.24	0.620
Chlorodibromomethane	124-48-1	1.24	U	6.20	1.24	0.620
Chloroethane	75-00-3	2.48	U	6.20	2.48	1.24
Chloroform	67-66-3	1.24	U	6.20	1.24	0.620
Chloromethane	74-87-3	4.96	U	12.4	4.96	2.48
2-Chlorotoluene	95-49-8	1.24	U	6.20	1.24	0.620
4-Chlorotoluene	106-43-4	1.24	U	6.20	1.24	0.620
1,2-Dibromo-3-chloropropane	96-12-8	4.96	U	12.4	4.96	2.48
1,2-Dibromoethane	106-93-4	1.24	U	6.20	1.24	0.620
Dibromomethane	74-95-3	1.24	U	6.20	1.24	0.620
1,2-Dichlorobenzene	95-50-1	1.24	U	6.20	1.24	0.620
1,3-Dichlorobenzene	541-73-1	1.24	U	6.20	1.24	0.620
1,4-Dichlorobenzene	106-46-7	1.24	U	6.20	1.24	0.620
Dichlorodifluoromethane	75-71-8	2.48	U	6.20	2.48	1.24
1,1-Dichloroethane	75-34-3	2.48	U	6.20	2.48	1.24
1,2-Dichloroethane	107-06-2	1.24	U	6.20	1.24	0.620
1,1-Dichloroethene	75-35-4	1.24	U	6.20	1.24	0.620
cis-1,2-Dichloroethene	156-59-2	1.24	U	6.20	1.24	0.620

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.24	U	6.20	1.24	0.620
1,2-Dichloropropane	78-87-5	1.24	U	6.20	1.24	0.620
1,3-Dichloropropane	142-28-9	1.24	U	6.20	1.24	0.620
2,2-Dichloropropane	594-20-7	1.24	U	6.20	1.24	0.620
cis-1,3-Dichloropropene	10061-01-5	1.24	U	6.20	1.24	0.620
trans-1,3-Dichloropropene	10061-02-6	1.24	U	6.20	1.24	0.620
1,1-Dichloropropene	563-58-6	1.24	U	6.20	1.24	0.620
Ethylbenzene	100-41-4	1.24	U	6.20	1.24	0.620
2-Hexanone	591-78-6	6.20	U	12.4	6.20	3.10
Hexachlorobutadiene	87-68-3	1.24	U	6.20	1.24	0.620
Isopropylbenzene	98-82-8	1.24	U	6.20	1.24	0.620
p-Isopropyltoluene	99-87-6	4.08	J	6.20	1.24	0.620
4-Methyl-2-pentanone	108-10-1	6.20	U	12.4	6.20	3.10
Methylene chloride	75-09-2	2.48	U	6.20	2.48	1.24
Naphthalene	91-20-3	1.24	U	6.20	1.24	0.620
n-Propylbenzene	103-65-1	1.24	U	6.20	1.24	0.620
Styrene	100-42-5	1.24	U	6.20	1.24	0.620
1,1,1,2-Tetrachloroethane	630-20-6	1.24	U	6.20	1.24	0.620
1,1,2,2-Tetrachloroethane	79-34-5	1.24	U	6.20	1.24	0.620
Tetrachloroethene	127-18-4	1.24	U	6.20	1.24	0.620
Toluene	108-88-3	1.24	U	6.20	1.24	0.620
1,2,3-Trichlorobenzene	87-61-6	1.24	U	6.20	1.24	0.620
1,2,4-Trichlorobenzene	120-82-1	1.24	U	6.20	1.24	0.620
1,1,1-Trichloroethane	71-55-6	1.24	U	6.20	1.24	0.620
1,1,2-Trichloroethane	79-00-5	1.24	U	6.20	1.24	0.620
Trichloroethene	79-01-6	1.24	U	6.20	1.24	0.620
Trichlorofluoromethane	75-69-4	2.48	U	6.20	2.48	1.24
1,2,3-Trichloropropane	96-18-4	2.48	U	6.20	2.48	1.24
1,2,4-Trimethylbenzene	95-63-6	1.24	U	6.20	1.24	0.620
1,3,5-Trimethylbenzene	108-67-8	1.24	U	6.20	1.24	0.620
Vinyl chloride	75-01-4	2.48	U	6.20	2.48	1.24
o-Xylene	95-47-6	1.24	U	6.20	1.24	0.620
m-,p-Xylene	179601-23-1	1.24	U	6.20	1.24	0.620

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.5	80	120	
1,2-Dichloroethane-d4	97.0	80	120	
Toluene-d8	106	85	115	
4-Bromofluorobenzene	117	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT02(10-10.5)260216FD	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 02:56
Collect Date:	02/26/2016 08:42	**Dilution:**	1	**File ID:**	1LM.LM33496
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.36	U	4.71	2.36	1.18

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT02(15-15.5)260216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:26
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	03/01/2016 01:36
Collect Date:	02/26/2016 09:00	**Dilution:**	1	**File ID:**	9M972983
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	78.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	8.14	J	23.8	11.9	5.95
Benzene	71-43-2	1.19	U	5.95	1.19	0.595
Bromobenzene	108-86-1	1.19	U	5.95	1.19	0.595
Bromochloromethane	74-97-5	2.38	U	5.95	2.38	1.19
Bromodichloromethane	75-27-4	1.19	U	5.95	1.19	0.595
Bromoform	75-25-2	1.19	U	5.95	1.19	0.595
Bromomethane	74-83-9	2.38	U	5.95	2.38	1.19
2-Butanone	78-93-3	5.94	U	11.9	5.94	2.97
n-Butylbenzene	104-51-8	1.19	U	5.95	1.19	0.595
sec-Butylbenzene	135-98-8	1.19	U	5.95	1.19	0.595
tert-Butylbenzene	98-06-6	1.19	U	5.95	1.19	0.595
Carbon disulfide	75-15-0	1.19	U	5.95	1.19	0.595
Carbon tetrachloride	56-23-5	1.19	U	5.95	1.19	0.595
Chlorobenzene	108-90-7	1.19	U	5.95	1.19	0.595
Chlorodibromomethane	124-48-1	1.19	U	5.95	1.19	0.595
Chloroethane	75-00-3	2.38	U	5.95	2.38	1.19
Chloroform	67-66-3	1.19	U	5.95	1.19	0.595
Chloromethane	74-87-3	4.76	U	11.9	4.76	2.38
2-Chlorotoluene	95-49-8	1.19	U	5.95	1.19	0.595
4-Chlorotoluene	106-43-4	1.19	U	5.95	1.19	0.595
1,2-Dibromo-3-chloropropane	96-12-8	4.76	U	11.9	4.76	2.38
1,2-Dibromoethane	106-93-4	1.19	U	5.95	1.19	0.595
Dibromomethane	74-95-3	1.19	U	5.95	1.19	0.595
1,2-Dichlorobenzene	95-50-1	1.19	U	5.95	1.19	0.595
1,3-Dichlorobenzene	541-73-1	1.19	U	5.95	1.19	0.595
1,4-Dichlorobenzene	106-46-7	1.19	U	5.95	1.19	0.595
Dichlorodifluoromethane	75-71-8	2.38	U	5.95	2.38	1.19
1,1-Dichloroethane	75-34-3	2.38	U	5.95	2.38	1.19
1,2-Dichloroethane	107-06-2	1.19	U	5.95	1.19	0.595
1,1-Dichloroethene	75-35-4	1.19	U	5.95	1.19	0.595
cis-1,2-Dichloroethene	156-59-2	1.19	U	5.95	1.19	0.595

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.19	U	5.95	1.19	0.595
1,2-Dichloropropane	78-87-5	1.19	U	5.95	1.19	0.595
1,3-Dichloropropane	142-28-9	1.19	U	5.95	1.19	0.595
2,2-Dichloropropane	594-20-7	1.19	U	5.95	1.19	0.595
cis-1,3-Dichloropropene	10061-01-5	1.19	U	5.95	1.19	0.595
trans-1,3-Dichloropropene	10061-02-6	1.19	U	5.95	1.19	0.595
1,1-Dichloropropene	563-58-6	1.19	U	5.95	1.19	0.595
Ethylbenzene	100-41-4	1.19	U	5.95	1.19	0.595
2-Hexanone	591-78-6	5.94	U	11.9	5.94	2.97
Hexachlorobutadiene	87-68-3	1.19	U	5.95	1.19	0.595
Isopropylbenzene	98-82-8	1.19	U	5.95	1.19	0.595
p-Isopropyltoluene	99-87-6	1.35	J	5.95	1.19	0.595
4-Methyl-2-pentanone	108-10-1	5.94	U	11.9	5.94	2.97
Methylene chloride	75-09-2	2.38	U	5.95	2.38	1.19
Naphthalene	91-20-3	1.19	U	5.95	1.19	0.595
n-Propylbenzene	103-65-1	1.19	U	5.95	1.19	0.595
Styrene	100-42-5	1.19	U	5.95	1.19	0.595
1,1,1,2-Tetrachloroethane	630-20-6	1.19	U	5.95	1.19	0.595
1,1,2,2-Tetrachloroethane	79-34-5	1.19	U	5.95	1.19	0.595
Tetrachloroethene	127-18-4	1.19	U	5.95	1.19	0.595
Toluene	108-88-3	1.19	U	5.95	1.19	0.595
1,2,3-Trichlorobenzene	87-61-6	1.19	U	5.95	1.19	0.595
1,2,4-Trichlorobenzene	120-82-1	1.19	U	5.95	1.19	0.595
1,1,1-Trichloroethane	71-55-6	1.19	U	5.95	1.19	0.595
1,1,2-Trichloroethane	79-00-5	1.19	U	5.95	1.19	0.595
Trichloroethene	79-01-6	1.19	U	5.95	1.19	0.595
Trichlorofluoromethane	75-69-4	2.38	U	5.95	2.38	1.19
1,2,3-Trichloropropane	96-18-4	2.38	U	5.95	2.38	1.19
1,2,4-Trimethylbenzene	95-63-6	1.19	U	5.95	1.19	0.595
1,3,5-Trimethylbenzene	108-67-8	1.19	U	5.95	1.19	0.595
Vinyl chloride	75-01-4	2.38	U	5.95	2.38	1.19
o-Xylene	95-47-6	1.19	U	5.95	1.19	0.595
m-,p-Xylene	179601-23-1	1.19	U	5.95	1.19	0.595

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.9	80	120	
1,2-Dichloroethane-d4	98.7	80	120	
Toluene-d8	108	85	115	
4-Bromofluorobenzene	115	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT02(15-15.5)260216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 03:15
Collect Date:	02/26/2016 09:00	**Dilution:**	1	**File ID:**	1LM.LM33497
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	78.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.50	U	4.98	2.50	1.25

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT02(22-22.5)260216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:26
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	03/01/2016 02:06
Collect Date:	02/26/2016 09:15	**Dilution:**	1	**File ID:**	9M972984
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.4	U	26.8	13.4	6.70
Benzene	71-43-2	1.34	U	6.70	1.34	0.670
Bromobenzene	108-86-1	1.34	U	6.70	1.34	0.670
Bromochloromethane	74-97-5	2.68	U	6.70	2.68	1.34
Bromodichloromethane	75-27-4	1.34	U	6.70	1.34	0.670
Bromoform	75-25-2	1.34	U	6.70	1.34	0.670
Bromomethane	74-83-9	2.68	U	6.70	2.68	1.34
2-Butanone	78-93-3	6.70	U	13.4	6.70	3.35
n-Butylbenzene	104-51-8	1.34	U	6.70	1.34	0.670
sec-Butylbenzene	135-98-8	1.34	U	6.70	1.34	0.670
tert-Butylbenzene	98-06-6	1.34	U	6.70	1.34	0.670
Carbon disulfide	75-15-0	1.34	U	6.70	1.34	0.670
Carbon tetrachloride	56-23-5	1.34	U	6.70	1.34	0.670
Chlorobenzene	108-90-7	1.34	U	6.70	1.34	0.670
Chlorodibromomethane	124-48-1	1.34	U	6.70	1.34	0.670
Chloroethane	75-00-3	2.68	U	6.70	2.68	1.34
Chloroform	67-66-3	1.34	U	6.70	1.34	0.670
Chloromethane	74-87-3	5.36	U	13.4	5.36	2.68
2-Chlorotoluene	95-49-8	1.34	U	6.70	1.34	0.670
4-Chlorotoluene	106-43-4	1.34	U	6.70	1.34	0.670
1,2-Dibromo-3-chloropropane	96-12-8	5.36	U	13.4	5.36	2.68
1,2-Dibromoethane	106-93-4	1.34	U	6.70	1.34	0.670
Dibromomethane	74-95-3	1.34	U	6.70	1.34	0.670
1,2-Dichlorobenzene	95-50-1	1.34	U	6.70	1.34	0.670
1,3-Dichlorobenzene	541-73-1	1.34	U	6.70	1.34	0.670
1,4-Dichlorobenzene	106-46-7	1.34	U	6.70	1.34	0.670
Dichlorodifluoromethane	75-71-8	2.68	U	6.70	2.68	1.34
1,1-Dichloroethane	75-34-3	2.68	U	6.70	2.68	1.34
1,2-Dichloroethane	107-06-2	1.34	U	6.70	1.34	0.670
1,1-Dichloroethene	75-35-4	1.34	U	6.70	1.34	0.670
cis-1,2-Dichloroethene	156-59-2	1.34	U	6.70	1.34	0.670

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.34	U	6.70	1.34	0.670
1,2-Dichloropropane	78-87-5	1.34	U	6.70	1.34	0.670
1,3-Dichloropropane	142-28-9	1.34	U	6.70	1.34	0.670
2,2-Dichloropropane	594-20-7	1.34	U	6.70	1.34	0.670
cis-1,3-Dichloropropene	10061-01-5	1.34	U	6.70	1.34	0.670
trans-1,3-Dichloropropene	10061-02-6	1.34	U	6.70	1.34	0.670
1,1-Dichloropropene	563-58-6	1.34	U	6.70	1.34	0.670
Ethylbenzene	100-41-4	1.34	U	6.70	1.34	0.670
2-Hexanone	591-78-6	6.70	U	13.4	6.70	3.35
Hexachlorobutadiene	87-68-3	1.34	U	6.70	1.34	0.670
Isopropylbenzene	98-82-8	1.34	U	6.70	1.34	0.670
p-Isopropyltoluene	99-87-6	1.34	U	6.70	1.34	0.670
4-Methyl-2-pentanone	108-10-1	6.70	U	13.4	6.70	3.35
Methylene chloride	75-09-2	2.68	U	6.70	2.68	1.34
Naphthalene	91-20-3	1.34	U	6.70	1.34	0.670
n-Propylbenzene	103-65-1	1.34	U	6.70	1.34	0.670
Styrene	100-42-5	1.34	U	6.70	1.34	0.670
1,1,1,2-Tetrachloroethane	630-20-6	1.34	U	6.70	1.34	0.670
1,1,2,2-Tetrachloroethane	79-34-5	1.34	U	6.70	1.34	0.670
Tetrachloroethene	127-18-4	1.34	U	6.70	1.34	0.670
Toluene	108-88-3	1.34	U	6.70	1.34	0.670
1,2,3-Trichlorobenzene	87-61-6	1.34	U	6.70	1.34	0.670
1,2,4-Trichlorobenzene	120-82-1	1.34	U	6.70	1.34	0.670
1,1,1-Trichloroethane	71-55-6	1.34	U	6.70	1.34	0.670
1,1,2-Trichloroethane	79-00-5	1.34	U	6.70	1.34	0.670
Trichloroethene	79-01-6	1.34	U	6.70	1.34	0.670
Trichlorofluoromethane	75-69-4	2.68	U	6.70	2.68	1.34
1,2,3-Trichloropropane	96-18-4	2.68	U	6.70	2.68	1.34
1,2,4-Trimethylbenzene	95-63-6	1.34	U	6.70	1.34	0.670
1,3,5-Trimethylbenzene	108-67-8	1.34	U	6.70	1.34	0.670
Vinyl chloride	75-01-4	2.68	U	6.70	2.68	1.34
o-Xylene	95-47-6	1.34	U	6.70	1.34	0.670
m-,p-Xylene	179601-23-1	1.34	U	6.70	1.34	0.670

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.7	80	120	
1,2-Dichloroethane-d4	95.4	80	120	
Toluene-d8	107	85	115	
4-Bromofluorobenzene	114	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT02(22-22.5)260216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 10:51
Collect Date:	02/26/2016 09:15	**Dilution:**	10	**File ID:**	1LM.LM33512
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	81.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	269		47.3	23.6	11.8

Certificate of Analysis

Sample #:	L16021358-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT03(5-5.5)260216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:08
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	03/01/2016 02:36
Collect Date:	02/26/2016 11:15	**Dilution:**	1	**File ID:**	9M972985
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	25.0	12.5	6.25
Benzene	71-43-2	1.25	U	6.25	1.25	0.625
Bromobenzene	108-86-1	1.25	U	6.25	1.25	0.625
Bromochloromethane	74-97-5	2.50	U	6.25	2.50	1.25
Bromodichloromethane	75-27-4	1.25	U	6.25	1.25	0.625
Bromoform	75-25-2	1.25	U	6.25	1.25	0.625
Bromomethane	74-83-9	2.50	U	6.25	2.50	1.25
2-Butanone	78-93-3	6.26	U	12.5	6.26	3.13
n-Butylbenzene	104-51-8	1.25	U	6.25	1.25	0.625
sec-Butylbenzene	135-98-8	1.25	U	6.25	1.25	0.625
tert-Butylbenzene	98-06-6	1.25	U	6.25	1.25	0.625
Carbon disulfide	75-15-0	1.25	U	6.25	1.25	0.625
Carbon tetrachloride	56-23-5	1.25	U	6.25	1.25	0.625
Chlorobenzene	108-90-7	1.25	U	6.25	1.25	0.625
Chlorodibromomethane	124-48-1	1.25	U	6.25	1.25	0.625
Chloroethane	75-00-3	2.50	U	6.25	2.50	1.25
Chloroform	67-66-3	1.25	U	6.25	1.25	0.625
Chloromethane	74-87-3	5.00	U	12.5	5.00	2.50
2-Chlorotoluene	95-49-8	1.25	U	6.25	1.25	0.625
4-Chlorotoluene	106-43-4	1.25	U	6.25	1.25	0.625

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	5.00	U	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	6.25	1.25	0.625
Dibromomethane	74-95-3	1.25	U	6.25	1.25	0.625
1,2-Dichlorobenzene	95-50-1	1.25	U	6.25	1.25	0.625
1,3-Dichlorobenzene	541-73-1	1.25	U	6.25	1.25	0.625
1,4-Dichlorobenzene	106-46-7	1.25	U	6.25	1.25	0.625
Dichlorodifluoromethane	75-71-8	2.50	U	6.25	2.50	1.25
1,1-Dichloroethane	75-34-3	2.50	U	6.25	2.50	1.25
1,2-Dichloroethane	107-06-2	1.25	U	6.25	1.25	0.625
1,1-Dichloroethene	75-35-4	1.25	U	6.25	1.25	0.625
cis-1,2-Dichloroethene	156-59-2	1.25	U	6.25	1.25	0.625
trans-1,2-Dichloroethene	156-60-5	1.25	U	6.25	1.25	0.625
1,2-Dichloropropane	78-87-5	1.25	U	6.25	1.25	0.625
1,3-Dichloropropane	142-28-9	1.25	U	6.25	1.25	0.625
2,2-Dichloropropane	594-20-7	1.25	U	6.25	1.25	0.625
cis-1,3-Dichloropropene	10061-01-5	1.25	U	6.25	1.25	0.625
trans-1,3-Dichloropropene	10061-02-6	1.25	U	6.25	1.25	0.625
1,1-Dichloropropene	563-58-6	1.25	U	6.25	1.25	0.625
Ethylbenzene	100-41-4	1.25	U	6.25	1.25	0.625
2-Hexanone	591-78-6	6.26	U	12.5	6.26	3.13
Hexachlorobutadiene	87-68-3	1.25	U	6.25	1.25	0.625
Isopropylbenzene	98-82-8	1.25	U	6.25	1.25	0.625
p-Isopropyltoluene	99-87-6	1.25	U	6.25	1.25	0.625
4-Methyl-2-pentanone	108-10-1	6.26	U	12.5	6.26	3.13
Methylene chloride	75-09-2	2.50	U	6.25	2.50	1.25
Naphthalene	91-20-3	1.25	U	6.25	1.25	0.625
n-Propylbenzene	103-65-1	1.25	U	6.25	1.25	0.625
Styrene	100-42-5	1.25	U	6.25	1.25	0.625
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	6.25	1.25	0.625
1,1,2,2-Tetrachloroethane	79-34-5	1.25	U	6.25	1.25	0.625
Tetrachloroethene	127-18-4	1.25	U	6.25	1.25	0.625
Toluene	108-88-3	1.25	U	6.25	1.25	0.625
1,2,3-Trichlorobenzene	87-61-6	1.25	U	6.25	1.25	0.625
1,2,4-Trichlorobenzene	120-82-1	1.25	U	6.25	1.25	0.625
1,1,1-Trichloroethane	71-55-6	1.25	U	6.25	1.25	0.625
1,1,2-Trichloroethane	79-00-5	1.25	U	6.25	1.25	0.625
Trichloroethene	79-01-6	1.25	U	6.25	1.25	0.625
Trichlorofluoromethane	75-69-4	2.50	U	6.25	2.50	1.25
1,2,3-Trichloropropane	96-18-4	2.50	U	6.25	2.50	1.25

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.25	U	6.25	1.25	0.625
1,3,5-Trimethylbenzene	108-67-8	1.25	U	6.25	1.25	0.625
Vinyl chloride	75-01-4	2.50	U	6.25	2.50	1.25
o-Xylene	95-47-6	1.25	U	6.25	1.25	0.625
m-,p-Xylene	179601-23-1	1.25	U	6.25	1.25	0.625

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.3	80	120	
1,2-Dichloroethane-d4	101	80	120	
Toluene-d8	106	85	115	
4-Bromofluorobenzene	113	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT03(5-5.5)260216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 03:53
Collect Date:	02/26/2016 11:15	**Dilution:**	1	**File ID:**	1LM.LM33499
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.46	U	4.94	2.46	1.23

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT03(10-10.5)260216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:28
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	03/01/2016 03:06
Collect Date:	02/26/2016 11:17	**Dilution:**	1	**File ID:**	9M972986
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	87.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.4	U	22.8	11.4	5.69
Benzene	71-43-2	1.14	U	5.69	1.14	0.569
Bromobenzene	108-86-1	1.14	U	5.69	1.14	0.569
Bromochloromethane	74-97-5	2.28	U	5.69	2.28	1.14
Bromodichloromethane	75-27-4	1.14	U	5.69	1.14	0.569
Bromoform	75-25-2	1.14	U	5.69	1.14	0.569
Bromomethane	74-83-9	2.28	U	5.69	2.28	1.14
2-Butanone	78-93-3	5.70	U	11.4	5.70	2.85
n-Butylbenzene	104-51-8	1.14	U	5.69	1.14	0.569
sec-Butylbenzene	135-98-8	1.14	U	5.69	1.14	0.569
tert-Butylbenzene	98-06-6	1.14	U	5.69	1.14	0.569
Carbon disulfide	75-15-0	1.14	U	5.69	1.14	0.569
Carbon tetrachloride	56-23-5	1.14	U	5.69	1.14	0.569
Chlorobenzene	108-90-7	1.14	U	5.69	1.14	0.569
Chlorodibromomethane	124-48-1	1.14	U	5.69	1.14	0.569
Chloroethane	75-00-3	2.28	U	5.69	2.28	1.14
Chloroform	67-66-3	1.14	U	5.69	1.14	0.569
Chloromethane	74-87-3	4.56	U	11.4	4.56	2.28
2-Chlorotoluene	95-49-8	1.14	U	5.69	1.14	0.569
4-Chlorotoluene	106-43-4	1.14	U	5.69	1.14	0.569
1,2-Dibromo-3-chloropropane	96-12-8	4.56	U	11.4	4.56	2.28
1,2-Dibromoethane	106-93-4	1.14	U	5.69	1.14	0.569
Dibromomethane	74-95-3	1.14	U	5.69	1.14	0.569
1,2-Dichlorobenzene	95-50-1	1.14	U	5.69	1.14	0.569
1,3-Dichlorobenzene	541-73-1	1.14	U	5.69	1.14	0.569
1,4-Dichlorobenzene	106-46-7	1.14	U	5.69	1.14	0.569
Dichlorodifluoromethane	75-71-8	2.28	U	5.69	2.28	1.14
1,1-Dichloroethane	75-34-3	2.28	U	5.69	2.28	1.14
1,2-Dichloroethane	107-06-2	1.14	U	5.69	1.14	0.569
1,1-Dichloroethene	75-35-4	1.14	U	5.69	1.14	0.569
cis-1,2-Dichloroethene	156-59-2	1.14	U	5.69	1.14	0.569

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.14	U	5.69	1.14	0.569
1,2-Dichloropropane	78-87-5	1.14	U	5.69	1.14	0.569
1,3-Dichloropropane	142-28-9	1.14	U	5.69	1.14	0.569
2,2-Dichloropropane	594-20-7	1.14	U	5.69	1.14	0.569
cis-1,3-Dichloropropene	10061-01-5	1.14	U	5.69	1.14	0.569
trans-1,3-Dichloropropene	10061-02-6	1.14	U	5.69	1.14	0.569
1,1-Dichloropropene	563-58-6	1.14	U	5.69	1.14	0.569
Ethylbenzene	100-41-4	1.14	U	5.69	1.14	0.569
2-Hexanone	591-78-6	5.70	U	11.4	5.70	2.85
Hexachlorobutadiene	87-68-3	1.14	U	5.69	1.14	0.569
Isopropylbenzene	98-82-8	1.14	U	5.69	1.14	0.569
p-Isopropyltoluene	99-87-6	1.14	U	5.69	1.14	0.569
4-Methyl-2-pentanone	108-10-1	5.70	U	11.4	5.70	2.85
Methylene chloride	75-09-2	2.28	U	5.69	2.28	1.14
Naphthalene	91-20-3	1.14	U	5.69	1.14	0.569
n-Propylbenzene	103-65-1	1.14	U	5.69	1.14	0.569
Styrene	100-42-5	1.14	U	5.69	1.14	0.569
1,1,1,2-Tetrachloroethane	630-20-6	1.14	U	5.69	1.14	0.569
1,1,2,2-Tetrachloroethane	79-34-5	1.14	U	5.69	1.14	0.569
Tetrachloroethene	127-18-4	1.14	U	5.69	1.14	0.569
Toluene	108-88-3	1.14	U	5.69	1.14	0.569
1,2,3-Trichlorobenzene	87-61-6	1.14	U	5.69	1.14	0.569
1,2,4-Trichlorobenzene	120-82-1	1.14	U	5.69	1.14	0.569
1,1,1-Trichloroethane	71-55-6	1.14	U	5.69	1.14	0.569
1,1,2-Trichloroethane	79-00-5	1.14	U	5.69	1.14	0.569
Trichloroethene	79-01-6	1.14	U	5.69	1.14	0.569
Trichlorofluoromethane	75-69-4	2.28	U	5.69	2.28	1.14
1,2,3-Trichloropropane	96-18-4	2.28	U	5.69	2.28	1.14
1,2,4-Trimethylbenzene	95-63-6	1.14	U	5.69	1.14	0.569
1,3,5-Trimethylbenzene	108-67-8	1.14	U	5.69	1.14	0.569
Vinyl chloride	75-01-4	2.28	U	5.69	2.28	1.14
o-Xylene	95-47-6	1.14	U	5.69	1.14	0.569
m-,p-Xylene	179601-23-1	1.14	U	5.69	1.14	0.569

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.6	80	120	
1,2-Dichloroethane-d4	95.0	80	120	
Toluene-d8	107	85	115	
4-Bromofluorobenzene	110	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT03(10-10.5)260216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 11:10
Collect Date:	02/26/2016 11:17	**Dilution:**	100	**File ID:**	1LM.LM33513
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	87.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2110		437	218	109

Certificate of Analysis

Sample #:	L16021358-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT03(14.5-15)260216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:29
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	03/01/2016 03:37
Collect Date:	02/26/2016 11:19	**Dilution:**	1	**File ID:**	9M972987
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.1	U	24.3	12.1	6.07
Benzene	71-43-2	1.21	U	6.07	1.21	0.607
Bromobenzene	108-86-1	1.21	U	6.07	1.21	0.607
Bromochloromethane	74-97-5	2.42	U	6.07	2.42	1.21
Bromodichloromethane	75-27-4	1.21	U	6.07	1.21	0.607
Bromoform	75-25-2	1.21	U	6.07	1.21	0.607
Bromomethane	74-83-9	2.42	U	6.07	2.42	1.21
2-Butanone	78-93-3	6.08	U	12.1	6.08	3.04
n-Butylbenzene	104-51-8	1.21	U	6.07	1.21	0.607
sec-Butylbenzene	135-98-8	1.21	U	6.07	1.21	0.607
tert-Butylbenzene	98-06-6	1.21	U	6.07	1.21	0.607
Carbon disulfide	75-15-0	1.21	U	6.07	1.21	0.607
Carbon tetrachloride	56-23-5	1.21	U	6.07	1.21	0.607
Chlorobenzene	108-90-7	1.21	U	6.07	1.21	0.607
Chlorodibromomethane	124-48-1	1.21	U	6.07	1.21	0.607
Chloroethane	75-00-3	2.42	U	6.07	2.42	1.21
Chloroform	67-66-3	1.21	U	6.07	1.21	0.607
Chloromethane	74-87-3	4.86	U	12.1	4.86	2.43
2-Chlorotoluene	95-49-8	1.21	U	6.07	1.21	0.607
4-Chlorotoluene	106-43-4	1.21	U	6.07	1.21	0.607

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Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	4.86	U	12.1	4.86	2.43
1,2-Dibromoethane	106-93-4	1.21	U	6.07	1.21	0.607
Dibromomethane	74-95-3	1.21	U	6.07	1.21	0.607
1,2-Dichlorobenzene	95-50-1	1.21	U	6.07	1.21	0.607
1,3-Dichlorobenzene	541-73-1	1.21	U	6.07	1.21	0.607
1,4-Dichlorobenzene	106-46-7	1.21	U	6.07	1.21	0.607
Dichlorodifluoromethane	75-71-8	2.42	U	6.07	2.42	1.21
1,1-Dichloroethane	75-34-3	2.42	U	6.07	2.42	1.21
1,2-Dichloroethane	107-06-2	1.21	U	6.07	1.21	0.607
1,1-Dichloroethene	75-35-4	1.21	U	6.07	1.21	0.607
cis-1,2-Dichloroethene	156-59-2	1.21	U	6.07	1.21	0.607
trans-1,2-Dichloroethene	156-60-5	1.21	U	6.07	1.21	0.607
1,2-Dichloropropane	78-87-5	1.21	U	6.07	1.21	0.607
1,3-Dichloropropane	142-28-9	1.21	U	6.07	1.21	0.607
2,2-Dichloropropane	594-20-7	1.21	U	6.07	1.21	0.607
cis-1,3-Dichloropropene	10061-01-5	1.21	U	6.07	1.21	0.607
trans-1,3-Dichloropropene	10061-02-6	1.21	U	6.07	1.21	0.607
1,1-Dichloropropene	563-58-6	1.21	U	6.07	1.21	0.607
Ethylbenzene	100-41-4	1.21	U	6.07	1.21	0.607
2-Hexanone	591-78-6	6.08	U	12.1	6.08	3.04
Hexachlorobutadiene	87-68-3	1.21	U	6.07	1.21	0.607
Isopropylbenzene	98-82-8	1.21	U	6.07	1.21	0.607
p-Isopropyltoluene	99-87-6	1.21	U	6.07	1.21	0.607
4-Methyl-2-pentanone	108-10-1	6.08	U	12.1	6.08	3.04
Methylene chloride	75-09-2	2.42	U	6.07	2.42	1.21
Naphthalene	91-20-3	1.21	U	6.07	1.21	0.607
n-Propylbenzene	103-65-1	1.21	U	6.07	1.21	0.607
Styrene	100-42-5	1.21	U	6.07	1.21	0.607
1,1,1,2-Tetrachloroethane	630-20-6	1.21	U	6.07	1.21	0.607
1,1,2,2-Tetrachloroethane	79-34-5	1.21	U	6.07	1.21	0.607
Tetrachloroethene	127-18-4	1.21	U	6.07	1.21	0.607
Toluene	108-88-3	1.21	U	6.07	1.21	0.607
1,2,3-Trichlorobenzene	87-61-6	1.21	U	6.07	1.21	0.607
1,2,4-Trichlorobenzene	120-82-1	1.21	U	6.07	1.21	0.607
1,1,1-Trichloroethane	71-55-6	1.21	U	6.07	1.21	0.607
1,1,2-Trichloroethane	79-00-5	1.21	U	6.07	1.21	0.607
Trichloroethene	79-01-6	1.21	U	6.07	1.21	0.607
Trichlorofluoromethane	75-69-4	2.42	U	6.07	2.42	1.21
1,2,3-Trichloropropane	96-18-4	2.42	U	6.07	2.42	1.21

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Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.21	U	6.07	1.21	0.607
1,3,5-Trimethylbenzene	108-67-8	1.21	U	6.07	1.21	0.607
Vinyl chloride	75-01-4	2.42	U	6.07	2.42	1.21
o-Xylene	95-47-6	1.21	U	6.07	1.21	0.607
m-,p-Xylene	179601-23-1	1.21	U	6.07	1.21	0.607

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	80	120	
1,2-Dichloroethane-d4	106	80	120	
Toluene-d8	106	85	115	
4-Bromofluorobenzene	110	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT03(14.5-15)260216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 11:29
Collect Date:	02/26/2016 11:19	**Dilution:**	100	**File ID:**	1LM.LM33514
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	85.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3290		465	232	116

Certificate of Analysis

Sample #:	L16021358-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT03(17.5-18)260216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:29
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	03/01/2016 04:07
Collect Date:	02/26/2016 11:21	**Dilution:**	1	**File ID:**	9M972988
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.3	U	26.7	13.3	6.67
Benzene	71-43-2	1.33	U	6.67	1.33	0.667
Bromobenzene	108-86-1	1.33	U	6.67	1.33	0.667
Bromochloromethane	74-97-5	2.66	U	6.67	2.66	1.33
Bromodichloromethane	75-27-4	1.33	U	6.67	1.33	0.667
Bromoform	75-25-2	1.33	U	6.67	1.33	0.667
Bromomethane	74-83-9	2.66	U	6.67	2.66	1.33
2-Butanone	78-93-3	6.68	U	13.3	6.68	3.34
n-Butylbenzene	104-51-8	1.33	U	6.67	1.33	0.667
sec-Butylbenzene	135-98-8	1.33	U	6.67	1.33	0.667
tert-Butylbenzene	98-06-6	1.33	U	6.67	1.33	0.667
Carbon disulfide	75-15-0	1.33	U	6.67	1.33	0.667
Carbon tetrachloride	56-23-5	1.33	U	6.67	1.33	0.667
Chlorobenzene	108-90-7	1.33	U	6.67	1.33	0.667
Chlorodibromomethane	124-48-1	1.33	U	6.67	1.33	0.667
Chloroethane	75-00-3	2.66	U	6.67	2.66	1.33
Chloroform	67-66-3	1.33	U	6.67	1.33	0.667
Chloromethane	74-87-3	5.34	U	13.3	5.34	2.67
2-Chlorotoluene	95-49-8	1.33	U	6.67	1.33	0.667
4-Chlorotoluene	106-43-4	1.33	U	6.67	1.33	0.667

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	5.34	U	13.3	5.34	2.67
1,2-Dibromoethane	106-93-4	1.33	U	6.67	1.33	0.667
Dibromomethane	74-95-3	1.33	U	6.67	1.33	0.667
1,2-Dichlorobenzene	95-50-1	1.33	U	6.67	1.33	0.667
1,3-Dichlorobenzene	541-73-1	1.33	U	6.67	1.33	0.667
1,4-Dichlorobenzene	106-46-7	1.33	U	6.67	1.33	0.667
Dichlorodifluoromethane	75-71-8	2.66	U	6.67	2.66	1.33
1,1-Dichloroethane	75-34-3	2.66	U	6.67	2.66	1.33
1,2-Dichloroethane	107-06-2	1.33	U	6.67	1.33	0.667
1,1-Dichloroethene	75-35-4	1.33	U	6.67	1.33	0.667
cis-1,2-Dichloroethene	156-59-2	1.33	U	6.67	1.33	0.667
trans-1,2-Dichloroethene	156-60-5	1.33	U	6.67	1.33	0.667
1,2-Dichloropropane	78-87-5	1.33	U	6.67	1.33	0.667
1,3-Dichloropropane	142-28-9	1.33	U	6.67	1.33	0.667
2,2-Dichloropropane	594-20-7	1.33	U	6.67	1.33	0.667
cis-1,3-Dichloropropene	10061-01-5	1.33	U	6.67	1.33	0.667
trans-1,3-Dichloropropene	10061-02-6	1.33	U	6.67	1.33	0.667
1,1-Dichloropropene	563-58-6	1.33	U	6.67	1.33	0.667
Ethylbenzene	100-41-4	1.33	U	6.67	1.33	0.667
2-Hexanone	591-78-6	6.68	U	13.3	6.68	3.34
Hexachlorobutadiene	87-68-3	1.33	U	6.67	1.33	0.667
Isopropylbenzene	98-82-8	1.33	U	6.67	1.33	0.667
p-Isopropyltoluene	99-87-6	1.33	U	6.67	1.33	0.667
4-Methyl-2-pentanone	108-10-1	6.68	U	13.3	6.68	3.34
Methylene chloride	75-09-2	2.66	U	6.67	2.66	1.33
Naphthalene	91-20-3	1.33	U	6.67	1.33	0.667
n-Propylbenzene	103-65-1	1.33	U	6.67	1.33	0.667
Styrene	100-42-5	1.33	U	6.67	1.33	0.667
1,1,1,2-Tetrachloroethane	630-20-6	1.33	U	6.67	1.33	0.667
1,1,2,2-Tetrachloroethane	79-34-5	1.33	U	6.67	1.33	0.667
Tetrachloroethene	127-18-4	1.33	U	6.67	1.33	0.667
Toluene	108-88-3	1.33	U	6.67	1.33	0.667
1,2,3-Trichlorobenzene	87-61-6	1.33	U	6.67	1.33	0.667
1,2,4-Trichlorobenzene	120-82-1	1.33	U	6.67	1.33	0.667
1,1,1-Trichloroethane	71-55-6	1.33	U	6.67	1.33	0.667
1,1,2-Trichloroethane	79-00-5	1.33	U	6.67	1.33	0.667
Trichloroethene	79-01-6	1.33	U	6.67	1.33	0.667
Trichlorofluoromethane	75-69-4	2.66	U	6.67	2.66	1.33
1,2,3-Trichloropropane	96-18-4	2.66	U	6.67	2.66	1.33

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Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.33	U	6.67	1.33	0.667
1,3,5-Trimethylbenzene	108-67-8	1.33	U	6.67	1.33	0.667
Vinyl chloride	75-01-4	2.66	U	6.67	2.66	1.33
o-Xylene	95-47-6	1.33	U	6.67	1.33	0.667
m-,p-Xylene	179601-23-1	1.33	U	6.67	1.33	0.667

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.9	80	120	
1,2-Dichloroethane-d4	96.2	80	120	
Toluene-d8	107	85	115	
4-Bromofluorobenzene	111	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-09	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT03(17.5-18)260216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 11:48
Collect Date:	02/26/2016 11:21	**Dilution:**	100	**File ID:**	1LM.LM33515
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	81.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2330		484	242	121

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Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #: L16021358-01 **Client ID:** 18DPT02(5-5.5)260216 **Matrix:** Soil **Collect Date:** 02/26/2016 08:35

Analyte	Result	Units	Qualifier
Percent Solids	82.1	weight %	

Sample #: L16021358-02 **Client ID:** 18DPT02(10-10.5)260216 **Matrix:** Soil **Collect Date:** 02/26/2016 08:42

Analyte	Result	Units	Qualifier
Percent Solids	83.6	weight %	

Sample #: L16021358-03 **Client ID:** 18DPT02(10-10.5)260216FD **Matrix:** Soil **Collect Date:** 02/26/2016 08:42

Analyte	Result	Units	Qualifier
Percent Solids	83.4	weight %	

Sample #: L16021358-04 **Client ID:** 18DPT02(15-15.5)260216 **Matrix:** Soil **Collect Date:** 02/26/2016 09:00

Analyte	Result	Units	Qualifier
Percent Solids	78.3	weight %	

Sample #: L16021358-05 **Client ID:** 18DPT02(22-22.5)260216 **Matrix:** Soil **Collect Date:** 02/26/2016 09:15

Analyte	Result	Units	Qualifier
Percent Solids	81.6	weight %	

Sample #: L16021358-06 **Client ID:** 18DPT03(5-5.5)260216 **Matrix:** Soil **Collect Date:** 02/26/2016 11:15

Analyte	Result	Units	Qualifier
Percent Solids	79.9	weight %	

Sample #: L16021358-07 **Client ID:** 18DPT03(10-10.5)260216 **Matrix:** Soil **Collect Date:** 02/26/2016 11:17

Analyte	Result	Units	Qualifier
Percent Solids	87.6	weight %	

Sample #: L16021358-08 **Client ID:** 18DPT03(14.5-15)260216 **Matrix:** Soil **Collect Date:** 02/26/2016 11:19

Analyte	Result	Units	Qualifier
Percent Solids	85.1	weight %	

Sample #: L16021358-09 **Client ID:** 18DPT03(17.5-18)260216 **Matrix:** Soil **Collect Date:** 02/26/2016 11:21

Analyte	Result	Units	Qualifier
Percent Solids	81.4	weight %	

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT02(5-5.5)260216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:24
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	03/01/2016 00:04
Collect Date:	02/26/2016 08:35	**Dilution:**	1	**File ID:**	9M972980
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	22.8	J	24.8	12.4	6.19
Benzene	71-43-2	1.24	U	6.19	1.24	0.619
Bromobenzene	108-86-1	1.24	U	6.19	1.24	0.619
Bromochloromethane	74-97-5	2.48	U	6.19	2.48	1.24
Bromodichloromethane	75-27-4	1.24	U	6.19	1.24	0.619
Bromoform	75-25-2	1.24	U	6.19	1.24	0.619
Bromomethane	74-83-9	2.48	U	6.19	2.48	1.24
2-Butanone	78-93-3	6.18	U	12.4	6.18	3.09
n-Butylbenzene	104-51-8	1.24	U	6.19	1.24	0.619
sec-Butylbenzene	135-98-8	1.24	U	6.19	1.24	0.619
tert-Butylbenzene	98-06-6	1.24	U	6.19	1.24	0.619
Carbon disulfide	75-15-0	1.24	U	6.19	1.24	0.619
Carbon tetrachloride	56-23-5	1.24	U	6.19	1.24	0.619
Chlorobenzene	108-90-7	1.24	U	6.19	1.24	0.619
Chlorodibromomethane	124-48-1	1.24	U	6.19	1.24	0.619
Chloroethane	75-00-3	2.48	U	6.19	2.48	1.24
Chloroform	67-66-3	1.24	U	6.19	1.24	0.619
Chloromethane	74-87-3	4.96	U	12.4	4.96	2.48
2-Chlorotoluene	95-49-8	1.24	U	6.19	1.24	0.619
4-Chlorotoluene	106-43-4	1.24	U	6.19	1.24	0.619
1,2-Dibromo-3-chloropropane	96-12-8	4.96	U	12.4	4.96	2.48
1,2-Dibromoethane	106-93-4	1.24	U	6.19	1.24	0.619
Dibromomethane	74-95-3	1.24	U	6.19	1.24	0.619
1,2-Dichlorobenzene	95-50-1	1.24	U	6.19	1.24	0.619
1,3-Dichlorobenzene	541-73-1	1.24	U	6.19	1.24	0.619
1,4-Dichlorobenzene	106-46-7	1.24	U	6.19	1.24	0.619
Dichlorodifluoromethane	75-71-8	2.48	U	6.19	2.48	1.24
1,1-Dichloroethane	75-34-3	2.48	U	6.19	2.48	1.24
1,2-Dichloroethane	107-06-2	1.24	U	6.19	1.24	0.619
1,1-Dichloroethene	75-35-4	1.24	U	6.19	1.24	0.619
cis-1,2-Dichloroethene	156-59-2	1.24	U	6.19	1.24	0.619
trans-1,2-Dichloroethene	156-60-5	1.24	U	6.19	1.24	0.619

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Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.24	U	6.19	1.24	0.619
1,3-Dichloropropane	142-28-9	1.24	U	6.19	1.24	0.619
2,2-Dichloropropane	594-20-7	1.24	U	6.19	1.24	0.619
cis-1,3-Dichloropropene	10061-01-5	1.24	U	6.19	1.24	0.619
trans-1,3-Dichloropropene	10061-02-6	1.24	U	6.19	1.24	0.619
1,1-Dichloropropene	563-58-6	1.24	U	6.19	1.24	0.619
Ethylbenzene	100-41-4	1.24	U	6.19	1.24	0.619
2-Hexanone	591-78-6	6.18	U	12.4	6.18	3.09
Hexachlorobutadiene	87-68-3	1.24	U	6.19	1.24	0.619
Isopropylbenzene	98-82-8	1.24	U	6.19	1.24	0.619
p-Isopropyltoluene	99-87-6	1.98	J	6.19	1.24	0.619
4-Methyl-2-pentanone	108-10-1	6.18	U	12.4	6.18	3.09
Methylene chloride	75-09-2	2.48	U	6.19	2.48	1.24
Naphthalene	91-20-3	1.24	U	6.19	1.24	0.619
n-Propylbenzene	103-65-1	1.24	U	6.19	1.24	0.619
Styrene	100-42-5	1.24	U	6.19	1.24	0.619
1,1,1,2-Tetrachloroethane	630-20-6	1.24	U	6.19	1.24	0.619
1,1,2,2-Tetrachloroethane	79-34-5	1.24	U	6.19	1.24	0.619
Tetrachloroethene	127-18-4	1.24	U	6.19	1.24	0.619
Toluene	108-88-3	1.24	U	6.19	1.24	0.619
1,2,3-Trichlorobenzene	87-61-6	1.24	U	6.19	1.24	0.619
1,2,4-Trichlorobenzene	120-82-1	1.24	U	6.19	1.24	0.619
1,1,1-Trichloroethane	71-55-6	1.24	U	6.19	1.24	0.619
1,1,2-Trichloroethane	79-00-5	1.24	U	6.19	1.24	0.619
Trichloroethene	79-01-6	1.24	U	6.19	1.24	0.619
Trichlorofluoromethane	75-69-4	2.48	U	6.19	2.48	1.24
1,2,3-Trichloropropane	96-18-4	2.48	U	6.19	2.48	1.24
1,2,4-Trimethylbenzene	95-63-6	1.24	U	6.19	1.24	0.619
1,3,5-Trimethylbenzene	108-67-8	1.24	U	6.19	1.24	0.619
Vinyl chloride	75-01-4	2.48	U	6.19	2.48	1.24
o-Xylene	95-47-6	1.24	U	6.19	1.24	0.619
m-,p-Xylene	179601-23-1	1.24	U	6.19	1.24	0.619

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.8	80	120	
1,2-Dichloroethane-d4	95.0	80	120	
Toluene-d8	106	85	115	
4-Bromofluorobenzene	110	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT02(10-10.5)260216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:25
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	03/01/2016 00:34
Collect Date:	02/26/2016 08:42	**Dilution:**	1	**File ID:**	9M972981
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	7.17	J	24.1	12.0	6.02
Benzene	71-43-2	1.20	U	6.02	1.20	0.602
Bromobenzene	108-86-1	1.20	U	6.02	1.20	0.602
Bromochloromethane	74-97-5	2.40	U	6.02	2.40	1.20
Bromodichloromethane	75-27-4	1.20	U	6.02	1.20	0.602
Bromoform	75-25-2	1.20	U	6.02	1.20	0.602
Bromomethane	74-83-9	2.40	U	6.02	2.40	1.20
2-Butanone	78-93-3	6.02	U	12.0	6.02	3.01
n-Butylbenzene	104-51-8	1.20	U	6.02	1.20	0.602
sec-Butylbenzene	135-98-8	1.20	U	6.02	1.20	0.602
tert-Butylbenzene	98-06-6	1.20	U	6.02	1.20	0.602
Carbon disulfide	75-15-0	1.20	U	6.02	1.20	0.602
Carbon tetrachloride	56-23-5	1.20	U	6.02	1.20	0.602
Chlorobenzene	108-90-7	1.20	U	6.02	1.20	0.602
Chlorodibromomethane	124-48-1	1.20	U	6.02	1.20	0.602
Chloroethane	75-00-3	2.40	U	6.02	2.40	1.20
Chloroform	67-66-3	1.20	U	6.02	1.20	0.602
Chloromethane	74-87-3	4.82	U	12.0	4.82	2.41
2-Chlorotoluene	95-49-8	1.20	U	6.02	1.20	0.602
4-Chlorotoluene	106-43-4	1.20	U	6.02	1.20	0.602
1,2-Dibromo-3-chloropropane	96-12-8	4.82	U	12.0	4.82	2.41
1,2-Dibromoethane	106-93-4	1.20	U	6.02	1.20	0.602
Dibromomethane	74-95-3	1.20	U	6.02	1.20	0.602
1,2-Dichlorobenzene	95-50-1	1.20	U	6.02	1.20	0.602
1,3-Dichlorobenzene	541-73-1	1.20	U	6.02	1.20	0.602
1,4-Dichlorobenzene	106-46-7	1.20	U	6.02	1.20	0.602
Dichlorodifluoromethane	75-71-8	2.40	U	6.02	2.40	1.20
1,1-Dichloroethane	75-34-3	2.40	U	6.02	2.40	1.20
1,2-Dichloroethane	107-06-2	1.20	U	6.02	1.20	0.602
1,1-Dichloroethene	75-35-4	1.20	U	6.02	1.20	0.602
cis-1,2-Dichloroethene	156-59-2	1.20	U	6.02	1.20	0.602

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.20	U	6.02	1.20	0.602
1,2-Dichloropropane	78-87-5	1.20	U	6.02	1.20	0.602
1,3-Dichloropropane	142-28-9	1.20	U	6.02	1.20	0.602
2,2-Dichloropropane	594-20-7	1.20	U	6.02	1.20	0.602
cis-1,3-Dichloropropene	10061-01-5	1.20	U	6.02	1.20	0.602
trans-1,3-Dichloropropene	10061-02-6	1.20	U	6.02	1.20	0.602
1,1-Dichloropropene	563-58-6	1.20	U	6.02	1.20	0.602
Ethylbenzene	100-41-4	1.20	U	6.02	1.20	0.602
2-Hexanone	591-78-6	6.02	U	12.0	6.02	3.01
Hexachlorobutadiene	87-68-3	1.20	U	6.02	1.20	0.602
Isopropylbenzene	98-82-8	1.20	U	6.02	1.20	0.602
p-Isopropyltoluene	99-87-6	1.20	U	6.02	1.20	0.602
4-Methyl-2-pentanone	108-10-1	6.02	U	12.0	6.02	3.01
Methylene chloride	75-09-2	2.40	U	6.02	2.40	1.20
Naphthalene	91-20-3	1.20	U	6.02	1.20	0.602
n-Propylbenzene	103-65-1	1.20	U	6.02	1.20	0.602
Styrene	100-42-5	1.20	U	6.02	1.20	0.602
1,1,1,2-Tetrachloroethane	630-20-6	1.20	U	6.02	1.20	0.602
1,1,2,2-Tetrachloroethane	79-34-5	1.20	U	6.02	1.20	0.602
Tetrachloroethene	127-18-4	1.20	U	6.02	1.20	0.602
Toluene	108-88-3	1.20	U	6.02	1.20	0.602
1,2,3-Trichlorobenzene	87-61-6	1.20	U	6.02	1.20	0.602
1,2,4-Trichlorobenzene	120-82-1	1.20	U	6.02	1.20	0.602
1,1,1-Trichloroethane	71-55-6	1.20	U	6.02	1.20	0.602
1,1,2-Trichloroethane	79-00-5	1.20	U	6.02	1.20	0.602
Trichloroethene	79-01-6	1.20	U	6.02	1.20	0.602
Trichlorofluoromethane	75-69-4	2.40	U	6.02	2.40	1.20
1,2,3-Trichloropropane	96-18-4	2.40	U	6.02	2.40	1.20
1,2,4-Trimethylbenzene	95-63-6	1.20	U	6.02	1.20	0.602
1,3,5-Trimethylbenzene	108-67-8	1.20	U	6.02	1.20	0.602
Vinyl chloride	75-01-4	2.40	U	6.02	2.40	1.20
o-Xylene	95-47-6	1.20	U	6.02	1.20	0.602
m-,p-Xylene	179601-23-1	1.20	U	6.02	1.20	0.602

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.8	80	120	
1,2-Dichloroethane-d4	97.2	80	120	
Toluene-d8	104	85	115	
4-Bromofluorobenzene	108	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT02(10-10.5)260216FD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:25
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	03/01/2016 01:04
Collect Date:	02/26/2016 08:42	**Dilution:**	1	**File ID:**	9M972982
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	17.3	J	24.8	12.4	6.20
Benzene	71-43-2	1.24	U	6.20	1.24	0.620
Bromobenzene	108-86-1	1.24	U	6.20	1.24	0.620
Bromochloromethane	74-97-5	2.48	U	6.20	2.48	1.24
Bromodichloromethane	75-27-4	1.24	U	6.20	1.24	0.620
Bromoform	75-25-2	1.24	U	6.20	1.24	0.620
Bromomethane	74-83-9	2.48	U	6.20	2.48	1.24
2-Butanone	78-93-3	6.20	U	12.4	6.20	3.10
n-Butylbenzene	104-51-8	1.24	U	6.20	1.24	0.620
sec-Butylbenzene	135-98-8	1.24	U	6.20	1.24	0.620
tert-Butylbenzene	98-06-6	1.24	U	6.20	1.24	0.620
Carbon disulfide	75-15-0	1.24	U	6.20	1.24	0.620
Carbon tetrachloride	56-23-5	1.24	U	6.20	1.24	0.620
Chlorobenzene	108-90-7	1.24	U	6.20	1.24	0.620
Chlorodibromomethane	124-48-1	1.24	U	6.20	1.24	0.620
Chloroethane	75-00-3	2.48	U	6.20	2.48	1.24
Chloroform	67-66-3	1.24	U	6.20	1.24	0.620
Chloromethane	74-87-3	4.96	U	12.4	4.96	2.48
2-Chlorotoluene	95-49-8	1.24	U	6.20	1.24	0.620
4-Chlorotoluene	106-43-4	1.24	U	6.20	1.24	0.620
1,2-Dibromo-3-chloropropane	96-12-8	4.96	U	12.4	4.96	2.48
1,2-Dibromoethane	106-93-4	1.24	U	6.20	1.24	0.620
Dibromomethane	74-95-3	1.24	U	6.20	1.24	0.620
1,2-Dichlorobenzene	95-50-1	1.24	U	6.20	1.24	0.620
1,3-Dichlorobenzene	541-73-1	1.24	U	6.20	1.24	0.620
1,4-Dichlorobenzene	106-46-7	1.24	U	6.20	1.24	0.620
Dichlorodifluoromethane	75-71-8	2.48	U	6.20	2.48	1.24
1,1-Dichloroethane	75-34-3	2.48	U	6.20	2.48	1.24
1,2-Dichloroethane	107-06-2	1.24	U	6.20	1.24	0.620
1,1-Dichloroethene	75-35-4	1.24	U	6.20	1.24	0.620
cis-1,2-Dichloroethene	156-59-2	1.24	U	6.20	1.24	0.620

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.24	U	6.20	1.24	0.620
1,2-Dichloropropane	78-87-5	1.24	U	6.20	1.24	0.620
1,3-Dichloropropane	142-28-9	1.24	U	6.20	1.24	0.620
2,2-Dichloropropane	594-20-7	1.24	U	6.20	1.24	0.620
cis-1,3-Dichloropropene	10061-01-5	1.24	U	6.20	1.24	0.620
trans-1,3-Dichloropropene	10061-02-6	1.24	U	6.20	1.24	0.620
1,1-Dichloropropene	563-58-6	1.24	U	6.20	1.24	0.620
Ethylbenzene	100-41-4	1.24	U	6.20	1.24	0.620
2-Hexanone	591-78-6	6.20	U	12.4	6.20	3.10
Hexachlorobutadiene	87-68-3	1.24	U	6.20	1.24	0.620
Isopropylbenzene	98-82-8	1.24	U	6.20	1.24	0.620
p-Isopropyltoluene	99-87-6	4.08	J	6.20	1.24	0.620
4-Methyl-2-pentanone	108-10-1	6.20	U	12.4	6.20	3.10
Methylene chloride	75-09-2	2.48	U	6.20	2.48	1.24
Naphthalene	91-20-3	1.24	U	6.20	1.24	0.620
n-Propylbenzene	103-65-1	1.24	U	6.20	1.24	0.620
Styrene	100-42-5	1.24	U	6.20	1.24	0.620
1,1,1,2-Tetrachloroethane	630-20-6	1.24	U	6.20	1.24	0.620
1,1,2,2-Tetrachloroethane	79-34-5	1.24	U	6.20	1.24	0.620
Tetrachloroethene	127-18-4	1.24	U	6.20	1.24	0.620
Toluene	108-88-3	1.24	U	6.20	1.24	0.620
1,2,3-Trichlorobenzene	87-61-6	1.24	U	6.20	1.24	0.620
1,2,4-Trichlorobenzene	120-82-1	1.24	U	6.20	1.24	0.620
1,1,1-Trichloroethane	71-55-6	1.24	U	6.20	1.24	0.620
1,1,2-Trichloroethane	79-00-5	1.24	U	6.20	1.24	0.620
Trichloroethene	79-01-6	1.24	U	6.20	1.24	0.620
Trichlorofluoromethane	75-69-4	2.48	U	6.20	2.48	1.24
1,2,3-Trichloropropane	96-18-4	2.48	U	6.20	2.48	1.24
1,2,4-Trimethylbenzene	95-63-6	1.24	U	6.20	1.24	0.620
1,3,5-Trimethylbenzene	108-67-8	1.24	U	6.20	1.24	0.620
Vinyl chloride	75-01-4	2.48	U	6.20	2.48	1.24
o-Xylene	95-47-6	1.24	U	6.20	1.24	0.620
m-,p-Xylene	179601-23-1	1.24	U	6.20	1.24	0.620

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.5	80	120	
1,2-Dichloroethane-d4	97.0	80	120	
Toluene-d8	106	85	115	
4-Bromofluorobenzene	117	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT02(15-15.5)260216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:26
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	03/01/2016 01:36
Collect Date:	02/26/2016 09:00	**Dilution:**	1	**File ID:**	9M972983
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	78.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	8.14	J	23.8	11.9	5.95
Benzene	71-43-2	1.19	U	5.95	1.19	0.595
Bromobenzene	108-86-1	1.19	U	5.95	1.19	0.595
Bromochloromethane	74-97-5	2.38	U	5.95	2.38	1.19
Bromodichloromethane	75-27-4	1.19	U	5.95	1.19	0.595
Bromoform	75-25-2	1.19	U	5.95	1.19	0.595
Bromomethane	74-83-9	2.38	U	5.95	2.38	1.19
2-Butanone	78-93-3	5.94	U	11.9	5.94	2.97
n-Butylbenzene	104-51-8	1.19	U	5.95	1.19	0.595
sec-Butylbenzene	135-98-8	1.19	U	5.95	1.19	0.595
tert-Butylbenzene	98-06-6	1.19	U	5.95	1.19	0.595
Carbon disulfide	75-15-0	1.19	U	5.95	1.19	0.595
Carbon tetrachloride	56-23-5	1.19	U	5.95	1.19	0.595
Chlorobenzene	108-90-7	1.19	U	5.95	1.19	0.595
Chlorodibromomethane	124-48-1	1.19	U	5.95	1.19	0.595
Chloroethane	75-00-3	2.38	U	5.95	2.38	1.19
Chloroform	67-66-3	1.19	U	5.95	1.19	0.595
Chloromethane	74-87-3	4.76	U	11.9	4.76	2.38
2-Chlorotoluene	95-49-8	1.19	U	5.95	1.19	0.595
4-Chlorotoluene	106-43-4	1.19	U	5.95	1.19	0.595
1,2-Dibromo-3-chloropropane	96-12-8	4.76	U	11.9	4.76	2.38
1,2-Dibromoethane	106-93-4	1.19	U	5.95	1.19	0.595
Dibromomethane	74-95-3	1.19	U	5.95	1.19	0.595
1,2-Dichlorobenzene	95-50-1	1.19	U	5.95	1.19	0.595
1,3-Dichlorobenzene	541-73-1	1.19	U	5.95	1.19	0.595
1,4-Dichlorobenzene	106-46-7	1.19	U	5.95	1.19	0.595
Dichlorodifluoromethane	75-71-8	2.38	U	5.95	2.38	1.19
1,1-Dichloroethane	75-34-3	2.38	U	5.95	2.38	1.19
1,2-Dichloroethane	107-06-2	1.19	U	5.95	1.19	0.595
1,1-Dichloroethene	75-35-4	1.19	U	5.95	1.19	0.595
cis-1,2-Dichloroethene	156-59-2	1.19	U	5.95	1.19	0.595

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Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.19	U	5.95	1.19	0.595
1,2-Dichloropropane	78-87-5	1.19	U	5.95	1.19	0.595
1,3-Dichloropropane	142-28-9	1.19	U	5.95	1.19	0.595
2,2-Dichloropropane	594-20-7	1.19	U	5.95	1.19	0.595
cis-1,3-Dichloropropene	10061-01-5	1.19	U	5.95	1.19	0.595
trans-1,3-Dichloropropene	10061-02-6	1.19	U	5.95	1.19	0.595
1,1-Dichloropropene	563-58-6	1.19	U	5.95	1.19	0.595
Ethylbenzene	100-41-4	1.19	U	5.95	1.19	0.595
2-Hexanone	591-78-6	5.94	U	11.9	5.94	2.97
Hexachlorobutadiene	87-68-3	1.19	U	5.95	1.19	0.595
Isopropylbenzene	98-82-8	1.19	U	5.95	1.19	0.595
p-Isopropyltoluene	99-87-6	1.35	J	5.95	1.19	0.595
4-Methyl-2-pentanone	108-10-1	5.94	U	11.9	5.94	2.97
Methylene chloride	75-09-2	2.38	U	5.95	2.38	1.19
Naphthalene	91-20-3	1.19	U	5.95	1.19	0.595
n-Propylbenzene	103-65-1	1.19	U	5.95	1.19	0.595
Styrene	100-42-5	1.19	U	5.95	1.19	0.595
1,1,1,2-Tetrachloroethane	630-20-6	1.19	U	5.95	1.19	0.595
1,1,2,2-Tetrachloroethane	79-34-5	1.19	U	5.95	1.19	0.595
Tetrachloroethene	127-18-4	1.19	U	5.95	1.19	0.595
Toluene	108-88-3	1.19	U	5.95	1.19	0.595
1,2,3-Trichlorobenzene	87-61-6	1.19	U	5.95	1.19	0.595
1,2,4-Trichlorobenzene	120-82-1	1.19	U	5.95	1.19	0.595
1,1,1-Trichloroethane	71-55-6	1.19	U	5.95	1.19	0.595
1,1,2-Trichloroethane	79-00-5	1.19	U	5.95	1.19	0.595
Trichloroethene	79-01-6	1.19	U	5.95	1.19	0.595
Trichlorofluoromethane	75-69-4	2.38	U	5.95	2.38	1.19
1,2,3-Trichloropropane	96-18-4	2.38	U	5.95	2.38	1.19
1,2,4-Trimethylbenzene	95-63-6	1.19	U	5.95	1.19	0.595
1,3,5-Trimethylbenzene	108-67-8	1.19	U	5.95	1.19	0.595
Vinyl chloride	75-01-4	2.38	U	5.95	2.38	1.19
o-Xylene	95-47-6	1.19	U	5.95	1.19	0.595
m-,p-Xylene	179601-23-1	1.19	U	5.95	1.19	0.595

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.9	80	120	
1,2-Dichloroethane-d4	98.7	80	120	
Toluene-d8	108	85	115	
4-Bromofluorobenzene	115	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT02(22-22.5)260216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:26
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	03/01/2016 02:06
Collect Date:	02/26/2016 09:15	**Dilution:**	1	**File ID:**	9M972984
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.4	U	26.8	13.4	6.70
Benzene	71-43-2	1.34	U	6.70	1.34	0.670
Bromobenzene	108-86-1	1.34	U	6.70	1.34	0.670
Bromochloromethane	74-97-5	2.68	U	6.70	2.68	1.34
Bromodichloromethane	75-27-4	1.34	U	6.70	1.34	0.670
Bromoform	75-25-2	1.34	U	6.70	1.34	0.670
Bromomethane	74-83-9	2.68	U	6.70	2.68	1.34
2-Butanone	78-93-3	6.70	U	13.4	6.70	3.35
n-Butylbenzene	104-51-8	1.34	U	6.70	1.34	0.670
sec-Butylbenzene	135-98-8	1.34	U	6.70	1.34	0.670
tert-Butylbenzene	98-06-6	1.34	U	6.70	1.34	0.670
Carbon disulfide	75-15-0	1.34	U	6.70	1.34	0.670
Carbon tetrachloride	56-23-5	1.34	U	6.70	1.34	0.670
Chlorobenzene	108-90-7	1.34	U	6.70	1.34	0.670
Chlorodibromomethane	124-48-1	1.34	U	6.70	1.34	0.670
Chloroethane	75-00-3	2.68	U	6.70	2.68	1.34
Chloroform	67-66-3	1.34	U	6.70	1.34	0.670
Chloromethane	74-87-3	5.36	U	13.4	5.36	2.68
2-Chlorotoluene	95-49-8	1.34	U	6.70	1.34	0.670
4-Chlorotoluene	106-43-4	1.34	U	6.70	1.34	0.670
1,2-Dibromo-3-chloropropane	96-12-8	5.36	U	13.4	5.36	2.68
1,2-Dibromoethane	106-93-4	1.34	U	6.70	1.34	0.670
Dibromomethane	74-95-3	1.34	U	6.70	1.34	0.670
1,2-Dichlorobenzene	95-50-1	1.34	U	6.70	1.34	0.670
1,3-Dichlorobenzene	541-73-1	1.34	U	6.70	1.34	0.670
1,4-Dichlorobenzene	106-46-7	1.34	U	6.70	1.34	0.670
Dichlorodifluoromethane	75-71-8	2.68	U	6.70	2.68	1.34
1,1-Dichloroethane	75-34-3	2.68	U	6.70	2.68	1.34
1,2-Dichloroethane	107-06-2	1.34	U	6.70	1.34	0.670
1,1-Dichloroethene	75-35-4	1.34	U	6.70	1.34	0.670
cis-1,2-Dichloroethene	156-59-2	1.34	U	6.70	1.34	0.670

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Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.34	U	6.70	1.34	0.670
1,2-Dichloropropane	78-87-5	1.34	U	6.70	1.34	0.670
1,3-Dichloropropane	142-28-9	1.34	U	6.70	1.34	0.670
2,2-Dichloropropane	594-20-7	1.34	U	6.70	1.34	0.670
cis-1,3-Dichloropropene	10061-01-5	1.34	U	6.70	1.34	0.670
trans-1,3-Dichloropropene	10061-02-6	1.34	U	6.70	1.34	0.670
1,1-Dichloropropene	563-58-6	1.34	U	6.70	1.34	0.670
Ethylbenzene	100-41-4	1.34	U	6.70	1.34	0.670
2-Hexanone	591-78-6	6.70	U	13.4	6.70	3.35
Hexachlorobutadiene	87-68-3	1.34	U	6.70	1.34	0.670
Isopropylbenzene	98-82-8	1.34	U	6.70	1.34	0.670
p-Isopropyltoluene	99-87-6	1.34	U	6.70	1.34	0.670
4-Methyl-2-pentanone	108-10-1	6.70	U	13.4	6.70	3.35
Methylene chloride	75-09-2	2.68	U	6.70	2.68	1.34
Naphthalene	91-20-3	1.34	U	6.70	1.34	0.670
n-Propylbenzene	103-65-1	1.34	U	6.70	1.34	0.670
Styrene	100-42-5	1.34	U	6.70	1.34	0.670
1,1,1,2-Tetrachloroethane	630-20-6	1.34	U	6.70	1.34	0.670
1,1,2,2-Tetrachloroethane	79-34-5	1.34	U	6.70	1.34	0.670
Tetrachloroethene	127-18-4	1.34	U	6.70	1.34	0.670
Toluene	108-88-3	1.34	U	6.70	1.34	0.670
1,2,3-Trichlorobenzene	87-61-6	1.34	U	6.70	1.34	0.670
1,2,4-Trichlorobenzene	120-82-1	1.34	U	6.70	1.34	0.670
1,1,1-Trichloroethane	71-55-6	1.34	U	6.70	1.34	0.670
1,1,2-Trichloroethane	79-00-5	1.34	U	6.70	1.34	0.670
Trichloroethene	79-01-6	1.34	U	6.70	1.34	0.670
Trichlorofluoromethane	75-69-4	2.68	U	6.70	2.68	1.34
1,2,3-Trichloropropane	96-18-4	2.68	U	6.70	2.68	1.34
1,2,4-Trimethylbenzene	95-63-6	1.34	U	6.70	1.34	0.670
1,3,5-Trimethylbenzene	108-67-8	1.34	U	6.70	1.34	0.670
Vinyl chloride	75-01-4	2.68	U	6.70	2.68	1.34
o-Xylene	95-47-6	1.34	U	6.70	1.34	0.670
m-,p-Xylene	179601-23-1	1.34	U	6.70	1.34	0.670

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.7	80	120	
1,2-Dichloroethane-d4	95.4	80	120	
Toluene-d8	107	85	115	
4-Bromofluorobenzene	114	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT03(5-5.5)260216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:08
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	03/01/2016 02:36
Collect Date:	02/26/2016 11:15	**Dilution:**	1	**File ID:**	9M972985
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	25.0	12.5	6.25
Benzene	71-43-2	1.25	U	6.25	1.25	0.625
Bromobenzene	108-86-1	1.25	U	6.25	1.25	0.625
Bromochloromethane	74-97-5	2.50	U	6.25	2.50	1.25
Bromodichloromethane	75-27-4	1.25	U	6.25	1.25	0.625
Bromoform	75-25-2	1.25	U	6.25	1.25	0.625
Bromomethane	74-83-9	2.50	U	6.25	2.50	1.25
2-Butanone	78-93-3	6.26	U	12.5	6.26	3.13
n-Butylbenzene	104-51-8	1.25	U	6.25	1.25	0.625
sec-Butylbenzene	135-98-8	1.25	U	6.25	1.25	0.625
tert-Butylbenzene	98-06-6	1.25	U	6.25	1.25	0.625
Carbon disulfide	75-15-0	1.25	U	6.25	1.25	0.625
Carbon tetrachloride	56-23-5	1.25	U	6.25	1.25	0.625
Chlorobenzene	108-90-7	1.25	U	6.25	1.25	0.625
Chlorodibromomethane	124-48-1	1.25	U	6.25	1.25	0.625
Chloroethane	75-00-3	2.50	U	6.25	2.50	1.25
Chloroform	67-66-3	1.25	U	6.25	1.25	0.625
Chloromethane	74-87-3	5.00	U	12.5	5.00	2.50
2-Chlorotoluene	95-49-8	1.25	U	6.25	1.25	0.625
4-Chlorotoluene	106-43-4	1.25	U	6.25	1.25	0.625
1,2-Dibromo-3-chloropropane	96-12-8	5.00	U	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	6.25	1.25	0.625
Dibromomethane	74-95-3	1.25	U	6.25	1.25	0.625
1,2-Dichlorobenzene	95-50-1	1.25	U	6.25	1.25	0.625
1,3-Dichlorobenzene	541-73-1	1.25	U	6.25	1.25	0.625
1,4-Dichlorobenzene	106-46-7	1.25	U	6.25	1.25	0.625
Dichlorodifluoromethane	75-71-8	2.50	U	6.25	2.50	1.25
1,1-Dichloroethane	75-34-3	2.50	U	6.25	2.50	1.25
1,2-Dichloroethane	107-06-2	1.25	U	6.25	1.25	0.625
1,1-Dichloroethene	75-35-4	1.25	U	6.25	1.25	0.625
cis-1,2-Dichloroethene	156-59-2	1.25	U	6.25	1.25	0.625

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Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.25	U	6.25	1.25	0.625
1,2-Dichloropropane	78-87-5	1.25	U	6.25	1.25	0.625
1,3-Dichloropropane	142-28-9	1.25	U	6.25	1.25	0.625
2,2-Dichloropropane	594-20-7	1.25	U	6.25	1.25	0.625
cis-1,3-Dichloropropene	10061-01-5	1.25	U	6.25	1.25	0.625
trans-1,3-Dichloropropene	10061-02-6	1.25	U	6.25	1.25	0.625
1,1-Dichloropropene	563-58-6	1.25	U	6.25	1.25	0.625
Ethylbenzene	100-41-4	1.25	U	6.25	1.25	0.625
2-Hexanone	591-78-6	6.26	U	12.5	6.26	3.13
Hexachlorobutadiene	87-68-3	1.25	U	6.25	1.25	0.625
Isopropylbenzene	98-82-8	1.25	U	6.25	1.25	0.625
p-Isopropyltoluene	99-87-6	1.25	U	6.25	1.25	0.625
4-Methyl-2-pentanone	108-10-1	6.26	U	12.5	6.26	3.13
Methylene chloride	75-09-2	2.50	U	6.25	2.50	1.25
Naphthalene	91-20-3	1.25	U	6.25	1.25	0.625
n-Propylbenzene	103-65-1	1.25	U	6.25	1.25	0.625
Styrene	100-42-5	1.25	U	6.25	1.25	0.625
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	6.25	1.25	0.625
1,1,2,2-Tetrachloroethane	79-34-5	1.25	U	6.25	1.25	0.625
Tetrachloroethene	127-18-4	1.25	U	6.25	1.25	0.625
Toluene	108-88-3	1.25	U	6.25	1.25	0.625
1,2,3-Trichlorobenzene	87-61-6	1.25	U	6.25	1.25	0.625
1,2,4-Trichlorobenzene	120-82-1	1.25	U	6.25	1.25	0.625
1,1,1-Trichloroethane	71-55-6	1.25	U	6.25	1.25	0.625
1,1,2-Trichloroethane	79-00-5	1.25	U	6.25	1.25	0.625
Trichloroethene	79-01-6	1.25	U	6.25	1.25	0.625
Trichlorofluoromethane	75-69-4	2.50	U	6.25	2.50	1.25
1,2,3-Trichloropropane	96-18-4	2.50	U	6.25	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	6.25	1.25	0.625
1,3,5-Trimethylbenzene	108-67-8	1.25	U	6.25	1.25	0.625
Vinyl chloride	75-01-4	2.50	U	6.25	2.50	1.25
o-Xylene	95-47-6	1.25	U	6.25	1.25	0.625
m-,p-Xylene	179601-23-1	1.25	U	6.25	1.25	0.625

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.3	80	120	
1,2-Dichloroethane-d4	101	80	120	
Toluene-d8	106	85	115	
4-Bromofluorobenzene	113	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT03(10-10.5)260216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:28
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	03/01/2016 03:06
Collect Date:	02/26/2016 11:17	**Dilution:**	1	**File ID:**	9M972986
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	87.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.4	U	22.8	11.4	5.69
Benzene	71-43-2	1.14	U	5.69	1.14	0.569
Bromobenzene	108-86-1	1.14	U	5.69	1.14	0.569
Bromochloromethane	74-97-5	2.28	U	5.69	2.28	1.14
Bromodichloromethane	75-27-4	1.14	U	5.69	1.14	0.569
Bromoform	75-25-2	1.14	U	5.69	1.14	0.569
Bromomethane	74-83-9	2.28	U	5.69	2.28	1.14
2-Butanone	78-93-3	5.70	U	11.4	5.70	2.85
n-Butylbenzene	104-51-8	1.14	U	5.69	1.14	0.569
sec-Butylbenzene	135-98-8	1.14	U	5.69	1.14	0.569
tert-Butylbenzene	98-06-6	1.14	U	5.69	1.14	0.569
Carbon disulfide	75-15-0	1.14	U	5.69	1.14	0.569
Carbon tetrachloride	56-23-5	1.14	U	5.69	1.14	0.569
Chlorobenzene	108-90-7	1.14	U	5.69	1.14	0.569
Chlorodibromomethane	124-48-1	1.14	U	5.69	1.14	0.569
Chloroethane	75-00-3	2.28	U	5.69	2.28	1.14
Chloroform	67-66-3	1.14	U	5.69	1.14	0.569
Chloromethane	74-87-3	4.56	U	11.4	4.56	2.28
2-Chlorotoluene	95-49-8	1.14	U	5.69	1.14	0.569
4-Chlorotoluene	106-43-4	1.14	U	5.69	1.14	0.569
1,2-Dibromo-3-chloropropane	96-12-8	4.56	U	11.4	4.56	2.28
1,2-Dibromoethane	106-93-4	1.14	U	5.69	1.14	0.569
Dibromomethane	74-95-3	1.14	U	5.69	1.14	0.569
1,2-Dichlorobenzene	95-50-1	1.14	U	5.69	1.14	0.569
1,3-Dichlorobenzene	541-73-1	1.14	U	5.69	1.14	0.569
1,4-Dichlorobenzene	106-46-7	1.14	U	5.69	1.14	0.569
Dichlorodifluoromethane	75-71-8	2.28	U	5.69	2.28	1.14
1,1-Dichloroethane	75-34-3	2.28	U	5.69	2.28	1.14
1,2-Dichloroethane	107-06-2	1.14	U	5.69	1.14	0.569
1,1-Dichloroethene	75-35-4	1.14	U	5.69	1.14	0.569
cis-1,2-Dichloroethene	156-59-2	1.14	U	5.69	1.14	0.569

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Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.14	U	5.69	1.14	0.569
1,2-Dichloropropane	78-87-5	1.14	U	5.69	1.14	0.569
1,3-Dichloropropane	142-28-9	1.14	U	5.69	1.14	0.569
2,2-Dichloropropane	594-20-7	1.14	U	5.69	1.14	0.569
cis-1,3-Dichloropropene	10061-01-5	1.14	U	5.69	1.14	0.569
trans-1,3-Dichloropropene	10061-02-6	1.14	U	5.69	1.14	0.569
1,1-Dichloropropene	563-58-6	1.14	U	5.69	1.14	0.569
Ethylbenzene	100-41-4	1.14	U	5.69	1.14	0.569
2-Hexanone	591-78-6	5.70	U	11.4	5.70	2.85
Hexachlorobutadiene	87-68-3	1.14	U	5.69	1.14	0.569
Isopropylbenzene	98-82-8	1.14	U	5.69	1.14	0.569
p-Isopropyltoluene	99-87-6	1.14	U	5.69	1.14	0.569
4-Methyl-2-pentanone	108-10-1	5.70	U	11.4	5.70	2.85
Methylene chloride	75-09-2	2.28	U	5.69	2.28	1.14
Naphthalene	91-20-3	1.14	U	5.69	1.14	0.569
n-Propylbenzene	103-65-1	1.14	U	5.69	1.14	0.569
Styrene	100-42-5	1.14	U	5.69	1.14	0.569
1,1,1,2-Tetrachloroethane	630-20-6	1.14	U	5.69	1.14	0.569
1,1,2,2-Tetrachloroethane	79-34-5	1.14	U	5.69	1.14	0.569
Tetrachloroethene	127-18-4	1.14	U	5.69	1.14	0.569
Toluene	108-88-3	1.14	U	5.69	1.14	0.569
1,2,3-Trichlorobenzene	87-61-6	1.14	U	5.69	1.14	0.569
1,2,4-Trichlorobenzene	120-82-1	1.14	U	5.69	1.14	0.569
1,1,1-Trichloroethane	71-55-6	1.14	U	5.69	1.14	0.569
1,1,2-Trichloroethane	79-00-5	1.14	U	5.69	1.14	0.569
Trichloroethene	79-01-6	1.14	U	5.69	1.14	0.569
Trichlorofluoromethane	75-69-4	2.28	U	5.69	2.28	1.14
1,2,3-Trichloropropane	96-18-4	2.28	U	5.69	2.28	1.14
1,2,4-Trimethylbenzene	95-63-6	1.14	U	5.69	1.14	0.569
1,3,5-Trimethylbenzene	108-67-8	1.14	U	5.69	1.14	0.569
Vinyl chloride	75-01-4	2.28	U	5.69	2.28	1.14
o-Xylene	95-47-6	1.14	U	5.69	1.14	0.569
m-,p-Xylene	179601-23-1	1.14	U	5.69	1.14	0.569

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.6	80	120	
1,2-Dichloroethane-d4	95.0	80	120	
Toluene-d8	107	85	115	
4-Bromofluorobenzene	110	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT03(14.5-15)260216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:29
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	03/01/2016 03:37
Collect Date:	02/26/2016 11:19	**Dilution:**	1	**File ID:**	9M972987
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.1	U	24.3	12.1	6.07
Benzene	71-43-2	1.21	U	6.07	1.21	0.607
Bromobenzene	108-86-1	1.21	U	6.07	1.21	0.607
Bromochloromethane	74-97-5	2.42	U	6.07	2.42	1.21
Bromodichloromethane	75-27-4	1.21	U	6.07	1.21	0.607
Bromoform	75-25-2	1.21	U	6.07	1.21	0.607
Bromomethane	74-83-9	2.42	U	6.07	2.42	1.21
2-Butanone	78-93-3	6.08	U	12.1	6.08	3.04
n-Butylbenzene	104-51-8	1.21	U	6.07	1.21	0.607
sec-Butylbenzene	135-98-8	1.21	U	6.07	1.21	0.607
tert-Butylbenzene	98-06-6	1.21	U	6.07	1.21	0.607
Carbon disulfide	75-15-0	1.21	U	6.07	1.21	0.607
Carbon tetrachloride	56-23-5	1.21	U	6.07	1.21	0.607
Chlorobenzene	108-90-7	1.21	U	6.07	1.21	0.607
Chlorodibromomethane	124-48-1	1.21	U	6.07	1.21	0.607
Chloroethane	75-00-3	2.42	U	6.07	2.42	1.21
Chloroform	67-66-3	1.21	U	6.07	1.21	0.607
Chloromethane	74-87-3	4.86	U	12.1	4.86	2.43
2-Chlorotoluene	95-49-8	1.21	U	6.07	1.21	0.607
4-Chlorotoluene	106-43-4	1.21	U	6.07	1.21	0.607
1,2-Dibromo-3-chloropropane	96-12-8	4.86	U	12.1	4.86	2.43
1,2-Dibromoethane	106-93-4	1.21	U	6.07	1.21	0.607
Dibromomethane	74-95-3	1.21	U	6.07	1.21	0.607
1,2-Dichlorobenzene	95-50-1	1.21	U	6.07	1.21	0.607
1,3-Dichlorobenzene	541-73-1	1.21	U	6.07	1.21	0.607
1,4-Dichlorobenzene	106-46-7	1.21	U	6.07	1.21	0.607
Dichlorodifluoromethane	75-71-8	2.42	U	6.07	2.42	1.21
1,1-Dichloroethane	75-34-3	2.42	U	6.07	2.42	1.21
1,2-Dichloroethane	107-06-2	1.21	U	6.07	1.21	0.607
1,1-Dichloroethene	75-35-4	1.21	U	6.07	1.21	0.607
cis-1,2-Dichloroethene	156-59-2	1.21	U	6.07	1.21	0.607

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.21	U	6.07	1.21	0.607
1,2-Dichloropropane	78-87-5	1.21	U	6.07	1.21	0.607
1,3-Dichloropropane	142-28-9	1.21	U	6.07	1.21	0.607
2,2-Dichloropropane	594-20-7	1.21	U	6.07	1.21	0.607
cis-1,3-Dichloropropene	10061-01-5	1.21	U	6.07	1.21	0.607
trans-1,3-Dichloropropene	10061-02-6	1.21	U	6.07	1.21	0.607
1,1-Dichloropropene	563-58-6	1.21	U	6.07	1.21	0.607
Ethylbenzene	100-41-4	1.21	U	6.07	1.21	0.607
2-Hexanone	591-78-6	6.08	U	12.1	6.08	3.04
Hexachlorobutadiene	87-68-3	1.21	U	6.07	1.21	0.607
Isopropylbenzene	98-82-8	1.21	U	6.07	1.21	0.607
p-Isopropyltoluene	99-87-6	1.21	U	6.07	1.21	0.607
4-Methyl-2-pentanone	108-10-1	6.08	U	12.1	6.08	3.04
Methylene chloride	75-09-2	2.42	U	6.07	2.42	1.21
Naphthalene	91-20-3	1.21	U	6.07	1.21	0.607
n-Propylbenzene	103-65-1	1.21	U	6.07	1.21	0.607
Styrene	100-42-5	1.21	U	6.07	1.21	0.607
1,1,1,2-Tetrachloroethane	630-20-6	1.21	U	6.07	1.21	0.607
1,1,2,2-Tetrachloroethane	79-34-5	1.21	U	6.07	1.21	0.607
Tetrachloroethene	127-18-4	1.21	U	6.07	1.21	0.607
Toluene	108-88-3	1.21	U	6.07	1.21	0.607
1,2,3-Trichlorobenzene	87-61-6	1.21	U	6.07	1.21	0.607
1,2,4-Trichlorobenzene	120-82-1	1.21	U	6.07	1.21	0.607
1,1,1-Trichloroethane	71-55-6	1.21	U	6.07	1.21	0.607
1,1,2-Trichloroethane	79-00-5	1.21	U	6.07	1.21	0.607
Trichloroethene	79-01-6	1.21	U	6.07	1.21	0.607
Trichlorofluoromethane	75-69-4	2.42	U	6.07	2.42	1.21
1,2,3-Trichloropropane	96-18-4	2.42	U	6.07	2.42	1.21
1,2,4-Trimethylbenzene	95-63-6	1.21	U	6.07	1.21	0.607
1,3,5-Trimethylbenzene	108-67-8	1.21	U	6.07	1.21	0.607
Vinyl chloride	75-01-4	2.42	U	6.07	2.42	1.21
o-Xylene	95-47-6	1.21	U	6.07	1.21	0.607
m-,p-Xylene	179601-23-1	1.21	U	6.07	1.21	0.607

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	80	120	
1,2-Dichloroethane-d4	106	80	120	
Toluene-d8	106	85	115	
4-Bromofluorobenzene	110	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT03(17.5-18)260216	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	02/29/2016 12:29
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559151	**Analyst:**	FJB/JDS	**Run Date:**	03/01/2016 04:07
Collect Date:	02/26/2016 11:21	**Dilution:**	1	**File ID:**	9M972988
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.3	U	26.7	13.3	6.67
Benzene	71-43-2	1.33	U	6.67	1.33	0.667
Bromobenzene	108-86-1	1.33	U	6.67	1.33	0.667
Bromochloromethane	74-97-5	2.66	U	6.67	2.66	1.33
Bromodichloromethane	75-27-4	1.33	U	6.67	1.33	0.667
Bromoform	75-25-2	1.33	U	6.67	1.33	0.667
Bromomethane	74-83-9	2.66	U	6.67	2.66	1.33
2-Butanone	78-93-3	6.68	U	13.3	6.68	3.34
n-Butylbenzene	104-51-8	1.33	U	6.67	1.33	0.667
sec-Butylbenzene	135-98-8	1.33	U	6.67	1.33	0.667
tert-Butylbenzene	98-06-6	1.33	U	6.67	1.33	0.667
Carbon disulfide	75-15-0	1.33	U	6.67	1.33	0.667
Carbon tetrachloride	56-23-5	1.33	U	6.67	1.33	0.667
Chlorobenzene	108-90-7	1.33	U	6.67	1.33	0.667
Chlorodibromomethane	124-48-1	1.33	U	6.67	1.33	0.667
Chloroethane	75-00-3	2.66	U	6.67	2.66	1.33
Chloroform	67-66-3	1.33	U	6.67	1.33	0.667
Chloromethane	74-87-3	5.34	U	13.3	5.34	2.67
2-Chlorotoluene	95-49-8	1.33	U	6.67	1.33	0.667
4-Chlorotoluene	106-43-4	1.33	U	6.67	1.33	0.667
1,2-Dibromo-3-chloropropane	96-12-8	5.34	U	13.3	5.34	2.67
1,2-Dibromoethane	106-93-4	1.33	U	6.67	1.33	0.667
Dibromomethane	74-95-3	1.33	U	6.67	1.33	0.667
1,2-Dichlorobenzene	95-50-1	1.33	U	6.67	1.33	0.667
1,3-Dichlorobenzene	541-73-1	1.33	U	6.67	1.33	0.667
1,4-Dichlorobenzene	106-46-7	1.33	U	6.67	1.33	0.667
Dichlorodifluoromethane	75-71-8	2.66	U	6.67	2.66	1.33
1,1-Dichloroethane	75-34-3	2.66	U	6.67	2.66	1.33
1,2-Dichloroethane	107-06-2	1.33	U	6.67	1.33	0.667
1,1-Dichloroethene	75-35-4	1.33	U	6.67	1.33	0.667
cis-1,2-Dichloroethene	156-59-2	1.33	U	6.67	1.33	0.667

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.33	U	6.67	1.33	0.667
1,2-Dichloropropane	78-87-5	1.33	U	6.67	1.33	0.667
1,3-Dichloropropane	142-28-9	1.33	U	6.67	1.33	0.667
2,2-Dichloropropane	594-20-7	1.33	U	6.67	1.33	0.667
cis-1,3-Dichloropropene	10061-01-5	1.33	U	6.67	1.33	0.667
trans-1,3-Dichloropropene	10061-02-6	1.33	U	6.67	1.33	0.667
1,1-Dichloropropene	563-58-6	1.33	U	6.67	1.33	0.667
Ethylbenzene	100-41-4	1.33	U	6.67	1.33	0.667
2-Hexanone	591-78-6	6.68	U	13.3	6.68	3.34
Hexachlorobutadiene	87-68-3	1.33	U	6.67	1.33	0.667
Isopropylbenzene	98-82-8	1.33	U	6.67	1.33	0.667
p-Isopropyltoluene	99-87-6	1.33	U	6.67	1.33	0.667
4-Methyl-2-pentanone	108-10-1	6.68	U	13.3	6.68	3.34
Methylene chloride	75-09-2	2.66	U	6.67	2.66	1.33
Naphthalene	91-20-3	1.33	U	6.67	1.33	0.667
n-Propylbenzene	103-65-1	1.33	U	6.67	1.33	0.667
Styrene	100-42-5	1.33	U	6.67	1.33	0.667
1,1,1,2-Tetrachloroethane	630-20-6	1.33	U	6.67	1.33	0.667
1,1,2,2-Tetrachloroethane	79-34-5	1.33	U	6.67	1.33	0.667
Tetrachloroethene	127-18-4	1.33	U	6.67	1.33	0.667
Toluene	108-88-3	1.33	U	6.67	1.33	0.667
1,2,3-Trichlorobenzene	87-61-6	1.33	U	6.67	1.33	0.667
1,2,4-Trichlorobenzene	120-82-1	1.33	U	6.67	1.33	0.667
1,1,1-Trichloroethane	71-55-6	1.33	U	6.67	1.33	0.667
1,1,2-Trichloroethane	79-00-5	1.33	U	6.67	1.33	0.667
Trichloroethene	79-01-6	1.33	U	6.67	1.33	0.667
Trichlorofluoromethane	75-69-4	2.66	U	6.67	2.66	1.33
1,2,3-Trichloropropane	96-18-4	2.66	U	6.67	2.66	1.33
1,2,4-Trimethylbenzene	95-63-6	1.33	U	6.67	1.33	0.667
1,3,5-Trimethylbenzene	108-67-8	1.33	U	6.67	1.33	0.667
Vinyl chloride	75-01-4	2.66	U	6.67	2.66	1.33
o-Xylene	95-47-6	1.33	U	6.67	1.33	0.667
m-,p-Xylene	179601-23-1	1.33	U	6.67	1.33	0.667

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.9	80	120	
1,2-Dichloroethane-d4	96.2	80	120	
Toluene-d8	107	85	115	
4-Bromofluorobenzene	111	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.
VOA Preparation/Preservation/Extraction Log

Batch #: WG559084
Analyst: AWE
Method: 5030B/5030C/5035
Run Date: 02/29/2016 12:19
Product: 8260
Purge and trap methanol COA18540
Purified Lab Sand Lot # COA18552

SAMPLE #	Fraction	Collected	Preserved	PCT-S	Tare Wt	Total Wt	Sample Wt	Water	MeOH	Vt	Comments
L16021357-01	A	02/25/16 11:30	02/29/16 12:19	81.7			4.90	5		5	
L16021357-02	A	02/25/16 11:37	02/29/16 12:21	88.2			5.22	5		5	
L16021357-03	A	02/25/16 14:23	02/29/16 12:22	90.1			4.98	5		5	
L16021357-04	A	02/25/16 16:00	02/29/16 12:22	84.1			5.33	5		5	
L16021357-05	A	02/25/16 16:30	02/29/16 12:23	87.2			5.19	5		5	
L16021357-06	A	02/25/16 16:35	02/29/16 12:23	79.1			4.98	5		5	
L16021358-01	A	02/26/16 08:35	02/29/16 12:24	82.1			4.92	5		5	
L16021358-02	A	02/26/16 08:42	02/29/16 12:25	83.6			4.97	5		5	
L16021358-03	A	02/26/16 08:42	02/29/16 12:25	83.4			4.83	5		5	
L16021358-04	A	02/26/16 09:00	02/29/16 12:26	78.3			5.37	5		5	
L16021358-05	A	02/26/16 09:15	02/29/16 12:26	81.6			4.57	5		5	
L16021358-06	A	02/26/16 11:15	02/29/16 12:08	79.9			5.00	5		5	
L16021358-07	A	02/26/16 11:17	02/29/16 12:28	87.6			5.01	5		5	
L16021358-08	A	02/26/16 11:19	02/29/16 12:29	85.1			4.84	5		5	
L16021358-09	A	02/26/16 11:21	02/29/16 12:29	81.4			4.60	5		5	
WG559084-01	A		02/29/16 12:19	81.7			4.90	5		5	
WG559084-02	A		02/29/16 12:20	81.7			4.93	5		5	
WG559084-03	A		02/29/16 12:20	81.7			4.98	5		5	

Comments:
1 = improperly sealed cap
2 = preserved out of hold
3 = effervesced
4 = preserved with NaHSO4
5 = preserved by freezing
6 = preserved in field

Analyst: Andrew Casey

VOA_EXT - Modified 05/22/2008
PDF ID: 4651351
Report generated: 03/01/2016 11:17

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 012516
Analyst1: ADC Analyst2: NA
Method: 8260B/8260C SOP: MSV01(-C) Rev: 23 (2)
Method: 5030B/5030C/5035 SOP: PAT01 Rev: 18
Method: 624 SOP: MSV10 Rev: 12
Maintenance Log ID:

Internal Standard: STD74414 Surrogate Standard: STD74126
CCV: STD74488 LCS: STD74459 MS/MSD: STD74459

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG555000 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M972470	WG555000-01 BFB 50ng A9	NA	7	1	STD74202	01/25/16 10:27
9M972471	RINSE	NA	7	1		01/25/16 10:52
9M972472	WG555000-02 5ug/Kg STD A9	NA	7	1	STD74406	01/25/16 11:22
9M972473	WG555000-03 20ug/Kg STD A9	NA	7	1	STD74406	01/25/16 11:52
9M972474	WG555000-04 50ug/Kg STD A9	NA	7	1	STD74406	01/25/16 12:23
9M972475	WG555000-05 100ug/Kg STD A9	NA	7	1	STD74406	01/25/16 12:53
9M972476	WG555000-06 200ug/Kg STD A9	NA	7	1	STD74406	01/25/16 13:23
9M972477	WG555000-07 300ug/Kg STD A9	NA	7	1	STD74406	01/25/16 13:54
9M972478	WG555000-08 400ug/Kg STD A9	NA	7	1	STD74406	01/25/16 14:25
9M972479	WG555000-09 500ug/Kg STD A9	NA	7	1	STD74406	01/25/16 14:56
9M972480	RINSE	NA	7	1		01/25/16 15:26
9M972481	WG555000-10 100ug/Kg ICV A9	NA	7	1	STD74461	01/25/16 15:56
9M972482	RINSE	NA	7	1		01/25/16 16:28

Approved: January 29, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 022516
Analyst1: ADC Analyst2: NA
Method: 8260 SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD74726 Surrogate Standard: STD74815
CCV: STD74488 LCS: STD74755 MS/MSD: STD74755

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG558732 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M972892	WG558732-01 BFB 50ng	NA	7	1	STD74773	02/25/16 14:26
9M972894	WG558732-01 BFB 50ng	NA	7	1	STD74773	02/25/16 14:45
9M972895	WG558732-02 50ug/L CCV 8260C	NA	7	1	STD74773	02/25/16 15:11
9M972896	WG558732-02 50ug/L CCV 8260C	NA	7	1	STD74773	02/25/16 15:48
9M972897	RINSE	NA	7	1		02/25/16 16:25
9M972898	WG558732-03 0.5ug/kg STD	NA	7	1	STD74773	02/25/16 16:55
9M972899	WG558732-04 1.0ug/kg STD	NA	7	1	STD74773	02/25/16 17:27
9M972900	WG558732-05 2.0ug/kg STD	NA	7	1	STD74773	02/25/16 17:57
9M972901	WG558732-06 5.0ug/kg STD	NA	7	1	STD74773	02/25/16 18:28
9M972902	WG558732-07 20.0ug/kg STD	NA	7	1	STD74773	02/25/16 18:59
9M972903	WG558732-08 100.0ug/kg STD	NA	7	1	STD74773	02/25/16 19:29
9M972904	WG558732-09 200.0ug/kg STD	NA	7	1	STD74773	02/25/16 20:00
9M972905	WG558732-10 300.0ug/kg STD	NA	7	1	STD74773	02/25/16 20:30
9M972906	RINSE	NA	7	1	STD74773	02/25/16 21:01
9M972907	WG558732-11 50.0ug/kg ALTSRC	NA	7	1	STD74755	02/25/16 21:31

Approved: February 29, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 022916
Analyst1: FJB Analyst2: JDS
Method: 8260 SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD74726 Surrogate Standard: STD74815
CCV: STD74773 LCS: STD74900 MS/MSD: STD74900

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG559151

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M972966	WG559150-01 BFB 50ng 8260	NA	7	1	STD74606	02/29/16 16:59
9M972967	WG559150-02 50ug/Kg CCV 8260	NA	7	1	STD74773	02/29/16 17:23
9M972968	WG000000-01 50ug/Kg A9-CCV 8260	NA	7	1	STD74831	02/29/16 17:54
9M972969	WG559151-01 VBLK0229 BLANK 8260	NA	7	1		02/29/16 18:25
9M972970	WG559151-02 20ug/Kg LCS 8260	NA	7	1	STD74900	02/29/16 18:56
9M972971	WG559084-02 MS 4.93g 8260	NA	7	1	STD74900	02/29/16 19:28
9M972972	WG559084-03 MSD 4.98g 8260	NA	7	1	STD74900	02/29/16 19:59
9M972973	RINSE	NA	7	1		02/29/16 20:29
9M972974	WG559084-01 L16021357-01 REF 4.90g 82	NA	7	1		02/29/16 21:00
9M972975	L16021357-02 5.22g 8260	NA	7	1		02/29/16 21:30
9M972976	L16021357-03 4.98g 8260	NA	7	1		02/29/16 22:01
9M972977	L16021357-04 5.33g 8260	NA	7	1		02/29/16 22:32
9M972978	L16021357-05 5.19g 8260	NA	7	1		02/29/16 23:03
9M972979	L16021357-06 4.98g 8260	NA	7	1		02/29/16 23:33
9M972980	L16021358-01 4.92g 8260	NA	7	1		03/01/16 00:04
9M972981	L16021358-02 4.97g 8260	NA	7	1		03/01/16 00:34
9M972982	L16021358-03 4.83g 8260	NA	7	1		03/01/16 01:04
9M972983	L16021358-04 5.37g 8260	NA	7	1		03/01/16 01:36
9M972984	L16021358-05 4.57g 8260	NA	7	1		03/01/16 02:06
9M972985	L16021358-06 5.00g 8260	NA	7	1		03/01/16 02:36
9M972986	L16021358-07 5.01g 8260	NA	7	1		03/01/16 03:06
9M972987	L16021358-08 4.84g 8260	NA	7	1		03/01/16 03:37
9M972988	L16021358-09 4.60g 8260	NA	7	1		03/01/16 04:07
9M972989	CCV	NA	7	1		03/01/16 04:37
9M972990	RINSE	NA	7	1		03/01/16 05:07
9M972991	RINSE	NA	7	1		03/01/16 05:38

Approved: March 01, 2016

Sarah Vandenberg

Page: 1

Microbac Laboratories Inc.

Data Checklist

Date: 25-JAN-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 72995
Analytical Workgroups: WG555000

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
28-JAN-2016

Secondary Reviewer:
29-JAN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JAN-29-2016 16:00:23

Microbac Laboratories Inc.

Data Checklist

Date: 25-FEB-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 73547
Analytical Workgroups: WG558732

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
29-FEB-2016

Secondary Reviewer:
29-FEB-2016

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-29-2016 15:30:51

Microbac Laboratories Inc.

Data Checklist

Date: 29-FEB-2016
Analyst: FJB
Analyst: JDS
Method: 8260B
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 73561
Analytical Workgroups: WG559151

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	FJB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	X
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	FJB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
01-MAR-2016

Secondary Reviewer:
01-MAR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-01-2016 14:48:08

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG559151

Login Number: L16021358

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18DPT02(5-5.5)260216	01	02/26/16					02/29/2016	3.2	14		03/01/16	3.6	14	
18DPT02(10-10.5)260216	02	02/26/16					02/29/2016	3.2	14		03/01/16	3.7	14	
18DPT02(10-10.5)260216FD	03	02/26/16					02/29/2016	3.2	14		03/01/16	3.7	14	
18DPT02(15-15.5)260216	04	02/26/16					02/29/2016	3.1	14		03/01/16	3.7	14	
18DPT02(22-22.5)260216	05	02/26/16					02/29/2016	3.1	14		03/01/16	3.7	14	
18DPT03(5-5.5)260216	06	02/26/16					02/29/2016	3	14		03/01/16	3.6	14	
18DPT03(10-10.5)260216	07	02/26/16					02/29/2016	3	14		03/01/16	3.7	14	
18DPT03(14.5-15)260216	08	02/26/16					02/29/2016	3	14		03/01/16	3.7	14	
18DPT03(17.5-18)260216	09	02/26/16					02/29/2016	3	14		03/01/16	3.7	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4652687
Report generated 03/01/2016 14:46

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16021358
Instrument Id: HPMS9
Workgroup (AAB#): WG559151

Method: 8260
CAL ID: HPMS9-25-FEB-16
Matrix: Soil

Sample Number	Dilution	Tag	1	2	3	4
L16021358-01	1.00	01	95.0	97.8	110	106
L16021358-02	1.00	01	97.2	96.8	108	104
L16021358-03	1.00	01	97.0	97.5	117	106
L16021358-04	1.00	01	98.7	98.9	115	108
L16021358-05	1.00	01	95.4	97.7	114	107
L16021358-06	1.00	01	101	99.3	113	106
L16021358-07	1.00	01	95.0	97.6	110	107
L16021358-08	1.00	01	106	100	110	106
L16021358-09	1.00	01	96.2	95.9	111	107
WG559151-01	1.00	01	97.5	98.6	113	106
WG559151-02	1.00	01	97.0	99.0	105	102

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	80	-	120
2 - Dibromofluoromethane	80	-	120
3 - 4-Bromofluorobenzene	85	-	120
4 - Toluene-d8	85	-	115

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4652695
Report generated: 03/01/2016 14:46

METHOD BLANK SUMMARY

Login Number: L16021358
Blank File ID: 9M972969
Prep Date: 02/29/16 18:25
Analyzed Date: 02/29/16 18:25
Analyst: FJB/JDS

Work Group: WG559151
Blank Sample ID: WG559151-01
Instrument ID: HPMS9
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG559151-02	9M972970	02/29/16 18:56	01
18DPT02(5-5.5)260216	L16021358-01	9M972980	03/01/16 00:04	01
18DPT02(10-10.5)260216	L16021358-02	9M972981	03/01/16 00:34	01
18DPT02(10-10.5)260216FD	L16021358-03	9M972982	03/01/16 01:04	01
18DPT02(15-15.5)260216	L16021358-04	9M972983	03/01/16 01:36	01
18DPT02(22-22.5)260216	L16021358-05	9M972984	03/01/16 02:06	01
18DPT03(5-5.5)260216	L16021358-06	9M972985	03/01/16 02:36	01
18DPT03(10-10.5)260216	L16021358-07	9M972986	03/01/16 03:06	01
18DPT03(14.5-15)260216	L16021358-08	9M972987	03/01/16 03:37	01
18DPT03(17.5-18)260216	L16021358-09	9M972988	03/01/16 04:07	01

Report Name: BLANK_SUMMARY
PDF File ID: 4652688
Report generated 03/01/2016 14:46

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16021358 Prep Date: 02/29/16 18:25 Sample ID: WG559151-01
Instrument ID: HPMS9 Run Date: 02/29/16 18:25 Prep Method: 5030B/5030C/503
File ID: 9M972969 Analyst: FJB/JDS Method: 8260B
Workgroup (AAB#): WG559151 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-25-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	5.00	20.0	5.00	1	U
Benzene	0.500	5.00	0.500	1	U
Bromobenzene	0.500	5.00	0.500	1	U
Bromochloromethane	1.00	5.00	1.00	1	U
Bromodichloromethane	0.500	5.00	0.500	1	U
Bromoform	0.500	5.00	0.500	1	U
Bromomethane	1.00	5.00	1.00	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.500	5.00	0.500	1	U
sec-Butylbenzene	0.500	5.00	0.500	1	U
tert-Butylbenzene	0.500	5.00	0.500	1	U
Carbon disulfide	0.500	5.00	0.500	1	U
Carbon tetrachloride	0.500	5.00	0.500	1	U
Chlorobenzene	0.500	5.00	0.500	1	U
Chlorodibromomethane	0.500	5.00	0.500	1	U
Chloroethane	1.00	5.00	1.00	1	U
Chloroform	0.500	5.00	0.500	1	U
Chloromethane	2.00	10.0	2.00	1	U
2-Chlorotoluene	0.500	5.00	0.500	1	U
4-Chlorotoluene	0.500	5.00	0.500	1	U
1,2-Dibromo-3-chloropropane	2.00	10.0	2.00	1	U
1,2-Dibromoethane	0.500	5.00	0.500	1	U
Dibromomethane	0.500	5.00	0.500	1	U
1,2-Dichlorobenzene	0.500	5.00	0.500	1	U
1,3-Dichlorobenzene	0.500	5.00	0.500	1	U
1,4-Dichlorobenzene	0.500	5.00	0.500	1	U
Dichlorodifluoromethane	1.00	5.00	1.00	1	U
1,1-Dichloroethane	1.00	5.00	1.00	1	U
1,2-Dichloroethane	0.500	5.00	0.500	1	U
1,1-Dichloroethene	0.500	5.00	0.500	1	U
cis-1,2-Dichloroethene	0.500	5.00	0.500	1	U
trans-1,2-Dichloroethene	0.500	5.00	0.500	1	U
1,2-Dichloropropane	0.500	5.00	0.500	1	U
1,3-Dichloropropane	0.500	5.00	0.500	1	U
2,2-Dichloropropane	0.500	5.00	0.500	1	U
cis-1,3-Dichloropropene	0.500	5.00	0.500	1	U
trans-1,3-Dichloropropene	0.500	5.00	0.500	1	U
1,1-Dichloropropene	0.500	5.00	0.500	1	U
Ethylbenzene	0.500	5.00	0.500	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.500	5.00	0.500	1	U
Isopropylbenzene	0.500	5.00	0.500	1	U

Report Name: BLANK
PDF ID: 4652689
01-MAR-2016 14:46

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16021358 Prep Date: 02/29/16 18:25 Sample ID: WG559151-01
Instrument ID: HPMS9 Run Date: 02/29/16 18:25 Prep Method: 5030B/5030C/503
File ID: 9M972969 Analyst: FJB/JDS Method: 8260B
Workgroup (AAB#): WG559151 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-25-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.500	5.00	0.500	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	1.00	5.00	1.00	1	U
Naphthalene	0.500	5.00	0.500	1	U
n-Propylbenzene	0.500	5.00	0.500	1	U
Styrene	0.500	5.00	0.500	1	U
1,1,1,2-Tetrachloroethane	0.500	5.00	0.500	1	U
1,1,2,2-Tetrachloroethane	0.500	5.00	0.500	1	U
Tetrachloroethene	0.500	5.00	0.500	1	U
Toluene	0.500	5.00	0.500	1	U
1,2,3-Trichlorobenzene	0.500	5.00	0.500	1	U
1,2,4-Trichlorobenzene	0.500	5.00	0.500	1	U
1,1,1-Trichloroethane	0.500	5.00	0.500	1	U
1,1,2-Trichloroethane	0.500	5.00	0.500	1	U
Trichloroethene	0.500	5.00	0.500	1	U
Trichlorofluoromethane	1.00	5.00	1.00	1	U
1,2,3-Trichloropropane	1.00	5.00	1.00	1	U
1,2,4-Trimethylbenzene	0.500	5.00	0.500	1	U
1,3,5-Trimethylbenzene	0.500	5.00	0.500	1	U
Vinyl chloride	1.00	5.00	1.00	1	U
o-Xylene	0.500	5.00	0.500	1	U
m-,p-Xylene	0.500	5.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	98.6	80 - 120	PASS
1,2-Dichloroethane-d4	97.5	80 - 120	PASS
Toluene-d8	106	85 - 115	PASS
4-Bromofluorobenzene	113	85 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4652689
01-MAR-2016 14:46

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16021358 | Run Date: 02/29/2016 | Sample ID: WG559151-02
Instrument ID: HPMS9 | Run Time: 18:56 | Prep Method: 5030B/5030C/503
File ID: 9M972970 | Analyst: FJB/JDS | Method: 8260B
Workgroup (AAB#): WG559151 | Matrix: Soil | Units: ug/kg
QC Key: DOD4 | Lot#: STD74900 | Cal ID: HPMS9-25-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	21.0	105	20 - 160	
Benzene	20.0	19.8	98.8	75 - 125	
Bromobenzene	20.0	19.1	95.5	65 - 120	
Bromochloromethane	20.0	19.8	99.0	70 - 125	
Bromodichloromethane	20.0	18.3	91.4	70 - 130	
Bromoform	20.0	16.9	84.7	55 - 135	
Bromomethane	20.0	18.9	94.3	30 - 160	
2-Butanone	20.0	20.6	103	30 - 160	
n-Butylbenzene	20.0	18.4	92.2	65 - 140	
sec-Butylbenzene	20.0	19.9	99.7	65 - 130	
tert-Butylbenzene	20.0	20.6	103	65 - 130	
Carbon disulfide	20.0	17.9	89.3	45 - 160	
Carbon tetrachloride	20.0	17.9	89.7	65 - 135	
Chlorobenzene	20.0	20.0	99.8	75 - 125	
Chlorodibromomethane	20.0	18.2	90.8	65 - 130	
Chloroethane	20.0	20.0	100	40 - 155	
Chloroform	20.0	18.8	94.0	70 - 125	
Chloromethane	20.0	19.9	99.4	50 - 130	
2-Chlorotoluene	20.0	19.6	97.9	70 - 130	
4-Chlorotoluene	20.0	20.7	104	75 - 125	
1,2-Dibromo-3-chloropropane	20.0	17.8	88.9	40 - 135	
1,2-Dibromoethane	20.0	18.8	94.2	70 - 125	
Dibromomethane	20.0	17.6	87.9	75 - 130	
1,2-Dichlorobenzene	20.0	19.5	97.5	75 - 120	
1,3-Dichlorobenzene	20.0	18.6	92.8	70 - 125	
1,4-Dichlorobenzene	20.0	19.0	95.1	70 - 125	
Dichlorodifluoromethane	20.0	25.5	127	35 - 135	
1,1-Dichloroethane	20.0	19.0	95.0	75 - 125	
1,2-Dichloroethane	20.0	19.5	97.3	70 - 135	
1,1-Dichloroethene	20.0	18.8	94.0	65 - 135	
cis-1,2-Dichloroethene	20.0	20.3	102	65 - 125	
trans-1,2-Dichloroethene	20.0	20.3	101	65 - 135	
1,2-Dichloropropane	20.0	20.8	104	70 - 120	
1,3-Dichloropropane	20.0	20.7	104	75 - 125	
2,2-Dichloropropane	20.0	19.2	95.9	65 - 135	
cis-1,3-Dichloropropene	20.0	20.8	104	70 - 125	
trans-1,3-Dichloropropene	20.0	19.7	98.3	65 - 125	
1,1-Dichloropropene	20.0	18.5	92.7	70 - 135	
Ethylbenzene	20.0	21.2	106	75 - 125	
2-Hexanone	20.0	20.5	103	45 - 145	
Hexachlorobutadiene	20.0	16.7	83.7	55 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4652690
Report generated: 03/01/2016 14:46

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16021358 Run Date: 02/29/2016 Sample ID: WG559151-02
Instrument ID: HPMS9 Run Time: 18:56 Prep Method: 5030B/5030C/503
File ID: 9M972970 Analyst: FJB/JDS Method: 8260B
Workgroup (AAB#): WG559151 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD74900 Cal ID: HPMS9-25-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	20.3	102	75 - 130	
p-Isopropyltoluene	20.0	19.2	96.0	75 - 135	
4-Methyl-2-pentanone	20.0	21.5	108	45 - 145	
Methylene chloride	20.0	19.3	96.7	55 - 140	
Naphthalene	20.0	17.6	87.8	40 - 125	
n-Propylbenzene	20.0	20.7	104	65 - 135	
Styrene	20.0	20.2	101	75 - 125	
1,1,1,2-Tetrachloroethane	20.0	19.3	96.4	75 - 125	
1,1,2,2-Tetrachloroethane	20.0	18.4	92.0	55 - 130	
Tetrachloroethene	20.0	18.8	94.2	65 - 140	
Toluene	20.0	20.3	102	70 - 125	
1,2,3-Trichlorobenzene	20.0	18.2	91.2	60 - 135	
1,2,4-Trichlorobenzene	20.0	17.5	87.7	65 - 130	
1,1,1-Trichloroethane	20.0	18.9	94.6	70 - 135	
1,1,2-Trichloroethane	20.0	20.4	102	60 - 125	
Trichloroethene	20.0	20.3	101	75 - 125	
Trichlorofluoromethane	20.0	18.4	92.2	25 - 185	
1,2,3-Trichloropropane	20.0	19.9	99.3	65 - 130	
1,2,4-Trimethylbenzene	20.0	19.3	96.5	65 - 135	
1,3,5-Trimethylbenzene	20.0	20.3	102	65 - 135	
Vinyl chloride	20.0	21.6	108	60 - 125	
o-Xylene	20.0	20.9	104	75 - 125	
m-,p-Xylene	40.0	40.7	102	80 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	99.0	80 - 120	PASS
1,2-Dichloroethane-d4	97.0	80 - 120	PASS
Toluene-d8	102	85 - 115	PASS
4-Bromofluorobenzene	105	85 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4652690
Report generated: 03/01/2016 14:46

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16021358
Instrument: HPMS9
Analyst: FJB
Workgroup: WG555000

Tune ID: WG555000-01
Run Date: 01/25/2016
Run Time: 10:27
File ID: 9M972470
Cal ID: HPMS9 - 25-JAN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	23.0	10289	PASS
75.0	95.0	30.0	60.0	49.3	22030	PASS
95.0	95.0	100	100	100	44728	PASS
96.0	95.0	5.00	9.00	6.98	3122	PASS
173	174	0	2.00	0.381	160	PASS
174	95.0	50.0	100	93.9	41989	PASS
175	174	5.00	9.00	6.62	2778	PASS
176	174	95.0	101	95.6	40133	PASS
177	176	5.00	9.00	6.39	2564	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG555000-02	STD-S	01	01/25/2016 11:22	
WG555000-03	STD-S	01	01/25/2016 11:52	
WG555000-04	STD-S	01	01/25/2016 12:23	
WG555000-05	STD-CCV-S	01	01/25/2016 12:53	
WG555000-06	STD-S	01	01/25/2016 13:23	
WG555000-07	STD-S	01	01/25/2016 13:54	
WG555000-08	STD-S	01	01/25/2016 14:25	
WG555000-09	STD-S	01	01/25/2016 14:56	
WG555000-10	SSCV-S	01	01/25/2016 15:56	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4652692
Report generated 03/01/2016 14:46

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16021358
Instrument: HPMS9
Analyst: ADC
Workgroup: WG558732

Tune ID: WG558732-01
Run Date: 02/25/2016
Run Time: 14:45
File ID: 9M972894
Cal ID: HPMS9 - 25-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.2	5378	PASS
75.0	95.0	30.0	60.0	49.1	13067	PASS
95.0	95.0	100	100	100	26621	PASS
96.0	95.0	5.00	9.00	6.32	1683	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	85.8	22851	PASS
175	174	5.00	9.00	6.50	1485	PASS
176	174	95.0	101	98.3	22461	PASS
177	176	5.00	9.00	7.21	1619	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG558732-02	STD-CCV-S	01	02/25/2016 15:48	
WG558732-03	STD-S	01	02/25/2016 16:55	
WG558732-04	STD-S	01	02/25/2016 17:27	
WG558732-05	STD-S	01	02/25/2016 17:57	
WG558732-06	STD-S	01	02/25/2016 18:28	
WG558732-07	STD-S	01	02/25/2016 18:59	
WG558732-08	STD-S	01	02/25/2016 19:29	
WG558732-09	STD-S	01	02/25/2016 20:00	
WG558732-10	STD-S	01	02/25/2016 20:30	
WG558732-11	SSCV-S	01	02/25/2016 21:31	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4652692
Report generated 03/01/2016 14:46

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16021358
Instrument: HPMS9
Analyst: FJB/JDS
Workgroup: WG559150

Tune ID: WG559150-01
Run Date: 02/29/2016
Run Time: 16:59
File ID: 9M972966
Cal ID: HPMS9 - 25-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.9	11703	PASS
75.0	95.0	30.0	60.0	49.4	25229	PASS
95.0	95.0	100	100	100	51056	PASS
96.0	95.0	5.00	9.00	6.77	3456	PASS
173	174	0	2.00	0.437	169	PASS
174	95.0	50.0	100	75.7	38650	PASS
175	174	5.00	9.00	6.65	2572	PASS
176	174	95.0	101	95.5	36914	PASS
177	176	5.00	9.00	6.11	2255	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG559150-02	CCV-S	01	02/29/2016 17:23	
WG559151-01	BLANK	01	02/29/2016 18:25	
WG559151-02	LCS	01	02/29/2016 18:56	
L16021358-01	18DPT02(5-5.5)260216	01	03/01/2016 00:04	
L16021358-02	18DPT02(10-10.5)260216	01	03/01/2016 00:34	
L16021358-03	18DPT02(10-10.5)260216FD	01	03/01/2016 01:04	
L16021358-04	18DPT02(15-15.5)260216	01	03/01/2016 01:36	
L16021358-05	18DPT02(22-22.5)260216	01	03/01/2016 02:06	
L16021358-06	18DPT03(5-5.5)260216	01	03/01/2016 02:36	
L16021358-07	18DPT03(10-10.5)260216	01	03/01/2016 03:06	
L16021358-08	18DPT03(14.5-15)260216	01	03/01/2016 03:37	
L16021358-09	18DPT03(17.5-18)260216	01	03/01/2016 04:07	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4652692
Report generated 03/01/2016 14:46

Calibration Table Report
Method: A9FOO_SL.M
Title: FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Calibration: Wed Jan 27 09:49:02 2016
Curve: WG555000
Calibration Files

Compound	5 9M972472.D	20 9M972473.D	50 9M972474.D	100 9M972475.D	200 9M972476.D	300 9M972477.D	400 9M972478.D	500 9M972479.D	Avg	%RSD	R^2 Linear
Fluorobenzene	ISTD										
Acetonitrile		0.053	0.046	0.048	0.052	0.046	0.052	0.054	0.050	6.657	
3-Chloro-1-propene	0.498	0.524	0.450	0.519	0.514	0.434	0.507	0.503	0.494	6.719	
2-Chloro-1,3-butadiene	0.534	0.576	0.519	0.592	0.585	0.509	0.593	0.584	0.561	6.202	
Ethyl Acetate		0.333	0.313	0.339	0.338	0.300	0.341	0.344	0.330	5.124	
Methacrylonitrile	0.102	0.109	0.101	0.112	0.110	0.096	0.112	0.112	0.107	5.912	
Isobutyl Alcohol	0.014	0.018	0.018	0.021	0.024	0.021	0.025	0.025	0.021	18.016	0.993
1-Butanol		0.010	0.013	0.015	0.017	0.015	0.018	0.018	0.015	17.838	0.992
Methyl methacrylate	0.236	0.246	0.231	0.265	0.265	0.231	0.271	0.269	0.252	7.005	
2-Nitropropane	0.069	0.073	0.074	0.083	0.089	0.079	0.093	0.095	0.082	12.090	
Chlorobenzene-d5	ISTD										
Cyclohexanone		0.020	0.022	0.025	0.028	0.023	0.027	0.028	0.025	12.963	
1,4-Dichlorobenzene-d4	ISTD										

Wed Jan 27 10:01:56 2016

Calibration Table Report
Method: 8260SL.M
Title: 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Calibration: Fri Feb 26 11:38:33 2016
Curve: WG558732
Calibration Files

Compound	0.5 9M972898.D	1 9M972899.D	2 9M972900.D	5 9M972901.D	20 9M972902.D	50 9M972896.D	100 9M972903.D	200 9M972904.D	300 9M972905.D	Avg	%RSD	R^2 Linear	Quadratic
Fluorobenzene	ISTD												
Dichlorodifluoromethane			0.338	0.271	0.399	0.396	0.318	0.357	0.307	0.341	13.734		
Chloromethane			0.372	0.280	0.331	0.361	0.296	0.346	0.304	0.327	10.674		
Vinyl Chloride		0.250	0.318	0.314	0.373	0.372	0.342	0.355	0.296	0.327	12.768		
1,3-Butadiene			0.347	0.266	0.328	0.330	0.297	0.321	0.293	0.312	8.837		
Bromomethane		0.236	0.267	0.181	0.206	0.208	0.186	0.217	0.199	0.213	13.250		
Chloroethane			0.127	0.116	0.142	0.165	0.139	0.173	0.160	0.146	14.271		
Trichlorofluoromethane		0.519	0.518	0.416	0.503	0.514	0.470	0.517	0.473	0.491	7.357		
Diethyl ether		0.215	0.246	0.217	0.243	0.241	0.214		0.231	0.230	6.215		
Isoprene			0.302	0.251	0.303	0.302	0.282	0.318	0.295	0.293	7.364		
Acrolein		0.041	0.046	0.045	0.046	0.048	0.046		0.050	0.046	6.212		
1,1,2-Trichloro-1,2,2-Trifluoroethane			0.252	0.234	0.255	0.261	0.248	0.273	0.251	0.253	4.699		
Acetone				0.179	0.138	0.128	0.119	0.124		0.138	17.810	0.999	
1,1-Dichloroethene		0.464	0.511	0.400	0.482	0.471	0.454	0.500	0.456	0.467	7.277		
Tert-Butyl Alcohol			0.057	0.046	0.055	0.051	0.047			0.051	8.698		
Dimethyl Sulfide		0.150	0.203	0.186	0.207	0.211	0.196	0.224	0.203	0.197	11.169		
Iodomethane				0.076	0.109	0.154	0.126	0.157	0.142	0.127	24.315	0.993	
Methyl acetate			0.282	0.223	0.279	0.262	0.240	0.258	0.234	0.254	8.867		
Methylene Chloride			0.271	0.217	0.263	0.261	0.240	0.280	0.249	0.254	8.252		
Carbon Disulfide			0.795	0.626	0.740	0.737	0.678	0.761	0.702	0.720	7.788		
Acrylonitrile		0.117	0.127	0.114	0.130	0.135	0.123		0.134	0.126	6.412		
Methyl Tert Butyl Ether		0.669	0.722	0.642	0.760	0.786	0.713	0.788	0.718	0.725	7.239		
trans-1,2-Dichloroethene		0.400	0.422	0.377	0.430	0.438	0.407	0.446	0.412	0.416	5.376		
n-Hexane			0.456	0.385	0.420	0.424	0.429	0.464	0.428	0.430	5.986		
Diisopropyl ether		0.938	1.068	0.928	1.071	1.051	0.931		0.995	0.998	6.627		
Vinyl Acetate			0.593	0.519	0.545	0.602	0.554	0.608	0.558	0.569	5.855		
1,1-Dichloroethane		0.548	0.558	0.445	0.532	0.549	0.499	0.553	0.500	0.523	7.454		
Ethyl-Tert-Butyl ether		0.871	0.992	0.852	0.990	0.988	0.865		0.934	0.928	6.918		
2-Butanone			0.177	0.152	0.156	0.166	0.156	0.172	0.149	0.161	6.650		
Propionitrile		0.042	0.055	0.048	0.053	0.051	0.048		0.049	0.049	8.494		
2,2-Dichloropropane			0.428	0.330	0.377	0.415	0.383	0.417	0.383	0.390	8.575		
cis-1,2-Dichloroethene		0.247	0.257	0.248	0.287	0.297	0.273	0.299	0.277	0.273	7.647		
Chloroform		0.473	0.530	0.432	0.482	0.509	0.459	0.505	0.454	0.480	6.746		
1-Bromopropane			0.011	0.041	0.042	0.043	0.040	0.045	0.041	0.038	31.434	0.997	
Bromochloromethane		0.131	0.173	0.169	0.194	0.199	0.179	0.197	0.178	0.177	12.275		
Tetrahydrofuran			0.111	0.099	0.110	0.110	0.097		0.097	0.104	6.802		
Dibromofluoromethane				0.267	0.243	0.286	0.286	0.274		0.271	6.547		
1,1,1-Trichloroethane		0.426	0.436	0.385	0.438	0.470	0.425	0.470	0.427	0.434	6.319		
Cyclohexane		0.465	0.495	0.425	0.494	0.478	0.465	0.503	0.464	0.474	5.302		
1,1-Dichloropropene		0.353	0.359	0.300	0.344	0.352	0.333	0.360	0.335	0.342	5.748		
Tert-Amyl-Methyl ether		0.631	0.709	0.631	0.716	0.716	0.632		0.684	0.674	6.133		
Carbon Tetrachloride			0.41939	0.34041	0.40512	0.42742	0.39181	0.43819	0.39737	0.40282	7.96886		
1,2-Dichloroethane-d4				0.34995	0.30686	0.35494	0.35835	0.33017		0.34005	6.33015		
Heptane										0	0		
1,2-Dichloroethane		0.36551	0.44947	0.39601	0.44224	0.45938	0.41291	0.4496	0.40581	0.42262	7.76179		
Benzene	1.14079	0.92872	1.03015	0.83328	0.97121	0.9721	0.88431	0.97127	0.88279	0.95718	9.53654		
Trichloroethene		0.30364	0.32158	0.26212	0.31219	0.31666	0.29597	0.321	0.29314	0.30329	6.54492		
Methylcyclohexane		0.31249	0.39837	0.32203	0.40419	0.39506	0.39323	0.42525	0.39247	0.38039	10.6291		
1,2-Dichloropropane		0.23004	0.27101	0.24016	0.27676	0.28593	0.2555	0.28277	0.26062	0.26285	7.66268		
1,4-Dioxane			0.0041	0.00361	0.00449	0.00376	0.00356		0.00414	0.00394	9.17892		
Bromodichloromethane			0.37851	0.33087	0.3725	0.39384	0.35929	0.397	0.36103	0.37044	6.13725		
Dibromomethane		0.15103	0.18915	0.16523	0.1825	0.18519	0.16707	0.1849	0.1682	0.17416	7.61692		
2-Chloroethyl Vinyl Ether				0.04535	0.05625	0.07439	0.06667	0.08013	0.07633	0.06652	20.1377	0.996	
4-Methyl-2-Pentanone				0.08933	0.11327	0.12554	0.11786	0.12977	0.11644	0.11537	12.2612		
cis-1,3-Dichloropropene			0.37321	0.33699	0.39477	0.41098	0.38072	0.42291	0.38195	0.38594	7.23123		
Dimethyl Disulfide			0.30882	0.3269	0.39409	0.4245	0.40234	0.4579	0.40032	0.38784	13.5683		
Chlorobenzene-d5	ISTD												
Toluene-d8				1.21266	1.14503	1.34974	1.34798	1.26813		1.26471	6.98417		
Toluene	1.57001	1.40445	1.51648	1.23448	1.46732	1.48749	1.3712	1.4823	1.3236	1.42859	7.34792		
Ethyl Methacrylate				0.31749	0.4112	0.4195	0.39758	0.44016	0.38999	0.39599	10.6751		
trans-1,3-Dichloropropene			0.50304	0.44978	0.5157	0.56049	0.50648	0.56248	0.50379	0.51454	7.49294		
1,1,2-Trichloroethane		0.27692	0.29584	0.27194	0.31787	0.32454	0.3	0.32173	0.292	0.3001	6.65768		
2-Hexanone				0.26013	0.28088	0.31451	0.30524	0.34734	0.28972	0.29964	10.056		
1,3-Dichloropropane		0.46617	0.55761	0.45639	0.51068	0.53187	0.47698	0.53043	0.47034	0.50006	7.49429		
Tetrachloroethene		0.33351	0.31568	0.26327	0.31051	0.30894	0.30156	0.32634	0.29026	0.30626	7.18201		
Dibromochloromethane			0.45014	0.36113	0.41394	0.44566	0.40515	0.45572	0.40415	0.41941	8.03547		
1,2-Dibromoethane				0.31086	0.34005	0.35035	0.32626	0.35324	0.31647	0.33287	5.32182		
1-Chlorohexane		0.39643	0.40929	0.33097	0.45098	0.44465	0.43807	0.477	0.42289	0.42128	10.5148		
Chlorobenzene		1.02904	1.08596	0.91908	1.05295	1.05625	0.95434	1.02465	0.91009	1.00405	6.67004		
1,1,1,2-Tetrachloroethane			0.37536	0.32525	0.38767	0.40783	0.37127	0.40937	0.36265	0.37706	7.67975		
Ethylbenzene	0.5157	0.51658	0.53164	0.45493	0.54391	0.54636	0.50916	0.54884	0.48836	0.51728	5.93862		
m-,p-Xylene	0.67213	0.61926	0.69794	0.58569	0.67162	0.65634	0.61182	0.65803	0.57657	0.63882	6.58722		
o-Xylene	0.61273	0.56415	0.61379	0.55512	0.6465	0.65334	0.60899	0.67127	0.59158	0.61305	6.41073		
Styrene		0.95813	1.06028	0.90308	1.08018	1.12326	1.04689	1.15897	1.02088	1.04396	8.002		
Bromoform			0.22872	0.23892	0.27832	0.30617	0.27263	0.32232	0.28054	0.27538	12.1348		
Isopropylbenzene		1.53891	1.69742	1.42189	1.74341	1.73716	1.64433	1.81019	1.57289	1.64577	7.76922		
1,4-Dichlorobenzene-d4	ISTD												
1,1,2,2-Tetrachloroethane		0.61571	0.83634	0.73739	0.79769	0.80854	0.74616	0.78083	0.74513	0.75847	8.88143		
p-Bromofluorobenzene				0.91653	0.87561	1.04735	1.0775	0.95104		0.97361	8.83571		
1,2,3-Trichloropropane		0.24645	0.29476	0.28329	0.29208	0.30442	0.29453	0.30315	0.28248	0.28764	6.41284		

trans-1,4-Dichloro-2-Butene		0.22501	0.23725	0.31415	0.3034	0.3105	0.33164	0.30766	0.28994	14.2446
n-Propylbenzene	3.98718	4.09811	3.61454	4.21971	4.10826	3.88939	3.82307	3.70205	3.93029	5.36989
Bromobenzene	0.84385	1.11565	0.86076	0.97118	0.9688	0.89248	0.89548	0.87446	0.92783	9.59949
1,3,5-Trimethylbenzene			2.76735	3.16086	3.10843	2.93606	2.91239	2.81635	2.95024	5.30322
2-Chlorotoluene		2.99265	2.31448	2.81057	2.64897	2.50142	2.61378	2.57101	2.63612	8.25378
4-Chlorotoluene	2.56339	2.5861	2.29006	2.55177	2.63031	2.41864	2.2799	2.17747	2.4372	6.98222
a-Methylstyrene			1.12025	1.41688	1.39756	1.35572	1.41986	1.35543	1.34428	8.43365
tert-Butylbenzene			0.56026	0.65003	0.66483	0.62531	0.61977	0.59094	0.61853	6.19423
1,2,4-Trimethylbenzene	3.41485	3.20381	2.86379	3.24429	3.17284	3.0014	2.96997	2.8463	3.08966	6.49589
sec-Butylbenzene	3.92127	3.95846	3.39254	3.98281	3.96896	3.8029	3.77812	3.59297	3.79976	5.54855
p-Isopropyltoluene			2.97918	3.35219	3.3501	3.24235	3.24339	3.07285	3.20668	4.70949
1,3-Dichlorobenzene	2.09668	2.18083	1.63464	1.82169	1.84149	1.71899	1.77783	1.67989	1.84401	10.6223
1,4-Dichlorobenzene	2.13498	2.06617	1.68605	1.85221	1.83159	1.72549	1.79434	1.65691	1.84347	9.41157
n-Butylbenzene	3.12981	3.1425	2.56827	2.96652	3.08072	3.01911	3.06733	2.87744	2.98146	6.31771
1,2-Dichlorobenzene	1.80685	1.84212	1.52596	1.70901	1.74915	1.66133	1.78603	1.60751	1.71099	6.28256
1,2-Dibromo-3-Chloropropane			0.17584	0.21007	0.23479	0.23723	0.24208	0.21787	0.21965	11.2549
1,2,4-Trichlorobenzene	1.3714	1.33063	1.02655	1.15029	1.2163	1.24479	1.25089	1.12609	1.21462	9.21088
Hexachlorobutadiene	0.57233	0.7279	0.53741	0.61674	0.64289	0.67353	0.72181	0.62948	0.64026	10.4449
Naphthalene		3.19632	2.63671	3.04494	3.29135	3.2233	3.14196	2.79099	3.04651	7.99534
1,2,3-Trichlorobenzene	1.32324	1.26566	0.99788	1.12352	1.21351	1.21702	1.20507	1.0788	1.17809	8.93408

Fri Feb 26 11:40:14 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16021358 Run Date: 02/25/2016 Sample ID: WG558732-11
Instrument ID: HPMS9 Run Time: 21:31 Method: 8260B
File ID: 9M972907 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG558732 Cal ID: HPMS9 - 25-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	48.0	ug/kg	0.461	4.00	20	
1,1-Dichloroethene	CCC	50.0	48.6	ug/kg	0.454	2.90	20	
1,2-Dichloropropane	CCC	50.0	52.3	ug/kg	0.275	4.60	20	
Ethylbenzene	CCC	50.0	51.3	ug/kg	0.531	2.60	20	
Toluene	CCC	50.0	50.7	ug/kg	1.45	1.50	20	
Vinyl Chloride	CCC	50.0	59.8	ug/kg	0.392	19.7	20	
Bromoform	SPCC	50.0	47.3	ug/kg	0.261	5.40	20	
Chlorobenzene	SPCC	50.0	51.2	ug/kg	1.03	2.40	20	
Chloromethane	SPCC	50.0	52.7	ug/kg	0.345	5.40	20	
1,1-Dichloroethane	SPCC	50.0	46.4	ug/kg	0.485	7.20	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	52.0	ug/kg	0.789	4.00	20	
Acetone		50.0	43.9	ug/kg	0.112	12.2	20	
Benzene		50.0	49.0	ug/kg	0.937	2.10	20	
Bromobenzene		50.0	52.2	ug/kg	0.968	4.40	20	
Bromochloromethane		50.0	51.5	ug/kg	0.183	3.00	20	
Bromodichloromethane		50.0	47.6	ug/kg	0.352	4.90	20	
Bromomethane		50.0	49.0	ug/kg	0.208	2.10	20	
2-Butanone		50.0	47.4	ug/kg	0.153	5.20	20	
n-Butylbenzene		50.0	52.5	ug/kg	3.13	4.90	20	
sec-Butylbenzene		50.0	54.7	ug/kg	4.16	9.50	20	
tert-Butylbenzene		50.0	55.4	ug/kg	0.685	10.8	20	
Carbon Disulfide		50.0	44.1	ug/kg	0.635	11.7	20	
Carbon Tetrachloride		50.0	46.5	ug/kg	0.375	7.00	20	
Dibromochloromethane		50.0	48.5	ug/kg	0.407	3.10	20	
Chloroethane		50.0	54.2	ug/kg	0.158	8.30	20	
2-Chlorotoluene		50.0	54.2	ug/kg	2.86	8.40	20	
4-Chlorotoluene		50.0	53.0	ug/kg	2.59	6.10	20	
1,2-Dibromo-3-Chloropropane		50.0	54.5	ug/kg	0.239	8.90	20	
1,2-Dibromoethane		50.0	50.8	ug/kg	0.338	1.50	20	
Dibromomethane		50.0	47.0	ug/kg	0.164	6.10	20	
1,2-Dichlorobenzene		50.0	52.7	ug/kg	1.81	5.50	20	
1,3-Dichlorobenzene		50.0	50.8	ug/kg	1.87	1.60	20	
1,4-Dichlorobenzene		50.0	51.1	ug/kg	1.88	2.20	20	
Dichlorodifluoromethane		50.0	63.4	ug/kg	0.432	26.7	20	*
1,2-Dichloroethane		50.0	49.2	ug/kg	0.416	1.60	20	
cis-1,2-Dichloroethene		50.0	52.6	ug/kg	0.287	5.20	20	
trans-1,2-Dichloroethene		50.0	50.6	ug/kg	0.422	1.20	20	
1,3-Dichloropropane		50.0	53.8	ug/kg	0.538	7.60	20	
2,2-Dichloropropane		50.0	47.1	ug/kg	0.368	5.90	20	
cis-1,3-Dichloropropene		50.0	53.2	ug/kg	0.411	6.40	20	
trans-1,3-Dichloropropene		50.0	50.0	ug/kg	0.515	0.100	20	
1,1-Dichloropropene		50.0	48.5	ug/kg	0.332	2.90	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4652691
Report generated 03/01/2016 14:46

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16021358 Run Date: 02/25/2016 Sample ID: WG558732-11
Instrument ID: HPMS9 Run Time: 21:31 Method: 8260B
File ID: 9M972907 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG558732 Cal ID: HPMS9 - 25-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	48.2	ug/kg	0.289	3.60	20	
Hexachlorobutadiene		50.0	54.5	ug/kg	0.698	9.00	20	
Isopropylbenzene		50.0	52.0	ug/kg	1.71	4.00	20	
p-Isopropyltoluene		50.0	54.1	ug/kg	3.47	8.10	20	
4-Methyl-2-Pentanone		50.0	47.8	ug/kg	0.110	4.40	20	
Methylene Chloride		50.0	49.8	ug/kg	0.254	0.400	20	
Naphthalene		50.0	50.8	ug/kg	3.10	1.70	20	
n-Propylbenzene		50.0	54.9	ug/kg	4.32	9.80	20	
Styrene		50.0	52.8	ug/kg	1.10	5.60	20	
1,1,1,2-Tetrachloroethane		50.0	49.7	ug/kg	0.375	0.600	20	
Tetrachloroethene		50.0	49.8	ug/kg	0.305	0.400	20	
1,2,3-Trichlorobenzene		50.0	52.6	ug/kg	1.24	5.20	20	
1,2,4-Trichlorobenzene		50.0	51.7	ug/kg	1.26	3.40	20	
1,1,1-Trichloroethane		50.0	46.7	ug/kg	0.406	6.50	20	
1,1,2-Trichloroethane		50.0	51.5	ug/kg	0.309	3.00	20	
Trichloroethene		50.0	49.4	ug/kg	0.300	1.20	20	
Trichlorofluoromethane		50.0	47.6	ug/kg	0.467	4.90	20	
1,2,3-Trichloropropane		50.0	54.2	ug/kg	0.312	8.40	20	
1,2,4-Trimethylbenzene		50.0	51.5	ug/kg	3.18	3.10	20	
1,3,5-Trimethylbenzene		50.0	54.3	ug/kg	3.21	8.60	20	
o-Xylene		50.0	53.6	ug/kg	0.657	7.10	20	
m-,p-Xylene		100	103	ug/kg	0.655	2.60	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4652691
Report generated 03/01/2016 14:46

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021358 Run Date: 02/29/2016 Sample ID: WG559150-02
Instrument ID: HPMS9 Run Time: 17:23 Method: 8260B
File ID: 9M972967 Analyst: FJB/JDS QC Key: DOD4
Workgroup (AAB#): WG559151 Cal ID: HPMS9 - 25-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.0	ug/kg	0.480	0.0136	20	
1,1-Dichloroethene	CCC	50.0	50.3	ug/kg	0.470	0.656	20	
1,2-Dichloropropane	CCC	50.0	54.5	ug/kg	0.287	9.07	20	
Ethylbenzene	CCC	50.0	54.8	ug/kg	0.567	9.62	20	
Toluene	CCC	50.0	53.2	ug/kg	1.52	6.47	20	
Vinyl Chloride	CCC	50.0	57.3	ug/kg	0.375	14.5	20	
Bromoform	SPCC	50.0	49.9	ug/kg	0.275	0.188	20	
Chlorobenzene	SPCC	50.0	52.5	ug/kg	1.06	5.09	20	
Chloromethane	SPCC	50.0	44.7	ug/kg	0.292	10.6	20	
1,1-Dichloroethane	SPCC	50.0	52.1	ug/kg	0.545	4.16	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.9	ug/kg	0.757	0.242	20	
Xylenes		150	163	ug/kg	0.681	8.56	40	
Acetone		50.0	46.0	ug/kg	0.117	8.05	20	
Benzene		50.0	50.9	ug/kg	0.974	1.71	20	
Bromobenzene		50.0	53.0	ug/kg	0.984	6.00	20	
Bromochloromethane		50.0	52.4	ug/kg	0.186	4.72	20	
Bromodichloromethane		50.0	50.1	ug/kg	0.371	0.216	20	
Bromomethane		50.0	45.8	ug/kg	0.195	8.34	20	
2-Butanone		50.0	47.2	ug/kg	0.152	5.54	20	
n-Butylbenzene		50.0	56.2	ug/kg	3.35	12.4	20	
sec-Butylbenzene		50.0	56.9	ug/kg	4.33	13.8	20	
tert-Butylbenzene		50.0	57.2	ug/kg	0.708	14.5	20	
Carbon Disulfide		50.0	58.8	ug/kg	0.847	17.7	20	
Carbon Tetrachloride		50.0	51.1	ug/kg	0.412	2.18	20	
Dibromochloromethane		50.0	50.5	ug/kg	0.423	0.949	20	
Chloroethane		50.0	54.1	ug/kg	0.158	8.17	20	
2-Chlorotoluene		50.0	53.7	ug/kg	2.83	7.36	20	
4-Chlorotoluene		50.0	56.2	ug/kg	2.74	12.4	20	
1,2-Dibromo-3-Chloropropane		50.0	45.8	ug/kg	0.201	8.44	20	
1,2-Dibromoethane		50.0	49.8	ug/kg	0.331	0.443	20	
Dibromomethane		50.0	50.8	ug/kg	0.177	1.54	20	
1,2-Dichlorobenzene		50.0	51.9	ug/kg	1.78	3.77	20	
1,3-Dichlorobenzene		50.0	51.4	ug/kg	1.89	2.72	20	
1,4-Dichlorobenzene		50.0	51.4	ug/kg	1.89	2.70	20	
Dichlorodifluoromethane		50.0	45.8	ug/kg	0.312	8.33	20	
1,2-Dichloroethane		50.0	50.4	ug/kg	0.426	0.802	20	
cis-1,2-Dichloroethene		50.0	53.3	ug/kg	0.291	6.56	20	
trans-1,2-Dichloroethene		50.0	54.2	ug/kg	0.452	8.49	20	
1,3-Dichloropropane		50.0	51.0	ug/kg	0.510	2.07	20	
2,2-Dichloropropane		50.0	55.8	ug/kg	0.436	11.7	20	
cis-1,3-Dichloropropene		50.0	52.9	ug/kg	0.408	5.79	20	
trans-1,3-Dichloropropene		50.0	53.4	ug/kg	0.550	6.86	20	

CCV - Modified 03/05/2008
PDF File ID: 4652693
Report generated 03/01/2016 14:46

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021358 Run Date: 02/29/2016 Sample ID: WG559150-02
Instrument ID: HPMS9 Run Time: 17:23 Method: 8260B
File ID: 9M972967 Analyst: FJB/JDS QC Key: DOD4
Workgroup (AAB#): WG559151 Cal ID: HPMS9 - 25-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	53.3	ug/kg	0.365	6.61	20	
2-Hexanone		50.0	49.6	ug/kg	0.297	0.827	20	
Hexachlorobutadiene		50.0	54.2	ug/kg	0.695	8.48	20	
Isopropylbenzene		50.0	55.0	ug/kg	1.81	10.1	20	
p-Isopropyltoluene		50.0	56.6	ug/kg	3.63	13.2	20	
4-Methyl-2-Pentanone		50.0	50.1	ug/kg	0.116	0.238	20	
Methylene Chloride		50.0	50.3	ug/kg	0.256	0.504	20	
Naphthalene		50.0	47.7	ug/kg	2.90	4.70	20	
n-Propylbenzene		50.0	57.0	ug/kg	4.48	14.0	20	
Styrene		50.0	54.9	ug/kg	1.15	9.79	20	
1,1,1,2-Tetrachloroethane		50.0	52.1	ug/kg	0.393	4.12	20	
Tetrachloroethene		50.0	53.9	ug/kg	0.330	7.82	20	
1,2,3-Trichlorobenzene		50.0	50.2	ug/kg	1.18	0.361	20	
1,2,4-Trichlorobenzene		50.0	50.8	ug/kg	1.23	1.54	20	
1,1,1-Trichloroethane		50.0	52.6	ug/kg	0.457	5.20	20	
1,1,2-Trichloroethane		50.0	52.5	ug/kg	0.315	5.05	20	
Trichloroethene		50.0	52.9	ug/kg	0.321	5.82	20	
Trichlorofluoromethane		50.0	52.3	ug/kg	0.513	4.50	20	
1,2,3-Trichloropropane		50.0	50.0	ug/kg	0.288	0.0332	20	
1,2,4-Trimethylbenzene		50.0	54.4	ug/kg	3.36	8.70	20	
1,3,5-Trimethylbenzene		50.0	56.7	ug/kg	3.35	13.5	20	
o-Xylene		50.0	54.9	ug/kg	0.674	9.89	20	
m-,p-Xylene		100	108	ug/kg	0.689	7.89	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4652693
Report generated 03/01/2016 14:46

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16021358
Instrument ID: HPMS9
Workgroup (AAB#): WG559151

ICAL CCV Number: WG558732-02
CAL ID: HPMS9-25-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558732-02	NA	NA	183008	378926	517775
Upper Limit	NA	NA	366016	757852	1035550
Lower Limit	NA	NA	91504	189463	258888
L16021358-01	1.00	01	182224	401543	569420
L16021358-02	1.00	01	201415	439169	608411
L16021358-03	1.00	01	173065	382940	535668
L16021358-04	1.00	01	182994	397163	556527
L16021358-05	1.00	01	179911	403143	577665
L16021358-06	1.00	01	181264	391693	550575
L16021358-07	1.00	01	180534	390047	554504
L16021358-08	1.00	01	164608	356211	492393
L16021358-09	1.00	01	156364	337722	484214
WG559151-01	1.00	01	183902	403206	567751
WG559151-02	1.00	01	203058	426907	583985

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4652694
Report generated 03/01/2016 14:46

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16021358
Instrument ID: HPMS9
Workgroup (AAB#): WG559151

ICAL CCV Number: WG558732-02
CAL ID: HPMS9 - 25-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558732-02	NA	NA	17.76	14.73	10.85
Upper Limit	NA	NA	18.26	15.23	11.35
Lower Limit	NA	NA	17.26	14.23	10.35
L16021358-01	1.00	01	17.75	14.72	10.85
L16021358-02	1.00	01	17.75	14.72	10.85
L16021358-03	1.00	01	17.75	14.72	10.85
L16021358-04	1.00	01	17.75	14.72	10.85
L16021358-05	1.00	01	17.75	14.72	10.85
L16021358-06	1.00	01	17.75	14.72	10.85
L16021358-07	1.00	01	17.75	14.72	10.85
L16021358-08	1.00	01	17.75	14.72	10.85
L16021358-09	1.00	01	17.75	14.72	10.85
WG559151-01	1.00	01	17.75	14.72	10.85
WG559151-02	1.00	01	17.76	14.73	10.85

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4652696
Report generated: 03/01/2016 14:46

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972980.D Vial: 14
Acq On : 1 Mar 2016 00:04 Operator: FJB/JDS
Sample : L16021358-01 4.92g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 01 09:27:21 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	569420	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	401543	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	182224	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	150915	48.8944 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.78%		
43) 1,2-Dichloroethane-d4	10.45	65	184014	47.5160 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.04%		
58) Toluene-d8	12.82	98	539473	53.1150 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.24%		
79) p-Bromofluorobenzene	16.22	95	195654	55.1405 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 110.28%		

Target Compounds

					Qvalue
13) Acetone	6.42	43	28633	18.3830 ug/kg	99
17) Iodomethane	7.15	142	199	2.9171 ug/kg#	34
29) 2-Butanone	9.02	43	1603	0.8730 ug/kg#	58
56) Dimethyl Disulfide	12.82	94	15116	3.4223 ug/kg#	29
91) p-Isopropyltoluene	17.47	119	18692	1.5994 ug/kg	95
97) 1,2,4-Trichlorobenzene	20.39	180	2426	0.5480 ug/kg#	25
100) 1,2,3-Trichlorobenzene	21.11	180	3544	0.8254 ug/kg#	12

(#) = qualifier out of range (m) = manual integration
9M972980.D 8260SL.M Tue Mar 01 09:27:21 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972980.D Vial: 14
Acq On : 1 Mar 2016 00:04 Operator: FJB/JDS
Sample : L16021358-01 4.92g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 1 9:27 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

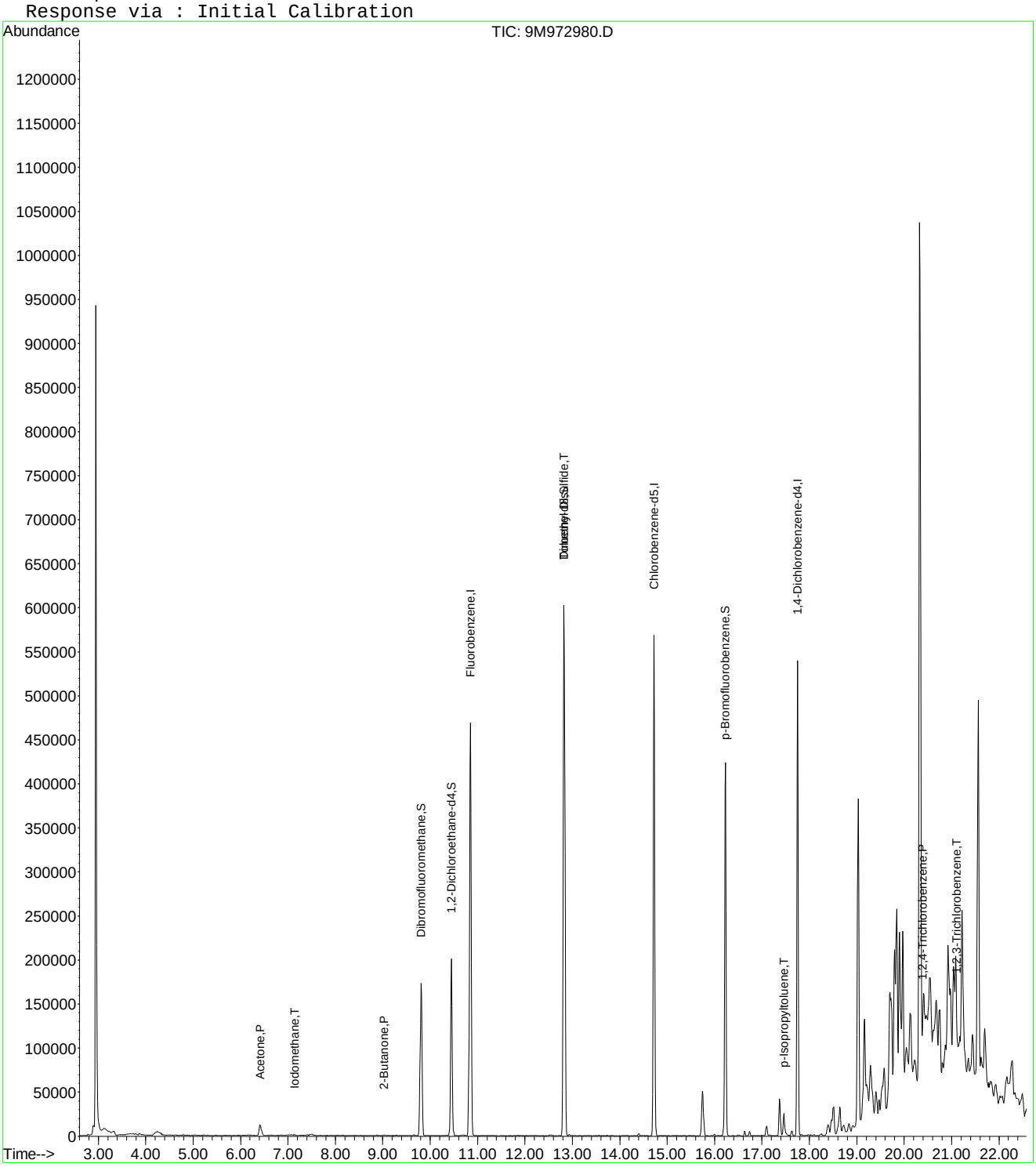

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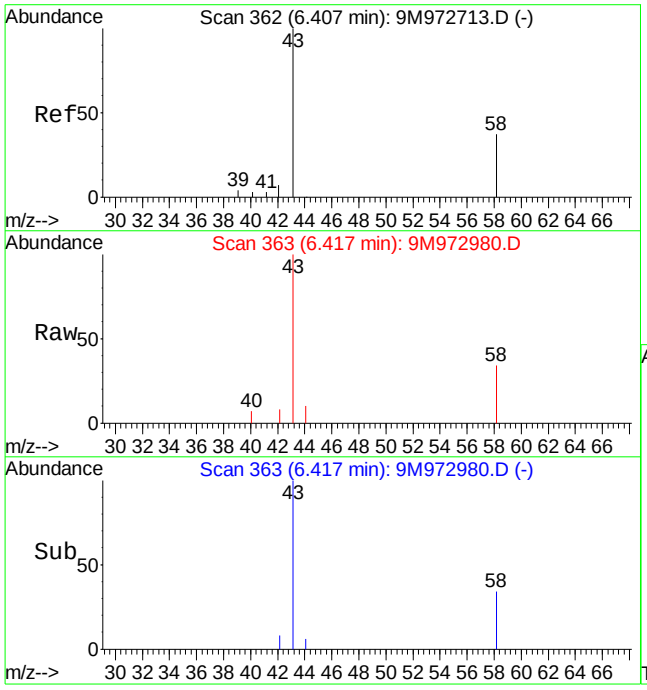

#13
Acetone
Concen: 18.38 ug/kg
RT: 6.42 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M972980.D
Acq: 1 Mar 2016 00:04

Tgt Ion: 43 Resp: 28633

Ion	Ratio	Lower	Upper
43	100		
58	28.8	16.9	39.3

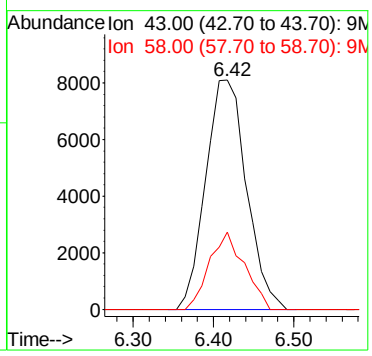

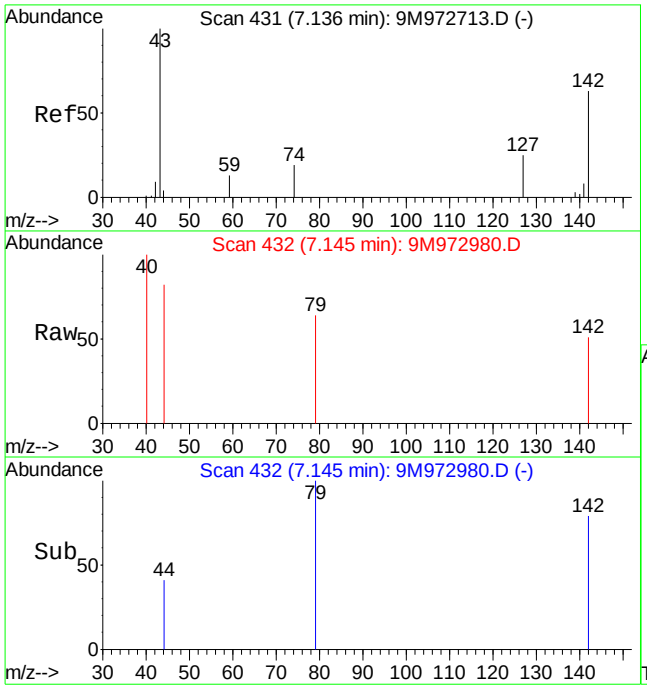

#17
Iodomethane
Concen: 2.92 ug/kg
RT: 7.15 min Scan# 432
Delta R.T. 0.01 min
Lab File: 9M972980.D
Acq: 1 Mar 2016 00:04

Tgt Ion:142 Resp: 199

Ion	Ratio	Lower	Upper
142	100		
127	0.0	25.1	58.7#

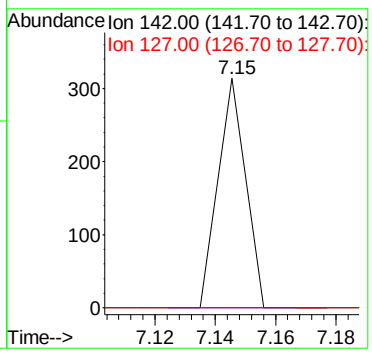

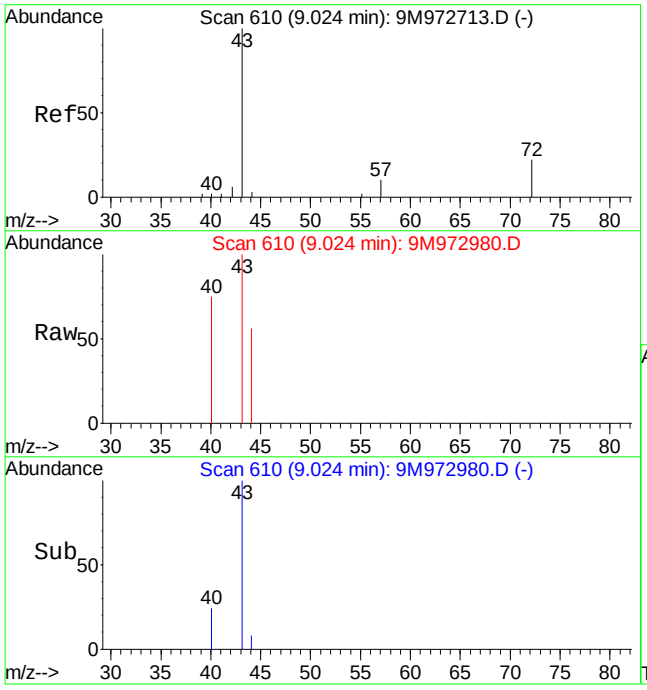

#29
2-Butanone
Concen: 0.87 ug/kg
RT: 9.02 min Scan# 610
Delta R.T. -0.01 min
Lab File: 9M972980.D
Acq: 1 Mar 2016 00:04

Tgt Ion: 43 Resp: 1603

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

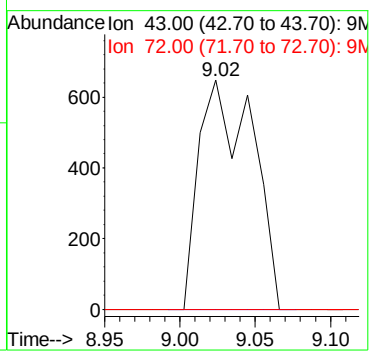

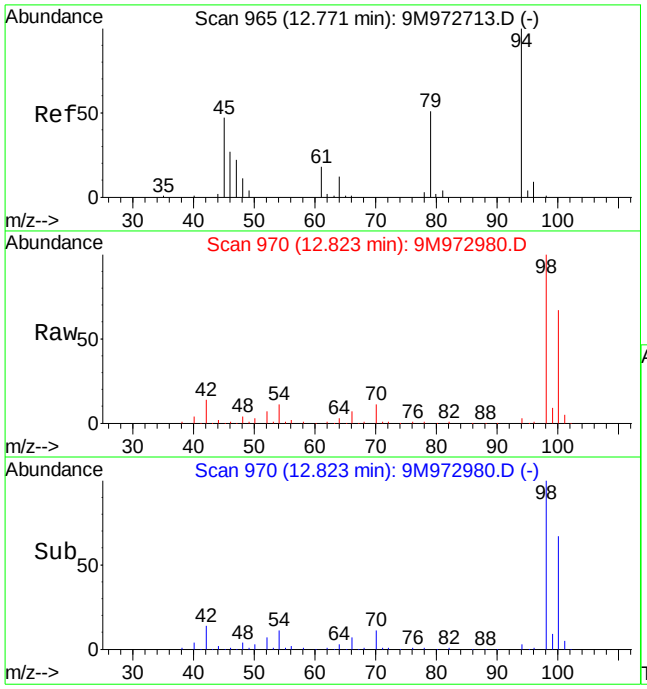

#56
Dimethyl Disulfide
Concen: 3.42 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M972980.D
Acq: 1 Mar 2016 00:04

Tgt Ion: 94 Resp: 15116

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

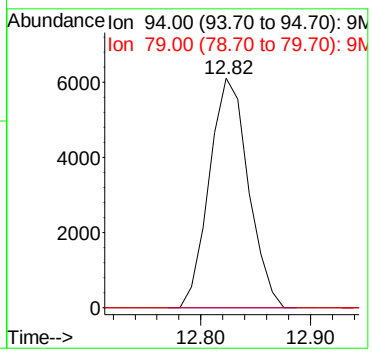

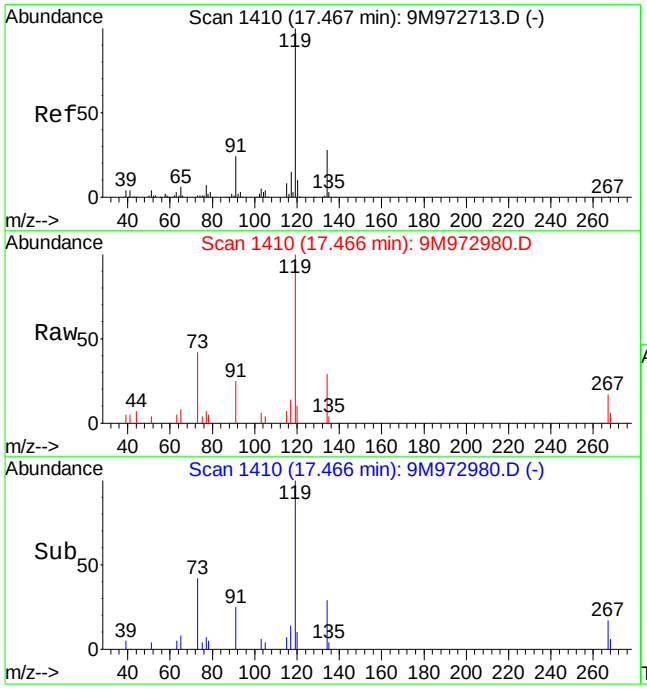

#91
p-Isopropyltoluene
Concen: 1.60 ug/kg
RT: 17.47 min Scan# 1410
Delta R.T. 0.00 min
Lab File: 9M972980.D
Acq: 1 Mar 2016 00:04

Tgt Ion:119 Resp: 18692

Ion	Ratio	Lower	Upper
119	100		
134	23.5	15.7	36.5

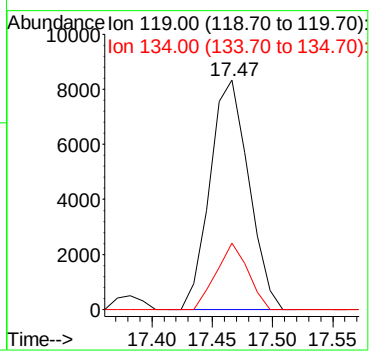

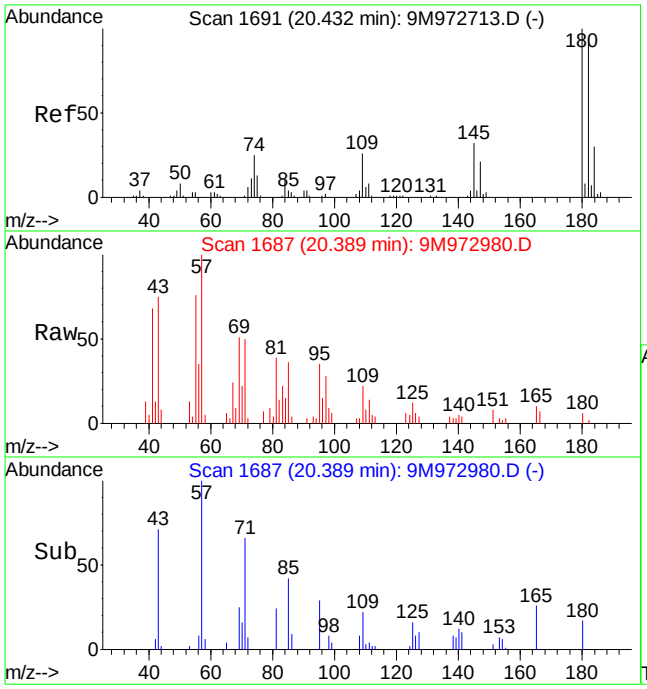

#97
1,2,4-Trichlorobenzene
Concen: 0.55 ug/kg
RT: 20.39 min Scan# 1687
Delta R.T. -0.05 min
Lab File: 9M972980.D
Acq: 1 Mar 2016 00:04

Tgt Ion:180 Resp: 2426

Ion	Ratio	Lower	Upper
180	100		
182	16.9	57.5	134.1#
145	0.0	19.3	45.1#

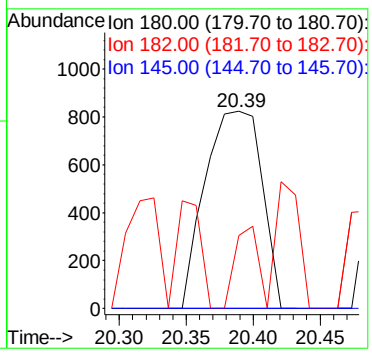

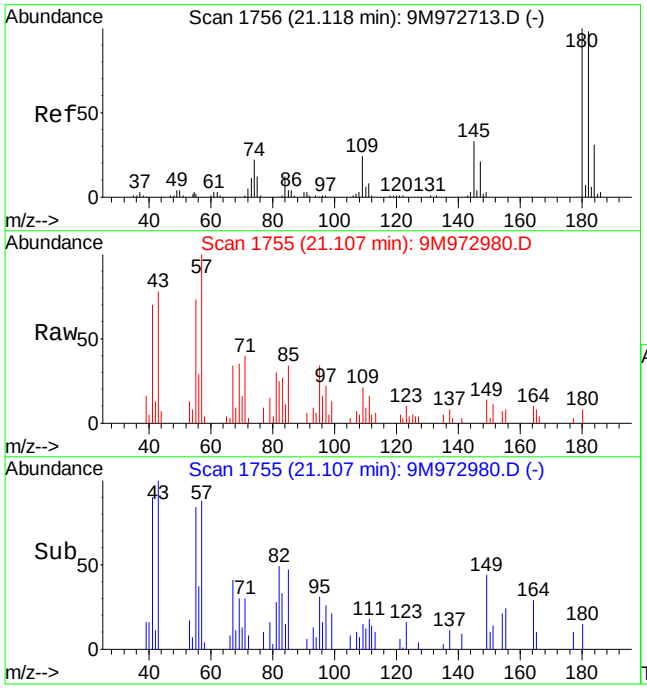

#100
1,2,3-Trichlorobenzene
Concen: 0.83 ug/kg
RT: 21.11 min Scan# 1755
Delta R.T. -0.01 min
Lab File: 9M972980.D
Acq: 1 Mar 2016 00:04

Tgt Ion:180 Resp: 3544

Ion	Ratio	Lower	Upper
180	100		
182	0.0	57.6	134.4#
145	0.0	20.2	47.0#

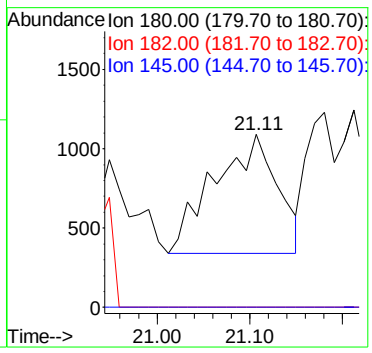

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972981.D Vial: 15
Acq On : 1 Mar 2016 00:34 Operator: FJB/JDS
Sample : L16021358-02 4.97g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 01 09:27:22 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	608411	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	439169	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	201415	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	159676	48.4175 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.84%		
43) 1,2-Dichloroethane-d4	10.45	65	201026	48.5821 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.16%		
58) Toluene-d8	12.83	98	575552	51.8123 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 103.62%		
79) p-Bromofluorobenzene	16.23	95	212061	54.0700 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 108.14%		

Target Compounds

					Qvalue
13) Acetone	6.41	43	12410	5.9633 ug/kg	89
17) Iodomethane	7.13	142	203	2.9117 ug/kg#	34
29) 2-Butanone	9.04	43	1221	0.6223 ug/kg#	58
56) Dimethyl Disulfide	12.83	94	16800	3.5598 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972981.D 8260SL.M Tue Mar 01 09:27:23 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972981.D Vial: 15
Acq On : 1 Mar 2016 00:34 Operator: FJB/JDS
Sample : L16021358-02 4.97g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 1 9:27 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

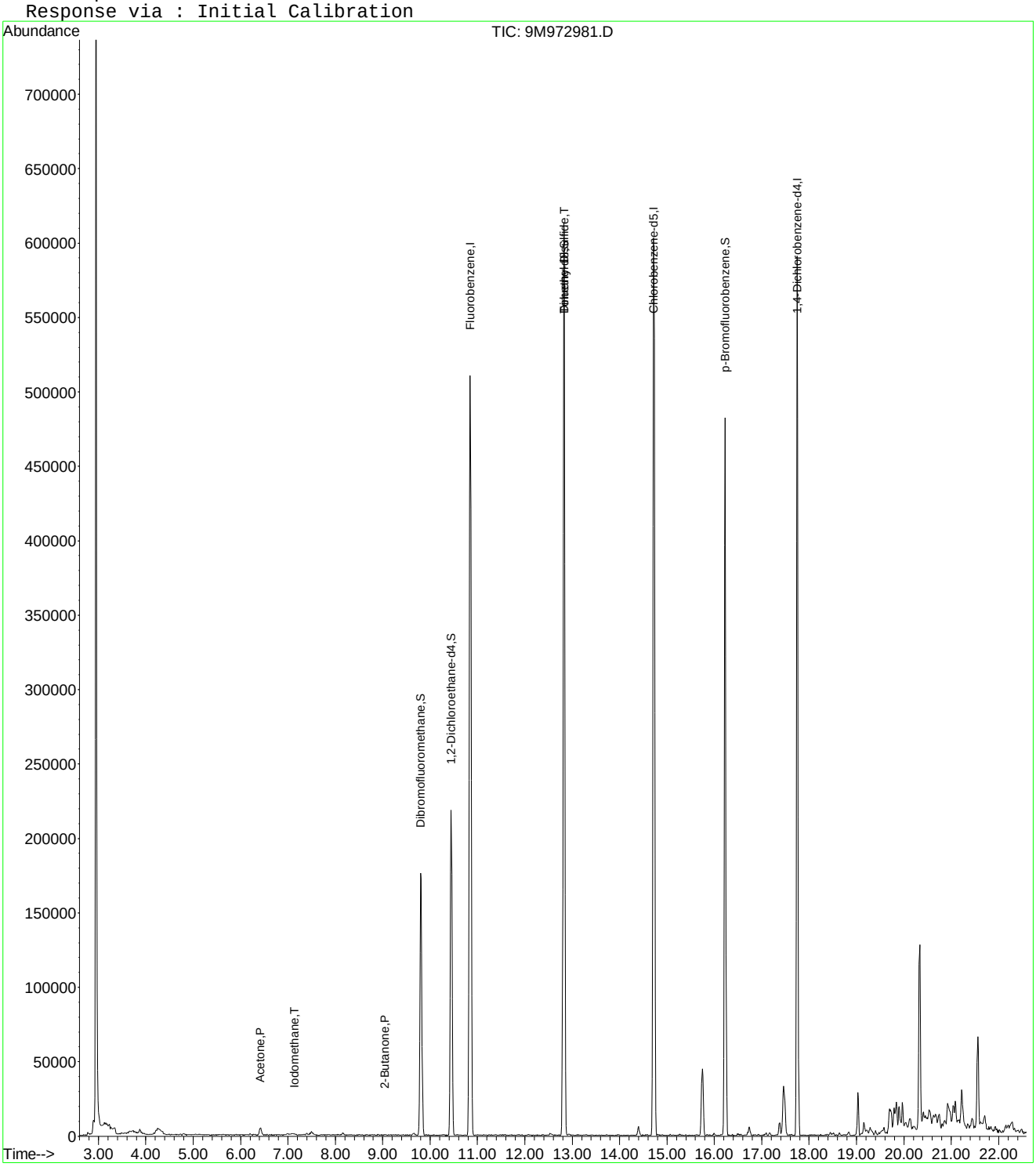

9M972981.D 8260SL.M Tue Mar 01 09:27:23 2016 Page 2

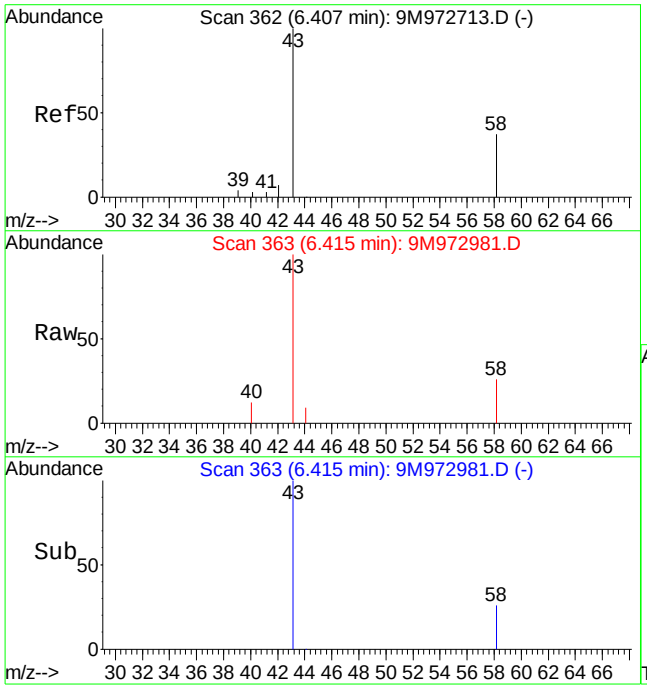

#13
Acetone
Concen: 5.96 ug/kg
RT: 6.41 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M972981.D
Acq: 1 Mar 2016 00:34

Tgt Ion: 43 Resp: 12410

Ion	Ratio	Lower	Upper
43	100		
58	22.5	16.9	39.3

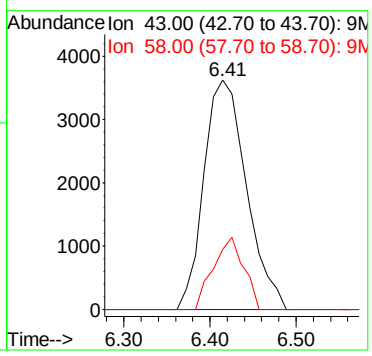

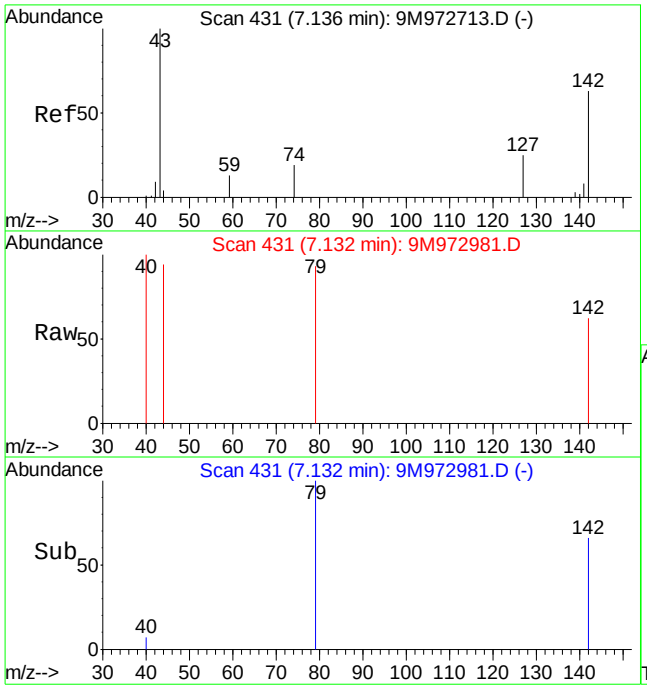

#17
Iodomethane
Concen: 2.91 ug/kg
RT: 7.13 min Scan# 431
Delta R.T. 0.00 min
Lab File: 9M972981.D
Acq: 1 Mar 2016 00:34

Tgt Ion:142 Resp: 203

Ion	Ratio	Lower	Upper
142	100		
127	0.0	25.1	58.7#

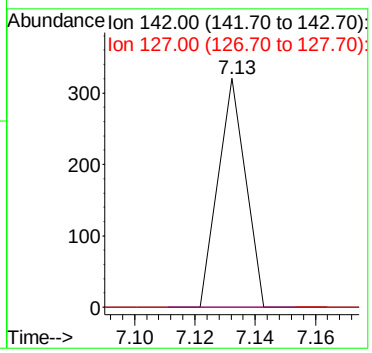

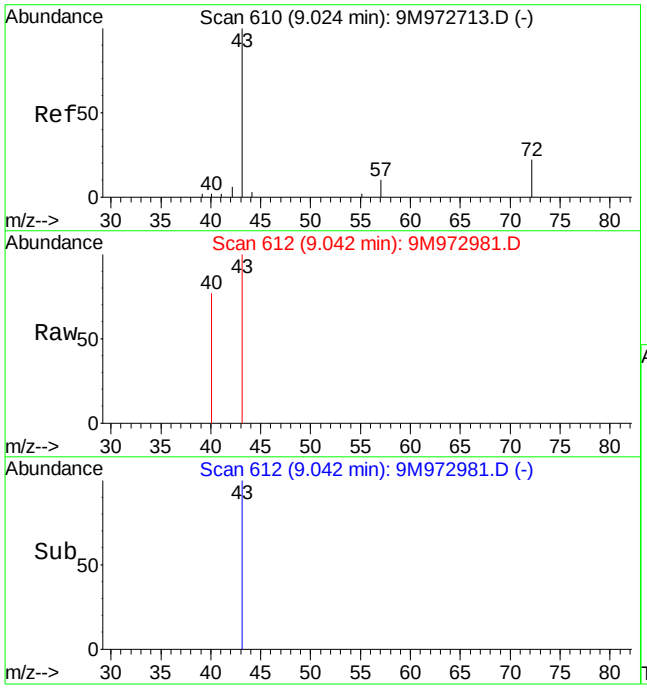

#29
2-Butanone
Concen: 0.62 ug/kg
RT: 9.04 min Scan# 612
Delta R.T. 0.01 min
Lab File: 9M972981.D
Acq: 1 Mar 2016 00:34

Tgt Ion: 43 Resp: 1221

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

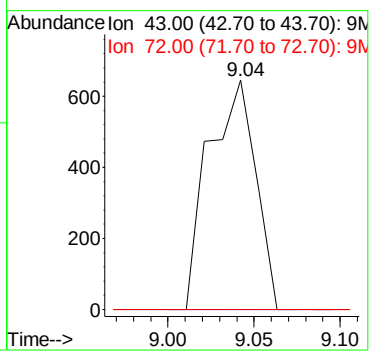

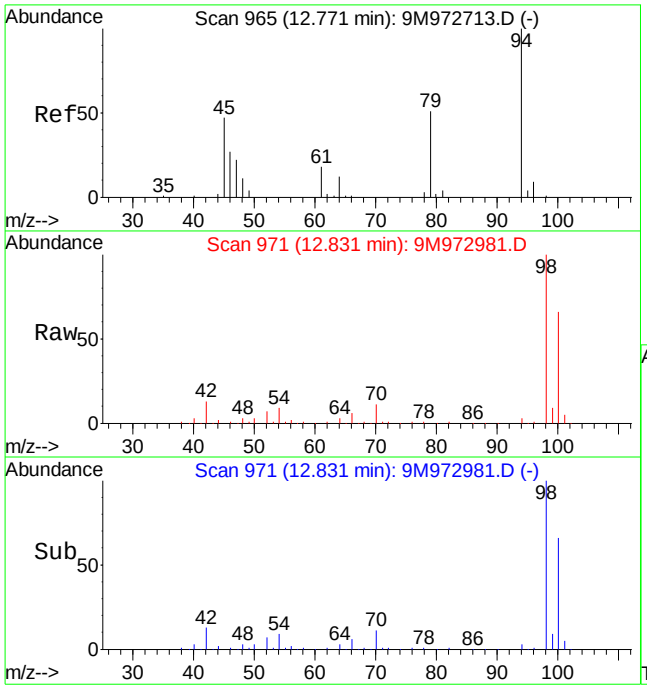

#56
Dimethyl Disulfide
Concen: 3.56 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.06 min
Lab File: 9M972981.D
Acq: 1 Mar 2016 00:34

Tgt Ion: 94 Resp: 16800

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

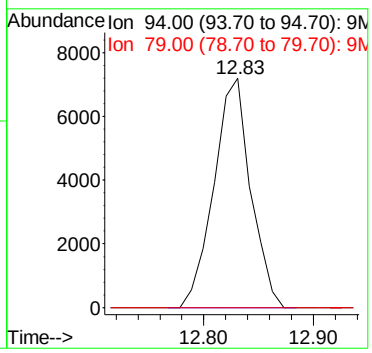

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972982.D Vial: 16
Acq On : 1 Mar 2016 1:04 Operator: FJB/JDS
Sample : L16021358-03 4.83g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 01 09:27:23 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	535668	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	382940	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	173065	50.00 ug/kg	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.81	111	141534	48.7444 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.48%		
43) 1,2-Dichloroethane-d4	10.45	65	176701	48.5026 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.00%		
58) Toluene-d8	12.83	98	514617	53.1292 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.26%		
79) p-Bromofluorobenzene	16.23	95	196503	58.3106 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 116.62%		
Target Compounds					Qvalue
13) Acetone	6.41	43	21224	13.9519 ug/kg	97
17) Iodomethane	7.13	142	211	2.9322 ug/kg#	34
29) 2-Butanone	9.03	43	2635	1.5254 ug/kg#	58
56) Dimethyl Disulfide	12.83	94	14678	3.5325 ug/kg#	29
85) 2-Chlorotoluene	16.70	91	4869	0.5336 ug/kg#	41
86) 4-Chlorotoluene	16.70	91	4869	0.5772 ug/kg#	40
91) p-Isopropyltoluene	17.46	119	36527	3.2909 ug/kg	96

(#) = qualifier out of range (m) = manual integration
9M972982.D 8260SL.M Tue Mar 01 09:27:24 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972982.D Vial: 16
Acq On : 1 Mar 2016 1:04 Operator: FJB/JDS
Sample : L16021358-03 4.83g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 1 9:27 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

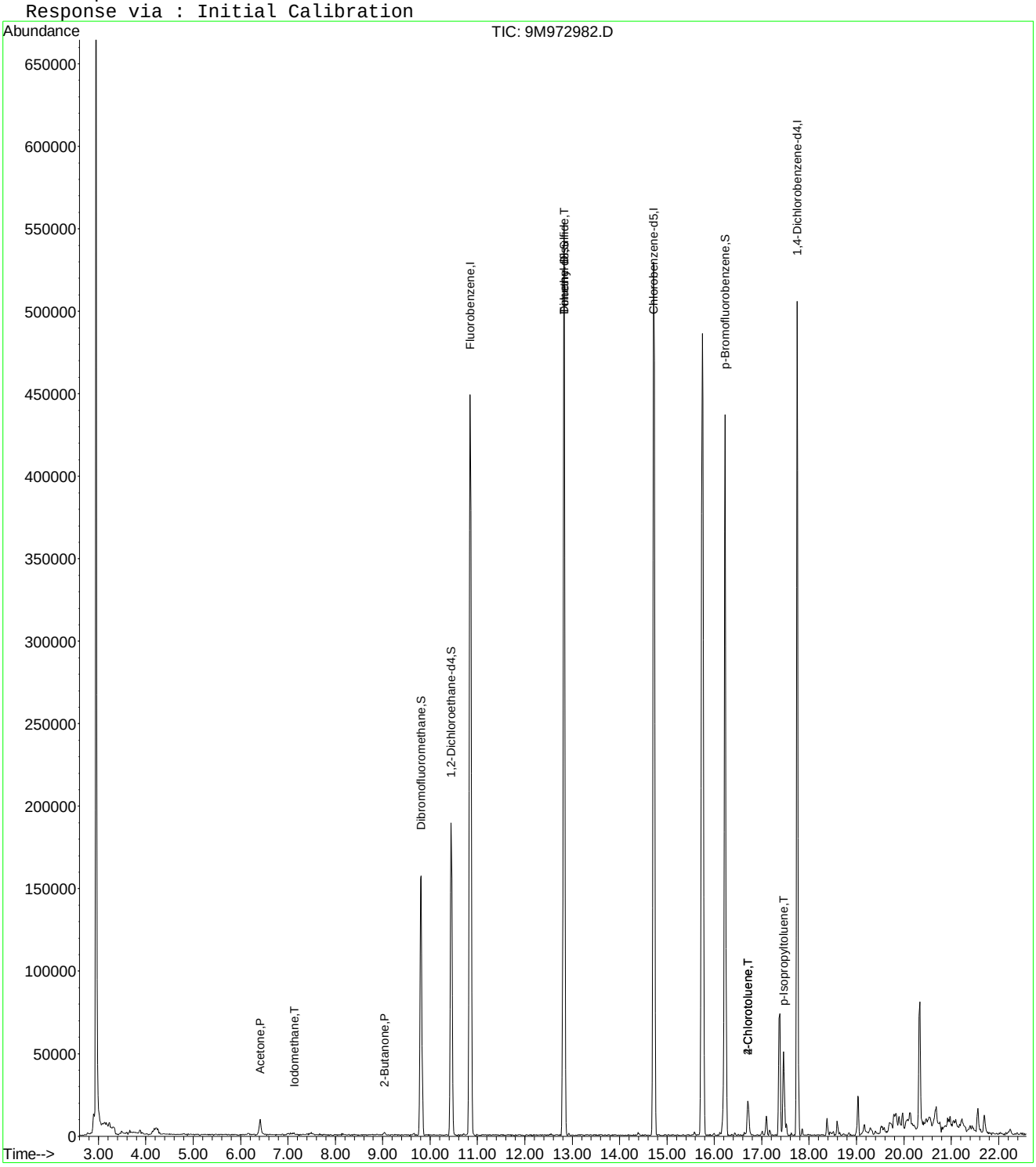

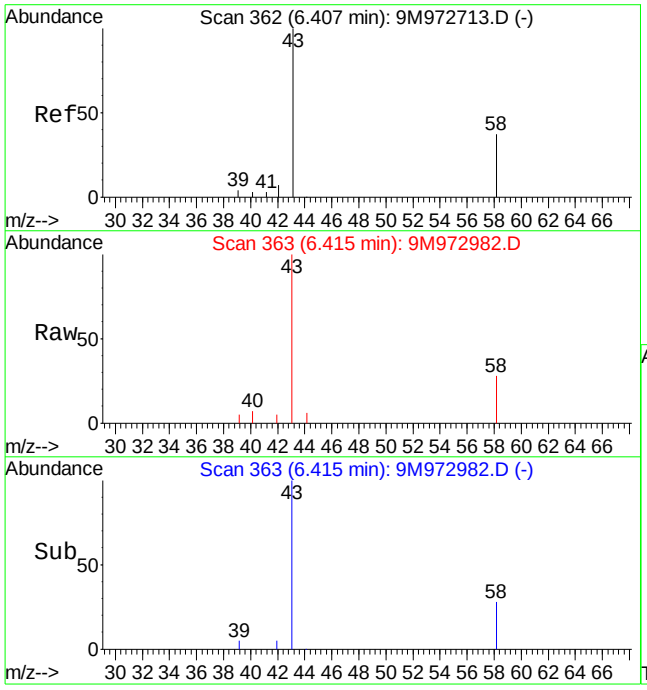

#13
Acetone
Concen: 13.95 ug/kg
RT: 6.41 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M972982.D
Acq: 1 Mar 2016 1:04

Tgt Ion: 43 Resp: 21224

Ion	Ratio	Lower	Upper
43	100		
58	29.5	16.9	39.3

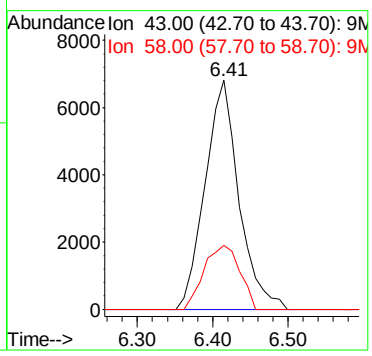

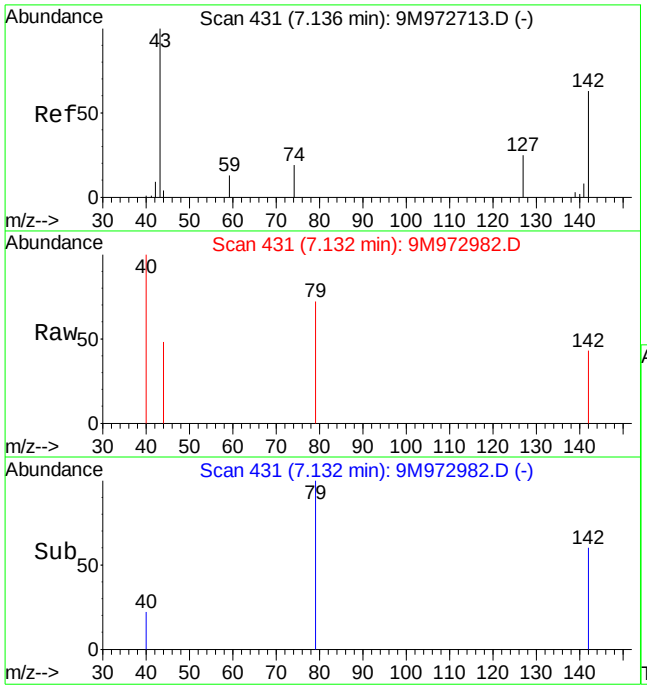

#17
Iodomethane
Concen: 2.93 ug/kg
RT: 7.13 min Scan# 431
Delta R.T. 0.00 min
Lab File: 9M972982.D
Acq: 1 Mar 2016 1:04

Tgt Ion:142 Resp: 211

Ion	Ratio	Lower	Upper
142	100		
127	0.0	25.1	58.7#

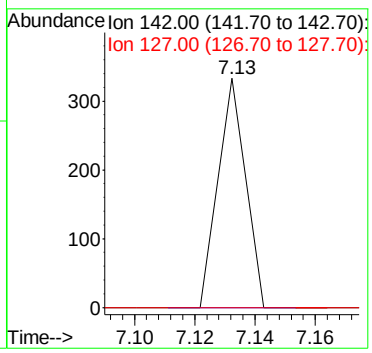

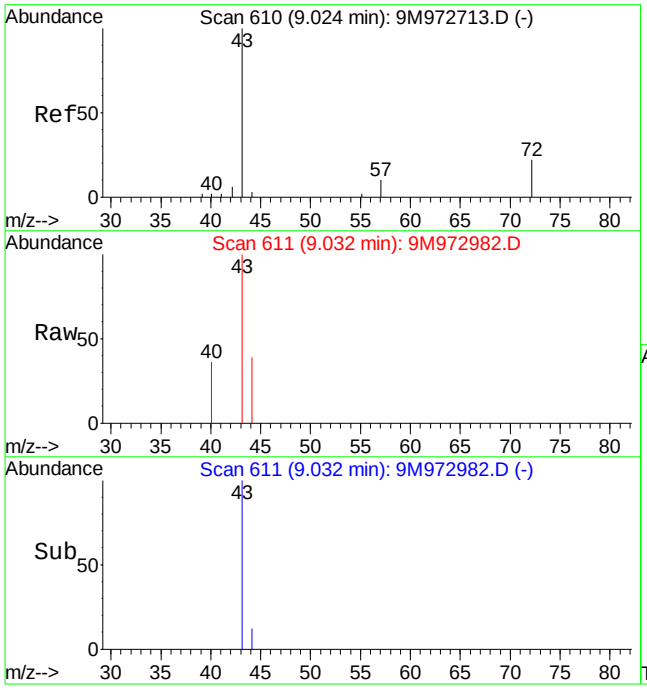

#29
2-Butanone
Concen: 1.53 ug/kg
RT: 9.03 min Scan# 611
Delta R.T. 0.00 min
Lab File: 9M972982.D
Acq: 1 Mar 2016 1:04

Tgt Ion: 43 Resp: 2635

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

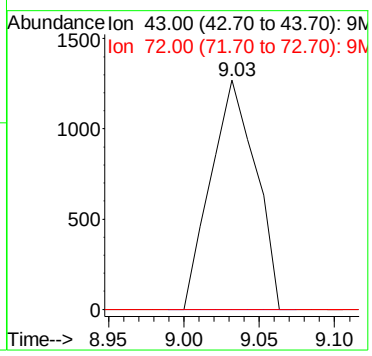

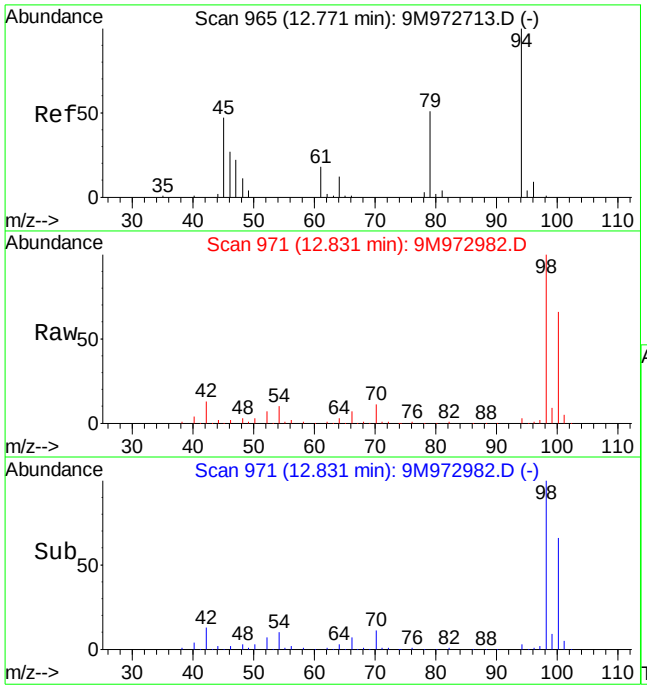

#56
Dimethyl Disulfide
Concen: 3.53 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.06 min
Lab File: 9M972982.D
Acq: 1 Mar 2016 1:04

Tgt Ion: 94 Resp: 14678

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

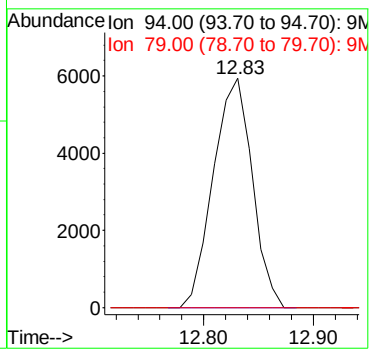

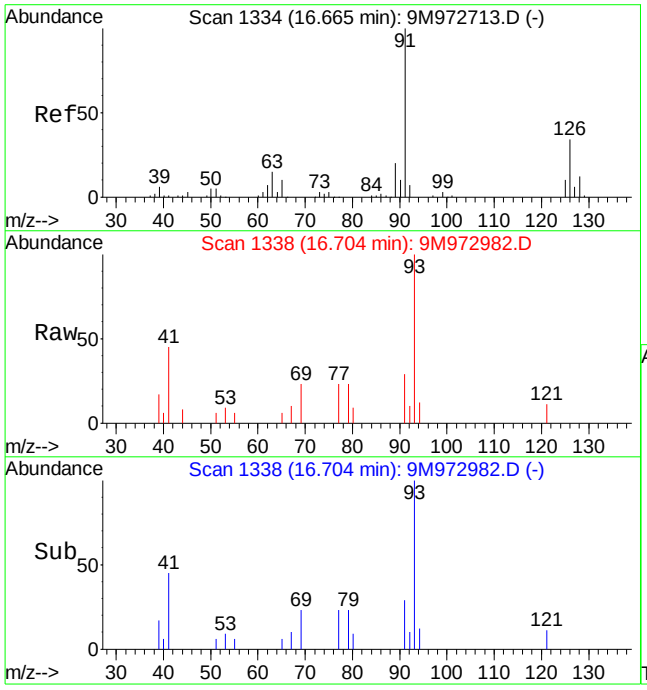

#85
2-Chlorotoluene
Concen: 0.53 ug/kg
RT: 16.70 min Scan# 1338
Delta R.T. 0.04 min
Lab File: 9M972982.D
Acq: 1 Mar 2016 1:04

Tgt Ion: 91 Resp: 4869

Ion	Ratio	Lower	Upper
91	100		
126	0.0	20.1	46.9#

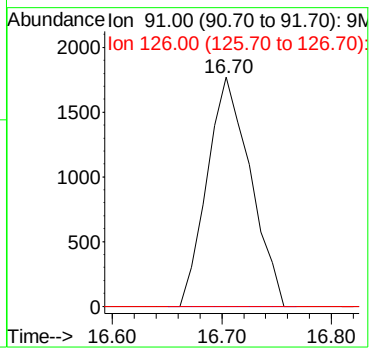

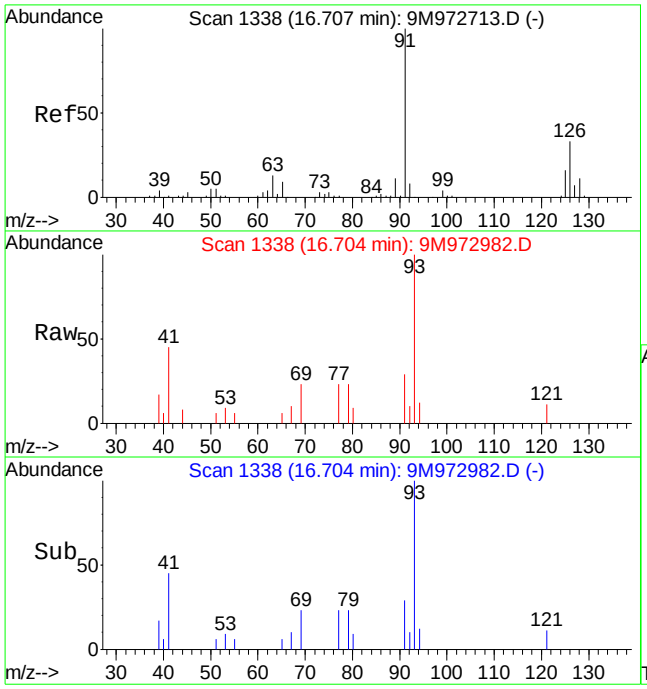

#86
4-Chlorotoluene
Concen: 0.58 ug/kg
RT: 16.70 min Scan# 1338
Delta R.T. 0.00 min
Lab File: 9M972982.D
Acq: 1 Mar 2016 1:04

Tgt Ion: 91 Resp: 4869

Ion	Ratio	Lower	Upper
91	100		
126	0.0	20.9	48.9#

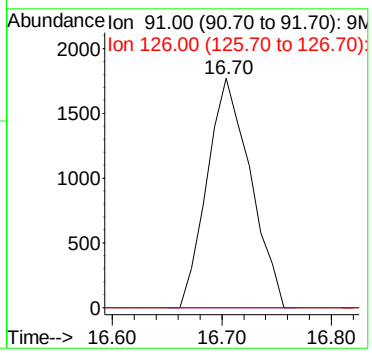

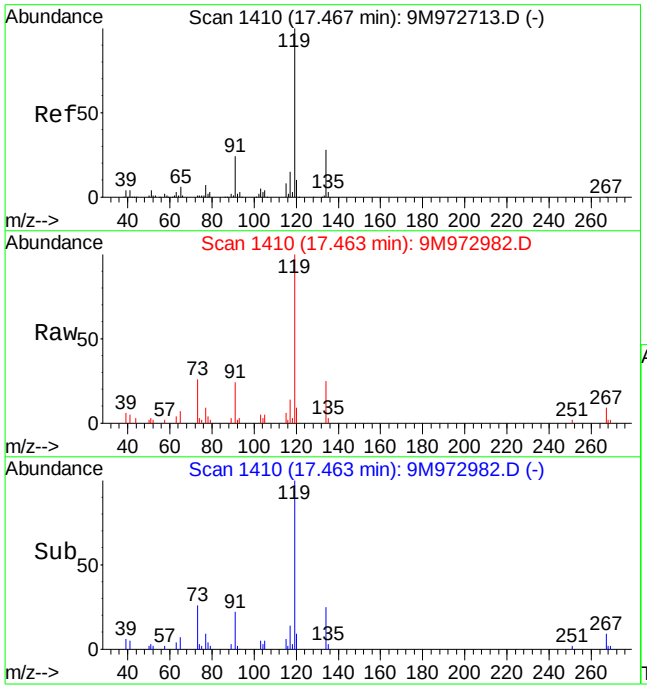

#91
p-Isopropyltoluene
Concen: 3.29 ug/kg
RT: 17.46 min Scan# 1410
Delta R.T. 0.00 min
Lab File: 9M972982.D
Acq: 1 Mar 2016 1:04

Tgt Ion:119 Resp: 36527

Ion	Ratio	Lower	Upper
119	100		
134	23.9	15.7	36.5

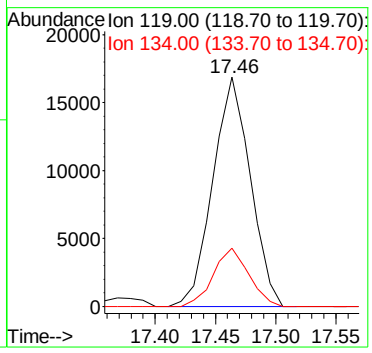

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972983.D Vial: 17
Acq On : 1 Mar 2016 1:36 Operator: FJB/JDS
Sample : L16021358-04 5.37g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 01 09:27:24 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	556527	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	397163	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	182994	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	149189	49.4550 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.90%		
43) 1,2-Dichloroethane-d4	10.45	65	186845	49.3647 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.72%		
58) Toluene-d8	12.83	98	541335	53.8862 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 107.78%		
79) p-Bromofluorobenzene	16.23	95	204642	57.4309 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 114.86%		

Target Compounds

					Qvalue
13) Acetone	6.41	43	12529	6.8424 ug/kg	94
17) Iodomethane	7.14	142	197	2.9186 ug/kg#	34
29) 2-Butanone	9.04	43	1429	0.7963 ug/kg#	58
56) Dimethyl Disulfide	12.83	94	15403	3.5681 ug/kg#	29
91) p-Isopropyltoluene	17.46	119	13366	1.1389 ug/kg	98

(#) = qualifier out of range (m) = manual integration
9M972983.D 8260SL.M Tue Mar 01 09:27:25 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972983.D Vial: 17
Acq On : 1 Mar 2016 1:36 Operator: FJB/JDS
Sample : L16021358-04 5.37g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 1 9:27 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

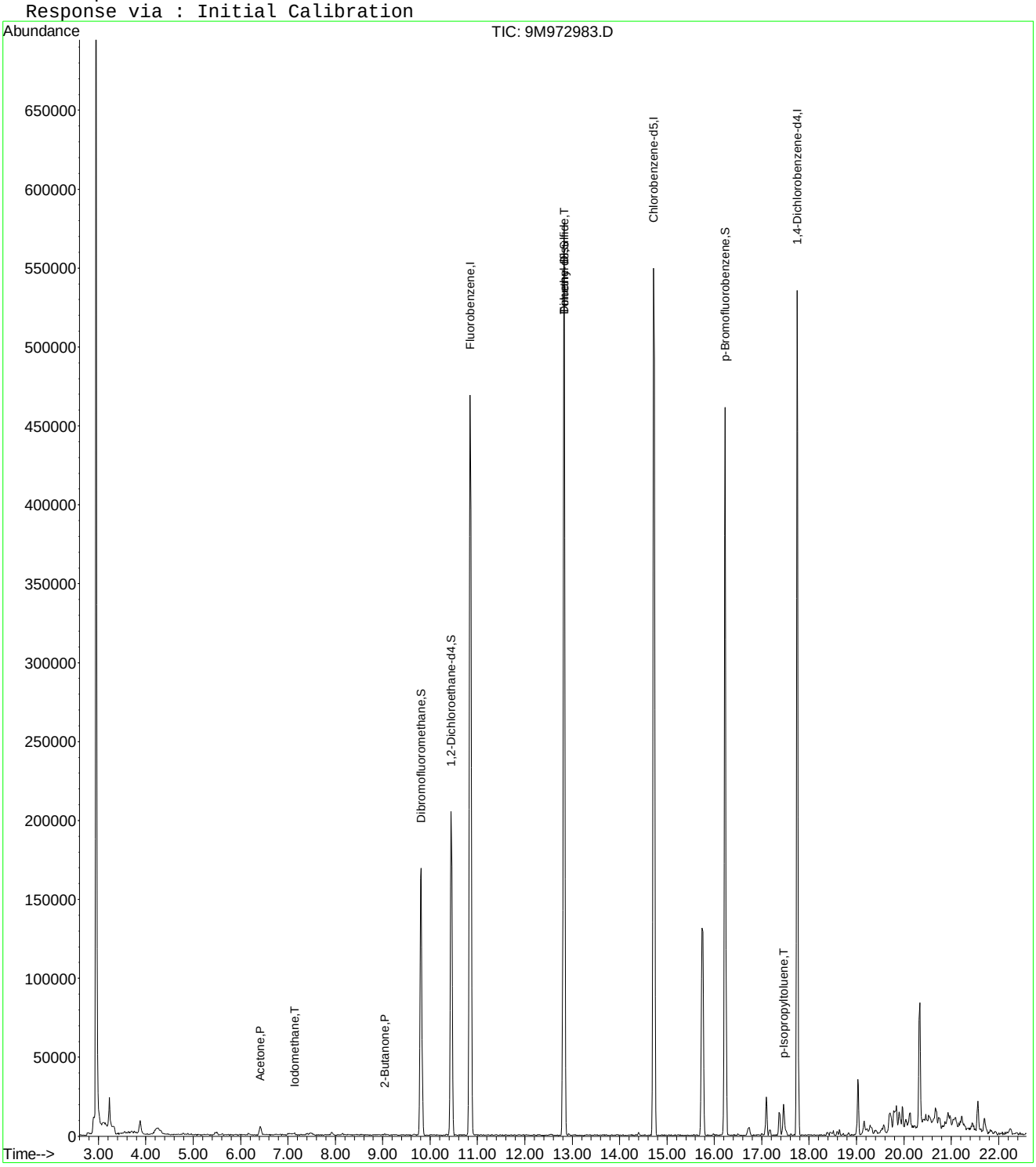

9M972983.D 8260SL.M Tue Mar 01 09:27:25 2016 Page 2

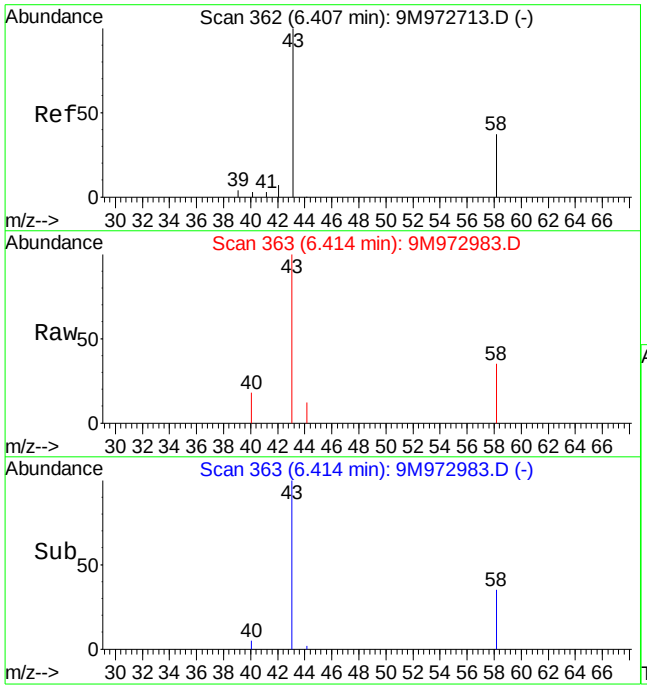

#13
Acetone
Concen: 6.84 ug/kg
RT: 6.41 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M972983.D
Acq: 1 Mar 2016 1:36

Tgt Ion: 43 Resp: 12529

Ion	Ratio	Lower	Upper
43	100		
58	31.3	16.9	39.3

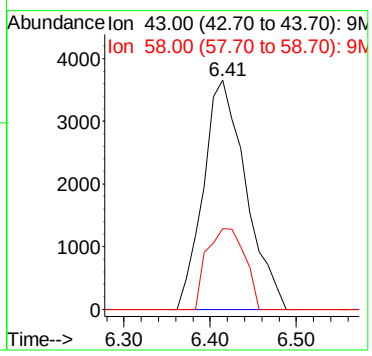

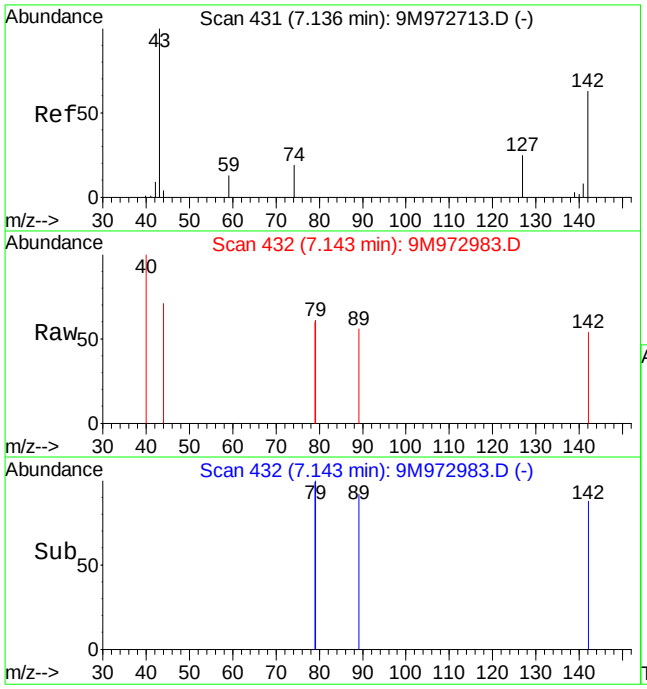

#17
Iodomethane
Concen: 2.92 ug/kg
RT: 7.14 min Scan# 432
Delta R.T. 0.01 min
Lab File: 9M972983.D
Acq: 1 Mar 2016 1:36

Tgt Ion:142 Resp: 197

Ion	Ratio	Lower	Upper
142	100		
127	0.0	25.1	58.7#

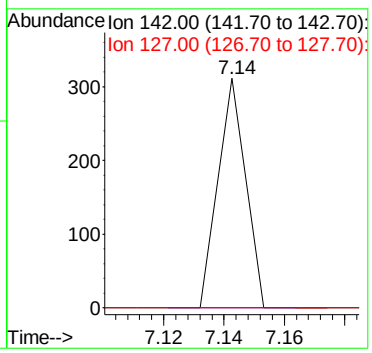

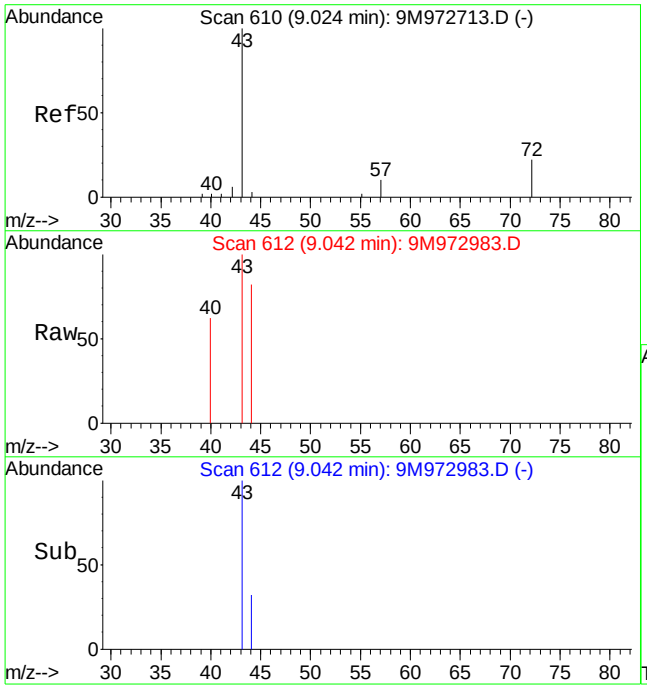

#29
2-Butanone
Concen: 0.80 ug/kg
RT: 9.04 min Scan# 612
Delta R.T. 0.01 min
Lab File: 9M972983.D
Acq: 1 Mar 2016 1:36

Tgt Ion: 43 Resp: 1429

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

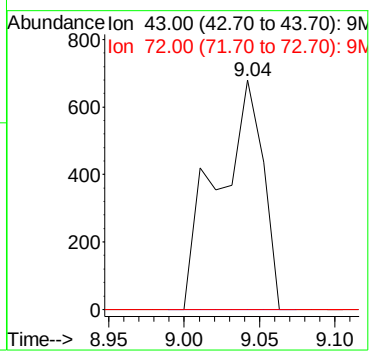

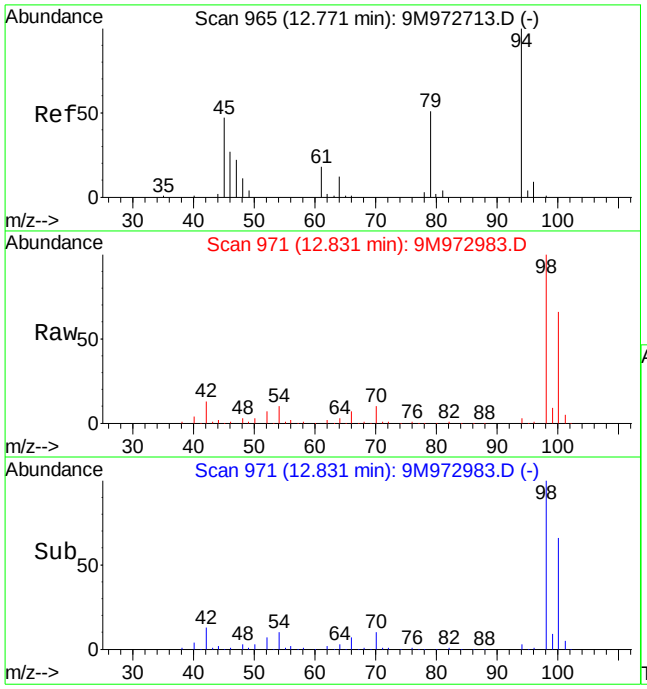

#56
Dimethyl Disulfide
Concen: 3.57 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.06 min
Lab File: 9M972983.D
Acq: 1 Mar 2016 1:36

Tgt Ion: 94 Resp: 15403

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

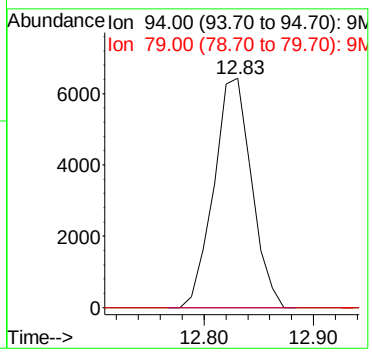

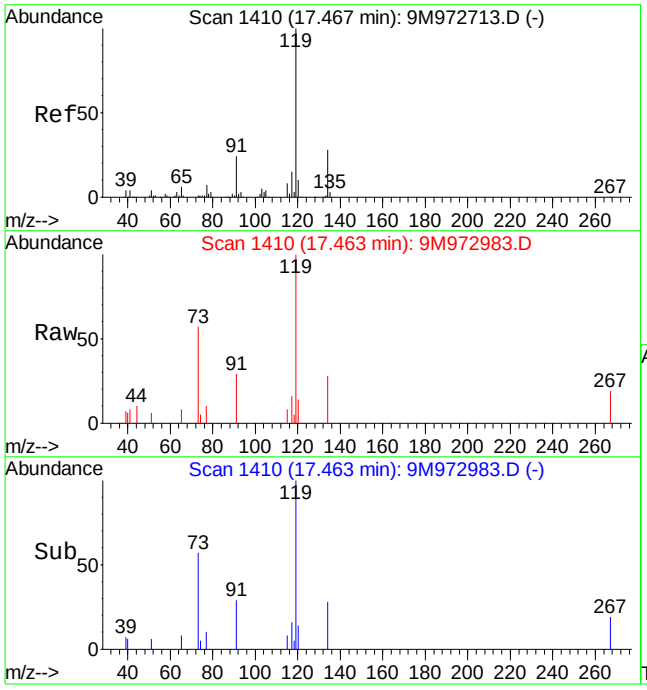

#91
p-Isopropyltoluene
Concen: 1.14 ug/kg
RT: 17.46 min Scan# 1410
Delta R.T. 0.00 min
Lab File: 9M972983.D
Acq: 1 Mar 2016 1:36

Tgt Ion:119 Resp: 13366

Ion	Ratio	Lower	Upper
119	100		
134	24.9	15.7	36.5

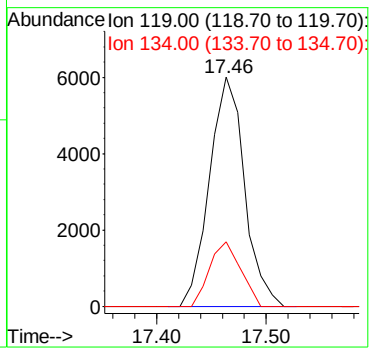

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972984.D Vial: 18
Acq On : 1 Mar 2016 2:06 Operator: FJB/JDS
Sample : L16021358-05 4.57g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 01 09:27:25 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	577665	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	403143	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	179911	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	152887	48.8263 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.66%		
43) 1,2-Dichloroethane-d4	10.45	65	187462	47.7154 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.44%		
58) Toluene-d8	12.82	98	546293	53.5731 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 107.14%		
79) p-Bromofluorobenzene	16.23	95	199402	56.9192 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 113.84%		

Target Compounds					Qvalue
13) Acetone	6.41	43	5906	1.7357 ug/kg	88
17) Iodomethane	7.14	142	219	2.9272 ug/kg#	34
56) Dimethyl Disulfide	12.83	94	15063	3.3616 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972984.D 8260SL.M Tue Mar 01 09:27:26 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972984.D Vial: 18
Acq On : 1 Mar 2016 2:06 Operator: FJB/JDS
Sample : L16021358-05 4.57g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 1 9:27 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

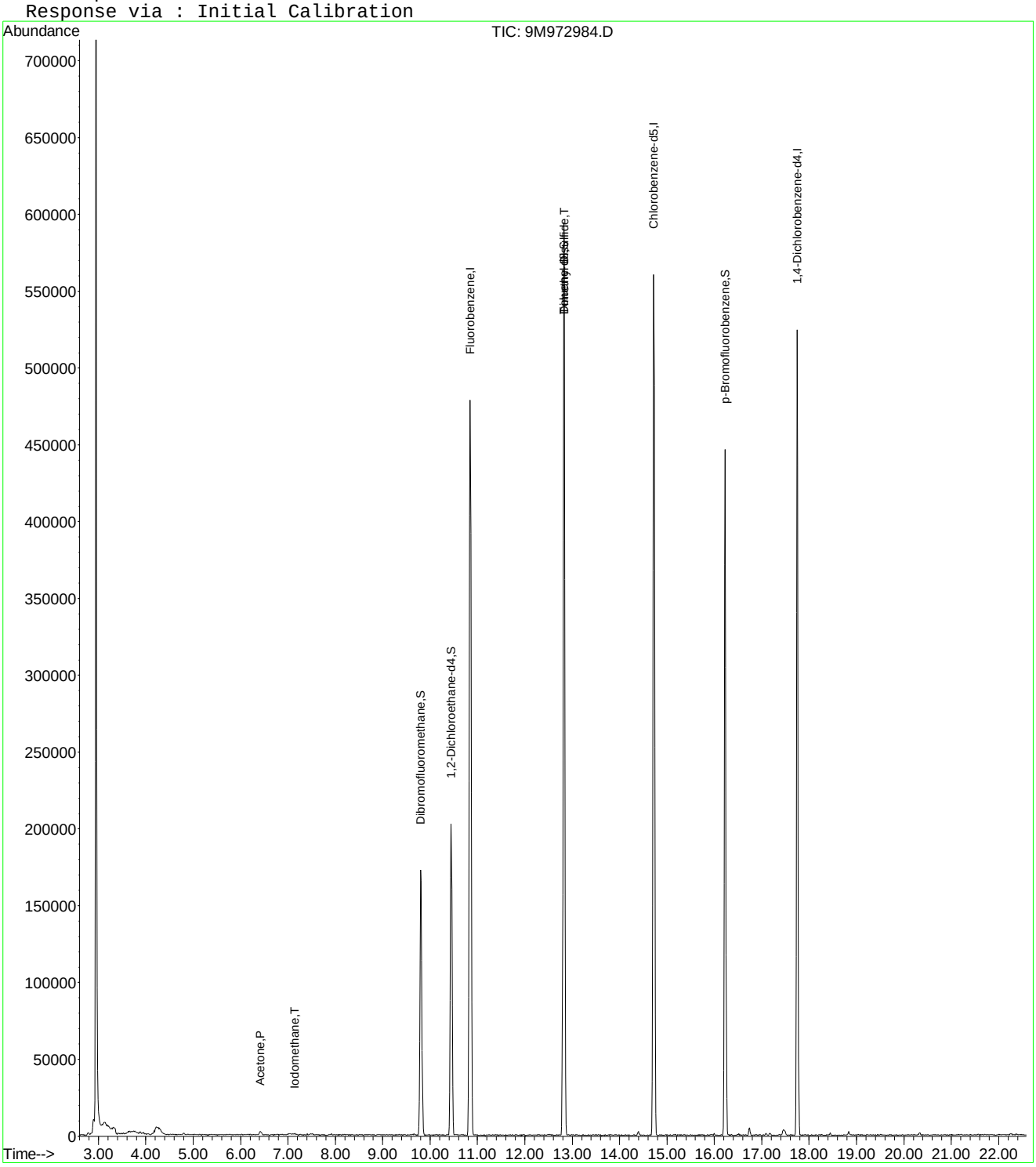

9M972984.D 8260SL.M Tue Mar 01 09:27:26 2016 Page 2

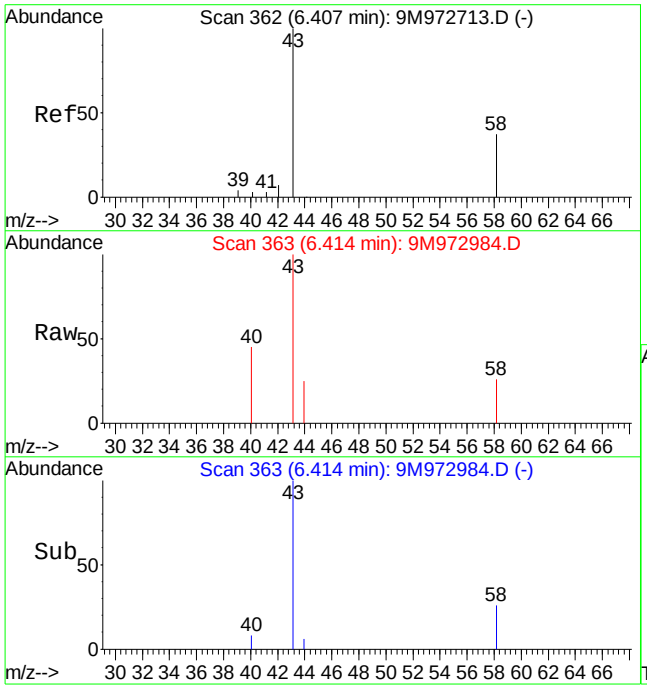

#13
Acetone
Concen: 1.74 ug/kg
RT: 6.41 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M972984.D
Acq: 1 Mar 2016 2:06

Tgt Ion: 43 Resp: 5906

Ion	Ratio	Lower	Upper
43	100		
58	21.5	16.9	39.3

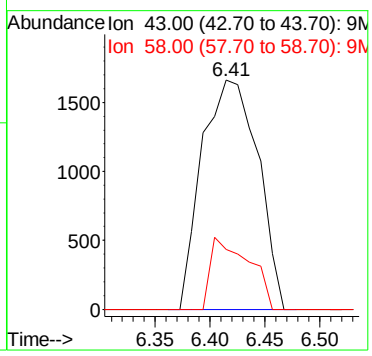

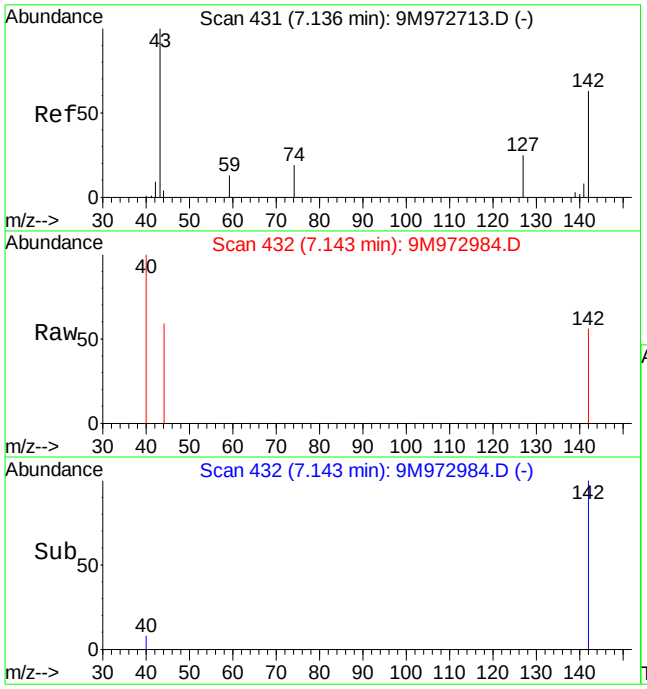

#17
Iodomethane
Concen: 2.93 ug/kg
RT: 7.14 min Scan# 432
Delta R.T. 0.01 min
Lab File: 9M972984.D
Acq: 1 Mar 2016 2:06

Tgt Ion:142 Resp: 219

Ion	Ratio	Lower	Upper
142	100		
127	0.0	25.1	58.7#

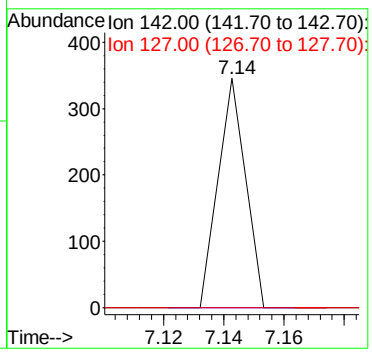

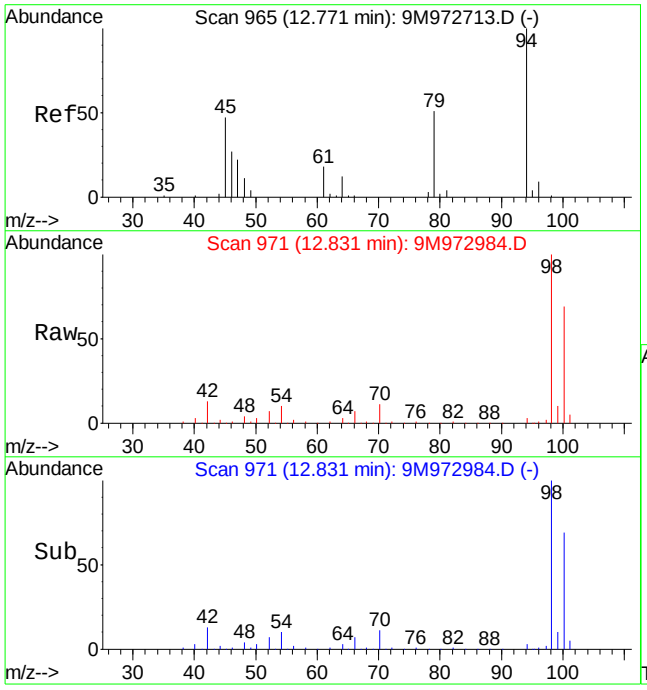

#56
Dimethyl Disulfide
Concen: 3.36 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.06 min
Lab File: 9M972984.D
Acq: 1 Mar 2016 2:06

Tgt Ion: 94 Resp: 15063

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

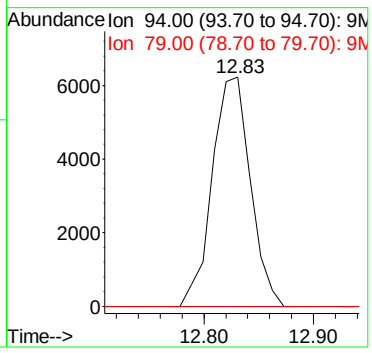

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972985.D Vial: 19
Acq On : 1 Mar 2016 2:36 Operator: FJB/JDS
Sample : L16021358-06 5.00g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 01 09:27:26 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	550575	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	391693	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.75	152	181264	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	148154	49.6428 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.28%		
43) 1,2-Dichloroethane-d4	10.45	65	189697	50.6600 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 101.32%		
58) Toluene-d8	12.83	98	527557	53.2480 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.50%		
79) p-Bromofluorobenzene	16.23	95	198850	56.3380 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 112.68%		

Target Compounds

					Qvalue
13) Acetone	6.41	43	3143	Below Cal	98
15) Tert-Butyl Alcohol	6.77	59	229	0.4068 ug/kg#	58
56) Dimethyl Disulfide	12.82	94	13985	3.2746 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972985.D 8260SL.M Tue Mar 01 09:27:27 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972985.D Vial: 19
Acq On : 1 Mar 2016 2:36 Operator: FJB/JDS
Sample : L16021358-06 5.00g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 1 9:27 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

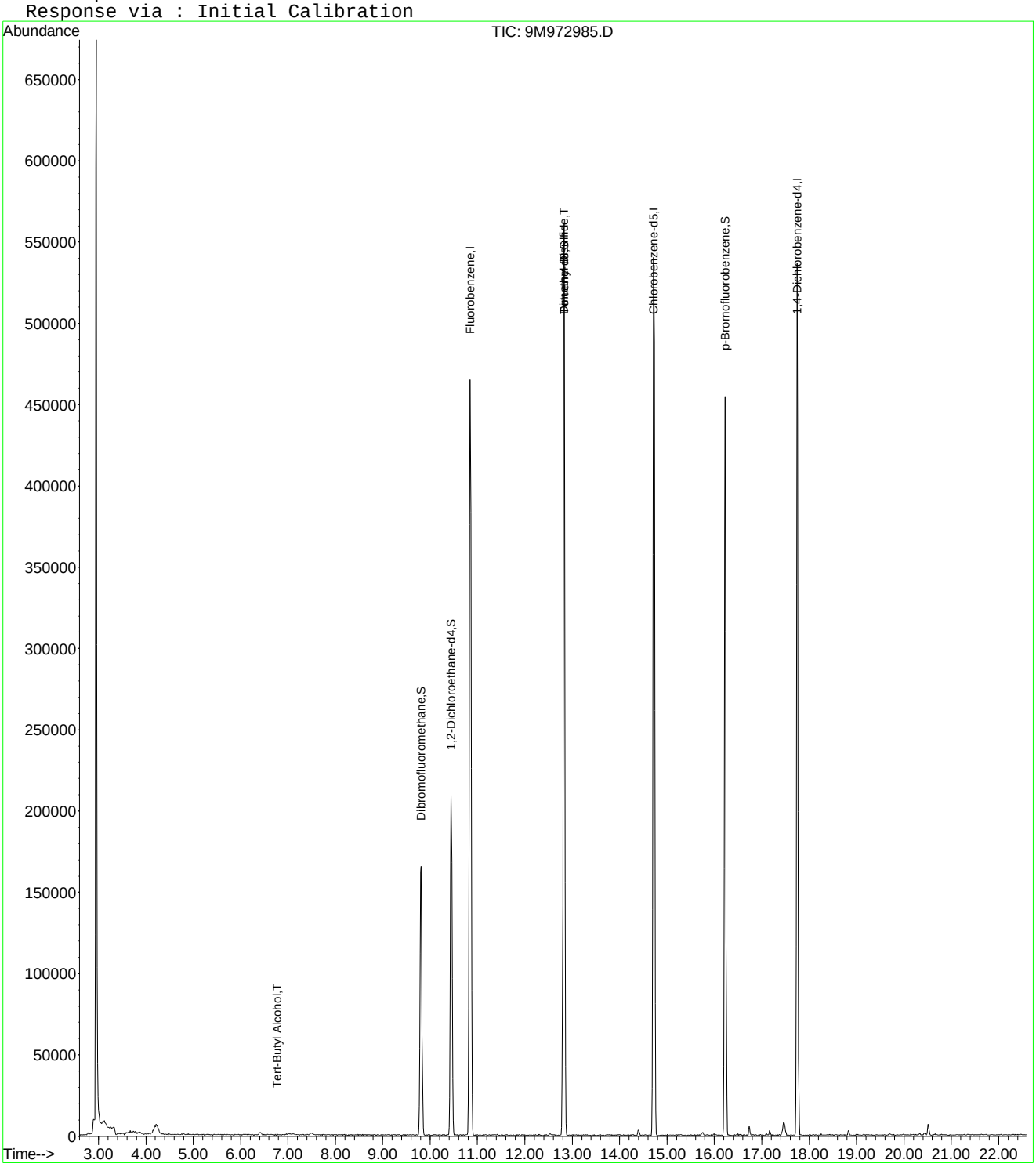

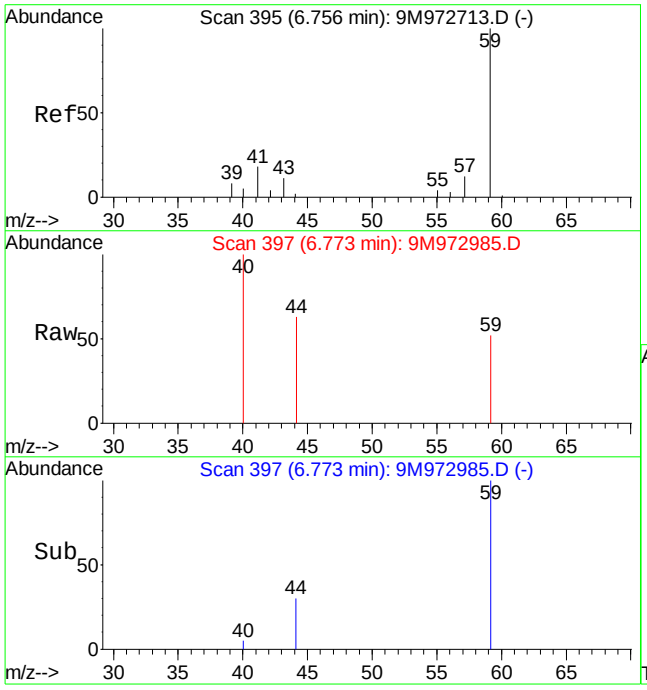

#15
Tert-Butyl Alcohol
Concen: 0.41 ug/kg
RT: 6.77 min Scan# 397
Delta R.T. 0.01 min
Lab File: 9M972985.D
Acq: 1 Mar 2016 2:36

Tgt Ion: 59 Resp: 229

Ion	Ratio	Lower	Upper
59	100		
41	0.0	14.1	32.9#
57	0.0	6.4	15.0#

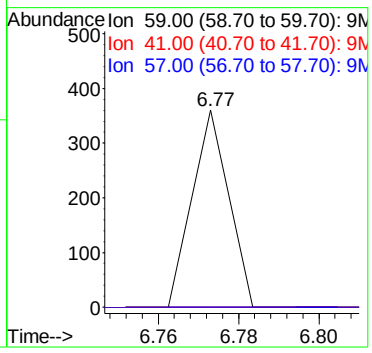

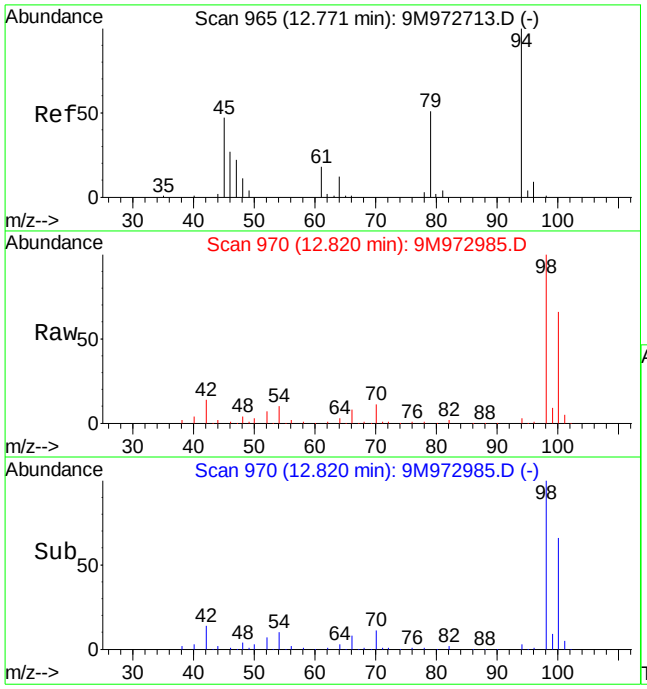

#56
Dimethyl Disulfide
Concen: 3.27 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M972985.D
Acq: 1 Mar 2016 2:36

Tgt Ion: 94 Resp: 13985

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

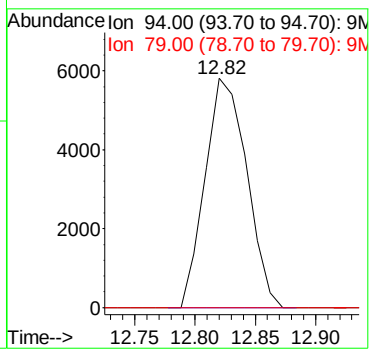

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972986.D Vial: 20
Acq On : 1 Mar 2016 3:06 Operator: FJB/JDS
Sample : L16021358-07 5.01g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 01 09:27:27 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	554504	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	390047	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	180534	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	146715	48.8123 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.62%		
43) 1,2-Dichloroethane-d4	10.45	65	179143	47.5025 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.00%		
58) Toluene-d8	12.82	98	527003	53.4166 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.84%		
79) p-Bromofluorobenzene	16.23	95	193777	55.1227 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 110.24%		

Target Compounds

					Qvalue
13) Acetone	6.42	43	8118	3.5708 ug/kg	98
15) Tert-Butyl Alcohol	6.76	59	477	0.8413 ug/kg#	58
17) Iodomethane	7.12	142	717	3.2379 ug/kg#	34
56) Dimethyl Disulfide	12.82	94	14825	3.4467 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972986.D 8260SL.M Tue Mar 01 09:27:28 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972986.D Vial: 20
Acq On : 1 Mar 2016 3:06 Operator: FJB/JDS
Sample : L16021358-07 5.01g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 1 9:27 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

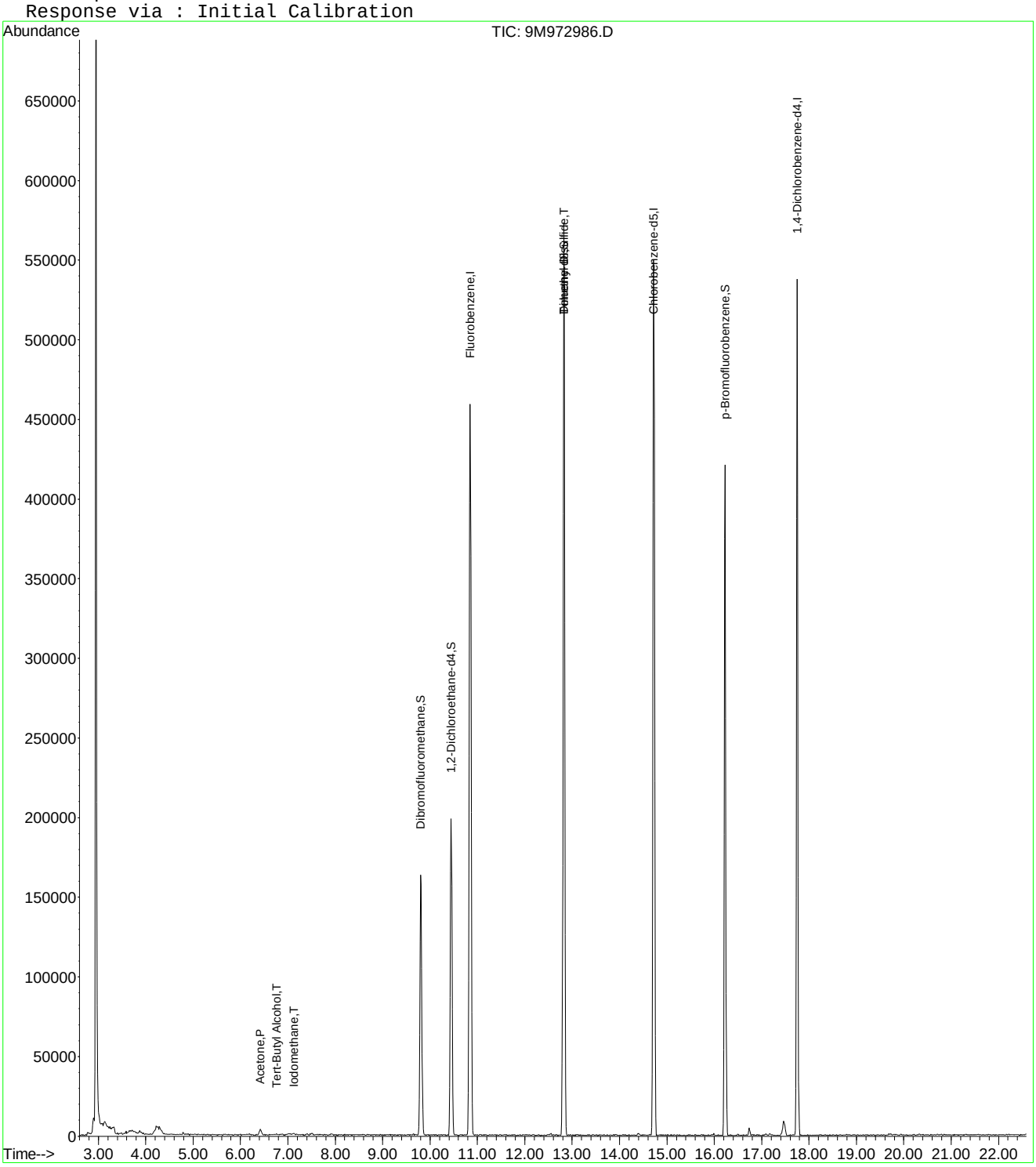

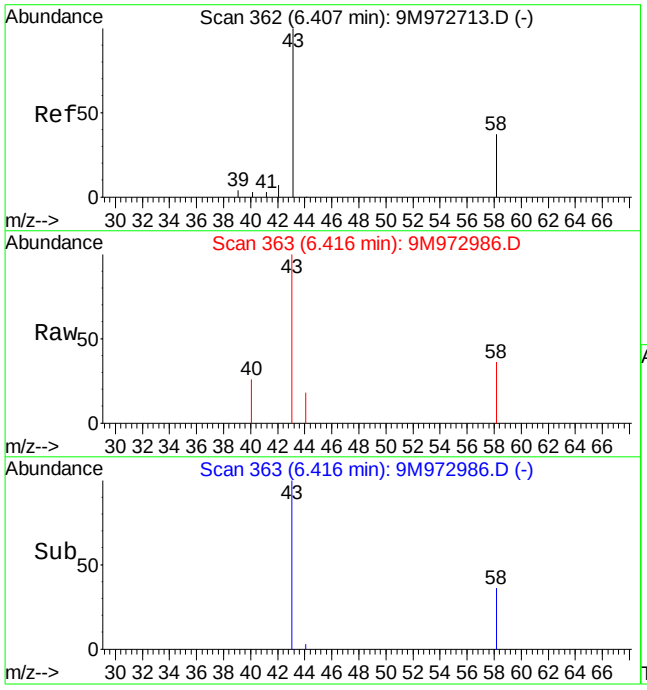

#13
Acetone
Concen: 3.57 ug/kg
RT: 6.42 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M972986.D
Acq: 1 Mar 2016 3:06

Tgt Ion: 43 Resp: 8118

Ion	Ratio	Lower	Upper
43	100		
58	26.9	16.9	39.3

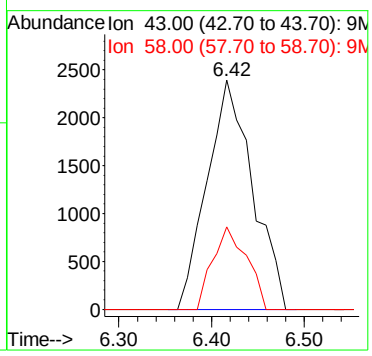

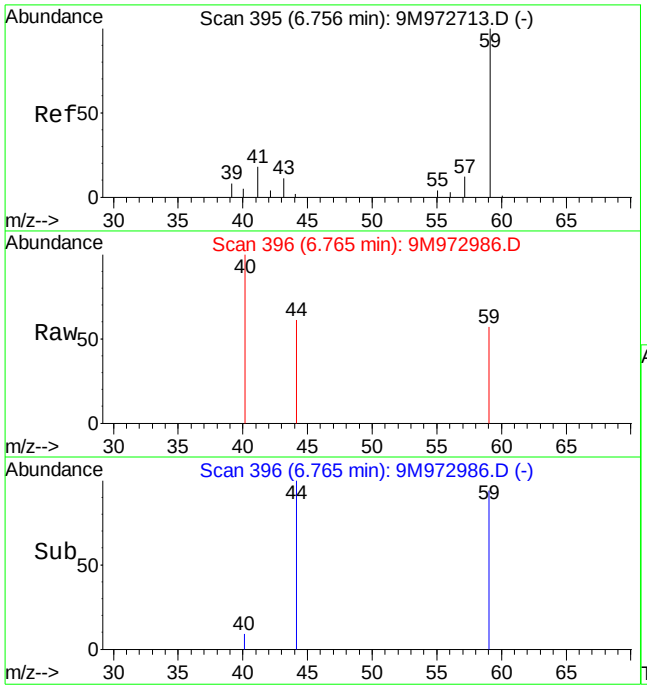

#15
Tert-Butyl Alcohol
Concen: 0.84 ug/kg
RT: 6.76 min Scan# 396
Delta R.T. 0.00 min
Lab File: 9M972986.D
Acq: 1 Mar 2016 3:06

Tgt Ion: 59 Resp: 477

Ion	Ratio	Lower	Upper
59	100		
41	0.0	14.1	32.9#
57	0.0	6.4	15.0#

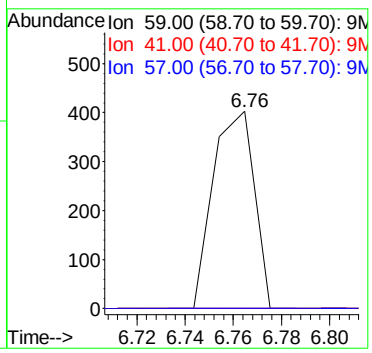

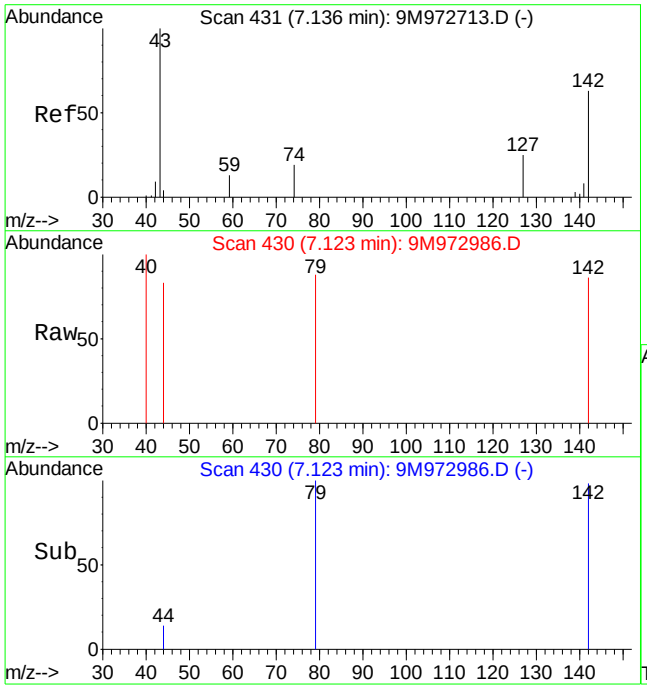

#17
Iodomethane
Concen: 3.24 ug/kg
RT: 7.12 min Scan# 430
Delta R.T. -0.01 min
Lab File: 9M972986.D
Acq: 1 Mar 2016 3:06

Tgt Ion:142 Resp: 717

Ion	Ratio	Lower	Upper
142	100		
127	0.0	25.1	58.7#

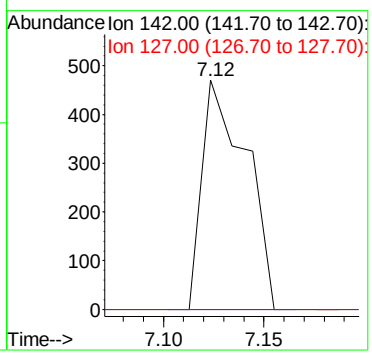

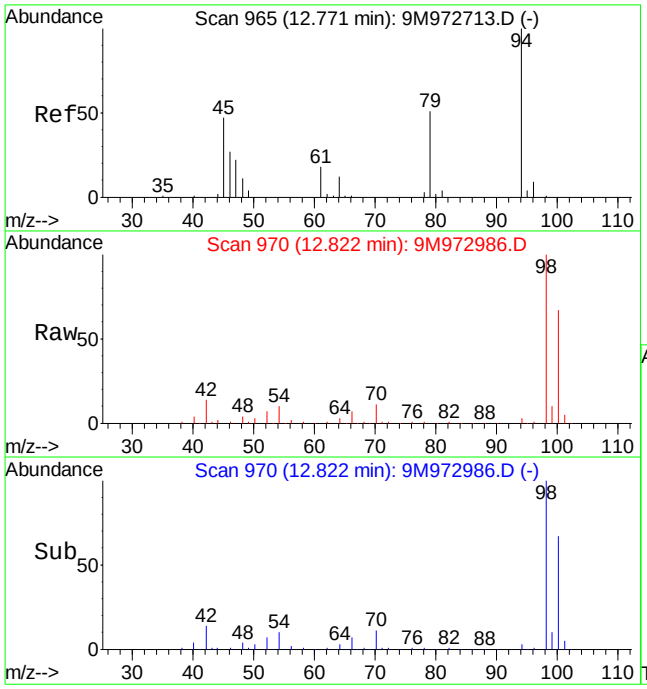

#56
Dimethyl Disulfide
Concen: 3.45 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M972986.D
Acq: 1 Mar 2016 3:06

Tgt Ion: 94 Resp: 14825

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

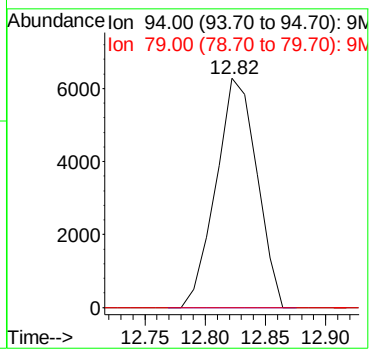

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972987.D Vial: 21
Acq On : 1 Mar 2016 3:37 Operator: FJB/JDS
Sample : L16021358-08 4.84g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 01 09:27:28 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	492393	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	356211	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	164608	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	133496	50.0168 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.04%		
43) 1,2-Dichloroethane-d4	10.45	65	177799	53.0932 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 106.18%		
58) Toluene-d8	12.83	98	477680	53.0163 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.04%		
79) p-Bromofluorobenzene	16.23	95	176710	55.1312 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 110.26%		

Target Compounds

					Qvalue
13) Acetone	6.40	43	5335	1.9895 ug/kg	87
17) Iodomethane	7.13	142	194	2.9322 ug/kg#	34
36) Tetrahydrofuran	9.79	42	434	0.4240 ug/kg#	43
56) Dimethyl Disulfide	12.83	94	13588	3.5576 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972987.D 8260SL.M Tue Mar 01 09:27:29 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972987.D Vial: 21
Acq On : 1 Mar 2016 3:37 Operator: FJB/JDS
Sample : L16021358-08 4.84g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 1 9:27 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

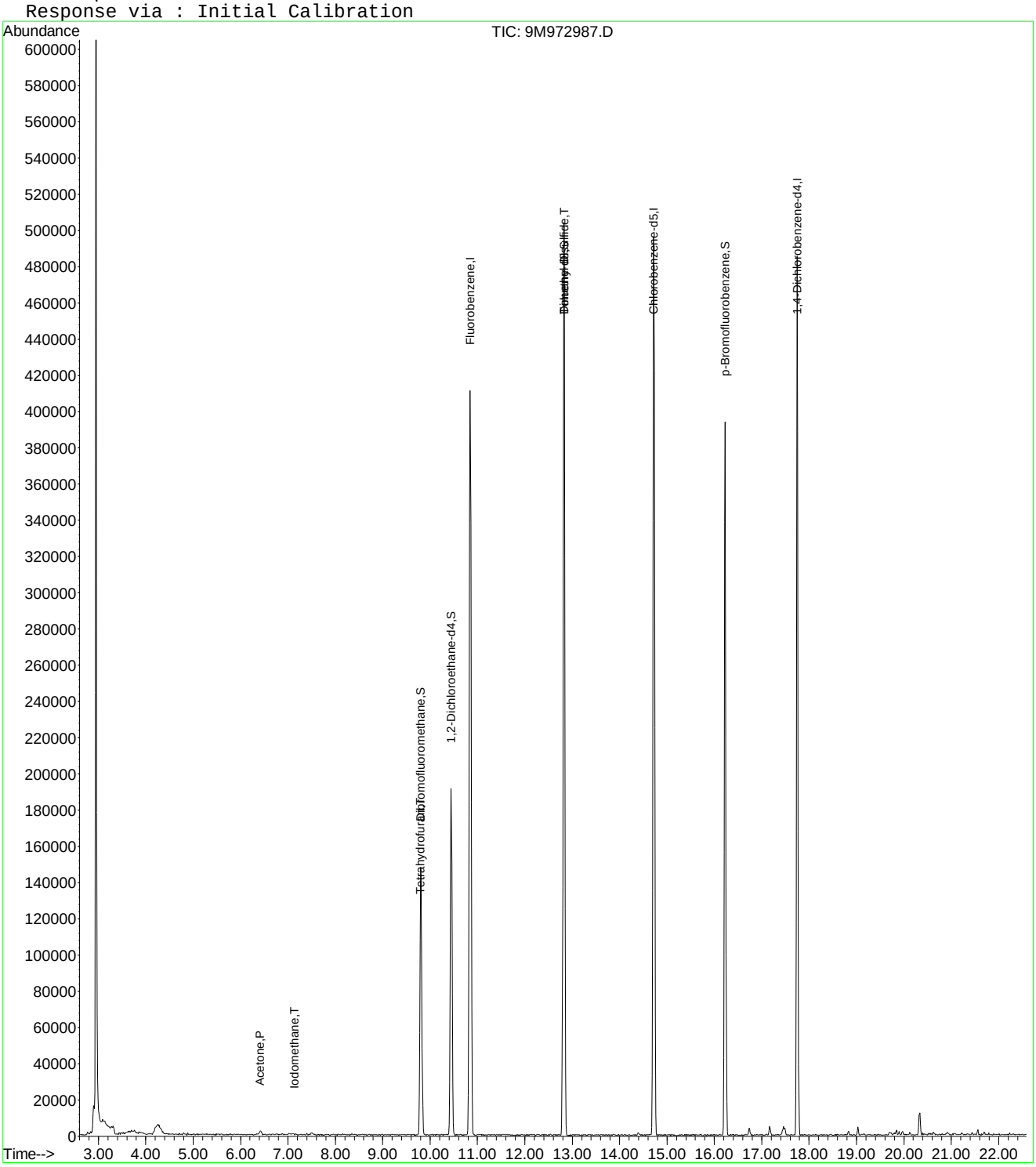

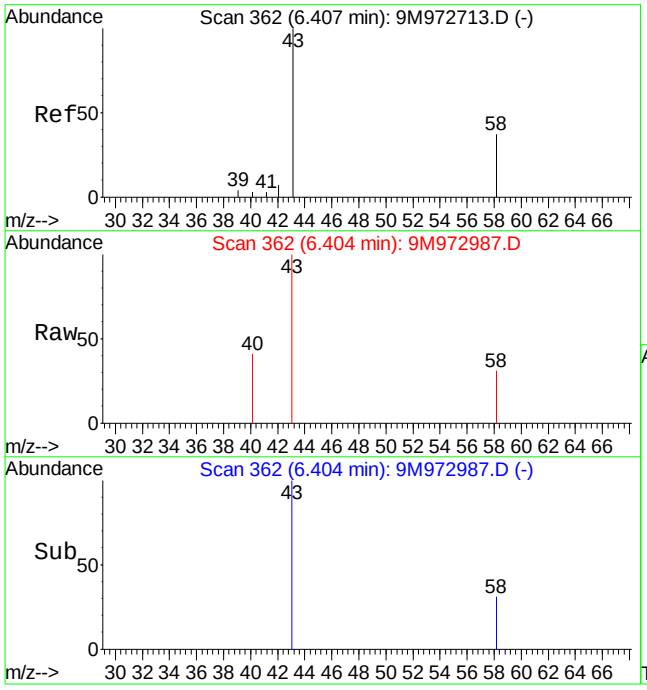

#13
Acetone
Concen: 1.99 ug/kg
RT: 6.40 min Scan# 362
Delta R.T. -0.01 min
Lab File: 9M972987.D
Acq: 1 Mar 2016 3:37

Tgt Ion: 43 Resp: 5335

Ion	Ratio	Lower	Upper
43	100		
58	21.3	16.9	39.3

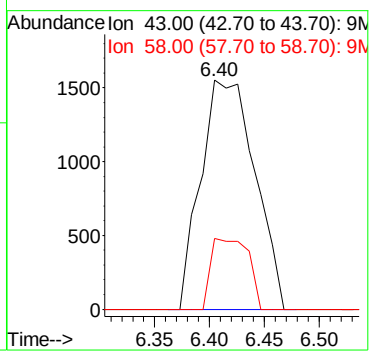

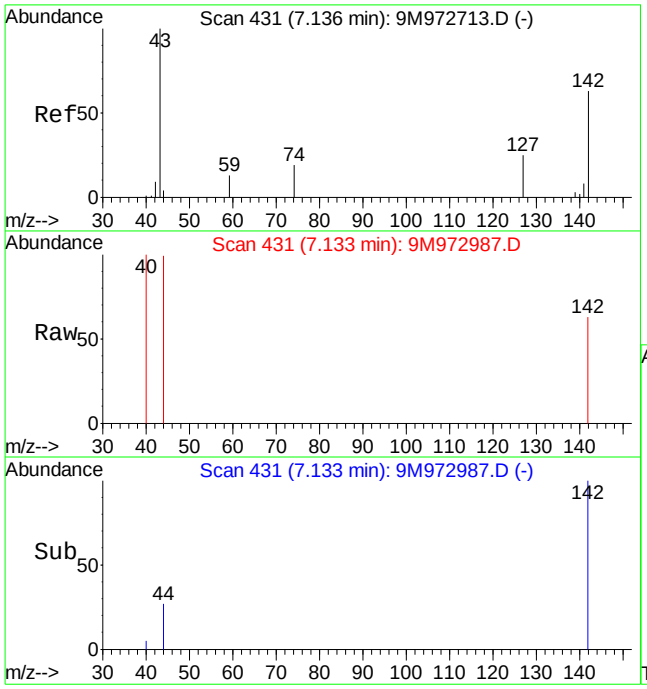

#17
Iodomethane
Concen: 2.93 ug/kg
RT: 7.13 min Scan# 431
Delta R.T. 0.00 min
Lab File: 9M972987.D
Acq: 1 Mar 2016 3:37

Tgt Ion:142 Resp: 194

Ion	Ratio	Lower	Upper
142	100		
127	0.0	25.1	58.7#

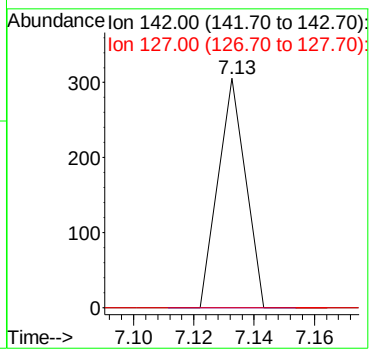

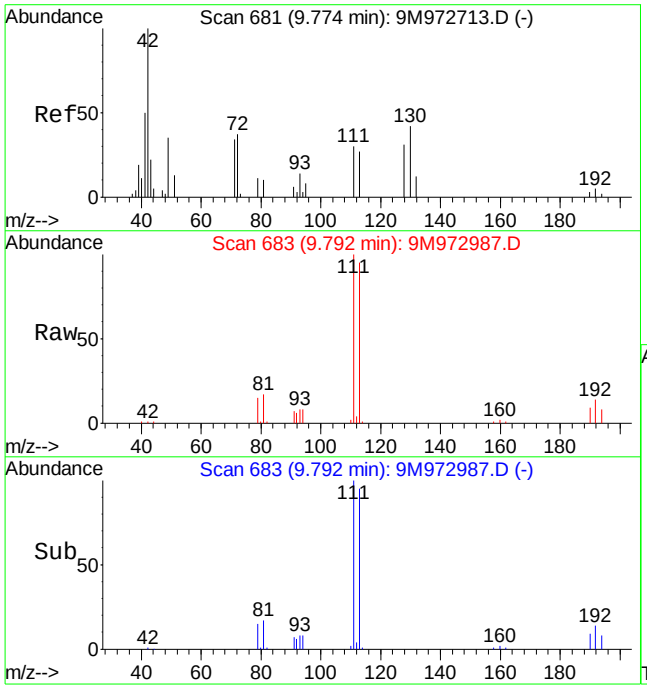

#36
Tetrahydrofuran
Concen: 0.42 ug/kg
RT: 9.79 min Scan# 683
Delta R.T. 0.01 min
Lab File: 9M972987.D
Acq: 1 Mar 2016 3:37

Tgt Ion: 42 Resp: 434

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

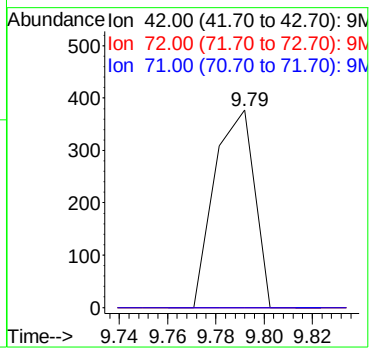

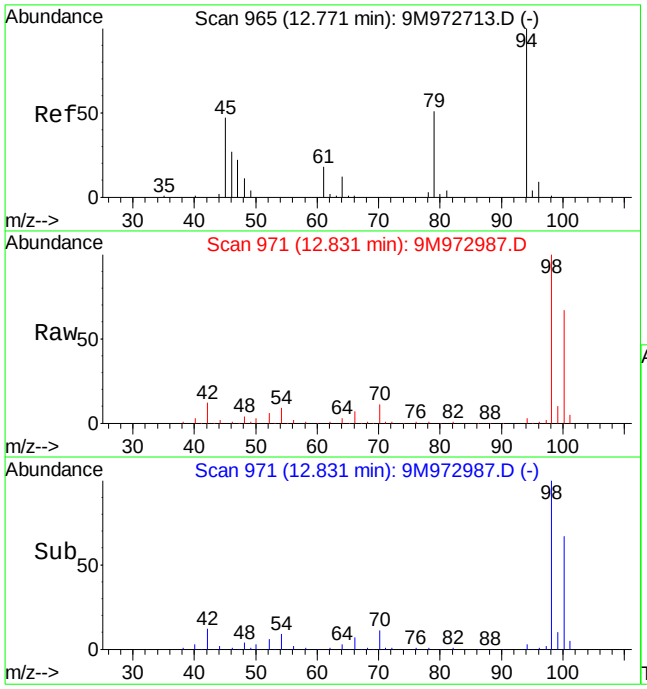

#56
Dimethyl Disulfide
Concen: 3.56 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.07 min
Lab File: 9M972987.D
Acq: 1 Mar 2016 3:37

Tgt Ion: 94 Resp: 13588

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

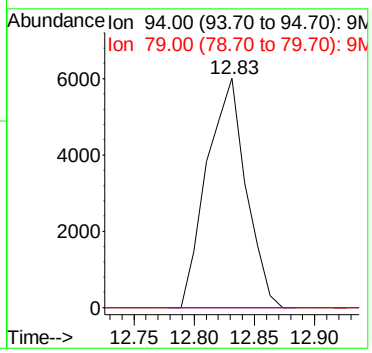

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972988.D Vial: 22
Acq On : 1 Mar 2016 4:07 Operator: FJB/JDS
Sample : L16021358-09 4.60g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 01 09:27:29 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	484214	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	337722	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	156364	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	125839	47.9444 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.88%		
43) 1,2-Dichloroethane-d4	10.45	65	158386	48.0951 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.20%		
58) Toluene-d8	12.82	98	457011	53.4992 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 107.00%		
79) p-Bromofluorobenzene	16.23	95	169191	55.5684 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 111.14%		

Target Compounds					Qvalue
13) Acetone	6.41	43	5937	2.5822 ug/kg	89
56) Dimethyl Disulfide	12.82	94	12597	3.3539 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972988.D 8260SL.M Tue Mar 01 09:27:30 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972988.D Vial: 22
Acq On : 1 Mar 2016 4:07 Operator: FJB/JDS
Sample : L16021358-09 4.60g 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 1 9:27 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

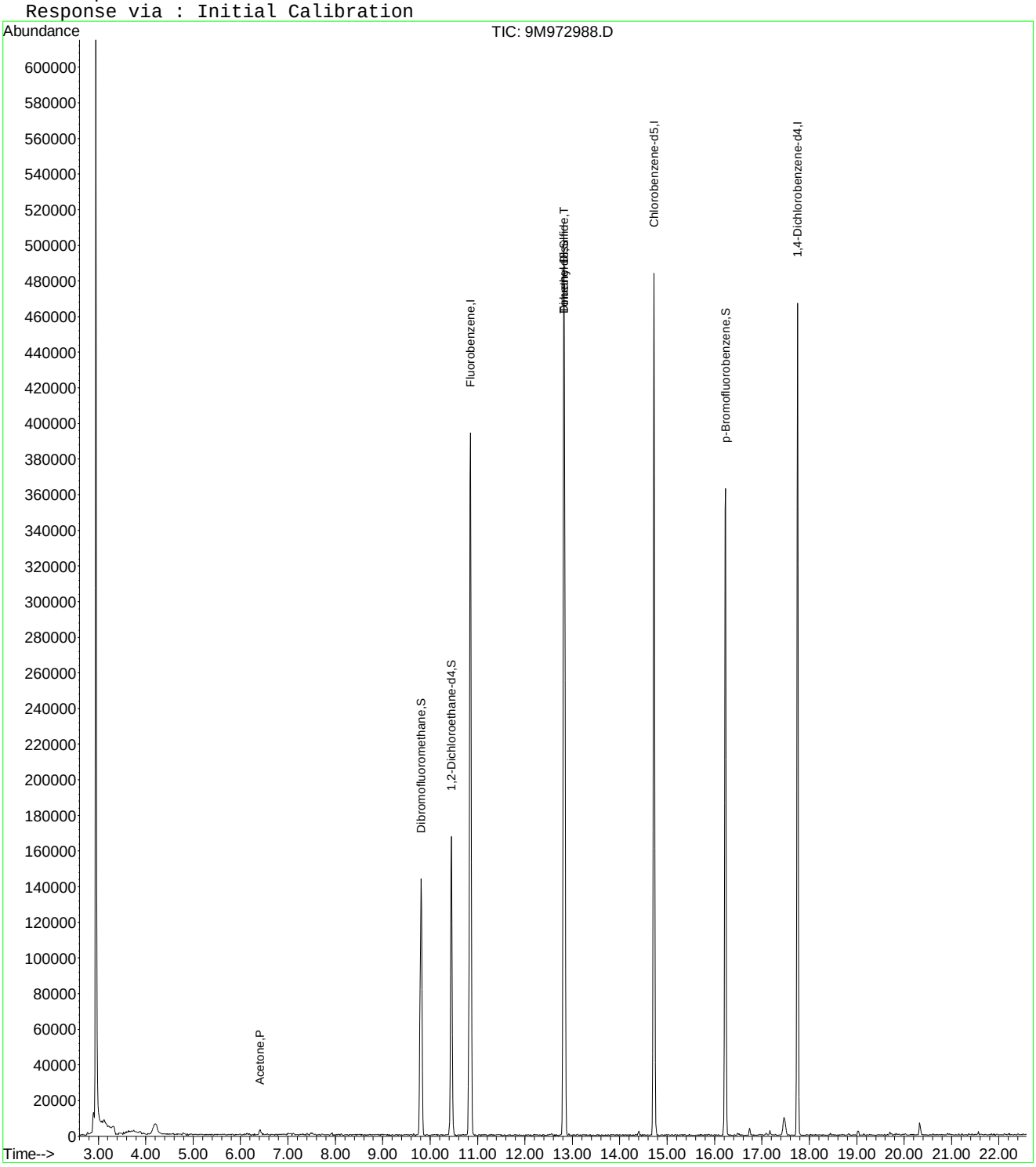

9M972988.D 8260SL.M Tue Mar 01 09:27:30 2016 Page 2

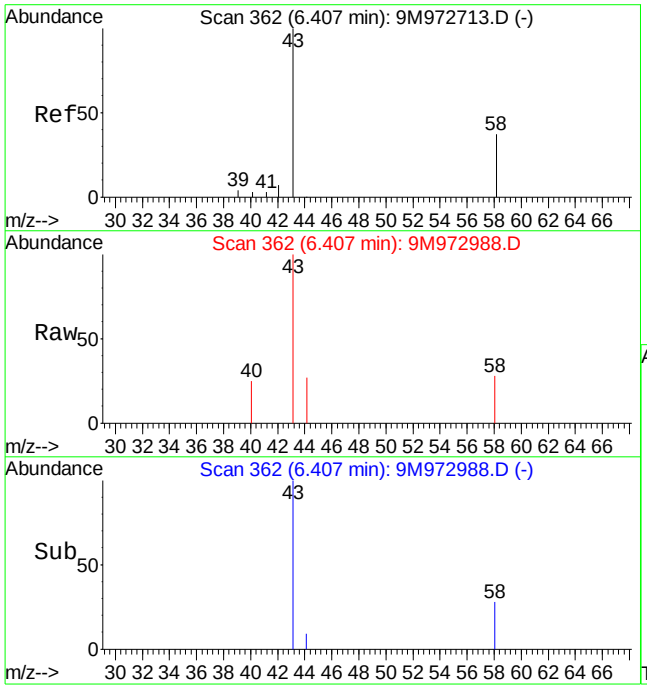

#13
Acetone
Concen: 2.58 ug/kg
RT: 6.41 min Scan# 362
Delta R.T. -0.01 min
Lab File: 9M972988.D
Acq: 1 Mar 2016 4:07

Tgt Ion: 43 Resp: 5937

Ion	Ratio	Lower	Upper
43	100		
58	22.4	16.9	39.3

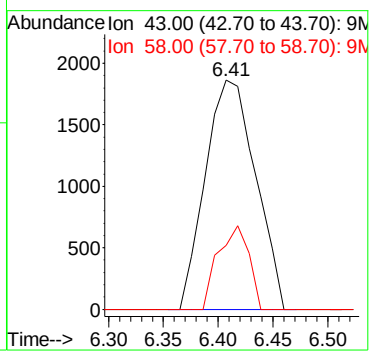

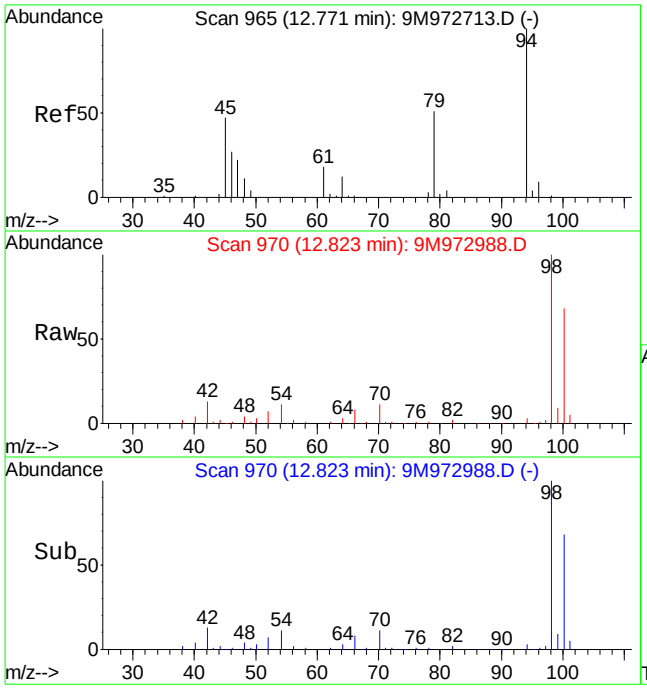

#56
Dimethyl Disulfide
Concen: 3.35 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M972988.D
Acq: 1 Mar 2016 4:07

Tgt Ion: 94 Resp: 12597

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

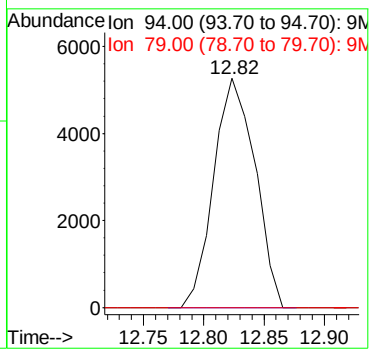

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972472.D Vial: 3
Acq On : 25 Jan 2016 11:22 Operator: FJB
Sample : WG555000-02 5ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:05 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	367739	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	266763	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.77	152	148882	50.00 ug/kg	0.01

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	1974	5.3580 ug/kg#	1
3) 3-Chloro-1-propene	7.23	41	18322	5.0468 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	19639	4.7564 ug/kg	98
5) Ethyl Acetate	9.24	43	12755	5.2595 ug/kg	91
6) Methacrylonitrile	9.40	67	3744	4.7691 ug/kg	95
7) Isobutyl Alcohol	9.42	43	1055	12.9700 ug/kg#	62
8) 1-Butanol	10.36	56	203	11.8711 ug/kg#	26
9) Methyl methacrylate	11.56	41	8689	4.6908 ug/kg	95
10) 2-Nitropropane	11.90	43	2531	4.2058 ug/kg	96

(#) = qualifier out of range (m) = manual integration
9M972472.D A9FOO_SL.M Wed Jan 27 11:22:42 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972472.D Vial: 3
Acq On : 25 Jan 2016 11:22 Operator: FJB
Sample : WG555000-02 5ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

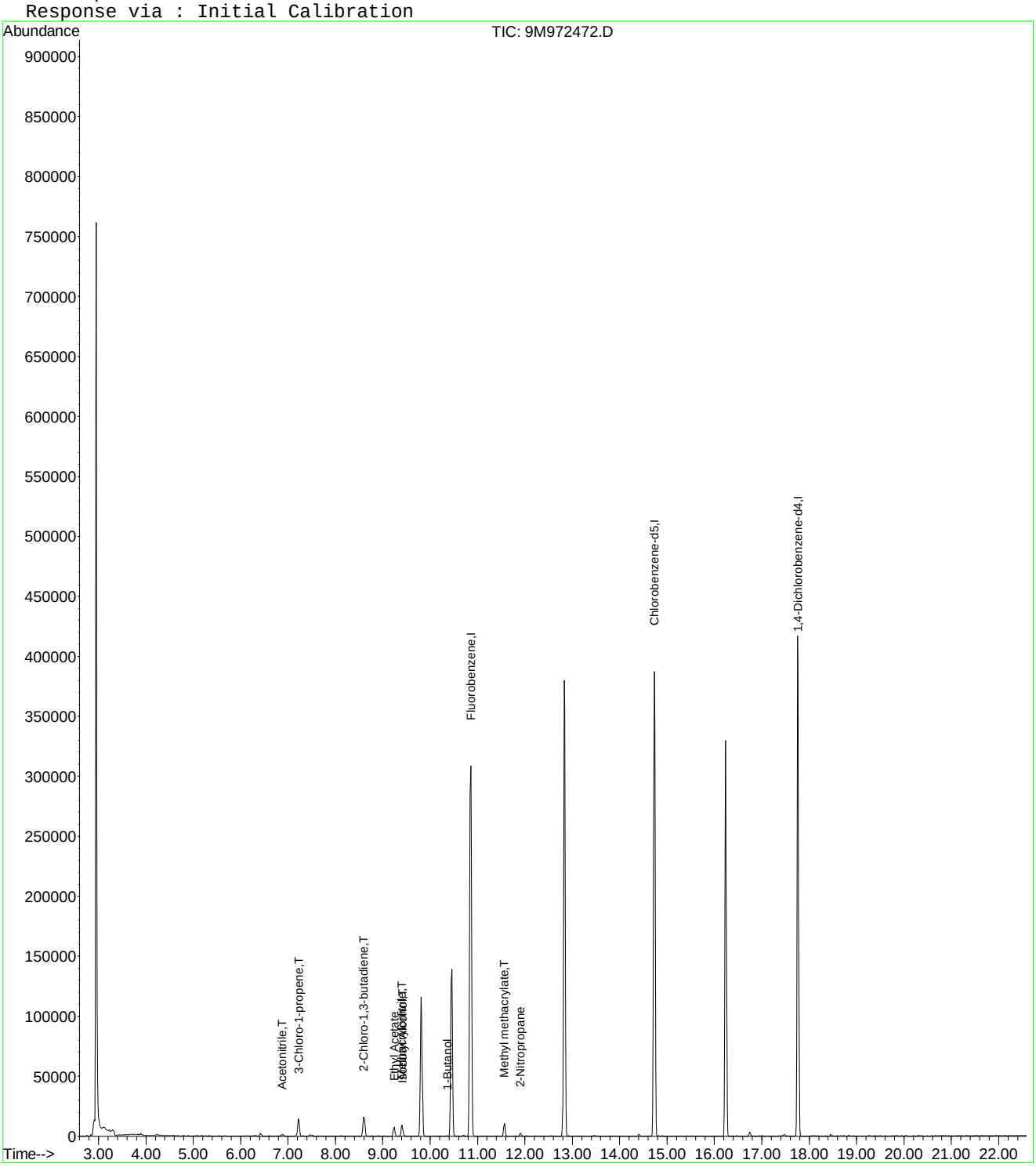

9M972472.D A9FOO_SL.M Wed Jan 27 11:22:42 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972473.D Vial: 4
Acq On : 25 Jan 2016 11:52 Operator: FJB
Sample : WG555000-03 20ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:05 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	359691	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	265773	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	149223	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	7669	21.2815 ug/kg#	77
3) 3-Chloro-1-propene	7.23	41	75360	21.2224 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	82865	20.5181 ug/kg	100
5) Ethyl Acetate	9.23	43	47912	20.1986 ug/kg	97
6) Methacrylonitrile	9.40	67	15740	20.4980 ug/kg	98
7) Isobutyl Alcohol	9.42	43	5287	37.9280 ug/kg	95
8) 1-Butanol	10.35	56	1509	22.3153 ug/kg#	81
9) Methyl methacrylate	11.56	41	35437	19.5588 ug/kg	98
10) 2-Nitropropane	11.90	43	10433	17.7247 ug/kg	98
12) Cyclohexanone	16.01	55	2157	16.3929 ug/kg#	86

(#) = qualifier out of range (m) = manual integration
9M972473.D A9FOO_SL.M Wed Jan 27 11:22:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972473.D Vial: 4
Acq On : 25 Jan 2016 11:52 Operator: FJB
Sample : WG555000-03 20ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

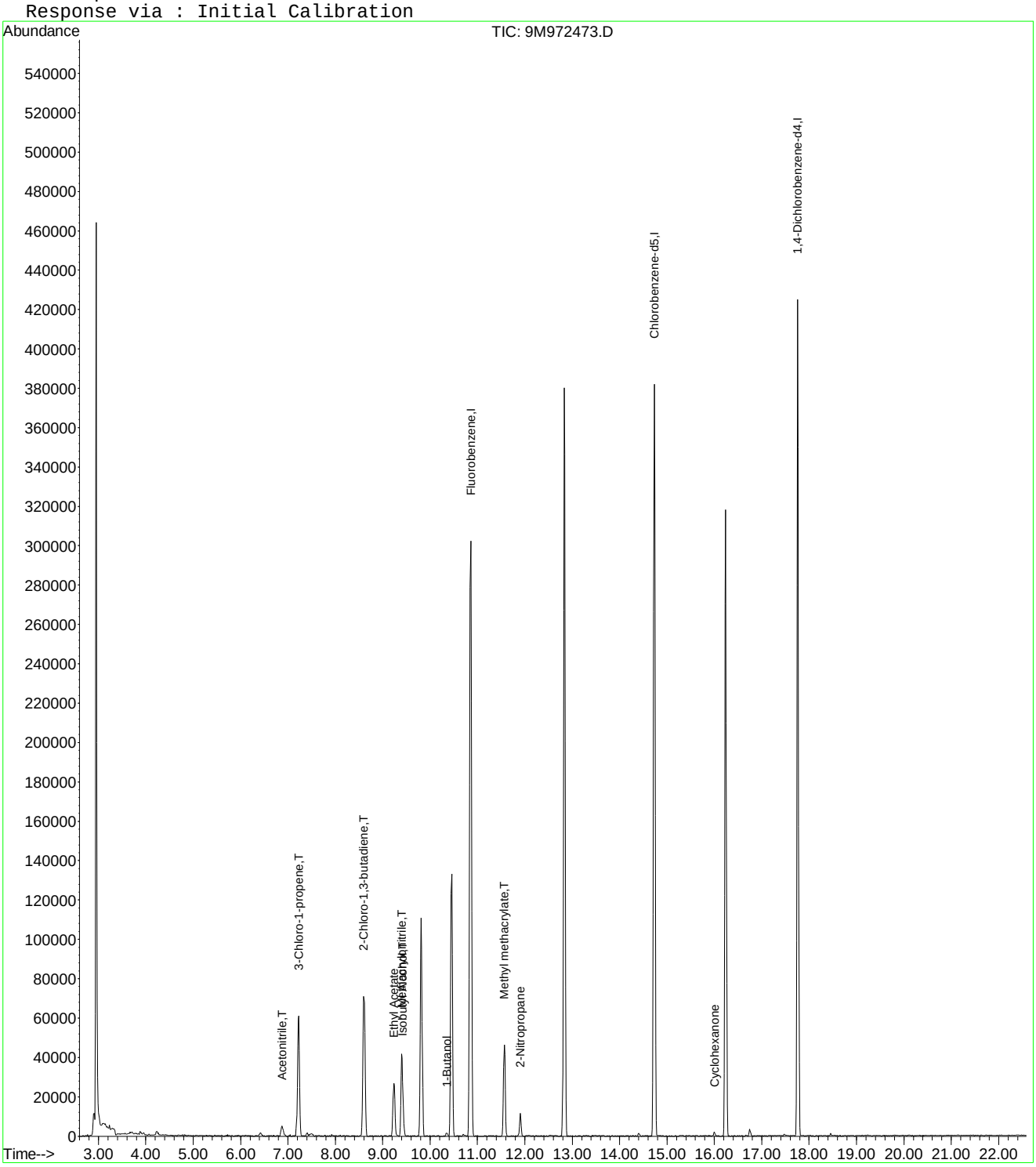

9M972473.D A9FOO_SL.M Wed Jan 27 11:22:46 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972474.D Vial: 5
Acq On : 25 Jan 2016 12:23 Operator: FJB
Sample : WG555000-04 50ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:06 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	356886	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	259679	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	147334	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	16583	46.3795 ug/kg#	94
3) 3-Chloro-1-propene	7.23	41	160601	45.5828 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.61	53	185316	46.2464 ug/kg	99
5) Ethyl Acetate	9.23	43	111538	47.3915 ug/kg	99
6) Methacrylonitrile	9.40	67	36081	47.3572 ug/kg	99
7) Isobutyl Alcohol	9.42	43	12624	81.5447 ug/kg	95
8) 1-Butanol	10.35	56	4707	48.0983 ug/kg#	50
9) Methyl methacrylate	11.56	41	82406	45.8400 ug/kg	99
10) 2-Nitropropane	11.90	43	26302	45.0359 ug/kg	97
12) Cyclohexanone	16.01	55	5625	43.7525 ug/kg	93

(#) = qualifier out of range (m) = manual integration
9M972474.D A9FOO_SL.M Wed Jan 27 11:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972474.D Vial: 5
Acq On : 25 Jan 2016 12:23 Operator: FJB
Sample : WG555000-04 50ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

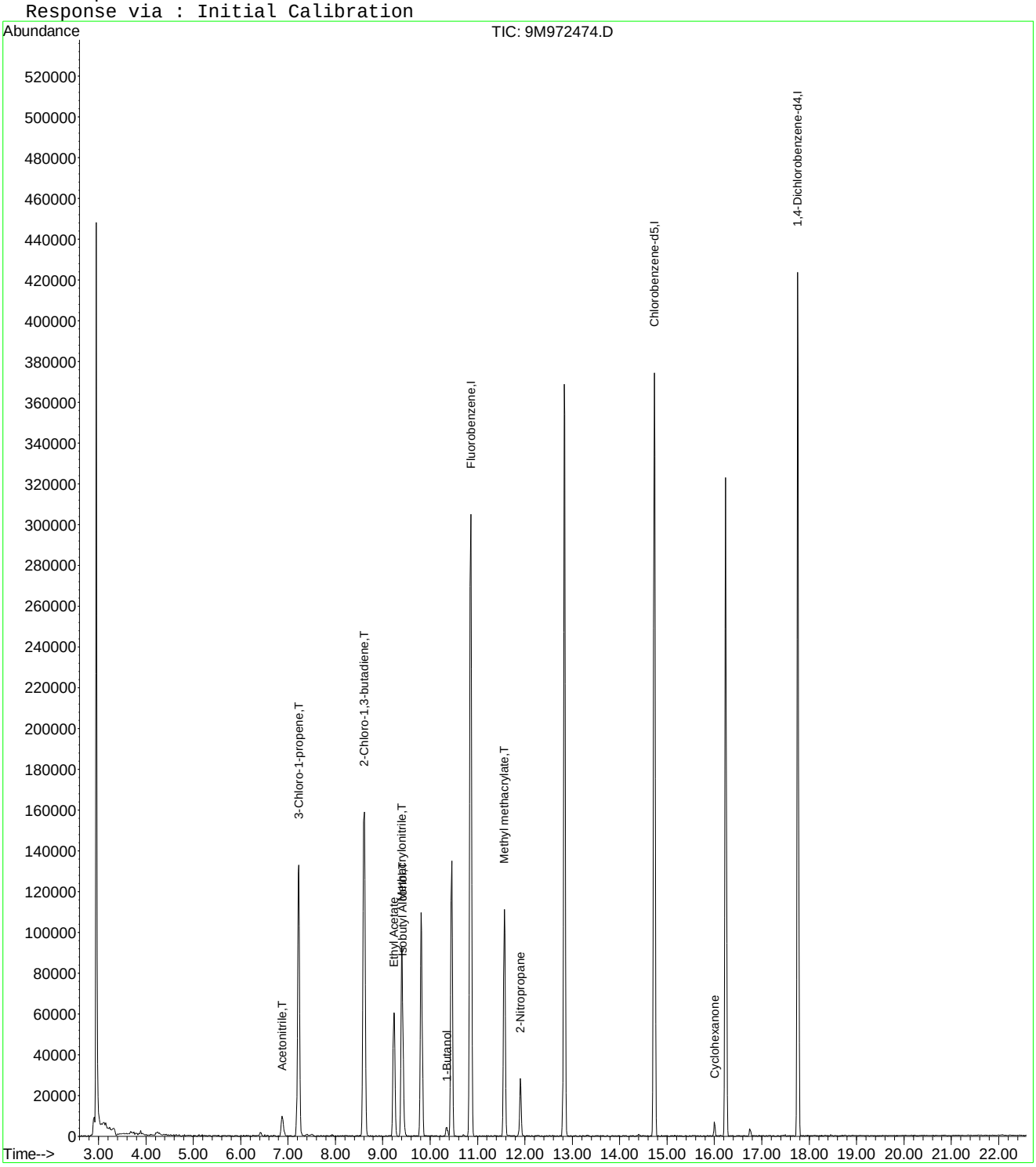

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972475.D Vial: 6
Acq On : 25 Jan 2016 12:53 Operator: FJB
Sample : WG555000-05 100ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:06 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	394669	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	285851	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	161505	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	37767	95.5151	ug/kg#	100
3) 3-Chloro-1-propene	7.23	41	409870	105.1952	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.61	53	467514	105.5010	ug/kg	100
5) Ethyl Acetate	9.23	43	267513	102.7824	ug/kg	100
6) Methacrylonitrile	9.40	67	88054	104.5088	ug/kg	100
7) Isobutyl Alcohol	9.42	43	33721	187.1766	ug/kg	100
8) 1-Butanol	10.36	56	11671	95.0627	ug/kg	100
9) Methyl methacrylate	11.56	41	209503	105.3834	ug/kg	100
10) 2-Nitropropane	11.90	43	65435	101.3157	ug/kg	100
12) Cyclohexanone	16.01	55	14062	99.3630	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972475.D A9FOO_SL.M Wed Jan 27 11:22:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972475.D Vial: 6
Acq On : 25 Jan 2016 12:53 Operator: FJB
Sample : WG555000-05 100ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

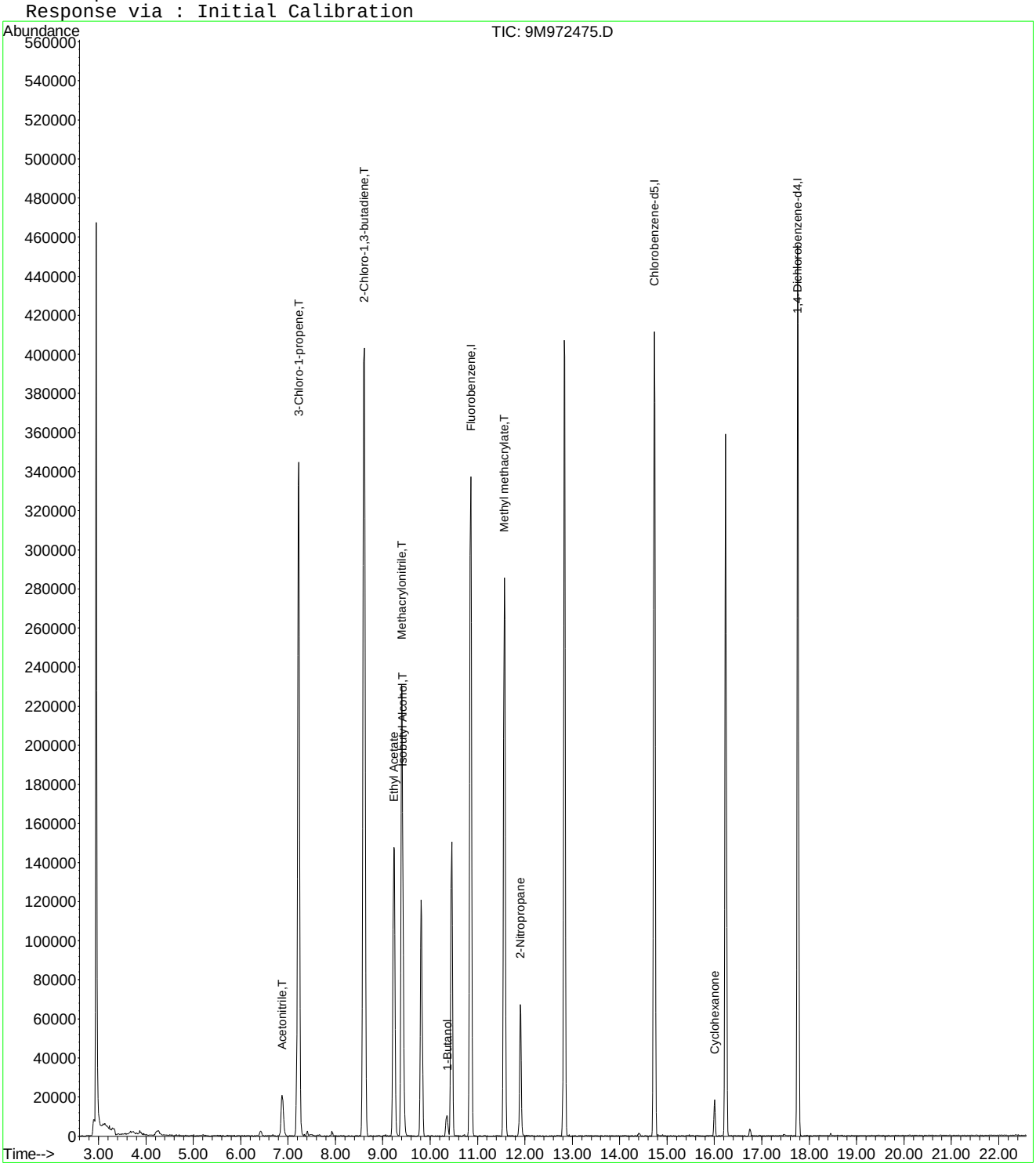

9M972475.D A9FOO_SL.M Wed Jan 27 11:22:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972476.D Vial: 7
Acq On : 25 Jan 2016 13:23 Operator: FJB
Sample : WG555000-06 200ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 09:51:10 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	361792	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	264283	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	150478	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.87	41	75099	207.1896	ug/kg#	94
3) 3-Chloro-1-propene	7.22	41	743262	208.0969	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	846271	208.3269	ug/kg	100
5) Ethyl Acetate	9.23	43	489855	205.3125	ug/kg	100
6) Methacrylonitrile	9.40	67	159879	206.9995	ug/kg	100
7) Isobutyl Alcohol	9.42	43	68551	406.6640	ug/kg	99
8) 1-Butanol	10.35	56	24111	201.3375	ug/kg	97
9) Methyl methacrylate	11.57	41	382820	210.0636	ug/kg	99
10) 2-Nitropropane	11.90	43	129000	217.8866	ug/kg	95
12) Cyclohexanone	16.00	55	30065	229.7785	ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972476.D A9FOO_SL.M Wed Jan 27 09:51:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972476.D Vial: 7
Acq On : 25 Jan 2016 13:23 Operator: FJB
Sample : WG555000-06 200ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 9:51 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

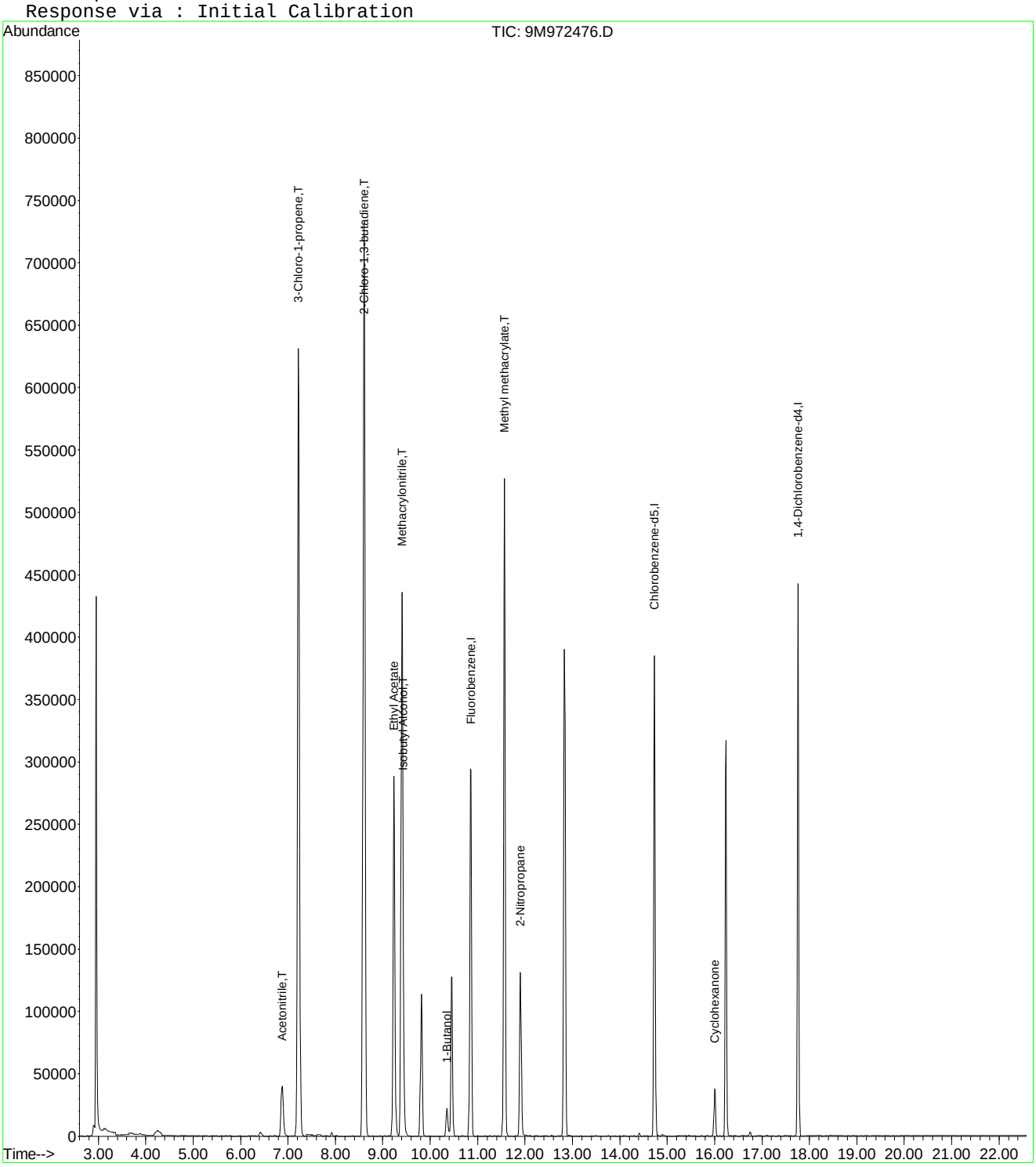

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972477.D Vial: 8
Acq On : 25 Jan 2016 13:54 Operator: FJB
Sample : WG555000-07 300ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:07 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.85	96	362779	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	265659	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	153468	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	99618	274.0870	ug/kg#	97
3) 3-Chloro-1-propene	7.22	41	944879	263.8255	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	1107217	271.8226	ug/kg	99
5) Ethyl Acetate	9.24	43	652386	272.6900	ug/kg	99
6) Methacrylonitrile	9.40	67	208153	268.7679	ug/kg	98
7) Isobutyl Alcohol	9.43	43	89707	528.6093	ug/kg#	99
8) 1-Butanol	10.35	56	31640	260.3131	ug/kg	98
9) Methyl methacrylate	11.57	41	502506	274.9883	ug/kg	98
10) 2-Nitropropane	11.90	43	172692	290.8907	ug/kg	95
12) Cyclohexanone	16.00	55	36951	280.9436	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972477.D A9FOO_SL.M Wed Jan 27 11:23:05 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972477.D Vial: 8
Acq On : 25 Jan 2016 13:54 Operator: FJB
Sample : WG555000-07 300ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

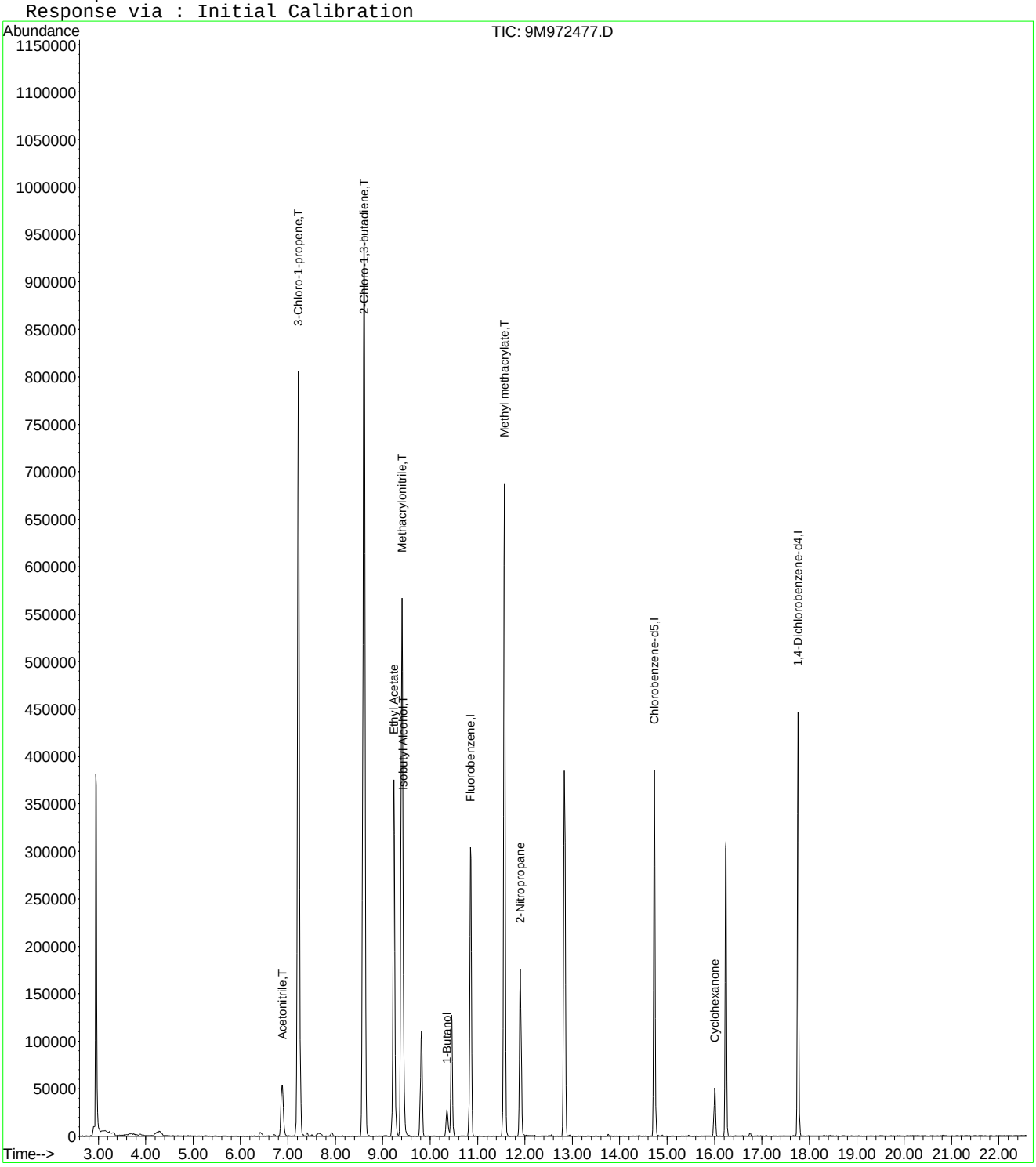

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972478.D Vial: 9
Acq On : 25 Jan 2016 14:25 Operator: FJB
Sample : WG555000-08 400ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 09:51:10 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	359343	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	261674	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	149058	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.89	41	148074	411.3034	ug/kg#	96
3) 3-Chloro-1-propene	7.22	41	1457717	410.9100	ug/kg	99
4) 2-Chloro-1,3-butadiene	8.61	53	1703971	422.3261	ug/kg	100
5) Ethyl Acetate	9.23	43	980479	413.7480	ug/kg	100
6) Methacrylonitrile	9.40	67	321602	419.2243	ug/kg	99
7) Isobutyl Alcohol	9.43	43	142361	842.7355	ug/kg#	98
8) 1-Butanol	10.36	56	51732	422.9922	ug/kg	99
9) Methyl methacrylate	11.56	41	779879	430.8570	ug/kg	98
10) 2-Nitropropane	11.90	43	267565	455.0088	ug/kg	96
12) Cyclohexanone	16.01	55	56623	437.0688	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972478.D A9FOO_SL.M Wed Jan 27 09:51:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972478.D Vial: 9
Acq On : 25 Jan 2016 14:25 Operator: FJB
Sample : WG555000-08 400ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 9:51 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

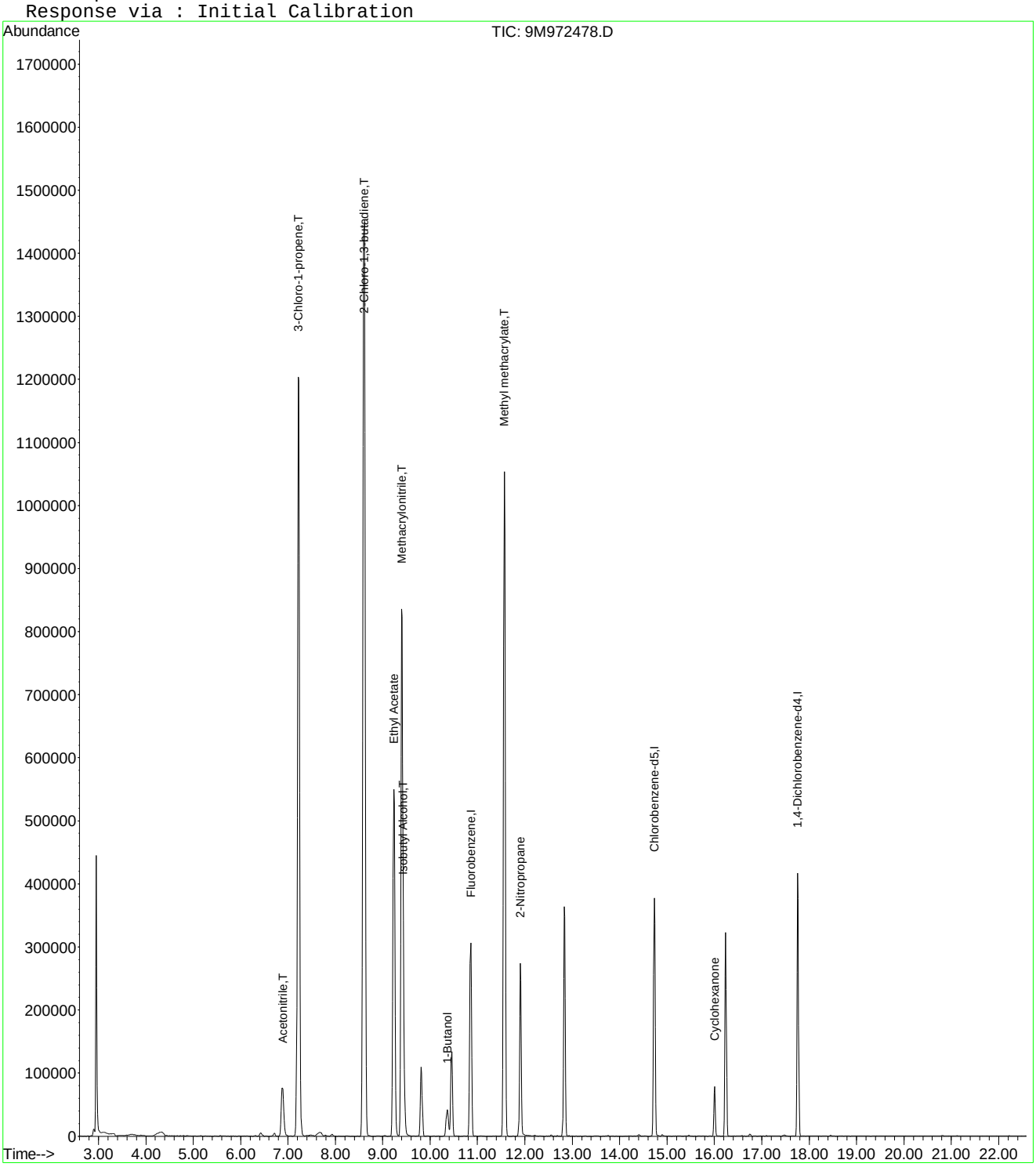

9M972478.D A9FOO_SL.M Wed Jan 27 09:51:11 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972479.D Vial: 10
Acq On : 25 Jan 2016 14:56 Operator: FJB
Sample : WG555000-09 500ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:08 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	364474	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	266311	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	151707	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	196334	537.6773	ug/kg#	94
3) 3-Chloro-1-propene	7.22	41	1832802	509.3680	ug/kg	99
4) 2-Chloro-1,3-butadiene	8.60	53	2126710	519.6807	ug/kg	100
5) Ethyl Acetate	9.23	43	1255294	522.2587	ug/kg	100
6) Methacrylonitrile	9.40	67	408537	525.0513	ug/kg	100
7) Isobutyl Alcohol	9.43	43	180610	1052.3719	ug/kg	98
8) 1-Butanol	10.36	56	64789	519.8809	ug/kg	97
9) Methyl methacrylate	11.56	41	981460	534.5904	ug/kg	100
10) 2-Nitropropane	11.90	43	346571	581.0659	ug/kg	97
12) Cyclohexanone	16.01	55	74733	566.8143	ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972479.D A9FOO_SL.M Wed Jan 27 11:30:29 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972479.D Vial: 10
Acq On : 25 Jan 2016 14:56 Operator: FJB
Sample : WG555000-09 500ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

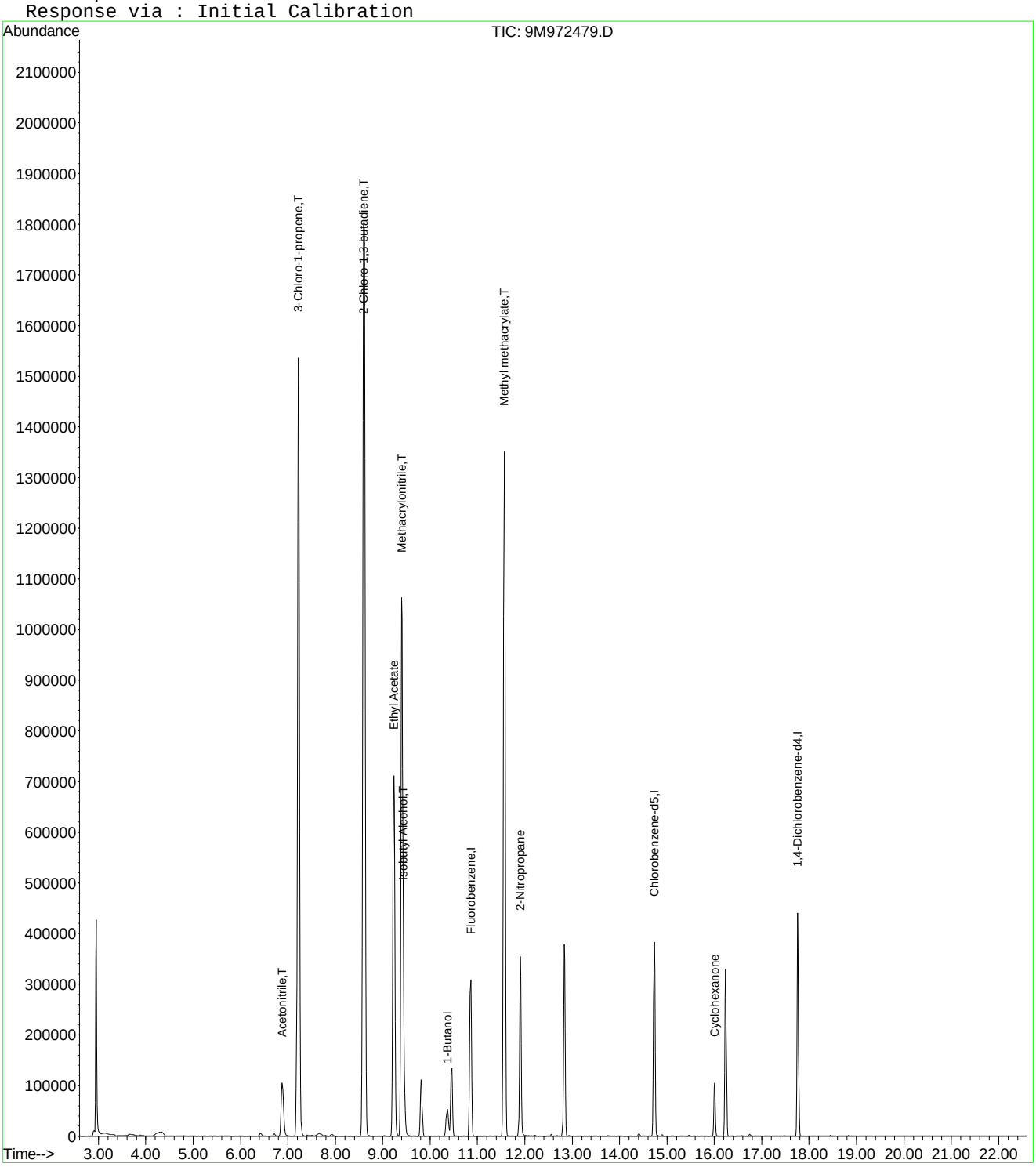

9M972479.D A9FOO_SL.M Wed Jan 27 11:30:29 2016 Page 2

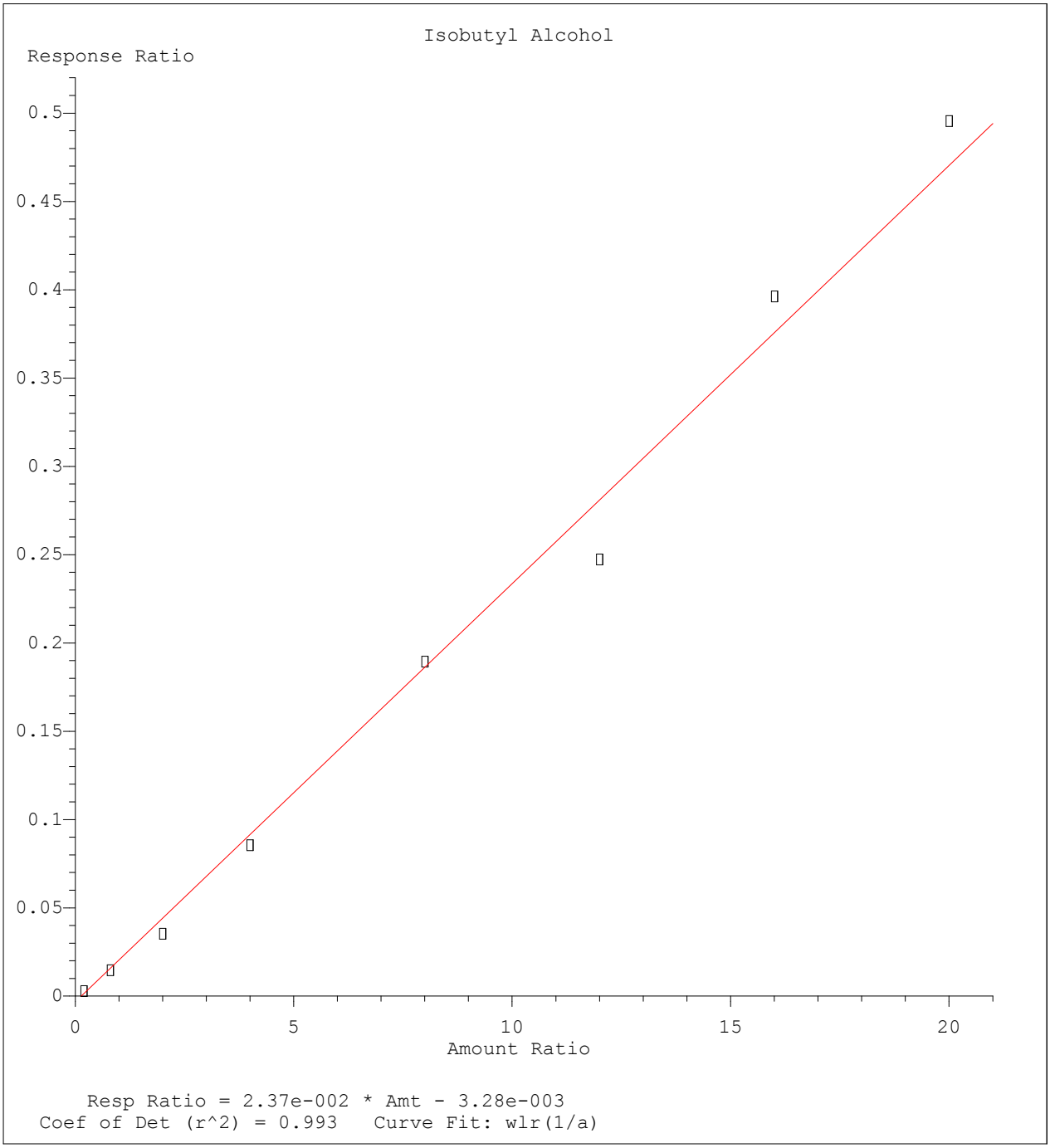

Method Name: C:\MSDCHEM\1\METHODS\A9FOO_SL.M
Calibration Table Last Updated: Wed Jan 27 09:49:02 2016

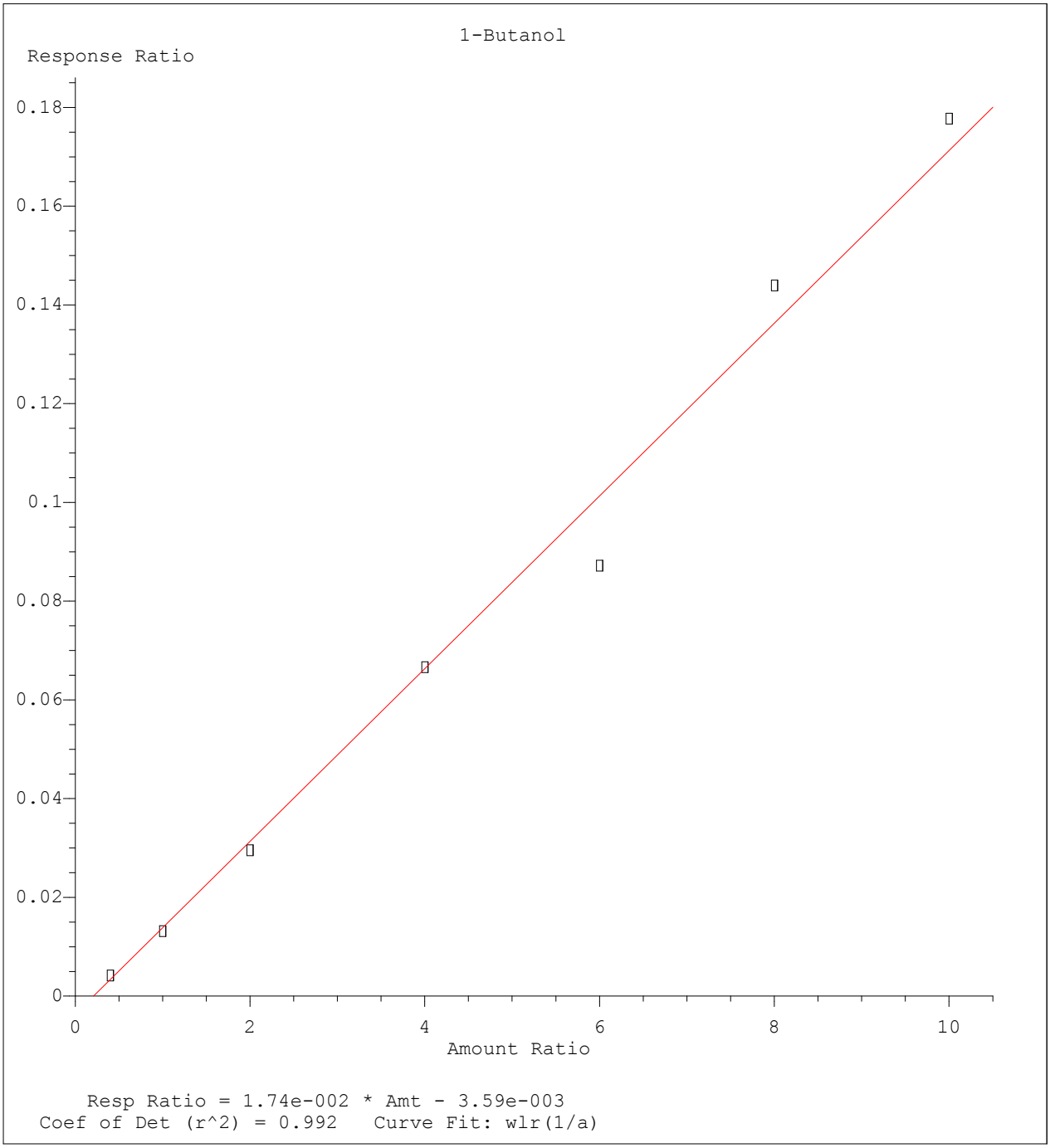

Method Name: C:\MSDCHEM\1\METHODS\A9FOO_SL.M
Calibration Table Last Updated: Wed Jan 27 09:49:02 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:09 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	394765	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	285754	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	159586	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	40054	101.2745 ug/kg#	100
3) 3-Chloro-1-propene	7.22	41	402890	103.3786 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	572568	129.1764 ug/kg	99
5) Ethyl Acetate	9.23	43	275962	106.0028 ug/kg	99
6) Methacrylonitrile	9.40	67	90289	107.1354 ug/kg	96
7) Isobutyl Alcohol	9.42	43	34031	188.7895 ug/kg	99
8) 1-Butanol	10.35	56	12038	97.7072 ug/kg	97
9) Methyl methacrylate	11.56	41	219363	110.3163 ug/kg	100
10) 2-Nitropropane	11.90	43	69288	107.2554 ug/kg	93
12) Cyclohexanone	16.01	55	14203	100.3934 ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972481.D A9FOO_SL.M Wed Jan 27 11:15:09 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

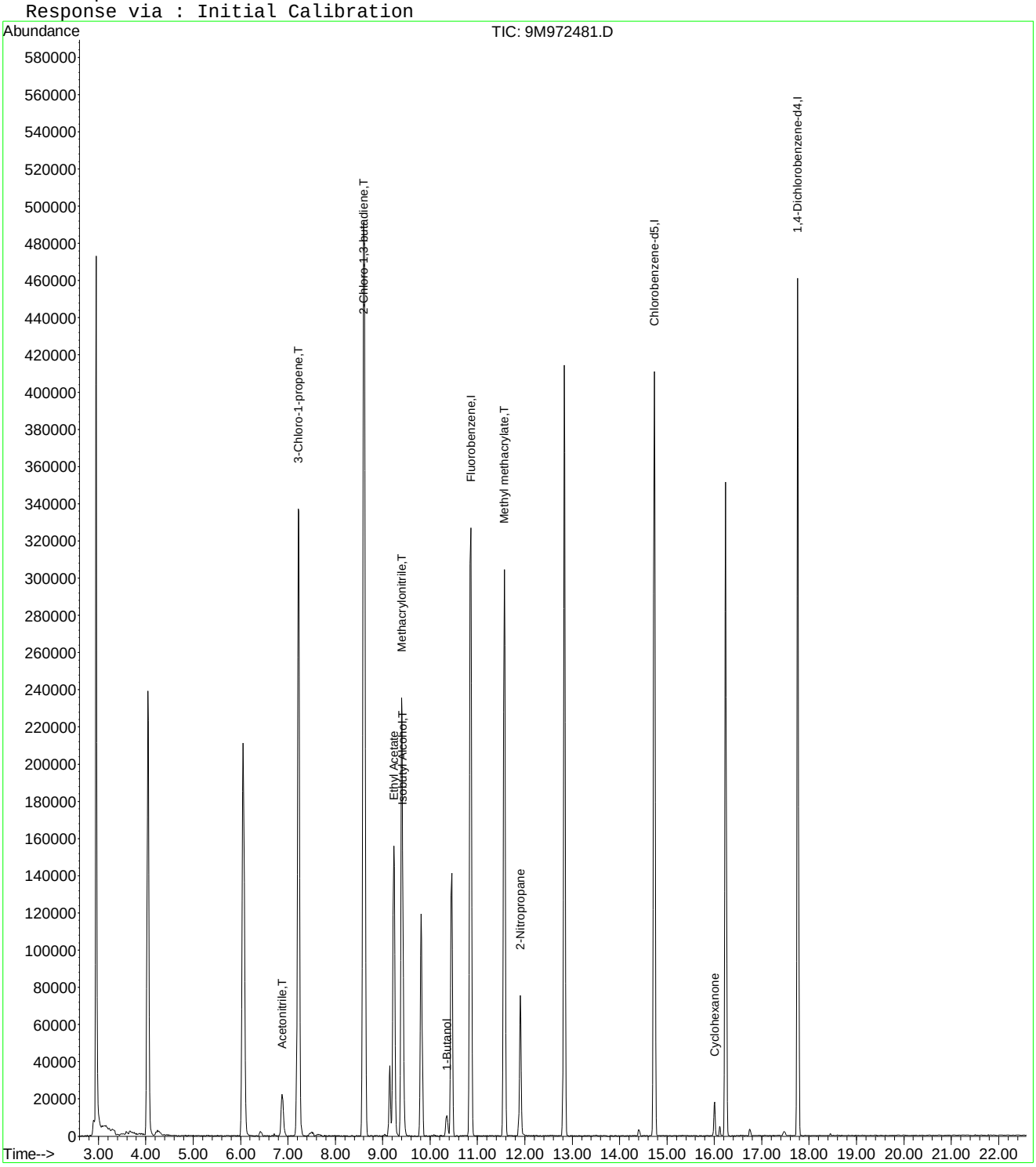

9M972481.D A9FOO_SL.M Wed Jan 27 11:15:09 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	101.2745	-1.3	106	0.00
3	T	3-Chloro-1-propene	100.0000	103.3786	-3.4	98	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	129.1764	-29.2	122	0.00
5		Ethyl Acetate	100.0000	106.0028	-6.0	103	0.00
6	T	Methacrylonitrile	100.0000	107.1354	-7.1	103	0.00
7	T	Isobutyl Alcohol	200.0000	188.7895	5.6	101	0.00
8		1-Butanol	100.0000	97.7072	2.3	103	0.00
9	T	Methyl methacrylate	100.0000	110.3163	-10.3	105	0.00
10		2-Nitropropane	100.0000	107.2554	-7.3	106	0.00
11	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
12		Cyclohexanone	100.0000	100.3934	-0.4	101	0.00
13	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	99	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972481.D A9FOO_SL.M Wed Jan 27 11:32:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972896.D Vial: 3
Acq On : 25 Feb 2016 15:48 Operator: ADC
Sample : WG558732-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:54 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260B_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	517775	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.73	117	378926	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.76	152	183008	50.00 ug/kg	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.80	111	147955	52.7167 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.44%		
43) 1,2-Dichloroethane-d4	10.44	65	183779	52.1887 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.38%		
58) Toluene-d8	12.83	98	511451	53.3617 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.72%		
79) p-Bromofluorobenzene	16.23	95	191673	53.7871 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 107.58%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	204882	57.9763 ug/kg	100
3) Chloromethane	3.74	50	183152	54.0664 ug/kg	100
4) Vinyl Chloride	3.99	62	192536	56.7764 ug/kg	100
5) 1,3-Butadiene	4.04	54	170907	52.9740 ug/kg	100
6) Bromomethane	4.88	94	107911	48.9956 ug/kg	100
7) Chloroethane	5.04	64	85391	56.5213 ug/kg	100
8) Trichlorofluoromethane	5.53	101	265962	52.2923 ug/kg	100
9) Diethyl ether	6.04	59	249400	104.8955 ug/kg	100
10) Isoprene	6.09	67	156373	51.4980 ug/kg	100
11) Acrolein	6.30	56	24630	51.9520 ug/kg	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	135036	51.4825 ug/kg	100
13) Acetone	6.41	43	66195	50.6135 ug/kg	100
14) 1,1-Dichloroethene	6.61	61	244051	50.4389 ug/kg	100
15) Tert-Butyl Alcohol	6.76	59	110494	208.7036 ug/kg	98
16) Dimethyl Sulfide	6.88	62	109294	53.4455 ug/kg	100
17) Iodomethane	7.13	142	79749	55.1586 ug/kg	100
18) Methyl acetate	7.14	43	135648	51.5699 ug/kg	100
19) Methylene Chloride	7.40	84	135280	51.3362 ug/kg	100
20) Carbon Disulfide	7.45	76	381814	51.2249 ug/kg	100
21) Acrylonitrile	7.59	53	69697	53.5624 ug/kg	100
22) Methyl Tert Butyl Ether	7.61	73	407131	54.2460 ug/kg	100
23) trans-1,2-Dichloroethene	7.85	61	226890	52.6160 ug/kg	100
24) n-Hexane	7.91	57	219597	49.3729 ug/kg	100
25) Diisopropyl ether	8.26	45	1088740	105.3973 ug/kg	100
26) Vinyl Acetate	8.43	43	311838	52.9553 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	284391	52.5076 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	1023392	106.5502 ug/kg	100
29) 2-Butanone	9.03	43	86123	51.5803 ug/kg	100
30) Propionitrile	9.14	54	53253	104.2214 ug/kg	100
31) 2,2-Dichloropropane	9.24	77	215042	53.1943 ug/kg	100
32) cis-1,2-Dichloroethene	9.31	96	153722	54.3532 ug/kg	100
33) Chloroform	9.52	83	263571	52.9749 ug/kg	100
34) 1-Bromopropane	9.65	122	22164	51.3817 ug/kg	100
35) Bromochloromethane	9.75	130	102780	55.9453 ug/kg	100
36) Tetrahydrofuran	9.78	42	113791	105.7289 ug/kg	100
38) 1,1,1-Trichloroethane	10.04	97	243452	54.1074 ug/kg	100
39) Cyclohexane	10.08	56	247641	50.4821 ug/kg	100
40) 1,1-Dichloropropene	10.24	75	182199	51.4612 ug/kg	100
41) Tert-Amyl-Methyl ether	10.34	73	741165	106.1603 ug/kg	100
42) Carbon Tetrachloride	10.39	117	221306	53.0537 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972896.D Vial: 3
Acq On : 25 Feb 2016 15:48 Operator: ADC
Sample : WG558732-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:54 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260B_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	237857	54.3500 ug/kg	100
46)	Benzene	10.60	78	503328	50.7793 ug/kg	100
47)	Trichloroethene	11.35	130	163959	52.2047 ug/kg	100
48)	Methylcyclohexane	11.44	83	204551	51.9284 ug/kg	100
49)	1,2-Dichloropropane	11.56	63	148045	54.3898 ug/kg	100
50)	1,4-Dioxane	11.88	88	7789	190.7454 ug/kg	100
51)	Bromodichloromethane	11.87	83	203922	53.1595 ug/kg	100
52)	Dibromomethane	11.96	174	95887	53.1673 ug/kg	100
53)	2-Chloroethyl Vinyl Ether	12.17	63	38515	51.1377 ug/kg	100
54)	4-Methyl-2-Pentanone	12.19	58	64999	54.4056 ug/kg	100
55)	cis-1,3-Dichloropropene	12.50	75	212797	53.2452 ug/kg	100
56)	Dimethyl Disulfide	12.77	94	219798	54.7267 ug/kg	100
59)	Toluene	12.92	91	563647	52.0613 ug/kg	100
60)	Ethyl Methacrylate	13.02	69	158958	52.9687 ug/kg	100
61)	trans-1,3-Dichloropropene	13.10	75	212386	54.4657 ug/kg	100
62)	1,1,2-Trichloroethane	13.33	97	122975	54.0706 ug/kg	100
63)	2-Hexanone	13.25	43	119176	52.4822 ug/kg	100
64)	1,3-Dichloropropane	13.63	76	201541	53.1810 ug/kg	100
65)	Tetrachloroethene	13.75	164	117066	50.4378 ug/kg	100
66)	Dibromochloromethane	14.01	129	168874	53.1294 ug/kg	100
67)	1,2-Dibromoethane	14.28	107	132755	52.6249 ug/kg	100
68)	1-Chlorohexane	14.35	91	168490	52.7733 ug/kg	100
69)	Chlorobenzene	14.77	112	400241	52.5998 ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.80	131	154536	54.0800 ug/kg	100
71)	Ethylbenzene	14.80	106	207031	52.8117 ug/kg	100
72)	m-,p-Xylene	14.89	106	497405	102.7415 ug/kg	100
73)	o-Xylene	15.45	106	247567	53.2858 ug/kg	100
74)	Styrene	15.49	104	425634	53.7983 ug/kg	100
75)	Bromoform	16.00	173	116015	55.5910 ug/kg	100
76)	Isopropylbenzene	15.88	105	658255	52.7764 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.10	83	147970	53.3007 ug/kg	100
80)	1,2,3-Trichloropropane	16.29	110	55711	52.9159 ug/kg	100
81)	trans-1,4-Dichloro-2-Buten	16.33	53	55525	52.3210 ug/kg	100
82)	n-Propylbenzene	16.39	91	751844	52.2641 ug/kg	100
83)	Bromobenzene	16.52	156	177299	52.2079 ug/kg	100
84)	1,3,5-Trimethylbenzene	16.58	105	568867	52.6809 ug/kg	100
85)	2-Chlorotoluene	16.66	91	484783	50.2437 ug/kg	100
86)	4-Chlorotoluene	16.70	91	481367	53.9615 ug/kg	100
87)	a-Methylstyrene	16.98	118	255765	51.9817 ug/kg	100
88)	tert-Butylbenzene	17.04	134	121669	53.7430 ug/kg	100
89)	1,2,4-Trimethylbenzene	17.09	105	580656	51.3463 ug/kg	100
90)	sec-Butylbenzene	17.30	105	726352	52.2266 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	613096	52.2364 ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	337008	49.9319 ug/kg	100
93)	1,4-Dichlorobenzene	17.80	146	335195	49.6777 ug/kg	100
94)	n-Butylbenzene	17.99	91	563797	51.6647 ug/kg	100
95)	1,2-Dichlorobenzene	18.30	146	320108	51.1150 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.30	157	42968	53.4468 ug/kg	100
97)	1,2,4-Trichlorobenzene	20.44	180	222592	50.0691 ug/kg	100
98)	Hexachlorobutadiene	20.59	225	117654	50.2053 ug/kg	100
99)	Naphthalene	20.81	128	602344	54.0184 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	222082	51.5034 ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972896.D 8260SL.M Fri Feb 26 11:21:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972896.D Vial: 3
Acq On : 25 Feb 2016 15:48 Operator: ADC
Sample : WG558732-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

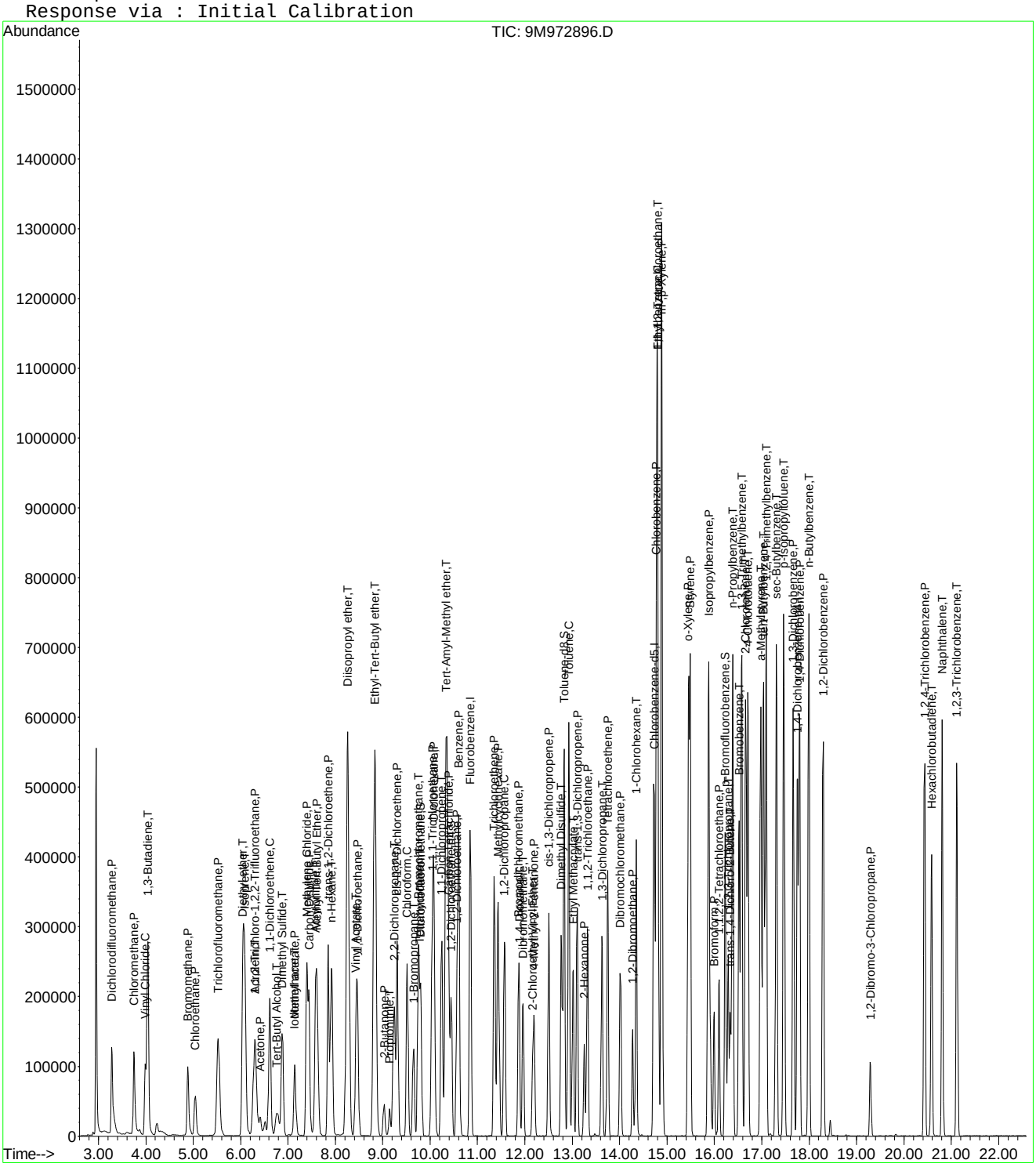

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:15 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	491503	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	353502	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	169028	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.83	98	923	0.1032 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.20%#	
79) p-Bromofluorobenzene	16.22	95	770	0.2339 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.46%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	1359	0.4051 ug/kg#	69
3) Chloromethane	3.75	50	2926	0.9099 ug/kg	95
4) Vinyl Chloride	3.98	62	1474	0.4579 ug/kg#	67
5) 1,3-Butadiene	4.03	54	1519	0.4960 ug/kg	82
6) Bromomethane	4.89	94	2071	0.9906 ug/kg	100
8) Trichlorofluoromethane	5.53	101	2609	0.5404 ug/kg#	51
10) Isoprene	6.08	67	1239	0.4298 ug/kg	70
13) Acetone	6.43	43	4251	5.5216 ug/kg#	75
14) 1,1-Dichloroethene	6.63	61	2149	0.4679 ug/kg#	66
17) Iodomethane	7.14	142	943	3.4505 ug/kg#	34
18) Methyl acetate	7.16	43	1334	0.5343 ug/kg#	45
19) Methylene Chloride	7.40	84	1287	0.5145 ug/kg	81
20) Carbon Disulfide	7.44	76	6762	0.9557 ug/kg#	76
23) trans-1,2-Dichloroethene	7.84	61	2196	0.5365 ug/kg	86
24) n-Hexane	7.92	57	2239	0.5303 ug/kg#	62
26) Vinyl Acetate	8.44	43	2494	0.4462 ug/kg#	78
27) 1,1-Dichloroethane	8.48	63	2396	0.4660 ug/kg#	63
29) 2-Butanone	9.02	43	778	0.4909 ug/kg#	58
31) 2,2-Dichloropropane	9.24	77	1877	0.4891 ug/kg#	42
32) cis-1,2-Dichloroethene	9.32	96	1178	0.4388 ug/kg	74
33) Chloroform	9.52	83	2007	0.4249 ug/kg	81
35) Bromochloromethane	9.74	130	828	0.4748 ug/kg#	68
36) Tetrahydrofuran	9.76	42	1603	1.5690 ug/kg#	57
38) 1,1,1-Trichloroethane	10.05	97	1773	0.4151 ug/kg	92
40) 1,1-Dichloropropene	10.25	75	1521	0.4526 ug/kg#	38
42) Carbon Tetrachloride	10.40	117	1765	0.4457 ug/kg#	85
45) 1,2-Dichloroethane	10.57	62	1885	0.4537 ug/kg#	68
46) Benzene	10.61	78	5607	0.5959 ug/kg#	83
47) Trichloroethene	11.36	130	1808	0.6064 ug/kg	88
48) Methylcyclohexane	11.44	83	1930	0.5161 ug/kg	96
55) cis-1,3-Dichloropropene	12.51	75	1714	0.4518 ug/kg#	51
59) Toluene	12.93	91	5550	0.5495 ug/kg	88
61) trans-1,3-Dichloropropene	13.10	75	1920	0.5278 ug/kg#	51
63) 2-Hexanone	13.25	43	877	0.4140 ug/kg#	63
64) 1,3-Dichloropropane	13.63	76	1615	0.4568 ug/kg	91
65) Tetrachloroethene	13.75	164	1154	0.5330 ug/kg#	74
67) 1,2-Dibromoethane	14.27	107	988	0.4198 ug/kg	87
68) 1-Chlorohexane	14.35	91	1436	0.4821 ug/kg	83
69) Chlorobenzene	14.78	112	4578	0.6449 ug/kg	87
70) 1,1,1,2-Tetrachloroethane	14.81	131	1078	0.4044 ug/kg	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:15 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
71)	Ethylbenzene	14.80	106	1823	0.4985 ug/kg	68
72)	m-,p-Xylene	14.88	106	4752	1.0521 ug/kg	95
73)	o-Xylene	15.44	106	2166	0.4997 ug/kg	94
74)	Styrene	15.49	104	3544	0.4802 ug/kg	91
76)	Isopropylbenzene	15.87	105	6349	0.5456 ug/kg	97
78)	1,1,2,2-Tetrachloroethane	16.09	83	1326	0.5171 ug/kg#	89
82)	n-Propylbenzene	16.38	91	7679	0.5780 ug/kg	98
83)	Bromobenzene	16.52	156	1798	0.5732 ug/kg	88
84)	1,3,5-Trimethylbenzene	16.57	105	4554	0.4566 ug/kg	92
85)	2-Chlorotoluene	16.66	91	5237	0.5877 ug/kg	84
86)	4-Chlorotoluene	16.71	91	5645	0.6851 ug/kg	93
87)	a-Methylstyrene	16.97	118	2091	0.4601 ug/kg	93
89)	1,2,4-Trimethylbenzene	17.09	105	6291	0.6023 ug/kg	84
90)	sec-Butylbenzene	17.31	105	7013	0.5460 ug/kg	93
91)	p-Isopropyltoluene	17.47	119	5681	0.5241 ug/kg	95
92)	1,3-Dichlorobenzene	17.67	146	4446	0.7132 ug/kg	91
93)	1,4-Dichlorobenzene	17.79	146	4603	0.7386 ug/kg#	73
94)	n-Butylbenzene	17.99	91	6750	0.6697 ug/kg#	90
95)	1,2-Dichlorobenzene	18.29	146	3889	0.6724 ug/kg	82
97)	1,2,4-Trichlorobenzene	20.43	180	3506	0.8539 ug/kg	94
98)	Hexachlorobutadiene	20.58	225	1493	0.6898 ug/kg#	70
99)	Naphthalene	20.81	128	10277	0.9979 ug/kg	93
100)	1,2,3-Trichlorobenzene	21.12	180	3961	0.9946 ug/kg	80

(#) = qualifier out of range (m) = manual integration
9M972898.D 8260SL.M Fri Feb 26 11:11:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration

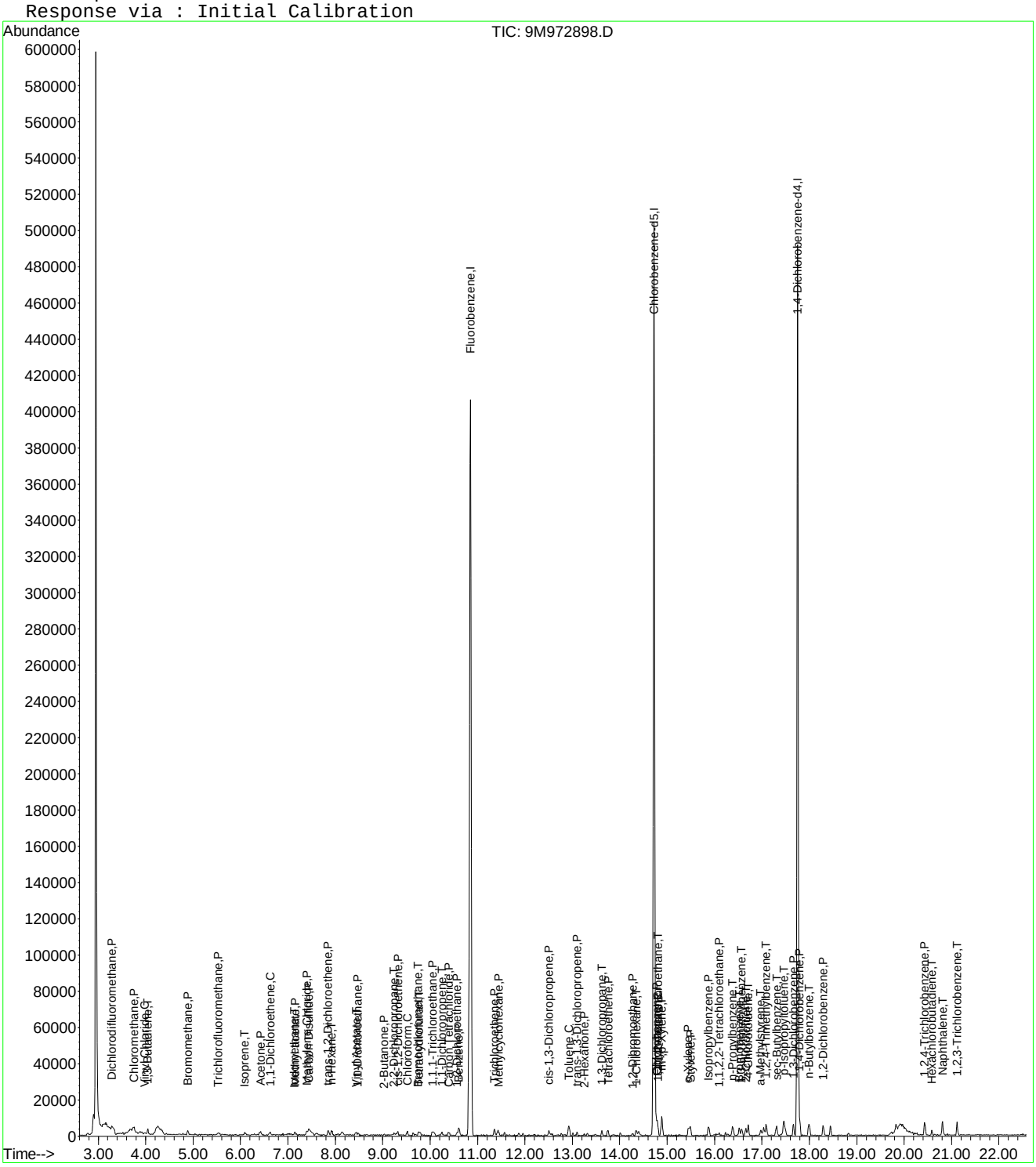

9M972898.D 8260SL.M Fri Feb 26 11:11:55 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	0.4051	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.9099	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.4579	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	0.4960	0.0	0	0.00
6	P	Bromomethane	-1.0000	0.9906	0.0	100	0.00
7	P	Chloroethane	-1.0000	0.2845	0.0	100	0.01
8	P	Trichlorofluoromethane	-1.0000	0.5404	0.0	100	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.04#
10	T	Isoprene	-1.0000	0.4298	0.0	0	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.30#
12	P	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.0779	0.0	100	0.00
13	P	Acetone	-1.0000	5.5216	0.0	0	0.02
14	C	1,1-Dichloroethene	-1.0000	0.4679	0.0	100	0.01
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.76#
16	T	Dimethyl Sulfide	-1.0000	0.1242	0.0	0	0.01
17	T	Iodomethane	-1.0000	3.4505	0.0	0	0.00
18	P	Methyl acetate	-1.0000	0.5343	0.0	0	0.02
19	P	Methylene Chloride	-1.0000	0.5145	0.0	100	0.00
20	P	Carbon Disulfide	-1.0000	0.9557	0.0	0	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.59#
22	P	Methyl Tert Butyl Ether	-1.0000	0.3878	0.0	100	0.00
23	P	trans-1,2-Dichloroethene	-1.0000	0.5365	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.5303	0.0	0	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.26#
26	T	Vinyl Acetate	-1.0000	0.4462	0.0	100	0.01
27	P	1,1-Dichloroethane	-1.0000	0.4660	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.83#
29	P	2-Butanone	-1.0000	0.4909	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.14#
31	T	2,2-Dichloropropane	-1.0000	0.4891	0.0	100	0.00
32	P	cis-1,2-Dichloroethene	-1.0000	0.4388	0.0	100	0.01
33	C	Chloroform	-1.0000	0.4249	0.0	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.65#
35	T	Bromochloromethane	-1.0000	0.4748	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	1.5690	0.0	100	-0.02
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	-1.0000	0.4151	0.0	100	0.00
39	P	Cyclohexane	-1.0000	0.3314	0.0	0	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4526	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.34#
42	P	Carbon Tetrachloride	-1.0000	0.4457	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	-1.0000	0.4537	0.0	100	0.00
46	P	Benzene	0.5000	0.5959	-19.2	100	0.00
47	P	Trichloroethene	-1.0000	0.6064	0.0	100	0.00
48	P	Methylcyclohexane	-1.0000	0.5161	0.0	0	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2930	0.0	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.88#
51	P	Bromodichloromethane	-1.0000	0.3238	0.0	100	0.00
52	T	Dibromomethane	-1.0000	0.1630	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.0000	0.0	0	-12.16#
54	P	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.19#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	-1.0000	0.4518	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2529	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.1032	0.0	100	0.00
59	C	Toluene	0.5000	0.5495	-9.9	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2340	0.0	0	0.00
61	P	trans-1,3-Dichloropropene	-1.0000	0.5278	0.0	100	0.00
62	P	1,1,2-Trichloroethane	-1.0000	0.3964	0.0	100	0.00
63	P	2-Hexanone	-1.0000	0.4140	0.0	100	0.00
64	T	1,3-Dichloropropane	-1.0000	0.4568	0.0	100	0.00
65	P	Tetrachloroethene	-1.0000	0.5330	0.0	100	0.00
66	P	Dibromochloromethane	-1.0000	0.3541	0.0	100	0.00
67	P	1,2-Dibromoethane	-1.0000	0.4198	0.0	100	0.00
68	T	1-Chlorohexane	-1.0000	0.4821	0.0	0	0.00
69	P	Chlorobenzene	-1.0000	0.6449	0.0	100	0.00
70	T	1,1,1,2-Tetrachloroethane	-1.0000	0.4044	0.0	100	0.00
71	C	Ethylbenzene	0.5000	0.4985	0.3	100	0.00
72	P	m-,p-Xylene	1.0000	1.0521	-5.2	100	0.00
73	P	o-Xylene	0.5000	0.4997	0.1	100	0.00
74	P	Styrene	-1.0000	0.4802	0.0	100	0.00
75	P	Bromoform	-1.0000	0.3955	0.0	100	0.00
76	P	Isopropylbenzene	-1.0000	0.5456	0.0	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	-1.0000	0.5171	0.0	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.2339	0.0	100	0.00
80	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.29#
81	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.33#
82	T	n-Propylbenzene	-1.0000	0.5780	0.0	100	0.00
83	T	Bromobenzene	-1.0000	0.5732	0.0	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	0.4566	0.0	100	0.00
85	T	2-Chlorotoluene	-1.0000	0.5877	0.0	100	0.00
86	T	4-Chlorotoluene	-1.0000	0.6851	0.0	100	0.00
87	T	a-Methylstyrene	-1.0000	0.4601	0.0	0	0.00
88	T	tert-Butylbenzene	-1.0000	0.2860	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	-1.0000	0.6023	0.0	100	0.00
90	T	sec-Butylbenzene	-1.0000	0.5460	0.0	100	0.00
91	T	p-Isopropyltoluene	-1.0000	0.5241	0.0	100	0.00
92	P	1,3-Dichlorobenzene	-1.0000	0.7132	0.0	100	0.00
93	P	1,4-Dichlorobenzene	-1.0000	0.7386	0.0	100	0.00
94	T	n-Butylbenzene	-1.0000	0.6697	0.0	100	0.00
95	P	1,2-Dichlorobenzene	-1.0000	0.6724	0.0	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.30#
97	P	1,2,4-Trichlorobenzene	-1.0000	0.8539	0.0	100	0.00
98	T	Hexachlorobutadiene	-1.0000	0.6898	0.0	100	0.00
99	T	Naphthalene	-1.0000	0.9979	0.0	100	0.00
100	T	1,2,3-Trichlorobenzene	-1.0000	0.9946	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972898.D 8260SL.M Fri Feb 26 11:11:52 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	536651	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	387839	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	177519	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.82	98	959	0.0978 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.20%#	
79) p-Bromofluorobenzene	16.22	95	467	0.1351 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	3486	0.9518 ug/kg#	85
3) Chloromethane	3.74	50	4175	1.1891 ug/kg	88
4) Vinyl Chloride	3.98	62	2686	0.7642 ug/kg	80
5) 1,3-Butadiene	4.03	54	3056	0.9139 ug/kg	91
6) Bromomethane	4.89	94	2537	1.1114 ug/kg	94
7) Chloroethane	5.05	64	1264	0.8072 ug/kg#	45
8) Trichlorofluoromethane	5.53	101	5567	1.0561 ug/kg#	93
9) Diethyl ether	6.05	59	11529	4.6784 ug/kg	97
10) Isoprene	6.08	67	2965	0.9421 ug/kg	97
11) Acrolein	6.29	56	1087	2.2122 ug/kg#	35
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	1939	0.7132 ug/kg	88
13) Acetone	6.41	43	5231	5.8863 ug/kg	95
14) 1,1-Dichloroethene	6.62	61	4981	0.9932 ug/kg	92
15) Tert-Butyl Alcohol	6.77	59	5682	10.3548 ug/kg#	63
16) Dimethyl Sulfide	6.88	62	1614	0.7615 ug/kg	91
17) Iodomethane	7.15	142	941	3.3944 ug/kg#	66
18) Methyl acetate	7.16	43	2553	0.9364 ug/kg#	65
19) Methylene Chloride	7.40	84	2963	1.0849 ug/kg	92
20) Carbon Disulfide	7.45	76	9749	1.2619 ug/kg	95
21) Acrylonitrile	7.58	53	3140	2.3282 ug/kg	85
22) Methyl Tert Butyl Ether	7.61	73	7179	0.9229 ug/kg	83
23) trans-1,2-Dichloroethene	7.85	61	4296	0.9612 ug/kg	95
24) n-Hexane	7.93	57	4481	0.9720 ug/kg	95
25) Diisopropyl ether	8.26	45	50344	4.7022 ug/kg	98
26) Vinyl Acetate	8.43	43	5247	0.8597 ug/kg#	90
27) 1,1-Dichloroethane	8.48	63	5885	1.0483 ug/kg#	85
28) Ethyl-Tert-Butyl ether	8.83	59	46767	4.6979 ug/kg	99
29) 2-Butanone	9.03	43	1776	1.0263 ug/kg#	58
30) Propionitrile	9.14	54	2256	4.2599 ug/kg#	60
31) 2,2-Dichloropropane	9.24	77	4402	1.0506 ug/kg#	71
32) cis-1,2-Dichloroethene	9.31	96	2650	0.9040 ug/kg	94
33) Chloroform	9.51	83	5072	0.9836 ug/kg	96
35) Bromochloromethane	9.75	130	1408	0.7394 ug/kg	86
36) Tetrahydrofuran	9.77	42	6699	6.0054 ug/kg	95
38) 1,1,1-Trichloroethane	10.05	97	4567	0.9793 ug/kg	91
39) Cyclohexane	10.08	56	4992	0.9818 ug/kg#	85
40) 1,1-Dichloropropene	10.24	75	3785	1.0315 ug/kg	90
41) Tert-Amyl-Methyl ether	10.34	73	33850	4.6779 ug/kg	95
42) Carbon Tetrachloride	10.40	117	4297	0.9939 ug/kg#	90
45) 1,2-Dichloroethane	10.55	62	3923	0.8649 ug/kg	93

(#) = qualifier out of range (m) = manual integration
9M972899.D 8260SL.M Fri Feb 26 11:12:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
46)	Benzene	10.61	78	9968	0.9703 ug/kg	96
47)	Trichloroethene	11.36	130	3259	1.0012 ug/kg	99
48)	Methylcyclohexane	11.43	83	3354	0.8215 ug/kg	76
49)	1,2-Dichloropropane	11.57	63	2469	0.8752 ug/kg	94
51)	Bromodichloromethane	11.87	83	3657	0.9198 ug/kg#	94
52)	Dibromomethane	11.96	174	1621	0.8672 ug/kg	93
53)	2-Chloroethyl Vinyl Ether	12.16	63	210	3.0851 ug/kg#	47
54)	4-Methyl-2-Pentanone	12.20	58	738	0.5960 ug/kg#	40
55)	cis-1,3-Dichloropropene	12.51	75	3714	0.8966 ug/kg	86
56)	Dimethyl Disulfide	12.77	94	3075	0.7387 ug/kg	83
59)	Toluene	12.93	91	10894	0.9831 ug/kg	97
60)	Ethyl Methacrylate	13.01	69	1966	0.6401 ug/kg#	53
61)	trans-1,3-Dichloropropene	13.11	75	3837	0.9614 ug/kg#	79
62)	1,1,2-Trichloroethane	13.32	97	2148	0.9227 ug/kg	94
63)	2-Hexanone	13.26	43	1796	0.7727 ug/kg#	80
64)	1,3-Dichloropropane	13.63	76	3616	0.9322 ug/kg	99
65)	Tetrachloroethene	13.75	164	2587	1.0890 ug/kg	79
66)	Dibromochloromethane	14.02	129	3318	1.0199 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	2336	0.9047 ug/kg	97
68)	1-Chlorohexane	14.34	91	3075	0.9410 ug/kg	85
69)	Chlorobenzene	14.78	112	7982	1.0249 ug/kg	88
70)	1,1,1,2-Tetrachloroethane	14.81	131	2589	0.8852 ug/kg	86
71)	Ethylbenzene	14.80	106	4007	0.9987 ug/kg	89
72)	m-,p-Xylene	14.88	106	9607	1.9388 ug/kg	98
73)	o-Xylene	15.45	106	4376	0.9202 ug/kg	99
74)	Styrene	15.49	104	7432	0.9178 ug/kg	92
75)	Bromoform	16.00	173	1759	0.8235 ug/kg#	79
76)	Isopropylbenzene	15.87	105	11937	0.9351 ug/kg	98
78)	1,1,2,2-Tetrachloroethane	16.09	83	2186	0.8118 ug/kg#	83
80)	1,2,3-Trichloropropane	16.28	110	875	0.8568 ug/kg#	81
81)	trans-1,4-Dichloro-2-Buten	16.34	53	831	0.8073 ug/kg#	74
82)	n-Propylbenzene	16.38	91	14156	1.0145 ug/kg	99
83)	Bromobenzene	16.53	156	2996	0.9095 ug/kg#	39
84)	1,3,5-Trimethylbenzene	16.57	105	11008	1.0509 ug/kg	88
85)	2-Chlorotoluene	16.65	91	10606	1.1332 ug/kg	84
86)	4-Chlorotoluene	16.71	91	9101	1.0518 ug/kg	95
87)	a-Methylstyrene	16.98	118	4078	0.8544 ug/kg	85
88)	tert-Butylbenzene	17.03	134	2095	0.9540 ug/kg	74
89)	1,2,4-Trimethylbenzene	17.09	105	12124	1.1053 ug/kg	83
90)	sec-Butylbenzene	17.31	105	13922	1.0320 ug/kg	100
91)	p-Isopropyltoluene	17.47	119	10153	0.8918 ug/kg	98
92)	1,3-Dichlorobenzene	17.67	146	7444	1.1370 ug/kg	90
93)	1,4-Dichlorobenzene	17.79	146	7580	1.1581 ug/kg	92
94)	n-Butylbenzene	17.99	91	11112	1.0498 ug/kg	91
95)	1,2-Dichlorobenzene	18.29	146	6415	1.0560 ug/kg	97
97)	1,2,4-Trichlorobenzene	20.43	180	4869	1.1291 ug/kg	98
98)	Hexachlorobutadiene	20.59	225	2032	0.8939 ug/kg	87
99)	Naphthalene	20.81	128	11710	1.0826 ug/kg	92
100)	1,2,3-Trichlorobenzene	21.12	180	4698	1.1232 ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972899.D 8260SL.M Fri Feb 26 11:12:33 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration

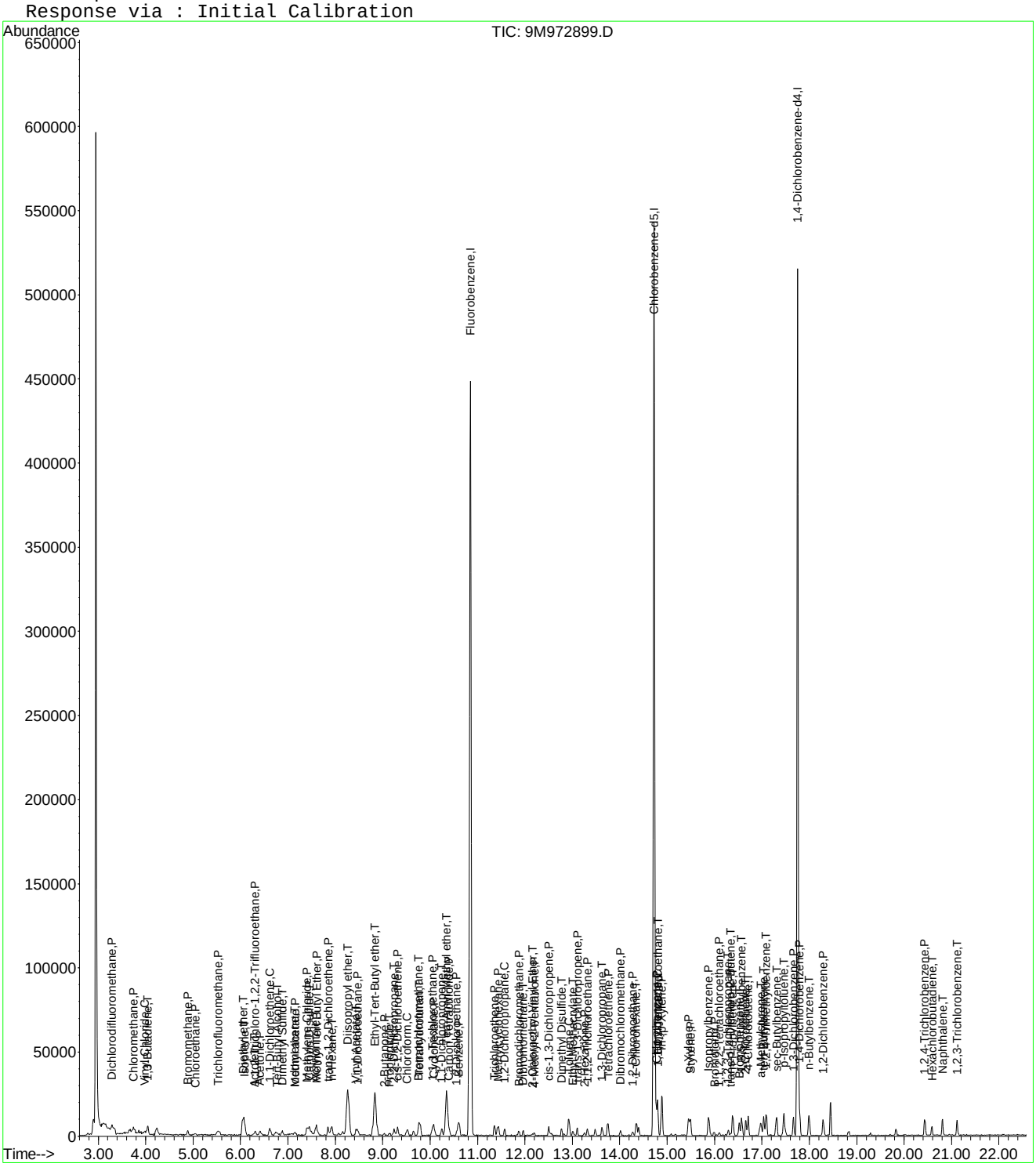

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	0.9518	0.0	100	0.00
3	P	Chloromethane	-1.0000	1.1891	0.0	100	0.00
4	C	Vinyl Chloride	1.0000	0.7642	23.6#	100	0.00
5	T	1,3-Butadiene	-1.0000	0.9139	0.0	0	0.00
6	P	Bromomethane	1.0000	1.1114	-11.1	100	0.00
7	P	Chloroethane	-1.0000	0.8072	0.0	100	0.00
8	P	Trichlorofluoromethane	1.0000	1.0561	-5.6	100	0.00
9	T	Diethyl ether	5.0000	4.6784	6.4	100	0.00
10	T	Isoprene	-1.0000	0.9421	0.0	0	0.00
11	T	Acrolein	2.5000	2.2122	11.5	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.7132	0.0	100	0.00
13	P	Acetone	-1.0000	5.8863	0.0	0	0.00
14	C	1,1-Dichloroethene	1.0000	0.9932	0.7	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	10.3548	0.0	100	0.00
16	T	Dimethyl Sulfide	1.0000	0.7615	23.9	100	0.00
17	T	Iodomethane	-1.0000	3.3944	0.0	0	0.01
18	P	Methyl acetate	-1.0000	0.9364	0.0	0	0.02
19	P	Methylene Chloride	-1.0000	1.0849	0.0	100	0.00
20	P	Carbon Disulfide	-1.0000	1.2619	0.0	0	0.00
21	T	Acrylonitrile	2.5000	2.3282	6.9	100	0.00
22	P	Methyl Tert Butyl Ether	1.0000	0.9229	7.7	100	0.00
23	P	trans-1,2-Dichloroethene	1.0000	0.9612	3.9	100	0.00
24	T	n-Hexane	-1.0000	0.9720	0.0	0	0.01
25	T	Diisopropyl ether	5.0000	4.7022	6.0	100	0.00
26	T	Vinyl Acetate	-1.0000	0.8597	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0483	-4.8	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.6979	6.0	100	0.00
29	P	2-Butanone	-1.0000	1.0263	0.0	100	0.00
30	T	Propionitrile	5.0000	4.2599	14.8	100	0.00
31	T	2,2-Dichloropropane	-1.0000	1.0506	0.0	100	0.00
32	P	cis-1,2-Dichloroethene	1.0000	0.9040	9.6	100	0.00
33	C	Chloroform	1.0000	0.9836	1.6	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.65#
35	T	Bromochloromethane	1.0000	0.7395	26.1#	100	0.00
36	T	Tetrahydrofuran	-1.0000	6.0054	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	1.0000	0.9793	2.1	100	0.00
39	P	Cyclohexane	1.0000	0.9818	1.8	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0315	-3.1	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	4.6780	6.4	100	0.00
42	P	Carbon Tetrachloride	-1.0000	0.9939	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	1.0000	0.8649	13.5	100	0.00
46	P	Benzene	1.0000	0.9703	3.0	100	0.00
47	P	Trichloroethene	1.0000	1.0012	-0.1	100	0.00
48	P	Methylcyclohexane	1.0000	0.8215	17.8	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.8752	12.5	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.88#
51	P	Bromodichloromethane	-1.0000	0.9198	0.0	100	0.00
52	T	Dibromomethane	1.0000	0.8672	13.3	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	3.0851	0.0	0	0.00
54	P	4-Methyl-2-Pentanone	-1.0000	0.5960	0.0	100	0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	-1.0000	0.8966	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.7387	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0978	0.0	100	0.00
59	C	Toluene	1.0000	0.9831	1.7	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.6401	0.0	0	0.00
61	P	trans-1,3-Dichloropropene	-1.0000	0.9614	0.0	100	0.00
62	P	1,1,2-Trichloroethane	1.0000	0.9227	7.7	100	0.00
63	P	2-Hexanone	-1.0000	0.7727	0.0	100	0.00
64	T	1,3-Dichloropropane	1.0000	0.9322	6.8	100	0.00
65	P	Tetrachloroethene	1.0000	1.0890	-8.9	100	0.00
66	P	Dibromochloromethane	-1.0000	1.0199	0.0	100	0.00
67	P	1,2-Dibromoethane	-1.0000	0.9047	0.0	100	0.00
68	T	1-Chlorohexane	1.0000	0.9410	5.9	100	0.00
69	P	Chlorobenzene	1.0000	1.0249	-2.5	100	0.00
70	T	1,1,1,2-Tetrachloroethane	-1.0000	0.8852	0.0	100	0.00
71	C	Ethylbenzene	1.0000	0.9987	0.1	100	0.00
72	P	m-,p-Xylene	2.0000	1.9388	3.1	100	0.00
73	P	o-Xylene	1.0000	0.9202	8.0	100	0.00
74	P	Styrene	1.0000	0.9178	8.2	100	0.00
75	P	Bromoform	-1.0000	0.8235	0.0	100	0.00
76	P	Isopropylbenzene	1.0000	0.9351	6.5	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	1.0000	0.8118	18.8	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.1351	0.0	100	0.00
80	T	1,2,3-Trichloropropane	1.0000	0.8568	14.3	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.8073	0.0	0	0.00
82	T	n-Propylbenzene	1.0000	1.0145	-1.4	100	0.00
83	T	Bromobenzene	1.0000	0.9095	9.1	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	1.0509	0.0	100	0.00
85	T	2-Chlorotoluene	-1.0000	1.1332	0.0	100	0.00
86	T	4-Chlorotoluene	1.0000	1.0518	-5.2	100	0.00
87	T	a-Methylstyrene	-1.0000	0.8544	0.0	0	0.00
88	T	tert-Butylbenzene	-1.0000	0.9540	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	1.0000	1.1053	-10.5	100	0.00
90	T	sec-Butylbenzene	1.0000	1.0320	-3.2	100	0.00
91	T	p-Isopropyltoluene	-1.0000	0.8918	0.0	100	0.00
92	P	1,3-Dichlorobenzene	1.0000	1.1370	-13.7	100	0.00
93	P	1,4-Dichlorobenzene	1.0000	1.1581	-15.8	100	0.00
94	T	n-Butylbenzene	1.0000	1.0498	-5.0	100	0.00
95	P	1,2-Dichlorobenzene	1.0000	1.0560	-5.6	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	0.3514	0.0	100	0.00
97	P	1,2,4-Trichlorobenzene	1.0000	1.1291	-12.9	100	0.00
98	T	Hexachlorobutadiene	1.0000	0.8939	10.6	100	0.00
99	T	Naphthalene	-1.0000	1.0826	0.0	100	0.00
100	T	1,2,3-Trichlorobenzene	1.0000	1.1232	-12.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1
9M972899.D 8260SL.M Fri Feb 26 11:12:31 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	472115	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	342668	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	156993	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.83	98	772	0.0891 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.18%#	
79) p-Bromofluorobenzene	16.23	95	570	0.1865 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.38%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.29	85	6383	1.9809 ug/kg#	78
3) Chloromethane	3.74	50	7027	2.2750 ug/kg	100
4) Vinyl Chloride	4.00	62	6001	1.9408 ug/kg	97
5) 1,3-Butadiene	4.04	54	6545	2.2249 ug/kg	95
6) Bromomethane	4.90	94	5050	2.5146 ug/kg	81
7) Chloroethane	5.04	64	2391	1.7357 ug/kg#	70
8) Trichlorofluoromethane	5.54	101	9777	2.1082 ug/kg#	94
9) Diethyl ether	6.06	59	58156	26.8255 ug/kg	97
10) Isoprene	6.09	67	5698	2.0580 ug/kg	89
11) Acrolein	6.30	56	5427	12.5543 ug/kg	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	4756	1.9886 ug/kg	93
13) Acetone	6.40	43	6167	6.9886 ug/kg	93
14) 1,1-Dichloroethene	6.62	61	9652	2.1877 ug/kg	91
15) Tert-Butyl Alcohol	6.75	59	26757	55.4271 ug/kg#	91
16) Dimethyl Sulfide	6.89	62	3840	2.0594 ug/kg	97
17) Iodomethane	7.14	142	1541	3.9079 ug/kg#	56
18) Methyl acetate	7.15	43	5334	2.2240 ug/kg#	69
19) Methylene Chloride	7.40	84	5116	2.1292 ug/kg	98
20) Carbon Disulfide	7.44	76	15010	2.2085 ug/kg	94
21) Acrylonitrile	7.59	53	14961	12.6096 ug/kg	100
22) Methyl Tert Butyl Ether	7.61	73	13630	1.9917 ug/kg	93
23) trans-1,2-Dichloroethene	7.85	61	7964	2.0255 ug/kg	100
24) n-Hexane	7.92	57	8619	2.1253 ug/kg	100
25) Diisopropyl ether	8.26	45	252190	26.7748 ug/kg	99
26) Vinyl Acetate	8.43	43	11207	2.0872 ug/kg	95
27) 1,1-Dichloroethane	8.47	63	10529	2.1320 ug/kg#	93
28) Ethyl-Tert-Butyl ether	8.83	59	234163	26.7377 ug/kg	99
29) 2-Butanone	9.03	43	3346	2.1978 ug/kg#	76
30) Propionitrile	9.14	54	12899	27.6861 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	8085	2.1934 ug/kg	88
32) cis-1,2-Dichloroethene	9.32	96	4861	1.8850 ug/kg	98
33) Chloroform	9.53	83	10005	2.2054 ug/kg	95
34) 1-Bromopropane	9.64	122	209	1.5465 ug/kg	96
35) Bromochloromethane	9.75	130	3273	1.9539 ug/kg	81
36) Tetrahydrofuran	9.78	42	26192	26.6900 ug/kg	94
38) 1,1,1-Trichloroethane	10.04	97	8229	2.0058 ug/kg	97
39) Cyclohexane	10.09	56	9354	2.0912 ug/kg	96
40) 1,1-Dichloropropene	10.23	75	6787	2.1024 ug/kg	88
41) Tert-Amyl-Methyl ether	10.34	73	167275	26.2768 ug/kg	98
42) Carbon Tetrachloride	10.39	117	7920	2.0823 ug/kg#	95

(#) = qualifier out of range (m) = manual integration
9M972900.D 8260SL.M Fri Feb 26 11:13:39 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	8488	2.1271 ug/kg	89
46)	Benzene	10.60	78	19454	2.1525 ug/kg	96
47)	Trichloroethene	11.35	130	6073	2.1207 ug/kg	96
48)	Methylcyclohexane	11.44	83	7523	2.0945 ug/kg	95
49)	1,2-Dichloropropane	11.58	63	5118	2.0621 ug/kg	93
50)	1,4-Dioxane	11.88	88	1938	52.0499 ug/kg	84
51)	Bromodichloromethane	11.87	83	7148	2.0436 ug/kg#	95
52)	Dibromomethane	11.97	174	3572	2.1721 ug/kg	91
53)	2-Chloroethyl Vinyl Ether	12.17	63	474	3.4830 ug/kg#	47
54)	4-Methyl-2-Pentanone	12.19	58	2111	1.9378 ug/kg#	64
55)	cis-1,3-Dichloropropene	12.50	75	7048	1.9341 ug/kg	92
56)	Dimethyl Disulfide	12.77	94	5832	1.5925 ug/kg	95
59)	Toluene	12.93	91	20786	2.1230 ug/kg	97
60)	Ethyl Methacrylate	13.01	69	4184	1.5417 ug/kg	98
61)	trans-1,3-Dichloropropene	13.11	75	6895	1.9553 ug/kg	92
62)	1,1,2-Trichloroethane	13.33	97	4055	1.9716 ug/kg	86
63)	2-Hexanone	13.25	43	3773	1.8373 ug/kg#	82
64)	1,3-Dichloropropane	13.62	76	7643	2.2302 ug/kg	97
65)	Tetrachloroethene	13.75	164	4327	2.0615 ug/kg	94
66)	Dibromochloromethane	14.01	129	6170	2.1465 ug/kg	87
67)	1,2-Dibromoethane	14.28	107	4656	2.0410 ug/kg	88
68)	1-Chlorohexane	14.35	91	5610	1.9430 ug/kg	97
69)	Chlorobenzene	14.77	112	14885	2.1632 ug/kg	95
70)	1,1,1,2-Tetrachloroethane	14.80	131	5145	1.9910 ug/kg	86
71)	Ethylbenzene	14.79	106	7287	2.0555 ug/kg	99
72)	m-,p-Xylene	14.89	106	19133	4.3702 ug/kg	93
73)	o-Xylene	15.45	106	8413	2.0024 ug/kg	94
74)	Styrene	15.49	104	14533	2.0313 ug/kg	97
75)	Bromoform	15.99	173	3135	1.6611 ug/kg	97
76)	Isopropylbenzene	15.87	105	23266	2.0628 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	5252	2.2053 ug/kg#	89
80)	1,2,3-Trichloropropane	16.28	110	1851	2.0495 ug/kg#	89
81)	trans-1,4-Dichloro-2-Buten	16.33	53	1413	1.5521 ug/kg	47
82)	n-Propylbenzene	16.38	91	25735	2.0854 ug/kg	99
83)	Bromobenzene	16.52	156	7006	2.4049 ug/kg	83
84)	1,3,5-Trimethylbenzene	16.57	105	18571	2.0048 ug/kg	99
85)	2-Chlorotoluene	16.66	91	18793	2.2705 ug/kg	97
86)	4-Chlorotoluene	16.70	91	16240	2.1222 ug/kg	96
87)	a-Methylstyrene	16.98	118	7524	1.7826 ug/kg	97
88)	tert-Butylbenzene	17.04	134	3654	1.8815 ug/kg	64
89)	1,2,4-Trimethylbenzene	17.09	105	20119	2.0739 ug/kg	99
90)	sec-Butylbenzene	17.31	105	24858	2.0835 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	20956	2.0813 ug/kg	96
92)	1,3-Dichlorobenzene	17.66	146	13695	2.3653 ug/kg	94
93)	1,4-Dichlorobenzene	17.79	146	12975	2.2416 ug/kg	82
94)	n-Butylbenzene	17.99	91	19734	2.1080 ug/kg	95
95)	1,2-Dichlorobenzene	18.30	146	11568	2.1533 ug/kg	91
96)	1,2-Dibromo-3-Chloropropan	19.30	157	941	1.3644 ug/kg	84
97)	1,2,4-Trichlorobenzene	20.44	180	8356	2.1910 ug/kg	98
98)	Hexachlorobutadiene	20.59	225	4571	2.2738 ug/kg	87
99)	Naphthalene	20.81	128	20072	2.0983 ug/kg	96
100)	1,2,3-Trichlorobenzene	21.11	180	7948	2.1487 ug/kg	96

(#) = qualifier out of range (m) = manual integration
9M972900.D 8260SL.M Fri Feb 26 11:13:39 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration

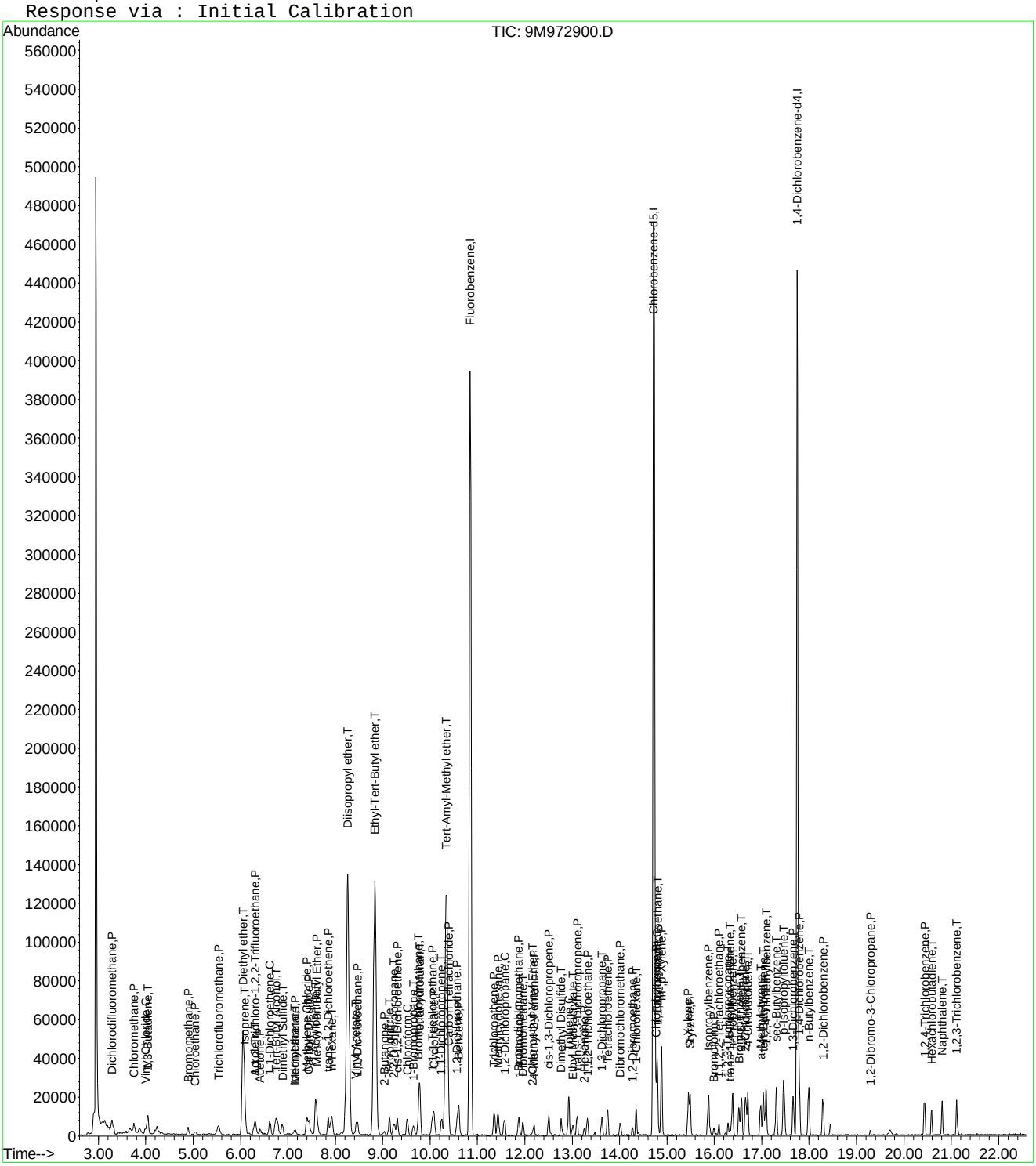

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	1.9809	0.0	100	0.01
3	P	Chloromethane	2.0000	2.2750	-13.7	100	0.00
4	C	Vinyl Chloride	2.0000	1.9408	3.0	100	0.01
5	T	1,3-Butadiene	2.0000	2.2249	-11.2	100	0.00
6	P	Bromomethane	2.0000	2.5146	-25.7#	100	0.01
7	P	Chloroethane	2.0000	1.7357	13.2	100	0.00
8	P	Trichlorofluoromethane	2.0000	2.1082	-5.4	100	0.01
9	T	Diethyl ether	25.0000	26.8255	-7.3	100	0.01
10	T	Isoprene	2.0000	2.0580	-2.9	100	0.00
11	T	Acrolein	12.5000	12.5543	-0.4	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.9886	0.6	100	0.01
13	P	Acetone	-1.0000	6.9886	0.0	0	0.00
14	C	1,1-Dichloroethene	2.0000	2.1877	-9.4	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	55.4271	-10.9	100	0.00
16	T	Dimethyl Sulfide	2.0000	2.0594	-3.0	100	0.01
17	T	Iodomethane	-1.0000	3.9079	0.0	0	0.01
18	P	Methyl acetate	2.0000	2.2240	-11.2	100	0.01
19	P	Methylene Chloride	2.0000	2.1292	-6.5	100	0.00
20	P	Carbon Disulfide	2.0000	2.2085	-10.4	100	0.00
21	T	Acrylonitrile	12.5000	12.6096	-0.9	100	0.00
22	P	Methyl Tert Butyl Ether	2.0000	1.9917	0.4	100	0.00
23	P	trans-1,2-Dichloroethene	2.0000	2.0255	-1.3	100	0.00
24	T	n-Hexane	2.0000	2.1253	-6.3	100	0.01
25	T	Diisopropyl ether	25.0000	26.7748	-7.1	100	0.00
26	T	Vinyl Acetate	2.0000	2.0872	-4.4	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.1320	-6.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	26.7377	-7.0	100	0.00
29	P	2-Butanone	2.0000	2.1978	-9.9	100	0.00
30	T	Propionitrile	25.0000	27.6861	-10.7	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1934	-9.7	100	0.00
32	P	cis-1,2-Dichloroethene	2.0000	1.8850	5.8	100	0.01
33	C	Chloroform	2.0000	2.2054	-10.3	100	0.01
34	T	1-Bromopropane	2.0000	1.5465	22.7	100	0.00
35	T	Bromochloromethane	2.0000	1.9539	2.3	100	0.00
36	T	Tetrahydrofuran	25.0000	26.6900	-6.8	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	2.0000	2.0058	-0.3	100	0.00
39	P	Cyclohexane	2.0000	2.0913	-4.6	100	0.01
40	T	1,1-Dichloropropene	2.0000	2.1023	-5.1	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	26.2768	-5.1	100	0.00
42	P	Carbon Tetrachloride	2.0000	2.0823	-4.1	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	2.0000	2.1271	-6.4	100	0.00
46	P	Benzene	2.0000	2.1525	-7.6	100	0.00
47	P	Trichloroethene	2.0000	2.1207	-6.0	100	0.00
48	P	Methylcyclohexane	2.0000	2.0945	-4.7	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0621	-3.1	100	0.01
50	T	1,4-Dioxane	50.0000	52.0499	-4.1	100	0.00
51	P	Bromodichloromethane	2.0000	2.0436	-2.2	100	0.00
52	T	Dibromomethane	2.0000	2.1721	-8.6	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	3.4830	0.0	0	0.00
54	P	4-Methyl-2-Pentanone	-1.0000	1.9378	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	2.0000	1.9341	3.3	100	0.00
56	T	Dimethyl Disulfide	2.0000	1.5925	20.4	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0891	0.0	100	0.00
59	C	Toluene	2.0000	2.1230	-6.2	100	0.00
60	T	Ethyl Methacrylate	-1.0000	1.5417	0.0	0	0.00
61	P	trans-1,3-Dichloropropene	2.0000	1.9553	2.2	100	0.00
62	P	1,1,2-Trichloroethane	2.0000	1.9716	1.4	100	0.00
63	P	2-Hexanone	-1.0000	1.8373	0.0	100	0.00
64	T	1,3-Dichloropropane	2.0000	2.2302	-11.5	100	0.00
65	P	Tetrachloroethene	2.0000	2.0616	-3.1	100	0.00
66	P	Dibromochloromethane	2.0000	2.1465	-7.3	100	0.00
67	P	1,2-Dibromoethane	-1.0000	2.0410	0.0	100	0.00
68	T	1-Chlorohexane	2.0000	1.9430	2.8	100	0.00
69	P	Chlorobenzene	2.0000	2.1632	-8.2	100	0.00
70	T	1,1,1,2-Tetrachloroethane	2.0000	1.9910	0.4	100	0.00
71	C	Ethylbenzene	2.0000	2.0555	-2.8	100	0.00
72	P	m-,p-Xylene	4.0000	4.3702	-9.3	100	0.00
73	P	o-Xylene	2.0000	2.0024	-0.1	100	0.00
74	P	Styrene	2.0000	2.0313	-1.6	100	0.00
75	P	Bromoform	2.0000	1.6611	16.9	100	0.00
76	P	Isopropylbenzene	2.0000	2.0628	-3.1	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	2.0000	2.2053	-10.3	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.1865	0.0	100	0.00
80	T	1,2,3-Trichloropropane	2.0000	2.0495	-2.5	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	2.0000	1.5521	22.4	100	0.00
82	T	n-Propylbenzene	2.0000	2.0854	-4.3	100	0.00
83	T	Bromobenzene	2.0000	2.4049	-20.2	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	2.0048	0.0	100	0.00
85	T	2-Chlorotoluene	2.0000	2.2705	-13.5	100	0.00
86	T	4-Chlorotoluene	2.0000	2.1222	-6.1	100	0.00
87	T	a-Methylstyrene	-1.0000	1.7826	0.0	0	0.00
88	T	tert-Butylbenzene	-1.0000	1.8815	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	2.0000	2.0739	-3.7	100	0.00
90	T	sec-Butylbenzene	2.0000	2.0835	-4.2	100	0.00
91	T	p-Isopropyltoluene	-1.0000	2.0813	0.0	100	0.00
92	P	1,3-Dichlorobenzene	2.0000	2.3653	-18.3	100	0.00
93	P	1,4-Dichlorobenzene	2.0000	2.2416	-12.1	100	0.00
94	T	n-Butylbenzene	2.0000	2.1080	-5.4	100	0.00
95	P	1,2-Dichlorobenzene	2.0000	2.1533	-7.7	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	1.3644	0.0	100	0.00
97	P	1,2,4-Trichlorobenzene	2.0000	2.1910	-9.6	100	0.00
98	T	Hexachlorobutadiene	2.0000	2.2738	-13.7	100	0.00
99	T	Naphthalene	2.0000	2.0983	-4.9	100	0.00
100	T	1,2,3-Trichlorobenzene	2.0000	2.1487	-7.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972900.D 8260SL.M Fri Feb 26 11:13:36 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	544259	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	391881	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.76	152	178969	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	29036	9.8422 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 19.68%#		
43) 1,2-Dichloroethane-d4	10.44	65	38093	10.2911 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 20.58%#		
58) Toluene-d8	12.83	98	95044	9.5885 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 19.18%#		
79) p-Bromofluorobenzene	16.23	95	32806	9.4138 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 18.82%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	14756	3.9724 ug/kg	92
3) Chloromethane	3.74	50	15227	4.2763 ug/kg	91
4) Vinyl Chloride	3.99	62	17097	4.7964 ug/kg	89
5) 1,3-Butadiene	4.04	54	14484	4.2710 ug/kg	97
6) Bromomethane	4.89	94	9847	4.2533 ug/kg	95
7) Chloroethane	5.04	64	6311	3.9741 ug/kg	93
8) Trichlorofluoromethane	5.53	101	22668	4.2400 ug/kg	100
9) Diethyl ether	6.05	59	118004	47.2164 ug/kg	99
10) Isoprene	6.10	67	13644	4.2747 ug/kg	95
11) Acrolein	6.30	56	12131	24.3428 ug/kg	84
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	12752	4.6251 ug/kg	95
13) Acetone	6.41	43	9765	4.9429 ug/kg	94
14) 1,1-Dichloroethene	6.62	61	21760	4.2784 ug/kg	99
15) Tert-Butyl Alcohol	6.76	59	50500	90.7440 ug/kg	98
16) Dimethyl Sulfide	6.88	62	10098	4.6977 ug/kg	87
17) Iodomethane	7.13	142	4147	5.3886 ug/kg	97
18) Methyl acetate	7.15	43	12159	4.3976 ug/kg#	87
19) Methylene Chloride	7.41	84	11825	4.2690 ug/kg	99
20) Carbon Disulfide	7.45	76	34078	4.3495 ug/kg	94
21) Acrylonitrile	7.58	53	31012	22.6731 ug/kg	100
22) Methyl Tert Butyl Ether	7.61	73	34936	4.4284 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	20503	4.5233 ug/kg	95
24) n-Hexane	7.92	57	20970	4.4853 ug/kg	98
25) Diisopropyl ether	8.26	45	505084	46.5162 ug/kg	100
26) Vinyl Acetate	8.44	43	28253	4.5644 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	24239	4.2575 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	463447	45.9037 ug/kg	99
29) 2-Butanone	9.03	43	8265	4.7092 ug/kg	88
30) Propionitrile	9.15	54	25938	48.2931 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	17954	4.2251 ug/kg	91
32) cis-1,2-Dichloroethene	9.32	96	13479	4.5340 ug/kg	84
33) Chloroform	9.52	83	23525	4.4982 ug/kg	95
34) 1-Bromopropane	9.65	122	2239	5.8652 ug/kg	90
35) Bromochloromethane	9.75	130	9205	4.7667 ug/kg	97
36) Tetrahydrofuran	9.78	42	53635	47.4100 ug/kg	99
38) 1,1,1-Trichloroethane	10.04	97	20945	4.4285 ug/kg	91
39) Cyclohexane	10.09	56	23110	4.4818 ug/kg	98
40) 1,1-Dichloropropene	10.24	75	16349	4.3930 ug/kg	99
41) Tert-Amyl-Methyl ether	10.35	73	343692	46.8330 ug/kg	98
42) Carbon Tetrachloride	10.39	117	18527	4.2254 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	21553	4.6852 ug/kg	99
46)	Benzene	10.60	78	45352	4.3528 ug/kg	99
47)	Trichloroethene	11.35	130	14266	4.3213 ug/kg	97
48)	Methylcyclohexane	11.44	83	17527	4.2330 ug/kg	97
49)	1,2-Dichloropropane	11.56	63	13071	4.5684 ug/kg	100
50)	1,4-Dioxane	11.88	88	3926	91.4657 ug/kg	99
51)	Bromodichloromethane	11.87	83	18008	4.4660 ug/kg	97
52)	Dibromomethane	11.96	174	8993	4.7438 ug/kg	95
53)	2-Chloroethyl Vinyl Ether	12.16	63	2468	5.7758 ug/kg#	66
54)	4-Methyl-2-Pentanone	12.19	58	4862	3.8716 ug/kg	95
55)	cis-1,3-Dichloropropene	12.50	75	18341	4.3659 ug/kg	96
56)	Dimethyl Disulfide	12.77	94	17792	4.2144 ug/kg	91
59)	Toluene	12.92	91	48377	4.3206 ug/kg	96
60)	Ethyl Methacrylate	13.02	69	12442	4.0089 ug/kg	96
61)	trans-1,3-Dichloropropene	13.10	75	17626	4.3707 ug/kg	95
62)	1,1,2-Trichloroethane	13.33	97	10657	4.5308 ug/kg	99
63)	2-Hexanone	13.25	43	10194	4.3408 ug/kg	96
64)	1,3-Dichloropropane	13.62	76	17885	4.5633 ug/kg	100
65)	Tetrachloroethene	13.75	164	10317	4.2981 ug/kg	97
66)	Dibromochloromethane	14.01	129	14152	4.3052 ug/kg	98
67)	1,2-Dibromoethane	14.28	107	12182	4.6694 ug/kg	99
68)	1-Chlorohexane	14.35	91	12970	3.9281 ug/kg	87
69)	Chlorobenzene	14.77	112	36017	4.5769 ug/kg	85
70)	1,1,1,2-Tetrachloroethane	14.80	131	12746	4.3130 ug/kg	95
71)	Ethylbenzene	14.80	106	17828	4.3974 ug/kg	92
72)	m-,p-Xylene	14.89	106	45904	9.1683 ug/kg	95
73)	o-Xylene	15.46	106	21754	4.5275 ug/kg	91
74)	Styrene	15.49	104	35390	4.3253 ug/kg	98
75)	Bromoform	15.98	173	9363	4.3382 ug/kg	96
76)	Isopropylbenzene	15.88	105	55721	4.3198 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	13197	4.8610 ug/kg	97
80)	1,2,3-Trichloropropane	16.29	110	5070	4.9243 ug/kg#	28
81)	trans-1,4-Dichloro-2-Buten	16.33	53	4246	4.0913 ug/kg#	39
82)	n-Propylbenzene	16.39	91	64689	4.5983 ug/kg	100
83)	Bromobenzene	16.52	156	15405	4.6386 ug/kg	90
84)	1,3,5-Trimethylbenzene	16.58	105	49527	4.6900 ug/kg	98
85)	2-Chlorotoluene	16.66	91	41422	4.3899 ug/kg	97
86)	4-Chlorotoluene	16.70	91	40985	4.6981 ug/kg	99
87)	a-Methylstyrene	16.98	118	20049	4.1667 ug/kg	90
88)	tert-Butylbenzene	17.04	134	10027	4.5290 ug/kg	84
89)	1,2,4-Trimethylbenzene	17.09	105	51253	4.6345 ug/kg	98
90)	sec-Butylbenzene	17.30	105	60716	4.4642 ug/kg	98
91)	p-Isopropyltoluene	17.46	119	53318	4.6453 ug/kg	98
92)	1,3-Dichlorobenzene	17.66	146	29255	4.4323 ug/kg	98
93)	1,4-Dichlorobenzene	17.79	146	30175	4.5730 ug/kg	91
94)	n-Butylbenzene	17.99	91	45964	4.3071 ug/kg	98
95)	1,2-Dichlorobenzene	18.30	146	27310	4.4593 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.30	157	3147	4.0028 ug/kg	87
97)	1,2,4-Trichlorobenzene	20.44	180	18372	4.2258 ug/kg	95
98)	Hexachlorobutadiene	20.59	225	9618	4.1968 ug/kg	90
99)	Naphthalene	20.81	128	47189	4.3274 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.11	180	17859	4.2352 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972901.D 8260SL.M Fri Feb 26 11:21:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

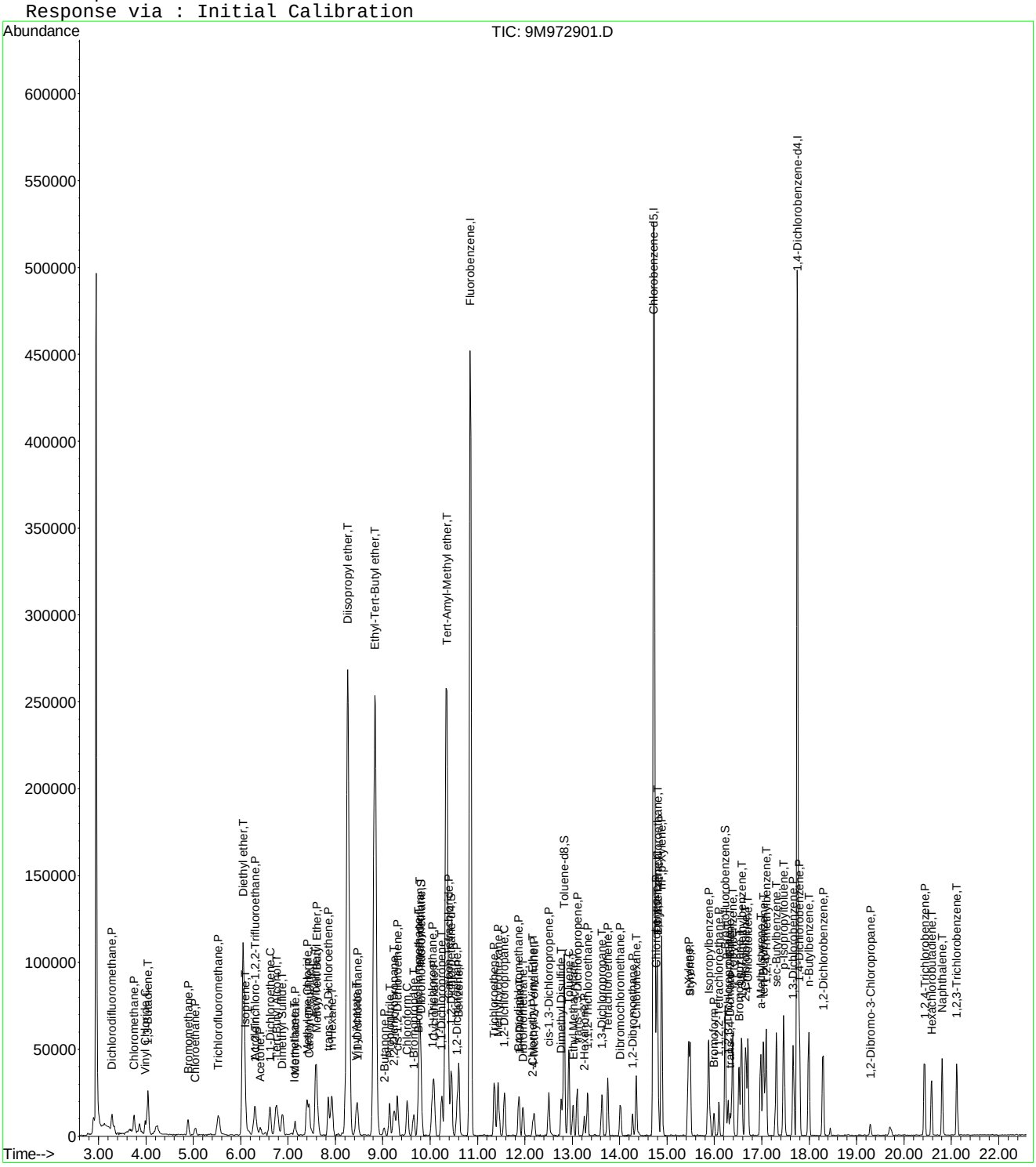

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	5.0000	3.9724	20.6	100	0.00
3	P	Chloromethane	5.0000	4.2763	14.5	100	0.00
4	C	Vinyl Chloride	5.0000	4.7964	4.1	100	0.00
5	T	1,3-Butadiene	5.0000	4.2710	14.6	100	0.00
6	P	Bromomethane	5.0000	4.2534	14.9	100	0.00
7	P	Chloroethane	5.0000	3.9741	20.5	100	0.00
8	P	Trichlorofluoromethane	5.0000	4.2400	15.2	100	0.00
9	T	Diethyl ether	50.0000	47.2164	5.6	100	0.00
10	T	Isoprene	5.0000	4.2747	14.5	100	0.01
11	T	Acrolein	25.0000	24.3428	2.6	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.6251	7.5	100	0.00
13	P	Acetone	5.0000	4.9429	1.1	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.2784	14.4	100	0.01
15	T	Tert-Butyl Alcohol	100.0000	90.7440	9.3	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.6977	6.0	100	0.00
17	T	Iodomethane	5.0000	5.3886	-7.8	100	0.00
18	P	Methyl acetate	5.0000	4.3976	12.0	100	0.01
19	P	Methylene Chloride	5.0000	4.2690	14.6	100	0.00
20	P	Carbon Disulfide	5.0000	4.3495	13.0	100	0.00
21	T	Acrylonitrile	25.0000	22.6731	9.3	100	0.00
22	P	Methyl Tert Butyl Ether	5.0000	4.4284	11.4	100	0.00
23	P	trans-1,2-Dichloroethene	5.0000	4.5233	9.5	100	0.00
24	T	n-Hexane	5.0000	4.4854	10.3	100	0.01
25	T	Diisopropyl ether	50.0000	46.5162	7.0	100	0.00
26	T	Vinyl Acetate	5.0000	4.5644	8.7	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.2575	14.8	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	45.9037	8.2	100	0.00
29	P	2-Butanone	5.0000	4.7092	5.8	100	0.00
30	T	Propionitrile	50.0000	48.2931	3.4	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.2251	15.5	100	-0.01
32	P	cis-1,2-Dichloroethene	5.0000	4.5340	9.3	100	0.00
33	C	Chloroform	5.0000	4.4982	10.0	100	0.00
34	T	1-Bromopropane	5.0000	5.8651	-17.3	100	0.00
35	T	Bromochloromethane	5.0000	4.7667	4.7	100	0.00
36	T	Tetrahydrofuran	50.0000	47.4100	5.2	100	0.00
37	S	Dibromofluoromethane	10.0000	9.8422	1.6	100	0.00
38	P	1,1,1-Trichloroethane	5.0000	4.4285	11.4	100	0.00
39	P	Cyclohexane	5.0000	4.4818	10.4	100	0.01
40	T	1,1-Dichloropropene	5.0000	4.3930	12.1	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	46.8330	6.3	100	0.00
42	P	Carbon Tetrachloride	5.0000	4.2254	15.5	100	0.00
43	S	1,2-Dichloroethane-d4	10.0000	10.2911	-2.9	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	5.0000	4.6852	6.3	100	0.00
46	P	Benzene	5.0000	4.3528	12.9	100	0.00
47	P	Trichloroethene	5.0000	4.3213	13.6	100	0.00
48	P	Methylcyclohexane	5.0000	4.2330	15.3	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.5684	8.6	100	0.00
50	T	1,4-Dioxane	100.0000	91.4657	8.5	100	0.00
51	P	Bromodichloromethane	5.0000	4.4660	10.7	100	0.00
52	T	Dibromomethane	5.0000	4.7438	5.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	5.7758	-15.5	100	0.00
54	P	4-Methyl-2-Pentanone	5.0000	3.8716	22.6	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	5.0000	4.3659	12.7	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.2144	15.7	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	-0.01
58	S	Toluene-d8	10.0000	9.5885	4.1	100	0.00
59	C	Toluene	5.0000	4.3206	13.6	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.0089	19.8	100	0.00
61	P	trans-1,3-Dichloropropene	5.0000	4.3707	12.6	100	0.00
62	P	1,1,2-Trichloroethane	5.0000	4.5309	9.4	100	0.00
63	P	2-Hexanone	5.0000	4.3408	13.2	100	0.00
64	T	1,3-Dichloropropane	5.0000	4.5633	8.7	100	-0.01
65	P	Tetrachloroethene	5.0000	4.2981	14.0	100	0.00
66	P	Dibromochloromethane	5.0000	4.3052	13.9	100	0.00
67	P	1,2-Dibromoethane	5.0000	4.6694	6.6	100	0.00
68	T	1-Chlorohexane	5.0000	3.9281	21.4	100	0.00
69	P	Chlorobenzene	5.0000	4.5769	8.5	100	0.00
70	T	1,1,1,2-Tetrachloroethane	5.0000	4.3130	13.7	100	0.00
71	C	Ethylbenzene	5.0000	4.3974	12.1	100	0.00
72	P	m-,p-Xylene	10.0000	9.1683	8.3	100	0.00
73	P	o-Xylene	5.0000	4.5275	9.5	100	0.00
74	P	Styrene	5.0000	4.3253	13.5	100	0.00
75	P	Bromoform	5.0000	4.3382	13.2	100	-0.01
76	P	Isopropylbenzene	5.0000	4.3198	13.6	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	5.0000	4.8610	2.8	100	-0.01
79	S	p-Bromofluorobenzene	10.0000	9.4138	5.9	100	0.00
80	T	1,2,3-Trichloropropane	5.0000	4.9243	1.5	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	5.0000	4.0913	18.2	100	0.00
82	T	n-Propylbenzene	5.0000	4.5983	8.0	100	0.00
83	T	Bromobenzene	5.0000	4.6386	7.2	100	0.00
84	T	1,3,5-Trimethylbenzene	5.0000	4.6900	6.2	100	0.00
85	T	2-Chlorotoluene	5.0000	4.3899	12.2	100	0.00
86	T	4-Chlorotoluene	5.0000	4.6981	6.0	100	0.00
87	T	a-Methylstyrene	5.0000	4.1667	16.7	100	0.00
88	T	tert-Butylbenzene	5.0000	4.5290	9.4	100	0.00
89	T	1,2,4-Trimethylbenzene	5.0000	4.6345	7.3	100	0.00
90	T	sec-Butylbenzene	5.0000	4.4642	10.7	100	0.00
91	T	p-Isopropyltoluene	5.0000	4.6453	7.1	100	0.00
92	P	1,3-Dichlorobenzene	5.0000	4.4323	11.4	100	0.00
93	P	1,4-Dichlorobenzene	5.0000	4.5730	8.5	100	-0.01
94	T	n-Butylbenzene	5.0000	4.3071	13.9	100	0.00
95	P	1,2-Dichlorobenzene	5.0000	4.4593	10.8	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	5.0000	4.0028	19.9	100	0.00
97	P	1,2,4-Trichlorobenzene	5.0000	4.2258	15.5	100	0.00
98	T	Hexachlorobutadiene	5.0000	4.1968	16.1	100	0.00
99	T	Naphthalene	5.0000	4.3274	13.5	100	0.00
100	T	1,2,3-Trichlorobenzene	5.0000	4.2352	15.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972901.D 8260SL.M Fri Feb 26 11:21:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972902.D Vial: 7
Acq On : 25 Feb 2016 18:59 Operator: ADC
Sample : WG558732-07 20.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	491006	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	357658	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	168257	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	47666	17.9094 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 35.82%#		
43) 1,2-Dichloroethane-d4	10.45	65	60269	18.0480 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 36.10%#		
58) Toluene-d8	12.82	98	163811	18.1074 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 36.22%#		
79) p-Bromofluorobenzene	16.23	95	58931	17.9870 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 35.98%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	78283	23.3598 ug/kg	99
3) Chloromethane	3.75	50	64951	20.2188 ug/kg	98
4) Vinyl Chloride	3.99	62	73167	22.7523 ug/kg	97
5) 1,3-Butadiene	4.04	54	64372	21.0404 ug/kg	98
6) Bromomethane	4.88	94	40556	19.4178 ug/kg	97
7) Chloroethane	5.04	64	27981	19.5307 ug/kg	97
8) Trichlorofluoromethane	5.53	101	98871	20.4994 ug/kg	98
9) Diethyl ether	6.06	59	191078	84.7472 ug/kg	99
10) Isoprene	6.10	67	59437	20.6414 ug/kg	98
11) Acrolein	6.30	56	18057	40.1641 ug/kg	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	50002	20.1026 ug/kg	100
13) Acetone	6.42	43	27164	20.4768 ug/kg	100
14) 1,1-Dichloroethene	6.62	61	94732	20.6460 ug/kg	98
15) Tert-Butyl Alcohol	6.75	59	85695	170.6872 ug/kg	97
16) Dimethyl Sulfide	6.88	62	40580	20.9258 ug/kg	99
17) Iodomethane	7.13	142	21330	17.5663 ug/kg	96
18) Methyl acetate	7.15	43	54770	21.9573 ug/kg	99
19) Methylene Chloride	7.41	84	51619	20.6564 ug/kg	95
20) Carbon Disulfide	7.45	76	145286	20.5545 ug/kg	97
21) Acrylonitrile	7.59	53	50918	41.2640 ug/kg	97
22) Methyl Tert Butyl Ether	7.61	73	149271	20.9731 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	84416	20.6434 ug/kg	98
24) n-Hexane	7.92	57	82582	19.5795 ug/kg	98
25) Diisopropyl ether	8.26	45	841729	85.9275 ug/kg	99
26) Vinyl Acetate	8.44	43	107114	19.1814 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	104490	20.3440 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	777976	85.4147 ug/kg	99
29) 2-Butanone	9.02	43	30691	19.3834 ug/kg	100
30) Propionitrile	9.14	54	41719	86.0996 ug/kg	99
31) 2,2-Dichloropropane	9.24	77	73960	19.2927 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	56404	21.0307 ug/kg	100
33) Chloroform	9.52	83	94621	20.0546 ug/kg	98
34) 1-Bromopropane	9.65	122	8251	20.7938 ug/kg	98
35) Bromochloromethane	9.75	130	38059	21.8457 ug/kg	99
36) Tetrahydrofuran	9.77	42	86589	84.8405 ug/kg	100
38) 1,1,1-Trichloroethane	10.05	97	85938	20.1411 ug/kg	99
39) Cyclohexane	10.09	56	96933	20.8373 ug/kg	98
40) 1,1-Dichloropropene	10.25	75	67544	20.1175 ug/kg	96
41) Tert-Amyl-Methyl ether	10.34	73	562826	85.0111 ug/kg	99
42) Carbon Tetrachloride	10.39	117	79566	20.1143 ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972902.D 8260SL.M Fri Feb 26 11:21:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972902.D Vial: 7
Acq On : 25 Feb 2016 18:59 Operator: ADC
Sample : WG558732-07 20.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	86857	20.9287	ug/kg	98
46)	Benzene	10.60	78	190747	20.2931	ug/kg	98
47)	Trichloroethene	11.35	130	61315	20.5871	ug/kg	99
48)	Methylcyclohexane	11.44	83	79384	21.2516	ug/kg	99
49)	1,2-Dichloropropane	11.56	63	54356	21.0584	ug/kg	98
50)	1,4-Dioxane	11.88	88	7054	182.1639	ug/kg	93
51)	Bromodichloromethane	11.87	83	73160	20.1115	ug/kg	99
52)	Dibromomethane	11.97	174	35844	20.9583	ug/kg	97
53)	2-Chloroethyl Vinyl Ether	12.17	63	11048	17.4432	ug/kg	94
54)	4-Methyl-2-Pentanone	12.20	58	22247	19.6364	ug/kg	96
55)	cis-1,3-Dichloropropene	12.50	75	77533	20.4577	ug/kg	99
56)	Dimethyl Disulfide	12.77	94	77400	20.3222	ug/kg	99
59)	Toluene	12.93	91	209919	20.5421	ug/kg	99
60)	Ethyl Methacrylate	13.01	69	58827	20.7683	ug/kg	99
61)	trans-1,3-Dichloropropene	13.11	75	73778	20.0452	ug/kg	98
62)	1,1,2-Trichloroethane	13.32	97	45475	21.1838	ug/kg	98
63)	2-Hexanone	13.25	43	40183	18.7479	ug/kg	97
64)	1,3-Dichloropropane	13.62	76	73060	20.4249	ug/kg	95
65)	Tetrachloroethene	13.75	164	44423	20.2778	ug/kg	96
66)	Dibromochloromethane	14.01	129	59220	19.7391	ug/kg	99
67)	1,2-Dibromoethane	14.27	107	48648	20.4311	ug/kg	97
68)	1-Chlorohexane	14.35	91	64519	21.4099	ug/kg	96
69)	Chlorobenzene	14.77	112	150639	20.9742	ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	55462	20.5631	ug/kg	99
71)	Ethylbenzene	14.79	106	77813	21.0297	ug/kg	100
72)	m-,p-Xylene	14.89	106	192168	42.0536	ug/kg	98
73)	o-Xylene	15.45	106	92490	21.0911	ug/kg	98
74)	Styrene	15.49	104	154534	20.6939	ug/kg	100
75)	Bromoform	16.00	173	39818	20.2142	ug/kg	98
76)	Isopropylbenzene	15.87	105	249418	21.1865	ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	53687	21.0342	ug/kg	98
80)	1,2,3-Trichloropropane	16.28	110	19658	20.3087	ug/kg	98
81)	trans-1,4-Dichloro-2-Buten	16.33	53	21143	21.6696	ug/kg	89
82)	n-Propylbenzene	16.39	91	283998	21.4728	ug/kg	98
83)	Bromobenzene	16.52	156	65363	20.9343	ug/kg	95
84)	1,3,5-Trimethylbenzene	16.57	105	212735	21.4278	ug/kg	99
85)	2-Chlorotoluene	16.66	91	189159	21.3235	ug/kg	99
86)	4-Chlorotoluene	16.70	91	171741	20.9401	ug/kg	99
87)	a-Methylstyrene	16.98	118	95360	21.0801	ug/kg	99
88)	tert-Butylbenzene	17.03	134	43749	21.0188	ug/kg	90
89)	1,2,4-Trimethylbenzene	17.08	105	218350	21.0010	ug/kg	99
90)	sec-Butylbenzene	17.31	105	268054	20.9635	ug/kg	100
91)	p-Isopropyltoluene	17.46	119	225612	20.9076	ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	122605	19.7580	ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	124659	20.0949	ug/kg	99
94)	n-Butylbenzene	17.99	91	199655	19.8998	ug/kg	99
95)	1,2-Dichlorobenzene	18.30	146	115021	19.9768	ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	14138	19.1277	ug/kg	95
97)	1,2,4-Trichlorobenzene	20.43	180	77418	18.9408	ug/kg	99
98)	Hexachlorobutadiene	20.59	225	41508	19.2651	ug/kg	96
99)	Naphthalene	20.81	128	204933	19.9897	ug/kg	98
100)	1,2,3-Trichlorobenzene	21.12	180	75616	19.0736	ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972902.D Vial: 7
Acq On : 25 Feb 2016 18:59 Operator: ADC
Sample : WG558732-07 20.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

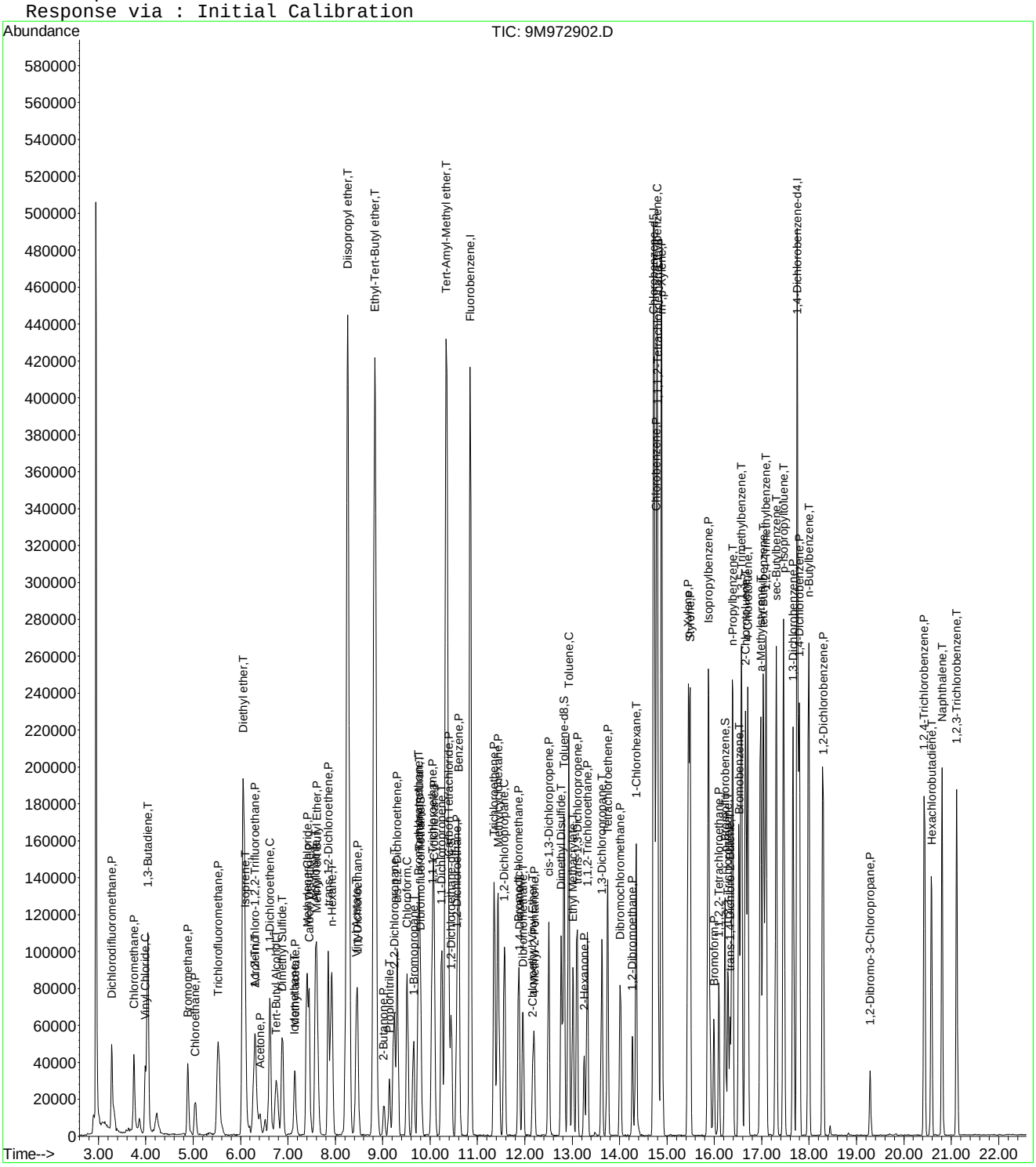

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972903.D Vial: 8
Acq On : 25 Feb 2016 19:29 Operator: ADC
Sample : WG558732-08 100.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:57 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	535022	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	390279	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.75	152	187456	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	305515	105.3466 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 210.70%#		
43) 1,2-Dichloroethane-d4	10.45	65	383447	105.3793 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 210.76%#		
58) Toluene-d8	12.83	98	1052175	106.5842 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 213.16%#		
79) p-Bromofluorobenzene	16.23	95	403966	110.6707 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 221.34%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	340079	93.1314 ug/kg	98
3) Chloromethane	3.74	50	316834	90.5143 ug/kg	100
4) Vinyl Chloride	3.99	62	366384	104.5591 ug/kg	99
5) 1,3-Butadiene	4.04	54	317949	95.3739 ug/kg	98
6) Bromomethane	4.88	94	198493	87.2180 ug/kg	99
7) Chloroethane	5.04	64	148539	95.1503 ug/kg	96
8) Trichlorofluoromethane	5.53	101	502703	95.6532 ug/kg	99
9) Diethyl ether	6.06	59	457873	186.3696 ug/kg	99
10) Isoprene	6.09	67	302269	96.3367 ug/kg	100
11) Acrolein	6.30	56	49319	100.6749 ug/kg	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	264925	97.7467 ug/kg	100
13) Acetone	6.41	43	126959	96.0965 ug/kg	97
14) 1,1-Dichloroethene	6.61	61	485466	97.0986 ug/kg	99
15) Tert-Butyl Alcohol	6.77	59	202804	370.7125 ug/kg	97
16) Dimethyl Sulfide	6.88	62	209613	99.1979 ug/kg	97
17) Iodomethane	7.14	142	134789	88.4431 ug/kg	96
18) Methyl acetate	7.15	43	256770	94.4705 ug/kg	99
19) Methylene Chloride	7.40	84	256919	94.3530 ug/kg	100
20) Carbon Disulfide	7.45	76	725343	94.1764 ug/kg	99
21) Acrylonitrile	7.59	53	131913	98.1077 ug/kg	97
22) Methyl Tert Butyl Ether	7.61	73	763125	98.4009 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	435514	97.7404 ug/kg	99
24) n-Hexane	7.92	57	458951	99.8615 ug/kg	98
25) Diisopropyl ether	8.26	45	1991599	186.5850 ug/kg	99
26) Vinyl Acetate	8.44	43	593217	97.4908 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	533571	95.3384 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	1850360	186.4394 ug/kg	100
29) 2-Butanone	9.03	43	167064	96.8316 ug/kg	99
30) Propionitrile	9.14	54	102467	194.0735 ug/kg	99
31) 2,2-Dichloropropane	9.24	77	409808	98.1051 ug/kg	98
32) cis-1,2-Dichloroethene	9.31	96	291782	99.8428 ug/kg	100
33) Chloroform	9.52	83	491651	95.6310 ug/kg	100
34) 1-Bromopropane	9.65	122	43084	95.7559 ug/kg	98
35) Bromochloromethane	9.75	130	191150	100.6929 ug/kg	97
36) Tetrahydrofuran	9.78	42	206962	186.0999 ug/kg	99
38) 1,1,1-Trichloroethane	10.04	97	454248	97.7025 ug/kg	99
39) Cyclohexane	10.08	56	497594	98.1657 ug/kg	99
40) 1,1-Dichloropropene	10.24	75	355996	97.3080 ug/kg	98
41) Tert-Amyl-Methyl ether	10.35	73	1353122	187.5659 ug/kg	99
42) Carbon Tetrachloride	10.39	117	419252	97.2674 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972903.D 8260SL.M Fri Feb 26 11:21:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972903.D Vial: 8
Acq On : 25 Feb 2016 19:29 Operator: ADC
Sample : WG558732-08 100.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:57 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	441828	97.7027	ug/kg	98
46)	Benzene	10.60	78	946247	92.3868	ug/kg	100
47)	Trichloroethene	11.35	130	316701	97.5872	ug/kg	98
48)	Methylcyclohexane	11.44	83	420776	103.3770	ug/kg	100
49)	1,2-Dichloropropane	11.56	63	273398	97.2049	ug/kg	97
50)	1,4-Dioxane	11.89	88	15240	361.1826	ug/kg	95
51)	Bromodichloromethane	11.87	83	384453	96.9905	ug/kg	100
52)	Dibromomethane	11.96	174	178770	95.9288	ug/kg	100
53)	2-Chloroethyl Vinyl Ether	12.17	63	71336	89.4187	ug/kg	97
54)	4-Methyl-2-Pentanone	12.19	58	126118	102.1606	ug/kg	99
55)	cis-1,3-Dichloropropene	12.50	75	407392	98.6500	ug/kg	99
56)	Dimethyl Disulfide	12.77	94	430523	103.7388	ug/kg	99
59)	Toluene	12.93	91	1070303	95.9828	ug/kg	100
60)	Ethyl Methacrylate	13.01	69	310336	100.4033	ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	395340	98.4345	ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	234168	99.9657	ug/kg	97
63)	2-Hexanone	13.25	43	238254	101.8692	ug/kg	99
64)	1,3-Dichloropropane	13.62	76	372307	95.3836	ug/kg	98
65)	Tetrachloroethene	13.75	164	235384	98.4650	ug/kg	97
66)	Dibromochloromethane	14.01	129	316240	96.5980	ug/kg	100
67)	1,2-Dibromoethane	14.28	107	254663	98.0133	ug/kg	98
68)	1-Chlorohexane	14.35	91	341938	103.9841	ug/kg	98
69)	Chlorobenzene	14.77	112	744916	95.0493	ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.80	131	289798	98.4650	ug/kg	98
71)	Ethylbenzene	14.79	106	397428	98.4311	ug/kg	99
72)	m-,p-Xylene	14.89	106	955121	191.5462	ug/kg	97
73)	o-Xylene	15.45	106	475355	99.3381	ug/kg	100
74)	Styrene	15.49	104	817155	100.2803	ug/kg	100
75)	Bromoform	15.99	173	212807	99.0046	ug/kg	98
76)	Isopropylbenzene	15.88	105	1283494	99.9122	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	279744	98.3764	ug/kg	100
80)	1,2,3-Trichloropropane	16.29	110	110421	102.3924	ug/kg	94
81)	trans-1,4-Dichloro-2-Buten	16.33	53	116410	107.0899	ug/kg	87
82)	n-Propylbenzene	16.39	91	1458178	98.9594	ug/kg	99
83)	Bromobenzene	16.52	156	334600	96.1892	ug/kg	97
84)	1,3,5-Trimethylbenzene	16.57	105	1100766	99.5195	ug/kg	99
85)	2-Chlorotoluene	16.66	91	937812	94.8900	ug/kg	100
86)	4-Chlorotoluene	16.70	91	906777	99.2383	ug/kg	100
87)	a-Methylstyrene	16.98	118	508276	100.8508	ug/kg	99
88)	tert-Butylbenzene	17.04	134	234437	101.0972	ug/kg	99
89)	1,2,4-Trimethylbenzene	17.09	105	1125260	97.1435	ug/kg	99
90)	sec-Butylbenzene	17.30	105	1425754	100.0828	ug/kg	100
91)	p-Isopropyltoluene	17.46	119	1215596	101.1125	ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	644471	93.2206	ug/kg	100
93)	1,4-Dichlorobenzene	17.79	146	646907	93.6002	ug/kg	99
94)	n-Butylbenzene	17.99	91	1131901	101.2628	ug/kg	99
95)	1,2-Dichlorobenzene	18.30	146	622851	97.0971	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.30	157	88939	108.0040	ug/kg	99
97)	1,2,4-Trichlorobenzene	20.44	180	466688	102.4843	ug/kg	99
98)	Hexachlorobutadiene	20.59	225	252514	105.1960	ug/kg	99
99)	Naphthalene	20.81	128	1208454	105.8030	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	456274	103.3044	ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972903.D Vial: 8
Acq On : 25 Feb 2016 19:29 Operator: ADC
Sample : WG558732-08 100.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

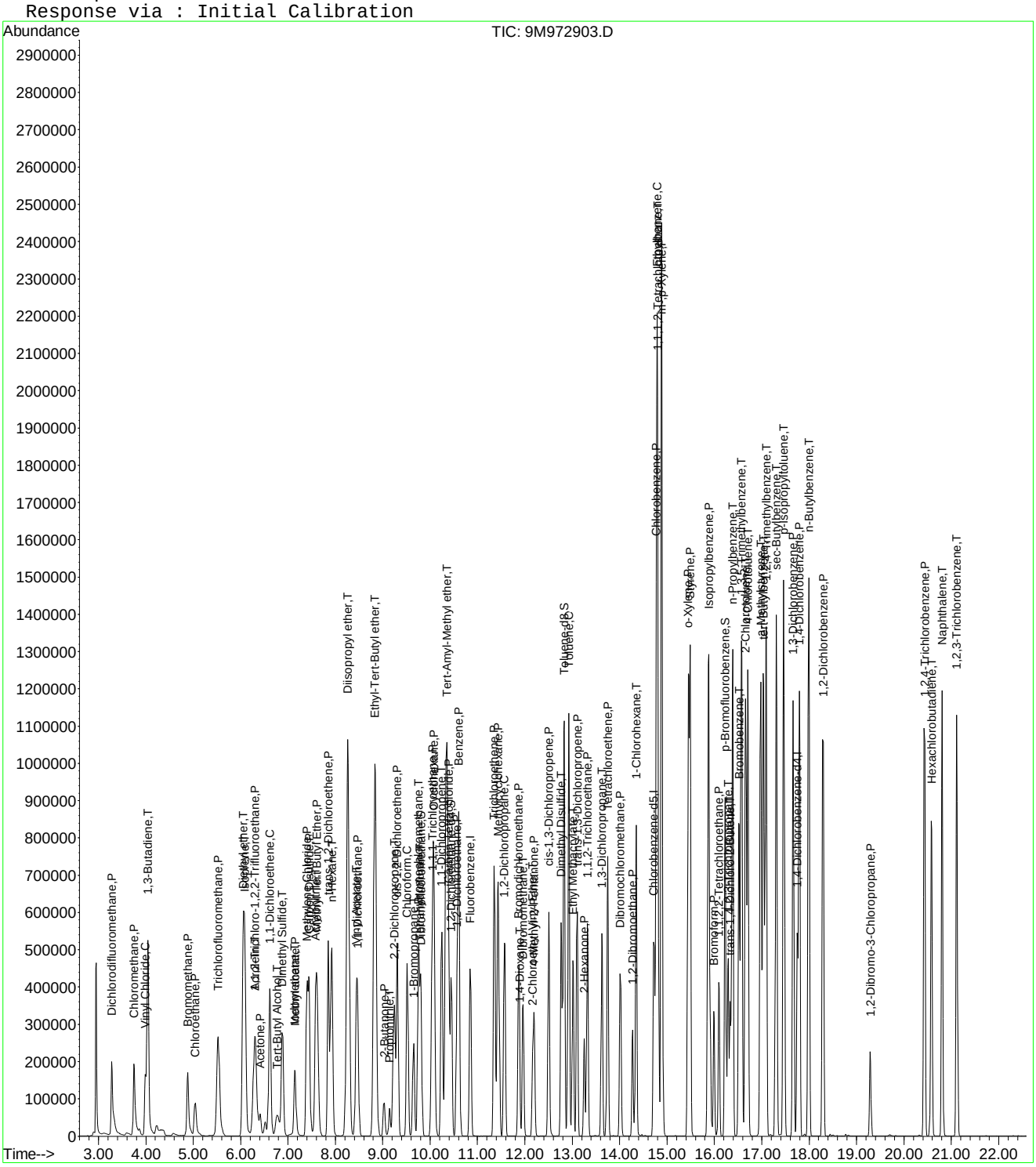

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972904.D Vial: 9
Acq On : 25 Feb 2016 20:00 Operator: ADC
Sample : WG558732-09 200.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:58 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	542388	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	396894	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	212175	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	595362	202.5026 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery	= 405.00%#	
43) 1,2-Dichloroethane-d4	10.45	65	716316	194.1852 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery	= 388.38%#	
58) Toluene-d8	12.82	98	2013255	200.5415 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery	= 401.08%#	
79) p-Bromofluorobenzene	16.23	95	807150	195.3653 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery	= 390.74%#	

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.28	85	774894	209.3245 ug/kg	100
3) Chloromethane	3.75	50	750862	211.5959 ug/kg	100
4) Vinyl Chloride	3.99	62	770550	216.9141 ug/kg	100
5) 1,3-Butadiene	4.04	54	695631	205.8318 ug/kg	99
6) Bromomethane	4.88	94	470946	204.1239 ug/kg	97
7) Chloroethane	5.04	64	374502	236.6386 ug/kg	98
8) Trichlorofluoromethane	5.52	101	1120886	210.3832 ug/kg	99
10) Isoprene	6.09	67	690766	217.1654 ug/kg	97
11) Acrolein	6.31	56	2288	4.6071 ug/kg	86
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	592415	215.6090 ug/kg	100
13) Acetone	6.42	43	268070	202.8703 ug/kg	99
14) 1,1-Dichloroethene	6.62	61	1084122	213.8917 ug/kg	99
15) Tert-Butyl Alcohol	6.78	59	290	0.5229 ug/kg#	58
16) Dimethyl Sulfide	6.88	62	486231	226.9805 ug/kg	99
17) Iodomethane	7.14	142	341644	216.9305 ug/kg	98
18) Methyl acetate	7.15	43	558766	202.7886 ug/kg	97
19) Methylene Chloride	7.40	84	606998	219.8913 ug/kg	98
20) Carbon Disulfide	7.44	76	1650167	211.3432 ug/kg	98
21) Acrylonitrile	7.61	53	18860	13.8363 ug/kg#	28
22) Methyl Tert Butyl Ether	7.61	73	1710517	217.5666 ug/kg	99
23) trans-1,2-Dichloroethene	7.84	61	967656	214.2173 ug/kg	99
24) n-Hexane	7.92	57	1006142	215.9497 ug/kg	97
26) Vinyl Acetate	8.43	43	1320060	213.9959 ug/kg	98
27) 1,1-Dichloroethane	8.46	63	1199515	211.4185 ug/kg	100
29) 2-Butanone	9.02	43	373284	213.4201 ug/kg	100
31) 2,2-Dichloropropane	9.24	77	904865	213.6764 ug/kg	100
32) cis-1,2-Dichloroethene	9.31	96	649726	219.3058 ug/kg	100
33) Chloroform	9.52	83	1094765	210.0507 ug/kg	100
34) 1-Bromopropane	9.66	122	98189	213.9851 ug/kg	100
35) Bromochloromethane	9.75	130	427351	222.0603 ug/kg	99
36) Tetrahydrofuran	9.77	42	2491	2.2095 ug/kg	93
38) 1,1,1-Trichloroethane	10.05	97	1020636	216.5435 ug/kg	100
39) Cyclohexane	10.08	56	1092323	212.5677 ug/kg	98
40) 1,1-Dichloropropene	10.24	75	780375	210.4109 ug/kg	98
42) Carbon Tetrachloride	10.39	117	950685	217.5657 ug/kg	100
45) 1,2-Dichloroethane	10.56	62	975428	212.7698 ug/kg	98
46) Benzene	10.61	78	2107212	202.9435 ug/kg	100
47) Trichloroethene	11.36	130	696420	211.6783 ug/kg	98
48) Methylcyclohexane	11.43	83	922594	223.5862 ug/kg	100
49) 1,2-Dichloropropane	11.57	63	613480	215.1567 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972904.D Vial: 9
Acq On : 25 Feb 2016 20:00 Operator: ADC
Sample : WG558732-09 200.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:58 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
50)	1,4-Dioxane	11.86	88	821	19.1932	ug/kg#	7
51)	Bromodichloromethane	11.87	83	861318	214.3439	ug/kg	99
52)	Dibromomethane	11.96	174	401145	212.3328	ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	173854	210.9891	ug/kg	98
54)	4-Methyl-2-Pentanone	12.19	58	281550	224.9694	ug/kg	99
55)	cis-1,3-Dichloropropene	12.51	75	917528	219.1621	ug/kg	100
56)	Dimethyl Disulfide	12.77	94	993447	236.1300	ug/kg	99
59)	Toluene	12.93	91	2353264	207.5190	ug/kg	100
60)	Ethyl Methacrylate	13.01	69	698780	222.3090	ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	892986	218.6361	ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	510766	214.4105	ug/kg	98
63)	2-Hexanone	13.26	43	551431	231.8433	ug/kg	99
64)	1,3-Dichloropropane	13.63	76	842104	212.1481	ug/kg	99
65)	Tetrachloroethene	13.75	164	518091	213.1138	ug/kg	97
66)	Dibromochloromethane	14.02	129	723489	217.3121	ug/kg	99
67)	1,2-Dibromoethane	14.27	107	560802	212.2411	ug/kg	99
68)	1-Chlorohexane	14.35	91	757279	226.4519	ug/kg	100
69)	Chlorobenzene	14.78	112	1626715	204.1050	ug/kg	98
70)	1,1,1,2-Tetrachloroethane	14.81	131	649903	217.1378	ug/kg	97
71)	Ethylbenzene	14.80	106	871321	212.2035	ug/kg	99
72)	m-,p-Xylene	14.89	106	2089330	412.0243	ug/kg	98
73)	o-Xylene	15.45	106	1065692	218.9929	ug/kg	98
74)	Styrene	15.49	104	1839951	222.0334	ug/kg	100
75)	Bromoform	15.99	173	511700	234.0915	ug/kg	99
76)	Isopropylbenzene	15.87	105	2873816	219.9805	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	662688	205.8943	ug/kg	99
80)	1,2,3-Trichloropropane	16.29	110	257281	210.7797	ug/kg	98
81)	trans-1,4-Dichloro-2-Buten	16.34	53	281460	228.7601	ug/kg	90
82)	n-Propylbenzene	16.38	91	3244636	194.5439	ug/kg	100
83)	Bromobenzene	16.52	156	759998	193.0269	ug/kg	95
84)	1,3,5-Trimethylbenzene	16.57	105	2471747	197.4342	ug/kg	99
85)	2-Chlorotoluene	16.66	91	2218317	198.3049	ug/kg	100
86)	4-Chlorotoluene	16.71	91	1934954	187.0917	ug/kg	100
87)	a-Methylstyrene	16.98	118	1205032	211.2436	ug/kg	99
88)	tert-Butylbenzene	17.03	134	526001	200.4032	ug/kg	87
89)	1,2,4-Trimethylbenzene	17.09	105	2520611	192.2523	ug/kg	100
90)	sec-Butylbenzene	17.31	105	3206494	198.8615	ug/kg	100
91)	p-Isopropyltoluene	17.47	119	2752661	202.2895	ug/kg	100
92)	1,3-Dichlorobenzene	17.67	146	1508843	192.8225	ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	1522857	194.6701	ug/kg	99
94)	n-Butylbenzene	17.99	91	2603240	205.7600	ug/kg	100
95)	1,2-Dichlorobenzene	18.29	146	1515803	208.7710	ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	205456	220.4304	ug/kg	98
97)	1,2,4-Trichlorobenzene	20.43	180	1061631	205.9726	ug/kg	99
98)	Hexachlorobutadiene	20.58	225	612598	225.4729	ug/kg	100
99)	Naphthalene	20.81	128	2666581	206.2661	ug/kg	99
100)	1,2,3-Trichlorobenzene	21.12	180	1022740	204.5802	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972904.D 8260SL.M Fri Feb 26 11:21:58 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972904.D Vial: 9
Acq On : 25 Feb 2016 20:00 Operator: ADC
Sample : WG558732-09 200.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

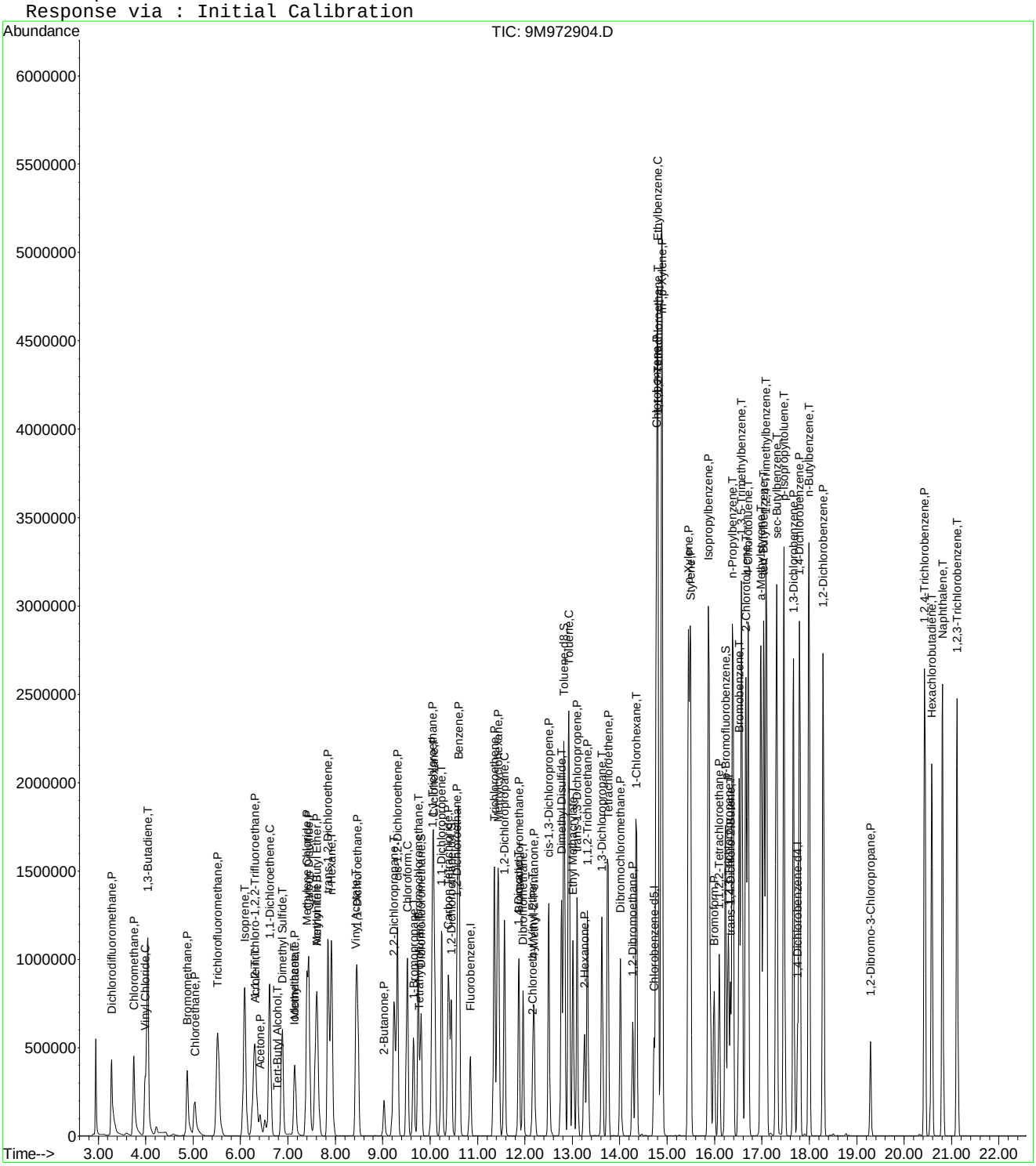

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972905.D Vial: 10
Acq On : 25 Feb 2016 20:30 Operator: ADC
Sample : WG558732-10 300.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:59 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	626979	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	468521	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	224223	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	520	0.1530 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.30%#	
43) 1,2-Dichloroethane-d4	10.45	65	1794	0.4207 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.84%#	
58) Toluene-d8	12.82	98	7789	0.6573 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	1.32%#	
79) p-Bromofluorobenzene	16.23	95	6216	1.4237 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	2.84%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	1155483	270.0216 ug/kg	98
3) Chloromethane	3.75	50	1142773	278.5891 ug/kg	100
4) Vinyl Chloride	3.98	62	1112221	270.8539 ug/kg	99
5) 1,3-Butadiene	4.03	54	1100483	281.6917 ug/kg	98
6) Bromomethane	4.87	94	749711	281.1083 ug/kg	98
7) Chloroethane	5.04	64	601337	328.7051 ug/kg	98
8) Trichlorofluoromethane	5.52	101	1778447	288.7670 ug/kg	99
9) Diethyl ether	6.06	59	869609	302.0457 ug/kg	99
10) Isoprene	6.08	67	1108410	301.4513 ug/kg	98
11) Acrolein	6.30	56	93621	163.0794 ug/kg	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	943691	297.1172 ug/kg	99
13) Acetone	6.42	43	369915	242.6618 ug/kg	95
14) 1,1-Dichloroethene	6.61	61	1715009	292.7111 ug/kg	98
15) Tert-Butyl Alcohol	6.80	59	188151	293.4850 ug/kg	89
16) Dimethyl Sulfide	6.88	62	763075	308.1557 ug/kg	99
17) Iodomethane	7.14	142	532480	291.5128 ug/kg	99
18) Methyl acetate	7.15	43	879657	276.1748 ug/kg	98
19) Methylene Chloride	7.40	84	937262	293.7237 ug/kg	96
20) Carbon Disulfide	7.44	76	2640380	292.5391 ug/kg	98
21) Acrylonitrile	7.59	53	252681	160.3640 ug/kg	94
22) Methyl Tert Butyl Ether	7.61	73	2699681	297.0533 ug/kg	98
23) trans-1,2-Dichloroethene	7.84	61	1548353	296.5245 ug/kg	100
24) n-Hexane	7.92	57	1608467	298.6501 ug/kg	98
25) Diisopropyl ether	8.26	45	3742238	299.1747 ug/kg	100
26) Vinyl Acetate	8.43	43	2097407	294.1383 ug/kg	99
27) 1,1-Dichloroethane	8.47	63	1881635	286.8995 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	3515202	302.2390 ug/kg	99
29) 2-Butanone	9.02	43	559900	276.9258 ug/kg	100
30) Propionitrile	9.14	54	182998	295.7653 ug/kg	100
31) 2,2-Dichloropropane	9.24	77	1439671	294.0988 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	1040893	303.9366 ug/kg	99
33) Chloroform	9.52	83	1708608	283.5977 ug/kg	99
34) 1-Bromopropane	9.65	122	152776	287.6719 ug/kg	98
35) Bromochloromethane	9.75	130	668631	300.5590 ug/kg	98
36) Tetrahydrofuran	9.77	42	365915	280.7723 ug/kg	97
38) 1,1,1-Trichloroethane	10.05	97	1606962	294.9423 ug/kg	100
39) Cyclohexane	10.08	56	1746722	294.0540 ug/kg	99
40) 1,1-Dichloropropene	10.24	75	1258569	293.5615 ug/kg	98
41) Tert-Amyl-Methyl ether	10.34	73	2573262	304.3824 ug/kg	98
42) Carbon Tetrachloride	10.39	117	1494872	295.9476 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972905.D Vial: 10
Acq On : 25 Feb 2016 20:30 Operator: ADC
Sample : WG558732-10 300.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:59 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.57	62	1526616	288.0725 ug/kg	98
46)	Benzene	10.61	78	3320959	276.6861 ug/kg	99
47)	Trichloroethene	11.36	130	1102750	289.9607 ug/kg	98
48)	Methylcyclohexane	11.43	83	1476436	309.5324 ug/kg	98
49)	1,2-Dichloropropane	11.57	63	980423	297.4576 ug/kg	99
50)	1,4-Dioxane	11.89	88	31126	629.4828 ug/kg	81
51)	Bromodichloromethane	11.87	83	1358159	292.3851 ug/kg	99
52)	Dibromomethane	11.96	174	632731	289.7290 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	287132	300.2354 ug/kg	96
54)	4-Methyl-2-Pentanone	12.19	58	438042	302.7895 ug/kg	99
55)	cis-1,3-Dichloropropene	12.51	75	1436858	296.9047 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	1505953	309.6528 ug/kg	95
59)	Toluene	12.93	91	3720819	277.9530 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	1096301	295.4554 ug/kg	100
61)	trans-1,3-Dichloropropene	13.10	75	1416217	293.7329 ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	820836	291.8946 ug/kg	99
63)	2-Hexanone	13.26	43	814427	290.0688 ug/kg	100
64)	1,3-Dichloropropane	13.63	76	1322191	282.1714 ug/kg	100
65)	Tetrachloroethene	13.75	164	815946	284.3233 ug/kg	98
66)	Dibromochloromethane	14.02	129	1136128	289.0845 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	889642	285.2204 ug/kg	99
68)	1-Chlorohexane	14.34	91	1188786	301.1405 ug/kg	99
69)	Chlorobenzene	14.78	112	2558374	271.9265 ug/kg	97
70)	1,1,1,2-Tetrachloroethane	14.81	131	1019464	288.5389 ug/kg	97
71)	Ethylbenzene	14.80	106	1372834	283.2291 ug/kg	97
72)	m-,p-Xylene	14.89	106	3241616	541.5304 ug/kg	97
73)	o-Xylene	15.45	106	1663016	289.4945 ug/kg	99
74)	Styrene	15.49	104	2869824	293.3680 ug/kg	99
75)	Bromoform	15.99	173	788638	305.6282 ug/kg	99
76)	Isopropylbenzene	15.87	105	4421589	286.7141 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	1002445	294.7201 ug/kg	99
80)	1,2,3-Trichloropropane	16.28	110	380025	294.6098 ug/kg	66
81)	trans-1,4-Dichloro-2-Buten	16.34	53	413901	318.3274 ug/kg	57
82)	n-Propylbenzene	16.38	91	4980503	282.5783 ug/kg	99
83)	Bromobenzene	16.52	156	1176440	282.7414 ug/kg	93
84)	1,3,5-Trimethylbenzene	16.57	105	3788936	286.3846 ug/kg	99
85)	2-Chlorotoluene	16.66	91	3458872	292.5892 ug/kg	100
86)	4-Chlorotoluene	16.71	91	2929432	268.0287 ug/kg	100
87)	a-Methylstyrene	16.98	118	1823514	302.4880 ug/kg	100
88)	tert-Butylbenzene	17.03	134	795019	286.6221 ug/kg	86
89)	1,2,4-Trimethylbenzene	17.09	105	3829230	276.3702 ug/kg	100
90)	sec-Butylbenzene	17.31	105	4833765	283.6742 ug/kg	99
91)	p-Isopropyltoluene	17.47	119	4134027	287.4802 ug/kg	99
92)	1,3-Dichlorobenzene	17.67	146	2260017	273.2999 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	2229106	269.6404 ug/kg	99
94)	n-Butylbenzene	17.99	91	3871124	289.5329 ug/kg	100
95)	1,2-Dichlorobenzene	18.29	146	2162642	281.8552 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	293112	297.5776 ug/kg	98
97)	1,2,4-Trichlorobenzene	20.43	180	1514973	278.1345 ug/kg	100
98)	Hexachlorobutadiene	20.58	225	846867	294.9498 ug/kg	99
99)	Naphthalene	20.81	128	3754823	274.8379 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.12	180	1451357	274.7177 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972905.D 8260SL.M Fri Feb 26 11:21:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972905.D Vial: 10
Acq On : 25 Feb 2016 20:30 Operator: ADC
Sample : WG558732-10 300.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

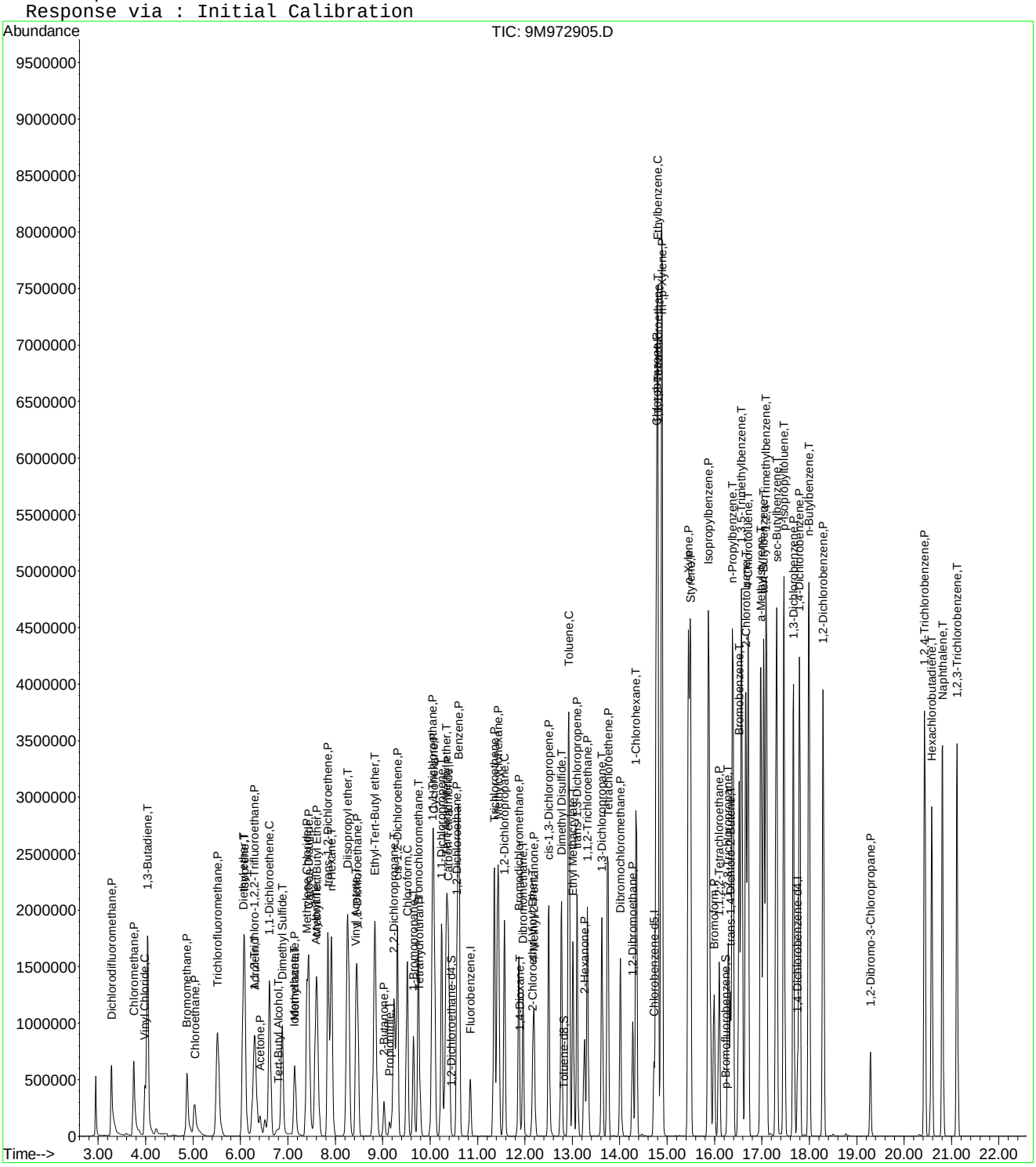

9M972905.D 8260SL.M Fri Feb 26 11:21:59 2016 Page 3

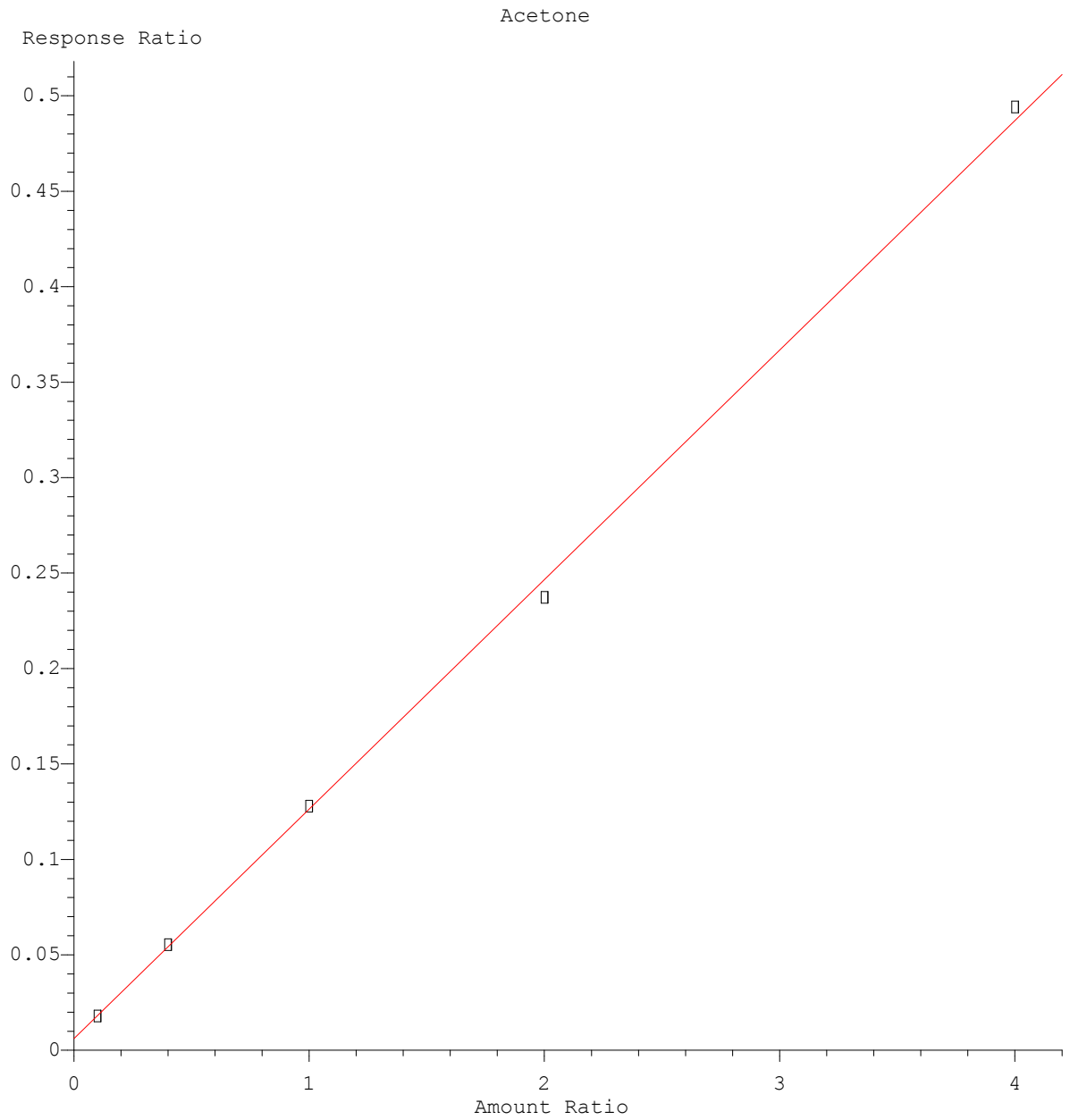

Resp Ratio = 1.20e-001 * Amt + 6.05e-003
Coef of Det (r^2) = 0.999 Curve Fit: wlr(1/a)

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

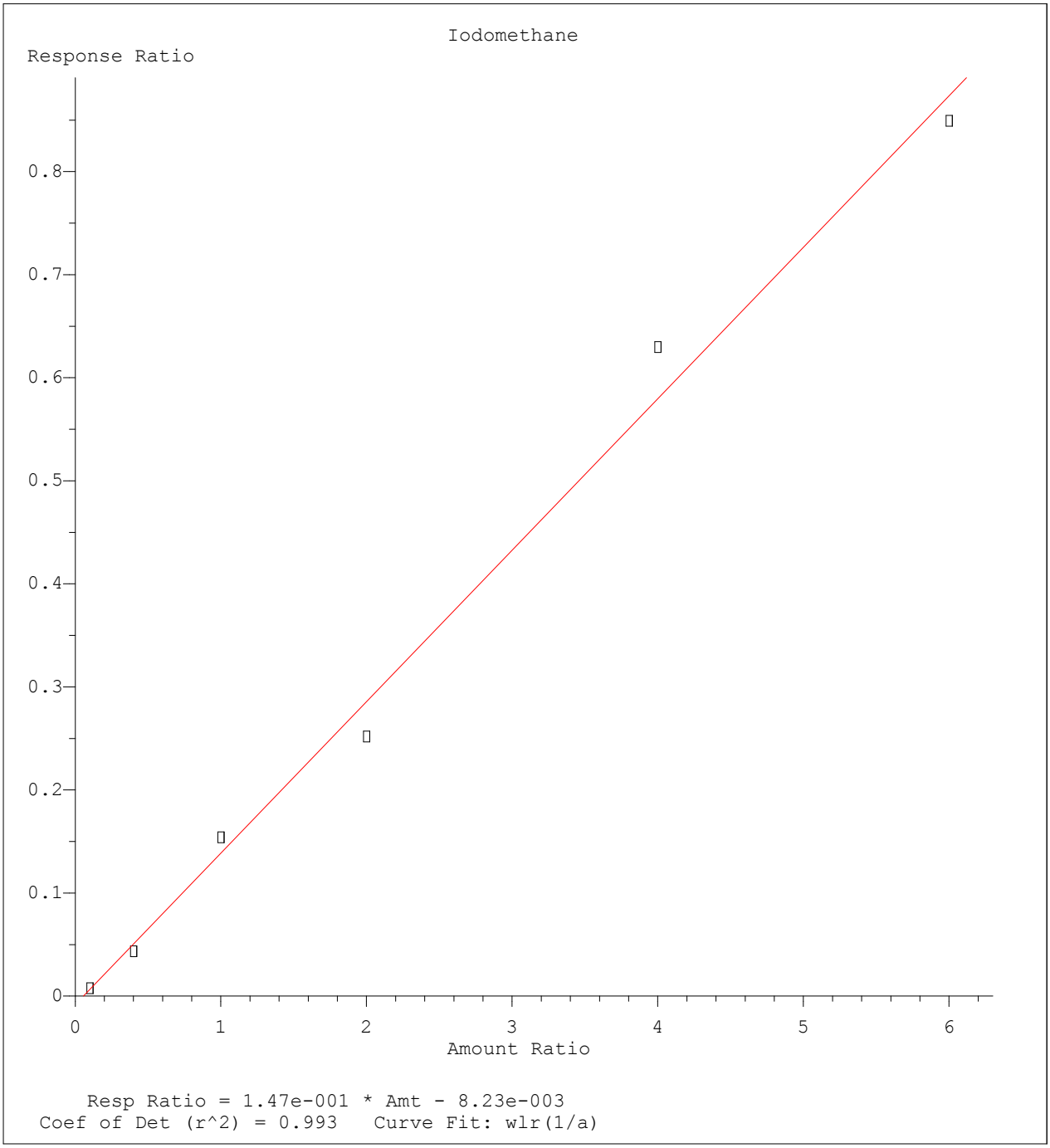

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

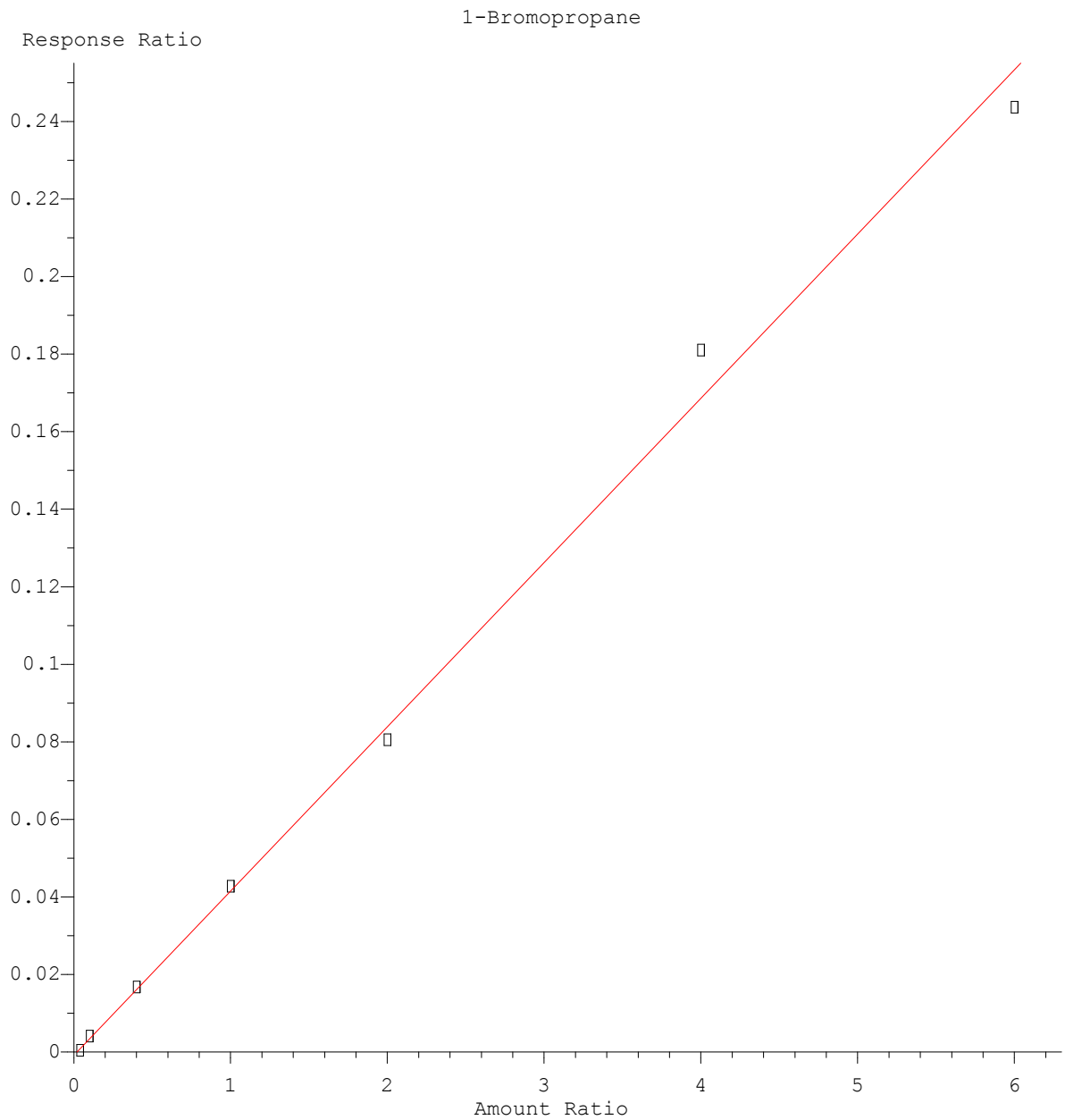

Resp Ratio = 4.25e-002 * Amt - 8.72e-004
Coef of Det (r^2) = 0.997 Curve Fit: wlr(1/a)

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

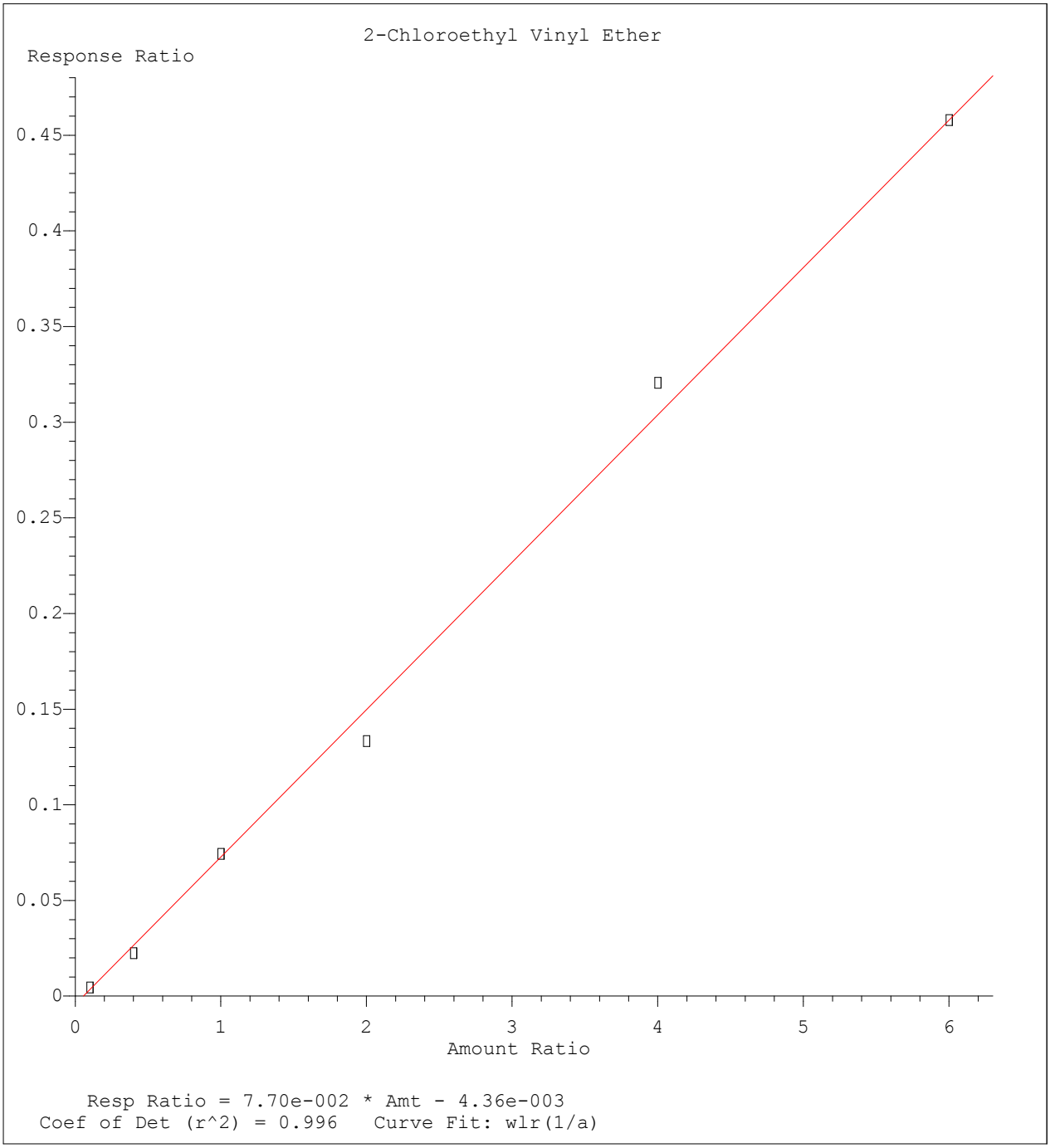

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:39:12 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	582126	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	421408	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	194909	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	163260	51.7395 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 103.48%		
43) 1,2-Dichloroethane-d4	10.45	65	197344	49.8458 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.70%		
58) Toluene-d8	12.82	98	564883	52.9951 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.00%		
79) p-Bromofluorobenzene	16.23	95	212358	55.9531 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 111.90%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	251431	63.3698 ug/kg	100
3) Chloromethane	3.74	50	200793	52.7216 ug/kg	100
4) Vinyl Chloride	3.99	62	228101	59.8284 ug/kg	99
5) 1,3-Butadiene	4.04	54	19055	5.2533 ug/kg	94
6) Bromomethane	4.88	94	121270	48.9744 ug/kg	100
7) Chloroethane	5.04	64	92003	54.1660 ug/kg	100
8) Trichlorofluoromethane	5.52	101	271981	47.5643 ug/kg	98
9) Diethyl ether	6.06	59	198146	74.1259 ug/kg	98
10) Isoprene	6.09	67	201645	59.0663 ug/kg	95
11) Acrolein	6.30	56	34569	64.8558 ug/kg	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	151498	51.3737 ug/kg	99
13) Acetone	6.41	43	65044	43.9190 ug/kg	98
14) 1,1-Dichloroethene	6.62	61	264179	48.5632 ug/kg	99
15) Tert-Butyl Alcohol	6.77	59	122141	205.1997 ug/kg	96
16) Dimethyl Sulfide	6.88	62	168266	73.1872 ug/kg	98
17) Iodomethane	7.13	142	81070	50.1419 ug/kg	99
18) Methyl acetate	7.15	43	155780	52.6767 ug/kg	99
19) Methylene Chloride	7.41	84	147546	49.8014 ug/kg	97
20) Carbon Disulfide	7.45	76	369798	44.1284 ug/kg	98
21) Acrylonitrile	7.59	53	71462	48.8478 ug/kg	99
22) Methyl Tert Butyl Ether	7.61	73	402298	47.6767 ug/kg	100
23) trans-1,2-Dichloroethene	7.85	61	245432	50.6242 ug/kg	100
24) n-Hexane	7.91	57	240056	48.0064 ug/kg	97
25) Diisopropyl ether	8.26	45	951889	81.9626 ug/kg	100
26) Vinyl Acetate	8.44	43	224385	33.8921 ug/kg	98
27) 1,1-Dichloroethane	8.47	63	282537	46.3987 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	854399	79.1219 ug/kg	99
29) 2-Butanone	9.03	43	88970	47.3950 ug/kg	99
30) Propionitrile	9.14	54	53106	92.4444 ug/kg	97
31) 2,2-Dichloropropane	9.24	77	213921	47.0673 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	167198	52.5828 ug/kg	96
33) Chloroform	9.52	83	268532	48.0056 ug/kg	99
34) 1-Bromopropane	9.65	122	36381	74.5451 ug/kg	96
35) Bromochloromethane	9.75	130	106386	51.5067 ug/kg	96
36) Tetrahydrofuran	9.78	42	101921	84.2313 ug/kg	98
38) 1,1,1-Trichloroethane	10.04	97	236420	46.7360 ug/kg	100
39) Cyclohexane	10.08	56	267623	48.5247 ug/kg	98
40) 1,1-Dichloropropene	10.25	75	193208	48.5381 ug/kg	99
41) Tert-Amyl-Methyl ether	10.34	73	688412	87.7041 ug/kg	100
42) Carbon Tetrachloride	10.39	117	218086	46.5023 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:39:12 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	241996	49.1831 ug/kg	99
46)	Benzene	10.60	78	545692	48.9674 ug/kg	99
47)	Trichloroethene	11.35	130	174371	49.3824 ug/kg	96
48)	Methylcyclohexane	11.44	83	228572	51.6120 ug/kg	98
49)	1,2-Dichloropropane	11.56	63	160075	52.3084 ug/kg	99
50)	1,4-Dioxane	11.88	88	7749	168.7883 ug/kg	88
51)	Bromodichloromethane	11.87	83	205164	47.5709 ug/kg	100
52)	Dibromomethane	11.96	174	95223	46.9624 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	36447	43.4907 ug/kg	97
54)	4-Methyl-2-Pentanone	12.19	58	64228	47.8173 ug/kg	96
55)	cis-1,3-Dichloropropene	12.50	75	238969	53.1840 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	243519	53.9302 ug/kg	99
59)	Toluene	12.93	91	610944	50.7412 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	172650	51.7315 ug/kg	99
61)	trans-1,3-Dichloropropene	13.11	75	216958	50.0293 ug/kg	98
62)	1,1,2-Trichloroethane	13.32	97	130293	51.5130 ug/kg	96
63)	2-Hexanone	13.25	43	121727	48.2017 ug/kg	99
64)	1,3-Dichloropropane	13.62	76	226811	53.8157 ug/kg	99
65)	Tetrachloroethene	13.75	164	128602	49.8224 ug/kg	96
66)	Dibromochloromethane	14.01	129	171284	48.4552 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	142409	50.7609 ug/kg	97
68)	1-Chlorohexane	14.35	91	184711	52.0217 ug/kg	98
69)	Chlorobenzene	14.77	112	433181	51.1898 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	157986	49.7138 ug/kg	100
71)	Ethylbenzene	14.79	106	223582	51.2841 ug/kg	100
72)	m-,p-Xylene	14.89	106	552299	102.5798 ug/kg	98
73)	o-Xylene	15.45	106	276739	53.5600 ug/kg	99
74)	Styrene	15.49	104	464515	52.7939 ug/kg	99
75)	Bromoform	15.99	173	109809	47.3129 ug/kg	99
76)	Isopropylbenzene	15.87	105	721376	52.0066 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	153818	52.0241 ug/kg	97
80)	1,2,3-Trichloropropane	16.29	110	60794	54.2181 ug/kg	92
81)	trans-1,4-Dichloro-2-Buten	16.33	53	48561	42.9649 ug/kg	74
82)	n-Propylbenzene	16.39	91	841260	54.9091 ug/kg	100
83)	Bromobenzene	16.52	156	188730	52.1806 ug/kg	96
84)	1,3,5-Trimethylbenzene	16.57	105	624761	54.3244 ug/kg	99
85)	2-Chlorotoluene	16.66	91	556729	54.1771 ug/kg	100
86)	4-Chlorotoluene	16.70	91	503918	53.0403 ug/kg	99
87)	a-Methylstyrene	16.98	118	305038	58.2105 ug/kg	98
88)	tert-Butylbenzene	17.03	134	133555	55.3912 ug/kg	90
89)	1,2,4-Trimethylbenzene	17.08	105	620621	51.5293 ug/kg	99
90)	sec-Butylbenzene	17.31	105	810765	54.7366 ug/kg	99
91)	p-Isopropyltoluene	17.46	119	675672	54.0529 ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	365216	50.8073 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	367190	51.0968 ug/kg	99
94)	n-Butylbenzene	17.99	91	609687	52.4585 ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	351826	52.7494 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	46623	54.4522 ug/kg	96
97)	1,2,4-Trichlorobenzene	20.43	180	244804	51.7031 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	136025	54.5004 ug/kg	99
99)	Naphthalene	20.81	128	603753	50.8387 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	241600	52.6087 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972907.D 8260SL.M Fri Feb 26 11:39:13 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:39 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

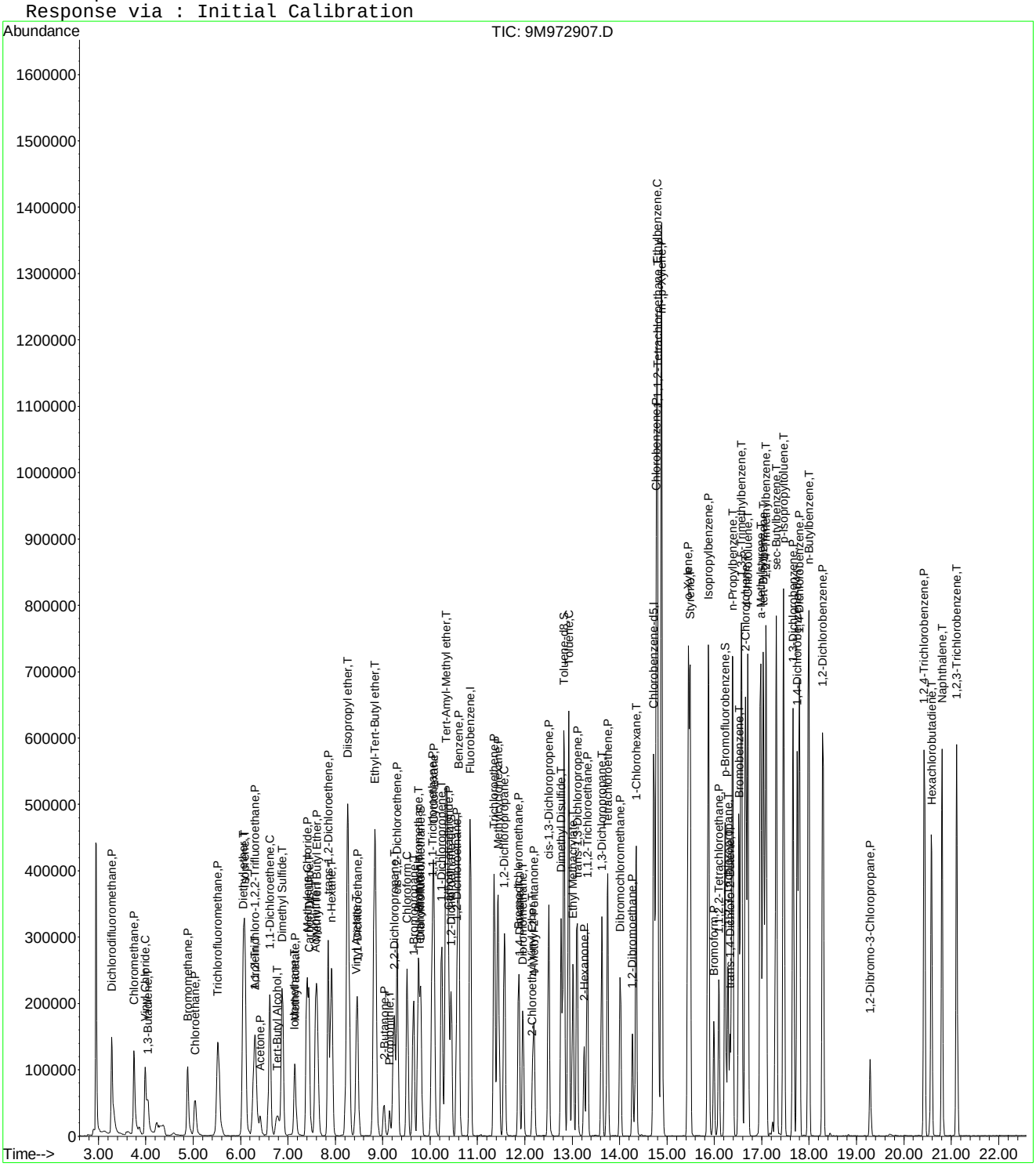

9M972907.D 8260SL.M Fri Feb 26 11:39:13 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	112	0.00
2	P	Dichlorodifluoromethane	50.0000	63.3698	-26.7#	123	0.00
3	P	Chloromethane	50.0000	52.7216	-5.4	107	0.00
4	C	Vinyl Chloride	50.0000	59.8284	-19.7	118	0.00
5	T	1,3-Butadiene	50.0000	5.2533	89.5#	11	0.00
6	P	Bromomethane	50.0000	48.9744	2.1	112	0.00
7	P	Chloroethane	50.0000	54.1660	-8.3	108	0.00
8	P	Trichlorofluoromethane	50.0000	47.5643	4.9	102	0.00
9	T	Diethyl ether	100.0000	74.1259	25.9#	79	0.01
10	T	Isoprene	50.0000	59.0664	-18.1	129	0.00
11	T	Acrolein	50.0000	64.8558	-29.7#	140	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	51.3737	-2.7	112	0.00
13	P	Acetone	50.0000	43.9190	12.2	98	0.00
14	C	1,1-Dichloroethene	50.0000	48.5632	2.9	108	0.00
15	T	Tert-Butyl Alcohol	200.0000	205.1997	-2.6	116	0.01
16	T	Dimethyl Sulfide	50.0000	73.1872	-46.4#	154	0.00
17	T	Iodomethane	50.0000	50.1419	-0.3	102	0.00
18	P	Methyl acetate	50.0000	52.6767	-5.4	115	0.01
19	P	Methylene Chloride	50.0000	49.8014	0.4	109	0.01
20	P	Carbon Disulfide	50.0000	44.1284	11.7	97	0.00
21	T	Acrylonitrile	50.0000	48.8478	2.3	103	0.00
22	P	Methyl Tert Butyl Ether	50.0000	47.6767	4.6	99	0.00
23	P	trans-1,2-Dichloroethene	50.0000	50.6242	-1.2	108	0.00
24	T	n-Hexane	50.0000	48.0064	4.0	109	0.00
25	T	Diisopropyl ether	100.0000	81.9626	18.0	87	0.00
26	T	Vinyl Acetate	50.0000	33.8921	32.2#	72	0.01
27	P	1,1-Dichloroethane	50.0000	46.3987	7.2	99	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	79.1219	20.9	83	0.00
29	P	2-Butanone	50.0000	47.3950	5.2	103	0.00
30	T	Propionitrile	100.0000	92.4444	7.6	100	0.00
31	T	2,2-Dichloropropane	50.0000	47.0673	5.9	99	0.00
32	P	cis-1,2-Dichloroethene	50.0000	52.5828	-5.2	109	0.00
33	C	Chloroform	50.0000	48.0057	4.0	102	0.00
34	T	1-Bromopropane	50.0000	74.5451	-49.1#	164	0.00
35	T	Bromochloromethane	50.0000	51.5067	-3.0	104	0.00
36	T	Tetrahydrofuran	100.0000	84.2314	15.8	90	0.00
37	S	Dibromofluoromethane	50.0000	51.7395	-3.5	110	0.00
38	P	1,1,1-Trichloroethane	50.0000	46.7360	6.5	97	0.00
39	P	Cyclohexane	50.0000	48.5247	3.0	108	0.00
40	T	1,1-Dichloropropene	50.0000	48.5381	2.9	106	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	87.7041	12.3	93	0.00
42	P	Carbon Tetrachloride	50.0000	46.5023	7.0	99	0.00
43	S	1,2-Dichloroethane-d4	50.0000	49.8458	0.3	107	0.00
44		Heptane	-1.0000	0.0000	0.0	104	0.00
45	P	1,2-Dichloroethane	50.0000	49.1831	1.6	102	0.00
46	P	Benzene	50.0000	48.9674	2.1	108	0.00
47	P	Trichloroethene	50.0000	49.3824	1.2	106	0.00
48	P	Methylcyclohexane	50.0000	51.6120	-3.2	112	0.00
49	C	1,2-Dichloropropane	50.0000	52.3083	-4.6	108	0.00
50	T	1,4-Dioxane	200.0000	168.7883	15.6	99	0.00
51	P	Bromodichloromethane	50.0000	47.5710	4.9	101	0.00
52	T	Dibromomethane	50.0000	46.9624	6.1	99	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	43.4907	13.0	95	0.00
54	P	4-Methyl-2-Pentanone	50.0000	47.8173	4.4	99	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	53.1840	-6.4	112	0.00
56	T	Dimethyl Disulfide	50.0000	53.9302	-7.9	111	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	111	0.00
58	S	Toluene-d8	50.0000	52.9951	-6.0	110	0.00
59	C	Toluene	50.0000	50.7412	-1.5	108	0.00
60	T	Ethyl Methacrylate	50.0000	51.7315	-3.5	109	0.00
61	P	trans-1,3-Dichloropropene	50.0000	50.0293	-0.1	102	0.00
62	P	1,1,2-Trichloroethane	50.0000	51.5130	-3.0	106	0.00
63	P	2-Hexanone	50.0000	48.2017	3.6	102	0.00
64	T	1,3-Dichloropropane	50.0000	53.8157	-7.6	113	0.00
65	P	Tetrachloroethene	50.0000	49.8224	0.4	110	0.00
66	P	Dibromochloromethane	50.0000	48.4552	3.1	101	0.00
67	P	1,2-Dibromoethane	50.0000	50.7609	-1.5	107	0.00
68	T	1-Chlorohexane	50.0000	52.0217	-4.0	110	0.00
69	P	Chlorobenzene	50.0000	51.1898	-2.4	108	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	49.7138	0.6	102	0.00
71	C	Ethylbenzene	50.0000	51.2841	-2.6	108	0.00
72	P	m-,p-Xylene	100.0000	102.5798	-2.6	111	0.00
73	P	o-Xylene	50.0000	53.5600	-7.1	112	0.00
74	P	Styrene	50.0000	52.7939	-5.6	109	0.00
75	P	Bromoform	50.0000	47.3129	5.4	95	0.00
76	P	Isopropylbenzene	50.0000	52.0066	-4.0	110	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	107	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	52.0241	-4.0	104	0.00
79	S	p-Bromofluorobenzene	50.0000	55.9531	-11.9	111	0.00
80	T	1,2,3-Trichloropropane	50.0000	54.2181	-8.4	109	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	42.9649	14.1	87	0.00
82	T	n-Propylbenzene	50.0000	54.9091	-9.8	112	0.00
83	T	Bromobenzene	50.0000	52.1806	-4.4	106	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	54.3244	-8.6	110	0.00
85	T	2-Chlorotoluene	50.0000	54.1771	-8.4	115	0.00
86	T	4-Chlorotoluene	50.0000	53.0403	-6.1	105	0.00
87	T	a-Methylstyrene	50.0000	58.2105	-16.4	119	0.00
88	T	tert-Butylbenzene	50.0000	55.3912	-10.8	110	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	51.5293	-3.1	107	0.00
90	T	sec-Butylbenzene	50.0000	54.7366	-9.5	112	0.00
91	T	p-Isopropyltoluene	50.0000	54.0529	-8.1	110	0.00
92	P	1,3-Dichlorobenzene	50.0000	50.8073	-1.6	108	0.00
93	P	1,4-Dichlorobenzene	50.0000	51.0968	-2.2	110	0.00
94	T	n-Butylbenzene	50.0000	52.4585	-4.9	108	0.00
95	P	1,2-Dichlorobenzene	50.0000	52.7494	-5.5	110	0.00
96	P	1,2-Dibromo-3-Chloropropane	50.0000	54.4522	-8.9	109	0.00
97	P	1,2,4-Trichlorobenzene	50.0000	51.7031	-3.4	110	0.00
98	T	Hexachlorobutadiene	50.0000	54.5004	-9.0	116	0.00
99	T	Naphthalene	50.0000	50.8387	-1.7	100	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	52.6087	-5.2	109	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972907.D 8260SL.M Fri Feb 26 11:39:16 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022916\9M972967.D Vial: 1
Acq On : 29 Feb 2016 17:23 Operator: FJB/JDS
Sample : WG559150-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 17:45:41 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	717529	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.73	117	517165	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	238402	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	191450	49.2238 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.44%		
43) 1,2-Dichloroethane-d4	10.45	65	235993	48.3594 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.72%		
58) Toluene-d8	12.83	98	664282	50.7812 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.56%		
79) p-Bromofluorobenzene	16.23	95	254634	54.8522 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 109.70%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	224161	45.8354 ug/kg	95
3) Chloromethane	3.74	50	209740	44.6785 ug/kg	99
4) Vinyl Chloride	3.99	62	269057	57.2535 ug/kg	99
5) 1,3-Butadiene	4.04	54	305677	68.3702 ug/kg	99
6) Bromomethane	4.88	94	139881	45.8302 ug/kg	96
7) Chloroethane	5.04	64	113232	54.0843 ug/kg	98
8) Trichlorofluoromethane	5.53	101	368283	52.2519 ug/kg	99
9) Diethyl ether	6.06	59	339394	103.0069 ug/kg	99
10) Isoprene	6.09	67	270591	64.3048 ug/kg	99
11) Acrolein	6.30	56	34446	52.4298 ug/kg	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	197562	54.3519 ug/kg	99
13) Acetone	6.40	43	83723	45.9748 ug/kg	97
14) 1,1-Dichloroethene	6.61	61	337460	50.3279 ug/kg	98
15) Tert-Butyl Alcohol	6.75	59	123383	168.1699 ug/kg	98
16) Dimethyl Sulfide	6.88	62	157653	55.6312 ug/kg	98
17) Iodomethane	7.13	142	114641	57.1132 ug/kg	98
18) Methyl acetate	7.14	43	193963	53.2112 ug/kg	98
19) Methylene Chloride	7.40	84	183510	50.2518 ug/kg	98
20) Carbon Disulfide	7.45	76	607619	58.8251 ug/kg	99
21) Acrylonitrile	7.59	53	92377	51.2285 ug/kg	99
22) Methyl Tert Butyl Ether	7.61	73	527557	50.7230 ug/kg	98
23) trans-1,2-Dichloroethene	7.85	61	324146	54.2431 ug/kg	97
24) n-Hexane	7.92	57	370697	60.1427 ug/kg	98
25) Diisopropyl ether	8.26	45	1544159	107.8696 ug/kg	99
26) Vinyl Acetate	8.43	43	418695	51.3074 ug/kg	99
27) 1,1-Dichloroethane	8.46	63	390904	52.0808 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	1407574	105.7511 ug/kg	99
29) 2-Butanone	9.02	43	109282	47.2297 ug/kg	99
30) Propionitrile	9.14	54	67587	95.4504 ug/kg	100
31) 2,2-Dichloropropane	9.24	77	312822	55.8394 ug/kg	100
32) cis-1,2-Dichloroethene	9.31	96	208818	53.2793 ug/kg	96
33) Chloroform	9.52	83	344697	49.9932 ug/kg	99
34) 1-Bromopropane	9.65	122	32395	54.1365 ug/kg	100
35) Bromochloromethane	9.75	130	133300	52.3585 ug/kg	95
36) Tetrahydrofuran	9.78	42	144902	97.1543 ug/kg	100
38) 1,1,1-Trichloroethane	10.04	97	327988	52.6021 ug/kg	98
39) Cyclohexane	10.08	56	404884	59.5590 ug/kg	99
40) 1,1-Dichloropropene	10.24	75	261534	53.3045 ug/kg	100
41) Tert-Amyl-Methyl ether	10.34	73	995534	102.8976 ug/kg	99
42) Carbon Tetrachloride	10.39	117	295327	51.0890 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022916\9M972967.D Vial: 1
Acq On : 29 Feb 2016 17:23 Operator: FJB/JDS
Sample : WG559150-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 17:45:41 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	305670	50.4009 ug/kg	97
46)	Benzene	10.60	78	698526	50.8534 ug/kg	100
47)	Trichloroethene	11.35	130	230291	52.9118 ug/kg	97
48)	Methylcyclohexane	11.44	83	332449	60.9018 ug/kg	100
49)	1,2-Dichloropropane	11.56	63	205707	54.5349 ug/kg	98
50)	1,4-Dioxane	11.88	88	11862	209.6197 ug/kg	97
51)	Bromodichloromethane	11.87	83	266373	50.1082 ug/kg	99
52)	Dibromomethane	11.96	174	126894	50.7724 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.17	63	43935	42.5950 ug/kg	100
54)	4-Methyl-2-Pentanone	12.20	58	82978	50.1189 ug/kg	99
55)	cis-1,3-Dichloropropene	12.50	75	292953	52.8950 ug/kg	100
56)	Dimethyl Disulfide	12.77	94	318733	57.2670 ug/kg	99
59)	Toluene	12.93	91	786633	53.2359 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	229430	56.0160 ug/kg	96
61)	trans-1,3-Dichloropropene	13.10	75	284368	53.4322 ug/kg	99
62)	1,1,2-Trichloroethane	13.33	97	163037	52.5238 ug/kg	96
63)	2-Hexanone	13.25	43	153679	49.5865 ug/kg	98
64)	1,3-Dichloropropane	13.62	76	263969	51.0354 ug/kg	97
65)	Tetrachloroethene	13.75	164	170776	53.9110 ug/kg	97
66)	Dibromochloromethane	14.01	129	218964	50.4743 ug/kg	99
67)	1,2-Dibromoethane	14.28	107	171387	49.7787 ug/kg	99
68)	1-Chlorohexane	14.35	91	270956	62.1819 ug/kg	100
69)	Chlorobenzene	14.77	112	545712	52.5474 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	203041	52.0614 ug/kg	98
71)	Ethylbenzene	14.79	106	293242	54.8082 ug/kg	100
72)	m-,p-Xylene	14.89	106	712906	107.8931 ug/kg	96
73)	o-Xylene	15.45	106	348413	54.9463 ug/kg	97
74)	Styrene	15.49	104	592775	54.8968 ug/kg	99
75)	Bromoform	16.00	173	142147	49.9061 ug/kg	100
76)	Isopropylbenzene	15.88	105	937009	55.0446 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.10	83	180384	49.8790 ug/kg	97
80)	1,2,3-Trichloropropane	16.29	110	68552	49.9834 ug/kg	95
81)	trans-1,4-Dichloro-2-Buten	16.33	53	80928	58.5392 ug/kg	82
82)	n-Propylbenzene	16.39	91	1067940	56.9879 ug/kg	100
83)	Bromobenzene	16.52	156	234464	52.9988 ug/kg	96
84)	1,3,5-Trimethylbenzene	16.58	105	797971	56.7270 ug/kg	98
85)	2-Chlorotoluene	16.66	91	674685	53.6779 ug/kg	99
86)	4-Chlorotoluene	16.70	91	653058	56.1979 ug/kg	99
87)	a-Methylstyrene	16.98	118	400282	62.4504 ug/kg	99
88)	tert-Butylbenzene	17.04	134	168830	57.2469 ug/kg	100
89)	1,2,4-Trimethylbenzene	17.09	105	800671	54.3506 ug/kg	99
90)	sec-Butylbenzene	17.30	105	1031272	56.9217 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	865022	56.5760 ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	451554	51.3579 ug/kg	99
93)	1,4-Dichlorobenzene	17.80	146	451360	51.3508 ug/kg	100
94)	n-Butylbenzene	17.99	91	798632	56.1795 ug/kg	99
95)	1,2-Dichlorobenzene	18.30	146	423274	51.8840 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.30	157	47947	45.7824 ug/kg	98
97)	1,2,4-Trichlorobenzene	20.44	180	294038	50.7719 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	165585	54.2406 ug/kg	99
99)	Naphthalene	20.81	128	692181	47.6516 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	281873	50.1806 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972967.D 8260SL.M Mon Feb 29 17:45:41 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022916\9M972967.D Vial: 1
Acq On : 29 Feb 2016 17:23 Operator: FJB/JDS
Sample : WG559150-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 17:45 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

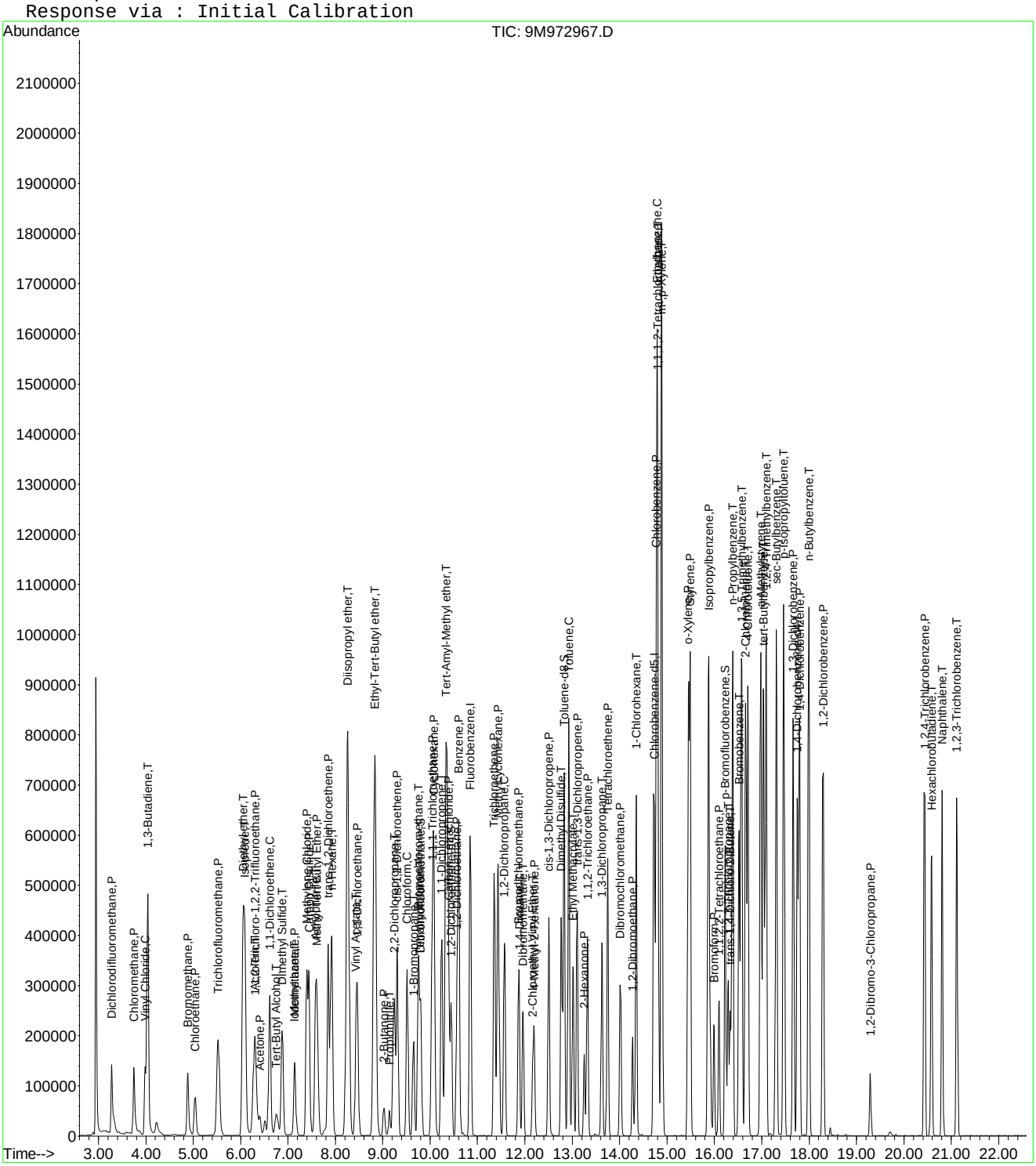

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022916\9M972967.D Vial: 1
Acq On : 29 Feb 2016 17:23 Operator: FJB/JDS
Sample : WG559150-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	139	0.00
2	P	Dichlorodifluoromethane	0.3408	0.3124	8.3	109	0.00
3	P	Chloromethane	0.3271	0.2923	10.6	112	0.00
4	C	Vinyl Chloride	0.3275	0.3750	-14.5	140	0.00
5	T	1,3-Butadiene	0.3115	0.4260	-36.7#	179	0.00
6	P	Bromomethane	0.2127	0.1950	8.3	130	0.00
7	P	Chloroethane	0.1459	0.1578	-8.2	133	0.00
8	P	Trichlorofluoromethane	0.4911	0.5133	-4.5	138	0.00
9	T	Diethyl ether	0.2296	0.2365	-3.0	136	0.01
10	T	Isoprene	0.2932	0.3771	-28.6#	173	0.00
11	T	Acrolein	0.0458	0.0480	-4.9	140	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	0.2533	0.2753	-8.7	146	0.01
13	P	Acetone	0.1376	0.1167	15.2	126	0.00
14	C	1,1-Dichloroethene	0.4672	0.4703	-0.7	138	0.00
15	T	Tert-Butyl Alcohol	0.0511	0.0430	15.9	118	-0.01
16	T	Dimethyl Sulfide	0.1975	0.2197	-11.3	144	0.00
17	T	Iodomethane	0.1273	0.1598	-25.5#	144	0.00
18	P	Methyl acetate	0.2540	0.2703	-6.4	143	0.00
19	P	Methylene Chloride	0.2545	0.2557	-0.5	136	0.00
20	P	Carbon Disulfide	0.7198	0.8468	-17.6	159	0.00
21	T	Acrylonitrile	0.1257	0.1287	-2.5	133	0.00
22	P	Methyl Tert Butyl Ether	0.7248	0.7352	-1.4	130	0.00
23	P	trans-1,2-Dichloroethene	0.4164	0.4517	-8.5	143	0.00
24	T	n-Hexane	0.4295	0.5166	-20.3	169	0.01
25	T	Diisopropyl ether	0.9975	1.0760	-7.9	142	0.00
26	T	Vinyl Acetate	0.5686	0.5835	-2.6	134	0.00
27	P	1,1-Dichloroethane	0.5230	0.5448	-4.2	137	-0.01
28	T	Ethyl-Tert-Butyl ether	0.9275	0.9809	-5.8	138	0.00
29	P	2-Butanone	0.1612	0.1523	5.5	127	-0.01
30	T	Propionitrile	0.0493	0.0471	4.5	127	0.00
31	T	2,2-Dichloropropane	0.3904	0.4360	-11.7	145	0.00
32	P	cis-1,2-Dichloroethene	0.2731	0.2910	-6.6	136	0.00
33	C	Chloroform	0.4805	0.4804	0.0	131	0.00
34	T	1-Bromopropane	0.0376	0.0452	-20.1	146	0.00
35	T	Bromochloromethane	0.1774	0.1858	-4.7	130	0.00
36	T	Tetrahydrofuran	0.1039	0.1010	2.8	127	0.00
37	S	Dibromofluoromethane	0.2710	0.2668	1.6	129	0.00
38	P	1,1,1-Trichloroethane	0.4345	0.4571	-5.2	135	0.00
39	P	Cyclohexane	0.4737	0.5643	-19.1	163	0.00
40	T	1,1-Dichloropropene	0.3419	0.3645	-6.6	144	0.00
41	T	Tert-Amyl-Methyl ether	0.6742	0.6937	-2.9	134	0.00
42	P	Carbon Tetrachloride	0.4028	0.4116	-2.2	133	0.00
43	S	1,2-Dichloroethane-d4	0.3401	0.3289	3.3	128	0.00
44		Heptane	0.0000	0.0000	0.0	134	0.00
45	P	1,2-Dichloroethane	0.4226	0.4260	-0.8	129	0.00
46	P	Benzene	0.9572	0.9735	-1.7	139	0.00
47	P	Trichloroethene	0.3033	0.3210	-5.8	140	0.00
48	P	Methylcyclohexane	0.3804	0.4633	-21.8	163	0.00
49	C	1,2-Dichloropropane	0.2628	0.2867	-9.1	139	0.00
50	T	1,4-Dioxane	0.0039	0.0041	-4.8	152	0.00
51	P	Bromodichloromethane	0.3704	0.3712	-0.2	131	0.00
52	T	Dibromomethane	0.1742	0.1769	-1.5	132	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0665	0.0612	8.0	114	0.00
54	P	4-Methyl-2-Pentanone	0.1154	0.1156	-0.2	128	0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022916\9M972967.D Vial: 1
Acq On : 29 Feb 2016 17:23 Operator: FJB/JDS
Sample : WG559150-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	0.3859	0.4083	-5.8	138	0.00
56	T	Dimethyl Disulfide	0.3878	0.4442	-14.5	145	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	136	0.00
58	S	Toluene-d8	1.2647	1.2845	-1.6	130	0.00
59	C	Toluene	1.4286	1.5211	-6.5	140	0.00
60	T	Ethyl Methacrylate	0.3960	0.4436	-12.0	144	0.00
61	P	trans-1,3-Dichloropropene	0.5145	0.5499	-6.9	134	0.00
62	P	1,1,2-Trichloroethane	0.3001	0.3152	-5.0	133	0.00
63	P	2-Hexanone	0.2996	0.2972	0.8	129	0.00
64	T	1,3-Dichloropropane	0.5001	0.5104	-2.1	131	-0.01
65	P	Tetrachloroethene	0.3063	0.3302	-7.8	146	0.00
66	P	Dibromochloromethane	0.4194	0.4234	-0.9	130	0.00
67	P	1,2-Dibromoethane	0.3329	0.3314	0.4	129	0.00
68	T	1-Chlorohexane	0.4213	0.5239	-24.4	161	0.00
69	P	Chlorobenzene	1.0041	1.0552	-5.1	136	0.00
70	T	1,1,1,2-Tetrachloroethane	0.3771	0.3926	-4.1	131	0.00
71	C	Ethylbenzene	0.5173	0.5670	-9.6	142	-0.01
72	P	m-,p-Xylene	0.6388	0.6892	-7.9	143	0.00
73	P	o-Xylene	0.6130	0.6737	-9.9	141	0.00
74	P	Styrene	1.0440	1.1462	-9.8	139	0.00
75	P	Bromoform	0.2754	0.2749	0.2	123	0.00
76	P	Isopropylbenzene	1.6458	1.8118	-10.1	142	0.00
77	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	130	-0.01
78	P	1,1,2,2-Tetrachloroethane	0.7585	0.7566	0.2	122	0.00
79	S	p-Bromofluorobenzene	0.9736	1.0681	-9.7	133	0.00
80	T	1,2,3-Trichloropropane	0.2876	0.2875	0.0	123	0.00
81	T	trans-1,4-Dichloro-2-Butene	0.2899	0.3395	-17.1	146	0.00
82	T	n-Propylbenzene	3.9303	4.4796	-14.0	142	0.00
83	T	Bromobenzene	0.9278	0.9835	-6.0	132	0.00
84	T	1,3,5-Trimethylbenzene	2.9502	3.3472	-13.5	140	0.00
85	T	2-Chlorotoluene	2.6361	2.8300	-7.4	139	0.00
86	T	4-Chlorotoluene	2.4372	2.7393	-12.4	136	0.00
87	T	a-Methylstyrene	1.3443	1.6790	-24.9	157	0.00
88	T	tert-Butylbenzene	0.6185	0.7082	-14.5	139	0.00
89	T	1,2,4-Trimethylbenzene	3.0897	3.3585	-8.7	138	0.00
90	T	sec-Butylbenzene	3.7998	4.3258	-13.8	142	0.00
91	T	p-Isopropyltoluene	3.2067	3.6284	-13.2	141	0.00
92	P	1,3-Dichlorobenzene	1.8440	1.8941	-2.7	134	0.00
93	P	1,4-Dichlorobenzene	1.8435	1.8933	-2.7	135	0.00
94	T	n-Butylbenzene	2.9815	3.3499	-12.4	142	0.00
95	P	1,2-Dichlorobenzene	1.7110	1.7755	-3.8	132	0.00
96	P	1,2-Dibromo-3-Chloropropane	0.2197	0.2011	8.4	112	0.00
97	P	1,2,4-Trichlorobenzene	1.2146	1.2334	-1.5	132	0.00
98	T	Hexachlorobutadiene	0.6403	0.6946	-8.5	141	0.00
99	T	Naphthalene	3.0465	2.9034	4.7	115	0.00
100	T	1,2,3-Trichlorobenzene	1.1781	1.1823	-0.4	127	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972967.D 8260SL.M Mon Feb 29 17:53:08 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022916\9M972967.D Vial: 1
Acq On : 29 Feb 2016 17:23 Operator: FJB/JDS
Sample : WG559150-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	139	0.00
2	P	Dichlorodifluoromethane	50.0000	45.8354	8.3	109	0.00
3	P	Chloromethane	50.0000	44.6785	10.6	112	0.00
4	C	Vinyl Chloride	50.0000	57.2535	-14.5	140	0.00
5	T	1,3-Butadiene	50.0000	68.3702	-36.7#	179	0.00
6	P	Bromomethane	50.0000	45.8302	8.3	130	0.00
7	P	Chloroethane	50.0000	54.0843	-8.2	133	0.00
8	P	Trichlorofluoromethane	50.0000	52.2519	-4.5	138	0.00
9	T	Diethyl ether	100.0000	103.0069	-3.0	136	0.01
10	T	Isoprene	50.0000	64.3048	-28.6#	173	0.00
11	T	Acrolein	50.0000	52.4298	-4.9	140	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	54.3519	-8.7	146	0.01
13	P	Acetone	50.0000	45.9748	8.1	126	0.00
14	C	1,1-Dichloroethene	50.0000	50.3279	-0.7	138	0.00
15	T	Tert-Butyl Alcohol	200.0000	168.1699	15.9	118	-0.01
16	T	Dimethyl Sulfide	50.0000	55.6313	-11.3	144	0.00
17	T	Iodomethane	50.0000	57.1132	-14.2	144	0.00
18	P	Methyl acetate	50.0000	53.2112	-6.4	143	0.00
19	P	Methylene Chloride	50.0000	50.2518	-0.5	136	0.00
20	P	Carbon Disulfide	50.0000	58.8251	-17.7	159	0.00
21	T	Acrylonitrile	50.0000	51.2285	-2.5	133	0.00
22	P	Methyl Tert Butyl Ether	50.0000	50.7230	-1.4	130	0.00
23	P	trans-1,2-Dichloroethene	50.0000	54.2432	-8.5	143	0.00
24	T	n-Hexane	50.0000	60.1427	-20.3	169	0.01
25	T	Diisopropyl ether	100.0000	107.8696	-7.9	142	0.00
26	T	Vinyl Acetate	50.0000	51.3074	-2.6	134	0.00
27	P	1,1-Dichloroethane	50.0000	52.0808	-4.2	137	-0.01
28	T	Ethyl-Tert-Butyl ether	100.0000	105.7511	-5.8	138	0.00
29	P	2-Butanone	50.0000	47.2297	5.5	127	-0.01
30	T	Propionitrile	100.0000	95.4504	4.5	127	0.00
31	T	2,2-Dichloropropane	50.0000	55.8394	-11.7	145	0.00
32	P	cis-1,2-Dichloroethene	50.0000	53.2793	-6.6	136	0.00
33	C	Chloroform	50.0000	49.9932	0.0	131	0.00
34	T	1-Bromopropane	50.0000	54.1365	-8.3	146	0.00
35	T	Bromochloromethane	50.0000	52.3585	-4.7	130	0.00
36	T	Tetrahydrofuran	100.0000	97.1543	2.8	127	0.00
37	S	Dibromofluoromethane	50.0000	49.2238	1.6	129	0.00
38	P	1,1,1-Trichloroethane	50.0000	52.6021	-5.2	135	0.00
39	P	Cyclohexane	50.0000	59.5590	-19.1	163	0.00
40	T	1,1-Dichloropropene	50.0000	53.3045	-6.6	144	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	102.8976	-2.9	134	0.00
42	P	Carbon Tetrachloride	50.0000	51.0890	-2.2	133	0.00
43	S	1,2-Dichloroethane-d4	50.0000	48.3594	3.3	128	0.00
44		Heptane	-1.0000	0.0000	0.0	134	0.00
45	P	1,2-Dichloroethane	50.0000	50.4009	-0.8	129	0.00
46	P	Benzene	50.0000	50.8534	-1.7	139	0.00
47	P	Trichloroethene	50.0000	52.9118	-5.8	140	0.00
48	P	Methylcyclohexane	50.0000	60.9018	-21.8	163	0.00
49	C	1,2-Dichloropropane	50.0000	54.5348	-9.1	139	0.00
50	T	1,4-Dioxane	200.0000	209.6197	-4.8	152	0.00
51	P	Bromodichloromethane	50.0000	50.1082	-0.2	131	0.00
52	T	Dibromomethane	50.0000	50.7724	-1.5	132	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	42.5950	14.8	114	0.00
54	P	4-Methyl-2-Pentanone	50.0000	50.1189	-0.2	128	0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022916\9M972967.D Vial: 1
Acq On : 29 Feb 2016 17:23 Operator: FJB/JDS
Sample : WG559150-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	52.8950	-5.8	138	0.00
56	T	Dimethyl Disulfide	50.0000	57.2670	-14.5	145	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	136	0.00
58	S	Toluene-d8	50.0000	50.7812	-1.6	130	0.00
59	C	Toluene	50.0000	53.2359	-6.5	140	0.00
60	T	Ethyl Methacrylate	50.0000	56.0160	-12.0	144	0.00
61	P	trans-1,3-Dichloropropene	50.0000	53.4323	-6.9	134	0.00
62	P	1,1,2-Trichloroethane	50.0000	52.5238	-5.0	133	0.00
63	P	2-Hexanone	50.0000	49.5865	0.8	129	0.00
64	T	1,3-Dichloropropane	50.0000	51.0354	-2.1	131	-0.01
65	P	Tetrachloroethene	50.0000	53.9111	-7.8	146	0.00
66	P	Dibromochloromethane	50.0000	50.4743	-0.9	130	0.00
67	P	1,2-Dibromoethane	50.0000	49.7787	0.4	129	0.00
68	T	1-Chlorohexane	50.0000	62.1819	-24.4	161	0.00
69	P	Chlorobenzene	50.0000	52.5474	-5.1	136	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	52.0614	-4.1	131	0.00
71	C	Ethylbenzene	50.0000	54.8083	-9.6	142	-0.01
72	P	m-,p-Xylene	100.0000	107.8931	-7.9	143	0.00
73	P	o-Xylene	50.0000	54.9463	-9.9	141	0.00
74	P	Styrene	50.0000	54.8968	-9.8	139	0.00
75	P	Bromoform	50.0000	49.9061	0.2	123	0.00
76	P	Isopropylbenzene	50.0000	55.0446	-10.1	142	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	130	-0.01
78	P	1,1,2,2-Tetrachloroethane	50.0000	49.8790	0.2	122	0.00
79	S	p-Bromofluorobenzene	50.0000	54.8522	-9.7	133	0.00
80	T	1,2,3-Trichloropropane	50.0000	49.9834	0.0	123	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	58.5392	-17.1	146	0.00
82	T	n-Propylbenzene	50.0000	56.9879	-14.0	142	0.00
83	T	Bromobenzene	50.0000	52.9988	-6.0	132	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	56.7270	-13.5	140	0.00
85	T	2-Chlorotoluene	50.0000	53.6779	-7.4	139	0.00
86	T	4-Chlorotoluene	50.0000	56.1979	-12.4	136	0.00
87	T	a-Methylstyrene	50.0000	62.4504	-24.9	157	0.00
88	T	tert-Butylbenzene	50.0000	57.2469	-14.5	139	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	54.3506	-8.7	138	0.00
90	T	sec-Butylbenzene	50.0000	56.9217	-13.8	142	0.00
91	T	p-Isopropyltoluene	50.0000	56.5760	-13.2	141	0.00
92	P	1,3-Dichlorobenzene	50.0000	51.3580	-2.7	134	0.00
93	P	1,4-Dichlorobenzene	50.0000	51.3508	-2.7	135	0.00
94	T	n-Butylbenzene	50.0000	56.1795	-12.4	142	0.00
95	P	1,2-Dichlorobenzene	50.0000	51.8840	-3.8	132	0.00
96	P	1,2-Dibromo-3-Chloropropane	50.0000	45.7824	8.4	112	0.00
97	P	1,2,4-Trichlorobenzene	50.0000	50.7719	-1.5	132	0.00
98	T	Hexachlorobutadiene	50.0000	54.2405	-8.5	141	0.00
99	T	Naphthalene	50.0000	47.6516	4.7	115	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	50.1806	-0.4	127	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972967.D 8260SL.M Mon Feb 29 17:53:10 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\1\DATA\022516\9M972894.D          Vial: 3
Acq On    : 25 Feb 2016  14:45                       Operator: ADC
Sample    : WG558732-01 BFB 50ng                     Inst    : hpms9
Misc      : 7,1 STD74773                             Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 02/15/16  HPMS9
```

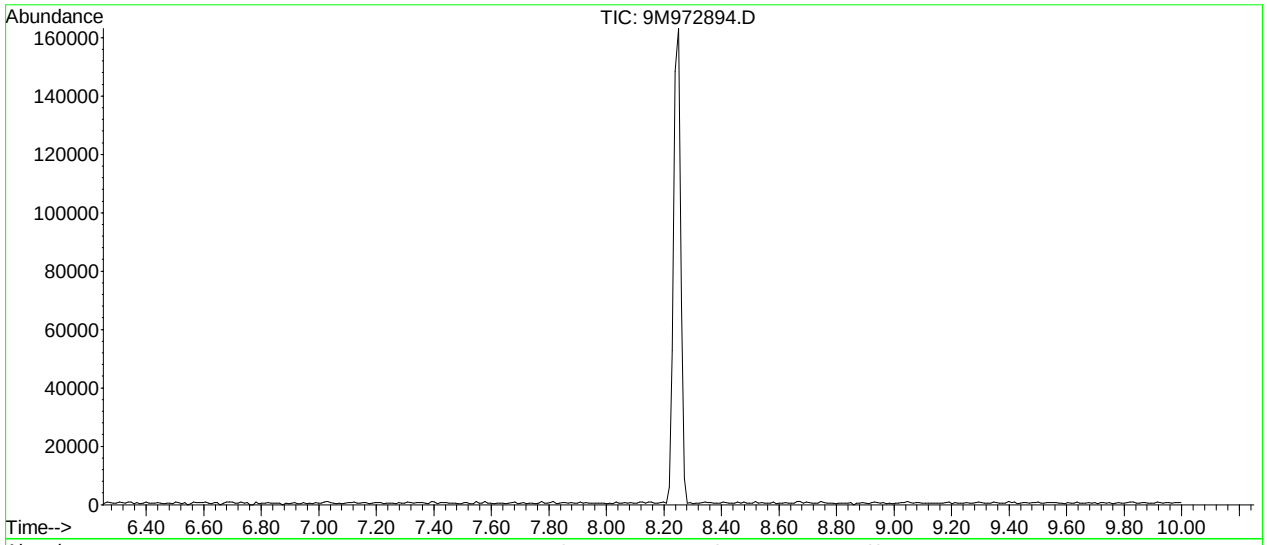

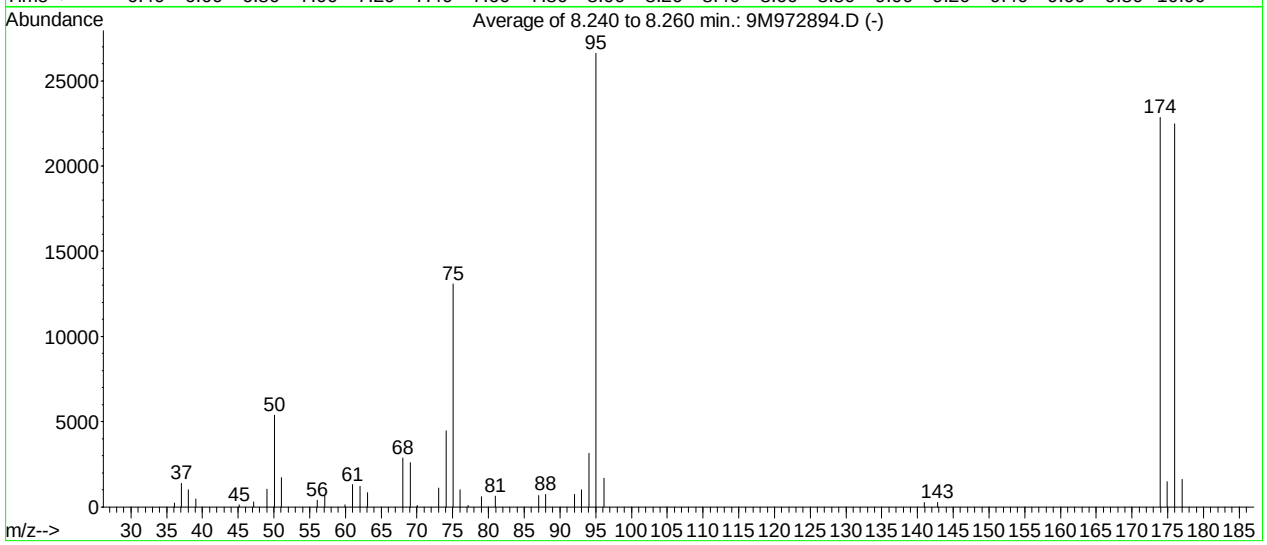

AutoFind: Scans 305, 306, 307; Background Corrected with Scan 300

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.2	5378	PASS
75	95	30	60	49.1	13067	PASS
95	95	100	100	100.0	26621	PASS
96	95	5	9	6.3	1683	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	85.8	22851	PASS
175	174	5	9	6.5	1485	PASS
176	174	95	101	98.3	22461	PASS
177	176	5	9	7.2	1619	PASS

9M972894.D 8260SL.M Fri Feb 26 11:11:03 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\022916\9M972966.D          Vial: 1
Acq On    : 29 Feb 2016  16:59                        Operator: FJB/JDS
Sample    : WG559150-01 BFB 50ng 8260                 Inst    : hpms9
Misc      : 7,1 STD74606                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 02/25/16  HPMS9
```

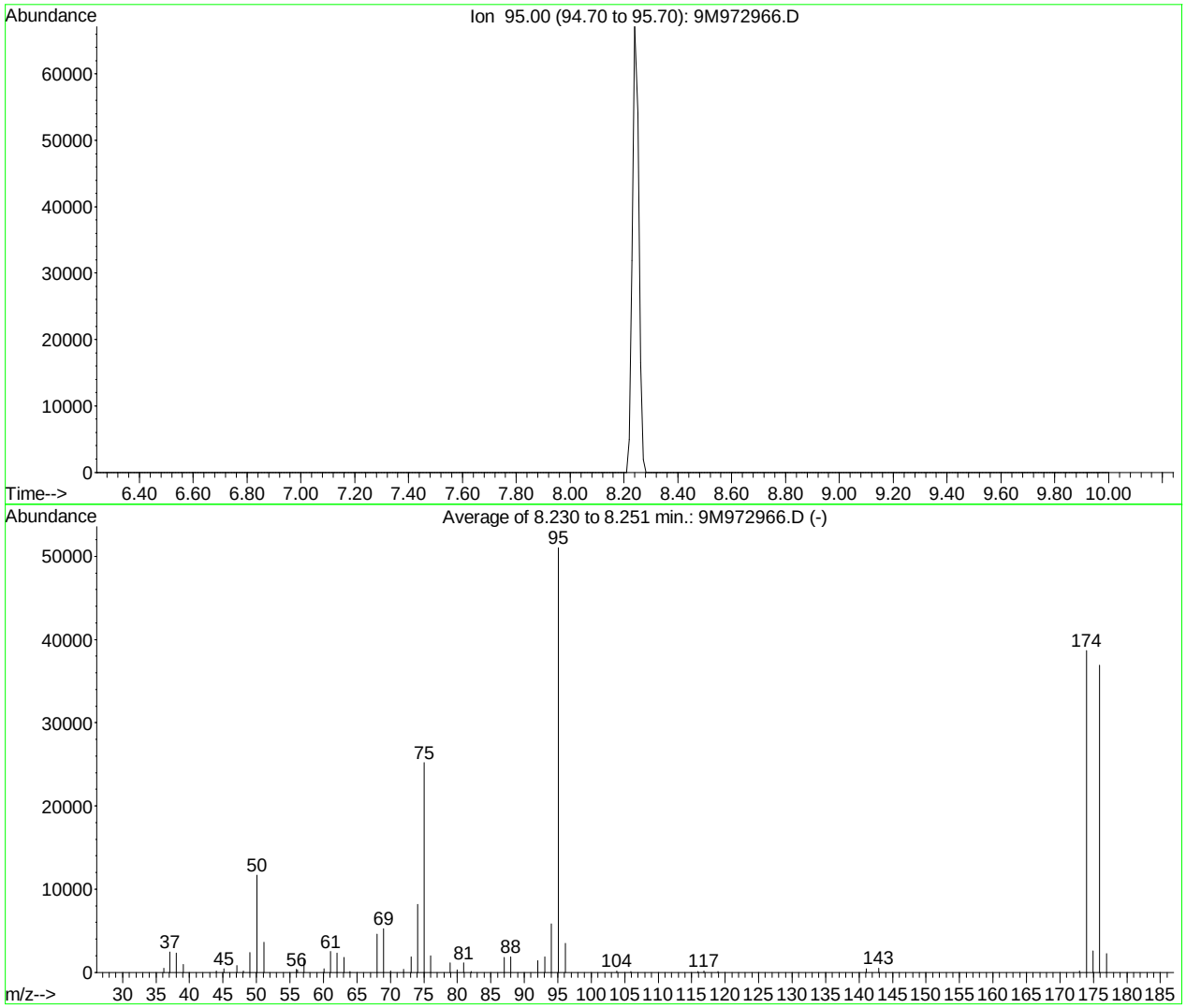

AutoFind: Scans 304, 305, 306; Background Corrected with Scan 300

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.9	11703	PASS
75	95	30	60	49.4	25229	PASS
95	95	100	100	100.0	51056	PASS
96	95	5	9	6.8	3456	PASS
173	174	0.00	2	0.4	169	PASS
174	95	50	100	75.7	38650	PASS
175	174	5	9	6.7	2572	PASS
176	174	95	101	95.5	36914	PASS
177	176	5	9	6.1	2255	PASS

9M972966.D 8260SL.M Tue Mar 01 09:17:35 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972969.D Vial: 3
Acq On : 29 Feb 2016 18:25 Operator: FJB/JDS
Sample : WG559151-01 VBLK0229 BLANK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 01 09:27:14 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	567751	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	403206	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	183902	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	151694	49.2913 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.58%		
43) 1,2-Dichloroethane-d4	10.45	65	188281	48.7607 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.52%		
58) Toluene-d8	12.83	98	538243	52.7754 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 105.56%		
79) p-Bromofluorobenzene	16.23	95	201972	56.4017 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 112.80%		

Target Compounds					Qvalue
13) Acetone	6.40	43	6092	1.9460 ug/kg#	78
56) Dimethyl Disulfide	12.82	94	14641	3.3245 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M972969.D 8260SL.M Tue Mar 01 09:27:15 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022916\9M972969.D Vial: 3
Acq On : 29 Feb 2016 18:25 Operator: FJB/JDS
Sample : WG559151-01 VBLK0229 BLANK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 1 9:27 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

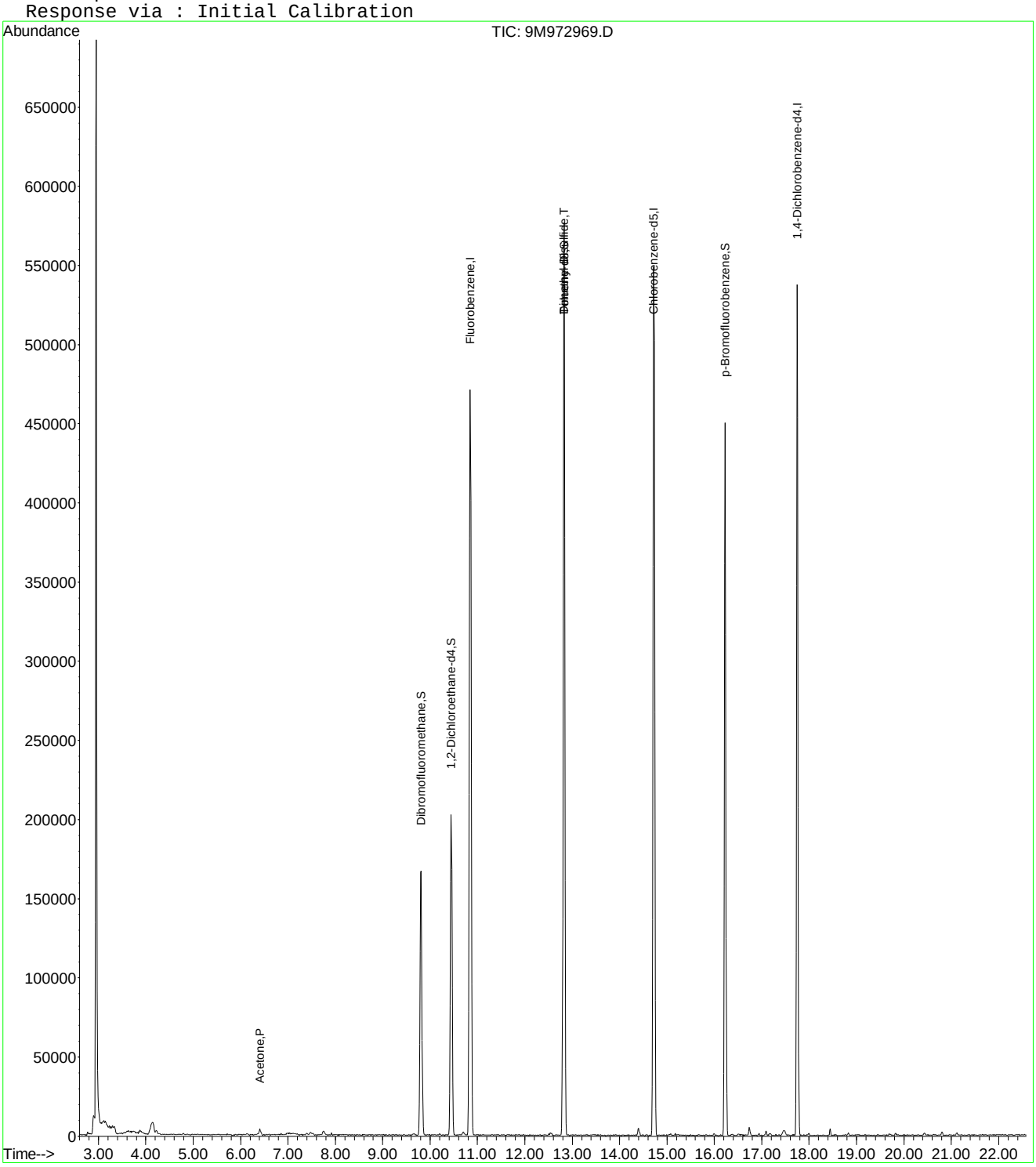

9M972969.D 8260SL.M Tue Mar 01 09:27:15 2016 Page 2

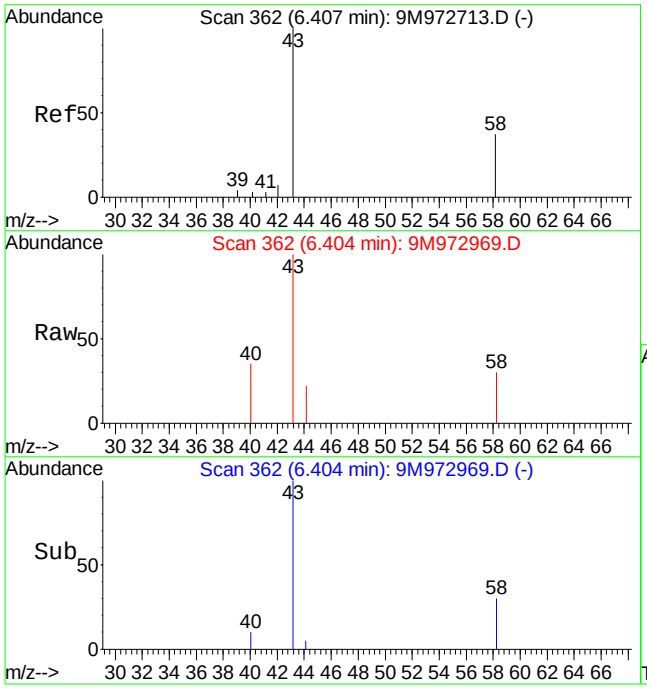

#13
Acetone
Concen: 1.95 ug/kg
RT: 6.40 min Scan# 362
Delta R.T. -0.01 min
Lab File: 9M972969.D
Acq: 29 Feb 2016 18:25

Tgt Ion: 43 Resp: 6092

Ion	Ratio	Lower	Upper
43	100		
58	39.6	16.9	39.3#

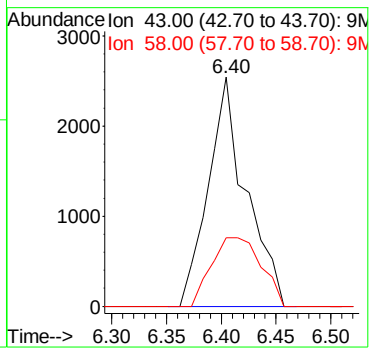

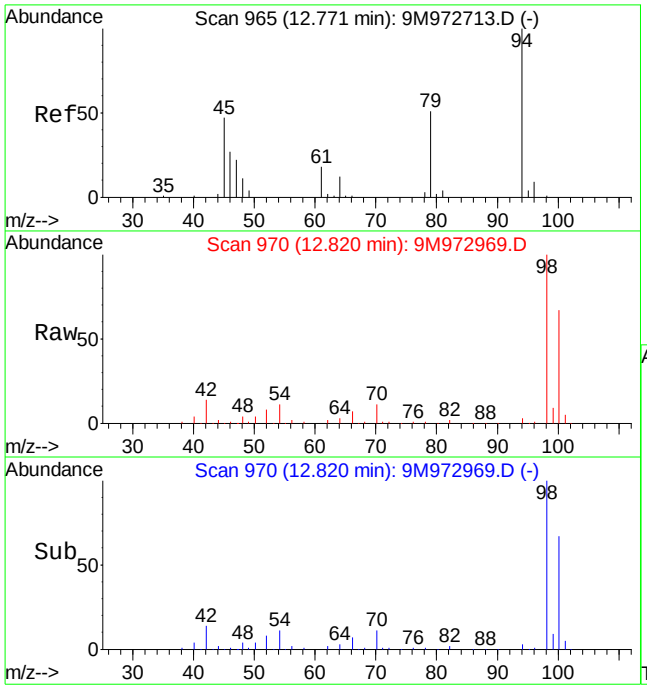

#56
Dimethyl Disulfide
Concen: 3.32 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M972969.D
Acq: 29 Feb 2016 18:25

Tgt Ion: 94 Resp: 14641

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

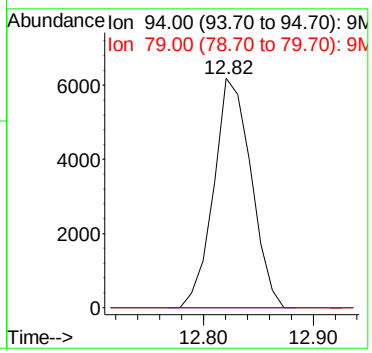

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022916\9M972970.D Vial: 4
Acq On : 29 Feb 2016 18:56 Operator: FJB/JDS
Sample : WG559151-02 20ug/Kg LCS 8260 Inst : hpms9
Misc : 7,1 STD74900 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 19:19:22 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	583985	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.73	117	426907	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.76	152	203058	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	156696	49.5012 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.00%		
43) 1,2-Dichloroethane-d4	10.44	65	192546	48.4791 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.96%		
58) Toluene-d8	12.83	98	549357	50.8746 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.74%		
79) p-Bromofluorobenzene	16.23	95	206720	52.2817 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 104.56%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	101334	25.4586 ug/kg	99
3) Chloromethane	3.74	50	75969	19.8835 ug/kg	100
4) Vinyl Chloride	3.99	62	82664	21.6128 ug/kg	99
5) 1,3-Butadiene	4.04	54	77329	21.2512 ug/kg	98
6) Bromomethane	4.88	94	46861	18.8644 ug/kg	98
7) Chloroethane	5.03	64	34093	20.0081 ug/kg	99
8) Trichlorofluoromethane	5.53	101	105806	18.4446 ug/kg	98
9) Diethyl ether	6.05	59	151224	56.3924 ug/kg	98
10) Isoprene	6.10	67	81952	23.9292 ug/kg	99
11) Acrolein	6.30	56	33255	62.1919 ug/kg	89
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	60735	20.5300 ug/kg	94
13) Acetone	6.40	43	32992	20.9636 ug/kg	99
14) 1,1-Dichloroethene	6.61	61	102623	18.8048 ug/kg	99
15) Tert-Butyl Alcohol	6.76	59	154055	257.9921 ug/kg	99
16) Dimethyl Sulfide	6.88	62	69525	30.1436 ug/kg	100
17) Iodomethane	7.13	142	28057	19.1310 ug/kg	99
18) Methyl acetate	7.14	43	57004	19.2144 ug/kg	98
19) Methylene Chloride	7.41	84	57477	19.3385 ug/kg	99
20) Carbon Disulfide	7.45	76	150130	17.8581 ug/kg	98
21) Acrylonitrile	7.58	53	29946	20.4044 ug/kg	98
22) Methyl Tert Butyl Ether	7.62	73	171070	20.2091 ug/kg	100
23) trans-1,2-Dichloroethene	7.85	61	98554	20.2636 ug/kg	97
24) n-Hexane	7.92	57	95889	19.1148 ug/kg	97
25) Diisopropyl ether	8.26	45	989869	84.9616 ug/kg	99
26) Vinyl Acetate	8.44	43	147777	22.2498 ug/kg	99
27) 1,1-Dichloroethane	8.47	63	116120	19.0087 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	875293	80.7988 ug/kg	99
29) 2-Butanone	9.02	43	38857	20.6335 ug/kg	98
30) Propionitrile	9.14	54	57762	100.2292 ug/kg	99
31) 2,2-Dichloropropane	9.24	77	87495	19.1895 ug/kg	96
32) cis-1,2-Dichloroethene	9.31	96	64843	20.3278 ug/kg	100
33) Chloroform	9.52	83	105458	18.7928 ug/kg	100
34) 1-Bromopropane	9.65	122	15268	31.7814 ug/kg	92
35) Bromochloromethane	9.75	130	41010	19.7918 ug/kg	97
36) Tetrahydrofuran	9.78	42	106319	87.5863 ug/kg	98
38) 1,1,1-Trichloroethane	10.04	97	95970	18.9112 ug/kg	98
39) Cyclohexane	10.08	56	116345	21.0282 ug/kg	98
40) 1,1-Dichloropropene	10.24	75	74028	18.5383 ug/kg	98
41) Tert-Amyl-Methyl ether	10.34	73	740185	93.9998 ug/kg	100
42) Carbon Tetrachloride	10.39	117	84392	17.9376 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972970.D 8260SL.M Mon Feb 29 19:19:23 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022916\9M972970.D Vial: 4
Acq On : 29 Feb 2016 18:56 Operator: FJB/JDS
Sample : WG559151-02 20ug/Kg LCS 8260 Inst : hpms9
Misc : 7,1 STD74900 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 19:19:22 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	96010	19.4509 ug/kg	97
46)	Benzene	10.60	78	220888	19.7582 ug/kg	100
47)	Trichloroethene	11.35	130	71807	20.2712 ug/kg	97
48)	Methylcyclohexane	11.44	83	94356	21.2379 ug/kg	98
49)	1,2-Dichloropropane	11.56	63	63876	20.8066 ug/kg	99
50)	1,4-Dioxane	11.87	88	11081	240.5973 ug/kg	100
51)	Bromodichloromethane	11.87	83	79058	18.2727 ug/kg	99
52)	Dibromomethane	11.96	174	35780	17.5899 ug/kg	93
53)	2-Chloroethyl Vinyl Ether	12.16	63	13942	18.3350 ug/kg	91
54)	4-Methyl-2-Pentanone	12.20	58	29035	21.5476 ug/kg	96
55)	cis-1,3-Dichloropropene	12.50	75	93709	20.7891 ug/kg	100
56)	Dimethyl Disulfide	12.78	94	101791	22.4711 ug/kg	94
59)	Toluene	12.92	91	247646	20.3030 ug/kg	98
60)	Ethyl Methacrylate	13.02	69	71469	21.1386 ug/kg	100
61)	trans-1,3-Dichloropropene	13.10	75	86392	19.6649 ug/kg	98
62)	1,1,2-Trichloroethane	13.33	97	52262	20.3963 ug/kg	96
63)	2-Hexanone	13.25	43	52495	20.5193 ug/kg	98
64)	1,3-Dichloropropane	13.62	76	88405	20.7058 ug/kg	96
65)	Tetrachloroethene	13.75	164	49274	18.8436 ug/kg	98
66)	Dibromochloromethane	14.01	129	65001	18.1515 ug/kg	99
67)	1,2-Dibromoethane	14.28	107	53571	18.8491 ug/kg	100
68)	1-Chlorohexane	14.35	91	75778	21.0671 ug/kg	100
69)	Chlorobenzene	14.77	112	171132	19.9625 ug/kg	96
70)	1,1,1,2-Tetrachloroethane	14.80	131	62080	19.2832 ug/kg	96
71)	Ethylbenzene	14.79	106	93576	21.1875 ug/kg	95
72)	m-,p-Xylene	14.89	106	222100	40.7198 ug/kg	98
73)	o-Xylene	15.46	106	109315	20.8843 ug/kg	100
74)	Styrene	15.49	104	180106	20.2061 ug/kg	98
75)	Bromoform	16.00	173	39845	16.9467 ug/kg	99
76)	Isopropylbenzene	15.88	105	285427	20.3124 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	56665	18.3960 ug/kg	96
80)	1,2,3-Trichloropropane	16.29	110	23191	19.8525 ug/kg	91
81)	trans-1,4-Dichloro-2-Buten	16.33	53	20358	17.2891 ug/kg	90
82)	n-Propylbenzene	16.39	91	330501	20.7061 ug/kg	100
83)	Bromobenzene	16.52	156	72004	19.1089 ug/kg	93
84)	1,3,5-Trimethylbenzene	16.58	105	243261	20.3032 ug/kg	99
85)	2-Chlorotoluene	16.66	91	209662	19.5841 ug/kg	99
86)	4-Chlorotoluene	16.70	91	205369	20.7488 ug/kg	100
87)	a-Methylstyrene	16.98	118	125141	22.9223 ug/kg	98
88)	tert-Butylbenzene	17.04	134	51846	20.6399 ug/kg	98
89)	1,2,4-Trimethylbenzene	17.09	105	242157	19.2991 ug/kg	100
90)	sec-Butylbenzene	17.30	105	307726	19.9415 ug/kg	99
91)	p-Isopropyltoluene	17.46	119	249999	19.1970 ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	138985	18.5590 ug/kg	99
93)	1,4-Dichlorobenzene	17.80	146	142369	19.0165 ug/kg	99
94)	n-Butylbenzene	17.99	91	223292	18.4414 ug/kg	100
95)	1,2-Dichlorobenzene	18.30	146	135532	19.5049 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	15855	17.7743 ug/kg	97
97)	1,2,4-Trichlorobenzene	20.44	180	86505	17.5368 ug/kg	98
98)	Hexachlorobutadiene	20.59	225	43540	16.7449 ug/kg	99
99)	Naphthalene	20.81	128	217141	17.5505 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.11	180	87309	18.2487 ug/kg	98

(#) = qualifier out of range (m) = manual integration
9M972970.D 8260SL.M Mon Feb 29 19:19:23 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\022916\9M972970.D Vial: 4
Acq On : 29 Feb 2016 18:56 Operator: FJB/JDS
Sample : WG559151-02 20ug/Kg LCS 8260 Inst : hpms9
Misc : 7,1 STD74900 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 19:19 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

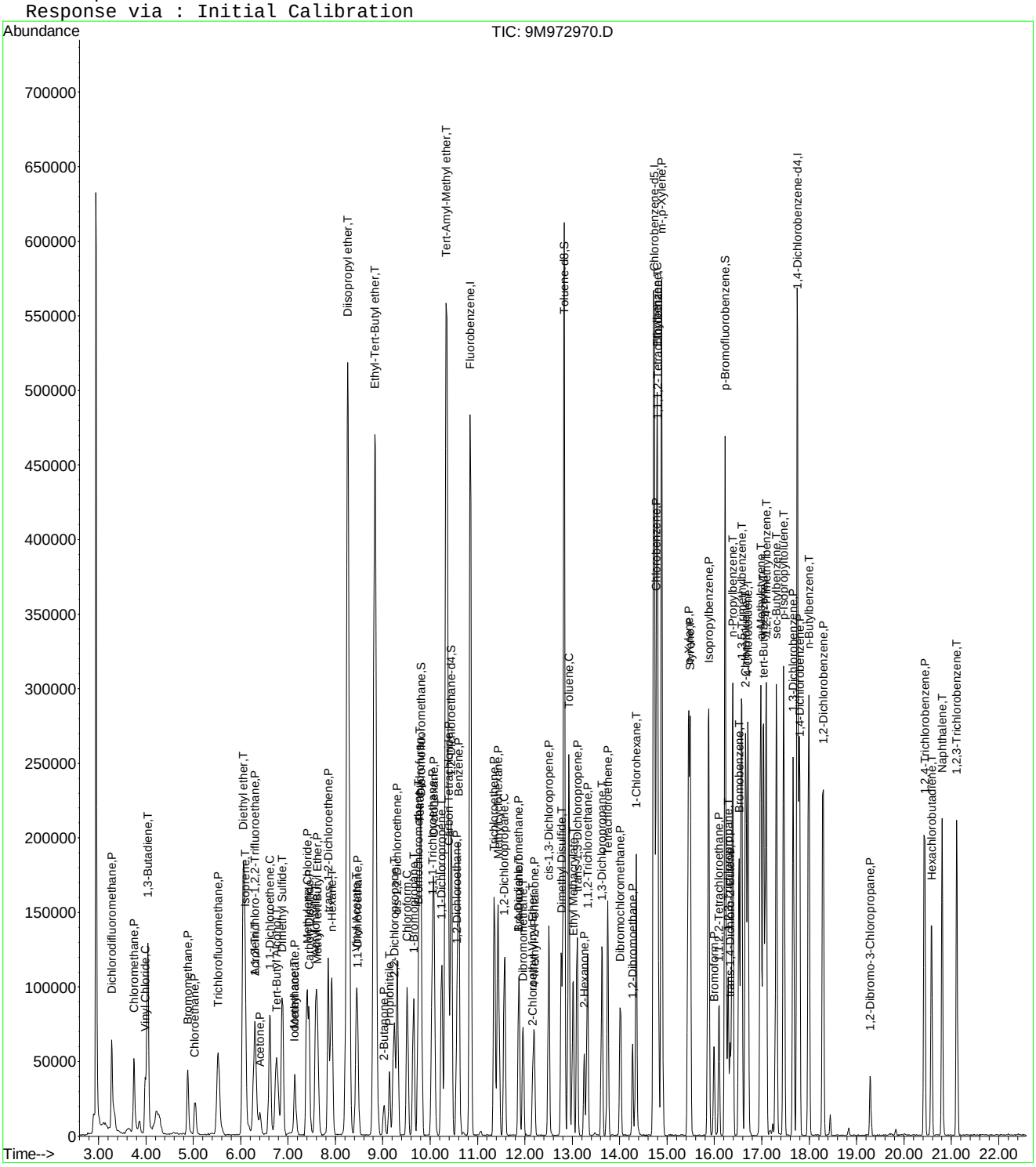

2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT02(5-5.5)260216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 02:18
Collect Date:	02/26/2016 08:35	**Dilution:**	1	**File ID:**	1LM.LM33494
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.36	U	4.72	2.36	1.18

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT02(10-10.5)260216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 02:37
Collect Date:	02/26/2016 08:42	**Dilution:**	1	**File ID:**	1LM.LM33495
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.36	U	4.70	2.36	1.18

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT02(10-10.5)260216FD	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 02:56
Collect Date:	02/26/2016 08:42	**Dilution:**	1	**File ID:**	1LM.LM33496
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.36	U	4.71	2.36	1.18

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT02(15-15.5)260216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 03:15
Collect Date:	02/26/2016 09:00	**Dilution:**	1	**File ID:**	1LM.LM33497
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	78.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.50	U	4.98	2.50	1.25

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT02(22-22.5)260216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 10:51
Collect Date:	02/26/2016 09:15	**Dilution:**	10	**File ID:**	1LM.LM33512
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	81.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	269		47.3	23.6	11.8

Certificate of Analysis

Sample #:	L16021358-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT03(5-5.5)260216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 03:53
Collect Date:	02/26/2016 11:15	**Dilution:**	1	**File ID:**	1LM.LM33499
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.46	U	4.94	2.46	1.23

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16021358
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16021358-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT03(10-10.5)260216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 11:10
Collect Date:	02/26/2016 11:17	**Dilution:**	100	**File ID:**	1LM.LM33513
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	87.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2110		437	218	109

Certificate of Analysis

Sample #:	L16021358-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT03(14.5-15)260216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 11:29
Collect Date:	02/26/2016 11:19	**Dilution:**	100	**File ID:**	1LM.LM33514
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	85.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3290		465	232	116

Certificate of Analysis

Sample #:	L16021358-09	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT03(17.5-18)260216	**Prep Method:**	6850	**Prep Date:**	02/29/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	02/17/2016 21:24
Workgroup #:	WG559142	**Analyst:**	WTD	**Run Date:**	03/01/2016 11:48
Collect Date:	02/26/2016 11:21	**Dilution:**	100	**File ID:**	1LM.LM33515
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	81.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2330		484	242	121

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

MICROBAC

Semivolatile Sample Extract Log

Parameter: Perchlorate
SOP #: HPLC 06
Analyst: ADC / AWE
Spike/Surrogate analyst: ADC
Surrogate #: NA
Spike # A: STD 72686
Ext Solvent: DI-H2O
Ext Solvent: NA
Ext Disk: NA

Matrix: SOILS
Rev #: 07
Date/Time Extracted: ADC 2/29/16 12:30
Witness:
Spike # B: NA
Lot #: NA
Lot #: NA
Lot #: NA

Extraction Work Group: WG 559140
Analytical Work Group: WG 559142
Run ID: R4478798
Pipetter(s): Eppendorf #403
Analytical Balance ID: BAL 014
Reagent: Tubes Lot #: R6134011
Reagent: Spa Lot #: COA 16150
Other: DS Lot #: COA 18071

Color Code
T = Transparent
C = Colored
O = Opaque

	Sample ID	Test Code	pH	Initial Wt / Vol	IS Amount ~~Surrogate~~ ADC	Amount Spike	Final Volume	Extract Color	Comments
1	WG -01	6850	NA	5.003	0.250 mL	1.0 mL	50.0 mL	NA	MCT (2mg/kg) (10,000 ug/kg)
2	-02			5.006		NA			Blank
3	-03			5.009		1.0 mL			LCS (2mg/kg)
4	L16021352-01			5.250		NA			RPA
5	WG -05			5.241		1.0 mL			MS
6	-06			5.248		1.0 mL			MSD
7	1357-02			5.210		NA			
8	-03			5.143					
9	-04			5.239					
10	-05			5.120					
11	-06			5.199					
12	L16021358-01			5.165					
13	-02			5.088					
14	-03			5.087					
15	-04			5.129					
16	-05			5.186					
17	-06			5.066					
18	-07			5.222					
19	-08			5.059					
20	-09			5.075					
21									
22									
23									
24									

Reviewed by: [signature] 3-1-16

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe
Calibration Check: 1412 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG559142-01 MCT	~~4,056~~ 9,560	
-02 BLK	6.51	
-03 LCS	6.57	
L16021357-01 208	~~1527~~ 15.27	
MS	18.06	
MSD	14.16	
1357-02	~~25.8~~ 258	
-03	190.2	
-04	182.7	
-05	155.6	
-06	96.2	
L16021358-01	6.58	
-02	19.11	
-03	16.73	
-04	7.87	
-05	28.4	
-06	5.76	
-07	68.9	
-08	37.9	
-09	26.3	

Analyst: Andrew Ewing

Date/Time: 3-1-16 / 1310

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 021716_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG557864 (waters)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 MS/MSD STD: NA

Comments: ICAL WG557856 : Alternate Source STD72685
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM33244	WG557856-01 CCB	1	1		02/17/16 19:12
2	1LM.LM33245	WG557856-02 STD (0.1 ug/L)	1	1	STD72683	02/17/16 19:31
3	1LM.LM33246	WG557856-03 STD (0.2 ug/L)	1	1	STD72683	02/17/16 19:50
4	1LM.LM33247	WG557856-04 STD (0.5 ug/L)	1	1	STD72683	02/17/16 20:08
5	1LM.LM33248	WG557856-05 STD (1.0 ug/L)	1	1	STD72683	02/17/16 20:27
6	1LM.LM33249	WG557856-06 STD (2.0 ug/L)	1	1	STD72683	02/17/16 20:46
7	1LM.LM33250	WG557856-07 STD (5.0 ug/L)	1	1	STD72683	02/17/16 21:05
8	1LM.LM33251	WG557856-08 STD (10 ug/L)	1	1	STD72683	02/17/16 21:24
9	1LM.LM33252	WG557856-09 SSCV (1.0 ug/L)	1	1	STD72685	02/17/16 21:43
10	1LM.LM33253	WG557868-01 CCB	1	1		02/17/16 22:02
11	1LM.LM33254	WG557868-02 CCV (1.0ug/L)	1	1	STD72683	02/17/16 22:21
12	1LM.LM33255	WG557864-05 MRL (0.2ug/L)	1	1	STD72683	02/17/16 22:40
13	1LM.LM33256	WG557864-01 MCT (0.2ug/L)	1	1	STD72685	02/17/16 22:59
14	1LM.LM33257	WG557864-02 BLANK	1	1		02/17/16 23:18
15	1LM.LM33258	WG557864-03 LCS (0.2ug/L)	1	1	STD72685	02/17/16 23:37
16	1LM.LM33259	WG557864-04 LCS2 (0.2ug/L)	1	1	STD72685	02/17/16 23:56
17	1LM.LM33260	L16020819-01 (1000x) (NR)	1	1000		02/18/16 00:15
18	1LM.LM33261	L16020819-01 (100x) (NR)	1	100		02/18/16 00:34
19	1LM.LM33262	L16020819-01 (10x) (NR)	1	10		02/18/16 00:53
20	1LM.LM33263	L16020819-01 Neat	1	1		02/18/16 01:11
21	1LM.LM33264	Blank Rinse	1	1		02/18/16 01:30
22	1LM.LM33265	Blank Rinse	1	1		02/18/16 01:49
23	1LM.LM33266	WG557868-03 CCV (1.0ug/L)	1	1	STD72683	02/18/16 02:08
24	1LM.LM33267	WG557864-06 MRL (0.2ug/L)	1	1	STD72683	02/18/16 02:27
25	1LM.LM33268	WG557868-04 CCB	1	1		02/18/16 02:46

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17	X	1	Analyzed too dilute	
	L16020819-01 (1000x) (NR) : Results from this sample at this dilution are not needed.			
18	X	1	Analyzed too dilute	
	L16020819-01 (100x) (NR) : Results from this sample at this dilution are not needed.			
19	X	1	Analyzed too dilute	

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 021716_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG557864 (waters)

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 NA

Comments

Seq.	Rerun	Dil.	Reason	Analytes
	L16020819-01 (10x) (NR) : Results from this sample at this dilution are not needed.			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 022916_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015 (Water) WG559142 (Soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 MS/MSD STD: STD72685

Comments: L16021262s were analyzed initially at dilutions based on historical data. Fraction 03 required further dilution to obtain results within the calibration range. Seq No.s 4 through 26 need re-analyzed due to CCV failure.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM33446	WG559066-01 CCB	1	1		02/29/16 11:09
2	1LM.LM33447	WG559066-02 CCV (1.0ug/L)	1	1	STD72683	02/29/16 11:28
3	1LM.LM33448	WG559015-05 MRL (0.2ug/L)	1	1	STD72683	02/29/16 11:47
4	1LM.LM33449	WG559015-01 MCT (0.2ug/L)	1	1	STD72685	02/29/16 12:06
5	1LM.LM33450	WG559015-02 BLANK	1	1		02/29/16 12:25
6	1LM.LM33451	WG559015-03 LCS (0.2ug/L)	1	1	STD72685	02/29/16 12:44
7	1LM.LM33452	WG559015-04 LCS2 (0.2ug/L)	1	1	STD72685	02/29/16 13:02
8	1LM.LM33453	L16021060-01 ADC	1	1	STD72685	02/29/16 13:21
9	1LM.LM33454	L16021060-02 ADC	1	1	STD72685	02/29/16 13:40
10	1LM.LM33455	L16021060-03 ADC	1	1	STD72685	02/29/16 13:59
11	1LM.LM33456	L16021060-04 ADC	1	1	STD72685	02/29/16 14:18
12	1LM.LM33457	L16021262-01 (20x)	1	20		02/29/16 14:37
13	1LM.LM33458	L16021262-02 (5000x)	1	5000		02/29/16 14:56
14	1LM.LM33459	WG559066-03 CCV (1.0ug/L)	1	1	STD72683	02/29/16 15:15
15	1LM.LM33460	WG559015-06 MRL (0.2ug/L)	1	1	STD72683	02/29/16 15:34
16	1LM.LM33461	WG559066-04 CCB	1	1		02/29/16 15:53
17	1LM.LM33462	L16021262-03 (20X)	1	20		02/29/16 16:12
18	1LM.LM33463	L16021262-04 (2000X)	1	2000		02/29/16 16:31
19	1LM.LM33464	L16021262-05 (1000X)	1	1000		02/29/16 16:50
20	1LM.LM33465	L16021262-06 (10,000X)	1	10000		02/29/16 17:09
21	1LM.LM33466	L16021262-07 (10,000X)	1	10000		02/29/16 17:28
22	1LM.LM33467	L16021262-08 (5000X)	1	5000		02/29/16 17:47
23	1LM.LM33468	L16021262-09 (5000X)	1	5000		02/29/16 18:06
24	1LM.LM33469	L16021262-10 (100,000X)	1	100000		02/29/16 18:24
25	1LM.LM33470	L16021262-11 (10,000X)	1	10000		02/29/16 18:43
26	1LM.LM33471	L16021262-12 (10,000X)	1	10000		02/29/16 19:02
27	1LM.LM33472	WG559066-05 CCV (1.0ug/L)	1	1	STD72683	02/29/16 19:21
28	1LM.LM33473	WG559015-07 MRL (0.2ug/L)	1	1	STD72683	02/29/16 19:40
29	1LM.LM33474	WG559066-06 CCB	1	1		02/29/16 19:59
30	1LM.LM33475	L16021262-13 (10,000X)	1	10000		02/29/16 20:18
31	1LM.LM33476	L16021262-14 (10,000X)	1	10000		02/29/16 20:37
32	1LM.LM33477	WG559066-07 CCV (1.0ug/L)	1	1	STD72683	02/29/16 20:56
75	1LM.LM33478	WG559142-07 MRL (0.2ug/L)	7	1	STD72683	02/29/16 21:15

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 022916_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015 (Water) WG559142 (Soils)

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM33479	WG559066-08 CCB	1	1		02/29/16 21:34
35	1LM.LM33480	WG559142-01 MCT (2.0ug/kg)	7	1	STD72685	02/29/16 21:53
36	1LM.LM33481	WG559142-02 BLANK	7	1		02/29/16 22:12
37	1LM.LM33482	WG559142-03 LCS (2.0ug/kg)	7	1	STD72685	02/29/16 22:31
76	1LM.LM33483	L16021357-01 REF	7	1		02/29/16 22:50
39	1LM.LM33484	L16021357-01 MS	7	1		02/29/16 23:09
40	1LM.LM33485	L16021357-01 MSD	7	1		02/29/16 23:27
41	1LM.LM33486	L16021357-02	7	1		02/29/16 23:46
42	1LM.LM33487	L16021357-03	7	1		03/01/16 00:05
43	1LM.LM33488	L16021357-04	7	1		03/01/16 00:24
44	1LM.LM33489	L16021357-05	7	1		03/01/16 00:43
45	1LM.LM33490	WG559066-09 CCV (1.0ug/L)	1	1	STD72685	03/01/16 01:02
46	1LM.LM33491	WG559142-08 MRL (2.0ug/kg)	7	1	STD72685	03/01/16 01:21
47	1LM.LM33492	WG559066-10 CCB	1	1		03/01/16 01:40
48	1LM.LM33493	L16021357-06	7	1		03/01/16 01:59
49	1LM.LM33494	L16021358-01	7	1		03/01/16 02:18
50	1LM.LM33495	L16021358-02	7	1		03/01/16 02:37
51	1LM.LM33496	L16021358-03	7	1		03/01/16 02:56
52	1LM.LM33497	L16021358-04	7	1		03/01/16 03:15
53	1LM.LM33498	L16021358-05	7	1		03/01/16 03:34
54	1LM.LM33499	L16021358-06	7	1		03/01/16 03:53
55	1LM.LM33500	L16021358-07	7	1		03/01/16 04:12
56	1LM.LM33501	L16021358-08	7	1		03/01/16 04:30
57	1LM.LM33502	L16021358-09	7	1		03/01/16 04:49
58	1LM.LM33503	WG559066-11 CCV (1.0ug/L)	1	1	STD72685	03/01/16 05:08
59	1LM.LM33504	WG559142-09 MRL (2.0ug/kg)	7	1	STD72685	03/01/16 05:27
60	1LM.LM33505	WG559066-12 CCB	1	1		03/01/16 05:46
61	1LM.LM33506	WG559015-09 MRL (0.2ug/L)	1	1	STD72683	03/01/16 08:58
62	1LM.LM33507	L16021262-03 (100X)	1	100		03/01/16 09:17
63	1LM.LM33508	WG559066-13 CCV (1.0ug/L)	1	1	STD72683	03/01/16 09:35
64	1LM.LM33509	WG559015-10 MRL (0.2ug/L)	1	1	STD72683	03/01/16 09:54
65	1LM.LM33510	WG559066-14 CCB	1	1		03/01/16 10:13
66	1LM.LM33511	L16021357-06 (10X)	7	10		03/01/16 10:32
67	1LM.LM33512	L16021358-05 (10X)	7	10		03/01/16 10:51
68	1LM.LM33513	L16021358-07 (100X)	7	100		03/01/16 11:10
69	1LM.LM33514	L16021358-08 (100X)	7	100		03/01/16 11:29

Page: 2 Approved: 01-MAR-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 022916_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015 (Water) WG559142 (Soils)

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
70	1LM.LM33515	L16021358-09 (100X)	7	100		03/01/16 11:48
71	1LM.LM33516	WG559066-15 CCV (1.0ug/L)	1	1	STD72685	03/01/16 12:07
72	1LM.LM33517	WG559142-10 MRL (2.0ug/kg)	7	1	STD72685	03/01/16 12:26
73	1LM.LM33518	WG559066-16 CCB	1	1		03/01/16 12:45

Comments

Seq.	Rerun	Dil.	Reason	Analytes
14				
	WG559066-03 CCV fails high. Affected samples will need re-analyzed.			
30				
	L16021262-13 not reporting per WTD.			
31				
	L16021262-14 not reporting per WTD.			
48	X	10	Over Calibration Range	perchlorate
	L16021357-06			
53	X	10	Over Calibration Range	Perchlorate
	L16021358-05			
55	X	100	Over Calibration Range	Perchlorate
	L16021358-07			
56	X	100	Over Calibration Range	Perchlorate
	L16021358-08			
57	X	100	Over Calibration Range	Perchlorate
	L16021358-09			

Page: 3 Approved: 01-MAR-16

Microbac Laboratories Inc.

Data Checklist

Date: 17-FEB-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG557856
Runlog ID: 73366
Analytical Workgroups: L16020819

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
18-FEB-2016
John Richards

Secondary Reviewer:
18-FEB-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-18-2016 16:36:00

Microbac Laboratories Inc.

Data Checklist

Date: 29-FEB-2016
Analyst: WTD
Analyst: ADC
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 73569
Analytical Workgroups: L16021262,L16021060,L16021357,L16021358

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	WTD
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MES

Primary Reviewer: 01-MAR-2016

Secondary Reviewer: 01-MAR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-02-2016 08:38:17

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG559142

Login Number: L16021358

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18DPT02(5-5.5)260216	01	02/26/16					02/29/2016	3.2	28		03/01/16	.6	28	
18DPT02(10-10.5)260216	02	02/26/16					02/29/2016	3.2	28		03/01/16	.6	28	
18DPT02(10-10.5)260216FD	03	02/26/16					02/29/2016	3.2	28		03/01/16	.6	28	
18DPT02(15-15.5)260216	04	02/26/16					02/29/2016	3.1	28		03/01/16	.6	28	
18DPT02(22-22.5)260216	05	02/26/16					02/29/2016	3.1	28		03/01/16	.9	28	
18DPT03(5-5.5)260216	06	02/26/16					02/29/2016	3.1	28		03/01/16	.6	28	
18DPT03(10-10.5)260216	07	02/26/16					02/29/2016	3.1	28		03/01/16	.9	28	
18DPT03(14.5-15)260216	08	02/26/16					02/29/2016	3	28		03/01/16	1	28	
18DPT03(17.5-18)260216	09	02/26/16					02/29/2016	3	28		03/01/16	1	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4653190
Report generated 03/02/2016 08:27

METHOD BLANK SUMMARY

Login Number: L16021358
Blank File ID: 1LM.LM33481
Prep Date: 02/29/16 12:30
Analyzed Date: 02/29/16 22:12
Analyst: WTD

Work Group: WG559142
Blank Sample ID: WG559142-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG559142-07	1LM.LM33478	02/29/16 21:15	01
MCT	WG559142-01	1LM.LM33480	02/29/16 21:53	01
LCS	WG559142-03	1LM.LM33482	02/29/16 22:31	01
QCMRL	WG559142-08	1LM.LM33491	03/01/16 01:21	01
18DPT02(5-5.5)260216	L16021358-01	1LM.LM33494	03/01/16 02:18	01
18DPT02(10-10.5)260216	L16021358-02	1LM.LM33495	03/01/16 02:37	01
18DPT02(10-10.5)260216FD	L16021358-03	1LM.LM33496	03/01/16 02:56	01
18DPT02(15-15.5)260216	L16021358-04	1LM.LM33497	03/01/16 03:15	01
18DPT03(5-5.5)260216	L16021358-06	1LM.LM33499	03/01/16 03:53	01
QCMRL	WG559142-09	1LM.LM33504	03/01/16 05:27	01
18DPT02(22-22.5)260216	L16021358-05	1LM.LM33512	03/01/16 10:51	DL01
18DPT03(10-10.5)260216	L16021358-07	1LM.LM33513	03/01/16 11:10	DL01
18DPT03(14.5-15)260216	L16021358-08	1LM.LM33514	03/01/16 11:29	DL01
18DPT03(17.5-18)260216	L16021358-09	1LM.LM33515	03/01/16 11:48	DL01
QCMRL	WG559142-10	1LM.LM33517	03/01/16 12:26	01

Report Name: BLANK_SUMMARY
PDF File ID: 4653191
Report generated 03/02/2016 08:27

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16021358 Prep Date: 02/29/16 12:30 Sample ID: WG559142-02
Instrument ID: LCMS1 Run Date: 02/29/16 22:12 Prep Method: 6850
File ID: 1LM.LM33481 Analyst: WTD Method: 6850
Workgroup (AAB#): WG559142 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-17-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.999	4.00	0.999	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4653192
02-MAR-2016 08:27

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16021358 Run Date: 02/29/2016 Sample ID: WG559142-03
Instrument ID: LCMS1 Run Time: 22:31 Prep Method: 6850
File ID: 1LM.LM33482 Analyst: WTD Method: 6850
Workgroup (AAB#): WG559142 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD72685 Cal ID: LCMS1-17-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	2.00	2.07	104	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4653194
Report generated: 03/02/2016 08:27

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16021358
Analytical Method: 6850
ICAL Workgroup: WG557856

Instrument ID: LCMS1
Initial Calibration Date: 17-FEB-16 21:24
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.628	7.83	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4653197
Report generated 03/02/2016 08:27

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16021358

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 17-FEB-16 21:24

Column ID: F

Analyte	WG557856-02			WG557856-03			WG557856-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	18800.0000	1.692	0.200	38700.0000	1.755	0.500	91400.0000	1.644

INT_CAL - Modified 03/06/2008
PDF File ID: 4653197
Report generated 03/02/2016 08:27

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16021358

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 17-FEB-16 21:24

Column ID: F

Analyte	WG557856-05			WG557856-06			WG557856-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	178000.000	1.625	2.00	350000.000	1.604	5.00	826000.000	1.554

INT_CAL - Modified 03/06/2008
PDF File ID: 4653197
Report generated 03/02/2016 08:27

INITIAL CALIBRATION DATA

Login Number: L16021358
Analytical Method: 6850
Instrument ID: LCMS1
Initial Calibration Date: 17-FEB-16 21:24
Column ID: F

Analyte	WG557856-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.521

INT_CAL - Modified 03/06/2008
PDF File ID: 4653197
Report generated 03/02/2016 08:27

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16021358 Run Date: 02/17/2016 Sample ID: WG557856-09
Instrument ID: LCMS1 Run Time: 21:43 Method: 6850
File ID: 1LM.LM33252 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG557856 Cal ID: LCMS1 - 17-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	1.05	ug/L	1.65	5.00	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4653198
Report generated 03/02/2016 08:28

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16021358
Run Date: 02/29/2016
Sample ID: WG559066-08
Instrument ID: LCMS1
Run Time: 21:34
Method: 6850
File ID: 1LM.LM33479
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG559142
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4653201
Report generated 03/02/2016 08:28

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16021358
Run Date: 03/01/2016
Sample ID: WG559066-10
Instrument ID: LCMS1
Run Time: 01:40
Method: 6850
File ID: 1LM.LM33492
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG559142
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4653201
Report generated 03/02/2016 08:28

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16021358
Run Date: 03/01/2016
Sample ID: WG559066-12
Instrument ID: LCMS1
Run Time: 05:46
Method: 6850
File ID: 1LM.LM33505
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG559142
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4653201
Report generated 03/02/2016 08:28

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16021358
Run Date: 03/01/2016
Sample ID: WG559066-14
Instrument ID: LCMS1
Run Time: 10:13
Method: 6850
File ID: 1LM.LM33510
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG559142
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4653201
Report generated 03/02/2016 08:28

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16021358
Run Date: 03/01/2016
Sample ID: WG559066-16
Instrument ID: LCMS1
Run Time: 12:45
Method: 6850
File ID: 1LM.LM33518
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG559142
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4653201
Report generated 03/02/2016 08:28

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021358
Run Date: 02/29/2016
Sample ID: WG559066-07
Instrument ID: LCMS1
Run Time: 20:56
Method: 6850
File ID: 1LM.LM33477
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG559142
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.06	ug/kg	1.66	6.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4653199
Report generated 03/02/2016 08:28

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021358 Run Date: 03/01/2016 Sample ID: WG559066-09
Instrument ID: LCMS1 Run Time: 01:02 Method: 6850
File ID: 1LM.LM33490 Analyst: WTD QC Key: DOD4
Workgroup (AAB#): WG559142 Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/kg	1.61	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4653199
Report generated 03/02/2016 08:28

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021358
Run Date: 03/01/2016
Sample ID: WG559066-11
Instrument ID: LCMS1
Run Time: 05:08
Method: 6850
File ID: 1LM.LM33503
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG559142
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/kg	1.62	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4653199
Report generated 03/02/2016 08:28

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021358
Run Date: 03/01/2016
Sample ID: WG559066-13
Instrument ID: LCMS1
Run Time: 09:35
Method: 6850
File ID: 1LM.LM33508
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG559142
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/kg	1.62	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4653199
Report generated 03/02/2016 08:28

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16021358
Run Date: 03/01/2016
Sample ID: WG559066-15
Instrument ID: LCMS1
Run Time: 12:07
Method: 6850
File ID: 1LM.LM33516
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG559142
Cal ID: LCMS1 - 17-FEB-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.05	ug/kg	1.65	5.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4653199
Report generated 03/02/2016 08:28

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16021358 Run Date: 02/29/2016 Sample ID: WG559142-07

Instrument ID: LCMS1 Run Time: 21:15 Prep Method: 6850

File ID: 1LM.LM33478 Analyst: WTD Method: 6850

Workgroup (AAB#): WG559142 Matrix: Soil Units: ug/kg

Contract #: Cal ID: LCMS1-17-FEB-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.18	109	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4653195
Report generated 03/02/2016 08:27

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16021358 Run Date: 03/01/2016 Sample ID: WG559142-08
Instrument ID: LCMS1 Run Time: 01:21 Prep Method: 6850
File ID: 1LM.LM33491 Analyst: WTD Method: 6850
Workgroup (AAB#): WG559142 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-17-FEB-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.02	101	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4653195
Report generated 03/02/2016 08:27

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16021358 Run Date: 03/01/2016 Sample ID: WG559142-09
Instrument ID: LCMS1 Run Time: 05:27 Prep Method: 6850
File ID: 1LM.LM33504 Analyst: WTD Method: 6850
Workgroup (AAB#): WG559142 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-17-FEB-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.05	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4653195
Report generated 03/02/2016 08:27

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16021358 Run Date: 03/01/2016 Sample ID: WG559142-10
Instrument ID: LCMS1 Run Time: 12:26 Prep Method: 6850
File ID: 1LM.LM33517 Analyst: WTD Method: 6850
Workgroup (AAB#): WG559142 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-17-FEB-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.07	104	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4653195
Report generated 03/02/2016 08:27

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16021358
Instrument ID: LCMS1
Workgroup (AAB#): WG559142

ICAL CCV Number: WG557856-05
CAL ID: LCMS1-17-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1
WG557856	NA	NA	542000
Upper Limit	NA	NA	813000
Lower Limit	NA	NA	271000
L16021358-01	1.00	01	506000
L16021358-02	1.00	01	523000
L16021358-03	1.00	01	504000
L16021358-04	1.00	01	500000
L16021358-05	10.0	DL01	453000
L16021358-06	1.00	01	522000
L16021358-07	100	DL01	455000
L16021358-08	100	DL01	448000
L16021358-09	100	DL01	450000
WG559142-02	1.00	01	515000
WG559142-03	1.00	01	508000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4653205
Report generated 03/02/2016 08:28

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**	6850	**Samplenum:**	L16021358-01
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33494
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	03/01/2016 02:18	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	7110	2890	2.46	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**	6850	**Samplenum:**	L16021358-02
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33495
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	03/01/2016 02:37	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	3430	1120	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**	6850	**Samplenum:**	L16021358-03
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33496
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	03/01/2016 02:56	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	3470	1960	1.77	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**	6850	**Samplenum:**	L16021358-04
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33497
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	03/01/2016 03:15	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	2530	1450	1.74	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**	6850	**Samplenum:**	L16021358-05
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33512
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	03/01/2016 10:51	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	321000	103000	3.12	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**	6850	**Samplenum:**	L16021358-06
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33499
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	03/01/2016 03:53	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	11100	4190	2.65	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**	6850	**Samplenum:**	L16021358-07
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33513
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	03/01/2016 11:10	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	273000	88600	3.08	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**	6850	**Samplenum:**	L16021358-08
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33514
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	03/01/2016 11:29	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	393000	129000	3.05	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**	6850	**Samplenum:**	L16021358-09
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33515
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	03/01/2016 11:48	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	270000	88500	3.05	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**		**Samplenum:**	WG557856-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33245
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	02/17/2016 19:31	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	18800	6990	2.69	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**		**Samplenum:**	WG557856-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33246
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	02/17/2016 19:50	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38700	14200	2.73	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**		**Samplenum:**	WG557856-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33247
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	02/17/2016 20:08	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	91400	32900	2.78	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**		**Samplenum:**	WG557856-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33248
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	02/17/2016 20:27	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	178000	63900	2.79	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**		**Samplenum:**	WG557856-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33249
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	02/17/2016 20:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	350000	126000	2.78	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**		**Samplenum:**	WG557856-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33250
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	02/17/2016 21:05	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	826000	293000	2.82	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**		**Samplenum:**	WG557856-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33251
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	02/17/2016 21:24	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	562000	2.72	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**		**Samplenum:**	WG557856-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33252
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	02/17/2016 21:43	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	179000	63600	2.81	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**		**Samplenum:**	WG559066-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33474
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	02/29/2016 19:59	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	890	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**		**Samplenum:**	WG559066-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33477
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	02/29/2016 20:56	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	176000	58300	3.02	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**		**Samplenum:**	WG559066-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33479
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	02/29/2016 21:34	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	840	230	3.65	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**		**Samplenum:**	WG559066-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33490
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	03/01/2016 01:02	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	173000	55900	3.09	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**		**Samplenum:**	WG559066-10
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33492
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	03/01/2016 01:40	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	490	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**		**Samplenum:**	WG559066-11
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33503
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	03/01/2016 05:08	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	163000	53400	3.05	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**		**Samplenum:**	WG559066-12
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33505
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	03/01/2016 05:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**		**Samplenum:**	WG559066-13
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33508
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	03/01/2016 09:35	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	156000	51400	3.04	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**		**Samplenum:**	WG559066-14
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33510
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	03/01/2016 10:13	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**		**Samplenum:**	WG559066-15
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33516
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	03/01/2016 12:07	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	162000	53000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**		**Samplenum:**	WG559066-16
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33518
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559142	**Analysis Date:**	03/01/2016 12:45	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1320	1400	0.943	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**	6850	**Samplenum:**	WG559142-01
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33480
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	02/29/2016 21:53	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	33200	11500	2.89	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**	6850	**Samplenum:**	WG559142-02
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33481
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	02/29/2016 22:12	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	776	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**	6850	**Samplenum:**	WG559142-03
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33482
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	02/29/2016 22:31	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35800	12800	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**	6850	**Samplenum:**	WG559142-07
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33478
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	02/29/2016 21:15	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	39100	13500	2.90	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**	6850	**Samplenum:**	WG559142-08
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33491
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	03/01/2016 01:21	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36300	12600	2.88	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**	6850	**Samplenum:**	WG559142-09
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33504
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	03/01/2016 05:27	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35000	11800	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16021358	**Prep Method:**	6850	**Samplenum:**	WG559142-10
Instrument:	LCMS1	**Prep Date:**	02/29/2016 12:30	**File ID:**	1LM.LM33517
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559142	**Analysis Date:**	03/01/2016 12:26	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34300	11800	2.91	2.3	3.8	

2.2.1.3 Sample Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 3/1/2016 2:37 PM

Data File	LM33494.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 2:18:22 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021358-01	**Injection Vial**	37.00
Data File	LM33494.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 2:18:22 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	L16021358-01	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.060e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.110e+03	9.98	N/A	0.024
Perchlorate conf	2.890e+03	9.98	N/A	0.0289

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

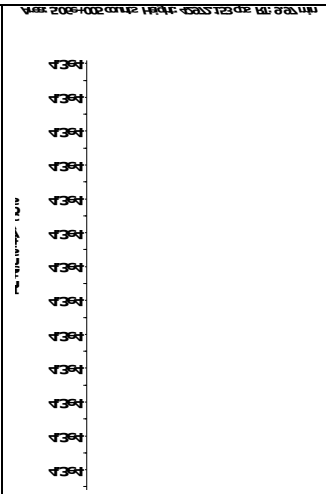

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.98 (9.94) min Calculated conc: 0.024 ng/ml Area Ratio: 0.014 Sample Type: (Unknown)	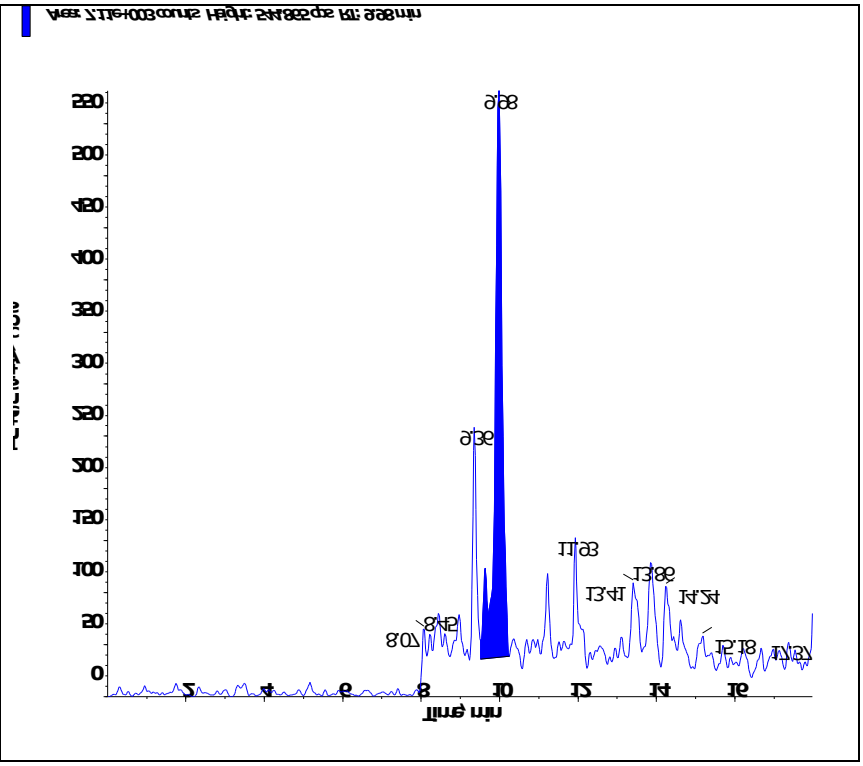
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.98 (9.92) min Calculated conc: 0.0289 ng/ml Area Ratio: 0.006 Sample Type: (Unknown)	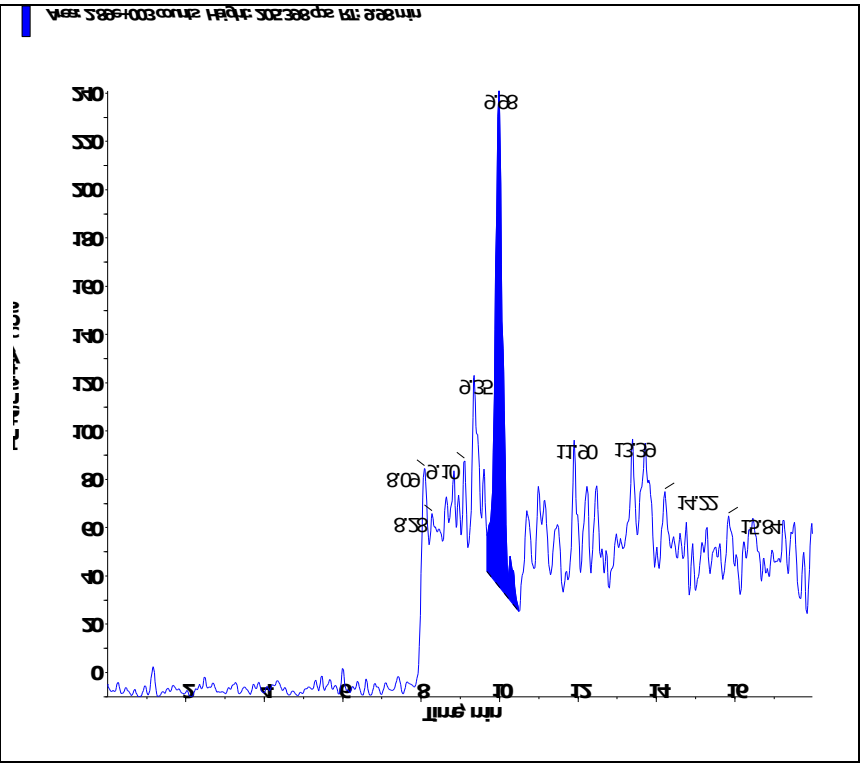

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 3/1/2016 2:38 PM

Data File	LM33495.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 2:37:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021358-02	**Injection Vial**	38.00
Data File	LM33495.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 2:37:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	L16021358-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.230e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.430e+03	9.99	N/A	< 0
Perchlorate conf	1.120e+03	9.95	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

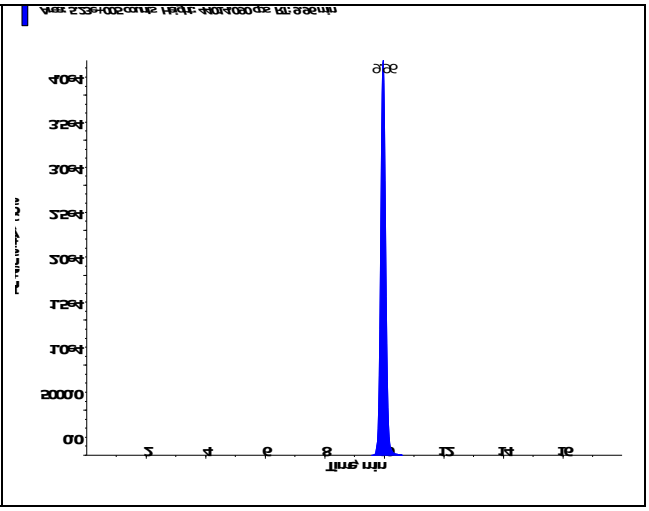

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.99 (9.94) min Calculated conc: < 0 ng/ml Area Ratio: 0.007 Sample Type: (Unknown)	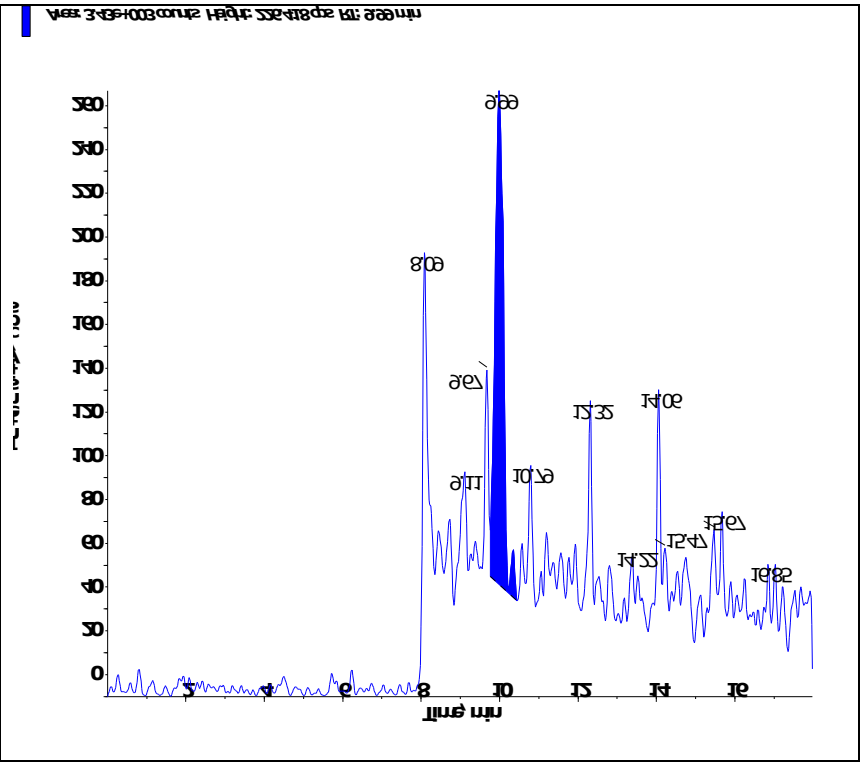
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.95 (9.92) min Calculated conc: < 0 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	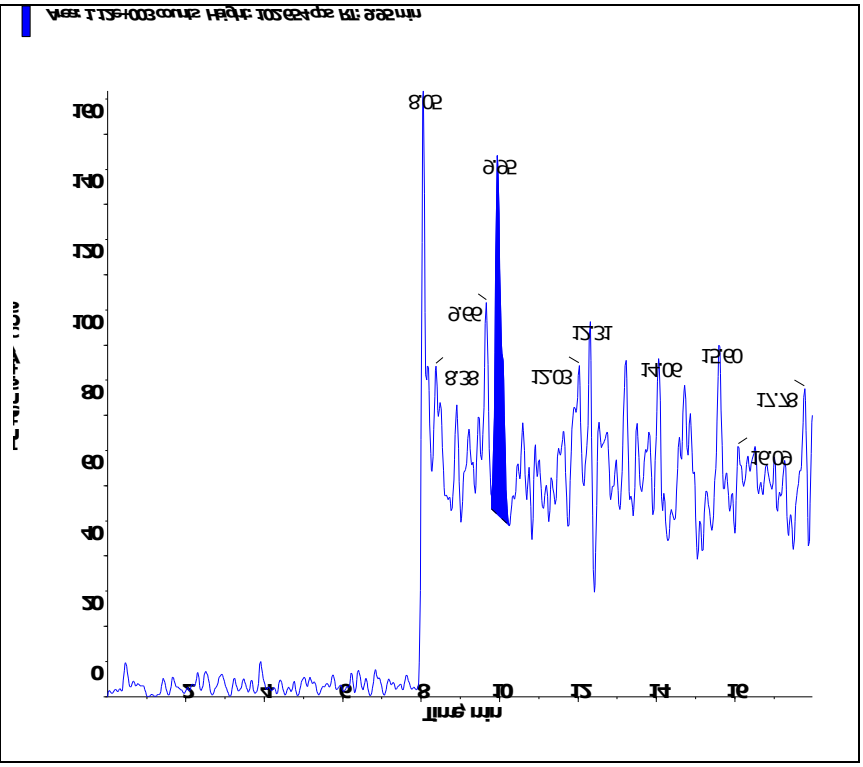

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Data File	LM33496.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 2:56:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021358-03	**Injection Vial**	39.00
Data File	LM33496.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 2:56:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	L16021358-03	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.040e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.470e+03	9.97	N/A	0.0008
Perchlorate conf	1.960e+03	9.95	N/A	0.0126

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

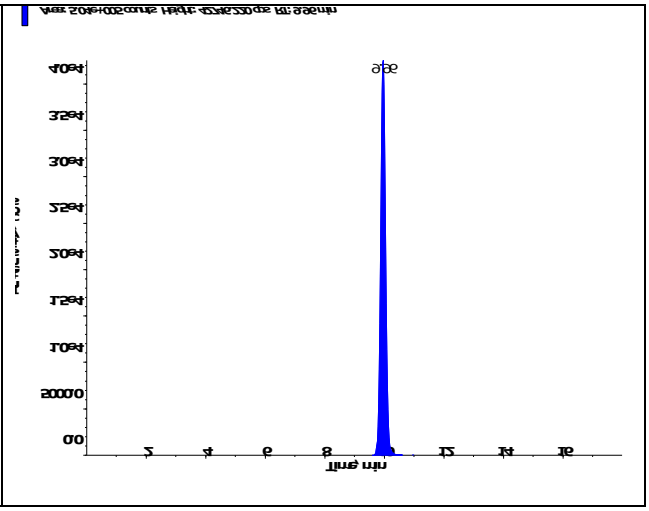

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.97 (9.94) min Calculated conc: 0.0008 ng/ml Area Ratio: 0.007 Sample Type: (Unknown)	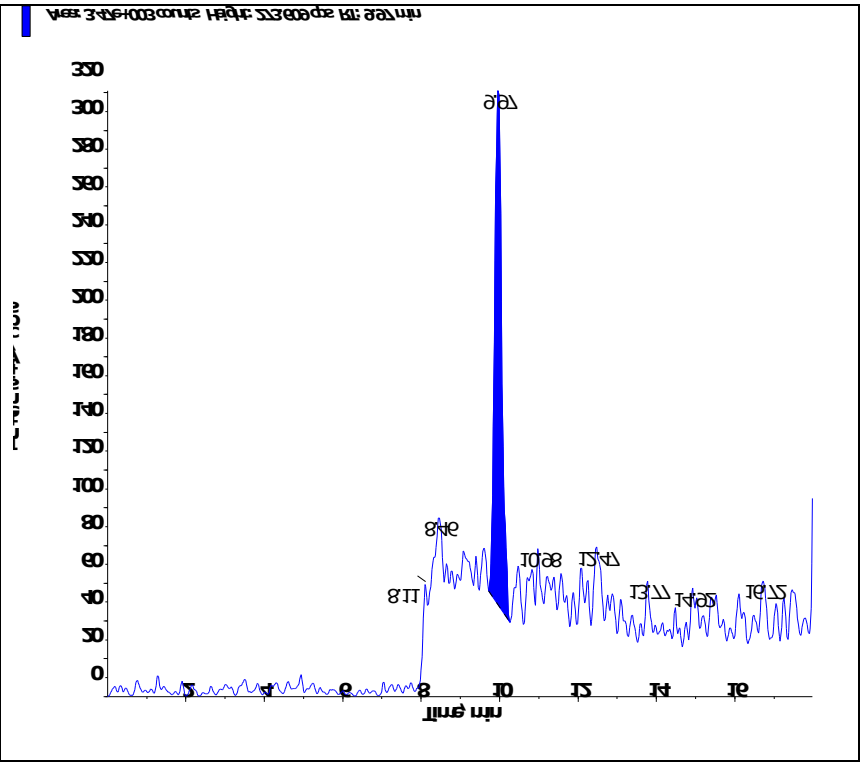
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.95 (9.92) min Calculated conc: 0.0126 ng/ml Area Ratio: 0.004 Sample Type: (Unknown)	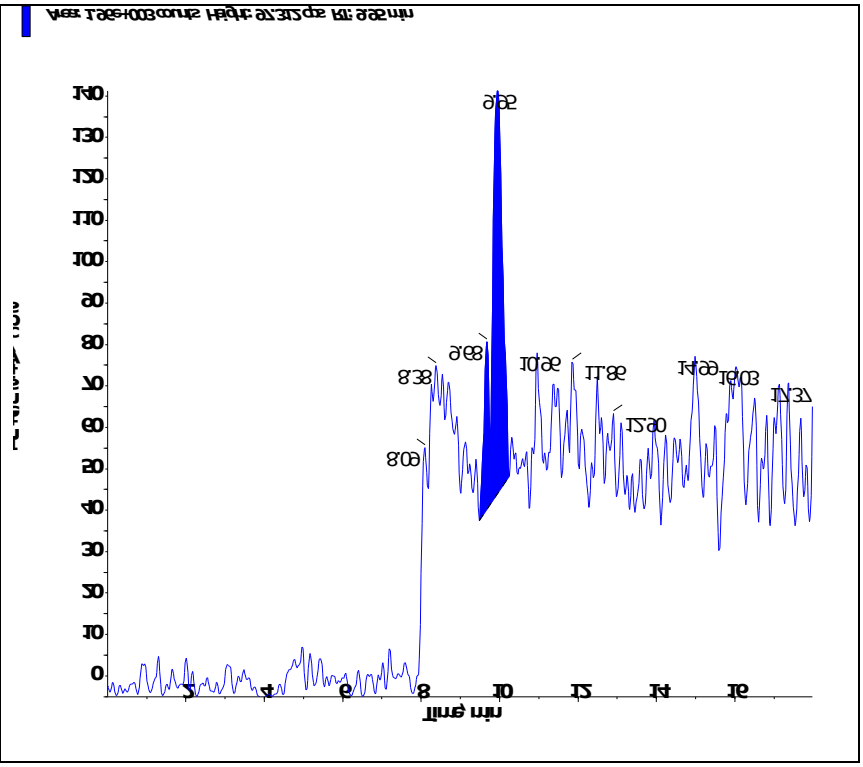

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Data File	LM33497.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 3:15:14 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021358-04	**Injection Vial**	40.00
Data File	LM33497.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 3:15:14 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	L16021358-04	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.530e+03	9.97	N/A	< 0
Perchlorate conf	1.450e+03	9.96	N/A	0.0037

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

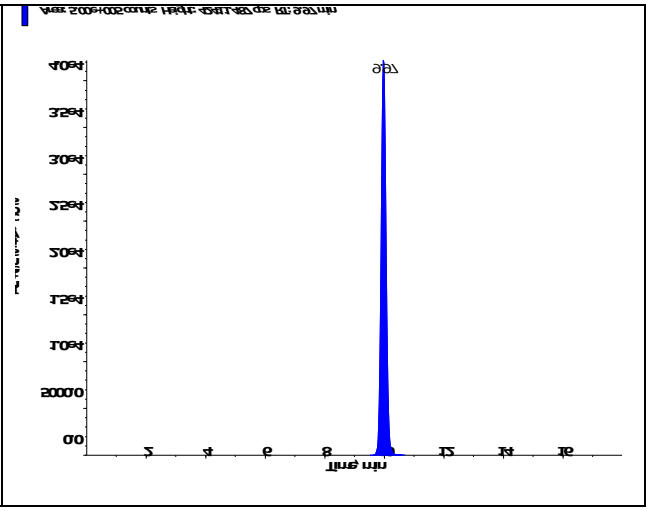

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.97 (9.94) min Calculated conc: < 0 ng/ml Area Ratio: 0.005 Sample Type: (Unknown)	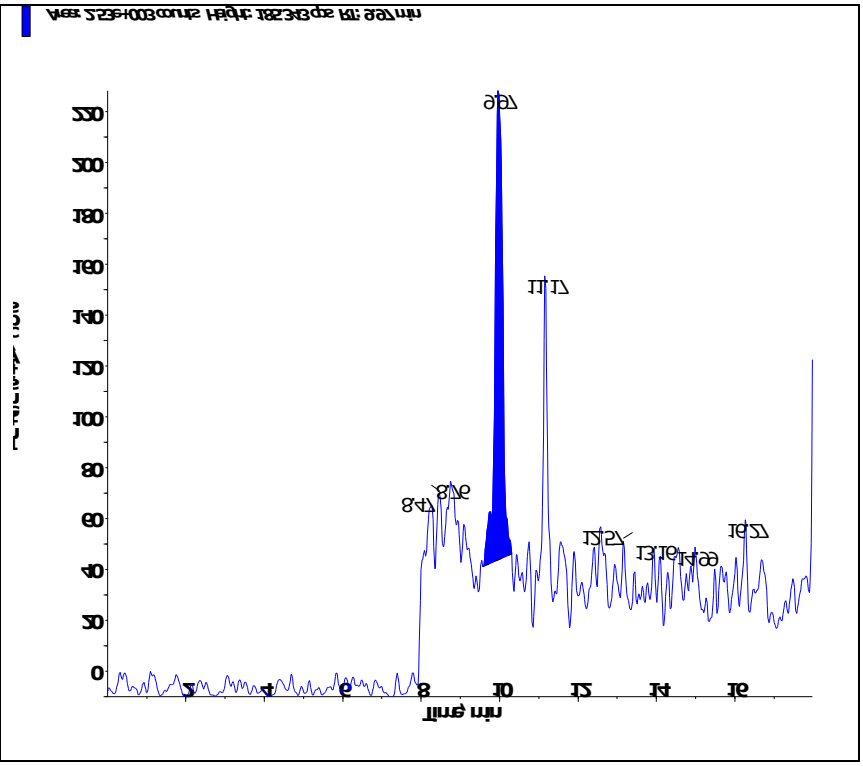
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.96 (9.92) min Calculated conc: 0.0037 ng/ml Area Ratio: 0.003 Sample Type: (Unknown)	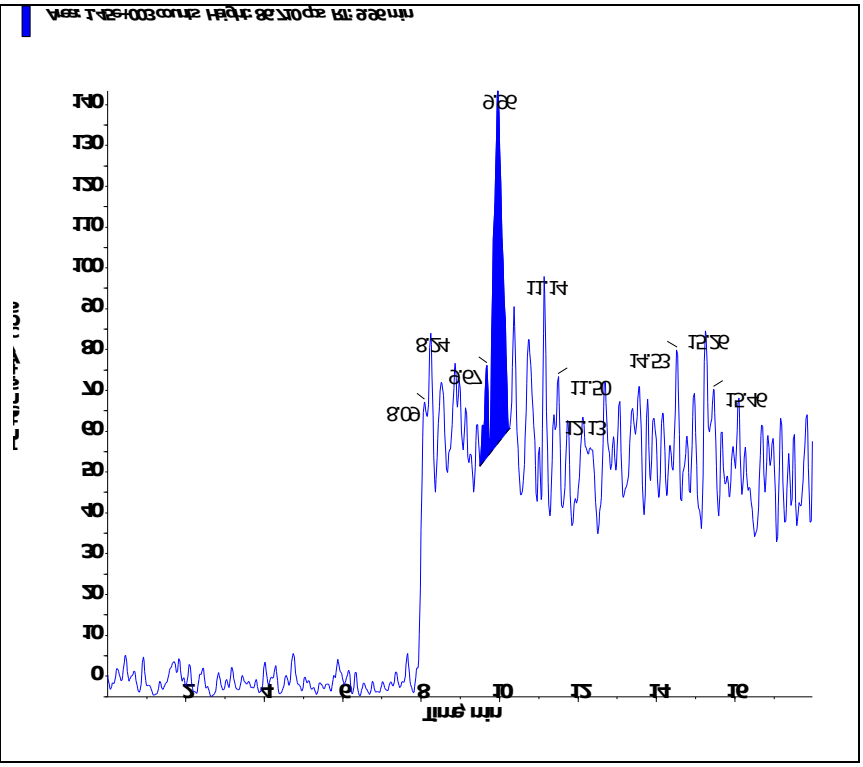

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Data File	LM33512.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 10:51:44 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021358-05 (10X)	**Injection Vial**	48.00
Data File	LM33512.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 10:51:44 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	L16021358-05	**Dilution Factor**	1.00
Sample Comment	710.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.530e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.210e+05	9.97	N/A	2.28
Perchlorate conf	1.030e+05	9.96	N/A	2.02

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

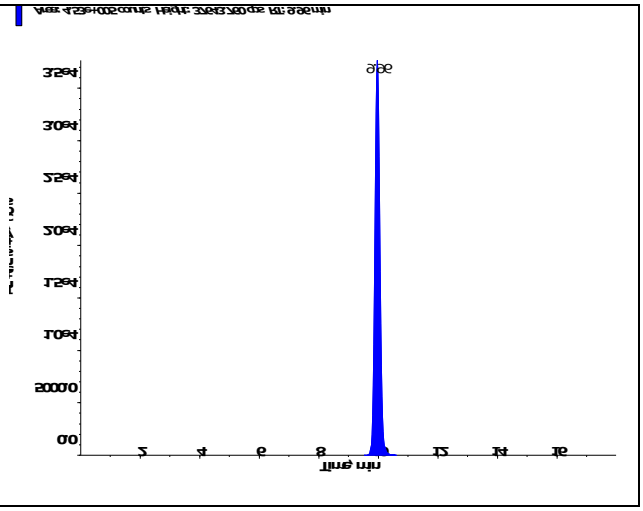

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.97 (9.94) min Calculated conc: 2.28 ng/ml Area Ratio: 0.709 Sample Type: (Unknown)	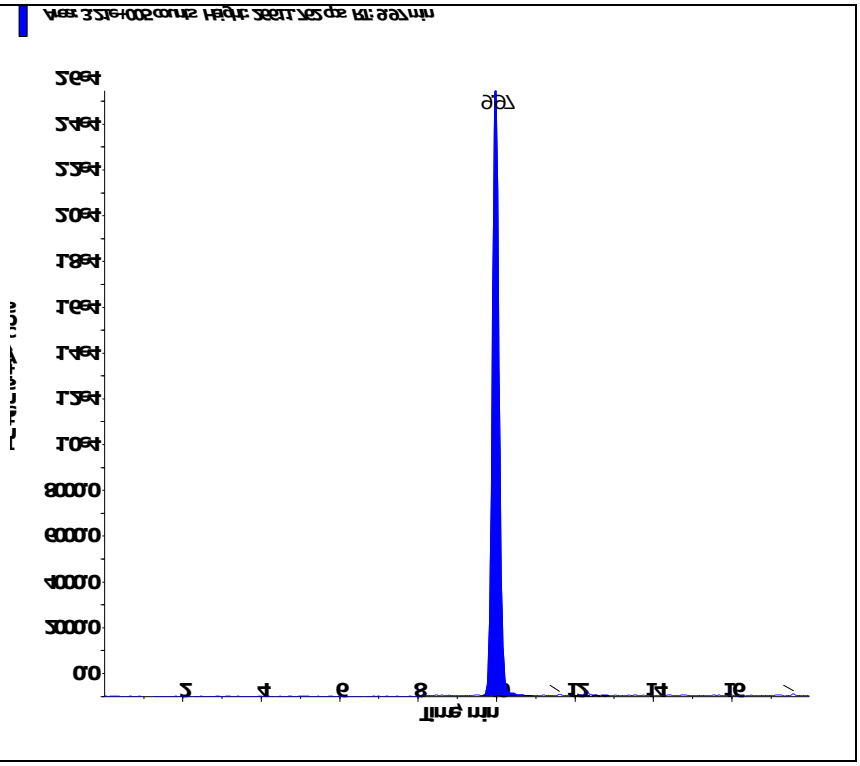
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.96 (9.92) min Calculated conc: 2.02 ng/ml Area Ratio: 0.228 Sample Type: (Unknown)	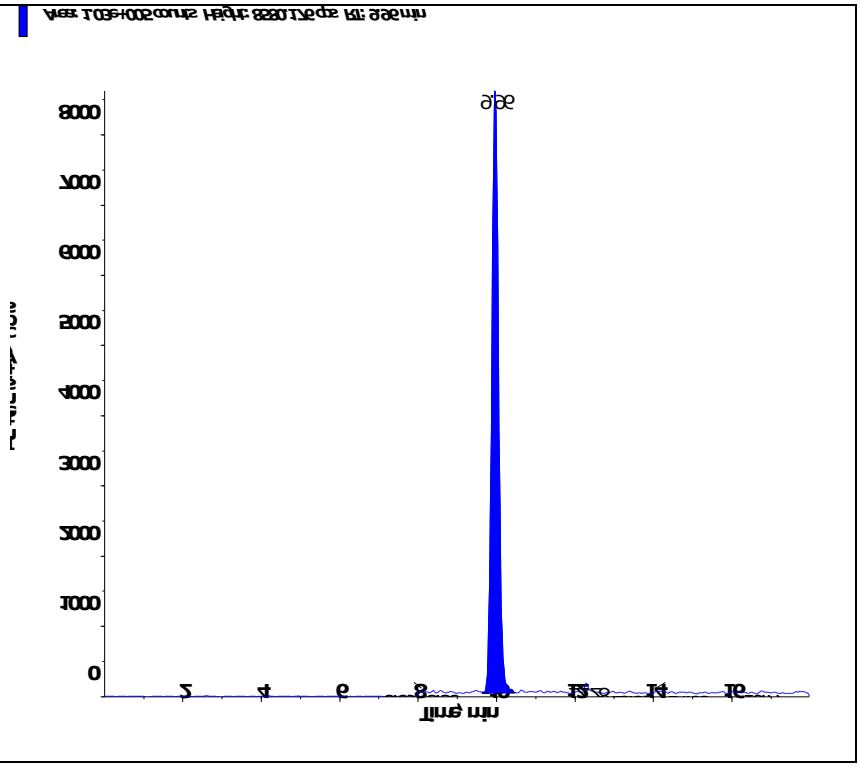

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Data File	LM33499.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 3:53:07 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021358-06	**Injection Vial**	42.00
Data File	LM33499.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 3:53:07 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	L16021358-06	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.220e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.110e+04	9.98	N/A	0.0474
Perchlorate conf	4.190e+03	9.98	N/A	0.0496

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

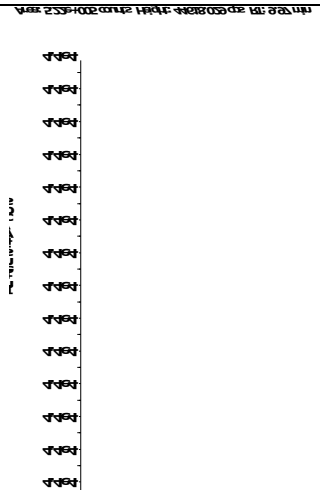

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.98 (9.94) min Calculated conc: 0.0474 ng/ml Area Ratio: 0.021 Sample Type: (Unknown)	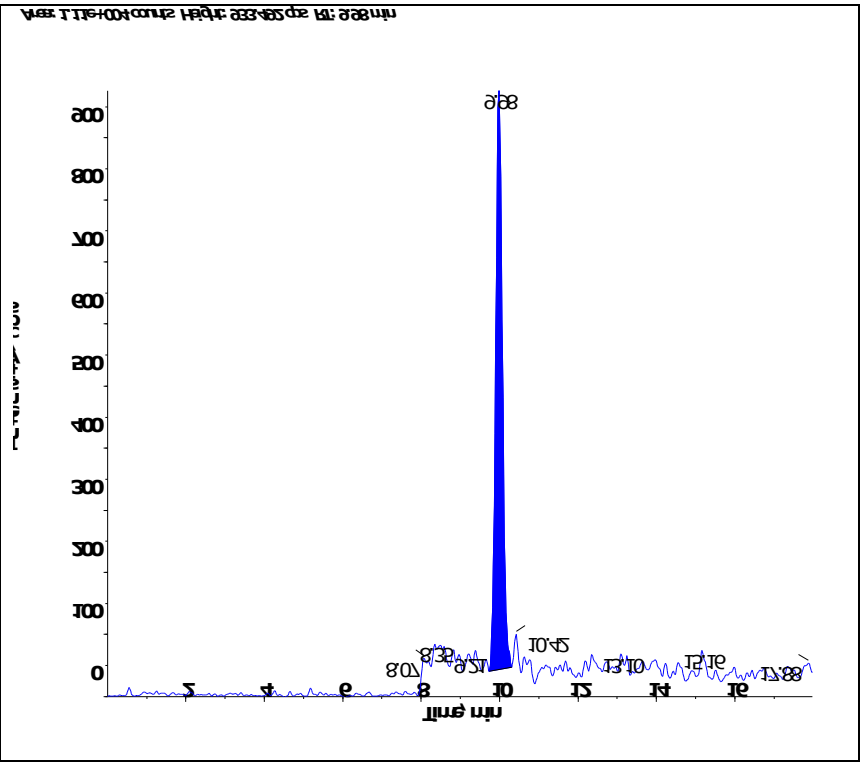
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.98 (9.92) min Calculated conc: 0.0496 ng/ml Area Ratio: 0.008 Sample Type: (Unknown)	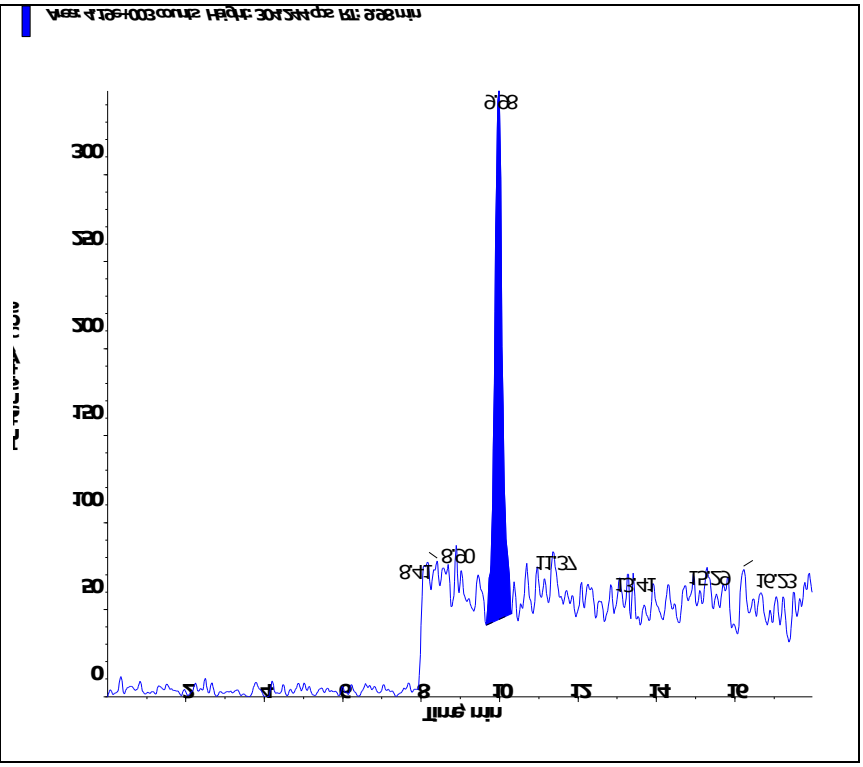

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Data File	LM33513.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 11:10:41 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021358-07 (100X)	**Injection Vial**	49.00
Data File	LM33513.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 11:10:41 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	L16021358-07	**Dilution Factor**	1.00
Sample Comment	7,100.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.550e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.730e+05	9.98	N/A	1.93
Perchlorate conf	8.860e+04	9.97	N/A	1.72

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

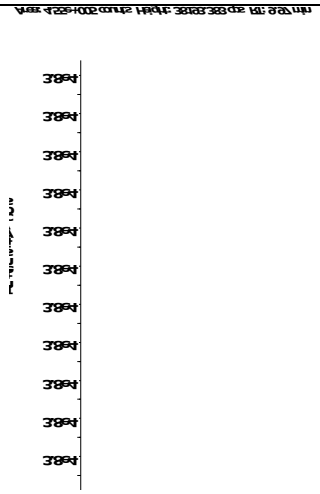

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.98 (9.94) min Calculated conc: 1.93 ng/ml Area Ratio: 0.60 Sample Type: (Unknown)	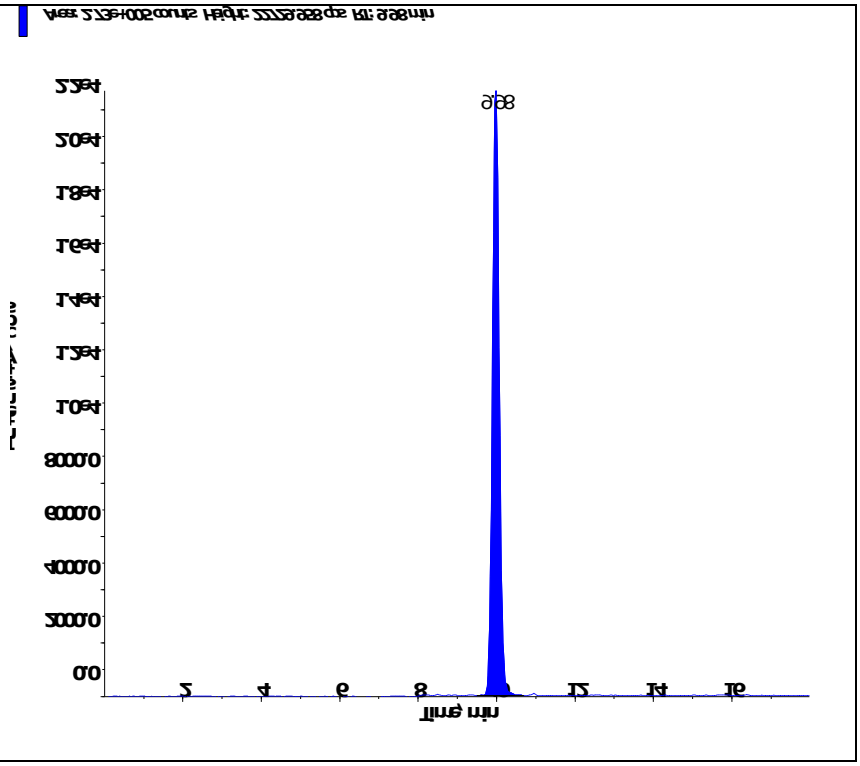
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.97 (9.92) min Calculated conc: 1.72 ng/ml Area Ratio: 0.195 Sample Type: (Unknown)	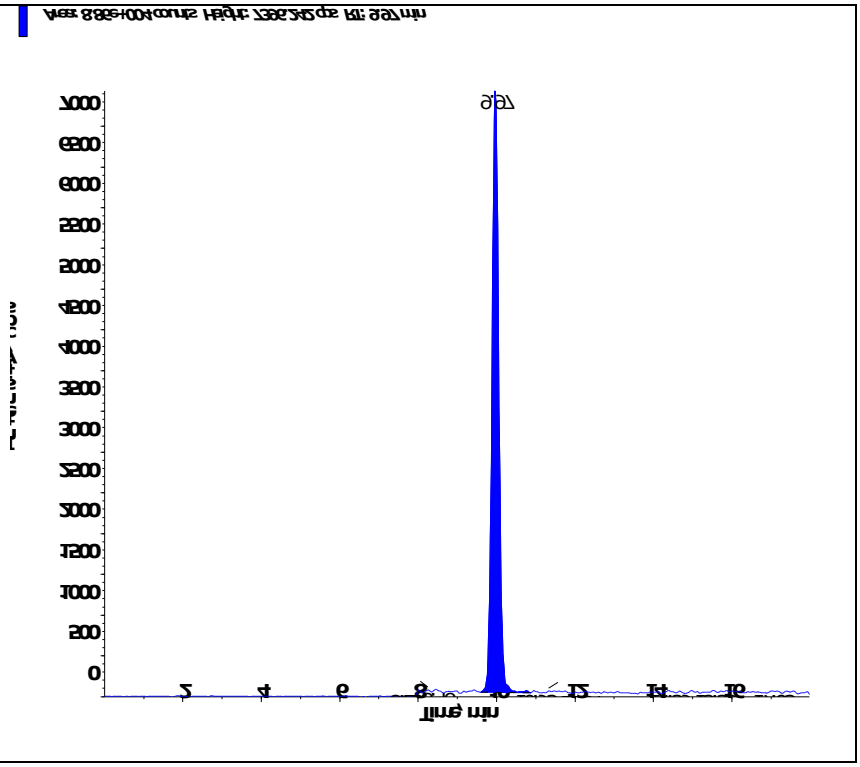

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Data File	LM33514.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 11:29:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021358-08 (100X)	**Injection Vial**	50.00
Data File	LM33514.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 11:29:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	L16021358-08	**Dilution Factor**	1.00
Sample Comment	7,100.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.480e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.930e+05	9.97	N/A	2.83
Perchlorate conf	1.290e+05	9.96	N/A	2.55

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

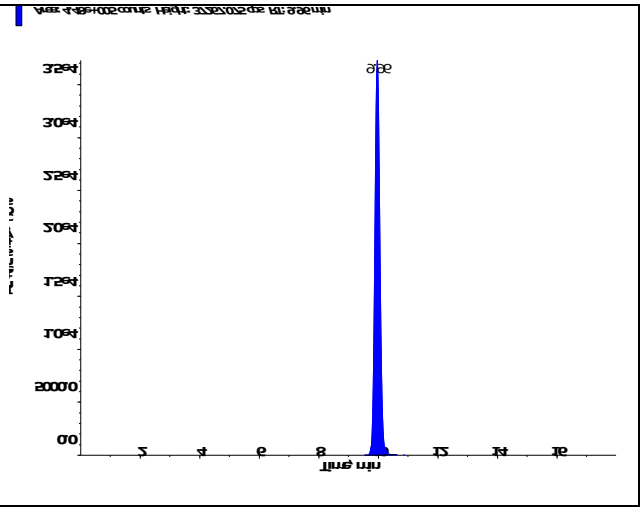

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.97 (9.94) min Calculated conc: 2.83 ng/ml Area Ratio: 0.878 Sample Type: (Unknown)	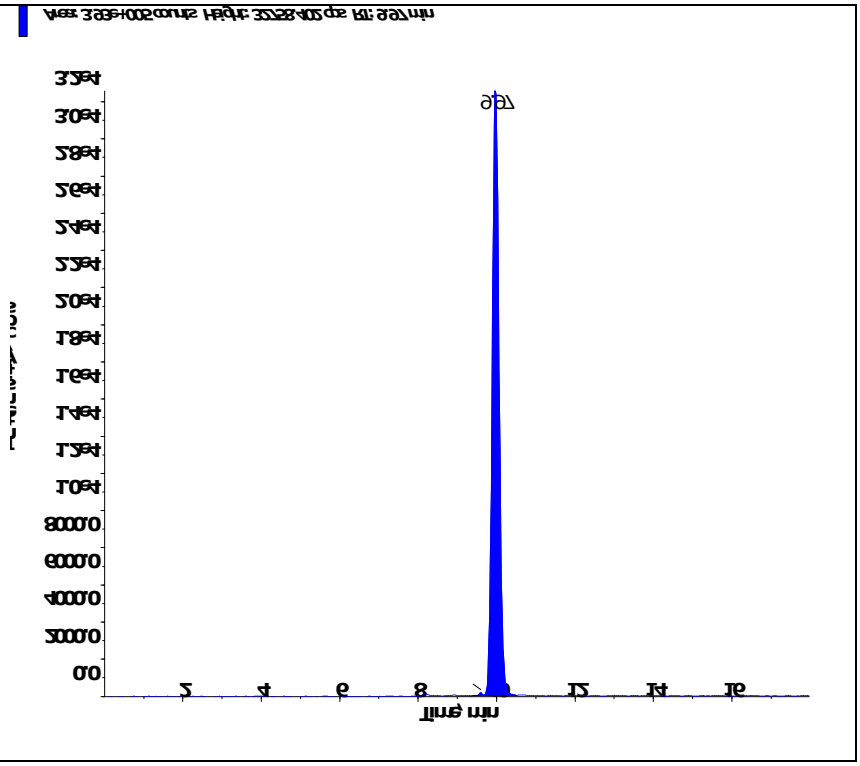
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.96 (9.92) min Calculated conc: 2.55 ng/ml Area Ratio: 0.287 Sample Type: (Unknown)	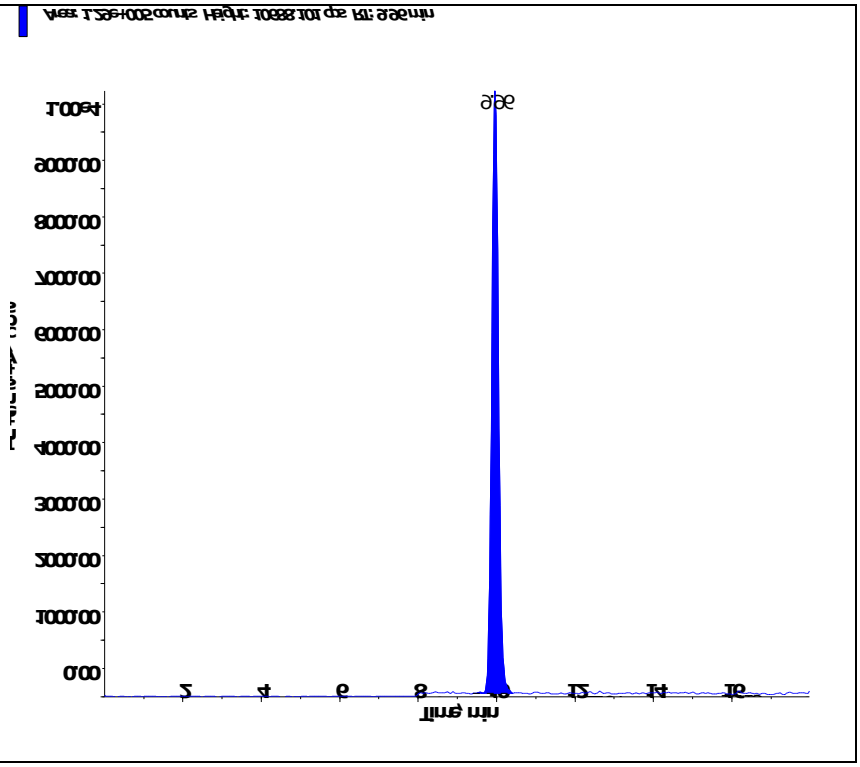

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Data File	LM33515.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 11:48:36 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16021358-09 (100X)	**Injection Vial**	51.00
Data File	LM33515.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 11:48:36 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	L16021358-09	**Dilution Factor**	1.00
Sample Comment	7,100.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.500e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.700e+05	9.98	N/A	1.93
Perchlorate conf	8.850e+04	9.96	N/A	1.74

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

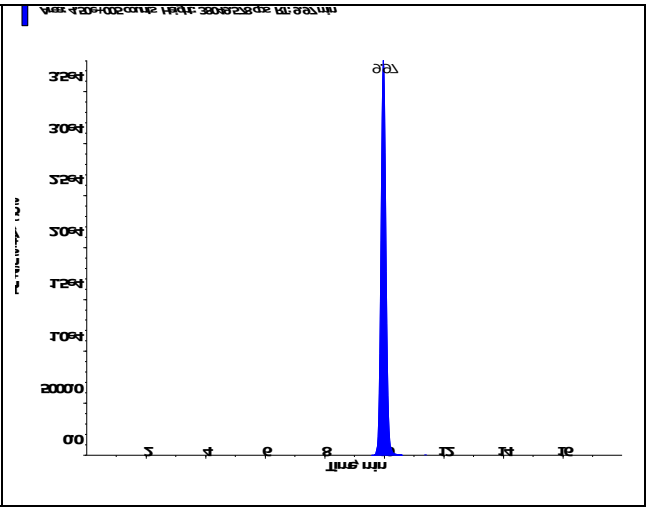

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.98 (9.94) min Calculated conc: 1.93 ng/ml Area Ratio: 0.599 Sample Type: (Unknown)	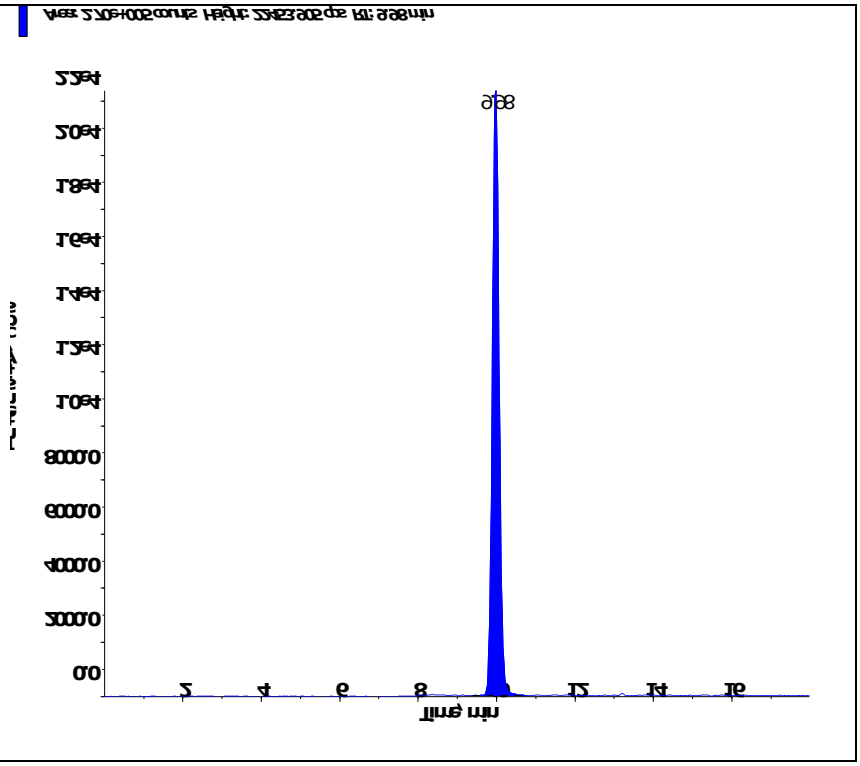
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.96 (9.92) min Calculated conc: 1.74 ng/ml Area Ratio: 0.196 Sample Type: (Unknown)	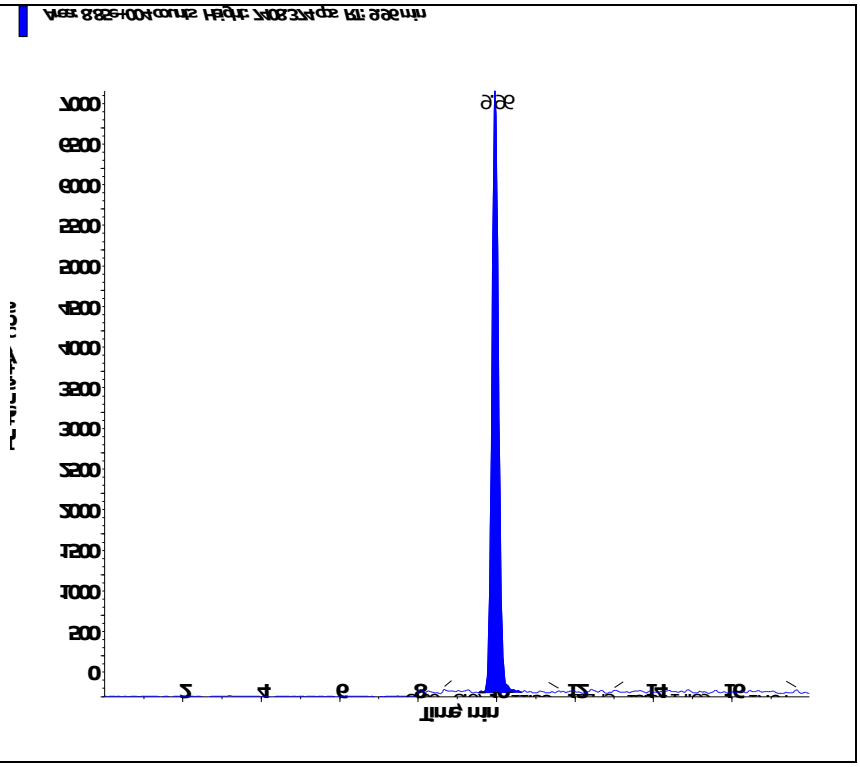

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2.2.1.4 Standards Data

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Printed: 3/1/2016 2:20 PM

Data File	LM33244.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/17/2016 7:12:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-01 CCB	**Injection Vial**	1.00
Data File	LM33244.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 7:12:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG557856-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.570e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.560e+03	9.97	N/A	< 0
Perchlorate conf	1.050e+03	9.97	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

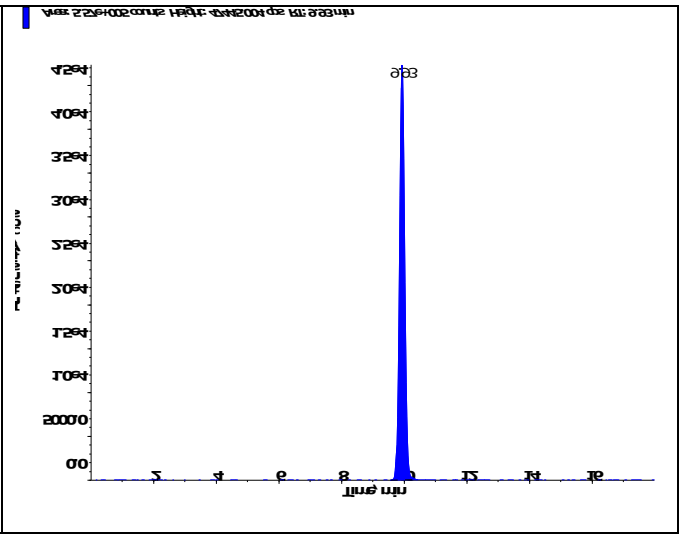

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.97 (9.94) min Calculated conc: < 0 ng/ml Area Ratio: 0.005 Sample Type: (Unknown)	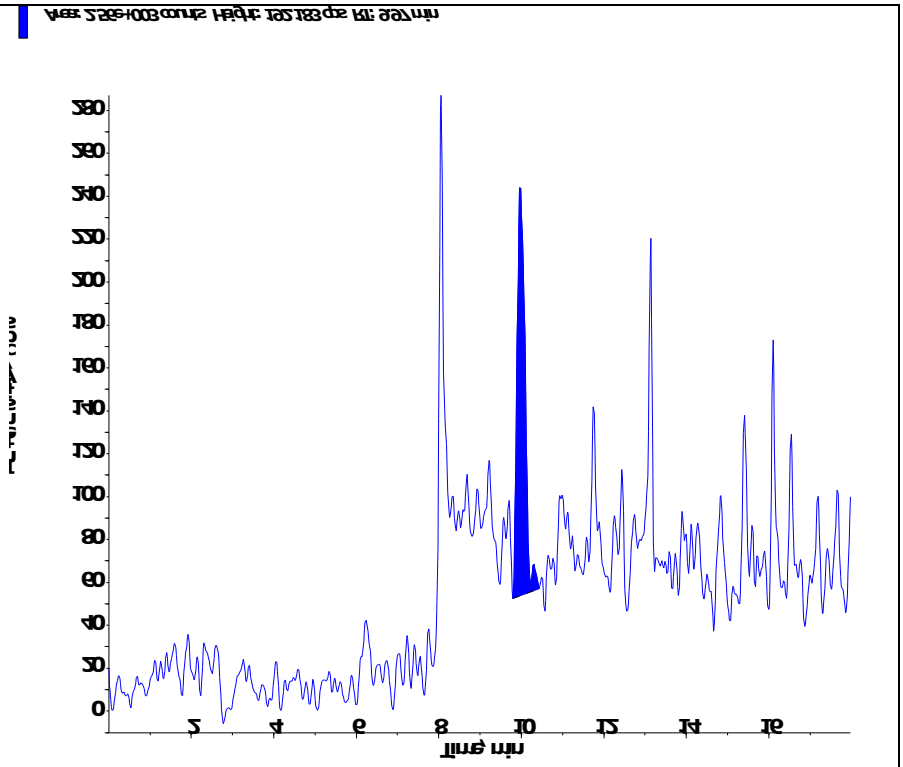
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.97 (9.92) min Calculated conc: < 0 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	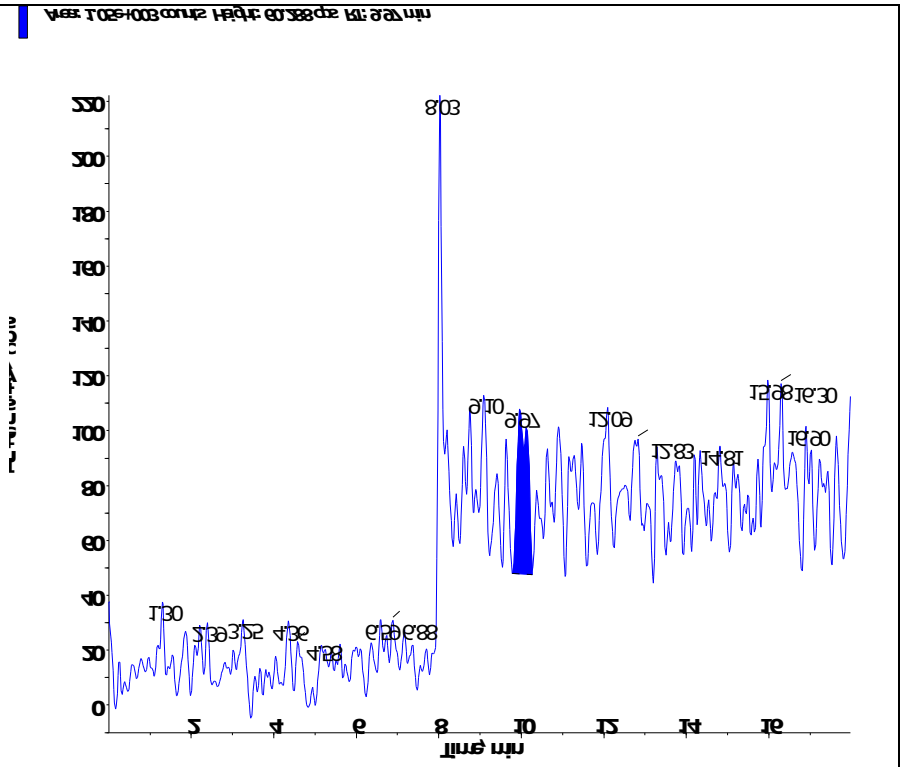

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Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM33244.wiff	**Result Table**	021716_JWR.rdb
Acquisition Date	2/17/2016 7:12:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.54 x + 0.00666 (r = 0.9998)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	88.4	N/A	N/A
0.20	1	0.21	103.3	N/A	N/A
0.50	1	0.51	102.6	N/A	N/A
1.00	1	1.03	103.4	N/A	N/A
2.00	1	2.06	103.1	N/A	N/A
5.00	1	5.03	100.6	N/A	N/A
10.00	1	9.87	98.7	N/A	N/A

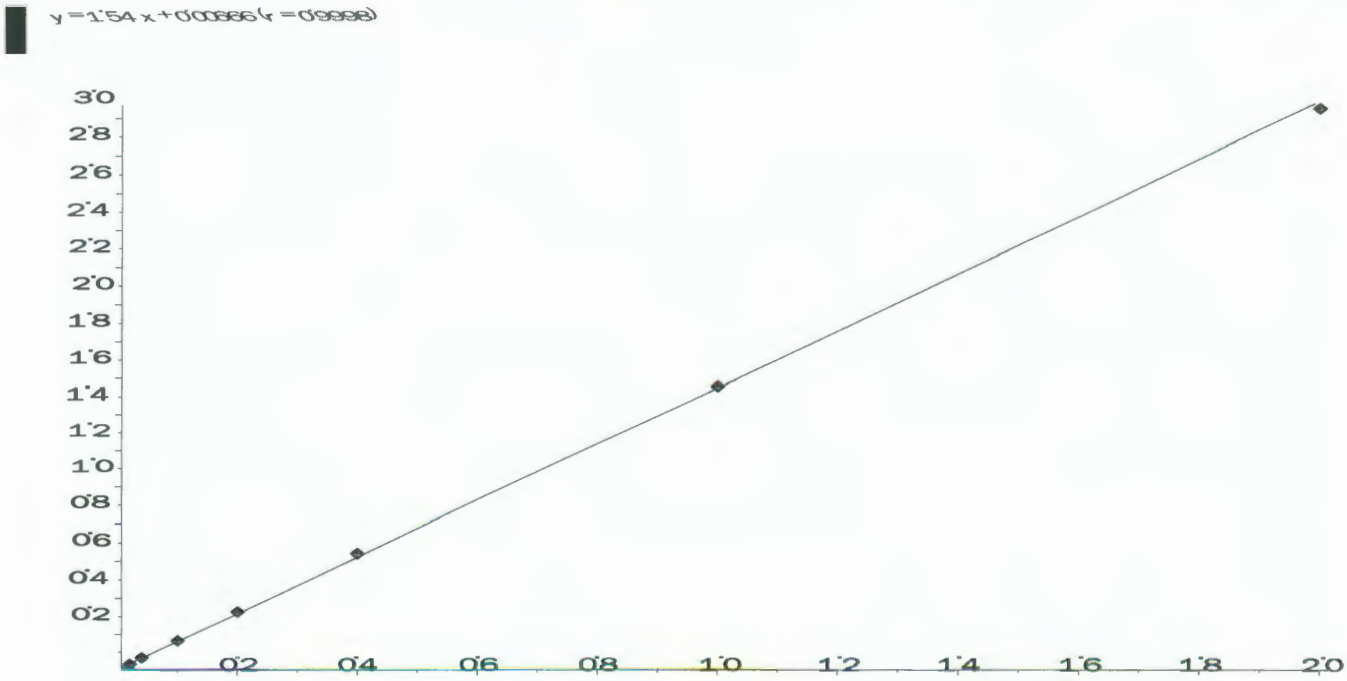

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Printed: 2/18/2016 2:15 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM33244.wiff	**Result Table**	021716_JWR.rdb
Acquisition Date	2/17/2016 7:12:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.557 x + 0.00249 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	90.6	N/A	N/A
0.20	1	0.21	104.9	N/A	N/A
0.50	1	0.51	101.7	N/A	N/A
1.00	1	1.02	102.2	N/A	N/A
2.00	1	2.04	102.1	N/A	N/A
5.00	1	4.93	98.6	N/A	N/A
10.00	1	10.00	100.0	N/A	N/A

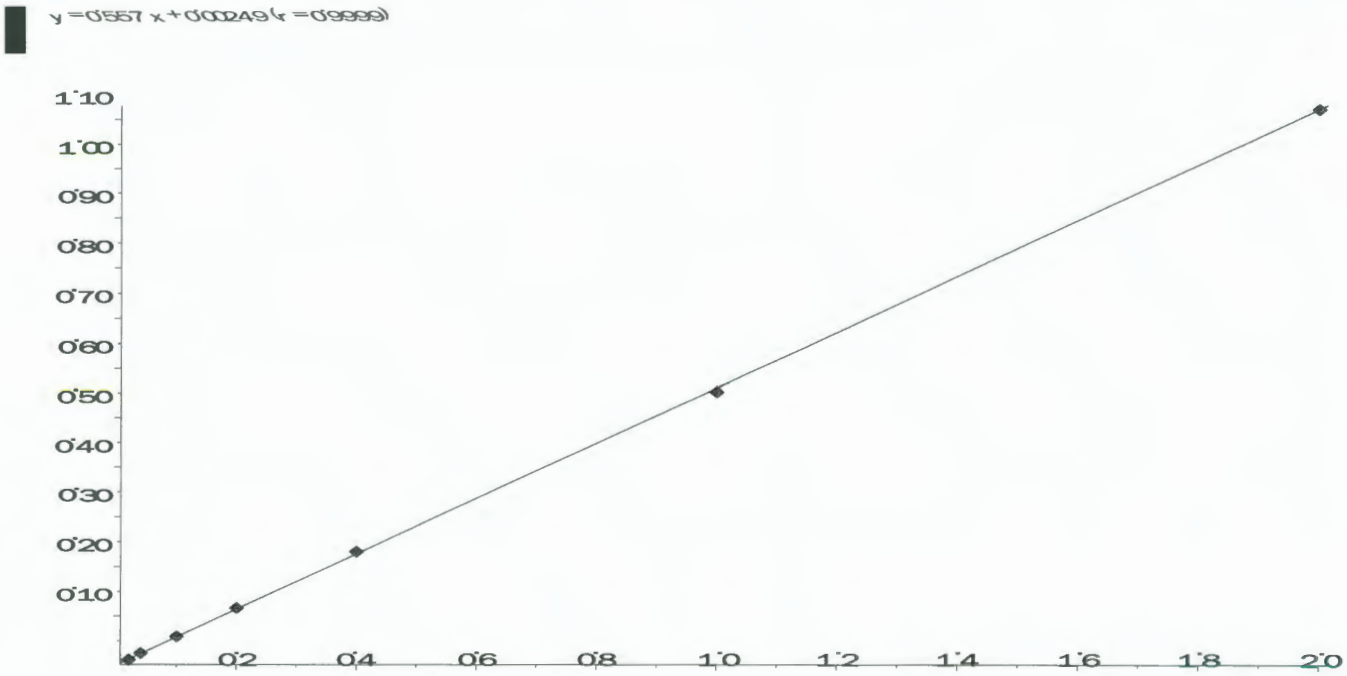

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Data File	LM33245.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/17/2016 7:31:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM33245.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 7:31:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG557856-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.550e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.880e+04	9.94	0.10	0.0884
Perchlorate conf	6.990e+03	9.93	0.10	0.0906

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

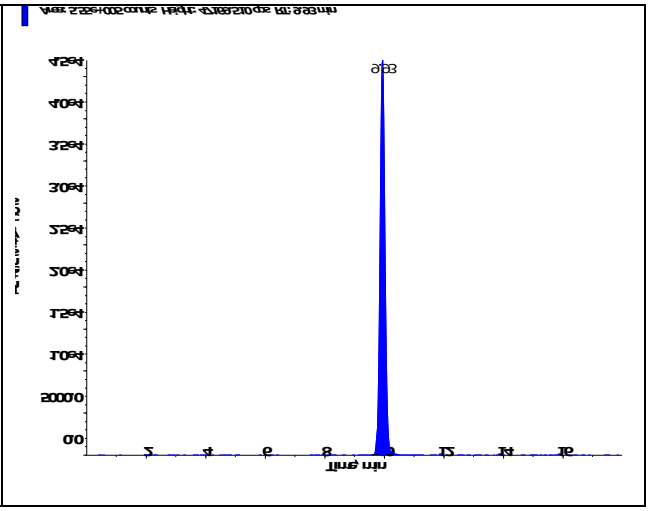

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.94 (9.94) min Calculated conc: 0.0884 ng/ml Area Ratio: 0.034 Sample Type: (Standard)	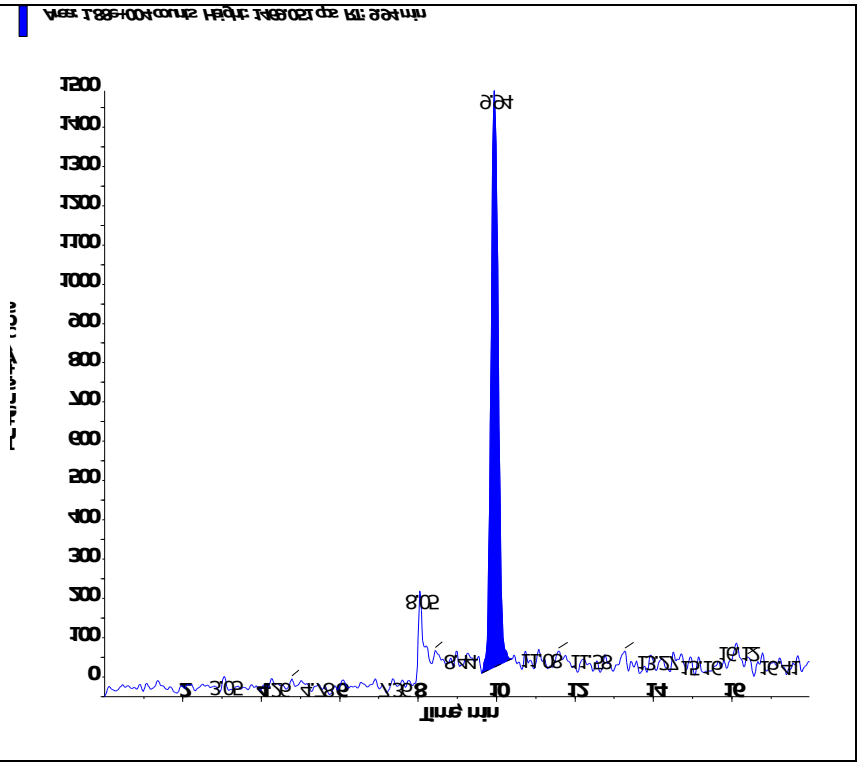
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.93 (9.92) min Calculated conc: 0.0906 ng/ml Area Ratio: 0.013 Sample Type: (Standard)	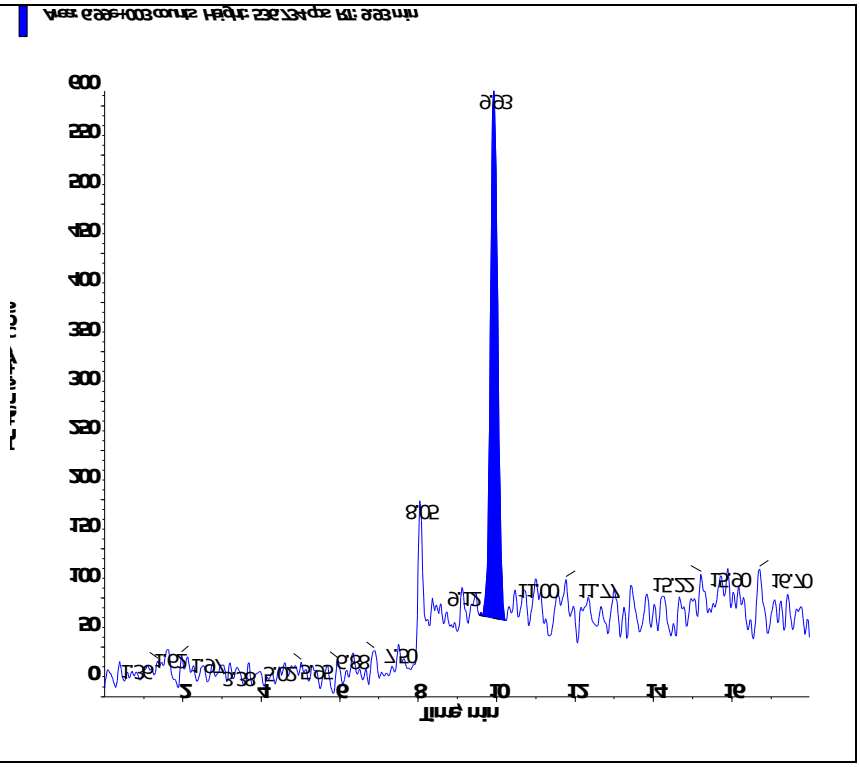

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Data File	LM33246.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/17/2016 7:50:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM33246.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 7:50:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG557856-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.510e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.870e+04	9.94	0.20	0.207
Perchlorate conf	1.420e+04	9.93	0.20	0.21

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

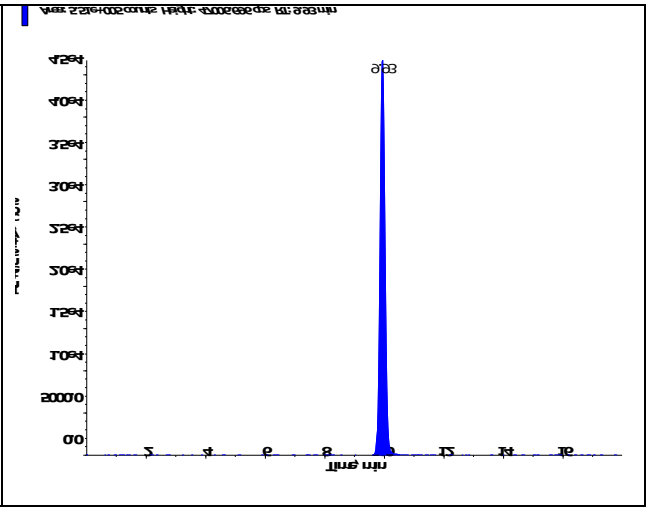

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.94 (9.94) min Calculated conc: 0.207 ng/ml Area Ratio: 0.07 Sample Type: (Standard)	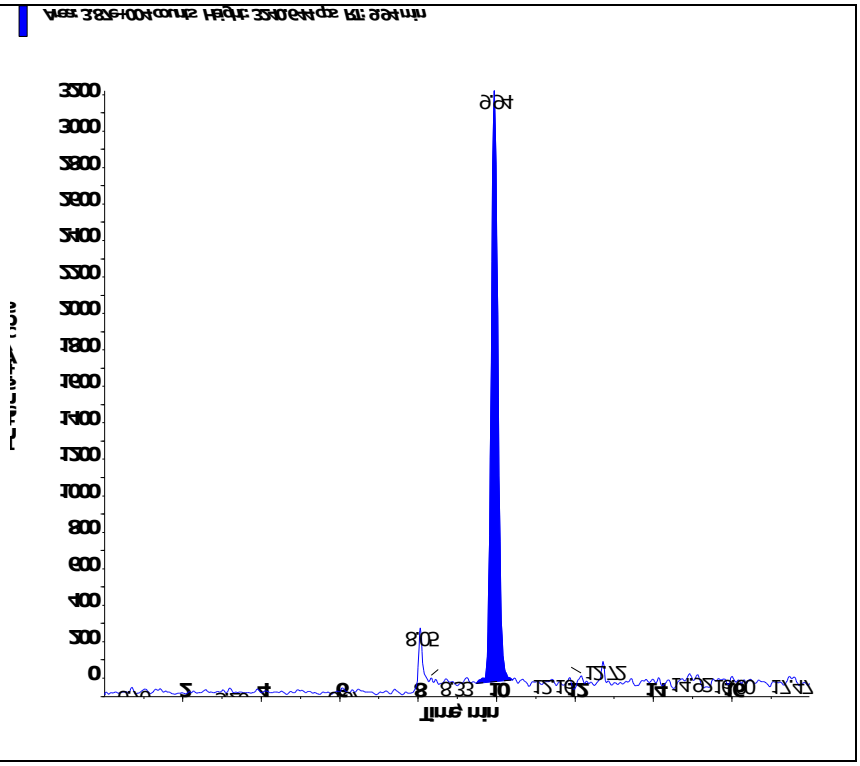
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.93 (9.92) min Calculated conc: 0.21 ng/ml Area Ratio: 0.026 Sample Type: (Standard)	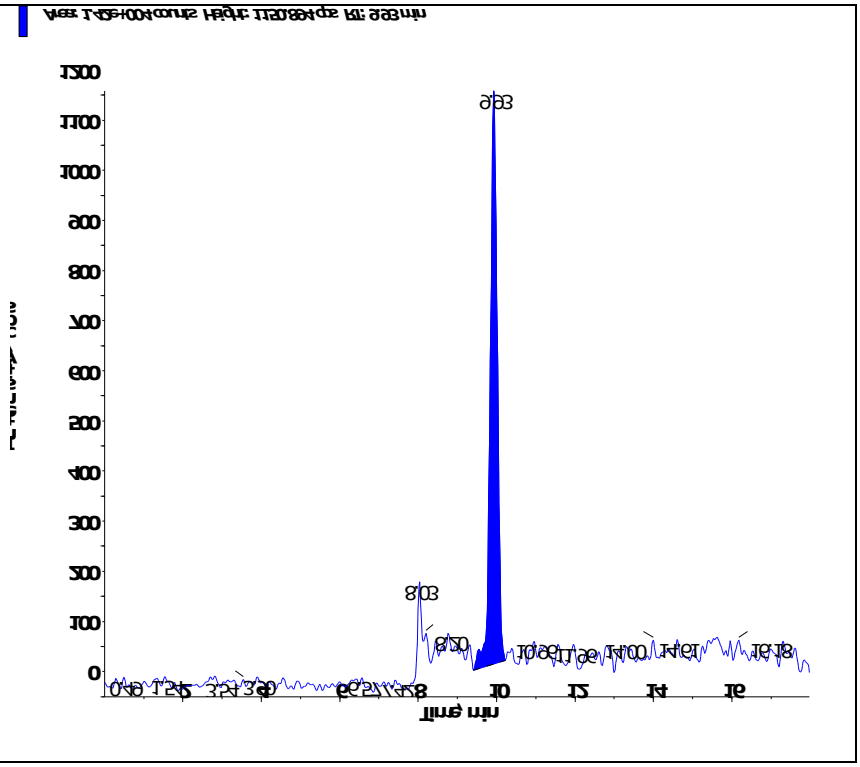

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Data File	LM33247.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/17/2016 8:08:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM33247.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 8:08:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG557856-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.560e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	9.140e+04	9.94	0.50	0.513
Perchlorate conf	3.290e+04	9.93	0.50	0.508

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

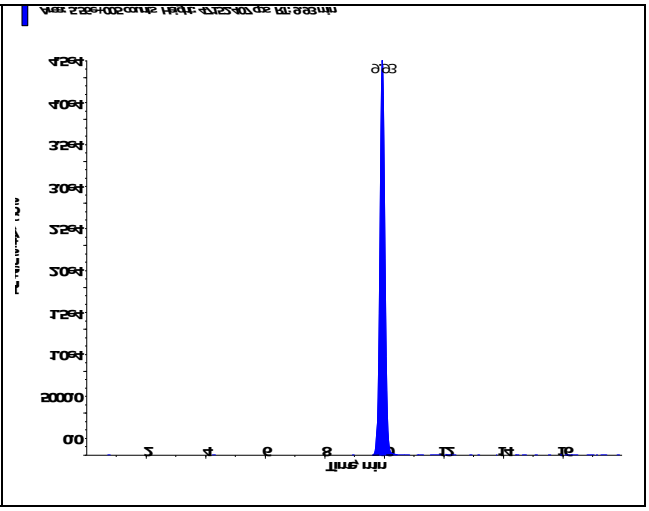

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.94 (9.94) min Calculated conc: 0.513 ng/ml Area Ratio: 0.164 Sample Type: (Standard)	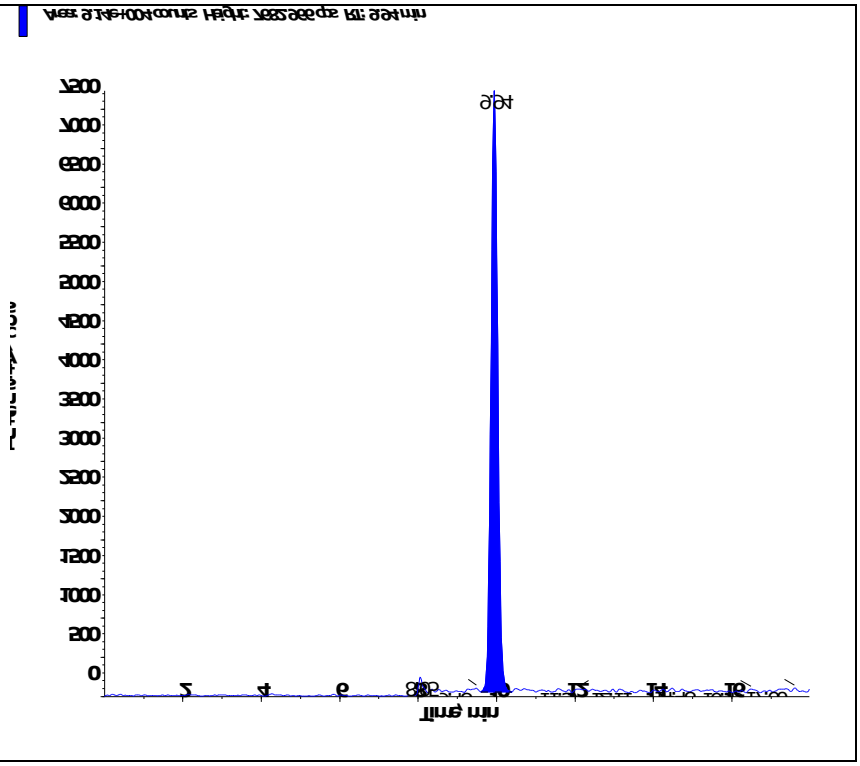
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.93 (9.92) min Calculated conc: 0.508 ng/ml Area Ratio: 0.059 Sample Type: (Standard)	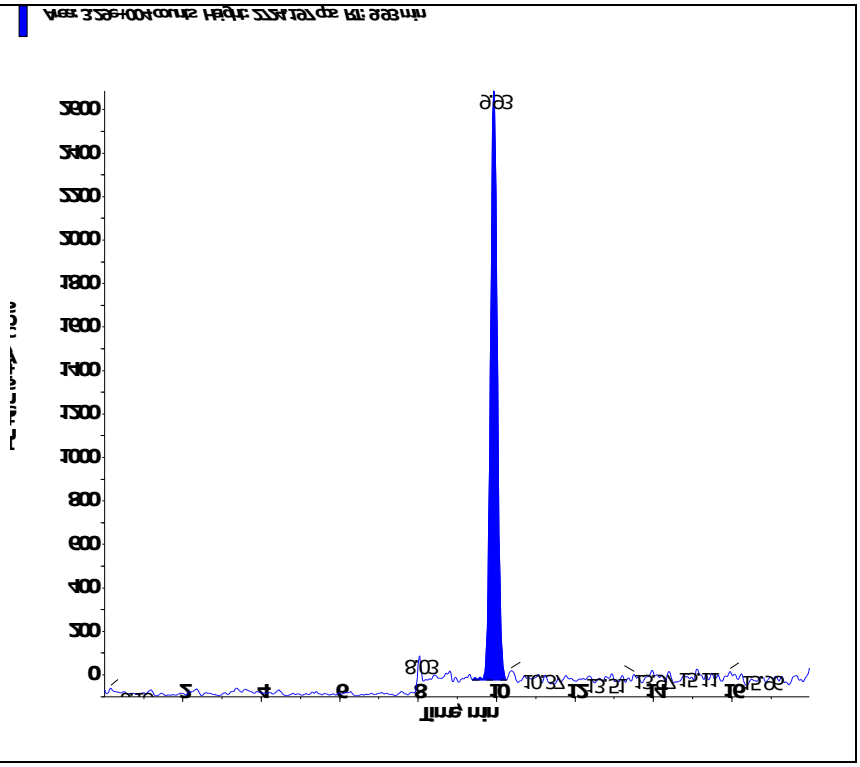

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Data File	LM33248.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/17/2016 8:27:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM33248.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 8:27:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG557856-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.490e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.780e+05	9.95	1.00	1.03
Perchlorate conf	6.390e+04	9.94	1.00	1.02

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

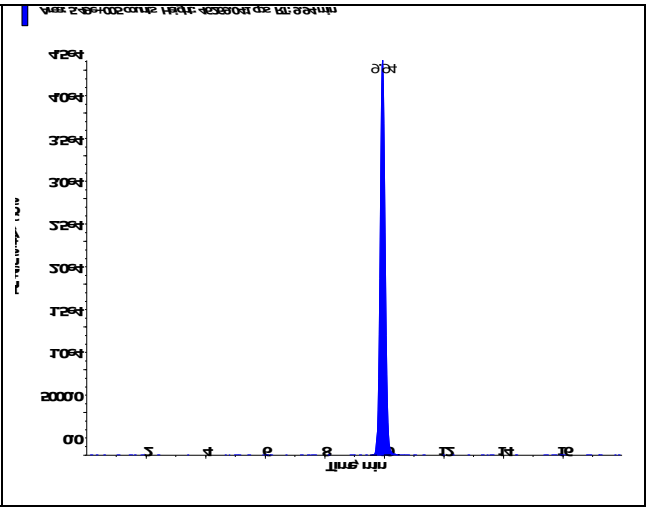

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.95 (9.94) min Calculated conc: 1.03 ng/ml Area Ratio: 0.325 Sample Type: (Standard)	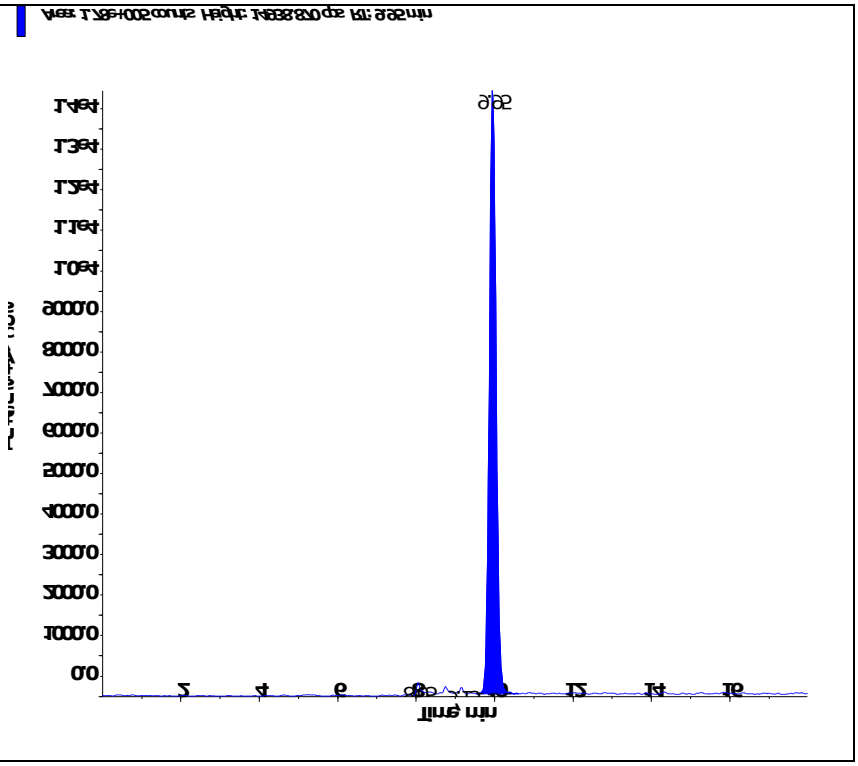
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.94 (9.92) min Calculated conc: 1.02 ng/ml Area Ratio: 0.116 Sample Type: (Standard)	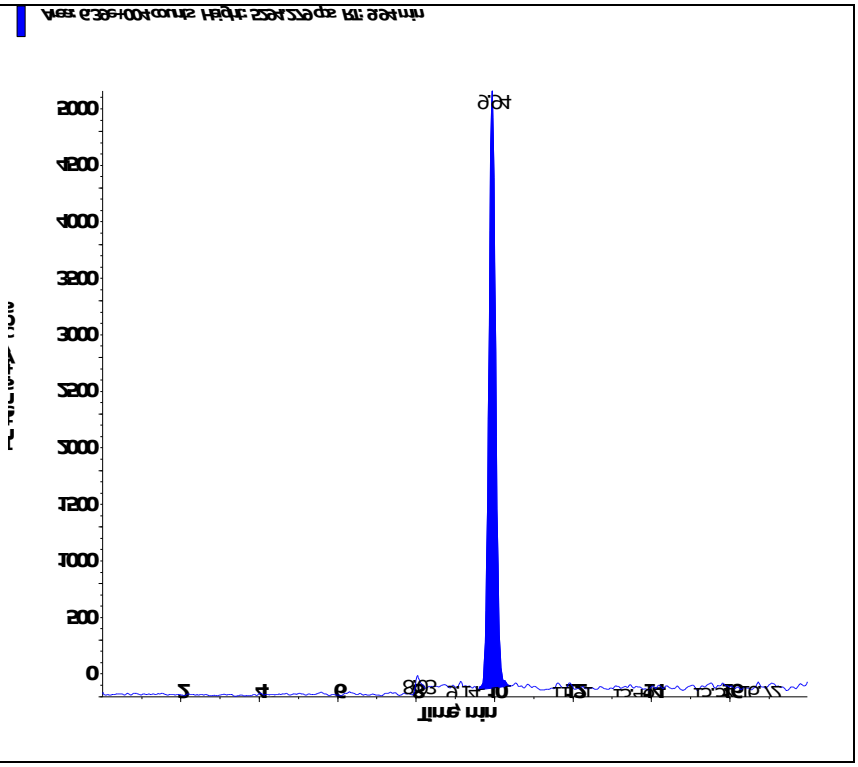

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Data File	LM33249.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/17/2016 8:46:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM33249.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 8:46:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG557856-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.460e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.500e+05	9.94	2.00	2.06
Perchlorate conf	1.260e+05	9.93	2.00	2.04

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

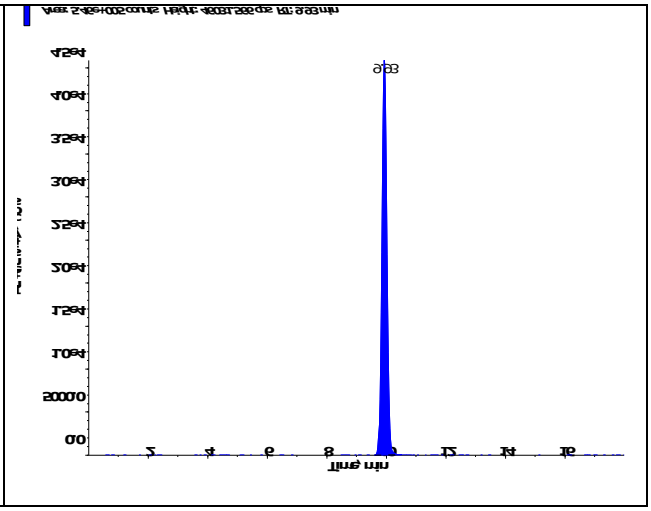

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.94 (9.94) min Calculated conc: 2.06 ng/ml Area Ratio: 0.641 Sample Type: (Standard)	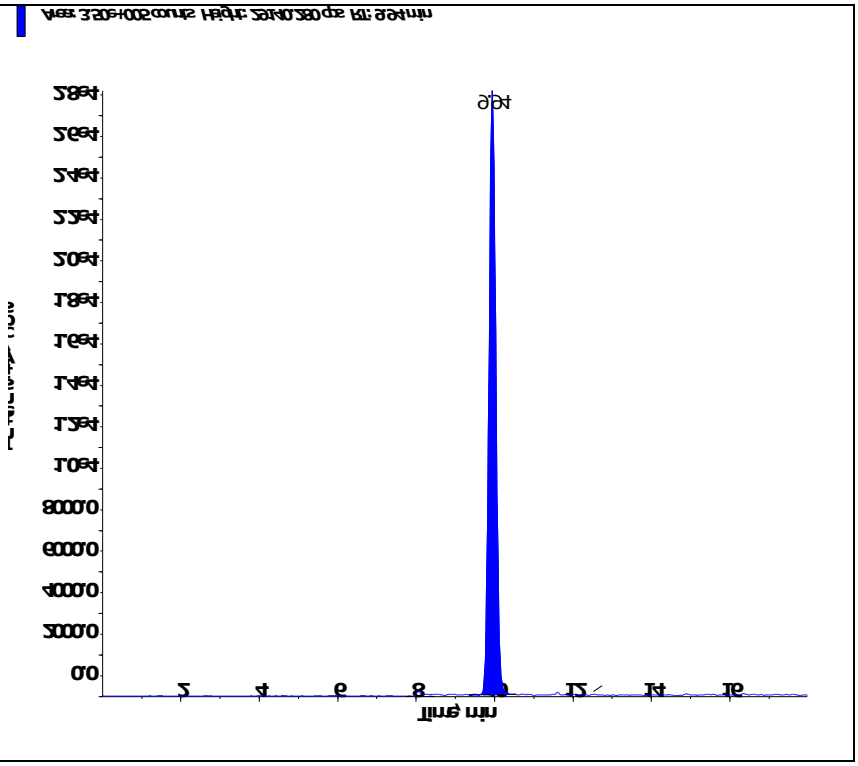
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.93 (9.92) min Calculated conc: 2.04 ng/ml Area Ratio: 0.23 Sample Type: (Standard)	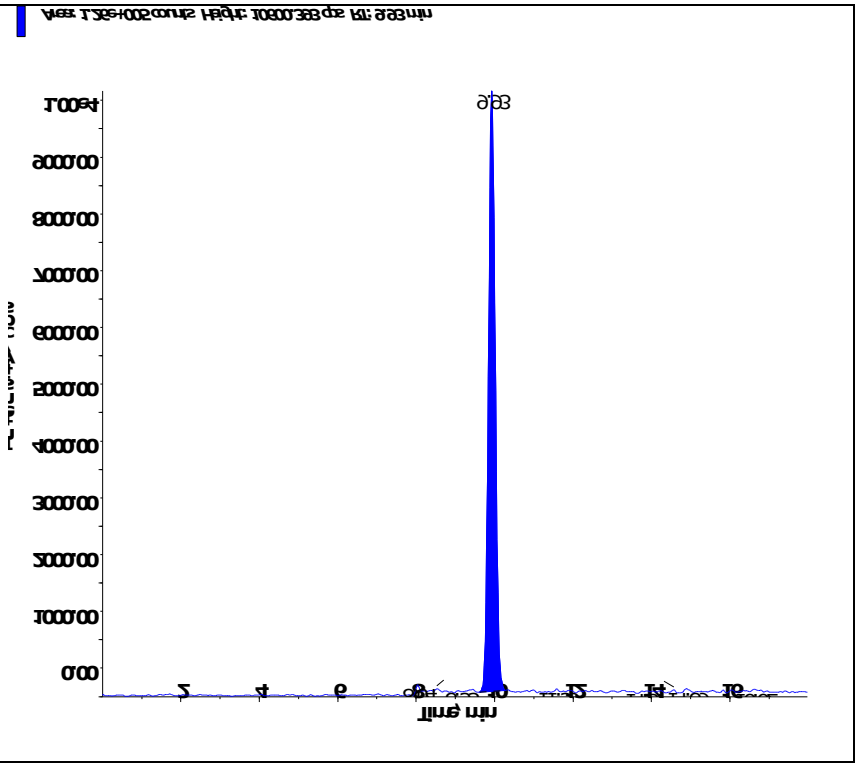

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Data File	LM33250.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/17/2016 9:05:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM33250.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 9:05:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG557856-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.320e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.260e+05	9.96	5.00	5.03
Perchlorate conf	2.930e+05	9.94	5.00	4.93

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

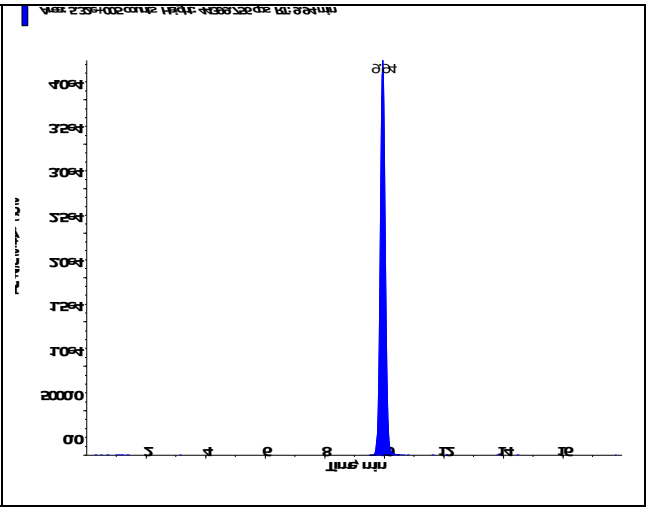

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.96 (9.94) min Calculated conc: 5.03 ng/ml Area Ratio: 1.554 Sample Type: (Standard)	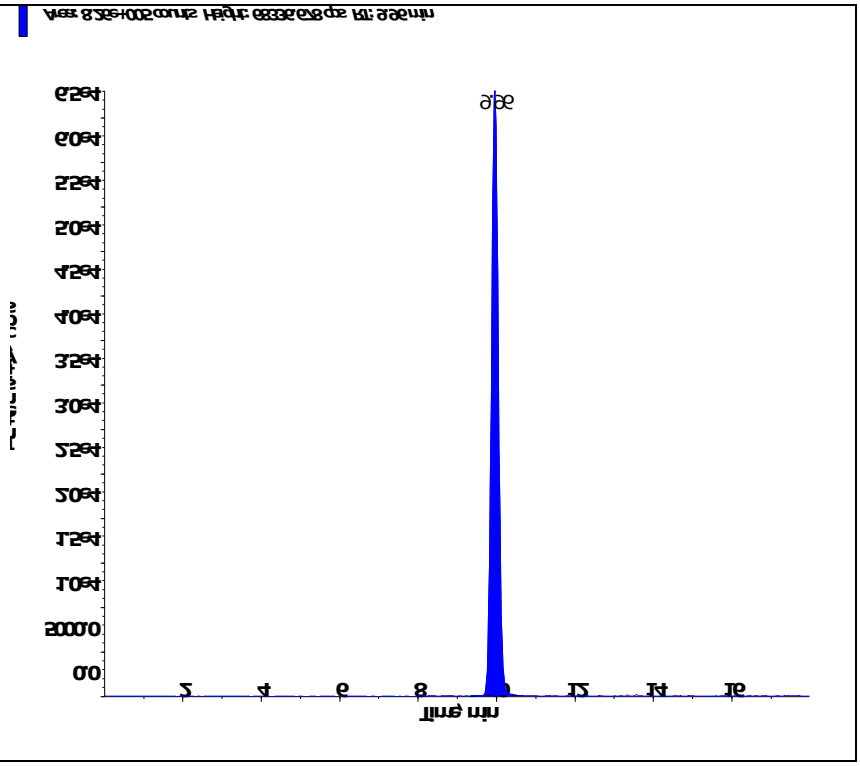
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.94 (9.92) min Calculated conc: 4.93 ng/ml Area Ratio: 0.552 Sample Type: (Standard)	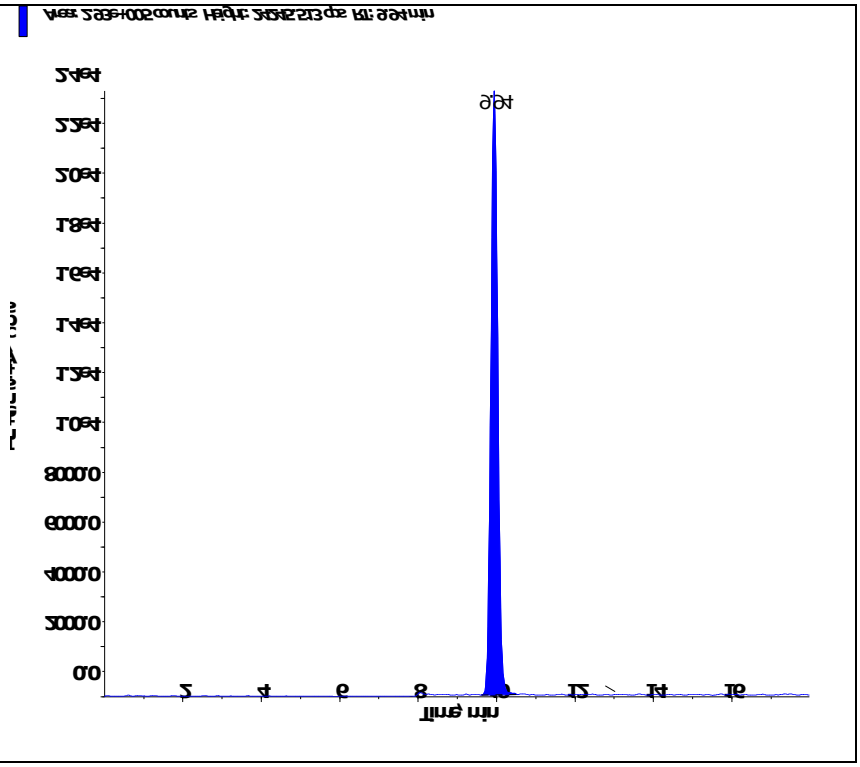

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Data File	LM33251.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/17/2016 9:24:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM33251.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 9:24:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG557856-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.030e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.94	10.00	9.87
Perchlorate conf	5.620e+05	9.93	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

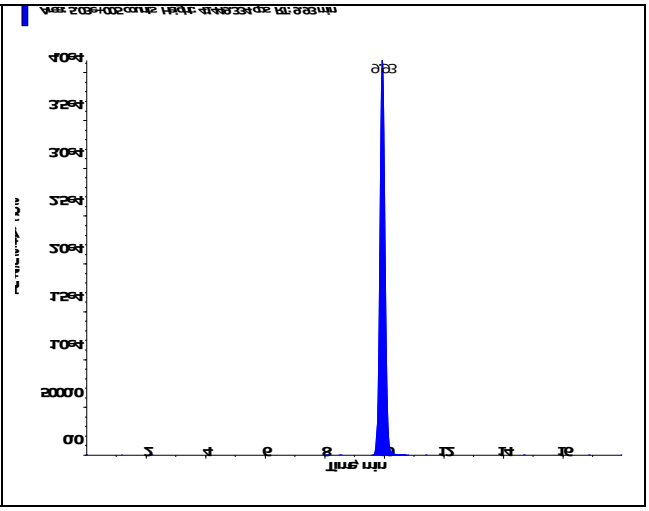

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.94 (9.94) min Calculated conc: 9.87 ng/ml Area Ratio: 3.043 Sample Type: (Standard)	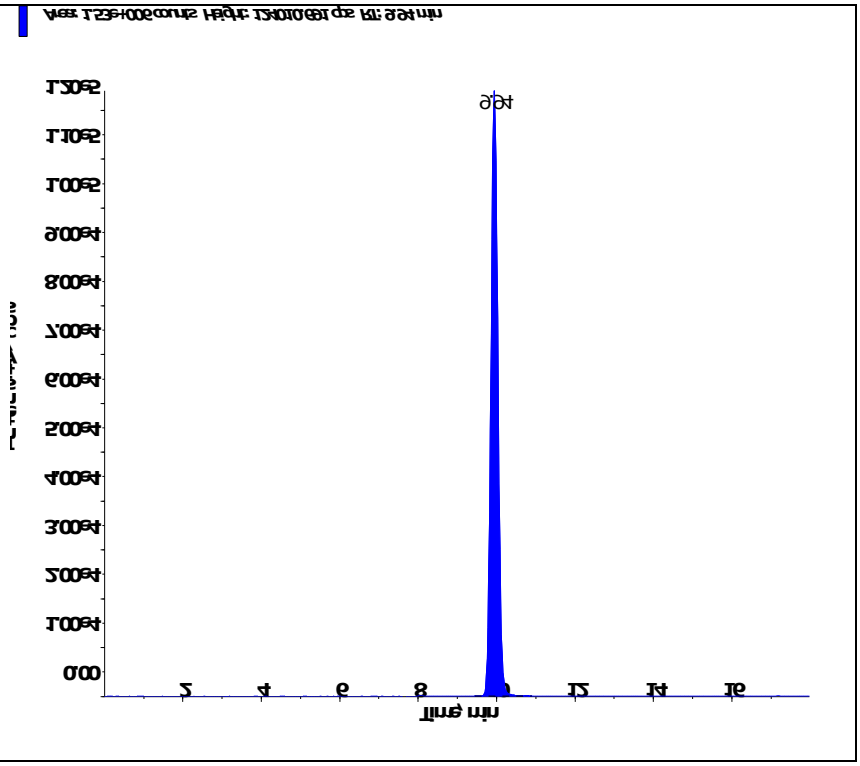
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.93 (9.92) min Calculated conc: 10.00 ng/ml Area Ratio: 1.117 Sample Type: (Standard)	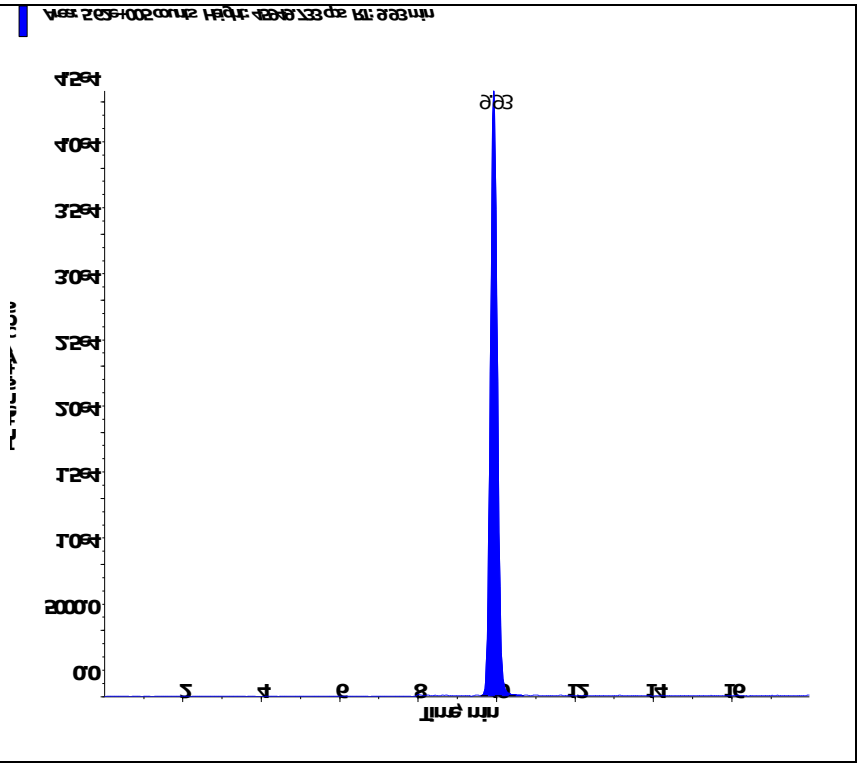

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Data File	LM33252.wiff	**Result Table**	021716_JWR.rdb
Acquisition Date	2/17/2016 9:43:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG557856-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM33252.wiff	**Injection Volume**	10.00
Acquisition Date	2/17/2016 9:43:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	021716_JWR.rdb
Sample ID	WG557856-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.420e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+05	9.93	1.00	1.05
Perchlorate conf	6.360e+04	9.92	1.00	1.03

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

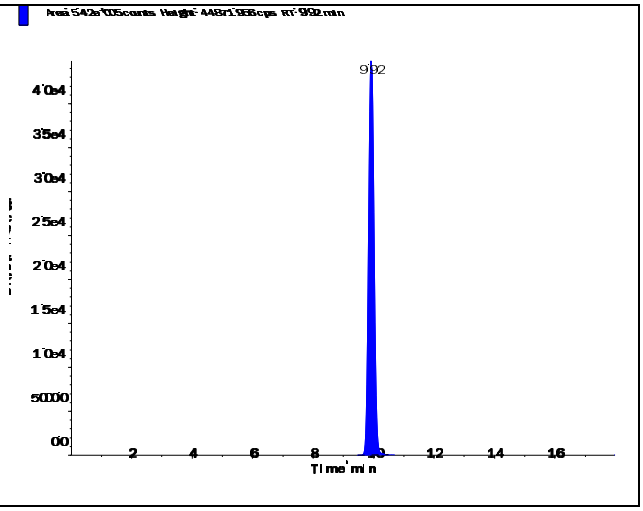

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.33
Sample Type:	(Quality Control)

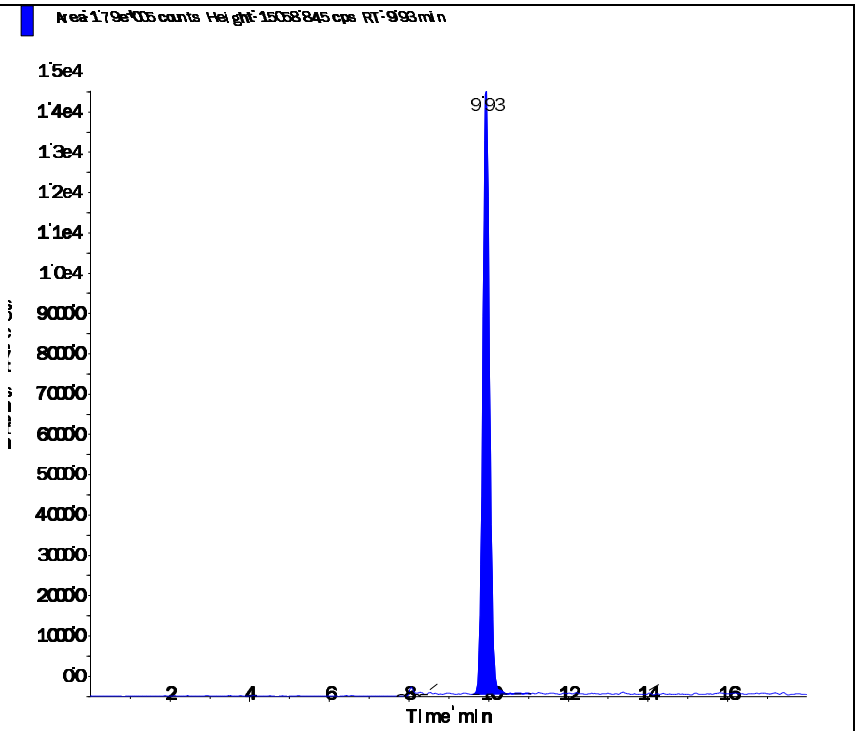

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.117
Sample Type:	(Quality Control)

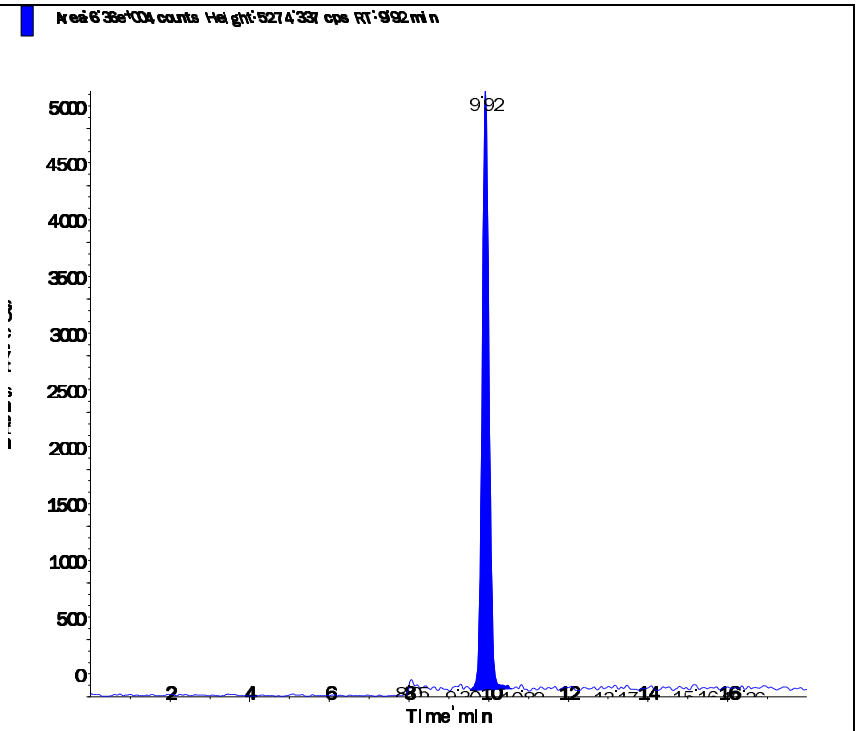

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Data File	LM33477.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/29/2016 8:56:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559066-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33477.wiff	**Injection Volume**	10.00
Acquisition Date	2/29/2016 8:56:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559066-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.320e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.760e+05	9.97	1.00	1.06
Perchlorate conf	5.830e+04	9.96	1.00	0.962

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

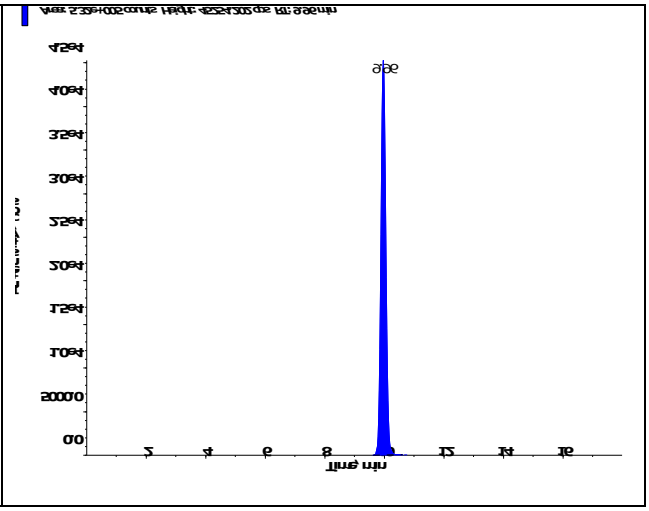

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.97 (9.94) min Calculated conc: 1.06 ng/ml Area Ratio: 0.332 Sample Type: (Quality Control)	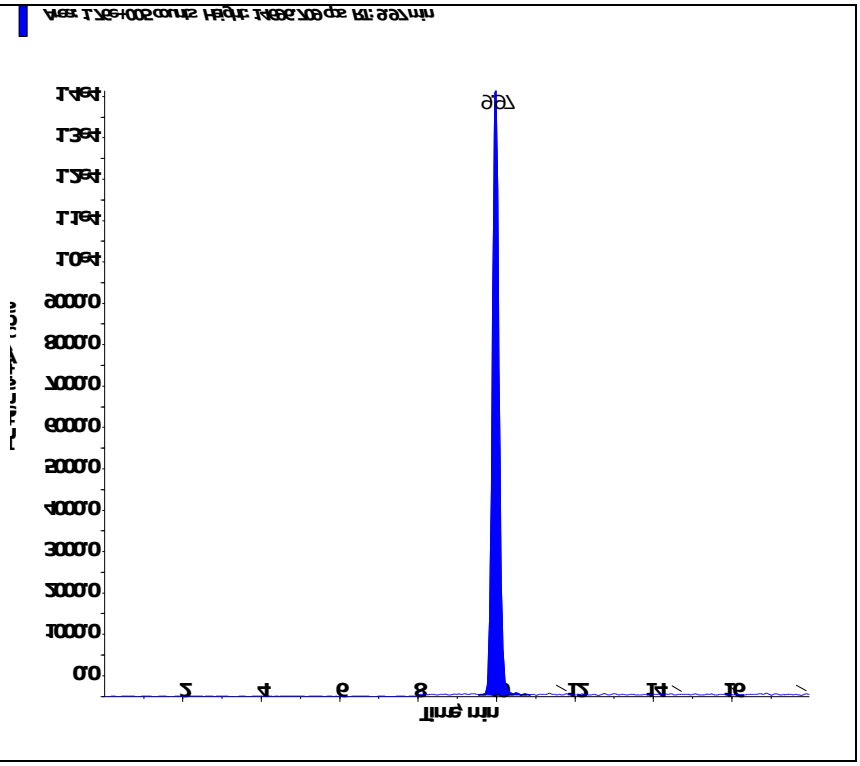
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.96 (9.92) min Calculated conc: 0.962 ng/ml Area Ratio: 0.11 Sample Type: (Quality Control)	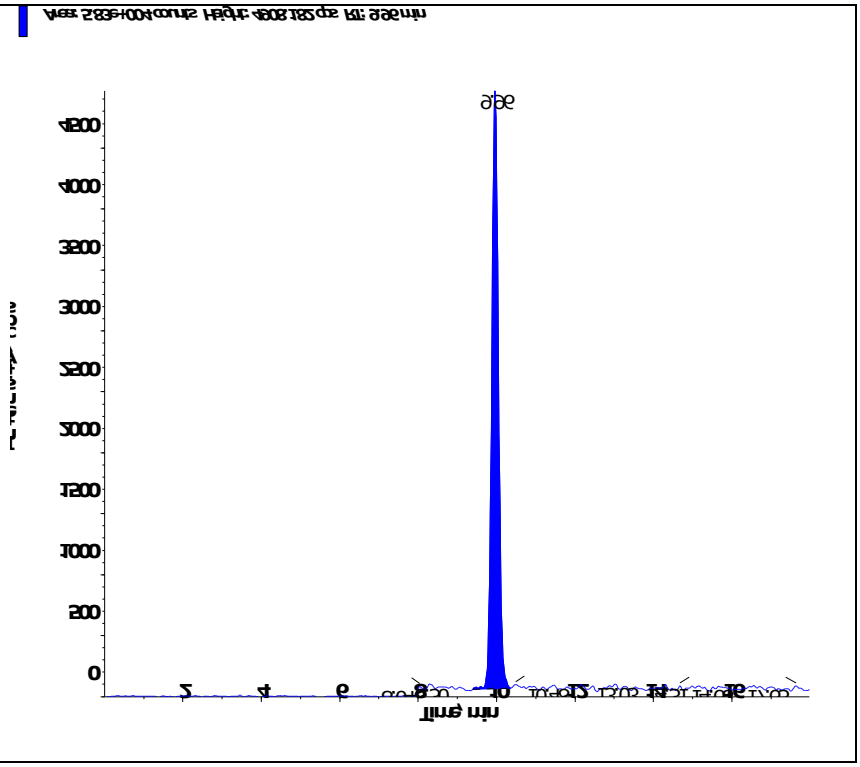

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Data File	LM33490.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 1:02:38 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG599066-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33490.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 1:02:38 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG599066-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.380e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.730e+05	9.97	1.00	1.02
Perchlorate conf	5.590e+04	9.95	1.00	0.91

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

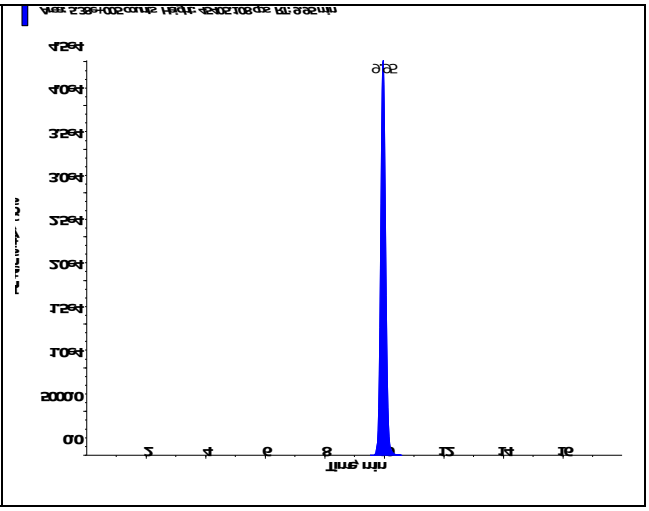

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.97 (9.94) min Calculated conc: 1.02 ng/ml Area Ratio: 0.322 Sample Type: (Quality Control)	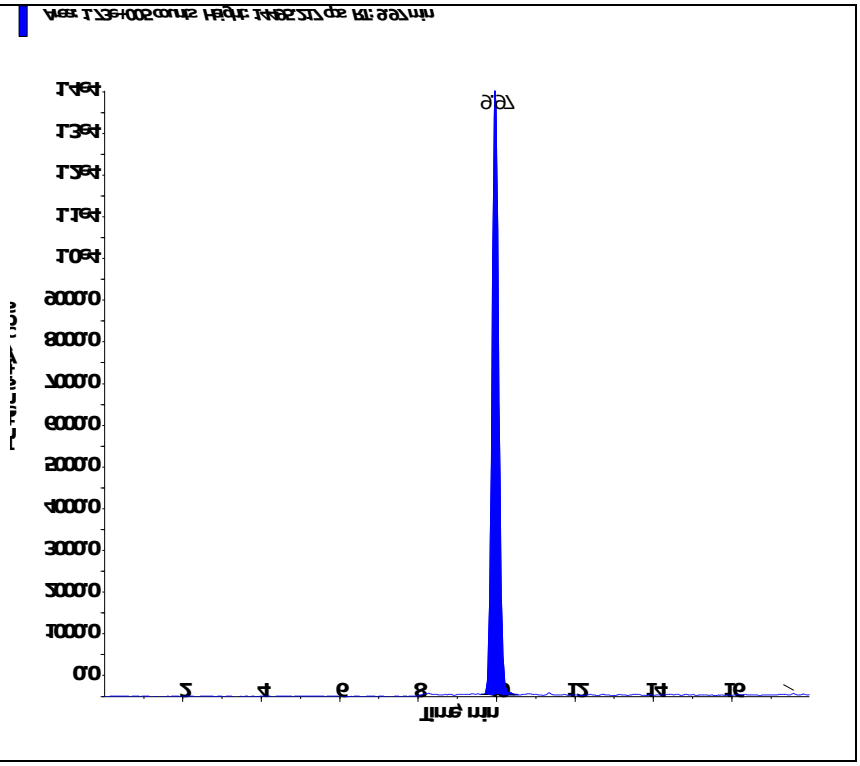
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.95 (9.92) min Calculated conc: 0.91 ng/ml Area Ratio: 0.104 Sample Type: (Quality Control)	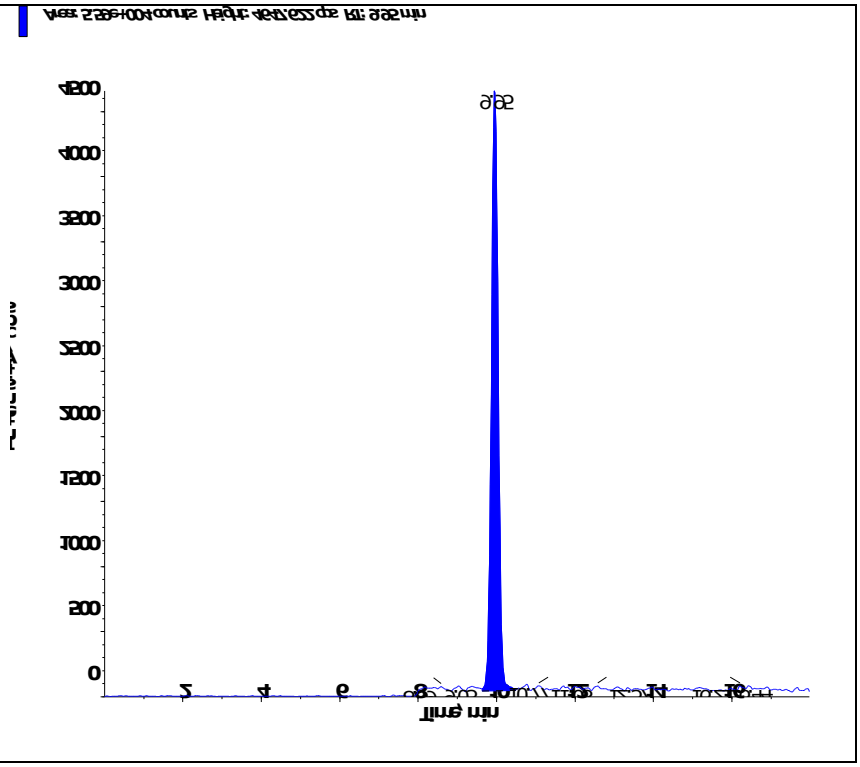

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Data File	LM33503.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 5:08:49 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG599066-11 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33503.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 5:08:49 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG599066-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.040e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.630e+05	9.96	1.00	1.03
Perchlorate conf	5.340e+04	9.94	1.00	0.929

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

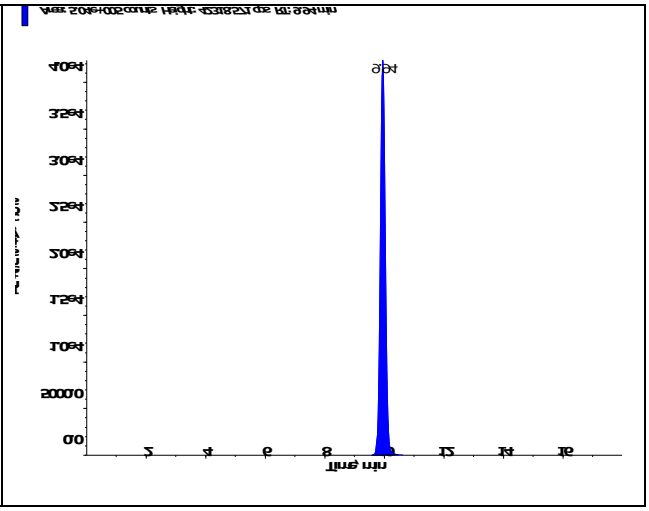

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.96 (9.94) min Calculated conc: 1.03 ng/ml Area Ratio: 0.323 Sample Type: (Quality Control)	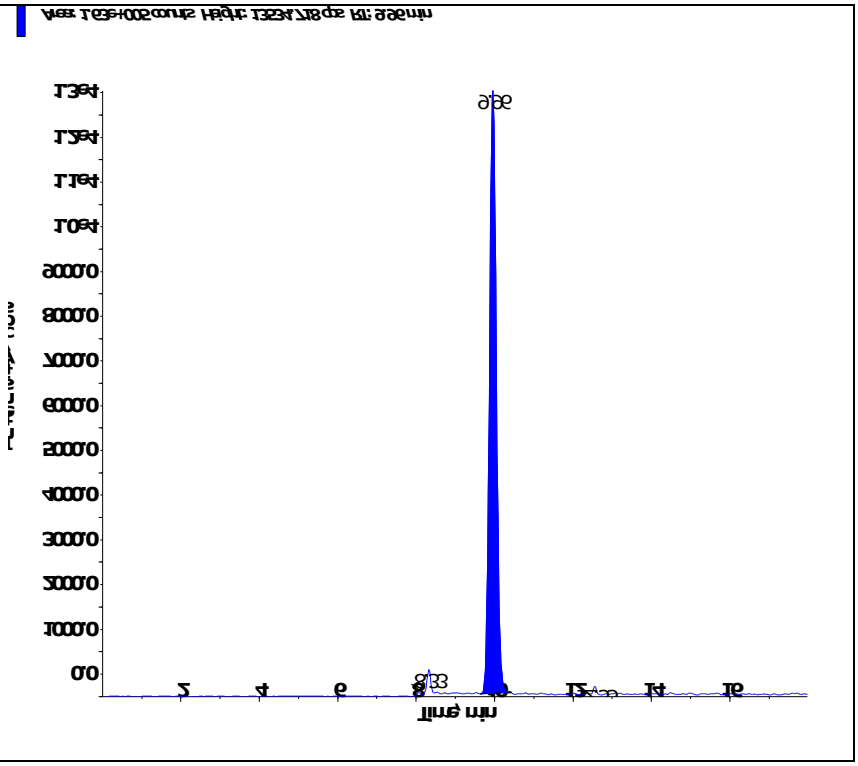
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.94 (9.92) min Calculated conc: 0.929 ng/ml Area Ratio: 0.106 Sample Type: (Quality Control)	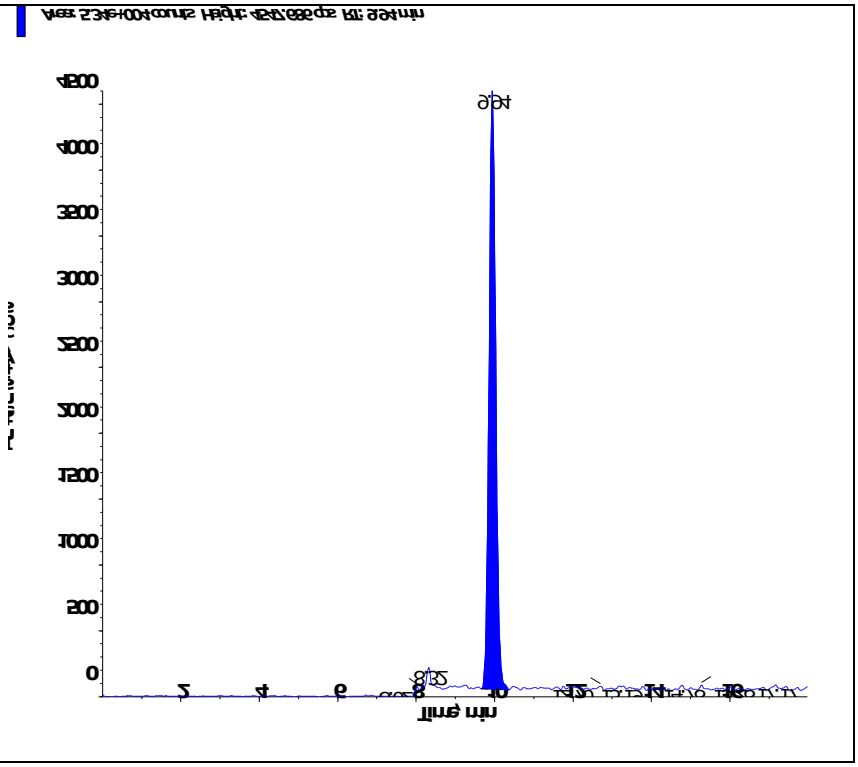

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Data File	LM33508.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 9:35:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559066-13 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33508.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 9:35:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559066-13	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.810e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.560e+05	9.97	1.00	1.03
Perchlorate conf	5.140e+04	9.96	1.00	0.936

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

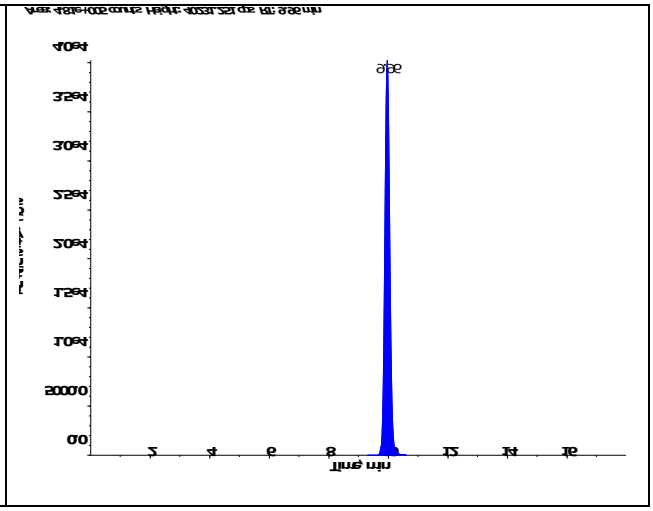

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.97 (9.94) min Calculated conc: 1.03 ng/ml Area Ratio: 0.324 Sample Type: (Quality Control)	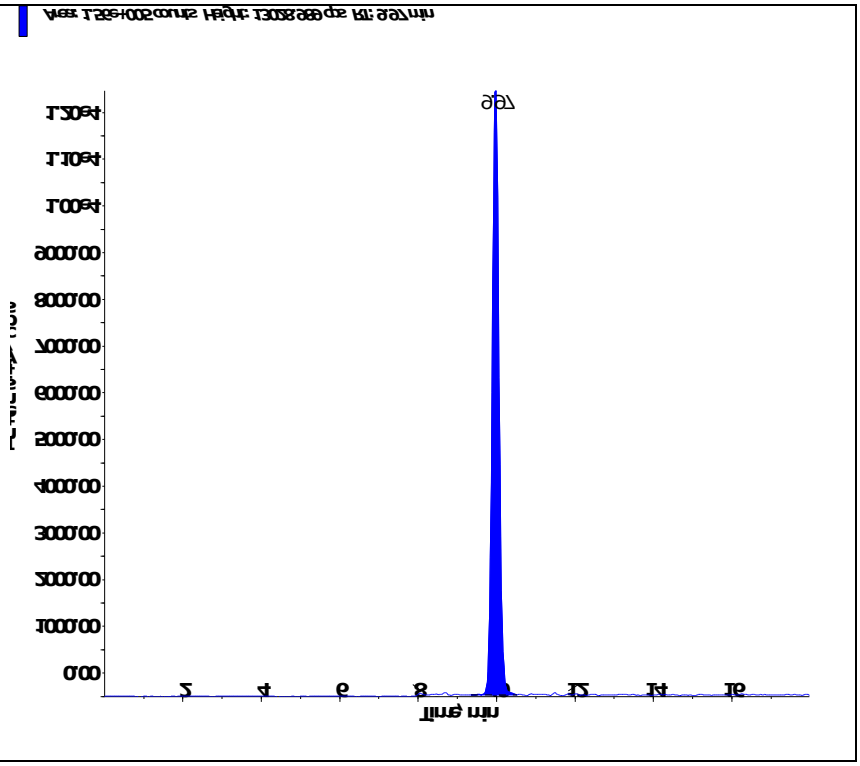
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.96 (9.92) min Calculated conc: 0.936 ng/ml Area Ratio: 0.107 Sample Type: (Quality Control)	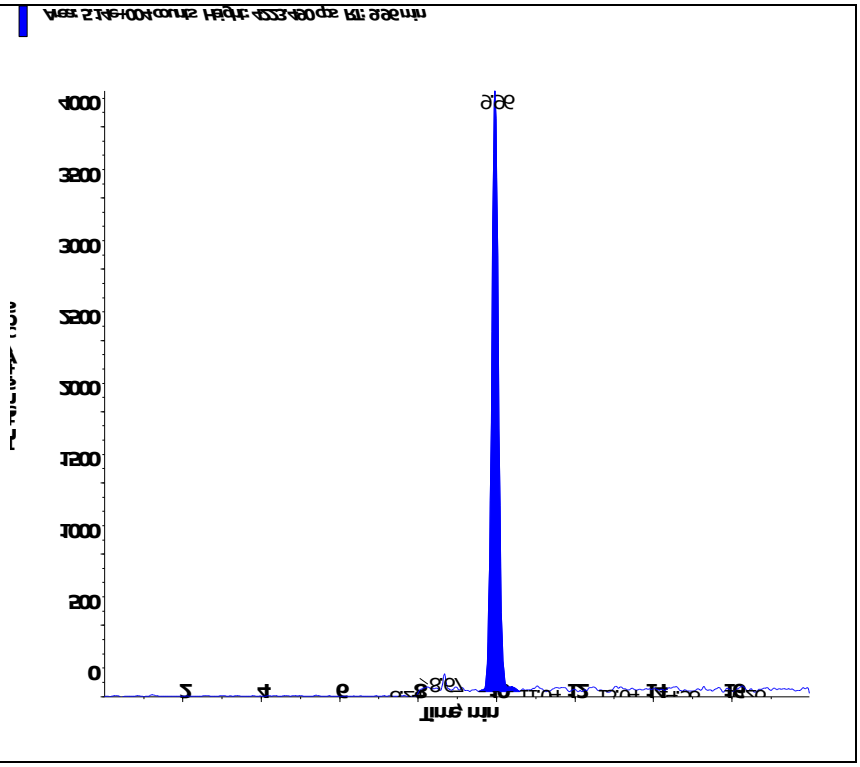

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Data File	LM33516.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 12:07:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG599066-15 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33516.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 12:07:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG599066-15	**Dilution Factor**	1.00
Sample Comment	1,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.910e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.620e+05	10.00	1.00	1.05
Perchlorate conf	5.300e+04	9.98	1.00	0.945

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

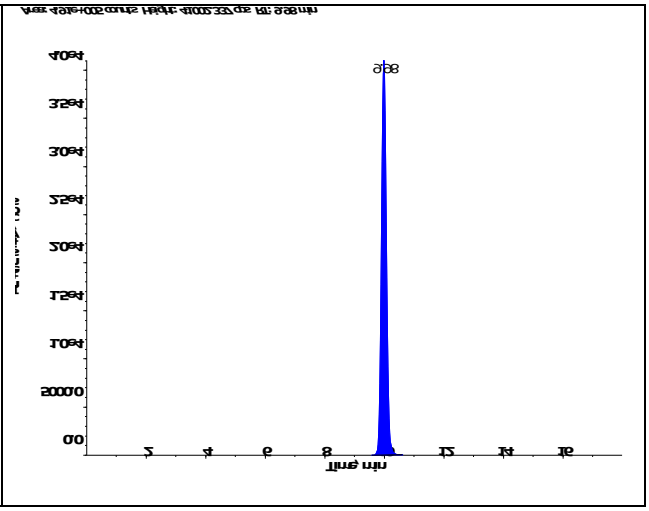

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.00 (9.94) min Calculated conc: 1.05 ng/ml Area Ratio: 0.33 Sample Type: (Quality Control)	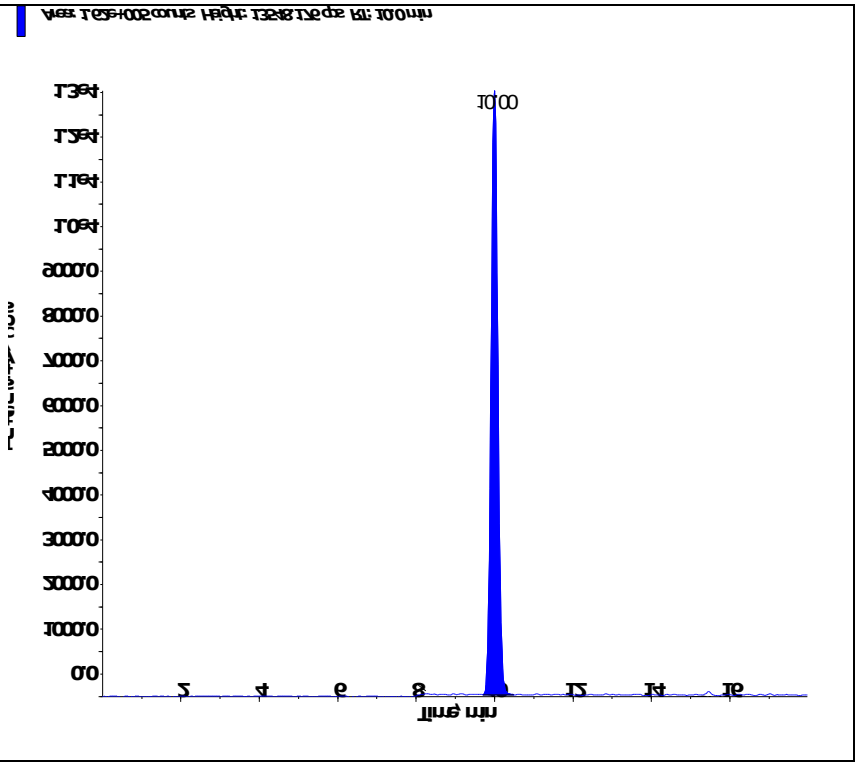
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.98 (9.92) min Calculated conc: 0.945 ng/ml Area Ratio: 0.108 Sample Type: (Quality Control)	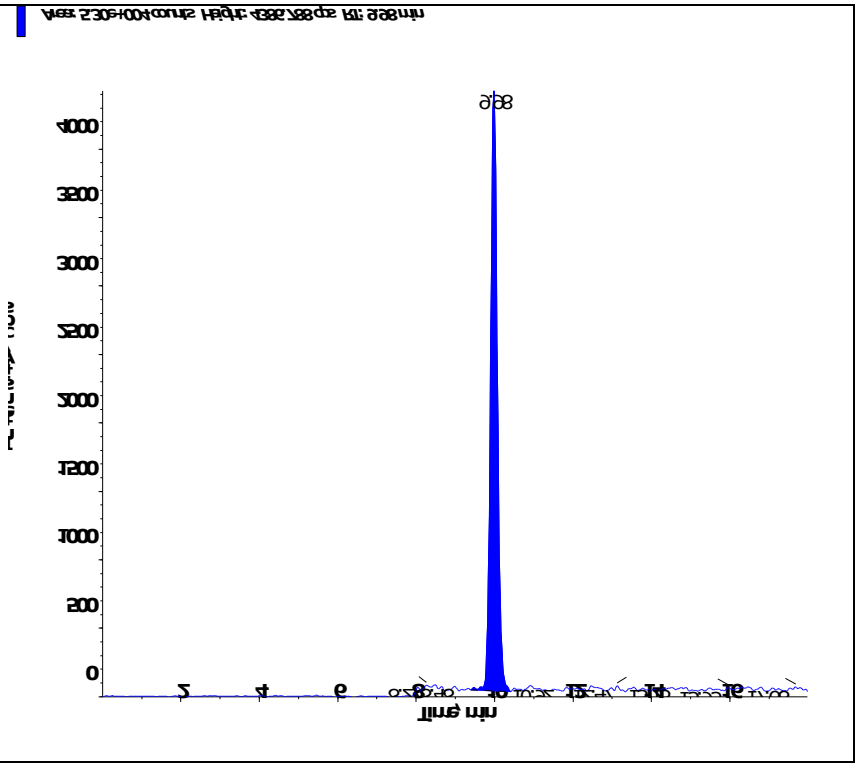

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Data File	LM33478.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/29/2016 9:15:23 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559015-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM33478.wiff	**Injection Volume**	10.00
Acquisition Date	2/29/2016 9:15:23 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559015-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.310e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.910e+04	9.98	N/A	0.218
Perchlorate conf	1.350e+04	9.96	N/A	0.205

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

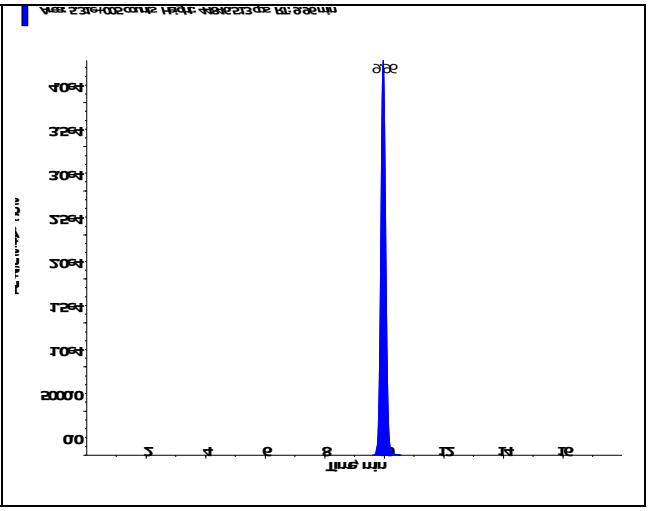

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.98 (9.94) min Calculated conc: 0.218 ng/ml Area Ratio: 0.074 Sample Type: (Unknown)	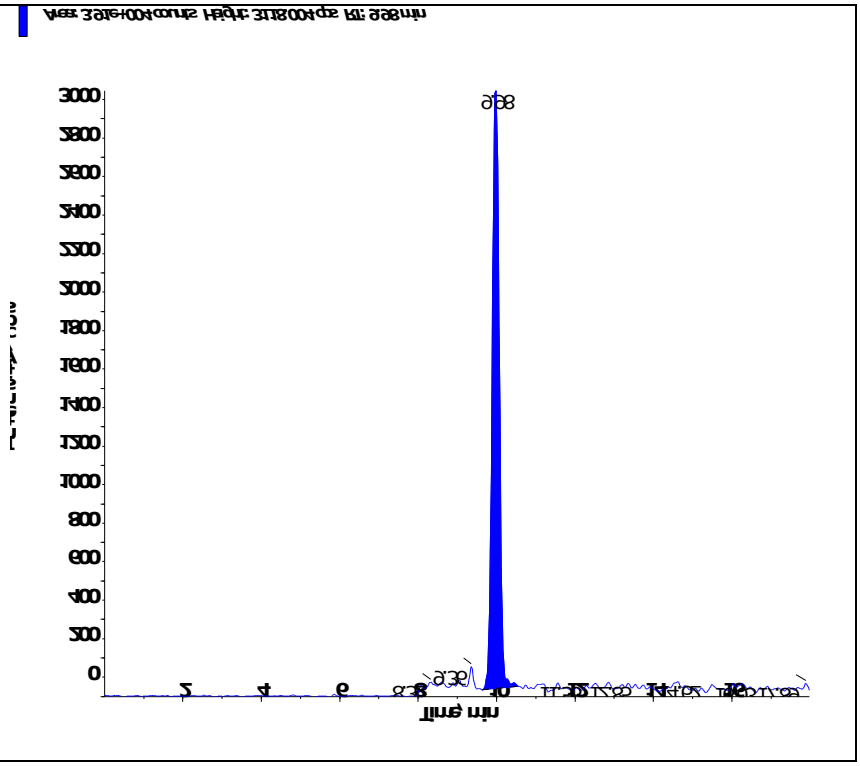
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.96 (9.92) min Calculated conc: 0.205 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	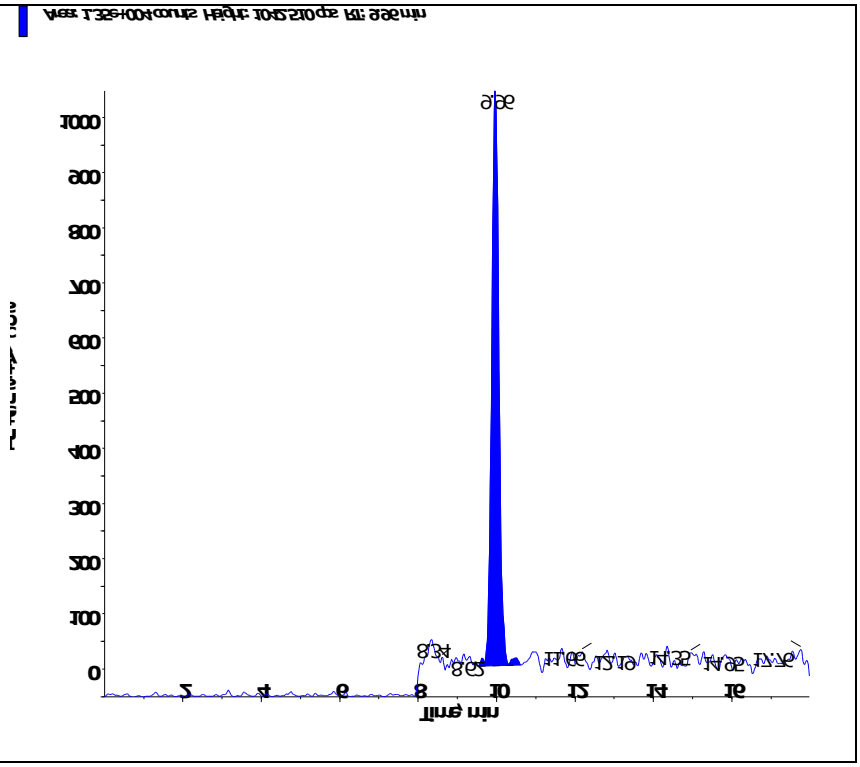

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Data File	LM33491.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 1:21:34 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559142-08 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33491.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 1:21:34 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559142-08	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.260e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.630e+04	9.98	N/A	0.202
Perchlorate conf	1.260e+04	9.97	N/A	0.192

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

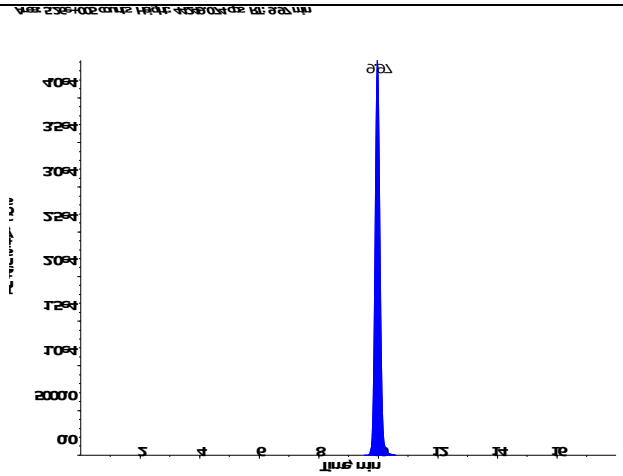

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.98 (9.94) min Calculated conc: 0.202 ng/ml Area Ratio: 0.069 Sample Type: (Unknown)	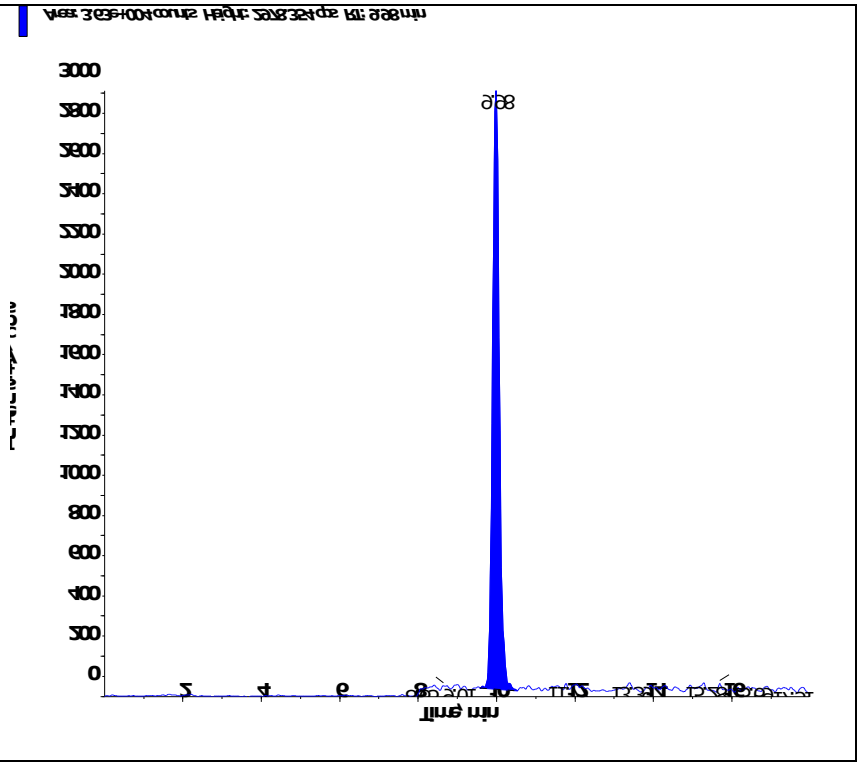
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.97 (9.92) min Calculated conc: 0.192 ng/ml Area Ratio: 0.024 Sample Type: (Unknown)	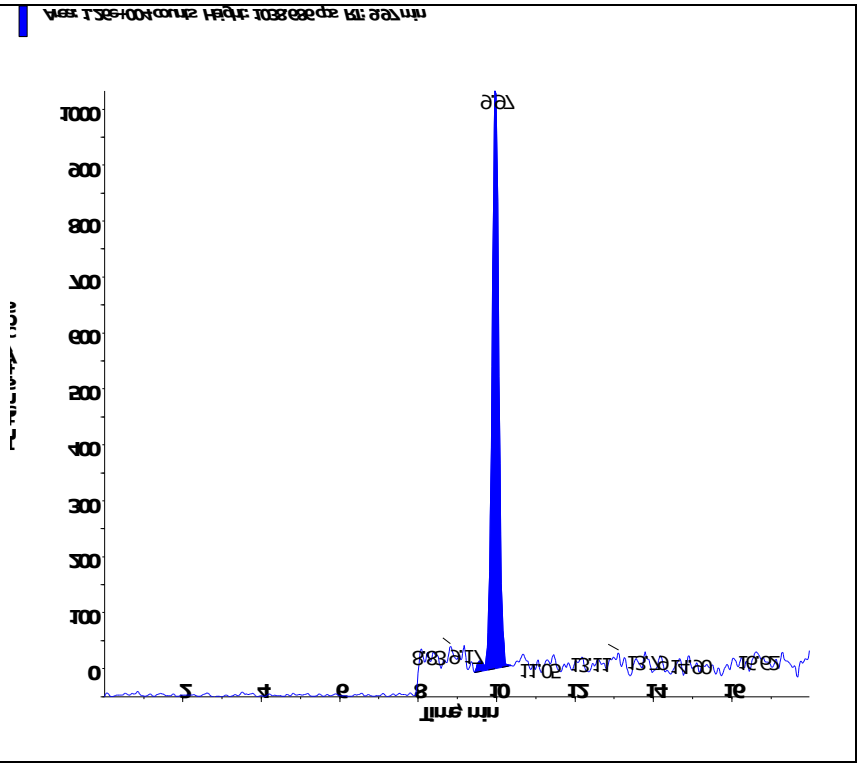

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Data File	LM33504.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 5:27:44 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559142-09 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33504.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 5:27:44 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559142-09	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.500e+04	9.96	N/A	0.205
Perchlorate conf	1.180e+04	9.95	N/A	0.188

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

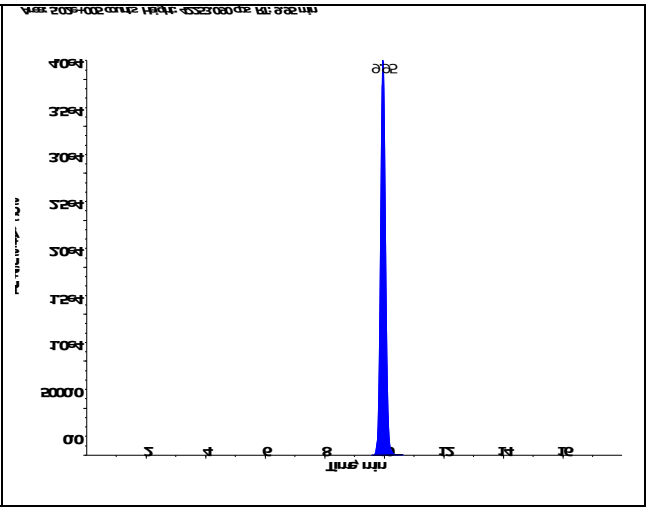

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.96 (9.94) min Calculated conc: 0.205 ng/ml Area Ratio: 0.07 Sample Type: (Unknown)	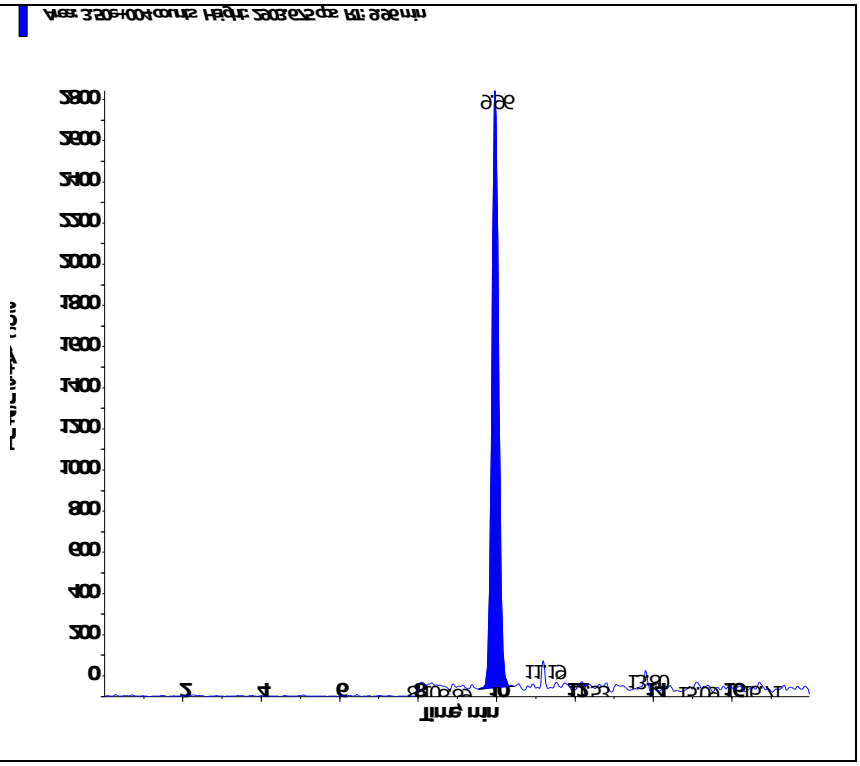
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.95 (9.92) min Calculated conc: 0.188 ng/ml Area Ratio: 0.023 Sample Type: (Unknown)	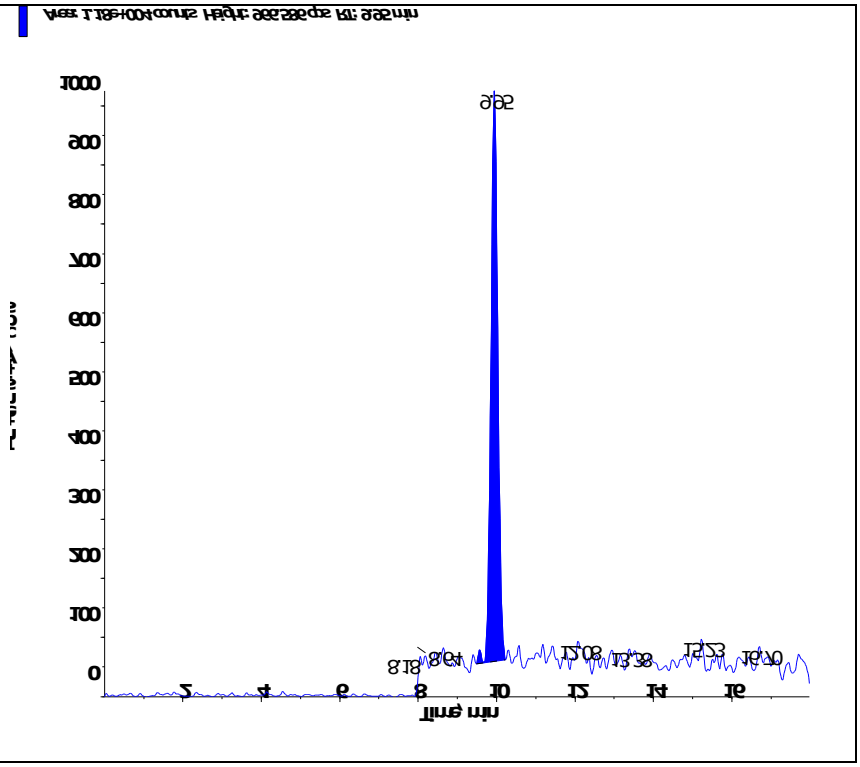

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Data File	LM33517.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 12:26:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559142-10 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33517.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 12:26:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559142-10	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.860e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.430e+04	10.00	N/A	0.207
Perchlorate conf	1.180e+04	9.98	N/A	0.196

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

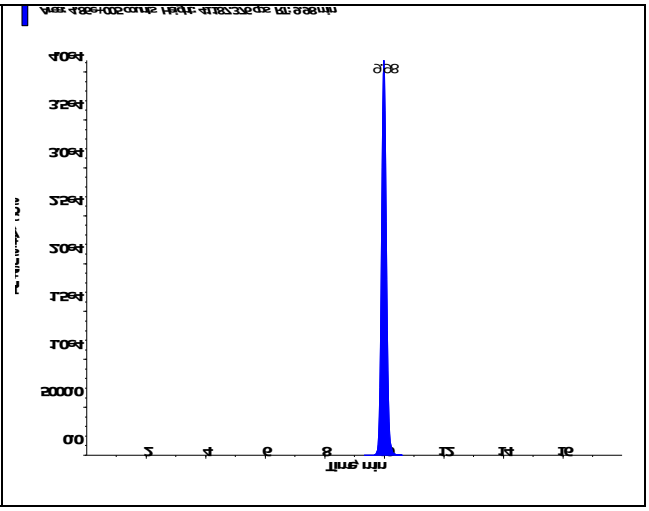

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.00 (9.94) min Calculated conc: 0.207 ng/ml Area Ratio: 0.07 Sample Type: (Unknown)	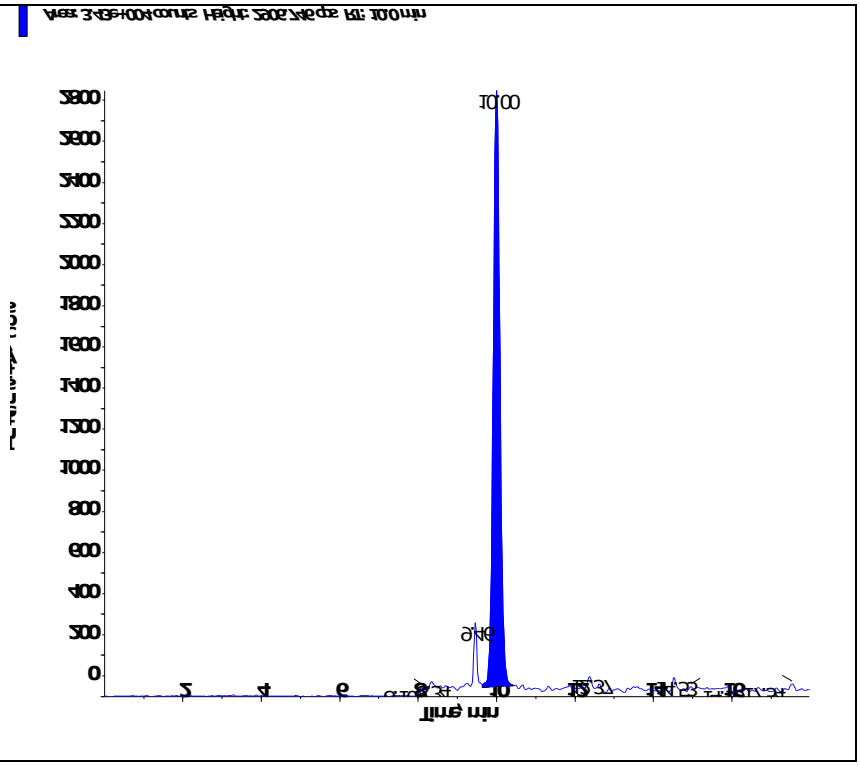
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.98 (9.92) min Calculated conc: 0.196 ng/ml Area Ratio: 0.024 Sample Type: (Unknown)	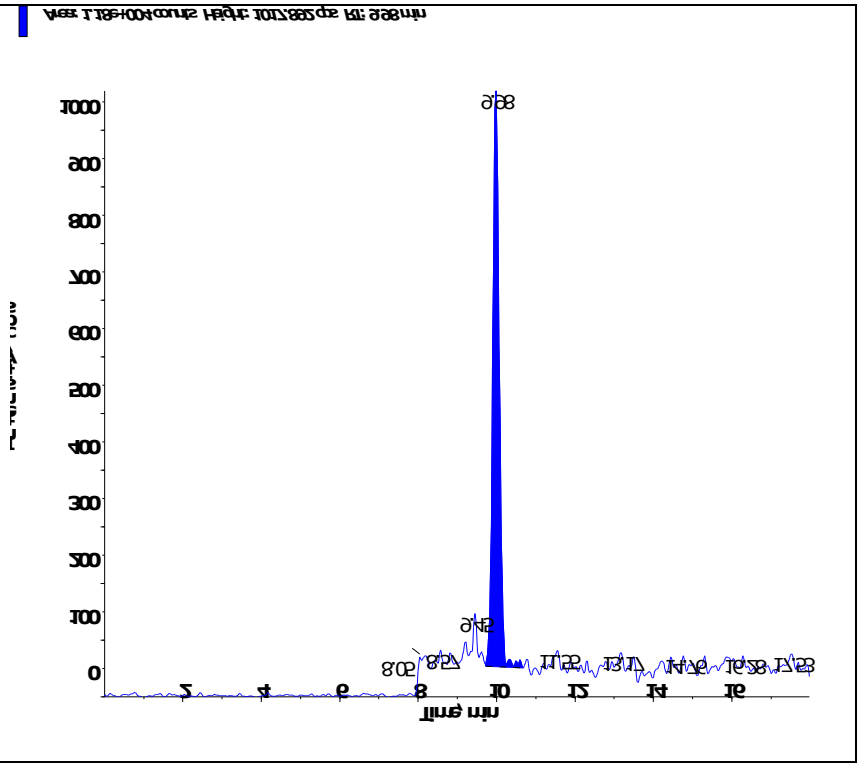

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Data File	LM33479.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/29/2016 9:34:19 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559066-08 CCB	**Injection Vial**	1.00
Data File	LM33479.wiff	**Injection Volume**	10.00
Acquisition Date	2/29/2016 9:34:19 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559066-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.400e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.400e+02	9.92	N/A	< 0
Perchlorate conf	2.300e+02	9.95	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

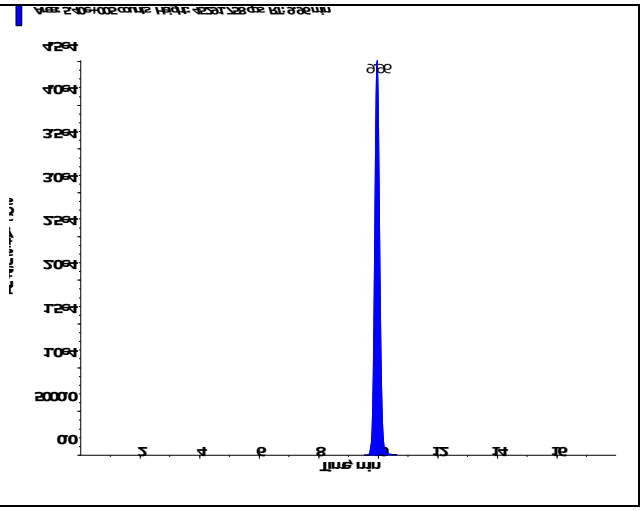

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.92 (9.94) min Calculated conc: < 0 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	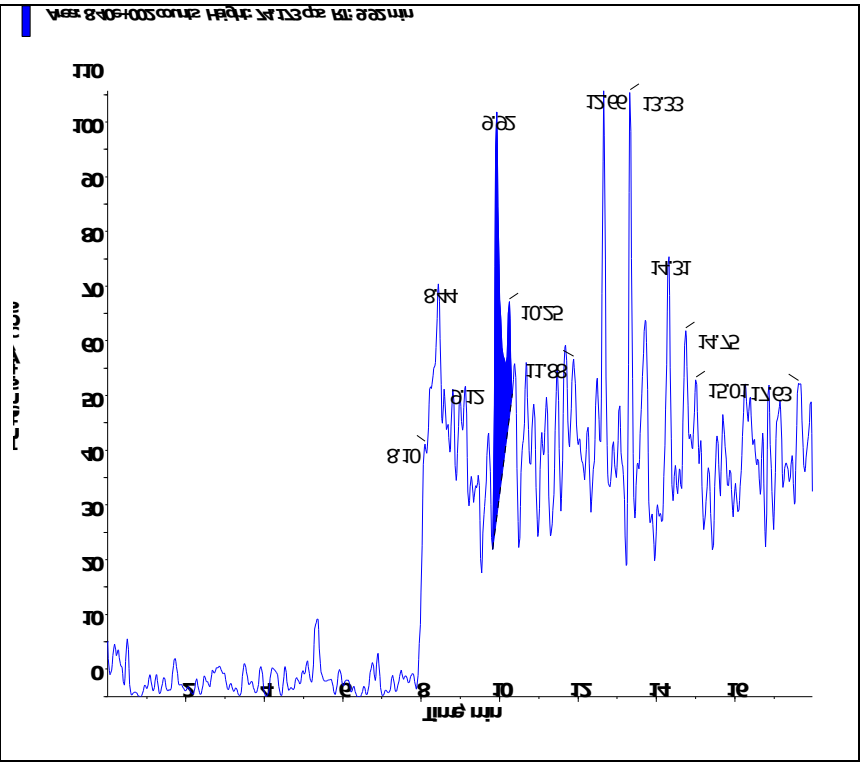
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.95 (9.92) min Calculated conc: < 0 ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	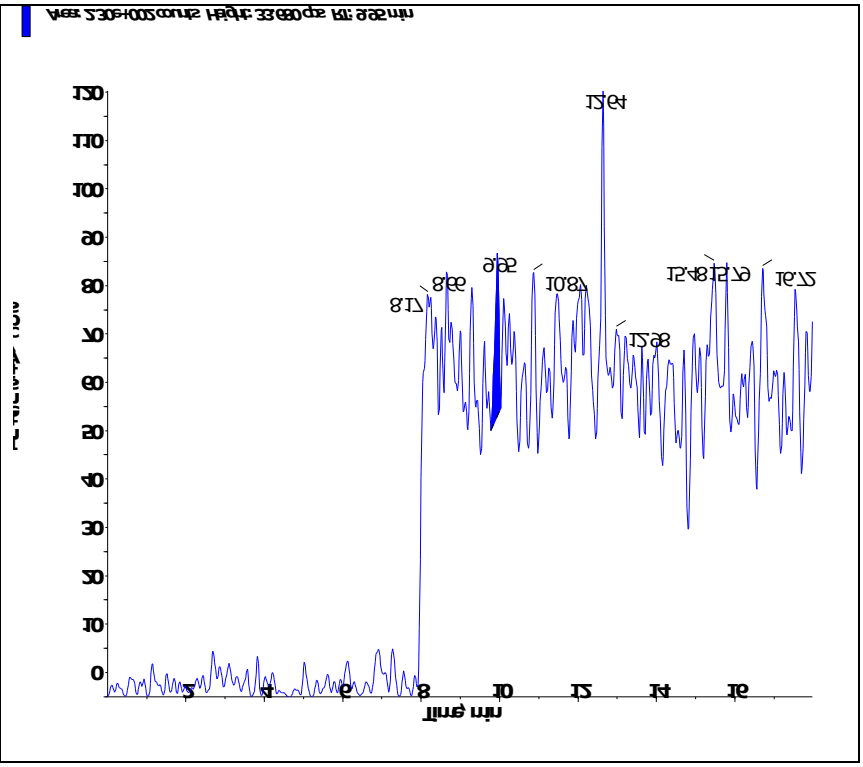

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Data File	LM33492.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 1:40:30 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG599066-10 CCB	**Injection Vial**	1.00
Data File	LM33492.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 1:40:30 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG599066-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.310e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	4.900e+02	9.88	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

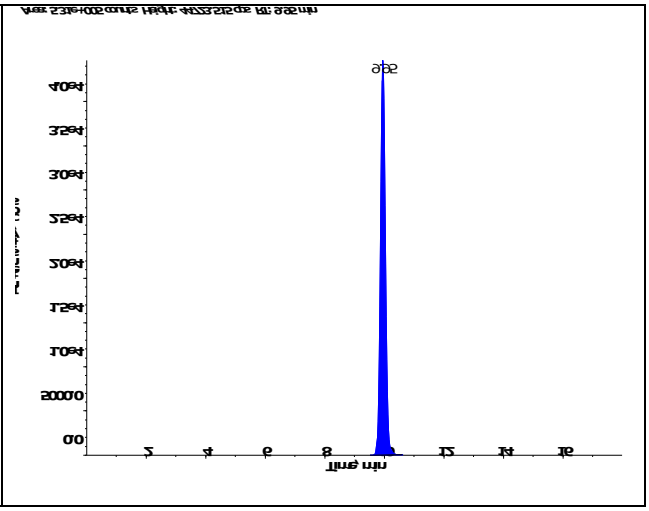

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.94) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	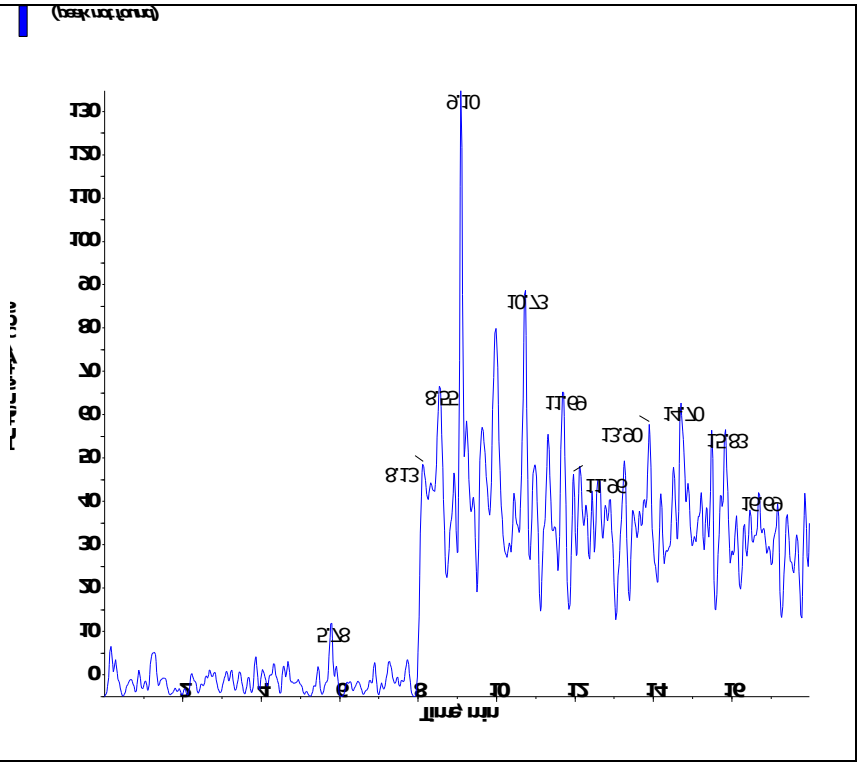
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.88 (9.92) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	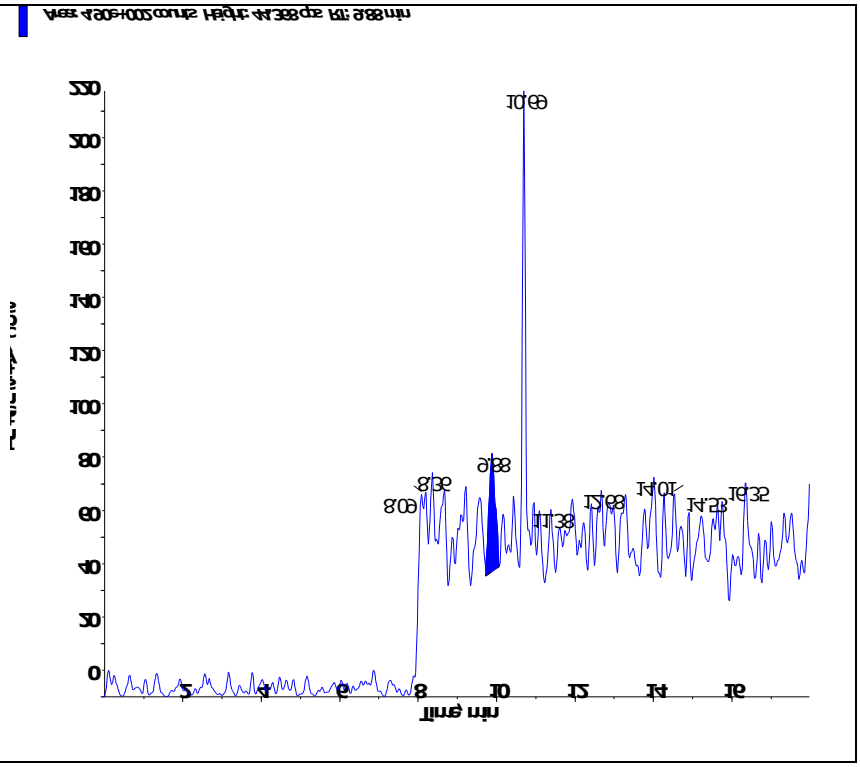

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Data File	LM33505.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 5:46:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG599066-12 CCB	**Injection Vial**	1.00
Data File	LM33505.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 5:46:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG599066-12	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

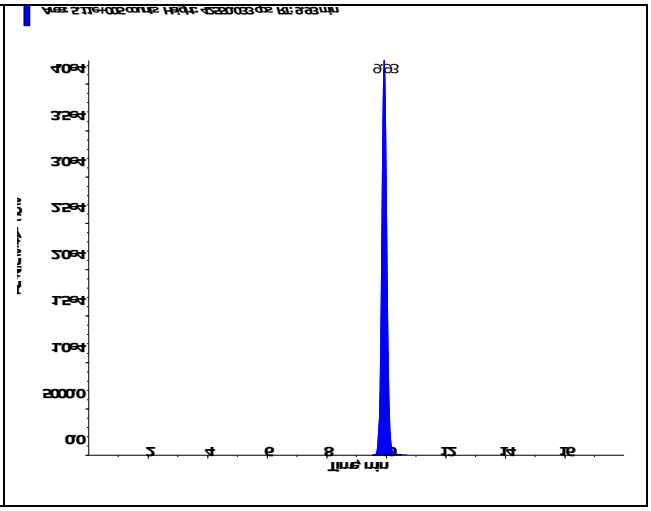

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.94) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	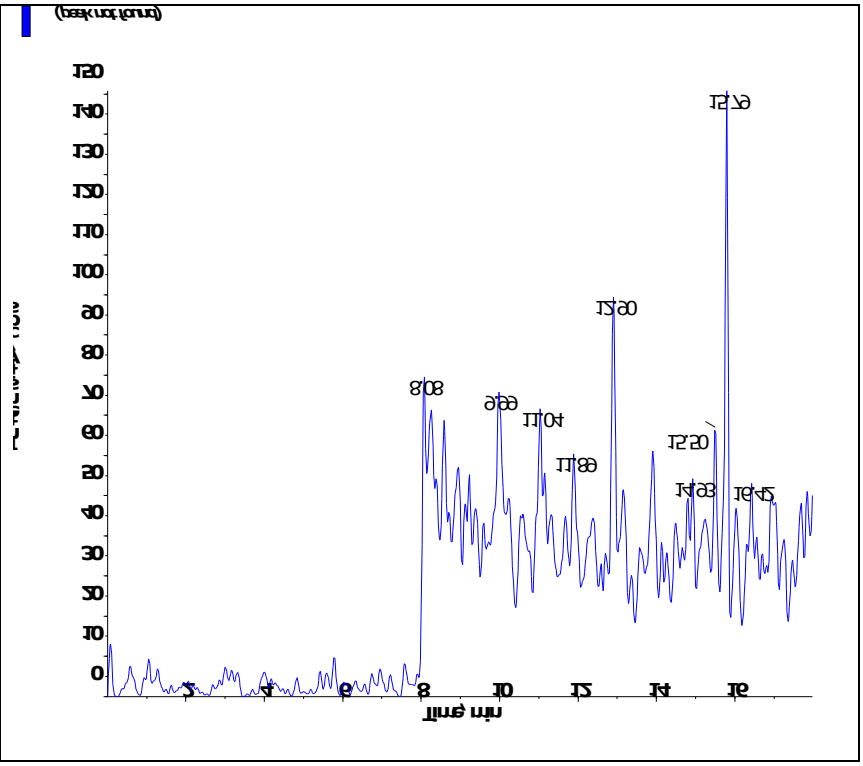
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.92) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	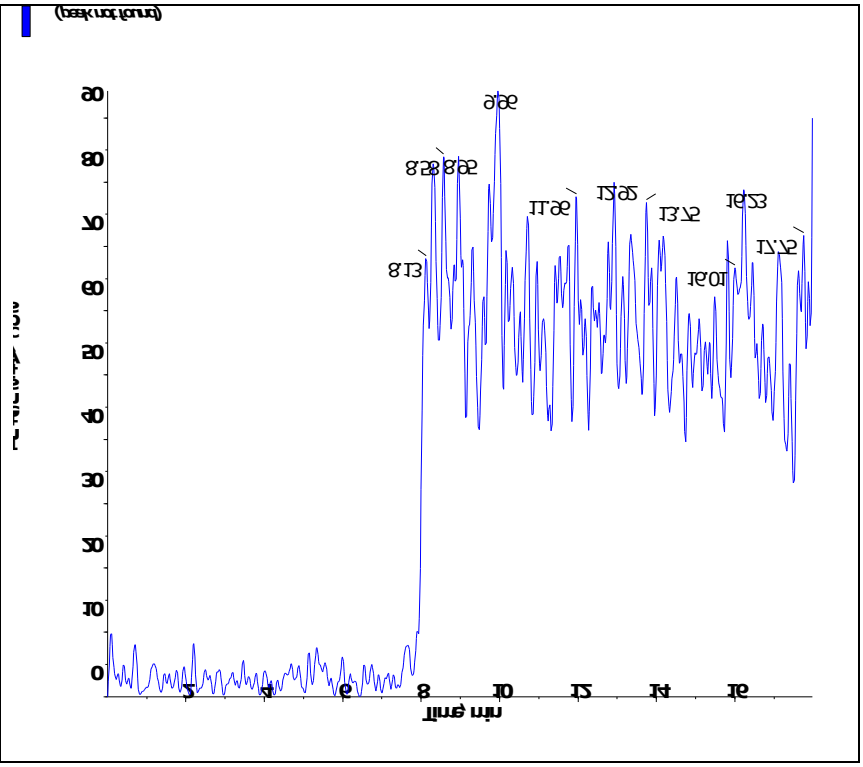

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Data File	LM33510.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 10:13:50 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559066-14 CCB	**Injection Vial**	1.00
Data File	LM33510.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 10:13:50 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559066-14	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.980e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

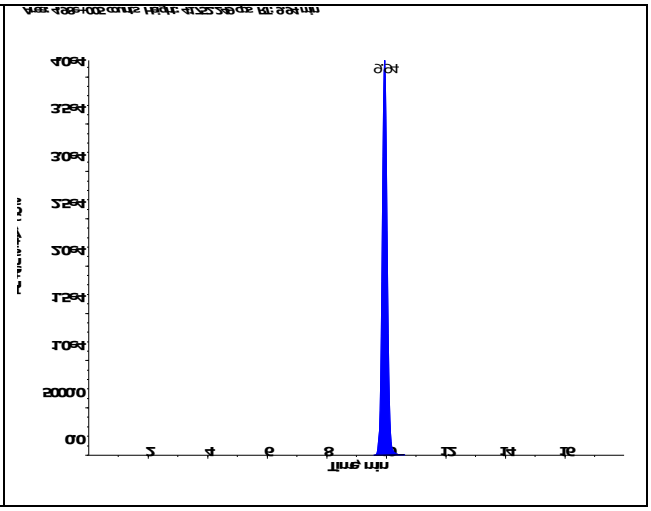

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.94) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	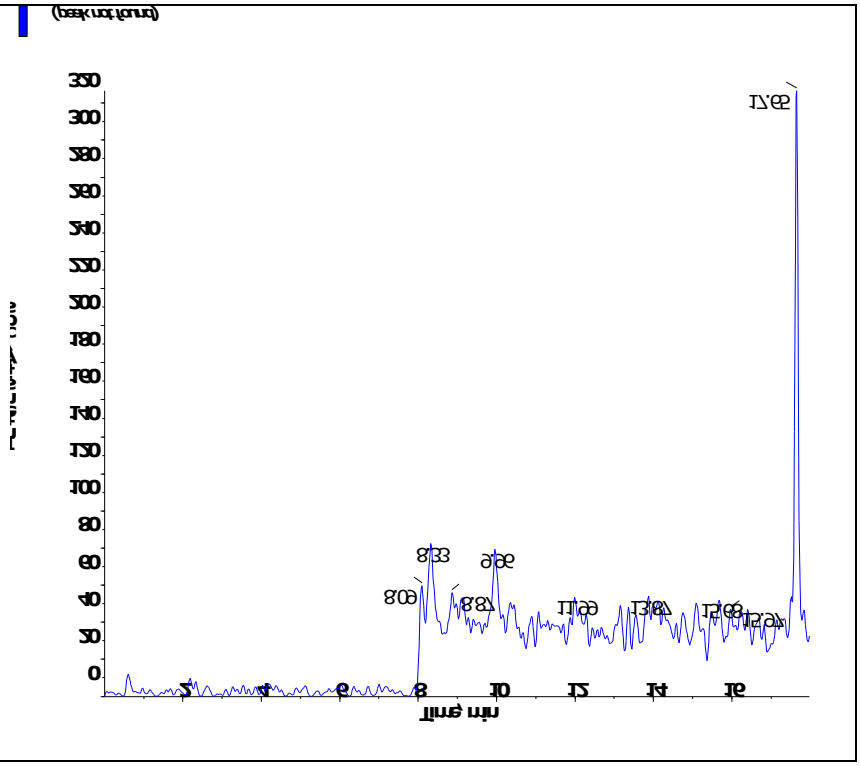
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.92) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	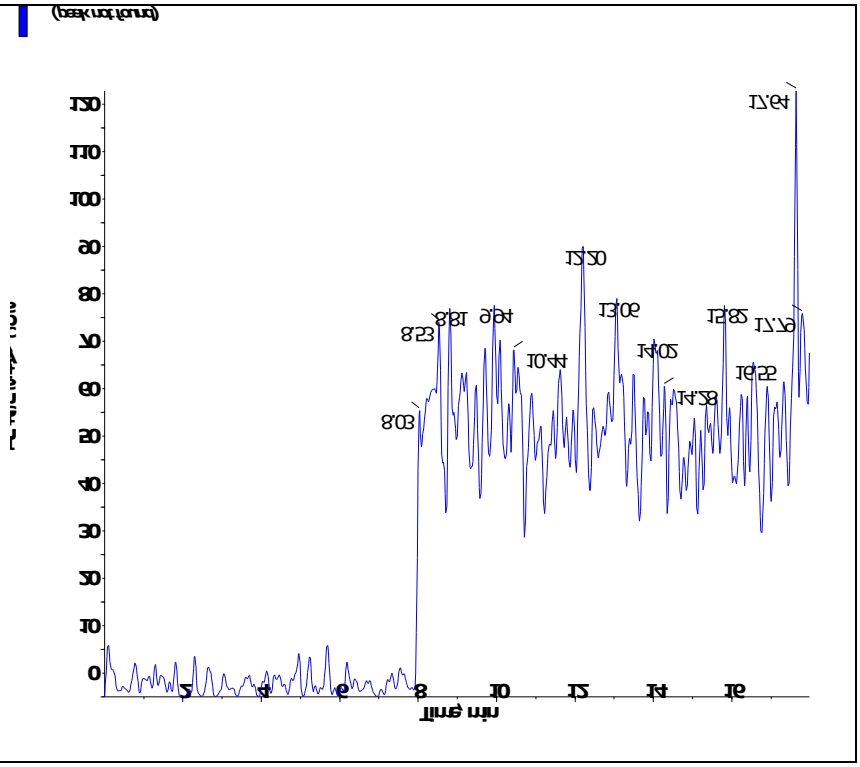

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Data File	LM33518.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	3/1/2016 12:45:23 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG599066-16 CCB	**Injection Vial**	1.00
Data File	LM33518.wiff	**Injection Volume**	10.00
Acquisition Date	3/1/2016 12:45:23 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG599066-16	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.870e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.320e+03	10.10	N/A	< 0
Perchlorate conf	1.400e+03	10.10	N/A	0.0035

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

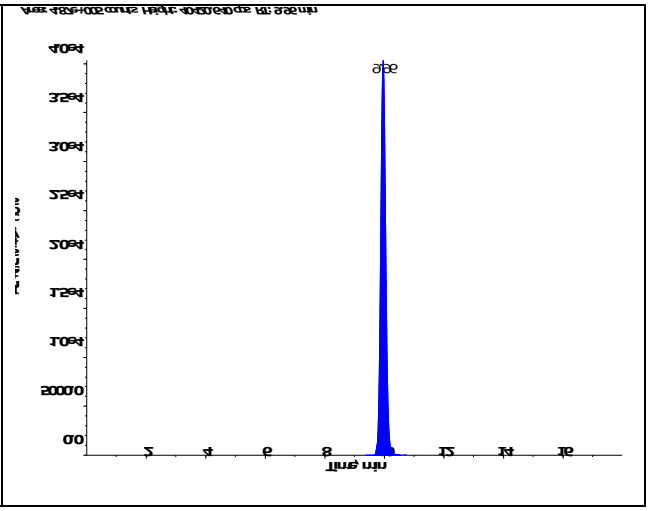

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 10.10 (9.94) min Calculated conc: < 0 ng/ml Area Ratio: 0.003 Sample Type: (Unknown)	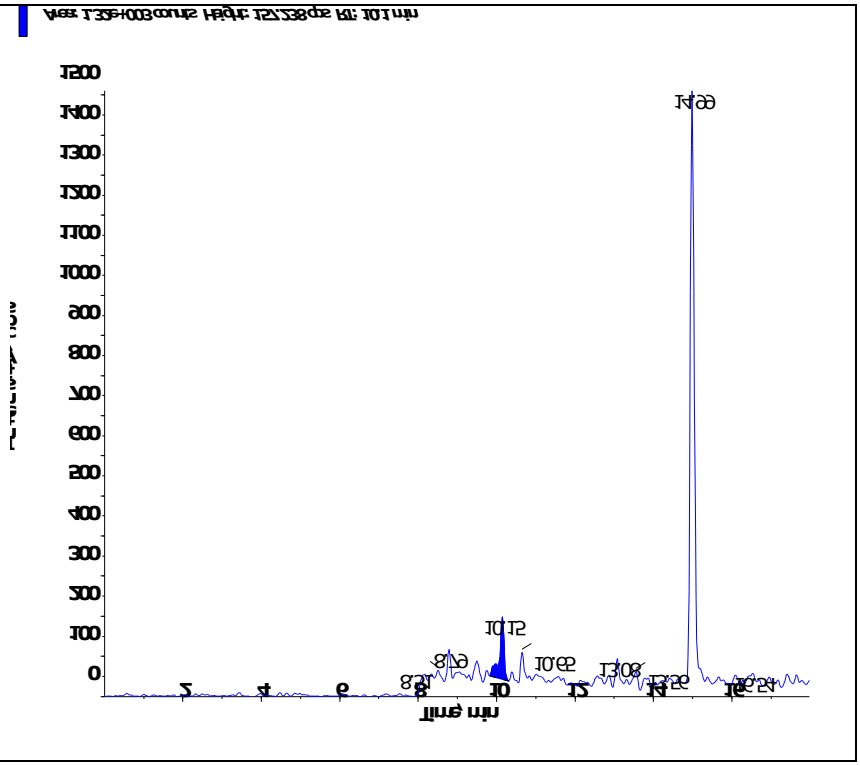
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 10.10 (9.92) min Calculated conc: 0.0035 ng/ml Area Ratio: 0.003 Sample Type: (Unknown)	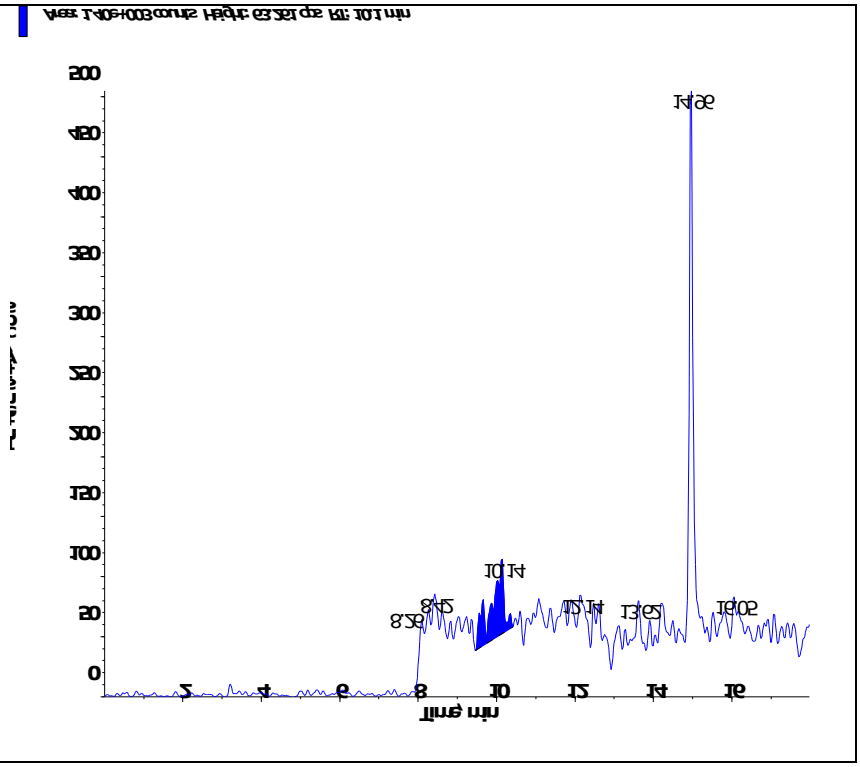

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 3/1/2016 2:32 PM

Data File	LM33480.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/29/2016 9:53:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559142-01 MCT (2.0ug/kg)	**Injection Vial**	26.00
Data File	LM33480.wiff	**Injection Volume**	10.00
Acquisition Date	2/29/2016 9:53:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559142-01	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.060e+05	9.56	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.320e+04	9.57	N/A	0.191
Perchlorate conf	1.150e+04	9.55	N/A	0.181

O18LP (Internal Standard)

RT (Exp. RT): 9.56(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

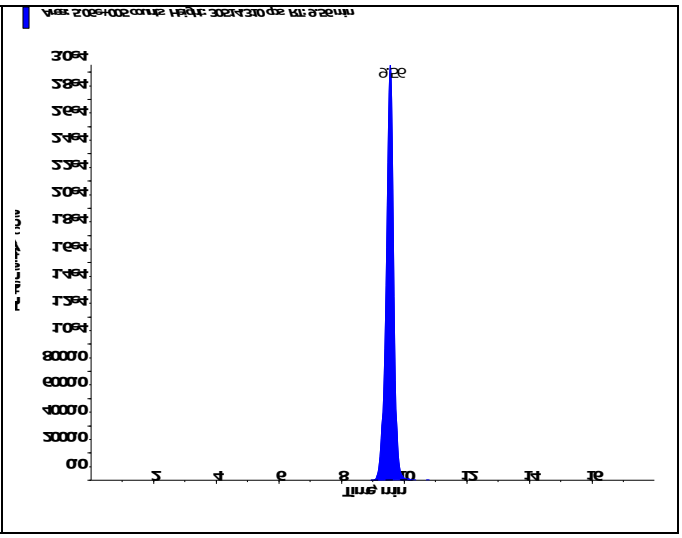

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 3/1/2016 2:32 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.57 (9.94) min Calculated conc: 0.191 ng/ml Area Ratio: 0.066 Sample Type: (Unknown)	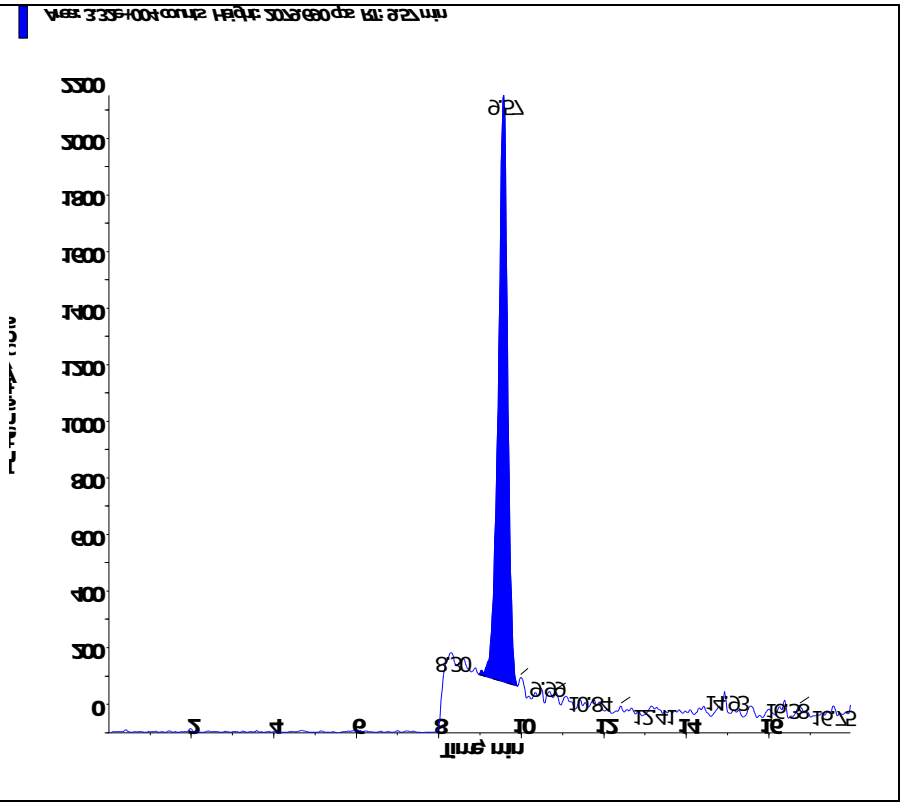
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.55 (9.92) min Calculated conc: 0.181 ng/ml Area Ratio: 0.023 Sample Type: (Unknown)	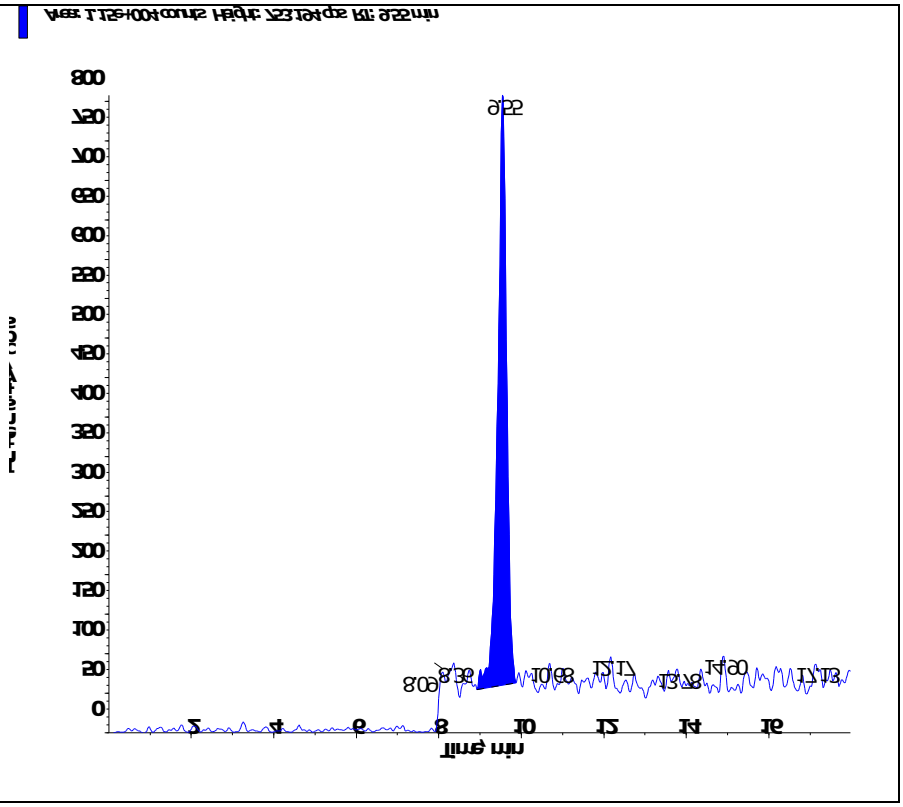

s.dataFile Page 2 of 2

2.2.1.5 Raw QC Data

Applied Biosystems | MDS SCIEX

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Printed: 3/1/2016 2:32 PM

Data File	LM33481.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/29/2016 10:12:12 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559142-02 BLANK	**Injection Vial**	27.00
Data File	LM33481.wiff	**Injection Volume**	10.00
Acquisition Date	2/29/2016 10:12:12 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559142-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.150e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	7.760e+02	9.92	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

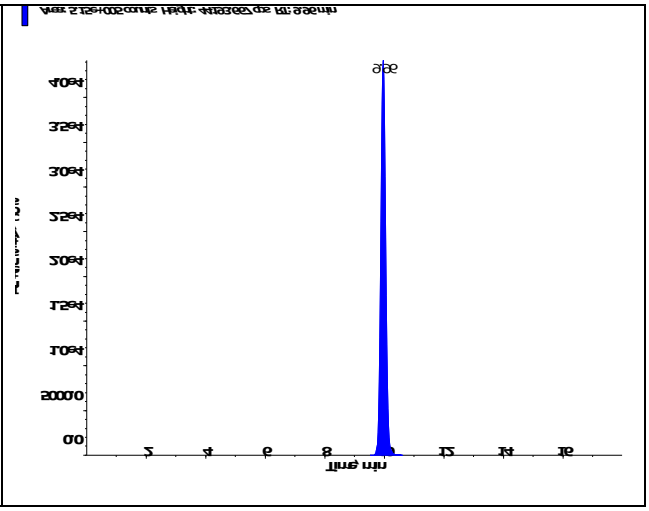

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 3/1/2016 2:32 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.94) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	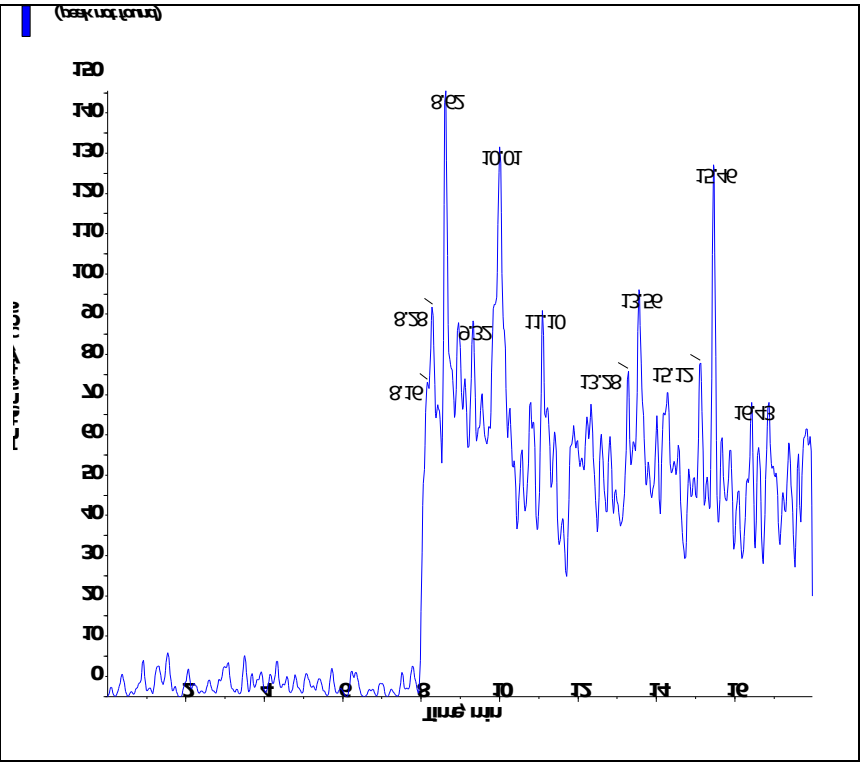
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.92 (9.92) min Calculated conc: < 0 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	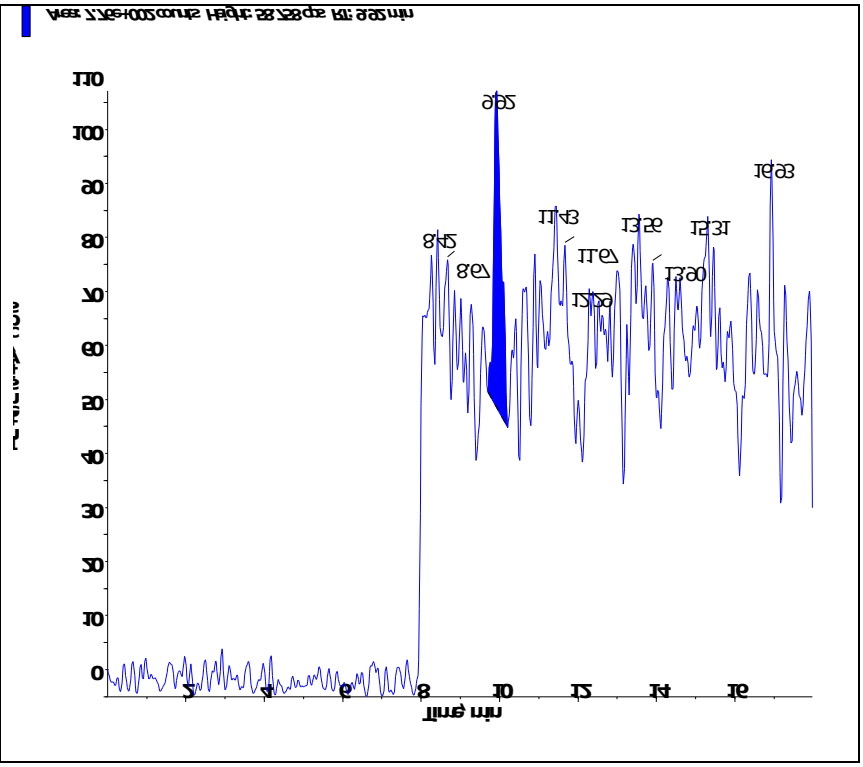

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 3/1/2016 2:33 PM

Data File	LM33482.wiff	**Result Table**	022916_WTD.rdb
Acquisition Date	2/29/2016 10:31:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559142-03 LCS (2.0ug/kg)	**Injection Vial**	28.00
Data File	LM33482.wiff	**Injection Volume**	10.00
Acquisition Date	2/29/2016 10:31:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	022916_WTD.rdb
Sample ID	WG559142-03	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.580e+04	9.97	N/A	0.207
Perchlorate conf	1.280e+04	9.96	N/A	0.204

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

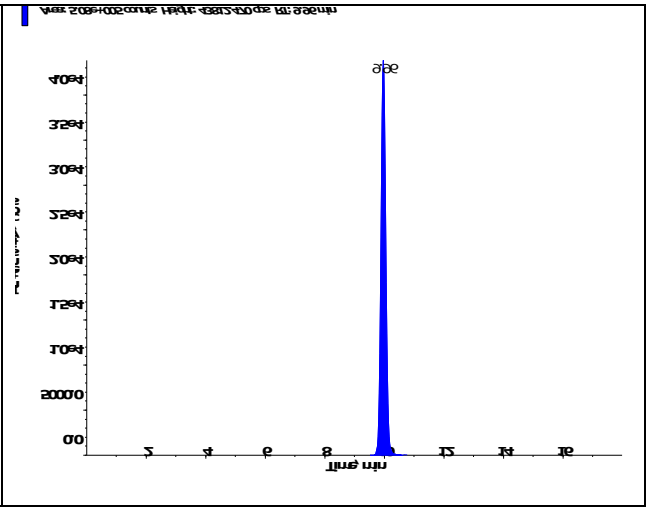

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.97 (9.94) min Calculated conc: 0.207 ng/ml Area Ratio: 0.07 Sample Type: (Unknown)	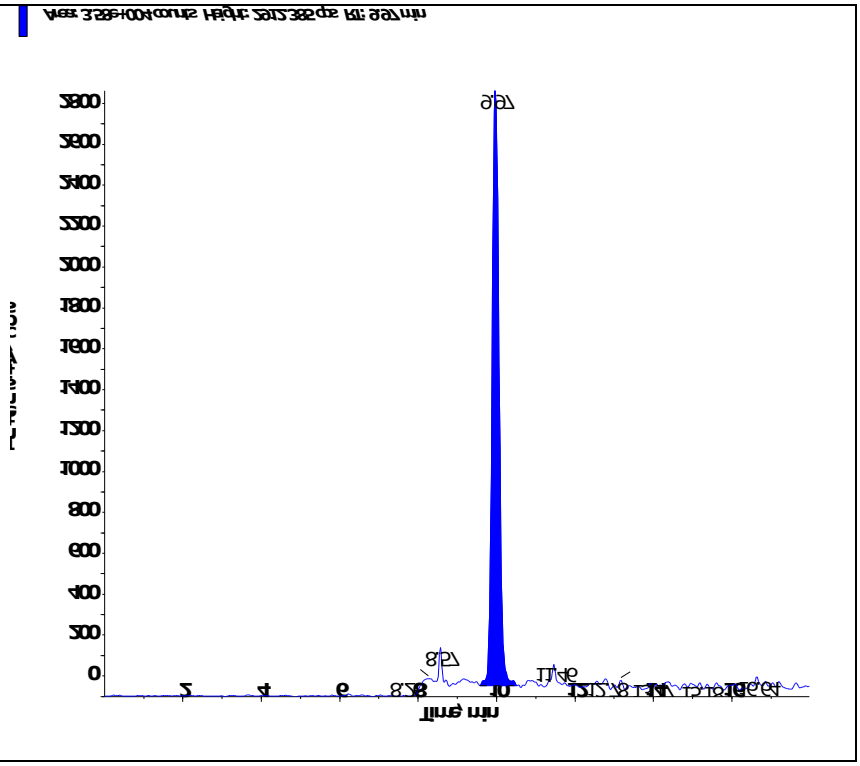
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.96 (9.92) min Calculated conc: 0.204 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	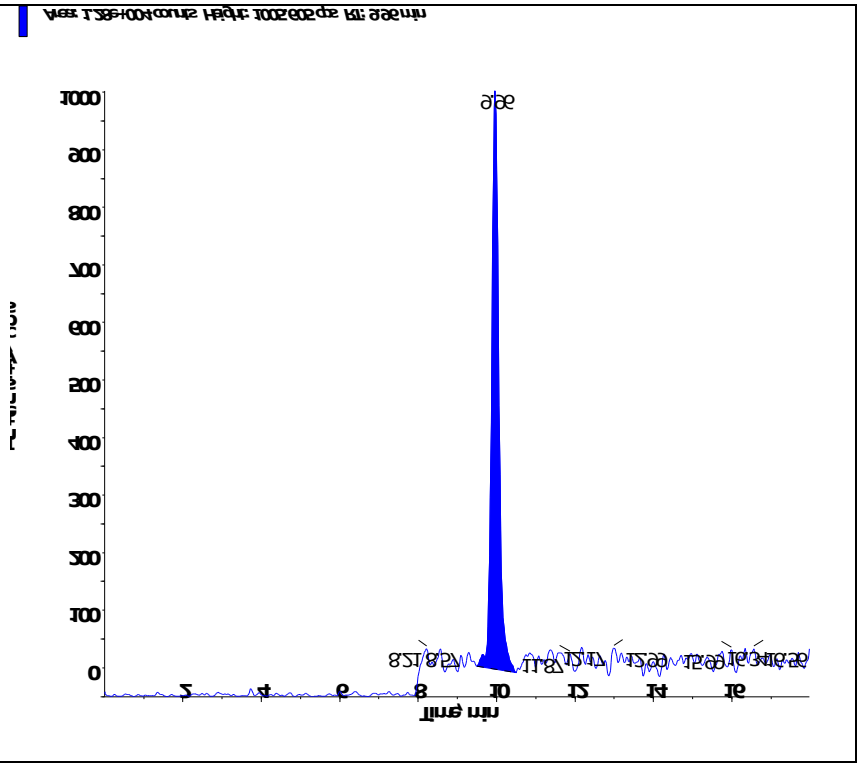

2.3 General Chemistry Data

2.3.1 Percent Solids Data

2.3.1.1 Raw Data

Example Percent Solids Calculations

1.0 Calculating the percent solids of a sample.

$$\%Solids = \frac{WT3 - WT1}{WT2 - WT1} \times F$$

Where:	
WT1 = Weight, in grams, of the empty container	1.30 g
WT2 = Weight, in grams, of the container and wet sample	21.274 g
WT3 = Weight, in grams, of the container and dried sample	5.21 g
F = Factor to get units as percent weight	100
%Solids = Percent solids present in sample.	19.58%

2.0 Calculating the percent moisture of a sample.

% Moisture = 100 - % Solids from 1.0 calculation

Microbac Laboratories Inc.

PERCENT SOLIDS

Workgroup (AAB#): WG559108 Analyst: AC ADT(on): 02/29/2016 13:53
Method: D2216-90 Instrument: BAL021 ADT(off): 03/01/2016 08:01
SOP: K0003 Rev: 14

SAMPLE NUMBER	EMPTY PAN WT 1	WET WT 2	DRY WT 3A	DRY WT 3B	DRY WT 3C	PERCENT SOLID	PERCENT MOISTURE
L16021354-02	1.295	16.623	12.281			71.67	
L16021354-03	1.289	16.412	13.157			78.48	
L16021354-04	1.299	17.74	12.93			70.74	
L16021354-05	1.294	18.333	14.899			79.85	
L16021354-06	1.295	16.451	12.716			75.36	
L16021354-07	1.295	16.451	12.716			75.36	
L16021354-08	1.295	16.451	12.716			75.36	
L16021354-09	1.293	18.074	13.136			70.57	
L16021357-01	1.296	25.752	21.282			81.72	
L16021357-02	1.287	20.884	18.578			88.23	
L16021357-03	1.293	25.373	22.987			90.09	
L16021357-04	1.3	23.612	20.061			84.08	
L16021357-05	1.288	25.903	22.745			87.17	
L16021357-06	1.28	22.506	18.069			79.10	
L16021358-01	1.284	21.033	17.498			82.10	
L16021358-02	1.295	26.216	22.134			83.62	
L16021358-03	1.293	21.007	17.744			83.45	
L16021358-04	1.282	28.108	22.283			78.29	
L16021358-05	1.28	24.692	20.383			81.59	
L16021358-06	1.289	24.186	19.593			79.94	
L16021358-07	1.293	25.604	22.599			87.64	
L16021358-08	1.297	27.046	23.197			85.05	
L16021358-09	1.291	24.875	20.497			81.44	
WG559108-01	1.287	20.884	18.578			88.23	11.77
WG559108-02	1.297	27.046	23.197			85.05	14.95
WG559108-03	1.289	20.044	17.36			85.69	14.31
WG559108-04	1.295	21.346	18.385			85.23	14.77

Analyst: [signature]

PERCENT_SOLIDS - Modified 04/24/2008
PDF ID: 4652109
Report generated: 03/01/2016 08:07

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
March 3, 2016

---

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
March 03, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
March 03, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Stephanie Mossburg	Project Manager: Debra Richmon	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): KAYLA PALLANES	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Kayla Pallanes	Fed Ex Airbill No: 1231 7116 5938	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205			
Turn Around Time: STANDARD	pH:	Program:	
Project Name/Location: Longhorn			
Project Number: 60274185-0013BM41824		ERPIMS REQUIRED FIELDS	

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOCs 8260	PETCHLORATE 6850	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
	18DPT02(5-5.5)260216			2/26/16	0835		X	S	2	X	X					
	18DPT02(10-10.5)260216			2/26/16	0842		X	S	2	X	X					
	18DPT02(10-10.5)260216 ~~[illegible]~~		FD	2/26/16	0842		X	S	2	X	X					
	18DPT02(15-15.5)260216			2/26/16	0900		X	S	2	X	X					
	18DPT02(22-22.5)260216			2/26/16	0915		X	S	2	X	X					
	18DPT03(5-5.5)260216			2/26/16	1115		X	S	2	X	X					
	18DPT03(10-10.5)260216			2/26/16	1117		X	S	2	X	X					
	18DPT03(14.5-15)260216			2/26/16	1119		X	S	2	X	X					
	18DPT03(17.5-18)260216			2/26/16	1121		X	S	2	X	X					

Microbac OVD
Received: 02/27/2016 10:39
By: CARA STRICKLER 221000082531
Cara Strickler

Comments: ~~STANDARD TAT~~ 48 HR TAT

Relinquished by: (Signature) Kayla Pallanes	Date 2/26/16	Time 1200	Received by: (Signature)	Received by: (Signature)	Date / Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time	Remarks:

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16021358
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 02-MAR-2016

Samplenum	Container ID	Products
L16021358-01	706587	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-FEB-2016 11:06	CLS		
2	ANALYZ	V1	ORG4	28-FEB-2016 11:22	AWE	CLS	

Samplenum	Container ID	Products
L16021358-01	706588	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-FEB-2016 11:06	CLS		
2	ANALYZ	W1	SEM	29-FEB-2016 11:09	AWE	CLS	
3	STORE	DIG	A1	29-FEB-2016 15:12	BRG	ERP	

Samplenum	Container ID	Products
L16021358-02	706589	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-FEB-2016 11:06	CLS		
2	ANALYZ	V1	ORG4	28-FEB-2016 11:22	AWE	CLS	

Samplenum	Container ID	Products
L16021358-02	706590	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-FEB-2016 11:06	CLS		
2	ANALYZ	W1	SEM	29-FEB-2016 11:09	AWE	CLS	
3	STORE	DIG	A1	29-FEB-2016 15:12	BRG	ERP	

Samplenum	Container ID	Products
L16021358-03	706591	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-FEB-2016 11:06	CLS		
2	ANALYZ	V1	ORG4	28-FEB-2016 11:22	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16021358
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 02-MAR-2016

Samplenum	Container ID	Products
L16021358-03	706592	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-FEB-2016 11:06	CLS		
2	ANALYZ	W1	SEM	29-FEB-2016 11:09	AWE	CLS	
3	STORE	DIG	A1	29-FEB-2016 15:12	BRG	ERP	

Samplenum	Container ID	Products
L16021358-04	706593	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-FEB-2016 11:06	CLS		
2	ANALYZ	V1	ORG4	28-FEB-2016 11:22	AWE	CLS	

Samplenum	Container ID	Products
L16021358-04	706594	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-FEB-2016 11:06	CLS		
2	ANALYZ	W1	SEM	29-FEB-2016 11:10	AWE	CLS	
3	STORE	DIG	A1	29-FEB-2016 15:12	BRG	ERP	

Samplenum	Container ID	Products
L16021358-05	706595	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-FEB-2016 11:06	CLS		
2	ANALYZ	V1	ORG4	28-FEB-2016 11:22	AWE	CLS	

Samplenum	Container ID	Products
L16021358-05	706596	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-FEB-2016 11:06	CLS		
2	ANALYZ	W1	SEM	29-FEB-2016 11:10	AWE	CLS	
3	STORE	DIG	A1	29-FEB-2016 15:12	BRG	ERP	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16021358
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 02-MAR-2016

Samplenum	Container ID	Products
L16021358-06	706597	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-FEB-2016 11:06	CLS		
2	ANALYZ	V1	ORG4	28-FEB-2016 11:22	AWE	CLS	

Samplenum	Container ID	Products
L16021358-06	706598	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-FEB-2016 11:06	CLS		
2	ANALYZ	W1	SEM	29-FEB-2016 11:10	AWE	CLS	
3	STORE	DIG	A1	29-FEB-2016 15:12	BRG	ERP	

Samplenum	Container ID	Products
L16021358-07	706599	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-FEB-2016 11:06	CLS		
2	ANALYZ	V1	ORG4	28-FEB-2016 11:22	AWE	CLS	

Samplenum	Container ID	Products
L16021358-07	706600	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	DIG	27-FEB-2016 11:06	CLS		
2	STORE	DIG	A1	29-FEB-2016 15:12	BRG	ERP	

Samplenum	Container ID	Products
L16021358-08	706601	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-FEB-2016 11:06	CLS		
2	ANALYZ	V1	ORG4	28-FEB-2016 11:22	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16021358
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 02-MAR-2016

Samplenum	Container ID	Products
L16021358-08	706602	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-FEB-2016 11:06	CLS		
2	ANALYZ	W1	SEM	29-FEB-2016 11:10	AWE	CLS	
3	STORE	DIG	A1	29-FEB-2016 15:12	BRG	ERP	

Samplenum	Container ID	Products
L16021358-09	706603	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	27-FEB-2016 11:06	CLS		
2	ANALYZ	V1	ORG4	28-FEB-2016 11:22	AWE	CLS	

Samplenum	Container ID	Products
L16021358-09	706604	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	27-FEB-2016 11:06	CLS		
2	ANALYZ	W1	SEM	29-FEB-2016 11:09	AWE	CLS	
3	STORE	DIG	A1	29-FEB-2016 15:12	BRG	ERP	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16030134

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on March 10 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00113008	I	0.0		J2317165910	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	NA
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	NA

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18DPT06(5-5.5)020316	L16030134-01	03/02/2016 08:58	03/03/2016 09:52
18DPT06(5-5.5)020316FD	L16030134-02	03/02/2016 08:58	03/03/2016 09:52
18DPT06(15-15.5)020316	L16030134-03	03/02/2016 10:35	03/03/2016 09:52
18DPT06(20-20.5)020316	L16030134-04	03/02/2016 11:11	03/03/2016 09:52
18DPT06(27.5-28)020316	L16030134-05	03/02/2016 12:05	03/03/2016 09:52
18DPT06(38.5-39)020316	L16030134-06	03/02/2016 15:00	03/03/2016 09:52

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16030134
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030134
Project Name:		**Method:**	8260
Prep Batch Number(s):	559859	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-10 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2016-03-10 15:57:36

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030134
Project Name:		**Method:**	8260
Prep Batch Number(s):	559859	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-10 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				
Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030134
Project Name:		**Method:**	8260
Prep Batch Number(s):	559859	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-10 00:00:00		

Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				
Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030134
Project Name:		**Method:**	8260
Prep Batch Number(s):	559859	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-10 00:00:00		

Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?		X			1
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					
Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030134
Project Name:		**Method:**	8260
Prep Batch Number(s):	559859	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-10 00:00:00		

Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1)Dichlorodifluoromethane exceeded the UCL in the ICV.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030134
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559621	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-07 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-03-07 19:36:01

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030134
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559621	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-07 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030134
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559621	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-07 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			1
Were MS/MSD RPDs within laboratory QC limits?		X			1
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030134
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559621	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-07 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030134
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559621	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-07 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030134
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559621	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-07 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. The MS failed high and the MSD failed low due to the presence of a large amount of perchlorate in the reference sample.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030134
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559579	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-04 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2016-03-04 14:27:48

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030134
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559579	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-04 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?			X		
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?			X		
Were sample detection limits reported for all analytes not detected?			X		
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?			X		
Were blanks analyzed at the appropriate frequency?			X		
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?			X		
Were blank concentrations < MQL?			X		
Laboratory control samples (LCS):			X		
Were all COCs included in the LCS?			X		

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030134
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559579	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-04 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?			X		
Were LCSs analyzed at the required frequency?			X		
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?			X		
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?			X		
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?			X		
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?			X		
Are unadjusted MQLs and DCSs included in the laboratory data package?			X		
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?			X		
Were percent RSDs or correlation coefficient criteria met?			X		

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030134
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559579	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-04 00:00:00		

Was the number of standards recommended in the method used for all analytes?			X		
Were all points generated between the lowest and highest standard used to calculate the curve?			X		
Are ICAL data available for all instruments used?			X		
Has the initial calibration curve been verified using an appropriate second source standard?			X		
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030134
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559579	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-04 00:00:00		

Was a MDL study performed for each reported analyte?			X		
Is the MDL either adjusted or supported by the analysis of DCSs?			X		
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?			X		
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030134
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559579	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-04 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030134-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT06(5-5.5)020316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 12:56
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559859	**Analyst:**	ADC	**Run Date:**	03/06/2016 18:28
Collect Date:	03/02/2016 08:58	**Dilution:**	1	**File ID:**	9M973104
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.4	U	26.8	13.4	6.70
Benzene	71-43-2	1.34	U	6.70	1.34	0.670
Bromobenzene	108-86-1	1.34	U	6.70	1.34	0.670
Bromochloromethane	74-97-5	2.68	U	6.70	2.68	1.34
Bromodichloromethane	75-27-4	1.34	U	6.70	1.34	0.670
Bromoform	75-25-2	1.34	U	6.70	1.34	0.670
Bromomethane	74-83-9	2.68	U	6.70	2.68	1.34
2-Butanone	78-93-3	6.70	U	13.4	6.70	3.35
n-Butylbenzene	104-51-8	1.34	U	6.70	1.34	0.670
sec-Butylbenzene	135-98-8	1.34	U	6.70	1.34	0.670
tert-Butylbenzene	98-06-6	1.34	U	6.70	1.34	0.670
Carbon disulfide	75-15-0	1.34	U	6.70	1.34	0.670
Carbon tetrachloride	56-23-5	1.34	U	6.70	1.34	0.670
Chlorobenzene	108-90-7	1.34	U	6.70	1.34	0.670
Chlorodibromomethane	124-48-1	1.34	U	6.70	1.34	0.670
Chloroethane	75-00-3	2.68	U	6.70	2.68	1.34
Chloroform	67-66-3	1.34	U	6.70	1.34	0.670
Chloromethane	74-87-3	5.36	U	13.4	5.36	2.68
2-Chlorotoluene	95-49-8	1.34	U	6.70	1.34	0.670
4-Chlorotoluene	106-43-4	1.34	U	6.70	1.34	0.670
1,2-Dibromo-3-chloropropane	96-12-8	5.36	U	13.4	5.36	2.68
1,2-Dibromoethane	106-93-4	1.34	U	6.70	1.34	0.670
Dibromomethane	74-95-3	1.34	U	6.70	1.34	0.670
1,2-Dichlorobenzene	95-50-1	1.34	U	6.70	1.34	0.670
1,3-Dichlorobenzene	541-73-1	1.34	U	6.70	1.34	0.670
1,4-Dichlorobenzene	106-46-7	1.34	U	6.70	1.34	0.670
Dichlorodifluoromethane	75-71-8	2.68	U	6.70	2.68	1.34
1,1-Dichloroethane	75-34-3	2.68	U	6.70	2.68	1.34
1,2-Dichloroethane	107-06-2	1.34	U	6.70	1.34	0.670
1,1-Dichloroethene	75-35-4	1.34	U	6.70	1.34	0.670
cis-1,2-Dichloroethene	156-59-2	1.34	U	6.70	1.34	0.670
trans-1,2-Dichloroethene	156-60-5	1.34	U	6.70	1.34	0.670

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.34	U	6.70	1.34	0.670
1,3-Dichloropropane	142-28-9	1.34	U	6.70	1.34	0.670
2,2-Dichloropropane	594-20-7	1.34	U	6.70	1.34	0.670
cis-1,3-Dichloropropene	10061-01-5	1.34	U	6.70	1.34	0.670
trans-1,3-Dichloropropene	10061-02-6	1.34	U	6.70	1.34	0.670
1,1-Dichloropropene	563-58-6	1.34	U	6.70	1.34	0.670
Ethylbenzene	100-41-4	1.34	U	6.70	1.34	0.670
2-Hexanone	591-78-6	6.70	U	13.4	6.70	3.35
Hexachlorobutadiene	87-68-3	1.34	U	6.70	1.34	0.670
Isopropylbenzene	98-82-8	1.34	U	6.70	1.34	0.670
p-Isopropyltoluene	99-87-6	1.34	U	6.70	1.34	0.670
4-Methyl-2-pentanone	108-10-1	6.70	U	13.4	6.70	3.35
Methylene chloride	75-09-2	2.68	U	6.70	2.68	1.34
Naphthalene	91-20-3	1.34	U	6.70	1.34	0.670
n-Propylbenzene	103-65-1	1.34	U	6.70	1.34	0.670
Styrene	100-42-5	1.34	U	6.70	1.34	0.670
1,1,1,2-Tetrachloroethane	630-20-6	1.34	U	6.70	1.34	0.670
1,1,2,2-Tetrachloroethane	79-34-5	1.34	U	6.70	1.34	0.670
Tetrachloroethene	127-18-4	1.34	U	6.70	1.34	0.670
Toluene	108-88-3	1.34	U	6.70	1.34	0.670
1,2,3-Trichlorobenzene	87-61-6	1.34	U	6.70	1.34	0.670
1,2,4-Trichlorobenzene	120-82-1	1.34	U	6.70	1.34	0.670
1,1,1-Trichloroethane	71-55-6	1.34	U	6.70	1.34	0.670
1,1,2-Trichloroethane	79-00-5	1.34	U	6.70	1.34	0.670
Trichloroethene	79-01-6	1.34	U	6.70	1.34	0.670
Trichlorofluoromethane	75-69-4	2.68	U	6.70	2.68	1.34
1,2,3-Trichloropropane	96-18-4	2.68	U	6.70	2.68	1.34
1,2,4-Trimethylbenzene	95-63-6	1.34	U	6.70	1.34	0.670
1,3,5-Trimethylbenzene	108-67-8	1.34	U	6.70	1.34	0.670
Vinyl chloride	75-01-4	2.68	U	6.70	2.68	1.34
o-Xylene	95-47-6	1.34	U	6.70	1.34	0.670
m-,p-Xylene	179601-23-1	1.34	U	6.70	1.34	0.670

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.2	80	120	
1,2-Dichloroethane-d4	93.9	80	120	
Toluene-d8	97.7	85	115	
4-Bromofluorobenzene	101	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030134-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT06(5-5.5)020316	**Prep Method:**	6850	**Prep Date:**	03/03/2016 17:43
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559621	**Analyst:**	WTD	**Run Date:**	03/03/2016 19:37
Collect Date:	03/02/2016 08:58	**Dilution:**	1	**File ID:**	1LM.LM33660
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.42	U	4.84	2.42	1.21

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030134-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT06(5-5.5)020316FD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 12:56
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559859	**Analyst:**	ADC	**Run Date:**	03/06/2016 18:59
Collect Date:	03/02/2016 08:58	**Dilution:**	1	**File ID:**	9M973105
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.0	U	23.9	12.0	5.98
Benzene	71-43-2	1.20	U	5.98	1.20	0.598
Bromobenzene	108-86-1	1.20	U	5.98	1.20	0.598
Bromochloromethane	74-97-5	2.40	U	5.98	2.40	1.20
Bromodichloromethane	75-27-4	1.20	U	5.98	1.20	0.598
Bromoform	75-25-2	1.20	U	5.98	1.20	0.598
Bromomethane	74-83-9	2.40	U	5.98	2.40	1.20
2-Butanone	78-93-3	5.98	U	12.0	5.98	2.99
n-Butylbenzene	104-51-8	1.20	U	5.98	1.20	0.598
sec-Butylbenzene	135-98-8	1.20	U	5.98	1.20	0.598
tert-Butylbenzene	98-06-6	1.20	U	5.98	1.20	0.598
Carbon disulfide	75-15-0	1.20	U	5.98	1.20	0.598
Carbon tetrachloride	56-23-5	1.20	U	5.98	1.20	0.598
Chlorobenzene	108-90-7	1.20	U	5.98	1.20	0.598
Chlorodibromomethane	124-48-1	1.20	U	5.98	1.20	0.598
Chloroethane	75-00-3	2.40	U	5.98	2.40	1.20
Chloroform	67-66-3	1.20	U	5.98	1.20	0.598
Chloromethane	74-87-3	4.78	U	12.0	4.78	2.39
2-Chlorotoluene	95-49-8	1.20	U	5.98	1.20	0.598
4-Chlorotoluene	106-43-4	1.20	U	5.98	1.20	0.598
1,2-Dibromo-3-chloropropane	96-12-8	4.78	U	12.0	4.78	2.39
1,2-Dibromoethane	106-93-4	1.20	U	5.98	1.20	0.598
Dibromomethane	74-95-3	1.20	U	5.98	1.20	0.598
1,2-Dichlorobenzene	95-50-1	1.20	U	5.98	1.20	0.598
1,3-Dichlorobenzene	541-73-1	1.20	U	5.98	1.20	0.598
1,4-Dichlorobenzene	106-46-7	1.20	U	5.98	1.20	0.598
Dichlorodifluoromethane	75-71-8	2.40	U	5.98	2.40	1.20
1,1-Dichloroethane	75-34-3	2.40	U	5.98	2.40	1.20
1,2-Dichloroethane	107-06-2	1.20	U	5.98	1.20	0.598
1,1-Dichloroethene	75-35-4	1.20	U	5.98	1.20	0.598
cis-1,2-Dichloroethene	156-59-2	1.20	U	5.98	1.20	0.598

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.20	U	5.98	1.20	0.598
1,2-Dichloropropane	78-87-5	1.20	U	5.98	1.20	0.598
1,3-Dichloropropane	142-28-9	1.20	U	5.98	1.20	0.598
2,2-Dichloropropane	594-20-7	1.20	U	5.98	1.20	0.598
cis-1,3-Dichloropropene	10061-01-5	1.20	U	5.98	1.20	0.598
trans-1,3-Dichloropropene	10061-02-6	1.20	U	5.98	1.20	0.598
1,1-Dichloropropene	563-58-6	1.20	U	5.98	1.20	0.598
Ethylbenzene	100-41-4	1.20	U	5.98	1.20	0.598
2-Hexanone	591-78-6	5.98	U	12.0	5.98	2.99
Hexachlorobutadiene	87-68-3	1.20	U	5.98	1.20	0.598
Isopropylbenzene	98-82-8	1.20	U	5.98	1.20	0.598
p-Isopropyltoluene	99-87-6	1.20	U	5.98	1.20	0.598
4-Methyl-2-pentanone	108-10-1	5.98	U	12.0	5.98	2.99
Methylene chloride	75-09-2	2.40	U	5.98	2.40	1.20
Naphthalene	91-20-3	1.20	U	5.98	1.20	0.598
n-Propylbenzene	103-65-1	1.20	U	5.98	1.20	0.598
Styrene	100-42-5	1.20	U	5.98	1.20	0.598
1,1,1,2-Tetrachloroethane	630-20-6	1.20	U	5.98	1.20	0.598
1,1,2,2-Tetrachloroethane	79-34-5	1.20	U	5.98	1.20	0.598
Tetrachloroethene	127-18-4	1.20	U	5.98	1.20	0.598
Toluene	108-88-3	1.20	U	5.98	1.20	0.598
1,2,3-Trichlorobenzene	87-61-6	1.20	U	5.98	1.20	0.598
1,2,4-Trichlorobenzene	120-82-1	1.20	U	5.98	1.20	0.598
1,1,1-Trichloroethane	71-55-6	1.20	U	5.98	1.20	0.598
1,1,2-Trichloroethane	79-00-5	1.20	U	5.98	1.20	0.598
Trichloroethene	79-01-6	1.20	U	5.98	1.20	0.598
Trichlorofluoromethane	75-69-4	2.40	U	5.98	2.40	1.20
1,2,3-Trichloropropane	96-18-4	2.40	U	5.98	2.40	1.20
1,2,4-Trimethylbenzene	95-63-6	1.20	U	5.98	1.20	0.598
1,3,5-Trimethylbenzene	108-67-8	1.20	U	5.98	1.20	0.598
Vinyl chloride	75-01-4	2.40	U	5.98	2.40	1.20
o-Xylene	95-47-6	1.20	U	5.98	1.20	0.598
m-,p-Xylene	179601-23-1	1.20	U	5.98	1.20	0.598

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.7	80	120	
1,2-Dichloroethane-d4	95.7	80	120	
Toluene-d8	99.3	85	115	
4-Bromofluorobenzene	102	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030134-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT06(5-5.5)020316FD	**Prep Method:**	6850	**Prep Date:**	03/03/2016 17:43
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559621	**Analyst:**	WTD	**Run Date:**	03/03/2016 19:56
Collect Date:	03/02/2016 08:58	**Dilution:**	1	**File ID:**	1LM.LM33661
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.46	U	4.94	2.46	1.23

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030134-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT06(15-15.5)020316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 12:57
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559859	**Analyst:**	ADC	**Run Date:**	03/06/2016 19:29
Collect Date:	03/02/2016 10:35	**Dilution:**	1	**File ID:**	9M973106
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	88.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.5	U	23.0	11.5	5.74
Benzene	71-43-2	1.15	U	5.74	1.15	0.574
Bromobenzene	108-86-1	1.15	U	5.74	1.15	0.574
Bromochloromethane	74-97-5	2.30	U	5.74	2.30	1.15
Bromodichloromethane	75-27-4	1.15	U	5.74	1.15	0.574
Bromoform	75-25-2	1.15	U	5.74	1.15	0.574
Bromomethane	74-83-9	2.30	U	5.74	2.30	1.15
2-Butanone	78-93-3	5.74	U	11.5	5.74	2.87
n-Butylbenzene	104-51-8	1.15	U	5.74	1.15	0.574
sec-Butylbenzene	135-98-8	1.15	U	5.74	1.15	0.574
tert-Butylbenzene	98-06-6	1.15	U	5.74	1.15	0.574
Carbon disulfide	75-15-0	1.15	U	5.74	1.15	0.574
Carbon tetrachloride	56-23-5	1.15	U	5.74	1.15	0.574
Chlorobenzene	108-90-7	1.15	U	5.74	1.15	0.574
Chlorodibromomethane	124-48-1	1.15	U	5.74	1.15	0.574
Chloroethane	75-00-3	2.30	U	5.74	2.30	1.15
Chloroform	67-66-3	1.15	U	5.74	1.15	0.574
Chloromethane	74-87-3	4.60	U	11.5	4.60	2.30
2-Chlorotoluene	95-49-8	1.15	U	5.74	1.15	0.574
4-Chlorotoluene	106-43-4	1.15	U	5.74	1.15	0.574
1,2-Dibromo-3-chloropropane	96-12-8	4.60	U	11.5	4.60	2.30
1,2-Dibromoethane	106-93-4	1.15	U	5.74	1.15	0.574
Dibromomethane	74-95-3	1.15	U	5.74	1.15	0.574
1,2-Dichlorobenzene	95-50-1	1.15	U	5.74	1.15	0.574
1,3-Dichlorobenzene	541-73-1	1.15	U	5.74	1.15	0.574
1,4-Dichlorobenzene	106-46-7	1.15	U	5.74	1.15	0.574
Dichlorodifluoromethane	75-71-8	2.30	U	5.74	2.30	1.15
1,1-Dichloroethane	75-34-3	2.30	U	5.74	2.30	1.15
1,2-Dichloroethane	107-06-2	1.15	U	5.74	1.15	0.574
1,1-Dichloroethene	75-35-4	1.15	U	5.74	1.15	0.574
cis-1,2-Dichloroethene	156-59-2	1.15	U	5.74	1.15	0.574

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.15	U	5.74	1.15	0.574
1,2-Dichloropropane	78-87-5	1.15	U	5.74	1.15	0.574
1,3-Dichloropropane	142-28-9	1.15	U	5.74	1.15	0.574
2,2-Dichloropropane	594-20-7	1.15	U	5.74	1.15	0.574
cis-1,3-Dichloropropene	10061-01-5	1.15	U	5.74	1.15	0.574
trans-1,3-Dichloropropene	10061-02-6	1.15	U	5.74	1.15	0.574
1,1-Dichloropropene	563-58-6	1.15	U	5.74	1.15	0.574
Ethylbenzene	100-41-4	1.15	U	5.74	1.15	0.574
2-Hexanone	591-78-6	5.74	U	11.5	5.74	2.87
Hexachlorobutadiene	87-68-3	1.15	U	5.74	1.15	0.574
Isopropylbenzene	98-82-8	1.15	U	5.74	1.15	0.574
p-Isopropyltoluene	99-87-6	1.15	U	5.74	1.15	0.574
4-Methyl-2-pentanone	108-10-1	5.74	U	11.5	5.74	2.87
Methylene chloride	75-09-2	2.30	U	5.74	2.30	1.15
Naphthalene	91-20-3	1.15	U	5.74	1.15	0.574
n-Propylbenzene	103-65-1	1.15	U	5.74	1.15	0.574
Styrene	100-42-5	1.15	U	5.74	1.15	0.574
1,1,1,2-Tetrachloroethane	630-20-6	1.15	U	5.74	1.15	0.574
1,1,2,2-Tetrachloroethane	79-34-5	1.15	U	5.74	1.15	0.574
Tetrachloroethene	127-18-4	1.15	U	5.74	1.15	0.574
Toluene	108-88-3	1.15	U	5.74	1.15	0.574
1,2,3-Trichlorobenzene	87-61-6	1.15	U	5.74	1.15	0.574
1,2,4-Trichlorobenzene	120-82-1	1.15	U	5.74	1.15	0.574
1,1,1-Trichloroethane	71-55-6	1.15	U	5.74	1.15	0.574
1,1,2-Trichloroethane	79-00-5	1.15	U	5.74	1.15	0.574
Trichloroethene	79-01-6	1.15	U	5.74	1.15	0.574
Trichlorofluoromethane	75-69-4	2.30	U	5.74	2.30	1.15
1,2,3-Trichloropropane	96-18-4	2.30	U	5.74	2.30	1.15
1,2,4-Trimethylbenzene	95-63-6	1.15	U	5.74	1.15	0.574
1,3,5-Trimethylbenzene	108-67-8	1.15	U	5.74	1.15	0.574
Vinyl chloride	75-01-4	2.30	U	5.74	2.30	1.15
o-Xylene	95-47-6	1.15	U	5.74	1.15	0.574
m-,p-Xylene	179601-23-1	1.15	U	5.74	1.15	0.574

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.2	80	120	
1,2-Dichloroethane-d4	97.0	80	120	
Toluene-d8	99.0	85	115	
4-Bromofluorobenzene	99.4	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030134-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT06(15-15.5)020316	**Prep Method:**	6850	**Prep Date:**	03/03/2016 17:43
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559621	**Analyst:**	WTD	**Run Date:**	03/03/2016 20:15
Collect Date:	03/02/2016 10:35	**Dilution:**	1	**File ID:**	1LM.LM33662
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	88.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.26	U	4.52	2.26	1.13

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030134-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT06(20-20.5)020316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 12:58
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559859	**Analyst:**	ADC	**Run Date:**	03/06/2016 20:00
Collect Date:	03/02/2016 11:11	**Dilution:**	1	**File ID:**	9M973107
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.8	U	25.6	12.8	6.39
Benzene	71-43-2	1.28	U	6.39	1.28	0.639
Bromobenzene	108-86-1	1.28	U	6.39	1.28	0.639
Bromochloromethane	74-97-5	2.56	U	6.39	2.56	1.28
Bromodichloromethane	75-27-4	1.28	U	6.39	1.28	0.639
Bromoform	75-25-2	1.28	U	6.39	1.28	0.639
Bromomethane	74-83-9	2.56	U	6.39	2.56	1.28
2-Butanone	78-93-3	6.40	U	12.8	6.40	3.20
n-Butylbenzene	104-51-8	1.28	U	6.39	1.28	0.639
sec-Butylbenzene	135-98-8	1.28	U	6.39	1.28	0.639
tert-Butylbenzene	98-06-6	1.28	U	6.39	1.28	0.639
Carbon disulfide	75-15-0	1.28	U	6.39	1.28	0.639
Carbon tetrachloride	56-23-5	1.28	U	6.39	1.28	0.639
Chlorobenzene	108-90-7	1.28	U	6.39	1.28	0.639
Chlorodibromomethane	124-48-1	1.28	U	6.39	1.28	0.639
Chloroethane	75-00-3	2.56	U	6.39	2.56	1.28
Chloroform	67-66-3	1.28	U	6.39	1.28	0.639
Chloromethane	74-87-3	5.12	U	12.8	5.12	2.56
2-Chlorotoluene	95-49-8	1.28	U	6.39	1.28	0.639
4-Chlorotoluene	106-43-4	1.28	U	6.39	1.28	0.639
1,2-Dibromo-3-chloropropane	96-12-8	5.12	U	12.8	5.12	2.56
1,2-Dibromoethane	106-93-4	1.28	U	6.39	1.28	0.639
Dibromomethane	74-95-3	1.28	U	6.39	1.28	0.639
1,2-Dichlorobenzene	95-50-1	1.28	U	6.39	1.28	0.639
1,3-Dichlorobenzene	541-73-1	1.28	U	6.39	1.28	0.639
1,4-Dichlorobenzene	106-46-7	1.28	U	6.39	1.28	0.639
Dichlorodifluoromethane	75-71-8	2.56	U	6.39	2.56	1.28
1,1-Dichloroethane	75-34-3	2.56	U	6.39	2.56	1.28
1,2-Dichloroethane	107-06-2	1.28	U	6.39	1.28	0.639
1,1-Dichloroethene	75-35-4	1.28	U	6.39	1.28	0.639
cis-1,2-Dichloroethene	156-59-2	1.28	U	6.39	1.28	0.639

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.28	U	6.39	1.28	0.639
1,2-Dichloropropane	78-87-5	1.28	U	6.39	1.28	0.639
1,3-Dichloropropane	142-28-9	1.28	U	6.39	1.28	0.639
2,2-Dichloropropane	594-20-7	1.28	U	6.39	1.28	0.639
cis-1,3-Dichloropropene	10061-01-5	1.28	U	6.39	1.28	0.639
trans-1,3-Dichloropropene	10061-02-6	1.28	U	6.39	1.28	0.639
1,1-Dichloropropene	563-58-6	1.28	U	6.39	1.28	0.639
Ethylbenzene	100-41-4	1.28	U	6.39	1.28	0.639
2-Hexanone	591-78-6	6.40	U	12.8	6.40	3.20
Hexachlorobutadiene	87-68-3	1.28	U	6.39	1.28	0.639
Isopropylbenzene	98-82-8	1.28	U	6.39	1.28	0.639
p-Isopropyltoluene	99-87-6	1.28	U	6.39	1.28	0.639
4-Methyl-2-pentanone	108-10-1	6.40	U	12.8	6.40	3.20
Methylene chloride	75-09-2	2.56	U	6.39	2.56	1.28
Naphthalene	91-20-3	1.28	U	6.39	1.28	0.639
n-Propylbenzene	103-65-1	1.28	U	6.39	1.28	0.639
Styrene	100-42-5	1.28	U	6.39	1.28	0.639
1,1,1,2-Tetrachloroethane	630-20-6	1.28	U	6.39	1.28	0.639
1,1,2,2-Tetrachloroethane	79-34-5	1.28	U	6.39	1.28	0.639
Tetrachloroethene	127-18-4	1.28	U	6.39	1.28	0.639
Toluene	108-88-3	1.28	U	6.39	1.28	0.639
1,2,3-Trichlorobenzene	87-61-6	1.28	U	6.39	1.28	0.639
1,2,4-Trichlorobenzene	120-82-1	1.28	U	6.39	1.28	0.639
1,1,1-Trichloroethane	71-55-6	1.28	U	6.39	1.28	0.639
1,1,2-Trichloroethane	79-00-5	1.28	U	6.39	1.28	0.639
Trichloroethene	79-01-6	1.28	U	6.39	1.28	0.639
Trichlorofluoromethane	75-69-4	2.56	U	6.39	2.56	1.28
1,2,3-Trichloropropane	96-18-4	2.56	U	6.39	2.56	1.28
1,2,4-Trimethylbenzene	95-63-6	1.28	U	6.39	1.28	0.639
1,3,5-Trimethylbenzene	108-67-8	1.28	U	6.39	1.28	0.639
Vinyl chloride	75-01-4	2.56	U	6.39	2.56	1.28
o-Xylene	95-47-6	1.28	U	6.39	1.28	0.639
m-,p-Xylene	179601-23-1	1.28	U	6.39	1.28	0.639

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.0	80	120	
1,2-Dichloroethane-d4	98.9	80	120	
Toluene-d8	98.6	85	115	
4-Bromofluorobenzene	98.3	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030134-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT06(20-20.5)020316	**Prep Method:**	6850	**Prep Date:**	03/03/2016 17:43
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559621	**Analyst:**	WTD	**Run Date:**	03/03/2016 20:34
Collect Date:	03/02/2016 11:11	**Dilution:**	1	**File ID:**	1LM.LM33663
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3.35	J	4.67	2.34	1.17

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030134-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT06(27.5-28)020316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 12:58
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559859	**Analyst:**	ADC	**Run Date:**	03/06/2016 20:30
Collect Date:	03/02/2016 12:05	**Dilution:**	1	**File ID:**	9M973108
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.0	U	25.9	13.0	6.48
Benzene	71-43-2	1.30	U	6.48	1.30	0.648
Bromobenzene	108-86-1	1.30	U	6.48	1.30	0.648
Bromochloromethane	74-97-5	2.60	U	6.48	2.60	1.30
Bromodichloromethane	75-27-4	1.30	U	6.48	1.30	0.648
Bromoform	75-25-2	1.30	U	6.48	1.30	0.648
Bromomethane	74-83-9	2.60	U	6.48	2.60	1.30
2-Butanone	78-93-3	6.48	U	13.0	6.48	3.24
n-Butylbenzene	104-51-8	1.30	U	6.48	1.30	0.648
sec-Butylbenzene	135-98-8	1.30	U	6.48	1.30	0.648
tert-Butylbenzene	98-06-6	1.30	U	6.48	1.30	0.648
Carbon disulfide	75-15-0	1.30	U	6.48	1.30	0.648
Carbon tetrachloride	56-23-5	1.30	U	6.48	1.30	0.648
Chlorobenzene	108-90-7	1.30	U	6.48	1.30	0.648
Chlorodibromomethane	124-48-1	1.30	U	6.48	1.30	0.648
Chloroethane	75-00-3	2.60	U	6.48	2.60	1.30
Chloroform	67-66-3	1.30	U	6.48	1.30	0.648
Chloromethane	74-87-3	5.18	U	13.0	5.18	2.59
2-Chlorotoluene	95-49-8	1.30	U	6.48	1.30	0.648
4-Chlorotoluene	106-43-4	1.30	U	6.48	1.30	0.648
1,2-Dibromo-3-chloropropane	96-12-8	5.18	U	13.0	5.18	2.59
1,2-Dibromoethane	106-93-4	1.30	U	6.48	1.30	0.648
Dibromomethane	74-95-3	1.30	U	6.48	1.30	0.648
1,2-Dichlorobenzene	95-50-1	1.30	U	6.48	1.30	0.648
1,3-Dichlorobenzene	541-73-1	1.30	U	6.48	1.30	0.648
1,4-Dichlorobenzene	106-46-7	1.30	U	6.48	1.30	0.648
Dichlorodifluoromethane	75-71-8	2.60	U	6.48	2.60	1.30
1,1-Dichloroethane	75-34-3	2.60	U	6.48	2.60	1.30
1,2-Dichloroethane	107-06-2	1.07	J	6.48	1.30	0.648
1,1-Dichloroethene	75-35-4	1.30	U	6.48	1.30	0.648
cis-1,2-Dichloroethene	156-59-2	1.30	U	6.48	1.30	0.648

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.30	U	6.48	1.30	0.648
1,2-Dichloropropane	78-87-5	1.30	U	6.48	1.30	0.648
1,3-Dichloropropane	142-28-9	1.30	U	6.48	1.30	0.648
2,2-Dichloropropane	594-20-7	1.30	U	6.48	1.30	0.648
cis-1,3-Dichloropropene	10061-01-5	1.30	U	6.48	1.30	0.648
trans-1,3-Dichloropropene	10061-02-6	1.30	U	6.48	1.30	0.648
1,1-Dichloropropene	563-58-6	1.30	U	6.48	1.30	0.648
Ethylbenzene	100-41-4	1.30	U	6.48	1.30	0.648
2-Hexanone	591-78-6	6.48	U	13.0	6.48	3.24
Hexachlorobutadiene	87-68-3	1.30	U	6.48	1.30	0.648
Isopropylbenzene	98-82-8	1.30	U	6.48	1.30	0.648
p-Isopropyltoluene	99-87-6	1.30	U	6.48	1.30	0.648
4-Methyl-2-pentanone	108-10-1	6.48	U	13.0	6.48	3.24
Methylene chloride	75-09-2	2.60	U	6.48	2.60	1.30
Naphthalene	91-20-3	1.30	U	6.48	1.30	0.648
n-Propylbenzene	103-65-1	1.30	U	6.48	1.30	0.648
Styrene	100-42-5	1.30	U	6.48	1.30	0.648
1,1,1,2-Tetrachloroethane	630-20-6	1.30	U	6.48	1.30	0.648
1,1,2,2-Tetrachloroethane	79-34-5	1.30	U	6.48	1.30	0.648
Tetrachloroethene	127-18-4	1.30	U	6.48	1.30	0.648
Toluene	108-88-3	1.30	U	6.48	1.30	0.648
1,2,3-Trichlorobenzene	87-61-6	1.30	U	6.48	1.30	0.648
1,2,4-Trichlorobenzene	120-82-1	1.30	U	6.48	1.30	0.648
1,1,1-Trichloroethane	71-55-6	1.30	U	6.48	1.30	0.648
1,1,2-Trichloroethane	79-00-5	1.30	U	6.48	1.30	0.648
Trichloroethene	79-01-6	57.1		6.48	1.30	0.648
Trichlorofluoromethane	75-69-4	2.60	U	6.48	2.60	1.30
1,2,3-Trichloropropane	96-18-4	2.60	U	6.48	2.60	1.30
1,2,4-Trimethylbenzene	95-63-6	1.30	U	6.48	1.30	0.648
1,3,5-Trimethylbenzene	108-67-8	1.30	U	6.48	1.30	0.648
Vinyl chloride	75-01-4	2.60	U	6.48	2.60	1.30
o-Xylene	95-47-6	1.30	U	6.48	1.30	0.648
m-,p-Xylene	179601-23-1	1.30	U	6.48	1.30	0.648

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.6	80	120	
1,2-Dichloroethane-d4	97.1	80	120	
Toluene-d8	99.0	85	115	
4-Bromofluorobenzene	100	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030134-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT06(27.5-28)020316	**Prep Method:**	6850	**Prep Date:**	03/03/2016 17:43
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559621	**Analyst:**	WTD	**Run Date:**	03/04/2016 11:16
Collect Date:	03/02/2016 12:05	**Dilution:**	100	**File ID:**	1LM.LM33703
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	82.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1530		474	236	118

Certificate of Analysis

Sample #:	L16030134-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT06(38.5-39)020316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 12:59
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559859	**Analyst:**	ADC	**Run Date:**	03/06/2016 21:00
Collect Date:	03/02/2016 15:00	**Dilution:**	1	**File ID:**	9M973109
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.1	U	26.2	13.1	6.55
Benzene	71-43-2	1.31	U	6.55	1.31	0.655
Bromobenzene	108-86-1	1.31	U	6.55	1.31	0.655
Bromochloromethane	74-97-5	2.62	U	6.55	2.62	1.31
Bromodichloromethane	75-27-4	1.31	U	6.55	1.31	0.655
Bromoform	75-25-2	1.31	U	6.55	1.31	0.655
Bromomethane	74-83-9	2.62	U	6.55	2.62	1.31
2-Butanone	78-93-3	6.54	U	13.1	6.54	3.27
n-Butylbenzene	104-51-8	1.31	U	6.55	1.31	0.655
sec-Butylbenzene	135-98-8	1.31	U	6.55	1.31	0.655
tert-Butylbenzene	98-06-6	1.31	U	6.55	1.31	0.655
Carbon disulfide	75-15-0	1.31	U	6.55	1.31	0.655
Carbon tetrachloride	56-23-5	1.31	U	6.55	1.31	0.655
Chlorobenzene	108-90-7	1.31	U	6.55	1.31	0.655
Chlorodibromomethane	124-48-1	1.31	U	6.55	1.31	0.655
Chloroethane	75-00-3	2.62	U	6.55	2.62	1.31
Chloroform	67-66-3	1.31	U	6.55	1.31	0.655
Chloromethane	74-87-3	5.24	U	13.1	5.24	2.62
2-Chlorotoluene	95-49-8	1.31	U	6.55	1.31	0.655
4-Chlorotoluene	106-43-4	1.31	U	6.55	1.31	0.655

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	5.24	U	13.1	5.24	2.62
1,2-Dibromoethane	106-93-4	1.31	U	6.55	1.31	0.655
Dibromomethane	74-95-3	1.31	U	6.55	1.31	0.655
1,2-Dichlorobenzene	95-50-1	1.31	U	6.55	1.31	0.655
1,3-Dichlorobenzene	541-73-1	1.31	U	6.55	1.31	0.655
1,4-Dichlorobenzene	106-46-7	1.31	U	6.55	1.31	0.655
Dichlorodifluoromethane	75-71-8	2.62	U	6.55	2.62	1.31
1,1-Dichloroethane	75-34-3	2.62	U	6.55	2.62	1.31
1,2-Dichloroethane	107-06-2	1.31	U	6.55	1.31	0.655
1,1-Dichloroethene	75-35-4	1.31	U	6.55	1.31	0.655
cis-1,2-Dichloroethene	156-59-2	1.31	U	6.55	1.31	0.655
trans-1,2-Dichloroethene	156-60-5	1.31	U	6.55	1.31	0.655
1,2-Dichloropropane	78-87-5	1.31	U	6.55	1.31	0.655
1,3-Dichloropropane	142-28-9	1.31	U	6.55	1.31	0.655
2,2-Dichloropropane	594-20-7	1.31	U	6.55	1.31	0.655
cis-1,3-Dichloropropene	10061-01-5	1.31	U	6.55	1.31	0.655
trans-1,3-Dichloropropene	10061-02-6	1.31	U	6.55	1.31	0.655
1,1-Dichloropropene	563-58-6	1.31	U	6.55	1.31	0.655
Ethylbenzene	100-41-4	1.31	U	6.55	1.31	0.655
2-Hexanone	591-78-6	6.54	U	13.1	6.54	3.27
Hexachlorobutadiene	87-68-3	1.31	U	6.55	1.31	0.655
Isopropylbenzene	98-82-8	1.31	U	6.55	1.31	0.655
p-Isopropyltoluene	99-87-6	1.31	U	6.55	1.31	0.655
4-Methyl-2-pentanone	108-10-1	6.54	U	13.1	6.54	3.27
Methylene chloride	75-09-2	2.62	U	6.55	2.62	1.31
Naphthalene	91-20-3	1.31	U	6.55	1.31	0.655
n-Propylbenzene	103-65-1	1.31	U	6.55	1.31	0.655
Styrene	100-42-5	1.31	U	6.55	1.31	0.655
1,1,1,2-Tetrachloroethane	630-20-6	1.31	U	6.55	1.31	0.655
1,1,2,2-Tetrachloroethane	79-34-5	1.31	U	6.55	1.31	0.655
Tetrachloroethene	127-18-4	1.31	U	6.55	1.31	0.655
Toluene	108-88-3	1.31	U	6.55	1.31	0.655
1,2,3-Trichlorobenzene	87-61-6	1.31	U	6.55	1.31	0.655
1,2,4-Trichlorobenzene	120-82-1	1.31	U	6.55	1.31	0.655
1,1,1-Trichloroethane	71-55-6	1.31	U	6.55	1.31	0.655
1,1,2-Trichloroethane	79-00-5	1.31	U	6.55	1.31	0.655
Trichloroethene	79-01-6	0.747	J	6.55	1.31	0.655
Trichlorofluoromethane	75-69-4	2.62	U	6.55	2.62	1.31
1,2,3-Trichloropropane	96-18-4	2.62	U	6.55	2.62	1.31

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.31	U	6.55	1.31	0.655
1,3,5-Trimethylbenzene	108-67-8	1.31	U	6.55	1.31	0.655
Vinyl chloride	75-01-4	2.62	U	6.55	2.62	1.31
o-Xylene	95-47-6	1.31	U	6.55	1.31	0.655
m-,p-Xylene	179601-23-1	1.31	U	6.55	1.31	0.655

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.8	80	120	
1,2-Dichloroethane-d4	102	80	120	
Toluene-d8	99.0	85	115	
4-Bromofluorobenzene	101	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030134-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT06(38.5-39)020316	**Prep Method:**	6850	**Prep Date:**	03/03/2016 17:43
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559621	**Analyst:**	WTD	**Run Date:**	03/04/2016 11:35
Collect Date:	03/02/2016 15:00	**Dilution:**	100	**File ID:**	1LM.LM33704
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	80.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2690		497	248	124

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #: L16030134-01 **Client ID:** 18DPT06(5-5.5)020316 **Matrix:** Soil **Collect Date:** 03/02/2016 08:58

Analyte	Result	Units	Qualifier
Percent Solids	80.7	weight %	

Sample #: L16030134-02 **Client ID:** 18DPT06(5-5.5)020316FD **Matrix:** Soil **Collect Date:** 03/02/2016 08:58

Analyte	Result	Units	Qualifier
Percent Solids	80.8	weight %	

Sample #: L16030134-03 **Client ID:** 18DPT06(15-15.5)020316 **Matrix:** Soil **Collect Date:** 03/02/2016 10:35

Analyte	Result	Units	Qualifier
Percent Solids	88.1	weight %	

Sample #: L16030134-04 **Client ID:** 18DPT06(20-20.5)020316 **Matrix:** Soil **Collect Date:** 03/02/2016 11:11

Analyte	Result	Units	Qualifier
Percent Solids	82.3	weight %	

Sample #: L16030134-05 **Client ID:** 18DPT06(27.5-28)020316 **Matrix:** Soil **Collect Date:** 03/02/2016 12:05

Analyte	Result	Units	Qualifier
Percent Solids	82.1	weight %	

Sample #: L16030134-06 **Client ID:** 18DPT06(38.5-39)020316 **Matrix:** Soil **Collect Date:** 03/02/2016 15:00

Analyte	Result	Units	Qualifier
Percent Solids	80.0	weight %	

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030134-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT06(5-5.5)020316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 12:56
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559859	**Analyst:**	ADC	**Run Date:**	03/06/2016 18:28
Collect Date:	03/02/2016 08:58	**Dilution:**	1	**File ID:**	9M973104
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.4	U	26.8	13.4	6.70
Benzene	71-43-2	1.34	U	6.70	1.34	0.670
Bromobenzene	108-86-1	1.34	U	6.70	1.34	0.670
Bromochloromethane	74-97-5	2.68	U	6.70	2.68	1.34
Bromodichloromethane	75-27-4	1.34	U	6.70	1.34	0.670
Bromoform	75-25-2	1.34	U	6.70	1.34	0.670
Bromomethane	74-83-9	2.68	U	6.70	2.68	1.34
2-Butanone	78-93-3	6.70	U	13.4	6.70	3.35
n-Butylbenzene	104-51-8	1.34	U	6.70	1.34	0.670
sec-Butylbenzene	135-98-8	1.34	U	6.70	1.34	0.670
tert-Butylbenzene	98-06-6	1.34	U	6.70	1.34	0.670
Carbon disulfide	75-15-0	1.34	U	6.70	1.34	0.670
Carbon tetrachloride	56-23-5	1.34	U	6.70	1.34	0.670
Chlorobenzene	108-90-7	1.34	U	6.70	1.34	0.670
Chlorodibromomethane	124-48-1	1.34	U	6.70	1.34	0.670
Chloroethane	75-00-3	2.68	U	6.70	2.68	1.34
Chloroform	67-66-3	1.34	U	6.70	1.34	0.670
Chloromethane	74-87-3	5.36	U	13.4	5.36	2.68
2-Chlorotoluene	95-49-8	1.34	U	6.70	1.34	0.670
4-Chlorotoluene	106-43-4	1.34	U	6.70	1.34	0.670
1,2-Dibromo-3-chloropropane	96-12-8	5.36	U	13.4	5.36	2.68
1,2-Dibromoethane	106-93-4	1.34	U	6.70	1.34	0.670
Dibromomethane	74-95-3	1.34	U	6.70	1.34	0.670
1,2-Dichlorobenzene	95-50-1	1.34	U	6.70	1.34	0.670
1,3-Dichlorobenzene	541-73-1	1.34	U	6.70	1.34	0.670
1,4-Dichlorobenzene	106-46-7	1.34	U	6.70	1.34	0.670
Dichlorodifluoromethane	75-71-8	2.68	U	6.70	2.68	1.34
1,1-Dichloroethane	75-34-3	2.68	U	6.70	2.68	1.34
1,2-Dichloroethane	107-06-2	1.34	U	6.70	1.34	0.670
1,1-Dichloroethene	75-35-4	1.34	U	6.70	1.34	0.670
cis-1,2-Dichloroethene	156-59-2	1.34	U	6.70	1.34	0.670
trans-1,2-Dichloroethene	156-60-5	1.34	U	6.70	1.34	0.670

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Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.34	U	6.70	1.34	0.670
1,3-Dichloropropane	142-28-9	1.34	U	6.70	1.34	0.670
2,2-Dichloropropane	594-20-7	1.34	U	6.70	1.34	0.670
cis-1,3-Dichloropropene	10061-01-5	1.34	U	6.70	1.34	0.670
trans-1,3-Dichloropropene	10061-02-6	1.34	U	6.70	1.34	0.670
1,1-Dichloropropene	563-58-6	1.34	U	6.70	1.34	0.670
Ethylbenzene	100-41-4	1.34	U	6.70	1.34	0.670
2-Hexanone	591-78-6	6.70	U	13.4	6.70	3.35
Hexachlorobutadiene	87-68-3	1.34	U	6.70	1.34	0.670
Isopropylbenzene	98-82-8	1.34	U	6.70	1.34	0.670
p-Isopropyltoluene	99-87-6	1.34	U	6.70	1.34	0.670
4-Methyl-2-pentanone	108-10-1	6.70	U	13.4	6.70	3.35
Methylene chloride	75-09-2	2.68	U	6.70	2.68	1.34
Naphthalene	91-20-3	1.34	U	6.70	1.34	0.670
n-Propylbenzene	103-65-1	1.34	U	6.70	1.34	0.670
Styrene	100-42-5	1.34	U	6.70	1.34	0.670
1,1,1,2-Tetrachloroethane	630-20-6	1.34	U	6.70	1.34	0.670
1,1,2,2-Tetrachloroethane	79-34-5	1.34	U	6.70	1.34	0.670
Tetrachloroethene	127-18-4	1.34	U	6.70	1.34	0.670
Toluene	108-88-3	1.34	U	6.70	1.34	0.670
1,2,3-Trichlorobenzene	87-61-6	1.34	U	6.70	1.34	0.670
1,2,4-Trichlorobenzene	120-82-1	1.34	U	6.70	1.34	0.670
1,1,1-Trichloroethane	71-55-6	1.34	U	6.70	1.34	0.670
1,1,2-Trichloroethane	79-00-5	1.34	U	6.70	1.34	0.670
Trichloroethene	79-01-6	1.34	U	6.70	1.34	0.670
Trichlorofluoromethane	75-69-4	2.68	U	6.70	2.68	1.34
1,2,3-Trichloropropane	96-18-4	2.68	U	6.70	2.68	1.34
1,2,4-Trimethylbenzene	95-63-6	1.34	U	6.70	1.34	0.670
1,3,5-Trimethylbenzene	108-67-8	1.34	U	6.70	1.34	0.670
Vinyl chloride	75-01-4	2.68	U	6.70	2.68	1.34
o-Xylene	95-47-6	1.34	U	6.70	1.34	0.670
m-,p-Xylene	179601-23-1	1.34	U	6.70	1.34	0.670

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.2	80	120	
1,2-Dichloroethane-d4	93.9	80	120	
Toluene-d8	97.7	85	115	
4-Bromofluorobenzene	101	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030134-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT06(5-5.5)020316FD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 12:56
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559859	**Analyst:**	ADC	**Run Date:**	03/06/2016 18:59
Collect Date:	03/02/2016 08:58	**Dilution:**	1	**File ID:**	9M973105
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.0	U	23.9	12.0	5.98
Benzene	71-43-2	1.20	U	5.98	1.20	0.598
Bromobenzene	108-86-1	1.20	U	5.98	1.20	0.598
Bromochloromethane	74-97-5	2.40	U	5.98	2.40	1.20
Bromodichloromethane	75-27-4	1.20	U	5.98	1.20	0.598
Bromoform	75-25-2	1.20	U	5.98	1.20	0.598
Bromomethane	74-83-9	2.40	U	5.98	2.40	1.20
2-Butanone	78-93-3	5.98	U	12.0	5.98	2.99
n-Butylbenzene	104-51-8	1.20	U	5.98	1.20	0.598
sec-Butylbenzene	135-98-8	1.20	U	5.98	1.20	0.598
tert-Butylbenzene	98-06-6	1.20	U	5.98	1.20	0.598
Carbon disulfide	75-15-0	1.20	U	5.98	1.20	0.598
Carbon tetrachloride	56-23-5	1.20	U	5.98	1.20	0.598
Chlorobenzene	108-90-7	1.20	U	5.98	1.20	0.598
Chlorodibromomethane	124-48-1	1.20	U	5.98	1.20	0.598
Chloroethane	75-00-3	2.40	U	5.98	2.40	1.20
Chloroform	67-66-3	1.20	U	5.98	1.20	0.598
Chloromethane	74-87-3	4.78	U	12.0	4.78	2.39
2-Chlorotoluene	95-49-8	1.20	U	5.98	1.20	0.598
4-Chlorotoluene	106-43-4	1.20	U	5.98	1.20	0.598
1,2-Dibromo-3-chloropropane	96-12-8	4.78	U	12.0	4.78	2.39
1,2-Dibromoethane	106-93-4	1.20	U	5.98	1.20	0.598
Dibromomethane	74-95-3	1.20	U	5.98	1.20	0.598
1,2-Dichlorobenzene	95-50-1	1.20	U	5.98	1.20	0.598
1,3-Dichlorobenzene	541-73-1	1.20	U	5.98	1.20	0.598
1,4-Dichlorobenzene	106-46-7	1.20	U	5.98	1.20	0.598
Dichlorodifluoromethane	75-71-8	2.40	U	5.98	2.40	1.20
1,1-Dichloroethane	75-34-3	2.40	U	5.98	2.40	1.20
1,2-Dichloroethane	107-06-2	1.20	U	5.98	1.20	0.598
1,1-Dichloroethene	75-35-4	1.20	U	5.98	1.20	0.598
cis-1,2-Dichloroethene	156-59-2	1.20	U	5.98	1.20	0.598

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Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.20	U	5.98	1.20	0.598
1,2-Dichloropropane	78-87-5	1.20	U	5.98	1.20	0.598
1,3-Dichloropropane	142-28-9	1.20	U	5.98	1.20	0.598
2,2-Dichloropropane	594-20-7	1.20	U	5.98	1.20	0.598
cis-1,3-Dichloropropene	10061-01-5	1.20	U	5.98	1.20	0.598
trans-1,3-Dichloropropene	10061-02-6	1.20	U	5.98	1.20	0.598
1,1-Dichloropropene	563-58-6	1.20	U	5.98	1.20	0.598
Ethylbenzene	100-41-4	1.20	U	5.98	1.20	0.598
2-Hexanone	591-78-6	5.98	U	12.0	5.98	2.99
Hexachlorobutadiene	87-68-3	1.20	U	5.98	1.20	0.598
Isopropylbenzene	98-82-8	1.20	U	5.98	1.20	0.598
p-Isopropyltoluene	99-87-6	1.20	U	5.98	1.20	0.598
4-Methyl-2-pentanone	108-10-1	5.98	U	12.0	5.98	2.99
Methylene chloride	75-09-2	2.40	U	5.98	2.40	1.20
Naphthalene	91-20-3	1.20	U	5.98	1.20	0.598
n-Propylbenzene	103-65-1	1.20	U	5.98	1.20	0.598
Styrene	100-42-5	1.20	U	5.98	1.20	0.598
1,1,1,2-Tetrachloroethane	630-20-6	1.20	U	5.98	1.20	0.598
1,1,2,2-Tetrachloroethane	79-34-5	1.20	U	5.98	1.20	0.598
Tetrachloroethene	127-18-4	1.20	U	5.98	1.20	0.598
Toluene	108-88-3	1.20	U	5.98	1.20	0.598
1,2,3-Trichlorobenzene	87-61-6	1.20	U	5.98	1.20	0.598
1,2,4-Trichlorobenzene	120-82-1	1.20	U	5.98	1.20	0.598
1,1,1-Trichloroethane	71-55-6	1.20	U	5.98	1.20	0.598
1,1,2-Trichloroethane	79-00-5	1.20	U	5.98	1.20	0.598
Trichloroethene	79-01-6	1.20	U	5.98	1.20	0.598
Trichlorofluoromethane	75-69-4	2.40	U	5.98	2.40	1.20
1,2,3-Trichloropropane	96-18-4	2.40	U	5.98	2.40	1.20
1,2,4-Trimethylbenzene	95-63-6	1.20	U	5.98	1.20	0.598
1,3,5-Trimethylbenzene	108-67-8	1.20	U	5.98	1.20	0.598
Vinyl chloride	75-01-4	2.40	U	5.98	2.40	1.20
o-Xylene	95-47-6	1.20	U	5.98	1.20	0.598
m-,p-Xylene	179601-23-1	1.20	U	5.98	1.20	0.598

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.7	80	120	
1,2-Dichloroethane-d4	95.7	80	120	
Toluene-d8	99.3	85	115	
4-Bromofluorobenzene	102	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030134-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT06(15-15.5)020316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 12:57
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559859	**Analyst:**	ADC	**Run Date:**	03/06/2016 19:29
Collect Date:	03/02/2016 10:35	**Dilution:**	1	**File ID:**	9M973106
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	88.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.5	U	23.0	11.5	5.74
Benzene	71-43-2	1.15	U	5.74	1.15	0.574
Bromobenzene	108-86-1	1.15	U	5.74	1.15	0.574
Bromochloromethane	74-97-5	2.30	U	5.74	2.30	1.15
Bromodichloromethane	75-27-4	1.15	U	5.74	1.15	0.574
Bromoform	75-25-2	1.15	U	5.74	1.15	0.574
Bromomethane	74-83-9	2.30	U	5.74	2.30	1.15
2-Butanone	78-93-3	5.74	U	11.5	5.74	2.87
n-Butylbenzene	104-51-8	1.15	U	5.74	1.15	0.574
sec-Butylbenzene	135-98-8	1.15	U	5.74	1.15	0.574
tert-Butylbenzene	98-06-6	1.15	U	5.74	1.15	0.574
Carbon disulfide	75-15-0	1.15	U	5.74	1.15	0.574
Carbon tetrachloride	56-23-5	1.15	U	5.74	1.15	0.574
Chlorobenzene	108-90-7	1.15	U	5.74	1.15	0.574
Chlorodibromomethane	124-48-1	1.15	U	5.74	1.15	0.574
Chloroethane	75-00-3	2.30	U	5.74	2.30	1.15
Chloroform	67-66-3	1.15	U	5.74	1.15	0.574
Chloromethane	74-87-3	4.60	U	11.5	4.60	2.30
2-Chlorotoluene	95-49-8	1.15	U	5.74	1.15	0.574
4-Chlorotoluene	106-43-4	1.15	U	5.74	1.15	0.574
1,2-Dibromo-3-chloropropane	96-12-8	4.60	U	11.5	4.60	2.30
1,2-Dibromoethane	106-93-4	1.15	U	5.74	1.15	0.574
Dibromomethane	74-95-3	1.15	U	5.74	1.15	0.574
1,2-Dichlorobenzene	95-50-1	1.15	U	5.74	1.15	0.574
1,3-Dichlorobenzene	541-73-1	1.15	U	5.74	1.15	0.574
1,4-Dichlorobenzene	106-46-7	1.15	U	5.74	1.15	0.574
Dichlorodifluoromethane	75-71-8	2.30	U	5.74	2.30	1.15
1,1-Dichloroethane	75-34-3	2.30	U	5.74	2.30	1.15
1,2-Dichloroethane	107-06-2	1.15	U	5.74	1.15	0.574
1,1-Dichloroethene	75-35-4	1.15	U	5.74	1.15	0.574
cis-1,2-Dichloroethene	156-59-2	1.15	U	5.74	1.15	0.574

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Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.15	U	5.74	1.15	0.574
1,2-Dichloropropane	78-87-5	1.15	U	5.74	1.15	0.574
1,3-Dichloropropane	142-28-9	1.15	U	5.74	1.15	0.574
2,2-Dichloropropane	594-20-7	1.15	U	5.74	1.15	0.574
cis-1,3-Dichloropropene	10061-01-5	1.15	U	5.74	1.15	0.574
trans-1,3-Dichloropropene	10061-02-6	1.15	U	5.74	1.15	0.574
1,1-Dichloropropene	563-58-6	1.15	U	5.74	1.15	0.574
Ethylbenzene	100-41-4	1.15	U	5.74	1.15	0.574
2-Hexanone	591-78-6	5.74	U	11.5	5.74	2.87
Hexachlorobutadiene	87-68-3	1.15	U	5.74	1.15	0.574
Isopropylbenzene	98-82-8	1.15	U	5.74	1.15	0.574
p-Isopropyltoluene	99-87-6	1.15	U	5.74	1.15	0.574
4-Methyl-2-pentanone	108-10-1	5.74	U	11.5	5.74	2.87
Methylene chloride	75-09-2	2.30	U	5.74	2.30	1.15
Naphthalene	91-20-3	1.15	U	5.74	1.15	0.574
n-Propylbenzene	103-65-1	1.15	U	5.74	1.15	0.574
Styrene	100-42-5	1.15	U	5.74	1.15	0.574
1,1,1,2-Tetrachloroethane	630-20-6	1.15	U	5.74	1.15	0.574
1,1,2,2-Tetrachloroethane	79-34-5	1.15	U	5.74	1.15	0.574
Tetrachloroethene	127-18-4	1.15	U	5.74	1.15	0.574
Toluene	108-88-3	1.15	U	5.74	1.15	0.574
1,2,3-Trichlorobenzene	87-61-6	1.15	U	5.74	1.15	0.574
1,2,4-Trichlorobenzene	120-82-1	1.15	U	5.74	1.15	0.574
1,1,1-Trichloroethane	71-55-6	1.15	U	5.74	1.15	0.574
1,1,2-Trichloroethane	79-00-5	1.15	U	5.74	1.15	0.574
Trichloroethene	79-01-6	1.15	U	5.74	1.15	0.574
Trichlorofluoromethane	75-69-4	2.30	U	5.74	2.30	1.15
1,2,3-Trichloropropane	96-18-4	2.30	U	5.74	2.30	1.15
1,2,4-Trimethylbenzene	95-63-6	1.15	U	5.74	1.15	0.574
1,3,5-Trimethylbenzene	108-67-8	1.15	U	5.74	1.15	0.574
Vinyl chloride	75-01-4	2.30	U	5.74	2.30	1.15
o-Xylene	95-47-6	1.15	U	5.74	1.15	0.574
m-,p-Xylene	179601-23-1	1.15	U	5.74	1.15	0.574

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.2	80	120	
1,2-Dichloroethane-d4	97.0	80	120	
Toluene-d8	99.0	85	115	
4-Bromofluorobenzene	99.4	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030134-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT06(20-20.5)020316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 12:58
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559859	**Analyst:**	ADC	**Run Date:**	03/06/2016 20:00
Collect Date:	03/02/2016 11:11	**Dilution:**	1	**File ID:**	9M973107
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.8	U	25.6	12.8	6.39
Benzene	71-43-2	1.28	U	6.39	1.28	0.639
Bromobenzene	108-86-1	1.28	U	6.39	1.28	0.639
Bromochloromethane	74-97-5	2.56	U	6.39	2.56	1.28
Bromodichloromethane	75-27-4	1.28	U	6.39	1.28	0.639
Bromoform	75-25-2	1.28	U	6.39	1.28	0.639
Bromomethane	74-83-9	2.56	U	6.39	2.56	1.28
2-Butanone	78-93-3	6.40	U	12.8	6.40	3.20
n-Butylbenzene	104-51-8	1.28	U	6.39	1.28	0.639
sec-Butylbenzene	135-98-8	1.28	U	6.39	1.28	0.639
tert-Butylbenzene	98-06-6	1.28	U	6.39	1.28	0.639
Carbon disulfide	75-15-0	1.28	U	6.39	1.28	0.639
Carbon tetrachloride	56-23-5	1.28	U	6.39	1.28	0.639
Chlorobenzene	108-90-7	1.28	U	6.39	1.28	0.639
Chlorodibromomethane	124-48-1	1.28	U	6.39	1.28	0.639
Chloroethane	75-00-3	2.56	U	6.39	2.56	1.28
Chloroform	67-66-3	1.28	U	6.39	1.28	0.639
Chloromethane	74-87-3	5.12	U	12.8	5.12	2.56
2-Chlorotoluene	95-49-8	1.28	U	6.39	1.28	0.639
4-Chlorotoluene	106-43-4	1.28	U	6.39	1.28	0.639
1,2-Dibromo-3-chloropropane	96-12-8	5.12	U	12.8	5.12	2.56
1,2-Dibromoethane	106-93-4	1.28	U	6.39	1.28	0.639
Dibromomethane	74-95-3	1.28	U	6.39	1.28	0.639
1,2-Dichlorobenzene	95-50-1	1.28	U	6.39	1.28	0.639
1,3-Dichlorobenzene	541-73-1	1.28	U	6.39	1.28	0.639
1,4-Dichlorobenzene	106-46-7	1.28	U	6.39	1.28	0.639
Dichlorodifluoromethane	75-71-8	2.56	U	6.39	2.56	1.28
1,1-Dichloroethane	75-34-3	2.56	U	6.39	2.56	1.28
1,2-Dichloroethane	107-06-2	1.28	U	6.39	1.28	0.639
1,1-Dichloroethene	75-35-4	1.28	U	6.39	1.28	0.639
cis-1,2-Dichloroethene	156-59-2	1.28	U	6.39	1.28	0.639

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.28	U	6.39	1.28	0.639
1,2-Dichloropropane	78-87-5	1.28	U	6.39	1.28	0.639
1,3-Dichloropropane	142-28-9	1.28	U	6.39	1.28	0.639
2,2-Dichloropropane	594-20-7	1.28	U	6.39	1.28	0.639
cis-1,3-Dichloropropene	10061-01-5	1.28	U	6.39	1.28	0.639
trans-1,3-Dichloropropene	10061-02-6	1.28	U	6.39	1.28	0.639
1,1-Dichloropropene	563-58-6	1.28	U	6.39	1.28	0.639
Ethylbenzene	100-41-4	1.28	U	6.39	1.28	0.639
2-Hexanone	591-78-6	6.40	U	12.8	6.40	3.20
Hexachlorobutadiene	87-68-3	1.28	U	6.39	1.28	0.639
Isopropylbenzene	98-82-8	1.28	U	6.39	1.28	0.639
p-Isopropyltoluene	99-87-6	1.28	U	6.39	1.28	0.639
4-Methyl-2-pentanone	108-10-1	6.40	U	12.8	6.40	3.20
Methylene chloride	75-09-2	2.56	U	6.39	2.56	1.28
Naphthalene	91-20-3	1.28	U	6.39	1.28	0.639
n-Propylbenzene	103-65-1	1.28	U	6.39	1.28	0.639
Styrene	100-42-5	1.28	U	6.39	1.28	0.639
1,1,1,2-Tetrachloroethane	630-20-6	1.28	U	6.39	1.28	0.639
1,1,2,2-Tetrachloroethane	79-34-5	1.28	U	6.39	1.28	0.639
Tetrachloroethene	127-18-4	1.28	U	6.39	1.28	0.639
Toluene	108-88-3	1.28	U	6.39	1.28	0.639
1,2,3-Trichlorobenzene	87-61-6	1.28	U	6.39	1.28	0.639
1,2,4-Trichlorobenzene	120-82-1	1.28	U	6.39	1.28	0.639
1,1,1-Trichloroethane	71-55-6	1.28	U	6.39	1.28	0.639
1,1,2-Trichloroethane	79-00-5	1.28	U	6.39	1.28	0.639
Trichloroethene	79-01-6	1.28	U	6.39	1.28	0.639
Trichlorofluoromethane	75-69-4	2.56	U	6.39	2.56	1.28
1,2,3-Trichloropropane	96-18-4	2.56	U	6.39	2.56	1.28
1,2,4-Trimethylbenzene	95-63-6	1.28	U	6.39	1.28	0.639
1,3,5-Trimethylbenzene	108-67-8	1.28	U	6.39	1.28	0.639
Vinyl chloride	75-01-4	2.56	U	6.39	2.56	1.28
o-Xylene	95-47-6	1.28	U	6.39	1.28	0.639
m-,p-Xylene	179601-23-1	1.28	U	6.39	1.28	0.639

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.0	80	120	
1,2-Dichloroethane-d4	98.9	80	120	
Toluene-d8	98.6	85	115	
4-Bromofluorobenzene	98.3	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030134-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT06(27.5-28)020316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 12:58
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559859	**Analyst:**	ADC	**Run Date:**	03/06/2016 20:30
Collect Date:	03/02/2016 12:05	**Dilution:**	1	**File ID:**	9M973108
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.0	U	25.9	13.0	6.48
Benzene	71-43-2	1.30	U	6.48	1.30	0.648
Bromobenzene	108-86-1	1.30	U	6.48	1.30	0.648
Bromochloromethane	74-97-5	2.60	U	6.48	2.60	1.30
Bromodichloromethane	75-27-4	1.30	U	6.48	1.30	0.648
Bromoform	75-25-2	1.30	U	6.48	1.30	0.648
Bromomethane	74-83-9	2.60	U	6.48	2.60	1.30
2-Butanone	78-93-3	6.48	U	13.0	6.48	3.24
n-Butylbenzene	104-51-8	1.30	U	6.48	1.30	0.648
sec-Butylbenzene	135-98-8	1.30	U	6.48	1.30	0.648
tert-Butylbenzene	98-06-6	1.30	U	6.48	1.30	0.648
Carbon disulfide	75-15-0	1.30	U	6.48	1.30	0.648
Carbon tetrachloride	56-23-5	1.30	U	6.48	1.30	0.648
Chlorobenzene	108-90-7	1.30	U	6.48	1.30	0.648
Chlorodibromomethane	124-48-1	1.30	U	6.48	1.30	0.648
Chloroethane	75-00-3	2.60	U	6.48	2.60	1.30
Chloroform	67-66-3	1.30	U	6.48	1.30	0.648
Chloromethane	74-87-3	5.18	U	13.0	5.18	2.59
2-Chlorotoluene	95-49-8	1.30	U	6.48	1.30	0.648
4-Chlorotoluene	106-43-4	1.30	U	6.48	1.30	0.648
1,2-Dibromo-3-chloropropane	96-12-8	5.18	U	13.0	5.18	2.59
1,2-Dibromoethane	106-93-4	1.30	U	6.48	1.30	0.648
Dibromomethane	74-95-3	1.30	U	6.48	1.30	0.648
1,2-Dichlorobenzene	95-50-1	1.30	U	6.48	1.30	0.648
1,3-Dichlorobenzene	541-73-1	1.30	U	6.48	1.30	0.648
1,4-Dichlorobenzene	106-46-7	1.30	U	6.48	1.30	0.648
Dichlorodifluoromethane	75-71-8	2.60	U	6.48	2.60	1.30
1,1-Dichloroethane	75-34-3	2.60	U	6.48	2.60	1.30
1,2-Dichloroethane	107-06-2	1.07	J	6.48	1.30	0.648
1,1-Dichloroethene	75-35-4	1.30	U	6.48	1.30	0.648
cis-1,2-Dichloroethene	156-59-2	1.30	U	6.48	1.30	0.648

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.30	U	6.48	1.30	0.648
1,2-Dichloropropane	78-87-5	1.30	U	6.48	1.30	0.648
1,3-Dichloropropane	142-28-9	1.30	U	6.48	1.30	0.648
2,2-Dichloropropane	594-20-7	1.30	U	6.48	1.30	0.648
cis-1,3-Dichloropropene	10061-01-5	1.30	U	6.48	1.30	0.648
trans-1,3-Dichloropropene	10061-02-6	1.30	U	6.48	1.30	0.648
1,1-Dichloropropene	563-58-6	1.30	U	6.48	1.30	0.648
Ethylbenzene	100-41-4	1.30	U	6.48	1.30	0.648
2-Hexanone	591-78-6	6.48	U	13.0	6.48	3.24
Hexachlorobutadiene	87-68-3	1.30	U	6.48	1.30	0.648
Isopropylbenzene	98-82-8	1.30	U	6.48	1.30	0.648
p-Isopropyltoluene	99-87-6	1.30	U	6.48	1.30	0.648
4-Methyl-2-pentanone	108-10-1	6.48	U	13.0	6.48	3.24
Methylene chloride	75-09-2	2.60	U	6.48	2.60	1.30
Naphthalene	91-20-3	1.30	U	6.48	1.30	0.648
n-Propylbenzene	103-65-1	1.30	U	6.48	1.30	0.648
Styrene	100-42-5	1.30	U	6.48	1.30	0.648
1,1,1,2-Tetrachloroethane	630-20-6	1.30	U	6.48	1.30	0.648
1,1,2,2-Tetrachloroethane	79-34-5	1.30	U	6.48	1.30	0.648
Tetrachloroethene	127-18-4	1.30	U	6.48	1.30	0.648
Toluene	108-88-3	1.30	U	6.48	1.30	0.648
1,2,3-Trichlorobenzene	87-61-6	1.30	U	6.48	1.30	0.648
1,2,4-Trichlorobenzene	120-82-1	1.30	U	6.48	1.30	0.648
1,1,1-Trichloroethane	71-55-6	1.30	U	6.48	1.30	0.648
1,1,2-Trichloroethane	79-00-5	1.30	U	6.48	1.30	0.648
Trichloroethene	79-01-6	57.1		6.48	1.30	0.648
Trichlorofluoromethane	75-69-4	2.60	U	6.48	2.60	1.30
1,2,3-Trichloropropane	96-18-4	2.60	U	6.48	2.60	1.30
1,2,4-Trimethylbenzene	95-63-6	1.30	U	6.48	1.30	0.648
1,3,5-Trimethylbenzene	108-67-8	1.30	U	6.48	1.30	0.648
Vinyl chloride	75-01-4	2.60	U	6.48	2.60	1.30
o-Xylene	95-47-6	1.30	U	6.48	1.30	0.648
m-,p-Xylene	179601-23-1	1.30	U	6.48	1.30	0.648

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.6	80	120	
1,2-Dichloroethane-d4	97.1	80	120	
Toluene-d8	99.0	85	115	
4-Bromofluorobenzene	100	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030134-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT06(38.5-39)020316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 12:59
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559859	**Analyst:**	ADC	**Run Date:**	03/06/2016 21:00
Collect Date:	03/02/2016 15:00	**Dilution:**	1	**File ID:**	9M973109
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.1	U	26.2	13.1	6.55
Benzene	71-43-2	1.31	U	6.55	1.31	0.655
Bromobenzene	108-86-1	1.31	U	6.55	1.31	0.655
Bromochloromethane	74-97-5	2.62	U	6.55	2.62	1.31
Bromodichloromethane	75-27-4	1.31	U	6.55	1.31	0.655
Bromoform	75-25-2	1.31	U	6.55	1.31	0.655
Bromomethane	74-83-9	2.62	U	6.55	2.62	1.31
2-Butanone	78-93-3	6.54	U	13.1	6.54	3.27
n-Butylbenzene	104-51-8	1.31	U	6.55	1.31	0.655
sec-Butylbenzene	135-98-8	1.31	U	6.55	1.31	0.655
tert-Butylbenzene	98-06-6	1.31	U	6.55	1.31	0.655
Carbon disulfide	75-15-0	1.31	U	6.55	1.31	0.655
Carbon tetrachloride	56-23-5	1.31	U	6.55	1.31	0.655
Chlorobenzene	108-90-7	1.31	U	6.55	1.31	0.655
Chlorodibromomethane	124-48-1	1.31	U	6.55	1.31	0.655
Chloroethane	75-00-3	2.62	U	6.55	2.62	1.31
Chloroform	67-66-3	1.31	U	6.55	1.31	0.655
Chloromethane	74-87-3	5.24	U	13.1	5.24	2.62
2-Chlorotoluene	95-49-8	1.31	U	6.55	1.31	0.655
4-Chlorotoluene	106-43-4	1.31	U	6.55	1.31	0.655
1,2-Dibromo-3-chloropropane	96-12-8	5.24	U	13.1	5.24	2.62
1,2-Dibromoethane	106-93-4	1.31	U	6.55	1.31	0.655
Dibromomethane	74-95-3	1.31	U	6.55	1.31	0.655
1,2-Dichlorobenzene	95-50-1	1.31	U	6.55	1.31	0.655
1,3-Dichlorobenzene	541-73-1	1.31	U	6.55	1.31	0.655
1,4-Dichlorobenzene	106-46-7	1.31	U	6.55	1.31	0.655
Dichlorodifluoromethane	75-71-8	2.62	U	6.55	2.62	1.31
1,1-Dichloroethane	75-34-3	2.62	U	6.55	2.62	1.31
1,2-Dichloroethane	107-06-2	1.31	U	6.55	1.31	0.655
1,1-Dichloroethene	75-35-4	1.31	U	6.55	1.31	0.655
cis-1,2-Dichloroethene	156-59-2	1.31	U	6.55	1.31	0.655

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Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.31	U	6.55	1.31	0.655
1,2-Dichloropropane	78-87-5	1.31	U	6.55	1.31	0.655
1,3-Dichloropropane	142-28-9	1.31	U	6.55	1.31	0.655
2,2-Dichloropropane	594-20-7	1.31	U	6.55	1.31	0.655
cis-1,3-Dichloropropene	10061-01-5	1.31	U	6.55	1.31	0.655
trans-1,3-Dichloropropene	10061-02-6	1.31	U	6.55	1.31	0.655
1,1-Dichloropropene	563-58-6	1.31	U	6.55	1.31	0.655
Ethylbenzene	100-41-4	1.31	U	6.55	1.31	0.655
2-Hexanone	591-78-6	6.54	U	13.1	6.54	3.27
Hexachlorobutadiene	87-68-3	1.31	U	6.55	1.31	0.655
Isopropylbenzene	98-82-8	1.31	U	6.55	1.31	0.655
p-Isopropyltoluene	99-87-6	1.31	U	6.55	1.31	0.655
4-Methyl-2-pentanone	108-10-1	6.54	U	13.1	6.54	3.27
Methylene chloride	75-09-2	2.62	U	6.55	2.62	1.31
Naphthalene	91-20-3	1.31	U	6.55	1.31	0.655
n-Propylbenzene	103-65-1	1.31	U	6.55	1.31	0.655
Styrene	100-42-5	1.31	U	6.55	1.31	0.655
1,1,1,2-Tetrachloroethane	630-20-6	1.31	U	6.55	1.31	0.655
1,1,2,2-Tetrachloroethane	79-34-5	1.31	U	6.55	1.31	0.655
Tetrachloroethene	127-18-4	1.31	U	6.55	1.31	0.655
Toluene	108-88-3	1.31	U	6.55	1.31	0.655
1,2,3-Trichlorobenzene	87-61-6	1.31	U	6.55	1.31	0.655
1,2,4-Trichlorobenzene	120-82-1	1.31	U	6.55	1.31	0.655
1,1,1-Trichloroethane	71-55-6	1.31	U	6.55	1.31	0.655
1,1,2-Trichloroethane	79-00-5	1.31	U	6.55	1.31	0.655
Trichloroethene	79-01-6	0.747	J	6.55	1.31	0.655
Trichlorofluoromethane	75-69-4	2.62	U	6.55	2.62	1.31
1,2,3-Trichloropropane	96-18-4	2.62	U	6.55	2.62	1.31
1,2,4-Trimethylbenzene	95-63-6	1.31	U	6.55	1.31	0.655
1,3,5-Trimethylbenzene	108-67-8	1.31	U	6.55	1.31	0.655
Vinyl chloride	75-01-4	2.62	U	6.55	2.62	1.31
o-Xylene	95-47-6	1.31	U	6.55	1.31	0.655
m-,p-Xylene	179601-23-1	1.31	U	6.55	1.31	0.655

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.8	80	120	
1,2-Dichloroethane-d4	102	80	120	
Toluene-d8	99.0	85	115	
4-Bromofluorobenzene	101	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.
VOA Preparation/Preservation/Extraction Log

Batch #: WG559855
Analyst: AWE
Method: 5030B/5030C/5035
Run Date: 03/06/2016 12:56
Product: 8260
Purge and trap methanol COA18540
Purified Lab Sand Lot # COA18552

SAMPLE #	Fraction	Collected	Preserved	PCT-S	Tare Wt	Total Wt	Sample Wt	Water	MeOH	Vt	Comments
L16030134-01	A	03/02/16 08:58	03/06/16 12:56	80.7			4.62	5		5	
L16030134-02	A	03/02/16 08:58	03/06/16 12:56	80.8			5.17	5		5	
L16030134-03	A	03/02/16 10:35	03/06/16 12:57	88.1			4.94	5		5	
L16030134-04	A	03/02/16 11:11	03/06/16 12:58	82.3			4.75	5		5	
L16030134-05	A	03/02/16 12:05	03/06/16 12:58	82.1			4.70	5		5	
L16030134-06	A	03/02/16 15:00	03/06/16 12:59	80.0			4.77	5		5	
L16030234-01	A	03/03/16 13:15	03/06/16 13:01	83.4			4.61	5		5	
L16030234-02	A	03/03/16 13:49	03/06/16 13:02	81.8			4.73	5		5	
L16030234-03	A	03/03/16 14:40	03/06/16 13:03	84.4			4.79	5		5	
L16030234-04	A	03/03/16 14:50	03/06/16 13:04	83.4			4.56	5		5	
L16030234-05	A	03/03/16 14:55	03/06/16 13:04	82.0			5.43	5		5	
L16030234-06	A	03/03/16 15:05	03/06/16 13:05	80.1			5.03	5		5	
L16030235-01	A	03/02/16 16:00	03/06/16 13:06	82.3			4.92	5		5	
L16030235-02	A	03/02/16 16:25	03/06/16 13:06	76.4			5.25	5		5	
L16030235-03	A	03/03/16 10:00	03/06/16 13:07	82.2			5.48	5		5	
L16030235-04	A	03/03/16 10:00	03/06/16 13:07	82.2			5.17	5		5	
L16030235-05	A	03/03/16 10:00	03/06/16 13:08	82.2			5.07	5		5	
L16030235-06	A	03/03/16 10:10	03/06/16 13:09	75.6			5.16	5		5	
L16030235-07	A	03/03/16 10:10	03/06/16 13:10	75.6			4.64	5		5	
L16030235-08	A	03/03/16 10:15	03/06/16 13:10	83.1			5.24	5		5	
WG559855-01	A		03/06/16 12:59	80.0			4.77	5		5	
WG559855-02	A		03/06/16 13:00	80.0			5.05	5		5	
WG559855-03	A		03/06/16 13:00	80.0			4.75	5		5	

Comments:
1 = improperly sealed cap
2 = preserved out of hold
3 = effervesced
4 = preserved with NaHSO4
5 = preserved by freezing
6 = preserved in field

Analyst: Andrew Baeg

VOA_EXT - Modified 05/22/2008
PDF ID: 4658103
Report generated: 03/08/2016 15:07

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 012516
Analyst1: ADC Analyst2: NA
Method: 8260B/8260C SOP: MSV01(-C) Rev: 23 (2)
Method: 5030B/5030C/5035 SOP: PAT01 Rev: 18
Method: 624 SOP: MSV10 Rev: 12
Maintenance Log ID:

Internal Standard: STD74414 Surrogate Standard: STD74126
CCV: STD74488 LCS: STD74459 MS/MSD: STD74459

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG555000 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M972470	WG555000-01 BFB 50ng A9	NA	7	1	STD74202	01/25/16 10:27
9M972471	RINSE	NA	7	1		01/25/16 10:52
9M972472	WG555000-02 5ug/Kg STD A9	NA	7	1	STD74406	01/25/16 11:22
9M972473	WG555000-03 20ug/Kg STD A9	NA	7	1	STD74406	01/25/16 11:52
9M972474	WG555000-04 50ug/Kg STD A9	NA	7	1	STD74406	01/25/16 12:23
9M972475	WG555000-05 100ug/Kg STD A9	NA	7	1	STD74406	01/25/16 12:53
9M972476	WG555000-06 200ug/Kg STD A9	NA	7	1	STD74406	01/25/16 13:23
9M972477	WG555000-07 300ug/Kg STD A9	NA	7	1	STD74406	01/25/16 13:54
9M972478	WG555000-08 400ug/Kg STD A9	NA	7	1	STD74406	01/25/16 14:25
9M972479	WG555000-09 500ug/Kg STD A9	NA	7	1	STD74406	01/25/16 14:56
9M972480	RINSE	NA	7	1		01/25/16 15:26
9M972481	WG555000-10 100ug/Kg ICV A9	NA	7	1	STD74461	01/25/16 15:56
9M972482	RINSE	NA	7	1		01/25/16 16:28

Approved: January 29, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 022516
Analyst1: ADC Analyst2: NA
Method: 8260 SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD74726 Surrogate Standard: STD74815
CCV: STD74488 LCS: STD74755 MS/MSD: STD74755

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG558732 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M972892	WG558732-01 BFB 50ng	NA	7	1	STD74773	02/25/16 14:26
9M972894	WG558732-01 BFB 50ng	NA	7	1	STD74773	02/25/16 14:45
9M972895	WG558732-02 50ug/L CCV 8260C	NA	7	1	STD74773	02/25/16 15:11
9M972896	WG558732-02 50ug/L CCV 8260C	NA	7	1	STD74773	02/25/16 15:48
9M972897	RINSE	NA	7	1		02/25/16 16:25
9M972898	WG558732-03 0.5ug/kg STD	NA	7	1	STD74773	02/25/16 16:55
9M972899	WG558732-04 1.0ug/kg STD	NA	7	1	STD74773	02/25/16 17:27
9M972900	WG558732-05 2.0ug/kg STD	NA	7	1	STD74773	02/25/16 17:57
9M972901	WG558732-06 5.0ug/kg STD	NA	7	1	STD74773	02/25/16 18:28
9M972902	WG558732-07 20.0ug/kg STD	NA	7	1	STD74773	02/25/16 18:59
9M972903	WG558732-08 100.0ug/kg STD	NA	7	1	STD74773	02/25/16 19:29
9M972904	WG558732-09 200.0ug/kg STD	NA	7	1	STD74773	02/25/16 20:00
9M972905	WG558732-10 300.0ug/kg STD	NA	7	1	STD74773	02/25/16 20:30
9M972906	RINSE	NA	7	1	STD74773	02/25/16 21:01
9M972907	WG558732-11 50.0ug/kg ALTSRC	NA	7	1	STD74755	02/25/16 21:31

Approved: February 29, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 030616
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD74726 Surrogate Standard: STD74815
CCV: STD74773 LCS: STD74900 MS/MSD: STD74900

Column 1 ID: RTX502.1 Column 2 ID: NA
Workgroups: WG559859

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M973096	WG559858-01 BFB 50ng 8260	NA	7	1	STD74606	03/06/16 14:28
9M973097	WG559858-02 50ug/Kg CCV 8260	NA	7	1	STD74773	03/06/16 14:55
9M973098	WGXXXXXX-01 A9FOO QC 100ug/kg	NA	7	1		03/06/16 15:25
9M973099	WG559858-02 50ug/Kg CCV 8260	NA	7	1	STD74773	03/06/16 15:56
9M973100	RINSE	NA	7	1		03/06/16 16:26
9M973101	WG559859-01 VBLK0306 BLANK 8260	NA	7	1		03/06/16 16:57
9M973102	WG559859-02 20ug/L LCS 8260	NA	7	1	STD74900	03/06/16 17:27
9M973103	RINSE	NA	7	1		03/06/16 17:58
9M973104	L16030134-01 A 8260 4.62g	NA	7	1		03/06/16 18:28
9M973105	L16030134-02 A 8260 5.17g	NA	7	1		03/06/16 18:59
9M973106	L16030134-03 A 8260 4.94g	NA	7	1		03/06/16 19:29
9M973107	L16030134-04 A 8260 4.75g	NA	7	1		03/06/16 20:00
9M973108	L16030134-05 A 8260 4.70g	NA	7	1		03/06/16 20:30
9M973109	WG559855-01 L16030134-06 A 8260 4.77g	NA	7	1		03/06/16 21:00
9M973110	L16030234-01 A 8260 4.61g	NA	7	1		03/06/16 21:31
9M973111	L16030234-02 A 8260 4.73g	NA	7	1		03/06/16 22:01
9M973112	L16030234-03 A 8260 4.79g	NA	7	1		03/06/16 22:31
9M973113	L16030234-04 A 8260 4.56g	NA	7	1		03/06/16 23:01
9M973114	L16030234-05 A 8260 5.43g	NA	7	1		03/06/16 23:32
9M973115	L16030234-06 A 8260 5.03g	NA	7	1		03/07/16 00:02
9M973116	WG559855-02 MS A 8260 5.05g	NA	7	1		03/07/16 00:32
9M973117	WG559855-03 MSD A 8260 4.75g	NA	7	1		03/07/16 01:02
9M973118	RINSE	NA	7	1		03/07/16 01:32
9M973119	RINSE	NA	7	1		03/07/16 02:03

Comments

Seq.	Rerun	Dil.	Reason	Analytes
19	X		Internal standard failure	
File ID: 9M973114				
L16030234-05				

Approved: March 07, 2016

Page: 1

Microbac Laboratories Inc.

Data Checklist

Date: 25-JAN-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 72995
Analytical Workgroups: WG555000

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
28-JAN-2016

Secondary Reviewer:
29-JAN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JAN-29-2016 16:00:23

Microbac Laboratories Inc.

Data Checklist

Date: 25-FEB-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 73547
Analytical Workgroups: WG558732

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
29-FEB-2016

Secondary Reviewer:
29-FEB-2016

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-29-2016 15:30:51

Microbac Laboratories Inc.

Data Checklist

Date: 06-MAR-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 73657
Analytical Workgroups: WG559859

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
07-MAR-2016

Secondary Reviewer:
07-MAR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-07-2016 14:35:52

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG559859

Login Number: L16030134

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18DPT06(5-5.5)020316	01	03/02/16					03/06/2016	4.2	14		03/06/16	4.4	14	
18DPT06(5-5.5)020316FD	02	03/02/16					03/06/2016	4.2	14		03/06/16	4.4	14	
18DPT06(15-15.5)020316	03	03/02/16					03/06/2016	4.1	14		03/06/16	4.4	14	
18DPT06(20-20.5)020316	04	03/02/16					03/06/2016	4.1	14		03/06/16	4.4	14	
18DPT06(27.5-28)020316	05	03/02/16					03/06/2016	4	14		03/06/16	4.4	14	
18DPT06(38.5-39)020316	06	03/02/16					03/06/2016	3.9	14		03/06/16	4.3	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4659239
Report generated 03/07/2016 12:33

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16030134
Instrument Id: HPMS9
Workgroup (AAB#): WG559859

Method: 8260
CAL ID: HPMS9-25-FEB-16
Matrix: Soil

Sample Number	Dilution	Tag	1	2	3	4
L16030134-01	1.00	01	93.9	96.2	101	97.7
L16030134-02	1.00	01	95.7	95.7	102	99.3
L16030134-03	1.00	01	97.0	95.2	99.4	99.0
L16030134-04	1.00	01	98.9	98.0	98.3	98.6
L16030134-05	1.00	01	97.1	94.6	100	99.0
L16030134-06	1.00	01	102	96.8	101	99.0
WG559859-01	1.00	01	99.7	96.5	102	99.4
WG559859-02	1.00	01	97.6	97.9	102	100

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	80	-	120
2 - Dibromofluoromethane	80	-	120
3 - 4-Bromofluorobenzene	85	-	120
4 - Toluene-d8	85	-	115

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4659252
Report generated: 03/07/2016 12:34

METHOD BLANK SUMMARY

Login Number: L16030134
Blank File ID: 9M973101
Prep Date: 03/06/16 16:57
Analyzed Date: 03/06/16 16:57
Analyst: ADC

Work Group: WG559859
Blank Sample ID: WG559859-01
Instrument ID: HPMS9
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG559859-02	9M973102	03/06/16 17:27	01
18DPT06(5-5.5)020316	L16030134-01	9M973104	03/06/16 18:28	01
18DPT06(5-5.5)020316FD	L16030134-02	9M973105	03/06/16 18:59	01
18DPT06(15-15.5)020316	L16030134-03	9M973106	03/06/16 19:29	01
18DPT06(20-20.5)020316	L16030134-04	9M973107	03/06/16 20:00	01
18DPT06(27.5-28)020316	L16030134-05	9M973108	03/06/16 20:30	01
18DPT06(38.5-39)020316	L16030134-06	9M973109	03/06/16 21:00	01

Report Name: BLANK_SUMMARY
PDF File ID: 4659240
Report generated 03/07/2016 12:33

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16030134 Prep Date: 03/06/16 16:57 Sample ID: WG559859-01
Instrument ID: HPMS9 Run Date: 03/06/16 16:57 Prep Method: 5030B/5030C/503
File ID: 9M973101 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG559859 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-25-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	5.00	20.0	5.00	1	U
Benzene	0.500	5.00	0.500	1	U
Bromobenzene	0.500	5.00	0.500	1	U
Bromochloromethane	1.00	5.00	1.00	1	U
Bromodichloromethane	0.500	5.00	0.500	1	U
Bromoform	0.500	5.00	0.500	1	U
Bromomethane	1.00	5.00	1.00	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.500	5.00	0.500	1	U
sec-Butylbenzene	0.500	5.00	0.500	1	U
tert-Butylbenzene	0.500	5.00	0.500	1	U
Carbon disulfide	0.500	5.00	0.500	1	U
Carbon tetrachloride	0.500	5.00	0.500	1	U
Chlorobenzene	0.500	5.00	0.500	1	U
Chlorodibromomethane	0.500	5.00	0.500	1	U
Chloroethane	1.00	5.00	1.00	1	U
Chloroform	0.500	5.00	0.500	1	U
Chloromethane	2.00	10.0	2.00	1	U
2-Chlorotoluene	0.500	5.00	0.500	1	U
4-Chlorotoluene	0.500	5.00	0.500	1	U
1,2-Dibromo-3-chloropropane	2.00	10.0	2.00	1	U
1,2-Dibromoethane	0.500	5.00	0.500	1	U
Dibromomethane	0.500	5.00	0.500	1	U
1,2-Dichlorobenzene	0.500	5.00	0.500	1	U
1,3-Dichlorobenzene	0.500	5.00	0.500	1	U
1,4-Dichlorobenzene	0.500	5.00	0.500	1	U
Dichlorodifluoromethane	1.00	5.00	1.00	1	U
1,1-Dichloroethane	1.00	5.00	1.00	1	U
1,2-Dichloroethane	0.500	5.00	0.500	1	U
1,1-Dichloroethene	0.500	5.00	0.500	1	U
cis-1,2-Dichloroethene	0.500	5.00	0.500	1	U
trans-1,2-Dichloroethene	0.500	5.00	0.500	1	U
1,2-Dichloropropane	0.500	5.00	0.500	1	U
1,3-Dichloropropane	0.500	5.00	0.500	1	U
2,2-Dichloropropane	0.500	5.00	0.500	1	U
cis-1,3-Dichloropropene	0.500	5.00	0.500	1	U
trans-1,3-Dichloropropene	0.500	5.00	0.500	1	U
1,1-Dichloropropene	0.500	5.00	0.500	1	U
Ethylbenzene	0.500	5.00	0.500	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.500	5.00	0.500	1	U
Isopropylbenzene	0.500	5.00	0.500	1	U

Report Name: BLANK
PDF ID: 4659241
07-MAR-2016 12:33

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16030134 Prep Date: 03/06/16 16:57 Sample ID: WG559859-01
Instrument ID: HPMS9 Run Date: 03/06/16 16:57 Prep Method: 5030B/5030C/503
File ID: 9M973101 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG559859 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-25-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.500	5.00	0.500	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	1.00	5.00	1.00	1	U
Naphthalene	0.500	5.00	0.500	1	U
n-Propylbenzene	0.500	5.00	0.500	1	U
Styrene	0.500	5.00	0.500	1	U
1,1,1,2-Tetrachloroethane	0.500	5.00	0.500	1	U
1,1,2,2-Tetrachloroethane	0.500	5.00	0.500	1	U
Tetrachloroethene	0.500	5.00	0.500	1	U
Toluene	0.500	5.00	0.500	1	U
1,2,3-Trichlorobenzene	0.500	5.00	0.500	1	U
1,2,4-Trichlorobenzene	0.500	5.00	0.500	1	U
1,1,1-Trichloroethane	0.500	5.00	0.500	1	U
1,1,2-Trichloroethane	0.500	5.00	0.500	1	U
Trichloroethene	0.500	5.00	0.500	1	U
Trichlorofluoromethane	1.00	5.00	1.00	1	U
1,2,3-Trichloropropane	1.00	5.00	1.00	1	U
1,2,4-Trimethylbenzene	0.500	5.00	0.500	1	U
1,3,5-Trimethylbenzene	0.500	5.00	0.500	1	U
Vinyl chloride	1.00	5.00	1.00	1	U
o-Xylene	0.500	5.00	0.500	1	U
m-,p-Xylene	0.500	5.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	96.5	80 - 120	PASS
1,2-Dichloroethane-d4	99.7	80 - 120	PASS
Toluene-d8	99.4	85 - 115	PASS
4-Bromofluorobenzene	102	85 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4659241
07-MAR-2016 12:33

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030134 | Run Date: 03/06/2016 | Sample ID: WG559859-02
Instrument ID: HPMS9 | Run Time: 17:27 | Prep Method: 5030B/5030C/503
File ID: 9M973102 | Analyst: ADC | Method: 8260B
Workgroup (AAB#): WG559859 | Matrix: Soil | Units: ug/kg
QC Key: DOD4 | Lot#: STD74900 | Cal ID: HPMS9-25-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	20.7	103	20 - 160	
Benzene	20.0	19.6	98.0	75 - 125	
Bromobenzene	20.0	17.3	86.5	65 - 120	
Bromochloromethane	20.0	19.8	99.0	70 - 125	
Bromodichloromethane	20.0	19.1	95.3	70 - 130	
Bromoform	20.0	16.4	82.2	55 - 135	
Bromomethane	20.0	18.3	91.6	30 - 160	
2-Butanone	20.0	21.6	108	30 - 160	
n-Butylbenzene	20.0	16.6	83.0	65 - 140	
sec-Butylbenzene	20.0	18.1	90.4	65 - 130	
tert-Butylbenzene	20.0	18.1	90.6	65 - 130	
Carbon disulfide	20.0	18.6	92.9	45 - 160	
Carbon tetrachloride	20.0	18.0	89.8	65 - 135	
Chlorobenzene	20.0	19.3	96.7	75 - 125	
Chlorodibromomethane	20.0	18.2	91.0	65 - 130	
Chloroethane	20.0	19.0	95.0	40 - 155	
Chloroform	20.0	19.6	98.0	70 - 125	
Chloromethane	20.0	19.7	98.5	50 - 130	
2-Chlorotoluene	20.0	19.1	95.4	70 - 130	
4-Chlorotoluene	20.0	16.6	83.2	75 - 125	
1,2-Dibromo-3-chloropropane	20.0	15.4	77.2	40 - 135	
1,2-Dibromoethane	20.0	18.3	91.7	70 - 125	
Dibromomethane	20.0	18.7	93.6	75 - 130	
1,2-Dichlorobenzene	20.0	17.4	87.0	75 - 120	
1,3-Dichlorobenzene	20.0	16.3	81.5	70 - 125	
1,4-Dichlorobenzene	20.0	17.0	84.9	70 - 125	
Dichlorodifluoromethane	20.0	23.1	116	35 - 135	
1,1-Dichloroethane	20.0	18.9	94.3	75 - 125	
1,2-Dichloroethane	20.0	21.0	105	70 - 135	
1,1-Dichloroethene	20.0	19.4	97.2	65 - 135	
cis-1,2-Dichloroethene	20.0	20.2	101	65 - 125	
trans-1,2-Dichloroethene	20.0	20.3	102	65 - 135	
1,2-Dichloropropane	20.0	21.7	109	70 - 120	
1,3-Dichloropropane	20.0	20.6	103	75 - 125	
2,2-Dichloropropane	20.0	18.1	90.3	65 - 135	
cis-1,3-Dichloropropene	20.0	20.3	101	70 - 125	
trans-1,3-Dichloropropene	20.0	18.8	94.0	65 - 125	
1,1-Dichloropropene	20.0	18.5	92.5	70 - 135	
Ethylbenzene	20.0	19.9	99.4	75 - 125	
2-Hexanone	20.0	20.8	104	45 - 145	
Hexachlorobutadiene	20.0	16.1	80.7	55 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4659243
Report generated: 03/07/2016 12:33

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030134 | Run Date: 03/06/2016 | Sample ID: WG559859-02
Instrument ID: HPMS9 | Run Time: 17:27 | Prep Method: 5030B/5030C/503
File ID: 9M973102 | Analyst: ADC | Method: 8260B
Workgroup (AAB#): WG559859 | Matrix: Soil | Units: ug/kg
QC Key: DOD4 | Lot#: STD74900 | Cal ID: HPMS9-25-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	19.6	98.1	75 - 130	
p-Isopropyltoluene	20.0	17.2	86.1	75 - 135	
4-Methyl-2-pentanone	20.0	21.5	107	45 - 145	
Methylene chloride	20.0	19.8	99.0	55 - 140	
Naphthalene	20.0	14.3	71.7	40 - 125	
n-Propylbenzene	20.0	18.4	92.2	65 - 135	
Styrene	20.0	19.7	98.4	75 - 125	
1,1,1,2-Tetrachloroethane	20.0	18.9	94.7	75 - 125	
1,1,2,2-Tetrachloroethane	20.0	17.3	86.7	55 - 130	
Tetrachloroethene	20.0	17.3	86.6	65 - 140	
Toluene	20.0	19.3	96.5	70 - 125	
1,2,3-Trichlorobenzene	20.0	15.3	76.7	60 - 135	
1,2,4-Trichlorobenzene	20.0	15.1	75.7	65 - 130	
1,1,1-Trichloroethane	20.0	18.5	92.3	70 - 135	
1,1,2-Trichloroethane	20.0	20.1	101	60 - 125	
Trichloroethene	20.0	19.4	96.9	75 - 125	
Trichlorofluoromethane	20.0	18.6	92.8	25 - 185	
1,2,3-Trichloropropane	20.0	17.5	87.4	65 - 130	
1,2,4-Trimethylbenzene	20.0	17.4	87.0	65 - 135	
1,3,5-Trimethylbenzene	20.0	18.2	91.0	65 - 135	
Vinyl chloride	20.0	21.1	105	60 - 125	
o-Xylene	20.0	20.0	100	75 - 125	
m-,p-Xylene	40.0	39.5	98.7	80 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	97.9	80 - 120	PASS
1,2-Dichloroethane-d4	97.6	80 - 120	PASS
Toluene-d8	100	85 - 115	PASS
4-Bromofluorobenzene	102	85 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4659243
Report generated: 03/07/2016 12:33

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16030134
Instrument: HPMS9
Analyst: FJB
Workgroup: WG555000

Tune ID: WG555000-01
Run Date: 01/25/2016
Run Time: 10:27
File ID: 9M972470
Cal ID: HPMS9 - 25-JAN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	23.0	10289	PASS
75.0	95.0	30.0	60.0	49.3	22030	PASS
95.0	95.0	100	100	100	44728	PASS
96.0	95.0	5.00	9.00	6.98	3122	PASS
173	174	0	2.00	0.381	160	PASS
174	95.0	50.0	100	93.9	41989	PASS
175	174	5.00	9.00	6.62	2778	PASS
176	174	95.0	101	95.6	40133	PASS
177	176	5.00	9.00	6.39	2564	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG555000-02	STD-S	01	01/25/2016 11:22	
WG555000-03	STD-S	01	01/25/2016 11:52	
WG555000-04	STD-S	01	01/25/2016 12:23	
WG555000-05	STD-CCV-S	01	01/25/2016 12:53	
WG555000-06	STD-S	01	01/25/2016 13:23	
WG555000-07	STD-S	01	01/25/2016 13:54	
WG555000-08	STD-S	01	01/25/2016 14:25	
WG555000-09	STD-S	01	01/25/2016 14:56	
WG555000-10	SSCV-S	01	01/25/2016 15:56	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4659248
Report generated 03/07/2016 12:33

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16030134
Instrument: HPMS9
Analyst: ADC
Workgroup: WG558732

Tune ID: WG558732-01
Run Date: 02/25/2016
Run Time: 14:45
File ID: 9M972894
Cal ID: HPMS9 - 25-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.2	5378	PASS
75.0	95.0	30.0	60.0	49.1	13067	PASS
95.0	95.0	100	100	100	26621	PASS
96.0	95.0	5.00	9.00	6.32	1683	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	85.8	22851	PASS
175	174	5.00	9.00	6.50	1485	PASS
176	174	95.0	101	98.3	22461	PASS
177	176	5.00	9.00	7.21	1619	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG558732-02	STD-CCV-S	01	02/25/2016 15:48	
WG558732-03	STD-S	01	02/25/2016 16:55	
WG558732-04	STD-S	01	02/25/2016 17:27	
WG558732-05	STD-S	01	02/25/2016 17:57	
WG558732-06	STD-S	01	02/25/2016 18:28	
WG558732-07	STD-S	01	02/25/2016 18:59	
WG558732-08	STD-S	01	02/25/2016 19:29	
WG558732-09	STD-S	01	02/25/2016 20:00	
WG558732-10	STD-S	01	02/25/2016 20:30	
WG558732-11	SSCV-S	01	02/25/2016 21:31	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4659248
Report generated 03/07/2016 12:33

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16030134
Instrument: HPMS9
Analyst: ADC
Workgroup: WG559858

Tune ID: WG559858-01
Run Date: 03/06/2016
Run Time: 14:28
File ID: 9M973096
Cal ID: HPMS9 - 25-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	23.0	6500	PASS
75.0	95.0	30.0	60.0	49.4	13966	PASS
95.0	95.0	100	100	100	28287	PASS
96.0	95.0	5.00	9.00	6.91	1954	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	74.8	21150	PASS
175	174	5.00	9.00	7.33	1550	PASS
176	174	95.0	101	95.6	20221	PASS
177	176	5.00	9.00	5.87	1186	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG559858-02	CCV-S	01	03/06/2016 15:56	
WG559859-01	BLANK	01	03/06/2016 16:57	
WG559859-02	LCS	01	03/06/2016 17:27	
L16030134-01	18DPT06(5-5.5)020316	01	03/06/2016 18:28	
L16030134-02	18DPT06(5-5.5)020316FD	01	03/06/2016 18:59	
L16030134-03	18DPT06(15-15.5)020316	01	03/06/2016 19:29	
L16030134-04	18DPT06(20-20.5)020316	01	03/06/2016 20:00	
L16030134-05	18DPT06(27.5-28)020316	01	03/06/2016 20:30	
L16030134-06	18DPT06(38.5-39)020316	01	03/06/2016 21:00	
WG559855-02	MS	01	03/07/2016 00:32	
WG559855-03	MSD	01	03/07/2016 01:02	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4659248
Report generated 03/07/2016 12:33

Calibration Table Report
Method: A9FOO_SL.M
Title: FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Calibration: Wed Jan 27 09:49:02 2016
Curve: WG555000
Calibration Files

Compound	5 9M972472.D	20 9M972473.D	50 9M972474.D	100 9M972475.D	200 9M972476.D	300 9M972477.D	400 9M972478.D	500 9M972479.D	Avg	%RSD	R^2 Linear
Fluorobenzene	ISTD										
Acetonitrile		0.053	0.046	0.048	0.052	0.046	0.052	0.054	0.050	6.657	
3-Chloro-1-propene	0.498	0.524	0.450	0.519	0.514	0.434	0.507	0.503	0.494	6.719	
2-Chloro-1,3-butadiene	0.534	0.576	0.519	0.592	0.585	0.509	0.593	0.584	0.561	6.202	
Ethyl Acetate		0.333	0.313	0.339	0.338	0.300	0.341	0.344	0.330	5.124	
Methacrylonitrile	0.102	0.109	0.101	0.112	0.110	0.096	0.112	0.112	0.107	5.912	
Isobutyl Alcohol	0.014	0.018	0.018	0.021	0.024	0.021	0.025	0.025	0.021	18.016	0.993
1-Butanol		0.010	0.013	0.015	0.017	0.015	0.018	0.018	0.015	17.838	0.992
Methyl methacrylate	0.236	0.246	0.231	0.265	0.265	0.231	0.271	0.269	0.252	7.005	
2-Nitropropane	0.069	0.073	0.074	0.083	0.089	0.079	0.093	0.095	0.082	12.090	
Chlorobenzene-d5	ISTD										
Cyclohexanone		0.020	0.022	0.025	0.028	0.023	0.027	0.028	0.025	12.963	
1,4-Dichlorobenzene-d4	ISTD										

Wed Jan 27 10:01:56 2016

Calibration Table Report
Method: 8260SL.M
Title: 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Calibration: Fri Feb 26 11:38:33 2016
Curve: WG558732
Calibration Files

Compound	0.5 9M972898.D	1 9M972899.D	2 9M972900.D	5 9M972901.D	20 9M972902.D	50 9M972896.D	100 9M972903.D	200 9M972904.D	300 9M972905.D	Avg	%RSD	R^2 Linear	Quadratic
Fluorobenzene	ISTD												
Dichlorodifluoromethane			0.338	0.271	0.399	0.396	0.318	0.357	0.307	0.341	13.734		
Chloromethane			0.372	0.280	0.331	0.361	0.296	0.346	0.304	0.327	10.674		
Vinyl Chloride		0.250	0.318	0.314	0.373	0.372	0.342	0.355	0.296	0.327	12.768		
1,3-Butadiene			0.347	0.266	0.328	0.330	0.297	0.321	0.293	0.312	8.837		
Bromomethane		0.236	0.267	0.181	0.206	0.208	0.186	0.217	0.199	0.213	13.250		
Chloroethane			0.127	0.116	0.142	0.165	0.139	0.173	0.160	0.146	14.271		
Trichlorofluoromethane		0.519	0.518	0.416	0.503	0.514	0.470	0.517	0.473	0.491	7.357		
Diethyl ether		0.215	0.246	0.217	0.243	0.241	0.214		0.231	0.230	6.215		
Isoprene			0.302	0.251	0.303	0.302	0.282	0.318	0.295	0.293	7.364		
Acrolein		0.041	0.046	0.045	0.046	0.048	0.046		0.050	0.046	6.212		
1,1,2-Trichloro-1,2,2-Trifluoroethane			0.252	0.234	0.255	0.261	0.248	0.273	0.251	0.253	4.699		
Acetone				0.179	0.138	0.128	0.119	0.124		0.138	17.810	0.999	
1,1-Dichloroethene		0.464	0.511	0.400	0.482	0.471	0.454	0.500	0.456	0.467	7.277		
Tert-Butyl Alcohol			0.057	0.046	0.055	0.051	0.047			0.051	8.698		
Dimethyl Sulfide		0.150	0.203	0.186	0.207	0.211	0.196	0.224	0.203	0.197	11.169		
Iodomethane				0.076	0.109	0.154	0.126	0.157	0.142	0.127	24.315	0.993	
Methyl acetate			0.282	0.223	0.279	0.262	0.240	0.258	0.234	0.254	8.867		
Methylene Chloride			0.271	0.217	0.263	0.261	0.240	0.280	0.249	0.254	8.252		
Carbon Disulfide			0.795	0.626	0.740	0.737	0.678	0.761	0.702	0.720	7.788		
Acrylonitrile		0.117	0.127	0.114	0.130	0.135	0.123		0.134	0.126	6.412		
Methyl Tert Butyl Ether		0.669	0.722	0.642	0.760	0.786	0.713	0.788	0.718	0.725	7.239		
trans-1,2-Dichloroethene		0.400	0.422	0.377	0.430	0.438	0.407	0.446	0.412	0.416	5.376		
n-Hexane			0.456	0.385	0.420	0.424	0.429	0.464	0.428	0.430	5.986		
Diisopropyl ether		0.938	1.068	0.928	1.071	1.051	0.931		0.995	0.998	6.627		
Vinyl Acetate			0.593	0.519	0.545	0.602	0.554	0.608	0.558	0.569	5.855		
1,1-Dichloroethane		0.548	0.558	0.445	0.532	0.549	0.499	0.553	0.500	0.523	7.454		
Ethyl-Tert-Butyl ether		0.871	0.992	0.852	0.990	0.988	0.865		0.934	0.928	6.918		
2-Butanone			0.177	0.152	0.156	0.166	0.156	0.172	0.149	0.161	6.650		
Propionitrile		0.042	0.055	0.048	0.053	0.051	0.048		0.049	0.049	8.494		
2,2-Dichloropropane			0.428	0.330	0.377	0.415	0.383	0.417	0.383	0.390	8.575		
cis-1,2-Dichloroethene		0.247	0.257	0.248	0.287	0.297	0.273	0.299	0.277	0.273	7.647		
Chloroform		0.473	0.530	0.432	0.482	0.509	0.459	0.505	0.454	0.480	6.746		
1-Bromopropane			0.011	0.041	0.042	0.043	0.040	0.045	0.041	0.038	31.434	0.997	
Bromochloromethane		0.131	0.173	0.169	0.194	0.199	0.179	0.197	0.178	0.177	12.275		
Tetrahydrofuran			0.111	0.099	0.110	0.110	0.097		0.097	0.104	6.802		
Dibromofluoromethane				0.267	0.243	0.286	0.286	0.274		0.271	6.547		
1,1,1-Trichloroethane		0.426	0.436	0.385	0.438	0.470	0.425	0.470	0.427	0.434	6.319		
Cyclohexane		0.465	0.495	0.425	0.494	0.478	0.465	0.503	0.464	0.474	5.302		
1,1-Dichloropropene		0.353	0.359	0.300	0.344	0.352	0.333	0.360	0.335	0.342	5.748		
Tert-Amyl-Methyl ether		0.631	0.709	0.631	0.716	0.716	0.632		0.684	0.674	6.133		
Carbon Tetrachloride			0.41939	0.34041	0.40512	0.42742	0.39181	0.43819	0.39737	0.40282	7.96886		
1,2-Dichloroethane-d4				0.34995	0.30686	0.35494	0.35835	0.33017		0.34005	6.33015		
Heptane										0	0		
1,2-Dichloroethane		0.36551	0.44947	0.39601	0.44224	0.45938	0.41291	0.4496	0.40581	0.42262	7.76179		
Benzene	1.14079	0.92872	1.03015	0.83328	0.97121	0.9721	0.88431	0.97127	0.88279	0.95718	9.53654		
Trichloroethene		0.30364	0.32158	0.26212	0.31219	0.31666	0.29597	0.321	0.29314	0.30329	6.54492		
Methylcyclohexane		0.31249	0.39837	0.32203	0.40419	0.39506	0.39323	0.42525	0.39247	0.38039	10.6291		
1,2-Dichloropropane		0.23004	0.27101	0.24016	0.27676	0.28593	0.2555	0.28277	0.26062	0.26285	7.66268		
1,4-Dioxane			0.0041	0.00361	0.00449	0.00376	0.00356		0.00414	0.00394	9.17892		
Bromodichloromethane			0.37851	0.33087	0.3725	0.39384	0.35929	0.397	0.36103	0.37044	6.13725		
Dibromomethane		0.15103	0.18915	0.16523	0.1825	0.18519	0.16707	0.1849	0.1682	0.17416	7.61692		
2-Chloroethyl Vinyl Ether				0.04535	0.05625	0.07439	0.06667	0.08013	0.07633	0.06652	20.1377	0.996	
4-Methyl-2-Pentanone				0.08933	0.11327	0.12554	0.11786	0.12977	0.11644	0.11537	12.2612		
cis-1,3-Dichloropropene			0.37321	0.33699	0.39477	0.41098	0.38072	0.42291	0.38195	0.38594	7.23123		
Dimethyl Disulfide			0.30882	0.3269	0.39409	0.4245	0.40234	0.4579	0.40032	0.38784	13.5683		
Chlorobenzene-d5	ISTD												
Toluene-d8				1.21266	1.14503	1.34974	1.34798	1.26813		1.26471	6.98417		
Toluene	1.57001	1.40445	1.51648	1.23448	1.46732	1.48749	1.3712	1.4823	1.3236	1.42859	7.34792		
Ethyl Methacrylate				0.31749	0.4112	0.4195	0.39758	0.44016	0.38999	0.39599	10.6751		
trans-1,3-Dichloropropene			0.50304	0.44978	0.5157	0.56049	0.50648	0.56248	0.50379	0.51454	7.49294		
1,1,2-Trichloroethane		0.27692	0.29584	0.27194	0.31787	0.32454	0.3	0.32173	0.292	0.3001	6.65768		
2-Hexanone				0.26013	0.28088	0.31451	0.30524	0.34734	0.28972	0.29964	10.056		
1,3-Dichloropropane		0.46617	0.55761	0.45639	0.51068	0.53187	0.47698	0.53043	0.47034	0.50006	7.49429		
Tetrachloroethene		0.33351	0.31568	0.26327	0.31051	0.30894	0.30156	0.32634	0.29026	0.30626	7.18201		
Dibromochloromethane			0.45014	0.36113	0.41394	0.44566	0.40515	0.45572	0.40415	0.41941	8.03547		
1,2-Dibromoethane				0.31086	0.34005	0.35035	0.32626	0.35324	0.31647	0.33287	5.32182		
1-Chlorohexane		0.39643	0.40929	0.33097	0.45098	0.44465	0.43807	0.477	0.42289	0.42128	10.5148		
Chlorobenzene		1.02904	1.08596	0.91908	1.05295	1.05625	0.95434	1.02465	0.91009	1.00405	6.67004		
1,1,1,2-Tetrachloroethane			0.37536	0.32525	0.38767	0.40783	0.37127	0.40937	0.36265	0.37706	7.67975		
Ethylbenzene	0.5157	0.51658	0.53164	0.45493	0.54391	0.54636	0.50916	0.54884	0.48836	0.51728	5.93862		
m-,p-Xylene	0.67213	0.61926	0.69794	0.58569	0.67162	0.65634	0.61182	0.65803	0.57657	0.63882	6.58722		
o-Xylene	0.61273	0.56415	0.61379	0.55512	0.6465	0.65334	0.60899	0.67127	0.59158	0.61305	6.41073		
Styrene		0.95813	1.06028	0.90308	1.08018	1.12326	1.04689	1.15897	1.02088	1.04396	8.002		
Bromoform			0.22872	0.23892	0.27832	0.30617	0.27263	0.32232	0.28054	0.27538	12.1348		
Isopropylbenzene		1.53891	1.69742	1.42189	1.74341	1.73716	1.64433	1.81019	1.57289	1.64577	7.76922		
1,4-Dichlorobenzene-d4	ISTD												
1,1,2,2-Tetrachloroethane		0.61571	0.83634	0.73739	0.79769	0.80854	0.74616	0.78083	0.74513	0.75847	8.88143		
p-Bromofluorobenzene				0.91653	0.87561	1.04735	1.0775	0.95104		0.97361	8.83571		
1,2,3-Trichloropropane		0.24645	0.29476	0.28329	0.29208	0.30442	0.29453	0.30315	0.28248	0.28764	6.41284		

trans-1,4-Dichloro-2-Butene		0.22501	0.23725	0.31415	0.3034	0.3105	0.33164	0.30766	0.28994	14.2446
n-Propylbenzene	3.98718	4.09811	3.61454	4.21971	4.10826	3.88939	3.82307	3.70205	3.93029	5.36989
Bromobenzene	0.84385	1.11565	0.86076	0.97118	0.9688	0.89248	0.89548	0.87446	0.92783	9.59949
1,3,5-Trimethylbenzene			2.76735	3.16086	3.10843	2.93606	2.91239	2.81635	2.95024	5.30322
2-Chlorotoluene		2.99265	2.31448	2.81057	2.64897	2.50142	2.61378	2.57101	2.63612	8.25378
4-Chlorotoluene	2.56339	2.5861	2.29006	2.55177	2.63031	2.41864	2.2799	2.17747	2.4372	6.98222
a-Methylstyrene			1.12025	1.41688	1.39756	1.35572	1.41986	1.35543	1.34428	8.43365
tert-Butylbenzene			0.56026	0.65003	0.66483	0.62531	0.61977	0.59094	0.61853	6.19423
1,2,4-Trimethylbenzene	3.41485	3.20381	2.86379	3.24429	3.17284	3.0014	2.96997	2.8463	3.08966	6.49589
sec-Butylbenzene	3.92127	3.95846	3.39254	3.98281	3.96896	3.8029	3.77812	3.59297	3.79976	5.54855
p-Isopropyltoluene			2.97918	3.35219	3.3501	3.24235	3.24339	3.07285	3.20668	4.70949
1,3-Dichlorobenzene	2.09668	2.18083	1.63464	1.82169	1.84149	1.71899	1.77783	1.67989	1.84401	10.6223
1,4-Dichlorobenzene	2.13498	2.06617	1.68605	1.85221	1.83159	1.72549	1.79434	1.65691	1.84347	9.41157
n-Butylbenzene	3.12981	3.1425	2.56827	2.96652	3.08072	3.01911	3.06733	2.87744	2.98146	6.31771
1,2-Dichlorobenzene	1.80685	1.84212	1.52596	1.70901	1.74915	1.66133	1.78603	1.60751	1.71099	6.28256
1,2-Dibromo-3-Chloropropane			0.17584	0.21007	0.23479	0.23723	0.24208	0.21787	0.21965	11.2549
1,2,4-Trichlorobenzene	1.3714	1.33063	1.02655	1.15029	1.2163	1.24479	1.25089	1.12609	1.21462	9.21088
Hexachlorobutadiene	0.57233	0.7279	0.53741	0.61674	0.64289	0.67353	0.72181	0.62948	0.64026	10.4449
Naphthalene		3.19632	2.63671	3.04494	3.29135	3.2233	3.14196	2.79099	3.04651	7.99534
1,2,3-Trichlorobenzene	1.32324	1.26566	0.99788	1.12352	1.21351	1.21702	1.20507	1.0788	1.17809	8.93408

Fri Feb 26 11:40:14 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16030134 Run Date: 02/25/2016 Sample ID: WG558732-11
Instrument ID: HPMS9 Run Time: 21:31 Method: 8260B
File ID: 9M972907 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG558732 Cal ID: HPMS9 - 25-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	48.0	ug/kg	0.461	4.00	20	
1,1-Dichloroethene	CCC	50.0	48.6	ug/kg	0.454	2.90	20	
1,2-Dichloropropane	CCC	50.0	52.3	ug/kg	0.275	4.60	20	
Ethylbenzene	CCC	50.0	51.3	ug/kg	0.531	2.60	20	
Toluene	CCC	50.0	50.7	ug/kg	1.45	1.50	20	
Vinyl Chloride	CCC	50.0	59.8	ug/kg	0.392	19.7	20	
Bromoform	SPCC	50.0	47.3	ug/kg	0.261	5.40	20	
Chlorobenzene	SPCC	50.0	51.2	ug/kg	1.03	2.40	20	
Chloromethane	SPCC	50.0	52.7	ug/kg	0.345	5.40	20	
1,1-Dichloroethane	SPCC	50.0	46.4	ug/kg	0.485	7.20	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	52.0	ug/kg	0.789	4.00	20	
Acetone		50.0	43.9	ug/kg	0.112	12.2	20	
Benzene		50.0	49.0	ug/kg	0.937	2.10	20	
Bromobenzene		50.0	52.2	ug/kg	0.968	4.40	20	
Bromochloromethane		50.0	51.5	ug/kg	0.183	3.00	20	
Bromodichloromethane		50.0	47.6	ug/kg	0.352	4.90	20	
Bromomethane		50.0	49.0	ug/kg	0.208	2.10	20	
2-Butanone		50.0	47.4	ug/kg	0.153	5.20	20	
n-Butylbenzene		50.0	52.5	ug/kg	3.13	4.90	20	
sec-Butylbenzene		50.0	54.7	ug/kg	4.16	9.50	20	
tert-Butylbenzene		50.0	55.4	ug/kg	0.685	10.8	20	
Carbon Disulfide		50.0	44.1	ug/kg	0.635	11.7	20	
Carbon Tetrachloride		50.0	46.5	ug/kg	0.375	7.00	20	
Dibromochloromethane		50.0	48.5	ug/kg	0.407	3.10	20	
Chloroethane		50.0	54.2	ug/kg	0.158	8.30	20	
2-Chlorotoluene		50.0	54.2	ug/kg	2.86	8.40	20	
4-Chlorotoluene		50.0	53.0	ug/kg	2.59	6.10	20	
1,2-Dibromo-3-Chloropropane		50.0	54.5	ug/kg	0.239	8.90	20	
1,2-Dibromoethane		50.0	50.8	ug/kg	0.338	1.50	20	
Dibromomethane		50.0	47.0	ug/kg	0.164	6.10	20	
1,2-Dichlorobenzene		50.0	52.7	ug/kg	1.81	5.50	20	
1,3-Dichlorobenzene		50.0	50.8	ug/kg	1.87	1.60	20	
1,4-Dichlorobenzene		50.0	51.1	ug/kg	1.88	2.20	20	
Dichlorodifluoromethane		50.0	63.4	ug/kg	0.432	26.7	20	*
1,2-Dichloroethane		50.0	49.2	ug/kg	0.416	1.60	20	
cis-1,2-Dichloroethene		50.0	52.6	ug/kg	0.287	5.20	20	
trans-1,2-Dichloroethene		50.0	50.6	ug/kg	0.422	1.20	20	
1,3-Dichloropropane		50.0	53.8	ug/kg	0.538	7.60	20	
2,2-Dichloropropane		50.0	47.1	ug/kg	0.368	5.90	20	
cis-1,3-Dichloropropene		50.0	53.2	ug/kg	0.411	6.40	20	
trans-1,3-Dichloropropene		50.0	50.0	ug/kg	0.515	0.100	20	
1,1-Dichloropropene		50.0	48.5	ug/kg	0.332	2.90	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4659246
Report generated 03/07/2016 12:33

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16030134 Run Date: 02/25/2016 Sample ID: WG558732-11
Instrument ID: HPMS9 Run Time: 21:31 Method: 8260B
File ID: 9M972907 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG558732 Cal ID: HPMS9 - 25-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	48.2	ug/kg	0.289	3.60	20	
Hexachlorobutadiene		50.0	54.5	ug/kg	0.698	9.00	20	
Isopropylbenzene		50.0	52.0	ug/kg	1.71	4.00	20	
p-Isopropyltoluene		50.0	54.1	ug/kg	3.47	8.10	20	
4-Methyl-2-Pentanone		50.0	47.8	ug/kg	0.110	4.40	20	
Methylene Chloride		50.0	49.8	ug/kg	0.254	0.400	20	
Naphthalene		50.0	50.8	ug/kg	3.10	1.70	20	
n-Propylbenzene		50.0	54.9	ug/kg	4.32	9.80	20	
Styrene		50.0	52.8	ug/kg	1.10	5.60	20	
1,1,1,2-Tetrachloroethane		50.0	49.7	ug/kg	0.375	0.600	20	
Tetrachloroethene		50.0	49.8	ug/kg	0.305	0.400	20	
1,2,3-Trichlorobenzene		50.0	52.6	ug/kg	1.24	5.20	20	
1,2,4-Trichlorobenzene		50.0	51.7	ug/kg	1.26	3.40	20	
1,1,1-Trichloroethane		50.0	46.7	ug/kg	0.406	6.50	20	
1,1,2-Trichloroethane		50.0	51.5	ug/kg	0.309	3.00	20	
Trichloroethene		50.0	49.4	ug/kg	0.300	1.20	20	
Trichlorofluoromethane		50.0	47.6	ug/kg	0.467	4.90	20	
1,2,3-Trichloropropane		50.0	54.2	ug/kg	0.312	8.40	20	
1,2,4-Trimethylbenzene		50.0	51.5	ug/kg	3.18	3.10	20	
1,3,5-Trimethylbenzene		50.0	54.3	ug/kg	3.21	8.60	20	
o-Xylene		50.0	53.6	ug/kg	0.657	7.10	20	
m-,p-Xylene		100	103	ug/kg	0.655	2.60	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

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Version 1.5 PDF File ID: 4659246
Report generated 03/07/2016 12:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030134 Run Date: 03/06/2016 Sample ID: WG559858-02
Instrument ID: HPMS9 Run Time: 15:56 Method: 8260B
File ID: 9M973099 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG559859 Cal ID: HPMS9 - 25-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.3	ug/kg	0.483	0.621	20	
1,1-Dichloroethene	CCC	50.0	50.4	ug/kg	0.471	0.823	20	
1,2-Dichloropropane	CCC	50.0	53.8	ug/kg	0.283	7.66	20	
Ethylbenzene	CCC	50.0	50.8	ug/kg	0.526	1.66	20	
Toluene	CCC	50.0	49.6	ug/kg	1.42	0.854	20	
Vinyl Chloride	CCC	50.0	51.6	ug/kg	0.338	3.15	20	
Bromoform	SPCC	50.0	50.7	ug/kg	0.279	1.46	20	
Chlorobenzene	SPCC	50.0	49.1	ug/kg	0.986	1.82	20	
Chloromethane	SPCC	50.0	44.3	ug/kg	0.290	11.3	20	
1,1-Dichloroethane	SPCC	50.0	50.8	ug/kg	0.532	1.64	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	46.7	ug/kg	0.708	6.65	20	
Xylenes		150	153	ug/kg	0.639	1.95	40	
Acetone		50.0	50.5	ug/kg	0.128	0.987	20	
Benzene		50.0	50.0	ug/kg	0.958	0.0928	20	
Bromobenzene		50.0	44.1	ug/kg	0.818	11.8	20	
Bromochloromethane		50.0	52.1	ug/kg	0.185	4.10	20	
Bromodichloromethane		50.0	50.8	ug/kg	0.376	1.60	20	
Bromomethane		50.0	42.0	ug/kg	0.179	16.0	20	
2-Butanone		50.0	53.7	ug/kg	0.173	7.40	20	
n-Butylbenzene		50.0	47.0	ug/kg	2.81	5.91	20	
sec-Butylbenzene		50.0	46.4	ug/kg	3.53	7.21	20	
tert-Butylbenzene		50.0	46.5	ug/kg	0.575	7.10	20	
Carbon Disulfide		50.0	52.0	ug/kg	0.748	3.91	20	
Carbon Tetrachloride		50.0	49.4	ug/kg	0.398	1.11	20	
Dibromochloromethane		50.0	50.2	ug/kg	0.421	0.410	20	
Chloroethane		50.0	48.2	ug/kg	0.141	3.54	20	
2-Chlorotoluene		50.0	45.4	ug/kg	2.39	9.21	20	
4-Chlorotoluene		50.0	45.4	ug/kg	2.21	9.25	20	
1,2-Dibromo-3-Chloropropane		50.0	44.5	ug/kg	0.196	11.0	20	
1,2-Dibromoethane		50.0	49.7	ug/kg	0.331	0.666	20	
Dibromomethane		50.0	52.1	ug/kg	0.182	4.21	20	
1,2-Dichlorobenzene		50.0	44.1	ug/kg	1.51	11.9	20	
1,3-Dichlorobenzene		50.0	42.5	ug/kg	1.57	14.9	20	
1,4-Dichlorobenzene		50.0	42.5	ug/kg	1.57	15.0	20	
Dichlorodifluoromethane		50.0	41.5	ug/kg	0.283	17.0	20	
1,2-Dichloroethane		50.0	55.1	ug/kg	0.466	10.2	20	
cis-1,2-Dichloroethene		50.0	51.9	ug/kg	0.284	3.80	20	
trans-1,2-Dichloroethene		50.0	52.4	ug/kg	0.437	4.86	20	
1,3-Dichloropropane		50.0	51.1	ug/kg	0.511	2.11	20	
2,2-Dichloropropane		50.0	50.1	ug/kg	0.392	0.293	20	
cis-1,3-Dichloropropene		50.0	52.2	ug/kg	0.403	4.42	20	
trans-1,3-Dichloropropene		50.0	51.2	ug/kg	0.527	2.43	20	

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030134 Run Date: 03/06/2016 Sample ID: WG559858-02
Instrument ID: HPMS9 Run Time: 15:56 Method: 8260B
File ID: 9M973099 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG559859 Cal ID: HPMS9 - 25-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	50.4	ug/kg	0.345	0.871	20	
2-Hexanone		50.0	54.4	ug/kg	0.326	8.80	20	
Hexachlorobutadiene		50.0	43.0	ug/kg	0.551	13.9	20	
Isopropylbenzene		50.0	51.5	ug/kg	1.70	3.04	20	
p-Isopropyltoluene		50.0	45.9	ug/kg	2.94	8.26	20	
4-Methyl-2-Pentanone		50.0	55.6	ug/kg	0.128	11.2	20	
Methylene Chloride		50.0	49.6	ug/kg	0.253	0.775	20	
Naphthalene		50.0	46.1	ug/kg	2.81	7.78	20	
n-Propylbenzene		50.0	46.6	ug/kg	3.66	6.80	20	
Styrene		50.0	51.5	ug/kg	1.08	2.98	20	
1,1,1,2-Tetrachloroethane		50.0	50.4	ug/kg	0.380	0.836	20	
Tetrachloroethene		50.0	49.2	ug/kg	0.302	1.50	20	
1,2,3-Trichlorobenzene		50.0	44.2	ug/kg	1.04	11.5	20	
1,2,4-Trichlorobenzene		50.0	42.8	ug/kg	1.04	14.3	20	
1,1,1-Trichloroethane		50.0	50.1	ug/kg	0.435	0.115	20	
1,1,2-Trichloroethane		50.0	54.3	ug/kg	0.326	8.65	20	
Trichloroethene		50.0	50.4	ug/kg	0.306	0.764	20	
Trichlorofluoromethane		50.0	47.7	ug/kg	0.469	4.53	20	
1,2,3-Trichloropropane		50.0	47.6	ug/kg	0.274	4.81	20	
1,2,4-Trimethylbenzene		50.0	44.7	ug/kg	2.76	10.7	20	
1,3,5-Trimethylbenzene		50.0	45.6	ug/kg	2.69	8.72	20	
o-Xylene		50.0	51.4	ug/kg	0.630	2.72	20	
m-,p-Xylene		100	102	ug/kg	0.649	1.57	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4659249
Report generated 03/07/2016 12:33

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16030134
Instrument ID: HPMS9
Workgroup (AAB#): WG559859

ICAL CCV Number: WG558732-02
CAL ID: HPMS9-25-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558732-02	NA	NA	183008	378926	517775
Upper Limit	NA	NA	366016	757852	1035550
Lower Limit	NA	NA	91504	189463	258888
L16030134-01	1.00	01	212370	416715	554464
L16030134-02	1.00	01	203978	402733	546953
L16030134-03	1.00	01	181442	346645	466371
L16030134-04	1.00	01	192544	366169	484932
L16030134-05	1.00	01	192130	376977	507085
L16030134-06	1.00	01	172969	329308	440806
WG559859-01	1.00	01	209918	419175	561969
WG559859-02	1.00	01	236934	449882	599667

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4659250
Report generated 03/07/2016 12:34

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16030134
Instrument ID: HPMS9
Workgroup (AAB#): WG559859

ICAL CCV Number: WG558732-02
CAL ID: HPMS9 - 25-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558732-02	NA	NA	17.76	14.73	10.85
Upper Limit	NA	NA	18.26	15.23	11.35
Lower Limit	NA	NA	17.26	14.23	10.35
L16030134-01	1.00	01	17.75	14.72	10.85
L16030134-02	1.00	01	17.75	14.72	10.85
L16030134-03	1.00	01	17.75	14.72	10.85
L16030134-04	1.00	01	17.75	14.72	10.85
L16030134-05	1.00	01	17.75	14.72	10.85
L16030134-06	1.00	01	17.75	14.72	10.85
WG559859-01	1.00	01	17.75	14.72	10.85
WG559859-02	1.00	01	17.75	14.72	10.85

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4659253
Report generated: 03/07/2016 12:34

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973104.D Vial: 8
Acq On : 6 Mar 2016 18:28 Operator: ADC
Sample : L16030134-01 A 8260 4.62g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 12:19:06 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	554464	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	416715	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.75	152	212370	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	144511	48.0825 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.16%		
43) 1,2-Dichloroethane-d4	10.45	65	177130	46.9721 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.94%		
58) Toluene-d8	12.83	98	514823	48.8426 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 97.68%		
79) p-Bromofluorobenzene	16.23	95	208085	50.3193 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 100.64%		

Target Compounds

					Qvalue
13) Acetone	6.41	43	6120	2.0738 ug/kg#	72
36) Tetrahydrofuran	9.79	42	1173	1.0178 ug/kg#	43
56) Dimethyl Disulfide	12.83	94	14764	3.4328 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M973104.D 8260SL.M Mon Mar 07 12:19:06 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973104.D Vial: 8
Acq On : 6 Mar 2016 18:28 Operator: ADC
Sample : L16030134-01 A 8260 4.62g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 7 12:19 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

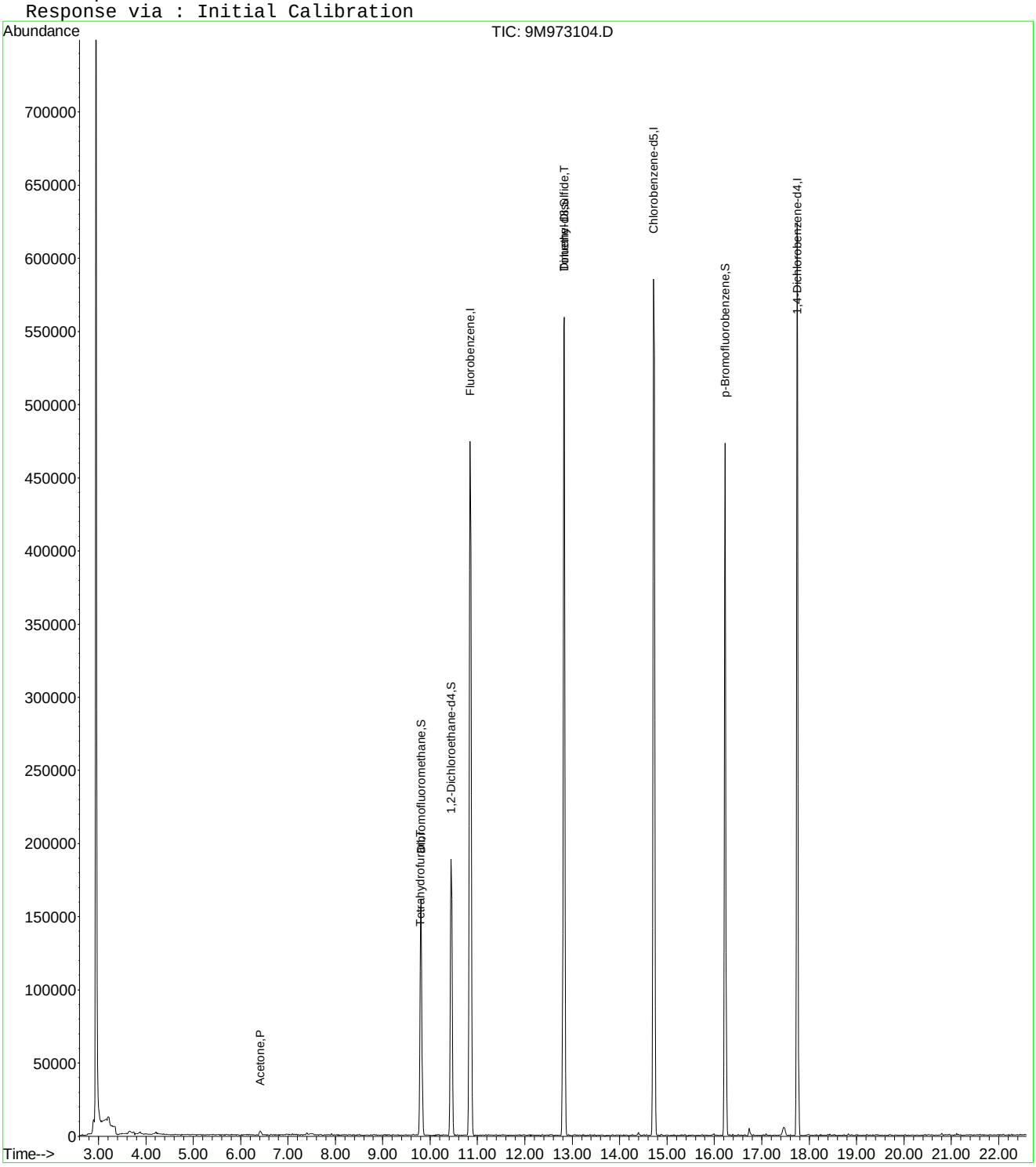

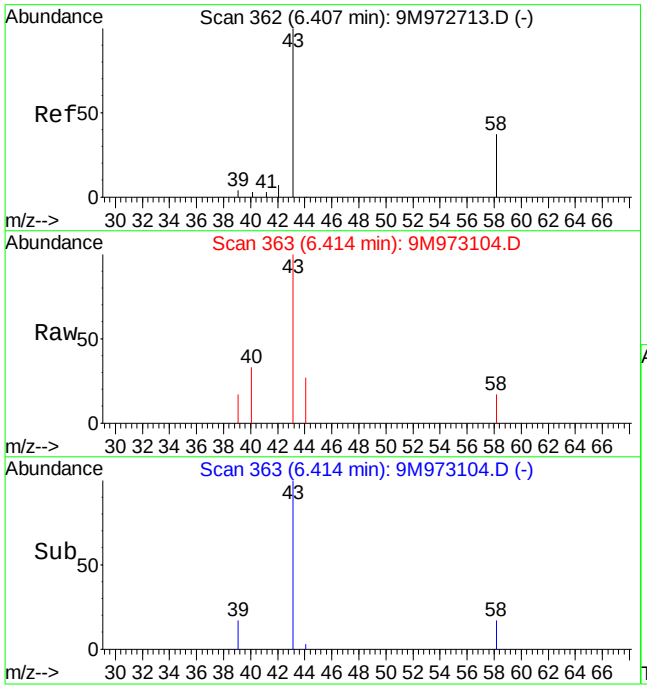

#13
Acetone
Concen: 2.07 ug/kg
RT: 6.41 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M973104.D
Acq: 6 Mar 2016 18:28

Tgt Ion: 43 Resp: 6120

Ion	Ratio	Lower	Upper
43	100		
58	13.6	16.9	39.3#

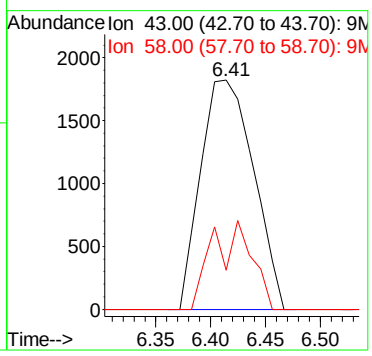

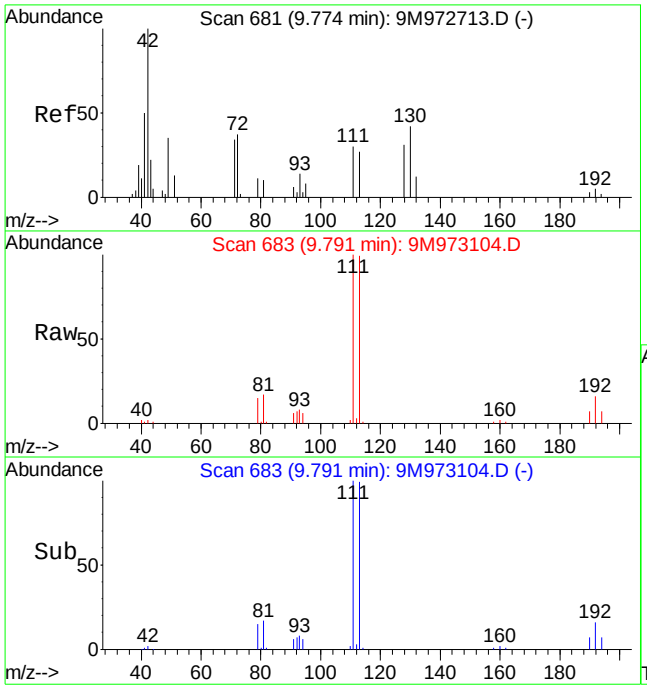

#36
Tetrahydrofuran
Concen: 1.02 ug/kg
RT: 9.79 min Scan# 683
Delta R.T. 0.01 min
Lab File: 9M973104.D
Acq: 6 Mar 2016 18:28

Tgt Ion: 42 Resp: 1173

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

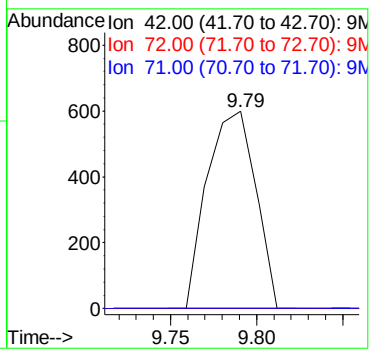

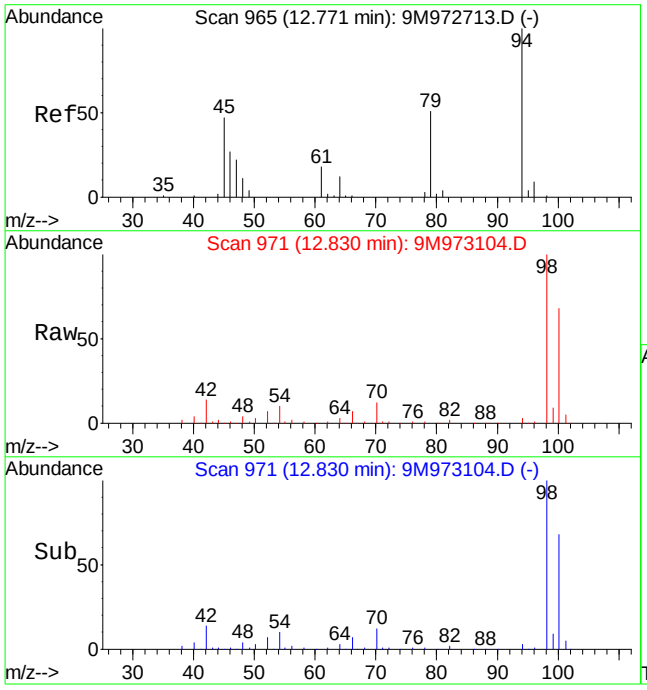

#56
Dimethyl Disulfide
Concen: 3.43 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.06 min
Lab File: 9M973104.D
Acq: 6 Mar 2016 18:28

Tgt Ion: 94 Resp: 14764

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

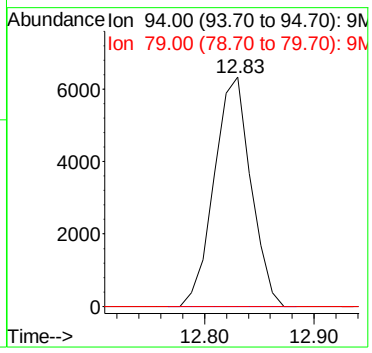

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973105.D Vial: 9
Acq On : 6 Mar 2016 18:59 Operator: ADC
Sample : L16030134-02 A 8260 5.17g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 12:19:07 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	546953	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	402733	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	203978	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	141902	47.8628 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.72%		
43) 1,2-Dichloroethane-d4	10.45	65	177910	47.8269 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.66%		
58) Toluene-d8	12.82	98	505893	49.6617 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.32%		
79) p-Bromofluorobenzene	16.22	95	202944	51.0952 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.20%		

Target Compounds

					Qvalue
13) Acetone	6.40	43	7069	2.8578 ug/kg	96
29) 2-Butanone	9.04	43	938	0.5318 ug/kg#	58
36) Tetrahydrofuran	9.79	42	1242	1.0924 ug/kg#	43
56) Dimethyl Disulfide	12.82	94	14953	3.5245 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M973105.D 8260SL.M Mon Mar 07 12:19:07 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973105.D Vial: 9
Acq On : 6 Mar 2016 18:59 Operator: ADC
Sample : L16030134-02 A 8260 5.17g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 7 12:19 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

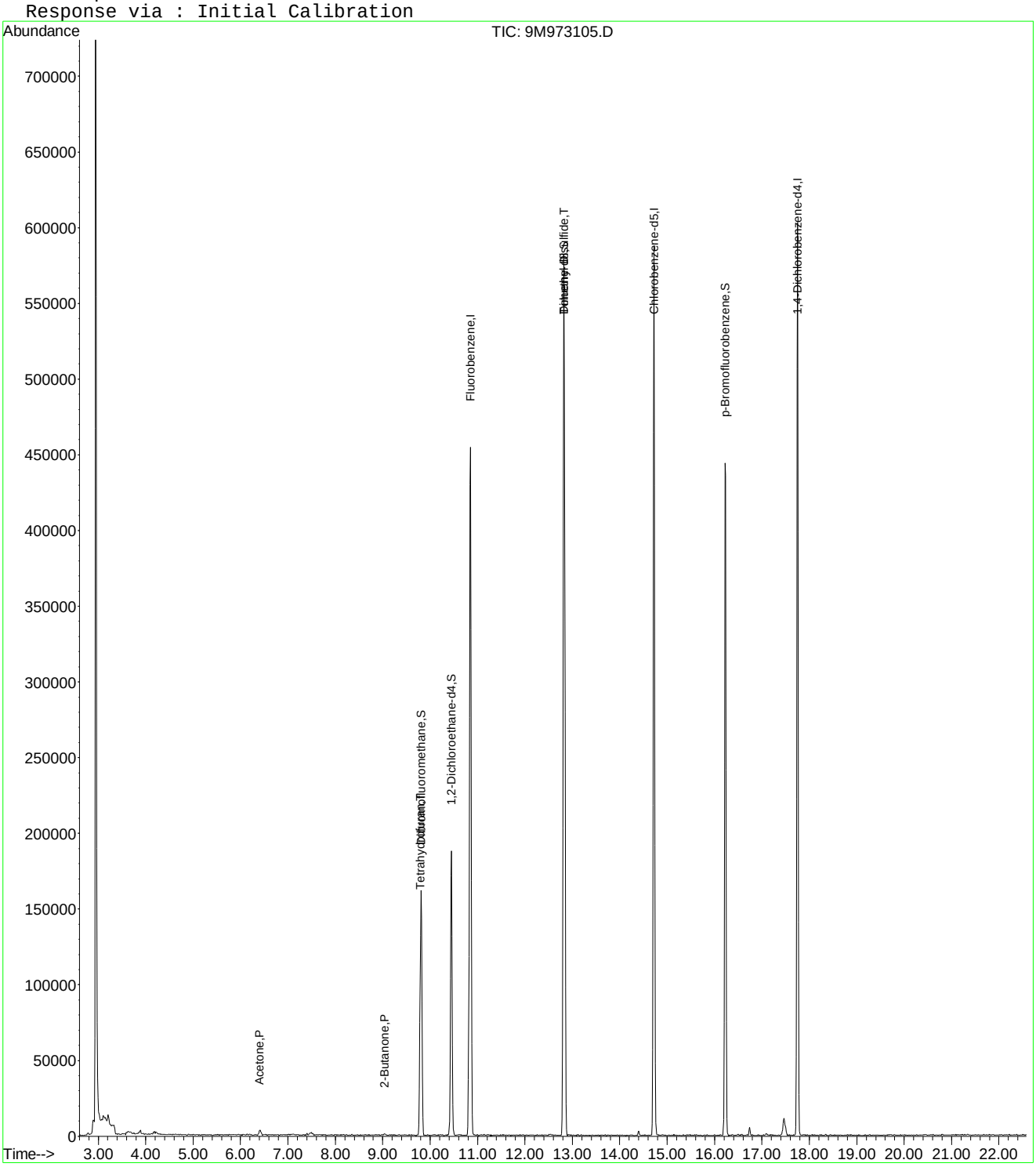

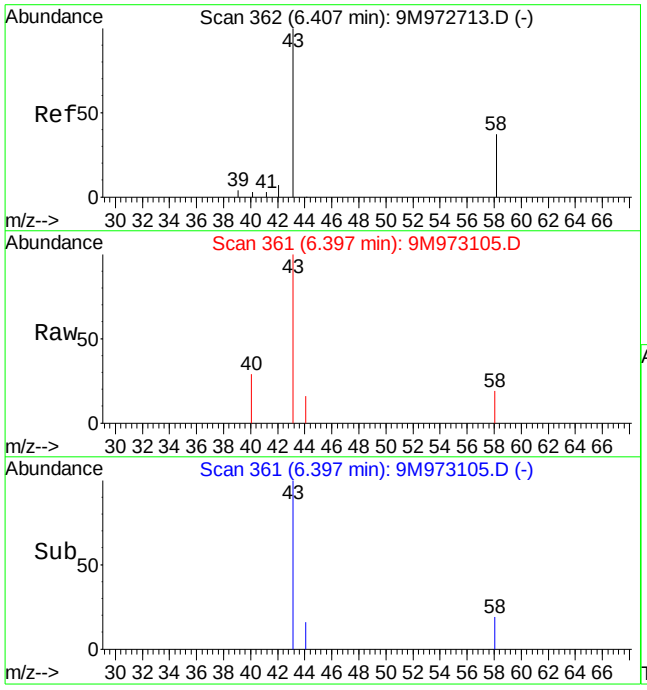

#13
Acetone
Concen: 2.86 ug/kg
RT: 6.40 min Scan# 361
Delta R.T. -0.02 min
Lab File: 9M973105.D
Acq: 6 Mar 2016 18:59

Tgt Ion: 43 Resp: 7069

Ion	Ratio	Lower	Upper
43	100		
58	26.0	16.9	39.3

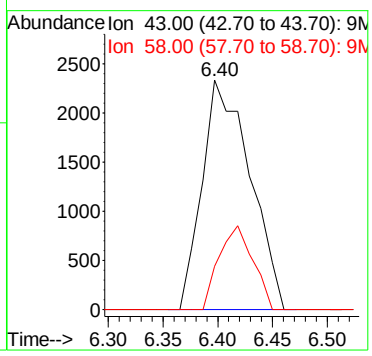

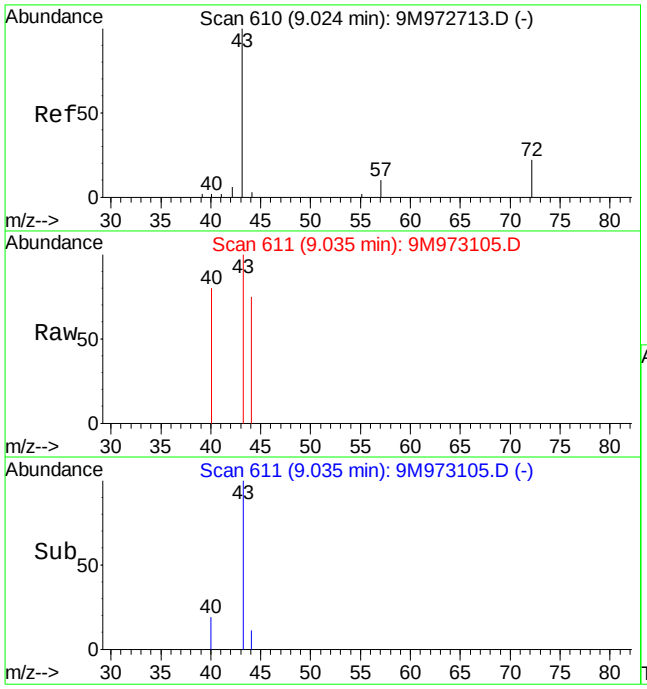

#29
2-Butanone
Concen: 0.53 ug/kg
RT: 9.04 min Scan# 611
Delta R.T. 0.00 min
Lab File: 9M973105.D
Acq: 6 Mar 2016 18:59

Tgt Ion: 43 Resp: 938

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

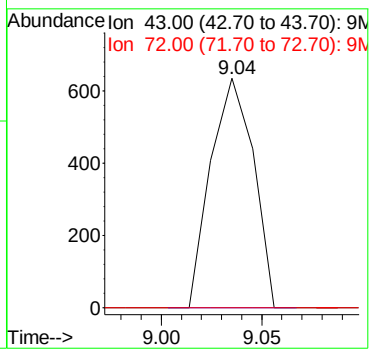

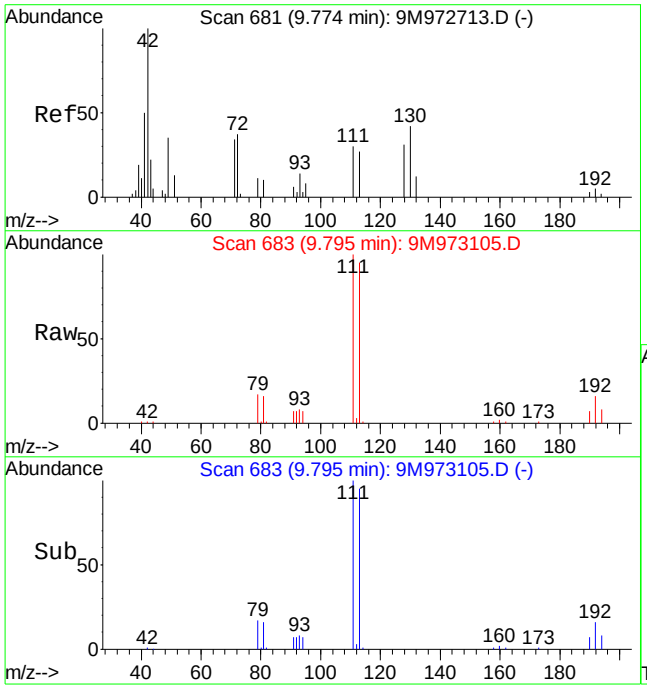

#36
Tetrahydrofuran
Concen: 1.09 ug/kg
RT: 9.79 min Scan# 683
Delta R.T. 0.01 min
Lab File: 9M973105.D
Acq: 6 Mar 2016 18:59

Tgt Ion: 42 Resp: 1242

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

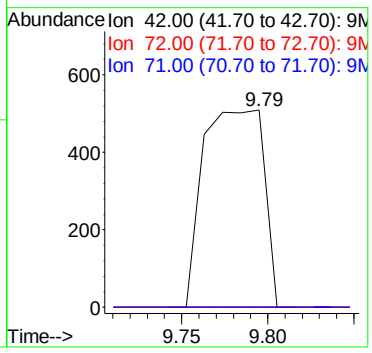

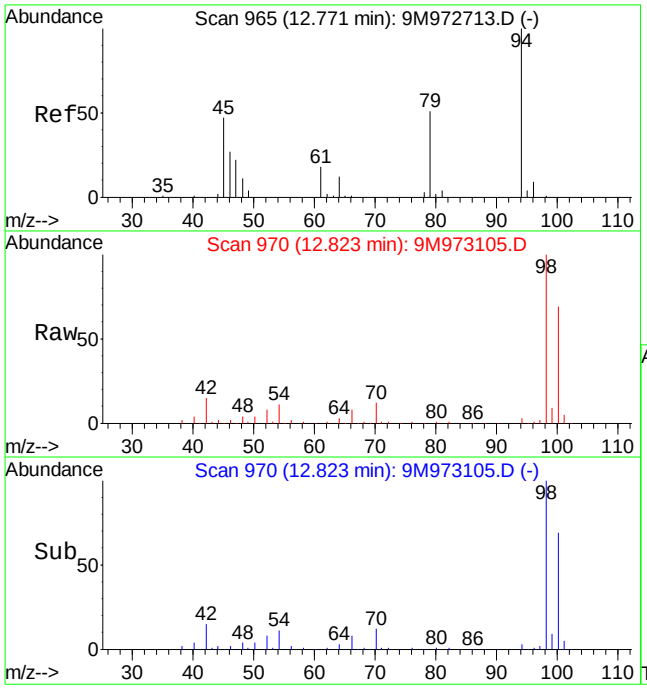

#56
Dimethyl Disulfide
Concen: 3.52 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M973105.D
Acq: 6 Mar 2016 18:59

Tgt Ion: 94 Resp: 14953

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

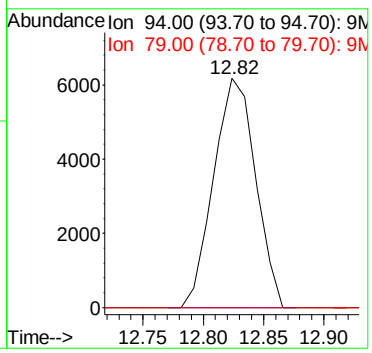

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973106.D Vial: 10
Acq On : 6 Mar 2016 19:29 Operator: ADC
Sample : L16030134-03 A 8260 4.94g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 12:19:08 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	466371	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	346645	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	181442	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	120306	47.5900 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.18%		
43) 1,2-Dichloroethane-d4	10.45	65	153783	48.4840 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.96%		
58) Toluene-d8	12.82	98	434125	49.5119 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.02%		
79) p-Bromofluorobenzene	16.23	95	175652	49.7167 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 99.44%		

Target Compounds					Qvalue
13) Acetone	6.40	43	7908	4.5334 ug/kg	99
15) Tert-Butyl Alcohol	6.76	59	1669	3.4999 ug/kg#	58
29) 2-Butanone	9.03	43	1874	1.2461 ug/kg#	58
36) Tetrahydrofuran	9.77	42	1105	1.1399 ug/kg#	43
56) Dimethyl Disulfide	12.82	94	12440	3.4388 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M973106.D 8260SL.M Mon Mar 07 12:19:08 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973106.D Vial: 10
Acq On : 6 Mar 2016 19:29 Operator: ADC
Sample : L16030134-03 A 8260 4.94g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 7 12:19 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

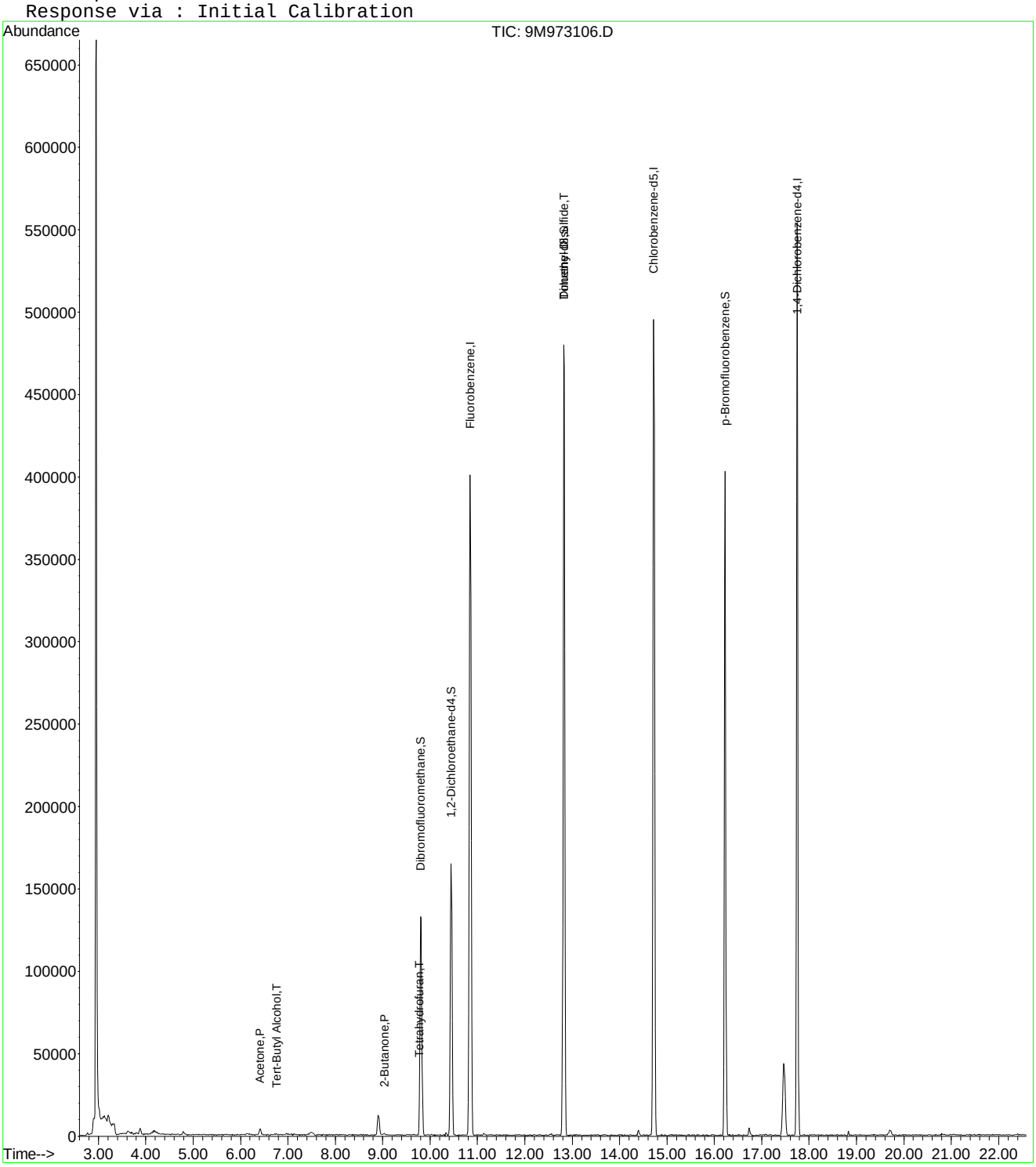

9M973106.D 8260SL.M Mon Mar 07 12:19:08 2016 Page 2

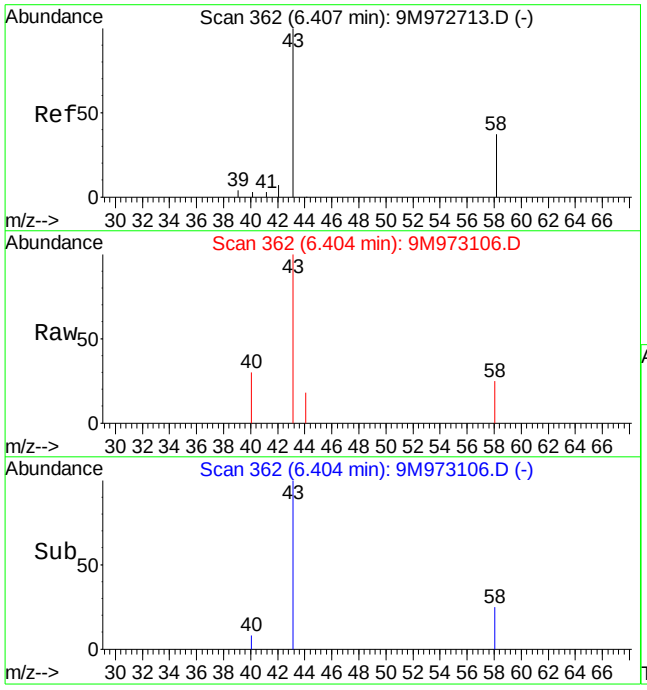

#13
Acetone
Concen: 4.53 ug/kg
RT: 6.40 min Scan# 362
Delta R.T. -0.01 min
Lab File: 9M973106.D
Acq: 6 Mar 2016 19:29

Tgt Ion: 43 Resp: 7908

Ion	Ratio	Lower	Upper
43	100		
58	27.4	16.9	39.3

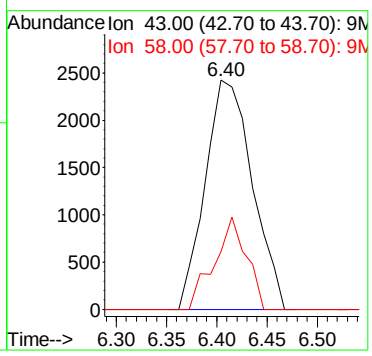

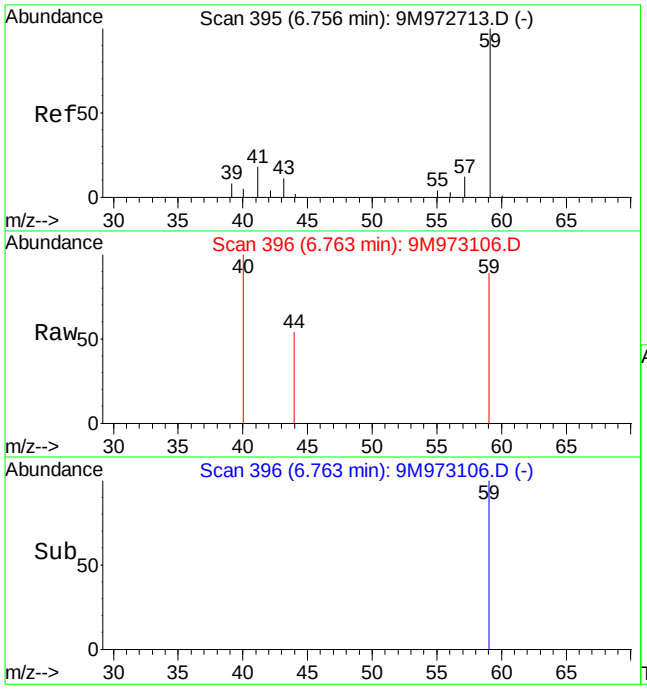

#15
Tert-Butyl Alcohol
Concen: 3.50 ug/kg
RT: 6.76 min Scan# 396
Delta R.T. 0.00 min
Lab File: 9M973106.D
Acq: 6 Mar 2016 19:29

Tgt Ion: 59 Resp: 1669

Ion	Ratio	Lower	Upper
59	100		
41	0.0	14.1	32.9#
57	0.0	6.4	15.0#

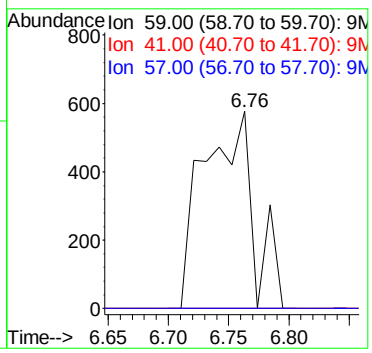

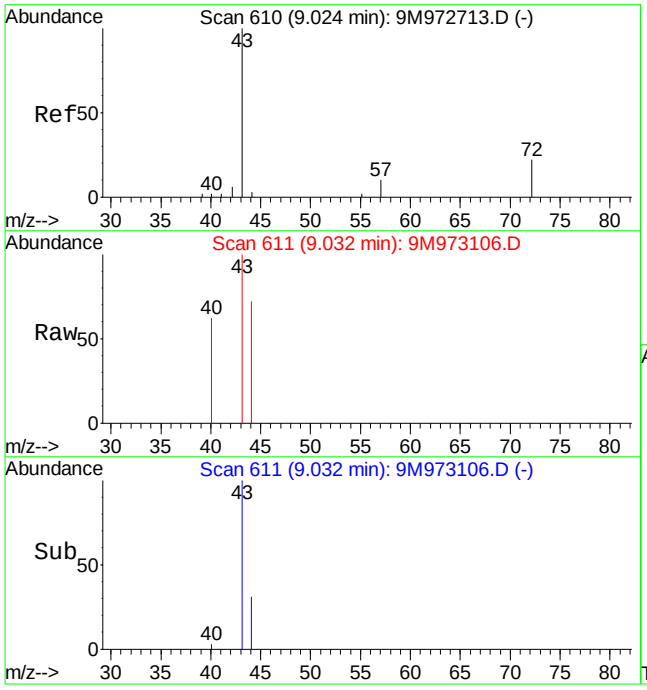

#29
2-Butanone
Concen: 1.25 ug/kg
RT: 9.03 min Scan# 611
Delta R.T. 0.00 min
Lab File: 9M973106.D
Acq: 6 Mar 2016 19:29

Tgt Ion: 43 Resp: 1874

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

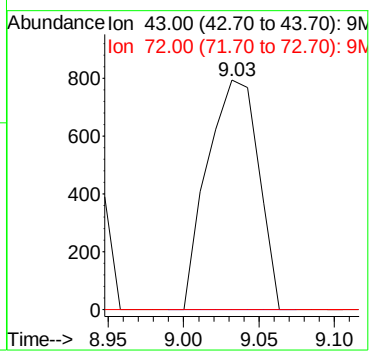

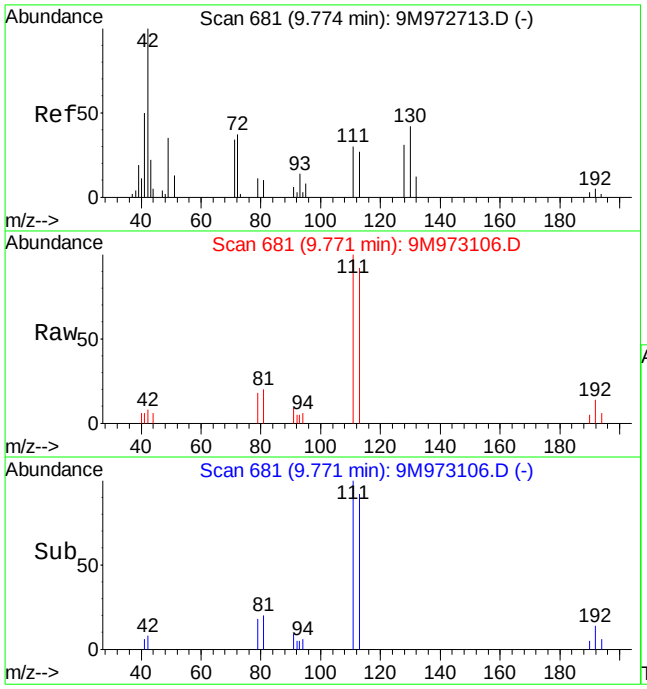

#36
Tetrahydrofuran
Concen: 1.14 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. -0.01 min
Lab File: 9M973106.D
Acq: 6 Mar 2016 19:29

Tgt Ion: 42 Resp: 1105

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

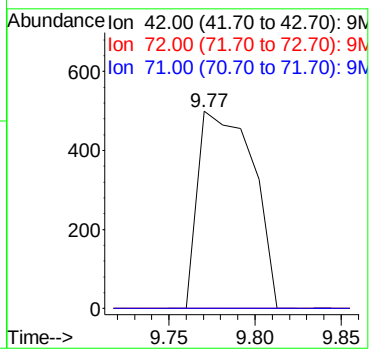

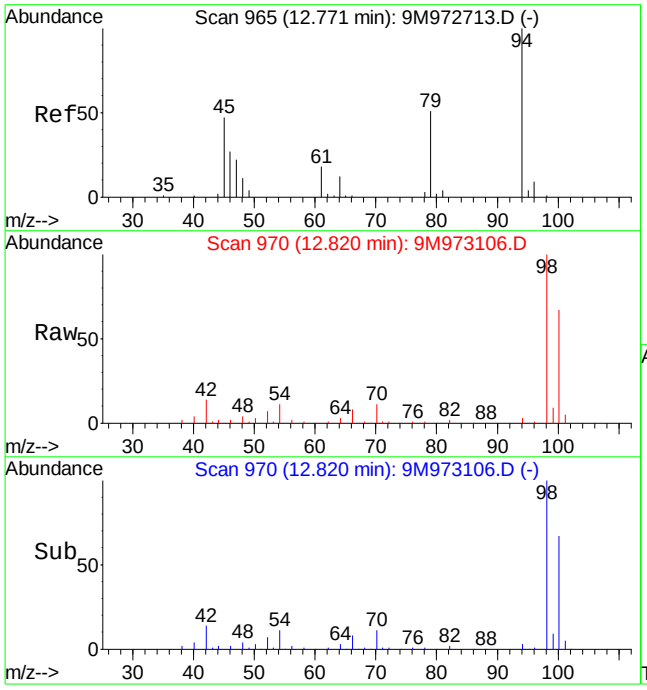

#56
Dimethyl Disulfide
Concen: 3.44 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M973106.D
Acq: 6 Mar 2016 19:29

Tgt Ion: 94 Resp: 12440

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

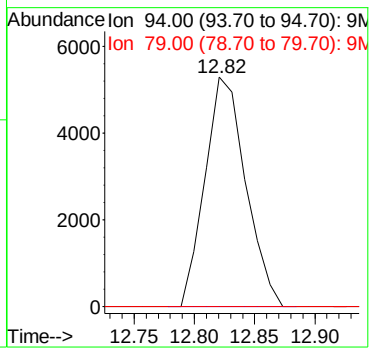

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973107.D Vial: 11
Acq On : 6 Mar 2016 20:00 Operator: ADC
Sample : L16030134-04 A 8260 4.75g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 12:19:09 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	484932	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	366169	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	192544	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	128739	48.9766 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.96%		
43) 1,2-Dichloroethane-d4	10.45	65	163022	49.4296 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.86%		
58) Toluene-d8	12.83	98	456733	49.3129 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.62%		
79) p-Bromofluorobenzene	16.23	95	184269	49.1484 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 98.30%		

Target Compounds

					Qvalue
13) Acetone	6.42	43	7983	4.3280 ug/kg	97
15) Tert-Butyl Alcohol	6.76	59	771	1.5549 ug/kg#	58
29) 2-Butanone	9.03	43	1068	0.6830 ug/kg#	58
36) Tetrahydrofuran	9.78	42	885	0.8780 ug/kg#	43
56) Dimethyl Disulfide	12.82	94	12231	3.2516 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M973107.D 8260SL.M Mon Mar 07 12:19:09 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973107.D Vial: 11
Acq On : 6 Mar 2016 20:00 Operator: ADC
Sample : L16030134-04 A 8260 4.75g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 7 12:19 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

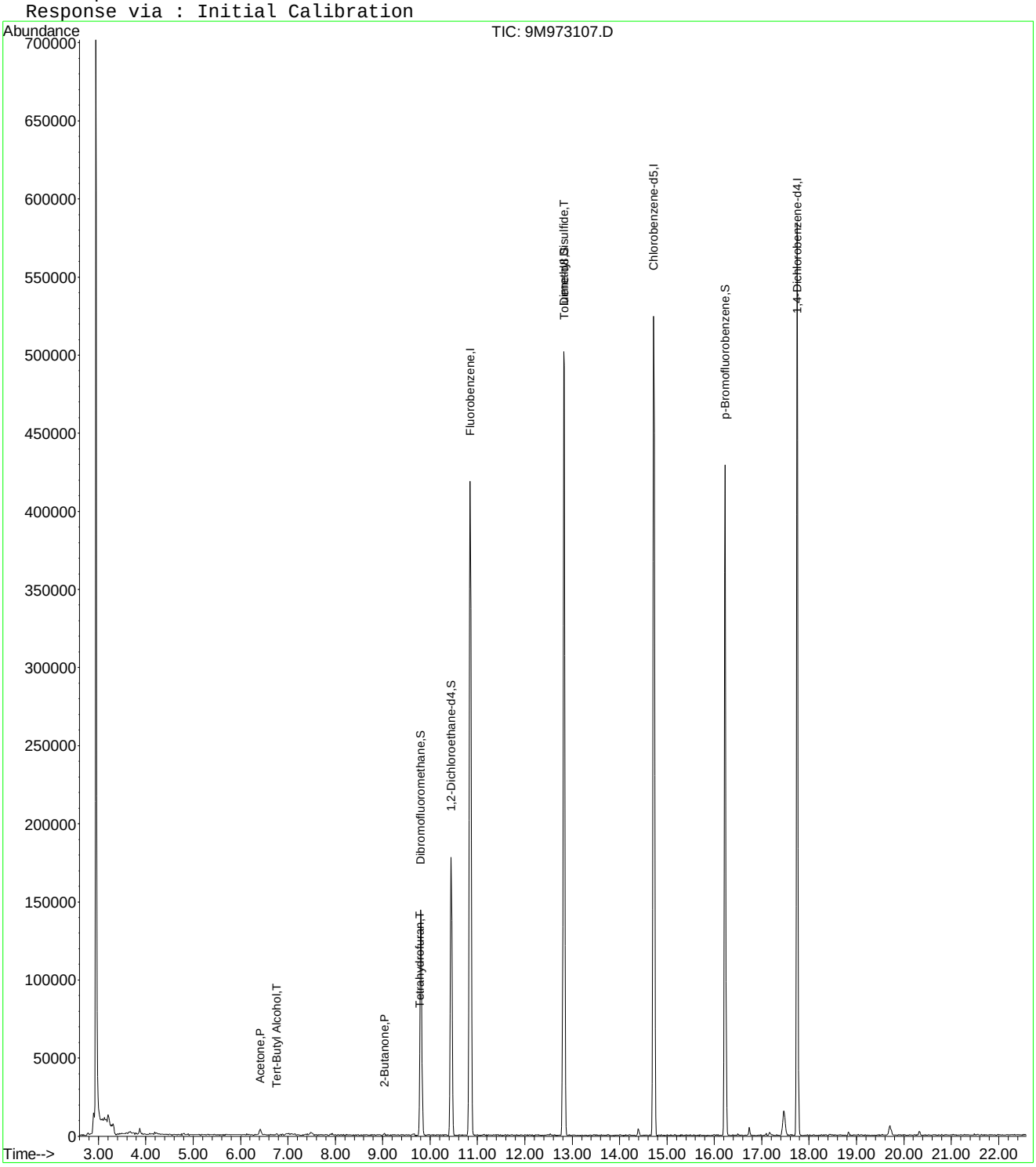

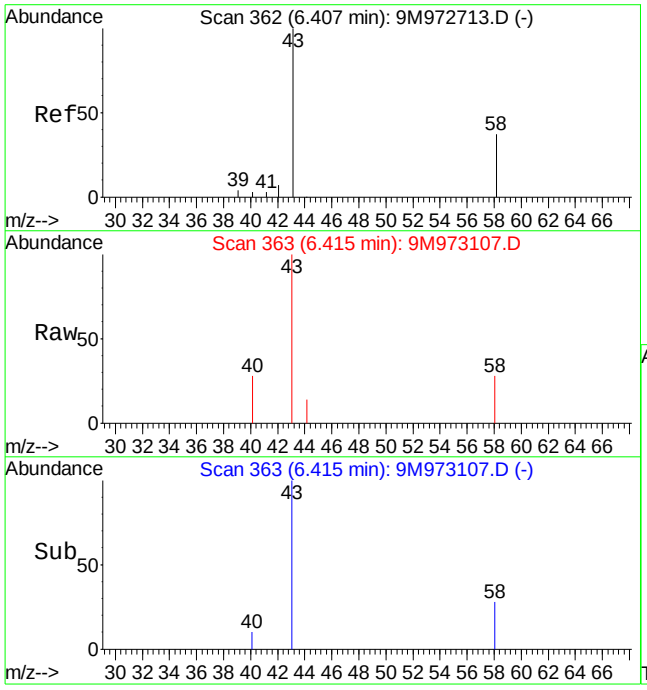

#13
Acetone
Concen: 4.33 ug/kg
RT: 6.42 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M973107.D
Acq: 6 Mar 2016 20:00

Tgt Ion: 43 Resp: 7983

Ion	Ratio	Lower	Upper
43	100		
58	29.5	16.9	39.3

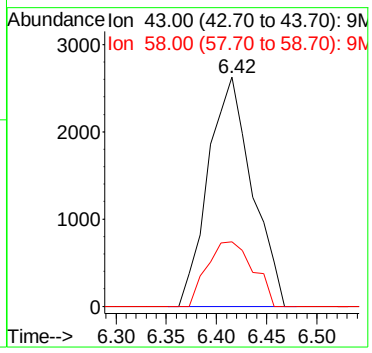

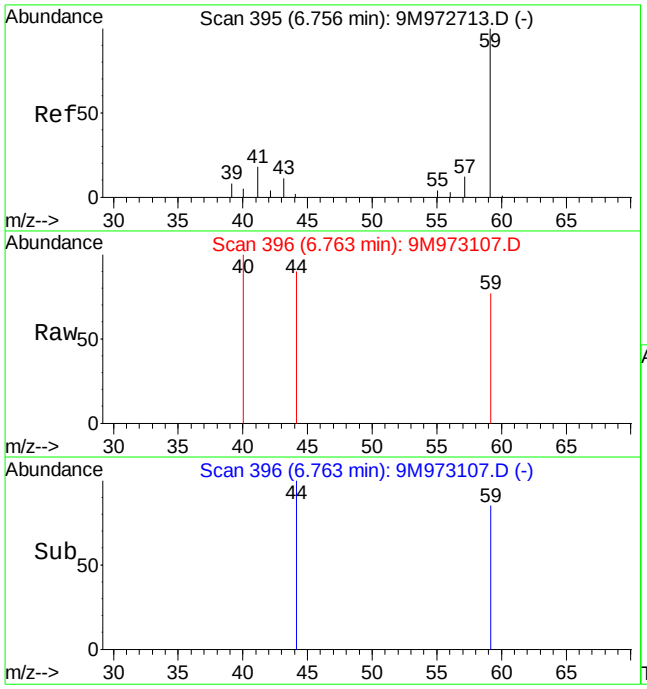

#15
Tert-Butyl Alcohol
Concen: 1.55 ug/kg
RT: 6.76 min Scan# 396
Delta R.T. 0.00 min
Lab File: 9M973107.D
Acq: 6 Mar 2016 20:00

Tgt Ion: 59 Resp: 771

Ion	Ratio	Lower	Upper
59	100		
41	0.0	14.1	32.9#
57	0.0	6.4	15.0#

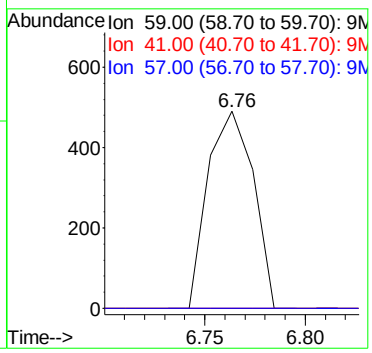

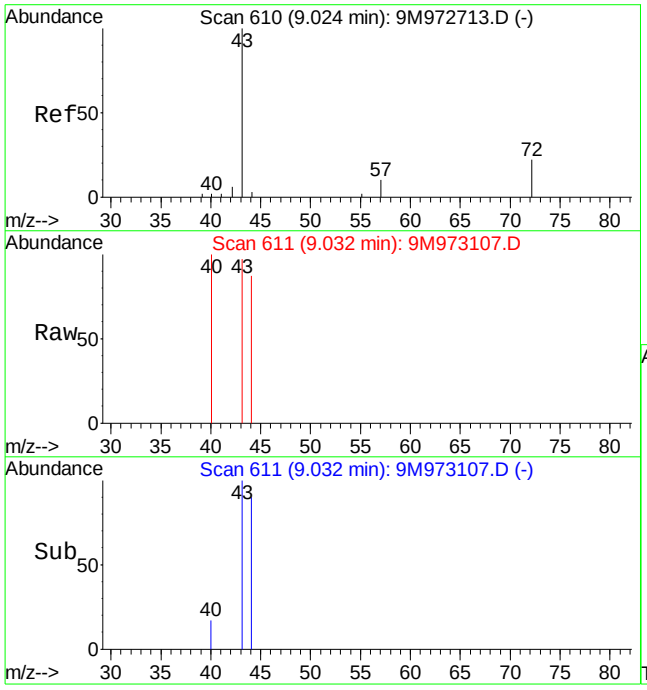

#29
2-Butanone
Concen: 0.68 ug/kg
RT: 9.03 min Scan# 611
Delta R.T. 0.00 min
Lab File: 9M973107.D
Acq: 6 Mar 2016 20:00

Tgt Ion: 43 Resp: 1068

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

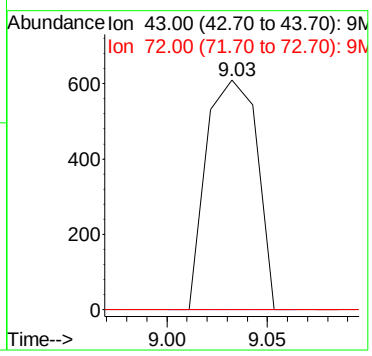

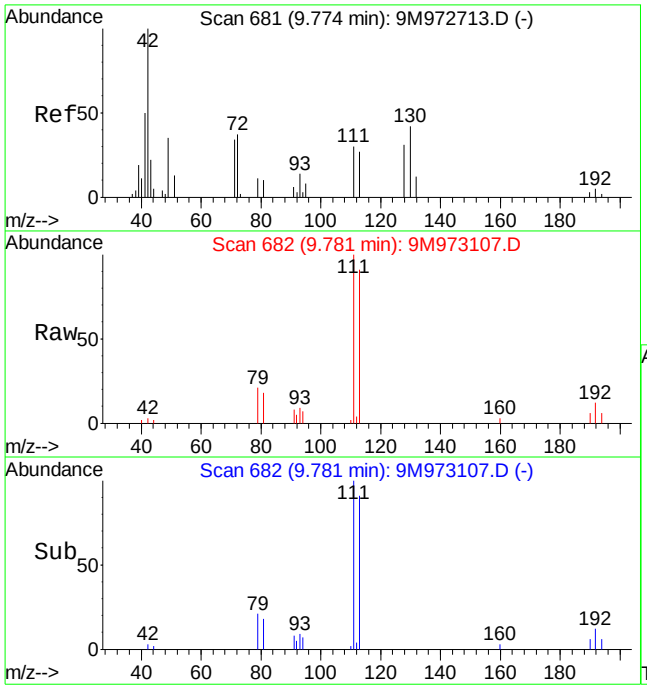

#36
Tetrahydrofuran
Concen: 0.88 ug/kg
RT: 9.78 min Scan# 682
Delta R.T. 0.00 min
Lab File: 9M973107.D
Acq: 6 Mar 2016 20:00

Tgt Ion: 42 Resp: 885

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

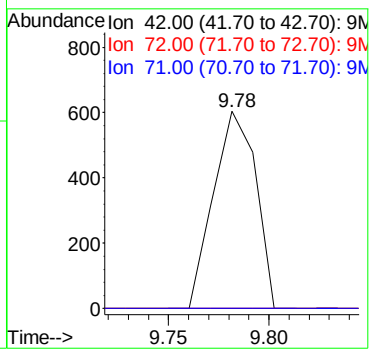

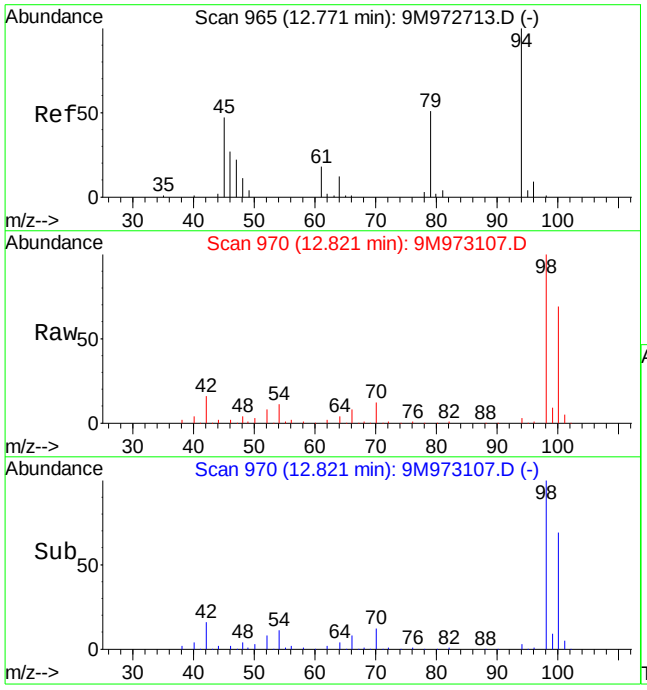

#56
Dimethyl Disulfide
Concen: 3.25 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M973107.D
Acq: 6 Mar 2016 20:00

Tgt Ion: 94 Resp: 12231

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

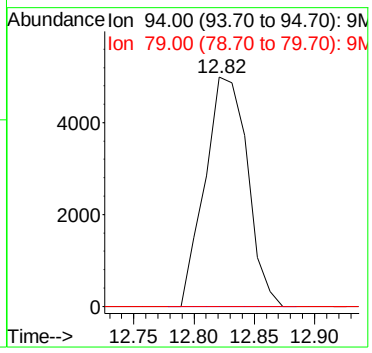

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973108.D Vial: 12
Acq On : 6 Mar 2016 20:30 Operator: ADC
Sample : L16030134-05 A 8260 4.70g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 12:19:10 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	507085	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	376977	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.75	152	192130	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	129951	47.2779 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.56%		
43) 1,2-Dichloroethane-d4	10.44	65	167510	48.5715 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.14%		
58) Toluene-d8	12.83	98	472181	49.5192 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.04%		
79) p-Bromofluorobenzene	16.23	95	187381	50.0862 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 100.18%		

Target Compounds					Qvalue
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	8855	3.4471 ug/kg	96
13) Acetone	6.41	43	6101	2.4868 ug/kg	99
29) 2-Butanone	9.03	43	1376	0.8415 ug/kg#	58
36) Tetrahydrofuran	9.79	42	1188	1.1271 ug/kg#	43
45) 1,2-Dichloroethane	10.56	62	3527	0.8229 ug/kg	93
47) Trichloroethene	11.35	130	135609	44.0883 ug/kg	98
56) Dimethyl Disulfide	12.82	94	13765	3.4995 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M973108.D 8260SL.M Mon Mar 07 12:19:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973108.D Vial: 12
Acq On : 6 Mar 2016 20:30 Operator: ADC
Sample : L16030134-05 A 8260 4.70g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 7 12:19 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

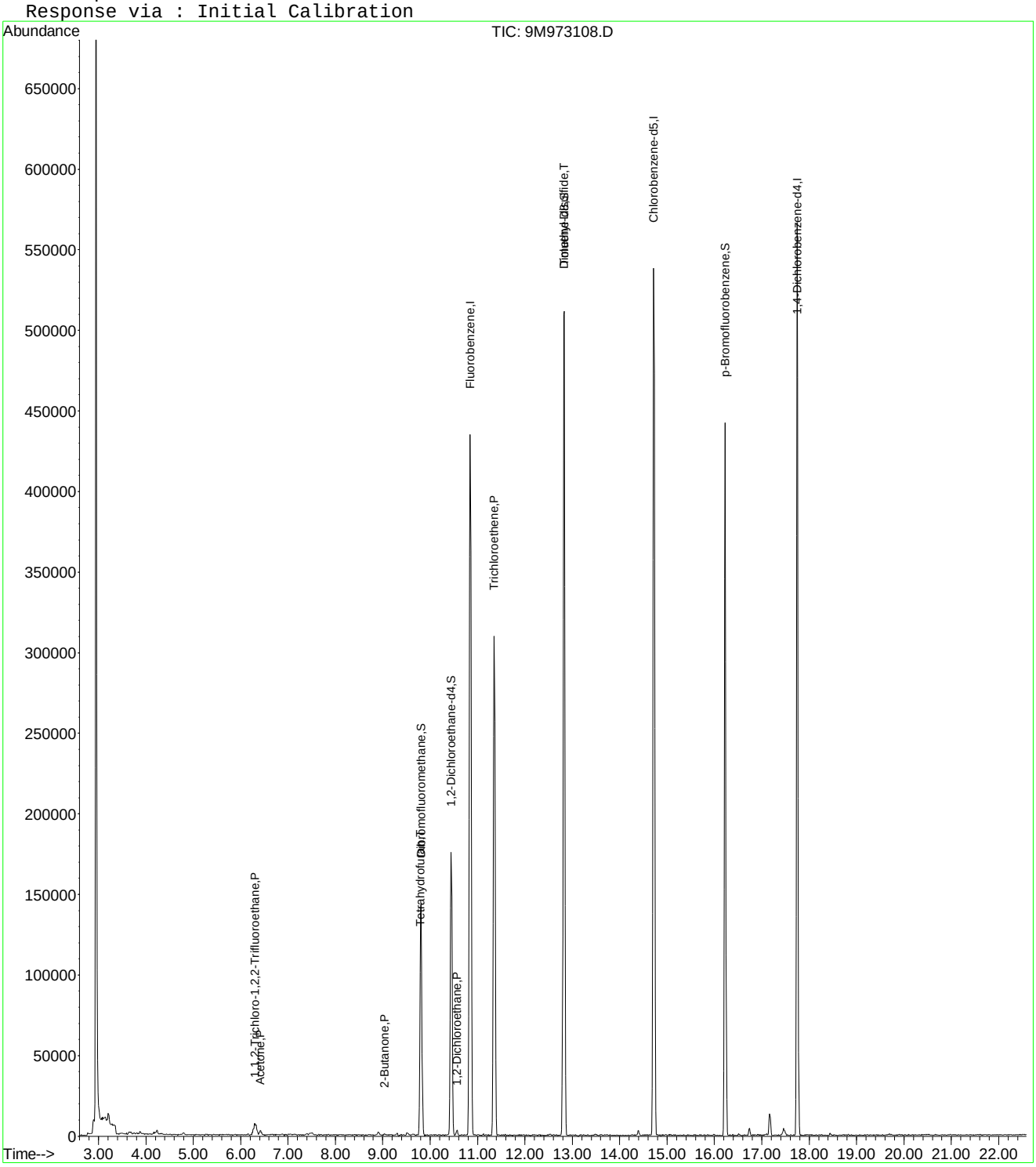

9M973108.D 8260SL.M Mon Mar 07 12:19:11 2016 Page 2

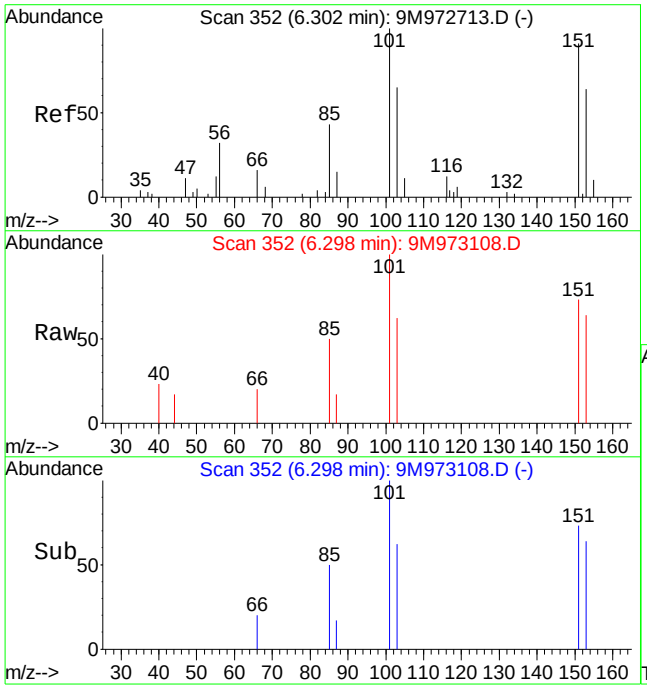

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 3.45 ug/kg
RT: 6.30 min Scan# 352
Delta R.T. -0.00 min
Lab File: 9M973108.D
Acq: 6 Mar 2016 20:30

Tgt Ion:101 Resp: 8855

Ion	Ratio	Lower	Upper
101	100		
151	87.4	43.8	123.8

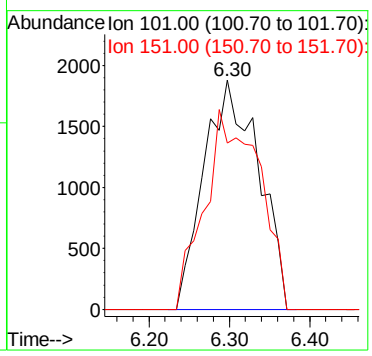

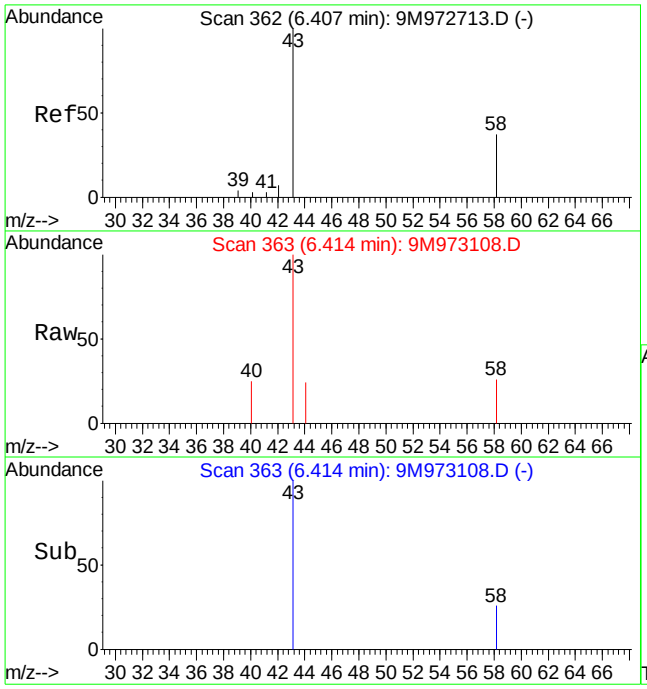

#13
Acetone
Concen: 2.49 ug/kg
RT: 6.41 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M973108.D
Acq: 6 Mar 2016 20:30

Tgt Ion: 43 Resp: 6101

Ion	Ratio	Lower	Upper
43	100		
58	27.4	16.9	39.3

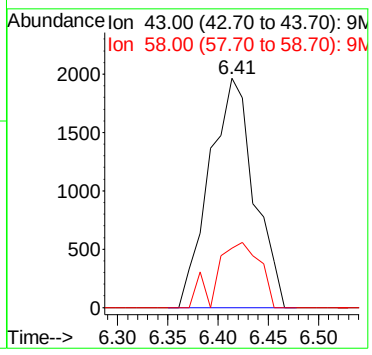

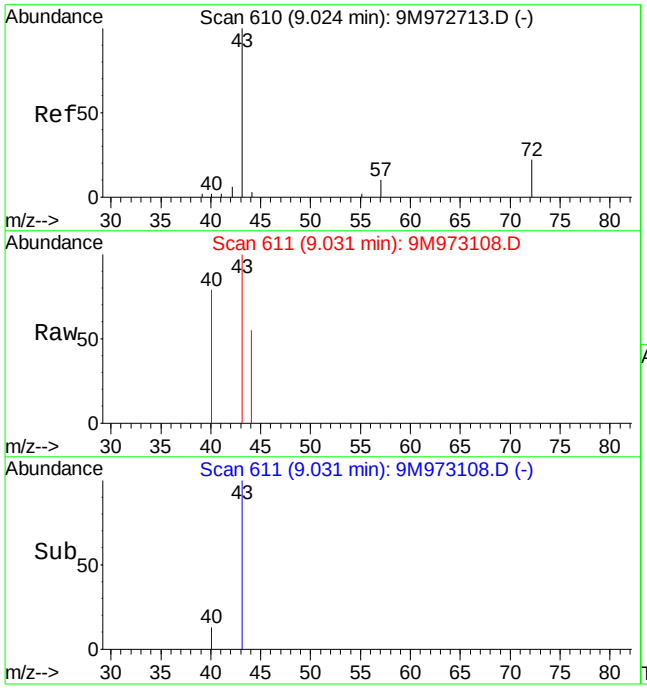

#29
2-Butanone
Concen: 0.84 ug/kg
RT: 9.03 min Scan# 611
Delta R.T. -0.00 min
Lab File: 9M973108.D
Acq: 6 Mar 2016 20:30

Tgt Ion: 43 Resp: 1376

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

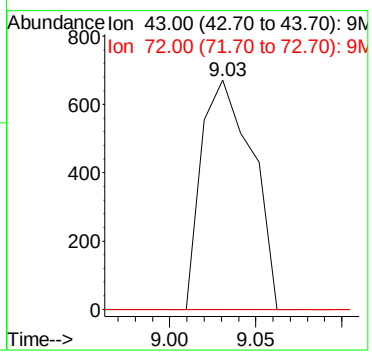

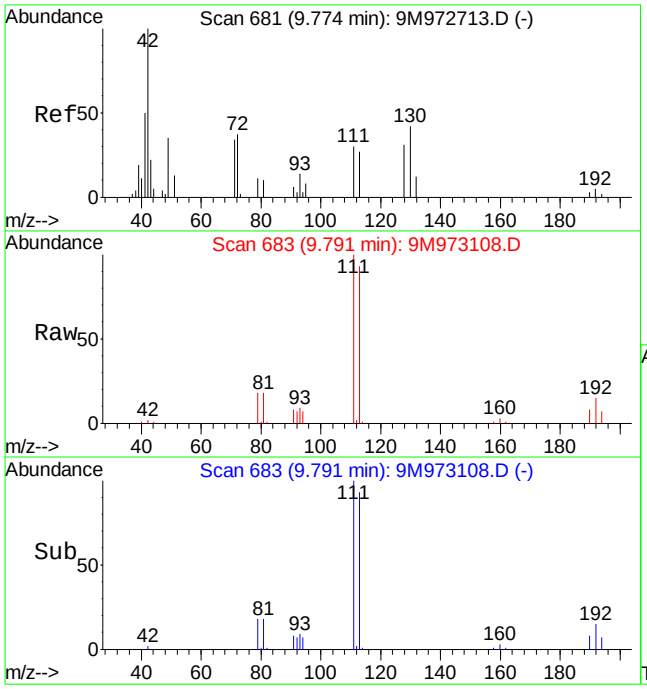

#36
Tetrahydrofuran
Concen: 1.13 ug/kg
RT: 9.79 min Scan# 683
Delta R.T. 0.01 min
Lab File: 9M973108.D
Acq: 6 Mar 2016 20:30

Tgt Ion: 42 Resp: 1188

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

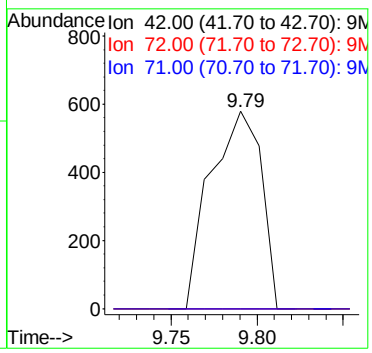

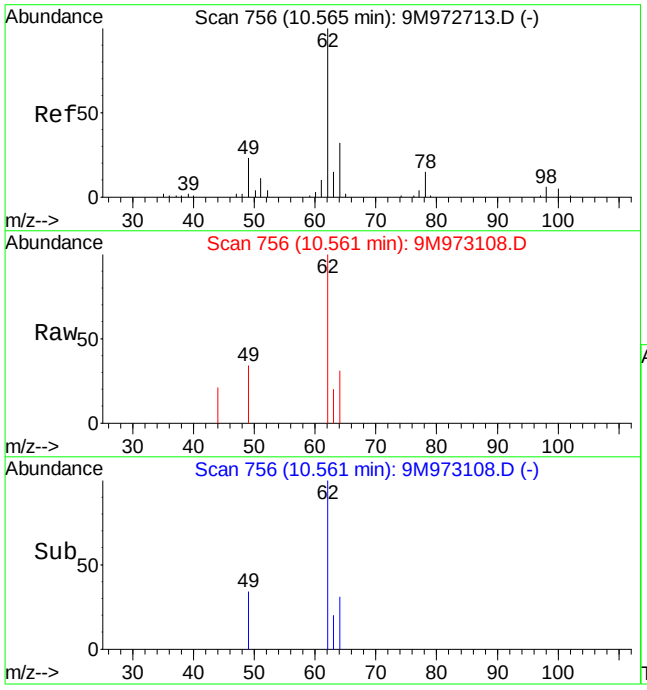

#45
1,2-Dichloroethane
Concen: 0.82 ug/kg
RT: 10.56 min Scan# 756
Delta R.T. -0.00 min
Lab File: 9M973108.D
Acq: 6 Mar 2016 20:30

Tgt Ion: 62 Resp: 3527

Ion	Ratio	Lower	Upper
62	100		
64	26.8	18.7	43.5
49	30.5	20.3	47.5

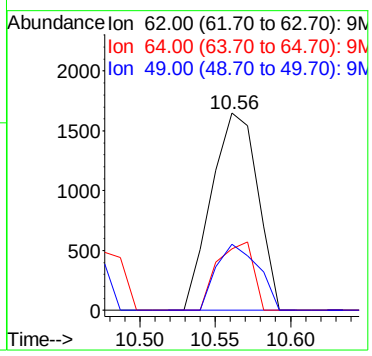

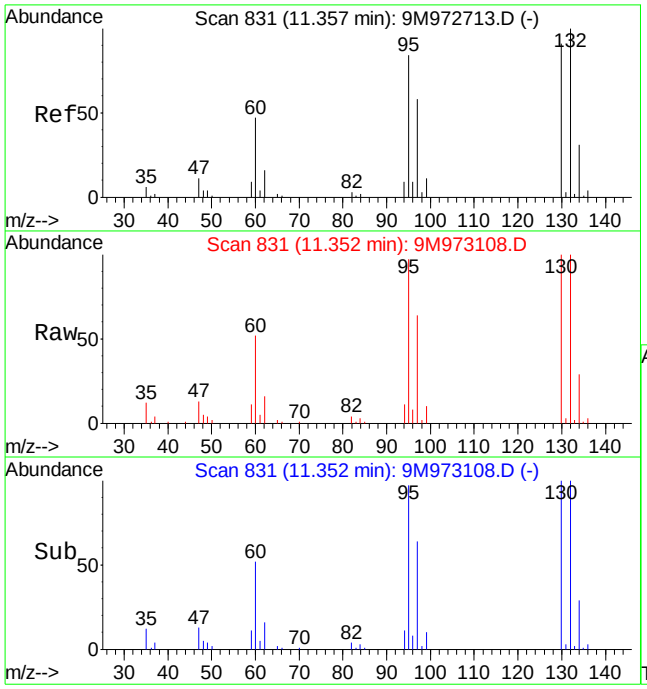

#47
Trichloroethene
Concen: 44.09 ug/kg
RT: 11.35 min Scan# 831
Delta R.T. -0.00 min
Lab File: 9M973108.D
Acq: 6 Mar 2016 20:30

Tgt Ion:130 Resp: 135609

Ion	Ratio	Lower	Upper
130	100		
132	96.9	56.5	131.7
95	94.4	55.4	129.4

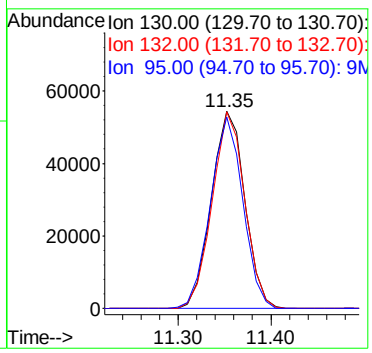

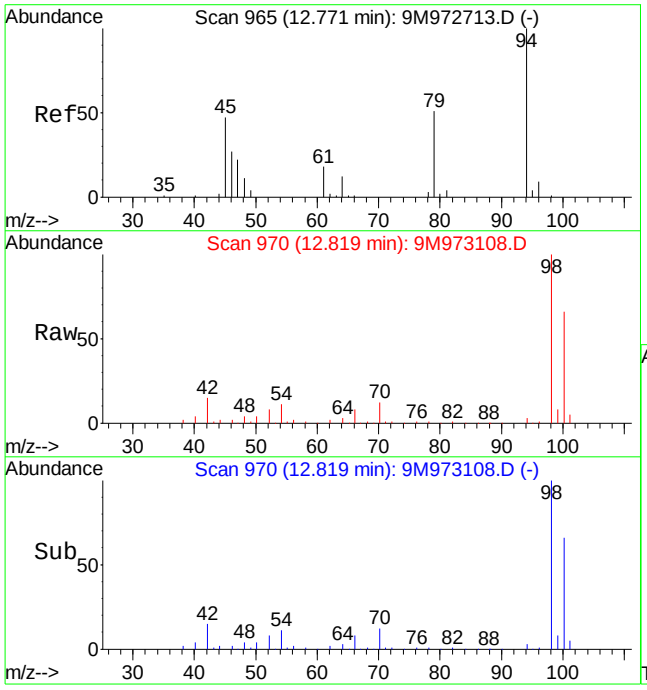

#56
Dimethyl Disulfide
Concen: 3.50 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M973108.D
Acq: 6 Mar 2016 20:30

Tgt Ion: 94 Resp: 13765

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

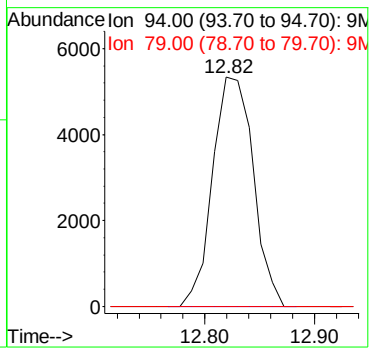

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973109.D Vial: 13
Acq On : 6 Mar 2016 21:00 Operator: ADC
Sample : WG559855-01 L16030134-06 A 8260 4.77g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 12:19:12 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	440806	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	329308	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.75	152	172969	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	115706	48.4248 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.84%		
43) 1,2-Dichloroethane-d4	10.44	65	152664	50.9226 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 101.84%		
58) Toluene-d8	12.83	98	412352	49.5046 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.00%		
79) p-Bromofluorobenzene	16.23	95	170094	50.5019 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 101.00%		

Target Compounds					Qvalue
13) Acetone	6.41	43	5821	2.9746 ug/kg	89
15) Tert-Butyl Alcohol	6.77	59	227	0.5036 ug/kg#	58
36) Tetrahydrofuran	9.78	42	845	0.9222 ug/kg#	43
47) Trichloroethene	11.35	130	1526	0.5707 ug/kg	72
56) Dimethyl Disulfide	12.82	94	10983	3.2121 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M973109.D 8260SL.M Mon Mar 07 12:19:12 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973109.D Vial: 13
Acq On : 6 Mar 2016 21:00 Operator: ADC
Sample : WG559855-01 L16030134-06 A 8260 4.77g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 7 12:19 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

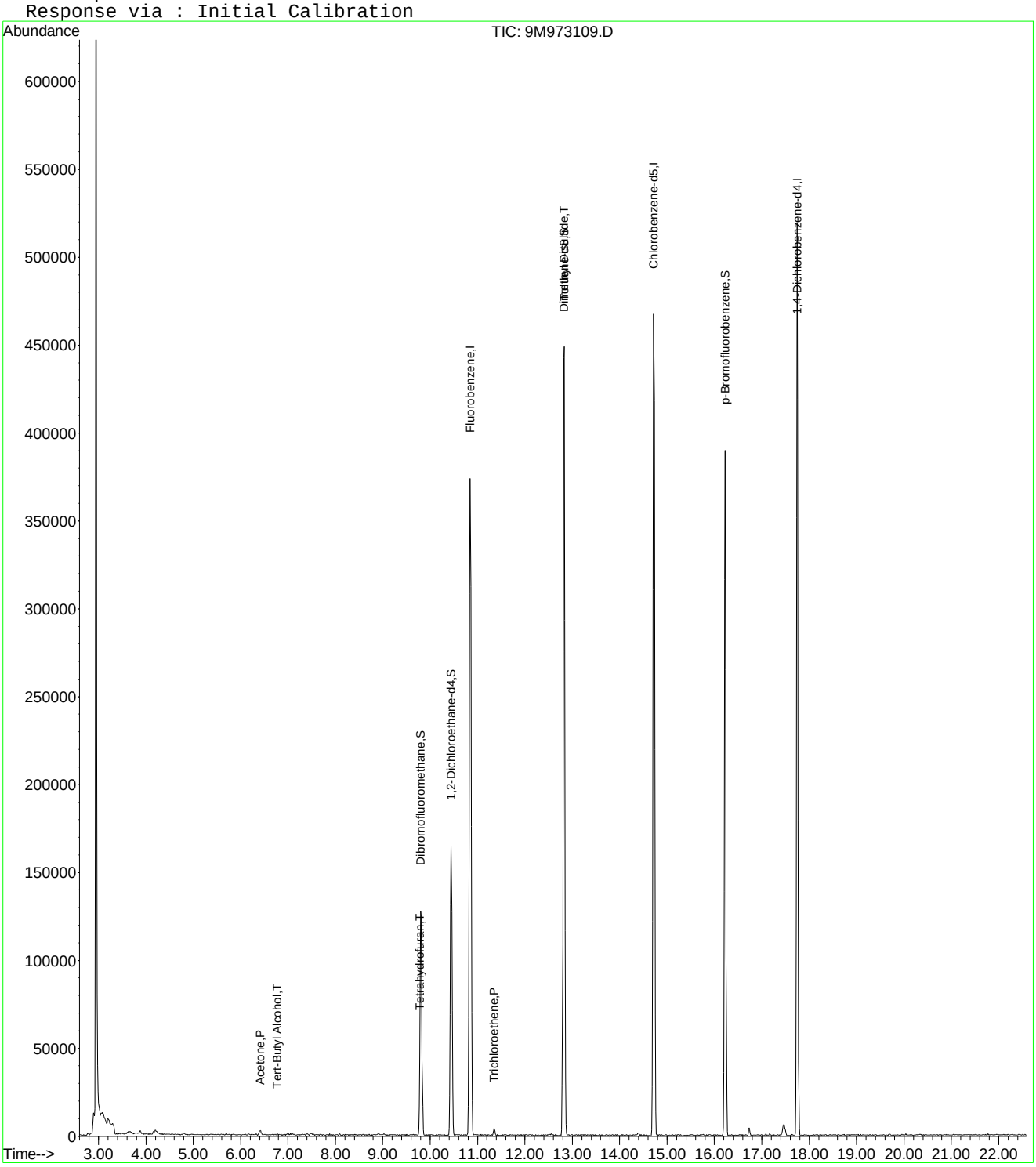

9M973109.D 8260SL.M Mon Mar 07 12:19:12 2016 Page 2

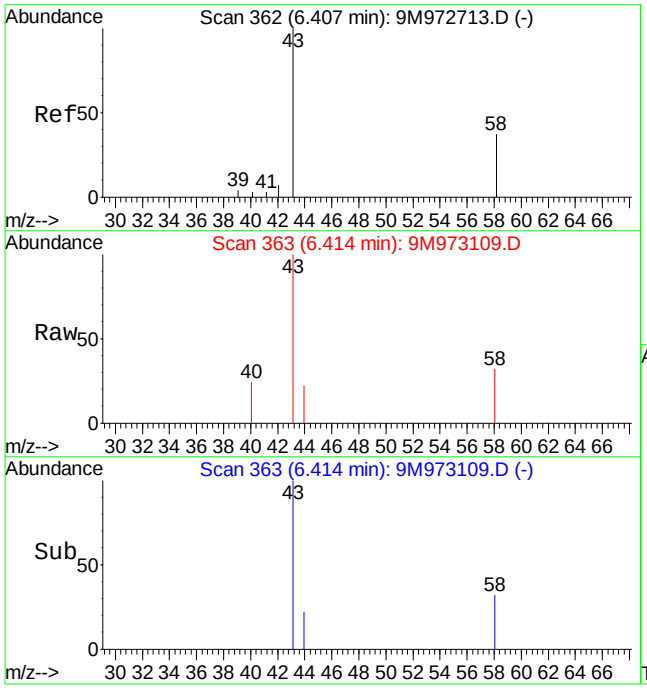

#13
Acetone
Concen: 2.97 ug/kg
RT: 6.41 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M973109.D
Acq: 6 Mar 2016 21:00

Tgt Ion: 43 Resp: 5821

Ion	Ratio	Lower	Upper
43	100		
58	22.4	16.9	39.3

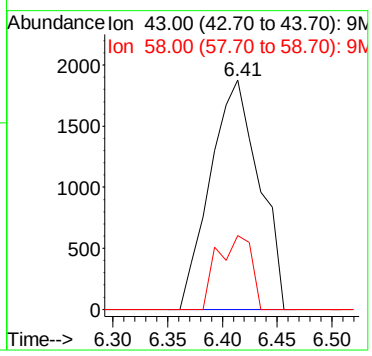

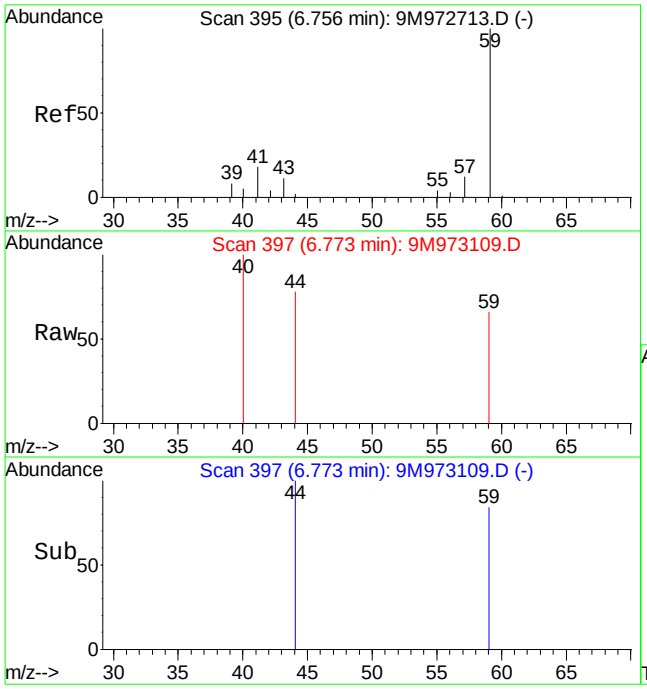

#15
Tert-Butyl Alcohol
Concen: 0.50 ug/kg
RT: 6.77 min Scan# 397
Delta R.T. 0.01 min
Lab File: 9M973109.D
Acq: 6 Mar 2016 21:00

Tgt Ion: 59 Resp: 227

Ion	Ratio	Lower	Upper
59	100		
41	0.0	14.1	32.9#
57	0.0	6.4	15.0#

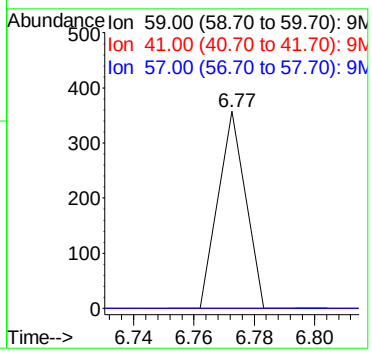

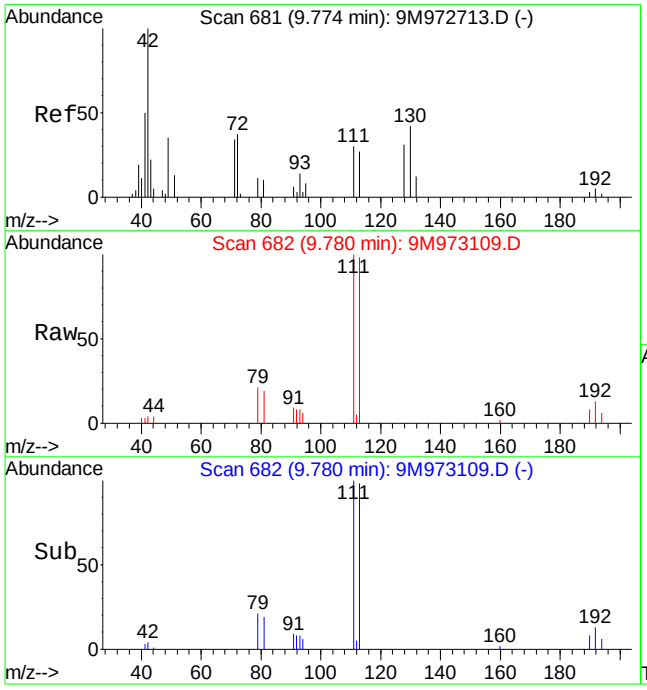

#36
Tetrahydrofuran
Concen: 0.92 ug/kg
RT: 9.78 min Scan# 682
Delta R.T. -0.00 min
Lab File: 9M973109.D
Acq: 6 Mar 2016 21:00

Tgt Ion: 42 Resp: 845

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

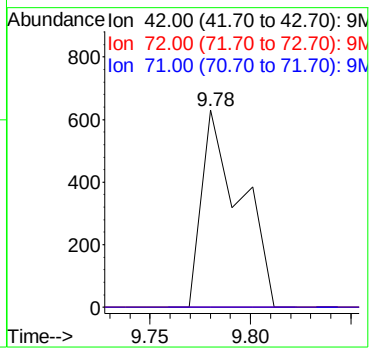

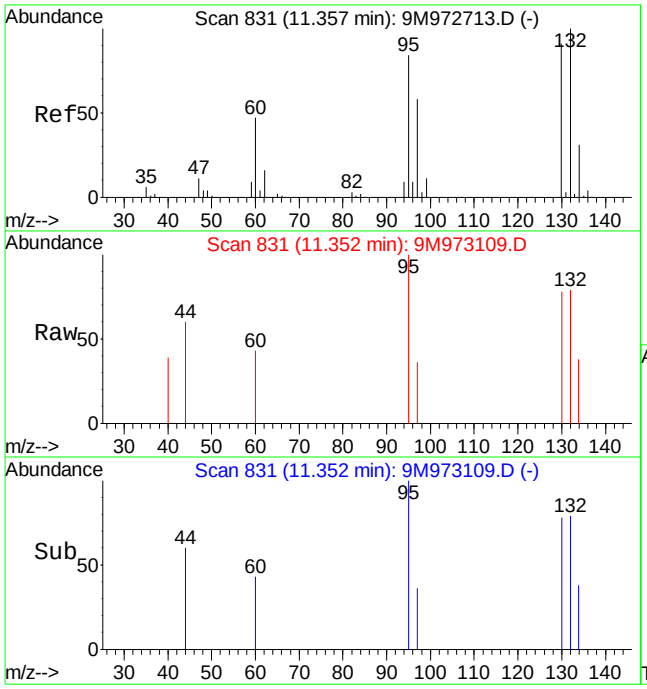

#47
Trichloroethene
Concen: 0.57 ug/kg
RT: 11.35 min Scan# 831
Delta R.T. -0.00 min
Lab File: 9M973109.D
Acq: 6 Mar 2016 21:00

Tgt Ion:130 Resp: 1526

Ion	Ratio	Lower	Upper
130	100		
132	119.6	56.5	131.7
95	120.4	55.4	129.4

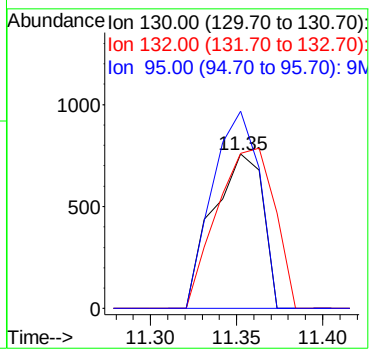

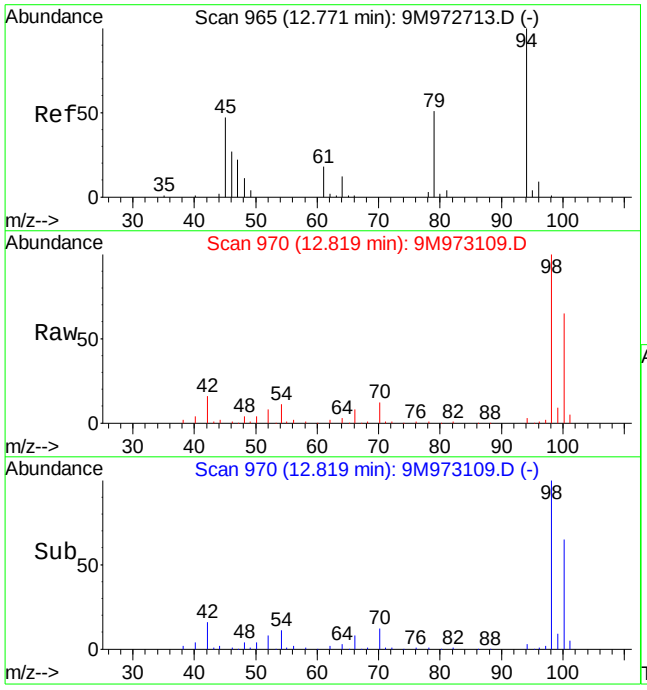

#56
Dimethyl Disulfide
Concen: 3.21 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M973109.D
Acq: 6 Mar 2016 21:00

Tgt Ion: 94 Resp: 10983

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

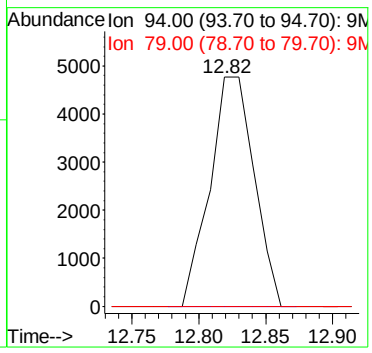

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972472.D Vial: 3
Acq On : 25 Jan 2016 11:22 Operator: FJB
Sample : WG555000-02 5ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:05 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	367739	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	266763	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.77	152	148882	50.00 ug/kg	0.01

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	1974	5.3580 ug/kg#	1
3) 3-Chloro-1-propene	7.23	41	18322	5.0468 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	19639	4.7564 ug/kg	98
5) Ethyl Acetate	9.24	43	12755	5.2595 ug/kg	91
6) Methacrylonitrile	9.40	67	3744	4.7691 ug/kg	95
7) Isobutyl Alcohol	9.42	43	1055	12.9700 ug/kg#	62
8) 1-Butanol	10.36	56	203	11.8711 ug/kg#	26
9) Methyl methacrylate	11.56	41	8689	4.6908 ug/kg	95
10) 2-Nitropropane	11.90	43	2531	4.2058 ug/kg	96

(#) = qualifier out of range (m) = manual integration
9M972472.D A9FOO_SL.M Wed Jan 27 11:22:42 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972472.D Vial: 3
Acq On : 25 Jan 2016 11:22 Operator: FJB
Sample : WG555000-02 5ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

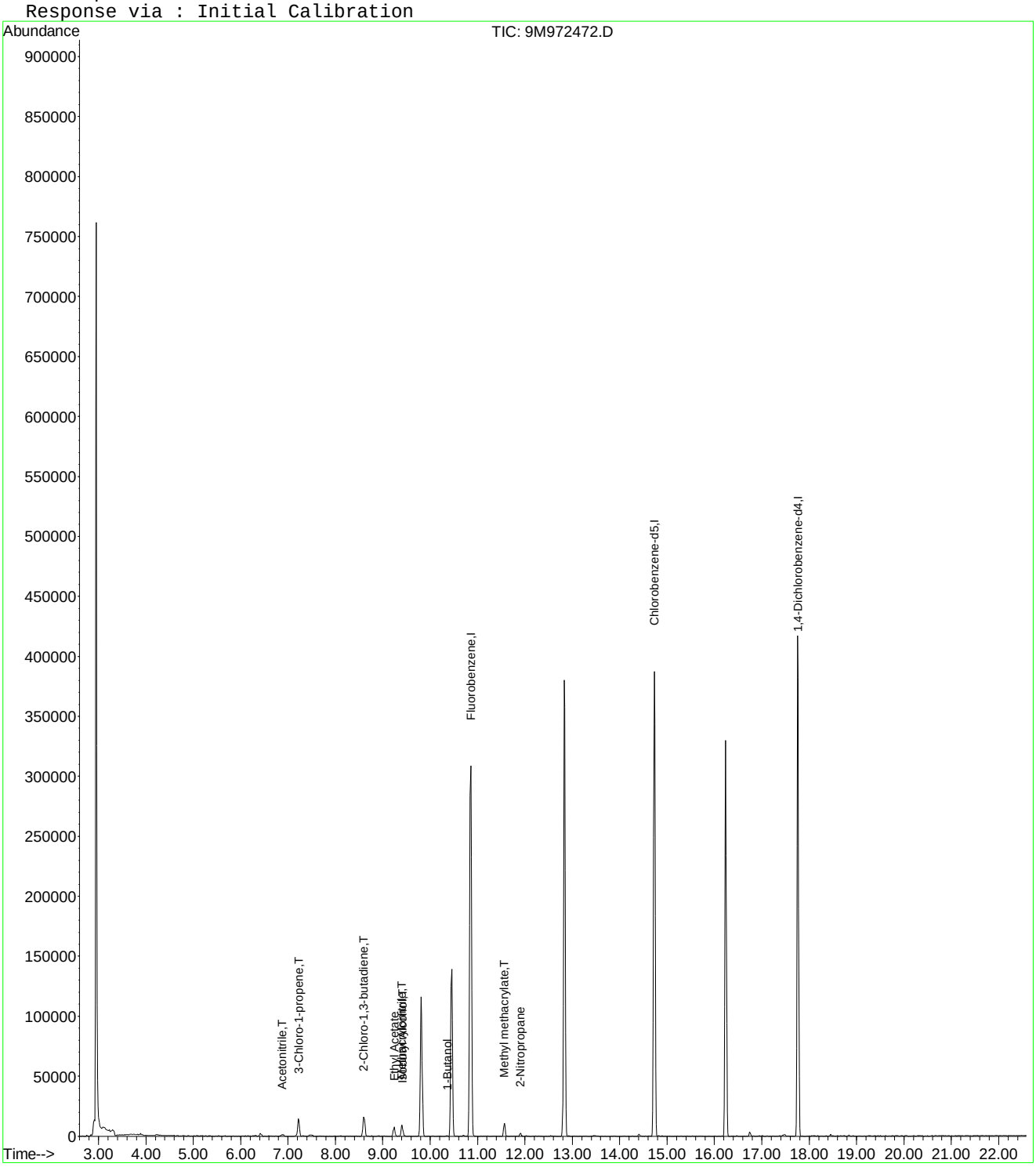

9M972472.D A9FOO_SL.M Wed Jan 27 11:22:42 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972473.D Vial: 4
Acq On : 25 Jan 2016 11:52 Operator: FJB
Sample : WG555000-03 20ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:05 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	359691	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	265773	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	149223	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	7669	21.2815 ug/kg#	77
3) 3-Chloro-1-propene	7.23	41	75360	21.2224 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	82865	20.5181 ug/kg	100
5) Ethyl Acetate	9.23	43	47912	20.1986 ug/kg	97
6) Methacrylonitrile	9.40	67	15740	20.4980 ug/kg	98
7) Isobutyl Alcohol	9.42	43	5287	37.9280 ug/kg	95
8) 1-Butanol	10.35	56	1509	22.3153 ug/kg#	81
9) Methyl methacrylate	11.56	41	35437	19.5588 ug/kg	98
10) 2-Nitropropane	11.90	43	10433	17.7247 ug/kg	98
12) Cyclohexanone	16.01	55	2157	16.3929 ug/kg#	86

(#) = qualifier out of range (m) = manual integration
9M972473.D A9FOO_SL.M Wed Jan 27 11:22:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972473.D Vial: 4
Acq On : 25 Jan 2016 11:52 Operator: FJB
Sample : WG555000-03 20ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

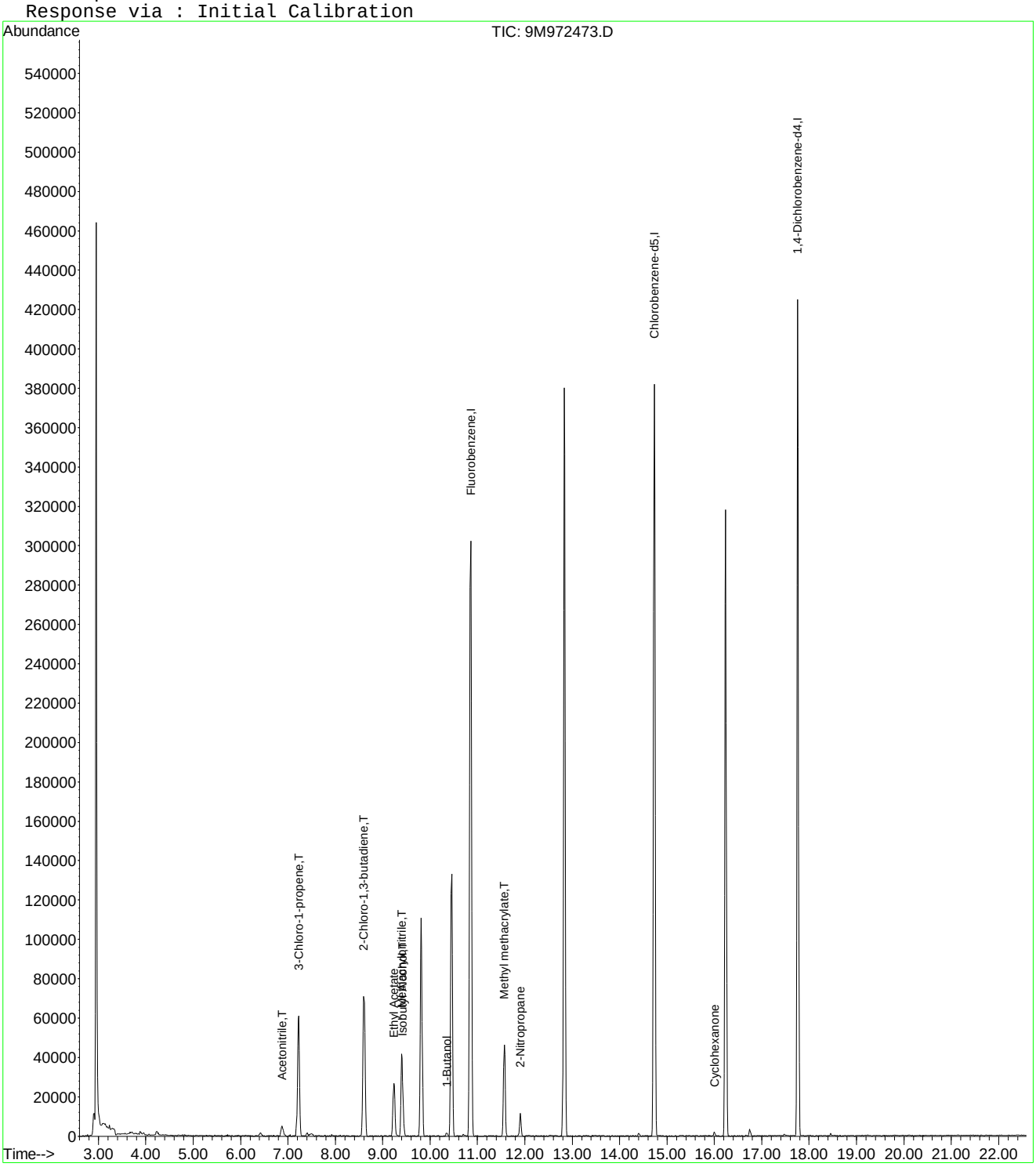

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972474.D Vial: 5
Acq On : 25 Jan 2016 12:23 Operator: FJB
Sample : WG555000-04 50ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:06 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	356886	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	259679	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	147334	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	16583	46.3795 ug/kg#	94
3) 3-Chloro-1-propene	7.23	41	160601	45.5828 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.61	53	185316	46.2464 ug/kg	99
5) Ethyl Acetate	9.23	43	111538	47.3915 ug/kg	99
6) Methacrylonitrile	9.40	67	36081	47.3572 ug/kg	99
7) Isobutyl Alcohol	9.42	43	12624	81.5447 ug/kg	95
8) 1-Butanol	10.35	56	4707	48.0983 ug/kg#	50
9) Methyl methacrylate	11.56	41	82406	45.8400 ug/kg	99
10) 2-Nitropropane	11.90	43	26302	45.0359 ug/kg	97
12) Cyclohexanone	16.01	55	5625	43.7525 ug/kg	93

(#) = qualifier out of range (m) = manual integration
9M972474.D A9FOO_SL.M Wed Jan 27 11:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972474.D Vial: 5
Acq On : 25 Jan 2016 12:23 Operator: FJB
Sample : WG555000-04 50ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

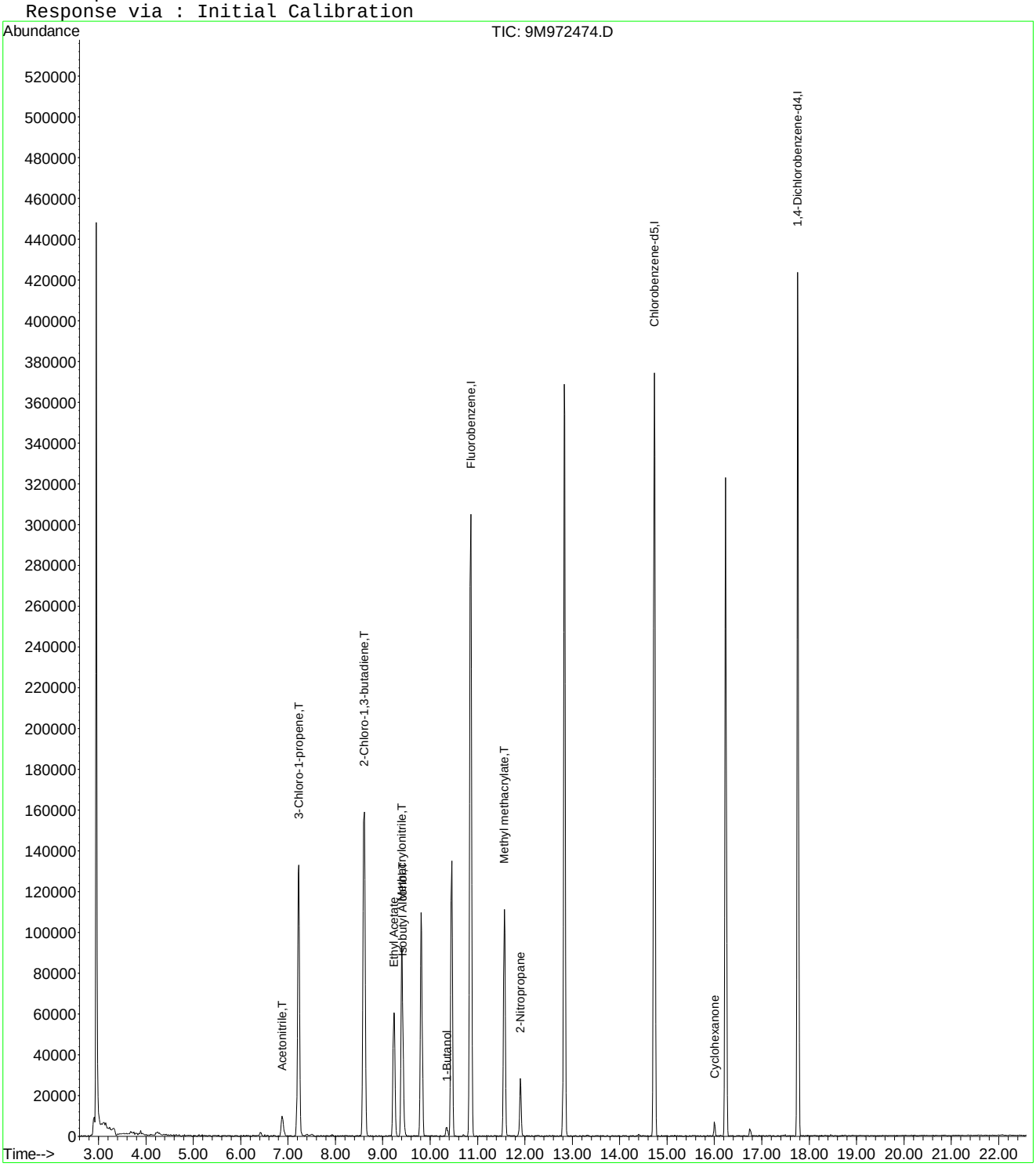

9M972474.D A9FOO_SL.M Wed Jan 27 11:22:51 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972475.D Vial: 6
Acq On : 25 Jan 2016 12:53 Operator: FJB
Sample : WG555000-05 100ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:06 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	394669	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	285851	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	161505	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	37767	95.5151	ug/kg#	100
3) 3-Chloro-1-propene	7.23	41	409870	105.1952	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.61	53	467514	105.5010	ug/kg	100
5) Ethyl Acetate	9.23	43	267513	102.7824	ug/kg	100
6) Methacrylonitrile	9.40	67	88054	104.5088	ug/kg	100
7) Isobutyl Alcohol	9.42	43	33721	187.1766	ug/kg	100
8) 1-Butanol	10.36	56	11671	95.0627	ug/kg	100
9) Methyl methacrylate	11.56	41	209503	105.3834	ug/kg	100
10) 2-Nitropropane	11.90	43	65435	101.3157	ug/kg	100
12) Cyclohexanone	16.01	55	14062	99.3630	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972475.D A9FOO_SL.M Wed Jan 27 11:22:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972475.D Vial: 6
Acq On : 25 Jan 2016 12:53 Operator: FJB
Sample : WG555000-05 100ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

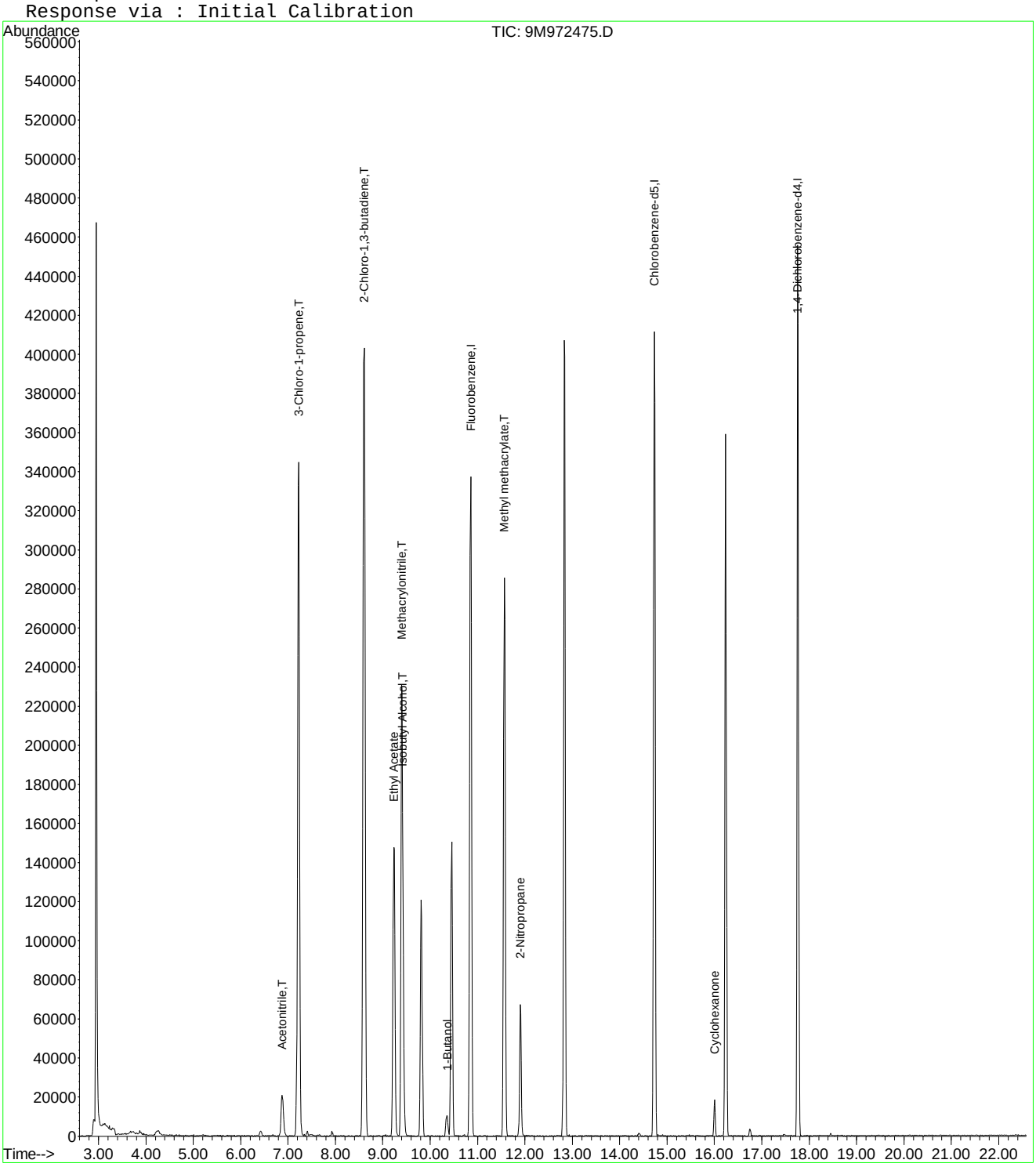

9M972475.D A9FOO_SL.M Wed Jan 27 11:22:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972476.D Vial: 7
Acq On : 25 Jan 2016 13:23 Operator: FJB
Sample : WG555000-06 200ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 09:51:10 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	361792	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	264283	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	150478	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.87	41	75099	207.1896	ug/kg#	94
3) 3-Chloro-1-propene	7.22	41	743262	208.0969	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	846271	208.3269	ug/kg	100
5) Ethyl Acetate	9.23	43	489855	205.3125	ug/kg	100
6) Methacrylonitrile	9.40	67	159879	206.9995	ug/kg	100
7) Isobutyl Alcohol	9.42	43	68551	406.6640	ug/kg	99
8) 1-Butanol	10.35	56	24111	201.3375	ug/kg	97
9) Methyl methacrylate	11.57	41	382820	210.0636	ug/kg	99
10) 2-Nitropropane	11.90	43	129000	217.8866	ug/kg	95
12) Cyclohexanone	16.00	55	30065	229.7785	ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972476.D A9FOO_SL.M Wed Jan 27 09:51:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972476.D Vial: 7
Acq On : 25 Jan 2016 13:23 Operator: FJB
Sample : WG555000-06 200ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 9:51 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

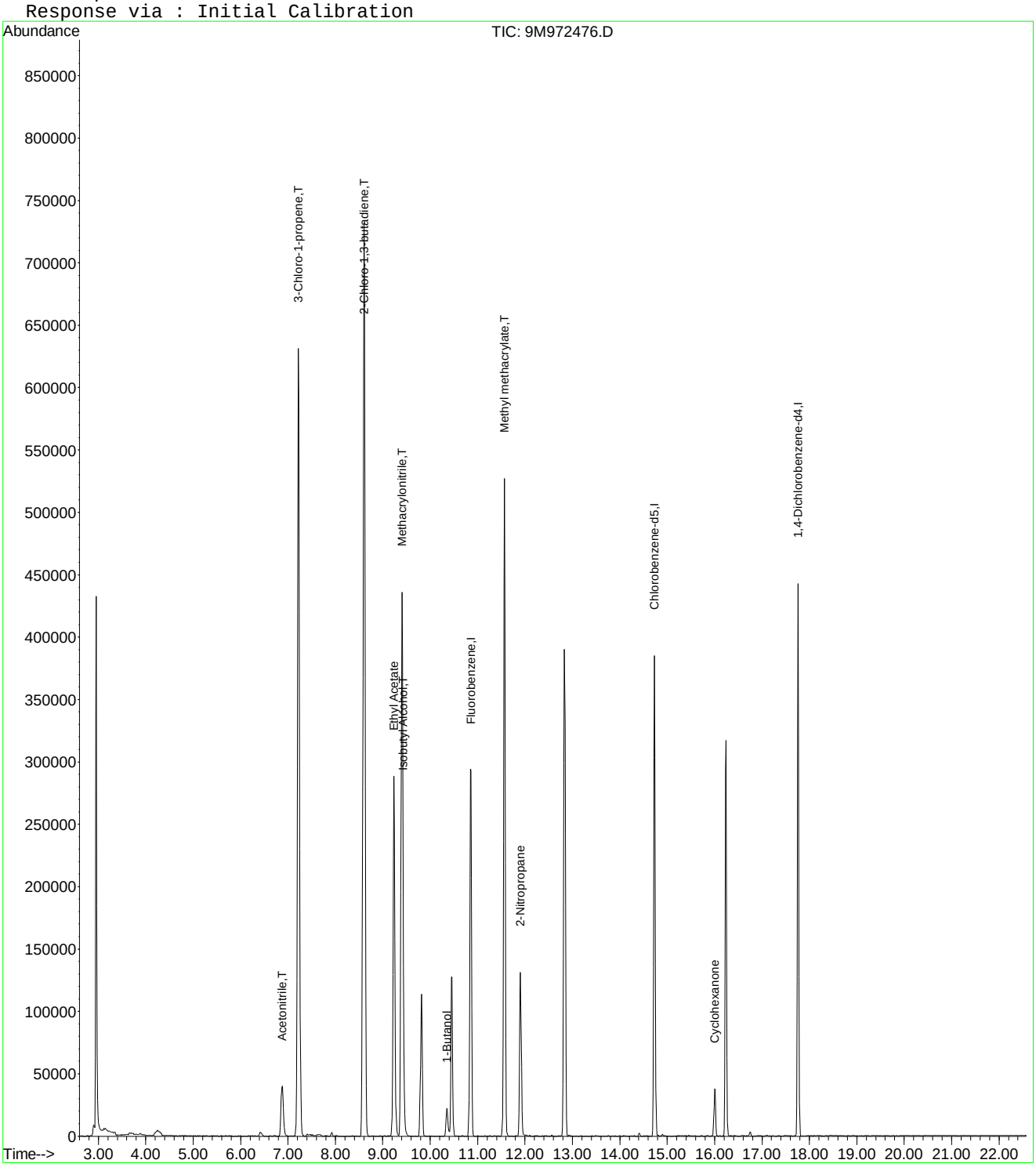

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972477.D Vial: 8
Acq On : 25 Jan 2016 13:54 Operator: FJB
Sample : WG555000-07 300ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:07 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.85	96	362779	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	265659	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	153468	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	99618	274.0870	ug/kg#	97
3) 3-Chloro-1-propene	7.22	41	944879	263.8255	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	1107217	271.8226	ug/kg	99
5) Ethyl Acetate	9.24	43	652386	272.6900	ug/kg	99
6) Methacrylonitrile	9.40	67	208153	268.7679	ug/kg	98
7) Isobutyl Alcohol	9.43	43	89707	528.6093	ug/kg#	99
8) 1-Butanol	10.35	56	31640	260.3131	ug/kg	98
9) Methyl methacrylate	11.57	41	502506	274.9883	ug/kg	98
10) 2-Nitropropane	11.90	43	172692	290.8907	ug/kg	95
12) Cyclohexanone	16.00	55	36951	280.9436	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972477.D A9FOO_SL.M Wed Jan 27 11:23:05 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972477.D Vial: 8
Acq On : 25 Jan 2016 13:54 Operator: FJB
Sample : WG555000-07 300ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

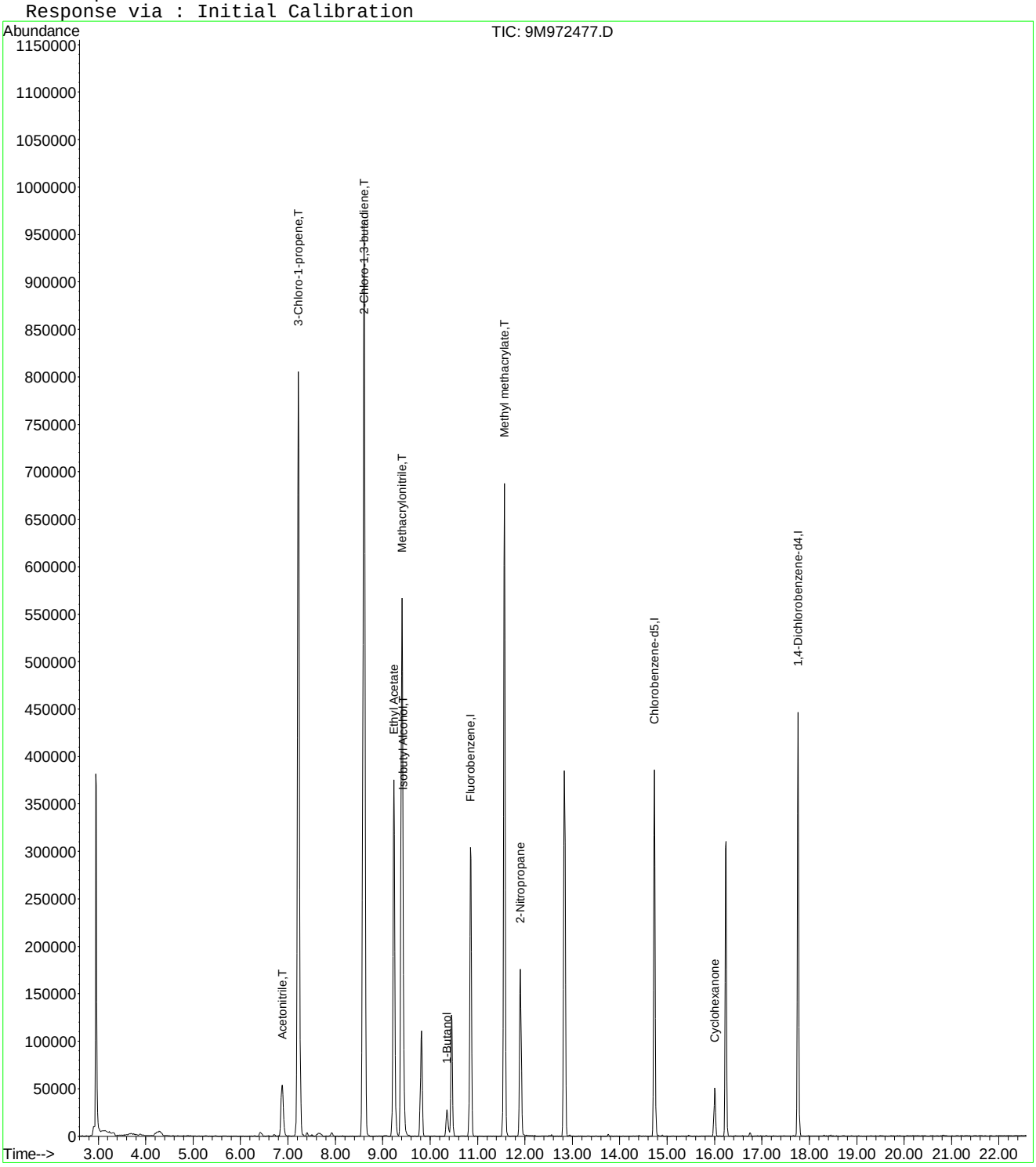

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972478.D Vial: 9
Acq On : 25 Jan 2016 14:25 Operator: FJB
Sample : WG555000-08 400ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 09:51:10 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	359343	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	261674	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	149058	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.89	41	148074	411.3034	ug/kg#	96
3) 3-Chloro-1-propene	7.22	41	1457717	410.9100	ug/kg	99
4) 2-Chloro-1,3-butadiene	8.61	53	1703971	422.3261	ug/kg	100
5) Ethyl Acetate	9.23	43	980479	413.7480	ug/kg	100
6) Methacrylonitrile	9.40	67	321602	419.2243	ug/kg	99
7) Isobutyl Alcohol	9.43	43	142361	842.7355	ug/kg#	98
8) 1-Butanol	10.36	56	51732	422.9922	ug/kg	99
9) Methyl methacrylate	11.56	41	779879	430.8570	ug/kg	98
10) 2-Nitropropane	11.90	43	267565	455.0088	ug/kg	96
12) Cyclohexanone	16.01	55	56623	437.0688	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972478.D A9FOO_SL.M Wed Jan 27 09:51:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972478.D Vial: 9
Acq On : 25 Jan 2016 14:25 Operator: FJB
Sample : WG555000-08 400ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 9:51 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

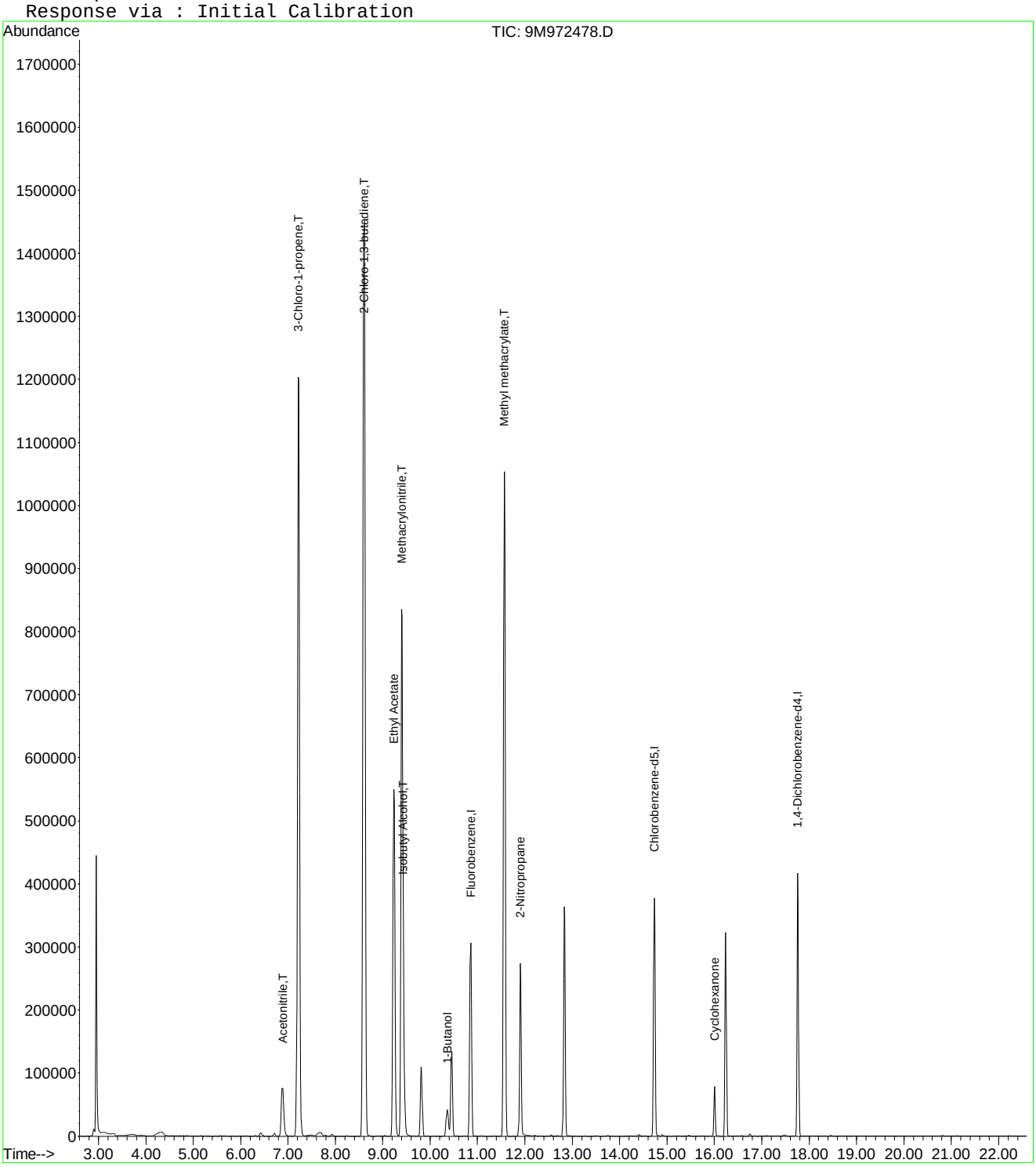

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972479.D Vial: 10
Acq On : 25 Jan 2016 14:56 Operator: FJB
Sample : WG555000-09 500ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:08 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	364474	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	266311	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	151707	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	196334	537.6773	ug/kg#	94
3) 3-Chloro-1-propene	7.22	41	1832802	509.3680	ug/kg	99
4) 2-Chloro-1,3-butadiene	8.60	53	2126710	519.6807	ug/kg	100
5) Ethyl Acetate	9.23	43	1255294	522.2587	ug/kg	100
6) Methacrylonitrile	9.40	67	408537	525.0513	ug/kg	100
7) Isobutyl Alcohol	9.43	43	180610	1052.3719	ug/kg	98
8) 1-Butanol	10.36	56	64789	519.8809	ug/kg	97
9) Methyl methacrylate	11.56	41	981460	534.5904	ug/kg	100
10) 2-Nitropropane	11.90	43	346571	581.0659	ug/kg	97
12) Cyclohexanone	16.01	55	74733	566.8143	ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972479.D A9FOO_SL.M Wed Jan 27 11:30:29 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972479.D Vial: 10
Acq On : 25 Jan 2016 14:56 Operator: FJB
Sample : WG555000-09 500ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

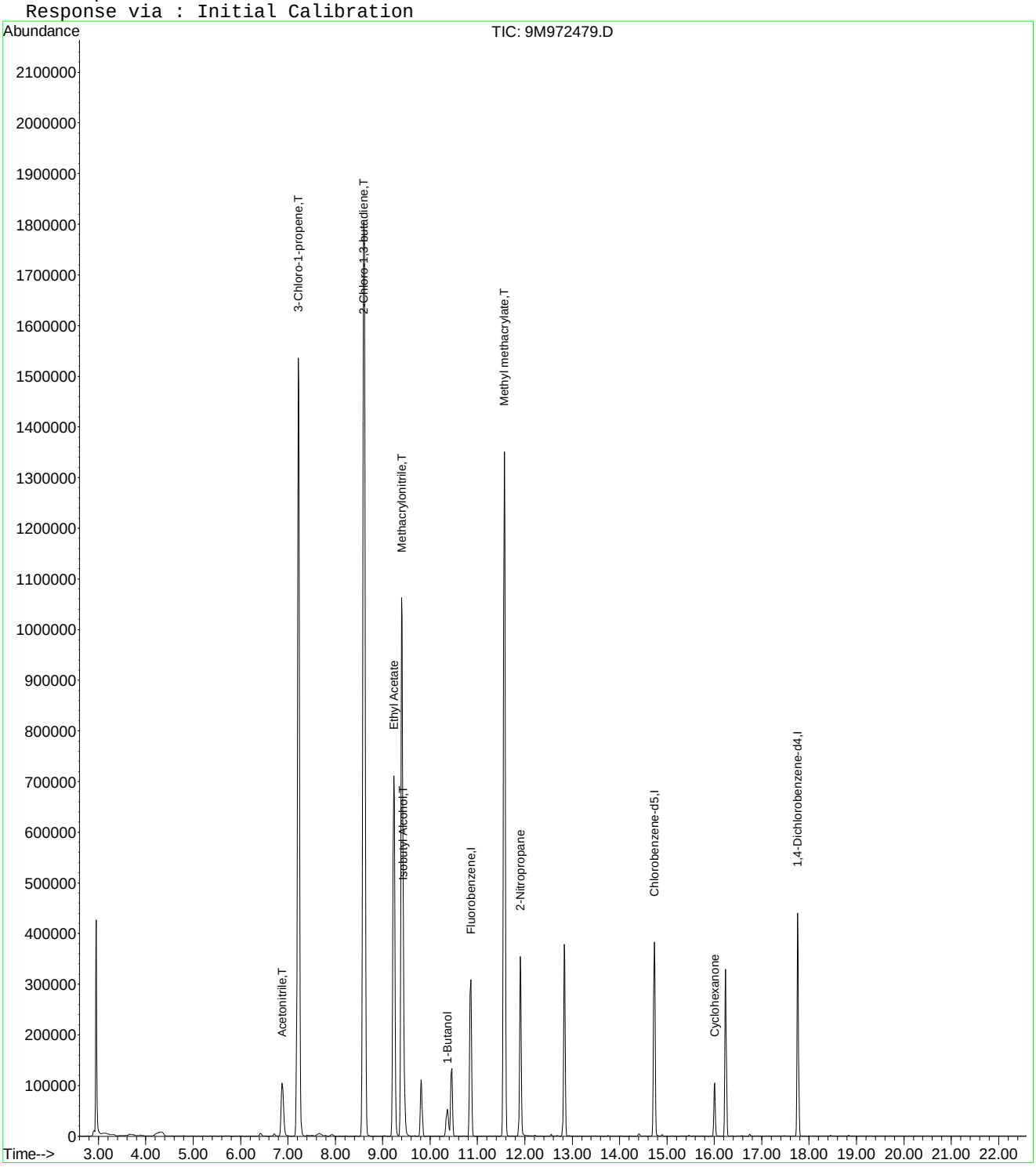

9M972479.D A9FOO_SL.M Wed Jan 27 11:30:29 2016 Page 2

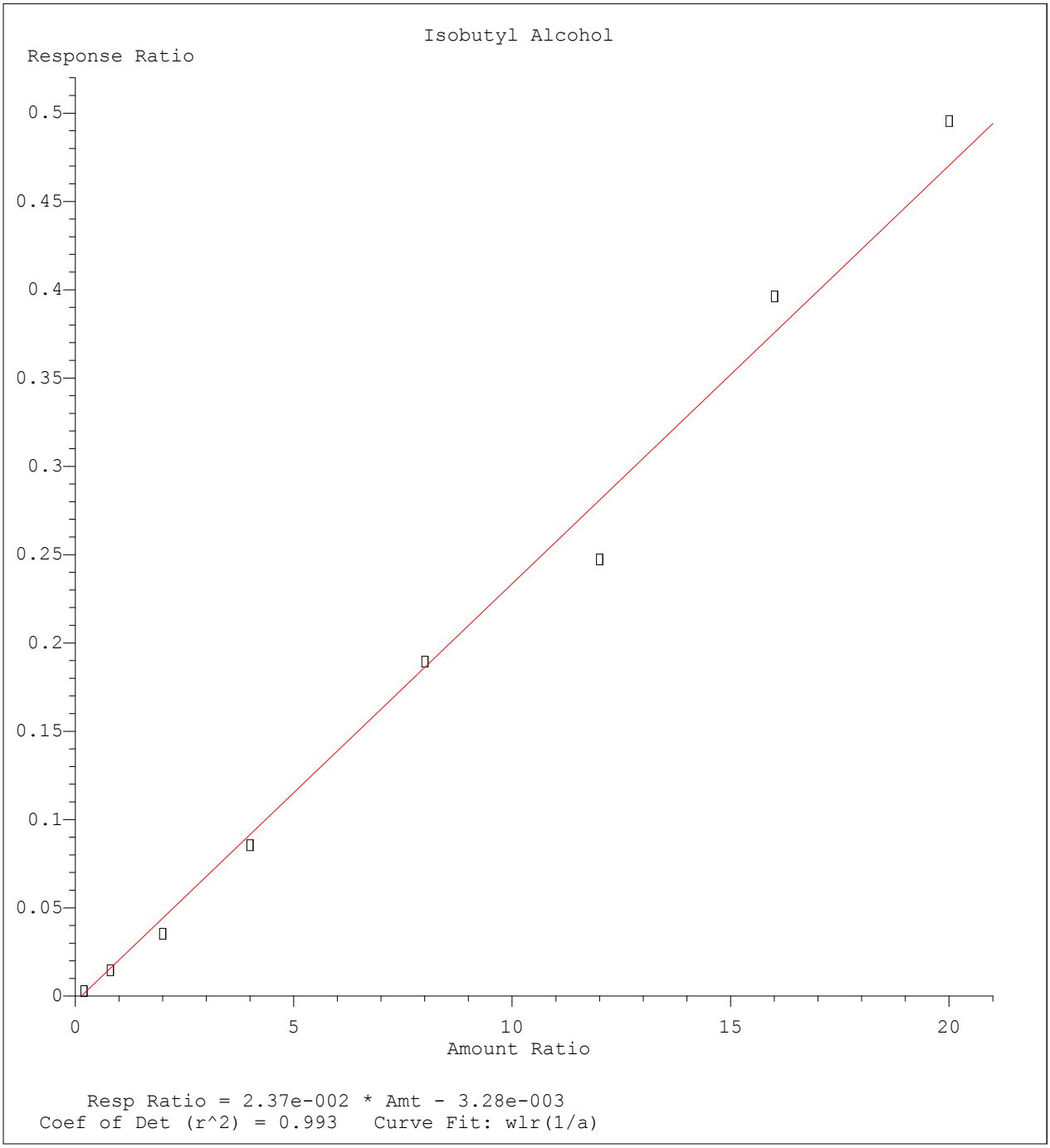

Method Name: C:\MSDCHEM\1\METHODS\A9FOO_SL.M
Calibration Table Last Updated: Wed Jan 27 09:49:02 2016

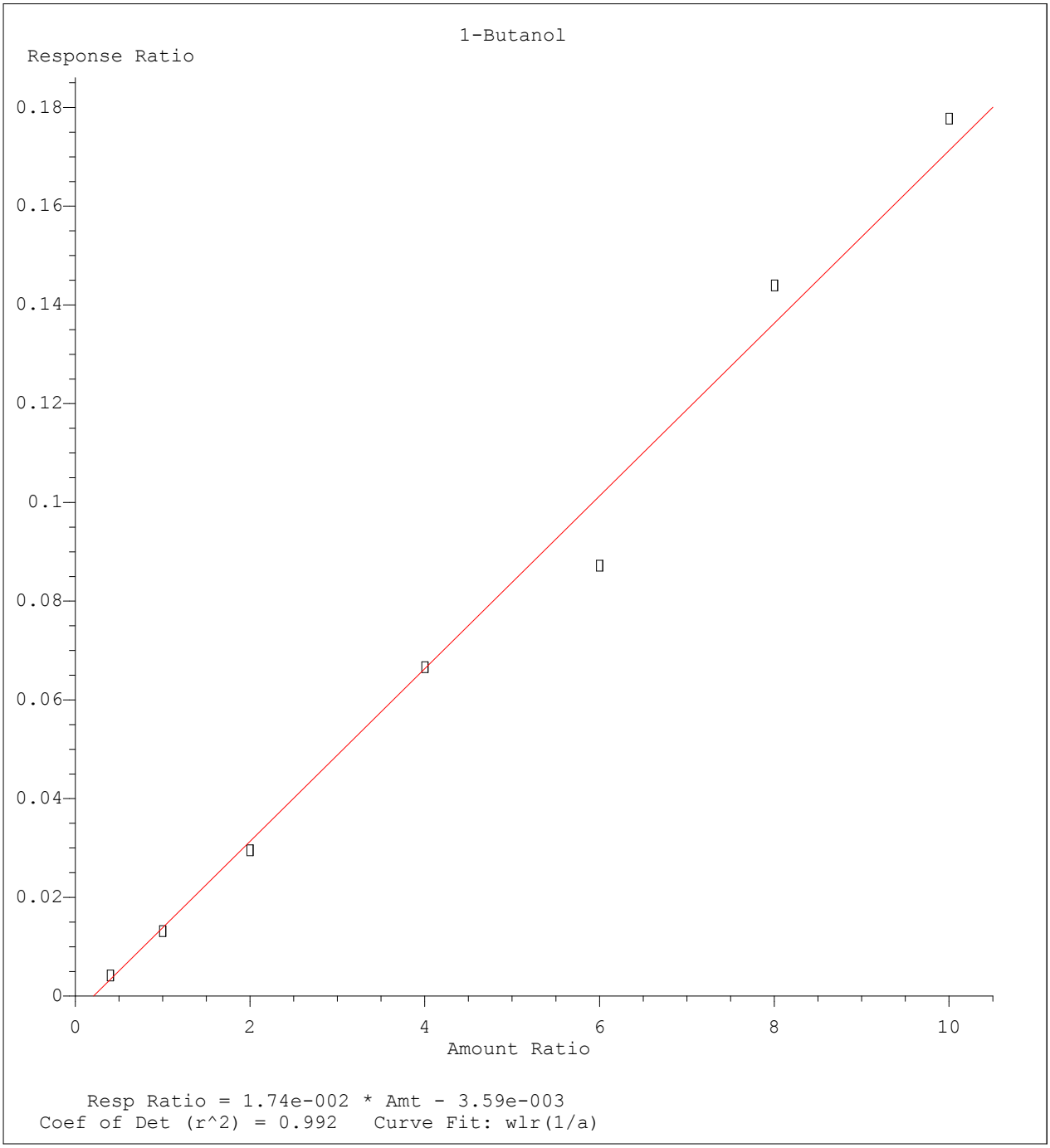

Method Name: C:\MSDCHEM\1\METHODS\A9FOO_SL.M
Calibration Table Last Updated: Wed Jan 27 09:49:02 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:09 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	394765	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	285754	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	159586	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	40054	101.2745 ug/kg#	100
3) 3-Chloro-1-propene	7.22	41	402890	103.3786 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	572568	129.1764 ug/kg	99
5) Ethyl Acetate	9.23	43	275962	106.0028 ug/kg	99
6) Methacrylonitrile	9.40	67	90289	107.1354 ug/kg	96
7) Isobutyl Alcohol	9.42	43	34031	188.7895 ug/kg	99
8) 1-Butanol	10.35	56	12038	97.7072 ug/kg	97
9) Methyl methacrylate	11.56	41	219363	110.3163 ug/kg	100
10) 2-Nitropropane	11.90	43	69288	107.2554 ug/kg	93
12) Cyclohexanone	16.01	55	14203	100.3934 ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972481.D A9FOO_SL.M Wed Jan 27 11:15:09 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

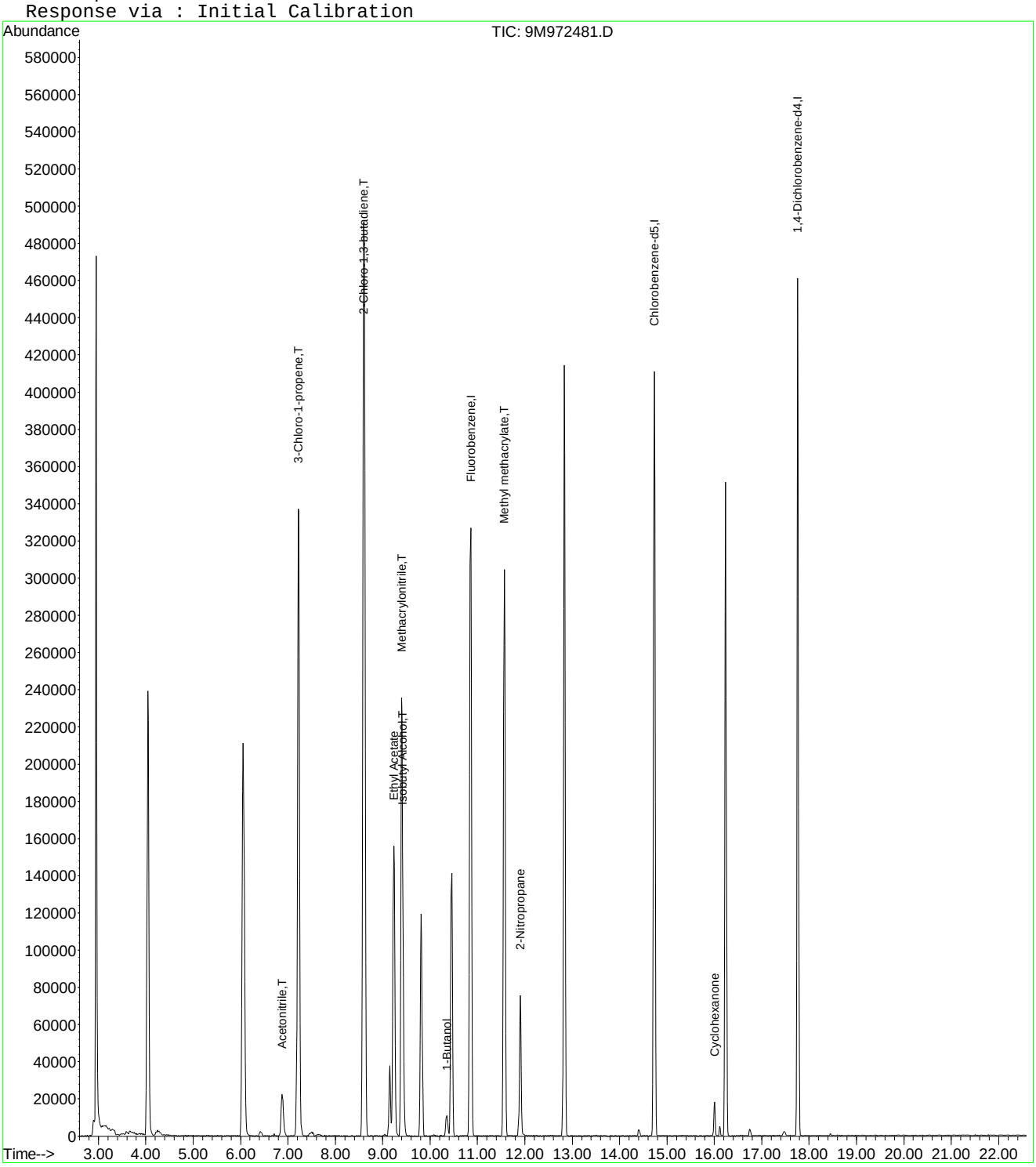

9M972481.D A9FOO_SL.M Wed Jan 27 11:15:09 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	101.2745	-1.3	106	0.00
3	T	3-Chloro-1-propene	100.0000	103.3786	-3.4	98	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	129.1764	-29.2	122	0.00
5		Ethyl Acetate	100.0000	106.0028	-6.0	103	0.00
6	T	Methacrylonitrile	100.0000	107.1354	-7.1	103	0.00
7	T	Isobutyl Alcohol	200.0000	188.7895	5.6	101	0.00
8		1-Butanol	100.0000	97.7072	2.3	103	0.00
9	T	Methyl methacrylate	100.0000	110.3163	-10.3	105	0.00
10		2-Nitropropane	100.0000	107.2554	-7.3	106	0.00
11	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
12		Cyclohexanone	100.0000	100.3934	-0.4	101	0.00
13	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	99	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972481.D A9FOO_SL.M Wed Jan 27 11:32:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972896.D Vial: 3
Acq On : 25 Feb 2016 15:48 Operator: ADC
Sample : WG558732-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:54 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260B_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	517775	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.73	117	378926	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.76	152	183008	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	147955	52.7167 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.44%		
43) 1,2-Dichloroethane-d4	10.44	65	183779	52.1887 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.38%		
58) Toluene-d8	12.83	98	511451	53.3617 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.72%		
79) p-Bromofluorobenzene	16.23	95	191673	53.7871 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 107.58%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.28	85	204882	57.9763 ug/kg	100
3) Chloromethane	3.74	50	183152	54.0664 ug/kg	100
4) Vinyl Chloride	3.99	62	192536	56.7764 ug/kg	100
5) 1,3-Butadiene	4.04	54	170907	52.9740 ug/kg	100
6) Bromomethane	4.88	94	107911	48.9956 ug/kg	100
7) Chloroethane	5.04	64	85391	56.5213 ug/kg	100
8) Trichlorofluoromethane	5.53	101	265962	52.2923 ug/kg	100
9) Diethyl ether	6.04	59	249400	104.8955 ug/kg	100
10) Isoprene	6.09	67	156373	51.4980 ug/kg	100
11) Acrolein	6.30	56	24630	51.9520 ug/kg	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	135036	51.4825 ug/kg	100
13) Acetone	6.41	43	66195	50.6135 ug/kg	100
14) 1,1-Dichloroethene	6.61	61	244051	50.4389 ug/kg	100
15) Tert-Butyl Alcohol	6.76	59	110494	208.7036 ug/kg	98
16) Dimethyl Sulfide	6.88	62	109294	53.4455 ug/kg	100
17) Iodomethane	7.13	142	79749	55.1586 ug/kg	100
18) Methyl acetate	7.14	43	135648	51.5699 ug/kg	100
19) Methylene Chloride	7.40	84	135280	51.3362 ug/kg	100
20) Carbon Disulfide	7.45	76	381814	51.2249 ug/kg	100
21) Acrylonitrile	7.59	53	69697	53.5624 ug/kg	100
22) Methyl Tert Butyl Ether	7.61	73	407131	54.2460 ug/kg	100
23) trans-1,2-Dichloroethene	7.85	61	226890	52.6160 ug/kg	100
24) n-Hexane	7.91	57	219597	49.3729 ug/kg	100
25) Diisopropyl ether	8.26	45	1088740	105.3973 ug/kg	100
26) Vinyl Acetate	8.43	43	311838	52.9553 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	284391	52.5076 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	1023392	106.5502 ug/kg	100
29) 2-Butanone	9.03	43	86123	51.5803 ug/kg	100
30) Propionitrile	9.14	54	53253	104.2214 ug/kg	100
31) 2,2-Dichloropropane	9.24	77	215042	53.1943 ug/kg	100
32) cis-1,2-Dichloroethene	9.31	96	153722	54.3532 ug/kg	100
33) Chloroform	9.52	83	263571	52.9749 ug/kg	100
34) 1-Bromopropane	9.65	122	22164	51.3817 ug/kg	100
35) Bromochloromethane	9.75	130	102780	55.9453 ug/kg	100
36) Tetrahydrofuran	9.78	42	113791	105.7289 ug/kg	100
38) 1,1,1-Trichloroethane	10.04	97	243452	54.1074 ug/kg	100
39) Cyclohexane	10.08	56	247641	50.4821 ug/kg	100
40) 1,1-Dichloropropene	10.24	75	182199	51.4612 ug/kg	100
41) Tert-Amyl-Methyl ether	10.34	73	741165	106.1603 ug/kg	100
42) Carbon Tetrachloride	10.39	117	221306	53.0537 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972896.D Vial: 3
Acq On : 25 Feb 2016 15:48 Operator: ADC
Sample : WG558732-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:54 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260B_SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	237857	54.3500	ug/kg	100
46)	Benzene	10.60	78	503328	50.7793	ug/kg	100
47)	Trichloroethene	11.35	130	163959	52.2047	ug/kg	100
48)	Methylcyclohexane	11.44	83	204551	51.9284	ug/kg	100
49)	1,2-Dichloropropane	11.56	63	148045	54.3898	ug/kg	100
50)	1,4-Dioxane	11.88	88	7789	190.7454	ug/kg	100
51)	Bromodichloromethane	11.87	83	203922	53.1595	ug/kg	100
52)	Dibromomethane	11.96	174	95887	53.1673	ug/kg	100
53)	2-Chloroethyl Vinyl Ether	12.17	63	38515	51.1377	ug/kg	100
54)	4-Methyl-2-Pentanone	12.19	58	64999	54.4056	ug/kg	100
55)	cis-1,3-Dichloropropene	12.50	75	212797	53.2452	ug/kg	100
56)	Dimethyl Disulfide	12.77	94	219798	54.7267	ug/kg	100
59)	Toluene	12.92	91	563647	52.0613	ug/kg	100
60)	Ethyl Methacrylate	13.02	69	158958	52.9687	ug/kg	100
61)	trans-1,3-Dichloropropene	13.10	75	212386	54.4657	ug/kg	100
62)	1,1,2-Trichloroethane	13.33	97	122975	54.0706	ug/kg	100
63)	2-Hexanone	13.25	43	119176	52.4822	ug/kg	100
64)	1,3-Dichloropropane	13.63	76	201541	53.1810	ug/kg	100
65)	Tetrachloroethene	13.75	164	117066	50.4378	ug/kg	100
66)	Dibromochloromethane	14.01	129	168874	53.1294	ug/kg	100
67)	1,2-Dibromoethane	14.28	107	132755	52.6249	ug/kg	100
68)	1-Chlorohexane	14.35	91	168490	52.7733	ug/kg	100
69)	Chlorobenzene	14.77	112	400241	52.5998	ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.80	131	154536	54.0800	ug/kg	100
71)	Ethylbenzene	14.80	106	207031	52.8117	ug/kg	100
72)	m-,p-Xylene	14.89	106	497405	102.7415	ug/kg	100
73)	o-Xylene	15.45	106	247567	53.2858	ug/kg	100
74)	Styrene	15.49	104	425634	53.7983	ug/kg	100
75)	Bromoform	16.00	173	116015	55.5910	ug/kg	100
76)	Isopropylbenzene	15.88	105	658255	52.7764	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.10	83	147970	53.3007	ug/kg	100
80)	1,2,3-Trichloropropane	16.29	110	55711	52.9159	ug/kg	100
81)	trans-1,4-Dichloro-2-Buten	16.33	53	55525	52.3210	ug/kg	100
82)	n-Propylbenzene	16.39	91	751844	52.2641	ug/kg	100
83)	Bromobenzene	16.52	156	177299	52.2079	ug/kg	100
84)	1,3,5-Trimethylbenzene	16.58	105	568867	52.6809	ug/kg	100
85)	2-Chlorotoluene	16.66	91	484783	50.2437	ug/kg	100
86)	4-Chlorotoluene	16.70	91	481367	53.9615	ug/kg	100
87)	a-Methylstyrene	16.98	118	255765	51.9817	ug/kg	100
88)	tert-Butylbenzene	17.04	134	121669	53.7430	ug/kg	100
89)	1,2,4-Trimethylbenzene	17.09	105	580656	51.3463	ug/kg	100
90)	sec-Butylbenzene	17.30	105	726352	52.2266	ug/kg	100
91)	p-Isopropyltoluene	17.46	119	613096	52.2364	ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	337008	49.9319	ug/kg	100
93)	1,4-Dichlorobenzene	17.80	146	335195	49.6777	ug/kg	100
94)	n-Butylbenzene	17.99	91	563797	51.6647	ug/kg	100
95)	1,2-Dichlorobenzene	18.30	146	320108	51.1150	ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.30	157	42968	53.4468	ug/kg	100
97)	1,2,4-Trichlorobenzene	20.44	180	222592	50.0691	ug/kg	100
98)	Hexachlorobutadiene	20.59	225	117654	50.2053	ug/kg	100
99)	Naphthalene	20.81	128	602344	54.0184	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	222082	51.5034	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972896.D 8260SL.M Fri Feb 26 11:21:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972896.D Vial: 3
Acq On : 25 Feb 2016 15:48 Operator: ADC
Sample : WG558732-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

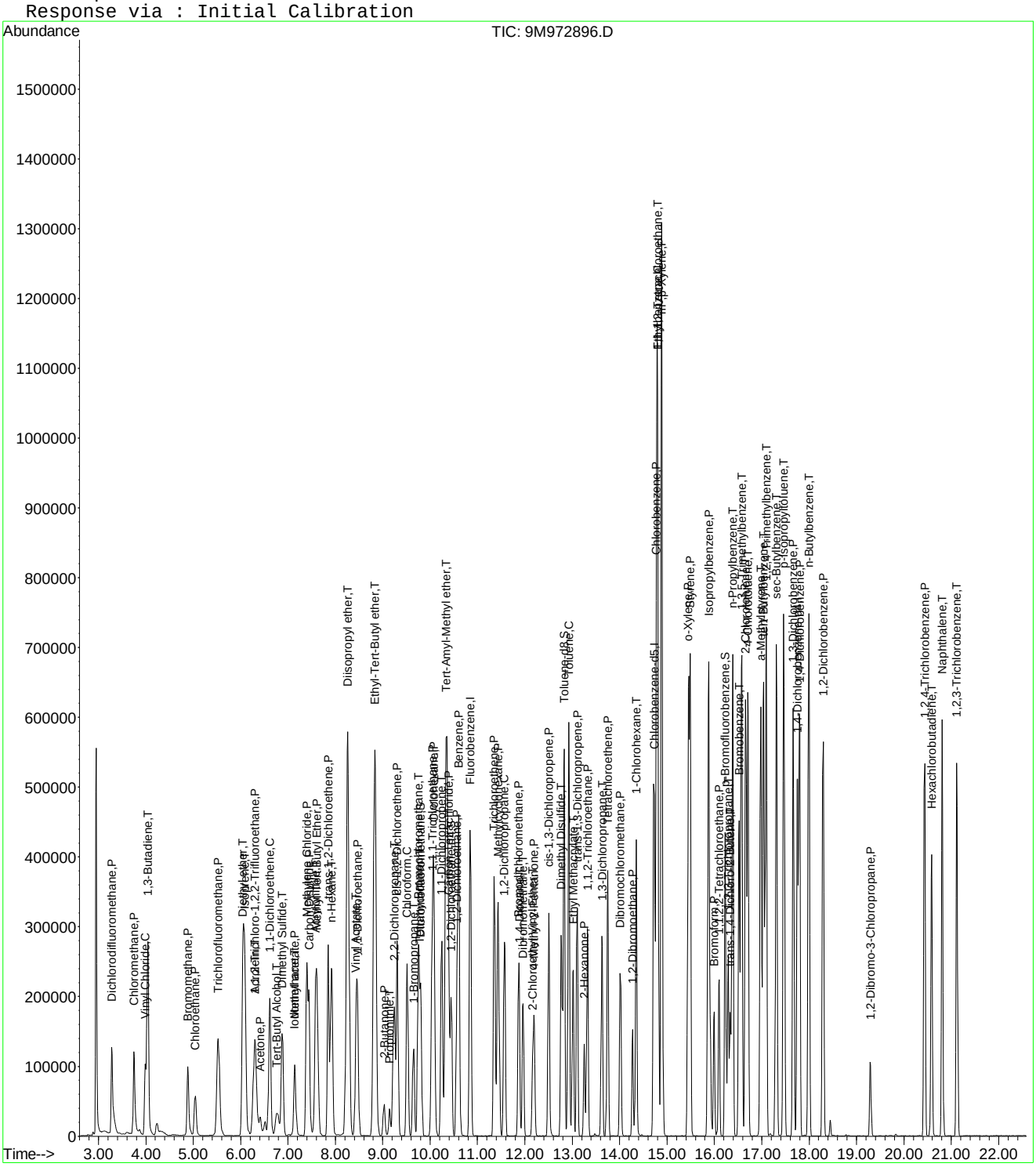

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:15 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	491503	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	353502	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	169028	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.83	98	923	0.1032 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.20%#	
79) p-Bromofluorobenzene	16.22	95	770	0.2339 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.46%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	1359	0.4051 ug/kg#	69
3) Chloromethane	3.75	50	2926	0.9099 ug/kg	95
4) Vinyl Chloride	3.98	62	1474	0.4579 ug/kg#	67
5) 1,3-Butadiene	4.03	54	1519	0.4960 ug/kg	82
6) Bromomethane	4.89	94	2071	0.9906 ug/kg	100
8) Trichlorofluoromethane	5.53	101	2609	0.5404 ug/kg#	51
10) Isoprene	6.08	67	1239	0.4298 ug/kg	70
13) Acetone	6.43	43	4251	5.5216 ug/kg#	75
14) 1,1-Dichloroethene	6.63	61	2149	0.4679 ug/kg#	66
17) Iodomethane	7.14	142	943	3.4505 ug/kg#	34
18) Methyl acetate	7.16	43	1334	0.5343 ug/kg#	45
19) Methylene Chloride	7.40	84	1287	0.5145 ug/kg	81
20) Carbon Disulfide	7.44	76	6762	0.9557 ug/kg#	76
23) trans-1,2-Dichloroethene	7.84	61	2196	0.5365 ug/kg	86
24) n-Hexane	7.92	57	2239	0.5303 ug/kg#	62
26) Vinyl Acetate	8.44	43	2494	0.4462 ug/kg#	78
27) 1,1-Dichloroethane	8.48	63	2396	0.4660 ug/kg#	63
29) 2-Butanone	9.02	43	778	0.4909 ug/kg#	58
31) 2,2-Dichloropropane	9.24	77	1877	0.4891 ug/kg#	42
32) cis-1,2-Dichloroethene	9.32	96	1178	0.4388 ug/kg	74
33) Chloroform	9.52	83	2007	0.4249 ug/kg	81
35) Bromochloromethane	9.74	130	828	0.4748 ug/kg#	68
36) Tetrahydrofuran	9.76	42	1603	1.5690 ug/kg#	57
38) 1,1,1-Trichloroethane	10.05	97	1773	0.4151 ug/kg	92
40) 1,1-Dichloropropene	10.25	75	1521	0.4526 ug/kg#	38
42) Carbon Tetrachloride	10.40	117	1765	0.4457 ug/kg#	85
45) 1,2-Dichloroethane	10.57	62	1885	0.4537 ug/kg#	68
46) Benzene	10.61	78	5607	0.5959 ug/kg#	83
47) Trichloroethene	11.36	130	1808	0.6064 ug/kg	88
48) Methylcyclohexane	11.44	83	1930	0.5161 ug/kg	96
55) cis-1,3-Dichloropropene	12.51	75	1714	0.4518 ug/kg#	51
59) Toluene	12.93	91	5550	0.5495 ug/kg	88
61) trans-1,3-Dichloropropene	13.10	75	1920	0.5278 ug/kg#	51
63) 2-Hexanone	13.25	43	877	0.4140 ug/kg#	63
64) 1,3-Dichloropropane	13.63	76	1615	0.4568 ug/kg	91
65) Tetrachloroethene	13.75	164	1154	0.5330 ug/kg#	74
67) 1,2-Dibromoethane	14.27	107	988	0.4198 ug/kg	87
68) 1-Chlorohexane	14.35	91	1436	0.4821 ug/kg	83
69) Chlorobenzene	14.78	112	4578	0.6449 ug/kg	87
70) 1,1,1,2-Tetrachloroethane	14.81	131	1078	0.4044 ug/kg	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:15 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
71)	Ethylbenzene	14.80	106	1823	0.4985 ug/kg	68
72)	m-,p-Xylene	14.88	106	4752	1.0521 ug/kg	95
73)	o-Xylene	15.44	106	2166	0.4997 ug/kg	94
74)	Styrene	15.49	104	3544	0.4802 ug/kg	91
76)	Isopropylbenzene	15.87	105	6349	0.5456 ug/kg	97
78)	1,1,2,2-Tetrachloroethane	16.09	83	1326	0.5171 ug/kg#	89
82)	n-Propylbenzene	16.38	91	7679	0.5780 ug/kg	98
83)	Bromobenzene	16.52	156	1798	0.5732 ug/kg	88
84)	1,3,5-Trimethylbenzene	16.57	105	4554	0.4566 ug/kg	92
85)	2-Chlorotoluene	16.66	91	5237	0.5877 ug/kg	84
86)	4-Chlorotoluene	16.71	91	5645	0.6851 ug/kg	93
87)	a-Methylstyrene	16.97	118	2091	0.4601 ug/kg	93
89)	1,2,4-Trimethylbenzene	17.09	105	6291	0.6023 ug/kg	84
90)	sec-Butylbenzene	17.31	105	7013	0.5460 ug/kg	93
91)	p-Isopropyltoluene	17.47	119	5681	0.5241 ug/kg	95
92)	1,3-Dichlorobenzene	17.67	146	4446	0.7132 ug/kg	91
93)	1,4-Dichlorobenzene	17.79	146	4603	0.7386 ug/kg#	73
94)	n-Butylbenzene	17.99	91	6750	0.6697 ug/kg#	90
95)	1,2-Dichlorobenzene	18.29	146	3889	0.6724 ug/kg	82
97)	1,2,4-Trichlorobenzene	20.43	180	3506	0.8539 ug/kg	94
98)	Hexachlorobutadiene	20.58	225	1493	0.6898 ug/kg#	70
99)	Naphthalene	20.81	128	10277	0.9979 ug/kg	93
100)	1,2,3-Trichlorobenzene	21.12	180	3961	0.9946 ug/kg	80

(#) = qualifier out of range (m) = manual integration
9M972898.D 8260SL.M Fri Feb 26 11:11:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration

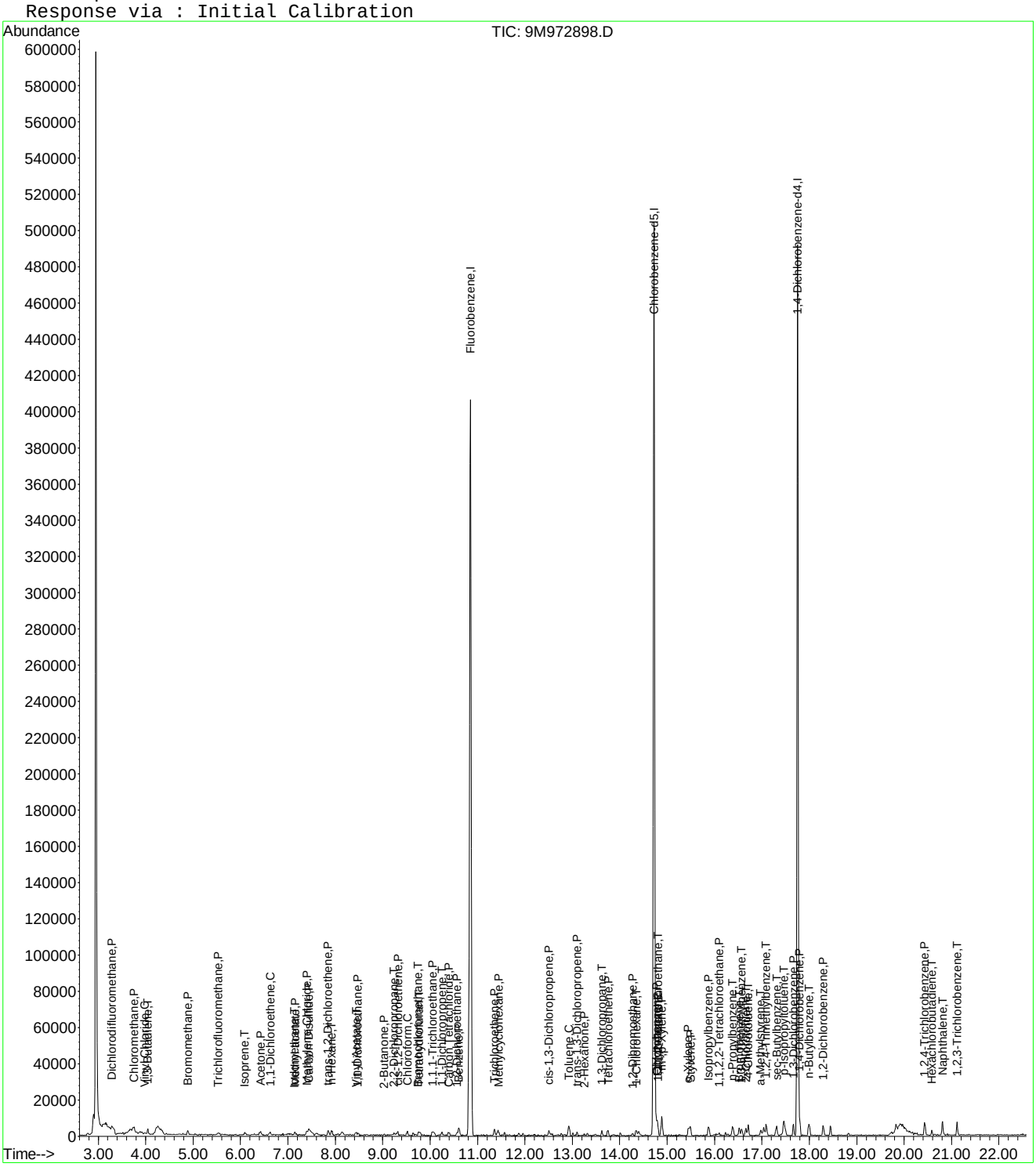

9M972898.D 8260SL.M Fri Feb 26 11:11:55 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	0.4051	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.9099	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.4579	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	0.4960	0.0	0	0.00
6	P	Bromomethane	-1.0000	0.9906	0.0	100	0.00
7	P	Chloroethane	-1.0000	0.2845	0.0	100	0.01
8	P	Trichlorofluoromethane	-1.0000	0.5404	0.0	100	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.04#
10	T	Isoprene	-1.0000	0.4298	0.0	0	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.30#
12	P	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.0779	0.0	100	0.00
13	P	Acetone	-1.0000	5.5216	0.0	0	0.02
14	C	1,1-Dichloroethene	-1.0000	0.4679	0.0	100	0.01
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.76#
16	T	Dimethyl Sulfide	-1.0000	0.1242	0.0	0	0.01
17	T	Iodomethane	-1.0000	3.4505	0.0	0	0.00
18	P	Methyl acetate	-1.0000	0.5343	0.0	0	0.02
19	P	Methylene Chloride	-1.0000	0.5145	0.0	100	0.00
20	P	Carbon Disulfide	-1.0000	0.9557	0.0	0	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.59#
22	P	Methyl Tert Butyl Ether	-1.0000	0.3878	0.0	100	0.00
23	P	trans-1,2-Dichloroethene	-1.0000	0.5365	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.5303	0.0	0	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.26#
26	T	Vinyl Acetate	-1.0000	0.4462	0.0	100	0.01
27	P	1,1-Dichloroethane	-1.0000	0.4660	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.83#
29	P	2-Butanone	-1.0000	0.4909	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.14#
31	T	2,2-Dichloropropane	-1.0000	0.4891	0.0	100	0.00
32	P	cis-1,2-Dichloroethene	-1.0000	0.4388	0.0	100	0.01
33	C	Chloroform	-1.0000	0.4249	0.0	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.65#
35	T	Bromochloromethane	-1.0000	0.4748	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	1.5690	0.0	100	-0.02
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	-1.0000	0.4151	0.0	100	0.00
39	P	Cyclohexane	-1.0000	0.3314	0.0	0	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4526	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.34#
42	P	Carbon Tetrachloride	-1.0000	0.4457	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	-1.0000	0.4537	0.0	100	0.00
46	P	Benzene	0.5000	0.5959	-19.2	100	0.00
47	P	Trichloroethene	-1.0000	0.6064	0.0	100	0.00
48	P	Methylcyclohexane	-1.0000	0.5161	0.0	0	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2930	0.0	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.88#
51	P	Bromodichloromethane	-1.0000	0.3238	0.0	100	0.00
52	T	Dibromomethane	-1.0000	0.1630	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.0000	0.0	0	-12.16#
54	P	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.19#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	-1.0000	0.4518	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2529	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.1032	0.0	100	0.00
59	C	Toluene	0.5000	0.5495	-9.9	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2340	0.0	0	0.00
61	P	trans-1,3-Dichloropropene	-1.0000	0.5278	0.0	100	0.00
62	P	1,1,2-Trichloroethane	-1.0000	0.3964	0.0	100	0.00
63	P	2-Hexanone	-1.0000	0.4140	0.0	100	0.00
64	T	1,3-Dichloropropane	-1.0000	0.4568	0.0	100	0.00
65	P	Tetrachloroethene	-1.0000	0.5330	0.0	100	0.00
66	P	Dibromochloromethane	-1.0000	0.3541	0.0	100	0.00
67	P	1,2-Dibromoethane	-1.0000	0.4198	0.0	100	0.00
68	T	1-Chlorohexane	-1.0000	0.4821	0.0	0	0.00
69	P	Chlorobenzene	-1.0000	0.6449	0.0	100	0.00
70	T	1,1,1,2-Tetrachloroethane	-1.0000	0.4044	0.0	100	0.00
71	C	Ethylbenzene	0.5000	0.4985	0.3	100	0.00
72	P	m-,p-Xylene	1.0000	1.0521	-5.2	100	0.00
73	P	o-Xylene	0.5000	0.4997	0.1	100	0.00
74	P	Styrene	-1.0000	0.4802	0.0	100	0.00
75	P	Bromoform	-1.0000	0.3955	0.0	100	0.00
76	P	Isopropylbenzene	-1.0000	0.5456	0.0	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	-1.0000	0.5171	0.0	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.2339	0.0	100	0.00
80	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.29#
81	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.33#
82	T	n-Propylbenzene	-1.0000	0.5780	0.0	100	0.00
83	T	Bromobenzene	-1.0000	0.5732	0.0	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	0.4566	0.0	100	0.00
85	T	2-Chlorotoluene	-1.0000	0.5877	0.0	100	0.00
86	T	4-Chlorotoluene	-1.0000	0.6851	0.0	100	0.00
87	T	a-Methylstyrene	-1.0000	0.4601	0.0	0	0.00
88	T	tert-Butylbenzene	-1.0000	0.2860	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	-1.0000	0.6023	0.0	100	0.00
90	T	sec-Butylbenzene	-1.0000	0.5460	0.0	100	0.00
91	T	p-Isopropyltoluene	-1.0000	0.5241	0.0	100	0.00
92	P	1,3-Dichlorobenzene	-1.0000	0.7132	0.0	100	0.00
93	P	1,4-Dichlorobenzene	-1.0000	0.7386	0.0	100	0.00
94	T	n-Butylbenzene	-1.0000	0.6697	0.0	100	0.00
95	P	1,2-Dichlorobenzene	-1.0000	0.6724	0.0	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.30#
97	P	1,2,4-Trichlorobenzene	-1.0000	0.8539	0.0	100	0.00
98	T	Hexachlorobutadiene	-1.0000	0.6898	0.0	100	0.00
99	T	Naphthalene	-1.0000	0.9979	0.0	100	0.00
100	T	1,2,3-Trichlorobenzene	-1.0000	0.9946	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972898.D 8260SL.M Fri Feb 26 11:11:52 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	536651	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	387839	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	177519	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.82	98	959	0.0978 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.20%#	
79) p-Bromofluorobenzene	16.22	95	467	0.1351 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	3486	0.9518 ug/kg#	85
3) Chloromethane	3.74	50	4175	1.1891 ug/kg	88
4) Vinyl Chloride	3.98	62	2686	0.7642 ug/kg	80
5) 1,3-Butadiene	4.03	54	3056	0.9139 ug/kg	91
6) Bromomethane	4.89	94	2537	1.1114 ug/kg	94
7) Chloroethane	5.05	64	1264	0.8072 ug/kg#	45
8) Trichlorofluoromethane	5.53	101	5567	1.0561 ug/kg#	93
9) Diethyl ether	6.05	59	11529	4.6784 ug/kg	97
10) Isoprene	6.08	67	2965	0.9421 ug/kg	97
11) Acrolein	6.29	56	1087	2.2122 ug/kg#	35
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	1939	0.7132 ug/kg	88
13) Acetone	6.41	43	5231	5.8863 ug/kg	95
14) 1,1-Dichloroethene	6.62	61	4981	0.9932 ug/kg	92
15) Tert-Butyl Alcohol	6.77	59	5682	10.3548 ug/kg#	63
16) Dimethyl Sulfide	6.88	62	1614	0.7615 ug/kg	91
17) Iodomethane	7.15	142	941	3.3944 ug/kg#	66
18) Methyl acetate	7.16	43	2553	0.9364 ug/kg#	65
19) Methylene Chloride	7.40	84	2963	1.0849 ug/kg	92
20) Carbon Disulfide	7.45	76	9749	1.2619 ug/kg	95
21) Acrylonitrile	7.58	53	3140	2.3282 ug/kg	85
22) Methyl Tert Butyl Ether	7.61	73	7179	0.9229 ug/kg	83
23) trans-1,2-Dichloroethene	7.85	61	4296	0.9612 ug/kg	95
24) n-Hexane	7.93	57	4481	0.9720 ug/kg	95
25) Diisopropyl ether	8.26	45	50344	4.7022 ug/kg	98
26) Vinyl Acetate	8.43	43	5247	0.8597 ug/kg#	90
27) 1,1-Dichloroethane	8.48	63	5885	1.0483 ug/kg#	85
28) Ethyl-Tert-Butyl ether	8.83	59	46767	4.6979 ug/kg	99
29) 2-Butanone	9.03	43	1776	1.0263 ug/kg#	58
30) Propionitrile	9.14	54	2256	4.2599 ug/kg#	60
31) 2,2-Dichloropropane	9.24	77	4402	1.0506 ug/kg#	71
32) cis-1,2-Dichloroethene	9.31	96	2650	0.9040 ug/kg	94
33) Chloroform	9.51	83	5072	0.9836 ug/kg	96
35) Bromochloromethane	9.75	130	1408	0.7394 ug/kg	86
36) Tetrahydrofuran	9.77	42	6699	6.0054 ug/kg	95
38) 1,1,1-Trichloroethane	10.05	97	4567	0.9793 ug/kg	91
39) Cyclohexane	10.08	56	4992	0.9818 ug/kg#	85
40) 1,1-Dichloropropene	10.24	75	3785	1.0315 ug/kg	90
41) Tert-Amyl-Methyl ether	10.34	73	33850	4.6779 ug/kg	95
42) Carbon Tetrachloride	10.40	117	4297	0.9939 ug/kg#	90
45) 1,2-Dichloroethane	10.55	62	3923	0.8649 ug/kg	93

(#) = qualifier out of range (m) = manual integration
9M972899.D 8260SL.M Fri Feb 26 11:12:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
46)	Benzene	10.61	78	9968	0.9703 ug/kg	96
47)	Trichloroethene	11.36	130	3259	1.0012 ug/kg	99
48)	Methylcyclohexane	11.43	83	3354	0.8215 ug/kg	76
49)	1,2-Dichloropropane	11.57	63	2469	0.8752 ug/kg	94
51)	Bromodichloromethane	11.87	83	3657	0.9198 ug/kg#	94
52)	Dibromomethane	11.96	174	1621	0.8672 ug/kg	93
53)	2-Chloroethyl Vinyl Ether	12.16	63	210	3.0851 ug/kg#	47
54)	4-Methyl-2-Pentanone	12.20	58	738	0.5960 ug/kg#	40
55)	cis-1,3-Dichloropropene	12.51	75	3714	0.8966 ug/kg	86
56)	Dimethyl Disulfide	12.77	94	3075	0.7387 ug/kg	83
59)	Toluene	12.93	91	10894	0.9831 ug/kg	97
60)	Ethyl Methacrylate	13.01	69	1966	0.6401 ug/kg#	53
61)	trans-1,3-Dichloropropene	13.11	75	3837	0.9614 ug/kg#	79
62)	1,1,2-Trichloroethane	13.32	97	2148	0.9227 ug/kg	94
63)	2-Hexanone	13.26	43	1796	0.7727 ug/kg#	80
64)	1,3-Dichloropropane	13.63	76	3616	0.9322 ug/kg	99
65)	Tetrachloroethene	13.75	164	2587	1.0890 ug/kg	79
66)	Dibromochloromethane	14.02	129	3318	1.0199 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	2336	0.9047 ug/kg	97
68)	1-Chlorohexane	14.34	91	3075	0.9410 ug/kg	85
69)	Chlorobenzene	14.78	112	7982	1.0249 ug/kg	88
70)	1,1,1,2-Tetrachloroethane	14.81	131	2589	0.8852 ug/kg	86
71)	Ethylbenzene	14.80	106	4007	0.9987 ug/kg	89
72)	m-,p-Xylene	14.88	106	9607	1.9388 ug/kg	98
73)	o-Xylene	15.45	106	4376	0.9202 ug/kg	99
74)	Styrene	15.49	104	7432	0.9178 ug/kg	92
75)	Bromoform	16.00	173	1759	0.8235 ug/kg#	79
76)	Isopropylbenzene	15.87	105	11937	0.9351 ug/kg	98
78)	1,1,2,2-Tetrachloroethane	16.09	83	2186	0.8118 ug/kg#	83
80)	1,2,3-Trichloropropane	16.28	110	875	0.8568 ug/kg#	81
81)	trans-1,4-Dichloro-2-Buten	16.34	53	831	0.8073 ug/kg#	74
82)	n-Propylbenzene	16.38	91	14156	1.0145 ug/kg	99
83)	Bromobenzene	16.53	156	2996	0.9095 ug/kg#	39
84)	1,3,5-Trimethylbenzene	16.57	105	11008	1.0509 ug/kg	88
85)	2-Chlorotoluene	16.65	91	10606	1.1332 ug/kg	84
86)	4-Chlorotoluene	16.71	91	9101	1.0518 ug/kg	95
87)	a-Methylstyrene	16.98	118	4078	0.8544 ug/kg	85
88)	tert-Butylbenzene	17.03	134	2095	0.9540 ug/kg	74
89)	1,2,4-Trimethylbenzene	17.09	105	12124	1.1053 ug/kg	83
90)	sec-Butylbenzene	17.31	105	13922	1.0320 ug/kg	100
91)	p-Isopropyltoluene	17.47	119	10153	0.8918 ug/kg	98
92)	1,3-Dichlorobenzene	17.67	146	7444	1.1370 ug/kg	90
93)	1,4-Dichlorobenzene	17.79	146	7580	1.1581 ug/kg	92
94)	n-Butylbenzene	17.99	91	11112	1.0498 ug/kg	91
95)	1,2-Dichlorobenzene	18.29	146	6415	1.0560 ug/kg	97
97)	1,2,4-Trichlorobenzene	20.43	180	4869	1.1291 ug/kg	98
98)	Hexachlorobutadiene	20.59	225	2032	0.8939 ug/kg	87
99)	Naphthalene	20.81	128	11710	1.0826 ug/kg	92
100)	1,2,3-Trichlorobenzene	21.12	180	4698	1.1232 ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972899.D 8260SL.M Fri Feb 26 11:12:33 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration

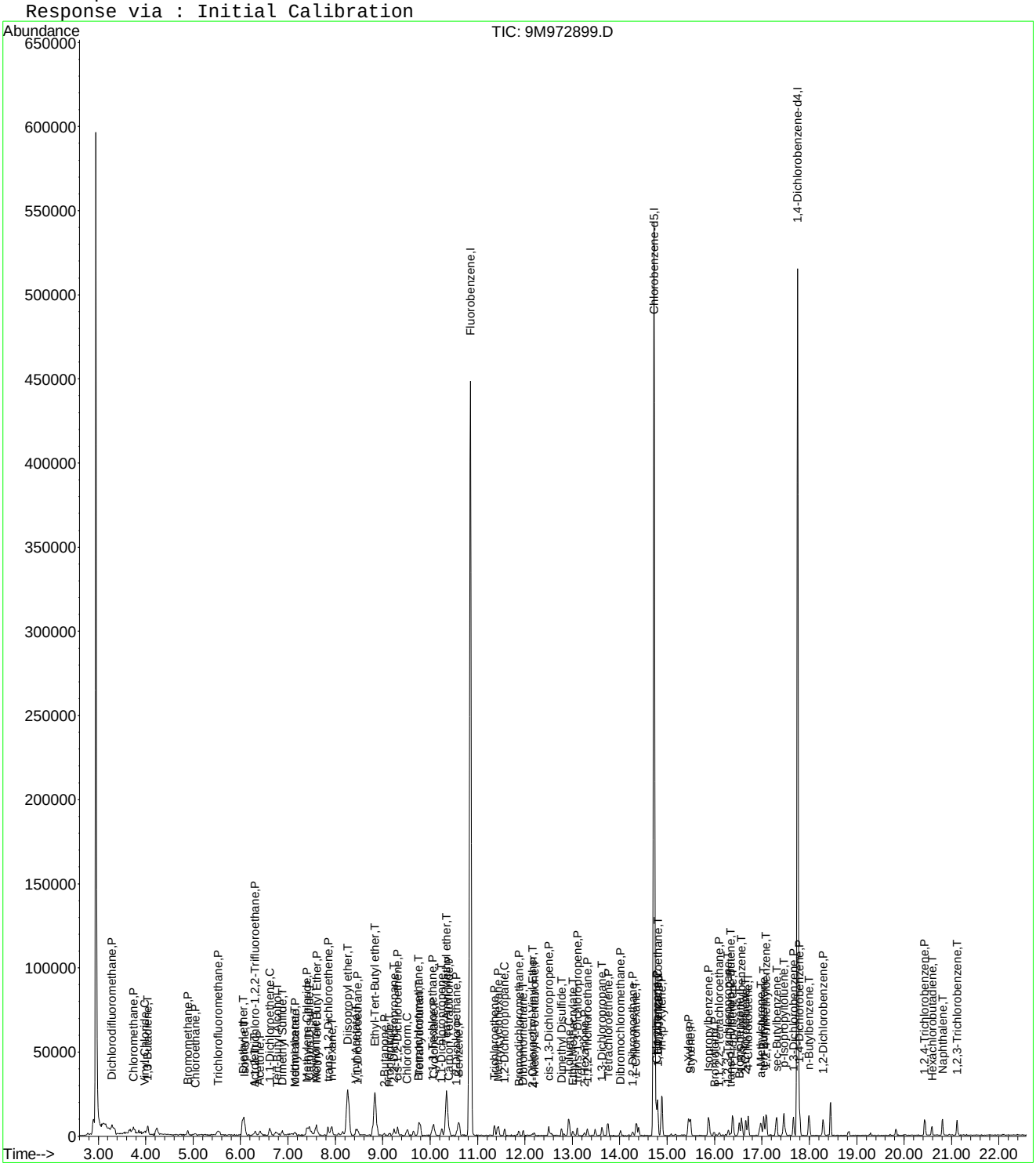

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	0.9518	0.0	100	0.00
3	P	Chloromethane	-1.0000	1.1891	0.0	100	0.00
4	C	Vinyl Chloride	1.0000	0.7642	23.6#	100	0.00
5	T	1,3-Butadiene	-1.0000	0.9139	0.0	0	0.00
6	P	Bromomethane	1.0000	1.1114	-11.1	100	0.00
7	P	Chloroethane	-1.0000	0.8072	0.0	100	0.00
8	P	Trichlorofluoromethane	1.0000	1.0561	-5.6	100	0.00
9	T	Diethyl ether	5.0000	4.6784	6.4	100	0.00
10	T	Isoprene	-1.0000	0.9421	0.0	0	0.00
11	T	Acrolein	2.5000	2.2122	11.5	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.7132	0.0	100	0.00
13	P	Acetone	-1.0000	5.8863	0.0	0	0.00
14	C	1,1-Dichloroethene	1.0000	0.9932	0.7	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	10.3548	0.0	100	0.00
16	T	Dimethyl Sulfide	1.0000	0.7615	23.9	100	0.00
17	T	Iodomethane	-1.0000	3.3944	0.0	0	0.01
18	P	Methyl acetate	-1.0000	0.9364	0.0	0	0.02
19	P	Methylene Chloride	-1.0000	1.0849	0.0	100	0.00
20	P	Carbon Disulfide	-1.0000	1.2619	0.0	0	0.00
21	T	Acrylonitrile	2.5000	2.3282	6.9	100	0.00
22	P	Methyl Tert Butyl Ether	1.0000	0.9229	7.7	100	0.00
23	P	trans-1,2-Dichloroethene	1.0000	0.9612	3.9	100	0.00
24	T	n-Hexane	-1.0000	0.9720	0.0	0	0.01
25	T	Diisopropyl ether	5.0000	4.7022	6.0	100	0.00
26	T	Vinyl Acetate	-1.0000	0.8597	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0483	-4.8	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.6979	6.0	100	0.00
29	P	2-Butanone	-1.0000	1.0263	0.0	100	0.00
30	T	Propionitrile	5.0000	4.2599	14.8	100	0.00
31	T	2,2-Dichloropropane	-1.0000	1.0506	0.0	100	0.00
32	P	cis-1,2-Dichloroethene	1.0000	0.9040	9.6	100	0.00
33	C	Chloroform	1.0000	0.9836	1.6	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.65#
35	T	Bromochloromethane	1.0000	0.7395	26.1#	100	0.00
36	T	Tetrahydrofuran	-1.0000	6.0054	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	1.0000	0.9793	2.1	100	0.00
39	P	Cyclohexane	1.0000	0.9818	1.8	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0315	-3.1	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	4.6780	6.4	100	0.00
42	P	Carbon Tetrachloride	-1.0000	0.9939	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	1.0000	0.8649	13.5	100	0.00
46	P	Benzene	1.0000	0.9703	3.0	100	0.00
47	P	Trichloroethene	1.0000	1.0012	-0.1	100	0.00
48	P	Methylcyclohexane	1.0000	0.8215	17.8	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.8752	12.5	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.88#
51	P	Bromodichloromethane	-1.0000	0.9198	0.0	100	0.00
52	T	Dibromomethane	1.0000	0.8672	13.3	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	3.0851	0.0	0	0.00
54	P	4-Methyl-2-Pentanone	-1.0000	0.5960	0.0	100	0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	-1.0000	0.8966	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.7387	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0978	0.0	100	0.00
59	C	Toluene	1.0000	0.9831	1.7	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.6401	0.0	0	0.00
61	P	trans-1,3-Dichloropropene	-1.0000	0.9614	0.0	100	0.00
62	P	1,1,2-Trichloroethane	1.0000	0.9227	7.7	100	0.00
63	P	2-Hexanone	-1.0000	0.7727	0.0	100	0.00
64	T	1,3-Dichloropropane	1.0000	0.9322	6.8	100	0.00
65	P	Tetrachloroethene	1.0000	1.0890	-8.9	100	0.00
66	P	Dibromochloromethane	-1.0000	1.0199	0.0	100	0.00
67	P	1,2-Dibromoethane	-1.0000	0.9047	0.0	100	0.00
68	T	1-Chlorohexane	1.0000	0.9410	5.9	100	0.00
69	P	Chlorobenzene	1.0000	1.0249	-2.5	100	0.00
70	T	1,1,1,2-Tetrachloroethane	-1.0000	0.8852	0.0	100	0.00
71	C	Ethylbenzene	1.0000	0.9987	0.1	100	0.00
72	P	m-,p-Xylene	2.0000	1.9388	3.1	100	0.00
73	P	o-Xylene	1.0000	0.9202	8.0	100	0.00
74	P	Styrene	1.0000	0.9178	8.2	100	0.00
75	P	Bromoform	-1.0000	0.8235	0.0	100	0.00
76	P	Isopropylbenzene	1.0000	0.9351	6.5	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	1.0000	0.8118	18.8	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.1351	0.0	100	0.00
80	T	1,2,3-Trichloropropane	1.0000	0.8568	14.3	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.8073	0.0	0	0.00
82	T	n-Propylbenzene	1.0000	1.0145	-1.4	100	0.00
83	T	Bromobenzene	1.0000	0.9095	9.1	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	1.0509	0.0	100	0.00
85	T	2-Chlorotoluene	-1.0000	1.1332	0.0	100	0.00
86	T	4-Chlorotoluene	1.0000	1.0518	-5.2	100	0.00
87	T	a-Methylstyrene	-1.0000	0.8544	0.0	0	0.00
88	T	tert-Butylbenzene	-1.0000	0.9540	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	1.0000	1.1053	-10.5	100	0.00
90	T	sec-Butylbenzene	1.0000	1.0320	-3.2	100	0.00
91	T	p-Isopropyltoluene	-1.0000	0.8918	0.0	100	0.00
92	P	1,3-Dichlorobenzene	1.0000	1.1370	-13.7	100	0.00
93	P	1,4-Dichlorobenzene	1.0000	1.1581	-15.8	100	0.00
94	T	n-Butylbenzene	1.0000	1.0498	-5.0	100	0.00
95	P	1,2-Dichlorobenzene	1.0000	1.0560	-5.6	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	0.3514	0.0	100	0.00
97	P	1,2,4-Trichlorobenzene	1.0000	1.1291	-12.9	100	0.00
98	T	Hexachlorobutadiene	1.0000	0.8939	10.6	100	0.00
99	T	Naphthalene	-1.0000	1.0826	0.0	100	0.00
100	T	1,2,3-Trichlorobenzene	1.0000	1.1232	-12.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1
9M972899.D 8260SL.M Fri Feb 26 11:12:31 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	472115	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	342668	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	156993	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.83	98	772	0.0891 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.18%#	
79) p-Bromofluorobenzene	16.23	95	570	0.1865 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.38%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.29	85	6383	1.9809 ug/kg#	78
3) Chloromethane	3.74	50	7027	2.2750 ug/kg	100
4) Vinyl Chloride	4.00	62	6001	1.9408 ug/kg	97
5) 1,3-Butadiene	4.04	54	6545	2.2249 ug/kg	95
6) Bromomethane	4.90	94	5050	2.5146 ug/kg	81
7) Chloroethane	5.04	64	2391	1.7357 ug/kg#	70
8) Trichlorofluoromethane	5.54	101	9777	2.1082 ug/kg#	94
9) Diethyl ether	6.06	59	58156	26.8255 ug/kg	97
10) Isoprene	6.09	67	5698	2.0580 ug/kg	89
11) Acrolein	6.30	56	5427	12.5543 ug/kg	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	4756	1.9886 ug/kg	93
13) Acetone	6.40	43	6167	6.9886 ug/kg	93
14) 1,1-Dichloroethene	6.62	61	9652	2.1877 ug/kg	91
15) Tert-Butyl Alcohol	6.75	59	26757	55.4271 ug/kg#	91
16) Dimethyl Sulfide	6.89	62	3840	2.0594 ug/kg	97
17) Iodomethane	7.14	142	1541	3.9079 ug/kg#	56
18) Methyl acetate	7.15	43	5334	2.2240 ug/kg#	69
19) Methylene Chloride	7.40	84	5116	2.1292 ug/kg	98
20) Carbon Disulfide	7.44	76	15010	2.2085 ug/kg	94
21) Acrylonitrile	7.59	53	14961	12.6096 ug/kg	100
22) Methyl Tert Butyl Ether	7.61	73	13630	1.9917 ug/kg	93
23) trans-1,2-Dichloroethene	7.85	61	7964	2.0255 ug/kg	100
24) n-Hexane	7.92	57	8619	2.1253 ug/kg	100
25) Diisopropyl ether	8.26	45	252190	26.7748 ug/kg	99
26) Vinyl Acetate	8.43	43	11207	2.0872 ug/kg	95
27) 1,1-Dichloroethane	8.47	63	10529	2.1320 ug/kg#	93
28) Ethyl-Tert-Butyl ether	8.83	59	234163	26.7377 ug/kg	99
29) 2-Butanone	9.03	43	3346	2.1978 ug/kg#	76
30) Propionitrile	9.14	54	12899	27.6861 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	8085	2.1934 ug/kg	88
32) cis-1,2-Dichloroethene	9.32	96	4861	1.8850 ug/kg	98
33) Chloroform	9.53	83	10005	2.2054 ug/kg	95
34) 1-Bromopropane	9.64	122	209	1.5465 ug/kg	96
35) Bromochloromethane	9.75	130	3273	1.9539 ug/kg	81
36) Tetrahydrofuran	9.78	42	26192	26.6900 ug/kg	94
38) 1,1,1-Trichloroethane	10.04	97	8229	2.0058 ug/kg	97
39) Cyclohexane	10.09	56	9354	2.0912 ug/kg	96
40) 1,1-Dichloropropene	10.23	75	6787	2.1024 ug/kg	88
41) Tert-Amyl-Methyl ether	10.34	73	167275	26.2768 ug/kg	98
42) Carbon Tetrachloride	10.39	117	7920	2.0823 ug/kg#	95

(#) = qualifier out of range (m) = manual integration
9M972900.D 8260SL.M Fri Feb 26 11:13:39 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	8488	2.1271 ug/kg	89
46)	Benzene	10.60	78	19454	2.1525 ug/kg	96
47)	Trichloroethene	11.35	130	6073	2.1207 ug/kg	96
48)	Methylcyclohexane	11.44	83	7523	2.0945 ug/kg	95
49)	1,2-Dichloropropane	11.58	63	5118	2.0621 ug/kg	93
50)	1,4-Dioxane	11.88	88	1938	52.0499 ug/kg	84
51)	Bromodichloromethane	11.87	83	7148	2.0436 ug/kg#	95
52)	Dibromomethane	11.97	174	3572	2.1721 ug/kg	91
53)	2-Chloroethyl Vinyl Ether	12.17	63	474	3.4830 ug/kg#	47
54)	4-Methyl-2-Pentanone	12.19	58	2111	1.9378 ug/kg#	64
55)	cis-1,3-Dichloropropene	12.50	75	7048	1.9341 ug/kg	92
56)	Dimethyl Disulfide	12.77	94	5832	1.5925 ug/kg	95
59)	Toluene	12.93	91	20786	2.1230 ug/kg	97
60)	Ethyl Methacrylate	13.01	69	4184	1.5417 ug/kg	98
61)	trans-1,3-Dichloropropene	13.11	75	6895	1.9553 ug/kg	92
62)	1,1,2-Trichloroethane	13.33	97	4055	1.9716 ug/kg	86
63)	2-Hexanone	13.25	43	3773	1.8373 ug/kg#	82
64)	1,3-Dichloropropane	13.62	76	7643	2.2302 ug/kg	97
65)	Tetrachloroethene	13.75	164	4327	2.0615 ug/kg	94
66)	Dibromochloromethane	14.01	129	6170	2.1465 ug/kg	87
67)	1,2-Dibromoethane	14.28	107	4656	2.0410 ug/kg	88
68)	1-Chlorohexane	14.35	91	5610	1.9430 ug/kg	97
69)	Chlorobenzene	14.77	112	14885	2.1632 ug/kg	95
70)	1,1,1,2-Tetrachloroethane	14.80	131	5145	1.9910 ug/kg	86
71)	Ethylbenzene	14.79	106	7287	2.0555 ug/kg	99
72)	m-,p-Xylene	14.89	106	19133	4.3702 ug/kg	93
73)	o-Xylene	15.45	106	8413	2.0024 ug/kg	94
74)	Styrene	15.49	104	14533	2.0313 ug/kg	97
75)	Bromoform	15.99	173	3135	1.6611 ug/kg	97
76)	Isopropylbenzene	15.87	105	23266	2.0628 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	5252	2.2053 ug/kg#	89
80)	1,2,3-Trichloropropane	16.28	110	1851	2.0495 ug/kg#	89
81)	trans-1,4-Dichloro-2-Buten	16.33	53	1413	1.5521 ug/kg	47
82)	n-Propylbenzene	16.38	91	25735	2.0854 ug/kg	99
83)	Bromobenzene	16.52	156	7006	2.4049 ug/kg	83
84)	1,3,5-Trimethylbenzene	16.57	105	18571	2.0048 ug/kg	99
85)	2-Chlorotoluene	16.66	91	18793	2.2705 ug/kg	97
86)	4-Chlorotoluene	16.70	91	16240	2.1222 ug/kg	96
87)	a-Methylstyrene	16.98	118	7524	1.7826 ug/kg	97
88)	tert-Butylbenzene	17.04	134	3654	1.8815 ug/kg	64
89)	1,2,4-Trimethylbenzene	17.09	105	20119	2.0739 ug/kg	99
90)	sec-Butylbenzene	17.31	105	24858	2.0835 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	20956	2.0813 ug/kg	96
92)	1,3-Dichlorobenzene	17.66	146	13695	2.3653 ug/kg	94
93)	1,4-Dichlorobenzene	17.79	146	12975	2.2416 ug/kg	82
94)	n-Butylbenzene	17.99	91	19734	2.1080 ug/kg	95
95)	1,2-Dichlorobenzene	18.30	146	11568	2.1533 ug/kg	91
96)	1,2-Dibromo-3-Chloropropan	19.30	157	941	1.3644 ug/kg	84
97)	1,2,4-Trichlorobenzene	20.44	180	8356	2.1910 ug/kg	98
98)	Hexachlorobutadiene	20.59	225	4571	2.2738 ug/kg	87
99)	Naphthalene	20.81	128	20072	2.0983 ug/kg	96
100)	1,2,3-Trichlorobenzene	21.11	180	7948	2.1487 ug/kg	96

(#) = qualifier out of range (m) = manual integration
9M972900.D 8260SL.M Fri Feb 26 11:13:39 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration

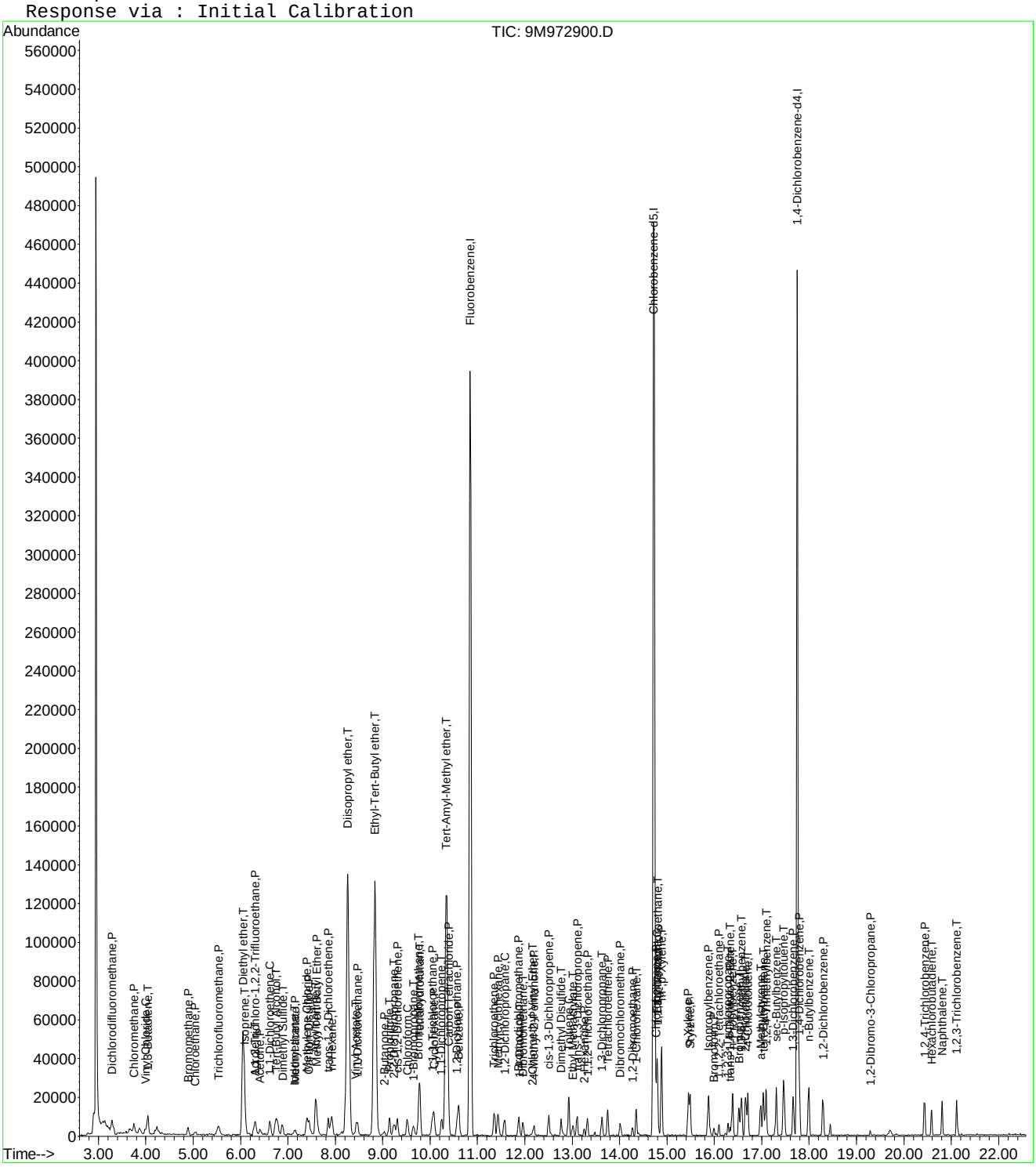

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	1.9809	0.0	100	0.01
3	P	Chloromethane	2.0000	2.2750	-13.7	100	0.00
4	C	Vinyl Chloride	2.0000	1.9408	3.0	100	0.01
5	T	1,3-Butadiene	2.0000	2.2249	-11.2	100	0.00
6	P	Bromomethane	2.0000	2.5146	-25.7#	100	0.01
7	P	Chloroethane	2.0000	1.7357	13.2	100	0.00
8	P	Trichlorofluoromethane	2.0000	2.1082	-5.4	100	0.01
9	T	Diethyl ether	25.0000	26.8255	-7.3	100	0.01
10	T	Isoprene	2.0000	2.0580	-2.9	100	0.00
11	T	Acrolein	12.5000	12.5543	-0.4	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.9886	0.6	100	0.01
13	P	Acetone	-1.0000	6.9886	0.0	0	0.00
14	C	1,1-Dichloroethene	2.0000	2.1877	-9.4	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	55.4271	-10.9	100	0.00
16	T	Dimethyl Sulfide	2.0000	2.0594	-3.0	100	0.01
17	T	Iodomethane	-1.0000	3.9079	0.0	0	0.01
18	P	Methyl acetate	2.0000	2.2240	-11.2	100	0.01
19	P	Methylene Chloride	2.0000	2.1292	-6.5	100	0.00
20	P	Carbon Disulfide	2.0000	2.2085	-10.4	100	0.00
21	T	Acrylonitrile	12.5000	12.6096	-0.9	100	0.00
22	P	Methyl Tert Butyl Ether	2.0000	1.9917	0.4	100	0.00
23	P	trans-1,2-Dichloroethene	2.0000	2.0255	-1.3	100	0.00
24	T	n-Hexane	2.0000	2.1253	-6.3	100	0.01
25	T	Diisopropyl ether	25.0000	26.7748	-7.1	100	0.00
26	T	Vinyl Acetate	2.0000	2.0872	-4.4	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.1320	-6.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	26.7377	-7.0	100	0.00
29	P	2-Butanone	2.0000	2.1978	-9.9	100	0.00
30	T	Propionitrile	25.0000	27.6861	-10.7	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1934	-9.7	100	0.00
32	P	cis-1,2-Dichloroethene	2.0000	1.8850	5.8	100	0.01
33	C	Chloroform	2.0000	2.2054	-10.3	100	0.01
34	T	1-Bromopropane	2.0000	1.5465	22.7	100	0.00
35	T	Bromochloromethane	2.0000	1.9539	2.3	100	0.00
36	T	Tetrahydrofuran	25.0000	26.6900	-6.8	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	2.0000	2.0058	-0.3	100	0.00
39	P	Cyclohexane	2.0000	2.0913	-4.6	100	0.01
40	T	1,1-Dichloropropene	2.0000	2.1023	-5.1	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	26.2768	-5.1	100	0.00
42	P	Carbon Tetrachloride	2.0000	2.0823	-4.1	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	2.0000	2.1271	-6.4	100	0.00
46	P	Benzene	2.0000	2.1525	-7.6	100	0.00
47	P	Trichloroethene	2.0000	2.1207	-6.0	100	0.00
48	P	Methylcyclohexane	2.0000	2.0945	-4.7	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0621	-3.1	100	0.01
50	T	1,4-Dioxane	50.0000	52.0499	-4.1	100	0.00
51	P	Bromodichloromethane	2.0000	2.0436	-2.2	100	0.00
52	T	Dibromomethane	2.0000	2.1721	-8.6	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	3.4830	0.0	0	0.00
54	P	4-Methyl-2-Pentanone	-1.0000	1.9378	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	2.0000	1.9341	3.3	100	0.00
56	T	Dimethyl Disulfide	2.0000	1.5925	20.4	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0891	0.0	100	0.00
59	C	Toluene	2.0000	2.1230	-6.2	100	0.00
60	T	Ethyl Methacrylate	-1.0000	1.5417	0.0	0	0.00
61	P	trans-1,3-Dichloropropene	2.0000	1.9553	2.2	100	0.00
62	P	1,1,2-Trichloroethane	2.0000	1.9716	1.4	100	0.00
63	P	2-Hexanone	-1.0000	1.8373	0.0	100	0.00
64	T	1,3-Dichloropropane	2.0000	2.2302	-11.5	100	0.00
65	P	Tetrachloroethene	2.0000	2.0616	-3.1	100	0.00
66	P	Dibromochloromethane	2.0000	2.1465	-7.3	100	0.00
67	P	1,2-Dibromoethane	-1.0000	2.0410	0.0	100	0.00
68	T	1-Chlorohexane	2.0000	1.9430	2.8	100	0.00
69	P	Chlorobenzene	2.0000	2.1632	-8.2	100	0.00
70	T	1,1,1,2-Tetrachloroethane	2.0000	1.9910	0.4	100	0.00
71	C	Ethylbenzene	2.0000	2.0555	-2.8	100	0.00
72	P	m-,p-Xylene	4.0000	4.3702	-9.3	100	0.00
73	P	o-Xylene	2.0000	2.0024	-0.1	100	0.00
74	P	Styrene	2.0000	2.0313	-1.6	100	0.00
75	P	Bromoform	2.0000	1.6611	16.9	100	0.00
76	P	Isopropylbenzene	2.0000	2.0628	-3.1	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	2.0000	2.2053	-10.3	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.1865	0.0	100	0.00
80	T	1,2,3-Trichloropropane	2.0000	2.0495	-2.5	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	2.0000	1.5521	22.4	100	0.00
82	T	n-Propylbenzene	2.0000	2.0854	-4.3	100	0.00
83	T	Bromobenzene	2.0000	2.4049	-20.2	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	2.0048	0.0	100	0.00
85	T	2-Chlorotoluene	2.0000	2.2705	-13.5	100	0.00
86	T	4-Chlorotoluene	2.0000	2.1222	-6.1	100	0.00
87	T	a-Methylstyrene	-1.0000	1.7826	0.0	0	0.00
88	T	tert-Butylbenzene	-1.0000	1.8815	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	2.0000	2.0739	-3.7	100	0.00
90	T	sec-Butylbenzene	2.0000	2.0835	-4.2	100	0.00
91	T	p-Isopropyltoluene	-1.0000	2.0813	0.0	100	0.00
92	P	1,3-Dichlorobenzene	2.0000	2.3653	-18.3	100	0.00
93	P	1,4-Dichlorobenzene	2.0000	2.2416	-12.1	100	0.00
94	T	n-Butylbenzene	2.0000	2.1080	-5.4	100	0.00
95	P	1,2-Dichlorobenzene	2.0000	2.1533	-7.7	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	1.3644	0.0	100	0.00
97	P	1,2,4-Trichlorobenzene	2.0000	2.1910	-9.6	100	0.00
98	T	Hexachlorobutadiene	2.0000	2.2738	-13.7	100	0.00
99	T	Naphthalene	2.0000	2.0983	-4.9	100	0.00
100	T	1,2,3-Trichlorobenzene	2.0000	2.1487	-7.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972900.D 8260SL.M Fri Feb 26 11:13:36 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	544259	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	391881	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.76	152	178969	50.00 ug/kg	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.81	111	29036	9.8422 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 19.68%#		
43) 1,2-Dichloroethane-d4	10.44	65	38093	10.2911 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 20.58%#		
58) Toluene-d8	12.83	98	95044	9.5885 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 19.18%#		
79) p-Bromofluorobenzene	16.23	95	32806	9.4138 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 18.82%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	14756	3.9724 ug/kg	92
3) Chloromethane	3.74	50	15227	4.2763 ug/kg	91
4) Vinyl Chloride	3.99	62	17097	4.7964 ug/kg	89
5) 1,3-Butadiene	4.04	54	14484	4.2710 ug/kg	97
6) Bromomethane	4.89	94	9847	4.2533 ug/kg	95
7) Chloroethane	5.04	64	6311	3.9741 ug/kg	93
8) Trichlorofluoromethane	5.53	101	22668	4.2400 ug/kg	100
9) Diethyl ether	6.05	59	118004	47.2164 ug/kg	99
10) Isoprene	6.10	67	13644	4.2747 ug/kg	95
11) Acrolein	6.30	56	12131	24.3428 ug/kg	84
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	12752	4.6251 ug/kg	95
13) Acetone	6.41	43	9765	4.9429 ug/kg	94
14) 1,1-Dichloroethene	6.62	61	21760	4.2784 ug/kg	99
15) Tert-Butyl Alcohol	6.76	59	50500	90.7440 ug/kg	98
16) Dimethyl Sulfide	6.88	62	10098	4.6977 ug/kg	87
17) Iodomethane	7.13	142	4147	5.3886 ug/kg	97
18) Methyl acetate	7.15	43	12159	4.3976 ug/kg#	87
19) Methylene Chloride	7.41	84	11825	4.2690 ug/kg	99
20) Carbon Disulfide	7.45	76	34078	4.3495 ug/kg	94
21) Acrylonitrile	7.58	53	31012	22.6731 ug/kg	100
22) Methyl Tert Butyl Ether	7.61	73	34936	4.4284 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	20503	4.5233 ug/kg	95
24) n-Hexane	7.92	57	20970	4.4853 ug/kg	98
25) Diisopropyl ether	8.26	45	505084	46.5162 ug/kg	100
26) Vinyl Acetate	8.44	43	28253	4.5644 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	24239	4.2575 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	463447	45.9037 ug/kg	99
29) 2-Butanone	9.03	43	8265	4.7092 ug/kg	88
30) Propionitrile	9.15	54	25938	48.2931 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	17954	4.2251 ug/kg	91
32) cis-1,2-Dichloroethene	9.32	96	13479	4.5340 ug/kg	84
33) Chloroform	9.52	83	23525	4.4982 ug/kg	95
34) 1-Bromopropane	9.65	122	2239	5.8652 ug/kg	90
35) Bromochloromethane	9.75	130	9205	4.7667 ug/kg	97
36) Tetrahydrofuran	9.78	42	53635	47.4100 ug/kg	99
38) 1,1,1-Trichloroethane	10.04	97	20945	4.4285 ug/kg	91
39) Cyclohexane	10.09	56	23110	4.4818 ug/kg	98
40) 1,1-Dichloropropene	10.24	75	16349	4.3930 ug/kg	99
41) Tert-Amyl-Methyl ether	10.35	73	343692	46.8330 ug/kg	98
42) Carbon Tetrachloride	10.39	117	18527	4.2254 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	21553	4.6852 ug/kg	99
46)	Benzene	10.60	78	45352	4.3528 ug/kg	99
47)	Trichloroethene	11.35	130	14266	4.3213 ug/kg	97
48)	Methylcyclohexane	11.44	83	17527	4.2330 ug/kg	97
49)	1,2-Dichloropropane	11.56	63	13071	4.5684 ug/kg	100
50)	1,4-Dioxane	11.88	88	3926	91.4657 ug/kg	99
51)	Bromodichloromethane	11.87	83	18008	4.4660 ug/kg	97
52)	Dibromomethane	11.96	174	8993	4.7438 ug/kg	95
53)	2-Chloroethyl Vinyl Ether	12.16	63	2468	5.7758 ug/kg#	66
54)	4-Methyl-2-Pentanone	12.19	58	4862	3.8716 ug/kg	95
55)	cis-1,3-Dichloropropene	12.50	75	18341	4.3659 ug/kg	96
56)	Dimethyl Disulfide	12.77	94	17792	4.2144 ug/kg	91
59)	Toluene	12.92	91	48377	4.3206 ug/kg	96
60)	Ethyl Methacrylate	13.02	69	12442	4.0089 ug/kg	96
61)	trans-1,3-Dichloropropene	13.10	75	17626	4.3707 ug/kg	95
62)	1,1,2-Trichloroethane	13.33	97	10657	4.5308 ug/kg	99
63)	2-Hexanone	13.25	43	10194	4.3408 ug/kg	96
64)	1,3-Dichloropropane	13.62	76	17885	4.5633 ug/kg	100
65)	Tetrachloroethene	13.75	164	10317	4.2981 ug/kg	97
66)	Dibromochloromethane	14.01	129	14152	4.3052 ug/kg	98
67)	1,2-Dibromoethane	14.28	107	12182	4.6694 ug/kg	99
68)	1-Chlorohexane	14.35	91	12970	3.9281 ug/kg	87
69)	Chlorobenzene	14.77	112	36017	4.5769 ug/kg	85
70)	1,1,1,2-Tetrachloroethane	14.80	131	12746	4.3130 ug/kg	95
71)	Ethylbenzene	14.80	106	17828	4.3974 ug/kg	92
72)	m-,p-Xylene	14.89	106	45904	9.1683 ug/kg	95
73)	o-Xylene	15.46	106	21754	4.5275 ug/kg	91
74)	Styrene	15.49	104	35390	4.3253 ug/kg	98
75)	Bromoform	15.98	173	9363	4.3382 ug/kg	96
76)	Isopropylbenzene	15.88	105	55721	4.3198 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	13197	4.8610 ug/kg	97
80)	1,2,3-Trichloropropane	16.29	110	5070	4.9243 ug/kg#	28
81)	trans-1,4-Dichloro-2-Buten	16.33	53	4246	4.0913 ug/kg#	39
82)	n-Propylbenzene	16.39	91	64689	4.5983 ug/kg	100
83)	Bromobenzene	16.52	156	15405	4.6386 ug/kg	90
84)	1,3,5-Trimethylbenzene	16.58	105	49527	4.6900 ug/kg	98
85)	2-Chlorotoluene	16.66	91	41422	4.3899 ug/kg	97
86)	4-Chlorotoluene	16.70	91	40985	4.6981 ug/kg	99
87)	a-Methylstyrene	16.98	118	20049	4.1667 ug/kg	90
88)	tert-Butylbenzene	17.04	134	10027	4.5290 ug/kg	84
89)	1,2,4-Trimethylbenzene	17.09	105	51253	4.6345 ug/kg	98
90)	sec-Butylbenzene	17.30	105	60716	4.4642 ug/kg	98
91)	p-Isopropyltoluene	17.46	119	53318	4.6453 ug/kg	98
92)	1,3-Dichlorobenzene	17.66	146	29255	4.4323 ug/kg	98
93)	1,4-Dichlorobenzene	17.79	146	30175	4.5730 ug/kg	91
94)	n-Butylbenzene	17.99	91	45964	4.3071 ug/kg	98
95)	1,2-Dichlorobenzene	18.30	146	27310	4.4593 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.30	157	3147	4.0028 ug/kg	87
97)	1,2,4-Trichlorobenzene	20.44	180	18372	4.2258 ug/kg	95
98)	Hexachlorobutadiene	20.59	225	9618	4.1968 ug/kg	90
99)	Naphthalene	20.81	128	47189	4.3274 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.11	180	17859	4.2352 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972901.D 8260SL.M Fri Feb 26 11:21:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

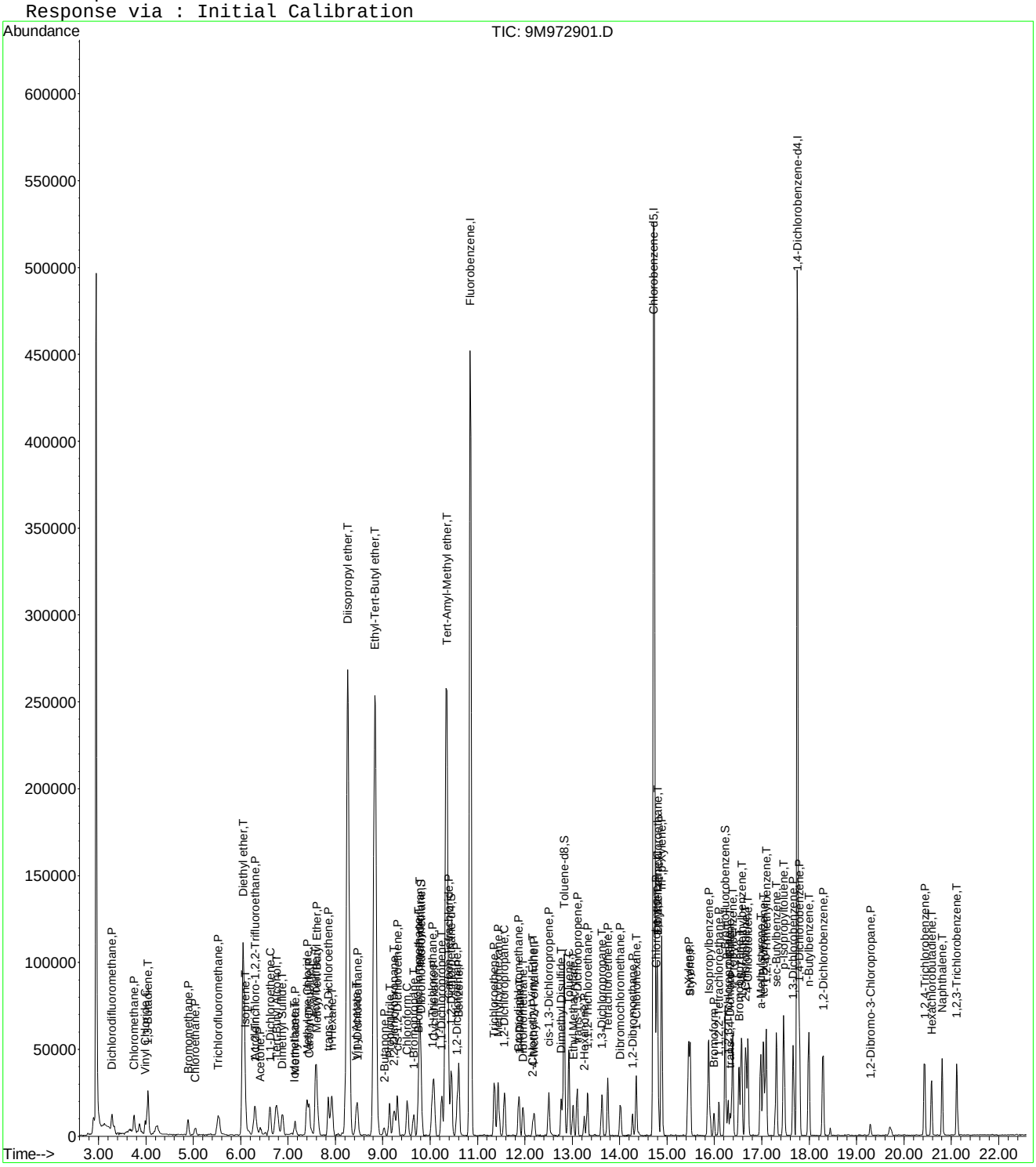

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	5.0000	3.9724	20.6	100	0.00
3	P	Chloromethane	5.0000	4.2763	14.5	100	0.00
4	C	Vinyl Chloride	5.0000	4.7964	4.1	100	0.00
5	T	1,3-Butadiene	5.0000	4.2710	14.6	100	0.00
6	P	Bromomethane	5.0000	4.2534	14.9	100	0.00
7	P	Chloroethane	5.0000	3.9741	20.5	100	0.00
8	P	Trichlorofluoromethane	5.0000	4.2400	15.2	100	0.00
9	T	Diethyl ether	50.0000	47.2164	5.6	100	0.00
10	T	Isoprene	5.0000	4.2747	14.5	100	0.01
11	T	Acrolein	25.0000	24.3428	2.6	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.6251	7.5	100	0.00
13	P	Acetone	5.0000	4.9429	1.1	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.2784	14.4	100	0.01
15	T	Tert-Butyl Alcohol	100.0000	90.7440	9.3	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.6977	6.0	100	0.00
17	T	Iodomethane	5.0000	5.3886	-7.8	100	0.00
18	P	Methyl acetate	5.0000	4.3976	12.0	100	0.01
19	P	Methylene Chloride	5.0000	4.2690	14.6	100	0.00
20	P	Carbon Disulfide	5.0000	4.3495	13.0	100	0.00
21	T	Acrylonitrile	25.0000	22.6731	9.3	100	0.00
22	P	Methyl Tert Butyl Ether	5.0000	4.4284	11.4	100	0.00
23	P	trans-1,2-Dichloroethene	5.0000	4.5233	9.5	100	0.00
24	T	n-Hexane	5.0000	4.4854	10.3	100	0.01
25	T	Diisopropyl ether	50.0000	46.5162	7.0	100	0.00
26	T	Vinyl Acetate	5.0000	4.5644	8.7	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.2575	14.8	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	45.9037	8.2	100	0.00
29	P	2-Butanone	5.0000	4.7092	5.8	100	0.00
30	T	Propionitrile	50.0000	48.2931	3.4	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.2251	15.5	100	-0.01
32	P	cis-1,2-Dichloroethene	5.0000	4.5340	9.3	100	0.00
33	C	Chloroform	5.0000	4.4982	10.0	100	0.00
34	T	1-Bromopropane	5.0000	5.8651	-17.3	100	0.00
35	T	Bromochloromethane	5.0000	4.7667	4.7	100	0.00
36	T	Tetrahydrofuran	50.0000	47.4100	5.2	100	0.00
37	S	Dibromofluoromethane	10.0000	9.8422	1.6	100	0.00
38	P	1,1,1-Trichloroethane	5.0000	4.4285	11.4	100	0.00
39	P	Cyclohexane	5.0000	4.4818	10.4	100	0.01
40	T	1,1-Dichloropropene	5.0000	4.3930	12.1	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	46.8330	6.3	100	0.00
42	P	Carbon Tetrachloride	5.0000	4.2254	15.5	100	0.00
43	S	1,2-Dichloroethane-d4	10.0000	10.2911	-2.9	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	5.0000	4.6852	6.3	100	0.00
46	P	Benzene	5.0000	4.3528	12.9	100	0.00
47	P	Trichloroethene	5.0000	4.3213	13.6	100	0.00
48	P	Methylcyclohexane	5.0000	4.2330	15.3	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.5684	8.6	100	0.00
50	T	1,4-Dioxane	100.0000	91.4657	8.5	100	0.00
51	P	Bromodichloromethane	5.0000	4.4660	10.7	100	0.00
52	T	Dibromomethane	5.0000	4.7438	5.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	5.7758	-15.5	100	0.00
54	P	4-Methyl-2-Pentanone	5.0000	3.8716	22.6	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	5.0000	4.3659	12.7	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.2144	15.7	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	-0.01
58	S	Toluene-d8	10.0000	9.5885	4.1	100	0.00
59	C	Toluene	5.0000	4.3206	13.6	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.0089	19.8	100	0.00
61	P	trans-1,3-Dichloropropene	5.0000	4.3707	12.6	100	0.00
62	P	1,1,2-Trichloroethane	5.0000	4.5309	9.4	100	0.00
63	P	2-Hexanone	5.0000	4.3408	13.2	100	0.00
64	T	1,3-Dichloropropane	5.0000	4.5633	8.7	100	-0.01
65	P	Tetrachloroethene	5.0000	4.2981	14.0	100	0.00
66	P	Dibromochloromethane	5.0000	4.3052	13.9	100	0.00
67	P	1,2-Dibromoethane	5.0000	4.6694	6.6	100	0.00
68	T	1-Chlorohexane	5.0000	3.9281	21.4	100	0.00
69	P	Chlorobenzene	5.0000	4.5769	8.5	100	0.00
70	T	1,1,1,2-Tetrachloroethane	5.0000	4.3130	13.7	100	0.00
71	C	Ethylbenzene	5.0000	4.3974	12.1	100	0.00
72	P	m-,p-Xylene	10.0000	9.1683	8.3	100	0.00
73	P	o-Xylene	5.0000	4.5275	9.5	100	0.00
74	P	Styrene	5.0000	4.3253	13.5	100	0.00
75	P	Bromoform	5.0000	4.3382	13.2	100	-0.01
76	P	Isopropylbenzene	5.0000	4.3198	13.6	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	5.0000	4.8610	2.8	100	-0.01
79	S	p-Bromofluorobenzene	10.0000	9.4138	5.9	100	0.00
80	T	1,2,3-Trichloropropane	5.0000	4.9243	1.5	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	5.0000	4.0913	18.2	100	0.00
82	T	n-Propylbenzene	5.0000	4.5983	8.0	100	0.00
83	T	Bromobenzene	5.0000	4.6386	7.2	100	0.00
84	T	1,3,5-Trimethylbenzene	5.0000	4.6900	6.2	100	0.00
85	T	2-Chlorotoluene	5.0000	4.3899	12.2	100	0.00
86	T	4-Chlorotoluene	5.0000	4.6981	6.0	100	0.00
87	T	a-Methylstyrene	5.0000	4.1667	16.7	100	0.00
88	T	tert-Butylbenzene	5.0000	4.5290	9.4	100	0.00
89	T	1,2,4-Trimethylbenzene	5.0000	4.6345	7.3	100	0.00
90	T	sec-Butylbenzene	5.0000	4.4642	10.7	100	0.00
91	T	p-Isopropyltoluene	5.0000	4.6453	7.1	100	0.00
92	P	1,3-Dichlorobenzene	5.0000	4.4323	11.4	100	0.00
93	P	1,4-Dichlorobenzene	5.0000	4.5730	8.5	100	-0.01
94	T	n-Butylbenzene	5.0000	4.3071	13.9	100	0.00
95	P	1,2-Dichlorobenzene	5.0000	4.4593	10.8	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	5.0000	4.0028	19.9	100	0.00
97	P	1,2,4-Trichlorobenzene	5.0000	4.2258	15.5	100	0.00
98	T	Hexachlorobutadiene	5.0000	4.1968	16.1	100	0.00
99	T	Naphthalene	5.0000	4.3274	13.5	100	0.00
100	T	1,2,3-Trichlorobenzene	5.0000	4.2352	15.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972901.D 8260SL.M Fri Feb 26 11:21:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972902.D Vial: 7
Acq On : 25 Feb 2016 18:59 Operator: ADC
Sample : WG558732-07 20.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	491006	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	357658	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	168257	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	47666	17.9094 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 35.82%#		
43) 1,2-Dichloroethane-d4	10.45	65	60269	18.0480 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 36.10%#		
58) Toluene-d8	12.82	98	163811	18.1074 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 36.22%#		
79) p-Bromofluorobenzene	16.23	95	58931	17.9870 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 35.98%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	78283	23.3598 ug/kg	99
3) Chloromethane	3.75	50	64951	20.2188 ug/kg	98
4) Vinyl Chloride	3.99	62	73167	22.7523 ug/kg	97
5) 1,3-Butadiene	4.04	54	64372	21.0404 ug/kg	98
6) Bromomethane	4.88	94	40556	19.4178 ug/kg	97
7) Chloroethane	5.04	64	27981	19.5307 ug/kg	97
8) Trichlorofluoromethane	5.53	101	98871	20.4994 ug/kg	98
9) Diethyl ether	6.06	59	191078	84.7472 ug/kg	99
10) Isoprene	6.10	67	59437	20.6414 ug/kg	98
11) Acrolein	6.30	56	18057	40.1641 ug/kg	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	50002	20.1026 ug/kg	100
13) Acetone	6.42	43	27164	20.4768 ug/kg	100
14) 1,1-Dichloroethene	6.62	61	94732	20.6460 ug/kg	98
15) Tert-Butyl Alcohol	6.75	59	85695	170.6872 ug/kg	97
16) Dimethyl Sulfide	6.88	62	40580	20.9258 ug/kg	99
17) Iodomethane	7.13	142	21330	17.5663 ug/kg	96
18) Methyl acetate	7.15	43	54770	21.9573 ug/kg	99
19) Methylene Chloride	7.41	84	51619	20.6564 ug/kg	95
20) Carbon Disulfide	7.45	76	145286	20.5545 ug/kg	97
21) Acrylonitrile	7.59	53	50918	41.2640 ug/kg	97
22) Methyl Tert Butyl Ether	7.61	73	149271	20.9731 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	84416	20.6434 ug/kg	98
24) n-Hexane	7.92	57	82582	19.5795 ug/kg	98
25) Diisopropyl ether	8.26	45	841729	85.9275 ug/kg	99
26) Vinyl Acetate	8.44	43	107114	19.1814 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	104490	20.3440 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	777976	85.4147 ug/kg	99
29) 2-Butanone	9.02	43	30691	19.3834 ug/kg	100
30) Propionitrile	9.14	54	41719	86.0996 ug/kg	99
31) 2,2-Dichloropropane	9.24	77	73960	19.2927 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	56404	21.0307 ug/kg	100
33) Chloroform	9.52	83	94621	20.0546 ug/kg	98
34) 1-Bromopropane	9.65	122	8251	20.7938 ug/kg	98
35) Bromochloromethane	9.75	130	38059	21.8457 ug/kg	99
36) Tetrahydrofuran	9.77	42	86589	84.8405 ug/kg	100
38) 1,1,1-Trichloroethane	10.05	97	85938	20.1411 ug/kg	99
39) Cyclohexane	10.09	56	96933	20.8373 ug/kg	98
40) 1,1-Dichloropropene	10.25	75	67544	20.1175 ug/kg	96
41) Tert-Amyl-Methyl ether	10.34	73	562826	85.0111 ug/kg	99
42) Carbon Tetrachloride	10.39	117	79566	20.1143 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972902.D Vial: 7
Acq On : 25 Feb 2016 18:59 Operator: ADC
Sample : WG558732-07 20.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	86857	20.9287 ug/kg	98
46)	Benzene	10.60	78	190747	20.2931 ug/kg	98
47)	Trichloroethene	11.35	130	61315	20.5871 ug/kg	99
48)	Methylcyclohexane	11.44	83	79384	21.2516 ug/kg	99
49)	1,2-Dichloropropane	11.56	63	54356	21.0584 ug/kg	98
50)	1,4-Dioxane	11.88	88	7054	182.1639 ug/kg	93
51)	Bromodichloromethane	11.87	83	73160	20.1115 ug/kg	99
52)	Dibromomethane	11.97	174	35844	20.9583 ug/kg	97
53)	2-Chloroethyl Vinyl Ether	12.17	63	11048	17.4432 ug/kg	94
54)	4-Methyl-2-Pentanone	12.20	58	22247	19.6364 ug/kg	96
55)	cis-1,3-Dichloropropene	12.50	75	77533	20.4577 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	77400	20.3222 ug/kg	99
59)	Toluene	12.93	91	209919	20.5421 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	58827	20.7683 ug/kg	99
61)	trans-1,3-Dichloropropene	13.11	75	73778	20.0452 ug/kg	98
62)	1,1,2-Trichloroethane	13.32	97	45475	21.1838 ug/kg	98
63)	2-Hexanone	13.25	43	40183	18.7479 ug/kg	97
64)	1,3-Dichloropropane	13.62	76	73060	20.4249 ug/kg	95
65)	Tetrachloroethene	13.75	164	44423	20.2778 ug/kg	96
66)	Dibromochloromethane	14.01	129	59220	19.7391 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	48648	20.4311 ug/kg	97
68)	1-Chlorohexane	14.35	91	64519	21.4099 ug/kg	96
69)	Chlorobenzene	14.77	112	150639	20.9742 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	55462	20.5631 ug/kg	99
71)	Ethylbenzene	14.79	106	77813	21.0297 ug/kg	100
72)	m-,p-Xylene	14.89	106	192168	42.0536 ug/kg	98
73)	o-Xylene	15.45	106	92490	21.0911 ug/kg	98
74)	Styrene	15.49	104	154534	20.6939 ug/kg	100
75)	Bromoform	16.00	173	39818	20.2142 ug/kg	98
76)	Isopropylbenzene	15.87	105	249418	21.1865 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	53687	21.0342 ug/kg	98
80)	1,2,3-Trichloropropane	16.28	110	19658	20.3087 ug/kg	98
81)	trans-1,4-Dichloro-2-Buten	16.33	53	21143	21.6696 ug/kg	89
82)	n-Propylbenzene	16.39	91	283998	21.4728 ug/kg	98
83)	Bromobenzene	16.52	156	65363	20.9343 ug/kg	95
84)	1,3,5-Trimethylbenzene	16.57	105	212735	21.4278 ug/kg	99
85)	2-Chlorotoluene	16.66	91	189159	21.3235 ug/kg	99
86)	4-Chlorotoluene	16.70	91	171741	20.9401 ug/kg	99
87)	a-Methylstyrene	16.98	118	95360	21.0801 ug/kg	99
88)	tert-Butylbenzene	17.03	134	43749	21.0188 ug/kg	90
89)	1,2,4-Trimethylbenzene	17.08	105	218350	21.0010 ug/kg	99
90)	sec-Butylbenzene	17.31	105	268054	20.9635 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	225612	20.9076 ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	122605	19.7580 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	124659	20.0949 ug/kg	99
94)	n-Butylbenzene	17.99	91	199655	19.8998 ug/kg	99
95)	1,2-Dichlorobenzene	18.30	146	115021	19.9768 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	14138	19.1277 ug/kg	95
97)	1,2,4-Trichlorobenzene	20.43	180	77418	18.9408 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	41508	19.2651 ug/kg	96
99)	Naphthalene	20.81	128	204933	19.9897 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.12	180	75616	19.0736 ug/kg	98

(#) = qualifier out of range (m) = manual integration
9M972902.D 8260SL.M Fri Feb 26 11:21:57 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972902.D Vial: 7
Acq On : 25 Feb 2016 18:59 Operator: ADC
Sample : WG558732-07 20.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

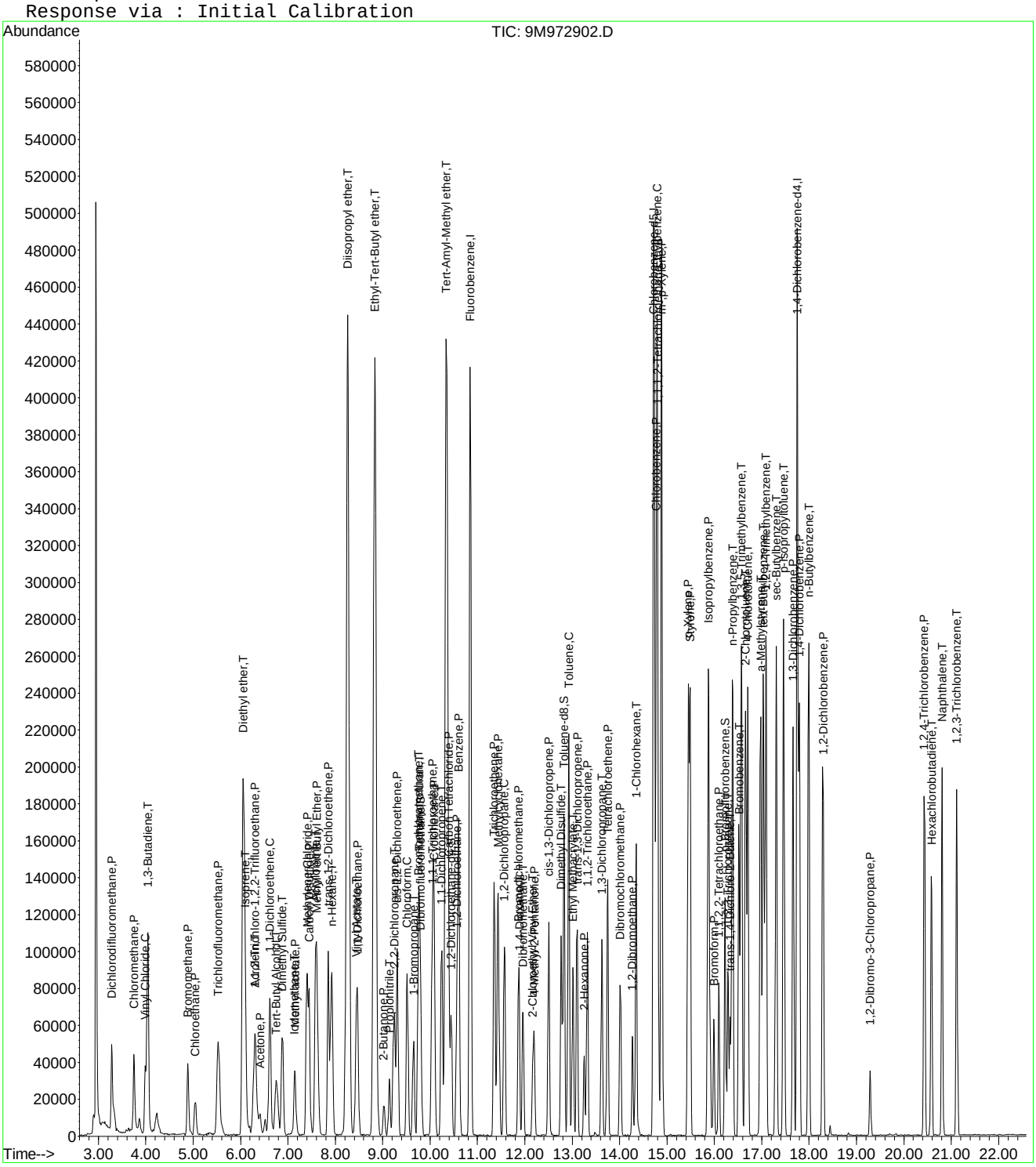

9M972902.D 8260SL.M Fri Feb 26 11:21:57 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972903.D Vial: 8
Acq On : 25 Feb 2016 19:29 Operator: ADC
Sample : WG558732-08 100.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:57 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	535022	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	390279	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.75	152	187456	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	305515	105.3466 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 210.70%#		
43) 1,2-Dichloroethane-d4	10.45	65	383447	105.3793 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 210.76%#		
58) Toluene-d8	12.83	98	1052175	106.5842 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 213.16%#		
79) p-Bromofluorobenzene	16.23	95	403966	110.6707 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 221.34%#		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.28	85	340079	93.1314 ug/kg	98
3) Chloromethane	3.74	50	316834	90.5143 ug/kg	100
4) Vinyl Chloride	3.99	62	366384	104.5591 ug/kg	99
5) 1,3-Butadiene	4.04	54	317949	95.3739 ug/kg	98
6) Bromomethane	4.88	94	198493	87.2180 ug/kg	99
7) Chloroethane	5.04	64	148539	95.1503 ug/kg	96
8) Trichlorofluoromethane	5.53	101	502703	95.6532 ug/kg	99
9) Diethyl ether	6.06	59	457873	186.3696 ug/kg	99
10) Isoprene	6.09	67	302269	96.3367 ug/kg	100
11) Acrolein	6.30	56	49319	100.6749 ug/kg	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	264925	97.7467 ug/kg	100
13) Acetone	6.41	43	126959	96.0965 ug/kg	97
14) 1,1-Dichloroethene	6.61	61	485466	97.0986 ug/kg	99
15) Tert-Butyl Alcohol	6.77	59	202804	370.7125 ug/kg	97
16) Dimethyl Sulfide	6.88	62	209613	99.1979 ug/kg	97
17) Iodomethane	7.14	142	134789	88.4431 ug/kg	96
18) Methyl acetate	7.15	43	256770	94.4705 ug/kg	99
19) Methylene Chloride	7.40	84	256919	94.3530 ug/kg	100
20) Carbon Disulfide	7.45	76	725343	94.1764 ug/kg	99
21) Acrylonitrile	7.59	53	131913	98.1077 ug/kg	97
22) Methyl Tert Butyl Ether	7.61	73	763125	98.4009 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	435514	97.7404 ug/kg	99
24) n-Hexane	7.92	57	458951	99.8615 ug/kg	98
25) Diisopropyl ether	8.26	45	1991599	186.5850 ug/kg	99
26) Vinyl Acetate	8.44	43	593217	97.4908 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	533571	95.3384 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	1850360	186.4394 ug/kg	100
29) 2-Butanone	9.03	43	167064	96.8316 ug/kg	99
30) Propionitrile	9.14	54	102467	194.0735 ug/kg	99
31) 2,2-Dichloropropane	9.24	77	409808	98.1051 ug/kg	98
32) cis-1,2-Dichloroethene	9.31	96	291782	99.8428 ug/kg	100
33) Chloroform	9.52	83	491651	95.6310 ug/kg	100
34) 1-Bromopropane	9.65	122	43084	95.7559 ug/kg	98
35) Bromochloromethane	9.75	130	191150	100.6929 ug/kg	97
36) Tetrahydrofuran	9.78	42	206962	186.0999 ug/kg	99
38) 1,1,1-Trichloroethane	10.04	97	454248	97.7025 ug/kg	99
39) Cyclohexane	10.08	56	497594	98.1657 ug/kg	99
40) 1,1-Dichloropropene	10.24	75	355996	97.3080 ug/kg	98
41) Tert-Amyl-Methyl ether	10.35	73	1353122	187.5659 ug/kg	99
42) Carbon Tetrachloride	10.39	117	419252	97.2674 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972903.D Vial: 8
Acq On : 25 Feb 2016 19:29 Operator: ADC
Sample : WG558732-08 100.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:57 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	441828	97.7027	ug/kg	98
46)	Benzene	10.60	78	946247	92.3868	ug/kg	100
47)	Trichloroethene	11.35	130	316701	97.5872	ug/kg	98
48)	Methylcyclohexane	11.44	83	420776	103.3770	ug/kg	100
49)	1,2-Dichloropropane	11.56	63	273398	97.2049	ug/kg	97
50)	1,4-Dioxane	11.89	88	15240	361.1826	ug/kg	95
51)	Bromodichloromethane	11.87	83	384453	96.9905	ug/kg	100
52)	Dibromomethane	11.96	174	178770	95.9288	ug/kg	100
53)	2-Chloroethyl Vinyl Ether	12.17	63	71336	89.4187	ug/kg	97
54)	4-Methyl-2-Pentanone	12.19	58	126118	102.1606	ug/kg	99
55)	cis-1,3-Dichloropropene	12.50	75	407392	98.6500	ug/kg	99
56)	Dimethyl Disulfide	12.77	94	430523	103.7388	ug/kg	99
59)	Toluene	12.93	91	1070303	95.9828	ug/kg	100
60)	Ethyl Methacrylate	13.01	69	310336	100.4033	ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	395340	98.4345	ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	234168	99.9657	ug/kg	97
63)	2-Hexanone	13.25	43	238254	101.8692	ug/kg	99
64)	1,3-Dichloropropane	13.62	76	372307	95.3836	ug/kg	98
65)	Tetrachloroethene	13.75	164	235384	98.4650	ug/kg	97
66)	Dibromochloromethane	14.01	129	316240	96.5980	ug/kg	100
67)	1,2-Dibromoethane	14.28	107	254663	98.0133	ug/kg	98
68)	1-Chlorohexane	14.35	91	341938	103.9841	ug/kg	98
69)	Chlorobenzene	14.77	112	744916	95.0493	ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.80	131	289798	98.4650	ug/kg	98
71)	Ethylbenzene	14.79	106	397428	98.4311	ug/kg	99
72)	m-,p-Xylene	14.89	106	955121	191.5462	ug/kg	97
73)	o-Xylene	15.45	106	475355	99.3381	ug/kg	100
74)	Styrene	15.49	104	817155	100.2803	ug/kg	100
75)	Bromoform	15.99	173	212807	99.0046	ug/kg	98
76)	Isopropylbenzene	15.88	105	1283494	99.9122	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	279744	98.3764	ug/kg	100
80)	1,2,3-Trichloropropane	16.29	110	110421	102.3924	ug/kg	94
81)	trans-1,4-Dichloro-2-Buten	16.33	53	116410	107.0899	ug/kg	87
82)	n-Propylbenzene	16.39	91	1458178	98.9594	ug/kg	99
83)	Bromobenzene	16.52	156	334600	96.1892	ug/kg	97
84)	1,3,5-Trimethylbenzene	16.57	105	1100766	99.5195	ug/kg	99
85)	2-Chlorotoluene	16.66	91	937812	94.8900	ug/kg	100
86)	4-Chlorotoluene	16.70	91	906777	99.2383	ug/kg	100
87)	a-Methylstyrene	16.98	118	508276	100.8508	ug/kg	99
88)	tert-Butylbenzene	17.04	134	234437	101.0972	ug/kg	99
89)	1,2,4-Trimethylbenzene	17.09	105	1125260	97.1435	ug/kg	99
90)	sec-Butylbenzene	17.30	105	1425754	100.0828	ug/kg	100
91)	p-Isopropyltoluene	17.46	119	1215596	101.1125	ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	644471	93.2206	ug/kg	100
93)	1,4-Dichlorobenzene	17.79	146	646907	93.6002	ug/kg	99
94)	n-Butylbenzene	17.99	91	1131901	101.2628	ug/kg	99
95)	1,2-Dichlorobenzene	18.30	146	622851	97.0971	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.30	157	88939	108.0040	ug/kg	99
97)	1,2,4-Trichlorobenzene	20.44	180	466688	102.4843	ug/kg	99
98)	Hexachlorobutadiene	20.59	225	252514	105.1960	ug/kg	99
99)	Naphthalene	20.81	128	1208454	105.8030	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	456274	103.3044	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972903.D 8260SL.M Fri Feb 26 11:21:58 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972903.D Vial: 8
Acq On : 25 Feb 2016 19:29 Operator: ADC
Sample : WG558732-08 100.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

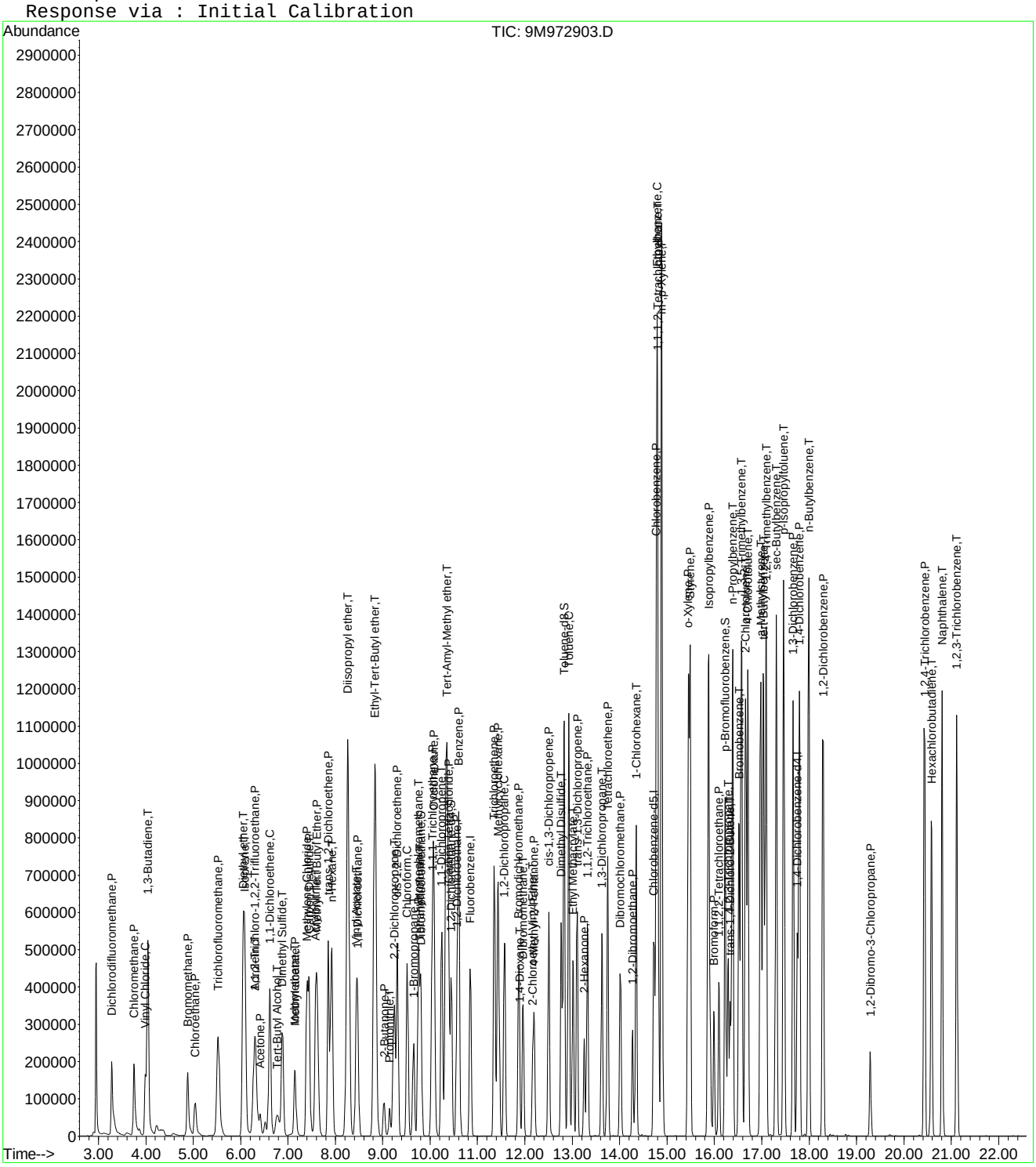

9M972903.D 8260SL.M Fri Feb 26 11:21:58 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972904.D Vial: 9
Acq On : 25 Feb 2016 20:00 Operator: ADC
Sample : WG558732-09 200.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:58 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	542388	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	396894	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	212175	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	595362	202.5026 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery	= 405.00%#	
43) 1,2-Dichloroethane-d4	10.45	65	716316	194.1852 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery	= 388.38%#	
58) Toluene-d8	12.82	98	2013255	200.5415 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery	= 401.08%#	
79) p-Bromofluorobenzene	16.23	95	807150	195.3653 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery	= 390.74%#	

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.28	85	774894	209.3245 ug/kg	100
3) Chloromethane	3.75	50	750862	211.5959 ug/kg	100
4) Vinyl Chloride	3.99	62	770550	216.9141 ug/kg	100
5) 1,3-Butadiene	4.04	54	695631	205.8318 ug/kg	99
6) Bromomethane	4.88	94	470946	204.1239 ug/kg	97
7) Chloroethane	5.04	64	374502	236.6386 ug/kg	98
8) Trichlorofluoromethane	5.52	101	1120886	210.3832 ug/kg	99
10) Isoprene	6.09	67	690766	217.1654 ug/kg	97
11) Acrolein	6.31	56	2288	4.6071 ug/kg	86
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	592415	215.6090 ug/kg	100
13) Acetone	6.42	43	268070	202.8703 ug/kg	99
14) 1,1-Dichloroethene	6.62	61	1084122	213.8917 ug/kg	99
15) Tert-Butyl Alcohol	6.78	59	290	0.5229 ug/kg#	58
16) Dimethyl Sulfide	6.88	62	486231	226.9805 ug/kg	99
17) Iodomethane	7.14	142	341644	216.9305 ug/kg	98
18) Methyl acetate	7.15	43	558766	202.7886 ug/kg	97
19) Methylene Chloride	7.40	84	606998	219.8913 ug/kg	98
20) Carbon Disulfide	7.44	76	1650167	211.3432 ug/kg	98
21) Acrylonitrile	7.61	53	18860	13.8363 ug/kg#	28
22) Methyl Tert Butyl Ether	7.61	73	1710517	217.5666 ug/kg	99
23) trans-1,2-Dichloroethene	7.84	61	967656	214.2173 ug/kg	99
24) n-Hexane	7.92	57	1006142	215.9497 ug/kg	97
26) Vinyl Acetate	8.43	43	1320060	213.9959 ug/kg	98
27) 1,1-Dichloroethane	8.46	63	1199515	211.4185 ug/kg	100
29) 2-Butanone	9.02	43	373284	213.4201 ug/kg	100
31) 2,2-Dichloropropane	9.24	77	904865	213.6764 ug/kg	100
32) cis-1,2-Dichloroethene	9.31	96	649726	219.3058 ug/kg	100
33) Chloroform	9.52	83	1094765	210.0507 ug/kg	100
34) 1-Bromopropane	9.66	122	98189	213.9851 ug/kg	100
35) Bromochloromethane	9.75	130	427351	222.0603 ug/kg	99
36) Tetrahydrofuran	9.77	42	2491	2.2095 ug/kg	93
38) 1,1,1-Trichloroethane	10.05	97	1020636	216.5435 ug/kg	100
39) Cyclohexane	10.08	56	1092323	212.5677 ug/kg	98
40) 1,1-Dichloropropene	10.24	75	780375	210.4109 ug/kg	98
42) Carbon Tetrachloride	10.39	117	950685	217.5657 ug/kg	100
45) 1,2-Dichloroethane	10.56	62	975428	212.7698 ug/kg	98
46) Benzene	10.61	78	2107212	202.9435 ug/kg	100
47) Trichloroethene	11.36	130	696420	211.6783 ug/kg	98
48) Methylcyclohexane	11.43	83	922594	223.5862 ug/kg	100
49) 1,2-Dichloropropane	11.57	63	613480	215.1567 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972904.D Vial: 9
Acq On : 25 Feb 2016 20:00 Operator: ADC
Sample : WG558732-09 200.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:58 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
50)	1,4-Dioxane	11.86	88	821	19.1932	ug/kg#	7
51)	Bromodichloromethane	11.87	83	861318	214.3439	ug/kg	99
52)	Dibromomethane	11.96	174	401145	212.3328	ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	173854	210.9891	ug/kg	98
54)	4-Methyl-2-Pentanone	12.19	58	281550	224.9694	ug/kg	99
55)	cis-1,3-Dichloropropene	12.51	75	917528	219.1621	ug/kg	100
56)	Dimethyl Disulfide	12.77	94	993447	236.1300	ug/kg	99
59)	Toluene	12.93	91	2353264	207.5190	ug/kg	100
60)	Ethyl Methacrylate	13.01	69	698780	222.3090	ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	892986	218.6361	ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	510766	214.4105	ug/kg	98
63)	2-Hexanone	13.26	43	551431	231.8433	ug/kg	99
64)	1,3-Dichloropropane	13.63	76	842104	212.1481	ug/kg	99
65)	Tetrachloroethene	13.75	164	518091	213.1138	ug/kg	97
66)	Dibromochloromethane	14.02	129	723489	217.3121	ug/kg	99
67)	1,2-Dibromoethane	14.27	107	560802	212.2411	ug/kg	99
68)	1-Chlorohexane	14.35	91	757279	226.4519	ug/kg	100
69)	Chlorobenzene	14.78	112	1626715	204.1050	ug/kg	98
70)	1,1,1,2-Tetrachloroethane	14.81	131	649903	217.1378	ug/kg	97
71)	Ethylbenzene	14.80	106	871321	212.2035	ug/kg	99
72)	m-,p-Xylene	14.89	106	2089330	412.0243	ug/kg	98
73)	o-Xylene	15.45	106	1065692	218.9929	ug/kg	98
74)	Styrene	15.49	104	1839951	222.0334	ug/kg	100
75)	Bromoform	15.99	173	511700	234.0915	ug/kg	99
76)	Isopropylbenzene	15.87	105	2873816	219.9805	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	662688	205.8943	ug/kg	99
80)	1,2,3-Trichloropropane	16.29	110	257281	210.7797	ug/kg	98
81)	trans-1,4-Dichloro-2-Buten	16.34	53	281460	228.7601	ug/kg	90
82)	n-Propylbenzene	16.38	91	3244636	194.5439	ug/kg	100
83)	Bromobenzene	16.52	156	759998	193.0269	ug/kg	95
84)	1,3,5-Trimethylbenzene	16.57	105	2471747	197.4342	ug/kg	99
85)	2-Chlorotoluene	16.66	91	2218317	198.3049	ug/kg	100
86)	4-Chlorotoluene	16.71	91	1934954	187.0917	ug/kg	100
87)	a-Methylstyrene	16.98	118	1205032	211.2436	ug/kg	99
88)	tert-Butylbenzene	17.03	134	526001	200.4032	ug/kg	87
89)	1,2,4-Trimethylbenzene	17.09	105	2520611	192.2523	ug/kg	100
90)	sec-Butylbenzene	17.31	105	3206494	198.8615	ug/kg	100
91)	p-Isopropyltoluene	17.47	119	2752661	202.2895	ug/kg	100
92)	1,3-Dichlorobenzene	17.67	146	1508843	192.8225	ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	1522857	194.6701	ug/kg	99
94)	n-Butylbenzene	17.99	91	2603240	205.7600	ug/kg	100
95)	1,2-Dichlorobenzene	18.29	146	1515803	208.7710	ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	205456	220.4304	ug/kg	98
97)	1,2,4-Trichlorobenzene	20.43	180	1061631	205.9726	ug/kg	99
98)	Hexachlorobutadiene	20.58	225	612598	225.4729	ug/kg	100
99)	Naphthalene	20.81	128	2666581	206.2661	ug/kg	99
100)	1,2,3-Trichlorobenzene	21.12	180	1022740	204.5802	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972904.D 8260SL.M Fri Feb 26 11:21:58 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972904.D Vial: 9
Acq On : 25 Feb 2016 20:00 Operator: ADC
Sample : WG558732-09 200.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

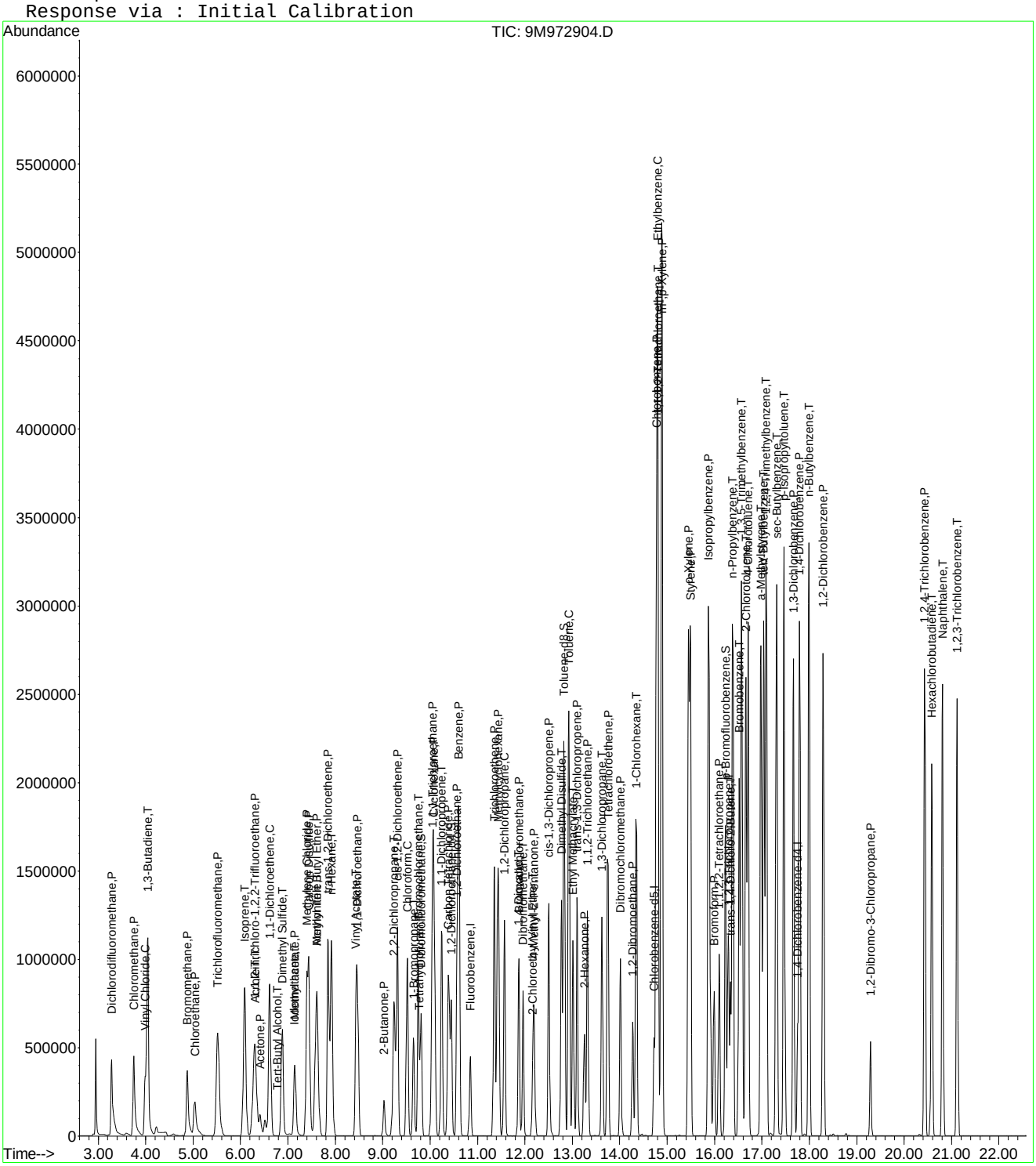

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972905.D Vial: 10
Acq On : 25 Feb 2016 20:30 Operator: ADC
Sample : WG558732-10 300.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:59 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.85	96	626979	50.00	ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	468521	50.00	ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	224223	50.00	ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	520	0.1530	ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.30%#		
43) 1,2-Dichloroethane-d4	10.45	65	1794	0.4207	ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.84%#		
58) Toluene-d8	12.82	98	7789	0.6573	ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	1.32%#		
79) p-Bromofluorobenzene	16.23	95	6216	1.4237	ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	2.84%#		

Target Compounds

						Qvalue
2) Dichlorodifluoromethane	3.28	85	1155483	270.0216	ug/kg	98
3) Chloromethane	3.75	50	1142773	278.5891	ug/kg	100
4) Vinyl Chloride	3.98	62	1112221	270.8539	ug/kg	99
5) 1,3-Butadiene	4.03	54	1100483	281.6917	ug/kg	98
6) Bromomethane	4.87	94	749711	281.1083	ug/kg	98
7) Chloroethane	5.04	64	601337	328.7051	ug/kg	98
8) Trichlorofluoromethane	5.52	101	1778447	288.7670	ug/kg	99
9) Diethyl ether	6.06	59	869609	302.0457	ug/kg	99
10) Isoprene	6.08	67	1108410	301.4513	ug/kg	98
11) Acrolein	6.30	56	93621	163.0794	ug/kg	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	943691	297.1172	ug/kg	99
13) Acetone	6.42	43	369915	242.6618	ug/kg	95
14) 1,1-Dichloroethene	6.61	61	1715009	292.7111	ug/kg	98
15) Tert-Butyl Alcohol	6.80	59	188151	293.4850	ug/kg	89
16) Dimethyl Sulfide	6.88	62	763075	308.1557	ug/kg	99
17) Iodomethane	7.14	142	532480	291.5128	ug/kg	99
18) Methyl acetate	7.15	43	879657	276.1748	ug/kg	98
19) Methylene Chloride	7.40	84	937262	293.7237	ug/kg	96
20) Carbon Disulfide	7.44	76	2640380	292.5391	ug/kg	98
21) Acrylonitrile	7.59	53	252681	160.3640	ug/kg	94
22) Methyl Tert Butyl Ether	7.61	73	2699681	297.0533	ug/kg	98
23) trans-1,2-Dichloroethene	7.84	61	1548353	296.5245	ug/kg	100
24) n-Hexane	7.92	57	1608467	298.6501	ug/kg	98
25) Diisopropyl ether	8.26	45	3742238	299.1747	ug/kg	100
26) Vinyl Acetate	8.43	43	2097407	294.1383	ug/kg	99
27) 1,1-Dichloroethane	8.47	63	1881635	286.8995	ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	3515202	302.2390	ug/kg	99
29) 2-Butanone	9.02	43	559900	276.9258	ug/kg	100
30) Propionitrile	9.14	54	182998	295.7653	ug/kg	100
31) 2,2-Dichloropropane	9.24	77	1439671	294.0988	ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	1040893	303.9366	ug/kg	99
33) Chloroform	9.52	83	1708608	283.5977	ug/kg	99
34) 1-Bromopropane	9.65	122	152776	287.6719	ug/kg	98
35) Bromochloromethane	9.75	130	668631	300.5590	ug/kg	98
36) Tetrahydrofuran	9.77	42	365915	280.7723	ug/kg	97
38) 1,1,1-Trichloroethane	10.05	97	1606962	294.9423	ug/kg	100
39) Cyclohexane	10.08	56	1746722	294.0540	ug/kg	99
40) 1,1-Dichloropropene	10.24	75	1258569	293.5615	ug/kg	98
41) Tert-Amyl-Methyl ether	10.34	73	2573262	304.3824	ug/kg	98
42) Carbon Tetrachloride	10.39	117	1494872	295.9476	ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972905.D Vial: 10
Acq On : 25 Feb 2016 20:30 Operator: ADC
Sample : WG558732-10 300.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:59 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.57	62	1526616	288.0725 ug/kg	98
46)	Benzene	10.61	78	3320959	276.6861 ug/kg	99
47)	Trichloroethene	11.36	130	1102750	289.9607 ug/kg	98
48)	Methylcyclohexane	11.43	83	1476436	309.5324 ug/kg	98
49)	1,2-Dichloropropane	11.57	63	980423	297.4576 ug/kg	99
50)	1,4-Dioxane	11.89	88	31126	629.4828 ug/kg	81
51)	Bromodichloromethane	11.87	83	1358159	292.3851 ug/kg	99
52)	Dibromomethane	11.96	174	632731	289.7290 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	287132	300.2354 ug/kg	96
54)	4-Methyl-2-Pentanone	12.19	58	438042	302.7895 ug/kg	99
55)	cis-1,3-Dichloropropene	12.51	75	1436858	296.9047 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	1505953	309.6528 ug/kg	95
59)	Toluene	12.93	91	3720819	277.9530 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	1096301	295.4554 ug/kg	100
61)	trans-1,3-Dichloropropene	13.10	75	1416217	293.7329 ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	820836	291.8946 ug/kg	99
63)	2-Hexanone	13.26	43	814427	290.0688 ug/kg	100
64)	1,3-Dichloropropane	13.63	76	1322191	282.1714 ug/kg	100
65)	Tetrachloroethene	13.75	164	815946	284.3233 ug/kg	98
66)	Dibromochloromethane	14.02	129	1136128	289.0845 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	889642	285.2204 ug/kg	99
68)	1-Chlorohexane	14.34	91	1188786	301.1405 ug/kg	99
69)	Chlorobenzene	14.78	112	2558374	271.9265 ug/kg	97
70)	1,1,1,2-Tetrachloroethane	14.81	131	1019464	288.5389 ug/kg	97
71)	Ethylbenzene	14.80	106	1372834	283.2291 ug/kg	97
72)	m-,p-Xylene	14.89	106	3241616	541.5304 ug/kg	97
73)	o-Xylene	15.45	106	1663016	289.4945 ug/kg	99
74)	Styrene	15.49	104	2869824	293.3680 ug/kg	99
75)	Bromoform	15.99	173	788638	305.6282 ug/kg	99
76)	Isopropylbenzene	15.87	105	4421589	286.7141 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	1002445	294.7201 ug/kg	99
80)	1,2,3-Trichloropropane	16.28	110	380025	294.6098 ug/kg	66
81)	trans-1,4-Dichloro-2-Buten	16.34	53	413901	318.3274 ug/kg	57
82)	n-Propylbenzene	16.38	91	4980503	282.5783 ug/kg	99
83)	Bromobenzene	16.52	156	1176440	282.7414 ug/kg	93
84)	1,3,5-Trimethylbenzene	16.57	105	3788936	286.3846 ug/kg	99
85)	2-Chlorotoluene	16.66	91	3458872	292.5892 ug/kg	100
86)	4-Chlorotoluene	16.71	91	2929432	268.0287 ug/kg	100
87)	a-Methylstyrene	16.98	118	1823514	302.4880 ug/kg	100
88)	tert-Butylbenzene	17.03	134	795019	286.6221 ug/kg	86
89)	1,2,4-Trimethylbenzene	17.09	105	3829230	276.3702 ug/kg	100
90)	sec-Butylbenzene	17.31	105	4833765	283.6742 ug/kg	99
91)	p-Isopropyltoluene	17.47	119	4134027	287.4802 ug/kg	99
92)	1,3-Dichlorobenzene	17.67	146	2260017	273.2999 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	2229106	269.6404 ug/kg	99
94)	n-Butylbenzene	17.99	91	3871124	289.5329 ug/kg	100
95)	1,2-Dichlorobenzene	18.29	146	2162642	281.8552 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	293112	297.5776 ug/kg	98
97)	1,2,4-Trichlorobenzene	20.43	180	1514973	278.1345 ug/kg	100
98)	Hexachlorobutadiene	20.58	225	846867	294.9498 ug/kg	99
99)	Naphthalene	20.81	128	3754823	274.8379 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.12	180	1451357	274.7177 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972905.D 8260SL.M Fri Feb 26 11:21:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972905.D Vial: 10
Acq On : 25 Feb 2016 20:30 Operator: ADC
Sample : WG558732-10 300.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

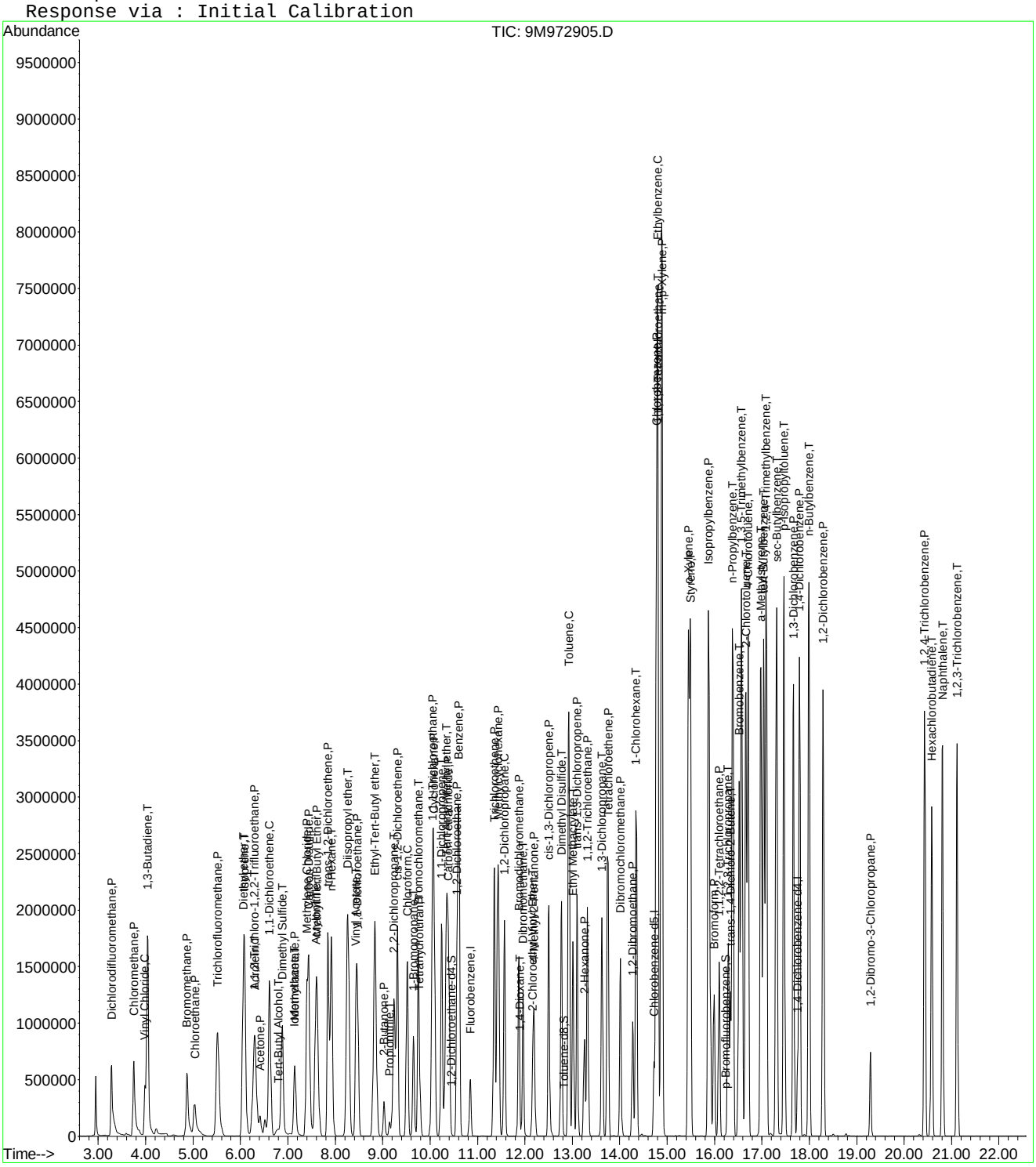

9M972905.D 8260SL.M Fri Feb 26 11:21:59 2016 Page 3

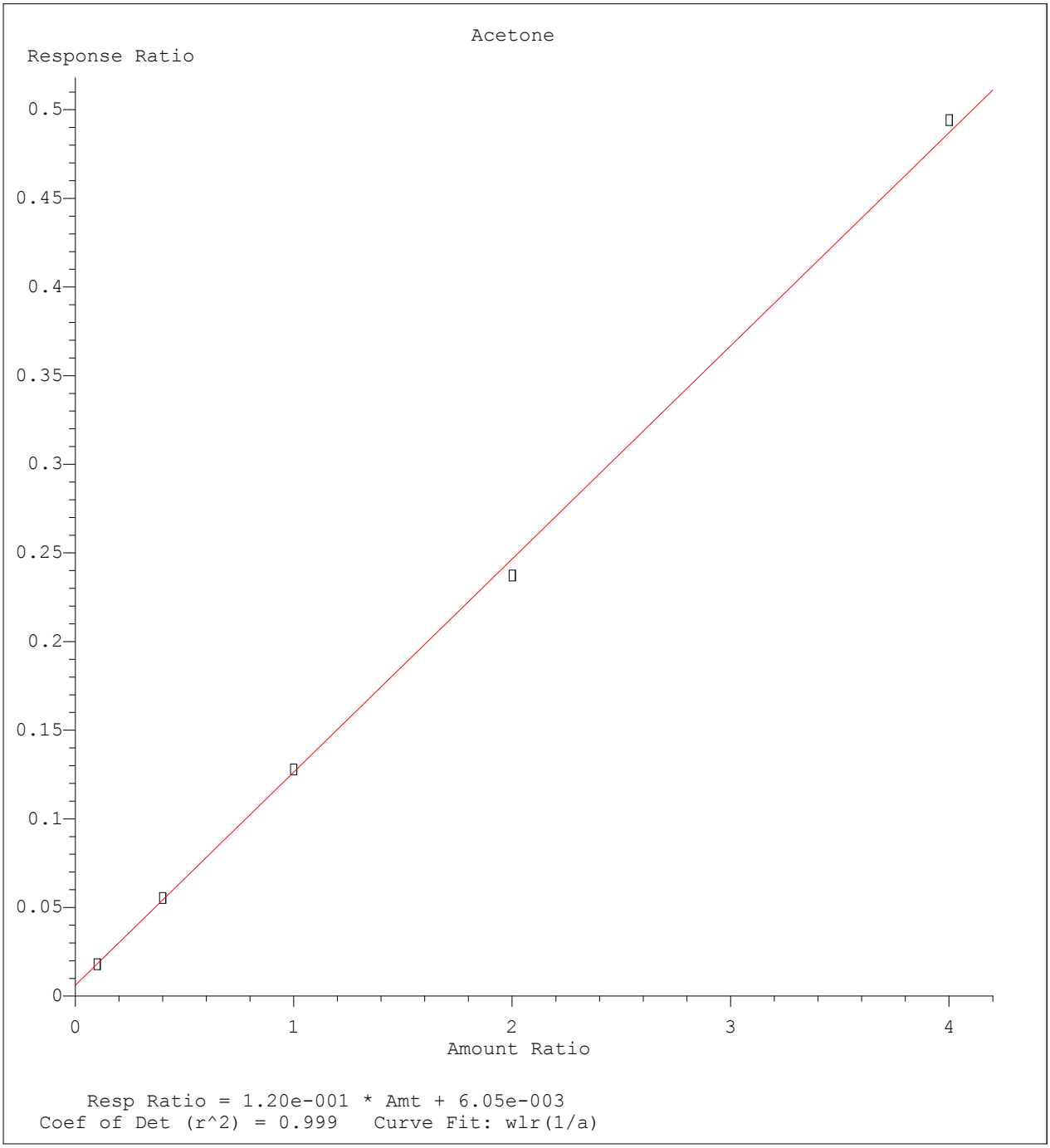

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

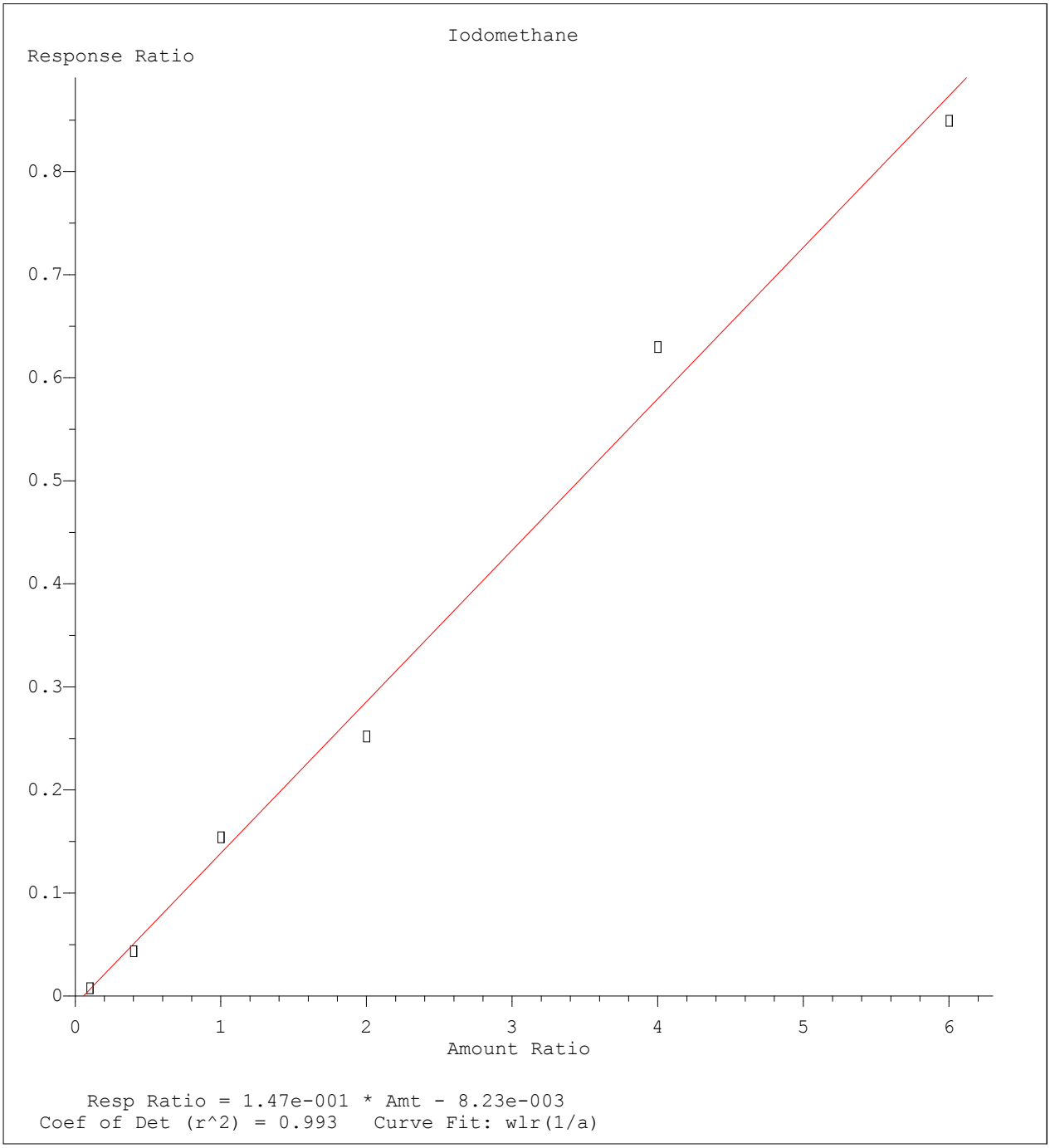

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

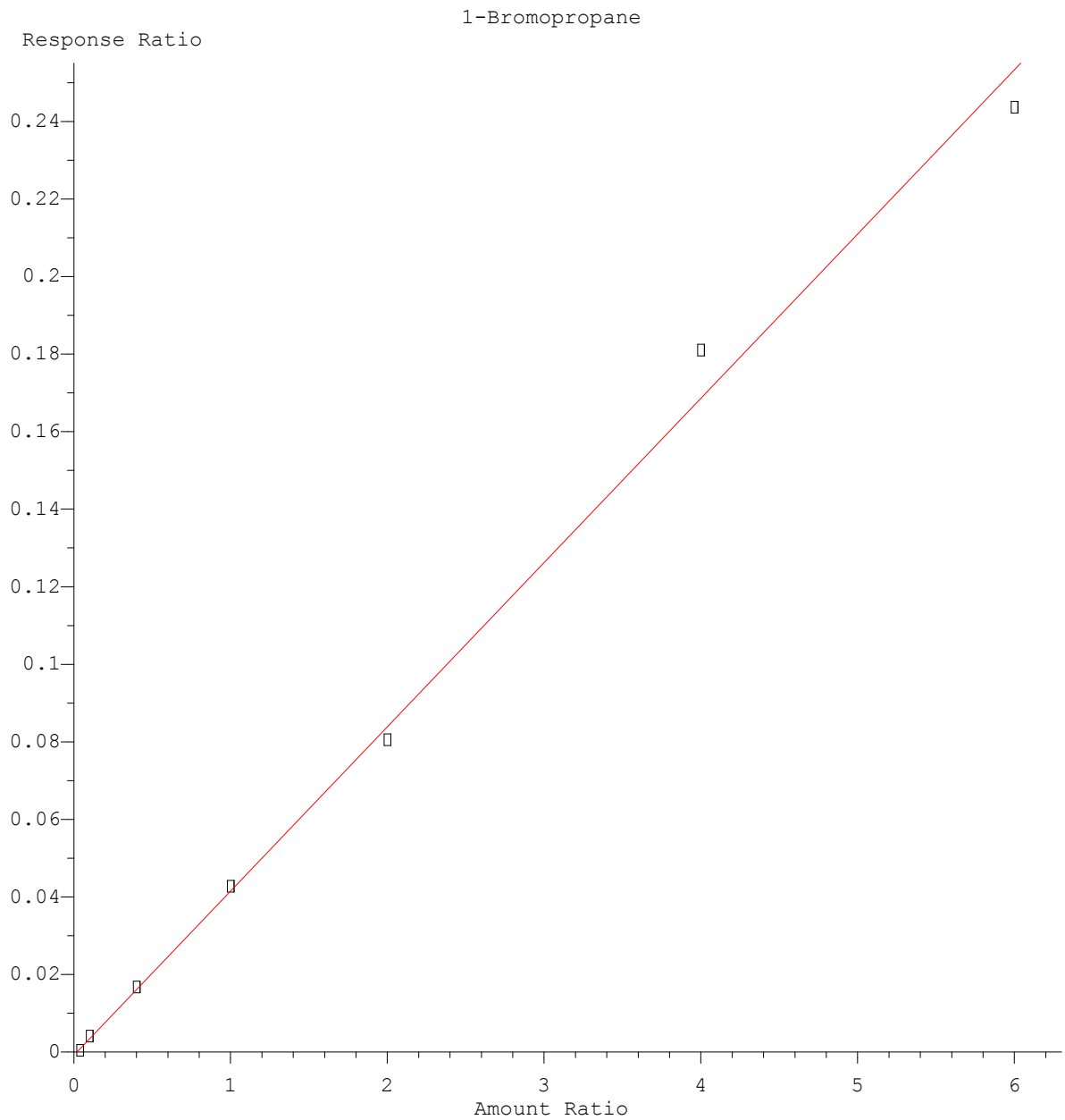

Resp Ratio = 4.25e-002 * Amt - 8.72e-004
Coef of Det (r^2) = 0.997 Curve Fit: wlr(1/a)

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

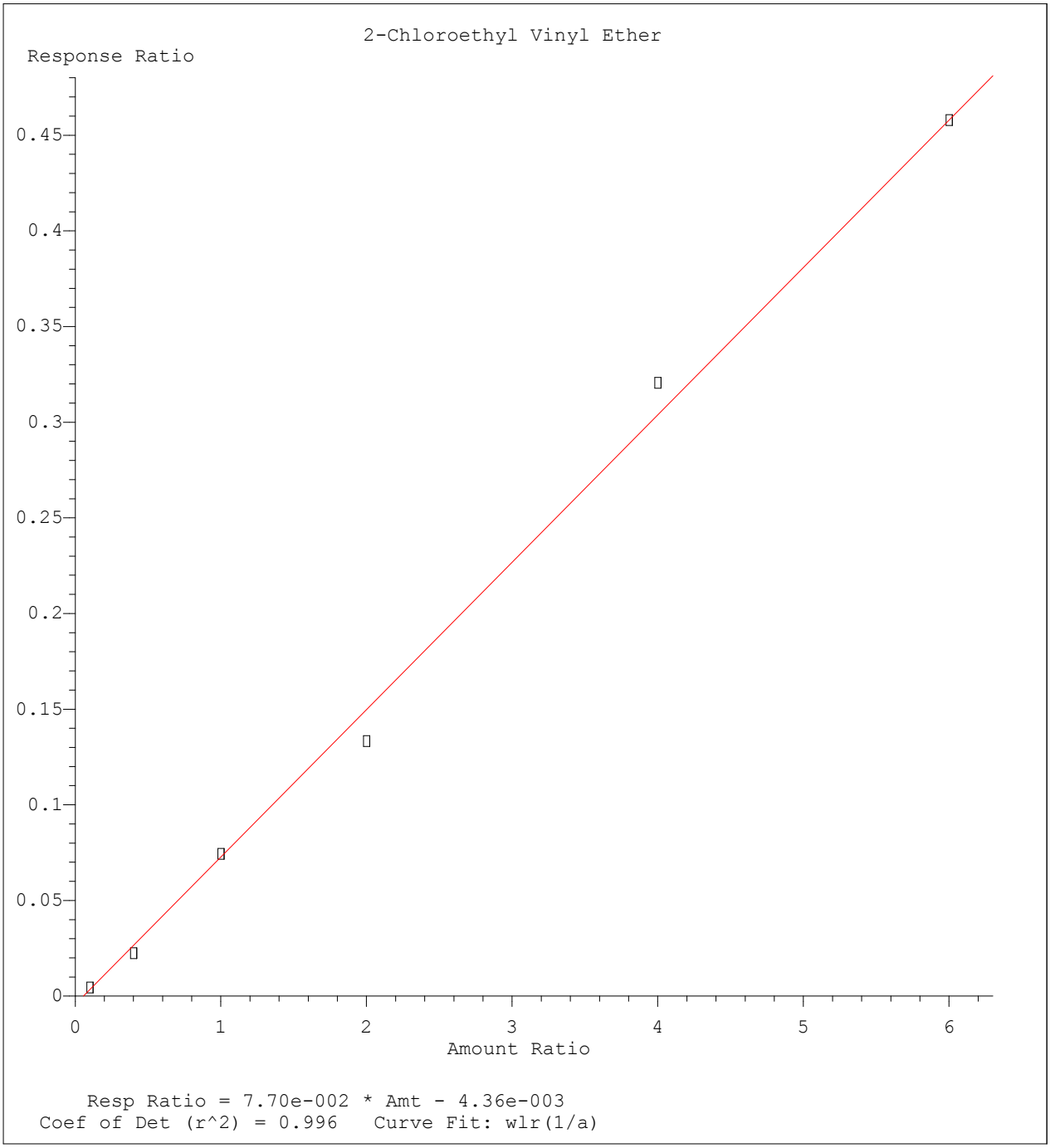

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:39:12 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	582126	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	421408	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	194909	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	163260	51.7395 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 103.48%		
43) 1,2-Dichloroethane-d4	10.45	65	197344	49.8458 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.70%		
58) Toluene-d8	12.82	98	564883	52.9951 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.00%		
79) p-Bromofluorobenzene	16.23	95	212358	55.9531 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 111.90%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	251431	63.3698 ug/kg	100
3) Chloromethane	3.74	50	200793	52.7216 ug/kg	100
4) Vinyl Chloride	3.99	62	228101	59.8284 ug/kg	99
5) 1,3-Butadiene	4.04	54	19055	5.2533 ug/kg	94
6) Bromomethane	4.88	94	121270	48.9744 ug/kg	100
7) Chloroethane	5.04	64	92003	54.1660 ug/kg	100
8) Trichlorofluoromethane	5.52	101	271981	47.5643 ug/kg	98
9) Diethyl ether	6.06	59	198146	74.1259 ug/kg	98
10) Isoprene	6.09	67	201645	59.0663 ug/kg	95
11) Acrolein	6.30	56	34569	64.8558 ug/kg	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	151498	51.3737 ug/kg	99
13) Acetone	6.41	43	65044	43.9190 ug/kg	98
14) 1,1-Dichloroethene	6.62	61	264179	48.5632 ug/kg	99
15) Tert-Butyl Alcohol	6.77	59	122141	205.1997 ug/kg	96
16) Dimethyl Sulfide	6.88	62	168266	73.1872 ug/kg	98
17) Iodomethane	7.13	142	81070	50.1419 ug/kg	99
18) Methyl acetate	7.15	43	155780	52.6767 ug/kg	99
19) Methylene Chloride	7.41	84	147546	49.8014 ug/kg	97
20) Carbon Disulfide	7.45	76	369798	44.1284 ug/kg	98
21) Acrylonitrile	7.59	53	71462	48.8478 ug/kg	99
22) Methyl Tert Butyl Ether	7.61	73	402298	47.6767 ug/kg	100
23) trans-1,2-Dichloroethene	7.85	61	245432	50.6242 ug/kg	100
24) n-Hexane	7.91	57	240056	48.0064 ug/kg	97
25) Diisopropyl ether	8.26	45	951889	81.9626 ug/kg	100
26) Vinyl Acetate	8.44	43	224385	33.8921 ug/kg	98
27) 1,1-Dichloroethane	8.47	63	282537	46.3987 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	854399	79.1219 ug/kg	99
29) 2-Butanone	9.03	43	88970	47.3950 ug/kg	99
30) Propionitrile	9.14	54	53106	92.4444 ug/kg	97
31) 2,2-Dichloropropane	9.24	77	213921	47.0673 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	167198	52.5828 ug/kg	96
33) Chloroform	9.52	83	268532	48.0056 ug/kg	99
34) 1-Bromopropane	9.65	122	36381	74.5451 ug/kg	96
35) Bromochloromethane	9.75	130	106386	51.5067 ug/kg	96
36) Tetrahydrofuran	9.78	42	101921	84.2313 ug/kg	98
38) 1,1,1-Trichloroethane	10.04	97	236420	46.7360 ug/kg	100
39) Cyclohexane	10.08	56	267623	48.5247 ug/kg	98
40) 1,1-Dichloropropene	10.25	75	193208	48.5381 ug/kg	99
41) Tert-Amyl-Methyl ether	10.34	73	688412	87.7041 ug/kg	100
42) Carbon Tetrachloride	10.39	117	218086	46.5023 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:39:12 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	241996	49.1831 ug/kg	99
46)	Benzene	10.60	78	545692	48.9674 ug/kg	99
47)	Trichloroethene	11.35	130	174371	49.3824 ug/kg	96
48)	Methylcyclohexane	11.44	83	228572	51.6120 ug/kg	98
49)	1,2-Dichloropropane	11.56	63	160075	52.3084 ug/kg	99
50)	1,4-Dioxane	11.88	88	7749	168.7883 ug/kg	88
51)	Bromodichloromethane	11.87	83	205164	47.5709 ug/kg	100
52)	Dibromomethane	11.96	174	95223	46.9624 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	36447	43.4907 ug/kg	97
54)	4-Methyl-2-Pentanone	12.19	58	64228	47.8173 ug/kg	96
55)	cis-1,3-Dichloropropene	12.50	75	238969	53.1840 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	243519	53.9302 ug/kg	99
59)	Toluene	12.93	91	610944	50.7412 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	172650	51.7315 ug/kg	99
61)	trans-1,3-Dichloropropene	13.11	75	216958	50.0293 ug/kg	98
62)	1,1,2-Trichloroethane	13.32	97	130293	51.5130 ug/kg	96
63)	2-Hexanone	13.25	43	121727	48.2017 ug/kg	99
64)	1,3-Dichloropropane	13.62	76	226811	53.8157 ug/kg	99
65)	Tetrachloroethene	13.75	164	128602	49.8224 ug/kg	96
66)	Dibromochloromethane	14.01	129	171284	48.4552 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	142409	50.7609 ug/kg	97
68)	1-Chlorohexane	14.35	91	184711	52.0217 ug/kg	98
69)	Chlorobenzene	14.77	112	433181	51.1898 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	157986	49.7138 ug/kg	100
71)	Ethylbenzene	14.79	106	223582	51.2841 ug/kg	100
72)	m-,p-Xylene	14.89	106	552299	102.5798 ug/kg	98
73)	o-Xylene	15.45	106	276739	53.5600 ug/kg	99
74)	Styrene	15.49	104	464515	52.7939 ug/kg	99
75)	Bromoform	15.99	173	109809	47.3129 ug/kg	99
76)	Isopropylbenzene	15.87	105	721376	52.0066 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	153818	52.0241 ug/kg	97
80)	1,2,3-Trichloropropane	16.29	110	60794	54.2181 ug/kg	92
81)	trans-1,4-Dichloro-2-Buten	16.33	53	48561	42.9649 ug/kg	74
82)	n-Propylbenzene	16.39	91	841260	54.9091 ug/kg	100
83)	Bromobenzene	16.52	156	188730	52.1806 ug/kg	96
84)	1,3,5-Trimethylbenzene	16.57	105	624761	54.3244 ug/kg	99
85)	2-Chlorotoluene	16.66	91	556729	54.1771 ug/kg	100
86)	4-Chlorotoluene	16.70	91	503918	53.0403 ug/kg	99
87)	a-Methylstyrene	16.98	118	305038	58.2105 ug/kg	98
88)	tert-Butylbenzene	17.03	134	133555	55.3912 ug/kg	90
89)	1,2,4-Trimethylbenzene	17.08	105	620621	51.5293 ug/kg	99
90)	sec-Butylbenzene	17.31	105	810765	54.7366 ug/kg	99
91)	p-Isopropyltoluene	17.46	119	675672	54.0529 ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	365216	50.8073 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	367190	51.0968 ug/kg	99
94)	n-Butylbenzene	17.99	91	609687	52.4585 ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	351826	52.7494 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	46623	54.4522 ug/kg	96
97)	1,2,4-Trichlorobenzene	20.43	180	244804	51.7031 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	136025	54.5004 ug/kg	99
99)	Naphthalene	20.81	128	603753	50.8387 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	241600	52.6087 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972907.D 8260SL.M Fri Feb 26 11:39:13 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:39 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

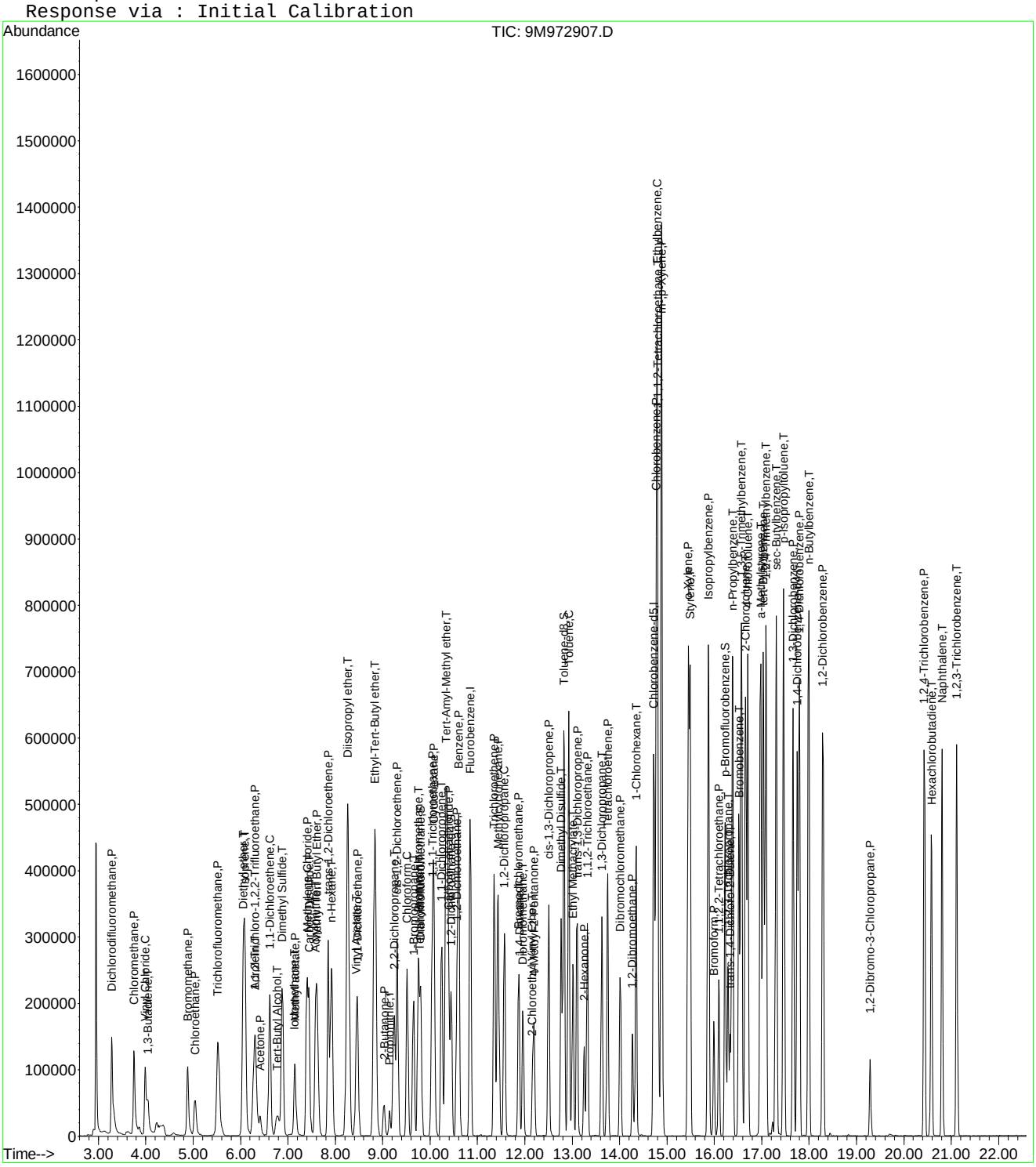

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	112	0.00
2	P	Dichlorodifluoromethane	50.0000	63.3698	-26.7#	123	0.00
3	P	Chloromethane	50.0000	52.7216	-5.4	107	0.00
4	C	Vinyl Chloride	50.0000	59.8284	-19.7	118	0.00
5	T	1,3-Butadiene	50.0000	5.2533	89.5#	11	0.00
6	P	Bromomethane	50.0000	48.9744	2.1	112	0.00
7	P	Chloroethane	50.0000	54.1660	-8.3	108	0.00
8	P	Trichlorofluoromethane	50.0000	47.5643	4.9	102	0.00
9	T	Diethyl ether	100.0000	74.1259	25.9#	79	0.01
10	T	Isoprene	50.0000	59.0664	-18.1	129	0.00
11	T	Acrolein	50.0000	64.8558	-29.7#	140	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	51.3737	-2.7	112	0.00
13	P	Acetone	50.0000	43.9190	12.2	98	0.00
14	C	1,1-Dichloroethene	50.0000	48.5632	2.9	108	0.00
15	T	Tert-Butyl Alcohol	200.0000	205.1997	-2.6	116	0.01
16	T	Dimethyl Sulfide	50.0000	73.1872	-46.4#	154	0.00
17	T	Iodomethane	50.0000	50.1419	-0.3	102	0.00
18	P	Methyl acetate	50.0000	52.6767	-5.4	115	0.01
19	P	Methylene Chloride	50.0000	49.8014	0.4	109	0.01
20	P	Carbon Disulfide	50.0000	44.1284	11.7	97	0.00
21	T	Acrylonitrile	50.0000	48.8478	2.3	103	0.00
22	P	Methyl Tert Butyl Ether	50.0000	47.6767	4.6	99	0.00
23	P	trans-1,2-Dichloroethene	50.0000	50.6242	-1.2	108	0.00
24	T	n-Hexane	50.0000	48.0064	4.0	109	0.00
25	T	Diisopropyl ether	100.0000	81.9626	18.0	87	0.00
26	T	Vinyl Acetate	50.0000	33.8921	32.2#	72	0.01
27	P	1,1-Dichloroethane	50.0000	46.3987	7.2	99	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	79.1219	20.9	83	0.00
29	P	2-Butanone	50.0000	47.3950	5.2	103	0.00
30	T	Propionitrile	100.0000	92.4444	7.6	100	0.00
31	T	2,2-Dichloropropane	50.0000	47.0673	5.9	99	0.00
32	P	cis-1,2-Dichloroethene	50.0000	52.5828	-5.2	109	0.00
33	C	Chloroform	50.0000	48.0057	4.0	102	0.00
34	T	1-Bromopropane	50.0000	74.5451	-49.1#	164	0.00
35	T	Bromochloromethane	50.0000	51.5067	-3.0	104	0.00
36	T	Tetrahydrofuran	100.0000	84.2314	15.8	90	0.00
37	S	Dibromofluoromethane	50.0000	51.7395	-3.5	110	0.00
38	P	1,1,1-Trichloroethane	50.0000	46.7360	6.5	97	0.00
39	P	Cyclohexane	50.0000	48.5247	3.0	108	0.00
40	T	1,1-Dichloropropene	50.0000	48.5381	2.9	106	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	87.7041	12.3	93	0.00
42	P	Carbon Tetrachloride	50.0000	46.5023	7.0	99	0.00
43	S	1,2-Dichloroethane-d4	50.0000	49.8458	0.3	107	0.00
44		Heptane	-1.0000	0.0000	0.0	104	0.00
45	P	1,2-Dichloroethane	50.0000	49.1831	1.6	102	0.00
46	P	Benzene	50.0000	48.9674	2.1	108	0.00
47	P	Trichloroethene	50.0000	49.3824	1.2	106	0.00
48	P	Methylcyclohexane	50.0000	51.6120	-3.2	112	0.00
49	C	1,2-Dichloropropane	50.0000	52.3083	-4.6	108	0.00
50	T	1,4-Dioxane	200.0000	168.7883	15.6	99	0.00
51	P	Bromodichloromethane	50.0000	47.5710	4.9	101	0.00
52	T	Dibromomethane	50.0000	46.9624	6.1	99	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	43.4907	13.0	95	0.00
54	P	4-Methyl-2-Pentanone	50.0000	47.8173	4.4	99	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	53.1840	-6.4	112	0.00
56	T	Dimethyl Disulfide	50.0000	53.9302	-7.9	111	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	111	0.00
58	S	Toluene-d8	50.0000	52.9951	-6.0	110	0.00
59	C	Toluene	50.0000	50.7412	-1.5	108	0.00
60	T	Ethyl Methacrylate	50.0000	51.7315	-3.5	109	0.00
61	P	trans-1,3-Dichloropropene	50.0000	50.0293	-0.1	102	0.00
62	P	1,1,2-Trichloroethane	50.0000	51.5130	-3.0	106	0.00
63	P	2-Hexanone	50.0000	48.2017	3.6	102	0.00
64	T	1,3-Dichloropropane	50.0000	53.8157	-7.6	113	0.00
65	P	Tetrachloroethene	50.0000	49.8224	0.4	110	0.00
66	P	Dibromochloromethane	50.0000	48.4552	3.1	101	0.00
67	P	1,2-Dibromoethane	50.0000	50.7609	-1.5	107	0.00
68	T	1-Chlorohexane	50.0000	52.0217	-4.0	110	0.00
69	P	Chlorobenzene	50.0000	51.1898	-2.4	108	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	49.7138	0.6	102	0.00
71	C	Ethylbenzene	50.0000	51.2841	-2.6	108	0.00
72	P	m-,p-Xylene	100.0000	102.5798	-2.6	111	0.00
73	P	o-Xylene	50.0000	53.5600	-7.1	112	0.00
74	P	Styrene	50.0000	52.7939	-5.6	109	0.00
75	P	Bromoform	50.0000	47.3129	5.4	95	0.00
76	P	Isopropylbenzene	50.0000	52.0066	-4.0	110	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	107	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	52.0241	-4.0	104	0.00
79	S	p-Bromofluorobenzene	50.0000	55.9531	-11.9	111	0.00
80	T	1,2,3-Trichloropropane	50.0000	54.2181	-8.4	109	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	42.9649	14.1	87	0.00
82	T	n-Propylbenzene	50.0000	54.9091	-9.8	112	0.00
83	T	Bromobenzene	50.0000	52.1806	-4.4	106	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	54.3244	-8.6	110	0.00
85	T	2-Chlorotoluene	50.0000	54.1771	-8.4	115	0.00
86	T	4-Chlorotoluene	50.0000	53.0403	-6.1	105	0.00
87	T	a-Methylstyrene	50.0000	58.2105	-16.4	119	0.00
88	T	tert-Butylbenzene	50.0000	55.3912	-10.8	110	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	51.5293	-3.1	107	0.00
90	T	sec-Butylbenzene	50.0000	54.7366	-9.5	112	0.00
91	T	p-Isopropyltoluene	50.0000	54.0529	-8.1	110	0.00
92	P	1,3-Dichlorobenzene	50.0000	50.8073	-1.6	108	0.00
93	P	1,4-Dichlorobenzene	50.0000	51.0968	-2.2	110	0.00
94	T	n-Butylbenzene	50.0000	52.4585	-4.9	108	0.00
95	P	1,2-Dichlorobenzene	50.0000	52.7494	-5.5	110	0.00
96	P	1,2-Dibromo-3-Chloropropane	50.0000	54.4522	-8.9	109	0.00
97	P	1,2,4-Trichlorobenzene	50.0000	51.7031	-3.4	110	0.00
98	T	Hexachlorobutadiene	50.0000	54.5004	-9.0	116	0.00
99	T	Naphthalene	50.0000	50.8387	-1.7	100	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	52.6087	-5.2	109	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972907.D 8260SL.M Fri Feb 26 11:39:16 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030616\9M973099.D Vial: 3
Acq On : 6 Mar 2016 15:56 Operator: ADC
Sample : WG559858-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 06 16:18:41 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	540271	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	409527	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.75	152	218878	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	142842	48.7757 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.56%		
43) 1,2-Dichloroethane-d4	10.44	65	179724	48.9121 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.82%		
58) Toluene-d8	12.83	98	506431	48.8897 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 97.78%		
79) p-Bromofluorobenzene	16.23	95	211772	49.6883 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 99.38%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	152852	41.5088 ug/kg	100
3) Chloromethane	3.74	50	156738	44.3425 ug/kg	99
4) Vinyl Chloride	3.99	62	182496	51.5749 ug/kg	99
5) 1,3-Butadiene	4.04	54	191273	56.8180 ug/kg	98
6) Bromomethane	4.88	94	96576	42.0233 ug/kg	97
7) Chloroethane	5.04	64	76033	48.2316 ug/kg	97
8) Trichlorofluoromethane	5.53	101	253324	47.7336 ug/kg	99
9) Diethyl ether	6.05	59	263983	106.4060 ug/kg	98
10) Isoprene	6.10	67	174062	54.9366 ug/kg	98
11) Acrolein	6.30	56	26216	52.9948 ug/kg	84
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	135596	49.5434 ug/kg	97
13) Acetone	6.40	43	68915	50.4935 ug/kg	100
14) 1,1-Dichloroethene	6.61	61	254517	50.4116 ug/kg	99
15) Tert-Butyl Alcohol	6.75	59	117182	212.1200 ug/kg	98
16) Dimethyl Sulfide	6.88	62	111297	52.1588 ug/kg	97
17) Iodomethane	7.14	142	63424	42.7063 ug/kg	98
18) Methyl acetate	7.14	43	166073	60.5078 ug/kg	97
19) Methylene Chloride	7.40	84	136418	49.6125 ug/kg	93
20) Carbon Disulfide	7.45	76	404084	51.9554 ug/kg	99
21) Acrylonitrile	7.59	53	77407	57.0106 ug/kg	99
22) Methyl Tert Butyl Ether	7.61	73	416760	53.2169 ug/kg	98
23) trans-1,2-Dichloroethene	7.85	61	235917	52.4314 ug/kg	96
24) n-Hexane	7.92	57	263016	56.6727 ug/kg	100
25) Diisopropyl ether	8.26	45	1195367	110.9012 ug/kg	98
26) Vinyl Acetate	8.43	43	313012	50.9414 ug/kg	99
27) 1,1-Dichloroethane	8.47	63	287207	50.8195 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	1064834	106.2487 ug/kg	98
29) 2-Butanone	9.02	43	93561	53.7018 ug/kg	98
30) Propionitrile	9.14	54	60333	113.1611 ug/kg	99
31) 2,2-Dichloropropane	9.24	77	211528	50.1463 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	153158	51.8989 ug/kg	93
33) Chloroform	9.52	83	261190	50.3104 ug/kg	100
34) 1-Bromopropane	9.65	122	22000	48.9279 ug/kg	99
35) Bromochloromethane	9.75	130	99779	52.0504 ug/kg	91
36) Tetrahydrofuran	9.78	42	129342	115.1741 ug/kg	98
38) 1,1,1-Trichloroethane	10.04	97	235016	50.0576 ug/kg	95
39) Cyclohexane	10.08	56	290166	56.6880 ug/kg	98
40) 1,1-Dichloropropene	10.24	75	186325	50.4353 ug/kg	99
41) Tert-Amyl-Methyl ether	10.34	73	761065	104.4717 ug/kg	98
42) Carbon Tetrachloride	10.39	117	215214	49.4450 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M973099.D 8260SL.M Sun Mar 06 16:18:42 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030616\9M973099.D Vial: 3
Acq On : 6 Mar 2016 15:56 Operator: ADC
Sample : WG559858-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 06 16:18:41 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	251601	55.0967 ug/kg	97
46)	Benzene	10.60	78	517616	50.0464 ug/kg	99
47)	Trichloroethene	11.35	130	165110	50.3822 ug/kg	96
48)	Methylcyclohexane	11.44	83	229191	55.7610 ug/kg	96
49)	1,2-Dichloropropane	11.57	63	152881	53.8278 ug/kg	100
50)	1,4-Dioxane	11.88	88	10267	240.9603 ug/kg	97
51)	Bromodichloromethane	11.87	83	203332	50.7986 ug/kg	98
52)	Dibromomethane	11.96	174	98058	52.1071 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.17	63	36203	46.3473 ug/kg	97
54)	4-Methyl-2-Pentanone	12.19	58	69290	55.5824 ug/kg	99
55)	cis-1,3-Dichloropropene	12.50	75	217717	52.2080 ug/kg	98
56)	Dimethyl Disulfide	12.77	94	231653	55.2768 ug/kg	98
59)	Toluene	12.92	91	580049	49.5729 ug/kg	100
60)	Ethyl Methacrylate	13.02	69	181833	56.0636 ug/kg	97
61)	trans-1,3-Dichloropropene	13.10	75	215831	51.2133 ug/kg	99
62)	1,1,2-Trichloroethane	13.32	97	133530	54.3244 ug/kg	100
63)	2-Hexanone	13.25	43	133511	54.4017 ug/kg	99
64)	1,3-Dichloropropane	13.62	76	209116	51.0567 ug/kg	93
65)	Tetrachloroethene	13.75	164	123539	49.2495 ug/kg	96
66)	Dibromochloromethane	14.01	129	172466	50.2051 ug/kg	97
67)	1,2-Dibromoethane	14.28	107	135412	49.6671 ug/kg	98
68)	1-Chlorohexane	14.35	91	186775	54.1291 ug/kg	94
69)	Chlorobenzene	14.77	112	403713	49.0916 ug/kg	98
70)	1,1,1,2-Tetrachloroethane	14.80	131	155707	50.4182 ug/kg	94
71)	Ethylbenzene	14.79	106	215364	50.8323 ug/kg	100
72)	m-,p-Xylene	14.89	106	531429	101.5671 ug/kg	97
73)	o-Xylene	15.45	106	257893	51.3606 ug/kg	99
74)	Styrene	15.49	104	440272	51.4903 ug/kg	99
75)	Bromoform	15.99	173	114415	50.7277 ug/kg	99
76)	Isopropylbenzene	15.87	105	694457	51.5184 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	154978	46.6764 ug/kg	100
80)	1,2,3-Trichloropropane	16.29	110	59930	47.5946 ug/kg	99
81)	trans-1,4-Dichloro-2-Buten	16.33	53	70039	55.1818 ug/kg	79
82)	n-Propylbenzene	16.39	91	801774	46.6010 ug/kg	98
83)	Bromobenzene	16.52	156	179091	44.0932 ug/kg	93
84)	1,3,5-Trimethylbenzene	16.57	105	589463	45.6422 ug/kg	99
85)	2-Chlorotoluene	16.66	91	523842	45.3944 ug/kg	100
86)	4-Chlorotoluene	16.70	91	484086	45.3731 ug/kg	99
87)	a-Methylstyrene	16.98	118	293131	49.8126 ug/kg	100
88)	tert-Butylbenzene	17.04	134	125771	46.4505 ug/kg	99
89)	1,2,4-Trimethylbenzene	17.09	105	604060	44.6620 ug/kg	100
90)	sec-Butylbenzene	17.30	105	771716	46.3949 ug/kg	99
91)	p-Isopropyltoluene	17.46	119	643926	45.8721 ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	343352	42.5349 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	342896	42.4908 ug/kg	100
94)	n-Butylbenzene	17.99	91	613993	47.0438 ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	330049	44.0654 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	42809	44.5225 ug/kg	98
97)	1,2,4-Trichlorobenzene	20.43	180	227738	42.8315 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	120658	43.0494 ug/kg	99
99)	Naphthalene	20.81	128	614969	46.1125 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	228091	44.2281 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030616\9M973099.D Vial: 3
Acq On : 6 Mar 2016 15:56 Operator: ADC
Sample : WG559858-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 6 16:18 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

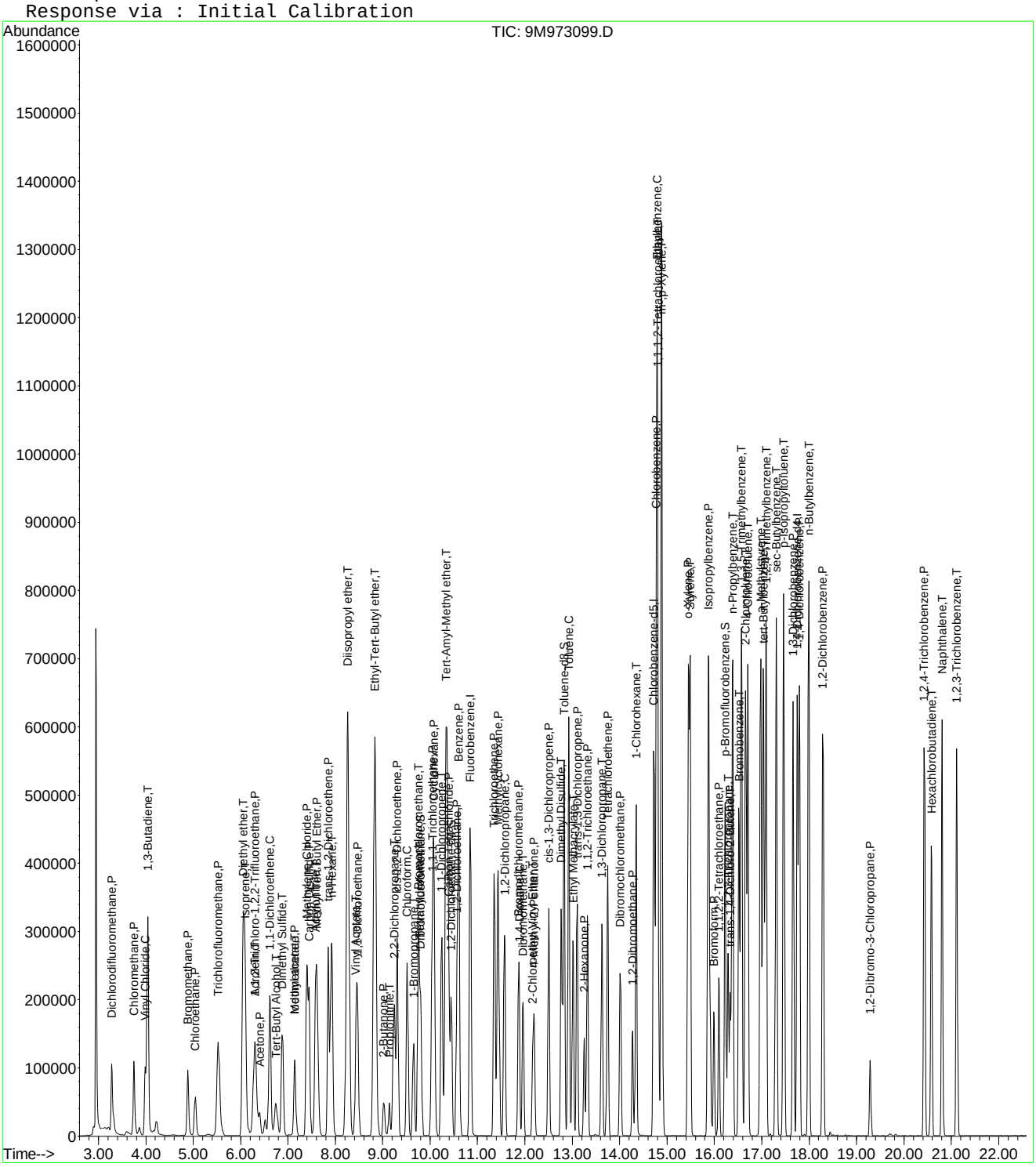

9M973099.D 8260SL.M Sun Mar 06 16:18:42 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\030616\9M973099.D Vial: 3
Acq On : 6 Mar 2016 15:56 Operator: ADC
Sample : WG559858-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	104	0.00
2	P	Dichlorodifluoromethane	0.3408	0.2829	17.0	75	0.00
3	P	Chloromethane	0.3271	0.2901	11.3	84	0.00
4	C	Vinyl Chloride	0.3275	0.3378	-3.2	95	0.00
5	T	1,3-Butadiene	0.3115	0.3540	-13.6	112	0.00
6	P	Bromomethane	0.2127	0.1787	16.0	89	0.00
7	P	Chloroethane	0.1459	0.1407	3.5	89	0.00
8	P	Trichlorofluoromethane	0.4911	0.4689	4.5	95	0.00
9	T	Diethyl ether	0.2296	0.2443	-6.4	106	0.01
10	T	Isoprene	0.2932	0.3222	-9.9	111	0.01
11	T	Acrolein	0.0458	0.0485	-6.0	106	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	0.2533	0.2510	0.9	100	0.00
13	P	Acetone	0.1376	0.1276	7.3	104	0.00
14	C	1,1-Dichloroethene	0.4672	0.4711	-0.8	104	0.00
15	T	Tert-Butyl Alcohol	0.0511	0.0542	-6.0	112	-0.01
16	T	Dimethyl Sulfide	0.1975	0.2060	-4.3	102	0.00
17	T	Iodomethane	0.1273	0.1174	7.8	80	0.01
18	P	Methyl acetate	0.2540	0.3074	-21.0	122	0.00
19	P	Methylene Chloride	0.2545	0.2525	0.8	101	0.00
20	P	Carbon Disulfide	0.7198	0.7479	-3.9	106	0.00
21	T	Acrylonitrile	0.1257	0.1433	-14.0	111	0.00
22	P	Methyl Tert Butyl Ether	0.7248	0.7714	-6.4	102	0.00
23	P	trans-1,2-Dichloroethene	0.4164	0.4367	-4.9	104	0.00
24	T	n-Hexane	0.4295	0.4868	-13.3	120	0.01
25	T	Diisopropyl ether	0.9975	1.1063	-10.9	110	0.00
26	T	Vinyl Acetate	0.5686	0.5794	-1.9	100	0.00
27	P	1,1-Dichloroethane	0.5230	0.5316	-1.6	101	0.00
28	T	Ethyl-Tert-Butyl ether	0.9275	0.9855	-6.2	104	0.00
29	P	2-Butanone	0.1612	0.1732	-7.4	109	-0.01
30	T	Propionitrile	0.0493	0.0558	-13.2	113	0.00
31	T	2,2-Dichloropropane	0.3904	0.3915	-0.3	98	0.00
32	P	cis-1,2-Dichloroethene	0.2731	0.2835	-3.8	100	0.00
33	C	Chloroform	0.4805	0.4834	-0.6	99	0.00
34	T	1-Bromopropane	0.0376	0.0407	-8.3	99	0.00
35	T	Bromochloromethane	0.1774	0.1847	-4.1	97	0.00
36	T	Tetrahydrofuran	0.1039	0.1197	-15.2	114	0.00
37	S	Dibromofluoromethane	0.2710	0.2644	2.4	97	0.00
38	P	1,1,1-Trichloroethane	0.4345	0.4350	-0.1	97	0.00
39	P	Cyclohexane	0.4737	0.5371	-13.4	117	0.00
40	T	1,1-Dichloropropene	0.3419	0.3449	-0.9	102	0.00
41	T	Tert-Amyl-Methyl ether	0.6742	0.7043	-4.5	103	0.00
42	P	Carbon Tetrachloride	0.4028	0.3983	1.1	97	0.00
43	S	1,2-Dichloroethane-d4	0.3401	0.3327	2.2	98	0.00
44		Heptane	0.0000	0.0000	0.0	110	0.00
45	P	1,2-Dichloroethane	0.4226	0.4657	-10.2	106	0.00
46	P	Benzene	0.9572	0.9581	-0.1	103	0.00
47	P	Trichloroethene	0.3033	0.3056	-0.8	101	0.00
48	P	Methylcyclohexane	0.3804	0.4242	-11.5	112	0.00
49	C	1,2-Dichloropropane	0.2628	0.2830	-7.7	103	0.01
50	T	1,4-Dioxane	0.0039	0.0047	-20.6	132	0.00
51	P	Bromodichloromethane	0.3704	0.3764	-1.6	100	0.00
52	T	Dibromomethane	0.1742	0.1815	-4.2	102	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0665	0.0670	-0.7	94	0.00
54	P	4-Methyl-2-Pentanone	0.1154	0.1283	-11.2	107	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\030616\9M973099.D Vial: 3
Acq On : 6 Mar 2016 15:56 Operator: ADC
Sample : WG559858-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	0.3859	0.4030	-4.4	102	0.00
56	T	Dimethyl Disulfide	0.3878	0.4288	-10.6	105	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	108	-0.01
58	S	Toluene-d8	1.2647	1.2366	2.2	99	0.00
59	C	Toluene	1.4286	1.4164	0.9	103	0.00
60	T	Ethyl Methacrylate	0.3960	0.4440	-12.1	114	0.00
61	P	trans-1,3-Dichloropropene	0.5145	0.5270	-2.4	102	0.00
62	P	1,1,2-Trichloroethane	0.3001	0.3261	-8.7	109	-0.01
63	P	2-Hexanone	0.2996	0.3260	-8.8	112	0.00
64	T	1,3-Dichloropropane	0.5001	0.5106	-2.1	104	-0.01
65	P	Tetrachloroethene	0.3063	0.3017	1.5	106	0.00
66	P	Dibromochloromethane	0.4194	0.4211	-0.4	102	0.00
67	P	1,2-Dibromoethane	0.3329	0.3307	0.7	102	0.00
68	T	1-Chlorohexane	0.4213	0.4561	-8.3	111	0.00
69	P	Chlorobenzene	1.0041	0.9858	1.8	101	0.00
70	T	1,1,1,2-Tetrachloroethane	0.3771	0.3802	-0.8	101	0.00
71	C	Ethylbenzene	0.5173	0.5259	-1.7	104	-0.01
72	P	m-,p-Xylene	0.6388	0.6488	-1.6	107	0.00
73	P	o-Xylene	0.6130	0.6297	-2.7	104	0.00
74	P	Styrene	1.0440	1.0751	-3.0	103	0.00
75	P	Bromoform	0.2754	0.2794	-1.5	99	-0.01
76	P	Isopropylbenzene	1.6458	1.6958	-3.0	105	-0.01
77	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	120	-0.01
78	P	1,1,2,2-Tetrachloroethane	0.7585	0.7081	6.6	105	-0.01
79	S	p-Bromofluorobenzene	0.9736	0.9675	0.6	110	0.00
80	T	1,2,3-Trichloropropane	0.2876	0.2738	4.8	108	0.00
81	T	trans-1,4-Dichloro-2-Butene	0.2899	0.3200	-10.4	126	0.00
82	T	n-Propylbenzene	3.9303	3.6631	6.8	107	0.00
83	T	Bromobenzene	0.9278	0.8182	11.8	101	0.00
84	T	1,3,5-Trimethylbenzene	2.9502	2.6931	8.7	104	-0.01
85	T	2-Chlorotoluene	2.6361	2.3933	9.2	108	0.00
86	T	4-Chlorotoluene	2.4372	2.2117	9.3	101	0.00
87	T	a-Methylstyrene	1.3443	1.3392	0.4	115	0.00
88	T	tert-Butylbenzene	0.6185	0.5746	7.1	103	0.00
89	T	1,2,4-Trimethylbenzene	3.0897	2.7598	10.7	104	0.00
90	T	sec-Butylbenzene	3.7998	3.5258	7.2	106	0.00
91	T	p-Isopropyltoluene	3.2067	2.9419	8.3	105	0.00
92	P	1,3-Dichlorobenzene	1.8440	1.5687	14.9	102	0.00
93	P	1,4-Dichlorobenzene	1.8435	1.5666	15.0	102	-0.01
94	T	n-Butylbenzene	2.9815	2.8052	5.9	109	0.00
95	P	1,2-Dichlorobenzene	1.7110	1.5079	11.9	103	-0.01
96	P	1,2-Dibromo-3-Chloropropane	0.2197	0.1956	11.0	100	-0.01
97	P	1,2,4-Trichlorobenzene	1.2146	1.0405	14.3	102	-0.01
98	T	Hexachlorobutadiene	0.6403	0.5513	13.9	103	0.00
99	T	Naphthalene	3.0465	2.8096	7.8	102	0.00
100	T	1,2,3-Trichlorobenzene	1.1781	1.0421	11.5	103	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M973099.D 8260SL.M Mon Mar 07 08:50:47 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\030616\9M973099.D Vial: 3
Acq On : 6 Mar 2016 15:56 Operator: ADC
Sample : WG559858-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	104	0.00
2	P	Dichlorodifluoromethane	50.0000	41.5088	17.0	75	0.00
3	P	Chloromethane	50.0000	44.3425	11.3	84	0.00
4	C	Vinyl Chloride	50.0000	51.5749	-3.1	95	0.00
5	T	1,3-Butadiene	50.0000	56.8180	-13.6	112	0.00
6	P	Bromomethane	50.0000	42.0233	16.0	89	0.00
7	P	Chloroethane	50.0000	48.2316	3.5	89	0.00
8	P	Trichlorofluoromethane	50.0000	47.7336	4.5	95	0.00
9	T	Diethyl ether	100.0000	106.4060	-6.4	106	0.01
10	T	Isoprene	50.0000	54.9366	-9.9	111	0.01
11	T	Acrolein	50.0000	52.9948	-6.0	106	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	49.5434	0.9	100	0.00
13	P	Acetone	50.0000	50.4935	-1.0	104	0.00
14	C	1,1-Dichloroethene	50.0000	50.4117	-0.8	104	0.00
15	T	Tert-Butyl Alcohol	200.0000	212.1200	-6.1	112	-0.01
16	T	Dimethyl Sulfide	50.0000	52.1588	-4.3	102	0.00
17	T	Iodomethane	50.0000	42.7063	14.6	80	0.01
18	P	Methyl acetate	50.0000	60.5078	-21.0	122	0.00
19	P	Methylene Chloride	50.0000	49.6125	0.8	101	0.00
20	P	Carbon Disulfide	50.0000	51.9554	-3.9	106	0.00
21	T	Acrylonitrile	50.0000	57.0106	-14.0	111	0.00
22	P	Methyl Tert Butyl Ether	50.0000	53.2169	-6.4	102	0.00
23	P	trans-1,2-Dichloroethene	50.0000	52.4314	-4.9	104	0.00
24	T	n-Hexane	50.0000	56.6727	-13.3	120	0.01
25	T	Diisopropyl ether	100.0000	110.9012	-10.9	110	0.00
26	T	Vinyl Acetate	50.0000	50.9414	-1.9	100	0.00
27	P	1,1-Dichloroethane	50.0000	50.8195	-1.6	101	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	106.2487	-6.2	104	0.00
29	P	2-Butanone	50.0000	53.7018	-7.4	109	-0.01
30	T	Propionitrile	100.0000	113.1611	-13.2	113	0.00
31	T	2,2-Dichloropropane	50.0000	50.1463	-0.3	98	0.00
32	P	cis-1,2-Dichloroethene	50.0000	51.8989	-3.8	100	0.00
33	C	Chloroform	50.0000	50.3104	-0.6	99	0.00
34	T	1-Bromopropane	50.0000	48.9279	2.1	99	0.00
35	T	Bromochloromethane	50.0000	52.0504	-4.1	97	0.00
36	T	Tetrahydrofuran	100.0000	115.1741	-15.2	114	0.00
37	S	Dibromofluoromethane	50.0000	48.7757	2.4	97	0.00
38	P	1,1,1-Trichloroethane	50.0000	50.0576	-0.1	97	0.00
39	P	Cyclohexane	50.0000	56.6880	-13.4	117	0.00
40	T	1,1-Dichloropropene	50.0000	50.4353	-0.9	102	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	104.4717	-4.5	103	0.00
42	P	Carbon Tetrachloride	50.0000	49.4450	1.1	97	0.00
43	S	1,2-Dichloroethane-d4	50.0000	48.9121	2.2	98	0.00
44		Heptane	-1.0000	0.0000	0.0	110	0.00
45	P	1,2-Dichloroethane	50.0000	55.0967	-10.2	106	0.00
46	P	Benzene	50.0000	50.0464	-0.1	103	0.00
47	P	Trichloroethene	50.0000	50.3822	-0.8	101	0.00
48	P	Methylcyclohexane	50.0000	55.7610	-11.5	112	0.00
49	C	1,2-Dichloropropane	50.0000	53.8278	-7.7	103	0.01
50	T	1,4-Dioxane	200.0000	240.9603	-20.5	132	0.00
51	P	Bromodichloromethane	50.0000	50.7986	-1.6	100	0.00
52	T	Dibromomethane	50.0000	52.1071	-4.2	102	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	46.3473	7.3	94	0.00
54	P	4-Methyl-2-Pentanone	50.0000	55.5824	-11.2	107	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\030616\9M973099.D Vial: 3
Acq On : 6 Mar 2016 15:56 Operator: ADC
Sample : WG559858-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	52.2080	-4.4	102	0.00
56	T	Dimethyl Disulfide	50.0000	55.2768	-10.6	105	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	108	-0.01
58	S	Toluene-d8	50.0000	48.8897	2.2	99	0.00
59	C	Toluene	50.0000	49.5729	0.9	103	0.00
60	T	Ethyl Methacrylate	50.0000	56.0637	-12.1	114	0.00
61	P	trans-1,3-Dichloropropene	50.0000	51.2133	-2.4	102	0.00
62	P	1,1,2-Trichloroethane	50.0000	54.3244	-8.6	109	-0.01
63	P	2-Hexanone	50.0000	54.4017	-8.8	112	0.00
64	T	1,3-Dichloropropane	50.0000	51.0567	-2.1	104	-0.01
65	P	Tetrachloroethene	50.0000	49.2495	1.5	106	0.00
66	P	Dibromochloromethane	50.0000	50.2051	-0.4	102	0.00
67	P	1,2-Dibromoethane	50.0000	49.6671	0.7	102	0.00
68	T	1-Chlorohexane	50.0000	54.1291	-8.3	111	0.00
69	P	Chlorobenzene	50.0000	49.0916	1.8	101	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	50.4182	-0.8	101	0.00
71	C	Ethylbenzene	50.0000	50.8323	-1.7	104	-0.01
72	P	m-,p-Xylene	100.0000	101.5671	-1.6	107	0.00
73	P	o-Xylene	50.0000	51.3606	-2.7	104	0.00
74	P	Styrene	50.0000	51.4903	-3.0	103	0.00
75	P	Bromoform	50.0000	50.7277	-1.5	99	-0.01
76	P	Isopropylbenzene	50.0000	51.5184	-3.0	105	-0.01
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	120	-0.01
78	P	1,1,2,2-Tetrachloroethane	50.0000	46.6764	6.6	105	-0.01
79	S	p-Bromofluorobenzene	50.0000	49.6883	0.6	110	0.00
80	T	1,2,3-Trichloropropane	50.0000	47.5946	4.8	108	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	55.1818	-10.4	126	0.00
82	T	n-Propylbenzene	50.0000	46.6011	6.8	107	0.00
83	T	Bromobenzene	50.0000	44.0932	11.8	101	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	45.6422	8.7	104	-0.01
85	T	2-Chlorotoluene	50.0000	45.3944	9.2	108	0.00
86	T	4-Chlorotoluene	50.0000	45.3731	9.3	101	0.00
87	T	a-Methylstyrene	50.0000	49.8126	0.4	115	0.00
88	T	tert-Butylbenzene	50.0000	46.4505	7.1	103	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	44.6620	10.7	104	0.00
90	T	sec-Butylbenzene	50.0000	46.3948	7.2	106	0.00
91	T	p-Isopropyltoluene	50.0000	45.8721	8.3	105	0.00
92	P	1,3-Dichlorobenzene	50.0000	42.5349	14.9	102	0.00
93	P	1,4-Dichlorobenzene	50.0000	42.4908	15.0	102	-0.01
94	T	n-Butylbenzene	50.0000	47.0438	5.9	109	0.00
95	P	1,2-Dichlorobenzene	50.0000	44.0654	11.9	103	-0.01
96	P	1,2-Dibromo-3-Chloropropane	50.0000	44.5225	11.0	100	-0.01
97	P	1,2,4-Trichlorobenzene	50.0000	42.8315	14.3	102	-0.01
98	T	Hexachlorobutadiene	50.0000	43.0494	13.9	103	0.00
99	T	Naphthalene	50.0000	46.1125	7.8	102	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	44.2281	11.5	103	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M973099.D 8260SL.M Mon Mar 07 08:50:46 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\1\DATA\022516\9M972894.D          Vial: 3
Acq On    : 25 Feb 2016  14:45                       Operator: ADC
Sample    : WG558732-01 BFB 50ng                     Inst    : hpms9
Misc      : 7,1 STD74773                             Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 02/15/16  HPMS9
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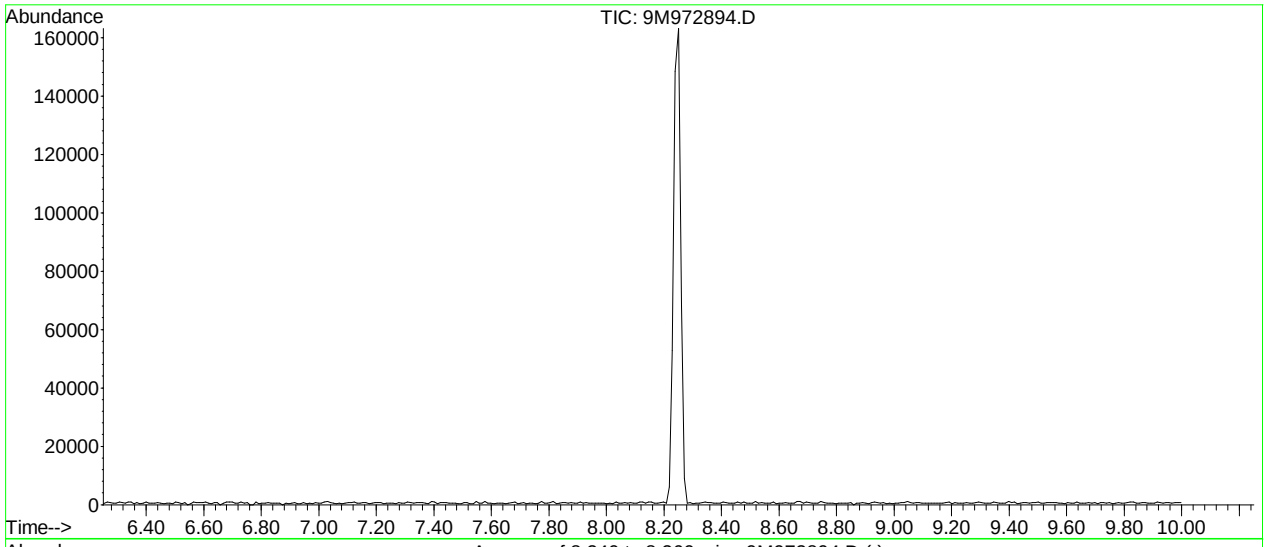

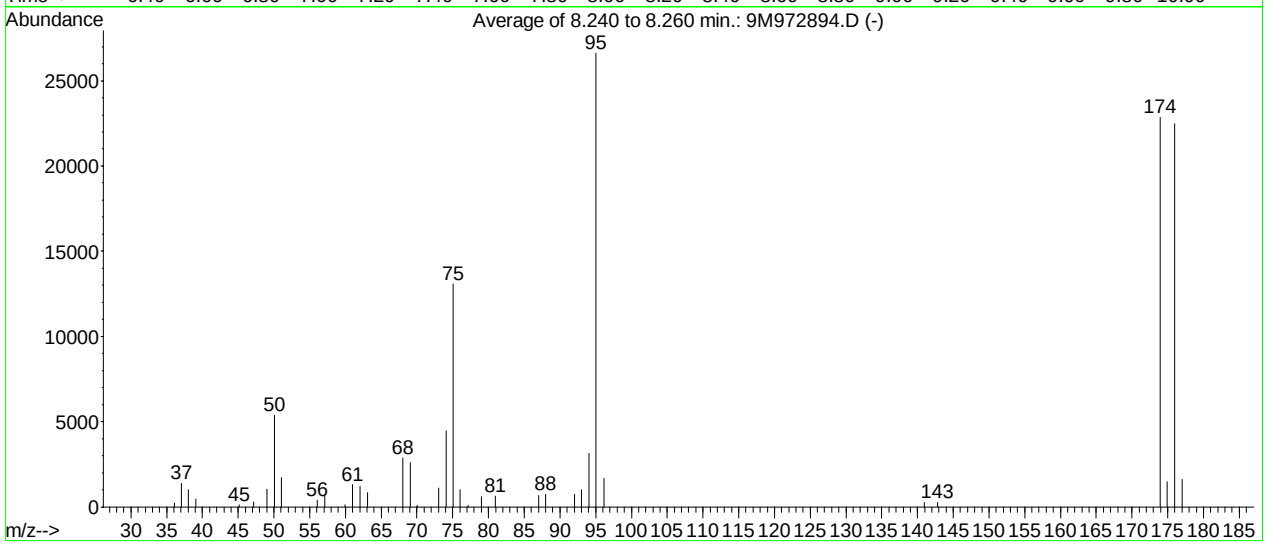

AutoFind: Scans 305, 306, 307; Background Corrected with Scan 300

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.2	5378	PASS
75	95	30	60	49.1	13067	PASS
95	95	100	100	100.0	26621	PASS
96	95	5	9	6.3	1683	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	85.8	22851	PASS
175	174	5	9	6.5	1485	PASS
176	174	95	101	98.3	22461	PASS
177	176	5	9	7.2	1619	PASS

9M972894.D 8260SL.M Fri Feb 26 11:11:03 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\030616\9M973096.D          Vial: 2
Acq On    :  6 Mar 2016  14:28                        Operator: ADC
Sample    : WG559858-01 BFB 50ng 8260                 Inst    : hpms9
Misc      : 7,1 STD74606                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 02/25/16  HPMS9
```

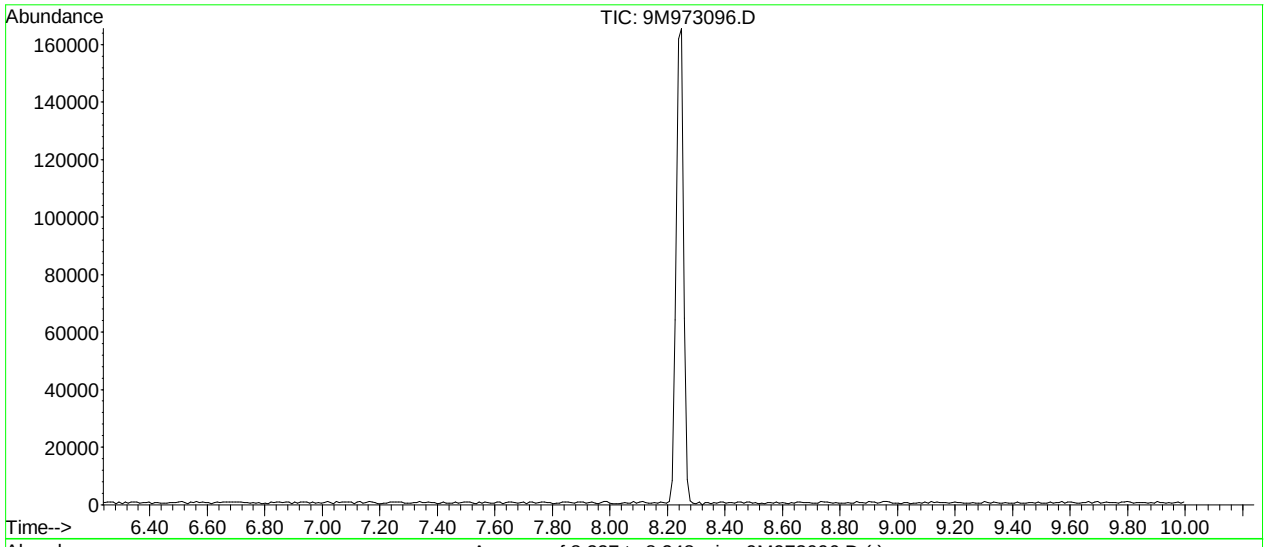

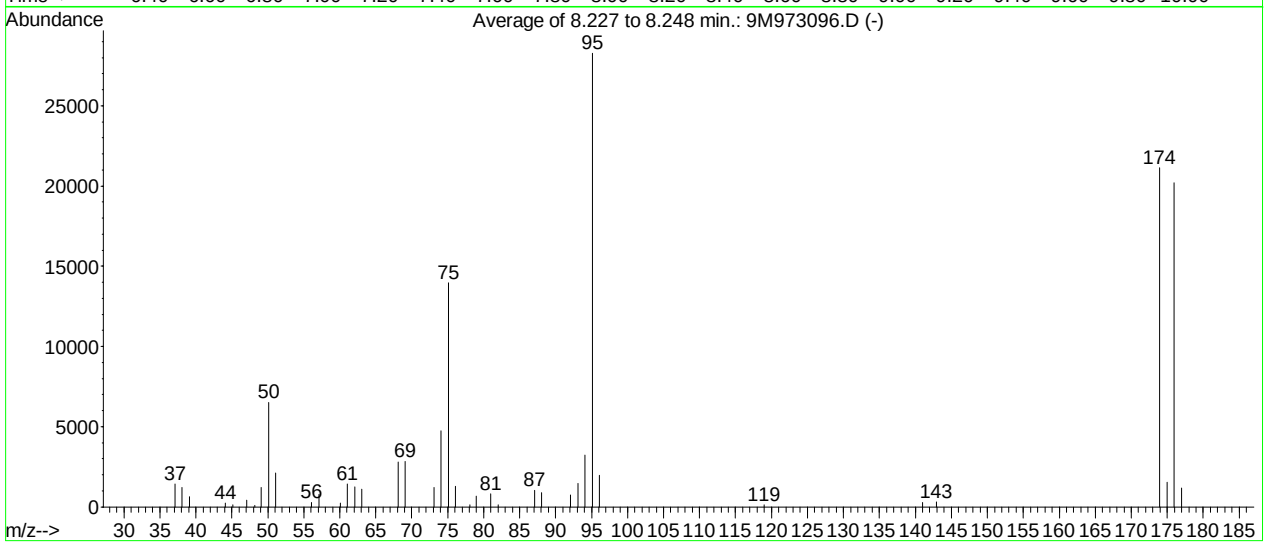

AutoFind: Scans 304, 305, 306; Background Corrected with Scan 300

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	23.0	6500	PASS
75	95	30	60	49.4	13966	PASS
95	95	100	100	100.0	28287	PASS
96	95	5	9	6.9	1954	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	74.8	21150	PASS
175	174	5	9	7.3	1550	PASS
176	174	95	101	95.6	20221	PASS
177	176	5	9	5.9	1186	PASS

9M973096.D 8260SL.M Mon Mar 07 08:50:59 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973101.D Vial: 5
Acq On : 6 Mar 2016 16:57 Operator: ADC
Sample : WG559859-01 VBLK0306 BLANK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 12:19:05 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	561969	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	419175	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	209918	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	146974	48.2489 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.50%		
43) 1,2-Dichloroethane-d4	10.45	65	190439	49.8270 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.66%		
58) Toluene-d8	12.83	98	526746	49.6805 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.36%		
79) p-Bromofluorobenzene	16.23	95	209348	51.2161 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.44%		

Target Compounds

					Qvalue
13) Acetone	6.40	43	5001	1.1851 ug/kg	85
36) Tetrahydrofuran	9.78	42	1481	1.2679 ug/kg#	43
56) Dimethyl Disulfide	12.83	94	15709	3.6037 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M973101.D 8260SL.M Mon Mar 07 12:19:05 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973101.D Vial: 5
Acq On : 6 Mar 2016 16:57 Operator: ADC
Sample : WG559859-01 VBLK0306 BLANK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 7 12:19 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

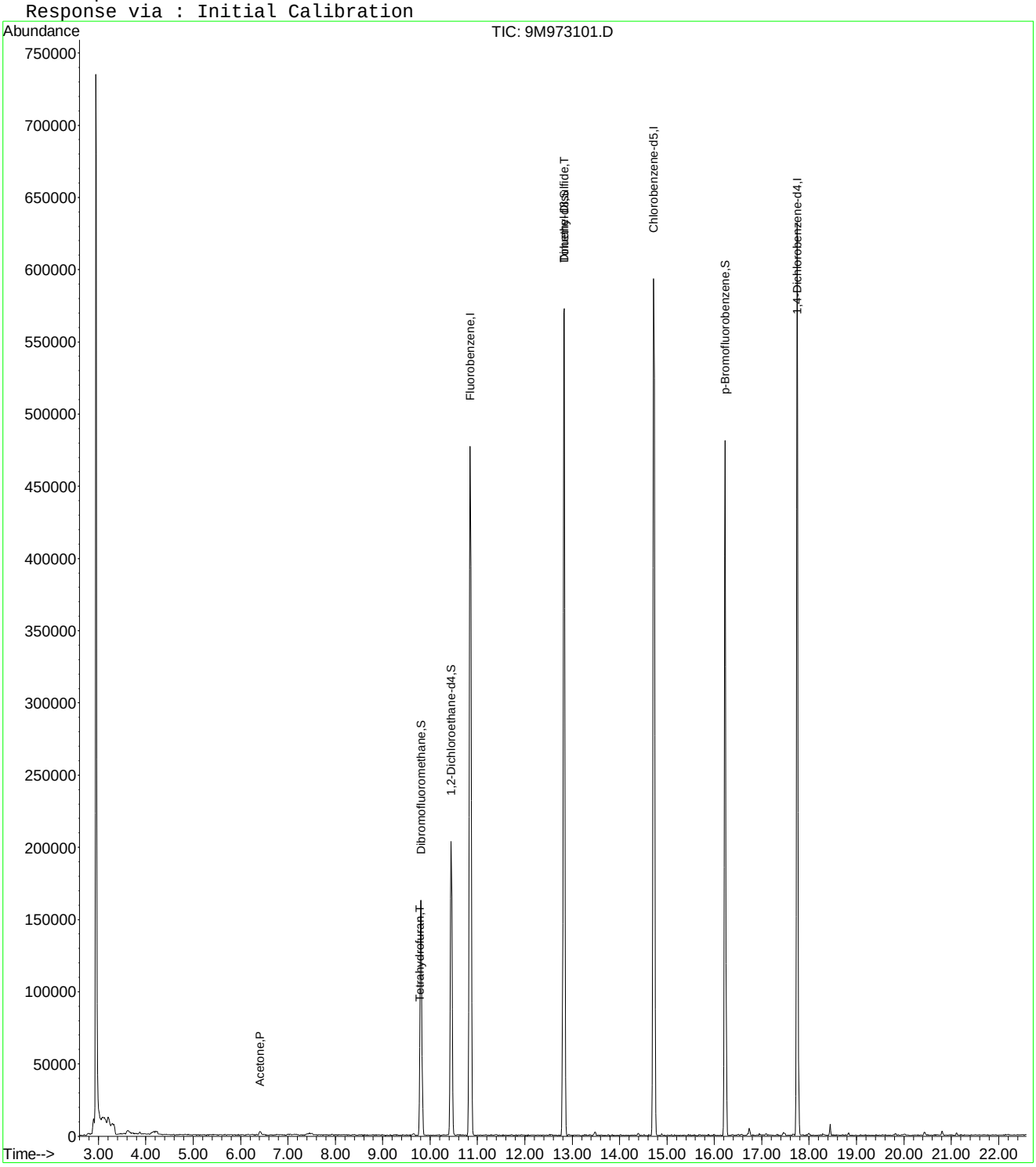

9M973101.D 8260SL.M Mon Mar 07 12:19:05 2016 Page 2

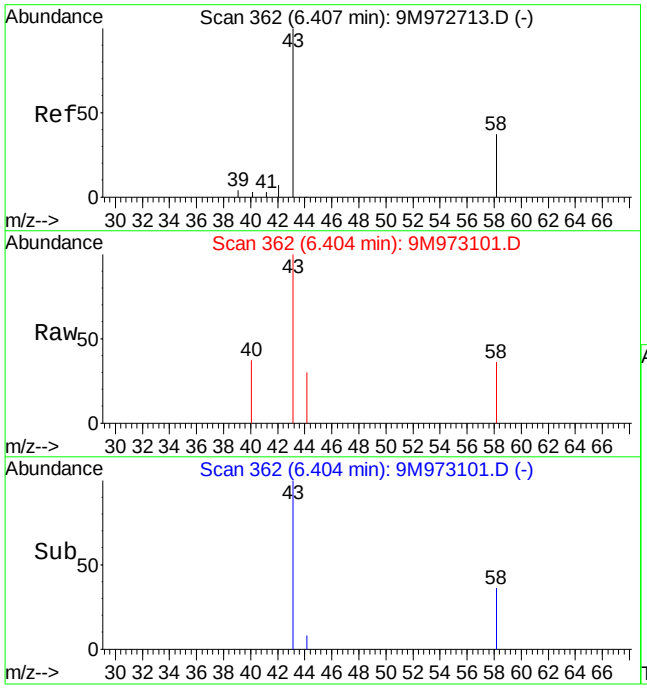

#13
Acetone
Concen: 1.19 ug/kg
RT: 6.40 min Scan# 362
Delta R.T. -0.01 min
Lab File: 9M973101.D
Acq: 6 Mar 2016 16:57

Tgt Ion: 43 Resp: 5001

Ion	Ratio	Lower	Upper
43	100		
58	35.8	16.9	39.3

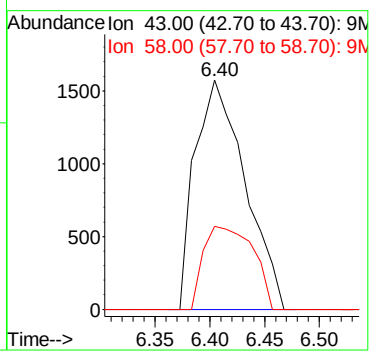

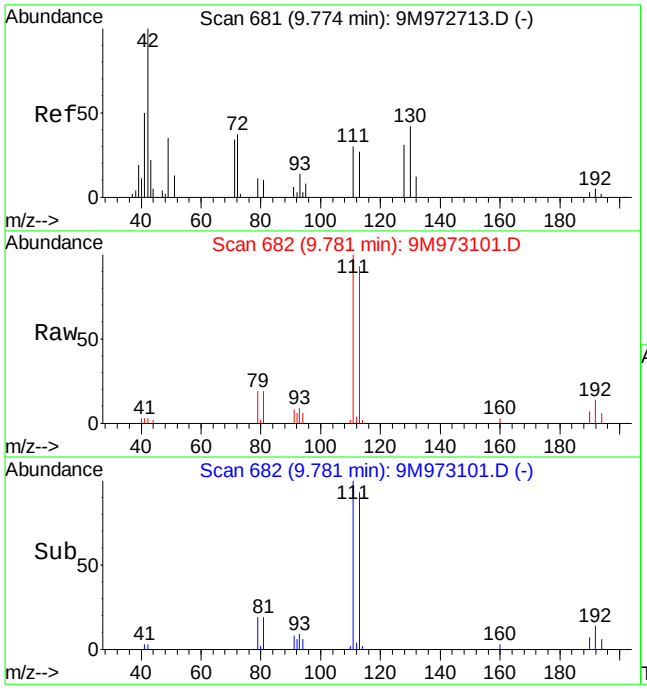

#36
Tetrahydrofuran
Concen: 1.27 ug/kg
RT: 9.78 min Scan# 682
Delta R.T. 0.00 min
Lab File: 9M973101.D
Acq: 6 Mar 2016 16:57

Tgt Ion: 42 Resp: 1481

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

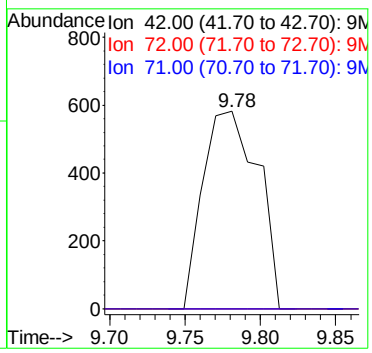

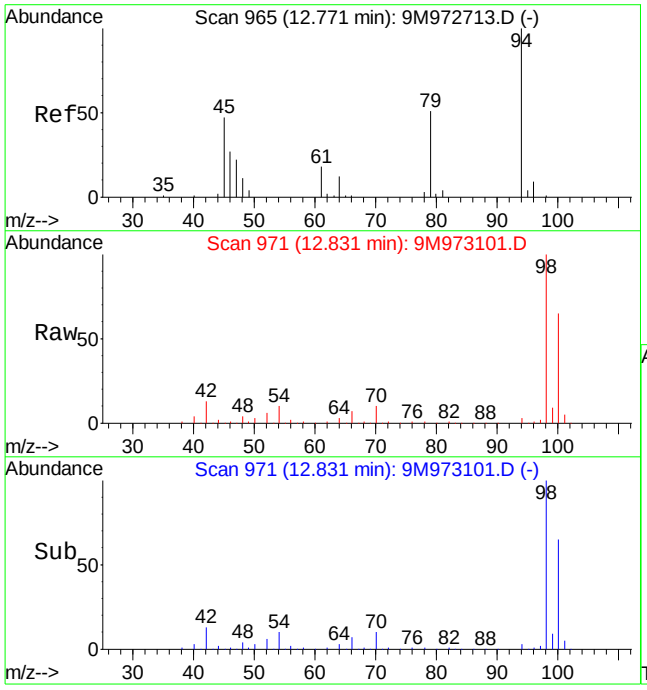

#56
Dimethyl Disulfide
Concen: 3.60 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.06 min
Lab File: 9M973101.D
Acq: 6 Mar 2016 16:57

Tgt Ion: 94 Resp: 15709

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

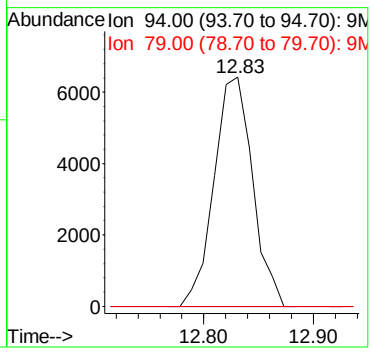

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030616\9M973102.D Vial: 6
Acq On : 6 Mar 2016 17:27 Operator: ADC
Sample : WG559859-02 20ug/L LCS 8260 Inst : hpms9
Misc : 7,1 STD74900 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 06 17:50:34 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	599667	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	449882	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	236934	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	159128	48.9549 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.90%		
43) 1,2-Dichloroethane-d4	10.45	65	198949	48.7813 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.56%		
58) Toluene-d8	12.82	98	571237	50.1993 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 100.40%		
79) p-Bromofluorobenzene	16.22	95	236329	51.2244 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.44%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	94480	23.1159 ug/kg	99
3) Chloromethane	3.75	50	77310	19.7053 ug/kg	98
4) Vinyl Chloride	3.99	62	82712	21.0599 ug/kg	100
5) 1,3-Butadiene	4.03	54	22381	5.9898 ug/kg	96
6) Bromomethane	4.89	94	46739	18.3232 ug/kg	96
7) Chloroethane	5.05	64	33247	19.0013 ug/kg	92
8) Trichlorofluoromethane	5.53	101	109280	18.5520 ug/kg	97
9) Diethyl ether	6.05	59	320855	116.5199 ug/kg	98
10) Isoprene	6.09	67	85179	24.2210 ug/kg	99
11) Acrolein	6.29	56	61647	112.2744 ug/kg	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	60451	19.8996 ug/kg	96
13) Acetone	6.41	43	33465	20.6774 ug/kg	96
14) 1,1-Dichloroethene	6.62	61	108890	19.4314 ug/kg	100
15) Tert-Butyl Alcohol	6.75	59	112894	184.1166 ug/kg	97
16) Dimethyl Sulfide	6.88	62	70485	29.7607 ug/kg	91
17) Iodomethane	7.14	142	25284	17.1319 ug/kg	96
18) Methyl acetate	7.15	43	65055	21.3547 ug/kg	98
19) Methylene Chloride	7.40	84	60446	19.8056 ug/kg	98
20) Carbon Disulfide	7.44	76	160362	18.5764 ug/kg	99
21) Acrylonitrile	7.59	53	31258	20.7414 ug/kg	97
22) Methyl Tert Butyl Ether	7.61	73	183920	21.1589 ug/kg	98
23) trans-1,2-Dichloroethene	7.84	61	101561	20.3358 ug/kg	98
24) n-Hexane	7.92	57	107355	20.8409 ug/kg	100
25) Diisopropyl ether	8.25	45	1351528	112.9695 ug/kg	99
26) Vinyl Acetate	8.43	43	148420	21.7623 ug/kg	99
27) 1,1-Dichloroethane	8.47	63	118305	18.8599 ug/kg	98
28) Ethyl-Tert-Butyl ether	8.83	59	1146457	103.0625 ug/kg	98
29) 2-Butanone	9.02	43	41754	21.5920 ug/kg	96
30) Propionitrile	9.14	54	60026	101.4339 ug/kg	97
31) 2,2-Dichloropropane	9.25	77	84514	18.0510 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	66111	20.1834 ug/kg	95
33) Chloroform	9.52	83	112899	19.5927 ug/kg	96
34) 1-Bromopropane	9.66	122	14310	29.0977 ug/kg	94
35) Bromochloromethane	9.75	130	42111	19.7916 ug/kg	94
36) Tetrahydrofuran	9.77	42	130566	104.7483 ug/kg	98
38) 1,1,1-Trichloroethane	10.05	97	96178	18.4565 ug/kg	94
39) Cyclohexane	10.08	56	123598	21.7549 ug/kg	99
40) 1,1-Dichloropropene	10.25	75	75864	18.5012 ug/kg	100
41) Tert-Amyl-Methyl ether	10.34	73	878194	108.6097 ug/kg	98
42) Carbon Tetrachloride	10.39	117	86746	17.9557 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M973102.D 8260SL.M Sun Mar 06 17:50:34 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030616\9M973102.D Vial: 6
Acq On : 6 Mar 2016 17:27 Operator: ADC
Sample : WG559859-02 20ug/L LCS 8260 Inst : hpms9
Misc : 7,1 STD74900 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 06 17:50:34 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.57	62	106382	20.9886 ug/kg	97
46)	Benzene	10.61	78	225013	19.6008 ug/kg	99
47)	Trichloroethene	11.36	130	70503	19.3826 ug/kg	95
48)	Methylcyclohexane	11.43	83	101608	22.2722 ug/kg	98
49)	1,2-Dichloropropane	11.57	63	68542	21.7426 ug/kg	97
50)	1,4-Dioxane	11.87	88	9997	211.3845 ug/kg	88
51)	Bromodichloromethane	11.87	83	84670	19.0580 ug/kg	99
52)	Dibromomethane	11.96	174	39104	18.7213 ug/kg	97
53)	2-Chloroethyl Vinyl Ether	12.16	63	15824	19.9676 ug/kg	93
54)	4-Methyl-2-Pentanone	12.19	58	29735	21.4900 ug/kg	98
55)	cis-1,3-Dichloropropene	12.51	75	93892	20.2850 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	112219	24.1253 ug/kg	93
59)	Toluene	12.93	91	247990	19.2929 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	76225	21.3939 ug/kg	96
61)	trans-1,3-Dichloropropene	13.10	75	87011	18.7944 ug/kg	98
62)	1,1,2-Trichloroethane	13.32	97	54400	20.1465 ug/kg	100
63)	2-Hexanone	13.25	43	56201	20.8460 ug/kg	95
64)	1,3-Dichloropropane	13.63	76	92634	20.5883 ug/kg	95
65)	Tetrachloroethene	13.75	164	47720	17.3174 ug/kg	94
66)	Dibromochloromethane	14.02	129	68707	18.2066 ug/kg	100
67)	1,2-Dibromoethane	14.27	107	54923	18.3379 ug/kg	96
68)	1-Chlorohexane	14.34	91	83470	22.0205 ug/kg	99
69)	Chlorobenzene	14.78	112	174797	19.3487 ug/kg	95
70)	1,1,1,2-Tetrachloroethane	14.81	131	64255	18.9396 ug/kg	100
71)	Ethylbenzene	14.80	106	92540	19.8829 ug/kg	100
72)	m-,p-Xylene	14.88	106	226968	39.4872 ug/kg	99
73)	o-Xylene	15.45	106	110469	20.0269 ug/kg	99
74)	Styrene	15.49	104	184923	19.6870 ug/kg	100
75)	Bromoform	15.99	173	40755	16.4485 ug/kg	97
76)	Isopropylbenzene	15.87	105	290509	19.6183 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	62302	17.3342 ug/kg	98
80)	1,2,3-Trichloropropane	16.28	110	23832	17.4843 ug/kg	89
81)	trans-1,4-Dichloro-2-Buten	16.33	53	23441	17.0611 ug/kg	89
82)	n-Propylbenzene	16.38	91	343369	18.4365 ug/kg	99
83)	Bromobenzene	16.52	156	76031	17.2927 ug/kg	73
84)	1,3,5-Trimethylbenzene	16.57	105	254517	18.2055 ug/kg	99
85)	2-Chlorotoluene	16.66	91	238316	19.0779 ug/kg	100
86)	4-Chlorotoluene	16.71	91	192135	16.6363 ug/kg	99
87)	a-Methylstyrene	16.97	118	133550	20.9650 ug/kg	96
88)	tert-Butylbenzene	17.03	134	53098	18.1160 ug/kg	83
89)	1,2,4-Trimethylbenzene	17.09	105	254797	17.4031 ug/kg	99
90)	sec-Butylbenzene	17.31	105	325663	18.0865 ug/kg	100
91)	p-Isopropyltoluene	17.47	119	261769	17.2268 ug/kg	100
92)	1,3-Dichlorobenzene	17.67	146	142348	16.2904 ug/kg	98
93)	1,4-Dichlorobenzene	17.79	146	148255	16.9713 ug/kg	100
94)	n-Butylbenzene	17.99	91	234575	16.6033 ug/kg	98
95)	1,2-Dichlorobenzene	18.29	146	141050	17.3967 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	16074	15.4434 ug/kg	96
97)	1,2,4-Trichlorobenzene	20.43	180	87140	15.1398 ug/kg	99
98)	Hexachlorobutadiene	20.58	225	48996	16.1490 ug/kg	98
99)	Naphthalene	20.80	128	207013	14.3396 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.12	180	85622	15.3374 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M973102.D 8260SL.M Sun Mar 06 17:50:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030616\9M973102.D Vial: 6
Acq On : 6 Mar 2016 17:27 Operator: ADC
Sample : WG559859-02 20ug/L LCS 8260 Inst : hpms9
Misc : 7,1 STD74900 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 6 17:50 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

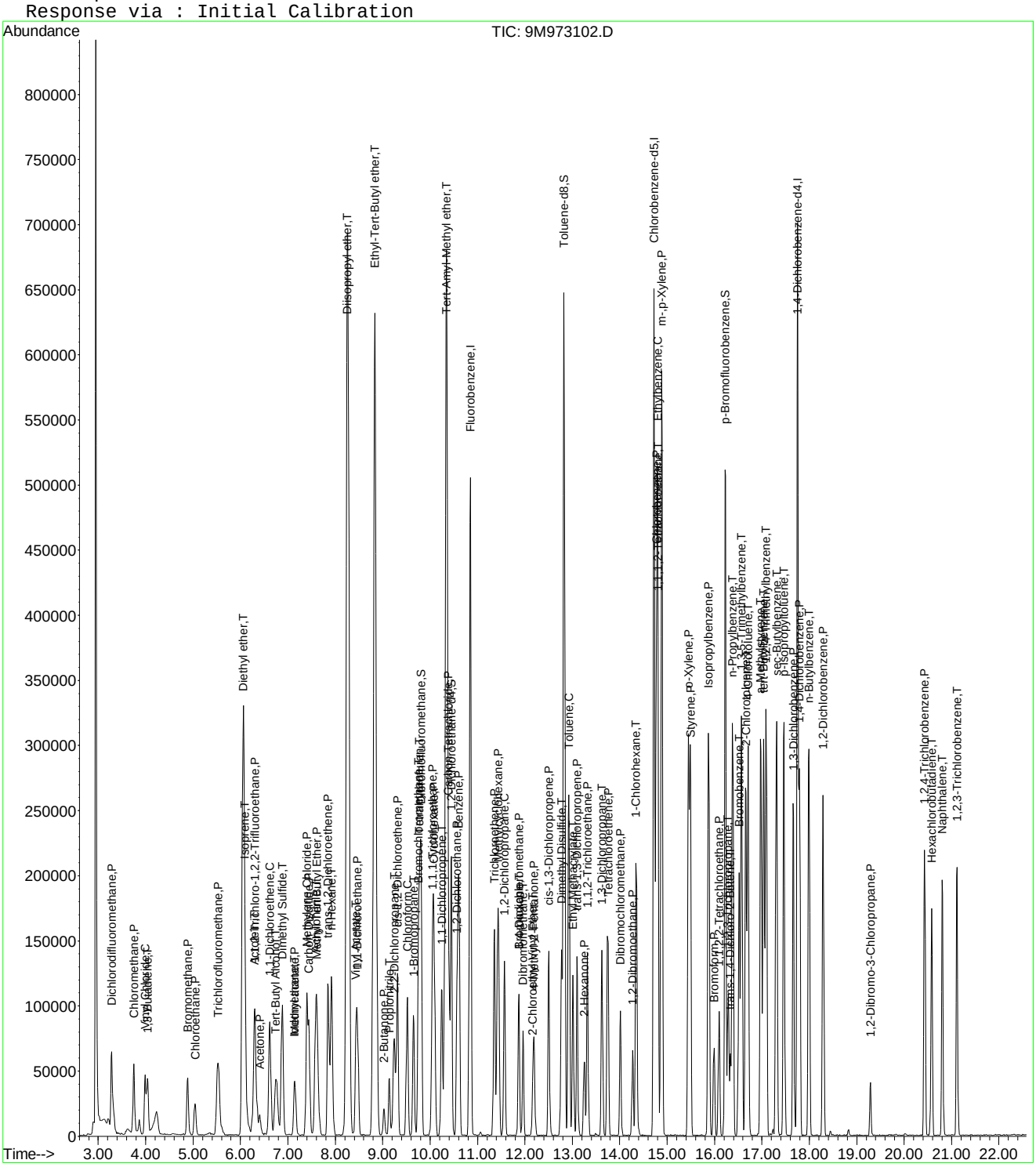

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030616\9M973116.D Vial: 20
Acq On : 7 Mar 2016 00:32 Operator: ADC
Sample : WG559855-02 MS A 8260 5.05g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 00:55:24 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	503932	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	380297	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	206376	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	132817	48.6229 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.24%		
43) 1,2-Dichloroethane-d4	10.45	65	175019	51.0663 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 102.14%		
58) Toluene-d8	12.82	98	479005	49.7963 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.60%		
79) p-Bromofluorobenzene	16.23	95	205903	51.2378 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.48%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	81875	23.8375 ug/kg	97
3) Chloromethane	3.74	50	61358	18.6104 ug/kg	99
4) Vinyl Chloride	3.99	62	67493	20.4496 ug/kg	96
6) Bromomethane	4.88	94	35865	16.7314 ug/kg	99
7) Chloroethane	5.04	64	29496	20.0601 ug/kg	99
8) Trichlorofluoromethane	5.53	101	97530	19.7027 ug/kg	99
10) Isoprene	6.10	67	66192	22.3977 ug/kg	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	53364	20.9039 ug/kg	96
13) Acetone	6.40	43	25182	18.2527 ug/kg	99
14) 1,1-Dichloroethene	6.62	61	89734	19.0551 ug/kg	96
16) Dimethyl Sulfide	6.89	62	48901	24.5698 ug/kg	92
17) Iodomethane	7.13	142	15687	13.3808 ug/kg	88
18) Methyl acetate	7.14	43	40682	15.8911 ug/kg	96
19) Methylene Chloride	7.40	84	44281	17.2654 ug/kg	96
20) Carbon Disulfide	7.45	76	126385	17.4218 ug/kg	99
21) Acrylonitrile	7.59	53	21493	16.9712 ug/kg	97
22) Methyl Tert Butyl Ether	7.61	73	121654	16.6544 ug/kg	97
23) trans-1,2-Dichloroethene	7.85	61	82901	19.7529 ug/kg	93
24) n-Hexane	7.91	57	89015	20.5634 ug/kg	99
27) 1,1-Dichloroethane	8.47	63	91490	17.3560 ug/kg	99
29) 2-Butanone	9.02	43	27919	17.1804 ug/kg	94
31) 2,2-Dichloropropane	9.24	77	64913	16.4984 ug/kg	100
32) cis-1,2-Dichloroethene	9.31	96	50260	18.2591 ug/kg	96
33) Chloroform	9.52	83	86164	17.7937 ug/kg	97
34) 1-Bromopropane	9.65	122	10929	26.5382 ug/kg	98
35) Bromochloromethane	9.75	130	29689	16.6043 ug/kg	91
36) Tetrahydrofuran	9.79	42	1135	1.0836 ug/kg#	43
38) 1,1,1-Trichloroethane	10.04	97	80942	18.4836 ug/kg	96
39) Cyclohexane	10.08	56	97418	20.4044 ug/kg	97
40) 1,1-Dichloropropene	10.25	75	62347	18.0933 ug/kg	98
42) Carbon Tetrachloride	10.39	117	74625	18.3813 ug/kg	99
45) 1,2-Dichloroethane	10.56	62	76970	18.0707 ug/kg	96
46) Benzene	10.60	78	167758	17.3895 ug/kg	98
47) Trichloroethene	11.35	130	59375	19.4244 ug/kg	97
48) Methylcyclohexane	11.44	83	81452	21.2459 ug/kg	96
49) 1,2-Dichloropropane	11.56	63	51201	19.3273 ug/kg	97
51) Bromodichloromethane	11.87	83	64190	17.1931 ug/kg	99
52) Dibromomethane	11.95	174	27297	15.5514 ug/kg	97
53) 2-Chloroethyl Vinyl Ether	12.16	63	8039	13.1908 ug/kg	94
54) 4-Methyl-2-Pentanone	12.20	58	20578	17.6974 ug/kg	93

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030616\9M973116.D Vial: 20
Acq On : 7 Mar 2016 00:32 Operator: ADC
Sample : WG559855-02 MS A 8260 5.05g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 00:55:24 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
55)	cis-1,3-Dichloropropene	12.50	75	67748	17.4173	ug/kg	98
56)	Dimethyl Disulfide	12.77	94	72621	18.5783	ug/kg	95
59)	Toluene	12.93	91	192647	17.7297	ug/kg	99
60)	Ethyl Methacrylate	13.01	69	46221	15.3464	ug/kg	97
61)	trans-1,3-Dichloropropene	13.10	75	61102	15.6129	ug/kg	98
62)	1,1,2-Trichloroethane	13.32	97	38024	16.6584	ug/kg	99
63)	2-Hexanone	13.25	43	37503	16.4559	ug/kg	95
64)	1,3-Dichloropropane	13.62	76	65151	17.1296	ug/kg	90
65)	Tetrachloroethene	13.75	164	40784	17.5084	ug/kg	98
66)	Dibromochloromethane	14.01	129	49316	15.4594	ug/kg	97
67)	1,2-Dibromoethane	14.27	107	40132	15.8512	ug/kg	99
68)	1-Chlorohexane	14.35	91	64029	19.9824	ug/kg	96
69)	Chlorobenzene	14.77	112	135070	17.6869	ug/kg	96
70)	1,1,1,2-Tetrachloroethane	14.80	131	47676	16.6241	ug/kg	98
71)	Ethylbenzene	14.79	106	72401	18.4022	ug/kg	99
72)	m-,p-Xylene	14.89	106	175380	36.0950	ug/kg	99
73)	o-Xylene	15.45	106	83756	17.9625	ug/kg	98
74)	Styrene	15.49	104	135087	17.0129	ug/kg	97
75)	Bromoform	15.99	173	30775	14.6933	ug/kg	97
76)	Isopropylbenzene	15.87	105	234696	18.7492	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	43419	13.8692	ug/kg	99
80)	1,2,3-Trichloropropane	16.29	110	18039	15.1939	ug/kg	82
81)	trans-1,4-Dichloro-2-Buten	16.33	53	14699	12.2825	ug/kg	86
82)	n-Propylbenzene	16.39	91	273513	16.8603	ug/kg	99
83)	Bromobenzene	16.52	156	55284	14.4358	ug/kg	93
84)	1,3,5-Trimethylbenzene	16.57	105	196626	16.1471	ug/kg	99
85)	2-Chlorotoluene	16.66	91	175356	16.1163	ug/kg	99
86)	4-Chlorotoluene	16.70	91	157727	15.6792	ug/kg	98
87)	a-Methylstyrene	16.98	118	92507	16.6723	ug/kg	98
88)	tert-Butylbenzene	17.03	134	43941	17.2117	ug/kg	86
89)	1,2,4-Trimethylbenzene	17.09	105	192855	15.1228	ug/kg	99
90)	sec-Butylbenzene	17.31	105	263600	16.8074	ug/kg	99
91)	p-Isopropyltoluene	17.46	119	203806	15.3983	ug/kg	98
92)	1,3-Dichlorobenzene	17.66	146	106498	13.9923	ug/kg	98
93)	1,4-Dichlorobenzene	17.79	146	106384	13.9814	ug/kg	97
94)	n-Butylbenzene	17.99	91	182807	14.8551	ug/kg	98
95)	1,2-Dichlorobenzene	18.29	146	99583	14.1009	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	10653	11.7506	ug/kg	95
97)	1,2,4-Trichlorobenzene	20.44	180	60321	12.0320	ug/kg	98
98)	Hexachlorobutadiene	20.59	225	38074	14.4073	ug/kg	98
99)	Naphthalene	20.81	128	141328	11.2392	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	59879	12.3142	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M973116.D 8260SL.M Mon Mar 07 00:55:24 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030616\9M973116.D Vial: 20
Acq On : 7 Mar 2016 00:32 Operator: ADC
Sample : WG559855-02 MS A 8260 5.05g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 7 0:55 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

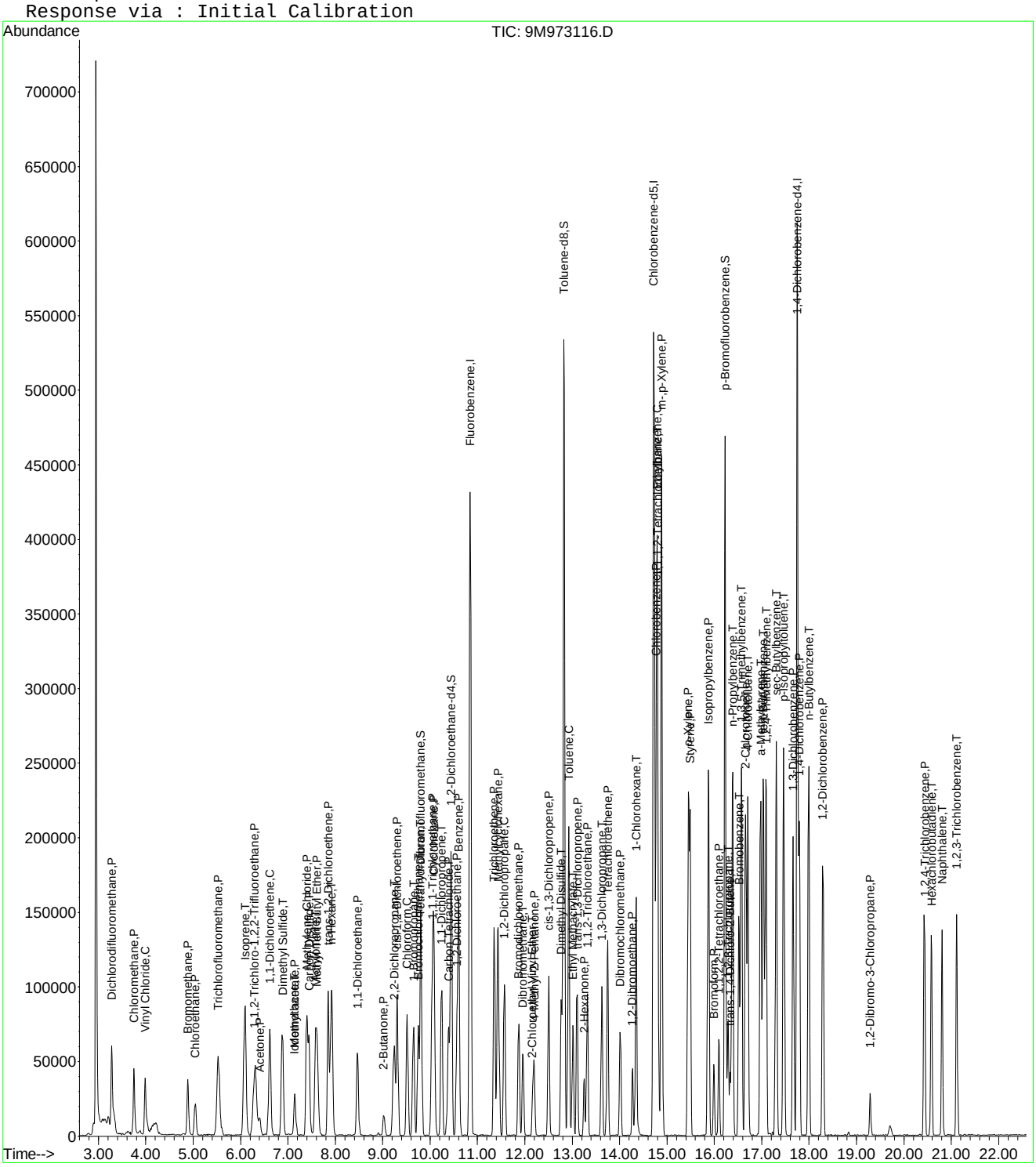

9M973116.D 8260SL.M Mon Mar 07 00:55:24 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030616\9M973117.D Vial: 21
Acq On : 7 Mar 2016 1:02 Operator: ADC
Sample : WG559855-03 MSD A 8260 4.75g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 01:25:21 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	473916	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	353935	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	184651	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	122415	47.6533 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.30%		
43) 1,2-Dichloroethane-d4	10.45	65	158525	49.1833 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.36%		
58) Toluene-d8	12.82	98	437471	48.8659 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 97.74%		
79) p-Bromofluorobenzene	16.22	95	181283	50.4188 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 100.84%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	75277	23.3046 ug/kg	98
3) Chloromethane	3.75	50	59233	19.1038 ug/kg	98
4) Vinyl Chloride	3.99	62	68095	21.9387 ug/kg	96
6) Bromomethane	4.89	94	33932	16.8322 ug/kg	96
7) Chloroethane	5.03	64	26263	18.9926 ug/kg	97
8) Trichlorofluoromethane	5.52	101	85332	18.3303 ug/kg	97
10) Isoprene	6.09	67	62074	22.3346 ug/kg	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	47348	19.7220 ug/kg	99
13) Acetone	6.40	43	24122	18.6385 ug/kg	99
14) 1,1-Dichloroethene	6.62	61	82029	18.5222 ug/kg	97
16) Dimethyl Sulfide	6.88	62	50072	26.7516 ug/kg	93
17) Iodomethane	7.14	142	19918	17.0860 ug/kg	96
18) Methyl acetate	7.14	43	40594	16.8610 ug/kg	96
19) Methylene Chloride	7.40	84	43728	18.1296 ug/kg	97
20) Carbon Disulfide	7.44	76	116380	17.0588 ug/kg	98
21) Acrylonitrile	7.58	53	21141	17.7505 ug/kg	97
22) Methyl Tert Butyl Ether	7.61	73	126408	18.4013 ug/kg	98
23) trans-1,2-Dichloroethene	7.85	61	75365	19.0947 ug/kg	96
24) n-Hexane	7.93	57	80157	19.6899 ug/kg	96
27) 1,1-Dichloroethane	8.47	63	84580	17.0614 ug/kg	98
29) 2-Butanone	9.02	43	27774	18.1737 ug/kg	93
31) 2,2-Dichloropropane	9.24	77	58084	15.6978 ug/kg	100
32) cis-1,2-Dichloroethene	9.31	96	47495	18.3475 ug/kg	100
33) Chloroform	9.52	83	80013	17.5700 ug/kg	100
34) 1-Bromopropane	9.65	122	10759	27.7321 ug/kg	89
35) Bromochloromethane	9.75	130	29076	17.2914 ug/kg	90
36) Tetrahydrofuran	9.78	42	636	0.6456 ug/kg#	43
38) 1,1,1-Trichloroethane	10.05	97	73725	17.9018 ug/kg	99
39) Cyclohexane	10.08	56	95156	21.1929 ug/kg	98
40) 1,1-Dichloropropene	10.25	75	55978	17.2739 ug/kg	100
41) Tert-Amyl-Methyl ether	10.25	73	9233	1.4449 ug/kg#	45
42) Carbon Tetrachloride	10.38	117	65481	17.1505 ug/kg	100
45) 1,2-Dichloroethane	10.56	62	73880	18.4438 ug/kg	98
46) Benzene	10.61	78	164113	18.0892 ug/kg	98
47) Trichloroethene	11.36	130	54221	18.8617 ug/kg	98
48) Methylcyclohexane	11.43	83	75636	20.9784 ug/kg	96
49) 1,2-Dichloropropane	11.57	63	46643	18.7219 ug/kg	98
51) Bromodichloromethane	11.87	83	60003	17.0895 ug/kg	97
52) Dibromomethane	11.96	174	26085	15.8021 ug/kg	97
53) 2-Chloroethyl Vinyl Ether	12.17	63	8790	14.8760 ug/kg	92

(#) = qualifier out of range (m) = manual integration
9M973117.D 8260SL.M Mon Mar 07 01:25:21 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030616\9M973117.D Vial: 21
Acq On : 7 Mar 2016 1:02 Operator: ADC
Sample : WG559855-03 MSD A 8260 4.75g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 01:25:21 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
54)	4-Methyl-2-Pentanone	12.19	58	19279	17.6304 ug/kg	98
55)	cis-1,3-Dichloropropene	12.51	75	63281	17.2993 ug/kg	100
56)	Dimethyl Disulfide	12.77	94	74804	20.3489 ug/kg	92
59)	Toluene	12.93	91	182952	18.0915 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	46776	16.6875 ug/kg	98
61)	trans-1,3-Dichloropropene	13.10	75	58249	15.9925 ug/kg	96
62)	1,1,2-Trichloroethane	13.32	97	35909	16.9036 ug/kg	94
63)	2-Hexanone	13.25	43	35976	16.9616 ug/kg	98
64)	1,3-Dichloropropane	13.62	76	62382	17.6232 ug/kg	92
65)	Tetrachloroethene	13.75	164	37530	17.3115 ug/kg	96
66)	Dibromochloromethane	14.01	129	46454	15.6468 ug/kg	98
67)	1,2-Dibromoethane	14.27	107	38451	16.3184 ug/kg	95
68)	1-Chlorohexane	14.34	91	58995	19.7827 ug/kg	92
69)	Chlorobenzene	14.77	112	126225	17.7598 ug/kg	96
70)	1,1,1,2-Tetrachloroethane	14.81	131	45664	17.1085 ug/kg	99
71)	Ethylbenzene	14.80	106	65813	17.9737 ug/kg	96
72)	m-,p-Xylene	14.89	106	164885	36.4626 ug/kg	99
73)	o-Xylene	15.45	106	80520	18.5547 ug/kg	99
74)	Styrene	15.49	104	132037	17.8673 ug/kg	100
75)	Bromoform	15.99	173	29228	14.9941 ug/kg	98
76)	Isopropylbenzene	15.87	105	211578	18.1613 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	41581	14.8447 ug/kg	97
80)	1,2,3-Trichloropropane	16.29	110	15993	15.0554 ug/kg	86
81)	trans-1,4-Dichloro-2-Buten	16.33	53	14483	13.5259 ug/kg	98
82)	n-Propylbenzene	16.38	91	250277	17.2431 ug/kg	100
83)	Bromobenzene	16.52	156	51790	15.1145 ug/kg	97
84)	1,3,5-Trimethylbenzene	16.57	105	175652	16.1218 ug/kg	98
85)	2-Chlorotoluene	16.66	91	168324	17.2901 ug/kg	99
86)	4-Chlorotoluene	16.71	91	138216	15.3562 ug/kg	100
87)	a-Methylstyrene	16.98	118	93610	18.8560 ug/kg	96
88)	tert-Butylbenzene	17.03	134	38153	16.7028 ug/kg	78
89)	1,2,4-Trimethylbenzene	17.09	105	176980	15.5107 ug/kg	99
90)	sec-Butylbenzene	17.31	105	235851	16.8074 ug/kg	100
91)	p-Isopropyltoluene	17.47	119	187087	15.7982 ug/kg	100
92)	1,3-Dichlorobenzene	17.67	146	100650	14.7798 ug/kg	100
93)	1,4-Dichlorobenzene	17.79	146	97441	14.3128 ug/kg	99
94)	n-Butylbenzene	17.99	91	165130	14.9974 ug/kg	100
95)	1,2-Dichlorobenzene	18.29	146	92601	14.6550 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	9840	12.1308 ug/kg	92
97)	1,2,4-Trichlorobenzene	20.43	180	51473	11.4751 ug/kg	100
98)	Hexachlorobutadiene	20.58	225	31656	13.3881 ug/kg	97
99)	Naphthalene	20.81	128	128731	11.4419 ug/kg	97
100)	1,2,3-Trichlorobenzene	21.12	180	52906	12.1603 ug/kg	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030616\9M973117.D Vial: 21
Acq On : 7 Mar 2016 1:02 Operator: ADC
Sample : WG559855-03 MSD A 8260 4.75g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 7 1:25 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

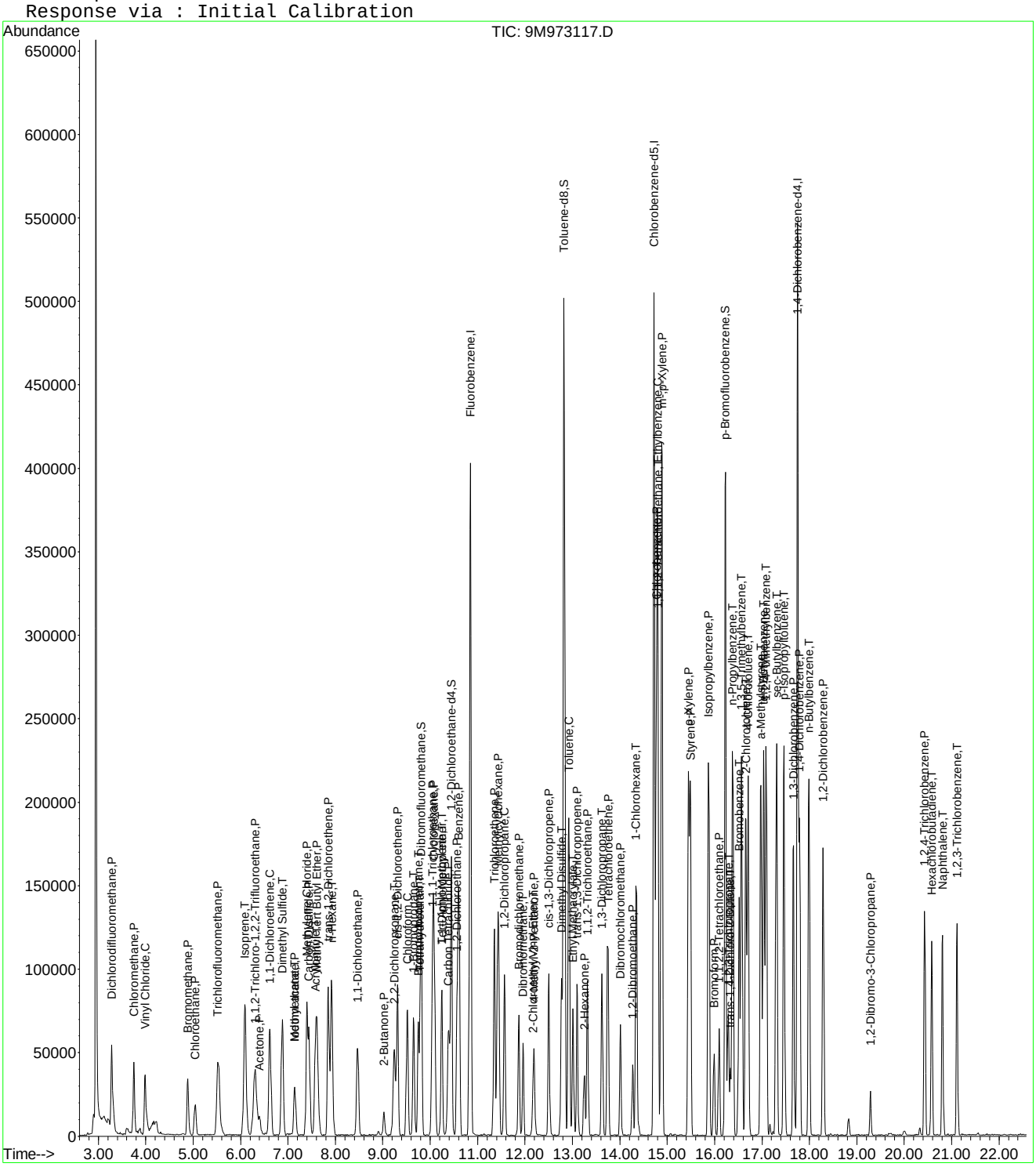

2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030134-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT06(5-5.5)020316	**Prep Method:**	6850	**Prep Date:**	03/03/2016 17:43
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559621	**Analyst:**	WTD	**Run Date:**	03/03/2016 19:37
Collect Date:	03/02/2016 08:58	**Dilution:**	1	**File ID:**	1LM.LM33660
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.42	U	4.84	2.42	1.21

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030134-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT06(5-5.5)020316FD	**Prep Method:**	6850	**Prep Date:**	03/03/2016 17:43
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559621	**Analyst:**	WTD	**Run Date:**	03/03/2016 19:56
Collect Date:	03/02/2016 08:58	**Dilution:**	1	**File ID:**	1LM.LM33661
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.46	U	4.94	2.46	1.23

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030134-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT06(15-15.5)020316	**Prep Method:**	6850	**Prep Date:**	03/03/2016 17:43
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559621	**Analyst:**	WTD	**Run Date:**	03/03/2016 20:15
Collect Date:	03/02/2016 10:35	**Dilution:**	1	**File ID:**	1LM.LM33662
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	88.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.26	U	4.52	2.26	1.13

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030134-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT06(20-20.5)020316	**Prep Method:**	6850	**Prep Date:**	03/03/2016 17:43
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559621	**Analyst:**	WTD	**Run Date:**	03/03/2016 20:34
Collect Date:	03/02/2016 11:11	**Dilution:**	1	**File ID:**	1LM.LM33663
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3.35	J	4.67	2.34	1.17

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030134
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030134-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT06(27.5-28)020316	**Prep Method:**	6850	**Prep Date:**	03/03/2016 17:43
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559621	**Analyst:**	WTD	**Run Date:**	03/04/2016 11:16
Collect Date:	03/02/2016 12:05	**Dilution:**	100	**File ID:**	1LM.LM33703
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	82.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1530		474	236	118

Certificate of Analysis

Sample #:	L16030134-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT06(38.5-39)020316	**Prep Method:**	6850	**Prep Date:**	03/03/2016 17:43
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559621	**Analyst:**	WTD	**Run Date:**	03/04/2016 11:35
Collect Date:	03/02/2016 15:00	**Dilution:**	100	**File ID:**	1LM.LM33704
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	80.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2690		497	248	124

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

MICROBAC

Semivolatile Sample Extract Log

Parameter: Perchlorate
SOP #: HPLC06
Analyst: ADC/AWE
Spike/Surrogate analyst: ADC
Surrogate #: STD 72686 NA
Spike # A: STD 72686
Ext Solvent: DI-H2O
Ext Solvent: NA
Ext Disk: NA

Matrix: Soils
Rev #: 07
Date/Time Extracted: 3-8-16 13:45
Witness: WD

Spike # B: NA
Lot #: NA
Lot #: NA
Lot #: NA

Extraction Work Group: WG 959620
Analytical Work Group: WG 959621
Run ID: R4483574

Pipetter(s): Eppendorf #403
Analytical Balance ID: BAL 014
Reagent: Tubes Lot #: RGT34011
Reagent: Sand Lot #: COA16156
Other: ES Lot #: COA18071

Color Code
T = Transparent
C = Colored
O = Opaque

	Sample ID	Test Code	pH	Initial Wt / Vol	~~Amount Surrogate~~	Amount Spike	Final Volume	Extract Color	Comments
1	WG 559621-01	6850	NA	5.000 g	0.250 mL	1.0 mL	50.0 mL	NA	MCT (10,000 µS/cm) (2.0 mg/kg)
2	-02			5.003 g		NA			BLK
3	-03			5.000 g		1.0 mL			LCS (2.0 mg/kg)
4	L16030134-01			5.124 g		NA			
5	-02			5.012 g					
6	-03			5.022					
7	-04			5.021					
8	-05			5.139					
9	-06			5.031					Rep
10	-06 MS			5.024		1.0 mL			MS (2.0 mg/kg)
11	-06 MSD			5.034		1.0 mL			MSD (2.0 mg/kg)
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									

Reviewed by: Wanda Dolly

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1386 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG 559 621 -01 MCT	9,740	
-02 LCS	6,21	
-03 BLK	7,06	
L16030134 -01	3,57	
-02	3,55	
-03	6,54	
-04	8,45	
-05	8,36	
-06 Rad	10,10	
-06 MS	9,09	
-06 MSD	9,08	

Analyst: Andrew Gunz

Date/Time: 3-6-16 / 1353

DCN#117048

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030216_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015, WG559292

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 MS/MSD STD: STD72685

Comments: L16021262s and L16021255s diluted based on historical data.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM33567	WG559340-01 CCB	1	1		03/02/16 08:34
2	1LM.LM33568	WG559340-02 STD (0.1 ug/L)	1	1	STD72683	03/02/16 08:53
3	1LM.LM33569	WG559340-03 STD (0.2 ug/L)	1	1	STD72683	03/02/16 09:12
4	1LM.LM33570	WG559340-04 STD (0.5 ug/L)	1	1	STD72683	03/02/16 09:31
5	1LM.LM33571	WG559340-05 STD (1.0 ug/L)	1	1	STD72683	03/02/16 09:50
6	1LM.LM33572	WG559340-06 STD (2.0 ug/L)	1	1	STD72683	03/02/16 10:09
7	1LM.LM33573	WG559340-07 STD (5.0 ug/L)	1	1	STD72683	03/02/16 10:28
8	1LM.LM33574	WG559340-08 STD (10 ug/L)	1	1	STD72683	03/02/16 10:46
9	1LM.LM33575	WG559340-09 SSCV (1.0 ug/L)	1	1	STD72685	03/02/16 11:05
10	1LM.LM33576	WG559291-01 CCB	1	1		03/02/16 11:25
11	1LM.LM33577	WG559291-02 CCV (1.0ug/L)	1	1	STD72683	03/02/16 11:44
12	1LM.LM33578	WG559015-05 MRL (0.2ug/L)	1	1	STD72683	03/02/16 12:03
13	1LM.LM33579	WG559015-01 MCT (0.2ug/L)	1	1	STD72685	03/02/16 12:22
14	1LM.LM33580	WG559015-02 BLANK	1	1		03/02/16 12:41
15	1LM.LM33581	WG559015-05 MRL (0.2ug/L)	1	1	STD72683	03/02/16 13:01
16	1LM.LM33582	WG559015-03 LCS (0.2ug/L)	1	1	STD72685	03/02/16 13:20
17	1LM.LM33583	WG559015-04 LCS2 (0.2ug/L)	1	1	STD72685	03/02/16 13:39
18	1LM.LM33584	L16021060-01 ADC	1	1	STD72685	03/02/16 13:58
19	1LM.LM33585	L16021060-02 ADC	1	1	STD72685	03/02/16 14:17
20	1LM.LM33586	L16021060-03 ADC	1	1	STD72685	03/02/16 14:36
21	1LM.LM33587	L16021060-04 ADC	1	1	STD72685	03/02/16 14:55
22	1LM.LM33588	L16021262-01 (20x)	1	20		03/02/16 15:13
23	1LM.LM33589	L16021262-02 (5000x)	1	5000		03/02/16 15:32
24	1LM.LM33590	WG559291-03 CCV (1.0ug/L)	1	1	STD72683	03/02/16 15:51
25	1LM.LM33591	WG559015-06 MRL (0.2ug/L)	1	1	STD72683	03/02/16 16:10
26	1LM.LM33592	WG559291-04 CCB	1	1		03/02/16 16:29
27	1LM.LM33593	L16021262-03 (100X)	1	100		03/02/16 16:48
28	1LM.LM33594	L16021262-04 (2000X)	1	2000		03/02/16 17:07
29	1LM.LM33595	L16021262-05 (1000X)	1	1000		03/02/16 17:26
30	1LM.LM33596	L16021262-06 (10,000X)	1	10000		03/02/16 17:45
31	1LM.LM33597	L16021262-07 (10,000X)	1	10000		03/02/16 18:04
32	1LM.LM33598	L16021262-08 (5000X)	1	5000		03/02/16 18:23
33	1LM.LM33599	L16021262-09 (5000X)	1	5000		03/02/16 18:42

Page: 1 Approved: 04-MAR-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030216_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015, WG559292

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM33600	L16021262-10 (100,000X)	1	100000		03/02/16 19:01
35	1LM.LM33601	L16021262-11 (10,000X)	1	10000		03/02/16 19:20
36	1LM.LM33602	L16021262-12 (10,000X)	1	10000		03/02/16 19:39
37	1LM.LM33603	WG559291-05 CCV (1.0ug/L)	1	1	STD72683	03/02/16 19:58
38	1LM.LM33604	WG559015-07 MRL (0.2ug/L)	1	1	STD72683	03/02/16 20:17
39	1LM.LM33605	WG559291-06 CCB	1	1		03/02/16 20:35
40	1LM.LM33606	L16021262-13 (10,000X)	1	10000		03/02/16 20:54
41	1LM.LM33607	L16021262-14 (10,000X)	1	10000		03/02/16 21:13
42	1LM.LM33608	WG559291-07 CCV (1.0ug/L)	1	1	STD72683	03/02/16 21:32
43	1LM.LM33609	WG559015-08 MRL (0.2ug/L)	1	1	STD72683	03/02/16 21:51
44	1LM.LM33610	WG559291-08 CCB	1	1		03/02/16 22:10
45	1LM.LM33611	WG559292-07 MRL (0.2ug/L)	1	1	STD72685	03/02/16 22:29
46	1LM.LM33612	WG559292-01 MCT (0.2ug/L)	1	1	STD72685	03/02/16 22:48
47	1LM.LM33613	WG559292-02 BLANK	1	1		03/02/16 23:07
48	1LM.LM33614	WG559292-03 LCS (0.2ug/L)	1	1	STD72685	03/02/16 23:26
93	1LM.LM33615	L16021255-01 REF 100X	1	100		03/02/16 23:45
50	1LM.LM33616	L16021255-02 MS 100X	1	100	STD72685	03/03/16 00:04
51	1LM.LM33617	L16021255-03 MSD 100X	1	100	STD72685	03/03/16 00:23
94	1LM.LM33618	L16021255-04 20X	1	20		03/03/16 00:42
53	1LM.LM33619	L16021255-05 20X	1	20		03/03/16 01:01
54	1LM.LM33620	L16021255-06 200X	1	200		03/03/16 01:20
55	1LM.LM33621	L16021255-07 100X	1	100		03/03/16 01:39
56	1LM.LM33622	WG559291-09 CCV (1.0ug/L)	1	1	STD72685	03/03/16 01:57
57	1LM.LM33623	WG559292-08 MRL (0.2ug/L)	1	1	STD72685	03/03/16 02:16
58	1LM.LM33624	WG559291-10 CCB	1	1		03/03/16 02:35
59	1LM.LM33625	L16021255-08	1	1		03/03/16 02:54
60	1LM.LM33626	L16021255-09 500X	1	500		03/03/16 03:13
61	1LM.LM33627	L16021255-10 5000X	1	5000		03/03/16 03:32
62	1LM.LM33628	L16021255-11 5000X	1	5000		03/03/16 03:51
63	1LM.LM33629	L16021255-12 100X	1	100		03/03/16 04:10
64	1LM.LM33630	L16021255-13 10,000X	1	10000		03/03/16 04:29
65	1LM.LM33631	L16021255-14 10,000X	1	10000		03/03/16 04:48
66	1LM.LM33632	L16030008-01	1	1		03/03/16 05:07
67	1LM.LM33633	L16030008-01 10X	1	10		03/03/16 05:26
68	1LM.LM33634	L16021328-01	1	1		03/03/16 05:45
69	1LM.LM33635	WG559291-11 CCV (1.0ug/L)	1	1	STD72685	03/03/16 06:04

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030216_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015, WG559292

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
70	1LM.LM33636	WG559292-09 MRL (0.2ug/L)	1	1	STD72685	03/03/16 06:23
71	1LM.LM33637	WG559291-12 CCB	1	1		03/03/16 06:41
72	1LM.LM33638	L16021328-02	1	1		03/03/16 07:00
73	1LM.LM33639	L16021328-03	1	1		03/03/16 07:19
74	1LM.LM33640	L16021328-04	1	1		03/03/16 07:38
75	1LM.LM33641	L16021328-05	1	1		03/03/16 07:57
76	1LM.LM33642	WG559291-13 CCV (1.0ug/L)	1	1	STD72685	03/03/16 08:16
77	1LM.LM33643	WG559292-10 MRL (0.2ug/L)	1	1	STD72685	03/03/16 08:35
78	1LM.LM33644	WG559291-14 CCB	1	1		03/03/16 08:54
79	1LM.LM33645	L16021255-05 200X	1	200		03/03/16 09:13
80	1LM.LM33646	L16021255-06	1	1		03/03/16 09:32
81	1LM.LM33647	L16021255-12 1000X	1	1000		03/03/16 09:51
95	1LM.LM33648	L16021255-04	1	1		03/03/16 10:10
96	1LM.LM33649	L16021255-02 MS	1	1	STD72685	03/03/16 10:29
97	1LM.LM33650	L16021255-03 MSD	1	1	STD72685	03/03/16 10:48
85	1LM.LM33651	WG559291-15 CCV (1.0ug/L)	1	1	STD72685	03/03/16 11:07
86	1LM.LM33652	WG559292-11 MRL (0.2ug/L)	1	1	STD72685	03/03/16 11:25
87	1LM.LM33653	WG559291-16 CCB	1	1		03/03/16 11:44

Comments

Seq.	Rerun	Dil.	Reason	Analytes
12	X			
	WG559015-05 incorrect vial location.			
50				
	DNR. Incorrect information on the supplied Chain of Custody.			
51				
	DNR. Incorrect information on the supplied Chain of Custody.			
94	X	1	Analyzed too dilute	
	L16021255-04			
53	X	200	Over Calibration Range	Perchlorate
	L16021255-05			
54	X	1	Analyzed too dilute	
	L16021255-06			
63	X	1000	Over Calibration Range	
	L16021255-12 100X			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030316_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: wg559619, wg559621

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 MS/MSD STD: STD72685

Comments: L16021329 were diluted based on historical data.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM33654	WG559618-01 CCB	1	1		03/03/16 17:43
2	1LM.LM33655	WG559618-02 CCV (1.0ug/L)	1	1	STD72683	03/03/16 18:02
3	1LM.LM33656	WG559621-07 MRL (2.0ug/KG)	7	1	STD72683	03/03/16 18:21
4	1LM.LM33657	WG559621-01 MCT (2.0ug/KG)	7	1	STD72686	03/03/16 18:40
5	1LM.LM33658	WG559621-02 BLK	7	1		03/03/16 18:59
6	1LM.LM33659	WG559621-02 LCS (2.0ug/KG)	7	1	STD72686	03/03/16 19:18
7	1LM.LM33660	L16030134-01	7	1		03/03/16 19:37
8	1LM.LM33661	L16030134-02	7	1		03/03/16 19:56
9	1LM.LM33662	L16030134-03	7	1		03/03/16 20:15
10	1LM.LM33663	L16030134-04	7	1		03/03/16 20:34
11	1LM.LM33664	L16030134-05	7	1		03/03/16 20:53
12	1LM.LM33665	WG559618-03 CCV (1.0ug/L)	1	1	STD72683	03/03/16 21:11
13	1LM.LM33666	WG559621-08 MRL (2.0ug/KG)	7	1	STD72683	03/03/16 21:30
14	1LM.LM33667	WG559618-04 CCB	1	1		03/03/16 21:49
63	1LM.LM33668	L16030134-06 REF	7	1		03/03/16 22:08
16	1LM.LM33669	WG559621-05 MS	7	1	STD72686	03/03/16 22:27
17	1LM.LM33670	WG559621-06 MSD	7	1	STD72686	03/03/16 22:46
18	1LM.LM33671	WG559618-05 CCV (1.0ug/L)	1	1	STD72683	03/03/16 23:05
19	1LM.LM33672	WG559621-09 MRL (2.0ug/KG)	7	1	STD72683	03/03/16 23:24
20	1LM.LM33673	WG559618-06 CCB	1	1		03/03/16 23:43
21	1LM.LM33674	WG559619-07 MRL (0.2ug/L)	1	1	STD72685	03/04/16 00:02
22	1LM.LM33675	WG559619-01 MCT (0.2ug/L)	1	1	STD72685	03/04/16 00:21
23	1LM.LM33676	WG559619-02 BLANK	1	1		03/04/16 00:40
24	1LM.LM33677	WG559619-03 LCS (0.2ug/L)	1	1	STD72685	03/04/16 00:59
25	1LM.LM33678	L16021329-01 100X	1	100		03/04/16 01:18
26	1LM.LM33679	L16021329-02 100X	1	100		03/04/16 01:37
64	1LM.LM33680	L16021329-03 REF 20X	1	20		03/04/16 01:56
65	1LM.LM33681	L16021329-04 MS 20X	1	20	STD72685	03/04/16 02:14
66	1LM.LM33682	L16021329-05 MSD 20X	1	20	STD72685	03/04/16 02:33
30	1LM.LM33683	L16021329-06	1	1		03/04/16 02:52
31	1LM.LM33684	L16021329-07 20X	1	20		03/04/16 03:11
32	1LM.LM33685	WG559618-07 CCV (1.0ug/L)	1	1	STD72685	03/04/16 03:30
33	1LM.LM33686	WG559619-08 MRL (0.2ug/L)	1	1	STD72685	03/04/16 03:49

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030316_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: wg559619, wg559621

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM33687	WG559618-08 CCB	1	1		03/04/16 04:08
35	1LM.LM33688	L16021329-08	1	1		03/04/16 04:27
36	1LM.LM33689	L16021329-09	1	1		03/04/16 04:46
37	1LM.LM33690	L16021329-10	1	1		03/04/16 05:05
38	1LM.LM33691	L16021329-11	1	1		03/04/16 05:24
39	1LM.LM33692	WG559618-09 CCV (1.0ug/L)	1	1	STD72685	03/04/16 05:43
40	1LM.LM33693	WG559619-09 MRL (0.2ug/L)	1	1	STD72685	03/04/16 06:02
41	1LM.LM33694	WG559618-10 CCB	1	1		03/04/16 06:21
67	1LM.LM33695	L16021329-03 REF 100X	1	100		03/04/16 08:44
68	1LM.LM33696	L16021329-04 MS 100X	1	100	STD72685	03/04/16 09:03
69	1LM.LM33697	L16021329-05 MSD 100X	1	100	STD72685	03/04/16 09:22
45	1LM.LM33698	L16021329-07	1	1		03/04/16 09:41
46	1LM.LM33699	WG559618-11 CCV (1.0ug/L)	1	1	STD72685	03/04/16 10:00
47	1LM.LM33700	WG559619-10 MRL (0.2ug/L)	1	1	STD72685	03/04/16 10:19
48	1LM.LM33701	WG559618-12 CCB	1	1		03/04/16 10:38
49	1LM.LM33702	WG559621-10 MRL (2.0ug/KG)	7	1	STD72683	03/04/16 10:57
50	1LM.LM33703	L16030134-05 (100X)	7	100		03/04/16 11:16
70	1LM.LM33704	L16030134-06 REF (100X)	7	100		03/04/16 11:35
52	1LM.LM33705	WG559621-05 MS (100X)	7	100	STD72686	03/04/16 11:53
53	1LM.LM33706	WG559621-06 MSD (100X)	7	100	STD72686	03/04/16 12:12
54	1LM.LM33707	WG559618-13 CCV (1.0ug/L)	1	1	STD72683	03/04/16 12:31
55	1LM.LM33708	WG559621-11 MRL (2.0ug/KG)	7	1	STD72683	03/04/16 12:50
56	1LM.LM33709	WG559618-14 CCB	1	1		03/04/16 13:09

Comments

Seq.	Rerun	Dil.	Reason	Analytes
11	X	100	Over Calibration Range	
	L16030134-05			
63	X	100	Over Calibration Range	
	L16030134-06			
16	X	100	Over Calibration Range	
	WG559621-05			
17	X	100	Over Calibration Range	
	WG559621-06			
64	X	100	Over Calibration Range	
	L16021329-03			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030316_WTD.TXT

Analyst1: WTD Analyst2: ADC

Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: wg559619, wg559621

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Comments

Seq.	Rerun	Dil.	Reason	Analytes
65	X	100	Over Calibration Range	
	L16021329-04			
66	X	100	Over Calibration Range	
	L16021329-05			
31	X	1	Analyzed too dilute	
	L16021329-07			
68				
	L16021329-04 MS has low recovery due to high levels in parent sample requiring dilution. Spiked concentration was diluted out.			
69				
	L16021329-05 MSD has low recovery due to high levels in parent sample requiring dilution. Spiked concentration was diluted out.			
52				
	WG559621-05 MS has low recovery due to high levels in parent sample requiring dilution. Spiked concentration was diluted out.			
53				
	WG559621-06 MSD has low recovery due to high levels in parent sample requiring dilution. Spiked concentration was diluted out.			

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Microbac Laboratories Inc.

Data Checklist

Date: 02-MAR-2016
Analyst: WTD
Analyst: ADC
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 73617
Analytical Workgroups: L16021255,L16021328,030008,021262,021060

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	WTD
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MES

Primary Reviewer: 03-MAR-2016

Secondary Reviewer: 04-MAR-2016

CHECKLIST1 - Modified 03/05/2008

Generated: MAR-04-2016 13:53:03

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAR-2016
Analyst: WTD
Analyst: ADC
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 73637
Analytical Workgroups: L16021329, L16030134

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	WTD
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MES

Primary Reviewer: 04-MAR-2016

Secondary Reviewer: 07-MAR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-07-2016 11:38:45

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG559621

Login Number: L16030134

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18DPT06(5-5.5)020316	01	03/02/16					03/03/2016	1.4	28		03/03/16	.1	28	
18DPT06(5-5.5)020316FD	02	03/02/16					03/03/2016	1.4	28		03/03/16	.1	28	
18DPT06(15-15.5)020316	03	03/02/16					03/03/2016	1.3	28		03/03/16	.1	28	
18DPT06(20-20.5)020316	04	03/02/16					03/03/2016	1.3	28		03/03/16	.1	28	
18DPT06(27.5-28)020316	05	03/02/16					03/03/2016	1.2	28		03/04/16	.7	28	
18DPT06(38.5-39)020316	06	03/02/16					03/03/2016	1.1	28		03/04/16	.7	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4657689
Report generated 03/07/2016 11:29

METHOD BLANK SUMMARY

Login Number: L16030134
Blank File ID: 1LM.LM33658
Prep Date: 03/03/16 17:43
Analyzed Date: 03/03/16 18:59
Analyst: WTD

Work Group: WG559621
Blank Sample ID: WG559621-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG559621-07	1LM.LM33656	03/03/16 18:21	01
MCT	WG559621-01	1LM.LM33657	03/03/16 18:40	01
LCS	WG559621-03	1LM.LM33659	03/03/16 19:18	01
18DPT06(5-5.5)020316	L16030134-01	1LM.LM33660	03/03/16 19:37	01
18DPT06(5-5.5)020316FD	L16030134-02	1LM.LM33661	03/03/16 19:56	01
18DPT06(15-15.5)020316	L16030134-03	1LM.LM33662	03/03/16 20:15	01
18DPT06(20-20.5)020316	L16030134-04	1LM.LM33663	03/03/16 20:34	01
QCMRL	WG559621-08	1LM.LM33666	03/03/16 21:30	01
QCMRL	WG559621-09	1LM.LM33672	03/03/16 23:24	01
QCMRL	WG559621-10	1LM.LM33702	03/04/16 10:57	01
18DPT06(27.5-28)020316	L16030134-05	1LM.LM33703	03/04/16 11:16	DL01
18DPT06(38.5-39)020316	L16030134-06	1LM.LM33704	03/04/16 11:35	DL01
QCMRL	WG559621-09	1LM.LM33708	03/04/16 12:50	02

Report Name: BLANK_SUMMARY
PDF File ID: 4657690
Report generated 03/07/2016 11:29

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16030134 Prep Date: 03/03/16 17:43 Sample ID: WG559621-02
Instrument ID: LCMS1 Run Date: 03/03/16 18:59 Prep Method: 6850
File ID: 1LM.LM33658 Analyst: WTD Method: 6850
Workgroup (AAB#): WG559621 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.999	4.00	0.999	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4657691
07-MAR-2016 11:29

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030134 Run Date: 03/03/2016 Sample ID: WG559621-03
Instrument ID: LCMS1 Run Time: 19:18 Prep Method: 6850
File ID: 1LM.LM33659 Analyst: WTD Method: 6850
Workgroup (AAB#): WG559621 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD72685 Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	2.00	1.95	97.5	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4657692
Report generated: 03/07/2016 11:29

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16030134 Cal ID: LCMS1 - Worknum: WG559621
Instrument ID: LCMS1 Contract #: Method: 6850
Parent ID: WG559621-04 File ID: 1LM.LM33704 Dil: 100 Matrix: SOLID
Sample ID: WG559621-05 MS File ID: 1LM.LM33705 Dil: 100 Units: ug/kg
Sample ID: WG559621-06 MSD File ID: 1LM.LM33706 Dil: 100 Percent Solid: 80.0

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Perchlorate	2690	2.49	2900	8150	2.48	2670	-1060	8.23	80 - 120	15	*

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4657693
Report generated 03/07/2016 11:29

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16030134
Analytical Method: 6850
ICAL Workgroup: WG559340

Instrument ID: LCMS1
Initial Calibration Date: 02-MAR-16 10:46
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.808	3.97	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4657695
Report generated 03/07/2016 11:30

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16030134

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 02-MAR-16 10:46

Column ID: F

Analyte	WG559340-02			WG559340-03			WG559340-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	18400.0000	1.879	0.200	37000.0000	1.850	0.500	89000.0000	1.810

INT_CAL - Modified 03/06/2008
PDF File ID: 4657695
Report generated 03/07/2016 11:30

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16030134

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 02-MAR-16 10:46

Column ID: F

Analyte	WG559340-05			WG559340-06			WG559340-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	183000.000	1.829	2.00	363000.000	1.777	5.00	871000.000	1.779

INT_CAL - Modified 03/06/2008
PDF File ID: 4657695
Report generated 03/07/2016 11:30

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16030134

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 02-MAR-16 10:46

Column ID: F

Analyte	WG559340-08		
	CONC	RESP	RF
Perchlorate	10.0	1650000.00	1.729

INT_CAL - Modified 03/06/2008

PDF File ID: 4657695

Report generated 03/07/2016 11:30

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16030134 Run Date: 03/02/2016 Sample ID: WG559340-09
Instrument ID: LCMS1 Run Time: 11:05 Method: 6850
File ID: 1LM.LM33575 Analyst: WTD QC Key: DOD4
ICal Workgroup: WG559340 Cal ID: LCMS1 - 02-MAR-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.83	3.00	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4657696
Report generated 03/07/2016 11:30

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030134
Run Date: 03/03/2016
Sample ID: WG559618-01
Instrument ID: LCMS1
Run Time: 17:43
Method: 6850
File ID: 1LM.LM33654
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG559621
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4657698
Report generated 03/07/2016 11:30

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030134
Run Date: 03/03/2016
Sample ID: WG559618-04
Instrument ID: LCMS1
Run Time: 21:49
Method: 6850
File ID: 1LM.LM33667
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG559621
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4657698
Report generated 03/07/2016 11:30

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030134
Run Date: 03/03/2016
Sample ID: WG559618-06
Instrument ID: LCMS1
Run Time: 23:43
Method: 6850
File ID: 1LM.LM33673
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG559621
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4657698
Report generated 03/07/2016 11:30

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030134
Run Date: 03/04/2016
Sample ID: WG559618-12
Instrument ID: LCMS1
Run Time: 10:38
Method: 6850
File ID: 1LM.LM33701
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG559621
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4657698
Report generated 03/07/2016 11:30

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030134
Run Date: 03/04/2016
Sample ID: WG559618-14
Instrument ID: LCMS1
Run Time: 13:09
Method: 6850
File ID: 1LM.LM33709
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG559621
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4657698
Report generated 03/07/2016 11:30

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030134 Run Date: 03/03/2016 Sample ID: WG559618-02
Instrument ID: LCMS1 Run Time: 18:02 Method: 6850
File ID: 1LM.LM33655 Analyst: WTD QC Key: DOD4
Workgroup (AAB#): WG559621 Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.975	ug/kg	1.73	2.50	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4657697
Report generated 03/07/2016 11:30

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030134
Run Date: 03/03/2016
Sample ID: WG559618-03
Instrument ID: LCMS1
Run Time: 21:11
Method: 6850
File ID: 1LM.LM33665
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG559621
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.970	ug/kg	1.72	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4657697
Report generated 03/07/2016 11:30

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030134
Run Date: 03/03/2016
Sample ID: WG559618-05
Instrument ID: LCMS1
Run Time: 23:05
Method: 6850
File ID: 1LM.LM33671
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG559621
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.981	ug/kg	1.74	1.90	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4657697
Report generated 03/07/2016 11:30

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030134 Run Date: 03/04/2016 Sample ID: WG559618-07
Instrument ID: LCMS1 Run Time: 03:30 Method: 6850
File ID: 1LM.LM33685 Analyst: WTD QC Key: DOD4
Workgroup (AAB#): WG559621 Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.971	ug/kg	1.72	2.90	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4657697
Report generated 03/07/2016 11:30

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030134 Run Date: 03/04/2016 Sample ID: WG559618-11
Instrument ID: LCMS1 Run Time: 10:00 Method: 6850
File ID: 1LM.LM33699 Analyst: WTD QC Key: DOD4
Workgroup (AAB#): WG559621 Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.975	ug/kg	1.73	2.50	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4657697
Report generated 03/07/2016 11:30

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030134
Run Date: 03/04/2016
Sample ID: WG559618-13
Instrument ID: LCMS1
Run Time: 12:31
Method: 6850
File ID: 1LM.LM33707
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG559621
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.962	ug/kg	1.71	3.80	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4657697
Report generated 03/07/2016 11:30

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030134 Run Date: 03/03/2016 Sample ID: WG559621-07
Instrument ID: LCMS1 Run Time: 18:21 Prep Method: 6850
File ID: 1LM.LM33656 Analyst: WTD Method: 6850
Workgroup (AAB#): WG559621 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.90	95.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4657694
Report generated 03/07/2016 11:30

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030134 Run Date: 03/03/2016 Sample ID: WG559621-08
Instrument ID: LCMS1 Run Time: 21:30 Prep Method: 6850
File ID: 1LM.LM33666 Analyst: WTD Method: 6850
Workgroup (AAB#): WG559621 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.93	96.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4657694
Report generated 03/07/2016 11:30

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030134 Run Date: 03/03/2016 Sample ID: WG559621-09
Instrument ID: LCMS1 Run Time: 23:24 Prep Method: 6850
File ID: 1LM.LM33672 Analyst: WTD Method: 6850
Workgroup (AAB#): WG559621 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.95	97.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4657694
Report generated 03/07/2016 11:30

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030134 Run Date: 03/04/2016 Sample ID: WG559621-10

Instrument ID: LCMS1 Run Time: 10:57 Prep Method: 6850

File ID: 1LM.LM33702 Analyst: WTD Method: 6850

Workgroup (AAB#): WG559621 Matrix: Soil Units: ug/kg

Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.91	95.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4657694
Report generated 03/07/2016 11:30

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030134 Run Date: 03/04/2016 Sample ID: WG559621-09

Instrument ID: LCMS1 Run Time: 12:50 Prep Method: 6850

File ID: 1LM.LM33708 Analyst: WTD Method: 6850

Workgroup (AAB#): WG559621 Matrix: Soil Units: ug/kg

Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.00	100	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4657694
Report generated 03/07/2016 11:30

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16030134
Instrument ID: LCMS1
Workgroup (AAB#): WG559621

ICAL CCV Number: WG559340-05
CAL ID: LCMS1-02-MAR-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1
WG559340	NA	NA	494000
Upper Limit	NA	NA	741000
Lower Limit	NA	NA	247000
L16030134-01	1.00	01	539000
L16030134-02	1.00	01	536000
L16030134-03	1.00	01	539000
L16030134-04	1.00	01	523000
L16030134-05	100	DL01	509000
L16030134-06	100	DL01	507000
WG559621-02	1.00	01	513000
WG559621-03	1.00	01	517000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4657699
Report generated 03/07/2016 11:30

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**	6850	**Samplenum:**	L16030134-01
Instrument:	LCMS1	**Prep Date:**	03/03/2016 17:43	**File ID:**	1LM.LM33660
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559621	**Analysis Date:**	03/03/2016 19:37	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	5330	1490	3.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**	6850	**Samplenum:**	L16030134-02
Instrument:	LCMS1	**Prep Date:**	03/03/2016 17:43	**File ID:**	1LM.LM33661
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559621	**Analysis Date:**	03/03/2016 19:56	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	3690	2060	1.79	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**	6850	**Samplenum:**	L16030134-03
Instrument:	LCMS1	**Prep Date:**	03/03/2016 17:43	**File ID:**	1LM.LM33662
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559621	**Analysis Date:**	03/03/2016 20:15	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	5880	2950	1.99	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**	6850	**Samplenum:**	L16030134-04
Instrument:	LCMS1	**Prep Date:**	03/03/2016 17:43	**File ID:**	1LM.LM33663
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559621	**Analysis Date:**	03/03/2016 20:34	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	54900	17200	3.19	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**	6850	**Samplenum:**	L16030134-05
Instrument:	LCMS1	**Prep Date:**	03/03/2016 17:43	**File ID:**	1LM.LM33703
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559621	**Analysis Date:**	03/04/2016 11:16	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	232000	73300	3.17	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**	6850	**Samplenum:**	L16030134-06
Instrument:	LCMS1	**Prep Date:**	03/03/2016 17:43	**File ID:**	1LM.LM33704
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559621	**Analysis Date:**	03/04/2016 11:35	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	387000	124000	3.12	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**		**Samplenum:**	WG559340-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33568
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559621	**Analysis Date:**	03/02/2016 08:53	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	18400	5910	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**		**Samplenum:**	WG559340-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33569
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559621	**Analysis Date:**	03/02/2016 09:12	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37000	11900	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**		**Samplenum:**	WG559340-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33570
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559621	**Analysis Date:**	03/02/2016 09:31	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	89000	30400	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**		**Samplenum:**	WG559340-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33571
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559621	**Analysis Date:**	03/02/2016 09:50	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	183000	56800	3.22	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**		**Samplenum:**	WG559340-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33572
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559621	**Analysis Date:**	03/02/2016 10:09	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	363000	117000	3.10	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**		**Samplenum:**	WG559340-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33573
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559621	**Analysis Date:**	03/02/2016 10:28	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	871000	282000	3.09	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**		**Samplenum:**	WG559340-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33574
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559621	**Analysis Date:**	03/02/2016 10:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1650000	530000	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**		**Samplenum:**	WG559340-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33575
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559621	**Analysis Date:**	03/02/2016 11:05	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	190000	62200	3.05	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**		**Samplenum:**	WG559618-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33654
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559621	**Analysis Date:**	03/03/2016 17:43	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**		**Samplenum:**	WG559618-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33655
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559621	**Analysis Date:**	03/03/2016 18:02	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	182000	59800	3.04	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**		**Samplenum:**	WG559618-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33665
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559621	**Analysis Date:**	03/03/2016 21:11	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	188000	60900	3.09	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**		**Samplenum:**	WG559618-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33667
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559621	**Analysis Date:**	03/03/2016 21:49	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**		**Samplenum:**	WG559618-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33671
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559621	**Analysis Date:**	03/03/2016 23:05	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	188000	60400	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**		**Samplenum:**	WG559618-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33673
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559621	**Analysis Date:**	03/03/2016 23:43	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	700	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**		**Samplenum:**	WG559618-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33685
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559621	**Analysis Date:**	03/04/2016 03:30	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	193000	60200	3.21	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**		**Samplenum:**	WG559618-11
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33699
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559621	**Analysis Date:**	03/04/2016 10:00	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	191000	60200	3.17	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**		**Samplenum:**	WG559618-12
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33701
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559621	**Analysis Date:**	03/04/2016 10:38	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**		**Samplenum:**	WG559618-13
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33707
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559621	**Analysis Date:**	03/04/2016 12:31	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	181000	59200	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**		**Samplenum:**	WG559618-14
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33709
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559621	**Analysis Date:**	03/04/2016 13:09	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**	6850	**Samplenum:**	WG559621-01
Instrument:	LCMS1	**Prep Date:**	03/03/2016 17:43	**File ID:**	1LM.LM33657
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559621	**Analysis Date:**	03/03/2016 18:40	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	39800	11800	3.37	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**	6850	**Samplenum:**	WG559621-02
Instrument:	LCMS1	**Prep Date:**	03/03/2016 17:43	**File ID:**	1LM.LM33658
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559621	**Analysis Date:**	03/03/2016 18:59	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	544	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**	6850	**Samplenum:**	WG559621-03
Instrument:	LCMS1	**Prep Date:**	03/03/2016 17:43	**File ID:**	1LM.LM33659
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559621	**Analysis Date:**	03/03/2016 19:18	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37400	12800	2.92	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**	6850	**Samplenum:**	WG559621-05
Instrument:	LCMS1	**Prep Date:**	03/03/2016 17:43	**File ID:**	1LM.LM33705
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559621	**Analysis Date:**	03/04/2016 11:53	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	408000	128000	3.19	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**	6850	**Samplenum:**	WG559621-06
Instrument:	LCMS1	**Prep Date:**	03/03/2016 17:43	**File ID:**	1LM.LM33706
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559621	**Analysis Date:**	03/04/2016 12:12	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	375000	119000	3.15	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**	6850	**Samplenum:**	WG559621-07
Instrument:	LCMS1	**Prep Date:**	03/03/2016 17:43	**File ID:**	1LM.LM33656
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559621	**Analysis Date:**	03/03/2016 18:21	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37300	13500	2.76	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**	6850	**Samplenum:**	WG559621-08
Instrument:	LCMS1	**Prep Date:**	03/03/2016 17:43	**File ID:**	1LM.LM33666
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559621	**Analysis Date:**	03/03/2016 21:30	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	39000	13600	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**	6850	**Samplenum:**	WG559621-09
Instrument:	LCMS1	**Prep Date:**	03/03/2016 17:43	**File ID:**	1LM.LM33672
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559621	**Analysis Date:**	03/03/2016 23:24	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	39400	12900	3.05	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**	6850	**Samplenum:**	WG559621-09
Instrument:	LCMS1	**Prep Date:**	03/03/2016 17:43	**File ID:**	1LM.LM33708
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559621	**Analysis Date:**	03/04/2016 12:50	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	40200	14100	2.85	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030134	**Prep Method:**	6850	**Samplenum:**	WG559621-10
Instrument:	LCMS1	**Prep Date:**	03/03/2016 17:43	**File ID:**	1LM.LM33702
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559621	**Analysis Date:**	03/04/2016 10:57	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37300	12500	2.98	2.3	3.8	

2.2.1.3 Sample Data

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Data File	LM33660.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/3/2016 7:37:15 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030134-01	**Injection Vial**	7.00
Data File	LM33660.wiff	**Injection Volume**	10.00
Acquisition Date	3/3/2016 7:37:15 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	L16030134-01	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.390e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.330e+03	9.94	N/A	0.0157
Perchlorate conf	1.490e+03	9.91	N/A	0.0107

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

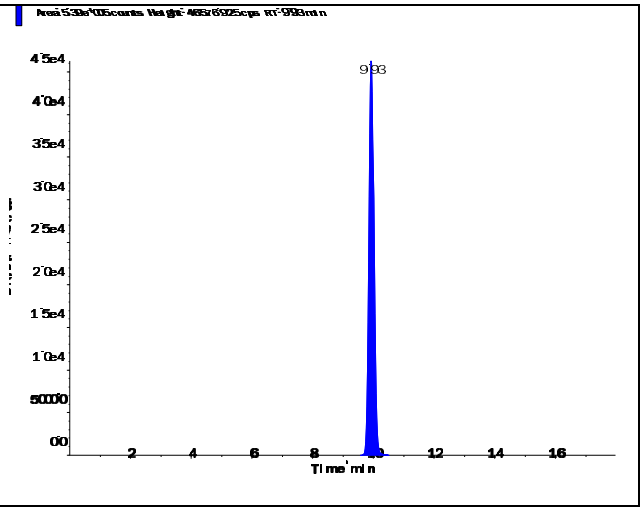

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.0157 ng/ml
Area Ratio:	0.01
Sample Type:	(Unknown)

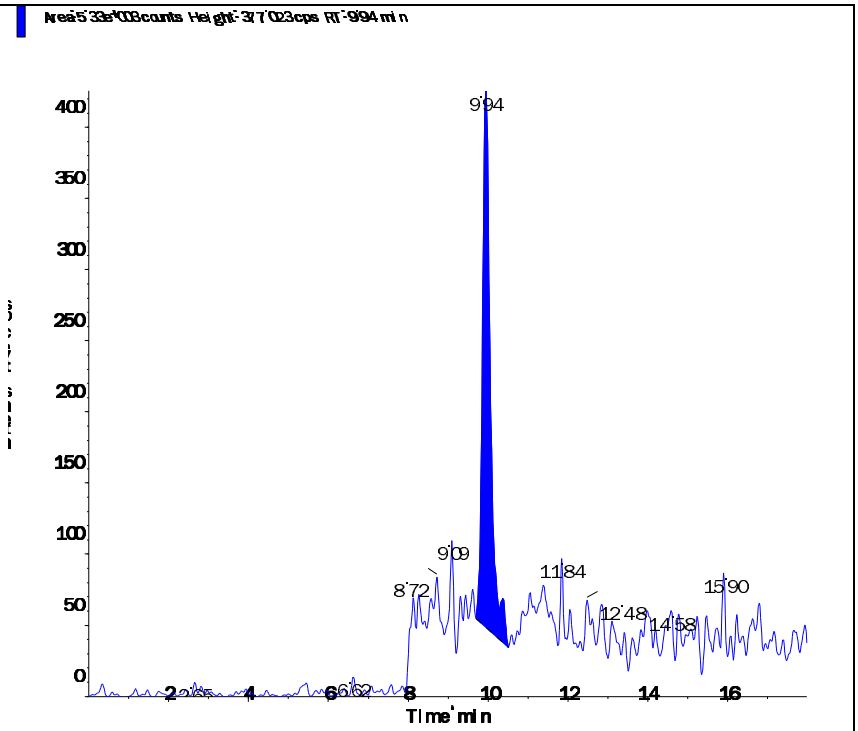

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.92) min
Calculated conc:	0.0107 ng/ml
Area Ratio:	0.003
Sample Type:	(Unknown)

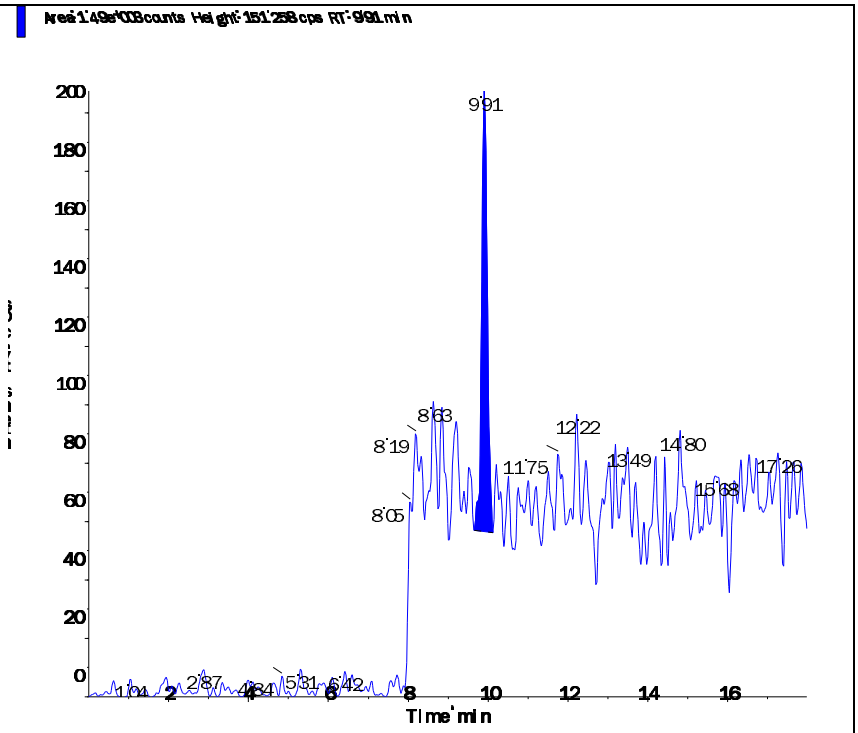

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Data File	LM33661.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/3/2016 7:56:11 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030134-02	**Injection Vial**	8.00
Data File	LM33661.wiff	**Injection Volume**	10.00
Acquisition Date	3/3/2016 7:56:11 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	L16030134-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.360e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.690e+03	9.96	N/A	0.0072
Perchlorate conf	2.060e+03	9.92	N/A	0.0202

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

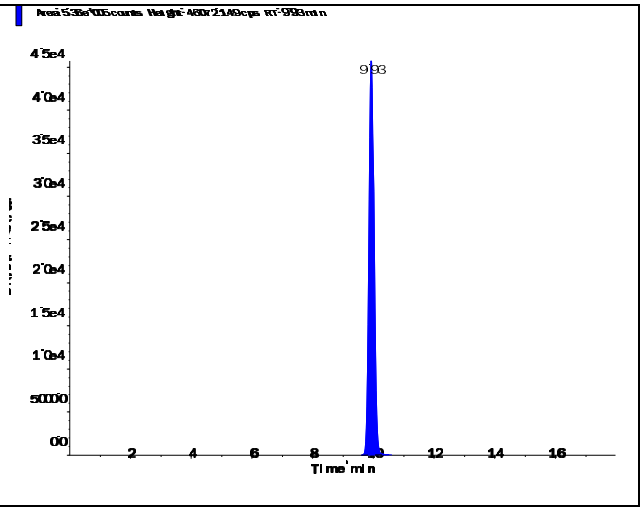

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.96 (9.94) min Calculated conc: 0.0072 ng/ml Area Ratio: 0.007 Sample Type: (Unknown)	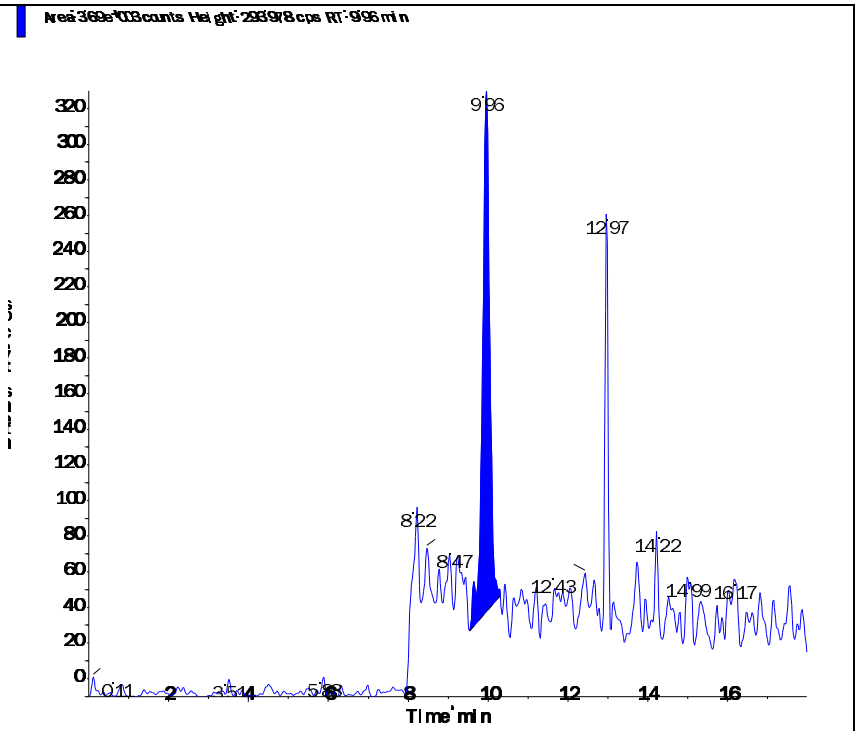
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.92 (9.92) min Calculated conc: 0.0202 ng/ml Area Ratio: 0.004 Sample Type: (Unknown)	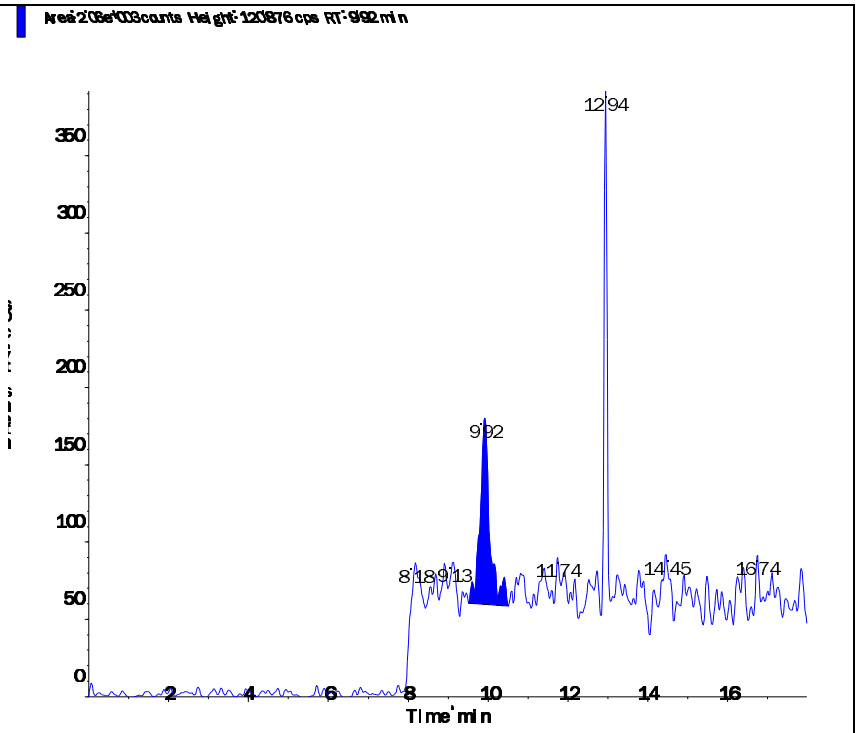

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Data File	LM33662.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/3/2016 8:15:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030134-03	**Injection Vial**	9.00
Data File	LM33662.wiff	**Injection Volume**	10.00
Acquisition Date	3/3/2016 8:15:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	L16030134-03	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.390e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.880e+03	9.94	N/A	0.0187
Perchlorate conf	2.950e+03	9.93	N/A	0.0348

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

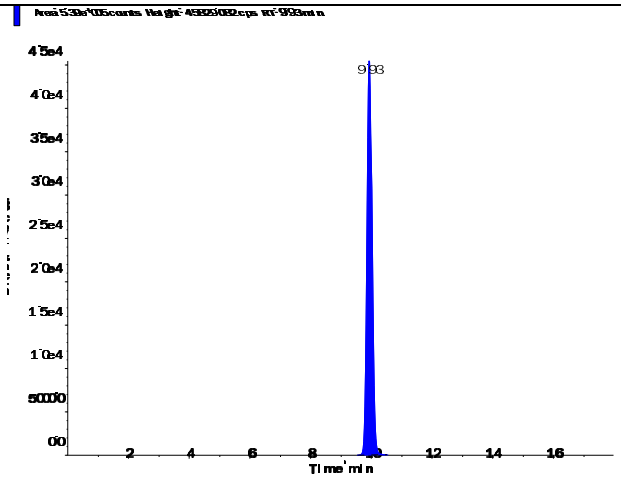

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.0187 ng/ml
Area Ratio:	0.011
Sample Type:	(Unknown)

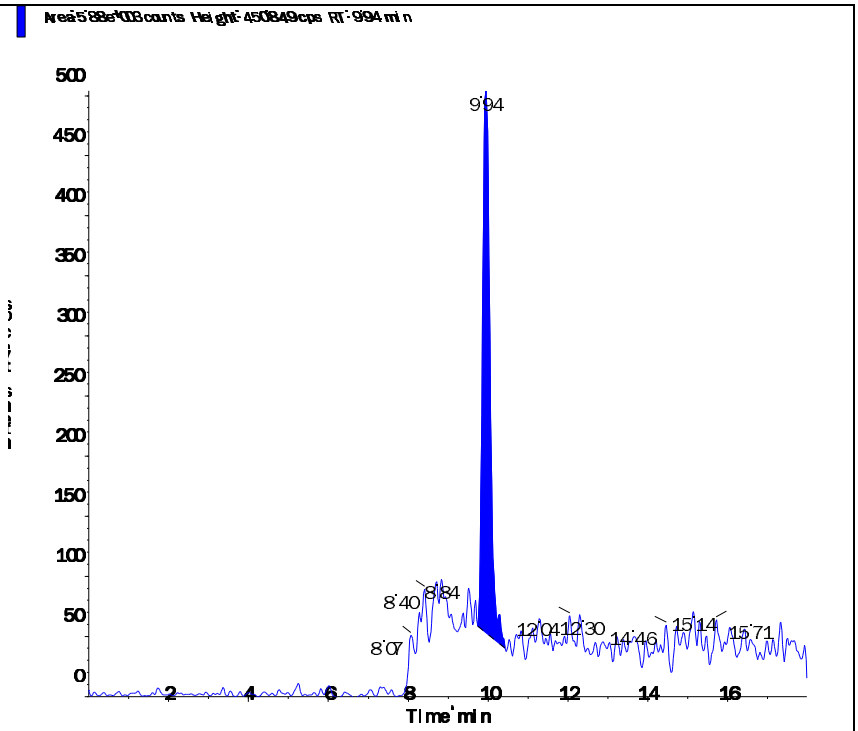

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	0.0348 ng/ml
Area Ratio:	0.005
Sample Type:	(Unknown)

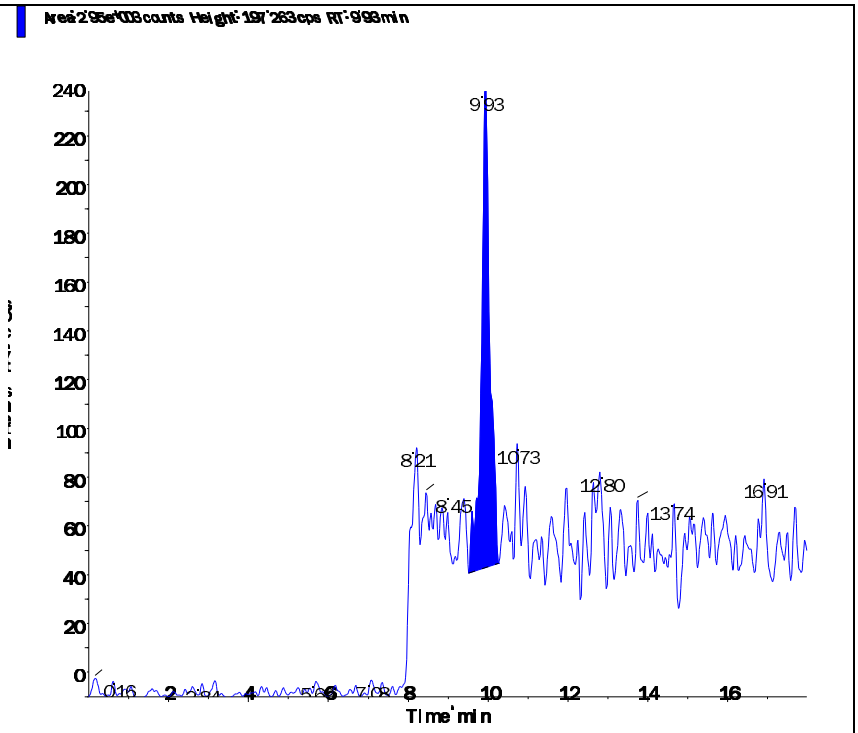

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Data File	LM33663.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/3/2016 8:34:08 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030134-04	**Injection Vial**	10.00
Data File	LM33663.wiff	**Injection Volume**	10.00
Acquisition Date	3/3/2016 8:34:08 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	L16030134-04	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.230e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.490e+04	9.93	N/A	0.287
Perchlorate conf	1.720e+04	9.93	N/A	0.278

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

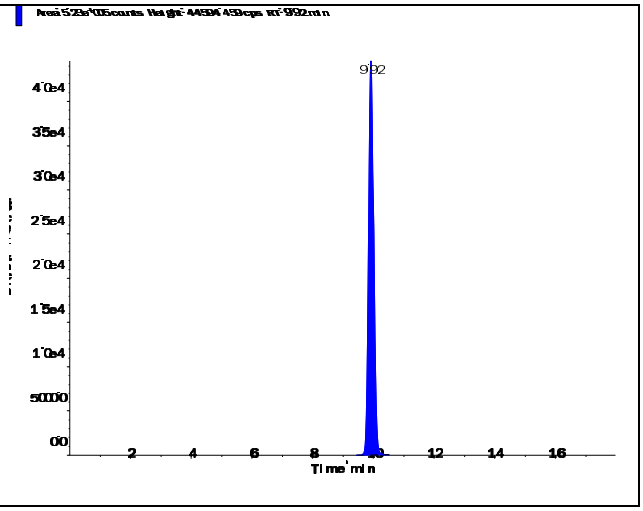

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	0.287 ng/ml
Area Ratio:	0.105
Sample Type:	(Unknown)

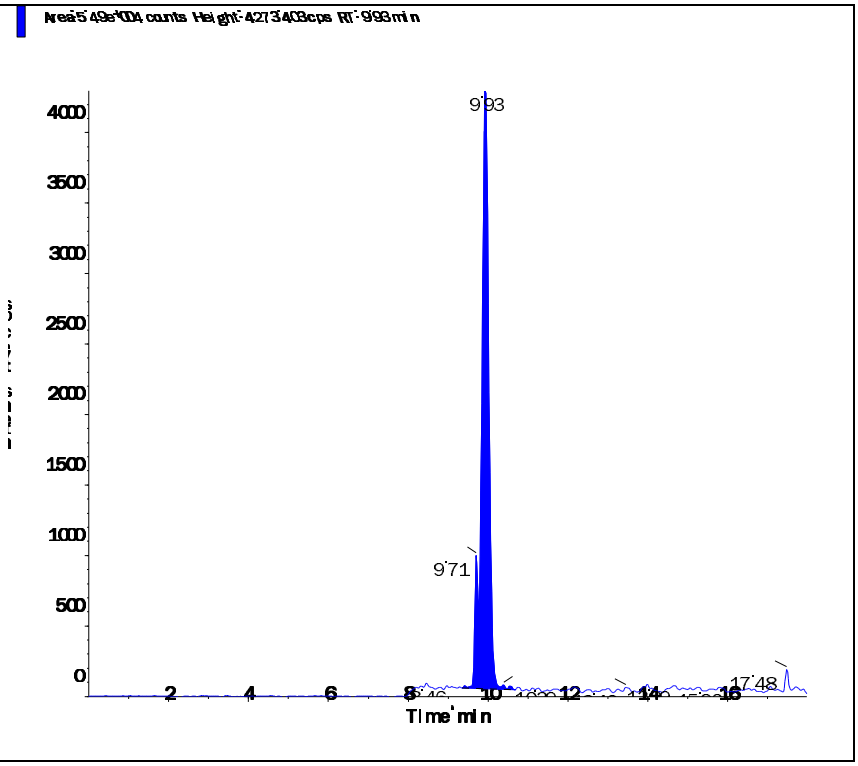

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	0.278 ng/ml
Area Ratio:	0.033
Sample Type:	(Unknown)

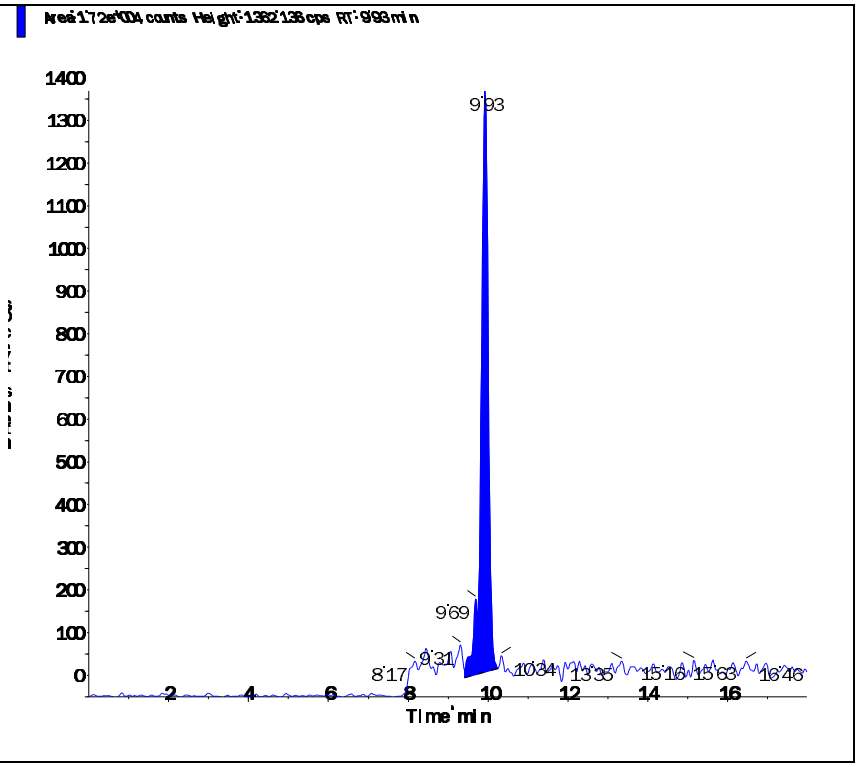

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Data File	LM33703.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/4/2016 11:16:02 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030134-05 (100X)	**Injection Vial**	11.00
Data File	LM33703.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 11:16:02 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	L16030134-05	**Dilution Factor**	1.00
Sample Comment	7,100.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.090e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.320e+05	9.96	N/A	1.29
Perchlorate conf	7.330e+04	9.94	N/A	1.27

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

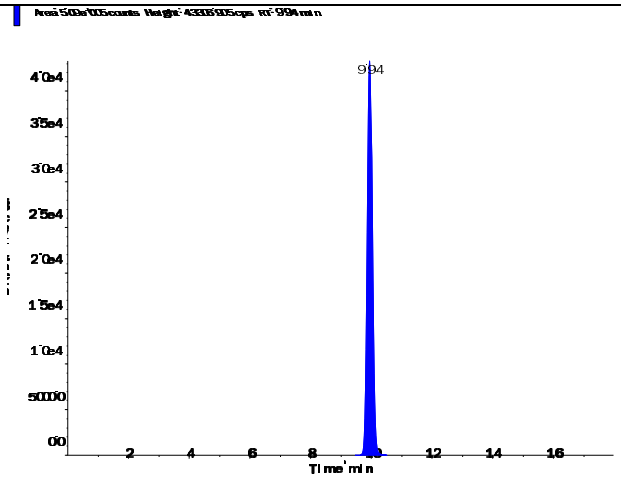

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.96 (9.94) min Calculated conc: 1.29 ng/ml Area Ratio: 0.455 Sample Type: (Unknown)	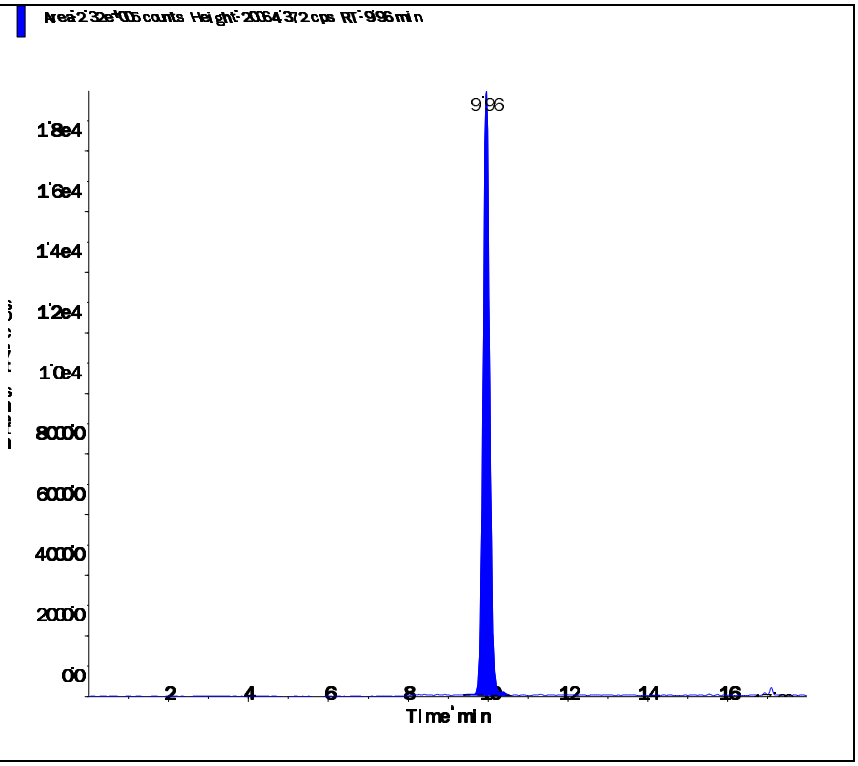
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.94 (9.92) min Calculated conc: 1.27 ng/ml Area Ratio: 0.144 Sample Type: (Unknown)	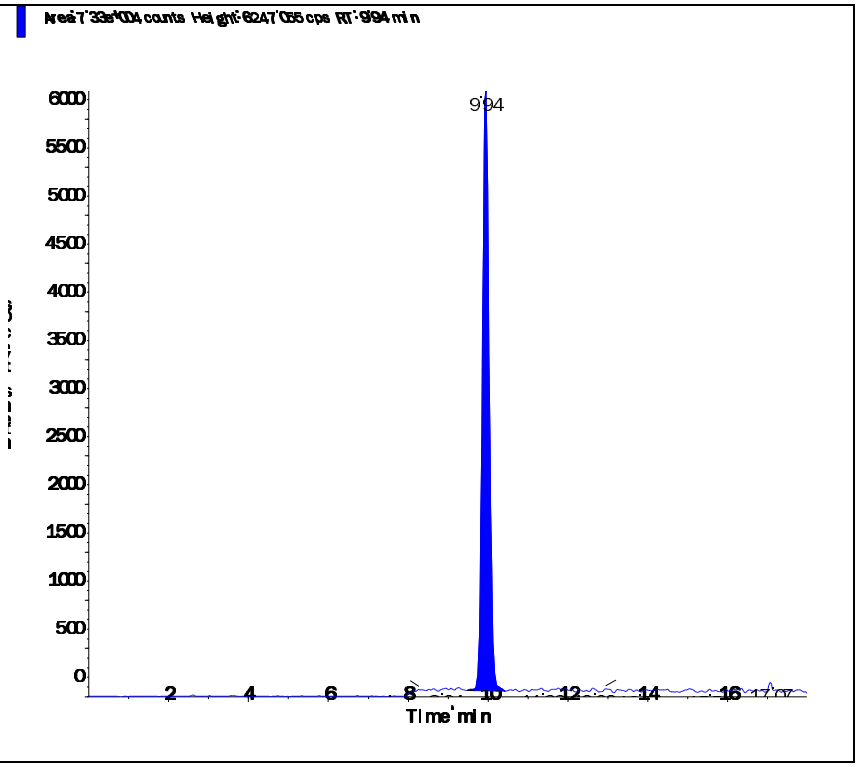

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Data File	LM33704.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/4/2016 11:35:01 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030134-06 REF (100X)	**Injection Vial**	12.00
Data File	LM33704.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 11:35:01 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	L16030134-06	**Dilution Factor**	1.00
Sample Comment	7,100.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.070e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.870e+05	9.95	N/A	2.17
Perchlorate conf	1.240e+05	9.94	N/A	2.15

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

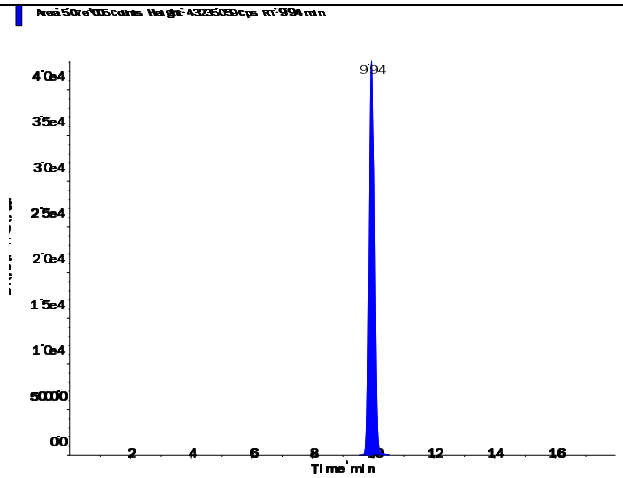

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	2.17 ng/ml
Area Ratio:	0.763
Sample Type:	(Unknown)

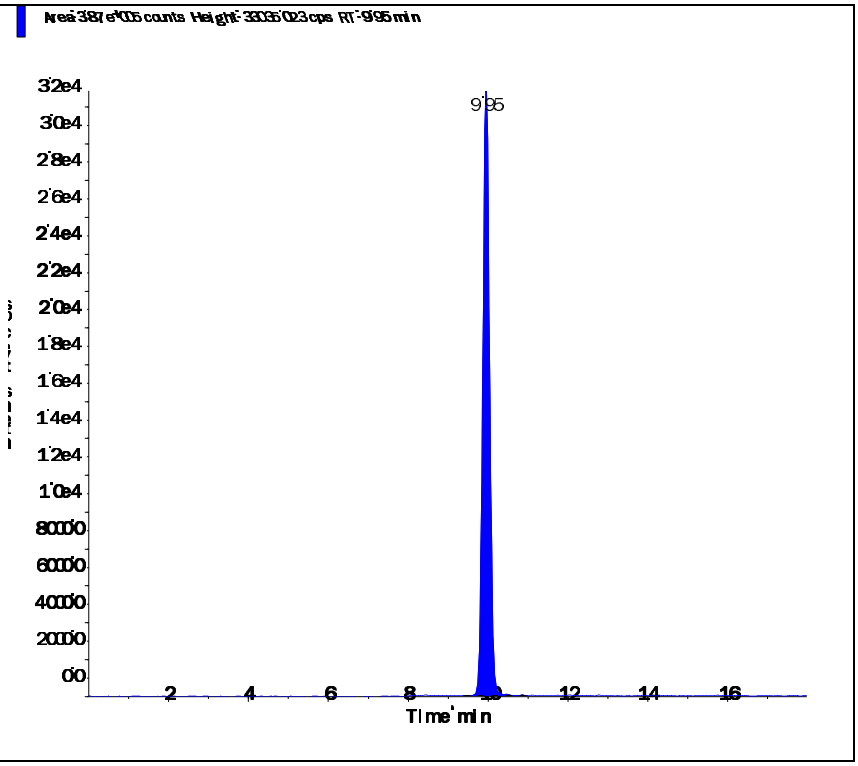

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	2.15 ng/ml
Area Ratio:	0.244
Sample Type:	(Unknown)

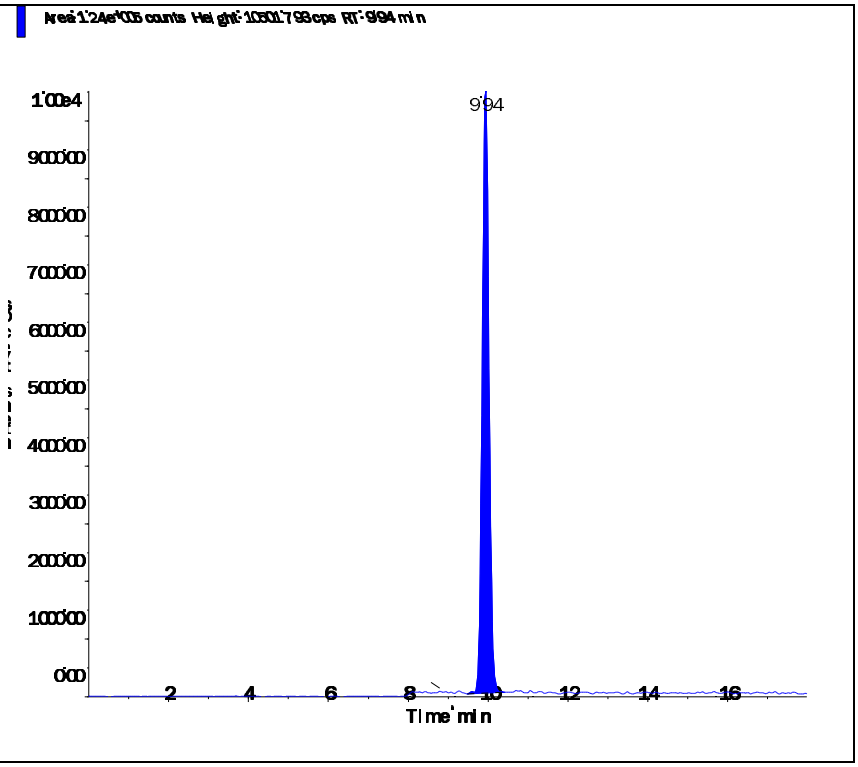

2.2.1.4 Standards Data

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Data File	LM33567.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-01 CCB	**Injection Vial**	51.00
Data File	LM33567.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559340-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.710e+05	9.99	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.99(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

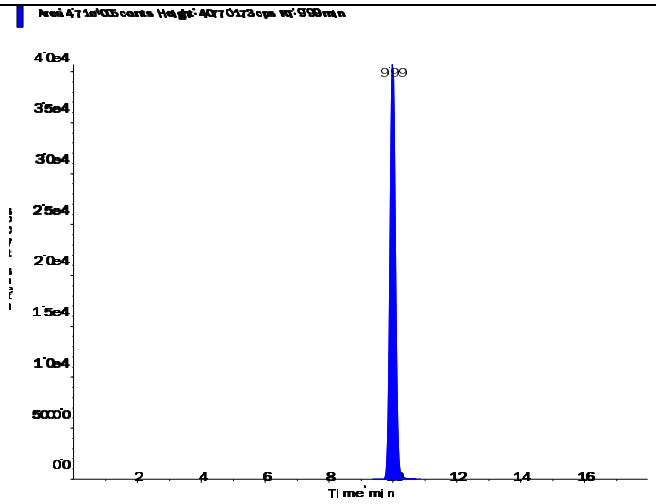

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

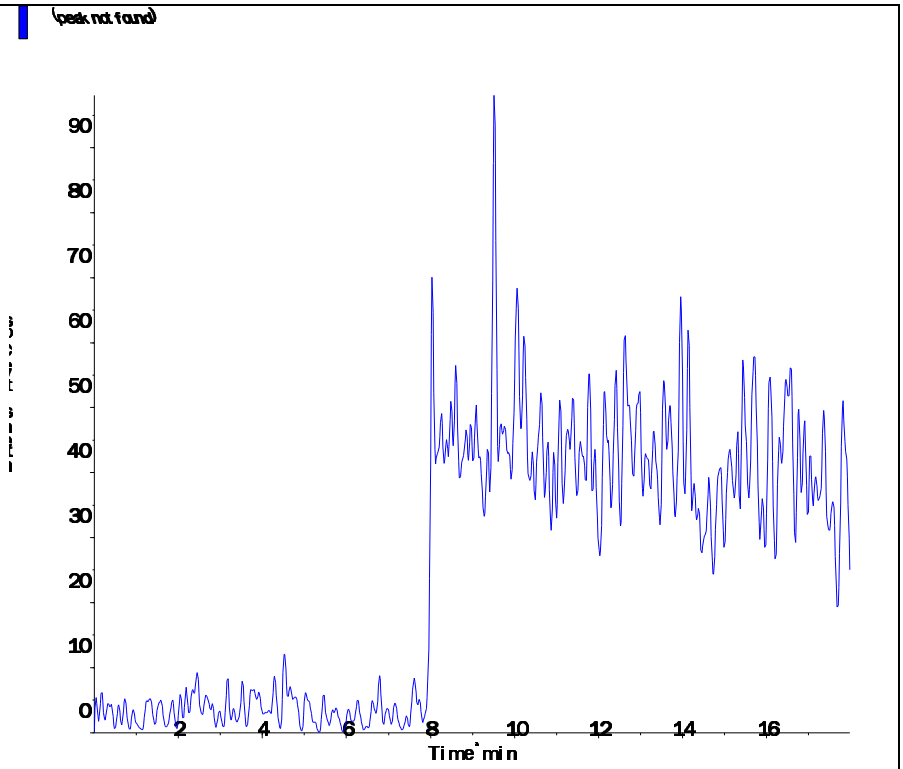

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

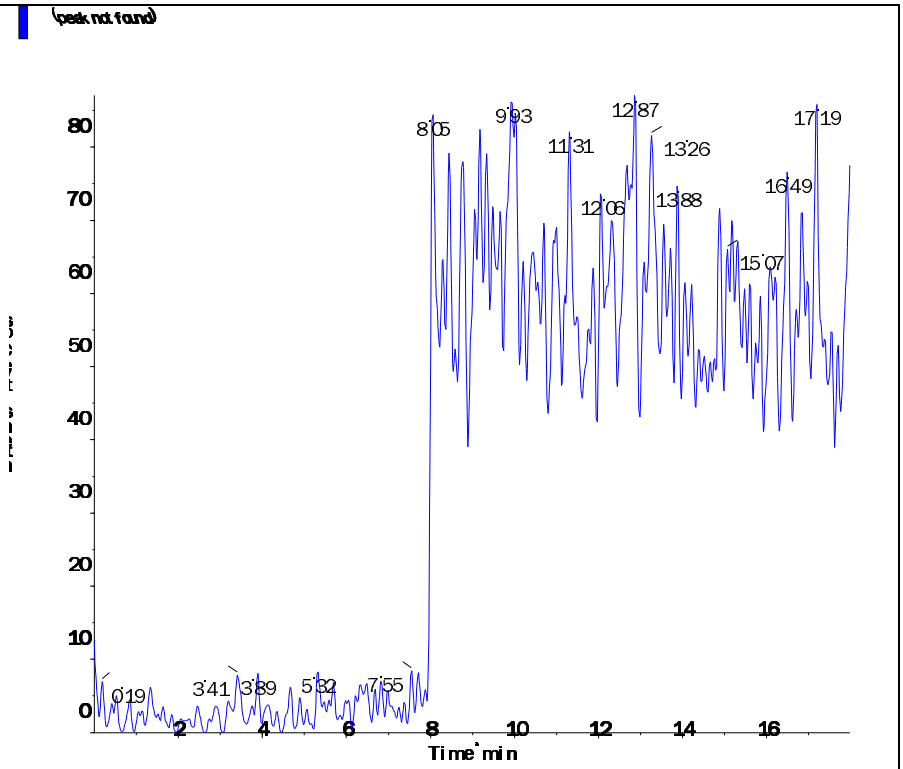

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Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM33567.wiff	**Result Table**	030216_WTD.rdb
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.75 x + 0.00437 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	95.0	N/A	N/A
0.20	1	0.20	99.5	N/A	N/A
0.50	1	0.50	101.0	N/A	N/A
1.00	1	1.03	103.4	N/A	N/A
2.00	1	2.02	101.0	N/A	N/A
5.00	1	5.07	101.5	N/A	N/A
10.00	1	9.87	98.7	N/A	N/A

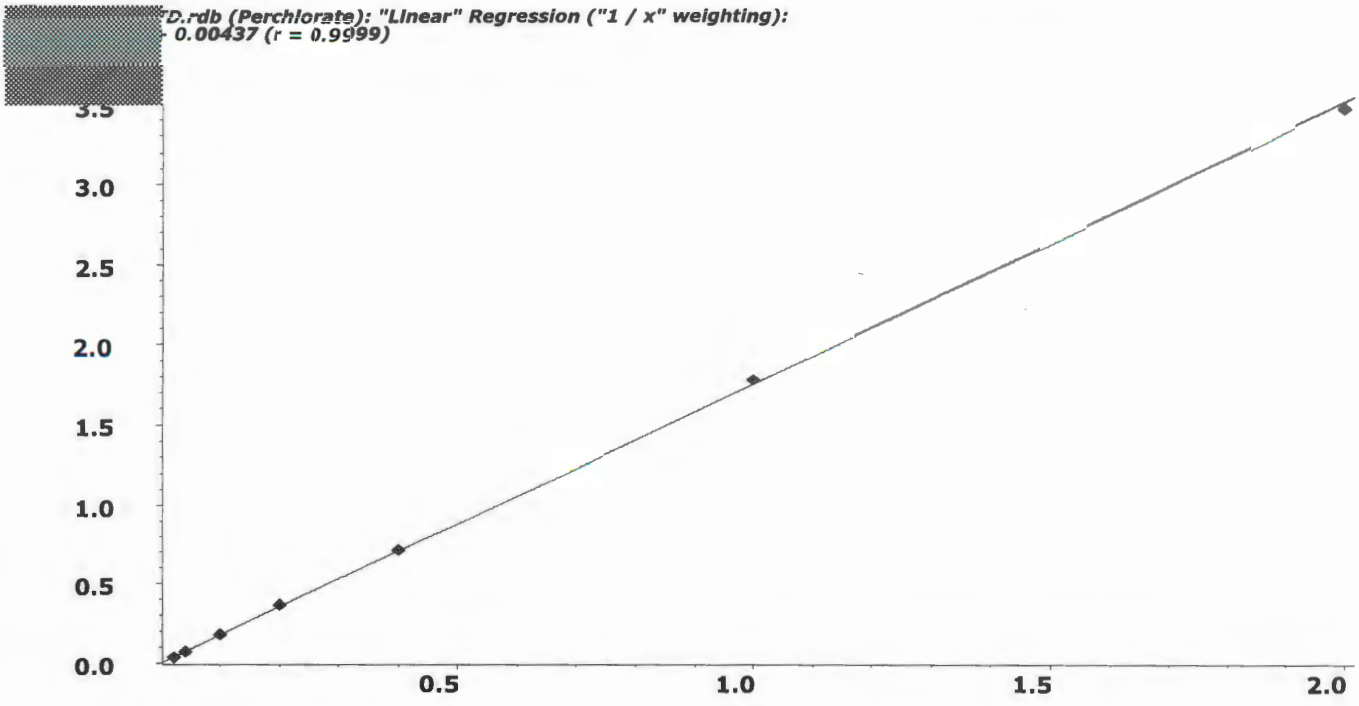

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Printed: 3/3/2016 1:59 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM33567.wiff	**Result Table**	030216_WTD.rdb
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.562 x + 0.00157 (r = 0.9998)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	93.4	N/A	N/A
0.20	1	0.20	98.6	N/A	N/A
0.50	1	0.54	107.2	N/A	N/A
1.00	1	1.00	99.5	N/A	N/A
2.00	1	2.01	100.7	N/A	N/A
5.00	1	5.11	102.2	N/A	N/A
10.00	1	9.85	98.5	N/A	N/A

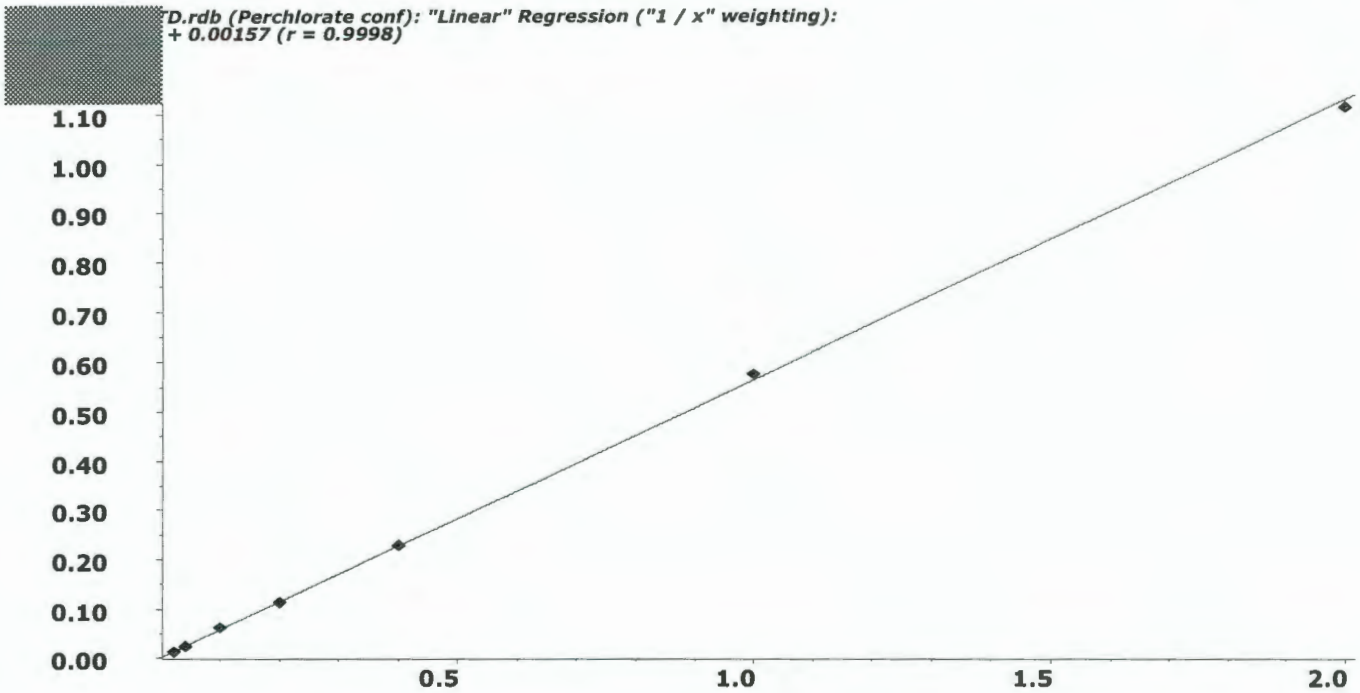

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Data File	LM33568.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/2/2016 8:53:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-02 STD (0.1 ug/L)	**Injection Vial**	52.00
Data File	LM33568.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 8:53:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559340-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.900e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.840e+04	9.97	0.10	0.095
Perchlorate conf	5.910e+03	9.94	0.10	0.0934

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

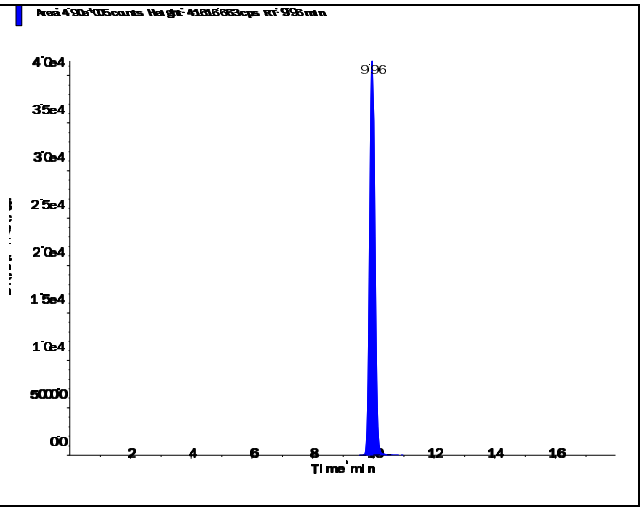

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.97 (9.94) min
Calculated conc:	0.095 ng/ml
Area Ratio:	0.038
Sample Type:	(Standard)

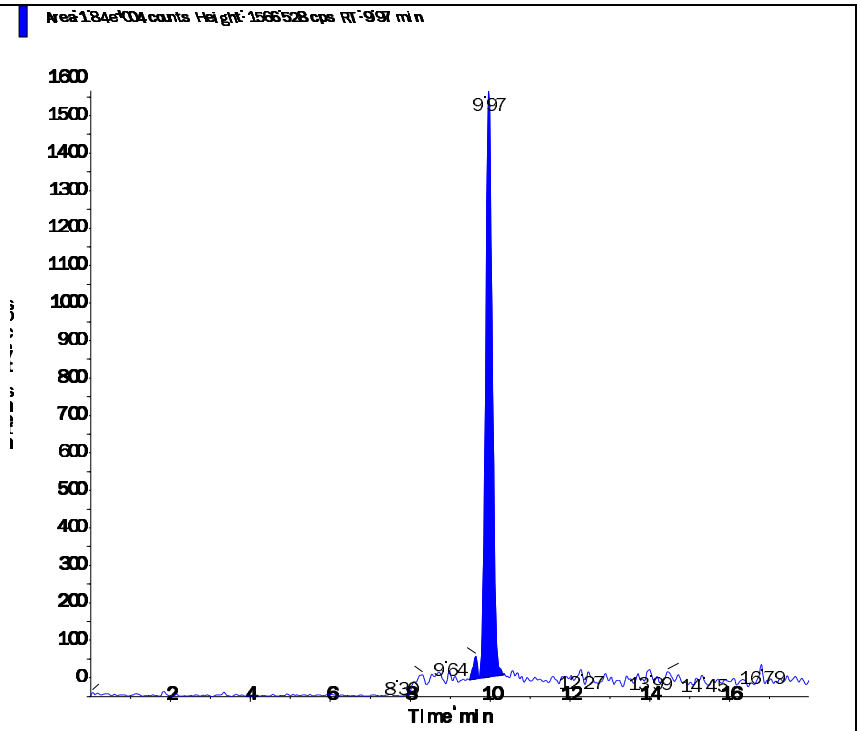

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.0934 ng/ml
Area Ratio:	0.012
Sample Type:	(Standard)

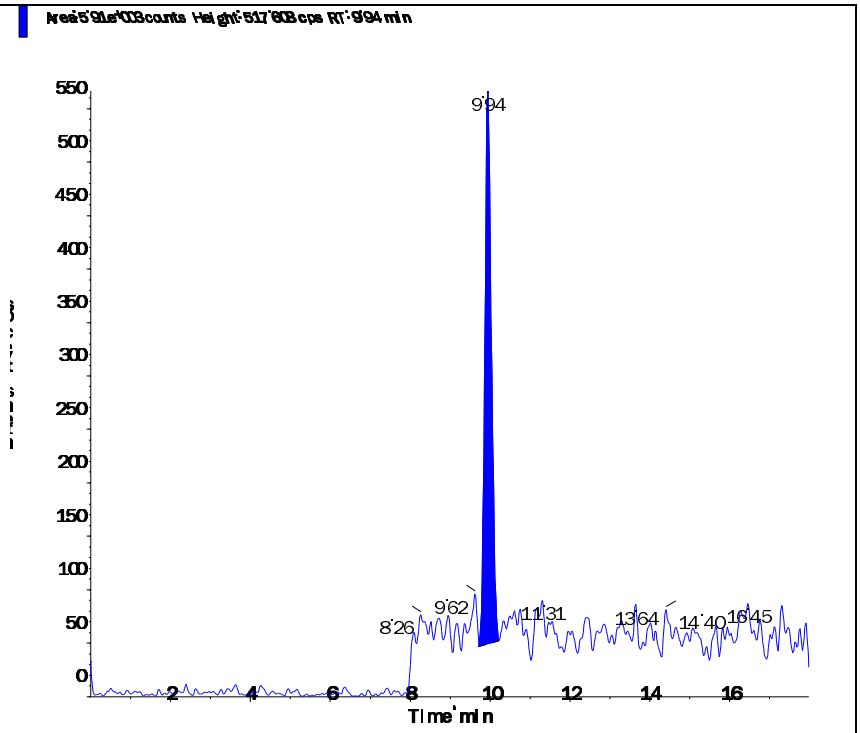

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Data File	LM33569.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/2/2016 9:12:17 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-03 STD (0.2 ug/L)	**Injection Vial**	53.00
Data File	LM33569.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 9:12:17 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559340-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.990e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.700e+04	9.99	0.20	0.199
Perchlorate conf	1.190e+04	9.98	0.20	0.197

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

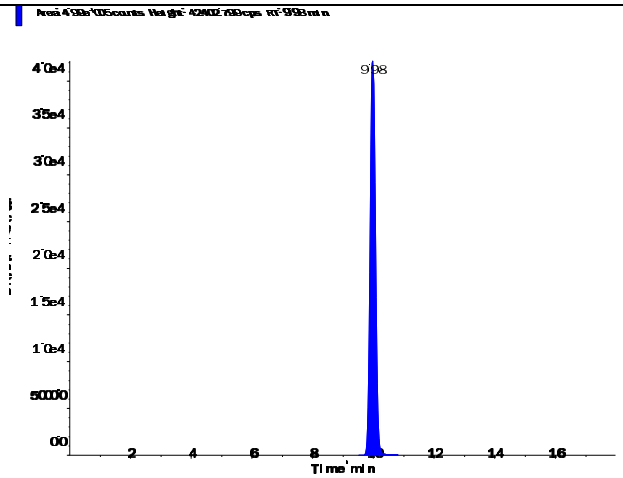

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.99 (9.94) min Calculated conc: 0.199 ng/ml Area Ratio: 0.074 Sample Type: (Standard)	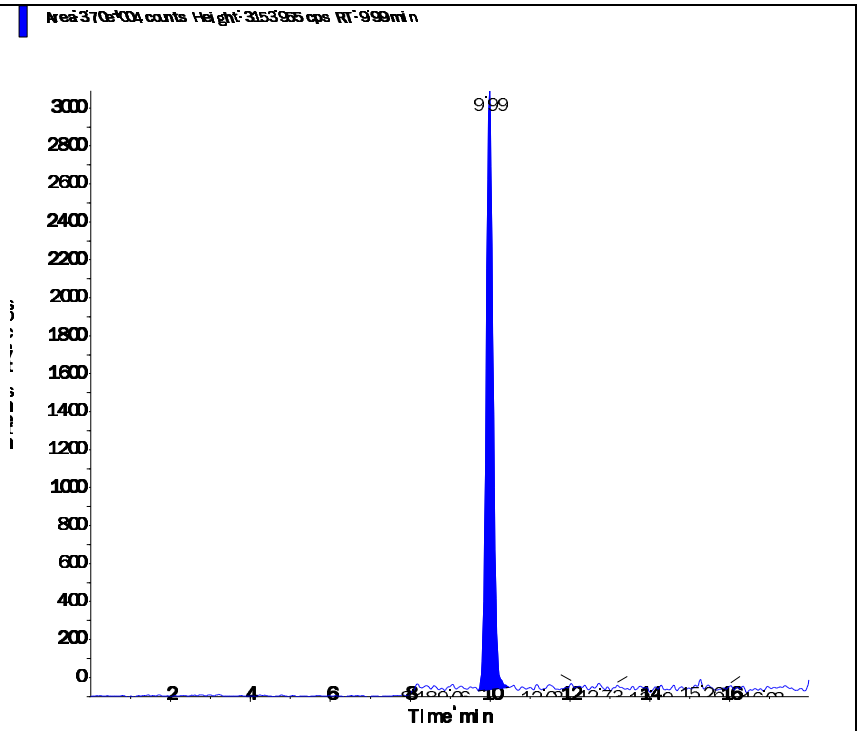
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.98 (9.92) min Calculated conc: 0.197 ng/ml Area Ratio: 0.024 Sample Type: (Standard)	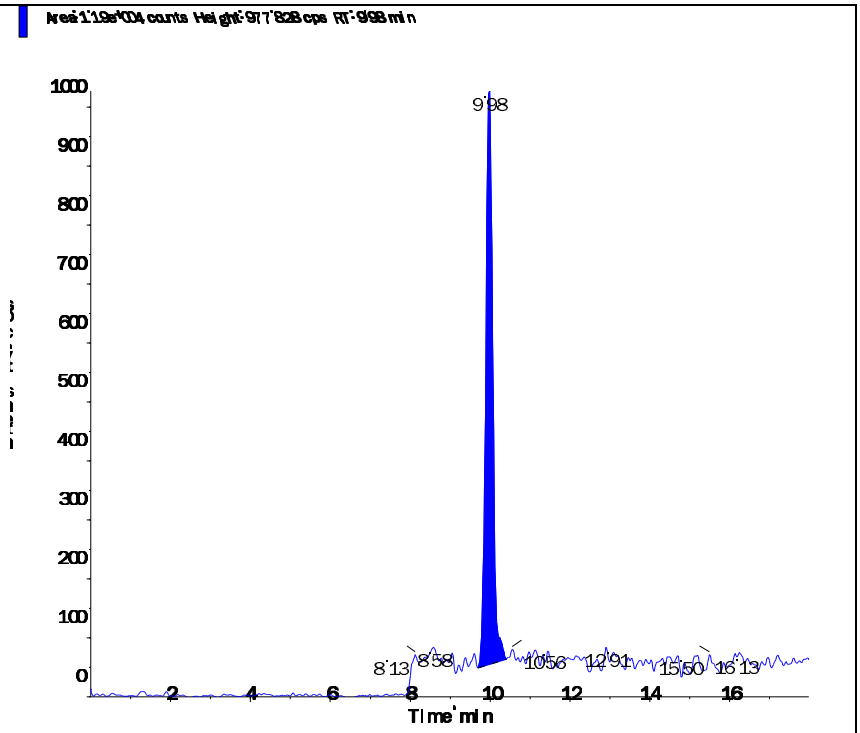

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Data File	LM33570.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/2/2016 9:31:14 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-04 STD (0.5 ug/L)	**Injection Vial**	54.00
Data File	LM33570.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 9:31:14 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559340-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.920e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.900e+04	10.00	0.50	0.505
Perchlorate conf	3.040e+04	9.98	0.50	0.536

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

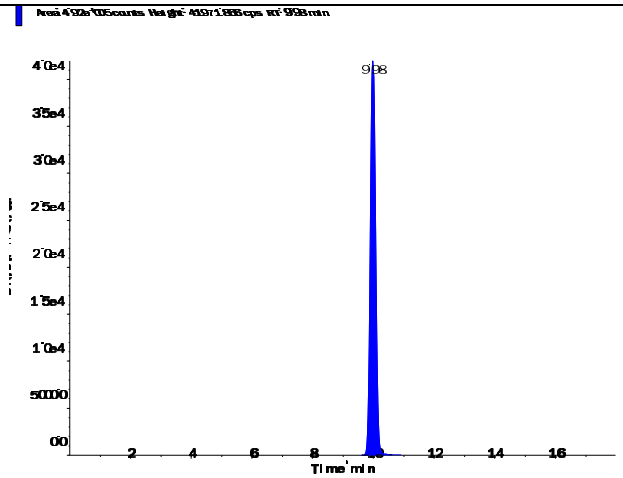

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.00 (9.94) min
Calculated conc:	0.505 ng/ml
Area Ratio:	0.181
Sample Type:	(Standard)

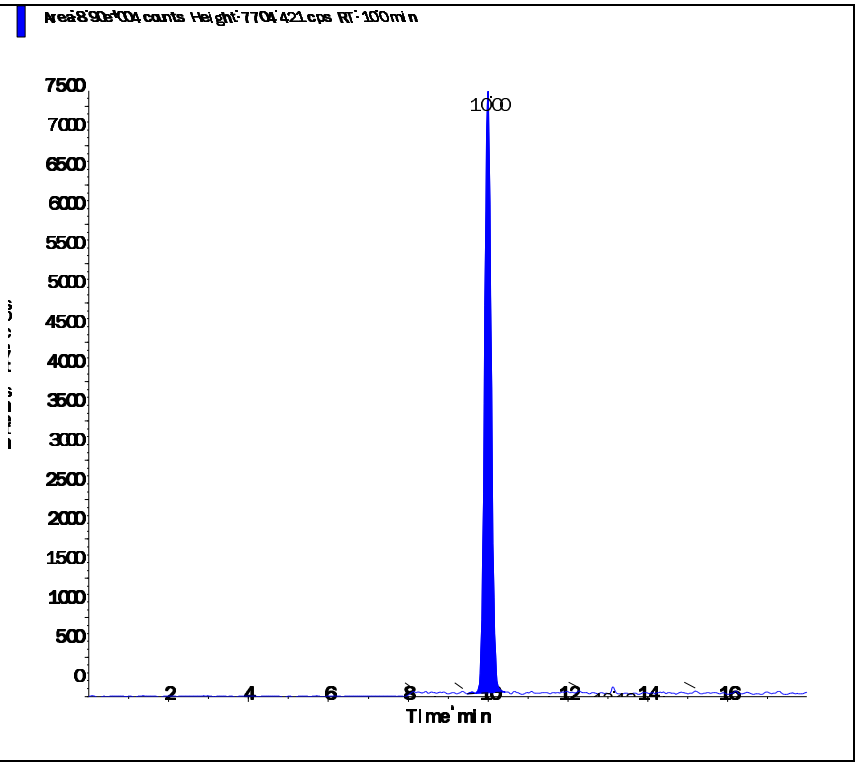

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.98 (9.92) min
Calculated conc:	0.536 ng/ml
Area Ratio:	0.062
Sample Type:	(Standard)

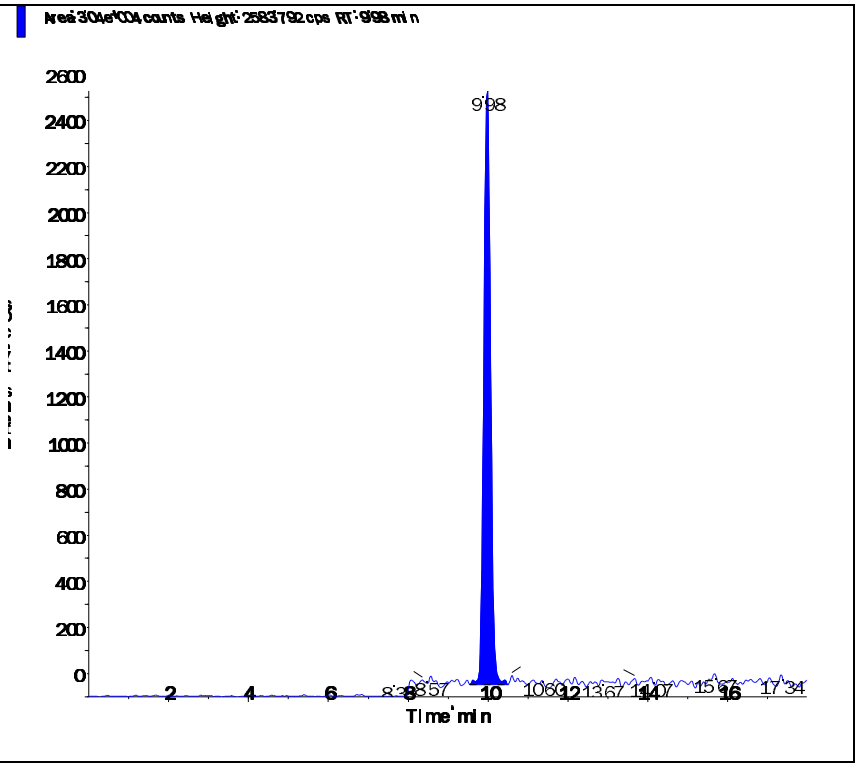

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Data File	LM33571.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/2/2016 9:50:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-05 STD (1.0 ug/L)	**Injection Vial**	55.00
Data File	LM33571.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 9:50:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559340-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.010e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.830e+05	9.99	1.00	1.03
Perchlorate conf	5.680e+04	9.98	1.00	0.995

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

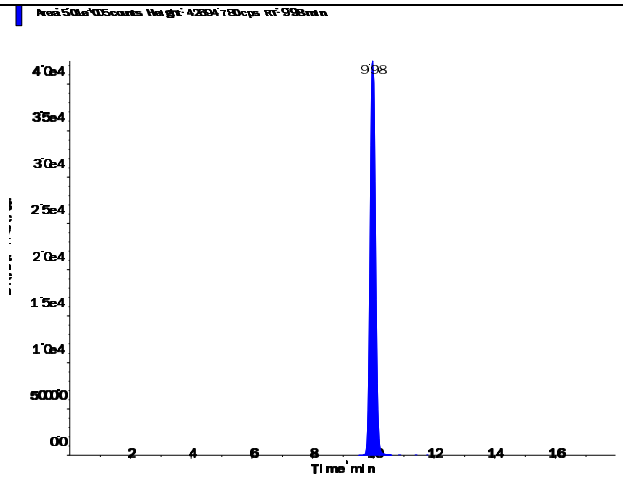

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.99 (9.94) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.366
Sample Type:	(Standard)

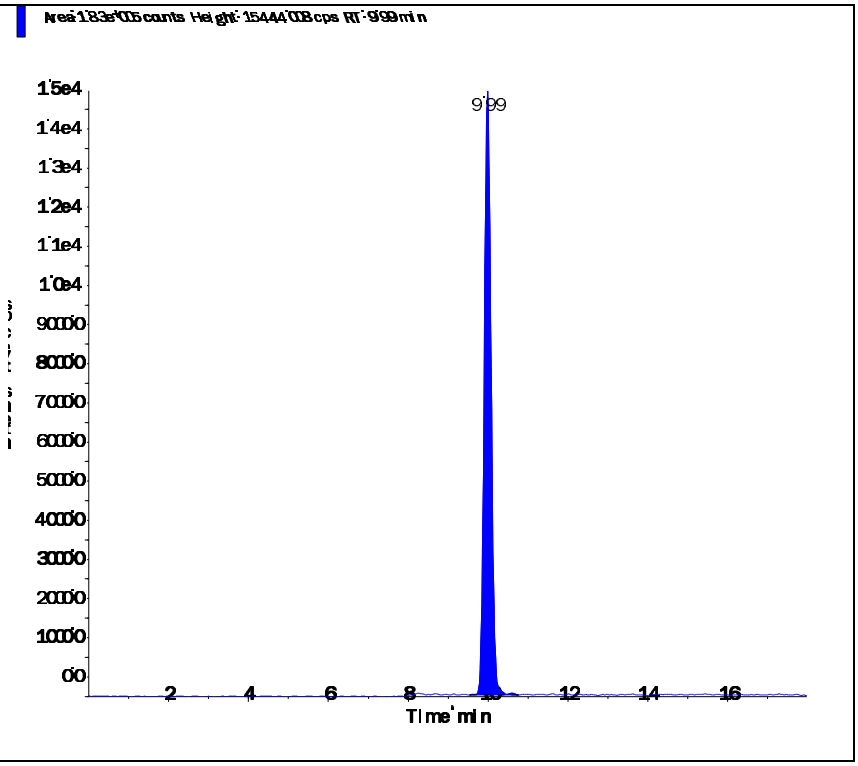

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.98 (9.92) min
Calculated conc:	0.995 ng/ml
Area Ratio:	0.113
Sample Type:	(Standard)

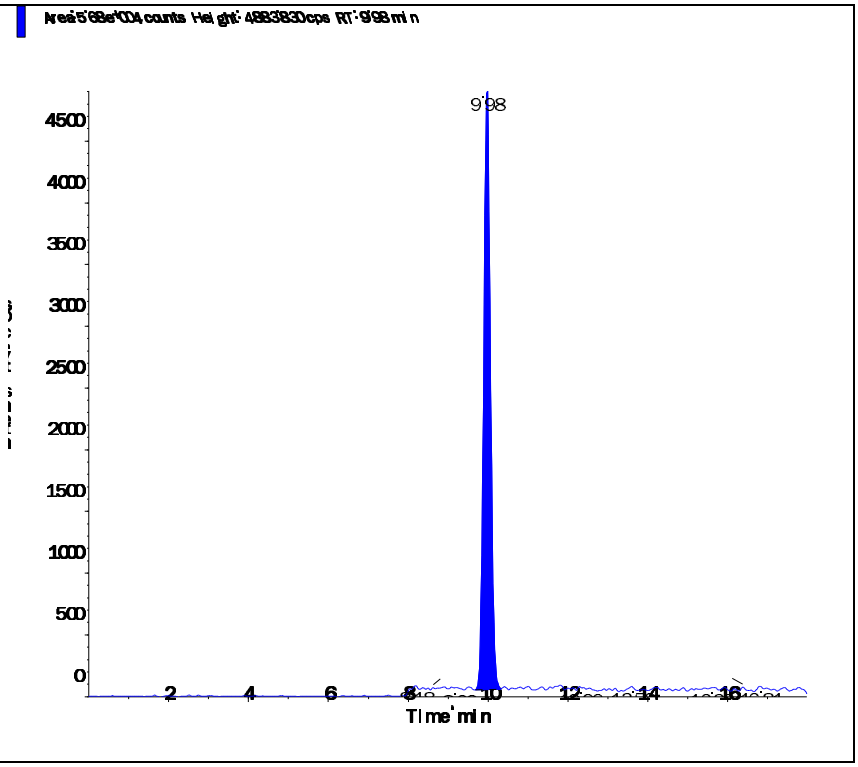

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Data File	LM33572.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/2/2016 10:09:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-06 STD (2.0 ug/L)	**Injection Vial**	56.00
Data File	LM33572.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 10:09:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559340-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.99	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.630e+05	10.00	2.00	2.02
Perchlorate conf	1.170e+05	9.99	2.00	2.01

O18LP (Internal Standard)

RT (Exp. RT): 9.99(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

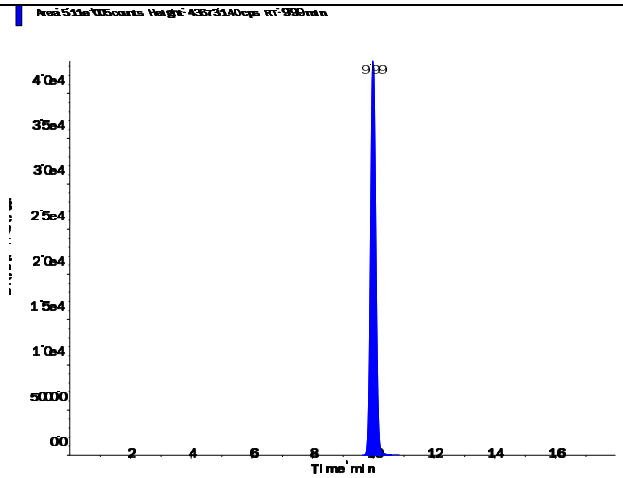

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.00 (9.94) min
Calculated conc:	2.02 ng/ml
Area Ratio:	0.711
Sample Type:	(Standard)

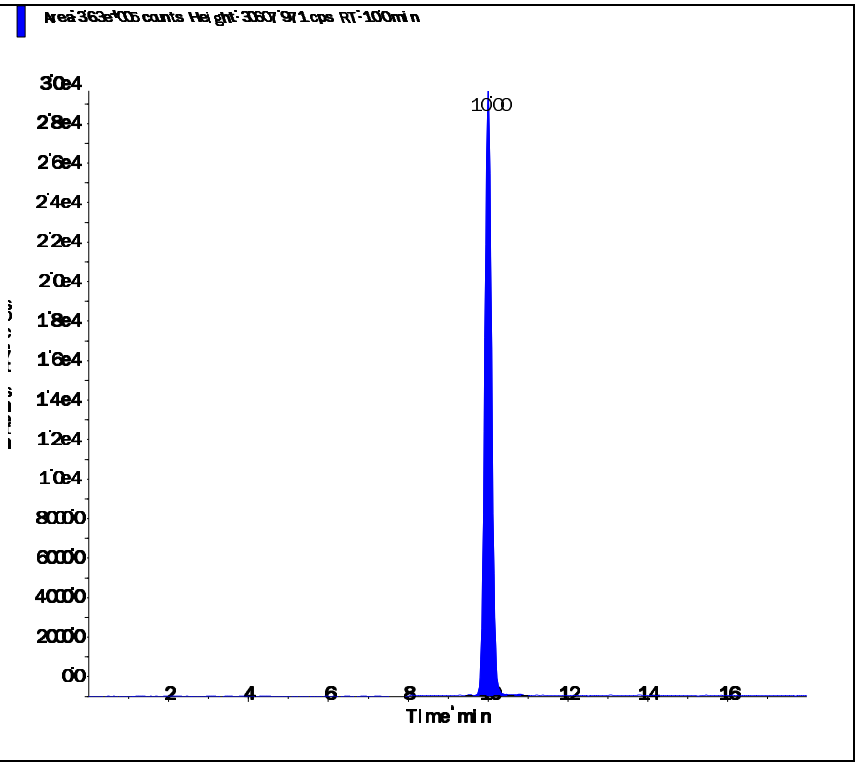

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.99 (9.92) min
Calculated conc:	2.01 ng/ml
Area Ratio:	0.228
Sample Type:	(Standard)

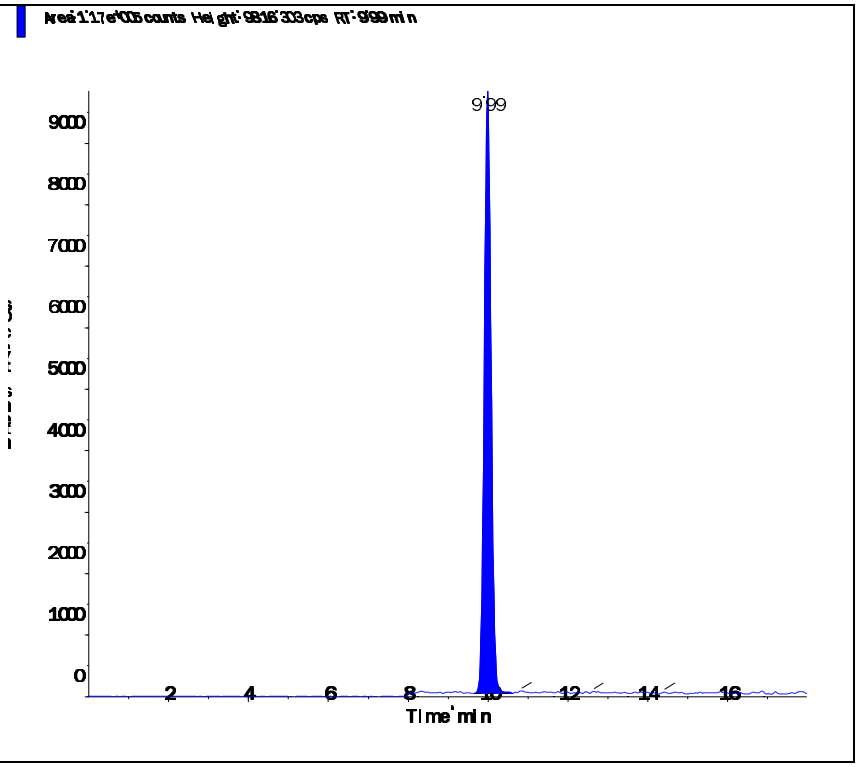

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Data File	LM33573.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/2/2016 10:28:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-07 STD (5.0 ug/L)	**Injection Vial**	57.00
Data File	LM33573.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 10:28:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559340-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.900e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.710e+05	9.98	5.00	5.07
Perchlorate conf	2.820e+05	9.97	5.00	5.11

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

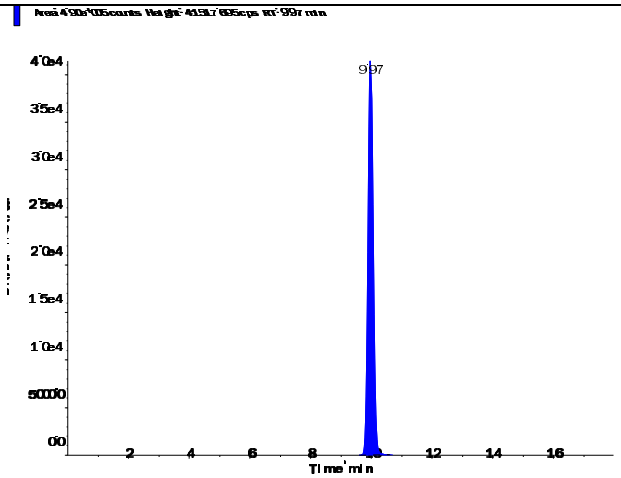

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.98 (9.94) min Calculated conc: 5.07 ng/ml Area Ratio: 1.779 Sample Type: (Standard)	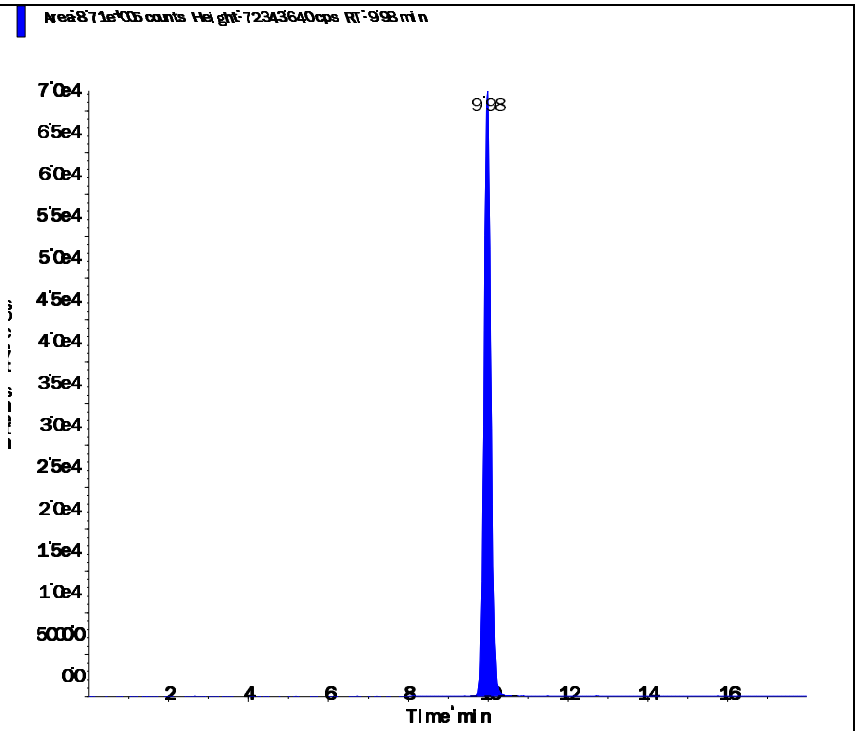
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.97 (9.92) min Calculated conc: 5.11 ng/ml Area Ratio: 0.576 Sample Type: (Standard)	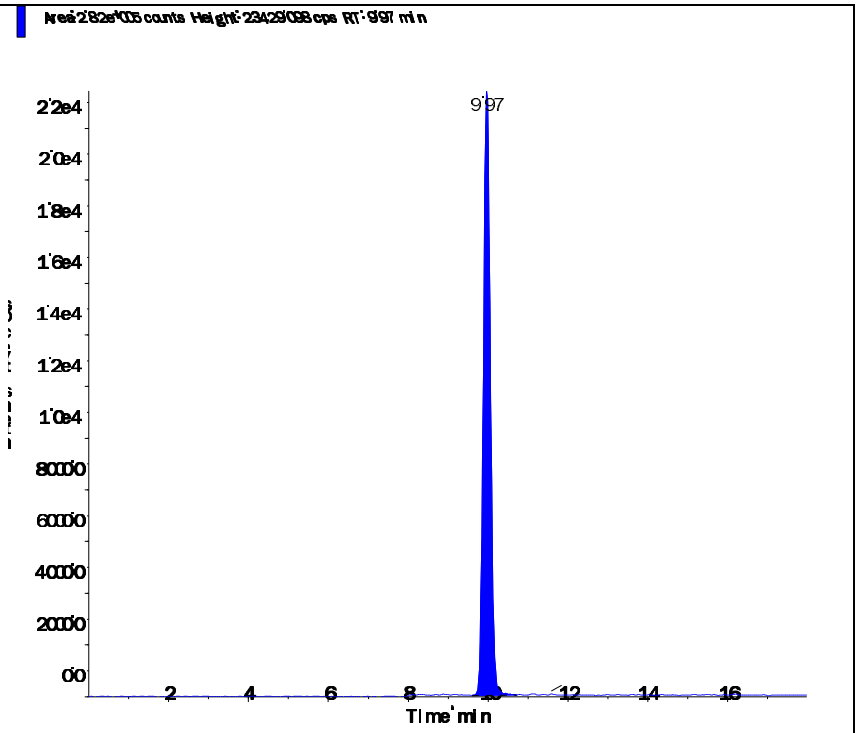

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Data File	LM33574.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/2/2016 10:46:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-08 STD (10 ug/L)	**Injection Vial**	58.00
Data File	LM33574.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 10:46:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559340-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.650e+06	9.98	10.00	9.87
Perchlorate conf	5.300e+05	9.96	10.00	9.85

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

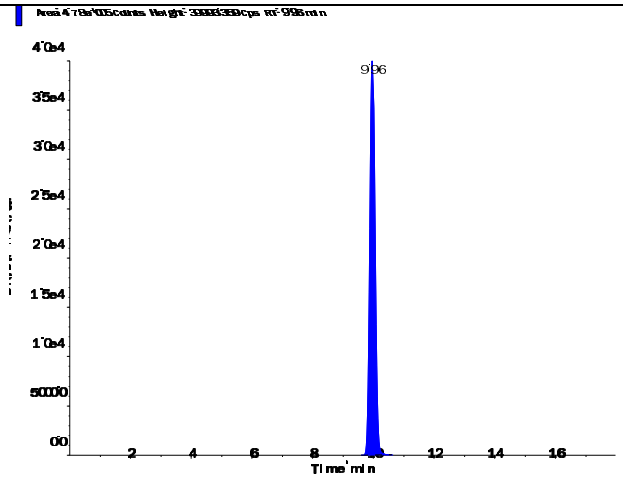

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.98 (9.94) min Calculated conc: 9.87 ng/ml Area Ratio: 3.458 Sample Type: (Standard)	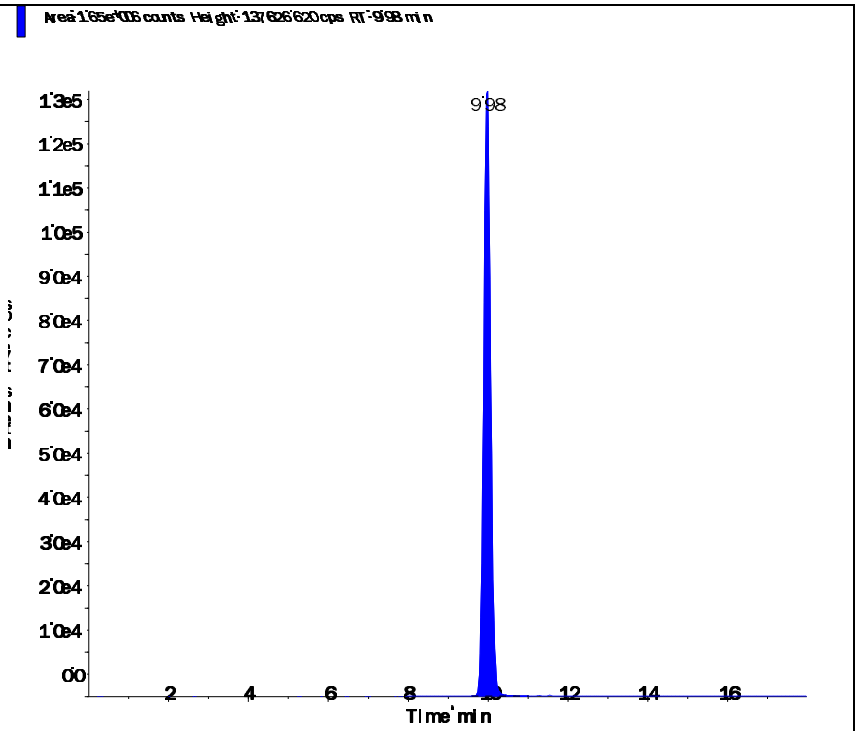
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.96 (9.92) min Calculated conc: 9.85 ng/ml Area Ratio: 1.11 Sample Type: (Standard)	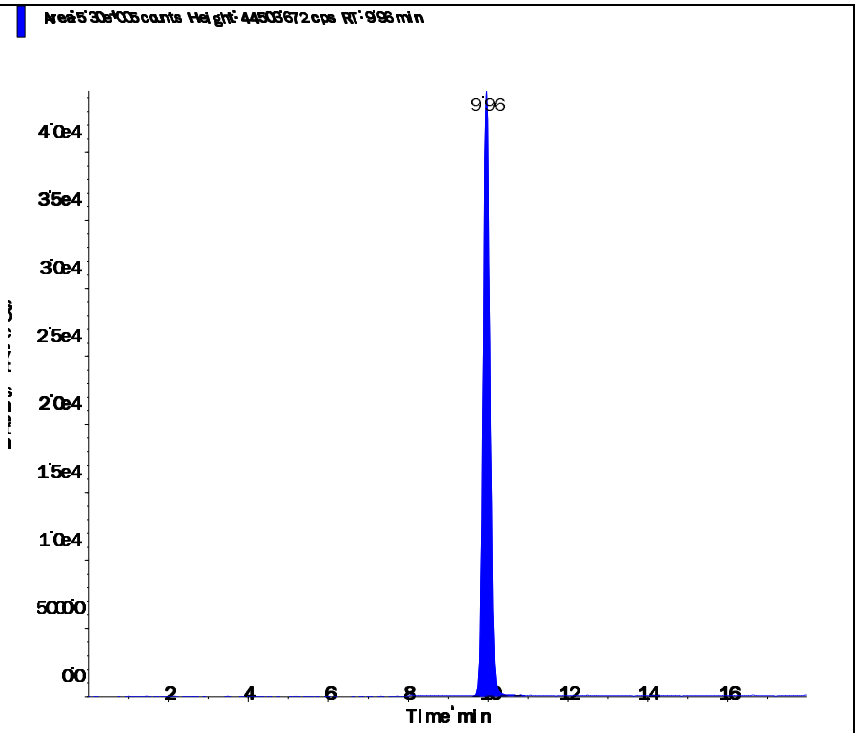

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Data File	LM33575.wiff	**Result Table**	030216_WTD.rdb
Acquisition Date	3/2/2016 11:05:52 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-09 SSCV (1.0 ug/L)	**Injection Vial**	59.00
Data File	LM33575.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 11:05:52 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030216_WTD.rdb
Sample ID	WG559340-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.200e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.900e+05	9.98	1.00	1.03
Perchlorate conf	6.220e+04	9.97	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

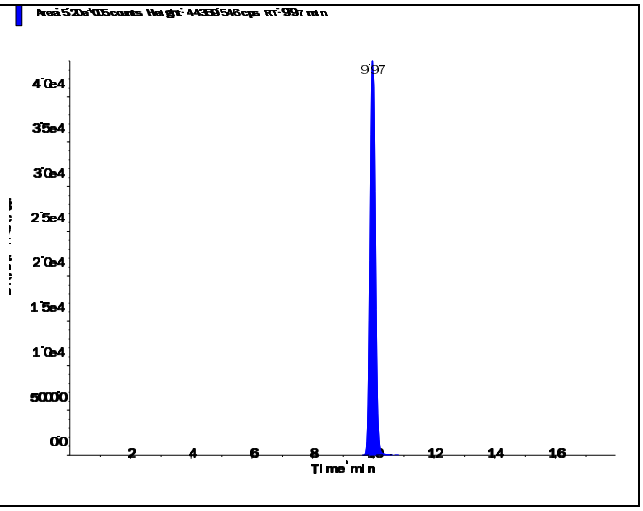

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.98 (9.94) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.366
Sample Type:	(Quality Control)

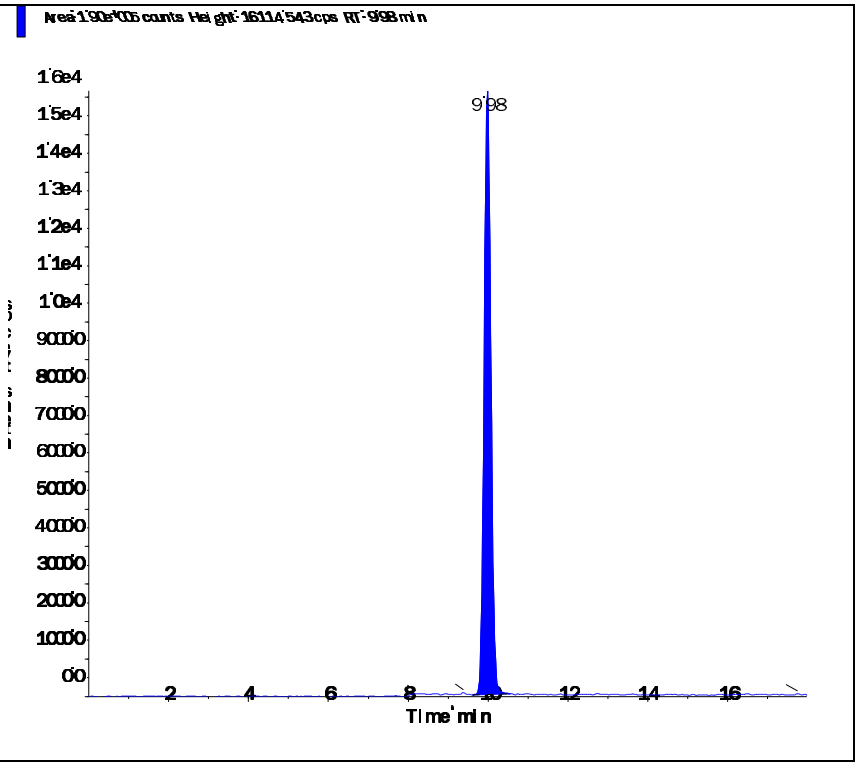

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.97 (9.92) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.12
Sample Type:	(Quality Control)

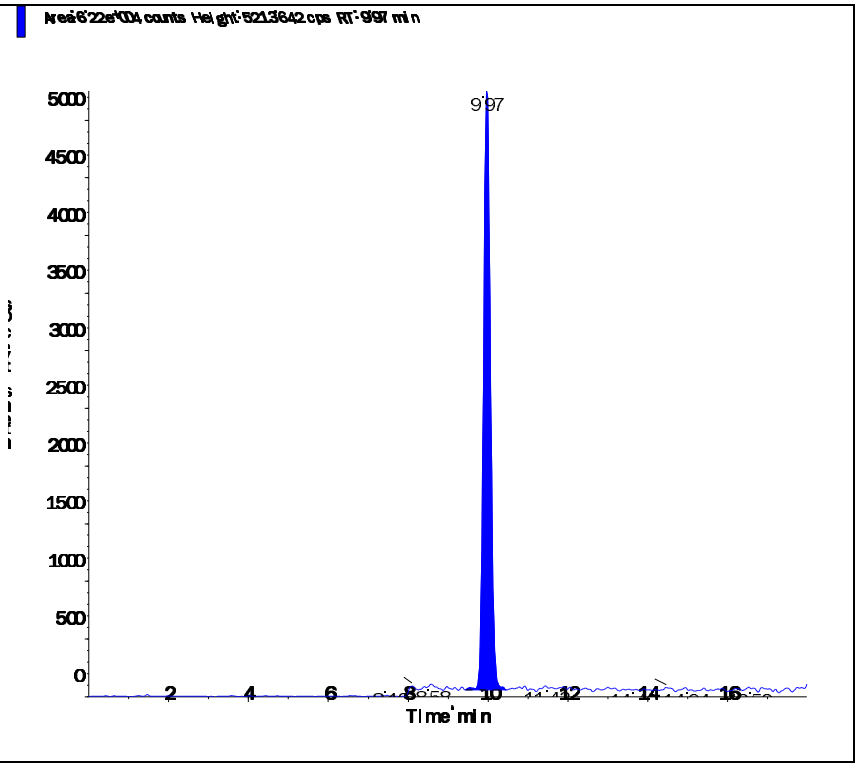

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Data File	LM33655.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/3/2016 6:02:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559618-02 CCV (1.0ug/L)	**Injection Vial**	2.00
Data File	LM33655.wiff	**Injection Volume**	10.00
Acquisition Date	3/3/2016 6:02:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559618-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.280e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.820e+05	9.94	1.00	0.975
Perchlorate conf	5.980e+04	9.93	1.00	0.995

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

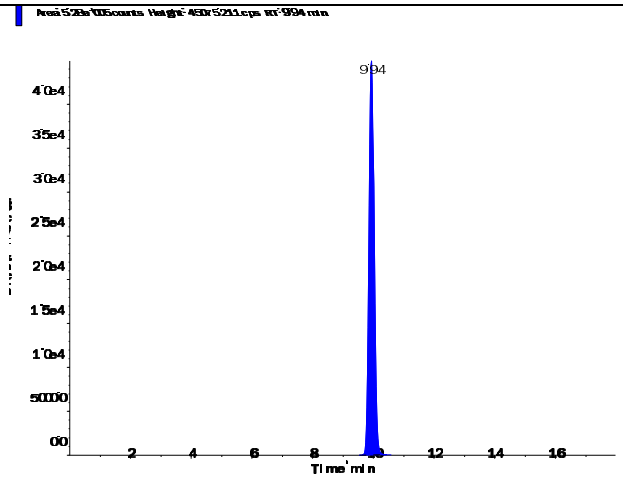

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.975 ng/ml
Area Ratio:	0.345
Sample Type:	(Quality Control)

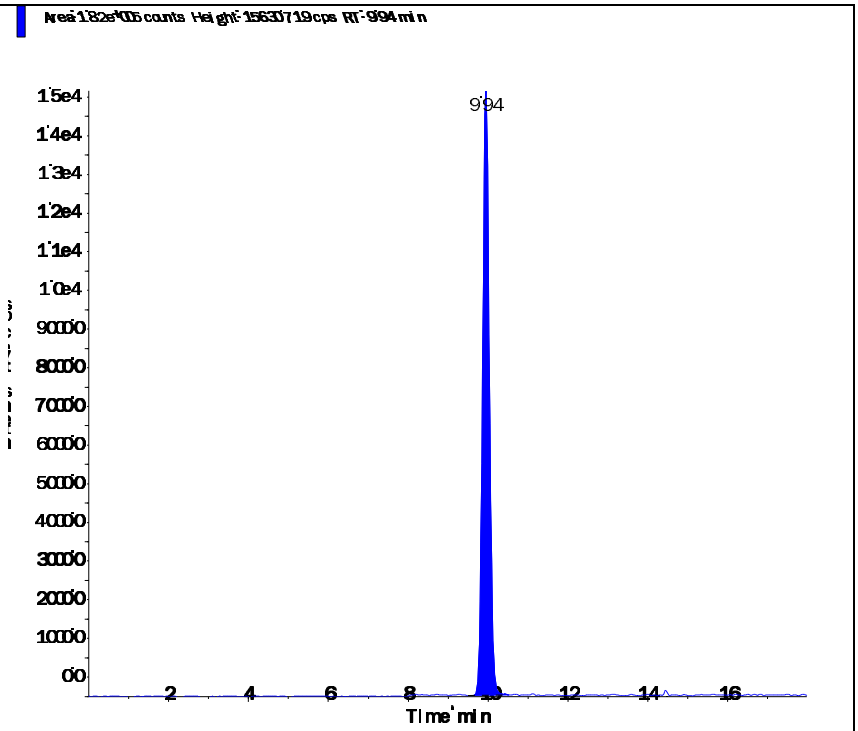

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	0.995 ng/ml
Area Ratio:	0.113
Sample Type:	(Quality Control)

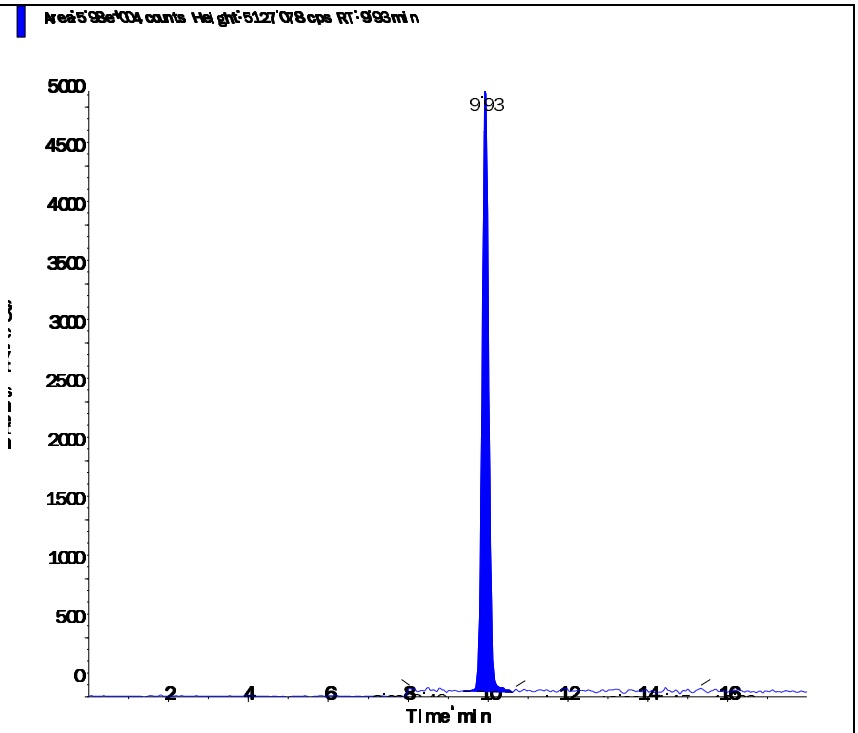

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Data File	LM33665.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/3/2016 9:11:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559618-03 CCV (1.0ug/L)	**Injection Vial**	2.00
Data File	LM33665.wiff	**Injection Volume**	10.00
Acquisition Date	3/3/2016 9:11:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559618-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.470e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.880e+05	9.94	1.00	0.97
Perchlorate conf	6.090e+04	9.93	1.00	0.976

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

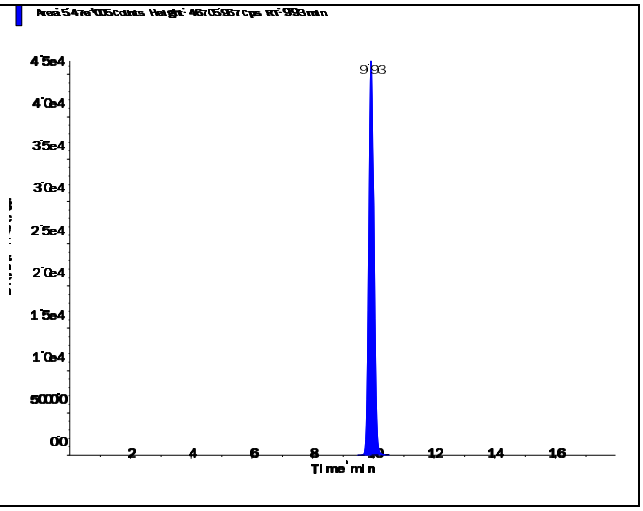

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.97 ng/ml
Area Ratio:	0.344
Sample Type:	(Quality Control)

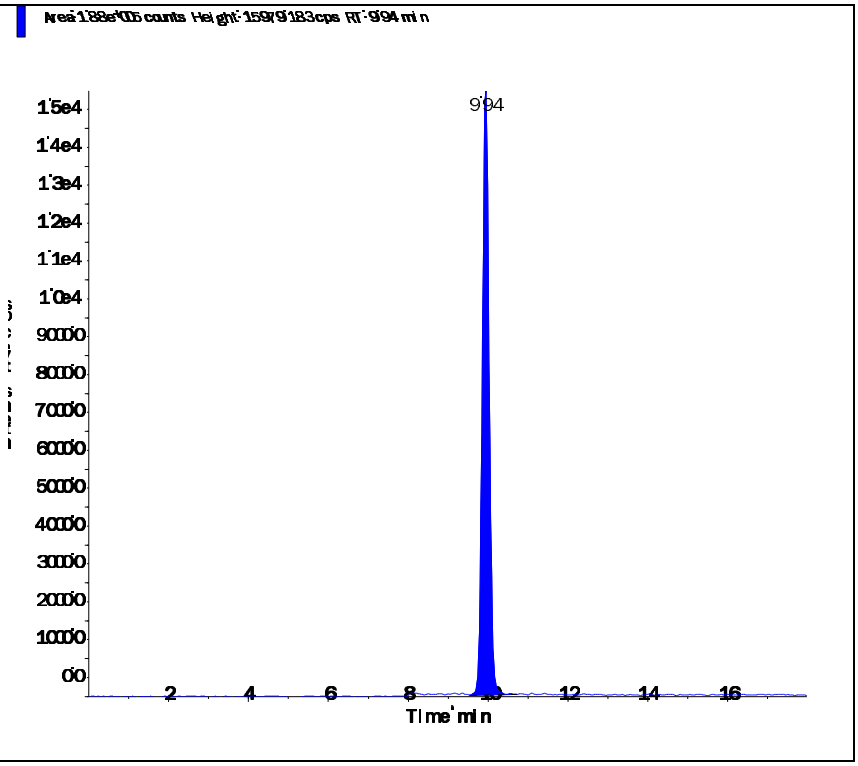

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	0.976 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

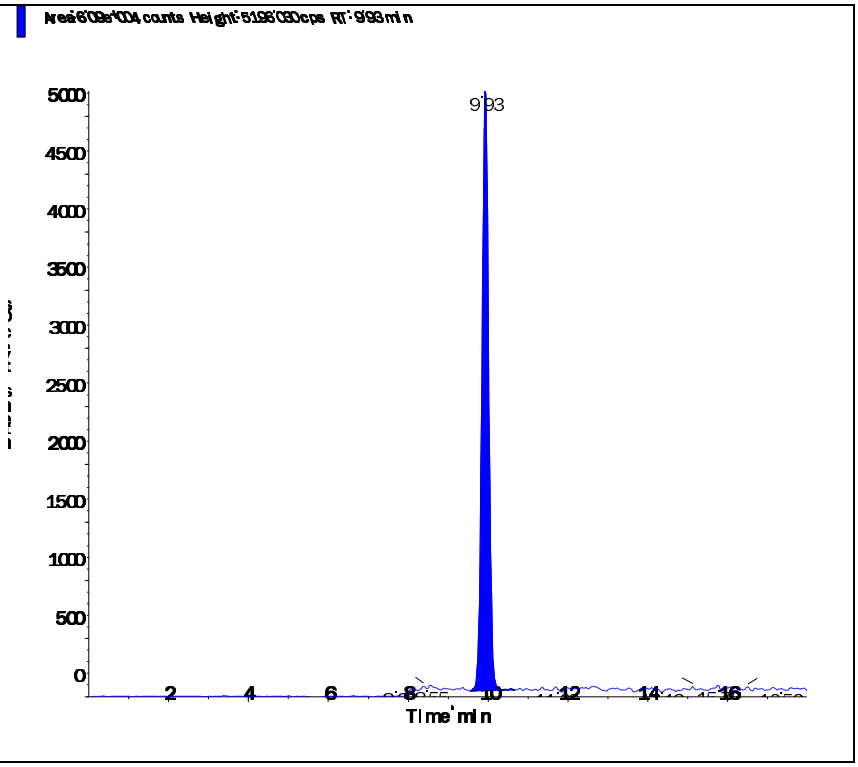

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Data File	LM33671.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/3/2016 11:05:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559618-05 CCV (1.0ug/L)	**Injection Vial**	2.00
Data File	LM33671.wiff	**Injection Volume**	10.00
Acquisition Date	3/3/2016 11:05:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559618-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.420e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.880e+05	9.94	1.00	0.981
Perchlorate conf	6.040e+04	9.92	1.00	0.977

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

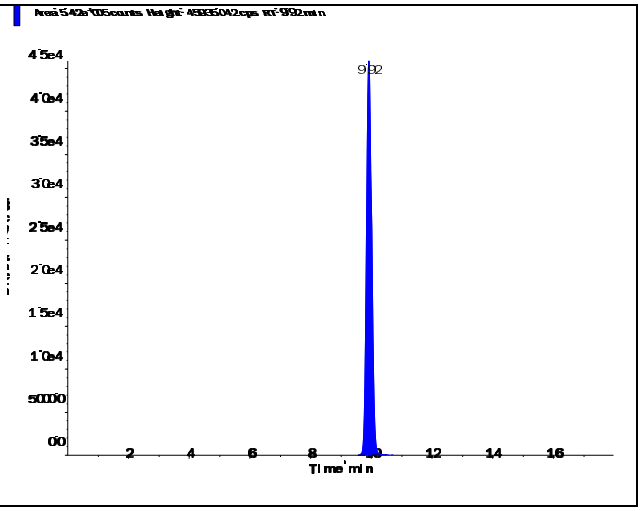

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.981 ng/ml
Area Ratio:	0.348
Sample Type:	(Quality Control)

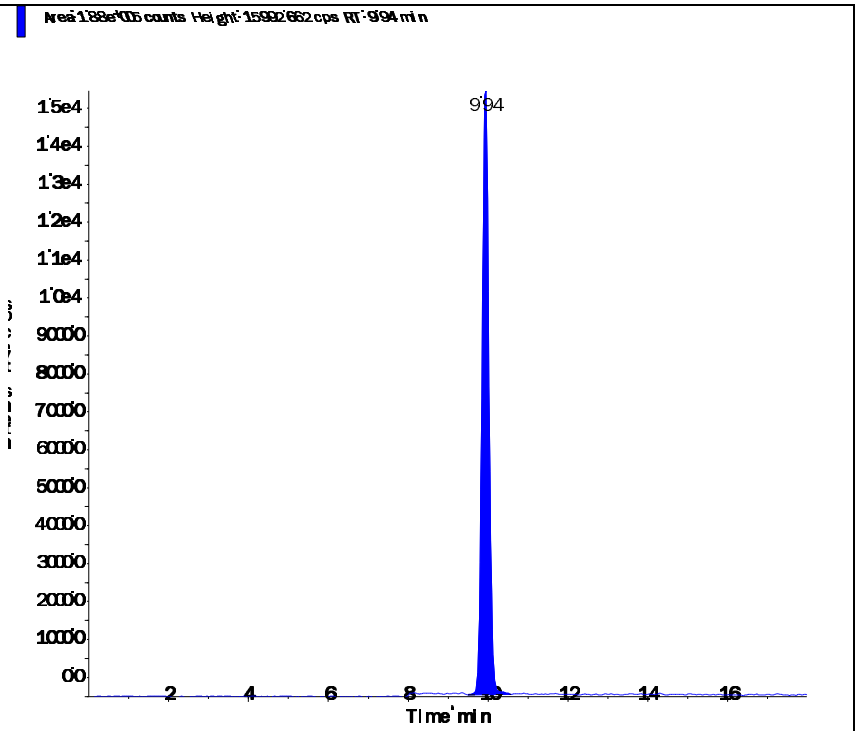

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	0.977 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

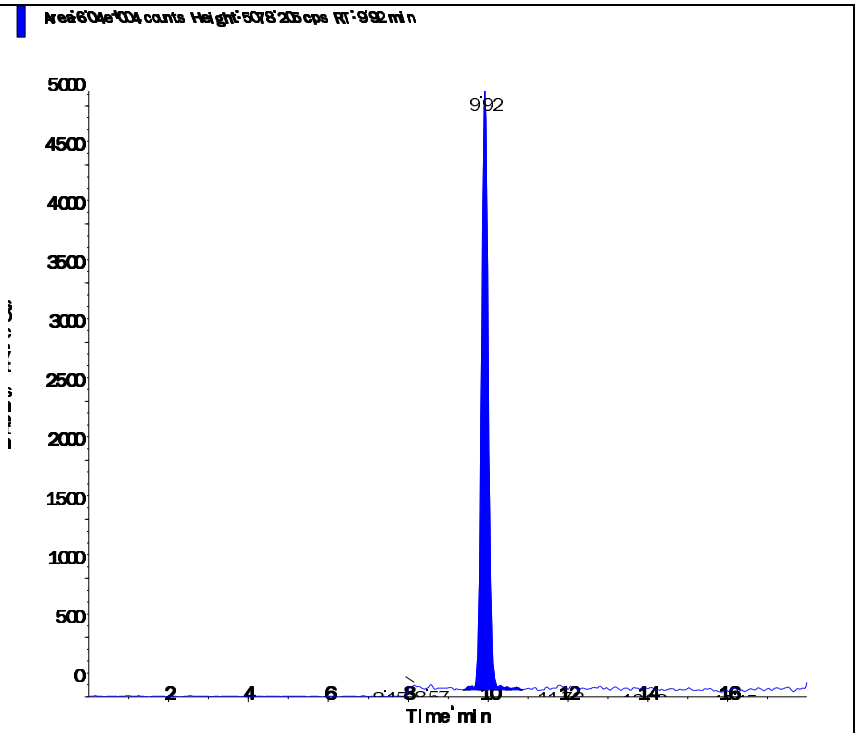

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Data File	LM33685.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/4/2016 3:30:43 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559618-07 CCV (1.0ug/L)	**Injection Vial**	2.00
Data File	LM33685.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 3:30:43 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559618-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.600e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.930e+05	9.94	1.00	0.971
Perchlorate conf	6.020e+04	9.93	1.00	0.942

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

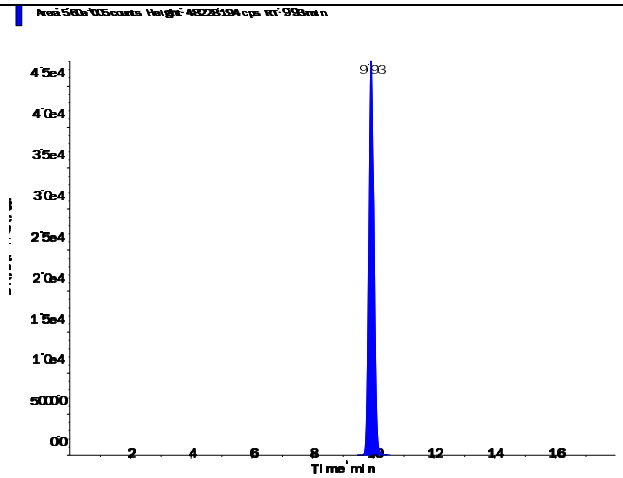

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.971 ng/ml
Area Ratio:	0.344
Sample Type:	(Quality Control)

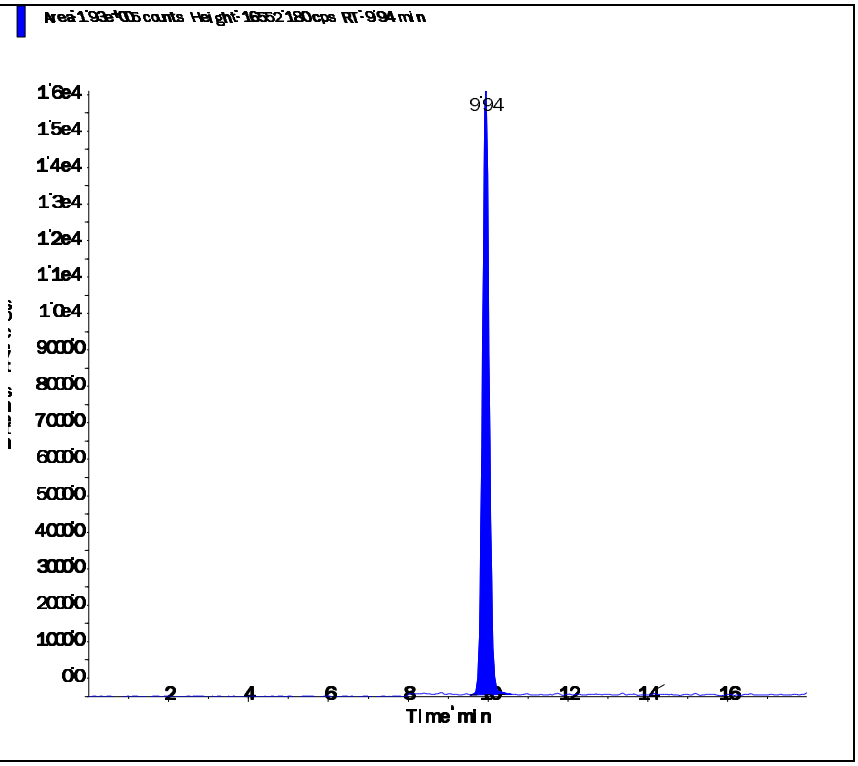

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	0.942 ng/ml
Area Ratio:	0.107
Sample Type:	(Quality Control)

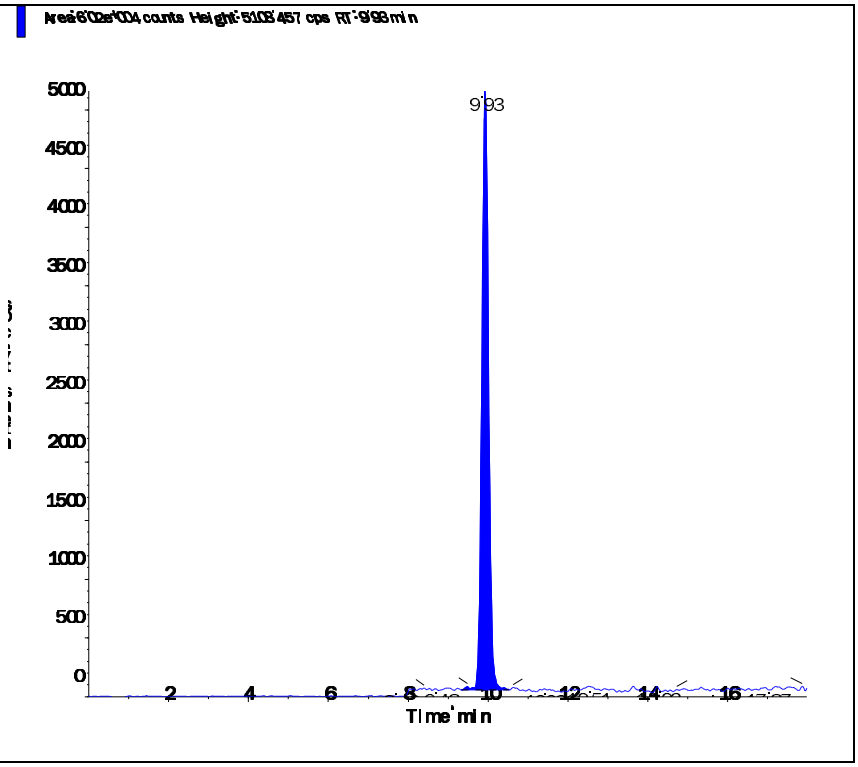

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Printed: 3/4/2016 2:08 PM

Data File	LM33699.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/4/2016 10:00:19 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559618-11 CCV (1.0ug/L)	**Injection Vial**	2.00
Data File	LM33699.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 10:00:19 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559618-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.540e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.910e+05	9.95	1.00	0.975
Perchlorate conf	6.020e+04	9.94	1.00	0.954

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

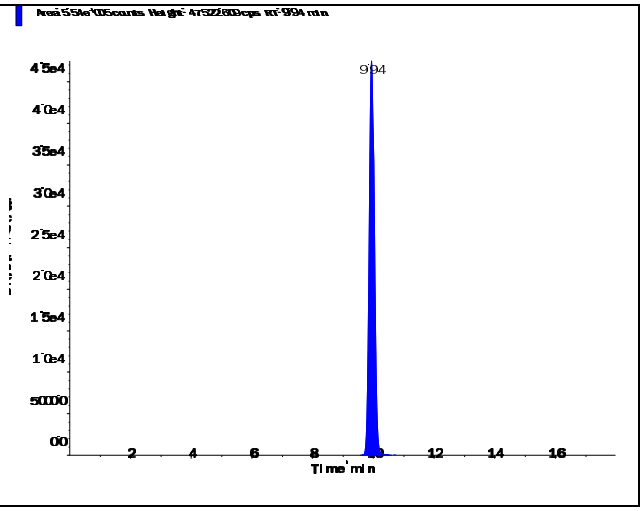

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.95 (9.94) min Calculated conc: 0.975 ng/ml Area Ratio: 0.345 Sample Type: (Quality Control)	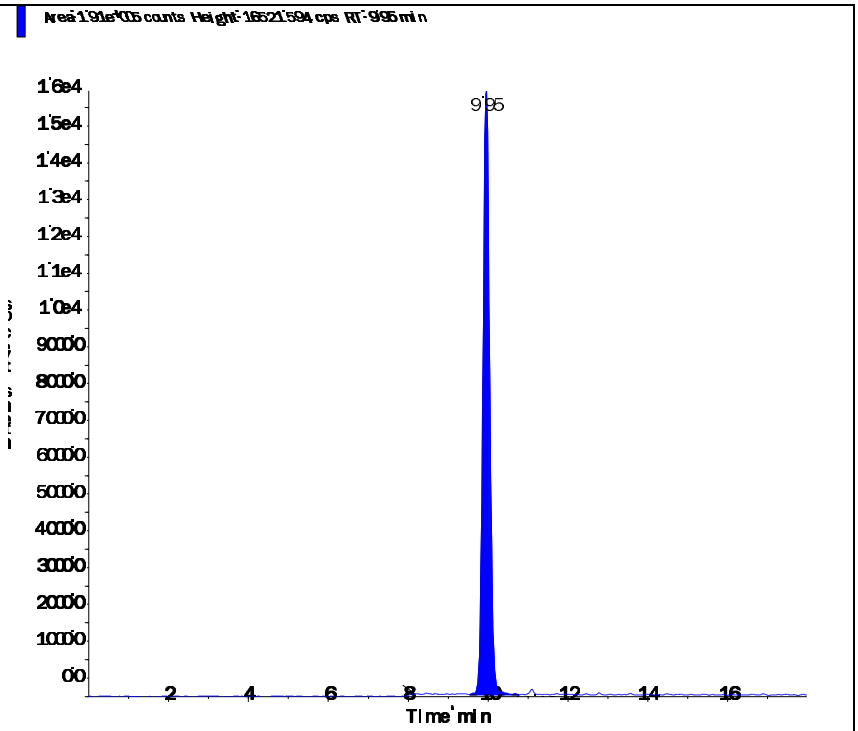
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.94 (9.92) min Calculated conc: 0.954 ng/ml Area Ratio: 0.109 Sample Type: (Quality Control)	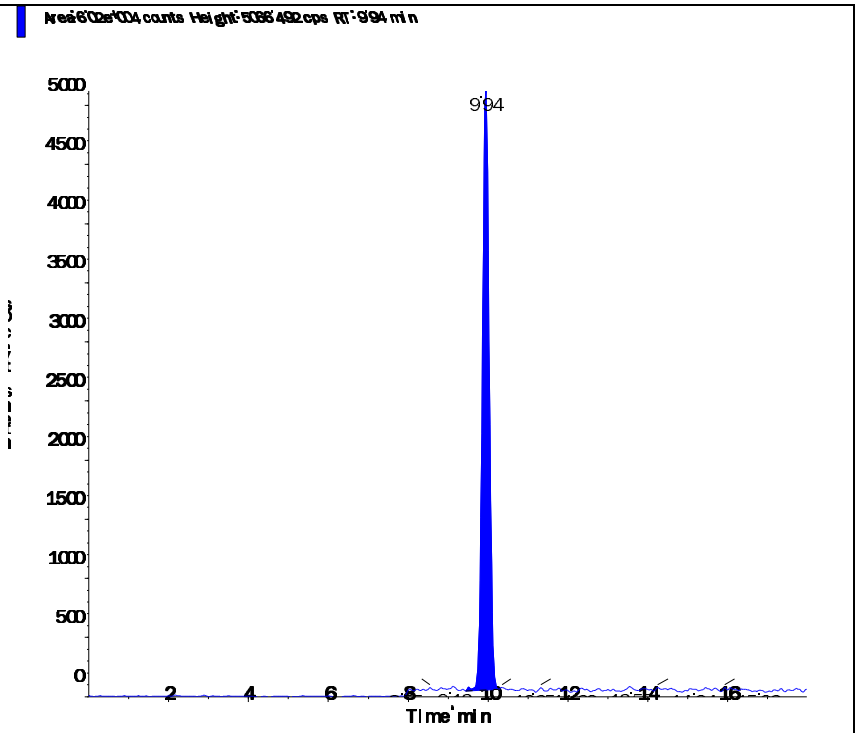

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Data File	LM33707.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/4/2016 12:31:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559618-13 CCV (1.0ug/L)	**Injection Vial**	2.00
Data File	LM33707.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 12:31:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559618-13	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.300e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.810e+05	9.96	1.00	0.962
Perchlorate conf	5.920e+04	9.94	1.00	0.981

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

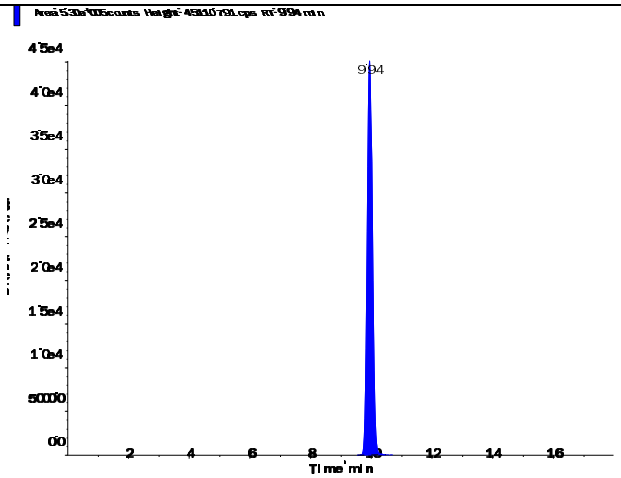

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	0.962 ng/ml
Area Ratio:	0.341
Sample Type:	(Quality Control)

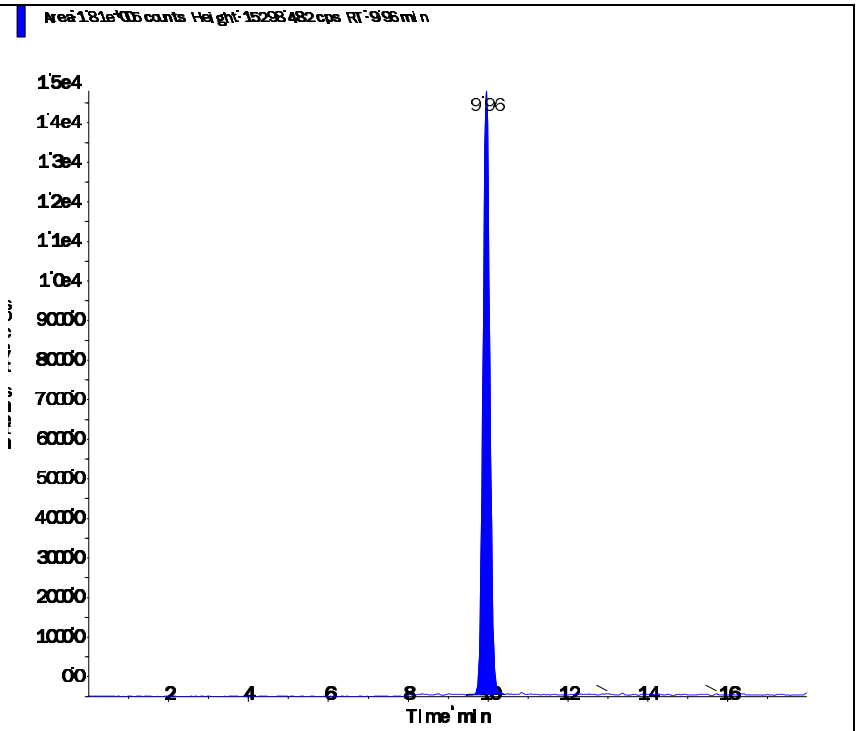

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.981 ng/ml
Area Ratio:	0.112
Sample Type:	(Quality Control)

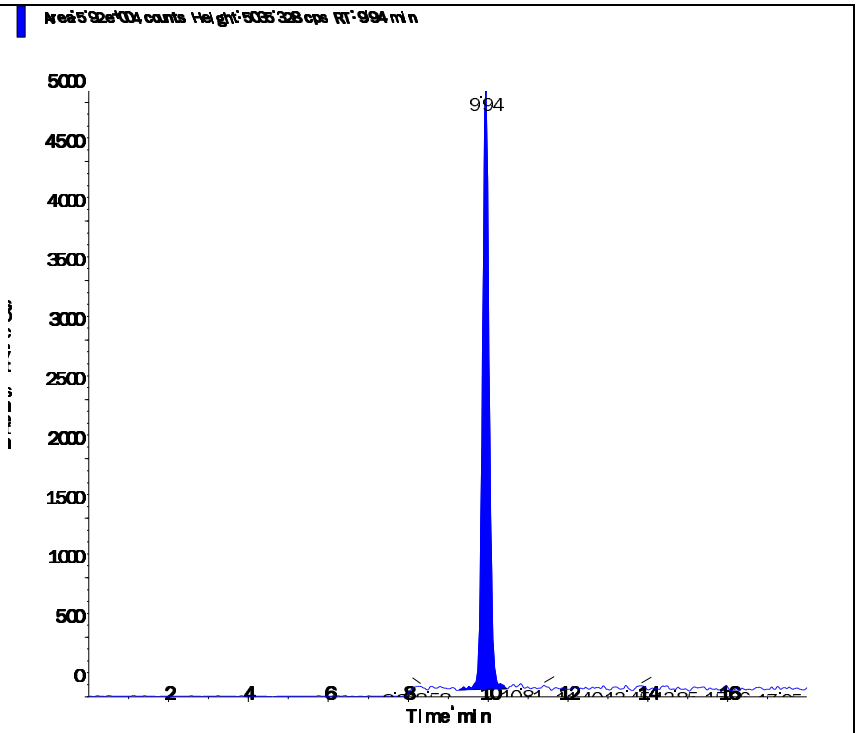

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Data File	LM33656.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/3/2016 6:21:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559621-07 MRL (2.0ug/KG)	**Injection Vial**	3.00
Data File	LM33656.wiff	**Injection Volume**	10.00
Acquisition Date	3/3/2016 6:21:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559621-07	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.270e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.730e+04	9.94	N/A	0.19
Perchlorate conf	1.350e+04	9.94	N/A	0.213

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

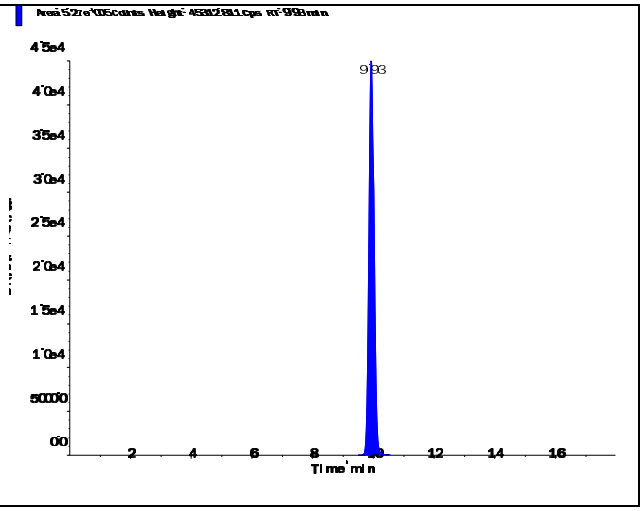

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.19 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

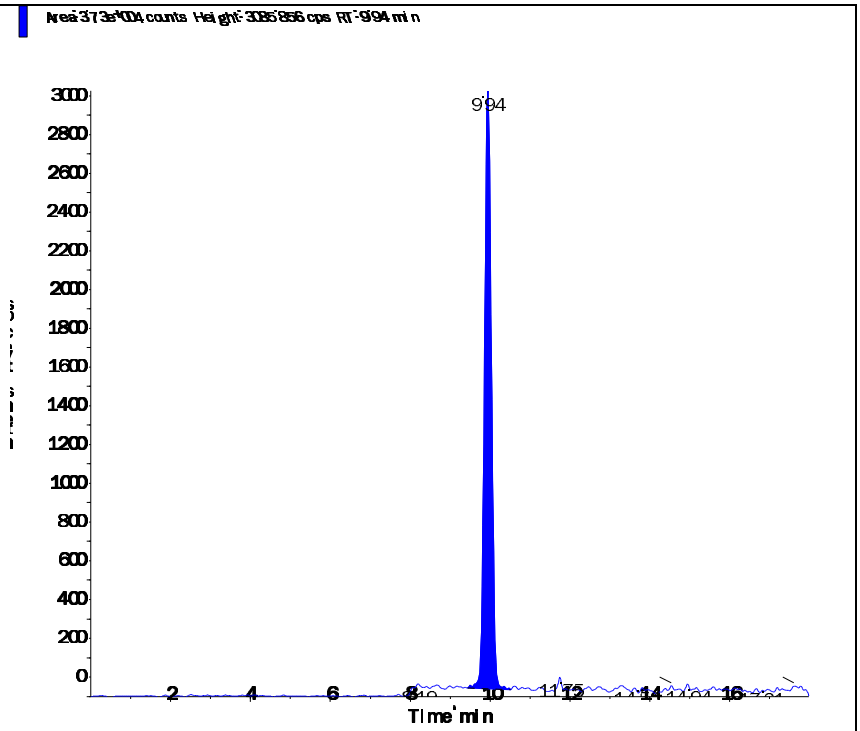

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.213 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

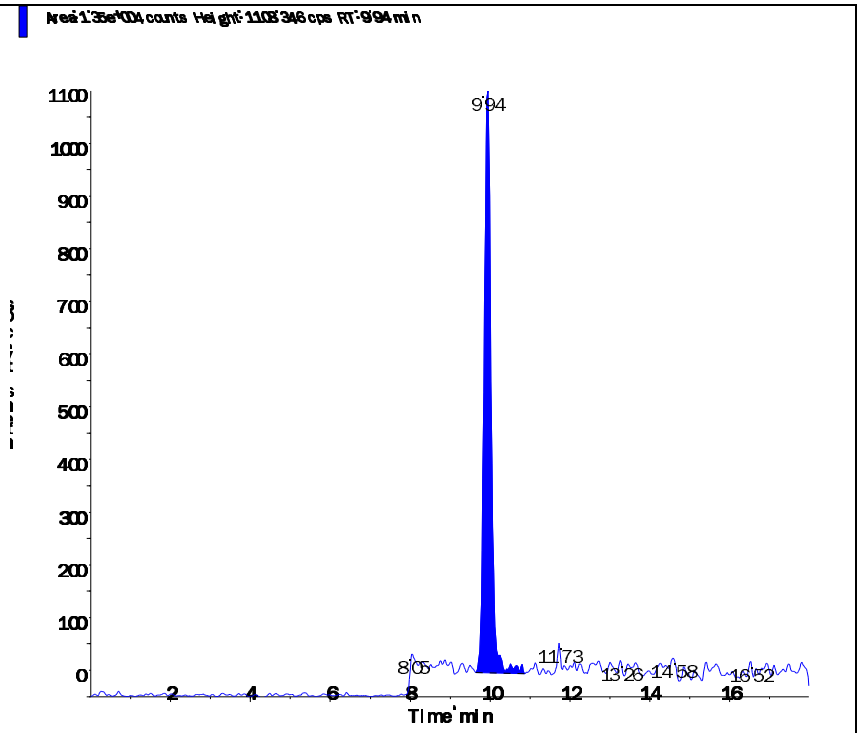

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Data File	LM33666.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/3/2016 9:30:55 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559621-08 MRL (2.0ug/KG)	**Injection Vial**	3.00
Data File	LM33666.wiff	**Injection Volume**	10.00
Acquisition Date	3/3/2016 9:30:55 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559621-08	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.440e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.900e+04	9.95	N/A	0.193
Perchlorate conf	1.360e+04	9.93	N/A	0.208

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

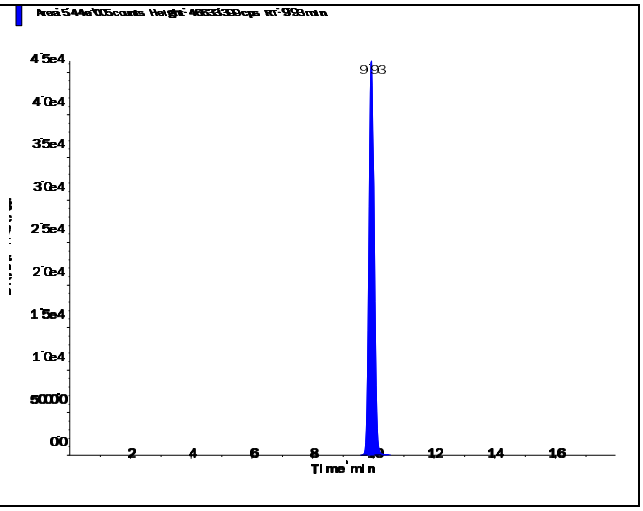

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.95 (9.94) min Calculated conc: 0.193 ng/ml Area Ratio: 0.072 Sample Type: (Unknown)	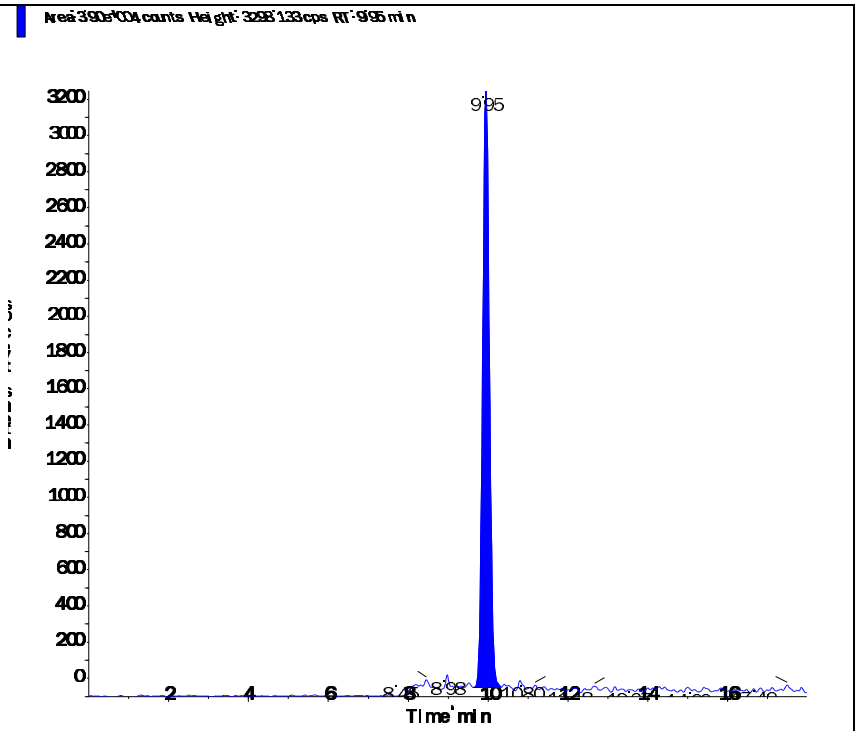
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.93 (9.92) min Calculated conc: 0.208 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	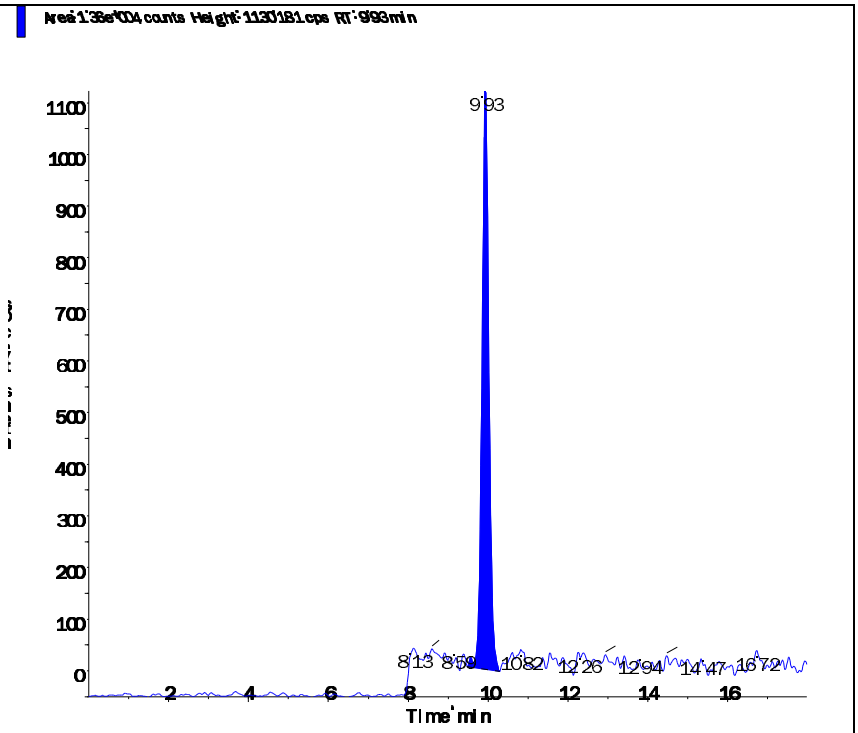

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Data File	LM33672.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/3/2016 11:24:31 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559621-09 MRL (2.0ug/KG)	**Injection Vial**	3.00
Data File	LM33672.wiff	**Injection Volume**	10.00
Acquisition Date	3/3/2016 11:24:31 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559621-09	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.440e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.940e+04	9.93	N/A	0.195
Perchlorate conf	1.290e+04	9.92	N/A	0.197

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

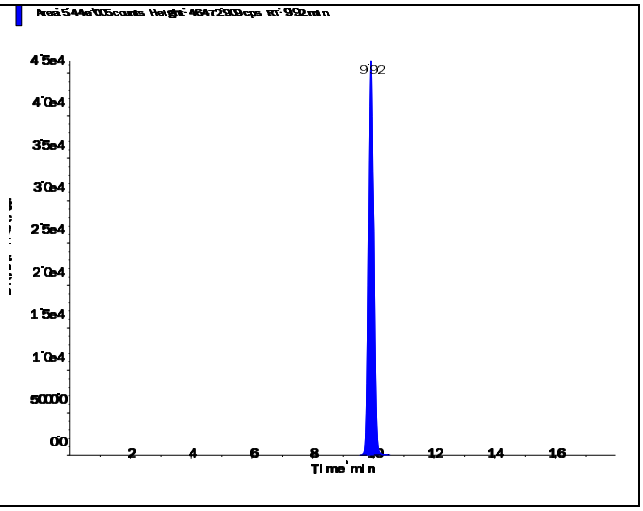

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	0.195 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

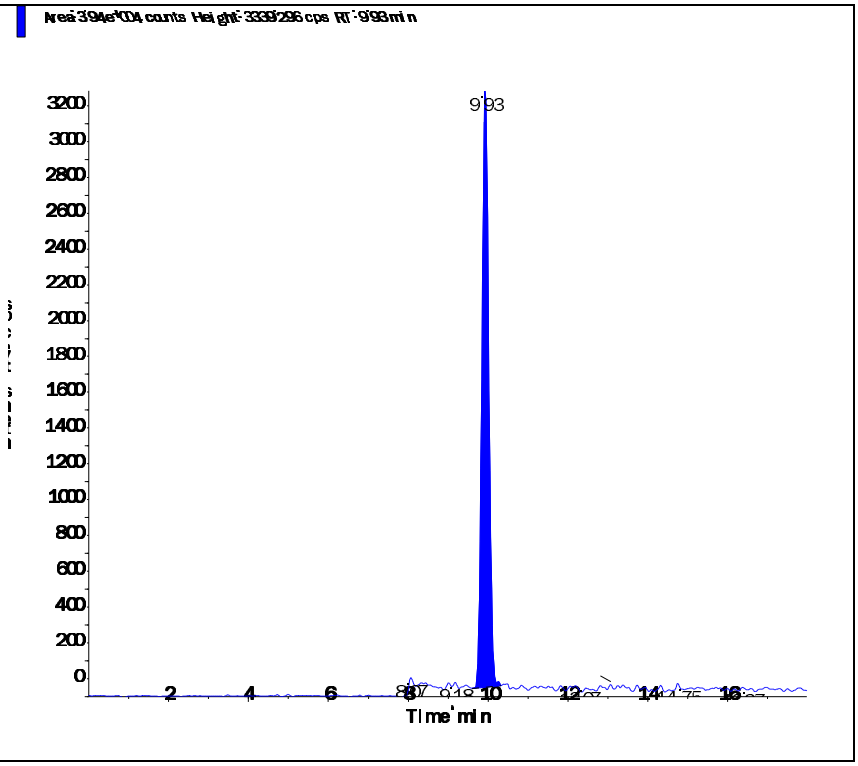

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

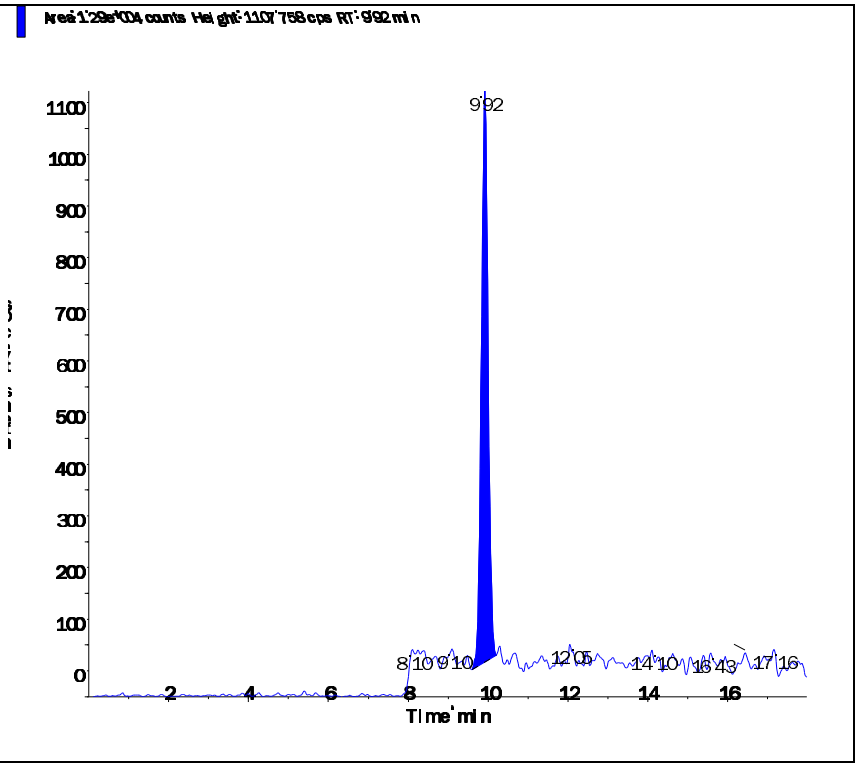

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Data File	LM33702.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/4/2016 10:57:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559621-10 MRL (2.0ug/KG)	**Injection Vial**	3.00
Data File	LM33702.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 10:57:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559621-10	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.240e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.730e+04	9.95	N/A	0.191
Perchlorate conf	1.250e+04	9.94	N/A	0.197

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

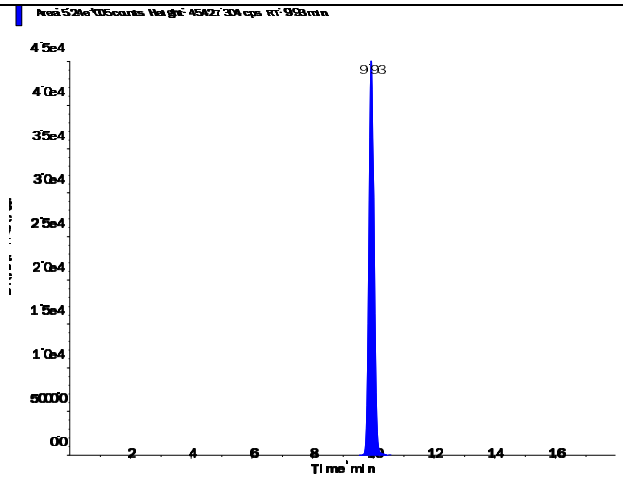

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	0.191 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

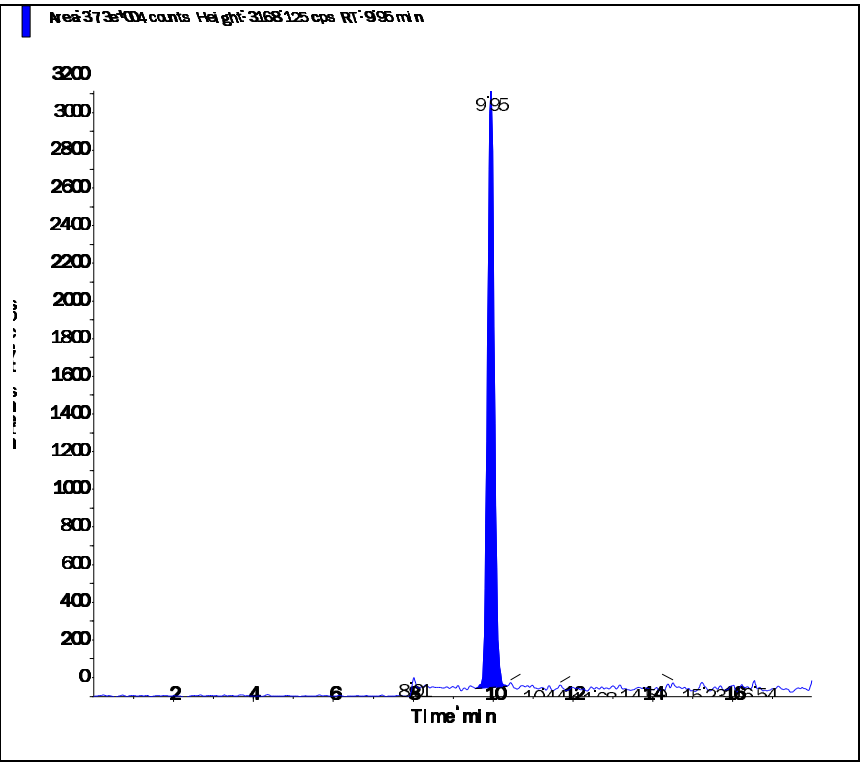

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

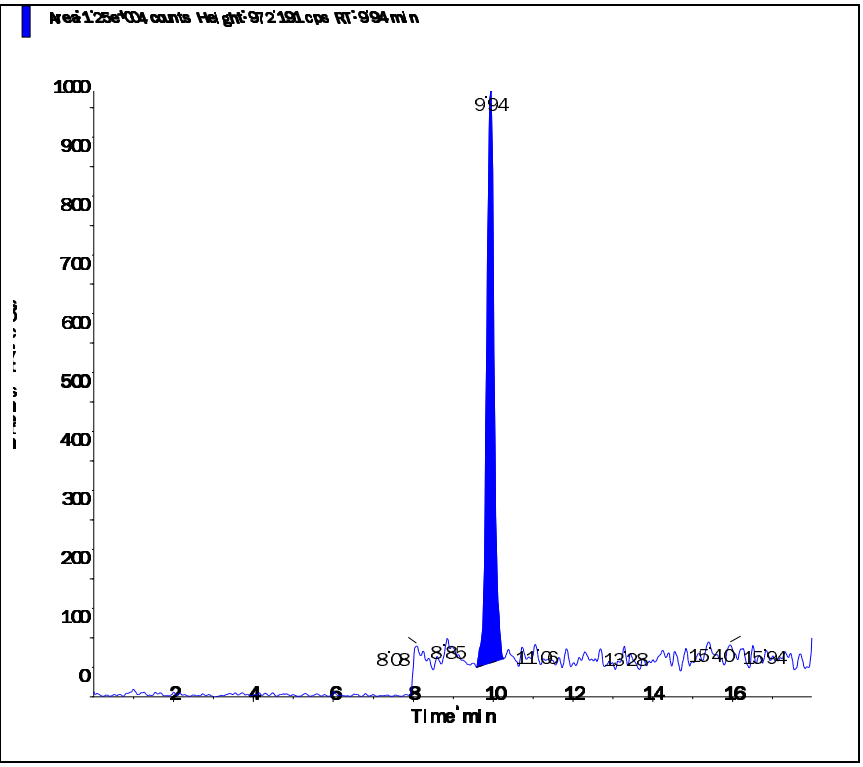

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Data File	LM33708.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/4/2016 12:50:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559621-11 MRL (2.0ug/KG)	**Injection Vial**	3.00
Data File	LM33708.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 12:50:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559621-09	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.410e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.020e+04	9.96	N/A	0.20
Perchlorate conf	1.410e+04	9.94	N/A	0.218

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

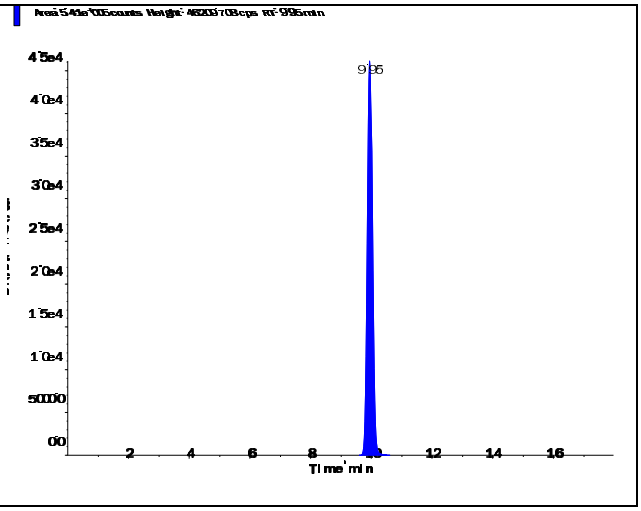

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	0.20 ng/ml
Area Ratio:	0.074
Sample Type:	(Unknown)

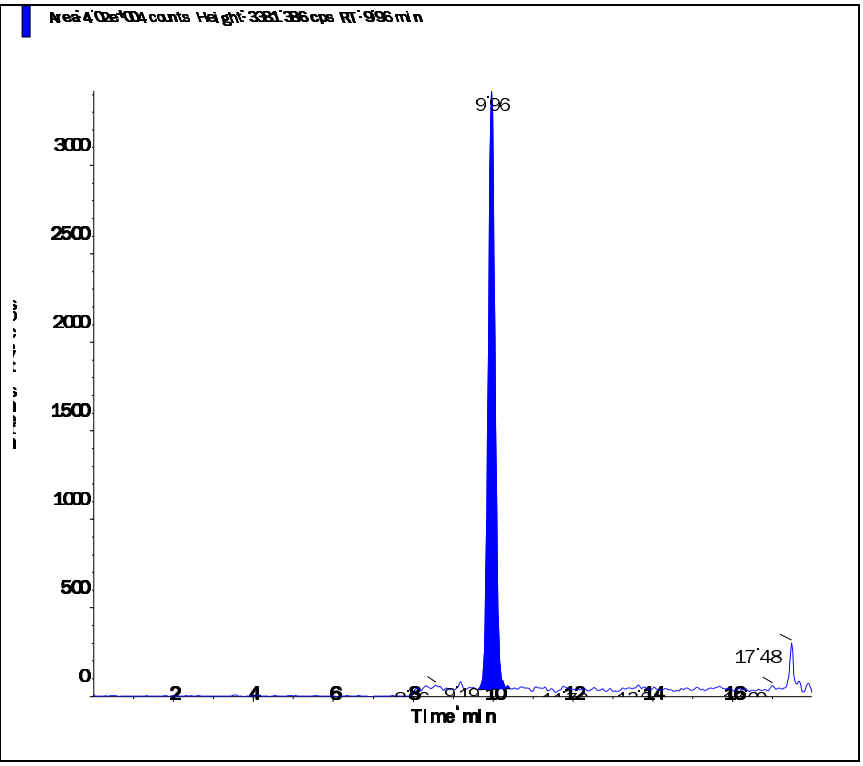

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.218 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

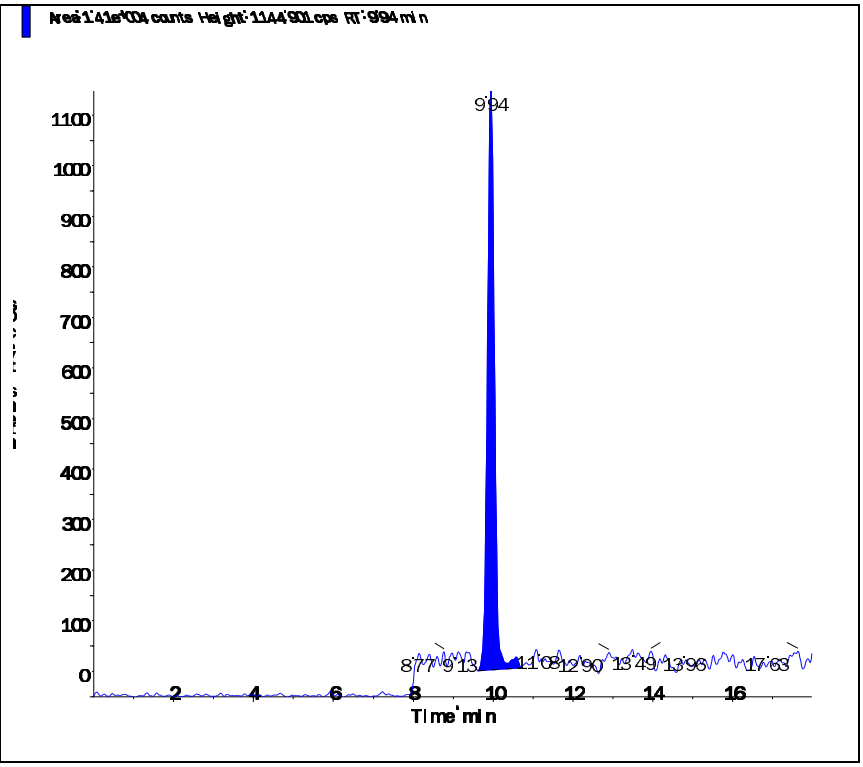

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Data File	LM33654.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/3/2016 5:43:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559618-01 CCB	**Injection Vial**	1.00
Data File	LM33654.wiff	**Injection Volume**	10.00
Acquisition Date	3/3/2016 5:43:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559618-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.060e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

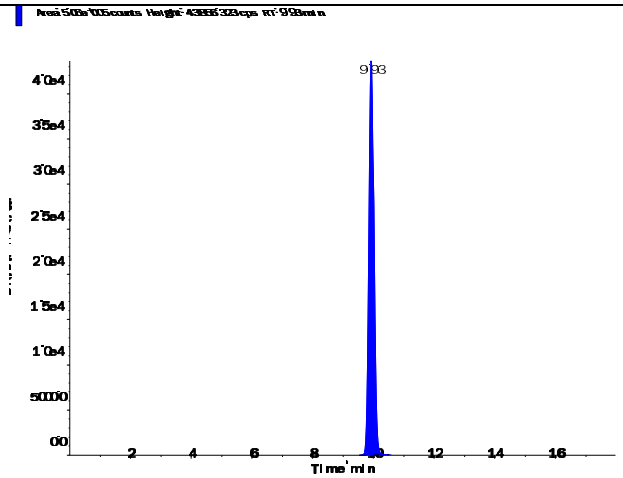

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

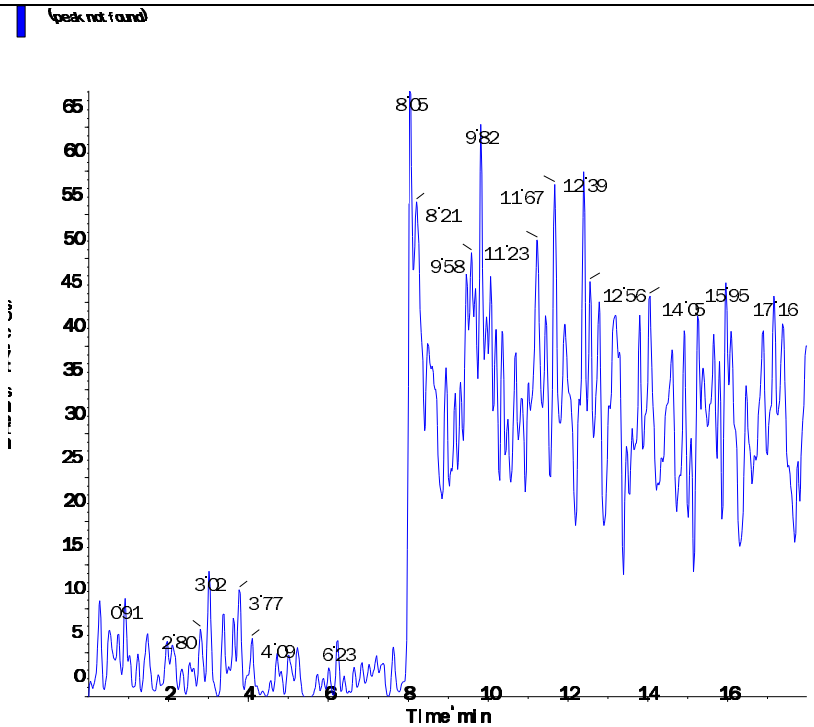

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

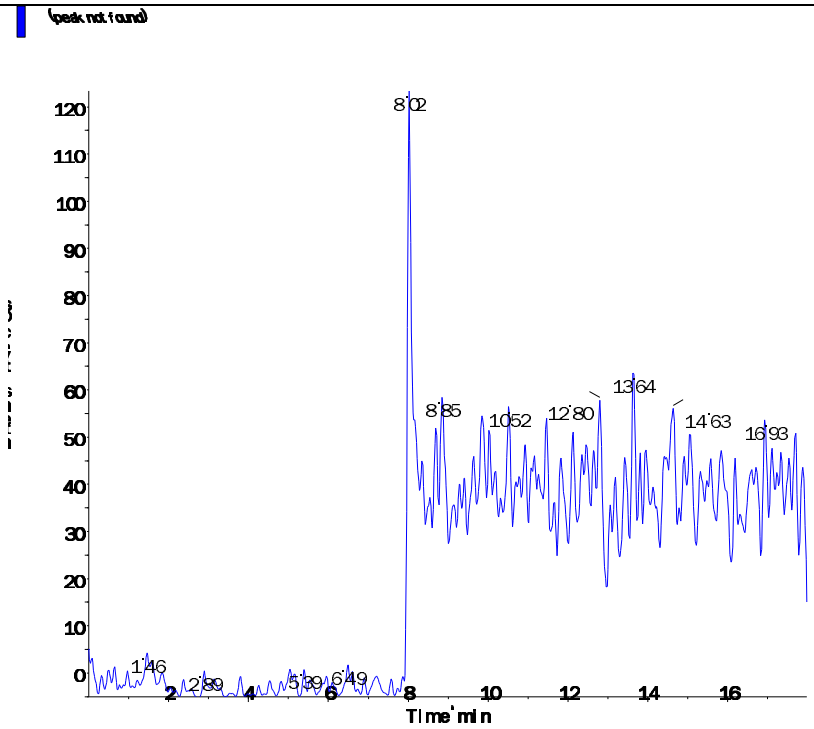

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Created with Analyst Reporter
Printed: 3/4/2016 2:00 PM

Data File	LM33667.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/3/2016 9:49:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559618-04 CCB	**Injection Vial**	1.00
Data File	LM33667.wiff	**Injection Volume**	10.00
Acquisition Date	3/3/2016 9:49:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559618-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.390e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

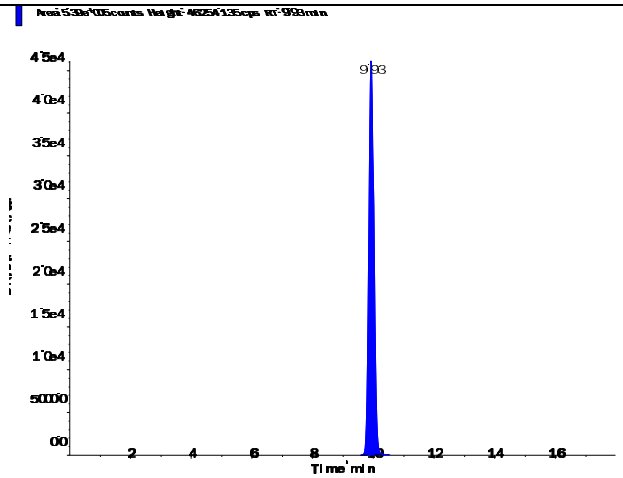

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Printed: 3/4/2016 2:00 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

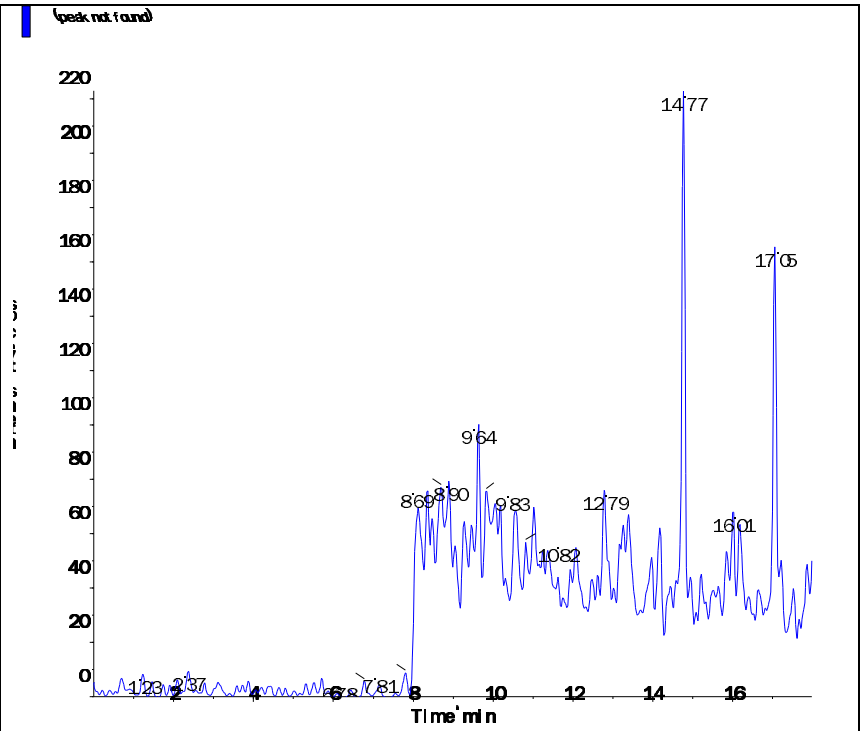

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

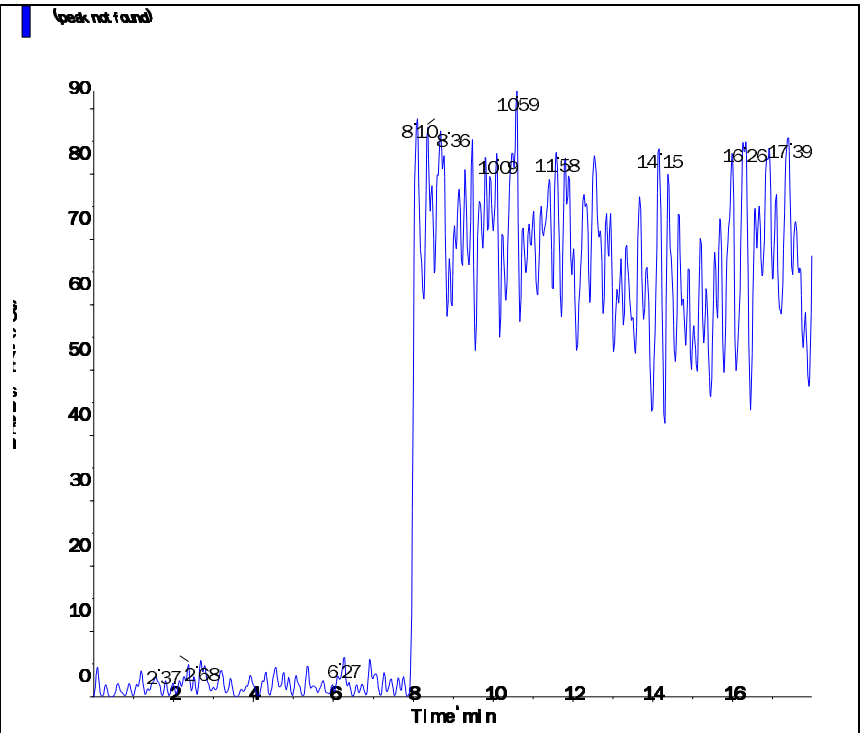

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Created with Analyst Reporter
Printed: 3/4/2016 2:03 PM

Data File	LM33673.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/3/2016 11:43:27 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559618-06 CCB	**Injection Vial**	1.00
Data File	LM33673.wiff	**Injection Volume**	10.00
Acquisition Date	3/3/2016 11:43:27 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559618-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.270e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	7.000e+02	9.95	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

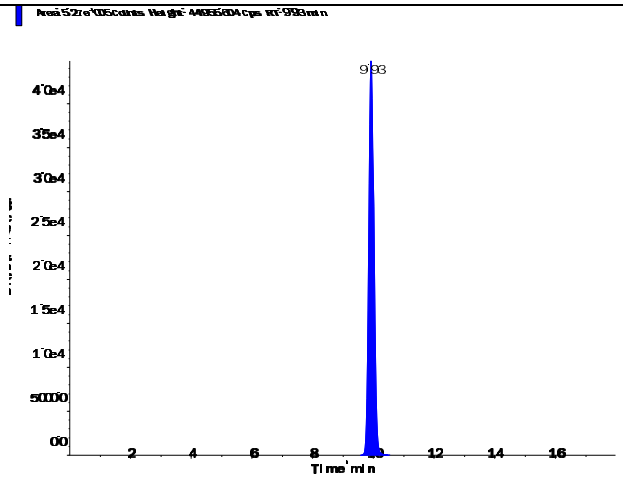

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

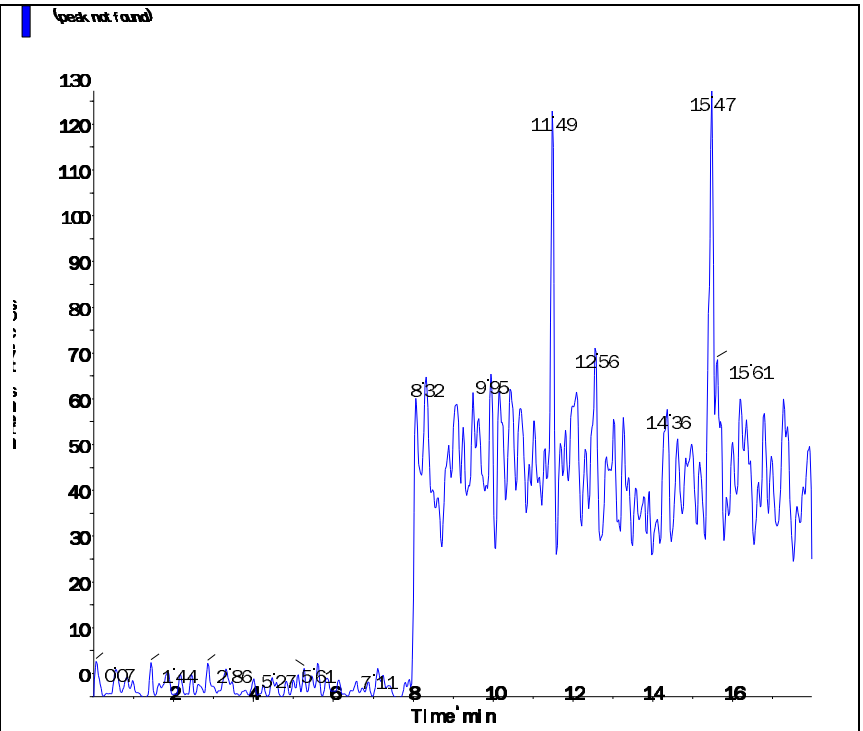

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.95 (9.92) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

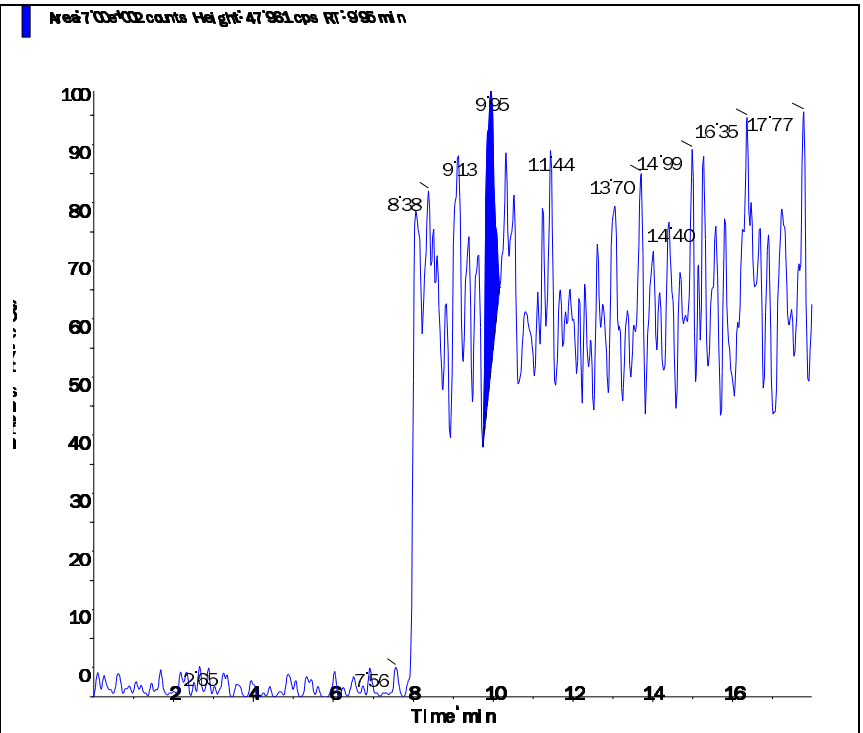

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Created with Analyst Reporter
Printed: 3/4/2016 2:09 PM

Data File	LM33701.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/4/2016 10:38:10 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559618-12 CCB	**Injection Vial**	1.00
Data File	LM33701.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 10:38:10 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559618-12	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.160e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

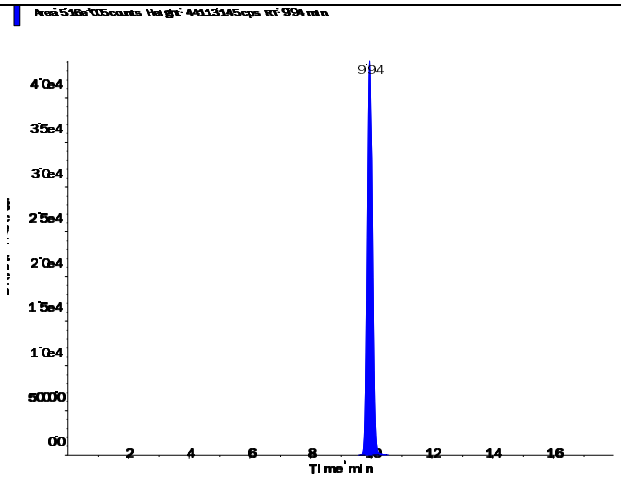

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

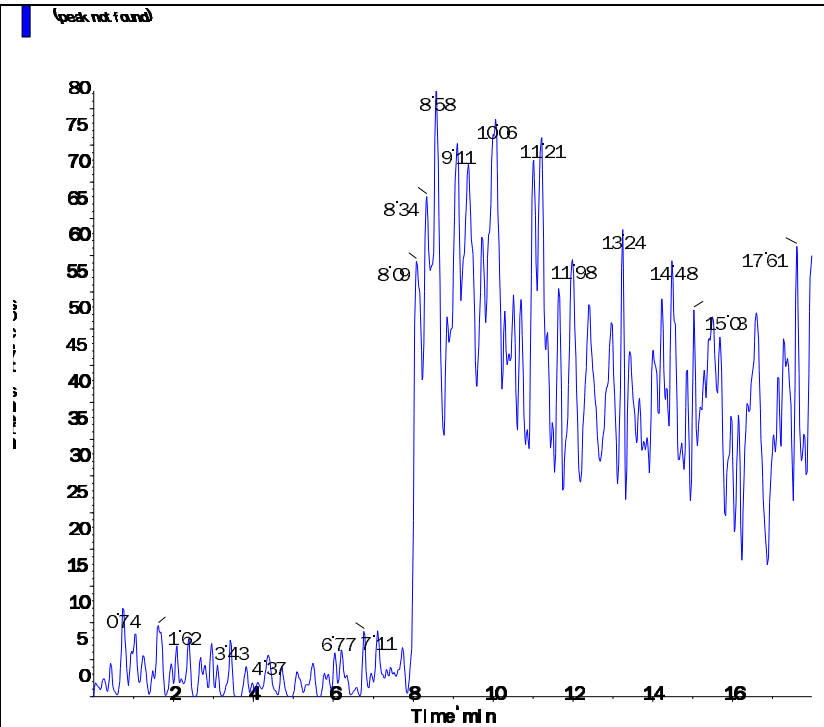

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

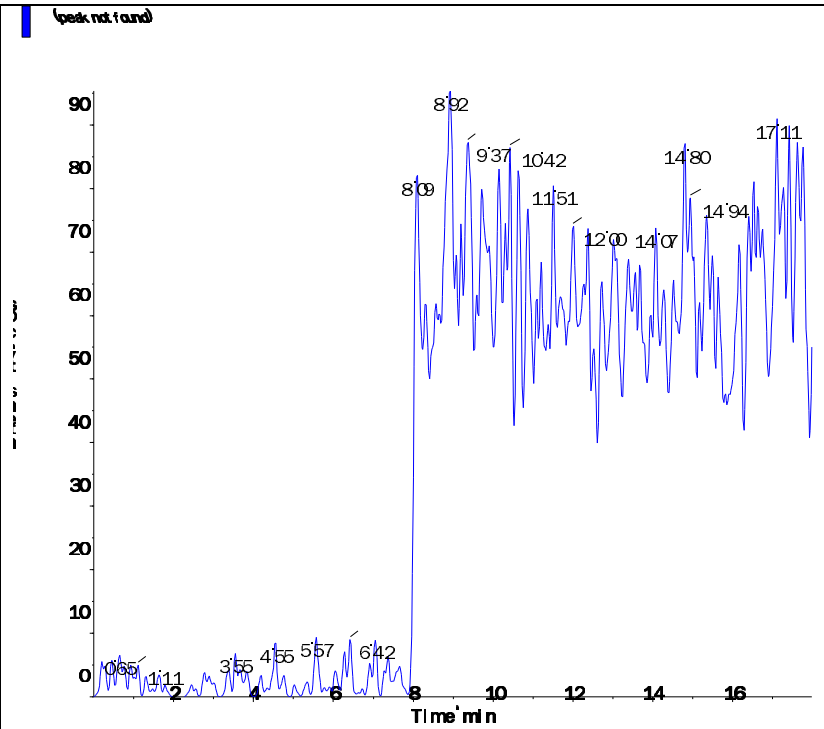

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Data File	LM33709.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/4/2016 1:09:41 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559618-14 CCB	**Injection Vial**	1.00
Data File	LM33709.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 1:09:41 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559618-14	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.310e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

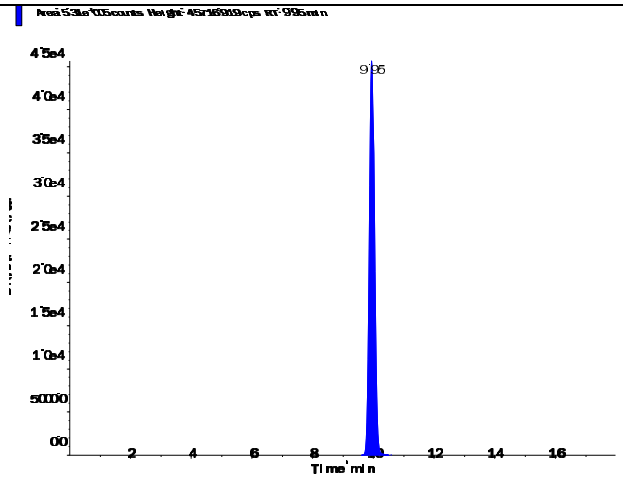

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Printed: 3/4/2016 2:12 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.94) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	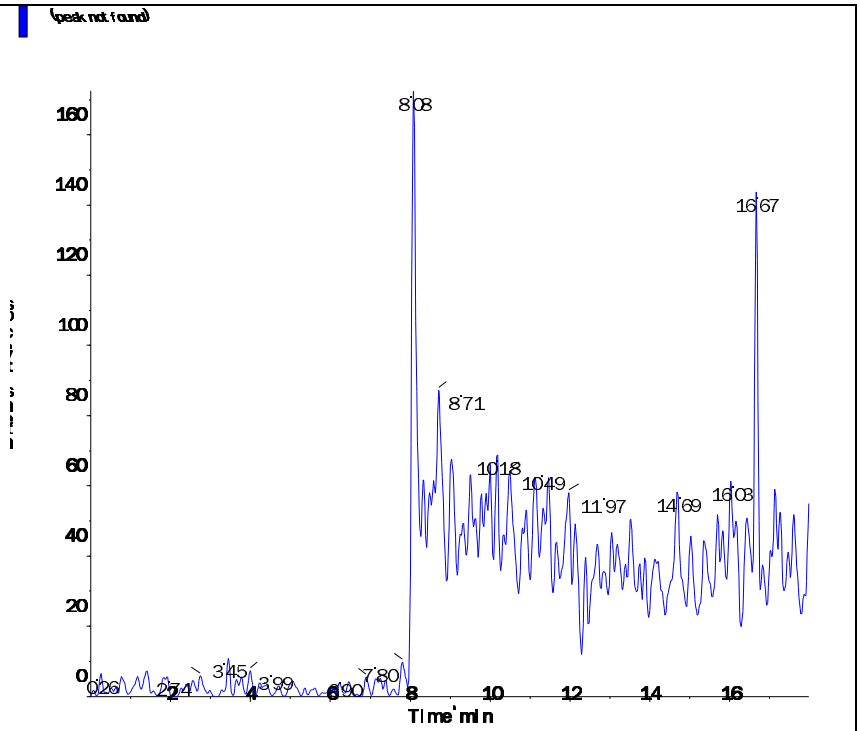
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.92) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	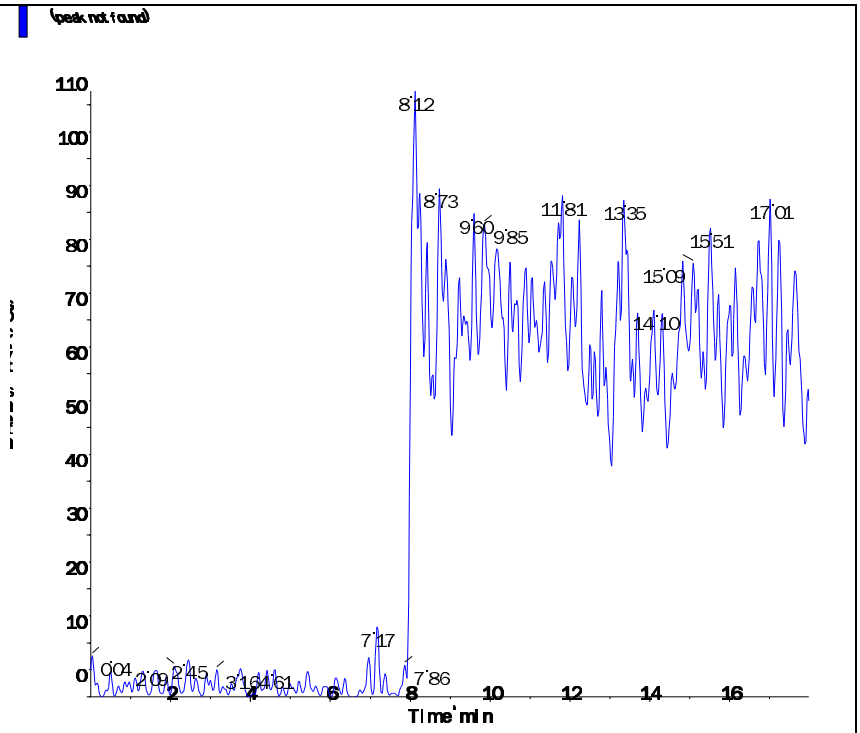

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Printed: 3/4/2016 1:57 PM

Data File	LM33657.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/3/2016 6:40:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559621-01 MCT (2.0ug/KG)	**Injection Vial**	4.00
Data File	LM33657.wiff	**Injection Volume**	10.00
Acquisition Date	3/3/2016 6:40:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559621-01	**Dilution Factor**	1.00
Sample Comment	7,1 STD72686	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.230e+05	9.53	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.980e+04	9.54	N/A	0.205
Perchlorate conf	1.180e+04	9.53	N/A	0.187

O18LP (Internal Standard)

RT (Exp. RT): 9.53(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

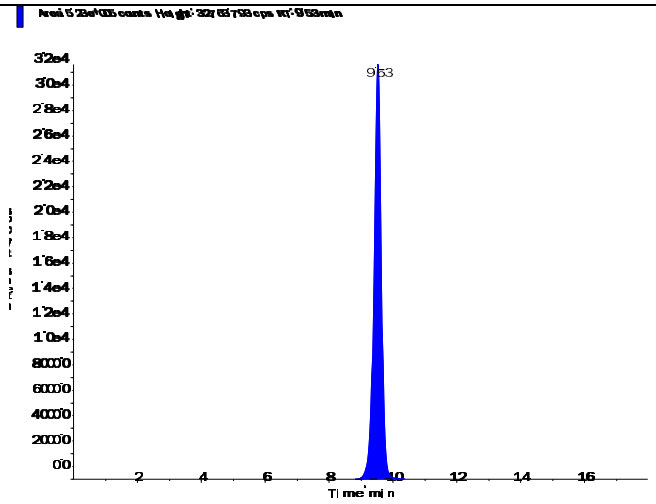

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.54 (9.94) min
Calculated conc:	0.205 ng/ml
Area Ratio:	0.076
Sample Type:	(Unknown)

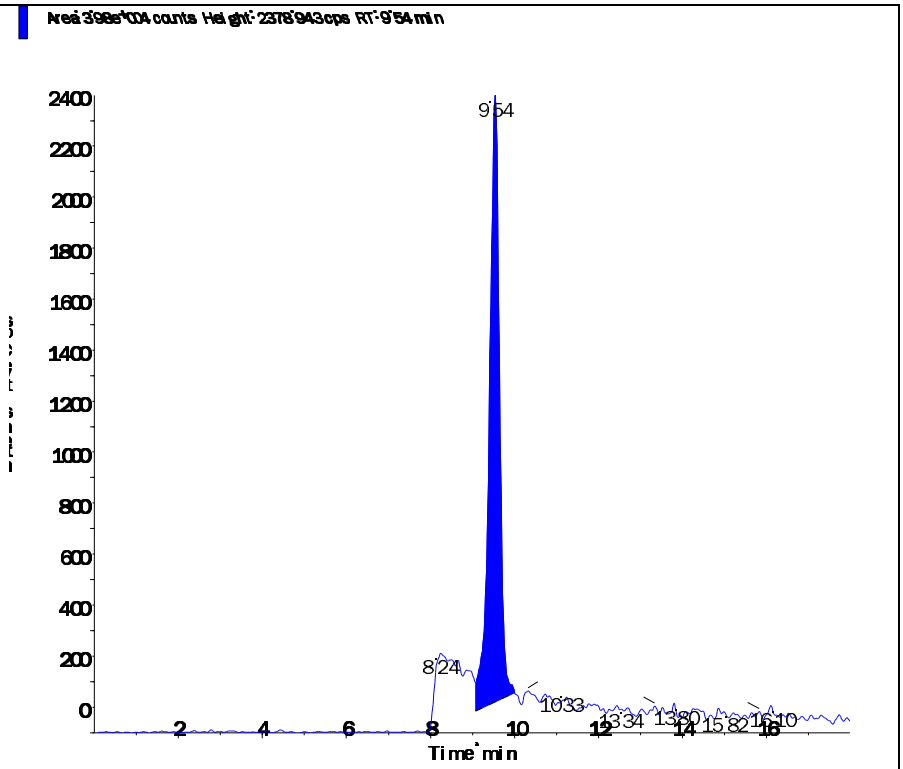

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.53 (9.92) min
Calculated conc:	0.187 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

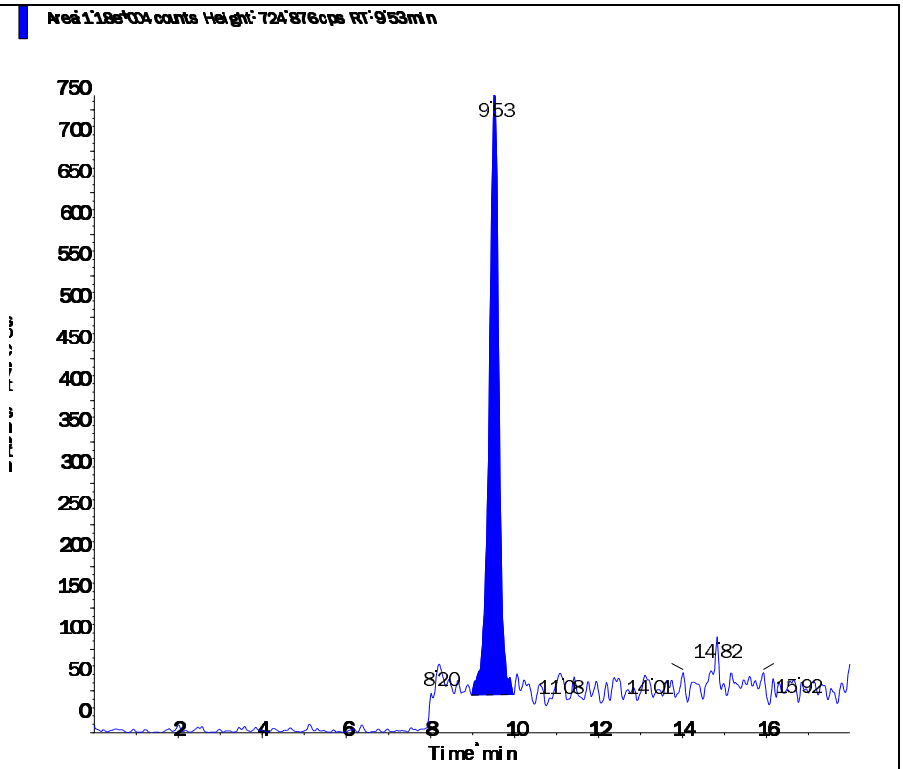

2.2.1.5 Raw QC Data

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Created with Analyst Reporter
Printed: 3/4/2016 1:57 PM

Data File	LM33658.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/3/2016 6:59:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559621-02 BLK	**Injection Vial**	5.00
Data File	LM33658.wiff	**Injection Volume**	10.00
Acquisition Date	3/3/2016 6:59:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559621-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.130e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	5.440e+02	9.95	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

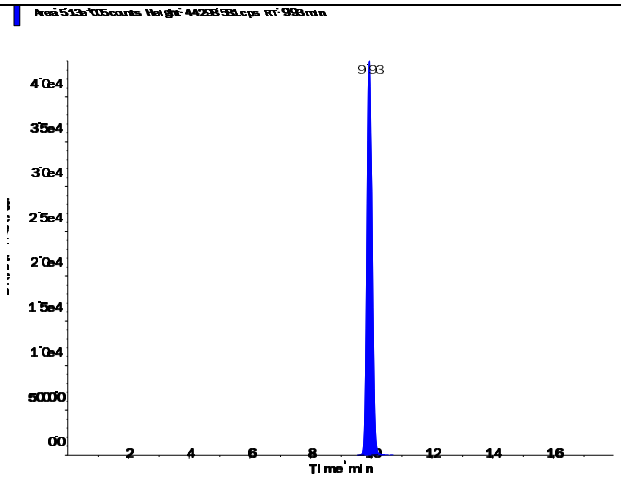

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.94) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	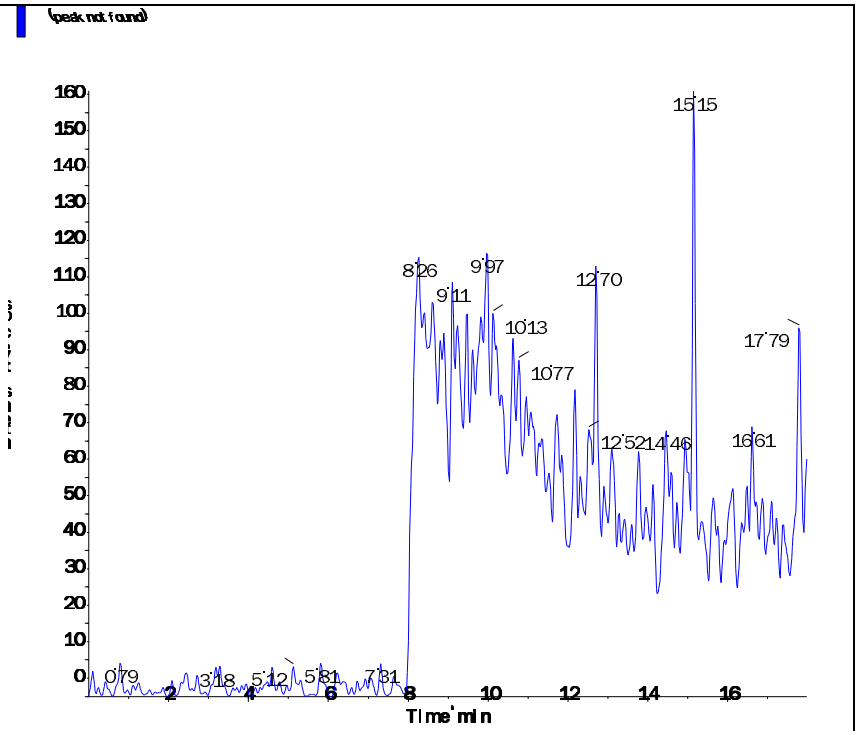
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.95 (9.92) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	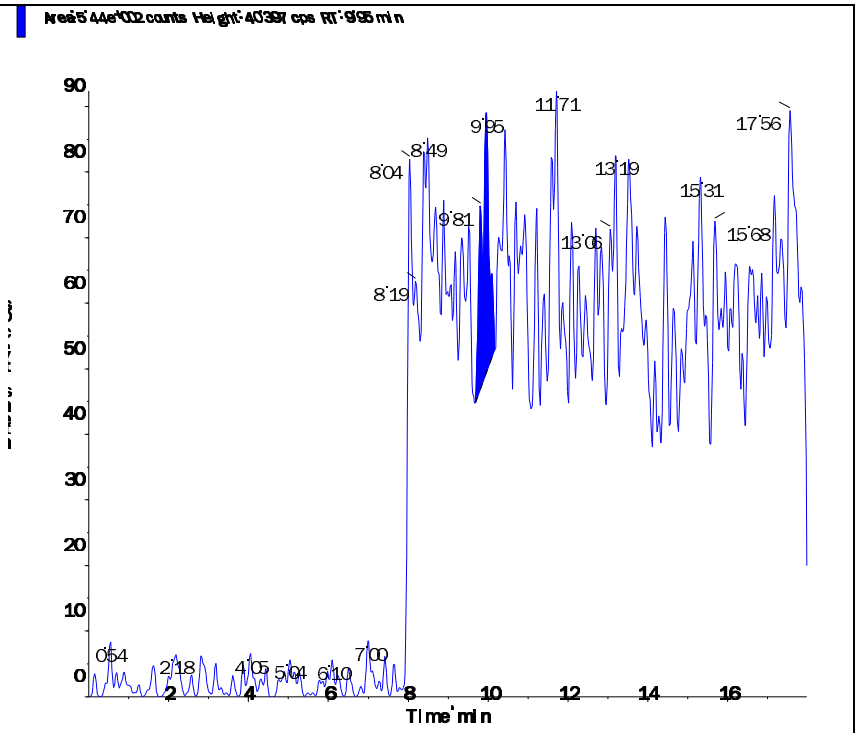

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Data File	LM33659.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/3/2016 7:18:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559621-02 LCS (2.0ug/KG)	**Injection Vial**	6.00
Data File	LM33659.wiff	**Injection Volume**	10.00
Acquisition Date	3/3/2016 7:18:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559621-03	**Dilution Factor**	1.00
Sample Comment	7,1 STD72686	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.170e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.740e+04	9.94	N/A	0.195
Perchlorate conf	1.280e+04	9.93	N/A	0.206

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

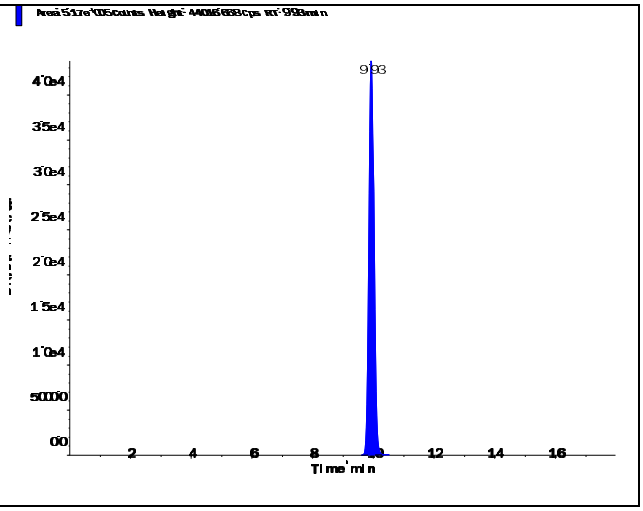

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.195 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

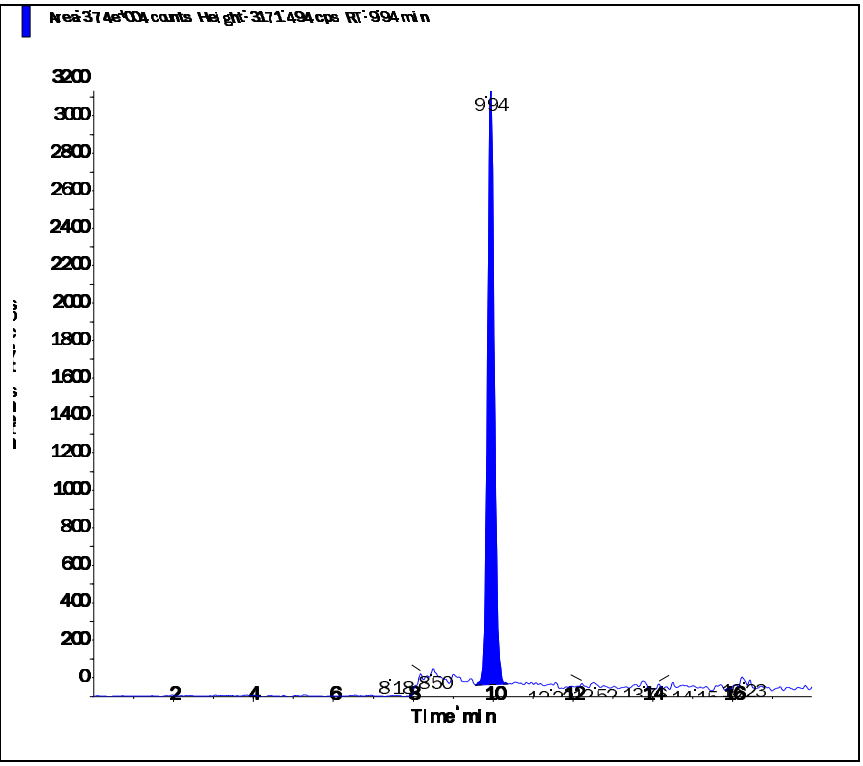

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

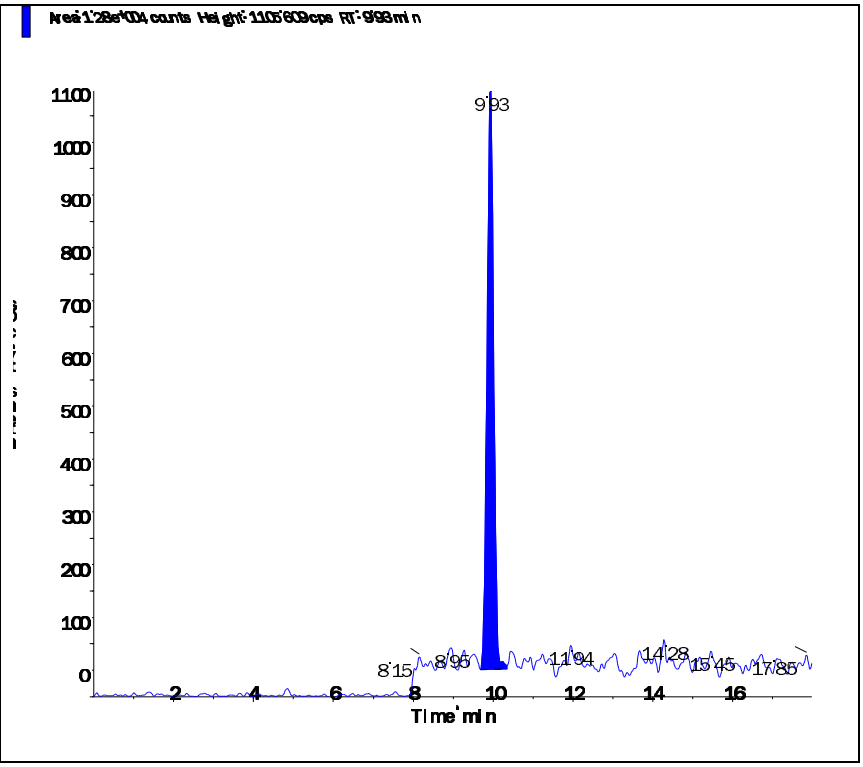

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Data File	LM33705.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/4/2016 11:53:57 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559621-05 MS (100X)	**Injection Vial**	13.00
Data File	LM33705.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 11:53:57 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559621-05	**Dilution Factor**	1.00
Sample Comment	7,100 STD72686	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.980e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.080e+05	9.95	N/A	2.33
Perchlorate conf	1.280e+05	9.94	N/A	2.28

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

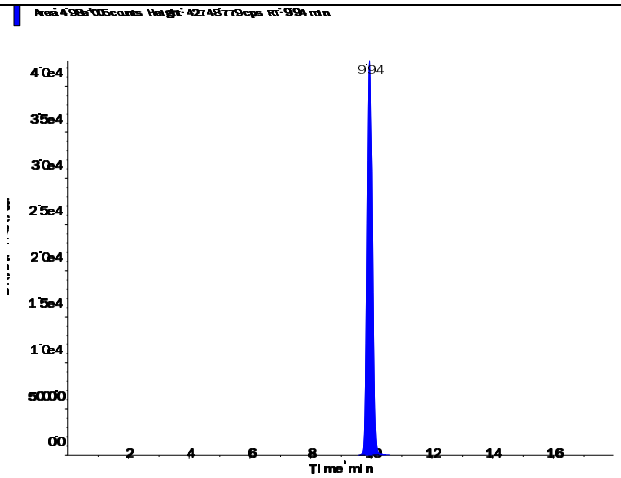

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	2.33 ng/ml
Area Ratio:	0.819
Sample Type:	(Unknown)

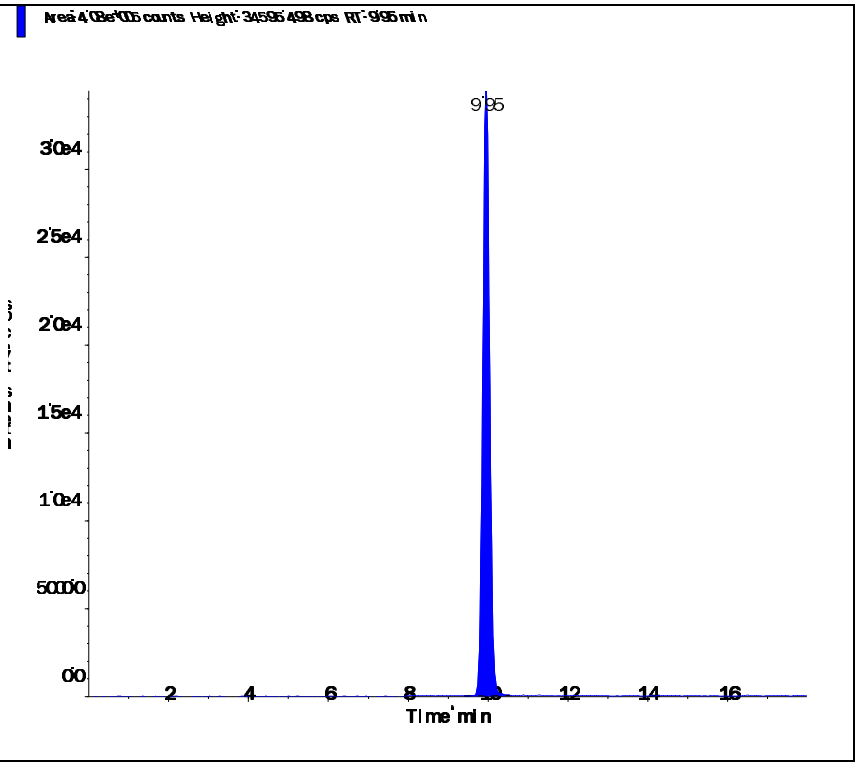

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	2.28 ng/ml
Area Ratio:	0.258
Sample Type:	(Unknown)

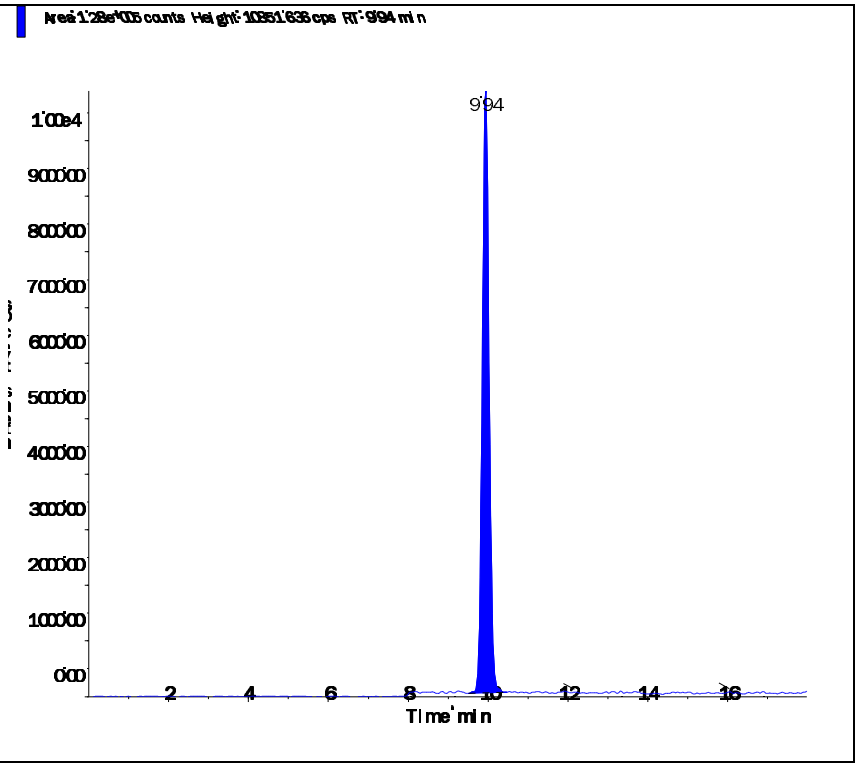

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 3/4/2016 2:11 PM

Data File	LM33706.wiff	**Result Table**	030316_WTD.rdb
Acquisition Date	3/4/2016 12:12:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559621-06 MSD (100X)	**Injection Vial**	14.00
Data File	LM33706.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 12:12:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030316_WTD.rdb
Sample ID	WG559621-06	**Dilution Factor**	1.00
Sample Comment	7,100 STD72686	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.750e+05	9.95	N/A	2.15
Perchlorate conf	1.190e+05	9.93	N/A	2.12

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

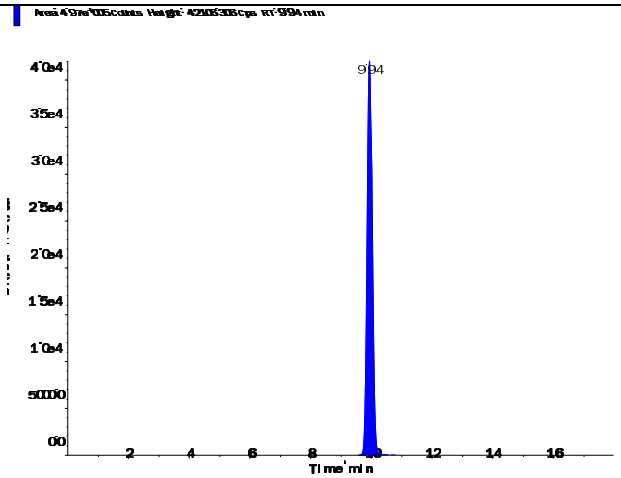

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 3/4/2016 2:11 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	2.15 ng/ml
Area Ratio:	0.756
Sample Type:	(Unknown)

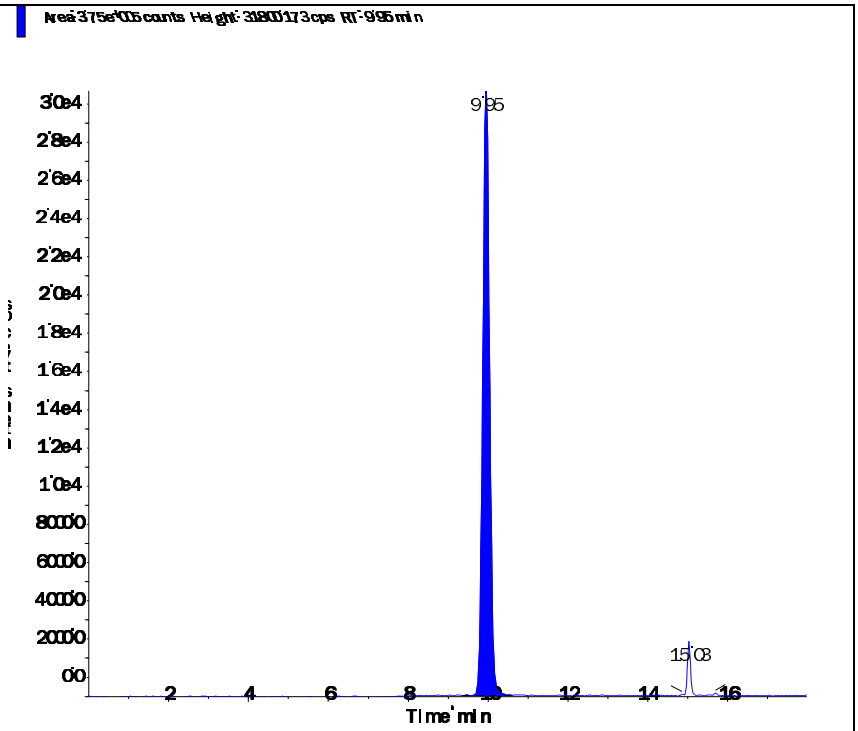

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	2.12 ng/ml
Area Ratio:	0.24
Sample Type:	(Unknown)

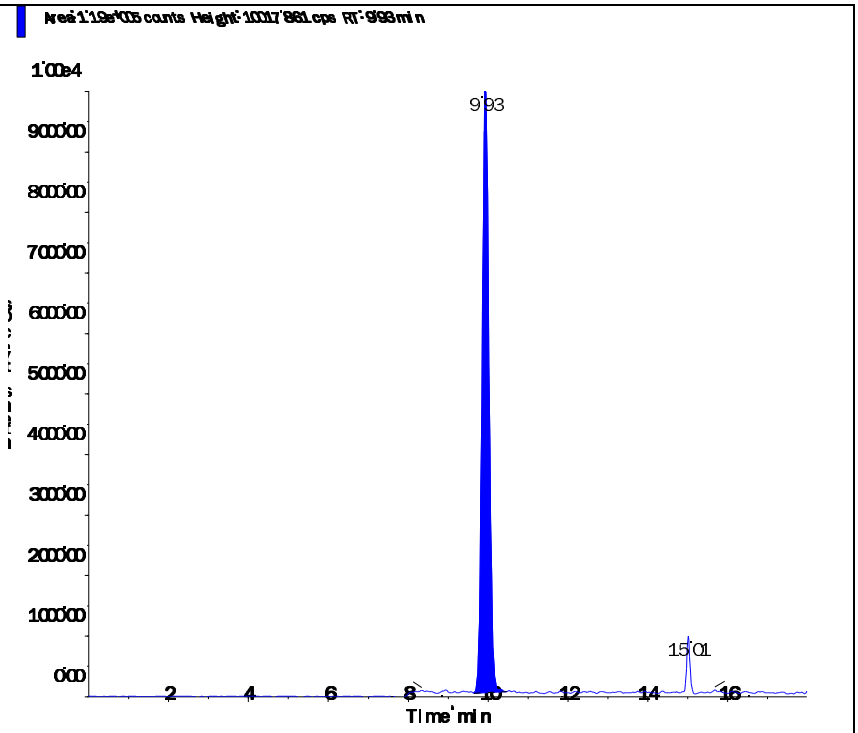

s.dataFile Page 2 of 2

2.3 General Chemistry Data

2.3.1 Percent Solids Data

2.3.1.1 Raw Data

Example Percent Solids Calculations

1.0 Calculating the percent solids of a sample.

$$\%Solids = \frac{WT3 - WT1}{WT2 - WT1} \times F$$

Where:	
WT1 = Weight, in grams, of the empty container	1.30 g
WT2 = Weight, in grams, of the container and wet sample	21.274 g
WT3 = Weight, in grams, of the container and dried sample	5.21 g
F = Factor to get units as percent weight	100
%Solids = Percent solids present in sample.	19.58%

2.0 Calculating the percent moisture of a sample.

% Moisture = 100 - % Solids from 1.0 calculation

Microbac Laboratories Inc.

PERCENT SOLIDS

Workgroup (AAB#): WG559579 Analyst: AC ADT(on): 03/03/2016 13:21
Method: D2216-90 Instrument: BAL021 ADT(off): 03/04/2016 08:03
SOP: K0003 Rev: 14

SAMPLE NUMBER	EMPTY PAN WT 1	WET WT 2	DRY WT 3A	DRY WT 3B	DRY WT 3C	PERCENT SOLID	PERCENT MOISTURE
L16030034-01	1.286	13.64	3.12			14.85	
L16030036-01	1.296	16.583	5.218			25.66	
L16030047-01	1.296	15.07	1.632			2.439	
L16030058-02	1.294	22.062	21.841			98.94	
L16030058-05	1.291	14.739	14.238			96.27	
L16030063-01	1.295	12.939	1.571			2.370	
L16030105-01	1.301	44.884	38.856			86.17	
L16030110-01	1.302	20.95	20.94			99.95	
L16030134-01	1.298	20.458	16.762			80.71	
L16030134-02	1.294	21.979	18.015			80.84	
L16030134-03	1.293	23.057	20.47			88.11	
L16030134-04	1.301	27.828	23.138			82.32	
L16030134-05	1.296	37.47	31.003			82.12	
L16030134-06	1.294	24.137	19.576			80.03	
WG559579-01	1.294	24.137	19.576			80.03	19.97
WG559579-02	1.295	23.702	19.297			80.34	19.66

Analyst: [signature]

PERCENT_SOLIDS - Modified 04/24/2008
PDF ID: 4656268
Report generated: 03/04/2016 08:06

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
March 10, 2016

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001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
March 10, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
March 10, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Debra Richmon
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	KAYLA PALLANES
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Kayla Pallanes
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD	pH:	
Project Name/Location:	Longhorn		
Project Number:	60274185 11DASOW16 DGI-RPT OL		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOCs 8260	Perchlorate 6850	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
	18DPT06(5-5.5)~~030216~~	020316		3/2/16	0858		X	S	2	X	X					
	18DPT06(5-5.5)~~030216FD~~	020316	FD	3/2/16	0858		X	S	2	X	X					
	18DPT06(15-15.5)~~030216~~	020316		3/2/16	1035		X	S	2	X	X					
	18DPT06(20-20.5)~~030216~~	020316		3/2/16	1111		X	S	2	X	X					
	18DPT06(27.5-28)~~030216~~	020316		3/2/16	1205		X	S	2	X	X					
	18DPT06(38.5-39)	020316		3/2/16	1500		X	S	2	X	X					

Comments: ~~STANDARD TAT~~ 48HR TAT

Relinquished by: (Signature) Kayla Pallanes	Date 2/3/16	Time 1700	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time			Time	Remarks:

Microbac OVD
Received: 03/03/2016 09:52
By: BRENDA GREGORY
221000082672
Brenda Gregory

*Homogenize all composite samples prior to analysis

Manager, Pink QA/QC Manager

09695558

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030134
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 07-MAR-2016

Samplenum	Container ID	Products
L16030134-01	708704	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-MAR-2016 10:14	BRG		
2	ANALYZ	V1	ORG4	03-MAR-2016 10:18	AWE	CLS	

Samplenum	Container ID	Products
L16030134-01	708705	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	03-MAR-2016 10:14	BRG		
2	ANALYZ	W1	SEM	03-MAR-2016 11:53	WTD	CLS	
3	STORE	DIG	A1	04-MAR-2016 13:45	BRG	ERP	

Samplenum	Container ID	Products
L16030134-02	708706	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-MAR-2016 10:14	BRG		
2	ANALYZ	V1	ORG4	03-MAR-2016 10:18	AWE	CLS	

Samplenum	Container ID	Products
L16030134-02	708707	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	03-MAR-2016 10:14	BRG		
2	ANALYZ	W1	SEM	03-MAR-2016 11:52	WTD	CLS	
3	STORE	DIG	A1	04-MAR-2016 13:45	BRG	ERP	

Samplenum	Container ID	Products
L16030134-03	708708	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-MAR-2016 10:14	BRG		
2	ANALYZ	V1	ORG4	03-MAR-2016 10:18	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030134
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 07-MAR-2016

Samplenum	Container ID	Products
L16030134-03	708709	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	03-MAR-2016 10:14	BRG		
2	ANALYZ	W1	SEM	03-MAR-2016 11:52	WTD	CLS	
3	STORE	DIG	A1	04-MAR-2016 13:45	BRG	ERP	

Samplenum	Container ID	Products
L16030134-04	708710	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-MAR-2016 10:14	BRG		
2	ANALYZ	V1	ORG4	03-MAR-2016 10:18	AWE	CLS	

Samplenum	Container ID	Products
L16030134-04	708711	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	03-MAR-2016 10:14	BRG		
2	ANALYZ	W1	SEM	03-MAR-2016 11:53	WTD	CLS	
3	STORE	DIG	A1	04-MAR-2016 13:45	BRG	ERP	

Samplenum	Container ID	Products
L16030134-05	708712	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-MAR-2016 10:14	BRG		
2	ANALYZ	V1	ORG4	03-MAR-2016 10:18	AWE	CLS	

Samplenum	Container ID	Products
L16030134-05	708713	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	03-MAR-2016 10:14	BRG		
2	ANALYZ	W1	SEM	03-MAR-2016 11:52	WTD	CLS	
3	STORE	DIG	A1	04-MAR-2016 13:45	BRG	ERP	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030134
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 07-MAR-2016

Samplenum	Container ID	Products
L16030134-06	708714	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	03-MAR-2016 10:14	BRG		
2	ANALYZ	V1	ORG4	03-MAR-2016 10:18	AWE	CLS	

Samplenum	Container ID	Products
L16030134-06	708715	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	03-MAR-2016 10:14	BRG		
2	ANALYZ	W1	SEM	03-MAR-2016 11:52	WTD	CLS	
3	STORE	DIG	A1	04-MAR-2016 13:45	BRG	ERP	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16030234

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on March 15 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00113624	I	0.0		J2317165901	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	NA
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	NA

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18DPT08(5-5.5)030316	L16030234-01	03/03/2016 13:15	03/04/2016 10:17
18DPT08(15-15.5)030316	L16030234-02	03/03/2016 13:49	03/04/2016 10:17
18DPT08(10-10.5)030316	L16030234-03	03/03/2016 14:40	03/04/2016 10:17
18DPT08(21-21.5)030316	L16030234-04	03/03/2016 14:50	03/04/2016 10:17
18DPT08(26-26.5)030316	L16030234-05	03/03/2016 14:55	03/04/2016 10:17
18DPT08(35-35.5)030316	L16030234-06	03/03/2016 15:05	03/04/2016 10:17

Microbac REPORT L16030234
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.0 Summary Data

1.1 Narratives

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030234
Project Name:		**Method:**	8260
Prep Batch Number(s):	559859, 559982	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-03-14 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden	Franci Bolden	Analyst I	2016-03-14 19:39:22

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030234
Project Name:		**Method:**	8260
Prep Batch Number(s):	559859, 559982	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-03-14 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				
Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030234
Project Name:		**Method:**	8260
Prep Batch Number(s):	559859, 559982	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-03-14 00:00:00		

Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				
Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030234
Project Name:		**Method:**	8260
Prep Batch Number(s):	559859, 559982	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-03-14 00:00:00		

Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?		X			1
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					
Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030234
Project Name:		**Method:**	8260
Prep Batch Number(s):	559859, 559982	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-03-14 00:00:00		

Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) Dichlorodifluoromethane exceeded the UCL in the ICV.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030234
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559808	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-08 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-03-08 19:45:14

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030234
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559808	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-08 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030234
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559808	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-08 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030234
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559808	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-08 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030234
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559808	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-08 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030234
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559808	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-08 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030234
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559839	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-07 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2016-03-07 17:47:27

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030234
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559839	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-07 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?			X		
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?			X		
Were sample detection limits reported for all analytes not detected?			X		
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?			X		
Were blanks analyzed at the appropriate frequency?			X		
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?			X		
Were blank concentrations < MQL?			X		
Laboratory control samples (LCS):			X		
Were all COCs included in the LCS?			X		

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030234
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559839	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-07 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?			X		
Were LCSs analyzed at the required frequency?			X		
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?			X		
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?			X		
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?			X		
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?			X		
Are unadjusted MQLs and DCSs included in the laboratory data package?			X		
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?			X		
Were percent RSDs or correlation coefficient criteria met?			X		

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030234
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559839	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-07 00:00:00		

Was the number of standards recommended in the method used for all analytes?			X		
Were all points generated between the lowest and highest standard used to calculate the curve?			X		
Are ICAL data available for all instruments used?			X		
Has the initial calibration curve been verified using an appropriate second source standard?			X		
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030234
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559839	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-07 00:00:00		

Was a MDL study performed for each reported analyte?			X		
Is the MDL either adjusted or supported by the analysis of DCSs?			X		
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?			X		
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030234
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559839	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-07 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030234-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT08(5-5.5)030316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:01
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559859	**Analyst:**	ADC	**Run Date:**	03/06/2016 21:31
Collect Date:	03/03/2016 13:15	**Dilution:**	1	**File ID:**	9M973110
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.0	U	26.0	13.0	6.51
Benzene	71-43-2	1.30	U	6.51	1.30	0.651
Bromobenzene	108-86-1	1.30	U	6.51	1.30	0.651
Bromochloromethane	74-97-5	2.60	U	6.51	2.60	1.30
Bromodichloromethane	75-27-4	1.30	U	6.51	1.30	0.651
Bromoform	75-25-2	1.30	U	6.51	1.30	0.651
Bromomethane	74-83-9	2.60	U	6.51	2.60	1.30
2-Butanone	78-93-3	6.50	U	13.0	6.50	3.25
n-Butylbenzene	104-51-8	1.30	U	6.51	1.30	0.651
sec-Butylbenzene	135-98-8	1.30	U	6.51	1.30	0.651
tert-Butylbenzene	98-06-6	1.30	U	6.51	1.30	0.651
Carbon disulfide	75-15-0	1.30	U	6.51	1.30	0.651
Carbon tetrachloride	56-23-5	1.30	U	6.51	1.30	0.651
Chlorobenzene	108-90-7	1.30	U	6.51	1.30	0.651
Chlorodibromomethane	124-48-1	1.30	U	6.51	1.30	0.651
Chloroethane	75-00-3	2.60	U	6.51	2.60	1.30
Chloroform	67-66-3	1.30	U	6.51	1.30	0.651
Chloromethane	74-87-3	5.20	U	13.0	5.20	2.60
2-Chlorotoluene	95-49-8	1.30	U	6.51	1.30	0.651
4-Chlorotoluene	106-43-4	1.30	U	6.51	1.30	0.651
1,2-Dibromo-3-chloropropane	96-12-8	5.20	U	13.0	5.20	2.60
1,2-Dibromoethane	106-93-4	1.30	U	6.51	1.30	0.651
Dibromomethane	74-95-3	1.30	U	6.51	1.30	0.651
1,2-Dichlorobenzene	95-50-1	1.30	U	6.51	1.30	0.651
1,3-Dichlorobenzene	541-73-1	1.30	U	6.51	1.30	0.651
1,4-Dichlorobenzene	106-46-7	1.30	U	6.51	1.30	0.651
Dichlorodifluoromethane	75-71-8	2.60	U	6.51	2.60	1.30
1,1-Dichloroethane	75-34-3	2.60	U	6.51	2.60	1.30
1,2-Dichloroethane	107-06-2	1.30	U	6.51	1.30	0.651
1,1-Dichloroethene	75-35-4	1.30	U	6.51	1.30	0.651
cis-1,2-Dichloroethene	156-59-2	1.30	U	6.51	1.30	0.651
trans-1,2-Dichloroethene	156-60-5	1.30	U	6.51	1.30	0.651

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.30	U	6.51	1.30	0.651
1,3-Dichloropropane	142-28-9	1.30	U	6.51	1.30	0.651
2,2-Dichloropropane	594-20-7	1.30	U	6.51	1.30	0.651
cis-1,3-Dichloropropene	10061-01-5	1.30	U	6.51	1.30	0.651
trans-1,3-Dichloropropene	10061-02-6	1.30	U	6.51	1.30	0.651
1,1-Dichloropropene	563-58-6	1.30	U	6.51	1.30	0.651
Ethylbenzene	100-41-4	1.30	U	6.51	1.30	0.651
2-Hexanone	591-78-6	6.50	U	13.0	6.50	3.25
Hexachlorobutadiene	87-68-3	1.30	U	6.51	1.30	0.651
Isopropylbenzene	98-82-8	1.30	U	6.51	1.30	0.651
p-Isopropyltoluene	99-87-6	1.30	U	6.51	1.30	0.651
4-Methyl-2-pentanone	108-10-1	6.50	U	13.0	6.50	3.25
Methylene chloride	75-09-2	2.60	U	6.51	2.60	1.30
Naphthalene	91-20-3	1.30	U	6.51	1.30	0.651
n-Propylbenzene	103-65-1	1.30	U	6.51	1.30	0.651
Styrene	100-42-5	1.30	U	6.51	1.30	0.651
1,1,1,2-Tetrachloroethane	630-20-6	1.30	U	6.51	1.30	0.651
1,1,2,2-Tetrachloroethane	79-34-5	1.30	U	6.51	1.30	0.651
Tetrachloroethene	127-18-4	1.30	U	6.51	1.30	0.651
Toluene	108-88-3	1.30	U	6.51	1.30	0.651
1,2,3-Trichlorobenzene	87-61-6	1.30	U	6.51	1.30	0.651
1,2,4-Trichlorobenzene	120-82-1	1.30	U	6.51	1.30	0.651
1,1,1-Trichloroethane	71-55-6	1.30	U	6.51	1.30	0.651
1,1,2-Trichloroethane	79-00-5	1.30	U	6.51	1.30	0.651
Trichloroethene	79-01-6	1.30	U	6.51	1.30	0.651
Trichlorofluoromethane	75-69-4	2.60	U	6.51	2.60	1.30
1,2,3-Trichloropropane	96-18-4	2.60	U	6.51	2.60	1.30
1,2,4-Trimethylbenzene	95-63-6	1.30	U	6.51	1.30	0.651
1,3,5-Trimethylbenzene	108-67-8	1.30	U	6.51	1.30	0.651
Vinyl chloride	75-01-4	2.60	U	6.51	2.60	1.30
o-Xylene	95-47-6	1.30	U	6.51	1.30	0.651
m-,p-Xylene	179601-23-1	1.30	U	6.51	1.30	0.651

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.7	80	120	
1,2-Dichloroethane-d4	112	80	120	
Toluene-d8	98.8	85	115	
4-Bromofluorobenzene	102	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030234-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT08(5-5.5)030316	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/04/2016 18:31
Collect Date:	03/03/2016 13:15	**Dilution:**	1	**File ID:**	1LM.LM33716
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.28	U	4.58	2.28	1.14

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030234-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT08(15-15.5)030316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:02
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559859	**Analyst:**	ADC	**Run Date:**	03/06/2016 22:01
Collect Date:	03/03/2016 13:49	**Dilution:**	1	**File ID:**	9M973111
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.9	U	25.9	12.9	6.46
Benzene	71-43-2	1.29	U	6.46	1.29	0.646
Bromobenzene	108-86-1	1.29	U	6.46	1.29	0.646
Bromochloromethane	74-97-5	2.58	U	6.46	2.58	1.29
Bromodichloromethane	75-27-4	1.29	U	6.46	1.29	0.646
Bromoform	75-25-2	1.29	U	6.46	1.29	0.646
Bromomethane	74-83-9	2.58	U	6.46	2.58	1.29
2-Butanone	78-93-3	6.46	U	12.9	6.46	3.23
n-Butylbenzene	104-51-8	1.29	U	6.46	1.29	0.646
sec-Butylbenzene	135-98-8	1.29	U	6.46	1.29	0.646
tert-Butylbenzene	98-06-6	1.29	U	6.46	1.29	0.646
Carbon disulfide	75-15-0	1.29	U	6.46	1.29	0.646
Carbon tetrachloride	56-23-5	1.29	U	6.46	1.29	0.646
Chlorobenzene	108-90-7	1.29	U	6.46	1.29	0.646
Chlorodibromomethane	124-48-1	1.29	U	6.46	1.29	0.646
Chloroethane	75-00-3	2.58	U	6.46	2.58	1.29
Chloroform	67-66-3	1.29	U	6.46	1.29	0.646
Chloromethane	74-87-3	5.18	U	12.9	5.18	2.59
2-Chlorotoluene	95-49-8	1.29	U	6.46	1.29	0.646
4-Chlorotoluene	106-43-4	1.29	U	6.46	1.29	0.646
1,2-Dibromo-3-chloropropane	96-12-8	5.18	U	12.9	5.18	2.59
1,2-Dibromoethane	106-93-4	1.29	U	6.46	1.29	0.646
Dibromomethane	74-95-3	1.29	U	6.46	1.29	0.646
1,2-Dichlorobenzene	95-50-1	1.29	U	6.46	1.29	0.646
1,3-Dichlorobenzene	541-73-1	1.29	U	6.46	1.29	0.646
1,4-Dichlorobenzene	106-46-7	1.29	U	6.46	1.29	0.646
Dichlorodifluoromethane	75-71-8	2.58	U	6.46	2.58	1.29
1,1-Dichloroethane	75-34-3	2.58	U	6.46	2.58	1.29
1,2-Dichloroethane	107-06-2	1.29	U	6.46	1.29	0.646
1,1-Dichloroethene	75-35-4	1.29	U	6.46	1.29	0.646
cis-1,2-Dichloroethene	156-59-2	1.29	U	6.46	1.29	0.646

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.29	U	6.46	1.29	0.646
1,2-Dichloropropane	78-87-5	1.29	U	6.46	1.29	0.646
1,3-Dichloropropane	142-28-9	1.29	U	6.46	1.29	0.646
2,2-Dichloropropane	594-20-7	1.29	U	6.46	1.29	0.646
cis-1,3-Dichloropropene	10061-01-5	1.29	U	6.46	1.29	0.646
trans-1,3-Dichloropropene	10061-02-6	1.29	U	6.46	1.29	0.646
1,1-Dichloropropene	563-58-6	1.29	U	6.46	1.29	0.646
Ethylbenzene	100-41-4	1.29	U	6.46	1.29	0.646
2-Hexanone	591-78-6	6.46	U	12.9	6.46	3.23
Hexachlorobutadiene	87-68-3	1.29	U	6.46	1.29	0.646
Isopropylbenzene	98-82-8	1.29	U	6.46	1.29	0.646
p-Isopropyltoluene	99-87-6	1.29	U	6.46	1.29	0.646
4-Methyl-2-pentanone	108-10-1	6.46	U	12.9	6.46	3.23
Methylene chloride	75-09-2	2.58	U	6.46	2.58	1.29
Naphthalene	91-20-3	1.29	U	6.46	1.29	0.646
n-Propylbenzene	103-65-1	1.29	U	6.46	1.29	0.646
Styrene	100-42-5	1.29	U	6.46	1.29	0.646
1,1,1,2-Tetrachloroethane	630-20-6	1.29	U	6.46	1.29	0.646
1,1,2,2-Tetrachloroethane	79-34-5	1.29	U	6.46	1.29	0.646
Tetrachloroethene	127-18-4	1.29	U	6.46	1.29	0.646
Toluene	108-88-3	1.29	U	6.46	1.29	0.646
1,2,3-Trichlorobenzene	87-61-6	1.29	U	6.46	1.29	0.646
1,2,4-Trichlorobenzene	120-82-1	1.29	U	6.46	1.29	0.646
1,1,1-Trichloroethane	71-55-6	1.29	U	6.46	1.29	0.646
1,1,2-Trichloroethane	79-00-5	1.29	U	6.46	1.29	0.646
Trichloroethene	79-01-6	1.29	U	6.46	1.29	0.646
Trichlorofluoromethane	75-69-4	2.58	U	6.46	2.58	1.29
1,2,3-Trichloropropane	96-18-4	2.58	U	6.46	2.58	1.29
1,2,4-Trimethylbenzene	95-63-6	1.29	U	6.46	1.29	0.646
1,3,5-Trimethylbenzene	108-67-8	1.29	U	6.46	1.29	0.646
Vinyl chloride	75-01-4	2.58	U	6.46	2.58	1.29
o-Xylene	95-47-6	1.29	U	6.46	1.29	0.646
m-,p-Xylene	179601-23-1	1.29	U	6.46	1.29	0.646

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.7	80	120	
1,2-Dichloroethane-d4	99.4	80	120	
Toluene-d8	98.3	85	115	
4-Bromofluorobenzene	104	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030234-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT08(15-15.5)030316	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/04/2016 18:50
Collect Date:	03/03/2016 13:49	**Dilution:**	1	**File ID:**	1LM.LM33717
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.34	U	4.68	2.34	1.17

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030234-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT08(10-10.5)030316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:03
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559859	**Analyst:**	ADC	**Run Date:**	03/06/2016 22:31
Collect Date:	03/03/2016 14:40	**Dilution:**	1	**File ID:**	9M973112
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.4	U	24.7	12.4	6.18
Benzene	71-43-2	1.24	U	6.18	1.24	0.618
Bromobenzene	108-86-1	1.24	U	6.18	1.24	0.618
Bromochloromethane	74-97-5	2.48	U	6.18	2.48	1.24
Bromodichloromethane	75-27-4	1.24	U	6.18	1.24	0.618
Bromoform	75-25-2	1.24	U	6.18	1.24	0.618
Bromomethane	74-83-9	2.48	U	6.18	2.48	1.24
2-Butanone	78-93-3	6.18	U	12.4	6.18	3.09
n-Butylbenzene	104-51-8	1.24	U	6.18	1.24	0.618
sec-Butylbenzene	135-98-8	1.24	U	6.18	1.24	0.618
tert-Butylbenzene	98-06-6	1.24	U	6.18	1.24	0.618
Carbon disulfide	75-15-0	1.24	U	6.18	1.24	0.618
Carbon tetrachloride	56-23-5	1.24	U	6.18	1.24	0.618
Chlorobenzene	108-90-7	1.24	U	6.18	1.24	0.618
Chlorodibromomethane	124-48-1	1.24	U	6.18	1.24	0.618
Chloroethane	75-00-3	2.48	U	6.18	2.48	1.24
Chloroform	67-66-3	1.24	U	6.18	1.24	0.618
Chloromethane	74-87-3	4.94	U	12.4	4.94	2.47
2-Chlorotoluene	95-49-8	1.24	U	6.18	1.24	0.618
4-Chlorotoluene	106-43-4	1.24	U	6.18	1.24	0.618
1,2-Dibromo-3-chloropropane	96-12-8	4.94	U	12.4	4.94	2.47
1,2-Dibromoethane	106-93-4	1.24	U	6.18	1.24	0.618
Dibromomethane	74-95-3	1.24	U	6.18	1.24	0.618
1,2-Dichlorobenzene	95-50-1	1.24	U	6.18	1.24	0.618
1,3-Dichlorobenzene	541-73-1	1.24	U	6.18	1.24	0.618
1,4-Dichlorobenzene	106-46-7	1.24	U	6.18	1.24	0.618
Dichlorodifluoromethane	75-71-8	2.48	U	6.18	2.48	1.24
1,1-Dichloroethane	75-34-3	2.48	U	6.18	2.48	1.24
1,2-Dichloroethane	107-06-2	1.24	U	6.18	1.24	0.618
1,1-Dichloroethene	75-35-4	1.24	U	6.18	1.24	0.618
cis-1,2-Dichloroethene	156-59-2	1.24	U	6.18	1.24	0.618

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.24	U	6.18	1.24	0.618
1,2-Dichloropropane	78-87-5	1.24	U	6.18	1.24	0.618
1,3-Dichloropropane	142-28-9	1.24	U	6.18	1.24	0.618
2,2-Dichloropropane	594-20-7	1.24	U	6.18	1.24	0.618
cis-1,3-Dichloropropene	10061-01-5	1.24	U	6.18	1.24	0.618
trans-1,3-Dichloropropene	10061-02-6	1.24	U	6.18	1.24	0.618
1,1-Dichloropropene	563-58-6	1.24	U	6.18	1.24	0.618
Ethylbenzene	100-41-4	1.24	U	6.18	1.24	0.618
2-Hexanone	591-78-6	6.18	U	12.4	6.18	3.09
Hexachlorobutadiene	87-68-3	1.24	U	6.18	1.24	0.618
Isopropylbenzene	98-82-8	1.24	U	6.18	1.24	0.618
p-Isopropyltoluene	99-87-6	1.24	U	6.18	1.24	0.618
4-Methyl-2-pentanone	108-10-1	6.18	U	12.4	6.18	3.09
Methylene chloride	75-09-2	2.48	U	6.18	2.48	1.24
Naphthalene	91-20-3	1.24	U	6.18	1.24	0.618
n-Propylbenzene	103-65-1	1.24	U	6.18	1.24	0.618
Styrene	100-42-5	1.24	U	6.18	1.24	0.618
1,1,1,2-Tetrachloroethane	630-20-6	1.24	U	6.18	1.24	0.618
1,1,2,2-Tetrachloroethane	79-34-5	1.24	U	6.18	1.24	0.618
Tetrachloroethene	127-18-4	1.24	U	6.18	1.24	0.618
Toluene	108-88-3	1.24	U	6.18	1.24	0.618
1,2,3-Trichlorobenzene	87-61-6	1.24	U	6.18	1.24	0.618
1,2,4-Trichlorobenzene	120-82-1	1.24	U	6.18	1.24	0.618
1,1,1-Trichloroethane	71-55-6	1.24	U	6.18	1.24	0.618
1,1,2-Trichloroethane	79-00-5	1.24	U	6.18	1.24	0.618
Trichloroethene	79-01-6	1.24	U	6.18	1.24	0.618
Trichlorofluoromethane	75-69-4	2.48	U	6.18	2.48	1.24
1,2,3-Trichloropropane	96-18-4	2.48	U	6.18	2.48	1.24
1,2,4-Trimethylbenzene	95-63-6	1.24	U	6.18	1.24	0.618
1,3,5-Trimethylbenzene	108-67-8	1.24	U	6.18	1.24	0.618
Vinyl chloride	75-01-4	2.48	U	6.18	2.48	1.24
o-Xylene	95-47-6	1.24	U	6.18	1.24	0.618
m-,p-Xylene	179601-23-1	1.24	U	6.18	1.24	0.618

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.7	80	120	
1,2-Dichloroethane-d4	100	80	120	
Toluene-d8	97.2	85	115	
4-Bromofluorobenzene	102	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030234-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT08(10-10.5)030316	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/04/2016 19:09
Collect Date:	03/03/2016 14:40	**Dilution:**	1	**File ID:**	1LM.LM33718
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.32	U	4.62	2.32	1.16

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030234-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT08(21-21.5)030316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:04
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559859	**Analyst:**	ADC	**Run Date:**	03/06/2016 23:01
Collect Date:	03/03/2016 14:50	**Dilution:**	1	**File ID:**	9M973113
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.1	U	26.3	13.1	6.57
Benzene	71-43-2	1.31	U	6.57	1.31	0.657
Bromobenzene	108-86-1	1.31	U	6.57	1.31	0.657
Bromochloromethane	74-97-5	2.62	U	6.57	2.62	1.31
Bromodichloromethane	75-27-4	1.31	U	6.57	1.31	0.657
Bromoform	75-25-2	1.31	U	6.57	1.31	0.657
Bromomethane	74-83-9	2.62	U	6.57	2.62	1.31
2-Butanone	78-93-3	6.58	U	13.1	6.58	3.29
n-Butylbenzene	104-51-8	1.31	U	6.57	1.31	0.657
sec-Butylbenzene	135-98-8	1.31	U	6.57	1.31	0.657
tert-Butylbenzene	98-06-6	1.31	U	6.57	1.31	0.657
Carbon disulfide	75-15-0	1.31	U	6.57	1.31	0.657
Carbon tetrachloride	56-23-5	1.31	U	6.57	1.31	0.657
Chlorobenzene	108-90-7	1.31	U	6.57	1.31	0.657
Chlorodibromomethane	124-48-1	1.31	U	6.57	1.31	0.657
Chloroethane	75-00-3	2.62	U	6.57	2.62	1.31
Chloroform	67-66-3	1.31	U	6.57	1.31	0.657
Chloromethane	74-87-3	5.26	U	13.1	5.26	2.63
2-Chlorotoluene	95-49-8	1.31	U	6.57	1.31	0.657
4-Chlorotoluene	106-43-4	1.31	U	6.57	1.31	0.657
1,2-Dibromo-3-chloropropane	96-12-8	5.26	U	13.1	5.26	2.63
1,2-Dibromoethane	106-93-4	1.31	U	6.57	1.31	0.657
Dibromomethane	74-95-3	1.31	U	6.57	1.31	0.657
1,2-Dichlorobenzene	95-50-1	1.31	U	6.57	1.31	0.657
1,3-Dichlorobenzene	541-73-1	1.31	U	6.57	1.31	0.657
1,4-Dichlorobenzene	106-46-7	1.31	U	6.57	1.31	0.657
Dichlorodifluoromethane	75-71-8	2.62	U	6.57	2.62	1.31
1,1-Dichloroethane	75-34-3	2.62	U	6.57	2.62	1.31
1,2-Dichloroethane	107-06-2	1.31	U	6.57	1.31	0.657
1,1-Dichloroethene	75-35-4	1.31	U	6.57	1.31	0.657
cis-1,2-Dichloroethene	156-59-2	1.31	U	6.57	1.31	0.657

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.31	U	6.57	1.31	0.657
1,2-Dichloropropane	78-87-5	1.31	U	6.57	1.31	0.657
1,3-Dichloropropane	142-28-9	1.31	U	6.57	1.31	0.657
2,2-Dichloropropane	594-20-7	1.31	U	6.57	1.31	0.657
cis-1,3-Dichloropropene	10061-01-5	1.31	U	6.57	1.31	0.657
trans-1,3-Dichloropropene	10061-02-6	1.31	U	6.57	1.31	0.657
1,1-Dichloropropene	563-58-6	1.31	U	6.57	1.31	0.657
Ethylbenzene	100-41-4	1.31	U	6.57	1.31	0.657
2-Hexanone	591-78-6	6.58	U	13.1	6.58	3.29
Hexachlorobutadiene	87-68-3	1.31	U	6.57	1.31	0.657
Isopropylbenzene	98-82-8	1.31	U	6.57	1.31	0.657
p-Isopropyltoluene	99-87-6	1.31	U	6.57	1.31	0.657
4-Methyl-2-pentanone	108-10-1	6.58	U	13.1	6.58	3.29
Methylene chloride	75-09-2	2.62	U	6.57	2.62	1.31
Naphthalene	91-20-3	1.31	U	6.57	1.31	0.657
n-Propylbenzene	103-65-1	1.31	U	6.57	1.31	0.657
Styrene	100-42-5	1.31	U	6.57	1.31	0.657
1,1,1,2-Tetrachloroethane	630-20-6	1.31	U	6.57	1.31	0.657
1,1,2,2-Tetrachloroethane	79-34-5	1.31	U	6.57	1.31	0.657
Tetrachloroethene	127-18-4	1.31	U	6.57	1.31	0.657
Toluene	108-88-3	1.31	U	6.57	1.31	0.657
1,2,3-Trichlorobenzene	87-61-6	1.31	U	6.57	1.31	0.657
1,2,4-Trichlorobenzene	120-82-1	1.31	U	6.57	1.31	0.657
1,1,1-Trichloroethane	71-55-6	1.31	U	6.57	1.31	0.657
1,1,2-Trichloroethane	79-00-5	1.31	U	6.57	1.31	0.657
Trichloroethene	79-01-6	1.31	U	6.57	1.31	0.657
Trichlorofluoromethane	75-69-4	2.62	U	6.57	2.62	1.31
1,2,3-Trichloropropane	96-18-4	2.62	U	6.57	2.62	1.31
1,2,4-Trimethylbenzene	95-63-6	1.31	U	6.57	1.31	0.657
1,3,5-Trimethylbenzene	108-67-8	1.31	U	6.57	1.31	0.657
Vinyl chloride	75-01-4	2.62	U	6.57	2.62	1.31
o-Xylene	95-47-6	1.31	U	6.57	1.31	0.657
m-,p-Xylene	179601-23-1	1.31	U	6.57	1.31	0.657

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.9	80	120	
1,2-Dichloroethane-d4	97.2	80	120	
Toluene-d8	98.6	85	115	
4-Bromofluorobenzene	102	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030234-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT08(21-21.5)030316	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/04/2016 19:28
Collect Date:	03/03/2016 14:50	**Dilution:**	1	**File ID:**	1LM.LM33719
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	18.9		4.67	2.34	1.17

Certificate of Analysis

Sample #:	L16030234-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT08(26-26.5)030316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/07/2016 10:14
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559982	**Analyst:**	ADC	**Run Date:**	03/07/2016 17:51
Collect Date:	03/03/2016 14:55	**Dilution:**	1	**File ID:**	9M973126
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	6.26	J	25.0	12.5	6.25
Benzene	71-43-2	1.25	U	6.25	1.25	0.625
Bromobenzene	108-86-1	1.25	U	6.25	1.25	0.625
Bromochloromethane	74-97-5	2.50	U	6.25	2.50	1.25
Bromodichloromethane	75-27-4	1.25	U	6.25	1.25	0.625
Bromoform	75-25-2	1.25	U	6.25	1.25	0.625
Bromomethane	74-83-9	2.50	U	6.25	2.50	1.25
2-Butanone	78-93-3	6.24	U	12.5	6.24	3.12
n-Butylbenzene	104-51-8	1.25	U	6.25	1.25	0.625
sec-Butylbenzene	135-98-8	1.25	U	6.25	1.25	0.625
tert-Butylbenzene	98-06-6	1.25	U	6.25	1.25	0.625
Carbon disulfide	75-15-0	1.25	U	6.25	1.25	0.625
Carbon tetrachloride	56-23-5	1.25	U	6.25	1.25	0.625
Chlorobenzene	108-90-7	1.25	U	6.25	1.25	0.625
Chlorodibromomethane	124-48-1	1.25	U	6.25	1.25	0.625
Chloroethane	75-00-3	2.50	U	6.25	2.50	1.25
Chloroform	67-66-3	1.25	U	6.25	1.25	0.625
Chloromethane	74-87-3	5.00	U	12.5	5.00	2.50
2-Chlorotoluene	95-49-8	1.25	U	6.25	1.25	0.625
4-Chlorotoluene	106-43-4	1.25	U	6.25	1.25	0.625

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	5.00	U	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	6.25	1.25	0.625
Dibromomethane	74-95-3	1.25	U	6.25	1.25	0.625
1,2-Dichlorobenzene	95-50-1	1.25	U	6.25	1.25	0.625
1,3-Dichlorobenzene	541-73-1	1.25	U	6.25	1.25	0.625
1,4-Dichlorobenzene	106-46-7	1.25	U	6.25	1.25	0.625
Dichlorodifluoromethane	75-71-8	2.50	U	6.25	2.50	1.25
1,1-Dichloroethane	75-34-3	2.50	U	6.25	2.50	1.25
1,2-Dichloroethane	107-06-2	1.25	U	6.25	1.25	0.625
1,1-Dichloroethene	75-35-4	1.25	U	6.25	1.25	0.625
cis-1,2-Dichloroethene	156-59-2	1.25	U	6.25	1.25	0.625
trans-1,2-Dichloroethene	156-60-5	1.25	U	6.25	1.25	0.625
1,2-Dichloropropane	78-87-5	1.25	U	6.25	1.25	0.625
1,3-Dichloropropane	142-28-9	1.25	U	6.25	1.25	0.625
2,2-Dichloropropane	594-20-7	1.25	U	6.25	1.25	0.625
cis-1,3-Dichloropropene	10061-01-5	1.25	U	6.25	1.25	0.625
trans-1,3-Dichloropropene	10061-02-6	1.25	U	6.25	1.25	0.625
1,1-Dichloropropene	563-58-6	1.25	U	6.25	1.25	0.625
Ethylbenzene	100-41-4	1.25	U	6.25	1.25	0.625
2-Hexanone	591-78-6	6.24	U	12.5	6.24	3.12
Hexachlorobutadiene	87-68-3	1.25	U	6.25	1.25	0.625
Isopropylbenzene	98-82-8	1.25	U	6.25	1.25	0.625
p-Isopropyltoluene	99-87-6	1.25	U	6.25	1.25	0.625
4-Methyl-2-pentanone	108-10-1	6.24	U	12.5	6.24	3.12
Methylene chloride	75-09-2	2.50	U	6.25	2.50	1.25
Naphthalene	91-20-3	1.25	U	6.25	1.25	0.625
n-Propylbenzene	103-65-1	1.25	U	6.25	1.25	0.625
Styrene	100-42-5	1.25	U	6.25	1.25	0.625
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	6.25	1.25	0.625
1,1,2,2-Tetrachloroethane	79-34-5	1.25	U	6.25	1.25	0.625
Tetrachloroethene	127-18-4	1.25	U	6.25	1.25	0.625
Toluene	108-88-3	1.25	U	6.25	1.25	0.625
1,2,3-Trichlorobenzene	87-61-6	1.25	U	6.25	1.25	0.625
1,2,4-Trichlorobenzene	120-82-1	1.25	U	6.25	1.25	0.625
1,1,1-Trichloroethane	71-55-6	1.25	U	6.25	1.25	0.625
1,1,2-Trichloroethane	79-00-5	1.25	U	6.25	1.25	0.625
Trichloroethene	79-01-6	1.25	U	6.25	1.25	0.625
Trichlorofluoromethane	75-69-4	2.50	U	6.25	2.50	1.25
1,2,3-Trichloropropane	96-18-4	2.50	U	6.25	2.50	1.25

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.25	U	6.25	1.25	0.625
1,3,5-Trimethylbenzene	108-67-8	1.25	U	6.25	1.25	0.625
Vinyl chloride	75-01-4	2.50	U	6.25	2.50	1.25
o-Xylene	95-47-6	1.25	U	6.25	1.25	0.625
m-,p-Xylene	179601-23-1	1.25	U	6.25	1.25	0.625

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.5	80	120	
1,2-Dichloroethane-d4	98.0	80	120	
Toluene-d8	97.7	85	115	
4-Bromofluorobenzene	101	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030234-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT08(26-26.5)030316	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/04/2016 19:47
Collect Date:	03/03/2016 14:55	**Dilution:**	1	**File ID:**	1LM.LM33720
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	31.3		4.85	2.42	1.21

Certificate of Analysis

Sample #:	L16030234-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT08(35-35.5)030316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:05
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559859	**Analyst:**	ADC	**Run Date:**	03/07/2016 00:02
Collect Date:	03/03/2016 15:05	**Dilution:**	1	**File ID:**	9M973115
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.4	U	24.8	12.4	6.20
Benzene	71-43-2	1.24	U	6.20	1.24	0.620
Bromobenzene	108-86-1	1.24	U	6.20	1.24	0.620
Bromochloromethane	74-97-5	2.48	U	6.20	2.48	1.24
Bromodichloromethane	75-27-4	1.24	U	6.20	1.24	0.620
Bromoform	75-25-2	1.24	U	6.20	1.24	0.620
Bromomethane	74-83-9	2.48	U	6.20	2.48	1.24
2-Butanone	78-93-3	6.20	U	12.4	6.20	3.10
n-Butylbenzene	104-51-8	1.24	U	6.20	1.24	0.620
sec-Butylbenzene	135-98-8	1.24	U	6.20	1.24	0.620
tert-Butylbenzene	98-06-6	1.24	U	6.20	1.24	0.620
Carbon disulfide	75-15-0	1.24	U	6.20	1.24	0.620
Carbon tetrachloride	56-23-5	1.24	U	6.20	1.24	0.620
Chlorobenzene	108-90-7	1.24	U	6.20	1.24	0.620
Chlorodibromomethane	124-48-1	1.24	U	6.20	1.24	0.620
Chloroethane	75-00-3	2.48	U	6.20	2.48	1.24
Chloroform	67-66-3	1.24	U	6.20	1.24	0.620
Chloromethane	74-87-3	4.96	U	12.4	4.96	2.48
2-Chlorotoluene	95-49-8	1.24	U	6.20	1.24	0.620
4-Chlorotoluene	106-43-4	1.24	U	6.20	1.24	0.620

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Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	4.96	U	12.4	4.96	2.48
1,2-Dibromoethane	106-93-4	1.24	U	6.20	1.24	0.620
Dibromomethane	74-95-3	1.24	U	6.20	1.24	0.620
1,2-Dichlorobenzene	95-50-1	1.24	U	6.20	1.24	0.620
1,3-Dichlorobenzene	541-73-1	1.24	U	6.20	1.24	0.620
1,4-Dichlorobenzene	106-46-7	1.24	U	6.20	1.24	0.620
Dichlorodifluoromethane	75-71-8	2.48	U	6.20	2.48	1.24
1,1-Dichloroethane	75-34-3	2.48	U	6.20	2.48	1.24
1,2-Dichloroethane	107-06-2	1.24	U	6.20	1.24	0.620
1,1-Dichloroethene	75-35-4	1.24	U	6.20	1.24	0.620
cis-1,2-Dichloroethene	156-59-2	1.24	U	6.20	1.24	0.620
trans-1,2-Dichloroethene	156-60-5	1.24	U	6.20	1.24	0.620
1,2-Dichloropropane	78-87-5	1.24	U	6.20	1.24	0.620
1,3-Dichloropropane	142-28-9	1.24	U	6.20	1.24	0.620
2,2-Dichloropropane	594-20-7	1.24	U	6.20	1.24	0.620
cis-1,3-Dichloropropene	10061-01-5	1.24	U	6.20	1.24	0.620
trans-1,3-Dichloropropene	10061-02-6	1.24	U	6.20	1.24	0.620
1,1-Dichloropropene	563-58-6	1.24	U	6.20	1.24	0.620
Ethylbenzene	100-41-4	1.24	U	6.20	1.24	0.620
2-Hexanone	591-78-6	6.20	U	12.4	6.20	3.10
Hexachlorobutadiene	87-68-3	1.24	U	6.20	1.24	0.620
Isopropylbenzene	98-82-8	1.24	U	6.20	1.24	0.620
p-Isopropyltoluene	99-87-6	1.24	U	6.20	1.24	0.620
4-Methyl-2-pentanone	108-10-1	6.20	U	12.4	6.20	3.10
Methylene chloride	75-09-2	2.48	U	6.20	2.48	1.24
Naphthalene	91-20-3	1.24	U	6.20	1.24	0.620
n-Propylbenzene	103-65-1	1.24	U	6.20	1.24	0.620
Styrene	100-42-5	1.24	U	6.20	1.24	0.620
1,1,1,2-Tetrachloroethane	630-20-6	1.24	U	6.20	1.24	0.620
1,1,2,2-Tetrachloroethane	79-34-5	1.24	U	6.20	1.24	0.620
Tetrachloroethene	127-18-4	1.24	U	6.20	1.24	0.620
Toluene	108-88-3	1.24	U	6.20	1.24	0.620
1,2,3-Trichlorobenzene	87-61-6	1.24	U	6.20	1.24	0.620
1,2,4-Trichlorobenzene	120-82-1	1.24	U	6.20	1.24	0.620
1,1,1-Trichloroethane	71-55-6	1.24	U	6.20	1.24	0.620
1,1,2-Trichloroethane	79-00-5	1.24	U	6.20	1.24	0.620
Trichloroethene	79-01-6	1.24	U	6.20	1.24	0.620
Trichlorofluoromethane	75-69-4	2.48	U	6.20	2.48	1.24
1,2,3-Trichloropropane	96-18-4	2.48	U	6.20	2.48	1.24

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Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.24	U	6.20	1.24	0.620
1,3,5-Trimethylbenzene	108-67-8	1.24	U	6.20	1.24	0.620
Vinyl chloride	75-01-4	2.48	U	6.20	2.48	1.24
o-Xylene	95-47-6	1.24	U	6.20	1.24	0.620
m-,p-Xylene	179601-23-1	1.24	U	6.20	1.24	0.620

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.0	80	120	
1,2-Dichloroethane-d4	98.6	80	120	
Toluene-d8	98.2	85	115	
4-Bromofluorobenzene	101	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030234-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT08(35-35.5)030316	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/04/2016 20:06
Collect Date:	03/03/2016 15:05	**Dilution:**	1	**File ID:**	1LM.LM33721
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	4.62	J	4.79	2.40	1.20

J	Estimated value ; the analyte concentration was less than the LOQ.

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Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

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Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #: L16030234-01 **Client ID:** 18DPT08(5-5.5)030316 **Matrix:** Soil **Collect Date:** 03/03/2016 13:15

Analyte	Result	Units	Qualifier
Percent Solids	83.4	weight %	

Sample #: L16030234-02 **Client ID:** 18DPT08(15-15.5)030316 **Matrix:** Soil **Collect Date:** 03/03/2016 13:49

Analyte	Result	Units	Qualifier
Percent Solids	81.8	weight %	

Sample #: L16030234-03 **Client ID:** 18DPT08(10-10.5)030316 **Matrix:** Soil **Collect Date:** 03/03/2016 14:40

Analyte	Result	Units	Qualifier
Percent Solids	84.4	weight %	

Sample #: L16030234-04 **Client ID:** 18DPT08(21-21.5)030316 **Matrix:** Soil **Collect Date:** 03/03/2016 14:50

Analyte	Result	Units	Qualifier
Percent Solids	83.4	weight %	

Sample #: L16030234-05 **Client ID:** 18DPT08(26-26.5)030316 **Matrix:** Soil **Collect Date:** 03/03/2016 14:55

Analyte	Result	Units	Qualifier
Percent Solids	82.0	weight %	

Sample #: L16030234-06 **Client ID:** 18DPT08(35-35.5)030316 **Matrix:** Soil **Collect Date:** 03/03/2016 15:05

Analyte	Result	Units	Qualifier
Percent Solids	80.1	weight %	

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

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Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030234-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT08(5-5.5)030316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:01
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559859	**Analyst:**	ADC	**Run Date:**	03/06/2016 21:31
Collect Date:	03/03/2016 13:15	**Dilution:**	1	**File ID:**	9M973110
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.0	U	26.0	13.0	6.51
Benzene	71-43-2	1.30	U	6.51	1.30	0.651
Bromobenzene	108-86-1	1.30	U	6.51	1.30	0.651
Bromochloromethane	74-97-5	2.60	U	6.51	2.60	1.30
Bromodichloromethane	75-27-4	1.30	U	6.51	1.30	0.651
Bromoform	75-25-2	1.30	U	6.51	1.30	0.651
Bromomethane	74-83-9	2.60	U	6.51	2.60	1.30
2-Butanone	78-93-3	6.50	U	13.0	6.50	3.25
n-Butylbenzene	104-51-8	1.30	U	6.51	1.30	0.651
sec-Butylbenzene	135-98-8	1.30	U	6.51	1.30	0.651
tert-Butylbenzene	98-06-6	1.30	U	6.51	1.30	0.651
Carbon disulfide	75-15-0	1.30	U	6.51	1.30	0.651
Carbon tetrachloride	56-23-5	1.30	U	6.51	1.30	0.651
Chlorobenzene	108-90-7	1.30	U	6.51	1.30	0.651
Chlorodibromomethane	124-48-1	1.30	U	6.51	1.30	0.651
Chloroethane	75-00-3	2.60	U	6.51	2.60	1.30
Chloroform	67-66-3	1.30	U	6.51	1.30	0.651
Chloromethane	74-87-3	5.20	U	13.0	5.20	2.60
2-Chlorotoluene	95-49-8	1.30	U	6.51	1.30	0.651
4-Chlorotoluene	106-43-4	1.30	U	6.51	1.30	0.651
1,2-Dibromo-3-chloropropane	96-12-8	5.20	U	13.0	5.20	2.60
1,2-Dibromoethane	106-93-4	1.30	U	6.51	1.30	0.651
Dibromomethane	74-95-3	1.30	U	6.51	1.30	0.651
1,2-Dichlorobenzene	95-50-1	1.30	U	6.51	1.30	0.651
1,3-Dichlorobenzene	541-73-1	1.30	U	6.51	1.30	0.651
1,4-Dichlorobenzene	106-46-7	1.30	U	6.51	1.30	0.651
Dichlorodifluoromethane	75-71-8	2.60	U	6.51	2.60	1.30
1,1-Dichloroethane	75-34-3	2.60	U	6.51	2.60	1.30
1,2-Dichloroethane	107-06-2	1.30	U	6.51	1.30	0.651
1,1-Dichloroethene	75-35-4	1.30	U	6.51	1.30	0.651
cis-1,2-Dichloroethene	156-59-2	1.30	U	6.51	1.30	0.651
trans-1,2-Dichloroethene	156-60-5	1.30	U	6.51	1.30	0.651

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Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.30	U	6.51	1.30	0.651
1,3-Dichloropropane	142-28-9	1.30	U	6.51	1.30	0.651
2,2-Dichloropropane	594-20-7	1.30	U	6.51	1.30	0.651
cis-1,3-Dichloropropene	10061-01-5	1.30	U	6.51	1.30	0.651
trans-1,3-Dichloropropene	10061-02-6	1.30	U	6.51	1.30	0.651
1,1-Dichloropropene	563-58-6	1.30	U	6.51	1.30	0.651
Ethylbenzene	100-41-4	1.30	U	6.51	1.30	0.651
2-Hexanone	591-78-6	6.50	U	13.0	6.50	3.25
Hexachlorobutadiene	87-68-3	1.30	U	6.51	1.30	0.651
Isopropylbenzene	98-82-8	1.30	U	6.51	1.30	0.651
p-Isopropyltoluene	99-87-6	1.30	U	6.51	1.30	0.651
4-Methyl-2-pentanone	108-10-1	6.50	U	13.0	6.50	3.25
Methylene chloride	75-09-2	2.60	U	6.51	2.60	1.30
Naphthalene	91-20-3	1.30	U	6.51	1.30	0.651
n-Propylbenzene	103-65-1	1.30	U	6.51	1.30	0.651
Styrene	100-42-5	1.30	U	6.51	1.30	0.651
1,1,1,2-Tetrachloroethane	630-20-6	1.30	U	6.51	1.30	0.651
1,1,2,2-Tetrachloroethane	79-34-5	1.30	U	6.51	1.30	0.651
Tetrachloroethene	127-18-4	1.30	U	6.51	1.30	0.651
Toluene	108-88-3	1.30	U	6.51	1.30	0.651
1,2,3-Trichlorobenzene	87-61-6	1.30	U	6.51	1.30	0.651
1,2,4-Trichlorobenzene	120-82-1	1.30	U	6.51	1.30	0.651
1,1,1-Trichloroethane	71-55-6	1.30	U	6.51	1.30	0.651
1,1,2-Trichloroethane	79-00-5	1.30	U	6.51	1.30	0.651
Trichloroethene	79-01-6	1.30	U	6.51	1.30	0.651
Trichlorofluoromethane	75-69-4	2.60	U	6.51	2.60	1.30
1,2,3-Trichloropropane	96-18-4	2.60	U	6.51	2.60	1.30
1,2,4-Trimethylbenzene	95-63-6	1.30	U	6.51	1.30	0.651
1,3,5-Trimethylbenzene	108-67-8	1.30	U	6.51	1.30	0.651
Vinyl chloride	75-01-4	2.60	U	6.51	2.60	1.30
o-Xylene	95-47-6	1.30	U	6.51	1.30	0.651
m-,p-Xylene	179601-23-1	1.30	U	6.51	1.30	0.651

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.7	80	120	
1,2-Dichloroethane-d4	112	80	120	
Toluene-d8	98.8	85	115	
4-Bromofluorobenzene	102	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030234-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT08(15-15.5)030316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:02
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559859	**Analyst:**	ADC	**Run Date:**	03/06/2016 22:01
Collect Date:	03/03/2016 13:49	**Dilution:**	1	**File ID:**	9M973111
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.9	U	25.9	12.9	6.46
Benzene	71-43-2	1.29	U	6.46	1.29	0.646
Bromobenzene	108-86-1	1.29	U	6.46	1.29	0.646
Bromochloromethane	74-97-5	2.58	U	6.46	2.58	1.29
Bromodichloromethane	75-27-4	1.29	U	6.46	1.29	0.646
Bromoform	75-25-2	1.29	U	6.46	1.29	0.646
Bromomethane	74-83-9	2.58	U	6.46	2.58	1.29
2-Butanone	78-93-3	6.46	U	12.9	6.46	3.23
n-Butylbenzene	104-51-8	1.29	U	6.46	1.29	0.646
sec-Butylbenzene	135-98-8	1.29	U	6.46	1.29	0.646
tert-Butylbenzene	98-06-6	1.29	U	6.46	1.29	0.646
Carbon disulfide	75-15-0	1.29	U	6.46	1.29	0.646
Carbon tetrachloride	56-23-5	1.29	U	6.46	1.29	0.646
Chlorobenzene	108-90-7	1.29	U	6.46	1.29	0.646
Chlorodibromomethane	124-48-1	1.29	U	6.46	1.29	0.646
Chloroethane	75-00-3	2.58	U	6.46	2.58	1.29
Chloroform	67-66-3	1.29	U	6.46	1.29	0.646
Chloromethane	74-87-3	5.18	U	12.9	5.18	2.59
2-Chlorotoluene	95-49-8	1.29	U	6.46	1.29	0.646
4-Chlorotoluene	106-43-4	1.29	U	6.46	1.29	0.646
1,2-Dibromo-3-chloropropane	96-12-8	5.18	U	12.9	5.18	2.59
1,2-Dibromoethane	106-93-4	1.29	U	6.46	1.29	0.646
Dibromomethane	74-95-3	1.29	U	6.46	1.29	0.646
1,2-Dichlorobenzene	95-50-1	1.29	U	6.46	1.29	0.646
1,3-Dichlorobenzene	541-73-1	1.29	U	6.46	1.29	0.646
1,4-Dichlorobenzene	106-46-7	1.29	U	6.46	1.29	0.646
Dichlorodifluoromethane	75-71-8	2.58	U	6.46	2.58	1.29
1,1-Dichloroethane	75-34-3	2.58	U	6.46	2.58	1.29
1,2-Dichloroethane	107-06-2	1.29	U	6.46	1.29	0.646
1,1-Dichloroethene	75-35-4	1.29	U	6.46	1.29	0.646
cis-1,2-Dichloroethene	156-59-2	1.29	U	6.46	1.29	0.646

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.29	U	6.46	1.29	0.646
1,2-Dichloropropane	78-87-5	1.29	U	6.46	1.29	0.646
1,3-Dichloropropane	142-28-9	1.29	U	6.46	1.29	0.646
2,2-Dichloropropane	594-20-7	1.29	U	6.46	1.29	0.646
cis-1,3-Dichloropropene	10061-01-5	1.29	U	6.46	1.29	0.646
trans-1,3-Dichloropropene	10061-02-6	1.29	U	6.46	1.29	0.646
1,1-Dichloropropene	563-58-6	1.29	U	6.46	1.29	0.646
Ethylbenzene	100-41-4	1.29	U	6.46	1.29	0.646
2-Hexanone	591-78-6	6.46	U	12.9	6.46	3.23
Hexachlorobutadiene	87-68-3	1.29	U	6.46	1.29	0.646
Isopropylbenzene	98-82-8	1.29	U	6.46	1.29	0.646
p-Isopropyltoluene	99-87-6	1.29	U	6.46	1.29	0.646
4-Methyl-2-pentanone	108-10-1	6.46	U	12.9	6.46	3.23
Methylene chloride	75-09-2	2.58	U	6.46	2.58	1.29
Naphthalene	91-20-3	1.29	U	6.46	1.29	0.646
n-Propylbenzene	103-65-1	1.29	U	6.46	1.29	0.646
Styrene	100-42-5	1.29	U	6.46	1.29	0.646
1,1,1,2-Tetrachloroethane	630-20-6	1.29	U	6.46	1.29	0.646
1,1,2,2-Tetrachloroethane	79-34-5	1.29	U	6.46	1.29	0.646
Tetrachloroethene	127-18-4	1.29	U	6.46	1.29	0.646
Toluene	108-88-3	1.29	U	6.46	1.29	0.646
1,2,3-Trichlorobenzene	87-61-6	1.29	U	6.46	1.29	0.646
1,2,4-Trichlorobenzene	120-82-1	1.29	U	6.46	1.29	0.646
1,1,1-Trichloroethane	71-55-6	1.29	U	6.46	1.29	0.646
1,1,2-Trichloroethane	79-00-5	1.29	U	6.46	1.29	0.646
Trichloroethene	79-01-6	1.29	U	6.46	1.29	0.646
Trichlorofluoromethane	75-69-4	2.58	U	6.46	2.58	1.29
1,2,3-Trichloropropane	96-18-4	2.58	U	6.46	2.58	1.29
1,2,4-Trimethylbenzene	95-63-6	1.29	U	6.46	1.29	0.646
1,3,5-Trimethylbenzene	108-67-8	1.29	U	6.46	1.29	0.646
Vinyl chloride	75-01-4	2.58	U	6.46	2.58	1.29
o-Xylene	95-47-6	1.29	U	6.46	1.29	0.646
m-,p-Xylene	179601-23-1	1.29	U	6.46	1.29	0.646

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.7	80	120	
1,2-Dichloroethane-d4	99.4	80	120	
Toluene-d8	98.3	85	115	
4-Bromofluorobenzene	104	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030234-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT08(10-10.5)030316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:03
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559859	**Analyst:**	ADC	**Run Date:**	03/06/2016 22:31
Collect Date:	03/03/2016 14:40	**Dilution:**	1	**File ID:**	9M973112
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.4	U	24.7	12.4	6.18
Benzene	71-43-2	1.24	U	6.18	1.24	0.618
Bromobenzene	108-86-1	1.24	U	6.18	1.24	0.618
Bromochloromethane	74-97-5	2.48	U	6.18	2.48	1.24
Bromodichloromethane	75-27-4	1.24	U	6.18	1.24	0.618
Bromoform	75-25-2	1.24	U	6.18	1.24	0.618
Bromomethane	74-83-9	2.48	U	6.18	2.48	1.24
2-Butanone	78-93-3	6.18	U	12.4	6.18	3.09
n-Butylbenzene	104-51-8	1.24	U	6.18	1.24	0.618
sec-Butylbenzene	135-98-8	1.24	U	6.18	1.24	0.618
tert-Butylbenzene	98-06-6	1.24	U	6.18	1.24	0.618
Carbon disulfide	75-15-0	1.24	U	6.18	1.24	0.618
Carbon tetrachloride	56-23-5	1.24	U	6.18	1.24	0.618
Chlorobenzene	108-90-7	1.24	U	6.18	1.24	0.618
Chlorodibromomethane	124-48-1	1.24	U	6.18	1.24	0.618
Chloroethane	75-00-3	2.48	U	6.18	2.48	1.24
Chloroform	67-66-3	1.24	U	6.18	1.24	0.618
Chloromethane	74-87-3	4.94	U	12.4	4.94	2.47
2-Chlorotoluene	95-49-8	1.24	U	6.18	1.24	0.618
4-Chlorotoluene	106-43-4	1.24	U	6.18	1.24	0.618
1,2-Dibromo-3-chloropropane	96-12-8	4.94	U	12.4	4.94	2.47
1,2-Dibromoethane	106-93-4	1.24	U	6.18	1.24	0.618
Dibromomethane	74-95-3	1.24	U	6.18	1.24	0.618
1,2-Dichlorobenzene	95-50-1	1.24	U	6.18	1.24	0.618
1,3-Dichlorobenzene	541-73-1	1.24	U	6.18	1.24	0.618
1,4-Dichlorobenzene	106-46-7	1.24	U	6.18	1.24	0.618
Dichlorodifluoromethane	75-71-8	2.48	U	6.18	2.48	1.24
1,1-Dichloroethane	75-34-3	2.48	U	6.18	2.48	1.24
1,2-Dichloroethane	107-06-2	1.24	U	6.18	1.24	0.618
1,1-Dichloroethene	75-35-4	1.24	U	6.18	1.24	0.618
cis-1,2-Dichloroethene	156-59-2	1.24	U	6.18	1.24	0.618

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Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.24	U	6.18	1.24	0.618
1,2-Dichloropropane	78-87-5	1.24	U	6.18	1.24	0.618
1,3-Dichloropropane	142-28-9	1.24	U	6.18	1.24	0.618
2,2-Dichloropropane	594-20-7	1.24	U	6.18	1.24	0.618
cis-1,3-Dichloropropene	10061-01-5	1.24	U	6.18	1.24	0.618
trans-1,3-Dichloropropene	10061-02-6	1.24	U	6.18	1.24	0.618
1,1-Dichloropropene	563-58-6	1.24	U	6.18	1.24	0.618
Ethylbenzene	100-41-4	1.24	U	6.18	1.24	0.618
2-Hexanone	591-78-6	6.18	U	12.4	6.18	3.09
Hexachlorobutadiene	87-68-3	1.24	U	6.18	1.24	0.618
Isopropylbenzene	98-82-8	1.24	U	6.18	1.24	0.618
p-Isopropyltoluene	99-87-6	1.24	U	6.18	1.24	0.618
4-Methyl-2-pentanone	108-10-1	6.18	U	12.4	6.18	3.09
Methylene chloride	75-09-2	2.48	U	6.18	2.48	1.24
Naphthalene	91-20-3	1.24	U	6.18	1.24	0.618
n-Propylbenzene	103-65-1	1.24	U	6.18	1.24	0.618
Styrene	100-42-5	1.24	U	6.18	1.24	0.618
1,1,1,2-Tetrachloroethane	630-20-6	1.24	U	6.18	1.24	0.618
1,1,2,2-Tetrachloroethane	79-34-5	1.24	U	6.18	1.24	0.618
Tetrachloroethene	127-18-4	1.24	U	6.18	1.24	0.618
Toluene	108-88-3	1.24	U	6.18	1.24	0.618
1,2,3-Trichlorobenzene	87-61-6	1.24	U	6.18	1.24	0.618
1,2,4-Trichlorobenzene	120-82-1	1.24	U	6.18	1.24	0.618
1,1,1-Trichloroethane	71-55-6	1.24	U	6.18	1.24	0.618
1,1,2-Trichloroethane	79-00-5	1.24	U	6.18	1.24	0.618
Trichloroethene	79-01-6	1.24	U	6.18	1.24	0.618
Trichlorofluoromethane	75-69-4	2.48	U	6.18	2.48	1.24
1,2,3-Trichloropropane	96-18-4	2.48	U	6.18	2.48	1.24
1,2,4-Trimethylbenzene	95-63-6	1.24	U	6.18	1.24	0.618
1,3,5-Trimethylbenzene	108-67-8	1.24	U	6.18	1.24	0.618
Vinyl chloride	75-01-4	2.48	U	6.18	2.48	1.24
o-Xylene	95-47-6	1.24	U	6.18	1.24	0.618
m-,p-Xylene	179601-23-1	1.24	U	6.18	1.24	0.618

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.7	80	120	
1,2-Dichloroethane-d4	100	80	120	
Toluene-d8	97.2	85	115	
4-Bromofluorobenzene	102	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030234-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT08(21-21.5)030316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:04
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559859	**Analyst:**	ADC	**Run Date:**	03/06/2016 23:01
Collect Date:	03/03/2016 14:50	**Dilution:**	1	**File ID:**	9M973113
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.1	U	26.3	13.1	6.57
Benzene	71-43-2	1.31	U	6.57	1.31	0.657
Bromobenzene	108-86-1	1.31	U	6.57	1.31	0.657
Bromochloromethane	74-97-5	2.62	U	6.57	2.62	1.31
Bromodichloromethane	75-27-4	1.31	U	6.57	1.31	0.657
Bromoform	75-25-2	1.31	U	6.57	1.31	0.657
Bromomethane	74-83-9	2.62	U	6.57	2.62	1.31
2-Butanone	78-93-3	6.58	U	13.1	6.58	3.29
n-Butylbenzene	104-51-8	1.31	U	6.57	1.31	0.657
sec-Butylbenzene	135-98-8	1.31	U	6.57	1.31	0.657
tert-Butylbenzene	98-06-6	1.31	U	6.57	1.31	0.657
Carbon disulfide	75-15-0	1.31	U	6.57	1.31	0.657
Carbon tetrachloride	56-23-5	1.31	U	6.57	1.31	0.657
Chlorobenzene	108-90-7	1.31	U	6.57	1.31	0.657
Chlorodibromomethane	124-48-1	1.31	U	6.57	1.31	0.657
Chloroethane	75-00-3	2.62	U	6.57	2.62	1.31
Chloroform	67-66-3	1.31	U	6.57	1.31	0.657
Chloromethane	74-87-3	5.26	U	13.1	5.26	2.63
2-Chlorotoluene	95-49-8	1.31	U	6.57	1.31	0.657
4-Chlorotoluene	106-43-4	1.31	U	6.57	1.31	0.657
1,2-Dibromo-3-chloropropane	96-12-8	5.26	U	13.1	5.26	2.63
1,2-Dibromoethane	106-93-4	1.31	U	6.57	1.31	0.657
Dibromomethane	74-95-3	1.31	U	6.57	1.31	0.657
1,2-Dichlorobenzene	95-50-1	1.31	U	6.57	1.31	0.657
1,3-Dichlorobenzene	541-73-1	1.31	U	6.57	1.31	0.657
1,4-Dichlorobenzene	106-46-7	1.31	U	6.57	1.31	0.657
Dichlorodifluoromethane	75-71-8	2.62	U	6.57	2.62	1.31
1,1-Dichloroethane	75-34-3	2.62	U	6.57	2.62	1.31
1,2-Dichloroethane	107-06-2	1.31	U	6.57	1.31	0.657
1,1-Dichloroethene	75-35-4	1.31	U	6.57	1.31	0.657
cis-1,2-Dichloroethene	156-59-2	1.31	U	6.57	1.31	0.657

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Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.31	U	6.57	1.31	0.657
1,2-Dichloropropane	78-87-5	1.31	U	6.57	1.31	0.657
1,3-Dichloropropane	142-28-9	1.31	U	6.57	1.31	0.657
2,2-Dichloropropane	594-20-7	1.31	U	6.57	1.31	0.657
cis-1,3-Dichloropropene	10061-01-5	1.31	U	6.57	1.31	0.657
trans-1,3-Dichloropropene	10061-02-6	1.31	U	6.57	1.31	0.657
1,1-Dichloropropene	563-58-6	1.31	U	6.57	1.31	0.657
Ethylbenzene	100-41-4	1.31	U	6.57	1.31	0.657
2-Hexanone	591-78-6	6.58	U	13.1	6.58	3.29
Hexachlorobutadiene	87-68-3	1.31	U	6.57	1.31	0.657
Isopropylbenzene	98-82-8	1.31	U	6.57	1.31	0.657
p-Isopropyltoluene	99-87-6	1.31	U	6.57	1.31	0.657
4-Methyl-2-pentanone	108-10-1	6.58	U	13.1	6.58	3.29
Methylene chloride	75-09-2	2.62	U	6.57	2.62	1.31
Naphthalene	91-20-3	1.31	U	6.57	1.31	0.657
n-Propylbenzene	103-65-1	1.31	U	6.57	1.31	0.657
Styrene	100-42-5	1.31	U	6.57	1.31	0.657
1,1,1,2-Tetrachloroethane	630-20-6	1.31	U	6.57	1.31	0.657
1,1,2,2-Tetrachloroethane	79-34-5	1.31	U	6.57	1.31	0.657
Tetrachloroethene	127-18-4	1.31	U	6.57	1.31	0.657
Toluene	108-88-3	1.31	U	6.57	1.31	0.657
1,2,3-Trichlorobenzene	87-61-6	1.31	U	6.57	1.31	0.657
1,2,4-Trichlorobenzene	120-82-1	1.31	U	6.57	1.31	0.657
1,1,1-Trichloroethane	71-55-6	1.31	U	6.57	1.31	0.657
1,1,2-Trichloroethane	79-00-5	1.31	U	6.57	1.31	0.657
Trichloroethene	79-01-6	1.31	U	6.57	1.31	0.657
Trichlorofluoromethane	75-69-4	2.62	U	6.57	2.62	1.31
1,2,3-Trichloropropane	96-18-4	2.62	U	6.57	2.62	1.31
1,2,4-Trimethylbenzene	95-63-6	1.31	U	6.57	1.31	0.657
1,3,5-Trimethylbenzene	108-67-8	1.31	U	6.57	1.31	0.657
Vinyl chloride	75-01-4	2.62	U	6.57	2.62	1.31
o-Xylene	95-47-6	1.31	U	6.57	1.31	0.657
m-,p-Xylene	179601-23-1	1.31	U	6.57	1.31	0.657

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.9	80	120	
1,2-Dichloroethane-d4	97.2	80	120	
Toluene-d8	98.6	85	115	
4-Bromofluorobenzene	102	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030234-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT08(26-26.5)030316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/07/2016 10:14
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559982	**Analyst:**	ADC	**Run Date:**	03/07/2016 17:51
Collect Date:	03/03/2016 14:55	**Dilution:**	1	**File ID:**	9M973126
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	6.26	J	25.0	12.5	6.25
Benzene	71-43-2	1.25	U	6.25	1.25	0.625
Bromobenzene	108-86-1	1.25	U	6.25	1.25	0.625
Bromochloromethane	74-97-5	2.50	U	6.25	2.50	1.25
Bromodichloromethane	75-27-4	1.25	U	6.25	1.25	0.625
Bromoform	75-25-2	1.25	U	6.25	1.25	0.625
Bromomethane	74-83-9	2.50	U	6.25	2.50	1.25
2-Butanone	78-93-3	6.24	U	12.5	6.24	3.12
n-Butylbenzene	104-51-8	1.25	U	6.25	1.25	0.625
sec-Butylbenzene	135-98-8	1.25	U	6.25	1.25	0.625
tert-Butylbenzene	98-06-6	1.25	U	6.25	1.25	0.625
Carbon disulfide	75-15-0	1.25	U	6.25	1.25	0.625
Carbon tetrachloride	56-23-5	1.25	U	6.25	1.25	0.625
Chlorobenzene	108-90-7	1.25	U	6.25	1.25	0.625
Chlorodibromomethane	124-48-1	1.25	U	6.25	1.25	0.625
Chloroethane	75-00-3	2.50	U	6.25	2.50	1.25
Chloroform	67-66-3	1.25	U	6.25	1.25	0.625
Chloromethane	74-87-3	5.00	U	12.5	5.00	2.50
2-Chlorotoluene	95-49-8	1.25	U	6.25	1.25	0.625
4-Chlorotoluene	106-43-4	1.25	U	6.25	1.25	0.625
1,2-Dibromo-3-chloropropane	96-12-8	5.00	U	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	6.25	1.25	0.625
Dibromomethane	74-95-3	1.25	U	6.25	1.25	0.625
1,2-Dichlorobenzene	95-50-1	1.25	U	6.25	1.25	0.625
1,3-Dichlorobenzene	541-73-1	1.25	U	6.25	1.25	0.625
1,4-Dichlorobenzene	106-46-7	1.25	U	6.25	1.25	0.625
Dichlorodifluoromethane	75-71-8	2.50	U	6.25	2.50	1.25
1,1-Dichloroethane	75-34-3	2.50	U	6.25	2.50	1.25
1,2-Dichloroethane	107-06-2	1.25	U	6.25	1.25	0.625
1,1-Dichloroethene	75-35-4	1.25	U	6.25	1.25	0.625
cis-1,2-Dichloroethene	156-59-2	1.25	U	6.25	1.25	0.625

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Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.25	U	6.25	1.25	0.625
1,2-Dichloropropane	78-87-5	1.25	U	6.25	1.25	0.625
1,3-Dichloropropane	142-28-9	1.25	U	6.25	1.25	0.625
2,2-Dichloropropane	594-20-7	1.25	U	6.25	1.25	0.625
cis-1,3-Dichloropropene	10061-01-5	1.25	U	6.25	1.25	0.625
trans-1,3-Dichloropropene	10061-02-6	1.25	U	6.25	1.25	0.625
1,1-Dichloropropene	563-58-6	1.25	U	6.25	1.25	0.625
Ethylbenzene	100-41-4	1.25	U	6.25	1.25	0.625
2-Hexanone	591-78-6	6.24	U	12.5	6.24	3.12
Hexachlorobutadiene	87-68-3	1.25	U	6.25	1.25	0.625
Isopropylbenzene	98-82-8	1.25	U	6.25	1.25	0.625
p-Isopropyltoluene	99-87-6	1.25	U	6.25	1.25	0.625
4-Methyl-2-pentanone	108-10-1	6.24	U	12.5	6.24	3.12
Methylene chloride	75-09-2	2.50	U	6.25	2.50	1.25
Naphthalene	91-20-3	1.25	U	6.25	1.25	0.625
n-Propylbenzene	103-65-1	1.25	U	6.25	1.25	0.625
Styrene	100-42-5	1.25	U	6.25	1.25	0.625
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	6.25	1.25	0.625
1,1,2,2-Tetrachloroethane	79-34-5	1.25	U	6.25	1.25	0.625
Tetrachloroethene	127-18-4	1.25	U	6.25	1.25	0.625
Toluene	108-88-3	1.25	U	6.25	1.25	0.625
1,2,3-Trichlorobenzene	87-61-6	1.25	U	6.25	1.25	0.625
1,2,4-Trichlorobenzene	120-82-1	1.25	U	6.25	1.25	0.625
1,1,1-Trichloroethane	71-55-6	1.25	U	6.25	1.25	0.625
1,1,2-Trichloroethane	79-00-5	1.25	U	6.25	1.25	0.625
Trichloroethene	79-01-6	1.25	U	6.25	1.25	0.625
Trichlorofluoromethane	75-69-4	2.50	U	6.25	2.50	1.25
1,2,3-Trichloropropane	96-18-4	2.50	U	6.25	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	6.25	1.25	0.625
1,3,5-Trimethylbenzene	108-67-8	1.25	U	6.25	1.25	0.625
Vinyl chloride	75-01-4	2.50	U	6.25	2.50	1.25
o-Xylene	95-47-6	1.25	U	6.25	1.25	0.625
m-,p-Xylene	179601-23-1	1.25	U	6.25	1.25	0.625

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.5	80	120	
1,2-Dichloroethane-d4	98.0	80	120	
Toluene-d8	97.7	85	115	
4-Bromofluorobenzene	101	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030234-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT08(35-35.5)030316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:05
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559859	**Analyst:**	ADC	**Run Date:**	03/07/2016 00:02
Collect Date:	03/03/2016 15:05	**Dilution:**	1	**File ID:**	9M973115
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.4	U	24.8	12.4	6.20
Benzene	71-43-2	1.24	U	6.20	1.24	0.620
Bromobenzene	108-86-1	1.24	U	6.20	1.24	0.620
Bromochloromethane	74-97-5	2.48	U	6.20	2.48	1.24
Bromodichloromethane	75-27-4	1.24	U	6.20	1.24	0.620
Bromoform	75-25-2	1.24	U	6.20	1.24	0.620
Bromomethane	74-83-9	2.48	U	6.20	2.48	1.24
2-Butanone	78-93-3	6.20	U	12.4	6.20	3.10
n-Butylbenzene	104-51-8	1.24	U	6.20	1.24	0.620
sec-Butylbenzene	135-98-8	1.24	U	6.20	1.24	0.620
tert-Butylbenzene	98-06-6	1.24	U	6.20	1.24	0.620
Carbon disulfide	75-15-0	1.24	U	6.20	1.24	0.620
Carbon tetrachloride	56-23-5	1.24	U	6.20	1.24	0.620
Chlorobenzene	108-90-7	1.24	U	6.20	1.24	0.620
Chlorodibromomethane	124-48-1	1.24	U	6.20	1.24	0.620
Chloroethane	75-00-3	2.48	U	6.20	2.48	1.24
Chloroform	67-66-3	1.24	U	6.20	1.24	0.620
Chloromethane	74-87-3	4.96	U	12.4	4.96	2.48
2-Chlorotoluene	95-49-8	1.24	U	6.20	1.24	0.620
4-Chlorotoluene	106-43-4	1.24	U	6.20	1.24	0.620
1,2-Dibromo-3-chloropropane	96-12-8	4.96	U	12.4	4.96	2.48
1,2-Dibromoethane	106-93-4	1.24	U	6.20	1.24	0.620
Dibromomethane	74-95-3	1.24	U	6.20	1.24	0.620
1,2-Dichlorobenzene	95-50-1	1.24	U	6.20	1.24	0.620
1,3-Dichlorobenzene	541-73-1	1.24	U	6.20	1.24	0.620
1,4-Dichlorobenzene	106-46-7	1.24	U	6.20	1.24	0.620
Dichlorodifluoromethane	75-71-8	2.48	U	6.20	2.48	1.24
1,1-Dichloroethane	75-34-3	2.48	U	6.20	2.48	1.24
1,2-Dichloroethane	107-06-2	1.24	U	6.20	1.24	0.620
1,1-Dichloroethene	75-35-4	1.24	U	6.20	1.24	0.620
cis-1,2-Dichloroethene	156-59-2	1.24	U	6.20	1.24	0.620

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.24	U	6.20	1.24	0.620
1,2-Dichloropropane	78-87-5	1.24	U	6.20	1.24	0.620
1,3-Dichloropropane	142-28-9	1.24	U	6.20	1.24	0.620
2,2-Dichloropropane	594-20-7	1.24	U	6.20	1.24	0.620
cis-1,3-Dichloropropene	10061-01-5	1.24	U	6.20	1.24	0.620
trans-1,3-Dichloropropene	10061-02-6	1.24	U	6.20	1.24	0.620
1,1-Dichloropropene	563-58-6	1.24	U	6.20	1.24	0.620
Ethylbenzene	100-41-4	1.24	U	6.20	1.24	0.620
2-Hexanone	591-78-6	6.20	U	12.4	6.20	3.10
Hexachlorobutadiene	87-68-3	1.24	U	6.20	1.24	0.620
Isopropylbenzene	98-82-8	1.24	U	6.20	1.24	0.620
p-Isopropyltoluene	99-87-6	1.24	U	6.20	1.24	0.620
4-Methyl-2-pentanone	108-10-1	6.20	U	12.4	6.20	3.10
Methylene chloride	75-09-2	2.48	U	6.20	2.48	1.24
Naphthalene	91-20-3	1.24	U	6.20	1.24	0.620
n-Propylbenzene	103-65-1	1.24	U	6.20	1.24	0.620
Styrene	100-42-5	1.24	U	6.20	1.24	0.620
1,1,1,2-Tetrachloroethane	630-20-6	1.24	U	6.20	1.24	0.620
1,1,2,2-Tetrachloroethane	79-34-5	1.24	U	6.20	1.24	0.620
Tetrachloroethene	127-18-4	1.24	U	6.20	1.24	0.620
Toluene	108-88-3	1.24	U	6.20	1.24	0.620
1,2,3-Trichlorobenzene	87-61-6	1.24	U	6.20	1.24	0.620
1,2,4-Trichlorobenzene	120-82-1	1.24	U	6.20	1.24	0.620
1,1,1-Trichloroethane	71-55-6	1.24	U	6.20	1.24	0.620
1,1,2-Trichloroethane	79-00-5	1.24	U	6.20	1.24	0.620
Trichloroethene	79-01-6	1.24	U	6.20	1.24	0.620
Trichlorofluoromethane	75-69-4	2.48	U	6.20	2.48	1.24
1,2,3-Trichloropropane	96-18-4	2.48	U	6.20	2.48	1.24
1,2,4-Trimethylbenzene	95-63-6	1.24	U	6.20	1.24	0.620
1,3,5-Trimethylbenzene	108-67-8	1.24	U	6.20	1.24	0.620
Vinyl chloride	75-01-4	2.48	U	6.20	2.48	1.24
o-Xylene	95-47-6	1.24	U	6.20	1.24	0.620
m-,p-Xylene	179601-23-1	1.24	U	6.20	1.24	0.620

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.0	80	120	
1,2-Dichloroethane-d4	98.6	80	120	
Toluene-d8	98.2	85	115	
4-Bromofluorobenzene	101	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.
VOA Preparation/Preservation/Extraction Log

Batch #: WG559855
Analyst: AWE
Method: 5030B/5030C/5035
Run Date: 03/06/2016 12:56
Product: 8260
Purge and trap methanol COA18540
Purified Lab Sand Lot # COA18552

SAMPLE #	Fraction	Collected	Preserved	PCT-S	Tare Wt	Total Wt	Sample Wt	Water	MeOH	Vt	Comments
L16030134-01	A	03/02/16 08:58	03/06/16 12:56	80.7			4.62	5		5	
L16030134-02	A	03/02/16 08:58	03/06/16 12:56	80.8			5.17	5		5	
L16030134-03	A	03/02/16 10:35	03/06/16 12:57	88.1			4.94	5		5	
L16030134-04	A	03/02/16 11:11	03/06/16 12:58	82.3			4.75	5		5	
L16030134-05	A	03/02/16 12:05	03/06/16 12:58	82.1			4.70	5		5	
L16030134-06	A	03/02/16 15:00	03/06/16 12:59	80.0			4.77	5		5	
L16030234-01	A	03/03/16 13:15	03/06/16 13:01	83.4			4.61	5		5	
L16030234-02	A	03/03/16 13:49	03/06/16 13:02	81.8			4.73	5		5	
L16030234-03	A	03/03/16 14:40	03/06/16 13:03	84.4			4.79	5		5	
L16030234-04	A	03/03/16 14:50	03/06/16 13:04	83.4			4.56	5		5	
L16030234-05	A	03/03/16 14:55	03/06/16 13:04	82.0			5.43	5		5	
L16030234-06	A	03/03/16 15:05	03/06/16 13:05	80.1			5.03	5		5	
L16030235-01	A	03/02/16 16:00	03/06/16 13:06	82.3			4.92	5		5	
L16030235-02	A	03/02/16 16:25	03/06/16 13:06	76.4			5.25	5		5	
L16030235-03	A	03/03/16 10:00	03/06/16 13:07	82.2			5.48	5		5	
L16030235-04	A	03/03/16 10:00	03/06/16 13:07	82.2			5.17	5		5	
L16030235-05	A	03/03/16 10:00	03/06/16 13:08	82.2			5.07	5		5	
L16030235-06	A	03/03/16 10:10	03/06/16 13:09	75.6			5.16	5		5	
L16030235-07	A	03/03/16 10:10	03/06/16 13:10	75.6			4.64	5		5	
L16030235-08	A	03/03/16 10:15	03/06/16 13:10	83.1			5.24	5		5	
WG559855-01	A		03/06/16 12:59	80.0			4.77	5		5	
WG559855-02	A		03/06/16 13:00	80.0			5.05	5		5	
WG559855-03	A		03/06/16 13:00	80.0			4.75	5		5	

Comments:
1 = improperly sealed cap
2 = preserved out of hold
3 = effervesced
4 = preserved with NaHSO4
5 = preserved by freezing
6 = preserved in field

Analyst: Andrew Baeg

VOA_EXT - Modified 05/22/2008
PDF ID: 4658102
Report generated: 03/08/2016 15:07

Microbac Laboratories Inc.
VOA Preparation/Preservation/Extraction Log

Batch #: WG559925
Analyst: AWE
Method: 5030B/5030C/5035
Run Date: 03/07/2016 10:54
Product: 8260
Purge and trap methanol COA18540
Purified Lab Sand Lot # COA18552

SAMPLE #	Fraction	Collected	Preserved	PCT-S	Tare Wt	Total Wt	Sample Wt	Water	MeOH	Vt	Comments
L16030176-02	A	03/02/16 10:30	03/07/16 10:54	100			0.94	5		5	
L16030234-05	A	03/03/16 14:55	03/07/16 10:14	82.0			4.88	5		5	

Comments:
1 = improperly sealed cap
2 = preserved out of hold
3 = effervesced
4 = preserved with NaHSO4
5 = preserved by freezing
6 = preserved in field

Analyst: Andrew Ciesig

VOA_EXT - Modified 05/22/2008
PDF ID: 4658638
Report generated: 03/07/2016 10:54

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 012516
Analyst1: ADC Analyst2: NA
Method: 8260B/8260C SOP: MSV01(-C) Rev: 23 (2)
Method: 5030B/5030C/5035 SOP: PAT01 Rev: 18
Method: 624 SOP: MSV10 Rev: 12
Maintenance Log ID:

Internal Standard: STD74414 Surrogate Standard: STD74126
CCV: STD74488 LCS: STD74459 MS/MSD: STD74459

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG555000 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M972470	WG555000-01 BFB 50ng A9	NA	7	1	STD74202	01/25/16 10:27
9M972471	RINSE	NA	7	1		01/25/16 10:52
9M972472	WG555000-02 5ug/Kg STD A9	NA	7	1	STD74406	01/25/16 11:22
9M972473	WG555000-03 20ug/Kg STD A9	NA	7	1	STD74406	01/25/16 11:52
9M972474	WG555000-04 50ug/Kg STD A9	NA	7	1	STD74406	01/25/16 12:23
9M972475	WG555000-05 100ug/Kg STD A9	NA	7	1	STD74406	01/25/16 12:53
9M972476	WG555000-06 200ug/Kg STD A9	NA	7	1	STD74406	01/25/16 13:23
9M972477	WG555000-07 300ug/Kg STD A9	NA	7	1	STD74406	01/25/16 13:54
9M972478	WG555000-08 400ug/Kg STD A9	NA	7	1	STD74406	01/25/16 14:25
9M972479	WG555000-09 500ug/Kg STD A9	NA	7	1	STD74406	01/25/16 14:56
9M972480	RINSE	NA	7	1		01/25/16 15:26
9M972481	WG555000-10 100ug/Kg ICV A9	NA	7	1	STD74461	01/25/16 15:56
9M972482	RINSE	NA	7	1		01/25/16 16:28

Approved: January 29, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 022516
Analyst1: ADC Analyst2: NA
Method: 8260 SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD74726 Surrogate Standard: STD74815
CCV: STD74488 LCS: STD74755 MS/MSD: STD74755

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG558732 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M972892	WG558732-01 BFB 50ng	NA	7	1	STD74773	02/25/16 14:26
9M972894	WG558732-01 BFB 50ng	NA	7	1	STD74773	02/25/16 14:45
9M972895	WG558732-02 50ug/L CCV 8260C	NA	7	1	STD74773	02/25/16 15:11
9M972896	WG558732-02 50ug/L CCV 8260C	NA	7	1	STD74773	02/25/16 15:48
9M972897	RINSE	NA	7	1		02/25/16 16:25
9M972898	WG558732-03 0.5ug/kg STD	NA	7	1	STD74773	02/25/16 16:55
9M972899	WG558732-04 1.0ug/kg STD	NA	7	1	STD74773	02/25/16 17:27
9M972900	WG558732-05 2.0ug/kg STD	NA	7	1	STD74773	02/25/16 17:57
9M972901	WG558732-06 5.0ug/kg STD	NA	7	1	STD74773	02/25/16 18:28
9M972902	WG558732-07 20.0ug/kg STD	NA	7	1	STD74773	02/25/16 18:59
9M972903	WG558732-08 100.0ug/kg STD	NA	7	1	STD74773	02/25/16 19:29
9M972904	WG558732-09 200.0ug/kg STD	NA	7	1	STD74773	02/25/16 20:00
9M972905	WG558732-10 300.0ug/kg STD	NA	7	1	STD74773	02/25/16 20:30
9M972906	RINSE	NA	7	1	STD74773	02/25/16 21:01
9M972907	WG558732-11 50.0ug/kg ALTSRC	NA	7	1	STD74755	02/25/16 21:31

Approved: February 29, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 030616
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD74726 Surrogate Standard: STD74815
CCV: STD74773 LCS: STD74900 MS/MSD: STD74900

Column 1 ID: RTX502.1 Column 2 ID: NA
Workgroups: WG559859

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M973096	WG559858-01 BFB 50ng 8260	NA	7	1	STD74606	03/06/16 14:28
9M973097	WG559858-02 50ug/Kg CCV 8260	NA	7	1	STD74773	03/06/16 14:55
9M973098	WGXXXXXX-01 A9FOO QC 100ug/kg	NA	7	1		03/06/16 15:25
9M973099	WG559858-02 50ug/Kg CCV 8260	NA	7	1	STD74773	03/06/16 15:56
9M973100	RINSE	NA	7	1		03/06/16 16:26
9M973101	WG559859-01 VBLK0306 BLANK 8260	NA	7	1		03/06/16 16:57
9M973102	WG559859-02 20ug/L LCS 8260	NA	7	1	STD74900	03/06/16 17:27
9M973103	RINSE	NA	7	1		03/06/16 17:58
9M973104	L16030134-01 A 8260 4.62g	NA	7	1		03/06/16 18:28
9M973105	L16030134-02 A 8260 5.17g	NA	7	1		03/06/16 18:59
9M973106	L16030134-03 A 8260 4.94g	NA	7	1		03/06/16 19:29
9M973107	L16030134-04 A 8260 4.75g	NA	7	1		03/06/16 20:00
9M973108	L16030134-05 A 8260 4.70g	NA	7	1		03/06/16 20:30
9M973109	WG559855-01 L16030134-06 A 8260 4.77g	NA	7	1		03/06/16 21:00
9M973110	L16030234-01 A 8260 4.61g	NA	7	1		03/06/16 21:31
9M973111	L16030234-02 A 8260 4.73g	NA	7	1		03/06/16 22:01
9M973112	L16030234-03 A 8260 4.79g	NA	7	1		03/06/16 22:31
9M973113	L16030234-04 A 8260 4.56g	NA	7	1		03/06/16 23:01
9M973114	L16030234-05 A 8260 5.43g	NA	7	1		03/06/16 23:32
9M973115	L16030234-06 A 8260 5.03g	NA	7	1		03/07/16 00:02
9M973116	WG559855-02 MS A 8260 5.05g	NA	7	1		03/07/16 00:32
9M973117	WG559855-03 MSD A 8260 4.75g	NA	7	1		03/07/16 01:02
9M973118	RINSE	NA	7	1		03/07/16 01:32
9M973119	RINSE	NA	7	1		03/07/16 02:03

Comments

Seq.	Rerun	Dil.	Reason	Analytes
19	X		Internal standard failure	
File ID: 9M973114				
L16030234-05				

Approved: March 07, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 030716
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD74726 Surrogate Standard: STD74815
CCV: STD74773 LCS: STD74900 MS/MSD: STD74900

Column 1 ID: RTX502.1 Column 2 ID: NA
Workgroups: WG559982

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M973120	WG559980-01 BFB 50ng 8260	NA	7	1	STD74606	03/07/16 14:48
9M973121	WG559980-02 50ug/Kg CCV 8260	NA	7	1	STD74773	03/07/16 15:17
9M973122	WGXXXXXX-01 A9FOO QC 100ug/kg	NA	7	1		03/07/16 15:48
9M973123	WG559982-01 VBLK0307 BLANK 8260	NA	7	1		03/07/16 16:18
9M973124	WG559982-02 20ug/L LCS 8260	NA	7	1	STD74900	03/07/16 16:49
9M973125	RINSE	NA	7	1		03/07/16 17:20
9M973126	L16030234-05 A 8260 4.88g	NA	7	1		03/07/16 17:51
9M973127	L16030235-01 A 8260 4.92g	NA	7	1		03/07/16 18:21
9M973128	L16030235-02 A 8260 5.25g	NA	7	1		03/07/16 18:51
9M973129	L16030235-03 A RS 8260 5.48g	NA	7	1		03/07/16 19:22
9M973130	L16030235-06 A 8260 5.16g	NA	7	1		03/07/16 19:53
9M973131	L16030235-07 A 8260 4.64g	NA	7	1		03/07/16 20:24
9M973132	L16030235-08 A 8260 5.24g	NA	7	1		03/07/16 20:55
9M973133	L16030235-04 A MS 8260 5.17g	NA	7	1		03/07/16 21:26
9M973134	L16030235-05 A MSD 8260 5.07g	NA	7	1		03/07/16 21:58
9M973135	RINSE	NA	7	1		03/07/16 22:29
9M973136	L16030176-02 A 8260 0.94g	NA	10	1		03/07/16 23:00
9M973137	RINSE	NA	7	1		03/07/16 23:30
9M973138	SCREEN 10X 0323-01	NA	7	1		03/08/16 00:01
9M973139	SCREEN 10X 0323-02	NA	7	1		03/08/16 00:31
9M973140	SCREEN 10X 0323-03	NA	7	1		03/08/16 01:01
9M973141	SCREEN 10X 0323-04	NA	7	1		03/08/16 01:32
9M973142	SCREEN 10X 0323-05	NA	7	1		03/08/16 02:02
9M973143	SCREEN 10X 0323-06	NA	7	1		03/08/16 02:32
9M973144	SCREEN 1000X 0168-01	NA	7	1		03/08/16 03:03
9M973145	RINSE	NA	7	1		03/08/16 03:33
9M973146	RINSE	NA	7	1		03/08/16 04:03

Comments

Seq.	Rerun	Dil.	Reason	Analytes
3				
File ID: 9M973122				
Not needed. DNR.				

Approved: March 08, 2016

Tiffany Bailey

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 030716
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD74726 Surrogate Standard: STD74815
CCV: STD74773 LCS: STD74900 MS/MSD: STD74900

Column 1 ID: RTX502.1 Column 2 ID: NA
Workgroups: WG559982

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17	X	1	Analyzed too dilute	
File ID: 9M973136				
IS/SS failures				

Approved: March 08, 2016

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 25-JAN-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 72995
Analytical Workgroups: WG555000

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
28-JAN-2016

Secondary Reviewer:
29-JAN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JAN-29-2016 16:00:23

Microbac Laboratories Inc.

Data Checklist

Date: 25-FEB-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 73547
Analytical Workgroups: WG558732

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
29-FEB-2016

Secondary Reviewer:
29-FEB-2016

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-29-2016 15:30:51

Microbac Laboratories Inc.

Data Checklist

Date: 06-MAR-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 73657
Analytical Workgroups: WG559859

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
07-MAR-2016

Secondary Reviewer:
07-MAR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-07-2016 14:35:52

Microbac Laboratories Inc.

Data Checklist

Date: 07-MAR-2016
Analyst: ADC
Analyst: NA
Method: 8260B
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 73696
Analytical Workgroups: WG559982

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	FJB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	FJB
Secondary Reviewer	TMB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer: 08-MAR-2016

Secondary Reviewer: 08-MAR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-08-2016 15:47:34

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG559859

Login Number: L16030234

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18DPT08(5-5.5)030316	01	03/03/16					03/06/2016	3	14		03/06/16	3.3	14	
18DPT08(15-15.5)030316	02	03/03/16					03/06/2016	3	14		03/06/16	3.3	14	
18DPT08(10-10.5)030316	03	03/03/16					03/06/2016	2.9	14		03/06/16	3.3	14	
18DPT08(21-21.5)030316	04	03/03/16					03/06/2016	2.9	14		03/06/16	3.3	14	
18DPT08(35-35.5)030316	06	03/03/16					03/06/2016	2.9	14		03/07/16	3.4	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4659260
Report generated 03/14/2016 11:22

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG559982

Login Number: L16030234

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18DPT08(26-26.5)030316	05	03/03/16					03/07/2016	3.8	14		03/07/16	4.1	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4659260
Report generated 03/14/2016 11:22

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16030234
Instrument Id: HPMS9
Workgroup (AAB#): WG559982

Method: 8260
CAL ID: HPMS9-25-FEB-16
Matrix: Soil

Sample Number	Dilution	Tag	1	2	3	4
L16030234-05	1.00	01	98.0	96.5	101	97.7
WG559982-01	1.00	01	101	97.2	103	99.2
WG559982-02	1.00	01	97.7	94.6	96.4	95.3

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	80	-	120
2 - Dibromofluoromethane	80	-	120
3 - 4-Bromofluorobenzene	85	-	120
4 - Toluene-d8	85	-	115

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4659274
Report generated: 03/14/2016 11:22

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16030234
Instrument Id: HPMS9
Workgroup (AAB#): WG559859

Method: 8260
CAL ID: HPMS9-25-FEB-16
Matrix: Soil

Sample Number	Dilution	Tag	1	2	3	4
L16030234-01	1.00	01	112	98.7	102	98.8
L16030234-02	1.00	01	99.4	96.7	104	98.3
L16030234-03	1.00	01	100	94.7	102	97.2
L16030234-04	1.00	01	97.2	94.9	102	98.6
L16030234-06	1.00	01	98.6	97.0	101	98.2
WG559859-01	1.00	01	99.7	96.5	102	99.4
WG559859-02	1.00	01	97.6	97.9	102	100

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	80	-	120
2 - Dibromofluoromethane	80	-	120
3 - 4-Bromofluorobenzene	85	-	120
4 - Toluene-d8	85	-	115

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4659274
Report generated: 03/14/2016 11:22

METHOD BLANK SUMMARY

Login Number: L16030234
Blank File ID: 9M973101
Prep Date: 03/06/16 16:57
Analyzed Date: 03/06/16 16:57
Analyst: ADC

Work Group: WG559859
Blank Sample ID: WG559859-01
Instrument ID: HPMS9
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG559859-02	9M973102	03/06/16 17:27	01
18DPT08(5-5.5)030316	L16030234-01	9M973110	03/06/16 21:31	01
18DPT08(15-15.5)030316	L16030234-02	9M973111	03/06/16 22:01	01
18DPT08(10-10.5)030316	L16030234-03	9M973112	03/06/16 22:31	01
18DPT08(21-21.5)030316	L16030234-04	9M973113	03/06/16 23:01	01
18DPT08(35-35.5)030316	L16030234-06	9M973115	03/07/16 00:02	01

Report Name: BLANK_SUMMARY
PDF File ID: 4659262
Report generated 03/14/2016 11:22

METHOD BLANK SUMMARY

Login Number: L16030234
Blank File ID: 9M973123
Prep Date: 03/07/16 16:18
Analyzed Date: 03/07/16 16:18
Analyst: ADC

Work Group: WG559982
Blank Sample ID: WG559982-01
Instrument ID: HPMS9
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG559982-02	9M973124	03/07/16 16:49	01
18DPT08(26-26.5)030316	L16030234-05	9M973126	03/07/16 17:51	01

Report Name: BLANK_SUMMARY
PDF File ID: 4659262
Report generated 03/14/2016 11:22

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16030234 Prep Date: 03/06/16 16:57 Sample ID: WG559859-01
Instrument ID: HPMS9 Run Date: 03/06/16 16:57 Prep Method: 5030B/5030C/503
File ID: 9M973101 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG559859 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-25-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	5.00	20.0	5.00	1	U
Benzene	0.500	5.00	0.500	1	U
Bromobenzene	0.500	5.00	0.500	1	U
Bromochloromethane	1.00	5.00	1.00	1	U
Bromodichloromethane	0.500	5.00	0.500	1	U
Bromoform	0.500	5.00	0.500	1	U
Bromomethane	1.00	5.00	1.00	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.500	5.00	0.500	1	U
sec-Butylbenzene	0.500	5.00	0.500	1	U
tert-Butylbenzene	0.500	5.00	0.500	1	U
Carbon disulfide	0.500	5.00	0.500	1	U
Carbon tetrachloride	0.500	5.00	0.500	1	U
Chlorobenzene	0.500	5.00	0.500	1	U
Chlorodibromomethane	0.500	5.00	0.500	1	U
Chloroethane	1.00	5.00	1.00	1	U
Chloroform	0.500	5.00	0.500	1	U
Chloromethane	2.00	10.0	2.00	1	U
2-Chlorotoluene	0.500	5.00	0.500	1	U
4-Chlorotoluene	0.500	5.00	0.500	1	U
1,2-Dibromo-3-chloropropane	2.00	10.0	2.00	1	U
1,2-Dibromoethane	0.500	5.00	0.500	1	U
Dibromomethane	0.500	5.00	0.500	1	U
1,2-Dichlorobenzene	0.500	5.00	0.500	1	U
1,3-Dichlorobenzene	0.500	5.00	0.500	1	U
1,4-Dichlorobenzene	0.500	5.00	0.500	1	U
Dichlorodifluoromethane	1.00	5.00	1.00	1	U
1,1-Dichloroethane	1.00	5.00	1.00	1	U
1,2-Dichloroethane	0.500	5.00	0.500	1	U
1,1-Dichloroethene	0.500	5.00	0.500	1	U
cis-1,2-Dichloroethene	0.500	5.00	0.500	1	U
trans-1,2-Dichloroethene	0.500	5.00	0.500	1	U
1,2-Dichloropropane	0.500	5.00	0.500	1	U
1,3-Dichloropropane	0.500	5.00	0.500	1	U
2,2-Dichloropropane	0.500	5.00	0.500	1	U
cis-1,3-Dichloropropene	0.500	5.00	0.500	1	U
trans-1,3-Dichloropropene	0.500	5.00	0.500	1	U
1,1-Dichloropropene	0.500	5.00	0.500	1	U
Ethylbenzene	0.500	5.00	0.500	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.500	5.00	0.500	1	U
Isopropylbenzene	0.500	5.00	0.500	1	U

Report Name: BLANK
PDF ID: 4659264
14-MAR-2016 11:22

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16030234 Prep Date: 03/06/16 16:57 Sample ID: WG559859-01
Instrument ID: HPMS9 Run Date: 03/06/16 16:57 Prep Method: 5030B/5030C/503
File ID: 9M973101 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG559859 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-25-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.500	5.00	0.500	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	1.00	5.00	1.00	1	U
Naphthalene	0.500	5.00	0.500	1	U
n-Propylbenzene	0.500	5.00	0.500	1	U
Styrene	0.500	5.00	0.500	1	U
1,1,1,2-Tetrachloroethane	0.500	5.00	0.500	1	U
1,1,2,2-Tetrachloroethane	0.500	5.00	0.500	1	U
Tetrachloroethene	0.500	5.00	0.500	1	U
Toluene	0.500	5.00	0.500	1	U
1,2,3-Trichlorobenzene	0.500	5.00	0.500	1	U
1,2,4-Trichlorobenzene	0.500	5.00	0.500	1	U
1,1,1-Trichloroethane	0.500	5.00	0.500	1	U
1,1,2-Trichloroethane	0.500	5.00	0.500	1	U
Trichloroethene	0.500	5.00	0.500	1	U
Trichlorofluoromethane	1.00	5.00	1.00	1	U
1,2,3-Trichloropropane	1.00	5.00	1.00	1	U
1,2,4-Trimethylbenzene	0.500	5.00	0.500	1	U
1,3,5-Trimethylbenzene	0.500	5.00	0.500	1	U
Vinyl chloride	1.00	5.00	1.00	1	U
o-Xylene	0.500	5.00	0.500	1	U
m-,p-Xylene	0.500	5.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	96.5	80 - 120	PASS
1,2-Dichloroethane-d4	99.7	80 - 120	PASS
Toluene-d8	99.4	85 - 115	PASS
4-Bromofluorobenzene	102	85 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4659264
14-MAR-2016 11:22

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16030234 Prep Date: 03/07/16 16:18 Sample ID: WG559982-01
Instrument ID: HPMS9 Run Date: 03/07/16 16:18 Prep Method: 5030B/5030C/503
File ID: 9M973123 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG559982 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-25-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	5.00	20.0	5.00	1	U
Benzene	0.500	5.00	0.500	1	U
Bromobenzene	0.500	5.00	0.500	1	U
Bromochloromethane	1.00	5.00	1.00	1	U
Bromodichloromethane	0.500	5.00	0.500	1	U
Bromoform	0.500	5.00	0.500	1	U
Bromomethane	1.00	5.00	1.00	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.500	5.00	0.500	1	U
sec-Butylbenzene	0.500	5.00	0.500	1	U
tert-Butylbenzene	0.500	5.00	0.500	1	U
Carbon disulfide	0.500	5.00	0.500	1	U
Carbon tetrachloride	0.500	5.00	0.500	1	U
Chlorobenzene	0.500	5.00	0.500	1	U
Chlorodibromomethane	0.500	5.00	0.500	1	U
Chloroethane	1.00	5.00	1.00	1	U
Chloroform	0.500	5.00	0.500	1	U
Chloromethane	2.00	10.0	2.00	1	U
2-Chlorotoluene	0.500	5.00	0.500	1	U
4-Chlorotoluene	0.500	5.00	0.500	1	U
1,2-Dibromo-3-chloropropane	2.00	10.0	2.00	1	U
1,2-Dibromoethane	0.500	5.00	0.500	1	U
Dibromomethane	0.500	5.00	0.500	1	U
1,2-Dichlorobenzene	0.500	5.00	0.500	1	U
1,3-Dichlorobenzene	0.500	5.00	0.500	1	U
1,4-Dichlorobenzene	0.500	5.00	0.500	1	U
Dichlorodifluoromethane	1.00	5.00	1.00	1	U
1,1-Dichloroethane	1.00	5.00	1.00	1	U
1,2-Dichloroethane	0.500	5.00	0.500	1	U
1,1-Dichloroethene	0.500	5.00	0.500	1	U
cis-1,2-Dichloroethene	0.500	5.00	0.500	1	U
trans-1,2-Dichloroethene	0.500	5.00	0.500	1	U
1,2-Dichloropropane	0.500	5.00	0.500	1	U
1,3-Dichloropropane	0.500	5.00	0.500	1	U
2,2-Dichloropropane	0.500	5.00	0.500	1	U
cis-1,3-Dichloropropene	0.500	5.00	0.500	1	U
trans-1,3-Dichloropropene	0.500	5.00	0.500	1	U
1,1-Dichloropropene	0.500	5.00	0.500	1	U
Ethylbenzene	0.500	5.00	0.500	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.500	5.00	0.500	1	U
Isopropylbenzene	0.500	5.00	0.500	1	U

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Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16030234 Prep Date: 03/07/16 16:18 Sample ID: WG559982-01
Instrument ID: HPMS9 Run Date: 03/07/16 16:18 Prep Method: 5030B/5030C/503
File ID: 9M973123 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG559982 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-25-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.500	5.00	0.500	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	1.00	5.00	1.00	1	U
Naphthalene	0.500	5.00	0.500	1	U
n-Propylbenzene	0.500	5.00	0.500	1	U
Styrene	0.500	5.00	0.500	1	U
1,1,1,2-Tetrachloroethane	0.500	5.00	0.500	1	U
1,1,2,2-Tetrachloroethane	0.500	5.00	0.500	1	U
Tetrachloroethene	0.500	5.00	0.500	1	U
Toluene	0.500	5.00	0.500	1	U
1,2,3-Trichlorobenzene	0.500	5.00	0.500	1	U
1,2,4-Trichlorobenzene	0.500	5.00	0.500	1	U
1,1,1-Trichloroethane	0.500	5.00	0.500	1	U
1,1,2-Trichloroethane	0.500	5.00	0.500	1	U
Trichloroethene	0.500	5.00	0.500	1	U
Trichlorofluoromethane	1.00	5.00	1.00	1	U
1,2,3-Trichloropropane	1.00	5.00	1.00	1	U
1,2,4-Trimethylbenzene	0.500	5.00	0.500	1	U
1,3,5-Trimethylbenzene	0.500	5.00	0.500	1	U
Vinyl chloride	1.00	5.00	1.00	1	U
o-Xylene	0.500	5.00	0.500	1	U
m-,p-Xylene	0.500	5.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	97.2	80 - 120	PASS
1,2-Dichloroethane-d4	101	80 - 120	PASS
Toluene-d8	99.2	85 - 115	PASS
4-Bromofluorobenzene	103	85 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030234 Run Date: 03/06/2016 Sample ID: WG559859-02
Instrument ID: HPMS9 Run Time: 17:27 Prep Method: 5030B/5030C/503
File ID: 9M973102 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG559859 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD74900 Cal ID: HPMS9-25-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	20.7	103	20 - 160	
Benzene	20.0	19.6	98.0	75 - 125	
Bromobenzene	20.0	17.3	86.5	65 - 120	
Bromochloromethane	20.0	19.8	99.0	70 - 125	
Bromodichloromethane	20.0	19.1	95.3	70 - 130	
Bromoform	20.0	16.4	82.2	55 - 135	
Bromomethane	20.0	18.3	91.6	30 - 160	
2-Butanone	20.0	21.6	108	30 - 160	
n-Butylbenzene	20.0	16.6	83.0	65 - 140	
sec-Butylbenzene	20.0	18.1	90.4	65 - 130	
tert-Butylbenzene	20.0	18.1	90.6	65 - 130	
Carbon disulfide	20.0	18.6	92.9	45 - 160	
Carbon tetrachloride	20.0	18.0	89.8	65 - 135	
Chlorobenzene	20.0	19.3	96.7	75 - 125	
Chlorodibromomethane	20.0	18.2	91.0	65 - 130	
Chloroethane	20.0	19.0	95.0	40 - 155	
Chloroform	20.0	19.6	98.0	70 - 125	
Chloromethane	20.0	19.7	98.5	50 - 130	
2-Chlorotoluene	20.0	19.1	95.4	70 - 130	
4-Chlorotoluene	20.0	16.6	83.2	75 - 125	
1,2-Dibromo-3-chloropropane	20.0	15.4	77.2	40 - 135	
1,2-Dibromoethane	20.0	18.3	91.7	70 - 125	
Dibromomethane	20.0	18.7	93.6	75 - 130	
1,2-Dichlorobenzene	20.0	17.4	87.0	75 - 120	
1,3-Dichlorobenzene	20.0	16.3	81.5	70 - 125	
1,4-Dichlorobenzene	20.0	17.0	84.9	70 - 125	
Dichlorodifluoromethane	20.0	23.1	116	35 - 135	
1,1-Dichloroethane	20.0	18.9	94.3	75 - 125	
1,2-Dichloroethane	20.0	21.0	105	70 - 135	
1,1-Dichloroethene	20.0	19.4	97.2	65 - 135	
cis-1,2-Dichloroethene	20.0	20.2	101	65 - 125	
trans-1,2-Dichloroethene	20.0	20.3	102	65 - 135	
1,2-Dichloropropane	20.0	21.7	109	70 - 120	
1,3-Dichloropropane	20.0	20.6	103	75 - 125	
2,2-Dichloropropane	20.0	18.1	90.3	65 - 135	
cis-1,3-Dichloropropene	20.0	20.3	101	70 - 125	
trans-1,3-Dichloropropene	20.0	18.8	94.0	65 - 125	
1,1-Dichloropropene	20.0	18.5	92.5	70 - 135	
Ethylbenzene	20.0	19.9	99.4	75 - 125	
2-Hexanone	20.0	20.8	104	45 - 145	
Hexachlorobutadiene	20.0	16.1	80.7	55 - 140	

LCS - Modified 03/06/2008
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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030234 | Run Date: 03/06/2016 | Sample ID: WG559859-02
Instrument ID: HPMS9 | Run Time: 17:27 | Prep Method: 5030B/5030C/503
File ID: 9M973102 | Analyst: ADC | Method: 8260B
Workgroup (AAB#): WG559859 | Matrix: Soil | Units: ug/kg
QC Key: DOD4 | Lot#: STD74900 | Cal ID: HPMS9-25-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	19.6	98.1	75 - 130	
p-Isopropyltoluene	20.0	17.2	86.1	75 - 135	
4-Methyl-2-pentanone	20.0	21.5	107	45 - 145	
Methylene chloride	20.0	19.8	99.0	55 - 140	
Naphthalene	20.0	14.3	71.7	40 - 125	
n-Propylbenzene	20.0	18.4	92.2	65 - 135	
Styrene	20.0	19.7	98.4	75 - 125	
1,1,1,2-Tetrachloroethane	20.0	18.9	94.7	75 - 125	
1,1,2,2-Tetrachloroethane	20.0	17.3	86.7	55 - 130	
Tetrachloroethene	20.0	17.3	86.6	65 - 140	
Toluene	20.0	19.3	96.5	70 - 125	
1,2,3-Trichlorobenzene	20.0	15.3	76.7	60 - 135	
1,2,4-Trichlorobenzene	20.0	15.1	75.7	65 - 130	
1,1,1-Trichloroethane	20.0	18.5	92.3	70 - 135	
1,1,2-Trichloroethane	20.0	20.1	101	60 - 125	
Trichloroethene	20.0	19.4	96.9	75 - 125	
Trichlorofluoromethane	20.0	18.6	92.8	25 - 185	
1,2,3-Trichloropropane	20.0	17.5	87.4	65 - 130	
1,2,4-Trimethylbenzene	20.0	17.4	87.0	65 - 135	
1,3,5-Trimethylbenzene	20.0	18.2	91.0	65 - 135	
Vinyl chloride	20.0	21.1	105	60 - 125	
o-Xylene	20.0	20.0	100	75 - 125	
m-,p-Xylene	40.0	39.5	98.7	80 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	97.9	80 - 120	PASS
1,2-Dichloroethane-d4	97.6	80 - 120	PASS
Toluene-d8	100	85 - 115	PASS
4-Bromofluorobenzene	102	85 - 120	PASS

* EXCEEDS %REC LIMIT

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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030234 Run Date: 03/07/2016 Sample ID: WG559982-02
Instrument ID: HPMS9 Run Time: 16:49 Prep Method: 5030B/5030C/503
File ID: 9M973124 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG559982 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD74900 Cal ID: HPMS9-25-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	21.5	107	20 - 160	
Benzene	20.0	19.9	99.3	75 - 125	
Bromobenzene	20.0	16.2	80.8	65 - 120	
Bromochloromethane	20.0	19.4	96.8	70 - 125	
Bromodichloromethane	20.0	19.2	96.1	70 - 130	
Bromoform	20.0	17.0	85.2	55 - 135	
Bromomethane	20.0	18.4	91.8	30 - 160	
2-Butanone	20.0	22.5	113	30 - 160	
n-Butylbenzene	20.0	17.4	87.0	65 - 140	
sec-Butylbenzene	20.0	18.7	93.3	65 - 130	
tert-Butylbenzene	20.0	18.6	93.2	65 - 130	
Carbon disulfide	20.0	18.6	93.1	45 - 160	
Carbon tetrachloride	20.0	19.3	96.5	65 - 135	
Chlorobenzene	20.0	20.2	101	75 - 125	
Chlorodibromomethane	20.0	18.3	91.5	65 - 130	
Chloroethane	20.0	19.7	98.7	40 - 155	
Chloroform	20.0	19.3	96.3	70 - 125	
Chloromethane	20.0	21.2	106	50 - 130	
2-Chlorotoluene	20.0	18.4	92.2	70 - 130	
4-Chlorotoluene	20.0	18.0	89.8	75 - 125	
1,2-Dibromo-3-chloropropane	20.0	15.2	75.8	40 - 135	
1,2-Dibromoethane	20.0	18.9	94.3	70 - 125	
Dibromomethane	20.0	17.9	89.6	75 - 130	
1,2-Dichlorobenzene	20.0	17.4	87.0	75 - 120	
1,3-Dichlorobenzene	20.0	16.7	83.4	70 - 125	
1,4-Dichlorobenzene	20.0	16.5	82.6	70 - 125	
Dichlorodifluoromethane	20.0	24.0	120	35 - 135	
1,1-Dichloroethane	20.0	19.5	97.7	75 - 125	
1,2-Dichloroethane	20.0	21.2	106	70 - 135	
1,1-Dichloroethene	20.0	20.2	101	65 - 135	
cis-1,2-Dichloroethene	20.0	20.3	102	65 - 125	
trans-1,2-Dichloroethene	20.0	20.7	103	65 - 135	
1,2-Dichloropropane	20.0	21.1	105	70 - 120	
1,3-Dichloropropane	20.0	20.8	104	75 - 125	
2,2-Dichloropropane	20.0	19.8	99.0	65 - 135	
cis-1,3-Dichloropropene	20.0	20.6	103	70 - 125	
trans-1,3-Dichloropropene	20.0	19.3	96.6	65 - 125	
1,1-Dichloropropene	20.0	19.4	97.1	70 - 135	
Ethylbenzene	20.0	20.6	103	75 - 125	
2-Hexanone	20.0	21.1	106	45 - 145	
Hexachlorobutadiene	20.0	16.5	82.6	55 - 140	

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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030234 Run Date: 03/07/2016 Sample ID: WG559982-02
Instrument ID: HPMS9 Run Time: 16:49 Prep Method: 5030B/5030C/503
File ID: 9M973124 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG559982 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD74900 Cal ID: HPMS9-25-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	20.3	101	75 - 130	
p-Isopropyltoluene	20.0	17.8	89.1	75 - 135	
4-Methyl-2-pentanone	20.0	21.7	109	45 - 145	
Methylene chloride	20.0	19.0	94.9	55 - 140	
Naphthalene	20.0	14.6	72.8	40 - 125	
n-Propylbenzene	20.0	18.6	92.9	65 - 135	
Styrene	20.0	19.8	99.0	75 - 125	
1,1,1,2-Tetrachloroethane	20.0	19.3	96.6	75 - 125	
1,1,2,2-Tetrachloroethane	20.0	16.1	80.4	55 - 130	
Tetrachloroethene	20.0	19.2	96.2	65 - 140	
Toluene	20.0	19.7	98.3	70 - 125	
1,2,3-Trichlorobenzene	20.0	15.3	76.6	60 - 135	
1,2,4-Trichlorobenzene	20.0	15.3	76.7	65 - 130	
1,1,1-Trichloroethane	20.0	20.2	101	70 - 135	
1,1,2-Trichloroethane	20.0	20.2	101	60 - 125	
Trichloroethene	20.0	20.6	103	75 - 125	
Trichlorofluoromethane	20.0	19.8	98.9	25 - 185	
1,2,3-Trichloropropane	20.0	18.0	90.2	65 - 130	
1,2,4-Trimethylbenzene	20.0	17.2	85.8	65 - 135	
1,3,5-Trimethylbenzene	20.0	18.4	92.0	65 - 135	
Vinyl chloride	20.0	18.7	93.4	60 - 125	
o-Xylene	20.0	20.4	102	75 - 125	
m-,p-Xylene	40.0	40.7	102	80 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	94.6	80 - 120	PASS
1,2-Dichloroethane-d4	97.7	80 - 120	PASS
Toluene-d8	95.3	85 - 115	PASS
4-Bromofluorobenzene	96.4	85 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
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Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16030234
Instrument: HPMS9
Analyst: FJB
Workgroup: WG555000

Tune ID: WG555000-01
Run Date: 01/25/2016
Run Time: 10:27
File ID: 9M972470
Cal ID: HPMS9 - 25-JAN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	23.0	10289	PASS
75.0	95.0	30.0	60.0	49.3	22030	PASS
95.0	95.0	100	100	100	44728	PASS
96.0	95.0	5.00	9.00	6.98	3122	PASS
173	174	0	2.00	0.381	160	PASS
174	95.0	50.0	100	93.9	41989	PASS
175	174	5.00	9.00	6.62	2778	PASS
176	174	95.0	101	95.6	40133	PASS
177	176	5.00	9.00	6.39	2564	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG555000-02	STD-S	01	01/25/2016 11:22	
WG555000-03	STD-S	01	01/25/2016 11:52	
WG555000-04	STD-S	01	01/25/2016 12:23	
WG555000-05	STD-CCV-S	01	01/25/2016 12:53	
WG555000-06	STD-S	01	01/25/2016 13:23	
WG555000-07	STD-S	01	01/25/2016 13:54	
WG555000-08	STD-S	01	01/25/2016 14:25	
WG555000-09	STD-S	01	01/25/2016 14:56	
WG555000-10	SSCV-S	01	01/25/2016 15:56	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
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Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16030234
Instrument: HPMS9
Analyst: ADC
Workgroup: WG558732

Tune ID: WG558732-01
Run Date: 02/25/2016
Run Time: 14:45
File ID: 9M972894
Cal ID: HPMS9 - 25-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.2	5378	PASS
75.0	95.0	30.0	60.0	49.1	13067	PASS
95.0	95.0	100	100	100	26621	PASS
96.0	95.0	5.00	9.00	6.32	1683	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	85.8	22851	PASS
175	174	5.00	9.00	6.50	1485	PASS
176	174	95.0	101	98.3	22461	PASS
177	176	5.00	9.00	7.21	1619	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG558732-02	STD-CCV-S	01	02/25/2016 15:48	
WG558732-03	STD-S	01	02/25/2016 16:55	
WG558732-04	STD-S	01	02/25/2016 17:27	
WG558732-05	STD-S	01	02/25/2016 17:57	
WG558732-06	STD-S	01	02/25/2016 18:28	
WG558732-07	STD-S	01	02/25/2016 18:59	
WG558732-08	STD-S	01	02/25/2016 19:29	
WG558732-09	STD-S	01	02/25/2016 20:00	
WG558732-10	STD-S	01	02/25/2016 20:30	
WG558732-11	SSCV-S	01	02/25/2016 21:31	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
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Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16030234
Instrument: HPMS9
Analyst: ADC
Workgroup: WG559858

Tune ID: WG559858-01
Run Date: 03/06/2016
Run Time: 14:28
File ID: 9M973096
Cal ID: HPMS9 - 25-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	23.0	6500	PASS
75.0	95.0	30.0	60.0	49.4	13966	PASS
95.0	95.0	100	100	100	28287	PASS
96.0	95.0	5.00	9.00	6.91	1954	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	74.8	21150	PASS
175	174	5.00	9.00	7.33	1550	PASS
176	174	95.0	101	95.6	20221	PASS
177	176	5.00	9.00	5.87	1186	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG559858-02	CCV-S	01	03/06/2016 15:56	
WG559859-01	BLANK	01	03/06/2016 16:57	
WG559859-02	LCS	01	03/06/2016 17:27	
L16030234-01	18DPT08(5-5.5)030316	01	03/06/2016 21:31	
L16030234-02	18DPT08(15-15.5)030316	01	03/06/2016 22:01	
L16030234-03	18DPT08(10-10.5)030316	01	03/06/2016 22:31	
L16030234-04	18DPT08(21-21.5)030316	01	03/06/2016 23:01	
L16030234-06	18DPT08(35-35.5)030316	01	03/07/2016 00:02	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4659269
Report generated 03/14/2016 11:22

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16030234
Instrument: HPMS9
Analyst: ADC
Workgroup: WG559980

Tune ID: WG559980-01
Run Date: 03/07/2016
Run Time: 14:48
File ID: 9M973120
Cal ID: HPMS9 - 25-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	24.3	8393	PASS
75.0	95.0	30.0	60.0	51.9	17879	PASS
95.0	95.0	100	100	100	34471	PASS
96.0	95.0	5.00	9.00	5.97	2058	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	73.1	25197	PASS
175	174	5.00	9.00	7.16	1804	PASS
176	174	95.0	101	95.6	24090	PASS
177	176	5.00	9.00	6.96	1676	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG559980-02	CCV-S	01	03/07/2016 15:17	
WG559982-01	BLANK	01	03/07/2016 16:18	
WG559982-02	LCS	01	03/07/2016 16:49	
L16030234-05	18DPT08(26-26.5)030316	01	03/07/2016 17:51	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4659269
Report generated 03/14/2016 11:22

Calibration Table Report
Method: A9FOO_SL.M
Title: FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Calibration: Wed Jan 27 09:49:02 2016
Curve: WG555000
Calibration Files

Compound	5 9M972472.D	20 9M972473.D	50 9M972474.D	100 9M972475.D	200 9M972476.D	300 9M972477.D	400 9M972478.D	500 9M972479.D	Avg	%RSD	R^2 Linear
Fluorobenzene	ISTD										
Acetonitrile		0.053	0.046	0.048	0.052	0.046	0.052	0.054	0.050	6.657	
3-Chloro-1-propene	0.498	0.524	0.450	0.519	0.514	0.434	0.507	0.503	0.494	6.719	
2-Chloro-1,3-butadiene	0.534	0.576	0.519	0.592	0.585	0.509	0.593	0.584	0.561	6.202	
Ethyl Acetate		0.333	0.313	0.339	0.338	0.300	0.341	0.344	0.330	5.124	
Methacrylonitrile	0.102	0.109	0.101	0.112	0.110	0.096	0.112	0.112	0.107	5.912	
Isobutyl Alcohol	0.014	0.018	0.018	0.021	0.024	0.021	0.025	0.025	0.021	18.016	0.993
1-Butanol		0.010	0.013	0.015	0.017	0.015	0.018	0.018	0.015	17.838	0.992
Methyl methacrylate	0.236	0.246	0.231	0.265	0.265	0.231	0.271	0.269	0.252	7.005	
2-Nitropropane	0.069	0.073	0.074	0.083	0.089	0.079	0.093	0.095	0.082	12.090	
Chlorobenzene-d5	ISTD										
Cyclohexanone		0.020	0.022	0.025	0.028	0.023	0.027	0.028	0.025	12.963	
1,4-Dichlorobenzene-d4	ISTD										

Wed Jan 27 10:01:56 2016

Calibration Table Report
Method: 8260SL.M
Title: 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Calibration: Fri Feb 26 11:38:33 2016
Curve: WG558732
Calibration Files

Compound	0.5 9M972898.D	1 9M972899.D	2 9M972900.D	5 9M972901.D	20 9M972902.D	50 9M972896.D	100 9M972903.D	200 9M972904.D	300 9M972905.D	Avg	%RSD	R^2 Linear	Quadratic
Fluorobenzene	ISTD												
Dichlorodifluoromethane			0.338	0.271	0.399	0.396	0.318	0.357	0.307	0.341	13.734		
Chloromethane			0.372	0.280	0.331	0.361	0.296	0.346	0.304	0.327	10.674		
Vinyl Chloride		0.250	0.318	0.314	0.373	0.372	0.342	0.355	0.296	0.327	12.768		
1,3-Butadiene			0.347	0.266	0.328	0.330	0.297	0.321	0.293	0.312	8.837		
Bromomethane		0.236	0.267	0.181	0.206	0.208	0.186	0.217	0.199	0.213	13.250		
Chloroethane			0.127	0.116	0.142	0.165	0.139	0.173	0.160	0.146	14.271		
Trichlorofluoromethane		0.519	0.518	0.416	0.503	0.514	0.470	0.517	0.473	0.491	7.357		
Diethyl ether		0.215	0.246	0.217	0.243	0.241	0.214		0.231	0.230	6.215		
Isoprene			0.302	0.251	0.303	0.302	0.282	0.318	0.295	0.293	7.364		
Acrolein		0.041	0.046	0.045	0.046	0.048	0.046		0.050	0.046	6.212		
1,1,2-Trichloro-1,2,2-Trifluoroethane			0.252	0.234	0.255	0.261	0.248	0.273	0.251	0.253	4.699		
Acetone				0.179	0.138	0.128	0.119	0.124		0.138	17.810	0.999	
1,1-Dichloroethene		0.464	0.511	0.400	0.482	0.471	0.454	0.500	0.456	0.467	7.277		
Tert-Butyl Alcohol			0.057	0.046	0.055	0.051	0.047			0.051	8.698		
Dimethyl Sulfide		0.150	0.203	0.186	0.207	0.211	0.196	0.224	0.203	0.197	11.169		
Iodomethane				0.076	0.109	0.154	0.126	0.157	0.142	0.127	24.315	0.993	
Methyl acetate			0.282	0.223	0.279	0.262	0.240	0.258	0.234	0.254	8.867		
Methylene Chloride			0.271	0.217	0.263	0.261	0.240	0.280	0.249	0.254	8.252		
Carbon Disulfide			0.795	0.626	0.740	0.737	0.678	0.761	0.702	0.720	7.788		
Acrylonitrile		0.117	0.127	0.114	0.130	0.135	0.123		0.134	0.126	6.412		
Methyl Tert Butyl Ether		0.669	0.722	0.642	0.760	0.786	0.713	0.788	0.718	0.725	7.239		
trans-1,2-Dichloroethene		0.400	0.422	0.377	0.430	0.438	0.407	0.446	0.412	0.416	5.376		
n-Hexane			0.456	0.385	0.420	0.424	0.429	0.464	0.428	0.430	5.986		
Diisopropyl ether		0.938	1.068	0.928	1.071	1.051	0.931		0.995	0.998	6.627		
Vinyl Acetate			0.593	0.519	0.545	0.602	0.554	0.608	0.558	0.569	5.855		
1,1-Dichloroethane		0.548	0.558	0.445	0.532	0.549	0.499	0.553	0.500	0.523	7.454		
Ethyl-Tert-Butyl ether		0.871	0.992	0.852	0.990	0.988	0.865		0.934	0.928	6.918		
2-Butanone			0.177	0.152	0.156	0.166	0.156	0.172	0.149	0.161	6.650		
Propionitrile		0.042	0.055	0.048	0.053	0.051	0.048		0.049	0.049	8.494		
2,2-Dichloropropane			0.428	0.330	0.377	0.415	0.383	0.417	0.383	0.390	8.575		
cis-1,2-Dichloroethene		0.247	0.257	0.248	0.287	0.297	0.273	0.299	0.277	0.273	7.647		
Chloroform		0.473	0.530	0.432	0.482	0.509	0.459	0.505	0.454	0.480	6.746		
1-Bromopropane			0.011	0.041	0.042	0.043	0.040	0.045	0.041	0.038	31.434	0.997	
Bromochloromethane		0.131	0.173	0.169	0.194	0.199	0.179	0.197	0.178	0.177	12.275		
Tetrahydrofuran			0.111	0.099	0.110	0.110	0.097		0.097	0.104	6.802		
Dibromofluoromethane				0.267	0.243	0.286	0.286	0.274		0.271	6.547		
1,1,1-Trichloroethane		0.426	0.436	0.385	0.438	0.470	0.425	0.470	0.427	0.434	6.319		
Cyclohexane		0.465	0.495	0.425	0.494	0.478	0.465	0.503	0.464	0.474	5.302		
1,1-Dichloropropene		0.353	0.359	0.300	0.344	0.352	0.333	0.360	0.335	0.342	5.748		
Tert-Amyl-Methyl ether		0.631	0.709	0.631	0.716	0.716	0.632		0.684	0.674	6.133		
Carbon Tetrachloride			0.41939	0.34041	0.40512	0.42742	0.39181	0.43819	0.39737	0.40282	7.96886		
1,2-Dichloroethane-d4				0.34995	0.30686	0.35494	0.35835	0.33017		0.34005	6.33015		
Heptane										0	0		
1,2-Dichloroethane		0.36551	0.44947	0.39601	0.44224	0.45938	0.41291	0.4496	0.40581	0.42262	7.76179		
Benzene	1.14079	0.92872	1.03015	0.83328	0.97121	0.9721	0.88431	0.97127	0.88279	0.95718	9.53654		
Trichloroethene		0.30364	0.32158	0.26212	0.31219	0.31666	0.29597	0.321	0.29314	0.30329	6.54492		
Methylcyclohexane		0.31249	0.39837	0.32203	0.40419	0.39506	0.39323	0.42525	0.39247	0.38039	10.6291		
1,2-Dichloropropane		0.23004	0.27101	0.24016	0.27676	0.28593	0.2555	0.28277	0.26062	0.26285	7.66268		
1,4-Dioxane			0.0041	0.00361	0.00449	0.00376	0.00356		0.00414	0.00394	9.17892		
Bromodichloromethane			0.37851	0.33087	0.3725	0.39384	0.35929	0.397	0.36103	0.37044	6.13725		
Dibromomethane		0.15103	0.18915	0.16523	0.1825	0.18519	0.16707	0.1849	0.1682	0.17416	7.61692		
2-Chloroethyl Vinyl Ether				0.04535	0.05625	0.07439	0.06667	0.08013	0.07633	0.06652	20.1377	0.996	
4-Methyl-2-Pentanone				0.08933	0.11327	0.12554	0.11786	0.12977	0.11644	0.11537	12.2612		
cis-1,3-Dichloropropene			0.37321	0.33699	0.39477	0.41098	0.38072	0.42291	0.38195	0.38594	7.23123		
Dimethyl Disulfide			0.30882	0.3269	0.39409	0.4245	0.40234	0.4579	0.40032	0.38784	13.5683		
Chlorobenzene-d5	ISTD												
Toluene-d8				1.21266	1.14503	1.34974	1.34798	1.26813		1.26471	6.98417		
Toluene	1.57001	1.40445	1.51648	1.23448	1.46732	1.48749	1.3712	1.4823	1.3236	1.42859	7.34792		
Ethyl Methacrylate				0.31749	0.4112	0.4195	0.39758	0.44016	0.38999	0.39599	10.6751		
trans-1,3-Dichloropropene			0.50304	0.44978	0.5157	0.56049	0.50648	0.56248	0.50379	0.51454	7.49294		
1,1,2-Trichloroethane		0.27692	0.29584	0.27194	0.31787	0.32454	0.3	0.32173	0.292	0.3001	6.65768		
2-Hexanone				0.26013	0.28088	0.31451	0.30524	0.34734	0.28972	0.29964	10.056		
1,3-Dichloropropane		0.46617	0.55761	0.45639	0.51068	0.53187	0.47698	0.53043	0.47034	0.50006	7.49429		
Tetrachloroethene		0.33351	0.31568	0.26327	0.31051	0.30894	0.30156	0.32634	0.29026	0.30626	7.18201		
Dibromochloromethane			0.45014	0.36113	0.41394	0.44566	0.40515	0.45572	0.40415	0.41941	8.03547		
1,2-Dibromoethane				0.31086	0.34005	0.35035	0.32626	0.35324	0.31647	0.33287	5.32182		
1-Chlorohexane		0.39643	0.40929	0.33097	0.45098	0.44465	0.43807	0.477	0.42289	0.42128	10.5148		
Chlorobenzene		1.02904	1.08596	0.91908	1.05295	1.05625	0.95434	1.02465	0.91009	1.00405	6.67004		
1,1,1,2-Tetrachloroethane			0.37536	0.32525	0.38767	0.40783	0.37127	0.40937	0.36265	0.37706	7.67975		
Ethylbenzene	0.5157	0.51658	0.53164	0.45493	0.54391	0.54636	0.50916	0.54884	0.48836	0.51728	5.93862		
m-,p-Xylene	0.67213	0.61926	0.69794	0.58569	0.67162	0.65634	0.61182	0.65803	0.57657	0.63882	6.58722		
o-Xylene	0.61273	0.56415	0.61379	0.55512	0.6465	0.65334	0.60899	0.67127	0.59158	0.61305	6.41073		
Styrene		0.95813	1.06028	0.90308	1.08018	1.12326	1.04689	1.15897	1.02088	1.04396	8.002		
Bromoform			0.22872	0.23892	0.27832	0.30617	0.27263	0.32232	0.28054	0.27538	12.1348		
Isopropylbenzene		1.53891	1.69742	1.42189	1.74341	1.73716	1.64433	1.81019	1.57289	1.64577	7.76922		
1,4-Dichlorobenzene-d4	ISTD												
1,1,2,2-Tetrachloroethane		0.61571	0.83634	0.73739	0.79769	0.80854	0.74616	0.78083	0.74513	0.75847	8.88143		
p-Bromofluorobenzene				0.91653	0.87561	1.04735	1.0775	0.95104		0.97361	8.83571		
1,2,3-Trichloropropane		0.24645	0.29476	0.28329	0.29208	0.30442	0.29453	0.30315	0.28248	0.28764	6.41284		

trans-1,4-Dichloro-2-Butene		0.22501	0.23725	0.31415	0.3034	0.3105	0.33164	0.30766	0.28994	14.2446
n-Propylbenzene	3.98718	4.09811	3.61454	4.21971	4.10826	3.88939	3.82307	3.70205	3.93029	5.36989
Bromobenzene	0.84385	1.11565	0.86076	0.97118	0.9688	0.89248	0.89548	0.87446	0.92783	9.59949
1,3,5-Trimethylbenzene			2.76735	3.16086	3.10843	2.93606	2.91239	2.81635	2.95024	5.30322
2-Chlorotoluene		2.99265	2.31448	2.81057	2.64897	2.50142	2.61378	2.57101	2.63612	8.25378
4-Chlorotoluene	2.56339	2.5861	2.29006	2.55177	2.63031	2.41864	2.2799	2.17747	2.4372	6.98222
a-Methylstyrene			1.12025	1.41688	1.39756	1.35572	1.41986	1.35543	1.34428	8.43365
tert-Butylbenzene			0.56026	0.65003	0.66483	0.62531	0.61977	0.59094	0.61853	6.19423
1,2,4-Trimethylbenzene	3.41485	3.20381	2.86379	3.24429	3.17284	3.0014	2.96997	2.8463	3.08966	6.49589
sec-Butylbenzene	3.92127	3.95846	3.39254	3.98281	3.96896	3.8029	3.77812	3.59297	3.79976	5.54855
p-Isopropyltoluene			2.97918	3.35219	3.3501	3.24235	3.24339	3.07285	3.20668	4.70949
1,3-Dichlorobenzene	2.09668	2.18083	1.63464	1.82169	1.84149	1.71899	1.77783	1.67989	1.84401	10.6223
1,4-Dichlorobenzene	2.13498	2.06617	1.68605	1.85221	1.83159	1.72549	1.79434	1.65691	1.84347	9.41157
n-Butylbenzene	3.12981	3.1425	2.56827	2.96652	3.08072	3.01911	3.06733	2.87744	2.98146	6.31771
1,2-Dichlorobenzene	1.80685	1.84212	1.52596	1.70901	1.74915	1.66133	1.78603	1.60751	1.71099	6.28256
1,2-Dibromo-3-Chloropropane			0.17584	0.21007	0.23479	0.23723	0.24208	0.21787	0.21965	11.2549
1,2,4-Trichlorobenzene	1.3714	1.33063	1.02655	1.15029	1.2163	1.24479	1.25089	1.12609	1.21462	9.21088
Hexachlorobutadiene	0.57233	0.7279	0.53741	0.61674	0.64289	0.67353	0.72181	0.62948	0.64026	10.4449
Naphthalene		3.19632	2.63671	3.04494	3.29135	3.2233	3.14196	2.79099	3.04651	7.99534
1,2,3-Trichlorobenzene	1.32324	1.26566	0.99788	1.12352	1.21351	1.21702	1.20507	1.0788	1.17809	8.93408

Fri Feb 26 11:40:14 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16030234 Run Date: 02/25/2016 Sample ID: WG558732-11
Instrument ID: HPMS9 Run Time: 21:31 Method: 8260B
File ID: 9M972907 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG558732 Cal ID: HPMS9 - 25-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	48.0	ug/kg	0.461	4.00	20	
1,1-Dichloroethene	CCC	50.0	48.6	ug/kg	0.454	2.90	20	
1,2-Dichloropropane	CCC	50.0	52.3	ug/kg	0.275	4.60	20	
Ethylbenzene	CCC	50.0	51.3	ug/kg	0.531	2.60	20	
Toluene	CCC	50.0	50.7	ug/kg	1.45	1.50	20	
Vinyl Chloride	CCC	50.0	59.8	ug/kg	0.392	19.7	20	
Bromoform	SPCC	50.0	47.3	ug/kg	0.261	5.40	20	
Chlorobenzene	SPCC	50.0	51.2	ug/kg	1.03	2.40	20	
Chloromethane	SPCC	50.0	52.7	ug/kg	0.345	5.40	20	
1,1-Dichloroethane	SPCC	50.0	46.4	ug/kg	0.485	7.20	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	52.0	ug/kg	0.789	4.00	20	
Acetone		50.0	43.9	ug/kg	0.112	12.2	20	
Benzene		50.0	49.0	ug/kg	0.937	2.10	20	
Bromobenzene		50.0	52.2	ug/kg	0.968	4.40	20	
Bromochloromethane		50.0	51.5	ug/kg	0.183	3.00	20	
Bromodichloromethane		50.0	47.6	ug/kg	0.352	4.90	20	
Bromomethane		50.0	49.0	ug/kg	0.208	2.10	20	
2-Butanone		50.0	47.4	ug/kg	0.153	5.20	20	
n-Butylbenzene		50.0	52.5	ug/kg	3.13	4.90	20	
sec-Butylbenzene		50.0	54.7	ug/kg	4.16	9.50	20	
tert-Butylbenzene		50.0	55.4	ug/kg	0.685	10.8	20	
Carbon Disulfide		50.0	44.1	ug/kg	0.635	11.7	20	
Carbon Tetrachloride		50.0	46.5	ug/kg	0.375	7.00	20	
Dibromochloromethane		50.0	48.5	ug/kg	0.407	3.10	20	
Chloroethane		50.0	54.2	ug/kg	0.158	8.30	20	
2-Chlorotoluene		50.0	54.2	ug/kg	2.86	8.40	20	
4-Chlorotoluene		50.0	53.0	ug/kg	2.59	6.10	20	
1,2-Dibromo-3-Chloropropane		50.0	54.5	ug/kg	0.239	8.90	20	
1,2-Dibromoethane		50.0	50.8	ug/kg	0.338	1.50	20	
Dibromomethane		50.0	47.0	ug/kg	0.164	6.10	20	
1,2-Dichlorobenzene		50.0	52.7	ug/kg	1.81	5.50	20	
1,3-Dichlorobenzene		50.0	50.8	ug/kg	1.87	1.60	20	
1,4-Dichlorobenzene		50.0	51.1	ug/kg	1.88	2.20	20	
Dichlorodifluoromethane		50.0	63.4	ug/kg	0.432	26.7	20	*
1,2-Dichloroethane		50.0	49.2	ug/kg	0.416	1.60	20	
cis-1,2-Dichloroethene		50.0	52.6	ug/kg	0.287	5.20	20	
trans-1,2-Dichloroethene		50.0	50.6	ug/kg	0.422	1.20	20	
1,3-Dichloropropane		50.0	53.8	ug/kg	0.538	7.60	20	
2,2-Dichloropropane		50.0	47.1	ug/kg	0.368	5.90	20	
cis-1,3-Dichloropropene		50.0	53.2	ug/kg	0.411	6.40	20	
trans-1,3-Dichloropropene		50.0	50.0	ug/kg	0.515	0.100	20	
1,1-Dichloropropene		50.0	48.5	ug/kg	0.332	2.90	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4659267
Report generated 03/14/2016 11:22

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16030234 Run Date: 02/25/2016 Sample ID: WG558732-11
Instrument ID: HPMS9 Run Time: 21:31 Method: 8260B
File ID: 9M972907 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG558732 Cal ID: HPMS9 - 25-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	48.2	ug/kg	0.289	3.60	20	
Hexachlorobutadiene		50.0	54.5	ug/kg	0.698	9.00	20	
Isopropylbenzene		50.0	52.0	ug/kg	1.71	4.00	20	
p-Isopropyltoluene		50.0	54.1	ug/kg	3.47	8.10	20	
4-Methyl-2-Pentanone		50.0	47.8	ug/kg	0.110	4.40	20	
Methylene Chloride		50.0	49.8	ug/kg	0.254	0.400	20	
Naphthalene		50.0	50.8	ug/kg	3.10	1.70	20	
n-Propylbenzene		50.0	54.9	ug/kg	4.32	9.80	20	
Styrene		50.0	52.8	ug/kg	1.10	5.60	20	
1,1,1,2-Tetrachloroethane		50.0	49.7	ug/kg	0.375	0.600	20	
Tetrachloroethene		50.0	49.8	ug/kg	0.305	0.400	20	
1,2,3-Trichlorobenzene		50.0	52.6	ug/kg	1.24	5.20	20	
1,2,4-Trichlorobenzene		50.0	51.7	ug/kg	1.26	3.40	20	
1,1,1-Trichloroethane		50.0	46.7	ug/kg	0.406	6.50	20	
1,1,2-Trichloroethane		50.0	51.5	ug/kg	0.309	3.00	20	
Trichloroethene		50.0	49.4	ug/kg	0.300	1.20	20	
Trichlorofluoromethane		50.0	47.6	ug/kg	0.467	4.90	20	
1,2,3-Trichloropropane		50.0	54.2	ug/kg	0.312	8.40	20	
1,2,4-Trimethylbenzene		50.0	51.5	ug/kg	3.18	3.10	20	
1,3,5-Trimethylbenzene		50.0	54.3	ug/kg	3.21	8.60	20	
o-Xylene		50.0	53.6	ug/kg	0.657	7.10	20	
m-,p-Xylene		100	103	ug/kg	0.655	2.60	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

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Version 1.5 PDF File ID: 4659267
Report generated 03/14/2016 11:22

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030234 Run Date: 03/06/2016 Sample ID: WG559858-02
Instrument ID: HPMS9 Run Time: 15:56 Method: 8260B
File ID: 9M973099 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG559859 Cal ID: HPMS9 - 25-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.3	ug/kg	0.483	0.621	20	
1,1-Dichloroethene	CCC	50.0	50.4	ug/kg	0.471	0.823	20	
1,2-Dichloropropane	CCC	50.0	53.8	ug/kg	0.283	7.66	20	
Ethylbenzene	CCC	50.0	50.8	ug/kg	0.526	1.66	20	
Toluene	CCC	50.0	49.6	ug/kg	1.42	0.854	20	
Vinyl Chloride	CCC	50.0	51.6	ug/kg	0.338	3.15	20	
Bromoform	SPCC	50.0	50.7	ug/kg	0.279	1.46	20	
Chlorobenzene	SPCC	50.0	49.1	ug/kg	0.986	1.82	20	
Chloromethane	SPCC	50.0	44.3	ug/kg	0.290	11.3	20	
1,1-Dichloroethane	SPCC	50.0	50.8	ug/kg	0.532	1.64	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	46.7	ug/kg	0.708	6.65	20	
Xylenes		150	153	ug/kg	0.639	1.95	40	
Acetone		50.0	50.5	ug/kg	0.128	0.987	20	
Benzene		50.0	50.0	ug/kg	0.958	0.0928	20	
Bromobenzene		50.0	44.1	ug/kg	0.818	11.8	20	
Bromochloromethane		50.0	52.1	ug/kg	0.185	4.10	20	
Bromodichloromethane		50.0	50.8	ug/kg	0.376	1.60	20	
Bromomethane		50.0	42.0	ug/kg	0.179	16.0	20	
2-Butanone		50.0	53.7	ug/kg	0.173	7.40	20	
n-Butylbenzene		50.0	47.0	ug/kg	2.81	5.91	20	
sec-Butylbenzene		50.0	46.4	ug/kg	3.53	7.21	20	
tert-Butylbenzene		50.0	46.5	ug/kg	0.575	7.10	20	
Carbon Disulfide		50.0	52.0	ug/kg	0.748	3.91	20	
Carbon Tetrachloride		50.0	49.4	ug/kg	0.398	1.11	20	
Dibromochloromethane		50.0	50.2	ug/kg	0.421	0.410	20	
Chloroethane		50.0	48.2	ug/kg	0.141	3.54	20	
2-Chlorotoluene		50.0	45.4	ug/kg	2.39	9.21	20	
4-Chlorotoluene		50.0	45.4	ug/kg	2.21	9.25	20	
1,2-Dibromo-3-Chloropropane		50.0	44.5	ug/kg	0.196	11.0	20	
1,2-Dibromoethane		50.0	49.7	ug/kg	0.331	0.666	20	
Dibromomethane		50.0	52.1	ug/kg	0.182	4.21	20	
1,2-Dichlorobenzene		50.0	44.1	ug/kg	1.51	11.9	20	
1,3-Dichlorobenzene		50.0	42.5	ug/kg	1.57	14.9	20	
1,4-Dichlorobenzene		50.0	42.5	ug/kg	1.57	15.0	20	
Dichlorodifluoromethane		50.0	41.5	ug/kg	0.283	17.0	20	
1,2-Dichloroethane		50.0	55.1	ug/kg	0.466	10.2	20	
cis-1,2-Dichloroethene		50.0	51.9	ug/kg	0.284	3.80	20	
trans-1,2-Dichloroethene		50.0	52.4	ug/kg	0.437	4.86	20	
1,3-Dichloropropane		50.0	51.1	ug/kg	0.511	2.11	20	
2,2-Dichloropropane		50.0	50.1	ug/kg	0.392	0.293	20	
cis-1,3-Dichloropropene		50.0	52.2	ug/kg	0.403	4.42	20	
trans-1,3-Dichloropropene		50.0	51.2	ug/kg	0.527	2.43	20	

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030234 Run Date: 03/06/2016 Sample ID: WG559858-02
Instrument ID: HPMS9 Run Time: 15:56 Method: 8260B
File ID: 9M973099 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG559859 Cal ID: HPMS9 - 25-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	50.4	ug/kg	0.345	0.871	20	
2-Hexanone		50.0	54.4	ug/kg	0.326	8.80	20	
Hexachlorobutadiene		50.0	43.0	ug/kg	0.551	13.9	20	
Isopropylbenzene		50.0	51.5	ug/kg	1.70	3.04	20	
p-Isopropyltoluene		50.0	45.9	ug/kg	2.94	8.26	20	
4-Methyl-2-Pentanone		50.0	55.6	ug/kg	0.128	11.2	20	
Methylene Chloride		50.0	49.6	ug/kg	0.253	0.775	20	
Naphthalene		50.0	46.1	ug/kg	2.81	7.78	20	
n-Propylbenzene		50.0	46.6	ug/kg	3.66	6.80	20	
Styrene		50.0	51.5	ug/kg	1.08	2.98	20	
1,1,1,2-Tetrachloroethane		50.0	50.4	ug/kg	0.380	0.836	20	
Tetrachloroethene		50.0	49.2	ug/kg	0.302	1.50	20	
1,2,3-Trichlorobenzene		50.0	44.2	ug/kg	1.04	11.5	20	
1,2,4-Trichlorobenzene		50.0	42.8	ug/kg	1.04	14.3	20	
1,1,1-Trichloroethane		50.0	50.1	ug/kg	0.435	0.115	20	
1,1,2-Trichloroethane		50.0	54.3	ug/kg	0.326	8.65	20	
Trichloroethene		50.0	50.4	ug/kg	0.306	0.764	20	
Trichlorofluoromethane		50.0	47.7	ug/kg	0.469	4.53	20	
1,2,3-Trichloropropane		50.0	47.6	ug/kg	0.274	4.81	20	
1,2,4-Trimethylbenzene		50.0	44.7	ug/kg	2.76	10.7	20	
1,3,5-Trimethylbenzene		50.0	45.6	ug/kg	2.69	8.72	20	
o-Xylene		50.0	51.4	ug/kg	0.630	2.72	20	
m-,p-Xylene		100	102	ug/kg	0.649	1.57	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4659271
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Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030234 Run Date: 03/07/2016 Sample ID: WG559980-02
Instrument ID: HPMS9 Run Time: 15:17 Method: 8260B
File ID: 9M973121 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG559982 Cal ID: HPMS9 - 25-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	52.1	ug/kg	0.500	4.14	20	
1,1-Dichloroethene	CCC	50.0	53.3	ug/kg	0.498	6.67	20	
1,2-Dichloropropane	CCC	50.0	54.8	ug/kg	0.288	9.67	20	
Ethylbenzene	CCC	50.0	51.9	ug/kg	0.537	3.74	20	
Toluene	CCC	50.0	50.7	ug/kg	1.45	1.41	20	
Vinyl Chloride	CCC	50.0	55.7	ug/kg	0.365	11.4	20	
Bromoform	SPCC	50.0	51.0	ug/kg	0.281	2.08	20	
Chlorobenzene	SPCC	50.0	50.7	ug/kg	1.02	1.47	20	
Chloromethane	SPCC	50.0	47.9	ug/kg	0.313	4.20	20	
1,1-Dichloroethane	SPCC	50.0	54.0	ug/kg	0.565	7.95	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	45.1	ug/kg	0.685	9.71	20	
Xylenes		150	155	ug/kg	0.650	3.64	40	
Acetone		50.0	50.0	ug/kg	0.126	0.0460	20	
Benzene		50.0	50.2	ug/kg	0.961	0.429	20	
Bromobenzene		50.0	45.3	ug/kg	0.841	9.31	20	
Bromochloromethane		50.0	51.5	ug/kg	0.183	3.06	20	
Bromodichloromethane		50.0	51.6	ug/kg	0.383	3.27	20	
Bromomethane		50.0	42.9	ug/kg	0.183	14.1	20	
2-Butanone		50.0	52.3	ug/kg	0.169	4.50	20	
n-Butylbenzene		50.0	51.3	ug/kg	3.06	2.61	20	
sec-Butylbenzene		50.0	49.5	ug/kg	3.76	0.971	20	
tert-Butylbenzene		50.0	48.0	ug/kg	0.594	3.94	20	
Carbon Disulfide		50.0	54.2	ug/kg	0.781	8.47	20	
Carbon Tetrachloride		50.0	56.1	ug/kg	0.452	12.2	20	
Dibromochloromethane		50.0	48.8	ug/kg	0.410	2.37	20	
Chloroethane		50.0	54.7	ug/kg	0.160	9.46	20	
2-Chlorotoluene		50.0	46.9	ug/kg	2.47	6.14	20	
4-Chlorotoluene		50.0	49.5	ug/kg	2.41	0.944	20	
1,2-Dibromo-3-Chloropropane		50.0	44.2	ug/kg	0.194	11.6	20	
1,2-Dibromoethane		50.0	48.1	ug/kg	0.320	3.81	20	
Dibromomethane		50.0	49.7	ug/kg	0.173	0.585	20	
1,2-Dichlorobenzene		50.0	45.9	ug/kg	1.57	8.25	20	
1,3-Dichlorobenzene		50.0	45.3	ug/kg	1.67	9.39	20	
1,4-Dichlorobenzene		50.0	45.4	ug/kg	1.67	9.24	20	
Dichlorodifluoromethane		50.0	45.0	ug/kg	0.306	10.1	20	
1,2-Dichloroethane		50.0	53.5	ug/kg	0.453	7.08	20	
cis-1,2-Dichloroethene		50.0	53.2	ug/kg	0.290	6.31	20	
trans-1,2-Dichloroethene		50.0	54.8	ug/kg	0.457	9.68	20	
1,3-Dichloropropane		50.0	49.4	ug/kg	0.494	1.16	20	
2,2-Dichloropropane		50.0	57.8	ug/kg	0.451	15.5	20	
cis-1,3-Dichloropropene		50.0	52.5	ug/kg	0.405	4.93	20	
trans-1,3-Dichloropropene		50.0	51.0	ug/kg	0.525	2.09	20	

CCV - Modified 03/05/2008
PDF File ID: 4659271
Report generated 03/14/2016 11:22

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030234 Run Date: 03/07/2016 Sample ID: WG559980-02
Instrument ID: HPMS9 Run Time: 15:17 Method: 8260B
File ID: 9M973121 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG559982 Cal ID: HPMS9 - 25-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	53.5	ug/kg	0.366	7.00	20	
2-Hexanone		50.0	50.6	ug/kg	0.303	1.27	20	
Hexachlorobutadiene		50.0	48.7	ug/kg	0.623	2.68	20	
Isopropylbenzene		50.0	53.7	ug/kg	1.77	7.45	20	
p-Isopropyltoluene		50.0	49.5	ug/kg	3.18	0.988	20	
4-Methyl-2-Pentanone		50.0	51.2	ug/kg	0.118	2.32	20	
Methylene Chloride		50.0	50.0	ug/kg	0.254	0.0730	20	
Naphthalene		50.0	45.4	ug/kg	2.76	9.27	20	
n-Propylbenzene		50.0	49.7	ug/kg	3.91	0.537	20	
Styrene		50.0	52.2	ug/kg	1.09	4.48	20	
1,1,1,2-Tetrachloroethane		50.0	50.9	ug/kg	0.384	1.81	20	
Tetrachloroethene		50.0	51.9	ug/kg	0.318	3.87	20	
1,2,3-Trichlorobenzene		50.0	46.2	ug/kg	1.09	7.69	20	
1,2,4-Trichlorobenzene		50.0	46.2	ug/kg	1.12	7.58	20	
1,1,1-Trichloroethane		50.0	54.9	ug/kg	0.477	9.88	20	
1,1,2-Trichloroethane		50.0	50.2	ug/kg	0.301	0.347	20	
Trichloroethene		50.0	53.5	ug/kg	0.324	6.92	20	
Trichlorofluoromethane		50.0	55.3	ug/kg	0.543	10.6	20	
1,2,3-Trichloropropane		50.0	46.9	ug/kg	0.270	6.12	20	
1,2,4-Trimethylbenzene		50.0	47.5	ug/kg	2.94	4.96	20	
1,3,5-Trimethylbenzene		50.0	48.4	ug/kg	2.85	3.27	20	
o-Xylene		50.0	52.4	ug/kg	0.642	4.74	20	
m-,p-Xylene		100	103	ug/kg	0.659	3.09	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4659271
Report generated 03/14/2016 11:22

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16030234
Instrument ID: HPMS9
Workgroup (AAB#): WG559859

ICAL CCV Number: WG558732-02
CAL ID: HPMS9 - 25-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558732-02	NA	NA	183008	378926	517775
Upper Limit	NA	NA	366016	757852	1035550
Lower Limit	NA	NA	91504	189463	258888
L16030234-01	1.00	01	204986	390973	520456
L16030234-02	1.00	01	172975	341132	458479
L16030234-03	1.00	01	193752	382523	512636
L16030234-04	1.00	01	181646	364200	493928
L16030234-06	1.00	01	171566	337203	454311
WG559859-01	1.00	01	209918	419175	561969
WG559859-02	1.00	01	236934	449882	599667

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4659273
Report generated 03/14/2016 11:22

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16030234
Instrument ID: HPMS9
Workgroup (AAB#): WG559982

ICAL CCV Number: WG558732-02
CAL ID: HPMS9 - 25-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558732-02	NA	NA	183008	378926	517775
Upper Limit	NA	NA	366016	757852	1035550
Lower Limit	NA	NA	91504	189463	258888
L16030234-05	1.00	01	188823	368734	492604
WG559982-01	1.00	01	193847	377724	512722
WG559982-02	1.00	01	201592	374762	497008

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4659273
Report generated 03/14/2016 11:22

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16030234
Instrument ID: HPMS9
Workgroup (AAB#): WG559859

ICAL CCV Number: WG558732-02
CAL ID: HPMS9 - 25-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558732-02	NA	NA	17.76	14.73	10.85
Upper Limit	NA	NA	18.26	15.23	11.35
Lower Limit	NA	NA	17.26	14.23	10.35
L16030234-01	1.00	01	17.75	14.72	10.85
L16030234-02	1.00	01	17.75	14.72	10.85
L16030234-03	1.00	01	17.75	14.72	10.85
L16030234-04	1.00	01	17.75	14.72	10.85
L16030234-06	1.00	01	17.75	14.72	10.85
WG559859-01	1.00	01	17.75	14.72	10.85
WG559859-02	1.00	01	17.75	14.72	10.85

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4659275
Report generated: 03/14/2016 11:22

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16030234
Instrument ID: HPMS9
Workgroup (AAB#): WG559982

ICAL CCV Number: WG558732-02
CAL ID: HPMS9 - 25-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558732-02	NA	NA	17.76	14.73	10.85
Upper Limit	NA	NA	18.26	15.23	11.35
Lower Limit	NA	NA	17.26	14.23	10.35
L16030234-05	1.00	01	17.75	14.72	10.85
WG559982-01	1.00	01	17.75	14.72	10.85
WG559982-02	1.00	01	17.75	14.72	10.85

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4659275
Report generated: 03/14/2016 11:22

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973110.D Vial: 14
Acq On : 6 Mar 2016 21:31 Operator: ADC
Sample : L16030234-01 A 8260 4.61g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 12:19:13 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	520456	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	390973	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	204986	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	139207	49.3443 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.68%		
43) 1,2-Dichloroethane-d4	10.45	65	197637	55.8349 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 111.66%		
58) Toluene-d8	12.82	98	488418	49.3884 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.78%		
79) p-Bromofluorobenzene	16.22	95	204199	51.1584 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.32%		

Target Compounds

					Qvalue
13) Acetone	6.42	43	4527	1.1016 ug/kg	82
15) Tert-Butyl Alcohol	6.76	59	231	0.4341 ug/kg#	58
36) Tetrahydrofuran	9.78	42	1076	0.9946 ug/kg#	43
56) Dimethyl Disulfide	12.82	94	14006	3.4693 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M973110.D 8260SL.M Mon Mar 07 12:19:13 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973110.D Vial: 14
Acq On : 6 Mar 2016 21:31 Operator: ADC
Sample : L16030234-01 A 8260 4.61g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 7 12:19 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

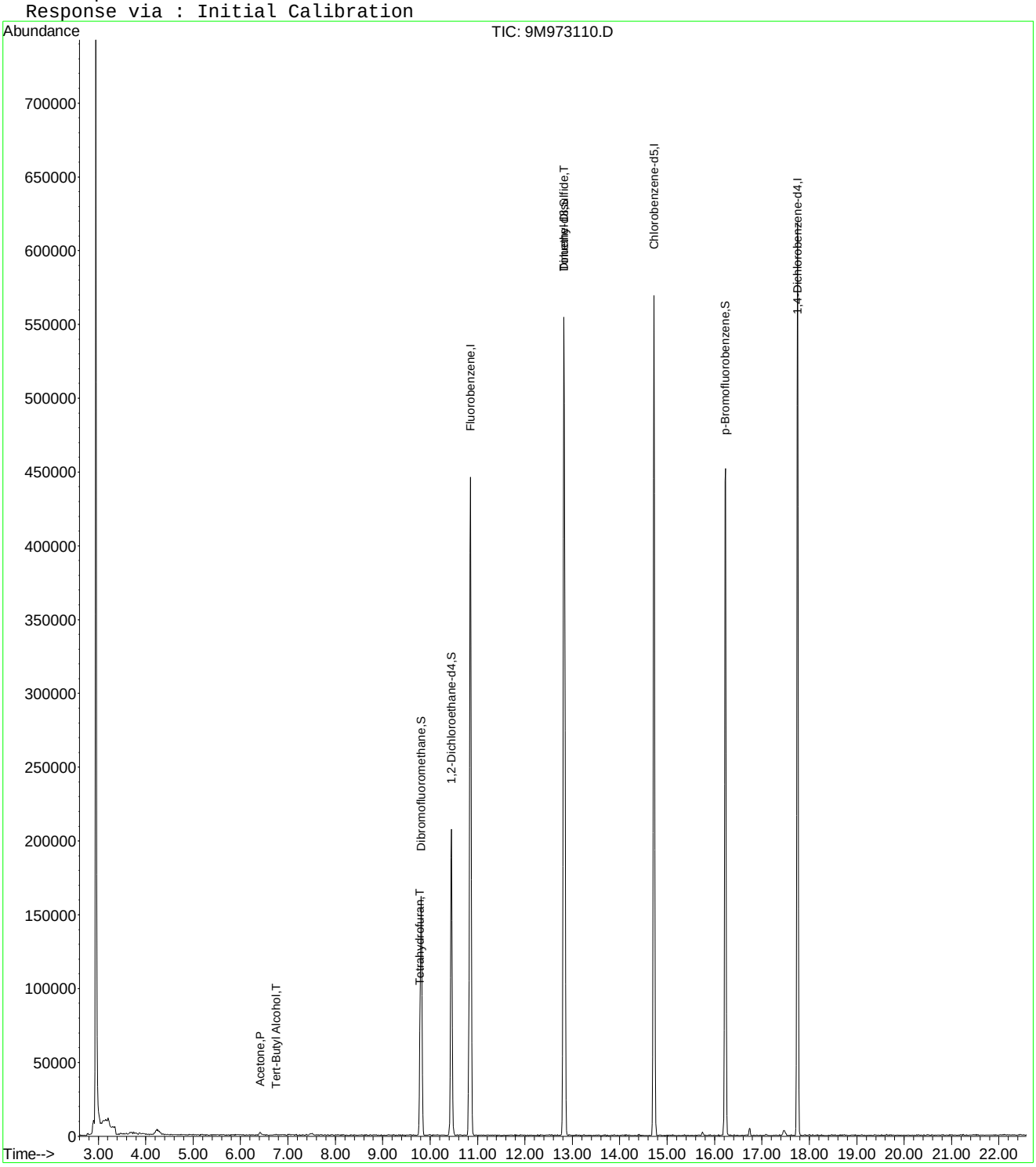

9M973110.D 8260SL.M Mon Mar 07 12:19:13 2016 Page 2

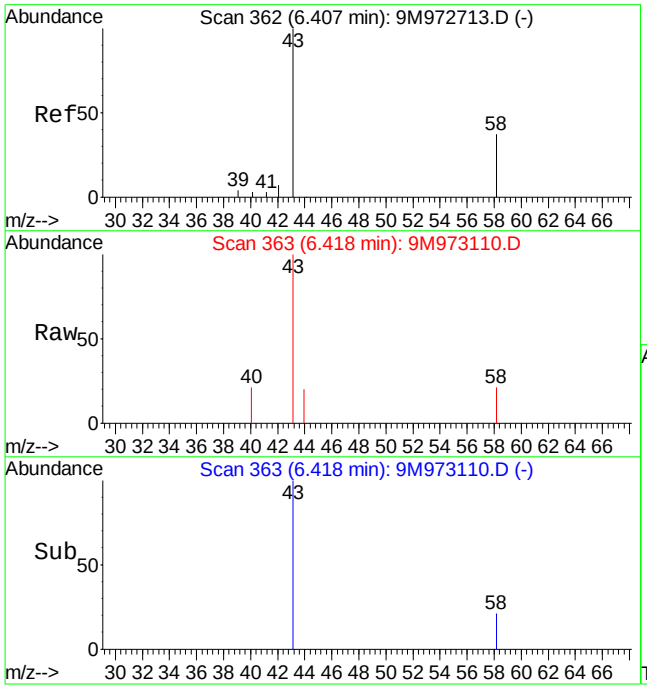

#13
Acetone
Concen: 1.10 ug/kg
RT: 6.42 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M973110.D
Acq: 6 Mar 2016 21:31

Tgt Ion: 43 Resp: 4527

Ion	Ratio	Lower	Upper
43	100		
58	18.6	16.9	39.3

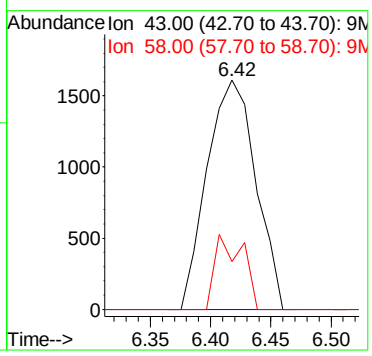

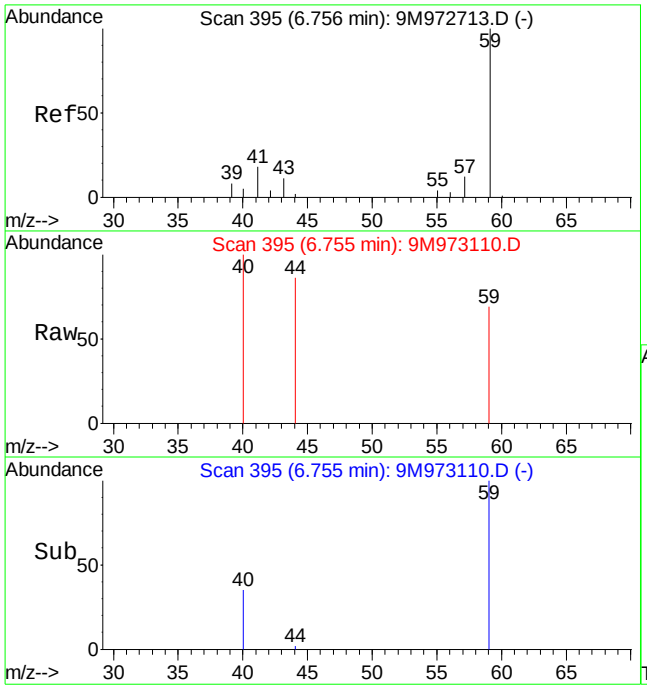

#15
Tert-Butyl Alcohol
Concen: 0.43 ug/kg
RT: 6.76 min Scan# 395
Delta R.T. -0.01 min
Lab File: 9M973110.D
Acq: 6 Mar 2016 21:31

Tgt Ion: 59 Resp: 231

Ion	Ratio	Lower	Upper
59	100		
41	0.0	14.1	32.9#
57	0.0	6.4	15.0#

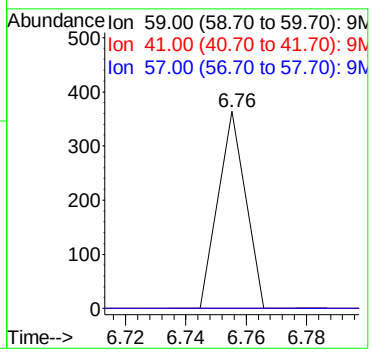

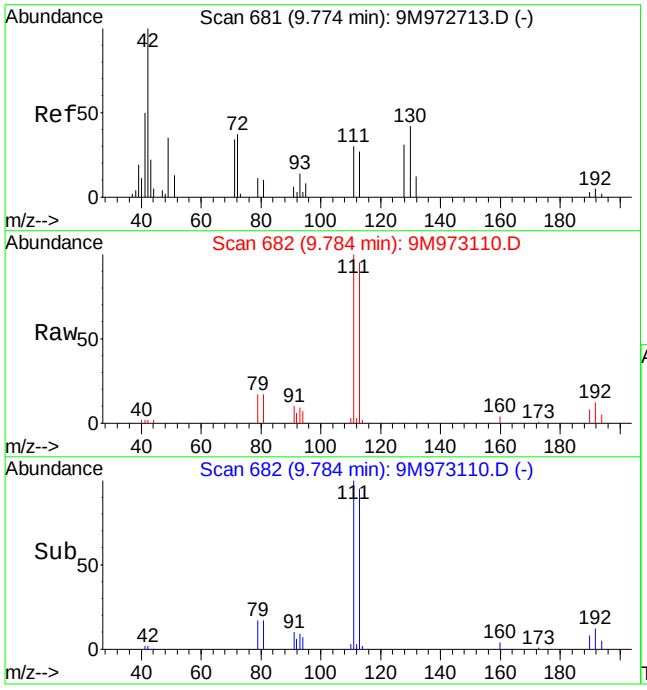

#36
Tetrahydrofuran
Concen: 0.99 ug/kg
RT: 9.78 min Scan# 682
Delta R.T. 0.00 min
Lab File: 9M973110.D
Acq: 6 Mar 2016 21:31

Tgt Ion: 42 Resp: 1076

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

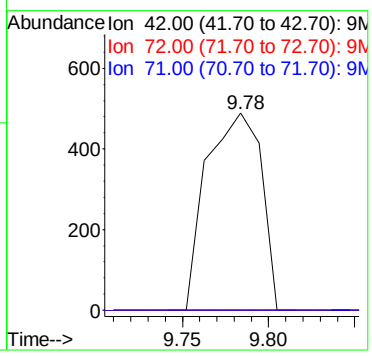

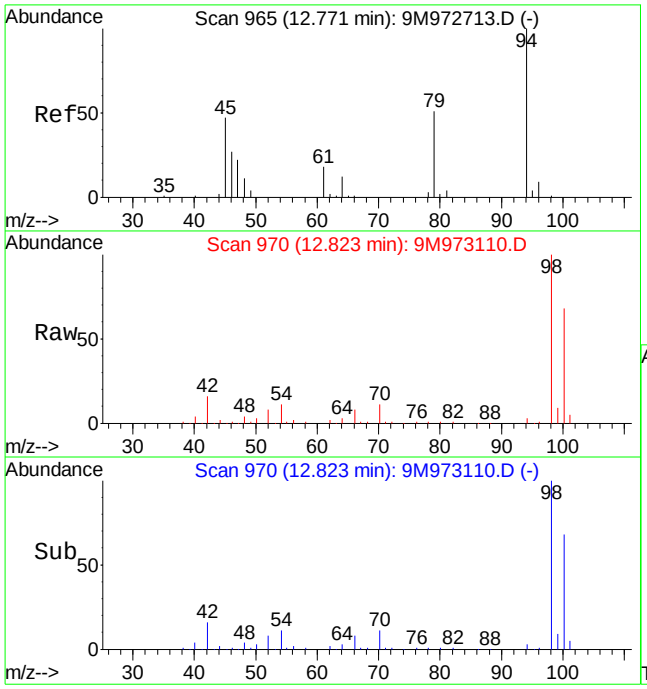

#56
Dimethyl Disulfide
Concen: 3.47 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M973110.D
Acq: 6 Mar 2016 21:31

Tgt Ion: 94 Resp: 14006

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

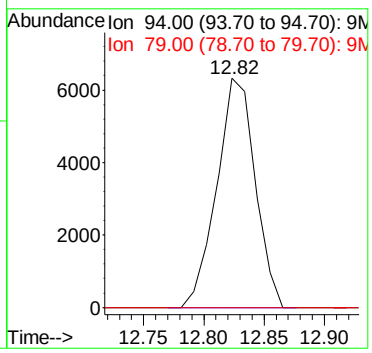

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973111.D Vial: 15
Acq On : 6 Mar 2016 22:01 Operator: ADC
Sample : L16030234-02 A 8260 4.73g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 12:19:14 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	458479	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	341132	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.75	152	172975	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	120103	48.3275 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.66%		
43) 1,2-Dichloroethane-d4	10.45	65	154956	49.6947 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.38%		
58) Toluene-d8	12.83	98	424036	49.1428 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.28%		
79) p-Bromofluorobenzene	16.23	95	174622	51.8445 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 103.68%		

Target Compounds					Qvalue
13) Acetone	6.41	43	6667	3.5299 ug/kg	95
29) 2-Butanone	9.03	43	720	0.4870 ug/kg#	58
36) Tetrahydrofuran	9.78	42	651	0.6831 ug/kg#	43
56) Dimethyl Disulfide	12.83	94	11670	3.2815 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M973111.D 8260SL.M Mon Mar 07 12:19:14 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973111.D Vial: 15
Acq On : 6 Mar 2016 22:01 Operator: ADC
Sample : L16030234-02 A 8260 4.73g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 7 12:19 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

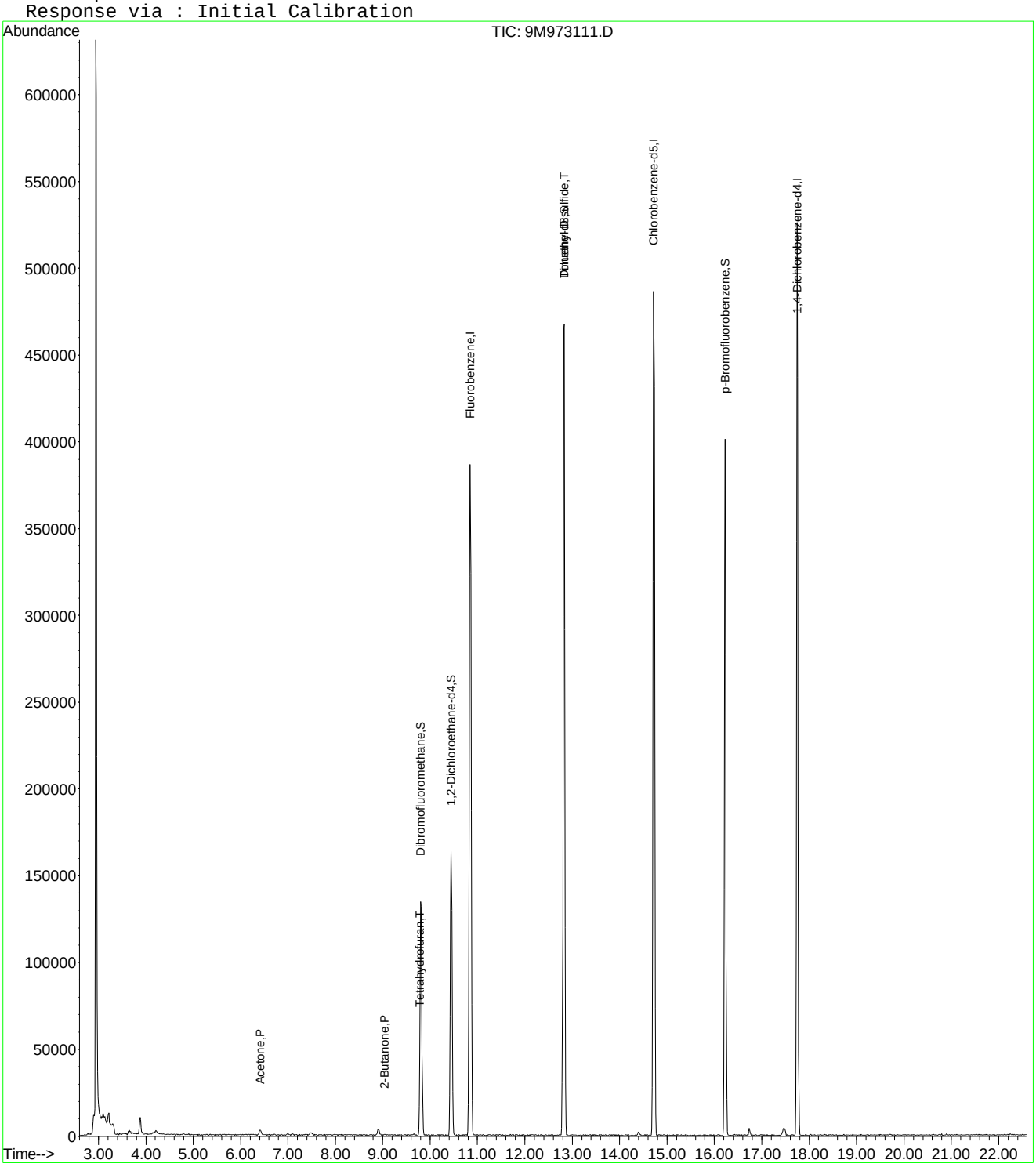

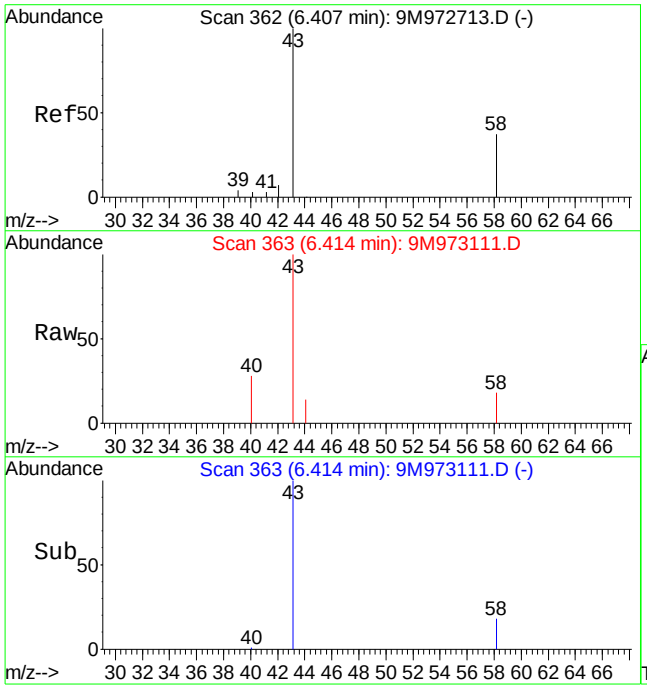

#13
Acetone
Concen: 3.53 ug/kg
RT: 6.41 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M973111.D
Acq: 6 Mar 2016 22:01

Tgt Ion: 43 Resp: 6667

Ion	Ratio	Lower	Upper
43	100		
58	25.5	16.9	39.3

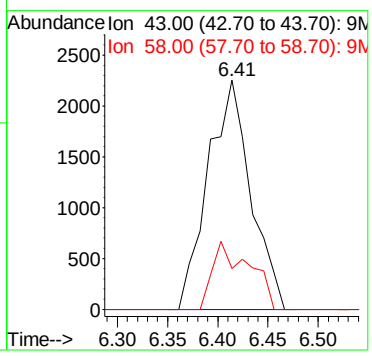

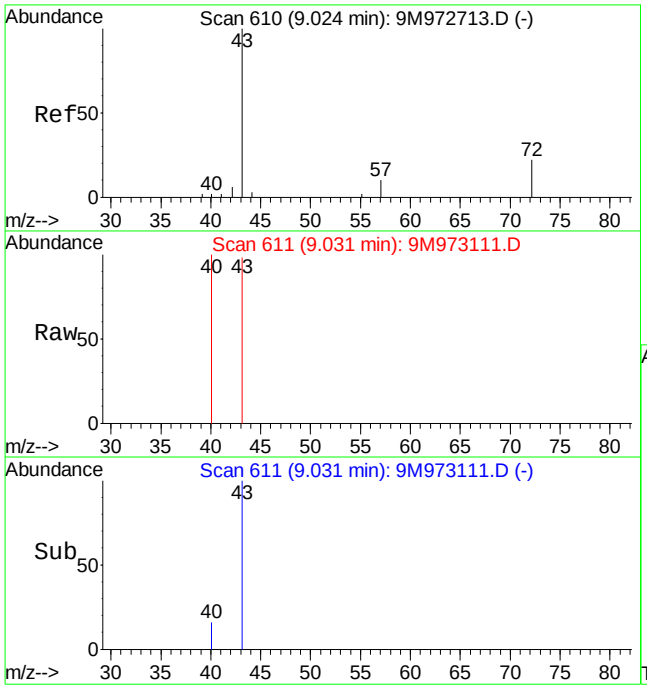

#29
2-Butanone
Concen: 0.49 ug/kg
RT: 9.03 min Scan# 611
Delta R.T. 0.00 min
Lab File: 9M973111.D
Acq: 6 Mar 2016 22:01

Tgt Ion: 43 Resp: 720

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

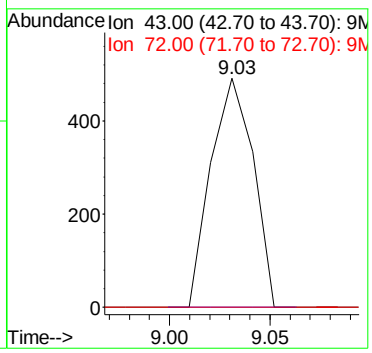

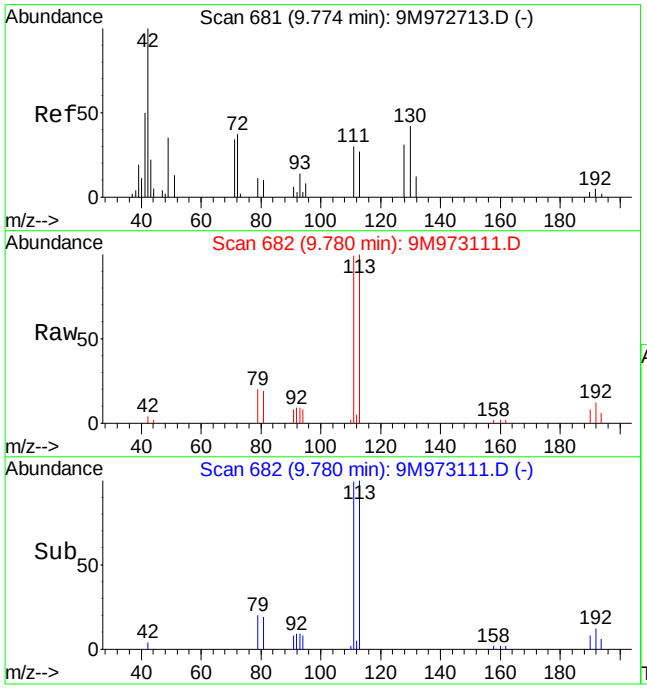

#36
Tetrahydrofuran
Concen: 0.68 ug/kg
RT: 9.78 min Scan# 682
Delta R.T. 0.00 min
Lab File: 9M973111.D
Acq: 6 Mar 2016 22:01

Tgt Ion: 42 Resp: 651

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

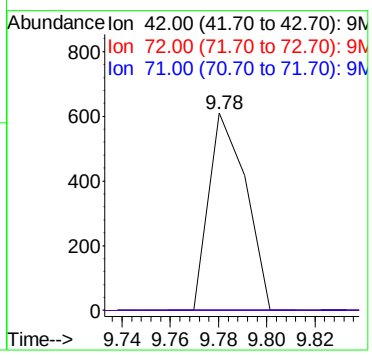

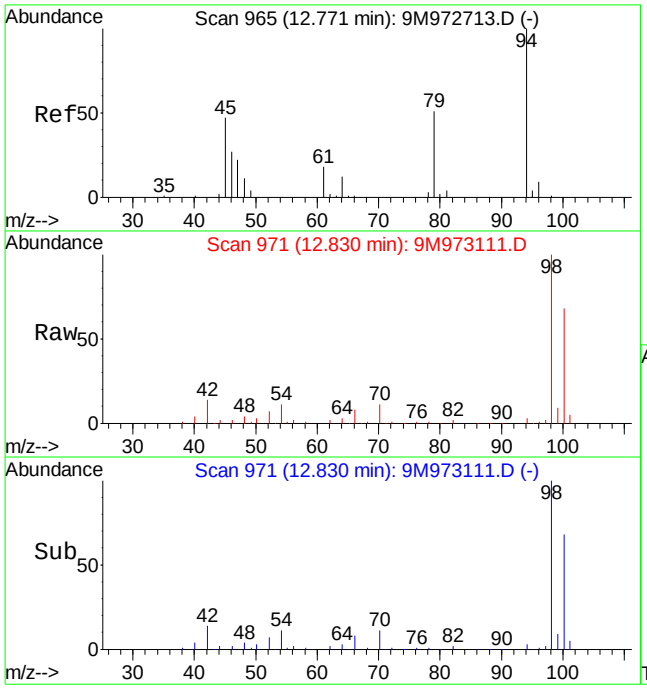

#56
Dimethyl Disulfide
Concen: 3.28 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.06 min
Lab File: 9M973111.D
Acq: 6 Mar 2016 22:01

Tgt Ion: 94 Resp: 11670

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

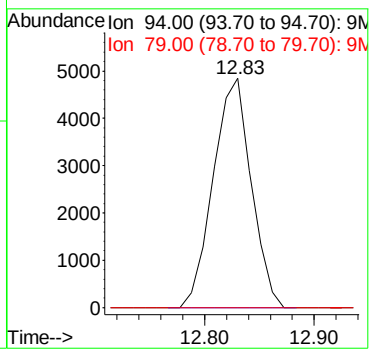

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973112.D Vial: 16
Acq On : 6 Mar 2016 22:31 Operator: ADC
Sample : L16030234-03 A 8260 4.79g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 12:19:15 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	512636	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	382523	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	193752	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	131589	47.3555 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.72%		
43) 1,2-Dichloroethane-d4	10.45	65	174782	50.1313 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.26%		
58) Toluene-d8	12.82	98	470017	48.5776 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 97.16%		
79) p-Bromofluorobenzene	16.22	95	191543	50.7700 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 101.54%		

Target Compounds

					Qvalue
13) Acetone	6.41	43	5827	2.2106 ug/kg	88
29) 2-Butanone	9.02	43	917	0.5547 ug/kg#	58
36) Tetrahydrofuran	9.76	42	1013	0.9507 ug/kg#	43
56) Dimethyl Disulfide	12.82	94	13776	3.4644 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M973112.D 8260SL.M Mon Mar 07 12:19:15 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973112.D Vial: 16
Acq On : 6 Mar 2016 22:31 Operator: ADC
Sample : L16030234-03 A 8260 4.79g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 7 12:19 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

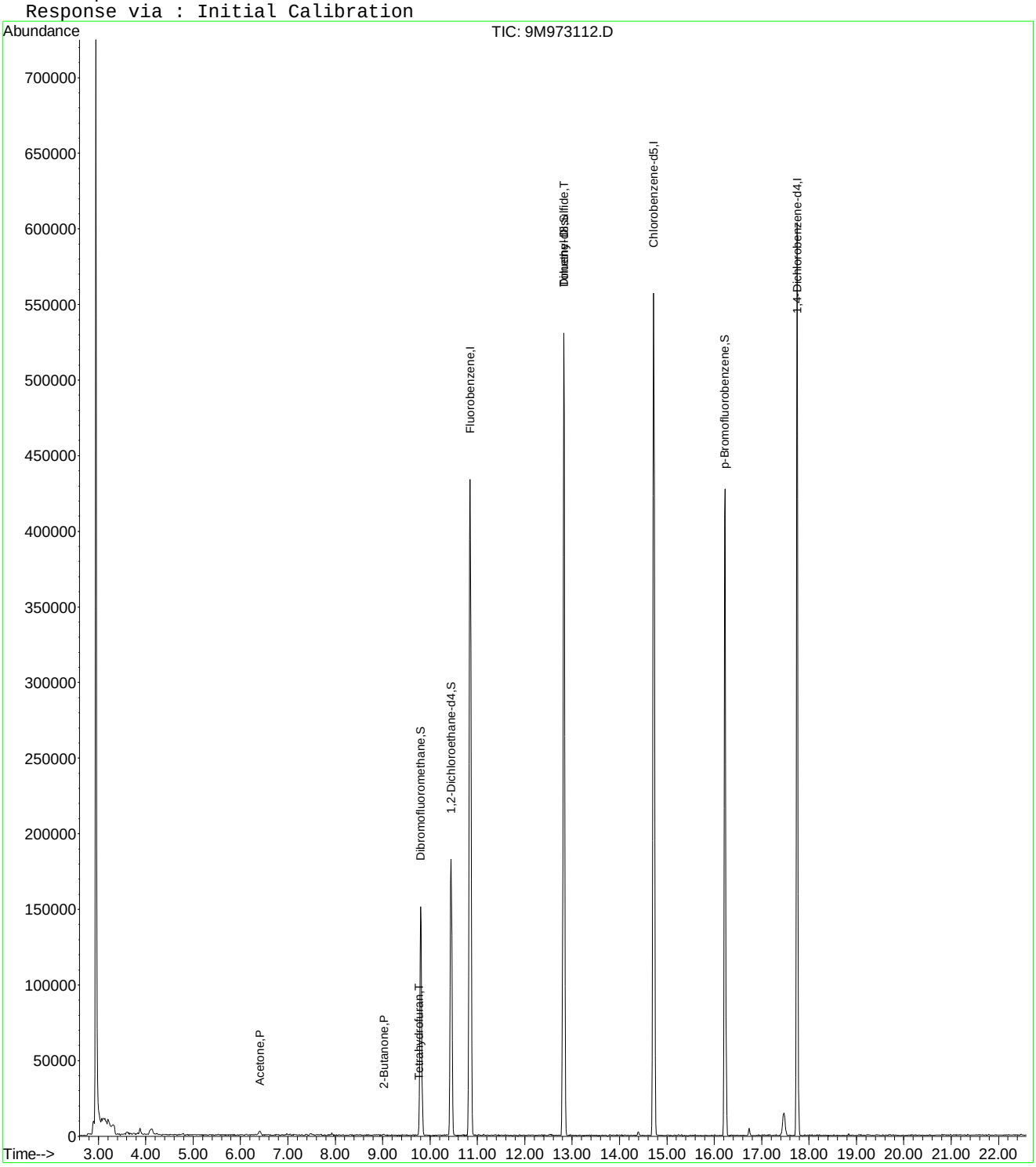

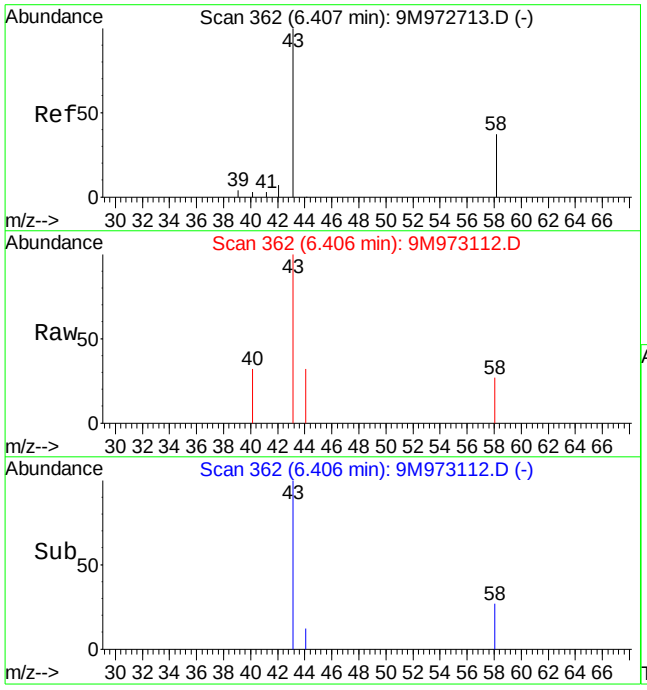

#13
Acetone
Concen: 2.21 ug/kg
RT: 6.41 min Scan# 362
Delta R.T. -0.01 min
Lab File: 9M973112.D
Acq: 6 Mar 2016 22:31

Tgt Ion: 43 Resp: 5827

Ion	Ratio	Lower	Upper
43	100		
58	21.6	16.9	39.3

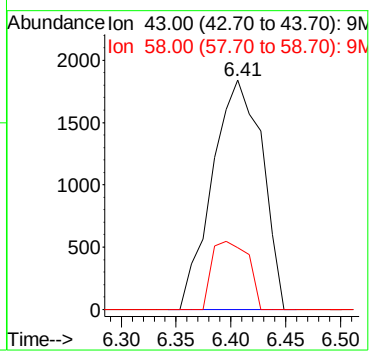

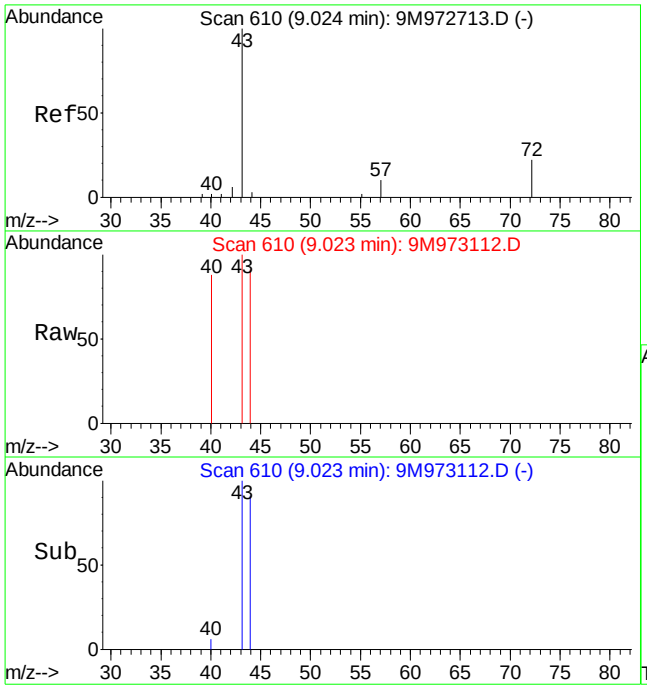

#29
2-Butanone
Concen: 0.55 ug/kg
RT: 9.02 min Scan# 610
Delta R.T. -0.01 min
Lab File: 9M973112.D
Acq: 6 Mar 2016 22:31

Tgt Ion: 43 Resp: 917

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

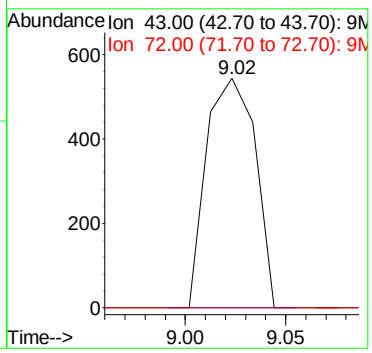

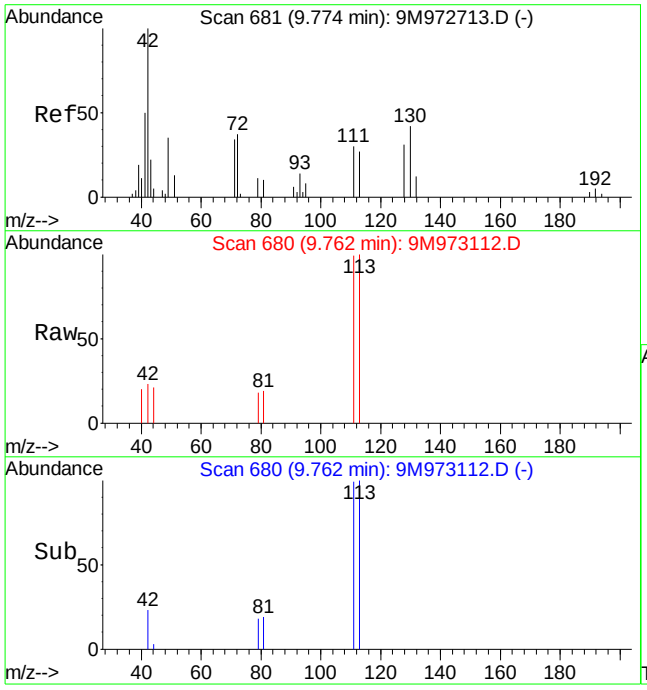

#36
Tetrahydrofuran
Concen: 0.95 ug/kg
RT: 9.76 min Scan# 680
Delta R.T. -0.02 min
Lab File: 9M973112.D
Acq: 6 Mar 2016 22:31

Tgt Ion: 42 Resp: 1013

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

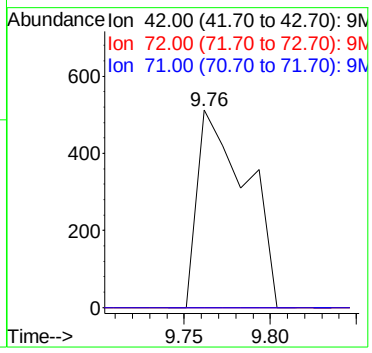

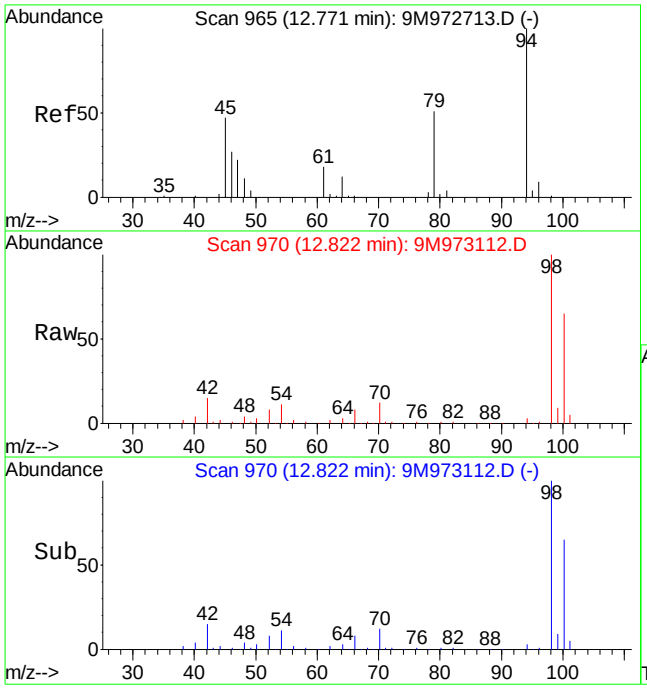

#56
Dimethyl Disulfide
Concen: 3.46 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M973112.D
Acq: 6 Mar 2016 22:31

Tgt Ion: 94 Resp: 13776

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

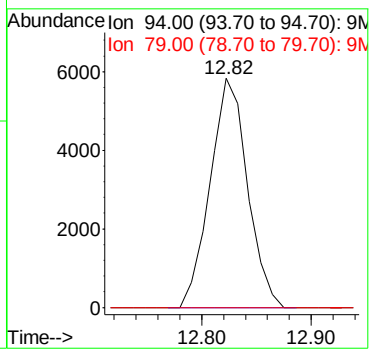

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973113.D Vial: 17
Acq On : 6 Mar 2016 23:01 Operator: ADC
Sample : L16030234-04 A 8260 4.56g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 12:19:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	493928	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	364200	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	181646	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	126996	47.4336 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.86%		
43) 1,2-Dichloroethane-d4	10.45	65	163217	48.5874 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.18%		
58) Toluene-d8	12.82	98	454325	49.3181 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.64%		
79) p-Bromofluorobenzene	16.22	95	181188	51.2261 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.46%		

Target Compounds					Qvalue
13) Acetone	6.42	43	7449	3.7541 ug/kg	92
29) 2-Butanone	9.02	43	800	0.5023 ug/kg#	58
36) Tetrahydrofuran	9.79	42	986	0.9604 ug/kg#	43
56) Dimethyl Disulfide	12.82	94	12893	3.3652 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M973113.D 8260SL.M Mon Mar 07 12:19:16 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973113.D Vial: 17
Acq On : 6 Mar 2016 23:01 Operator: ADC
Sample : L16030234-04 A 8260 4.56g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 7 12:19 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

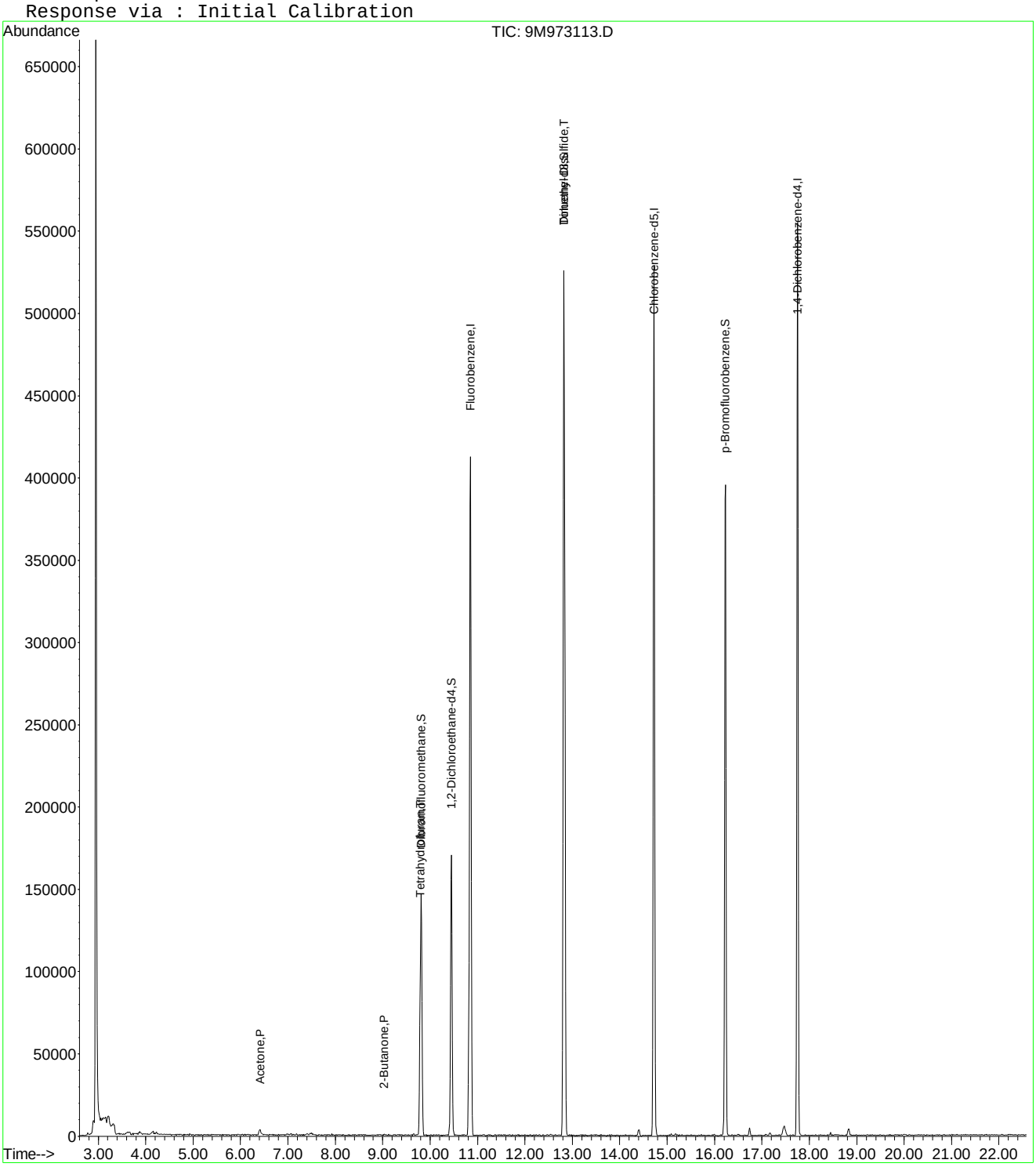

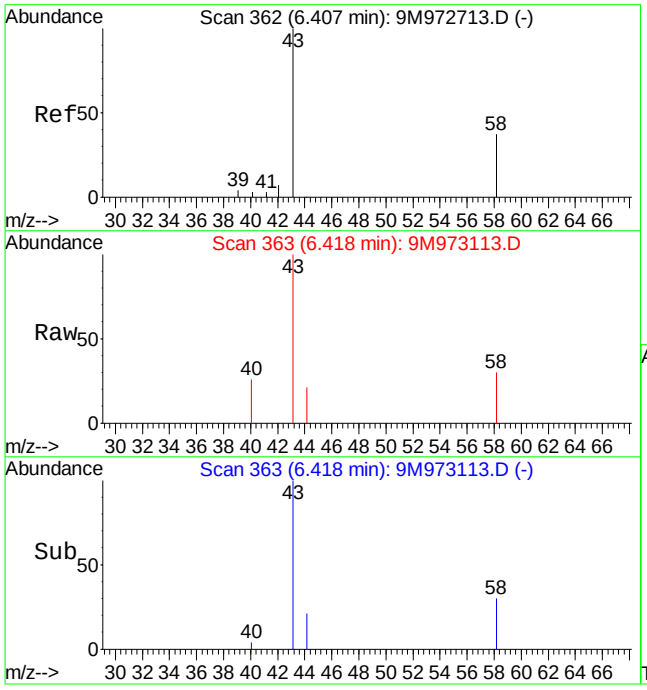

#13
Acetone
Concen: 3.75 ug/kg
RT: 6.42 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M973113.D
Acq: 6 Mar 2016 23:01

Tgt Ion: 43 Resp: 7449

Ion	Ratio	Lower	Upper
43	100		
58	32.3	16.9	39.3

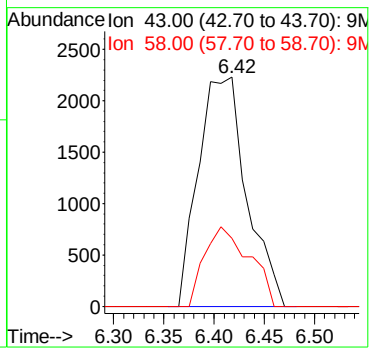

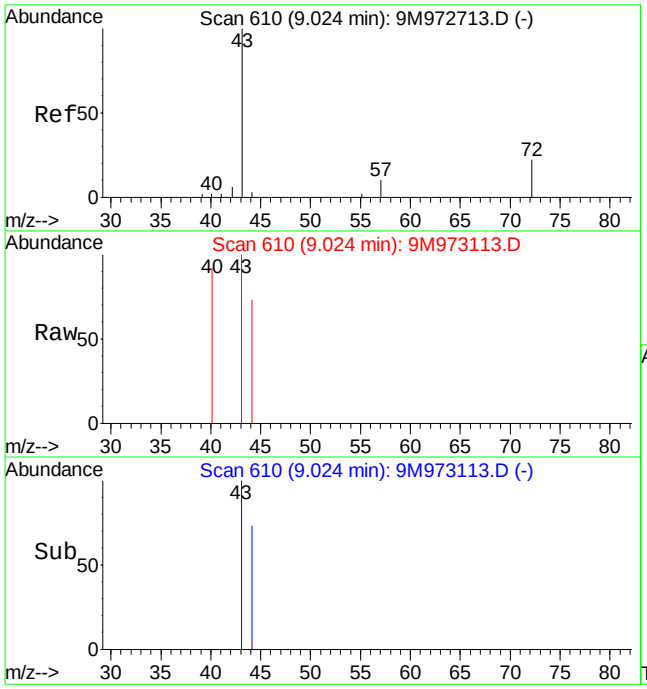

#29
2-Butanone
Concen: 0.50 ug/kg
RT: 9.02 min Scan# 610
Delta R.T. -0.01 min
Lab File: 9M973113.D
Acq: 6 Mar 2016 23:01

Tgt Ion: 43 Resp: 800

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

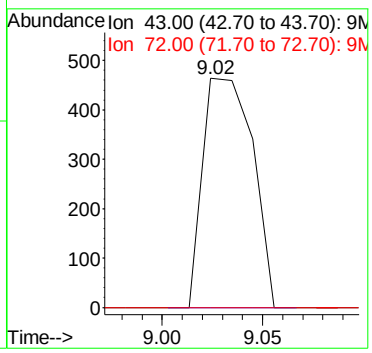

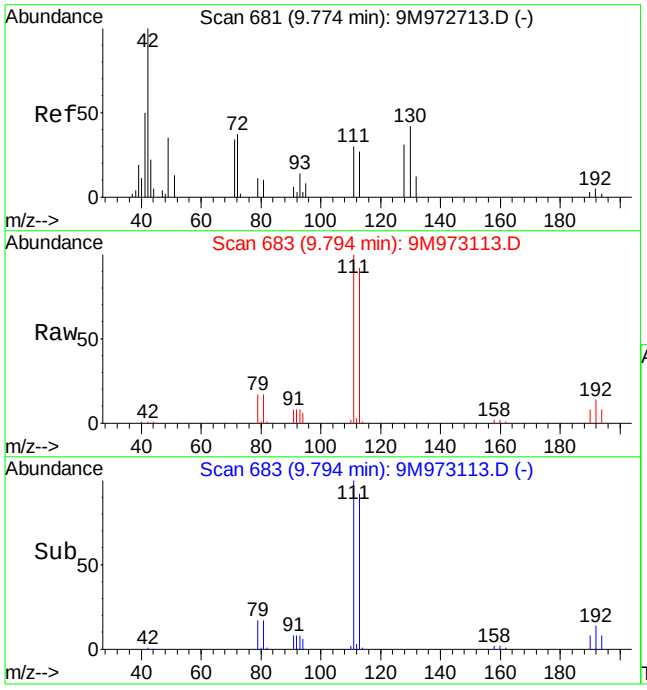

#36
Tetrahydrofuran
Concen: 0.96 ug/kg
RT: 9.79 min Scan# 683
Delta R.T. 0.01 min
Lab File: 9M973113.D
Acq: 6 Mar 2016 23:01

Tgt Ion: 42 Resp: 986

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

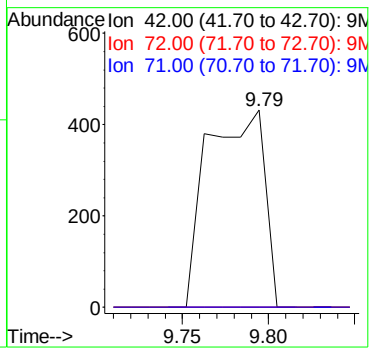

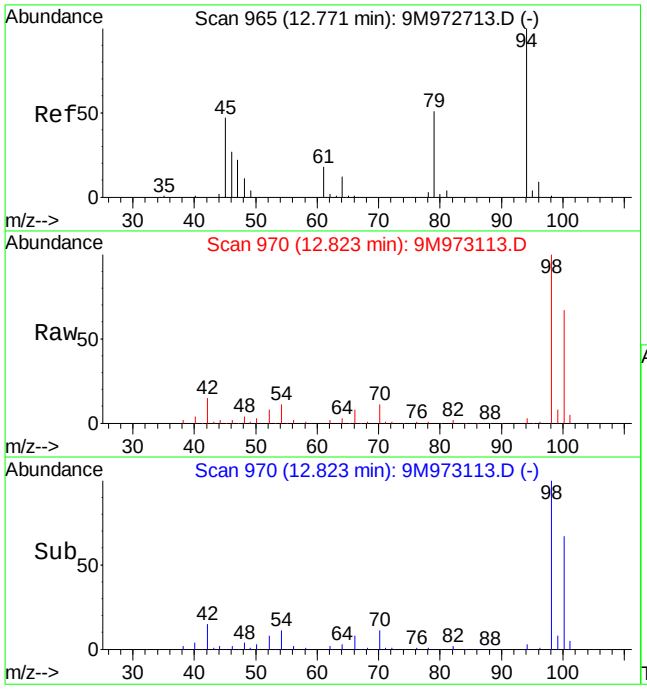

#56
Dimethyl Disulfide
Concen: 3.37 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M973113.D
Acq: 6 Mar 2016 23:01

Tgt Ion: 94 Resp: 12893

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

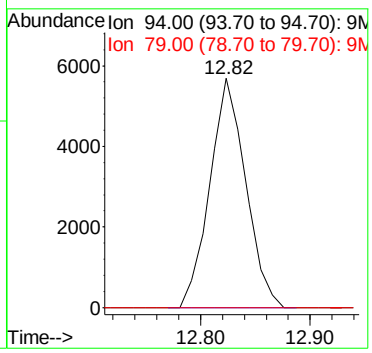

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030716\9M973126.D Vial: 6
Acq On : 7 Mar 2016 17:51 Operator: ADC
Sample : L16030234-05 A 8260 4.88g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 08 14:13:42 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	492604	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	368734	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.75	152	188823	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	128829	48.2475 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.50%		
43) 1,2-Dichloroethane-d4	10.45	65	164176	49.0042 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.00%		
58) Toluene-d8	12.83	98	455720	48.8613 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 97.72%		
79) p-Bromofluorobenzene	16.23	95	186099	50.6147 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 101.22%		

Target Compounds

					Qvalue
13) Acetone	6.41	43	8924	5.0152 ug/kg	97
15) Tert-Butyl Alcohol	6.76	59	474	0.9411 ug/kg#	58
19) Methylene Chloride	7.40	84	1023	0.4080 ug/kg	78
29) 2-Butanone	9.03	43	1491	0.9386 ug/kg#	58
36) Tetrahydrofuran	9.79	42	1040	1.0157 ug/kg#	43
56) Dimethyl Disulfide	12.83	94	13765	3.6024 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M973126.D 8260SL.M Tue Mar 08 14:13:42 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030716\9M973126.D Vial: 6
Acq On : 7 Mar 2016 17:51 Operator: ADC
Sample : L16030234-05 A 8260 4.88g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 8 14:13 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

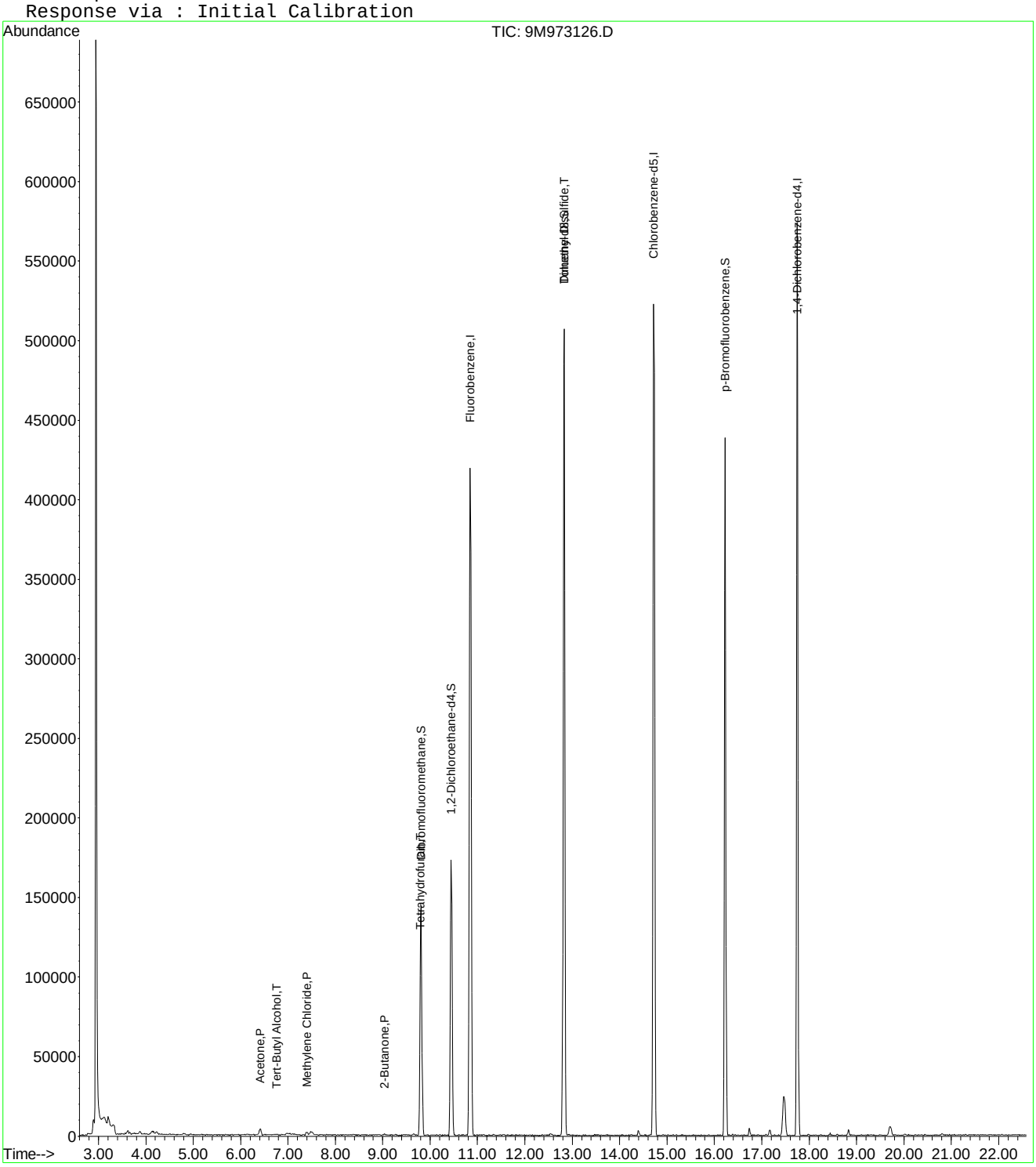

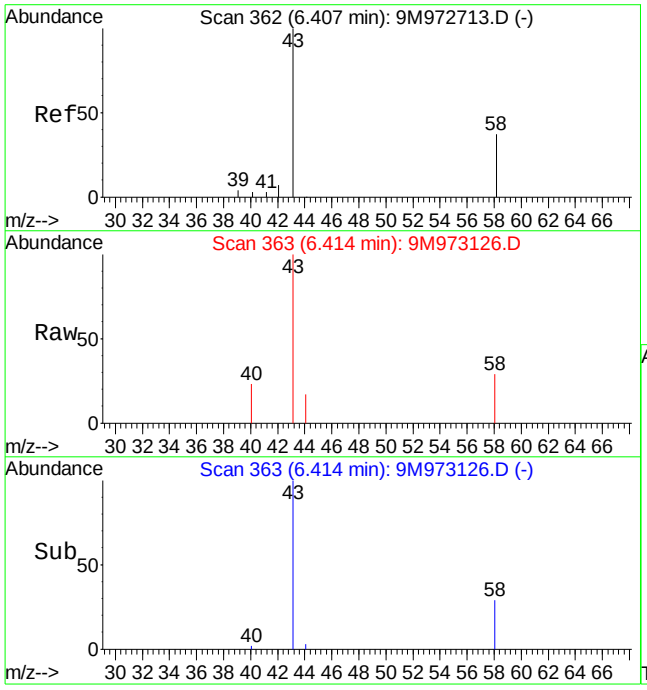

#13
Acetone
Concen: 5.02 ug/kg
RT: 6.41 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M973126.D
Acq: 7 Mar 2016 17:51

Tgt Ion: 43 Resp: 8924

Ion	Ratio	Lower	Upper
43	100		
58	29.5	16.9	39.3

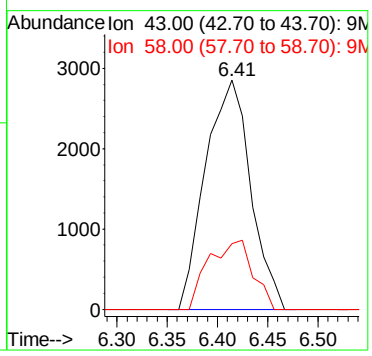

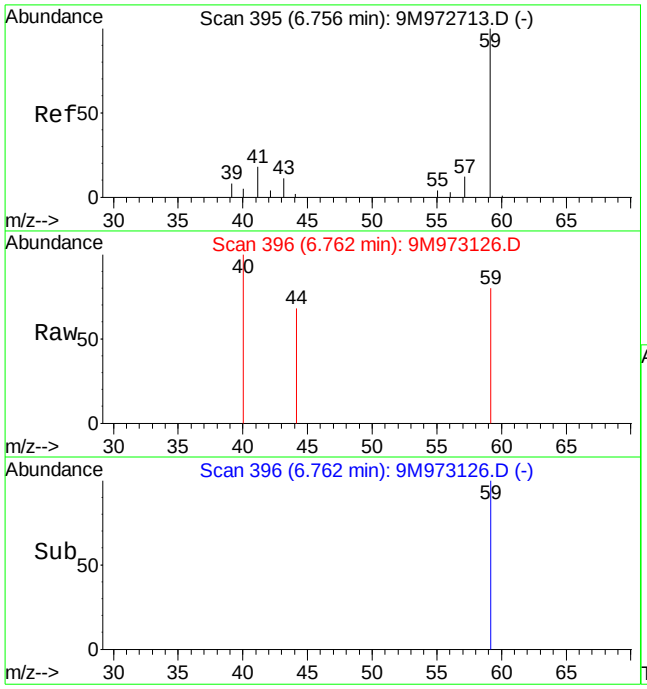

#15
Tert-Butyl Alcohol
Concen: 0.94 ug/kg
RT: 6.76 min Scan# 396
Delta R.T. 0.00 min
Lab File: 9M973126.D
Acq: 7 Mar 2016 17:51

Tgt Ion: 59 Resp: 474

Ion	Ratio	Lower	Upper
59	100		
41	0.0	14.1	32.9#
57	0.0	6.4	15.0#

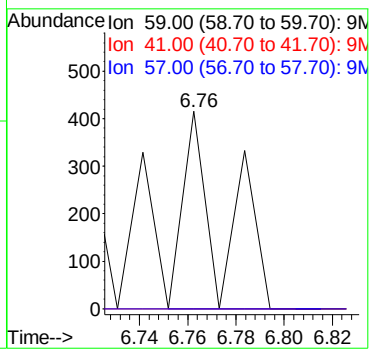

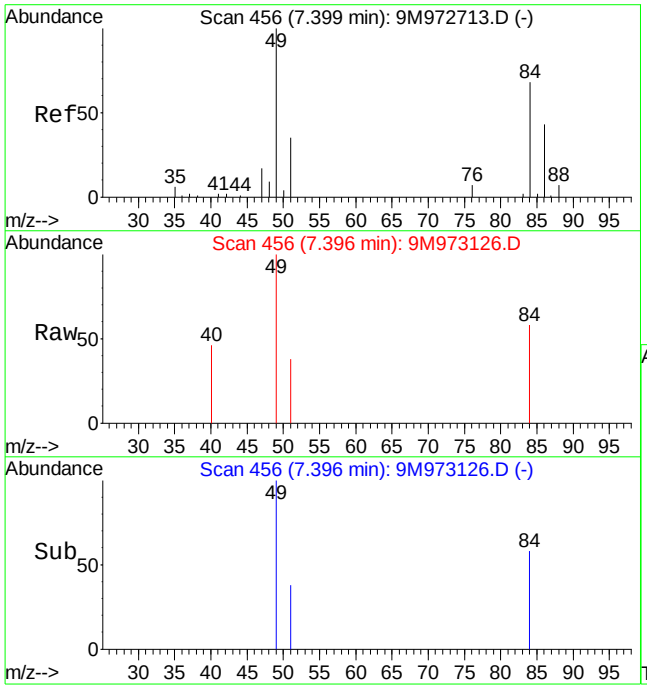

#19
Methylene Chloride
Concen: 0.41 ug/kg
RT: 7.40 min Scan# 456
Delta R.T. 0.00 min
Lab File: 9M973126.D
Acq: 7 Mar 2016 17:51

Tgt Ion: 84 Resp: 1023

Ion	Ratio	Lower	Upper
84	100		
49	199.6	101.8	237.4

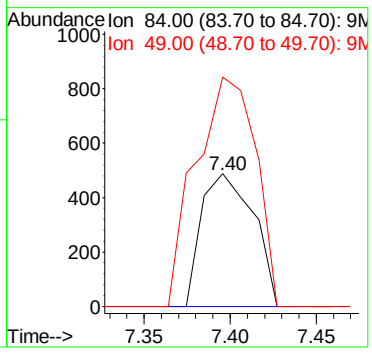

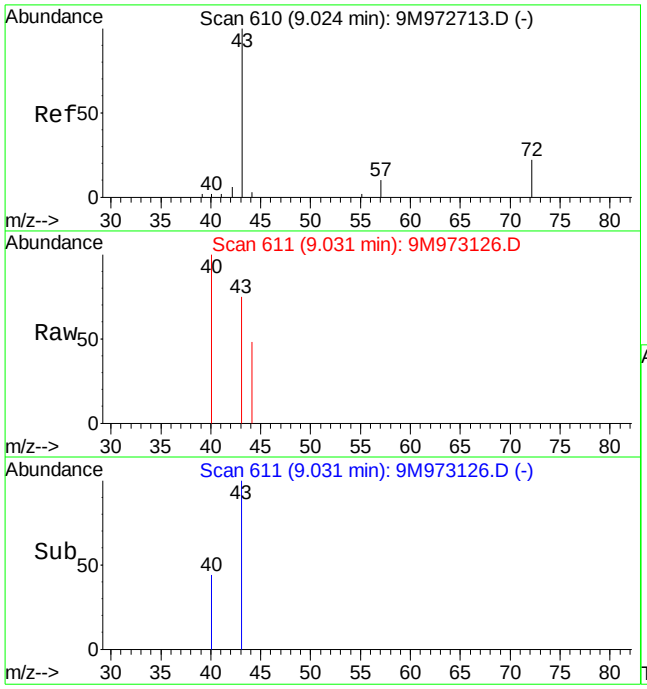

#29
2-Butanone
Concen: 0.94 ug/kg
RT: 9.03 min Scan# 611
Delta R.T. 0.00 min
Lab File: 9M973126.D
Acq: 7 Mar 2016 17:51

Tgt Ion: 43 Resp: 1491

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

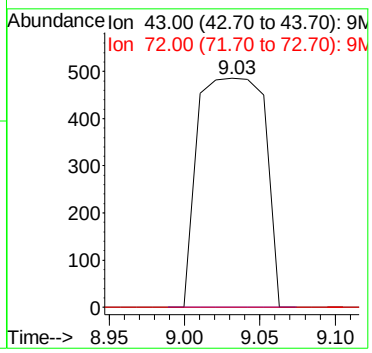

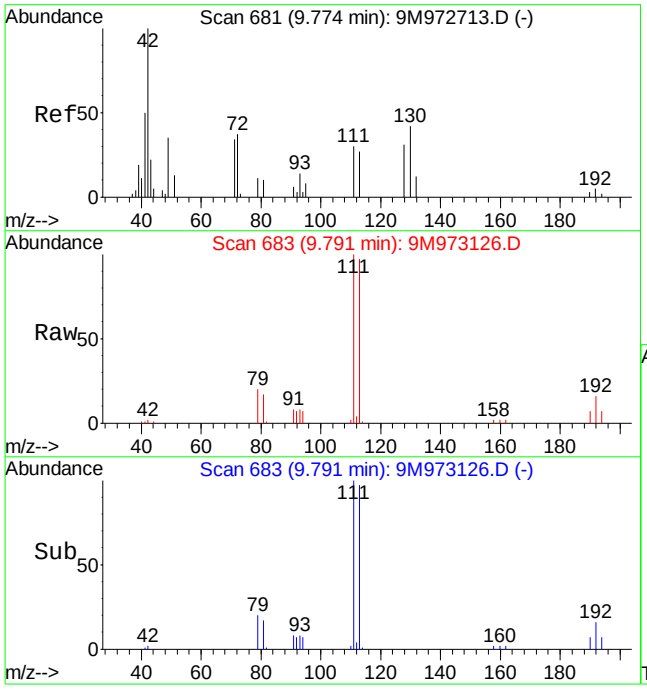

#36
Tetrahydrofuran
Concen: 1.02 ug/kg
RT: 9.79 min Scan# 683
Delta R.T. 0.01 min
Lab File: 9M973126.D
Acq: 7 Mar 2016 17:51

Tgt Ion: 42 Resp: 1040

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

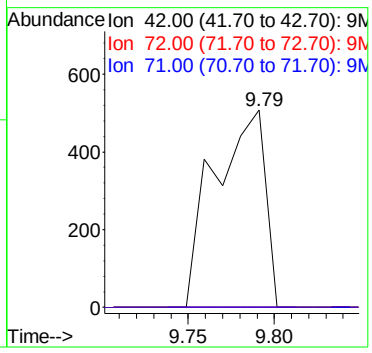

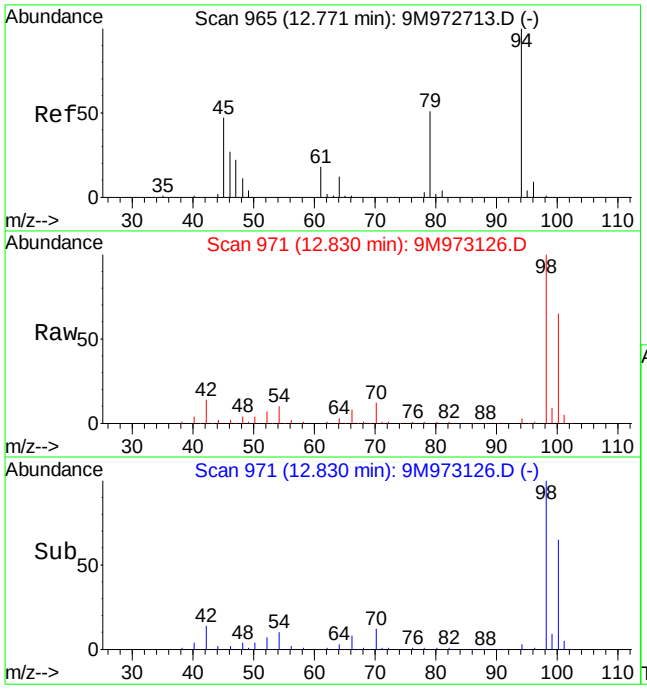

#56
Dimethyl Disulfide
Concen: 3.60 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.06 min
Lab File: 9M973126.D
Acq: 7 Mar 2016 17:51

Tgt Ion: 94 Resp: 13765

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

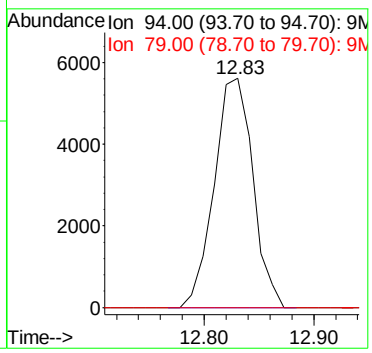

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973115.D Vial: 19
Acq On : 7 Mar 2016 00:02 Operator: ADC
Sample : L16030234-06 A 8260 5.03g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 12:19:18 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	454311	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	337203	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.75	152	171566	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	119455	48.5077 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.02%		
43) 1,2-Dichloroethane-d4	10.44	65	152333	49.3017 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.60%		
58) Toluene-d8	12.83	98	418962	49.1205 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.24%		
79) p-Bromofluorobenzene	16.23	95	168261	50.3662 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 100.74%		

Target Compounds					Qvalue
13) Acetone	6.40	43	7707	4.5366 ug/kg	95
15) Tert-Butyl Alcohol	6.73	59	482	1.0376 ug/kg#	58
29) 2-Butanone	9.04	43	1313	0.8962 ug/kg#	58
36) Tetrahydrofuran	9.78	42	799	0.8461 ug/kg#	43
56) Dimethyl Disulfide	12.83	94	12525	3.5542 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M973115.D 8260SL.M Mon Mar 07 12:19:18 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973115.D Vial: 19
Acq On : 7 Mar 2016 00:02 Operator: ADC
Sample : L16030234-06 A 8260 5.03g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 7 12:19 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

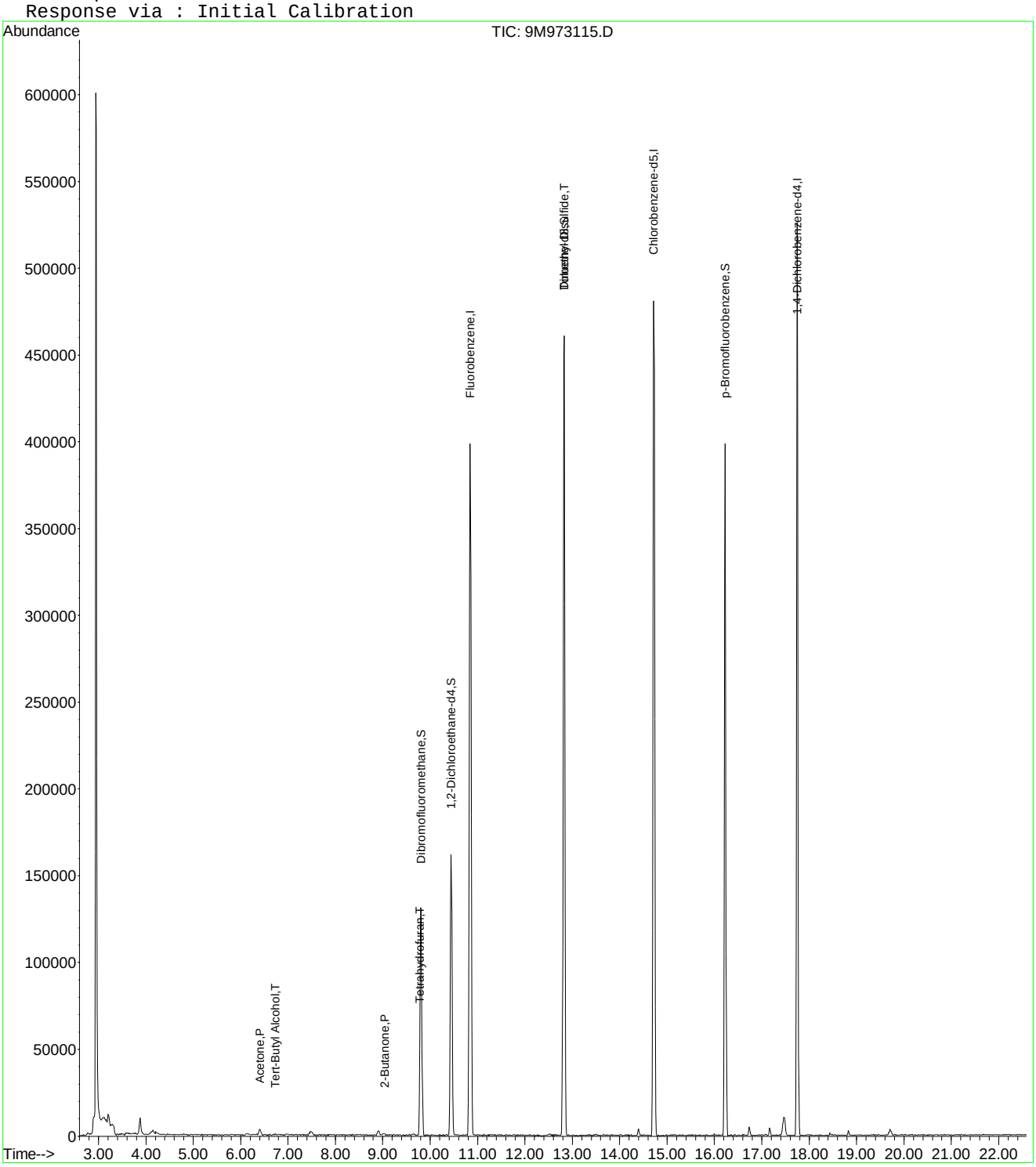

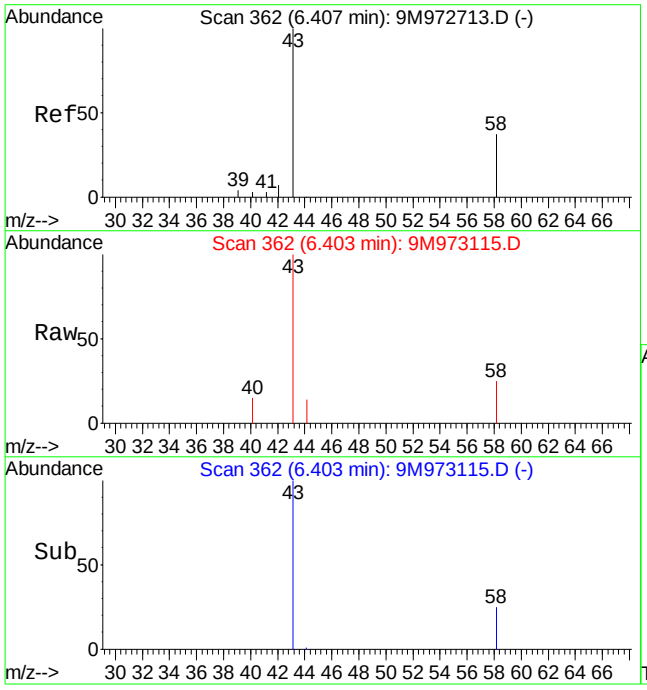

#13
Acetone
Concen: 4.54 ug/kg
RT: 6.40 min Scan# 362
Delta R.T. -0.01 min
Lab File: 9M973115.D
Acq: 7 Mar 2016 00:02

Tgt Ion: 43 Resp: 7707

Ion	Ratio	Lower	Upper
43	100		
58	25.7	16.9	39.3

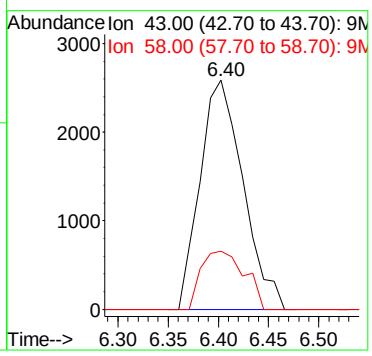

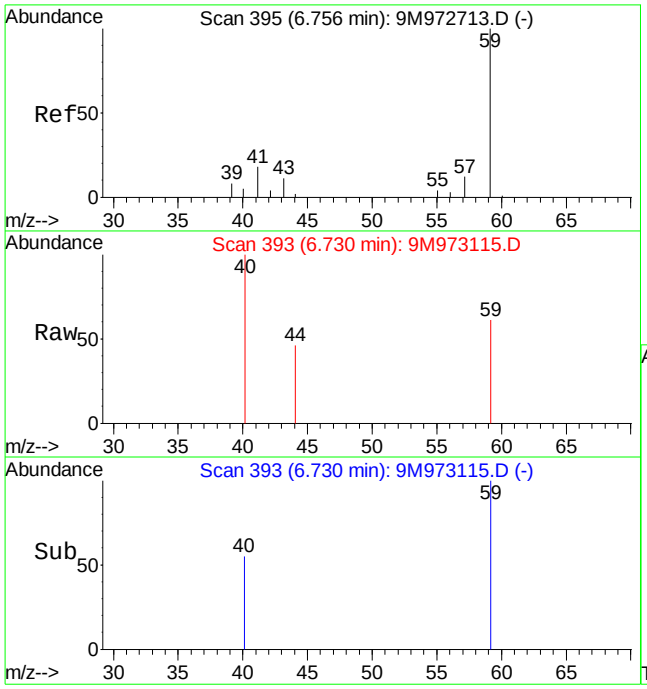

#15
Tert-Butyl Alcohol
Concen: 1.04 ug/kg
RT: 6.73 min Scan# 393
Delta R.T. -0.03 min
Lab File: 9M973115.D
Acq: 7 Mar 2016 00:02

Tgt Ion: 59 Resp: 482

Ion	Ratio	Lower	Upper
59	100		
41	0.0	14.1	32.9#
57	0.0	6.4	15.0#

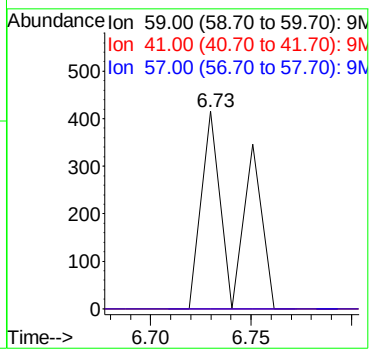

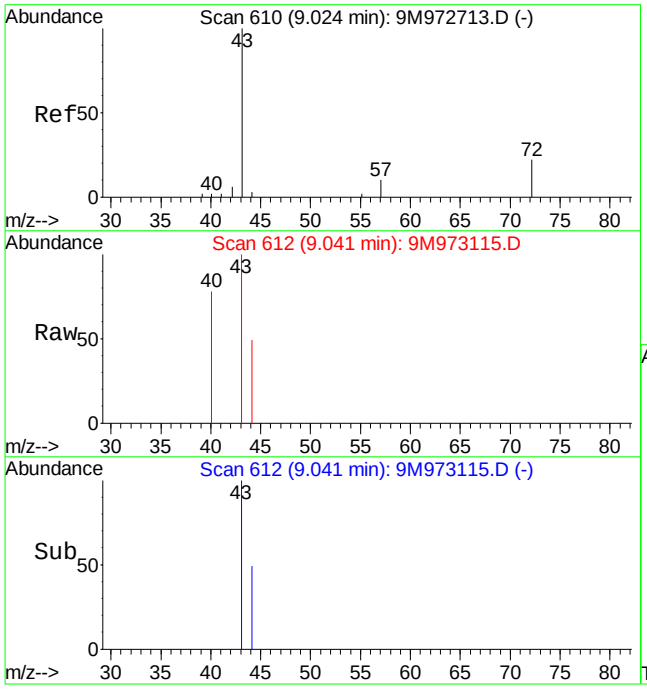

#29
2-Butanone
Concen: 0.90 ug/kg
RT: 9.04 min Scan# 612
Delta R.T. 0.01 min
Lab File: 9M973115.D
Acq: 7 Mar 2016 00:02

Tgt Ion: 43 Resp: 1313

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

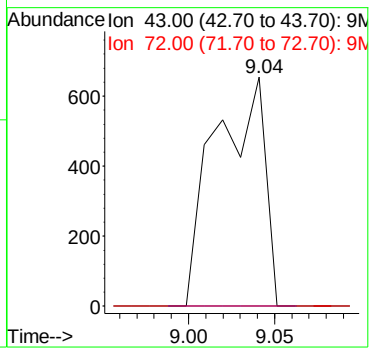

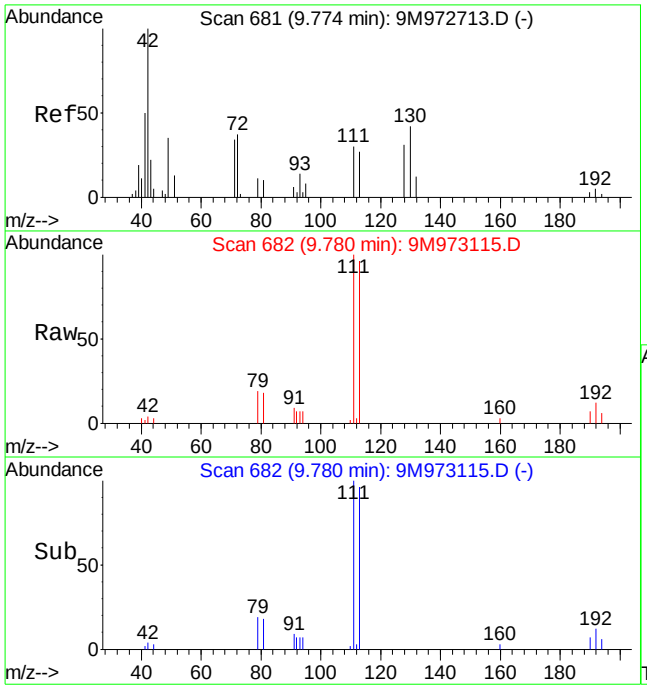

#36
Tetrahydrofuran
Concen: 0.85 ug/kg
RT: 9.78 min Scan# 682
Delta R.T. -0.00 min
Lab File: 9M973115.D
Acq: 7 Mar 2016 00:02

Tgt Ion: 42 Resp: 799

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

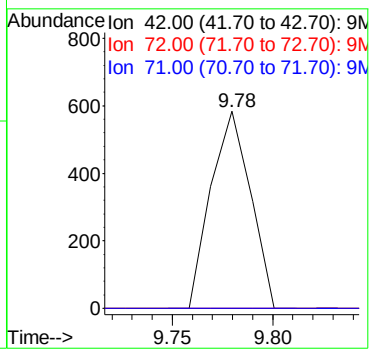

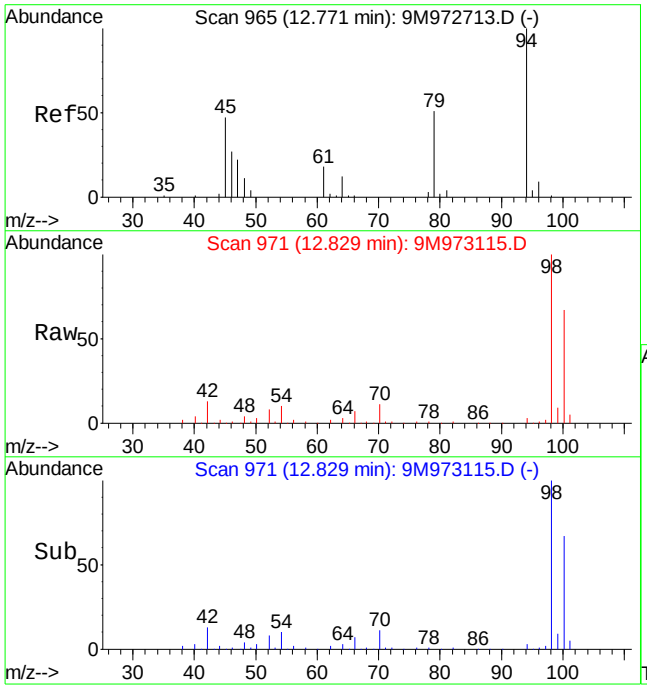

#56
Dimethyl Disulfide
Concen: 3.55 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.06 min
Lab File: 9M973115.D
Acq: 7 Mar 2016 00:02

Tgt Ion: 94 Resp: 12525

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

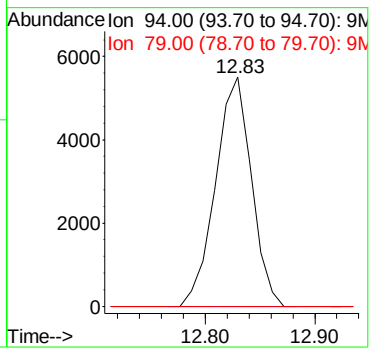

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972472.D Vial: 3
Acq On : 25 Jan 2016 11:22 Operator: FJB
Sample : WG555000-02 5ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:05 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	367739	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	266763	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.77	152	148882	50.00 ug/kg	0.01

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	1974	5.3580 ug/kg#	1
3) 3-Chloro-1-propene	7.23	41	18322	5.0468 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	19639	4.7564 ug/kg	98
5) Ethyl Acetate	9.24	43	12755	5.2595 ug/kg	91
6) Methacrylonitrile	9.40	67	3744	4.7691 ug/kg	95
7) Isobutyl Alcohol	9.42	43	1055	12.9700 ug/kg#	62
8) 1-Butanol	10.36	56	203	11.8711 ug/kg#	26
9) Methyl methacrylate	11.56	41	8689	4.6908 ug/kg	95
10) 2-Nitropropane	11.90	43	2531	4.2058 ug/kg	96

(#) = qualifier out of range (m) = manual integration
9M972472.D A9FOO_SL.M Wed Jan 27 11:22:42 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972472.D Vial: 3
Acq On : 25 Jan 2016 11:22 Operator: FJB
Sample : WG555000-02 5ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

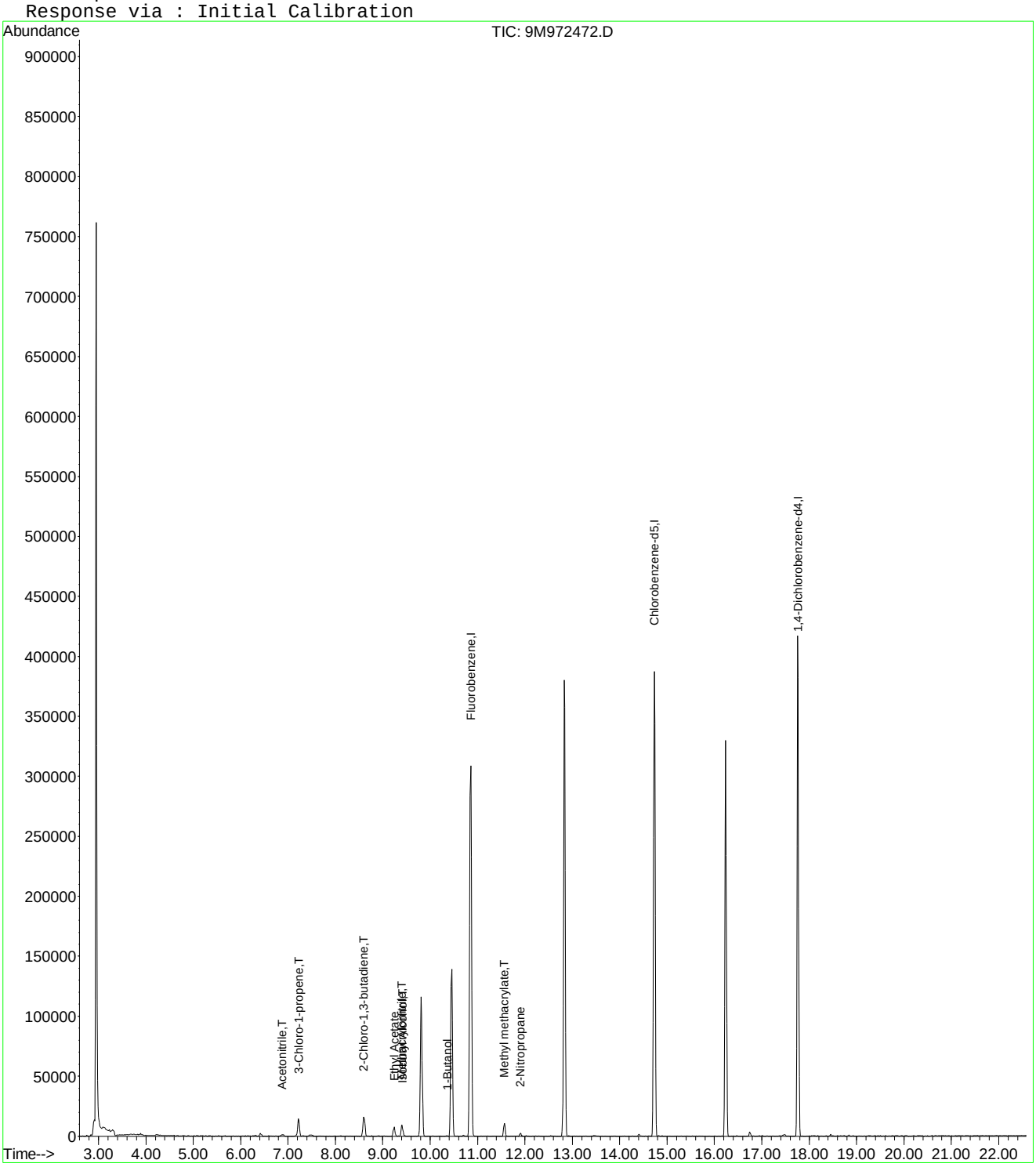

9M972472.D A9FOO_SL.M Wed Jan 27 11:22:42 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972473.D Vial: 4
Acq On : 25 Jan 2016 11:52 Operator: FJB
Sample : WG555000-03 20ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:05 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	359691	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	265773	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	149223	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	7669	21.2815 ug/kg#	77
3) 3-Chloro-1-propene	7.23	41	75360	21.2224 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	82865	20.5181 ug/kg	100
5) Ethyl Acetate	9.23	43	47912	20.1986 ug/kg	97
6) Methacrylonitrile	9.40	67	15740	20.4980 ug/kg	98
7) Isobutyl Alcohol	9.42	43	5287	37.9280 ug/kg	95
8) 1-Butanol	10.35	56	1509	22.3153 ug/kg#	81
9) Methyl methacrylate	11.56	41	35437	19.5588 ug/kg	98
10) 2-Nitropropane	11.90	43	10433	17.7247 ug/kg	98
12) Cyclohexanone	16.01	55	2157	16.3929 ug/kg#	86

(#) = qualifier out of range (m) = manual integration
9M972473.D A9FOO_SL.M Wed Jan 27 11:22:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972473.D Vial: 4
Acq On : 25 Jan 2016 11:52 Operator: FJB
Sample : WG555000-03 20ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

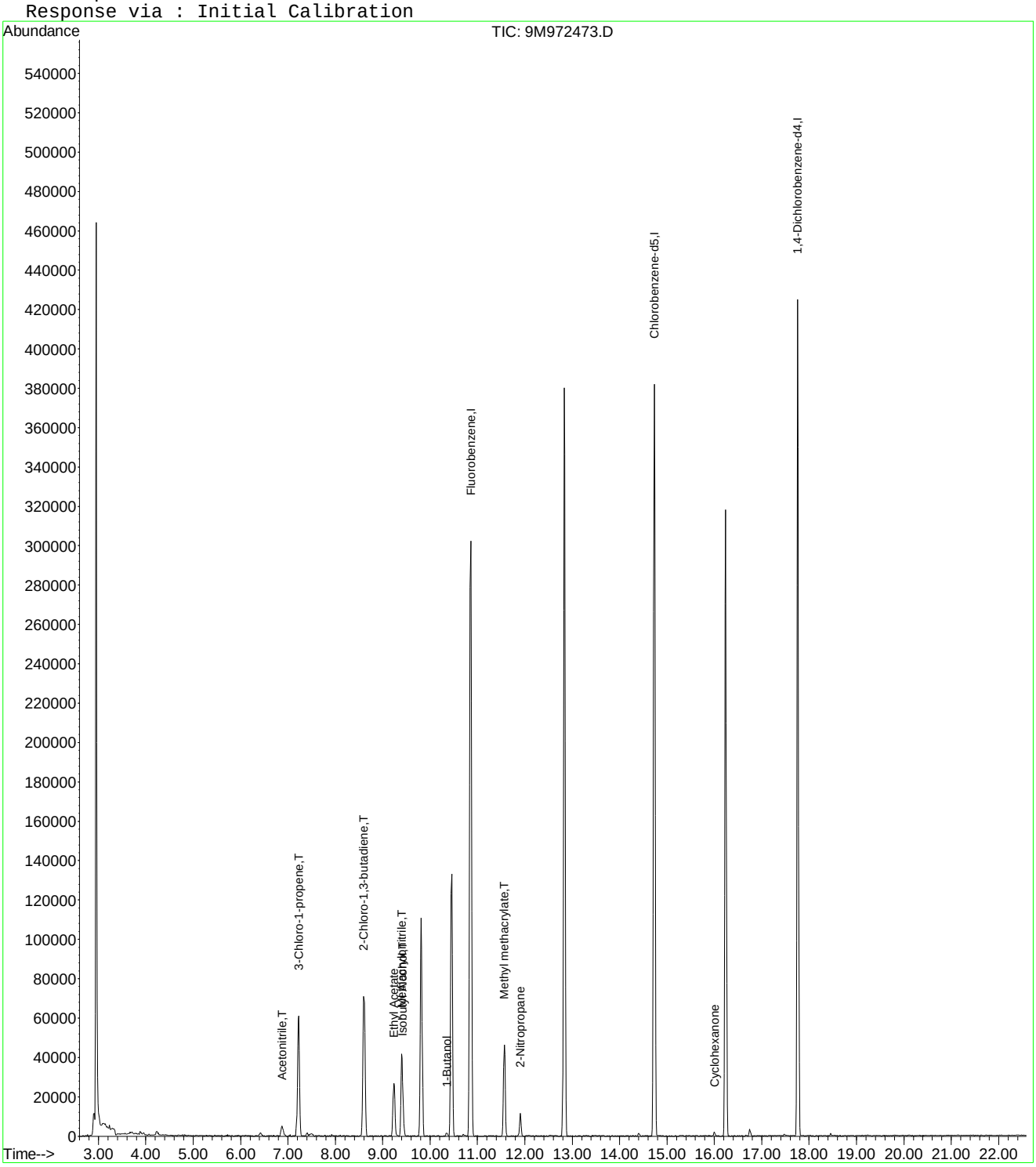

9M972473.D A9FOO_SL.M Wed Jan 27 11:22:46 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972474.D Vial: 5
Acq On : 25 Jan 2016 12:23 Operator: FJB
Sample : WG555000-04 50ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:06 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	356886	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	259679	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	147334	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	16583	46.3795 ug/kg#	94
3) 3-Chloro-1-propene	7.23	41	160601	45.5828 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.61	53	185316	46.2464 ug/kg	99
5) Ethyl Acetate	9.23	43	111538	47.3915 ug/kg	99
6) Methacrylonitrile	9.40	67	36081	47.3572 ug/kg	99
7) Isobutyl Alcohol	9.42	43	12624	81.5447 ug/kg	95
8) 1-Butanol	10.35	56	4707	48.0983 ug/kg#	50
9) Methyl methacrylate	11.56	41	82406	45.8400 ug/kg	99
10) 2-Nitropropane	11.90	43	26302	45.0359 ug/kg	97
12) Cyclohexanone	16.01	55	5625	43.7525 ug/kg	93

(#) = qualifier out of range (m) = manual integration
9M972474.D A9FOO_SL.M Wed Jan 27 11:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972474.D Vial: 5
Acq On : 25 Jan 2016 12:23 Operator: FJB
Sample : WG555000-04 50ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

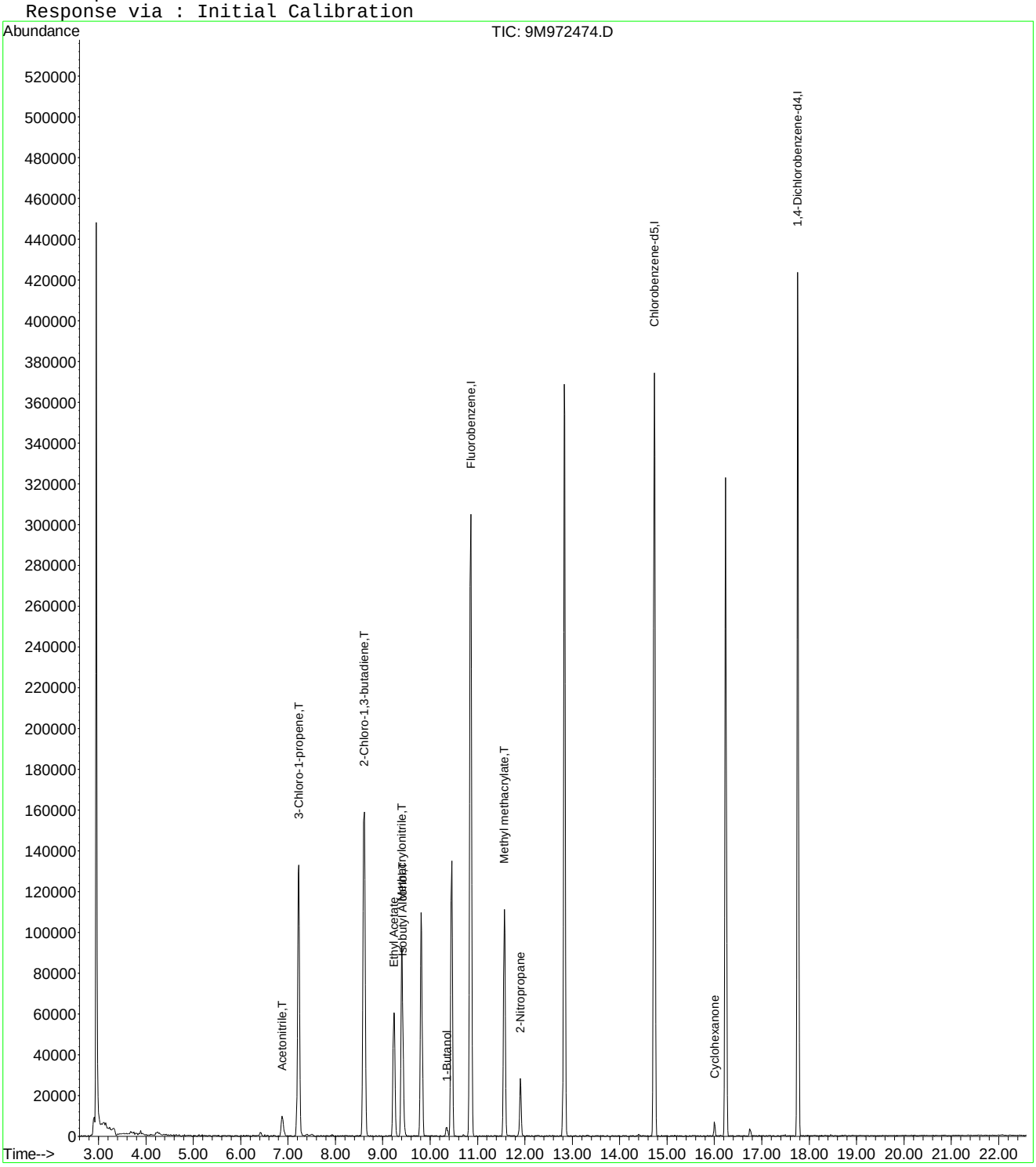

9M972474.D A9FOO_SL.M Wed Jan 27 11:22:51 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972475.D Vial: 6
Acq On : 25 Jan 2016 12:53 Operator: FJB
Sample : WG555000-05 100ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:06 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	394669	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	285851	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	161505	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	37767	95.5151	ug/kg#	100
3) 3-Chloro-1-propene	7.23	41	409870	105.1952	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.61	53	467514	105.5010	ug/kg	100
5) Ethyl Acetate	9.23	43	267513	102.7824	ug/kg	100
6) Methacrylonitrile	9.40	67	88054	104.5088	ug/kg	100
7) Isobutyl Alcohol	9.42	43	33721	187.1766	ug/kg	100
8) 1-Butanol	10.36	56	11671	95.0627	ug/kg	100
9) Methyl methacrylate	11.56	41	209503	105.3834	ug/kg	100
10) 2-Nitropropane	11.90	43	65435	101.3157	ug/kg	100
12) Cyclohexanone	16.01	55	14062	99.3630	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972475.D A9FOO_SL.M Wed Jan 27 11:22:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972475.D Vial: 6
Acq On : 25 Jan 2016 12:53 Operator: FJB
Sample : WG555000-05 100ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

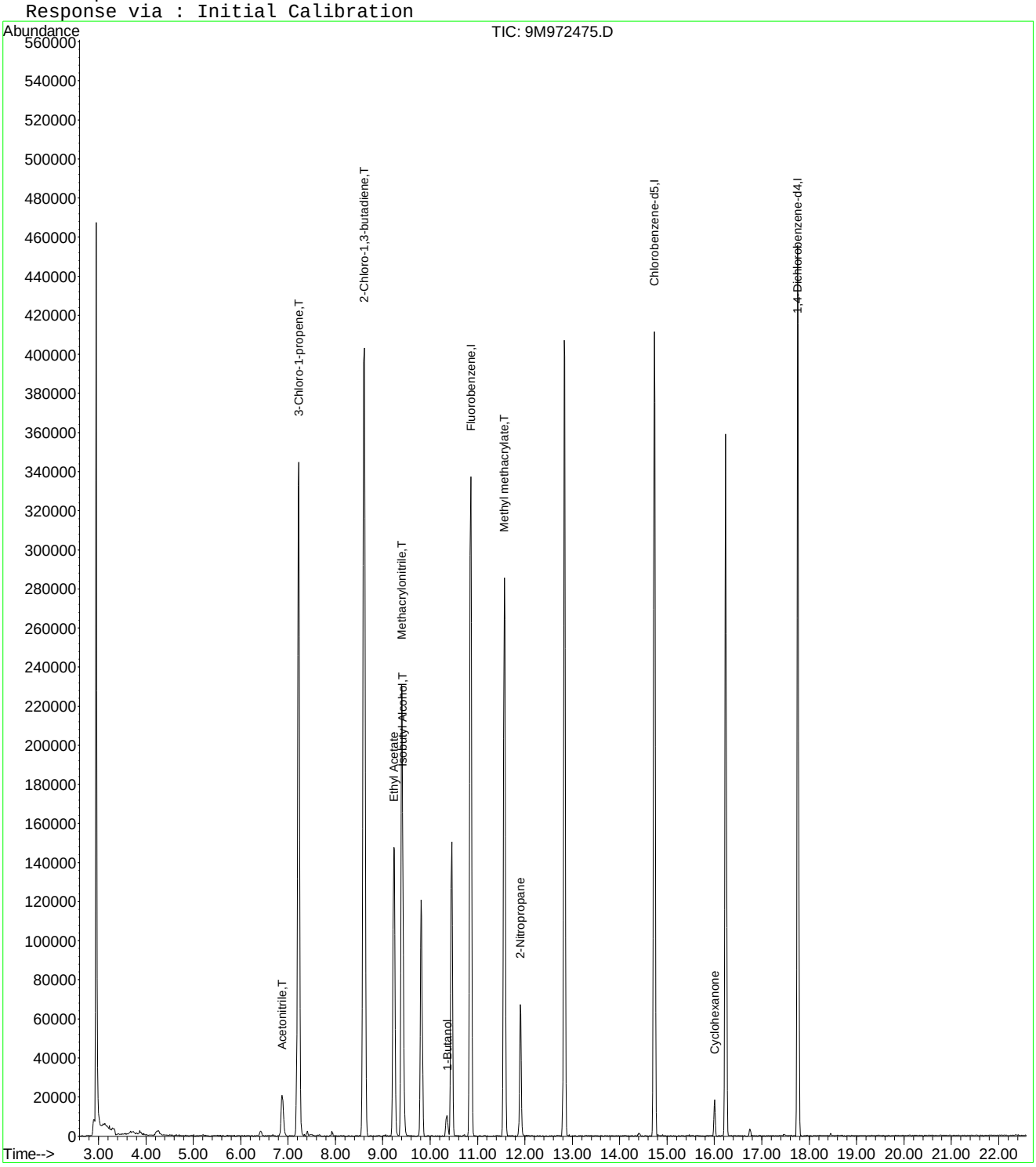

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972476.D Vial: 7
Acq On : 25 Jan 2016 13:23 Operator: FJB
Sample : WG555000-06 200ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 09:51:10 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	361792	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	264283	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	150478	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.87	41	75099	207.1896	ug/kg#	94
3) 3-Chloro-1-propene	7.22	41	743262	208.0969	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	846271	208.3269	ug/kg	100
5) Ethyl Acetate	9.23	43	489855	205.3125	ug/kg	100
6) Methacrylonitrile	9.40	67	159879	206.9995	ug/kg	100
7) Isobutyl Alcohol	9.42	43	68551	406.6640	ug/kg	99
8) 1-Butanol	10.35	56	24111	201.3375	ug/kg	97
9) Methyl methacrylate	11.57	41	382820	210.0636	ug/kg	99
10) 2-Nitropropane	11.90	43	129000	217.8866	ug/kg	95
12) Cyclohexanone	16.00	55	30065	229.7785	ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972476.D A9FOO_SL.M Wed Jan 27 09:51:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972476.D Vial: 7
Acq On : 25 Jan 2016 13:23 Operator: FJB
Sample : WG555000-06 200ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 9:51 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

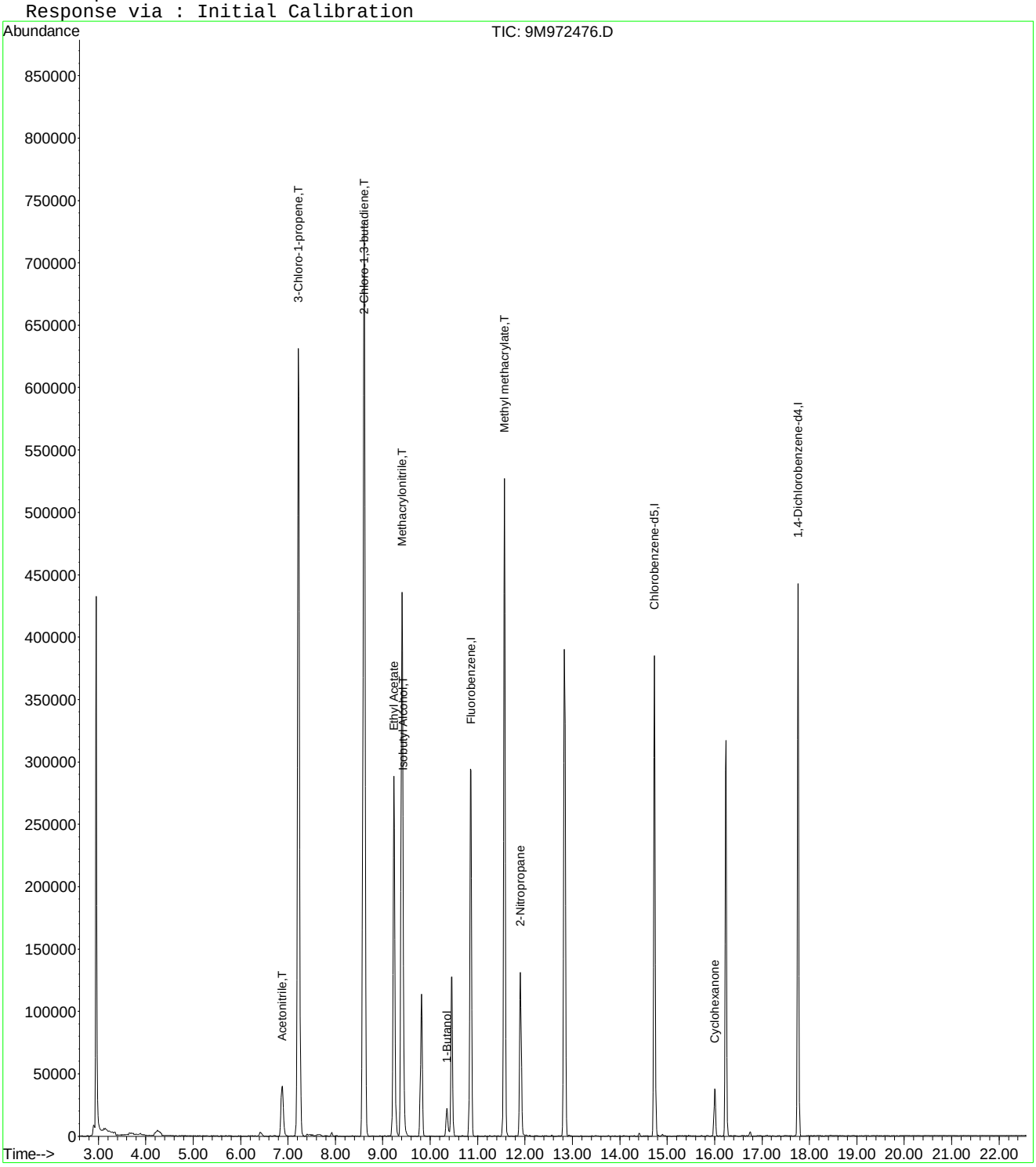

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972477.D Vial: 8
Acq On : 25 Jan 2016 13:54 Operator: FJB
Sample : WG555000-07 300ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:07 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.85	96	362779	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	265659	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	153468	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	99618	274.0870	ug/kg#	97
3) 3-Chloro-1-propene	7.22	41	944879	263.8255	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	1107217	271.8226	ug/kg	99
5) Ethyl Acetate	9.24	43	652386	272.6900	ug/kg	99
6) Methacrylonitrile	9.40	67	208153	268.7679	ug/kg	98
7) Isobutyl Alcohol	9.43	43	89707	528.6093	ug/kg#	99
8) 1-Butanol	10.35	56	31640	260.3131	ug/kg	98
9) Methyl methacrylate	11.57	41	502506	274.9883	ug/kg	98
10) 2-Nitropropane	11.90	43	172692	290.8907	ug/kg	95
12) Cyclohexanone	16.00	55	36951	280.9436	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972477.D A9FOO_SL.M Wed Jan 27 11:23:05 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972477.D Vial: 8
Acq On : 25 Jan 2016 13:54 Operator: FJB
Sample : WG555000-07 300ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

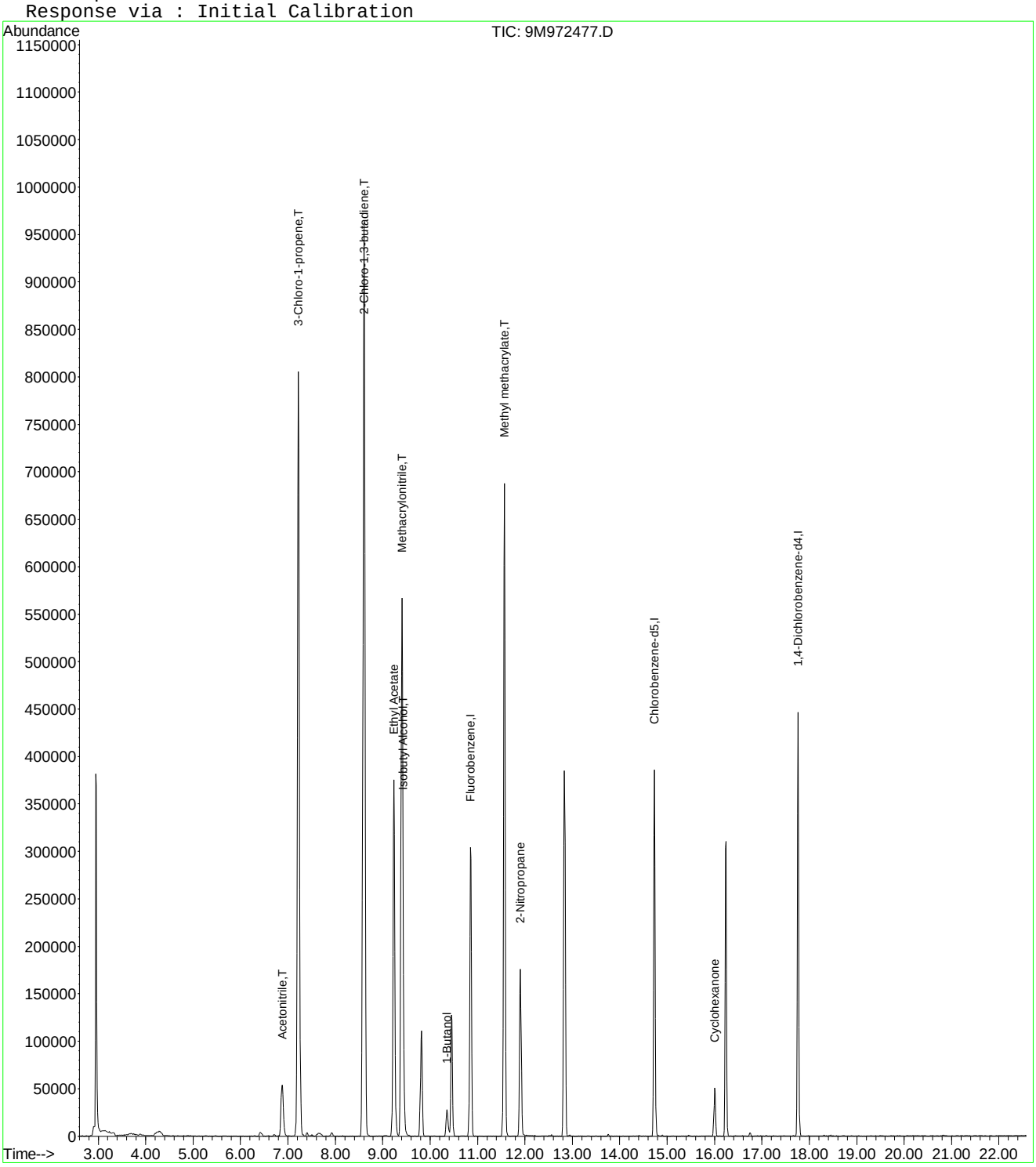

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972478.D Vial: 9
Acq On : 25 Jan 2016 14:25 Operator: FJB
Sample : WG555000-08 400ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 09:51:10 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	359343	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	261674	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	149058	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.89	41	148074	411.3034	ug/kg#	96
3) 3-Chloro-1-propene	7.22	41	1457717	410.9100	ug/kg	99
4) 2-Chloro-1,3-butadiene	8.61	53	1703971	422.3261	ug/kg	100
5) Ethyl Acetate	9.23	43	980479	413.7480	ug/kg	100
6) Methacrylonitrile	9.40	67	321602	419.2243	ug/kg	99
7) Isobutyl Alcohol	9.43	43	142361	842.7355	ug/kg#	98
8) 1-Butanol	10.36	56	51732	422.9922	ug/kg	99
9) Methyl methacrylate	11.56	41	779879	430.8570	ug/kg	98
10) 2-Nitropropane	11.90	43	267565	455.0088	ug/kg	96
12) Cyclohexanone	16.01	55	56623	437.0688	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972478.D A9FOO_SL.M Wed Jan 27 09:51:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972478.D Vial: 9
Acq On : 25 Jan 2016 14:25 Operator: FJB
Sample : WG555000-08 400ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 9:51 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

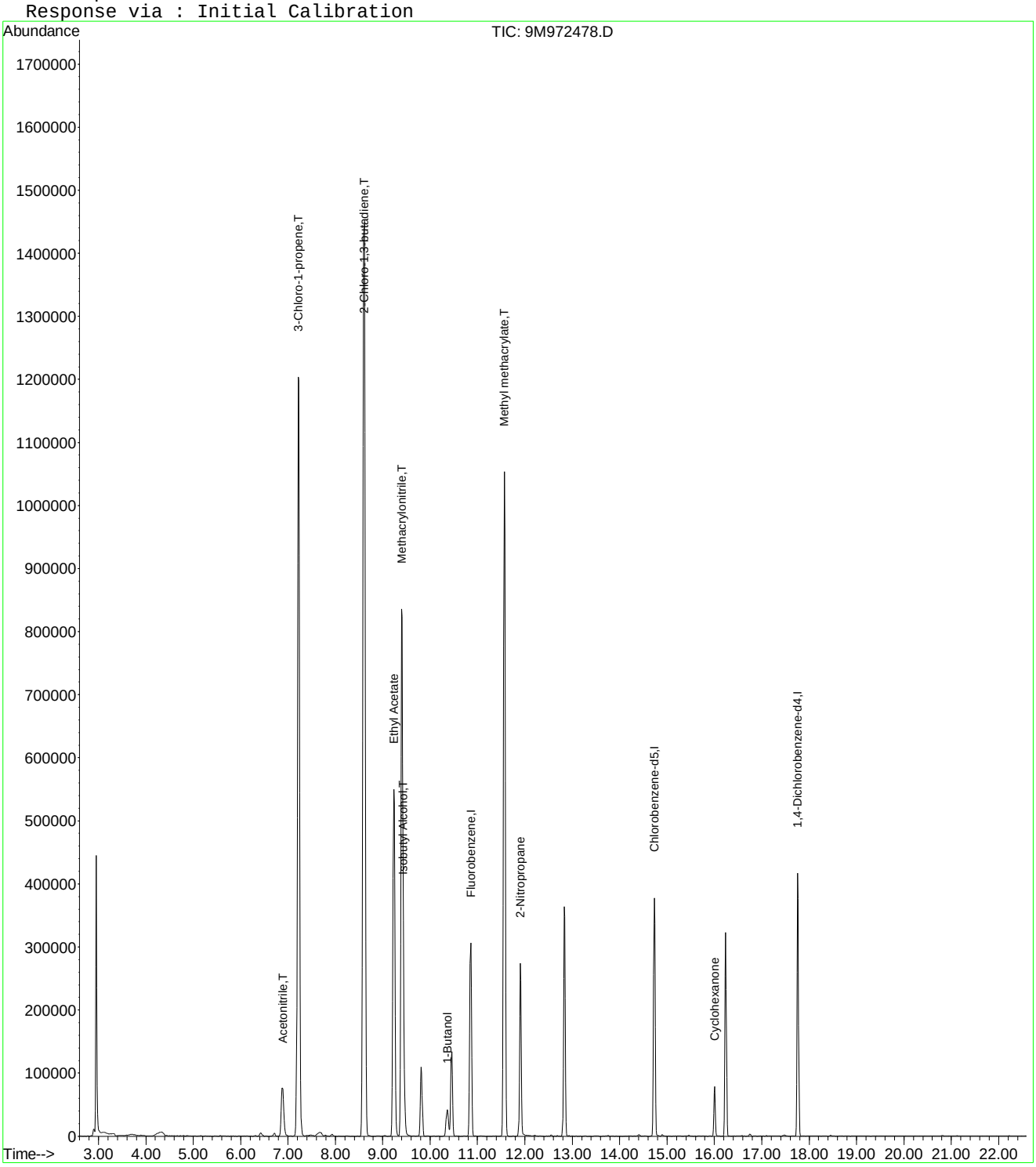

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972479.D Vial: 10
Acq On : 25 Jan 2016 14:56 Operator: FJB
Sample : WG555000-09 500ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:08 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	364474	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	266311	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	151707	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	196334	537.6773	ug/kg#	94
3) 3-Chloro-1-propene	7.22	41	1832802	509.3680	ug/kg	99
4) 2-Chloro-1,3-butadiene	8.60	53	2126710	519.6807	ug/kg	100
5) Ethyl Acetate	9.23	43	1255294	522.2587	ug/kg	100
6) Methacrylonitrile	9.40	67	408537	525.0513	ug/kg	100
7) Isobutyl Alcohol	9.43	43	180610	1052.3719	ug/kg	98
8) 1-Butanol	10.36	56	64789	519.8809	ug/kg	97
9) Methyl methacrylate	11.56	41	981460	534.5904	ug/kg	100
10) 2-Nitropropane	11.90	43	346571	581.0659	ug/kg	97
12) Cyclohexanone	16.01	55	74733	566.8143	ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972479.D A9FOO_SL.M Wed Jan 27 11:30:29 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972479.D Vial: 10
Acq On : 25 Jan 2016 14:56 Operator: FJB
Sample : WG555000-09 500ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

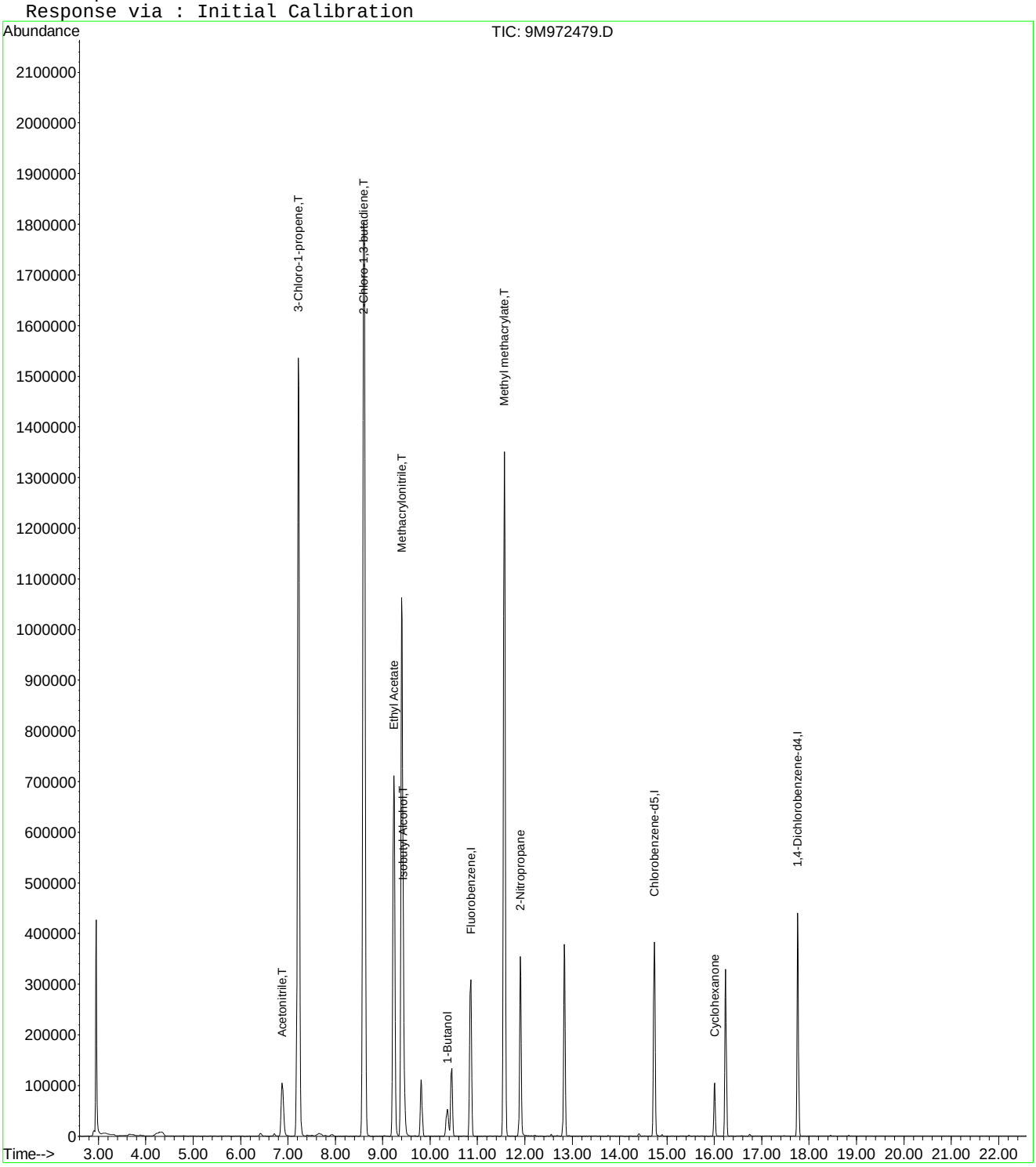

9M972479.D A9FOO_SL.M Wed Jan 27 11:30:29 2016 Page 2

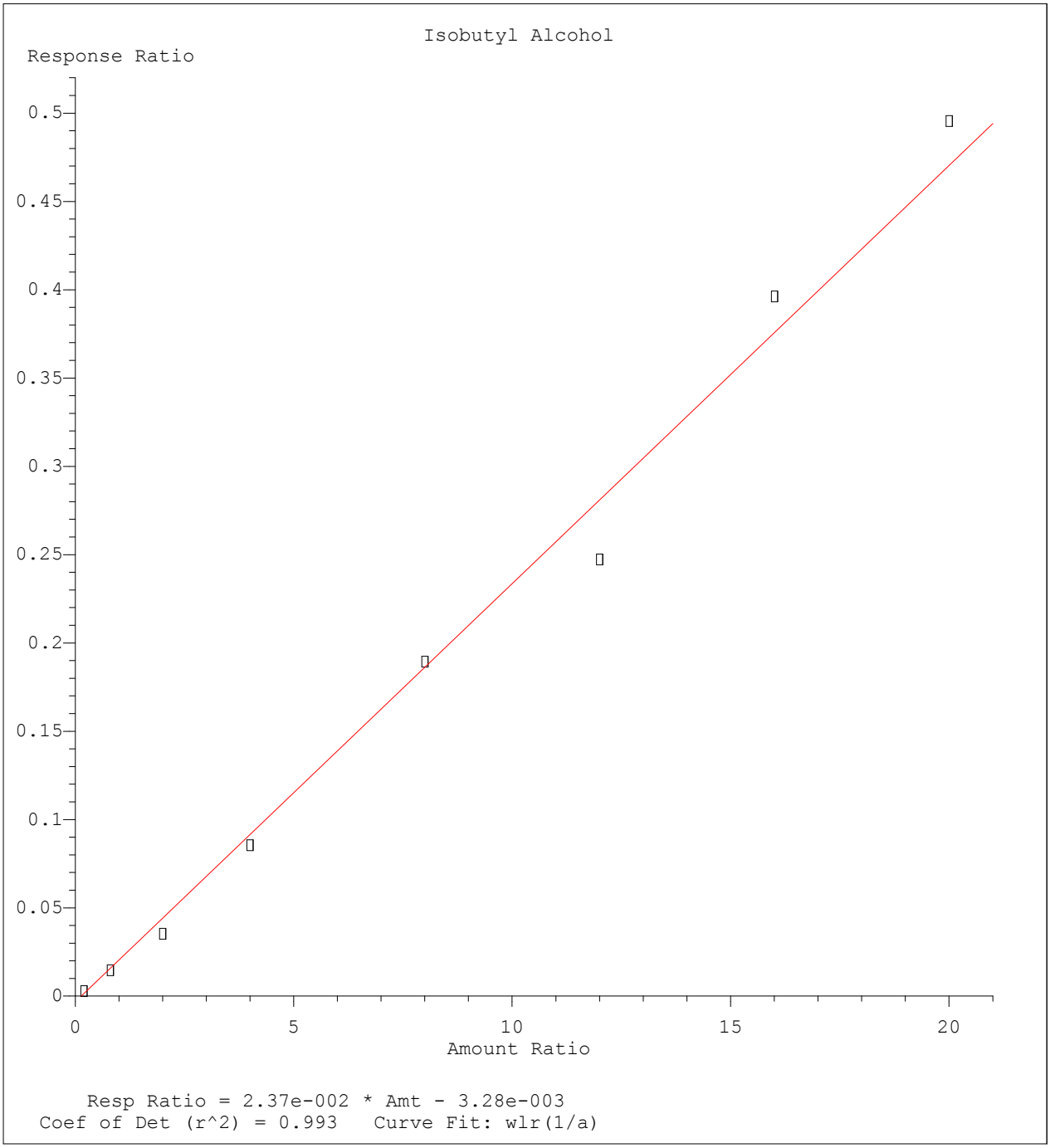

Method Name: C:\MSDCHEM\1\METHODS\A9FOO_SL.M
Calibration Table Last Updated: Wed Jan 27 09:49:02 2016

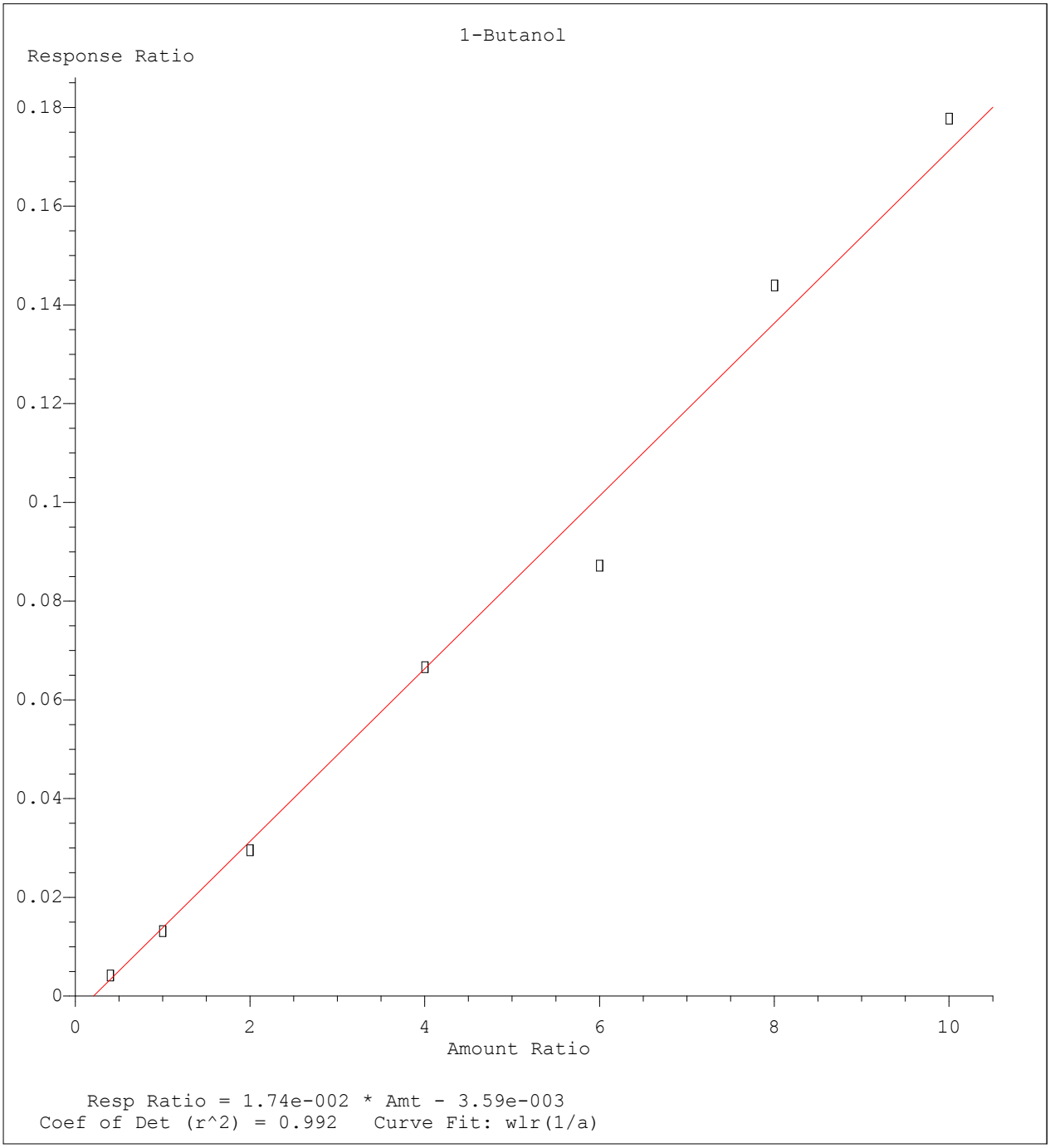

Method Name: C:\MSDCHEM\1\METHODS\A9FOO_SL.M
Calibration Table Last Updated: Wed Jan 27 09:49:02 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:09 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	394765	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	285754	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	159586	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	40054	101.2745 ug/kg#	100
3) 3-Chloro-1-propene	7.22	41	402890	103.3786 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	572568	129.1764 ug/kg	99
5) Ethyl Acetate	9.23	43	275962	106.0028 ug/kg	99
6) Methacrylonitrile	9.40	67	90289	107.1354 ug/kg	96
7) Isobutyl Alcohol	9.42	43	34031	188.7895 ug/kg	99
8) 1-Butanol	10.35	56	12038	97.7072 ug/kg	97
9) Methyl methacrylate	11.56	41	219363	110.3163 ug/kg	100
10) 2-Nitropropane	11.90	43	69288	107.2554 ug/kg	93
12) Cyclohexanone	16.01	55	14203	100.3934 ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972481.D A9FOO_SL.M Wed Jan 27 11:15:09 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

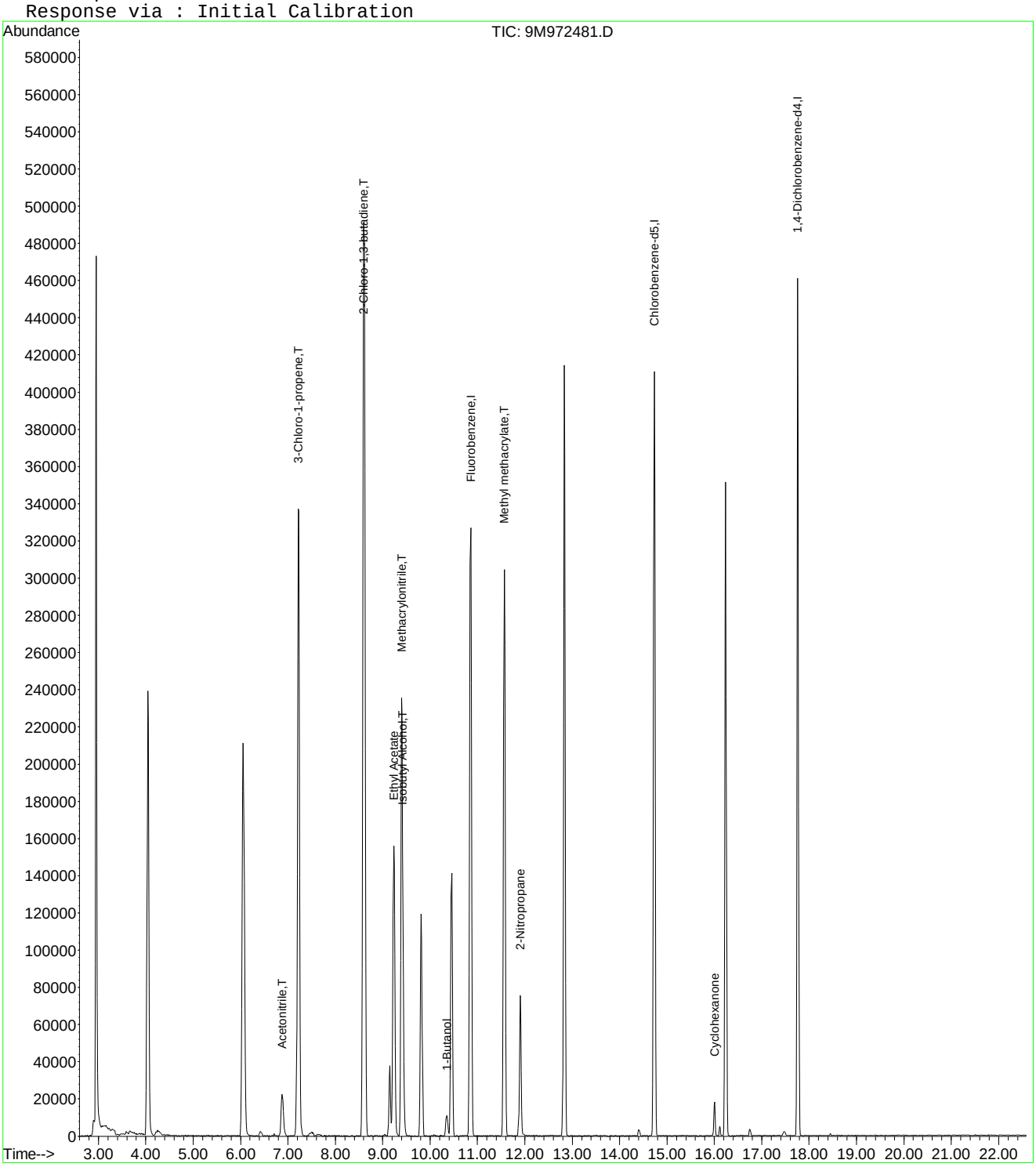

9M972481.D A9FOO_SL.M Wed Jan 27 11:15:09 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	101.2745	-1.3	106	0.00
3	T	3-Chloro-1-propene	100.0000	103.3786	-3.4	98	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	129.1764	-29.2	122	0.00
5		Ethyl Acetate	100.0000	106.0028	-6.0	103	0.00
6	T	Methacrylonitrile	100.0000	107.1354	-7.1	103	0.00
7	T	Isobutyl Alcohol	200.0000	188.7895	5.6	101	0.00
8		1-Butanol	100.0000	97.7072	2.3	103	0.00
9	T	Methyl methacrylate	100.0000	110.3163	-10.3	105	0.00
10		2-Nitropropane	100.0000	107.2554	-7.3	106	0.00
11	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
12		Cyclohexanone	100.0000	100.3934	-0.4	101	0.00
13	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	99	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972481.D A9FOO_SL.M Wed Jan 27 11:32:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972896.D Vial: 3
Acq On : 25 Feb 2016 15:48 Operator: ADC
Sample : WG558732-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:54 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260B_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	517775	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.73	117	378926	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.76	152	183008	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	147955	52.7167 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.44%		
43) 1,2-Dichloroethane-d4	10.44	65	183779	52.1887 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.38%		
58) Toluene-d8	12.83	98	511451	53.3617 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.72%		
79) p-Bromofluorobenzene	16.23	95	191673	53.7871 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 107.58%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.28	85	204882	57.9763 ug/kg	100
3) Chloromethane	3.74	50	183152	54.0664 ug/kg	100
4) Vinyl Chloride	3.99	62	192536	56.7764 ug/kg	100
5) 1,3-Butadiene	4.04	54	170907	52.9740 ug/kg	100
6) Bromomethane	4.88	94	107911	48.9956 ug/kg	100
7) Chloroethane	5.04	64	85391	56.5213 ug/kg	100
8) Trichlorofluoromethane	5.53	101	265962	52.2923 ug/kg	100
9) Diethyl ether	6.04	59	249400	104.8955 ug/kg	100
10) Isoprene	6.09	67	156373	51.4980 ug/kg	100
11) Acrolein	6.30	56	24630	51.9520 ug/kg	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	135036	51.4825 ug/kg	100
13) Acetone	6.41	43	66195	50.6135 ug/kg	100
14) 1,1-Dichloroethene	6.61	61	244051	50.4389 ug/kg	100
15) Tert-Butyl Alcohol	6.76	59	110494	208.7036 ug/kg	98
16) Dimethyl Sulfide	6.88	62	109294	53.4455 ug/kg	100
17) Iodomethane	7.13	142	79749	55.1586 ug/kg	100
18) Methyl acetate	7.14	43	135648	51.5699 ug/kg	100
19) Methylene Chloride	7.40	84	135280	51.3362 ug/kg	100
20) Carbon Disulfide	7.45	76	381814	51.2249 ug/kg	100
21) Acrylonitrile	7.59	53	69697	53.5624 ug/kg	100
22) Methyl Tert Butyl Ether	7.61	73	407131	54.2460 ug/kg	100
23) trans-1,2-Dichloroethene	7.85	61	226890	52.6160 ug/kg	100
24) n-Hexane	7.91	57	219597	49.3729 ug/kg	100
25) Diisopropyl ether	8.26	45	1088740	105.3973 ug/kg	100
26) Vinyl Acetate	8.43	43	311838	52.9553 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	284391	52.5076 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	1023392	106.5502 ug/kg	100
29) 2-Butanone	9.03	43	86123	51.5803 ug/kg	100
30) Propionitrile	9.14	54	53253	104.2214 ug/kg	100
31) 2,2-Dichloropropane	9.24	77	215042	53.1943 ug/kg	100
32) cis-1,2-Dichloroethene	9.31	96	153722	54.3532 ug/kg	100
33) Chloroform	9.52	83	263571	52.9749 ug/kg	100
34) 1-Bromopropane	9.65	122	22164	51.3817 ug/kg	100
35) Bromochloromethane	9.75	130	102780	55.9453 ug/kg	100
36) Tetrahydrofuran	9.78	42	113791	105.7289 ug/kg	100
38) 1,1,1-Trichloroethane	10.04	97	243452	54.1074 ug/kg	100
39) Cyclohexane	10.08	56	247641	50.4821 ug/kg	100
40) 1,1-Dichloropropene	10.24	75	182199	51.4612 ug/kg	100
41) Tert-Amyl-Methyl ether	10.34	73	741165	106.1603 ug/kg	100
42) Carbon Tetrachloride	10.39	117	221306	53.0537 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972896.D Vial: 3
Acq On : 25 Feb 2016 15:48 Operator: ADC
Sample : WG558732-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:54 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260B_SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	237857	54.3500	ug/kg	100
46)	Benzene	10.60	78	503328	50.7793	ug/kg	100
47)	Trichloroethene	11.35	130	163959	52.2047	ug/kg	100
48)	Methylcyclohexane	11.44	83	204551	51.9284	ug/kg	100
49)	1,2-Dichloropropane	11.56	63	148045	54.3898	ug/kg	100
50)	1,4-Dioxane	11.88	88	7789	190.7454	ug/kg	100
51)	Bromodichloromethane	11.87	83	203922	53.1595	ug/kg	100
52)	Dibromomethane	11.96	174	95887	53.1673	ug/kg	100
53)	2-Chloroethyl Vinyl Ether	12.17	63	38515	51.1377	ug/kg	100
54)	4-Methyl-2-Pentanone	12.19	58	64999	54.4056	ug/kg	100
55)	cis-1,3-Dichloropropene	12.50	75	212797	53.2452	ug/kg	100
56)	Dimethyl Disulfide	12.77	94	219798	54.7267	ug/kg	100
59)	Toluene	12.92	91	563647	52.0613	ug/kg	100
60)	Ethyl Methacrylate	13.02	69	158958	52.9687	ug/kg	100
61)	trans-1,3-Dichloropropene	13.10	75	212386	54.4657	ug/kg	100
62)	1,1,2-Trichloroethane	13.33	97	122975	54.0706	ug/kg	100
63)	2-Hexanone	13.25	43	119176	52.4822	ug/kg	100
64)	1,3-Dichloropropane	13.63	76	201541	53.1810	ug/kg	100
65)	Tetrachloroethene	13.75	164	117066	50.4378	ug/kg	100
66)	Dibromochloromethane	14.01	129	168874	53.1294	ug/kg	100
67)	1,2-Dibromoethane	14.28	107	132755	52.6249	ug/kg	100
68)	1-Chlorohexane	14.35	91	168490	52.7733	ug/kg	100
69)	Chlorobenzene	14.77	112	400241	52.5998	ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.80	131	154536	54.0800	ug/kg	100
71)	Ethylbenzene	14.80	106	207031	52.8117	ug/kg	100
72)	m-,p-Xylene	14.89	106	497405	102.7415	ug/kg	100
73)	o-Xylene	15.45	106	247567	53.2858	ug/kg	100
74)	Styrene	15.49	104	425634	53.7983	ug/kg	100
75)	Bromoform	16.00	173	116015	55.5910	ug/kg	100
76)	Isopropylbenzene	15.88	105	658255	52.7764	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.10	83	147970	53.3007	ug/kg	100
80)	1,2,3-Trichloropropane	16.29	110	55711	52.9159	ug/kg	100
81)	trans-1,4-Dichloro-2-Buten	16.33	53	55525	52.3210	ug/kg	100
82)	n-Propylbenzene	16.39	91	751844	52.2641	ug/kg	100
83)	Bromobenzene	16.52	156	177299	52.2079	ug/kg	100
84)	1,3,5-Trimethylbenzene	16.58	105	568867	52.6809	ug/kg	100
85)	2-Chlorotoluene	16.66	91	484783	50.2437	ug/kg	100
86)	4-Chlorotoluene	16.70	91	481367	53.9615	ug/kg	100
87)	a-Methylstyrene	16.98	118	255765	51.9817	ug/kg	100
88)	tert-Butylbenzene	17.04	134	121669	53.7430	ug/kg	100
89)	1,2,4-Trimethylbenzene	17.09	105	580656	51.3463	ug/kg	100
90)	sec-Butylbenzene	17.30	105	726352	52.2266	ug/kg	100
91)	p-Isopropyltoluene	17.46	119	613096	52.2364	ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	337008	49.9319	ug/kg	100
93)	1,4-Dichlorobenzene	17.80	146	335195	49.6777	ug/kg	100
94)	n-Butylbenzene	17.99	91	563797	51.6647	ug/kg	100
95)	1,2-Dichlorobenzene	18.30	146	320108	51.1150	ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.30	157	42968	53.4468	ug/kg	100
97)	1,2,4-Trichlorobenzene	20.44	180	222592	50.0691	ug/kg	100
98)	Hexachlorobutadiene	20.59	225	117654	50.2053	ug/kg	100
99)	Naphthalene	20.81	128	602344	54.0184	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	222082	51.5034	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972896.D 8260SL.M Fri Feb 26 11:21:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972896.D Vial: 3
Acq On : 25 Feb 2016 15:48 Operator: ADC
Sample : WG558732-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

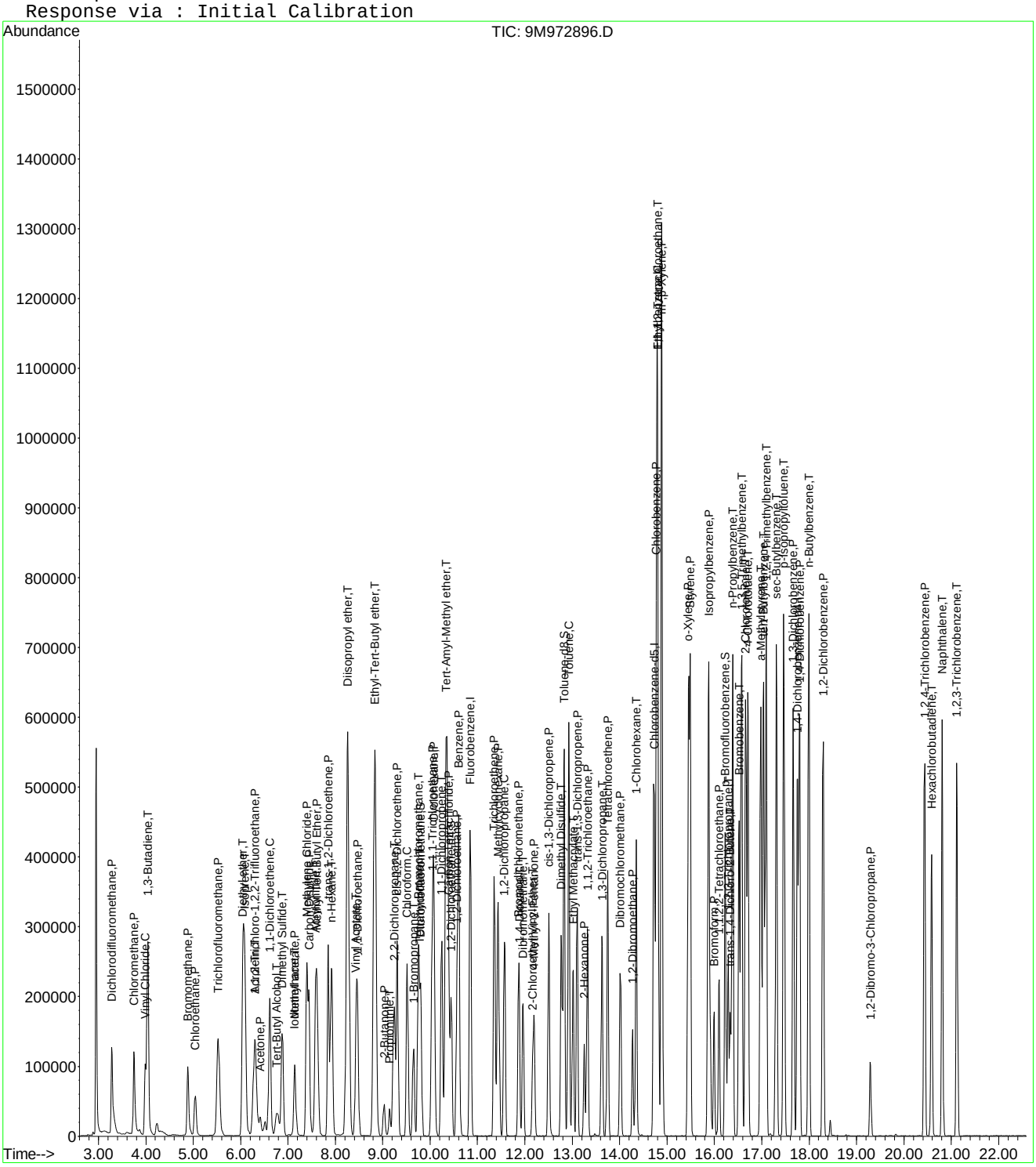

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:15 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	491503	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	353502	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	169028	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.83	98	923	0.1032 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.20%#	
79) p-Bromofluorobenzene	16.22	95	770	0.2339 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.46%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	1359	0.4051 ug/kg#	69
3) Chloromethane	3.75	50	2926	0.9099 ug/kg	95
4) Vinyl Chloride	3.98	62	1474	0.4579 ug/kg#	67
5) 1,3-Butadiene	4.03	54	1519	0.4960 ug/kg	82
6) Bromomethane	4.89	94	2071	0.9906 ug/kg	100
8) Trichlorofluoromethane	5.53	101	2609	0.5404 ug/kg#	51
10) Isoprene	6.08	67	1239	0.4298 ug/kg	70
13) Acetone	6.43	43	4251	5.5216 ug/kg#	75
14) 1,1-Dichloroethene	6.63	61	2149	0.4679 ug/kg#	66
17) Iodomethane	7.14	142	943	3.4505 ug/kg#	34
18) Methyl acetate	7.16	43	1334	0.5343 ug/kg#	45
19) Methylene Chloride	7.40	84	1287	0.5145 ug/kg	81
20) Carbon Disulfide	7.44	76	6762	0.9557 ug/kg#	76
23) trans-1,2-Dichloroethene	7.84	61	2196	0.5365 ug/kg	86
24) n-Hexane	7.92	57	2239	0.5303 ug/kg#	62
26) Vinyl Acetate	8.44	43	2494	0.4462 ug/kg#	78
27) 1,1-Dichloroethane	8.48	63	2396	0.4660 ug/kg#	63
29) 2-Butanone	9.02	43	778	0.4909 ug/kg#	58
31) 2,2-Dichloropropane	9.24	77	1877	0.4891 ug/kg#	42
32) cis-1,2-Dichloroethene	9.32	96	1178	0.4388 ug/kg	74
33) Chloroform	9.52	83	2007	0.4249 ug/kg	81
35) Bromochloromethane	9.74	130	828	0.4748 ug/kg#	68
36) Tetrahydrofuran	9.76	42	1603	1.5690 ug/kg#	57
38) 1,1,1-Trichloroethane	10.05	97	1773	0.4151 ug/kg	92
40) 1,1-Dichloropropene	10.25	75	1521	0.4526 ug/kg#	38
42) Carbon Tetrachloride	10.40	117	1765	0.4457 ug/kg#	85
45) 1,2-Dichloroethane	10.57	62	1885	0.4537 ug/kg#	68
46) Benzene	10.61	78	5607	0.5959 ug/kg#	83
47) Trichloroethene	11.36	130	1808	0.6064 ug/kg	88
48) Methylcyclohexane	11.44	83	1930	0.5161 ug/kg	96
55) cis-1,3-Dichloropropene	12.51	75	1714	0.4518 ug/kg#	51
59) Toluene	12.93	91	5550	0.5495 ug/kg	88
61) trans-1,3-Dichloropropene	13.10	75	1920	0.5278 ug/kg#	51
63) 2-Hexanone	13.25	43	877	0.4140 ug/kg#	63
64) 1,3-Dichloropropane	13.63	76	1615	0.4568 ug/kg	91
65) Tetrachloroethene	13.75	164	1154	0.5330 ug/kg#	74
67) 1,2-Dibromoethane	14.27	107	988	0.4198 ug/kg	87
68) 1-Chlorohexane	14.35	91	1436	0.4821 ug/kg	83
69) Chlorobenzene	14.78	112	4578	0.6449 ug/kg	87
70) 1,1,1,2-Tetrachloroethane	14.81	131	1078	0.4044 ug/kg	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:15 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
71)	Ethylbenzene	14.80	106	1823	0.4985 ug/kg	68
72)	m-,p-Xylene	14.88	106	4752	1.0521 ug/kg	95
73)	o-Xylene	15.44	106	2166	0.4997 ug/kg	94
74)	Styrene	15.49	104	3544	0.4802 ug/kg	91
76)	Isopropylbenzene	15.87	105	6349	0.5456 ug/kg	97
78)	1,1,2,2-Tetrachloroethane	16.09	83	1326	0.5171 ug/kg#	89
82)	n-Propylbenzene	16.38	91	7679	0.5780 ug/kg	98
83)	Bromobenzene	16.52	156	1798	0.5732 ug/kg	88
84)	1,3,5-Trimethylbenzene	16.57	105	4554	0.4566 ug/kg	92
85)	2-Chlorotoluene	16.66	91	5237	0.5877 ug/kg	84
86)	4-Chlorotoluene	16.71	91	5645	0.6851 ug/kg	93
87)	a-Methylstyrene	16.97	118	2091	0.4601 ug/kg	93
89)	1,2,4-Trimethylbenzene	17.09	105	6291	0.6023 ug/kg	84
90)	sec-Butylbenzene	17.31	105	7013	0.5460 ug/kg	93
91)	p-Isopropyltoluene	17.47	119	5681	0.5241 ug/kg	95
92)	1,3-Dichlorobenzene	17.67	146	4446	0.7132 ug/kg	91
93)	1,4-Dichlorobenzene	17.79	146	4603	0.7386 ug/kg#	73
94)	n-Butylbenzene	17.99	91	6750	0.6697 ug/kg#	90
95)	1,2-Dichlorobenzene	18.29	146	3889	0.6724 ug/kg	82
97)	1,2,4-Trichlorobenzene	20.43	180	3506	0.8539 ug/kg	94
98)	Hexachlorobutadiene	20.58	225	1493	0.6898 ug/kg#	70
99)	Naphthalene	20.81	128	10277	0.9979 ug/kg	93
100)	1,2,3-Trichlorobenzene	21.12	180	3961	0.9946 ug/kg	80

(#) = qualifier out of range (m) = manual integration
9M972898.D 8260SL.M Fri Feb 26 11:11:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration

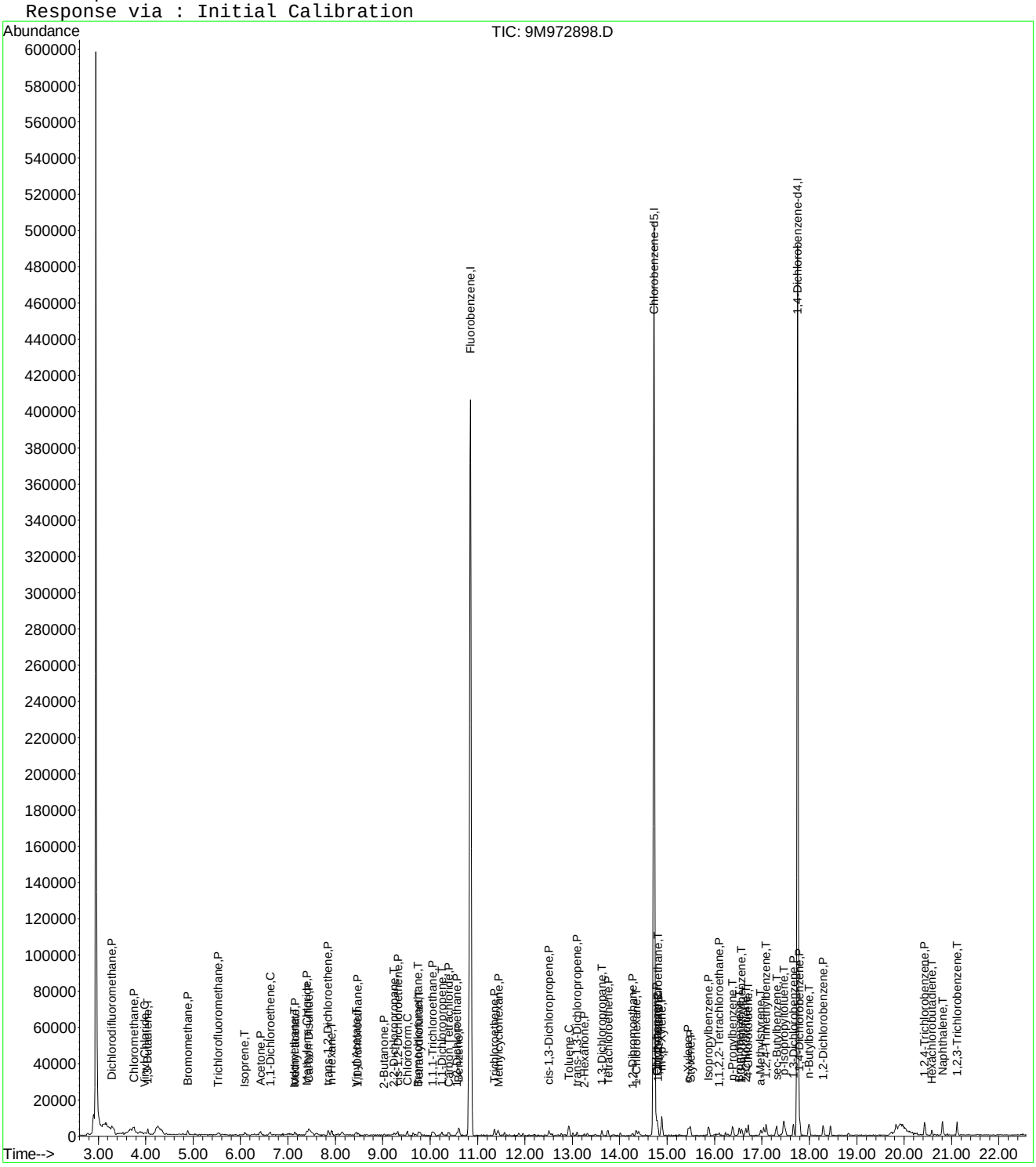

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	0.4051	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.9099	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.4579	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	0.4960	0.0	0	0.00
6	P	Bromomethane	-1.0000	0.9906	0.0	100	0.00
7	P	Chloroethane	-1.0000	0.2845	0.0	100	0.01
8	P	Trichlorofluoromethane	-1.0000	0.5404	0.0	100	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.04#
10	T	Isoprene	-1.0000	0.4298	0.0	0	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.30#
12	P	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.0779	0.0	100	0.00
13	P	Acetone	-1.0000	5.5216	0.0	0	0.02
14	C	1,1-Dichloroethene	-1.0000	0.4679	0.0	100	0.01
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.76#
16	T	Dimethyl Sulfide	-1.0000	0.1242	0.0	0	0.01
17	T	Iodomethane	-1.0000	3.4505	0.0	0	0.00
18	P	Methyl acetate	-1.0000	0.5343	0.0	0	0.02
19	P	Methylene Chloride	-1.0000	0.5145	0.0	100	0.00
20	P	Carbon Disulfide	-1.0000	0.9557	0.0	0	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.59#
22	P	Methyl Tert Butyl Ether	-1.0000	0.3878	0.0	100	0.00
23	P	trans-1,2-Dichloroethene	-1.0000	0.5365	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.5303	0.0	0	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.26#
26	T	Vinyl Acetate	-1.0000	0.4462	0.0	100	0.01
27	P	1,1-Dichloroethane	-1.0000	0.4660	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.83#
29	P	2-Butanone	-1.0000	0.4909	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.14#
31	T	2,2-Dichloropropane	-1.0000	0.4891	0.0	100	0.00
32	P	cis-1,2-Dichloroethene	-1.0000	0.4388	0.0	100	0.01
33	C	Chloroform	-1.0000	0.4249	0.0	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.65#
35	T	Bromochloromethane	-1.0000	0.4748	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	1.5690	0.0	100	-0.02
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	-1.0000	0.4151	0.0	100	0.00
39	P	Cyclohexane	-1.0000	0.3314	0.0	0	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4526	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.34#
42	P	Carbon Tetrachloride	-1.0000	0.4457	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	-1.0000	0.4537	0.0	100	0.00
46	P	Benzene	0.5000	0.5959	-19.2	100	0.00
47	P	Trichloroethene	-1.0000	0.6064	0.0	100	0.00
48	P	Methylcyclohexane	-1.0000	0.5161	0.0	0	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2930	0.0	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.88#
51	P	Bromodichloromethane	-1.0000	0.3238	0.0	100	0.00
52	T	Dibromomethane	-1.0000	0.1630	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.0000	0.0	0	-12.16#
54	P	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.19#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	-1.0000	0.4518	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2529	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.1032	0.0	100	0.00
59	C	Toluene	0.5000	0.5495	-9.9	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2340	0.0	0	0.00
61	P	trans-1,3-Dichloropropene	-1.0000	0.5278	0.0	100	0.00
62	P	1,1,2-Trichloroethane	-1.0000	0.3964	0.0	100	0.00
63	P	2-Hexanone	-1.0000	0.4140	0.0	100	0.00
64	T	1,3-Dichloropropane	-1.0000	0.4568	0.0	100	0.00
65	P	Tetrachloroethene	-1.0000	0.5330	0.0	100	0.00
66	P	Dibromochloromethane	-1.0000	0.3541	0.0	100	0.00
67	P	1,2-Dibromoethane	-1.0000	0.4198	0.0	100	0.00
68	T	1-Chlorohexane	-1.0000	0.4821	0.0	0	0.00
69	P	Chlorobenzene	-1.0000	0.6449	0.0	100	0.00
70	T	1,1,1,2-Tetrachloroethane	-1.0000	0.4044	0.0	100	0.00
71	C	Ethylbenzene	0.5000	0.4985	0.3	100	0.00
72	P	m-,p-Xylene	1.0000	1.0521	-5.2	100	0.00
73	P	o-Xylene	0.5000	0.4997	0.1	100	0.00
74	P	Styrene	-1.0000	0.4802	0.0	100	0.00
75	P	Bromoform	-1.0000	0.3955	0.0	100	0.00
76	P	Isopropylbenzene	-1.0000	0.5456	0.0	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	-1.0000	0.5171	0.0	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.2339	0.0	100	0.00
80	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.29#
81	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.33#
82	T	n-Propylbenzene	-1.0000	0.5780	0.0	100	0.00
83	T	Bromobenzene	-1.0000	0.5732	0.0	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	0.4566	0.0	100	0.00
85	T	2-Chlorotoluene	-1.0000	0.5877	0.0	100	0.00
86	T	4-Chlorotoluene	-1.0000	0.6851	0.0	100	0.00
87	T	a-Methylstyrene	-1.0000	0.4601	0.0	0	0.00
88	T	tert-Butylbenzene	-1.0000	0.2860	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	-1.0000	0.6023	0.0	100	0.00
90	T	sec-Butylbenzene	-1.0000	0.5460	0.0	100	0.00
91	T	p-Isopropyltoluene	-1.0000	0.5241	0.0	100	0.00
92	P	1,3-Dichlorobenzene	-1.0000	0.7132	0.0	100	0.00
93	P	1,4-Dichlorobenzene	-1.0000	0.7386	0.0	100	0.00
94	T	n-Butylbenzene	-1.0000	0.6697	0.0	100	0.00
95	P	1,2-Dichlorobenzene	-1.0000	0.6724	0.0	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.30#
97	P	1,2,4-Trichlorobenzene	-1.0000	0.8539	0.0	100	0.00
98	T	Hexachlorobutadiene	-1.0000	0.6898	0.0	100	0.00
99	T	Naphthalene	-1.0000	0.9979	0.0	100	0.00
100	T	1,2,3-Trichlorobenzene	-1.0000	0.9946	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972898.D 8260SL.M Fri Feb 26 11:11:52 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	536651	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	387839	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	177519	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.82	98	959	0.0978 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.20%#	
79) p-Bromofluorobenzene	16.22	95	467	0.1351 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	3486	0.9518 ug/kg#	85
3) Chloromethane	3.74	50	4175	1.1891 ug/kg	88
4) Vinyl Chloride	3.98	62	2686	0.7642 ug/kg	80
5) 1,3-Butadiene	4.03	54	3056	0.9139 ug/kg	91
6) Bromomethane	4.89	94	2537	1.1114 ug/kg	94
7) Chloroethane	5.05	64	1264	0.8072 ug/kg#	45
8) Trichlorofluoromethane	5.53	101	5567	1.0561 ug/kg#	93
9) Diethyl ether	6.05	59	11529	4.6784 ug/kg	97
10) Isoprene	6.08	67	2965	0.9421 ug/kg	97
11) Acrolein	6.29	56	1087	2.2122 ug/kg#	35
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	1939	0.7132 ug/kg	88
13) Acetone	6.41	43	5231	5.8863 ug/kg	95
14) 1,1-Dichloroethene	6.62	61	4981	0.9932 ug/kg	92
15) Tert-Butyl Alcohol	6.77	59	5682	10.3548 ug/kg#	63
16) Dimethyl Sulfide	6.88	62	1614	0.7615 ug/kg	91
17) Iodomethane	7.15	142	941	3.3944 ug/kg#	66
18) Methyl acetate	7.16	43	2553	0.9364 ug/kg#	65
19) Methylene Chloride	7.40	84	2963	1.0849 ug/kg	92
20) Carbon Disulfide	7.45	76	9749	1.2619 ug/kg	95
21) Acrylonitrile	7.58	53	3140	2.3282 ug/kg	85
22) Methyl Tert Butyl Ether	7.61	73	7179	0.9229 ug/kg	83
23) trans-1,2-Dichloroethene	7.85	61	4296	0.9612 ug/kg	95
24) n-Hexane	7.93	57	4481	0.9720 ug/kg	95
25) Diisopropyl ether	8.26	45	50344	4.7022 ug/kg	98
26) Vinyl Acetate	8.43	43	5247	0.8597 ug/kg#	90
27) 1,1-Dichloroethane	8.48	63	5885	1.0483 ug/kg#	85
28) Ethyl-Tert-Butyl ether	8.83	59	46767	4.6979 ug/kg	99
29) 2-Butanone	9.03	43	1776	1.0263 ug/kg#	58
30) Propionitrile	9.14	54	2256	4.2599 ug/kg#	60
31) 2,2-Dichloropropane	9.24	77	4402	1.0506 ug/kg#	71
32) cis-1,2-Dichloroethene	9.31	96	2650	0.9040 ug/kg	94
33) Chloroform	9.51	83	5072	0.9836 ug/kg	96
35) Bromochloromethane	9.75	130	1408	0.7394 ug/kg	86
36) Tetrahydrofuran	9.77	42	6699	6.0054 ug/kg	95
38) 1,1,1-Trichloroethane	10.05	97	4567	0.9793 ug/kg	91
39) Cyclohexane	10.08	56	4992	0.9818 ug/kg#	85
40) 1,1-Dichloropropene	10.24	75	3785	1.0315 ug/kg	90
41) Tert-Amyl-Methyl ether	10.34	73	33850	4.6779 ug/kg	95
42) Carbon Tetrachloride	10.40	117	4297	0.9939 ug/kg#	90
45) 1,2-Dichloroethane	10.55	62	3923	0.8649 ug/kg	93

(#) = qualifier out of range (m) = manual integration
9M972899.D 8260SL.M Fri Feb 26 11:12:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
46)	Benzene	10.61	78	9968	0.9703 ug/kg	96
47)	Trichloroethene	11.36	130	3259	1.0012 ug/kg	99
48)	Methylcyclohexane	11.43	83	3354	0.8215 ug/kg	76
49)	1,2-Dichloropropane	11.57	63	2469	0.8752 ug/kg	94
51)	Bromodichloromethane	11.87	83	3657	0.9198 ug/kg#	94
52)	Dibromomethane	11.96	174	1621	0.8672 ug/kg	93
53)	2-Chloroethyl Vinyl Ether	12.16	63	210	3.0851 ug/kg#	47
54)	4-Methyl-2-Pentanone	12.20	58	738	0.5960 ug/kg#	40
55)	cis-1,3-Dichloropropene	12.51	75	3714	0.8966 ug/kg	86
56)	Dimethyl Disulfide	12.77	94	3075	0.7387 ug/kg	83
59)	Toluene	12.93	91	10894	0.9831 ug/kg	97
60)	Ethyl Methacrylate	13.01	69	1966	0.6401 ug/kg#	53
61)	trans-1,3-Dichloropropene	13.11	75	3837	0.9614 ug/kg#	79
62)	1,1,2-Trichloroethane	13.32	97	2148	0.9227 ug/kg	94
63)	2-Hexanone	13.26	43	1796	0.7727 ug/kg#	80
64)	1,3-Dichloropropane	13.63	76	3616	0.9322 ug/kg	99
65)	Tetrachloroethene	13.75	164	2587	1.0890 ug/kg	79
66)	Dibromochloromethane	14.02	129	3318	1.0199 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	2336	0.9047 ug/kg	97
68)	1-Chlorohexane	14.34	91	3075	0.9410 ug/kg	85
69)	Chlorobenzene	14.78	112	7982	1.0249 ug/kg	88
70)	1,1,1,2-Tetrachloroethane	14.81	131	2589	0.8852 ug/kg	86
71)	Ethylbenzene	14.80	106	4007	0.9987 ug/kg	89
72)	m-,p-Xylene	14.88	106	9607	1.9388 ug/kg	98
73)	o-Xylene	15.45	106	4376	0.9202 ug/kg	99
74)	Styrene	15.49	104	7432	0.9178 ug/kg	92
75)	Bromoform	16.00	173	1759	0.8235 ug/kg#	79
76)	Isopropylbenzene	15.87	105	11937	0.9351 ug/kg	98
78)	1,1,2,2-Tetrachloroethane	16.09	83	2186	0.8118 ug/kg#	83
80)	1,2,3-Trichloropropane	16.28	110	875	0.8568 ug/kg#	81
81)	trans-1,4-Dichloro-2-Buten	16.34	53	831	0.8073 ug/kg#	74
82)	n-Propylbenzene	16.38	91	14156	1.0145 ug/kg	99
83)	Bromobenzene	16.53	156	2996	0.9095 ug/kg#	39
84)	1,3,5-Trimethylbenzene	16.57	105	11008	1.0509 ug/kg	88
85)	2-Chlorotoluene	16.65	91	10606	1.1332 ug/kg	84
86)	4-Chlorotoluene	16.71	91	9101	1.0518 ug/kg	95
87)	a-Methylstyrene	16.98	118	4078	0.8544 ug/kg	85
88)	tert-Butylbenzene	17.03	134	2095	0.9540 ug/kg	74
89)	1,2,4-Trimethylbenzene	17.09	105	12124	1.1053 ug/kg	83
90)	sec-Butylbenzene	17.31	105	13922	1.0320 ug/kg	100
91)	p-Isopropyltoluene	17.47	119	10153	0.8918 ug/kg	98
92)	1,3-Dichlorobenzene	17.67	146	7444	1.1370 ug/kg	90
93)	1,4-Dichlorobenzene	17.79	146	7580	1.1581 ug/kg	92
94)	n-Butylbenzene	17.99	91	11112	1.0498 ug/kg	91
95)	1,2-Dichlorobenzene	18.29	146	6415	1.0560 ug/kg	97
97)	1,2,4-Trichlorobenzene	20.43	180	4869	1.1291 ug/kg	98
98)	Hexachlorobutadiene	20.59	225	2032	0.8939 ug/kg	87
99)	Naphthalene	20.81	128	11710	1.0826 ug/kg	92
100)	1,2,3-Trichlorobenzene	21.12	180	4698	1.1232 ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972899.D 8260SL.M Fri Feb 26 11:12:33 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration

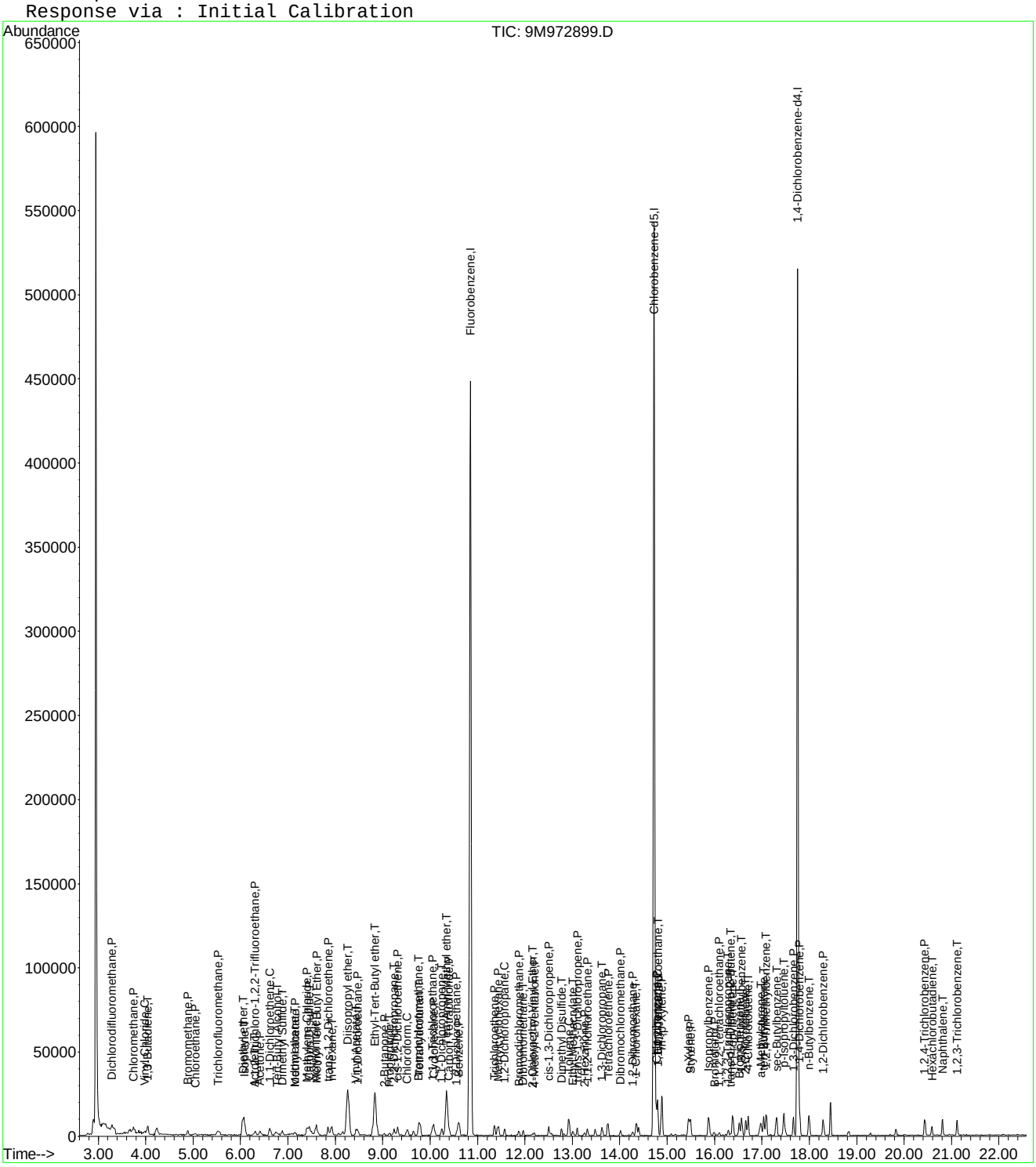

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	0.9518	0.0	100	0.00
3	P	Chloromethane	-1.0000	1.1891	0.0	100	0.00
4	C	Vinyl Chloride	1.0000	0.7642	23.6#	100	0.00
5	T	1,3-Butadiene	-1.0000	0.9139	0.0	0	0.00
6	P	Bromomethane	1.0000	1.1114	-11.1	100	0.00
7	P	Chloroethane	-1.0000	0.8072	0.0	100	0.00
8	P	Trichlorofluoromethane	1.0000	1.0561	-5.6	100	0.00
9	T	Diethyl ether	5.0000	4.6784	6.4	100	0.00
10	T	Isoprene	-1.0000	0.9421	0.0	0	0.00
11	T	Acrolein	2.5000	2.2122	11.5	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.7132	0.0	100	0.00
13	P	Acetone	-1.0000	5.8863	0.0	0	0.00
14	C	1,1-Dichloroethene	1.0000	0.9932	0.7	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	10.3548	0.0	100	0.00
16	T	Dimethyl Sulfide	1.0000	0.7615	23.9	100	0.00
17	T	Iodomethane	-1.0000	3.3944	0.0	0	0.01
18	P	Methyl acetate	-1.0000	0.9364	0.0	0	0.02
19	P	Methylene Chloride	-1.0000	1.0849	0.0	100	0.00
20	P	Carbon Disulfide	-1.0000	1.2619	0.0	0	0.00
21	T	Acrylonitrile	2.5000	2.3282	6.9	100	0.00
22	P	Methyl Tert Butyl Ether	1.0000	0.9229	7.7	100	0.00
23	P	trans-1,2-Dichloroethene	1.0000	0.9612	3.9	100	0.00
24	T	n-Hexane	-1.0000	0.9720	0.0	0	0.01
25	T	Diisopropyl ether	5.0000	4.7022	6.0	100	0.00
26	T	Vinyl Acetate	-1.0000	0.8597	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0483	-4.8	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.6979	6.0	100	0.00
29	P	2-Butanone	-1.0000	1.0263	0.0	100	0.00
30	T	Propionitrile	5.0000	4.2599	14.8	100	0.00
31	T	2,2-Dichloropropane	-1.0000	1.0506	0.0	100	0.00
32	P	cis-1,2-Dichloroethene	1.0000	0.9040	9.6	100	0.00
33	C	Chloroform	1.0000	0.9836	1.6	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.65#
35	T	Bromochloromethane	1.0000	0.7395	26.1#	100	0.00
36	T	Tetrahydrofuran	-1.0000	6.0054	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	1.0000	0.9793	2.1	100	0.00
39	P	Cyclohexane	1.0000	0.9818	1.8	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0315	-3.1	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	4.6780	6.4	100	0.00
42	P	Carbon Tetrachloride	-1.0000	0.9939	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	1.0000	0.8649	13.5	100	0.00
46	P	Benzene	1.0000	0.9703	3.0	100	0.00
47	P	Trichloroethene	1.0000	1.0012	-0.1	100	0.00
48	P	Methylcyclohexane	1.0000	0.8215	17.8	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.8752	12.5	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.88#
51	P	Bromodichloromethane	-1.0000	0.9198	0.0	100	0.00
52	T	Dibromomethane	1.0000	0.8672	13.3	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	3.0851	0.0	0	0.00
54	P	4-Methyl-2-Pentanone	-1.0000	0.5960	0.0	100	0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	-1.0000	0.8966	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.7387	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0978	0.0	100	0.00
59	C	Toluene	1.0000	0.9831	1.7	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.6401	0.0	0	0.00
61	P	trans-1,3-Dichloropropene	-1.0000	0.9614	0.0	100	0.00
62	P	1,1,2-Trichloroethane	1.0000	0.9227	7.7	100	0.00
63	P	2-Hexanone	-1.0000	0.7727	0.0	100	0.00
64	T	1,3-Dichloropropane	1.0000	0.9322	6.8	100	0.00
65	P	Tetrachloroethene	1.0000	1.0890	-8.9	100	0.00
66	P	Dibromochloromethane	-1.0000	1.0199	0.0	100	0.00
67	P	1,2-Dibromoethane	-1.0000	0.9047	0.0	100	0.00
68	T	1-Chlorohexane	1.0000	0.9410	5.9	100	0.00
69	P	Chlorobenzene	1.0000	1.0249	-2.5	100	0.00
70	T	1,1,1,2-Tetrachloroethane	-1.0000	0.8852	0.0	100	0.00
71	C	Ethylbenzene	1.0000	0.9987	0.1	100	0.00
72	P	m-,p-Xylene	2.0000	1.9388	3.1	100	0.00
73	P	o-Xylene	1.0000	0.9202	8.0	100	0.00
74	P	Styrene	1.0000	0.9178	8.2	100	0.00
75	P	Bromoform	-1.0000	0.8235	0.0	100	0.00
76	P	Isopropylbenzene	1.0000	0.9351	6.5	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	1.0000	0.8118	18.8	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.1351	0.0	100	0.00
80	T	1,2,3-Trichloropropane	1.0000	0.8568	14.3	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.8073	0.0	0	0.00
82	T	n-Propylbenzene	1.0000	1.0145	-1.4	100	0.00
83	T	Bromobenzene	1.0000	0.9095	9.1	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	1.0509	0.0	100	0.00
85	T	2-Chlorotoluene	-1.0000	1.1332	0.0	100	0.00
86	T	4-Chlorotoluene	1.0000	1.0518	-5.2	100	0.00
87	T	a-Methylstyrene	-1.0000	0.8544	0.0	0	0.00
88	T	tert-Butylbenzene	-1.0000	0.9540	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	1.0000	1.1053	-10.5	100	0.00
90	T	sec-Butylbenzene	1.0000	1.0320	-3.2	100	0.00
91	T	p-Isopropyltoluene	-1.0000	0.8918	0.0	100	0.00
92	P	1,3-Dichlorobenzene	1.0000	1.1370	-13.7	100	0.00
93	P	1,4-Dichlorobenzene	1.0000	1.1581	-15.8	100	0.00
94	T	n-Butylbenzene	1.0000	1.0498	-5.0	100	0.00
95	P	1,2-Dichlorobenzene	1.0000	1.0560	-5.6	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	0.3514	0.0	100	0.00
97	P	1,2,4-Trichlorobenzene	1.0000	1.1291	-12.9	100	0.00
98	T	Hexachlorobutadiene	1.0000	0.8939	10.6	100	0.00
99	T	Naphthalene	-1.0000	1.0826	0.0	100	0.00
100	T	1,2,3-Trichlorobenzene	1.0000	1.1232	-12.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1
9M972899.D 8260SL.M Fri Feb 26 11:12:31 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	472115	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	342668	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	156993	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.83	98	772	0.0891 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.18%#	
79) p-Bromofluorobenzene	16.23	95	570	0.1865 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.38%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.29	85	6383	1.9809 ug/kg#	78
3) Chloromethane	3.74	50	7027	2.2750 ug/kg	100
4) Vinyl Chloride	4.00	62	6001	1.9408 ug/kg	97
5) 1,3-Butadiene	4.04	54	6545	2.2249 ug/kg	95
6) Bromomethane	4.90	94	5050	2.5146 ug/kg	81
7) Chloroethane	5.04	64	2391	1.7357 ug/kg#	70
8) Trichlorofluoromethane	5.54	101	9777	2.1082 ug/kg#	94
9) Diethyl ether	6.06	59	58156	26.8255 ug/kg	97
10) Isoprene	6.09	67	5698	2.0580 ug/kg	89
11) Acrolein	6.30	56	5427	12.5543 ug/kg	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	4756	1.9886 ug/kg	93
13) Acetone	6.40	43	6167	6.9886 ug/kg	93
14) 1,1-Dichloroethene	6.62	61	9652	2.1877 ug/kg	91
15) Tert-Butyl Alcohol	6.75	59	26757	55.4271 ug/kg#	91
16) Dimethyl Sulfide	6.89	62	3840	2.0594 ug/kg	97
17) Iodomethane	7.14	142	1541	3.9079 ug/kg#	56
18) Methyl acetate	7.15	43	5334	2.2240 ug/kg#	69
19) Methylene Chloride	7.40	84	5116	2.1292 ug/kg	98
20) Carbon Disulfide	7.44	76	15010	2.2085 ug/kg	94
21) Acrylonitrile	7.59	53	14961	12.6096 ug/kg	100
22) Methyl Tert Butyl Ether	7.61	73	13630	1.9917 ug/kg	93
23) trans-1,2-Dichloroethene	7.85	61	7964	2.0255 ug/kg	100
24) n-Hexane	7.92	57	8619	2.1253 ug/kg	100
25) Diisopropyl ether	8.26	45	252190	26.7748 ug/kg	99
26) Vinyl Acetate	8.43	43	11207	2.0872 ug/kg	95
27) 1,1-Dichloroethane	8.47	63	10529	2.1320 ug/kg#	93
28) Ethyl-Tert-Butyl ether	8.83	59	234163	26.7377 ug/kg	99
29) 2-Butanone	9.03	43	3346	2.1978 ug/kg#	76
30) Propionitrile	9.14	54	12899	27.6861 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	8085	2.1934 ug/kg	88
32) cis-1,2-Dichloroethene	9.32	96	4861	1.8850 ug/kg	98
33) Chloroform	9.53	83	10005	2.2054 ug/kg	95
34) 1-Bromopropane	9.64	122	209	1.5465 ug/kg	96
35) Bromochloromethane	9.75	130	3273	1.9539 ug/kg	81
36) Tetrahydrofuran	9.78	42	26192	26.6900 ug/kg	94
38) 1,1,1-Trichloroethane	10.04	97	8229	2.0058 ug/kg	97
39) Cyclohexane	10.09	56	9354	2.0912 ug/kg	96
40) 1,1-Dichloropropene	10.23	75	6787	2.1024 ug/kg	88
41) Tert-Amyl-Methyl ether	10.34	73	167275	26.2768 ug/kg	98
42) Carbon Tetrachloride	10.39	117	7920	2.0823 ug/kg#	95

(#) = qualifier out of range (m) = manual integration
9M972900.D 8260SL.M Fri Feb 26 11:13:39 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	8488	2.1271 ug/kg	89
46)	Benzene	10.60	78	19454	2.1525 ug/kg	96
47)	Trichloroethene	11.35	130	6073	2.1207 ug/kg	96
48)	Methylcyclohexane	11.44	83	7523	2.0945 ug/kg	95
49)	1,2-Dichloropropane	11.58	63	5118	2.0621 ug/kg	93
50)	1,4-Dioxane	11.88	88	1938	52.0499 ug/kg	84
51)	Bromodichloromethane	11.87	83	7148	2.0436 ug/kg#	95
52)	Dibromomethane	11.97	174	3572	2.1721 ug/kg	91
53)	2-Chloroethyl Vinyl Ether	12.17	63	474	3.4830 ug/kg#	47
54)	4-Methyl-2-Pentanone	12.19	58	2111	1.9378 ug/kg#	64
55)	cis-1,3-Dichloropropene	12.50	75	7048	1.9341 ug/kg	92
56)	Dimethyl Disulfide	12.77	94	5832	1.5925 ug/kg	95
59)	Toluene	12.93	91	20786	2.1230 ug/kg	97
60)	Ethyl Methacrylate	13.01	69	4184	1.5417 ug/kg	98
61)	trans-1,3-Dichloropropene	13.11	75	6895	1.9553 ug/kg	92
62)	1,1,2-Trichloroethane	13.33	97	4055	1.9716 ug/kg	86
63)	2-Hexanone	13.25	43	3773	1.8373 ug/kg#	82
64)	1,3-Dichloropropane	13.62	76	7643	2.2302 ug/kg	97
65)	Tetrachloroethene	13.75	164	4327	2.0615 ug/kg	94
66)	Dibromochloromethane	14.01	129	6170	2.1465 ug/kg	87
67)	1,2-Dibromoethane	14.28	107	4656	2.0410 ug/kg	88
68)	1-Chlorohexane	14.35	91	5610	1.9430 ug/kg	97
69)	Chlorobenzene	14.77	112	14885	2.1632 ug/kg	95
70)	1,1,1,2-Tetrachloroethane	14.80	131	5145	1.9910 ug/kg	86
71)	Ethylbenzene	14.79	106	7287	2.0555 ug/kg	99
72)	m-,p-Xylene	14.89	106	19133	4.3702 ug/kg	93
73)	o-Xylene	15.45	106	8413	2.0024 ug/kg	94
74)	Styrene	15.49	104	14533	2.0313 ug/kg	97
75)	Bromoform	15.99	173	3135	1.6611 ug/kg	97
76)	Isopropylbenzene	15.87	105	23266	2.0628 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	5252	2.2053 ug/kg#	89
80)	1,2,3-Trichloropropane	16.28	110	1851	2.0495 ug/kg#	89
81)	trans-1,4-Dichloro-2-Buten	16.33	53	1413	1.5521 ug/kg	47
82)	n-Propylbenzene	16.38	91	25735	2.0854 ug/kg	99
83)	Bromobenzene	16.52	156	7006	2.4049 ug/kg	83
84)	1,3,5-Trimethylbenzene	16.57	105	18571	2.0048 ug/kg	99
85)	2-Chlorotoluene	16.66	91	18793	2.2705 ug/kg	97
86)	4-Chlorotoluene	16.70	91	16240	2.1222 ug/kg	96
87)	a-Methylstyrene	16.98	118	7524	1.7826 ug/kg	97
88)	tert-Butylbenzene	17.04	134	3654	1.8815 ug/kg	64
89)	1,2,4-Trimethylbenzene	17.09	105	20119	2.0739 ug/kg	99
90)	sec-Butylbenzene	17.31	105	24858	2.0835 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	20956	2.0813 ug/kg	96
92)	1,3-Dichlorobenzene	17.66	146	13695	2.3653 ug/kg	94
93)	1,4-Dichlorobenzene	17.79	146	12975	2.2416 ug/kg	82
94)	n-Butylbenzene	17.99	91	19734	2.1080 ug/kg	95
95)	1,2-Dichlorobenzene	18.30	146	11568	2.1533 ug/kg	91
96)	1,2-Dibromo-3-Chloropropan	19.30	157	941	1.3644 ug/kg	84
97)	1,2,4-Trichlorobenzene	20.44	180	8356	2.1910 ug/kg	98
98)	Hexachlorobutadiene	20.59	225	4571	2.2738 ug/kg	87
99)	Naphthalene	20.81	128	20072	2.0983 ug/kg	96
100)	1,2,3-Trichlorobenzene	21.11	180	7948	2.1487 ug/kg	96

(#) = qualifier out of range (m) = manual integration
9M972900.D 8260SL.M Fri Feb 26 11:13:39 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration

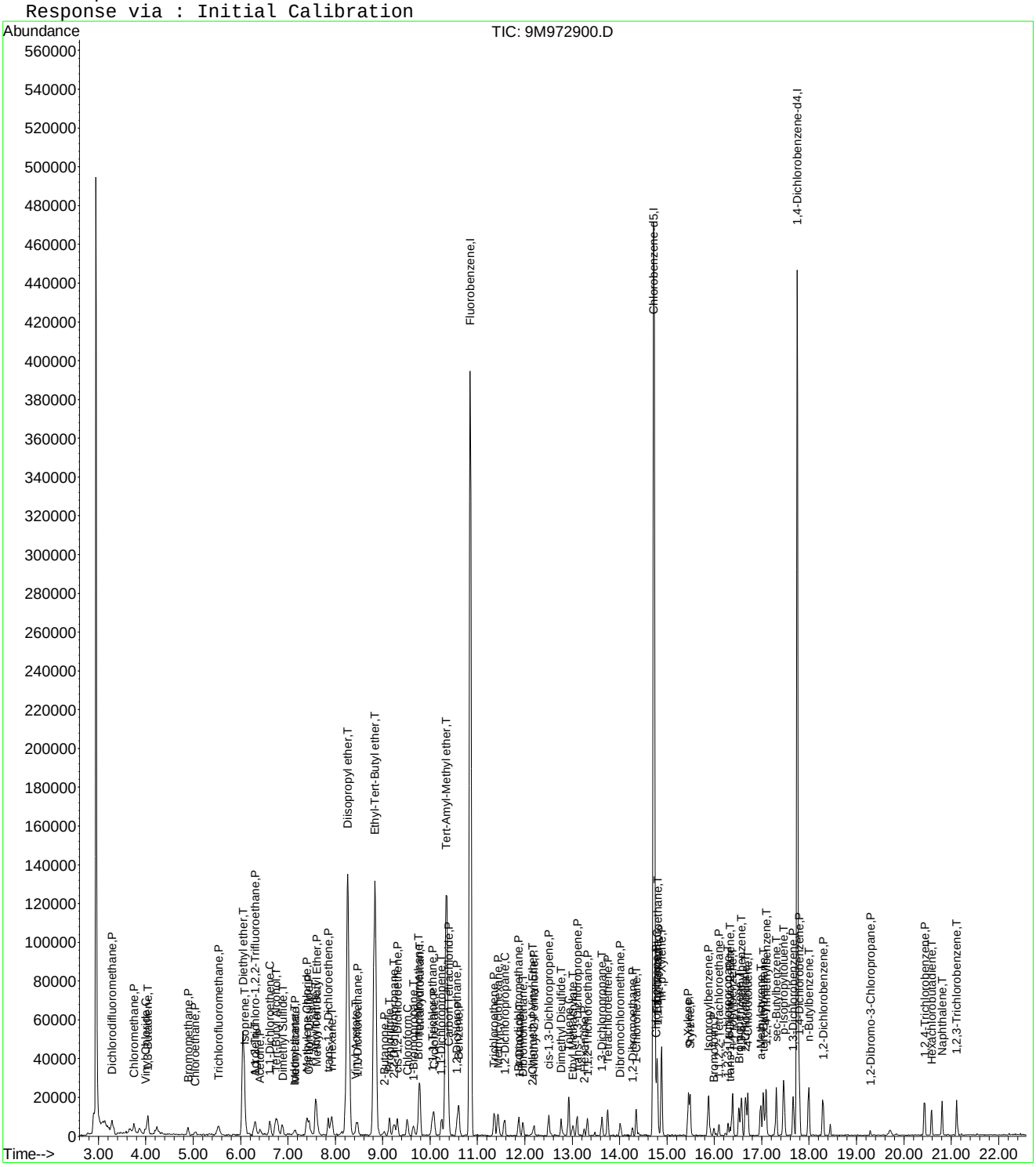

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	1.9809	0.0	100	0.01
3	P	Chloromethane	2.0000	2.2750	-13.7	100	0.00
4	C	Vinyl Chloride	2.0000	1.9408	3.0	100	0.01
5	T	1,3-Butadiene	2.0000	2.2249	-11.2	100	0.00
6	P	Bromomethane	2.0000	2.5146	-25.7#	100	0.01
7	P	Chloroethane	2.0000	1.7357	13.2	100	0.00
8	P	Trichlorofluoromethane	2.0000	2.1082	-5.4	100	0.01
9	T	Diethyl ether	25.0000	26.8255	-7.3	100	0.01
10	T	Isoprene	2.0000	2.0580	-2.9	100	0.00
11	T	Acrolein	12.5000	12.5543	-0.4	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.9886	0.6	100	0.01
13	P	Acetone	-1.0000	6.9886	0.0	0	0.00
14	C	1,1-Dichloroethene	2.0000	2.1877	-9.4	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	55.4271	-10.9	100	0.00
16	T	Dimethyl Sulfide	2.0000	2.0594	-3.0	100	0.01
17	T	Iodomethane	-1.0000	3.9079	0.0	0	0.01
18	P	Methyl acetate	2.0000	2.2240	-11.2	100	0.01
19	P	Methylene Chloride	2.0000	2.1292	-6.5	100	0.00
20	P	Carbon Disulfide	2.0000	2.2085	-10.4	100	0.00
21	T	Acrylonitrile	12.5000	12.6096	-0.9	100	0.00
22	P	Methyl Tert Butyl Ether	2.0000	1.9917	0.4	100	0.00
23	P	trans-1,2-Dichloroethene	2.0000	2.0255	-1.3	100	0.00
24	T	n-Hexane	2.0000	2.1253	-6.3	100	0.01
25	T	Diisopropyl ether	25.0000	26.7748	-7.1	100	0.00
26	T	Vinyl Acetate	2.0000	2.0872	-4.4	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.1320	-6.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	26.7377	-7.0	100	0.00
29	P	2-Butanone	2.0000	2.1978	-9.9	100	0.00
30	T	Propionitrile	25.0000	27.6861	-10.7	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1934	-9.7	100	0.00
32	P	cis-1,2-Dichloroethene	2.0000	1.8850	5.8	100	0.01
33	C	Chloroform	2.0000	2.2054	-10.3	100	0.01
34	T	1-Bromopropane	2.0000	1.5465	22.7	100	0.00
35	T	Bromochloromethane	2.0000	1.9539	2.3	100	0.00
36	T	Tetrahydrofuran	25.0000	26.6900	-6.8	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	2.0000	2.0058	-0.3	100	0.00
39	P	Cyclohexane	2.0000	2.0913	-4.6	100	0.01
40	T	1,1-Dichloropropene	2.0000	2.1023	-5.1	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	26.2768	-5.1	100	0.00
42	P	Carbon Tetrachloride	2.0000	2.0823	-4.1	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	2.0000	2.1271	-6.4	100	0.00
46	P	Benzene	2.0000	2.1525	-7.6	100	0.00
47	P	Trichloroethene	2.0000	2.1207	-6.0	100	0.00
48	P	Methylcyclohexane	2.0000	2.0945	-4.7	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0621	-3.1	100	0.01
50	T	1,4-Dioxane	50.0000	52.0499	-4.1	100	0.00
51	P	Bromodichloromethane	2.0000	2.0436	-2.2	100	0.00
52	T	Dibromomethane	2.0000	2.1721	-8.6	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	3.4830	0.0	0	0.00
54	P	4-Methyl-2-Pentanone	-1.0000	1.9378	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	2.0000	1.9341	3.3	100	0.00
56	T	Dimethyl Disulfide	2.0000	1.5925	20.4	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0891	0.0	100	0.00
59	C	Toluene	2.0000	2.1230	-6.2	100	0.00
60	T	Ethyl Methacrylate	-1.0000	1.5417	0.0	0	0.00
61	P	trans-1,3-Dichloropropene	2.0000	1.9553	2.2	100	0.00
62	P	1,1,2-Trichloroethane	2.0000	1.9716	1.4	100	0.00
63	P	2-Hexanone	-1.0000	1.8373	0.0	100	0.00
64	T	1,3-Dichloropropane	2.0000	2.2302	-11.5	100	0.00
65	P	Tetrachloroethene	2.0000	2.0616	-3.1	100	0.00
66	P	Dibromochloromethane	2.0000	2.1465	-7.3	100	0.00
67	P	1,2-Dibromoethane	-1.0000	2.0410	0.0	100	0.00
68	T	1-Chlorohexane	2.0000	1.9430	2.8	100	0.00
69	P	Chlorobenzene	2.0000	2.1632	-8.2	100	0.00
70	T	1,1,1,2-Tetrachloroethane	2.0000	1.9910	0.4	100	0.00
71	C	Ethylbenzene	2.0000	2.0555	-2.8	100	0.00
72	P	m-,p-Xylene	4.0000	4.3702	-9.3	100	0.00
73	P	o-Xylene	2.0000	2.0024	-0.1	100	0.00
74	P	Styrene	2.0000	2.0313	-1.6	100	0.00
75	P	Bromoform	2.0000	1.6611	16.9	100	0.00
76	P	Isopropylbenzene	2.0000	2.0628	-3.1	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	2.0000	2.2053	-10.3	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.1865	0.0	100	0.00
80	T	1,2,3-Trichloropropane	2.0000	2.0495	-2.5	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	2.0000	1.5521	22.4	100	0.00
82	T	n-Propylbenzene	2.0000	2.0854	-4.3	100	0.00
83	T	Bromobenzene	2.0000	2.4049	-20.2	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	2.0048	0.0	100	0.00
85	T	2-Chlorotoluene	2.0000	2.2705	-13.5	100	0.00
86	T	4-Chlorotoluene	2.0000	2.1222	-6.1	100	0.00
87	T	a-Methylstyrene	-1.0000	1.7826	0.0	0	0.00
88	T	tert-Butylbenzene	-1.0000	1.8815	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	2.0000	2.0739	-3.7	100	0.00
90	T	sec-Butylbenzene	2.0000	2.0835	-4.2	100	0.00
91	T	p-Isopropyltoluene	-1.0000	2.0813	0.0	100	0.00
92	P	1,3-Dichlorobenzene	2.0000	2.3653	-18.3	100	0.00
93	P	1,4-Dichlorobenzene	2.0000	2.2416	-12.1	100	0.00
94	T	n-Butylbenzene	2.0000	2.1080	-5.4	100	0.00
95	P	1,2-Dichlorobenzene	2.0000	2.1533	-7.7	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	1.3644	0.0	100	0.00
97	P	1,2,4-Trichlorobenzene	2.0000	2.1910	-9.6	100	0.00
98	T	Hexachlorobutadiene	2.0000	2.2738	-13.7	100	0.00
99	T	Naphthalene	2.0000	2.0983	-4.9	100	0.00
100	T	1,2,3-Trichlorobenzene	2.0000	2.1487	-7.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972900.D 8260SL.M Fri Feb 26 11:13:36 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	544259	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	391881	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.76	152	178969	50.00 ug/kg	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.81	111	29036	9.8422 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 19.68%#		
43) 1,2-Dichloroethane-d4	10.44	65	38093	10.2911 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 20.58%#		
58) Toluene-d8	12.83	98	95044	9.5885 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 19.18%#		
79) p-Bromofluorobenzene	16.23	95	32806	9.4138 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 18.82%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	14756	3.9724 ug/kg	92
3) Chloromethane	3.74	50	15227	4.2763 ug/kg	91
4) Vinyl Chloride	3.99	62	17097	4.7964 ug/kg	89
5) 1,3-Butadiene	4.04	54	14484	4.2710 ug/kg	97
6) Bromomethane	4.89	94	9847	4.2533 ug/kg	95
7) Chloroethane	5.04	64	6311	3.9741 ug/kg	93
8) Trichlorofluoromethane	5.53	101	22668	4.2400 ug/kg	100
9) Diethyl ether	6.05	59	118004	47.2164 ug/kg	99
10) Isoprene	6.10	67	13644	4.2747 ug/kg	95
11) Acrolein	6.30	56	12131	24.3428 ug/kg	84
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	12752	4.6251 ug/kg	95
13) Acetone	6.41	43	9765	4.9429 ug/kg	94
14) 1,1-Dichloroethene	6.62	61	21760	4.2784 ug/kg	99
15) Tert-Butyl Alcohol	6.76	59	50500	90.7440 ug/kg	98
16) Dimethyl Sulfide	6.88	62	10098	4.6977 ug/kg	87
17) Iodomethane	7.13	142	4147	5.3886 ug/kg	97
18) Methyl acetate	7.15	43	12159	4.3976 ug/kg#	87
19) Methylene Chloride	7.41	84	11825	4.2690 ug/kg	99
20) Carbon Disulfide	7.45	76	34078	4.3495 ug/kg	94
21) Acrylonitrile	7.58	53	31012	22.6731 ug/kg	100
22) Methyl Tert Butyl Ether	7.61	73	34936	4.4284 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	20503	4.5233 ug/kg	95
24) n-Hexane	7.92	57	20970	4.4853 ug/kg	98
25) Diisopropyl ether	8.26	45	505084	46.5162 ug/kg	100
26) Vinyl Acetate	8.44	43	28253	4.5644 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	24239	4.2575 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	463447	45.9037 ug/kg	99
29) 2-Butanone	9.03	43	8265	4.7092 ug/kg	88
30) Propionitrile	9.15	54	25938	48.2931 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	17954	4.2251 ug/kg	91
32) cis-1,2-Dichloroethene	9.32	96	13479	4.5340 ug/kg	84
33) Chloroform	9.52	83	23525	4.4982 ug/kg	95
34) 1-Bromopropane	9.65	122	2239	5.8652 ug/kg	90
35) Bromochloromethane	9.75	130	9205	4.7667 ug/kg	97
36) Tetrahydrofuran	9.78	42	53635	47.4100 ug/kg	99
38) 1,1,1-Trichloroethane	10.04	97	20945	4.4285 ug/kg	91
39) Cyclohexane	10.09	56	23110	4.4818 ug/kg	98
40) 1,1-Dichloropropene	10.24	75	16349	4.3930 ug/kg	99
41) Tert-Amyl-Methyl ether	10.35	73	343692	46.8330 ug/kg	98
42) Carbon Tetrachloride	10.39	117	18527	4.2254 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	21553	4.6852 ug/kg	99
46)	Benzene	10.60	78	45352	4.3528 ug/kg	99
47)	Trichloroethene	11.35	130	14266	4.3213 ug/kg	97
48)	Methylcyclohexane	11.44	83	17527	4.2330 ug/kg	97
49)	1,2-Dichloropropane	11.56	63	13071	4.5684 ug/kg	100
50)	1,4-Dioxane	11.88	88	3926	91.4657 ug/kg	99
51)	Bromodichloromethane	11.87	83	18008	4.4660 ug/kg	97
52)	Dibromomethane	11.96	174	8993	4.7438 ug/kg	95
53)	2-Chloroethyl Vinyl Ether	12.16	63	2468	5.7758 ug/kg#	66
54)	4-Methyl-2-Pentanone	12.19	58	4862	3.8716 ug/kg	95
55)	cis-1,3-Dichloropropene	12.50	75	18341	4.3659 ug/kg	96
56)	Dimethyl Disulfide	12.77	94	17792	4.2144 ug/kg	91
59)	Toluene	12.92	91	48377	4.3206 ug/kg	96
60)	Ethyl Methacrylate	13.02	69	12442	4.0089 ug/kg	96
61)	trans-1,3-Dichloropropene	13.10	75	17626	4.3707 ug/kg	95
62)	1,1,2-Trichloroethane	13.33	97	10657	4.5308 ug/kg	99
63)	2-Hexanone	13.25	43	10194	4.3408 ug/kg	96
64)	1,3-Dichloropropane	13.62	76	17885	4.5633 ug/kg	100
65)	Tetrachloroethene	13.75	164	10317	4.2981 ug/kg	97
66)	Dibromochloromethane	14.01	129	14152	4.3052 ug/kg	98
67)	1,2-Dibromoethane	14.28	107	12182	4.6694 ug/kg	99
68)	1-Chlorohexane	14.35	91	12970	3.9281 ug/kg	87
69)	Chlorobenzene	14.77	112	36017	4.5769 ug/kg	85
70)	1,1,1,2-Tetrachloroethane	14.80	131	12746	4.3130 ug/kg	95
71)	Ethylbenzene	14.80	106	17828	4.3974 ug/kg	92
72)	m-,p-Xylene	14.89	106	45904	9.1683 ug/kg	95
73)	o-Xylene	15.46	106	21754	4.5275 ug/kg	91
74)	Styrene	15.49	104	35390	4.3253 ug/kg	98
75)	Bromoform	15.98	173	9363	4.3382 ug/kg	96
76)	Isopropylbenzene	15.88	105	55721	4.3198 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	13197	4.8610 ug/kg	97
80)	1,2,3-Trichloropropane	16.29	110	5070	4.9243 ug/kg#	28
81)	trans-1,4-Dichloro-2-Buten	16.33	53	4246	4.0913 ug/kg#	39
82)	n-Propylbenzene	16.39	91	64689	4.5983 ug/kg	100
83)	Bromobenzene	16.52	156	15405	4.6386 ug/kg	90
84)	1,3,5-Trimethylbenzene	16.58	105	49527	4.6900 ug/kg	98
85)	2-Chlorotoluene	16.66	91	41422	4.3899 ug/kg	97
86)	4-Chlorotoluene	16.70	91	40985	4.6981 ug/kg	99
87)	a-Methylstyrene	16.98	118	20049	4.1667 ug/kg	90
88)	tert-Butylbenzene	17.04	134	10027	4.5290 ug/kg	84
89)	1,2,4-Trimethylbenzene	17.09	105	51253	4.6345 ug/kg	98
90)	sec-Butylbenzene	17.30	105	60716	4.4642 ug/kg	98
91)	p-Isopropyltoluene	17.46	119	53318	4.6453 ug/kg	98
92)	1,3-Dichlorobenzene	17.66	146	29255	4.4323 ug/kg	98
93)	1,4-Dichlorobenzene	17.79	146	30175	4.5730 ug/kg	91
94)	n-Butylbenzene	17.99	91	45964	4.3071 ug/kg	98
95)	1,2-Dichlorobenzene	18.30	146	27310	4.4593 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.30	157	3147	4.0028 ug/kg	87
97)	1,2,4-Trichlorobenzene	20.44	180	18372	4.2258 ug/kg	95
98)	Hexachlorobutadiene	20.59	225	9618	4.1968 ug/kg	90
99)	Naphthalene	20.81	128	47189	4.3274 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.11	180	17859	4.2352 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972901.D 8260SL.M Fri Feb 26 11:21:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

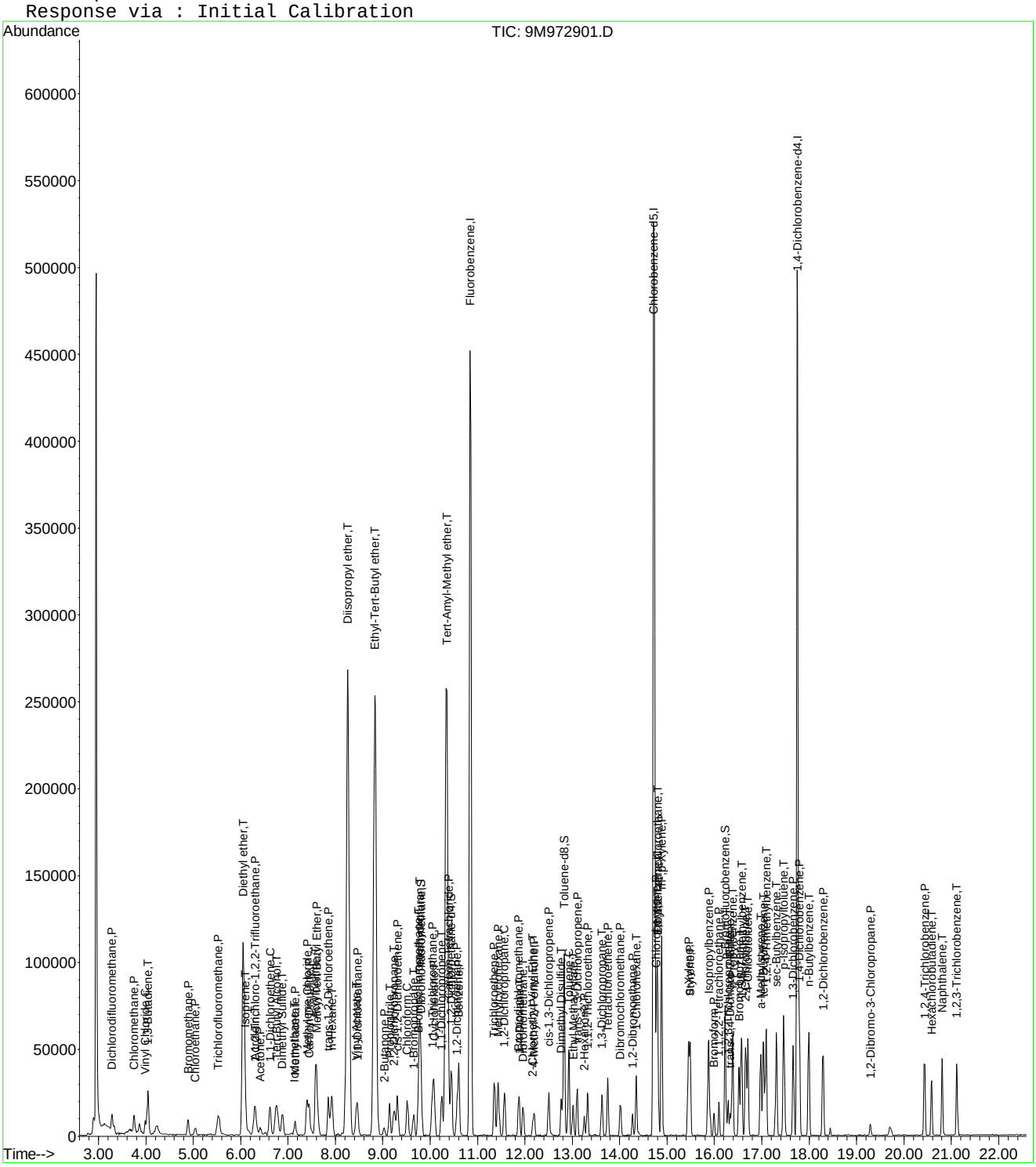

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	5.0000	3.9724	20.6	100	0.00
3	P	Chloromethane	5.0000	4.2763	14.5	100	0.00
4	C	Vinyl Chloride	5.0000	4.7964	4.1	100	0.00
5	T	1,3-Butadiene	5.0000	4.2710	14.6	100	0.00
6	P	Bromomethane	5.0000	4.2534	14.9	100	0.00
7	P	Chloroethane	5.0000	3.9741	20.5	100	0.00
8	P	Trichlorofluoromethane	5.0000	4.2400	15.2	100	0.00
9	T	Diethyl ether	50.0000	47.2164	5.6	100	0.00
10	T	Isoprene	5.0000	4.2747	14.5	100	0.01
11	T	Acrolein	25.0000	24.3428	2.6	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.6251	7.5	100	0.00
13	P	Acetone	5.0000	4.9429	1.1	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.2784	14.4	100	0.01
15	T	Tert-Butyl Alcohol	100.0000	90.7440	9.3	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.6977	6.0	100	0.00
17	T	Iodomethane	5.0000	5.3886	-7.8	100	0.00
18	P	Methyl acetate	5.0000	4.3976	12.0	100	0.01
19	P	Methylene Chloride	5.0000	4.2690	14.6	100	0.00
20	P	Carbon Disulfide	5.0000	4.3495	13.0	100	0.00
21	T	Acrylonitrile	25.0000	22.6731	9.3	100	0.00
22	P	Methyl Tert Butyl Ether	5.0000	4.4284	11.4	100	0.00
23	P	trans-1,2-Dichloroethene	5.0000	4.5233	9.5	100	0.00
24	T	n-Hexane	5.0000	4.4854	10.3	100	0.01
25	T	Diisopropyl ether	50.0000	46.5162	7.0	100	0.00
26	T	Vinyl Acetate	5.0000	4.5644	8.7	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.2575	14.8	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	45.9037	8.2	100	0.00
29	P	2-Butanone	5.0000	4.7092	5.8	100	0.00
30	T	Propionitrile	50.0000	48.2931	3.4	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.2251	15.5	100	-0.01
32	P	cis-1,2-Dichloroethene	5.0000	4.5340	9.3	100	0.00
33	C	Chloroform	5.0000	4.4982	10.0	100	0.00
34	T	1-Bromopropane	5.0000	5.8651	-17.3	100	0.00
35	T	Bromochloromethane	5.0000	4.7667	4.7	100	0.00
36	T	Tetrahydrofuran	50.0000	47.4100	5.2	100	0.00
37	S	Dibromofluoromethane	10.0000	9.8422	1.6	100	0.00
38	P	1,1,1-Trichloroethane	5.0000	4.4285	11.4	100	0.00
39	P	Cyclohexane	5.0000	4.4818	10.4	100	0.01
40	T	1,1-Dichloropropene	5.0000	4.3930	12.1	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	46.8330	6.3	100	0.00
42	P	Carbon Tetrachloride	5.0000	4.2254	15.5	100	0.00
43	S	1,2-Dichloroethane-d4	10.0000	10.2911	-2.9	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	5.0000	4.6852	6.3	100	0.00
46	P	Benzene	5.0000	4.3528	12.9	100	0.00
47	P	Trichloroethene	5.0000	4.3213	13.6	100	0.00
48	P	Methylcyclohexane	5.0000	4.2330	15.3	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.5684	8.6	100	0.00
50	T	1,4-Dioxane	100.0000	91.4657	8.5	100	0.00
51	P	Bromodichloromethane	5.0000	4.4660	10.7	100	0.00
52	T	Dibromomethane	5.0000	4.7438	5.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	5.7758	-15.5	100	0.00
54	P	4-Methyl-2-Pentanone	5.0000	3.8716	22.6	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	5.0000	4.3659	12.7	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.2144	15.7	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	-0.01
58	S	Toluene-d8	10.0000	9.5885	4.1	100	0.00
59	C	Toluene	5.0000	4.3206	13.6	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.0089	19.8	100	0.00
61	P	trans-1,3-Dichloropropene	5.0000	4.3707	12.6	100	0.00
62	P	1,1,2-Trichloroethane	5.0000	4.5309	9.4	100	0.00
63	P	2-Hexanone	5.0000	4.3408	13.2	100	0.00
64	T	1,3-Dichloropropane	5.0000	4.5633	8.7	100	-0.01
65	P	Tetrachloroethene	5.0000	4.2981	14.0	100	0.00
66	P	Dibromochloromethane	5.0000	4.3052	13.9	100	0.00
67	P	1,2-Dibromoethane	5.0000	4.6694	6.6	100	0.00
68	T	1-Chlorohexane	5.0000	3.9281	21.4	100	0.00
69	P	Chlorobenzene	5.0000	4.5769	8.5	100	0.00
70	T	1,1,1,2-Tetrachloroethane	5.0000	4.3130	13.7	100	0.00
71	C	Ethylbenzene	5.0000	4.3974	12.1	100	0.00
72	P	m-,p-Xylene	10.0000	9.1683	8.3	100	0.00
73	P	o-Xylene	5.0000	4.5275	9.5	100	0.00
74	P	Styrene	5.0000	4.3253	13.5	100	0.00
75	P	Bromoform	5.0000	4.3382	13.2	100	-0.01
76	P	Isopropylbenzene	5.0000	4.3198	13.6	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	5.0000	4.8610	2.8	100	-0.01
79	S	p-Bromofluorobenzene	10.0000	9.4138	5.9	100	0.00
80	T	1,2,3-Trichloropropane	5.0000	4.9243	1.5	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	5.0000	4.0913	18.2	100	0.00
82	T	n-Propylbenzene	5.0000	4.5983	8.0	100	0.00
83	T	Bromobenzene	5.0000	4.6386	7.2	100	0.00
84	T	1,3,5-Trimethylbenzene	5.0000	4.6900	6.2	100	0.00
85	T	2-Chlorotoluene	5.0000	4.3899	12.2	100	0.00
86	T	4-Chlorotoluene	5.0000	4.6981	6.0	100	0.00
87	T	a-Methylstyrene	5.0000	4.1667	16.7	100	0.00
88	T	tert-Butylbenzene	5.0000	4.5290	9.4	100	0.00
89	T	1,2,4-Trimethylbenzene	5.0000	4.6345	7.3	100	0.00
90	T	sec-Butylbenzene	5.0000	4.4642	10.7	100	0.00
91	T	p-Isopropyltoluene	5.0000	4.6453	7.1	100	0.00
92	P	1,3-Dichlorobenzene	5.0000	4.4323	11.4	100	0.00
93	P	1,4-Dichlorobenzene	5.0000	4.5730	8.5	100	-0.01
94	T	n-Butylbenzene	5.0000	4.3071	13.9	100	0.00
95	P	1,2-Dichlorobenzene	5.0000	4.4593	10.8	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	5.0000	4.0028	19.9	100	0.00
97	P	1,2,4-Trichlorobenzene	5.0000	4.2258	15.5	100	0.00
98	T	Hexachlorobutadiene	5.0000	4.1968	16.1	100	0.00
99	T	Naphthalene	5.0000	4.3274	13.5	100	0.00
100	T	1,2,3-Trichlorobenzene	5.0000	4.2352	15.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972901.D 8260SL.M Fri Feb 26 11:21:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972902.D Vial: 7
Acq On : 25 Feb 2016 18:59 Operator: ADC
Sample : WG558732-07 20.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	491006	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	357658	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	168257	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	47666	17.9094 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 35.82%#		
43) 1,2-Dichloroethane-d4	10.45	65	60269	18.0480 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 36.10%#		
58) Toluene-d8	12.82	98	163811	18.1074 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 36.22%#		
79) p-Bromofluorobenzene	16.23	95	58931	17.9870 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 35.98%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	78283	23.3598 ug/kg	99
3) Chloromethane	3.75	50	64951	20.2188 ug/kg	98
4) Vinyl Chloride	3.99	62	73167	22.7523 ug/kg	97
5) 1,3-Butadiene	4.04	54	64372	21.0404 ug/kg	98
6) Bromomethane	4.88	94	40556	19.4178 ug/kg	97
7) Chloroethane	5.04	64	27981	19.5307 ug/kg	97
8) Trichlorofluoromethane	5.53	101	98871	20.4994 ug/kg	98
9) Diethyl ether	6.06	59	191078	84.7472 ug/kg	99
10) Isoprene	6.10	67	59437	20.6414 ug/kg	98
11) Acrolein	6.30	56	18057	40.1641 ug/kg	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	50002	20.1026 ug/kg	100
13) Acetone	6.42	43	27164	20.4768 ug/kg	100
14) 1,1-Dichloroethene	6.62	61	94732	20.6460 ug/kg	98
15) Tert-Butyl Alcohol	6.75	59	85695	170.6872 ug/kg	97
16) Dimethyl Sulfide	6.88	62	40580	20.9258 ug/kg	99
17) Iodomethane	7.13	142	21330	17.5663 ug/kg	96
18) Methyl acetate	7.15	43	54770	21.9573 ug/kg	99
19) Methylene Chloride	7.41	84	51619	20.6564 ug/kg	95
20) Carbon Disulfide	7.45	76	145286	20.5545 ug/kg	97
21) Acrylonitrile	7.59	53	50918	41.2640 ug/kg	97
22) Methyl Tert Butyl Ether	7.61	73	149271	20.9731 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	84416	20.6434 ug/kg	98
24) n-Hexane	7.92	57	82582	19.5795 ug/kg	98
25) Diisopropyl ether	8.26	45	841729	85.9275 ug/kg	99
26) Vinyl Acetate	8.44	43	107114	19.1814 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	104490	20.3440 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	777976	85.4147 ug/kg	99
29) 2-Butanone	9.02	43	30691	19.3834 ug/kg	100
30) Propionitrile	9.14	54	41719	86.0996 ug/kg	99
31) 2,2-Dichloropropane	9.24	77	73960	19.2927 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	56404	21.0307 ug/kg	100
33) Chloroform	9.52	83	94621	20.0546 ug/kg	98
34) 1-Bromopropane	9.65	122	8251	20.7938 ug/kg	98
35) Bromochloromethane	9.75	130	38059	21.8457 ug/kg	99
36) Tetrahydrofuran	9.77	42	86589	84.8405 ug/kg	100
38) 1,1,1-Trichloroethane	10.05	97	85938	20.1411 ug/kg	99
39) Cyclohexane	10.09	56	96933	20.8373 ug/kg	98
40) 1,1-Dichloropropene	10.25	75	67544	20.1175 ug/kg	96
41) Tert-Amyl-Methyl ether	10.34	73	562826	85.0111 ug/kg	99
42) Carbon Tetrachloride	10.39	117	79566	20.1143 ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972902.D 8260SL.M Fri Feb 26 11:21:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972902.D Vial: 7
Acq On : 25 Feb 2016 18:59 Operator: ADC
Sample : WG558732-07 20.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	86857	20.9287 ug/kg	98
46)	Benzene	10.60	78	190747	20.2931 ug/kg	98
47)	Trichloroethene	11.35	130	61315	20.5871 ug/kg	99
48)	Methylcyclohexane	11.44	83	79384	21.2516 ug/kg	99
49)	1,2-Dichloropropane	11.56	63	54356	21.0584 ug/kg	98
50)	1,4-Dioxane	11.88	88	7054	182.1639 ug/kg	93
51)	Bromodichloromethane	11.87	83	73160	20.1115 ug/kg	99
52)	Dibromomethane	11.97	174	35844	20.9583 ug/kg	97
53)	2-Chloroethyl Vinyl Ether	12.17	63	11048	17.4432 ug/kg	94
54)	4-Methyl-2-Pentanone	12.20	58	22247	19.6364 ug/kg	96
55)	cis-1,3-Dichloropropene	12.50	75	77533	20.4577 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	77400	20.3222 ug/kg	99
59)	Toluene	12.93	91	209919	20.5421 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	58827	20.7683 ug/kg	99
61)	trans-1,3-Dichloropropene	13.11	75	73778	20.0452 ug/kg	98
62)	1,1,2-Trichloroethane	13.32	97	45475	21.1838 ug/kg	98
63)	2-Hexanone	13.25	43	40183	18.7479 ug/kg	97
64)	1,3-Dichloropropane	13.62	76	73060	20.4249 ug/kg	95
65)	Tetrachloroethene	13.75	164	44423	20.2778 ug/kg	96
66)	Dibromochloromethane	14.01	129	59220	19.7391 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	48648	20.4311 ug/kg	97
68)	1-Chlorohexane	14.35	91	64519	21.4099 ug/kg	96
69)	Chlorobenzene	14.77	112	150639	20.9742 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	55462	20.5631 ug/kg	99
71)	Ethylbenzene	14.79	106	77813	21.0297 ug/kg	100
72)	m-,p-Xylene	14.89	106	192168	42.0536 ug/kg	98
73)	o-Xylene	15.45	106	92490	21.0911 ug/kg	98
74)	Styrene	15.49	104	154534	20.6939 ug/kg	100
75)	Bromoform	16.00	173	39818	20.2142 ug/kg	98
76)	Isopropylbenzene	15.87	105	249418	21.1865 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	53687	21.0342 ug/kg	98
80)	1,2,3-Trichloropropane	16.28	110	19658	20.3087 ug/kg	98
81)	trans-1,4-Dichloro-2-Buten	16.33	53	21143	21.6696 ug/kg	89
82)	n-Propylbenzene	16.39	91	283998	21.4728 ug/kg	98
83)	Bromobenzene	16.52	156	65363	20.9343 ug/kg	95
84)	1,3,5-Trimethylbenzene	16.57	105	212735	21.4278 ug/kg	99
85)	2-Chlorotoluene	16.66	91	189159	21.3235 ug/kg	99
86)	4-Chlorotoluene	16.70	91	171741	20.9401 ug/kg	99
87)	a-Methylstyrene	16.98	118	95360	21.0801 ug/kg	99
88)	tert-Butylbenzene	17.03	134	43749	21.0188 ug/kg	90
89)	1,2,4-Trimethylbenzene	17.08	105	218350	21.0010 ug/kg	99
90)	sec-Butylbenzene	17.31	105	268054	20.9635 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	225612	20.9076 ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	122605	19.7580 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	124659	20.0949 ug/kg	99
94)	n-Butylbenzene	17.99	91	199655	19.8998 ug/kg	99
95)	1,2-Dichlorobenzene	18.30	146	115021	19.9768 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	14138	19.1277 ug/kg	95
97)	1,2,4-Trichlorobenzene	20.43	180	77418	18.9408 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	41508	19.2651 ug/kg	96
99)	Naphthalene	20.81	128	204933	19.9897 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.12	180	75616	19.0736 ug/kg	98

(#) = qualifier out of range (m) = manual integration
9M972902.D 8260SL.M Fri Feb 26 11:21:57 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972902.D Vial: 7
Acq On : 25 Feb 2016 18:59 Operator: ADC
Sample : WG558732-07 20.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

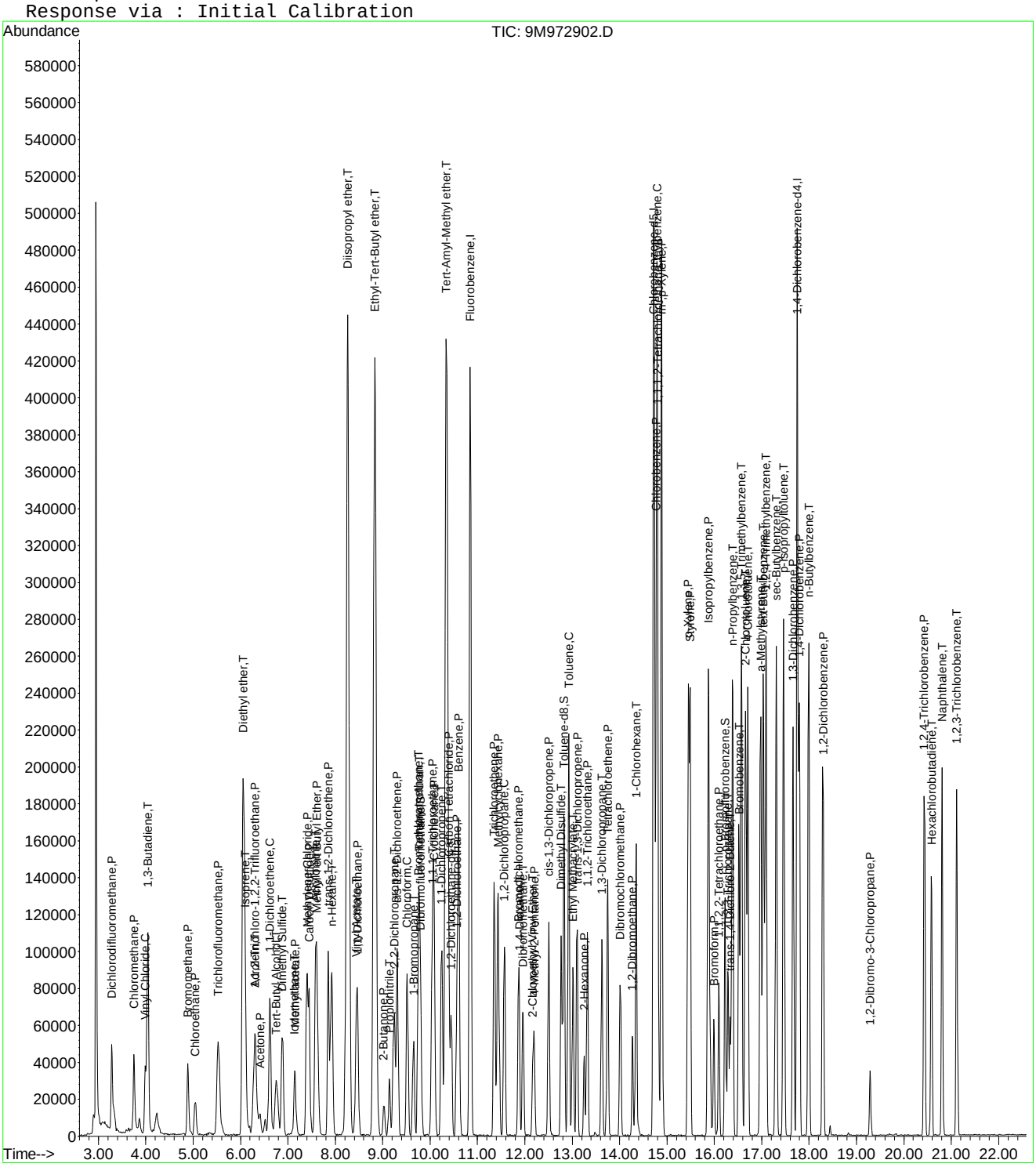

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972903.D Vial: 8
Acq On : 25 Feb 2016 19:29 Operator: ADC
Sample : WG558732-08 100.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:57 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	535022	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	390279	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.75	152	187456	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	305515	105.3466 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 210.70%#		
43) 1,2-Dichloroethane-d4	10.45	65	383447	105.3793 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 210.76%#		
58) Toluene-d8	12.83	98	1052175	106.5842 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 213.16%#		
79) p-Bromofluorobenzene	16.23	95	403966	110.6707 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 221.34%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	340079	93.1314 ug/kg	98
3) Chloromethane	3.74	50	316834	90.5143 ug/kg	100
4) Vinyl Chloride	3.99	62	366384	104.5591 ug/kg	99
5) 1,3-Butadiene	4.04	54	317949	95.3739 ug/kg	98
6) Bromomethane	4.88	94	198493	87.2180 ug/kg	99
7) Chloroethane	5.04	64	148539	95.1503 ug/kg	96
8) Trichlorofluoromethane	5.53	101	502703	95.6532 ug/kg	99
9) Diethyl ether	6.06	59	457873	186.3696 ug/kg	99
10) Isoprene	6.09	67	302269	96.3367 ug/kg	100
11) Acrolein	6.30	56	49319	100.6749 ug/kg	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	264925	97.7467 ug/kg	100
13) Acetone	6.41	43	126959	96.0965 ug/kg	97
14) 1,1-Dichloroethene	6.61	61	485466	97.0986 ug/kg	99
15) Tert-Butyl Alcohol	6.77	59	202804	370.7125 ug/kg	97
16) Dimethyl Sulfide	6.88	62	209613	99.1979 ug/kg	97
17) Iodomethane	7.14	142	134789	88.4431 ug/kg	96
18) Methyl acetate	7.15	43	256770	94.4705 ug/kg	99
19) Methylene Chloride	7.40	84	256919	94.3530 ug/kg	100
20) Carbon Disulfide	7.45	76	725343	94.1764 ug/kg	99
21) Acrylonitrile	7.59	53	131913	98.1077 ug/kg	97
22) Methyl Tert Butyl Ether	7.61	73	763125	98.4009 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	435514	97.7404 ug/kg	99
24) n-Hexane	7.92	57	458951	99.8615 ug/kg	98
25) Diisopropyl ether	8.26	45	1991599	186.5850 ug/kg	99
26) Vinyl Acetate	8.44	43	593217	97.4908 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	533571	95.3384 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	1850360	186.4394 ug/kg	100
29) 2-Butanone	9.03	43	167064	96.8316 ug/kg	99
30) Propionitrile	9.14	54	102467	194.0735 ug/kg	99
31) 2,2-Dichloropropane	9.24	77	409808	98.1051 ug/kg	98
32) cis-1,2-Dichloroethene	9.31	96	291782	99.8428 ug/kg	100
33) Chloroform	9.52	83	491651	95.6310 ug/kg	100
34) 1-Bromopropane	9.65	122	43084	95.7559 ug/kg	98
35) Bromochloromethane	9.75	130	191150	100.6929 ug/kg	97
36) Tetrahydrofuran	9.78	42	206962	186.0999 ug/kg	99
38) 1,1,1-Trichloroethane	10.04	97	454248	97.7025 ug/kg	99
39) Cyclohexane	10.08	56	497594	98.1657 ug/kg	99
40) 1,1-Dichloropropene	10.24	75	355996	97.3080 ug/kg	98
41) Tert-Amyl-Methyl ether	10.35	73	1353122	187.5659 ug/kg	99
42) Carbon Tetrachloride	10.39	117	419252	97.2674 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972903.D 8260SL.M Fri Feb 26 11:21:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972903.D Vial: 8
Acq On : 25 Feb 2016 19:29 Operator: ADC
Sample : WG558732-08 100.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:57 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	441828	97.7027	ug/kg	98
46)	Benzene	10.60	78	946247	92.3868	ug/kg	100
47)	Trichloroethene	11.35	130	316701	97.5872	ug/kg	98
48)	Methylcyclohexane	11.44	83	420776	103.3770	ug/kg	100
49)	1,2-Dichloropropane	11.56	63	273398	97.2049	ug/kg	97
50)	1,4-Dioxane	11.89	88	15240	361.1826	ug/kg	95
51)	Bromodichloromethane	11.87	83	384453	96.9905	ug/kg	100
52)	Dibromomethane	11.96	174	178770	95.9288	ug/kg	100
53)	2-Chloroethyl Vinyl Ether	12.17	63	71336	89.4187	ug/kg	97
54)	4-Methyl-2-Pentanone	12.19	58	126118	102.1606	ug/kg	99
55)	cis-1,3-Dichloropropene	12.50	75	407392	98.6500	ug/kg	99
56)	Dimethyl Disulfide	12.77	94	430523	103.7388	ug/kg	99
59)	Toluene	12.93	91	1070303	95.9828	ug/kg	100
60)	Ethyl Methacrylate	13.01	69	310336	100.4033	ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	395340	98.4345	ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	234168	99.9657	ug/kg	97
63)	2-Hexanone	13.25	43	238254	101.8692	ug/kg	99
64)	1,3-Dichloropropane	13.62	76	372307	95.3836	ug/kg	98
65)	Tetrachloroethene	13.75	164	235384	98.4650	ug/kg	97
66)	Dibromochloromethane	14.01	129	316240	96.5980	ug/kg	100
67)	1,2-Dibromoethane	14.28	107	254663	98.0133	ug/kg	98
68)	1-Chlorohexane	14.35	91	341938	103.9841	ug/kg	98
69)	Chlorobenzene	14.77	112	744916	95.0493	ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.80	131	289798	98.4650	ug/kg	98
71)	Ethylbenzene	14.79	106	397428	98.4311	ug/kg	99
72)	m-,p-Xylene	14.89	106	955121	191.5462	ug/kg	97
73)	o-Xylene	15.45	106	475355	99.3381	ug/kg	100
74)	Styrene	15.49	104	817155	100.2803	ug/kg	100
75)	Bromoform	15.99	173	212807	99.0046	ug/kg	98
76)	Isopropylbenzene	15.88	105	1283494	99.9122	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	279744	98.3764	ug/kg	100
80)	1,2,3-Trichloropropane	16.29	110	110421	102.3924	ug/kg	94
81)	trans-1,4-Dichloro-2-Buten	16.33	53	116410	107.0899	ug/kg	87
82)	n-Propylbenzene	16.39	91	1458178	98.9594	ug/kg	99
83)	Bromobenzene	16.52	156	334600	96.1892	ug/kg	97
84)	1,3,5-Trimethylbenzene	16.57	105	1100766	99.5195	ug/kg	99
85)	2-Chlorotoluene	16.66	91	937812	94.8900	ug/kg	100
86)	4-Chlorotoluene	16.70	91	906777	99.2383	ug/kg	100
87)	a-Methylstyrene	16.98	118	508276	100.8508	ug/kg	99
88)	tert-Butylbenzene	17.04	134	234437	101.0972	ug/kg	99
89)	1,2,4-Trimethylbenzene	17.09	105	1125260	97.1435	ug/kg	99
90)	sec-Butylbenzene	17.30	105	1425754	100.0828	ug/kg	100
91)	p-Isopropyltoluene	17.46	119	1215596	101.1125	ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	644471	93.2206	ug/kg	100
93)	1,4-Dichlorobenzene	17.79	146	646907	93.6002	ug/kg	99
94)	n-Butylbenzene	17.99	91	1131901	101.2628	ug/kg	99
95)	1,2-Dichlorobenzene	18.30	146	622851	97.0971	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.30	157	88939	108.0040	ug/kg	99
97)	1,2,4-Trichlorobenzene	20.44	180	466688	102.4843	ug/kg	99
98)	Hexachlorobutadiene	20.59	225	252514	105.1960	ug/kg	99
99)	Naphthalene	20.81	128	1208454	105.8030	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	456274	103.3044	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972903.D 8260SL.M Fri Feb 26 11:21:58 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972903.D Vial: 8
Acq On : 25 Feb 2016 19:29 Operator: ADC
Sample : WG558732-08 100.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

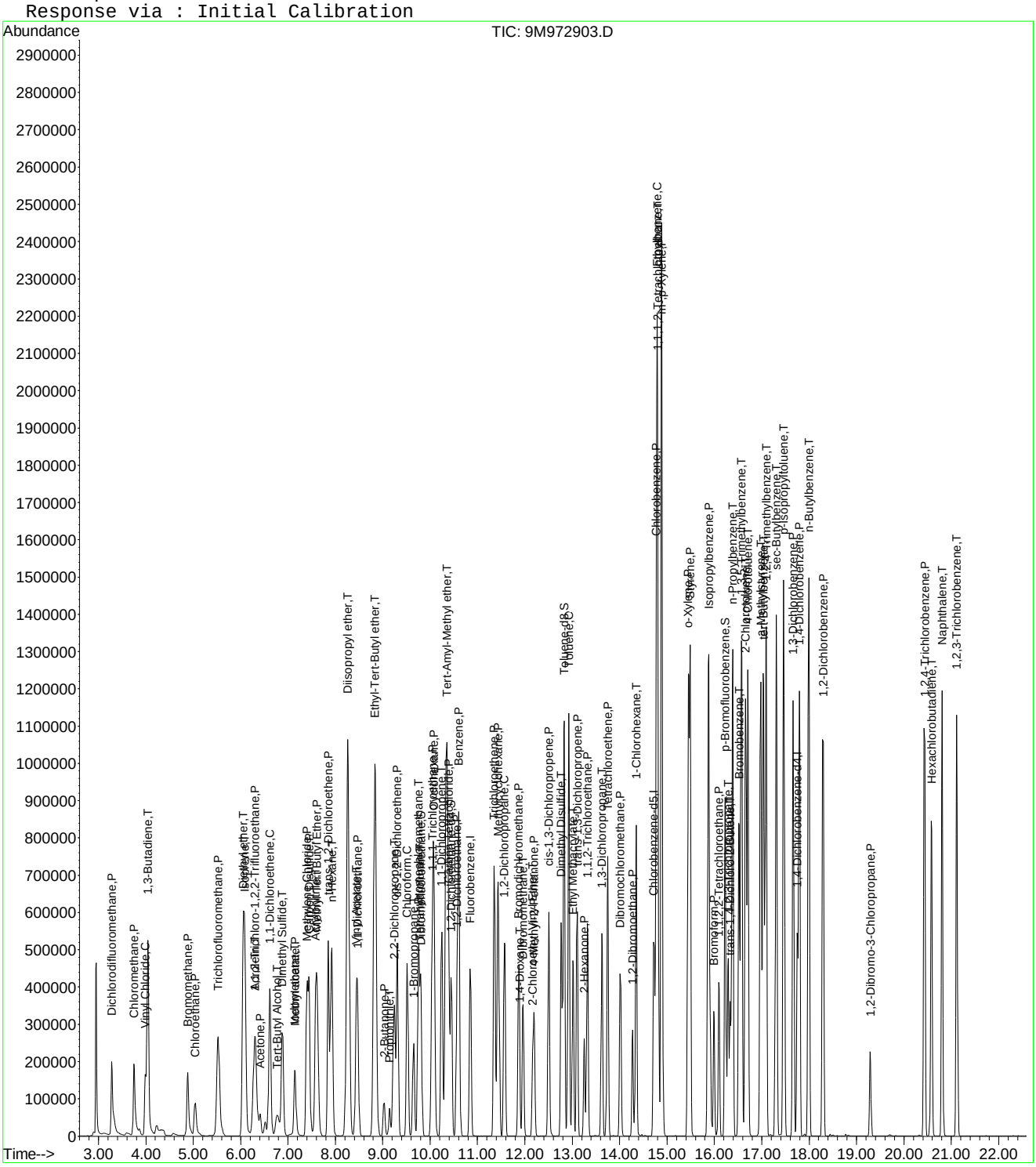

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972904.D Vial: 9
Acq On : 25 Feb 2016 20:00 Operator: ADC
Sample : WG558732-09 200.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:58 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	542388	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	396894	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	212175	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	595362	202.5026 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery	= 405.00%#	
43) 1,2-Dichloroethane-d4	10.45	65	716316	194.1852 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery	= 388.38%#	
58) Toluene-d8	12.82	98	2013255	200.5415 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery	= 401.08%#	
79) p-Bromofluorobenzene	16.23	95	807150	195.3653 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery	= 390.74%#	

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.28	85	774894	209.3245 ug/kg	100
3) Chloromethane	3.75	50	750862	211.5959 ug/kg	100
4) Vinyl Chloride	3.99	62	770550	216.9141 ug/kg	100
5) 1,3-Butadiene	4.04	54	695631	205.8318 ug/kg	99
6) Bromomethane	4.88	94	470946	204.1239 ug/kg	97
7) Chloroethane	5.04	64	374502	236.6386 ug/kg	98
8) Trichlorofluoromethane	5.52	101	1120886	210.3832 ug/kg	99
10) Isoprene	6.09	67	690766	217.1654 ug/kg	97
11) Acrolein	6.31	56	2288	4.6071 ug/kg	86
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	592415	215.6090 ug/kg	100
13) Acetone	6.42	43	268070	202.8703 ug/kg	99
14) 1,1-Dichloroethene	6.62	61	1084122	213.8917 ug/kg	99
15) Tert-Butyl Alcohol	6.78	59	290	0.5229 ug/kg#	58
16) Dimethyl Sulfide	6.88	62	486231	226.9805 ug/kg	99
17) Iodomethane	7.14	142	341644	216.9305 ug/kg	98
18) Methyl acetate	7.15	43	558766	202.7886 ug/kg	97
19) Methylene Chloride	7.40	84	606998	219.8913 ug/kg	98
20) Carbon Disulfide	7.44	76	1650167	211.3432 ug/kg	98
21) Acrylonitrile	7.61	53	18860	13.8363 ug/kg#	28
22) Methyl Tert Butyl Ether	7.61	73	1710517	217.5666 ug/kg	99
23) trans-1,2-Dichloroethene	7.84	61	967656	214.2173 ug/kg	99
24) n-Hexane	7.92	57	1006142	215.9497 ug/kg	97
26) Vinyl Acetate	8.43	43	1320060	213.9959 ug/kg	98
27) 1,1-Dichloroethane	8.46	63	1199515	211.4185 ug/kg	100
29) 2-Butanone	9.02	43	373284	213.4201 ug/kg	100
31) 2,2-Dichloropropane	9.24	77	904865	213.6764 ug/kg	100
32) cis-1,2-Dichloroethene	9.31	96	649726	219.3058 ug/kg	100
33) Chloroform	9.52	83	1094765	210.0507 ug/kg	100
34) 1-Bromopropane	9.66	122	98189	213.9851 ug/kg	100
35) Bromochloromethane	9.75	130	427351	222.0603 ug/kg	99
36) Tetrahydrofuran	9.77	42	2491	2.2095 ug/kg	93
38) 1,1,1-Trichloroethane	10.05	97	1020636	216.5435 ug/kg	100
39) Cyclohexane	10.08	56	1092323	212.5677 ug/kg	98
40) 1,1-Dichloropropene	10.24	75	780375	210.4109 ug/kg	98
42) Carbon Tetrachloride	10.39	117	950685	217.5657 ug/kg	100
45) 1,2-Dichloroethane	10.56	62	975428	212.7698 ug/kg	98
46) Benzene	10.61	78	2107212	202.9435 ug/kg	100
47) Trichloroethene	11.36	130	696420	211.6783 ug/kg	98
48) Methylcyclohexane	11.43	83	922594	223.5862 ug/kg	100
49) 1,2-Dichloropropane	11.57	63	613480	215.1567 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972904.D Vial: 9
Acq On : 25 Feb 2016 20:00 Operator: ADC
Sample : WG558732-09 200.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:58 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
50)	1,4-Dioxane	11.86	88	821	19.1932	ug/kg#	7
51)	Bromodichloromethane	11.87	83	861318	214.3439	ug/kg	99
52)	Dibromomethane	11.96	174	401145	212.3328	ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	173854	210.9891	ug/kg	98
54)	4-Methyl-2-Pentanone	12.19	58	281550	224.9694	ug/kg	99
55)	cis-1,3-Dichloropropene	12.51	75	917528	219.1621	ug/kg	100
56)	Dimethyl Disulfide	12.77	94	993447	236.1300	ug/kg	99
59)	Toluene	12.93	91	2353264	207.5190	ug/kg	100
60)	Ethyl Methacrylate	13.01	69	698780	222.3090	ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	892986	218.6361	ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	510766	214.4105	ug/kg	98
63)	2-Hexanone	13.26	43	551431	231.8433	ug/kg	99
64)	1,3-Dichloropropane	13.63	76	842104	212.1481	ug/kg	99
65)	Tetrachloroethene	13.75	164	518091	213.1138	ug/kg	97
66)	Dibromochloromethane	14.02	129	723489	217.3121	ug/kg	99
67)	1,2-Dibromoethane	14.27	107	560802	212.2411	ug/kg	99
68)	1-Chlorohexane	14.35	91	757279	226.4519	ug/kg	100
69)	Chlorobenzene	14.78	112	1626715	204.1050	ug/kg	98
70)	1,1,1,2-Tetrachloroethane	14.81	131	649903	217.1378	ug/kg	97
71)	Ethylbenzene	14.80	106	871321	212.2035	ug/kg	99
72)	m-,p-Xylene	14.89	106	2089330	412.0243	ug/kg	98
73)	o-Xylene	15.45	106	1065692	218.9929	ug/kg	98
74)	Styrene	15.49	104	1839951	222.0334	ug/kg	100
75)	Bromoform	15.99	173	511700	234.0915	ug/kg	99
76)	Isopropylbenzene	15.87	105	2873816	219.9805	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	662688	205.8943	ug/kg	99
80)	1,2,3-Trichloropropane	16.29	110	257281	210.7797	ug/kg	98
81)	trans-1,4-Dichloro-2-Buten	16.34	53	281460	228.7601	ug/kg	90
82)	n-Propylbenzene	16.38	91	3244636	194.5439	ug/kg	100
83)	Bromobenzene	16.52	156	759998	193.0269	ug/kg	95
84)	1,3,5-Trimethylbenzene	16.57	105	2471747	197.4342	ug/kg	99
85)	2-Chlorotoluene	16.66	91	2218317	198.3049	ug/kg	100
86)	4-Chlorotoluene	16.71	91	1934954	187.0917	ug/kg	100
87)	a-Methylstyrene	16.98	118	1205032	211.2436	ug/kg	99
88)	tert-Butylbenzene	17.03	134	526001	200.4032	ug/kg	87
89)	1,2,4-Trimethylbenzene	17.09	105	2520611	192.2523	ug/kg	100
90)	sec-Butylbenzene	17.31	105	3206494	198.8615	ug/kg	100
91)	p-Isopropyltoluene	17.47	119	2752661	202.2895	ug/kg	100
92)	1,3-Dichlorobenzene	17.67	146	1508843	192.8225	ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	1522857	194.6701	ug/kg	99
94)	n-Butylbenzene	17.99	91	2603240	205.7600	ug/kg	100
95)	1,2-Dichlorobenzene	18.29	146	1515803	208.7710	ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	205456	220.4304	ug/kg	98
97)	1,2,4-Trichlorobenzene	20.43	180	1061631	205.9726	ug/kg	99
98)	Hexachlorobutadiene	20.58	225	612598	225.4729	ug/kg	100
99)	Naphthalene	20.81	128	2666581	206.2661	ug/kg	99
100)	1,2,3-Trichlorobenzene	21.12	180	1022740	204.5802	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972904.D 8260SL.M Fri Feb 26 11:21:58 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972904.D Vial: 9
Acq On : 25 Feb 2016 20:00 Operator: ADC
Sample : WG558732-09 200.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

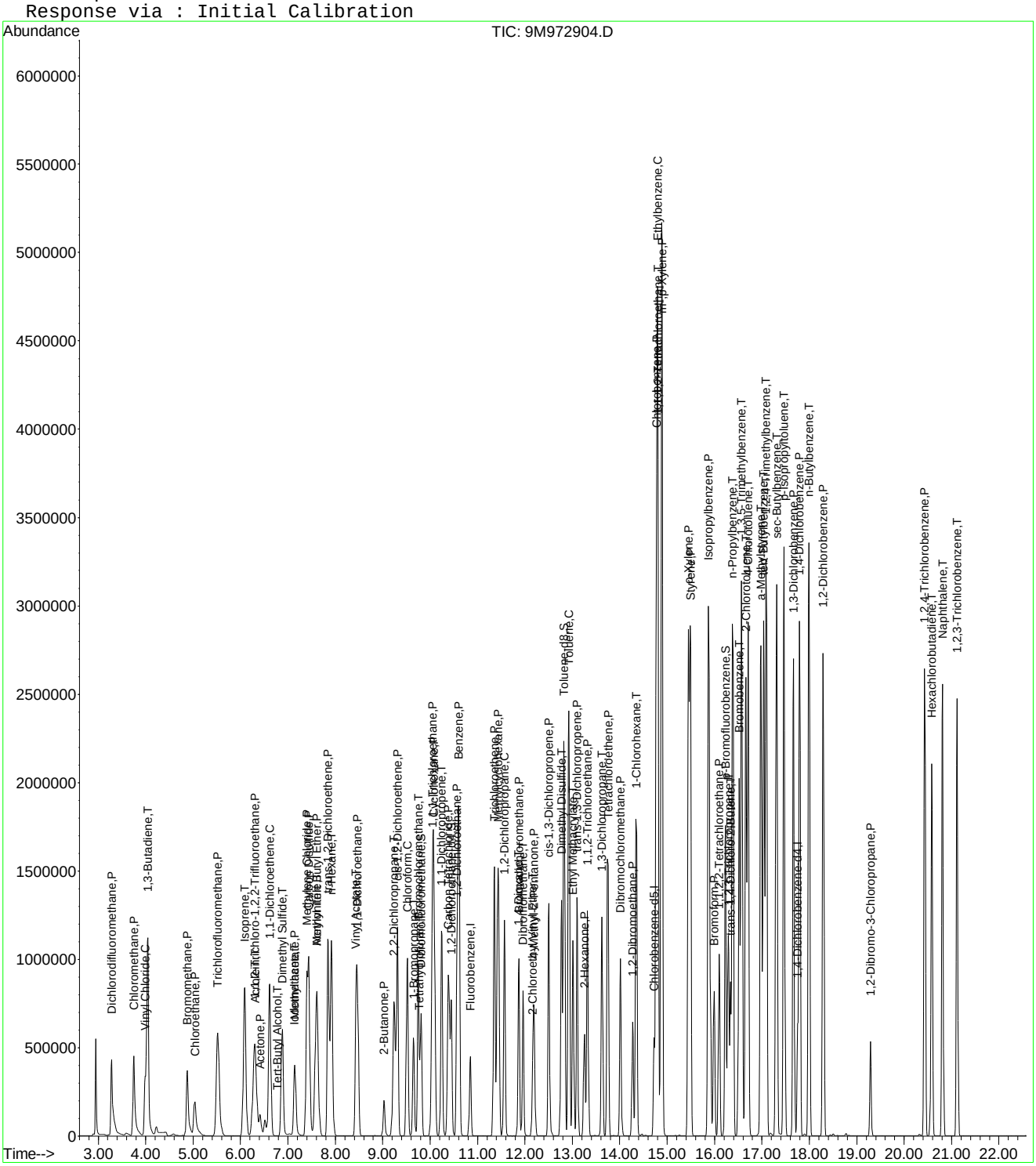

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972905.D Vial: 10
Acq On : 25 Feb 2016 20:30 Operator: ADC
Sample : WG558732-10 300.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:59 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	626979	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	468521	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	224223	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	520	0.1530 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.30%#	
43) 1,2-Dichloroethane-d4	10.45	65	1794	0.4207 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.84%#	
58) Toluene-d8	12.82	98	7789	0.6573 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	1.32%#	
79) p-Bromofluorobenzene	16.23	95	6216	1.4237 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	2.84%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	1155483	270.0216 ug/kg	98
3) Chloromethane	3.75	50	1142773	278.5891 ug/kg	100
4) Vinyl Chloride	3.98	62	1112221	270.8539 ug/kg	99
5) 1,3-Butadiene	4.03	54	1100483	281.6917 ug/kg	98
6) Bromomethane	4.87	94	749711	281.1083 ug/kg	98
7) Chloroethane	5.04	64	601337	328.7051 ug/kg	98
8) Trichlorofluoromethane	5.52	101	1778447	288.7670 ug/kg	99
9) Diethyl ether	6.06	59	869609	302.0457 ug/kg	99
10) Isoprene	6.08	67	1108410	301.4513 ug/kg	98
11) Acrolein	6.30	56	93621	163.0794 ug/kg	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	943691	297.1172 ug/kg	99
13) Acetone	6.42	43	369915	242.6618 ug/kg	95
14) 1,1-Dichloroethene	6.61	61	1715009	292.7111 ug/kg	98
15) Tert-Butyl Alcohol	6.80	59	188151	293.4850 ug/kg	89
16) Dimethyl Sulfide	6.88	62	763075	308.1557 ug/kg	99
17) Iodomethane	7.14	142	532480	291.5128 ug/kg	99
18) Methyl acetate	7.15	43	879657	276.1748 ug/kg	98
19) Methylene Chloride	7.40	84	937262	293.7237 ug/kg	96
20) Carbon Disulfide	7.44	76	2640380	292.5391 ug/kg	98
21) Acrylonitrile	7.59	53	252681	160.3640 ug/kg	94
22) Methyl Tert Butyl Ether	7.61	73	2699681	297.0533 ug/kg	98
23) trans-1,2-Dichloroethene	7.84	61	1548353	296.5245 ug/kg	100
24) n-Hexane	7.92	57	1608467	298.6501 ug/kg	98
25) Diisopropyl ether	8.26	45	3742238	299.1747 ug/kg	100
26) Vinyl Acetate	8.43	43	2097407	294.1383 ug/kg	99
27) 1,1-Dichloroethane	8.47	63	1881635	286.8995 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	3515202	302.2390 ug/kg	99
29) 2-Butanone	9.02	43	559900	276.9258 ug/kg	100
30) Propionitrile	9.14	54	182998	295.7653 ug/kg	100
31) 2,2-Dichloropropane	9.24	77	1439671	294.0988 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	1040893	303.9366 ug/kg	99
33) Chloroform	9.52	83	1708608	283.5977 ug/kg	99
34) 1-Bromopropane	9.65	122	152776	287.6719 ug/kg	98
35) Bromochloromethane	9.75	130	668631	300.5590 ug/kg	98
36) Tetrahydrofuran	9.77	42	365915	280.7723 ug/kg	97
38) 1,1,1-Trichloroethane	10.05	97	1606962	294.9423 ug/kg	100
39) Cyclohexane	10.08	56	1746722	294.0540 ug/kg	99
40) 1,1-Dichloropropene	10.24	75	1258569	293.5615 ug/kg	98
41) Tert-Amyl-Methyl ether	10.34	73	2573262	304.3824 ug/kg	98
42) Carbon Tetrachloride	10.39	117	1494872	295.9476 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972905.D Vial: 10
Acq On : 25 Feb 2016 20:30 Operator: ADC
Sample : WG558732-10 300.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:59 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.57	62	1526616	288.0725 ug/kg	98
46)	Benzene	10.61	78	3320959	276.6861 ug/kg	99
47)	Trichloroethene	11.36	130	1102750	289.9607 ug/kg	98
48)	Methylcyclohexane	11.43	83	1476436	309.5324 ug/kg	98
49)	1,2-Dichloropropane	11.57	63	980423	297.4576 ug/kg	99
50)	1,4-Dioxane	11.89	88	31126	629.4828 ug/kg	81
51)	Bromodichloromethane	11.87	83	1358159	292.3851 ug/kg	99
52)	Dibromomethane	11.96	174	632731	289.7290 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	287132	300.2354 ug/kg	96
54)	4-Methyl-2-Pentanone	12.19	58	438042	302.7895 ug/kg	99
55)	cis-1,3-Dichloropropene	12.51	75	1436858	296.9047 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	1505953	309.6528 ug/kg	95
59)	Toluene	12.93	91	3720819	277.9530 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	1096301	295.4554 ug/kg	100
61)	trans-1,3-Dichloropropene	13.10	75	1416217	293.7329 ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	820836	291.8946 ug/kg	99
63)	2-Hexanone	13.26	43	814427	290.0688 ug/kg	100
64)	1,3-Dichloropropane	13.63	76	1322191	282.1714 ug/kg	100
65)	Tetrachloroethene	13.75	164	815946	284.3233 ug/kg	98
66)	Dibromochloromethane	14.02	129	1136128	289.0845 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	889642	285.2204 ug/kg	99
68)	1-Chlorohexane	14.34	91	1188786	301.1405 ug/kg	99
69)	Chlorobenzene	14.78	112	2558374	271.9265 ug/kg	97
70)	1,1,1,2-Tetrachloroethane	14.81	131	1019464	288.5389 ug/kg	97
71)	Ethylbenzene	14.80	106	1372834	283.2291 ug/kg	97
72)	m-,p-Xylene	14.89	106	3241616	541.5304 ug/kg	97
73)	o-Xylene	15.45	106	1663016	289.4945 ug/kg	99
74)	Styrene	15.49	104	2869824	293.3680 ug/kg	99
75)	Bromoform	15.99	173	788638	305.6282 ug/kg	99
76)	Isopropylbenzene	15.87	105	4421589	286.7141 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	1002445	294.7201 ug/kg	99
80)	1,2,3-Trichloropropane	16.28	110	380025	294.6098 ug/kg	66
81)	trans-1,4-Dichloro-2-Buten	16.34	53	413901	318.3274 ug/kg	57
82)	n-Propylbenzene	16.38	91	4980503	282.5783 ug/kg	99
83)	Bromobenzene	16.52	156	1176440	282.7414 ug/kg	93
84)	1,3,5-Trimethylbenzene	16.57	105	3788936	286.3846 ug/kg	99
85)	2-Chlorotoluene	16.66	91	3458872	292.5892 ug/kg	100
86)	4-Chlorotoluene	16.71	91	2929432	268.0287 ug/kg	100
87)	a-Methylstyrene	16.98	118	1823514	302.4880 ug/kg	100
88)	tert-Butylbenzene	17.03	134	795019	286.6221 ug/kg	86
89)	1,2,4-Trimethylbenzene	17.09	105	3829230	276.3702 ug/kg	100
90)	sec-Butylbenzene	17.31	105	4833765	283.6742 ug/kg	99
91)	p-Isopropyltoluene	17.47	119	4134027	287.4802 ug/kg	99
92)	1,3-Dichlorobenzene	17.67	146	2260017	273.2999 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	2229106	269.6404 ug/kg	99
94)	n-Butylbenzene	17.99	91	3871124	289.5329 ug/kg	100
95)	1,2-Dichlorobenzene	18.29	146	2162642	281.8552 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	293112	297.5776 ug/kg	98
97)	1,2,4-Trichlorobenzene	20.43	180	1514973	278.1345 ug/kg	100
98)	Hexachlorobutadiene	20.58	225	846867	294.9498 ug/kg	99
99)	Naphthalene	20.81	128	3754823	274.8379 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.12	180	1451357	274.7177 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972905.D 8260SL.M Fri Feb 26 11:21:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972905.D Vial: 10
Acq On : 25 Feb 2016 20:30 Operator: ADC
Sample : WG558732-10 300.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

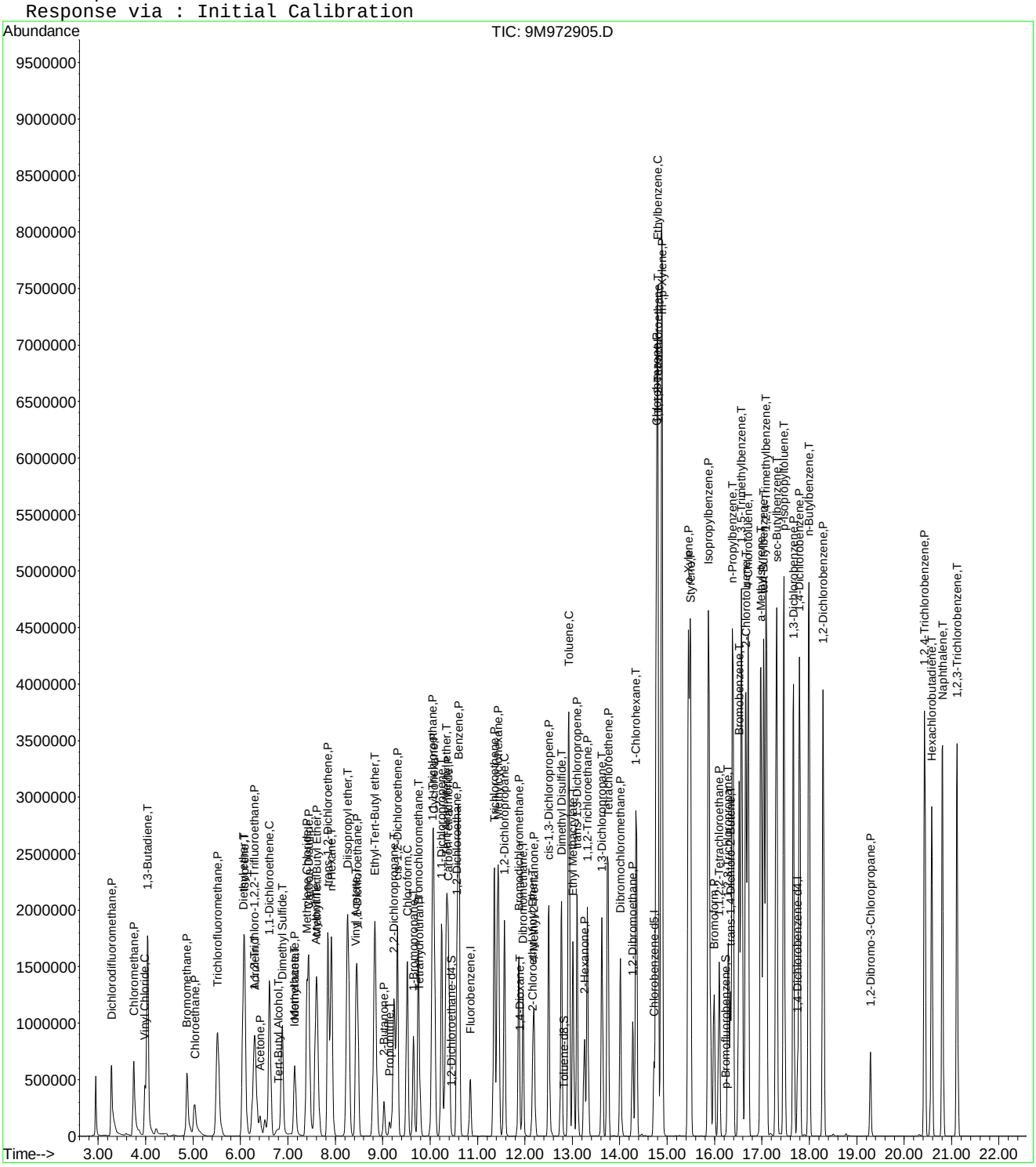

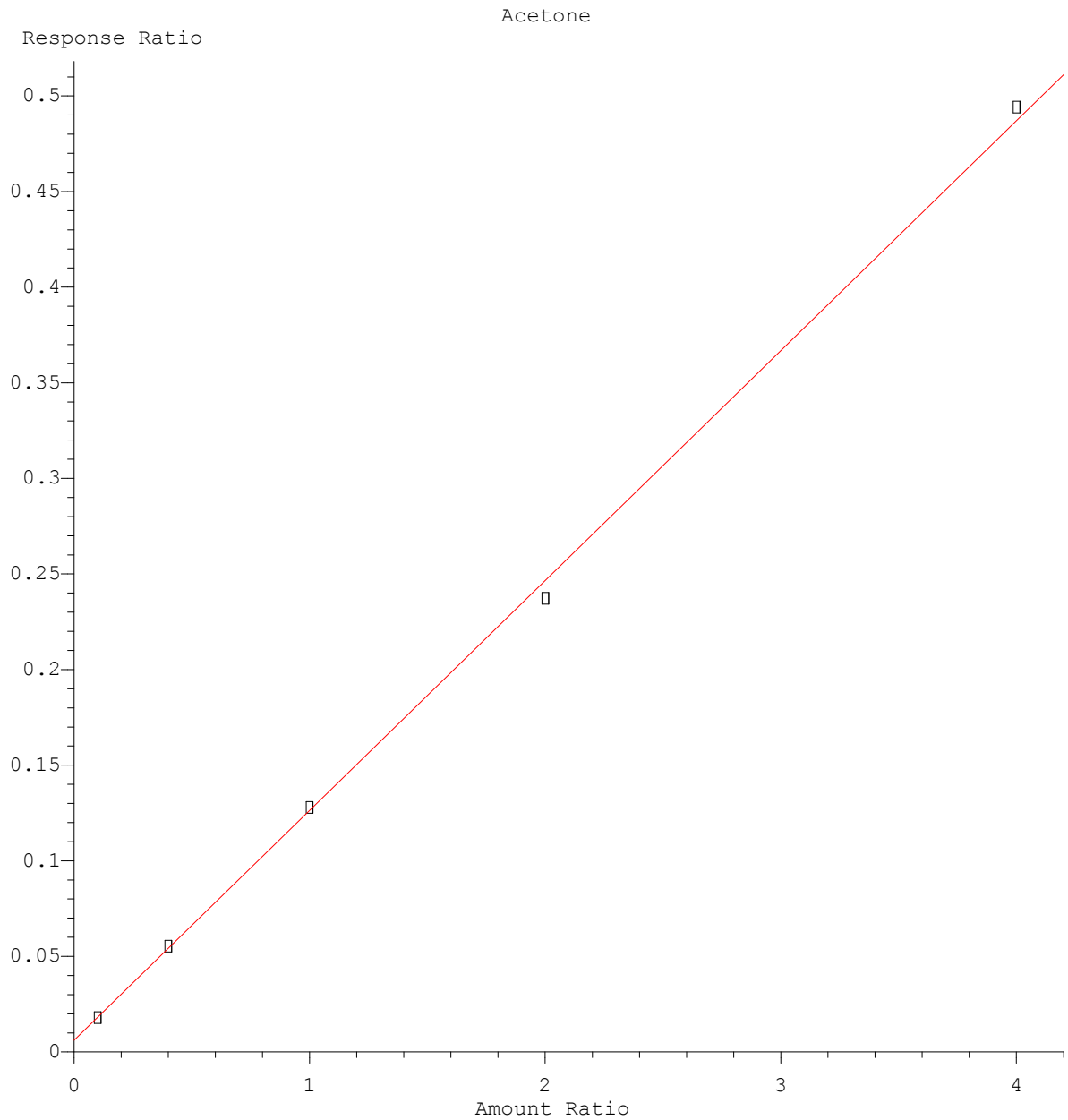

Resp Ratio = 1.20e-001 * Amt + 6.05e-003
Coef of Det (r^2) = 0.999 Curve Fit: wlr(1/a)

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

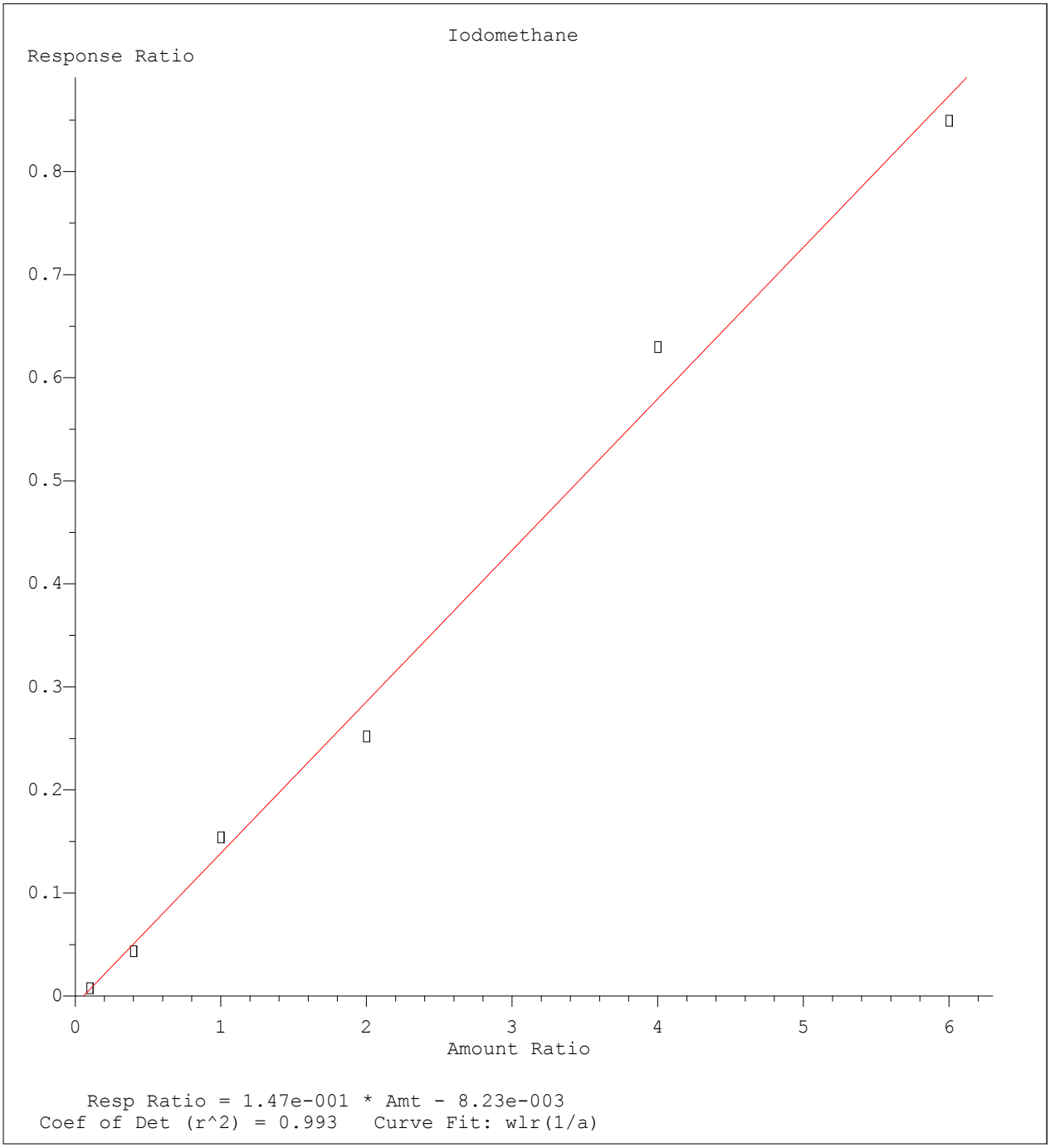

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

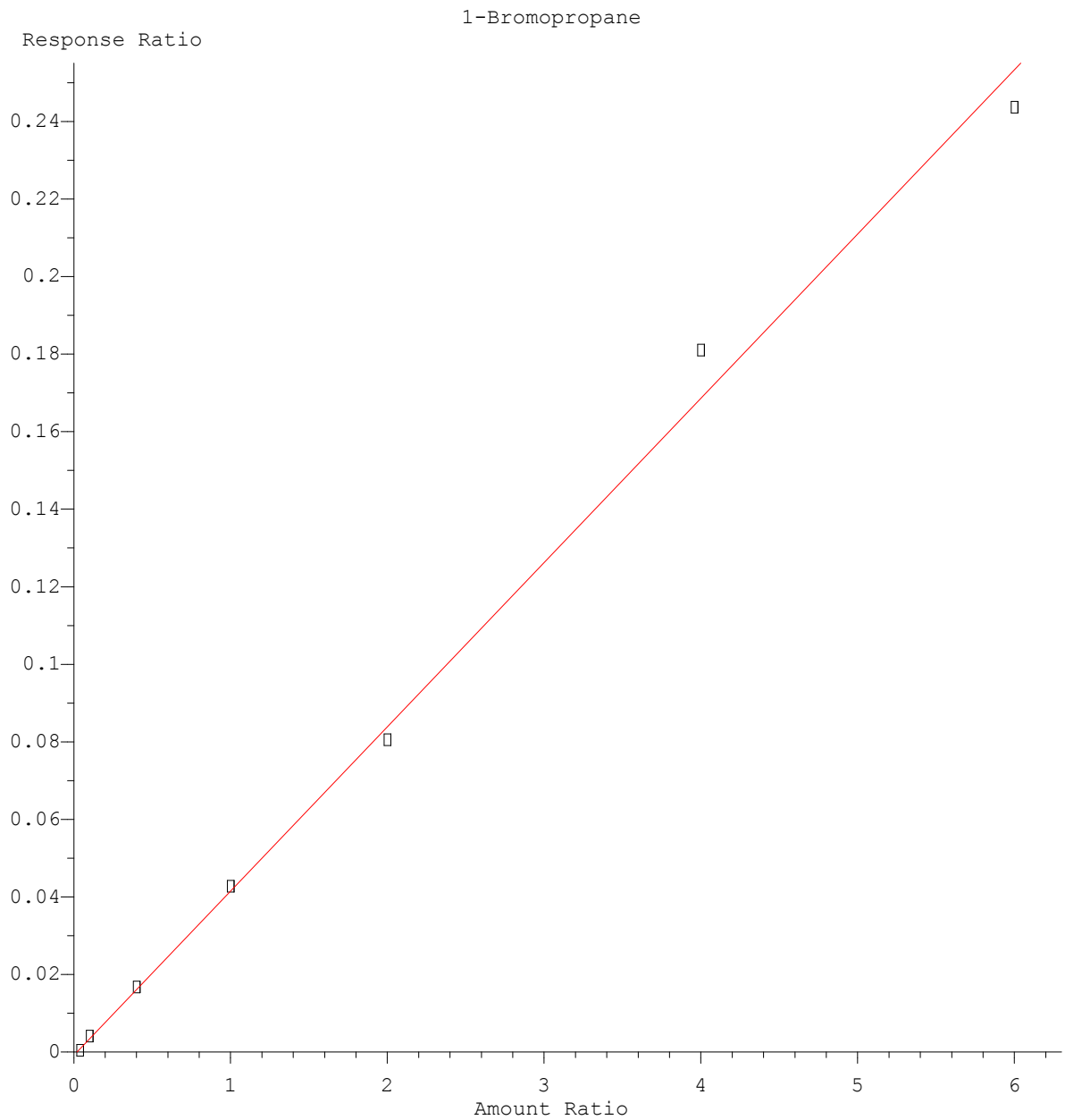

Resp Ratio = 4.25e-002 * Amt - 8.72e-004
Coef of Det (r^2) = 0.997 Curve Fit: wlr(1/a)

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

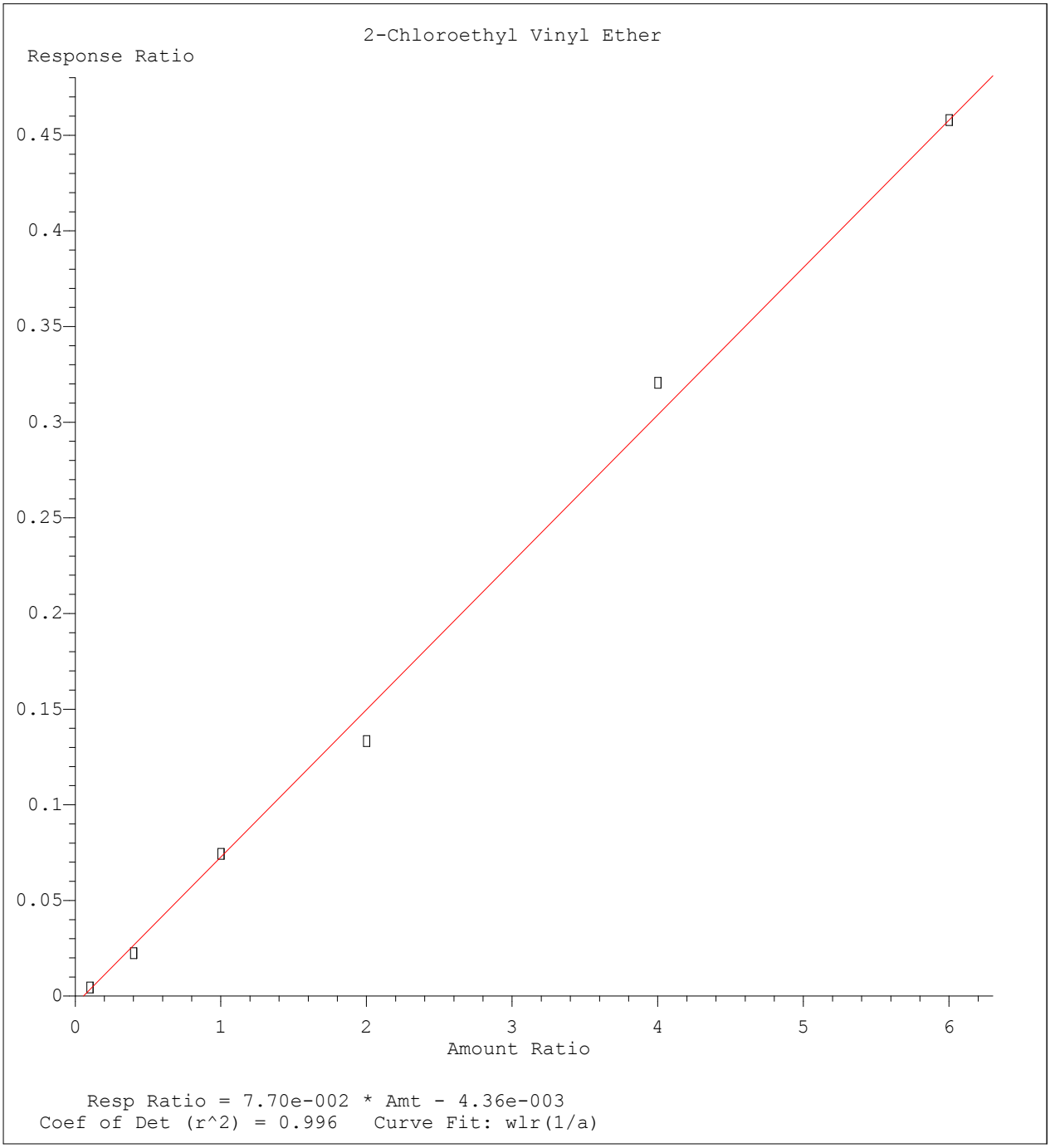

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:39:12 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	582126	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	421408	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	194909	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	163260	51.7395 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 103.48%		
43) 1,2-Dichloroethane-d4	10.45	65	197344	49.8458 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.70%		
58) Toluene-d8	12.82	98	564883	52.9951 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.00%		
79) p-Bromofluorobenzene	16.23	95	212358	55.9531 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 111.90%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	251431	63.3698 ug/kg	100
3) Chloromethane	3.74	50	200793	52.7216 ug/kg	100
4) Vinyl Chloride	3.99	62	228101	59.8284 ug/kg	99
5) 1,3-Butadiene	4.04	54	19055	5.2533 ug/kg	94
6) Bromomethane	4.88	94	121270	48.9744 ug/kg	100
7) Chloroethane	5.04	64	92003	54.1660 ug/kg	100
8) Trichlorofluoromethane	5.52	101	271981	47.5643 ug/kg	98
9) Diethyl ether	6.06	59	198146	74.1259 ug/kg	98
10) Isoprene	6.09	67	201645	59.0663 ug/kg	95
11) Acrolein	6.30	56	34569	64.8558 ug/kg	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	151498	51.3737 ug/kg	99
13) Acetone	6.41	43	65044	43.9190 ug/kg	98
14) 1,1-Dichloroethene	6.62	61	264179	48.5632 ug/kg	99
15) Tert-Butyl Alcohol	6.77	59	122141	205.1997 ug/kg	96
16) Dimethyl Sulfide	6.88	62	168266	73.1872 ug/kg	98
17) Iodomethane	7.13	142	81070	50.1419 ug/kg	99
18) Methyl acetate	7.15	43	155780	52.6767 ug/kg	99
19) Methylene Chloride	7.41	84	147546	49.8014 ug/kg	97
20) Carbon Disulfide	7.45	76	369798	44.1284 ug/kg	98
21) Acrylonitrile	7.59	53	71462	48.8478 ug/kg	99
22) Methyl Tert Butyl Ether	7.61	73	402298	47.6767 ug/kg	100
23) trans-1,2-Dichloroethene	7.85	61	245432	50.6242 ug/kg	100
24) n-Hexane	7.91	57	240056	48.0064 ug/kg	97
25) Diisopropyl ether	8.26	45	951889	81.9626 ug/kg	100
26) Vinyl Acetate	8.44	43	224385	33.8921 ug/kg	98
27) 1,1-Dichloroethane	8.47	63	282537	46.3987 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	854399	79.1219 ug/kg	99
29) 2-Butanone	9.03	43	88970	47.3950 ug/kg	99
30) Propionitrile	9.14	54	53106	92.4444 ug/kg	97
31) 2,2-Dichloropropane	9.24	77	213921	47.0673 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	167198	52.5828 ug/kg	96
33) Chloroform	9.52	83	268532	48.0056 ug/kg	99
34) 1-Bromopropane	9.65	122	36381	74.5451 ug/kg	96
35) Bromochloromethane	9.75	130	106386	51.5067 ug/kg	96
36) Tetrahydrofuran	9.78	42	101921	84.2313 ug/kg	98
38) 1,1,1-Trichloroethane	10.04	97	236420	46.7360 ug/kg	100
39) Cyclohexane	10.08	56	267623	48.5247 ug/kg	98
40) 1,1-Dichloropropene	10.25	75	193208	48.5381 ug/kg	99
41) Tert-Amyl-Methyl ether	10.34	73	688412	87.7041 ug/kg	100
42) Carbon Tetrachloride	10.39	117	218086	46.5023 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:39:12 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	241996	49.1831 ug/kg	99
46)	Benzene	10.60	78	545692	48.9674 ug/kg	99
47)	Trichloroethene	11.35	130	174371	49.3824 ug/kg	96
48)	Methylcyclohexane	11.44	83	228572	51.6120 ug/kg	98
49)	1,2-Dichloropropane	11.56	63	160075	52.3084 ug/kg	99
50)	1,4-Dioxane	11.88	88	7749	168.7883 ug/kg	88
51)	Bromodichloromethane	11.87	83	205164	47.5709 ug/kg	100
52)	Dibromomethane	11.96	174	95223	46.9624 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	36447	43.4907 ug/kg	97
54)	4-Methyl-2-Pentanone	12.19	58	64228	47.8173 ug/kg	96
55)	cis-1,3-Dichloropropene	12.50	75	238969	53.1840 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	243519	53.9302 ug/kg	99
59)	Toluene	12.93	91	610944	50.7412 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	172650	51.7315 ug/kg	99
61)	trans-1,3-Dichloropropene	13.11	75	216958	50.0293 ug/kg	98
62)	1,1,2-Trichloroethane	13.32	97	130293	51.5130 ug/kg	96
63)	2-Hexanone	13.25	43	121727	48.2017 ug/kg	99
64)	1,3-Dichloropropane	13.62	76	226811	53.8157 ug/kg	99
65)	Tetrachloroethene	13.75	164	128602	49.8224 ug/kg	96
66)	Dibromochloromethane	14.01	129	171284	48.4552 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	142409	50.7609 ug/kg	97
68)	1-Chlorohexane	14.35	91	184711	52.0217 ug/kg	98
69)	Chlorobenzene	14.77	112	433181	51.1898 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	157986	49.7138 ug/kg	100
71)	Ethylbenzene	14.79	106	223582	51.2841 ug/kg	100
72)	m-,p-Xylene	14.89	106	552299	102.5798 ug/kg	98
73)	o-Xylene	15.45	106	276739	53.5600 ug/kg	99
74)	Styrene	15.49	104	464515	52.7939 ug/kg	99
75)	Bromoform	15.99	173	109809	47.3129 ug/kg	99
76)	Isopropylbenzene	15.87	105	721376	52.0066 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	153818	52.0241 ug/kg	97
80)	1,2,3-Trichloropropane	16.29	110	60794	54.2181 ug/kg	92
81)	trans-1,4-Dichloro-2-Buten	16.33	53	48561	42.9649 ug/kg	74
82)	n-Propylbenzene	16.39	91	841260	54.9091 ug/kg	100
83)	Bromobenzene	16.52	156	188730	52.1806 ug/kg	96
84)	1,3,5-Trimethylbenzene	16.57	105	624761	54.3244 ug/kg	99
85)	2-Chlorotoluene	16.66	91	556729	54.1771 ug/kg	100
86)	4-Chlorotoluene	16.70	91	503918	53.0403 ug/kg	99
87)	a-Methylstyrene	16.98	118	305038	58.2105 ug/kg	98
88)	tert-Butylbenzene	17.03	134	133555	55.3912 ug/kg	90
89)	1,2,4-Trimethylbenzene	17.08	105	620621	51.5293 ug/kg	99
90)	sec-Butylbenzene	17.31	105	810765	54.7366 ug/kg	99
91)	p-Isopropyltoluene	17.46	119	675672	54.0529 ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	365216	50.8073 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	367190	51.0968 ug/kg	99
94)	n-Butylbenzene	17.99	91	609687	52.4585 ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	351826	52.7494 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	46623	54.4522 ug/kg	96
97)	1,2,4-Trichlorobenzene	20.43	180	244804	51.7031 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	136025	54.5004 ug/kg	99
99)	Naphthalene	20.81	128	603753	50.8387 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	241600	52.6087 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972907.D 8260SL.M Fri Feb 26 11:39:13 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:39 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

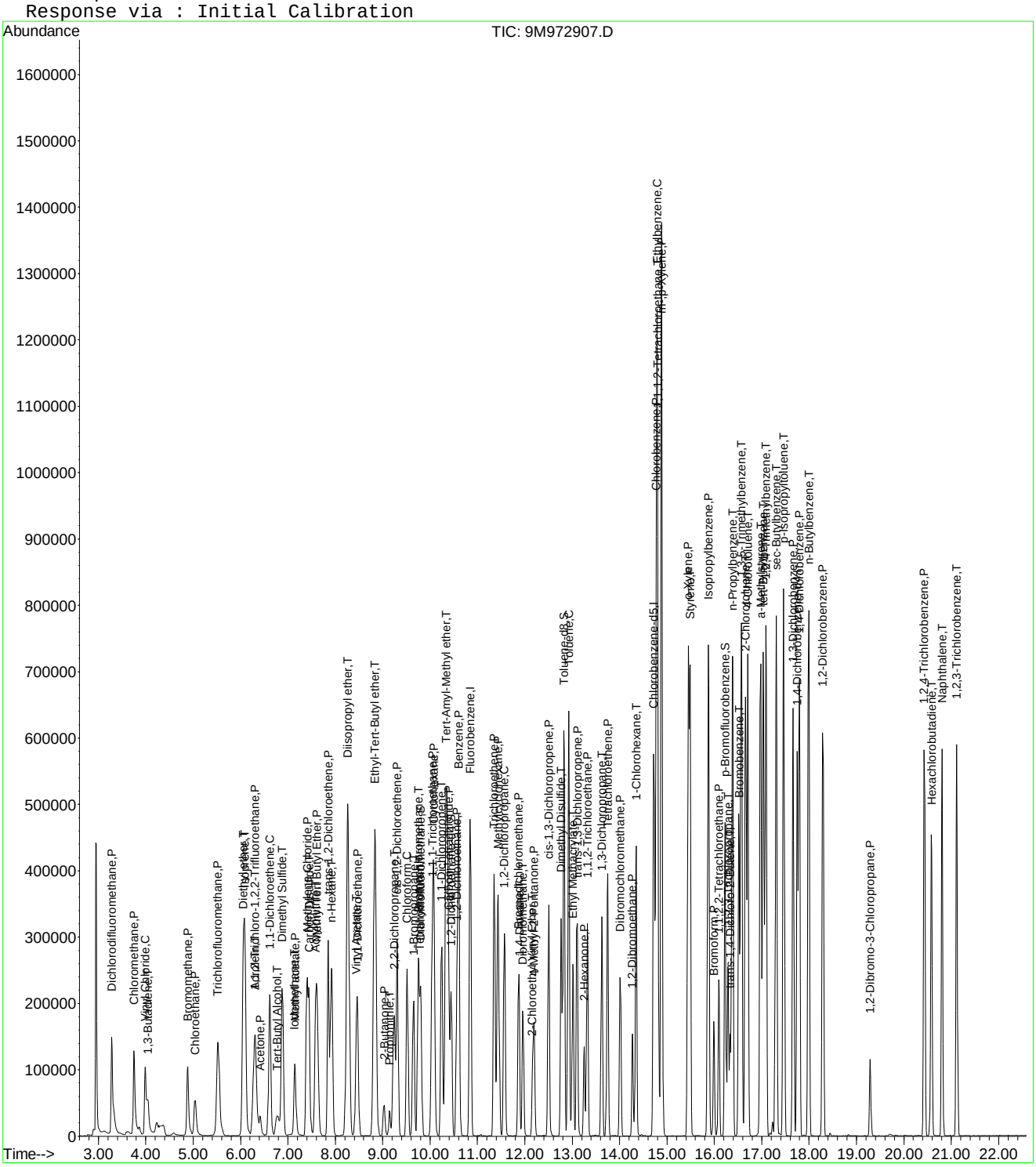

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	112	0.00
2	P	Dichlorodifluoromethane	50.0000	63.3698	-26.7#	123	0.00
3	P	Chloromethane	50.0000	52.7216	-5.4	107	0.00
4	C	Vinyl Chloride	50.0000	59.8284	-19.7	118	0.00
5	T	1,3-Butadiene	50.0000	5.2533	89.5#	11	0.00
6	P	Bromomethane	50.0000	48.9744	2.1	112	0.00
7	P	Chloroethane	50.0000	54.1660	-8.3	108	0.00
8	P	Trichlorofluoromethane	50.0000	47.5643	4.9	102	0.00
9	T	Diethyl ether	100.0000	74.1259	25.9#	79	0.01
10	T	Isoprene	50.0000	59.0664	-18.1	129	0.00
11	T	Acrolein	50.0000	64.8558	-29.7#	140	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	51.3737	-2.7	112	0.00
13	P	Acetone	50.0000	43.9190	12.2	98	0.00
14	C	1,1-Dichloroethene	50.0000	48.5632	2.9	108	0.00
15	T	Tert-Butyl Alcohol	200.0000	205.1997	-2.6	116	0.01
16	T	Dimethyl Sulfide	50.0000	73.1872	-46.4#	154	0.00
17	T	Iodomethane	50.0000	50.1419	-0.3	102	0.00
18	P	Methyl acetate	50.0000	52.6767	-5.4	115	0.01
19	P	Methylene Chloride	50.0000	49.8014	0.4	109	0.01
20	P	Carbon Disulfide	50.0000	44.1284	11.7	97	0.00
21	T	Acrylonitrile	50.0000	48.8478	2.3	103	0.00
22	P	Methyl Tert Butyl Ether	50.0000	47.6767	4.6	99	0.00
23	P	trans-1,2-Dichloroethene	50.0000	50.6242	-1.2	108	0.00
24	T	n-Hexane	50.0000	48.0064	4.0	109	0.00
25	T	Diisopropyl ether	100.0000	81.9626	18.0	87	0.00
26	T	Vinyl Acetate	50.0000	33.8921	32.2#	72	0.01
27	P	1,1-Dichloroethane	50.0000	46.3987	7.2	99	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	79.1219	20.9	83	0.00
29	P	2-Butanone	50.0000	47.3950	5.2	103	0.00
30	T	Propionitrile	100.0000	92.4444	7.6	100	0.00
31	T	2,2-Dichloropropane	50.0000	47.0673	5.9	99	0.00
32	P	cis-1,2-Dichloroethene	50.0000	52.5828	-5.2	109	0.00
33	C	Chloroform	50.0000	48.0057	4.0	102	0.00
34	T	1-Bromopropane	50.0000	74.5451	-49.1#	164	0.00
35	T	Bromochloromethane	50.0000	51.5067	-3.0	104	0.00
36	T	Tetrahydrofuran	100.0000	84.2314	15.8	90	0.00
37	S	Dibromofluoromethane	50.0000	51.7395	-3.5	110	0.00
38	P	1,1,1-Trichloroethane	50.0000	46.7360	6.5	97	0.00
39	P	Cyclohexane	50.0000	48.5247	3.0	108	0.00
40	T	1,1-Dichloropropene	50.0000	48.5381	2.9	106	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	87.7041	12.3	93	0.00
42	P	Carbon Tetrachloride	50.0000	46.5023	7.0	99	0.00
43	S	1,2-Dichloroethane-d4	50.0000	49.8458	0.3	107	0.00
44		Heptane	-1.0000	0.0000	0.0	104	0.00
45	P	1,2-Dichloroethane	50.0000	49.1831	1.6	102	0.00
46	P	Benzene	50.0000	48.9674	2.1	108	0.00
47	P	Trichloroethene	50.0000	49.3824	1.2	106	0.00
48	P	Methylcyclohexane	50.0000	51.6120	-3.2	112	0.00
49	C	1,2-Dichloropropane	50.0000	52.3083	-4.6	108	0.00
50	T	1,4-Dioxane	200.0000	168.7883	15.6	99	0.00
51	P	Bromodichloromethane	50.0000	47.5710	4.9	101	0.00
52	T	Dibromomethane	50.0000	46.9624	6.1	99	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	43.4907	13.0	95	0.00
54	P	4-Methyl-2-Pentanone	50.0000	47.8173	4.4	99	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	53.1840	-6.4	112	0.00
56	T	Dimethyl Disulfide	50.0000	53.9302	-7.9	111	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	111	0.00
58	S	Toluene-d8	50.0000	52.9951	-6.0	110	0.00
59	C	Toluene	50.0000	50.7412	-1.5	108	0.00
60	T	Ethyl Methacrylate	50.0000	51.7315	-3.5	109	0.00
61	P	trans-1,3-Dichloropropene	50.0000	50.0293	-0.1	102	0.00
62	P	1,1,2-Trichloroethane	50.0000	51.5130	-3.0	106	0.00
63	P	2-Hexanone	50.0000	48.2017	3.6	102	0.00
64	T	1,3-Dichloropropane	50.0000	53.8157	-7.6	113	0.00
65	P	Tetrachloroethene	50.0000	49.8224	0.4	110	0.00
66	P	Dibromochloromethane	50.0000	48.4552	3.1	101	0.00
67	P	1,2-Dibromoethane	50.0000	50.7609	-1.5	107	0.00
68	T	1-Chlorohexane	50.0000	52.0217	-4.0	110	0.00
69	P	Chlorobenzene	50.0000	51.1898	-2.4	108	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	49.7138	0.6	102	0.00
71	C	Ethylbenzene	50.0000	51.2841	-2.6	108	0.00
72	P	m-,p-Xylene	100.0000	102.5798	-2.6	111	0.00
73	P	o-Xylene	50.0000	53.5600	-7.1	112	0.00
74	P	Styrene	50.0000	52.7939	-5.6	109	0.00
75	P	Bromoform	50.0000	47.3129	5.4	95	0.00
76	P	Isopropylbenzene	50.0000	52.0066	-4.0	110	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	107	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	52.0241	-4.0	104	0.00
79	S	p-Bromofluorobenzene	50.0000	55.9531	-11.9	111	0.00
80	T	1,2,3-Trichloropropane	50.0000	54.2181	-8.4	109	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	42.9649	14.1	87	0.00
82	T	n-Propylbenzene	50.0000	54.9091	-9.8	112	0.00
83	T	Bromobenzene	50.0000	52.1806	-4.4	106	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	54.3244	-8.6	110	0.00
85	T	2-Chlorotoluene	50.0000	54.1771	-8.4	115	0.00
86	T	4-Chlorotoluene	50.0000	53.0403	-6.1	105	0.00
87	T	a-Methylstyrene	50.0000	58.2105	-16.4	119	0.00
88	T	tert-Butylbenzene	50.0000	55.3912	-10.8	110	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	51.5293	-3.1	107	0.00
90	T	sec-Butylbenzene	50.0000	54.7366	-9.5	112	0.00
91	T	p-Isopropyltoluene	50.0000	54.0529	-8.1	110	0.00
92	P	1,3-Dichlorobenzene	50.0000	50.8073	-1.6	108	0.00
93	P	1,4-Dichlorobenzene	50.0000	51.0968	-2.2	110	0.00
94	T	n-Butylbenzene	50.0000	52.4585	-4.9	108	0.00
95	P	1,2-Dichlorobenzene	50.0000	52.7494	-5.5	110	0.00
96	P	1,2-Dibromo-3-Chloropropane	50.0000	54.4522	-8.9	109	0.00
97	P	1,2,4-Trichlorobenzene	50.0000	51.7031	-3.4	110	0.00
98	T	Hexachlorobutadiene	50.0000	54.5004	-9.0	116	0.00
99	T	Naphthalene	50.0000	50.8387	-1.7	100	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	52.6087	-5.2	109	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972907.D 8260SL.M Fri Feb 26 11:39:16 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030616\9M973099.D Vial: 3
Acq On : 6 Mar 2016 15:56 Operator: ADC
Sample : WG559858-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 06 16:18:41 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	540271	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	409527	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.75	152	218878	50.00 ug/kg	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.80	111	142842	48.7757 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.56%		
43) 1,2-Dichloroethane-d4	10.44	65	179724	48.9121 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.82%		
58) Toluene-d8	12.83	98	506431	48.8897 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 97.78%		
79) p-Bromofluorobenzene	16.23	95	211772	49.6883 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 99.38%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	152852	41.5088 ug/kg	100
3) Chloromethane	3.74	50	156738	44.3425 ug/kg	99
4) Vinyl Chloride	3.99	62	182496	51.5749 ug/kg	99
5) 1,3-Butadiene	4.04	54	191273	56.8180 ug/kg	98
6) Bromomethane	4.88	94	96576	42.0233 ug/kg	97
7) Chloroethane	5.04	64	76033	48.2316 ug/kg	97
8) Trichlorofluoromethane	5.53	101	253324	47.7336 ug/kg	99
9) Diethyl ether	6.05	59	263983	106.4060 ug/kg	98
10) Isoprene	6.10	67	174062	54.9366 ug/kg	98
11) Acrolein	6.30	56	26216	52.9948 ug/kg	84
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	135596	49.5434 ug/kg	97
13) Acetone	6.40	43	68915	50.4935 ug/kg	100
14) 1,1-Dichloroethene	6.61	61	254517	50.4116 ug/kg	99
15) Tert-Butyl Alcohol	6.75	59	117182	212.1200 ug/kg	98
16) Dimethyl Sulfide	6.88	62	111297	52.1588 ug/kg	97
17) Iodomethane	7.14	142	63424	42.7063 ug/kg	98
18) Methyl acetate	7.14	43	166073	60.5078 ug/kg	97
19) Methylene Chloride	7.40	84	136418	49.6125 ug/kg	93
20) Carbon Disulfide	7.45	76	404084	51.9554 ug/kg	99
21) Acrylonitrile	7.59	53	77407	57.0106 ug/kg	99
22) Methyl Tert Butyl Ether	7.61	73	416760	53.2169 ug/kg	98
23) trans-1,2-Dichloroethene	7.85	61	235917	52.4314 ug/kg	96
24) n-Hexane	7.92	57	263016	56.6727 ug/kg	100
25) Diisopropyl ether	8.26	45	1195367	110.9012 ug/kg	98
26) Vinyl Acetate	8.43	43	313012	50.9414 ug/kg	99
27) 1,1-Dichloroethane	8.47	63	287207	50.8195 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	1064834	106.2487 ug/kg	98
29) 2-Butanone	9.02	43	93561	53.7018 ug/kg	98
30) Propionitrile	9.14	54	60333	113.1611 ug/kg	99
31) 2,2-Dichloropropane	9.24	77	211528	50.1463 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	153158	51.8989 ug/kg	93
33) Chloroform	9.52	83	261190	50.3104 ug/kg	100
34) 1-Bromopropane	9.65	122	22000	48.9279 ug/kg	99
35) Bromochloromethane	9.75	130	99779	52.0504 ug/kg	91
36) Tetrahydrofuran	9.78	42	129342	115.1741 ug/kg	98
38) 1,1,1-Trichloroethane	10.04	97	235016	50.0576 ug/kg	95
39) Cyclohexane	10.08	56	290166	56.6880 ug/kg	98
40) 1,1-Dichloropropene	10.24	75	186325	50.4353 ug/kg	99
41) Tert-Amyl-Methyl ether	10.34	73	761065	104.4717 ug/kg	98
42) Carbon Tetrachloride	10.39	117	215214	49.4450 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M973099.D 8260SL.M Sun Mar 06 16:18:42 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030616\9M973099.D Vial: 3
Acq On : 6 Mar 2016 15:56 Operator: ADC
Sample : WG559858-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 06 16:18:41 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	251601	55.0967	ug/kg	97
46)	Benzene	10.60	78	517616	50.0464	ug/kg	99
47)	Trichloroethene	11.35	130	165110	50.3822	ug/kg	96
48)	Methylcyclohexane	11.44	83	229191	55.7610	ug/kg	96
49)	1,2-Dichloropropane	11.57	63	152881	53.8278	ug/kg	100
50)	1,4-Dioxane	11.88	88	10267	240.9603	ug/kg	97
51)	Bromodichloromethane	11.87	83	203332	50.7986	ug/kg	98
52)	Dibromomethane	11.96	174	98058	52.1071	ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.17	63	36203	46.3473	ug/kg	97
54)	4-Methyl-2-Pentanone	12.19	58	69290	55.5824	ug/kg	99
55)	cis-1,3-Dichloropropene	12.50	75	217717	52.2080	ug/kg	98
56)	Dimethyl Disulfide	12.77	94	231653	55.2768	ug/kg	98
59)	Toluene	12.92	91	580049	49.5729	ug/kg	100
60)	Ethyl Methacrylate	13.02	69	181833	56.0636	ug/kg	97
61)	trans-1,3-Dichloropropene	13.10	75	215831	51.2133	ug/kg	99
62)	1,1,2-Trichloroethane	13.32	97	133530	54.3244	ug/kg	100
63)	2-Hexanone	13.25	43	133511	54.4017	ug/kg	99
64)	1,3-Dichloropropane	13.62	76	209116	51.0567	ug/kg	93
65)	Tetrachloroethene	13.75	164	123539	49.2495	ug/kg	96
66)	Dibromochloromethane	14.01	129	172466	50.2051	ug/kg	97
67)	1,2-Dibromoethane	14.28	107	135412	49.6671	ug/kg	98
68)	1-Chlorohexane	14.35	91	186775	54.1291	ug/kg	94
69)	Chlorobenzene	14.77	112	403713	49.0916	ug/kg	98
70)	1,1,1,2-Tetrachloroethane	14.80	131	155707	50.4182	ug/kg	94
71)	Ethylbenzene	14.79	106	215364	50.8323	ug/kg	100
72)	m-,p-Xylene	14.89	106	531429	101.5671	ug/kg	97
73)	o-Xylene	15.45	106	257893	51.3606	ug/kg	99
74)	Styrene	15.49	104	440272	51.4903	ug/kg	99
75)	Bromoform	15.99	173	114415	50.7277	ug/kg	99
76)	Isopropylbenzene	15.87	105	694457	51.5184	ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	154978	46.6764	ug/kg	100
80)	1,2,3-Trichloropropane	16.29	110	59930	47.5946	ug/kg	99
81)	trans-1,4-Dichloro-2-Buten	16.33	53	70039	55.1818	ug/kg	79
82)	n-Propylbenzene	16.39	91	801774	46.6010	ug/kg	98
83)	Bromobenzene	16.52	156	179091	44.0932	ug/kg	93
84)	1,3,5-Trimethylbenzene	16.57	105	589463	45.6422	ug/kg	99
85)	2-Chlorotoluene	16.66	91	523842	45.3944	ug/kg	100
86)	4-Chlorotoluene	16.70	91	484086	45.3731	ug/kg	99
87)	a-Methylstyrene	16.98	118	293131	49.8126	ug/kg	100
88)	tert-Butylbenzene	17.04	134	125771	46.4505	ug/kg	99
89)	1,2,4-Trimethylbenzene	17.09	105	604060	44.6620	ug/kg	100
90)	sec-Butylbenzene	17.30	105	771716	46.3949	ug/kg	99
91)	p-Isopropyltoluene	17.46	119	643926	45.8721	ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	343352	42.5349	ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	342896	42.4908	ug/kg	100
94)	n-Butylbenzene	17.99	91	613993	47.0438	ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	330049	44.0654	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	42809	44.5225	ug/kg	98
97)	1,2,4-Trichlorobenzene	20.43	180	227738	42.8315	ug/kg	99
98)	Hexachlorobutadiene	20.59	225	120658	43.0494	ug/kg	99
99)	Naphthalene	20.81	128	614969	46.1125	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	228091	44.2281	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030616\9M973099.D Vial: 3
Acq On : 6 Mar 2016 15:56 Operator: ADC
Sample : WG559858-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 6 16:18 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

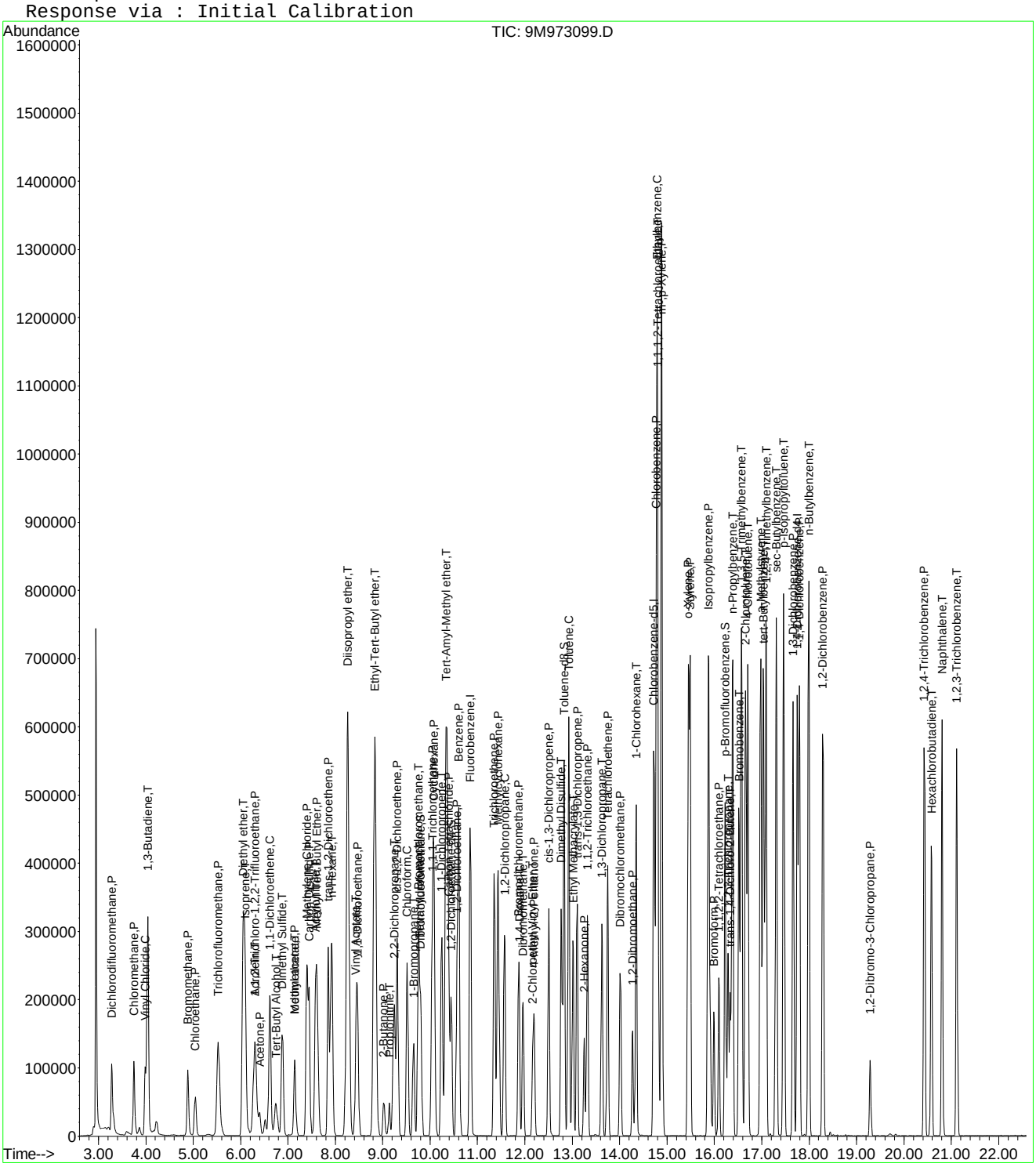

9M973099.D 8260SL.M Sun Mar 06 16:18:42 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\030616\9M973099.D Vial: 3
Acq On : 6 Mar 2016 15:56 Operator: ADC
Sample : WG559858-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	104	0.00
2	P	Dichlorodifluoromethane	0.3408	0.2829	17.0	75	0.00
3	P	Chloromethane	0.3271	0.2901	11.3	84	0.00
4	C	Vinyl Chloride	0.3275	0.3378	-3.2	95	0.00
5	T	1,3-Butadiene	0.3115	0.3540	-13.6	112	0.00
6	P	Bromomethane	0.2127	0.1787	16.0	89	0.00
7	P	Chloroethane	0.1459	0.1407	3.5	89	0.00
8	P	Trichlorofluoromethane	0.4911	0.4689	4.5	95	0.00
9	T	Diethyl ether	0.2296	0.2443	-6.4	106	0.01
10	T	Isoprene	0.2932	0.3222	-9.9	111	0.01
11	T	Acrolein	0.0458	0.0485	-6.0	106	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	0.2533	0.2510	0.9	100	0.00
13	P	Acetone	0.1376	0.1276	7.3	104	0.00
14	C	1,1-Dichloroethene	0.4672	0.4711	-0.8	104	0.00
15	T	Tert-Butyl Alcohol	0.0511	0.0542	-6.0	112	-0.01
16	T	Dimethyl Sulfide	0.1975	0.2060	-4.3	102	0.00
17	T	Iodomethane	0.1273	0.1174	7.8	80	0.01
18	P	Methyl acetate	0.2540	0.3074	-21.0	122	0.00
19	P	Methylene Chloride	0.2545	0.2525	0.8	101	0.00
20	P	Carbon Disulfide	0.7198	0.7479	-3.9	106	0.00
21	T	Acrylonitrile	0.1257	0.1433	-14.0	111	0.00
22	P	Methyl Tert Butyl Ether	0.7248	0.7714	-6.4	102	0.00
23	P	trans-1,2-Dichloroethene	0.4164	0.4367	-4.9	104	0.00
24	T	n-Hexane	0.4295	0.4868	-13.3	120	0.01
25	T	Diisopropyl ether	0.9975	1.1063	-10.9	110	0.00
26	T	Vinyl Acetate	0.5686	0.5794	-1.9	100	0.00
27	P	1,1-Dichloroethane	0.5230	0.5316	-1.6	101	0.00
28	T	Ethyl-Tert-Butyl ether	0.9275	0.9855	-6.2	104	0.00
29	P	2-Butanone	0.1612	0.1732	-7.4	109	-0.01
30	T	Propionitrile	0.0493	0.0558	-13.2	113	0.00
31	T	2,2-Dichloropropane	0.3904	0.3915	-0.3	98	0.00
32	P	cis-1,2-Dichloroethene	0.2731	0.2835	-3.8	100	0.00
33	C	Chloroform	0.4805	0.4834	-0.6	99	0.00
34	T	1-Bromopropane	0.0376	0.0407	-8.3	99	0.00
35	T	Bromochloromethane	0.1774	0.1847	-4.1	97	0.00
36	T	Tetrahydrofuran	0.1039	0.1197	-15.2	114	0.00
37	S	Dibromofluoromethane	0.2710	0.2644	2.4	97	0.00
38	P	1,1,1-Trichloroethane	0.4345	0.4350	-0.1	97	0.00
39	P	Cyclohexane	0.4737	0.5371	-13.4	117	0.00
40	T	1,1-Dichloropropene	0.3419	0.3449	-0.9	102	0.00
41	T	Tert-Amyl-Methyl ether	0.6742	0.7043	-4.5	103	0.00
42	P	Carbon Tetrachloride	0.4028	0.3983	1.1	97	0.00
43	S	1,2-Dichloroethane-d4	0.3401	0.3327	2.2	98	0.00
44		Heptane	0.0000	0.0000	0.0	110	0.00
45	P	1,2-Dichloroethane	0.4226	0.4657	-10.2	106	0.00
46	P	Benzene	0.9572	0.9581	-0.1	103	0.00
47	P	Trichloroethene	0.3033	0.3056	-0.8	101	0.00
48	P	Methylcyclohexane	0.3804	0.4242	-11.5	112	0.00
49	C	1,2-Dichloropropane	0.2628	0.2830	-7.7	103	0.01
50	T	1,4-Dioxane	0.0039	0.0047	-20.6	132	0.00
51	P	Bromodichloromethane	0.3704	0.3764	-1.6	100	0.00
52	T	Dibromomethane	0.1742	0.1815	-4.2	102	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0665	0.0670	-0.7	94	0.00
54	P	4-Methyl-2-Pentanone	0.1154	0.1283	-11.2	107	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\030616\9M973099.D Vial: 3
Acq On : 6 Mar 2016 15:56 Operator: ADC
Sample : WG559858-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	0.3859	0.4030	-4.4	102	0.00
56	T	Dimethyl Disulfide	0.3878	0.4288	-10.6	105	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	108	-0.01
58	S	Toluene-d8	1.2647	1.2366	2.2	99	0.00
59	C	Toluene	1.4286	1.4164	0.9	103	0.00
60	T	Ethyl Methacrylate	0.3960	0.4440	-12.1	114	0.00
61	P	trans-1,3-Dichloropropene	0.5145	0.5270	-2.4	102	0.00
62	P	1,1,2-Trichloroethane	0.3001	0.3261	-8.7	109	-0.01
63	P	2-Hexanone	0.2996	0.3260	-8.8	112	0.00
64	T	1,3-Dichloropropane	0.5001	0.5106	-2.1	104	-0.01
65	P	Tetrachloroethene	0.3063	0.3017	1.5	106	0.00
66	P	Dibromochloromethane	0.4194	0.4211	-0.4	102	0.00
67	P	1,2-Dibromoethane	0.3329	0.3307	0.7	102	0.00
68	T	1-Chlorohexane	0.4213	0.4561	-8.3	111	0.00
69	P	Chlorobenzene	1.0041	0.9858	1.8	101	0.00
70	T	1,1,1,2-Tetrachloroethane	0.3771	0.3802	-0.8	101	0.00
71	C	Ethylbenzene	0.5173	0.5259	-1.7	104	-0.01
72	P	m-,p-Xylene	0.6388	0.6488	-1.6	107	0.00
73	P	o-Xylene	0.6130	0.6297	-2.7	104	0.00
74	P	Styrene	1.0440	1.0751	-3.0	103	0.00
75	P	Bromoform	0.2754	0.2794	-1.5	99	-0.01
76	P	Isopropylbenzene	1.6458	1.6958	-3.0	105	-0.01
77	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	120	-0.01
78	P	1,1,2,2-Tetrachloroethane	0.7585	0.7081	6.6	105	-0.01
79	S	p-Bromofluorobenzene	0.9736	0.9675	0.6	110	0.00
80	T	1,2,3-Trichloropropane	0.2876	0.2738	4.8	108	0.00
81	T	trans-1,4-Dichloro-2-Butene	0.2899	0.3200	-10.4	126	0.00
82	T	n-Propylbenzene	3.9303	3.6631	6.8	107	0.00
83	T	Bromobenzene	0.9278	0.8182	11.8	101	0.00
84	T	1,3,5-Trimethylbenzene	2.9502	2.6931	8.7	104	-0.01
85	T	2-Chlorotoluene	2.6361	2.3933	9.2	108	0.00
86	T	4-Chlorotoluene	2.4372	2.2117	9.3	101	0.00
87	T	a-Methylstyrene	1.3443	1.3392	0.4	115	0.00
88	T	tert-Butylbenzene	0.6185	0.5746	7.1	103	0.00
89	T	1,2,4-Trimethylbenzene	3.0897	2.7598	10.7	104	0.00
90	T	sec-Butylbenzene	3.7998	3.5258	7.2	106	0.00
91	T	p-Isopropyltoluene	3.2067	2.9419	8.3	105	0.00
92	P	1,3-Dichlorobenzene	1.8440	1.5687	14.9	102	0.00
93	P	1,4-Dichlorobenzene	1.8435	1.5666	15.0	102	-0.01
94	T	n-Butylbenzene	2.9815	2.8052	5.9	109	0.00
95	P	1,2-Dichlorobenzene	1.7110	1.5079	11.9	103	-0.01
96	P	1,2-Dibromo-3-Chloropropane	0.2197	0.1956	11.0	100	-0.01
97	P	1,2,4-Trichlorobenzene	1.2146	1.0405	14.3	102	-0.01
98	T	Hexachlorobutadiene	0.6403	0.5513	13.9	103	0.00
99	T	Naphthalene	3.0465	2.8096	7.8	102	0.00
100	T	1,2,3-Trichlorobenzene	1.1781	1.0421	11.5	103	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M973099.D 8260SL.M Mon Mar 07 08:50:47 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\030616\9M973099.D Vial: 3
Acq On : 6 Mar 2016 15:56 Operator: ADC
Sample : WG559858-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	104	0.00
2	P	Dichlorodifluoromethane	50.0000	41.5088	17.0	75	0.00
3	P	Chloromethane	50.0000	44.3425	11.3	84	0.00
4	C	Vinyl Chloride	50.0000	51.5749	-3.1	95	0.00
5	T	1,3-Butadiene	50.0000	56.8180	-13.6	112	0.00
6	P	Bromomethane	50.0000	42.0233	16.0	89	0.00
7	P	Chloroethane	50.0000	48.2316	3.5	89	0.00
8	P	Trichlorofluoromethane	50.0000	47.7336	4.5	95	0.00
9	T	Diethyl ether	100.0000	106.4060	-6.4	106	0.01
10	T	Isoprene	50.0000	54.9366	-9.9	111	0.01
11	T	Acrolein	50.0000	52.9948	-6.0	106	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	49.5434	0.9	100	0.00
13	P	Acetone	50.0000	50.4935	-1.0	104	0.00
14	C	1,1-Dichloroethene	50.0000	50.4117	-0.8	104	0.00
15	T	Tert-Butyl Alcohol	200.0000	212.1200	-6.1	112	-0.01
16	T	Dimethyl Sulfide	50.0000	52.1588	-4.3	102	0.00
17	T	Iodomethane	50.0000	42.7063	14.6	80	0.01
18	P	Methyl acetate	50.0000	60.5078	-21.0	122	0.00
19	P	Methylene Chloride	50.0000	49.6125	0.8	101	0.00
20	P	Carbon Disulfide	50.0000	51.9554	-3.9	106	0.00
21	T	Acrylonitrile	50.0000	57.0106	-14.0	111	0.00
22	P	Methyl Tert Butyl Ether	50.0000	53.2169	-6.4	102	0.00
23	P	trans-1,2-Dichloroethene	50.0000	52.4314	-4.9	104	0.00
24	T	n-Hexane	50.0000	56.6727	-13.3	120	0.01
25	T	Diisopropyl ether	100.0000	110.9012	-10.9	110	0.00
26	T	Vinyl Acetate	50.0000	50.9414	-1.9	100	0.00
27	P	1,1-Dichloroethane	50.0000	50.8195	-1.6	101	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	106.2487	-6.2	104	0.00
29	P	2-Butanone	50.0000	53.7018	-7.4	109	-0.01
30	T	Propionitrile	100.0000	113.1611	-13.2	113	0.00
31	T	2,2-Dichloropropane	50.0000	50.1463	-0.3	98	0.00
32	P	cis-1,2-Dichloroethene	50.0000	51.8989	-3.8	100	0.00
33	C	Chloroform	50.0000	50.3104	-0.6	99	0.00
34	T	1-Bromopropane	50.0000	48.9279	2.1	99	0.00
35	T	Bromochloromethane	50.0000	52.0504	-4.1	97	0.00
36	T	Tetrahydrofuran	100.0000	115.1741	-15.2	114	0.00
37	S	Dibromofluoromethane	50.0000	48.7757	2.4	97	0.00
38	P	1,1,1-Trichloroethane	50.0000	50.0576	-0.1	97	0.00
39	P	Cyclohexane	50.0000	56.6880	-13.4	117	0.00
40	T	1,1-Dichloropropene	50.0000	50.4353	-0.9	102	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	104.4717	-4.5	103	0.00
42	P	Carbon Tetrachloride	50.0000	49.4450	1.1	97	0.00
43	S	1,2-Dichloroethane-d4	50.0000	48.9121	2.2	98	0.00
44		Heptane	-1.0000	0.0000	0.0	110	0.00
45	P	1,2-Dichloroethane	50.0000	55.0967	-10.2	106	0.00
46	P	Benzene	50.0000	50.0464	-0.1	103	0.00
47	P	Trichloroethene	50.0000	50.3822	-0.8	101	0.00
48	P	Methylcyclohexane	50.0000	55.7610	-11.5	112	0.00
49	C	1,2-Dichloropropane	50.0000	53.8278	-7.7	103	0.01
50	T	1,4-Dioxane	200.0000	240.9603	-20.5	132	0.00
51	P	Bromodichloromethane	50.0000	50.7986	-1.6	100	0.00
52	T	Dibromomethane	50.0000	52.1071	-4.2	102	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	46.3473	7.3	94	0.00
54	P	4-Methyl-2-Pentanone	50.0000	55.5824	-11.2	107	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\030616\9M973099.D Vial: 3
Acq On : 6 Mar 2016 15:56 Operator: ADC
Sample : WG559858-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	52.2080	-4.4	102	0.00
56	T	Dimethyl Disulfide	50.0000	55.2768	-10.6	105	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	108	-0.01
58	S	Toluene-d8	50.0000	48.8897	2.2	99	0.00
59	C	Toluene	50.0000	49.5729	0.9	103	0.00
60	T	Ethyl Methacrylate	50.0000	56.0637	-12.1	114	0.00
61	P	trans-1,3-Dichloropropene	50.0000	51.2133	-2.4	102	0.00
62	P	1,1,2-Trichloroethane	50.0000	54.3244	-8.6	109	-0.01
63	P	2-Hexanone	50.0000	54.4017	-8.8	112	0.00
64	T	1,3-Dichloropropane	50.0000	51.0567	-2.1	104	-0.01
65	P	Tetrachloroethene	50.0000	49.2495	1.5	106	0.00
66	P	Dibromochloromethane	50.0000	50.2051	-0.4	102	0.00
67	P	1,2-Dibromoethane	50.0000	49.6671	0.7	102	0.00
68	T	1-Chlorohexane	50.0000	54.1291	-8.3	111	0.00
69	P	Chlorobenzene	50.0000	49.0916	1.8	101	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	50.4182	-0.8	101	0.00
71	C	Ethylbenzene	50.0000	50.8323	-1.7	104	-0.01
72	P	m-,p-Xylene	100.0000	101.5671	-1.6	107	0.00
73	P	o-Xylene	50.0000	51.3606	-2.7	104	0.00
74	P	Styrene	50.0000	51.4903	-3.0	103	0.00
75	P	Bromoform	50.0000	50.7277	-1.5	99	-0.01
76	P	Isopropylbenzene	50.0000	51.5184	-3.0	105	-0.01
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	120	-0.01
78	P	1,1,2,2-Tetrachloroethane	50.0000	46.6764	6.6	105	-0.01
79	S	p-Bromofluorobenzene	50.0000	49.6883	0.6	110	0.00
80	T	1,2,3-Trichloropropane	50.0000	47.5946	4.8	108	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	55.1818	-10.4	126	0.00
82	T	n-Propylbenzene	50.0000	46.6011	6.8	107	0.00
83	T	Bromobenzene	50.0000	44.0932	11.8	101	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	45.6422	8.7	104	-0.01
85	T	2-Chlorotoluene	50.0000	45.3944	9.2	108	0.00
86	T	4-Chlorotoluene	50.0000	45.3731	9.3	101	0.00
87	T	a-Methylstyrene	50.0000	49.8126	0.4	115	0.00
88	T	tert-Butylbenzene	50.0000	46.4505	7.1	103	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	44.6620	10.7	104	0.00
90	T	sec-Butylbenzene	50.0000	46.3948	7.2	106	0.00
91	T	p-Isopropyltoluene	50.0000	45.8721	8.3	105	0.00
92	P	1,3-Dichlorobenzene	50.0000	42.5349	14.9	102	0.00
93	P	1,4-Dichlorobenzene	50.0000	42.4908	15.0	102	-0.01
94	T	n-Butylbenzene	50.0000	47.0438	5.9	109	0.00
95	P	1,2-Dichlorobenzene	50.0000	44.0654	11.9	103	-0.01
96	P	1,2-Dibromo-3-Chloropropane	50.0000	44.5225	11.0	100	-0.01
97	P	1,2,4-Trichlorobenzene	50.0000	42.8315	14.3	102	-0.01
98	T	Hexachlorobutadiene	50.0000	43.0494	13.9	103	0.00
99	T	Naphthalene	50.0000	46.1125	7.8	102	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	44.2281	11.5	103	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M973099.D 8260SL.M Mon Mar 07 08:50:46 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030716\9M973121.D Vial: 1
Acq On : 7 Mar 2016 15:17 Operator: ADC
Sample : WG559980-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 15:39:41 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	541092	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	410315	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	216745	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	136467	46.5282 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.06%		
43) 1,2-Dichloroethane-d4	10.45	65	183191	49.7800 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.56%		
58) Toluene-d8	12.83	98	484876	46.7190 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 93.44%		
79) p-Bromofluorobenzene	16.23	95	209340	49.6010 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 99.20%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	165796	44.9556 ug/kg	94
3) Chloromethane	3.75	50	169574	47.9011 ug/kg	100
4) Vinyl Chloride	3.99	62	197450	55.7164 ug/kg	98
5) 1,3-Butadiene	4.04	54	219394	65.0725 ug/kg	97
6) Bromomethane	4.88	94	98848	42.9467 ug/kg	98
7) Chloroethane	5.04	64	86411	54.7318 ug/kg	95
8) Trichlorofluoromethane	5.52	101	293802	55.2768 ug/kg	99
9) Diethyl ether	6.05	59	250267	100.7243 ug/kg	95
10) Isoprene	6.09	67	187307	59.0273 ug/kg	94
11) Acrolein	6.29	56	24619	49.6910 ug/kg	88
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	150516	54.9114 ug/kg	98
13) Acetone	6.40	43	68407	50.0230 ug/kg	98
14) 1,1-Dichloroethene	6.62	61	269678	53.3335 ug/kg	98
15) Tert-Butyl Alcohol	6.75	59	100671	181.9557 ug/kg	95
16) Dimethyl Sulfide	6.88	62	110228	51.5795 ug/kg	89
17) Iodomethane	7.13	142	69289	46.3306 ug/kg	91
18) Methyl acetate	7.14	43	160928	58.5442 ug/kg	96
19) Methylene Chloride	7.40	84	137592	49.9635 ug/kg	89
20) Carbon Disulfide	7.44	76	422471	54.2371 ug/kg	98
21) Acrylonitrile	7.58	53	72603	53.3913 ug/kg	98
22) Methyl Tert Butyl Ether	7.61	73	405307	51.6759 ug/kg	98
23) trans-1,2-Dichloroethene	7.84	61	247137	54.8416 ug/kg	95
24) n-Hexane	7.91	57	280159	60.2750 ug/kg	98
25) Diisopropyl ether	8.25	45	1208461	111.9458 ug/kg	98
26) Vinyl Acetate	8.43	43	292604	47.5479 ug/kg	99
27) 1,1-Dichloroethane	8.46	63	305499	53.9742 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	1056064	105.2137 ug/kg	98
29) 2-Butanone	9.02	43	91173	52.2518 ug/kg	97
30) Propionitrile	9.14	54	54756	102.5450 ug/kg	100
31) 2,2-Dichloropropane	9.24	77	244010	57.7590 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	157098	53.1532 ug/kg	92
33) Chloroform	9.52	83	270735	52.0699 ug/kg	100
34) 1-Bromopropane	9.65	122	22771	50.5314 ug/kg	95
35) Bromochloromethane	9.75	130	98927	51.5276 ug/kg	89
36) Tetrahydrofuran	9.77	42	121362	107.9043 ug/kg	95
38) 1,1,1-Trichloroethane	10.05	97	258323	54.9384 ug/kg	94
39) Cyclohexane	10.08	56	303283	59.1607 ug/kg	97
40) 1,1-Dichloropropene	10.25	75	197941	53.4983 ug/kg	100
41) Tert-Amyl-Methyl ether	10.34	73	740706	101.5227 ug/kg	97
42) Carbon Tetrachloride	10.39	117	244485	56.0848 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030716\9M973121.D Vial: 1
Acq On : 7 Mar 2016 15:17 Operator: ADC
Sample : WG559980-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 15:39:41 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	244854	53.5379 ug/kg	97
46)	Benzene	10.60	78	520143	50.2144 ug/kg	98
47)	Trichloroethene	11.35	130	175462	53.4598 ug/kg	96
48)	Methylcyclohexane	11.44	83	244539	59.4048 ug/kg	97
49)	1,2-Dichloropropane	11.56	63	155975	54.8338 ug/kg	98
50)	1,4-Dioxane	11.88	88	8310	194.7348 ug/kg	100
51)	Bromodichloromethane	11.87	83	206988	51.6335 ug/kg	99
52)	Dibromomethane	11.97	174	93684	49.7073 ug/kg	96
53)	2-Chloroethyl Vinyl Ether	12.17	63	31739	40.9236 ug/kg	92
54)	4-Methyl-2-Pentanone	12.19	58	63874	51.1601 ug/kg	99
55)	cis-1,3-Dichloropropene	12.50	75	219123	52.4654 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	222676	53.0541 ug/kg	99
59)	Toluene	12.93	91	594424	50.7038 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	166383	51.2015 ug/kg	99
61)	trans-1,3-Dichloropropene	13.11	75	215529	51.0435 ug/kg	99
62)	1,1,2-Trichloroethane	13.32	97	123564	50.1734 ug/kg	99
63)	2-Hexanone	13.25	43	124506	50.6350 ug/kg	97
64)	1,3-Dichloropropane	13.62	76	202800	49.4195 ug/kg	91
65)	Tetrachloroethene	13.75	164	130531	51.9369 ug/kg	96
66)	Dibromochloromethane	14.01	129	168020	48.8169 ug/kg	98
67)	1,2-Dibromoethane	14.28	107	131380	48.0957 ug/kg	98
68)	1-Chlorohexane	14.35	91	198492	57.4143 ug/kg	94
69)	Chlorobenzene	14.77	112	418018	50.7334 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	157509	50.9037 ug/kg	98
71)	Ethylbenzene	14.79	106	220173	51.8675 ug/kg	96
72)	m-,p-Xylene	14.89	106	540452	103.0932 ug/kg	97
73)	o-Xylene	15.45	106	263463	52.3691 ug/kg	100
74)	Styrene	15.49	104	447543	52.2401 ug/kg	99
75)	Bromoform	16.00	173	115336	51.0378 ug/kg	99
76)	Isopropylbenzene	15.88	105	725612	53.7263 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	148425	45.1427 ug/kg	100
80)	1,2,3-Trichloropropane	16.29	110	58528	46.9386 ug/kg	97
81)	trans-1,4-Dichloro-2-Buten	16.33	53	66485	52.8972 ug/kg	85
82)	n-Propylbenzene	16.39	91	847299	49.7317 ug/kg	99
83)	Bromobenzene	16.52	156	182379	45.3446 ug/kg	94
84)	1,3,5-Trimethylbenzene	16.57	105	618570	48.3674 ug/kg	99
85)	2-Chlorotoluene	16.66	91	536292	46.9306 ug/kg	100
86)	4-Chlorotoluene	16.70	91	523267	49.5282 ug/kg	99
87)	a-Methylstyrene	16.98	118	292498	50.1941 ug/kg	99
88)	tert-Butylbenzene	17.04	134	128780	48.0299 ug/kg	94
89)	1,2,4-Trimethylbenzene	17.09	105	636478	47.5220 ug/kg	100
90)	sec-Butylbenzene	17.31	105	815584	49.5147 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	688161	49.5058 ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	362161	45.3065 ug/kg	98
93)	1,4-Dichlorobenzene	17.79	146	362635	45.3790 ug/kg	100
94)	n-Butylbenzene	17.99	91	663055	51.3028 ug/kg	99
95)	1,2-Dichlorobenzene	18.30	146	340271	45.8773 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	42077	44.1919 ug/kg	97
97)	1,2,4-Trichlorobenzene	20.44	180	243320	46.2124 ug/kg	98
98)	Hexachlorobutadiene	20.59	225	135057	48.6610 ug/kg	98
99)	Naphthalene	20.81	128	599108	45.3652 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.12	180	235710	46.1553 ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M973121.D 8260SL.M Mon Mar 07 15:39:42 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030716\9M973121.D Vial: 1
Acq On : 7 Mar 2016 15:17 Operator: ADC
Sample : WG559980-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 7 15:39 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

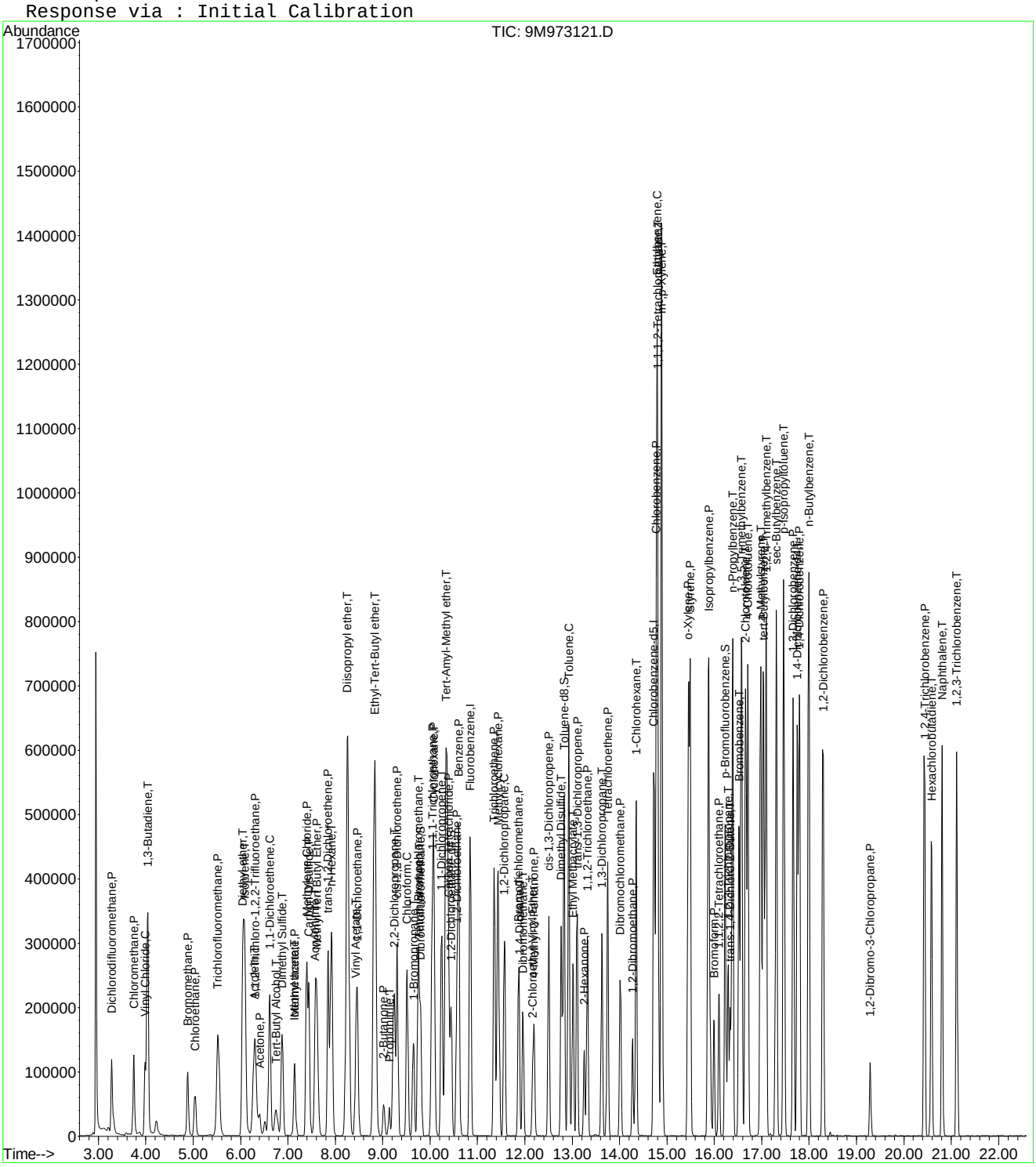

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\030716\9M973121.D Vial: 1
Acq On : 7 Mar 2016 15:17 Operator: ADC
Sample : WG559980-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	105	0.00
2	P	Dichlorodifluoromethane	0.3408	0.3064	10.1	81	0.00
3	P	Chloromethane	0.3271	0.3134	4.2	91	0.00
4	C	Vinyl Chloride	0.3275	0.3649	-11.4	103	0.00
5	T	1,3-Butadiene	0.3115	0.4055	-30.1#	128	0.00
6	P	Bromomethane	0.2127	0.1827	14.1	92	0.00
7	P	Chloroethane	0.1459	0.1597	-9.5	101	0.00
8	P	Trichlorofluoromethane	0.4911	0.5430	-10.6	110	0.00
9	T	Diethyl ether	0.2296	0.2313	-0.7	100	0.00
10	T	Isoprene	0.2932	0.3462	-18.1	120	0.00
11	T	Acrolein	0.0458	0.0455	0.6	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	0.2533	0.2782	-9.8	111	0.01
13	P	Acetone	0.1376	0.1264	8.1	103	0.00
14	C	1,1-Dichloroethene	0.4672	0.4984	-6.7	111	0.00
15	T	Tert-Butyl Alcohol	0.0511	0.0465	9.0	96	0.00
16	T	Dimethyl Sulfide	0.1975	0.2037	-3.2	101	0.00
17	T	Iodomethane	0.1273	0.1281	-0.6	87	0.00
18	P	Methyl acetate	0.2540	0.2974	-17.1	119	0.00
19	P	Methylene Chloride	0.2545	0.2543	0.1	102	0.00
20	P	Carbon Disulfide	0.7198	0.7808	-8.5	111	0.00
21	T	Acrylonitrile	0.1257	0.1342	-6.8	104	0.00
22	P	Methyl Tert Butyl Ether	0.7248	0.7490	-3.4	100	0.00
23	P	trans-1,2-Dichloroethene	0.4164	0.4567	-9.7	109	0.00
24	T	n-Hexane	0.4295	0.5178	-20.6	128	0.00
25	T	Diisopropyl ether	0.9975	1.1167	-11.9	111	0.00
26	T	Vinyl Acetate	0.5686	0.5408	4.9	94	0.00
27	P	1,1-Dichloroethane	0.5230	0.5646	-7.9	107	0.00
28	T	Ethyl-Tert-Butyl ether	0.9275	0.9759	-5.2	103	0.00
29	P	2-Butanone	0.1612	0.1685	-4.5	106	0.00
30	T	Propionitrile	0.0493	0.0506	-2.6	103	0.00
31	T	2,2-Dichloropropane	0.3904	0.4510	-15.5	113	0.00
32	P	cis-1,2-Dichloroethene	0.2731	0.2903	-6.3	102	0.00
33	C	Chloroform	0.4805	0.5003	-4.1	103	0.00
34	T	1-Bromopropane	0.0376	0.0421	-11.9	103	0.00
35	T	Bromochloromethane	0.1774	0.1828	-3.1	96	0.00
36	T	Tetrahydrofuran	0.1039	0.1122	-7.9	107	0.00
37	S	Dibromofluoromethane	0.2710	0.2522	6.9	92	0.00
38	P	1,1,1-Trichloroethane	0.4345	0.4774	-9.9	106	0.00
39	P	Cyclohexane	0.4737	0.5605	-18.3	122	0.00
40	T	1,1-Dichloropropene	0.3419	0.3658	-7.0	109	0.00
41	T	Tert-Amyl-Methyl ether	0.6742	0.6845	-1.5	100	0.00
42	P	Carbon Tetrachloride	0.4028	0.4518	-12.2	110	0.00
43	S	1,2-Dichloroethane-d4	0.3401	0.3386	0.4	100	0.00
44		Heptane	0.0000	0.0000	0.0	105	0.00
45	P	1,2-Dichloroethane	0.4226	0.4525	-7.1	103	0.00
46	P	Benzene	0.9572	0.9613	-0.4	103	0.00
47	P	Trichloroethene	0.3033	0.3243	-6.9	107	0.00
48	P	Methylcyclohexane	0.3804	0.4519	-18.8	120	0.00
49	C	1,2-Dichloropropane	0.2628	0.2883	-9.7	105	0.00
50	T	1,4-Dioxane	0.0039	0.0038	2.5	107	0.00
51	P	Bromodichloromethane	0.3704	0.3825	-3.3	102	0.00
52	T	Dibromomethane	0.1742	0.1731	0.6	98	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0665	0.0587	11.8	82	0.00
54	P	4-Methyl-2-Pentanone	0.1154	0.1181	-2.3	98	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\030716\9M973121.D Vial: 1
Acq On : 7 Mar 2016 15:17 Operator: ADC
Sample : WG559980-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	0.3859	0.4050	-4.9	103	0.00
56	T	Dimethyl Disulfide	0.3878	0.4115	-6.1	101	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	108	0.00
58	S	Toluene-d8	1.2647	1.1817	6.6	95	0.00
59	C	Toluene	1.4286	1.4487	-1.4	105	0.00
60	T	Ethyl Methacrylate	0.3960	0.4055	-2.4	105	0.00
61	P	trans-1,3-Dichloropropene	0.5145	0.5253	-2.1	101	0.00
62	P	1,1,2-Trichloroethane	0.3001	0.3011	-0.3	100	0.00
63	P	2-Hexanone	0.2996	0.3034	-1.3	104	0.00
64	T	1,3-Dichloropropane	0.5001	0.4943	1.2	101	0.00
65	P	Tetrachloroethene	0.3063	0.3181	-3.9	112	0.00
66	P	Dibromochloromethane	0.4194	0.4095	2.4	99	0.00
67	P	1,2-Dibromoethane	0.3329	0.3202	3.8	99	0.00
68	T	1-Chlorohexane	0.4213	0.4838	-14.8	118	0.00
69	P	Chlorobenzene	1.0041	1.0188	-1.5	104	0.00
70	T	1,1,1,2-Tetrachloroethane	0.3771	0.3839	-1.8	102	0.00
71	C	Ethylbenzene	0.5173	0.5366	-3.7	106	0.00
72	P	m-,p-Xylene	0.6388	0.6586	-3.1	109	0.00
73	P	o-Xylene	0.6130	0.6421	-4.7	106	0.00
74	P	Styrene	1.0440	1.0907	-4.5	105	0.00
75	P	Bromoform	0.2754	0.2811	-2.1	99	0.00
76	P	Isopropylbenzene	1.6458	1.7684	-7.5	110	0.00
77	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	118	0.00
78	P	1,1,2,2-Tetrachloroethane	0.7585	0.6848	9.7	100	0.00
79	S	p-Bromofluorobenzene	0.9736	0.9658	0.8	109	0.00
80	T	1,2,3-Trichloropropane	0.2876	0.2700	6.1	105	0.00
81	T	trans-1,4-Dichloro-2-Butene	0.2899	0.3067	-5.8	120	0.00
82	T	n-Propylbenzene	3.9303	3.9092	0.5	113	0.00
83	T	Bromobenzene	0.9278	0.8415	9.3	103	0.00
84	T	1,3,5-Trimethylbenzene	2.9502	2.8539	3.3	109	0.00
85	T	2-Chlorotoluene	2.6361	2.4743	6.1	111	0.00
86	T	4-Chlorotoluene	2.4372	2.4142	0.9	109	0.00
87	T	a-Methylstyrene	1.3443	1.3495	-0.4	114	0.00
88	T	tert-Butylbenzene	0.6185	0.5941	3.9	106	0.00
89	T	1,2,4-Trimethylbenzene	3.0897	2.9365	5.0	110	0.00
90	T	sec-Butylbenzene	3.7998	3.7629	1.0	112	0.00
91	T	p-Isopropyltoluene	3.2067	3.1750	1.0	112	0.00
92	P	1,3-Dichlorobenzene	1.8440	1.6709	9.4	107	0.00
93	P	1,4-Dichlorobenzene	1.8435	1.6731	9.2	108	0.00
94	T	n-Butylbenzene	2.9815	3.0591	-2.6	118	0.00
95	P	1,2-Dichlorobenzene	1.7110	1.5699	8.2	106	0.00
96	P	1,2-Dibromo-3-Chloropropane	0.2197	0.1941	11.6	98	0.00
97	P	1,2,4-Trichlorobenzene	1.2146	1.1226	7.6	109	0.00
98	T	Hexachlorobutadiene	0.6403	0.6231	2.7	115	0.00
99	T	Naphthalene	3.0465	2.7641	9.3	99	0.00
100	T	1,2,3-Trichlorobenzene	1.1781	1.0875	7.7	106	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M973121.D 8260SL.M Tue Mar 08 08:55:20 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\030716\9M973121.D Vial: 1
Acq On : 7 Mar 2016 15:17 Operator: ADC
Sample : WG559980-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	105	0.00
2	P	Dichlorodifluoromethane	50.0000	44.9556	10.1	81	0.00
3	P	Chloromethane	50.0000	47.9011	4.2	91	0.00
4	C	Vinyl Chloride	50.0000	55.7164	-11.4	103	0.00
5	T	1,3-Butadiene	50.0000	65.0725	-30.1#	128	0.00
6	P	Bromomethane	50.0000	42.9467	14.1	92	0.00
7	P	Chloroethane	50.0000	54.7317	-9.5	101	0.00
8	P	Trichlorofluoromethane	50.0000	55.2769	-10.6	110	0.00
9	T	Diethyl ether	100.0000	100.7243	-0.7	100	0.00
10	T	Isoprene	50.0000	59.0273	-18.1	120	0.00
11	T	Acrolein	50.0000	49.6910	0.6	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	54.9114	-9.8	111	0.01
13	P	Acetone	50.0000	50.0230	-0.0	103	0.00
14	C	1,1-Dichloroethene	50.0000	53.3335	-6.7	111	0.00
15	T	Tert-Butyl Alcohol	200.0000	181.9557	9.0	96	0.00
16	T	Dimethyl Sulfide	50.0000	51.5795	-3.2	101	0.00
17	T	Iodomethane	50.0000	46.3306	7.3	87	0.00
18	P	Methyl acetate	50.0000	58.5442	-17.1	119	0.00
19	P	Methylene Chloride	50.0000	49.9635	0.1	102	0.00
20	P	Carbon Disulfide	50.0000	54.2371	-8.5	111	0.00
21	T	Acrylonitrile	50.0000	53.3913	-6.8	104	0.00
22	P	Methyl Tert Butyl Ether	50.0000	51.6759	-3.4	100	0.00
23	P	trans-1,2-Dichloroethene	50.0000	54.8416	-9.7	109	0.00
24	T	n-Hexane	50.0000	60.2750	-20.5	128	0.00
25	T	Diisopropyl ether	100.0000	111.9458	-11.9	111	0.00
26	T	Vinyl Acetate	50.0000	47.5479	4.9	94	0.00
27	P	1,1-Dichloroethane	50.0000	53.9742	-7.9	107	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	105.2137	-5.2	103	0.00
29	P	2-Butanone	50.0000	52.2518	-4.5	106	0.00
30	T	Propionitrile	100.0000	102.5450	-2.5	103	0.00
31	T	2,2-Dichloropropane	50.0000	57.7590	-15.5	113	0.00
32	P	cis-1,2-Dichloroethene	50.0000	53.1532	-6.3	102	0.00
33	C	Chloroform	50.0000	52.0699	-4.1	103	0.00
34	T	1-Bromopropane	50.0000	50.5314	-1.1	103	0.00
35	T	Bromochloromethane	50.0000	51.5276	-3.1	96	0.00
36	T	Tetrahydrofuran	100.0000	107.9043	-7.9	107	0.00
37	S	Dibromofluoromethane	50.0000	46.5282	6.9	92	0.00
38	P	1,1,1-Trichloroethane	50.0000	54.9385	-9.9	106	0.00
39	P	Cyclohexane	50.0000	59.1607	-18.3	122	0.00
40	T	1,1-Dichloropropene	50.0000	53.4983	-7.0	109	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	101.5227	-1.5	100	0.00
42	P	Carbon Tetrachloride	50.0000	56.0848	-12.2	110	0.00
43	S	1,2-Dichloroethane-d4	50.0000	49.7800	0.4	100	0.00
44		Heptane	-1.0000	0.0000	0.0	105	0.00
45	P	1,2-Dichloroethane	50.0000	53.5379	-7.1	103	0.00
46	P	Benzene	50.0000	50.2144	-0.4	103	0.00
47	P	Trichloroethene	50.0000	53.4598	-6.9	107	0.00
48	P	Methylcyclohexane	50.0000	59.4048	-18.8	120	0.00
49	C	1,2-Dichloropropane	50.0000	54.8338	-9.7	105	0.00
50	T	1,4-Dioxane	200.0000	194.7347	2.6	107	0.00
51	P	Bromodichloromethane	50.0000	51.6335	-3.3	102	0.00
52	T	Dibromomethane	50.0000	49.7073	0.6	98	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	40.9236	18.2	82	0.00
54	P	4-Methyl-2-Pentanone	50.0000	51.1601	-2.3	98	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\030716\9M973121.D Vial: 1
Acq On : 7 Mar 2016 15:17 Operator: ADC
Sample : WG559980-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	52.4654	-4.9	103	0.00
56	T	Dimethyl Disulfide	50.0000	53.0541	-6.1	101	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	108	0.00
58	S	Toluene-d8	50.0000	46.7190	6.6	95	0.00
59	C	Toluene	50.0000	50.7038	-1.4	105	0.00
60	T	Ethyl Methacrylate	50.0000	51.2015	-2.4	105	0.00
61	P	trans-1,3-Dichloropropene	50.0000	51.0435	-2.1	101	0.00
62	P	1,1,2-Trichloroethane	50.0000	50.1734	-0.3	100	0.00
63	P	2-Hexanone	50.0000	50.6350	-1.3	104	0.00
64	T	1,3-Dichloropropane	50.0000	49.4195	1.2	101	0.00
65	P	Tetrachloroethene	50.0000	51.9369	-3.9	112	0.00
66	P	Dibromochloromethane	50.0000	48.8169	2.4	99	0.00
67	P	1,2-Dibromoethane	50.0000	48.0957	3.8	99	0.00
68	T	1-Chlorohexane	50.0000	57.4143	-14.8	118	0.00
69	P	Chlorobenzene	50.0000	50.7334	-1.5	104	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	50.9037	-1.8	102	0.00
71	C	Ethylbenzene	50.0000	51.8675	-3.7	106	0.00
72	P	m-,p-Xylene	100.0000	103.0932	-3.1	109	0.00
73	P	o-Xylene	50.0000	52.3691	-4.7	106	0.00
74	P	Styrene	50.0000	52.2401	-4.5	105	0.00
75	P	Bromoform	50.0000	51.0378	-2.1	99	0.00
76	P	Isopropylbenzene	50.0000	53.7263	-7.5	110	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	118	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	45.1427	9.7	100	0.00
79	S	p-Bromofluorobenzene	50.0000	49.6010	0.8	109	0.00
80	T	1,2,3-Trichloropropane	50.0000	46.9386	6.1	105	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	52.8972	-5.8	120	0.00
82	T	n-Propylbenzene	50.0000	49.7317	0.5	113	0.00
83	T	Bromobenzene	50.0000	45.3446	9.3	103	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	48.3674	3.3	109	0.00
85	T	2-Chlorotoluene	50.0000	46.9306	6.1	111	0.00
86	T	4-Chlorotoluene	50.0000	49.5282	0.9	109	0.00
87	T	a-Methylstyrene	50.0000	50.1941	-0.4	114	0.00
88	T	tert-Butylbenzene	50.0000	48.0299	3.9	106	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	47.5220	5.0	110	0.00
90	T	sec-Butylbenzene	50.0000	49.5147	1.0	112	0.00
91	T	p-Isopropyltoluene	50.0000	49.5058	1.0	112	0.00
92	P	1,3-Dichlorobenzene	50.0000	45.3065	9.4	107	0.00
93	P	1,4-Dichlorobenzene	50.0000	45.3790	9.2	108	0.00
94	T	n-Butylbenzene	50.0000	51.3028	-2.6	118	0.00
95	P	1,2-Dichlorobenzene	50.0000	45.8772	8.2	106	0.00
96	P	1,2-Dibromo-3-Chloropropane	50.0000	44.1919	11.6	98	0.00
97	P	1,2,4-Trichlorobenzene	50.0000	46.2124	7.6	109	0.00
98	T	Hexachlorobutadiene	50.0000	48.6610	2.7	115	0.00
99	T	Naphthalene	50.0000	45.3653	9.3	99	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	46.1553	7.7	106	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M973121.D 8260SL.M Tue Mar 08 08:55:18 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\1\DATA\022516\9M972894.D          Vial: 3
Acq On    : 25 Feb 2016  14:45                       Operator: ADC
Sample    : WG558732-01 BFB 50ng                     Inst    : hpms9
Misc      : 7,1 STD74773                             Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 02/15/16  HPMS9
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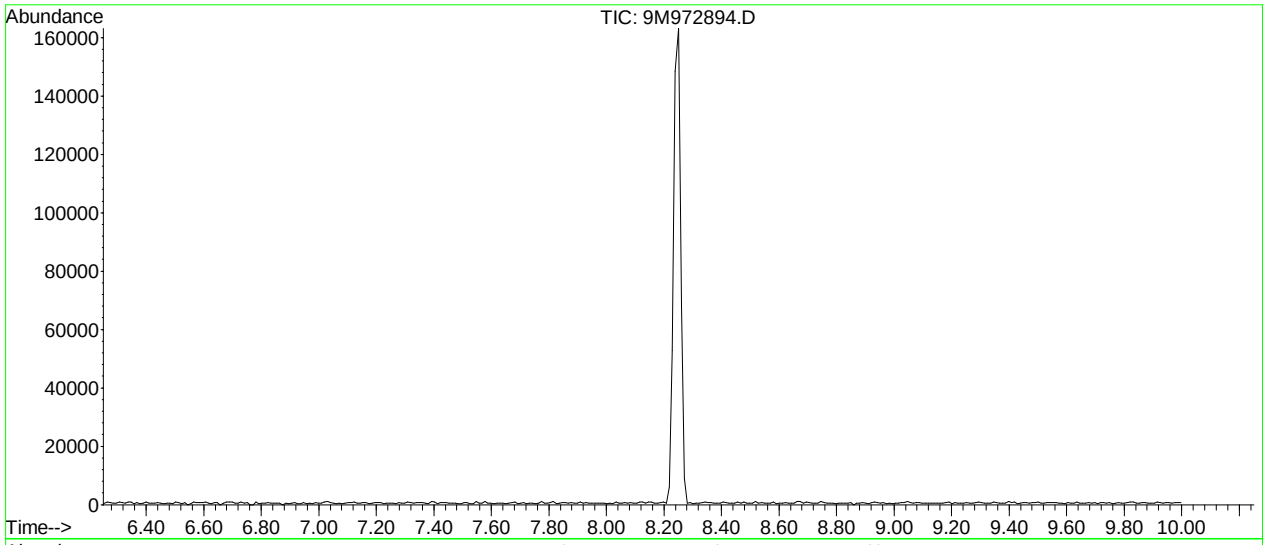

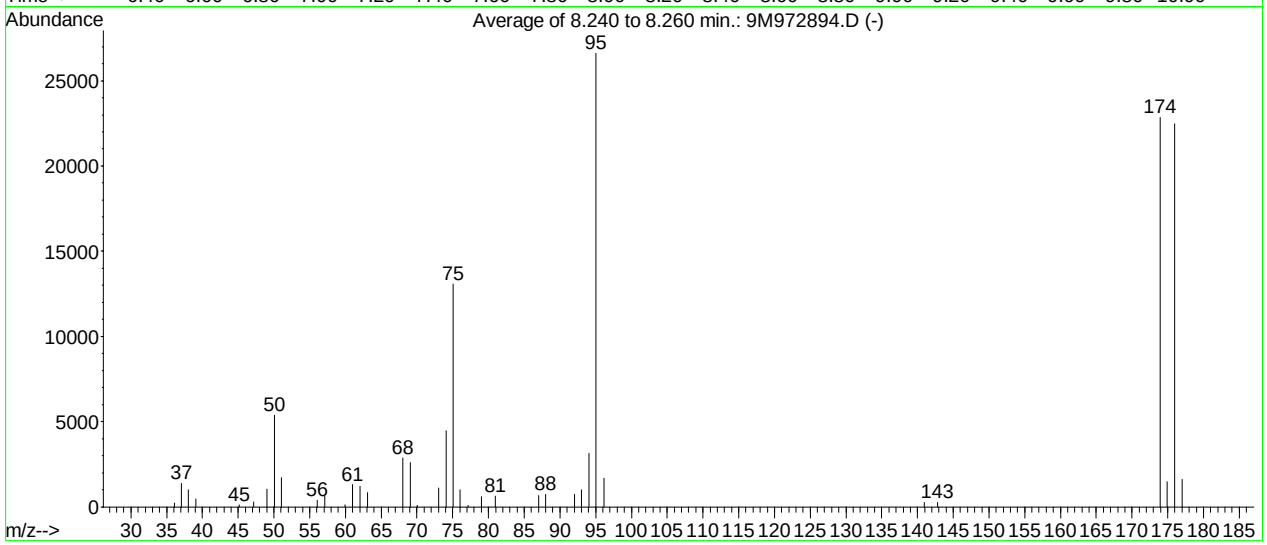

AutoFind: Scans 305, 306, 307; Background Corrected with Scan 300

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.2	5378	PASS
75	95	30	60	49.1	13067	PASS
95	95	100	100	100.0	26621	PASS
96	95	5	9	6.3	1683	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	85.8	22851	PASS
175	174	5	9	6.5	1485	PASS
176	174	95	101	98.3	22461	PASS
177	176	5	9	7.2	1619	PASS

9M972894.D 8260SL.M Fri Feb 26 11:11:03 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\030616\9M973096.D          Vial: 2
Acq On    :  6 Mar 2016  14:28                        Operator: ADC
Sample    : WG559858-01 BFB 50ng 8260                 Inst    : hpms9
Misc      : 7,1 STD74606                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 02/25/16  HPMS9
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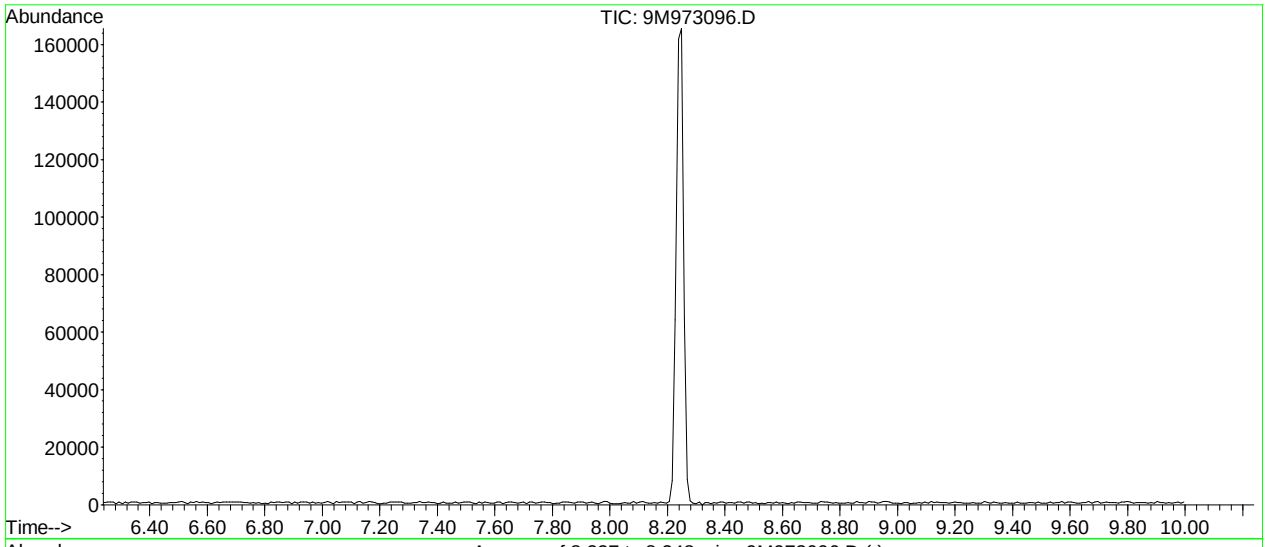

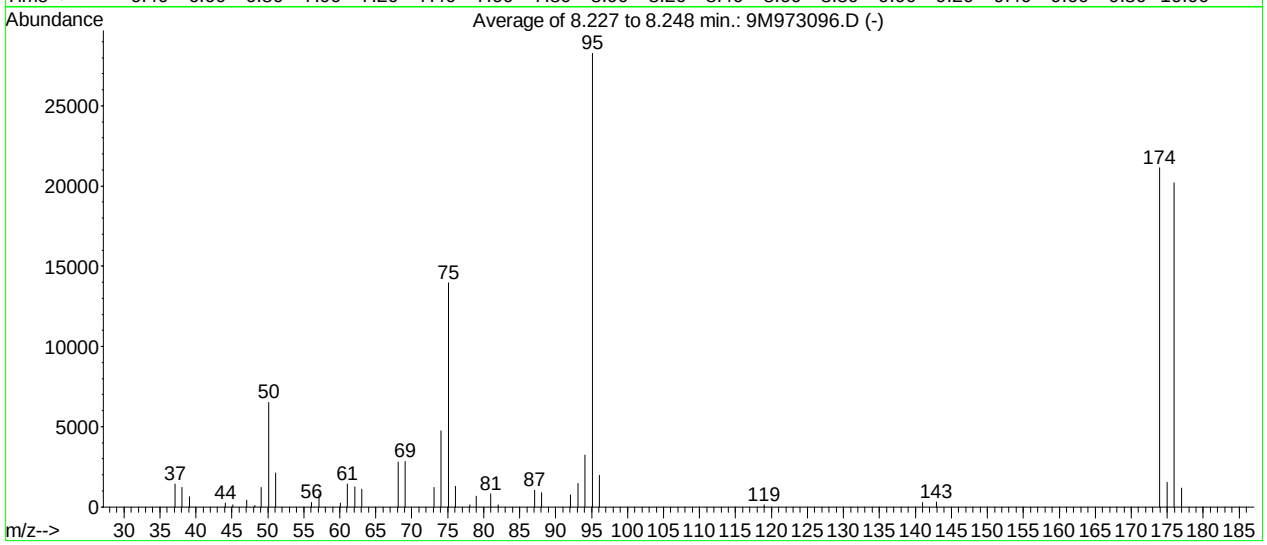

AutoFind: Scans 304, 305, 306; Background Corrected with Scan 300

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	23.0	6500	PASS
75	95	30	60	49.4	13966	PASS
95	95	100	100	100.0	28287	PASS
96	95	5	9	6.9	1954	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	74.8	21150	PASS
175	174	5	9	7.3	1550	PASS
176	174	95	101	95.6	20221	PASS
177	176	5	9	5.9	1186	PASS

9M973096.D 8260SL.M Mon Mar 07 08:50:59 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\030716\9M973120.D          Vial: 1
Acq On    :  7 Mar 2016  14:48                        Operator: ADC
Sample    : WG559980-01 BFB 50ng 8260                 Inst    : hpms9
Misc      : 7,1 STD74606                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 02/25/16  HPMS9
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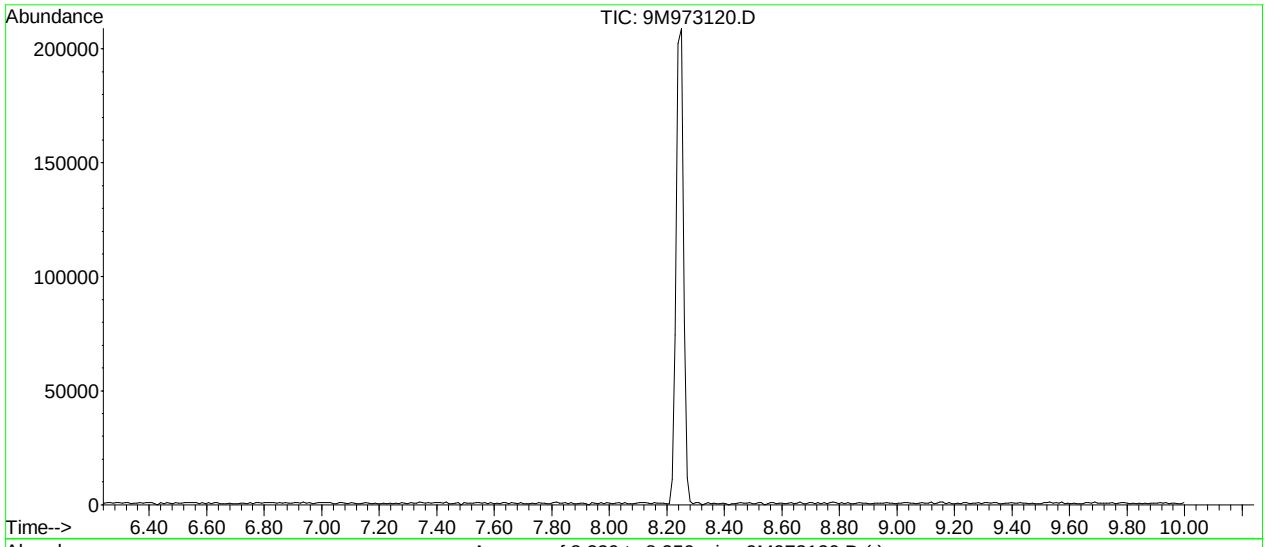

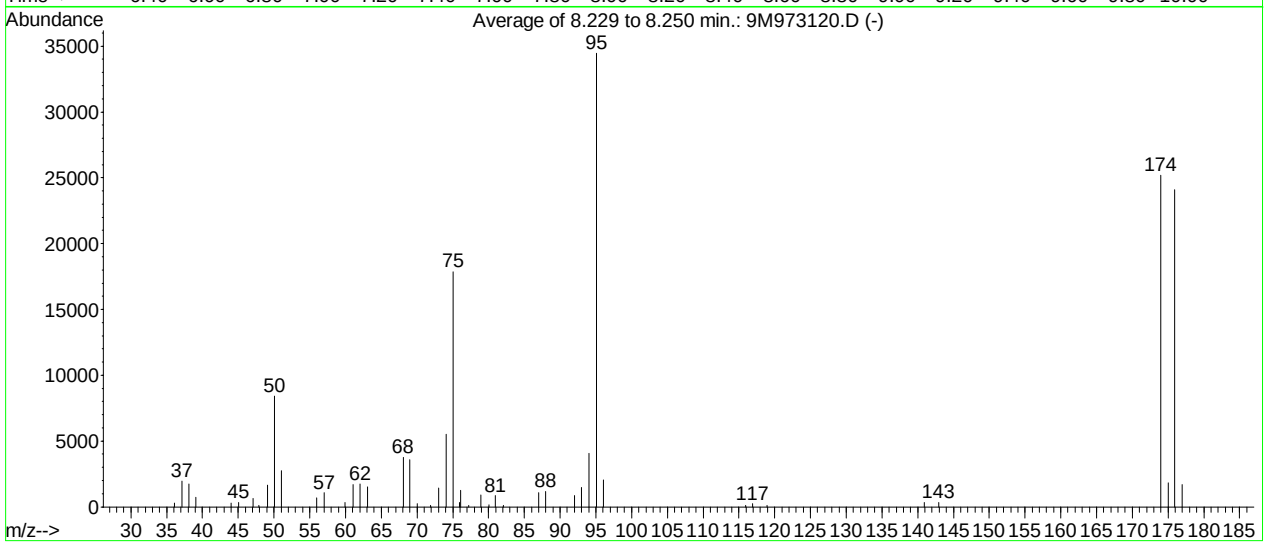

AutoFind: Scans 304, 305, 306; Background Corrected with Scan 300

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	24.3	8393	PASS
75	95	30	60	51.9	17879	PASS
95	95	100	100	100.0	34471	PASS
96	95	5	9	6.0	2058	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	73.1	25197	PASS
175	174	5	9	7.2	1804	PASS
176	174	95	101	95.6	24090	PASS
177	176	5	9	7.0	1676	PASS

9M973120.D 8260SL.M Tue Mar 08 08:55:09 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973101.D Vial: 5
Acq On : 6 Mar 2016 16:57 Operator: ADC
Sample : WG559859-01 VBLK0306 BLANK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 12:19:05 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	561969	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	419175	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	209918	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	146974	48.2489 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.50%		
43) 1,2-Dichloroethane-d4	10.45	65	190439	49.8270 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.66%		
58) Toluene-d8	12.83	98	526746	49.6805 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.36%		
79) p-Bromofluorobenzene	16.23	95	209348	51.2161 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.44%		

Target Compounds

					Qvalue
13) Acetone	6.40	43	5001	1.1851 ug/kg	85
36) Tetrahydrofuran	9.78	42	1481	1.2679 ug/kg#	43
56) Dimethyl Disulfide	12.83	94	15709	3.6037 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M973101.D 8260SL.M Mon Mar 07 12:19:05 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030616\9M973101.D Vial: 5
Acq On : 6 Mar 2016 16:57 Operator: ADC
Sample : WG559859-01 VBLK0306 BLANK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 7 12:19 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

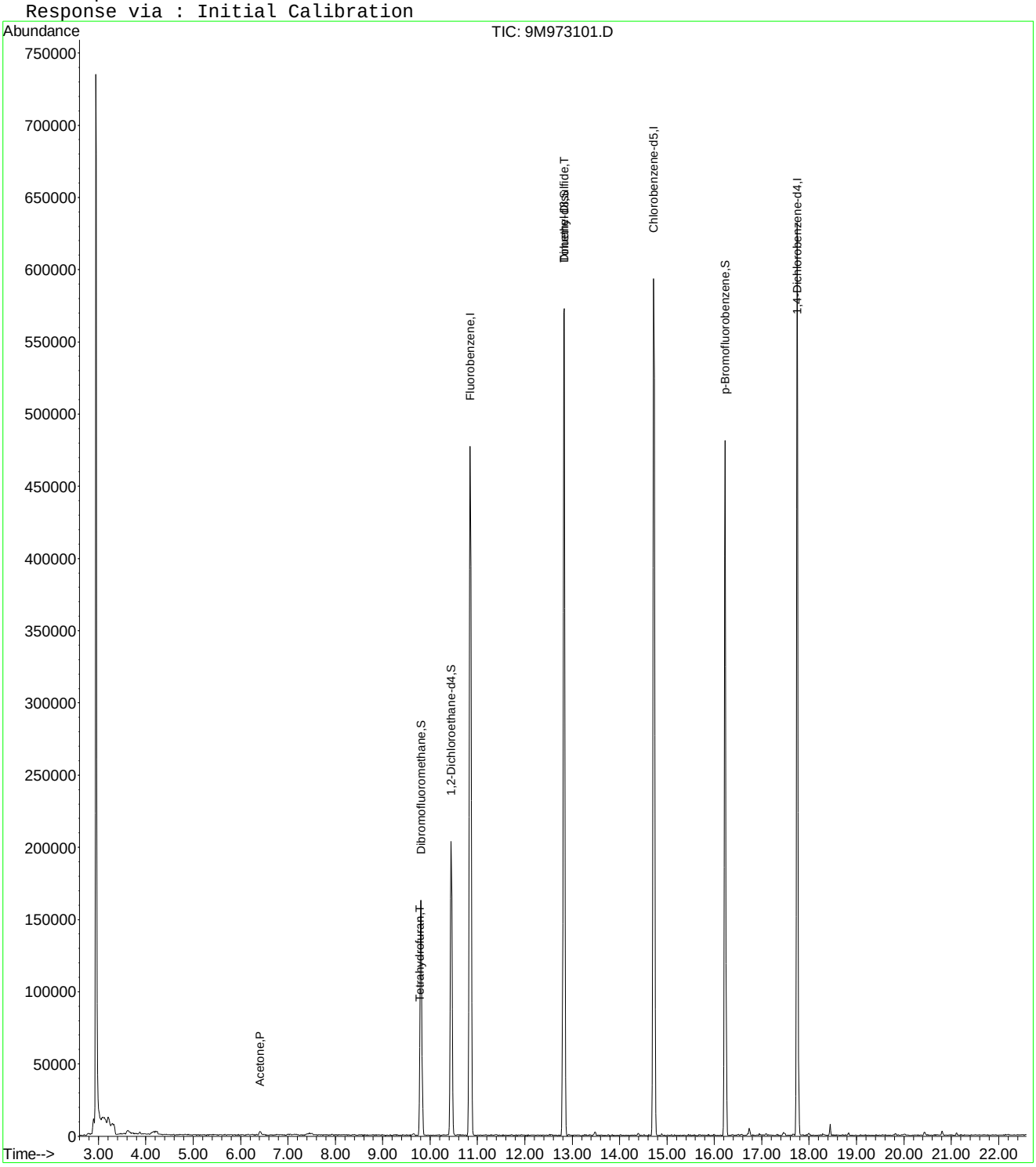

9M973101.D 8260SL.M Mon Mar 07 12:19:05 2016 Page 2

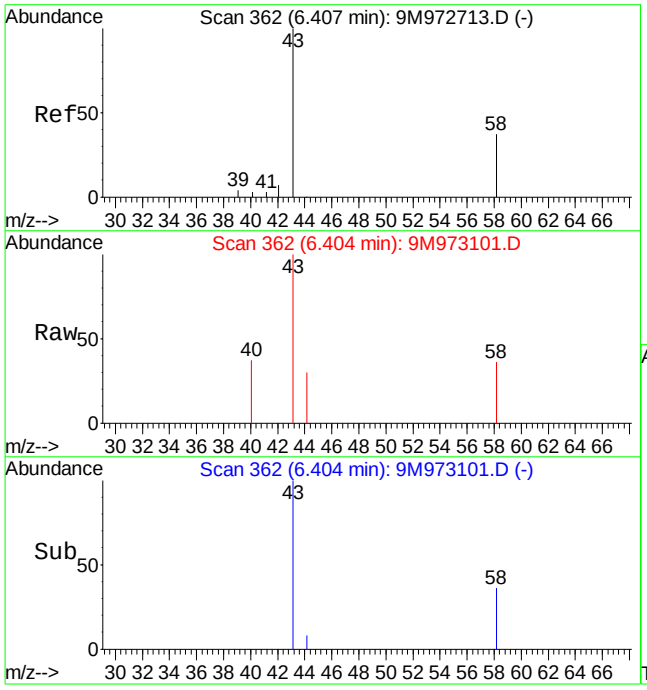

#13
Acetone
Concen: 1.19 ug/kg
RT: 6.40 min Scan# 362
Delta R.T. -0.01 min
Lab File: 9M973101.D
Acq: 6 Mar 2016 16:57

Tgt Ion: 43 Resp: 5001

Ion	Ratio	Lower	Upper
43	100		
58	35.8	16.9	39.3

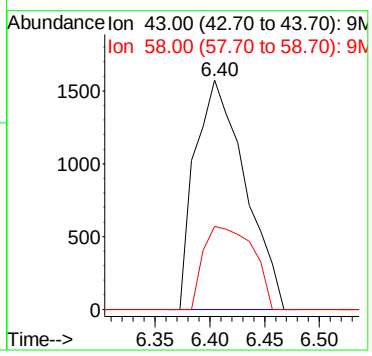

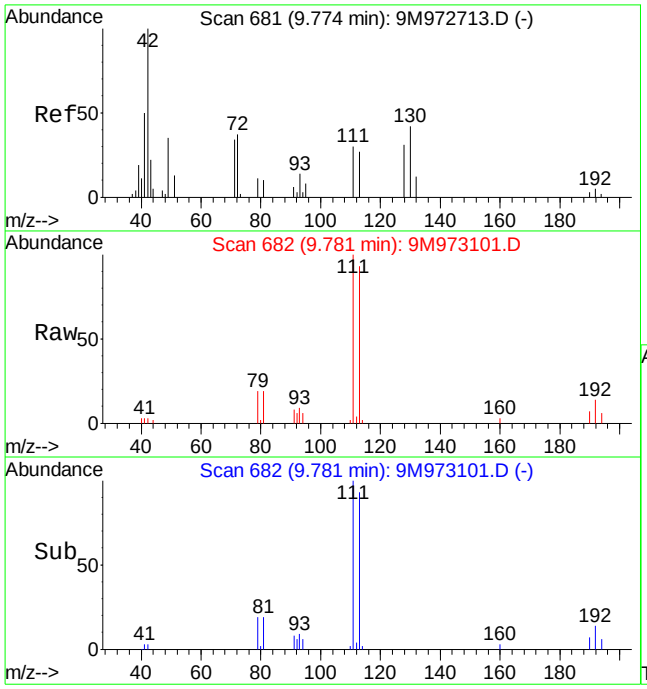

#36
Tetrahydrofuran
Concen: 1.27 ug/kg
RT: 9.78 min Scan# 682
Delta R.T. 0.00 min
Lab File: 9M973101.D
Acq: 6 Mar 2016 16:57

Tgt Ion: 42 Resp: 1481

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

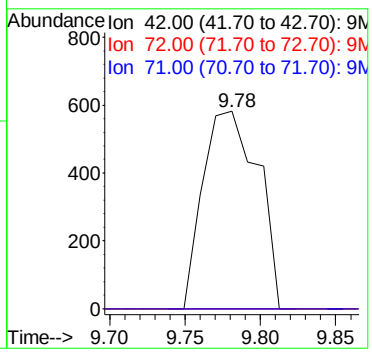

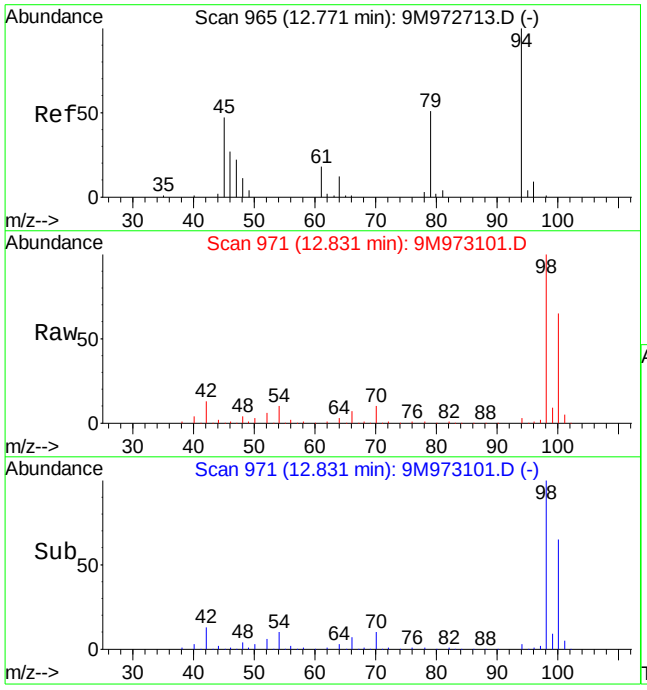

#56
Dimethyl Disulfide
Concen: 3.60 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.06 min
Lab File: 9M973101.D
Acq: 6 Mar 2016 16:57

Tgt Ion: 94 Resp: 15709

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

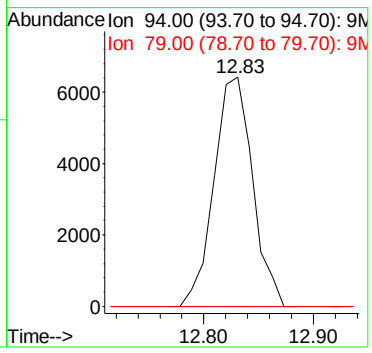

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030716\9M973123.D Vial: 3
Acq On : 7 Mar 2016 16:18 Operator: ADC
Sample : WG559982-01 VBLK0307 BLANK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 08 14:13:41 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	512722	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	377724	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	193847	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	135118	48.6173 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.24%		
43) 1,2-Dichloroethane-d4	10.45	65	176534	50.6253 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 101.26%		
58) Toluene-d8	12.82	98	473876	49.5987 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.20%		
79) p-Bromofluorobenzene	16.23	95	194741	51.5924 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 103.18%		

Target Compounds					Qvalue
13) Acetone	6.41	43	4966	1.5119 ug/kg	91
36) Tetrahydrofuran	9.77	42	968	0.9083 ug/kg#	43
56) Dimethyl Disulfide	12.82	94	12603	3.1689 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M973123.D 8260SL.M Tue Mar 08 14:13:41 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030716\9M973123.D Vial: 3
Acq On : 7 Mar 2016 16:18 Operator: ADC
Sample : WG559982-01 VBLK0307 BLANK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 8 14:13 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

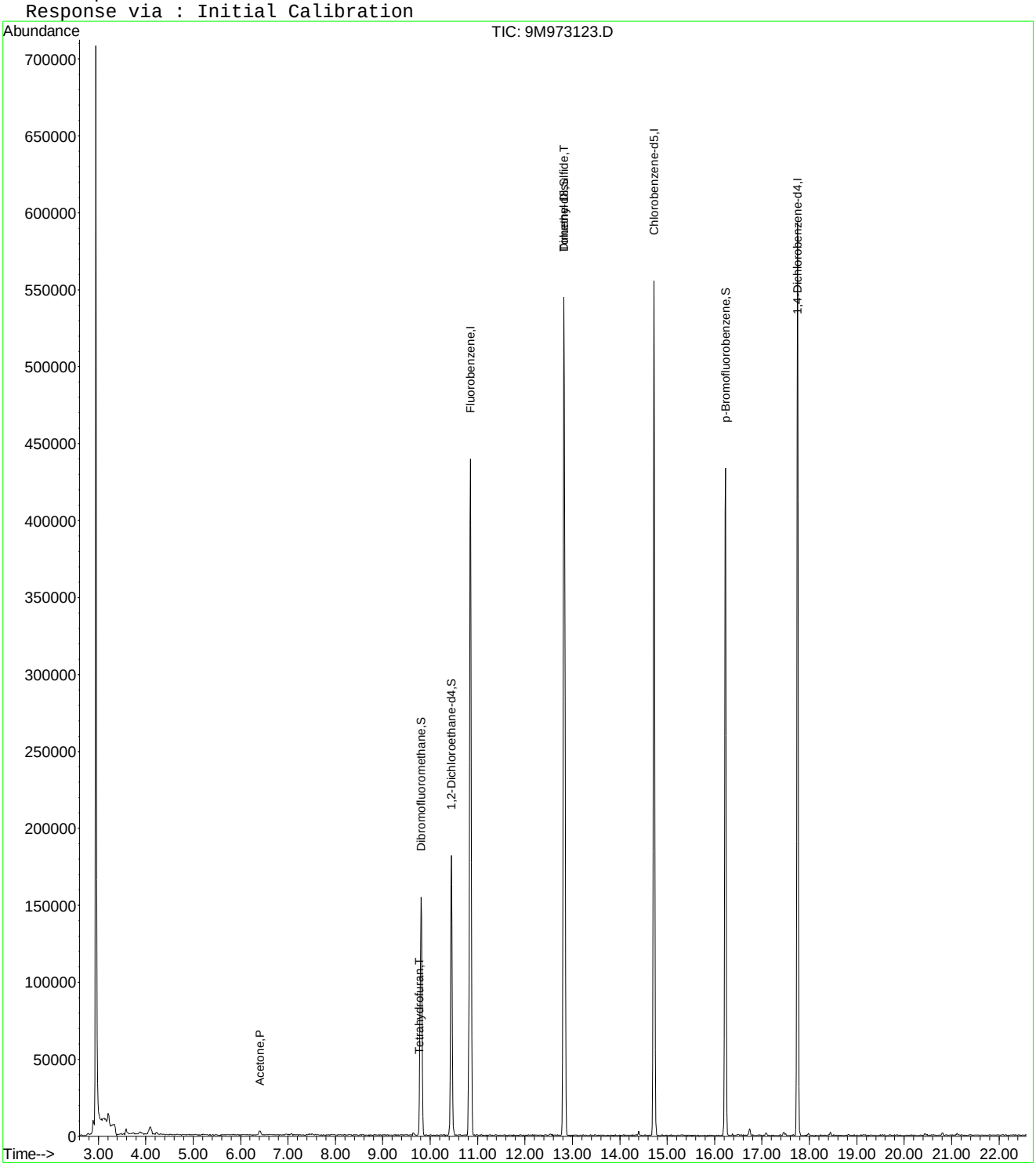

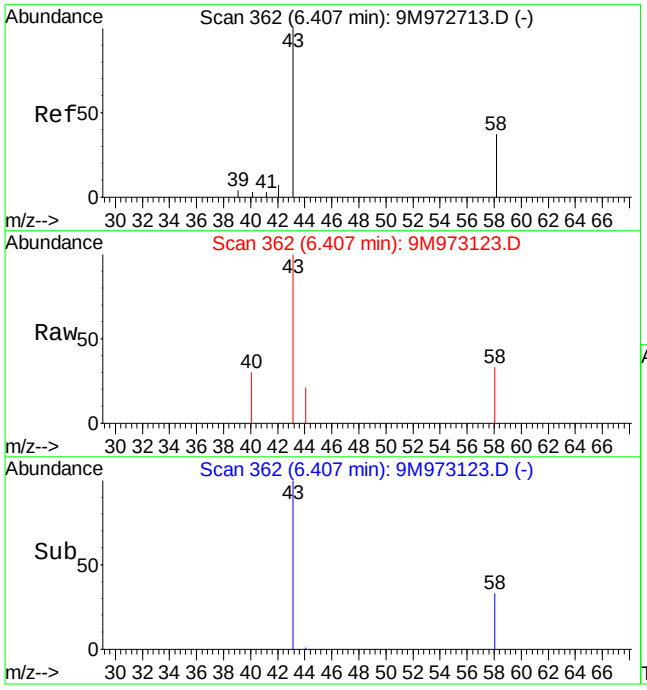

#13
Acetone
Concen: 1.51 ug/kg
RT: 6.41 min Scan# 362
Delta R.T. -0.01 min
Lab File: 9M973123.D
Acq: 7 Mar 2016 16:18

Tgt Ion: 43 Resp: 4966

Ion	Ratio	Lower	Upper
43	100		
58	33.0	16.9	39.3

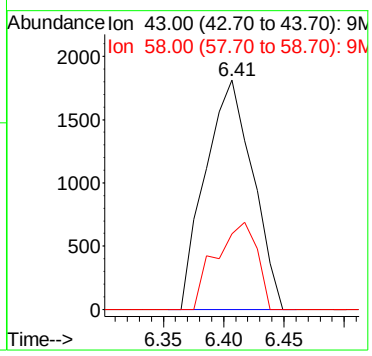

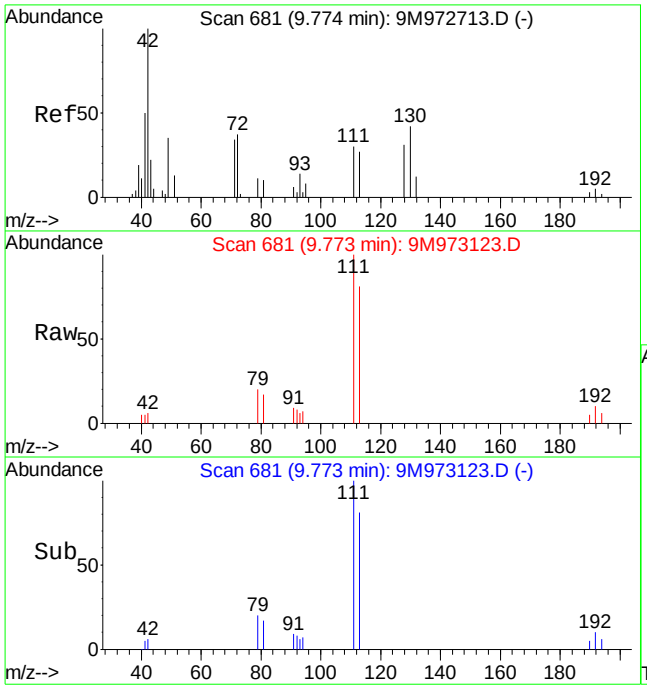

#36
Tetrahydrofuran
Concen: 0.91 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. -0.01 min
Lab File: 9M973123.D
Acq: 7 Mar 2016 16:18

Tgt Ion: 42 Resp: 968

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

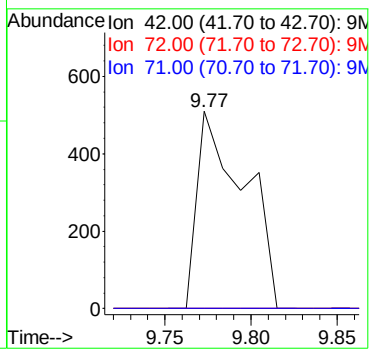

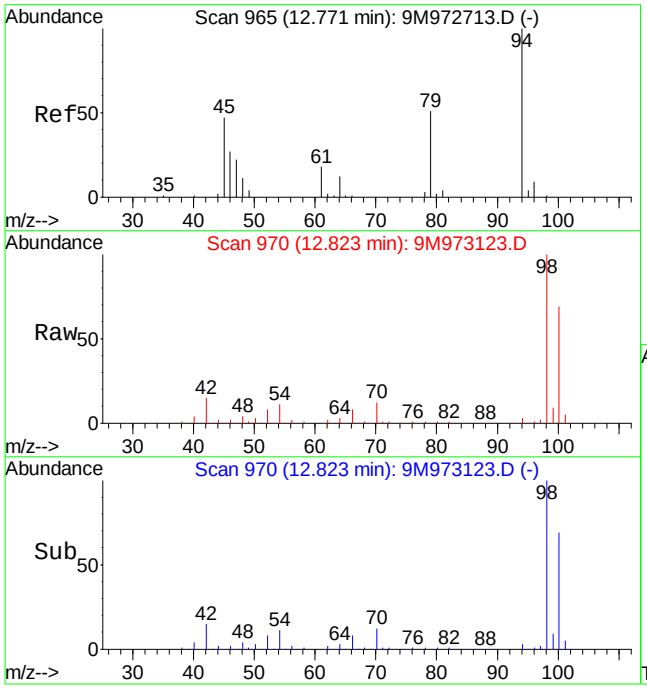

#56
Dimethyl Disulfide
Concen: 3.17 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M973123.D
Acq: 7 Mar 2016 16:18

Tgt Ion: 94 Resp: 12603

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

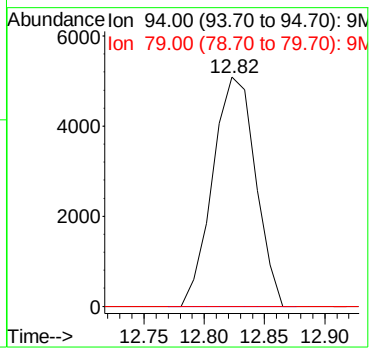

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030616\9M973102.D Vial: 6
Acq On : 6 Mar 2016 17:27 Operator: ADC
Sample : WG559859-02 20ug/L LCS 8260 Inst : hpms9
Misc : 7,1 STD74900 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 06 17:50:34 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	599667	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	449882	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	236934	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	159128	48.9549 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.90%		
43) 1,2-Dichloroethane-d4	10.45	65	198949	48.7813 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.56%		
58) Toluene-d8	12.82	98	571237	50.1993 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 100.40%		
79) p-Bromofluorobenzene	16.22	95	236329	51.2244 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.44%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	94480	23.1159 ug/kg	99
3) Chloromethane	3.75	50	77310	19.7053 ug/kg	98
4) Vinyl Chloride	3.99	62	82712	21.0599 ug/kg	100
5) 1,3-Butadiene	4.03	54	22381	5.9898 ug/kg	96
6) Bromomethane	4.89	94	46739	18.3232 ug/kg	96
7) Chloroethane	5.05	64	33247	19.0013 ug/kg	92
8) Trichlorofluoromethane	5.53	101	109280	18.5520 ug/kg	97
9) Diethyl ether	6.05	59	320855	116.5199 ug/kg	98
10) Isoprene	6.09	67	85179	24.2210 ug/kg	99
11) Acrolein	6.29	56	61647	112.2744 ug/kg	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	60451	19.8996 ug/kg	96
13) Acetone	6.41	43	33465	20.6774 ug/kg	96
14) 1,1-Dichloroethene	6.62	61	108890	19.4314 ug/kg	100
15) Tert-Butyl Alcohol	6.75	59	112894	184.1166 ug/kg	97
16) Dimethyl Sulfide	6.88	62	70485	29.7607 ug/kg	91
17) Iodomethane	7.14	142	25284	17.1319 ug/kg	96
18) Methyl acetate	7.15	43	65055	21.3547 ug/kg	98
19) Methylene Chloride	7.40	84	60446	19.8056 ug/kg	98
20) Carbon Disulfide	7.44	76	160362	18.5764 ug/kg	99
21) Acrylonitrile	7.59	53	31258	20.7414 ug/kg	97
22) Methyl Tert Butyl Ether	7.61	73	183920	21.1589 ug/kg	98
23) trans-1,2-Dichloroethene	7.84	61	101561	20.3358 ug/kg	98
24) n-Hexane	7.92	57	107355	20.8409 ug/kg	100
25) Diisopropyl ether	8.25	45	1351528	112.9695 ug/kg	99
26) Vinyl Acetate	8.43	43	148420	21.7623 ug/kg	99
27) 1,1-Dichloroethane	8.47	63	118305	18.8599 ug/kg	98
28) Ethyl-Tert-Butyl ether	8.83	59	1146457	103.0625 ug/kg	98
29) 2-Butanone	9.02	43	41754	21.5920 ug/kg	96
30) Propionitrile	9.14	54	60026	101.4339 ug/kg	97
31) 2,2-Dichloropropane	9.25	77	84514	18.0510 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	66111	20.1834 ug/kg	95
33) Chloroform	9.52	83	112899	19.5927 ug/kg	96
34) 1-Bromopropane	9.66	122	14310	29.0977 ug/kg	94
35) Bromochloromethane	9.75	130	42111	19.7916 ug/kg	94
36) Tetrahydrofuran	9.77	42	130566	104.7483 ug/kg	98
38) 1,1,1-Trichloroethane	10.05	97	96178	18.4565 ug/kg	94
39) Cyclohexane	10.08	56	123598	21.7549 ug/kg	99
40) 1,1-Dichloropropene	10.25	75	75864	18.5012 ug/kg	100
41) Tert-Amyl-Methyl ether	10.34	73	878194	108.6097 ug/kg	98
42) Carbon Tetrachloride	10.39	117	86746	17.9557 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M973102.D 8260SL.M Sun Mar 06 17:50:34 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030616\9M973102.D Vial: 6
Acq On : 6 Mar 2016 17:27 Operator: ADC
Sample : WG559859-02 20ug/L LCS 8260 Inst : hpms9
Misc : 7,1 STD74900 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 06 17:50:34 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.57	62	106382	20.9886 ug/kg	97
46)	Benzene	10.61	78	225013	19.6008 ug/kg	99
47)	Trichloroethene	11.36	130	70503	19.3826 ug/kg	95
48)	Methylcyclohexane	11.43	83	101608	22.2722 ug/kg	98
49)	1,2-Dichloropropane	11.57	63	68542	21.7426 ug/kg	97
50)	1,4-Dioxane	11.87	88	9997	211.3845 ug/kg	88
51)	Bromodichloromethane	11.87	83	84670	19.0580 ug/kg	99
52)	Dibromomethane	11.96	174	39104	18.7213 ug/kg	97
53)	2-Chloroethyl Vinyl Ether	12.16	63	15824	19.9676 ug/kg	93
54)	4-Methyl-2-Pentanone	12.19	58	29735	21.4900 ug/kg	98
55)	cis-1,3-Dichloropropene	12.51	75	93892	20.2850 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	112219	24.1253 ug/kg	93
59)	Toluene	12.93	91	247990	19.2929 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	76225	21.3939 ug/kg	96
61)	trans-1,3-Dichloropropene	13.10	75	87011	18.7944 ug/kg	98
62)	1,1,2-Trichloroethane	13.32	97	54400	20.1465 ug/kg	100
63)	2-Hexanone	13.25	43	56201	20.8460 ug/kg	95
64)	1,3-Dichloropropane	13.63	76	92634	20.5883 ug/kg	95
65)	Tetrachloroethene	13.75	164	47720	17.3174 ug/kg	94
66)	Dibromochloromethane	14.02	129	68707	18.2066 ug/kg	100
67)	1,2-Dibromoethane	14.27	107	54923	18.3379 ug/kg	96
68)	1-Chlorohexane	14.34	91	83470	22.0205 ug/kg	99
69)	Chlorobenzene	14.78	112	174797	19.3487 ug/kg	95
70)	1,1,1,2-Tetrachloroethane	14.81	131	64255	18.9396 ug/kg	100
71)	Ethylbenzene	14.80	106	92540	19.8829 ug/kg	100
72)	m-,p-Xylene	14.88	106	226968	39.4872 ug/kg	99
73)	o-Xylene	15.45	106	110469	20.0269 ug/kg	99
74)	Styrene	15.49	104	184923	19.6870 ug/kg	100
75)	Bromoform	15.99	173	40755	16.4485 ug/kg	97
76)	Isopropylbenzene	15.87	105	290509	19.6183 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	62302	17.3342 ug/kg	98
80)	1,2,3-Trichloropropane	16.28	110	23832	17.4843 ug/kg	89
81)	trans-1,4-Dichloro-2-Buten	16.33	53	23441	17.0611 ug/kg	89
82)	n-Propylbenzene	16.38	91	343369	18.4365 ug/kg	99
83)	Bromobenzene	16.52	156	76031	17.2927 ug/kg	73
84)	1,3,5-Trimethylbenzene	16.57	105	254517	18.2055 ug/kg	99
85)	2-Chlorotoluene	16.66	91	238316	19.0779 ug/kg	100
86)	4-Chlorotoluene	16.71	91	192135	16.6363 ug/kg	99
87)	a-Methylstyrene	16.97	118	133550	20.9650 ug/kg	96
88)	tert-Butylbenzene	17.03	134	53098	18.1160 ug/kg	83
89)	1,2,4-Trimethylbenzene	17.09	105	254797	17.4031 ug/kg	99
90)	sec-Butylbenzene	17.31	105	325663	18.0865 ug/kg	100
91)	p-Isopropyltoluene	17.47	119	261769	17.2268 ug/kg	100
92)	1,3-Dichlorobenzene	17.67	146	142348	16.2904 ug/kg	98
93)	1,4-Dichlorobenzene	17.79	146	148255	16.9713 ug/kg	100
94)	n-Butylbenzene	17.99	91	234575	16.6033 ug/kg	98
95)	1,2-Dichlorobenzene	18.29	146	141050	17.3967 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	16074	15.4434 ug/kg	96
97)	1,2,4-Trichlorobenzene	20.43	180	87140	15.1398 ug/kg	99
98)	Hexachlorobutadiene	20.58	225	48996	16.1490 ug/kg	98
99)	Naphthalene	20.80	128	207013	14.3396 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.12	180	85622	15.3374 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M973102.D 8260SL.M Sun Mar 06 17:50:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030616\9M973102.D Vial: 6
Acq On : 6 Mar 2016 17:27 Operator: ADC
Sample : WG559859-02 20ug/L LCS 8260 Inst : hpms9
Misc : 7,1 STD74900 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 6 17:50 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

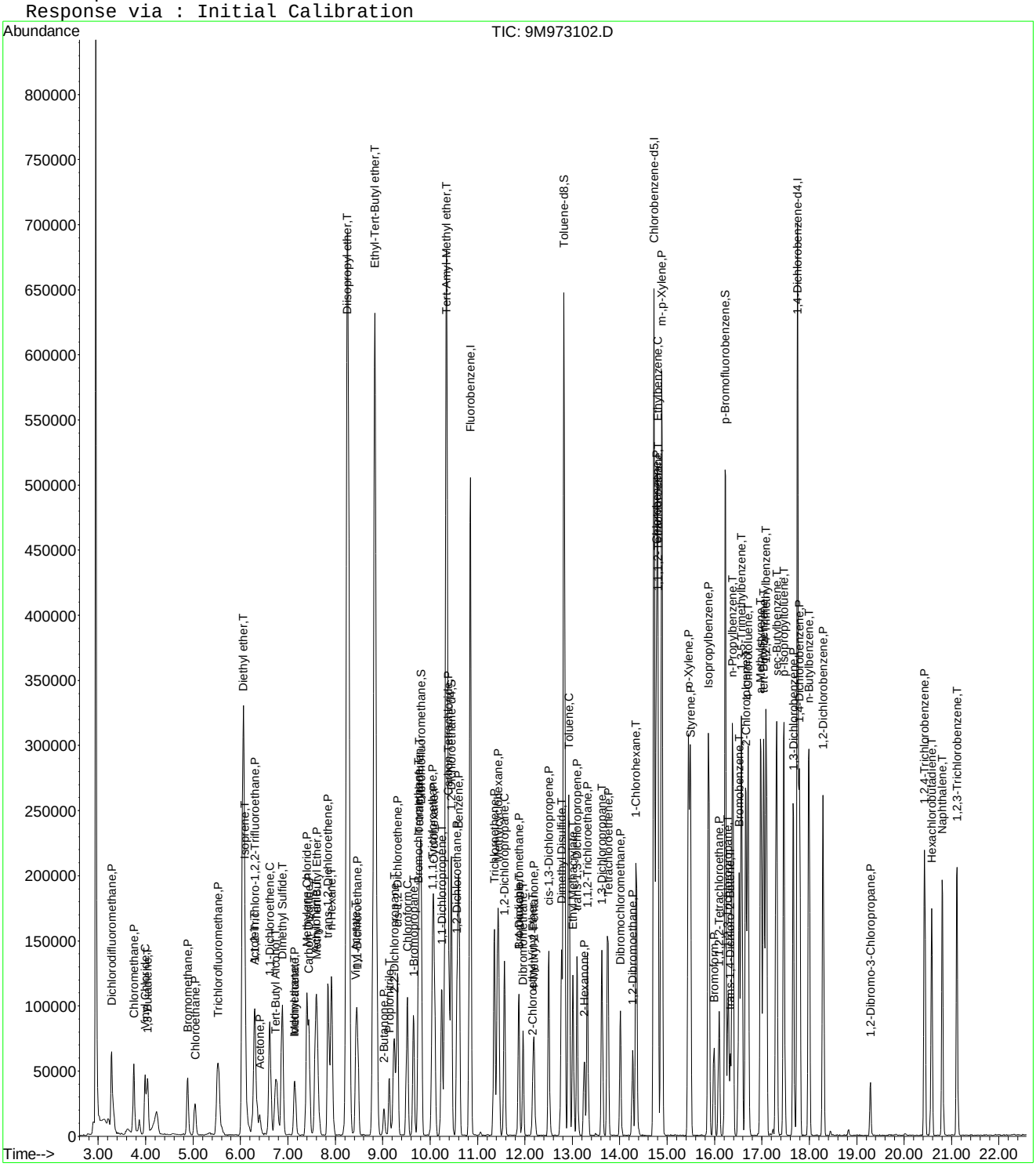

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030716\9M973124.D Vial: 4
Acq On : 7 Mar 2016 16:49 Operator: ADC
Sample : WG559982-02 20ug/L LCS 8260 Inst : hpms9
Misc : 7,1 STD74900 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 17:12:31 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	497008	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	374762	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	201592	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	127386	47.2844 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.56%		
43) 1,2-Dichloroethane-d4	10.45	65	165046	48.8274 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.66%		
58) Toluene-d8	12.82	98	451751	47.6566 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 95.32%		
79) p-Bromofluorobenzene	16.23	95	189263	48.2147 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 96.42%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	81189	23.9670 ug/kg	94
3) Chloromethane	3.75	50	68926	21.1971 ug/kg	98
4) Vinyl Chloride	3.99	62	60809	18.6811 ug/kg	99
5) 1,3-Butadiene	4.04	54	12770	4.1235 ug/kg	98
6) Bromomethane	4.89	94	38796	18.3509 ug/kg	98
7) Chloroethane	5.04	64	28617	19.7334 ug/kg	94
8) Trichlorofluoromethane	5.53	101	96596	19.7859 ug/kg	98
9) Diethyl ether	6.06	59	246109	107.8365 ug/kg	98
10) Isoprene	6.09	67	72116	24.7422 ug/kg	95
11) Acrolein	6.29	56	47397	104.1517 ug/kg	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	54379	21.5983 ug/kg	94
13) Acetone	6.42	43	28675	21.4625 ug/kg	97
14) 1,1-Dichloroethene	6.62	61	94036	20.2468 ug/kg	98
15) Tert-Butyl Alcohol	6.75	59	97912	192.6659 ug/kg	99
16) Dimethyl Sulfide	6.88	62	59428	30.2750 ug/kg	92
17) Iodomethane	7.13	142	21234	17.3223 ug/kg	90
18) Methyl acetate	7.14	43	54828	21.7151 ug/kg	96
19) Methylene Chloride	7.40	84	48026	18.9865 ug/kg	90
20) Carbon Disulfide	7.44	76	133241	18.6228 ug/kg	98
21) Acrylonitrile	7.59	53	28280	22.6414 ug/kg	97
22) Methyl Tert Butyl Ether	7.61	73	149798	20.7930 ug/kg	97
23) trans-1,2-Dichloroethene	7.85	61	85524	20.6618 ug/kg	95
24) n-Hexane	7.91	57	93250	21.8418 ug/kg	98
25) Diisopropyl ether	8.26	45	1051190	106.0143 ug/kg	98
26) Vinyl Acetate	8.43	43	109480	19.3684 ug/kg	98
27) 1,1-Dichloroethane	8.46	63	101617	19.5457 ug/kg	97
28) Ethyl-Tert-Butyl ether	8.83	59	880890	95.5458 ug/kg	98
29) 2-Butanone	9.03	43	36108	22.5292 ug/kg	95
30) Propionitrile	9.14	54	49899	101.7378 ug/kg	97
31) 2,2-Dichloropropane	9.23	77	76852	19.8050 ug/kg	96
32) cis-1,2-Dichloroethene	9.31	96	55136	20.3096 ug/kg	94
33) Chloroform	9.52	83	91986	19.2607 ug/kg	99
34) 1-Bromopropane	9.65	122	12690	31.0617 ug/kg	99
35) Bromochloromethane	9.75	130	34136	19.3573 ug/kg	89
36) Tetrahydrofuran	9.77	42	103869	100.5425 ug/kg	97
38) 1,1,1-Trichloroethane	10.05	97	87305	20.2144 ug/kg	96
39) Cyclohexane	10.08	56	104376	22.1663 ug/kg	99
40) 1,1-Dichloropropene	10.25	75	65978	19.4138 ug/kg	98
41) Tert-Amyl-Methyl ether	10.34	73	660335	98.5348 ug/kg	97
42) Carbon Tetrachloride	10.39	117	77261	19.2957 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030716\9M973124.D Vial: 4
Acq On : 7 Mar 2016 16:49 Operator: ADC
Sample : WG559982-02 20ug/L LCS 8260 Inst : hpms9
Misc : 7,1 STD74900 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 17:12:31 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	89150	21.2218 ug/kg	99
46)	Benzene	10.60	78	188881	19.8519 ug/kg	98
47)	Trichloroethene	11.35	130	62138	20.6115 ug/kg	99
48)	Methylcyclohexane	11.44	83	84241	22.2795 ug/kg	96
49)	1,2-Dichloropropane	11.57	63	55104	21.0904 ug/kg	95
50)	1,4-Dioxane	11.87	88	8680	221.4470 ug/kg	99
51)	Bromodichloromethane	11.87	83	70735	19.2101 ug/kg	99
52)	Dibromomethane	11.97	174	31009	17.9123 ug/kg	93
53)	2-Chloroethyl Vinyl Ether	12.16	63	12395	19.0268 ug/kg	93
54)	4-Methyl-2-Pentanone	12.19	58	24925	21.7345 ug/kg	97
55)	cis-1,3-Dichloropropene	12.50	75	79005	20.5943 ug/kg	96
56)	Dimethyl Disulfide	12.77	94	85293	22.1241 ug/kg	95
59)	Toluene	12.93	91	210601	19.6683 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	62622	21.0990 ug/kg	97
61)	trans-1,3-Dichloropropene	13.11	75	74526	19.3243 ug/kg	99
62)	1,1,2-Trichloroethane	13.32	97	45328	20.1516 ug/kg	97
63)	2-Hexanone	13.25	43	47427	21.1178 ug/kg	94
64)	1,3-Dichloropropane	13.62	76	77933	20.7928 ug/kg	96
65)	Tetrachloroethene	13.75	164	44150	19.2334 ug/kg	96
66)	Dibromochloromethane	14.01	129	57552	18.3076 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	47056	18.8605 ug/kg	99
68)	1-Chlorohexane	14.35	91	66412	21.0322 ug/kg	92
69)	Chlorobenzene	14.77	112	151707	20.1589 ug/kg	98
70)	1,1,1,2-Tetrachloroethane	14.80	131	54601	19.3200 ug/kg	98
71)	Ethylbenzene	14.79	106	79683	20.5522 ug/kg	98
72)	m-,p-Xylene	14.89	106	194644	40.6514 ug/kg	99
73)	o-Xylene	15.45	106	93573	20.3642 ug/kg	98
74)	Styrene	15.49	104	154867	19.7920 ug/kg	100
75)	Bromoform	16.00	173	35185	17.0470 ug/kg	99
76)	Isopropylbenzene	15.87	105	250079	20.2732 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	49163	16.0766 ug/kg	99
80)	1,2,3-Trichloropropane	16.28	110	20911	18.0309 ug/kg	84
81)	trans-1,4-Dichloro-2-Buten	16.33	53	20041	17.1437 ug/kg	87
82)	n-Propylbenzene	16.38	91	294383	18.5774 ug/kg	99
83)	Bromobenzene	16.51	156	60436	16.1556 ug/kg	63
84)	1,3,5-Trimethylbenzene	16.57	105	218930	18.4054 ug/kg	98
85)	2-Chlorotoluene	16.66	91	195931	18.4346 ug/kg	99
86)	4-Chlorotoluene	16.70	91	176507	17.9625 ug/kg	100
87)	a-Methylstyrene	16.98	118	109195	20.1469 ug/kg	96
88)	tert-Butylbenzene	17.03	134	46507	18.6491 ug/kg	97
89)	1,2,4-Trimethylbenzene	17.08	105	213672	17.1528 ug/kg	98
90)	sec-Butylbenzene	17.31	105	285822	18.6568 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	230460	17.8253 ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	124077	16.6888 ug/kg	100
93)	1,4-Dichlorobenzene	17.79	146	122848	16.5283 ug/kg	96
94)	n-Butylbenzene	17.99	91	209200	17.4032 ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	120053	17.4029 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	13417	15.1506 ug/kg	95
97)	1,2,4-Trichlorobenzene	20.43	180	75129	15.3414 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	42664	16.5273 ug/kg	98
99)	Naphthalene	20.81	128	178894	14.5643 ug/kg	99
100)	1,2,3-Trichlorobenzene	21.12	180	72797	15.3261 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030716\9M973124.D Vial: 4
Acq On : 7 Mar 2016 16:49 Operator: ADC
Sample : WG559982-02 20ug/L LCS 8260 Inst : hpms9
Misc : 7,1 STD74900 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 7 17:12 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

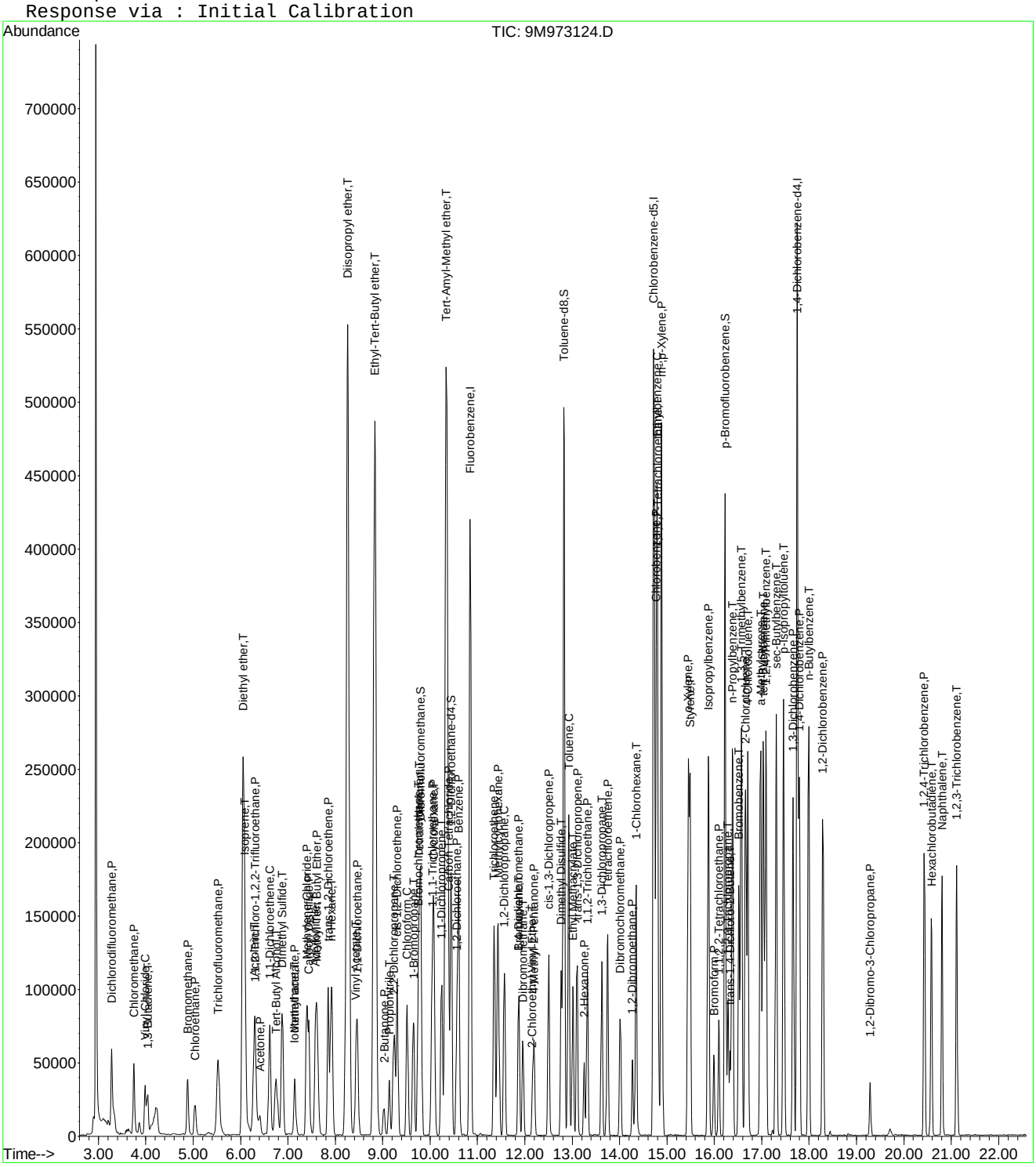

9M973124.D 8260SL.M Mon Mar 07 17:12:31 2016 Page 3

2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030234-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT08(5-5.5)030316	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/04/2016 18:31
Collect Date:	03/03/2016 13:15	**Dilution:**	1	**File ID:**	1LM.LM33716
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.28	U	4.58	2.28	1.14

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030234-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT08(15-15.5)030316	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/04/2016 18:50
Collect Date:	03/03/2016 13:49	**Dilution:**	1	**File ID:**	1LM.LM33717
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.34	U	4.68	2.34	1.17

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030234-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT08(10-10.5)030316	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/04/2016 19:09
Collect Date:	03/03/2016 14:40	**Dilution:**	1	**File ID:**	1LM.LM33718
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.32	U	4.62	2.32	1.16

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030234-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT08(21-21.5)030316	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/04/2016 19:28
Collect Date:	03/03/2016 14:50	**Dilution:**	1	**File ID:**	1LM.LM33719
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	18.9		4.67	2.34	1.17

Certificate of Analysis

Sample #:	L16030234-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT08(26-26.5)030316	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/04/2016 19:47
Collect Date:	03/03/2016 14:55	**Dilution:**	1	**File ID:**	1LM.LM33720
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	31.3		4.85	2.42	1.21

Certificate of Analysis

Sample #:	L16030234-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT08(35-35.5)030316	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/04/2016 20:06
Collect Date:	03/03/2016 15:05	**Dilution:**	1	**File ID:**	1LM.LM33721
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	4.62	J	4.79	2.40	1.20

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030234
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

MICROBAC

Semivolatile Sample Extract Log

Parameter: 6850
SOP #: HPLC06
Analyst: ADC, WD
Spike/Surrogate analyst: WD
Surrogate #: NA
Spike # A: STD 72686
Ext Solvent: DI Water
Ext Solvent: NA
Ext Disk: NA

Matrix: Soil
Rev #: 07
Date/Time Extracted: 03/04/2016 15:30
Witness: ADC

Spike # B: NA
Lot #: NA
Lot #: NA
Lot #: NA

Extraction Work Group: WG-559804
Analytical Work Group: WG-559808
Run ID: R4485579

Pipetter(s): 403
Analytical Balance ID: BAL014
Reagent: Sand Lot #: A0A16150
Reagent: Tubes Lot #: RCT34011
Other: IS = COA18071 Lot #: COA18071

Color Code
T = Transparent
C = Colored
O = Opaque

	Sample ID	Test Code	pH	Initial Wt / Vol	IS ~~Amount Surrogate~~	Amount Spike	Final Volume	Extract Color	Comments
1	WG-559804-01	6850		5.008g	0.250ml	1.0ml	50ml		MCT
2	WG-559804-02			5.007					Blk
3	WG-559804-03			5.002		1.0ml			LCS
4	L16030234-01			5.242					
5	-02			5.228					
6	-03			5.125					
7	-04			5.139					
8	-05			5.030					
9	-06			5.211					
10	L16030235-01			5.096					
11	-02			5.116					
12	RS -03			5.075					Ref WG559804-04
13	MS -04			5.074		1.0ml			MS WG559804-05
14	MSD -05			5.072		1.0ml			MSD WG559804-06
15	-06			5.208					
16	-07			5.113					
17	-08			5.069					
18									
19									
20									
21									
22									
23									
24									

Reviewed by: [signature]

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1390 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG559808-01 MCT	9,860	
-02 Blk	11.21	
-03 LCS	6.74	
L16030234-01	218	
-02	81.5	
-03	173	
-04	58.2	
-05	36.4	
-06	37.7	
L16030235-01	8.45	
-02	64.5	
-03 Ref	3.72	
-04 MS	3.77	
-05 MSD	5.52	
-06	8.05	
-07	4.22	
-08	5.94	

Analyst: Andrew Ewing

Date/Time: 3-6-16 / 1345

DCN#117045

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030216_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015, WG559292

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 MS/MSD STD: STD72685

Comments: L16021262s and L16021255s diluted based on historical data.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM33567	WG559340-01 CCB	1	1		03/02/16 08:34
2	1LM.LM33568	WG559340-02 STD (0.1 ug/L)	1	1	STD72683	03/02/16 08:53
3	1LM.LM33569	WG559340-03 STD (0.2 ug/L)	1	1	STD72683	03/02/16 09:12
4	1LM.LM33570	WG559340-04 STD (0.5 ug/L)	1	1	STD72683	03/02/16 09:31
5	1LM.LM33571	WG559340-05 STD (1.0 ug/L)	1	1	STD72683	03/02/16 09:50
6	1LM.LM33572	WG559340-06 STD (2.0 ug/L)	1	1	STD72683	03/02/16 10:09
7	1LM.LM33573	WG559340-07 STD (5.0 ug/L)	1	1	STD72683	03/02/16 10:28
8	1LM.LM33574	WG559340-08 STD (10 ug/L)	1	1	STD72683	03/02/16 10:46
9	1LM.LM33575	WG559340-09 SSCV (1.0 ug/L)	1	1	STD72685	03/02/16 11:05
10	1LM.LM33576	WG559291-01 CCB	1	1		03/02/16 11:25
11	1LM.LM33577	WG559291-02 CCV (1.0ug/L)	1	1	STD72683	03/02/16 11:44
12	1LM.LM33578	WG559015-05 MRL (0.2ug/L)	1	1	STD72683	03/02/16 12:03
13	1LM.LM33579	WG559015-01 MCT (0.2ug/L)	1	1	STD72685	03/02/16 12:22
14	1LM.LM33580	WG559015-02 BLANK	1	1		03/02/16 12:41
15	1LM.LM33581	WG559015-05 MRL (0.2ug/L)	1	1	STD72683	03/02/16 13:01
16	1LM.LM33582	WG559015-03 LCS (0.2ug/L)	1	1	STD72685	03/02/16 13:20
17	1LM.LM33583	WG559015-04 LCS2 (0.2ug/L)	1	1	STD72685	03/02/16 13:39
18	1LM.LM33584	L16021060-01 ADC	1	1	STD72685	03/02/16 13:58
19	1LM.LM33585	L16021060-02 ADC	1	1	STD72685	03/02/16 14:17
20	1LM.LM33586	L16021060-03 ADC	1	1	STD72685	03/02/16 14:36
21	1LM.LM33587	L16021060-04 ADC	1	1	STD72685	03/02/16 14:55
22	1LM.LM33588	L16021262-01 (20x)	1	20		03/02/16 15:13
23	1LM.LM33589	L16021262-02 (5000x)	1	5000		03/02/16 15:32
24	1LM.LM33590	WG559291-03 CCV (1.0ug/L)	1	1	STD72683	03/02/16 15:51
25	1LM.LM33591	WG559015-06 MRL (0.2ug/L)	1	1	STD72683	03/02/16 16:10
26	1LM.LM33592	WG559291-04 CCB	1	1		03/02/16 16:29
27	1LM.LM33593	L16021262-03 (100X)	1	100		03/02/16 16:48
28	1LM.LM33594	L16021262-04 (2000X)	1	2000		03/02/16 17:07
29	1LM.LM33595	L16021262-05 (1000X)	1	1000		03/02/16 17:26
30	1LM.LM33596	L16021262-06 (10,000X)	1	10000		03/02/16 17:45
31	1LM.LM33597	L16021262-07 (10,000X)	1	10000		03/02/16 18:04
32	1LM.LM33598	L16021262-08 (5000X)	1	5000		03/02/16 18:23
33	1LM.LM33599	L16021262-09 (5000X)	1	5000		03/02/16 18:42

Page: 1 Approved: 04-MAR-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030216_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015, WG559292

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM33600	L16021262-10 (100,000X)	1	100000		03/02/16 19:01
35	1LM.LM33601	L16021262-11 (10,000X)	1	10000		03/02/16 19:20
36	1LM.LM33602	L16021262-12 (10,000X)	1	10000		03/02/16 19:39
37	1LM.LM33603	WG559291-05 CCV (1.0ug/L)	1	1	STD72683	03/02/16 19:58
38	1LM.LM33604	WG559015-07 MRL (0.2ug/L)	1	1	STD72683	03/02/16 20:17
39	1LM.LM33605	WG559291-06 CCB	1	1		03/02/16 20:35
40	1LM.LM33606	L16021262-13 (10,000X)	1	10000		03/02/16 20:54
41	1LM.LM33607	L16021262-14 (10,000X)	1	10000		03/02/16 21:13
42	1LM.LM33608	WG559291-07 CCV (1.0ug/L)	1	1	STD72683	03/02/16 21:32
43	1LM.LM33609	WG559015-08 MRL (0.2ug/L)	1	1	STD72683	03/02/16 21:51
44	1LM.LM33610	WG559291-08 CCB	1	1		03/02/16 22:10
45	1LM.LM33611	WG559292-07 MRL (0.2ug/L)	1	1	STD72685	03/02/16 22:29
46	1LM.LM33612	WG559292-01 MCT (0.2ug/L)	1	1	STD72685	03/02/16 22:48
47	1LM.LM33613	WG559292-02 BLANK	1	1		03/02/16 23:07
48	1LM.LM33614	WG559292-03 LCS (0.2ug/L)	1	1	STD72685	03/02/16 23:26
93	1LM.LM33615	L16021255-01 REF 100X	1	100		03/02/16 23:45
50	1LM.LM33616	L16021255-02 MS 100X	1	100	STD72685	03/03/16 00:04
51	1LM.LM33617	L16021255-03 MSD 100X	1	100	STD72685	03/03/16 00:23
94	1LM.LM33618	L16021255-04 20X	1	20		03/03/16 00:42
53	1LM.LM33619	L16021255-05 20X	1	20		03/03/16 01:01
54	1LM.LM33620	L16021255-06 200X	1	200		03/03/16 01:20
55	1LM.LM33621	L16021255-07 100X	1	100		03/03/16 01:39
56	1LM.LM33622	WG559291-09 CCV (1.0ug/L)	1	1	STD72685	03/03/16 01:57
57	1LM.LM33623	WG559292-08 MRL (0.2ug/L)	1	1	STD72685	03/03/16 02:16
58	1LM.LM33624	WG559291-10 CCB	1	1		03/03/16 02:35
59	1LM.LM33625	L16021255-08	1	1		03/03/16 02:54
60	1LM.LM33626	L16021255-09 500X	1	500		03/03/16 03:13
61	1LM.LM33627	L16021255-10 5000X	1	5000		03/03/16 03:32
62	1LM.LM33628	L16021255-11 5000X	1	5000		03/03/16 03:51
63	1LM.LM33629	L16021255-12 100X	1	100		03/03/16 04:10
64	1LM.LM33630	L16021255-13 10,000X	1	10000		03/03/16 04:29
65	1LM.LM33631	L16021255-14 10,000X	1	10000		03/03/16 04:48
66	1LM.LM33632	L16030008-01	1	1		03/03/16 05:07
67	1LM.LM33633	L16030008-01 10X	1	10		03/03/16 05:26
68	1LM.LM33634	L16021328-01	1	1		03/03/16 05:45
69	1LM.LM33635	WG559291-11 CCV (1.0ug/L)	1	1	STD72685	03/03/16 06:04

Page: 2 Approved: 04-MAR-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030216_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015, WG559292

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
70	1LM.LM33636	WG559292-09 MRL (0.2ug/L)	1	1	STD72685	03/03/16 06:23
71	1LM.LM33637	WG559291-12 CCB	1	1		03/03/16 06:41
72	1LM.LM33638	L16021328-02	1	1		03/03/16 07:00
73	1LM.LM33639	L16021328-03	1	1		03/03/16 07:19
74	1LM.LM33640	L16021328-04	1	1		03/03/16 07:38
75	1LM.LM33641	L16021328-05	1	1		03/03/16 07:57
76	1LM.LM33642	WG559291-13 CCV (1.0ug/L)	1	1	STD72685	03/03/16 08:16
77	1LM.LM33643	WG559292-10 MRL (0.2ug/L)	1	1	STD72685	03/03/16 08:35
78	1LM.LM33644	WG559291-14 CCB	1	1		03/03/16 08:54
79	1LM.LM33645	L16021255-05 200X	1	200		03/03/16 09:13
80	1LM.LM33646	L16021255-06	1	1		03/03/16 09:32
81	1LM.LM33647	L16021255-12 1000X	1	1000		03/03/16 09:51
95	1LM.LM33648	L16021255-04	1	1		03/03/16 10:10
96	1LM.LM33649	L16021255-02 MS	1	1	STD72685	03/03/16 10:29
97	1LM.LM33650	L16021255-03 MSD	1	1	STD72685	03/03/16 10:48
85	1LM.LM33651	WG559291-15 CCV (1.0ug/L)	1	1	STD72685	03/03/16 11:07
86	1LM.LM33652	WG559292-11 MRL (0.2ug/L)	1	1	STD72685	03/03/16 11:25
87	1LM.LM33653	WG559291-16 CCB	1	1		03/03/16 11:44

Comments

Seq.	Rerun	Dil.	Reason	Analytes
12	X			
	WG559015-05 incorrect vial location.			
50				
	DNR. Incorrect information on the supplied Chain of Custody.			
51				
	DNR. Incorrect information on the supplied Chain of Custody.			
94	X	1	Analyzed too dilute	
	L16021255-04			
53	X	200	Over Calibration Range	Perchlorate
	L16021255-05			
54	X	1	Analyzed too dilute	
	L16021255-06			
63	X	1000	Over Calibration Range	
	L16021255-12 100X			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030416_WTD.TXT
Analyst1: ADC/WTD Analyst2: JWR
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG559808 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD72683 (03/02/2016)

CCV STD: STD72683 LCS STD: STD72685 MS/MSD STD: STD72685

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM33710	WG559812-01 CCB	1	1		03/04/16 16:38
2	1LM.LM33711	WG559812-02 CCV (1.0ug/L)	1	1	STD72683	03/04/16 16:57
3	1LM.LM33712	WG559808-07 MRL (2.0ug/kg)	7	1	STD72683	03/04/16 17:16
4	1LM.LM33713	WG559808-01 MCT (2.0ug/kg)	7	1	STD72685	03/04/16 17:35
5	1LM.LM33714	WG559808-02 BLK	7	1		03/04/16 17:53
6	1LM.LM33715	WG559808-03 LCS (2.0ug/kg)	7	1	STD72685	03/04/16 18:12
7	1LM.LM33716	L16030234-01	7	1		03/04/16 18:31
8	1LM.LM33717	L16030234-02	7	1		03/04/16 18:50
9	1LM.LM33718	L16030234-03	7	1		03/04/16 19:09
10	1LM.LM33719	L16030234-04	7	1		03/04/16 19:28
11	1LM.LM33720	L16030234-05	7	1		03/04/16 19:47
12	1LM.LM33721	L16030234-06	7	1		03/04/16 20:06
13	1LM.LM33722	L16030235-01	7	1		03/04/16 20:25
14	1LM.LM33723	WG559812-03 CCV (1.0ug/L)	1	1	STD72683	03/04/16 20:44
15	1LM.LM33724	WG559808-08 MRL (2.0ug/kg)	7	1	STD72683	03/04/16 21:03
16	1LM.LM33725	WG559812-04 CCB	1	1		03/04/16 21:22
17	1LM.LM33726	L16030235-02	7	1		03/04/16 21:41
18	1LM.LM33727	L16030235-03 RS (NR)	7	1		03/04/16 22:00
19	1LM.LM33728	L16030235-04 MS (NR)	7	1	STD72685	03/04/16 22:19
20	1LM.LM33729	L16030235-05 MSD (NR)	7	1	STD72685	03/04/16 22:38
21	1LM.LM33730	L16030235-06 (NR)	7	1		03/04/16 22:56
22	1LM.LM33731	L16030235-07 (NR)	7	1		03/04/16 23:15
23	1LM.LM33732	L16030235-08 (NR)	7	1		03/04/16 23:34
24	1LM.LM33733	WG559812-05 CCV (1.0ug/L)	1	1	STD72683	03/04/16 23:53
25	1LM.LM33734	WG559808-09 MRL (2.0ug/kg)	7	1	STD72683	03/05/16 00:12
26	1LM.LM33735	WG559812-06 CCB	1	1		03/05/16 00:31
27	1LM.LM33736	WG559899-01 CCB	1	1		03/07/16 09:54
28	1LM.LM33737	WG559899-02 CCV (1.0ug/L)	1	1	STD72683	03/07/16 10:13
29	1LM.LM33738	WG559808-10 MRL (2.0ug/kg)	7	1	STD72683	03/07/16 10:32
30	1LM.LM33739	L16030235-03 RS (RR 100x)	7	100		03/07/16 10:51
31	1LM.LM33740	L16030235-04 MS (RR 100x)	7	100	STD72685	03/07/16 11:10
32	1LM.LM33741	L16030235-05 MSD (RR 100x)	7	100	STD72685	03/07/16 11:29
33	1LM.LM33742	L16030235-06 (RR 10x)	7	10		03/07/16 11:48

Page: 1 Approved: 08-MAR-16

Wadei D

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030416_WTD.TXT
Analyst1: ADC/WTD Analyst2: JWR
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG559808 (soils)

Internal STD: COA18071 Surrogate STD: NA STD72683 (03/02/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM33743	L16030235-07 (RR 10x)	7	10		03/07/16 12:07
35	1LM.LM33744	L16030235-08 (RR 100x)	7	100		03/07/16 12:26
36	1LM.LM33745	WG559899-03 CCV (1.0ug/L)	1	1	STD72683	03/07/16 12:45
37	1LM.LM33746	WG559808-11 MRL (2.0ug/kg)	7	1	STD72683	03/07/16 13:04
38	1LM.LM33747	WG559899-04 CCB	1	1		03/07/16 13:22

Comments

Seq.	Rerun	Dil.	Reason	Analytes
18	X	100	Over Calibration Range	
	L16030235-03 RS (NR) : This sample was reanalyzed at a 100x dilution on the end of this run.			
19	X	100	Over Calibration Range	
	L16030235-04 MS (NR) : This sample was reanalyzed at a 100x dilution on the end of this run.			
20	X	100	Over Calibration Range	
	L16030235-05 MSD (NR) : This sample was reanalyzed at a 100x dilution on the end of this run.			
21	X	10	Over Calibration Range	
	L16030235-06 (NR) : This sample was reanalyzed at a 10x dilution on the end of this run.			
22	X	10	Over Calibration Range	
	L16030235-07 (NR) : This sample was reanalyzed at a 10x dilution on the end of this run.			
23	X	100	Over Calibration Range	
	L16030235-08 (NR) : This sample was reanalyzed at a 100x dilution on the end of this run.			
31				
	L16030235-04 MS (RR 100x) : The MS %Rec is below the advisory limit. The parent sample to this MS has a result greater than 900 times that of the MS-spiked amount.			
32				
	L16030235-05 MSD (RR 100x) : The MSD %Rec is above the advisory limit. The parent sample to this MSD has a result greater than 900 times that of the MSD-spiked amount.			

Page: 2 Approved: 08-MAR-16

Wadei D

Microbac Laboratories Inc.

Data Checklist

Date: 02-MAR-2016
Analyst: WTD
Analyst: ADC
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 73617
Analytical Workgroups: L16021255,L16021328,030008,021262,021060

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	WTD
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MES

Primary Reviewer: 03-MAR-2016

Secondary Reviewer: 04-MAR-2016

CHECKLIST1 - Modified 03/05/2008

Generated: MAR-04-2016 13:53:03

Microbac Laboratories Inc.

Data Checklist

Date: 04-MAR-2016
Analyst: ADC/WTD
Analyst: JWR
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 73668
Analytical Workgroups: L16030234, 0235 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	DL @ 100X DILUTION
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 07-MAR-2016 John Richards

Secondary Reviewer: 08-MAR-2016 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-08-2016 11:01:02

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG559808

Login Number: L16030234

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18DPT08(5-5.5)030316	01	03/03/16					03/04/2016	1.1	28		03/04/16	.1	28	
18DPT08(15-15.5)030316	02	03/03/16					03/04/2016	1.1	28		03/04/16	.1	28	
18DPT08(10-10.5)030316	03	03/03/16					03/04/2016	1	28		03/04/16	.2	28	
18DPT08(21-21.5)030316	04	03/03/16					03/04/2016	1	28		03/04/16	.2	28	
18DPT08(26-26.5)030316	05	03/03/16					03/04/2016	1	28		03/04/16	.2	28	
18DPT08(35-35.5)030316	06	03/03/16					03/04/2016	1	28		03/04/16	.2	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4659869
Report generated 03/08/2016 11:11

METHOD BLANK SUMMARY

Login Number: L16030234
Blank File ID: 1LM.LM33714
Prep Date: 03/04/16 15:30
Analyzed Date: 03/04/16 17:53
Analyst: JWR

Work Group: WG559808
Blank Sample ID: WG559808-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG559808-07	1LM.LM33712	03/04/16 17:16	01
MCT	WG559808-01	1LM.LM33713	03/04/16 17:35	01
LCS	WG559808-03	1LM.LM33715	03/04/16 18:12	01
18DPT08(5-5.5)030316	L16030234-01	1LM.LM33716	03/04/16 18:31	01
18DPT08(15-15.5)030316	L16030234-02	1LM.LM33717	03/04/16 18:50	01
18DPT08(10-10.5)030316	L16030234-03	1LM.LM33718	03/04/16 19:09	01
18DPT08(21-21.5)030316	L16030234-04	1LM.LM33719	03/04/16 19:28	01
18DPT08(26-26.5)030316	L16030234-05	1LM.LM33720	03/04/16 19:47	01
18DPT08(35-35.5)030316	L16030234-06	1LM.LM33721	03/04/16 20:06	01
QCMRL	WG559808-08	1LM.LM33724	03/04/16 21:03	01
QCMRL	WG559808-09	1LM.LM33734	03/05/16 00:12	01
QCMRL	WG559808-10	1LM.LM33738	03/07/16 10:32	01
QCMRL	WG559808-11	1LM.LM33746	03/07/16 13:04	01

Report Name: BLANK_SUMMARY
PDF File ID: 4659870
Report generated 03/08/2016 11:11

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16030234 Prep Date: 03/04/16 15:30 Sample ID: WG559808-02
Instrument ID: LCMS1 Run Date: 03/04/16 17:53 Prep Method: 6850
File ID: 1LM.LM33714 Analyst: JWR Method: 6850
Workgroup (AAB#): WG559808 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.999	3.99	0.999	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4659871
08-MAR-2016 11:11

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030234 Run Date: 03/04/2016 Sample ID: WG559808-03
Instrument ID: LCMS1 Run Time: 18:12 Prep Method: 6850
File ID: 1LM.LM33715 Analyst: JWR Method: 6850
Workgroup (AAB#): WG559808 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD72685 Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	2.00	2.35	118	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4659872
Report generated: 03/08/2016 11:11

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16030234
Analytical Method: 6850
ICAL Workgroup: WG559340

Instrument ID: LCMS1
Initial Calibration Date: 02-MAR-16 10:46
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.808	3.97	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4660460
Report generated 03/08/2016 11:11

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16030234

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 02-MAR-16 10:46

Column ID: F

Analyte	WG559340-02			WG559340-03			WG559340-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	18400.0000	1.879	0.200	37000.0000	1.850	0.500	89000.0000	1.810

INT_CAL - Modified 03/06/2008
PDF File ID: 4660460
Report generated 03/08/2016 11:11

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16030234

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 02-MAR-16 10:46

Column ID: F

Analyte	WG559340-05			WG559340-06			WG559340-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	183000.000	1.829	2.00	363000.000	1.777	5.00	871000.000	1.779

INT_CAL - Modified 03/06/2008
PDF File ID: 4660460
Report generated 03/08/2016 11:11

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16030234

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 02-MAR-16 10:46

Column ID: F

Analyte	WG559340-08		
	CONC	RESP	RF
Perchlorate	10.0	1650000.00	1.729

INT_CAL - Modified 03/06/2008

PDF File ID: 4660460

Report generated 03/08/2016 11:11

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16030234 Run Date: 03/02/2016 Sample ID: WG559340-09
Instrument ID: LCMS1 Run Time: 11:05 Method: 6850
File ID: 1LM.LM33575 Analyst: WTD QC Key: DOD4
ICal Workgroup: WG559340 Cal ID: LCMS1 - 02-MAR-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.83	3.00	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4660461
Report generated 03/08/2016 11:11

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030234
Run Date: 03/04/2016
Sample ID: WG559812-01
Instrument ID: LCMS1
Run Time: 16:38
Method: 6850
File ID: 1LM.LM33710
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG559808
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4659875
Report generated 03/08/2016 11:12

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030234
Run Date: 03/04/2016
Sample ID: WG559812-04
Instrument ID: LCMS1
Run Time: 21:22
Method: 6850
File ID: 1LM.LM33725
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG559808
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4659875
Report generated 03/08/2016 11:12

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030234
Run Date: 03/05/2016
Sample ID: WG559812-06
Instrument ID: LCMS1
Run Time: 00:31
Method: 6850
File ID: 1LM.LM33735
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG559808
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4659875
Report generated 03/08/2016 11:12

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030234
Run Date: 03/07/2016
Sample ID: WG559899-01
Instrument ID: LCMS1
Run Time: 09:54
Method: 6850
File ID: 1LM.LM33736
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG559808
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4659875
Report generated 03/08/2016 11:12

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030234
Run Date: 03/07/2016
Sample ID: WG559899-04
Instrument ID: LCMS1
Run Time: 13:22
Method: 6850
File ID: 1LM.LM33747
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG559808
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4659875
Report generated 03/08/2016 11:12

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030234
Run Date: 03/04/2016
Sample ID: WG559812-02
Instrument ID: LCMS1
Run Time: 16:57
Method: 6850
File ID: 1LM.LM33711
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG559808
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.969	ug/kg	1.72	3.10	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4659874
Report generated 03/08/2016 11:12

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030234
Run Date: 03/04/2016
Sample ID: WG559812-03
Instrument ID: LCMS1
Run Time: 20:44
Method: 6850
File ID: 1LM.LM33723
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG559808
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.975	ug/kg	1.73	2.50	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4659874
Report generated 03/08/2016 11:12

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030234
Run Date: 03/04/2016
Sample ID: WG559812-05
Instrument ID: LCMS1
Run Time: 23:53
Method: 6850
File ID: 1LM.LM33733
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG559808
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.978	ug/kg	1.73	2.20	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4659874
Report generated 03/08/2016 11:12

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030234
Run Date: 03/07/2016
Sample ID: WG559899-02
Instrument ID: LCMS1
Run Time: 10:13
Method: 6850
File ID: 1LM.LM33737
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG559808
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.999	ug/kg	1.77	0.100	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4659874
Report generated 03/08/2016 11:12

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030234 Run Date: 03/07/2016 Sample ID: WG559899-03
Instrument ID: LCMS1 Run Time: 12:45 Method: 6850
File ID: 1LM.LM33745 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG559808 Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.951	ug/kg	1.69	4.90	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4659874
Report generated 03/08/2016 11:12

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030234 Run Date: 03/04/2016 Sample ID: WG559808-07
Instrument ID: LCMS1 Run Time: 17:16 Prep Method: 6850
File ID: 1LM.LM33712 Analyst: JWR Method: 6850
Workgroup (AAB#): WG559808 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.96	98.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4659873
Report generated 03/08/2016 11:11

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030234 Run Date: 03/04/2016 Sample ID: WG559808-08
Instrument ID: LCMS1 Run Time: 21:03 Prep Method: 6850
File ID: 1LM.LM33724 Analyst: JWR Method: 6850
Workgroup (AAB#): WG559808 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.97	98.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4659873
Report generated 03/08/2016 11:11

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030234 Run Date: 03/05/2016 Sample ID: WG559808-09

Instrument ID: LCMS1 Run Time: 00:12 Prep Method: 6850

File ID: 1LM.LM33734 Analyst: JWR Method: 6850

Workgroup (AAB#): WG559808 Matrix: Soil Units: ug/kg

Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.95	97.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4659873
Report generated 03/08/2016 11:11

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030234 Run Date: 03/07/2016 Sample ID: WG559808-10

Instrument ID: LCMS1 Run Time: 10:32 Prep Method: 6850

File ID: 1LM.LM33738 Analyst: JWR Method: 6850

Workgroup (AAB#): WG559808 Matrix: Soil Units: ug/kg

Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.88	94.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4659873
Report generated 03/08/2016 11:11

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030234 Run Date: 03/07/2016 Sample ID: WG559808-11
Instrument ID: LCMS1 Run Time: 13:04 Prep Method: 6850
File ID: 1LM.LM33746 Analyst: JWR Method: 6850
Workgroup (AAB#): WG559808 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.95	97.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4659873
Report generated 03/08/2016 11:11

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16030234
Instrument ID: LCMS1
Workgroup (AAB#): WG559808

ICAL CCV Number: WG559340-05
CAL ID: LCMS1-02-MAR-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1
WG559340	NA	NA	494000
Upper Limit	NA	NA	741000
Lower Limit	NA	NA	247000
L16030234-01	1.00	01	528000
L16030234-02	1.00	01	535000
L16030234-03	1.00	01	538000
L16030234-04	1.00	01	526000
L16030234-05	1.00	01	526000
L16030234-06	1.00	01	565000
WG559808-02	1.00	01	530000
WG559808-03	1.00	01	516000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4659876
Report generated 03/08/2016 11:12

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**	6850	**Samplenum:**	L16030234-01
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33716
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/04/2016 18:31	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	5330	2210	2.41	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**	6850	**Samplenum:**	L16030234-02
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33717
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/04/2016 18:50	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1680	631	2.66	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**	6850	**Samplenum:**	L16030234-03
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33718
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/04/2016 19:09	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1740	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**	6850	**Samplenum:**	L16030234-04
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33719
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/04/2016 19:28	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	301000	95000	3.17	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**	6850	**Samplenum:**	L16030234-05
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33720
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/04/2016 19:47	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	477000	152000	3.14	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**	6850	**Samplenum:**	L16030234-06
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33721
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/04/2016 20:06	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	78800	26200	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**		**Samplenum:**	WG559340-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33568
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/02/2016 08:53	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	18400	5910	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**		**Samplenum:**	WG559340-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33569
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/02/2016 09:12	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37000	11900	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**		**Samplenum:**	WG559340-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33570
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/02/2016 09:31	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	89000	30400	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**		**Samplenum:**	WG559340-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33571
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/02/2016 09:50	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	183000	56800	3.22	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**		**Samplenum:**	WG559340-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33572
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/02/2016 10:09	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	363000	117000	3.10	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**		**Samplenum:**	WG559340-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33573
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/02/2016 10:28	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	871000	282000	3.09	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**		**Samplenum:**	WG559340-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33574
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/02/2016 10:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1650000	530000	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**		**Samplenum:**	WG559340-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33575
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/02/2016 11:05	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	190000	62200	3.05	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**	6850	**Samplenum:**	WG559808-01
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33713
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/04/2016 17:35	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38400	12700	3.02	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**	6850	**Samplenum:**	WG559808-02
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33714
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/04/2016 17:53	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	390	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**	6850	**Samplenum:**	WG559808-03
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33715
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/04/2016 18:12	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	44800	16800	2.67	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**	6850	**Samplenum:**	WG559808-07
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33712
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/04/2016 17:16	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38900	12900	3.02	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**	6850	**Samplenum:**	WG559808-08
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33724
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/04/2016 21:03	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	42600	13400	3.18	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**	6850	**Samplenum:**	WG559808-09
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33734
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/05/2016 00:12	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	41400	12600	3.29	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**	6850	**Samplenum:**	WG559808-10
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33738
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/07/2016 10:32	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	39400	13500	2.92	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**	6850	**Samplenum:**	WG559808-11
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33746
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/07/2016 13:04	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38300	12600	3.04	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**		**Samplenum:**	WG559812-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33710
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/04/2016 16:38	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**		**Samplenum:**	WG559812-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33711
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/04/2016 16:57	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	177000	56200	3.15	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**		**Samplenum:**	WG559812-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33723
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/04/2016 20:44	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	200000	62200	3.22	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**		**Samplenum:**	WG559812-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33725
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/04/2016 21:22	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**		**Samplenum:**	WG559812-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33733
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/04/2016 23:53	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	195000	61500	3.17	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**		**Samplenum:**	WG559812-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33735
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/05/2016 00:31	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**		**Samplenum:**	WG559899-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33736
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/07/2016 09:54	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**		**Samplenum:**	WG559899-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33737
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/07/2016 10:13	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	198000	64300	3.08	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**		**Samplenum:**	WG559899-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33745
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/07/2016 12:45	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	183000	60200	3.04	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030234	**Prep Method:**		**Samplenum:**	WG559899-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33747
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/07/2016 13:22	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	195	0.000	2.3	3.8	*

2.2.1.3 Sample Data

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Data File	LM33716.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 6:31:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030234-01	**Injection Vial**	7.00
Data File	LM33716.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 6:31:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	L16030234-01	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.280e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.330e+03	9.84	N/A	0.0163
Perchlorate conf	2.210e+03	9.85	N/A	0.0231

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

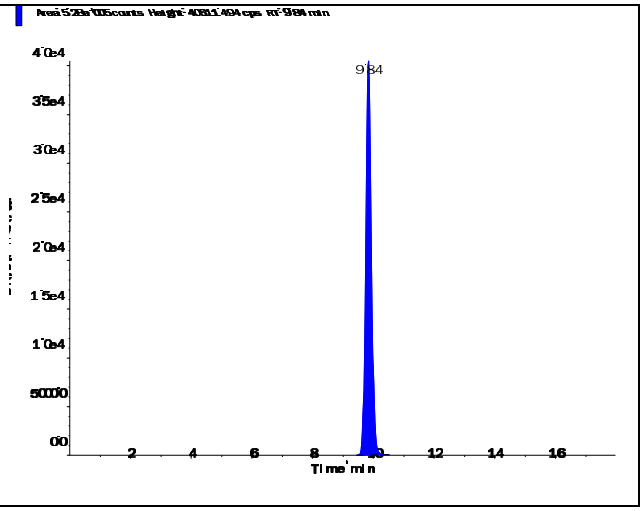

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.94) min
Calculated conc:	0.0163 ng/ml
Area Ratio:	0.01
Sample Type:	(Unknown)

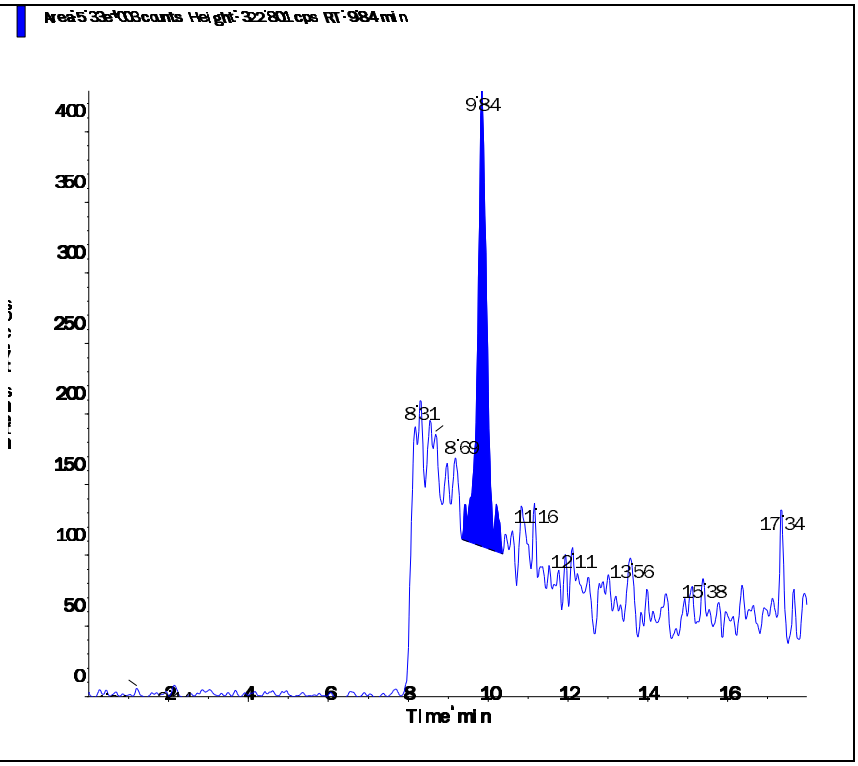

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.85 (9.92) min
Calculated conc:	0.0231 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)

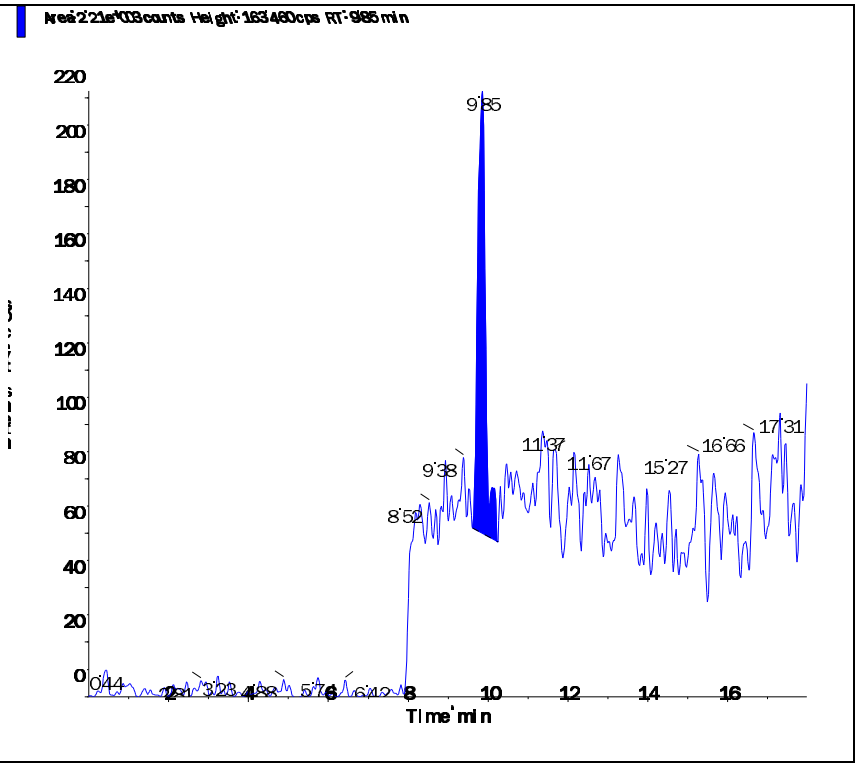

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Data File	LM33717.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 6:50:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030234-02	**Injection Vial**	8.00
Data File	LM33717.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 6:50:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	L16030234-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.350e+05	9.89	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+03	9.93	N/A	< 0
Perchlorate conf	6.310e+02	9.88	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.89(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

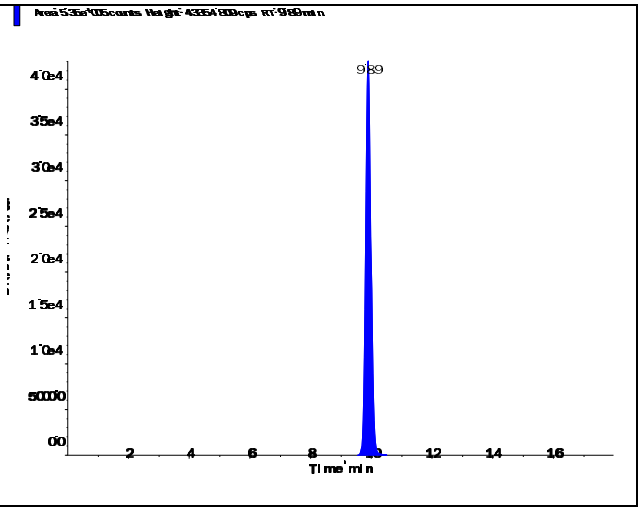

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.003
Sample Type:	(Unknown)

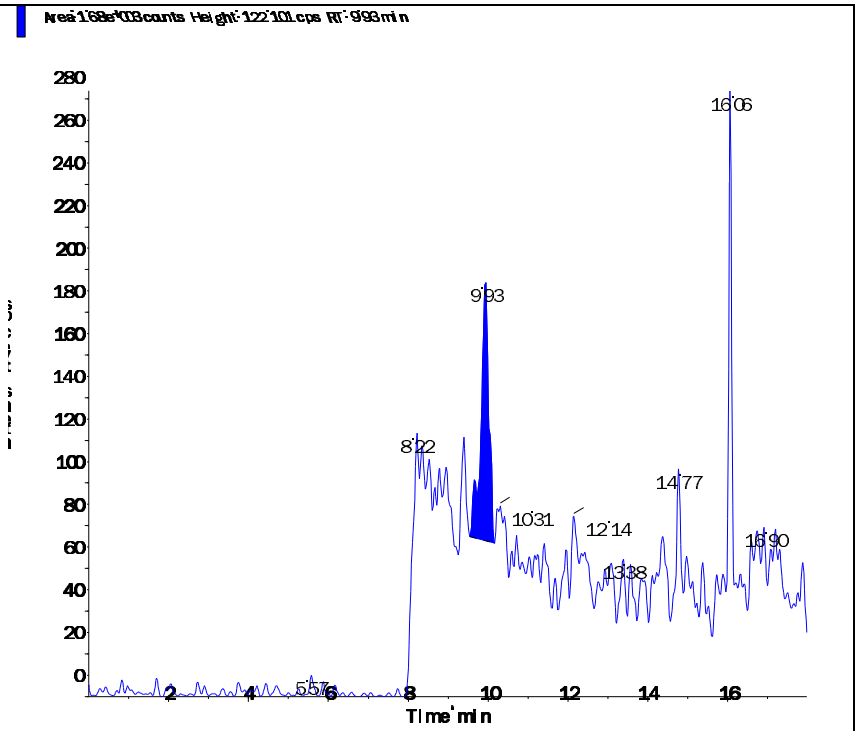

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.88 (9.92) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

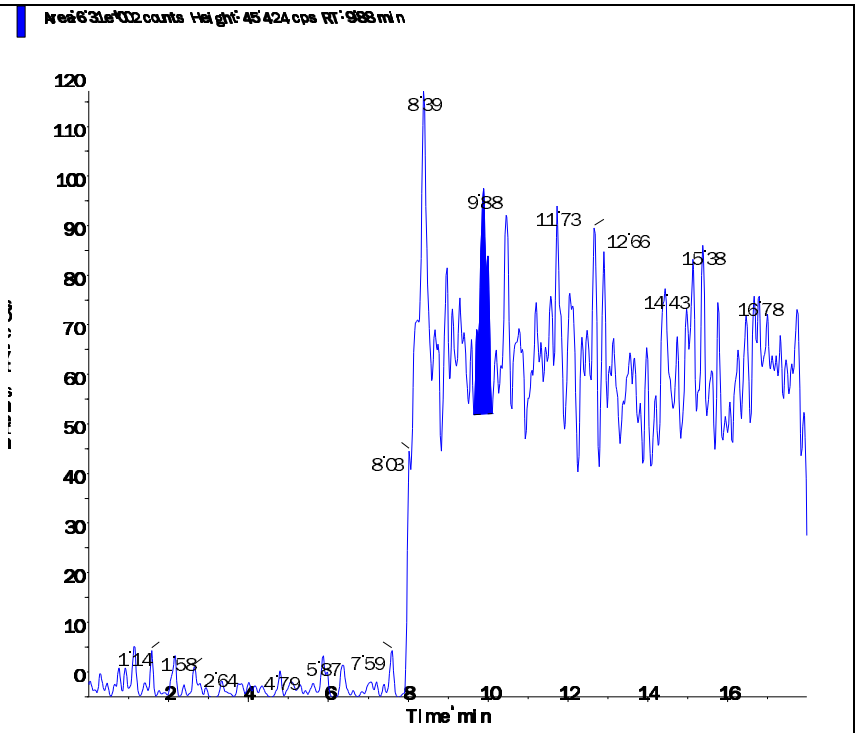

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Data File	LM33718.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 7:09:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030234-03	**Injection Vial**	9.00
Data File	LM33718.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 7:09:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	L16030234-03	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.380e+05	9.87	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.740e+03	9.88	N/A	< 0
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.87(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

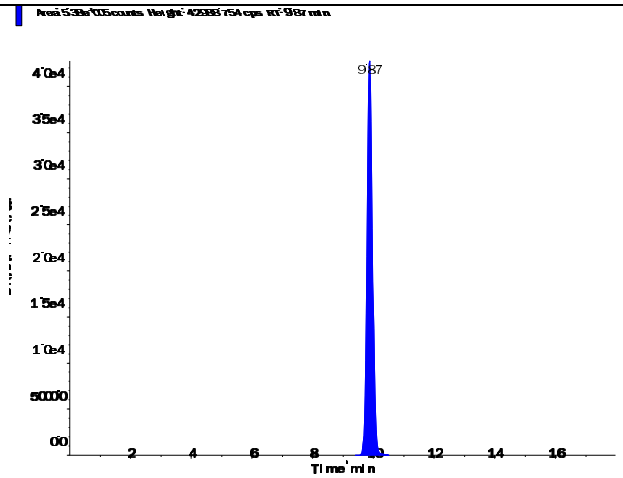

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.88 (9.94) min Calculated conc: < 0 ng/ml Area Ratio: 0.003 Sample Type: (Unknown)	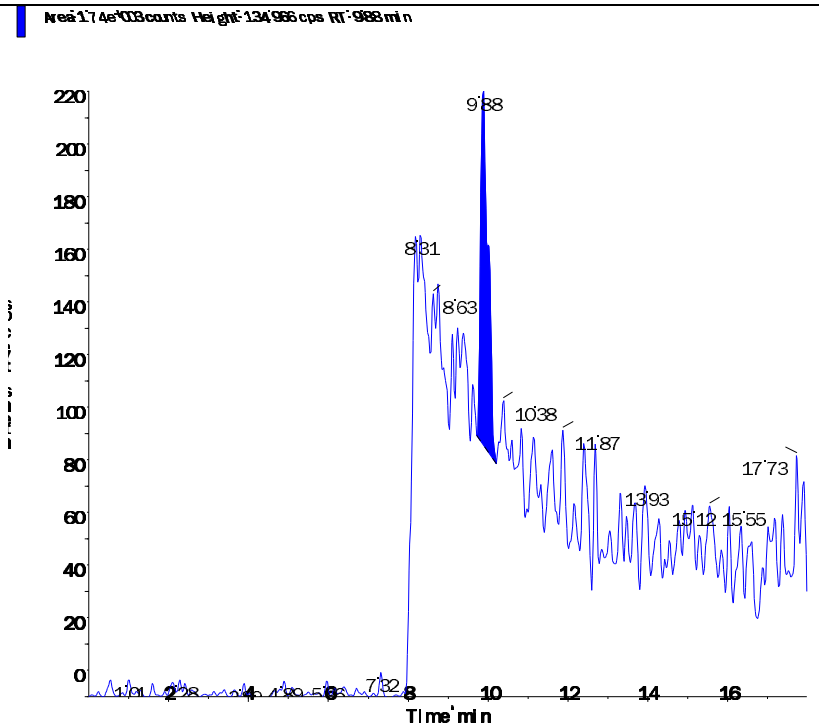
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.92) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	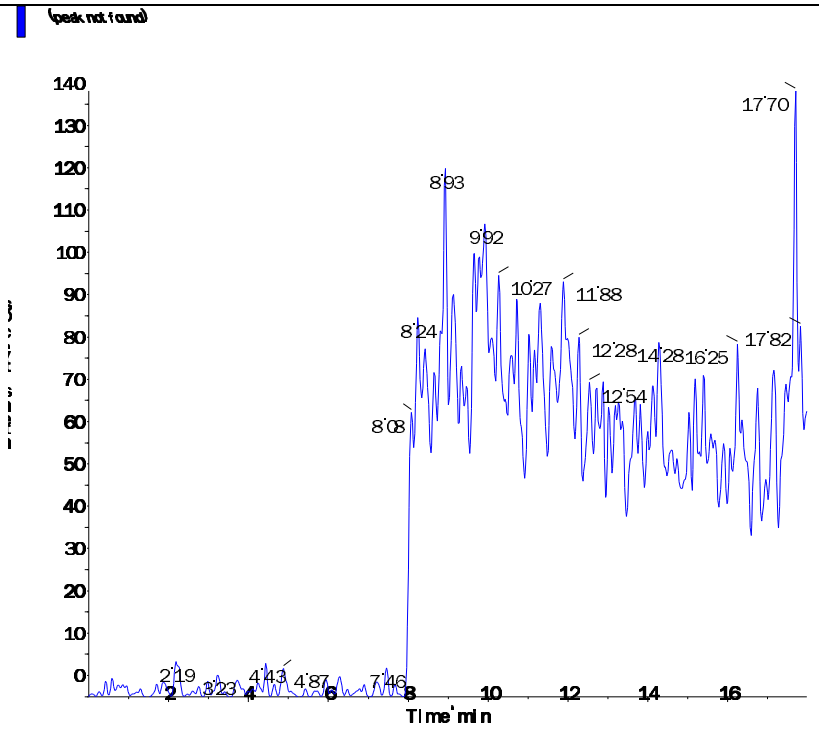

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Data File	LM33719.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 7:28:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030234-04	**Injection Vial**	10.00
Data File	LM33719.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 7:28:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	L16030234-04	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.260e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.010e+05	9.93	N/A	1.62
Perchlorate conf	9.500e+04	9.91	N/A	1.59

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

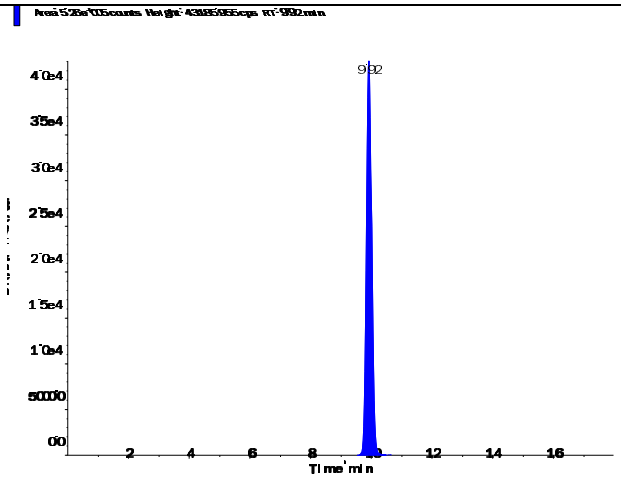

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	1.62 ng/ml
Area Ratio:	0.572
Sample Type:	(Unknown)

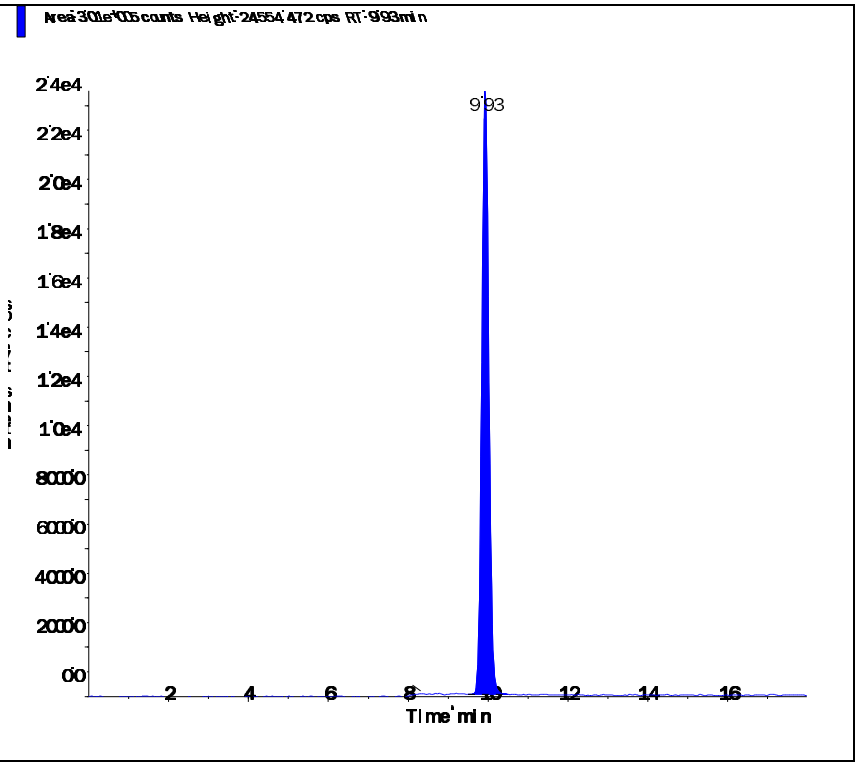

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.92) min
Calculated conc:	1.59 ng/ml
Area Ratio:	0.181
Sample Type:	(Unknown)

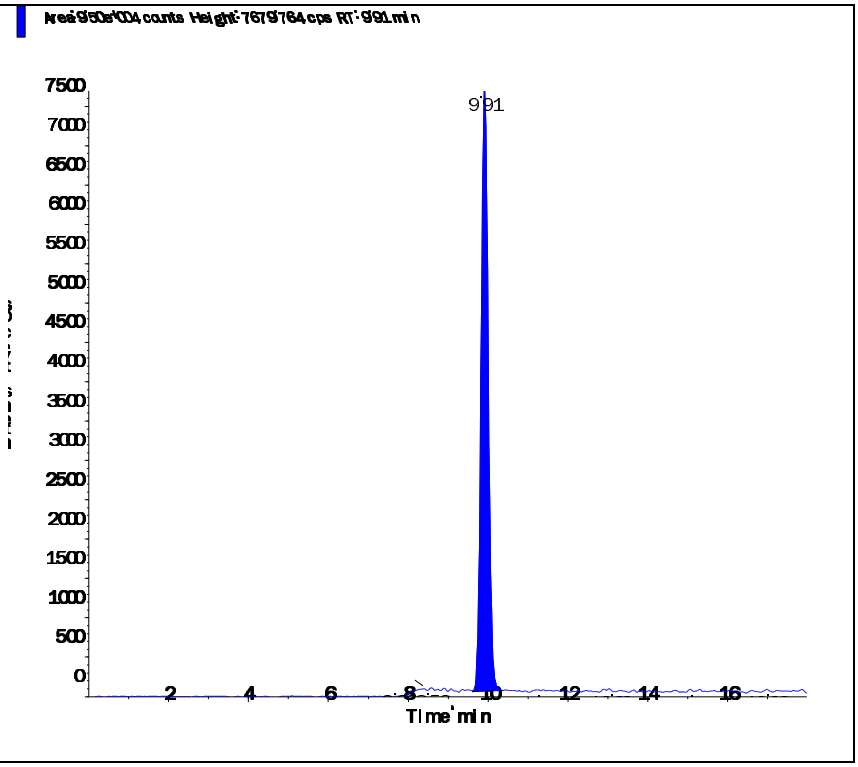

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Data File	LM33720.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 7:47:41 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030234-05	**Injection Vial**	11.00
Data File	LM33720.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 7:47:41 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	L16030234-05	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.260e+05	9.89	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.770e+05	9.91	N/A	2.58
Perchlorate conf	1.520e+05	9.89	N/A	2.55

O18LP (Internal Standard)

RT (Exp. RT): 9.89(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

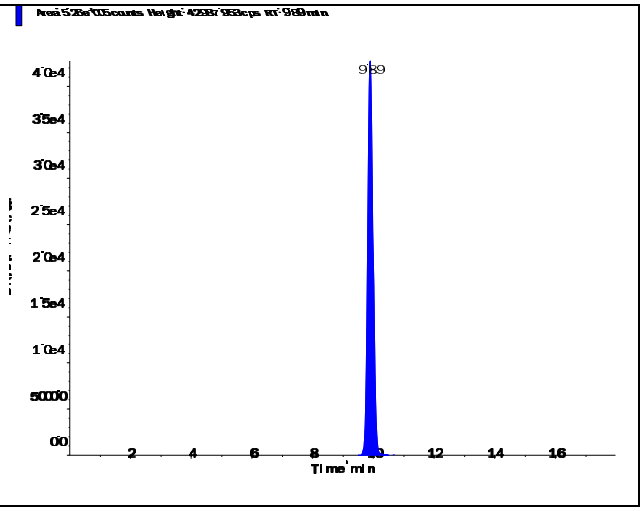

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.91 (9.94) min
Calculated conc:	2.58 ng/ml
Area Ratio:	0.906
Sample Type:	(Unknown)

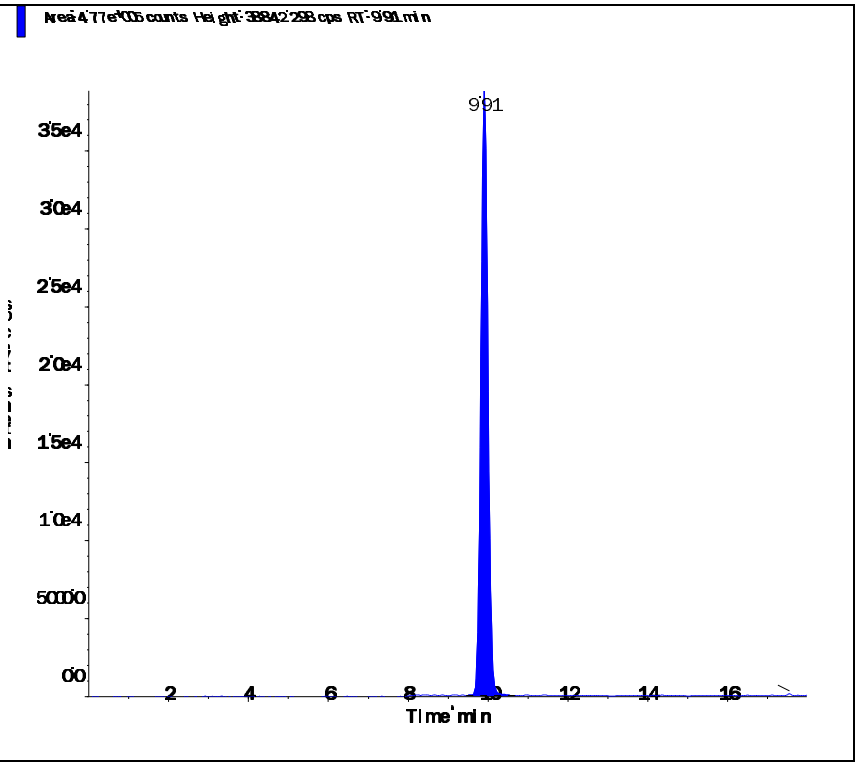

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.89 (9.92) min
Calculated conc:	2.55 ng/ml
Area Ratio:	0.288
Sample Type:	(Unknown)

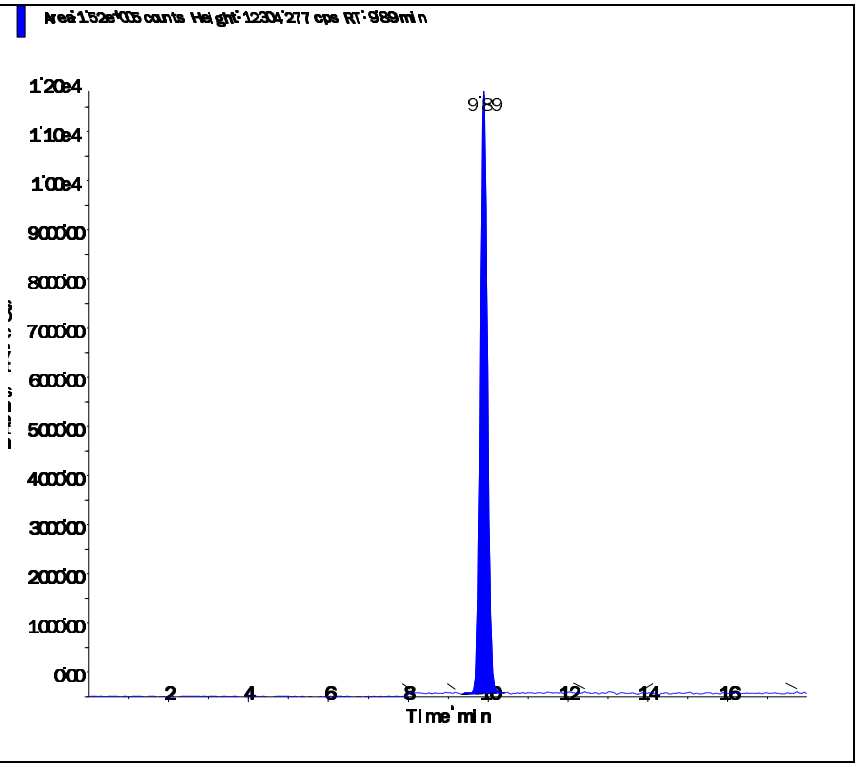

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Data File	LM33721.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 8:06:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030234-06	**Injection Vial**	12.00
Data File	LM33721.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 8:06:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	L16030234-06	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.650e+05	9.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.880e+04	9.91	N/A	0.386
Perchlorate conf	2.620e+04	9.90	N/A	0.398

O18LP (Internal Standard)

RT (Exp. RT): 9.90(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

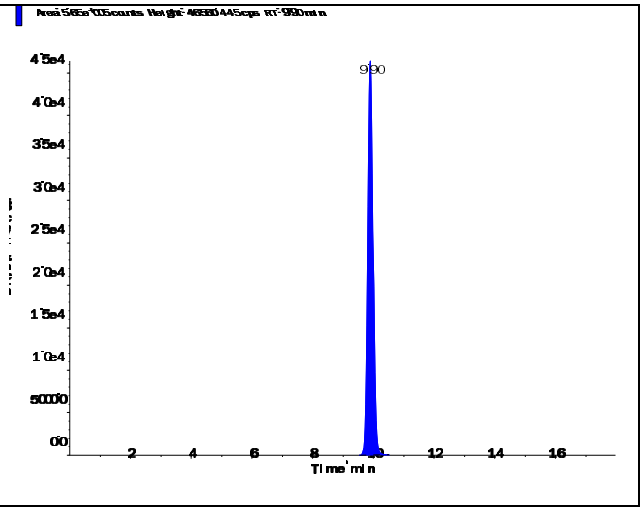

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.91 (9.94) min
Calculated conc:	0.386 ng/ml
Area Ratio:	0.139
Sample Type:	(Unknown)

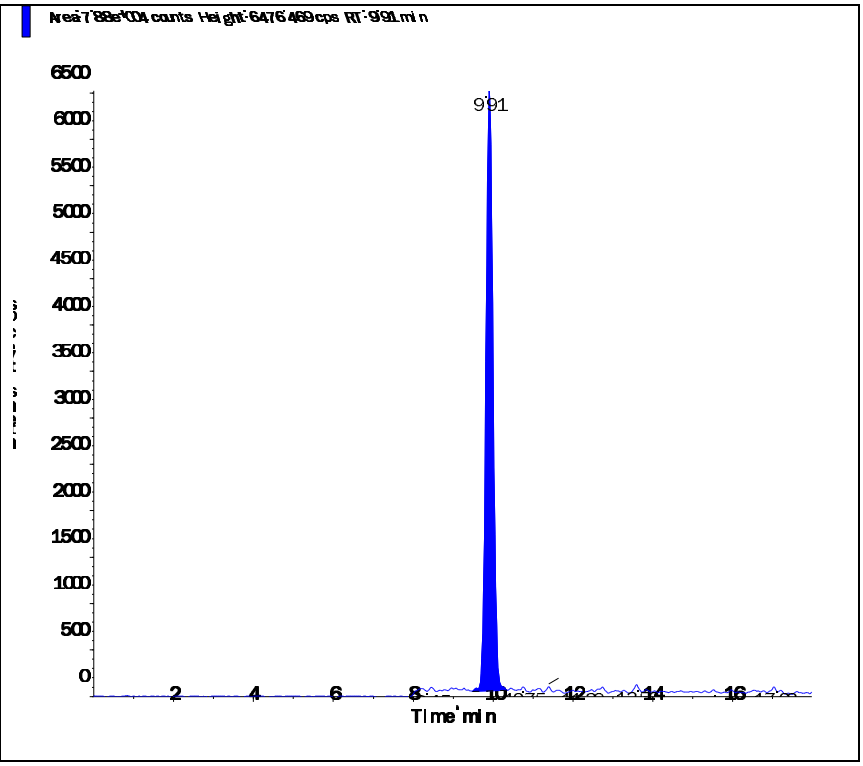

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.90 (9.92) min
Calculated conc:	0.398 ng/ml
Area Ratio:	0.046
Sample Type:	(Unknown)

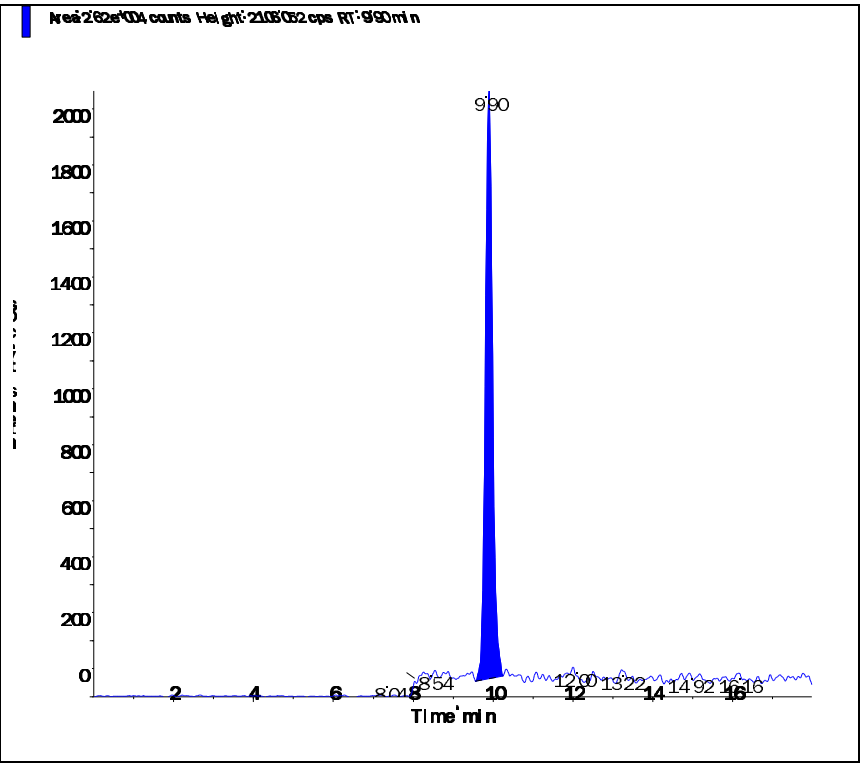

2.2.1.4 Standards Data

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Data File	LM33567.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-01 CCB	**Injection Vial**	51.00
Data File	LM33567.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559340-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.710e+05	9.99	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.99(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

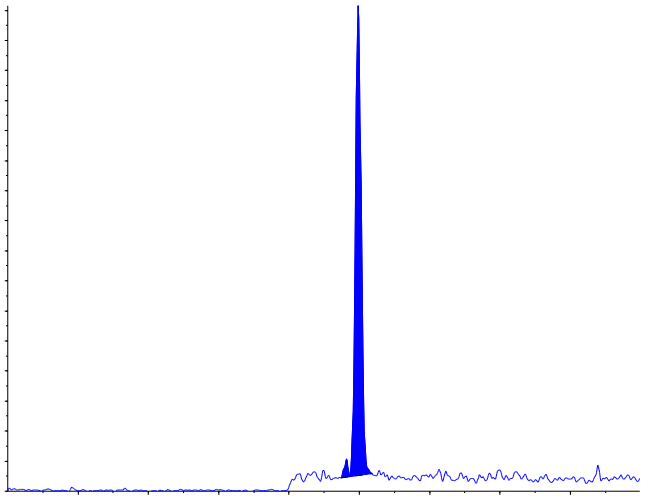

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

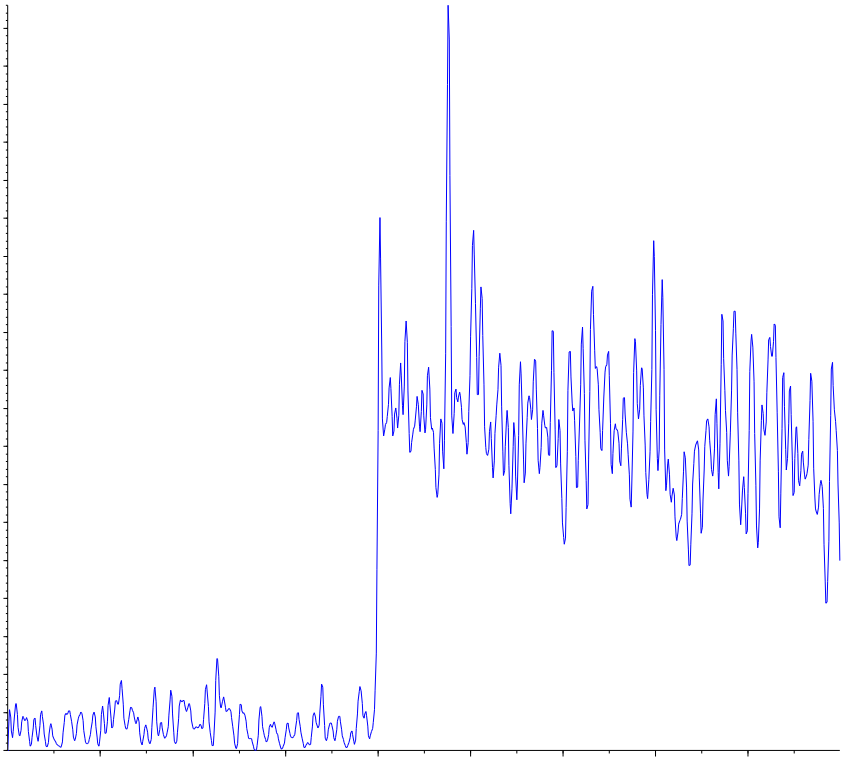

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

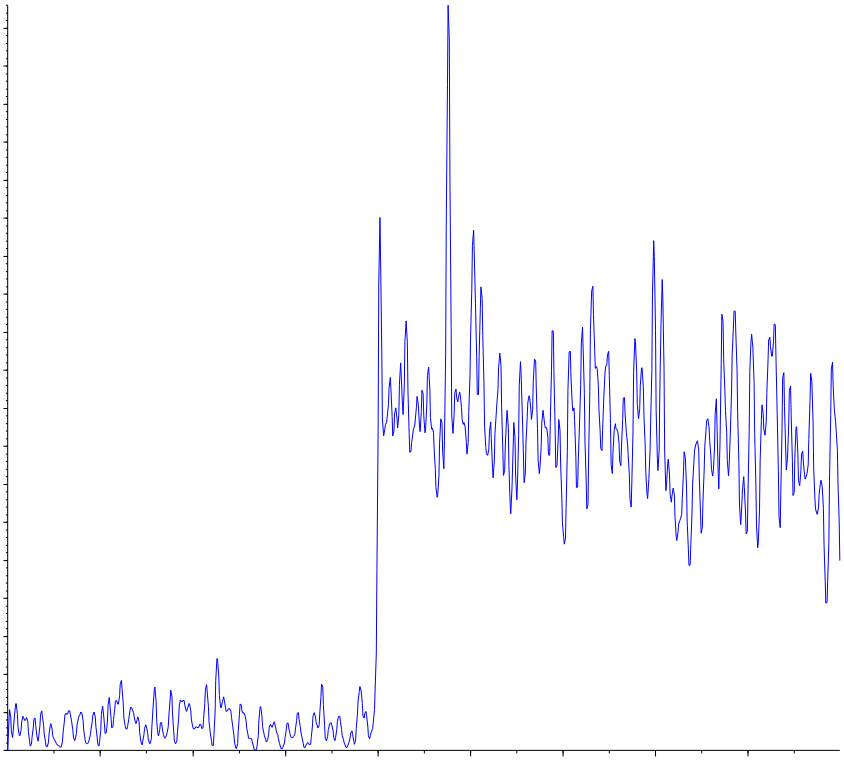

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Printed: 3/3/2016 1:59 PM

Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM33567.wiff	**Result Table**	030216_WTD.rdb
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.75 x + 0.00437 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	95.0	N/A	N/A
0.20	1	0.20	99.5	N/A	N/A
0.50	1	0.50	101.0	N/A	N/A
1.00	1	1.03	103.4	N/A	N/A
2.00	1	2.02	101.0	N/A	N/A
5.00	1	5.07	101.5	N/A	N/A
10.00	1	9.87	98.7	N/A	N/A

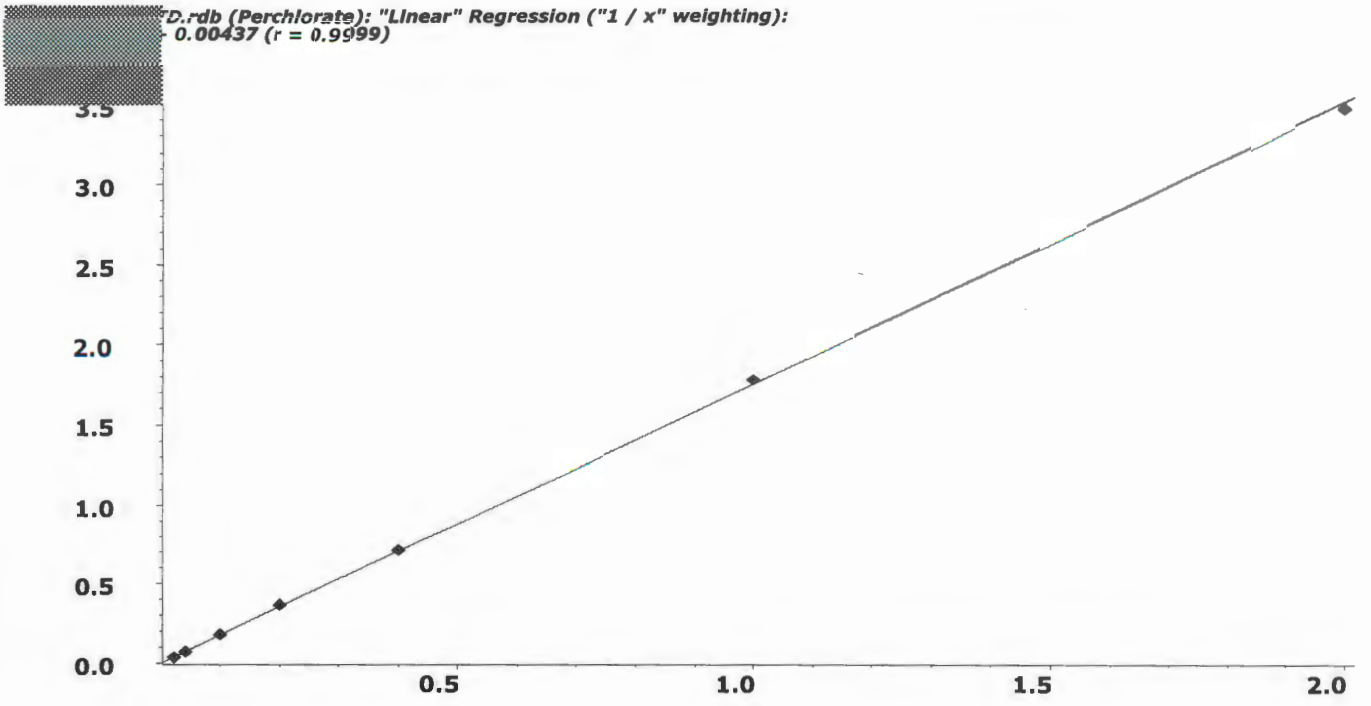

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Created with Analyst Reporter
Printed: 3/3/2016 1:59 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM33567.wiff	**Result Table**	030216_WTD.rdb
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.562 x + 0.00157 (r = 0.9998)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	93.4	N/A	N/A
0.20	1	0.20	98.6	N/A	N/A
0.50	1	0.54	107.2	N/A	N/A
1.00	1	1.00	99.5	N/A	N/A
2.00	1	2.01	100.7	N/A	N/A
5.00	1	5.11	102.2	N/A	N/A
10.00	1	9.85	98.5	N/A	N/A

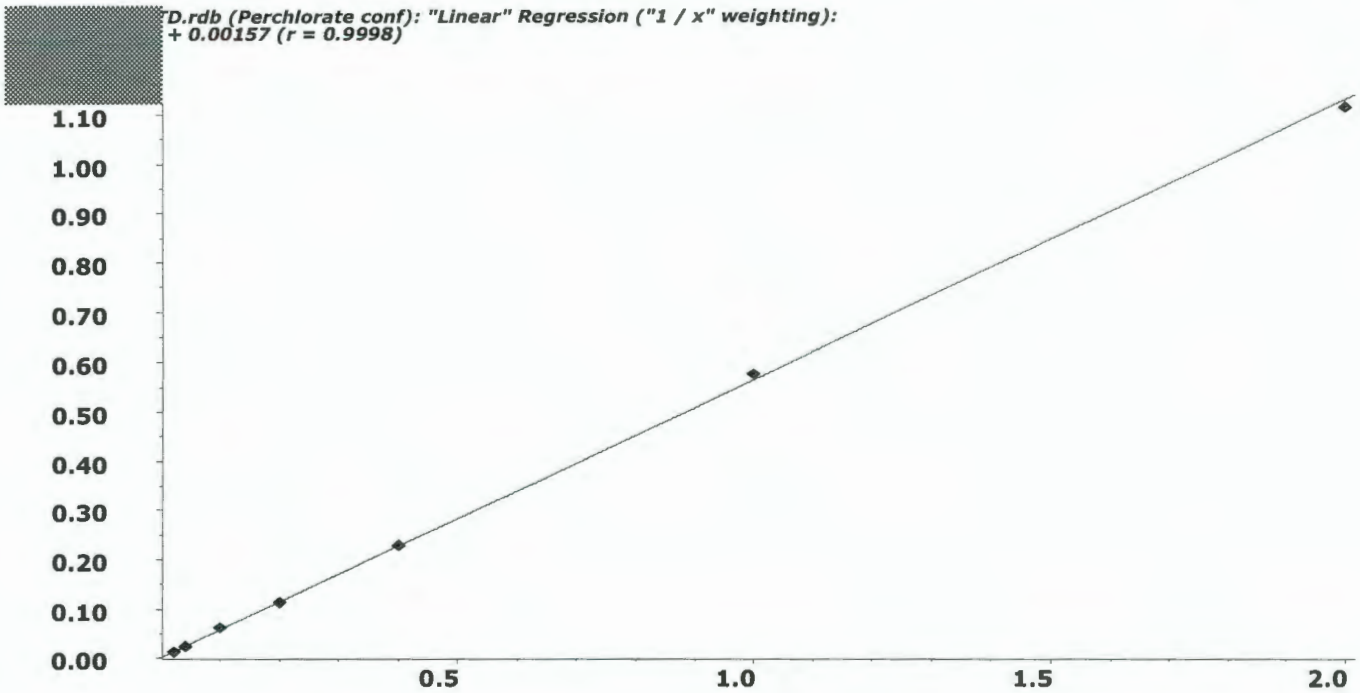

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Data File	LM33568.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/2/2016 8:53:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-02 STD (0.1 ug/L)	**Injection Vial**	52.00
Data File	LM33568.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 8:53:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559340-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.900e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.840e+04	9.97	0.10	0.095
Perchlorate conf	5.910e+03	9.94	0.10	0.0934

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

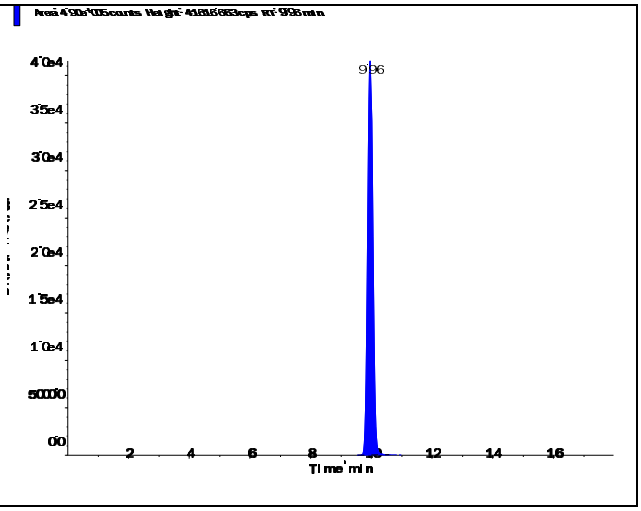

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.97 (9.94) min
Calculated conc:	0.095 ng/ml
Area Ratio:	0.038
Sample Type:	(Standard)

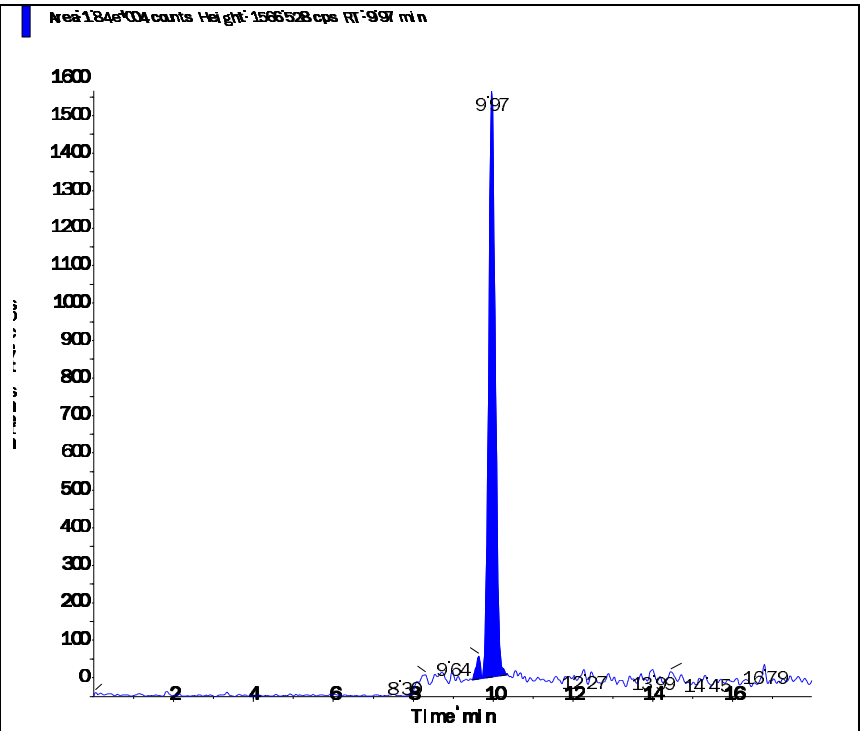

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.0934 ng/ml
Area Ratio:	0.012
Sample Type:	(Standard)

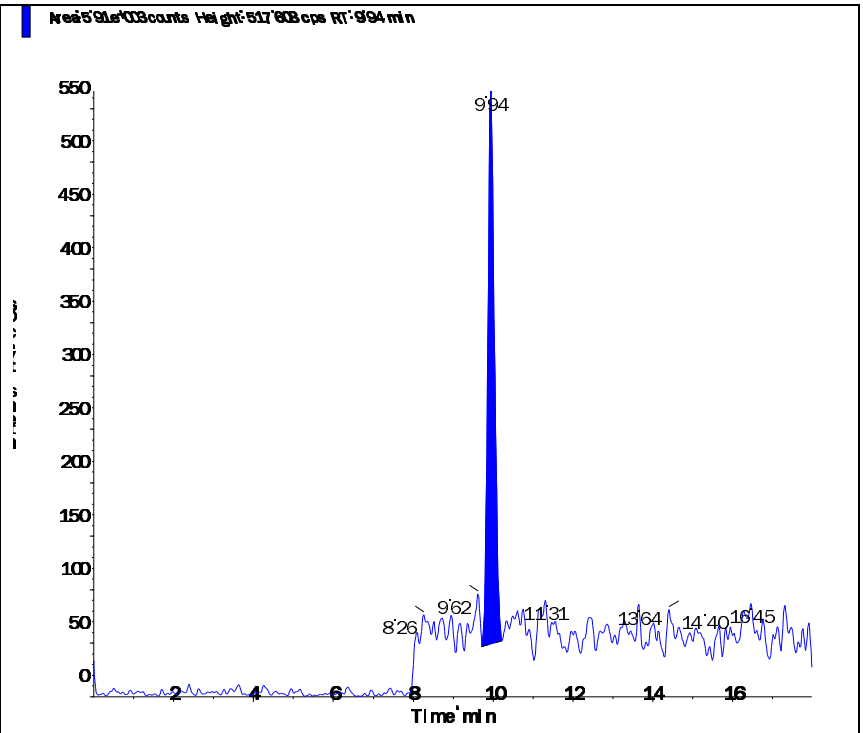

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Data File	LM33569.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/2/2016 9:12:17 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-03 STD (0.2 ug/L)	**Injection Vial**	53.00
Data File	LM33569.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 9:12:17 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559340-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.990e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.700e+04	9.99	0.20	0.199
Perchlorate conf	1.190e+04	9.98	0.20	0.197

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

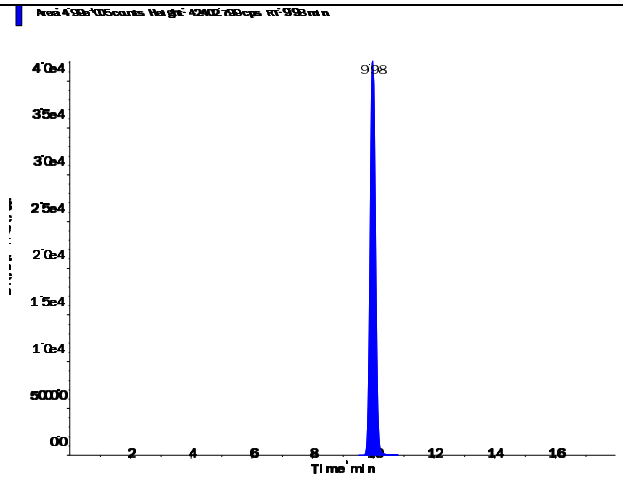

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.99 (9.94) min
Calculated conc:	0.199 ng/ml
Area Ratio:	0.074
Sample Type:	(Standard)

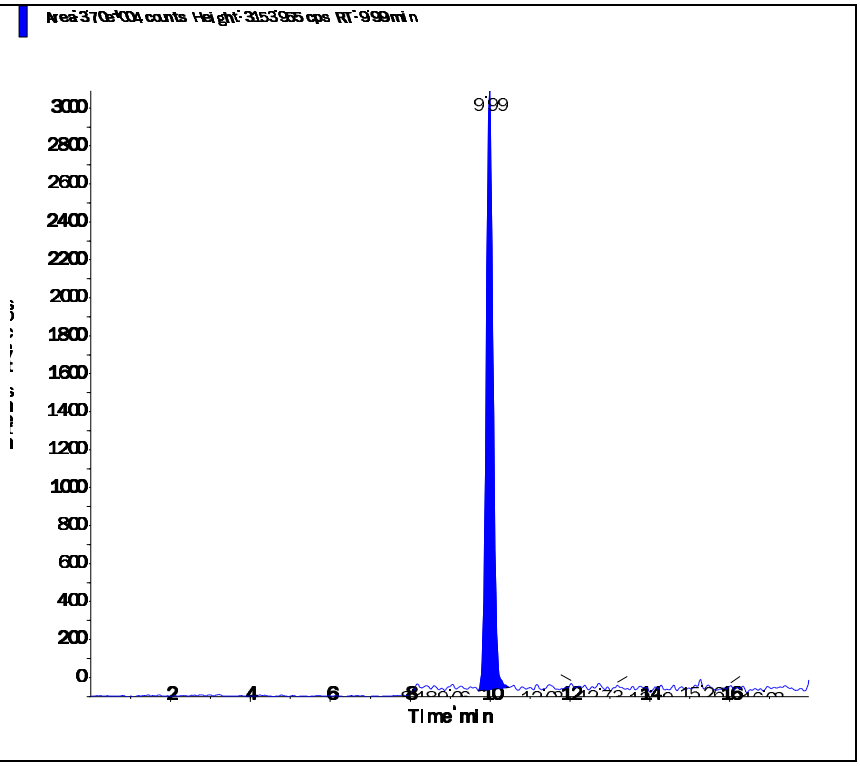

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.98 (9.92) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

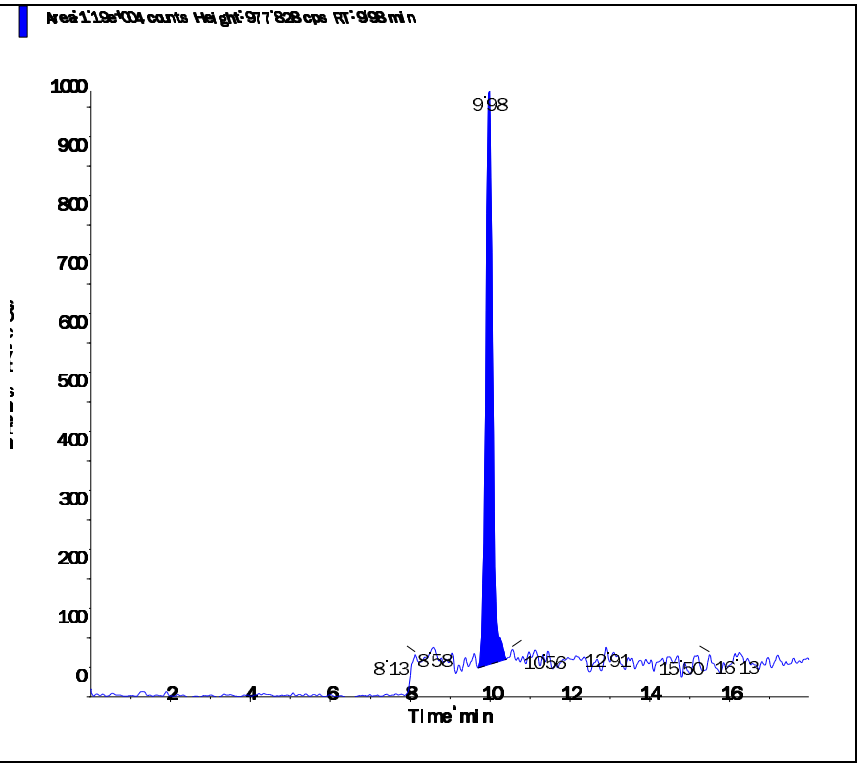

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Data File	LM33570.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/2/2016 9:31:14 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-04 STD (0.5 ug/L)	**Injection Vial**	54.00
Data File	LM33570.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 9:31:14 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559340-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.920e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.900e+04	10.00	0.50	0.505
Perchlorate conf	3.040e+04	9.98	0.50	0.536

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

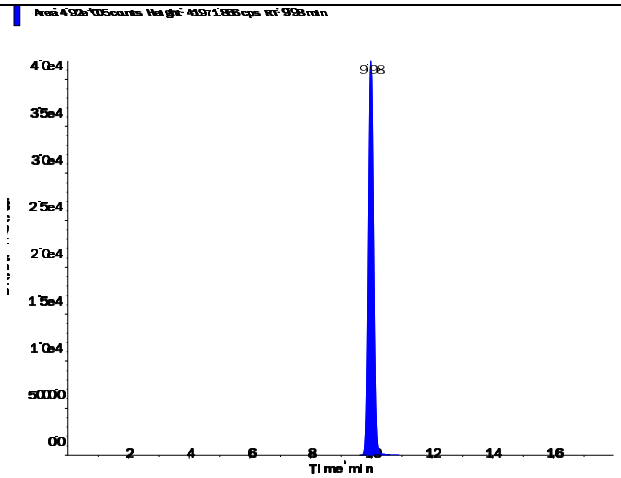

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.00 (9.94) min
Calculated conc:	0.505 ng/ml
Area Ratio:	0.181
Sample Type:	(Standard)

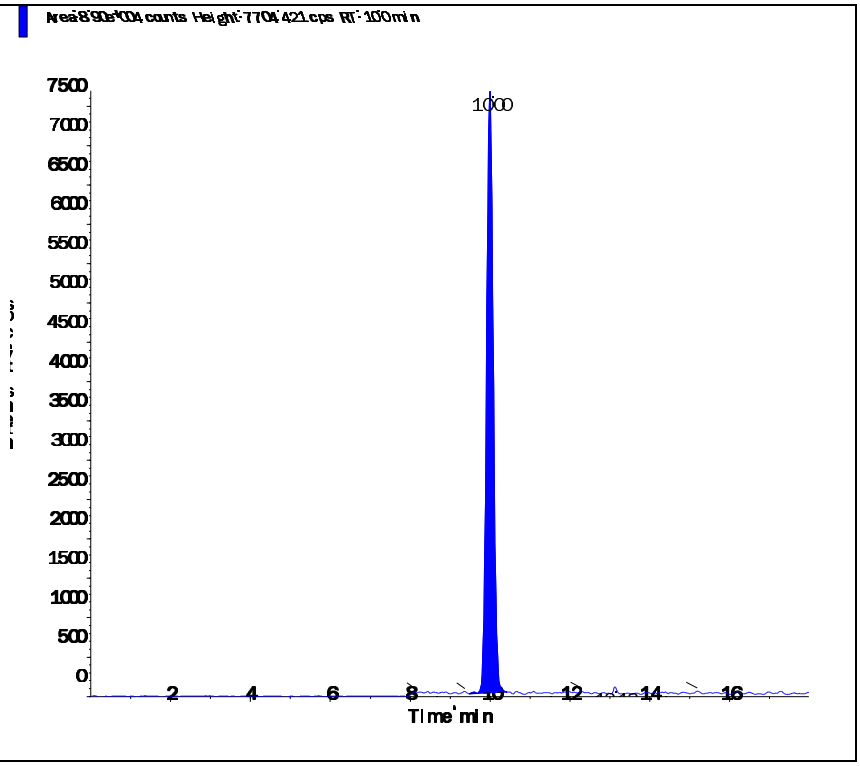

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.98 (9.92) min
Calculated conc:	0.536 ng/ml
Area Ratio:	0.062
Sample Type:	(Standard)

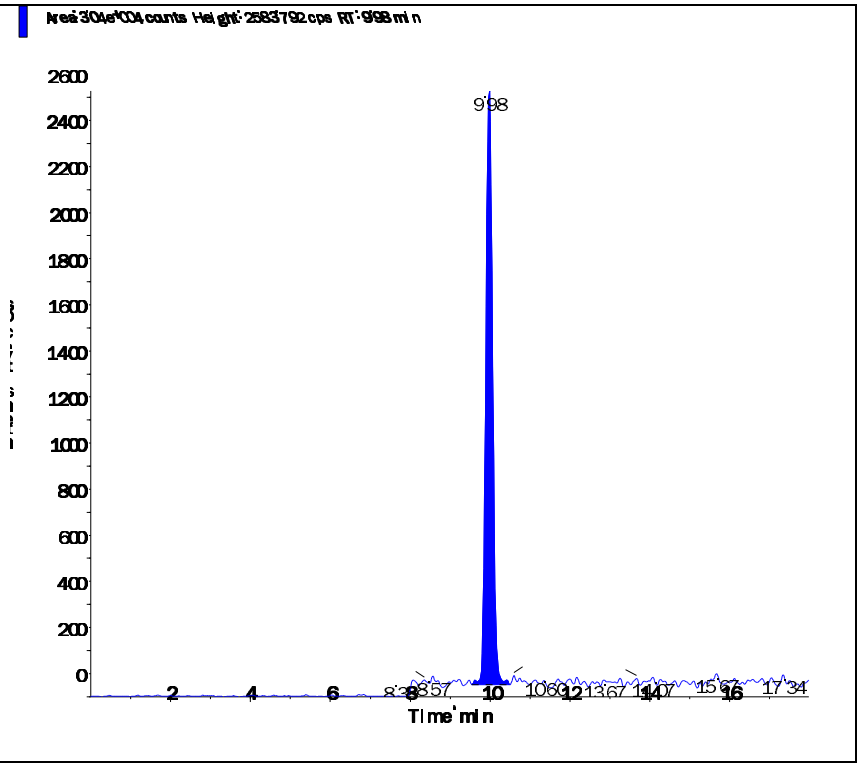

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Data File	LM33571.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/2/2016 9:50:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-05 STD (1.0 ug/L)	**Injection Vial**	55.00
Data File	LM33571.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 9:50:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559340-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.010e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.830e+05	9.99	1.00	1.03
Perchlorate conf	5.680e+04	9.98	1.00	0.995

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

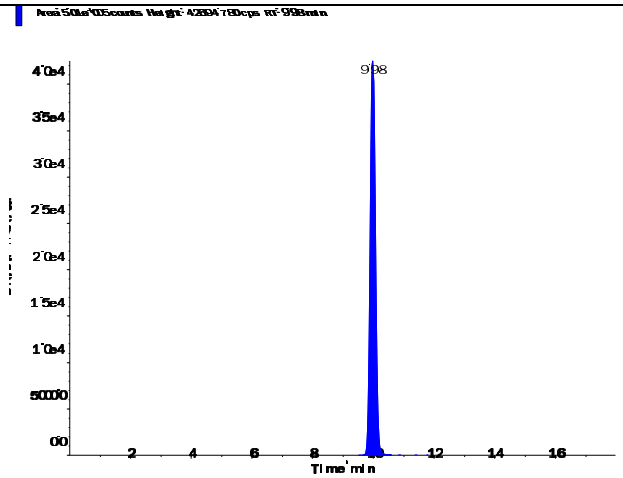

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.99 (9.94) min Calculated conc: 1.03 ng/ml Area Ratio: 0.366 Sample Type: (Standard)	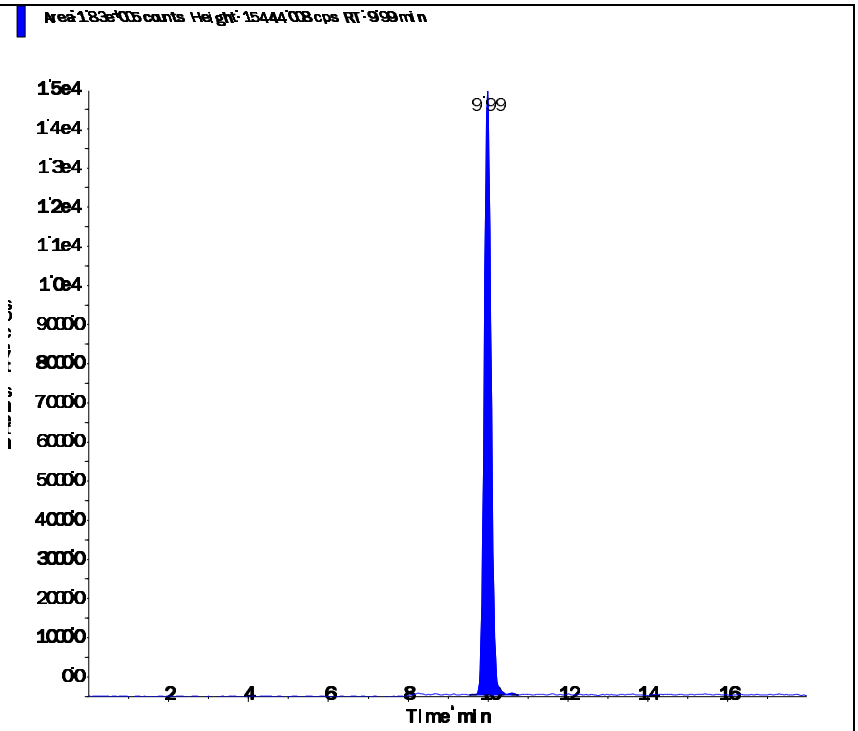
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.98 (9.92) min Calculated conc: 0.995 ng/ml Area Ratio: 0.113 Sample Type: (Standard)	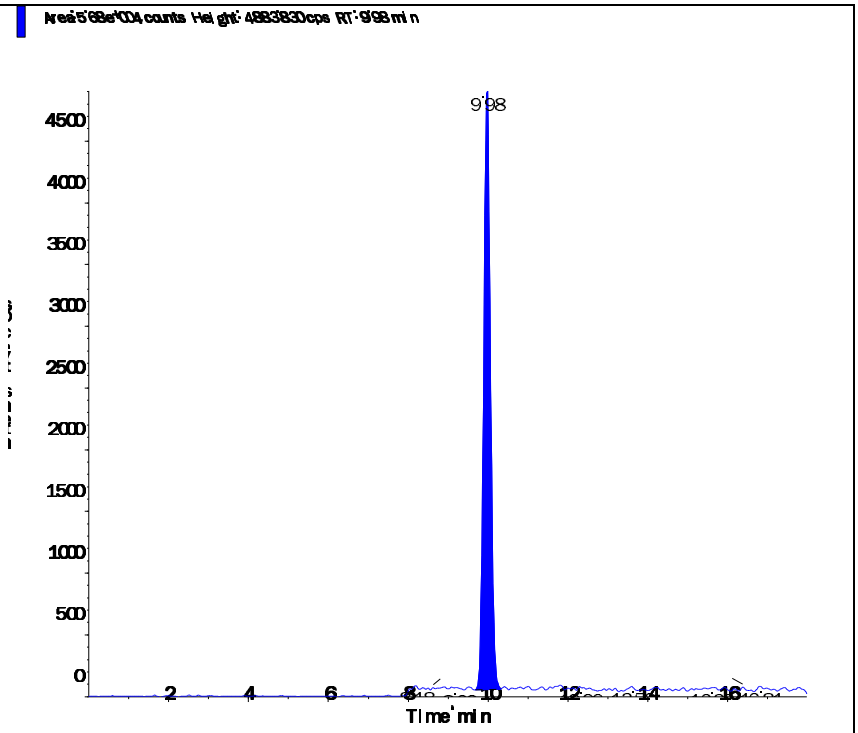

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Data File	LM33572.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/2/2016 10:09:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-06 STD (2.0 ug/L)	**Injection Vial**	56.00
Data File	LM33572.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 10:09:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559340-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.99	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.630e+05	10.00	2.00	2.02
Perchlorate conf	1.170e+05	9.99	2.00	2.01

O18LP (Internal Standard)

RT (Exp. RT): 9.99(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

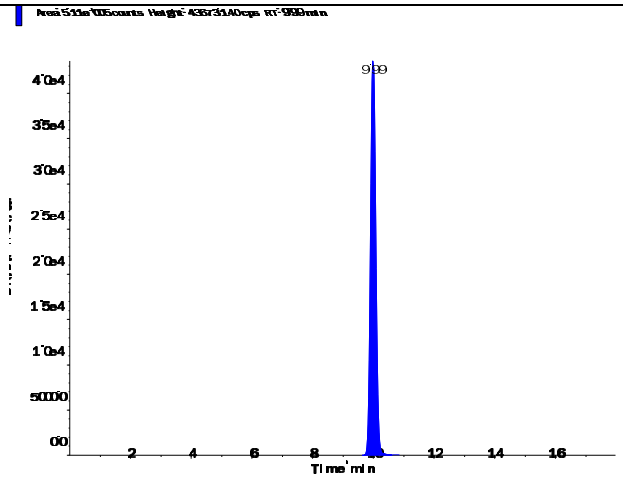

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.00 (9.94) min
Calculated conc:	2.02 ng/ml
Area Ratio:	0.711
Sample Type:	(Standard)

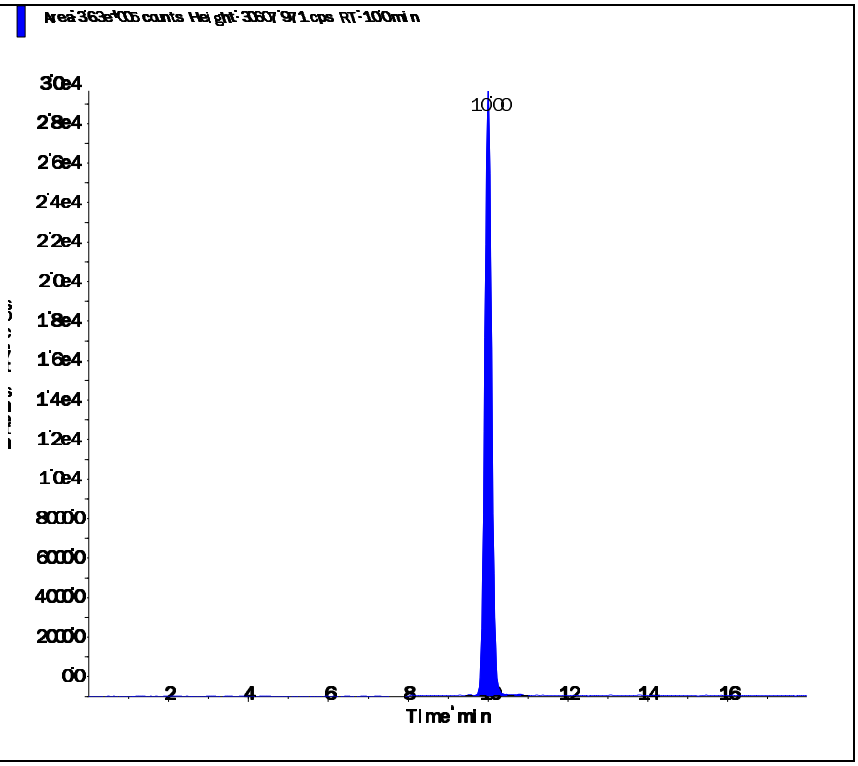

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.99 (9.92) min
Calculated conc:	2.01 ng/ml
Area Ratio:	0.228
Sample Type:	(Standard)

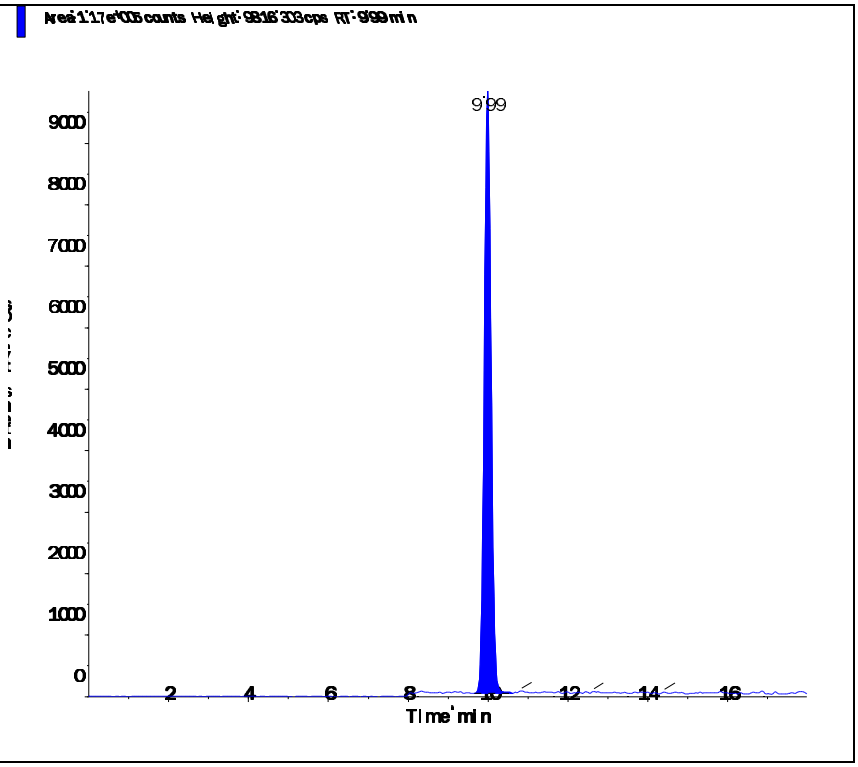

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Data File	LM33573.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/2/2016 10:28:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-07 STD (5.0 ug/L)	**Injection Vial**	57.00
Data File	LM33573.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 10:28:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559340-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.900e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.710e+05	9.98	5.00	5.07
Perchlorate conf	2.820e+05	9.97	5.00	5.11

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

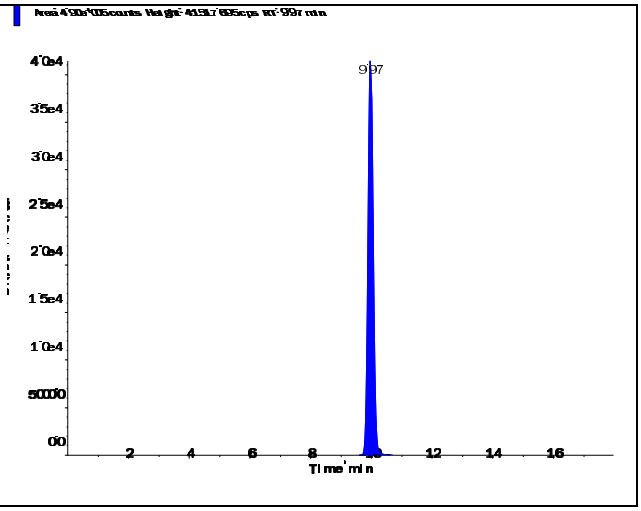

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.98 (9.94) min
Calculated conc:	5.07 ng/ml
Area Ratio:	1.779
Sample Type:	(Standard)

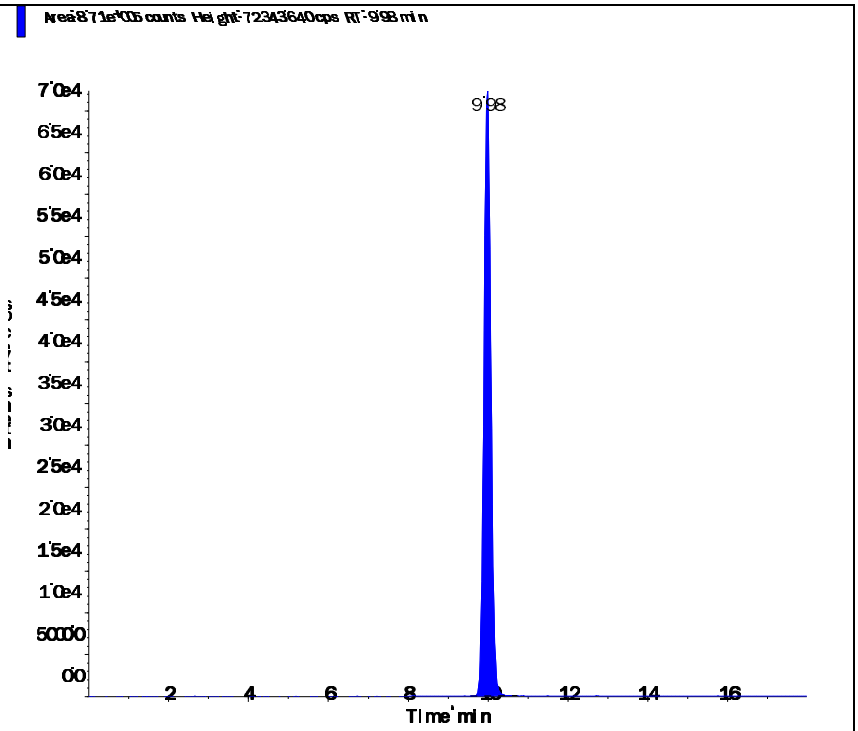

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.97 (9.92) min
Calculated conc:	5.11 ng/ml
Area Ratio:	0.576
Sample Type:	(Standard)

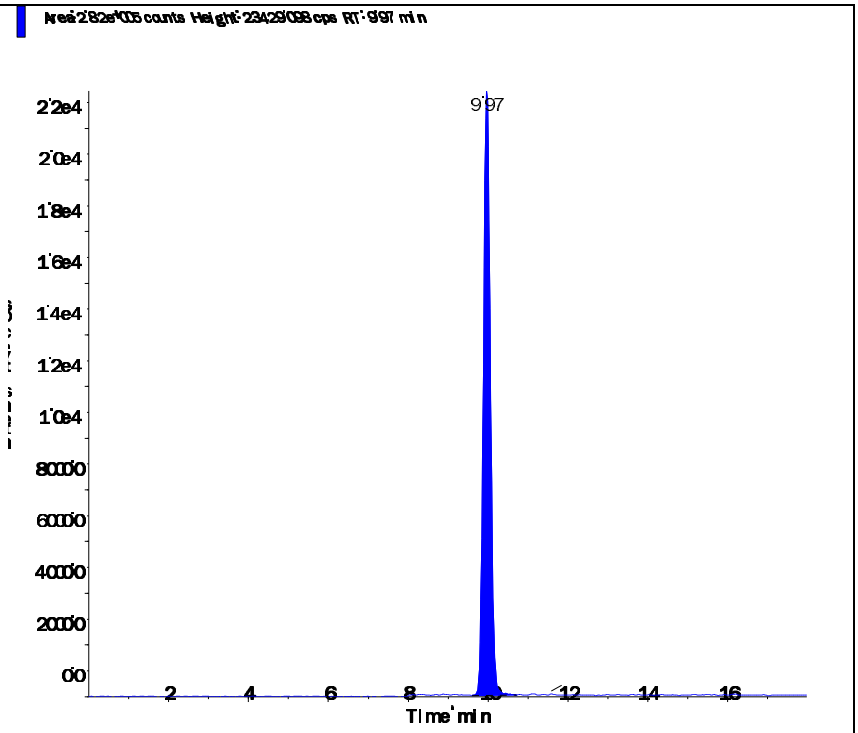

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Data File	LM33574.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/2/2016 10:46:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-08 STD (10 ug/L)	**Injection Vial**	58.00
Data File	LM33574.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 10:46:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559340-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.650e+06	9.98	10.00	9.87
Perchlorate conf	5.300e+05	9.96	10.00	9.85

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

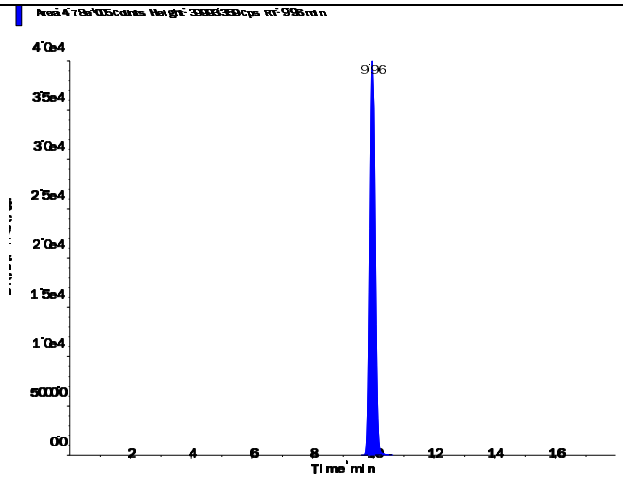

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.98 (9.94) min
Calculated conc:	9.87 ng/ml
Area Ratio:	3.458
Sample Type:	(Standard)

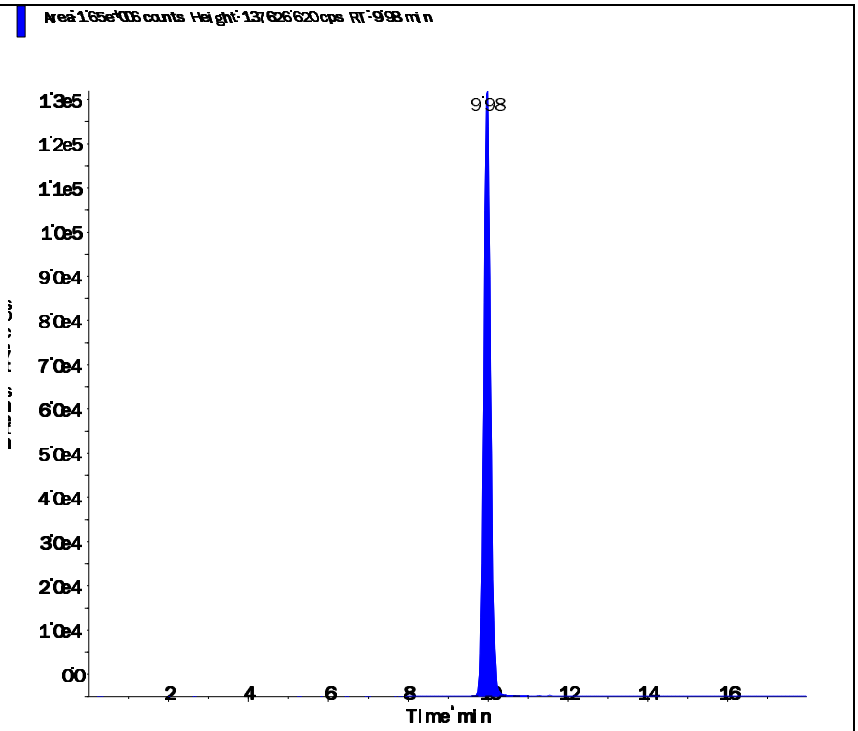

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.96 (9.92) min
Calculated conc:	9.85 ng/ml
Area Ratio:	1.11
Sample Type:	(Standard)

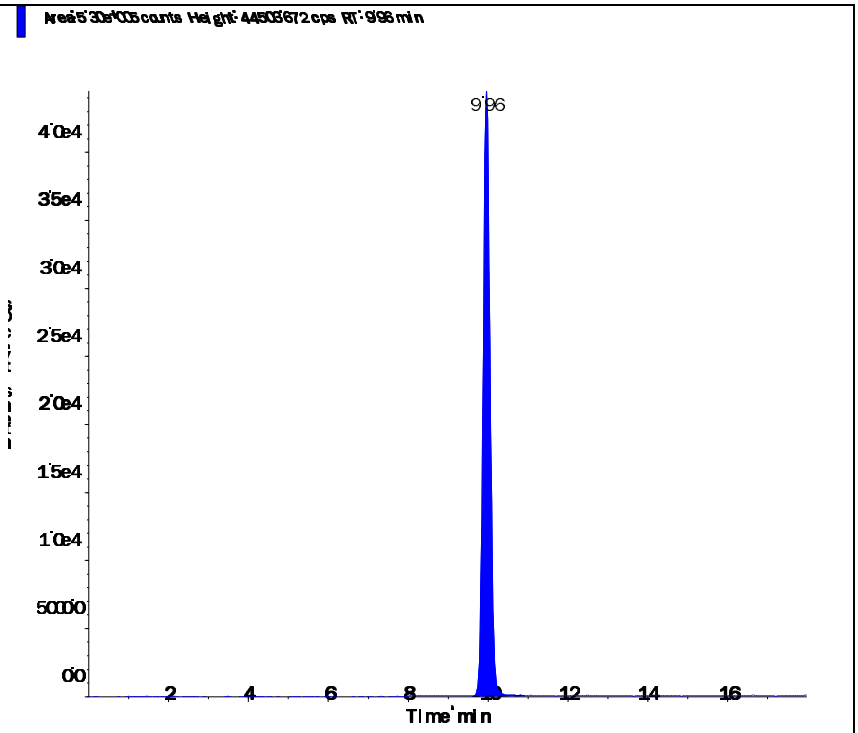

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Data File	LM33575.wiff	**Result Table**	030216_WTD.rdb
Acquisition Date	3/2/2016 11:05:52 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-09 SSCV (1.0 ug/L)	**Injection Vial**	59.00
Data File	LM33575.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 11:05:52 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030216_WTD.rdb
Sample ID	WG559340-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.200e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.900e+05	9.98	1.00	1.03
Perchlorate conf	6.220e+04	9.97	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

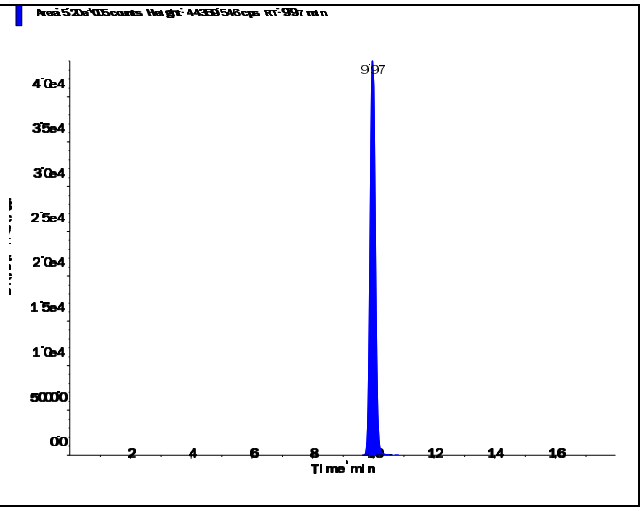

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.98 (9.94) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.366
Sample Type:	(Quality Control)

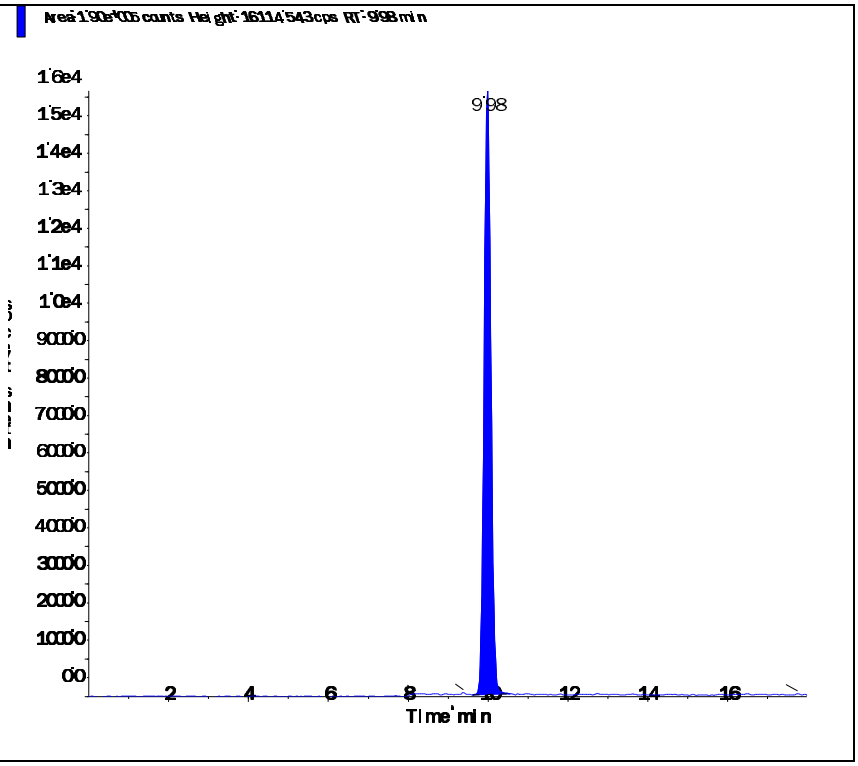

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.97 (9.92) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.12
Sample Type:	(Quality Control)

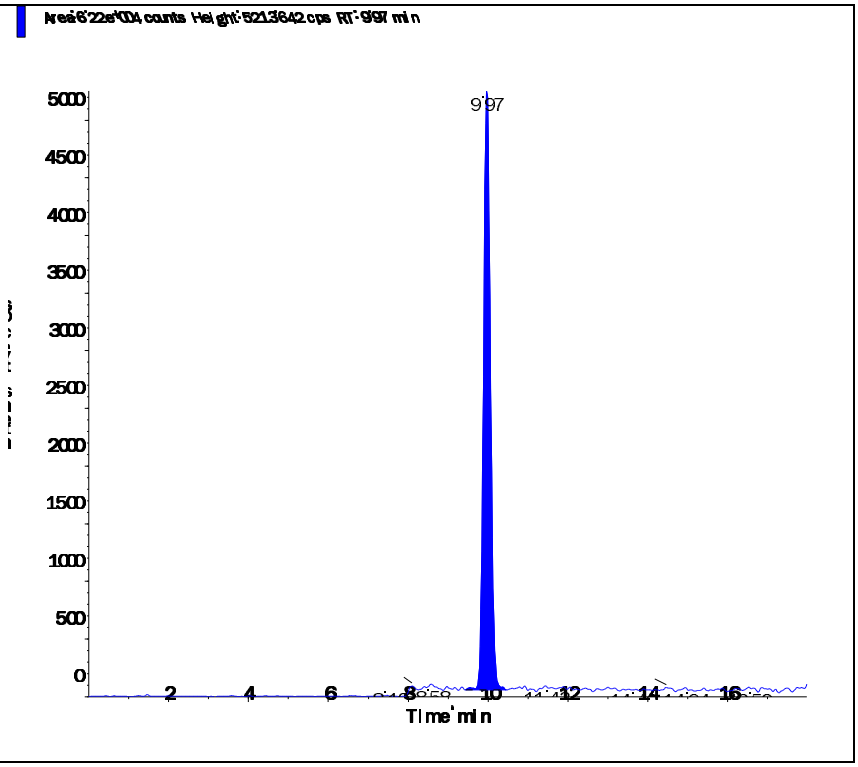

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Data File	LM33711.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 4:57:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559812-02 CCV (1.0ug/L)	**Injection Vial**	2.00
Data File	LM33711.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 4:57:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559812-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.160e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.770e+05	9.95	1.00	0.969
Perchlorate conf	5.620e+04	9.94	1.00	0.954

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

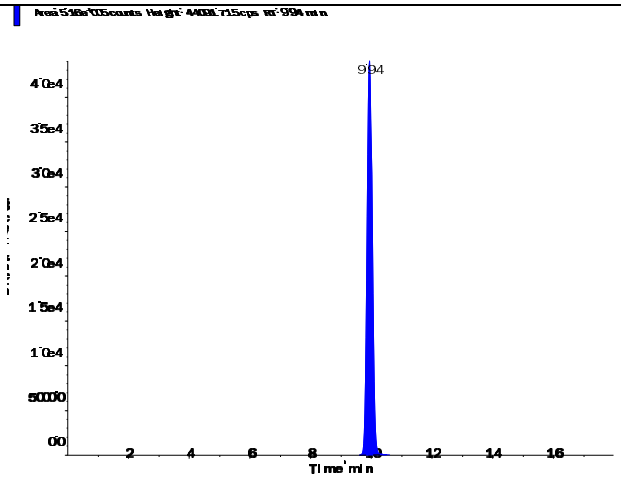

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	0.969 ng/ml
Area Ratio:	0.343
Sample Type:	(Quality Control)

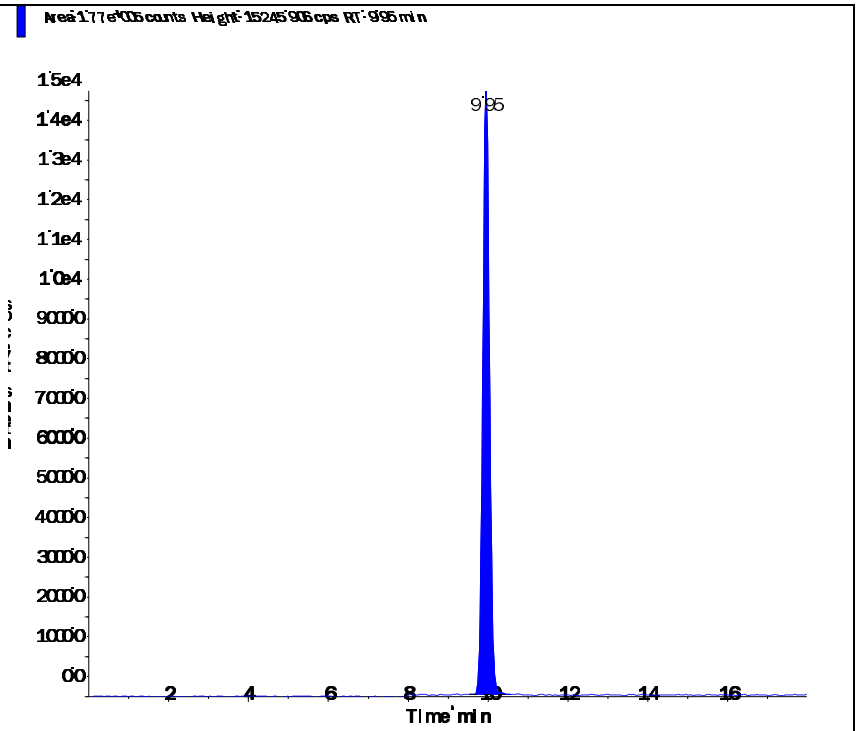

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.954 ng/ml
Area Ratio:	0.109
Sample Type:	(Quality Control)

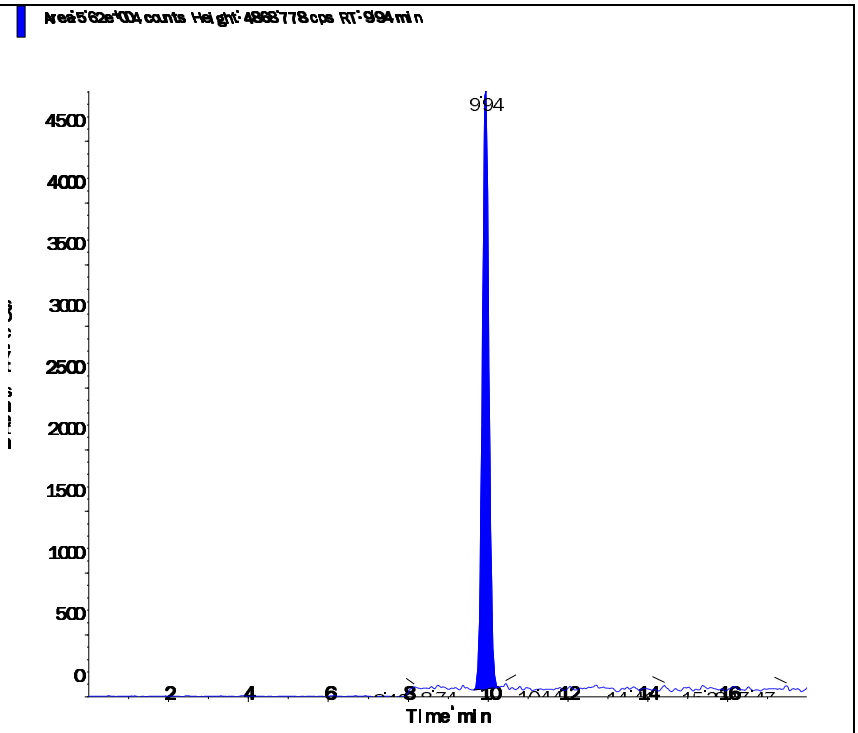

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Data File	LM33723.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 8:44:26 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559812-03 CCV (1.0ug/L)	**Injection Vial**	2.00
Data File	LM33723.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 8:44:26 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559812-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.800e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.000e+05	9.92	1.00	0.975
Perchlorate conf	6.220e+04	9.90	1.00	0.939

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Quality Control)

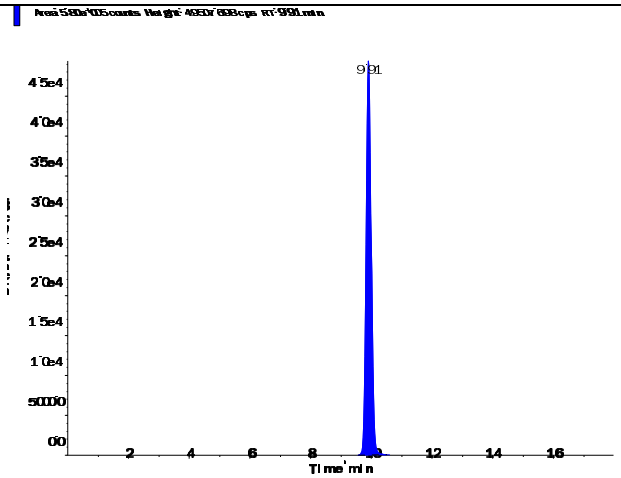

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.92 (9.94) min
Calculated conc:	0.975 ng/ml
Area Ratio:	0.345
Sample Type:	(Quality Control)

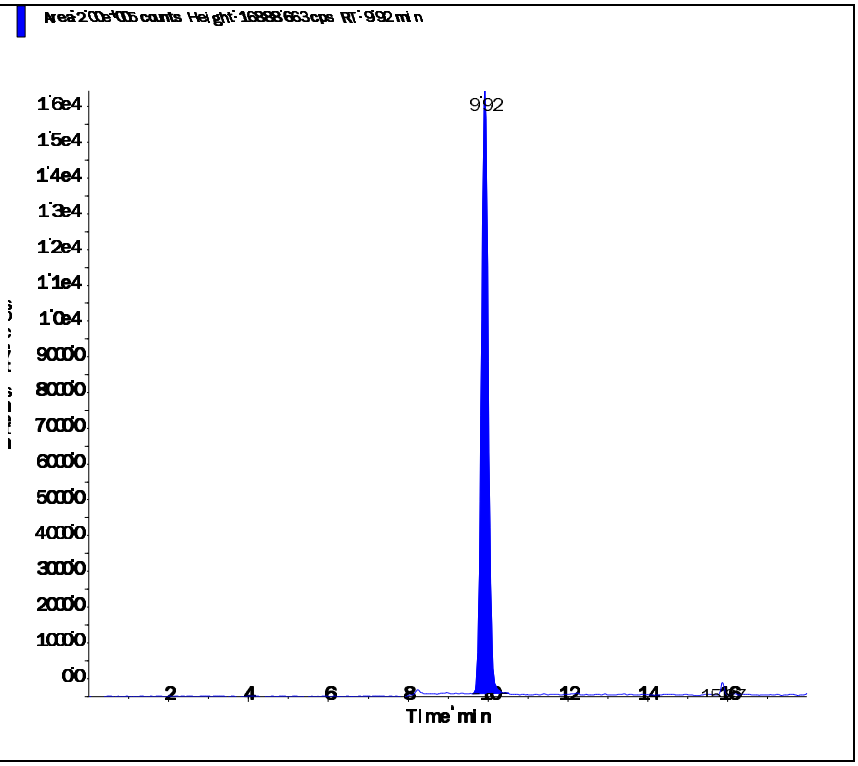

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.90 (9.92) min
Calculated conc:	0.939 ng/ml
Area Ratio:	0.107
Sample Type:	(Quality Control)

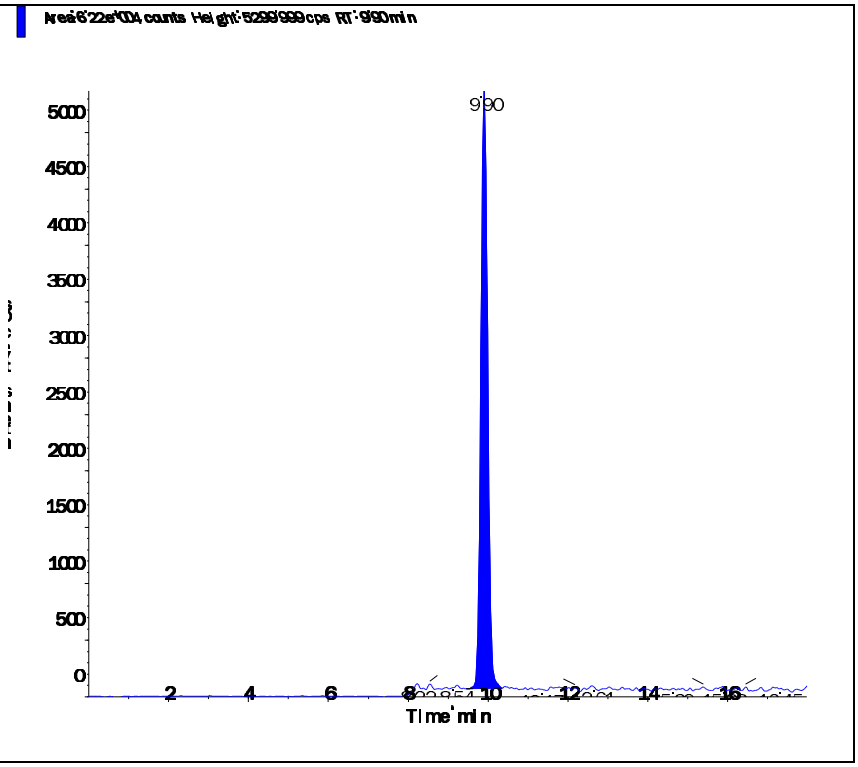

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Data File	LM33733.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 11:53:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559812-05 CCV (1.0ug/L)	**Injection Vial**	2.00
Data File	LM33733.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 11:53:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559812-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.630e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.950e+05	9.94	1.00	0.978
Perchlorate conf	6.150e+04	9.92	1.00	0.958

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

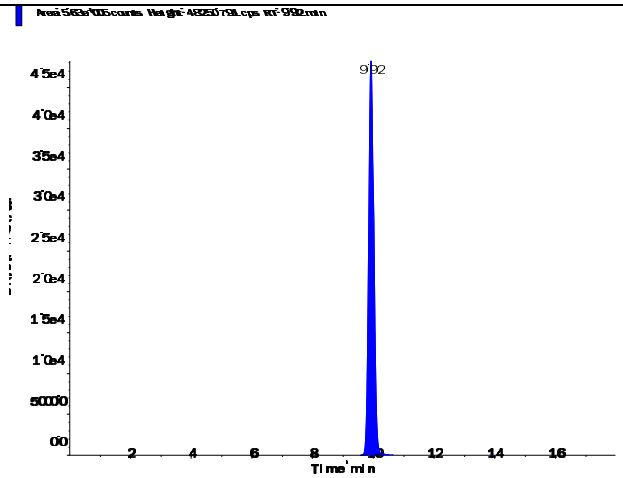

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.978 ng/ml
Area Ratio:	0.346
Sample Type:	(Quality Control)

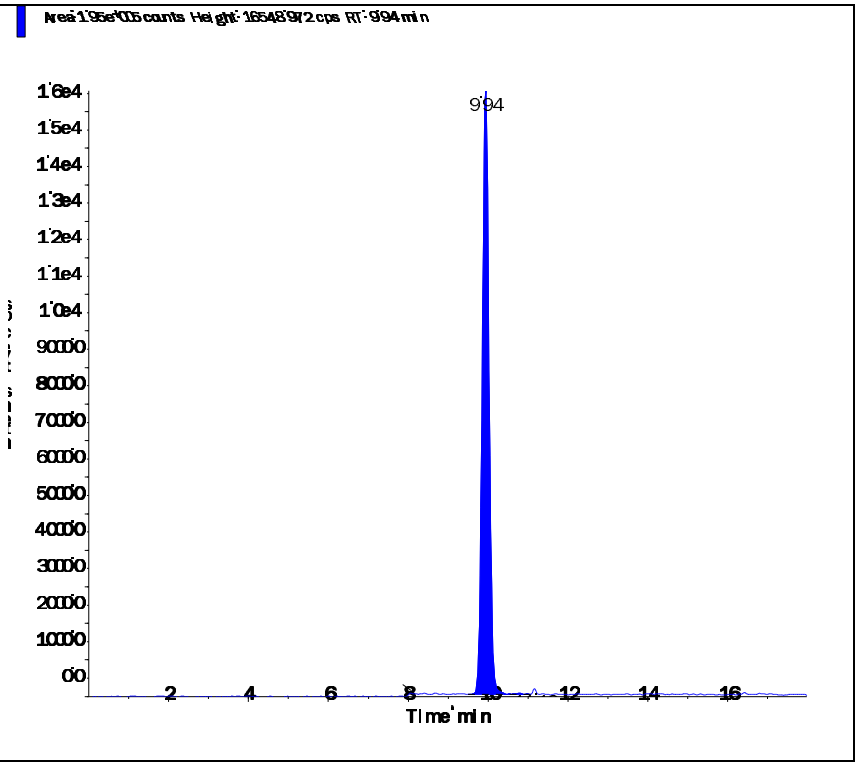

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	0.958 ng/ml
Area Ratio:	0.109
Sample Type:	(Quality Control)

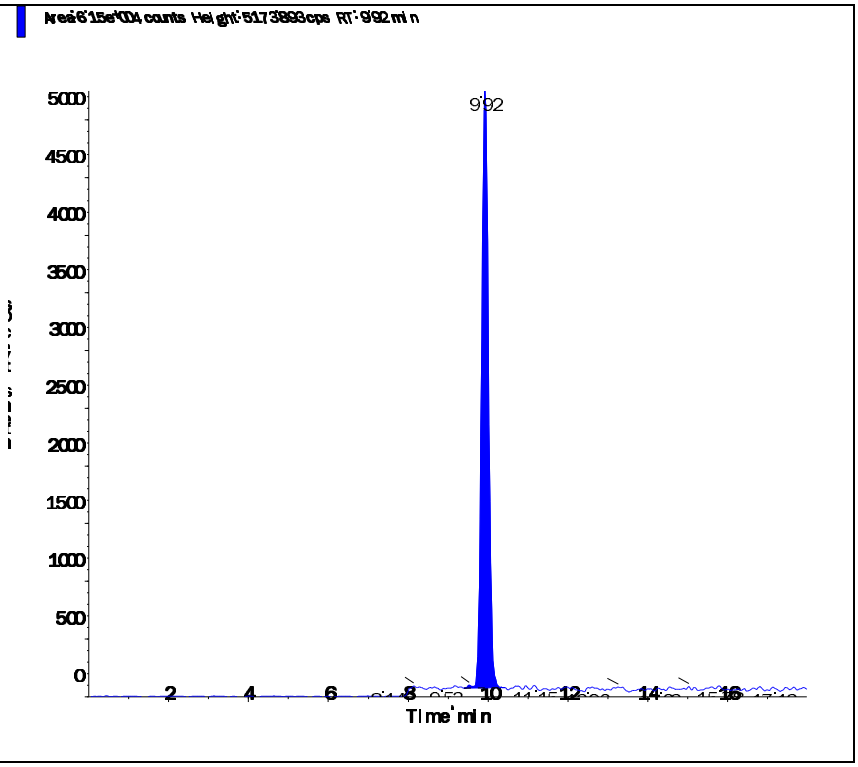

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Data File	LM33737.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/7/2016 10:13:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559899-02 CCV (1.0ug/L)	**Injection Vial**	2.00
Data File	LM33737.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 10:13:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559899-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.590e+05	9.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.980e+05	9.90	1.00	0.999
Perchlorate conf	6.430e+04	9.89	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.90(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

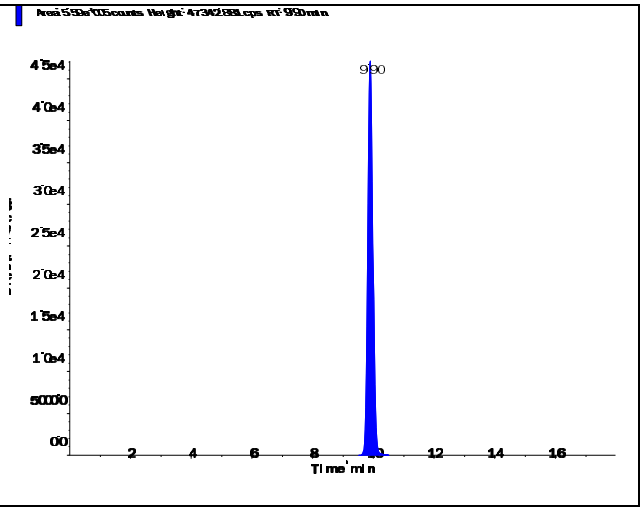

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.90 (9.94) min
Calculated conc:	0.999 ng/ml
Area Ratio:	0.354
Sample Type:	(Quality Control)

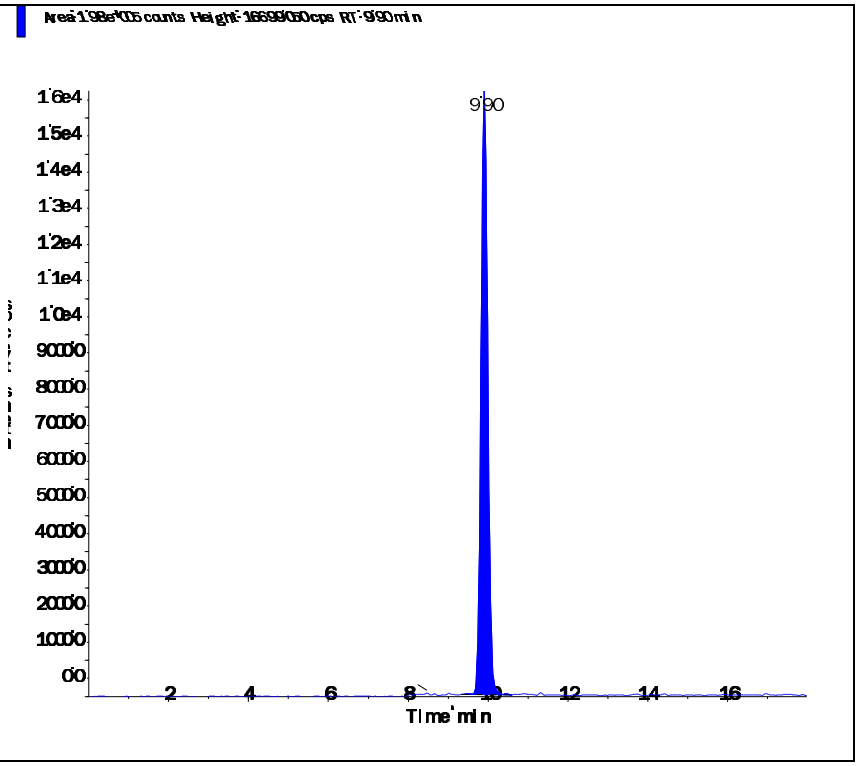

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.89 (9.92) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.115
Sample Type:	(Quality Control)

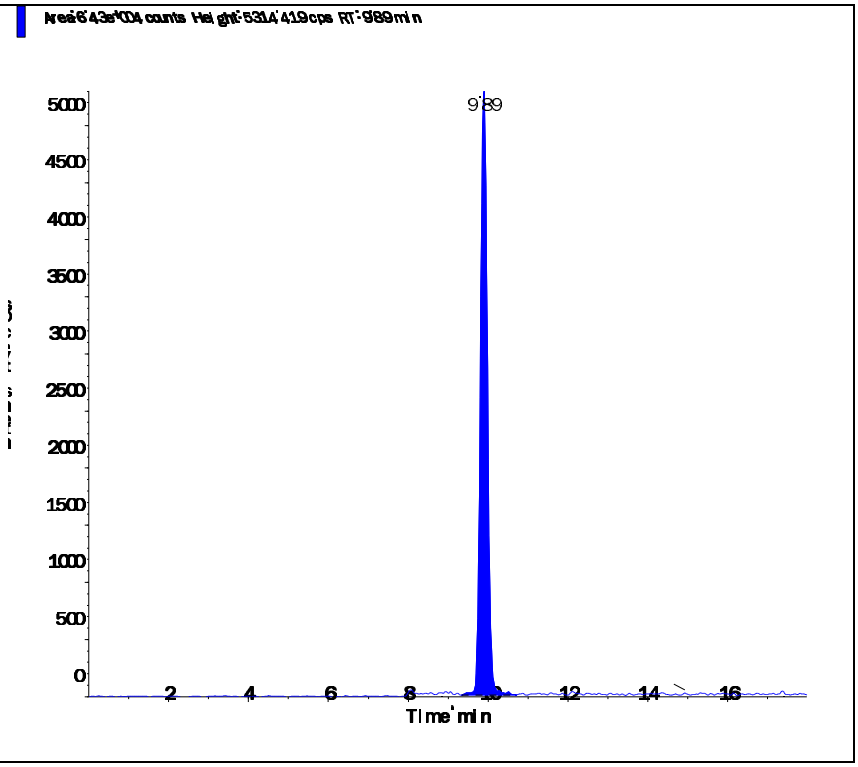

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Data File	LM33745.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/7/2016 12:45:07 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559899-03 CCV (1.0ug/L)	**Injection Vial**	2.00
Data File	LM33745.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 12:45:07 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559899-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.420e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.830e+05	9.93	1.00	0.951
Perchlorate conf	6.020e+04	9.92	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

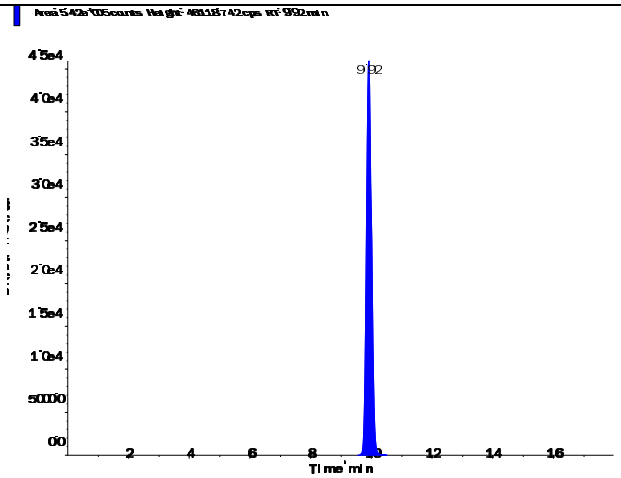

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	0.951 ng/ml
Area Ratio:	0.337
Sample Type:	(Quality Control)

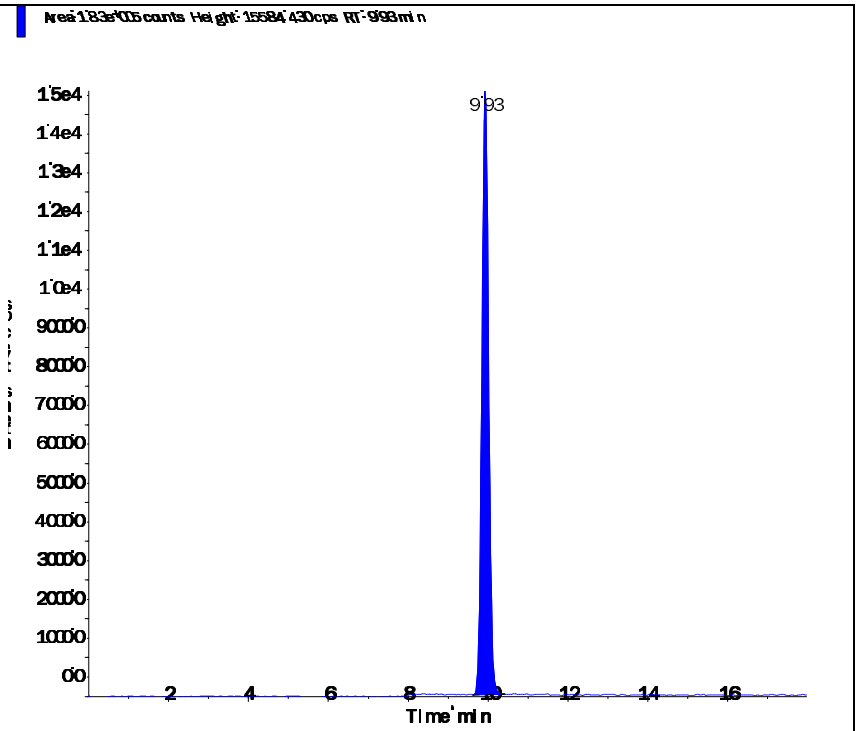

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

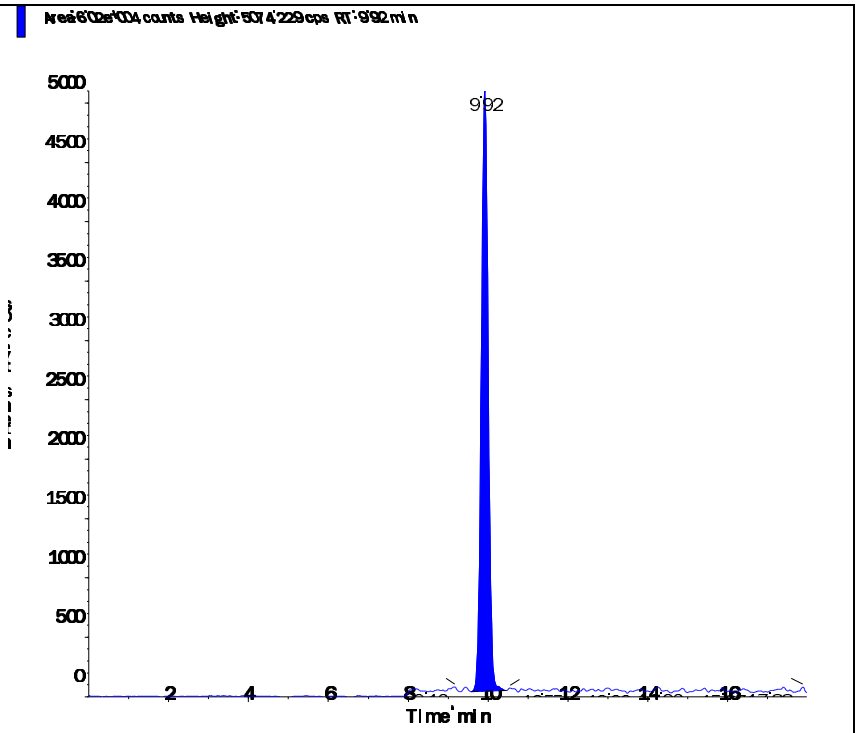

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Data File	LM33712.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 5:16:08 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559808-07 MRL (2.0ug/kg)	**Injection Vial**	3.00
Data File	LM33712.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 5:16:08 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559808-07	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.340e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.890e+04	9.96	N/A	0.196
Perchlorate conf	1.290e+04	9.94	N/A	0.201

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

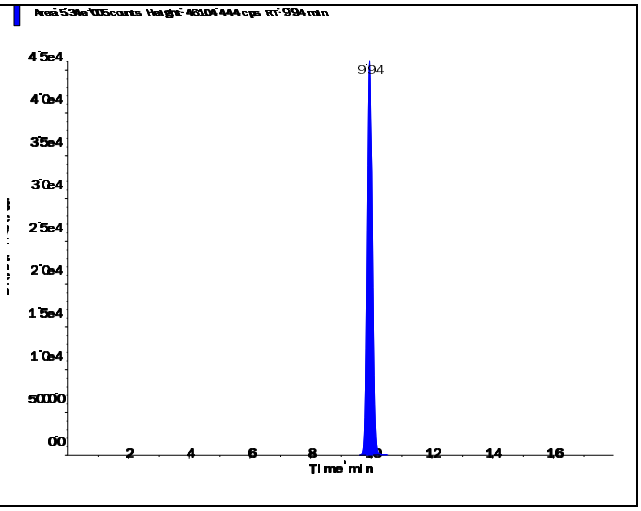

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	0.196 ng/ml
Area Ratio:	0.073
Sample Type:	(Unknown)

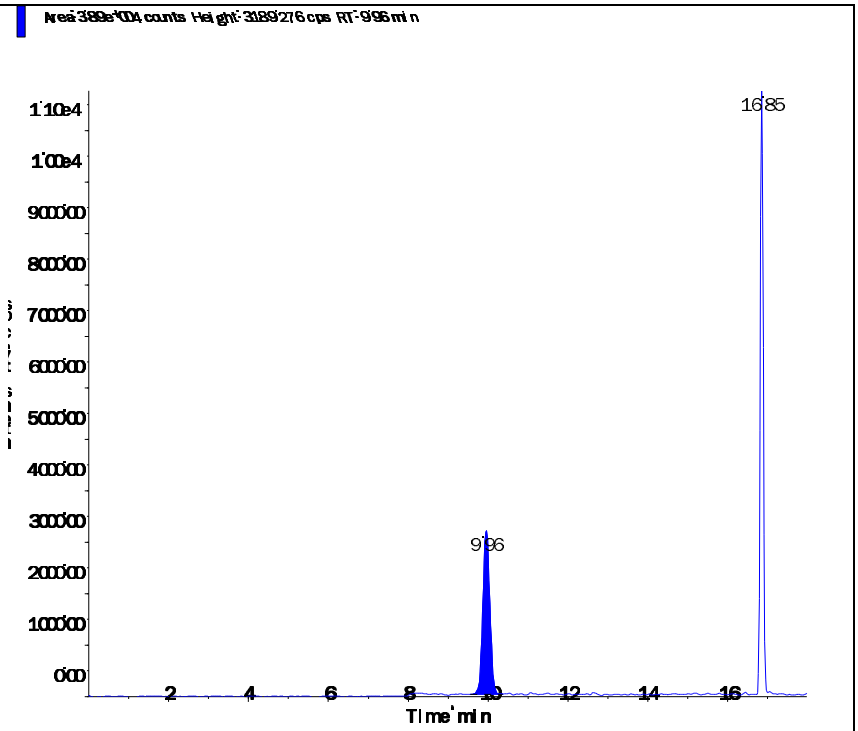

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

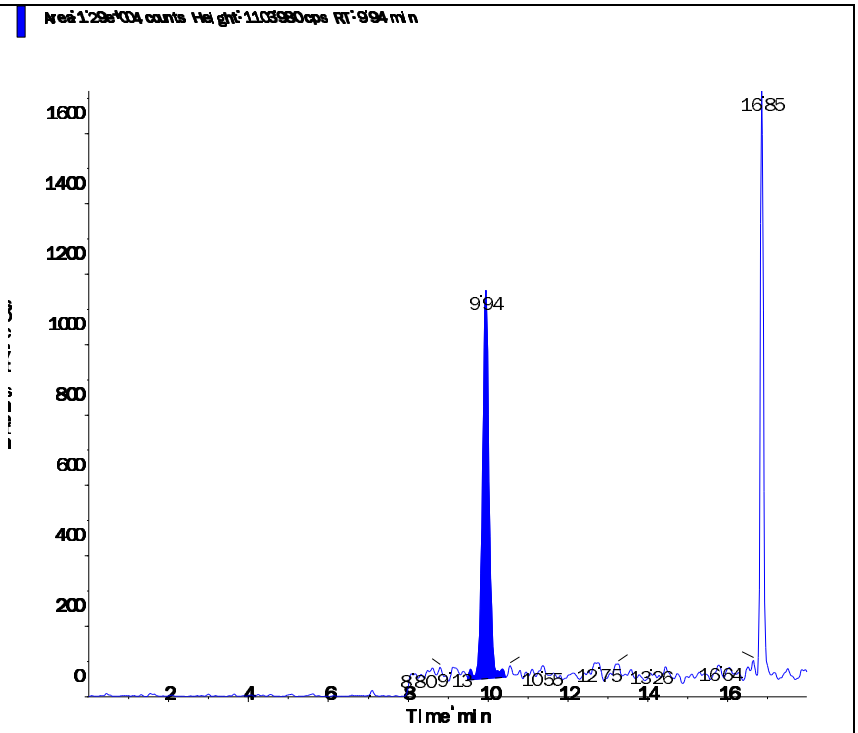

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Data File	LM33724.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 9:03:23 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559808-08 MRL (2.0ug/kg)	**Injection Vial**	3.00
Data File	LM33724.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 9:03:23 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559808-08	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.820e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.260e+04	9.94	N/A	0.197
Perchlorate conf	1.340e+04	9.92	N/A	0.191

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

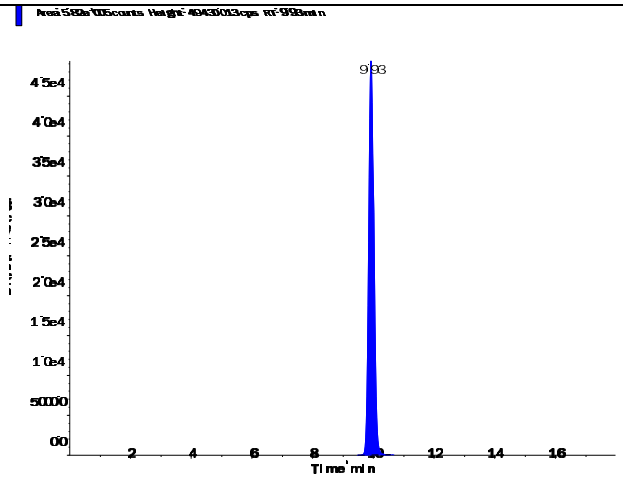

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.073
Sample Type:	(Unknown)

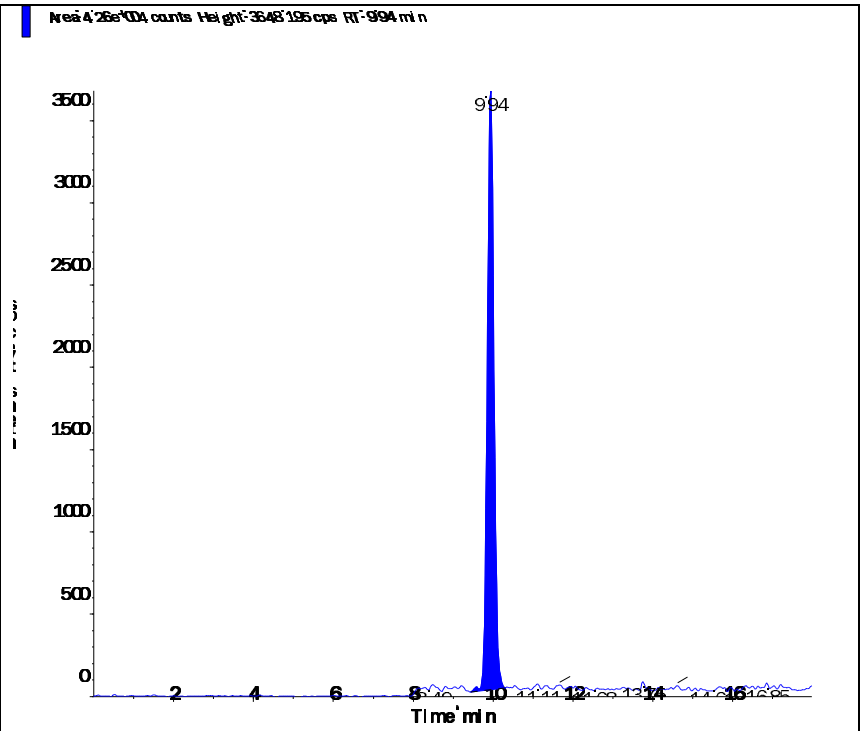

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	0.191 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

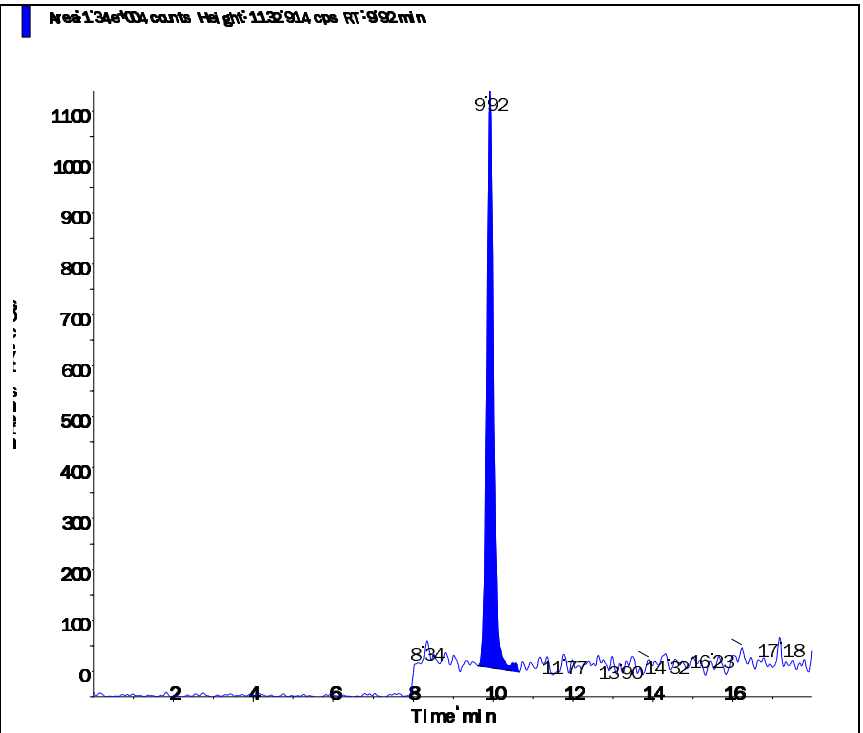

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Data File	LM33734.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/5/2016 12:12:48 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559808-09 MRL (2.0ug/kg)	**Injection Vial**	3.00
Data File	LM33734.wiff	**Injection Volume**	10.00
Acquisition Date	3/5/2016 12:12:48 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559808-09	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.690e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.140e+04	9.94	N/A	0.195
Perchlorate conf	1.260e+04	9.92	N/A	0.183

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

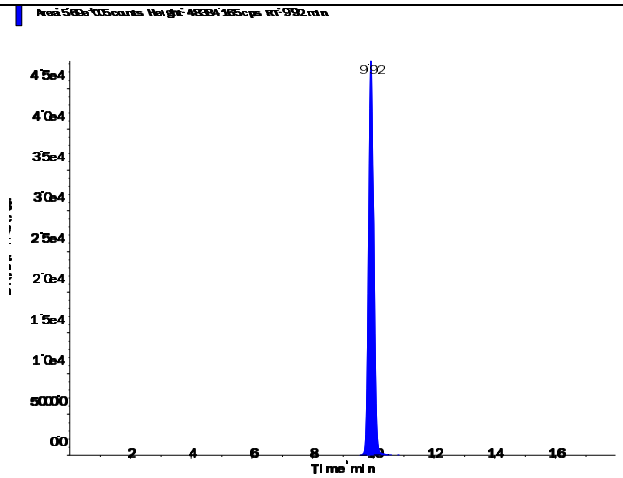

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.195 ng/ml
Area Ratio:	0.073
Sample Type:	(Unknown)

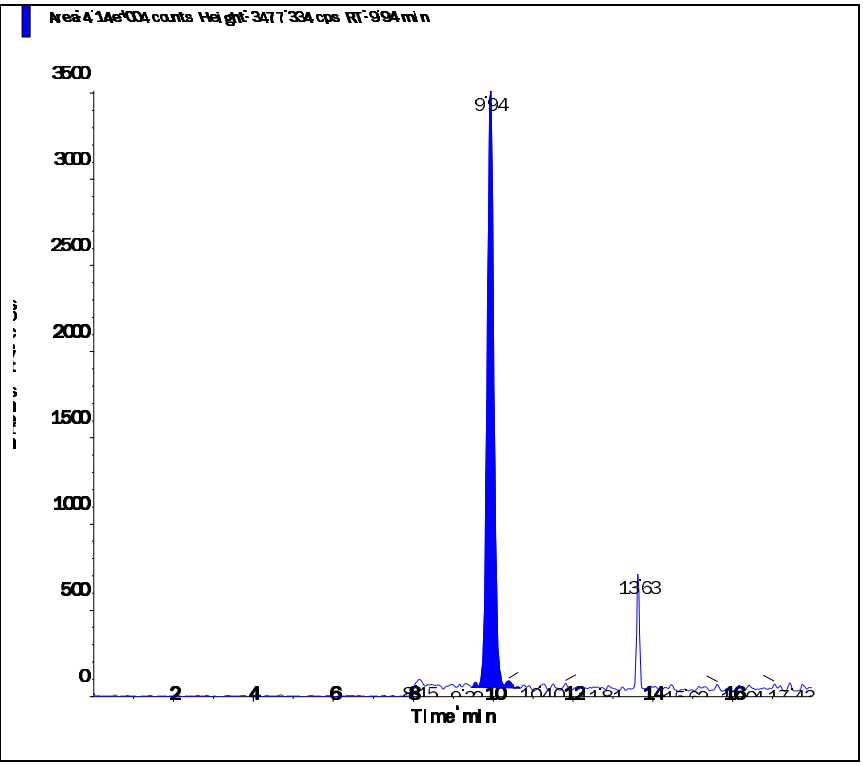

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	0.183 ng/ml
Area Ratio:	0.022
Sample Type:	(Unknown)

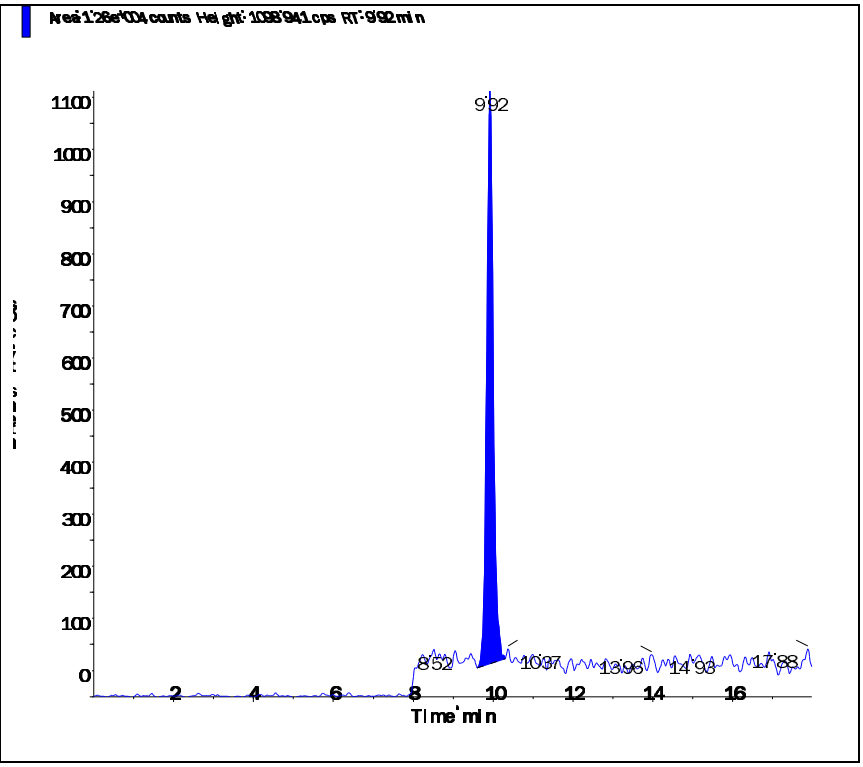

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Data File	LM33738.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/7/2016 10:32:32 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559808-10 MRL (2.0ug/kg)	**Injection Vial**	3.00
Data File	LM33738.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 10:32:32 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559808-10	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.610e+05	9.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.940e+04	9.91	N/A	0.188
Perchlorate conf	1.350e+04	9.90	N/A	0.199

O18LP (Internal Standard)

RT (Exp. RT): 9.90(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

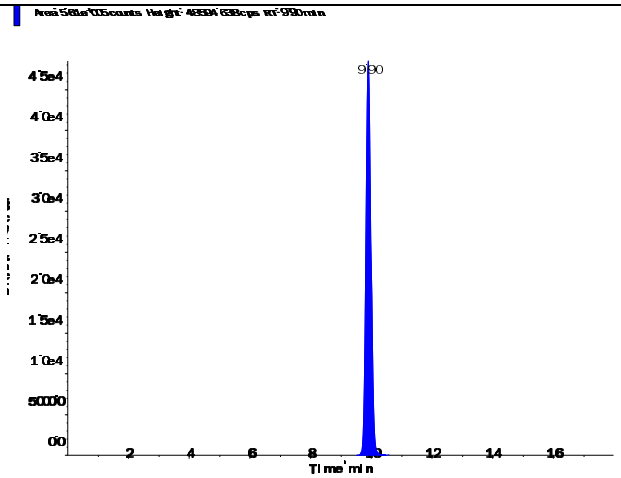

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.91 (9.94) min Calculated conc: 0.188 ng/ml Area Ratio: 0.07 Sample Type: (Unknown)	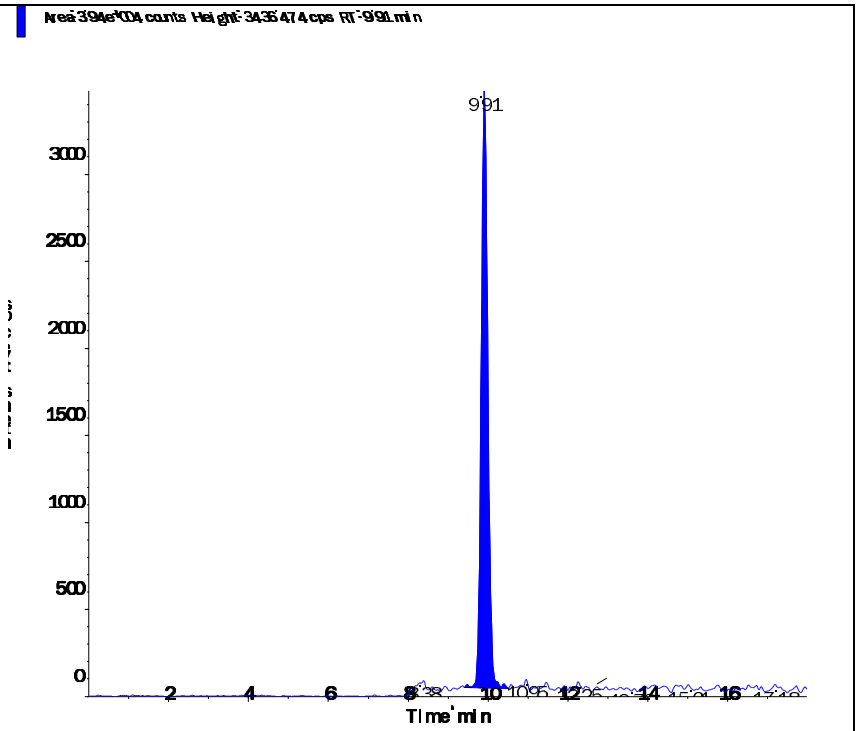
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.90 (9.92) min Calculated conc: 0.199 ng/ml Area Ratio: 0.024 Sample Type: (Unknown)	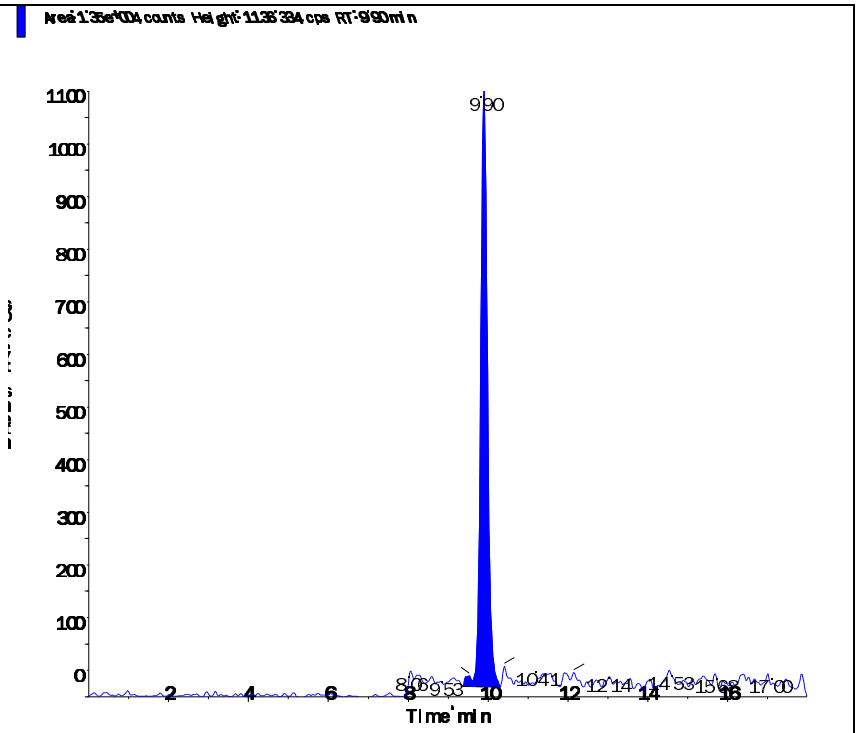

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Data File	LM33746.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/7/2016 1:04:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559808-11 MRL (2.0ug/kg)	**Injection Vial**	3.00
Data File	LM33746.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 1:04:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559808-11	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.270e+05	9.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.830e+04	9.91	N/A	0.195
Perchlorate conf	1.260e+04	9.90	N/A	0.198

O18LP (Internal Standard)

RT (Exp. RT): 9.90(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

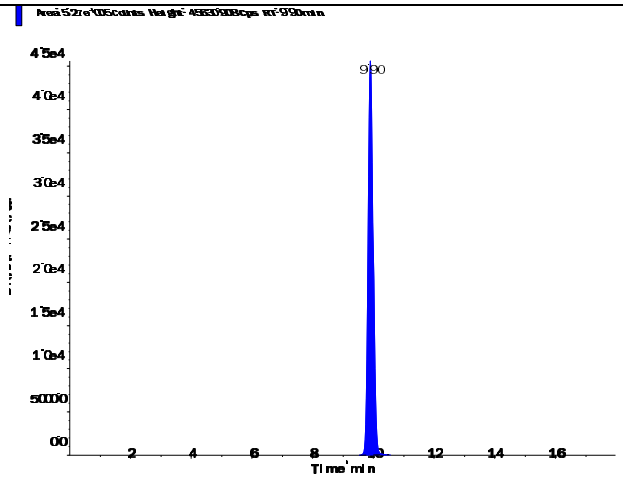

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.91 (9.94) min Calculated conc: 0.195 ng/ml Area Ratio: 0.073 Sample Type: (Unknown)	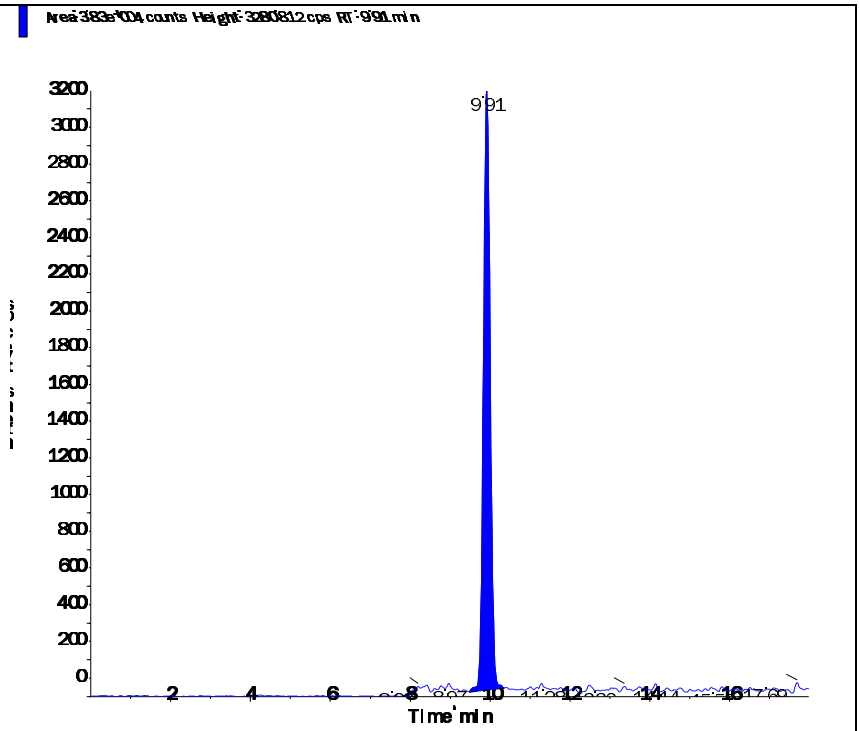
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.90 (9.92) min Calculated conc: 0.198 ng/ml Area Ratio: 0.024 Sample Type: (Unknown)	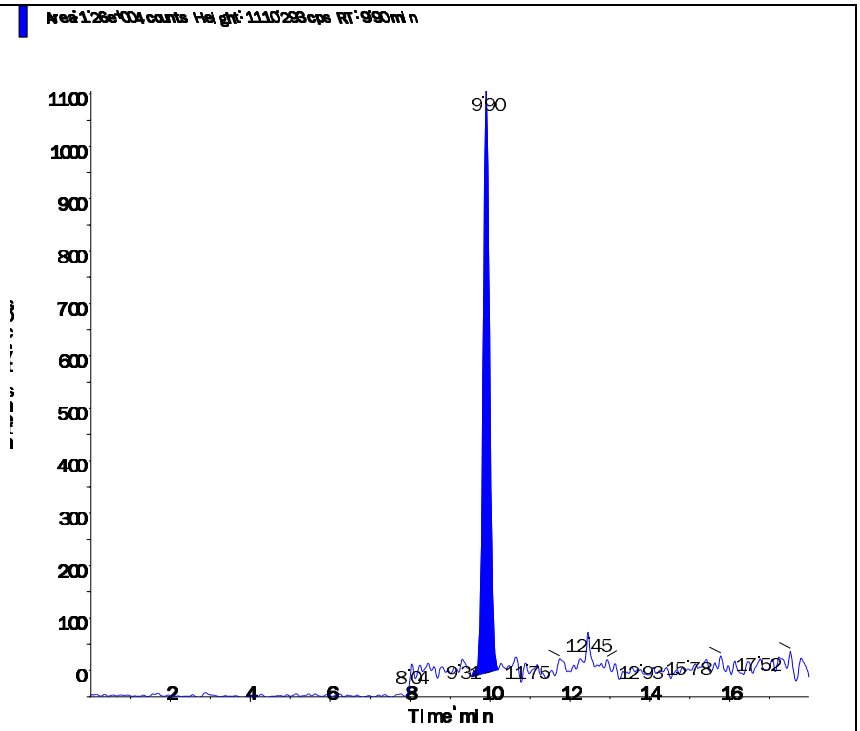

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Data File	LM33710.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 4:38:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559812-01 CCB	**Injection Vial**	1.00
Data File	LM33710.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 4:38:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559812-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.980e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

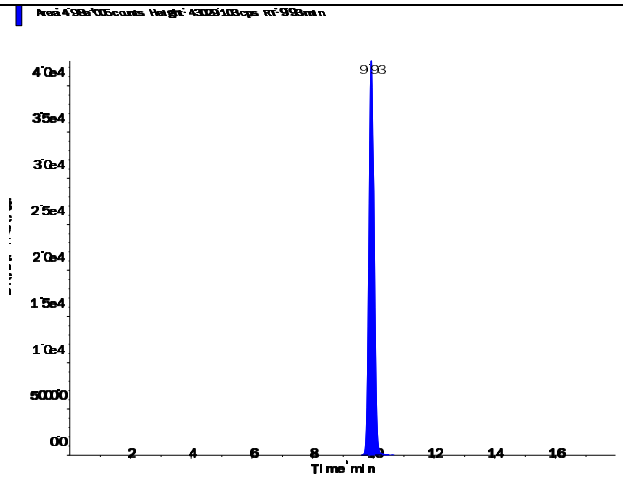

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

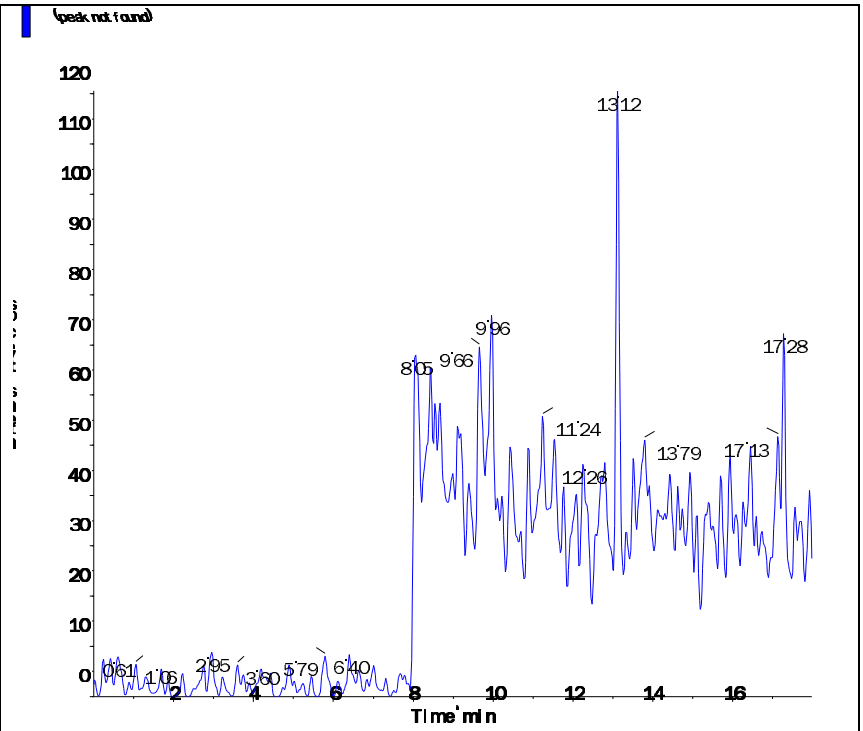

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

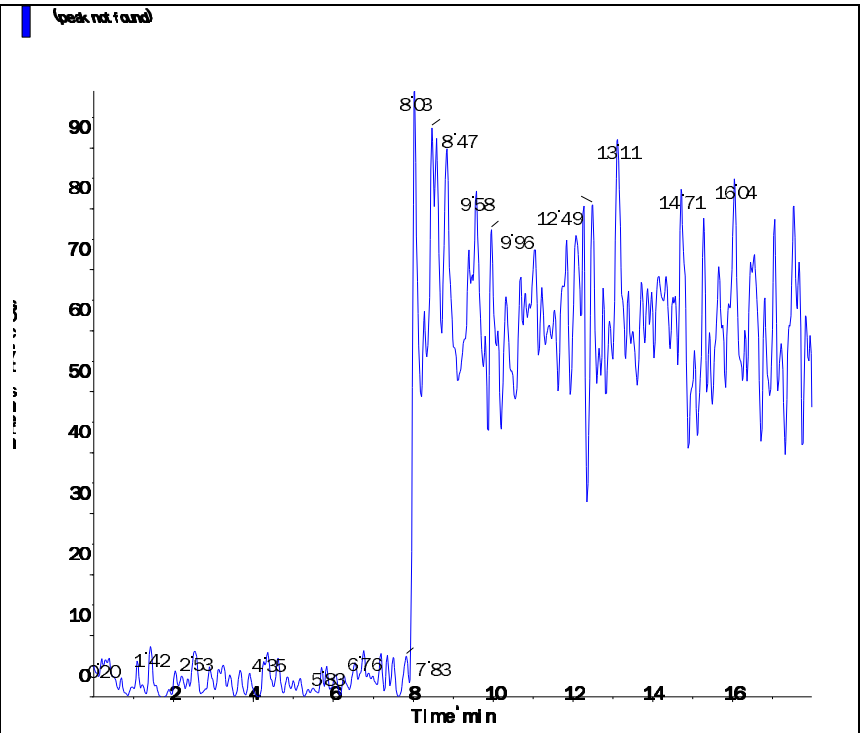

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Data File	LM33725.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 9:22:19 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559812-04 CCB	**Injection Vial**	1.00
Data File	LM33725.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 9:22:19 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559812-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.700e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

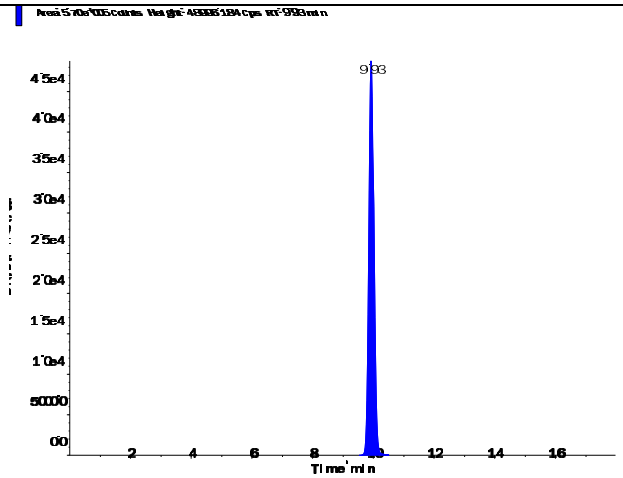

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

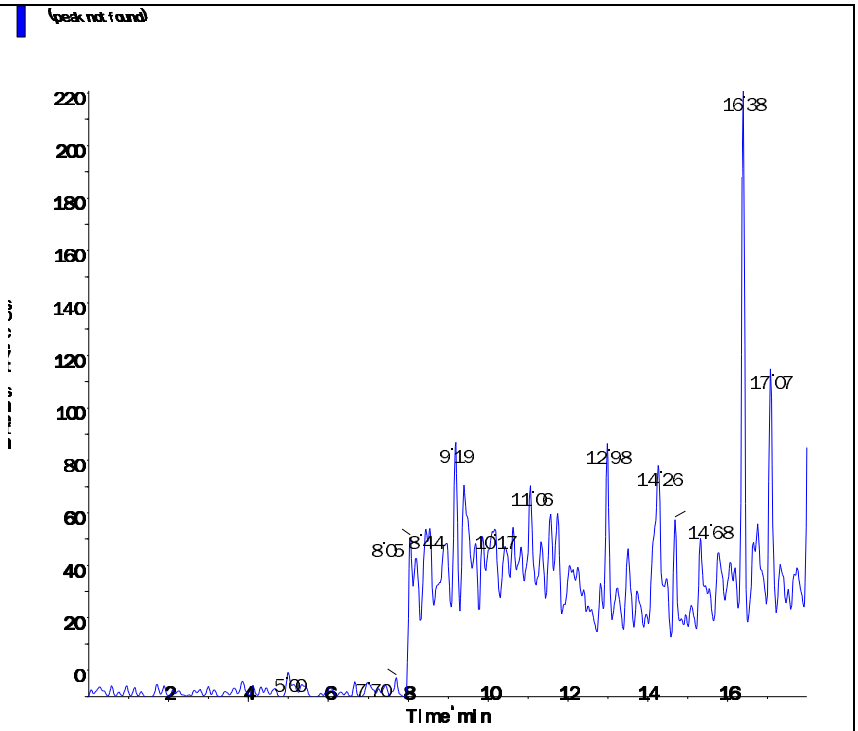

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

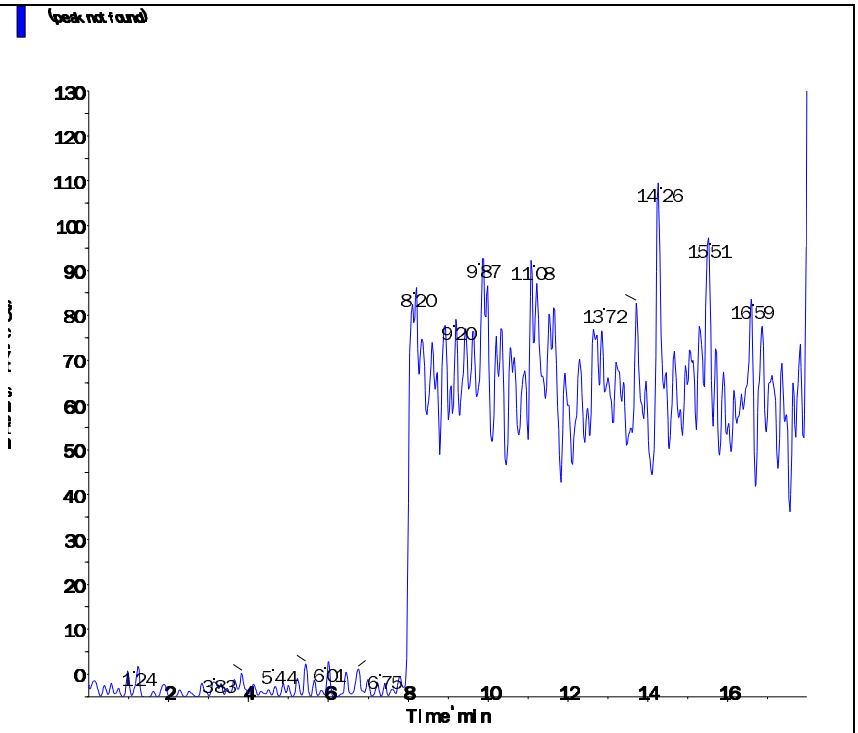

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Data File	LM33735.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/5/2016 12:31:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559812-06 CCB	**Injection Vial**	1.00
Data File	LM33735.wiff	**Injection Volume**	10.00
Acquisition Date	3/5/2016 12:31:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559812-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.590e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

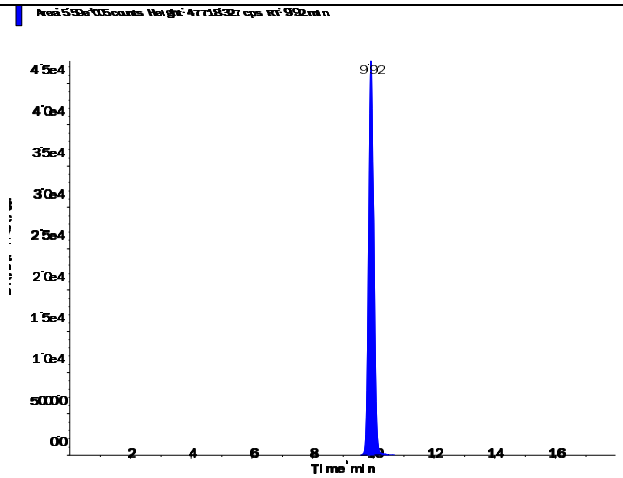

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Printed: 3/7/2016 5:49 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.94) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	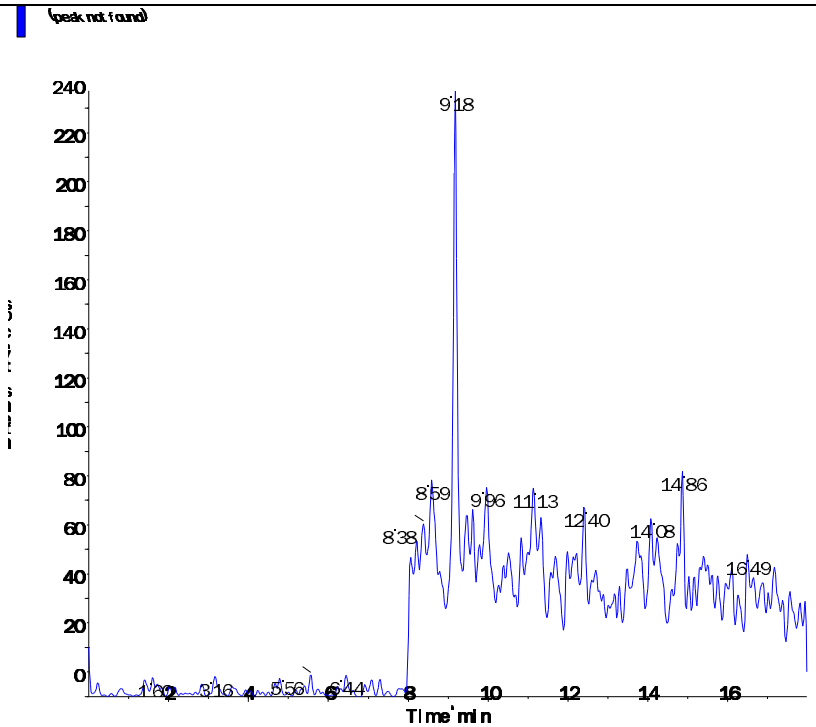
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.92) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	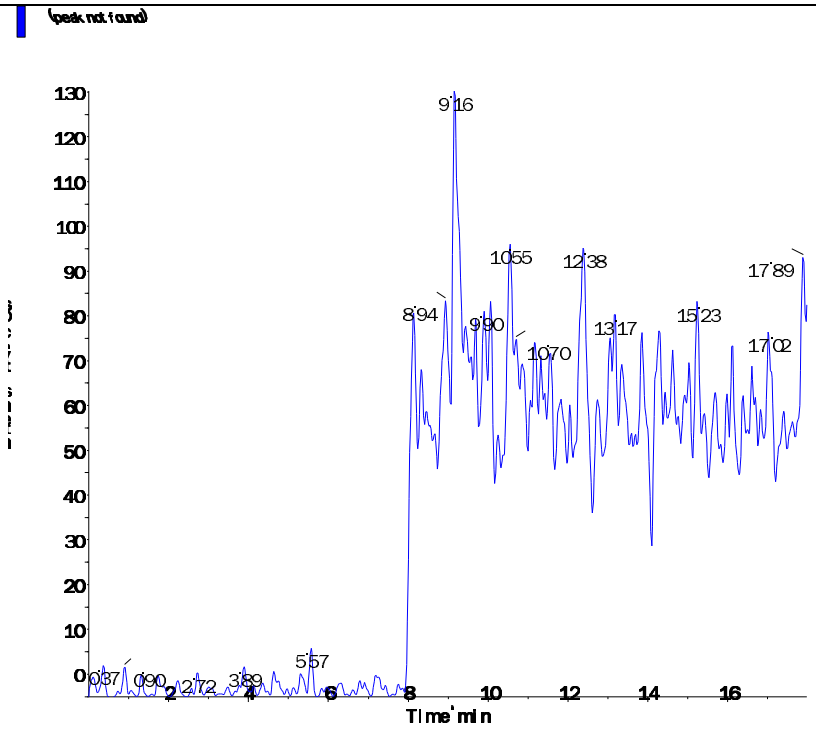

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Printed: 3/7/2016 5:49 PM

Data File	LM33736.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/7/2016 9:54:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559899-01 CCB	**Injection Vial**	1.00
Data File	LM33736.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 9:54:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559899-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.540e+05	9.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.90(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

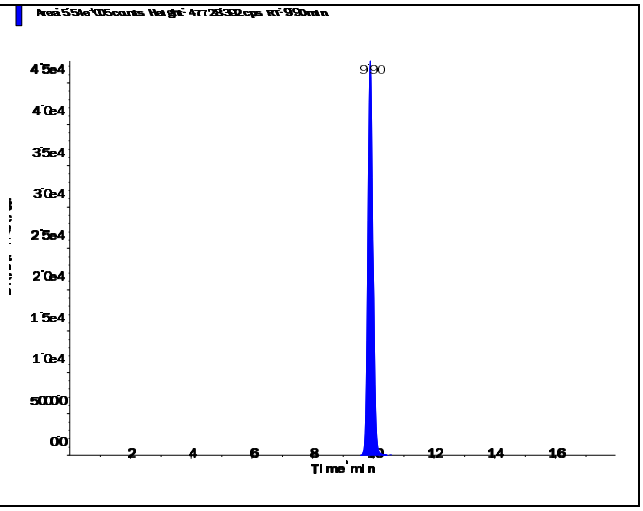

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

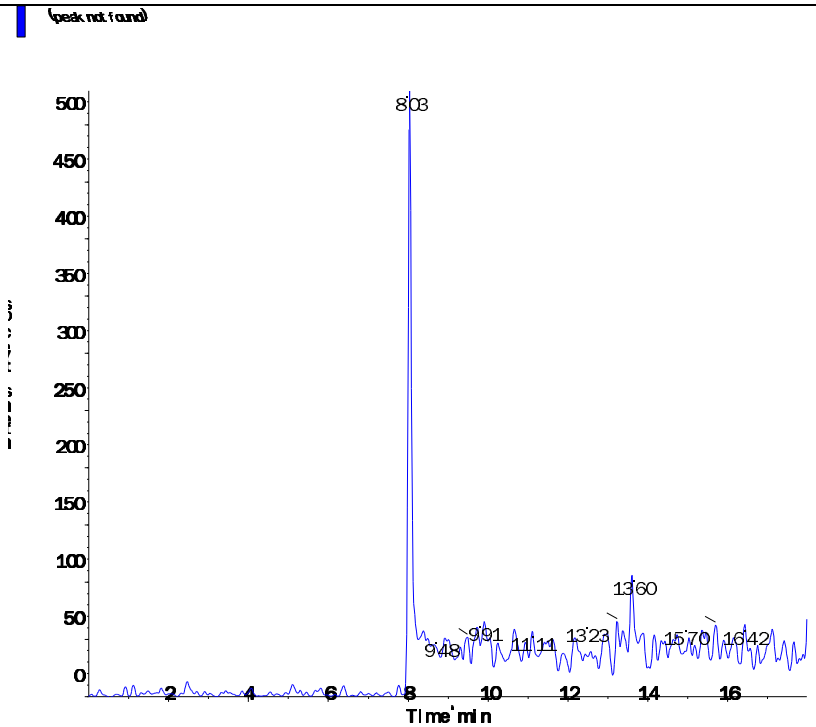

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

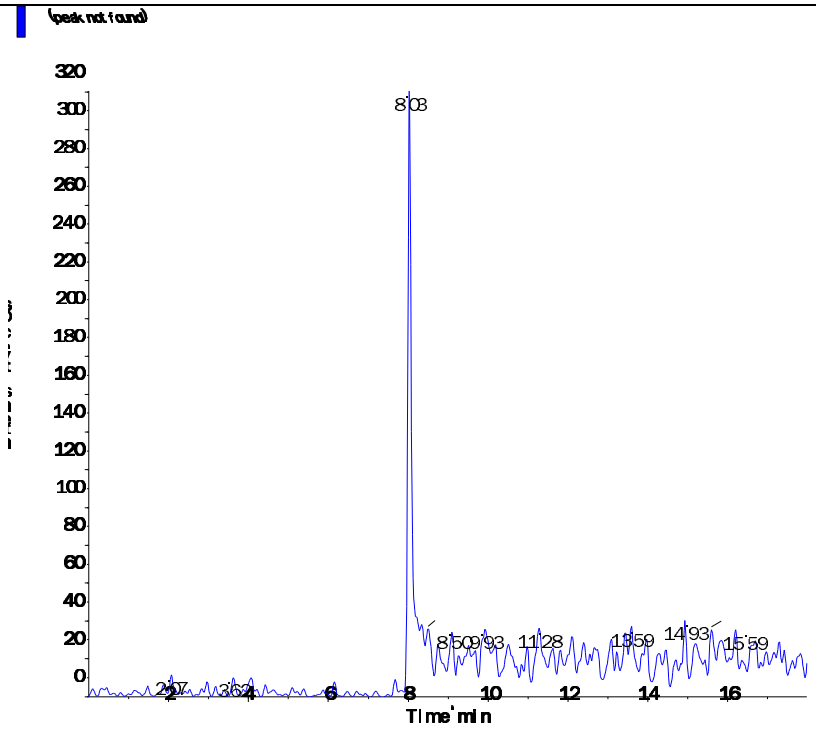

s.dataFile Page 2 of 2

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Created with Analyst Reporter
Printed: 3/7/2016 5:53 PM

Data File	LM33747.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/7/2016 1:22:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559899-04 CCB	**Injection Vial**	1.00
Data File	LM33747.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 1:22:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559899-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.260e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	1.950e+02	9.81	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

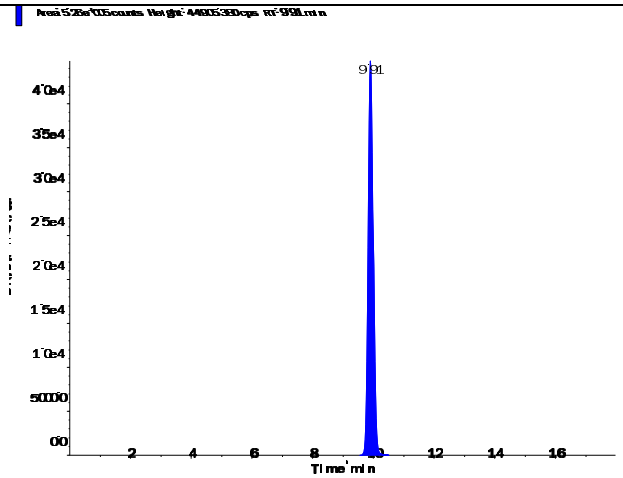

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Printed: 3/7/2016 5:53 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

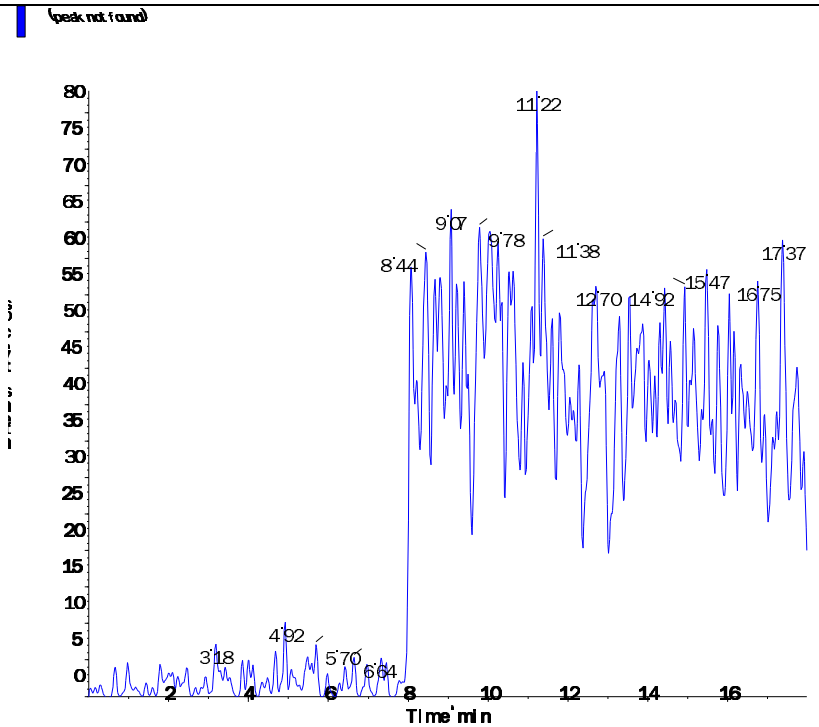

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.81 (9.92) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

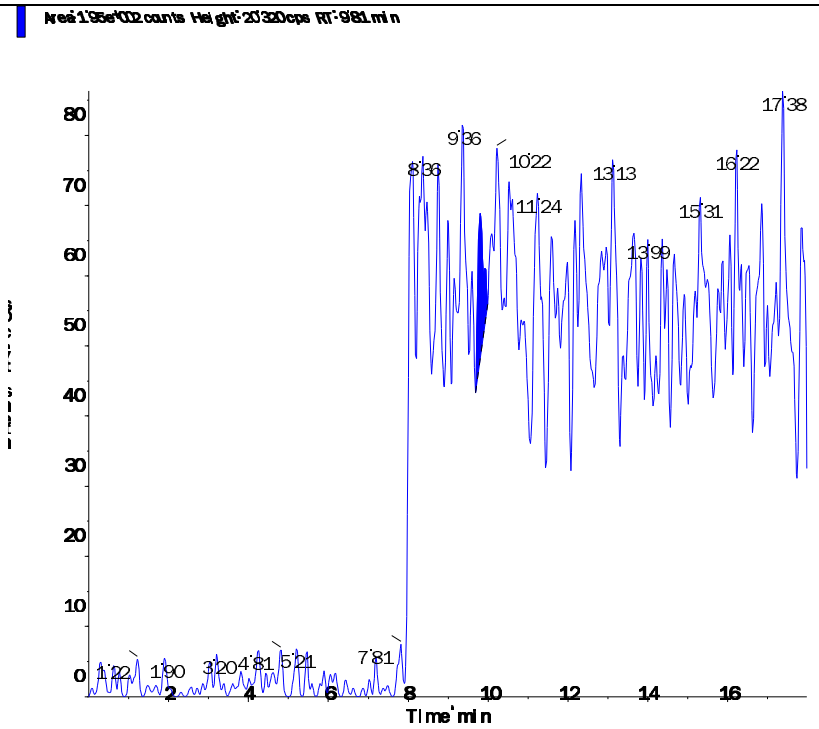

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 3/7/2016 5:41 PM

Data File	LM33713.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 5:35:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559808-01 MCT (2.0ug/kg)	**Injection Vial**	4.00
Data File	LM33713.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 5:35:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559808-01	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.680e+05	9.54	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.840e+04	9.54	N/A	0.181
Perchlorate conf	1.270e+04	9.51	N/A	0.184

O18LP (Internal Standard)

RT (Exp. RT): 9.54(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

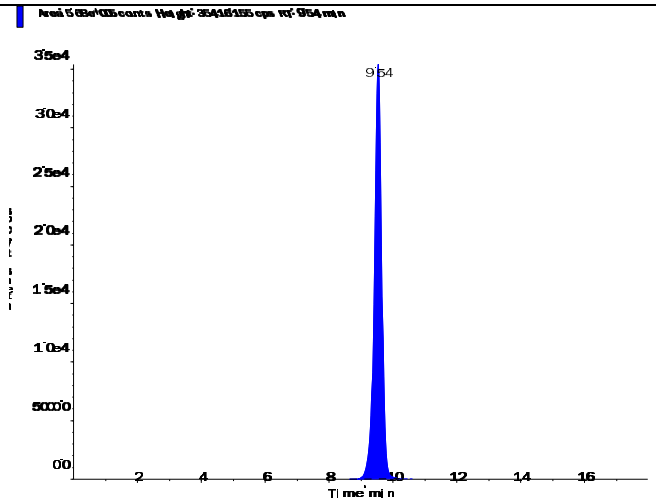

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Printed: 3/7/2016 5:41 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.54 (9.94) min
Calculated conc:	0.181 ng/ml
Area Ratio:	0.068
Sample Type:	(Unknown)

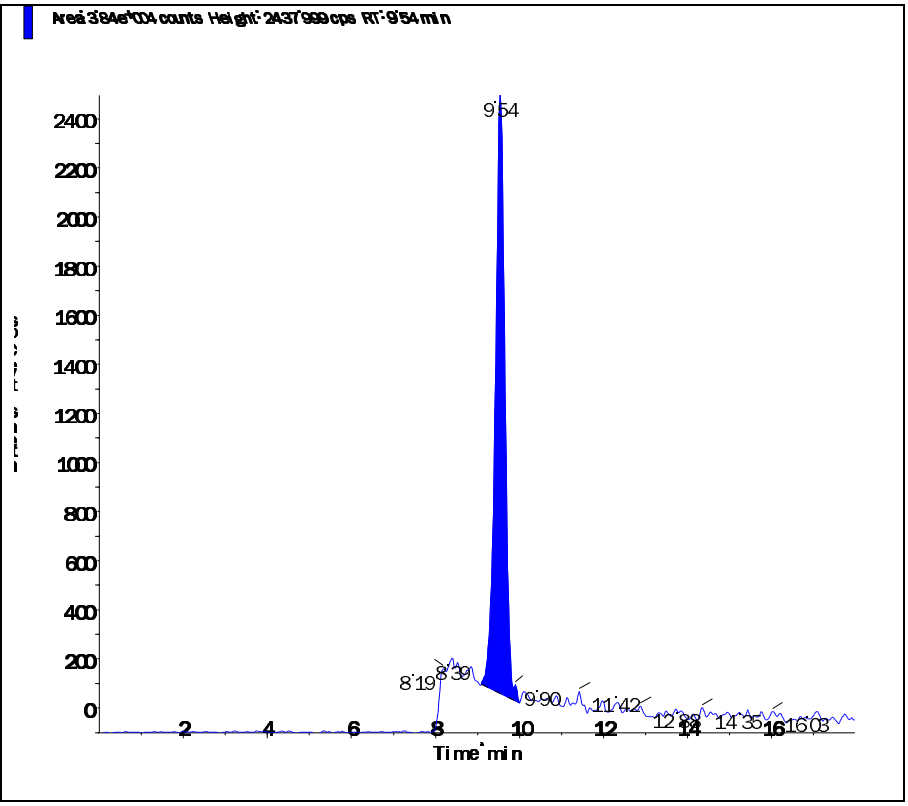

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.51 (9.92) min
Calculated conc:	0.184 ng/ml
Area Ratio:	0.022
Sample Type:	(Unknown)

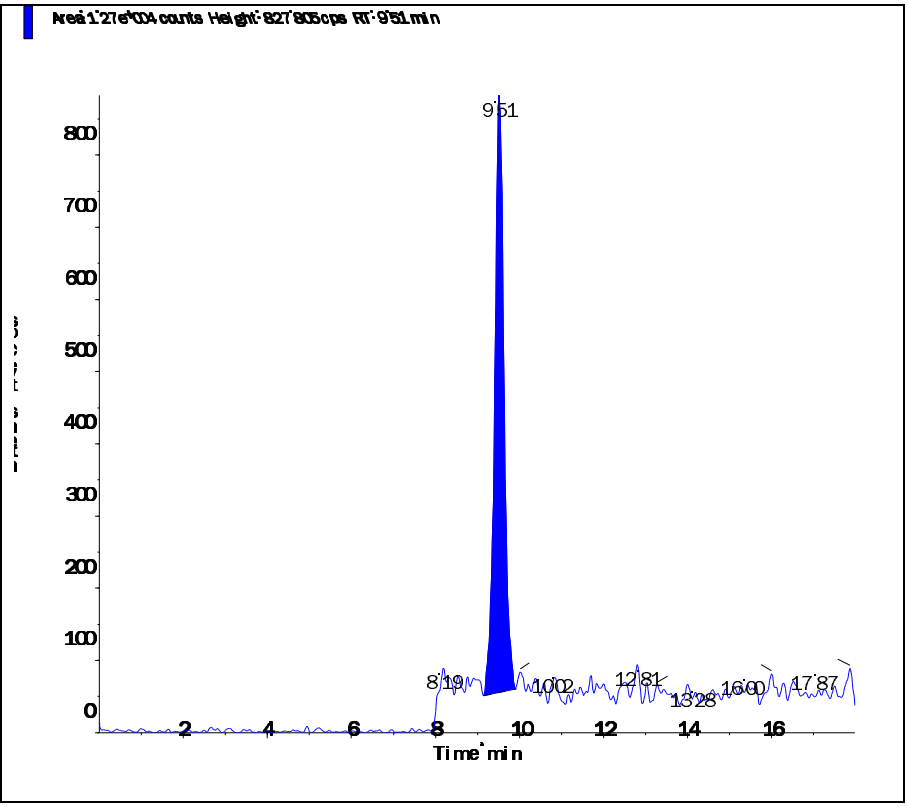

Printing Time: 11:17:21 AM
Printing Date: Monday, March 07, 2016

Sample Name: "WG559808-01 MCT (2.0ug/KG)" Sample ID: "WG559808-01" File: "LM33713.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "7,1 STD72686" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.199 ug/L
Acq. Date:	3/4/2016
Acq. Time:	5:35:05 PM
Modified:	No
Proc. Algorithm:	Analyst Classic
Bunching Factor:	3
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Sep. Width:	0.20
Sep. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.94 min
Use Relative RT:	Yes
Int. Type:	Valley
Retention Time:	9.54 min
Area:	4.21e+004 counts
Height:	2503.030 cps
Start Time:	9.073 min
End Time:	10.004 min

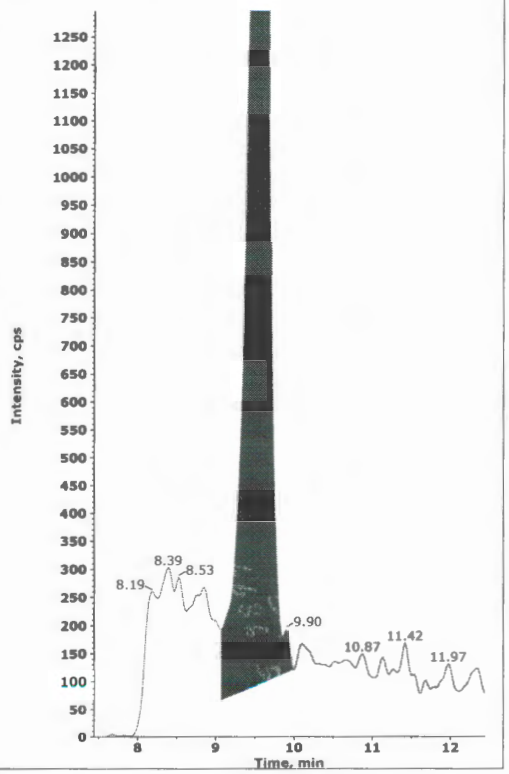

Collected by: N/A
Electronic Signature: no
Operator: lcms1

Printing Time: 11:18:03 AM
Printing Date: Monday, March 07, 2016

Sample Name: "WG559808-01 MCT (2.0ug/KG)" Sample ID: "WG559808-01" File: "LM33713.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "7,1 STD72686" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.181 ng/L
Acq. Date:	3/4/2016
Acq. Time:	5:35:05 PM
Modified:	Yes
Proc. Algorithm:	Analyst Classic
Bunching Factor:	1
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Sep. Width:	0.20
Sep. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.94 min
Use Relative RT:	Yes
Int. Type:	Base To Base
Retention Time:	9.54 min
Area:	3.84e+004 counts
Height:	2437.999 cps
Start Time:	9.093 min
End Time:	10.004 min

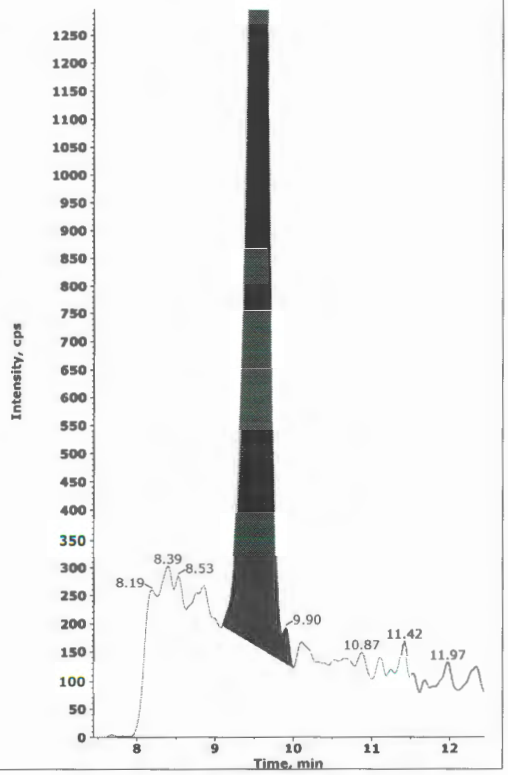

#4
JWR 03/07/16

✓ WD
3-8-16

Collected by: N/A
Electronic Signature: no
Operator: lcms1

2.2.1.5 Raw QC Data

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Created with Analyst Reporter
Printed: 3/7/2016 5:41 PM

Data File	LM33714.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 5:53:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559808-02 BLK	**Injection Vial**	5.00
Data File	LM33714.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 5:53:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559808-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.300e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	3.900e+02	9.97	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

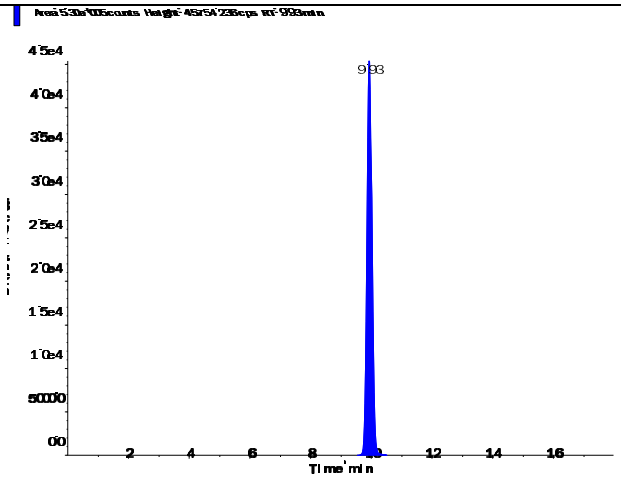

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Created with Analyst Reporter
Printed: 3/7/2016 5:41 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

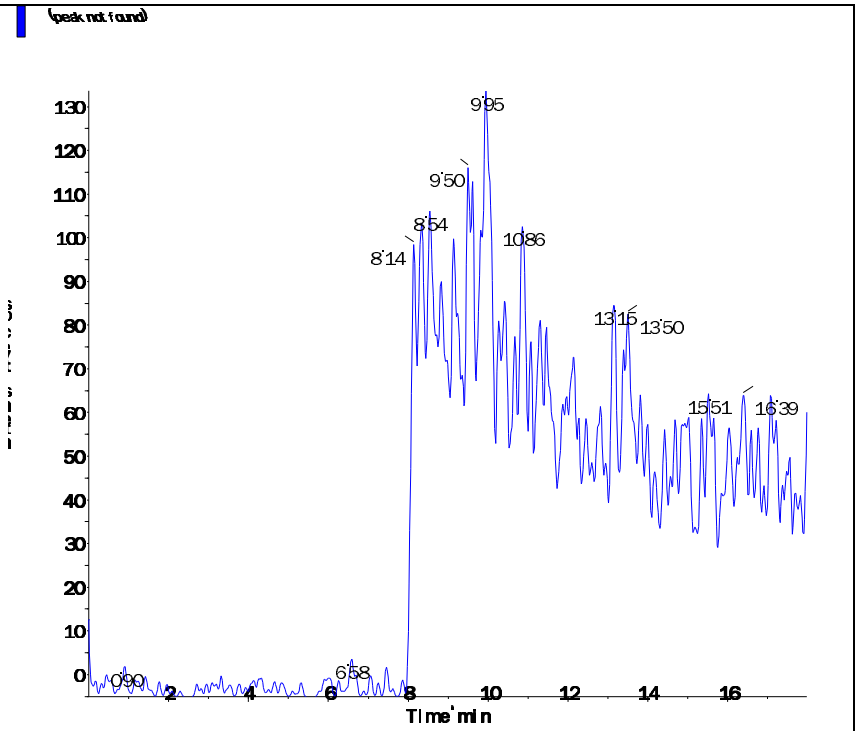

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.97 (9.92) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

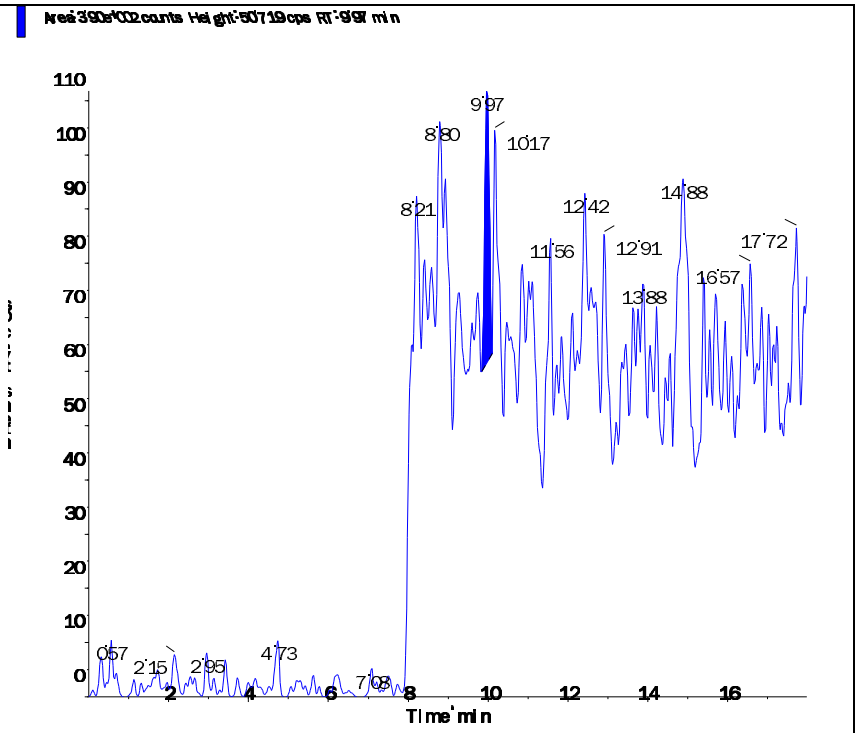

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 3/7/2016 5:41 PM

Data File	LM33715.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 6:12:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559808-03 LCS (2.0ug/kg)	**Injection Vial**	6.00
Data File	LM33715.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 6:12:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559808-03	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.160e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.480e+04	9.95	N/A	0.235
Perchlorate conf	1.680e+04	10.00	N/A	0.276

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

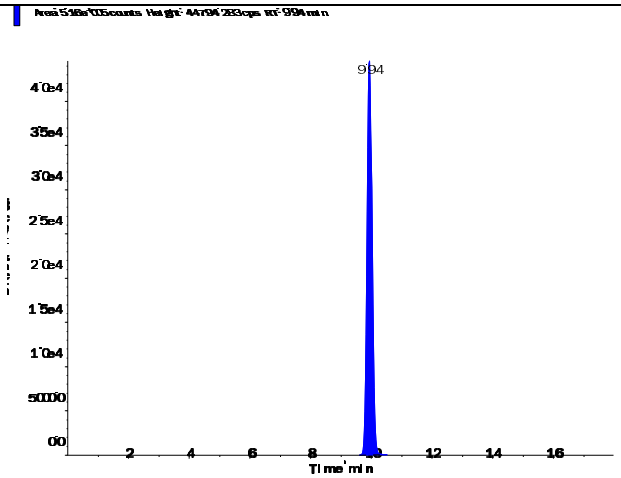

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Created with Analyst Reporter
Printed: 3/7/2016 5:41 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.95 (9.94) min Calculated conc: 0.235 ng/ml Area Ratio: 0.087 Sample Type: (Unknown)	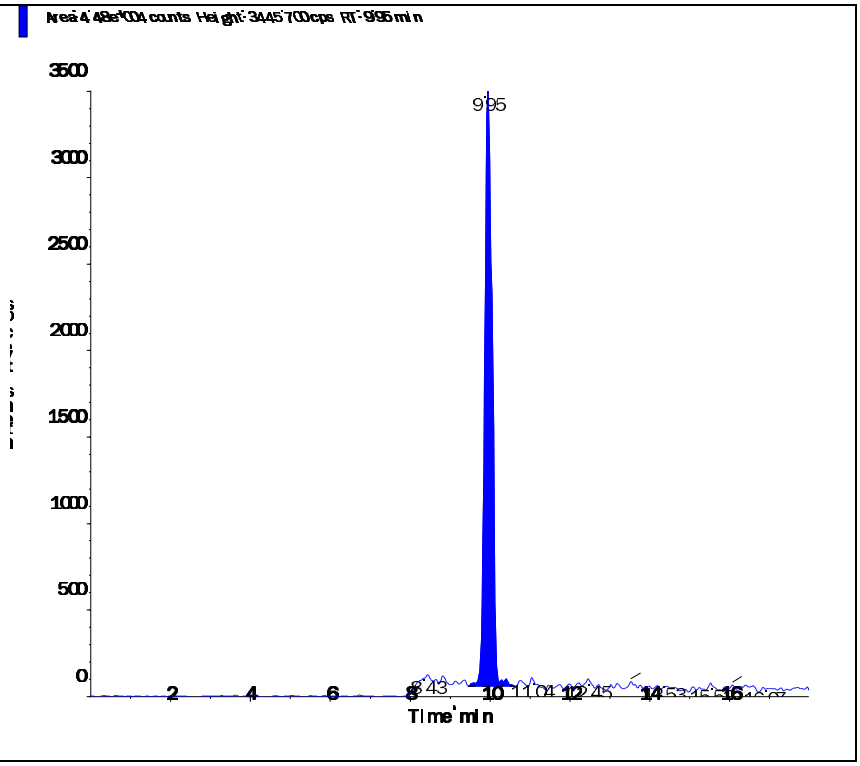
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 10.00 (9.92) min Calculated conc: 0.276 ng/ml Area Ratio: 0.033 Sample Type: (Unknown)	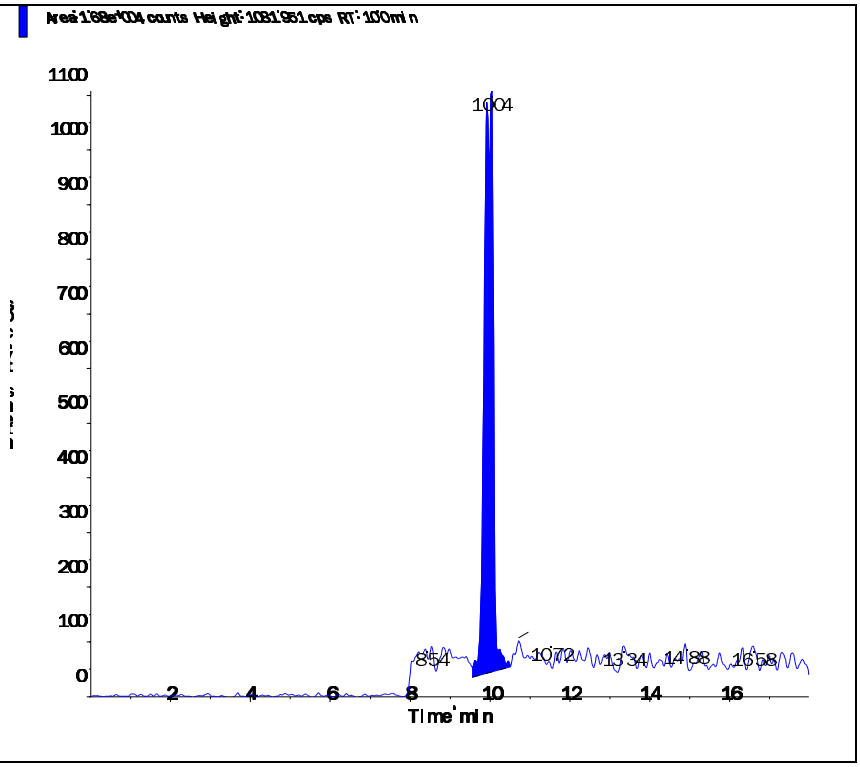

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2.3 General Chemistry Data

2.3.1 Percent Solids Data

2.3.1.1 Raw Data

Example Percent Solids Calculations

1.0 Calculating the percent solids of a sample.

$$\%Solids = \frac{WT3 - WT1}{WT2 - WT1} \times F$$

Where:	
WT1 = Weight, in grams, of the empty container	1.30 g
WT2 = Weight, in grams, of the container and wet sample	21.274 g
WT3 = Weight, in grams, of the container and dried sample	5.21 g
F = Factor to get units as percent weight	100
%Solids = Percent solids present in sample.	19.58%

2.0 Calculating the percent moisture of a sample.

% Moisture = 100 - % Solids from 1.0 calculation

Microbac Laboratories Inc.

PERCENT SOLIDS

Workgroup (AAB#): WG559839 Analyst: AC ADT(on): 03/04/2016 16:46
Method: D2216-90 Instrument: BAL021 ADT(off): 03/07/2016 08:20
SOP: K0003 Rev: 14

SAMPLE NUMBER	EMPTY PAN WT 1	WET WT 2	DRY WT 3A	DRY WT 3B	DRY WT 3C	PERCENT SOLID	PERCENT MOISTURE
L16030168-01	1.293	24.781	20.83			83.18	
L16030234-01	1.296	23.803	20.059			83.37	
L16030234-02	1.294	25.21	20.85			81.77	
L16030234-03	1.301	24.789	21.13			84.42	
L16030234-04	1.298	21.74	18.35			83.42	
L16030234-05	1.305	34.235	28.317			82.03	
L16030234-06	1.295	23.294	18.927			80.15	
L16030235-01	1.29	24.686	20.549			82.32	
L16030235-02	1.291	30.193	23.38			76.43	
L16030235-03	1.29	22.228	18.498			82.19	
L16030235-04	1.29	22.228	18.498			82.19	
L16030235-05	1.29	22.228	18.498			82.19	
L16030235-06	1.292	31.806	24.36			75.60	
L16030235-07	1.291	22.21	17.102			75.58	
L16030235-08	1.292	29.965	25.133			83.15	
L16030270-02	1.296	14.159	4.824			27.43	
L16030283-01	1.296	10.349	8.424			78.74	
L16030285-01	1.301	13.985	5.872			36.04	
L16030288-01	1.302	17.719	3.628			14.17	
L16030298-01	1.291	8.347	2.976			23.88	
WG559839-01	1.291	8.347	2.976			23.88	76.12
WG559839-02	1.298	9.63	3.292			23.93	76.07

Analyst: Andrea R Cochran

PERCENT_SOLIDS - Modified 04/24/2008
PDF ID: 4658333
Report generated: 03/07/2016 08:24

Microbac

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
March 15, 2016

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001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
March 15, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
March 15, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Stephanie Mossburg	Project Manager: Debra Richmon	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): KAYLA PALLANES	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Kayla Pallanes	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205	pH:	Program:	
Turn Around Time: STANDARD			
Project Name/Location: Longhorn			
Project Number: 60274185 11DASOW16 DGI RPT OL			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC 8260	PERSH DEPTH 16050	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
	18DPT08(5-5.5)030316			3/3/16	1315		X	S	2	X	X					
	18DPT08(15-15.5)030316			3/3/16	1349		X	S	2	X	X					
	18DPT08(10-10.5)030316			3/3/16	1440		X	S	2	X	X					
	18DPT08(21-21.5)030316			3/3/16	1450		X	S	2	X	X					
	18DPT08(26-26.5)030316			3/3/16	1455		X	S	2	X	X					
	18DPT08(35-35.5)030316			3/3/16	1505		X	S	2	X	X					

ERPIMS REQUIRED FIELDS

Comments: **STANDARD TAT**

Relinquished by: (Signature) Kayla Pallanes	Date 3/3/16	Time 1700	Received by	Time	Relinquished by: (Signature)	
Relinquished by: (Signature)	Date	Time	Received for (Signature)		Remarks:	

Microbac OVD
Received: 03/04/2016 10:17
By: CARA STRICKLER 221000082755
Cara Strickler

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

00695955

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030234
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 08-MAR-2016

Samplenum	Container ID	Products
L16030234-01	709943	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-MAR-2016 11:51	CLS		
2	ANALYZ	V1	ORG4	04-MAR-2016 12:19	AWE	CLS	

Samplenum	Container ID	Products
L16030234-01	709944	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	04-MAR-2016 11:51	CLS		
2	ANALYZ	W1	SEM	04-MAR-2016 12:23	AWE	CLS	
3	STORE	DIG	A1	07-MAR-2016 13:51	BRG	AC	

Samplenum	Container ID	Products
L16030234-02	709945	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-MAR-2016 11:51	CLS		
2	ANALYZ	V1	ORG4	04-MAR-2016 12:19	AWE	CLS	

Samplenum	Container ID	Products
L16030234-02	709946	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	04-MAR-2016 11:51	CLS		
2	ANALYZ	W1	SEM	04-MAR-2016 12:23	AWE	CLS	
3	STORE	DIG	A1	07-MAR-2016 13:51	BRG	AC	

Samplenum	Container ID	Products
L16030234-03	709947	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-MAR-2016 11:51	CLS		
2	ANALYZ	V1	ORG4	04-MAR-2016 12:19	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030234
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 08-MAR-2016

Samplenum	Container ID	Products
L16030234-03	709948	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	04-MAR-2016 11:51	CLS		
2	ANALYZ	W1	SEM	04-MAR-2016 12:22	AWE	CLS	
3	STORE	DIG	A1	07-MAR-2016 13:51	BRG	AC	

Samplenum	Container ID	Products
L16030234-04	709949	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-MAR-2016 11:51	CLS		
2	ANALYZ	V1	ORG4	04-MAR-2016 12:19	AWE	CLS	

Samplenum	Container ID	Products
L16030234-04	709950	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	04-MAR-2016 11:51	CLS		
2	ANALYZ	W1	SEM	04-MAR-2016 12:22	AWE	CLS	
3	STORE	DIG	A1	07-MAR-2016 13:50	BRG	AC	

Samplenum	Container ID	Products
L16030234-05	709951	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-MAR-2016 11:51	CLS		
2	ANALYZ	V1	ORG4	04-MAR-2016 12:19	AWE	CLS	

Samplenum	Container ID	Products
L16030234-05	709952	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	04-MAR-2016 11:51	CLS		
2	ANALYZ	W1	SEM	04-MAR-2016 12:22	AWE	CLS	
3	STORE	DIG	A1	07-MAR-2016 13:50	BRG	AC	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030234
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 08-MAR-2016

Samplenum	Container ID	Products
L16030234-06	709953	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-MAR-2016 11:51	CLS		
2	ANALYZ	V1	ORG4	04-MAR-2016 12:19	AWE	CLS	

Samplenum	Container ID	Products
L16030234-06	709954	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	04-MAR-2016 11:51	CLS		
2	ANALYZ	W1	SEM	04-MAR-2016 12:22	AWE	CLS	
3	STORE	DIG	A1	07-MAR-2016 13:50	BRG	AC	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16030235

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on March 15 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00113624	I	0.0		J2317165901	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	NA
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	NA

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18DPT07(5-5.5)020316	L16030235-01	03/02/2016 16:00	03/04/2016 10:17
18DPT07(15-15.5)020316	L16030235-02	03/02/2016 16:25	03/04/2016 10:17
18DPT07(33.5-34.5)030316	L16030235-03	03/03/2016 10:00	03/04/2016 10:17
18DPT07(33.5-34.5)030316 MS	L16030235-04	03/03/2016 10:00	03/04/2016 10:17
18DPT07(33.5-34.5)030316 MSD	L16030235-05	03/03/2016 10:00	03/04/2016 10:17
18DPT07(38-39)030316	L16030235-06	03/03/2016 10:10	03/04/2016 10:17
18DPT07(38-39)030316 FD	L16030235-07	03/03/2016 10:10	03/04/2016 10:17
18DPT07(27-27.5)030316	L16030235-08	03/03/2016 10:15	03/04/2016 10:17

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16030235
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.0 Summary Data

1.1 Narratives

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030235
Project Name:		**Method:**	8260
Prep Batch Number(s):	559982,	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-03-14 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden		Analyst I	2016-03-14 20:02:48

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030235
Project Name:		**Method:**	8260
Prep Batch Number(s):	559982,	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-03-14 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				
Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030235
Project Name:		**Method:**	8260
Prep Batch Number(s):	559982,	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-03-14 00:00:00		

Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				
Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030235
Project Name:		**Method:**	8260
Prep Batch Number(s):	559982,	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-03-14 00:00:00		

Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?		X			1
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					
Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030235
Project Name:		**Method:**	8260
Prep Batch Number(s):	559982,	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-03-14 00:00:00		

Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) Dichlorodifluoromethane exceeded the UCL in the ICV.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030235
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559808	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-08 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-03-08 19:56:31

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030235
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559808	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-08 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030235
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559808	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-08 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			1
Were MS/MSD RPDs within laboratory QC limits?		X			1
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030235
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559808	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-08 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030235
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559808	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-08 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030235
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559808	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-08 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. The MS failed low, the MSD failed high, and the RPD was beyond the acceptance limit. These were all due to a large amount of perchlorate in the reference sample.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030235
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559839	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-07 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2016-03-07 17:48:04

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030235
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559839	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-07 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?			X		
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?			X		
Were sample detection limits reported for all analytes not detected?			X		
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?			X		
Were blanks analyzed at the appropriate frequency?			X		
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?			X		
Were blank concentrations < MQL?			X		
Laboratory control samples (LCS):			X		
Were all COCs included in the LCS?			X		

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030235
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559839	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-07 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?			X		
Were LCSs analyzed at the required frequency?			X		
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?			X		
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?			X		
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?			X		
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?			X		
Are unadjusted MQLs and DCSs included in the laboratory data package?			X		
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?			X		
Were percent RSDs or correlation coefficient criteria met?			X		

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030235
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559839	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-07 00:00:00		

Was the number of standards recommended in the method used for all analytes?			X		
Were all points generated between the lowest and highest standard used to calculate the curve?			X		
Are ICAL data available for all instruments used?			X		
Has the initial calibration curve been verified using an appropriate second source standard?			X		
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030235
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559839	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-07 00:00:00		

Was a MDL study performed for each reported analyte?			X		
Is the MDL either adjusted or supported by the analysis of DCSs?			X		
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?			X		
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030235
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559839	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-07 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030235-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT07(5-5.5)020316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:06
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559982	**Analyst:**	ADC	**Run Date:**	03/07/2016 18:21
Collect Date:	03/02/2016 16:00	**Dilution:**	1	**File ID:**	9M973127
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	20.8	J	24.7	12.3	6.17
Benzene	71-43-2	1.23	U	6.17	1.23	0.617
Bromobenzene	108-86-1	1.23	U	6.17	1.23	0.617
Bromochloromethane	74-97-5	2.46	U	6.17	2.46	1.23
Bromodichloromethane	75-27-4	1.23	U	6.17	1.23	0.617
Bromoform	75-25-2	1.23	U	6.17	1.23	0.617
Bromomethane	74-83-9	2.46	U	6.17	2.46	1.23
2-Butanone	78-93-3	6.18	U	12.3	6.18	3.09
n-Butylbenzene	104-51-8	1.23	U	6.17	1.23	0.617
sec-Butylbenzene	135-98-8	1.23	U	6.17	1.23	0.617
tert-Butylbenzene	98-06-6	1.23	U	6.17	1.23	0.617
Carbon disulfide	75-15-0	1.23	U	6.17	1.23	0.617
Carbon tetrachloride	56-23-5	1.23	U	6.17	1.23	0.617
Chlorobenzene	108-90-7	1.23	U	6.17	1.23	0.617
Chlorodibromomethane	124-48-1	1.23	U	6.17	1.23	0.617
Chloroethane	75-00-3	2.46	U	6.17	2.46	1.23
Chloroform	67-66-3	1.23	U	6.17	1.23	0.617
Chloromethane	74-87-3	4.94	U	12.3	4.94	2.47
2-Chlorotoluene	95-49-8	1.23	U	6.17	1.23	0.617
4-Chlorotoluene	106-43-4	1.23	U	6.17	1.23	0.617
1,2-Dibromo-3-chloropropane	96-12-8	4.94	U	12.3	4.94	2.47
1,2-Dibromoethane	106-93-4	1.23	U	6.17	1.23	0.617
Dibromomethane	74-95-3	1.23	U	6.17	1.23	0.617
1,2-Dichlorobenzene	95-50-1	1.23	U	6.17	1.23	0.617
1,3-Dichlorobenzene	541-73-1	1.23	U	6.17	1.23	0.617
1,4-Dichlorobenzene	106-46-7	1.23	U	6.17	1.23	0.617
Dichlorodifluoromethane	75-71-8	2.46	U	6.17	2.46	1.23
1,1-Dichloroethane	75-34-3	2.46	U	6.17	2.46	1.23
1,2-Dichloroethane	107-06-2	1.23	U	6.17	1.23	0.617
1,1-Dichloroethene	75-35-4	1.23	U	6.17	1.23	0.617
cis-1,2-Dichloroethene	156-59-2	1.23	U	6.17	1.23	0.617
trans-1,2-Dichloroethene	156-60-5	1.23	U	6.17	1.23	0.617

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Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.23	U	6.17	1.23	0.617
1,3-Dichloropropane	142-28-9	1.23	U	6.17	1.23	0.617
2,2-Dichloropropane	594-20-7	1.23	U	6.17	1.23	0.617
cis-1,3-Dichloropropene	10061-01-5	1.23	U	6.17	1.23	0.617
trans-1,3-Dichloropropene	10061-02-6	1.23	U	6.17	1.23	0.617
1,1-Dichloropropene	563-58-6	1.23	U	6.17	1.23	0.617
Ethylbenzene	100-41-4	1.23	U	6.17	1.23	0.617
2-Hexanone	591-78-6	6.18	U	12.3	6.18	3.09
Hexachlorobutadiene	87-68-3	1.23	U	6.17	1.23	0.617
Isopropylbenzene	98-82-8	1.23	U	6.17	1.23	0.617
p-Isopropyltoluene	99-87-6	1.23	U	6.17	1.23	0.617
4-Methyl-2-pentanone	108-10-1	6.18	U	12.3	6.18	3.09
Methylene chloride	75-09-2	2.46	U	6.17	2.46	1.23
Naphthalene	91-20-3	1.23	U	6.17	1.23	0.617
n-Propylbenzene	103-65-1	1.23	U	6.17	1.23	0.617
Styrene	100-42-5	1.23	U	6.17	1.23	0.617
1,1,1,2-Tetrachloroethane	630-20-6	1.23	U	6.17	1.23	0.617
1,1,2,2-Tetrachloroethane	79-34-5	1.23	U	6.17	1.23	0.617
Tetrachloroethene	127-18-4	1.23	U	6.17	1.23	0.617
Toluene	108-88-3	1.23	U	6.17	1.23	0.617
1,2,3-Trichlorobenzene	87-61-6	1.23	U	6.17	1.23	0.617
1,2,4-Trichlorobenzene	120-82-1	1.23	U	6.17	1.23	0.617
1,1,1-Trichloroethane	71-55-6	1.23	U	6.17	1.23	0.617
1,1,2-Trichloroethane	79-00-5	1.23	U	6.17	1.23	0.617
Trichloroethene	79-01-6	1.23	U	6.17	1.23	0.617
Trichlorofluoromethane	75-69-4	2.46	U	6.17	2.46	1.23
1,2,3-Trichloropropane	96-18-4	2.46	U	6.17	2.46	1.23
1,2,4-Trimethylbenzene	95-63-6	1.23	U	6.17	1.23	0.617
1,3,5-Trimethylbenzene	108-67-8	1.23	U	6.17	1.23	0.617
Vinyl chloride	75-01-4	2.46	U	6.17	2.46	1.23
o-Xylene	95-47-6	1.23	U	6.17	1.23	0.617
m-,p-Xylene	179601-23-1	1.23	U	6.17	1.23	0.617

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.7	80	120	
1,2-Dichloroethane-d4	102	80	120	
Toluene-d8	98.8	85	115	
4-Bromofluorobenzene	105	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030235-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT07(5-5.5)020316	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/04/2016 20:25
Collect Date:	03/02/2016 16:00	**Dilution:**	1	**File ID:**	1LM.LM33722
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.38	U	4.77	2.38	1.19

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030235-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT07(15-15.5)020316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:06
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559982	**Analyst:**	ADC	**Run Date:**	03/07/2016 18:51
Collect Date:	03/02/2016 16:25	**Dilution:**	1	**File ID:**	9M973128
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	76.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	24.9	12.5	6.23
Benzene	71-43-2	1.25	U	6.23	1.25	0.623
Bromobenzene	108-86-1	1.25	U	6.23	1.25	0.623
Bromochloromethane	74-97-5	2.50	U	6.23	2.50	1.25
Bromodichloromethane	75-27-4	1.25	U	6.23	1.25	0.623
Bromoform	75-25-2	1.25	U	6.23	1.25	0.623
Bromomethane	74-83-9	2.50	U	6.23	2.50	1.25
2-Butanone	78-93-3	6.24	U	12.5	6.24	3.12
n-Butylbenzene	104-51-8	1.25	U	6.23	1.25	0.623
sec-Butylbenzene	135-98-8	1.25	U	6.23	1.25	0.623
tert-Butylbenzene	98-06-6	1.25	U	6.23	1.25	0.623
Carbon disulfide	75-15-0	1.25	U	6.23	1.25	0.623
Carbon tetrachloride	56-23-5	1.25	U	6.23	1.25	0.623
Chlorobenzene	108-90-7	1.25	U	6.23	1.25	0.623
Chlorodibromomethane	124-48-1	1.25	U	6.23	1.25	0.623
Chloroethane	75-00-3	2.50	U	6.23	2.50	1.25
Chloroform	67-66-3	1.25	U	6.23	1.25	0.623
Chloromethane	74-87-3	4.98	U	12.5	4.98	2.49
2-Chlorotoluene	95-49-8	1.25	U	6.23	1.25	0.623
4-Chlorotoluene	106-43-4	1.25	U	6.23	1.25	0.623
1,2-Dibromo-3-chloropropane	96-12-8	4.98	U	12.5	4.98	2.49
1,2-Dibromoethane	106-93-4	1.25	U	6.23	1.25	0.623
Dibromomethane	74-95-3	1.25	U	6.23	1.25	0.623
1,2-Dichlorobenzene	95-50-1	1.25	U	6.23	1.25	0.623
1,3-Dichlorobenzene	541-73-1	1.25	U	6.23	1.25	0.623
1,4-Dichlorobenzene	106-46-7	1.25	U	6.23	1.25	0.623
Dichlorodifluoromethane	75-71-8	2.50	U	6.23	2.50	1.25
1,1-Dichloroethane	75-34-3	2.50	U	6.23	2.50	1.25
1,2-Dichloroethane	107-06-2	1.25	U	6.23	1.25	0.623
1,1-Dichloroethene	75-35-4	1.25	U	6.23	1.25	0.623
cis-1,2-Dichloroethene	156-59-2	1.36	J	6.23	1.25	0.623

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Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.25	U	6.23	1.25	0.623
1,2-Dichloropropane	78-87-5	1.25	U	6.23	1.25	0.623
1,3-Dichloropropane	142-28-9	1.25	U	6.23	1.25	0.623
2,2-Dichloropropane	594-20-7	1.25	U	6.23	1.25	0.623
cis-1,3-Dichloropropene	10061-01-5	1.25	U	6.23	1.25	0.623
trans-1,3-Dichloropropene	10061-02-6	1.25	U	6.23	1.25	0.623
1,1-Dichloropropene	563-58-6	1.25	U	6.23	1.25	0.623
Ethylbenzene	100-41-4	1.25	U	6.23	1.25	0.623
2-Hexanone	591-78-6	6.24	U	12.5	6.24	3.12
Hexachlorobutadiene	87-68-3	1.25	U	6.23	1.25	0.623
Isopropylbenzene	98-82-8	1.25	U	6.23	1.25	0.623
p-Isopropyltoluene	99-87-6	1.25	U	6.23	1.25	0.623
4-Methyl-2-pentanone	108-10-1	6.24	U	12.5	6.24	3.12
Methylene chloride	75-09-2	2.50	U	6.23	2.50	1.25
Naphthalene	91-20-3	1.25	U	6.23	1.25	0.623
n-Propylbenzene	103-65-1	1.25	U	6.23	1.25	0.623
Styrene	100-42-5	1.25	U	6.23	1.25	0.623
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	6.23	1.25	0.623
1,1,2,2-Tetrachloroethane	79-34-5	1.25	U	6.23	1.25	0.623
Tetrachloroethene	127-18-4	1.25	U	6.23	1.25	0.623
Toluene	108-88-3	1.25	U	6.23	1.25	0.623
1,2,3-Trichlorobenzene	87-61-6	1.25	U	6.23	1.25	0.623
1,2,4-Trichlorobenzene	120-82-1	1.25	U	6.23	1.25	0.623
1,1,1-Trichloroethane	71-55-6	1.25	U	6.23	1.25	0.623
1,1,2-Trichloroethane	79-00-5	1.25	U	6.23	1.25	0.623
Trichloroethene	79-01-6	2.73	J	6.23	1.25	0.623
Trichlorofluoromethane	75-69-4	2.50	U	6.23	2.50	1.25
1,2,3-Trichloropropane	96-18-4	2.50	U	6.23	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	6.23	1.25	0.623
1,3,5-Trimethylbenzene	108-67-8	1.25	U	6.23	1.25	0.623
Vinyl chloride	75-01-4	2.50	U	6.23	2.50	1.25
o-Xylene	95-47-6	1.25	U	6.23	1.25	0.623
m-,p-Xylene	179601-23-1	1.25	U	6.23	1.25	0.623

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.8	80	120	
1,2-Dichloroethane-d4	113	80	120	
Toluene-d8	97.2	85	115	
4-Bromofluorobenzene	99.7	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

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Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030235-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT07(15-15.5)020316	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/04/2016 21:41
Collect Date:	03/02/2016 16:25	**Dilution:**	1	**File ID:**	1LM.LM33726
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	76.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.47	J	5.12	2.56	1.28

J	Estimated value ; the analyte concentration was less than the LOQ.

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Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030235-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT07(33.5-34.5)030316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:07
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559982	**Analyst:**	ADC	**Run Date:**	03/07/2016 19:22
Collect Date:	03/03/2016 10:00	**Dilution:**	1	**File ID:**	9M973129
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.1	U	22.2	11.1	5.55
Benzene	71-43-2	1.11	U	5.55	1.11	0.555
Bromobenzene	108-86-1	1.11	U	5.55	1.11	0.555
Bromochloromethane	74-97-5	2.22	U	5.55	2.22	1.11
Bromodichloromethane	75-27-4	1.11	U	5.55	1.11	0.555
Bromoform	75-25-2	1.11	U	5.55	1.11	0.555
Bromomethane	74-83-9	2.22	U	5.55	2.22	1.11
2-Butanone	78-93-3	5.56	U	11.1	5.56	2.78
n-Butylbenzene	104-51-8	1.11	U	5.55	1.11	0.555
sec-Butylbenzene	135-98-8	1.11	U	5.55	1.11	0.555
tert-Butylbenzene	98-06-6	1.11	U	5.55	1.11	0.555
Carbon disulfide	75-15-0	1.11	U	5.55	1.11	0.555
Carbon tetrachloride	56-23-5	1.11	U	5.55	1.11	0.555
Chlorobenzene	108-90-7	1.11	U	5.55	1.11	0.555
Chlorodibromomethane	124-48-1	1.11	U	5.55	1.11	0.555
Chloroethane	75-00-3	2.22	U	5.55	2.22	1.11
Chloroform	67-66-3	1.11	U	5.55	1.11	0.555
Chloromethane	74-87-3	4.44	U	11.1	4.44	2.22
2-Chlorotoluene	95-49-8	1.11	U	5.55	1.11	0.555
4-Chlorotoluene	106-43-4	1.11	U	5.55	1.11	0.555
1,2-Dibromo-3-chloropropane	96-12-8	4.44	U	11.1	4.44	2.22
1,2-Dibromoethane	106-93-4	1.11	U	5.55	1.11	0.555
Dibromomethane	74-95-3	1.11	U	5.55	1.11	0.555
1,2-Dichlorobenzene	95-50-1	1.11	U	5.55	1.11	0.555
1,3-Dichlorobenzene	541-73-1	1.11	U	5.55	1.11	0.555
1,4-Dichlorobenzene	106-46-7	1.11	U	5.55	1.11	0.555
Dichlorodifluoromethane	75-71-8	2.22	U	5.55	2.22	1.11
1,1-Dichloroethane	75-34-3	2.22	U	5.55	2.22	1.11
1,2-Dichloroethane	107-06-2	1.11	U	5.55	1.11	0.555
1,1-Dichloroethene	75-35-4	1.11	U	5.55	1.11	0.555
cis-1,2-Dichloroethene	156-59-2	1.11	U	5.55	1.11	0.555

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Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.11	U	5.55	1.11	0.555
1,2-Dichloropropane	78-87-5	1.11	U	5.55	1.11	0.555
1,3-Dichloropropane	142-28-9	1.11	U	5.55	1.11	0.555
2,2-Dichloropropane	594-20-7	1.11	U	5.55	1.11	0.555
cis-1,3-Dichloropropene	10061-01-5	1.11	U	5.55	1.11	0.555
trans-1,3-Dichloropropene	10061-02-6	1.11	U	5.55	1.11	0.555
1,1-Dichloropropene	563-58-6	1.11	U	5.55	1.11	0.555
Ethylbenzene	100-41-4	1.11	U	5.55	1.11	0.555
2-Hexanone	591-78-6	5.56	U	11.1	5.56	2.78
Hexachlorobutadiene	87-68-3	1.11	U	5.55	1.11	0.555
Isopropylbenzene	98-82-8	1.11	U	5.55	1.11	0.555
p-Isopropyltoluene	99-87-6	1.11	U	5.55	1.11	0.555
4-Methyl-2-pentanone	108-10-1	5.56	U	11.1	5.56	2.78
Methylene chloride	75-09-2	2.22	U	5.55	2.22	1.11
Naphthalene	91-20-3	1.11	U	5.55	1.11	0.555
n-Propylbenzene	103-65-1	1.11	U	5.55	1.11	0.555
Styrene	100-42-5	1.11	U	5.55	1.11	0.555
1,1,1,2-Tetrachloroethane	630-20-6	1.11	U	5.55	1.11	0.555
1,1,2,2-Tetrachloroethane	79-34-5	1.11	U	5.55	1.11	0.555
Tetrachloroethene	127-18-4	1.11	U	5.55	1.11	0.555
Toluene	108-88-3	1.11	U	5.55	1.11	0.555
1,2,3-Trichlorobenzene	87-61-6	1.11	U	5.55	1.11	0.555
1,2,4-Trichlorobenzene	120-82-1	1.11	U	5.55	1.11	0.555
1,1,1-Trichloroethane	71-55-6	1.11	U	5.55	1.11	0.555
1,1,2-Trichloroethane	79-00-5	1.11	U	5.55	1.11	0.555
Trichloroethene	79-01-6	5.03	J	5.55	1.11	0.555
Trichlorofluoromethane	75-69-4	2.22	U	5.55	2.22	1.11
1,2,3-Trichloropropane	96-18-4	2.22	U	5.55	2.22	1.11
1,2,4-Trimethylbenzene	95-63-6	1.11	U	5.55	1.11	0.555
1,3,5-Trimethylbenzene	108-67-8	1.11	U	5.55	1.11	0.555
Vinyl chloride	75-01-4	2.22	U	5.55	2.22	1.11
o-Xylene	95-47-6	1.11	U	5.55	1.11	0.555
m-,p-Xylene	179601-23-1	1.11	U	5.55	1.11	0.555

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.8	80	120	
1,2-Dichloroethane-d4	100	80	120	
Toluene-d8	97.6	85	115	
4-Bromofluorobenzene	98.9	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030235-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT07(33.5-34.5)030316	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/07/2016 10:51
Collect Date:	03/03/2016 10:00	**Dilution:**	100	**File ID:**	1LM.LM33739
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	82.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2180		480	240	120

Certificate of Analysis

Sample #:	L16030235-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT07(33.5-34.5)030316 MS	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:07
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559982	**Analyst:**	ADC	**Run Date:**	03/07/2016 21:26
Collect Date:	03/03/2016 10:00	**Dilution:**	1	**File ID:**	9M973133
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	22.3	J	23.5	11.8	5.88
Benzene	71-43-2	22.9		5.88	1.18	0.588
Bromobenzene	108-86-1	18.8		5.88	1.18	0.588
Bromochloromethane	74-97-5	23.1		5.88	2.36	1.18
Bromodichloromethane	75-27-4	23.2		5.88	1.18	0.588
Bromoform	75-25-2	18.9		5.88	1.18	0.588
Bromomethane	74-83-9	20.9		5.88	2.36	1.18
2-Butanone	78-93-3	22.1		11.8	5.88	2.94
n-Butylbenzene	104-51-8	19.2		5.88	1.18	0.588
sec-Butylbenzene	135-98-8	20.5		5.88	1.18	0.588
tert-Butylbenzene	98-06-6	21.2		5.88	1.18	0.588
Carbon disulfide	75-15-0	19.6		5.88	1.18	0.588
Carbon tetrachloride	56-23-5	22.9		5.88	1.18	0.588
Chlorobenzene	108-90-7	22.8		5.88	1.18	0.588
Chlorodibromomethane	124-48-1	21.1		5.88	1.18	0.588
Chloroethane	75-00-3	25.1		5.88	2.36	1.18
Chloroform	67-66-3	23.5		5.88	1.18	0.588
Chloromethane	74-87-3	23.8		11.8	4.70	2.35
2-Chlorotoluene	95-49-8	20.1		5.88	1.18	0.588

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
4-Chlorotoluene	106-43-4	20.8		5.88	1.18	0.588
1,2-Dibromo-3-chloropropane	96-12-8	14.6		11.8	4.70	2.35
1,2-Dibromoethane	106-93-4	21.2		5.88	1.18	0.588
Dibromomethane	74-95-3	21.4		5.88	1.18	0.588
1,2-Dichlorobenzene	95-50-1	18.9		5.88	1.18	0.588
1,3-Dichlorobenzene	541-73-1	18.1		5.88	1.18	0.588
1,4-Dichlorobenzene	106-46-7	18.3		5.88	1.18	0.588
Dichlorodifluoromethane	75-71-8	29.9		5.88	2.36	1.18
1,1-Dichloroethane	75-34-3	22.3		5.88	2.36	1.18
1,2-Dichloroethane	107-06-2	24.9		5.88	1.18	0.588
1,1-Dichloroethene	75-35-4	24.1		5.88	1.18	0.588
cis-1,2-Dichloroethene	156-59-2	24.2		5.88	1.18	0.588
trans-1,2-Dichloroethene	156-60-5	24.5		5.88	1.18	0.588
1,2-Dichloropropane	78-87-5	25.7		5.88	1.18	0.588
1,3-Dichloropropane	142-28-9	23.0		5.88	1.18	0.588
2,2-Dichloropropane	594-20-7	21.6		5.88	1.18	0.588
cis-1,3-Dichloropropene	10061-01-5	24.2		5.88	1.18	0.588
trans-1,3-Dichloropropene	10061-02-6	21.6		5.88	1.18	0.588
1,1-Dichloropropene	563-58-6	22.9		5.88	1.18	0.588
Ethylbenzene	100-41-4	23.2		5.88	1.18	0.588
2-Hexanone	591-78-6	19.9		11.8	5.88	2.94
Hexachlorobutadiene	87-68-3	19.0		5.88	1.18	0.588
Isopropylbenzene	98-82-8	23.5		5.88	1.18	0.588
p-Isopropyltoluene	99-87-6	19.6		5.88	1.18	0.588
4-Methyl-2-pentanone	108-10-1	21.3		11.8	5.88	2.94
Methylene chloride	75-09-2	23.0		5.88	2.36	1.18
Naphthalene	91-20-3	14.9		5.88	1.18	0.588
n-Propylbenzene	103-65-1	21.0		5.88	1.18	0.588
Styrene	100-42-5	22.6		5.88	1.18	0.588
1,1,1,2-Tetrachloroethane	630-20-6	22.5		5.88	1.18	0.588
1,1,2,2-Tetrachloroethane	79-34-5	17.3		5.88	1.18	0.588
Tetrachloroethene	127-18-4	21.9		5.88	1.18	0.588
Toluene	108-88-3	22.5		5.88	1.18	0.588
1,2,3-Trichlorobenzene	87-61-6	16.8		5.88	1.18	0.588
1,2,4-Trichlorobenzene	120-82-1	16.1		5.88	1.18	0.588
1,1,1-Trichloroethane	71-55-6	24.0		5.88	1.18	0.588
1,1,2-Trichloroethane	79-00-5	21.8		5.88	1.18	0.588
Trichloroethene	79-01-6	29.4		5.88	1.18	0.588
Trichlorofluoromethane	75-69-4	24.2		5.88	2.36	1.18

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Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,3-Trichloropropane	96-18-4	20.1		5.88	2.36	1.18
1,2,4-Trimethylbenzene	95-63-6	19.1		5.88	1.18	0.588
1,3,5-Trimethylbenzene	108-67-8	20.3		5.88	1.18	0.588
Vinyl chloride	75-01-4	24.7		5.88	2.36	1.18
o-Xylene	95-47-6	23.5		5.88	1.18	0.588
m-,p-Xylene	179601-23-1	46.6		5.88	1.18	0.588

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.5	80	120	
1,2-Dichloroethane-d4	103	80	120	
Toluene-d8	95.9	85	115	
4-Bromofluorobenzene	96.3	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030235-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT07(33.5-34.5)030316 MS	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/07/2016 11:10
Collect Date:	03/03/2016 10:00	**Dilution:**	100	**File ID:**	1LM.LM33740
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	82.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2170		480	240	120

Certificate of Analysis

Sample #:	L16030235-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT07(33.5-34.5)030316 MSD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:08
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559982	**Analyst:**	ADC	**Run Date:**	03/07/2016 21:58
Collect Date:	03/03/2016 10:00	**Dilution:**	1	**File ID:**	9M973134
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	23.9	J	24.0	12.0	6.00
Benzene	71-43-2	25.1		6.00	1.20	0.600
Bromobenzene	108-86-1	21.5		6.00	1.20	0.600
Bromochloromethane	74-97-5	23.7		6.00	2.40	1.20
Bromodichloromethane	75-27-4	24.9		6.00	1.20	0.600
Bromoform	75-25-2	20.2		6.00	1.20	0.600
Bromomethane	74-83-9	22.7		6.00	2.40	1.20
2-Butanone	78-93-3	24.3		12.0	6.00	3.00
n-Butylbenzene	104-51-8	22.7		6.00	1.20	0.600
sec-Butylbenzene	135-98-8	24.3		6.00	1.20	0.600
tert-Butylbenzene	98-06-6	24.6		6.00	1.20	0.600
Carbon disulfide	75-15-0	22.6		6.00	1.20	0.600
Carbon tetrachloride	56-23-5	25.3		6.00	1.20	0.600
Chlorobenzene	108-90-7	24.4		6.00	1.20	0.600
Chlorodibromomethane	124-48-1	22.1		6.00	1.20	0.600
Chloroethane	75-00-3	25.4		6.00	2.40	1.20
Chloroform	67-66-3	25.0		6.00	1.20	0.600
Chloromethane	74-87-3	26.3		12.0	4.80	2.40
2-Chlorotoluene	95-49-8	24.2		6.00	1.20	0.600

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Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
4-Chlorotoluene	106-43-4	22.4		6.00	1.20	0.600
1,2-Dibromo-3-chloropropane	96-12-8	18.0		12.0	4.80	2.40
1,2-Dibromoethane	106-93-4	22.9		6.00	1.20	0.600
Dibromomethane	74-95-3	22.4		6.00	1.20	0.600
1,2-Dichlorobenzene	95-50-1	21.5		6.00	1.20	0.600
1,3-Dichlorobenzene	541-73-1	21.4		6.00	1.20	0.600
1,4-Dichlorobenzene	106-46-7	21.4		6.00	1.20	0.600
Dichlorodifluoromethane	75-71-8	32.2		6.00	2.40	1.20
1,1-Dichloroethane	75-34-3	24.3		6.00	2.40	1.20
1,2-Dichloroethane	107-06-2	27.3		6.00	1.20	0.600
1,1-Dichloroethene	75-35-4	25.5		6.00	1.20	0.600
cis-1,2-Dichloroethene	156-59-2	25.8		6.00	1.20	0.600
trans-1,2-Dichloroethene	156-60-5	26.9		6.00	1.20	0.600
1,2-Dichloropropane	78-87-5	26.8		6.00	1.20	0.600
1,3-Dichloropropane	142-28-9	24.5		6.00	1.20	0.600
2,2-Dichloropropane	594-20-7	22.9		6.00	1.20	0.600
cis-1,3-Dichloropropene	10061-01-5	25.8		6.00	1.20	0.600
trans-1,3-Dichloropropene	10061-02-6	23.0		6.00	1.20	0.600
1,1-Dichloropropene	563-58-6	24.9		6.00	1.20	0.600
Ethylbenzene	100-41-4	25.1		6.00	1.20	0.600
2-Hexanone	591-78-6	23.3		12.0	6.00	3.00
Hexachlorobutadiene	87-68-3	22.5		6.00	1.20	0.600
Isopropylbenzene	98-82-8	25.8		6.00	1.20	0.600
p-Isopropyltoluene	99-87-6	22.8		6.00	1.20	0.600
4-Methyl-2-pentanone	108-10-1	24.0		12.0	6.00	3.00
Methylene chloride	75-09-2	24.0		6.00	2.40	1.20
Naphthalene	91-20-3	17.3		6.00	1.20	0.600
n-Propylbenzene	103-65-1	24.2		6.00	1.20	0.600
Styrene	100-42-5	25.0		6.00	1.20	0.600
1,1,1,2-Tetrachloroethane	630-20-6	24.0		6.00	1.20	0.600
1,1,2,2-Tetrachloroethane	79-34-5	19.1		6.00	1.20	0.600
Tetrachloroethene	127-18-4	23.6		6.00	1.20	0.600
Toluene	108-88-3	24.4		6.00	1.20	0.600
1,2,3-Trichlorobenzene	87-61-6	20.0		6.00	1.20	0.600
1,2,4-Trichlorobenzene	120-82-1	19.9		6.00	1.20	0.600
1,1,1-Trichloroethane	71-55-6	25.7		6.00	1.20	0.600
1,1,2-Trichloroethane	79-00-5	23.3		6.00	1.20	0.600
Trichloroethene	79-01-6	30.2		6.00	1.20	0.600
Trichlorofluoromethane	75-69-4	25.2		6.00	2.40	1.20

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Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,3-Trichloropropane	96-18-4	21.1		6.00	2.40	1.20
1,2,4-Trimethylbenzene	95-63-6	22.3		6.00	1.20	0.600
1,3,5-Trimethylbenzene	108-67-8	23.3		6.00	1.20	0.600
Vinyl chloride	75-01-4	27.0		6.00	2.40	1.20
o-Xylene	95-47-6	25.7		6.00	1.20	0.600
m-,p-Xylene	179601-23-1	50.7		6.00	1.20	0.600

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.5	80	120	
1,2-Dichloroethane-d4	99.7	80	120	
Toluene-d8	95.4	85	115	
4-Bromofluorobenzene	99.5	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

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Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030235-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT07(33.5-34.5)030316 MSD	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/07/2016 11:29
Collect Date:	03/03/2016 10:00	**Dilution:**	100	**File ID:**	1LM.LM33741
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	82.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2350		480	240	120

Certificate of Analysis

Sample #:	L16030235-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT07(38-39)030316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:09
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559982	**Analyst:**	ADC	**Run Date:**	03/07/2016 19:53
Collect Date:	03/03/2016 10:10	**Dilution:**	1	**File ID:**	9M973130
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	75.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	15.3	J	25.6	12.8	6.41
Benzene	71-43-2	1.28	U	6.41	1.28	0.641
Bromobenzene	108-86-1	1.28	U	6.41	1.28	0.641
Bromochloromethane	74-97-5	2.56	U	6.41	2.56	1.28
Bromodichloromethane	75-27-4	1.28	U	6.41	1.28	0.641
Bromoform	75-25-2	1.28	U	6.41	1.28	0.641
Bromomethane	74-83-9	2.56	U	6.41	2.56	1.28
2-Butanone	78-93-3	6.40	U	12.8	6.40	3.20
n-Butylbenzene	104-51-8	1.28	U	6.41	1.28	0.641
sec-Butylbenzene	135-98-8	1.28	U	6.41	1.28	0.641
tert-Butylbenzene	98-06-6	1.28	U	6.41	1.28	0.641
Carbon disulfide	75-15-0	1.28	U	6.41	1.28	0.641
Carbon tetrachloride	56-23-5	1.28	U	6.41	1.28	0.641
Chlorobenzene	108-90-7	1.28	U	6.41	1.28	0.641
Chlorodibromomethane	124-48-1	1.28	U	6.41	1.28	0.641
Chloroethane	75-00-3	2.56	U	6.41	2.56	1.28
Chloroform	67-66-3	1.28	U	6.41	1.28	0.641
Chloromethane	74-87-3	5.12	U	12.8	5.12	2.56
2-Chlorotoluene	95-49-8	1.28	U	6.41	1.28	0.641

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Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
4-Chlorotoluene	106-43-4	1.28	U	6.41	1.28	0.641
1,2-Dibromo-3-chloropropane	96-12-8	5.12	U	12.8	5.12	2.56
1,2-Dibromoethane	106-93-4	1.28	U	6.41	1.28	0.641
Dibromomethane	74-95-3	1.28	U	6.41	1.28	0.641
1,2-Dichlorobenzene	95-50-1	1.28	U	6.41	1.28	0.641
1,3-Dichlorobenzene	541-73-1	1.28	U	6.41	1.28	0.641
1,4-Dichlorobenzene	106-46-7	1.28	U	6.41	1.28	0.641
Dichlorodifluoromethane	75-71-8	2.56	U	6.41	2.56	1.28
1,1-Dichloroethane	75-34-3	2.56	U	6.41	2.56	1.28
1,2-Dichloroethane	107-06-2	1.28	U	6.41	1.28	0.641
1,1-Dichloroethene	75-35-4	1.28	U	6.41	1.28	0.641
cis-1,2-Dichloroethene	156-59-2	1.28	U	6.41	1.28	0.641
trans-1,2-Dichloroethene	156-60-5	1.28	U	6.41	1.28	0.641
1,2-Dichloropropane	78-87-5	1.28	U	6.41	1.28	0.641
1,3-Dichloropropane	142-28-9	1.28	U	6.41	1.28	0.641
2,2-Dichloropropane	594-20-7	1.28	U	6.41	1.28	0.641
cis-1,3-Dichloropropene	10061-01-5	1.28	U	6.41	1.28	0.641
trans-1,3-Dichloropropene	10061-02-6	1.28	U	6.41	1.28	0.641
1,1-Dichloropropene	563-58-6	1.28	U	6.41	1.28	0.641
Ethylbenzene	100-41-4	1.28	U	6.41	1.28	0.641
2-Hexanone	591-78-6	6.40	U	12.8	6.40	3.20
Hexachlorobutadiene	87-68-3	1.28	U	6.41	1.28	0.641
Isopropylbenzene	98-82-8	1.28	U	6.41	1.28	0.641
p-Isopropyltoluene	99-87-6	1.28	U	6.41	1.28	0.641
4-Methyl-2-pentanone	108-10-1	6.40	U	12.8	6.40	3.20
Methylene chloride	75-09-2	2.56	U	6.41	2.56	1.28
Naphthalene	91-20-3	1.28	U	6.41	1.28	0.641
n-Propylbenzene	103-65-1	1.28	U	6.41	1.28	0.641
Styrene	100-42-5	1.28	U	6.41	1.28	0.641
1,1,1,2-Tetrachloroethane	630-20-6	1.28	U	6.41	1.28	0.641
1,1,2,2-Tetrachloroethane	79-34-5	1.28	U	6.41	1.28	0.641
Tetrachloroethene	127-18-4	1.28	U	6.41	1.28	0.641
Toluene	108-88-3	1.28	U	6.41	1.28	0.641
1,2,3-Trichlorobenzene	87-61-6	1.28	U	6.41	1.28	0.641
1,2,4-Trichlorobenzene	120-82-1	1.28	U	6.41	1.28	0.641
1,1,1-Trichloroethane	71-55-6	1.28	U	6.41	1.28	0.641
1,1,2-Trichloroethane	79-00-5	1.28	U	6.41	1.28	0.641
Trichloroethene	79-01-6	20.9		6.41	1.28	0.641
Trichlorofluoromethane	75-69-4	2.56	U	6.41	2.56	1.28

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,3-Trichloropropane	96-18-4	2.56	U	6.41	2.56	1.28
1,2,4-Trimethylbenzene	95-63-6	1.28	U	6.41	1.28	0.641
1,3,5-Trimethylbenzene	108-67-8	1.28	U	6.41	1.28	0.641
Vinyl chloride	75-01-4	2.56	U	6.41	2.56	1.28
o-Xylene	95-47-6	1.28	U	6.41	1.28	0.641
m-,p-Xylene	179601-23-1	1.28	U	6.41	1.28	0.641

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.1	80	120	
1,2-Dichloroethane-d4	105	80	120	
Toluene-d8	96.0	85	115	
4-Bromofluorobenzene	99.2	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030235-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT07(38-39)030316	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/07/2016 11:48
Collect Date:	03/03/2016 10:10	**Dilution:**	10	**File ID:**	1LM.LM33742
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	75.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	697		50.8	25.4	12.7

Certificate of Analysis

Sample #:	L16030235-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT07(38-39)030316 FD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:10
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559982	**Analyst:**	ADC	**Run Date:**	03/07/2016 20:24
Collect Date:	03/03/2016 10:10	**Dilution:**	1	**File ID:**	9M973131
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	75.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	16.0	J	28.5	14.3	7.13
Benzene	71-43-2	1.43	U	7.13	1.43	0.713
Bromobenzene	108-86-1	1.43	U	7.13	1.43	0.713
Bromochloromethane	74-97-5	2.86	U	7.13	2.86	1.43
Bromodichloromethane	75-27-4	1.43	U	7.13	1.43	0.713
Bromoform	75-25-2	1.43	U	7.13	1.43	0.713
Bromomethane	74-83-9	2.86	U	7.13	2.86	1.43
2-Butanone	78-93-3	7.12	U	14.3	7.12	3.56
n-Butylbenzene	104-51-8	1.43	U	7.13	1.43	0.713
sec-Butylbenzene	135-98-8	1.43	U	7.13	1.43	0.713
tert-Butylbenzene	98-06-6	1.43	U	7.13	1.43	0.713
Carbon disulfide	75-15-0	1.43	U	7.13	1.43	0.713
Carbon tetrachloride	56-23-5	1.43	U	7.13	1.43	0.713
Chlorobenzene	108-90-7	1.43	U	7.13	1.43	0.713
Chlorodibromomethane	124-48-1	1.43	U	7.13	1.43	0.713
Chloroethane	75-00-3	2.86	U	7.13	2.86	1.43
Chloroform	67-66-3	1.43	U	7.13	1.43	0.713
Chloromethane	74-87-3	5.70	U	14.3	5.70	2.85
2-Chlorotoluene	95-49-8	1.43	U	7.13	1.43	0.713
4-Chlorotoluene	106-43-4	1.43	U	7.13	1.43	0.713

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	5.70	U	14.3	5.70	2.85
1,2-Dibromoethane	106-93-4	1.43	U	7.13	1.43	0.713
Dibromomethane	74-95-3	1.43	U	7.13	1.43	0.713
1,2-Dichlorobenzene	95-50-1	1.43	U	7.13	1.43	0.713
1,3-Dichlorobenzene	541-73-1	1.43	U	7.13	1.43	0.713
1,4-Dichlorobenzene	106-46-7	1.43	U	7.13	1.43	0.713
Dichlorodifluoromethane	75-71-8	2.86	U	7.13	2.86	1.43
1,1-Dichloroethane	75-34-3	2.86	U	7.13	2.86	1.43
1,2-Dichloroethane	107-06-2	1.43	U	7.13	1.43	0.713
1,1-Dichloroethene	75-35-4	1.43	U	7.13	1.43	0.713
cis-1,2-Dichloroethene	156-59-2	1.43	U	7.13	1.43	0.713
trans-1,2-Dichloroethene	156-60-5	1.43	U	7.13	1.43	0.713
1,2-Dichloropropane	78-87-5	1.43	U	7.13	1.43	0.713
1,3-Dichloropropane	142-28-9	1.43	U	7.13	1.43	0.713
2,2-Dichloropropane	594-20-7	1.43	U	7.13	1.43	0.713
cis-1,3-Dichloropropene	10061-01-5	1.43	U	7.13	1.43	0.713
trans-1,3-Dichloropropene	10061-02-6	1.43	U	7.13	1.43	0.713
1,1-Dichloropropene	563-58-6	1.43	U	7.13	1.43	0.713
Ethylbenzene	100-41-4	1.43	U	7.13	1.43	0.713
2-Hexanone	591-78-6	7.12	U	14.3	7.12	3.56
Hexachlorobutadiene	87-68-3	1.43	U	7.13	1.43	0.713
Isopropylbenzene	98-82-8	1.43	U	7.13	1.43	0.713
p-Isopropyltoluene	99-87-6	1.43	U	7.13	1.43	0.713
4-Methyl-2-pentanone	108-10-1	7.12	U	14.3	7.12	3.56
Methylene chloride	75-09-2	2.86	U	7.13	2.86	1.43
Naphthalene	91-20-3	1.43	U	7.13	1.43	0.713
n-Propylbenzene	103-65-1	1.43	U	7.13	1.43	0.713
Styrene	100-42-5	1.43	U	7.13	1.43	0.713
1,1,1,2-Tetrachloroethane	630-20-6	1.43	U	7.13	1.43	0.713
1,1,2,2-Tetrachloroethane	79-34-5	1.43	U	7.13	1.43	0.713
Tetrachloroethene	127-18-4	1.43	U	7.13	1.43	0.713
Toluene	108-88-3	1.43	U	7.13	1.43	0.713
1,2,3-Trichlorobenzene	87-61-6	1.43	U	7.13	1.43	0.713
1,2,4-Trichlorobenzene	120-82-1	1.43	U	7.13	1.43	0.713
1,1,1-Trichloroethane	71-55-6	1.43	U	7.13	1.43	0.713
1,1,2-Trichloroethane	79-00-5	1.43	U	7.13	1.43	0.713
Trichloroethene	79-01-6	17.4		7.13	1.43	0.713
Trichlorofluoromethane	75-69-4	2.86	U	7.13	2.86	1.43
1,2,3-Trichloropropane	96-18-4	2.86	U	7.13	2.86	1.43

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.43	U	7.13	1.43	0.713
1,3,5-Trimethylbenzene	108-67-8	1.43	U	7.13	1.43	0.713
Vinyl chloride	75-01-4	2.86	U	7.13	2.86	1.43
o-Xylene	95-47-6	1.43	U	7.13	1.43	0.713
m-,p-Xylene	179601-23-1	1.43	U	7.13	1.43	0.713

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.7	80	120	
1,2-Dichloroethane-d4	106	80	120	
Toluene-d8	101	85	115	
4-Bromofluorobenzene	101	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030235-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT07(38-39)030316 FD	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/07/2016 12:07
Collect Date:	03/03/2016 10:10	**Dilution:**	10	**File ID:**	1LM.LM33743
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	75.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	622		51.8	25.8	12.9

Certificate of Analysis

Sample #:	L16030235-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT07(27-27.5)030316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:10
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559982	**Analyst:**	ADC	**Run Date:**	03/07/2016 20:55
Collect Date:	03/03/2016 10:15	**Dilution:**	1	**File ID:**	9M973132
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.5	U	23.0	11.5	5.74
Benzene	71-43-2	1.15	U	5.74	1.15	0.574
Bromobenzene	108-86-1	1.15	U	5.74	1.15	0.574
Bromochloromethane	74-97-5	2.30	U	5.74	2.30	1.15
Bromodichloromethane	75-27-4	1.15	U	5.74	1.15	0.574
Bromoform	75-25-2	1.15	U	5.74	1.15	0.574
Bromomethane	74-83-9	2.30	U	5.74	2.30	1.15
2-Butanone	78-93-3	5.74	U	11.5	5.74	2.87
n-Butylbenzene	104-51-8	1.15	U	5.74	1.15	0.574
sec-Butylbenzene	135-98-8	1.15	U	5.74	1.15	0.574
tert-Butylbenzene	98-06-6	1.15	U	5.74	1.15	0.574
Carbon disulfide	75-15-0	1.15	U	5.74	1.15	0.574
Carbon tetrachloride	56-23-5	1.15	U	5.74	1.15	0.574
Chlorobenzene	108-90-7	1.15	U	5.74	1.15	0.574
Chlorodibromomethane	124-48-1	1.15	U	5.74	1.15	0.574
Chloroethane	75-00-3	2.30	U	5.74	2.30	1.15
Chloroform	67-66-3	1.15	U	5.74	1.15	0.574
Chloromethane	74-87-3	4.60	U	11.5	4.60	2.30
2-Chlorotoluene	95-49-8	1.15	U	5.74	1.15	0.574
4-Chlorotoluene	106-43-4	1.15	U	5.74	1.15	0.574

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	4.60	U	11.5	4.60	2.30
1,2-Dibromoethane	106-93-4	1.15	U	5.74	1.15	0.574
Dibromomethane	74-95-3	1.15	U	5.74	1.15	0.574
1,2-Dichlorobenzene	95-50-1	1.15	U	5.74	1.15	0.574
1,3-Dichlorobenzene	541-73-1	1.15	U	5.74	1.15	0.574
1,4-Dichlorobenzene	106-46-7	1.15	U	5.74	1.15	0.574
Dichlorodifluoromethane	75-71-8	2.30	U	5.74	2.30	1.15
1,1-Dichloroethane	75-34-3	2.30	U	5.74	2.30	1.15
1,2-Dichloroethane	107-06-2	1.15	U	5.74	1.15	0.574
1,1-Dichloroethene	75-35-4	1.15	U	5.74	1.15	0.574
cis-1,2-Dichloroethene	156-59-2	2.80	J	5.74	1.15	0.574
trans-1,2-Dichloroethene	156-60-5	1.15	U	5.74	1.15	0.574
1,2-Dichloropropane	78-87-5	1.15	U	5.74	1.15	0.574
1,3-Dichloropropane	142-28-9	1.15	U	5.74	1.15	0.574
2,2-Dichloropropane	594-20-7	1.15	U	5.74	1.15	0.574
cis-1,3-Dichloropropene	10061-01-5	1.15	U	5.74	1.15	0.574
trans-1,3-Dichloropropene	10061-02-6	1.15	U	5.74	1.15	0.574
1,1-Dichloropropene	563-58-6	1.15	U	5.74	1.15	0.574
Ethylbenzene	100-41-4	1.15	U	5.74	1.15	0.574
2-Hexanone	591-78-6	5.74	U	11.5	5.74	2.87
Hexachlorobutadiene	87-68-3	1.15	U	5.74	1.15	0.574
Isopropylbenzene	98-82-8	1.15	U	5.74	1.15	0.574
p-Isopropyltoluene	99-87-6	1.15	U	5.74	1.15	0.574
4-Methyl-2-pentanone	108-10-1	5.74	U	11.5	5.74	2.87
Methylene chloride	75-09-2	2.30	U	5.74	2.30	1.15
Naphthalene	91-20-3	1.15	U	5.74	1.15	0.574
n-Propylbenzene	103-65-1	1.15	U	5.74	1.15	0.574
Styrene	100-42-5	1.15	U	5.74	1.15	0.574
1,1,1,2-Tetrachloroethane	630-20-6	1.15	U	5.74	1.15	0.574
1,1,2,2-Tetrachloroethane	79-34-5	1.15	U	5.74	1.15	0.574
Tetrachloroethene	127-18-4	1.15	U	5.74	1.15	0.574
Toluene	108-88-3	1.15	U	5.74	1.15	0.574
1,2,3-Trichlorobenzene	87-61-6	1.15	U	5.74	1.15	0.574
1,2,4-Trichlorobenzene	120-82-1	1.15	U	5.74	1.15	0.574
1,1,1-Trichloroethane	71-55-6	1.15	U	5.74	1.15	0.574
1,1,2-Trichloroethane	79-00-5	1.15	U	5.74	1.15	0.574
Trichloroethene	79-01-6	3.00	J	5.74	1.15	0.574
Trichlorofluoromethane	75-69-4	2.30	U	5.74	2.30	1.15
1,2,3-Trichloropropane	96-18-4	2.30	U	5.74	2.30	1.15

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Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.15	U	5.74	1.15	0.574
1,3,5-Trimethylbenzene	108-67-8	1.15	U	5.74	1.15	0.574
Vinyl chloride	75-01-4	2.30	U	5.74	2.30	1.15
o-Xylene	95-47-6	1.15	U	5.74	1.15	0.574
m-,p-Xylene	179601-23-1	1.15	U	5.74	1.15	0.574

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.8	80	120	
1,2-Dichloroethane-d4	103	80	120	
Toluene-d8	97.8	85	115	
4-Bromofluorobenzene	102	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030235-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT07(27-27.5)030316	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/07/2016 12:26
Collect Date:	03/03/2016 10:15	**Dilution:**	100	**File ID:**	1LM.LM33744
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	83.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1200		475	238	119

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #: L16030235-01 **Client ID:** 18DPT07(5-5.5)020316 **Matrix:** Soil **Collect Date:** 03/02/2016 16:00

Analyte	Result	Units	Qualifier
Percent Solids	82.3	weight %	

Sample #: L16030235-02 **Client ID:** 18DPT07(15-15.5)020316 **Matrix:** Soil **Collect Date:** 03/02/2016 16:25

Analyte	Result	Units	Qualifier
Percent Solids	76.4	weight %	

Sample #: L16030235-03 **Client ID:** 18DPT07(33.5-34.5)030316 **Matrix:** Soil **Collect Date:** 03/03/2016 10:00

Analyte	Result	Units	Qualifier
Percent Solids	82.2	weight %	

Sample #: L16030235-04 **Client ID:** 18DPT07(33.5-34.5)030316 MS **Matrix:** Soil **Collect Date:** 03/03/2016 10:00

Analyte	Result	Units	Qualifier
Percent Solids	82.2	weight %	

Sample #: L16030235-05 **Client ID:** 18DPT07(33.5-34.5)030316 MSD **Matrix:** Soil **Collect Date:** 03/03/2016 10:00

Analyte	Result	Units	Qualifier
Percent Solids	82.2	weight %	

Sample #: L16030235-06 **Client ID:** 18DPT07(38-39)030316 **Matrix:** Soil **Collect Date:** 03/03/2016 10:10

Analyte	Result	Units	Qualifier
Percent Solids	75.6	weight %	

Sample #: L16030235-07 **Client ID:** 18DPT07(38-39)030316 FD **Matrix:** Soil **Collect Date:** 03/03/2016 10:10

Analyte	Result	Units	Qualifier
Percent Solids	75.6	weight %	

Sample #: L16030235-08 **Client ID:** 18DPT07(27-27.5)030316 **Matrix:** Soil **Collect Date:** 03/03/2016 10:15

Analyte	Result	Units	Qualifier
Percent Solids	83.1	weight %	

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030235-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT07(5-5.5)020316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:06
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559982	**Analyst:**	ADC	**Run Date:**	03/07/2016 18:21
Collect Date:	03/02/2016 16:00	**Dilution:**	1	**File ID:**	9M973127
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	20.8	J	24.7	12.3	6.17
Benzene	71-43-2	1.23	U	6.17	1.23	0.617
Bromobenzene	108-86-1	1.23	U	6.17	1.23	0.617
Bromochloromethane	74-97-5	2.46	U	6.17	2.46	1.23
Bromodichloromethane	75-27-4	1.23	U	6.17	1.23	0.617
Bromoform	75-25-2	1.23	U	6.17	1.23	0.617
Bromomethane	74-83-9	2.46	U	6.17	2.46	1.23
2-Butanone	78-93-3	6.18	U	12.3	6.18	3.09
n-Butylbenzene	104-51-8	1.23	U	6.17	1.23	0.617
sec-Butylbenzene	135-98-8	1.23	U	6.17	1.23	0.617
tert-Butylbenzene	98-06-6	1.23	U	6.17	1.23	0.617
Carbon disulfide	75-15-0	1.23	U	6.17	1.23	0.617
Carbon tetrachloride	56-23-5	1.23	U	6.17	1.23	0.617
Chlorobenzene	108-90-7	1.23	U	6.17	1.23	0.617
Chlorodibromomethane	124-48-1	1.23	U	6.17	1.23	0.617
Chloroethane	75-00-3	2.46	U	6.17	2.46	1.23
Chloroform	67-66-3	1.23	U	6.17	1.23	0.617
Chloromethane	74-87-3	4.94	U	12.3	4.94	2.47
2-Chlorotoluene	95-49-8	1.23	U	6.17	1.23	0.617
4-Chlorotoluene	106-43-4	1.23	U	6.17	1.23	0.617
1,2-Dibromo-3-chloropropane	96-12-8	4.94	U	12.3	4.94	2.47
1,2-Dibromoethane	106-93-4	1.23	U	6.17	1.23	0.617
Dibromomethane	74-95-3	1.23	U	6.17	1.23	0.617
1,2-Dichlorobenzene	95-50-1	1.23	U	6.17	1.23	0.617
1,3-Dichlorobenzene	541-73-1	1.23	U	6.17	1.23	0.617
1,4-Dichlorobenzene	106-46-7	1.23	U	6.17	1.23	0.617
Dichlorodifluoromethane	75-71-8	2.46	U	6.17	2.46	1.23
1,1-Dichloroethane	75-34-3	2.46	U	6.17	2.46	1.23
1,2-Dichloroethane	107-06-2	1.23	U	6.17	1.23	0.617
1,1-Dichloroethene	75-35-4	1.23	U	6.17	1.23	0.617
cis-1,2-Dichloroethene	156-59-2	1.23	U	6.17	1.23	0.617
trans-1,2-Dichloroethene	156-60-5	1.23	U	6.17	1.23	0.617

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Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.23	U	6.17	1.23	0.617
1,3-Dichloropropane	142-28-9	1.23	U	6.17	1.23	0.617
2,2-Dichloropropane	594-20-7	1.23	U	6.17	1.23	0.617
cis-1,3-Dichloropropene	10061-01-5	1.23	U	6.17	1.23	0.617
trans-1,3-Dichloropropene	10061-02-6	1.23	U	6.17	1.23	0.617
1,1-Dichloropropene	563-58-6	1.23	U	6.17	1.23	0.617
Ethylbenzene	100-41-4	1.23	U	6.17	1.23	0.617
2-Hexanone	591-78-6	6.18	U	12.3	6.18	3.09
Hexachlorobutadiene	87-68-3	1.23	U	6.17	1.23	0.617
Isopropylbenzene	98-82-8	1.23	U	6.17	1.23	0.617
p-Isopropyltoluene	99-87-6	1.23	U	6.17	1.23	0.617
4-Methyl-2-pentanone	108-10-1	6.18	U	12.3	6.18	3.09
Methylene chloride	75-09-2	2.46	U	6.17	2.46	1.23
Naphthalene	91-20-3	1.23	U	6.17	1.23	0.617
n-Propylbenzene	103-65-1	1.23	U	6.17	1.23	0.617
Styrene	100-42-5	1.23	U	6.17	1.23	0.617
1,1,1,2-Tetrachloroethane	630-20-6	1.23	U	6.17	1.23	0.617
1,1,2,2-Tetrachloroethane	79-34-5	1.23	U	6.17	1.23	0.617
Tetrachloroethene	127-18-4	1.23	U	6.17	1.23	0.617
Toluene	108-88-3	1.23	U	6.17	1.23	0.617
1,2,3-Trichlorobenzene	87-61-6	1.23	U	6.17	1.23	0.617
1,2,4-Trichlorobenzene	120-82-1	1.23	U	6.17	1.23	0.617
1,1,1-Trichloroethane	71-55-6	1.23	U	6.17	1.23	0.617
1,1,2-Trichloroethane	79-00-5	1.23	U	6.17	1.23	0.617
Trichloroethene	79-01-6	1.23	U	6.17	1.23	0.617
Trichlorofluoromethane	75-69-4	2.46	U	6.17	2.46	1.23
1,2,3-Trichloropropane	96-18-4	2.46	U	6.17	2.46	1.23
1,2,4-Trimethylbenzene	95-63-6	1.23	U	6.17	1.23	0.617
1,3,5-Trimethylbenzene	108-67-8	1.23	U	6.17	1.23	0.617
Vinyl chloride	75-01-4	2.46	U	6.17	2.46	1.23
o-Xylene	95-47-6	1.23	U	6.17	1.23	0.617
m-,p-Xylene	179601-23-1	1.23	U	6.17	1.23	0.617

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.7	80	120	
1,2-Dichloroethane-d4	102	80	120	
Toluene-d8	98.8	85	115	
4-Bromofluorobenzene	105	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030235-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT07(15-15.5)020316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:06
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559982	**Analyst:**	ADC	**Run Date:**	03/07/2016 18:51
Collect Date:	03/02/2016 16:25	**Dilution:**	1	**File ID:**	9M973128
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	76.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	24.9	12.5	6.23
Benzene	71-43-2	1.25	U	6.23	1.25	0.623
Bromobenzene	108-86-1	1.25	U	6.23	1.25	0.623
Bromochloromethane	74-97-5	2.50	U	6.23	2.50	1.25
Bromodichloromethane	75-27-4	1.25	U	6.23	1.25	0.623
Bromoform	75-25-2	1.25	U	6.23	1.25	0.623
Bromomethane	74-83-9	2.50	U	6.23	2.50	1.25
2-Butanone	78-93-3	6.24	U	12.5	6.24	3.12
n-Butylbenzene	104-51-8	1.25	U	6.23	1.25	0.623
sec-Butylbenzene	135-98-8	1.25	U	6.23	1.25	0.623
tert-Butylbenzene	98-06-6	1.25	U	6.23	1.25	0.623
Carbon disulfide	75-15-0	1.25	U	6.23	1.25	0.623
Carbon tetrachloride	56-23-5	1.25	U	6.23	1.25	0.623
Chlorobenzene	108-90-7	1.25	U	6.23	1.25	0.623
Chlorodibromomethane	124-48-1	1.25	U	6.23	1.25	0.623
Chloroethane	75-00-3	2.50	U	6.23	2.50	1.25
Chloroform	67-66-3	1.25	U	6.23	1.25	0.623
Chloromethane	74-87-3	4.98	U	12.5	4.98	2.49
2-Chlorotoluene	95-49-8	1.25	U	6.23	1.25	0.623
4-Chlorotoluene	106-43-4	1.25	U	6.23	1.25	0.623
1,2-Dibromo-3-chloropropane	96-12-8	4.98	U	12.5	4.98	2.49
1,2-Dibromoethane	106-93-4	1.25	U	6.23	1.25	0.623
Dibromomethane	74-95-3	1.25	U	6.23	1.25	0.623
1,2-Dichlorobenzene	95-50-1	1.25	U	6.23	1.25	0.623
1,3-Dichlorobenzene	541-73-1	1.25	U	6.23	1.25	0.623
1,4-Dichlorobenzene	106-46-7	1.25	U	6.23	1.25	0.623
Dichlorodifluoromethane	75-71-8	2.50	U	6.23	2.50	1.25
1,1-Dichloroethane	75-34-3	2.50	U	6.23	2.50	1.25
1,2-Dichloroethane	107-06-2	1.25	U	6.23	1.25	0.623
1,1-Dichloroethene	75-35-4	1.25	U	6.23	1.25	0.623
cis-1,2-Dichloroethene	156-59-2	1.36	J	6.23	1.25	0.623

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.25	U	6.23	1.25	0.623
1,2-Dichloropropane	78-87-5	1.25	U	6.23	1.25	0.623
1,3-Dichloropropane	142-28-9	1.25	U	6.23	1.25	0.623
2,2-Dichloropropane	594-20-7	1.25	U	6.23	1.25	0.623
cis-1,3-Dichloropropene	10061-01-5	1.25	U	6.23	1.25	0.623
trans-1,3-Dichloropropene	10061-02-6	1.25	U	6.23	1.25	0.623
1,1-Dichloropropene	563-58-6	1.25	U	6.23	1.25	0.623
Ethylbenzene	100-41-4	1.25	U	6.23	1.25	0.623
2-Hexanone	591-78-6	6.24	U	12.5	6.24	3.12
Hexachlorobutadiene	87-68-3	1.25	U	6.23	1.25	0.623
Isopropylbenzene	98-82-8	1.25	U	6.23	1.25	0.623
p-Isopropyltoluene	99-87-6	1.25	U	6.23	1.25	0.623
4-Methyl-2-pentanone	108-10-1	6.24	U	12.5	6.24	3.12
Methylene chloride	75-09-2	2.50	U	6.23	2.50	1.25
Naphthalene	91-20-3	1.25	U	6.23	1.25	0.623
n-Propylbenzene	103-65-1	1.25	U	6.23	1.25	0.623
Styrene	100-42-5	1.25	U	6.23	1.25	0.623
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	6.23	1.25	0.623
1,1,2,2-Tetrachloroethane	79-34-5	1.25	U	6.23	1.25	0.623
Tetrachloroethene	127-18-4	1.25	U	6.23	1.25	0.623
Toluene	108-88-3	1.25	U	6.23	1.25	0.623
1,2,3-Trichlorobenzene	87-61-6	1.25	U	6.23	1.25	0.623
1,2,4-Trichlorobenzene	120-82-1	1.25	U	6.23	1.25	0.623
1,1,1-Trichloroethane	71-55-6	1.25	U	6.23	1.25	0.623
1,1,2-Trichloroethane	79-00-5	1.25	U	6.23	1.25	0.623
Trichloroethene	79-01-6	2.73	J	6.23	1.25	0.623
Trichlorofluoromethane	75-69-4	2.50	U	6.23	2.50	1.25
1,2,3-Trichloropropane	96-18-4	2.50	U	6.23	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	6.23	1.25	0.623
1,3,5-Trimethylbenzene	108-67-8	1.25	U	6.23	1.25	0.623
Vinyl chloride	75-01-4	2.50	U	6.23	2.50	1.25
o-Xylene	95-47-6	1.25	U	6.23	1.25	0.623
m-,p-Xylene	179601-23-1	1.25	U	6.23	1.25	0.623

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.8	80	120	
1,2-Dichloroethane-d4	113	80	120	
Toluene-d8	97.2	85	115	
4-Bromofluorobenzene	99.7	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030235-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT07(33.5-34.5)030316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:07
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559982	**Analyst:**	ADC	**Run Date:**	03/07/2016 19:22
Collect Date:	03/03/2016 10:00	**Dilution:**	1	**File ID:**	9M973129
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.1	U	22.2	11.1	5.55
Benzene	71-43-2	1.11	U	5.55	1.11	0.555
Bromobenzene	108-86-1	1.11	U	5.55	1.11	0.555
Bromochloromethane	74-97-5	2.22	U	5.55	2.22	1.11
Bromodichloromethane	75-27-4	1.11	U	5.55	1.11	0.555
Bromoform	75-25-2	1.11	U	5.55	1.11	0.555
Bromomethane	74-83-9	2.22	U	5.55	2.22	1.11
2-Butanone	78-93-3	5.56	U	11.1	5.56	2.78
n-Butylbenzene	104-51-8	1.11	U	5.55	1.11	0.555
sec-Butylbenzene	135-98-8	1.11	U	5.55	1.11	0.555
tert-Butylbenzene	98-06-6	1.11	U	5.55	1.11	0.555
Carbon disulfide	75-15-0	1.11	U	5.55	1.11	0.555
Carbon tetrachloride	56-23-5	1.11	U	5.55	1.11	0.555
Chlorobenzene	108-90-7	1.11	U	5.55	1.11	0.555
Chlorodibromomethane	124-48-1	1.11	U	5.55	1.11	0.555
Chloroethane	75-00-3	2.22	U	5.55	2.22	1.11
Chloroform	67-66-3	1.11	U	5.55	1.11	0.555
Chloromethane	74-87-3	4.44	U	11.1	4.44	2.22
2-Chlorotoluene	95-49-8	1.11	U	5.55	1.11	0.555
4-Chlorotoluene	106-43-4	1.11	U	5.55	1.11	0.555
1,2-Dibromo-3-chloropropane	96-12-8	4.44	U	11.1	4.44	2.22
1,2-Dibromoethane	106-93-4	1.11	U	5.55	1.11	0.555
Dibromomethane	74-95-3	1.11	U	5.55	1.11	0.555
1,2-Dichlorobenzene	95-50-1	1.11	U	5.55	1.11	0.555
1,3-Dichlorobenzene	541-73-1	1.11	U	5.55	1.11	0.555
1,4-Dichlorobenzene	106-46-7	1.11	U	5.55	1.11	0.555
Dichlorodifluoromethane	75-71-8	2.22	U	5.55	2.22	1.11
1,1-Dichloroethane	75-34-3	2.22	U	5.55	2.22	1.11
1,2-Dichloroethane	107-06-2	1.11	U	5.55	1.11	0.555
1,1-Dichloroethene	75-35-4	1.11	U	5.55	1.11	0.555
cis-1,2-Dichloroethene	156-59-2	1.11	U	5.55	1.11	0.555

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Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.11	U	5.55	1.11	0.555
1,2-Dichloropropane	78-87-5	1.11	U	5.55	1.11	0.555
1,3-Dichloropropane	142-28-9	1.11	U	5.55	1.11	0.555
2,2-Dichloropropane	594-20-7	1.11	U	5.55	1.11	0.555
cis-1,3-Dichloropropene	10061-01-5	1.11	U	5.55	1.11	0.555
trans-1,3-Dichloropropene	10061-02-6	1.11	U	5.55	1.11	0.555
1,1-Dichloropropene	563-58-6	1.11	U	5.55	1.11	0.555
Ethylbenzene	100-41-4	1.11	U	5.55	1.11	0.555
2-Hexanone	591-78-6	5.56	U	11.1	5.56	2.78
Hexachlorobutadiene	87-68-3	1.11	U	5.55	1.11	0.555
Isopropylbenzene	98-82-8	1.11	U	5.55	1.11	0.555
p-Isopropyltoluene	99-87-6	1.11	U	5.55	1.11	0.555
4-Methyl-2-pentanone	108-10-1	5.56	U	11.1	5.56	2.78
Methylene chloride	75-09-2	2.22	U	5.55	2.22	1.11
Naphthalene	91-20-3	1.11	U	5.55	1.11	0.555
n-Propylbenzene	103-65-1	1.11	U	5.55	1.11	0.555
Styrene	100-42-5	1.11	U	5.55	1.11	0.555
1,1,1,2-Tetrachloroethane	630-20-6	1.11	U	5.55	1.11	0.555
1,1,2,2-Tetrachloroethane	79-34-5	1.11	U	5.55	1.11	0.555
Tetrachloroethene	127-18-4	1.11	U	5.55	1.11	0.555
Toluene	108-88-3	1.11	U	5.55	1.11	0.555
1,2,3-Trichlorobenzene	87-61-6	1.11	U	5.55	1.11	0.555
1,2,4-Trichlorobenzene	120-82-1	1.11	U	5.55	1.11	0.555
1,1,1-Trichloroethane	71-55-6	1.11	U	5.55	1.11	0.555
1,1,2-Trichloroethane	79-00-5	1.11	U	5.55	1.11	0.555
Trichloroethene	79-01-6	5.03	J	5.55	1.11	0.555
Trichlorofluoromethane	75-69-4	2.22	U	5.55	2.22	1.11
1,2,3-Trichloropropane	96-18-4	2.22	U	5.55	2.22	1.11
1,2,4-Trimethylbenzene	95-63-6	1.11	U	5.55	1.11	0.555
1,3,5-Trimethylbenzene	108-67-8	1.11	U	5.55	1.11	0.555
Vinyl chloride	75-01-4	2.22	U	5.55	2.22	1.11
o-Xylene	95-47-6	1.11	U	5.55	1.11	0.555
m-,p-Xylene	179601-23-1	1.11	U	5.55	1.11	0.555

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.8	80	120	
1,2-Dichloroethane-d4	100	80	120	
Toluene-d8	97.6	85	115	
4-Bromofluorobenzene	98.9	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030235-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT07(33.5-34.5)030316 MS	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:07
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559982	**Analyst:**	ADC	**Run Date:**	03/07/2016 21:26
Collect Date:	03/03/2016 10:00	**Dilution:**	1	**File ID:**	9M973133
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	22.3	J	23.5	11.8	5.88
Benzene	71-43-2	22.9		5.88	1.18	0.588
Bromobenzene	108-86-1	18.8		5.88	1.18	0.588
Bromochloromethane	74-97-5	23.1		5.88	2.36	1.18
Bromodichloromethane	75-27-4	23.2		5.88	1.18	0.588
Bromoform	75-25-2	18.9		5.88	1.18	0.588
Bromomethane	74-83-9	20.9		5.88	2.36	1.18
2-Butanone	78-93-3	22.1		11.8	5.88	2.94
n-Butylbenzene	104-51-8	19.2		5.88	1.18	0.588
sec-Butylbenzene	135-98-8	20.5		5.88	1.18	0.588
tert-Butylbenzene	98-06-6	21.2		5.88	1.18	0.588
Carbon disulfide	75-15-0	19.6		5.88	1.18	0.588
Carbon tetrachloride	56-23-5	22.9		5.88	1.18	0.588
Chlorobenzene	108-90-7	22.8		5.88	1.18	0.588
Chlorodibromomethane	124-48-1	21.1		5.88	1.18	0.588
Chloroethane	75-00-3	25.1		5.88	2.36	1.18
Chloroform	67-66-3	23.5		5.88	1.18	0.588
Chloromethane	74-87-3	23.8		11.8	4.70	2.35
2-Chlorotoluene	95-49-8	20.1		5.88	1.18	0.588
4-Chlorotoluene	106-43-4	20.8		5.88	1.18	0.588
1,2-Dibromo-3-chloropropane	96-12-8	14.6		11.8	4.70	2.35
1,2-Dibromoethane	106-93-4	21.2		5.88	1.18	0.588
Dibromomethane	74-95-3	21.4		5.88	1.18	0.588
1,2-Dichlorobenzene	95-50-1	18.9		5.88	1.18	0.588
1,3-Dichlorobenzene	541-73-1	18.1		5.88	1.18	0.588
1,4-Dichlorobenzene	106-46-7	18.3		5.88	1.18	0.588
Dichlorodifluoromethane	75-71-8	29.9		5.88	2.36	1.18
1,1-Dichloroethane	75-34-3	22.3		5.88	2.36	1.18
1,2-Dichloroethane	107-06-2	24.9		5.88	1.18	0.588
1,1-Dichloroethene	75-35-4	24.1		5.88	1.18	0.588

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Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	24.2		5.88	1.18	0.588
trans-1,2-Dichloroethene	156-60-5	24.5		5.88	1.18	0.588
1,2-Dichloropropane	78-87-5	25.7		5.88	1.18	0.588
1,3-Dichloropropane	142-28-9	23.0		5.88	1.18	0.588
2,2-Dichloropropane	594-20-7	21.6		5.88	1.18	0.588
cis-1,3-Dichloropropene	10061-01-5	24.2		5.88	1.18	0.588
trans-1,3-Dichloropropene	10061-02-6	21.6		5.88	1.18	0.588
1,1-Dichloropropene	563-58-6	22.9		5.88	1.18	0.588
Ethylbenzene	100-41-4	23.2		5.88	1.18	0.588
2-Hexanone	591-78-6	19.9		11.8	5.88	2.94
Hexachlorobutadiene	87-68-3	19.0		5.88	1.18	0.588
Isopropylbenzene	98-82-8	23.5		5.88	1.18	0.588
p-Isopropyltoluene	99-87-6	19.6		5.88	1.18	0.588
4-Methyl-2-pentanone	108-10-1	21.3		11.8	5.88	2.94
Methylene chloride	75-09-2	23.0		5.88	2.36	1.18
Naphthalene	91-20-3	14.9		5.88	1.18	0.588
n-Propylbenzene	103-65-1	21.0		5.88	1.18	0.588
Styrene	100-42-5	22.6		5.88	1.18	0.588
1,1,1,2-Tetrachloroethane	630-20-6	22.5		5.88	1.18	0.588
1,1,2,2-Tetrachloroethane	79-34-5	17.3		5.88	1.18	0.588
Tetrachloroethene	127-18-4	21.9		5.88	1.18	0.588
Toluene	108-88-3	22.5		5.88	1.18	0.588
1,2,3-Trichlorobenzene	87-61-6	16.8		5.88	1.18	0.588
1,2,4-Trichlorobenzene	120-82-1	16.1		5.88	1.18	0.588
1,1,1-Trichloroethane	71-55-6	24.0		5.88	1.18	0.588
1,1,2-Trichloroethane	79-00-5	21.8		5.88	1.18	0.588
Trichloroethene	79-01-6	29.4		5.88	1.18	0.588
Trichlorofluoromethane	75-69-4	24.2		5.88	2.36	1.18
1,2,3-Trichloropropane	96-18-4	20.1		5.88	2.36	1.18
1,2,4-Trimethylbenzene	95-63-6	19.1		5.88	1.18	0.588
1,3,5-Trimethylbenzene	108-67-8	20.3		5.88	1.18	0.588
Vinyl chloride	75-01-4	24.7		5.88	2.36	1.18
o-Xylene	95-47-6	23.5		5.88	1.18	0.588
m-,p-Xylene	179601-23-1	46.6		5.88	1.18	0.588

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.5	80	120	
1,2-Dichloroethane-d4	103	80	120	
Toluene-d8	95.9	85	115	
4-Bromofluorobenzene	96.3	85	120	

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

J	Estimated value ; the analyte concentration was less than the LOQ.

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Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030235-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT07(33.5-34.5)030316 MSD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:08
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559982	**Analyst:**	ADC	**Run Date:**	03/07/2016 21:58
Collect Date:	03/03/2016 10:00	**Dilution:**	1	**File ID:**	9M973134
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	23.9	J	24.0	12.0	6.00
Benzene	71-43-2	25.1		6.00	1.20	0.600
Bromobenzene	108-86-1	21.5		6.00	1.20	0.600
Bromochloromethane	74-97-5	23.7		6.00	2.40	1.20
Bromodichloromethane	75-27-4	24.9		6.00	1.20	0.600
Bromoform	75-25-2	20.2		6.00	1.20	0.600
Bromomethane	74-83-9	22.7		6.00	2.40	1.20
2-Butanone	78-93-3	24.3		12.0	6.00	3.00
n-Butylbenzene	104-51-8	22.7		6.00	1.20	0.600
sec-Butylbenzene	135-98-8	24.3		6.00	1.20	0.600
tert-Butylbenzene	98-06-6	24.6		6.00	1.20	0.600
Carbon disulfide	75-15-0	22.6		6.00	1.20	0.600
Carbon tetrachloride	56-23-5	25.3		6.00	1.20	0.600
Chlorobenzene	108-90-7	24.4		6.00	1.20	0.600
Chlorodibromomethane	124-48-1	22.1		6.00	1.20	0.600
Chloroethane	75-00-3	25.4		6.00	2.40	1.20
Chloroform	67-66-3	25.0		6.00	1.20	0.600
Chloromethane	74-87-3	26.3		12.0	4.80	2.40
2-Chlorotoluene	95-49-8	24.2		6.00	1.20	0.600
4-Chlorotoluene	106-43-4	22.4		6.00	1.20	0.600
1,2-Dibromo-3-chloropropane	96-12-8	18.0		12.0	4.80	2.40
1,2-Dibromoethane	106-93-4	22.9		6.00	1.20	0.600
Dibromomethane	74-95-3	22.4		6.00	1.20	0.600
1,2-Dichlorobenzene	95-50-1	21.5		6.00	1.20	0.600
1,3-Dichlorobenzene	541-73-1	21.4		6.00	1.20	0.600
1,4-Dichlorobenzene	106-46-7	21.4		6.00	1.20	0.600
Dichlorodifluoromethane	75-71-8	32.2		6.00	2.40	1.20
1,1-Dichloroethane	75-34-3	24.3		6.00	2.40	1.20
1,2-Dichloroethane	107-06-2	27.3		6.00	1.20	0.600
1,1-Dichloroethene	75-35-4	25.5		6.00	1.20	0.600

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Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	25.8		6.00	1.20	0.600
trans-1,2-Dichloroethene	156-60-5	26.9		6.00	1.20	0.600
1,2-Dichloropropane	78-87-5	26.8		6.00	1.20	0.600
1,3-Dichloropropane	142-28-9	24.5		6.00	1.20	0.600
2,2-Dichloropropane	594-20-7	22.9		6.00	1.20	0.600
cis-1,3-Dichloropropene	10061-01-5	25.8		6.00	1.20	0.600
trans-1,3-Dichloropropene	10061-02-6	23.0		6.00	1.20	0.600
1,1-Dichloropropene	563-58-6	24.9		6.00	1.20	0.600
Ethylbenzene	100-41-4	25.1		6.00	1.20	0.600
2-Hexanone	591-78-6	23.3		12.0	6.00	3.00
Hexachlorobutadiene	87-68-3	22.5		6.00	1.20	0.600
Isopropylbenzene	98-82-8	25.8		6.00	1.20	0.600
p-Isopropyltoluene	99-87-6	22.8		6.00	1.20	0.600
4-Methyl-2-pentanone	108-10-1	24.0		12.0	6.00	3.00
Methylene chloride	75-09-2	24.0		6.00	2.40	1.20
Naphthalene	91-20-3	17.3		6.00	1.20	0.600
n-Propylbenzene	103-65-1	24.2		6.00	1.20	0.600
Styrene	100-42-5	25.0		6.00	1.20	0.600
1,1,1,2-Tetrachloroethane	630-20-6	24.0		6.00	1.20	0.600
1,1,2,2-Tetrachloroethane	79-34-5	19.1		6.00	1.20	0.600
Tetrachloroethene	127-18-4	23.6		6.00	1.20	0.600
Toluene	108-88-3	24.4		6.00	1.20	0.600
1,2,3-Trichlorobenzene	87-61-6	20.0		6.00	1.20	0.600
1,2,4-Trichlorobenzene	120-82-1	19.9		6.00	1.20	0.600
1,1,1-Trichloroethane	71-55-6	25.7		6.00	1.20	0.600
1,1,2-Trichloroethane	79-00-5	23.3		6.00	1.20	0.600
Trichloroethene	79-01-6	30.2		6.00	1.20	0.600
Trichlorofluoromethane	75-69-4	25.2		6.00	2.40	1.20
1,2,3-Trichloropropane	96-18-4	21.1		6.00	2.40	1.20
1,2,4-Trimethylbenzene	95-63-6	22.3		6.00	1.20	0.600
1,3,5-Trimethylbenzene	108-67-8	23.3		6.00	1.20	0.600
Vinyl chloride	75-01-4	27.0		6.00	2.40	1.20
o-Xylene	95-47-6	25.7		6.00	1.20	0.600
m-,p-Xylene	179601-23-1	50.7		6.00	1.20	0.600

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.5	80	120	
1,2-Dichloroethane-d4	99.7	80	120	
Toluene-d8	95.4	85	115	
4-Bromofluorobenzene	99.5	85	120	

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Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030235-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT07(38-39)030316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:09
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559982	**Analyst:**	ADC	**Run Date:**	03/07/2016 19:53
Collect Date:	03/03/2016 10:10	**Dilution:**	1	**File ID:**	9M973130
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	75.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	15.3	J	25.6	12.8	6.41
Benzene	71-43-2	1.28	U	6.41	1.28	0.641
Bromobenzene	108-86-1	1.28	U	6.41	1.28	0.641
Bromochloromethane	74-97-5	2.56	U	6.41	2.56	1.28
Bromodichloromethane	75-27-4	1.28	U	6.41	1.28	0.641
Bromoform	75-25-2	1.28	U	6.41	1.28	0.641
Bromomethane	74-83-9	2.56	U	6.41	2.56	1.28
2-Butanone	78-93-3	6.40	U	12.8	6.40	3.20
n-Butylbenzene	104-51-8	1.28	U	6.41	1.28	0.641
sec-Butylbenzene	135-98-8	1.28	U	6.41	1.28	0.641
tert-Butylbenzene	98-06-6	1.28	U	6.41	1.28	0.641
Carbon disulfide	75-15-0	1.28	U	6.41	1.28	0.641
Carbon tetrachloride	56-23-5	1.28	U	6.41	1.28	0.641
Chlorobenzene	108-90-7	1.28	U	6.41	1.28	0.641
Chlorodibromomethane	124-48-1	1.28	U	6.41	1.28	0.641
Chloroethane	75-00-3	2.56	U	6.41	2.56	1.28
Chloroform	67-66-3	1.28	U	6.41	1.28	0.641
Chloromethane	74-87-3	5.12	U	12.8	5.12	2.56
2-Chlorotoluene	95-49-8	1.28	U	6.41	1.28	0.641
4-Chlorotoluene	106-43-4	1.28	U	6.41	1.28	0.641
1,2-Dibromo-3-chloropropane	96-12-8	5.12	U	12.8	5.12	2.56
1,2-Dibromoethane	106-93-4	1.28	U	6.41	1.28	0.641
Dibromomethane	74-95-3	1.28	U	6.41	1.28	0.641
1,2-Dichlorobenzene	95-50-1	1.28	U	6.41	1.28	0.641
1,3-Dichlorobenzene	541-73-1	1.28	U	6.41	1.28	0.641
1,4-Dichlorobenzene	106-46-7	1.28	U	6.41	1.28	0.641
Dichlorodifluoromethane	75-71-8	2.56	U	6.41	2.56	1.28
1,1-Dichloroethane	75-34-3	2.56	U	6.41	2.56	1.28
1,2-Dichloroethane	107-06-2	1.28	U	6.41	1.28	0.641
1,1-Dichloroethene	75-35-4	1.28	U	6.41	1.28	0.641
cis-1,2-Dichloroethene	156-59-2	1.28	U	6.41	1.28	0.641

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Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.28	U	6.41	1.28	0.641
1,2-Dichloropropane	78-87-5	1.28	U	6.41	1.28	0.641
1,3-Dichloropropane	142-28-9	1.28	U	6.41	1.28	0.641
2,2-Dichloropropane	594-20-7	1.28	U	6.41	1.28	0.641
cis-1,3-Dichloropropene	10061-01-5	1.28	U	6.41	1.28	0.641
trans-1,3-Dichloropropene	10061-02-6	1.28	U	6.41	1.28	0.641
1,1-Dichloropropene	563-58-6	1.28	U	6.41	1.28	0.641
Ethylbenzene	100-41-4	1.28	U	6.41	1.28	0.641
2-Hexanone	591-78-6	6.40	U	12.8	6.40	3.20
Hexachlorobutadiene	87-68-3	1.28	U	6.41	1.28	0.641
Isopropylbenzene	98-82-8	1.28	U	6.41	1.28	0.641
p-Isopropyltoluene	99-87-6	1.28	U	6.41	1.28	0.641
4-Methyl-2-pentanone	108-10-1	6.40	U	12.8	6.40	3.20
Methylene chloride	75-09-2	2.56	U	6.41	2.56	1.28
Naphthalene	91-20-3	1.28	U	6.41	1.28	0.641
n-Propylbenzene	103-65-1	1.28	U	6.41	1.28	0.641
Styrene	100-42-5	1.28	U	6.41	1.28	0.641
1,1,1,2-Tetrachloroethane	630-20-6	1.28	U	6.41	1.28	0.641
1,1,2,2-Tetrachloroethane	79-34-5	1.28	U	6.41	1.28	0.641
Tetrachloroethene	127-18-4	1.28	U	6.41	1.28	0.641
Toluene	108-88-3	1.28	U	6.41	1.28	0.641
1,2,3-Trichlorobenzene	87-61-6	1.28	U	6.41	1.28	0.641
1,2,4-Trichlorobenzene	120-82-1	1.28	U	6.41	1.28	0.641
1,1,1-Trichloroethane	71-55-6	1.28	U	6.41	1.28	0.641
1,1,2-Trichloroethane	79-00-5	1.28	U	6.41	1.28	0.641
Trichloroethene	79-01-6	20.9		6.41	1.28	0.641
Trichlorofluoromethane	75-69-4	2.56	U	6.41	2.56	1.28
1,2,3-Trichloropropane	96-18-4	2.56	U	6.41	2.56	1.28
1,2,4-Trimethylbenzene	95-63-6	1.28	U	6.41	1.28	0.641
1,3,5-Trimethylbenzene	108-67-8	1.28	U	6.41	1.28	0.641
Vinyl chloride	75-01-4	2.56	U	6.41	2.56	1.28
o-Xylene	95-47-6	1.28	U	6.41	1.28	0.641
m-,p-Xylene	179601-23-1	1.28	U	6.41	1.28	0.641

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.1	80	120	
1,2-Dichloroethane-d4	105	80	120	
Toluene-d8	96.0	85	115	
4-Bromofluorobenzene	99.2	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030235-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT07(38-39)030316 FD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:10
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559982	**Analyst:**	ADC	**Run Date:**	03/07/2016 20:24
Collect Date:	03/03/2016 10:10	**Dilution:**	1	**File ID:**	9M973131
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	75.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	16.0	J	28.5	14.3	7.13
Benzene	71-43-2	1.43	U	7.13	1.43	0.713
Bromobenzene	108-86-1	1.43	U	7.13	1.43	0.713
Bromochloromethane	74-97-5	2.86	U	7.13	2.86	1.43
Bromodichloromethane	75-27-4	1.43	U	7.13	1.43	0.713
Bromoform	75-25-2	1.43	U	7.13	1.43	0.713
Bromomethane	74-83-9	2.86	U	7.13	2.86	1.43
2-Butanone	78-93-3	7.12	U	14.3	7.12	3.56
n-Butylbenzene	104-51-8	1.43	U	7.13	1.43	0.713
sec-Butylbenzene	135-98-8	1.43	U	7.13	1.43	0.713
tert-Butylbenzene	98-06-6	1.43	U	7.13	1.43	0.713
Carbon disulfide	75-15-0	1.43	U	7.13	1.43	0.713
Carbon tetrachloride	56-23-5	1.43	U	7.13	1.43	0.713
Chlorobenzene	108-90-7	1.43	U	7.13	1.43	0.713
Chlorodibromomethane	124-48-1	1.43	U	7.13	1.43	0.713
Chloroethane	75-00-3	2.86	U	7.13	2.86	1.43
Chloroform	67-66-3	1.43	U	7.13	1.43	0.713
Chloromethane	74-87-3	5.70	U	14.3	5.70	2.85
2-Chlorotoluene	95-49-8	1.43	U	7.13	1.43	0.713
4-Chlorotoluene	106-43-4	1.43	U	7.13	1.43	0.713
1,2-Dibromo-3-chloropropane	96-12-8	5.70	U	14.3	5.70	2.85
1,2-Dibromoethane	106-93-4	1.43	U	7.13	1.43	0.713
Dibromomethane	74-95-3	1.43	U	7.13	1.43	0.713
1,2-Dichlorobenzene	95-50-1	1.43	U	7.13	1.43	0.713
1,3-Dichlorobenzene	541-73-1	1.43	U	7.13	1.43	0.713
1,4-Dichlorobenzene	106-46-7	1.43	U	7.13	1.43	0.713
Dichlorodifluoromethane	75-71-8	2.86	U	7.13	2.86	1.43
1,1-Dichloroethane	75-34-3	2.86	U	7.13	2.86	1.43
1,2-Dichloroethane	107-06-2	1.43	U	7.13	1.43	0.713
1,1-Dichloroethene	75-35-4	1.43	U	7.13	1.43	0.713
cis-1,2-Dichloroethene	156-59-2	1.43	U	7.13	1.43	0.713

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Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.43	U	7.13	1.43	0.713
1,2-Dichloropropane	78-87-5	1.43	U	7.13	1.43	0.713
1,3-Dichloropropane	142-28-9	1.43	U	7.13	1.43	0.713
2,2-Dichloropropane	594-20-7	1.43	U	7.13	1.43	0.713
cis-1,3-Dichloropropene	10061-01-5	1.43	U	7.13	1.43	0.713
trans-1,3-Dichloropropene	10061-02-6	1.43	U	7.13	1.43	0.713
1,1-Dichloropropene	563-58-6	1.43	U	7.13	1.43	0.713
Ethylbenzene	100-41-4	1.43	U	7.13	1.43	0.713
2-Hexanone	591-78-6	7.12	U	14.3	7.12	3.56
Hexachlorobutadiene	87-68-3	1.43	U	7.13	1.43	0.713
Isopropylbenzene	98-82-8	1.43	U	7.13	1.43	0.713
p-Isopropyltoluene	99-87-6	1.43	U	7.13	1.43	0.713
4-Methyl-2-pentanone	108-10-1	7.12	U	14.3	7.12	3.56
Methylene chloride	75-09-2	2.86	U	7.13	2.86	1.43
Naphthalene	91-20-3	1.43	U	7.13	1.43	0.713
n-Propylbenzene	103-65-1	1.43	U	7.13	1.43	0.713
Styrene	100-42-5	1.43	U	7.13	1.43	0.713
1,1,1,2-Tetrachloroethane	630-20-6	1.43	U	7.13	1.43	0.713
1,1,2,2-Tetrachloroethane	79-34-5	1.43	U	7.13	1.43	0.713
Tetrachloroethene	127-18-4	1.43	U	7.13	1.43	0.713
Toluene	108-88-3	1.43	U	7.13	1.43	0.713
1,2,3-Trichlorobenzene	87-61-6	1.43	U	7.13	1.43	0.713
1,2,4-Trichlorobenzene	120-82-1	1.43	U	7.13	1.43	0.713
1,1,1-Trichloroethane	71-55-6	1.43	U	7.13	1.43	0.713
1,1,2-Trichloroethane	79-00-5	1.43	U	7.13	1.43	0.713
Trichloroethene	79-01-6	17.4		7.13	1.43	0.713
Trichlorofluoromethane	75-69-4	2.86	U	7.13	2.86	1.43
1,2,3-Trichloropropane	96-18-4	2.86	U	7.13	2.86	1.43
1,2,4-Trimethylbenzene	95-63-6	1.43	U	7.13	1.43	0.713
1,3,5-Trimethylbenzene	108-67-8	1.43	U	7.13	1.43	0.713
Vinyl chloride	75-01-4	2.86	U	7.13	2.86	1.43
o-Xylene	95-47-6	1.43	U	7.13	1.43	0.713
m-,p-Xylene	179601-23-1	1.43	U	7.13	1.43	0.713

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.7	80	120	
1,2-Dichloroethane-d4	106	80	120	
Toluene-d8	101	85	115	
4-Bromofluorobenzene	101	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030235-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18DPT07(27-27.5)030316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/06/2016 13:10
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/25/2016 20:30
Workgroup #:	WG559982	**Analyst:**	ADC	**Run Date:**	03/07/2016 20:55
Collect Date:	03/03/2016 10:15	**Dilution:**	1	**File ID:**	9M973132
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.5	U	23.0	11.5	5.74
Benzene	71-43-2	1.15	U	5.74	1.15	0.574
Bromobenzene	108-86-1	1.15	U	5.74	1.15	0.574
Bromochloromethane	74-97-5	2.30	U	5.74	2.30	1.15
Bromodichloromethane	75-27-4	1.15	U	5.74	1.15	0.574
Bromoform	75-25-2	1.15	U	5.74	1.15	0.574
Bromomethane	74-83-9	2.30	U	5.74	2.30	1.15
2-Butanone	78-93-3	5.74	U	11.5	5.74	2.87
n-Butylbenzene	104-51-8	1.15	U	5.74	1.15	0.574
sec-Butylbenzene	135-98-8	1.15	U	5.74	1.15	0.574
tert-Butylbenzene	98-06-6	1.15	U	5.74	1.15	0.574
Carbon disulfide	75-15-0	1.15	U	5.74	1.15	0.574
Carbon tetrachloride	56-23-5	1.15	U	5.74	1.15	0.574
Chlorobenzene	108-90-7	1.15	U	5.74	1.15	0.574
Chlorodibromomethane	124-48-1	1.15	U	5.74	1.15	0.574
Chloroethane	75-00-3	2.30	U	5.74	2.30	1.15
Chloroform	67-66-3	1.15	U	5.74	1.15	0.574
Chloromethane	74-87-3	4.60	U	11.5	4.60	2.30
2-Chlorotoluene	95-49-8	1.15	U	5.74	1.15	0.574
4-Chlorotoluene	106-43-4	1.15	U	5.74	1.15	0.574
1,2-Dibromo-3-chloropropane	96-12-8	4.60	U	11.5	4.60	2.30
1,2-Dibromoethane	106-93-4	1.15	U	5.74	1.15	0.574
Dibromomethane	74-95-3	1.15	U	5.74	1.15	0.574
1,2-Dichlorobenzene	95-50-1	1.15	U	5.74	1.15	0.574
1,3-Dichlorobenzene	541-73-1	1.15	U	5.74	1.15	0.574
1,4-Dichlorobenzene	106-46-7	1.15	U	5.74	1.15	0.574
Dichlorodifluoromethane	75-71-8	2.30	U	5.74	2.30	1.15
1,1-Dichloroethane	75-34-3	2.30	U	5.74	2.30	1.15
1,2-Dichloroethane	107-06-2	1.15	U	5.74	1.15	0.574
1,1-Dichloroethene	75-35-4	1.15	U	5.74	1.15	0.574
cis-1,2-Dichloroethene	156-59-2	2.80	J	5.74	1.15	0.574

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.15	U	5.74	1.15	0.574
1,2-Dichloropropane	78-87-5	1.15	U	5.74	1.15	0.574
1,3-Dichloropropane	142-28-9	1.15	U	5.74	1.15	0.574
2,2-Dichloropropane	594-20-7	1.15	U	5.74	1.15	0.574
cis-1,3-Dichloropropene	10061-01-5	1.15	U	5.74	1.15	0.574
trans-1,3-Dichloropropene	10061-02-6	1.15	U	5.74	1.15	0.574
1,1-Dichloropropene	563-58-6	1.15	U	5.74	1.15	0.574
Ethylbenzene	100-41-4	1.15	U	5.74	1.15	0.574
2-Hexanone	591-78-6	5.74	U	11.5	5.74	2.87
Hexachlorobutadiene	87-68-3	1.15	U	5.74	1.15	0.574
Isopropylbenzene	98-82-8	1.15	U	5.74	1.15	0.574
p-Isopropyltoluene	99-87-6	1.15	U	5.74	1.15	0.574
4-Methyl-2-pentanone	108-10-1	5.74	U	11.5	5.74	2.87
Methylene chloride	75-09-2	2.30	U	5.74	2.30	1.15
Naphthalene	91-20-3	1.15	U	5.74	1.15	0.574
n-Propylbenzene	103-65-1	1.15	U	5.74	1.15	0.574
Styrene	100-42-5	1.15	U	5.74	1.15	0.574
1,1,1,2-Tetrachloroethane	630-20-6	1.15	U	5.74	1.15	0.574
1,1,2,2-Tetrachloroethane	79-34-5	1.15	U	5.74	1.15	0.574
Tetrachloroethene	127-18-4	1.15	U	5.74	1.15	0.574
Toluene	108-88-3	1.15	U	5.74	1.15	0.574
1,2,3-Trichlorobenzene	87-61-6	1.15	U	5.74	1.15	0.574
1,2,4-Trichlorobenzene	120-82-1	1.15	U	5.74	1.15	0.574
1,1,1-Trichloroethane	71-55-6	1.15	U	5.74	1.15	0.574
1,1,2-Trichloroethane	79-00-5	1.15	U	5.74	1.15	0.574
Trichloroethene	79-01-6	3.00	J	5.74	1.15	0.574
Trichlorofluoromethane	75-69-4	2.30	U	5.74	2.30	1.15
1,2,3-Trichloropropane	96-18-4	2.30	U	5.74	2.30	1.15
1,2,4-Trimethylbenzene	95-63-6	1.15	U	5.74	1.15	0.574
1,3,5-Trimethylbenzene	108-67-8	1.15	U	5.74	1.15	0.574
Vinyl chloride	75-01-4	2.30	U	5.74	2.30	1.15
o-Xylene	95-47-6	1.15	U	5.74	1.15	0.574
m-,p-Xylene	179601-23-1	1.15	U	5.74	1.15	0.574

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.8	80	120	
1,2-Dichloroethane-d4	103	80	120	
Toluene-d8	97.8	85	115	
4-Bromofluorobenzene	102	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.
VOA Preparation/Preservation/Extraction Log

Batch #: WG559855
Analyst: AWE
Method: 5030B/5030C/5035
Run Date: 03/06/2016 12:56
Product: 8260
Purge and trap methanol COA18540
Purified Lab Sand Lot #COA18552

SAMPLE #	Fraction	Collected	Preserved	PCT-S	Tare Wt	Total Wt	Sample Wt	Water	MeOH	Vt	Comments
L16030134-01	A	03/02/16 08:58	03/06/16 12:56	80.7			4.62	5		5	
L16030134-02	A	03/02/16 08:58	03/06/16 12:56	80.8			5.17	5		5	
L16030134-03	A	03/02/16 10:35	03/06/16 12:57	88.1			4.94	5		5	
L16030134-04	A	03/02/16 11:11	03/06/16 12:58	82.3			4.75	5		5	
L16030134-05	A	03/02/16 12:05	03/06/16 12:58	82.1			4.70	5		5	
L16030134-06	A	03/02/16 15:00	03/06/16 12:59	80.0			4.77	5		5	
L16030234-01	A	03/03/16 13:15	03/06/16 13:01	83.4			4.61	5		5	
L16030234-02	A	03/03/16 13:49	03/06/16 13:02	81.8			4.73	5		5	
L16030234-03	A	03/03/16 14:40	03/06/16 13:03	84.4			4.79	5		5	
L16030234-04	A	03/03/16 14:50	03/06/16 13:04	83.4			4.56	5		5	
L16030234-05	A	03/03/16 14:55	03/06/16 13:04	82.0			5.43	5		5	
L16030234-06	A	03/03/16 15:05	03/06/16 13:05	80.1			5.03	5		5	
L16030235-01	A	03/02/16 16:00	03/06/16 13:06	82.3			4.92	5		5	
L16030235-02	A	03/02/16 16:25	03/06/16 13:06	76.4			5.25	5		5	
L16030235-03	A	03/03/16 10:00	03/06/16 13:07	82.2			5.48	5		5	
L16030235-04	A	03/03/16 10:00	03/06/16 13:07	82.2			5.17	5		5	
L16030235-05	A	03/03/16 10:00	03/06/16 13:08	82.2			5.07	5		5	
L16030235-06	A	03/03/16 10:10	03/06/16 13:09	75.6			5.16	5		5	
L16030235-07	A	03/03/16 10:10	03/06/16 13:10	75.6			4.64	5		5	
L16030235-08	A	03/03/16 10:15	03/06/16 13:10	83.1			5.24	5		5	
WG559855-01	A		03/06/16 12:59	80.0			4.77	5		5	
WG559855-02	A		03/06/16 13:00	80.0			5.05	5		5	
WG559855-03	A		03/06/16 13:00	80.0			4.75	5		5	

Comments:
1 = improperly sealed cap
2 = preserved out of hold
3 = effervesced
4 = preserved with NaHSO4
5 = preserved by freezing
6 = preserved in field

Analyst: Andrew Baeg

VOA_EXT - Modified 05/22/2008
PDF ID: 4658101
Report generated: 03/08/2016 15:07

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 012516
Analyst1: ADC Analyst2: NA
Method: 8260B/8260C SOP: MSV01(-C) Rev: 23 (2)
Method: 5030B/5030C/5035 SOP: PAT01 Rev: 18
Method: 624 SOP: MSV10 Rev: 12
Maintenance Log ID:

Internal Standard: STD74414 Surrogate Standard: STD74126
CCV: STD74488 LCS: STD74459 MS/MSD: STD74459

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG555000 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M972470	WG555000-01 BFB 50ng A9	NA	7	1	STD74202	01/25/16 10:27
9M972471	RINSE	NA	7	1		01/25/16 10:52
9M972472	WG555000-02 5ug/Kg STD A9	NA	7	1	STD74406	01/25/16 11:22
9M972473	WG555000-03 20ug/Kg STD A9	NA	7	1	STD74406	01/25/16 11:52
9M972474	WG555000-04 50ug/Kg STD A9	NA	7	1	STD74406	01/25/16 12:23
9M972475	WG555000-05 100ug/Kg STD A9	NA	7	1	STD74406	01/25/16 12:53
9M972476	WG555000-06 200ug/Kg STD A9	NA	7	1	STD74406	01/25/16 13:23
9M972477	WG555000-07 300ug/Kg STD A9	NA	7	1	STD74406	01/25/16 13:54
9M972478	WG555000-08 400ug/Kg STD A9	NA	7	1	STD74406	01/25/16 14:25
9M972479	WG555000-09 500ug/Kg STD A9	NA	7	1	STD74406	01/25/16 14:56
9M972480	RINSE	NA	7	1		01/25/16 15:26
9M972481	WG555000-10 100ug/Kg ICV A9	NA	7	1	STD74461	01/25/16 15:56
9M972482	RINSE	NA	7	1		01/25/16 16:28

Approved: January 29, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 022516
Analyst1: ADC Analyst2: NA
Method: 8260 SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD74726 Surrogate Standard: STD74815
CCV: STD74488 LCS: STD74755 MS/MSD: STD74755

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG558732 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M972892	WG558732-01 BFB 50ng	NA	7	1	STD74773	02/25/16 14:26
9M972894	WG558732-01 BFB 50ng	NA	7	1	STD74773	02/25/16 14:45
9M972895	WG558732-02 50ug/L CCV 8260C	NA	7	1	STD74773	02/25/16 15:11
9M972896	WG558732-02 50ug/L CCV 8260C	NA	7	1	STD74773	02/25/16 15:48
9M972897	RINSE	NA	7	1		02/25/16 16:25
9M972898	WG558732-03 0.5ug/kg STD	NA	7	1	STD74773	02/25/16 16:55
9M972899	WG558732-04 1.0ug/kg STD	NA	7	1	STD74773	02/25/16 17:27
9M972900	WG558732-05 2.0ug/kg STD	NA	7	1	STD74773	02/25/16 17:57
9M972901	WG558732-06 5.0ug/kg STD	NA	7	1	STD74773	02/25/16 18:28
9M972902	WG558732-07 20.0ug/kg STD	NA	7	1	STD74773	02/25/16 18:59
9M972903	WG558732-08 100.0ug/kg STD	NA	7	1	STD74773	02/25/16 19:29
9M972904	WG558732-09 200.0ug/kg STD	NA	7	1	STD74773	02/25/16 20:00
9M972905	WG558732-10 300.0ug/kg STD	NA	7	1	STD74773	02/25/16 20:30
9M972906	RINSE	NA	7	1	STD74773	02/25/16 21:01
9M972907	WG558732-11 50.0ug/kg ALTSRC	NA	7	1	STD74755	02/25/16 21:31

Approved: February 29, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 030716
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD74726 Surrogate Standard: STD74815
CCV: STD74773 LCS: STD74900 MS/MSD: STD74900

Column 1 ID: RTX502.1 Column 2 ID: NA
Workgroups: WG559982

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M973120	WG559980-01 BFB 50ng 8260	NA	7	1	STD74606	03/07/16 14:48
9M973121	WG559980-02 50ug/Kg CCV 8260	NA	7	1	STD74773	03/07/16 15:17
9M973122	WGXXXXXX-01 A9FOO QC 100ug/kg	NA	7	1		03/07/16 15:48
9M973123	WG559982-01 VBLK0307 BLANK 8260	NA	7	1		03/07/16 16:18
9M973124	WG559982-02 20ug/L LCS 8260	NA	7	1	STD74900	03/07/16 16:49
9M973125	RINSE	NA	7	1		03/07/16 17:20
9M973126	L16030234-05 A 8260 4.88g	NA	7	1		03/07/16 17:51
9M973127	L16030235-01 A 8260 4.92g	NA	7	1		03/07/16 18:21
9M973128	L16030235-02 A 8260 5.25g	NA	7	1		03/07/16 18:51
9M973129	L16030235-03 A RS 8260 5.48g	NA	7	1		03/07/16 19:22
9M973130	L16030235-06 A 8260 5.16g	NA	7	1		03/07/16 19:53
9M973131	L16030235-07 A 8260 4.64g	NA	7	1		03/07/16 20:24
9M973132	L16030235-08 A 8260 5.24g	NA	7	1		03/07/16 20:55
9M973133	L16030235-04 A MS 8260 5.17g	NA	7	1		03/07/16 21:26
9M973134	L16030235-05 A MSD 8260 5.07g	NA	7	1		03/07/16 21:58
9M973135	RINSE	NA	7	1		03/07/16 22:29
9M973136	L16030176-02 A 8260 0.94g	NA	10	1		03/07/16 23:00
9M973137	RINSE	NA	7	1		03/07/16 23:30
9M973138	SCREEN 10X 0323-01	NA	7	1		03/08/16 00:01
9M973139	SCREEN 10X 0323-02	NA	7	1		03/08/16 00:31
9M973140	SCREEN 10X 0323-03	NA	7	1		03/08/16 01:01
9M973141	SCREEN 10X 0323-04	NA	7	1		03/08/16 01:32
9M973142	SCREEN 10X 0323-05	NA	7	1		03/08/16 02:02
9M973143	SCREEN 10X 0323-06	NA	7	1		03/08/16 02:32
9M973144	SCREEN 1000X 0168-01	NA	7	1		03/08/16 03:03
9M973145	RINSE	NA	7	1		03/08/16 03:33
9M973146	RINSE	NA	7	1		03/08/16 04:03

Comments

Seq.	Rerun	Dil.	Reason	Analytes
3				
File ID: 9M973122				
Not needed. DNR.				

Approved: March 08, 2016

Tiffany Bailey

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 030716
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD74726 Surrogate Standard: STD74815
CCV: STD74773 LCS: STD74900 MS/MSD: STD74900

Column 1 ID: RTX502.1 Column 2 ID: NA
Workgroups: WG559982

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17	X	1	Analyzed too dilute	
File ID: 9M973136				
IS/SS failures				

Approved: March 08, 2016

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 25-JAN-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 72995
Analytical Workgroups: WG555000

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
28-JAN-2016

Secondary Reviewer:
29-JAN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JAN-29-2016 16:00:23

Microbac Laboratories Inc.

Data Checklist

Date: 25-FEB-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 73547
Analytical Workgroups: WG558732

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
29-FEB-2016

Secondary Reviewer:
29-FEB-2016

CHECKLIST1 - Modified 03/05/2008
Generated: FEB-29-2016 15:30:51

Microbac Laboratories Inc.

Data Checklist

Date: 07-MAR-2016
Analyst: ADC
Analyst: NA
Method: 8260B
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 73696
Analytical Workgroups: WG559982

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	FJB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	FJB
Secondary Reviewer	TMB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer: 08-MAR-2016

Secondary Reviewer: 08-MAR-2016

CHECKLIST1 - Modified 03/05/2008

Generated: MAR-08-2016 15:47:34

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG559982

Login Number: L16030235

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18DPT07(5-5.5)020316	01	03/02/16					03/06/2016	3.9	14		03/07/16	5.1	14	
18DPT07(15-15.5)020316	02	03/02/16					03/06/2016	3.9	14		03/07/16	5.1	14	
18DPT07(33.5-34.5)030316	03	03/03/16					03/06/2016	3.1	14		03/07/16	4.4	14	
18DPT07(33.5-34.5)030316	04	03/03/16					03/06/2016	3.1	14		03/07/16	4.5	14	
18DPT07(33.5-34.5)030316	05	03/03/16					03/06/2016	3.1	14		03/07/16	4.5	14	
18DPT07(38-39)030316	06	03/03/16					03/06/2016	3.1	14		03/07/16	4.4	14	
18DPT07(38-39)030316 FD	07	03/03/16					03/06/2016	3.1	14		03/07/16	4.4	14	
18DPT07(27-27.5)030316	08	03/03/16					03/06/2016	3.1	14		03/07/16	4.4	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4661480
Report generated 03/14/2016 11:22

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16030235
Instrument Id: HPMS9
Workgroup (AAB#): WG559982

Method: 8260
CAL ID: HPMS9-25-FEB-16
Matrix: Soil

Sample Number	Dilution	Tag	1	2	3	4
L16030235-01	1.00	01	102	95.7	105	98.8
L16030235-02	1.00	01	113	99.8	99.7	97.2
L16030235-03	1.00	01	100	95.8	98.9	97.6
L16030235-04	1.00	01	103	97.5	96.3	95.9
L16030235-05	1.00	01	99.7	96.5	99.5	95.4
L16030235-06	1.00	01	105	99.1	99.2	96.0
L16030235-07	1.00	01	106	98.7	101	101
L16030235-08	1.00	01	103	97.8	102	97.8
WG559982-01	1.00	01	101	97.2	103	99.2
WG559982-02	1.00	01	97.7	94.6	96.4	95.3

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	80	-	120
2 - Dibromofluoromethane	80	-	120
3 - 4-Bromofluorobenzene	85	-	120
4 - Toluene-d8	85	-	115

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4661490
Report generated: 03/14/2016 11:22

METHOD BLANK SUMMARY

Login Number: L16030235
Blank File ID: 9M973123
Prep Date: 03/07/16 16:18
Analyzed Date: 03/07/16 16:18
Analyst: ADC

Work Group: WG559982
Blank Sample ID: WG559982-01
Instrument ID: HPMS9
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG559982-02	9M973124	03/07/16 16:49	01
18DPT07(5-5.5)020316	L16030235-01	9M973127	03/07/16 18:21	01
18DPT07(15-15.5)020316	L16030235-02	9M973128	03/07/16 18:51	01
18DPT07(33.5-34.5)030316	L16030235-03	9M973129	03/07/16 19:22	01
18DPT07(38-39)030316	L16030235-06	9M973130	03/07/16 19:53	01
18DPT07(38-39)030316 FD	L16030235-07	9M973131	03/07/16 20:24	01
18DPT07(27-27.5)030316	L16030235-08	9M973132	03/07/16 20:55	01
18DPT07(33.5-34.5)030316 MS	L16030235-04	9M973133	03/07/16 21:26	01
18DPT07(33.5-34.5)030316 MSD	L16030235-05	9M973134	03/07/16 21:58	01

Report Name: BLANK_SUMMARY
PDF File ID: 4661481
Report generated 03/14/2016 11:22

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16030235 Prep Date: 03/07/16 16:18 Sample ID: WG559982-01
Instrument ID: HPMS9 Run Date: 03/07/16 16:18 Prep Method: 5030B/5030C/503
File ID: 9M973123 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG559982 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-25-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	5.00	20.0	5.00	1	U
Benzene	0.500	5.00	0.500	1	U
Bromobenzene	0.500	5.00	0.500	1	U
Bromochloromethane	1.00	5.00	1.00	1	U
Bromodichloromethane	0.500	5.00	0.500	1	U
Bromoform	0.500	5.00	0.500	1	U
Bromomethane	1.00	5.00	1.00	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.500	5.00	0.500	1	U
sec-Butylbenzene	0.500	5.00	0.500	1	U
tert-Butylbenzene	0.500	5.00	0.500	1	U
Carbon disulfide	0.500	5.00	0.500	1	U
Carbon tetrachloride	0.500	5.00	0.500	1	U
Chlorobenzene	0.500	5.00	0.500	1	U
Chlorodibromomethane	0.500	5.00	0.500	1	U
Chloroethane	1.00	5.00	1.00	1	U
Chloroform	0.500	5.00	0.500	1	U
Chloromethane	2.00	10.0	2.00	1	U
2-Chlorotoluene	0.500	5.00	0.500	1	U
4-Chlorotoluene	0.500	5.00	0.500	1	U
1,2-Dibromo-3-chloropropane	2.00	10.0	2.00	1	U
1,2-Dibromoethane	0.500	5.00	0.500	1	U
Dibromomethane	0.500	5.00	0.500	1	U
1,2-Dichlorobenzene	0.500	5.00	0.500	1	U
1,3-Dichlorobenzene	0.500	5.00	0.500	1	U
1,4-Dichlorobenzene	0.500	5.00	0.500	1	U
Dichlorodifluoromethane	1.00	5.00	1.00	1	U
1,1-Dichloroethane	1.00	5.00	1.00	1	U
1,2-Dichloroethane	0.500	5.00	0.500	1	U
1,1-Dichloroethene	0.500	5.00	0.500	1	U
cis-1,2-Dichloroethene	0.500	5.00	0.500	1	U
trans-1,2-Dichloroethene	0.500	5.00	0.500	1	U
1,2-Dichloropropane	0.500	5.00	0.500	1	U
1,3-Dichloropropane	0.500	5.00	0.500	1	U
2,2-Dichloropropane	0.500	5.00	0.500	1	U
cis-1,3-Dichloropropene	0.500	5.00	0.500	1	U
trans-1,3-Dichloropropene	0.500	5.00	0.500	1	U
1,1-Dichloropropene	0.500	5.00	0.500	1	U
Ethylbenzene	0.500	5.00	0.500	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.500	5.00	0.500	1	U
Isopropylbenzene	0.500	5.00	0.500	1	U

Report Name: BLANK
PDF ID: 4661482
14-MAR-2016 11:22

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16030235 Prep Date: 03/07/16 16:18 Sample ID: WG559982-01
Instrument ID: HPMS9 Run Date: 03/07/16 16:18 Prep Method: 5030B/5030C/503
File ID: 9M973123 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG559982 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-25-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.500	5.00	0.500	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	1.00	5.00	1.00	1	U
Naphthalene	0.500	5.00	0.500	1	U
n-Propylbenzene	0.500	5.00	0.500	1	U
Styrene	0.500	5.00	0.500	1	U
1,1,1,2-Tetrachloroethane	0.500	5.00	0.500	1	U
1,1,2,2-Tetrachloroethane	0.500	5.00	0.500	1	U
Tetrachloroethene	0.500	5.00	0.500	1	U
Toluene	0.500	5.00	0.500	1	U
1,2,3-Trichlorobenzene	0.500	5.00	0.500	1	U
1,2,4-Trichlorobenzene	0.500	5.00	0.500	1	U
1,1,1-Trichloroethane	0.500	5.00	0.500	1	U
1,1,2-Trichloroethane	0.500	5.00	0.500	1	U
Trichloroethene	0.500	5.00	0.500	1	U
Trichlorofluoromethane	1.00	5.00	1.00	1	U
1,2,3-Trichloropropane	1.00	5.00	1.00	1	U
1,2,4-Trimethylbenzene	0.500	5.00	0.500	1	U
1,3,5-Trimethylbenzene	0.500	5.00	0.500	1	U
Vinyl chloride	1.00	5.00	1.00	1	U
o-Xylene	0.500	5.00	0.500	1	U
m-,p-Xylene	0.500	5.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	97.2	80 - 120	PASS
1,2-Dichloroethane-d4	101	80 - 120	PASS
Toluene-d8	99.2	85 - 115	PASS
4-Bromofluorobenzene	103	85 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4661482
14-MAR-2016 11:22

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030235 | Run Date: 03/07/2016 | Sample ID: WG559982-02
Instrument ID: HPMS9 | Run Time: 16:49 | Prep Method: 5030B/5030C/503
File ID: 9M973124 | Analyst: ADC | Method: 8260B
Workgroup (AAB#): WG559982 | Matrix: Soil | Units: ug/kg
QC Key: DOD4 | Lot#: STD74900 | Cal ID: HPMS9-25-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	21.5	107	20 - 160	
Benzene	20.0	19.9	99.3	75 - 125	
Bromobenzene	20.0	16.2	80.8	65 - 120	
Bromochloromethane	20.0	19.4	96.8	70 - 125	
Bromodichloromethane	20.0	19.2	96.1	70 - 130	
Bromoform	20.0	17.0	85.2	55 - 135	
Bromomethane	20.0	18.4	91.8	30 - 160	
2-Butanone	20.0	22.5	113	30 - 160	
n-Butylbenzene	20.0	17.4	87.0	65 - 140	
sec-Butylbenzene	20.0	18.7	93.3	65 - 130	
tert-Butylbenzene	20.0	18.6	93.2	65 - 130	
Carbon disulfide	20.0	18.6	93.1	45 - 160	
Carbon tetrachloride	20.0	19.3	96.5	65 - 135	
Chlorobenzene	20.0	20.2	101	75 - 125	
Chlorodibromomethane	20.0	18.3	91.5	65 - 130	
Chloroethane	20.0	19.7	98.7	40 - 155	
Chloroform	20.0	19.3	96.3	70 - 125	
Chloromethane	20.0	21.2	106	50 - 130	
2-Chlorotoluene	20.0	18.4	92.2	70 - 130	
4-Chlorotoluene	20.0	18.0	89.8	75 - 125	
1,2-Dibromo-3-chloropropane	20.0	15.2	75.8	40 - 135	
1,2-Dibromoethane	20.0	18.9	94.3	70 - 125	
Dibromomethane	20.0	17.9	89.6	75 - 130	
1,2-Dichlorobenzene	20.0	17.4	87.0	75 - 120	
1,3-Dichlorobenzene	20.0	16.7	83.4	70 - 125	
1,4-Dichlorobenzene	20.0	16.5	82.6	70 - 125	
Dichlorodifluoromethane	20.0	24.0	120	35 - 135	
1,1-Dichloroethane	20.0	19.5	97.7	75 - 125	
1,2-Dichloroethane	20.0	21.2	106	70 - 135	
1,1-Dichloroethene	20.0	20.2	101	65 - 135	
cis-1,2-Dichloroethene	20.0	20.3	102	65 - 125	
trans-1,2-Dichloroethene	20.0	20.7	103	65 - 135	
1,2-Dichloropropane	20.0	21.1	105	70 - 120	
1,3-Dichloropropane	20.0	20.8	104	75 - 125	
2,2-Dichloropropane	20.0	19.8	99.0	65 - 135	
cis-1,3-Dichloropropene	20.0	20.6	103	70 - 125	
trans-1,3-Dichloropropene	20.0	19.3	96.6	65 - 125	
1,1-Dichloropropene	20.0	19.4	97.1	70 - 135	
Ethylbenzene	20.0	20.6	103	75 - 125	
2-Hexanone	20.0	21.1	106	45 - 145	
Hexachlorobutadiene	20.0	16.5	82.6	55 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4661483
Report generated: 03/14/2016 11:22

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030235 Run Date: 03/07/2016 Sample ID: WG559982-02
Instrument ID: HPMS9 Run Time: 16:49 Prep Method: 5030B/5030C/503
File ID: 9M973124 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG559982 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD74900 Cal ID: HPMS9-25-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	20.3	101	75 - 130	
p-Isopropyltoluene	20.0	17.8	89.1	75 - 135	
4-Methyl-2-pentanone	20.0	21.7	109	45 - 145	
Methylene chloride	20.0	19.0	94.9	55 - 140	
Naphthalene	20.0	14.6	72.8	40 - 125	
n-Propylbenzene	20.0	18.6	92.9	65 - 135	
Styrene	20.0	19.8	99.0	75 - 125	
1,1,1,2-Tetrachloroethane	20.0	19.3	96.6	75 - 125	
1,1,2,2-Tetrachloroethane	20.0	16.1	80.4	55 - 130	
Tetrachloroethene	20.0	19.2	96.2	65 - 140	
Toluene	20.0	19.7	98.3	70 - 125	
1,2,3-Trichlorobenzene	20.0	15.3	76.6	60 - 135	
1,2,4-Trichlorobenzene	20.0	15.3	76.7	65 - 130	
1,1,1-Trichloroethane	20.0	20.2	101	70 - 135	
1,1,2-Trichloroethane	20.0	20.2	101	60 - 125	
Trichloroethene	20.0	20.6	103	75 - 125	
Trichlorofluoromethane	20.0	19.8	98.9	25 - 185	
1,2,3-Trichloropropane	20.0	18.0	90.2	65 - 130	
1,2,4-Trimethylbenzene	20.0	17.2	85.8	65 - 135	
1,3,5-Trimethylbenzene	20.0	18.4	92.0	65 - 135	
Vinyl chloride	20.0	18.7	93.4	60 - 125	
o-Xylene	20.0	20.4	102	75 - 125	
m-,p-Xylene	40.0	40.7	102	80 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	94.6	80 - 120	PASS
1,2-Dichloroethane-d4	97.7	80 - 120	PASS
Toluene-d8	95.3	85 - 115	PASS
4-Bromofluorobenzene	96.4	85 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4661483
Report generated: 03/14/2016 11:22

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16030235 Cal ID: HPMS9- 25-FEB-16 Worknum: WG559982

Instrument ID: HPMS9 Contract #: Prep Method: 5030B/5030C/

Parent ID: L16030235-03 File ID: 9M973129 Dil: 1 Method: 5035A

Sample ID: L16030235-04 MS File ID: 9M973133 Dil: 1 Matrix: 8260B

Sample ID: L16030235-05 MSD File ID: 9M973134 Dil: 1 Units: Soil

Percent Solid: ug/kg 82.2

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,1,1,2-Tetrachloroethane	U	23.5	22.5	95.8	24.0	24.0	99.9	6.13	75 - 125	30	
1,1,1-Trichloroethane	U	23.5	24.0	102	24.0	25.7	107	7.08	70 - 135	30	
1,1,2,2-Tetrachloroethane	U	23.5	17.3	73.3	24.0	19.1	79.7	10.4	55 - 130	30	
1,1,2-Trichloroethane	U	23.5	21.8	92.5	24.0	23.3	97.3	7.06	60 - 125	30	
1,1-Dichloroethane	U	23.5	22.3	95	24.0	24.3	101	8.48	75 - 125	30	
1,1-Dichloroethene	U	23.5	24.1	102	24.0	25.5	106	5.58	65 - 135	30	
1,1-Dichloropropene	U	23.5	22.9	97.4	24.0	24.9	104	8.21	70 - 135	30	
1,2,3-Trichlorobenzene	U	23.5	16.8	71.4	24.0	20.0	83.2	17.2	60 - 135	30	
1,2,3-Trichloropropane	U	23.5	20.1	85.5	24.0	21.1	88.1	4.95	65 - 130	30	
1,2,4-Trichlorobenzene	U	23.5	16.1	68.3	24.0	19.9	82.8	21.1	65 - 130	30	
1,2,4-Trimethylbenzene	U	23.5	19.1	81	24.0	22.3	92.9	15.7	65 - 135	30	
1,2-Dibromo-3-chloropropane	U	23.5	14.6	62	24.0	18.0	75.2	21.2	40 - 135	30	
1,2-Dibromoethane	U	23.5	21.2	90.1	24.0	22.9	95.4	7.71	70 - 125	30	
1,2-Dichlorobenzene	U	23.5	18.9	80.2	24.0	21.5	89.6	13.1	75 - 120	30	
1,2-Dichloroethane	U	23.5	24.9	106	24.0	27.3	114	9.24	70 - 135	30	
1,2-Dichloropropane	U	23.5	25.7	109	24.0	26.8	111	4.16	70 - 120	30	
1,3,5-Trimethylbenzene	U	23.5	20.3	86.1	24.0	23.3	97.1	13.9	65 - 135	30	
1,3-Dichlorobenzene	U	23.5	18.1	77	24.0	21.4	89.3	16.8	70 - 125	30	
1,3-Dichloropropane	U	23.5	23.0	97.8	24.0	24.5	102	6.32	75 - 125	30	
1,4-Dichlorobenzene	U	23.5	18.3	77.8	24.0	21.4	89	15.3	70 - 125	30	
2,2-Dichloropropane	U	23.5	21.6	92	24.0	22.9	95.5	5.73	65 - 135	30	
2-Butanone	U	23.5	22.1	93.8	24.0	24.3	101	9.76	30 - 160	30	
2-Chlorotoluene	U	23.5	20.1	85.3	24.0	24.2	101	18.7	70 - 130	30	
2-Hexanone	U	23.5	19.9	84.5	24.0	23.3	97	15.7	45 - 145	30	
4-Chlorotoluene	U	23.5	20.8	88.6	24.0	22.4	93.4	7.23	75 - 125	30	
4-Methyl-2-pentanone	U	23.5	21.3	90.3	24.0	24.0	99.9	12.0	45 - 145	30	
Acetone	U	23.5	22.3	94.9	24.0	23.9	99.7	6.84	20 - 160	30	
Benzene	U	23.5	22.9	97.4	24.0	25.1	105	9.09	75 - 125	30	
Bromobenzene	U	23.5	18.8	79.7	24.0	21.5	89.8	13.9	65 - 120	30	
Bromochloromethane	U	23.5	23.1	98	24.0	23.7	98.9	2.81	70 - 125	30	
Bromodichloromethane	U	23.5	23.2	98.7	24.0	24.9	104	6.94	70 - 130	30	
Bromoform	U	23.5	18.9	80.3	24.0	20.2	84	6.40	55 - 135	30	
Bromomethane	U	23.5	20.9	88.9	24.0	22.7	94.7	8.30	30 - 160	30	
Carbon disulfide	U	23.5	19.6	83.4	24.0	22.6	94	13.9	45 - 160	30	
Carbon tetrachloride	U	23.5	22.9	97.3	24.0	25.3	105	10.0	65 - 135	30	
Chlorobenzene	U	23.5	22.8	96.8	24.0	24.4	101	6.67	75 - 125	30	
Chloroethane	U	23.5	25.1	107	24.0	25.4	106	1.23	40 - 155	30	
Chloroform	U	23.5	23.5	99.9	24.0	25.0	104	6.12	70 - 125	30	
Chloromethane	U	23.5	23.8	101	24.0	26.3	110	10.3	50 - 130	30	
cis-1,2-Dichloroethene	U	23.5	24.2	103	24.0	25.8	107	6.28	65 - 125	30	
cis-1,3-Dichloropropene	U	23.5	24.2	103	24.0	25.8	108	6.76	70 - 125	30	

MS_MSD - Modified 03/06/2008
PDF File ID: 4661499
Report generated 03/08/2016 16:16

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16030235 Cal ID: HPMS9 25-FEB-16 Worknum: WG559982

Instrument ID: HPMS9 Contract #: Prep Method: 5030B/5030C/

Parent ID: L16030235-03 File ID: 9M973129 Dil: 1 Method: 5035A

Sample ID: L16030235-04 MS File ID: 9M973133 Dil: 1 Matrix: 8260B

Sample ID: L16030235-05 MSD File ID: 9M973134 Dil: 1 Units: Soil

Percent Solid: ug/kg

82.2

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chlorodibromomethane	U	23.5	21.1	89.7	24.0	22.1	92.3	4.84	65 - 130	30	
Dibromomethane	U	23.5	21.4	90.8	24.0	22.4	93.3	4.64	75 - 130	30	
Dichlorodifluoromethane	U	23.5	29.9	127	24.0	32.2	134	7.49	35 - 135	30	
Ethylbenzene	U	23.5	23.2	98.7	24.0	25.1	105	7.69	75 - 125	30	
Hexachlorobutadiene	U	23.5	19.0	80.7	24.0	22.5	93.6	16.8	55 - 140	30	
Isopropylbenzene	U	23.5	23.5	99.7	24.0	25.8	107	9.47	75 - 130	30	
m-,p-Xylene	U	47.1	46.6	99.1	48.0	50.7	106	8.30	80 - 125	30	
Methylene chloride	U	23.5	23.0	97.7	24.0	24.0	99.9	4.14	55 - 140	30	
n-Butylbenzene	U	23.5	19.2	81.7	24.0	22.7	94.6	16.6	65 - 140	30	
n-Propylbenzene	U	23.5	21.0	89.2	24.0	24.2	101	14.2	65 - 135	30	
Naphthalene	U	23.5	14.9	63.5	24.0	17.3	72.2	14.8	40 - 125	30	
o-Xylene	U	23.5	23.5	99.7	24.0	25.7	107	9.22	75 - 125	30	
p-Isopropyltoluene	U	23.5	19.6	83.1	24.0	22.8	94.9	15.1	75 - 135	30	
sec-Butylbenzene	U	23.5	20.5	87	24.0	24.3	101	17.0	65 - 130	30	
Styrene	U	23.5	22.6	96	24.0	25.0	104	10.1	75 - 125	30	
tert-Butylbenzene	U	23.5	21.2	89.9	24.0	24.6	103	15.2	65 - 130	30	
Tetrachloroethene	U	23.5	21.9	93.2	24.0	23.6	98.2	7.15	65 - 140	30	
Toluene	U	23.5	22.5	95.8	24.0	24.4	102	7.89	70 - 125	30	
trans-1,2-Dichloroethene	U	23.5	24.5	104	24.0	26.9	112	9.39	65 - 135	30	
trans-1,3-Dichloropropene	U	23.5	21.6	91.7	24.0	23.0	95.7	6.16	65 - 125	30	
Trichloroethene	5.03	23.5	29.4	103	24.0	30.2	105	2.95	75 - 125	30	
Trichlorofluoromethane	U	23.5	24.2	103	24.0	25.2	105	4.15	25 - 185	30	
Vinyl chloride	U	23.5	24.7	105	24.0	27.0	112	9.07	60 - 125	30	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4661499
Report generated 03/08/2016 16:16

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16030235
Instrument: HPMS9
Analyst: FJB
Workgroup: WG555000

Tune ID: WG555000-01
Run Date: 01/25/2016
Run Time: 10:27
File ID: 9M972470
Cal ID: HPMS9 - 25-JAN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	23.0	10289	PASS
75.0	95.0	30.0	60.0	49.3	22030	PASS
95.0	95.0	100	100	100	44728	PASS
96.0	95.0	5.00	9.00	6.98	3122	PASS
173	174	0	2.00	0.381	160	PASS
174	95.0	50.0	100	93.9	41989	PASS
175	174	5.00	9.00	6.62	2778	PASS
176	174	95.0	101	95.6	40133	PASS
177	176	5.00	9.00	6.39	2564	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG555000-02	STD-S	01	01/25/2016 11:22	
WG555000-03	STD-S	01	01/25/2016 11:52	
WG555000-04	STD-S	01	01/25/2016 12:23	
WG555000-05	STD-CCV-S	01	01/25/2016 12:53	
WG555000-06	STD-S	01	01/25/2016 13:23	
WG555000-07	STD-S	01	01/25/2016 13:54	
WG555000-08	STD-S	01	01/25/2016 14:25	
WG555000-09	STD-S	01	01/25/2016 14:56	
WG555000-10	SSCV-S	01	01/25/2016 15:56	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4661486
Report generated 03/14/2016 11:22

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16030235
Instrument: HPMS9
Analyst: ADC
Workgroup: WG558732

Tune ID: WG558732-01
Run Date: 02/25/2016
Run Time: 14:45
File ID: 9M972894
Cal ID: HPMS9 - 25-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.2	5378	PASS
75.0	95.0	30.0	60.0	49.1	13067	PASS
95.0	95.0	100	100	100	26621	PASS
96.0	95.0	5.00	9.00	6.32	1683	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	85.8	22851	PASS
175	174	5.00	9.00	6.50	1485	PASS
176	174	95.0	101	98.3	22461	PASS
177	176	5.00	9.00	7.21	1619	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG558732-02	STD-CCV-S	01	02/25/2016 15:48	
WG558732-03	STD-S	01	02/25/2016 16:55	
WG558732-04	STD-S	01	02/25/2016 17:27	
WG558732-05	STD-S	01	02/25/2016 17:57	
WG558732-06	STD-S	01	02/25/2016 18:28	
WG558732-07	STD-S	01	02/25/2016 18:59	
WG558732-08	STD-S	01	02/25/2016 19:29	
WG558732-09	STD-S	01	02/25/2016 20:00	
WG558732-10	STD-S	01	02/25/2016 20:30	
WG558732-11	SSCV-S	01	02/25/2016 21:31	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4661486
Report generated 03/14/2016 11:22

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16030235
Instrument: HPMS9
Analyst: ADC
Workgroup: WG559980

Tune ID: WG559980-01
Run Date: 03/07/2016
Run Time: 14:48
File ID: 9M973120
Cal ID: HPMS9 - 25-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	24.3	8393	PASS
75.0	95.0	30.0	60.0	51.9	17879	PASS
95.0	95.0	100	100	100	34471	PASS
96.0	95.0	5.00	9.00	5.97	2058	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	73.1	25197	PASS
175	174	5.00	9.00	7.16	1804	PASS
176	174	95.0	101	95.6	24090	PASS
177	176	5.00	9.00	6.96	1676	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG559980-02	CCV-S	01	03/07/2016 15:17	
WG559982-01	BLANK	01	03/07/2016 16:18	
WG559982-02	LCS	01	03/07/2016 16:49	
L16030235-01	18DPT07(5-5.5)020316	01	03/07/2016 18:21	
L16030235-02	18DPT07(15-15.5)020316	01	03/07/2016 18:51	
L16030235-03	18DPT07(33.5-34.5)030316	01	03/07/2016 19:22	
L16030235-06	18DPT07(38-39)030316	01	03/07/2016 19:53	
L16030235-07	18DPT07(38-39)030316 FD	01	03/07/2016 20:24	
L16030235-08	18DPT07(27-27.5)030316	01	03/07/2016 20:55	
L16030235-04	18DPT07(33.5-34.5)030316 MS	01	03/07/2016 21:26	
L16030235-05	18DPT07(33.5-34.5)030316 MSD	01	03/07/2016 21:58	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4661486
Report generated 03/14/2016 11:22

Calibration Table Report
Method: A9FOO_SL.M
Title: FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Calibration: Wed Jan 27 09:49:02 2016
Curve: WG555000
Calibration Files

Compound	5 9M972472.D	20 9M972473.D	50 9M972474.D	100 9M972475.D	200 9M972476.D	300 9M972477.D	400 9M972478.D	500 9M972479.D	Avg	%RSD	R^2 Linear
Fluorobenzene	ISTD										
Acetonitrile		0.053	0.046	0.048	0.052	0.046	0.052	0.054	0.050	6.657	
3-Chloro-1-propene	0.498	0.524	0.450	0.519	0.514	0.434	0.507	0.503	0.494	6.719	
2-Chloro-1,3-butadiene	0.534	0.576	0.519	0.592	0.585	0.509	0.593	0.584	0.561	6.202	
Ethyl Acetate		0.333	0.313	0.339	0.338	0.300	0.341	0.344	0.330	5.124	
Methacrylonitrile	0.102	0.109	0.101	0.112	0.110	0.096	0.112	0.112	0.107	5.912	
Isobutyl Alcohol	0.014	0.018	0.018	0.021	0.024	0.021	0.025	0.025	0.021	18.016	0.993
1-Butanol		0.010	0.013	0.015	0.017	0.015	0.018	0.018	0.015	17.838	0.992
Methyl methacrylate	0.236	0.246	0.231	0.265	0.265	0.231	0.271	0.269	0.252	7.005	
2-Nitropropane	0.069	0.073	0.074	0.083	0.089	0.079	0.093	0.095	0.082	12.090	
Chlorobenzene-d5	ISTD										
Cyclohexanone		0.020	0.022	0.025	0.028	0.023	0.027	0.028	0.025	12.963	
1,4-Dichlorobenzene-d4	ISTD										

Wed Jan 27 10:01:56 2016

Calibration Table Report
Method: 8260SL.M
Title: 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Calibration: Fri Feb 26 11:38:33 2016
Curve: WG558732
Calibration Files

Compound	0.5 9M972898.D	1 9M972899.D	2 9M972900.D	5 9M972901.D	20 9M972902.D	50 9M972896.D	100 9M972903.D	200 9M972904.D	300 9M972905.D	Avg	%RSD	R^2 Linear	Quadratic
Fluorobenzene	ISTD												
Dichlorodifluoromethane			0.338	0.271	0.399	0.396	0.318	0.357	0.307	0.341	13.734		
Chloromethane			0.372	0.280	0.331	0.361	0.296	0.346	0.304	0.327	10.674		
Vinyl Chloride		0.250	0.318	0.314	0.373	0.372	0.342	0.355	0.296	0.327	12.768		
1,3-Butadiene			0.347	0.266	0.328	0.330	0.297	0.321	0.293	0.312	8.837		
Bromomethane		0.236	0.267	0.181	0.206	0.208	0.186	0.217	0.199	0.213	13.250		
Chloroethane			0.127	0.116	0.142	0.165	0.139	0.173	0.160	0.146	14.271		
Trichlorofluoromethane		0.519	0.518	0.416	0.503	0.514	0.470	0.517	0.473	0.491	7.357		
Diethyl ether		0.215	0.246	0.217	0.243	0.241	0.214		0.231	0.230	6.215		
Isoprene			0.302	0.251	0.303	0.302	0.282	0.318	0.295	0.293	7.364		
Acrolein		0.041	0.046	0.045	0.046	0.048	0.046		0.050	0.046	6.212		
1,1,2-Trichloro-1,2,2-Trifluoroethane			0.252	0.234	0.255	0.261	0.248	0.273	0.251	0.253	4.699		
Acetone				0.179	0.138	0.128	0.119	0.124		0.138	17.810	0.999	
1,1-Dichloroethene		0.464	0.511	0.400	0.482	0.471	0.454	0.500	0.456	0.467	7.277		
Tert-Butyl Alcohol			0.057	0.046	0.055	0.051	0.047			0.051	8.698		
Dimethyl Sulfide		0.150	0.203	0.186	0.207	0.211	0.196	0.224	0.203	0.197	11.169		
Iodomethane				0.076	0.109	0.154	0.126	0.157	0.142	0.127	24.315	0.993	
Methyl acetate			0.282	0.223	0.279	0.262	0.240	0.258	0.234	0.254	8.867		
Methylene Chloride			0.271	0.217	0.263	0.261	0.240	0.280	0.249	0.254	8.252		
Carbon Disulfide			0.795	0.626	0.740	0.737	0.678	0.761	0.702	0.720	7.788		
Acrylonitrile		0.117	0.127	0.114	0.130	0.135	0.123		0.134	0.126	6.412		
Methyl Tert Butyl Ether		0.669	0.722	0.642	0.760	0.786	0.713	0.788	0.718	0.725	7.239		
trans-1,2-Dichloroethene		0.400	0.422	0.377	0.430	0.438	0.407	0.446	0.412	0.416	5.376		
n-Hexane			0.456	0.385	0.420	0.424	0.429	0.464	0.428	0.430	5.986		
Diisopropyl ether		0.938	1.068	0.928	1.071	1.051	0.931		0.995	0.998	6.627		
Vinyl Acetate			0.593	0.519	0.545	0.602	0.554	0.608	0.558	0.569	5.855		
1,1-Dichloroethane		0.548	0.558	0.445	0.532	0.549	0.499	0.553	0.500	0.523	7.454		
Ethyl-Tert-Butyl ether		0.871	0.992	0.852	0.990	0.988	0.865		0.934	0.928	6.918		
2-Butanone			0.177	0.152	0.156	0.166	0.156	0.172	0.149	0.161	6.650		
Propionitrile		0.042	0.055	0.048	0.053	0.051	0.048		0.049	0.049	8.494		
2,2-Dichloropropane			0.428	0.330	0.377	0.415	0.383	0.417	0.383	0.390	8.575		
cis-1,2-Dichloroethene		0.247	0.257	0.248	0.287	0.297	0.273	0.299	0.277	0.273	7.647		
Chloroform		0.473	0.530	0.432	0.482	0.509	0.459	0.505	0.454	0.480	6.746		
1-Bromopropane			0.011	0.041	0.042	0.043	0.040	0.045	0.041	0.038	31.434	0.997	
Bromochloromethane		0.131	0.173	0.169	0.194	0.199	0.179	0.197	0.178	0.177	12.275		
Tetrahydrofuran			0.111	0.099	0.110	0.110	0.097		0.097	0.104	6.802		
Dibromofluoromethane				0.267	0.243	0.286	0.286	0.274		0.271	6.547		
1,1,1-Trichloroethane		0.426	0.436	0.385	0.438	0.470	0.425	0.470	0.427	0.434	6.319		
Cyclohexane		0.465	0.495	0.425	0.494	0.478	0.465	0.503	0.464	0.474	5.302		
1,1-Dichloropropene		0.353	0.359	0.300	0.344	0.352	0.333	0.360	0.335	0.342	5.748		
Tert-Amyl-Methyl ether		0.631	0.709	0.631	0.716	0.716	0.632		0.684	0.674	6.133		
Carbon Tetrachloride			0.41939	0.34041	0.40512	0.42742	0.39181	0.43819	0.39737	0.40282	7.96886		
1,2-Dichloroethane-d4				0.34995	0.30686	0.35494	0.35835	0.33017		0.34005	6.33015		
Heptane										0	0		
1,2-Dichloroethane		0.36551	0.44947	0.39601	0.44224	0.45938	0.41291	0.4496	0.40581	0.42262	7.76179		
Benzene	1.14079	0.92872	1.03015	0.83328	0.97121	0.9721	0.88431	0.97127	0.88279	0.95718	9.53654		
Trichloroethene		0.30364	0.32158	0.26212	0.31219	0.31666	0.29597	0.321	0.29314	0.30329	6.54492		
Methylcyclohexane		0.31249	0.39837	0.32203	0.40419	0.39506	0.39323	0.42525	0.39247	0.38039	10.6291		
1,2-Dichloropropane		0.23004	0.27101	0.24016	0.27676	0.28593	0.2555	0.28277	0.26062	0.26285	7.66268		
1,4-Dioxane			0.0041	0.00361	0.00449	0.00376	0.00356		0.00414	0.00394	9.17892		
Bromodichloromethane			0.37851	0.33087	0.3725	0.39384	0.35929	0.397	0.36103	0.37044	6.13725		
Dibromomethane		0.15103	0.18915	0.16523	0.1825	0.18519	0.16707	0.1849	0.1682	0.17416	7.61692		
2-Chloroethyl Vinyl Ether				0.04535	0.05625	0.07439	0.06667	0.08013	0.07633	0.06652	20.1377	0.996	
4-Methyl-2-Pentanone				0.08933	0.11327	0.12554	0.11786	0.12977	0.11644	0.11537	12.2612		
cis-1,3-Dichloropropene			0.37321	0.33699	0.39477	0.41098	0.38072	0.42291	0.38195	0.38594	7.23123		
Dimethyl Disulfide			0.30882	0.3269	0.39409	0.4245	0.40234	0.4579	0.40032	0.38784	13.5683		
Chlorobenzene-d5	ISTD												
Toluene-d8				1.21266	1.14503	1.34974	1.34798	1.26813		1.26471	6.98417		
Toluene	1.57001	1.40445	1.51648	1.23448	1.46732	1.48749	1.3712	1.4823	1.3236	1.42859	7.34792		
Ethyl Methacrylate				0.31749	0.4112	0.4195	0.39758	0.44016	0.38999	0.39599	10.6751		
trans-1,3-Dichloropropene			0.50304	0.44978	0.5157	0.56049	0.50648	0.56248	0.50379	0.51454	7.49294		
1,1,2-Trichloroethane		0.27692	0.29584	0.27194	0.31787	0.32454	0.3	0.32173	0.292	0.3001	6.65768		
2-Hexanone				0.26013	0.28088	0.31451	0.30524	0.34734	0.28972	0.29964	10.056		
1,3-Dichloropropane		0.46617	0.55761	0.45639	0.51068	0.53187	0.47698	0.53043	0.47034	0.50006	7.49429		
Tetrachloroethene		0.33351	0.31568	0.26327	0.31051	0.30894	0.30156	0.32634	0.29026	0.30626	7.18201		
Dibromochloromethane			0.45014	0.36113	0.41394	0.44566	0.40515	0.45572	0.40415	0.41941	8.03547		
1,2-Dibromoethane				0.31086	0.34005	0.35035	0.32626	0.35324	0.31647	0.33287	5.32182		
1-Chlorohexane		0.39643	0.40929	0.33097	0.45098	0.44465	0.43807	0.477	0.42289	0.42128	10.5148		
Chlorobenzene		1.02904	1.08596	0.91908	1.05295	1.05625	0.95434	1.02465	0.91009	1.00405	6.67004		
1,1,1,2-Tetrachloroethane			0.37536	0.32525	0.38767	0.40783	0.37127	0.40937	0.36265	0.37706	7.67975		
Ethylbenzene	0.5157	0.51658	0.53164	0.45493	0.54391	0.54636	0.50916	0.54884	0.48836	0.51728	5.93862		
m-,p-Xylene	0.67213	0.61926	0.69794	0.58569	0.67162	0.65634	0.61182	0.65803	0.57657	0.63882	6.58722		
o-Xylene	0.61273	0.56415	0.61379	0.55512	0.6465	0.65334	0.60899	0.67127	0.59158	0.61305	6.41073		
Styrene		0.95813	1.06028	0.90308	1.08018	1.12326	1.04689	1.15897	1.02088	1.04396	8.002		
Bromoform			0.22872	0.23892	0.27832	0.30617	0.27263	0.32232	0.28054	0.27538	12.1348		
Isopropylbenzene		1.53891	1.69742	1.42189	1.74341	1.73716	1.64433	1.81019	1.57289	1.64577	7.76922		
1,4-Dichlorobenzene-d4	ISTD												
1,1,2,2-Tetrachloroethane		0.61571	0.83634	0.73739	0.79769	0.80854	0.74616	0.78083	0.74513	0.75847	8.88143		
p-Bromofluorobenzene				0.91653	0.87561	1.04735	1.0775	0.95104		0.97361	8.83571		
1,2,3-Trichloropropane		0.24645	0.29476	0.28329	0.29208	0.30442	0.29453	0.30315	0.28248	0.28764	6.41284		

trans-1,4-Dichloro-2-Butene		0.22501	0.23725	0.31415	0.3034	0.3105	0.33164	0.30766	0.28994	14.2446
n-Propylbenzene	3.98718	4.09811	3.61454	4.21971	4.10826	3.88939	3.82307	3.70205	3.93029	5.36989
Bromobenzene	0.84385	1.11565	0.86076	0.97118	0.9688	0.89248	0.89548	0.87446	0.92783	9.59949
1,3,5-Trimethylbenzene			2.76735	3.16086	3.10843	2.93606	2.91239	2.81635	2.95024	5.30322
2-Chlorotoluene		2.99265	2.31448	2.81057	2.64897	2.50142	2.61378	2.57101	2.63612	8.25378
4-Chlorotoluene	2.56339	2.5861	2.29006	2.55177	2.63031	2.41864	2.2799	2.17747	2.4372	6.98222
a-Methylstyrene			1.12025	1.41688	1.39756	1.35572	1.41986	1.35543	1.34428	8.43365
tert-Butylbenzene			0.56026	0.65003	0.66483	0.62531	0.61977	0.59094	0.61853	6.19423
1,2,4-Trimethylbenzene	3.41485	3.20381	2.86379	3.24429	3.17284	3.0014	2.96997	2.8463	3.08966	6.49589
sec-Butylbenzene	3.92127	3.95846	3.39254	3.98281	3.96896	3.8029	3.77812	3.59297	3.79976	5.54855
p-Isopropyltoluene			2.97918	3.35219	3.3501	3.24235	3.24339	3.07285	3.20668	4.70949
1,3-Dichlorobenzene	2.09668	2.18083	1.63464	1.82169	1.84149	1.71899	1.77783	1.67989	1.84401	10.6223
1,4-Dichlorobenzene	2.13498	2.06617	1.68605	1.85221	1.83159	1.72549	1.79434	1.65691	1.84347	9.41157
n-Butylbenzene	3.12981	3.1425	2.56827	2.96652	3.08072	3.01911	3.06733	2.87744	2.98146	6.31771
1,2-Dichlorobenzene	1.80685	1.84212	1.52596	1.70901	1.74915	1.66133	1.78603	1.60751	1.71099	6.28256
1,2-Dibromo-3-Chloropropane			0.17584	0.21007	0.23479	0.23723	0.24208	0.21787	0.21965	11.2549
1,2,4-Trichlorobenzene	1.3714	1.33063	1.02655	1.15029	1.2163	1.24479	1.25089	1.12609	1.21462	9.21088
Hexachlorobutadiene	0.57233	0.7279	0.53741	0.61674	0.64289	0.67353	0.72181	0.62948	0.64026	10.4449
Naphthalene		3.19632	2.63671	3.04494	3.29135	3.2233	3.14196	2.79099	3.04651	7.99534
1,2,3-Trichlorobenzene	1.32324	1.26566	0.99788	1.12352	1.21351	1.21702	1.20507	1.0788	1.17809	8.93408

Fri Feb 26 11:40:14 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16030235 Run Date: 02/25/2016 Sample ID: WG558732-11
Instrument ID: HPMS9 Run Time: 21:31 Method: 8260B
File ID: 9M972907 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG558732 Cal ID: HPMS9 - 25-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	48.0	ug/kg	0.461	4.00	20	
1,1-Dichloroethene	CCC	50.0	48.6	ug/kg	0.454	2.90	20	
1,2-Dichloropropane	CCC	50.0	52.3	ug/kg	0.275	4.60	20	
Ethylbenzene	CCC	50.0	51.3	ug/kg	0.531	2.60	20	
Toluene	CCC	50.0	50.7	ug/kg	1.45	1.50	20	
Vinyl Chloride	CCC	50.0	59.8	ug/kg	0.392	19.7	20	
Bromoform	SPCC	50.0	47.3	ug/kg	0.261	5.40	20	
Chlorobenzene	SPCC	50.0	51.2	ug/kg	1.03	2.40	20	
Chloromethane	SPCC	50.0	52.7	ug/kg	0.345	5.40	20	
1,1-Dichloroethane	SPCC	50.0	46.4	ug/kg	0.485	7.20	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	52.0	ug/kg	0.789	4.00	20	
Acetone		50.0	43.9	ug/kg	0.112	12.2	20	
Benzene		50.0	49.0	ug/kg	0.937	2.10	20	
Bromobenzene		50.0	52.2	ug/kg	0.968	4.40	20	
Bromochloromethane		50.0	51.5	ug/kg	0.183	3.00	20	
Bromodichloromethane		50.0	47.6	ug/kg	0.352	4.90	20	
Bromomethane		50.0	49.0	ug/kg	0.208	2.10	20	
2-Butanone		50.0	47.4	ug/kg	0.153	5.20	20	
n-Butylbenzene		50.0	52.5	ug/kg	3.13	4.90	20	
sec-Butylbenzene		50.0	54.7	ug/kg	4.16	9.50	20	
tert-Butylbenzene		50.0	55.4	ug/kg	0.685	10.8	20	
Carbon Disulfide		50.0	44.1	ug/kg	0.635	11.7	20	
Carbon Tetrachloride		50.0	46.5	ug/kg	0.375	7.00	20	
Dibromochloromethane		50.0	48.5	ug/kg	0.407	3.10	20	
Chloroethane		50.0	54.2	ug/kg	0.158	8.30	20	
2-Chlorotoluene		50.0	54.2	ug/kg	2.86	8.40	20	
4-Chlorotoluene		50.0	53.0	ug/kg	2.59	6.10	20	
1,2-Dibromo-3-Chloropropane		50.0	54.5	ug/kg	0.239	8.90	20	
1,2-Dibromoethane		50.0	50.8	ug/kg	0.338	1.50	20	
Dibromomethane		50.0	47.0	ug/kg	0.164	6.10	20	
1,2-Dichlorobenzene		50.0	52.7	ug/kg	1.81	5.50	20	
1,3-Dichlorobenzene		50.0	50.8	ug/kg	1.87	1.60	20	
1,4-Dichlorobenzene		50.0	51.1	ug/kg	1.88	2.20	20	
Dichlorodifluoromethane		50.0	63.4	ug/kg	0.432	26.7	20	*
1,2-Dichloroethane		50.0	49.2	ug/kg	0.416	1.60	20	
cis-1,2-Dichloroethene		50.0	52.6	ug/kg	0.287	5.20	20	
trans-1,2-Dichloroethene		50.0	50.6	ug/kg	0.422	1.20	20	
1,3-Dichloropropane		50.0	53.8	ug/kg	0.538	7.60	20	
2,2-Dichloropropane		50.0	47.1	ug/kg	0.368	5.90	20	
cis-1,3-Dichloropropene		50.0	53.2	ug/kg	0.411	6.40	20	
trans-1,3-Dichloropropene		50.0	50.0	ug/kg	0.515	0.100	20	
1,1-Dichloropropene		50.0	48.5	ug/kg	0.332	2.90	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4661485
Report generated 03/14/2016 11:22

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16030235 Run Date: 02/25/2016 Sample ID: WG558732-11
Instrument ID: HPMS9 Run Time: 21:31 Method: 8260B
File ID: 9M972907 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG558732 Cal ID: HPMS9 - 25-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	48.2	ug/kg	0.289	3.60	20	
Hexachlorobutadiene		50.0	54.5	ug/kg	0.698	9.00	20	
Isopropylbenzene		50.0	52.0	ug/kg	1.71	4.00	20	
p-Isopropyltoluene		50.0	54.1	ug/kg	3.47	8.10	20	
4-Methyl-2-Pentanone		50.0	47.8	ug/kg	0.110	4.40	20	
Methylene Chloride		50.0	49.8	ug/kg	0.254	0.400	20	
Naphthalene		50.0	50.8	ug/kg	3.10	1.70	20	
n-Propylbenzene		50.0	54.9	ug/kg	4.32	9.80	20	
Styrene		50.0	52.8	ug/kg	1.10	5.60	20	
1,1,1,2-Tetrachloroethane		50.0	49.7	ug/kg	0.375	0.600	20	
Tetrachloroethene		50.0	49.8	ug/kg	0.305	0.400	20	
1,2,3-Trichlorobenzene		50.0	52.6	ug/kg	1.24	5.20	20	
1,2,4-Trichlorobenzene		50.0	51.7	ug/kg	1.26	3.40	20	
1,1,1-Trichloroethane		50.0	46.7	ug/kg	0.406	6.50	20	
1,1,2-Trichloroethane		50.0	51.5	ug/kg	0.309	3.00	20	
Trichloroethene		50.0	49.4	ug/kg	0.300	1.20	20	
Trichlorofluoromethane		50.0	47.6	ug/kg	0.467	4.90	20	
1,2,3-Trichloropropane		50.0	54.2	ug/kg	0.312	8.40	20	
1,2,4-Trimethylbenzene		50.0	51.5	ug/kg	3.18	3.10	20	
1,3,5-Trimethylbenzene		50.0	54.3	ug/kg	3.21	8.60	20	
o-Xylene		50.0	53.6	ug/kg	0.657	7.10	20	
m-,p-Xylene		100	103	ug/kg	0.655	2.60	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4661485
Report generated 03/14/2016 11:22

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030235 Run Date: 03/07/2016 Sample ID: WG559980-02
Instrument ID: HPMS9 Run Time: 15:17 Method: 8260B
File ID: 9M973121 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG559982 Cal ID: HPMS9 - 25-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	52.1	ug/kg	0.500	4.14	20	
1,1-Dichloroethene	CCC	50.0	53.3	ug/kg	0.498	6.67	20	
1,2-Dichloropropane	CCC	50.0	54.8	ug/kg	0.288	9.67	20	
Ethylbenzene	CCC	50.0	51.9	ug/kg	0.537	3.74	20	
Toluene	CCC	50.0	50.7	ug/kg	1.45	1.41	20	
Vinyl Chloride	CCC	50.0	55.7	ug/kg	0.365	11.4	20	
Bromoform	SPCC	50.0	51.0	ug/kg	0.281	2.08	20	
Chlorobenzene	SPCC	50.0	50.7	ug/kg	1.02	1.47	20	
Chloromethane	SPCC	50.0	47.9	ug/kg	0.313	4.20	20	
1,1-Dichloroethane	SPCC	50.0	54.0	ug/kg	0.565	7.95	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	45.1	ug/kg	0.685	9.71	20	
Xylenes		150	155	ug/kg	0.650	3.64	40	
Acetone		50.0	50.0	ug/kg	0.126	0.0460	20	
Benzene		50.0	50.2	ug/kg	0.961	0.429	20	
Bromobenzene		50.0	45.3	ug/kg	0.841	9.31	20	
Bromochloromethane		50.0	51.5	ug/kg	0.183	3.06	20	
Bromodichloromethane		50.0	51.6	ug/kg	0.383	3.27	20	
Bromomethane		50.0	42.9	ug/kg	0.183	14.1	20	
2-Butanone		50.0	52.3	ug/kg	0.169	4.50	20	
n-Butylbenzene		50.0	51.3	ug/kg	3.06	2.61	20	
sec-Butylbenzene		50.0	49.5	ug/kg	3.76	0.971	20	
tert-Butylbenzene		50.0	48.0	ug/kg	0.594	3.94	20	
Carbon Disulfide		50.0	54.2	ug/kg	0.781	8.47	20	
Carbon Tetrachloride		50.0	56.1	ug/kg	0.452	12.2	20	
Dibromochloromethane		50.0	48.8	ug/kg	0.410	2.37	20	
Chloroethane		50.0	54.7	ug/kg	0.160	9.46	20	
2-Chlorotoluene		50.0	46.9	ug/kg	2.47	6.14	20	
4-Chlorotoluene		50.0	49.5	ug/kg	2.41	0.944	20	
1,2-Dibromo-3-Chloropropane		50.0	44.2	ug/kg	0.194	11.6	20	
1,2-Dibromoethane		50.0	48.1	ug/kg	0.320	3.81	20	
Dibromomethane		50.0	49.7	ug/kg	0.173	0.585	20	
1,2-Dichlorobenzene		50.0	45.9	ug/kg	1.57	8.25	20	
1,3-Dichlorobenzene		50.0	45.3	ug/kg	1.67	9.39	20	
1,4-Dichlorobenzene		50.0	45.4	ug/kg	1.67	9.24	20	
Dichlorodifluoromethane		50.0	45.0	ug/kg	0.306	10.1	20	
1,2-Dichloroethane		50.0	53.5	ug/kg	0.453	7.08	20	
cis-1,2-Dichloroethene		50.0	53.2	ug/kg	0.290	6.31	20	
trans-1,2-Dichloroethene		50.0	54.8	ug/kg	0.457	9.68	20	
1,3-Dichloropropane		50.0	49.4	ug/kg	0.494	1.16	20	
2,2-Dichloropropane		50.0	57.8	ug/kg	0.451	15.5	20	
cis-1,3-Dichloropropene		50.0	52.5	ug/kg	0.405	4.93	20	
trans-1,3-Dichloropropene		50.0	51.0	ug/kg	0.525	2.09	20	

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030235 Run Date: 03/07/2016 Sample ID: WG559980-02
Instrument ID: HPMS9 Run Time: 15:17 Method: 8260B
File ID: 9M973121 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG559982 Cal ID: HPMS9 - 25-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	53.5	ug/kg	0.366	7.00	20	
2-Hexanone		50.0	50.6	ug/kg	0.303	1.27	20	
Hexachlorobutadiene		50.0	48.7	ug/kg	0.623	2.68	20	
Isopropylbenzene		50.0	53.7	ug/kg	1.77	7.45	20	
p-Isopropyltoluene		50.0	49.5	ug/kg	3.18	0.988	20	
4-Methyl-2-Pentanone		50.0	51.2	ug/kg	0.118	2.32	20	
Methylene Chloride		50.0	50.0	ug/kg	0.254	0.0730	20	
Naphthalene		50.0	45.4	ug/kg	2.76	9.27	20	
n-Propylbenzene		50.0	49.7	ug/kg	3.91	0.537	20	
Styrene		50.0	52.2	ug/kg	1.09	4.48	20	
1,1,1,2-Tetrachloroethane		50.0	50.9	ug/kg	0.384	1.81	20	
Tetrachloroethene		50.0	51.9	ug/kg	0.318	3.87	20	
1,2,3-Trichlorobenzene		50.0	46.2	ug/kg	1.09	7.69	20	
1,2,4-Trichlorobenzene		50.0	46.2	ug/kg	1.12	7.58	20	
1,1,1-Trichloroethane		50.0	54.9	ug/kg	0.477	9.88	20	
1,1,2-Trichloroethane		50.0	50.2	ug/kg	0.301	0.347	20	
Trichloroethene		50.0	53.5	ug/kg	0.324	6.92	20	
Trichlorofluoromethane		50.0	55.3	ug/kg	0.543	10.6	20	
1,2,3-Trichloropropane		50.0	46.9	ug/kg	0.270	6.12	20	
1,2,4-Trimethylbenzene		50.0	47.5	ug/kg	2.94	4.96	20	
1,3,5-Trimethylbenzene		50.0	48.4	ug/kg	2.85	3.27	20	
o-Xylene		50.0	52.4	ug/kg	0.642	4.74	20	
m-,p-Xylene		100	103	ug/kg	0.659	3.09	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4661488
Report generated 03/14/2016 11:22

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16030235
Instrument ID: HPMS9
Workgroup (AAB#): WG559982

ICAL CCV Number: WG558732-02
CAL ID: HPMS9-25-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558732-02	NA	NA	183008	378926	517775
Upper Limit	NA	NA	366016	757852	1035550
Lower Limit	NA	NA	91504	189463	258888
L16030235-01	1.00	01	172842	340891	455762
L16030235-02	1.00	01	176046	325796	427501
L16030235-03	1.00	01	176771	336256	449854
L16030235-04	1.00	01	188874	343186	441025
L16030235-05	1.00	01	186361	353597	457727
L16030235-06	1.00	01	160139	307448	402998
L16030235-07	1.00	01	144215	273935	372592
L16030235-08	1.00	01	167619	325813	430643
WG559982-01	1.00	01	193847	377724	512722
WG559982-02	1.00	01	201592	374762	497008

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4661489
Report generated 03/14/2016 11:22

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16030235
Instrument ID: HPMS9
Workgroup (AAB#): WG559982

ICAL CCV Number: WG558732-02
CAL ID: HPMS9-25-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558732-02	NA	NA	17.76	14.73	10.85
Upper Limit	NA	NA	18.26	15.23	11.35
Lower Limit	NA	NA	17.26	14.23	10.35
L16030235-01	1.00	01	17.75	14.72	10.85
L16030235-02	1.00	01	17.75	14.72	10.85
L16030235-03	1.00	01	17.75	14.72	10.85
L16030235-04	1.00	01	17.75	14.72	10.85
L16030235-05	1.00	01	17.75	14.72	10.85
L16030235-06	1.00	01	17.75	14.72	10.85
L16030235-07	1.00	01	17.75	14.72	10.85
L16030235-08	1.00	01	17.75	14.72	10.85
WG559982-01	1.00	01	17.75	14.72	10.85
WG559982-02	1.00	01	17.75	14.72	10.85

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4661491
Report generated: 03/14/2016 11:22

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030716\9M973127.D Vial: 7
Acq On : 7 Mar 2016 18:21 Operator: ADC
Sample : L16030235-01 A 8260 4.92g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 08 14:13:43 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	455762	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	340891	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	172842	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	118216	47.8517 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.70%		
43) 1,2-Dichloroethane-d4	10.45	65	158841	51.2444 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 102.48%		
58) Toluene-d8	12.82	98	425851	49.3881 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.78%		
79) p-Bromofluorobenzene	16.23	95	175980	52.2879 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 104.58%		

Target Compounds					Qvalue
13) Acetone	6.39	43	21229	16.8432 ug/kg	90
29) 2-Butanone	9.03	43	2707	1.8419 ug/kg#	58
36) Tetrahydrofuran	9.78	42	976	1.0302 ug/kg#	43
56) Dimethyl Disulfide	12.83	94	12524	3.5426 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M973127.D 8260SL.M Tue Mar 08 14:13:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030716\9M973127.D Vial: 7
Acq On : 7 Mar 2016 18:21 Operator: ADC
Sample : L16030235-01 A 8260 4.92g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 8 14:13 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

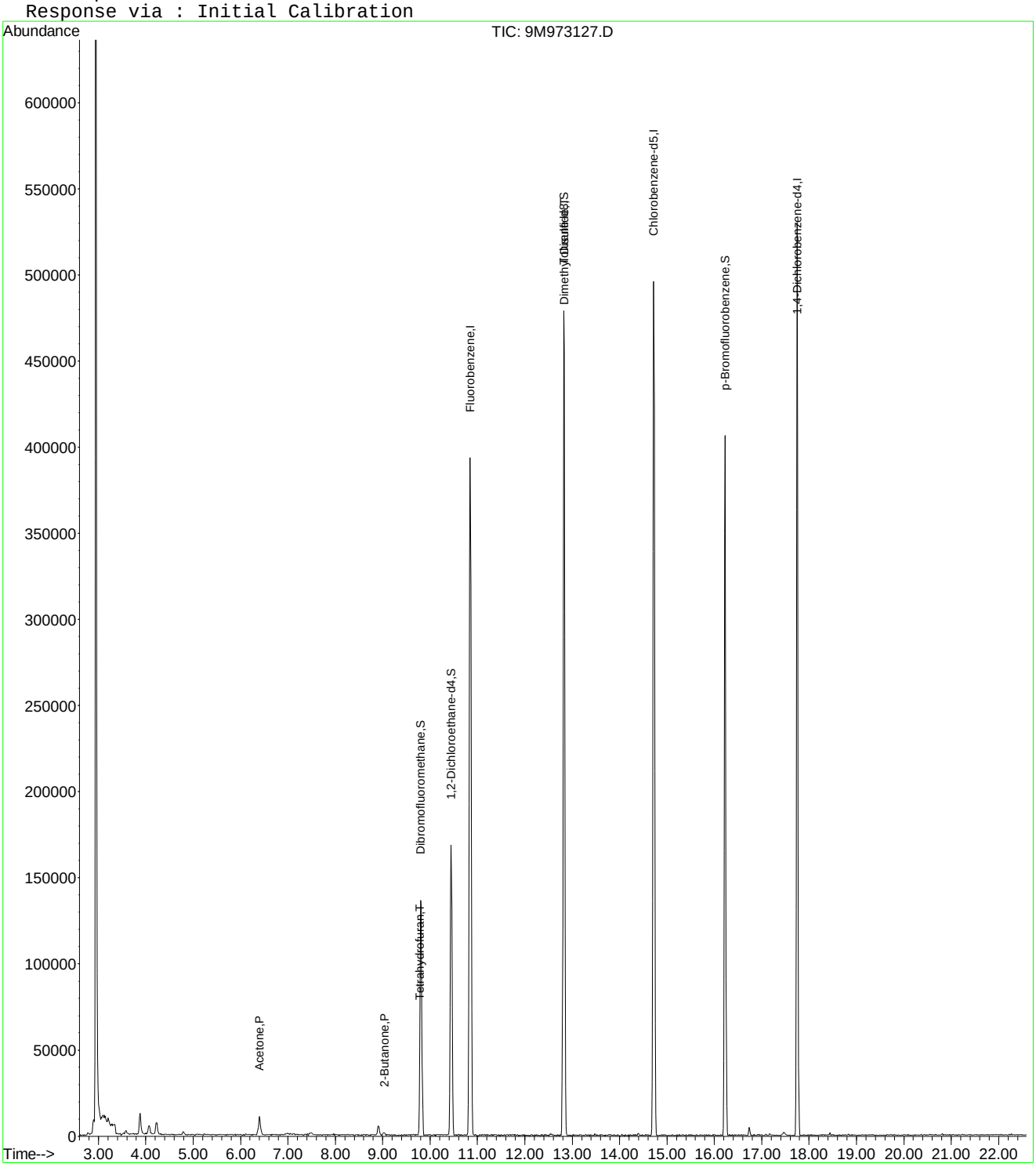

9M973127.D 8260SL.M Tue Mar 08 14:13:43 2016 Page 2

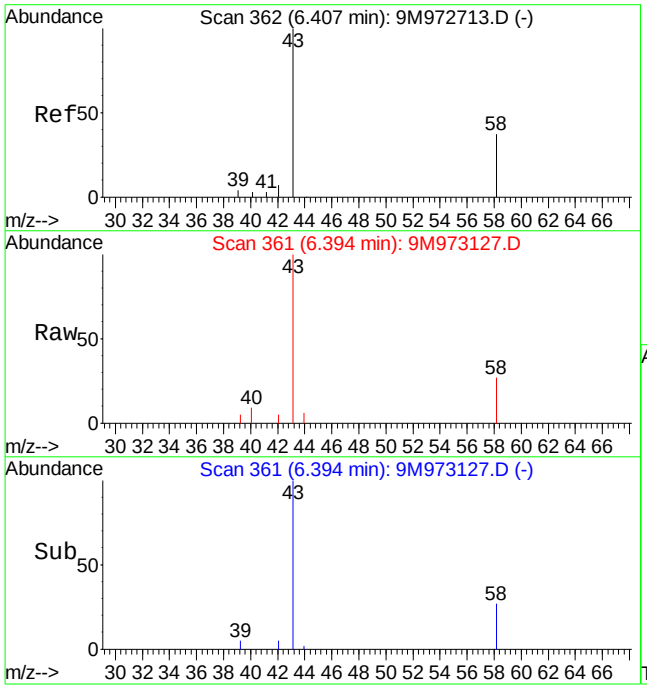

#13
Acetone
Concen: 16.84 ug/kg
RT: 6.39 min Scan# 361
Delta R.T. -0.02 min
Lab File: 9M973127.D
Acq: 7 Mar 2016 18:21

Tgt Ion: 43 Resp: 21229

Ion	Ratio	Lower	Upper
43	100		
58	33.6	16.9	39.3

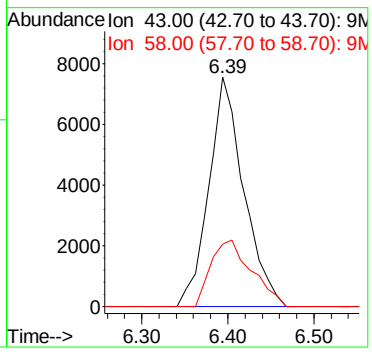

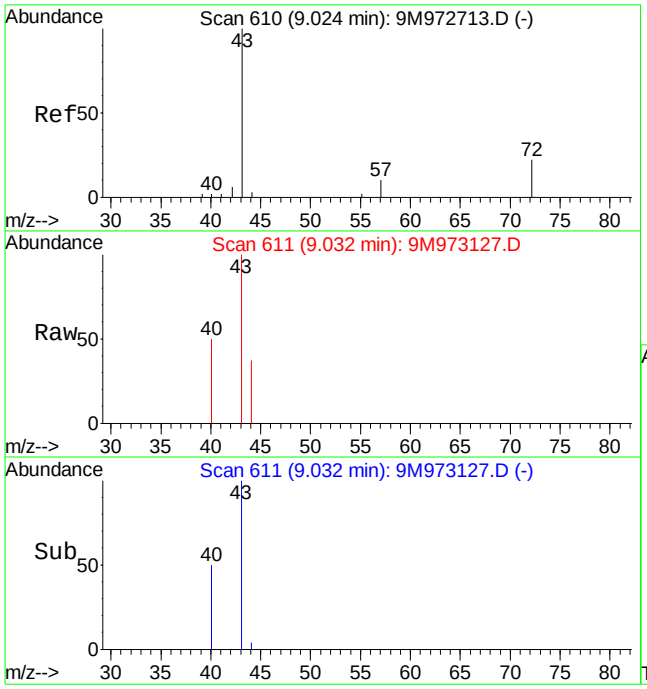

#29
2-Butanone
Concen: 1.84 ug/kg
RT: 9.03 min Scan# 611
Delta R.T. 0.00 min
Lab File: 9M973127.D
Acq: 7 Mar 2016 18:21

Tgt Ion: 43 Resp: 2707

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

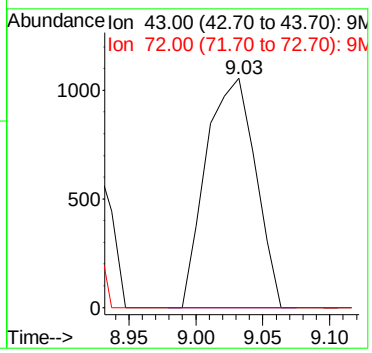

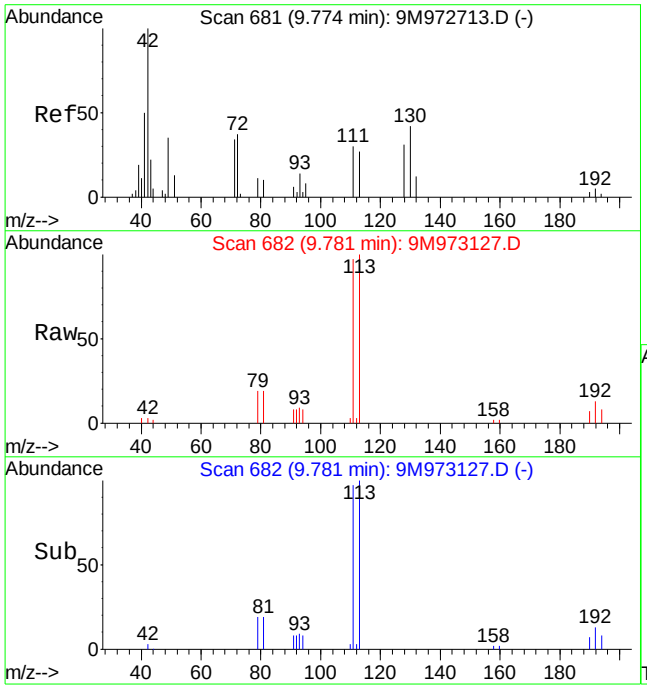

#36
Tetrahydrofuran
Concen: 1.03 ug/kg
RT: 9.78 min Scan# 682
Delta R.T. 0.00 min
Lab File: 9M973127.D
Acq: 7 Mar 2016 18:21

Tgt Ion: 42 Resp: 976

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

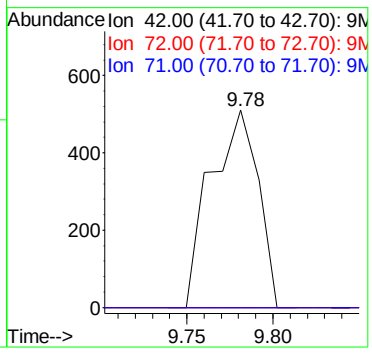

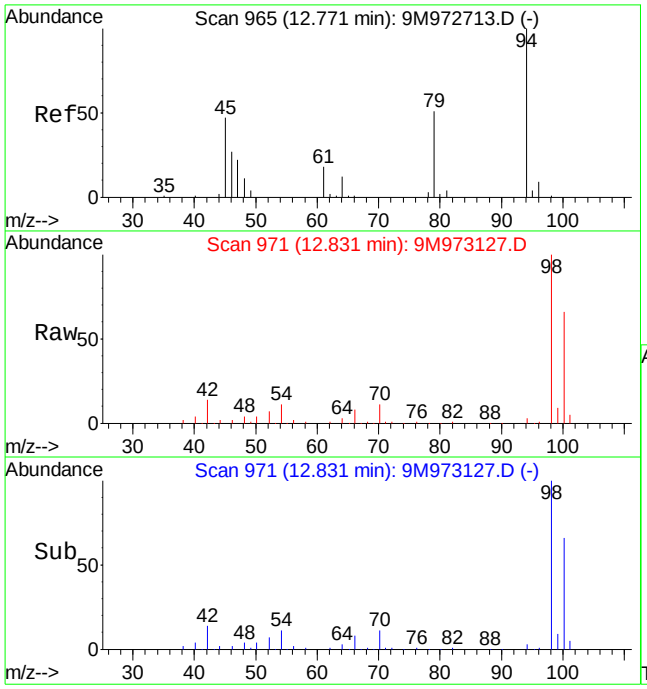

#56
Dimethyl Disulfide
Concen: 3.54 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.07 min
Lab File: 9M973127.D
Acq: 7 Mar 2016 18:21

Tgt Ion: 94 Resp: 12524

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

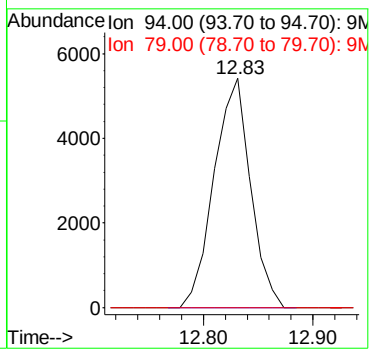

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030716\9M973128.D Vial: 8
Acq On : 7 Mar 2016 18:51 Operator: ADC
Sample : L16030235-02 A 8260 45.25g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 08 14:13:44 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	427501	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	325796	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	176046	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	115595	49.8840 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.76%		
43) 1,2-Dichloroethane-d4	10.45	65	163598	56.2681 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 112.54%		
58) Toluene-d8	12.82	98	400551	48.6062 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 97.22%		
79) p-Bromofluorobenzene	16.23	95	170823	49.8319 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 99.66%		

Target Compounds					Qvalue
13) Acetone	6.40	43	7121	4.4091 ug/kg	87
15) Tert-Butyl Alcohol	6.75	59	206	0.4713 ug/kg#	58
29) 2-Butanone	9.02	43	910	0.6601 ug/kg#	58
32) cis-1,2-Dichloroethene	9.32	96	2548	1.0912 ug/kg	99
36) Tetrahydrofuran	9.79	42	1083	1.2188 ug/kg#	43
47) Trichloroethene	11.35	130	5687	2.1931 ug/kg	94
56) Dimethyl Disulfide	12.83	94	11260	3.3956 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M973128.D 8260SL.M Tue Mar 08 14:13:44 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030716\9M973128.D Vial: 8
Acq On : 7 Mar 2016 18:51 Operator: ADC
Sample : L16030235-02 A 8260 45.25g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 8 14:13 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

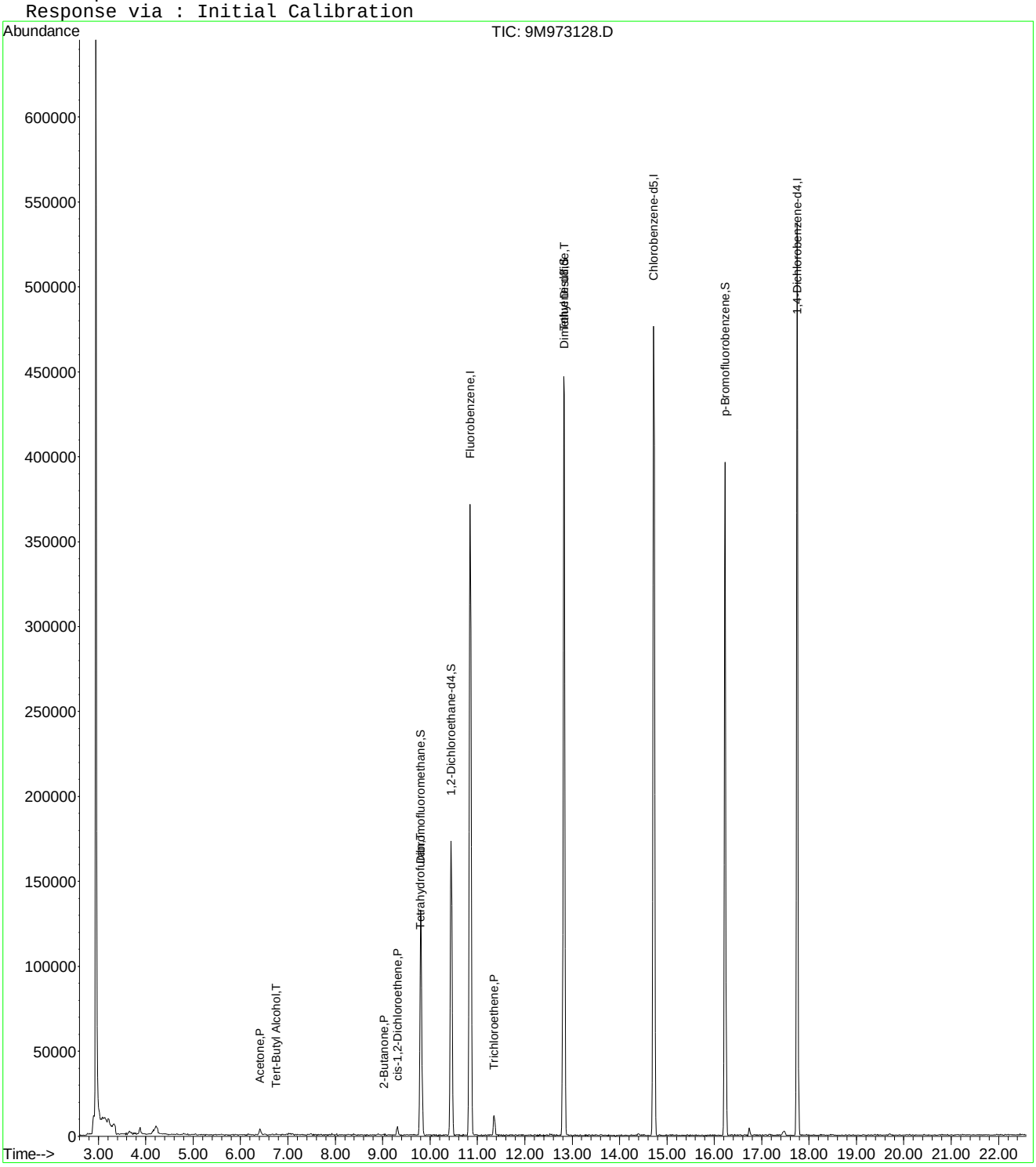

9M973128.D 8260SL.M Tue Mar 08 14:13:44 2016 Page 2

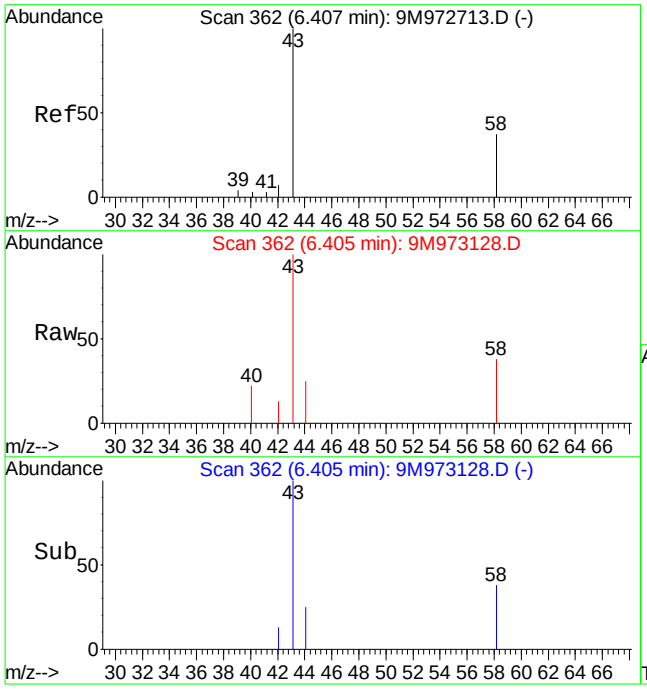

#13
Acetone
Concen: 4.41 ug/kg
RT: 6.40 min Scan# 362
Delta R.T. -0.01 min
Lab File: 9M973128.D
Acq: 7 Mar 2016 18:51

Tgt Ion: 43 Resp: 7121

Ion	Ratio	Lower	Upper
43	100		
58	34.8	16.9	39.3

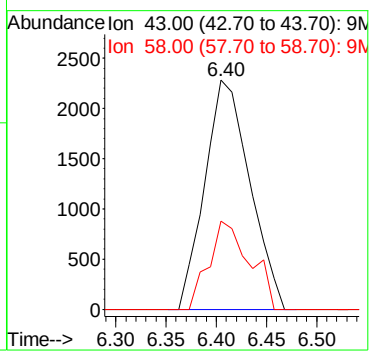

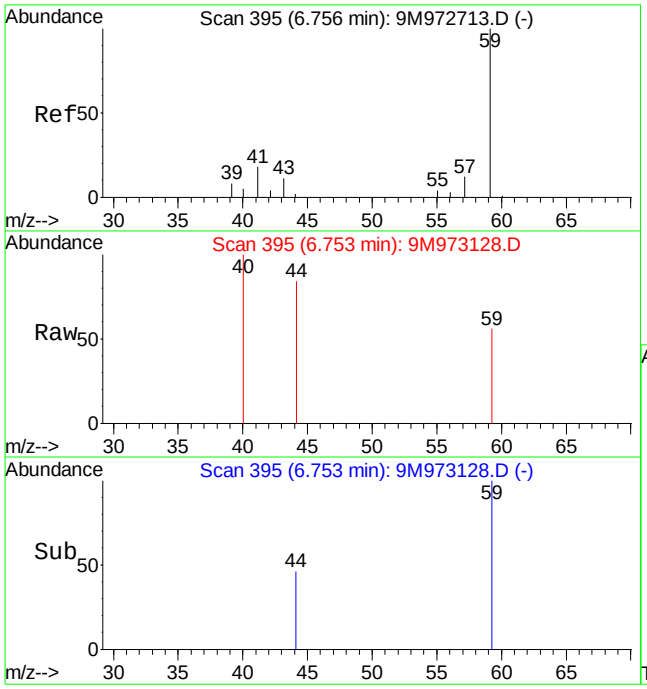

#15
Tert-Butyl Alcohol
Concen: 0.47 ug/kg
RT: 6.75 min Scan# 395
Delta R.T. -0.01 min
Lab File: 9M973128.D
Acq: 7 Mar 2016 18:51

Tgt Ion: 59 Resp: 206

Ion	Ratio	Lower	Upper
59	100		
41	0.0	14.1	32.9#
57	0.0	6.4	15.0#

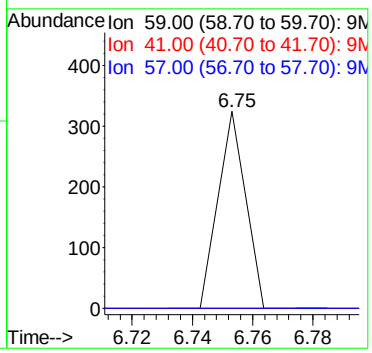

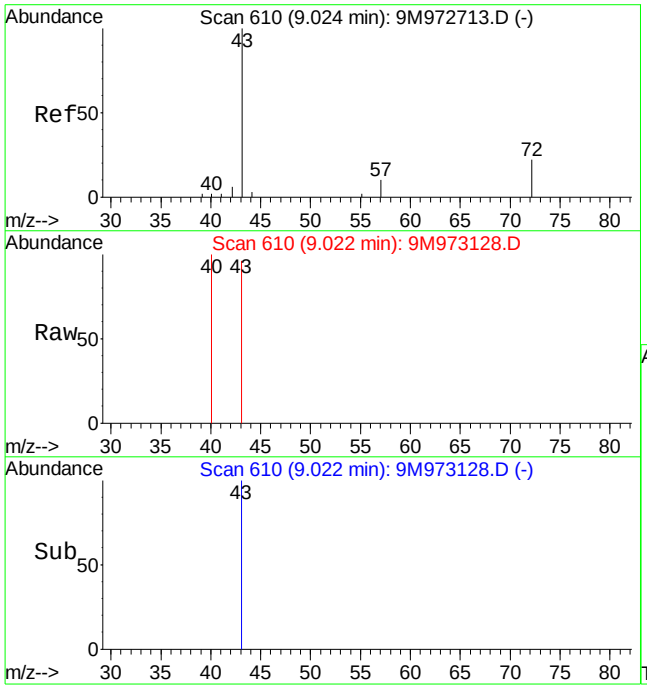

#29
2-Butanone
Concen: 0.66 ug/kg
RT: 9.02 min Scan# 610
Delta R.T. -0.01 min
Lab File: 9M973128.D
Acq: 7 Mar 2016 18:51

Tgt Ion: 43 Resp: 910

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

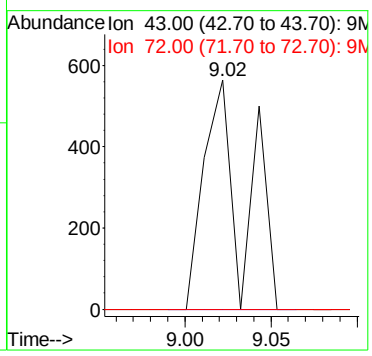

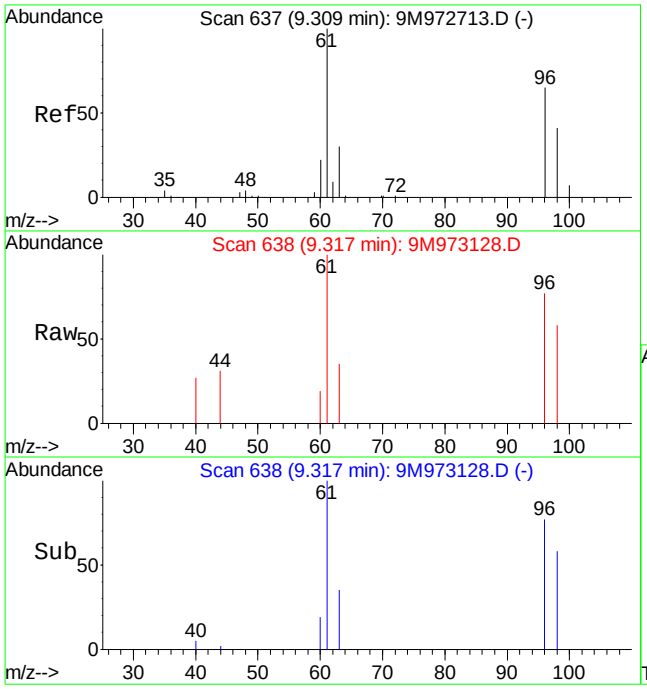

#32
cis-1,2-Dichloroethene
Concen: 1.09 ug/kg
RT: 9.32 min Scan# 638
Delta R.T. 0.01 min
Lab File: 9M973128.D
Acq: 7 Mar 2016 18:51

Tgt Ion: 96 Resp: 2548

Ion	Ratio	Lower	Upper
96	100		
61	172.5	102.6	239.4

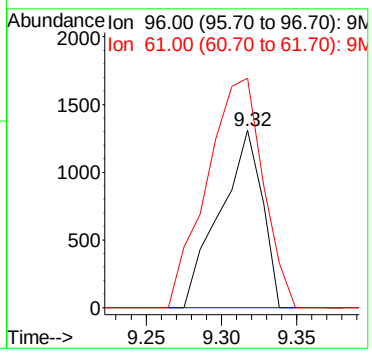

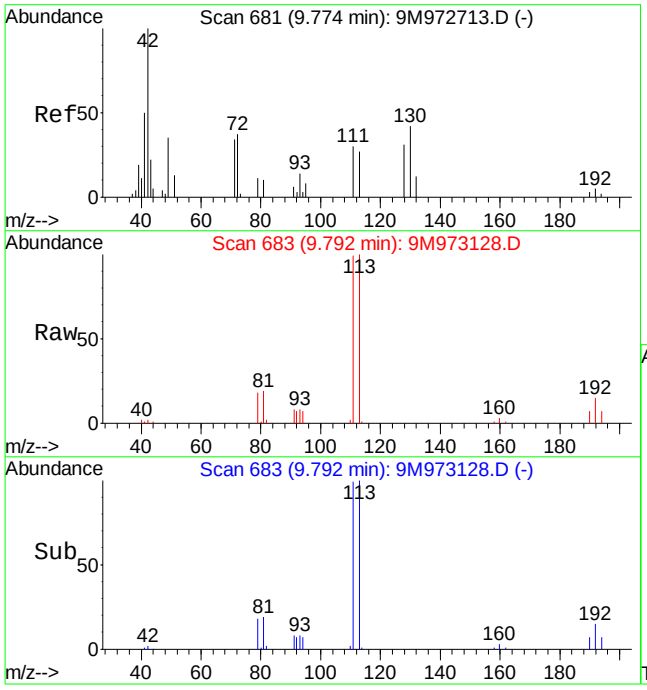

#36
Tetrahydrofuran
Concen: 1.22 ug/kg
RT: 9.79 min Scan# 683
Delta R.T. 0.01 min
Lab File: 9M973128.D
Acq: 7 Mar 2016 18:51

Tgt Ion: 42 Resp: 1083

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

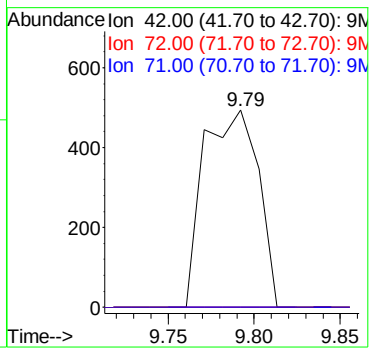

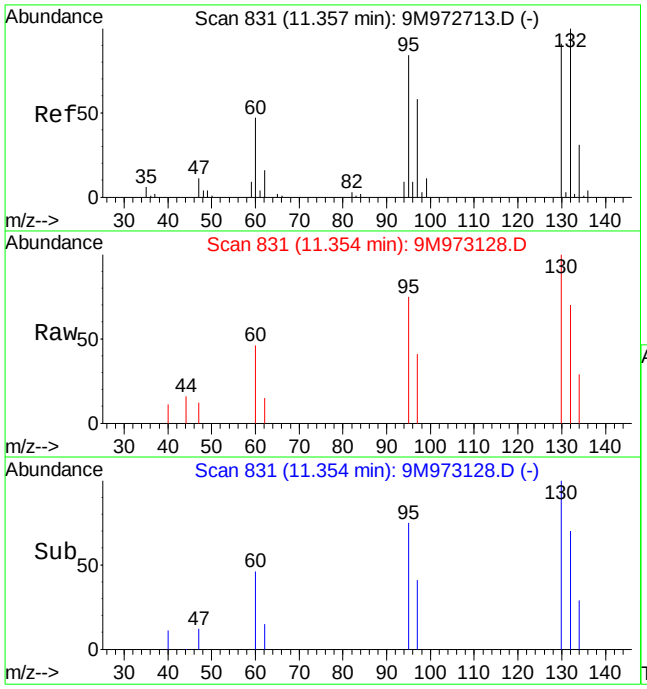

#47
Trichloroethene
Concen: 2.19 ug/kg
RT: 11.35 min Scan# 831
Delta R.T. 0.00 min
Lab File: 9M973128.D
Acq: 7 Mar 2016 18:51

Tgt Ion:130 Resp: 5687

Ion	Ratio	Lower	Upper
130	100		
132	86.6	56.5	131.7
95	95.8	55.4	129.4

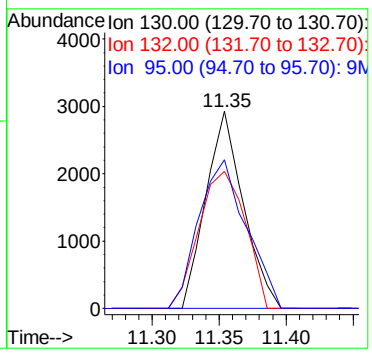

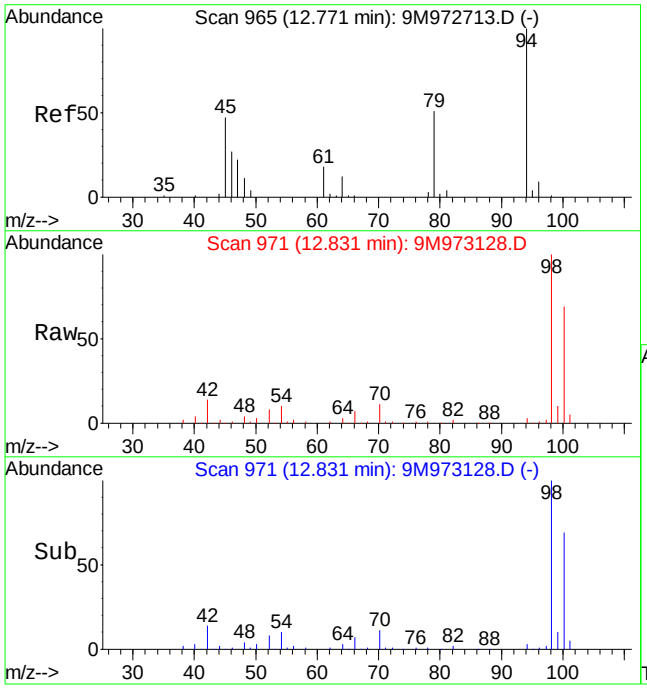

#56
Dimethyl Disulfide
Concen: 3.40 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.07 min
Lab File: 9M973128.D
Acq: 7 Mar 2016 18:51

Tgt Ion: 94 Resp: 11260

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

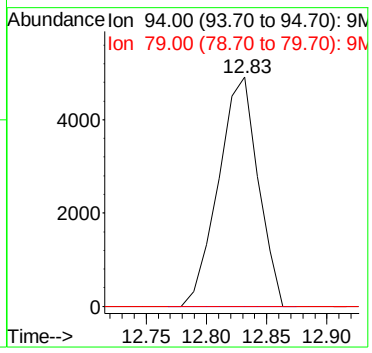

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030716\9M973129.D Vial: 9
Acq On : 7 Mar 2016 19:22 Operator: ADC
Sample : L16030235-03 A RS 8260 5.48g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 08 14:13:45 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	449854	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	336256	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	176771	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	116795	47.8974 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.80%		
43) 1,2-Dichloroethane-d4	10.45	65	153312	50.1102 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.22%		
58) Toluene-d8	12.83	98	415185	48.8148 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 97.62%		
79) p-Bromofluorobenzene	16.23	95	170140	49.4291 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 98.86%		

Target Compounds

					Qvalue
13) Acetone	6.41	43	5371	2.4485 ug/kg	88
29) 2-Butanone	9.02	43	1283	0.8844 ug/kg#	58
36) Tetrahydrofuran	9.79	42	1253	1.3400 ug/kg#	43
47) Trichloroethene	11.35	130	12355	4.5278 ug/kg	90
56) Dimethyl Disulfide	12.82	94	12226	3.5037 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M973129.D 8260SL.M Tue Mar 08 14:13:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030716\9M973129.D Vial: 9
Acq On : 7 Mar 2016 19:22 Operator: ADC
Sample : L16030235-03 A RS 8260 5.48g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 8 14:13 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

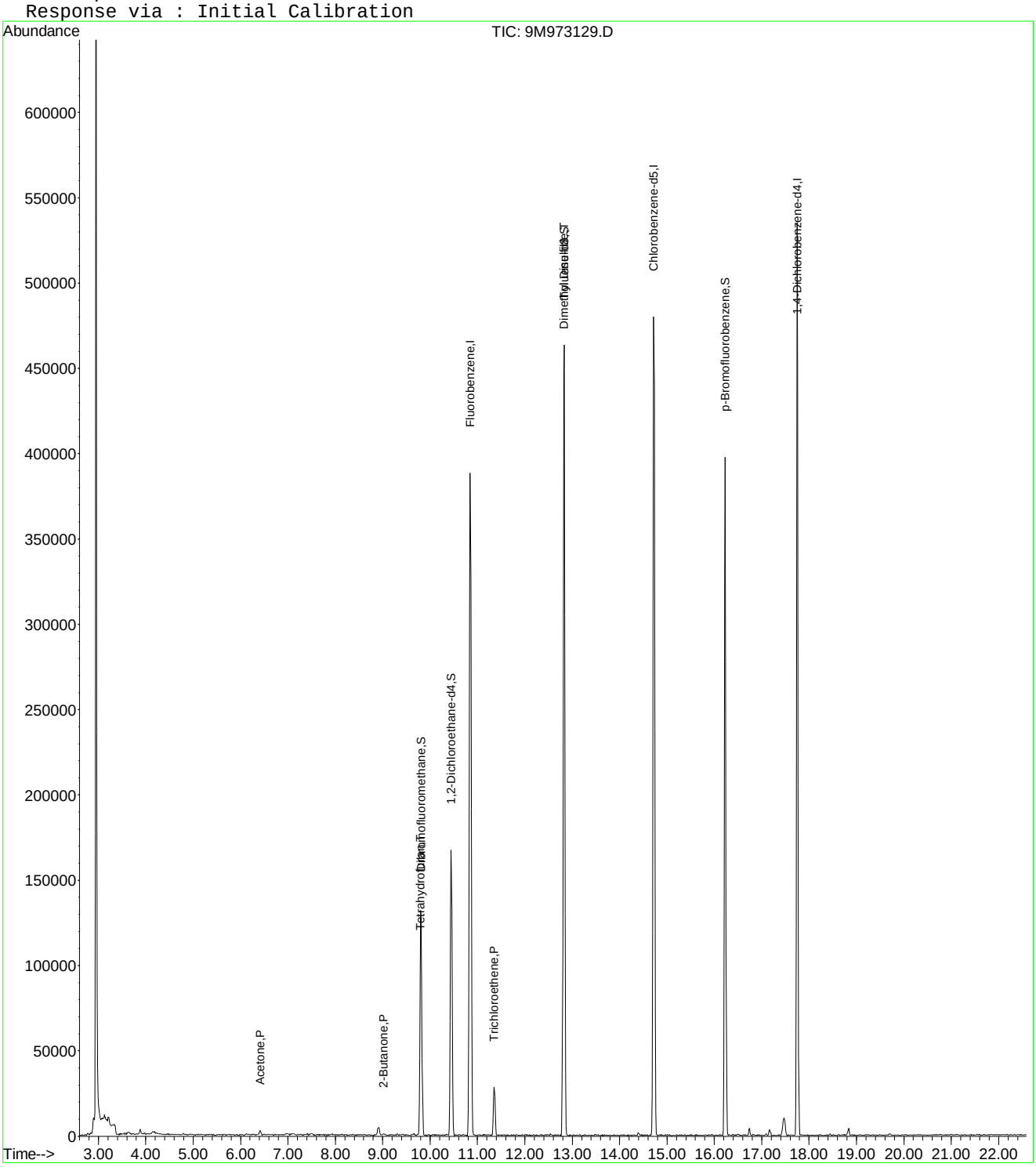

9M973129.D 8260SL.M Tue Mar 08 14:13:46 2016 Page 2

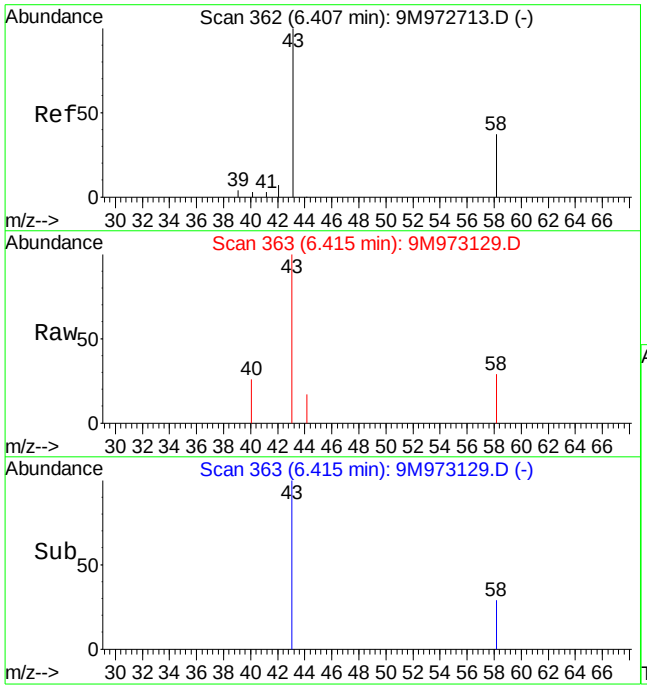

#13
Acetone
Concen: 2.45 ug/kg
RT: 6.41 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M973129.D
Acq: 7 Mar 2016 19:22

Tgt Ion: 43 Resp: 5371

Ion	Ratio	Lower	Upper
43	100		
58	21.8	16.9	39.3

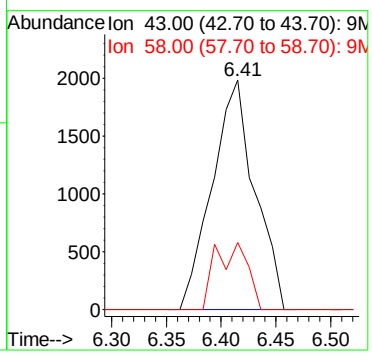

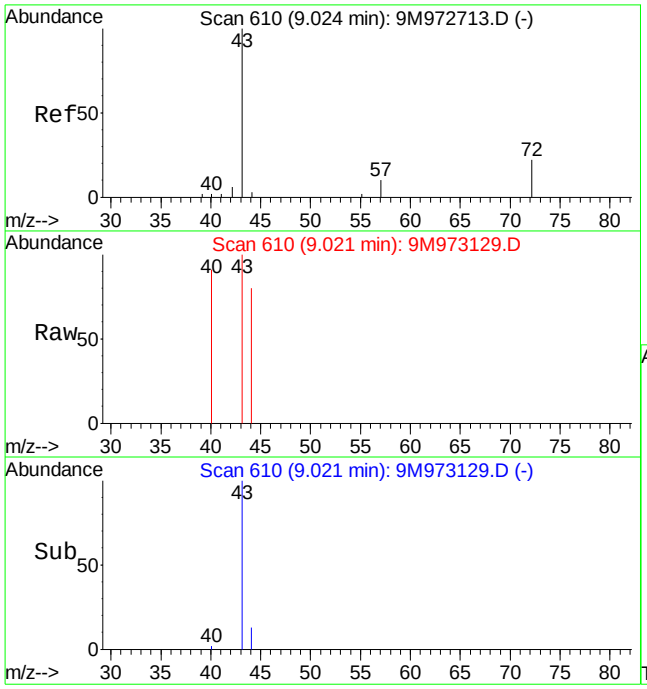

#29
2-Butanone
Concen: 0.88 ug/kg
RT: 9.02 min Scan# 610
Delta R.T. -0.01 min
Lab File: 9M973129.D
Acq: 7 Mar 2016 19:22

Tgt Ion: 43 Resp: 1283

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

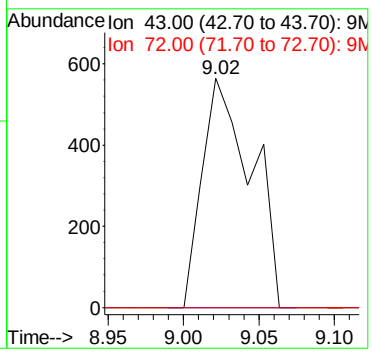

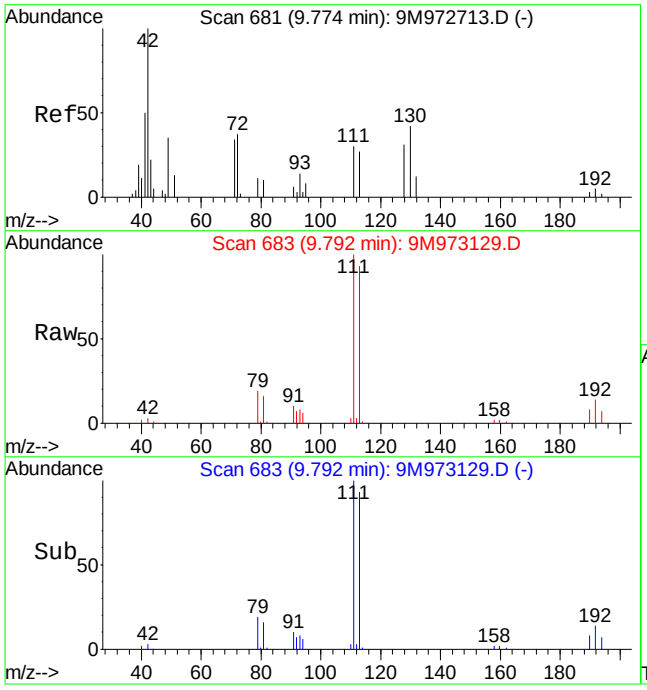

#36
Tetrahydrofuran
Concen: 1.34 ug/kg
RT: 9.79 min Scan# 683
Delta R.T. 0.01 min
Lab File: 9M973129.D
Acq: 7 Mar 2016 19:22

Tgt Ion: 42 Resp: 1253

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

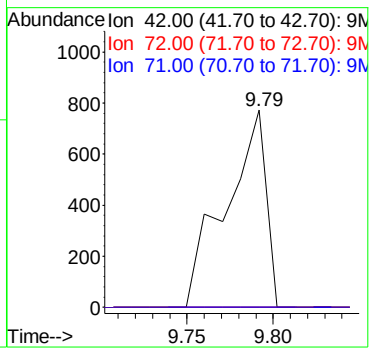

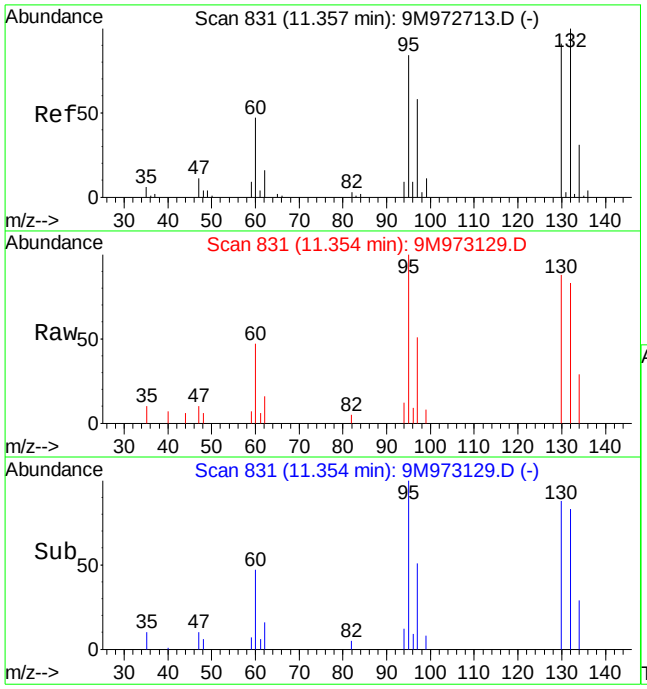

#47
Trichloroethene
Concen: 4.53 ug/kg
RT: 11.35 min Scan# 831
Delta R.T. 0.00 min
Lab File: 9M973129.D
Acq: 7 Mar 2016 19:22

Tgt Ion:130 Resp: 12355

Ion	Ratio	Lower	Upper
130	100		
132	100.2	56.5	131.7
95	106.0	55.4	129.4

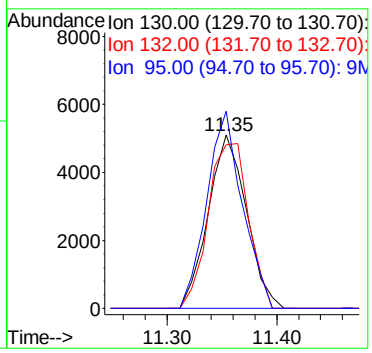

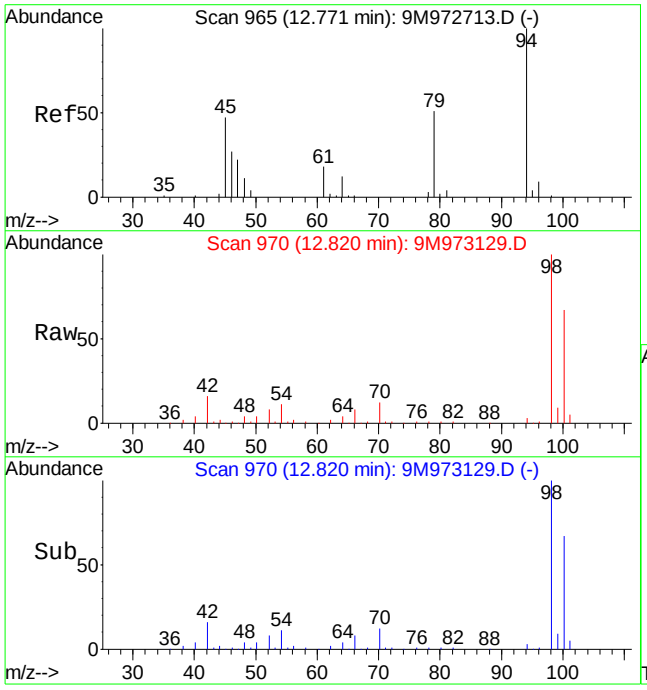

#56
Dimethyl Disulfide
Concen: 3.50 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M973129.D
Acq: 7 Mar 2016 19:22

Tgt Ion: 94 Resp: 12226

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

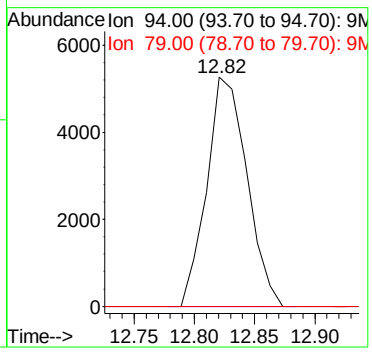

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030716\9M973133.D Vial: 13
Acq On : 7 Mar 2016 21:26 Operator: ADC
Sample : L16030235-04 A MS 8260 5.17g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 21:49:30 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	441025	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	343186	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.75	152	188874	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	116551	48.7542 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.50%		
43) 1,2-Dichloroethane-d4	10.44	65	154742	51.5901 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 103.18%		
58) Toluene-d8	12.83	98	416451	47.9749 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 95.94%		
79) p-Bromofluorobenzene	16.23	95	177077	48.1479 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 96.30%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	76258	25.3690 ug/kg	100
3) Chloromethane	3.74	50	58272	20.1955 ug/kg	99
4) Vinyl Chloride	3.99	62	60518	20.9517 ug/kg	97
6) Bromomethane	4.88	94	33343	17.7736 ug/kg	94
7) Chloroethane	5.04	64	27416	21.3050 ug/kg	97
8) Trichlorofluoromethane	5.53	101	89002	20.5445 ug/kg	98
10) Isoprene	6.09	67	53979	20.8704 ug/kg	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	47532	21.2752 ug/kg	96
13) Acetone	6.41	43	22813	18.9825 ug/kg	99
14) 1,1-Dichloroethene	6.61	61	84392	20.4769 ug/kg	96
16) Dimethyl Sulfide	6.88	62	46533	26.7149 ug/kg	92
17) Iodomethane	7.13	142	15032	14.3853 ug/kg	89
18) Methyl acetate	7.15	43	39395	17.5833 ug/kg	94
19) Methylene Chloride	7.39	84	43866	19.5432 ug/kg	92
20) Carbon Disulfide	7.45	76	105867	16.6751 ug/kg	100
21) Acrylonitrile	7.58	53	19875	17.9321 ug/kg	96
22) Methyl Tert Butyl Ether	7.62	73	120050	18.7791 ug/kg	96
23) trans-1,2-Dichloroethene	7.85	61	76481	20.8226 ug/kg	95
24) n-Hexane	7.92	57	74558	19.6804 ug/kg	98
27) 1,1-Dichloroethane	8.47	63	87608	18.9901 ug/kg	99
29) 2-Butanone	9.02	43	26668	18.7514 ug/kg	93
31) 2,2-Dichloropropane	9.24	77	63350	18.3978 ug/kg	98
32) cis-1,2-Dichloroethene	9.32	96	49590	20.5855 ug/kg	91
33) Chloroform	9.52	83	84692	19.9845 ug/kg	100
34) 1-Bromopropane	9.65	122	10232	28.3181 ug/kg	96
35) Bromochloromethane	9.75	130	30678	19.6047 ug/kg	89
36) Tetrahydrofuran	9.78	42	1210	1.3199 ug/kg#	43
38) 1,1,1-Trichloroethane	10.04	97	78120	20.3837 ug/kg	96
39) Cyclohexane	10.08	56	84109	20.1296 ug/kg	97
40) 1,1-Dichloropropene	10.24	75	58757	19.4837 ug/kg	98
41) Tert-Amyl-Methyl ether	10.24	73	9403	1.5812 ug/kg#	45
42) Carbon Tetrachloride	10.39	117	69123	19.4546 ug/kg	99
45) 1,2-Dichloroethane	10.56	62	78897	21.1652 ug/kg	99
46) Benzene	10.60	78	164415	19.4740 ug/kg	98
47) Trichloroethene	11.35	130	66769	24.9590 ug/kg	98
48) Methylcyclohexane	11.44	83	68335	20.3669 ug/kg	94
49) 1,2-Dichloropropane	11.56	63	50571	21.8124 ug/kg	97
51) Bromodichloromethane	11.87	83	64496	19.7391 ug/kg	99
52) Dibromomethane	11.96	174	27908	18.1673 ug/kg	100
53) 2-Chloroethyl Vinyl Ether	12.15	63	8301	15.0542 ug/kg	88

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030716\9M973133.D Vial: 13
Acq On : 7 Mar 2016 21:26 Operator: ADC
Sample : L16030235-04 A MS 8260 5.17g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 21:49:30 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
54)	4-Methyl-2-Pentanone	12.20	58	18385	18.0667 ug/kg	98
55)	cis-1,3-Dichloropropene	12.50	75	69873	20.5259 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	70015	20.4665 ug/kg	91
59)	Toluene	12.92	91	187899	19.1627 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	48423	17.8161 ug/kg	97
61)	trans-1,3-Dichloropropene	13.10	75	64790	18.3455 ug/kg	97
62)	1,1,2-Trichloroethane	13.31	97	38087	18.4904 ug/kg	94
63)	2-Hexanone	13.25	43	34761	16.9021 ug/kg	97
64)	1,3-Dichloropropane	13.62	76	67139	19.5611 ug/kg	91
65)	Tetrachloroethene	13.75	164	39187	18.6420 ug/kg	96
66)	Dibromochloromethane	14.01	129	51619	17.9311 ug/kg	100
67)	1,2-Dibromoethane	14.28	107	41165	18.0174 ug/kg	98
68)	1-Chlorohexane	14.35	91	54799	18.9512 ug/kg	92
69)	Chlorobenzene	14.77	112	133397	19.3568 ug/kg	96
70)	1,1,1,2-Tetrachloroethane	14.80	131	49573	19.1548 ug/kg	98
71)	Ethylbenzene	14.79	106	70120	19.7497 ug/kg	98
72)	m-,p-Xylene	14.89	106	173723	39.6203 ug/kg	97
73)	o-Xylene	15.45	106	83913	19.9422 ug/kg	98
74)	Styrene	15.49	104	137561	19.1978 ug/kg	99
75)	Bromoform	15.98	173	30370	16.0679 ug/kg	98
76)	Isopropylbenzene	15.88	105	225143	19.9310 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	42000	14.6591 ug/kg	99
80)	1,2,3-Trichloropropane	16.29	110	18579	17.0988 ug/kg	76
81)	trans-1,4-Dichloro-2-Buten	16.33	53	15364	14.0278 ug/kg	94
82)	n-Propylbenzene	16.39	91	264724	17.8306 ug/kg	98
83)	Bromobenzene	16.52	156	55849	15.9347 ug/kg	93
84)	1,3,5-Trimethylbenzene	16.57	105	192006	17.2288 ug/kg	98
85)	2-Chlorotoluene	16.66	91	169842	17.0560 ug/kg	100
86)	4-Chlorotoluene	16.70	91	163068	17.7123 ug/kg	97
87)	a-Methylstyrene	16.98	118	90621	17.8458 ug/kg	97
88)	tert-Butylbenzene	17.04	134	42016	17.9827 ug/kg	87
89)	1,2,4-Trimethylbenzene	17.09	105	188971	16.1913 ug/kg	99
90)	sec-Butylbenzene	17.30	105	249679	17.3950 ug/kg	99
91)	p-Isopropyltoluene	17.46	119	201403	16.6268 ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	107216	15.3920 ug/kg	97
93)	1,4-Dichlorobenzene	17.79	146	108417	15.5690 ug/kg	96
94)	n-Butylbenzene	17.99	91	184114	16.3477 ug/kg	98
95)	1,2-Dichlorobenzene	18.30	146	103649	16.0367 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	10284	12.3947 ug/kg	85
97)	1,2,4-Trichlorobenzene	20.43	180	62689	13.6631 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	39022	16.1343 ug/kg	98
99)	Naphthalene	20.81	128	146077	12.6934 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.11	180	63511	14.2715 ug/kg	98

(#) = qualifier out of range (m) = manual integration
9M973133.D 8260SL.M Mon Mar 07 21:49:30 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030716\9M973133.D Vial: 13
Acq On : 7 Mar 2016 21:26 Operator: ADC
Sample : L16030235-04 A MS 8260 5.17g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 7 21:49 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

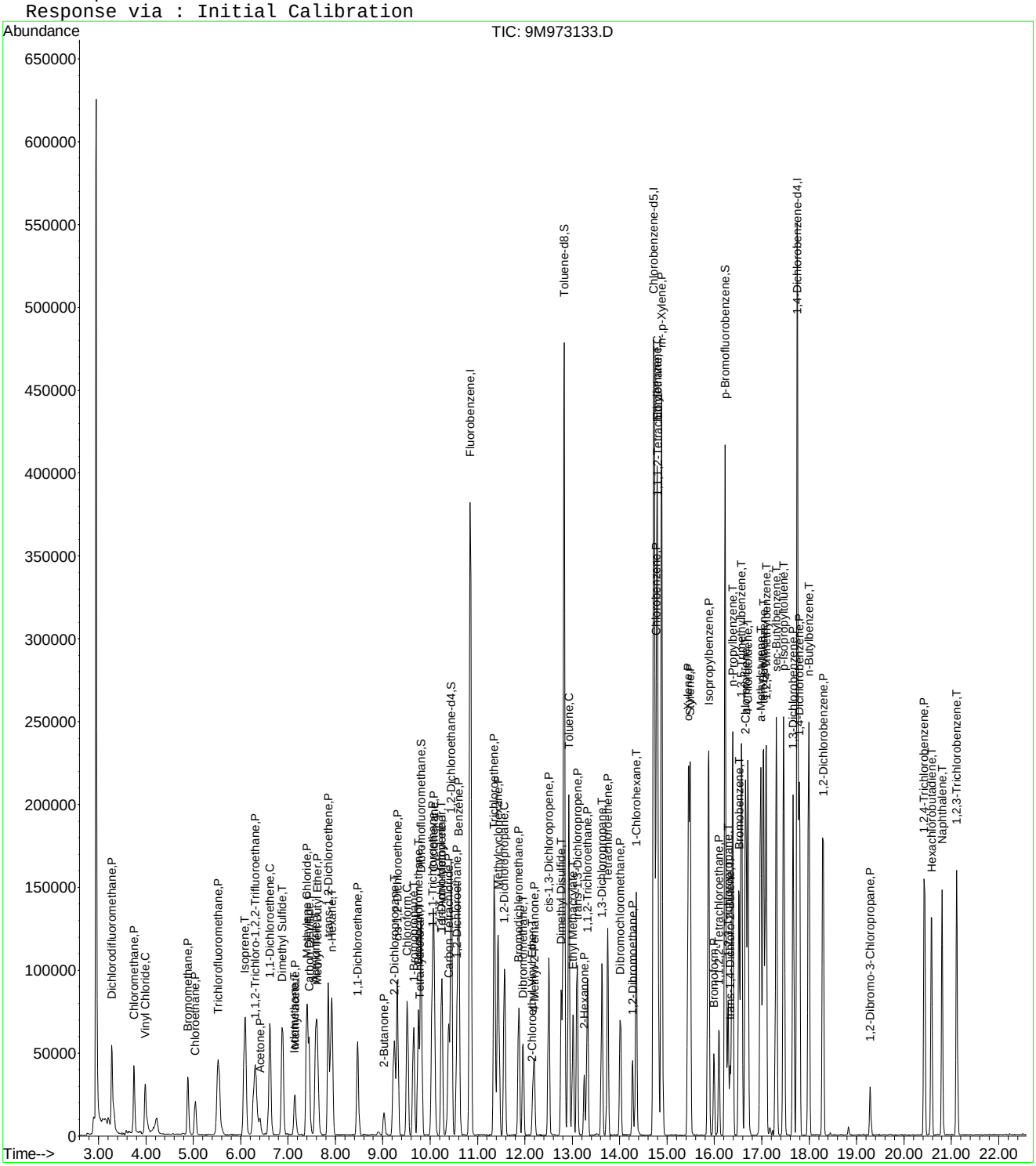

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030716\9M973134.D Vial: 14
Acq On : 7 Mar 2016 21:58 Operator: ADC
Sample : L16030235-05 A MSD 8260 5.07g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 22:20:40 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	457727	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	353597	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	186361	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	119653	48.2255 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.46%		
43) 1,2-Dichloroethane-d4	10.45	65	155219	49.8609 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.72%		
58) Toluene-d8	12.82	98	426736	47.7123 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 95.42%		
79) p-Bromofluorobenzene	16.23	95	180478	49.7344 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 99.46%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	83656	26.8146 ug/kg	97
3) Chloromethane	3.75	50	65733	21.9500 ug/kg	100
4) Vinyl Chloride	3.99	62	67446	22.4981 ug/kg	100
6) Bromomethane	4.89	94	36875	18.9391 ug/kg	100
7) Chloroethane	5.05	64	28249	21.1513 ug/kg	96
8) Trichlorofluoromethane	5.52	101	94423	21.0006 ug/kg	98
10) Isoprene	6.09	67	66778	24.8769 ug/kg	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	51862	22.3663 ug/kg	96
13) Acetone	6.41	43	24724	19.9331 ug/kg	97
14) 1,1-Dichloroethene	6.62	61	90820	21.2325 ug/kg	97
16) Dimethyl Sulfide	6.88	62	56169	31.0704 ug/kg	92
17) Iodomethane	7.14	142	19241	17.0885 ug/kg	92
18) Methyl acetate	7.15	43	44190	19.0038 ug/kg	96
19) Methylene Chloride	7.40	84	46535	19.9758 ug/kg	88
20) Carbon Disulfide	7.45	76	123852	18.7961 ug/kg	99
21) Acrylonitrile	7.59	53	23819	20.7064 ug/kg	96
22) Methyl Tert Butyl Ether	7.61	73	140835	21.2265 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	85515	22.4326 ug/kg	95
24) n-Hexane	7.93	57	90449	23.0039 ug/kg	99
27) 1,1-Dichloroethane	8.48	63	97068	20.2730 ug/kg	98
29) 2-Butanone	9.03	43	29929	20.2764 ug/kg	94
31) 2,2-Dichloropropane	9.25	77	68283	19.1068 ug/kg	100
32) cis-1,2-Dichloroethene	9.31	96	53744	21.4958 ug/kg	96
33) Chloroform	9.52	83	91641	20.8351 ug/kg	98
34) 1-Bromopropane	9.66	122	11504	30.5913 ug/kg	99
35) Bromochloromethane	9.75	130	32114	19.7735 ug/kg	90
36) Tetrahydrofuran	9.77	42	941	0.9890 ug/kg#	43
38) 1,1,1-Trichloroethane	10.05	97	85344	21.4561 ug/kg	98
39) Cyclohexane	10.08	56	102792	23.7033 ug/kg	97
40) 1,1-Dichloropropene	10.25	75	64923	20.7428 ug/kg	96
41) Tert-Amyl-Methyl ether	10.25	73	9726	1.5759 ug/kg#	45
42) Carbon Tetrachloride	10.40	117	77786	21.0940 ug/kg	98
45) 1,2-Dichloroethane	10.56	62	88081	22.7667 ug/kg	97
46) Benzene	10.61	78	183280	20.9163 ug/kg	99
47) Trichloroethene	11.36	130	69992	25.2091 ug/kg	97
48) Methylcyclohexane	11.43	83	82483	23.6866 ug/kg	96
49) 1,2-Dichloropropane	11.57	63	53656	22.2985 ug/kg	97
51) Bromodichloromethane	11.87	83	70361	20.7483 ug/kg	99
52) Dibromomethane	11.96	174	29753	18.6616 ug/kg	94
53) 2-Chloroethyl Vinyl Ether	12.16	63	9392	16.1561 ug/kg	94

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030716\9M973134.D Vial: 14
Acq On : 7 Mar 2016 21:58 Operator: ADC
Sample : L16030235-05 A MSD 8260 5.07g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 22:20:40 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
54)	4-Methyl-2-Pentanone	12.19	58	21103	19.9809 ug/kg	95
55)	cis-1,3-Dichloropropene	12.51	75	76093	21.5375 ug/kg	98
56)	Dimethyl Disulfide	12.77	94	83231	23.4420 ug/kg	92
59)	Toluene	12.93	91	205443	20.3350 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	57301	20.4618 ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	69628	19.1349 ug/kg	98
62)	1,1,2-Trichloroethane	13.32	97	41298	19.4589 ug/kg	94
63)	2-Hexanone	13.26	43	41107	19.3993 ug/kg	95
64)	1,3-Dichloropropane	13.63	76	72264	20.4344 ug/kg	87
65)	Tetrachloroethene	13.74	164	42531	19.6371 ug/kg	98
66)	Dibromochloromethane	14.02	129	54744	18.4567 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	44930	19.0863 ug/kg	95
68)	1-Chlorohexane	14.35	91	66471	22.3110 ug/kg	93
69)	Chlorobenzene	14.78	112	144090	20.2928 ug/kg	96
70)	1,1,1,2-Tetrachloroethane	14.81	131	53254	19.9712 ug/kg	100
71)	Ethylbenzene	14.80	106	76518	20.9172 ug/kg	98
72)	m-,p-Xylene	14.89	106	190731	42.2185 ug/kg	100
73)	o-Xylene	15.45	106	92979	21.4461 ug/kg	99
74)	Styrene	15.49	104	153744	20.8246 ug/kg	98
75)	Bromoform	15.99	173	32715	16.7990 ug/kg	98
76)	Isopropylbenzene	15.87	105	250100	21.4884 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	45090	15.9498 ug/kg	99
80)	1,2,3-Trichloropropane	16.30	110	18890	17.6194 ug/kg	87
81)	trans-1,4-Dichloro-2-Buten	16.33	53	17970	16.6284 ug/kg	92
82)	n-Propylbenzene	16.38	91	295230	20.1535 ug/kg	99
83)	Bromobenzene	16.52	156	62083	17.9522 ug/kg	94
84)	1,3,5-Trimethylbenzene	16.57	105	213439	19.4103 ug/kg	100
85)	2-Chlorotoluene	16.66	91	198285	20.1808 ug/kg	100
86)	4-Chlorotoluene	16.71	91	169619	18.6723 ug/kg	98
87)	a-Methylstyrene	16.98	118	112163	22.3859 ug/kg	97
88)	tert-Butylbenzene	17.03	134	47344	20.5363 ug/kg	88
89)	1,2,4-Trimethylbenzene	17.09	105	213938	18.5777 ug/kg	100
90)	sec-Butylbenzene	17.31	105	286363	20.2198 ug/kg	99
91)	p-Isopropyltoluene	17.47	119	226807	18.9765 ug/kg	99
92)	1,3-Dichlorobenzene	17.67	146	122733	17.8572 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	122339	17.8051 ug/kg	98
94)	n-Butylbenzene	17.99	91	210303	18.9248 ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	114326	17.9272 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	12311	15.0378 ug/kg	100
97)	1,2,4-Trichlorobenzene	20.43	180	74948	16.5552 ug/kg	97
98)	Hexachlorobutadiene	20.58	225	44689	18.7266 ug/kg	98
99)	Naphthalene	20.81	128	163942	14.4378 ug/kg	99
100)	1,2,3-Trichlorobenzene	21.12	180	73028	16.6313 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030716\9M973134.D Vial: 14
Acq On : 7 Mar 2016 21:58 Operator: ADC
Sample : L16030235-05 A MSD 8260 5.07g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 7 22:20 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

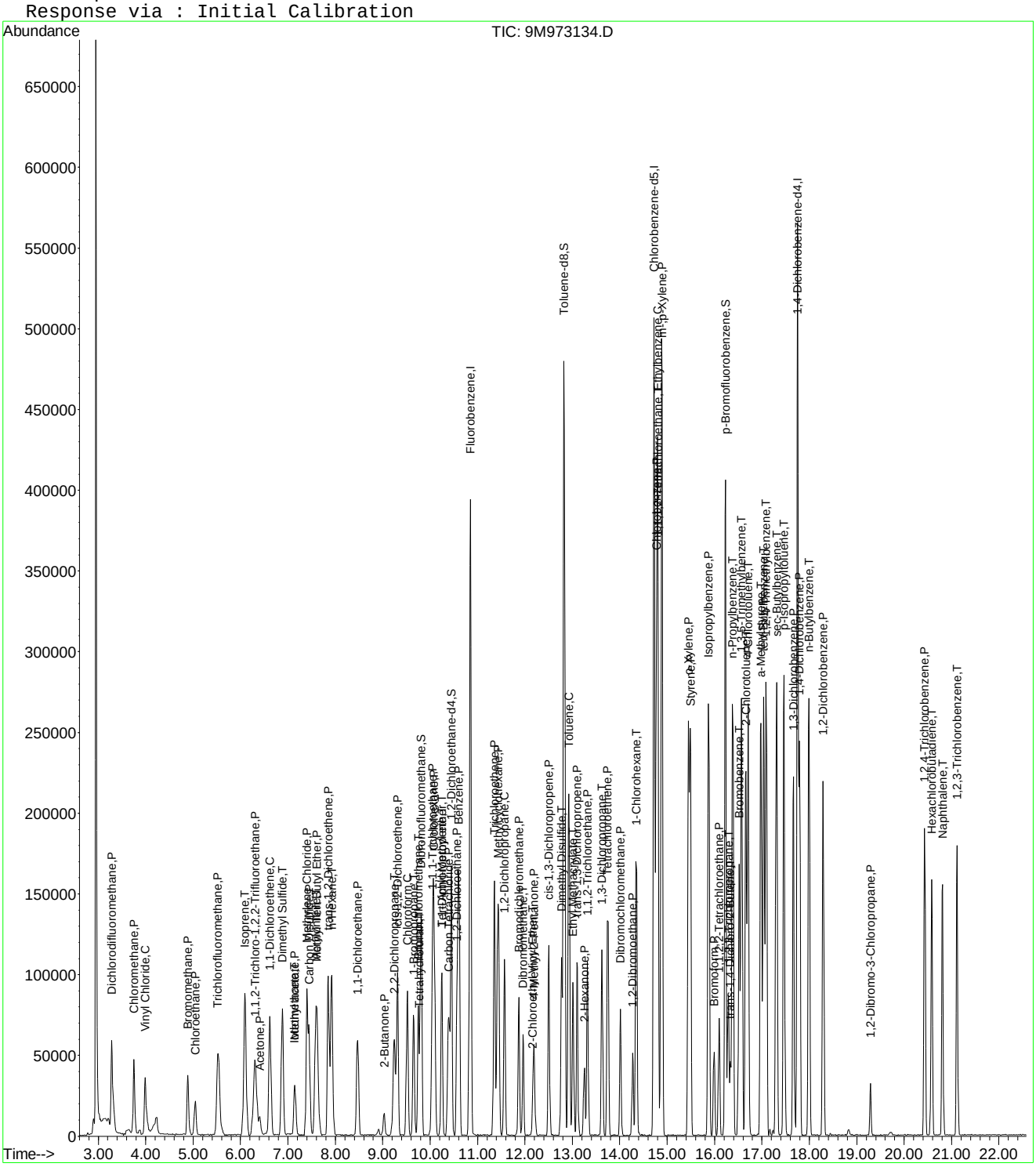

9M973134.D 8260SL.M Mon Mar 07 22:20:41 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030716\9M973130.D Vial: 10
Acq On : 7 Mar 2016 19:53 Operator: ADC
Sample : L16030235-06 A 8260 5.16g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 08 14:13:46 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	402998	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	307448	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	160139	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	108206	49.5345 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.06%		
43) 1,2-Dichloroethane-d4	10.45	65	143240	52.2616 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.52%		
58) Toluene-d8	12.83	98	373301	48.0029 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 96.00%		
79) p-Bromofluorobenzene	16.23	95	154705	49.6129 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 99.22%		

Target Compounds					Qvalue
13) Acetone	6.41	43	13977	11.8995 ug/kg#	76
20) Carbon Disulfide	7.45	76	4756	0.8198 ug/kg#	76
29) 2-Butanone	9.03	43	2862	2.2023 ug/kg#	58
36) Tetrahydrofuran	9.79	42	772	0.9216 ug/kg#	43
47) Trichloroethene	11.35	130	39784	16.2750 ug/kg	99
56) Dimethyl Disulfide	12.83	94	10096	3.2297 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M973130.D 8260SL.M Tue Mar 08 14:13:47 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030716\9M973130.D Vial: 10
Acq On : 7 Mar 2016 19:53 Operator: ADC
Sample : L16030235-06 A 8260 5.16g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 8 14:13 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

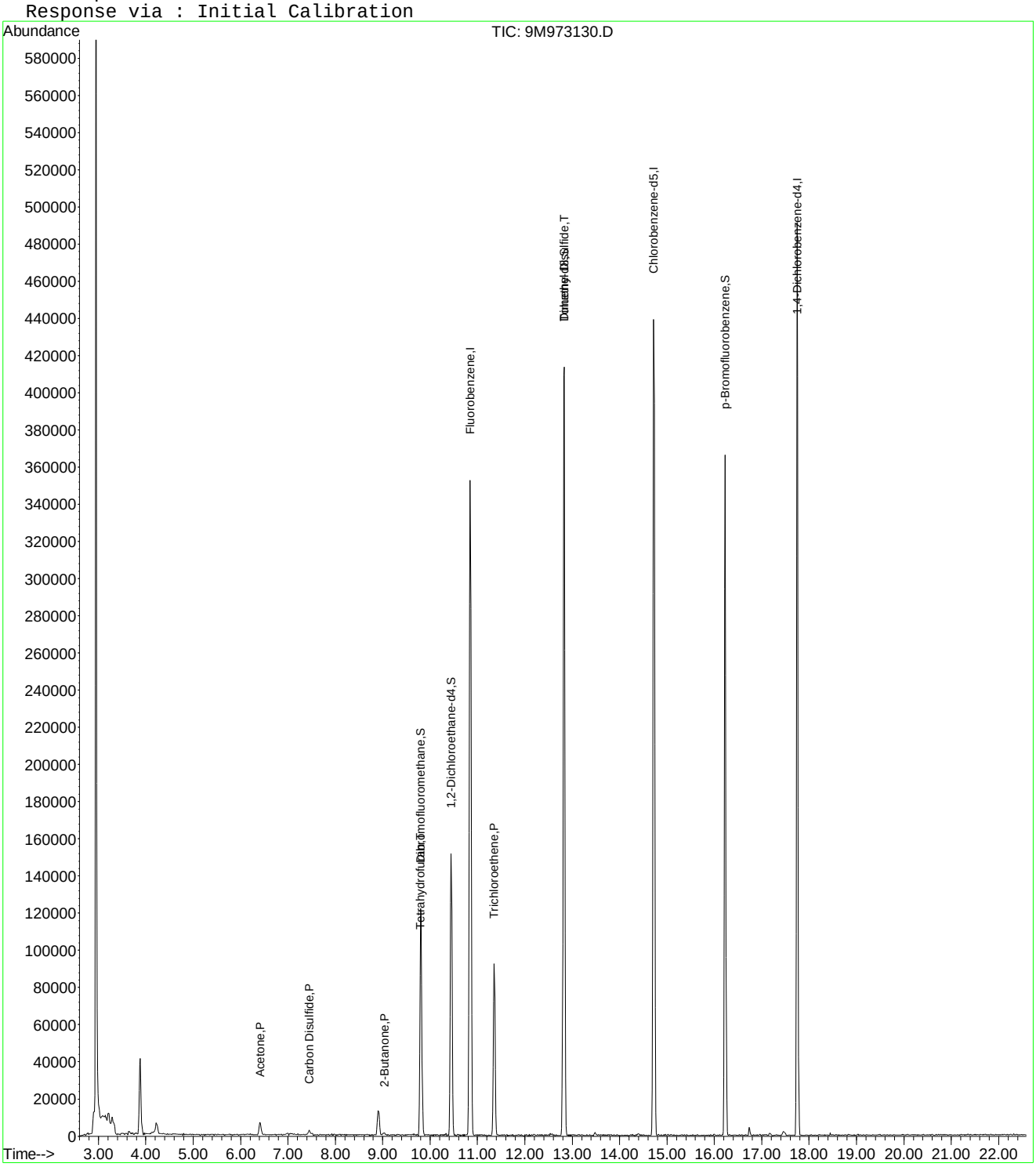

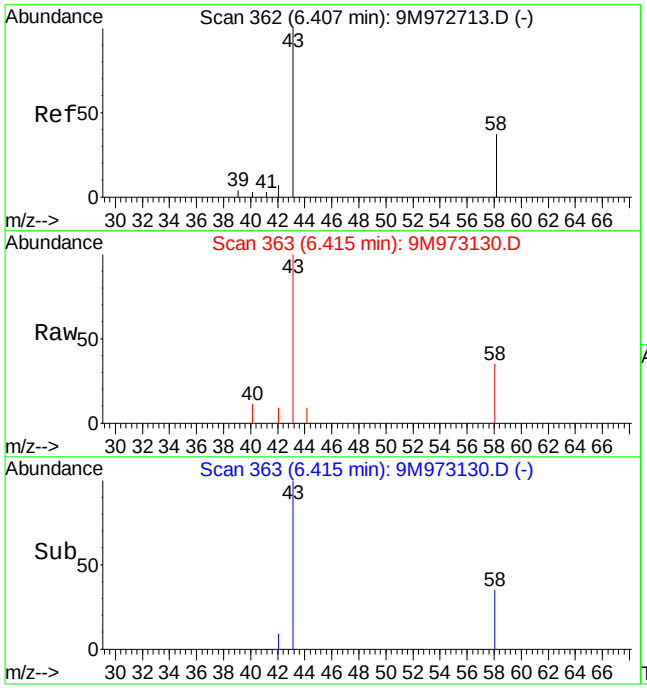

#13
Acetone
Concen: 11.90 ug/kg
RT: 6.41 min Scan# 363
Delta R.T. 0.00 min
Lab File: 9M973130.D
Acq: 7 Mar 2016 19:53

Tgt Ion: 43 Resp: 13977

Ion	Ratio	Lower	Upper
43	100		
58	40.7	16.9	39.3#

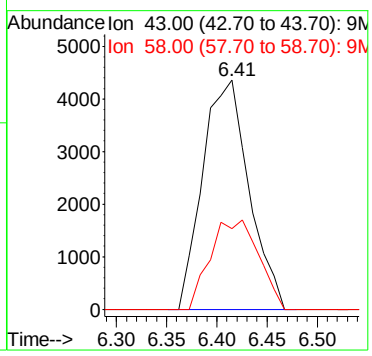

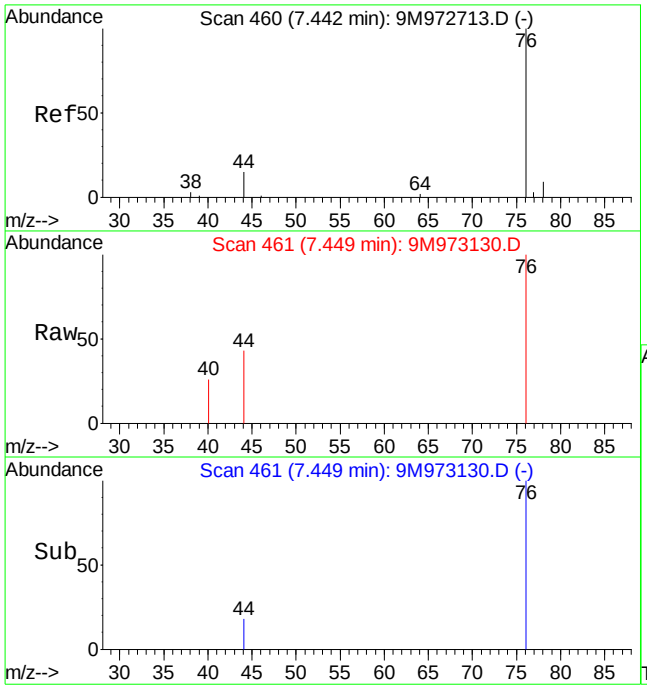

#20
Carbon Disulfide
Concen: 0.82 ug/kg
RT: 7.45 min Scan# 461
Delta R.T. 0.00 min
Lab File: 9M973130.D
Acq: 7 Mar 2016 19:53

Tgt Ion: 76 Resp: 4756

Ion	Ratio	Lower	Upper
76	100		
78	0.0	5.2	12.0#

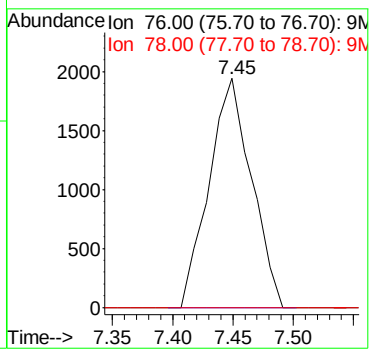

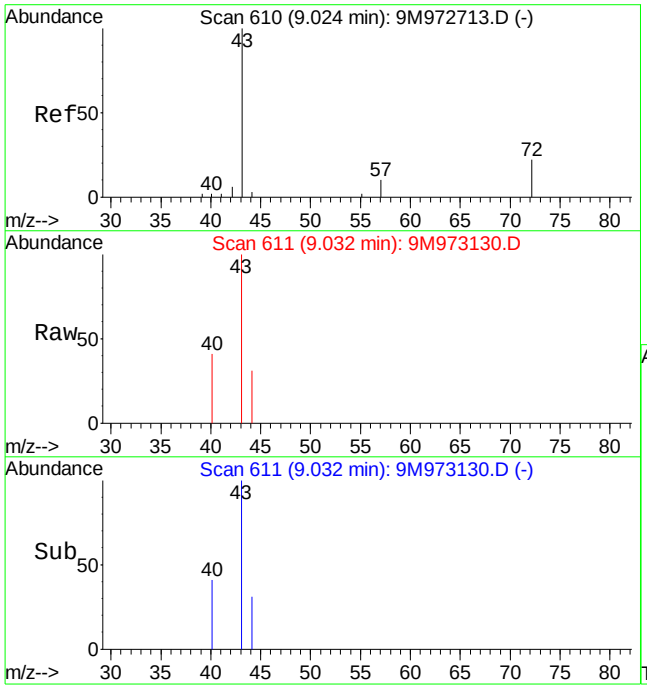

#29
2-Butanone
Concen: 2.20 ug/kg
RT: 9.03 min Scan# 611
Delta R.T. 0.00 min
Lab File: 9M973130.D
Acq: 7 Mar 2016 19:53

Tgt Ion: 43 Resp: 2862

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

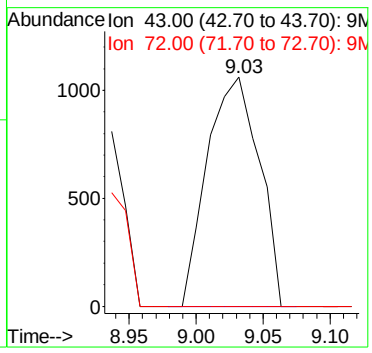

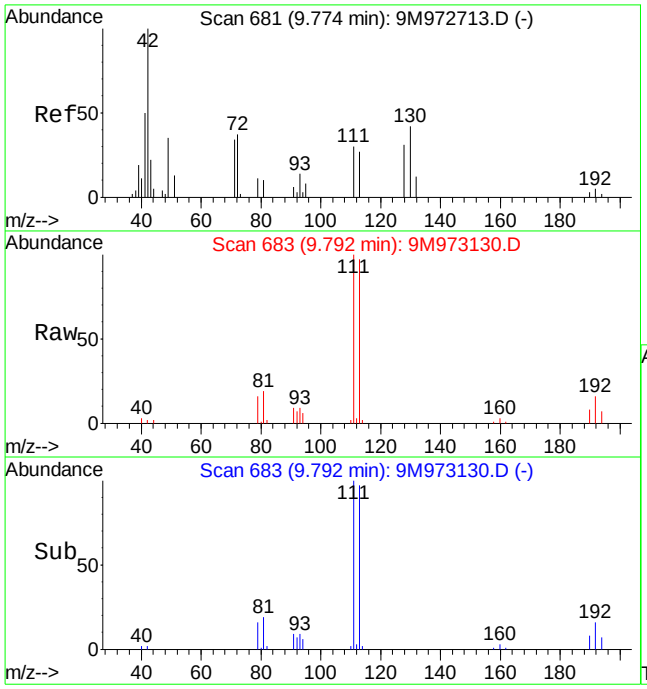

#36
Tetrahydrofuran
Concen: 0.92 ug/kg
RT: 9.79 min Scan# 683
Delta R.T. 0.01 min
Lab File: 9M973130.D
Acq: 7 Mar 2016 19:53

Tgt Ion: 42 Resp: 772

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

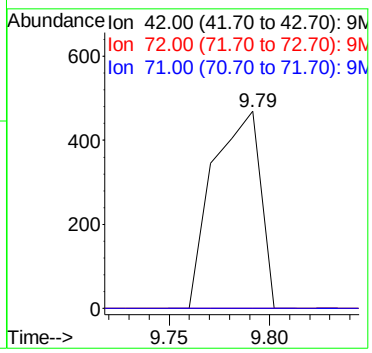

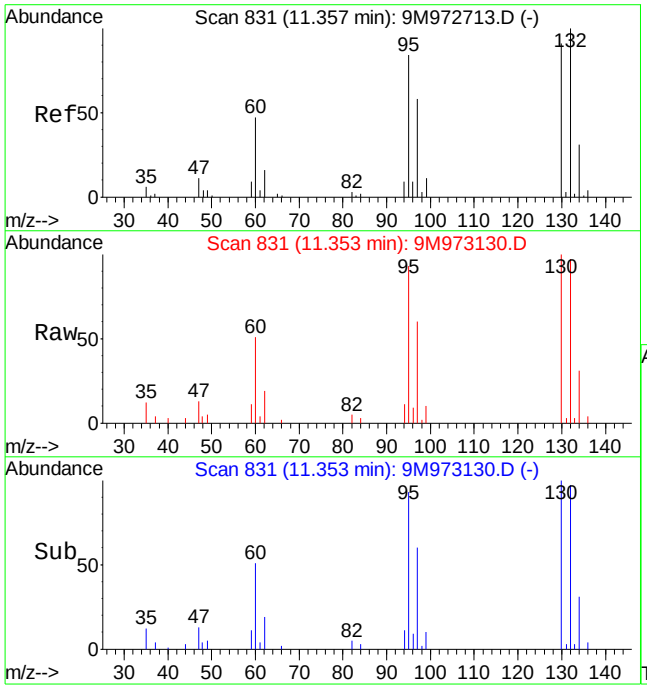

#47
Trichloroethene
Concen: 16.27 ug/kg
RT: 11.35 min Scan# 831
Delta R.T. 0.00 min
Lab File: 9M973130.D
Acq: 7 Mar 2016 19:53

Tgt Ion:130 Resp: 39784

Ion	Ratio	Lower	Upper
130	100		
132	95.3	56.5	131.7
95	92.3	55.4	129.4

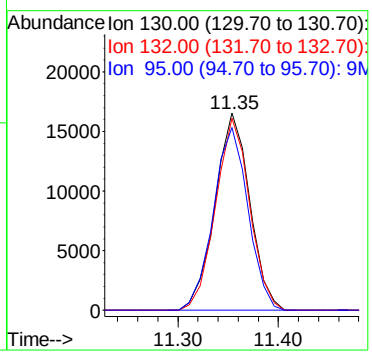

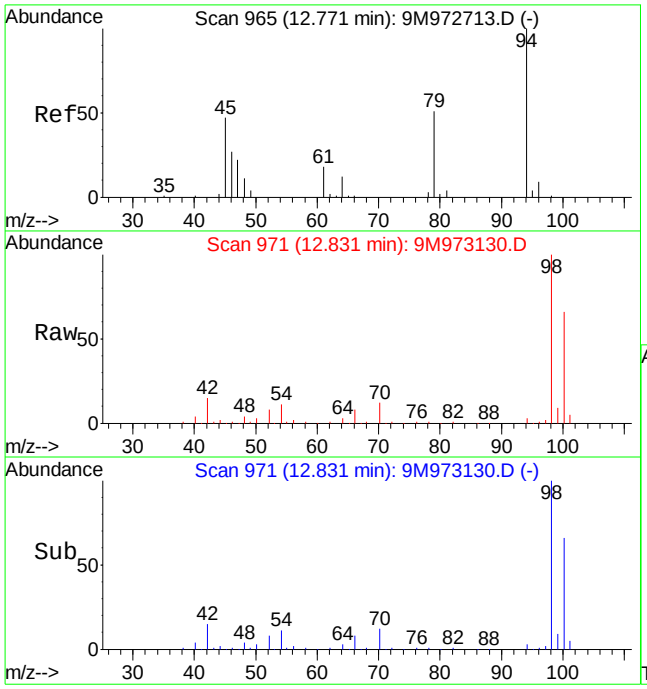

#56
Dimethyl Disulfide
Concen: 3.23 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.06 min
Lab File: 9M973130.D
Acq: 7 Mar 2016 19:53

Tgt Ion: 94 Resp: 10096

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

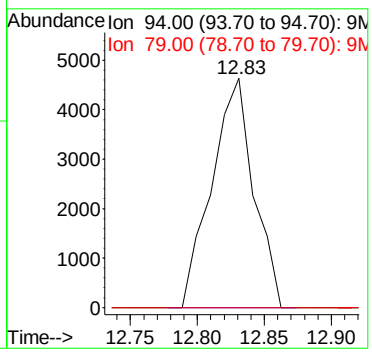

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030716\9M973131.D Vial: 11
Acq On : 7 Mar 2016 20:24 Operator: ADC
Sample : L16030235-07 A 8260 4.64g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 08 14:13:47 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	372592	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	273935	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	144215	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	99705	49.3677 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.74%		
43) 1,2-Dichloroethane-d4	10.45	65	134540	53.0933 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 106.18%		
58) Toluene-d8	12.82	98	348623	50.3140 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 100.62%		
79) p-Bromofluorobenzene	16.23	95	141633	50.4361 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 100.88%		

Target Compounds					Qvalue
13) Acetone	6.41	43	12313	11.2198 ug/kg#	67
20) Carbon Disulfide	7.45	76	4468	0.8330 ug/kg#	76
29) 2-Butanone	9.03	43	2356	1.9609 ug/kg#	58
36) Tetrahydrofuran	9.78	42	795	1.0265 ug/kg#	43
47) Trichloroethene	11.36	130	27578	12.2024 ug/kg	98
56) Dimethyl Disulfide	12.83	94	9808	3.3936 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M973131.D 8260SL.M Tue Mar 08 14:13:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030716\9M973131.D Vial: 11
Acq On : 7 Mar 2016 20:24 Operator: ADC
Sample : L16030235-07 A 8260 4.64g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 8 14:13 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

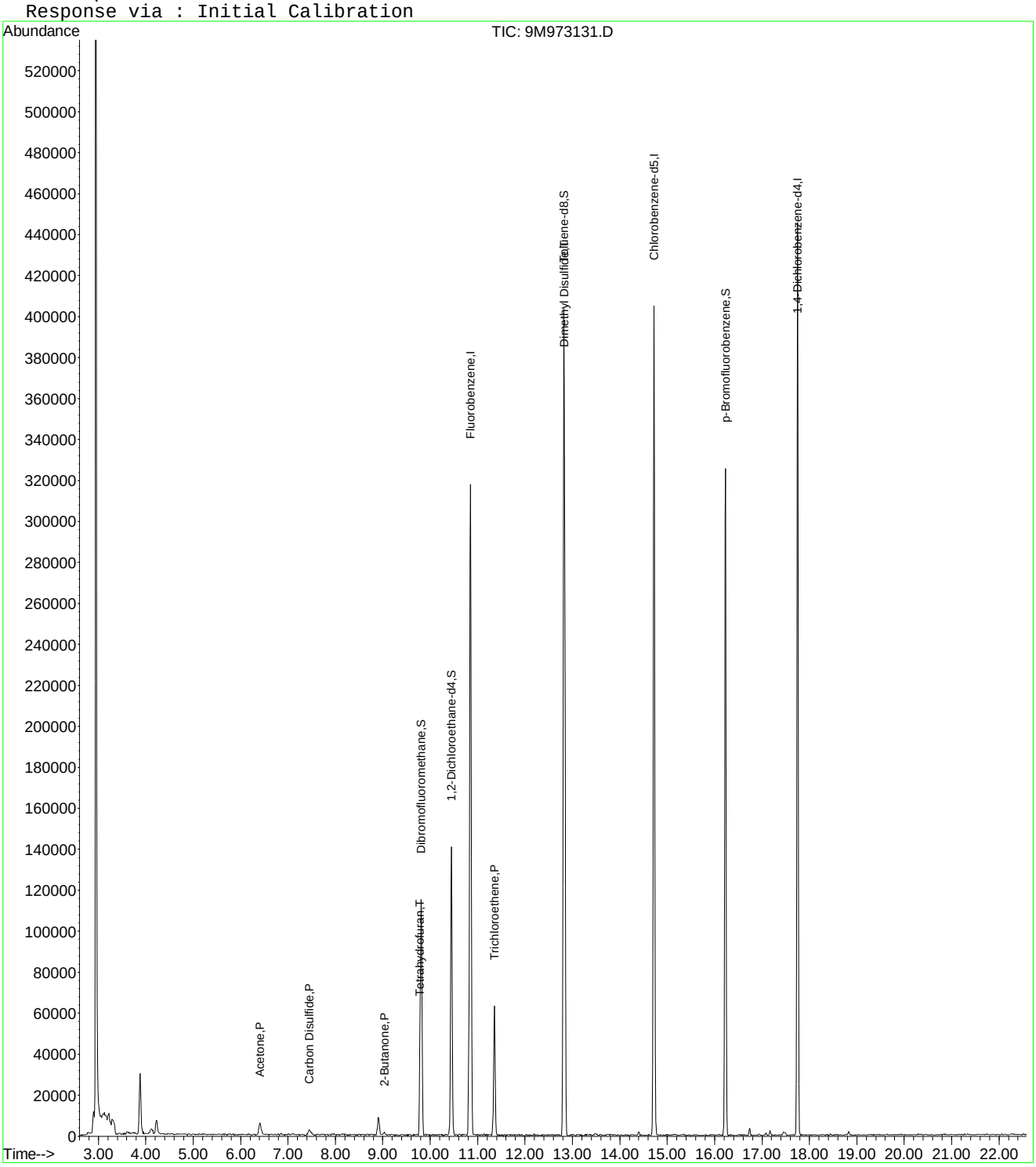

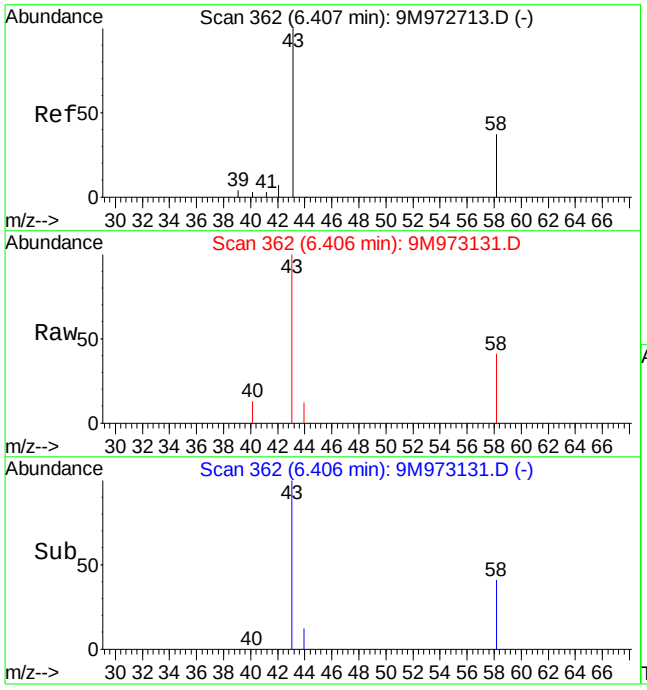

#13
Acetone
Concen: 11.22 ug/kg
RT: 6.41 min Scan# 362
Delta R.T. -0.01 min
Lab File: 9M973131.D
Acq: 7 Mar 2016 20:24

Tgt Ion: 43 Resp: 12313

Ion	Ratio	Lower	Upper
43	100		
58	45.3	16.9	39.3#

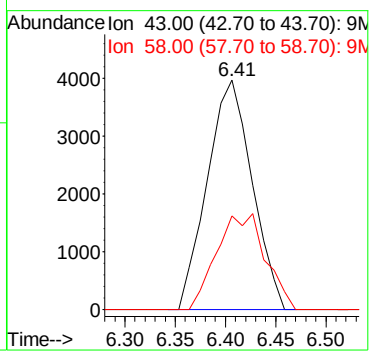

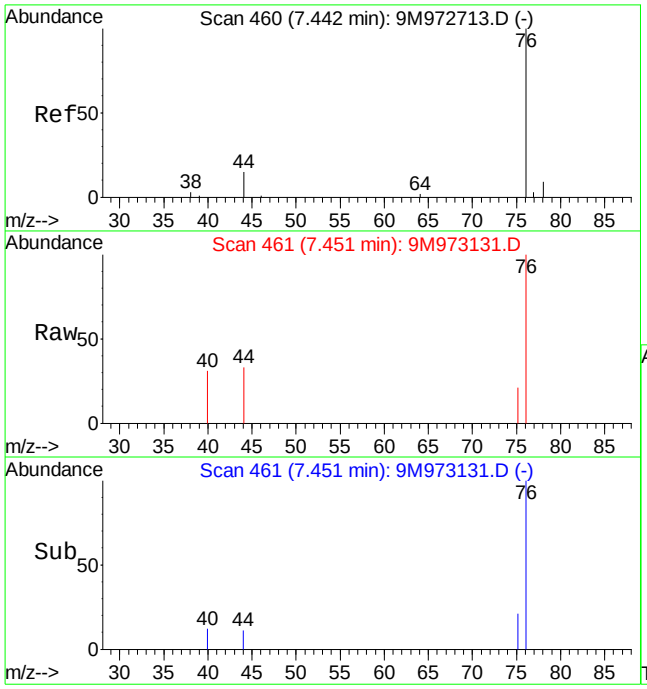

#20
Carbon Disulfide
Concen: 0.83 ug/kg
RT: 7.45 min Scan# 461
Delta R.T. 0.00 min
Lab File: 9M973131.D
Acq: 7 Mar 2016 20:24

Tgt Ion: 76 Resp: 4468

Ion	Ratio	Lower	Upper
76	100		
78	0.0	5.2	12.0#

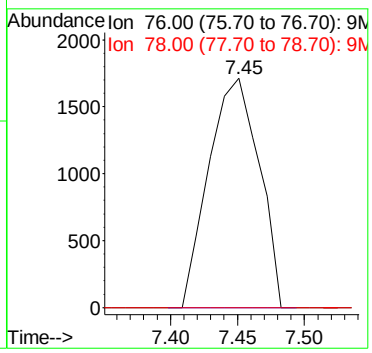

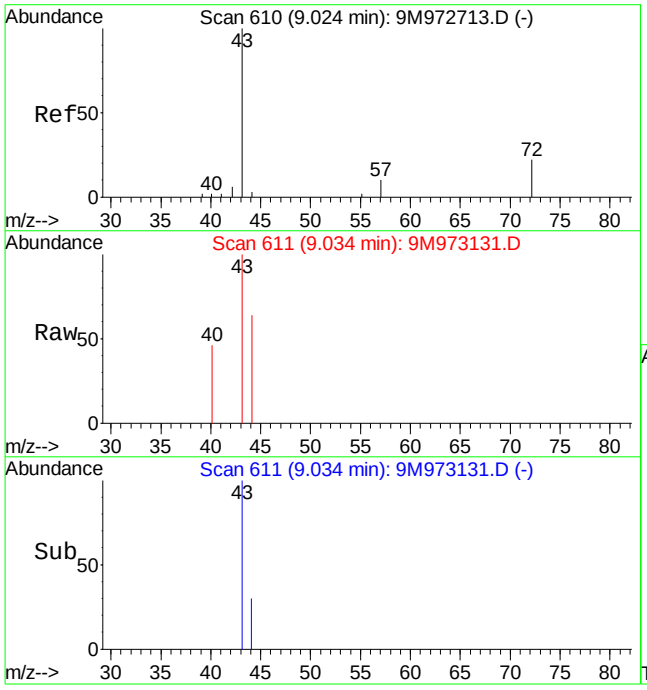

#29
2-Butanone
Concen: 1.96 ug/kg
RT: 9.03 min Scan# 611
Delta R.T. 0.00 min
Lab File: 9M973131.D
Acq: 7 Mar 2016 20:24

Tgt Ion: 43 Resp: 2356

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

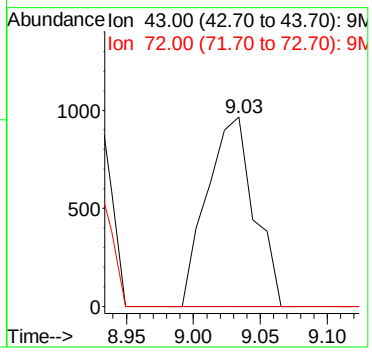

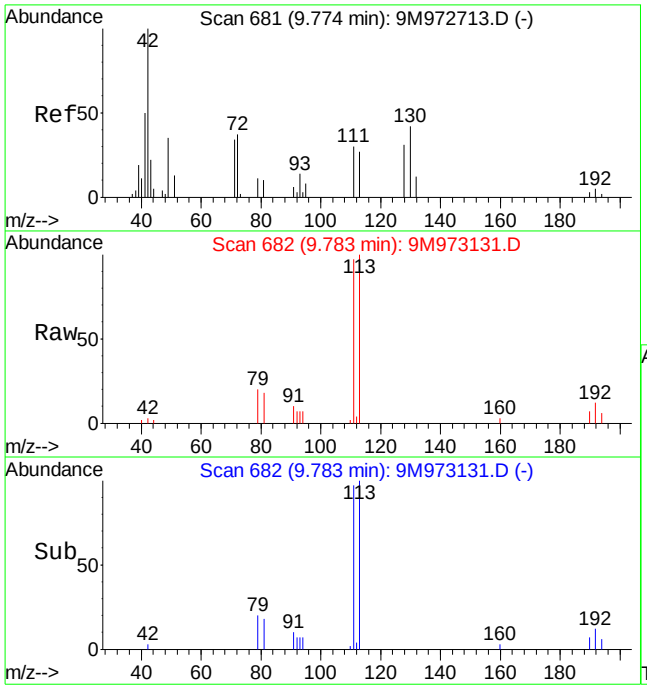

#36
Tetrahydrofuran
Concen: 1.03 ug/kg
RT: 9.78 min Scan# 682
Delta R.T. 0.00 min
Lab File: 9M973131.D
Acq: 7 Mar 2016 20:24

Tgt Ion: 42 Resp: 795

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

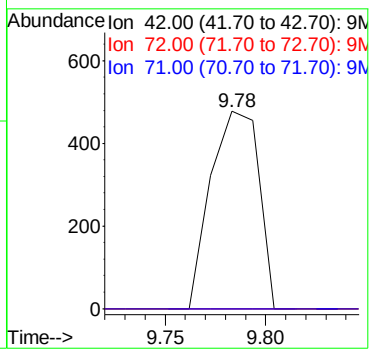

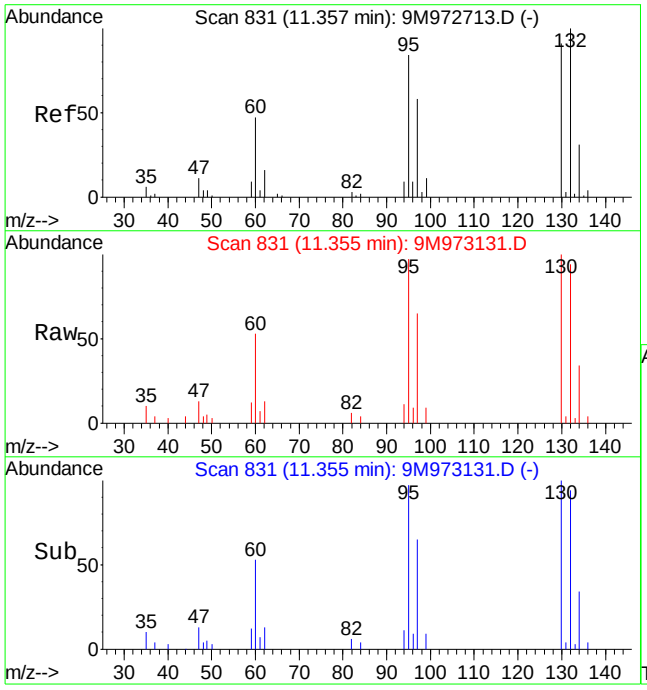

#47
Trichloroethene
Concen: 12.20 ug/kg
RT: 11.36 min Scan# 831
Delta R.T. 0.00 min
Lab File: 9M973131.D
Acq: 7 Mar 2016 20:24

Tgt Ion:130 Resp: 27578

Ion	Ratio	Lower	Upper
130	100		
132	91.9	56.5	131.7
95	94.0	55.4	129.4

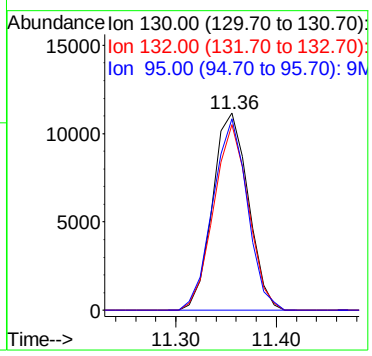

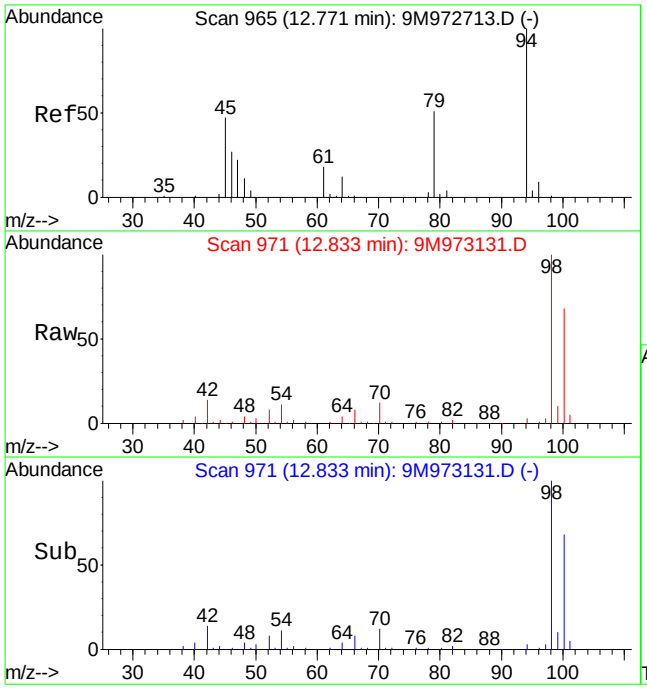

#56
Dimethyl Disulfide
Concen: 3.39 ug/kg
RT: 12.83 min Scan# 971
Delta R.T. 0.07 min
Lab File: 9M973131.D
Acq: 7 Mar 2016 20:24

Tgt Ion: 94 Resp: 9808

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

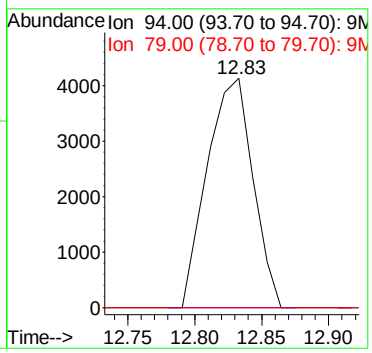

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030716\9M973132.D Vial: 12
Acq On : 7 Mar 2016 20:55 Operator: ADC
Sample : L16030235-08 A 8260 5.24g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 08 14:13:49 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	430643	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	325813	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	167619	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	114115	48.8860 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.78%		
43) 1,2-Dichloroethane-d4	10.45	65	151419	51.6993 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 103.40%		
58) Toluene-d8	12.82	98	402842	48.8817 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 97.76%		
79) p-Bromofluorobenzene	16.23	95	166939	51.1472 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.30%		

Target Compounds

					Qvalue
13) Acetone	6.40	43	4250	1.5882 ug/kg	83
29) 2-Butanone	9.03	43	680	0.4897 ug/kg#	58
32) cis-1,2-Dichloroethene	9.32	96	5744	2.4419 ug/kg	95
36) Tetrahydrofuran	9.77	42	953	1.0646 ug/kg#	43
47) Trichloroethene	11.36	130	6839	2.6181 ug/kg	98
56) Dimethyl Disulfide	12.82	94	11332	3.3924 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M973132.D 8260SL.M Tue Mar 08 14:13:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030716\9M973132.D Vial: 12
Acq On : 7 Mar 2016 20:55 Operator: ADC
Sample : L16030235-08 A 8260 5.24g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 8 14:13 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

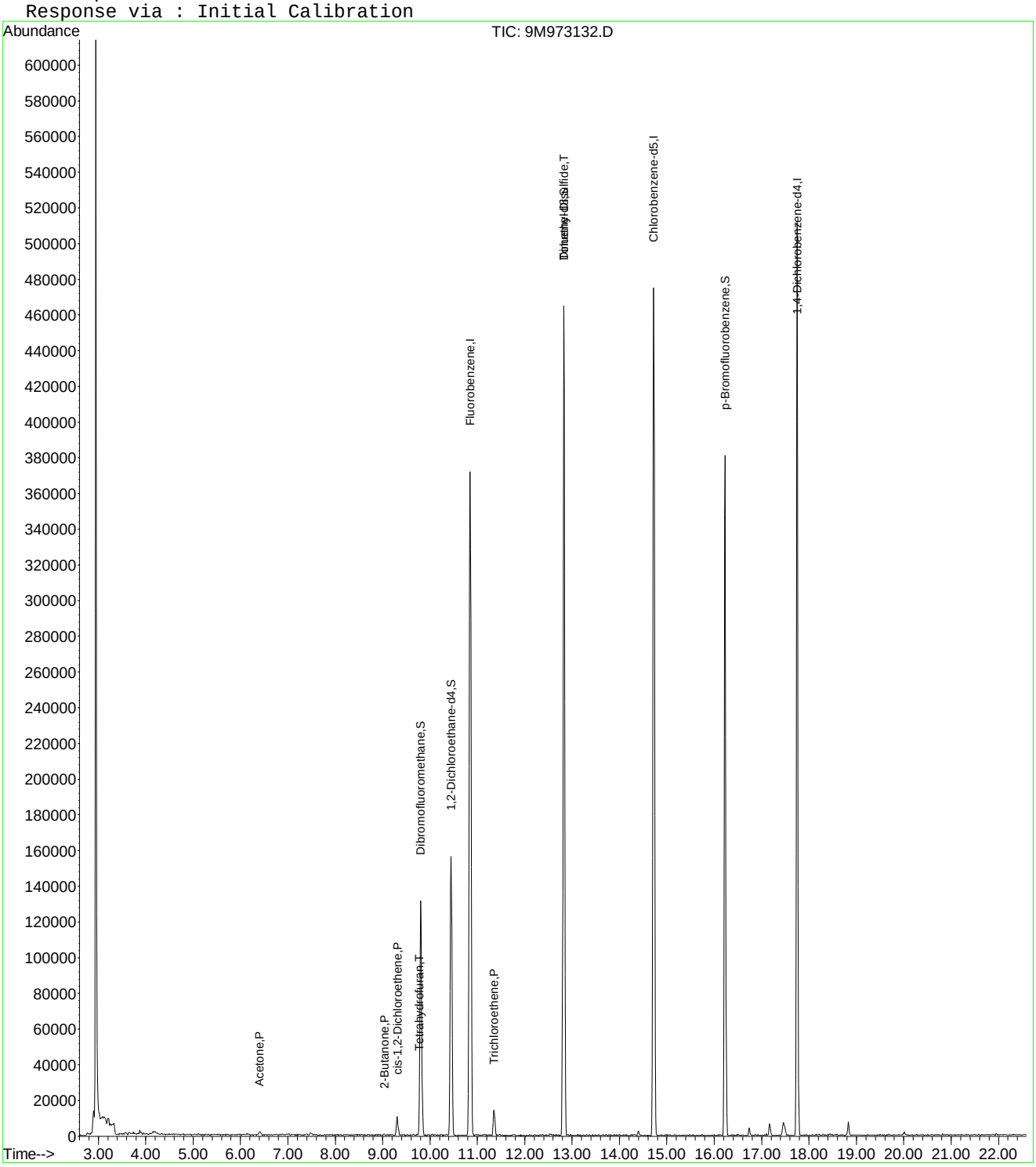

9M973132.D 8260SL.M Tue Mar 08 14:13:49 2016 Page 2

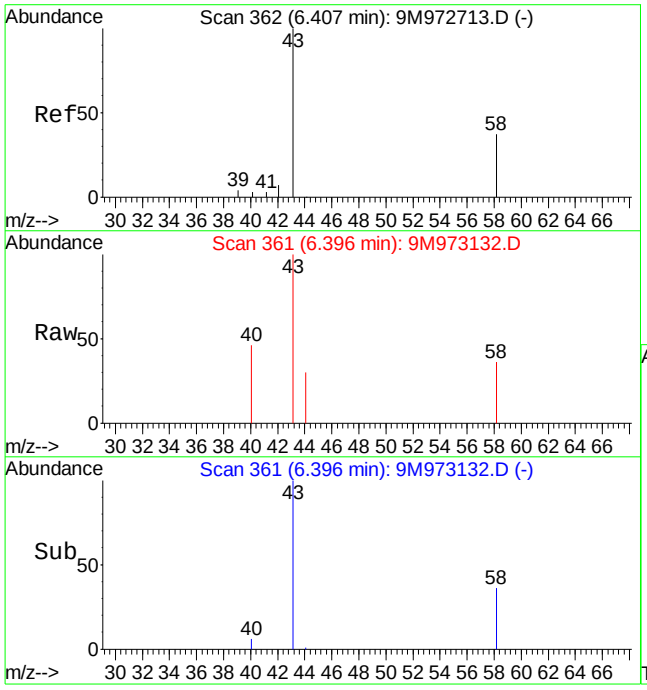

#13
Acetone
Concen: 1.59 ug/kg
RT: 6.40 min Scan# 361
Delta R.T. -0.02 min
Lab File: 9M973132.D
Acq: 7 Mar 2016 20:55

Tgt Ion: 43 Resp: 4250

Ion	Ratio	Lower	Upper
43	100		
58	19.3	16.9	39.3

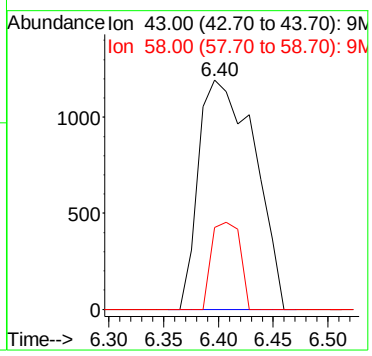

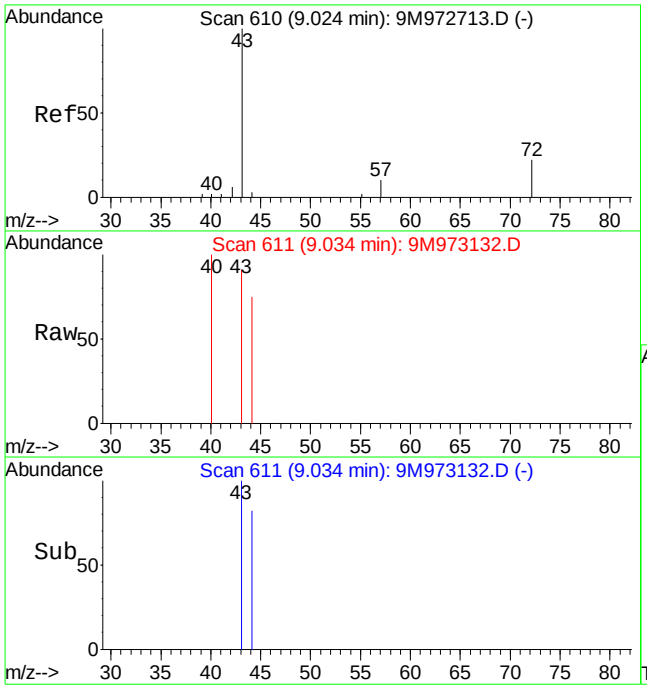

#29
2-Butanone
Concen: 0.49 ug/kg
RT: 9.03 min Scan# 611
Delta R.T. 0.00 min
Lab File: 9M973132.D
Acq: 7 Mar 2016 20:55

Tgt Ion: 43 Resp: 680

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.4	26.6#

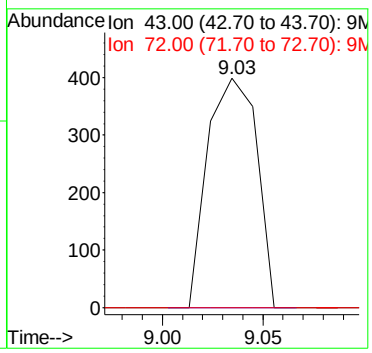

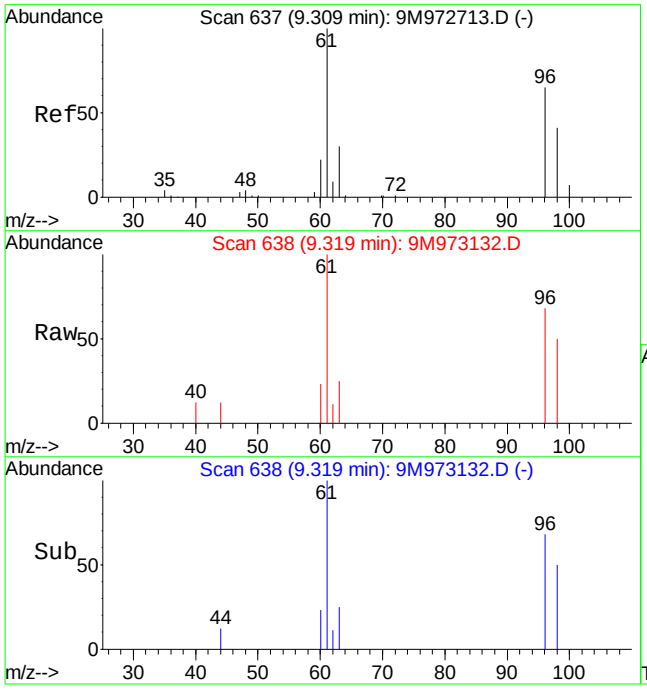

#32
cis-1,2-Dichloroethene
Concen: 2.44 ug/kg
RT: 9.32 min Scan# 638
Delta R.T. 0.01 min
Lab File: 9M973132.D
Acq: 7 Mar 2016 20:55

Tgt Ion: 96 Resp: 5744

Ion	Ratio	Lower	Upper
96	100		
61	163.8	102.6	239.4

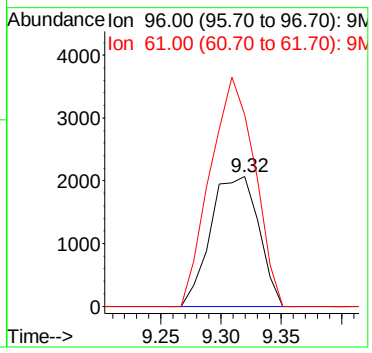

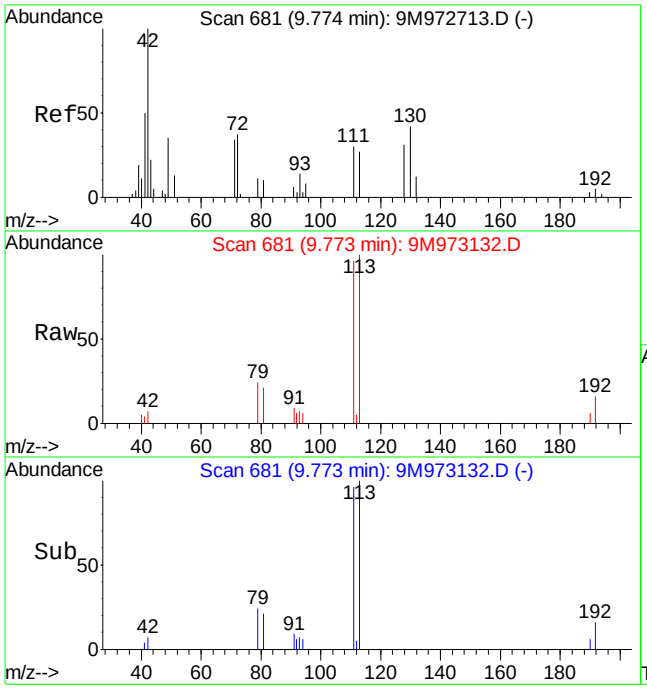

#36
Tetrahydrofuran
Concen: 1.06 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. -0.01 min
Lab File: 9M973132.D
Acq: 7 Mar 2016 20:55

Tgt Ion: 42 Resp: 953

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

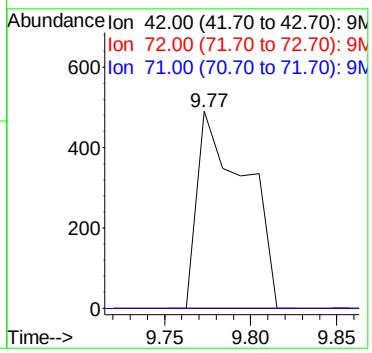

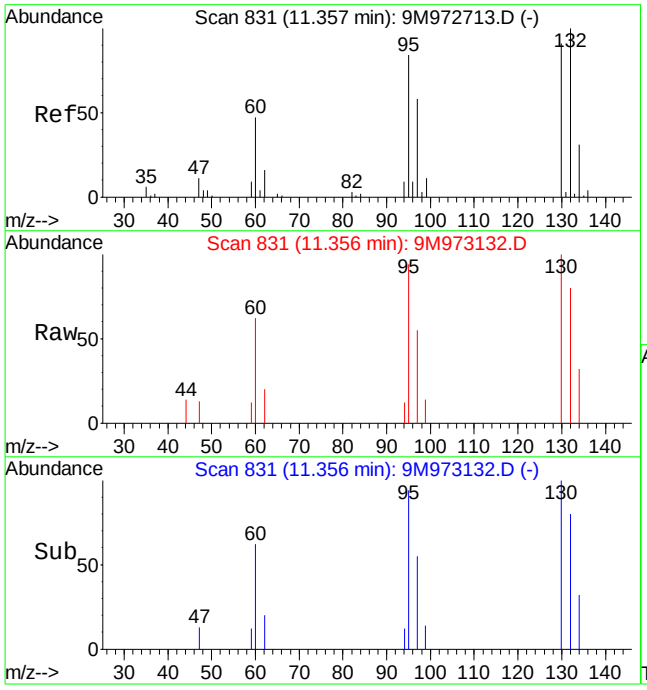

#47
Trichloroethene
Concen: 2.62 ug/kg
RT: 11.36 min Scan# 831
Delta R.T. 0.00 min
Lab File: 9M973132.D
Acq: 7 Mar 2016 20:55

Tgt Ion:130 Resp: 6839

Ion	Ratio	Lower	Upper
130	100		
132	91.2	56.5	131.7
95	94.1	55.4	129.4

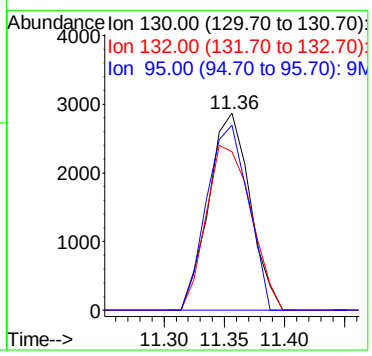

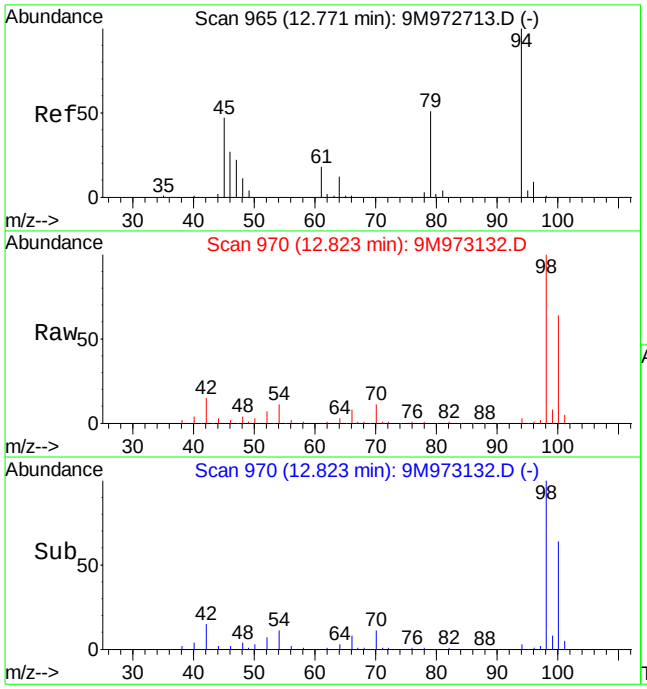

#56
Dimethyl Disulfide
Concen: 3.39 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M973132.D
Acq: 7 Mar 2016 20:55

Tgt Ion: 94 Resp: 11332

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

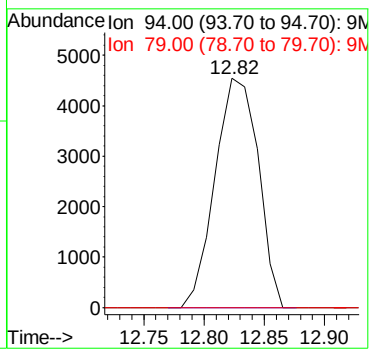

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972472.D Vial: 3
Acq On : 25 Jan 2016 11:22 Operator: FJB
Sample : WG555000-02 5ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:05 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	367739	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	266763	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.77	152	148882	50.00 ug/kg	0.01

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	1974	5.3580 ug/kg#	1
3) 3-Chloro-1-propene	7.23	41	18322	5.0468 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	19639	4.7564 ug/kg	98
5) Ethyl Acetate	9.24	43	12755	5.2595 ug/kg	91
6) Methacrylonitrile	9.40	67	3744	4.7691 ug/kg	95
7) Isobutyl Alcohol	9.42	43	1055	12.9700 ug/kg#	62
8) 1-Butanol	10.36	56	203	11.8711 ug/kg#	26
9) Methyl methacrylate	11.56	41	8689	4.6908 ug/kg	95
10) 2-Nitropropane	11.90	43	2531	4.2058 ug/kg	96

(#) = qualifier out of range (m) = manual integration
9M972472.D A9FOO_SL.M Wed Jan 27 11:22:42 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972472.D Vial: 3
Acq On : 25 Jan 2016 11:22 Operator: FJB
Sample : WG555000-02 5ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

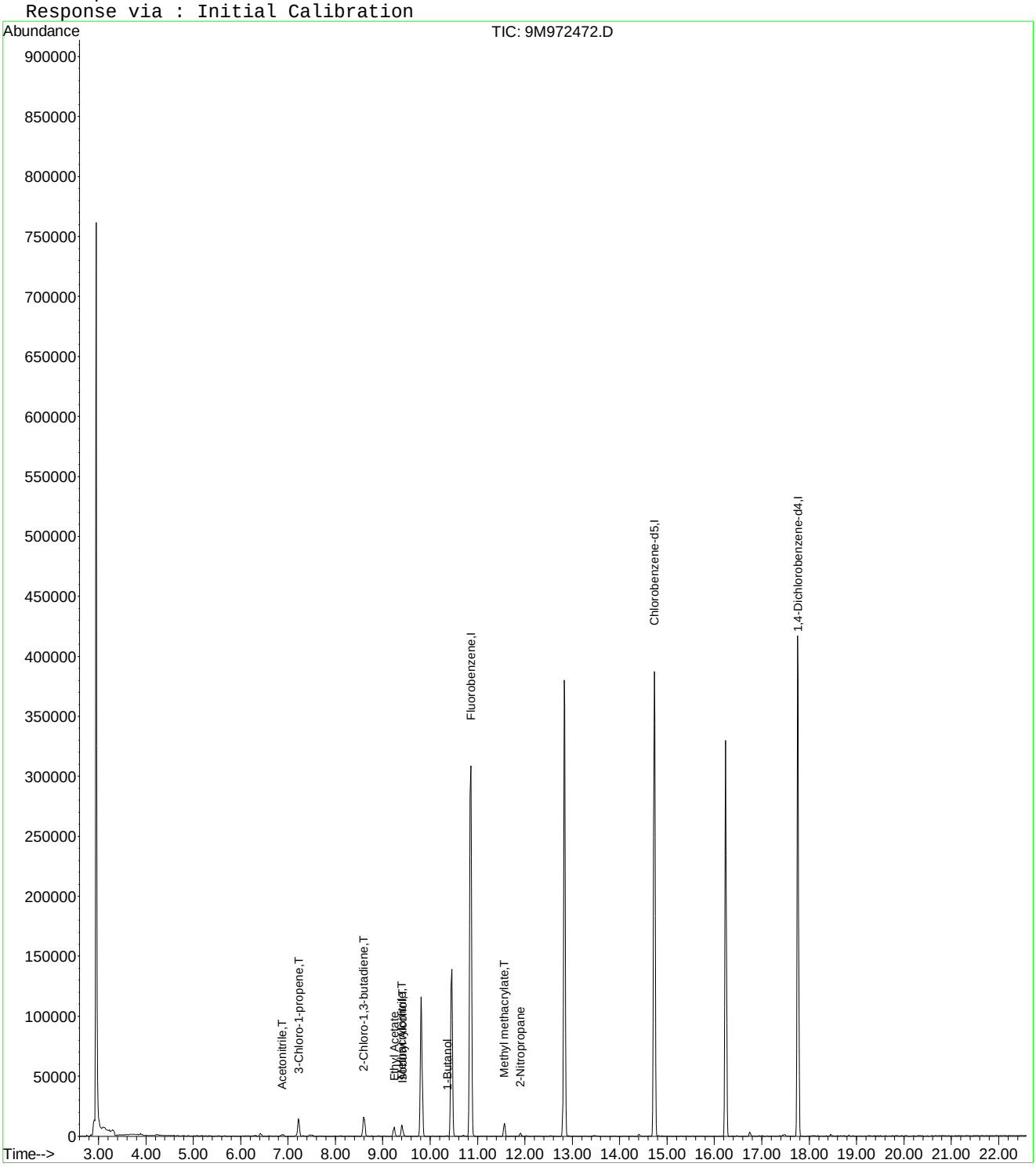

9M972472.D A9FOO_SL.M Wed Jan 27 11:22:42 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972473.D Vial: 4
Acq On : 25 Jan 2016 11:52 Operator: FJB
Sample : WG555000-03 20ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:05 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	359691	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	265773	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	149223	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	7669	21.2815 ug/kg#	77
3) 3-Chloro-1-propene	7.23	41	75360	21.2224 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	82865	20.5181 ug/kg	100
5) Ethyl Acetate	9.23	43	47912	20.1986 ug/kg	97
6) Methacrylonitrile	9.40	67	15740	20.4980 ug/kg	98
7) Isobutyl Alcohol	9.42	43	5287	37.9280 ug/kg	95
8) 1-Butanol	10.35	56	1509	22.3153 ug/kg#	81
9) Methyl methacrylate	11.56	41	35437	19.5588 ug/kg	98
10) 2-Nitropropane	11.90	43	10433	17.7247 ug/kg	98
12) Cyclohexanone	16.01	55	2157	16.3929 ug/kg#	86

(#) = qualifier out of range (m) = manual integration
9M972473.D A9FOO_SL.M Wed Jan 27 11:22:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972473.D Vial: 4
Acq On : 25 Jan 2016 11:52 Operator: FJB
Sample : WG555000-03 20ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

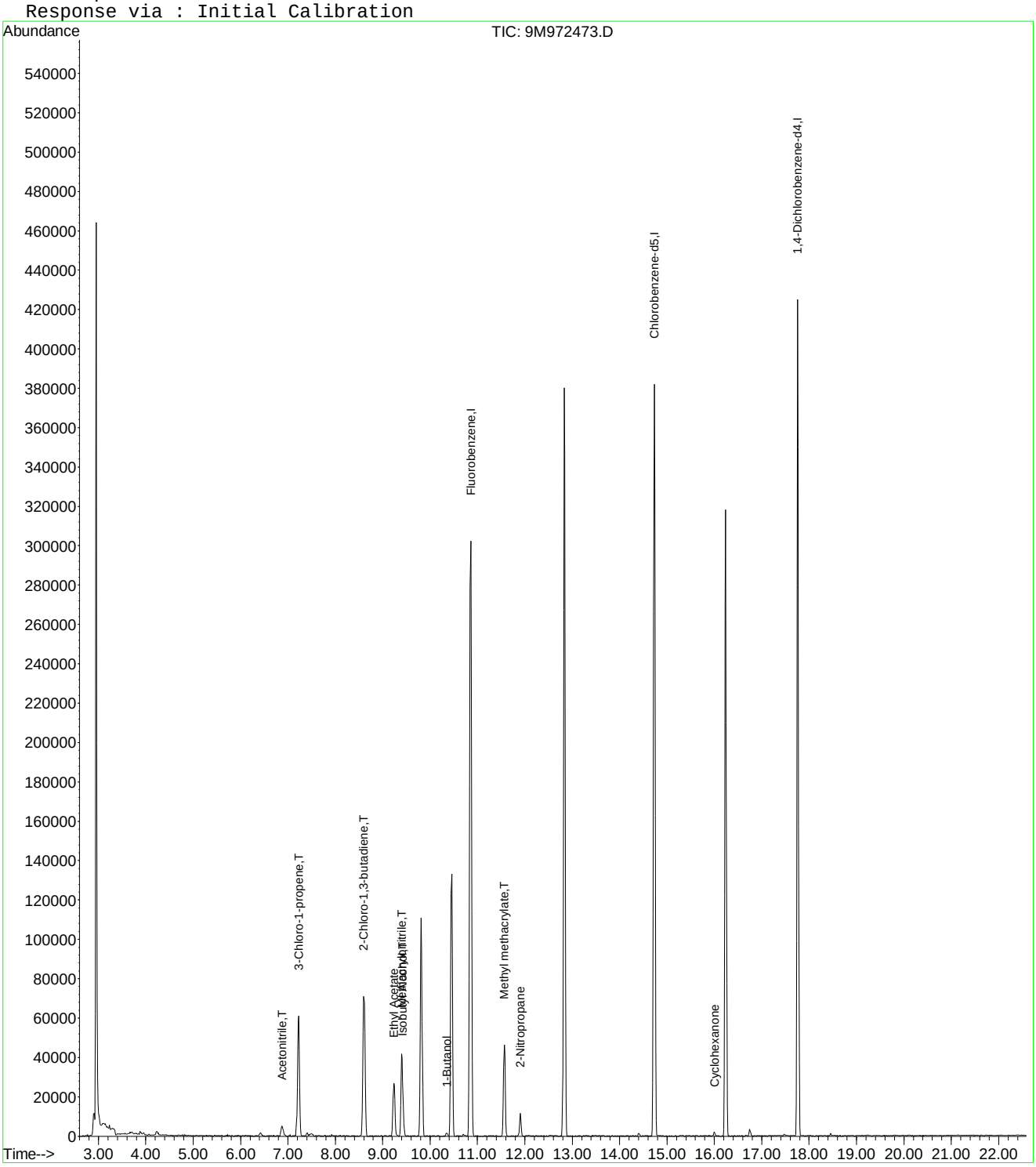

9M972473.D A9FOO_SL.M Wed Jan 27 11:22:46 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972474.D Vial: 5
Acq On : 25 Jan 2016 12:23 Operator: FJB
Sample : WG555000-04 50ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:06 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	356886	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	259679	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	147334	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	16583	46.3795 ug/kg#	94
3) 3-Chloro-1-propene	7.23	41	160601	45.5828 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.61	53	185316	46.2464 ug/kg	99
5) Ethyl Acetate	9.23	43	111538	47.3915 ug/kg	99
6) Methacrylonitrile	9.40	67	36081	47.3572 ug/kg	99
7) Isobutyl Alcohol	9.42	43	12624	81.5447 ug/kg	95
8) 1-Butanol	10.35	56	4707	48.0983 ug/kg#	50
9) Methyl methacrylate	11.56	41	82406	45.8400 ug/kg	99
10) 2-Nitropropane	11.90	43	26302	45.0359 ug/kg	97
12) Cyclohexanone	16.01	55	5625	43.7525 ug/kg	93

(#) = qualifier out of range (m) = manual integration
9M972474.D A9FOO_SL.M Wed Jan 27 11:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972474.D Vial: 5
Acq On : 25 Jan 2016 12:23 Operator: FJB
Sample : WG555000-04 50ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

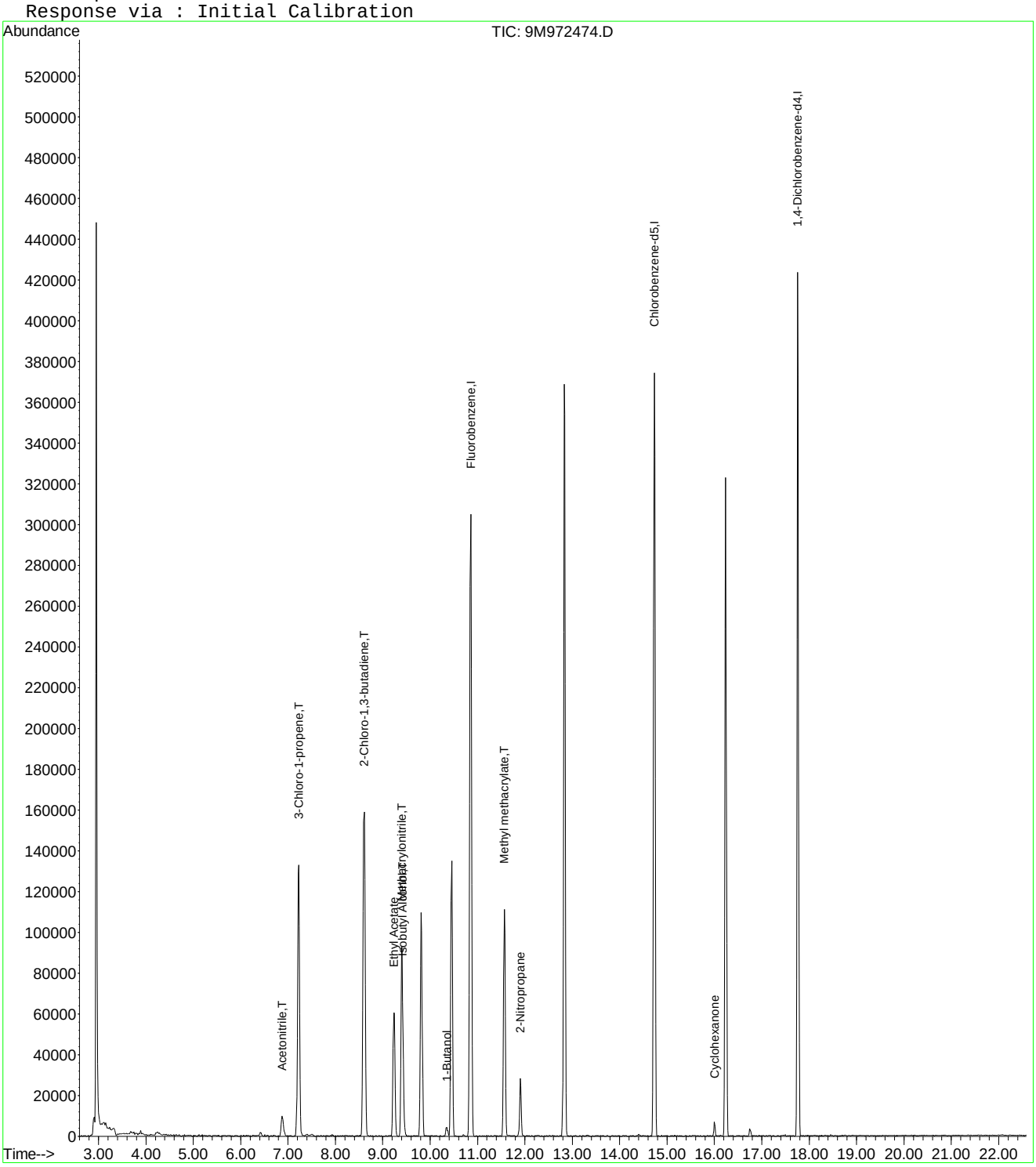

9M972474.D A9FOO_SL.M Wed Jan 27 11:22:51 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972475.D Vial: 6
Acq On : 25 Jan 2016 12:53 Operator: FJB
Sample : WG555000-05 100ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:06 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	394669	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	285851	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	161505	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	37767	95.5151	ug/kg#	100
3) 3-Chloro-1-propene	7.23	41	409870	105.1952	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.61	53	467514	105.5010	ug/kg	100
5) Ethyl Acetate	9.23	43	267513	102.7824	ug/kg	100
6) Methacrylonitrile	9.40	67	88054	104.5088	ug/kg	100
7) Isobutyl Alcohol	9.42	43	33721	187.1766	ug/kg	100
8) 1-Butanol	10.36	56	11671	95.0627	ug/kg	100
9) Methyl methacrylate	11.56	41	209503	105.3834	ug/kg	100
10) 2-Nitropropane	11.90	43	65435	101.3157	ug/kg	100
12) Cyclohexanone	16.01	55	14062	99.3630	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972475.D A9FOO_SL.M Wed Jan 27 11:22:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972475.D Vial: 6
Acq On : 25 Jan 2016 12:53 Operator: FJB
Sample : WG555000-05 100ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

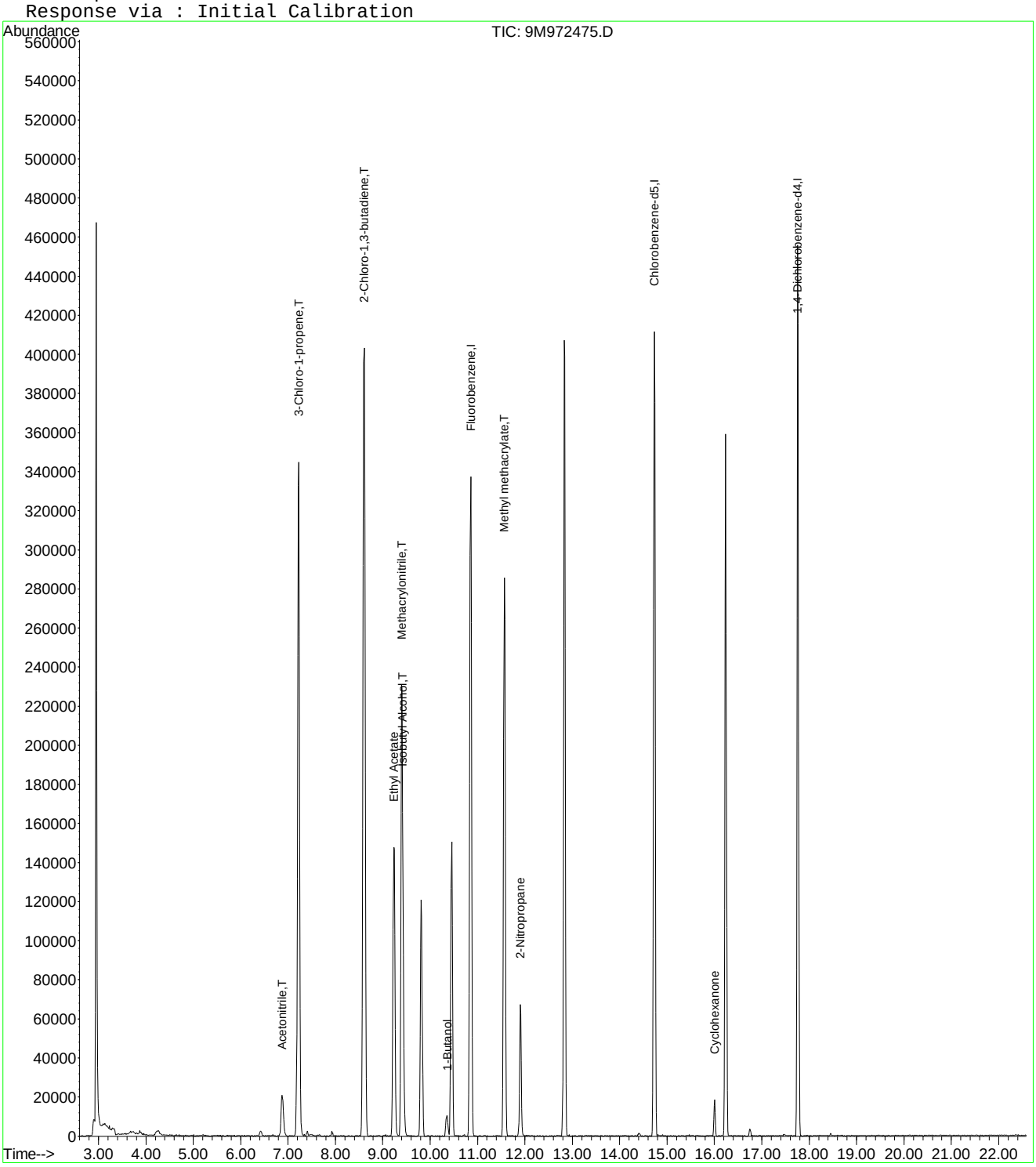

9M972475.D A9FOO_SL.M Wed Jan 27 11:22:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972476.D Vial: 7
Acq On : 25 Jan 2016 13:23 Operator: FJB
Sample : WG555000-06 200ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 09:51:10 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	361792	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	264283	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	150478	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.87	41	75099	207.1896	ug/kg#	94
3) 3-Chloro-1-propene	7.22	41	743262	208.0969	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	846271	208.3269	ug/kg	100
5) Ethyl Acetate	9.23	43	489855	205.3125	ug/kg	100
6) Methacrylonitrile	9.40	67	159879	206.9995	ug/kg	100
7) Isobutyl Alcohol	9.42	43	68551	406.6640	ug/kg	99
8) 1-Butanol	10.35	56	24111	201.3375	ug/kg	97
9) Methyl methacrylate	11.57	41	382820	210.0636	ug/kg	99
10) 2-Nitropropane	11.90	43	129000	217.8866	ug/kg	95
12) Cyclohexanone	16.00	55	30065	229.7785	ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972476.D A9FOO_SL.M Wed Jan 27 09:51:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972476.D Vial: 7
Acq On : 25 Jan 2016 13:23 Operator: FJB
Sample : WG555000-06 200ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 9:51 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

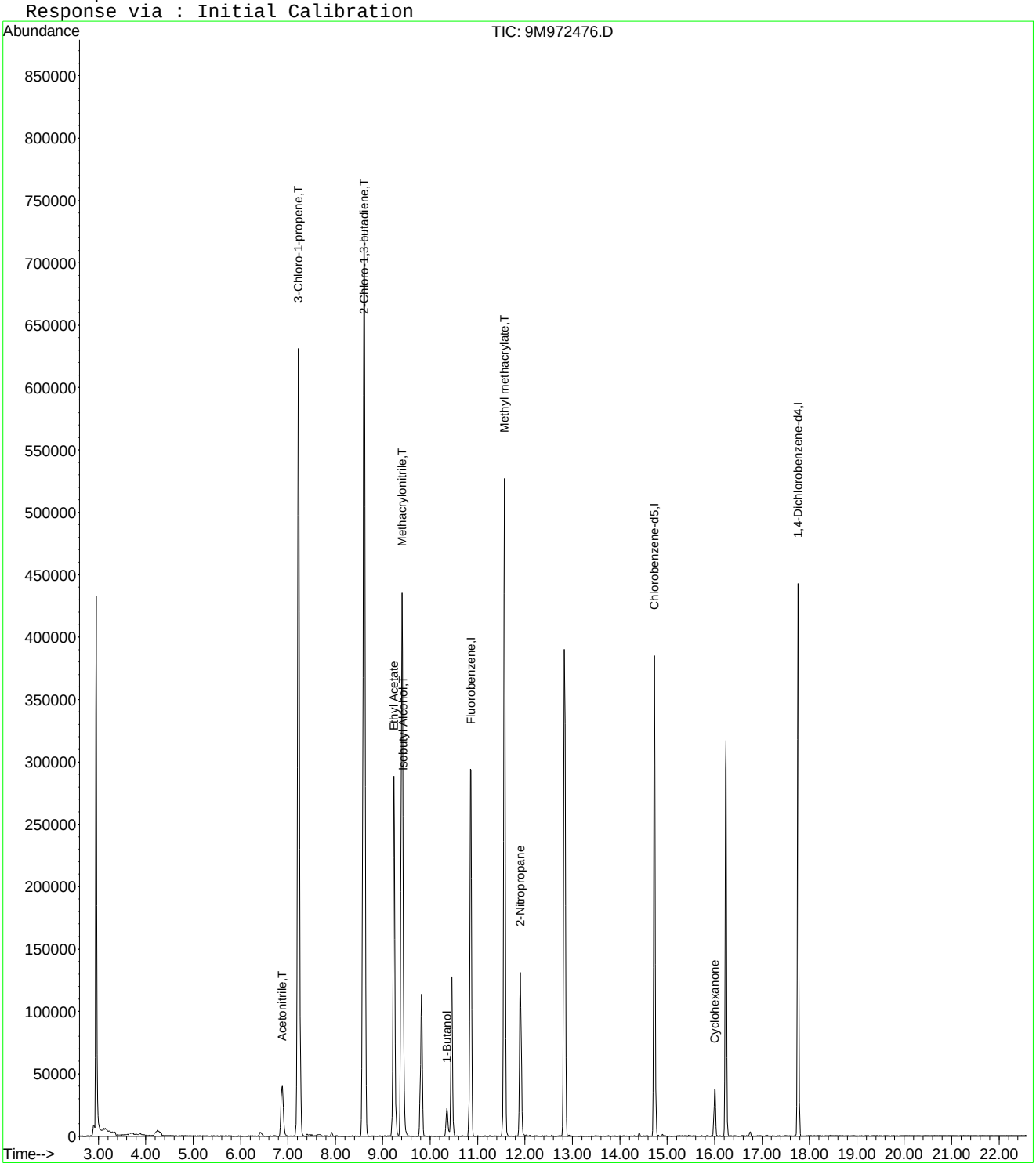

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972477.D Vial: 8
Acq On : 25 Jan 2016 13:54 Operator: FJB
Sample : WG555000-07 300ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:07 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.85	96	362779	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	265659	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	153468	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	99618	274.0870	ug/kg#	97
3) 3-Chloro-1-propene	7.22	41	944879	263.8255	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	1107217	271.8226	ug/kg	99
5) Ethyl Acetate	9.24	43	652386	272.6900	ug/kg	99
6) Methacrylonitrile	9.40	67	208153	268.7679	ug/kg	98
7) Isobutyl Alcohol	9.43	43	89707	528.6093	ug/kg#	99
8) 1-Butanol	10.35	56	31640	260.3131	ug/kg	98
9) Methyl methacrylate	11.57	41	502506	274.9883	ug/kg	98
10) 2-Nitropropane	11.90	43	172692	290.8907	ug/kg	95
12) Cyclohexanone	16.00	55	36951	280.9436	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972477.D A9FOO_SL.M Wed Jan 27 11:23:05 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972477.D Vial: 8
Acq On : 25 Jan 2016 13:54 Operator: FJB
Sample : WG555000-07 300ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

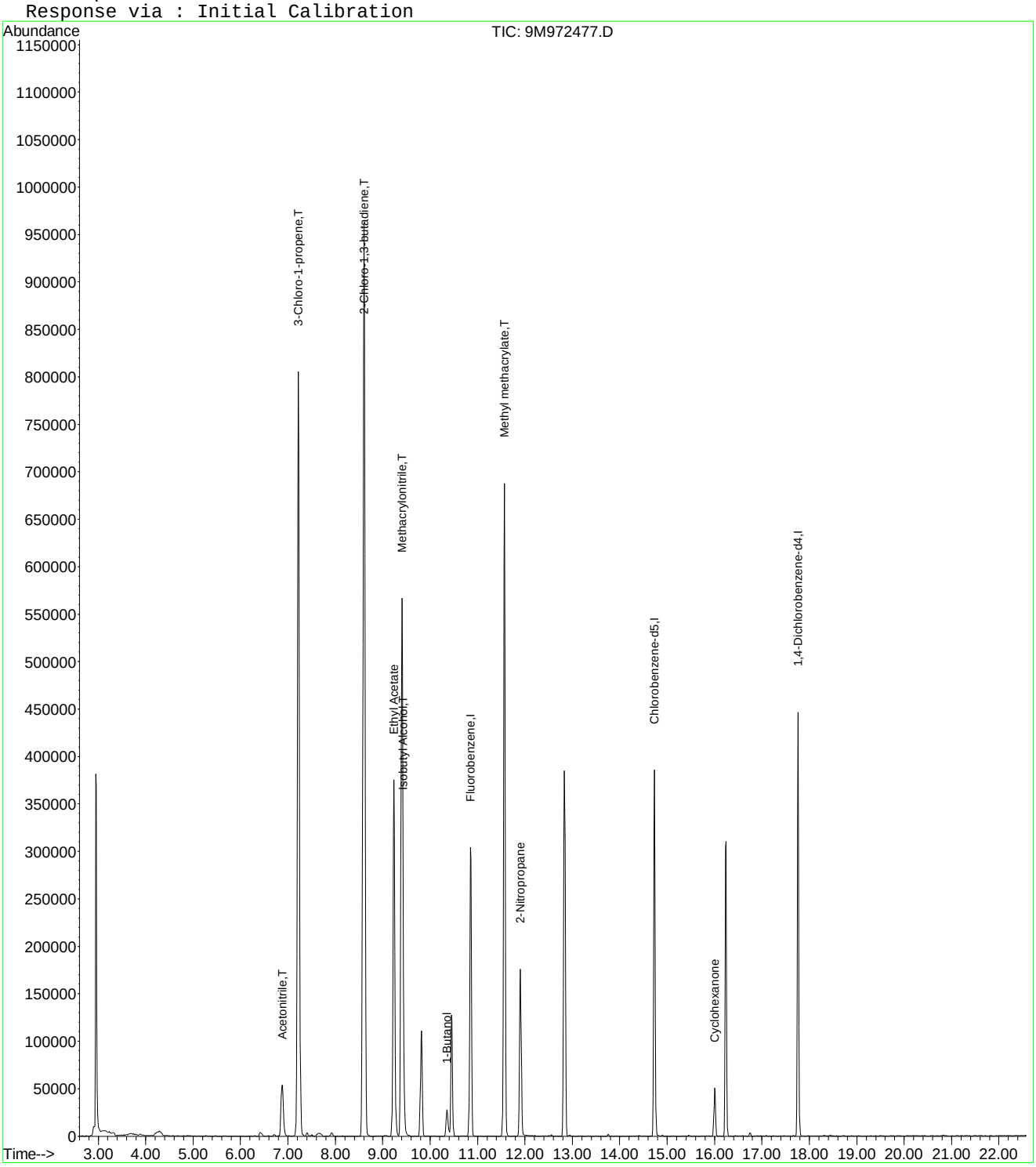

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972478.D Vial: 9
Acq On : 25 Jan 2016 14:25 Operator: FJB
Sample : WG555000-08 400ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 09:51:10 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	359343	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	261674	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	149058	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.89	41	148074	411.3034	ug/kg#	96
3) 3-Chloro-1-propene	7.22	41	1457717	410.9100	ug/kg	99
4) 2-Chloro-1,3-butadiene	8.61	53	1703971	422.3261	ug/kg	100
5) Ethyl Acetate	9.23	43	980479	413.7480	ug/kg	100
6) Methacrylonitrile	9.40	67	321602	419.2243	ug/kg	99
7) Isobutyl Alcohol	9.43	43	142361	842.7355	ug/kg#	98
8) 1-Butanol	10.36	56	51732	422.9922	ug/kg	99
9) Methyl methacrylate	11.56	41	779879	430.8570	ug/kg	98
10) 2-Nitropropane	11.90	43	267565	455.0088	ug/kg	96
12) Cyclohexanone	16.01	55	56623	437.0688	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972478.D A9FOO_SL.M Wed Jan 27 09:51:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972478.D Vial: 9
Acq On : 25 Jan 2016 14:25 Operator: FJB
Sample : WG555000-08 400ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 9:51 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

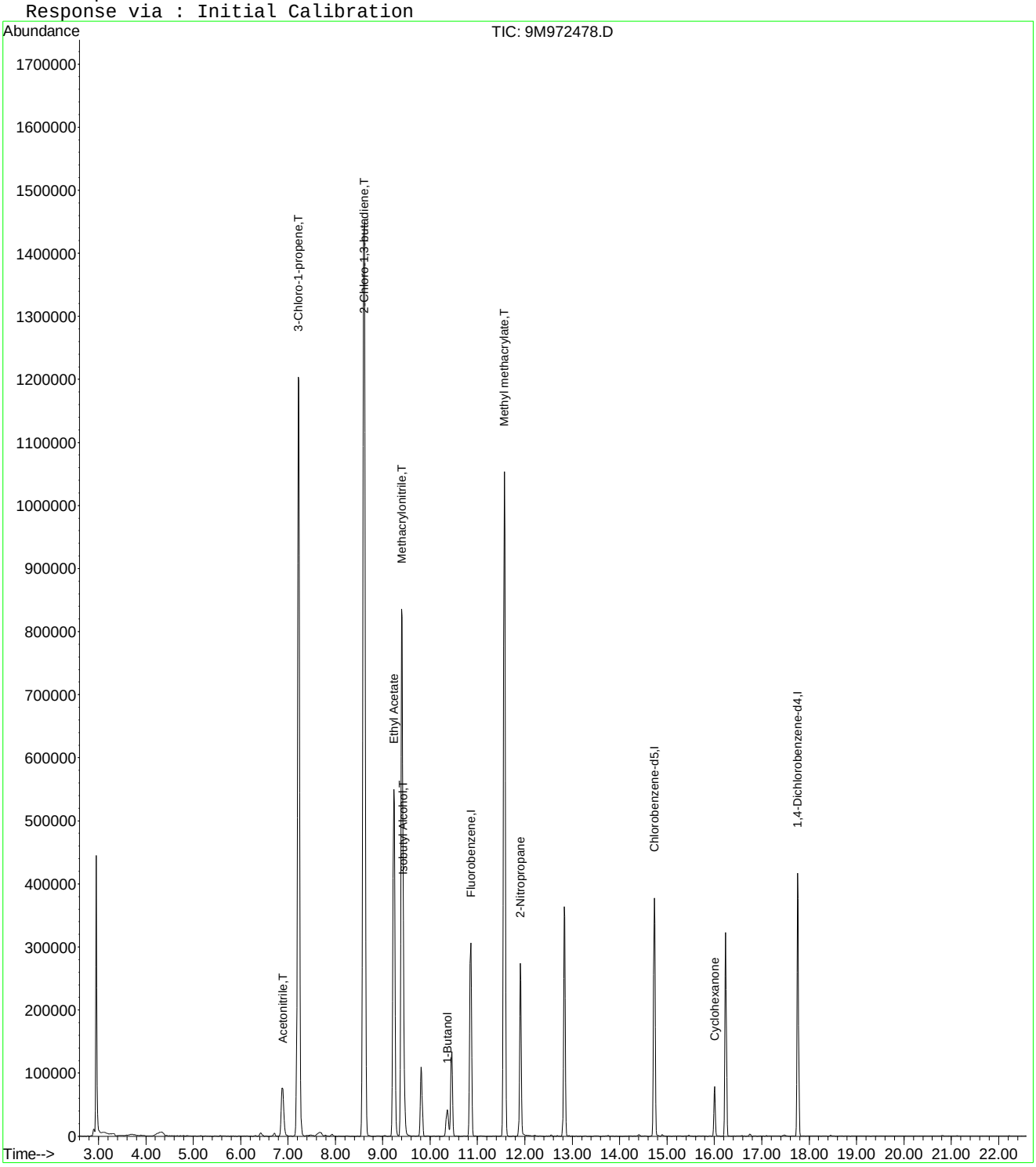

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972479.D Vial: 10
Acq On : 25 Jan 2016 14:56 Operator: FJB
Sample : WG555000-09 500ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:08 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	364474	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	266311	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	151707	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	196334	537.6773	ug/kg#	94
3) 3-Chloro-1-propene	7.22	41	1832802	509.3680	ug/kg	99
4) 2-Chloro-1,3-butadiene	8.60	53	2126710	519.6807	ug/kg	100
5) Ethyl Acetate	9.23	43	1255294	522.2587	ug/kg	100
6) Methacrylonitrile	9.40	67	408537	525.0513	ug/kg	100
7) Isobutyl Alcohol	9.43	43	180610	1052.3719	ug/kg	98
8) 1-Butanol	10.36	56	64789	519.8809	ug/kg	97
9) Methyl methacrylate	11.56	41	981460	534.5904	ug/kg	100
10) 2-Nitropropane	11.90	43	346571	581.0659	ug/kg	97
12) Cyclohexanone	16.01	55	74733	566.8143	ug/kg	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972479.D Vial: 10
Acq On : 25 Jan 2016 14:56 Operator: FJB
Sample : WG555000-09 500ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

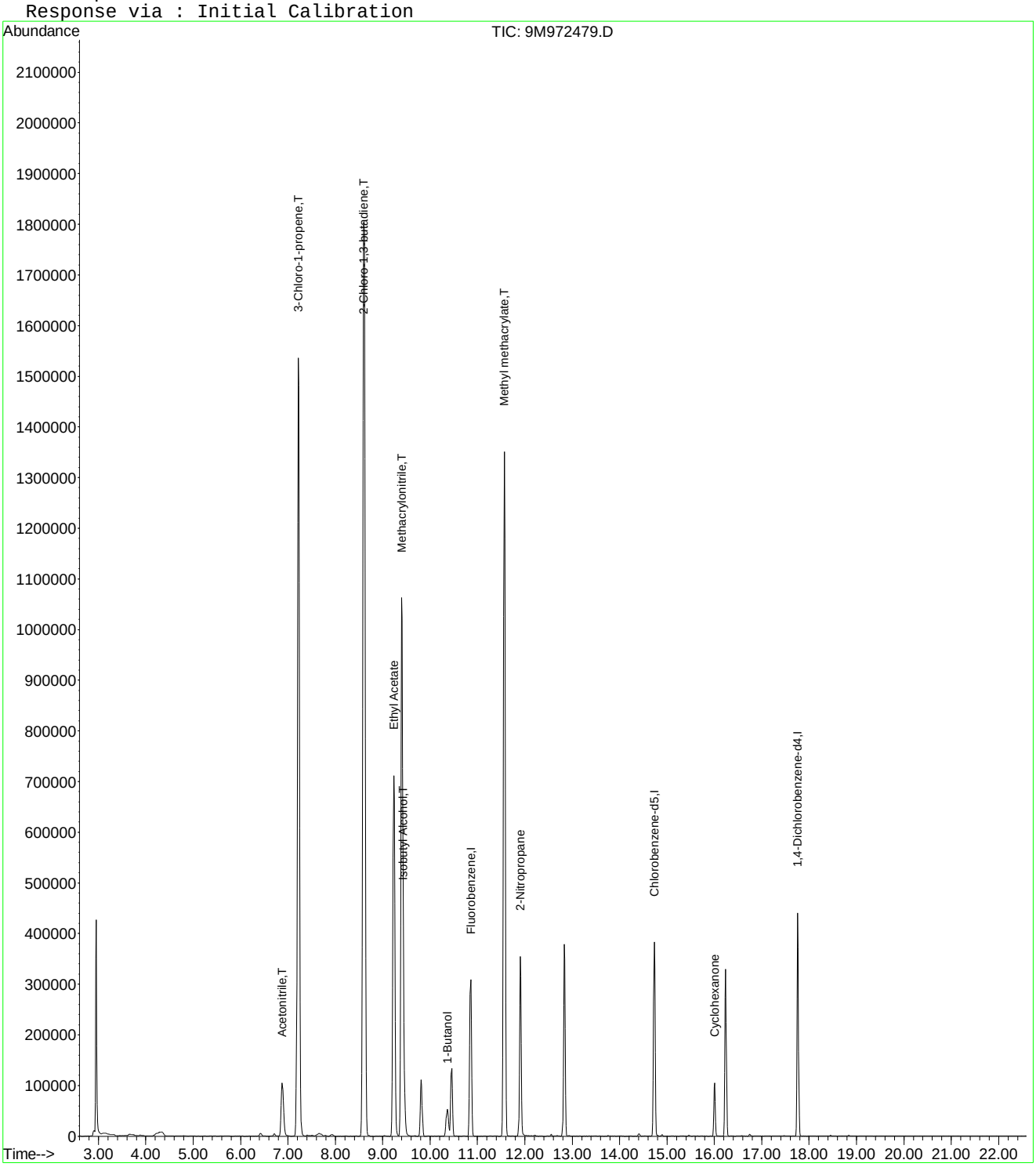

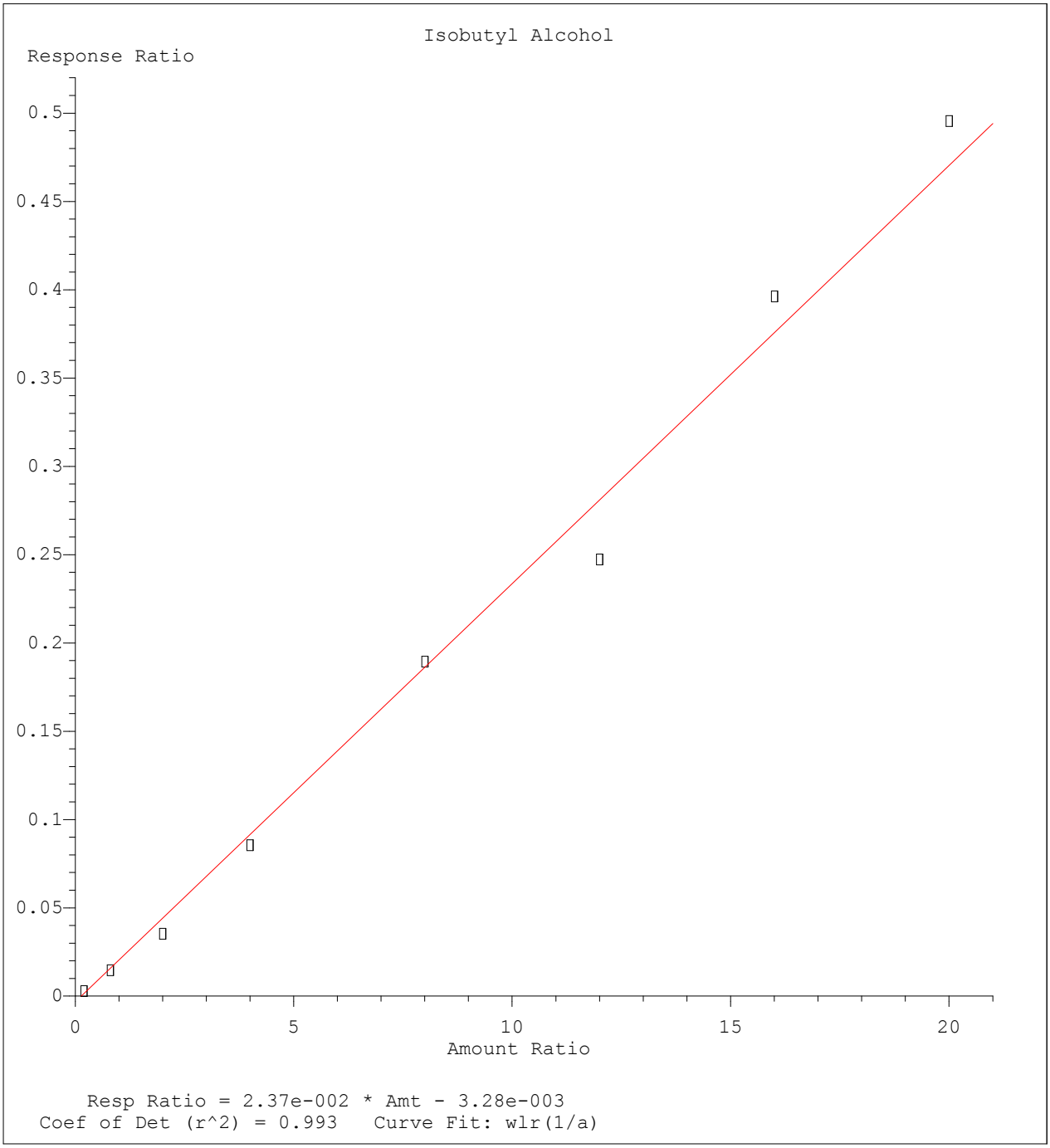

Method Name: C:\MSDCHEM\1\METHODS\A9FOO_SL.M
Calibration Table Last Updated: Wed Jan 27 09:49:02 2016

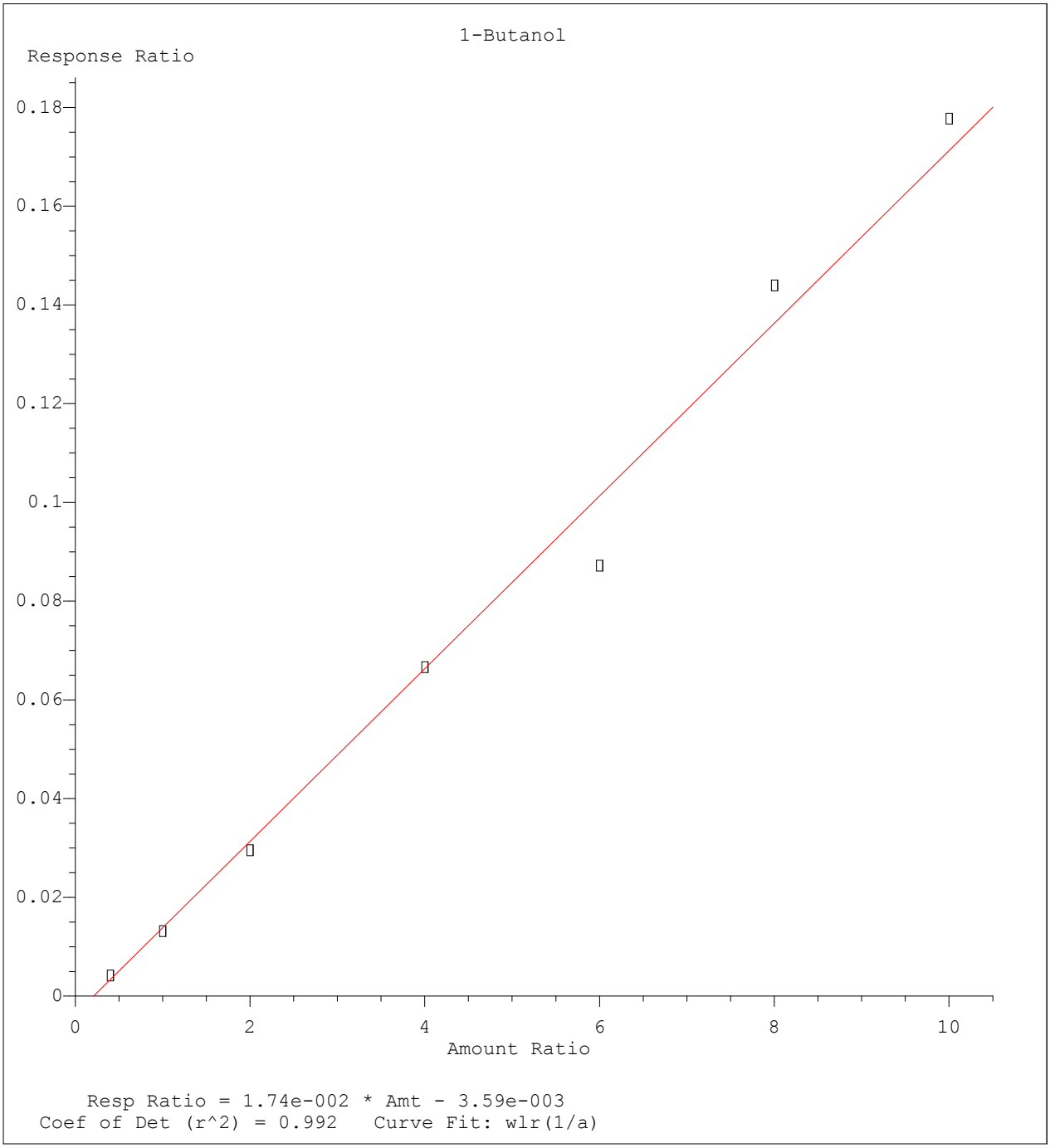

Method Name: C:\MSDCHEM\1\METHODS\A9FOO_SL.M
Calibration Table Last Updated: Wed Jan 27 09:49:02 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:09 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	394765	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	285754	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	159586	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	40054	101.2745 ug/kg#	100
3) 3-Chloro-1-propene	7.22	41	402890	103.3786 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	572568	129.1764 ug/kg	99
5) Ethyl Acetate	9.23	43	275962	106.0028 ug/kg	99
6) Methacrylonitrile	9.40	67	90289	107.1354 ug/kg	96
7) Isobutyl Alcohol	9.42	43	34031	188.7895 ug/kg	99
8) 1-Butanol	10.35	56	12038	97.7072 ug/kg	97
9) Methyl methacrylate	11.56	41	219363	110.3163 ug/kg	100
10) 2-Nitropropane	11.90	43	69288	107.2554 ug/kg	93
12) Cyclohexanone	16.01	55	14203	100.3934 ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972481.D A9FOO_SL.M Wed Jan 27 11:15:09 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

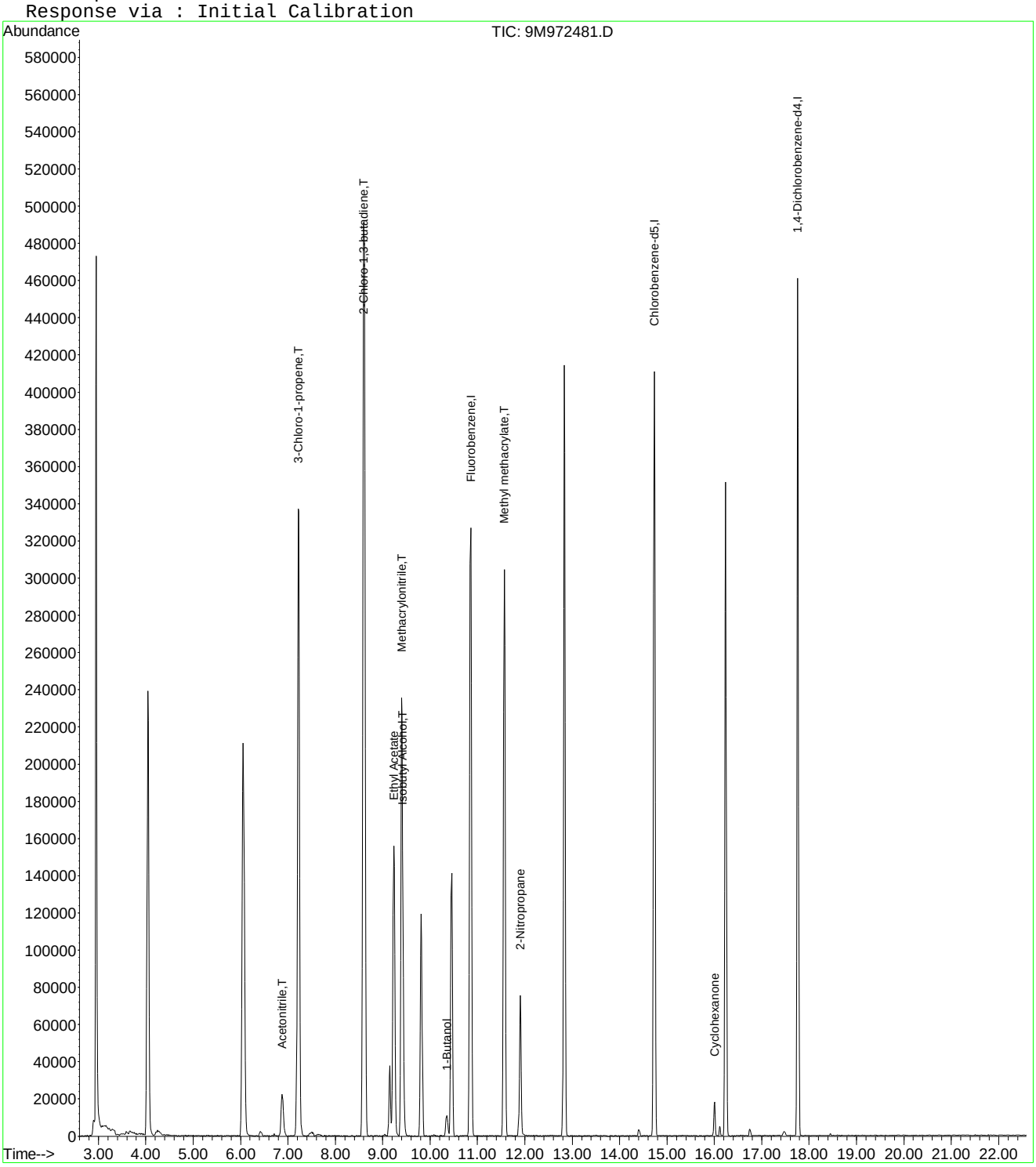

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	101.2745	-1.3	106	0.00
3	T	3-Chloro-1-propene	100.0000	103.3786	-3.4	98	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	129.1764	-29.2	122	0.00
5		Ethyl Acetate	100.0000	106.0028	-6.0	103	0.00
6	T	Methacrylonitrile	100.0000	107.1354	-7.1	103	0.00
7	T	Isobutyl Alcohol	200.0000	188.7895	5.6	101	0.00
8		1-Butanol	100.0000	97.7072	2.3	103	0.00
9	T	Methyl methacrylate	100.0000	110.3163	-10.3	105	0.00
10		2-Nitropropane	100.0000	107.2554	-7.3	106	0.00
11	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
12		Cyclohexanone	100.0000	100.3934	-0.4	101	0.00
13	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	99	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972481.D A9FOO_SL.M Wed Jan 27 11:32:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972896.D Vial: 3
Acq On : 25 Feb 2016 15:48 Operator: ADC
Sample : WG558732-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:54 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260B_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	517775	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.73	117	378926	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.76	152	183008	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	147955	52.7167 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.44%		
43) 1,2-Dichloroethane-d4	10.44	65	183779	52.1887 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.38%		
58) Toluene-d8	12.83	98	511451	53.3617 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.72%		
79) p-Bromofluorobenzene	16.23	95	191673	53.7871 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 107.58%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	204882	57.9763 ug/kg	100
3) Chloromethane	3.74	50	183152	54.0664 ug/kg	100
4) Vinyl Chloride	3.99	62	192536	56.7764 ug/kg	100
5) 1,3-Butadiene	4.04	54	170907	52.9740 ug/kg	100
6) Bromomethane	4.88	94	107911	48.9956 ug/kg	100
7) Chloroethane	5.04	64	85391	56.5213 ug/kg	100
8) Trichlorofluoromethane	5.53	101	265962	52.2923 ug/kg	100
9) Diethyl ether	6.04	59	249400	104.8955 ug/kg	100
10) Isoprene	6.09	67	156373	51.4980 ug/kg	100
11) Acrolein	6.30	56	24630	51.9520 ug/kg	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	135036	51.4825 ug/kg	100
13) Acetone	6.41	43	66195	50.6135 ug/kg	100
14) 1,1-Dichloroethene	6.61	61	244051	50.4389 ug/kg	100
15) Tert-Butyl Alcohol	6.76	59	110494	208.7036 ug/kg	98
16) Dimethyl Sulfide	6.88	62	109294	53.4455 ug/kg	100
17) Iodomethane	7.13	142	79749	55.1586 ug/kg	100
18) Methyl acetate	7.14	43	135648	51.5699 ug/kg	100
19) Methylene Chloride	7.40	84	135280	51.3362 ug/kg	100
20) Carbon Disulfide	7.45	76	381814	51.2249 ug/kg	100
21) Acrylonitrile	7.59	53	69697	53.5624 ug/kg	100
22) Methyl Tert Butyl Ether	7.61	73	407131	54.2460 ug/kg	100
23) trans-1,2-Dichloroethene	7.85	61	226890	52.6160 ug/kg	100
24) n-Hexane	7.91	57	219597	49.3729 ug/kg	100
25) Diisopropyl ether	8.26	45	1088740	105.3973 ug/kg	100
26) Vinyl Acetate	8.43	43	311838	52.9553 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	284391	52.5076 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	1023392	106.5502 ug/kg	100
29) 2-Butanone	9.03	43	86123	51.5803 ug/kg	100
30) Propionitrile	9.14	54	53253	104.2214 ug/kg	100
31) 2,2-Dichloropropane	9.24	77	215042	53.1943 ug/kg	100
32) cis-1,2-Dichloroethene	9.31	96	153722	54.3532 ug/kg	100
33) Chloroform	9.52	83	263571	52.9749 ug/kg	100
34) 1-Bromopropane	9.65	122	22164	51.3817 ug/kg	100
35) Bromochloromethane	9.75	130	102780	55.9453 ug/kg	100
36) Tetrahydrofuran	9.78	42	113791	105.7289 ug/kg	100
38) 1,1,1-Trichloroethane	10.04	97	243452	54.1074 ug/kg	100
39) Cyclohexane	10.08	56	247641	50.4821 ug/kg	100
40) 1,1-Dichloropropene	10.24	75	182199	51.4612 ug/kg	100
41) Tert-Amyl-Methyl ether	10.34	73	741165	106.1603 ug/kg	100
42) Carbon Tetrachloride	10.39	117	221306	53.0537 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972896.D Vial: 3
Acq On : 25 Feb 2016 15:48 Operator: ADC
Sample : WG558732-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:54 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260B_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	237857	54.3500 ug/kg	100
46)	Benzene	10.60	78	503328	50.7793 ug/kg	100
47)	Trichloroethene	11.35	130	163959	52.2047 ug/kg	100
48)	Methylcyclohexane	11.44	83	204551	51.9284 ug/kg	100
49)	1,2-Dichloropropane	11.56	63	148045	54.3898 ug/kg	100
50)	1,4-Dioxane	11.88	88	7789	190.7454 ug/kg	100
51)	Bromodichloromethane	11.87	83	203922	53.1595 ug/kg	100
52)	Dibromomethane	11.96	174	95887	53.1673 ug/kg	100
53)	2-Chloroethyl Vinyl Ether	12.17	63	38515	51.1377 ug/kg	100
54)	4-Methyl-2-Pentanone	12.19	58	64999	54.4056 ug/kg	100
55)	cis-1,3-Dichloropropene	12.50	75	212797	53.2452 ug/kg	100
56)	Dimethyl Disulfide	12.77	94	219798	54.7267 ug/kg	100
59)	Toluene	12.92	91	563647	52.0613 ug/kg	100
60)	Ethyl Methacrylate	13.02	69	158958	52.9687 ug/kg	100
61)	trans-1,3-Dichloropropene	13.10	75	212386	54.4657 ug/kg	100
62)	1,1,2-Trichloroethane	13.33	97	122975	54.0706 ug/kg	100
63)	2-Hexanone	13.25	43	119176	52.4822 ug/kg	100
64)	1,3-Dichloropropane	13.63	76	201541	53.1810 ug/kg	100
65)	Tetrachloroethene	13.75	164	117066	50.4378 ug/kg	100
66)	Dibromochloromethane	14.01	129	168874	53.1294 ug/kg	100
67)	1,2-Dibromoethane	14.28	107	132755	52.6249 ug/kg	100
68)	1-Chlorohexane	14.35	91	168490	52.7733 ug/kg	100
69)	Chlorobenzene	14.77	112	400241	52.5998 ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.80	131	154536	54.0800 ug/kg	100
71)	Ethylbenzene	14.80	106	207031	52.8117 ug/kg	100
72)	m-,p-Xylene	14.89	106	497405	102.7415 ug/kg	100
73)	o-Xylene	15.45	106	247567	53.2858 ug/kg	100
74)	Styrene	15.49	104	425634	53.7983 ug/kg	100
75)	Bromoform	16.00	173	116015	55.5910 ug/kg	100
76)	Isopropylbenzene	15.88	105	658255	52.7764 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.10	83	147970	53.3007 ug/kg	100
80)	1,2,3-Trichloropropane	16.29	110	55711	52.9159 ug/kg	100
81)	trans-1,4-Dichloro-2-Buten	16.33	53	55525	52.3210 ug/kg	100
82)	n-Propylbenzene	16.39	91	751844	52.2641 ug/kg	100
83)	Bromobenzene	16.52	156	177299	52.2079 ug/kg	100
84)	1,3,5-Trimethylbenzene	16.58	105	568867	52.6809 ug/kg	100
85)	2-Chlorotoluene	16.66	91	484783	50.2437 ug/kg	100
86)	4-Chlorotoluene	16.70	91	481367	53.9615 ug/kg	100
87)	a-Methylstyrene	16.98	118	255765	51.9817 ug/kg	100
88)	tert-Butylbenzene	17.04	134	121669	53.7430 ug/kg	100
89)	1,2,4-Trimethylbenzene	17.09	105	580656	51.3463 ug/kg	100
90)	sec-Butylbenzene	17.30	105	726352	52.2266 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	613096	52.2364 ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	337008	49.9319 ug/kg	100
93)	1,4-Dichlorobenzene	17.80	146	335195	49.6777 ug/kg	100
94)	n-Butylbenzene	17.99	91	563797	51.6647 ug/kg	100
95)	1,2-Dichlorobenzene	18.30	146	320108	51.1150 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.30	157	42968	53.4468 ug/kg	100
97)	1,2,4-Trichlorobenzene	20.44	180	222592	50.0691 ug/kg	100
98)	Hexachlorobutadiene	20.59	225	117654	50.2053 ug/kg	100
99)	Naphthalene	20.81	128	602344	54.0184 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	222082	51.5034 ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972896.D 8260SL.M Fri Feb 26 11:21:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972896.D Vial: 3
Acq On : 25 Feb 2016 15:48 Operator: ADC
Sample : WG558732-02 50ug/L CCV 8260C Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

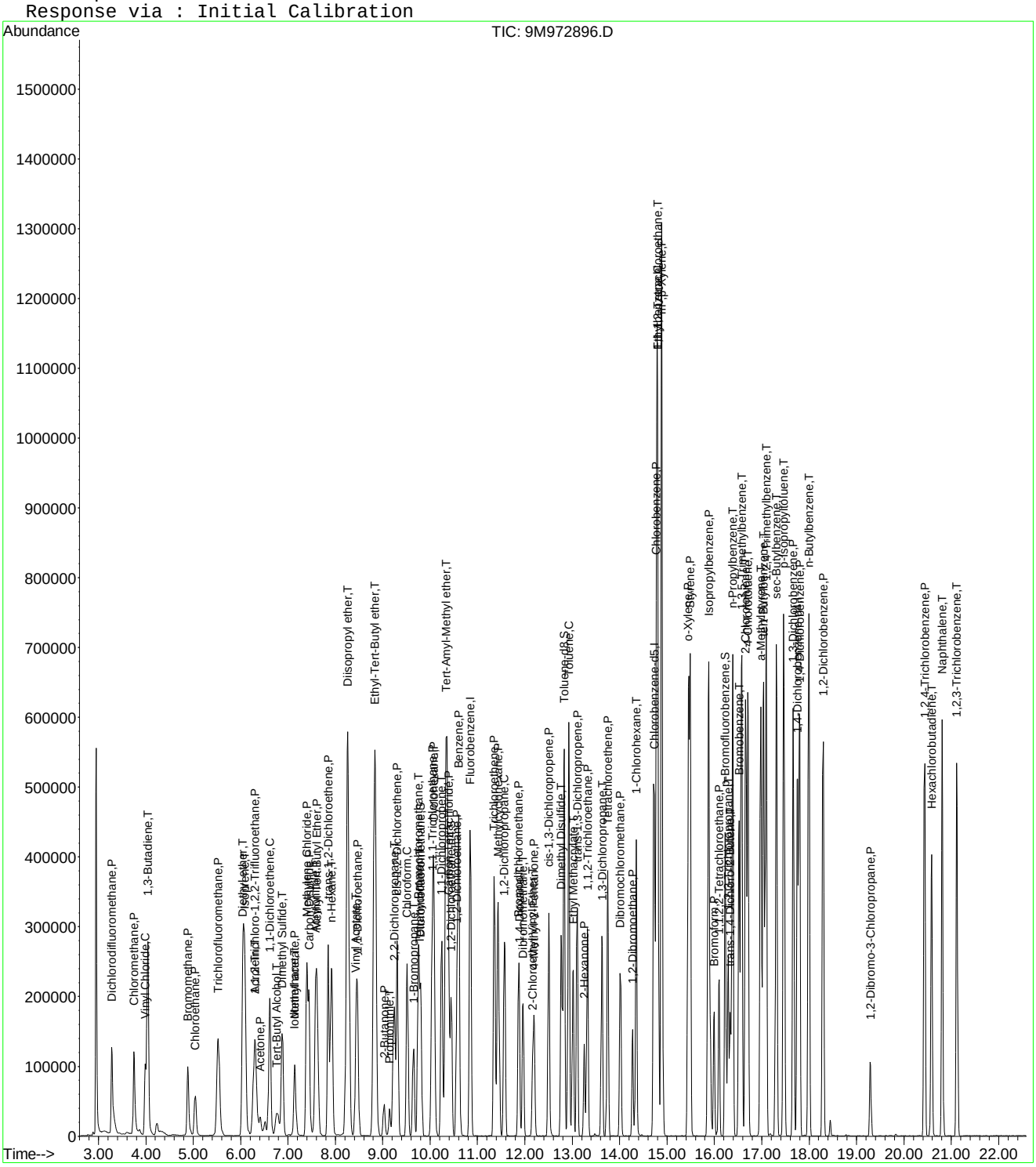

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:15 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	491503	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	353502	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	169028	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.83	98	923	0.1032 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.20%#	
79) p-Bromofluorobenzene	16.22	95	770	0.2339 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.46%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	1359	0.4051 ug/kg#	69
3) Chloromethane	3.75	50	2926	0.9099 ug/kg	95
4) Vinyl Chloride	3.98	62	1474	0.4579 ug/kg#	67
5) 1,3-Butadiene	4.03	54	1519	0.4960 ug/kg	82
6) Bromomethane	4.89	94	2071	0.9906 ug/kg	100
8) Trichlorofluoromethane	5.53	101	2609	0.5404 ug/kg#	51
10) Isoprene	6.08	67	1239	0.4298 ug/kg	70
13) Acetone	6.43	43	4251	5.5216 ug/kg#	75
14) 1,1-Dichloroethene	6.63	61	2149	0.4679 ug/kg#	66
17) Iodomethane	7.14	142	943	3.4505 ug/kg#	34
18) Methyl acetate	7.16	43	1334	0.5343 ug/kg#	45
19) Methylene Chloride	7.40	84	1287	0.5145 ug/kg	81
20) Carbon Disulfide	7.44	76	6762	0.9557 ug/kg#	76
23) trans-1,2-Dichloroethene	7.84	61	2196	0.5365 ug/kg	86
24) n-Hexane	7.92	57	2239	0.5303 ug/kg#	62
26) Vinyl Acetate	8.44	43	2494	0.4462 ug/kg#	78
27) 1,1-Dichloroethane	8.48	63	2396	0.4660 ug/kg#	63
29) 2-Butanone	9.02	43	778	0.4909 ug/kg#	58
31) 2,2-Dichloropropane	9.24	77	1877	0.4891 ug/kg#	42
32) cis-1,2-Dichloroethene	9.32	96	1178	0.4388 ug/kg	74
33) Chloroform	9.52	83	2007	0.4249 ug/kg	81
35) Bromochloromethane	9.74	130	828	0.4748 ug/kg#	68
36) Tetrahydrofuran	9.76	42	1603	1.5690 ug/kg#	57
38) 1,1,1-Trichloroethane	10.05	97	1773	0.4151 ug/kg	92
40) 1,1-Dichloropropene	10.25	75	1521	0.4526 ug/kg#	38
42) Carbon Tetrachloride	10.40	117	1765	0.4457 ug/kg#	85
45) 1,2-Dichloroethane	10.57	62	1885	0.4537 ug/kg#	68
46) Benzene	10.61	78	5607	0.5959 ug/kg#	83
47) Trichloroethene	11.36	130	1808	0.6064 ug/kg	88
48) Methylcyclohexane	11.44	83	1930	0.5161 ug/kg	96
55) cis-1,3-Dichloropropene	12.51	75	1714	0.4518 ug/kg#	51
59) Toluene	12.93	91	5550	0.5495 ug/kg	88
61) trans-1,3-Dichloropropene	13.10	75	1920	0.5278 ug/kg#	51
63) 2-Hexanone	13.25	43	877	0.4140 ug/kg#	63
64) 1,3-Dichloropropane	13.63	76	1615	0.4568 ug/kg	91
65) Tetrachloroethene	13.75	164	1154	0.5330 ug/kg#	74
67) 1,2-Dibromoethane	14.27	107	988	0.4198 ug/kg	87
68) 1-Chlorohexane	14.35	91	1436	0.4821 ug/kg	83
69) Chlorobenzene	14.78	112	4578	0.6449 ug/kg	87
70) 1,1,1,2-Tetrachloroethane	14.81	131	1078	0.4044 ug/kg	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:15 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
71)	Ethylbenzene	14.80	106	1823	0.4985 ug/kg	68
72)	m-,p-Xylene	14.88	106	4752	1.0521 ug/kg	95
73)	o-Xylene	15.44	106	2166	0.4997 ug/kg	94
74)	Styrene	15.49	104	3544	0.4802 ug/kg	91
76)	Isopropylbenzene	15.87	105	6349	0.5456 ug/kg	97
78)	1,1,2,2-Tetrachloroethane	16.09	83	1326	0.5171 ug/kg#	89
82)	n-Propylbenzene	16.38	91	7679	0.5780 ug/kg	98
83)	Bromobenzene	16.52	156	1798	0.5732 ug/kg	88
84)	1,3,5-Trimethylbenzene	16.57	105	4554	0.4566 ug/kg	92
85)	2-Chlorotoluene	16.66	91	5237	0.5877 ug/kg	84
86)	4-Chlorotoluene	16.71	91	5645	0.6851 ug/kg	93
87)	a-Methylstyrene	16.97	118	2091	0.4601 ug/kg	93
89)	1,2,4-Trimethylbenzene	17.09	105	6291	0.6023 ug/kg	84
90)	sec-Butylbenzene	17.31	105	7013	0.5460 ug/kg	93
91)	p-Isopropyltoluene	17.47	119	5681	0.5241 ug/kg	95
92)	1,3-Dichlorobenzene	17.67	146	4446	0.7132 ug/kg	91
93)	1,4-Dichlorobenzene	17.79	146	4603	0.7386 ug/kg#	73
94)	n-Butylbenzene	17.99	91	6750	0.6697 ug/kg#	90
95)	1,2-Dichlorobenzene	18.29	146	3889	0.6724 ug/kg	82
97)	1,2,4-Trichlorobenzene	20.43	180	3506	0.8539 ug/kg	94
98)	Hexachlorobutadiene	20.58	225	1493	0.6898 ug/kg#	70
99)	Naphthalene	20.81	128	10277	0.9979 ug/kg	93
100)	1,2,3-Trichlorobenzene	21.12	180	3961	0.9946 ug/kg	80

(#) = qualifier out of range (m) = manual integration
9M972898.D 8260SL.M Fri Feb 26 11:11:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration

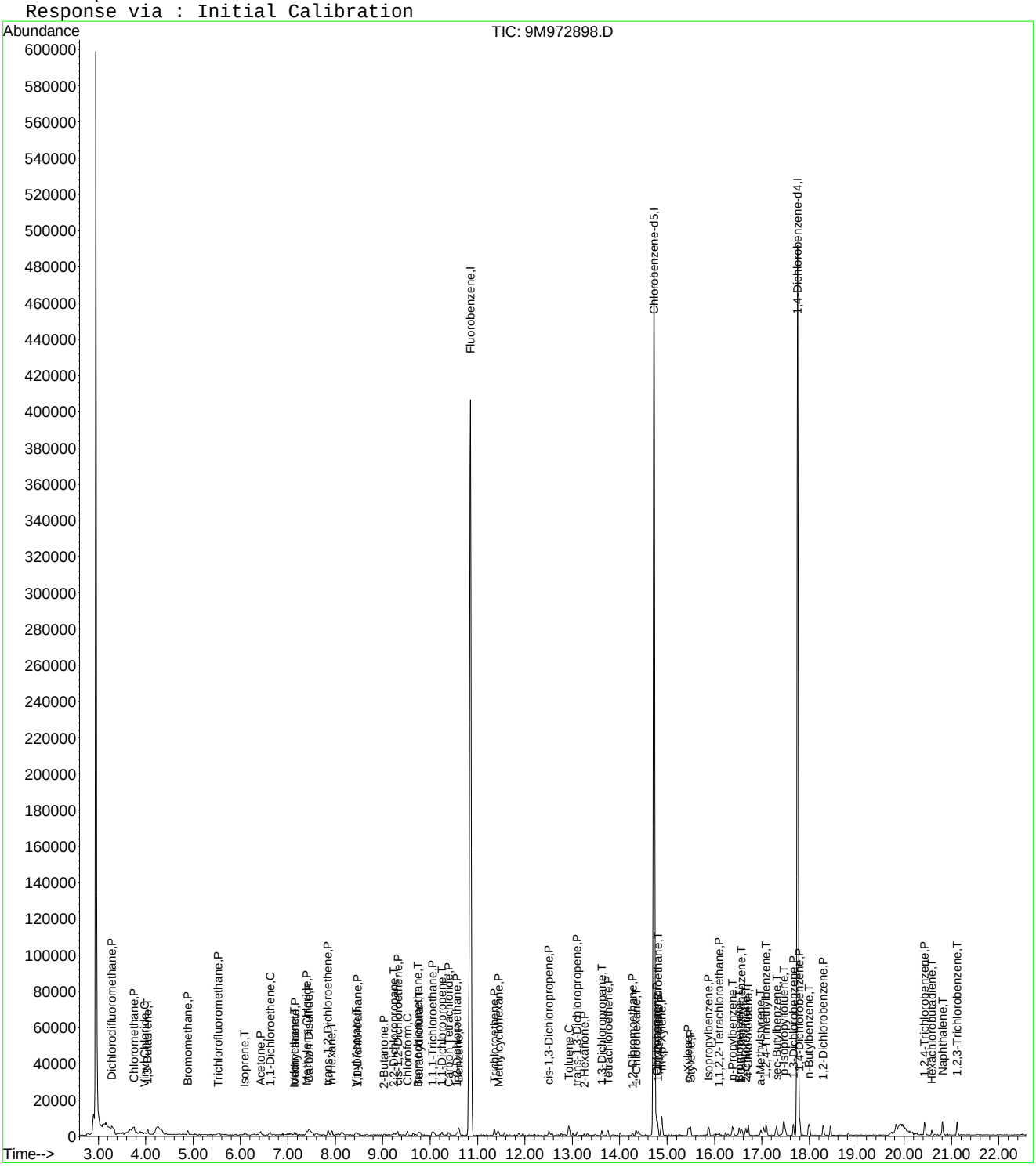

9M972898.D 8260SL.M Fri Feb 26 11:11:55 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	0.4051	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.9099	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.4579	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	0.4960	0.0	0	0.00
6	P	Bromomethane	-1.0000	0.9906	0.0	100	0.00
7	P	Chloroethane	-1.0000	0.2845	0.0	100	0.01
8	P	Trichlorofluoromethane	-1.0000	0.5404	0.0	100	0.00
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.04#
10	T	Isoprene	-1.0000	0.4298	0.0	0	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.30#
12	P	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.0779	0.0	100	0.00
13	P	Acetone	-1.0000	5.5216	0.0	0	0.02
14	C	1,1-Dichloroethene	-1.0000	0.4679	0.0	100	0.01
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.76#
16	T	Dimethyl Sulfide	-1.0000	0.1242	0.0	0	0.01
17	T	Iodomethane	-1.0000	3.4505	0.0	0	0.00
18	P	Methyl acetate	-1.0000	0.5343	0.0	0	0.02
19	P	Methylene Chloride	-1.0000	0.5145	0.0	100	0.00
20	P	Carbon Disulfide	-1.0000	0.9557	0.0	0	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.59#
22	P	Methyl Tert Butyl Ether	-1.0000	0.3878	0.0	100	0.00
23	P	trans-1,2-Dichloroethene	-1.0000	0.5365	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.5303	0.0	0	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.26#
26	T	Vinyl Acetate	-1.0000	0.4462	0.0	100	0.01
27	P	1,1-Dichloroethane	-1.0000	0.4660	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.83#
29	P	2-Butanone	-1.0000	0.4909	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.14#
31	T	2,2-Dichloropropane	-1.0000	0.4891	0.0	100	0.00
32	P	cis-1,2-Dichloroethene	-1.0000	0.4388	0.0	100	0.01
33	C	Chloroform	-1.0000	0.4249	0.0	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.65#
35	T	Bromochloromethane	-1.0000	0.4748	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	1.5690	0.0	100	-0.02
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	-1.0000	0.4151	0.0	100	0.00
39	P	Cyclohexane	-1.0000	0.3314	0.0	0	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4526	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.34#
42	P	Carbon Tetrachloride	-1.0000	0.4457	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	-1.0000	0.4537	0.0	100	0.00
46	P	Benzene	0.5000	0.5959	-19.2	100	0.00
47	P	Trichloroethene	-1.0000	0.6064	0.0	100	0.00
48	P	Methylcyclohexane	-1.0000	0.5161	0.0	0	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2930	0.0	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.88#
51	P	Bromodichloromethane	-1.0000	0.3238	0.0	100	0.00
52	T	Dibromomethane	-1.0000	0.1630	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.0000	0.0	0	-12.16#
54	P	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.19#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972898.D Vial: 3
Acq On : 25 Feb 2016 16:55 Operator: ADC
Sample : WG558732-03 0.5ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	-1.0000	0.4518	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2529	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.1032	0.0	100	0.00
59	C	Toluene	0.5000	0.5495	-9.9	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2340	0.0	0	0.00
61	P	trans-1,3-Dichloropropene	-1.0000	0.5278	0.0	100	0.00
62	P	1,1,2-Trichloroethane	-1.0000	0.3964	0.0	100	0.00
63	P	2-Hexanone	-1.0000	0.4140	0.0	100	0.00
64	T	1,3-Dichloropropane	-1.0000	0.4568	0.0	100	0.00
65	P	Tetrachloroethene	-1.0000	0.5330	0.0	100	0.00
66	P	Dibromochloromethane	-1.0000	0.3541	0.0	100	0.00
67	P	1,2-Dibromoethane	-1.0000	0.4198	0.0	100	0.00
68	T	1-Chlorohexane	-1.0000	0.4821	0.0	0	0.00
69	P	Chlorobenzene	-1.0000	0.6449	0.0	100	0.00
70	T	1,1,1,2-Tetrachloroethane	-1.0000	0.4044	0.0	100	0.00
71	C	Ethylbenzene	0.5000	0.4985	0.3	100	0.00
72	P	m-,p-Xylene	1.0000	1.0521	-5.2	100	0.00
73	P	o-Xylene	0.5000	0.4997	0.1	100	0.00
74	P	Styrene	-1.0000	0.4802	0.0	100	0.00
75	P	Bromoform	-1.0000	0.3955	0.0	100	0.00
76	P	Isopropylbenzene	-1.0000	0.5456	0.0	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	-1.0000	0.5171	0.0	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.2339	0.0	100	0.00
80	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.29#
81	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.33#
82	T	n-Propylbenzene	-1.0000	0.5780	0.0	100	0.00
83	T	Bromobenzene	-1.0000	0.5732	0.0	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	0.4566	0.0	100	0.00
85	T	2-Chlorotoluene	-1.0000	0.5877	0.0	100	0.00
86	T	4-Chlorotoluene	-1.0000	0.6851	0.0	100	0.00
87	T	a-Methylstyrene	-1.0000	0.4601	0.0	0	0.00
88	T	tert-Butylbenzene	-1.0000	0.2860	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	-1.0000	0.6023	0.0	100	0.00
90	T	sec-Butylbenzene	-1.0000	0.5460	0.0	100	0.00
91	T	p-Isopropyltoluene	-1.0000	0.5241	0.0	100	0.00
92	P	1,3-Dichlorobenzene	-1.0000	0.7132	0.0	100	0.00
93	P	1,4-Dichlorobenzene	-1.0000	0.7386	0.0	100	0.00
94	T	n-Butylbenzene	-1.0000	0.6697	0.0	100	0.00
95	P	1,2-Dichlorobenzene	-1.0000	0.6724	0.0	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.30#
97	P	1,2,4-Trichlorobenzene	-1.0000	0.8539	0.0	100	0.00
98	T	Hexachlorobutadiene	-1.0000	0.6898	0.0	100	0.00
99	T	Naphthalene	-1.0000	0.9979	0.0	100	0.00
100	T	1,2,3-Trichlorobenzene	-1.0000	0.9946	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972898.D 8260SL.M Fri Feb 26 11:11:52 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	536651	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	387839	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	177519	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.82	98	959	0.0978 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.20%#	
79) p-Bromofluorobenzene	16.22	95	467	0.1351 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	3486	0.9518 ug/kg#	85
3) Chloromethane	3.74	50	4175	1.1891 ug/kg	88
4) Vinyl Chloride	3.98	62	2686	0.7642 ug/kg	80
5) 1,3-Butadiene	4.03	54	3056	0.9139 ug/kg	91
6) Bromomethane	4.89	94	2537	1.1114 ug/kg	94
7) Chloroethane	5.05	64	1264	0.8072 ug/kg#	45
8) Trichlorofluoromethane	5.53	101	5567	1.0561 ug/kg#	93
9) Diethyl ether	6.05	59	11529	4.6784 ug/kg	97
10) Isoprene	6.08	67	2965	0.9421 ug/kg	97
11) Acrolein	6.29	56	1087	2.2122 ug/kg#	35
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	1939	0.7132 ug/kg	88
13) Acetone	6.41	43	5231	5.8863 ug/kg	95
14) 1,1-Dichloroethene	6.62	61	4981	0.9932 ug/kg	92
15) Tert-Butyl Alcohol	6.77	59	5682	10.3548 ug/kg#	63
16) Dimethyl Sulfide	6.88	62	1614	0.7615 ug/kg	91
17) Iodomethane	7.15	142	941	3.3944 ug/kg#	66
18) Methyl acetate	7.16	43	2553	0.9364 ug/kg#	65
19) Methylene Chloride	7.40	84	2963	1.0849 ug/kg	92
20) Carbon Disulfide	7.45	76	9749	1.2619 ug/kg	95
21) Acrylonitrile	7.58	53	3140	2.3282 ug/kg	85
22) Methyl Tert Butyl Ether	7.61	73	7179	0.9229 ug/kg	83
23) trans-1,2-Dichloroethene	7.85	61	4296	0.9612 ug/kg	95
24) n-Hexane	7.93	57	4481	0.9720 ug/kg	95
25) Diisopropyl ether	8.26	45	50344	4.7022 ug/kg	98
26) Vinyl Acetate	8.43	43	5247	0.8597 ug/kg#	90
27) 1,1-Dichloroethane	8.48	63	5885	1.0483 ug/kg#	85
28) Ethyl-Tert-Butyl ether	8.83	59	46767	4.6979 ug/kg	99
29) 2-Butanone	9.03	43	1776	1.0263 ug/kg#	58
30) Propionitrile	9.14	54	2256	4.2599 ug/kg#	60
31) 2,2-Dichloropropane	9.24	77	4402	1.0506 ug/kg#	71
32) cis-1,2-Dichloroethene	9.31	96	2650	0.9040 ug/kg	94
33) Chloroform	9.51	83	5072	0.9836 ug/kg	96
35) Bromochloromethane	9.75	130	1408	0.7394 ug/kg	86
36) Tetrahydrofuran	9.77	42	6699	6.0054 ug/kg	95
38) 1,1,1-Trichloroethane	10.05	97	4567	0.9793 ug/kg	91
39) Cyclohexane	10.08	56	4992	0.9818 ug/kg#	85
40) 1,1-Dichloropropene	10.24	75	3785	1.0315 ug/kg	90
41) Tert-Amyl-Methyl ether	10.34	73	33850	4.6779 ug/kg	95
42) Carbon Tetrachloride	10.40	117	4297	0.9939 ug/kg#	90
45) 1,2-Dichloroethane	10.55	62	3923	0.8649 ug/kg	93

(#) = qualifier out of range (m) = manual integration
9M972899.D 8260SL.M Fri Feb 26 11:12:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
46)	Benzene	10.61	78	9968	0.9703 ug/kg	96
47)	Trichloroethene	11.36	130	3259	1.0012 ug/kg	99
48)	Methylcyclohexane	11.43	83	3354	0.8215 ug/kg	76
49)	1,2-Dichloropropane	11.57	63	2469	0.8752 ug/kg	94
51)	Bromodichloromethane	11.87	83	3657	0.9198 ug/kg#	94
52)	Dibromomethane	11.96	174	1621	0.8672 ug/kg	93
53)	2-Chloroethyl Vinyl Ether	12.16	63	210	3.0851 ug/kg#	47
54)	4-Methyl-2-Pentanone	12.20	58	738	0.5960 ug/kg#	40
55)	cis-1,3-Dichloropropene	12.51	75	3714	0.8966 ug/kg	86
56)	Dimethyl Disulfide	12.77	94	3075	0.7387 ug/kg	83
59)	Toluene	12.93	91	10894	0.9831 ug/kg	97
60)	Ethyl Methacrylate	13.01	69	1966	0.6401 ug/kg#	53
61)	trans-1,3-Dichloropropene	13.11	75	3837	0.9614 ug/kg#	79
62)	1,1,2-Trichloroethane	13.32	97	2148	0.9227 ug/kg	94
63)	2-Hexanone	13.26	43	1796	0.7727 ug/kg#	80
64)	1,3-Dichloropropane	13.63	76	3616	0.9322 ug/kg	99
65)	Tetrachloroethene	13.75	164	2587	1.0890 ug/kg	79
66)	Dibromochloromethane	14.02	129	3318	1.0199 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	2336	0.9047 ug/kg	97
68)	1-Chlorohexane	14.34	91	3075	0.9410 ug/kg	85
69)	Chlorobenzene	14.78	112	7982	1.0249 ug/kg	88
70)	1,1,1,2-Tetrachloroethane	14.81	131	2589	0.8852 ug/kg	86
71)	Ethylbenzene	14.80	106	4007	0.9987 ug/kg	89
72)	m-,p-Xylene	14.88	106	9607	1.9388 ug/kg	98
73)	o-Xylene	15.45	106	4376	0.9202 ug/kg	99
74)	Styrene	15.49	104	7432	0.9178 ug/kg	92
75)	Bromoform	16.00	173	1759	0.8235 ug/kg#	79
76)	Isopropylbenzene	15.87	105	11937	0.9351 ug/kg	98
78)	1,1,2,2-Tetrachloroethane	16.09	83	2186	0.8118 ug/kg#	83
80)	1,2,3-Trichloropropane	16.28	110	875	0.8568 ug/kg#	81
81)	trans-1,4-Dichloro-2-Buten	16.34	53	831	0.8073 ug/kg#	74
82)	n-Propylbenzene	16.38	91	14156	1.0145 ug/kg	99
83)	Bromobenzene	16.53	156	2996	0.9095 ug/kg#	39
84)	1,3,5-Trimethylbenzene	16.57	105	11008	1.0509 ug/kg	88
85)	2-Chlorotoluene	16.65	91	10606	1.1332 ug/kg	84
86)	4-Chlorotoluene	16.71	91	9101	1.0518 ug/kg	95
87)	a-Methylstyrene	16.98	118	4078	0.8544 ug/kg	85
88)	tert-Butylbenzene	17.03	134	2095	0.9540 ug/kg	74
89)	1,2,4-Trimethylbenzene	17.09	105	12124	1.1053 ug/kg	83
90)	sec-Butylbenzene	17.31	105	13922	1.0320 ug/kg	100
91)	p-Isopropyltoluene	17.47	119	10153	0.8918 ug/kg	98
92)	1,3-Dichlorobenzene	17.67	146	7444	1.1370 ug/kg	90
93)	1,4-Dichlorobenzene	17.79	146	7580	1.1581 ug/kg	92
94)	n-Butylbenzene	17.99	91	11112	1.0498 ug/kg	91
95)	1,2-Dichlorobenzene	18.29	146	6415	1.0560 ug/kg	97
97)	1,2,4-Trichlorobenzene	20.43	180	4869	1.1291 ug/kg	98
98)	Hexachlorobutadiene	20.59	225	2032	0.8939 ug/kg	87
99)	Naphthalene	20.81	128	11710	1.0826 ug/kg	92
100)	1,2,3-Trichlorobenzene	21.12	180	4698	1.1232 ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972899.D 8260SL.M Fri Feb 26 11:12:33 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration

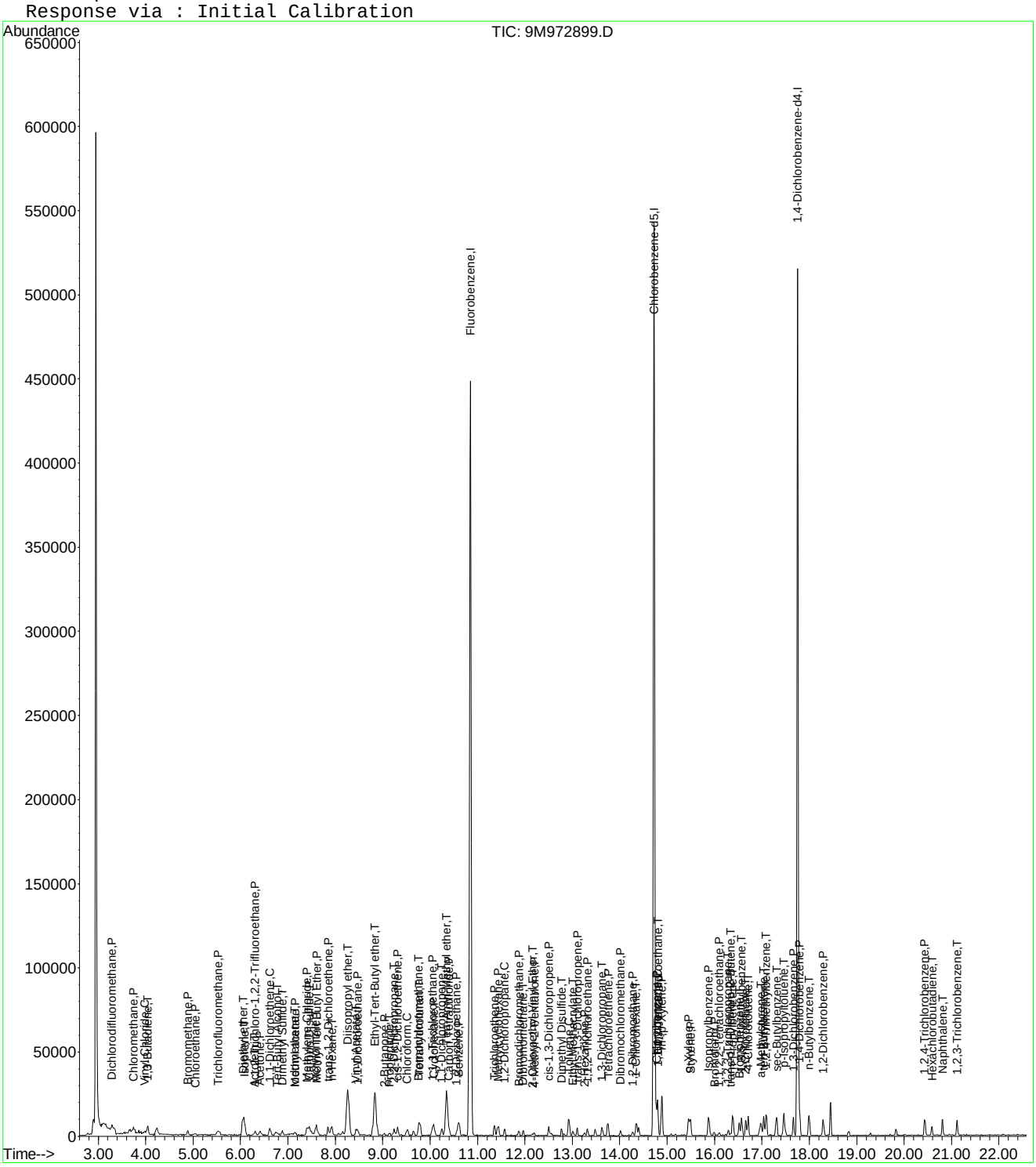

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	0.9518	0.0	100	0.00
3	P	Chloromethane	-1.0000	1.1891	0.0	100	0.00
4	C	Vinyl Chloride	1.0000	0.7642	23.6#	100	0.00
5	T	1,3-Butadiene	-1.0000	0.9139	0.0	0	0.00
6	P	Bromomethane	1.0000	1.1114	-11.1	100	0.00
7	P	Chloroethane	-1.0000	0.8072	0.0	100	0.00
8	P	Trichlorofluoromethane	1.0000	1.0561	-5.6	100	0.00
9	T	Diethyl ether	5.0000	4.6784	6.4	100	0.00
10	T	Isoprene	-1.0000	0.9421	0.0	0	0.00
11	T	Acrolein	2.5000	2.2122	11.5	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.7132	0.0	100	0.00
13	P	Acetone	-1.0000	5.8863	0.0	0	0.00
14	C	1,1-Dichloroethene	1.0000	0.9932	0.7	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	10.3548	0.0	100	0.00
16	T	Dimethyl Sulfide	1.0000	0.7615	23.9	100	0.00
17	T	Iodomethane	-1.0000	3.3944	0.0	0	0.01
18	P	Methyl acetate	-1.0000	0.9364	0.0	0	0.02
19	P	Methylene Chloride	-1.0000	1.0849	0.0	100	0.00
20	P	Carbon Disulfide	-1.0000	1.2619	0.0	0	0.00
21	T	Acrylonitrile	2.5000	2.3282	6.9	100	0.00
22	P	Methyl Tert Butyl Ether	1.0000	0.9229	7.7	100	0.00
23	P	trans-1,2-Dichloroethene	1.0000	0.9612	3.9	100	0.00
24	T	n-Hexane	-1.0000	0.9720	0.0	0	0.01
25	T	Diisopropyl ether	5.0000	4.7022	6.0	100	0.00
26	T	Vinyl Acetate	-1.0000	0.8597	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0483	-4.8	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.6979	6.0	100	0.00
29	P	2-Butanone	-1.0000	1.0263	0.0	100	0.00
30	T	Propionitrile	5.0000	4.2599	14.8	100	0.00
31	T	2,2-Dichloropropane	-1.0000	1.0506	0.0	100	0.00
32	P	cis-1,2-Dichloroethene	1.0000	0.9040	9.6	100	0.00
33	C	Chloroform	1.0000	0.9836	1.6	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.65#
35	T	Bromochloromethane	1.0000	0.7395	26.1#	100	0.00
36	T	Tetrahydrofuran	-1.0000	6.0054	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	1.0000	0.9793	2.1	100	0.00
39	P	Cyclohexane	1.0000	0.9818	1.8	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0315	-3.1	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	4.6780	6.4	100	0.00
42	P	Carbon Tetrachloride	-1.0000	0.9939	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	1.0000	0.8649	13.5	100	0.00
46	P	Benzene	1.0000	0.9703	3.0	100	0.00
47	P	Trichloroethene	1.0000	1.0012	-0.1	100	0.00
48	P	Methylcyclohexane	1.0000	0.8215	17.8	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.8752	12.5	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.88#
51	P	Bromodichloromethane	-1.0000	0.9198	0.0	100	0.00
52	T	Dibromomethane	1.0000	0.8672	13.3	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	3.0851	0.0	0	0.00
54	P	4-Methyl-2-Pentanone	-1.0000	0.5960	0.0	100	0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972899.D Vial: 4
Acq On : 25 Feb 2016 17:27 Operator: ADC
Sample : WG558732-04 1.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	-1.0000	0.8966	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.7387	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0978	0.0	100	0.00
59	C	Toluene	1.0000	0.9831	1.7	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.6401	0.0	0	0.00
61	P	trans-1,3-Dichloropropene	-1.0000	0.9614	0.0	100	0.00
62	P	1,1,2-Trichloroethane	1.0000	0.9227	7.7	100	0.00
63	P	2-Hexanone	-1.0000	0.7727	0.0	100	0.00
64	T	1,3-Dichloropropane	1.0000	0.9322	6.8	100	0.00
65	P	Tetrachloroethene	1.0000	1.0890	-8.9	100	0.00
66	P	Dibromochloromethane	-1.0000	1.0199	0.0	100	0.00
67	P	1,2-Dibromoethane	-1.0000	0.9047	0.0	100	0.00
68	T	1-Chlorohexane	1.0000	0.9410	5.9	100	0.00
69	P	Chlorobenzene	1.0000	1.0249	-2.5	100	0.00
70	T	1,1,1,2-Tetrachloroethane	-1.0000	0.8852	0.0	100	0.00
71	C	Ethylbenzene	1.0000	0.9987	0.1	100	0.00
72	P	m-,p-Xylene	2.0000	1.9388	3.1	100	0.00
73	P	o-Xylene	1.0000	0.9202	8.0	100	0.00
74	P	Styrene	1.0000	0.9178	8.2	100	0.00
75	P	Bromoform	-1.0000	0.8235	0.0	100	0.00
76	P	Isopropylbenzene	1.0000	0.9351	6.5	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	1.0000	0.8118	18.8	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.1351	0.0	100	0.00
80	T	1,2,3-Trichloropropane	1.0000	0.8568	14.3	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.8073	0.0	0	0.00
82	T	n-Propylbenzene	1.0000	1.0145	-1.4	100	0.00
83	T	Bromobenzene	1.0000	0.9095	9.1	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	1.0509	0.0	100	0.00
85	T	2-Chlorotoluene	-1.0000	1.1332	0.0	100	0.00
86	T	4-Chlorotoluene	1.0000	1.0518	-5.2	100	0.00
87	T	a-Methylstyrene	-1.0000	0.8544	0.0	0	0.00
88	T	tert-Butylbenzene	-1.0000	0.9540	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	1.0000	1.1053	-10.5	100	0.00
90	T	sec-Butylbenzene	1.0000	1.0320	-3.2	100	0.00
91	T	p-Isopropyltoluene	-1.0000	0.8918	0.0	100	0.00
92	P	1,3-Dichlorobenzene	1.0000	1.1370	-13.7	100	0.00
93	P	1,4-Dichlorobenzene	1.0000	1.1581	-15.8	100	0.00
94	T	n-Butylbenzene	1.0000	1.0498	-5.0	100	0.00
95	P	1,2-Dichlorobenzene	1.0000	1.0560	-5.6	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	0.3514	0.0	100	0.00
97	P	1,2,4-Trichlorobenzene	1.0000	1.1291	-12.9	100	0.00
98	T	Hexachlorobutadiene	1.0000	0.8939	10.6	100	0.00
99	T	Naphthalene	-1.0000	1.0826	0.0	100	0.00
100	T	1,2,3-Trichlorobenzene	1.0000	1.1232	-12.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1
9M972899.D 8260SL.M Fri Feb 26 11:12:31 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	472115	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	342668	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	156993	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.83	98	772	0.0891 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.18%#	
79) p-Bromofluorobenzene	16.23	95	570	0.1865 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.38%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.29	85	6383	1.9809 ug/kg#	78
3) Chloromethane	3.74	50	7027	2.2750 ug/kg	100
4) Vinyl Chloride	4.00	62	6001	1.9408 ug/kg	97
5) 1,3-Butadiene	4.04	54	6545	2.2249 ug/kg	95
6) Bromomethane	4.90	94	5050	2.5146 ug/kg	81
7) Chloroethane	5.04	64	2391	1.7357 ug/kg#	70
8) Trichlorofluoromethane	5.54	101	9777	2.1082 ug/kg#	94
9) Diethyl ether	6.06	59	58156	26.8255 ug/kg	97
10) Isoprene	6.09	67	5698	2.0580 ug/kg	89
11) Acrolein	6.30	56	5427	12.5543 ug/kg	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	4756	1.9886 ug/kg	93
13) Acetone	6.40	43	6167	6.9886 ug/kg	93
14) 1,1-Dichloroethene	6.62	61	9652	2.1877 ug/kg	91
15) Tert-Butyl Alcohol	6.75	59	26757	55.4271 ug/kg#	91
16) Dimethyl Sulfide	6.89	62	3840	2.0594 ug/kg	97
17) Iodomethane	7.14	142	1541	3.9079 ug/kg#	56
18) Methyl acetate	7.15	43	5334	2.2240 ug/kg#	69
19) Methylene Chloride	7.40	84	5116	2.1292 ug/kg	98
20) Carbon Disulfide	7.44	76	15010	2.2085 ug/kg	94
21) Acrylonitrile	7.59	53	14961	12.6096 ug/kg	100
22) Methyl Tert Butyl Ether	7.61	73	13630	1.9917 ug/kg	93
23) trans-1,2-Dichloroethene	7.85	61	7964	2.0255 ug/kg	100
24) n-Hexane	7.92	57	8619	2.1253 ug/kg	100
25) Diisopropyl ether	8.26	45	252190	26.7748 ug/kg	99
26) Vinyl Acetate	8.43	43	11207	2.0872 ug/kg	95
27) 1,1-Dichloroethane	8.47	63	10529	2.1320 ug/kg#	93
28) Ethyl-Tert-Butyl ether	8.83	59	234163	26.7377 ug/kg	99
29) 2-Butanone	9.03	43	3346	2.1978 ug/kg#	76
30) Propionitrile	9.14	54	12899	27.6861 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	8085	2.1934 ug/kg	88
32) cis-1,2-Dichloroethene	9.32	96	4861	1.8850 ug/kg	98
33) Chloroform	9.53	83	10005	2.2054 ug/kg	95
34) 1-Bromopropane	9.64	122	209	1.5465 ug/kg	96
35) Bromochloromethane	9.75	130	3273	1.9539 ug/kg	81
36) Tetrahydrofuran	9.78	42	26192	26.6900 ug/kg	94
38) 1,1,1-Trichloroethane	10.04	97	8229	2.0058 ug/kg	97
39) Cyclohexane	10.09	56	9354	2.0912 ug/kg	96
40) 1,1-Dichloropropene	10.23	75	6787	2.1024 ug/kg	88
41) Tert-Amyl-Methyl ether	10.34	73	167275	26.2768 ug/kg	98
42) Carbon Tetrachloride	10.39	117	7920	2.0823 ug/kg#	95

(#) = qualifier out of range (m) = manual integration
9M972900.D 8260SL.M Fri Feb 26 11:13:39 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10:16 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	8488	2.1271 ug/kg	89
46)	Benzene	10.60	78	19454	2.1525 ug/kg	96
47)	Trichloroethene	11.35	130	6073	2.1207 ug/kg	96
48)	Methylcyclohexane	11.44	83	7523	2.0945 ug/kg	95
49)	1,2-Dichloropropane	11.58	63	5118	2.0621 ug/kg	93
50)	1,4-Dioxane	11.88	88	1938	52.0499 ug/kg	84
51)	Bromodichloromethane	11.87	83	7148	2.0436 ug/kg#	95
52)	Dibromomethane	11.97	174	3572	2.1721 ug/kg	91
53)	2-Chloroethyl Vinyl Ether	12.17	63	474	3.4830 ug/kg#	47
54)	4-Methyl-2-Pentanone	12.19	58	2111	1.9378 ug/kg#	64
55)	cis-1,3-Dichloropropene	12.50	75	7048	1.9341 ug/kg	92
56)	Dimethyl Disulfide	12.77	94	5832	1.5925 ug/kg	95
59)	Toluene	12.93	91	20786	2.1230 ug/kg	97
60)	Ethyl Methacrylate	13.01	69	4184	1.5417 ug/kg	98
61)	trans-1,3-Dichloropropene	13.11	75	6895	1.9553 ug/kg	92
62)	1,1,2-Trichloroethane	13.33	97	4055	1.9716 ug/kg	86
63)	2-Hexanone	13.25	43	3773	1.8373 ug/kg#	82
64)	1,3-Dichloropropane	13.62	76	7643	2.2302 ug/kg	97
65)	Tetrachloroethene	13.75	164	4327	2.0615 ug/kg	94
66)	Dibromochloromethane	14.01	129	6170	2.1465 ug/kg	87
67)	1,2-Dibromoethane	14.28	107	4656	2.0410 ug/kg	88
68)	1-Chlorohexane	14.35	91	5610	1.9430 ug/kg	97
69)	Chlorobenzene	14.77	112	14885	2.1632 ug/kg	95
70)	1,1,1,2-Tetrachloroethane	14.80	131	5145	1.9910 ug/kg	86
71)	Ethylbenzene	14.79	106	7287	2.0555 ug/kg	99
72)	m-,p-Xylene	14.89	106	19133	4.3702 ug/kg	93
73)	o-Xylene	15.45	106	8413	2.0024 ug/kg	94
74)	Styrene	15.49	104	14533	2.0313 ug/kg	97
75)	Bromoform	15.99	173	3135	1.6611 ug/kg	97
76)	Isopropylbenzene	15.87	105	23266	2.0628 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	5252	2.2053 ug/kg#	89
80)	1,2,3-Trichloropropane	16.28	110	1851	2.0495 ug/kg#	89
81)	trans-1,4-Dichloro-2-Buten	16.33	53	1413	1.5521 ug/kg	47
82)	n-Propylbenzene	16.38	91	25735	2.0854 ug/kg	99
83)	Bromobenzene	16.52	156	7006	2.4049 ug/kg	83
84)	1,3,5-Trimethylbenzene	16.57	105	18571	2.0048 ug/kg	99
85)	2-Chlorotoluene	16.66	91	18793	2.2705 ug/kg	97
86)	4-Chlorotoluene	16.70	91	16240	2.1222 ug/kg	96
87)	a-Methylstyrene	16.98	118	7524	1.7826 ug/kg	97
88)	tert-Butylbenzene	17.04	134	3654	1.8815 ug/kg	64
89)	1,2,4-Trimethylbenzene	17.09	105	20119	2.0739 ug/kg	99
90)	sec-Butylbenzene	17.31	105	24858	2.0835 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	20956	2.0813 ug/kg	96
92)	1,3-Dichlorobenzene	17.66	146	13695	2.3653 ug/kg	94
93)	1,4-Dichlorobenzene	17.79	146	12975	2.2416 ug/kg	82
94)	n-Butylbenzene	17.99	91	19734	2.1080 ug/kg	95
95)	1,2-Dichlorobenzene	18.30	146	11568	2.1533 ug/kg	91
96)	1,2-Dibromo-3-Chloropropan	19.30	157	941	1.3644 ug/kg	84
97)	1,2,4-Trichlorobenzene	20.44	180	8356	2.1910 ug/kg	98
98)	Hexachlorobutadiene	20.59	225	4571	2.2738 ug/kg	87
99)	Naphthalene	20.81	128	20072	2.0983 ug/kg	96
100)	1,2,3-Trichlorobenzene	21.11	180	7948	2.1487 ug/kg	96

(#) = qualifier out of range (m) = manual integration
9M972900.D 8260SL.M Fri Feb 26 11:13:39 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:10 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Initial Calibration

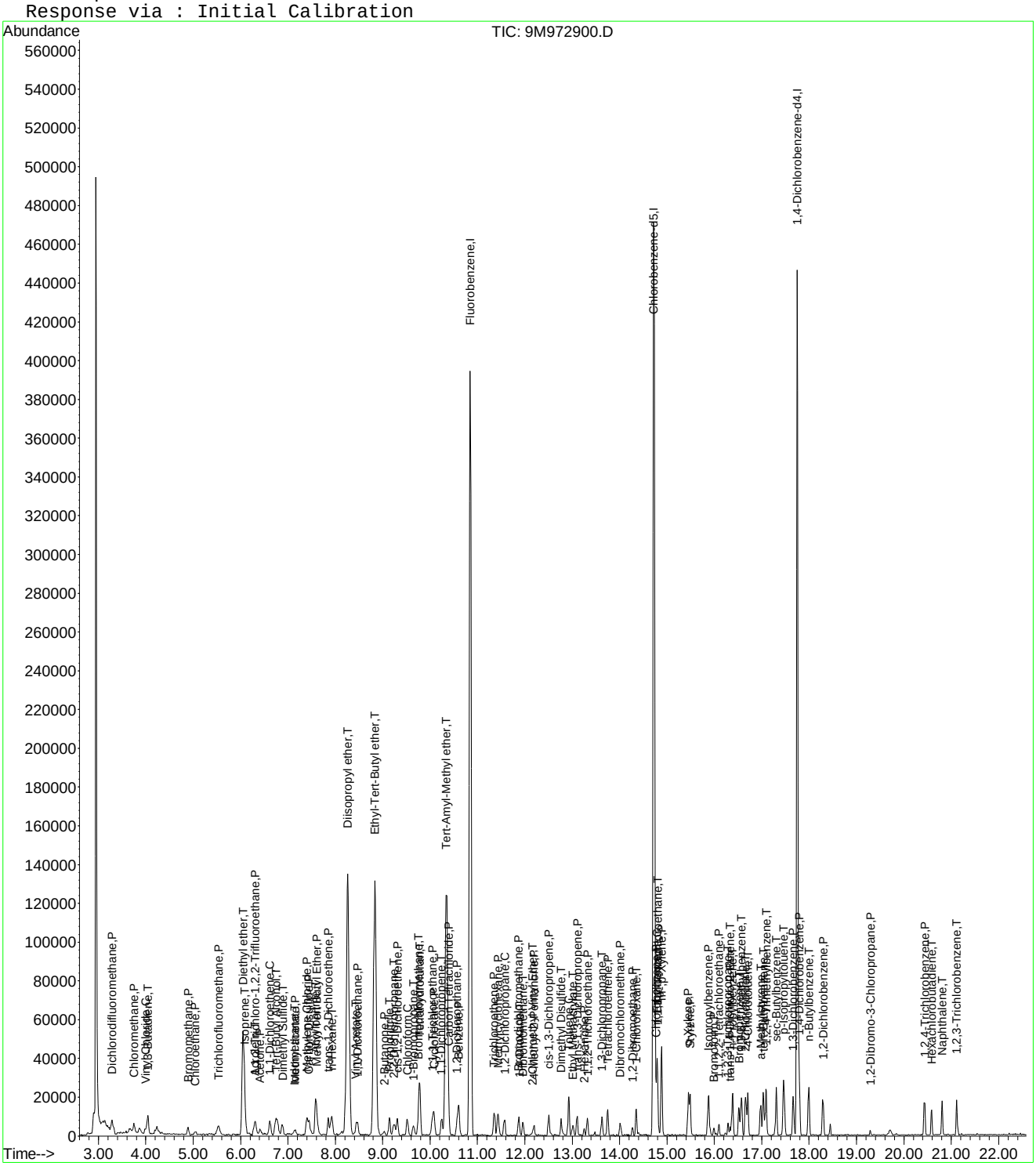

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	1.9809	0.0	100	0.01
3	P	Chloromethane	2.0000	2.2750	-13.7	100	0.00
4	C	Vinyl Chloride	2.0000	1.9408	3.0	100	0.01
5	T	1,3-Butadiene	2.0000	2.2249	-11.2	100	0.00
6	P	Bromomethane	2.0000	2.5146	-25.7#	100	0.01
7	P	Chloroethane	2.0000	1.7357	13.2	100	0.00
8	P	Trichlorofluoromethane	2.0000	2.1082	-5.4	100	0.01
9	T	Diethyl ether	25.0000	26.8255	-7.3	100	0.01
10	T	Isoprene	2.0000	2.0580	-2.9	100	0.00
11	T	Acrolein	12.5000	12.5543	-0.4	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.9886	0.6	100	0.01
13	P	Acetone	-1.0000	6.9886	0.0	0	0.00
14	C	1,1-Dichloroethene	2.0000	2.1877	-9.4	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	55.4271	-10.9	100	0.00
16	T	Dimethyl Sulfide	2.0000	2.0594	-3.0	100	0.01
17	T	Iodomethane	-1.0000	3.9079	0.0	0	0.01
18	P	Methyl acetate	2.0000	2.2240	-11.2	100	0.01
19	P	Methylene Chloride	2.0000	2.1292	-6.5	100	0.00
20	P	Carbon Disulfide	2.0000	2.2085	-10.4	100	0.00
21	T	Acrylonitrile	12.5000	12.6096	-0.9	100	0.00
22	P	Methyl Tert Butyl Ether	2.0000	1.9917	0.4	100	0.00
23	P	trans-1,2-Dichloroethene	2.0000	2.0255	-1.3	100	0.00
24	T	n-Hexane	2.0000	2.1253	-6.3	100	0.01
25	T	Diisopropyl ether	25.0000	26.7748	-7.1	100	0.00
26	T	Vinyl Acetate	2.0000	2.0872	-4.4	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.1320	-6.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	26.7377	-7.0	100	0.00
29	P	2-Butanone	2.0000	2.1978	-9.9	100	0.00
30	T	Propionitrile	25.0000	27.6861	-10.7	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1934	-9.7	100	0.00
32	P	cis-1,2-Dichloroethene	2.0000	1.8850	5.8	100	0.01
33	C	Chloroform	2.0000	2.2054	-10.3	100	0.01
34	T	1-Bromopropane	2.0000	1.5465	22.7	100	0.00
35	T	Bromochloromethane	2.0000	1.9539	2.3	100	0.00
36	T	Tetrahydrofuran	25.0000	26.6900	-6.8	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	2.0000	2.0058	-0.3	100	0.00
39	P	Cyclohexane	2.0000	2.0913	-4.6	100	0.01
40	T	1,1-Dichloropropene	2.0000	2.1023	-5.1	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	26.2768	-5.1	100	0.00
42	P	Carbon Tetrachloride	2.0000	2.0823	-4.1	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	2.0000	2.1271	-6.4	100	0.00
46	P	Benzene	2.0000	2.1525	-7.6	100	0.00
47	P	Trichloroethene	2.0000	2.1207	-6.0	100	0.00
48	P	Methylcyclohexane	2.0000	2.0945	-4.7	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0621	-3.1	100	0.01
50	T	1,4-Dioxane	50.0000	52.0499	-4.1	100	0.00
51	P	Bromodichloromethane	2.0000	2.0436	-2.2	100	0.00
52	T	Dibromomethane	2.0000	2.1721	-8.6	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	3.4830	0.0	0	0.00
54	P	4-Methyl-2-Pentanone	-1.0000	1.9378	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972900.D Vial: 5
Acq On : 25 Feb 2016 17:57 Operator: ADC
Sample : WG558732-05 2.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:09:46 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	2.0000	1.9341	3.3	100	0.00
56	T	Dimethyl Disulfide	2.0000	1.5925	20.4	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0891	0.0	100	0.00
59	C	Toluene	2.0000	2.1230	-6.2	100	0.00
60	T	Ethyl Methacrylate	-1.0000	1.5417	0.0	0	0.00
61	P	trans-1,3-Dichloropropene	2.0000	1.9553	2.2	100	0.00
62	P	1,1,2-Trichloroethane	2.0000	1.9716	1.4	100	0.00
63	P	2-Hexanone	-1.0000	1.8373	0.0	100	0.00
64	T	1,3-Dichloropropane	2.0000	2.2302	-11.5	100	0.00
65	P	Tetrachloroethene	2.0000	2.0616	-3.1	100	0.00
66	P	Dibromochloromethane	2.0000	2.1465	-7.3	100	0.00
67	P	1,2-Dibromoethane	-1.0000	2.0410	0.0	100	0.00
68	T	1-Chlorohexane	2.0000	1.9430	2.8	100	0.00
69	P	Chlorobenzene	2.0000	2.1632	-8.2	100	0.00
70	T	1,1,1,2-Tetrachloroethane	2.0000	1.9910	0.4	100	0.00
71	C	Ethylbenzene	2.0000	2.0555	-2.8	100	0.00
72	P	m-,p-Xylene	4.0000	4.3702	-9.3	100	0.00
73	P	o-Xylene	2.0000	2.0024	-0.1	100	0.00
74	P	Styrene	2.0000	2.0313	-1.6	100	0.00
75	P	Bromoform	2.0000	1.6611	16.9	100	0.00
76	P	Isopropylbenzene	2.0000	2.0628	-3.1	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	2.0000	2.2053	-10.3	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.1865	0.0	100	0.00
80	T	1,2,3-Trichloropropane	2.0000	2.0495	-2.5	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	2.0000	1.5521	22.4	100	0.00
82	T	n-Propylbenzene	2.0000	2.0854	-4.3	100	0.00
83	T	Bromobenzene	2.0000	2.4049	-20.2	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	2.0048	0.0	100	0.00
85	T	2-Chlorotoluene	2.0000	2.2705	-13.5	100	0.00
86	T	4-Chlorotoluene	2.0000	2.1222	-6.1	100	0.00
87	T	a-Methylstyrene	-1.0000	1.7826	0.0	0	0.00
88	T	tert-Butylbenzene	-1.0000	1.8815	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	2.0000	2.0739	-3.7	100	0.00
90	T	sec-Butylbenzene	2.0000	2.0835	-4.2	100	0.00
91	T	p-Isopropyltoluene	-1.0000	2.0813	0.0	100	0.00
92	P	1,3-Dichlorobenzene	2.0000	2.3653	-18.3	100	0.00
93	P	1,4-Dichlorobenzene	2.0000	2.2416	-12.1	100	0.00
94	T	n-Butylbenzene	2.0000	2.1080	-5.4	100	0.00
95	P	1,2-Dichlorobenzene	2.0000	2.1533	-7.7	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	1.3644	0.0	100	0.00
97	P	1,2,4-Trichlorobenzene	2.0000	2.1910	-9.6	100	0.00
98	T	Hexachlorobutadiene	2.0000	2.2738	-13.7	100	0.00
99	T	Naphthalene	2.0000	2.0983	-4.9	100	0.00
100	T	1,2,3-Trichlorobenzene	2.0000	2.1487	-7.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972900.D 8260SL.M Fri Feb 26 11:13:36 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	544259	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	391881	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.76	152	178969	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	29036	9.8422 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 19.68%#		
43) 1,2-Dichloroethane-d4	10.44	65	38093	10.2911 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 20.58%#		
58) Toluene-d8	12.83	98	95044	9.5885 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 19.18%#		
79) p-Bromofluorobenzene	16.23	95	32806	9.4138 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 18.82%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	14756	3.9724 ug/kg	92
3) Chloromethane	3.74	50	15227	4.2763 ug/kg	91
4) Vinyl Chloride	3.99	62	17097	4.7964 ug/kg	89
5) 1,3-Butadiene	4.04	54	14484	4.2710 ug/kg	97
6) Bromomethane	4.89	94	9847	4.2533 ug/kg	95
7) Chloroethane	5.04	64	6311	3.9741 ug/kg	93
8) Trichlorofluoromethane	5.53	101	22668	4.2400 ug/kg	100
9) Diethyl ether	6.05	59	118004	47.2164 ug/kg	99
10) Isoprene	6.10	67	13644	4.2747 ug/kg	95
11) Acrolein	6.30	56	12131	24.3428 ug/kg	84
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	12752	4.6251 ug/kg	95
13) Acetone	6.41	43	9765	4.9429 ug/kg	94
14) 1,1-Dichloroethene	6.62	61	21760	4.2784 ug/kg	99
15) Tert-Butyl Alcohol	6.76	59	50500	90.7440 ug/kg	98
16) Dimethyl Sulfide	6.88	62	10098	4.6977 ug/kg	87
17) Iodomethane	7.13	142	4147	5.3886 ug/kg	97
18) Methyl acetate	7.15	43	12159	4.3976 ug/kg#	87
19) Methylene Chloride	7.41	84	11825	4.2690 ug/kg	99
20) Carbon Disulfide	7.45	76	34078	4.3495 ug/kg	94
21) Acrylonitrile	7.58	53	31012	22.6731 ug/kg	100
22) Methyl Tert Butyl Ether	7.61	73	34936	4.4284 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	20503	4.5233 ug/kg	95
24) n-Hexane	7.92	57	20970	4.4853 ug/kg	98
25) Diisopropyl ether	8.26	45	505084	46.5162 ug/kg	100
26) Vinyl Acetate	8.44	43	28253	4.5644 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	24239	4.2575 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	463447	45.9037 ug/kg	99
29) 2-Butanone	9.03	43	8265	4.7092 ug/kg	88
30) Propionitrile	9.15	54	25938	48.2931 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	17954	4.2251 ug/kg	91
32) cis-1,2-Dichloroethene	9.32	96	13479	4.5340 ug/kg	84
33) Chloroform	9.52	83	23525	4.4982 ug/kg	95
34) 1-Bromopropane	9.65	122	2239	5.8652 ug/kg	90
35) Bromochloromethane	9.75	130	9205	4.7667 ug/kg	97
36) Tetrahydrofuran	9.78	42	53635	47.4100 ug/kg	99
38) 1,1,1-Trichloroethane	10.04	97	20945	4.4285 ug/kg	91
39) Cyclohexane	10.09	56	23110	4.4818 ug/kg	98
40) 1,1-Dichloropropene	10.24	75	16349	4.3930 ug/kg	99
41) Tert-Amyl-Methyl ether	10.35	73	343692	46.8330 ug/kg	98
42) Carbon Tetrachloride	10.39	117	18527	4.2254 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	21553	4.6852 ug/kg	99
46)	Benzene	10.60	78	45352	4.3528 ug/kg	99
47)	Trichloroethene	11.35	130	14266	4.3213 ug/kg	97
48)	Methylcyclohexane	11.44	83	17527	4.2330 ug/kg	97
49)	1,2-Dichloropropane	11.56	63	13071	4.5684 ug/kg	100
50)	1,4-Dioxane	11.88	88	3926	91.4657 ug/kg	99
51)	Bromodichloromethane	11.87	83	18008	4.4660 ug/kg	97
52)	Dibromomethane	11.96	174	8993	4.7438 ug/kg	95
53)	2-Chloroethyl Vinyl Ether	12.16	63	2468	5.7758 ug/kg#	66
54)	4-Methyl-2-Pentanone	12.19	58	4862	3.8716 ug/kg	95
55)	cis-1,3-Dichloropropene	12.50	75	18341	4.3659 ug/kg	96
56)	Dimethyl Disulfide	12.77	94	17792	4.2144 ug/kg	91
59)	Toluene	12.92	91	48377	4.3206 ug/kg	96
60)	Ethyl Methacrylate	13.02	69	12442	4.0089 ug/kg	96
61)	trans-1,3-Dichloropropene	13.10	75	17626	4.3707 ug/kg	95
62)	1,1,2-Trichloroethane	13.33	97	10657	4.5308 ug/kg	99
63)	2-Hexanone	13.25	43	10194	4.3408 ug/kg	96
64)	1,3-Dichloropropane	13.62	76	17885	4.5633 ug/kg	100
65)	Tetrachloroethene	13.75	164	10317	4.2981 ug/kg	97
66)	Dibromochloromethane	14.01	129	14152	4.3052 ug/kg	98
67)	1,2-Dibromoethane	14.28	107	12182	4.6694 ug/kg	99
68)	1-Chlorohexane	14.35	91	12970	3.9281 ug/kg	87
69)	Chlorobenzene	14.77	112	36017	4.5769 ug/kg	85
70)	1,1,1,2-Tetrachloroethane	14.80	131	12746	4.3130 ug/kg	95
71)	Ethylbenzene	14.80	106	17828	4.3974 ug/kg	92
72)	m-,p-Xylene	14.89	106	45904	9.1683 ug/kg	95
73)	o-Xylene	15.46	106	21754	4.5275 ug/kg	91
74)	Styrene	15.49	104	35390	4.3253 ug/kg	98
75)	Bromoform	15.98	173	9363	4.3382 ug/kg	96
76)	Isopropylbenzene	15.88	105	55721	4.3198 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	13197	4.8610 ug/kg	97
80)	1,2,3-Trichloropropane	16.29	110	5070	4.9243 ug/kg#	28
81)	trans-1,4-Dichloro-2-Buten	16.33	53	4246	4.0913 ug/kg#	39
82)	n-Propylbenzene	16.39	91	64689	4.5983 ug/kg	100
83)	Bromobenzene	16.52	156	15405	4.6386 ug/kg	90
84)	1,3,5-Trimethylbenzene	16.58	105	49527	4.6900 ug/kg	98
85)	2-Chlorotoluene	16.66	91	41422	4.3899 ug/kg	97
86)	4-Chlorotoluene	16.70	91	40985	4.6981 ug/kg	99
87)	a-Methylstyrene	16.98	118	20049	4.1667 ug/kg	90
88)	tert-Butylbenzene	17.04	134	10027	4.5290 ug/kg	84
89)	1,2,4-Trimethylbenzene	17.09	105	51253	4.6345 ug/kg	98
90)	sec-Butylbenzene	17.30	105	60716	4.4642 ug/kg	98
91)	p-Isopropyltoluene	17.46	119	53318	4.6453 ug/kg	98
92)	1,3-Dichlorobenzene	17.66	146	29255	4.4323 ug/kg	98
93)	1,4-Dichlorobenzene	17.79	146	30175	4.5730 ug/kg	91
94)	n-Butylbenzene	17.99	91	45964	4.3071 ug/kg	98
95)	1,2-Dichlorobenzene	18.30	146	27310	4.4593 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.30	157	3147	4.0028 ug/kg	87
97)	1,2,4-Trichlorobenzene	20.44	180	18372	4.2258 ug/kg	95
98)	Hexachlorobutadiene	20.59	225	9618	4.1968 ug/kg	90
99)	Naphthalene	20.81	128	47189	4.3274 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.11	180	17859	4.2352 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972901.D 8260SL.M Fri Feb 26 11:21:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

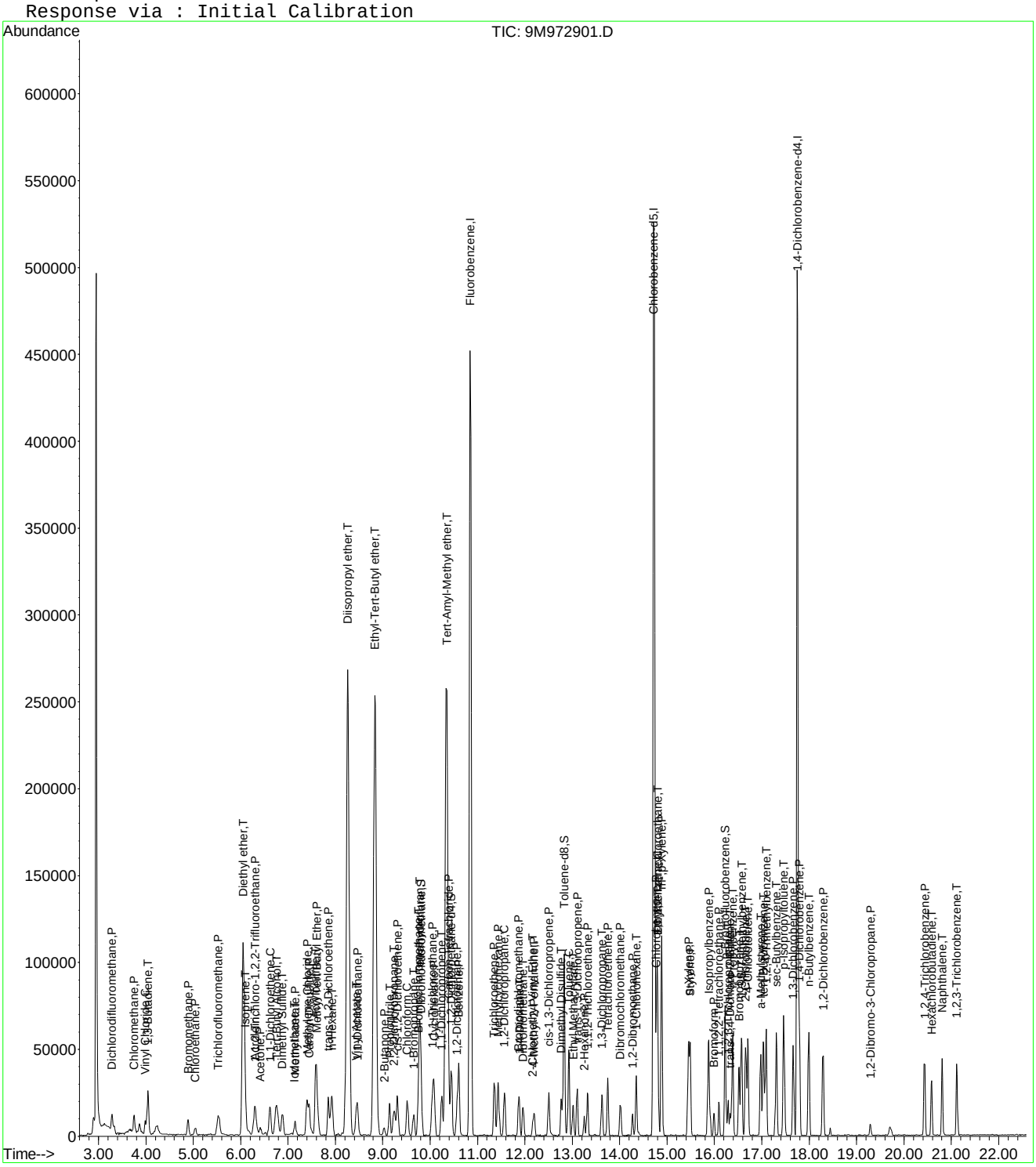

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	5.0000	3.9724	20.6	100	0.00
3	P	Chloromethane	5.0000	4.2763	14.5	100	0.00
4	C	Vinyl Chloride	5.0000	4.7964	4.1	100	0.00
5	T	1,3-Butadiene	5.0000	4.2710	14.6	100	0.00
6	P	Bromomethane	5.0000	4.2534	14.9	100	0.00
7	P	Chloroethane	5.0000	3.9741	20.5	100	0.00
8	P	Trichlorofluoromethane	5.0000	4.2400	15.2	100	0.00
9	T	Diethyl ether	50.0000	47.2164	5.6	100	0.00
10	T	Isoprene	5.0000	4.2747	14.5	100	0.01
11	T	Acrolein	25.0000	24.3428	2.6	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.6251	7.5	100	0.00
13	P	Acetone	5.0000	4.9429	1.1	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.2784	14.4	100	0.01
15	T	Tert-Butyl Alcohol	100.0000	90.7440	9.3	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.6977	6.0	100	0.00
17	T	Iodomethane	5.0000	5.3886	-7.8	100	0.00
18	P	Methyl acetate	5.0000	4.3976	12.0	100	0.01
19	P	Methylene Chloride	5.0000	4.2690	14.6	100	0.00
20	P	Carbon Disulfide	5.0000	4.3495	13.0	100	0.00
21	T	Acrylonitrile	25.0000	22.6731	9.3	100	0.00
22	P	Methyl Tert Butyl Ether	5.0000	4.4284	11.4	100	0.00
23	P	trans-1,2-Dichloroethene	5.0000	4.5233	9.5	100	0.00
24	T	n-Hexane	5.0000	4.4854	10.3	100	0.01
25	T	Diisopropyl ether	50.0000	46.5162	7.0	100	0.00
26	T	Vinyl Acetate	5.0000	4.5644	8.7	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.2575	14.8	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	45.9037	8.2	100	0.00
29	P	2-Butanone	5.0000	4.7092	5.8	100	0.00
30	T	Propionitrile	50.0000	48.2931	3.4	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.2251	15.5	100	-0.01
32	P	cis-1,2-Dichloroethene	5.0000	4.5340	9.3	100	0.00
33	C	Chloroform	5.0000	4.4982	10.0	100	0.00
34	T	1-Bromopropane	5.0000	5.8651	-17.3	100	0.00
35	T	Bromochloromethane	5.0000	4.7667	4.7	100	0.00
36	T	Tetrahydrofuran	50.0000	47.4100	5.2	100	0.00
37	S	Dibromofluoromethane	10.0000	9.8422	1.6	100	0.00
38	P	1,1,1-Trichloroethane	5.0000	4.4285	11.4	100	0.00
39	P	Cyclohexane	5.0000	4.4818	10.4	100	0.01
40	T	1,1-Dichloropropene	5.0000	4.3930	12.1	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	46.8330	6.3	100	0.00
42	P	Carbon Tetrachloride	5.0000	4.2254	15.5	100	0.00
43	S	1,2-Dichloroethane-d4	10.0000	10.2911	-2.9	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	5.0000	4.6852	6.3	100	0.00
46	P	Benzene	5.0000	4.3528	12.9	100	0.00
47	P	Trichloroethene	5.0000	4.3213	13.6	100	0.00
48	P	Methylcyclohexane	5.0000	4.2330	15.3	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.5684	8.6	100	0.00
50	T	1,4-Dioxane	100.0000	91.4657	8.5	100	0.00
51	P	Bromodichloromethane	5.0000	4.4660	10.7	100	0.00
52	T	Dibromomethane	5.0000	4.7438	5.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	5.7758	-15.5	100	0.00
54	P	4-Methyl-2-Pentanone	5.0000	3.8716	22.6	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972901.D Vial: 6
Acq On : 25 Feb 2016 18:28 Operator: ADC
Sample : WG558732-06 5.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	5.0000	4.3659	12.7	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.2144	15.7	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	-0.01
58	S	Toluene-d8	10.0000	9.5885	4.1	100	0.00
59	C	Toluene	5.0000	4.3206	13.6	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.0089	19.8	100	0.00
61	P	trans-1,3-Dichloropropene	5.0000	4.3707	12.6	100	0.00
62	P	1,1,2-Trichloroethane	5.0000	4.5309	9.4	100	0.00
63	P	2-Hexanone	5.0000	4.3408	13.2	100	0.00
64	T	1,3-Dichloropropane	5.0000	4.5633	8.7	100	-0.01
65	P	Tetrachloroethene	5.0000	4.2981	14.0	100	0.00
66	P	Dibromochloromethane	5.0000	4.3052	13.9	100	0.00
67	P	1,2-Dibromoethane	5.0000	4.6694	6.6	100	0.00
68	T	1-Chlorohexane	5.0000	3.9281	21.4	100	0.00
69	P	Chlorobenzene	5.0000	4.5769	8.5	100	0.00
70	T	1,1,1,2-Tetrachloroethane	5.0000	4.3130	13.7	100	0.00
71	C	Ethylbenzene	5.0000	4.3974	12.1	100	0.00
72	P	m-,p-Xylene	10.0000	9.1683	8.3	100	0.00
73	P	o-Xylene	5.0000	4.5275	9.5	100	0.00
74	P	Styrene	5.0000	4.3253	13.5	100	0.00
75	P	Bromoform	5.0000	4.3382	13.2	100	-0.01
76	P	Isopropylbenzene	5.0000	4.3198	13.6	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	5.0000	4.8610	2.8	100	-0.01
79	S	p-Bromofluorobenzene	10.0000	9.4138	5.9	100	0.00
80	T	1,2,3-Trichloropropane	5.0000	4.9243	1.5	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	5.0000	4.0913	18.2	100	0.00
82	T	n-Propylbenzene	5.0000	4.5983	8.0	100	0.00
83	T	Bromobenzene	5.0000	4.6386	7.2	100	0.00
84	T	1,3,5-Trimethylbenzene	5.0000	4.6900	6.2	100	0.00
85	T	2-Chlorotoluene	5.0000	4.3899	12.2	100	0.00
86	T	4-Chlorotoluene	5.0000	4.6981	6.0	100	0.00
87	T	a-Methylstyrene	5.0000	4.1667	16.7	100	0.00
88	T	tert-Butylbenzene	5.0000	4.5290	9.4	100	0.00
89	T	1,2,4-Trimethylbenzene	5.0000	4.6345	7.3	100	0.00
90	T	sec-Butylbenzene	5.0000	4.4642	10.7	100	0.00
91	T	p-Isopropyltoluene	5.0000	4.6453	7.1	100	0.00
92	P	1,3-Dichlorobenzene	5.0000	4.4323	11.4	100	0.00
93	P	1,4-Dichlorobenzene	5.0000	4.5730	8.5	100	-0.01
94	T	n-Butylbenzene	5.0000	4.3071	13.9	100	0.00
95	P	1,2-Dichlorobenzene	5.0000	4.4593	10.8	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	5.0000	4.0028	19.9	100	0.00
97	P	1,2,4-Trichlorobenzene	5.0000	4.2258	15.5	100	0.00
98	T	Hexachlorobutadiene	5.0000	4.1968	16.1	100	0.00
99	T	Naphthalene	5.0000	4.3274	13.5	100	0.00
100	T	1,2,3-Trichlorobenzene	5.0000	4.2352	15.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972901.D 8260SL.M Fri Feb 26 11:21:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972902.D Vial: 7
Acq On : 25 Feb 2016 18:59 Operator: ADC
Sample : WG558732-07 20.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	491006	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	357658	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	168257	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	47666	17.9094 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 35.82%#		
43) 1,2-Dichloroethane-d4	10.45	65	60269	18.0480 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 36.10%#		
58) Toluene-d8	12.82	98	163811	18.1074 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 36.22%#		
79) p-Bromofluorobenzene	16.23	95	58931	17.9870 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 35.98%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	78283	23.3598 ug/kg	99
3) Chloromethane	3.75	50	64951	20.2188 ug/kg	98
4) Vinyl Chloride	3.99	62	73167	22.7523 ug/kg	97
5) 1,3-Butadiene	4.04	54	64372	21.0404 ug/kg	98
6) Bromomethane	4.88	94	40556	19.4178 ug/kg	97
7) Chloroethane	5.04	64	27981	19.5307 ug/kg	97
8) Trichlorofluoromethane	5.53	101	98871	20.4994 ug/kg	98
9) Diethyl ether	6.06	59	191078	84.7472 ug/kg	99
10) Isoprene	6.10	67	59437	20.6414 ug/kg	98
11) Acrolein	6.30	56	18057	40.1641 ug/kg	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	50002	20.1026 ug/kg	100
13) Acetone	6.42	43	27164	20.4768 ug/kg	100
14) 1,1-Dichloroethene	6.62	61	94732	20.6460 ug/kg	98
15) Tert-Butyl Alcohol	6.75	59	85695	170.6872 ug/kg	97
16) Dimethyl Sulfide	6.88	62	40580	20.9258 ug/kg	99
17) Iodomethane	7.13	142	21330	17.5663 ug/kg	96
18) Methyl acetate	7.15	43	54770	21.9573 ug/kg	99
19) Methylene Chloride	7.41	84	51619	20.6564 ug/kg	95
20) Carbon Disulfide	7.45	76	145286	20.5545 ug/kg	97
21) Acrylonitrile	7.59	53	50918	41.2640 ug/kg	97
22) Methyl Tert Butyl Ether	7.61	73	149271	20.9731 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	84416	20.6434 ug/kg	98
24) n-Hexane	7.92	57	82582	19.5795 ug/kg	98
25) Diisopropyl ether	8.26	45	841729	85.9275 ug/kg	99
26) Vinyl Acetate	8.44	43	107114	19.1814 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	104490	20.3440 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	777976	85.4147 ug/kg	99
29) 2-Butanone	9.02	43	30691	19.3834 ug/kg	100
30) Propionitrile	9.14	54	41719	86.0996 ug/kg	99
31) 2,2-Dichloropropane	9.24	77	73960	19.2927 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	56404	21.0307 ug/kg	100
33) Chloroform	9.52	83	94621	20.0546 ug/kg	98
34) 1-Bromopropane	9.65	122	8251	20.7938 ug/kg	98
35) Bromochloromethane	9.75	130	38059	21.8457 ug/kg	99
36) Tetrahydrofuran	9.77	42	86589	84.8405 ug/kg	100
38) 1,1,1-Trichloroethane	10.05	97	85938	20.1411 ug/kg	99
39) Cyclohexane	10.09	56	96933	20.8373 ug/kg	98
40) 1,1-Dichloropropene	10.25	75	67544	20.1175 ug/kg	96
41) Tert-Amyl-Methyl ether	10.34	73	562826	85.0111 ug/kg	99
42) Carbon Tetrachloride	10.39	117	79566	20.1143 ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972902.D 8260SL.M Fri Feb 26 11:21:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972902.D Vial: 7
Acq On : 25 Feb 2016 18:59 Operator: ADC
Sample : WG558732-07 20.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	86857	20.9287 ug/kg	98
46)	Benzene	10.60	78	190747	20.2931 ug/kg	98
47)	Trichloroethene	11.35	130	61315	20.5871 ug/kg	99
48)	Methylcyclohexane	11.44	83	79384	21.2516 ug/kg	99
49)	1,2-Dichloropropane	11.56	63	54356	21.0584 ug/kg	98
50)	1,4-Dioxane	11.88	88	7054	182.1639 ug/kg	93
51)	Bromodichloromethane	11.87	83	73160	20.1115 ug/kg	99
52)	Dibromomethane	11.97	174	35844	20.9583 ug/kg	97
53)	2-Chloroethyl Vinyl Ether	12.17	63	11048	17.4432 ug/kg	94
54)	4-Methyl-2-Pentanone	12.20	58	22247	19.6364 ug/kg	96
55)	cis-1,3-Dichloropropene	12.50	75	77533	20.4577 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	77400	20.3222 ug/kg	99
59)	Toluene	12.93	91	209919	20.5421 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	58827	20.7683 ug/kg	99
61)	trans-1,3-Dichloropropene	13.11	75	73778	20.0452 ug/kg	98
62)	1,1,2-Trichloroethane	13.32	97	45475	21.1838 ug/kg	98
63)	2-Hexanone	13.25	43	40183	18.7479 ug/kg	97
64)	1,3-Dichloropropane	13.62	76	73060	20.4249 ug/kg	95
65)	Tetrachloroethene	13.75	164	44423	20.2778 ug/kg	96
66)	Dibromochloromethane	14.01	129	59220	19.7391 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	48648	20.4311 ug/kg	97
68)	1-Chlorohexane	14.35	91	64519	21.4099 ug/kg	96
69)	Chlorobenzene	14.77	112	150639	20.9742 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	55462	20.5631 ug/kg	99
71)	Ethylbenzene	14.79	106	77813	21.0297 ug/kg	100
72)	m-,p-Xylene	14.89	106	192168	42.0536 ug/kg	98
73)	o-Xylene	15.45	106	92490	21.0911 ug/kg	98
74)	Styrene	15.49	104	154534	20.6939 ug/kg	100
75)	Bromoform	16.00	173	39818	20.2142 ug/kg	98
76)	Isopropylbenzene	15.87	105	249418	21.1865 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	53687	21.0342 ug/kg	98
80)	1,2,3-Trichloropropane	16.28	110	19658	20.3087 ug/kg	98
81)	trans-1,4-Dichloro-2-Buten	16.33	53	21143	21.6696 ug/kg	89
82)	n-Propylbenzene	16.39	91	283998	21.4728 ug/kg	98
83)	Bromobenzene	16.52	156	65363	20.9343 ug/kg	95
84)	1,3,5-Trimethylbenzene	16.57	105	212735	21.4278 ug/kg	99
85)	2-Chlorotoluene	16.66	91	189159	21.3235 ug/kg	99
86)	4-Chlorotoluene	16.70	91	171741	20.9401 ug/kg	99
87)	a-Methylstyrene	16.98	118	95360	21.0801 ug/kg	99
88)	tert-Butylbenzene	17.03	134	43749	21.0188 ug/kg	90
89)	1,2,4-Trimethylbenzene	17.08	105	218350	21.0010 ug/kg	99
90)	sec-Butylbenzene	17.31	105	268054	20.9635 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	225612	20.9076 ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	122605	19.7580 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	124659	20.0949 ug/kg	99
94)	n-Butylbenzene	17.99	91	199655	19.8998 ug/kg	99
95)	1,2-Dichlorobenzene	18.30	146	115021	19.9768 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	14138	19.1277 ug/kg	95
97)	1,2,4-Trichlorobenzene	20.43	180	77418	18.9408 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	41508	19.2651 ug/kg	96
99)	Naphthalene	20.81	128	204933	19.9897 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.12	180	75616	19.0736 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972902.D Vial: 7
Acq On : 25 Feb 2016 18:59 Operator: ADC
Sample : WG558732-07 20.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

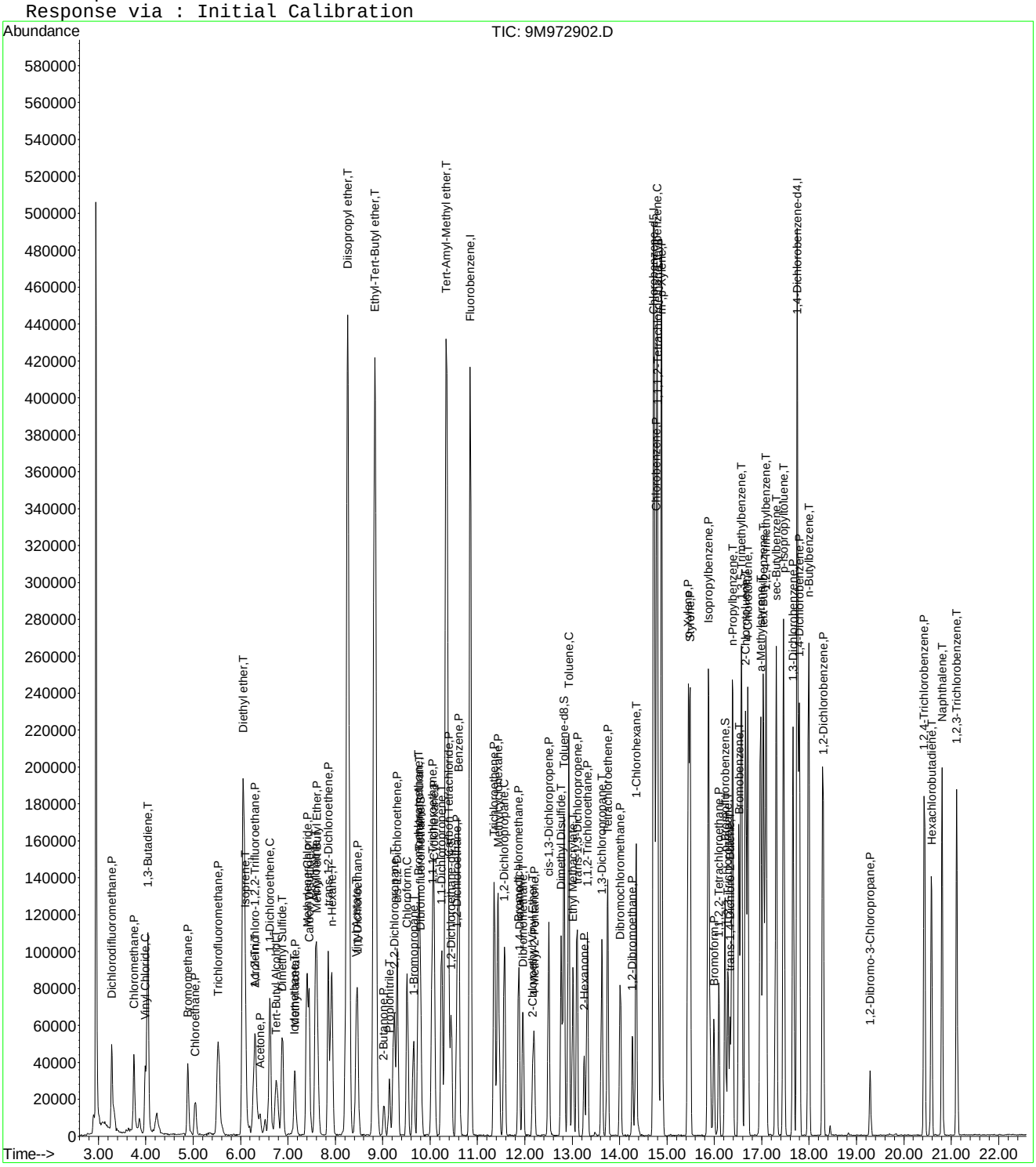

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972903.D Vial: 8
Acq On : 25 Feb 2016 19:29 Operator: ADC
Sample : WG558732-08 100.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:57 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	535022	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	390279	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.75	152	187456	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	305515	105.3466 ug/kg	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 210.70%#		
43) 1,2-Dichloroethane-d4	10.45	65	383447	105.3793 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 210.76%#		
58) Toluene-d8	12.83	98	1052175	106.5842 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 213.16%#		
79) p-Bromofluorobenzene	16.23	95	403966	110.6707 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 221.34%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	340079	93.1314 ug/kg	98
3) Chloromethane	3.74	50	316834	90.5143 ug/kg	100
4) Vinyl Chloride	3.99	62	366384	104.5591 ug/kg	99
5) 1,3-Butadiene	4.04	54	317949	95.3739 ug/kg	98
6) Bromomethane	4.88	94	198493	87.2180 ug/kg	99
7) Chloroethane	5.04	64	148539	95.1503 ug/kg	96
8) Trichlorofluoromethane	5.53	101	502703	95.6532 ug/kg	99
9) Diethyl ether	6.06	59	457873	186.3696 ug/kg	99
10) Isoprene	6.09	67	302269	96.3367 ug/kg	100
11) Acrolein	6.30	56	49319	100.6749 ug/kg	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	264925	97.7467 ug/kg	100
13) Acetone	6.41	43	126959	96.0965 ug/kg	97
14) 1,1-Dichloroethene	6.61	61	485466	97.0986 ug/kg	99
15) Tert-Butyl Alcohol	6.77	59	202804	370.7125 ug/kg	97
16) Dimethyl Sulfide	6.88	62	209613	99.1979 ug/kg	97
17) Iodomethane	7.14	142	134789	88.4431 ug/kg	96
18) Methyl acetate	7.15	43	256770	94.4705 ug/kg	99
19) Methylene Chloride	7.40	84	256919	94.3530 ug/kg	100
20) Carbon Disulfide	7.45	76	725343	94.1764 ug/kg	99
21) Acrylonitrile	7.59	53	131913	98.1077 ug/kg	97
22) Methyl Tert Butyl Ether	7.61	73	763125	98.4009 ug/kg	99
23) trans-1,2-Dichloroethene	7.85	61	435514	97.7404 ug/kg	99
24) n-Hexane	7.92	57	458951	99.8615 ug/kg	98
25) Diisopropyl ether	8.26	45	1991599	186.5850 ug/kg	99
26) Vinyl Acetate	8.44	43	593217	97.4908 ug/kg	100
27) 1,1-Dichloroethane	8.47	63	533571	95.3384 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	1850360	186.4394 ug/kg	100
29) 2-Butanone	9.03	43	167064	96.8316 ug/kg	99
30) Propionitrile	9.14	54	102467	194.0735 ug/kg	99
31) 2,2-Dichloropropane	9.24	77	409808	98.1051 ug/kg	98
32) cis-1,2-Dichloroethene	9.31	96	291782	99.8428 ug/kg	100
33) Chloroform	9.52	83	491651	95.6310 ug/kg	100
34) 1-Bromopropane	9.65	122	43084	95.7559 ug/kg	98
35) Bromochloromethane	9.75	130	191150	100.6929 ug/kg	97
36) Tetrahydrofuran	9.78	42	206962	186.0999 ug/kg	99
38) 1,1,1-Trichloroethane	10.04	97	454248	97.7025 ug/kg	99
39) Cyclohexane	10.08	56	497594	98.1657 ug/kg	99
40) 1,1-Dichloropropene	10.24	75	355996	97.3080 ug/kg	98
41) Tert-Amyl-Methyl ether	10.35	73	1353122	187.5659 ug/kg	99
42) Carbon Tetrachloride	10.39	117	419252	97.2674 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972903.D 8260SL.M Fri Feb 26 11:21:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972903.D Vial: 8
Acq On : 25 Feb 2016 19:29 Operator: ADC
Sample : WG558732-08 100.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:57 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	441828	97.7027	ug/kg	98
46)	Benzene	10.60	78	946247	92.3868	ug/kg	100
47)	Trichloroethene	11.35	130	316701	97.5872	ug/kg	98
48)	Methylcyclohexane	11.44	83	420776	103.3770	ug/kg	100
49)	1,2-Dichloropropane	11.56	63	273398	97.2049	ug/kg	97
50)	1,4-Dioxane	11.89	88	15240	361.1826	ug/kg	95
51)	Bromodichloromethane	11.87	83	384453	96.9905	ug/kg	100
52)	Dibromomethane	11.96	174	178770	95.9288	ug/kg	100
53)	2-Chloroethyl Vinyl Ether	12.17	63	71336	89.4187	ug/kg	97
54)	4-Methyl-2-Pentanone	12.19	58	126118	102.1606	ug/kg	99
55)	cis-1,3-Dichloropropene	12.50	75	407392	98.6500	ug/kg	99
56)	Dimethyl Disulfide	12.77	94	430523	103.7388	ug/kg	99
59)	Toluene	12.93	91	1070303	95.9828	ug/kg	100
60)	Ethyl Methacrylate	13.01	69	310336	100.4033	ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	395340	98.4345	ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	234168	99.9657	ug/kg	97
63)	2-Hexanone	13.25	43	238254	101.8692	ug/kg	99
64)	1,3-Dichloropropane	13.62	76	372307	95.3836	ug/kg	98
65)	Tetrachloroethene	13.75	164	235384	98.4650	ug/kg	97
66)	Dibromochloromethane	14.01	129	316240	96.5980	ug/kg	100
67)	1,2-Dibromoethane	14.28	107	254663	98.0133	ug/kg	98
68)	1-Chlorohexane	14.35	91	341938	103.9841	ug/kg	98
69)	Chlorobenzene	14.77	112	744916	95.0493	ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.80	131	289798	98.4650	ug/kg	98
71)	Ethylbenzene	14.79	106	397428	98.4311	ug/kg	99
72)	m-,p-Xylene	14.89	106	955121	191.5462	ug/kg	97
73)	o-Xylene	15.45	106	475355	99.3381	ug/kg	100
74)	Styrene	15.49	104	817155	100.2803	ug/kg	100
75)	Bromoform	15.99	173	212807	99.0046	ug/kg	98
76)	Isopropylbenzene	15.88	105	1283494	99.9122	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	279744	98.3764	ug/kg	100
80)	1,2,3-Trichloropropane	16.29	110	110421	102.3924	ug/kg	94
81)	trans-1,4-Dichloro-2-Buten	16.33	53	116410	107.0899	ug/kg	87
82)	n-Propylbenzene	16.39	91	1458178	98.9594	ug/kg	99
83)	Bromobenzene	16.52	156	334600	96.1892	ug/kg	97
84)	1,3,5-Trimethylbenzene	16.57	105	1100766	99.5195	ug/kg	99
85)	2-Chlorotoluene	16.66	91	937812	94.8900	ug/kg	100
86)	4-Chlorotoluene	16.70	91	906777	99.2383	ug/kg	100
87)	a-Methylstyrene	16.98	118	508276	100.8508	ug/kg	99
88)	tert-Butylbenzene	17.04	134	234437	101.0972	ug/kg	99
89)	1,2,4-Trimethylbenzene	17.09	105	1125260	97.1435	ug/kg	99
90)	sec-Butylbenzene	17.30	105	1425754	100.0828	ug/kg	100
91)	p-Isopropyltoluene	17.46	119	1215596	101.1125	ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	644471	93.2206	ug/kg	100
93)	1,4-Dichlorobenzene	17.79	146	646907	93.6002	ug/kg	99
94)	n-Butylbenzene	17.99	91	1131901	101.2628	ug/kg	99
95)	1,2-Dichlorobenzene	18.30	146	622851	97.0971	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.30	157	88939	108.0040	ug/kg	99
97)	1,2,4-Trichlorobenzene	20.44	180	466688	102.4843	ug/kg	99
98)	Hexachlorobutadiene	20.59	225	252514	105.1960	ug/kg	99
99)	Naphthalene	20.81	128	1208454	105.8030	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	456274	103.3044	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972903.D 8260SL.M Fri Feb 26 11:21:58 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972903.D Vial: 8
Acq On : 25 Feb 2016 19:29 Operator: ADC
Sample : WG558732-08 100.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

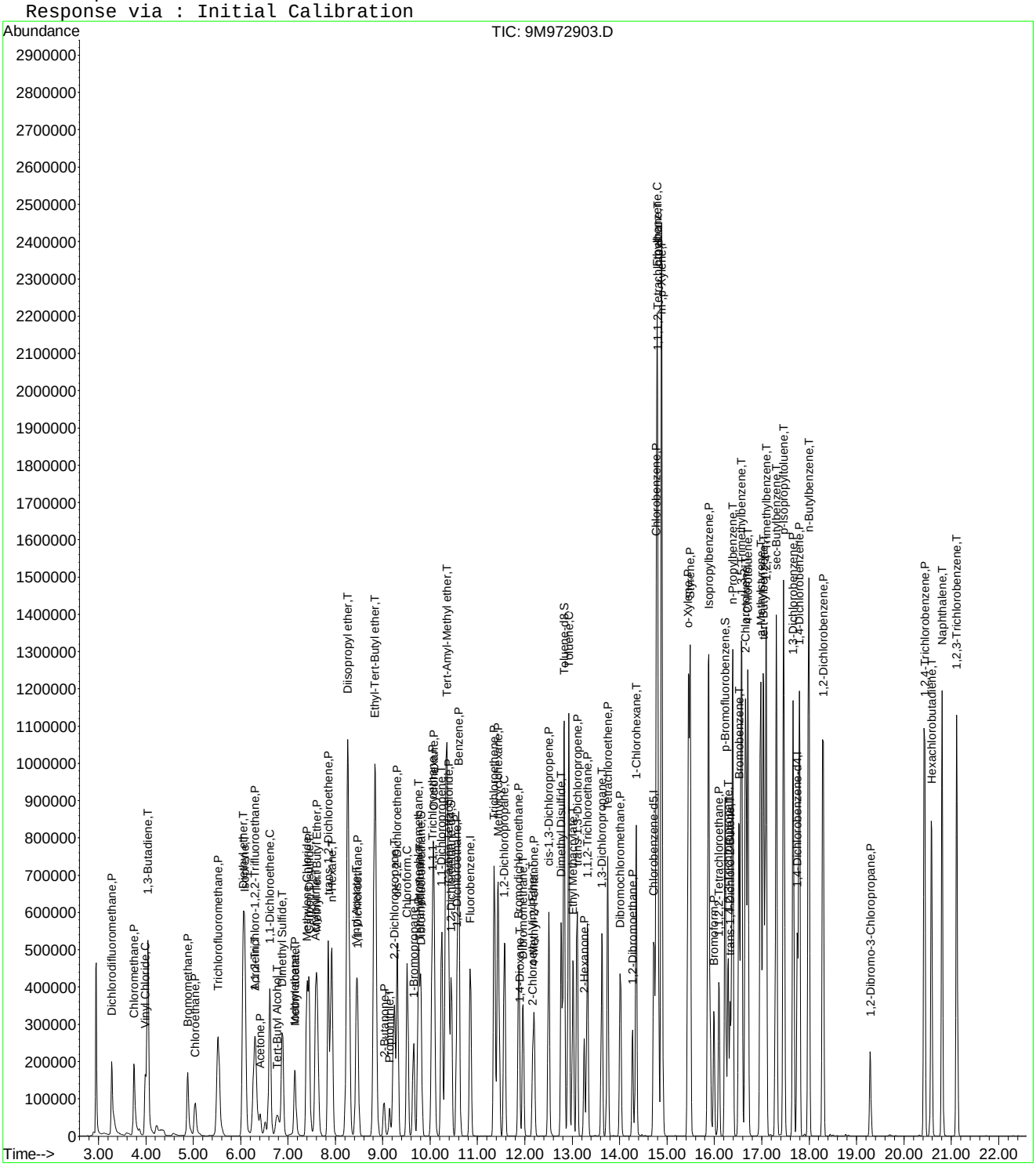

9M972903.D 8260SL.M Fri Feb 26 11:21:58 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972904.D Vial: 9
Acq On : 25 Feb 2016 20:00 Operator: ADC
Sample : WG558732-09 200.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:58 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	542388	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	396894	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	212175	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	595362	202.5026 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 405.00%#		
43) 1,2-Dichloroethane-d4	10.45	65	716316	194.1852 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 388.38%#		
58) Toluene-d8	12.82	98	2013255	200.5415 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 401.08%#		
79) p-Bromofluorobenzene	16.23	95	807150	195.3653 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 390.74%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	774894	209.3245 ug/kg	100
3) Chloromethane	3.75	50	750862	211.5959 ug/kg	100
4) Vinyl Chloride	3.99	62	770550	216.9141 ug/kg	100
5) 1,3-Butadiene	4.04	54	695631	205.8318 ug/kg	99
6) Bromomethane	4.88	94	470946	204.1239 ug/kg	97
7) Chloroethane	5.04	64	374502	236.6386 ug/kg	98
8) Trichlorofluoromethane	5.52	101	1120886	210.3832 ug/kg	99
10) Isoprene	6.09	67	690766	217.1654 ug/kg	97
11) Acrolein	6.31	56	2288	4.6071 ug/kg	86
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	592415	215.6090 ug/kg	100
13) Acetone	6.42	43	268070	202.8703 ug/kg	99
14) 1,1-Dichloroethene	6.62	61	1084122	213.8917 ug/kg	99
15) Tert-Butyl Alcohol	6.78	59	290	0.5229 ug/kg#	58
16) Dimethyl Sulfide	6.88	62	486231	226.9805 ug/kg	99
17) Iodomethane	7.14	142	341644	216.9305 ug/kg	98
18) Methyl acetate	7.15	43	558766	202.7886 ug/kg	97
19) Methylene Chloride	7.40	84	606998	219.8913 ug/kg	98
20) Carbon Disulfide	7.44	76	1650167	211.3432 ug/kg	98
21) Acrylonitrile	7.61	53	18860	13.8363 ug/kg#	28
22) Methyl Tert Butyl Ether	7.61	73	1710517	217.5666 ug/kg	99
23) trans-1,2-Dichloroethene	7.84	61	967656	214.2173 ug/kg	99
24) n-Hexane	7.92	57	1006142	215.9497 ug/kg	97
26) Vinyl Acetate	8.43	43	1320060	213.9959 ug/kg	98
27) 1,1-Dichloroethane	8.46	63	1199515	211.4185 ug/kg	100
29) 2-Butanone	9.02	43	373284	213.4201 ug/kg	100
31) 2,2-Dichloropropane	9.24	77	904865	213.6764 ug/kg	100
32) cis-1,2-Dichloroethene	9.31	96	649726	219.3058 ug/kg	100
33) Chloroform	9.52	83	1094765	210.0507 ug/kg	100
34) 1-Bromopropane	9.66	122	98189	213.9851 ug/kg	100
35) Bromochloromethane	9.75	130	427351	222.0603 ug/kg	99
36) Tetrahydrofuran	9.77	42	2491	2.2095 ug/kg	93
38) 1,1,1-Trichloroethane	10.05	97	1020636	216.5435 ug/kg	100
39) Cyclohexane	10.08	56	1092323	212.5677 ug/kg	98
40) 1,1-Dichloropropene	10.24	75	780375	210.4109 ug/kg	98
42) Carbon Tetrachloride	10.39	117	950685	217.5657 ug/kg	100
45) 1,2-Dichloroethane	10.56	62	975428	212.7698 ug/kg	98
46) Benzene	10.61	78	2107212	202.9435 ug/kg	100
47) Trichloroethene	11.36	130	696420	211.6783 ug/kg	98
48) Methylcyclohexane	11.43	83	922594	223.5862 ug/kg	100
49) 1,2-Dichloropropane	11.57	63	613480	215.1567 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972904.D Vial: 9
Acq On : 25 Feb 2016 20:00 Operator: ADC
Sample : WG558732-09 200.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:58 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
50)	1,4-Dioxane	11.86	88	821	19.1932	ug/kg#	7
51)	Bromodichloromethane	11.87	83	861318	214.3439	ug/kg	99
52)	Dibromomethane	11.96	174	401145	212.3328	ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	173854	210.9891	ug/kg	98
54)	4-Methyl-2-Pentanone	12.19	58	281550	224.9694	ug/kg	99
55)	cis-1,3-Dichloropropene	12.51	75	917528	219.1621	ug/kg	100
56)	Dimethyl Disulfide	12.77	94	993447	236.1300	ug/kg	99
59)	Toluene	12.93	91	2353264	207.5190	ug/kg	100
60)	Ethyl Methacrylate	13.01	69	698780	222.3090	ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	892986	218.6361	ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	510766	214.4105	ug/kg	98
63)	2-Hexanone	13.26	43	551431	231.8433	ug/kg	99
64)	1,3-Dichloropropane	13.63	76	842104	212.1481	ug/kg	99
65)	Tetrachloroethene	13.75	164	518091	213.1138	ug/kg	97
66)	Dibromochloromethane	14.02	129	723489	217.3121	ug/kg	99
67)	1,2-Dibromoethane	14.27	107	560802	212.2411	ug/kg	99
68)	1-Chlorohexane	14.35	91	757279	226.4519	ug/kg	100
69)	Chlorobenzene	14.78	112	1626715	204.1050	ug/kg	98
70)	1,1,1,2-Tetrachloroethane	14.81	131	649903	217.1378	ug/kg	97
71)	Ethylbenzene	14.80	106	871321	212.2035	ug/kg	99
72)	m-,p-Xylene	14.89	106	2089330	412.0243	ug/kg	98
73)	o-Xylene	15.45	106	1065692	218.9929	ug/kg	98
74)	Styrene	15.49	104	1839951	222.0334	ug/kg	100
75)	Bromoform	15.99	173	511700	234.0915	ug/kg	99
76)	Isopropylbenzene	15.87	105	2873816	219.9805	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	662688	205.8943	ug/kg	99
80)	1,2,3-Trichloropropane	16.29	110	257281	210.7797	ug/kg	98
81)	trans-1,4-Dichloro-2-Buten	16.34	53	281460	228.7601	ug/kg	90
82)	n-Propylbenzene	16.38	91	3244636	194.5439	ug/kg	100
83)	Bromobenzene	16.52	156	759998	193.0269	ug/kg	95
84)	1,3,5-Trimethylbenzene	16.57	105	2471747	197.4342	ug/kg	99
85)	2-Chlorotoluene	16.66	91	2218317	198.3049	ug/kg	100
86)	4-Chlorotoluene	16.71	91	1934954	187.0917	ug/kg	100
87)	a-Methylstyrene	16.98	118	1205032	211.2436	ug/kg	99
88)	tert-Butylbenzene	17.03	134	526001	200.4032	ug/kg	87
89)	1,2,4-Trimethylbenzene	17.09	105	2520611	192.2523	ug/kg	100
90)	sec-Butylbenzene	17.31	105	3206494	198.8615	ug/kg	100
91)	p-Isopropyltoluene	17.47	119	2752661	202.2895	ug/kg	100
92)	1,3-Dichlorobenzene	17.67	146	1508843	192.8225	ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	1522857	194.6701	ug/kg	99
94)	n-Butylbenzene	17.99	91	2603240	205.7600	ug/kg	100
95)	1,2-Dichlorobenzene	18.29	146	1515803	208.7710	ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	205456	220.4304	ug/kg	98
97)	1,2,4-Trichlorobenzene	20.43	180	1061631	205.9726	ug/kg	99
98)	Hexachlorobutadiene	20.58	225	612598	225.4729	ug/kg	100
99)	Naphthalene	20.81	128	2666581	206.2661	ug/kg	99
100)	1,2,3-Trichlorobenzene	21.12	180	1022740	204.5802	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972904.D 8260SL.M Fri Feb 26 11:21:58 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972904.D Vial: 9
Acq On : 25 Feb 2016 20:00 Operator: ADC
Sample : WG558732-09 200.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

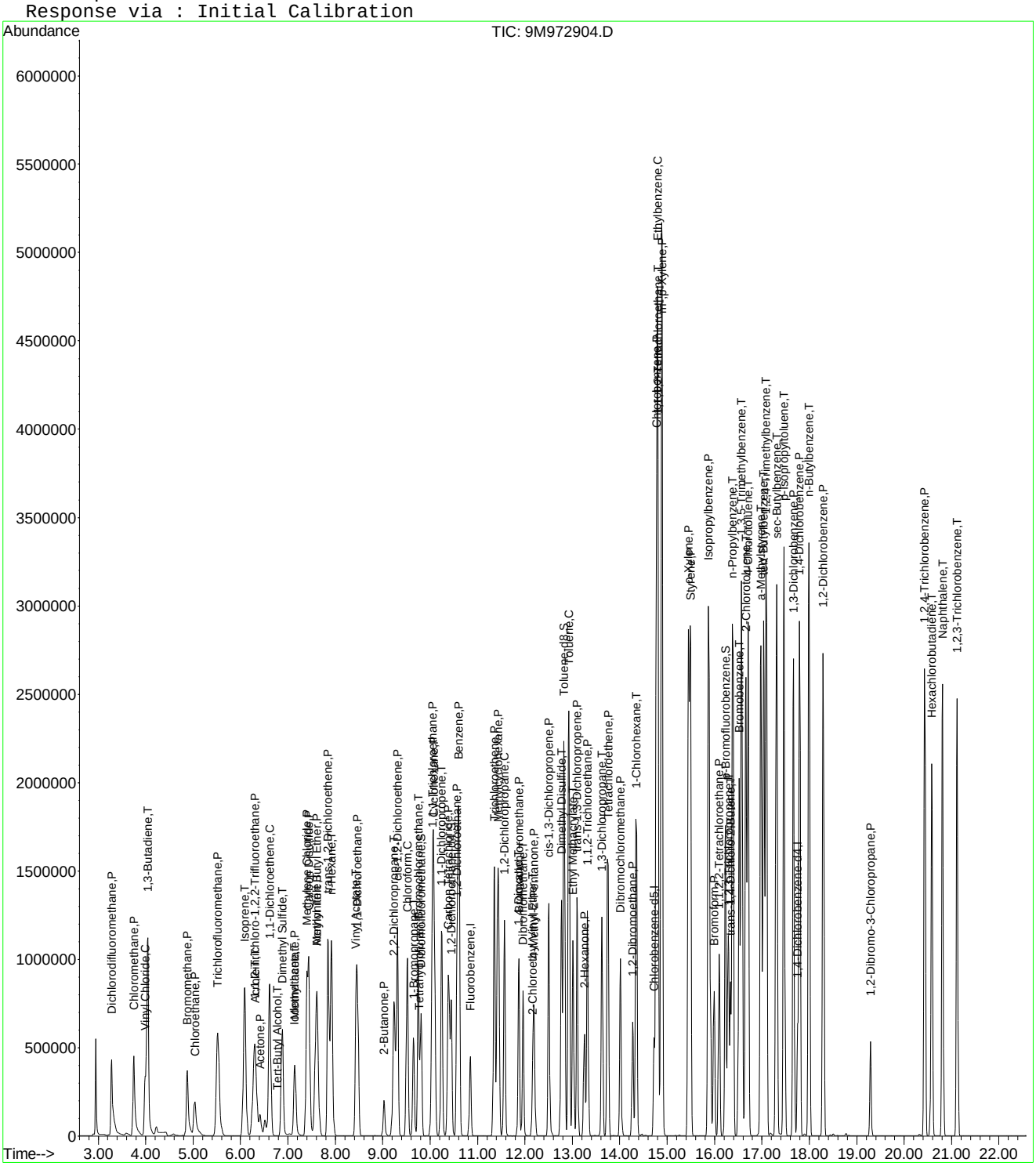

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972905.D Vial: 10
Acq On : 25 Feb 2016 20:30 Operator: ADC
Sample : WG558732-10 300.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:59 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.85	96	626979	50.00	ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	468521	50.00	ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	224223	50.00	ug/kg	0.00

System Monitoring Compounds						
37) Dibromofluoromethane	9.81	111	520	0.1530	ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.30%#		
43) 1,2-Dichloroethane-d4	10.45	65	1794	0.4207	ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.84%#		
58) Toluene-d8	12.82	98	7789	0.6573	ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	1.32%#		
79) p-Bromofluorobenzene	16.23	95	6216	1.4237	ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	2.84%#		

Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.28	85	1155483	270.0216	ug/kg	98
3) Chloromethane	3.75	50	1142773	278.5891	ug/kg	100
4) Vinyl Chloride	3.98	62	1112221	270.8539	ug/kg	99
5) 1,3-Butadiene	4.03	54	1100483	281.6917	ug/kg	98
6) Bromomethane	4.87	94	749711	281.1083	ug/kg	98
7) Chloroethane	5.04	64	601337	328.7051	ug/kg	98
8) Trichlorofluoromethane	5.52	101	1778447	288.7670	ug/kg	99
9) Diethyl ether	6.06	59	869609	302.0457	ug/kg	99
10) Isoprene	6.08	67	1108410	301.4513	ug/kg	98
11) Acrolein	6.30	56	93621	163.0794	ug/kg	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	943691	297.1172	ug/kg	99
13) Acetone	6.42	43	369915	242.6618	ug/kg	95
14) 1,1-Dichloroethene	6.61	61	1715009	292.7111	ug/kg	98
15) Tert-Butyl Alcohol	6.80	59	188151	293.4850	ug/kg	89
16) Dimethyl Sulfide	6.88	62	763075	308.1557	ug/kg	99
17) Iodomethane	7.14	142	532480	291.5128	ug/kg	99
18) Methyl acetate	7.15	43	879657	276.1748	ug/kg	98
19) Methylene Chloride	7.40	84	937262	293.7237	ug/kg	96
20) Carbon Disulfide	7.44	76	2640380	292.5391	ug/kg	98
21) Acrylonitrile	7.59	53	252681	160.3640	ug/kg	94
22) Methyl Tert Butyl Ether	7.61	73	2699681	297.0533	ug/kg	98
23) trans-1,2-Dichloroethene	7.84	61	1548353	296.5245	ug/kg	100
24) n-Hexane	7.92	57	1608467	298.6501	ug/kg	98
25) Diisopropyl ether	8.26	45	3742238	299.1747	ug/kg	100
26) Vinyl Acetate	8.43	43	2097407	294.1383	ug/kg	99
27) 1,1-Dichloroethane	8.47	63	1881635	286.8995	ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	3515202	302.2390	ug/kg	99
29) 2-Butanone	9.02	43	559900	276.9258	ug/kg	100
30) Propionitrile	9.14	54	182998	295.7653	ug/kg	100
31) 2,2-Dichloropropane	9.24	77	1439671	294.0988	ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	1040893	303.9366	ug/kg	99
33) Chloroform	9.52	83	1708608	283.5977	ug/kg	99
34) 1-Bromopropane	9.65	122	152776	287.6719	ug/kg	98
35) Bromochloromethane	9.75	130	668631	300.5590	ug/kg	98
36) Tetrahydrofuran	9.77	42	365915	280.7723	ug/kg	97
38) 1,1,1-Trichloroethane	10.05	97	1606962	294.9423	ug/kg	100
39) Cyclohexane	10.08	56	1746722	294.0540	ug/kg	99
40) 1,1-Dichloropropene	10.24	75	1258569	293.5615	ug/kg	98
41) Tert-Amyl-Methyl ether	10.34	73	2573262	304.3824	ug/kg	98
42) Carbon Tetrachloride	10.39	117	1494872	295.9476	ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972905.D Vial: 10
Acq On : 25 Feb 2016 20:30 Operator: ADC
Sample : WG558732-10 300.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21:59 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.57	62	1526616	288.0725 ug/kg	98
46)	Benzene	10.61	78	3320959	276.6861 ug/kg	99
47)	Trichloroethene	11.36	130	1102750	289.9607 ug/kg	98
48)	Methylcyclohexane	11.43	83	1476436	309.5324 ug/kg	98
49)	1,2-Dichloropropane	11.57	63	980423	297.4576 ug/kg	99
50)	1,4-Dioxane	11.89	88	31126	629.4828 ug/kg	81
51)	Bromodichloromethane	11.87	83	1358159	292.3851 ug/kg	99
52)	Dibromomethane	11.96	174	632731	289.7290 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	287132	300.2354 ug/kg	96
54)	4-Methyl-2-Pentanone	12.19	58	438042	302.7895 ug/kg	99
55)	cis-1,3-Dichloropropene	12.51	75	1436858	296.9047 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	1505953	309.6528 ug/kg	95
59)	Toluene	12.93	91	3720819	277.9530 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	1096301	295.4554 ug/kg	100
61)	trans-1,3-Dichloropropene	13.10	75	1416217	293.7329 ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	820836	291.8946 ug/kg	99
63)	2-Hexanone	13.26	43	814427	290.0688 ug/kg	100
64)	1,3-Dichloropropane	13.63	76	1322191	282.1714 ug/kg	100
65)	Tetrachloroethene	13.75	164	815946	284.3233 ug/kg	98
66)	Dibromochloromethane	14.02	129	1136128	289.0845 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	889642	285.2204 ug/kg	99
68)	1-Chlorohexane	14.34	91	1188786	301.1405 ug/kg	99
69)	Chlorobenzene	14.78	112	2558374	271.9265 ug/kg	97
70)	1,1,1,2-Tetrachloroethane	14.81	131	1019464	288.5389 ug/kg	97
71)	Ethylbenzene	14.80	106	1372834	283.2291 ug/kg	97
72)	m-,p-Xylene	14.89	106	3241616	541.5304 ug/kg	97
73)	o-Xylene	15.45	106	1663016	289.4945 ug/kg	99
74)	Styrene	15.49	104	2869824	293.3680 ug/kg	99
75)	Bromoform	15.99	173	788638	305.6282 ug/kg	99
76)	Isopropylbenzene	15.87	105	4421589	286.7141 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	1002445	294.7201 ug/kg	99
80)	1,2,3-Trichloropropane	16.28	110	380025	294.6098 ug/kg	66
81)	trans-1,4-Dichloro-2-Buten	16.34	53	413901	318.3274 ug/kg	57
82)	n-Propylbenzene	16.38	91	4980503	282.5783 ug/kg	99
83)	Bromobenzene	16.52	156	1176440	282.7414 ug/kg	93
84)	1,3,5-Trimethylbenzene	16.57	105	3788936	286.3846 ug/kg	99
85)	2-Chlorotoluene	16.66	91	3458872	292.5892 ug/kg	100
86)	4-Chlorotoluene	16.71	91	2929432	268.0287 ug/kg	100
87)	a-Methylstyrene	16.98	118	1823514	302.4880 ug/kg	100
88)	tert-Butylbenzene	17.03	134	795019	286.6221 ug/kg	86
89)	1,2,4-Trimethylbenzene	17.09	105	3829230	276.3702 ug/kg	100
90)	sec-Butylbenzene	17.31	105	4833765	283.6742 ug/kg	99
91)	p-Isopropyltoluene	17.47	119	4134027	287.4802 ug/kg	99
92)	1,3-Dichlorobenzene	17.67	146	2260017	273.2999 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	2229106	269.6404 ug/kg	99
94)	n-Butylbenzene	17.99	91	3871124	289.5329 ug/kg	100
95)	1,2-Dichlorobenzene	18.29	146	2162642	281.8552 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	293112	297.5776 ug/kg	98
97)	1,2,4-Trichlorobenzene	20.43	180	1514973	278.1345 ug/kg	100
98)	Hexachlorobutadiene	20.58	225	846867	294.9498 ug/kg	99
99)	Naphthalene	20.81	128	3754823	274.8379 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.12	180	1451357	274.7177 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972905.D 8260SL.M Fri Feb 26 11:21:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972905.D Vial: 10
Acq On : 25 Feb 2016 20:30 Operator: ADC
Sample : WG558732-10 300.0ug/kg STD Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:21 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:14:51 2016
Response via : Initial Calibration

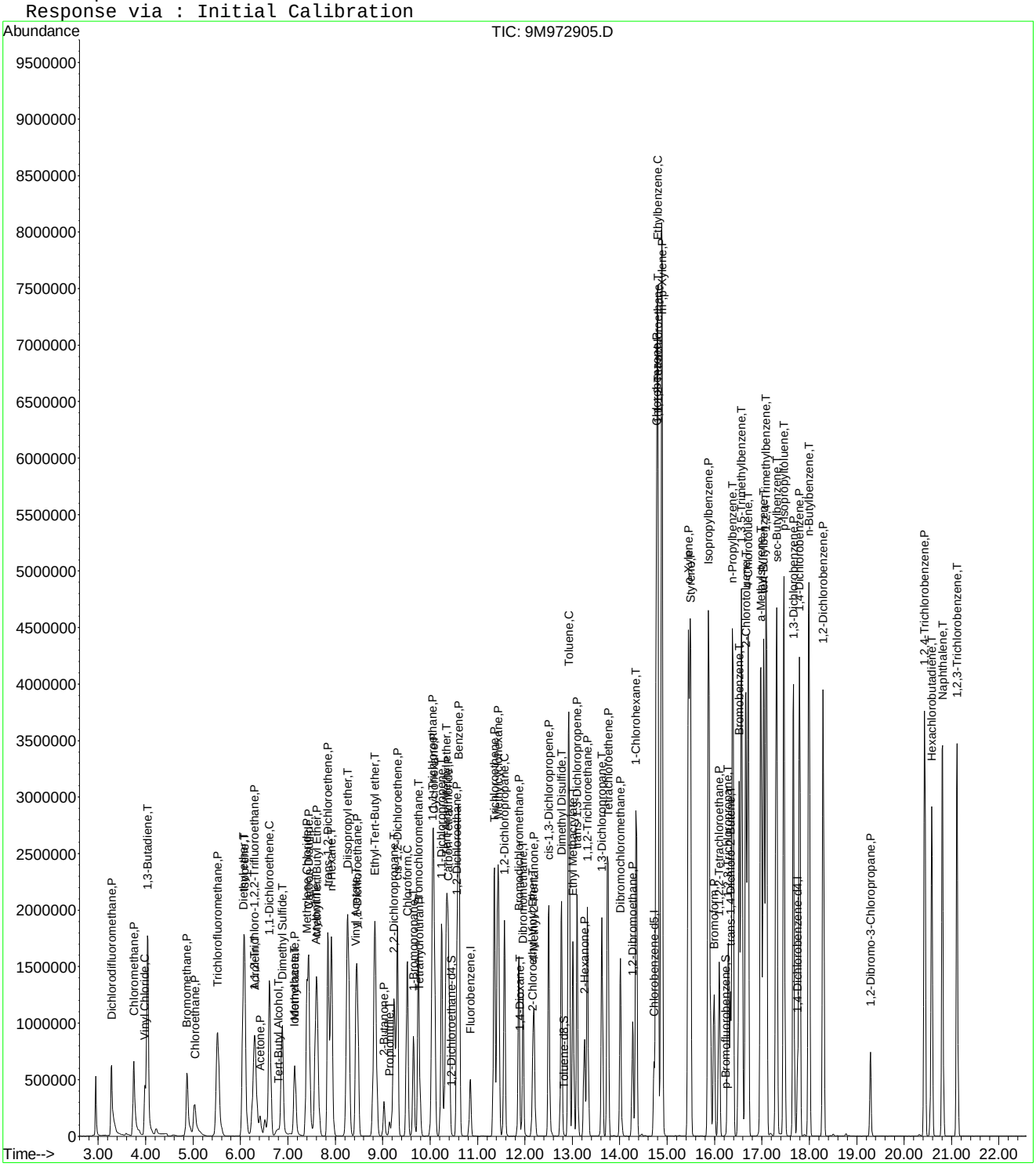

9M972905.D 8260SL.M Fri Feb 26 11:21:59 2016 Page 3

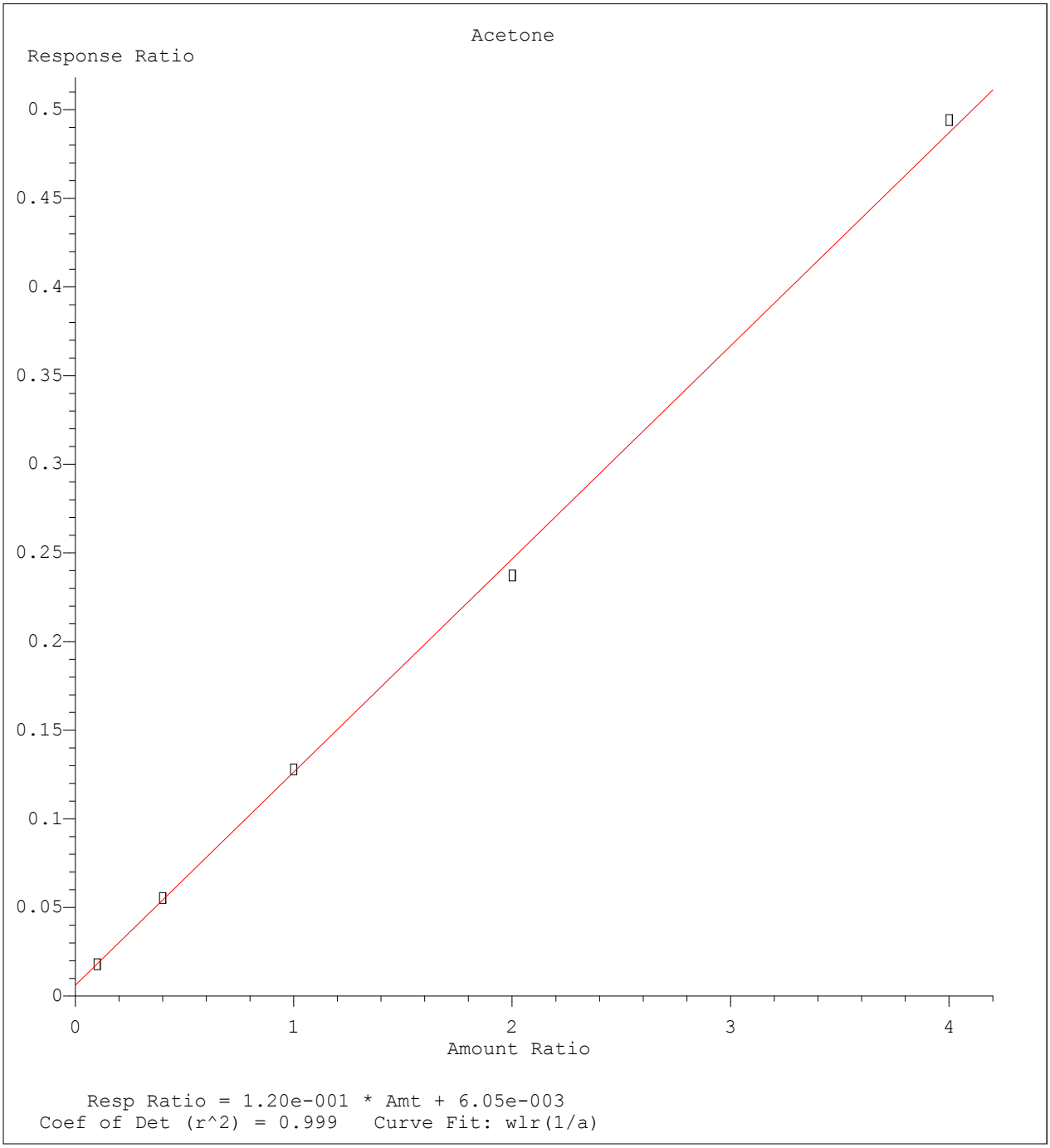

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

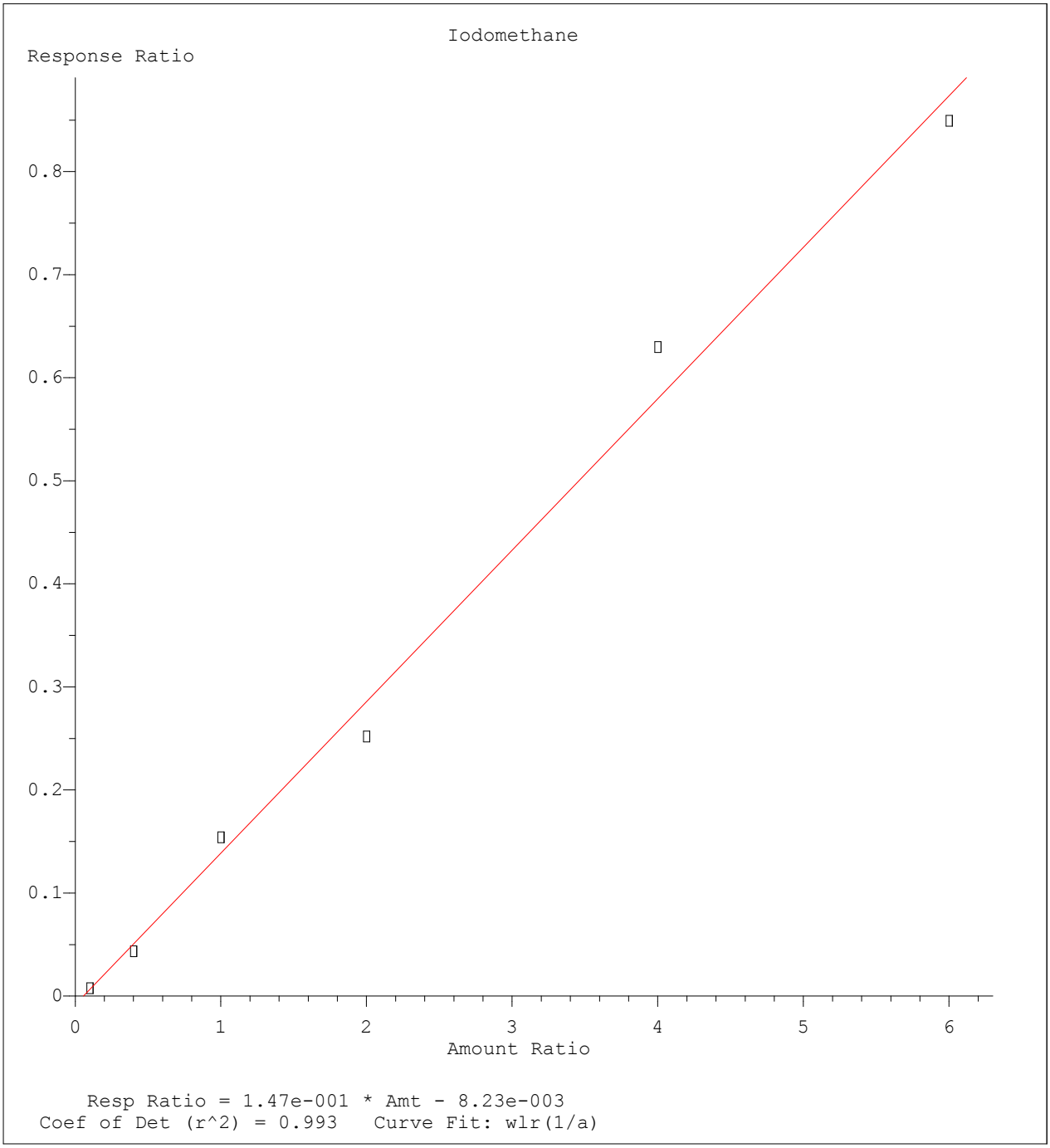

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

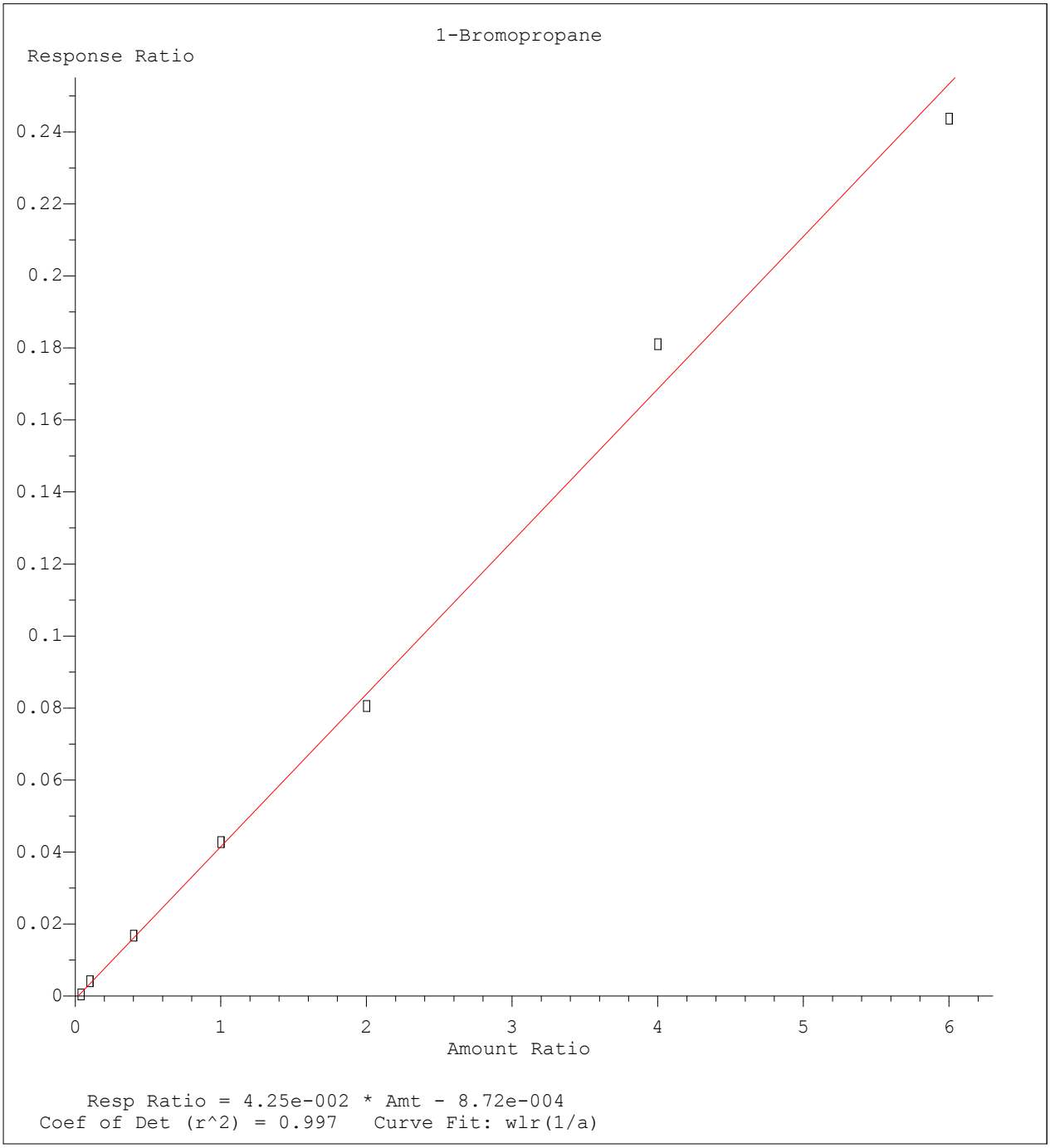

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

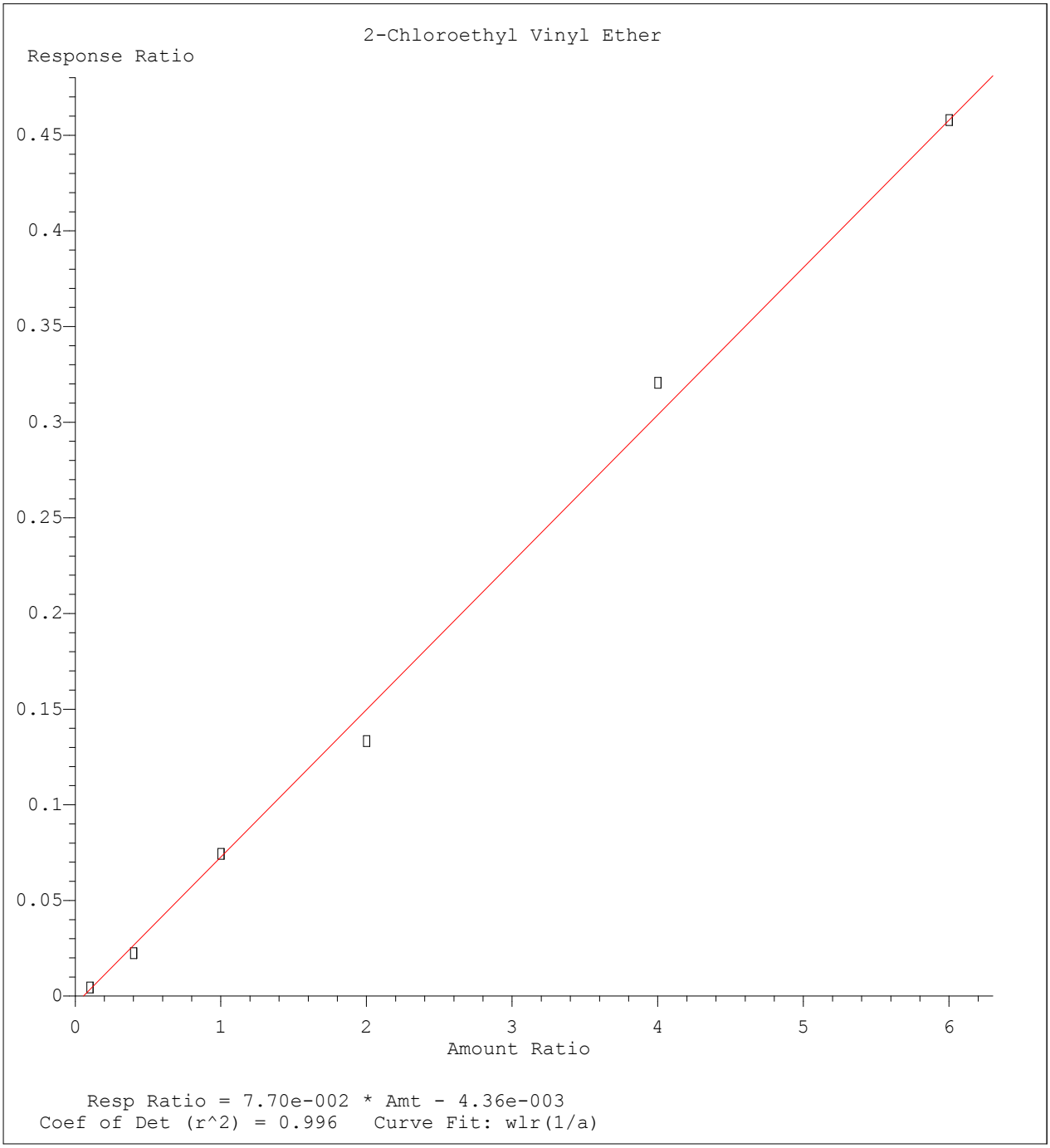

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Fri Feb 26 11:38:33 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:39:12 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	582126	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	421408	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	194909	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	163260	51.7395 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 103.48%		
43) 1,2-Dichloroethane-d4	10.45	65	197344	49.8458 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.70%		
58) Toluene-d8	12.82	98	564883	52.9951 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.00%		
79) p-Bromofluorobenzene	16.23	95	212358	55.9531 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 111.90%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	251431	63.3698 ug/kg	100
3) Chloromethane	3.74	50	200793	52.7216 ug/kg	100
4) Vinyl Chloride	3.99	62	228101	59.8284 ug/kg	99
5) 1,3-Butadiene	4.04	54	19055	5.2533 ug/kg	94
6) Bromomethane	4.88	94	121270	48.9744 ug/kg	100
7) Chloroethane	5.04	64	92003	54.1660 ug/kg	100
8) Trichlorofluoromethane	5.52	101	271981	47.5643 ug/kg	98
9) Diethyl ether	6.06	59	198146	74.1259 ug/kg	98
10) Isoprene	6.09	67	201645	59.0663 ug/kg	95
11) Acrolein	6.30	56	34569	64.8558 ug/kg	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	151498	51.3737 ug/kg	99
13) Acetone	6.41	43	65044	43.9190 ug/kg	98
14) 1,1-Dichloroethene	6.62	61	264179	48.5632 ug/kg	99
15) Tert-Butyl Alcohol	6.77	59	122141	205.1997 ug/kg	96
16) Dimethyl Sulfide	6.88	62	168266	73.1872 ug/kg	98
17) Iodomethane	7.13	142	81070	50.1419 ug/kg	99
18) Methyl acetate	7.15	43	155780	52.6767 ug/kg	99
19) Methylene Chloride	7.41	84	147546	49.8014 ug/kg	97
20) Carbon Disulfide	7.45	76	369798	44.1284 ug/kg	98
21) Acrylonitrile	7.59	53	71462	48.8478 ug/kg	99
22) Methyl Tert Butyl Ether	7.61	73	402298	47.6767 ug/kg	100
23) trans-1,2-Dichloroethene	7.85	61	245432	50.6242 ug/kg	100
24) n-Hexane	7.91	57	240056	48.0064 ug/kg	97
25) Diisopropyl ether	8.26	45	951889	81.9626 ug/kg	100
26) Vinyl Acetate	8.44	43	224385	33.8921 ug/kg	98
27) 1,1-Dichloroethane	8.47	63	282537	46.3987 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	854399	79.1219 ug/kg	99
29) 2-Butanone	9.03	43	88970	47.3950 ug/kg	99
30) Propionitrile	9.14	54	53106	92.4444 ug/kg	97
31) 2,2-Dichloropropane	9.24	77	213921	47.0673 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	167198	52.5828 ug/kg	96
33) Chloroform	9.52	83	268532	48.0056 ug/kg	99
34) 1-Bromopropane	9.65	122	36381	74.5451 ug/kg	96
35) Bromochloromethane	9.75	130	106386	51.5067 ug/kg	96
36) Tetrahydrofuran	9.78	42	101921	84.2313 ug/kg	98
38) 1,1,1-Trichloroethane	10.04	97	236420	46.7360 ug/kg	100
39) Cyclohexane	10.08	56	267623	48.5247 ug/kg	98
40) 1,1-Dichloropropene	10.25	75	193208	48.5381 ug/kg	99
41) Tert-Amyl-Methyl ether	10.34	73	688412	87.7041 ug/kg	100
42) Carbon Tetrachloride	10.39	117	218086	46.5023 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:39:12 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	241996	49.1831 ug/kg	99
46)	Benzene	10.60	78	545692	48.9674 ug/kg	99
47)	Trichloroethene	11.35	130	174371	49.3824 ug/kg	96
48)	Methylcyclohexane	11.44	83	228572	51.6120 ug/kg	98
49)	1,2-Dichloropropane	11.56	63	160075	52.3084 ug/kg	99
50)	1,4-Dioxane	11.88	88	7749	168.7883 ug/kg	88
51)	Bromodichloromethane	11.87	83	205164	47.5709 ug/kg	100
52)	Dibromomethane	11.96	174	95223	46.9624 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	36447	43.4907 ug/kg	97
54)	4-Methyl-2-Pentanone	12.19	58	64228	47.8173 ug/kg	96
55)	cis-1,3-Dichloropropene	12.50	75	238969	53.1840 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	243519	53.9302 ug/kg	99
59)	Toluene	12.93	91	610944	50.7412 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	172650	51.7315 ug/kg	99
61)	trans-1,3-Dichloropropene	13.11	75	216958	50.0293 ug/kg	98
62)	1,1,2-Trichloroethane	13.32	97	130293	51.5130 ug/kg	96
63)	2-Hexanone	13.25	43	121727	48.2017 ug/kg	99
64)	1,3-Dichloropropane	13.62	76	226811	53.8157 ug/kg	99
65)	Tetrachloroethene	13.75	164	128602	49.8224 ug/kg	96
66)	Dibromochloromethane	14.01	129	171284	48.4552 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	142409	50.7609 ug/kg	97
68)	1-Chlorohexane	14.35	91	184711	52.0217 ug/kg	98
69)	Chlorobenzene	14.77	112	433181	51.1898 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	157986	49.7138 ug/kg	100
71)	Ethylbenzene	14.79	106	223582	51.2841 ug/kg	100
72)	m-,p-Xylene	14.89	106	552299	102.5798 ug/kg	98
73)	o-Xylene	15.45	106	276739	53.5600 ug/kg	99
74)	Styrene	15.49	104	464515	52.7939 ug/kg	99
75)	Bromoform	15.99	173	109809	47.3129 ug/kg	99
76)	Isopropylbenzene	15.87	105	721376	52.0066 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	153818	52.0241 ug/kg	97
80)	1,2,3-Trichloropropane	16.29	110	60794	54.2181 ug/kg	92
81)	trans-1,4-Dichloro-2-Buten	16.33	53	48561	42.9649 ug/kg	74
82)	n-Propylbenzene	16.39	91	841260	54.9091 ug/kg	100
83)	Bromobenzene	16.52	156	188730	52.1806 ug/kg	96
84)	1,3,5-Trimethylbenzene	16.57	105	624761	54.3244 ug/kg	99
85)	2-Chlorotoluene	16.66	91	556729	54.1771 ug/kg	100
86)	4-Chlorotoluene	16.70	91	503918	53.0403 ug/kg	99
87)	a-Methylstyrene	16.98	118	305038	58.2105 ug/kg	98
88)	tert-Butylbenzene	17.03	134	133555	55.3912 ug/kg	90
89)	1,2,4-Trimethylbenzene	17.08	105	620621	51.5293 ug/kg	99
90)	sec-Butylbenzene	17.31	105	810765	54.7366 ug/kg	99
91)	p-Isopropyltoluene	17.46	119	675672	54.0529 ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	365216	50.8073 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	367190	51.0968 ug/kg	99
94)	n-Butylbenzene	17.99	91	609687	52.4585 ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	351826	52.7494 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	46623	54.4522 ug/kg	96
97)	1,2,4-Trichlorobenzene	20.43	180	244804	51.7031 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	136025	54.5004 ug/kg	99
99)	Naphthalene	20.81	128	603753	50.8387 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	241600	52.6087 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972907.D 8260SL.M Fri Feb 26 11:39:13 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 26 11:39 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

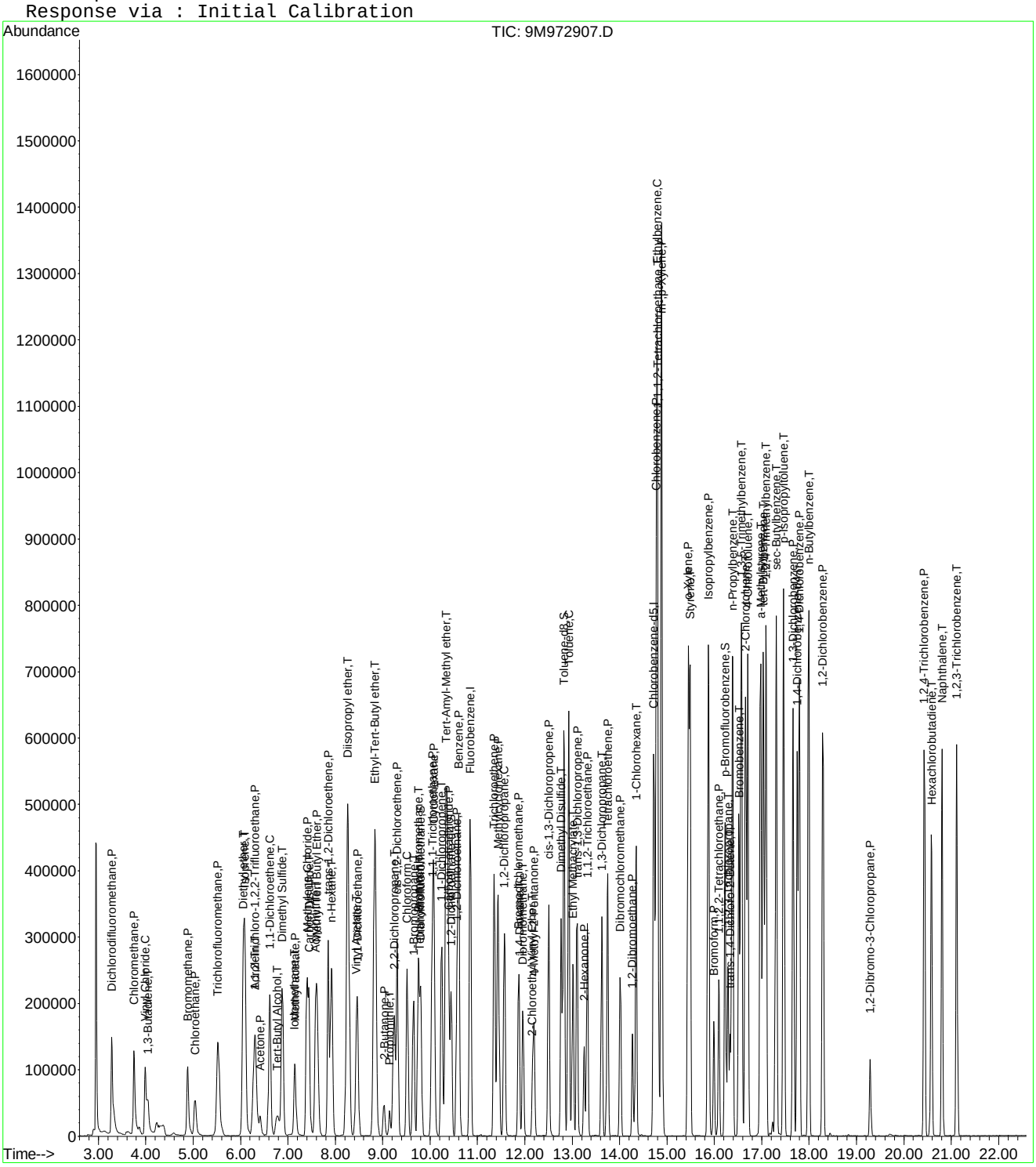

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	112	0.00
2	P	Dichlorodifluoromethane	50.0000	63.3698	-26.7#	123	0.00
3	P	Chloromethane	50.0000	52.7216	-5.4	107	0.00
4	C	Vinyl Chloride	50.0000	59.8284	-19.7	118	0.00
5	T	1,3-Butadiene	50.0000	5.2533	89.5#	11	0.00
6	P	Bromomethane	50.0000	48.9744	2.1	112	0.00
7	P	Chloroethane	50.0000	54.1660	-8.3	108	0.00
8	P	Trichlorofluoromethane	50.0000	47.5643	4.9	102	0.00
9	T	Diethyl ether	100.0000	74.1259	25.9#	79	0.01
10	T	Isoprene	50.0000	59.0664	-18.1	129	0.00
11	T	Acrolein	50.0000	64.8558	-29.7#	140	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	51.3737	-2.7	112	0.00
13	P	Acetone	50.0000	43.9190	12.2	98	0.00
14	C	1,1-Dichloroethene	50.0000	48.5632	2.9	108	0.00
15	T	Tert-Butyl Alcohol	200.0000	205.1997	-2.6	116	0.01
16	T	Dimethyl Sulfide	50.0000	73.1872	-46.4#	154	0.00
17	T	Iodomethane	50.0000	50.1419	-0.3	102	0.00
18	P	Methyl acetate	50.0000	52.6767	-5.4	115	0.01
19	P	Methylene Chloride	50.0000	49.8014	0.4	109	0.01
20	P	Carbon Disulfide	50.0000	44.1284	11.7	97	0.00
21	T	Acrylonitrile	50.0000	48.8478	2.3	103	0.00
22	P	Methyl Tert Butyl Ether	50.0000	47.6767	4.6	99	0.00
23	P	trans-1,2-Dichloroethene	50.0000	50.6242	-1.2	108	0.00
24	T	n-Hexane	50.0000	48.0064	4.0	109	0.00
25	T	Diisopropyl ether	100.0000	81.9626	18.0	87	0.00
26	T	Vinyl Acetate	50.0000	33.8921	32.2#	72	0.01
27	P	1,1-Dichloroethane	50.0000	46.3987	7.2	99	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	79.1219	20.9	83	0.00
29	P	2-Butanone	50.0000	47.3950	5.2	103	0.00
30	T	Propionitrile	100.0000	92.4444	7.6	100	0.00
31	T	2,2-Dichloropropane	50.0000	47.0673	5.9	99	0.00
32	P	cis-1,2-Dichloroethene	50.0000	52.5828	-5.2	109	0.00
33	C	Chloroform	50.0000	48.0057	4.0	102	0.00
34	T	1-Bromopropane	50.0000	74.5451	-49.1#	164	0.00
35	T	Bromochloromethane	50.0000	51.5067	-3.0	104	0.00
36	T	Tetrahydrofuran	100.0000	84.2314	15.8	90	0.00
37	S	Dibromofluoromethane	50.0000	51.7395	-3.5	110	0.00
38	P	1,1,1-Trichloroethane	50.0000	46.7360	6.5	97	0.00
39	P	Cyclohexane	50.0000	48.5247	3.0	108	0.00
40	T	1,1-Dichloropropene	50.0000	48.5381	2.9	106	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	87.7041	12.3	93	0.00
42	P	Carbon Tetrachloride	50.0000	46.5023	7.0	99	0.00
43	S	1,2-Dichloroethane-d4	50.0000	49.8458	0.3	107	0.00
44		Heptane	-1.0000	0.0000	0.0	104	0.00
45	P	1,2-Dichloroethane	50.0000	49.1831	1.6	102	0.00
46	P	Benzene	50.0000	48.9674	2.1	108	0.00
47	P	Trichloroethene	50.0000	49.3824	1.2	106	0.00
48	P	Methylcyclohexane	50.0000	51.6120	-3.2	112	0.00
49	C	1,2-Dichloropropane	50.0000	52.3083	-4.6	108	0.00
50	T	1,4-Dioxane	200.0000	168.7883	15.6	99	0.00
51	P	Bromodichloromethane	50.0000	47.5710	4.9	101	0.00
52	T	Dibromomethane	50.0000	46.9624	6.1	99	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	43.4907	13.0	95	0.00
54	P	4-Methyl-2-Pentanone	50.0000	47.8173	4.4	99	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022516\9M972907.D Vial: 12
Acq On : 25 Feb 2016 21:31 Operator: ADC
Sample : WG558732-11 50.0ug/kg ALTSRC Inst : hpms9
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/15/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	53.1840	-6.4	112	0.00
56	T	Dimethyl Disulfide	50.0000	53.9302	-7.9	111	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	111	0.00
58	S	Toluene-d8	50.0000	52.9951	-6.0	110	0.00
59	C	Toluene	50.0000	50.7412	-1.5	108	0.00
60	T	Ethyl Methacrylate	50.0000	51.7315	-3.5	109	0.00
61	P	trans-1,3-Dichloropropene	50.0000	50.0293	-0.1	102	0.00
62	P	1,1,2-Trichloroethane	50.0000	51.5130	-3.0	106	0.00
63	P	2-Hexanone	50.0000	48.2017	3.6	102	0.00
64	T	1,3-Dichloropropane	50.0000	53.8157	-7.6	113	0.00
65	P	Tetrachloroethene	50.0000	49.8224	0.4	110	0.00
66	P	Dibromochloromethane	50.0000	48.4552	3.1	101	0.00
67	P	1,2-Dibromoethane	50.0000	50.7609	-1.5	107	0.00
68	T	1-Chlorohexane	50.0000	52.0217	-4.0	110	0.00
69	P	Chlorobenzene	50.0000	51.1898	-2.4	108	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	49.7138	0.6	102	0.00
71	C	Ethylbenzene	50.0000	51.2841	-2.6	108	0.00
72	P	m-,p-Xylene	100.0000	102.5798	-2.6	111	0.00
73	P	o-Xylene	50.0000	53.5600	-7.1	112	0.00
74	P	Styrene	50.0000	52.7939	-5.6	109	0.00
75	P	Bromoform	50.0000	47.3129	5.4	95	0.00
76	P	Isopropylbenzene	50.0000	52.0066	-4.0	110	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	107	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	52.0241	-4.0	104	0.00
79	S	p-Bromofluorobenzene	50.0000	55.9531	-11.9	111	0.00
80	T	1,2,3-Trichloropropane	50.0000	54.2181	-8.4	109	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	42.9649	14.1	87	0.00
82	T	n-Propylbenzene	50.0000	54.9091	-9.8	112	0.00
83	T	Bromobenzene	50.0000	52.1806	-4.4	106	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	54.3244	-8.6	110	0.00
85	T	2-Chlorotoluene	50.0000	54.1771	-8.4	115	0.00
86	T	4-Chlorotoluene	50.0000	53.0403	-6.1	105	0.00
87	T	a-Methylstyrene	50.0000	58.2105	-16.4	119	0.00
88	T	tert-Butylbenzene	50.0000	55.3912	-10.8	110	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	51.5293	-3.1	107	0.00
90	T	sec-Butylbenzene	50.0000	54.7366	-9.5	112	0.00
91	T	p-Isopropyltoluene	50.0000	54.0529	-8.1	110	0.00
92	P	1,3-Dichlorobenzene	50.0000	50.8073	-1.6	108	0.00
93	P	1,4-Dichlorobenzene	50.0000	51.0968	-2.2	110	0.00
94	T	n-Butylbenzene	50.0000	52.4585	-4.9	108	0.00
95	P	1,2-Dichlorobenzene	50.0000	52.7494	-5.5	110	0.00
96	P	1,2-Dibromo-3-Chloropropane	50.0000	54.4522	-8.9	109	0.00
97	P	1,2,4-Trichlorobenzene	50.0000	51.7031	-3.4	110	0.00
98	T	Hexachlorobutadiene	50.0000	54.5004	-9.0	116	0.00
99	T	Naphthalene	50.0000	50.8387	-1.7	100	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	52.6087	-5.2	109	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972907.D 8260SL.M Fri Feb 26 11:39:16 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030716\9M973121.D Vial: 1
Acq On : 7 Mar 2016 15:17 Operator: ADC
Sample : WG559980-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 15:39:41 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	541092	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	410315	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	216745	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	136467	46.5282 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.06%		
43) 1,2-Dichloroethane-d4	10.45	65	183191	49.7800 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 99.56%		
58) Toluene-d8	12.83	98	484876	46.7190 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 93.44%		
79) p-Bromofluorobenzene	16.23	95	209340	49.6010 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 99.20%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	165796	44.9556 ug/kg	94
3) Chloromethane	3.75	50	169574	47.9011 ug/kg	100
4) Vinyl Chloride	3.99	62	197450	55.7164 ug/kg	98
5) 1,3-Butadiene	4.04	54	219394	65.0725 ug/kg	97
6) Bromomethane	4.88	94	98848	42.9467 ug/kg	98
7) Chloroethane	5.04	64	86411	54.7318 ug/kg	95
8) Trichlorofluoromethane	5.52	101	293802	55.2768 ug/kg	99
9) Diethyl ether	6.05	59	250267	100.7243 ug/kg	95
10) Isoprene	6.09	67	187307	59.0273 ug/kg	94
11) Acrolein	6.29	56	24619	49.6910 ug/kg	88
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	150516	54.9114 ug/kg	98
13) Acetone	6.40	43	68407	50.0230 ug/kg	98
14) 1,1-Dichloroethene	6.62	61	269678	53.3335 ug/kg	98
15) Tert-Butyl Alcohol	6.75	59	100671	181.9557 ug/kg	95
16) Dimethyl Sulfide	6.88	62	110228	51.5795 ug/kg	89
17) Iodomethane	7.13	142	69289	46.3306 ug/kg	91
18) Methyl acetate	7.14	43	160928	58.5442 ug/kg	96
19) Methylene Chloride	7.40	84	137592	49.9635 ug/kg	89
20) Carbon Disulfide	7.44	76	422471	54.2371 ug/kg	98
21) Acrylonitrile	7.58	53	72603	53.3913 ug/kg	98
22) Methyl Tert Butyl Ether	7.61	73	405307	51.6759 ug/kg	98
23) trans-1,2-Dichloroethene	7.84	61	247137	54.8416 ug/kg	95
24) n-Hexane	7.91	57	280159	60.2750 ug/kg	98
25) Diisopropyl ether	8.25	45	1208461	111.9458 ug/kg	98
26) Vinyl Acetate	8.43	43	292604	47.5479 ug/kg	99
27) 1,1-Dichloroethane	8.46	63	305499	53.9742 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	1056064	105.2137 ug/kg	98
29) 2-Butanone	9.02	43	91173	52.2518 ug/kg	97
30) Propionitrile	9.14	54	54756	102.5450 ug/kg	100
31) 2,2-Dichloropropane	9.24	77	244010	57.7590 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	157098	53.1532 ug/kg	92
33) Chloroform	9.52	83	270735	52.0699 ug/kg	100
34) 1-Bromopropane	9.65	122	22771	50.5314 ug/kg	95
35) Bromochloromethane	9.75	130	98927	51.5276 ug/kg	89
36) Tetrahydrofuran	9.77	42	121362	107.9043 ug/kg	95
38) 1,1,1-Trichloroethane	10.05	97	258323	54.9384 ug/kg	94
39) Cyclohexane	10.08	56	303283	59.1607 ug/kg	97
40) 1,1-Dichloropropene	10.25	75	197941	53.4983 ug/kg	100
41) Tert-Amyl-Methyl ether	10.34	73	740706	101.5227 ug/kg	97
42) Carbon Tetrachloride	10.39	117	244485	56.0848 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030716\9M973121.D Vial: 1
Acq On : 7 Mar 2016 15:17 Operator: ADC
Sample : WG559980-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 15:39:41 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	244854	53.5379	ug/kg	97
46)	Benzene	10.60	78	520143	50.2144	ug/kg	98
47)	Trichloroethene	11.35	130	175462	53.4598	ug/kg	96
48)	Methylcyclohexane	11.44	83	244539	59.4048	ug/kg	97
49)	1,2-Dichloropropane	11.56	63	155975	54.8338	ug/kg	98
50)	1,4-Dioxane	11.88	88	8310	194.7348	ug/kg	100
51)	Bromodichloromethane	11.87	83	206988	51.6335	ug/kg	99
52)	Dibromomethane	11.97	174	93684	49.7073	ug/kg	96
53)	2-Chloroethyl Vinyl Ether	12.17	63	31739	40.9236	ug/kg	92
54)	4-Methyl-2-Pentanone	12.19	58	63874	51.1601	ug/kg	99
55)	cis-1,3-Dichloropropene	12.50	75	219123	52.4654	ug/kg	99
56)	Dimethyl Disulfide	12.77	94	222676	53.0541	ug/kg	99
59)	Toluene	12.93	91	594424	50.7038	ug/kg	99
60)	Ethyl Methacrylate	13.01	69	166383	51.2015	ug/kg	99
61)	trans-1,3-Dichloropropene	13.11	75	215529	51.0435	ug/kg	99
62)	1,1,2-Trichloroethane	13.32	97	123564	50.1734	ug/kg	99
63)	2-Hexanone	13.25	43	124506	50.6350	ug/kg	97
64)	1,3-Dichloropropane	13.62	76	202800	49.4195	ug/kg	91
65)	Tetrachloroethene	13.75	164	130531	51.9369	ug/kg	96
66)	Dibromochloromethane	14.01	129	168020	48.8169	ug/kg	98
67)	1,2-Dibromoethane	14.28	107	131380	48.0957	ug/kg	98
68)	1-Chlorohexane	14.35	91	198492	57.4143	ug/kg	94
69)	Chlorobenzene	14.77	112	418018	50.7334	ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	157509	50.9037	ug/kg	98
71)	Ethylbenzene	14.79	106	220173	51.8675	ug/kg	96
72)	m-,p-Xylene	14.89	106	540452	103.0932	ug/kg	97
73)	o-Xylene	15.45	106	263463	52.3691	ug/kg	100
74)	Styrene	15.49	104	447543	52.2401	ug/kg	99
75)	Bromoform	16.00	173	115336	51.0378	ug/kg	99
76)	Isopropylbenzene	15.88	105	725612	53.7263	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	148425	45.1427	ug/kg	100
80)	1,2,3-Trichloropropane	16.29	110	58528	46.9386	ug/kg	97
81)	trans-1,4-Dichloro-2-Buten	16.33	53	66485	52.8972	ug/kg	85
82)	n-Propylbenzene	16.39	91	847299	49.7317	ug/kg	99
83)	Bromobenzene	16.52	156	182379	45.3446	ug/kg	94
84)	1,3,5-Trimethylbenzene	16.57	105	618570	48.3674	ug/kg	99
85)	2-Chlorotoluene	16.66	91	536292	46.9306	ug/kg	100
86)	4-Chlorotoluene	16.70	91	523267	49.5282	ug/kg	99
87)	a-Methylstyrene	16.98	118	292498	50.1941	ug/kg	99
88)	tert-Butylbenzene	17.04	134	128780	48.0299	ug/kg	94
89)	1,2,4-Trimethylbenzene	17.09	105	636478	47.5220	ug/kg	100
90)	sec-Butylbenzene	17.31	105	815584	49.5147	ug/kg	100
91)	p-Isopropyltoluene	17.46	119	688161	49.5058	ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	362161	45.3065	ug/kg	98
93)	1,4-Dichlorobenzene	17.79	146	362635	45.3790	ug/kg	100
94)	n-Butylbenzene	17.99	91	663055	51.3028	ug/kg	99
95)	1,2-Dichlorobenzene	18.30	146	340271	45.8773	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	42077	44.1919	ug/kg	97
97)	1,2,4-Trichlorobenzene	20.44	180	243320	46.2124	ug/kg	98
98)	Hexachlorobutadiene	20.59	225	135057	48.6610	ug/kg	98
99)	Naphthalene	20.81	128	599108	45.3652	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.12	180	235710	46.1553	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M973121.D 8260SL.M Mon Mar 07 15:39:42 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030716\9M973121.D Vial: 1
Acq On : 7 Mar 2016 15:17 Operator: ADC
Sample : WG559980-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 7 15:39 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

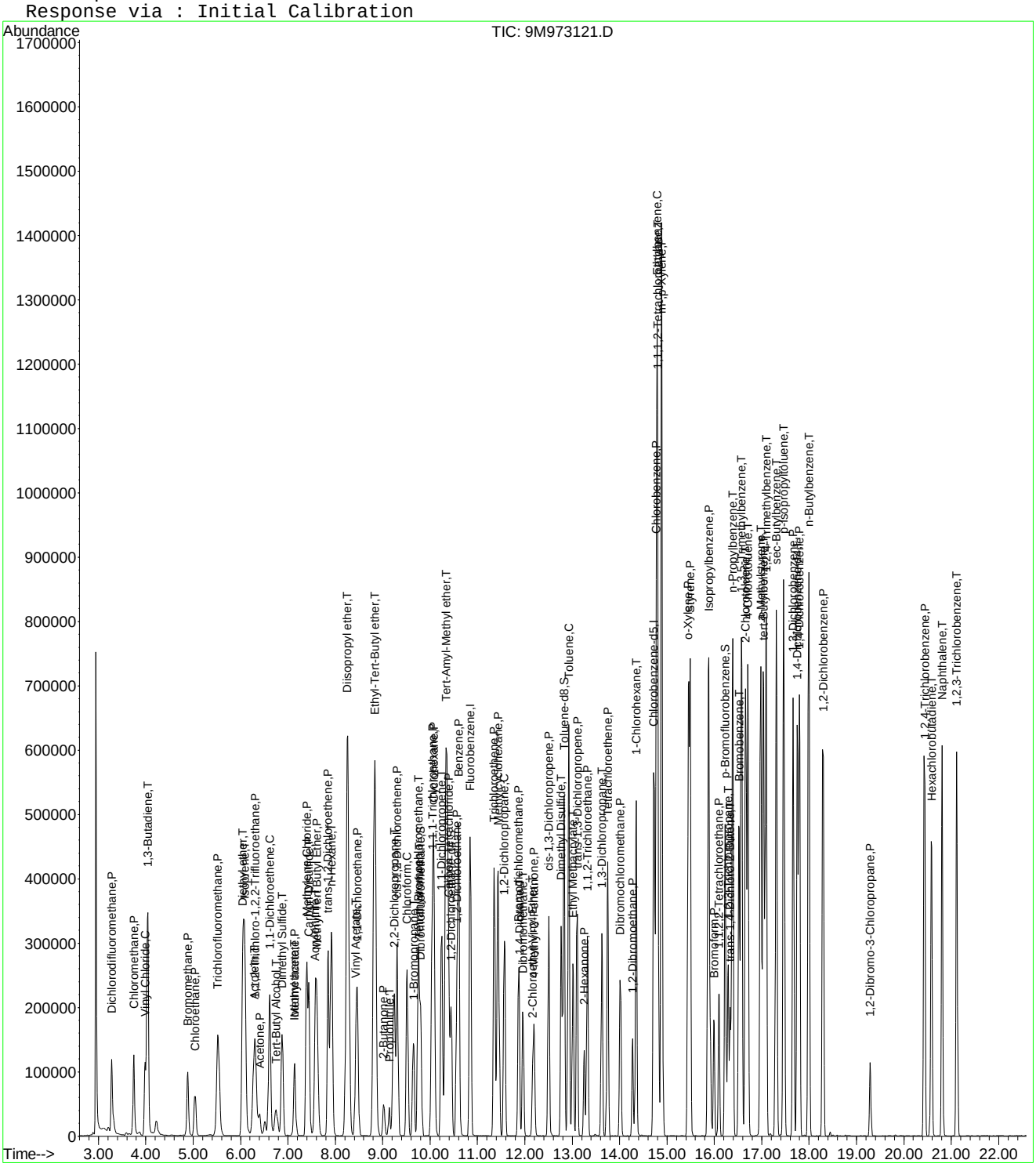

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\030716\9M973121.D Vial: 1
Acq On : 7 Mar 2016 15:17 Operator: ADC
Sample : WG559980-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	105	0.00
2	P	Dichlorodifluoromethane	0.3408	0.3064	10.1	81	0.00
3	P	Chloromethane	0.3271	0.3134	4.2	91	0.00
4	C	Vinyl Chloride	0.3275	0.3649	-11.4	103	0.00
5	T	1,3-Butadiene	0.3115	0.4055	-30.1#	128	0.00
6	P	Bromomethane	0.2127	0.1827	14.1	92	0.00
7	P	Chloroethane	0.1459	0.1597	-9.5	101	0.00
8	P	Trichlorofluoromethane	0.4911	0.5430	-10.6	110	0.00
9	T	Diethyl ether	0.2296	0.2313	-0.7	100	0.00
10	T	Isoprene	0.2932	0.3462	-18.1	120	0.00
11	T	Acrolein	0.0458	0.0455	0.6	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	0.2533	0.2782	-9.8	111	0.01
13	P	Acetone	0.1376	0.1264	8.1	103	0.00
14	C	1,1-Dichloroethene	0.4672	0.4984	-6.7	111	0.00
15	T	Tert-Butyl Alcohol	0.0511	0.0465	9.0	96	0.00
16	T	Dimethyl Sulfide	0.1975	0.2037	-3.2	101	0.00
17	T	Iodomethane	0.1273	0.1281	-0.6	87	0.00
18	P	Methyl acetate	0.2540	0.2974	-17.1	119	0.00
19	P	Methylene Chloride	0.2545	0.2543	0.1	102	0.00
20	P	Carbon Disulfide	0.7198	0.7808	-8.5	111	0.00
21	T	Acrylonitrile	0.1257	0.1342	-6.8	104	0.00
22	P	Methyl Tert Butyl Ether	0.7248	0.7490	-3.4	100	0.00
23	P	trans-1,2-Dichloroethene	0.4164	0.4567	-9.7	109	0.00
24	T	n-Hexane	0.4295	0.5178	-20.6	128	0.00
25	T	Diisopropyl ether	0.9975	1.1167	-11.9	111	0.00
26	T	Vinyl Acetate	0.5686	0.5408	4.9	94	0.00
27	P	1,1-Dichloroethane	0.5230	0.5646	-7.9	107	0.00
28	T	Ethyl-Tert-Butyl ether	0.9275	0.9759	-5.2	103	0.00
29	P	2-Butanone	0.1612	0.1685	-4.5	106	0.00
30	T	Propionitrile	0.0493	0.0506	-2.6	103	0.00
31	T	2,2-Dichloropropane	0.3904	0.4510	-15.5	113	0.00
32	P	cis-1,2-Dichloroethene	0.2731	0.2903	-6.3	102	0.00
33	C	Chloroform	0.4805	0.5003	-4.1	103	0.00
34	T	1-Bromopropane	0.0376	0.0421	-11.9	103	0.00
35	T	Bromochloromethane	0.1774	0.1828	-3.1	96	0.00
36	T	Tetrahydrofuran	0.1039	0.1122	-7.9	107	0.00
37	S	Dibromofluoromethane	0.2710	0.2522	6.9	92	0.00
38	P	1,1,1-Trichloroethane	0.4345	0.4774	-9.9	106	0.00
39	P	Cyclohexane	0.4737	0.5605	-18.3	122	0.00
40	T	1,1-Dichloropropene	0.3419	0.3658	-7.0	109	0.00
41	T	Tert-Amyl-Methyl ether	0.6742	0.6845	-1.5	100	0.00
42	P	Carbon Tetrachloride	0.4028	0.4518	-12.2	110	0.00
43	S	1,2-Dichloroethane-d4	0.3401	0.3386	0.4	100	0.00
44		Heptane	0.0000	0.0000	0.0	105	0.00
45	P	1,2-Dichloroethane	0.4226	0.4525	-7.1	103	0.00
46	P	Benzene	0.9572	0.9613	-0.4	103	0.00
47	P	Trichloroethene	0.3033	0.3243	-6.9	107	0.00
48	P	Methylcyclohexane	0.3804	0.4519	-18.8	120	0.00
49	C	1,2-Dichloropropane	0.2628	0.2883	-9.7	105	0.00
50	T	1,4-Dioxane	0.0039	0.0038	2.5	107	0.00
51	P	Bromodichloromethane	0.3704	0.3825	-3.3	102	0.00
52	T	Dibromomethane	0.1742	0.1731	0.6	98	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0665	0.0587	11.8	82	0.00
54	P	4-Methyl-2-Pentanone	0.1154	0.1181	-2.3	98	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\030716\9M973121.D Vial: 1
Acq On : 7 Mar 2016 15:17 Operator: ADC
Sample : WG559980-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	0.3859	0.4050	-4.9	103	0.00
56	T	Dimethyl Disulfide	0.3878	0.4115	-6.1	101	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	108	0.00
58	S	Toluene-d8	1.2647	1.1817	6.6	95	0.00
59	C	Toluene	1.4286	1.4487	-1.4	105	0.00
60	T	Ethyl Methacrylate	0.3960	0.4055	-2.4	105	0.00
61	P	trans-1,3-Dichloropropene	0.5145	0.5253	-2.1	101	0.00
62	P	1,1,2-Trichloroethane	0.3001	0.3011	-0.3	100	0.00
63	P	2-Hexanone	0.2996	0.3034	-1.3	104	0.00
64	T	1,3-Dichloropropane	0.5001	0.4943	1.2	101	0.00
65	P	Tetrachloroethene	0.3063	0.3181	-3.9	112	0.00
66	P	Dibromochloromethane	0.4194	0.4095	2.4	99	0.00
67	P	1,2-Dibromoethane	0.3329	0.3202	3.8	99	0.00
68	T	1-Chlorohexane	0.4213	0.4838	-14.8	118	0.00
69	P	Chlorobenzene	1.0041	1.0188	-1.5	104	0.00
70	T	1,1,1,2-Tetrachloroethane	0.3771	0.3839	-1.8	102	0.00
71	C	Ethylbenzene	0.5173	0.5366	-3.7	106	0.00
72	P	m-,p-Xylene	0.6388	0.6586	-3.1	109	0.00
73	P	o-Xylene	0.6130	0.6421	-4.7	106	0.00
74	P	Styrene	1.0440	1.0907	-4.5	105	0.00
75	P	Bromoform	0.2754	0.2811	-2.1	99	0.00
76	P	Isopropylbenzene	1.6458	1.7684	-7.5	110	0.00
77	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	118	0.00
78	P	1,1,2,2-Tetrachloroethane	0.7585	0.6848	9.7	100	0.00
79	S	p-Bromofluorobenzene	0.9736	0.9658	0.8	109	0.00
80	T	1,2,3-Trichloropropane	0.2876	0.2700	6.1	105	0.00
81	T	trans-1,4-Dichloro-2-Butene	0.2899	0.3067	-5.8	120	0.00
82	T	n-Propylbenzene	3.9303	3.9092	0.5	113	0.00
83	T	Bromobenzene	0.9278	0.8415	9.3	103	0.00
84	T	1,3,5-Trimethylbenzene	2.9502	2.8539	3.3	109	0.00
85	T	2-Chlorotoluene	2.6361	2.4743	6.1	111	0.00
86	T	4-Chlorotoluene	2.4372	2.4142	0.9	109	0.00
87	T	a-Methylstyrene	1.3443	1.3495	-0.4	114	0.00
88	T	tert-Butylbenzene	0.6185	0.5941	3.9	106	0.00
89	T	1,2,4-Trimethylbenzene	3.0897	2.9365	5.0	110	0.00
90	T	sec-Butylbenzene	3.7998	3.7629	1.0	112	0.00
91	T	p-Isopropyltoluene	3.2067	3.1750	1.0	112	0.00
92	P	1,3-Dichlorobenzene	1.8440	1.6709	9.4	107	0.00
93	P	1,4-Dichlorobenzene	1.8435	1.6731	9.2	108	0.00
94	T	n-Butylbenzene	2.9815	3.0591	-2.6	118	0.00
95	P	1,2-Dichlorobenzene	1.7110	1.5699	8.2	106	0.00
96	P	1,2-Dibromo-3-Chloropropane	0.2197	0.1941	11.6	98	0.00
97	P	1,2,4-Trichlorobenzene	1.2146	1.1226	7.6	109	0.00
98	T	Hexachlorobutadiene	0.6403	0.6231	2.7	115	0.00
99	T	Naphthalene	3.0465	2.7641	9.3	99	0.00
100	T	1,2,3-Trichlorobenzene	1.1781	1.0875	7.7	106	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M973121.D 8260SL.M Tue Mar 08 08:55:20 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\030716\9M973121.D Vial: 1
Acq On : 7 Mar 2016 15:17 Operator: ADC
Sample : WG559980-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	105	0.00
2	P	Dichlorodifluoromethane	50.0000	44.9556	10.1	81	0.00
3	P	Chloromethane	50.0000	47.9011	4.2	91	0.00
4	C	Vinyl Chloride	50.0000	55.7164	-11.4	103	0.00
5	T	1,3-Butadiene	50.0000	65.0725	-30.1#	128	0.00
6	P	Bromomethane	50.0000	42.9467	14.1	92	0.00
7	P	Chloroethane	50.0000	54.7317	-9.5	101	0.00
8	P	Trichlorofluoromethane	50.0000	55.2769	-10.6	110	0.00
9	T	Diethyl ether	100.0000	100.7243	-0.7	100	0.00
10	T	Isoprene	50.0000	59.0273	-18.1	120	0.00
11	T	Acrolein	50.0000	49.6910	0.6	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	54.9114	-9.8	111	0.01
13	P	Acetone	50.0000	50.0230	-0.0	103	0.00
14	C	1,1-Dichloroethene	50.0000	53.3335	-6.7	111	0.00
15	T	Tert-Butyl Alcohol	200.0000	181.9557	9.0	96	0.00
16	T	Dimethyl Sulfide	50.0000	51.5795	-3.2	101	0.00
17	T	Iodomethane	50.0000	46.3306	7.3	87	0.00
18	P	Methyl acetate	50.0000	58.5442	-17.1	119	0.00
19	P	Methylene Chloride	50.0000	49.9635	0.1	102	0.00
20	P	Carbon Disulfide	50.0000	54.2371	-8.5	111	0.00
21	T	Acrylonitrile	50.0000	53.3913	-6.8	104	0.00
22	P	Methyl Tert Butyl Ether	50.0000	51.6759	-3.4	100	0.00
23	P	trans-1,2-Dichloroethene	50.0000	54.8416	-9.7	109	0.00
24	T	n-Hexane	50.0000	60.2750	-20.5	128	0.00
25	T	Diisopropyl ether	100.0000	111.9458	-11.9	111	0.00
26	T	Vinyl Acetate	50.0000	47.5479	4.9	94	0.00
27	P	1,1-Dichloroethane	50.0000	53.9742	-7.9	107	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	105.2137	-5.2	103	0.00
29	P	2-Butanone	50.0000	52.2518	-4.5	106	0.00
30	T	Propionitrile	100.0000	102.5450	-2.5	103	0.00
31	T	2,2-Dichloropropane	50.0000	57.7590	-15.5	113	0.00
32	P	cis-1,2-Dichloroethene	50.0000	53.1532	-6.3	102	0.00
33	C	Chloroform	50.0000	52.0699	-4.1	103	0.00
34	T	1-Bromopropane	50.0000	50.5314	-1.1	103	0.00
35	T	Bromochloromethane	50.0000	51.5276	-3.1	96	0.00
36	T	Tetrahydrofuran	100.0000	107.9043	-7.9	107	0.00
37	S	Dibromofluoromethane	50.0000	46.5282	6.9	92	0.00
38	P	1,1,1-Trichloroethane	50.0000	54.9385	-9.9	106	0.00
39	P	Cyclohexane	50.0000	59.1607	-18.3	122	0.00
40	T	1,1-Dichloropropene	50.0000	53.4983	-7.0	109	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	101.5227	-1.5	100	0.00
42	P	Carbon Tetrachloride	50.0000	56.0848	-12.2	110	0.00
43	S	1,2-Dichloroethane-d4	50.0000	49.7800	0.4	100	0.00
44		Heptane	-1.0000	0.0000	0.0	105	0.00
45	P	1,2-Dichloroethane	50.0000	53.5379	-7.1	103	0.00
46	P	Benzene	50.0000	50.2144	-0.4	103	0.00
47	P	Trichloroethene	50.0000	53.4598	-6.9	107	0.00
48	P	Methylcyclohexane	50.0000	59.4048	-18.8	120	0.00
49	C	1,2-Dichloropropane	50.0000	54.8338	-9.7	105	0.00
50	T	1,4-Dioxane	200.0000	194.7347	2.6	107	0.00
51	P	Bromodichloromethane	50.0000	51.6335	-3.3	102	0.00
52	T	Dibromomethane	50.0000	49.7073	0.6	98	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	40.9236	18.2	82	0.00
54	P	4-Methyl-2-Pentanone	50.0000	51.1601	-2.3	98	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\030716\9M973121.D Vial: 1
Acq On : 7 Mar 2016 15:17 Operator: ADC
Sample : WG559980-02 50ug/Kg CCV 8260 Inst : hpms9
Misc : 7,1 STD74773 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	52.4654	-4.9	103	0.00
56	T	Dimethyl Disulfide	50.0000	53.0541	-6.1	101	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	108	0.00
58	S	Toluene-d8	50.0000	46.7190	6.6	95	0.00
59	C	Toluene	50.0000	50.7038	-1.4	105	0.00
60	T	Ethyl Methacrylate	50.0000	51.2015	-2.4	105	0.00
61	P	trans-1,3-Dichloropropene	50.0000	51.0435	-2.1	101	0.00
62	P	1,1,2-Trichloroethane	50.0000	50.1734	-0.3	100	0.00
63	P	2-Hexanone	50.0000	50.6350	-1.3	104	0.00
64	T	1,3-Dichloropropane	50.0000	49.4195	1.2	101	0.00
65	P	Tetrachloroethene	50.0000	51.9369	-3.9	112	0.00
66	P	Dibromochloromethane	50.0000	48.8169	2.4	99	0.00
67	P	1,2-Dibromoethane	50.0000	48.0957	3.8	99	0.00
68	T	1-Chlorohexane	50.0000	57.4143	-14.8	118	0.00
69	P	Chlorobenzene	50.0000	50.7334	-1.5	104	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	50.9037	-1.8	102	0.00
71	C	Ethylbenzene	50.0000	51.8675	-3.7	106	0.00
72	P	m-,p-Xylene	100.0000	103.0932	-3.1	109	0.00
73	P	o-Xylene	50.0000	52.3691	-4.7	106	0.00
74	P	Styrene	50.0000	52.2401	-4.5	105	0.00
75	P	Bromoform	50.0000	51.0378	-2.1	99	0.00
76	P	Isopropylbenzene	50.0000	53.7263	-7.5	110	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	118	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	45.1427	9.7	100	0.00
79	S	p-Bromofluorobenzene	50.0000	49.6010	0.8	109	0.00
80	T	1,2,3-Trichloropropane	50.0000	46.9386	6.1	105	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	52.8972	-5.8	120	0.00
82	T	n-Propylbenzene	50.0000	49.7317	0.5	113	0.00
83	T	Bromobenzene	50.0000	45.3446	9.3	103	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	48.3674	3.3	109	0.00
85	T	2-Chlorotoluene	50.0000	46.9306	6.1	111	0.00
86	T	4-Chlorotoluene	50.0000	49.5282	0.9	109	0.00
87	T	a-Methylstyrene	50.0000	50.1941	-0.4	114	0.00
88	T	tert-Butylbenzene	50.0000	48.0299	3.9	106	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	47.5220	5.0	110	0.00
90	T	sec-Butylbenzene	50.0000	49.5147	1.0	112	0.00
91	T	p-Isopropyltoluene	50.0000	49.5058	1.0	112	0.00
92	P	1,3-Dichlorobenzene	50.0000	45.3065	9.4	107	0.00
93	P	1,4-Dichlorobenzene	50.0000	45.3790	9.2	108	0.00
94	T	n-Butylbenzene	50.0000	51.3028	-2.6	118	0.00
95	P	1,2-Dichlorobenzene	50.0000	45.8772	8.2	106	0.00
96	P	1,2-Dibromo-3-Chloropropane	50.0000	44.1919	11.6	98	0.00
97	P	1,2,4-Trichlorobenzene	50.0000	46.2124	7.6	109	0.00
98	T	Hexachlorobutadiene	50.0000	48.6610	2.7	115	0.00
99	T	Naphthalene	50.0000	45.3653	9.3	99	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	46.1553	7.7	106	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M973121.D 8260SL.M Tue Mar 08 08:55:18 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\1\DATA\022516\9M972894.D          Vial: 3
Acq On    : 25 Feb 2016  14:45                       Operator: ADC
Sample    : WG558732-01 BFB 50ng                     Inst    : hpms9
Misc      : 7,1 STD74773                             Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 02/15/16  HPMS9
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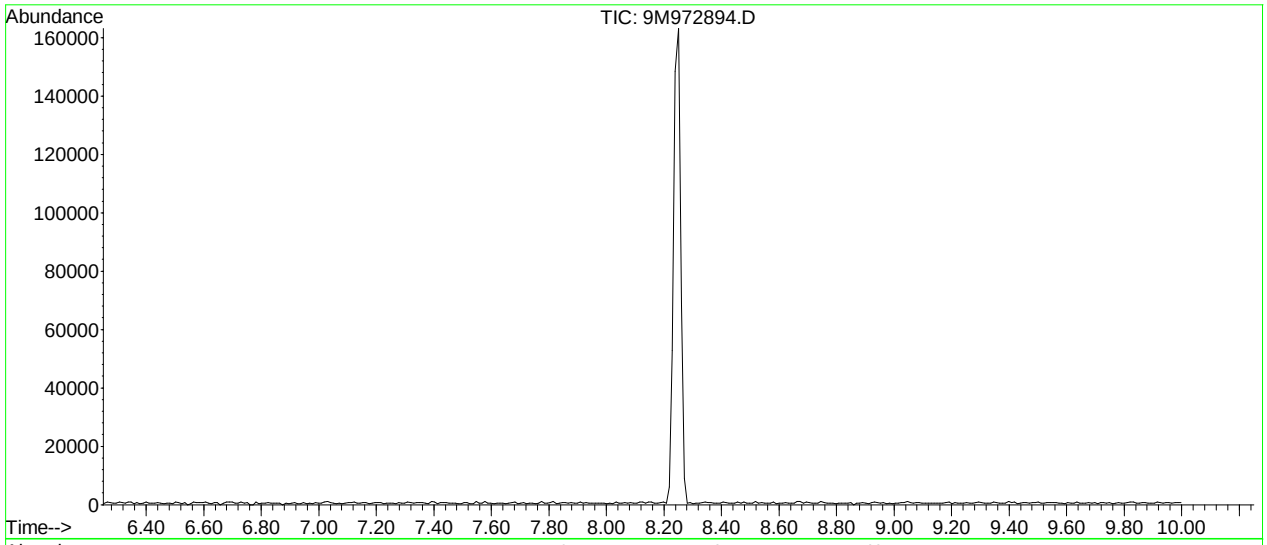

AutoFind: Scans 305, 306, 307; Background Corrected with Scan 300

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.2	5378	PASS
75	95	30	60	49.1	13067	PASS
95	95	100	100	100.0	26621	PASS
96	95	5	9	6.3	1683	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	85.8	22851	PASS
175	174	5	9	6.5	1485	PASS
176	174	95	101	98.3	22461	PASS
177	176	5	9	7.2	1619	PASS

9M972894.D 8260SL.M Fri Feb 26 11:11:03 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\030716\9M973120.D          Vial: 1
Acq On    :  7 Mar 2016  14:48                        Operator: ADC
Sample    : WG559980-01 BFB 50ng 8260                 Inst    : hpms9
Misc      : 7,1 STD74606                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 02/25/16  HPMS9
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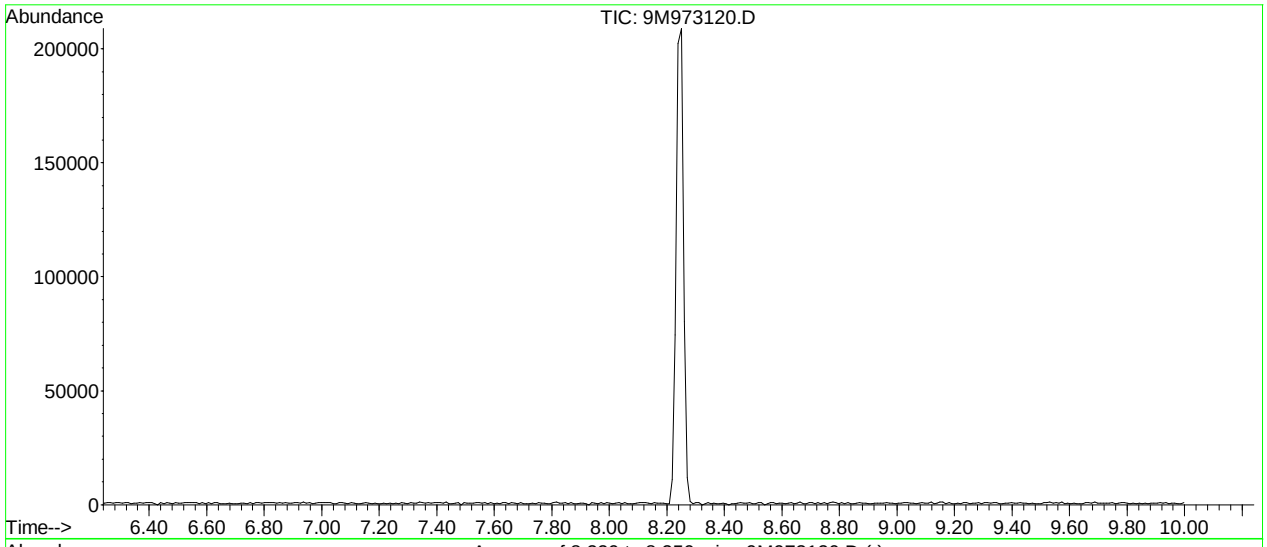

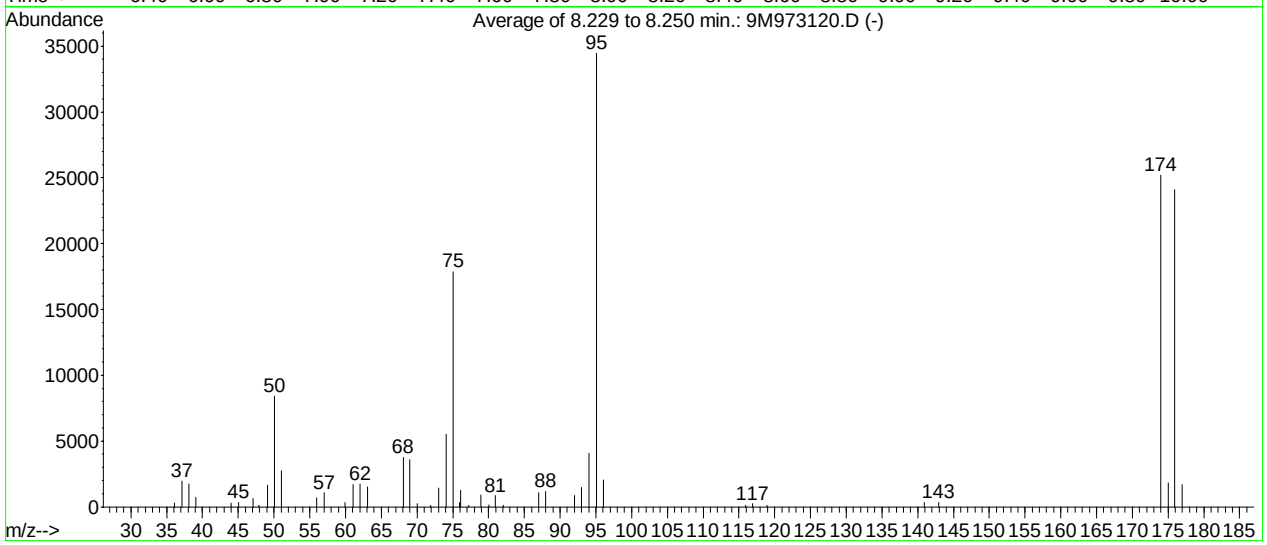

AutoFind: Scans 304, 305, 306; Background Corrected with Scan 300

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	24.3	8393	PASS
75	95	30	60	51.9	17879	PASS
95	95	100	100	100.0	34471	PASS
96	95	5	9	6.0	2058	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	73.1	25197	PASS
175	174	5	9	7.2	1804	PASS
176	174	95	101	95.6	24090	PASS
177	176	5	9	7.0	1676	PASS

9M973120.D 8260SL.M Tue Mar 08 08:55:09 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030716\9M973123.D Vial: 3
Acq On : 7 Mar 2016 16:18 Operator: ADC
Sample : WG559982-01 VBLK0307 BLANK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 08 14:13:41 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	512722	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	377724	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	193847	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	135118	48.6173 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.24%		
43) 1,2-Dichloroethane-d4	10.45	65	176534	50.6253 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 101.26%		
58) Toluene-d8	12.82	98	473876	49.5987 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.20%		
79) p-Bromofluorobenzene	16.23	95	194741	51.5924 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 103.18%		

Target Compounds					Qvalue
13) Acetone	6.41	43	4966	1.5119 ug/kg	91
36) Tetrahydrofuran	9.77	42	968	0.9083 ug/kg#	43
56) Dimethyl Disulfide	12.82	94	12603	3.1689 ug/kg#	29

(#) = qualifier out of range (m) = manual integration
9M973123.D 8260SL.M Tue Mar 08 14:13:41 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030716\9M973123.D Vial: 3
Acq On : 7 Mar 2016 16:18 Operator: ADC
Sample : WG559982-01 VBLK0307 BLANK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 8 14:13 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

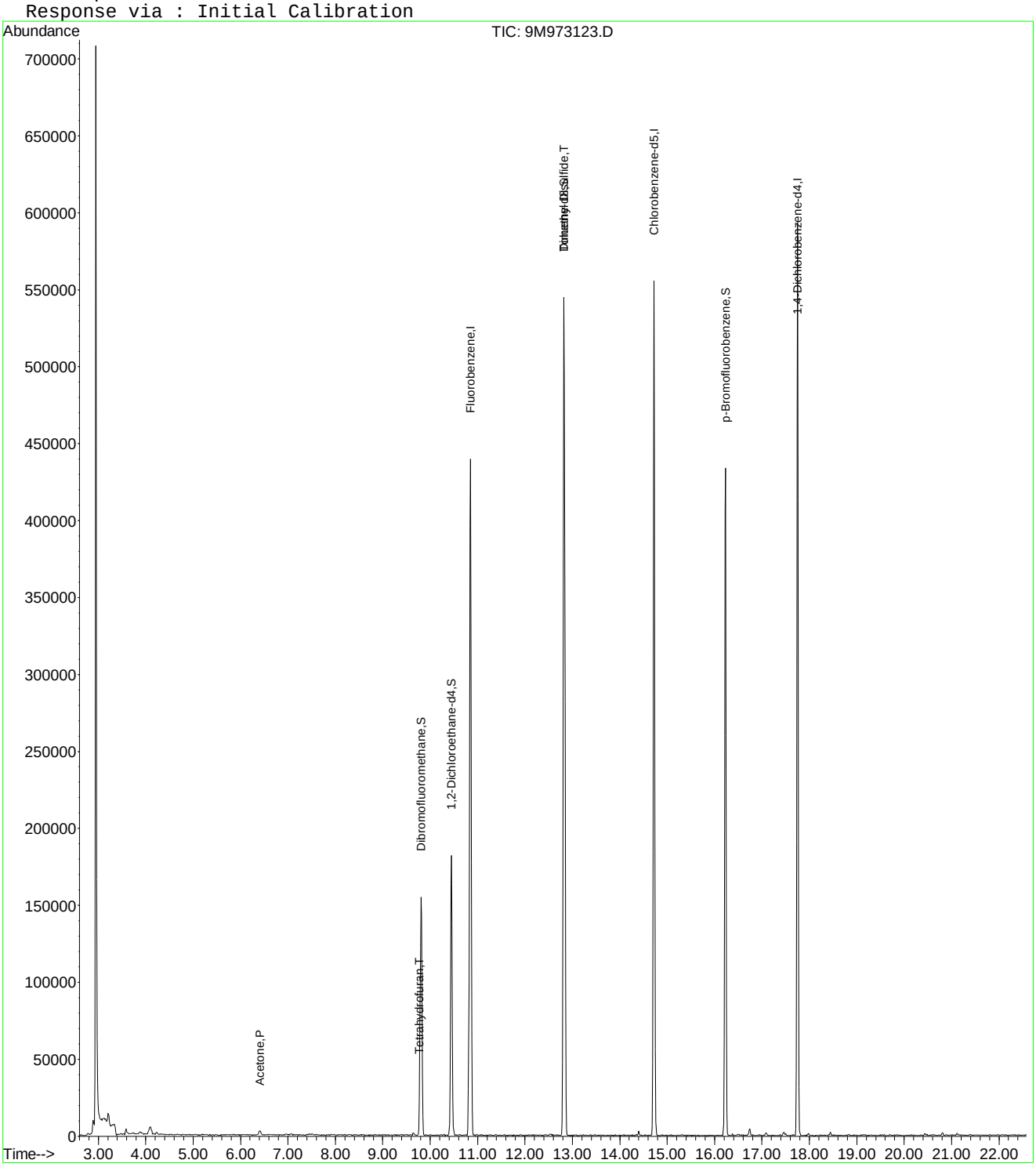

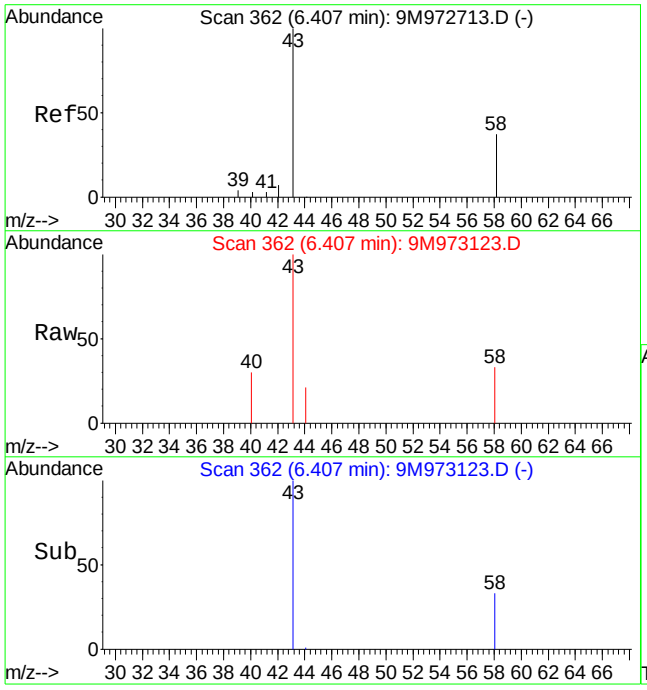

#13
Acetone
Concen: 1.51 ug/kg
RT: 6.41 min Scan# 362
Delta R.T. -0.01 min
Lab File: 9M973123.D
Acq: 7 Mar 2016 16:18

Tgt Ion: 43 Resp: 4966

Ion	Ratio	Lower	Upper
43	100		
58	33.0	16.9	39.3

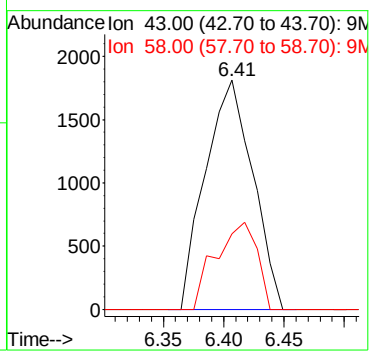

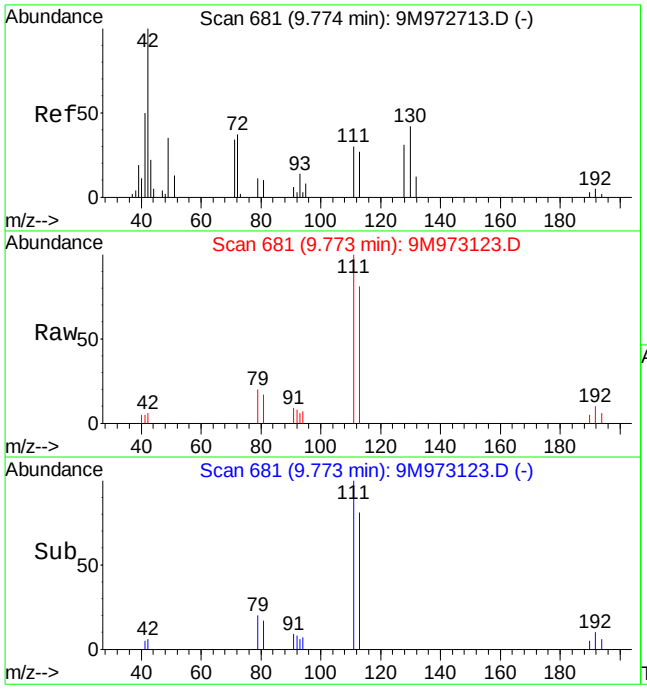

#36
Tetrahydrofuran
Concen: 0.91 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. -0.01 min
Lab File: 9M973123.D
Acq: 7 Mar 2016 16:18

Tgt Ion: 42 Resp: 968

Ion	Ratio	Lower	Upper
42	100		
72	0.0	19.9	46.5#
71	0.0	18.3	42.7#

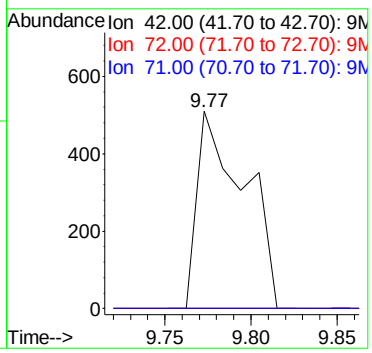

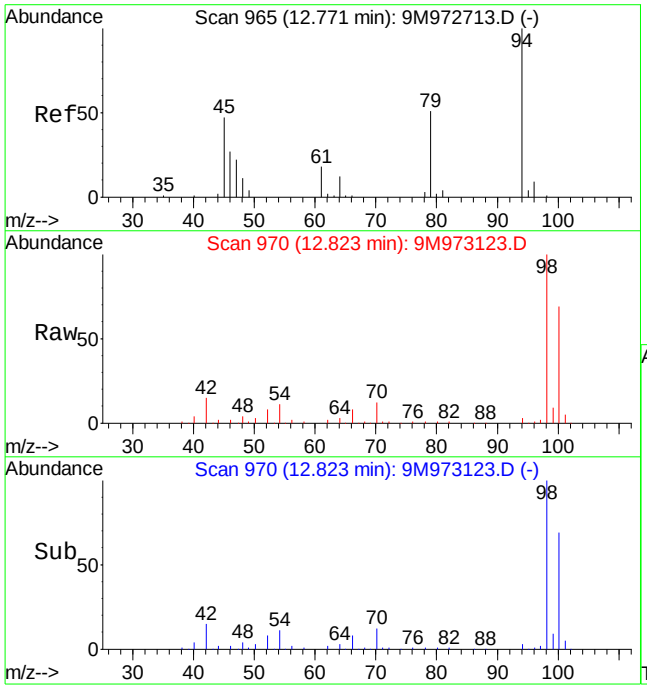

#56
Dimethyl Disulfide
Concen: 3.17 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M973123.D
Acq: 7 Mar 2016 16:18

Tgt Ion: 94 Resp: 12603

Ion	Ratio	Lower	Upper
94	100		
79	0.0	28.7	67.1#

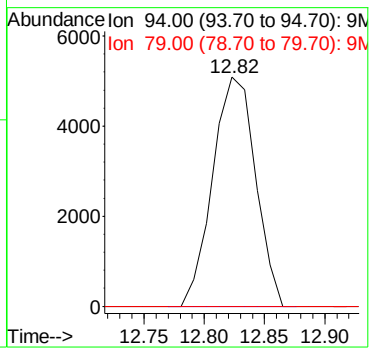

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030716\9M973124.D Vial: 4
Acq On : 7 Mar 2016 16:49 Operator: ADC
Sample : WG559982-02 20ug/L LCS 8260 Inst : hpms9
Misc : 7,1 STD74900 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 17:12:31 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	497008	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	374762	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	201592	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	127386	47.2844 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.56%		
43) 1,2-Dichloroethane-d4	10.45	65	165046	48.8274 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.66%		
58) Toluene-d8	12.82	98	451751	47.6566 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 95.32%		
79) p-Bromofluorobenzene	16.23	95	189263	48.2147 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 96.42%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	81189	23.9670 ug/kg	94
3) Chloromethane	3.75	50	68926	21.1971 ug/kg	98
4) Vinyl Chloride	3.99	62	60809	18.6811 ug/kg	99
5) 1,3-Butadiene	4.04	54	12770	4.1235 ug/kg	98
6) Bromomethane	4.89	94	38796	18.3509 ug/kg	98
7) Chloroethane	5.04	64	28617	19.7334 ug/kg	94
8) Trichlorofluoromethane	5.53	101	96596	19.7859 ug/kg	98
9) Diethyl ether	6.06	59	246109	107.8365 ug/kg	98
10) Isoprene	6.09	67	72116	24.7422 ug/kg	95
11) Acrolein	6.29	56	47397	104.1517 ug/kg	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	54379	21.5983 ug/kg	94
13) Acetone	6.42	43	28675	21.4625 ug/kg	97
14) 1,1-Dichloroethene	6.62	61	94036	20.2468 ug/kg	98
15) Tert-Butyl Alcohol	6.75	59	97912	192.6659 ug/kg	99
16) Dimethyl Sulfide	6.88	62	59428	30.2750 ug/kg	92
17) Iodomethane	7.13	142	21234	17.3223 ug/kg	90
18) Methyl acetate	7.14	43	54828	21.7151 ug/kg	96
19) Methylene Chloride	7.40	84	48026	18.9865 ug/kg	90
20) Carbon Disulfide	7.44	76	133241	18.6228 ug/kg	98
21) Acrylonitrile	7.59	53	28280	22.6414 ug/kg	97
22) Methyl Tert Butyl Ether	7.61	73	149798	20.7930 ug/kg	97
23) trans-1,2-Dichloroethene	7.85	61	85524	20.6618 ug/kg	95
24) n-Hexane	7.91	57	93250	21.8418 ug/kg	98
25) Diisopropyl ether	8.26	45	1051190	106.0143 ug/kg	98
26) Vinyl Acetate	8.43	43	109480	19.3684 ug/kg	98
27) 1,1-Dichloroethane	8.46	63	101617	19.5457 ug/kg	97
28) Ethyl-Tert-Butyl ether	8.83	59	880890	95.5458 ug/kg	98
29) 2-Butanone	9.03	43	36108	22.5292 ug/kg	95
30) Propionitrile	9.14	54	49899	101.7378 ug/kg	97
31) 2,2-Dichloropropane	9.23	77	76852	19.8050 ug/kg	96
32) cis-1,2-Dichloroethene	9.31	96	55136	20.3096 ug/kg	94
33) Chloroform	9.52	83	91986	19.2607 ug/kg	99
34) 1-Bromopropane	9.65	122	12690	31.0617 ug/kg	99
35) Bromochloromethane	9.75	130	34136	19.3573 ug/kg	89
36) Tetrahydrofuran	9.77	42	103869	100.5425 ug/kg	97
38) 1,1,1-Trichloroethane	10.05	97	87305	20.2144 ug/kg	96
39) Cyclohexane	10.08	56	104376	22.1663 ug/kg	99
40) 1,1-Dichloropropene	10.25	75	65978	19.4138 ug/kg	98
41) Tert-Amyl-Methyl ether	10.34	73	660335	98.5348 ug/kg	97
42) Carbon Tetrachloride	10.39	117	77261	19.2957 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030716\9M973124.D Vial: 4
Acq On : 7 Mar 2016 16:49 Operator: ADC
Sample : WG559982-02 20ug/L LCS 8260 Inst : hpms9
Misc : 7,1 STD74900 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 07 17:12:31 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	89150	21.2218 ug/kg	99
46)	Benzene	10.60	78	188881	19.8519 ug/kg	98
47)	Trichloroethene	11.35	130	62138	20.6115 ug/kg	99
48)	Methylcyclohexane	11.44	83	84241	22.2795 ug/kg	96
49)	1,2-Dichloropropane	11.57	63	55104	21.0904 ug/kg	95
50)	1,4-Dioxane	11.87	88	8680	221.4470 ug/kg	99
51)	Bromodichloromethane	11.87	83	70735	19.2101 ug/kg	99
52)	Dibromomethane	11.97	174	31009	17.9123 ug/kg	93
53)	2-Chloroethyl Vinyl Ether	12.16	63	12395	19.0268 ug/kg	93
54)	4-Methyl-2-Pentanone	12.19	58	24925	21.7345 ug/kg	97
55)	cis-1,3-Dichloropropene	12.50	75	79005	20.5943 ug/kg	96
56)	Dimethyl Disulfide	12.77	94	85293	22.1241 ug/kg	95
59)	Toluene	12.93	91	210601	19.6683 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	62622	21.0990 ug/kg	97
61)	trans-1,3-Dichloropropene	13.11	75	74526	19.3243 ug/kg	99
62)	1,1,2-Trichloroethane	13.32	97	45328	20.1516 ug/kg	97
63)	2-Hexanone	13.25	43	47427	21.1178 ug/kg	94
64)	1,3-Dichloropropane	13.62	76	77933	20.7928 ug/kg	96
65)	Tetrachloroethene	13.75	164	44150	19.2334 ug/kg	96
66)	Dibromochloromethane	14.01	129	57552	18.3076 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	47056	18.8605 ug/kg	99
68)	1-Chlorohexane	14.35	91	66412	21.0322 ug/kg	92
69)	Chlorobenzene	14.77	112	151707	20.1589 ug/kg	98
70)	1,1,1,2-Tetrachloroethane	14.80	131	54601	19.3200 ug/kg	98
71)	Ethylbenzene	14.79	106	79683	20.5522 ug/kg	98
72)	m-,p-Xylene	14.89	106	194644	40.6514 ug/kg	99
73)	o-Xylene	15.45	106	93573	20.3642 ug/kg	98
74)	Styrene	15.49	104	154867	19.7920 ug/kg	100
75)	Bromoform	16.00	173	35185	17.0470 ug/kg	99
76)	Isopropylbenzene	15.87	105	250079	20.2732 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	49163	16.0766 ug/kg	99
80)	1,2,3-Trichloropropane	16.28	110	20911	18.0309 ug/kg	84
81)	trans-1,4-Dichloro-2-Buten	16.33	53	20041	17.1437 ug/kg	87
82)	n-Propylbenzene	16.38	91	294383	18.5774 ug/kg	99
83)	Bromobenzene	16.51	156	60436	16.1556 ug/kg	63
84)	1,3,5-Trimethylbenzene	16.57	105	218930	18.4054 ug/kg	98
85)	2-Chlorotoluene	16.66	91	195931	18.4346 ug/kg	99
86)	4-Chlorotoluene	16.70	91	176507	17.9625 ug/kg	100
87)	a-Methylstyrene	16.98	118	109195	20.1469 ug/kg	96
88)	tert-Butylbenzene	17.03	134	46507	18.6491 ug/kg	97
89)	1,2,4-Trimethylbenzene	17.08	105	213672	17.1528 ug/kg	98
90)	sec-Butylbenzene	17.31	105	285822	18.6568 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	230460	17.8253 ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	124077	16.6888 ug/kg	100
93)	1,4-Dichlorobenzene	17.79	146	122848	16.5283 ug/kg	96
94)	n-Butylbenzene	17.99	91	209200	17.4032 ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	120053	17.4029 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	13417	15.1506 ug/kg	95
97)	1,2,4-Trichlorobenzene	20.43	180	75129	15.3414 ug/kg	99
98)	Hexachlorobutadiene	20.59	225	42664	16.5273 ug/kg	98
99)	Naphthalene	20.81	128	178894	14.5643 ug/kg	99
100)	1,2,3-Trichlorobenzene	21.12	180	72797	15.3261 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030716\9M973124.D Vial: 4
Acq On : 7 Mar 2016 16:49 Operator: ADC
Sample : WG559982-02 20ug/L LCS 8260 Inst : hpms9
Misc : 7,1 STD74900 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 7 17:12 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 02/25/16 HPMS9
Last Update : Fri Feb 26 11:38:33 2016
Response via : Initial Calibration

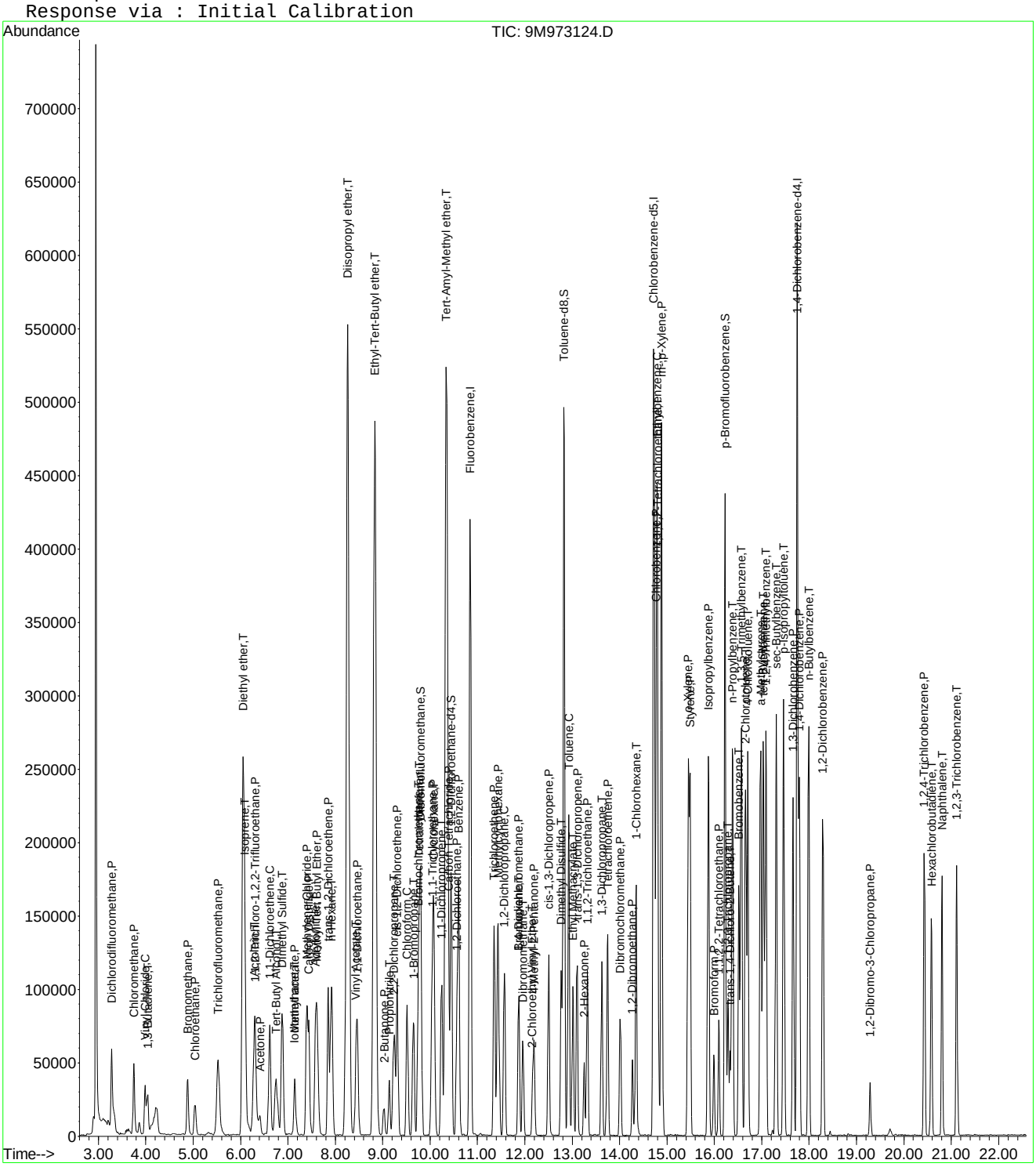

9M973124.D 8260SL.M Mon Mar 07 17:12:31 2016 Page 3

2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030235-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT07(5-5.5)020316	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/04/2016 20:25
Collect Date:	03/02/2016 16:00	**Dilution:**	1	**File ID:**	1LM.LM33722
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.38	U	4.77	2.38	1.19

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030235-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT07(15-15.5)020316	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/04/2016 21:41
Collect Date:	03/02/2016 16:25	**Dilution:**	1	**File ID:**	1LM.LM33726
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	76.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.47	J	5.12	2.56	1.28

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030235-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT07(33.5-34.5)030316	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/07/2016 10:51
Collect Date:	03/03/2016 10:00	**Dilution:**	100	**File ID:**	1LM.LM33739
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	82.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2180		480	240	120

Certificate of Analysis

Sample #:	L16030235-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT07(33.5-34.5)030316 MS	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/07/2016 11:10
Collect Date:	03/03/2016 10:00	**Dilution:**	100	**File ID:**	1LM.LM33740
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	82.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2170		480	240	120

Certificate of Analysis

Sample #:	L16030235-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT07(33.5-34.5)030316 MSD	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/07/2016 11:29
Collect Date:	03/03/2016 10:00	**Dilution:**	100	**File ID:**	1LM.LM33741
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	82.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2350		480	240	120

Certificate of Analysis

Microbac

Lab Report #: L16030235
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L16030235-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT07(38-39)030316	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/07/2016 11:48
Collect Date:	03/03/2016 10:10	**Dilution:**	10	**File ID:**	1LM.LM33742
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	75.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	697		50.8	25.4	12.7

Certificate of Analysis

Sample #:	L16030235-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT07(38-39)030316 FD	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/07/2016 12:07
Collect Date:	03/03/2016 10:10	**Dilution:**	10	**File ID:**	1LM.LM33743
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	75.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	622		51.8	25.8	12.9

Certificate of Analysis

Sample #:	L16030235-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT07(27-27.5)030316	**Prep Method:**	6850	**Prep Date:**	03/04/2016 15:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559808	**Analyst:**	JWR	**Run Date:**	03/07/2016 12:26
Collect Date:	03/03/2016 10:15	**Dilution:**	100	**File ID:**	1LM.LM33744
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	83.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1200		475	238	119

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

MICROBAC

Semivolatile Sample Extract Log

Parameter: 6850
SOP #: HPLC06
Analyst: ADC, WD
Spike/Surrogate analyst: WD
Surrogate #: NA
Spike # A: STD 72686
Ext Solvent: DI Water
Ext Solvent: NA
Ext Disk: NA

Matrix: Soil
Rev #: 07
Date/Time Extracted: 03/04/2016 15:30
Witness: ADC

Spike # B: NA
Lot #: NA
Lot #: NA
Lot #: NA

Extraction Work Group: WG-559804
Analytical Work Group: WG-559808
Run ID: R4485579

Pipetter(s): 403
Analytical Balance ID: BAL014
Reagent: Sand Lot #: A0A16150
Reagent: Tubes Lot #: RCT34011
Other: IS = COA18071 Lot #: COA18071

Color Code
T = Transparent
C = Colored
O = Opaque

	Sample ID	Test Code	pH	Initial Wt / Vol	IS ~~Amount Surrogate~~	Amount Spike	Final Volume	Extract Color	Comments
1	WG-559804-01	6850		5.008g	0.250ml	1.0ml	50ml		MCT
2	WG-559804-02			5.007					Blk
3	WG-559804-03			5.002		1.0ml			LCS
4	L16030234-01			5.242					
5	-02			5.228					
6	-03			5.125					
7	-04			5.139					
8	-05			5.030					
9	-06			5.211					
10	L16030235-01			5.096					
11	-02			5.116					
12	RS -03			5.075					Ref WG559804-04
13	MS -04			5.074		1.0ml			MS WG559804-05
14	MSD -05			5.072		1.0ml			MSD WG559804-06
15	-06			5.208					
16	-07			5.113					
17	-08			5.069					
18									
19									
20									
21									
22									
23									
24									

Reviewed by: [signature]

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1390 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG559808-01 MCT	9,860	
-02 Blk	11.21	
-03 LCS	6.74	
L16030234-01	218	
-02	81.5	
-03	173	
-04	58.2	
-05	36.4	
-06	37.7	
L16030235-01	8.45	
-02	64.5	
-03 Ref	3.72	
-04 MS	3.77	
-05 MSD	5.52	
-06	8.05	
-07	4.22	
-08	5.94	

Analyst: Andrew Ewing

Date/Time: 3-6-16 / 1345

DCN#117045

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030216_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015, WG559292

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 MS/MSD STD: STD72685

Comments: L16021262s and L16021255s diluted based on historical data.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM33567	WG559340-01 CCB	1	1		03/02/16 08:34
2	1LM.LM33568	WG559340-02 STD (0.1 ug/L)	1	1	STD72683	03/02/16 08:53
3	1LM.LM33569	WG559340-03 STD (0.2 ug/L)	1	1	STD72683	03/02/16 09:12
4	1LM.LM33570	WG559340-04 STD (0.5 ug/L)	1	1	STD72683	03/02/16 09:31
5	1LM.LM33571	WG559340-05 STD (1.0 ug/L)	1	1	STD72683	03/02/16 09:50
6	1LM.LM33572	WG559340-06 STD (2.0 ug/L)	1	1	STD72683	03/02/16 10:09
7	1LM.LM33573	WG559340-07 STD (5.0 ug/L)	1	1	STD72683	03/02/16 10:28
8	1LM.LM33574	WG559340-08 STD (10 ug/L)	1	1	STD72683	03/02/16 10:46
9	1LM.LM33575	WG559340-09 SSCV (1.0 ug/L)	1	1	STD72685	03/02/16 11:05
10	1LM.LM33576	WG559291-01 CCB	1	1		03/02/16 11:25
11	1LM.LM33577	WG559291-02 CCV (1.0ug/L)	1	1	STD72683	03/02/16 11:44
12	1LM.LM33578	WG559015-05 MRL (0.2ug/L)	1	1	STD72683	03/02/16 12:03
13	1LM.LM33579	WG559015-01 MCT (0.2ug/L)	1	1	STD72685	03/02/16 12:22
14	1LM.LM33580	WG559015-02 BLANK	1	1		03/02/16 12:41
15	1LM.LM33581	WG559015-05 MRL (0.2ug/L)	1	1	STD72683	03/02/16 13:01
16	1LM.LM33582	WG559015-03 LCS (0.2ug/L)	1	1	STD72685	03/02/16 13:20
17	1LM.LM33583	WG559015-04 LCS2 (0.2ug/L)	1	1	STD72685	03/02/16 13:39
18	1LM.LM33584	L16021060-01 ADC	1	1	STD72685	03/02/16 13:58
19	1LM.LM33585	L16021060-02 ADC	1	1	STD72685	03/02/16 14:17
20	1LM.LM33586	L16021060-03 ADC	1	1	STD72685	03/02/16 14:36
21	1LM.LM33587	L16021060-04 ADC	1	1	STD72685	03/02/16 14:55
22	1LM.LM33588	L16021262-01 (20x)	1	20		03/02/16 15:13
23	1LM.LM33589	L16021262-02 (5000x)	1	5000		03/02/16 15:32
24	1LM.LM33590	WG559291-03 CCV (1.0ug/L)	1	1	STD72683	03/02/16 15:51
25	1LM.LM33591	WG559015-06 MRL (0.2ug/L)	1	1	STD72683	03/02/16 16:10
26	1LM.LM33592	WG559291-04 CCB	1	1		03/02/16 16:29
27	1LM.LM33593	L16021262-03 (100X)	1	100		03/02/16 16:48
28	1LM.LM33594	L16021262-04 (2000X)	1	2000		03/02/16 17:07
29	1LM.LM33595	L16021262-05 (1000X)	1	1000		03/02/16 17:26
30	1LM.LM33596	L16021262-06 (10,000X)	1	10000		03/02/16 17:45
31	1LM.LM33597	L16021262-07 (10,000X)	1	10000		03/02/16 18:04
32	1LM.LM33598	L16021262-08 (5000X)	1	5000		03/02/16 18:23
33	1LM.LM33599	L16021262-09 (5000X)	1	5000		03/02/16 18:42

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030216_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015, WG559292

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM33600	L16021262-10 (100,000X)	1	100000		03/02/16 19:01
35	1LM.LM33601	L16021262-11 (10,000X)	1	10000		03/02/16 19:20
36	1LM.LM33602	L16021262-12 (10,000X)	1	10000		03/02/16 19:39
37	1LM.LM33603	WG559291-05 CCV (1.0ug/L)	1	1	STD72683	03/02/16 19:58
38	1LM.LM33604	WG559015-07 MRL (0.2ug/L)	1	1	STD72683	03/02/16 20:17
39	1LM.LM33605	WG559291-06 CCB	1	1		03/02/16 20:35
40	1LM.LM33606	L16021262-13 (10,000X)	1	10000		03/02/16 20:54
41	1LM.LM33607	L16021262-14 (10,000X)	1	10000		03/02/16 21:13
42	1LM.LM33608	WG559291-07 CCV (1.0ug/L)	1	1	STD72683	03/02/16 21:32
43	1LM.LM33609	WG559015-08 MRL (0.2ug/L)	1	1	STD72683	03/02/16 21:51
44	1LM.LM33610	WG559291-08 CCB	1	1		03/02/16 22:10
45	1LM.LM33611	WG559292-07 MRL (0.2ug/L)	1	1	STD72685	03/02/16 22:29
46	1LM.LM33612	WG559292-01 MCT (0.2ug/L)	1	1	STD72685	03/02/16 22:48
47	1LM.LM33613	WG559292-02 BLANK	1	1		03/02/16 23:07
48	1LM.LM33614	WG559292-03 LCS (0.2ug/L)	1	1	STD72685	03/02/16 23:26
93	1LM.LM33615	L16021255-01 REF 100X	1	100		03/02/16 23:45
50	1LM.LM33616	L16021255-02 MS 100X	1	100	STD72685	03/03/16 00:04
51	1LM.LM33617	L16021255-03 MSD 100X	1	100	STD72685	03/03/16 00:23
94	1LM.LM33618	L16021255-04 20X	1	20		03/03/16 00:42
53	1LM.LM33619	L16021255-05 20X	1	20		03/03/16 01:01
54	1LM.LM33620	L16021255-06 200X	1	200		03/03/16 01:20
55	1LM.LM33621	L16021255-07 100X	1	100		03/03/16 01:39
56	1LM.LM33622	WG559291-09 CCV (1.0ug/L)	1	1	STD72685	03/03/16 01:57
57	1LM.LM33623	WG559292-08 MRL (0.2ug/L)	1	1	STD72685	03/03/16 02:16
58	1LM.LM33624	WG559291-10 CCB	1	1		03/03/16 02:35
59	1LM.LM33625	L16021255-08	1	1		03/03/16 02:54
60	1LM.LM33626	L16021255-09 500X	1	500		03/03/16 03:13
61	1LM.LM33627	L16021255-10 5000X	1	5000		03/03/16 03:32
62	1LM.LM33628	L16021255-11 5000X	1	5000		03/03/16 03:51
63	1LM.LM33629	L16021255-12 100X	1	100		03/03/16 04:10
64	1LM.LM33630	L16021255-13 10,000X	1	10000		03/03/16 04:29
65	1LM.LM33631	L16021255-14 10,000X	1	10000		03/03/16 04:48
66	1LM.LM33632	L16030008-01	1	1		03/03/16 05:07
67	1LM.LM33633	L16030008-01 10X	1	10		03/03/16 05:26
68	1LM.LM33634	L16021328-01	1	1		03/03/16 05:45
69	1LM.LM33635	WG559291-11 CCV (1.0ug/L)	1	1	STD72685	03/03/16 06:04

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030216_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015, WG559292

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
70	1LM.LM33636	WG559292-09 MRL (0.2ug/L)	1	1	STD72685	03/03/16 06:23
71	1LM.LM33637	WG559291-12 CCB	1	1		03/03/16 06:41
72	1LM.LM33638	L16021328-02	1	1		03/03/16 07:00
73	1LM.LM33639	L16021328-03	1	1		03/03/16 07:19
74	1LM.LM33640	L16021328-04	1	1		03/03/16 07:38
75	1LM.LM33641	L16021328-05	1	1		03/03/16 07:57
76	1LM.LM33642	WG559291-13 CCV (1.0ug/L)	1	1	STD72685	03/03/16 08:16
77	1LM.LM33643	WG559292-10 MRL (0.2ug/L)	1	1	STD72685	03/03/16 08:35
78	1LM.LM33644	WG559291-14 CCB	1	1		03/03/16 08:54
79	1LM.LM33645	L16021255-05 200X	1	200		03/03/16 09:13
80	1LM.LM33646	L16021255-06	1	1		03/03/16 09:32
81	1LM.LM33647	L16021255-12 1000X	1	1000		03/03/16 09:51
95	1LM.LM33648	L16021255-04	1	1		03/03/16 10:10
96	1LM.LM33649	L16021255-02 MS	1	1	STD72685	03/03/16 10:29
97	1LM.LM33650	L16021255-03 MSD	1	1	STD72685	03/03/16 10:48
85	1LM.LM33651	WG559291-15 CCV (1.0ug/L)	1	1	STD72685	03/03/16 11:07
86	1LM.LM33652	WG559292-11 MRL (0.2ug/L)	1	1	STD72685	03/03/16 11:25
87	1LM.LM33653	WG559291-16 CCB	1	1		03/03/16 11:44

Comments

Seq.	Rerun	Dil.	Reason	Analytes
12	X			
	WG559015-05 incorrect vial location.			
50				
	DNR. Incorrect information on the supplied Chain of Custody.			
51				
	DNR. Incorrect information on the supplied Chain of Custody.			
94	X	1	Analyzed too dilute	
	L16021255-04			
53	X	200	Over Calibration Range	Perchlorate
	L16021255-05			
54	X	1	Analyzed too dilute	
	L16021255-06			
63	X	1000	Over Calibration Range	
	L16021255-12 100X			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030416_WTD.TXT
Analyst1: ADC/WTD Analyst2: JWR
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA
Analytical WG559808 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD72683 (03/02/2016)
CCV STD: STD72683 LCS STD: STD72685 MS/MSD STD: STD72685

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM33710	WG559812-01 CCB	1	1		03/04/16 16:38
2	1LM.LM33711	WG559812-02 CCV (1.0ug/L)	1	1	STD72683	03/04/16 16:57
3	1LM.LM33712	WG559808-07 MRL (2.0ug/kg)	7	1	STD72683	03/04/16 17:16
4	1LM.LM33713	WG559808-01 MCT (2.0ug/kg)	7	1	STD72685	03/04/16 17:35
5	1LM.LM33714	WG559808-02 BLK	7	1		03/04/16 17:53
6	1LM.LM33715	WG559808-03 LCS (2.0ug/kg)	7	1	STD72685	03/04/16 18:12
7	1LM.LM33716	L16030234-01	7	1		03/04/16 18:31
8	1LM.LM33717	L16030234-02	7	1		03/04/16 18:50
9	1LM.LM33718	L16030234-03	7	1		03/04/16 19:09
10	1LM.LM33719	L16030234-04	7	1		03/04/16 19:28
11	1LM.LM33720	L16030234-05	7	1		03/04/16 19:47
12	1LM.LM33721	L16030234-06	7	1		03/04/16 20:06
13	1LM.LM33722	L16030235-01	7	1		03/04/16 20:25
14	1LM.LM33723	WG559812-03 CCV (1.0ug/L)	1	1	STD72683	03/04/16 20:44
15	1LM.LM33724	WG559808-08 MRL (2.0ug/kg)	7	1	STD72683	03/04/16 21:03
16	1LM.LM33725	WG559812-04 CCB	1	1		03/04/16 21:22
17	1LM.LM33726	L16030235-02	7	1		03/04/16 21:41
18	1LM.LM33727	L16030235-03 RS (NR)	7	1		03/04/16 22:00
19	1LM.LM33728	L16030235-04 MS (NR)	7	1	STD72685	03/04/16 22:19
20	1LM.LM33729	L16030235-05 MSD (NR)	7	1	STD72685	03/04/16 22:38
21	1LM.LM33730	L16030235-06 (NR)	7	1		03/04/16 22:56
22	1LM.LM33731	L16030235-07 (NR)	7	1		03/04/16 23:15
23	1LM.LM33732	L16030235-08 (NR)	7	1		03/04/16 23:34
24	1LM.LM33733	WG559812-05 CCV (1.0ug/L)	1	1	STD72683	03/04/16 23:53
25	1LM.LM33734	WG559808-09 MRL (2.0ug/kg)	7	1	STD72683	03/05/16 00:12
26	1LM.LM33735	WG559812-06 CCB	1	1		03/05/16 00:31
27	1LM.LM33736	WG559899-01 CCB	1	1		03/07/16 09:54
28	1LM.LM33737	WG559899-02 CCV (1.0ug/L)	1	1	STD72683	03/07/16 10:13
29	1LM.LM33738	WG559808-10 MRL (2.0ug/kg)	7	1	STD72683	03/07/16 10:32
30	1LM.LM33739	L16030235-03 RS (RR 100x)	7	100		03/07/16 10:51
31	1LM.LM33740	L16030235-04 MS (RR 100x)	7	100	STD72685	03/07/16 11:10
32	1LM.LM33741	L16030235-05 MSD (RR 100x)	7	100	STD72685	03/07/16 11:29
33	1LM.LM33742	L16030235-06 (RR 10x)	7	10		03/07/16 11:48

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030416_WTD.TXT
Analyst1: ADC/WTD Analyst2: JWR
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG559808 (soils)

Internal STD: COA18071 Surrogate STD: NA STD72683 (03/02/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM33743	L16030235-07 (RR 10x)	7	10		03/07/16 12:07
35	1LM.LM33744	L16030235-08 (RR 100x)	7	100		03/07/16 12:26
36	1LM.LM33745	WG559899-03 CCV (1.0ug/L)	1	1	STD72683	03/07/16 12:45
37	1LM.LM33746	WG559808-11 MRL (2.0ug/kg)	7	1	STD72683	03/07/16 13:04
38	1LM.LM33747	WG559899-04 CCB	1	1		03/07/16 13:22

Comments

Seq.	Rerun	Dil.	Reason	Analytes
18	X	100	Over Calibration Range	
	L16030235-03 RS (NR) : This sample was reanalyzed at a 100x dilution on the end of this run.			
19	X	100	Over Calibration Range	
	L16030235-04 MS (NR) : This sample was reanalyzed at a 100x dilution on the end of this run.			
20	X	100	Over Calibration Range	
	L16030235-05 MSD (NR) : This sample was reanalyzed at a 100x dilution on the end of this run.			
21	X	10	Over Calibration Range	
	L16030235-06 (NR) : This sample was reanalyzed at a 10x dilution on the end of this run.			
22	X	10	Over Calibration Range	
	L16030235-07 (NR) : This sample was reanalyzed at a 10x dilution on the end of this run.			
23	X	100	Over Calibration Range	
	L16030235-08 (NR) : This sample was reanalyzed at a 100x dilution on the end of this run.			
31				
	L16030235-04 MS (RR 100x) : The MS %Rec is below the advisory limit. The parent sample to this MS has a result greater than 900 times that of the MS-spiked amount.			
32				
	L16030235-05 MSD (RR 100x) : The MSD %Rec is above the advisory limit. The parent sample to this MSD has a result greater than 900 times that of the MSD-spiked amount.			

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Microbac Laboratories Inc.

Data Checklist

Date: 02-MAR-2016
Analyst: WTD
Analyst: ADC
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 73617
Analytical Workgroups: L16021255,L16021328,030008,021262,021060

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	WTD
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MES

Primary Reviewer: 03-MAR-2016

Secondary Reviewer: 04-MAR-2016

CHECKLIST1 - Modified 03/05/2008

Generated: MAR-04-2016 13:53:03

Microbac Laboratories Inc.

Data Checklist

Date: 04-MAR-2016
Analyst: ADC/WTD
Analyst: JWR
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 73668
Analytical Workgroups: L16030234, 0235 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	DL @ 100X DILUTION
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 07-MAR-2016 John Richards

Secondary Reviewer: 08-MAR-2016 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-08-2016 11:01:02

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG559808

Login Number: L16030235

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18DPT07(5-5.5)020316	01	03/02/16					03/04/2016	2	28		03/04/16	.2	28	
18DPT07(15-15.5)020316	02	03/02/16					03/04/2016	2	28		03/04/16	.3	28	
18DPT07(33.5-34.5)030316	03	03/03/16					03/04/2016	1.2	28		03/07/16	2.8	28	
18DPT07(33.5-34.5)030316	04	03/03/16					03/04/2016	1.2	28		03/07/16	2.8	28	
18DPT07(33.5-34.5)030316	05	03/03/16					03/04/2016	1.2	28		03/07/16	2.8	28	
18DPT07(38-39)030316	06	03/03/16					03/04/2016	1.2	28		03/07/16	2.8	28	
18DPT07(38-39)030316 FD	07	03/03/16					03/04/2016	1.2	28		03/07/16	2.9	28	
18DPT07(27-27.5)030316	08	03/03/16					03/04/2016	1.2	28		03/07/16	2.9	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4659877
Report generated 03/08/2016 11:13

METHOD BLANK SUMMARY

Login Number: L16030235
Blank File ID: 1LM.LM33714
Prep Date: 03/04/16 15:30
Analyzed Date: 03/04/16 17:53
Analyst: JWR

Work Group: WG559808
Blank Sample ID: WG559808-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG559808-07	1LM.LM33712	03/04/16 17:16	01
MCT	WG559808-01	1LM.LM33713	03/04/16 17:35	01
LCS	WG559808-03	1LM.LM33715	03/04/16 18:12	01
18DPT07(5-5.5)020316	L16030235-01	1LM.LM33722	03/04/16 20:25	01
QCMRL	WG559808-08	1LM.LM33724	03/04/16 21:03	01
18DPT07(15-15.5)020316	L16030235-02	1LM.LM33726	03/04/16 21:41	01
QCMRL	WG559808-09	1LM.LM33734	03/05/16 00:12	01
QCMRL	WG559808-10	1LM.LM33738	03/07/16 10:32	01
18DPT07(33.5-34.5)030316	L16030235-03	1LM.LM33739	03/07/16 10:51	DL01
18DPT07(33.5-34.5)030316 MS	L16030235-04	1LM.LM33740	03/07/16 11:10	DL01
18DPT07(33.5-34.5)030316 MSD	L16030235-05	1LM.LM33741	03/07/16 11:29	DL01
18DPT07(38-39)030316	L16030235-06	1LM.LM33742	03/07/16 11:48	DL01
18DPT07(38-39)030316 FD	L16030235-07	1LM.LM33743	03/07/16 12:07	DL01
18DPT07(27-27.5)030316	L16030235-08	1LM.LM33744	03/07/16 12:26	DL01
QCMRL	WG559808-11	1LM.LM33746	03/07/16 13:04	01

Report Name: BLANK_SUMMARY
PDF File ID: 4659878
Report generated 03/08/2016 11:13

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16030235 Prep Date: 03/04/16 15:30 Sample ID: WG559808-02
Instrument ID: LCMS1 Run Date: 03/04/16 17:53 Prep Method: 6850
File ID: 1LM.LM33714 Analyst: JWR Method: 6850
Workgroup (AAB#): WG559808 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.999	3.99	0.999	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4659879
08-MAR-2016 11:13

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030235 Run Date: 03/04/2016 Sample ID: WG559808-03
Instrument ID: LCMS1 Run Time: 18:12 Prep Method: 6850
File ID: 1LM.LM33715 Analyst: JWR Method: 6850
Workgroup (AAB#): WG559808 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD72685 Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	2.00	2.35	118	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4659880
Report generated: 03/08/2016 11:13

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16030235 Cal ID: LCMS1- 02-MAR-16 Worknum: WG559808
Instrument ID: LCMS1 Contract #: Prep Method: 6850
Parent ID: L16030235-03 File ID: 1LM.LM33739 Dil: 100 Method: 6850
Sample ID: L16030235-04 MS File ID: 1LM.LM33740 Dil: 100 Matrix: Soil
Sample ID: L16030235-05 MSD File ID: 1LM.LM33741 Dil: 100 Units: ug/kg
Percent Solid: 82.2

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Perchlorate	2180	2.40	2170	-482	2.40	2350	7050	8.00	80 - 120	15	*

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4659881
Report generated 03/08/2016 11:13

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16030235
Analytical Method: 6850
ICAL Workgroup: WG559340

Instrument ID: LCMS1
Initial Calibration Date: 02-MAR-16 10:46
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.808	3.97	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4660463
Report generated 03/08/2016 11:13

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16030235

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 02-MAR-16 10:46

Column ID: F

Analyte	WG559340-02			WG559340-03			WG559340-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	18400.0000	1.879	0.200	37000.0000	1.850	0.500	89000.0000	1.810

INT_CAL - Modified 03/06/2008
PDF File ID: 4660463
Report generated 03/08/2016 11:13

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16030235

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 02-MAR-16 10:46

Column ID: F

Analyte	WG559340-05			WG559340-06			WG559340-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	183000.000	1.829	2.00	363000.000	1.777	5.00	871000.000	1.779

INT_CAL - Modified 03/06/2008
PDF File ID: 4660463
Report generated 03/08/2016 11:13

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16030235

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 02-MAR-16 10:46

Column ID: F

Analyte	WG559340-08		
	CONC	RESP	RF
Perchlorate	10.0	1650000.00	1.729

INT_CAL - Modified 03/06/2008

PDF File ID: 4660463

Report generated 03/08/2016 11:13

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16030235 Run Date: 03/02/2016 Sample ID: WG559340-09
Instrument ID: LCMS1 Run Time: 11:05 Method: 6850
File ID: 1LM.LM33575 Analyst: WTD QC Key: DOD4
ICal Workgroup: WG559340 Cal ID: LCMS1 - 02-MAR-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.83	3.00	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4660467
Report generated 03/08/2016 11:13

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030235
Run Date: 03/04/2016
Sample ID: WG559812-01
Instrument ID: LCMS1
Run Time: 16:38
Method: 6850
File ID: 1LM.LM33710
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG559808
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4659884
Report generated 03/08/2016 11:14

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030235
Run Date: 03/04/2016
Sample ID: WG559812-04
Instrument ID: LCMS1
Run Time: 21:22
Method: 6850
File ID: 1LM.LM33725
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG559808
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4659884
Report generated 03/08/2016 11:14

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030235
Run Date: 03/05/2016
Sample ID: WG559812-06
Instrument ID: LCMS1
Run Time: 00:31
Method: 6850
File ID: 1LM.LM33735
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG559808
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4659884
Report generated 03/08/2016 11:14

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030235
Run Date: 03/07/2016
Sample ID: WG559899-01
Instrument ID: LCMS1
Run Time: 09:54
Method: 6850
File ID: 1LM.LM33736
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG559808
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4659884
Report generated 03/08/2016 11:14

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030235
Run Date: 03/07/2016
Sample ID: WG559899-04
Instrument ID: LCMS1
Run Time: 13:22
Method: 6850
File ID: 1LM.LM33747
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG559808
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4659884
Report generated 03/08/2016 11:14

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030235
Run Date: 03/04/2016
Sample ID: WG559812-02
Instrument ID: LCMS1
Run Time: 16:57
Method: 6850
File ID: 1LM.LM33711
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG559808
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.969	ug/kg	1.72	3.10	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4659883
Report generated 03/08/2016 11:14

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030235
Run Date: 03/04/2016
Sample ID: WG559812-03
Instrument ID: LCMS1
Run Time: 20:44
Method: 6850
File ID: 1LM.LM33723
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG559808
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.975	ug/kg	1.73	2.50	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4659883
Report generated 03/08/2016 11:14

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030235
Run Date: 03/04/2016
Sample ID: WG559812-05
Instrument ID: LCMS1
Run Time: 23:53
Method: 6850
File ID: 1LM.LM33733
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG559808
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.978	ug/kg	1.73	2.20	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4659883
Report generated 03/08/2016 11:14

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030235
Run Date: 03/07/2016
Sample ID: WG559899-02
Instrument ID: LCMS1
Run Time: 10:13
Method: 6850
File ID: 1LM.LM33737
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG559808
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.999	ug/kg	1.77	0.100	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4659883
Report generated 03/08/2016 11:14

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030235
Run Date: 03/07/2016
Sample ID: WG559899-03
Instrument ID: LCMS1
Run Time: 12:45
Method: 6850
File ID: 1LM.LM33745
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG559808
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.951	ug/kg	1.69	4.90	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4659883
Report generated 03/08/2016 11:14

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030235 Run Date: 03/04/2016 Sample ID: WG559808-07
Instrument ID: LCMS1 Run Time: 17:16 Prep Method: 6850
File ID: 1LM.LM33712 Analyst: JWR Method: 6850
Workgroup (AAB#): WG559808 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.96	98.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4659882
Report generated 03/08/2016 11:13

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030235 Run Date: 03/04/2016 Sample ID: WG559808-08
Instrument ID: LCMS1 Run Time: 21:03 Prep Method: 6850
File ID: 1LM.LM33724 Analyst: JWR Method: 6850
Workgroup (AAB#): WG559808 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.97	98.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4659882
Report generated 03/08/2016 11:13

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030235 Run Date: 03/05/2016 Sample ID: WG559808-09

Instrument ID: LCMS1 Run Time: 00:12 Prep Method: 6850

File ID: 1LM.LM33734 Analyst: JWR Method: 6850

Workgroup (AAB#): WG559808 Matrix: Soil Units: ug/kg

Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.95	97.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4659882
Report generated 03/08/2016 11:13

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030235 Run Date: 03/07/2016 Sample ID: WG559808-10
Instrument ID: LCMS1 Run Time: 10:32 Prep Method: 6850
File ID: 1LM.LM33738 Analyst: JWR Method: 6850
Workgroup (AAB#): WG559808 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.88	94.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4659882
Report generated 03/08/2016 11:13

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030235 Run Date: 03/07/2016 Sample ID: WG559808-11
Instrument ID: LCMS1 Run Time: 13:04 Prep Method: 6850
File ID: 1LM.LM33746 Analyst: JWR Method: 6850
Workgroup (AAB#): WG559808 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.95	97.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4659882
Report generated 03/08/2016 11:13

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16030235
Instrument ID: LCMS1
Workgroup (AAB#): WG559808

ICAL CCV Number: WG559340-05
CAL ID: LCMS1-02-MAR-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1
WG559340	NA	NA	494000
Upper Limit	NA	NA	741000
Lower Limit	NA	NA	247000
L16030235-01	1.00	01	567000
L16030235-02	1.00	01	567000
L16030235-03	100	DL01	534000
L16030235-04	100	DL01	526000
L16030235-05	100	DL01	534000
L16030235-06	10.0	DL01	502000
L16030235-07	10.0	DL01	507000
L16030235-08	100	DL01	531000
WG559808-02	1.00	01	530000
WG559808-03	1.00	01	516000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4659885
Report generated 03/08/2016 11:14

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**	6850	**Samplenum:**	L16030235-01
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33722
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/04/2016 20:25	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	16300	5770	2.82	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**	6850	**Samplenum:**	L16030235-02
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33726
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/04/2016 21:41	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	40800	13900	2.94	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**	6850	**Samplenum:**	L16030235-03
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33739
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/07/2016 10:51	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	342000	110000	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**	6850	**Samplenum:**	L16030235-04
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33740
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/07/2016 11:10	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	335000	108000	3.10	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**	6850	**Samplenum:**	L16030235-05
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33741
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/07/2016 11:29	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	368000	118000	3.12	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**	6850	**Samplenum:**	L16030235-06
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33742
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/07/2016 11:48	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	967000	309000	3.13	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**	6850	**Samplenum:**	L16030235-07
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33743
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/07/2016 12:07	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	856000	277000	3.09	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**	6850	**Samplenum:**	L16030235-08
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33744
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/07/2016 12:26	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	190000	63300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**		**Samplenum:**	WG559340-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33568
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/02/2016 08:53	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	18400	5910	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**		**Samplenum:**	WG559340-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33569
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/02/2016 09:12	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37000	11900	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**		**Samplenum:**	WG559340-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33570
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/02/2016 09:31	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	89000	30400	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**		**Samplenum:**	WG559340-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33571
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/02/2016 09:50	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	183000	56800	3.22	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**		**Samplenum:**	WG559340-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33572
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/02/2016 10:09	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	363000	117000	3.10	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**		**Samplenum:**	WG559340-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33573
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/02/2016 10:28	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	871000	282000	3.09	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**		**Samplenum:**	WG559340-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33574
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/02/2016 10:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1650000	530000	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**		**Samplenum:**	WG559340-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33575
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/02/2016 11:05	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	190000	62200	3.05	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**	6850	**Samplenum:**	WG559808-01
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33713
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/04/2016 17:35	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38400	12700	3.02	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**	6850	**Samplenum:**	WG559808-02
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33714
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/04/2016 17:53	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	390	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**	6850	**Samplenum:**	WG559808-03
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33715
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/04/2016 18:12	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	44800	16800	2.67	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**	6850	**Samplenum:**	WG559808-07
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33712
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/04/2016 17:16	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38900	12900	3.02	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**	6850	**Samplenum:**	WG559808-08
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33724
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/04/2016 21:03	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	42600	13400	3.18	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**	6850	**Samplenum:**	WG559808-09
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33734
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/05/2016 00:12	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	41400	12600	3.29	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**	6850	**Samplenum:**	WG559808-10
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33738
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/07/2016 10:32	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	39400	13500	2.92	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**	6850	**Samplenum:**	WG559808-11
Instrument:	LCMS1	**Prep Date:**	03/04/2016 15:30	**File ID:**	1LM.LM33746
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559808	**Analysis Date:**	03/07/2016 13:04	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38300	12600	3.04	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**		**Samplenum:**	WG559812-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33710
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/04/2016 16:38	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**		**Samplenum:**	WG559812-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33711
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/04/2016 16:57	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	177000	56200	3.15	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**		**Samplenum:**	WG559812-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33723
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/04/2016 20:44	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	200000	62200	3.22	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**		**Samplenum:**	WG559812-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33725
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/04/2016 21:22	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**		**Samplenum:**	WG559812-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33733
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/04/2016 23:53	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	195000	61500	3.17	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**		**Samplenum:**	WG559812-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33735
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/05/2016 00:31	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**		**Samplenum:**	WG559899-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33736
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/07/2016 09:54	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**		**Samplenum:**	WG559899-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33737
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/07/2016 10:13	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	198000	64300	3.08	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**		**Samplenum:**	WG559899-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33745
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/07/2016 12:45	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	183000	60200	3.04	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030235	**Prep Method:**		**Samplenum:**	WG559899-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33747
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559808	**Analysis Date:**	03/07/2016 13:22	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	195	0.000	2.3	3.8	*

2.2.1.3 Sample Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 3/7/2016 5:44 PM

Data File	LM33722.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 8:25:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030235-01	**Injection Vial**	13.00
Data File	LM33722.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 8:25:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	L16030235-01	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.670e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.630e+04	9.94	N/A	0.0697
Perchlorate conf	5.770e+03	9.93	N/A	0.0766

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

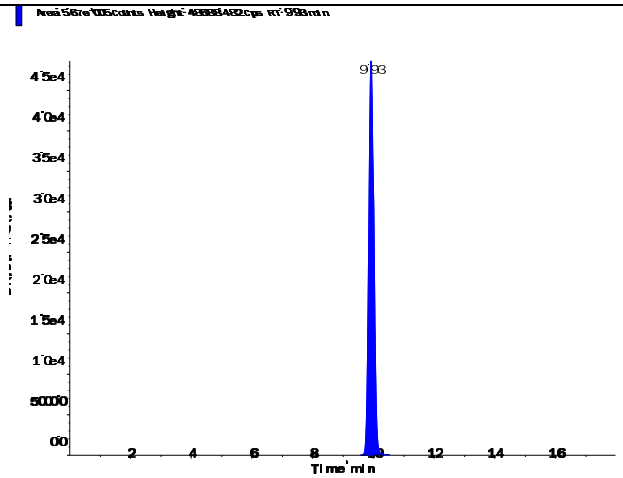

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 3/7/2016 5:44 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.0697 ng/ml
Area Ratio:	0.029
Sample Type:	(Unknown)

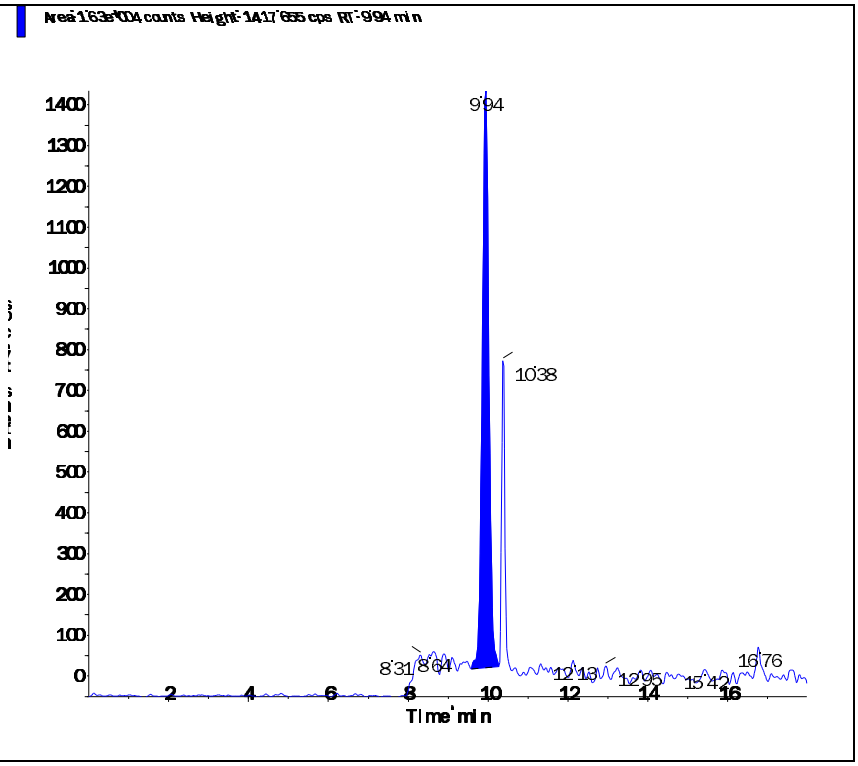

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	0.0766 ng/ml
Area Ratio:	0.01
Sample Type:	(Unknown)

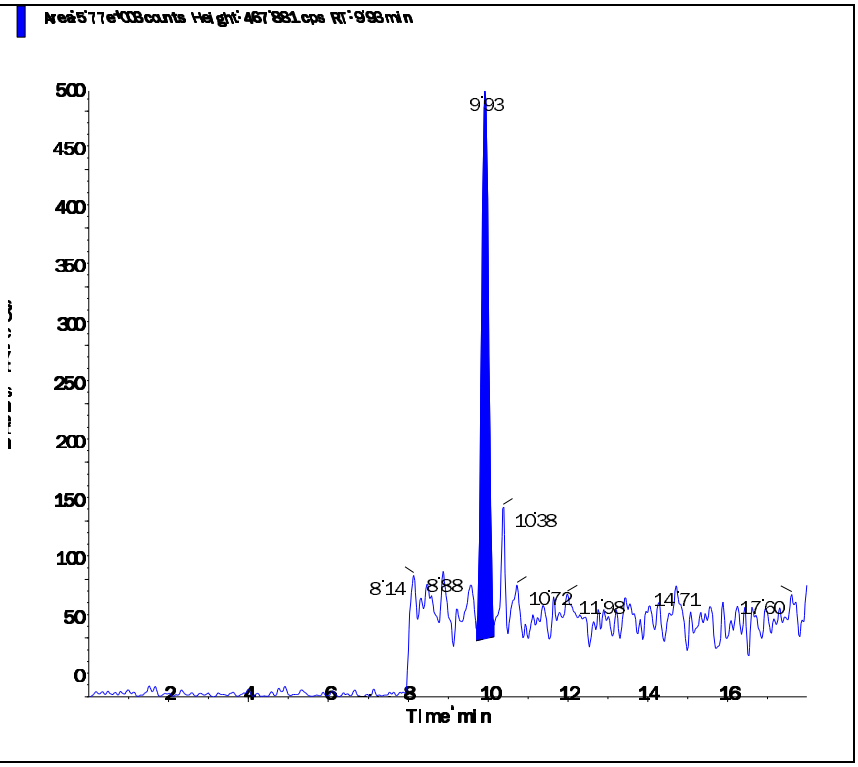

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Created with Analyst Reporter
Printed: 3/7/2016 5:46 PM

Data File	LM33726.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 9:41:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030235-02	**Injection Vial**	14.00
Data File	LM33726.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 9:41:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	L16030235-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.670e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.080e+04	9.92	N/A	0.193
Perchlorate conf	1.390e+04	9.90	N/A	0.204

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

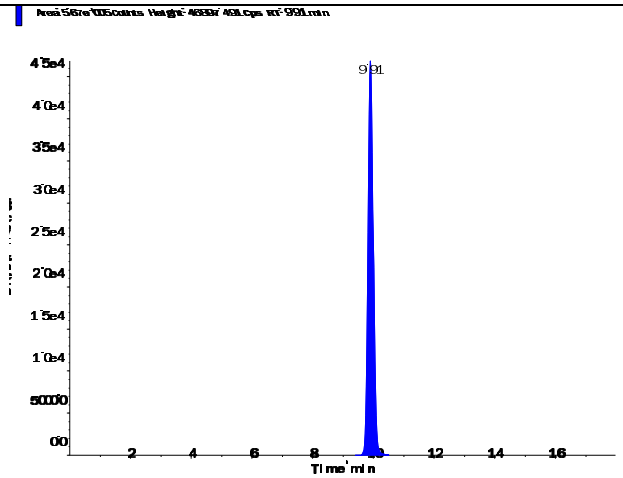

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.92 (9.94) min
Calculated conc:	0.193 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

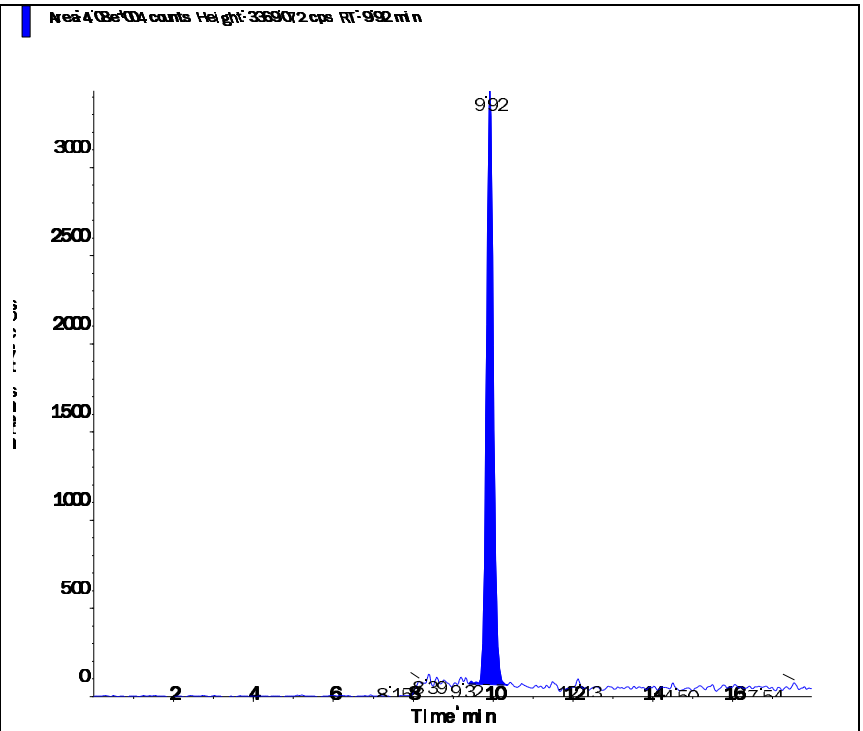

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.90 (9.92) min
Calculated conc:	0.204 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

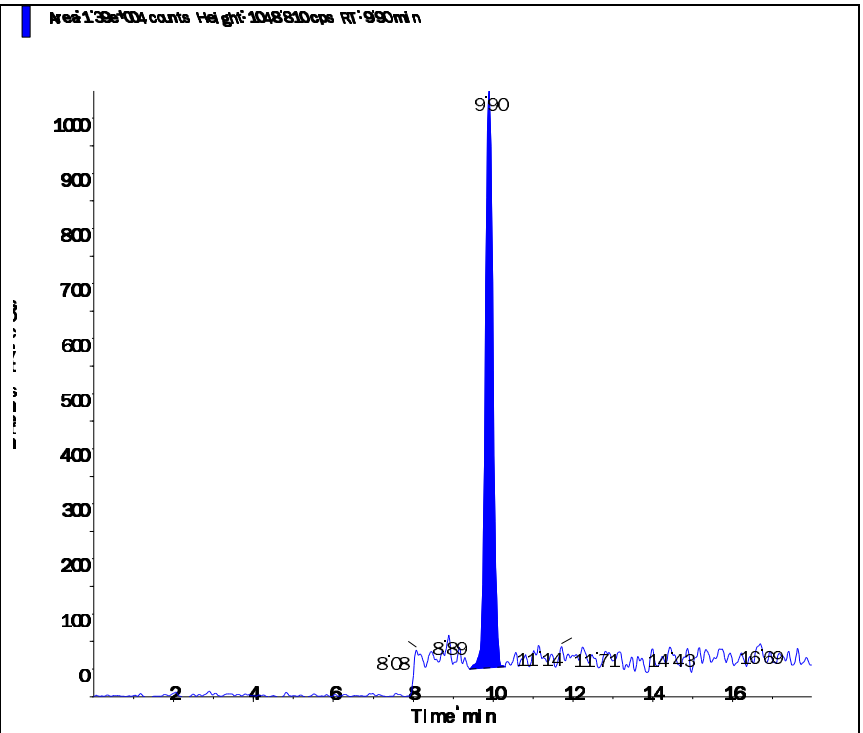

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Created with Analyst Reporter
Printed: 3/7/2016 5:50 PM

Data File	LM33739.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/7/2016 10:51:30 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030235-03 RS (RR 100x)	**Injection Vial**	21.00
Data File	LM33739.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 10:51:30 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559808-04	**Dilution Factor**	1.00
Sample Comment	7,100.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.340e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.420e+05	9.92	N/A	1.82
Perchlorate conf	1.100e+05	9.91	N/A	1.81

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

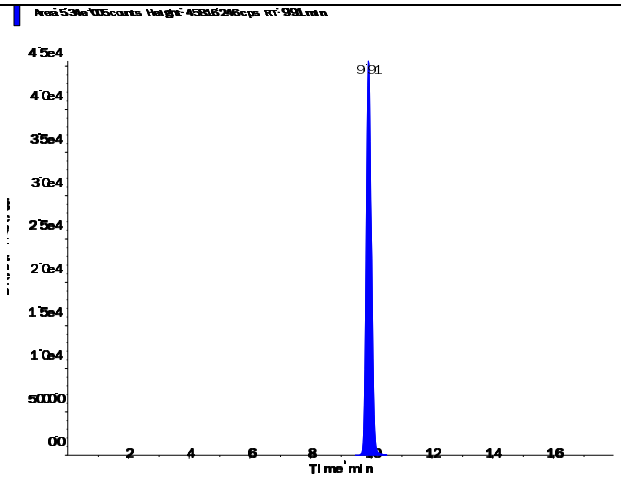

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.92 (9.94) min
Calculated conc:	1.82 ng/ml
Area Ratio:	0.641
Sample Type:	(Unknown)

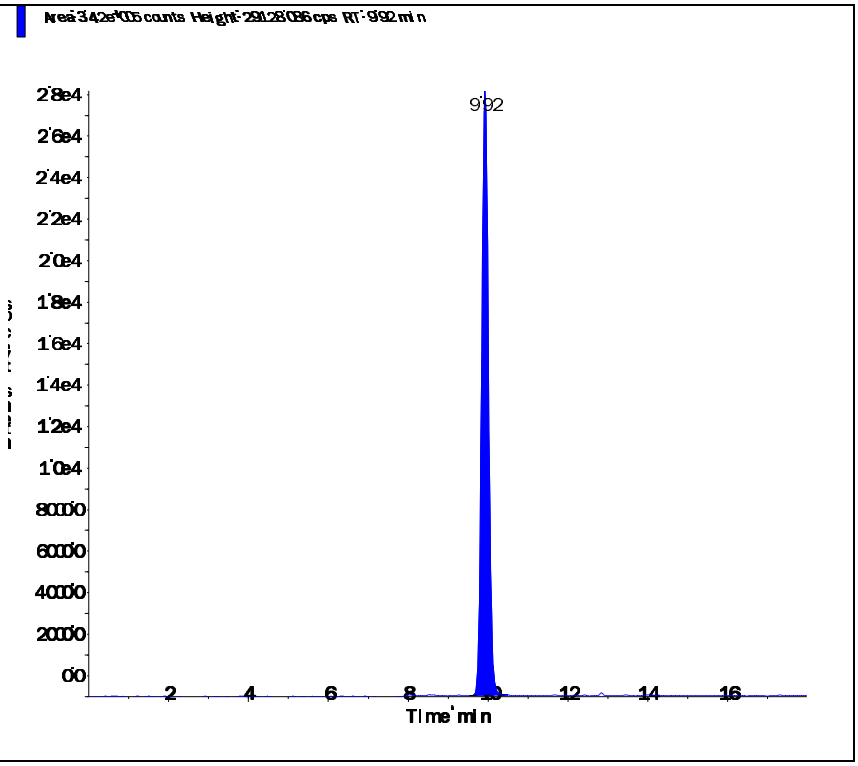

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.92) min
Calculated conc:	1.81 ng/ml
Area Ratio:	0.205
Sample Type:	(Unknown)

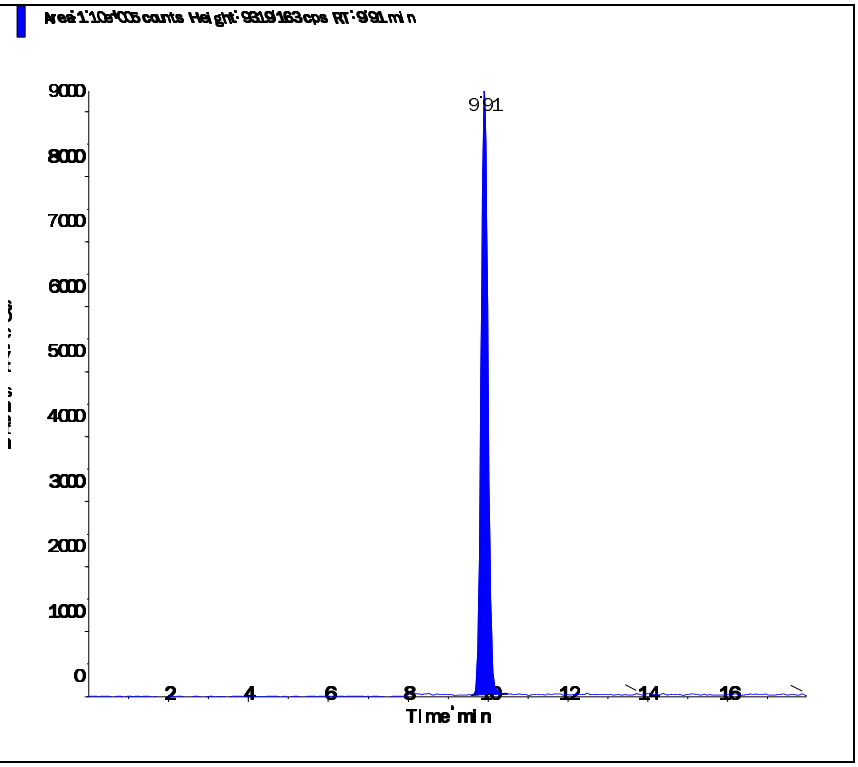

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Data File	LM33740.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/7/2016 11:10:27 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030235-04 MS (RR 100x)	**Injection Vial**	22.00
Data File	LM33740.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 11:10:27 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559808-05	**Dilution Factor**	1.00
Sample Comment	7,100 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.260e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.350e+05	9.92	N/A	1.81
Perchlorate conf	1.080e+05	9.91	N/A	1.80

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

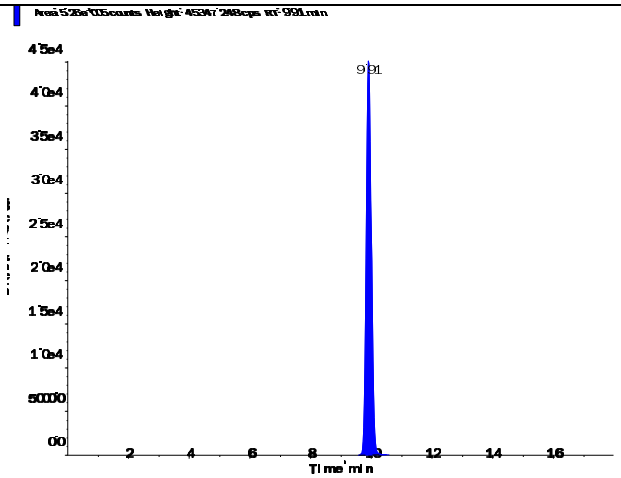

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.92 (9.94) min
Calculated conc:	1.81 ng/ml
Area Ratio:	0.636
Sample Type:	(Unknown)

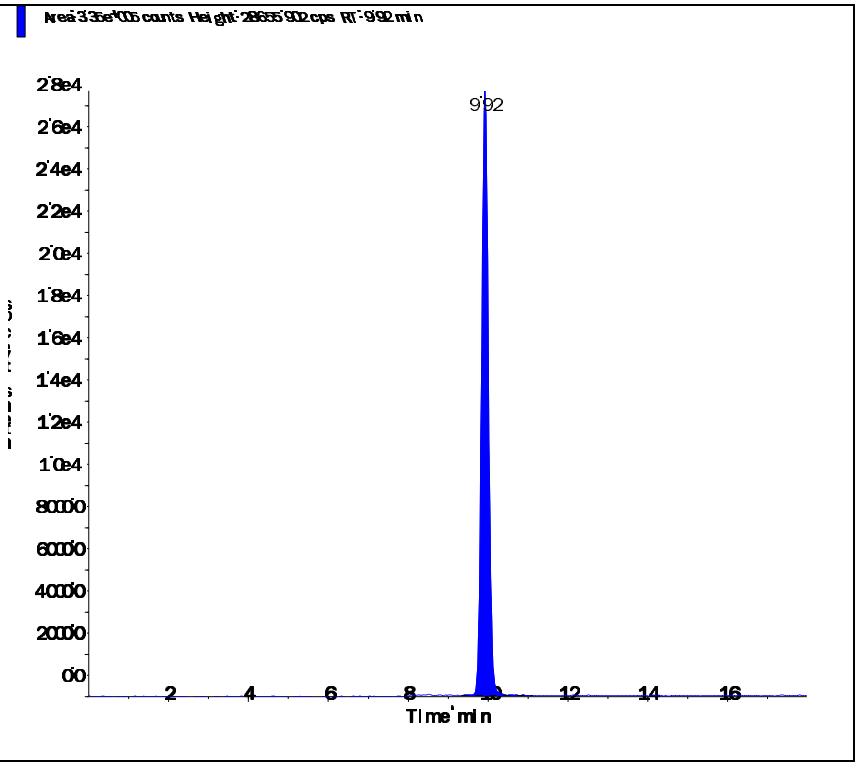

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.92) min
Calculated conc:	1.80 ng/ml
Area Ratio:	0.204
Sample Type:	(Unknown)

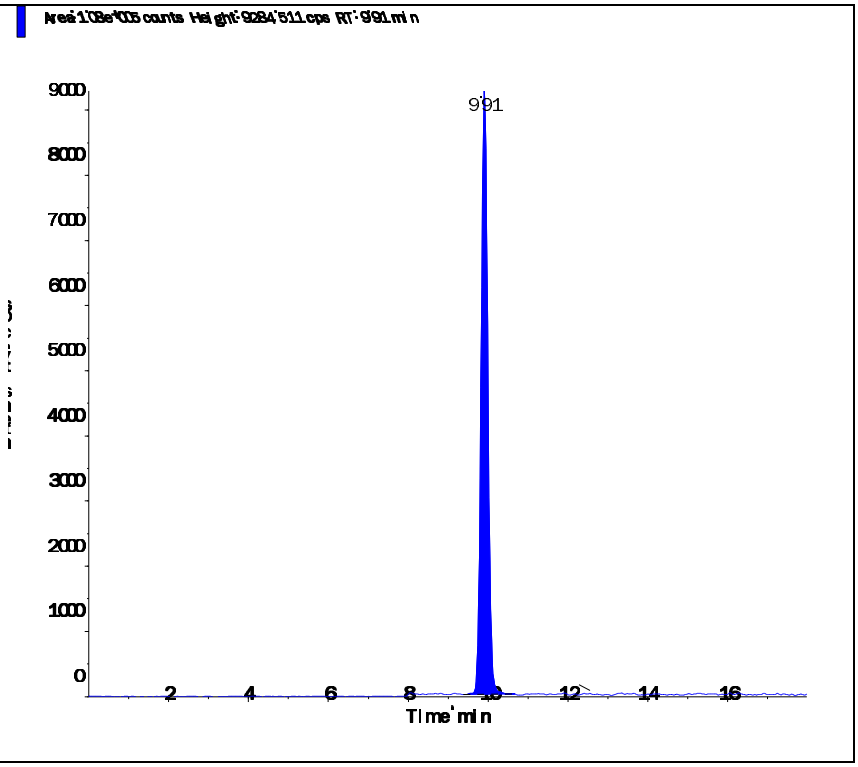

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Data File	LM33741.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/7/2016 11:29:22 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030235-05 MSD (RR 100x)	**Injection Vial**	23.00
Data File	LM33741.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 11:29:22 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559808-06	**Dilution Factor**	1.00
Sample Comment	7,100 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.340e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.680e+05	9.93	N/A	1.96
Perchlorate conf	1.180e+05	9.91	N/A	1.96

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

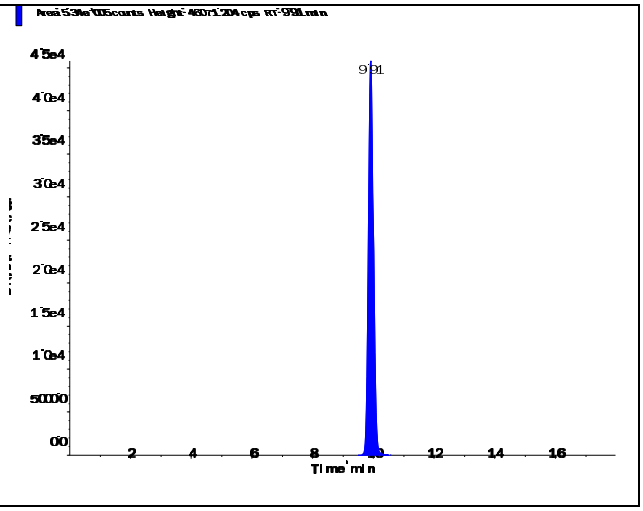

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	1.96 ng/ml
Area Ratio:	0.689
Sample Type:	(Unknown)

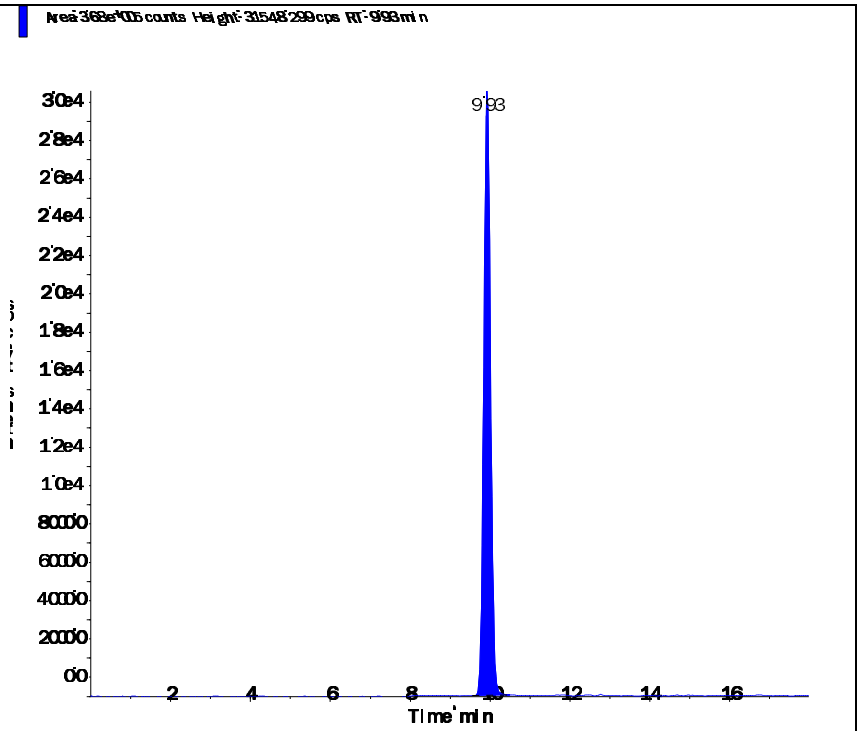

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.92) min
Calculated conc:	1.96 ng/ml
Area Ratio:	0.221
Sample Type:	(Unknown)

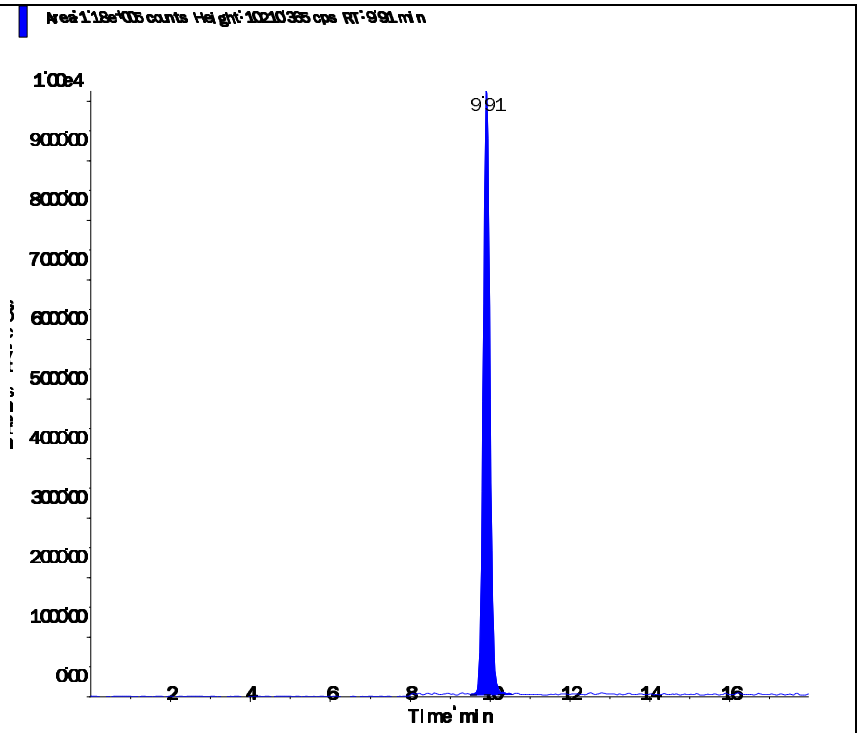

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Data File	LM33742.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/7/2016 11:48:20 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030235-06 (RR 10x)	**Injection Vial**	24.00
Data File	LM33742.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 11:48:20 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	L16030235-06	**Dilution Factor**	1.00
Sample Comment	710.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	9.670e+05	9.91	N/A	5.49
Perchlorate conf	3.090e+05	9.90	N/A	5.45

O18LP (Internal Standard)

RT (Exp. RT): 9.90(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

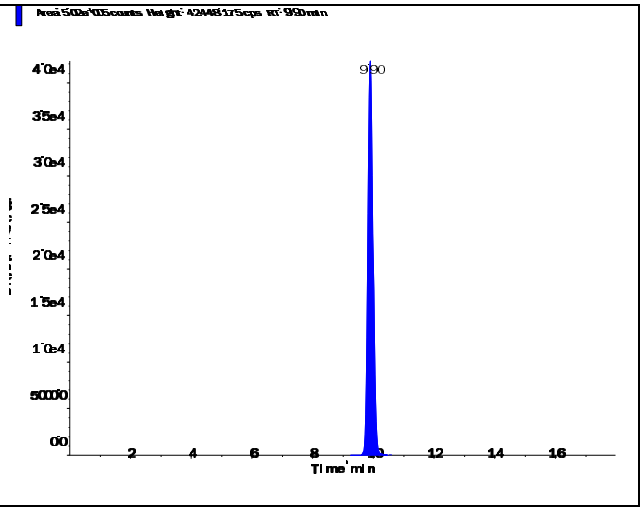

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.91 (9.94) min
Calculated conc:	5.49 ng/ml
Area Ratio:	1.925
Sample Type:	(Unknown)

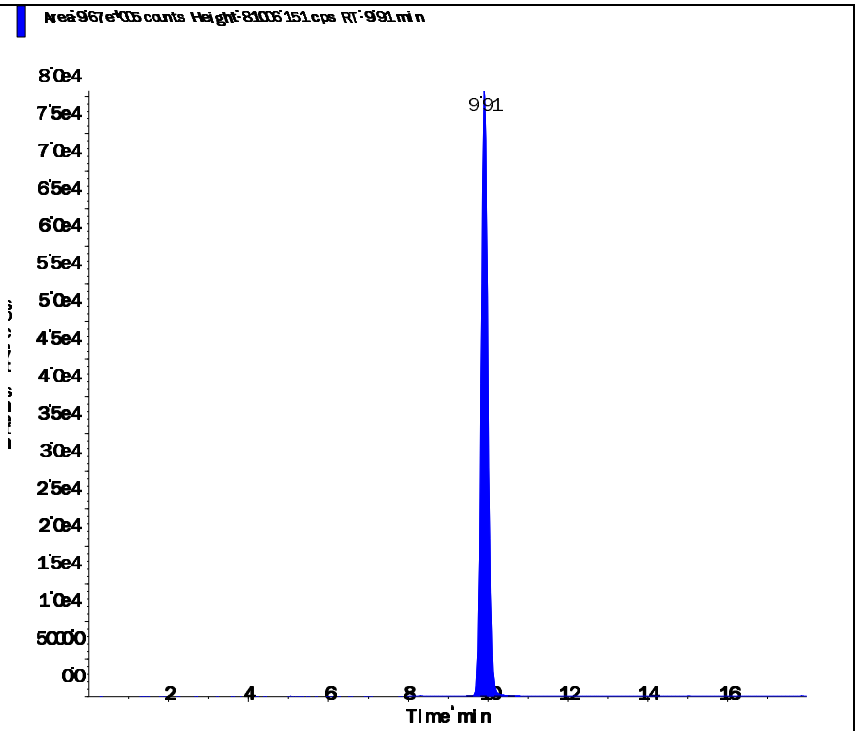

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.90 (9.92) min
Calculated conc:	5.45 ng/ml
Area Ratio:	0.614
Sample Type:	(Unknown)

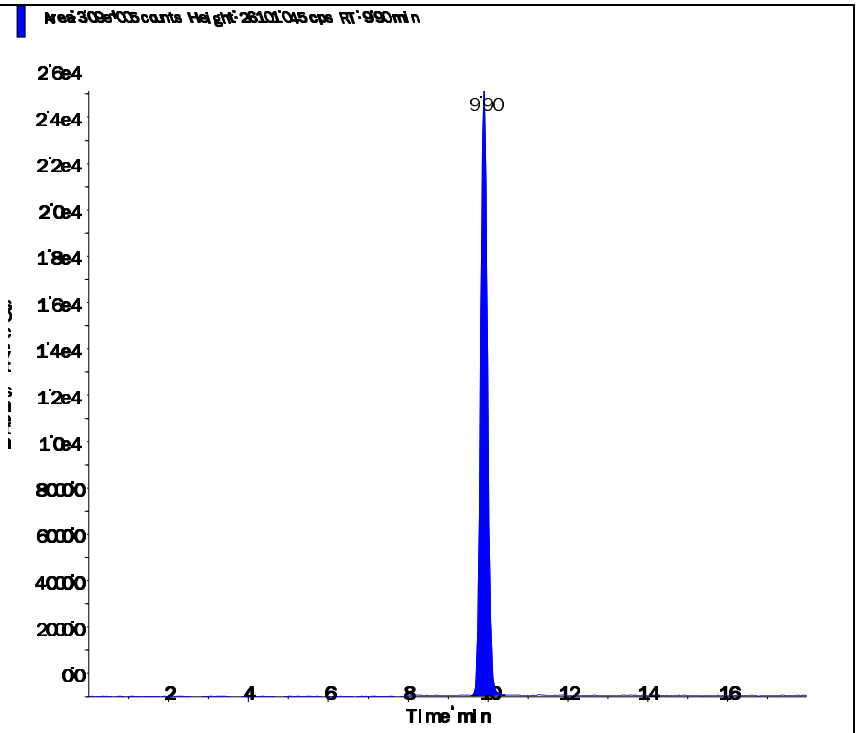

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Data File	LM33743.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/7/2016 12:07:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030235-07 (RR 10x)	**Injection Vial**	25.00
Data File	LM33743.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 12:07:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	L16030235-07	**Dilution Factor**	1.00
Sample Comment	710.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.070e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.560e+05	9.92	N/A	4.81
Perchlorate conf	2.770e+05	9.91	N/A	4.84

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

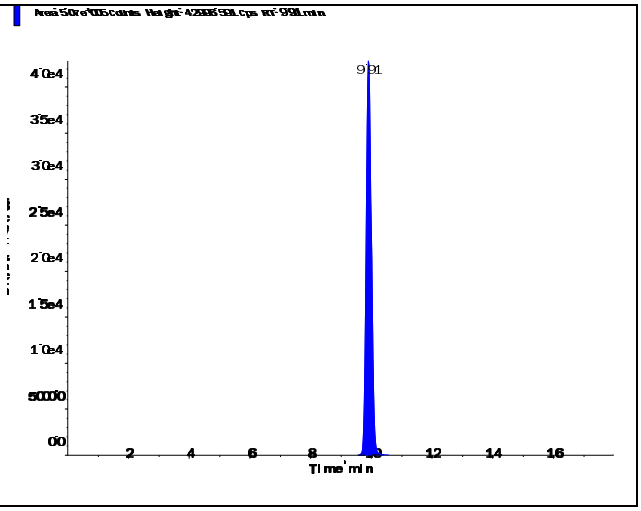

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.92 (9.94) min
Calculated conc:	4.81 ng/ml
Area Ratio:	1.688
Sample Type:	(Unknown)

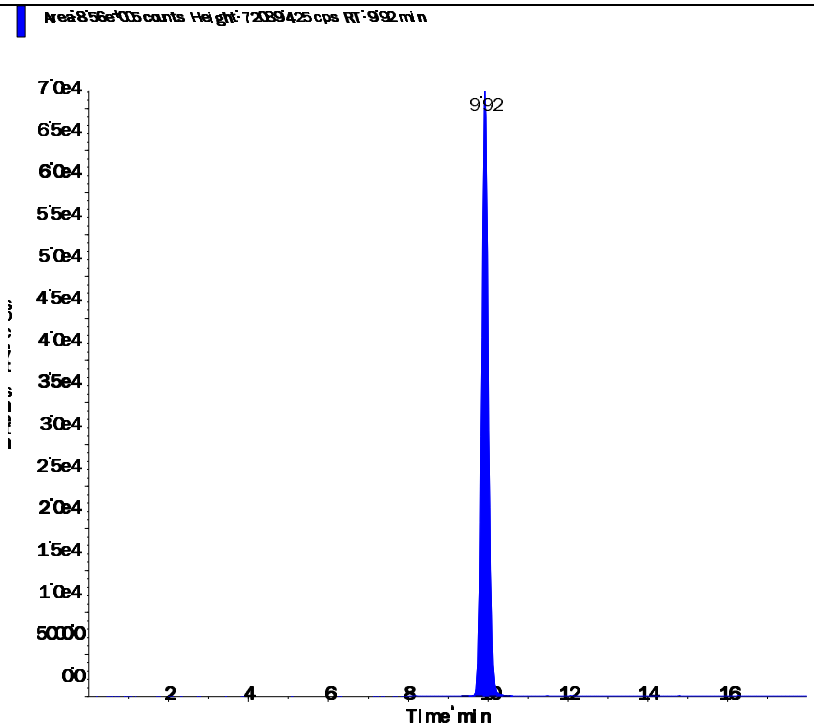

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.92) min
Calculated conc:	4.84 ng/ml
Area Ratio:	0.546
Sample Type:	(Unknown)

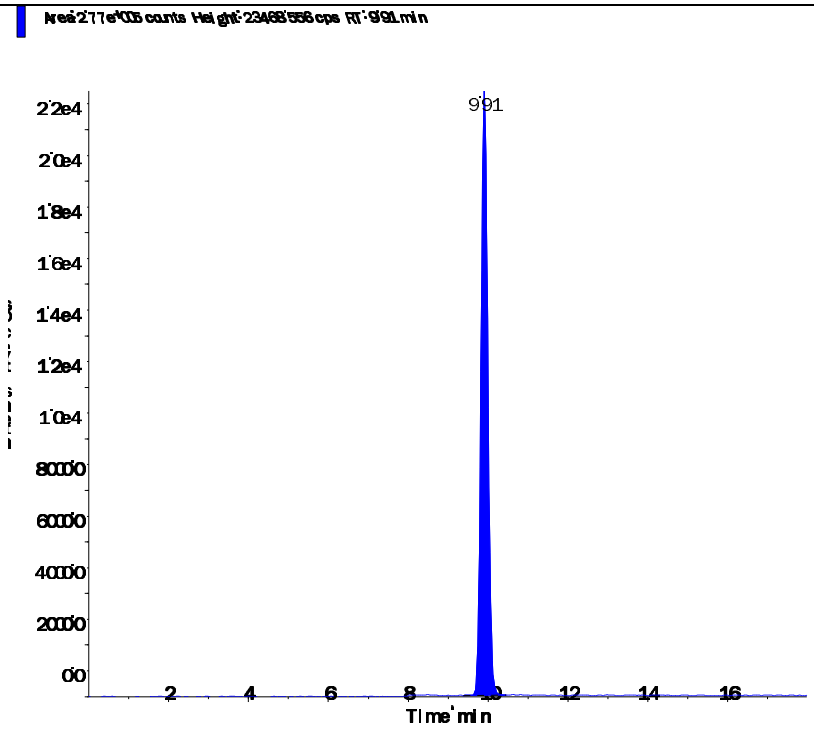

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Data File	LM33744.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/7/2016 12:26:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030235-08 (RR 100x)	**Injection Vial**	26.00
Data File	LM33744.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 12:26:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	L16030235-08	**Dilution Factor**	1.00
Sample Comment	7,100.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.310e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.900e+05	9.93	N/A	1.01
Perchlorate conf	6.330e+04	9.91	N/A	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

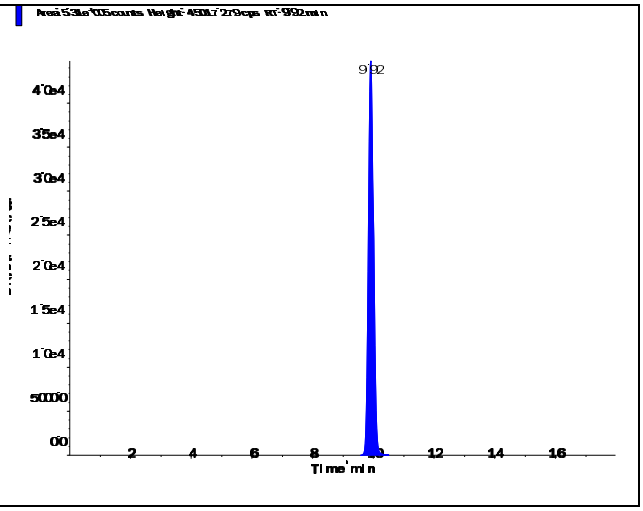

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.359
Sample Type:	(Unknown)

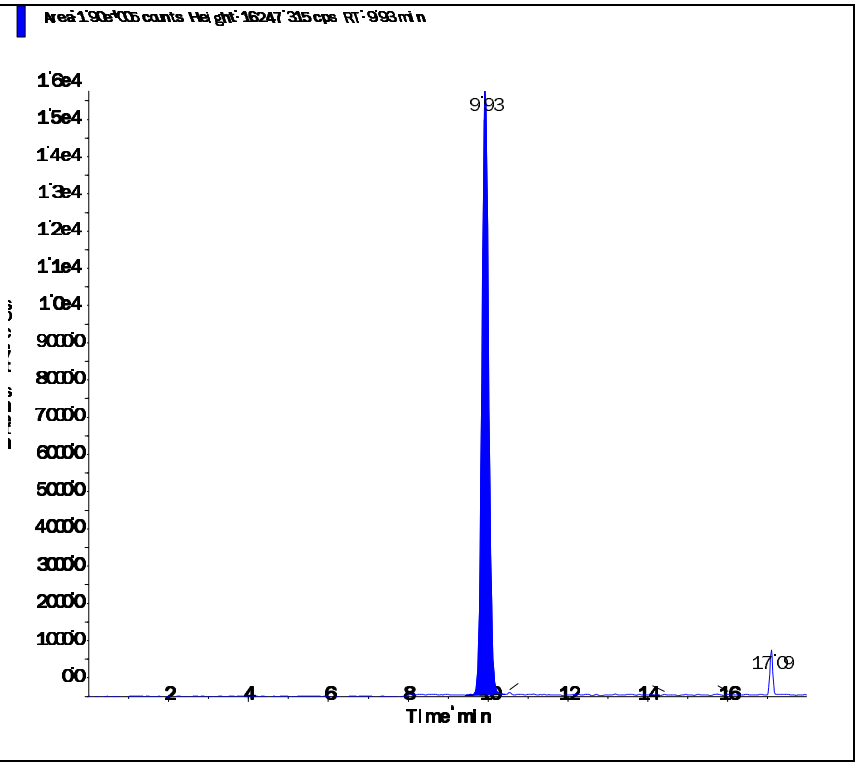

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.92) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.119
Sample Type:	(Unknown)

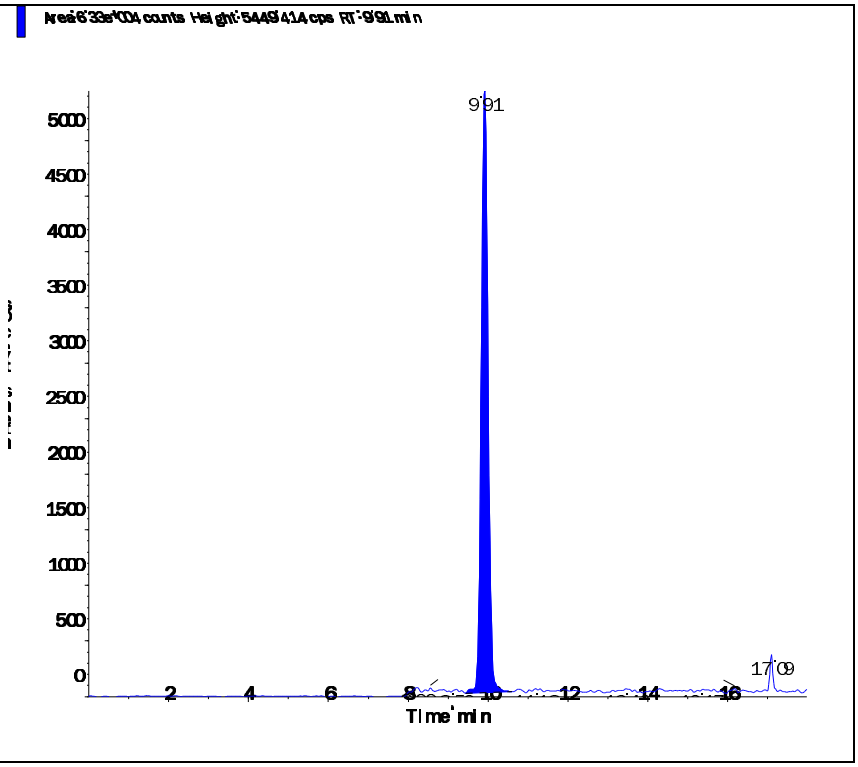

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2.2.1.4 Standards Data

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Data File	LM33567.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-01 CCB	**Injection Vial**	51.00
Data File	LM33567.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559340-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.710e+05	9.99	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.99(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

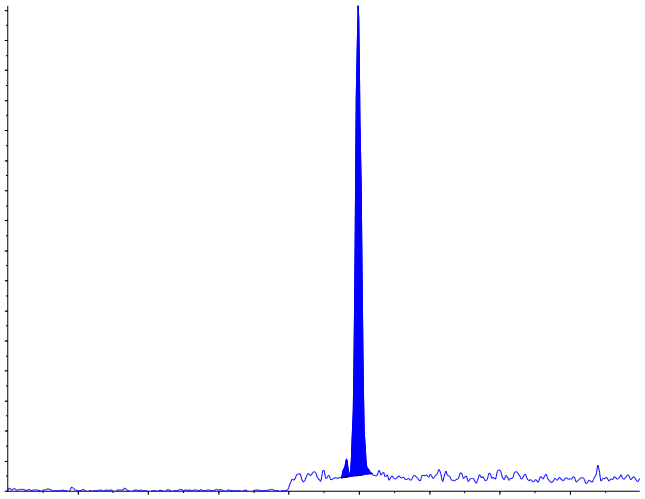

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

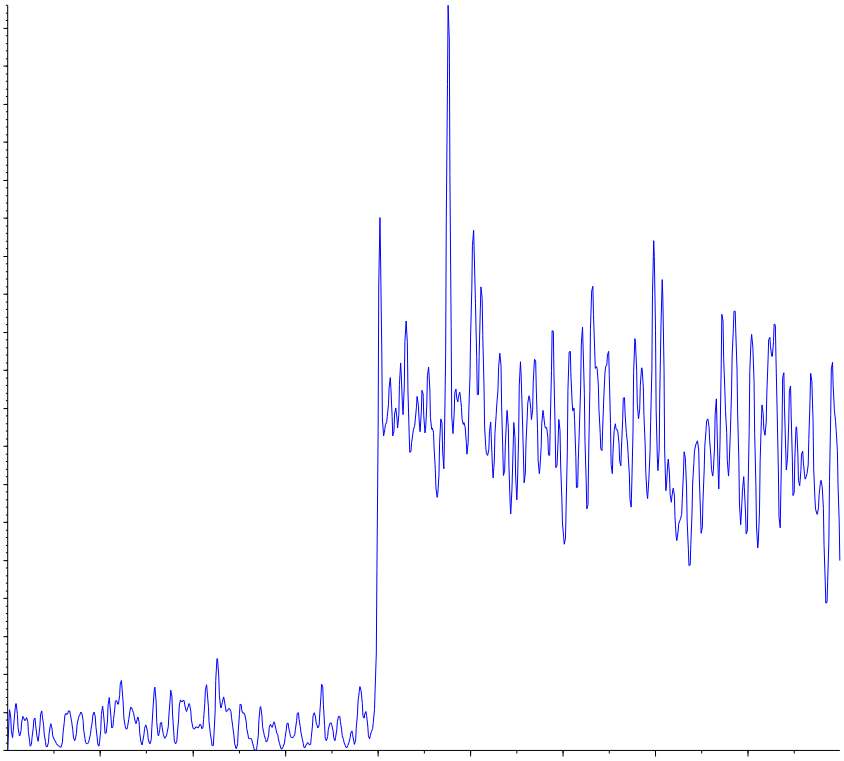

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

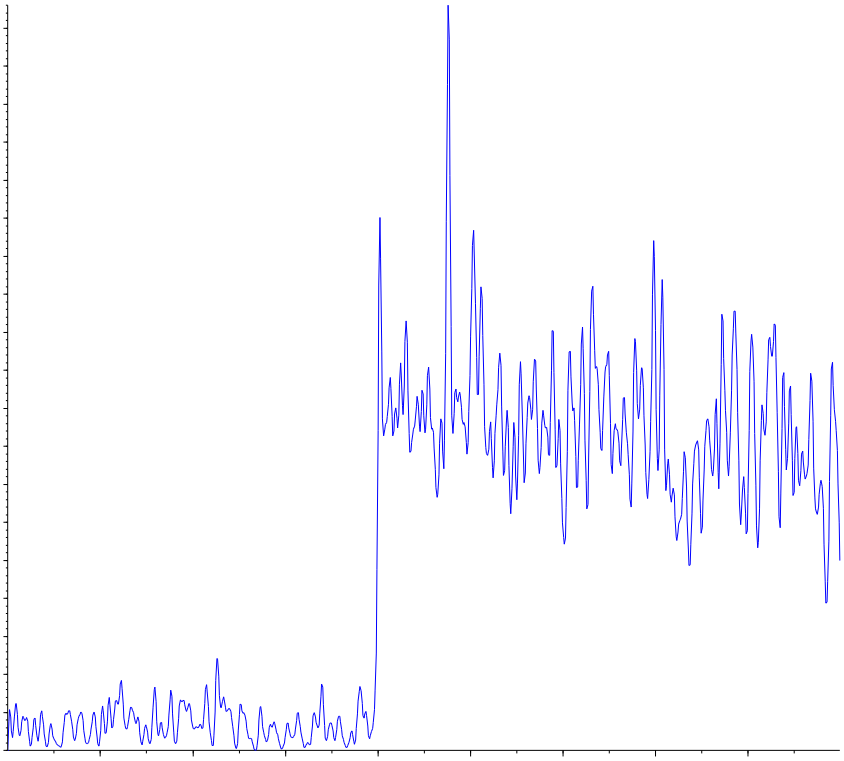

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Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM33567.wiff	**Result Table**	030216_WTD.rdb
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.75 x + 0.00437 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	95.0	N/A	N/A
0.20	1	0.20	99.5	N/A	N/A
0.50	1	0.50	101.0	N/A	N/A
1.00	1	1.03	103.4	N/A	N/A
2.00	1	2.02	101.0	N/A	N/A
5.00	1	5.07	101.5	N/A	N/A
10.00	1	9.87	98.7	N/A	N/A

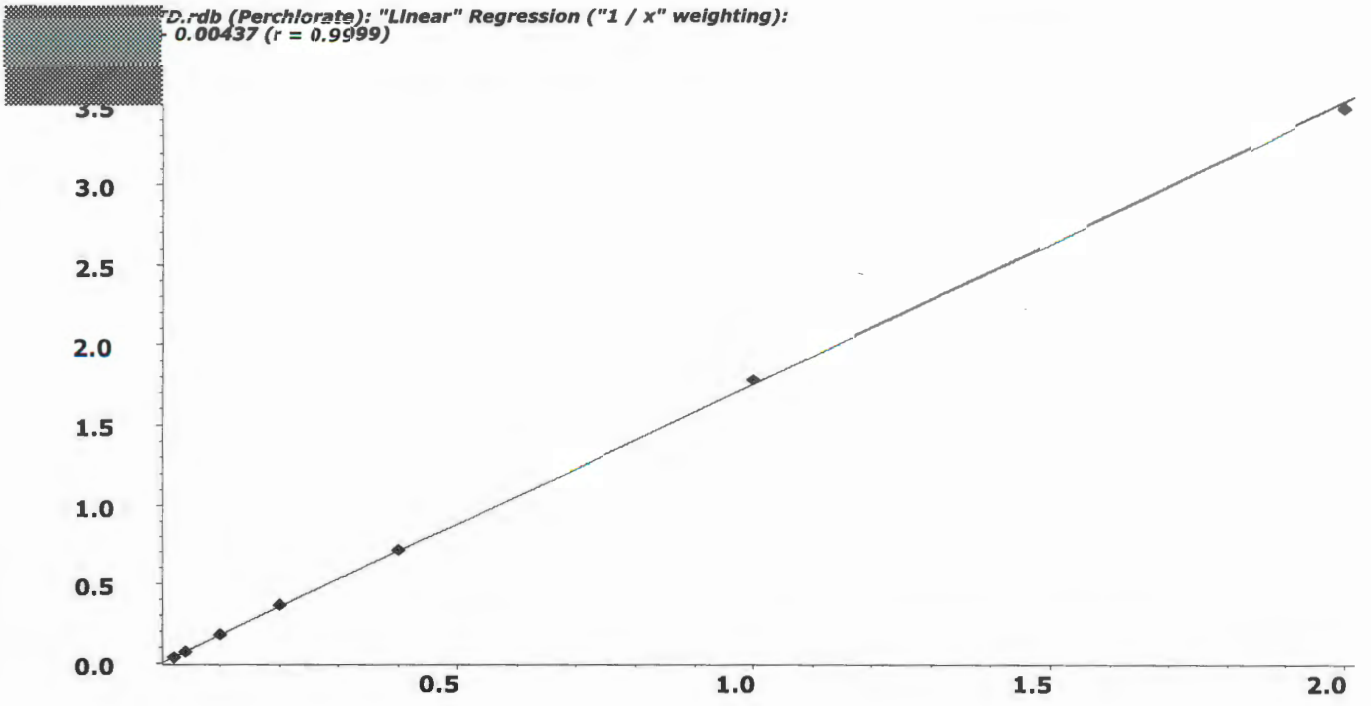

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Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM33567.wiff	**Result Table**	030216_WTD.rdb
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.562 x + 0.00157 (r = 0.9998)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	93.4	N/A	N/A
0.20	1	0.20	98.6	N/A	N/A
0.50	1	0.54	107.2	N/A	N/A
1.00	1	1.00	99.5	N/A	N/A
2.00	1	2.01	100.7	N/A	N/A
5.00	1	5.11	102.2	N/A	N/A
10.00	1	9.85	98.5	N/A	N/A

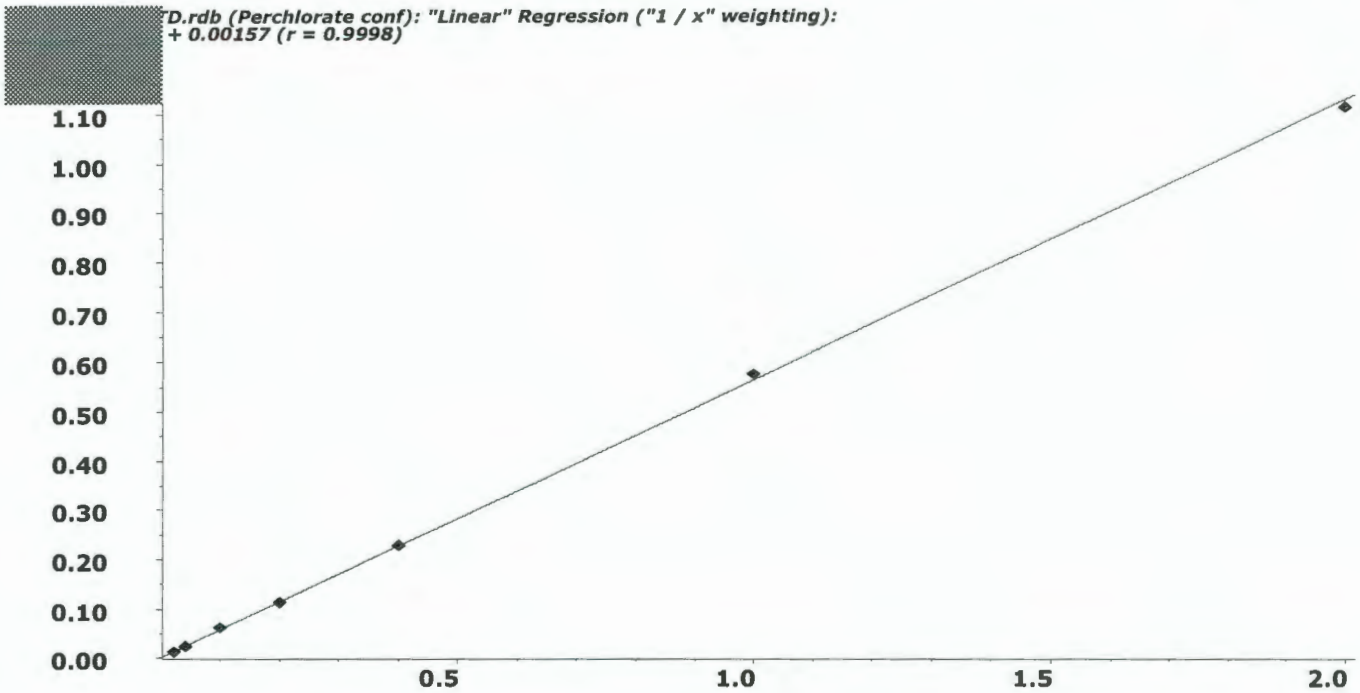

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Data File	LM33568.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/2/2016 8:53:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-02 STD (0.1 ug/L)	**Injection Vial**	52.00
Data File	LM33568.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 8:53:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559340-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.900e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.840e+04	9.97	0.10	0.095
Perchlorate conf	5.910e+03	9.94	0.10	0.0934

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

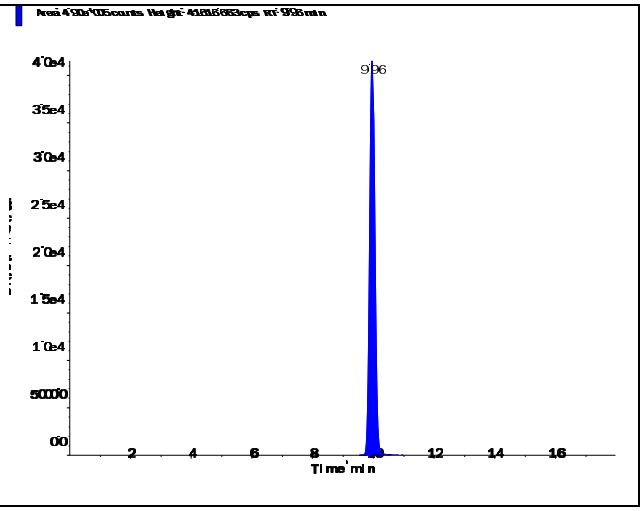

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.97 (9.94) min
Calculated conc:	0.095 ng/ml
Area Ratio:	0.038
Sample Type:	(Standard)

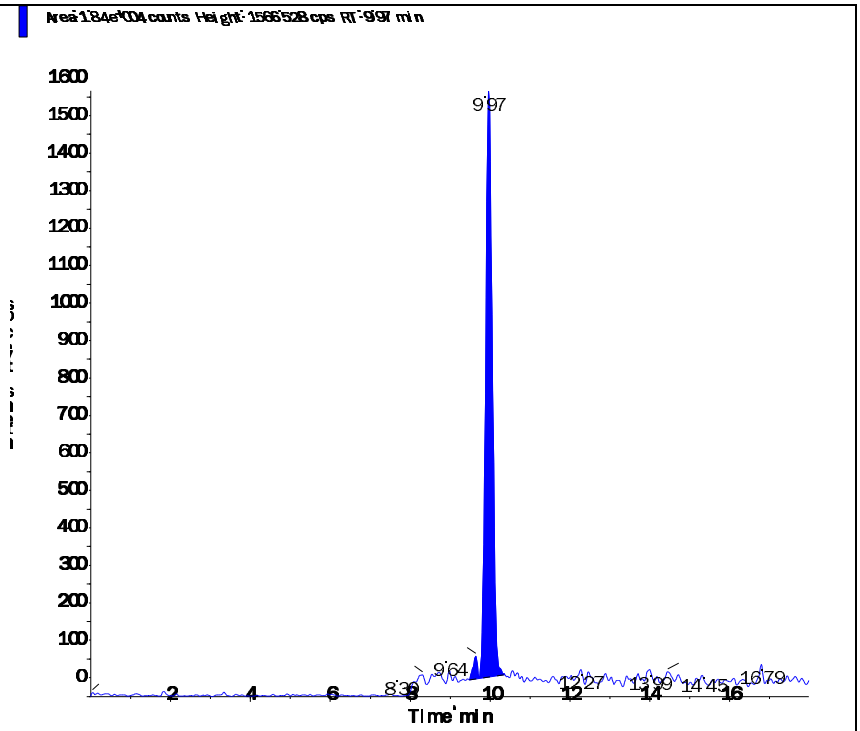

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.0934 ng/ml
Area Ratio:	0.012
Sample Type:	(Standard)

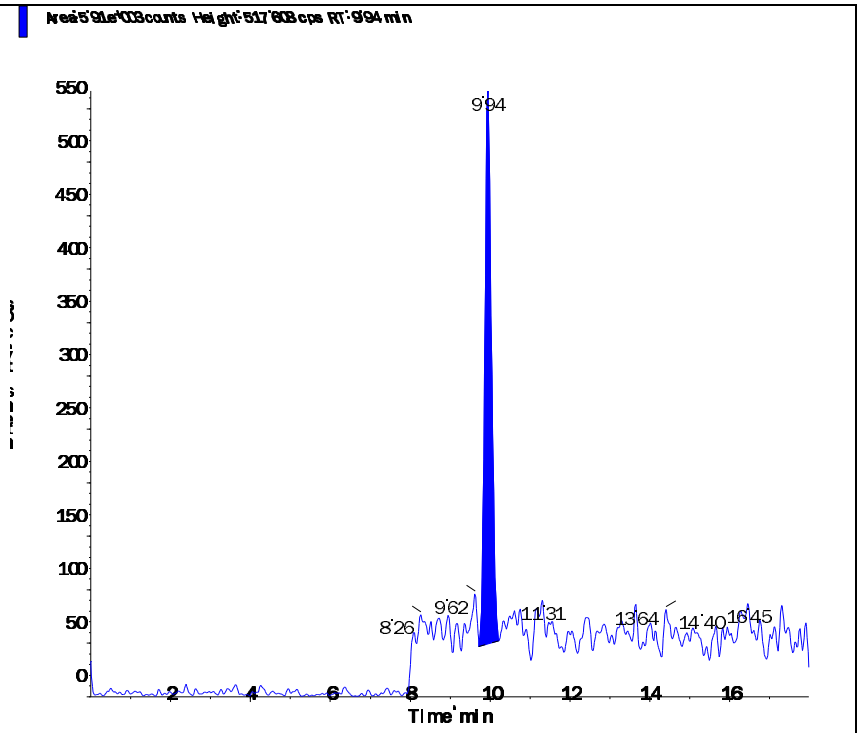

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Data File	LM33569.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/2/2016 9:12:17 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-03 STD (0.2 ug/L)	**Injection Vial**	53.00
Data File	LM33569.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 9:12:17 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559340-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.990e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.700e+04	9.99	0.20	0.199
Perchlorate conf	1.190e+04	9.98	0.20	0.197

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

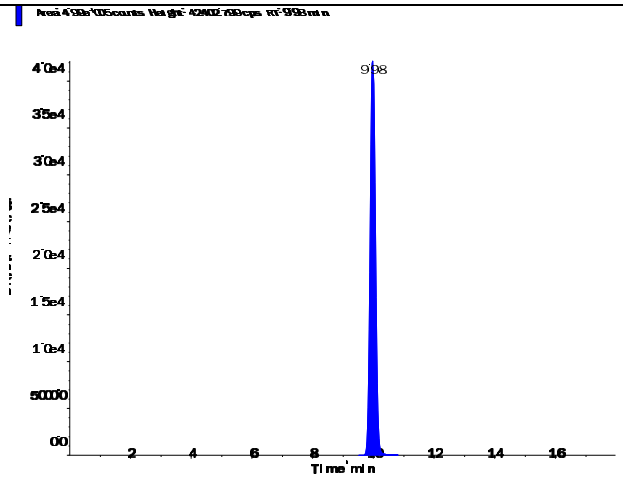

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.99 (9.94) min
Calculated conc:	0.199 ng/ml
Area Ratio:	0.074
Sample Type:	(Standard)

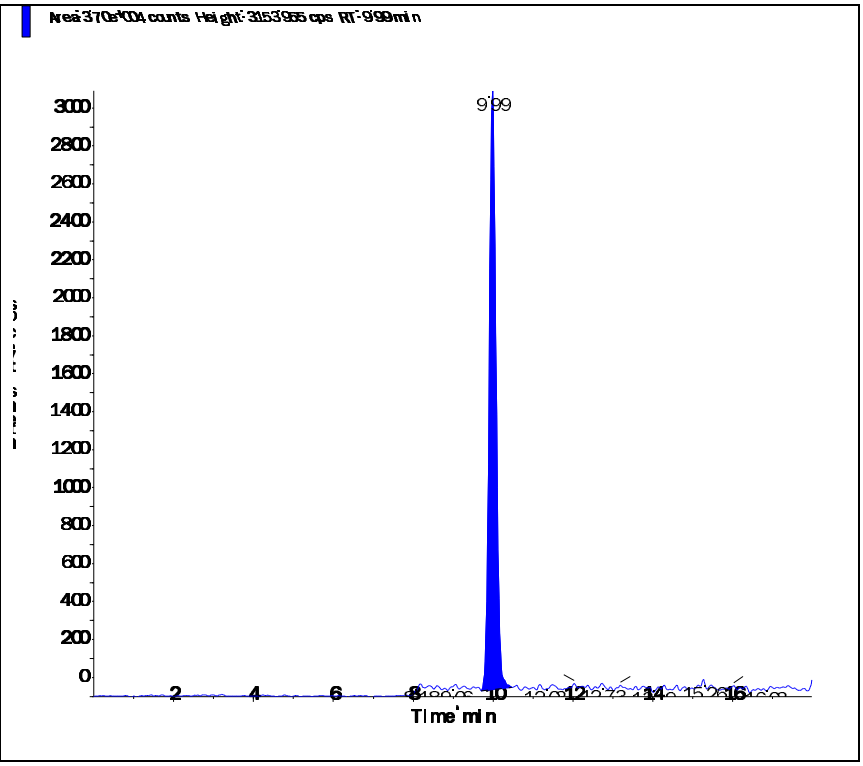

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.98 (9.92) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

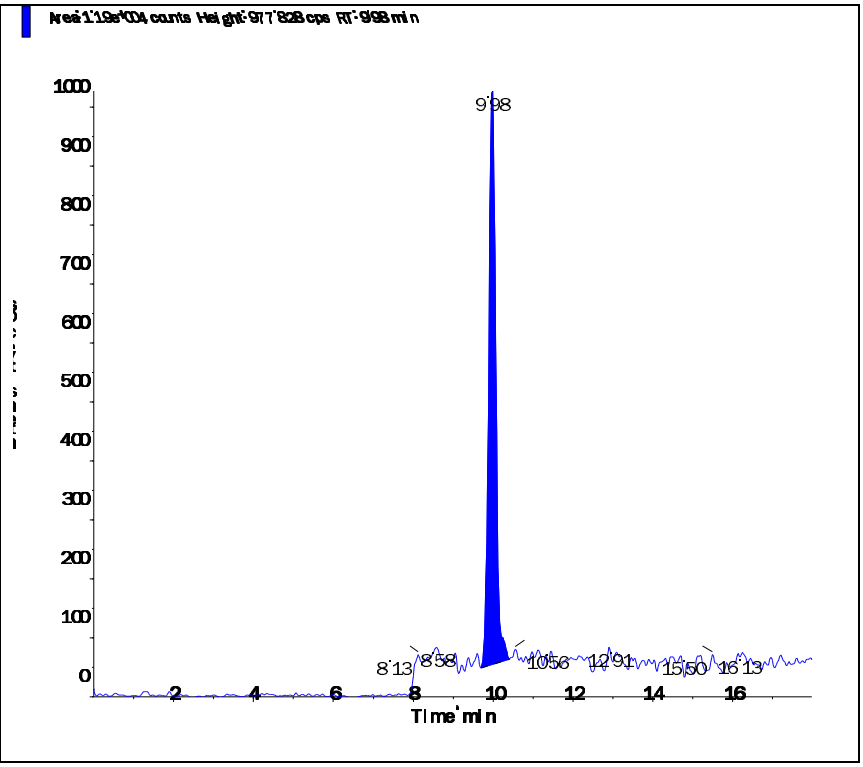

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Data File	LM33570.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/2/2016 9:31:14 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-04 STD (0.5 ug/L)	**Injection Vial**	54.00
Data File	LM33570.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 9:31:14 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559340-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.920e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.900e+04	10.00	0.50	0.505
Perchlorate conf	3.040e+04	9.98	0.50	0.536

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

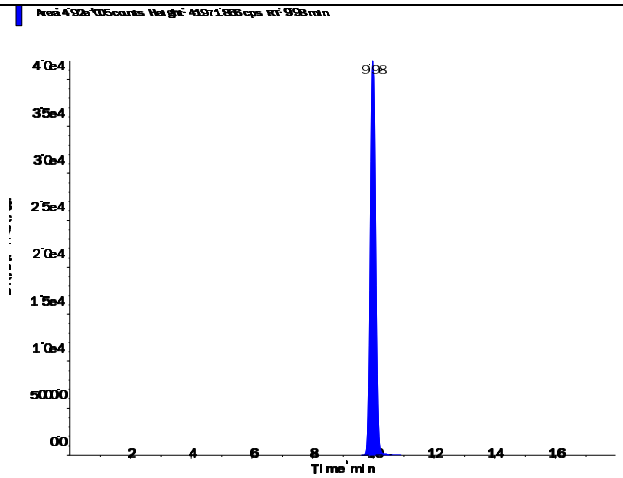

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.00 (9.94) min
Calculated conc:	0.505 ng/ml
Area Ratio:	0.181
Sample Type:	(Standard)

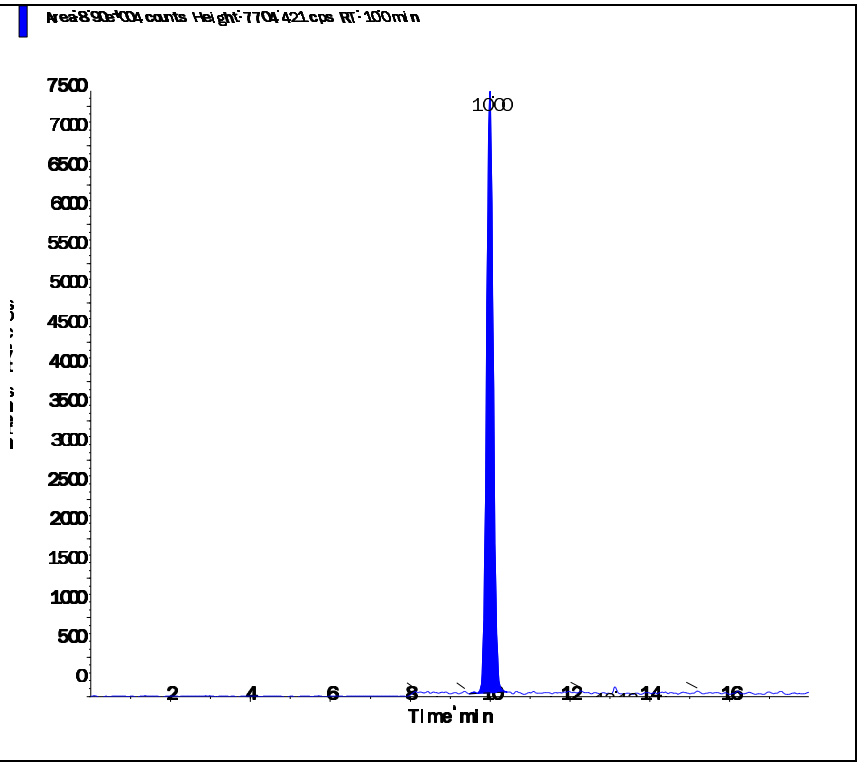

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.98 (9.92) min
Calculated conc:	0.536 ng/ml
Area Ratio:	0.062
Sample Type:	(Standard)

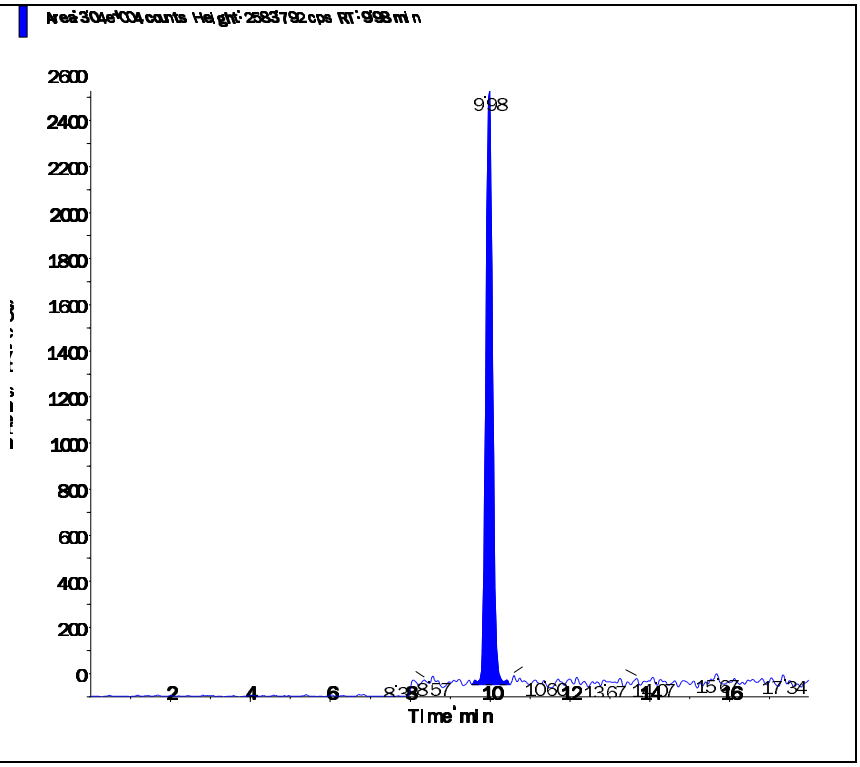

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Data File	LM33571.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/2/2016 9:50:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-05 STD (1.0 ug/L)	**Injection Vial**	55.00
Data File	LM33571.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 9:50:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559340-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.010e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.830e+05	9.99	1.00	1.03
Perchlorate conf	5.680e+04	9.98	1.00	0.995

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

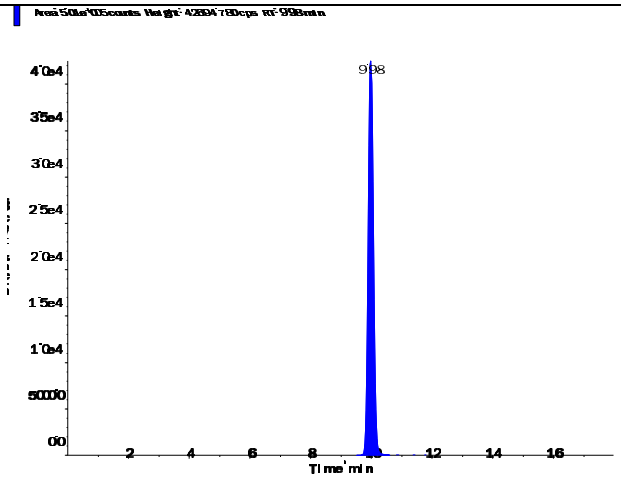

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.99 (9.94) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.366
Sample Type:	(Standard)

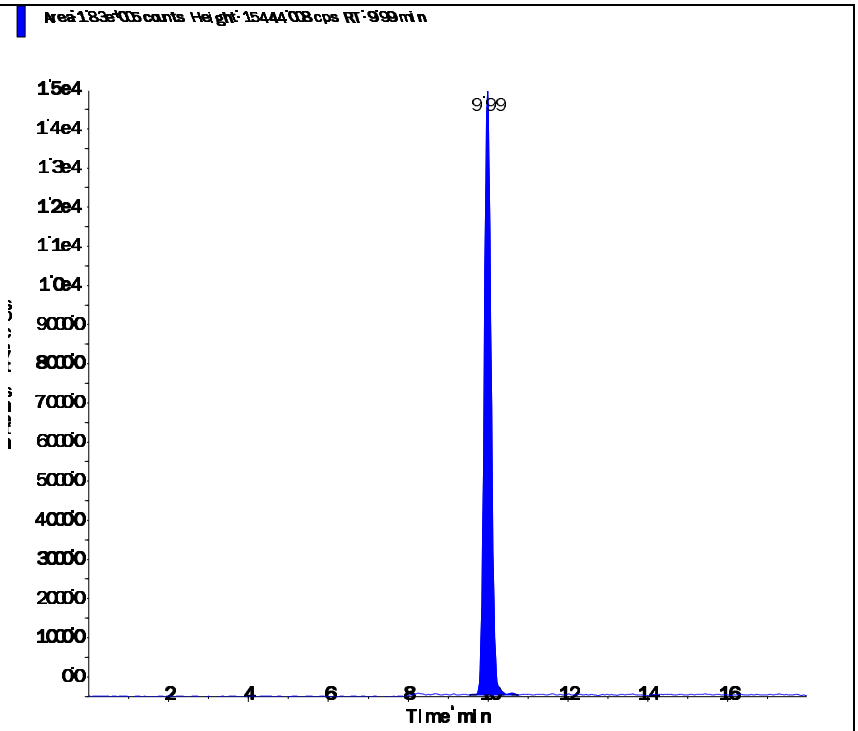

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.98 (9.92) min
Calculated conc:	0.995 ng/ml
Area Ratio:	0.113
Sample Type:	(Standard)

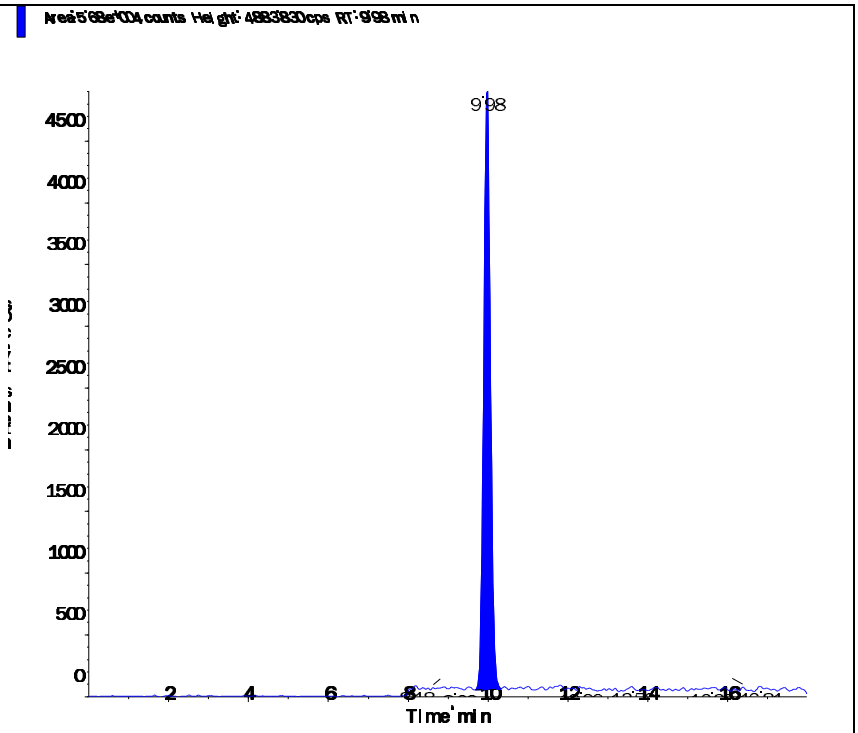

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Data File	LM33572.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/2/2016 10:09:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-06 STD (2.0 ug/L)	**Injection Vial**	56.00
Data File	LM33572.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 10:09:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559340-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.99	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.630e+05	10.00	2.00	2.02
Perchlorate conf	1.170e+05	9.99	2.00	2.01

O18LP (Internal Standard)

RT (Exp. RT): 9.99(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

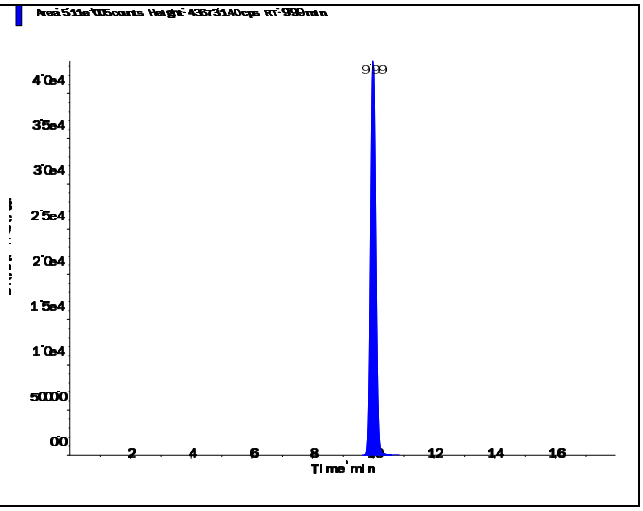

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.00 (9.94) min
Calculated conc:	2.02 ng/ml
Area Ratio:	0.711
Sample Type:	(Standard)

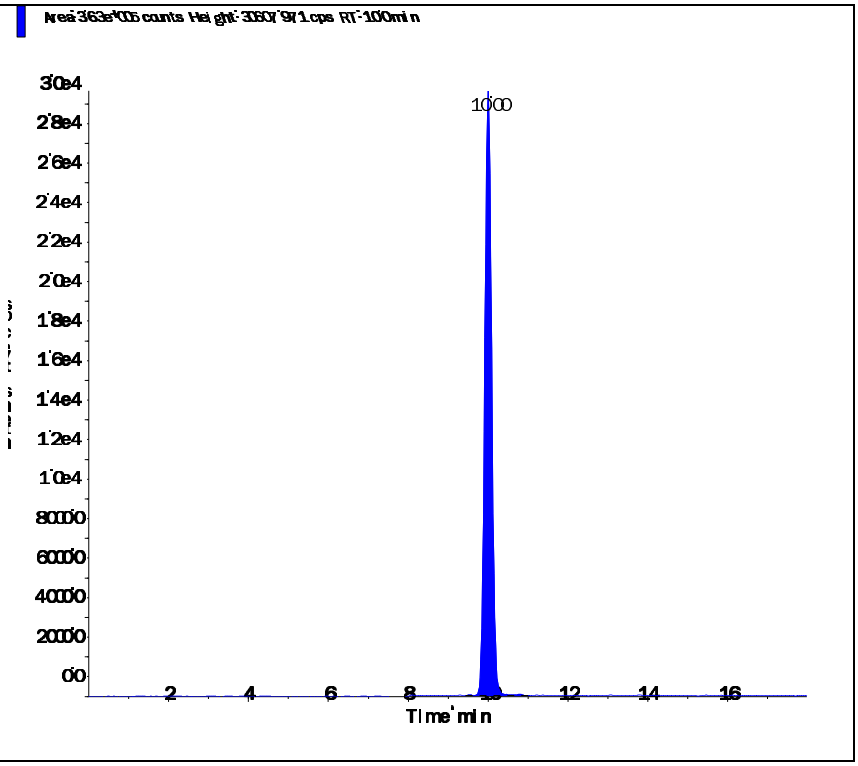

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.99 (9.92) min
Calculated conc:	2.01 ng/ml
Area Ratio:	0.228
Sample Type:	(Standard)

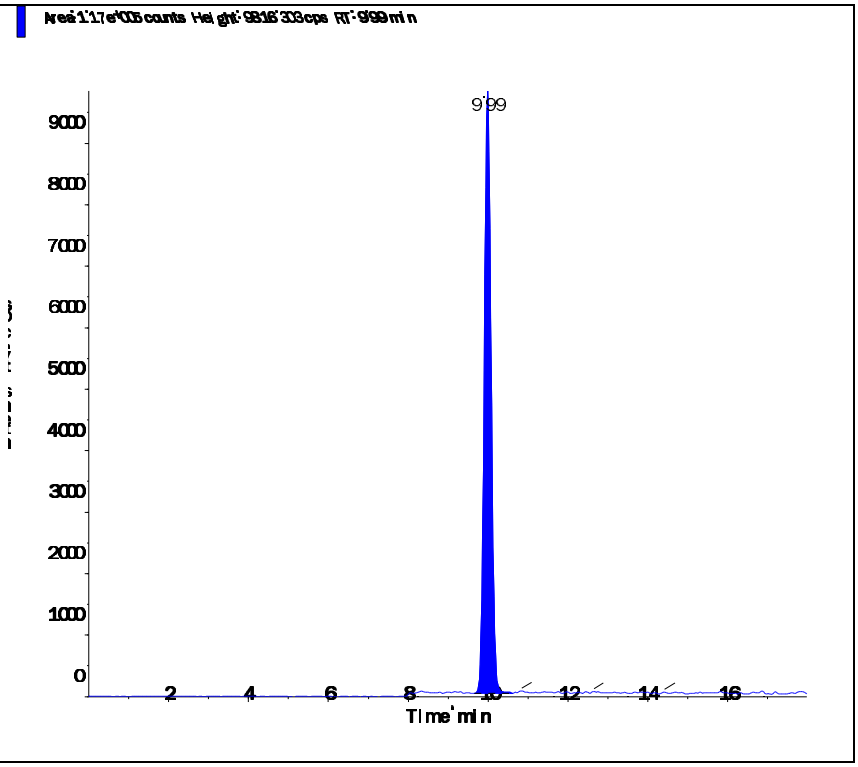

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Data File	LM33573.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/2/2016 10:28:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-07 STD (5.0 ug/L)	**Injection Vial**	57.00
Data File	LM33573.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 10:28:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559340-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.900e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.710e+05	9.98	5.00	5.07
Perchlorate conf	2.820e+05	9.97	5.00	5.11

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

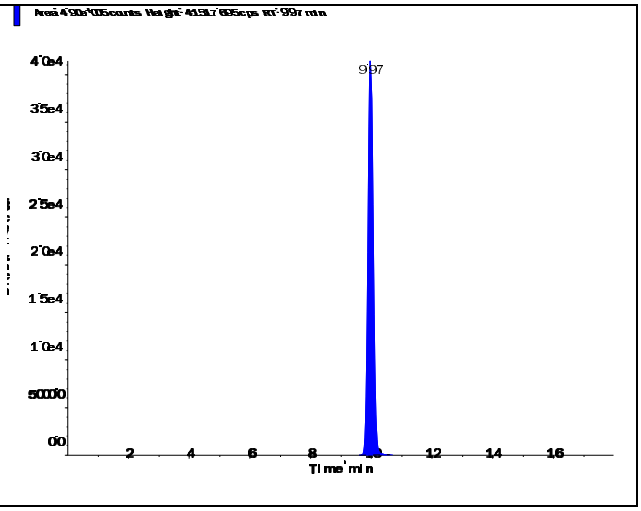

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.98 (9.94) min
Calculated conc:	5.07 ng/ml
Area Ratio:	1.779
Sample Type:	(Standard)

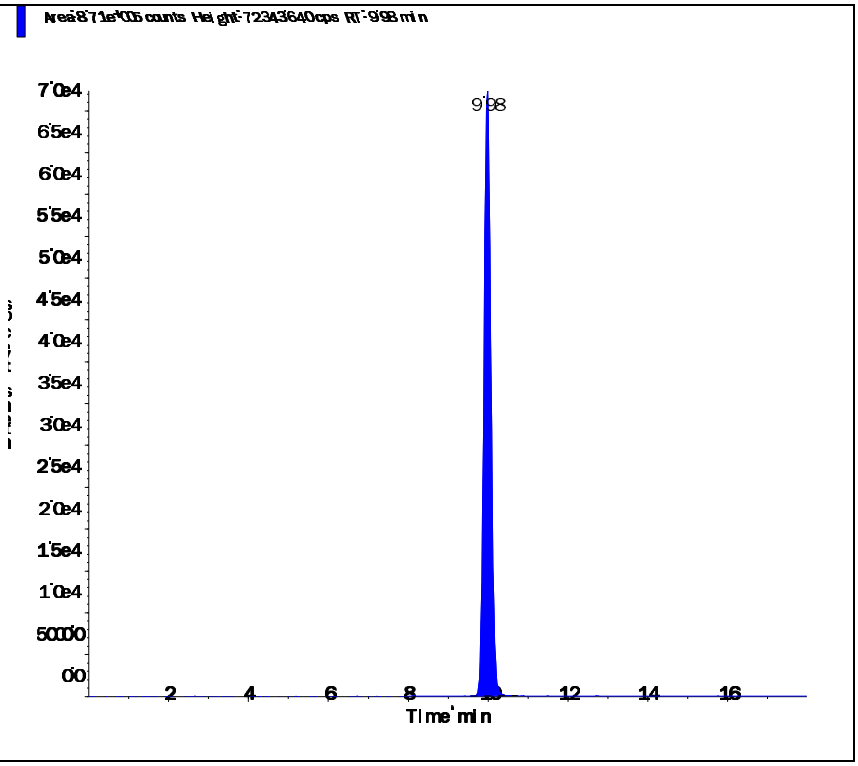

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.97 (9.92) min
Calculated conc:	5.11 ng/ml
Area Ratio:	0.576
Sample Type:	(Standard)

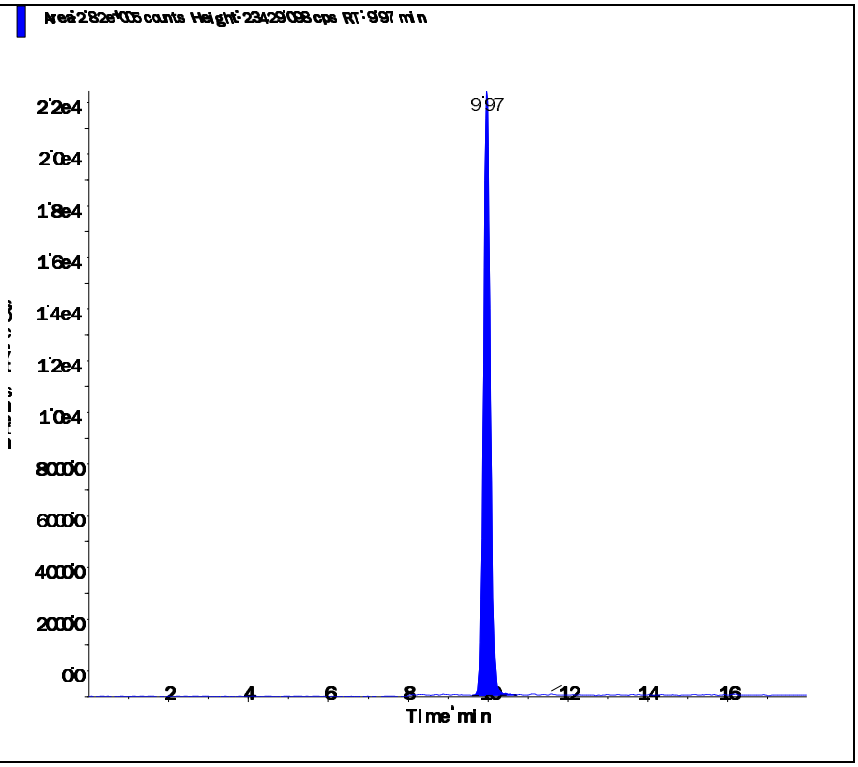

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Data File	LM33574.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/2/2016 10:46:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-08 STD (10 ug/L)	**Injection Vial**	58.00
Data File	LM33574.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 10:46:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559340-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.650e+06	9.98	10.00	9.87
Perchlorate conf	5.300e+05	9.96	10.00	9.85

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

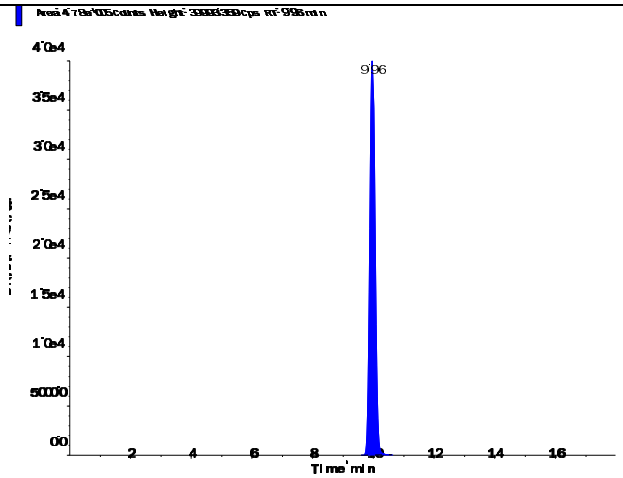

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.98 (9.94) min
Calculated conc:	9.87 ng/ml
Area Ratio:	3.458
Sample Type:	(Standard)

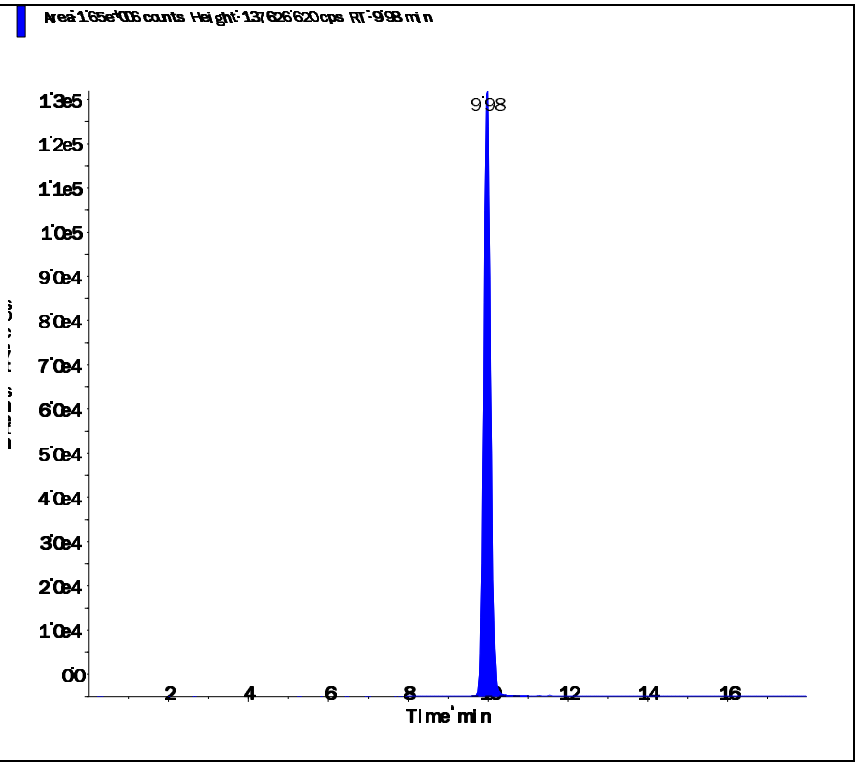

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.96 (9.92) min
Calculated conc:	9.85 ng/ml
Area Ratio:	1.11
Sample Type:	(Standard)

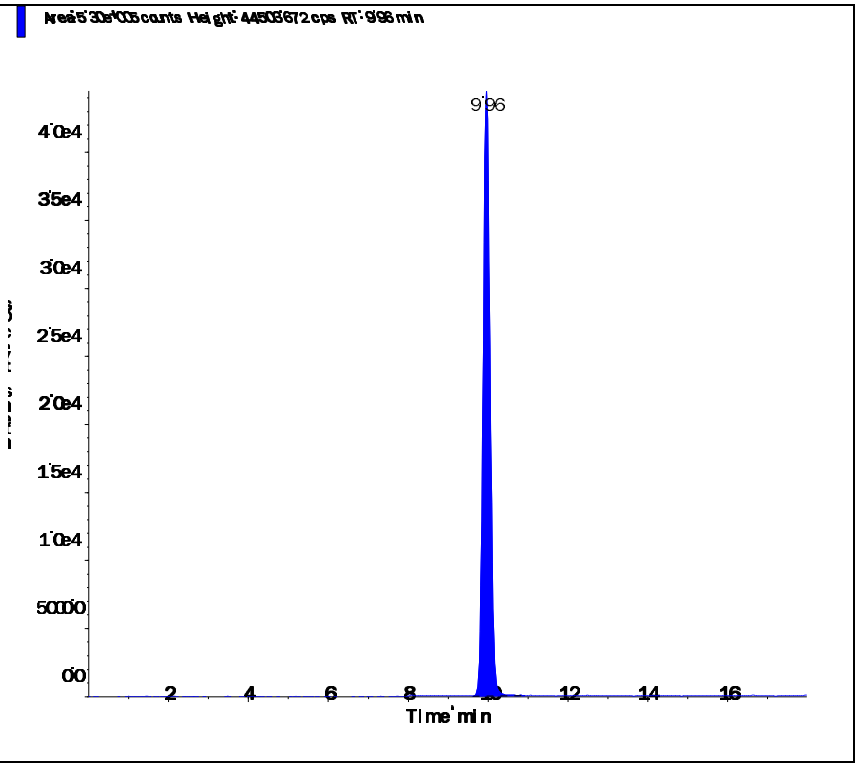

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Data File	LM33575.wiff	**Result Table**	030216_WTD.rdb
Acquisition Date	3/2/2016 11:05:52 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-09 SSCV (1.0 ug/L)	**Injection Vial**	59.00
Data File	LM33575.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 11:05:52 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030216_WTD.rdb
Sample ID	WG559340-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.200e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.900e+05	9.98	1.00	1.03
Perchlorate conf	6.220e+04	9.97	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

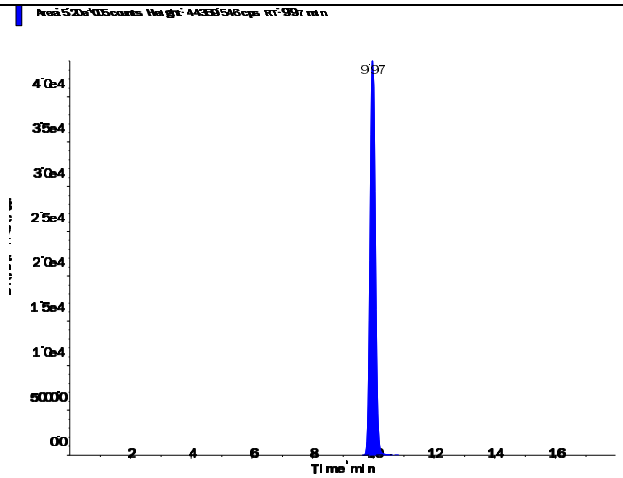

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.98 (9.94) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.366
Sample Type:	(Quality Control)

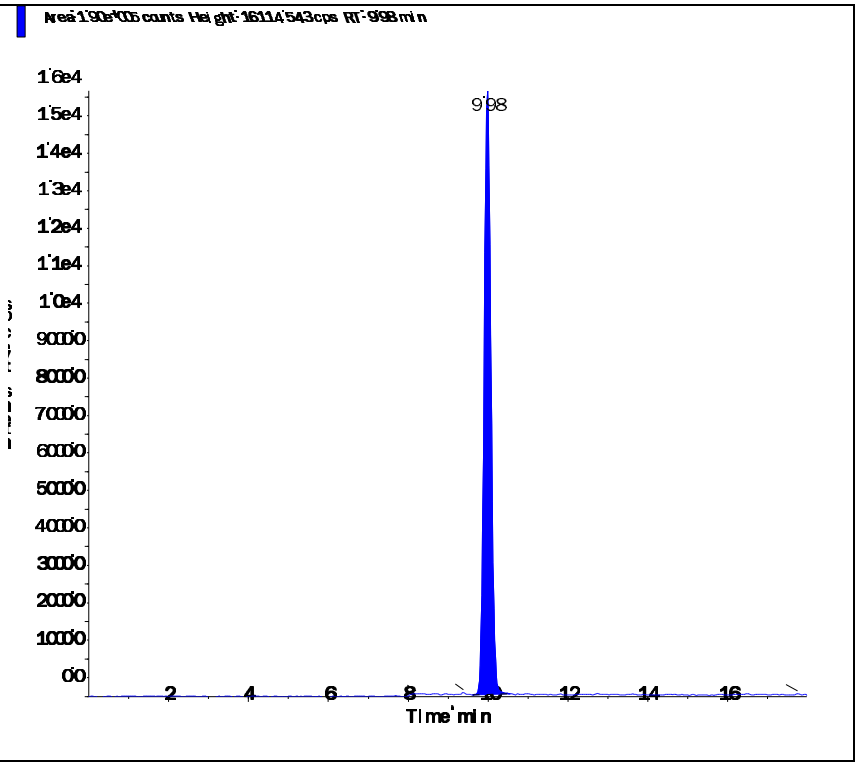

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.97 (9.92) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.12
Sample Type:	(Quality Control)

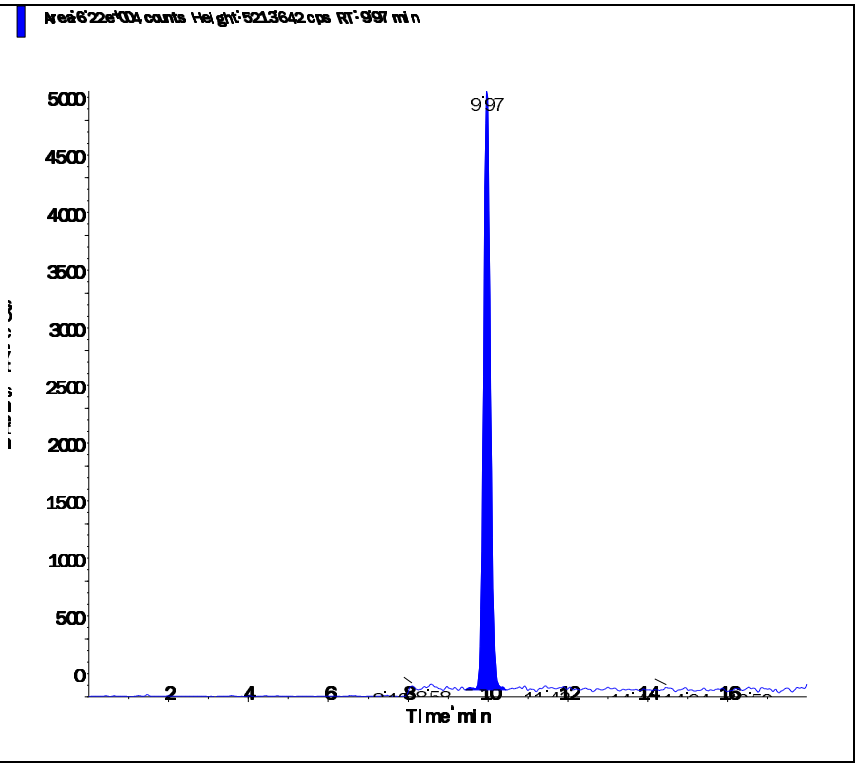

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Data File	LM33711.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 4:57:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559812-02 CCV (1.0ug/L)	**Injection Vial**	2.00
Data File	LM33711.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 4:57:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559812-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.160e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.770e+05	9.95	1.00	0.969
Perchlorate conf	5.620e+04	9.94	1.00	0.954

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

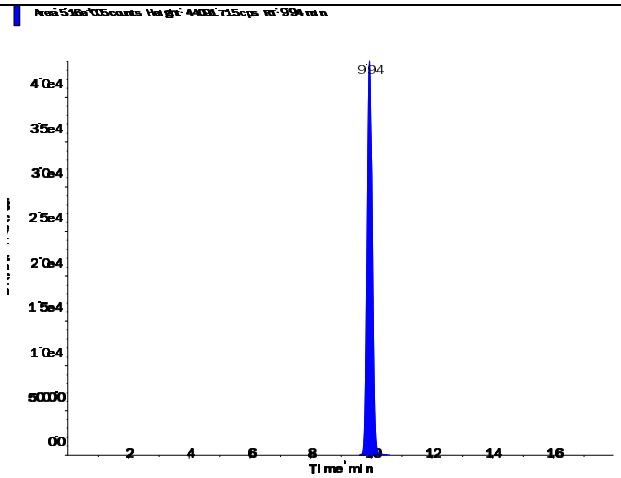

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	0.969 ng/ml
Area Ratio:	0.343
Sample Type:	(Quality Control)

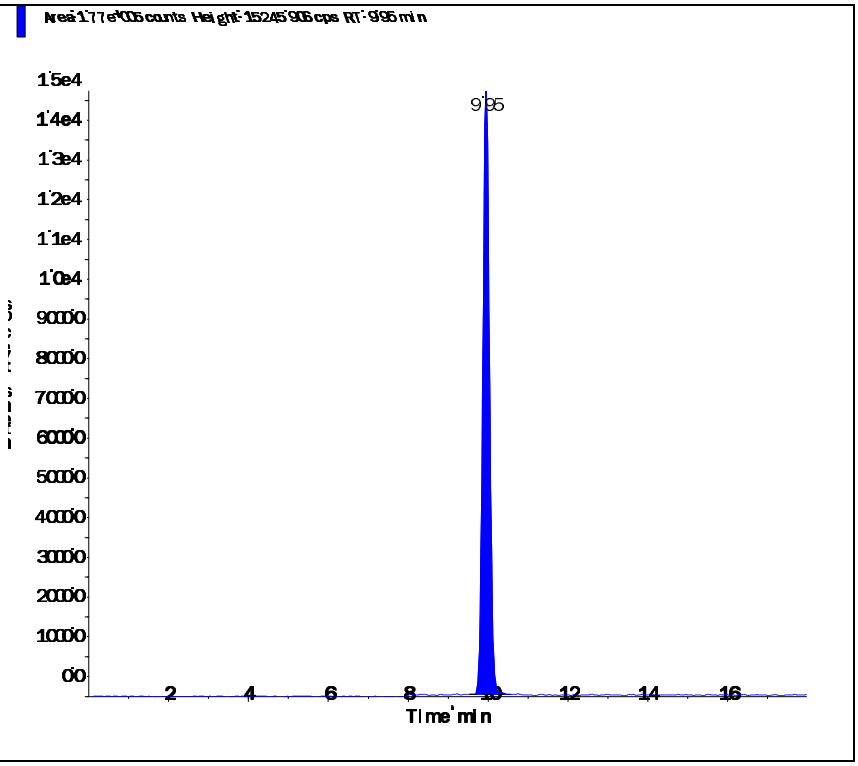

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.954 ng/ml
Area Ratio:	0.109
Sample Type:	(Quality Control)

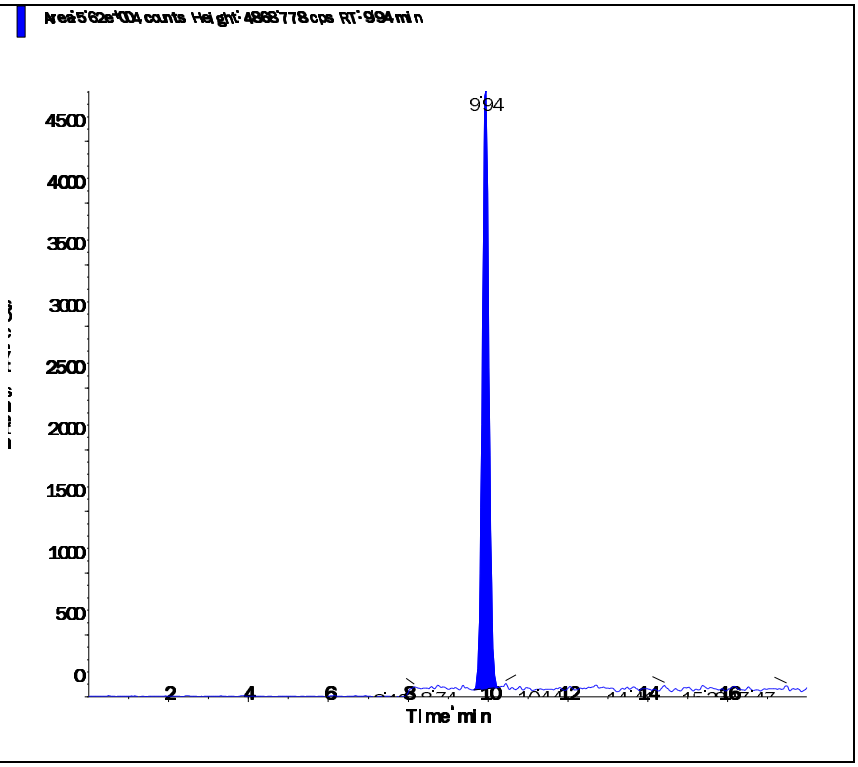

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Data File	LM33723.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 8:44:26 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559812-03 CCV (1.0ug/L)	**Injection Vial**	2.00
Data File	LM33723.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 8:44:26 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559812-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.800e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.000e+05	9.92	1.00	0.975
Perchlorate conf	6.220e+04	9.90	1.00	0.939

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

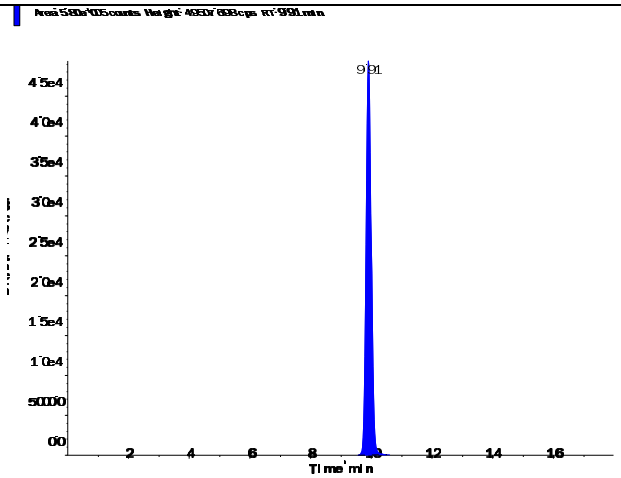

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.92 (9.94) min
Calculated conc:	0.975 ng/ml
Area Ratio:	0.345
Sample Type:	(Quality Control)

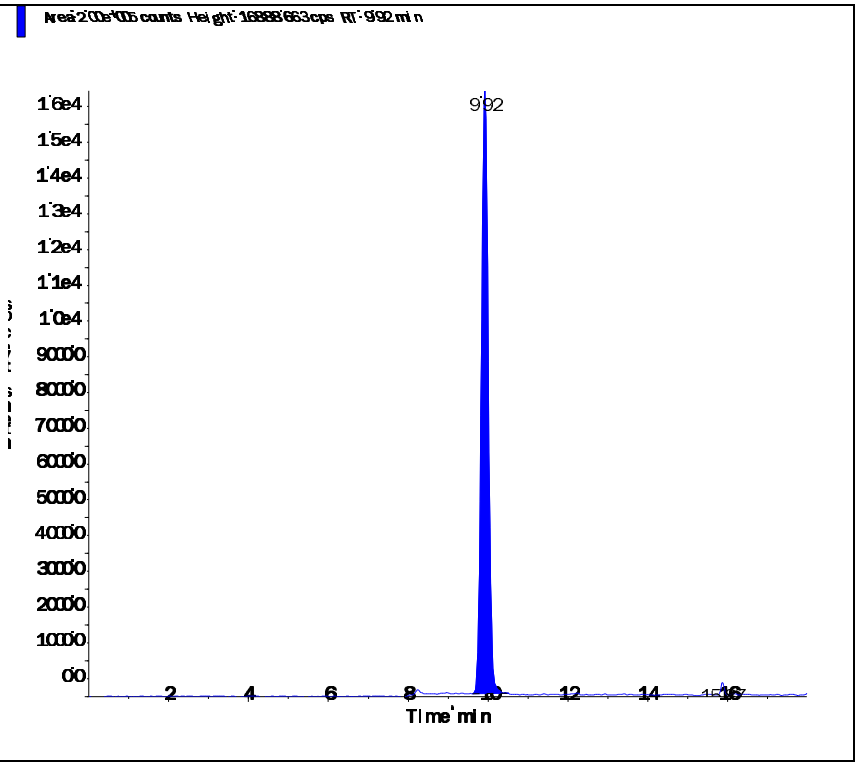

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.90 (9.92) min
Calculated conc:	0.939 ng/ml
Area Ratio:	0.107
Sample Type:	(Quality Control)

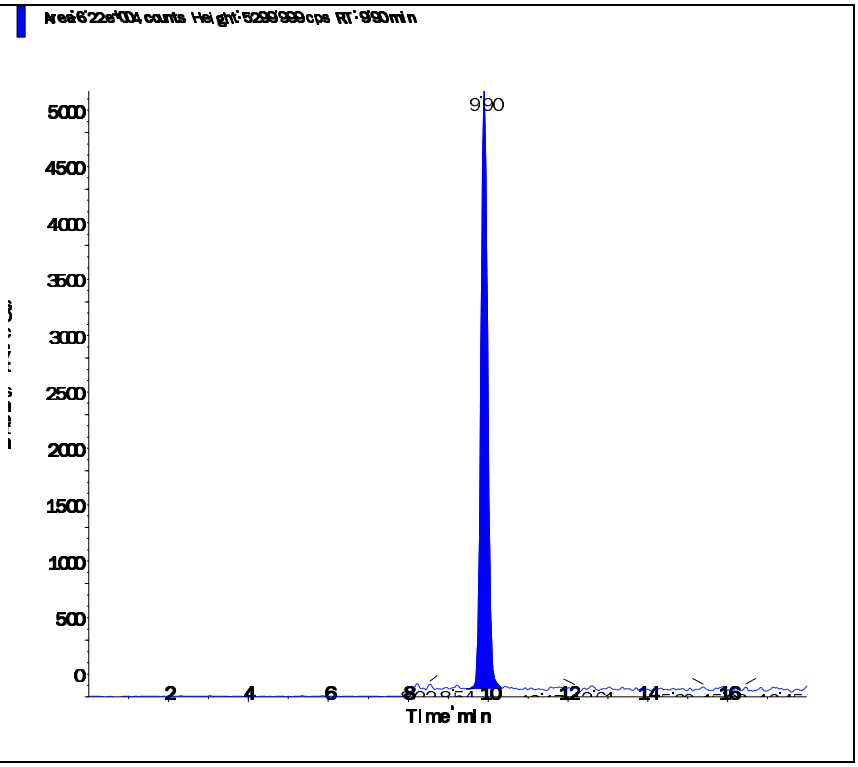

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Data File	LM33733.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 11:53:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559812-05 CCV (1.0ug/L)	**Injection Vial**	2.00
Data File	LM33733.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 11:53:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559812-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.630e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.950e+05	9.94	1.00	0.978
Perchlorate conf	6.150e+04	9.92	1.00	0.958

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

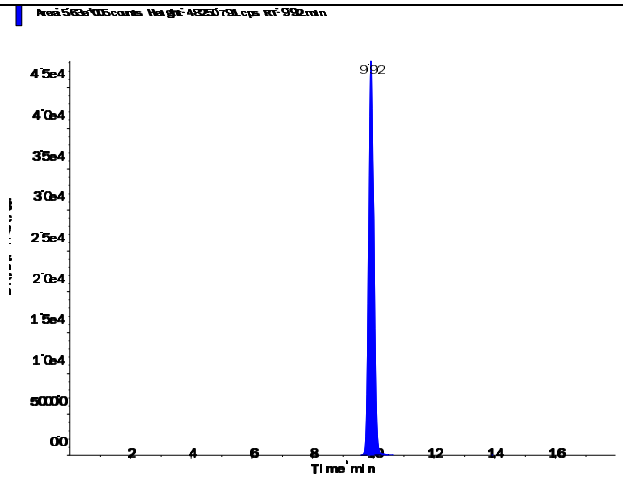

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.978 ng/ml
Area Ratio:	0.346
Sample Type:	(Quality Control)

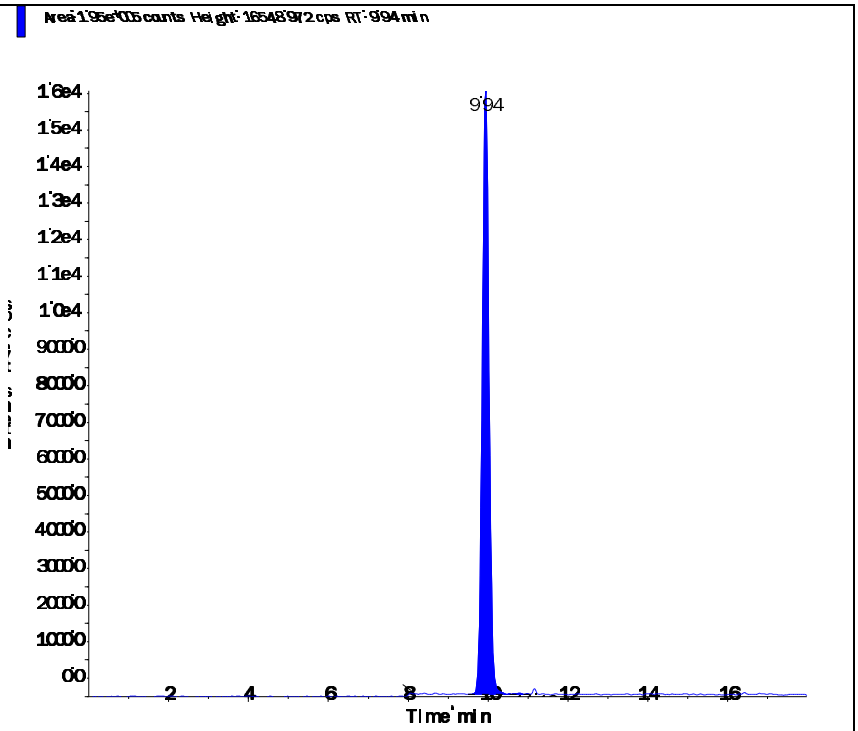

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	0.958 ng/ml
Area Ratio:	0.109
Sample Type:	(Quality Control)

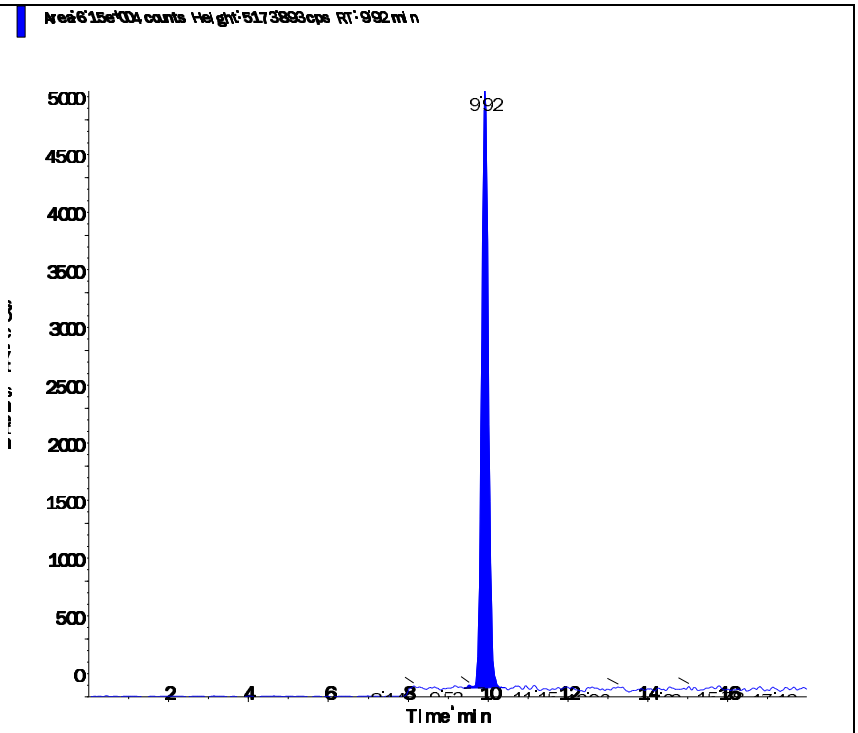

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Data File	LM33737.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/7/2016 10:13:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559899-02 CCV (1.0ug/L)	**Injection Vial**	2.00
Data File	LM33737.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 10:13:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559899-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.590e+05	9.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.980e+05	9.90	1.00	0.999
Perchlorate conf	6.430e+04	9.89	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.90(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

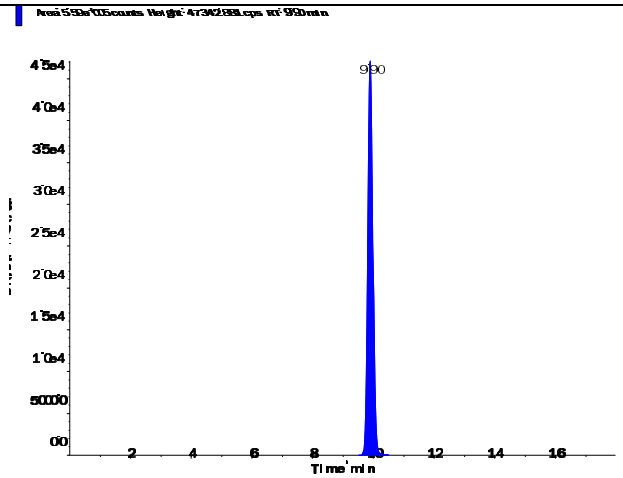

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.90 (9.94) min
Calculated conc:	0.999 ng/ml
Area Ratio:	0.354
Sample Type:	(Quality Control)

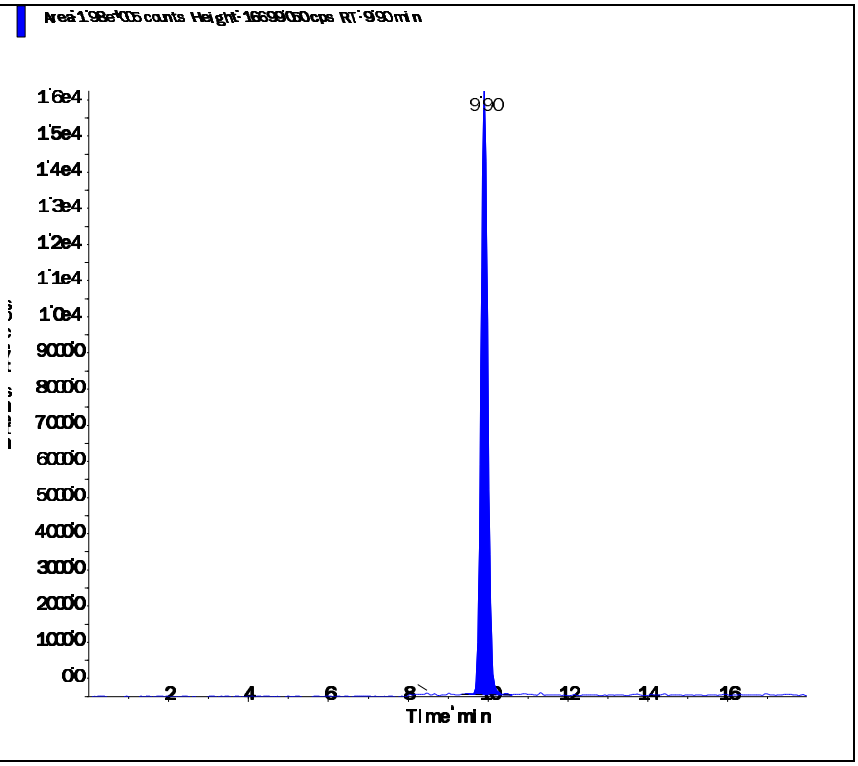

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.89 (9.92) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.115
Sample Type:	(Quality Control)

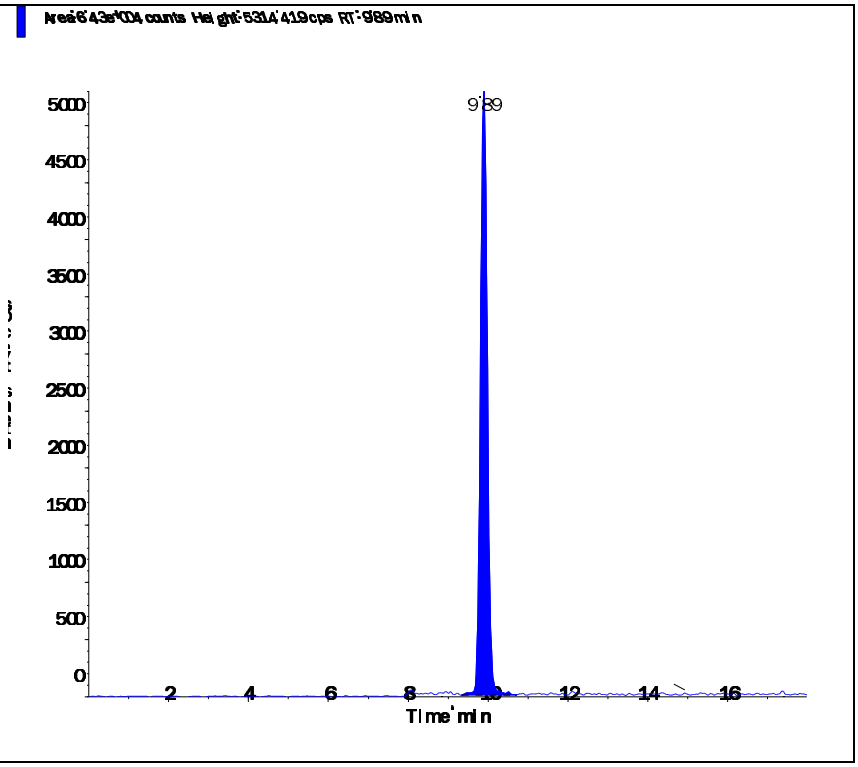

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Data File	LM33745.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/7/2016 12:45:07 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559899-03 CCV (1.0ug/L)	**Injection Vial**	2.00
Data File	LM33745.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 12:45:07 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559899-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.420e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.830e+05	9.93	1.00	0.951
Perchlorate conf	6.020e+04	9.92	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

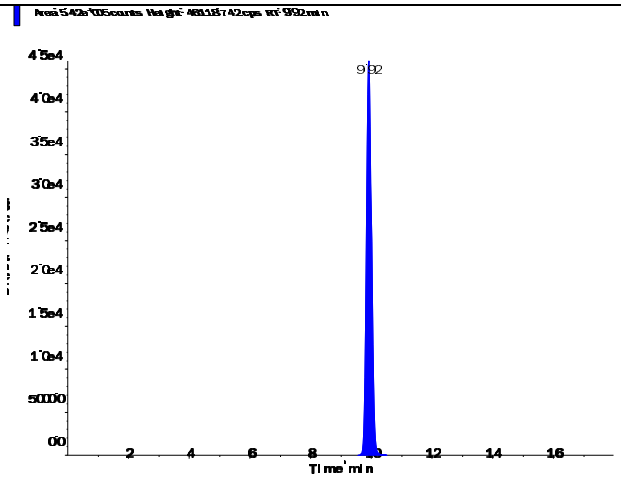

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	0.951 ng/ml
Area Ratio:	0.337
Sample Type:	(Quality Control)

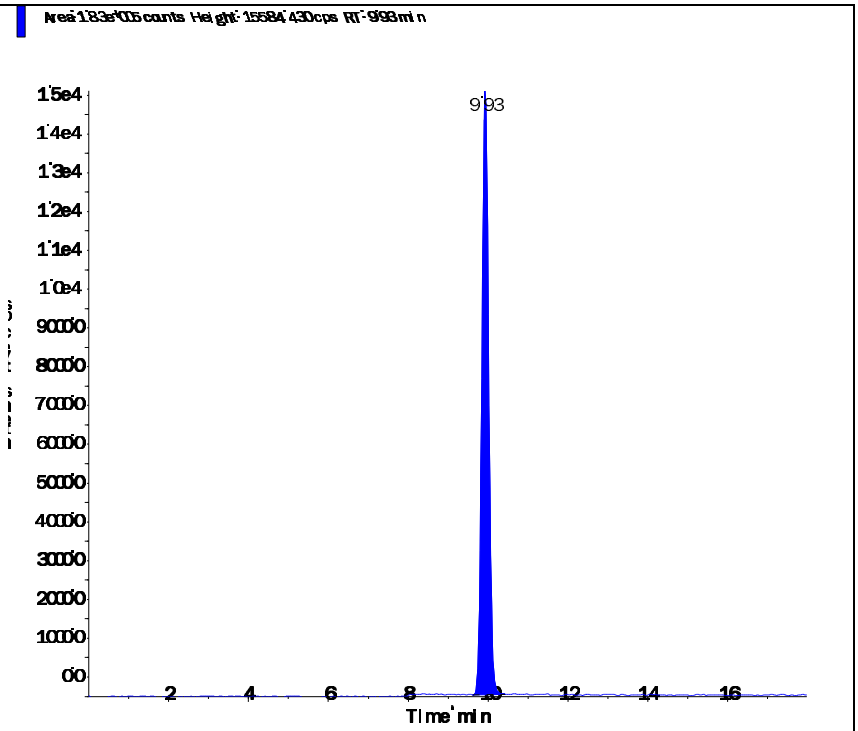

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

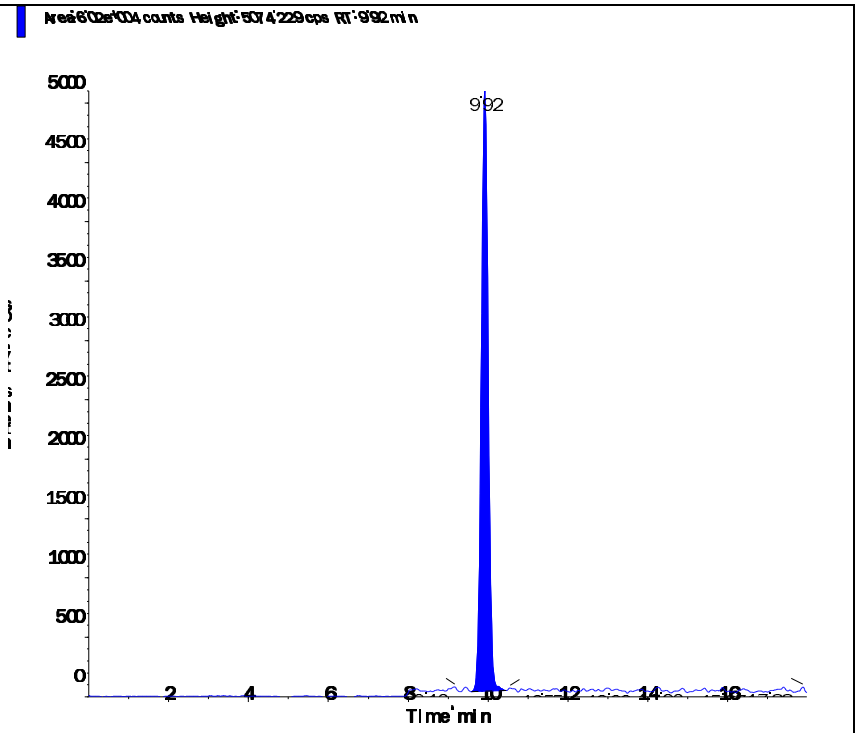

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Data File	LM33712.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 5:16:08 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559808-07 MRL (2.0ug/kg)	**Injection Vial**	3.00
Data File	LM33712.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 5:16:08 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559808-07	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.340e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.890e+04	9.96	N/A	0.196
Perchlorate conf	1.290e+04	9.94	N/A	0.201

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

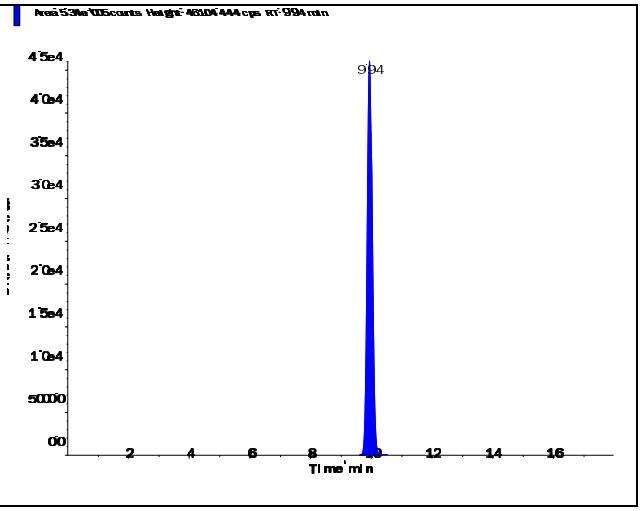

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	0.196 ng/ml
Area Ratio:	0.073
Sample Type:	(Unknown)

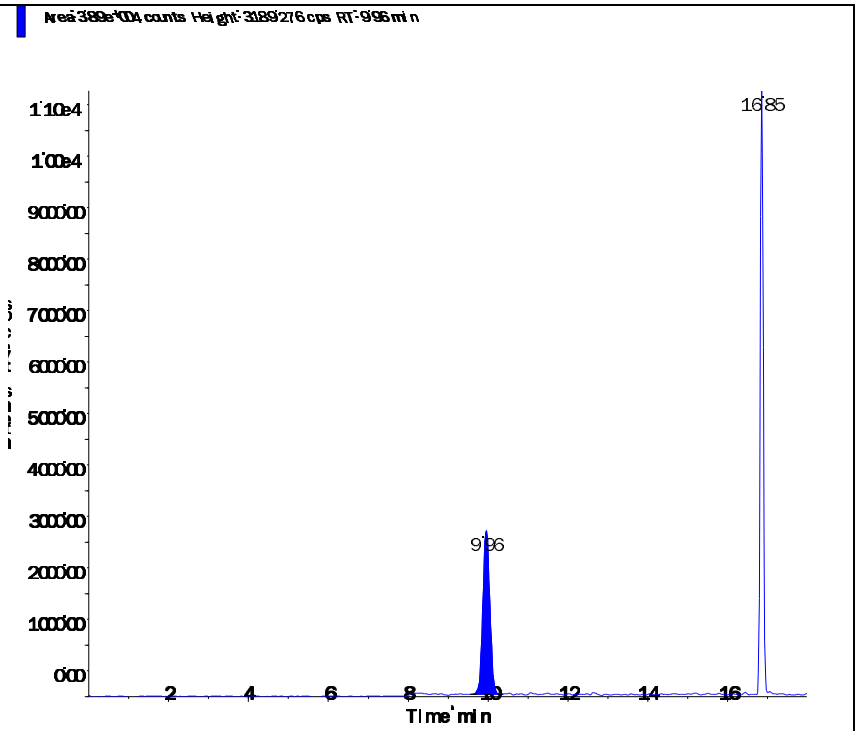

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

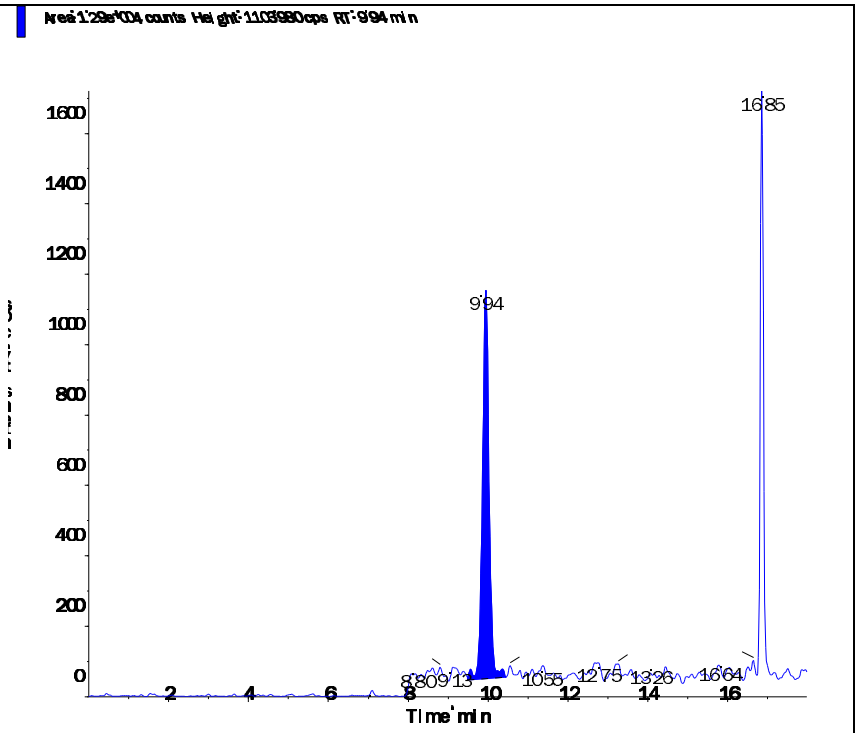

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Data File	LM33724.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 9:03:23 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559808-08 MRL (2.0ug/kg)	**Injection Vial**	3.00
Data File	LM33724.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 9:03:23 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559808-08	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.820e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.260e+04	9.94	N/A	0.197
Perchlorate conf	1.340e+04	9.92	N/A	0.191

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

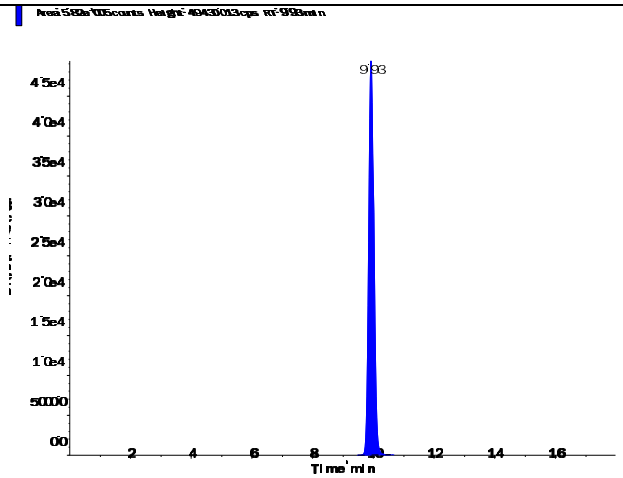

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.073
Sample Type:	(Unknown)

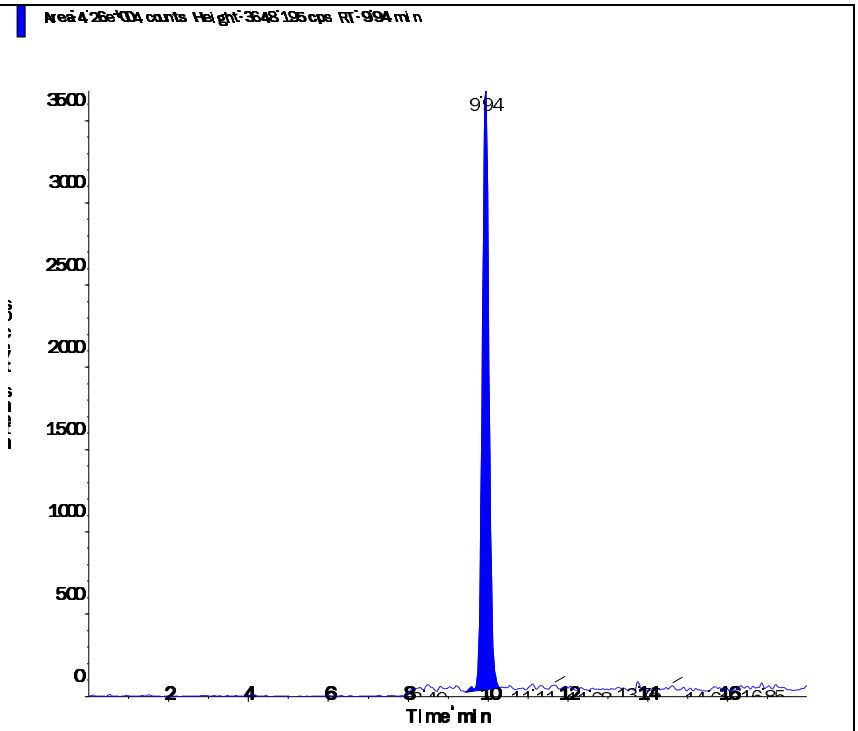

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	0.191 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

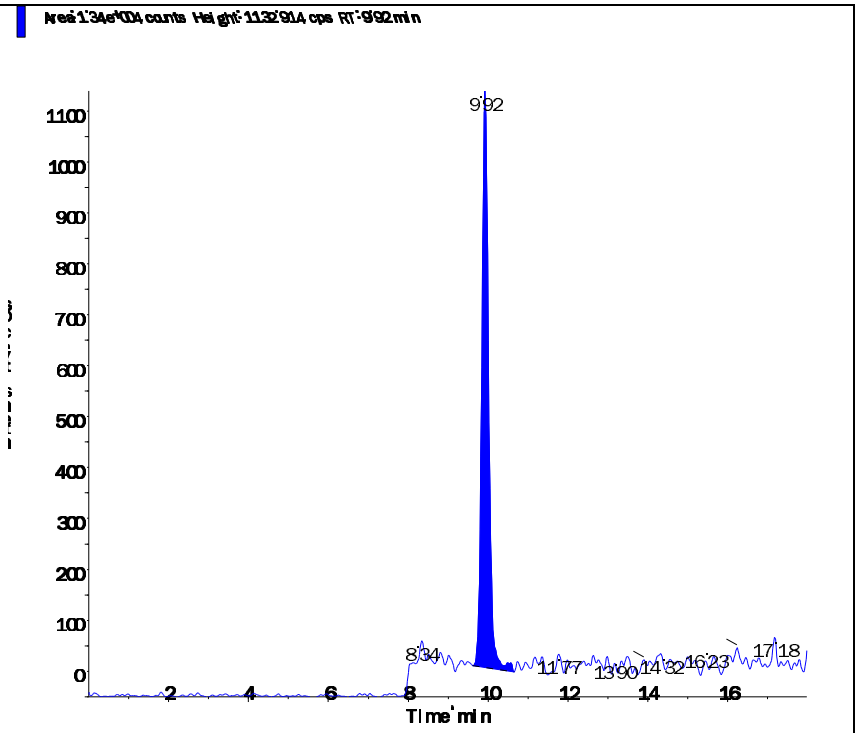

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Data File	LM33734.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/5/2016 12:12:48 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559808-09 MRL (2.0ug/kg)	**Injection Vial**	3.00
Data File	LM33734.wiff	**Injection Volume**	10.00
Acquisition Date	3/5/2016 12:12:48 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559808-09	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.690e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.140e+04	9.94	N/A	0.195
Perchlorate conf	1.260e+04	9.92	N/A	0.183

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

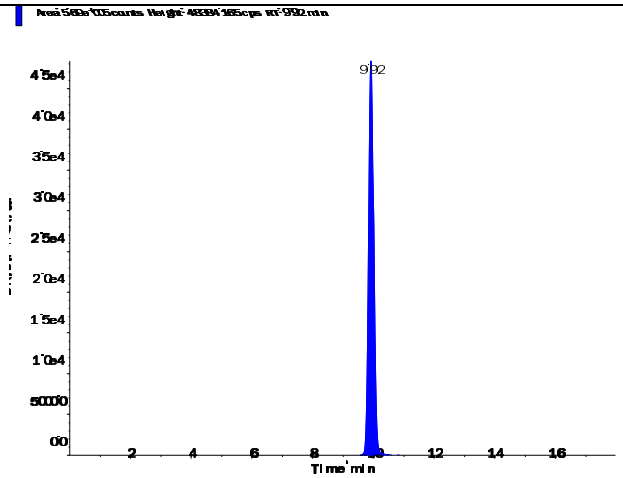

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.195 ng/ml
Area Ratio:	0.073
Sample Type:	(Unknown)

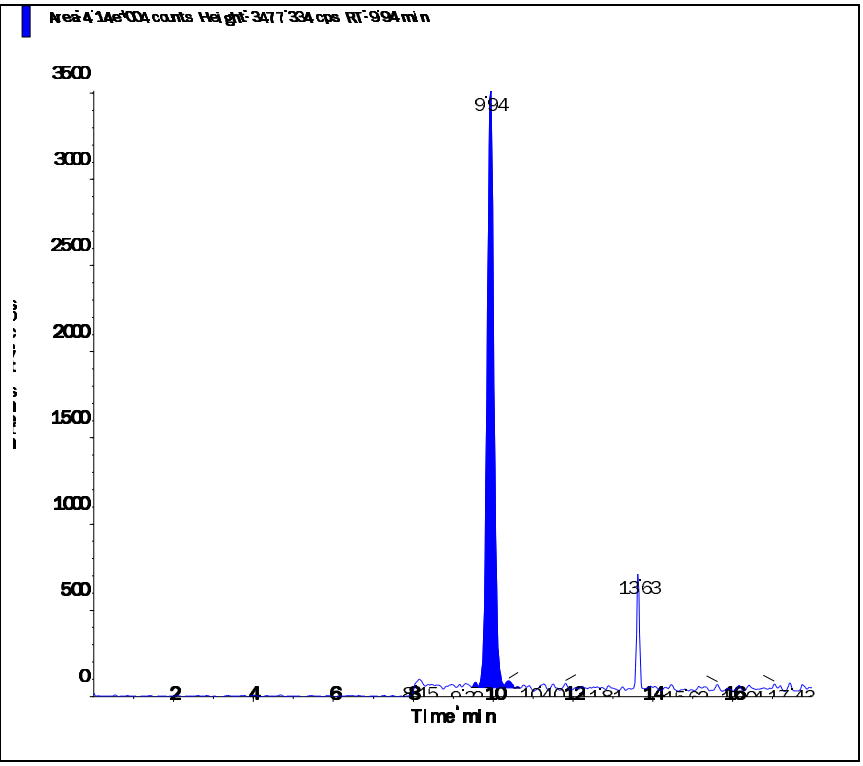

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	0.183 ng/ml
Area Ratio:	0.022
Sample Type:	(Unknown)

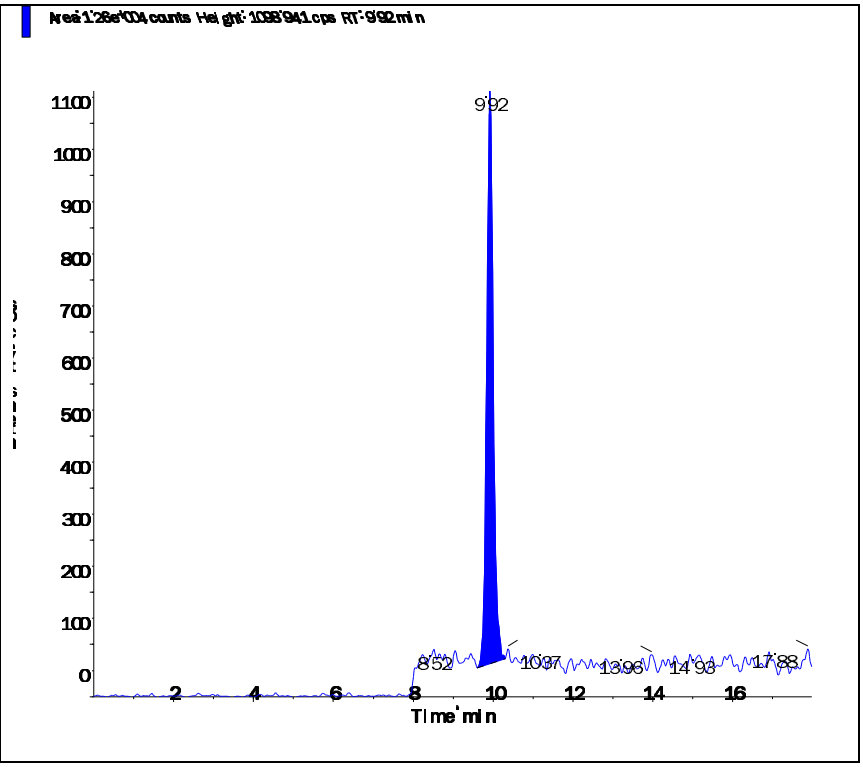

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Data File	LM33738.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/7/2016 10:32:32 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559808-10 MRL (2.0ug/kg)	**Injection Vial**	3.00
Data File	LM33738.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 10:32:32 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559808-10	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.610e+05	9.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.940e+04	9.91	N/A	0.188
Perchlorate conf	1.350e+04	9.90	N/A	0.199

O18LP (Internal Standard)

RT (Exp. RT): 9.90(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

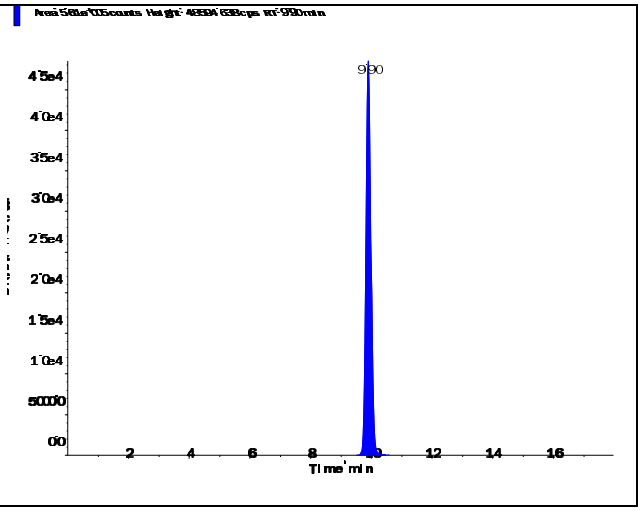

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.91 (9.94) min
Calculated conc:	0.188 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

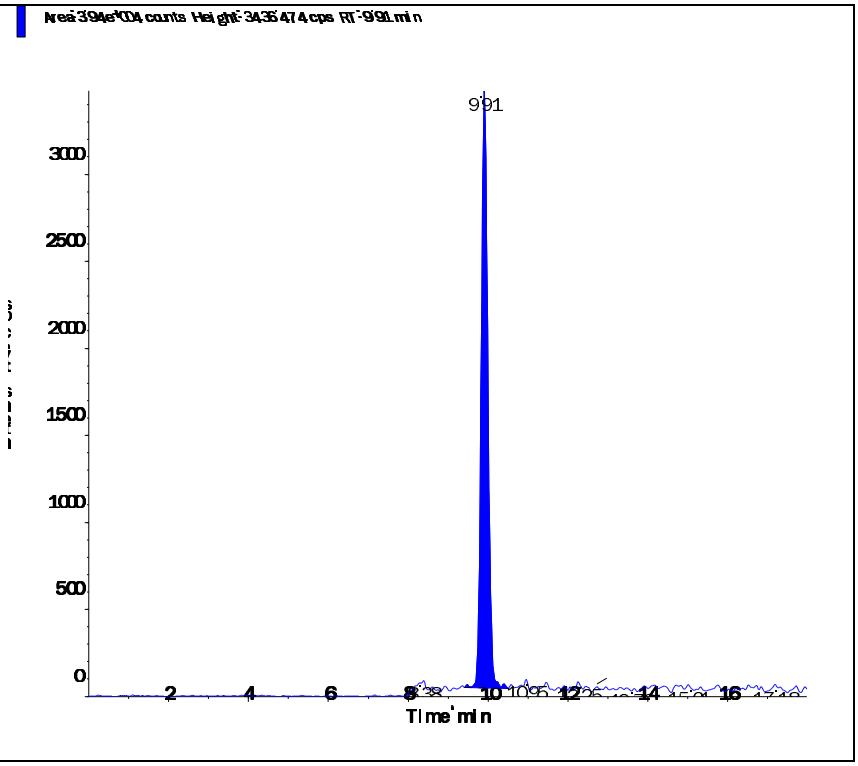

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.90 (9.92) min
Calculated conc:	0.199 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

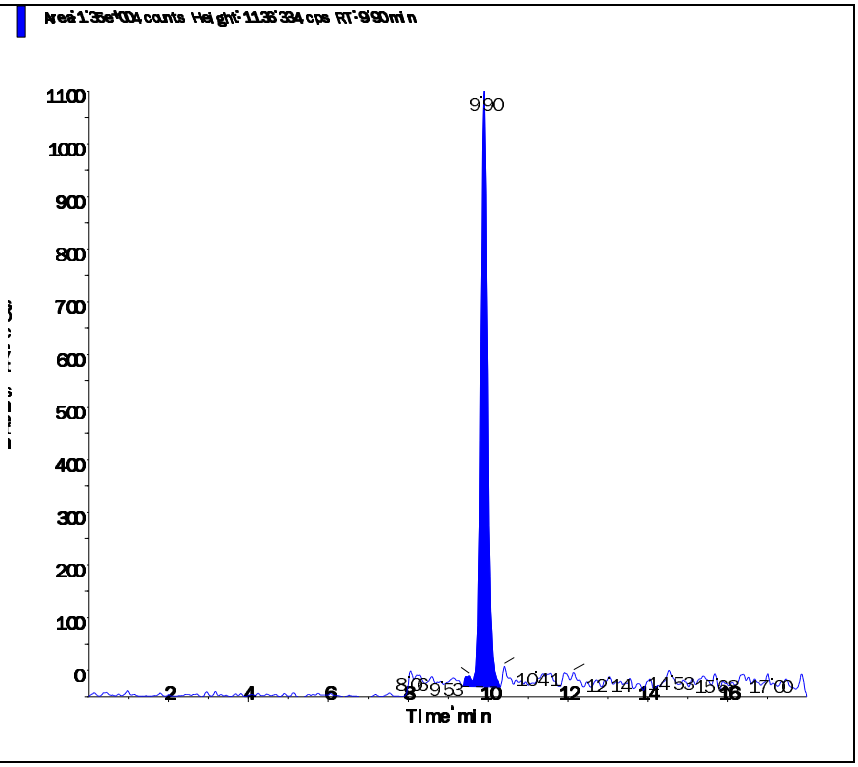

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Printed: 3/7/2016 5:52 PM

Data File	LM33746.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/7/2016 1:04:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559808-11 MRL (2.0ug/kg)	**Injection Vial**	3.00
Data File	LM33746.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 1:04:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559808-11	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.270e+05	9.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.830e+04	9.91	N/A	0.195
Perchlorate conf	1.260e+04	9.90	N/A	0.198

O18LP (Internal Standard)

RT (Exp. RT): 9.90(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

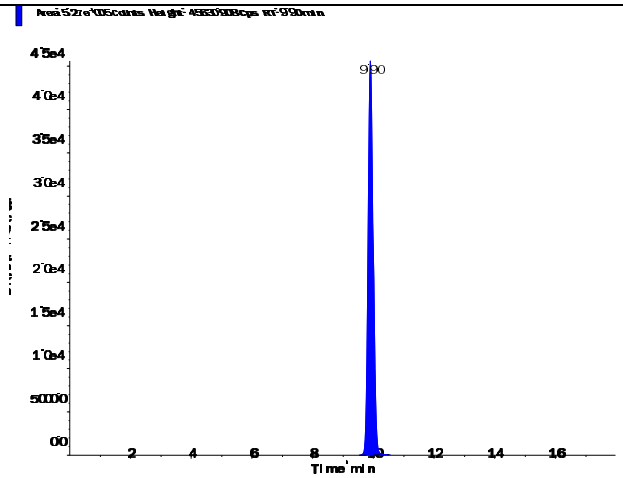

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.91 (9.94) min
Calculated conc:	0.195 ng/ml
Area Ratio:	0.073
Sample Type:	(Unknown)

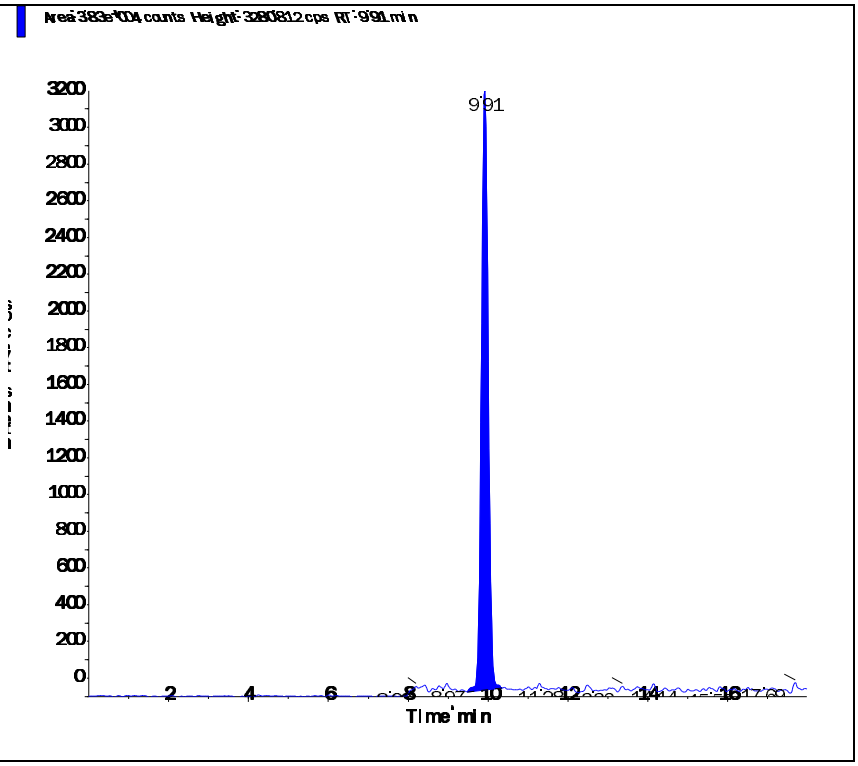

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.90 (9.92) min
Calculated conc:	0.198 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

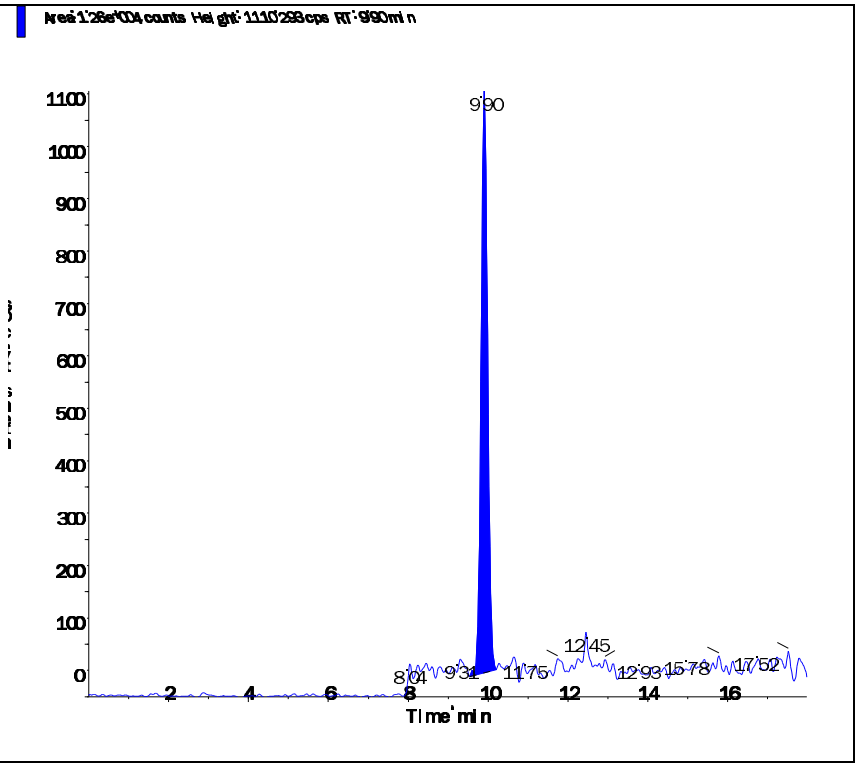

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Data File	LM33710.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 4:38:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559812-01 CCB	**Injection Vial**	1.00
Data File	LM33710.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 4:38:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559812-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.980e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

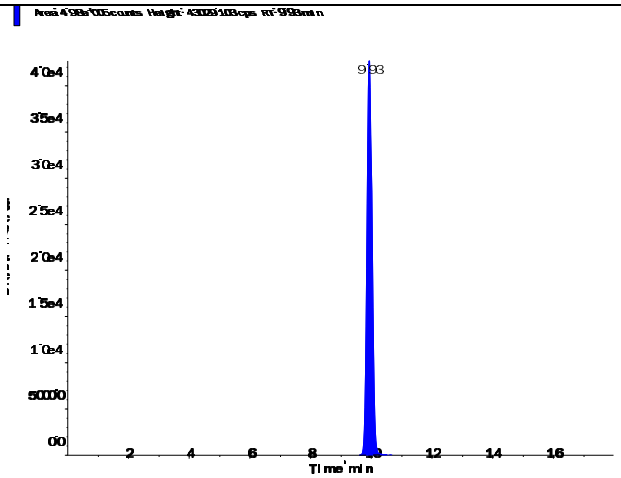

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

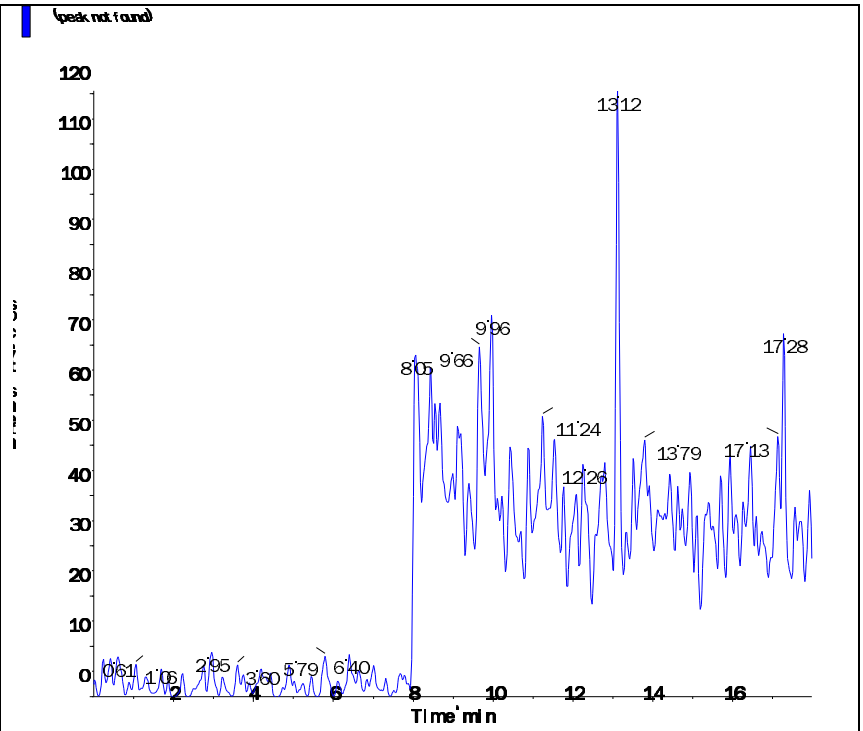

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

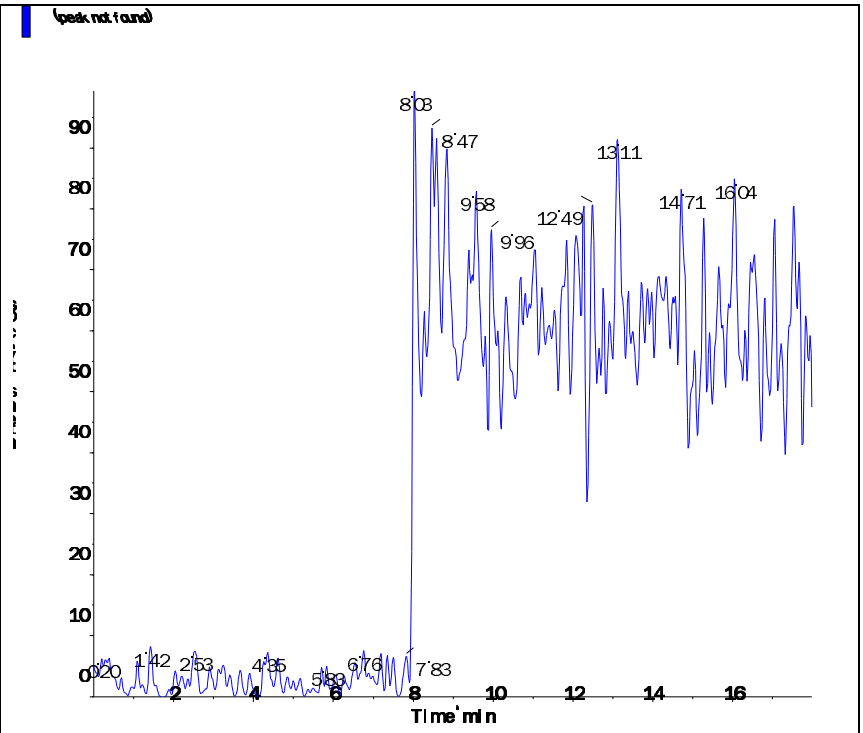

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Data File	LM33725.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 9:22:19 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559812-04 CCB	**Injection Vial**	1.00
Data File	LM33725.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 9:22:19 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559812-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.700e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

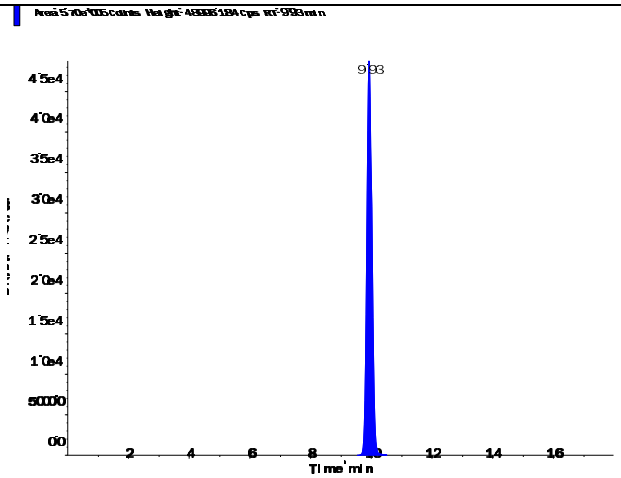

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

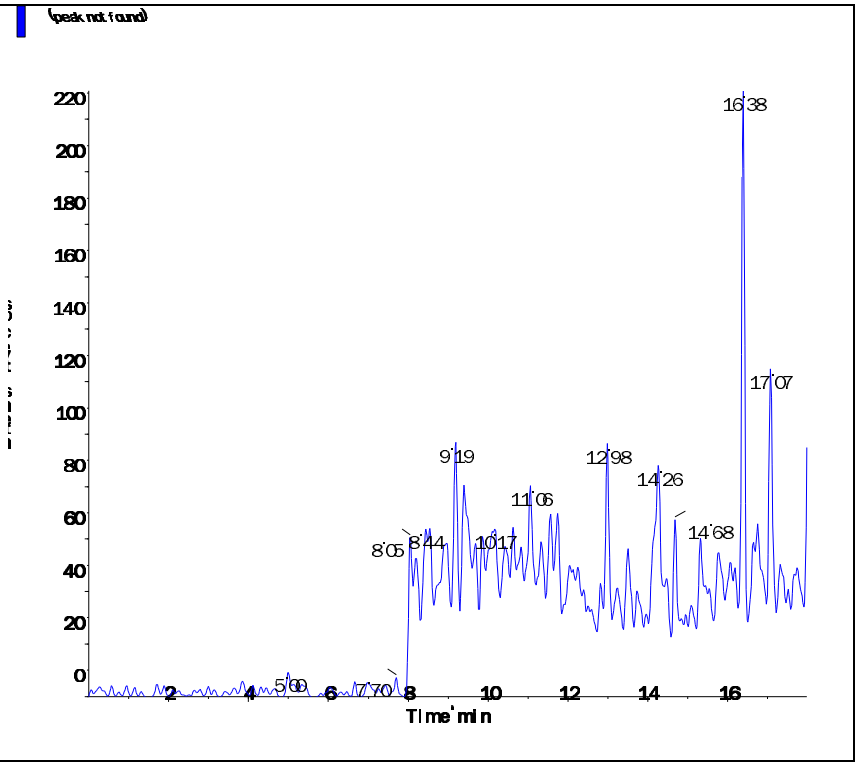

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

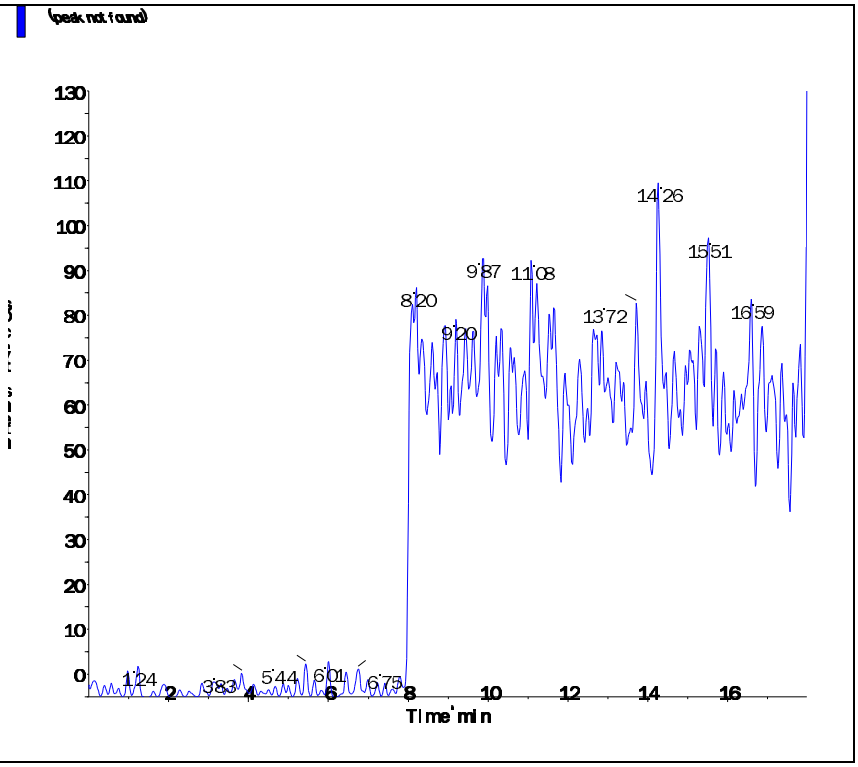

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Data File	LM33735.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/5/2016 12:31:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559812-06 CCB	**Injection Vial**	1.00
Data File	LM33735.wiff	**Injection Volume**	10.00
Acquisition Date	3/5/2016 12:31:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559812-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.590e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

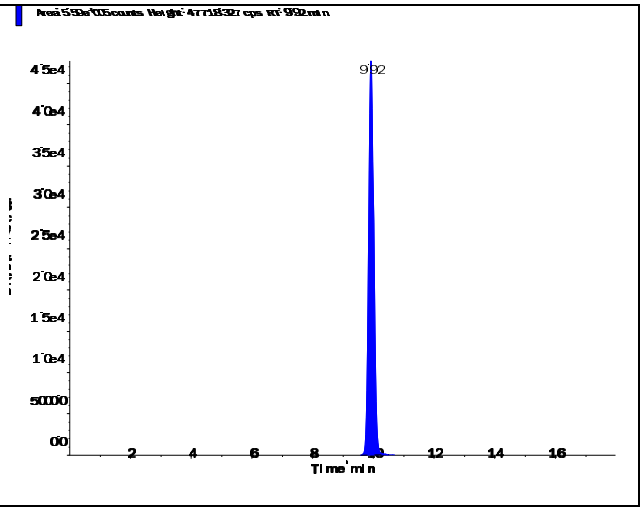

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

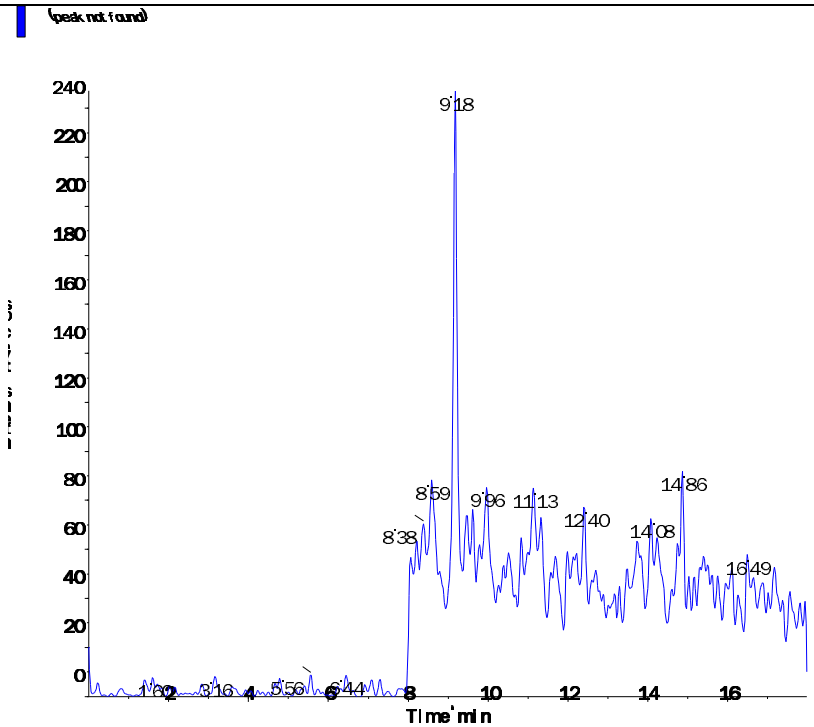

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

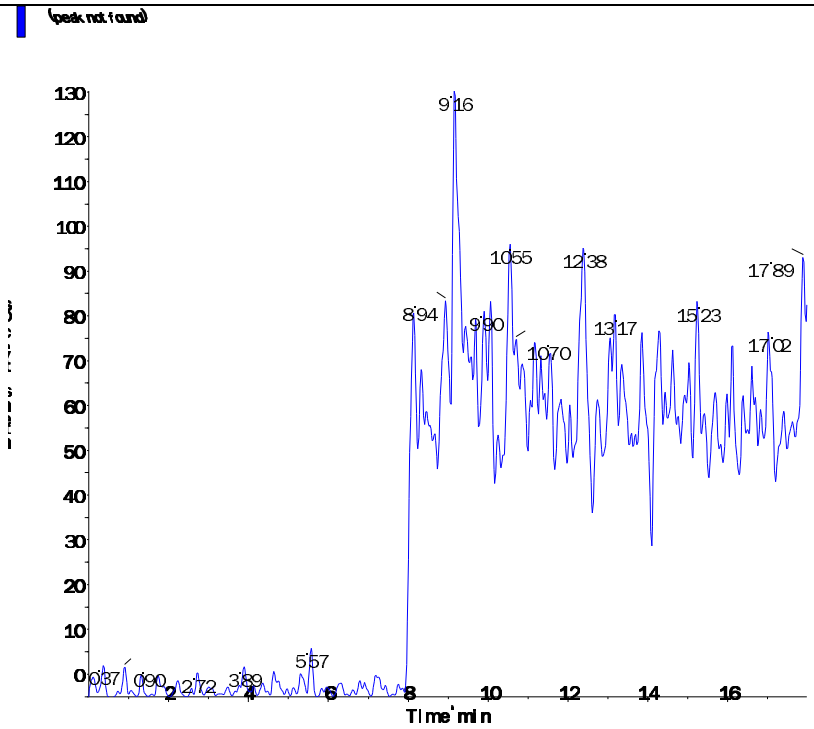

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Data File	LM33736.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/7/2016 9:54:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559899-01 CCB	**Injection Vial**	1.00
Data File	LM33736.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 9:54:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559899-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.540e+05	9.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.90(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

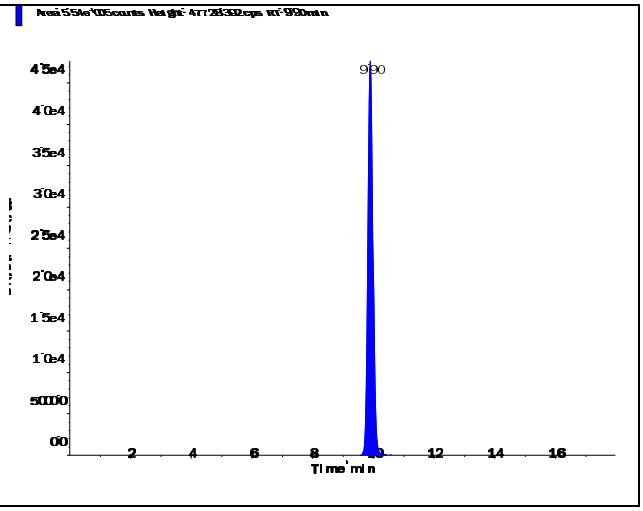

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

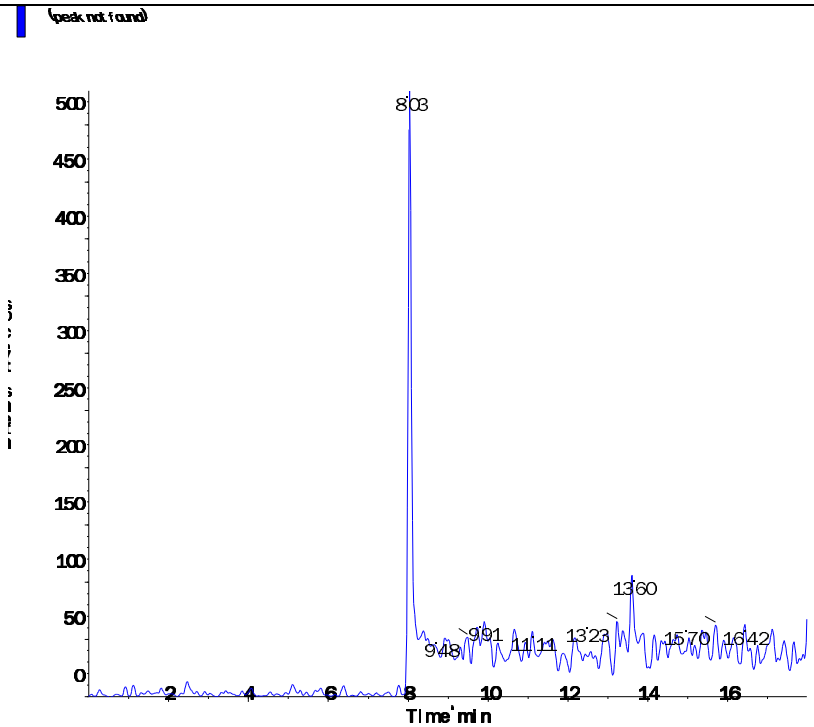

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

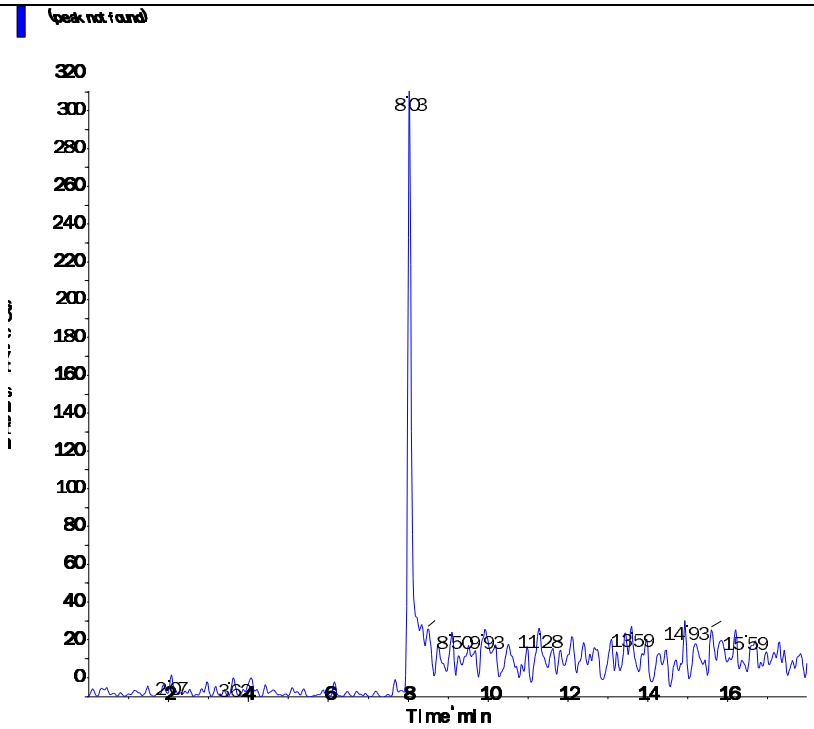

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Data File	LM33747.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/7/2016 1:22:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559899-04 CCB	**Injection Vial**	1.00
Data File	LM33747.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 1:22:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559899-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.260e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	1.950e+02	9.81	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

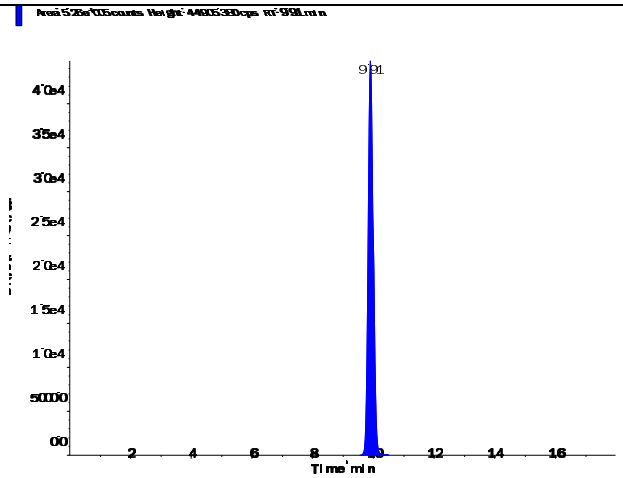

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

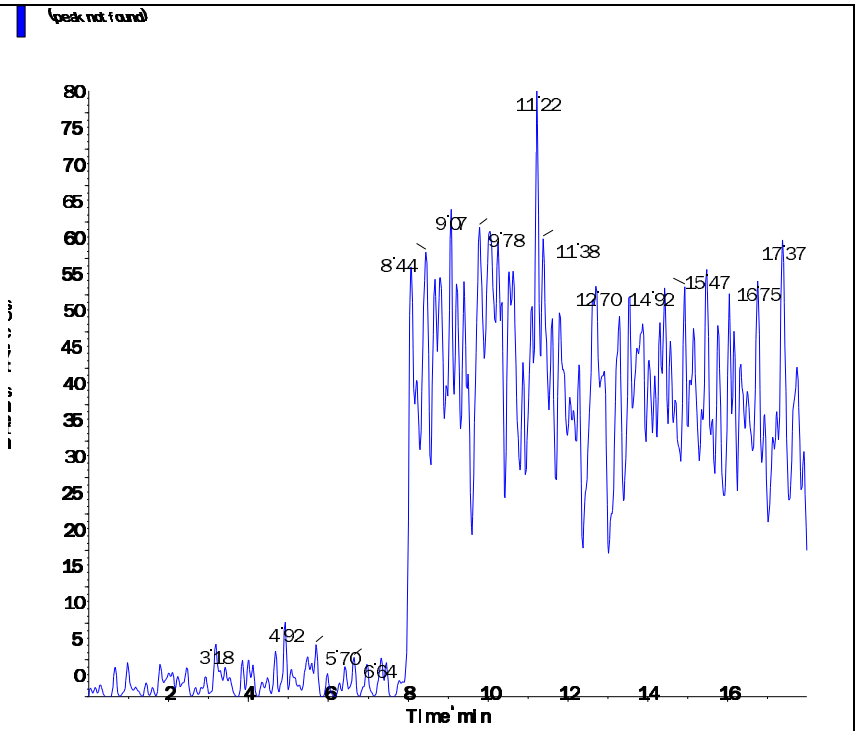

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.81 (9.92) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

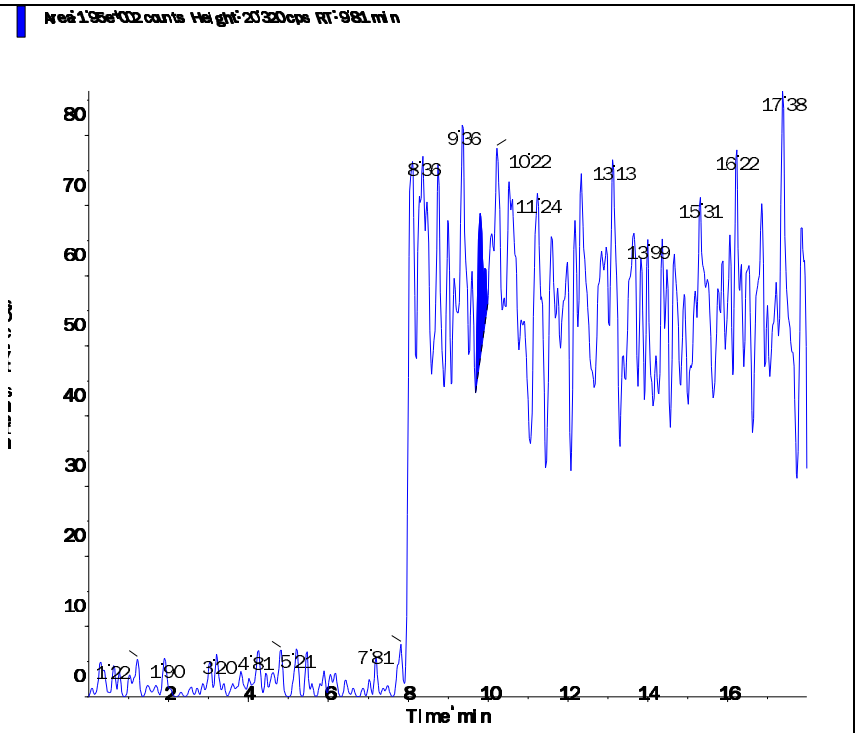

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Data File	LM33713.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 5:35:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559808-01 MCT (2.0ug/kg)	**Injection Vial**	4.00
Data File	LM33713.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 5:35:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559808-01	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.680e+05	9.54	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.840e+04	9.54	N/A	0.181
Perchlorate conf	1.270e+04	9.51	N/A	0.184

O18LP (Internal Standard)

RT (Exp. RT): 9.54(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

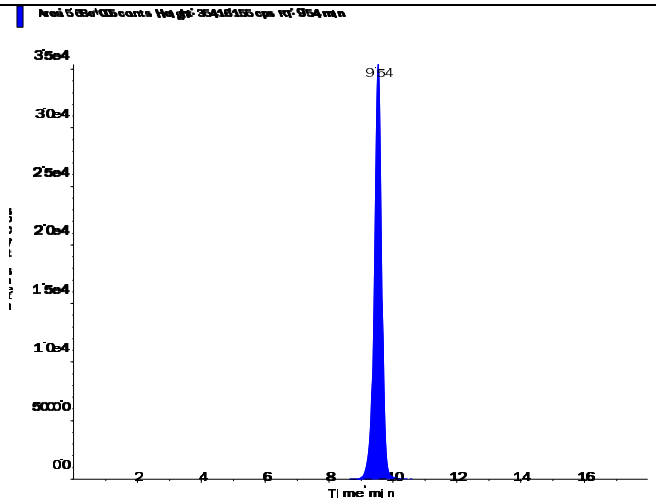

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Created with Analyst Reporter
Printed: 3/7/2016 5:41 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.54 (9.94) min
Calculated conc:	0.181 ng/ml
Area Ratio:	0.068
Sample Type:	(Unknown)

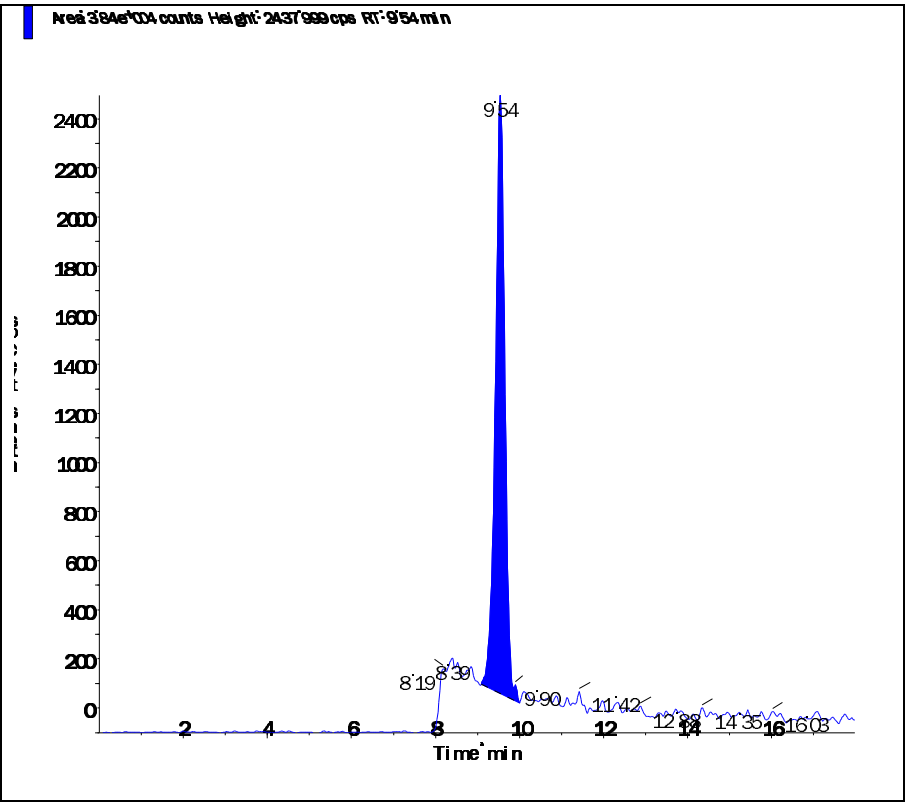

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.51 (9.92) min
Calculated conc:	0.184 ng/ml
Area Ratio:	0.022
Sample Type:	(Unknown)

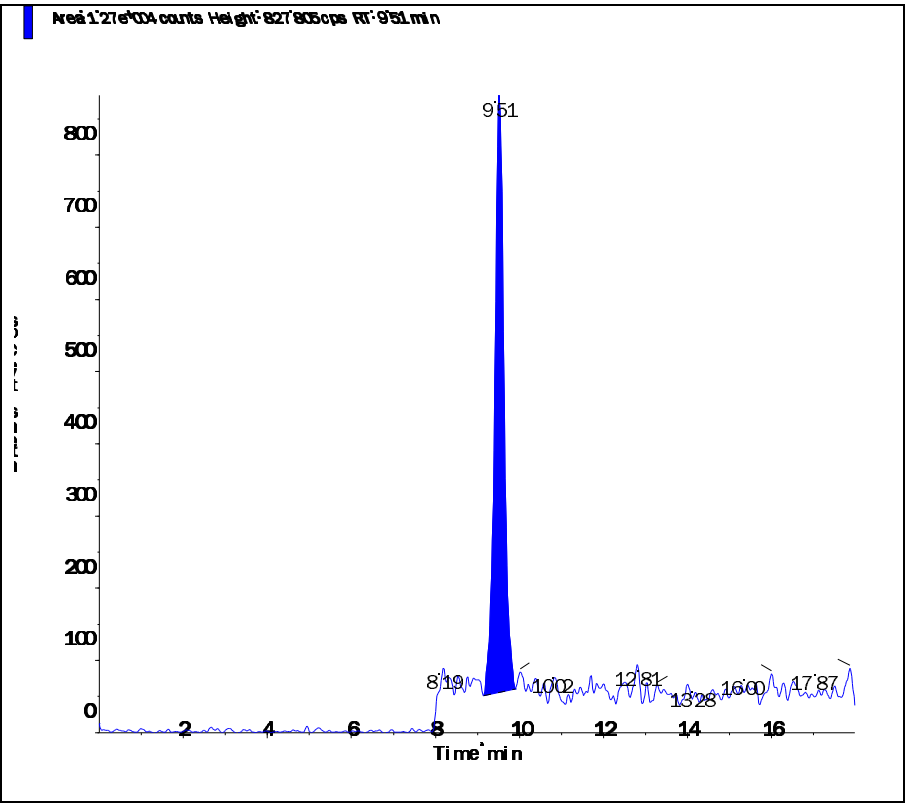

Printing Time: 11:17:21 AM
Printing Date: Monday, March 07, 2016

Sample Name: "WG559808-01 MCT (2.0ug/KG)" Sample ID: "WG559808-01" File: "LM33713.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "7,1 STD72686" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.199 ug/L
Acq. Date:	3/4/2016
Acq. Time:	5:35:05 PM
Modified:	No
Proc. Algorithm:	Analyst Classic
Bunching Factor:	3
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Sep. Width:	0.20
Sep. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.94 min
Use Relative RT:	Yes
Int. Type:	Valley
Retention Time:	9.54 min
Area:	4.21e+004 counts
Height:	2503.030 cps
Start Time:	9.073 min
End Time:	10.004 min

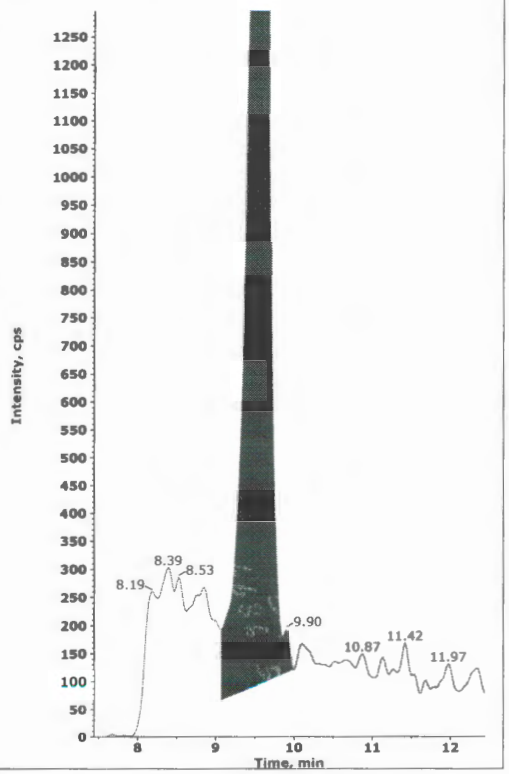

Collected by: N/A
Electronic Signature: no
Operator: lcms1

Printing Time: 11:18:03 AM
Printing Date: Monday, March 07, 2016

Sample Name: "WG559808-01 MCT (2.0ug/KG)" Sample ID: "WG559808-01" File: "LM33713.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "7,1 STD72686" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.181 ng/L
Acq. Date:	3/4/2016
Acq. Time:	5:35:05 PM
Modified:	Yes
Proc. Algorithm:	Analyst Classic
Bunching Factor:	1
Noise Threshold:	18.40 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Sep. Width:	0.20
Sep. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.94 min
Use Relative RT:	Yes
Int. Type:	Base To Base
Retention Time:	9.54 min
Area:	3.84e+004 counts
Height:	2437.999 cps
Start Time:	9.093 min
End Time:	10.004 min

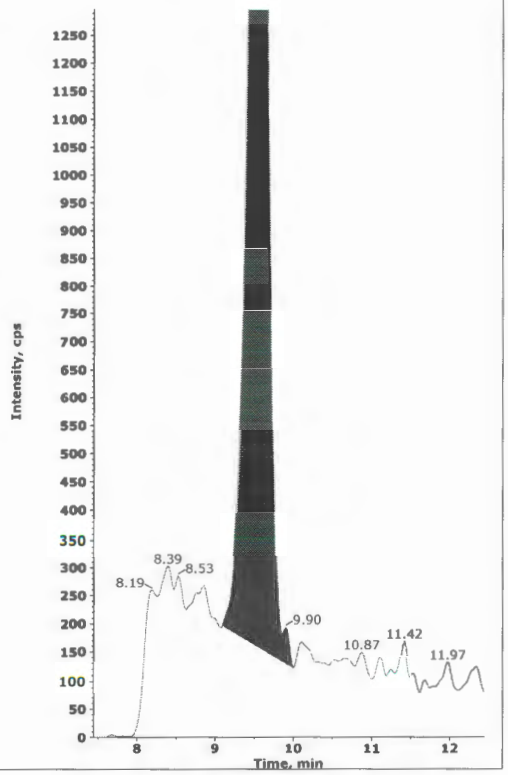

#4
JWR 03/07/16

✓ WD
3-8-16

Collected by: N/A
Electronic Signature: no
Operator: lcms1

2.2.1.5 Raw QC Data

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Created with Analyst Reporter
Printed: 3/7/2016 5:41 PM

Data File	LM33714.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 5:53:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559808-02 BLK	**Injection Vial**	5.00
Data File	LM33714.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 5:53:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559808-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.300e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	3.900e+02	9.97	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

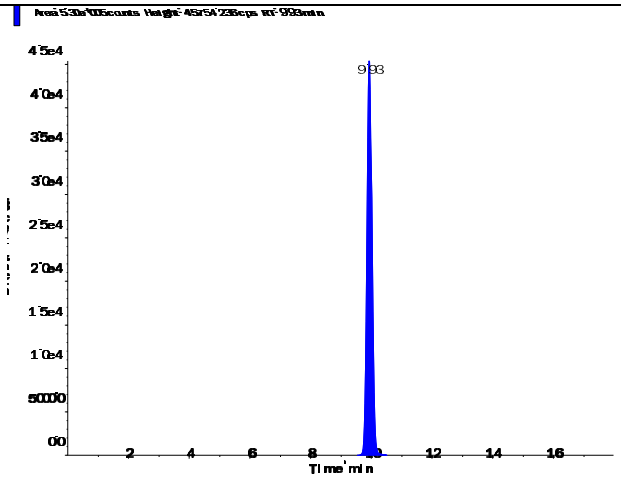

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

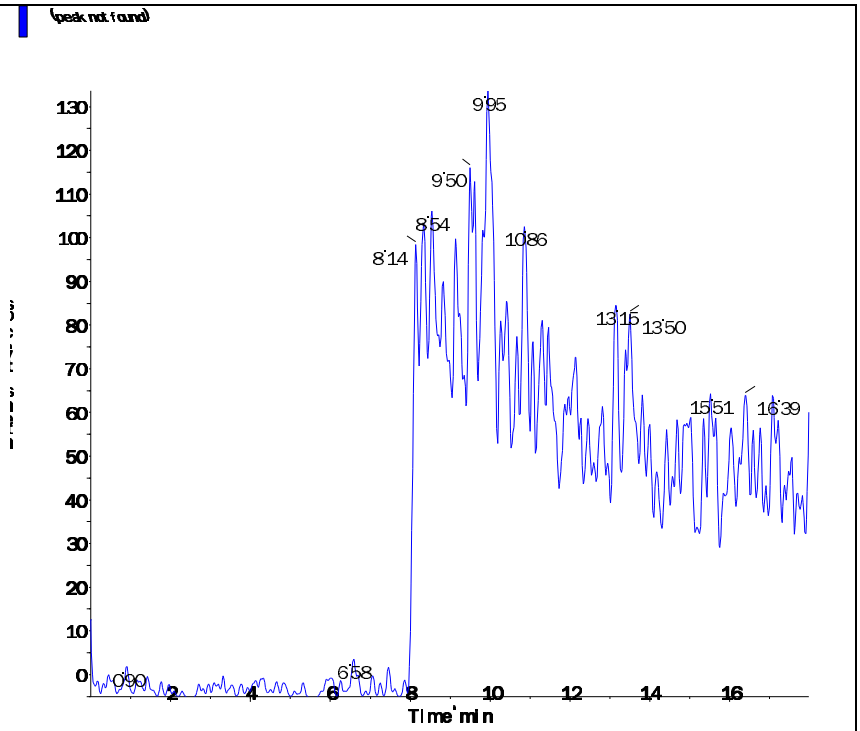

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.97 (9.92) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

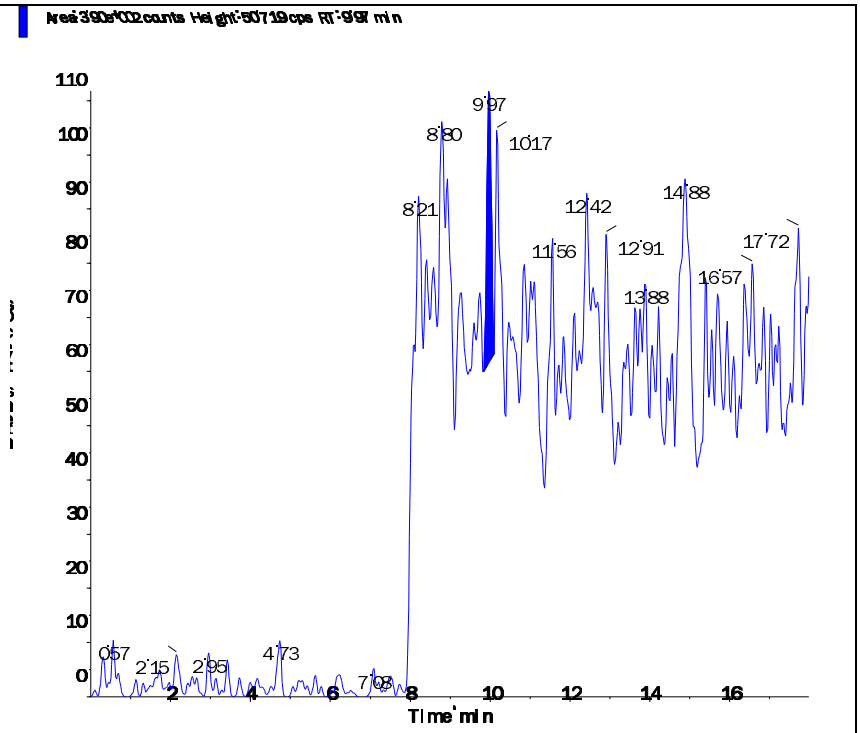

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Created with Analyst Reporter
Printed: 3/7/2016 5:41 PM

Data File	LM33715.wiff	**Result Table**	030416_WTD.rdb
Acquisition Date	3/4/2016 6:12:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559808-03 LCS (2.0ug/kg)	**Injection Vial**	6.00
Data File	LM33715.wiff	**Injection Volume**	10.00
Acquisition Date	3/4/2016 6:12:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030416_WTD.rdb
Sample ID	WG559808-03	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.160e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.480e+04	9.95	N/A	0.235
Perchlorate conf	1.680e+04	10.00	N/A	0.276

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

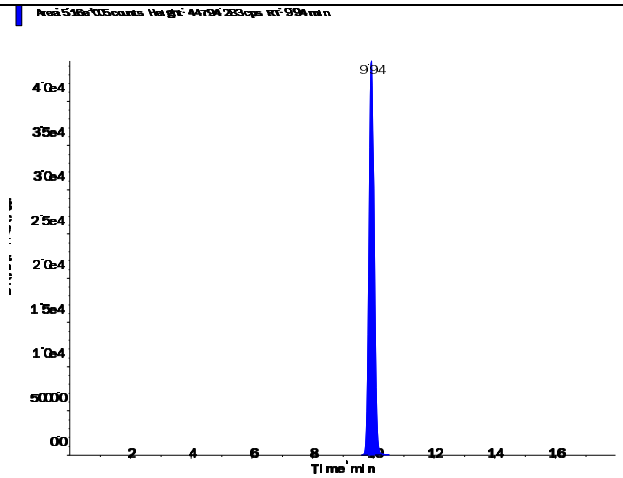

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	0.235 ng/ml
Area Ratio:	0.087
Sample Type:	(Unknown)

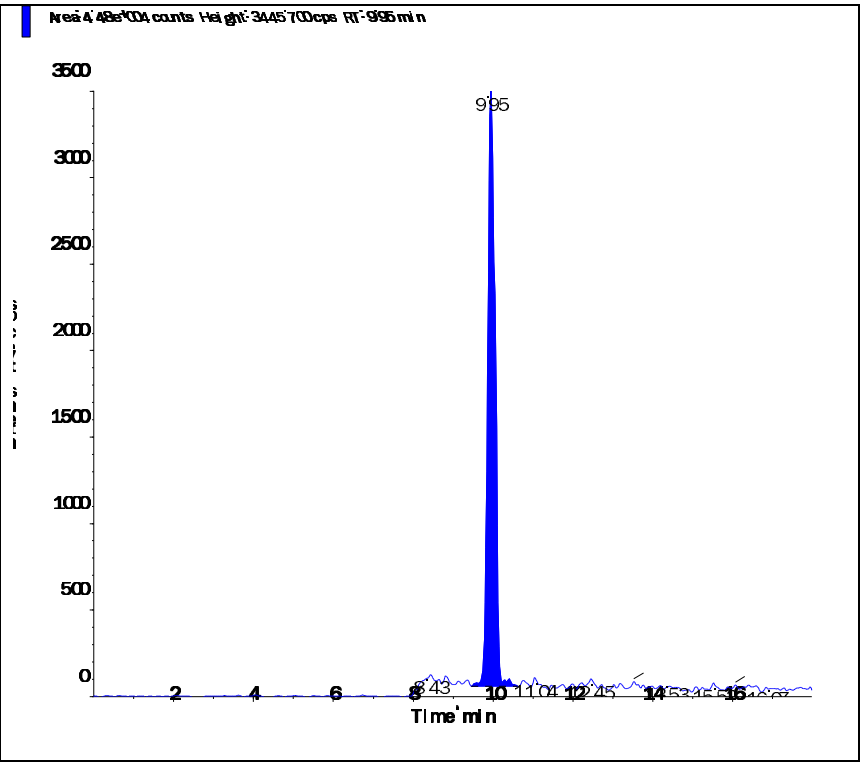

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.00 (9.92) min
Calculated conc:	0.276 ng/ml
Area Ratio:	0.033
Sample Type:	(Unknown)

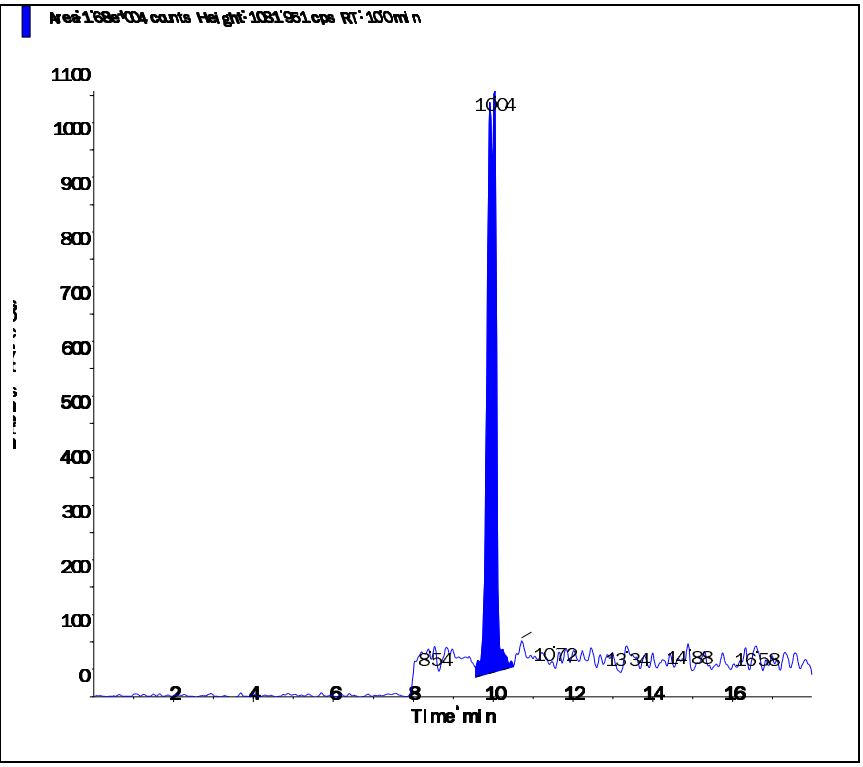

s.dataFile Page 2 of 2

2.3 General Chemistry Data

2.3.1 Percent Solids Data

2.3.1.1 Raw Data

Example Percent Solids Calculations

1.0 Calculating the percent solids of a sample.

$$\%Solids = \frac{WT3 - WT1}{WT2 - WT1} \times F$$

Where:

WT1 = Weight, in grams, of the empty container	1.30 g
WT2 = Weight, in grams, of the container and wet sample	21.274 g
WT3 = Weight, in grams, of the container and dried sample	5.21 g
F = Factor to get units as percent weight	100
%Solids = Percent solids present in sample.	19.58%

2.0 Calculating the percent moisture of a sample.

% Moisture = 100 - % Solids from 1.0 calculation

Microbac Laboratories Inc.

PERCENT SOLIDS

Workgroup (AAB#): WG559839 Analyst: AC ADT(on): 03/04/2016 16:46
Method: D2216-90 Instrument: BAL021 ADT(off): 03/07/2016 08:20
SOP: K0003 Rev: 14

SAMPLE NUMBER	EMPTY PAN WT 1	WET WT 2	DRY WT 3A	DRY WT 3B	DRY WT 3C	PERCENT SOLID	PERCENT MOISTURE
L16030168-01	1.293	24.781	20.83			83.18	
L16030234-01	1.296	23.803	20.059			83.37	
L16030234-02	1.294	25.21	20.85			81.77	
L16030234-03	1.301	24.789	21.13			84.42	
L16030234-04	1.298	21.74	18.35			83.42	
L16030234-05	1.305	34.235	28.317			82.03	
L16030234-06	1.295	23.294	18.927			80.15	
L16030235-01	1.29	24.686	20.549			82.32	
L16030235-02	1.291	30.193	23.38			76.43	
L16030235-03	1.29	22.228	18.498			82.19	
L16030235-04	1.29	22.228	18.498			82.19	
L16030235-05	1.29	22.228	18.498			82.19	
L16030235-06	1.292	31.806	24.36			75.60	
L16030235-07	1.291	22.21	17.102			75.58	
L16030235-08	1.292	29.965	25.133			83.15	
L16030270-02	1.296	14.159	4.824			27.43	
L16030283-01	1.296	10.349	8.424			78.74	
L16030285-01	1.301	13.985	5.872			36.04	
L16030288-01	1.302	17.719	3.628			14.17	
L16030298-01	1.291	8.347	2.976			23.88	
WG559839-01	1.291	8.347	2.976			23.88	76.12
WG559839-02	1.298	9.63	3.292			23.93	76.07

Analyst: Andrea R Cochran

PERCENT_SOLIDS - Modified 04/24/2008
PDF ID: 4658331
Report generated: 03/07/2016 08:24

Microbac

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
March 15, 2016

---

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
March 15, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
March 15, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Stephanie Mossburg	Project Manager: Debra Richmon	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): KAYLA PALLANES	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Kayla Pallanes	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205	pH:	Program:	
Turn Around Time: STANDARD			
Project Name/Location: Longhorn			
Project Number: 60274185 11DPSOW16 DGI-RPTOL			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp-	Grab	Matrix	Number of Containers	VOCs 8260	PERCHLORATE 6850	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
	18DPT07(5-5.5)020316			3/2/16	1600		X	S	2	X	X					
	18DPT07(15-15.5)030316			3/2/16	1625		X	S	2	X	X					
	18DPT07(33.5-34.5)030316			3/3/16	1000		X	S	2	X	X					
	18DPT07(33.5-34.5)030316MS			3/3/16	1000		X	S	2	X	X					
	18DPT07(33.5-34.5)030316MSD			3/3/16	1000		X	S	2	X	X					
	18DPT07(38-39)030316			3/3/16	1010		X	S	2	X	X					
	18DPT07(38-39)030316FD			3/3/16	1010		X	S	2	X	X					
	18DPT07(27-27.5)030316			3/3/16	1015		X	S	2	X	X					

ERPIMS REQUIRED FIELDS

Comments: **STANDARD TAT**

Microbac OVD
Received: 03/04/2016 10:17
By: CARA STRICKLER 221000082754
Cara Strickler

Relinquished by: (Signature) Kayla Pallanes	Date 3/3/16	Time 1700	Received by: (Signature	quished by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory (Signature)	arks:

•Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030235
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 08-MAR-2016

Samplenum	Container ID	Products
L16030235-01	709955	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-MAR-2016 11:56	CLS		
2	ANALYZ	V1	ORG4	04-MAR-2016 12:19	AWE	CLS	

Samplenum	Container ID	Products
L16030235-01	709956	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	04-MAR-2016 11:56	CLS		
2	ANALYZ	W1	SEM	04-MAR-2016 12:23	AWE	CLS	
3	STORE	DIG	A1	07-MAR-2016 13:50	BRG	AC	

Samplenum	Container ID	Products
L16030235-02	709957	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-MAR-2016 11:56	CLS		
2	ANALYZ	V1	ORG4	04-MAR-2016 12:19	AWE	CLS	

Samplenum	Container ID	Products
L16030235-02	709958	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	04-MAR-2016 11:56	CLS		
2	ANALYZ	W1	SEM	04-MAR-2016 12:23	AWE	CLS	
3	STORE	DIG	A1	07-MAR-2016 13:50	BRG	AC	

Samplenum	Container ID	Products
L16030235-03	709959	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-MAR-2016 11:56	CLS		
2	ANALYZ	V1	ORG4	04-MAR-2016 12:19	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030235
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 08-MAR-2016

Samplenum	Container ID	Products
L16030235-03	709960	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	04-MAR-2016 11:56	CLS		
2	ANALYZ	W1	SEM	04-MAR-2016 12:23	AWE	CLS	
3	STORE	DIG	A1	07-MAR-2016 13:50	BRG	AC	

Samplenum	Container ID	Products
L16030235-04	709961	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-MAR-2016 11:56	CLS		
2	ANALYZ	V1	ORG4	04-MAR-2016 12:19	AWE	CLS	

Samplenum	Container ID	Products
L16030235-04	709962	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	04-MAR-2016 11:56	CLS		
2	ANALYZ	W1	SEM	04-MAR-2016 12:22	AWE	CLS	
3	STORE	DIG	A1	07-MAR-2016 13:50	BRG	AC	

Samplenum	Container ID	Products
L16030235-05	709963	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-MAR-2016 11:56	CLS		
2	ANALYZ	V1	ORG4	04-MAR-2016 12:19	AWE	CLS	

Samplenum	Container ID	Products
L16030235-05	709964	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	04-MAR-2016 11:56	CLS		
2	ANALYZ	W1	SEM	04-MAR-2016 12:23	AWE	CLS	
3	STORE	DIG	A1	07-MAR-2016 13:50	BRG	AC	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030235
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 08-MAR-2016

Samplenum	Container ID	Products
L16030235-06	709965	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-MAR-2016 11:56	CLS		
2	ANALYZ	V1	ORG4	04-MAR-2016 12:19	AWE	CLS	

Samplenum	Container ID	Products
L16030235-06	709966	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	04-MAR-2016 11:56	CLS		
2	ANALYZ	W1	SEM	04-MAR-2016 12:23	AWE	CLS	
3	STORE	DIG	A1	07-MAR-2016 13:50	BRG	AC	

Samplenum	Container ID	Products
L16030235-07	709967	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-MAR-2016 11:56	CLS		
2	ANALYZ	V1	ORG4	04-MAR-2016 12:19	AWE	CLS	

Samplenum	Container ID	Products
L16030235-07	709968	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	04-MAR-2016 11:56	CLS		
2	ANALYZ	W1	SEM	04-MAR-2016 12:23	AWE	CLS	
3	STORE	DIG	A1	07-MAR-2016 13:50	BRG	AC	

Samplenum	Container ID	Products
L16030235-08	709969	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	04-MAR-2016 11:56	CLS		
2	ANALYZ	V1	ORG4	04-MAR-2016 12:19	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030235
Account: 2551
Project: 2551.096
Samples: 8
Due Date: 08-MAR-2016

Samplenum	Container ID	Products
L16030235-08	709970	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	04-MAR-2016 11:56	CLS		
2	ANALYZ	W1	SEM	04-MAR-2016 12:22	AWE	CLS	
3	STORE	DIG	A1	07-MAR-2016 13:50	BRG	AC	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16030323

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on March 10 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
0017841	H	1.0		J2317165894	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	NA
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	NA

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18DPT09(5-5.5)040316	L16030323-01	03/04/2016 10:30	03/07/2016 09:22
18DPT09(11-11.5)040316	L16030323-02	03/04/2016 10:35	03/07/2016 09:22
18DPT09(13.5-14)040316	L16030323-03	03/04/2016 10:40	03/07/2016 09:22
18DPT10(5-5.5)040316	L16030323-04	03/04/2016 11:25	03/07/2016 09:22
18DPT10(15.5-16)040316	L16030323-05	03/04/2016 11:55	03/07/2016 09:22
18DPT10(23.5-24)040316	L16030323-06	03/04/2016 12:40	03/07/2016 09:22

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16030323
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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2.1.1.3 Sample Data 90
2.1.1.4 Standards Data 114
2.1.1.5 Raw QC Data 172
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1.0 Summary Data

1.1 Narratives

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030323
Project Name:		**Method:**	8260
Prep Batch Number(s):	560074	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-03-10 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden	Franci Bolden	Analyst I	2016-03-10 21:42:40

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030323
Project Name:		**Method:**	8260
Prep Batch Number(s):	560074	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-03-10 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				
Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030323
Project Name:		**Method:**	8260
Prep Batch Number(s):	560074	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-03-10 00:00:00		

Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				
Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030323
Project Name:		**Method:**	8260
Prep Batch Number(s):	560074	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-03-10 00:00:00		

Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					
Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030323
Project Name:		**Method:**	8260
Prep Batch Number(s):	560074	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-03-10 00:00:00		

Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030323
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559975	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-09 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-03-09 19:05:32

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030323
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559975	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-09 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030323
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559975	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-09 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030323
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559975	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-09 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030323
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559975	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-09 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030323
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG559975	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-09 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030323
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559963	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-08 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2016-03-08 20:05:11

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030323
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559963	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-08 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?			X		
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?			X		
Were sample detection limits reported for all analytes not detected?			X		
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?			X		
Were blanks analyzed at the appropriate frequency?			X		
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?			X		
Were blank concentrations < MQL?			X		
Laboratory control samples (LCS):			X		
Were all COCs included in the LCS?			X		

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030323
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559963	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-08 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?			X		
Were LCSs analyzed at the required frequency?			X		
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?			X		
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?			X		
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?			X		
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?			X		
Are unadjusted MQLs and DCSs included in the laboratory data package?			X		
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?			X		
Were percent RSDs or correlation coefficient criteria met?			X		

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030323
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559963	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-08 00:00:00		

Was the number of standards recommended in the method used for all analytes?			X		
Were all points generated between the lowest and highest standard used to calculate the curve?			X		
Are ICAL data available for all instruments used?			X		
Has the initial calibration curve been verified using an appropriate second source standard?			X		
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030323
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559963	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-08 00:00:00		

Was a MDL study performed for each reported analyte?			X		
Is the MDL either adjusted or supported by the analysis of DCSs?			X		
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?			X		
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030323
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG559963	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-08 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030323-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT09(5-5.5)040316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/08/2016 09:22
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560074	**Analyst:**	TMB	**Run Date:**	03/08/2016 15:54
Collect Date:	03/04/2016 10:30	**Dilution:**	1	**File ID:**	6M137653
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	67.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	15.7	U	31.4	15.7	7.86
Benzene	71-43-2	1.57	U	7.86	1.57	0.786
Bromobenzene	108-86-1	1.57	U	7.86	1.57	0.786
Bromochloromethane	74-97-5	3.14	U	7.86	3.14	1.57
Bromodichloromethane	75-27-4	1.57	U	7.86	1.57	0.786
Bromoform	75-25-2	1.57	U	7.86	1.57	0.786
Bromomethane	74-83-9	3.14	U	7.86	3.14	1.57
2-Butanone	78-93-3	7.86	U	15.7	7.86	3.93
n-Butylbenzene	104-51-8	1.57	U	7.86	1.57	0.786
sec-Butylbenzene	135-98-8	1.57	U	7.86	1.57	0.786
tert-Butylbenzene	98-06-6	1.57	U	7.86	1.57	0.786
Carbon disulfide	75-15-0	1.57	U	7.86	1.57	0.786
Carbon tetrachloride	56-23-5	1.57	U	7.86	1.57	0.786
Chlorobenzene	108-90-7	1.57	U	7.86	1.57	0.786
Chlorodibromomethane	124-48-1	1.57	U	7.86	1.57	0.786
Chloroethane	75-00-3	3.14	U	7.86	3.14	1.57
Chloroform	67-66-3	1.57	U	7.86	1.57	0.786
Chloromethane	74-87-3	6.28	U	15.7	6.28	3.14
2-Chlorotoluene	95-49-8	1.57	U	7.86	1.57	0.786
4-Chlorotoluene	106-43-4	1.57	U	7.86	1.57	0.786
1,2-Dibromo-3-chloropropane	96-12-8	6.28	U	15.7	6.28	3.14
1,2-Dibromoethane	106-93-4	1.57	U	7.86	1.57	0.786
Dibromomethane	74-95-3	1.57	U	7.86	1.57	0.786
1,2-Dichlorobenzene	95-50-1	1.57	U	7.86	1.57	0.786
1,3-Dichlorobenzene	541-73-1	1.57	U	7.86	1.57	0.786
1,4-Dichlorobenzene	106-46-7	1.57	U	7.86	1.57	0.786
Dichlorodifluoromethane	75-71-8	3.14	U	7.86	3.14	1.57
1,1-Dichloroethane	75-34-3	3.14	U	7.86	3.14	1.57
1,2-Dichloroethane	107-06-2	1.57	U	7.86	1.57	0.786
1,1-Dichloroethene	75-35-4	1.57	U	7.86	1.57	0.786
cis-1,2-Dichloroethene	156-59-2	1.57	U	7.86	1.57	0.786
trans-1,2-Dichloroethene	156-60-5	1.57	U	7.86	1.57	0.786

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.57	U	7.86	1.57	0.786
1,3-Dichloropropane	142-28-9	1.57	U	7.86	1.57	0.786
2,2-Dichloropropane	594-20-7	1.57	U	7.86	1.57	0.786
cis-1,3-Dichloropropene	10061-01-5	1.57	U	7.86	1.57	0.786
trans-1,3-Dichloropropene	10061-02-6	1.57	U	7.86	1.57	0.786
1,1-Dichloropropene	563-58-6	1.57	U	7.86	1.57	0.786
Ethylbenzene	100-41-4	1.57	U	7.86	1.57	0.786
2-Hexanone	591-78-6	7.86	U	15.7	7.86	3.93
Hexachlorobutadiene	87-68-3	1.57	U	7.86	1.57	0.786
Isopropylbenzene	98-82-8	1.57	U	7.86	1.57	0.786
p-Isopropyltoluene	99-87-6	1.47	J	7.86	1.57	0.786
4-Methyl-2-pentanone	108-10-1	7.86	U	15.7	7.86	3.93
Methylene chloride	75-09-2	3.14	U	7.86	3.14	1.57
Naphthalene	91-20-3	1.57	U	7.86	1.57	0.786
n-Propylbenzene	103-65-1	1.57	U	7.86	1.57	0.786
Styrene	100-42-5	1.57	U	7.86	1.57	0.786
1,1,1,2-Tetrachloroethane	630-20-6	1.57	U	7.86	1.57	0.786
1,1,2,2-Tetrachloroethane	79-34-5	1.57	U	7.86	1.57	0.786
Tetrachloroethene	127-18-4	1.57	U	7.86	1.57	0.786
Toluene	108-88-3	1.57	U	7.86	1.57	0.786
1,2,3-Trichlorobenzene	87-61-6	1.57	U	7.86	1.57	0.786
1,2,4-Trichlorobenzene	120-82-1	1.57	U	7.86	1.57	0.786
1,1,1-Trichloroethane	71-55-6	1.57	U	7.86	1.57	0.786
1,1,2-Trichloroethane	79-00-5	1.57	U	7.86	1.57	0.786
Trichloroethene	79-01-6	1.57	U	7.86	1.57	0.786
Trichlorofluoromethane	75-69-4	3.14	U	7.86	3.14	1.57
1,2,3-Trichloropropane	96-18-4	3.14	U	7.86	3.14	1.57
1,2,4-Trimethylbenzene	95-63-6	1.57	U	7.86	1.57	0.786
1,3,5-Trimethylbenzene	108-67-8	1.57	U	7.86	1.57	0.786
Vinyl chloride	75-01-4	3.14	U	7.86	3.14	1.57
o-Xylene	95-47-6	1.57	U	7.86	1.57	0.786
m-,p-Xylene	179601-23-1	1.57	U	7.86	1.57	0.786

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	89.6	80	120	
1,2-Dichloroethane-d4	81.6	80	120	
Toluene-d8	100	85	115	
4-Bromofluorobenzene	99.9	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030323-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT09(5-5.5)040316	**Prep Method:**	6850	**Prep Date:**	03/07/2016 14:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559975	**Analyst:**	JWR	**Run Date:**	03/07/2016 18:39
Collect Date:	03/04/2016 10:30	**Dilution:**	1	**File ID:**	1LM.LM33757
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	67.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.84	U	5.70	2.84	1.42

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030323-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT09(11-11.5)040316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/08/2016 09:23
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560074	**Analyst:**	TMB	**Run Date:**	03/08/2016 16:28
Collect Date:	03/04/2016 10:35	**Dilution:**	1	**File ID:**	6M137654
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	86.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	25.0	12.5	6.24
Benzene	71-43-2	1.25	U	6.24	1.25	0.624
Bromobenzene	108-86-1	1.25	U	6.24	1.25	0.624
Bromochloromethane	74-97-5	2.50	U	6.24	2.50	1.25
Bromodichloromethane	75-27-4	1.25	U	6.24	1.25	0.624
Bromoform	75-25-2	1.25	U	6.24	1.25	0.624
Bromomethane	74-83-9	2.50	U	6.24	2.50	1.25
2-Butanone	78-93-3	6.24	U	12.5	6.24	3.12
n-Butylbenzene	104-51-8	1.25	U	6.24	1.25	0.624
sec-Butylbenzene	135-98-8	1.25	U	6.24	1.25	0.624
tert-Butylbenzene	98-06-6	1.25	U	6.24	1.25	0.624
Carbon disulfide	75-15-0	1.25	U	6.24	1.25	0.624
Carbon tetrachloride	56-23-5	1.25	U	6.24	1.25	0.624
Chlorobenzene	108-90-7	1.25	U	6.24	1.25	0.624
Chlorodibromomethane	124-48-1	1.25	U	6.24	1.25	0.624
Chloroethane	75-00-3	2.50	U	6.24	2.50	1.25
Chloroform	67-66-3	1.25	U	6.24	1.25	0.624
Chloromethane	74-87-3	5.00	U	12.5	5.00	2.50
2-Chlorotoluene	95-49-8	1.25	U	6.24	1.25	0.624
4-Chlorotoluene	106-43-4	1.25	U	6.24	1.25	0.624
1,2-Dibromo-3-chloropropane	96-12-8	5.00	U	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	6.24	1.25	0.624
Dibromomethane	74-95-3	1.25	U	6.24	1.25	0.624
1,2-Dichlorobenzene	95-50-1	1.25	U	6.24	1.25	0.624
1,3-Dichlorobenzene	541-73-1	1.25	U	6.24	1.25	0.624
1,4-Dichlorobenzene	106-46-7	1.25	U	6.24	1.25	0.624
Dichlorodifluoromethane	75-71-8	2.50	U	6.24	2.50	1.25
1,1-Dichloroethane	75-34-3	2.50	U	6.24	2.50	1.25
1,2-Dichloroethane	107-06-2	1.25	U	6.24	1.25	0.624
1,1-Dichloroethene	75-35-4	1.25	U	6.24	1.25	0.624
cis-1,2-Dichloroethene	156-59-2	1.25	U	6.24	1.25	0.624

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.25	U	6.24	1.25	0.624
1,2-Dichloropropane	78-87-5	1.25	U	6.24	1.25	0.624
1,3-Dichloropropane	142-28-9	1.25	U	6.24	1.25	0.624
2,2-Dichloropropane	594-20-7	1.25	U	6.24	1.25	0.624
cis-1,3-Dichloropropene	10061-01-5	1.25	U	6.24	1.25	0.624
trans-1,3-Dichloropropene	10061-02-6	1.25	U	6.24	1.25	0.624
1,1-Dichloropropene	563-58-6	1.25	U	6.24	1.25	0.624
Ethylbenzene	100-41-4	1.25	U	6.24	1.25	0.624
2-Hexanone	591-78-6	6.24	U	12.5	6.24	3.12
Hexachlorobutadiene	87-68-3	1.25	U	6.24	1.25	0.624
Isopropylbenzene	98-82-8	1.25	U	6.24	1.25	0.624
p-Isopropyltoluene	99-87-6	1.25	U	6.24	1.25	0.624
4-Methyl-2-pentanone	108-10-1	6.24	U	12.5	6.24	3.12
Methylene chloride	75-09-2	2.50	U	6.24	2.50	1.25
Naphthalene	91-20-3	1.25	U	6.24	1.25	0.624
n-Propylbenzene	103-65-1	1.25	U	6.24	1.25	0.624
Styrene	100-42-5	1.25	U	6.24	1.25	0.624
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	6.24	1.25	0.624
1,1,2,2-Tetrachloroethane	79-34-5	1.25	U	6.24	1.25	0.624
Tetrachloroethene	127-18-4	1.25	U	6.24	1.25	0.624
Toluene	108-88-3	1.25	U	6.24	1.25	0.624
1,2,3-Trichlorobenzene	87-61-6	1.25	U	6.24	1.25	0.624
1,2,4-Trichlorobenzene	120-82-1	1.25	U	6.24	1.25	0.624
1,1,1-Trichloroethane	71-55-6	1.25	U	6.24	1.25	0.624
1,1,2-Trichloroethane	79-00-5	1.25	U	6.24	1.25	0.624
Trichloroethene	79-01-6	1.25	U	6.24	1.25	0.624
Trichlorofluoromethane	75-69-4	2.50	U	6.24	2.50	1.25
1,2,3-Trichloropropane	96-18-4	2.50	U	6.24	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	6.24	1.25	0.624
1,3,5-Trimethylbenzene	108-67-8	1.25	U	6.24	1.25	0.624
Vinyl chloride	75-01-4	2.50	U	6.24	2.50	1.25
o-Xylene	95-47-6	1.25	U	6.24	1.25	0.624
m-,p-Xylene	179601-23-1	1.25	U	6.24	1.25	0.624

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.2	80	120	
1,2-Dichloroethane-d4	87.2	80	120	
Toluene-d8	98.2	85	115	
4-Bromofluorobenzene	97.6	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030323-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT09(11-11.5)040316	**Prep Method:**	6850	**Prep Date:**	03/07/2016 14:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559975	**Analyst:**	JWR	**Run Date:**	03/07/2016 18:58
Collect Date:	03/04/2016 10:35	**Dilution:**	1	**File ID:**	1LM.LM33758
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	86.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.26	U	4.51	2.26	1.13

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030323-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT09(13.5-14)040316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/08/2016 09:24
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560074	**Analyst:**	TMB	**Run Date:**	03/08/2016 17:01
Collect Date:	03/04/2016 10:40	**Dilution:**	1	**File ID:**	6M137655
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.6	U	27.1	13.6	6.78
Benzene	71-43-2	1.36	U	6.78	1.36	0.678
Bromobenzene	108-86-1	1.36	U	6.78	1.36	0.678
Bromochloromethane	74-97-5	2.72	U	6.78	2.72	1.36
Bromodichloromethane	75-27-4	1.36	U	6.78	1.36	0.678
Bromoform	75-25-2	1.36	U	6.78	1.36	0.678
Bromomethane	74-83-9	2.72	U	6.78	2.72	1.36
2-Butanone	78-93-3	6.78	U	13.6	6.78	3.39
n-Butylbenzene	104-51-8	1.36	U	6.78	1.36	0.678
sec-Butylbenzene	135-98-8	1.36	U	6.78	1.36	0.678
tert-Butylbenzene	98-06-6	1.36	U	6.78	1.36	0.678
Carbon disulfide	75-15-0	1.36	U	6.78	1.36	0.678
Carbon tetrachloride	56-23-5	1.36	U	6.78	1.36	0.678
Chlorobenzene	108-90-7	1.36	U	6.78	1.36	0.678
Chlorodibromomethane	124-48-1	1.36	U	6.78	1.36	0.678
Chloroethane	75-00-3	2.72	U	6.78	2.72	1.36
Chloroform	67-66-3	1.36	U	6.78	1.36	0.678
Chloromethane	74-87-3	5.42	U	13.6	5.42	2.71
2-Chlorotoluene	95-49-8	1.36	U	6.78	1.36	0.678
4-Chlorotoluene	106-43-4	1.36	U	6.78	1.36	0.678
1,2-Dibromo-3-chloropropane	96-12-8	5.42	U	13.6	5.42	2.71
1,2-Dibromoethane	106-93-4	1.36	U	6.78	1.36	0.678
Dibromomethane	74-95-3	1.36	U	6.78	1.36	0.678
1,2-Dichlorobenzene	95-50-1	1.36	U	6.78	1.36	0.678
1,3-Dichlorobenzene	541-73-1	1.36	U	6.78	1.36	0.678
1,4-Dichlorobenzene	106-46-7	1.36	U	6.78	1.36	0.678
Dichlorodifluoromethane	75-71-8	2.72	U	6.78	2.72	1.36
1,1-Dichloroethane	75-34-3	2.72	U	6.78	2.72	1.36
1,2-Dichloroethane	107-06-2	1.36	U	6.78	1.36	0.678
1,1-Dichloroethene	75-35-4	1.36	U	6.78	1.36	0.678
cis-1,2-Dichloroethene	156-59-2	1.36	U	6.78	1.36	0.678

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.36	U	6.78	1.36	0.678
1,2-Dichloropropane	78-87-5	1.36	U	6.78	1.36	0.678
1,3-Dichloropropane	142-28-9	1.36	U	6.78	1.36	0.678
2,2-Dichloropropane	594-20-7	1.36	U	6.78	1.36	0.678
cis-1,3-Dichloropropene	10061-01-5	1.36	U	6.78	1.36	0.678
trans-1,3-Dichloropropene	10061-02-6	1.36	U	6.78	1.36	0.678
1,1-Dichloropropene	563-58-6	1.36	U	6.78	1.36	0.678
Ethylbenzene	100-41-4	1.36	U	6.78	1.36	0.678
2-Hexanone	591-78-6	6.78	U	13.6	6.78	3.39
Hexachlorobutadiene	87-68-3	1.36	U	6.78	1.36	0.678
Isopropylbenzene	98-82-8	1.36	U	6.78	1.36	0.678
p-Isopropyltoluene	99-87-6	1.36	U	6.78	1.36	0.678
4-Methyl-2-pentanone	108-10-1	6.78	U	13.6	6.78	3.39
Methylene chloride	75-09-2	2.72	U	6.78	2.72	1.36
Naphthalene	91-20-3	1.36	U	6.78	1.36	0.678
n-Propylbenzene	103-65-1	1.36	U	6.78	1.36	0.678
Styrene	100-42-5	1.36	U	6.78	1.36	0.678
1,1,1,2-Tetrachloroethane	630-20-6	1.36	U	6.78	1.36	0.678
1,1,2,2-Tetrachloroethane	79-34-5	1.36	U	6.78	1.36	0.678
Tetrachloroethene	127-18-4	1.36	U	6.78	1.36	0.678
Toluene	108-88-3	1.36	U	6.78	1.36	0.678
1,2,3-Trichlorobenzene	87-61-6	1.36	U	6.78	1.36	0.678
1,2,4-Trichlorobenzene	120-82-1	1.36	U	6.78	1.36	0.678
1,1,1-Trichloroethane	71-55-6	1.36	U	6.78	1.36	0.678
1,1,2-Trichloroethane	79-00-5	1.36	U	6.78	1.36	0.678
Trichloroethene	79-01-6	1.36	U	6.78	1.36	0.678
Trichlorofluoromethane	75-69-4	2.72	U	6.78	2.72	1.36
1,2,3-Trichloropropane	96-18-4	2.72	U	6.78	2.72	1.36
1,2,4-Trimethylbenzene	95-63-6	1.36	U	6.78	1.36	0.678
1,3,5-Trimethylbenzene	108-67-8	1.36	U	6.78	1.36	0.678
Vinyl chloride	75-01-4	2.72	U	6.78	2.72	1.36
o-Xylene	95-47-6	1.36	U	6.78	1.36	0.678
m-,p-Xylene	179601-23-1	1.36	U	6.78	1.36	0.678

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.7	80	120	
1,2-Dichloroethane-d4	90.4	80	120	
Toluene-d8	98.3	85	115	
4-Bromofluorobenzene	97.6	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030323-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT09(13.5-14)040316	**Prep Method:**	6850	**Prep Date:**	03/07/2016 14:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559975	**Analyst:**	JWR	**Run Date:**	03/07/2016 19:17
Collect Date:	03/04/2016 10:40	**Dilution:**	1	**File ID:**	1LM.LM33759
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.44	U	4.89	2.44	1.22

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030323-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT10(5-5.5)040316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/08/2016 09:24
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560074	**Analyst:**	TMB	**Run Date:**	03/08/2016 17:34
Collect Date:	03/04/2016 11:25	**Dilution:**	1	**File ID:**	6M137656
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	74.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.1	U	26.2	13.1	6.56
Benzene	71-43-2	1.31	U	6.56	1.31	0.656
Bromobenzene	108-86-1	1.31	U	6.56	1.31	0.656
Bromochloromethane	74-97-5	2.62	U	6.56	2.62	1.31
Bromodichloromethane	75-27-4	1.31	U	6.56	1.31	0.656
Bromoform	75-25-2	1.31	U	6.56	1.31	0.656
Bromomethane	74-83-9	2.62	U	6.56	2.62	1.31
2-Butanone	78-93-3	6.56	U	13.1	6.56	3.28
n-Butylbenzene	104-51-8	1.31	U	6.56	1.31	0.656
sec-Butylbenzene	135-98-8	1.31	U	6.56	1.31	0.656
tert-Butylbenzene	98-06-6	1.31	U	6.56	1.31	0.656
Carbon disulfide	75-15-0	1.31	U	6.56	1.31	0.656
Carbon tetrachloride	56-23-5	1.31	U	6.56	1.31	0.656
Chlorobenzene	108-90-7	1.31	U	6.56	1.31	0.656
Chlorodibromomethane	124-48-1	1.31	U	6.56	1.31	0.656
Chloroethane	75-00-3	2.62	U	6.56	2.62	1.31
Chloroform	67-66-3	1.31	U	6.56	1.31	0.656
Chloromethane	74-87-3	5.24	U	13.1	5.24	2.62
2-Chlorotoluene	95-49-8	1.31	U	6.56	1.31	0.656
4-Chlorotoluene	106-43-4	1.31	U	6.56	1.31	0.656
1,2-Dibromo-3-chloropropane	96-12-8	5.24	U	13.1	5.24	2.62
1,2-Dibromoethane	106-93-4	1.31	U	6.56	1.31	0.656
Dibromomethane	74-95-3	1.31	U	6.56	1.31	0.656
1,2-Dichlorobenzene	95-50-1	1.31	U	6.56	1.31	0.656
1,3-Dichlorobenzene	541-73-1	1.31	U	6.56	1.31	0.656
1,4-Dichlorobenzene	106-46-7	1.31	U	6.56	1.31	0.656
Dichlorodifluoromethane	75-71-8	2.62	U	6.56	2.62	1.31
1,1-Dichloroethane	75-34-3	2.62	U	6.56	2.62	1.31
1,2-Dichloroethane	107-06-2	1.31	U	6.56	1.31	0.656
1,1-Dichloroethene	75-35-4	1.31	U	6.56	1.31	0.656
cis-1,2-Dichloroethene	156-59-2	1.31	U	6.56	1.31	0.656

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.31	U	6.56	1.31	0.656
1,2-Dichloropropane	78-87-5	1.31	U	6.56	1.31	0.656
1,3-Dichloropropane	142-28-9	1.31	U	6.56	1.31	0.656
2,2-Dichloropropane	594-20-7	1.31	U	6.56	1.31	0.656
cis-1,3-Dichloropropene	10061-01-5	1.31	U	6.56	1.31	0.656
trans-1,3-Dichloropropene	10061-02-6	1.31	U	6.56	1.31	0.656
1,1-Dichloropropene	563-58-6	1.31	U	6.56	1.31	0.656
Ethylbenzene	100-41-4	1.31	U	6.56	1.31	0.656
2-Hexanone	591-78-6	6.56	U	13.1	6.56	3.28
Hexachlorobutadiene	87-68-3	1.31	U	6.56	1.31	0.656
Isopropylbenzene	98-82-8	1.31	U	6.56	1.31	0.656
p-Isopropyltoluene	99-87-6	1.31	U	6.56	1.31	0.656
4-Methyl-2-pentanone	108-10-1	6.56	U	13.1	6.56	3.28
Methylene chloride	75-09-2	2.62	U	6.56	2.62	1.31
Naphthalene	91-20-3	1.31	U	6.56	1.31	0.656
n-Propylbenzene	103-65-1	1.31	U	6.56	1.31	0.656
Styrene	100-42-5	1.31	U	6.56	1.31	0.656
1,1,1,2-Tetrachloroethane	630-20-6	1.31	U	6.56	1.31	0.656
1,1,2,2-Tetrachloroethane	79-34-5	1.31	U	6.56	1.31	0.656
Tetrachloroethene	127-18-4	1.31	U	6.56	1.31	0.656
Toluene	108-88-3	1.31	U	6.56	1.31	0.656
1,2,3-Trichlorobenzene	87-61-6	1.31	U	6.56	1.31	0.656
1,2,4-Trichlorobenzene	120-82-1	1.31	U	6.56	1.31	0.656
1,1,1-Trichloroethane	71-55-6	1.31	U	6.56	1.31	0.656
1,1,2-Trichloroethane	79-00-5	1.31	U	6.56	1.31	0.656
Trichloroethene	79-01-6	1.31	U	6.56	1.31	0.656
Trichlorofluoromethane	75-69-4	2.62	U	6.56	2.62	1.31
1,2,3-Trichloropropane	96-18-4	2.62	U	6.56	2.62	1.31
1,2,4-Trimethylbenzene	95-63-6	1.31	U	6.56	1.31	0.656
1,3,5-Trimethylbenzene	108-67-8	1.31	U	6.56	1.31	0.656
Vinyl chloride	75-01-4	2.62	U	6.56	2.62	1.31
o-Xylene	95-47-6	1.31	U	6.56	1.31	0.656
m-,p-Xylene	179601-23-1	1.31	U	6.56	1.31	0.656

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.0	80	120	
1,2-Dichloroethane-d4	87.5	80	120	
Toluene-d8	98.4	85	115	
4-Bromofluorobenzene	98.1	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030323-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT10(5-5.5)040316	**Prep Method:**	6850	**Prep Date:**	03/07/2016 14:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559975	**Analyst:**	JWR	**Run Date:**	03/07/2016 19:36
Collect Date:	03/04/2016 11:25	**Dilution:**	1	**File ID:**	1LM.LM33760
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	74.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.60	U	5.21	2.60	1.30

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030323-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT10(15.5-16)040316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/08/2016 09:25
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560074	**Analyst:**	TMB	**Run Date:**	03/08/2016 18:08
Collect Date:	03/04/2016 11:55	**Dilution:**	1	**File ID:**	6M137657
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	94.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.5	U	22.9	11.5	5.73
Benzene	71-43-2	1.15	U	5.73	1.15	0.573
Bromobenzene	108-86-1	1.15	U	5.73	1.15	0.573
Bromochloromethane	74-97-5	2.30	U	5.73	2.30	1.15
Bromodichloromethane	75-27-4	1.15	U	5.73	1.15	0.573
Bromoform	75-25-2	1.15	U	5.73	1.15	0.573
Bromomethane	74-83-9	2.30	U	5.73	2.30	1.15
2-Butanone	78-93-3	5.74	U	11.5	5.74	2.87
n-Butylbenzene	104-51-8	1.15	U	5.73	1.15	0.573
sec-Butylbenzene	135-98-8	1.15	U	5.73	1.15	0.573
tert-Butylbenzene	98-06-6	1.15	U	5.73	1.15	0.573
Carbon disulfide	75-15-0	1.15	U	5.73	1.15	0.573
Carbon tetrachloride	56-23-5	1.15	U	5.73	1.15	0.573
Chlorobenzene	108-90-7	1.15	U	5.73	1.15	0.573
Chlorodibromomethane	124-48-1	1.15	U	5.73	1.15	0.573
Chloroethane	75-00-3	2.30	U	5.73	2.30	1.15
Chloroform	67-66-3	1.15	U	5.73	1.15	0.573
Chloromethane	74-87-3	4.58	U	11.5	4.58	2.29
2-Chlorotoluene	95-49-8	1.15	U	5.73	1.15	0.573
4-Chlorotoluene	106-43-4	1.15	U	5.73	1.15	0.573
1,2-Dibromo-3-chloropropane	96-12-8	4.58	U	11.5	4.58	2.29
1,2-Dibromoethane	106-93-4	1.15	U	5.73	1.15	0.573
Dibromomethane	74-95-3	1.15	U	5.73	1.15	0.573
1,2-Dichlorobenzene	95-50-1	1.15	U	5.73	1.15	0.573
1,3-Dichlorobenzene	541-73-1	1.15	U	5.73	1.15	0.573
1,4-Dichlorobenzene	106-46-7	1.15	U	5.73	1.15	0.573
Dichlorodifluoromethane	75-71-8	2.30	U	5.73	2.30	1.15
1,1-Dichloroethane	75-34-3	2.30	U	5.73	2.30	1.15
1,2-Dichloroethane	107-06-2	1.15	U	5.73	1.15	0.573
1,1-Dichloroethene	75-35-4	1.15	U	5.73	1.15	0.573
cis-1,2-Dichloroethene	156-59-2	1.15	U	5.73	1.15	0.573

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.15	U	5.73	1.15	0.573
1,2-Dichloropropane	78-87-5	1.15	U	5.73	1.15	0.573
1,3-Dichloropropane	142-28-9	1.15	U	5.73	1.15	0.573
2,2-Dichloropropane	594-20-7	1.15	U	5.73	1.15	0.573
cis-1,3-Dichloropropene	10061-01-5	1.15	U	5.73	1.15	0.573
trans-1,3-Dichloropropene	10061-02-6	1.15	U	5.73	1.15	0.573
1,1-Dichloropropene	563-58-6	1.15	U	5.73	1.15	0.573
Ethylbenzene	100-41-4	1.15	U	5.73	1.15	0.573
2-Hexanone	591-78-6	5.74	U	11.5	5.74	2.87
Hexachlorobutadiene	87-68-3	1.15	U	5.73	1.15	0.573
Isopropylbenzene	98-82-8	1.15	U	5.73	1.15	0.573
p-Isopropyltoluene	99-87-6	1.15	U	5.73	1.15	0.573
4-Methyl-2-pentanone	108-10-1	5.74	U	11.5	5.74	2.87
Methylene chloride	75-09-2	2.30	U	5.73	2.30	1.15
Naphthalene	91-20-3	1.15	U	5.73	1.15	0.573
n-Propylbenzene	103-65-1	1.15	U	5.73	1.15	0.573
Styrene	100-42-5	1.15	U	5.73	1.15	0.573
1,1,1,2-Tetrachloroethane	630-20-6	1.15	U	5.73	1.15	0.573
1,1,2,2-Tetrachloroethane	79-34-5	1.15	U	5.73	1.15	0.573
Tetrachloroethene	127-18-4	1.15	U	5.73	1.15	0.573
Toluene	108-88-3	1.15	U	5.73	1.15	0.573
1,2,3-Trichlorobenzene	87-61-6	1.15	U	5.73	1.15	0.573
1,2,4-Trichlorobenzene	120-82-1	1.15	U	5.73	1.15	0.573
1,1,1-Trichloroethane	71-55-6	1.15	U	5.73	1.15	0.573
1,1,2-Trichloroethane	79-00-5	1.15	U	5.73	1.15	0.573
Trichloroethene	79-01-6	1.15	U	5.73	1.15	0.573
Trichlorofluoromethane	75-69-4	2.30	U	5.73	2.30	1.15
1,2,3-Trichloropropane	96-18-4	2.30	U	5.73	2.30	1.15
1,2,4-Trimethylbenzene	95-63-6	1.15	U	5.73	1.15	0.573
1,3,5-Trimethylbenzene	108-67-8	1.15	U	5.73	1.15	0.573
Vinyl chloride	75-01-4	2.30	U	5.73	2.30	1.15
o-Xylene	95-47-6	1.15	U	5.73	1.15	0.573
m-,p-Xylene	179601-23-1	1.15	U	5.73	1.15	0.573

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.8	80	120	
1,2-Dichloroethane-d4	87.8	80	120	
Toluene-d8	97.4	85	115	
4-Bromofluorobenzene	97.0	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030323-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT10(15.5-16)040316	**Prep Method:**	6850	**Prep Date:**	03/07/2016 14:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559975	**Analyst:**	JWR	**Run Date:**	03/08/2016 11:35
Collect Date:	03/04/2016 11:55	**Dilution:**	10	**File ID:**	1LM.LM33776
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	94.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	175		41.8	21.0	10.5

Certificate of Analysis

Sample #:	L16030323-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT10(23.5-24)040316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/08/2016 09:27
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560074	**Analyst:**	TMB	**Run Date:**	03/08/2016 18:42
Collect Date:	03/04/2016 12:40	**Dilution:**	1	**File ID:**	6M137658
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	86.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.4	U	22.9	11.4	5.71
Benzene	71-43-2	1.14	U	5.71	1.14	0.571
Bromobenzene	108-86-1	1.14	U	5.71	1.14	0.571
Bromochloromethane	74-97-5	2.28	U	5.71	2.28	1.14
Bromodichloromethane	75-27-4	1.14	U	5.71	1.14	0.571
Bromoform	75-25-2	1.14	U	5.71	1.14	0.571
Bromomethane	74-83-9	2.28	U	5.71	2.28	1.14
2-Butanone	78-93-3	5.72	U	11.4	5.72	2.86
n-Butylbenzene	104-51-8	1.14	U	5.71	1.14	0.571
sec-Butylbenzene	135-98-8	1.14	U	5.71	1.14	0.571
tert-Butylbenzene	98-06-6	1.14	U	5.71	1.14	0.571
Carbon disulfide	75-15-0	1.14	U	5.71	1.14	0.571
Carbon tetrachloride	56-23-5	1.14	U	5.71	1.14	0.571
Chlorobenzene	108-90-7	1.14	U	5.71	1.14	0.571
Chlorodibromomethane	124-48-1	1.14	U	5.71	1.14	0.571
Chloroethane	75-00-3	2.28	U	5.71	2.28	1.14
Chloroform	67-66-3	1.14	U	5.71	1.14	0.571
Chloromethane	74-87-3	4.58	U	11.4	4.58	2.29
2-Chlorotoluene	95-49-8	1.14	U	5.71	1.14	0.571
4-Chlorotoluene	106-43-4	1.14	U	5.71	1.14	0.571

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	4.58	U	11.4	4.58	2.29
1,2-Dibromoethane	106-93-4	1.14	U	5.71	1.14	0.571
Dibromomethane	74-95-3	1.14	U	5.71	1.14	0.571
1,2-Dichlorobenzene	95-50-1	1.14	U	5.71	1.14	0.571
1,3-Dichlorobenzene	541-73-1	1.14	U	5.71	1.14	0.571
1,4-Dichlorobenzene	106-46-7	1.14	U	5.71	1.14	0.571
Dichlorodifluoromethane	75-71-8	2.28	U	5.71	2.28	1.14
1,1-Dichloroethane	75-34-3	2.28	U	5.71	2.28	1.14
1,2-Dichloroethane	107-06-2	1.14	U	5.71	1.14	0.571
1,1-Dichloroethene	75-35-4	1.14	U	5.71	1.14	0.571
cis-1,2-Dichloroethene	156-59-2	1.14	U	5.71	1.14	0.571
trans-1,2-Dichloroethene	156-60-5	1.14	U	5.71	1.14	0.571
1,2-Dichloropropane	78-87-5	1.14	U	5.71	1.14	0.571
1,3-Dichloropropane	142-28-9	1.14	U	5.71	1.14	0.571
2,2-Dichloropropane	594-20-7	1.14	U	5.71	1.14	0.571
cis-1,3-Dichloropropene	10061-01-5	1.14	U	5.71	1.14	0.571
trans-1,3-Dichloropropene	10061-02-6	1.14	U	5.71	1.14	0.571
1,1-Dichloropropene	563-58-6	1.14	U	5.71	1.14	0.571
Ethylbenzene	100-41-4	1.14	U	5.71	1.14	0.571
2-Hexanone	591-78-6	5.72	U	11.4	5.72	2.86
Hexachlorobutadiene	87-68-3	1.14	U	5.71	1.14	0.571
Isopropylbenzene	98-82-8	1.14	U	5.71	1.14	0.571
p-Isopropyltoluene	99-87-6	1.14	U	5.71	1.14	0.571
4-Methyl-2-pentanone	108-10-1	5.72	U	11.4	5.72	2.86
Methylene chloride	75-09-2	2.28	U	5.71	2.28	1.14
Naphthalene	91-20-3	1.14	U	5.71	1.14	0.571
n-Propylbenzene	103-65-1	1.14	U	5.71	1.14	0.571
Styrene	100-42-5	1.14	U	5.71	1.14	0.571
1,1,1,2-Tetrachloroethane	630-20-6	1.14	U	5.71	1.14	0.571
1,1,2,2-Tetrachloroethane	79-34-5	1.14	U	5.71	1.14	0.571
Tetrachloroethene	127-18-4	1.14	U	5.71	1.14	0.571
Toluene	108-88-3	1.14	U	5.71	1.14	0.571
1,2,3-Trichlorobenzene	87-61-6	1.14	U	5.71	1.14	0.571
1,2,4-Trichlorobenzene	120-82-1	1.14	U	5.71	1.14	0.571
1,1,1-Trichloroethane	71-55-6	1.14	U	5.71	1.14	0.571
1,1,2-Trichloroethane	79-00-5	1.14	U	5.71	1.14	0.571
Trichloroethene	79-01-6	1.14	U	5.71	1.14	0.571
Trichlorofluoromethane	75-69-4	2.28	U	5.71	2.28	1.14
1,2,3-Trichloropropane	96-18-4	2.28	U	5.71	2.28	1.14

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.14	U	5.71	1.14	0.571
1,3,5-Trimethylbenzene	108-67-8	1.14	U	5.71	1.14	0.571
Vinyl chloride	75-01-4	2.28	U	5.71	2.28	1.14
o-Xylene	95-47-6	1.14	U	5.71	1.14	0.571
m-,p-Xylene	179601-23-1	1.14	U	5.71	1.14	0.571

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	90.2	80	120	
1,2-Dichloroethane-d4	84.3	80	120	
Toluene-d8	99.9	85	115	
4-Bromofluorobenzene	96.8	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030323-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT10(23.5-24)040316	**Prep Method:**	6850	**Prep Date:**	03/07/2016 14:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559975	**Analyst:**	JWR	**Run Date:**	03/07/2016 21:11
Collect Date:	03/04/2016 12:40	**Dilution:**	1	**File ID:**	1LM.LM33765
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	86.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	15.9		4.55	2.28	1.14

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #: L16030323-01 **Client ID:** 18DPT09(5-5.5)040316 **Matrix:** Soil **Collect Date:** 03/04/2016 10:30

Analyte	Result	Units	Qualifier
Percent Solids	67.6	weight %	

Sample #: L16030323-02 **Client ID:** 18DPT09(11-11.5)040316 **Matrix:** Soil **Collect Date:** 03/04/2016 10:35

Analyte	Result	Units	Qualifier
Percent Solids	86.3	weight %	

Sample #: L16030323-03 **Client ID:** 18DPT09(13.5-14)040316 **Matrix:** Soil **Collect Date:** 03/04/2016 10:40

Analyte	Result	Units	Qualifier
Percent Solids	79.6	weight %	

Sample #: L16030323-04 **Client ID:** 18DPT10(5-5.5)040316 **Matrix:** Soil **Collect Date:** 03/04/2016 11:25

Analyte	Result	Units	Qualifier
Percent Solids	74.0	weight %	

Sample #: L16030323-05 **Client ID:** 18DPT10(15.5-16)040316 **Matrix:** Soil **Collect Date:** 03/04/2016 11:55

Analyte	Result	Units	Qualifier
Percent Solids	94.0	weight %	

Sample #: L16030323-06 **Client ID:** 18DPT10(23.5-24)040316 **Matrix:** Soil **Collect Date:** 03/04/2016 12:40

Analyte	Result	Units	Qualifier
Percent Solids	86.3	weight %	

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030323-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT09(5-5.5)040316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/08/2016 09:22
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560074	**Analyst:**	TMB	**Run Date:**	03/08/2016 15:54
Collect Date:	03/04/2016 10:30	**Dilution:**	1	**File ID:**	6M137653
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	67.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	15.7	U	31.4	15.7	7.86
Benzene	71-43-2	1.57	U	7.86	1.57	0.786
Bromobenzene	108-86-1	1.57	U	7.86	1.57	0.786
Bromochloromethane	74-97-5	3.14	U	7.86	3.14	1.57
Bromodichloromethane	75-27-4	1.57	U	7.86	1.57	0.786
Bromoform	75-25-2	1.57	U	7.86	1.57	0.786
Bromomethane	74-83-9	3.14	U	7.86	3.14	1.57
2-Butanone	78-93-3	7.86	U	15.7	7.86	3.93
n-Butylbenzene	104-51-8	1.57	U	7.86	1.57	0.786
sec-Butylbenzene	135-98-8	1.57	U	7.86	1.57	0.786
tert-Butylbenzene	98-06-6	1.57	U	7.86	1.57	0.786
Carbon disulfide	75-15-0	1.57	U	7.86	1.57	0.786
Carbon tetrachloride	56-23-5	1.57	U	7.86	1.57	0.786
Chlorobenzene	108-90-7	1.57	U	7.86	1.57	0.786
Chlorodibromomethane	124-48-1	1.57	U	7.86	1.57	0.786
Chloroethane	75-00-3	3.14	U	7.86	3.14	1.57
Chloroform	67-66-3	1.57	U	7.86	1.57	0.786
Chloromethane	74-87-3	6.28	U	15.7	6.28	3.14
2-Chlorotoluene	95-49-8	1.57	U	7.86	1.57	0.786
4-Chlorotoluene	106-43-4	1.57	U	7.86	1.57	0.786
1,2-Dibromo-3-chloropropane	96-12-8	6.28	U	15.7	6.28	3.14
1,2-Dibromoethane	106-93-4	1.57	U	7.86	1.57	0.786
Dibromomethane	74-95-3	1.57	U	7.86	1.57	0.786
1,2-Dichlorobenzene	95-50-1	1.57	U	7.86	1.57	0.786
1,3-Dichlorobenzene	541-73-1	1.57	U	7.86	1.57	0.786
1,4-Dichlorobenzene	106-46-7	1.57	U	7.86	1.57	0.786
Dichlorodifluoromethane	75-71-8	3.14	U	7.86	3.14	1.57
1,1-Dichloroethane	75-34-3	3.14	U	7.86	3.14	1.57
1,2-Dichloroethane	107-06-2	1.57	U	7.86	1.57	0.786
1,1-Dichloroethene	75-35-4	1.57	U	7.86	1.57	0.786
cis-1,2-Dichloroethene	156-59-2	1.57	U	7.86	1.57	0.786
trans-1,2-Dichloroethene	156-60-5	1.57	U	7.86	1.57	0.786

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Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.57	U	7.86	1.57	0.786
1,3-Dichloropropane	142-28-9	1.57	U	7.86	1.57	0.786
2,2-Dichloropropane	594-20-7	1.57	U	7.86	1.57	0.786
cis-1,3-Dichloropropene	10061-01-5	1.57	U	7.86	1.57	0.786
trans-1,3-Dichloropropene	10061-02-6	1.57	U	7.86	1.57	0.786
1,1-Dichloropropene	563-58-6	1.57	U	7.86	1.57	0.786
Ethylbenzene	100-41-4	1.57	U	7.86	1.57	0.786
2-Hexanone	591-78-6	7.86	U	15.7	7.86	3.93
Hexachlorobutadiene	87-68-3	1.57	U	7.86	1.57	0.786
Isopropylbenzene	98-82-8	1.57	U	7.86	1.57	0.786
p-Isopropyltoluene	99-87-6	1.47	J	7.86	1.57	0.786
4-Methyl-2-pentanone	108-10-1	7.86	U	15.7	7.86	3.93
Methylene chloride	75-09-2	3.14	U	7.86	3.14	1.57
Naphthalene	91-20-3	1.57	U	7.86	1.57	0.786
n-Propylbenzene	103-65-1	1.57	U	7.86	1.57	0.786
Styrene	100-42-5	1.57	U	7.86	1.57	0.786
1,1,1,2-Tetrachloroethane	630-20-6	1.57	U	7.86	1.57	0.786
1,1,2,2-Tetrachloroethane	79-34-5	1.57	U	7.86	1.57	0.786
Tetrachloroethene	127-18-4	1.57	U	7.86	1.57	0.786
Toluene	108-88-3	1.57	U	7.86	1.57	0.786
1,2,3-Trichlorobenzene	87-61-6	1.57	U	7.86	1.57	0.786
1,2,4-Trichlorobenzene	120-82-1	1.57	U	7.86	1.57	0.786
1,1,1-Trichloroethane	71-55-6	1.57	U	7.86	1.57	0.786
1,1,2-Trichloroethane	79-00-5	1.57	U	7.86	1.57	0.786
Trichloroethene	79-01-6	1.57	U	7.86	1.57	0.786
Trichlorofluoromethane	75-69-4	3.14	U	7.86	3.14	1.57
1,2,3-Trichloropropane	96-18-4	3.14	U	7.86	3.14	1.57
1,2,4-Trimethylbenzene	95-63-6	1.57	U	7.86	1.57	0.786
1,3,5-Trimethylbenzene	108-67-8	1.57	U	7.86	1.57	0.786
Vinyl chloride	75-01-4	3.14	U	7.86	3.14	1.57
o-Xylene	95-47-6	1.57	U	7.86	1.57	0.786
m-,p-Xylene	179601-23-1	1.57	U	7.86	1.57	0.786

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	89.6	80	120	
1,2-Dichloroethane-d4	81.6	80	120	
Toluene-d8	100	85	115	
4-Bromofluorobenzene	99.9	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030323-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT09(11-11.5)040316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/08/2016 09:23
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560074	**Analyst:**	TMB	**Run Date:**	03/08/2016 16:28
Collect Date:	03/04/2016 10:35	**Dilution:**	1	**File ID:**	6M137654
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	86.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	25.0	12.5	6.24
Benzene	71-43-2	1.25	U	6.24	1.25	0.624
Bromobenzene	108-86-1	1.25	U	6.24	1.25	0.624
Bromochloromethane	74-97-5	2.50	U	6.24	2.50	1.25
Bromodichloromethane	75-27-4	1.25	U	6.24	1.25	0.624
Bromoform	75-25-2	1.25	U	6.24	1.25	0.624
Bromomethane	74-83-9	2.50	U	6.24	2.50	1.25
2-Butanone	78-93-3	6.24	U	12.5	6.24	3.12
n-Butylbenzene	104-51-8	1.25	U	6.24	1.25	0.624
sec-Butylbenzene	135-98-8	1.25	U	6.24	1.25	0.624
tert-Butylbenzene	98-06-6	1.25	U	6.24	1.25	0.624
Carbon disulfide	75-15-0	1.25	U	6.24	1.25	0.624
Carbon tetrachloride	56-23-5	1.25	U	6.24	1.25	0.624
Chlorobenzene	108-90-7	1.25	U	6.24	1.25	0.624
Chlorodibromomethane	124-48-1	1.25	U	6.24	1.25	0.624
Chloroethane	75-00-3	2.50	U	6.24	2.50	1.25
Chloroform	67-66-3	1.25	U	6.24	1.25	0.624
Chloromethane	74-87-3	5.00	U	12.5	5.00	2.50
2-Chlorotoluene	95-49-8	1.25	U	6.24	1.25	0.624
4-Chlorotoluene	106-43-4	1.25	U	6.24	1.25	0.624
1,2-Dibromo-3-chloropropane	96-12-8	5.00	U	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	6.24	1.25	0.624
Dibromomethane	74-95-3	1.25	U	6.24	1.25	0.624
1,2-Dichlorobenzene	95-50-1	1.25	U	6.24	1.25	0.624
1,3-Dichlorobenzene	541-73-1	1.25	U	6.24	1.25	0.624
1,4-Dichlorobenzene	106-46-7	1.25	U	6.24	1.25	0.624
Dichlorodifluoromethane	75-71-8	2.50	U	6.24	2.50	1.25
1,1-Dichloroethane	75-34-3	2.50	U	6.24	2.50	1.25
1,2-Dichloroethane	107-06-2	1.25	U	6.24	1.25	0.624
1,1-Dichloroethene	75-35-4	1.25	U	6.24	1.25	0.624
cis-1,2-Dichloroethene	156-59-2	1.25	U	6.24	1.25	0.624

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Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.25	U	6.24	1.25	0.624
1,2-Dichloropropane	78-87-5	1.25	U	6.24	1.25	0.624
1,3-Dichloropropane	142-28-9	1.25	U	6.24	1.25	0.624
2,2-Dichloropropane	594-20-7	1.25	U	6.24	1.25	0.624
cis-1,3-Dichloropropene	10061-01-5	1.25	U	6.24	1.25	0.624
trans-1,3-Dichloropropene	10061-02-6	1.25	U	6.24	1.25	0.624
1,1-Dichloropropene	563-58-6	1.25	U	6.24	1.25	0.624
Ethylbenzene	100-41-4	1.25	U	6.24	1.25	0.624
2-Hexanone	591-78-6	6.24	U	12.5	6.24	3.12
Hexachlorobutadiene	87-68-3	1.25	U	6.24	1.25	0.624
Isopropylbenzene	98-82-8	1.25	U	6.24	1.25	0.624
p-Isopropyltoluene	99-87-6	1.25	U	6.24	1.25	0.624
4-Methyl-2-pentanone	108-10-1	6.24	U	12.5	6.24	3.12
Methylene chloride	75-09-2	2.50	U	6.24	2.50	1.25
Naphthalene	91-20-3	1.25	U	6.24	1.25	0.624
n-Propylbenzene	103-65-1	1.25	U	6.24	1.25	0.624
Styrene	100-42-5	1.25	U	6.24	1.25	0.624
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	6.24	1.25	0.624
1,1,2,2-Tetrachloroethane	79-34-5	1.25	U	6.24	1.25	0.624
Tetrachloroethene	127-18-4	1.25	U	6.24	1.25	0.624
Toluene	108-88-3	1.25	U	6.24	1.25	0.624
1,2,3-Trichlorobenzene	87-61-6	1.25	U	6.24	1.25	0.624
1,2,4-Trichlorobenzene	120-82-1	1.25	U	6.24	1.25	0.624
1,1,1-Trichloroethane	71-55-6	1.25	U	6.24	1.25	0.624
1,1,2-Trichloroethane	79-00-5	1.25	U	6.24	1.25	0.624
Trichloroethene	79-01-6	1.25	U	6.24	1.25	0.624
Trichlorofluoromethane	75-69-4	2.50	U	6.24	2.50	1.25
1,2,3-Trichloropropane	96-18-4	2.50	U	6.24	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	6.24	1.25	0.624
1,3,5-Trimethylbenzene	108-67-8	1.25	U	6.24	1.25	0.624
Vinyl chloride	75-01-4	2.50	U	6.24	2.50	1.25
o-Xylene	95-47-6	1.25	U	6.24	1.25	0.624
m-,p-Xylene	179601-23-1	1.25	U	6.24	1.25	0.624

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.2	80	120	
1,2-Dichloroethane-d4	87.2	80	120	
Toluene-d8	98.2	85	115	
4-Bromofluorobenzene	97.6	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030323-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT09(13.5-14)040316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/08/2016 09:24
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560074	**Analyst:**	TMB	**Run Date:**	03/08/2016 17:01
Collect Date:	03/04/2016 10:40	**Dilution:**	1	**File ID:**	6M137655
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.6	U	27.1	13.6	6.78
Benzene	71-43-2	1.36	U	6.78	1.36	0.678
Bromobenzene	108-86-1	1.36	U	6.78	1.36	0.678
Bromochloromethane	74-97-5	2.72	U	6.78	2.72	1.36
Bromodichloromethane	75-27-4	1.36	U	6.78	1.36	0.678
Bromoform	75-25-2	1.36	U	6.78	1.36	0.678
Bromomethane	74-83-9	2.72	U	6.78	2.72	1.36
2-Butanone	78-93-3	6.78	U	13.6	6.78	3.39
n-Butylbenzene	104-51-8	1.36	U	6.78	1.36	0.678
sec-Butylbenzene	135-98-8	1.36	U	6.78	1.36	0.678
tert-Butylbenzene	98-06-6	1.36	U	6.78	1.36	0.678
Carbon disulfide	75-15-0	1.36	U	6.78	1.36	0.678
Carbon tetrachloride	56-23-5	1.36	U	6.78	1.36	0.678
Chlorobenzene	108-90-7	1.36	U	6.78	1.36	0.678
Chlorodibromomethane	124-48-1	1.36	U	6.78	1.36	0.678
Chloroethane	75-00-3	2.72	U	6.78	2.72	1.36
Chloroform	67-66-3	1.36	U	6.78	1.36	0.678
Chloromethane	74-87-3	5.42	U	13.6	5.42	2.71
2-Chlorotoluene	95-49-8	1.36	U	6.78	1.36	0.678
4-Chlorotoluene	106-43-4	1.36	U	6.78	1.36	0.678
1,2-Dibromo-3-chloropropane	96-12-8	5.42	U	13.6	5.42	2.71
1,2-Dibromoethane	106-93-4	1.36	U	6.78	1.36	0.678
Dibromomethane	74-95-3	1.36	U	6.78	1.36	0.678
1,2-Dichlorobenzene	95-50-1	1.36	U	6.78	1.36	0.678
1,3-Dichlorobenzene	541-73-1	1.36	U	6.78	1.36	0.678
1,4-Dichlorobenzene	106-46-7	1.36	U	6.78	1.36	0.678
Dichlorodifluoromethane	75-71-8	2.72	U	6.78	2.72	1.36
1,1-Dichloroethane	75-34-3	2.72	U	6.78	2.72	1.36
1,2-Dichloroethane	107-06-2	1.36	U	6.78	1.36	0.678
1,1-Dichloroethene	75-35-4	1.36	U	6.78	1.36	0.678
cis-1,2-Dichloroethene	156-59-2	1.36	U	6.78	1.36	0.678

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Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.36	U	6.78	1.36	0.678
1,2-Dichloropropane	78-87-5	1.36	U	6.78	1.36	0.678
1,3-Dichloropropane	142-28-9	1.36	U	6.78	1.36	0.678
2,2-Dichloropropane	594-20-7	1.36	U	6.78	1.36	0.678
cis-1,3-Dichloropropene	10061-01-5	1.36	U	6.78	1.36	0.678
trans-1,3-Dichloropropene	10061-02-6	1.36	U	6.78	1.36	0.678
1,1-Dichloropropene	563-58-6	1.36	U	6.78	1.36	0.678
Ethylbenzene	100-41-4	1.36	U	6.78	1.36	0.678
2-Hexanone	591-78-6	6.78	U	13.6	6.78	3.39
Hexachlorobutadiene	87-68-3	1.36	U	6.78	1.36	0.678
Isopropylbenzene	98-82-8	1.36	U	6.78	1.36	0.678
p-Isopropyltoluene	99-87-6	1.36	U	6.78	1.36	0.678
4-Methyl-2-pentanone	108-10-1	6.78	U	13.6	6.78	3.39
Methylene chloride	75-09-2	2.72	U	6.78	2.72	1.36
Naphthalene	91-20-3	1.36	U	6.78	1.36	0.678
n-Propylbenzene	103-65-1	1.36	U	6.78	1.36	0.678
Styrene	100-42-5	1.36	U	6.78	1.36	0.678
1,1,1,2-Tetrachloroethane	630-20-6	1.36	U	6.78	1.36	0.678
1,1,2,2-Tetrachloroethane	79-34-5	1.36	U	6.78	1.36	0.678
Tetrachloroethene	127-18-4	1.36	U	6.78	1.36	0.678
Toluene	108-88-3	1.36	U	6.78	1.36	0.678
1,2,3-Trichlorobenzene	87-61-6	1.36	U	6.78	1.36	0.678
1,2,4-Trichlorobenzene	120-82-1	1.36	U	6.78	1.36	0.678
1,1,1-Trichloroethane	71-55-6	1.36	U	6.78	1.36	0.678
1,1,2-Trichloroethane	79-00-5	1.36	U	6.78	1.36	0.678
Trichloroethene	79-01-6	1.36	U	6.78	1.36	0.678
Trichlorofluoromethane	75-69-4	2.72	U	6.78	2.72	1.36
1,2,3-Trichloropropane	96-18-4	2.72	U	6.78	2.72	1.36
1,2,4-Trimethylbenzene	95-63-6	1.36	U	6.78	1.36	0.678
1,3,5-Trimethylbenzene	108-67-8	1.36	U	6.78	1.36	0.678
Vinyl chloride	75-01-4	2.72	U	6.78	2.72	1.36
o-Xylene	95-47-6	1.36	U	6.78	1.36	0.678
m-,p-Xylene	179601-23-1	1.36	U	6.78	1.36	0.678

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.7	80	120	
1,2-Dichloroethane-d4	90.4	80	120	
Toluene-d8	98.3	85	115	
4-Bromofluorobenzene	97.6	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030323-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT10(5-5.5)040316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/08/2016 09:24
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560074	**Analyst:**	TMB	**Run Date:**	03/08/2016 17:34
Collect Date:	03/04/2016 11:25	**Dilution:**	1	**File ID:**	6M137656
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	74.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.1	U	26.2	13.1	6.56
Benzene	71-43-2	1.31	U	6.56	1.31	0.656
Bromobenzene	108-86-1	1.31	U	6.56	1.31	0.656
Bromochloromethane	74-97-5	2.62	U	6.56	2.62	1.31
Bromodichloromethane	75-27-4	1.31	U	6.56	1.31	0.656
Bromoform	75-25-2	1.31	U	6.56	1.31	0.656
Bromomethane	74-83-9	2.62	U	6.56	2.62	1.31
2-Butanone	78-93-3	6.56	U	13.1	6.56	3.28
n-Butylbenzene	104-51-8	1.31	U	6.56	1.31	0.656
sec-Butylbenzene	135-98-8	1.31	U	6.56	1.31	0.656
tert-Butylbenzene	98-06-6	1.31	U	6.56	1.31	0.656
Carbon disulfide	75-15-0	1.31	U	6.56	1.31	0.656
Carbon tetrachloride	56-23-5	1.31	U	6.56	1.31	0.656
Chlorobenzene	108-90-7	1.31	U	6.56	1.31	0.656
Chlorodibromomethane	124-48-1	1.31	U	6.56	1.31	0.656
Chloroethane	75-00-3	2.62	U	6.56	2.62	1.31
Chloroform	67-66-3	1.31	U	6.56	1.31	0.656
Chloromethane	74-87-3	5.24	U	13.1	5.24	2.62
2-Chlorotoluene	95-49-8	1.31	U	6.56	1.31	0.656
4-Chlorotoluene	106-43-4	1.31	U	6.56	1.31	0.656
1,2-Dibromo-3-chloropropane	96-12-8	5.24	U	13.1	5.24	2.62
1,2-Dibromoethane	106-93-4	1.31	U	6.56	1.31	0.656
Dibromomethane	74-95-3	1.31	U	6.56	1.31	0.656
1,2-Dichlorobenzene	95-50-1	1.31	U	6.56	1.31	0.656
1,3-Dichlorobenzene	541-73-1	1.31	U	6.56	1.31	0.656
1,4-Dichlorobenzene	106-46-7	1.31	U	6.56	1.31	0.656
Dichlorodifluoromethane	75-71-8	2.62	U	6.56	2.62	1.31
1,1-Dichloroethane	75-34-3	2.62	U	6.56	2.62	1.31
1,2-Dichloroethane	107-06-2	1.31	U	6.56	1.31	0.656
1,1-Dichloroethene	75-35-4	1.31	U	6.56	1.31	0.656
cis-1,2-Dichloroethene	156-59-2	1.31	U	6.56	1.31	0.656

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Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.31	U	6.56	1.31	0.656
1,2-Dichloropropane	78-87-5	1.31	U	6.56	1.31	0.656
1,3-Dichloropropane	142-28-9	1.31	U	6.56	1.31	0.656
2,2-Dichloropropane	594-20-7	1.31	U	6.56	1.31	0.656
cis-1,3-Dichloropropene	10061-01-5	1.31	U	6.56	1.31	0.656
trans-1,3-Dichloropropene	10061-02-6	1.31	U	6.56	1.31	0.656
1,1-Dichloropropene	563-58-6	1.31	U	6.56	1.31	0.656
Ethylbenzene	100-41-4	1.31	U	6.56	1.31	0.656
2-Hexanone	591-78-6	6.56	U	13.1	6.56	3.28
Hexachlorobutadiene	87-68-3	1.31	U	6.56	1.31	0.656
Isopropylbenzene	98-82-8	1.31	U	6.56	1.31	0.656
p-Isopropyltoluene	99-87-6	1.31	U	6.56	1.31	0.656
4-Methyl-2-pentanone	108-10-1	6.56	U	13.1	6.56	3.28
Methylene chloride	75-09-2	2.62	U	6.56	2.62	1.31
Naphthalene	91-20-3	1.31	U	6.56	1.31	0.656
n-Propylbenzene	103-65-1	1.31	U	6.56	1.31	0.656
Styrene	100-42-5	1.31	U	6.56	1.31	0.656
1,1,1,2-Tetrachloroethane	630-20-6	1.31	U	6.56	1.31	0.656
1,1,2,2-Tetrachloroethane	79-34-5	1.31	U	6.56	1.31	0.656
Tetrachloroethene	127-18-4	1.31	U	6.56	1.31	0.656
Toluene	108-88-3	1.31	U	6.56	1.31	0.656
1,2,3-Trichlorobenzene	87-61-6	1.31	U	6.56	1.31	0.656
1,2,4-Trichlorobenzene	120-82-1	1.31	U	6.56	1.31	0.656
1,1,1-Trichloroethane	71-55-6	1.31	U	6.56	1.31	0.656
1,1,2-Trichloroethane	79-00-5	1.31	U	6.56	1.31	0.656
Trichloroethene	79-01-6	1.31	U	6.56	1.31	0.656
Trichlorofluoromethane	75-69-4	2.62	U	6.56	2.62	1.31
1,2,3-Trichloropropane	96-18-4	2.62	U	6.56	2.62	1.31
1,2,4-Trimethylbenzene	95-63-6	1.31	U	6.56	1.31	0.656
1,3,5-Trimethylbenzene	108-67-8	1.31	U	6.56	1.31	0.656
Vinyl chloride	75-01-4	2.62	U	6.56	2.62	1.31
o-Xylene	95-47-6	1.31	U	6.56	1.31	0.656
m-,p-Xylene	179601-23-1	1.31	U	6.56	1.31	0.656

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.0	80	120	
1,2-Dichloroethane-d4	87.5	80	120	
Toluene-d8	98.4	85	115	
4-Bromofluorobenzene	98.1	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030323-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT10(15.5-16)040316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/08/2016 09:25
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560074	**Analyst:**	TMB	**Run Date:**	03/08/2016 18:08
Collect Date:	03/04/2016 11:55	**Dilution:**	1	**File ID:**	6M137657
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	94.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.5	U	22.9	11.5	5.73
Benzene	71-43-2	1.15	U	5.73	1.15	0.573
Bromobenzene	108-86-1	1.15	U	5.73	1.15	0.573
Bromochloromethane	74-97-5	2.30	U	5.73	2.30	1.15
Bromodichloromethane	75-27-4	1.15	U	5.73	1.15	0.573
Bromoform	75-25-2	1.15	U	5.73	1.15	0.573
Bromomethane	74-83-9	2.30	U	5.73	2.30	1.15
2-Butanone	78-93-3	5.74	U	11.5	5.74	2.87
n-Butylbenzene	104-51-8	1.15	U	5.73	1.15	0.573
sec-Butylbenzene	135-98-8	1.15	U	5.73	1.15	0.573
tert-Butylbenzene	98-06-6	1.15	U	5.73	1.15	0.573
Carbon disulfide	75-15-0	1.15	U	5.73	1.15	0.573
Carbon tetrachloride	56-23-5	1.15	U	5.73	1.15	0.573
Chlorobenzene	108-90-7	1.15	U	5.73	1.15	0.573
Chlorodibromomethane	124-48-1	1.15	U	5.73	1.15	0.573
Chloroethane	75-00-3	2.30	U	5.73	2.30	1.15
Chloroform	67-66-3	1.15	U	5.73	1.15	0.573
Chloromethane	74-87-3	4.58	U	11.5	4.58	2.29
2-Chlorotoluene	95-49-8	1.15	U	5.73	1.15	0.573
4-Chlorotoluene	106-43-4	1.15	U	5.73	1.15	0.573
1,2-Dibromo-3-chloropropane	96-12-8	4.58	U	11.5	4.58	2.29
1,2-Dibromoethane	106-93-4	1.15	U	5.73	1.15	0.573
Dibromomethane	74-95-3	1.15	U	5.73	1.15	0.573
1,2-Dichlorobenzene	95-50-1	1.15	U	5.73	1.15	0.573
1,3-Dichlorobenzene	541-73-1	1.15	U	5.73	1.15	0.573
1,4-Dichlorobenzene	106-46-7	1.15	U	5.73	1.15	0.573
Dichlorodifluoromethane	75-71-8	2.30	U	5.73	2.30	1.15
1,1-Dichloroethane	75-34-3	2.30	U	5.73	2.30	1.15
1,2-Dichloroethane	107-06-2	1.15	U	5.73	1.15	0.573
1,1-Dichloroethene	75-35-4	1.15	U	5.73	1.15	0.573
cis-1,2-Dichloroethene	156-59-2	1.15	U	5.73	1.15	0.573

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Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.15	U	5.73	1.15	0.573
1,2-Dichloropropane	78-87-5	1.15	U	5.73	1.15	0.573
1,3-Dichloropropane	142-28-9	1.15	U	5.73	1.15	0.573
2,2-Dichloropropane	594-20-7	1.15	U	5.73	1.15	0.573
cis-1,3-Dichloropropene	10061-01-5	1.15	U	5.73	1.15	0.573
trans-1,3-Dichloropropene	10061-02-6	1.15	U	5.73	1.15	0.573
1,1-Dichloropropene	563-58-6	1.15	U	5.73	1.15	0.573
Ethylbenzene	100-41-4	1.15	U	5.73	1.15	0.573
2-Hexanone	591-78-6	5.74	U	11.5	5.74	2.87
Hexachlorobutadiene	87-68-3	1.15	U	5.73	1.15	0.573
Isopropylbenzene	98-82-8	1.15	U	5.73	1.15	0.573
p-Isopropyltoluene	99-87-6	1.15	U	5.73	1.15	0.573
4-Methyl-2-pentanone	108-10-1	5.74	U	11.5	5.74	2.87
Methylene chloride	75-09-2	2.30	U	5.73	2.30	1.15
Naphthalene	91-20-3	1.15	U	5.73	1.15	0.573
n-Propylbenzene	103-65-1	1.15	U	5.73	1.15	0.573
Styrene	100-42-5	1.15	U	5.73	1.15	0.573
1,1,1,2-Tetrachloroethane	630-20-6	1.15	U	5.73	1.15	0.573
1,1,2,2-Tetrachloroethane	79-34-5	1.15	U	5.73	1.15	0.573
Tetrachloroethene	127-18-4	1.15	U	5.73	1.15	0.573
Toluene	108-88-3	1.15	U	5.73	1.15	0.573
1,2,3-Trichlorobenzene	87-61-6	1.15	U	5.73	1.15	0.573
1,2,4-Trichlorobenzene	120-82-1	1.15	U	5.73	1.15	0.573
1,1,1-Trichloroethane	71-55-6	1.15	U	5.73	1.15	0.573
1,1,2-Trichloroethane	79-00-5	1.15	U	5.73	1.15	0.573
Trichloroethene	79-01-6	1.15	U	5.73	1.15	0.573
Trichlorofluoromethane	75-69-4	2.30	U	5.73	2.30	1.15
1,2,3-Trichloropropane	96-18-4	2.30	U	5.73	2.30	1.15
1,2,4-Trimethylbenzene	95-63-6	1.15	U	5.73	1.15	0.573
1,3,5-Trimethylbenzene	108-67-8	1.15	U	5.73	1.15	0.573
Vinyl chloride	75-01-4	2.30	U	5.73	2.30	1.15
o-Xylene	95-47-6	1.15	U	5.73	1.15	0.573
m-,p-Xylene	179601-23-1	1.15	U	5.73	1.15	0.573

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.8	80	120	
1,2-Dichloroethane-d4	87.8	80	120	
Toluene-d8	97.4	85	115	
4-Bromofluorobenzene	97.0	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030323-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT10(23.5-24)040316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/08/2016 09:27
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560074	**Analyst:**	TMB	**Run Date:**	03/08/2016 18:42
Collect Date:	03/04/2016 12:40	**Dilution:**	1	**File ID:**	6M137658
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	86.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.4	U	22.9	11.4	5.71
Benzene	71-43-2	1.14	U	5.71	1.14	0.571
Bromobenzene	108-86-1	1.14	U	5.71	1.14	0.571
Bromochloromethane	74-97-5	2.28	U	5.71	2.28	1.14
Bromodichloromethane	75-27-4	1.14	U	5.71	1.14	0.571
Bromoform	75-25-2	1.14	U	5.71	1.14	0.571
Bromomethane	74-83-9	2.28	U	5.71	2.28	1.14
2-Butanone	78-93-3	5.72	U	11.4	5.72	2.86
n-Butylbenzene	104-51-8	1.14	U	5.71	1.14	0.571
sec-Butylbenzene	135-98-8	1.14	U	5.71	1.14	0.571
tert-Butylbenzene	98-06-6	1.14	U	5.71	1.14	0.571
Carbon disulfide	75-15-0	1.14	U	5.71	1.14	0.571
Carbon tetrachloride	56-23-5	1.14	U	5.71	1.14	0.571
Chlorobenzene	108-90-7	1.14	U	5.71	1.14	0.571
Chlorodibromomethane	124-48-1	1.14	U	5.71	1.14	0.571
Chloroethane	75-00-3	2.28	U	5.71	2.28	1.14
Chloroform	67-66-3	1.14	U	5.71	1.14	0.571
Chloromethane	74-87-3	4.58	U	11.4	4.58	2.29
2-Chlorotoluene	95-49-8	1.14	U	5.71	1.14	0.571
4-Chlorotoluene	106-43-4	1.14	U	5.71	1.14	0.571
1,2-Dibromo-3-chloropropane	96-12-8	4.58	U	11.4	4.58	2.29
1,2-Dibromoethane	106-93-4	1.14	U	5.71	1.14	0.571
Dibromomethane	74-95-3	1.14	U	5.71	1.14	0.571
1,2-Dichlorobenzene	95-50-1	1.14	U	5.71	1.14	0.571
1,3-Dichlorobenzene	541-73-1	1.14	U	5.71	1.14	0.571
1,4-Dichlorobenzene	106-46-7	1.14	U	5.71	1.14	0.571
Dichlorodifluoromethane	75-71-8	2.28	U	5.71	2.28	1.14
1,1-Dichloroethane	75-34-3	2.28	U	5.71	2.28	1.14
1,2-Dichloroethane	107-06-2	1.14	U	5.71	1.14	0.571
1,1-Dichloroethene	75-35-4	1.14	U	5.71	1.14	0.571
cis-1,2-Dichloroethene	156-59-2	1.14	U	5.71	1.14	0.571

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.14	U	5.71	1.14	0.571
1,2-Dichloropropane	78-87-5	1.14	U	5.71	1.14	0.571
1,3-Dichloropropane	142-28-9	1.14	U	5.71	1.14	0.571
2,2-Dichloropropane	594-20-7	1.14	U	5.71	1.14	0.571
cis-1,3-Dichloropropene	10061-01-5	1.14	U	5.71	1.14	0.571
trans-1,3-Dichloropropene	10061-02-6	1.14	U	5.71	1.14	0.571
1,1-Dichloropropene	563-58-6	1.14	U	5.71	1.14	0.571
Ethylbenzene	100-41-4	1.14	U	5.71	1.14	0.571
2-Hexanone	591-78-6	5.72	U	11.4	5.72	2.86
Hexachlorobutadiene	87-68-3	1.14	U	5.71	1.14	0.571
Isopropylbenzene	98-82-8	1.14	U	5.71	1.14	0.571
p-Isopropyltoluene	99-87-6	1.14	U	5.71	1.14	0.571
4-Methyl-2-pentanone	108-10-1	5.72	U	11.4	5.72	2.86
Methylene chloride	75-09-2	2.28	U	5.71	2.28	1.14
Naphthalene	91-20-3	1.14	U	5.71	1.14	0.571
n-Propylbenzene	103-65-1	1.14	U	5.71	1.14	0.571
Styrene	100-42-5	1.14	U	5.71	1.14	0.571
1,1,1,2-Tetrachloroethane	630-20-6	1.14	U	5.71	1.14	0.571
1,1,2,2-Tetrachloroethane	79-34-5	1.14	U	5.71	1.14	0.571
Tetrachloroethene	127-18-4	1.14	U	5.71	1.14	0.571
Toluene	108-88-3	1.14	U	5.71	1.14	0.571
1,2,3-Trichlorobenzene	87-61-6	1.14	U	5.71	1.14	0.571
1,2,4-Trichlorobenzene	120-82-1	1.14	U	5.71	1.14	0.571
1,1,1-Trichloroethane	71-55-6	1.14	U	5.71	1.14	0.571
1,1,2-Trichloroethane	79-00-5	1.14	U	5.71	1.14	0.571
Trichloroethene	79-01-6	1.14	U	5.71	1.14	0.571
Trichlorofluoromethane	75-69-4	2.28	U	5.71	2.28	1.14
1,2,3-Trichloropropane	96-18-4	2.28	U	5.71	2.28	1.14
1,2,4-Trimethylbenzene	95-63-6	1.14	U	5.71	1.14	0.571
1,3,5-Trimethylbenzene	108-67-8	1.14	U	5.71	1.14	0.571
Vinyl chloride	75-01-4	2.28	U	5.71	2.28	1.14
o-Xylene	95-47-6	1.14	U	5.71	1.14	0.571
m-,p-Xylene	179601-23-1	1.14	U	5.71	1.14	0.571

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	90.2	80	120	
1,2-Dichloroethane-d4	84.3	80	120	
Toluene-d8	99.9	85	115	
4-Bromofluorobenzene	96.8	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.
VOA Preparation/Preservation/Extraction Log

Batch #: WG560060
Analyst: AWE
Method: 5030B/5030C/5035
Run Date: 03/08/2016 09:22
Product: 8260
Purge and trap methanol COA18540
Purified Lab Sand Lot # COA18552

SAMPLE #	Fraction	Collected	Preserved	PCT-S	Tare Wt	Total Wt	Sample Wt	Water	MeOH	Vt	Comments
L16030323-01	A	03/04/16 10:30	03/08/16 09:22	67.6			4.71	5		5	
L16030323-02	A	03/04/16 10:35	03/08/16 09:23	86.3			4.64	5		5	
L16030323-03	A	03/04/16 10:40	03/08/16 09:24	79.6			4.63	5		5	
L16030323-04	A	03/04/16 11:25	03/08/16 09:24	74.0			5.15	5		5	
L16030323-05	A	03/04/16 11:55	03/08/16 09:25	94.0			4.64	5		5	
L16030323-06	A	03/04/16 12:40	03/08/16 09:27	86.3			5.07	5		5	
WG560060-01	A		03/08/16 09:25	94.0			4.64	5		5	
WG560060-02	A		03/08/16 09:26	94.0			5.27	5		5	
WG560060-03	A		03/08/16 09:26	94.0			4.76	5		5	

Comments:
1 = improperly sealed cap
2 = preserved out of hold
3 = effervesced
4 = preserved with NaHSO4
5 = preserved by freezing
6 = preserved in field

Analyst: Andrew Casey

VOA_EXT - Modified 05/22/2008
PDF ID: 4660108
Report generated: 03/08/2016 10:01

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 022616
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Method: 8260C SOP: MSV01-C Rev: 2
Maintenance Log ID:

Internal Standard: STD74756 Surrogate Standard: STD74756
CCV: STD74897 LCS: STD74755 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG558920

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M137521	RINSE	NA	7	1		02/26/16 12:22
6M137522	WG558920-01 50ng BFB STD 8260	NA	7	1	STD74606	02/26/16 13:16
6M137523	WG558920-02 0.5ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 13:41
6M137524	WG558920-03 1ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 14:13
6M137525	WG558920-04 2ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 14:46
6M137526	WG558920-05 5ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 15:26
6M137527	WG558920-06 10ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 15:58
6M137528	WG558920-07 20ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 16:30
6M137529	WG558920-08 50ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 17:03
6M137530	WG558920-09 100ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 17:35
6M137531	WG558920-10 200ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 18:07
6M137532	WG558920-11 300ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 18:39
6M137533	RINSE	NA	7	1		02/26/16 19:11
6M137534	RINSE	NA	7	1		02/26/16 19:43
6M137535	WG558920-12 50ug/Kg ALT SRC STD 826	NA	7	1	STD74755	02/26/16 20:15
6M137536	RINSE	NA	7	1		02/26/16 20:48

Comments

Seq.	Rerun	Dil.	Reason	Analytes
15				
File ID: 6M137535				
Surrogates are spiked at 25 not 50.				

Approved: March 02, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 030816
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD74902 Surrogate Standard: STD74902
CCV: STD75017 LCS: STD74973 MS/MSD: STD74973

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG560074

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M137644	WG560072-01 50ng BFB STD 8260	NA	7	1	STD75004	03/08/16 10:59
6M137645	WG560072-02 50ug/Kg CCV STD 8260	NA	7	1	STD75017	03/08/16 11:24
6M137646	WG560072-02 50ug/Kg CCV STD 8260	NA	7	1	STD75017	03/08/16 11:58
6M137647	WG000000-01 100ug/Kg A9 CCV STD 826	NA	7	1	STD74831	03/08/16 12:32
6M137648	WG560074-01 VBLK0308 BLANK STD 826	NA	7	1		03/08/16 13:05
6M137649	WG560074-02 20ug/Kg LCS STD 8260	NA	7	1	STD74973	03/08/16 13:38
6M137650	WG560060-02 MS 323-05 8260 5.27g	NA	7	1	STD74973	03/08/16 14:12
6M137651	WG560060-03 MSD 323-05 8260 4.76g	NA	7	1	STD74973	03/08/16 14:46
6M137652	RINSE	NA	7	1		03/08/16 15:20
6M137653	L16030323-01 8260 4.71g	NA	7	1		03/08/16 15:54
6M137654	L16030323-02 8260 4.64g	NA	7	1		03/08/16 16:28
6M137655	L16030323-03 8260 4.63g	NA	7	1		03/08/16 17:01
6M137656	L16030323-04 8260 5.15g	NA	7	1		03/08/16 17:34
6M137657	WG560060-01 L16030323-05 8260 4.64g	NA	7	1		03/08/16 18:08
6M137658	L16030323-06 8260 5.07g	NA	7	1		03/08/16 18:42
6M137659	L16030176-02 5X 8260 0.98g A1	NA	10	1		03/08/16 19:15
6M137660	RINSE	NA	7	1		03/08/16 19:48
6M137661	L16030366-01 5X 8260	NA	7	1		03/08/16 20:22
6M137662	L16030366-02 5X 8260	NA	7	1		03/08/16 20:55
6M137663	L16030366-03 5X 8260	NA	7	1		03/08/16 21:28
6M137664	L16030366-04 5X 8260	NA	7	1		03/08/16 22:01
6M137665	L16030366-05 5X 8260	NA	7	1		03/08/16 22:34
6M137666	L16030366-06 5X 8260	NA	7	1		03/08/16 23:07
6M137667	L16030366-07 5X 8260	NA	7	1		03/08/16 23:39
6M137668	L16030366-08 5X 8260	NA	7	1		03/09/16 00:11
6M137669	L16030366-09 5X 8260	NA	7	1		03/09/16 00:44
6M137670	L16030366-10 5X 8260	NA	7	1		03/09/16 01:16
6M137671	L16030366-11 5X 8260	NA	7	1		03/09/16 01:47
6M137672	L16030366-12 5X 8260	NA	7	1		03/09/16 02:20
6M137673	RINSE	NA	7	1		03/09/16 02:52
6M137674	RINSE	NA	7	1		03/09/16 03:24

Comments

Approved: March 10, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 030816
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD74902 Surrogate Standard: STD74902
CCV: STD75017 LCS: STD74973 MS/MSD: STD74973

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG560074

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X		Surrogate standard failure	
File ID: 6M137645				
	Surrogates weren't spiked. DNR.			
4				
File ID: 6M137647				
	Not needed, DNR.			
8				
File ID: 6M137651				
	Internals were low. Non-client msd.			
18	X	1	Analyzed too dilute	
File ID: 6M137661				
19	X	1	Analyzed too dilute	
File ID: 6M137662				
20	X	1	Analyzed too dilute	
File ID: 6M137663				
21	X	1	Analyzed too dilute	
File ID: 6M137664				
22	X	1	Analyzed too dilute	
File ID: 6M137665				
23	X	1	Analyzed too dilute	
File ID: 6M137666				
24	X	1	Analyzed too dilute	
File ID: 6M137667				
25	X	1	Analyzed too dilute	
File ID: 6M137668				
26	X	1	Analyzed too dilute	
File ID: 6M137669				

Approved: March 10, 2016

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 030816
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD74902 Surrogate Standard: STD74902
CCV: STD75017 LCS: STD74973 MS/MSD: STD74973

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG560074

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
27	X	1	Analyzed too dilute	
File ID: 6M137670				
28	X	1	Analyzed too dilute	
File ID: 6M137671				
29	X	1	Analyzed too dilute	
File ID: 6M137672				

Approved: March 10, 2016

Page: 3

Microbac Laboratories Inc.

Data Checklist

Date: 26-FEB-2016
Analyst: TMB
Analyst: NA
Method: 8260B/C
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 73548
Analytical Workgroups: WG558920

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	NA
TCL Hits	NA
Spectra of TCL Hits	NA
Surrogates	NA
Internal Standards Criteria	NA
Library Searches	NA
Calculations & Correct Factors	NA
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
29-FEB-2016
Tiffany Bailey

Secondary Reviewer:
02-MAR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-02-2016 12:31:18

Microbac Laboratories Inc.

Data Checklist

Date: 08-MAR-2016
Analyst: TMB
Analyst: NA
Method: 8260B
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 73709
Analytical Workgroups: WG560074

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
09-MAR-2016
Tiffany Bailey

Secondary Reviewer:
10-MAR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-10-2016 15:41:31

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG560074

Login Number: L16030323

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18DPT09(5-5.5)040316	01	03/04/16					03/08/2016	4	14		03/08/16	4.2	14	
18DPT09(11-11.5)040316	02	03/04/16					03/08/2016	4	14		03/08/16	4.2	14	
18DPT09(13.5-14)040316	03	03/04/16					03/08/2016	3.9	14		03/08/16	4.3	14	
18DPT10(5-5.5)040316	04	03/04/16					03/08/2016	3.9	14		03/08/16	4.3	14	
18DPT10(15.5-16)040316	05	03/04/16					03/08/2016	3.9	14		03/08/16	4.3	14	
18DPT10(23.5-24)040316	06	03/04/16					03/08/2016	3.9	14		03/08/16	4.3	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4662197
Report generated 03/10/2016 16:26

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16030323
Instrument Id: HPMS6
Workgroup (AAB#): WG560074

Method: 8260
CAL ID: HPMS6-26-FEB-16
Matrix: Soil

Sample Number	Dilution	Tag	1	2	3	4
L16030323-01	1.00	01	81.6	89.6	99.9	100
L16030323-02	1.00	01	87.2	92.2	97.6	98.2
L16030323-03	1.00	01	90.4	92.7	97.6	98.3
L16030323-04	1.00	01	87.5	92.0	98.1	98.4
L16030323-05	1.00	01	87.8	93.8	97.0	97.4
L16030323-06	1.00	01	84.3	90.2	96.8	99.9
WG560074-01	1.00	01	85.8	91.5	98.3	98.3
WG560074-02	1.00	01	85.3	93.7	97.9	99.6

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	80	-	120
2 - Dibromofluoromethane	80	-	120
3 - 4-Bromofluorobenzene	85	-	120
4 - Toluene-d8	85	-	115

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4662203
Report generated: 03/10/2016 16:26

METHOD BLANK SUMMARY

Login Number: L16030323
Blank File ID: 6M137648
Prep Date: 03/08/16 13:05
Analyzed Date: 03/08/16 13:05
Analyst: TMB

Work Group: WG560074
Blank Sample ID: WG560074-01
Instrument ID: HPMS6
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG560074-02	6M137649	03/08/16 13:38	01
18DPT09(5-5.5)040316	L16030323-01	6M137653	03/08/16 15:54	01
18DPT09(11-11.5)040316	L16030323-02	6M137654	03/08/16 16:28	01
18DPT09(13.5-14)040316	L16030323-03	6M137655	03/08/16 17:01	01
18DPT10(5-5.5)040316	L16030323-04	6M137656	03/08/16 17:34	01
18DPT10(15.5-16)040316	L16030323-05	6M137657	03/08/16 18:08	01
18DPT10(23.5-24)040316	L16030323-06	6M137658	03/08/16 18:42	01

Report Name: BLANK_SUMMARY
PDF File ID: 4666018
Report generated 03/10/2016 16:26

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16030323 Prep Date: 03/08/16 13:05 Sample ID: WG560074-01
Instrument ID: HPMS6 Run Date: 03/08/16 13:05 Prep Method: 5030B/5030C/503
File ID: 6M137648 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG560074 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS6-26-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	5.00	20.0	5.00	1	U
Benzene	0.500	5.00	0.500	1	U
Bromobenzene	0.500	5.00	0.500	1	U
Bromochloromethane	1.00	5.00	1.00	1	U
Bromodichloromethane	0.500	5.00	0.500	1	U
Bromoform	0.500	5.00	0.500	1	U
Bromomethane	1.00	5.00	1.00	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.500	5.00	0.500	1	U
sec-Butylbenzene	0.500	5.00	0.500	1	U
tert-Butylbenzene	0.500	5.00	0.500	1	U
Carbon disulfide	0.500	5.00	0.500	1	U
Carbon tetrachloride	0.500	5.00	0.500	1	U
Chlorobenzene	0.500	5.00	0.500	1	U
Chlorodibromomethane	0.500	5.00	0.500	1	U
Chloroethane	1.00	5.00	1.00	1	U
Chloroform	0.500	5.00	0.500	1	U
Chloromethane	2.00	10.0	2.00	1	U
2-Chlorotoluene	0.500	5.00	0.500	1	U
4-Chlorotoluene	0.500	5.00	0.500	1	U
1,2-Dibromo-3-chloropropane	2.00	10.0	2.00	1	U
1,2-Dibromoethane	0.500	5.00	0.500	1	U
Dibromomethane	0.500	5.00	0.500	1	U
1,2-Dichlorobenzene	0.500	5.00	0.500	1	U
1,3-Dichlorobenzene	0.500	5.00	0.500	1	U
1,4-Dichlorobenzene	0.500	5.00	0.500	1	U
Dichlorodifluoromethane	1.00	5.00	1.00	1	U
1,1-Dichloroethane	1.00	5.00	1.00	1	U
1,2-Dichloroethane	0.500	5.00	0.500	1	U
1,1-Dichloroethene	0.500	5.00	0.500	1	U
cis-1,2-Dichloroethene	0.500	5.00	0.500	1	U
trans-1,2-Dichloroethene	0.500	5.00	0.500	1	U
1,2-Dichloropropane	0.500	5.00	0.500	1	U
1,3-Dichloropropane	0.500	5.00	0.500	1	U
2,2-Dichloropropane	0.500	5.00	0.500	1	U
cis-1,3-Dichloropropene	0.500	5.00	0.500	1	U
trans-1,3-Dichloropropene	0.500	5.00	0.500	1	U
1,1-Dichloropropene	0.500	5.00	0.500	1	U
Ethylbenzene	0.500	5.00	0.500	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.500	5.00	0.500	1	U
Isopropylbenzene	0.500	5.00	0.500	1	U

Report Name: BLANK
PDF ID: 4666019
10-MAR-2016 16:26

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16030323 Prep Date: 03/08/16 13:05 Sample ID: WG560074-01
Instrument ID: HPMS6 Run Date: 03/08/16 13:05 Prep Method: 5030B/5030C/503
File ID: 6M137648 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG560074 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS6-26-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.500	5.00	0.500	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	1.00	5.00	1.00	1	U
Naphthalene	0.500	5.00	0.500	1	U
n-Propylbenzene	0.500	5.00	0.500	1	U
Styrene	0.500	5.00	0.500	1	U
1,1,1,2-Tetrachloroethane	0.500	5.00	0.500	1	U
1,1,2,2-Tetrachloroethane	0.500	5.00	0.500	1	U
Tetrachloroethene	0.500	5.00	0.500	1	U
Toluene	0.500	5.00	0.500	1	U
1,2,3-Trichlorobenzene	0.500	5.00	0.500	1	U
1,2,4-Trichlorobenzene	0.500	5.00	0.500	1	U
1,1,1-Trichloroethane	0.500	5.00	0.500	1	U
1,1,2-Trichloroethane	0.500	5.00	0.500	1	U
Trichloroethene	0.500	5.00	0.500	1	U
Trichlorofluoromethane	1.00	5.00	1.00	1	U
1,2,3-Trichloropropane	1.00	5.00	1.00	1	U
1,2,4-Trimethylbenzene	0.500	5.00	0.500	1	U
1,3,5-Trimethylbenzene	0.500	5.00	0.500	1	U
Vinyl chloride	1.00	5.00	1.00	1	U
o-Xylene	0.500	5.00	0.500	1	U
m-,p-Xylene	0.500	5.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	91.5	80 - 120	PASS
1,2-Dichloroethane-d4	85.8	80 - 120	PASS
Toluene-d8	98.3	85 - 115	PASS
4-Bromofluorobenzene	98.3	85 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4666019
10-MAR-2016 16:26

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030323 Run Date: 03/08/2016 Sample ID: WG560074-02
Instrument ID: HPMS6 Run Time: 13:38 Prep Method: 5030B/5030C/503
File ID: 6M137649 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG560074 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD74973 Cal ID: HPMS6-26-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	17.5	87.3	20 - 160	
Benzene	20.0	20.2	101	75 - 125	
Bromobenzene	20.0	20.2	101	65 - 120	
Bromochloromethane	20.0	19.6	98.0	70 - 125	
Bromodichloromethane	20.0	19.5	97.4	70 - 130	
Bromoform	20.0	17.0	85.1	55 - 135	
Bromomethane	20.0	20.7	103	30 - 160	
2-Butanone	20.0	18.9	94.5	30 - 160	
n-Butylbenzene	20.0	20.5	102	65 - 140	
sec-Butylbenzene	20.0	22.1	110	65 - 130	
tert-Butylbenzene	20.0	22.4	112	65 - 130	
Carbon disulfide	20.0	18.7	93.3	45 - 160	
Carbon tetrachloride	20.0	20.1	101	65 - 135	
Chlorobenzene	20.0	20.7	103	75 - 125	
Chlorodibromomethane	20.0	19.2	95.8	65 - 130	
Chloroethane	20.0	21.8	109	40 - 155	
Chloroform	20.0	19.8	98.8	70 - 125	
Chloromethane	20.0	17.1	85.6	50 - 130	
2-Chlorotoluene	20.0	20.9	105	70 - 130	
4-Chlorotoluene	20.0	21.4	107	75 - 125	
1,2-Dibromo-3-chloropropane	20.0	18.8	93.8	40 - 135	
1,2-Dibromoethane	20.0	20.0	99.9	70 - 125	
Dibromomethane	20.0	18.5	92.6	75 - 130	
1,2-Dichlorobenzene	20.0	20.6	103	75 - 120	
1,3-Dichlorobenzene	20.0	20.4	102	70 - 125	
1,4-Dichlorobenzene	20.0	20.4	102	70 - 125	
Dichlorodifluoromethane	20.0	20.2	101	35 - 135	
1,1-Dichloroethane	20.0	19.7	98.7	75 - 125	
1,2-Dichloroethane	20.0	19.2	95.9	70 - 135	
1,1-Dichloroethene	20.0	20.1	101	65 - 135	
cis-1,2-Dichloroethene	20.0	20.7	104	65 - 125	
trans-1,2-Dichloroethene	20.0	21.5	107	65 - 135	
1,2-Dichloropropane	20.0	20.9	104	70 - 120	
1,3-Dichloropropane	20.0	20.8	104	75 - 125	
2,2-Dichloropropane	20.0	20.2	101	65 - 135	
cis-1,3-Dichloropropene	20.0	21.9	109	70 - 125	
trans-1,3-Dichloropropene	20.0	19.5	97.5	65 - 125	
1,1-Dichloropropene	20.0	20.8	104	70 - 135	
Ethylbenzene	20.0	21.2	106	75 - 125	
2-Hexanone	20.0	19.0	94.8	45 - 145	
Hexachlorobutadiene	20.0	22.6	113	55 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4662198
Report generated: 03/10/2016 16:26

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030323 Run Date: 03/08/2016 Sample ID: WG560074-02
Instrument ID: HPMS6 Run Time: 13:38 Prep Method: 5030B/5030C/503
File ID: 6M137649 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG560074 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD74973 Cal ID: HPMS6-26-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	22.2	111	75 - 130	
p-Isopropyltoluene	20.0	21.6	108	75 - 135	
4-Methyl-2-pentanone	20.0	19.5	97.6	45 - 145	
Methylene chloride	20.0	20.6	103	55 - 140	
Naphthalene	20.0	18.7	93.3	40 - 125	
n-Propylbenzene	20.0	22.1	110	65 - 135	
Styrene	20.0	21.1	105	75 - 125	
1,1,1,2-Tetrachloroethane	20.0	19.9	99.6	75 - 125	
1,1,2,2-Tetrachloroethane	20.0	18.8	93.9	55 - 130	
Tetrachloroethene	20.0	21.3	106	65 - 140	
Toluene	20.0	20.7	103	70 - 125	
1,2,3-Trichlorobenzene	20.0	20.0	100	60 - 135	
1,2,4-Trichlorobenzene	20.0	20.7	103	65 - 130	
1,1,1-Trichloroethane	20.0	20.5	102	70 - 135	
1,1,2-Trichloroethane	20.0	19.8	99.1	60 - 125	
Trichloroethene	20.0	21.4	107	75 - 125	
Trichlorofluoromethane	20.0	19.1	95.3	25 - 185	
1,2,3-Trichloropropane	20.0	19.8	98.8	65 - 130	
1,2,4-Trimethylbenzene	20.0	20.8	104	65 - 135	
1,3,5-Trimethylbenzene	20.0	21.7	108	65 - 135	
Vinyl chloride	20.0	19.6	97.8	60 - 125	
o-Xylene	20.0	22.3	111	75 - 125	
m-,p-Xylene	40.0	42.3	106	80 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	93.7	80 - 120	PASS
1,2-Dichloroethane-d4	85.3	80 - 120	PASS
Toluene-d8	99.6	85 - 115	PASS
4-Bromofluorobenzene	97.9	85 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4662198
Report generated: 03/10/2016 16:26

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16030323 Cal ID: HPMS6 - Worknum: WG560074
Instrument ID: HPMS6 Contract #: Method: 8260B
Parent ID: WG560060-01 File ID: 6M137657 Dil: 1 Matrix: SOLID
Sample ID: WG560060-02 MS File ID: 6M137650 Dil: 1 Units: ug/kg
Sample ID: WG560060-03 MSD File ID: 6M137651 Dil: 1 Percent Solid: 94.0

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,1,1,2-Tetrachloroethane	ND	20.2	19.6	97.0	22.3	20.6	92.1	4.97	75 - 125	30	
1,1,1-Trichloroethane	ND	20.2	20.1	99.6	22.3	20.4	91.2	1.38	70 - 135	30	
1,1,2,2-Tetrachloroethane	ND	20.2	21.8	108	22.3	22.7	102	4.32	55 - 130	30	
1,1,2-Trichloroethane	ND	20.2	21.1	104	22.3	21.4	96.0	1.77	60 - 125	30	
1,1-Dichloroethane	ND	20.2	19.2	95.4	22.3	19.8	88.8	2.98	75 - 125	30	
1,1-Dichloroethene	ND	20.2	19.8	97.9	22.3	20.1	89.8	1.49	65 - 135	30	
1,1-Dichloropropene	ND	20.2	20.8	103	22.3	20.8	93.0	0.0213	70 - 135	30	
1,2,3-Trichlorobenzene	ND	20.2	21.4	106	22.3	20.3	90.8	5.41	60 - 135	30	
1,2,3-Trichloropropane	ND	20.2	22.6	112	22.3	23.6	106	4.39	65 - 130	30	
1,2,4-Trichlorobenzene	ND	20.2	21.6	107	22.3	20.7	92.5	4.57	65 - 130	30	
1,2,4-Trimethylbenzene	ND	20.2	20.3	101	22.3	21.8	97.8	7.19	65 - 135	30	
1,2-Dibromo-3-chloropropane	ND	20.2	21.7	107	22.3	21.1	94.6	2.46	40 - 135	30	
1,2-Dibromoethane	ND	20.2	20.6	102	22.3	20.7	92.8	0.429	70 - 125	30	
1,2-Dichlorobenzene	ND	20.2	20.9	104	22.3	22.3	99.8	6.43	75 - 120	30	
1,2-Dichloroethane	ND	20.2	20.1	99.4	22.3	20.6	92.3	2.79	70 - 135	30	
1,2-Dichloropropane	ND	20.2	21.3	105	22.3	21.4	95.8	0.664	70 - 120	30	
1,3,5-Trimethylbenzene	ND	20.2	21.3	106	22.3	22.6	101	5.93	65 - 135	30	
1,3-Dichlorobenzene	ND	20.2	20.6	102	22.3	22.3	99.8	7.81	70 - 125	30	
1,3-Dichloropropane	ND	20.2	21.9	108	22.3	22.7	101	3.58	75 - 125	30	
1,4-Dichlorobenzene	ND	20.2	20.7	103	22.3	21.9	98.1	5.67	70 - 125	30	
2,2-Dichloropropane	ND	20.2	20.7	103	22.3	20.9	93.7	1.15	65 - 135	30	
2-Butanone	ND	20.2	22.0	109	22.3	24.1	108	9.05	30 - 160	30	
2-Chlorotoluene	ND	20.2	20.9	103	22.3	22.5	101	7.38	70 - 130	30	
2-Hexanone	ND	20.2	21.5	107	22.3	23.3	104	7.77	45 - 145	30	
4-Chlorotoluene	ND	20.2	20.9	104	22.3	22.5	101	7.65	75 - 125	30	
4-Methyl-2-pentanone	ND	20.2	22.9	114	22.3	24.3	109	5.77	45 - 145	30	
Acetone	ND	20.2	20.4	101	22.3	23.9	107	15.9	20 - 160	30	
Benzene	ND	20.2	19.8	98.0	22.3	20.2	90.5	2.24	75 - 125	30	
Bromobenzene	ND	20.2	20.2	99.9	22.3	21.7	97.3	7.52	65 - 120	30	
Bromochloromethane	ND	20.2	19.9	98.7	22.3	20.4	91.2	2.27	70 - 125	30	
Bromodichloromethane	ND	20.2	19.6	97.3	22.3	19.5	87.3	0.674	70 - 130	30	
Bromoform	ND	20.2	18.8	93.4	22.3	18.1	81.0	4.04	55 - 135	30	
Bromomethane	ND	20.2	19.9	98.6	22.3	21.2	95.0	6.47	30 - 160	30	
Carbon disulfide	ND	20.2	18.5	91.6	22.3	20.6	92.3	10.9	45 - 160	30	
Carbon tetrachloride	ND	20.2	20.0	98.9	22.3	19.9	88.9	0.474	65 - 135	30	
Chlorobenzene	ND	20.2	20.3	101	22.3	21.8	97.4	6.89	75 - 125	30	
Chlorodibromomethane	ND	20.2	19.7	97.6	22.3	19.4	86.9	1.46	65 - 130	30	
Chloroethane	ND	20.2	21.3	106	22.3	21.2	94.9	0.448	40 - 155	30	
Chloroform	ND	20.2	19.5	96.7	22.3	20.0	89.5	2.47	70 - 125	30	

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4662199
Report generated 03/09/2016 08:59

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16030323 Cal ID: HPMS6 Worknum: WG560074
Instrument ID: HPMS6 Contract #: Method: 8260B
Parent ID: WG560060-01 File ID: 6M137657 Dil: 1 Matrix: SOLID
Sample ID: WG560060-02 MS File ID: 6M137650 Dil: 1 Units: ug/kg
Sample ID: WG560060-03 MSD File ID: 6M137651 Dil: 1 Percent Solid: 94.0

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chloromethane	ND	20.2	16.3	80.8	22.3	16.7	74.8	2.44	50 - 130	30	
Dibromomethane	ND	20.2	20.1	99.6	22.3	19.8	88.6	1.52	75 - 130	30	
Dichlorodifluoromethane	ND	20.2	19.8	98.3	22.3	19.7	88.1	0.827	35 - 135	30	
Ethylbenzene	ND	20.2	20.9	104	22.3	21.4	95.8	2.41	75 - 125	30	
Hexachlorobutadiene	ND	20.2	22.9	113	22.3	23.5	105	2.51	55 - 140	30	
Isopropylbenzene	ND	20.2	21.4	106	22.3	22.2	99.2	3.38	75 - 130	30	
Methylene chloride	ND	20.2	20.5	102	22.3	21.4	95.9	4.30	55 - 140	30	
Naphthalene	ND	20.2	21.5	107	22.3	19.5	87.1	10.1	40 - 125	30	
Styrene	ND	20.2	20.5	102	22.3	20.6	92.3	0.431	75 - 125	30	
Tetrachloroethene	ND	20.2	20.5	102	22.3	21.2	94.9	3.47	65 - 140	30	
Toluene	ND	20.2	20.0	99.2	22.3	21.3	95.3	6.19	70 - 125	30	
Trichloroethene	ND	20.2	21.8	108	22.3	21.4	95.8	1.98	75 - 125	30	
Trichlorofluoromethane	ND	20.2	19.1	94.8	22.3	19.2	85.8	0.173	25 - 185	30	
Vinyl chloride	ND	20.2	19.8	98.1	22.3	20.2	90.3	1.82	60 - 125	30	
cis-1,2-Dichloroethene	ND	20.2	20.4	101	22.3	20.7	92.6	1.31	65 - 125	30	
cis-1,3-Dichloropropene	ND	20.2	22.2	110	22.3	21.7	97.2	2.44	70 - 125	30	
m-,p-Xylene	ND	40.4	41.8	104	44.7	43.0	96.2	2.86	80 - 125	30	
n-Butylbenzene	ND	20.2	20.9	104	22.3	21.2	94.8	1.15	65 - 140	30	
n-Propylbenzene	ND	20.2	21.7	107	22.3	23.0	103	5.99	65 - 135	30	
o-Xylene	ND	20.2	21.7	108	22.3	21.6	96.5	0.795	75 - 125	30	
p-Isopropyltoluene	ND	20.2	21.4	106	22.3	22.5	101	5.10	75 - 135	30	
sec-Butylbenzene	ND	20.2	21.9	108	22.3	23.2	104	5.84	65 - 130	30	
tert-Butylbenzene	ND	20.2	21.5	107	22.3	23.3	104	8.00	65 - 130	30	
trans-1,2-Dichloroethene	ND	20.2	21.1	105	22.3	21.4	95.8	1.19	65 - 135	30	
trans-1,3-Dichloropropene	ND	20.2	20.2	100	22.3	20.3	91.0	0.722	65 - 125	30	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4662199
Report generated 03/09/2016 08:59

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16030323
Instrument: HPMS6
Analyst: TMB
Workgroup: WG558920

Tune ID: WG558920-01
Run Date: 02/26/2016
Run Time: 13:16
File ID: 6M137522
Cal ID: HPMS6 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	25.4	9030	PASS
75.0	95.0	30.0	60.0	55.4	19666	PASS
95.0	95.0	100	100	100	35512	PASS
96.0	95.0	5.00	9.00	7.25	2576	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	73.2	26011	PASS
175	174	5.00	9.00	7.36	1914	PASS
176	174	95.0	101	96.1	24992	PASS
177	176	5.00	9.00	6.64	1660	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG558920-02	STD-S	01	02/26/2016 13:41	
WG558920-03	STD-S	01	02/26/2016 14:13	
WG558920-04	STD-S	01	02/26/2016 14:46	
WG558920-05	STD-S	01	02/26/2016 15:26	
WG558920-06	STD-S	01	02/26/2016 15:58	
WG558920-07	STD-S	01	02/26/2016 16:30	
WG558920-08	STD-CCV-S	01	02/26/2016 17:03	
WG558920-09	STD-S	01	02/26/2016 17:35	
WG558920-10	STD-S	01	02/26/2016 18:07	
WG558920-11	STD-S	01	02/26/2016 18:39	
WG558920-12	SSCV-S	01	02/26/2016 20:15	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4662201
Report generated 03/10/2016 16:26

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16030323
Instrument: HPMS6
Analyst: TMB
Workgroup: WG560072

Tune ID: WG560072-01
Run Date: 03/08/2016
Run Time: 10:59
File ID: 6M137644
Cal ID: HPMS6 - 26-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	23.4	11246	PASS
75.0	95.0	30.0	60.0	51.7	24897	PASS
95.0	95.0	100	100	100	48162	PASS
96.0	95.0	5.00	9.00	6.86	3304	PASS
173	174	0	2.00	0.325	109	PASS
174	95.0	50.0	100	69.5	33487	PASS
175	174	5.00	9.00	7.71	2582	PASS
176	174	95.0	101	99.1	33199	PASS
177	176	5.00	9.00	6.88	2283	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG560072-02	CCV-S	01	03/08/2016 11:58	
WG560074-01	BLANK	01	03/08/2016 13:05	
WG560074-02	LCS	01	03/08/2016 13:38	
WG560060-02	MS	01	03/08/2016 14:12	
WG560060-03	MSD	01	03/08/2016 14:46	
L16030323-01	18DPT09(5-5.5)040316	01	03/08/2016 15:54	
L16030323-02	18DPT09(11-11.5)040316	01	03/08/2016 16:28	
L16030323-03	18DPT09(13.5-14)040316	01	03/08/2016 17:01	
L16030323-04	18DPT10(5-5.5)040316	01	03/08/2016 17:34	
L16030323-05	18DPT10(15.5-16)040316	01	03/08/2016 18:08	
L16030323-06	18DPT10(23.5-24)040316	01	03/08/2016 18:42	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4662201
Report generated 03/10/2016 16:26

Calibration Table Report
Method: 826_SL.M
Title: 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Calibration: Mon Feb 29 15:59:52 2016
Curve: WG558920
Calibration Files

	Compound	0.5 6M137523.D	1 6M137524.D	2 6M137525.D	5 6M137526.D	10 6M137527.D	20 6M137528.D	50 6M137529.D	100 6M137530.D	200 6M137531.D	300 6M137532.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.386	0.437	0.426	0.515	0.537	0.438	0.464	0.471	0.459	10.647		
P	Chloromethane			0.578	0.509	0.480	0.500	0.503	0.398	0.425	0.436	0.479	11.984		
C	Vinyl Chloride			0.371	0.405	0.376	0.415	0.431	0.353	0.374	0.357	0.385	7.341		
T	1,3-Butadiene				0.369	0.322	0.361	0.344	0.289	0.282	0.277	0.320	11.982		
T	Bromomethane			0.192	0.207	0.206	0.215	0.213	0.184	0.207	0.218	0.205	5.643		
T	Chloroethane			0.199	0.219	0.208	0.232	0.244	0.202	0.219	0.224	0.218	6.941		
T	Trichlorofluoromethane			0.535	0.557	0.513	0.525	0.558	0.462	0.490	0.501	0.518	6.398		
T	Diethyl ether		0.243	0.231	0.234	0.251	0.241	0.233	0.233		0.238	0.238	2.758		
T	Isoprene				0.333	0.322	0.327	0.355	0.334	0.338	0.351	0.337	3.613		
T	Acrolein		0.044	0.045	0.044	0.050	0.045	0.042	0.045		0.047	0.045	5.301		
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.199	0.268	0.248	0.256	0.277	0.230	0.245	0.252	0.247	9.700		
T	Acetone					0.152	0.130	0.112	0.104	0.110	0.106	0.119	15.588	0.999	
C	1,1-Dichloroethene			0.380	0.462	0.424	0.453	0.487	0.410	0.439	0.447	0.438	7.530		
T	Tert-Butyl Alcohol		0.039	0.035	0.040	0.044	0.044	0.040	0.040		0.044	0.041	7.378		
T	Dimethyl Sulfide				0.204	0.210	0.197	0.223	0.210	0.218	0.224	0.212	4.669		
T	Iodomethane				0.056	0.082	0.123	0.197	0.197	0.211	0.207	0.153	42.723	0.998	
T	Methyl acetate				0.309	0.317	0.309	0.308	0.292	0.293	0.300	0.304	3.023		
T	Methylene Chloride			0.256	0.273	0.264	0.268	0.287	0.242	0.257	0.260	0.264	5.015		
T	Carbon Disulfide			0.821	0.880	0.808	0.840	0.872	0.808	0.825	0.844	0.837	3.273		
T	Acrylonitrile		0.108	0.114	0.119	0.133	0.128	0.130	0.129		0.140	0.125	8.391		
T	Methyl Tert Butyl Ether	0.732	0.693	0.663	0.725	0.773	0.787	0.833	0.734	0.785	0.799	0.753	6.930		
T	trans-1,2-Dichloroethene			0.227	0.244	0.240	0.247	0.265	0.226	0.240	0.244	0.242	5.097		
T	n-Hexane			0.407	0.452	0.430	0.435	0.466	0.433	0.438	0.452	0.439	4.050		
T	Diisopropyl ether		1.143	1.120	1.122	1.188	1.168	1.117	1.121		1.127	1.138	2.317		
T	Vinyl Acetate				0.493	0.583	0.630	0.596	0.570	0.626	0.621	0.588	8.090		
P	1,1-Dichloroethane			0.484	0.538	0.522	0.539	0.568	0.484	0.514	0.521	0.521	5.427		
T	Ethyl-Tert-Butyl ether		0.841	0.891	0.897	0.963	0.947	0.909	0.912		0.938	0.912	4.185		
T	2-Butanone				0.186	0.176	0.176	0.169	0.161	0.170	0.172	0.173	4.334		
T	Propionitrile		0.047	0.045	0.045	0.051	0.050	0.048	0.047		0.049	0.048	4.489		
T	2,2-Dichloropropane			0.413	0.427	0.425	0.415	0.454	0.383	0.410	0.420	0.418	4.750		
T	cis-1,2-Dichloroethene			0.265	0.274	0.263	0.275	0.290	0.250	0.269	0.273	0.270	4.259		
C	Chloroform			0.502	0.499	0.475	0.499	0.520	0.443	0.476	0.481	0.487	4.825		
T	1-Bromopropane				0.033	0.034	0.037	0.040	0.037	0.038	0.039	0.037	7.440		
T	Bromochloromethane			0.151	0.148	0.152	0.165	0.176	0.151	0.162	0.164	0.159	6.123		
T	Tetrahydrofuran		0.173	0.111	0.113	0.121	0.123	0.115	0.112		0.116	0.123	16.774	0.998	
S	Dibromofluoromethane			0.280	0.265	0.272	0.276	0.272	0.253	0.265	0.262	0.268	3.189		
T	1,1,1-Trichloroethane			0.412	0.417	0.434	0.435	0.474	0.398	0.430	0.438	0.430	5.218		
T	Cyclohexane			0.396	0.493	0.473	0.495	0.533	0.492	0.499	0.519	0.487	8.433		
T	1,1-Dichloropropene			0.306	0.372	0.338	0.347	0.383	0.324	0.345	0.355	0.346	7.125		
T	Tert-Amyl-Methyl ether		0.664	0.687	0.706	0.759	0.757	0.723	0.732		0.762	0.724	4.986		
T	Carbon Tetrachloride			0.351	0.409	0.4	0.412	0.445	0.378	0.403	0.416	0.4017	6.9015		
S	1,2-Dichloroethane-d4			0.36	0.365	0.337	0.366	0.353	0.329	0.34	0.336	0.3482	4.16		
T	Heptane											0	0		
T	1,2-Dichloroethane			0.387	0.414	0.422	0.43	0.449	0.388	0.415	0.419	0.4154	4.951		
T	Benzene	1.229	1.128	1.036	1.038	1.011	1.023	1.078	0.921	0.973	0.979	1.0416	8.3738		
T	Trichloroethene			0.223	0.257	0.243	0.254	0.268	0.229	0.245	0.249	0.2461	6.0218		
T	Methylcyclohexane			0.321	0.406	0.387	0.403	0.435	0.401	0.406	0.424	0.3978	8.6044		
C	1,2-Dichloropropane			0.249	0.279	0.277	0.29	0.305	0.266	0.286	0.29	0.2802	6.0373		
T	1,4-Dioxane			0.002	0.003	0.003	0.003	0.003	0.003		0.004	0.0031	18.585	0.996	
T	Bromodichloromethane			0.336	0.359	0.35	0.37	0.402	0.352	0.384	0.39	0.3678	6.1125		
T	Dibromomethane			0.145	0.152	0.16	0.169	0.185	0.158	0.171	0.173	0.1639	7.836		
T	2-Chloroethyl Vinyl Ether				0.126	0.141	0.155	0.164	0.161	0.178		0.1541	11.732		
T	4-Methyl-2-Pentanone				0.101	0.11	0.122	0.117	0.113	0.125	0.128	0.1167	8.1948		
T	cis-1,3-Dichloropropene			0.338	0.374	0.39	0.412	0.454	0.396	0.435	0.442	0.4052	9.5304		
T	Dimethyl Disulfide				0.171	0.174	0.192	0.225	0.22	0.245		0.2044	14.756		
I	Chlorobenzene-d5	ISTD													
S	Toluene-d8			1.274	1.278	1.167	1.22	1.21	1.113	1.144	1.105	1.1888	5.6789		
C	Toluene	1.627	1.459	1.33	1.431	1.418	1.424	1.504	1.27	1.35	1.331	1.4144	7.2521		
T	Ethyl Methacrylate			0.326	0.401	0.428	0.461	0.503	0.477	0.511	0.518	0.4532	14.498		
T	Paraldehyde											0	0		
T	trans-1,3-Dichloropropene			0.461	0.507	0.529	0.558	0.603	0.53	0.579	0.582	0.5439	8.4811		
T	1,1,2-Trichloroethane			0.265	0.288	0.302	0.309	0.319	0.28	0.302	0.299	0.2956	5.771		
T	2-Hexanone				0.298	0.324	0.345	0.341	0.328	0.359	0.366	0.3373	6.878		
T	1,3-Dichloropropane			0.488	0.541	0.538	0.558	0.579	0.503	0.54	0.54	0.5358	5.3786		
T	Tetrachloroethene			0.332	0.375	0.358	0.359	0.376	0.318	0.336	0.337	0.3489	6.0417		
T	Dibromochloromethane			0.318	0.369	0.378	0.394	0.425	0.373	0.407	0.41	0.3845	8.6342		
T	1,2-Dibromoethane			0.271	0.289	0.29	0.309	0.332	0.29	0.318	0.32	0.3023	6.7531		
T	1-Chlorohexane			0.358	0.417	0.417	0.441	0.485	0.451	0.47	0.474	0.4392	9.3805		
P	Chlorobenzene			0.915	0.966	0.916	0.927	0.958	0.821	0.89	0.88	0.909	5.1018		
T	1,1,1,2-Tetrachloroethane			0.348	0.343	0.362	0.374	0.393	0.344	0.376	0.38	0.365	5.0679		
C	Ethylbenzene	0.49	0.466	0.473	0.486	0.481	0.497	0.531	0.453	0.494	0.494	0.4864	4.3098		
T	m-,p-Xylene	0.674	0.598	0.537	0.6	0.59	0.605	0.637	0.546	0.585	0.58	0.5952	6.6768		
T	o-Xylene	0.574	0.512	0.494	0.539	0.544	0.588	0.634	0.54	0.59	0.591	0.5606	7.5243		
T	Styrene			0.772	0.876	0.918	0.982	1.071	0.935	1.037	1.041	0.9542	10.466		
P	Bromoform			0.222	0.256	0.259	0.275	0.298	0.261	0.293	0.307	0.2715	10.256		
T	Isopropylbenzene			1.284	1.474	1.498	1.583	1.683	1.433	1.559	1.542	1.507	7.8153		
I	1,4-Dichlorobenzene-d4	ISTD													
P	1,1,2,2-Tetrachloroethane			0.689	0.783	0.798	0.815	0.842	0.74	0.785	0.797	0.7811	6.0053		
S	p-Bromofluorobenzene			0.997	0.956	0.921	0.925	0.941	0.864	0.892	0.852	0.9184	5.2432		

T	1,2,3-Trichloropropane	0.202	0.247	0.251	0.244	0.258	0.225	0.243	0.244	0.2391	7.3405
T	trans-1,4-Dichloro-2-Butene	0.247	0.255	0.285	0.287	0.308	0.295	0.311	0.318	0.2883	8.9009
T	n-Propylbenzene	3.037	3.536	3.508	3.571	3.802	3.207	3.325	3.178	3.3956	7.429
T	Bromobenzene	0.67	0.762	0.744	0.775	0.808	0.694	0.733	0.719	0.7381	6.0417
T	1,3,5-Trimethylbenzene	2.096	2.503	2.443	2.485	2.702	2.295	2.435	2.377	2.417	7.2332
T	2-Chlorotoluene	1.974	2.457	2.366	2.375	2.437	2.106	2.239	2.178	2.2664	7.5835
T	4-Chlorotoluene	2.163	2.182	2.123	2.094	2.235	1.885	1.964	1.933	2.0723	6.208
T	a-Methylstyrene	0.921	1.071	1.127	1.156	1.295	1.234	1.294	1.291	1.1737	11.321
T	tert-Butylbenzene	0.437	0.508	0.504	0.521	0.567	0.48	0.511	0.502	0.5037	7.2697
T	1,2,4-Trimethylbenzene	2.274	2.614	2.634	2.636	2.804	2.386	2.535	2.452	2.5419	6.5668
T	sec-Butylbenzene	2.804	3.169	3.104	3.238	3.474	2.92	3.078	2.976	3.0953	6.6823
T	p-Isopropyltoluene	2.183	2.603	2.54	2.657	2.885	2.449	2.589	2.523	2.5537	7.7414
T	1,3-Dichlorobenzene	1.331	1.516	1.491	1.451	1.537	1.319	1.391	1.389	1.4282	5.8154
T	1,4-Dichlorobenzene	1.528	1.507	1.501	1.476	1.529	1.31	1.39	1.389	1.4537	5.5603
T	n-Butylbenzene	2.282	2.598	2.578	2.654	2.852	2.445	2.576	2.563	2.5684	6.3469
T	1,2-Dichlorobenzene	1.324	1.401	1.407	1.397	1.474	1.278	1.357	1.356	1.3743	4.3244
T	1,2-Dibromo-3-Chloropropane		0.159	0.163	0.176	0.183	0.167	0.179	0.182	0.1728	5.5543
T	1,2,4-Trichlorobenzene	0.968	0.981	1.002	1.008	1.105	0.936	0.963	0.985	0.9935	5.0666
T	Hexachlorobutadiene	0.528	0.583	0.572	0.579	0.635	0.532	0.546	0.571	0.5682	6.0591
T	Naphthalene	1.901	2.081	2.291	2.365	2.601	2.29	2.356	2.387	2.2839	9.2287
T	1,2,3-Trichlorobenzene	0.961	0.977	0.98	0.987	1.094	0.917	0.949	0.961	0.9783	5.2988

Mon Feb 29 16:03:43 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16030323 Run Date: 02/26/2016 Sample ID: WG558920-12
Instrument ID: HPMS6 Run Time: 20:15 Method: 8260B
File ID: 6M137535 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG558920 Cal ID: HPMS6 - 26-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.7	ug/kg	0.494	1.40	20	
1,1-Dichloroethene	CCC	50.0	51.6	ug/kg	0.452	3.30	20	
1,2-Dichloropropane	CCC	50.0	55.0	ug/kg	0.308	10.1	20	
Ethylbenzene	CCC	50.0	52.4	ug/kg	0.510	4.80	20	
Toluene	CCC	50.0	51.4	ug/kg	1.45	2.80	20	
Vinyl Chloride	CCC	50.0	43.3	ug/kg	0.334	13.3	20	
Bromoform	SPCC	50.0	49.2	ug/kg	0.267	1.50	20	
Chlorobenzene	SPCC	50.0	52.9	ug/kg	0.961	5.70	20	
Chloromethane	SPCC	50.0	50.9	ug/kg	0.487	1.80	20	
1,1-Dichloroethane	SPCC	50.0	50.3	ug/kg	0.525	0.700	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	52.1	ug/kg	0.815	4.30	20	
Acetone		50.0	48.7	ug/kg	0.111	2.70	20	
Benzene		50.0	50.4	ug/kg	1.05	0.900	20	
Bromobenzene		50.0	51.8	ug/kg	0.765	3.70	20	
Bromochloromethane		50.0	52.1	ug/kg	0.165	4.20	20	
Bromodichloromethane		50.0	51.6	ug/kg	0.380	3.30	20	
Bromomethane		50.0	58.6	ug/kg	0.240	17.1	20	
2-Butanone		50.0	49.2	ug/kg	0.170	1.50	20	
n-Butylbenzene		50.0	48.8	ug/kg	2.50	2.50	20	
sec-Butylbenzene		50.0	50.7	ug/kg	3.14	1.40	20	
tert-Butylbenzene		50.0	53.2	ug/kg	0.536	6.40	20	
Carbon Disulfide		50.0	44.4	ug/kg	0.743	11.2	20	
Carbon Tetrachloride		50.0	51.2	ug/kg	0.411	2.30	20	
Dibromochloromethane		50.0	51.8	ug/kg	0.399	3.70	20	
Chloroethane		50.0	56.6	ug/kg	0.247	13.2	20	
2-Chlorotoluene		50.0	52.1	ug/kg	2.36	4.20	20	
4-Chlorotoluene		50.0	52.1	ug/kg	2.16	4.10	20	
1,2-Dibromo-3-Chloropropane		50.0	52.1	ug/kg	0.180	4.30	20	
1,2-Dibromoethane		50.0	53.7	ug/kg	0.325	7.30	20	
Dibromomethane		50.0	50.4	ug/kg	0.165	0.800	20	
1,2-Dichlorobenzene		50.0	54.5	ug/kg	1.50	9.00	20	
1,3-Dichlorobenzene		50.0	52.0	ug/kg	1.49	4.00	20	
1,4-Dichlorobenzene		50.0	51.8	ug/kg	1.51	3.60	20	
Dichlorodifluoromethane		50.0	55.5	ug/kg	0.509	10.9	20	
1,2-Dichloroethane		50.0	51.3	ug/kg	0.426	2.50	20	
cis-1,2-Dichloroethene		50.0	54.1	ug/kg	0.292	8.30	20	
trans-1,2-Dichloroethene		50.0	53.7	ug/kg	0.260	7.50	20	
1,3-Dichloropropane		50.0	54.9	ug/kg	0.589	9.80	20	
2,2-Dichloropropane		50.0	53.1	ug/kg	0.444	6.20	20	
cis-1,3-Dichloropropene		50.0	58.8	ug/kg	0.476	17.5	20	
trans-1,3-Dichloropropene		50.0	52.9	ug/kg	0.575	5.70	20	
1,1-Dichloropropene		50.0	52.8	ug/kg	0.365	5.50	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4662200
Report generated 03/10/2016 16:26

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16030323 Run Date: 02/26/2016 Sample ID: WG558920-12
Instrument ID: HPMS6 Run Time: 20:15 Method: 8260B
File ID: 6M137535 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG558920 Cal ID: HPMS6 - 26-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	51.3	ug/kg	0.346	2.60	20	
Hexachlorobutadiene		50.0	47.6	ug/kg	0.541	4.80	20	
Isopropylbenzene		50.0	54.6	ug/kg	1.64	9.10	20	
p-Isopropyltoluene		50.0	50.9	ug/kg	2.60	1.80	20	
4-Methyl-2-Pentanone		50.0	51.3	ug/kg	0.120	2.50	20	
Methylene Chloride		50.0	53.4	ug/kg	0.281	6.80	20	
Naphthalene		50.0	49.8	ug/kg	2.28	0.300	20	
n-Propylbenzene		50.0	52.6	ug/kg	3.57	5.30	20	
Styrene		50.0	55.3	ug/kg	1.06	10.6	20	
1,1,1,2-Tetrachloroethane		50.0	51.8	ug/kg	0.379	3.70	20	
Tetrachloroethene		50.0	51.1	ug/kg	0.357	2.20	20	
1,2,3-Trichlorobenzene		50.0	51.0	ug/kg	0.997	2.00	20	
1,2,4-Trichlorobenzene		50.0	51.0	ug/kg	1.01	2.10	20	
1,1,1-Trichloroethane		50.0	52.0	ug/kg	0.447	4.00	20	
1,1,2-Trichloroethane		50.0	53.2	ug/kg	0.315	6.40	20	
Trichloroethene		50.0	54.7	ug/kg	0.269	9.40	20	
Trichlorofluoromethane		50.0	47.9	ug/kg	0.496	4.20	20	
1,2,3-Trichloropropane		50.0	53.2	ug/kg	0.254	6.30	20	
1,2,4-Trimethylbenzene		50.0	51.1	ug/kg	2.60	2.30	20	
1,3,5-Trimethylbenzene		50.0	52.7	ug/kg	2.55	5.30	20	
o-Xylene		50.0	56.9	ug/kg	0.638	13.8	20	
m-,p-Xylene		100	105	ug/kg	0.626	5.20	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4662200
Report generated 03/10/2016 16:26

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030323 Run Date: 03/08/2016 Sample ID: WG560072-02
Instrument ID: HPMS6 Run Time: 11:58 Method: 8260B
File ID: 6M137646 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG560074 Cal ID: HPMS6 - 26-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	49.1	ug/kg	0.478	1.90	20	
1,1-Dichloroethene	CCC	50.0	52.3	ug/kg	0.457	4.51	20	
1,2-Dichloropropane	CCC	50.0	51.2	ug/kg	0.287	2.36	20	
Ethylbenzene	CCC	50.0	51.9	ug/kg	0.505	3.72	20	
Toluene	CCC	50.0	50.4	ug/kg	1.43	0.845	20	
Vinyl Chloride	CCC	50.0	50.5	ug/kg	0.389	0.912	20	
Bromoform	SPCC	50.0	50.3	ug/kg	0.273	0.507	20	
Chlorobenzene	SPCC	50.0	50.0	ug/kg	0.909	0.0192	20	
Chloromethane	SPCC	50.0	41.8	ug/kg	0.400	16.5	20	
1,1-Dichloroethane	SPCC	50.0	50.4	ug/kg	0.525	0.821	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	52.5	ug/kg	0.820	5.00	20	
Xylenes		150	155	ug/kg	0.601	3.51	40	
Acetone		50.0	54.1	ug/kg	0.122	8.17	20	
Benzene		50.0	49.5	ug/kg	1.03	0.967	20	
Bromobenzene		50.0	51.0	ug/kg	0.753	2.00	20	
Bromochloromethane		50.0	51.8	ug/kg	0.164	3.68	20	
Bromodichloromethane		50.0	50.5	ug/kg	0.371	0.909	20	
Bromomethane		50.0	51.8	ug/kg	0.213	3.58	20	
2-Butanone		50.0	54.9	ug/kg	0.190	9.72	20	
n-Butylbenzene		50.0	51.5	ug/kg	2.65	3.02	20	
sec-Butylbenzene		50.0	52.3	ug/kg	3.24	4.54	20	
tert-Butylbenzene		50.0	52.0	ug/kg	0.524	4.09	20	
Carbon Disulfide		50.0	49.9	ug/kg	0.836	0.101	20	
Carbon Tetrachloride		50.0	51.1	ug/kg	0.411	2.24	20	
Dibromochloromethane		50.0	50.1	ug/kg	0.385	0.170	20	
Chloroethane		50.0	52.5	ug/kg	0.229	4.99	20	
2-Chlorotoluene		50.0	47.2	ug/kg	2.14	5.63	20	
4-Chlorotoluene		50.0	54.6	ug/kg	2.26	9.29	20	
1,2-Dibromo-3-Chloropropane		50.0	50.8	ug/kg	0.176	1.58	20	
1,2-Dibromoethane		50.0	52.5	ug/kg	0.317	4.91	20	
Dibromomethane		50.0	50.2	ug/kg	0.165	0.339	20	
1,2-Dichlorobenzene		50.0	49.2	ug/kg	1.35	1.63	20	
1,3-Dichlorobenzene		50.0	50.3	ug/kg	1.44	0.634	20	
1,4-Dichlorobenzene		50.0	49.3	ug/kg	1.43	1.39	20	
Dichlorodifluoromethane		50.0	53.2	ug/kg	0.489	6.44	20	
1,2-Dichloroethane		50.0	48.4	ug/kg	0.402	3.25	20	
cis-1,2-Dichloroethene		50.0	51.6	ug/kg	0.279	3.27	20	
trans-1,2-Dichloroethene		50.0	52.5	ug/kg	0.254	4.95	20	
1,3-Dichloropropane		50.0	50.7	ug/kg	0.544	1.43	20	
2,2-Dichloropropane		50.0	52.1	ug/kg	0.436	4.28	20	
cis-1,3-Dichloropropene		50.0	52.8	ug/kg	0.428	5.62	20	
trans-1,3-Dichloropropene		50.0	51.9	ug/kg	0.565	3.82	20	

CCV - Modified 03/05/2008
PDF File ID: 4662202
Report generated 03/10/2016 16:26

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030323 Run Date: 03/08/2016 Sample ID: WG560072-02
Instrument ID: HPMS6 Run Time: 11:58 Method: 8260B
File ID: 6M137646 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG560074 Cal ID: HPMS6 - 26-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	53.5	ug/kg	0.370	6.90	20	
2-Hexanone		50.0	56.5	ug/kg	0.382	13.1	20	
Hexachlorobutadiene		50.0	50.1	ug/kg	0.569	0.129	20	
Isopropylbenzene		50.0	52.8	ug/kg	1.59	5.67	20	
p-Isopropyltoluene		50.0	52.6	ug/kg	2.69	5.18	20	
4-Methyl-2-Pentanone		50.0	57.8	ug/kg	0.135	15.5	20	
Methylene Chloride		50.0	50.6	ug/kg	0.267	1.13	20	
Naphthalene		50.0	54.0	ug/kg	2.47	8.09	20	
n-Propylbenzene		50.0	52.7	ug/kg	3.58	5.39	20	
Styrene		50.0	53.3	ug/kg	1.02	6.53	20	
1,1,1,2-Tetrachloroethane		50.0	49.4	ug/kg	0.360	1.27	20	
Tetrachloroethene		50.0	52.3	ug/kg	0.365	4.51	20	
1,2,3-Trichlorobenzene		50.0	49.3	ug/kg	0.965	1.34	20	
1,2,4-Trichlorobenzene		50.0	50.1	ug/kg	0.995	0.108	20	
1,1,1-Trichloroethane		50.0	51.2	ug/kg	0.441	2.47	20	
1,1,2-Trichloroethane		50.0	51.3	ug/kg	0.303	2.54	20	
Trichloroethene		50.0	51.9	ug/kg	0.256	3.84	20	
Trichlorofluoromethane		50.0	50.6	ug/kg	0.524	1.17	20	
1,2,3-Trichloropropane		50.0	53.8	ug/kg	0.257	7.61	20	
1,2,4-Trimethylbenzene		50.0	50.9	ug/kg	2.59	1.77	20	
1,3,5-Trimethylbenzene		50.0	52.0	ug/kg	2.51	3.99	20	
o-Xylene		50.0	52.9	ug/kg	0.594	5.87	20	
m-,p-Xylene		100	102	ug/kg	0.609	2.33	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4662202
Report generated 03/10/2016 16:26

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16030323
Instrument ID: HPMS6
Workgroup (AAB#): WG560074

ICAL CCV Number: WG558920-08
CAL ID: HPMS6-26-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558920-08	NA	NA	237573	439950	607631
Upper Limit	NA	NA	475146	879900	1215262
Lower Limit	NA	NA	118787	219975	303816
L16030323-01	1.00	01	193297	373305	530995
L16030323-02	1.00	01	207806	393106	539806
L16030323-03	1.00	01	205060	385930	530956
L16030323-04	1.00	01	196388	374000	513529
L16030323-05	1.00	01	219502	411354	562512
L16030323-06	1.00	01	183781	349731	487901
WG560074-01	1.00	01	216022	411041	570797
WG560074-02	1.00	01	226756	418780	578167

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4666020
Report generated 03/10/2016 16:26

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16030323
Instrument ID: HPMS6
Workgroup (AAB#): WG560074

ICAL CCV Number: WG558920-08
CAL ID: HPMS6-26-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558920-08	NA	NA	19.6	16.01	11.51
Upper Limit	NA	NA	20.1	16.51	12.01
Lower Limit	NA	NA	19.1	15.51	11.01
L16030323-01	1.00	01	19.59	16.01	11.51
L16030323-02	1.00	01	19.6	16.01	11.52
L16030323-03	1.00	01	19.6	16.01	11.52
L16030323-04	1.00	01	19.59	16.01	11.51
L16030323-05	1.00	01	19.59	16.01	11.51
L16030323-06	1.00	01	19.59	16.01	11.51
WG560074-01	1.00	01	19.59	16.01	11.51
WG560074-02	1.00	01	19.6	16.01	11.52

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4666021
Report generated: 03/10/2016 16:26

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030816\6M137653.D Vial: 10
Acq On : 8 Mar 2016 15:54 Operator: TMB
Sample : L16030323-01 8260 4.71g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 09 08:30:21 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	530995	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	373305	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	193297	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.34	111	127642	44.8110 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 89.62%		
43) 1,2-Dichloroethane-d4	11.06	65	150961	40.8184 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 81.64%		
58) Toluene-d8	13.80	98	445735	50.2209 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 100.44%		
80) p-Bromofluorobenzene	17.79	95	177288	49.9338 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 99.86%		

Target Compounds					Qvalue
13) Acetone	6.61	43	2756	Below Cal	# 48
36) Tetrahydrofuran	10.29	42	1567	Below Cal	# 40
77) Isopropylbenzene	17.24	105	7944	0.7061 ug/L	# 48
87) 4-Chlorotoluene	18.35	91	2186	0.2729 ug/L	# 47
92) p-Isopropyltoluene	19.27	119	9225	0.9344 ug/L	90

(#) = qualifier out of range (m) = manual integration
6M137653.D 826_SL.M Wed Mar 09 08:30:21 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030816\6M137653.D Vial: 10
Acq On : 8 Mar 2016 15:54 Operator: TMB
Sample : L16030323-01 8260 4.71g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 8:30 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

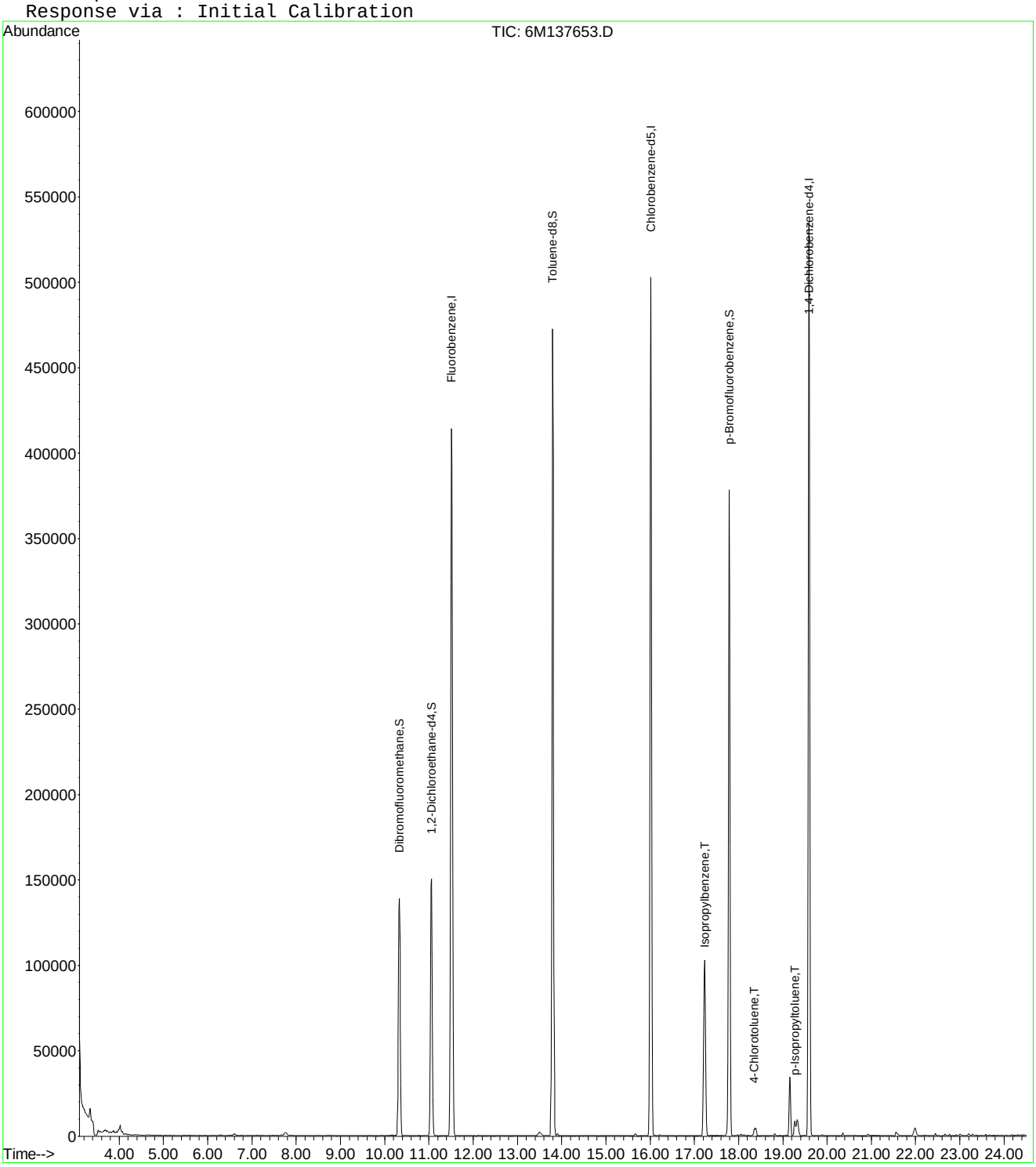

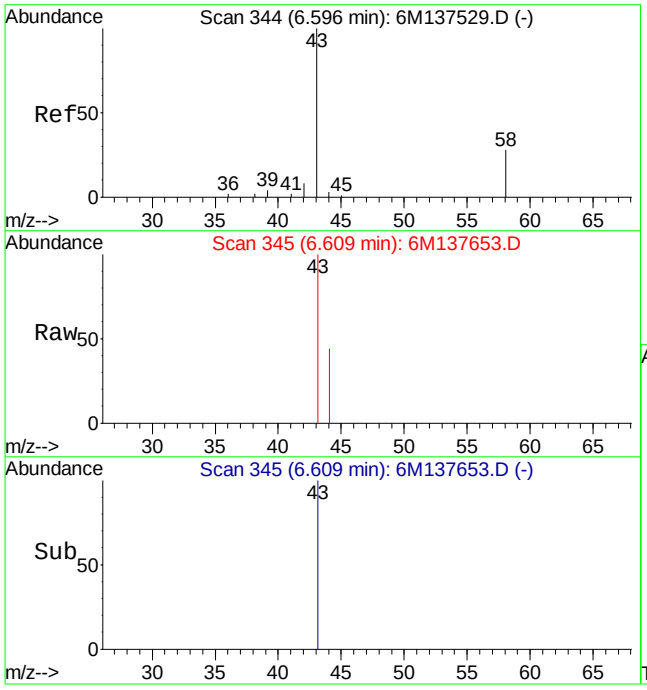

#13
Acetone
Concen: Below Cal
RT: 6.61 min Scan# 345
Delta R.T. 0.02 min
Lab File: 6M137653.D
Acq: 8 Mar 2016 15:54

Tgt Ion: 43 Resp: 2756

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.1	37.7#

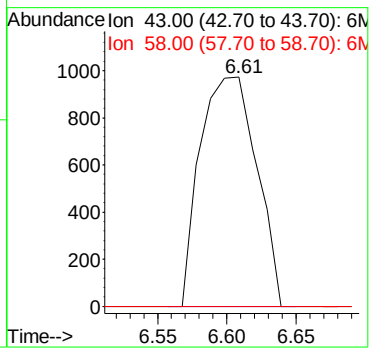

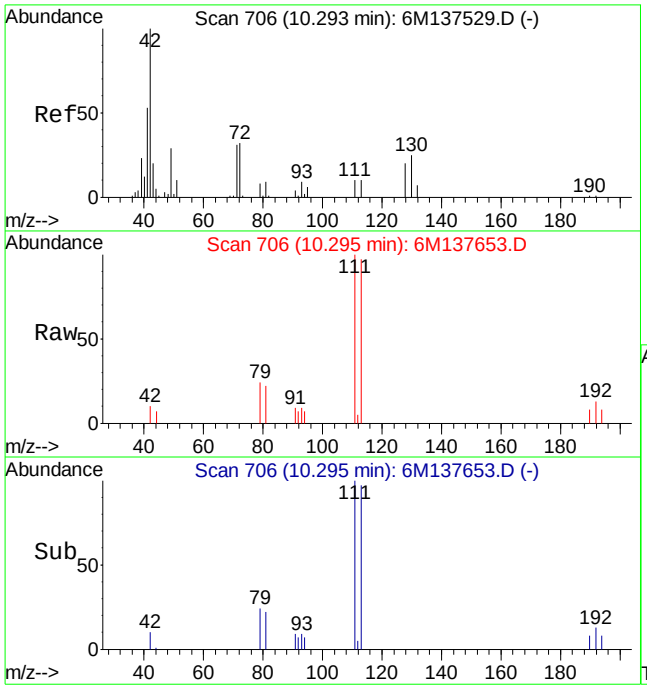

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.29 min Scan# 706
Delta R.T. 0.00 min
Lab File: 6M137653.D
Acq: 8 Mar 2016 15:54

Tgt Ion: 42 Resp: 1567

Ion	Ratio	Lower	Upper
42	100		
72	0.0	21.0	49.0#
71	0.0	20.6	48.2#

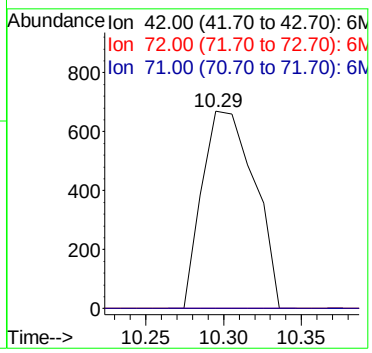

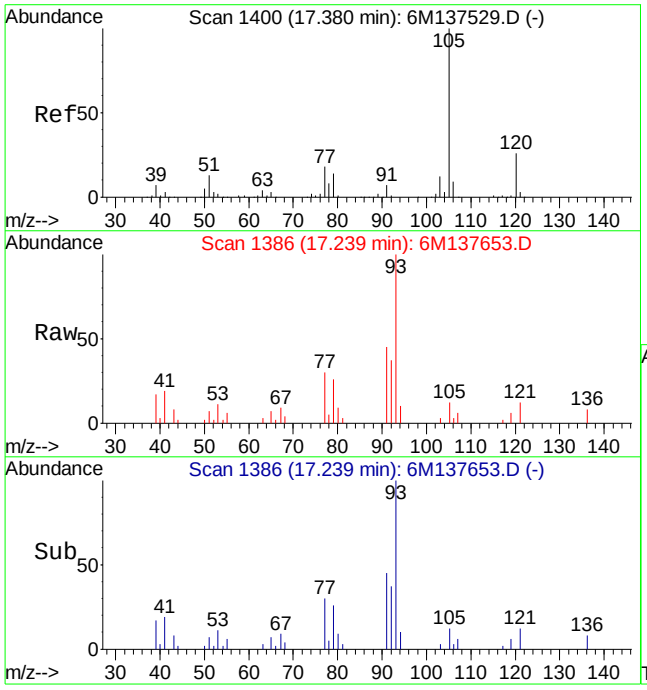

#77
Isopropylbenzene
Concen: 0.71 ug/L
RT: 17.24 min Scan# 1386
Delta R.T. -0.14 min
Lab File: 6M137653.D
Acq: 8 Mar 2016 15:54

Tgt Ion:105 Resp: 7944

Ion	Ratio	Lower	Upper
105	100		
120	0.0	16.3	38.1#

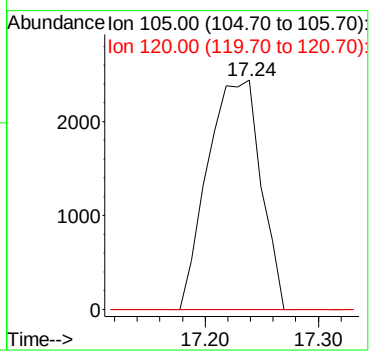

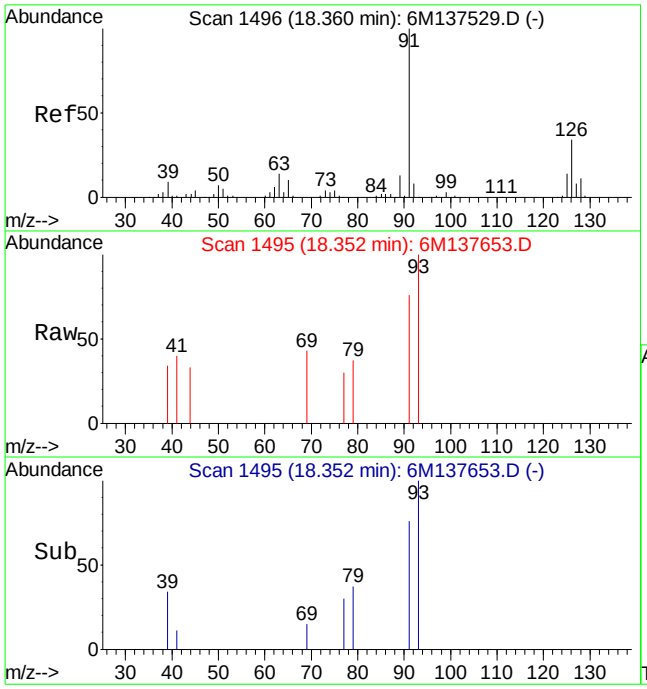

#87
4-Chlorotoluene
Concen: 0.27 ug/L
RT: 18.35 min Scan# 1495
Delta R.T. 0.00 min
Lab File: 6M137653.D
Acq: 8 Mar 2016 15:54

Tgt Ion: 91 Resp: 2186

Ion	Ratio	Lower	Upper
91	100		
126	0.0	21.0	49.0#
63	0.0	8.8	20.6#

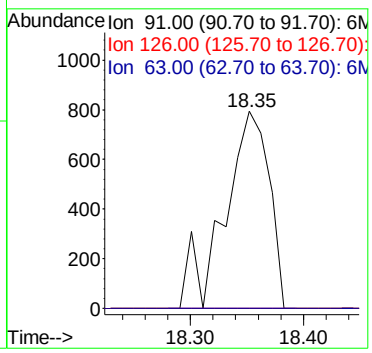

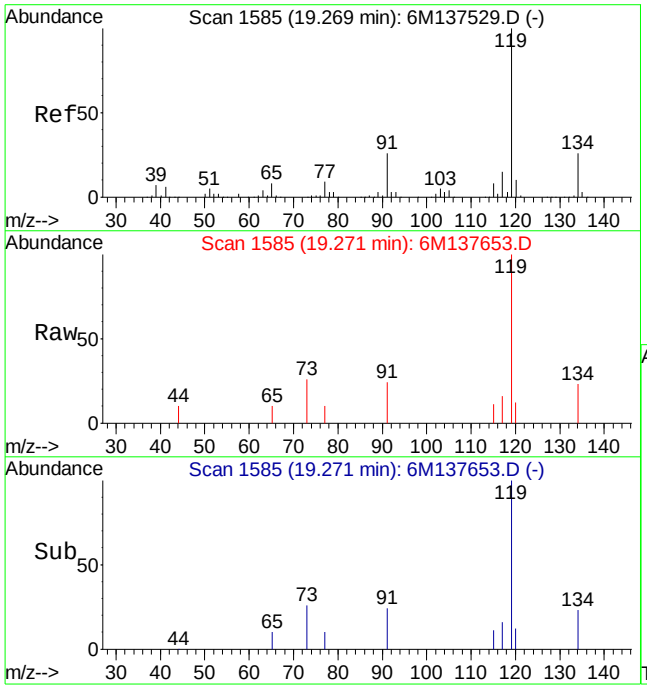

#92
p-Isopropyltoluene
Concen: 0.93 ug/L
RT: 19.27 min Scan# 1585
Delta R.T. 0.01 min
Lab File: 6M137653.D
Acq: 8 Mar 2016 15:54

Tgt Ion:119 Resp: 9225

Ion	Ratio	Lower	Upper
119	100		
134	20.9	15.6	36.4

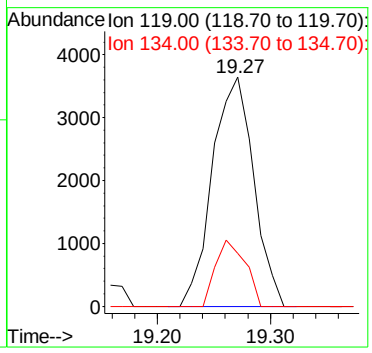

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030816\6M137654.D Vial: 11
Acq On : 8 Mar 2016 16:28 Operator: TMB
Sample : L16030323-02 8260 4.64g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 09 08:30:22 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	539806	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	393106	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	207806	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	133557	46.1223 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 92.24%		
43) 1,2-Dichloroethane-d4	11.06	65	163932	43.6022 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 87.20%		
58) Toluene-d8	13.80	98	459061	49.1171 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.24%		
80) p-Bromofluorobenzene	17.79	95	186225	48.7888 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 97.58%		

Target Compounds					Qvalue
13) Acetone	6.60	43	3453	Below Cal	84
36) Tetrahydrofuran	10.30	42	1406	Below Cal #	40

(#) = qualifier out of range (m) = manual integration
6M137654.D 826_SL.M Wed Mar 09 08:30:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030816\6M137654.D Vial: 11
Acq On : 8 Mar 2016 16:28 Operator: TMB
Sample : L16030323-02 8260 4.64g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 8:30 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

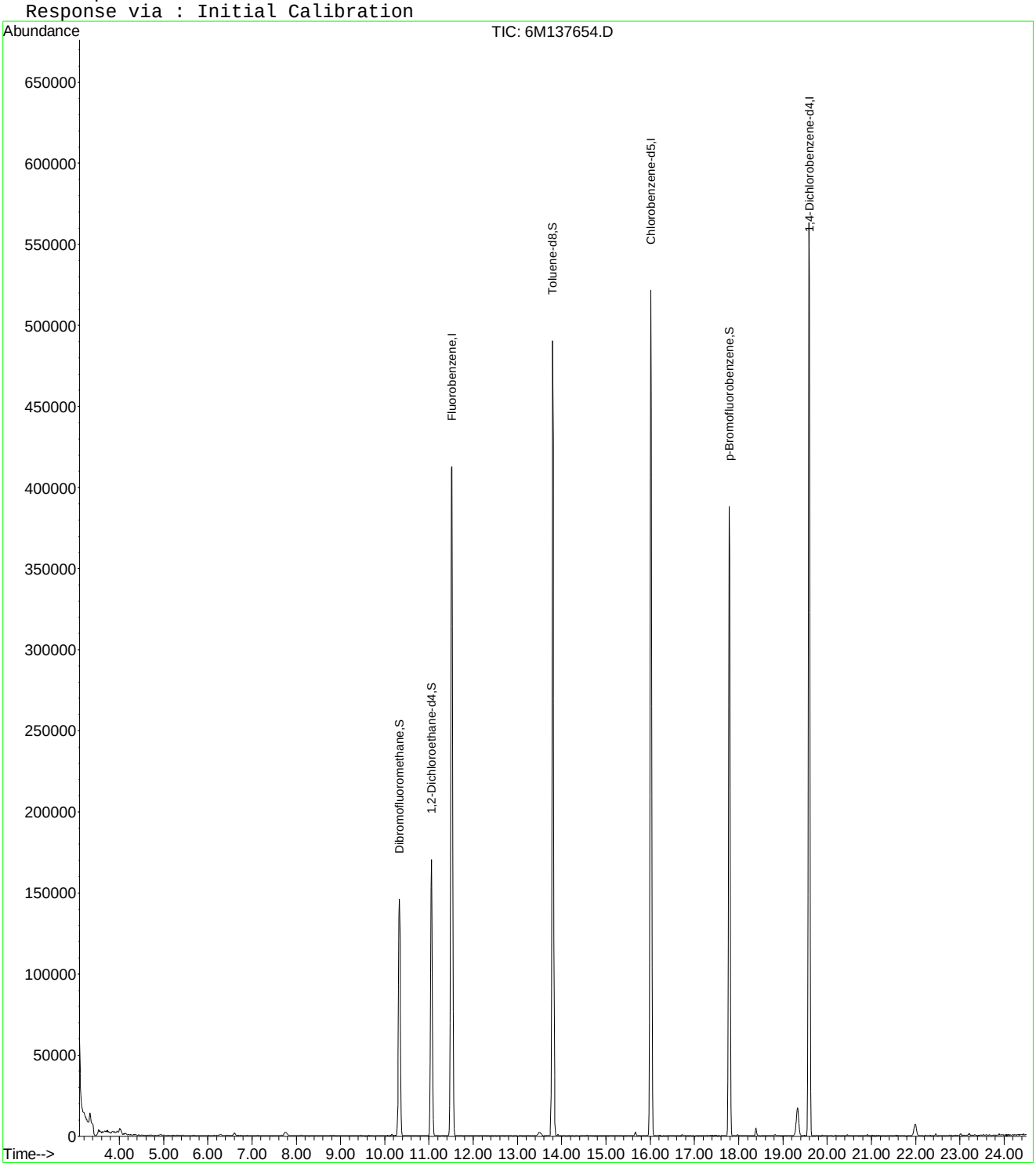

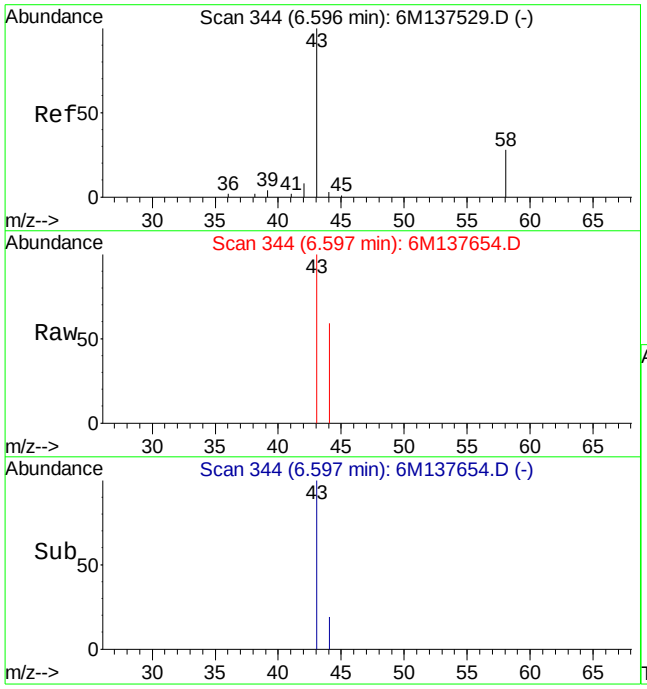

#13
Acetone
Concen: Below Cal
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137654.D
Acq: 8 Mar 2016 16:28

Tgt Ion: 43 Resp: 3453

Ion	Ratio	Lower	Upper
43	100		
58	18.8	16.1	37.7

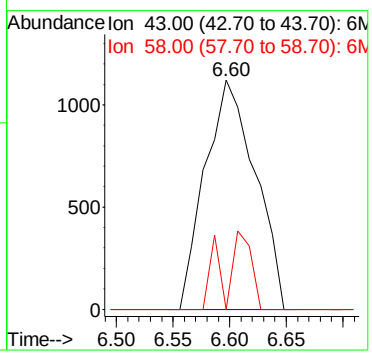

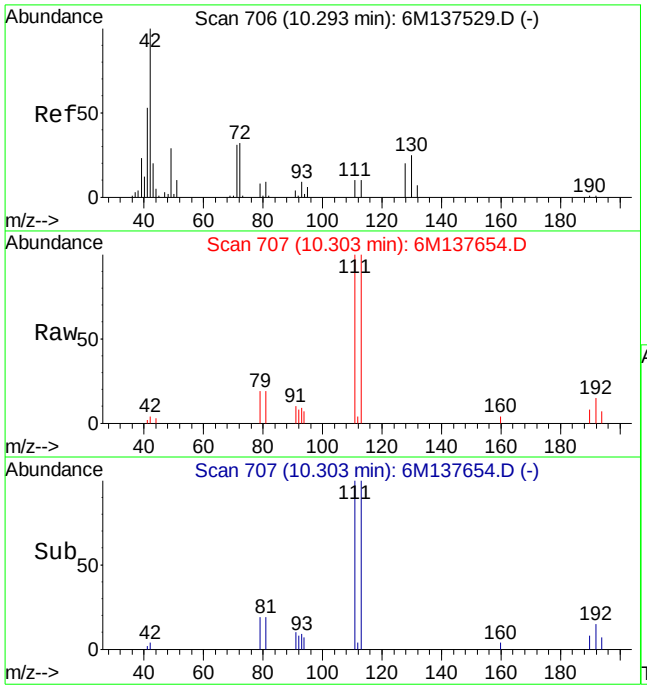

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.30 min Scan# 707
Delta R.T. 0.01 min
Lab File: 6M137654.D
Acq: 8 Mar 2016 16:28

Tgt Ion: 42 Resp: 1406

Ion	Ratio	Lower	Upper
42	100		
72	0.0	21.0	49.0#
71	0.0	20.6	48.2#

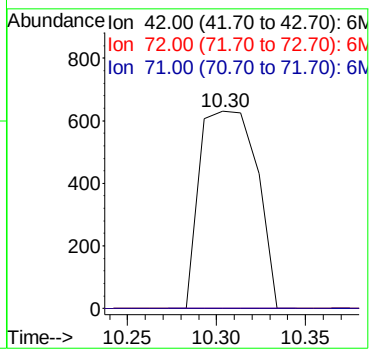

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030816\6M137655.D Vial: 12
Acq On : 8 Mar 2016 17:01 Operator: TMB
Sample : L16030323-03 8260 4.63g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 09 08:30:23 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	530956	50.00 ug/L	0.01
57) Chlorobenzene-d5	16.01	117	385930	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	205060	50.00 ug/L	0.01

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	132008	46.3472 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 92.70%		
43) 1,2-Dichloroethane-d4	11.06	65	167154	45.2002 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 90.40%		
58) Toluene-d8	13.80	98	451001	49.1519 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.30%		
80) p-Bromofluorobenzene	17.79	95	183785	48.7944 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 97.58%		

Target Compounds					Qvalue
13) Acetone	6.60	43	2290	Below Cal #	48
36) Tetrahydrofuran	10.29	42	1633	Below Cal #	40
60) Ethyl Methacrylate	13.81	69	1218	0.3482 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M137655.D 826_SL.M Wed Mar 09 08:30:23 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030816\6M137655.D Vial: 12
Acq On : 8 Mar 2016 17:01 Operator: TMB
Sample : L16030323-03 8260 4.63g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 8:30 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

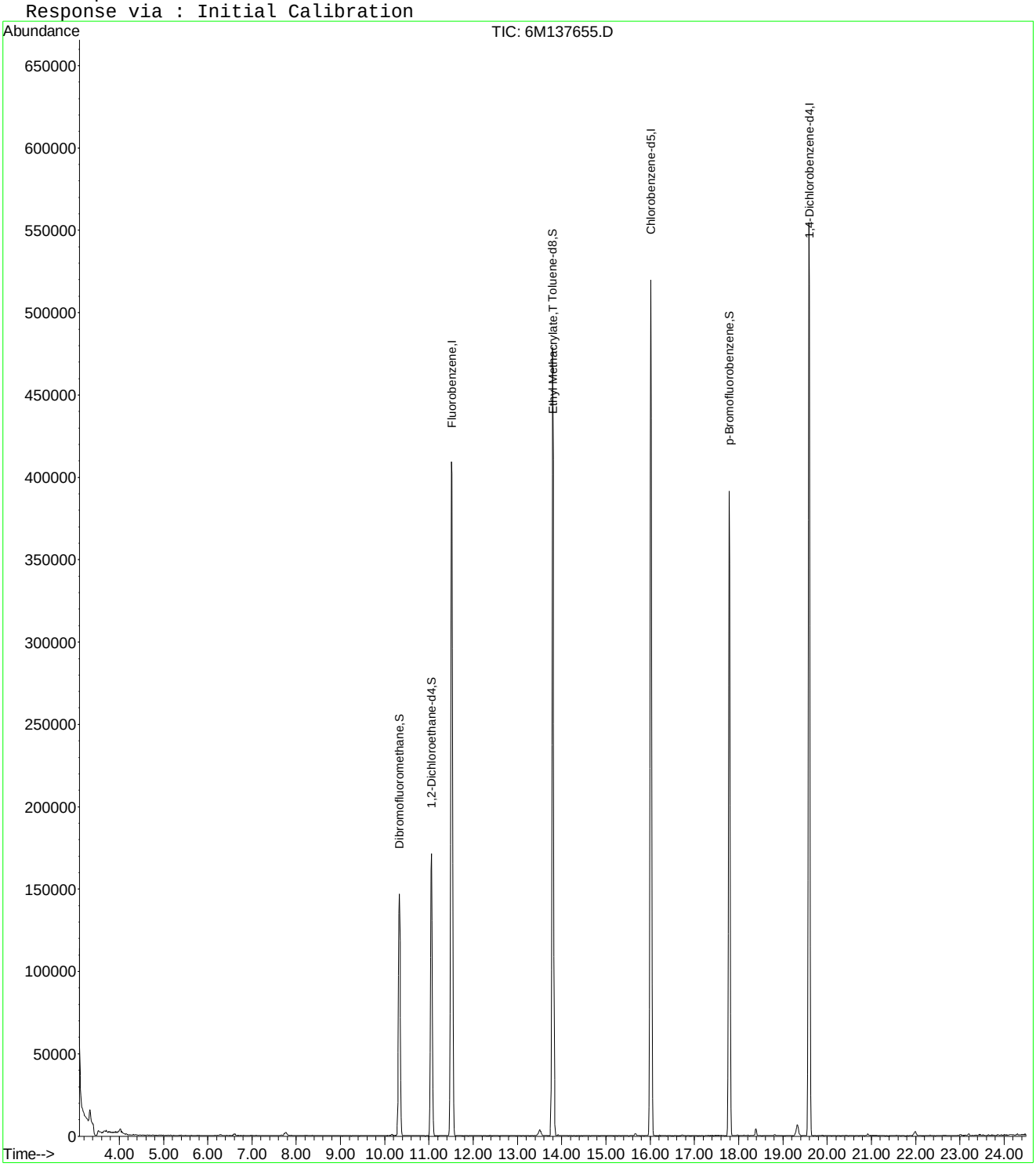

6M137655.D 826_SL.M Wed Mar 09 08:30:23 2016 Page 2

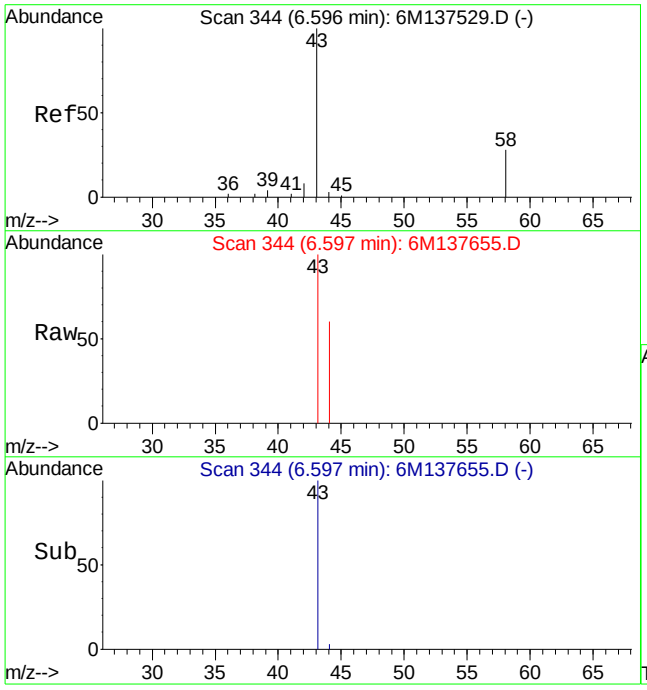

#13
Acetone
Concen: Below Cal
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137655.D
Acq: 8 Mar 2016 17:01

Tgt Ion: 43 Resp: 2290

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.1	37.7#

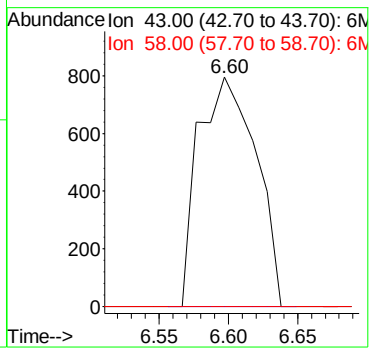

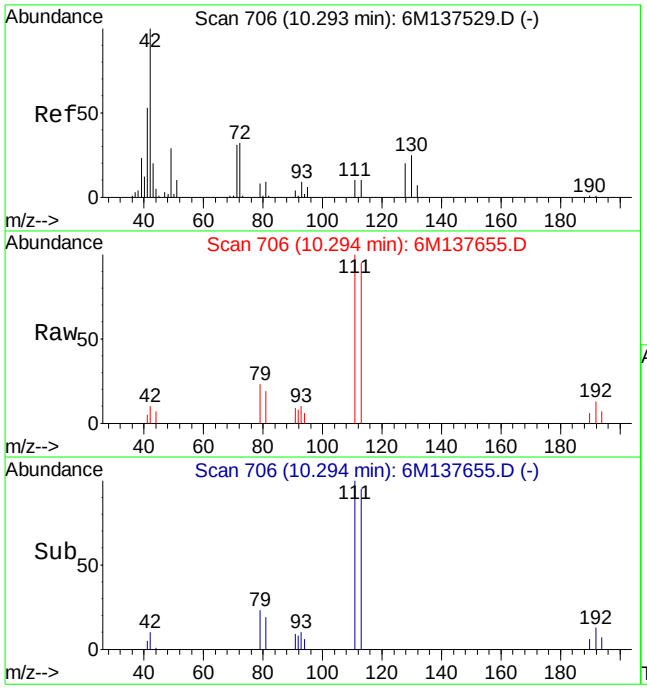

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.29 min Scan# 706
Delta R.T. 0.00 min
Lab File: 6M137655.D
Acq: 8 Mar 2016 17:01

Tgt Ion: 42 Resp: 1633

Ion	Ratio	Lower	Upper
42	100		
72	0.0	21.0	49.0#
71	0.0	20.6	48.2#

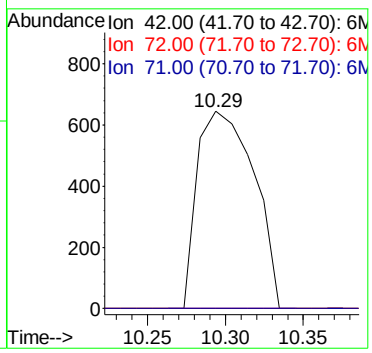

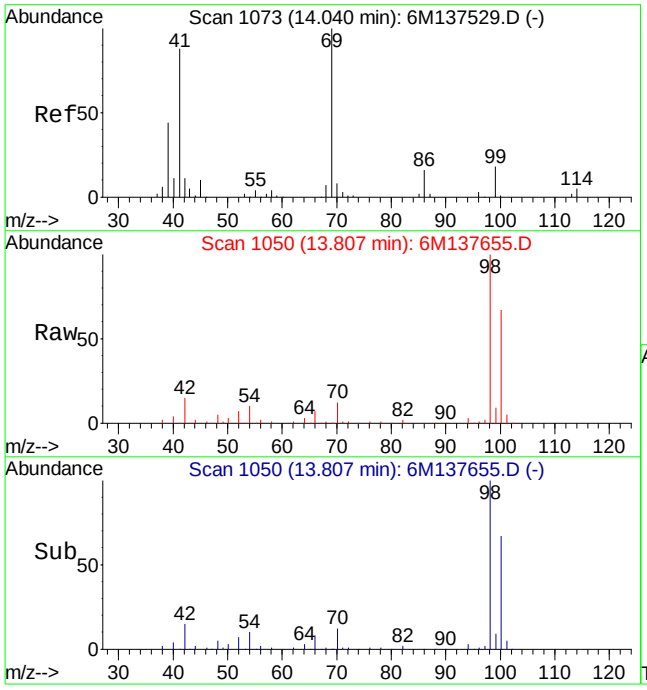

#60
Ethyl Methacrylate
Concen: 0.35 ug/L
RT: 13.81 min Scan# 1050
Delta R.T. -0.22 min
Lab File: 6M137655.D
Acq: 8 Mar 2016 17:01

Tgt Ion: 69 Resp: 1218

Ion	Ratio	Lower	Upper
69	100		
41	72.4	50.6	118.2

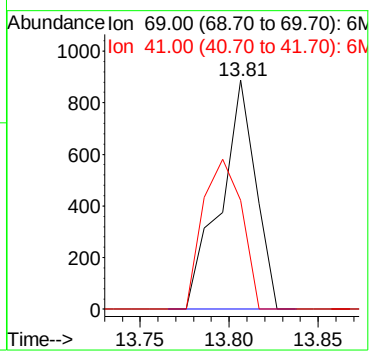

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030816\6M137656.D Vial: 13
Acq On : 8 Mar 2016 17:34 Operator: TMB
Sample : L16030323-04 8260 5.15g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 09 08:30:24 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	513529	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	374000	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	196388	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.34	111	126691	45.9899 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 91.98%		
43) 1,2-Dichloroethane-d4	11.06	65	156474	43.7481 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 87.50%		
58) Toluene-d8	13.80	98	437334	49.1828 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.36%		
80) p-Bromofluorobenzene	17.79	95	176891	49.0378 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 98.08%		

Target Compounds					Qvalue
3) Chloromethane	3.91	50	1258	0.2560 ug/L #	43
13) Acetone	6.60	43	1123	Below Cal #	48
36) Tetrahydrofuran	10.30	42	1798	Below Cal #	40

(#) = qualifier out of range (m) = manual integration
6M137656.D 826_SL.M Wed Mar 09 08:30:24 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030816\6M137656.D Vial: 13
Acq On : 8 Mar 2016 17:34 Operator: TMB
Sample : L16030323-04 8260 5.15g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 8:30 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

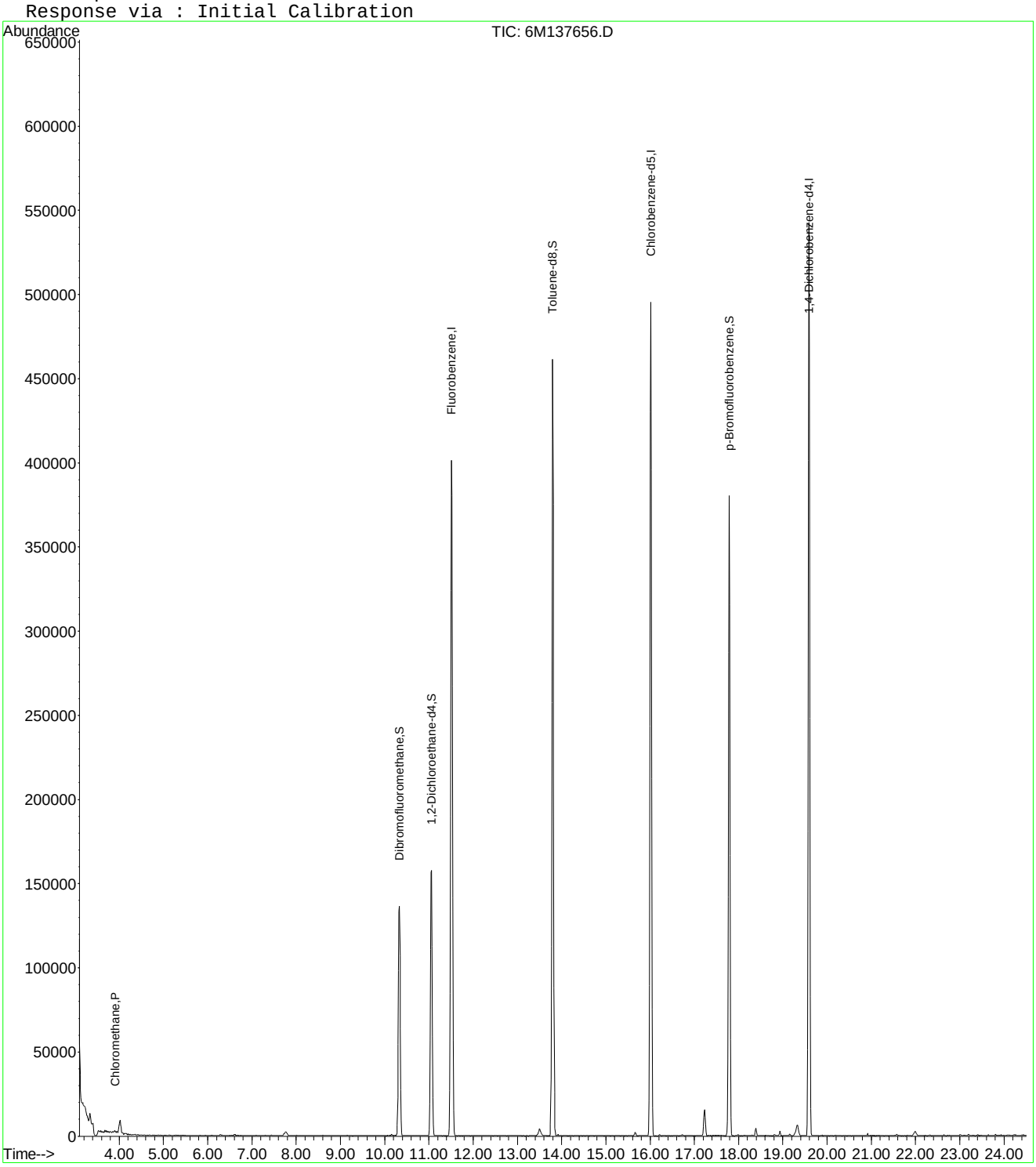

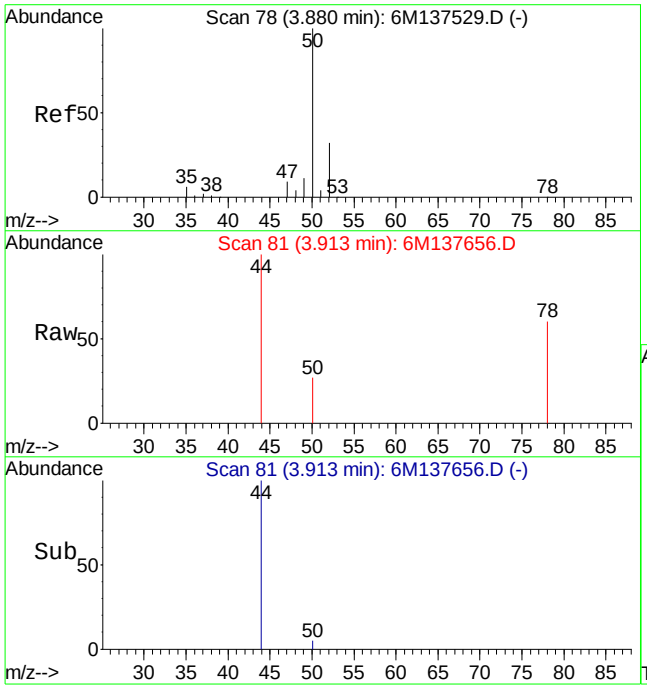

#3
Chloromethane
Concen: 0.26 ug/L
RT: 3.91 min Scan# 81
Delta R.T. 0.03 min
Lab File: 6M137656.D
Acq: 8 Mar 2016 17:34

Tgt Ion: 50 Resp: 1258

Ion	Ratio	Lower	Upper
50	100		
52	0.0	18.8	44.0#

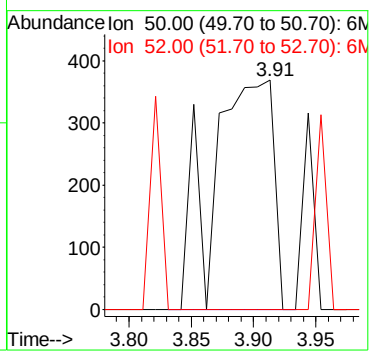

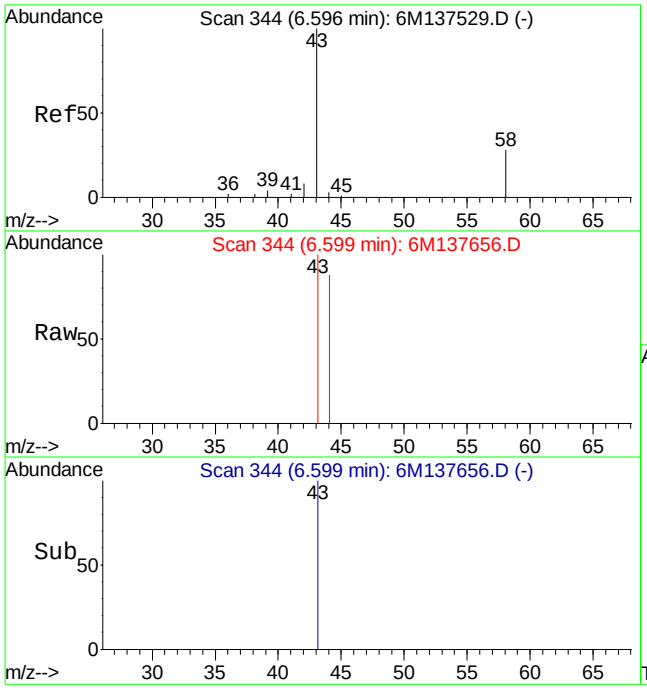

#13
Acetone
Concen: Below Cal
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137656.D
Acq: 8 Mar 2016 17:34

Tgt Ion: 43 Resp: 1123

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.1	37.7#

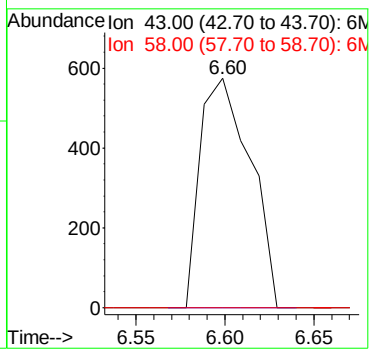

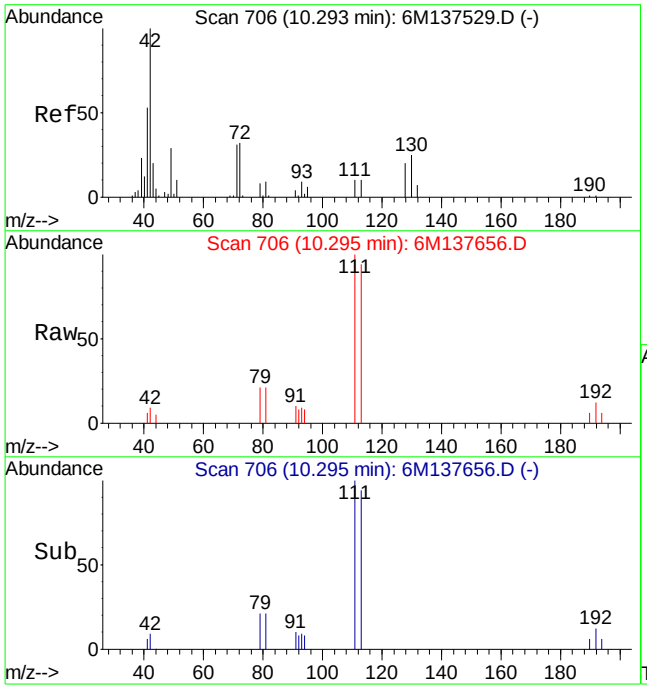

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.30 min Scan# 706
Delta R.T. 0.00 min
Lab File: 6M137656.D
Acq: 8 Mar 2016 17:34

Tgt Ion: 42 Resp: 1798

Ion	Ratio	Lower	Upper
42	100		
72	0.0	21.0	49.0#
71	0.0	20.6	48.2#

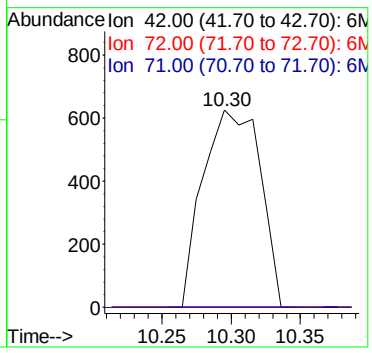

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030816\6M137657.D Vial: 14
Acq On : 8 Mar 2016 18:08 Operator: TMB
Sample : WG560060-01 L16030323-05 8260 4.64g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 09 08:30:25 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	562512	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	411354	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	219502	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	141558	46.9121 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.82%		
43) 1,2-Dichloroethane-d4	11.05	65	171966	43.8927 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 87.78%		
58) Toluene-d8	13.80	98	476125	48.6829 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 97.36%		
80) p-Bromofluorobenzene	17.79	95	195487	48.4864 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 96.98%		

Target Compounds

					Qvalue
13) Acetone	6.59	43	3024	Below Cal	# 72
36) Tetrahydrofuran	10.30	42	1891	Below Cal	# 51
60) Ethyl Methacrylate	13.81	69	946	0.2537 ug/L	# 57

(#) = qualifier out of range (m) = manual integration
6M137657.D 826_SL.M Wed Mar 09 08:30:25 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030816\6M137657.D Vial: 14
Acq On : 8 Mar 2016 18:08 Operator: TMB
Sample : WG560060-01 L16030323-05 8260 4.64g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 8:30 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

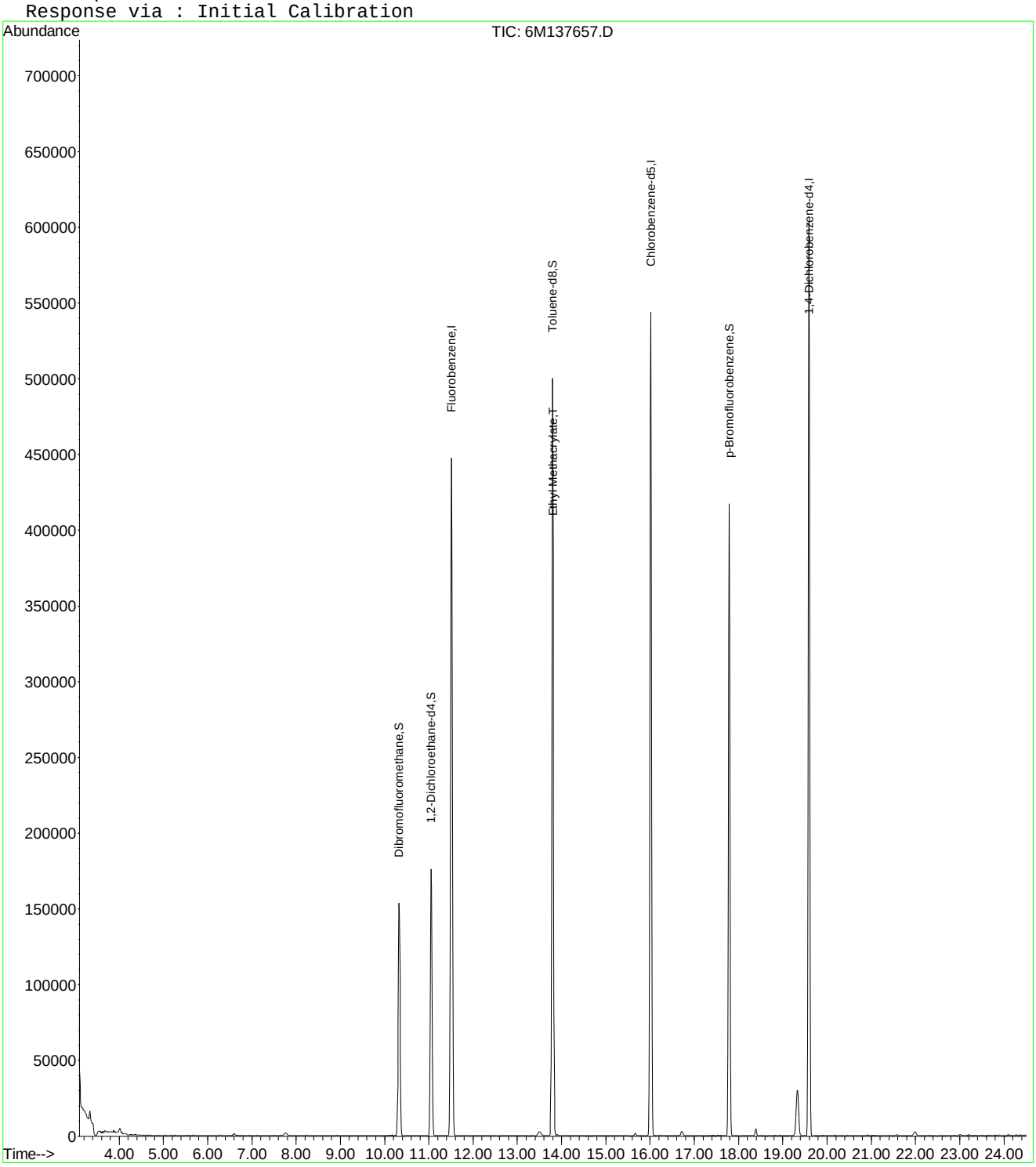

6M137657.D 826_SL.M Wed Mar 09 08:30:25 2016 Page 2

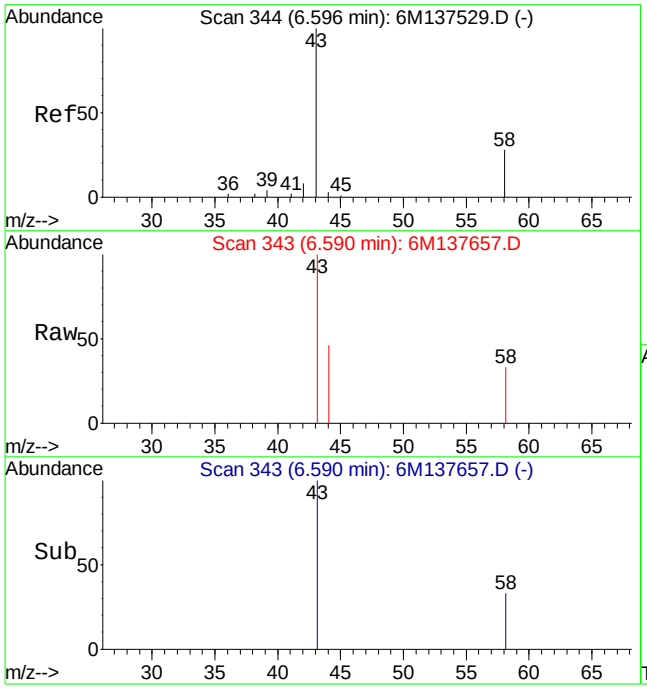

#13
Acetone
Concen: Below Cal
RT: 6.59 min Scan# 343
Delta R.T. 0.00 min
Lab File: 6M137657.D
Acq: 8 Mar 2016 18:08

Tgt Ion: 43 Resp: 3024

Ion	Ratio	Lower	Upper
43	100		
58	12.7	16.1	37.7#

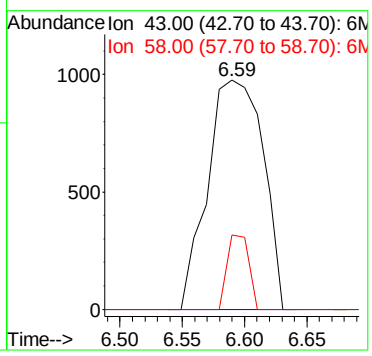

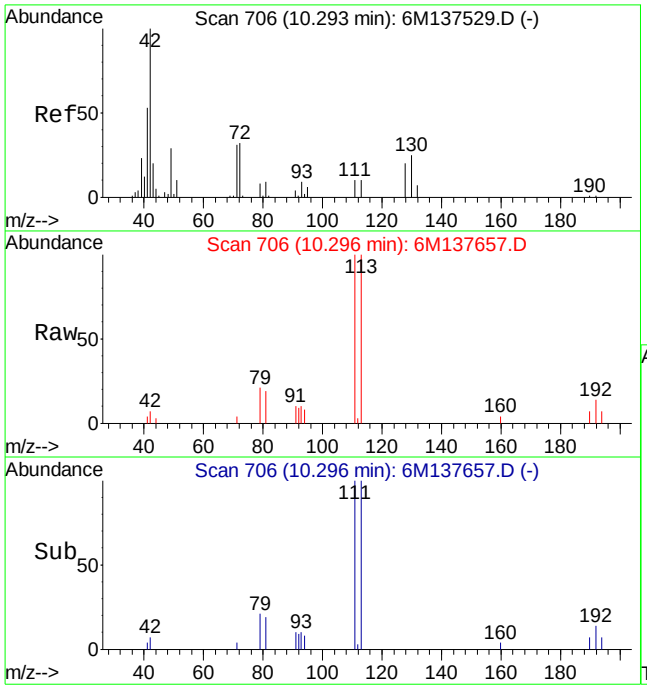

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.30 min Scan# 706
Delta R.T. 0.00 min
Lab File: 6M137657.D
Acq: 8 Mar 2016 18:08

Tgt Ion: 42 Resp: 1891

Ion	Ratio	Lower	Upper
42	100		
72	0.0	21.0	49.0#
71	13.0	20.6	48.2#

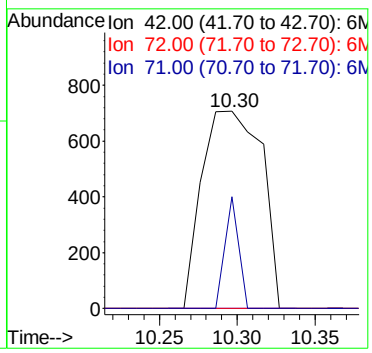

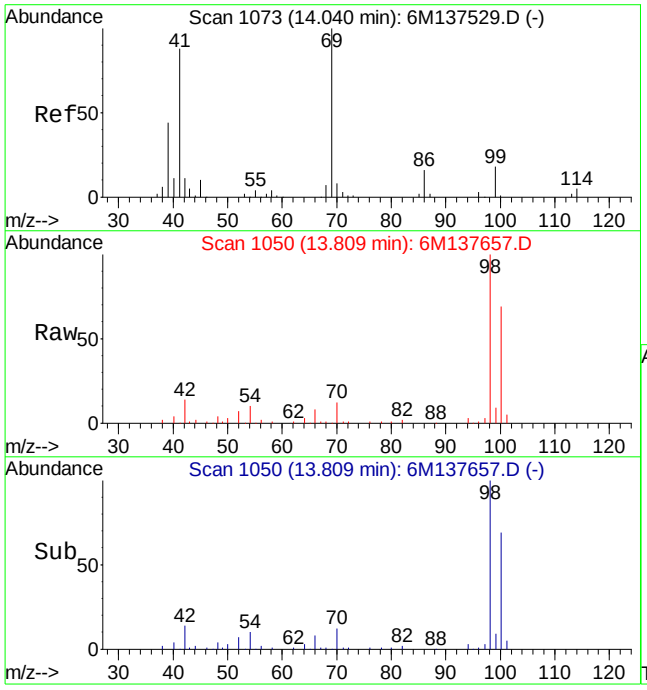

#60
Ethyl Methacrylate
Concen: 0.25 ug/L
RT: 13.81 min Scan# 1050
Delta R.T. -0.22 min
Lab File: 6M137657.D
Acq: 8 Mar 2016 18:08

Tgt Ion: 69 Resp: 946

Ion	Ratio	Lower	Upper
69	100		
41	123.7	50.6	118.2#

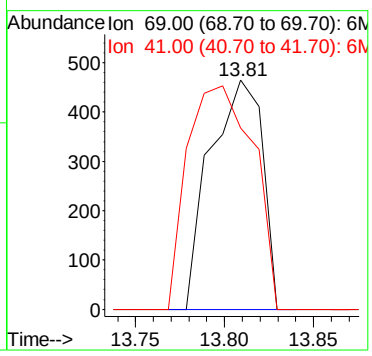

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030816\6M137658.D Vial: 15
Acq On : 8 Mar 2016 18:42 Operator: TMB
Sample : L16030323-06 8260 5.07g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 09 08:30:26 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	487901	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	349731	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	183781	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	118093	45.1205 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 90.24%		
43) 1,2-Dichloroethane-d4	11.06	65	143299	42.1690 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 84.34%		
58) Toluene-d8	13.80	98	415519	49.9722 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.94%		
80) p-Bromofluorobenzene	17.79	95	163464	48.4242 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 96.84%		

Target Compounds					Qvalue
13) Acetone	6.59	43	3741	Below Cal	# 1
36) Tetrahydrofuran	10.29	42	1753	Below Cal	# 40

(#) = qualifier out of range (m) = manual integration
6M137658.D 826_SL.M Wed Mar 09 08:30:26 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030816\6M137658.D Vial: 15
Acq On : 8 Mar 2016 18:42 Operator: TMB
Sample : L16030323-06 8260 5.07g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 8:30 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

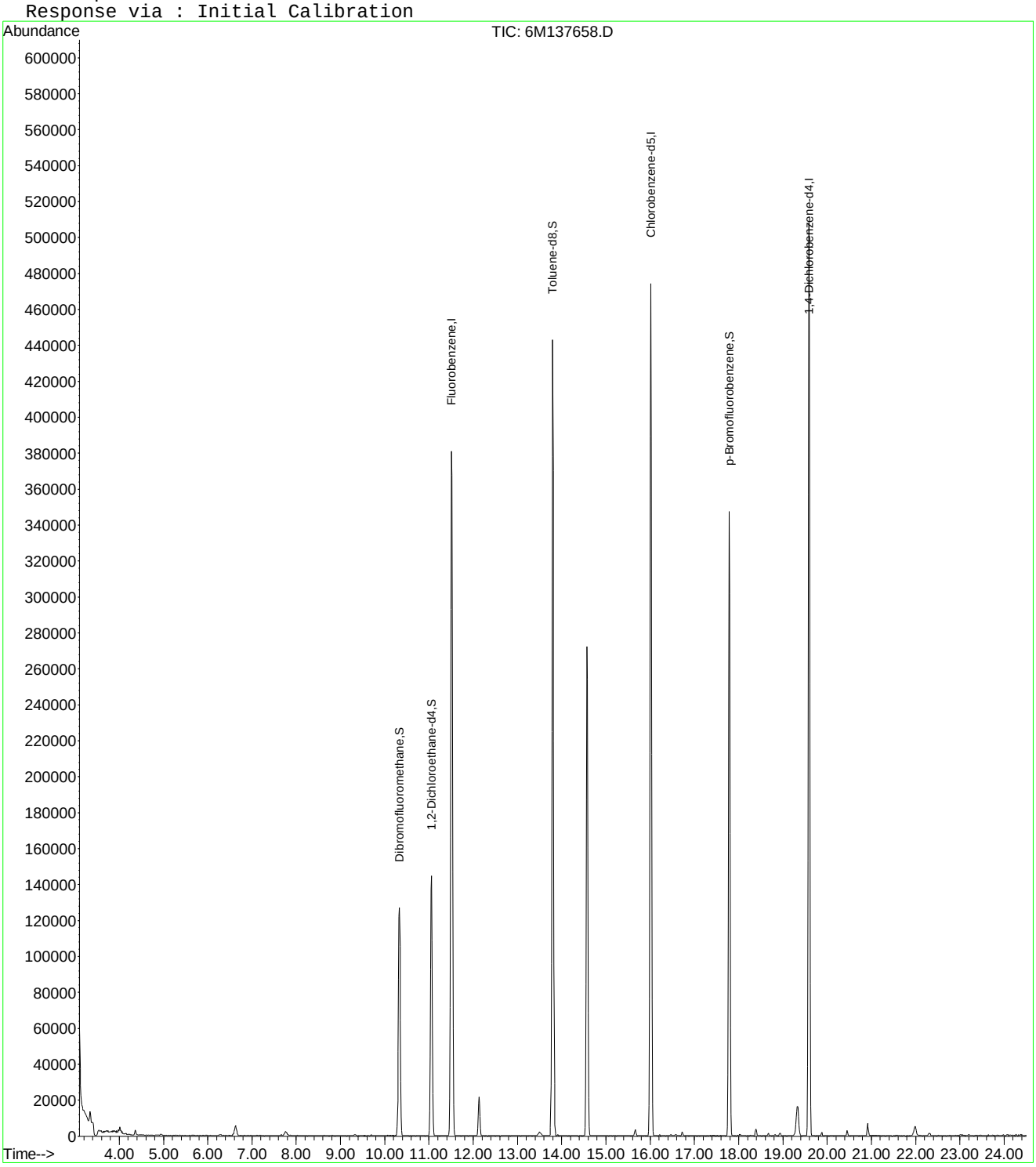

6M137658.D 826_SL.M Wed Mar 09 08:30:26 2016 Page 2

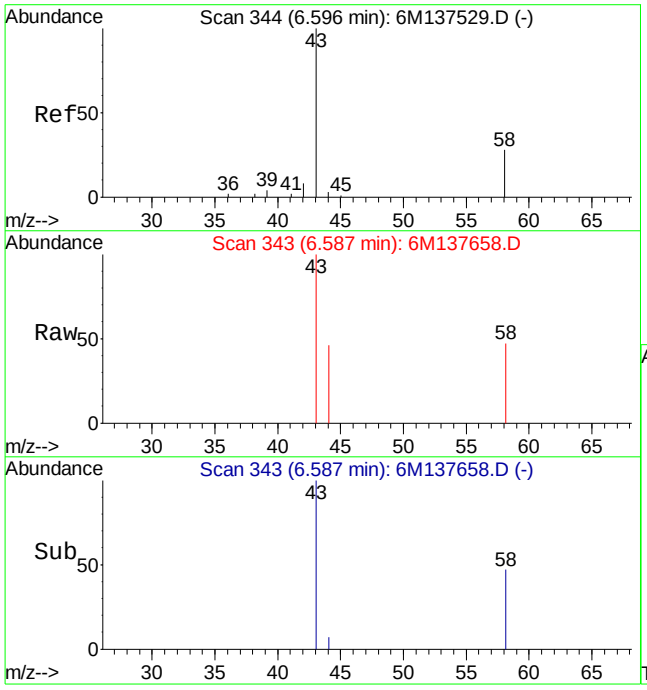

#13
Acetone
Concen: Below Cal
RT: 6.59 min Scan# 343
Delta R.T. 0.00 min
Lab File: 6M137658.D
Acq: 8 Mar 2016 18:42

Tgt Ion: 43 Resp: 3741

Ion	Ratio	Lower	Upper
43	100		
58	306.2	16.1	37.7#

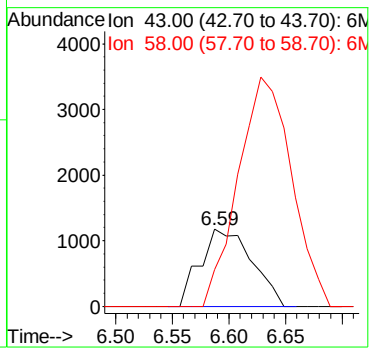

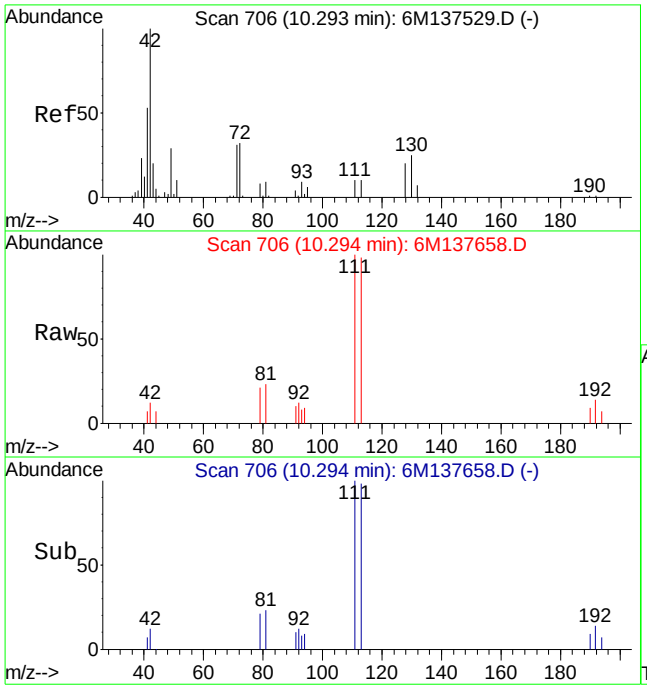

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.29 min Scan# 706
Delta R.T. 0.00 min
Lab File: 6M137658.D
Acq: 8 Mar 2016 18:42

Tgt Ion: 42 Resp: 1753

Ion	Ratio	Lower	Upper
42	100		
72	0.0	21.0	49.0#
71	0.0	20.6	48.2#

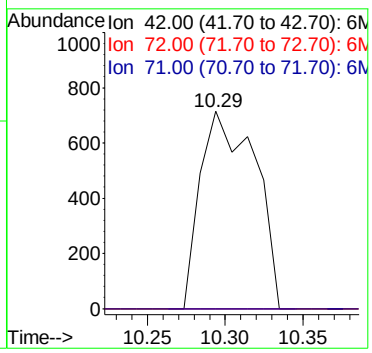

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:35 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:12:24 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	662608	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	467802	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	239669	50.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.32	111	1132	0.3185 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.64%#	
43) 1,2-Dichloroethane-d4	11.05	65	1872	0.4056 ug/L	-0.01
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.82%#	
58) Toluene-d8	13.80	98	5704	0.5128 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	1.02%#	
80) p-Bromofluorobenzene	17.79	95	2210	0.5020 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	1.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	3454	0.5676 ug/L #	66
3) Chloromethane	3.88	50	8579	1.3528 ug/L	90
4) Vinyl Chloride	4.12	62	3760	0.7367 ug/L #	74
5) 1,3-Butadiene	4.18	54	3027	0.7128 ug/L #	61
6) Bromomethane	5.03	94	1550	0.5697 ug/L	88
7) Chloroethane	5.19	64	1482	0.5121 ug/L #	45
8) Trichlorofluoromethane	5.69	101	6717	0.9794 ug/L #	89
10) Isoprene	6.27	67	1888	0.4226 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	1199	0.3663 ug/L #	55
13) Acetone	6.59	43	9375	2.3758 ug/L	94
14) 1,1-Dichloroethene	6.83	61	2956	0.5098 ug/L	84
15) Tert-Butyl Alcohol	6.94	59	200	0.3696 ug/L #	57
18) Methyl acetate	7.39	43	2867	0.7115 ug/L #	64
19) Methylene Chloride	7.67	84	2652	0.7594 ug/L	75
20) Carbon Disulfide	7.72	76	8199	0.7390 ug/L #	82
22) Methyl Tert Butyl Ether	7.88	73	4851	0.4864 ug/L #	63
23) trans-1,2-Dichloroethene	8.16	96	1352	0.4221 ug/L #	10
24) n-Hexane	8.23	57	3942	0.6777 ug/L	92
26) Vinyl Acetate	8.79	43	2062	0.2645 ug/L #	78
27) 1,1-Dichloroethane	8.82	63	3798	0.5499 ug/L #	68
29) 2-Butanone	9.46	43	1832	0.7999 ug/L #	56
31) 2,2-Dichloropropane	9.69	77	2885	0.5204 ug/L	96
32) cis-1,2-Dichloroethene	9.76	96	1812	0.5067 ug/L	93
33) Chloroform	10.01	83	3647	0.5654 ug/L	91
35) Bromochloromethane	10.26	130	694	0.3303 ug/L #	47
36) Tetrahydrofuran	10.29	42	9683	4.2648 ug/L	95
38) 1,1,1-Trichloroethane	10.59	97	2858	0.5017 ug/L	84
39) Cyclohexane	10.62	56	2886	0.4467 ug/L	94
40) 1,1-Dichloropropene	10.82	75	2042	0.4451 ug/L #	76
42) Carbon Tetrachloride	10.99	117	2712	0.5095 ug/L #	85
45) 1,2-Dichloroethane	11.19	62	3101	0.5633 ug/L #	75
46) Benzene	11.23	78	8142	0.5899 ug/L	89
47) Trichloroethene	12.09	130	1950	0.5980 ug/L	81
48) Methylcyclohexane	12.18	83	2990	0.5672 ug/L #	73
49) 1,2-Dichloropropane	12.34	63	1667	0.4489 ug/L #	69
51) Bromodichloromethane	12.68	83	2589	0.5312 ug/L	92
52) Dibromomethane	12.78	93	741	0.3411 ug/L	80
55) cis-1,3-Dichloropropene	13.42	75	2628	0.4894 ug/L #	74
56) Dimethyl Disulfide	13.71	79	853	0.3150 ug/L #	49
59) Toluene	13.92	91	7610	0.5751 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:35 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:12:24 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
60)	Ethyl Methacrylate	14.04	69	1764	0.4160 ug/L		85
62)	trans-1,3-Dichloropropene	14.12	75	2064	0.4056 ug/L	#	71
63)	1,1,2-Trichloroethane	14.37	97	1621	0.5861 ug/L	#	75
64)	2-Hexanone	14.32	43	1822	0.5773 ug/L	#	48
65)	1,3-Dichloropropane	14.75	76	2715	0.5416 ug/L		83
66)	Tetrachloroethene	14.86	166	1836	0.5624 ug/L		91
67)	Dibromochloromethane	15.18	129	1663	0.4623 ug/L		94
68)	1,2-Dibromoethane	15.48	107	1262	0.4462 ug/L		99
69)	1-Chlorohexane	15.59	91	2113	0.5142 ug/L		96
70)	Chlorobenzene	16.07	112	4991	0.5869 ug/L		75
71)	1,1,1,2-Tetrachloroethane	16.11	131	1409	0.4126 ug/L	#	79
72)	Ethylbenzene	16.11	106	2290	0.5032 ug/L		61
73)	m-,p-Xylene	16.22	106	6307	1.1326 ug/L		90
74)	o-Xylene	16.88	106	2685	0.5119 ug/L		71
75)	Styrene	16.92	104	4645	0.5203 ug/L		93
76)	Bromoform	17.49	173	756	0.2977 ug/L	#	62
77)	Isopropylbenzene	17.38	105	7047	0.4998 ug/L		82
79)	1,1,2,2-Tetrachloroethane	17.64	83	1948	0.5203 ug/L		84
83)	n-Propylbenzene	17.98	91	9243	0.5679 ug/L	#	92
84)	Bromobenzene	18.13	156	1885	0.5328 ug/L		100
85)	1,3,5-Trimethylbenzene	18.21	105	6007	0.5185 ug/L		90
86)	2-Chlorotoluene	18.29	91	5403	0.4973 ug/L		88
87)	4-Chlorotoluene	18.35	91	5598	0.5635 ug/L	#	83
88)	a-Methylstyrene	18.69	118	3780	0.6719 ug/L		93
89)	tert-Butylbenzene	18.76	134	1072	0.4440 ug/L		84
90)	1,2,4-Trimethylbenzene	18.82	105	7288	0.5982 ug/L		78
91)	sec-Butylbenzene	19.08	105	8207	0.5532 ug/L		85
92)	p-Isopropyltoluene	19.27	119	6156	0.5029 ug/L		99
93)	1,3-Dichlorobenzene	19.48	146	3876	0.5662 ug/L		99
94)	1,4-Dichlorobenzene	19.64	146	4389	0.6299 ug/L	#	36
95)	n-Butylbenzene	19.89	91	6993	0.5680 ug/L		91
96)	1,2-Dichlorobenzene	20.23	146	3739	0.5676 ug/L		89
98)	1,2,4-Trichlorobenzene	22.76	180	2881	0.6050 ug/L		89
99)	Hexachlorobutadiene	22.95	225	1268	0.4656 ug/L		81
100)	Naphthalene	23.20	128	5965	0.5449 ug/L		95
101)	1,2,3-Trichlorobenzene	23.58	180	2914	0.6214 ug/L	#	69

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

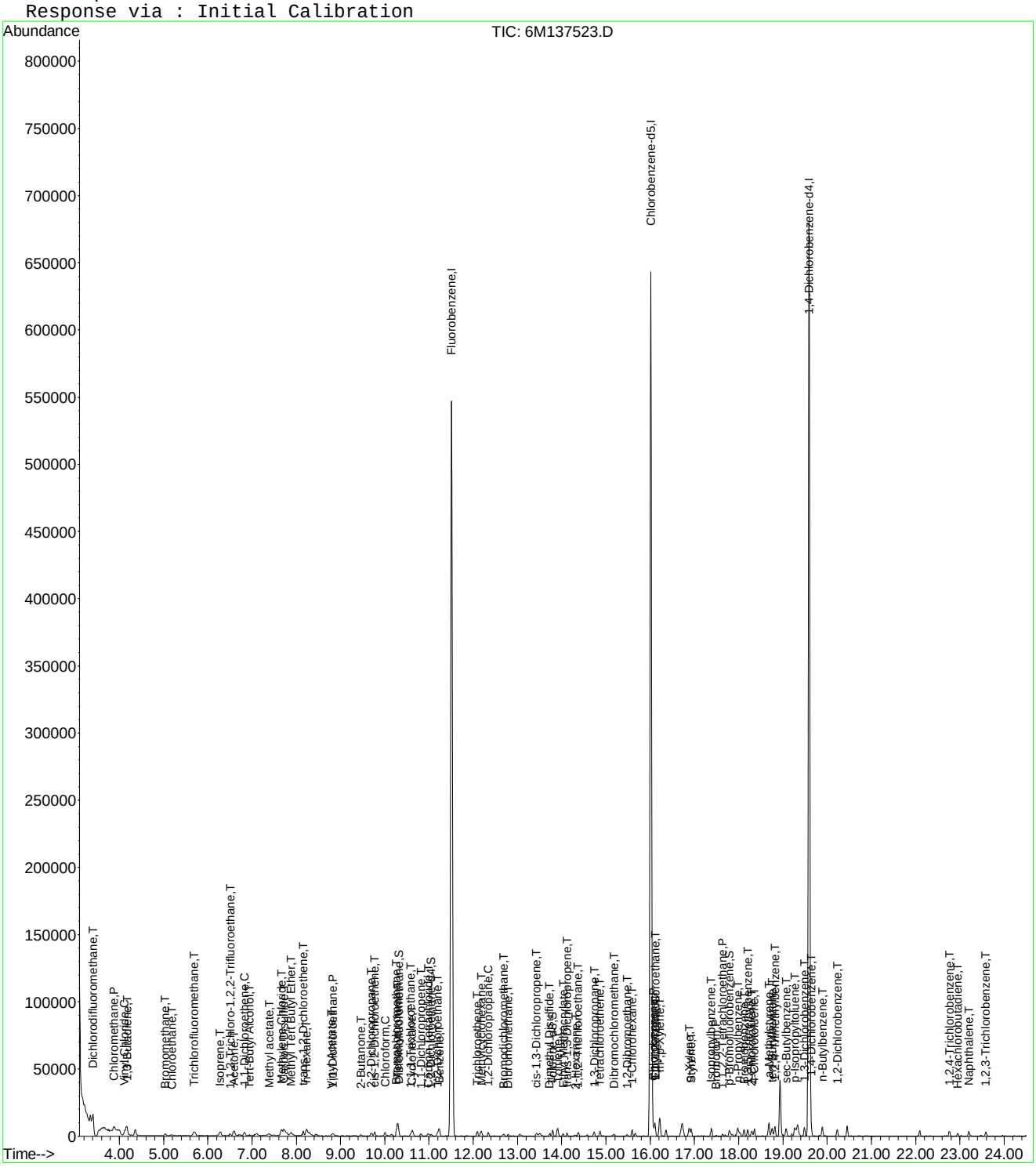

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.5676	0.0	0	0.00
3	P	Chloromethane	-1.0000	1.3528	0.0	0	0.00
4	C	Vinyl Chloride	-1.0000	0.7367	0.0	0	0.00
5	T	1,3-Butadiene	-1.0000	0.7128	0.0	0	0.01
6	T	Bromomethane	-1.0000	0.5697	0.0	0	0.00
7	T	Chloroethane	-1.0000	0.5121	0.0	0	0.00
8	T	Trichlorofluoromethane	-1.0000	0.9794	0.0	0	-0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.24#
10	T	Isoprene	-1.0000	0.4226	0.0	0	-0.01
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.48#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3663	0.0	0	0.00
13	T	Acetone	-1.0000	2.3758	0.0	0	0.00
14	C	1,1-Dichloroethene	-1.0000	0.5098	0.0	0	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.3696	0.0	0	0.00
16	T	Dimethyl Sulfide	-1.0000	0.2328	0.0	0	-0.02
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.38#
18	T	Methyl acetate	-1.0000	0.7115	0.0	0	0.00
19	T	Methylene Chloride	-1.0000	0.7594	0.0	0	0.00
20	T	Carbon Disulfide	-1.0000	0.7390	0.0	0	0.00
21	T	Acrylonitrile	-1.0000	0.1371	0.0	0	0.02
22	T	Methyl Tert Butyl Ether	0.5000	0.4864	2.7	100	-0.01
23	T	trans-1,2-Dichloroethene	-1.0000	0.4221	0.0	0	0.00
24	T	n-Hexane	-1.0000	0.6777	0.0	0	-0.01
25	T	Diisopropyl ether	-1.0000	0.1069	0.0	0	-0.16
26	T	Vinyl Acetate	-1.0000	0.2645	0.0	0	0.00
27	P	1,1-Dichloroethane	-1.0000	0.5499	0.0	0	-0.01
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-9.24#
29	T	2-Butanone	-1.0000	0.7999	0.0	0	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.58#
31	T	2,2-Dichloropropane	-1.0000	0.5204	0.0	0	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.5067	0.0	0	-0.01
33	C	Chloroform	-1.0000	0.5654	0.0	0	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-10.16#
35	T	Bromochloromethane	-1.0000	0.3303	0.0	0	0.00
36	T	Tetrahydrofuran	-1.0000	4.2648	0.0	0	0.00
37	S	Dibromofluoromethane	-1.0000	0.3185	0.0	0	0.00
38	T	1,1,1-Trichloroethane	-1.0000	0.5017	0.0	0	-0.01
39	T	Cyclohexane	-1.0000	0.4467	0.0	0	-0.02
40	T	1,1-Dichloropropene	-1.0000	0.4451	0.0	0	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.94#
42	T	Carbon Tetrachloride	-1.0000	0.5095	0.0	0	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.4056	0.0	0	-0.01
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	-1.0000	0.5633	0.0	0	0.00
46	T	Benzene	0.5000	0.5899	-18.0	100	0.00
47	T	Trichloroethene	-1.0000	0.5980	0.0	0	0.00
48	T	Methylcyclohexane	-1.0000	0.5672	0.0	0	0.00
49	C	1,2-Dichloropropane	-1.0000	0.4489	0.0	0	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-12.67#
51	T	Bromodichloromethane	-1.0000	0.5312	0.0	0	0.00
52	T	Dibromomethane	-1.0000	0.3411	0.0	0	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1346	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-13.07#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.4894	0.0	0	-0.01
56	T	Dimethyl Disulfide	-1.0000	0.3150	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.5128	0.0	0	0.00
59	C	Toluene	0.5000	0.5751	-15.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.4160	0.0	0	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	-1.0000	0.4056	0.0	0	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.5861	0.0	0	0.00
64	T	2-Hexanone	-1.0000	0.5773	0.0	0	0.00
65	T	1,3-Dichloropropane	-1.0000	0.5416	0.0	0	0.00
66	T	Tetrachloroethene	-1.0000	0.5624	0.0	0	-0.01
67	T	Dibromochloromethane	-1.0000	0.4623	0.0	0	0.00
68	T	1,2-Dibromoethane	-1.0000	0.4462	0.0	0	0.00
69	T	1-Chlorohexane	-1.0000	0.5142	0.0	0	0.00
70	P	Chlorobenzene	-1.0000	0.5869	0.0	0	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.4126	0.0	0	0.00
72	C	Ethylbenzene	0.5000	0.5032	-0.6	100	0.00
73	T	m-,p-Xylene	1.0000	1.1326	-13.3	100	0.00
74	T	o-Xylene	0.5000	0.5119	-2.4	100	0.00
75	T	Styrene	-1.0000	0.5203	0.0	0	0.00
76	P	Bromoform	-1.0000	0.2977	0.0	0	0.00
77	T	Isopropylbenzene	-1.0000	0.4998	0.0	0	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.5203	0.0	0	-0.01
80	S	p-Bromofluorobenzene	-1.0000	0.5020	0.0	0	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.1823	0.0	0	0.01
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.1476	0.0	0	0.00
83	T	n-Propylbenzene	-1.0000	0.5679	0.0	0	0.00
84	T	Bromobenzene	-1.0000	0.5328	0.0	0	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.5185	0.0	0	0.00
86	T	2-Chlorotoluene	-1.0000	0.4973	0.0	0	-0.01
87	T	4-Chlorotoluene	-1.0000	0.5635	0.0	0	0.00
88	T	a-Methylstyrene	-1.0000	0.6719	0.0	0	0.00
89	T	tert-Butylbenzene	-1.0000	0.4440	0.0	0	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.5982	0.0	0	0.00
91	T	sec-Butylbenzene	-1.0000	0.5532	0.0	0	0.00
92	T	p-Isopropyltoluene	-1.0000	0.5029	0.0	0	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.5662	0.0	0	0.00
94	T	1,4-Dichlorobenzene	-1.0000	0.6299	0.0	0	0.00
95	T	n-Butylbenzene	-1.0000	0.5680	0.0	0	0.00
96	T	1,2-Dichlorobenzene	-1.0000	0.5676	0.0	0	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-21.41#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.6050	0.0	0	0.00
99	T	Hexachlorobutadiene	-1.0000	0.4656	0.0	0	-0.01
100	T	Naphthalene	-1.0000	0.5449	0.0	0	0.00
101	T	1,2,3-Trichlorobenzene	-1.0000	0.6214	0.0	0	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137523.D 826_SL.M Mon Feb 29 16:01:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:37 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	594307	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	418336	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	217318	50.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.34	111	2084	0.6537 ug/L	0.02
Spiked Amount 50.000	Range 80 - 120		Recovery =	1.30%#	
43) 1,2-Dichloroethane-d4	11.06	65	2834	0.6847 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	1.36%#	
58) Toluene-d8	13.80	98	7503	0.7544 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	1.50%#	
80) p-Bromofluorobenzene	17.79	95	3135	0.7854 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	1.58%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	6025	1.1039 ug/L	88
3) Chloromethane	3.88	50	8942	1.5721 ug/L	80
4) Vinyl Chloride	4.13	62	5159	1.1269 ug/L	96
5) 1,3-Butadiene	4.18	54	4578	1.2019 ug/L #	67
6) Bromomethane	5.03	94	2477	1.0150 ug/L	94
7) Chloroethane	5.20	64	2347	0.9041 ug/L #	77
8) Trichlorofluoromethane	5.70	101	7751	1.2600 ug/L #	92
9) Diethyl ether	6.23	59	14414	5.0935 ug/L	81
10) Isoprene	6.28	67	3598	0.8978 ug/L	94
11) Acrolein	6.48	56	1307	2.4320 ug/L #	51
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	3197	1.0888 ug/L	73
13) Acetone	6.60	43	5933	0.3832 ug/L	97
14) 1,1-Dichloroethene	6.84	61	5455	1.0489 ug/L	83
15) Tert-Butyl Alcohol	6.93	59	4660	9.6025 ug/L #	86
16) Dimethyl Sulfide	7.13	62	2208	0.8750 ug/L	94
18) Methyl acetate	7.40	43	3574	0.9889 ug/L #	64
19) Methylene Chloride	7.66	84	3682	1.1755 ug/L	75
20) Carbon Disulfide	7.72	76	11945	1.2004 ug/L	97
21) Acrylonitrile	7.86	53	3216	2.1651 ug/L	84
22) Methyl Tert Butyl Ether	7.90	73	8242	0.9214 ug/L	91
23) trans-1,2-Dichloroethene	8.17	96	2437	0.8482 ug/L	60
24) n-Hexane	8.23	57	4827	0.9252 ug/L	90
25) Diisopropyl ether	8.62	45	67920	5.0212 ug/L	97
26) Vinyl Acetate	8.80	43	6077	0.8691 ug/L #	78
27) 1,1-Dichloroethane	8.83	63	6295	1.0162 ug/L	88
28) Ethyl-Tert-Butyl ether	9.25	59	49996	4.6114 ug/L	96
29) 2-Butanone	9.47	43	2247	1.0938 ug/L #	56
30) Propionitrile	9.57	54	2816	4.9529 ug/L #	71
31) 2,2-Dichloropropane	9.70	77	5030	1.0116 ug/L	94
32) cis-1,2-Dichloroethene	9.77	96	2740	0.8542 ug/L	83
33) Chloroform	10.00	83	6439	1.1130 ug/L	98
35) Bromochloromethane	10.26	130	1361	0.7221 ug/L	97
36) Tetrahydrofuran	10.29	42	10271	5.4403 ug/L	94
38) 1,1,1-Trichloroethane	10.61	97	5241	1.0257 ug/L	95
39) Cyclohexane	10.63	56	5811	1.0029 ug/L	86
40) 1,1-Dichloropropene	10.82	75	4038	0.9813 ug/L #	89
41) Tert-Amyl-Methyl ether	10.95	73	39464	4.5884 ug/L #	83
42) Carbon Tetrachloride	11.00	117	4871	1.0202 ug/L #	88
45) 1,2-Dichloroethane	11.19	62	4707	0.9533 ug/L #	86
46) Benzene	11.23	78	13412	1.0834 ug/L	93

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:37 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
47)	Trichloroethene	12.09	130	2983	1.0199 ug/L		90
48)	Methylcyclohexane	12.19	83	4295	0.9084 ug/L		77
49)	1,2-Dichloropropane	12.35	63	3111	0.9339 ug/L	#	69
51)	Bromodichloromethane	12.68	83	4337	0.9921 ug/L		97
52)	Dibromomethane	12.77	93	1629	0.8361 ug/L		91
53)	2-Chloroethyl Vinyl Ether	13.04	63	1268	0.6921 ug/L	#	43
54)	4-Methyl-2-Pentanone	13.08	58	633	0.4563 ug/L	#	34
55)	cis-1,3-Dichloropropene	13.43	75	4040	0.8388 ug/L		98
56)	Dimethyl Disulfide	13.72	79	1323	0.5447 ug/L	#	49
59)	Toluene	13.91	91	12207	1.0316 ug/L		97
60)	Ethyl Methacrylate	14.03	69	2818	0.7432 ug/L		100
62)	trans-1,3-Dichloropropene	14.12	75	3878	0.8522 ug/L		100
63)	1,1,2-Trichloroethane	14.38	97	2441	0.9869 ug/L		93
64)	2-Hexanone	14.31	43	2064	0.7313 ug/L		93
65)	1,3-Dichloropropane	14.73	76	4145	0.9246 ug/L		83
66)	Tetrachloroethene	14.87	166	3009	1.0308 ug/L		96
67)	Dibromochloromethane	15.17	129	2840	0.8829 ug/L		96
68)	1,2-Dibromoethane	15.48	107	1912	0.7559 ug/L		85
69)	1-Chlorohexane	15.59	91	3045	0.8286 ug/L	#	59
70)	Chlorobenzene	16.06	112	8053	1.0589 ug/L	#	66
71)	1,1,1,2-Tetrachloroethane	16.11	131	2914	0.9542 ug/L		92
72)	Ethylbenzene	16.10	106	3899	0.9580 ug/L		89
73)	m-,p-Xylene	16.21	106	9999	2.0079 ug/L		90
74)	o-Xylene	16.88	106	4283	0.9131 ug/L		84
75)	Styrene	16.92	104	6414	0.8034 ug/L		92
76)	Bromoform	17.49	173	1706	0.7511 ug/L	#	70
77)	Isopropylbenzene	17.38	105	11886	0.9427 ug/L		95
79)	1,1,2,2-Tetrachloroethane	17.65	83	3500	1.0310 ug/L		95
81)	1,2,3-Trichloropropane	17.87	110	811	0.7802 ug/L	#	55
82)	trans-1,4-Dichloro-2-Buten	17.93	53	959	0.7652 ug/L		70
83)	n-Propylbenzene	17.98	91	14256	0.9660 ug/L	#	91
84)	Bromobenzene	18.13	156	3248	1.0125 ug/L		98
85)	1,3,5-Trimethylbenzene	18.21	105	9438	0.8984 ug/L		95
86)	2-Chlorotoluene	18.30	91	9880	1.0030 ug/L		97
87)	4-Chlorotoluene	18.35	91	8357	0.9278 ug/L		93
88)	a-Methylstyrene	18.68	118	4374	0.8574 ug/L		95
89)	tert-Butylbenzene	18.75	134	1999	0.9131 ug/L		84
90)	1,2,4-Trimethylbenzene	18.82	105	10630	0.9622 ug/L		79
91)	sec-Butylbenzene	19.07	105	13062	0.9709 ug/L		95
92)	p-Isopropyltoluene	19.27	119	10400	0.9370 ug/L		89
93)	1,3-Dichlorobenzene	19.48	146	6397	1.0306 ug/L		97
94)	1,4-Dichlorobenzene	19.64	146	7211	1.1413 ug/L		83
95)	n-Butylbenzene	19.88	91	10811	0.9684 ug/L		88
96)	1,2-Dichlorobenzene	20.22	146	5973	1.0000 ug/L		96
97)	1,2-Dibromo-3-Chloropropan	21.41	75	191	0.2543 ug/L	#	1
98)	1,2,4-Trichlorobenzene	22.76	180	4430	1.0259 ug/L		93
99)	Hexachlorobutadiene	22.94	225	2385	0.9658 ug/L		90
100)	Naphthalene	23.20	128	8770	0.8835 ug/L		92
101)	1,2,3-Trichlorobenzene	23.59	180	4309	1.0134 ug/L		95

(#) = qualifier out of range (m) = manual integration
6M137524.D 826_SL.M Mon Feb 29 16:01:38 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

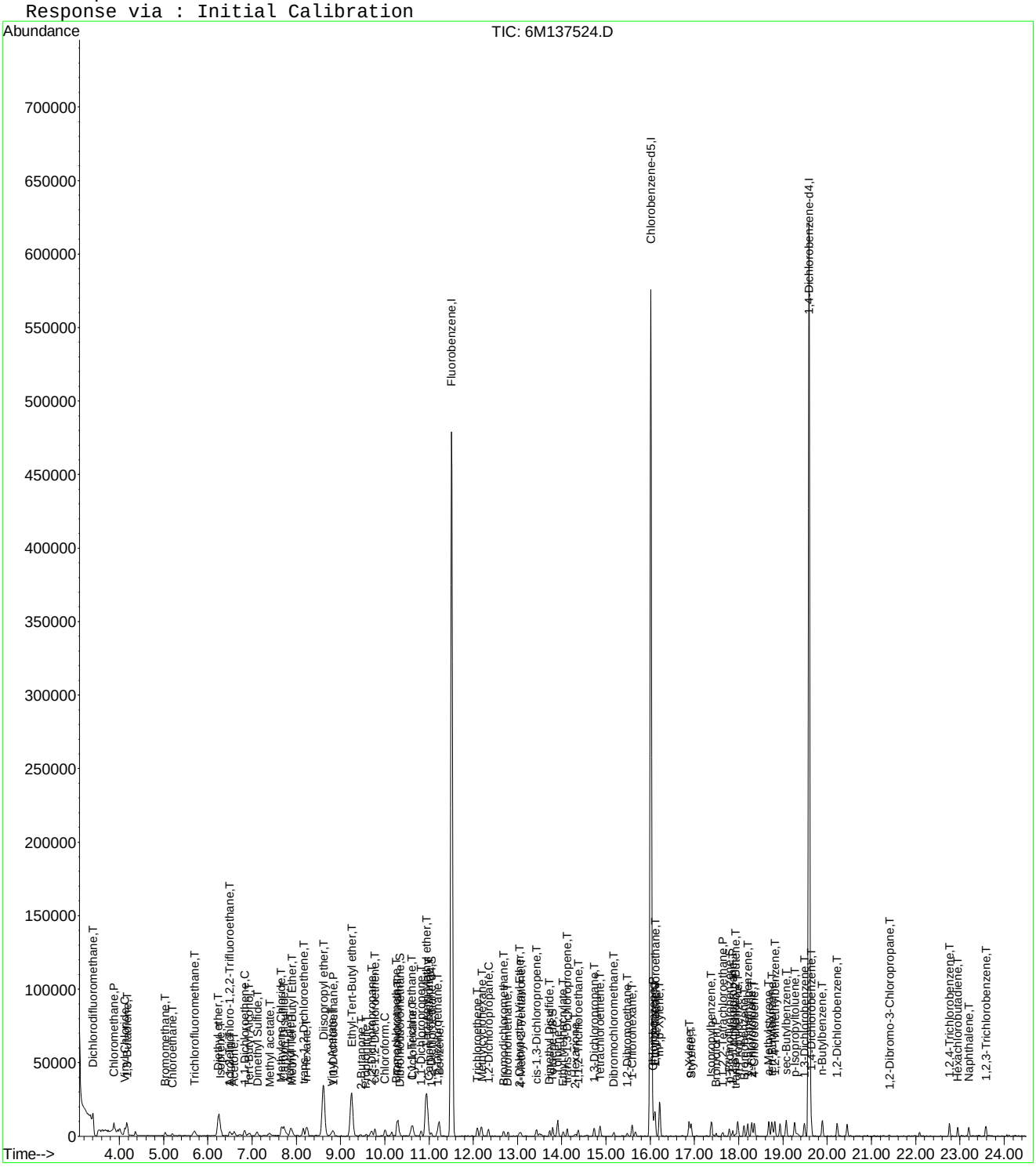

6M137524.D 826_SL.M Mon Feb 29 16:01:38 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	1.1039	0.0	0	0.00
3	P	Chloromethane	-1.0000	1.5721	0.0	0	0.00
4	C	Vinyl Chloride	-1.0000	1.1269	0.0	0	0.01
5	T	1,3-Butadiene	-1.0000	1.2019	0.0	0	0.01
6	T	Bromomethane	-1.0000	1.0150	0.0	0	0.00
7	T	Chloroethane	-1.0000	0.9041	0.0	0	0.00
8	T	Trichlorofluoromethane	-1.0000	1.2600	0.0	0	0.00
9	T	Diethyl ether	5.0000	5.0935	-1.9	100	-0.01
10	T	Isoprene	-1.0000	0.8978	0.0	0	0.00
11	T	Acrolein	2.5000	2.4320	2.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	1.0888	0.0	0	-0.01
13	T	Acetone	-1.0000	0.3832	0.0	0	0.01
14	C	1,1-Dichloroethene	-1.0000	1.0489	0.0	0	0.00
15	T	Tert-Butyl Alcohol	10.0000	9.6025	4.0	100	0.00
16	T	Dimethyl Sulfide	-1.0000	0.8750	0.0	0	0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.38#
18	T	Methyl acetate	-1.0000	0.9889	0.0	0	0.01
19	T	Methylene Chloride	-1.0000	1.1755	0.0	0	-0.01
20	T	Carbon Disulfide	-1.0000	1.2004	0.0	0	0.00
21	T	Acrylonitrile	2.5000	2.1651	13.4	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9214	7.9	100	0.00
23	T	trans-1,2-Dichloroethene	-1.0000	0.8482	0.0	0	0.00
24	T	n-Hexane	-1.0000	0.9252	0.0	0	-0.01
25	T	Diisopropyl ether	5.0000	5.0212	-0.4	100	0.01
26	T	Vinyl Acetate	-1.0000	0.8691	0.0	0	0.00
27	P	1,1-Dichloroethane	-1.0000	1.0162	0.0	0	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.6114	7.8	100	0.01
29	T	2-Butanone	-1.0000	1.0938	0.0	0	0.02
30	T	Propionitrile	5.0000	4.9529	0.9	100	-0.01
31	T	2,2-Dichloropropane	-1.0000	1.0116	0.0	0	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.8542	0.0	0	0.00
33	C	Chloroform	-1.0000	1.1130	0.0	0	-0.01
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-10.16#
35	T	Bromochloromethane	-1.0000	0.7221	0.0	0	0.00
36	T	Tetrahydrofuran	5.0000	5.4403	-8.8	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.6537	0.0	0	0.02
38	T	1,1,1-Trichloroethane	-1.0000	1.0257	0.0	0	0.00
39	T	Cyclohexane	-1.0000	1.0029	0.0	0	-0.01
40	T	1,1-Dichloropropene	-1.0000	0.9813	0.0	0	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	4.5884	8.2	100	0.00
42	T	Carbon Tetrachloride	-1.0000	1.0202	0.0	0	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.6847	0.0	0	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	-1.0000	0.9533	0.0	0	0.00
46	T	Benzene	1.0000	1.0834	-8.3	100	0.00
47	T	Trichloroethene	-1.0000	1.0199	0.0	0	0.00
48	T	Methylcyclohexane	-1.0000	0.9084	0.0	0	0.01
49	C	1,2-Dichloropropane	-1.0000	0.9339	0.0	0	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-12.67#
51	T	Bromodichloromethane	-1.0000	0.9921	0.0	0	0.00
52	T	Dibromomethane	-1.0000	0.8361	0.0	0	-0.01
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.6921	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.4563	0.0	0	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.8388	0.0	0	0.00
56	T	Dimethyl Disulfide	-1.0000	0.5447	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.7544	0.0	0	0.00
59	C	Toluene	1.0000	1.0316	-3.2	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.7432	0.0	0	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	-1.0000	0.8522	0.0	0	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.9869	0.0	0	0.00
64	T	2-Hexanone	-1.0000	0.7313	0.0	0	0.00
65	T	1,3-Dichloropropane	-1.0000	0.9246	0.0	0	0.00
66	T	Tetrachloroethene	-1.0000	1.0308	0.0	0	0.00
67	T	Dibromochloromethane	-1.0000	0.8829	0.0	0	0.00
68	T	1,2-Dibromoethane	-1.0000	0.7559	0.0	0	0.00
69	T	1-Chlorohexane	-1.0000	0.8286	0.0	0	0.00
70	P	Chlorobenzene	-1.0000	1.0589	0.0	0	-0.01
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.9542	0.0	0	0.00
72	C	Ethylbenzene	1.0000	0.9580	4.2	100	0.00
73	T	m-,p-Xylene	2.0000	2.0079	-0.4	100	-0.01
74	T	o-Xylene	1.0000	0.9132	8.7	100	0.00
75	T	Styrene	-1.0000	0.8034	0.0	0	0.00
76	P	Bromoform	-1.0000	0.7511	0.0	0	0.00
77	T	Isopropylbenzene	-1.0000	0.9427	0.0	0	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	1.0310	0.0	0	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.7854	0.0	0	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.7802	0.0	0	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.7652	0.0	0	0.00
83	T	n-Propylbenzene	-1.0000	0.9660	0.0	0	0.00
84	T	Bromobenzene	-1.0000	1.0125	0.0	0	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.8984	0.0	0	0.00
86	T	2-Chlorotoluene	-1.0000	1.0030	0.0	0	0.00
87	T	4-Chlorotoluene	-1.0000	0.9278	0.0	0	0.00
88	T	a-Methylstyrene	-1.0000	0.8574	0.0	0	-0.01
89	T	tert-Butylbenzene	-1.0000	0.9131	0.0	0	-0.01
90	T	1,2,4-Trimethylbenzene	-1.0000	0.9622	0.0	0	0.00
91	T	sec-Butylbenzene	-1.0000	0.9709	0.0	0	0.00
92	T	p-Isopropyltoluene	-1.0000	0.9370	0.0	0	0.00
93	T	1,3-Dichlorobenzene	-1.0000	1.0306	0.0	0	0.00
94	T	1,4-Dichlorobenzene	-1.0000	1.1413	0.0	0	0.00
95	T	n-Butylbenzene	-1.0000	0.9684	0.0	0	-0.01
96	T	1,2-Dichlorobenzene	-1.0000	1.0000	0.0	0	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.2543	0.0	0	0.00
98	T	1,2,4-Trichlorobenzene	-1.0000	1.0259	0.0	0	0.00
99	T	Hexachlorobutadiene	-1.0000	0.9658	0.0	0	-0.01
100	T	Naphthalene	-1.0000	0.8835	0.0	0	0.00
101	T	1,2,3-Trichlorobenzene	-1.0000	1.0134	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137524.D 826_SL.M Mon Feb 29 16:02:09 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:38 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	572212	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	404562	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	206668	50.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.32	111	3202	1.0431 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	2.08%#	
43) 1,2-Dichloroethane-d4	11.05	65	4123	1.0345 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	2.06%#	
58) Toluene-d8	13.80	98	10309	1.0718 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	2.14%#	
80) p-Bromofluorobenzene	17.79	95	4120	1.0853 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	2.18%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	8843	1.6827 ug/L	90
3) Chloromethane	3.88	50	13225	2.4149 ug/L	95
4) Vinyl Chloride	4.12	62	8482	1.9243 ug/L	95
5) 1,3-Butadiene	4.18	54	8044	2.1934 ug/L	77
6) Bromomethane	5.04	94	4396	1.8709 ug/L	94
7) Chloroethane	5.20	64	4555	1.8225 ug/L	99
8) Trichlorofluoromethane	5.70	101	12235	2.0657 ug/L #	96
9) Diethyl ether	6.24	59	66018	24.2296 ug/L	90
10) Isoprene	6.28	67	6318	1.6374 ug/L	84
11) Acrolein	6.49	56	6390	12.3492 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	4561	1.6133 ug/L	91
13) Acetone	6.60	43	7504	1.8809 ug/L	97
14) 1,1-Dichloroethene	6.83	61	8701	1.7376 ug/L	89
15) Tert-Butyl Alcohol	6.94	59	20238	43.3134 ug/L	94
16) Dimethyl Sulfide	7.11	62	4075	1.6773 ug/L	98
17) Iodomethane	7.39	142	581	5.2052 ug/L #	30
18) Methyl acetate	7.39	43	6390	1.8363 ug/L #	70
19) Methylene Chloride	7.67	84	5869	1.9461 ug/L	65
20) Carbon Disulfide	7.71	76	18795	1.9617 ug/L	99
21) Acrylonitrile	7.86	53	16272	11.3775 ug/L	99
22) Methyl Tert Butyl Ether	7.89	73	15172	1.7617 ug/L	96
23) trans-1,2-Dichloroethene	8.16	96	5205	1.8816 ug/L	79
24) n-Hexane	8.23	57	9310	1.8534 ug/L	99
25) Diisopropyl ether	8.61	45	320400	24.6012 ug/L	97
26) Vinyl Acetate	8.80	43	10816	1.6066 ug/L #	78
27) 1,1-Dichloroethane	8.83	63	11076	1.8571 ug/L	98
28) Ethyl-Tert-Butyl ether	9.25	59	254827	24.4116 ug/L	95
29) 2-Butanone	9.45	43	4021	2.0330 ug/L #	56
30) Propionitrile	9.58	54	12821	23.4210 ug/L	98
31) 2,2-Dichloropropane	9.69	77	9442	1.9723 ug/L	95
32) cis-1,2-Dichloroethene	9.77	96	6066	1.9642 ug/L	93
33) Chloroform	10.01	83	11484	2.0618 ug/L	99
34) 1-Bromopropane	10.16	122	398	0.9400 ug/L	97
35) Bromochloromethane	10.27	130	3448	1.9001 ug/L	92
36) Tetrahydrofuran	10.29	42	31678	22.2128 ug/L	93
38) 1,1,1-Trichloroethane	10.60	97	9432	1.9171 ug/L	98
39) Cyclohexane	10.63	56	9073	1.6263 ug/L	92
40) 1,1-Dichloropropene	10.82	75	7003	1.7675 ug/L	93
41) Tert-Amyl-Methyl ether	10.95	73	196452	23.7231 ug/L #	87
42) Carbon Tetrachloride	10.99	117	8034	1.7476 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:38 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	8853	1.8622 ug/L #	93
46)	Benzene	11.23	78	23723	1.9902 ug/L	97
47)	Trichloroethene	12.09	130	5099	1.8107 ug/L	92
48)	Methylcyclohexane	12.17	83	7350	1.6146 ug/L	79
49)	1,2-Dichloropropane	12.34	63	5698	1.7766 ug/L	95
50)	1,4-Dioxane	12.67	88	1122	55.6272 ug/L	88
51)	Bromodichloromethane	12.68	83	7699	1.8293 ug/L	96
52)	Dibromomethane	12.79	93	3316	1.7677 ug/L	91
53)	2-Chloroethyl Vinyl Ether	13.04	63	2386	1.3526 ug/L #	61
54)	4-Methyl-2-Pentanone	13.06	58	1423	1.0653 ug/L #	60
55)	cis-1,3-Dichloropropene	13.43	75	7739	1.6689 ug/L	96
56)	Dimethyl Disulfide	13.72	79	3072	1.3135 ug/L #	66
59)	Toluene	13.91	91	21516	1.8801 ug/L	99
60)	Ethyl Methacrylate	14.03	69	5274	1.4383 ug/L	90
62)	trans-1,3-Dichloropropene	14.12	75	7466	1.6966 ug/L	95
63)	1,1,2-Trichloroethane	14.37	97	4294	1.7952 ug/L	96
64)	2-Hexanone	14.32	43	4342	1.5908 ug/L	87
65)	1,3-Dichloropropane	14.74	76	7896	1.8213 ug/L	99
66)	Tetrachloroethene	14.88	166	5376	1.9043 ug/L	96
67)	Dibromochloromethane	15.17	129	5153	1.6564 ug/L	94
68)	1,2-Dibromoethane	15.47	107	4387	1.7934 ug/L	97
69)	1-Chlorohexane	15.58	91	5799	1.6318 ug/L	88
70)	Chlorobenzene	16.07	112	14803	2.0127 ug/L	82
71)	1,1,1,2-Tetrachloroethane	16.11	131	5636	1.9085 ug/L	89
72)	Ethylbenzene	16.10	106	7654	1.9447 ug/L	97
73)	m-,p-Xylene	16.22	106	17383	3.6096 ug/L	95
74)	o-Xylene	16.88	106	7997	1.7630 ug/L	95
75)	Styrene	16.92	104	12496	1.6186 ug/L	87
76)	Bromoform	17.49	173	3589	1.6340 ug/L	95
77)	Isopropylbenzene	17.38	105	20776	1.7039 ug/L	96
79)	1,1,2,2-Tetrachloroethane	17.64	83	5699	1.7652 ug/L	97
81)	1,2,3-Trichloropropane	17.86	110	1672	1.6915 ug/L	85
82)	trans-1,4-Dichloro-2-Buten	17.93	53	2042	1.7133 ug/L	78
83)	n-Propylbenzene	17.98	91	25104	1.7886 ug/L #	95
84)	Bromobenzene	18.13	156	5535	1.8143 ug/L	100
85)	1,3,5-Trimethylbenzene	18.21	105	17326	1.7343 ug/L	94
86)	2-Chlorotoluene	18.30	91	16320	1.7421 ug/L	90
87)	4-Chlorotoluene	18.35	91	17884	2.0879 ug/L	93
88)	a-Methylstyrene	18.69	118	7613	1.5692 ug/L	95
89)	tert-Butylbenzene	18.76	134	3612	1.7349 ug/L	82
90)	1,2,4-Trimethylbenzene	18.82	105	18800	1.7894 ug/L	86
91)	sec-Butylbenzene	19.08	105	23176	1.8115 ug/L	95
92)	p-Isopropyltoluene	19.26	119	18048	1.7099 ug/L	98
93)	1,3-Dichlorobenzene	19.48	146	10999	1.8633 ug/L	93
94)	1,4-Dichlorobenzene	19.64	146	12629	2.1018 ug/L	96
95)	n-Butylbenzene	19.89	91	18864	1.7769 ug/L	98
96)	1,2-Dichlorobenzene	20.23	146	10946	1.9270 ug/L	93
97)	1,2-Dibromo-3-Chloropropan	21.40	75	890	1.2459 ug/L	91
98)	1,2,4-Trichlorobenzene	22.77	180	8004	1.9491 ug/L	94
99)	Hexachlorobutadiene	22.95	225	4367	1.8595 ug/L	98
100)	Naphthalene	23.20	128	15712	1.6644 ug/L	96
101)	1,2,3-Trichlorobenzene	23.59	180	7942	1.9641 ug/L	93

(#) = qualifier out of range (m) = manual integration
6M137525.D 826_SL.M Mon Feb 29 16:01:38 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

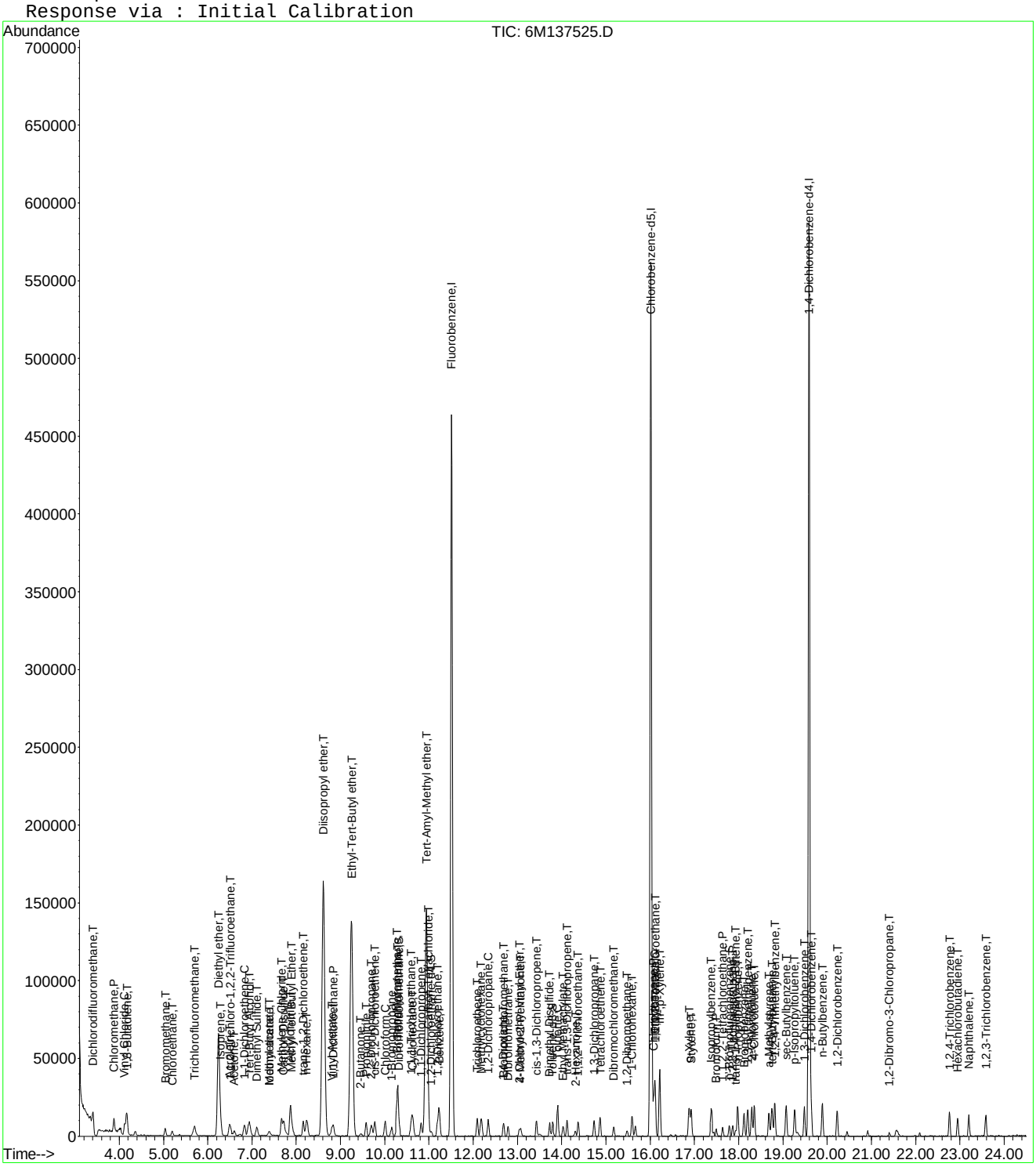

6M137525.D 826_SL.M Mon Feb 29 16:01:39 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.6827	15.9	100	0.00
3	P	Chloromethane	2.0000	2.4150	-20.7	100	0.00
4	C	Vinyl Chloride	2.0000	1.9243	3.8	100	0.00
5	T	1,3-Butadiene	-1.0000	2.1934	0.0	0	0.01
6	T	Bromomethane	2.0000	1.8709	6.5	100	0.01
7	T	Chloroethane	2.0000	1.8225	8.9	100	0.01
8	T	Trichlorofluoromethane	2.0000	2.0658	-3.3	100	0.00
9	T	Diethyl ether	25.0000	24.2296	3.1	100	0.00
10	T	Isoprene	-1.0000	1.6374	0.0	0	0.00
11	T	Acrolein	12.5000	12.3492	1.2	100	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.6134	19.3	100	0.00
13	T	Acetone	-1.0000	1.8809	0.0	0	0.01
14	C	1,1-Dichloroethene	2.0000	1.7376	13.1	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	43.3134	13.4	100	0.01
16	T	Dimethyl Sulfide	-1.0000	1.6773	0.0	0	0.00
17	T	Iodomethane	-1.0000	5.2052	0.0	0	0.01
18	T	Methyl acetate	-1.0000	1.8363	0.0	0	0.00
19	T	Methylene Chloride	2.0000	1.9461	2.7	100	0.00
20	T	Carbon Disulfide	2.0000	1.9617	1.9	100	0.00
21	T	Acrylonitrile	12.5000	11.3775	9.0	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.7617	11.9	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.8816	5.9	100	0.00
24	T	n-Hexane	2.0000	1.8534	7.3	100	-0.01
25	T	Diisopropyl ether	25.0000	24.6012	1.6	100	0.00
26	T	Vinyl Acetate	-1.0000	1.6066	0.0	0	0.00
27	P	1,1-Dichloroethane	2.0000	1.8571	7.1	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	24.4116	2.4	100	0.01
29	T	2-Butanone	-1.0000	2.0330	0.0	0	0.00
30	T	Propionitrile	25.0000	23.4210	6.3	100	0.00
31	T	2,2-Dichloropropane	2.0000	1.9723	1.4	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	1.9642	1.8	100	0.00
33	C	Chloroform	2.0000	2.0618	-3.1	100	0.00
34		1-Bromopropane	-1.0000	0.9400	0.0	0	0.00
35	T	Bromochloromethane	2.0000	1.9001	5.0	100	0.01
36	T	Tetrahydrofuran	25.0000	22.2128	11.1	100	0.00
37	S	Dibromofluoromethane	1.0000	1.0432	-4.3	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.9171	4.1	100	0.00
39	T	Cyclohexane	2.0000	1.6263	18.7	100	-0.01
40	T	1,1-Dichloropropene	2.0000	1.7675	11.6	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	23.7231	5.1	100	0.01
42	T	Carbon Tetrachloride	2.0000	1.7476	12.6	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0345	-3.5	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	2.0000	1.8622	6.9	100	0.00
46	T	Benzene	2.0000	1.9902	0.5	100	0.00
47	T	Trichloroethene	2.0000	1.8108	9.5	100	0.00
48	T	Methylcyclohexane	2.0000	1.6146	19.3	100	0.00
49	C	1,2-Dichloropropane	2.0000	1.7766	11.2	100	0.00
50	T	1,4-Dioxane	50.0000	55.6272	-11.3	100	0.00
51	T	Bromodichloromethane	2.0000	1.8293	8.5	100	0.00
52	T	Dibromomethane	2.0000	1.7677	11.6	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	1.3526	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.0653	0.0	0	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.6689	16.6	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.3135	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	1.0718	-7.2	100	0.00
59	C	Toluene	2.0000	1.8801	6.0	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.4383	28.1#	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	2.0000	1.6966	15.2	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.7952	10.2	100	0.00
64	T	2-Hexanone	-1.0000	1.5908	0.0	0	0.01
65	T	1,3-Dichloropropane	2.0000	1.8213	8.9	100	0.00
66	T	Tetrachloroethene	2.0000	1.9043	4.8	100	0.01
67	T	Dibromochloromethane	2.0000	1.6565	17.2	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.7934	10.3	100	-0.01
69	T	1-Chlorohexane	2.0000	1.6318	18.4	100	-0.01
70	P	Chlorobenzene	2.0000	2.0127	-0.6	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.9085	4.6	100	0.01
72	C	Ethylbenzene	2.0000	1.9447	2.8	100	0.00
73	T	m-,p-Xylene	4.0000	3.6096	9.8	100	0.00
74	T	o-Xylene	2.0000	1.7630	11.8	100	0.00
75	T	Styrene	2.0000	1.6186	19.1	100	0.00
76	P	Bromoform	2.0000	1.6340	18.3	100	0.00
77	T	Isopropylbenzene	2.0000	1.7039	14.8	100	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	1.7653	11.7	100	-0.01
80	S	p-Bromofluorobenzene	1.0000	1.0853	-8.5	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	1.6915	15.4	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	1.7133	14.3	100	0.00
83	T	n-Propylbenzene	2.0000	1.7886	10.6	100	0.00
84	T	Bromobenzene	2.0000	1.8143	9.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	1.7343	13.3	100	0.00
86	T	2-Chlorotoluene	2.0000	1.7421	12.9	100	0.00
87	T	4-Chlorotoluene	2.0000	2.0879	-4.4	100	0.00
88	T	a-Methylstyrene	2.0000	1.5692	21.5	100	0.00
89	T	tert-Butylbenzene	2.0000	1.7349	13.3	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	1.7894	10.5	100	0.00
91	T	sec-Butylbenzene	2.0000	1.8115	9.4	100	0.00
92	T	p-Isopropyltoluene	2.0000	1.7099	14.5	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	1.8633	6.8	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.1018	-5.1	100	0.00
95	T	n-Butylbenzene	2.0000	1.7769	11.2	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	1.9270	3.6	100	0.01
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.2459	0.0	0	-0.01
98	T	1,2,4-Trichlorobenzene	2.0000	1.9491	2.5	100	0.01
99	T	Hexachlorobutadiene	2.0000	1.8596	7.0	100	-0.01
100	T	Naphthalene	2.0000	1.6644	16.8	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9641	1.8	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137525.D 826_SL.M Mon Feb 29 16:02:19 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:39 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	643219	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	454348	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	233655	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.32	111	8526	2.4710 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	4.94%#	
43) 1,2-Dichloroethane-d4	11.06	65	11725	2.6172 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	5.24%#	
58) Toluene-d8	13.80	98	29032	2.6876 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	5.38%#	
80) p-Bromofluorobenzene	17.79	95	11167	2.6020 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	5.20%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	28102	4.7571 ug/L	100
3) Chloromethane	3.88	50	32755	5.3209 ug/L	91
4) Vinyl Chloride	4.12	62	26049	5.2573 ug/L	99
5) 1,3-Butadiene	4.17	54	23717	5.7531 ug/L	82
6) Bromomethane	5.03	94	13346	5.0529 ug/L	95
7) Chloroethane	5.19	64	14096	5.0173 ug/L	95
8) Trichlorofluoromethane	5.70	101	35831	5.3818 ug/L	98
9) Diethyl ether	6.24	59	150730	49.2132 ug/L	93
10) Isoprene	6.28	67	21438	4.9428 ug/L	81
11) Acrolein	6.48	56	14248	24.4956 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	17247	5.4273 ug/L	95
13) Acetone	6.59	43	13051	5.3136 ug/L	94
14) 1,1-Dichloroethene	6.83	61	29698	5.2760 ug/L	91
15) Tert-Butyl Alcohol	6.93	59	51304	97.6795 ug/L	93
16) Dimethyl Sulfide	7.12	62	13140	4.8115 ug/L	98
17) Iodomethane	7.38	142	3580	6.2818 ug/L	92
18) Methyl acetate	7.39	43	19888	5.0842 ug/L	93
19) Methylene Chloride	7.67	84	17567	5.1820 ug/L	73
20) Carbon Disulfide	7.72	76	56579	5.2535 ug/L	99
21) Acrylonitrile	7.86	53	38170	23.7426 ug/L	95
22) Methyl Tert Butyl Ether	7.89	73	46633	4.8170 ug/L	97
23) trans-1,2-Dichloroethene	8.16	96	15681	5.0428 ug/L	87
24) n-Hexane	8.24	57	29042	5.1432 ug/L	92
25) Diisopropyl ether	8.61	45	721466	49.2807 ug/L	97
26) Vinyl Acetate	8.80	43	31741	4.1943 ug/L	93
27) 1,1-Dichloroethane	8.83	63	34581	5.1581 ug/L	100
28) Ethyl-Tert-Butyl ether	9.24	59	576725	49.1494 ug/L	95
29) 2-Butanone	9.45	43	11939	5.3698 ug/L	87
30) Propionitrile	9.58	54	29074	47.2483 ug/L	96
31) 2,2-Dichloropropane	9.69	77	27493	5.1089 ug/L	98
32) cis-1,2-Dichloroethene	9.77	96	17624	5.0766 ug/L	93
33) Chloroform	10.01	83	32075	5.1228 ug/L	96
34) 1-Bromopropane	10.16	122	2123	4.4605 ug/L	82
35) Bromochloromethane	10.26	130	9542	4.6779 ug/L	100
36) Tetrahydrofuran	10.29	42	72518	47.4879 ug/L	94
38) 1,1,1-Trichloroethane	10.60	97	26846	4.8542 ug/L	94
39) Cyclohexane	10.64	56	31697	5.0544 ug/L	89
40) 1,1-Dichloropropene	10.82	75	23898	5.3658 ug/L	97
41) Tert-Amyl-Methyl ether	10.94	73	454105	48.7831 ug/L #	89
42) Carbon Tetrachloride	10.99	117	26296	5.0887 ug/L	96

(#) = qualifier out of range (m) = manual integration
6M137526.D 826_SL.M Mon Feb 29 16:01:39 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:39 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45) 1,2-Dichloroethane	11.19	62	26611	4.9796 ug/L	97
46) Benzene	11.23	78	66739	4.9809 ug/L	93
47) Trichloroethene	12.09	130	16560	5.2316 ug/L	93
48) Methylcyclohexane	12.18	83	26100	5.1005 ug/L	86
49) 1,2-Dichloropropane	12.34	63	17955	4.9803 ug/L	94
50) 1,4-Dioxane	12.67	88	3919	107.9166 ug/L	93
51) Bromodichloromethane	12.68	83	23069	4.8760 ug/L	92
52) Dibromomethane	12.79	93	9757	4.6271 ug/L	97
53) 2-Chloroethyl Vinyl Ether	13.04	63	8133	4.1014 ug/L	99
54) 4-Methyl-2-Pentanone	13.07	58	6484	4.3183 ug/L	81
55) cis-1,3-Dichloropropene	13.43	75	24075	4.6186 ug/L	98
56) Dimethyl Disulfide	13.72	79	10983	4.1777 ug/L	91
59) Toluene	13.91	91	65025	5.0594 ug/L	100
60) Ethyl Methacrylate	14.03	69	18200	4.4195 ug/L	95
62) trans-1,3-Dichloropropene	14.12	75	23055	4.6650 ug/L	96
63) 1,1,2-Trichloroethane	14.37	97	13105	4.8784 ug/L	97
64) 2-Hexanone	14.31	43	13531	4.4142 ug/L	93
65) 1,3-Dichloropropane	14.74	76	24567	5.0457 ug/L	96
66) Tetrachloroethene	14.87	166	17025	5.3699 ug/L	96
67) Dibromochloromethane	15.17	129	16779	4.8026 ug/L	98
68) 1,2-Dibromoethane	15.48	107	13121	4.7760 ug/L	98
69) 1-Chlorohexane	15.59	91	18960	4.7505 ug/L	75
70) Chlorobenzene	16.07	112	43871	5.3112 ug/L #	60
71) 1,1,1,2-Tetrachloroethane	16.10	131	15603	4.7045 ug/L	95
72) Ethylbenzene	16.10	106	22079	4.9950 ug/L	94
73) m-,p-Xylene	16.22	106	54549	10.0858 ug/L	96
74) o-Xylene	16.88	106	24478	4.8051 ug/L	92
75) Styrene	16.92	104	39808	4.5913 ug/L	95
76) Bromoform	17.49	173	11643	4.7199 ug/L	97
77) Isopropylbenzene	17.38	105	66989	4.8919 ug/L	99
79) 1,1,2,2-Tetrachloroethane	17.65	83	18286	5.0098 ug/L	96
81) 1,2,3-Trichloropropane	17.87	110	5764	5.1577 ug/L	93
82) trans-1,4-Dichloro-2-Buten	17.93	53	5968	4.4290 ug/L	92
83) n-Propylbenzene	17.98	91	82621	5.2068 ug/L	98
84) Bromobenzene	18.13	156	17797	5.1598 ug/L	96
85) 1,3,5-Trimethylbenzene	18.21	105	58488	5.1783 ug/L	94
86) 2-Chlorotoluene	18.30	91	57419	5.4213 ug/L	96
87) 4-Chlorotoluene	18.35	91	50976	5.2638 ug/L	97
88) a-Methylstyrene	18.69	118	25024	4.5623 ug/L	100
89) tert-Butylbenzene	18.76	134	11873	5.0441 ug/L	95
90) 1,2,4-Trimethylbenzene	18.82	105	61081	5.1422 ug/L	83
91) sec-Butylbenzene	19.08	105	74051	5.1195 ug/L	98
92) p-Isopropyltoluene	19.26	119	60824	5.0969 ug/L	97
93) 1,3-Dichlorobenzene	19.48	146	35412	5.3060 ug/L	98
94) 1,4-Dichlorobenzene	19.64	146	35211	5.1831 ug/L	83
95) n-Butylbenzene	19.89	91	60714	5.0584 ug/L	95
96) 1,2-Dichlorobenzene	20.22	146	32728	5.0962 ug/L	95
97) 1,2-Dibromo-3-Chloropropan	21.41	75	3714	4.5988 ug/L	88
98) 1,2,4-Trichlorobenzene	22.76	180	22925	4.9379 ug/L	93
99) Hexachlorobutadiene	22.96	225	13612	5.1268 ug/L	94
100) Naphthalene	23.20	128	48617	4.5551 ug/L	99
101) 1,2,3-Trichlorobenzene	23.59	180	22839	4.9959 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

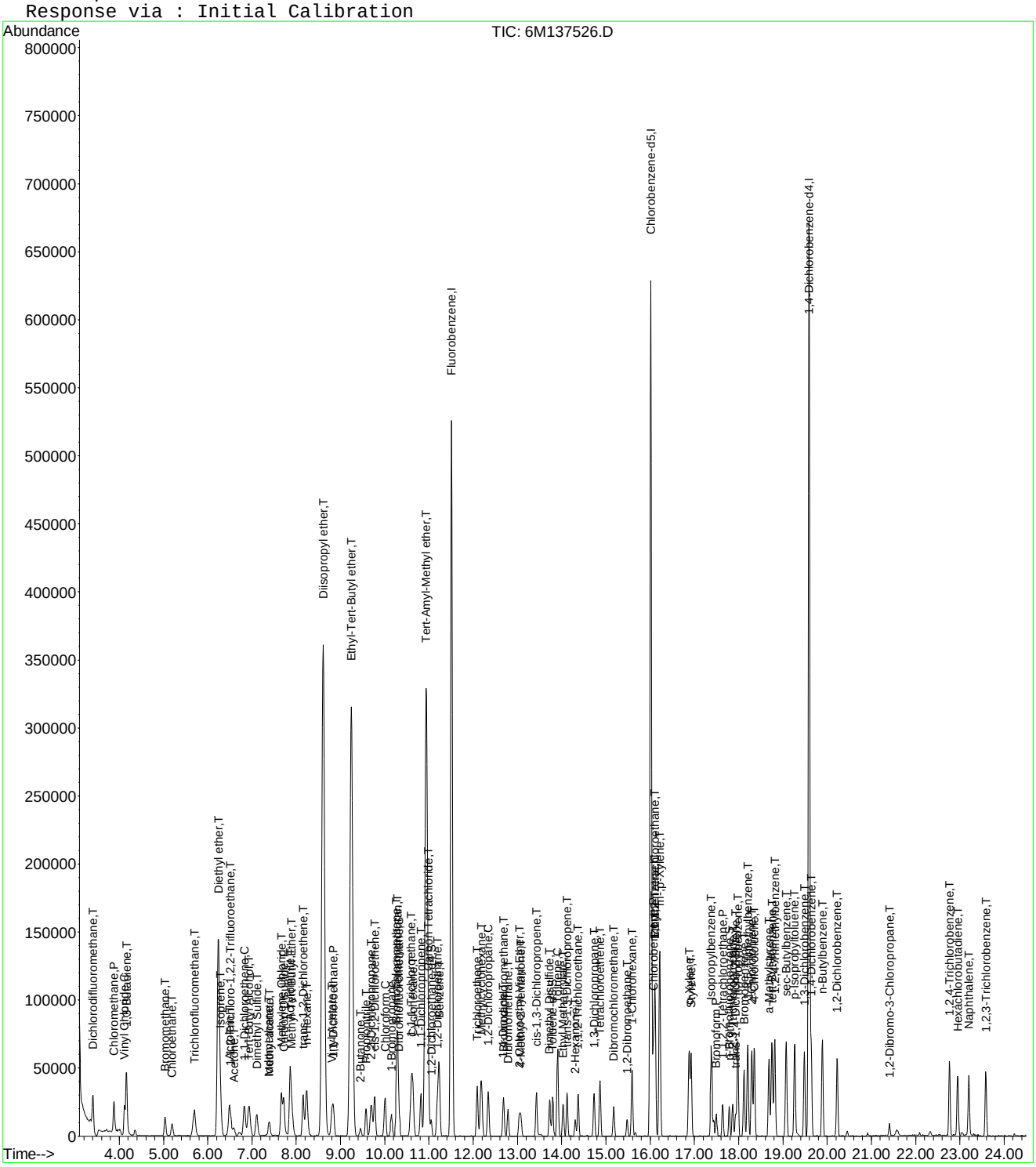

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.7571	4.9	100	0.00
3	P	Chloromethane	5.0000	5.3209	-6.4	100	0.00
4	C	Vinyl Chloride	5.0000	5.2573	-5.1	100	0.00
5	T	1,3-Butadiene	5.0000	5.7531	-15.1	100	0.00
6	T	Bromomethane	5.0000	5.0529	-1.1	100	0.00
7	T	Chloroethane	5.0000	5.0173	-0.3	100	0.00
8	T	Trichlorofluoromethane	5.0000	5.3818	-7.6	100	0.00
9	T	Diethyl ether	50.0000	49.2132	1.6	100	0.00
10	T	Isoprene	5.0000	4.9428	1.1	100	0.00
11	T	Acrolein	25.0000	24.4957	2.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	5.4272	-8.5	100	0.00
13	T	Acetone	-1.0000	5.3136	0.0	0	0.00
14	C	1,1-Dichloroethene	5.0000	5.2760	-5.5	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	97.6795	2.3	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.8115	3.8	100	0.00
17	T	Iodomethane	5.0000	6.2818	-25.6#	100	0.00
18	T	Methyl acetate	5.0000	5.0842	-1.7	100	0.00
19	T	Methylene Chloride	5.0000	5.1820	-3.6	100	0.00
20	T	Carbon Disulfide	5.0000	5.2535	-5.1	100	0.00
21	T	Acrylonitrile	25.0000	23.7426	5.0	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.8170	3.7	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	5.0428	-0.9	100	0.00
24	T	n-Hexane	5.0000	5.1432	-2.9	100	0.00
25	T	Diisopropyl ether	50.0000	49.2807	1.4	100	0.00
26	T	Vinyl Acetate	5.0000	4.1943	16.1	100	0.00
27	P	1,1-Dichloroethane	5.0000	5.1581	-3.2	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	49.1494	1.7	100	0.00
29	T	2-Butanone	5.0000	5.3698	-7.4	100	0.00
30	T	Propionitrile	50.0000	47.2483	5.5	100	0.00
31	T	2,2-Dichloropropane	5.0000	5.1089	-2.2	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	5.0766	-1.5	100	0.00
33	C	Chloroform	5.0000	5.1228	-2.5	100	0.00
34		1-Bromopropane	5.0000	4.4605	10.8	100	0.00
35	T	Bromochloromethane	5.0000	4.6779	6.4	100	0.00
36	T	Tetrahydrofuran	50.0000	47.4879	5.0	100	0.00
37	S	Dibromofluoromethane	2.5000	2.4710	1.2	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.8542	2.9	100	0.00
39	T	Cyclohexane	5.0000	5.0544	-1.1	100	0.00
40	T	1,1-Dichloropropene	5.0000	5.3658	-7.3	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	48.7831	2.4	100	0.00
42	T	Carbon Tetrachloride	5.0000	5.0887	-1.8	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.6172	-4.7	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	5.0000	4.9796	0.4	100	0.00
46	T	Benzene	5.0000	4.9809	0.4	100	0.00
47	T	Trichloroethene	5.0000	5.2316	-4.6	100	0.00
48	T	Methylcyclohexane	5.0000	5.1005	-2.0	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.9803	0.4	100	0.00
50	T	1,4-Dioxane	100.0000	107.9166	-7.9	100	0.00
51	T	Bromodichloromethane	5.0000	4.8760	2.5	100	0.00
52	T	Dibromomethane	5.0000	4.6271	7.5	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.1014	18.0	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.3183	13.6	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.6186	7.6	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.1777	16.4	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.6876	-7.5	100	0.00
59	C	Toluene	5.0000	5.0594	-1.2	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.4195	11.6	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	5.0000	4.6650	6.7	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.8784	2.4	100	0.00
64	T	2-Hexanone	5.0000	4.4142	11.7	100	0.00
65	T	1,3-Dichloropropane	5.0000	5.0457	-0.9	100	0.00
66	T	Tetrachloroethene	5.0000	5.3699	-7.4	100	0.00
67	T	Dibromochloromethane	5.0000	4.8026	3.9	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.7760	4.5	100	0.00
69	T	1-Chlorohexane	5.0000	4.7505	5.0	100	0.00
70	P	Chlorobenzene	5.0000	5.3112	-6.2	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.7045	5.9	100	0.00
72	C	Ethylbenzene	5.0000	4.9950	0.1	100	0.00
73	T	m-,p-Xylene	10.0000	10.0858	-0.9	100	0.00
74	T	o-Xylene	5.0000	4.8051	3.9	100	0.00
75	T	Styrene	5.0000	4.5913	8.2	100	0.00
76	P	Bromoform	5.0000	4.7199	5.6	100	0.00
77	T	Isopropylbenzene	5.0000	4.8919	2.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	5.0098	-0.2	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.6020	-4.1	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.1577	-3.2	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.4290	11.4	100	0.00
83	T	n-Propylbenzene	5.0000	5.2068	-4.1	100	0.00
84	T	Bromobenzene	5.0000	5.1597	-3.2	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	5.1783	-3.6	100	0.00
86	T	2-Chlorotoluene	5.0000	5.4214	-8.4	100	0.00
87	T	4-Chlorotoluene	5.0000	5.2638	-5.3	100	0.00
88	T	a-Methylstyrene	5.0000	4.5623	8.8	100	0.00
89	T	tert-Butylbenzene	5.0000	5.0441	-0.9	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.1422	-2.8	100	0.00
91	T	sec-Butylbenzene	5.0000	5.1195	-2.4	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.0969	-1.9	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	5.3060	-6.1	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	5.1831	-3.7	100	0.00
95	T	n-Butylbenzene	5.0000	5.0584	-1.2	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	5.0962	-1.9	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	4.5988	8.0	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.9379	1.2	100	0.00
99	T	Hexachlorobutadiene	5.0000	5.1268	-2.5	100	0.00
100	T	Naphthalene	5.0000	4.5552	8.9	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.9959	0.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:40 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	607286	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	435504	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	227713	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	16492	5.0625 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 10.12%#		
43) 1,2-Dichloroethane-d4	11.06	65	20491	4.8445 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 9.68%#		
58) Toluene-d8	13.80	98	50808	4.9069 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 9.82%#		
80) p-Bromofluorobenzene	17.79	95	20967	5.0129 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 10.02%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	51684	9.2668 ug/L	100
3) Chloromethane	3.88	50	58275	10.0267 ug/L	97
4) Vinyl Chloride	4.12	62	45684	9.7657 ug/L	98
5) 1,3-Butadiene	4.16	54	39114	10.0495 ug/L	90
6) Bromomethane	5.03	94	25017	10.0321 ug/L	98
7) Chloroethane	5.20	64	25248	9.5185 ug/L	95
8) Trichlorofluoromethane	5.69	101	62268	9.9061 ug/L	98
9) Diethyl ether	6.24	59	197846	68.4186 ug/L	92
10) Isoprene	6.28	67	39072	9.5415 ug/L	91
11) Acrolein	6.48	56	19614	35.7163 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	30114	10.0369 ug/L	94
13) Acetone	6.60	43	18461	10.1493 ug/L	97
14) 1,1-Dichloroethene	6.83	61	51482	9.6871 ug/L	94
15) Tert-Butyl Alcohol	6.93	59	70054	141.2703 ug/L	95
16) Dimethyl Sulfide	7.12	62	25452	9.8712 ug/L	97
17) Iodomethane	7.38	142	9906	8.8243 ug/L	91
18) Methyl acetate	7.39	43	38451	10.4113 ug/L	93
19) Methylene Chloride	7.67	84	32006	10.0000 ug/L	78
20) Carbon Disulfide	7.72	76	98104	9.6481 ug/L	100
21) Acrylonitrile	7.86	53	52450	34.5555 ug/L	97
22) Methyl Tert Butyl Ether	7.89	73	93836	10.2663 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	29186	9.9411 ug/L	85
24) n-Hexane	8.24	57	52226	9.7962 ug/L	99
25) Diisopropyl ether	8.61	45	937664	67.8382 ug/L	97
26) Vinyl Acetate	8.80	43	70808	9.9102 ug/L	96
27) 1,1-Dichloroethane	8.83	63	63440	10.0226 ug/L	98
28) Ethyl-Tert-Butyl ether	9.24	59	760504	68.6462 ug/L	96
29) 2-Butanone	9.45	43	21373	10.1817 ug/L	94
30) Propionitrile	9.58	54	40026	68.8953 ug/L	100
31) 2,2-Dichloropropane	9.69	77	51602	10.1564 ug/L	98
32) cis-1,2-Dichloroethene	9.77	96	31900	9.7326 ug/L	99
33) Chloroform	10.01	83	57702	9.7611 ug/L	96
34) 1-Bromopropane	10.15	122	4101	9.1261 ug/L	96
35) Bromochloromethane	10.26	130	18414	9.5616 ug/L	96
36) Tetrahydrofuran	10.29	42	95905	67.3892 ug/L	94
38) 1,1,1-Trichloroethane	10.60	97	52695	10.0919 ug/L	100
39) Cyclohexane	10.63	56	57419	9.6977 ug/L	90
40) 1,1-Dichloropropene	10.82	75	41095	9.7729 ug/L	98
41) Tert-Amyl-Methyl ether	10.95	73	598972	68.1530 ug/L	90
42) Carbon Tetrachloride	10.99	117	48542	9.9495 ug/L	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:40 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	11.19	62	51284	10.1644 ug/L		99
46)	Benzene	11.23	78	122737	9.7022 ug/L		94
47)	Trichloroethene	12.09	130	29481	9.8646 ug/L		92
48)	Methylcyclohexane	12.18	83	46982	9.7245 ug/L		87
49)	1,2-Dichloropropane	12.34	63	33640	9.8830 ug/L		97
50)	1,4-Dioxane	12.68	88	4932	133.5880 ug/L		83
51)	Bromodichloromethane	12.68	83	42482	9.5106 ug/L		92
52)	Dibromomethane	12.78	93	19421	9.7551 ug/L		99
53)	2-Chloroethyl Vinyl Ether	13.04	63	17139	9.1546 ug/L		98
54)	4-Methyl-2-Pentanone	13.07	58	13343	9.4122 ug/L		90
55)	cis-1,3-Dichloropropene	13.43	75	47323	9.6158 ug/L		96
56)	Dimethyl Disulfide	13.72	79	21113	8.5060 ug/L		97
59)	Toluene	13.91	91	123480	10.0233 ug/L		99
60)	Ethyl Methacrylate	14.04	69	37321	9.4549 ug/L		94
62)	trans-1,3-Dichloropropene	14.12	75	46119	9.7357 ug/L		96
63)	1,1,2-Trichloroethane	14.38	97	26300	10.2139 ug/L		99
64)	2-Hexanone	14.31	43	28213	9.6021 ug/L		99
65)	1,3-Dichloropropane	14.73	76	46832	10.0347 ug/L		94
66)	Tetrachloroethene	14.87	166	31153	10.2512 ug/L		97
67)	Dibromochloromethane	15.18	129	32946	9.8381 ug/L		99
68)	1,2-Dibromoethane	15.48	107	25271	9.5966 ug/L		95
69)	1-Chlorohexane	15.59	91	36355	9.5030 ug/L		82
70)	Chlorobenzene	16.07	112	79785	10.0771 ug/L	#	63
71)	1,1,1,2-Tetrachloroethane	16.11	131	31524	9.9162 ug/L		97
72)	Ethylbenzene	16.10	106	41898	9.8889 ug/L		95
73)	m-,p-Xylene	16.22	106	102847	19.8387 ug/L		96
74)	o-Xylene	16.88	106	47393	9.7060 ug/L		93
75)	Styrene	16.92	104	79997	9.6257 ug/L		97
76)	Bromoform	17.49	173	22569	9.5450 ug/L		99
77)	Isopropylbenzene	17.38	105	130459	9.9391 ug/L		96
79)	1,1,2,2-Tetrachloroethane	17.65	83	36327	10.2123 ug/L		95
81)	1,2,3-Trichloropropane	17.87	110	11417	10.4826 ug/L		96
82)	trans-1,4-Dichloro-2-Buten	17.93	53	12994	9.8948 ug/L		85
83)	n-Propylbenzene	17.98	91	159783	10.3323 ug/L		98
84)	Bromobenzene	18.13	156	33893	10.0828 ug/L		95
85)	1,3,5-Trimethylbenzene	18.21	105	111252	10.1069 ug/L		94
86)	2-Chlorotoluene	18.30	91	107737	10.4377 ug/L		98
87)	4-Chlorotoluene	18.36	91	96695	10.2453 ug/L		95
88)	a-Methylstyrene	18.69	118	51340	9.6043 ug/L		97
89)	tert-Butylbenzene	18.76	134	22949	10.0040 ug/L		90
90)	1,2,4-Trimethylbenzene	18.82	105	119948	10.3616 ug/L		79
91)	sec-Butylbenzene	19.07	105	141383	10.0296 ug/L		97
92)	p-Isopropyltoluene	19.27	119	115695	9.9480 ug/L		99
93)	1,3-Dichlorobenzene	19.48	146	67906	10.4404 ug/L		100
94)	1,4-Dichlorobenzene	19.64	146	68350	10.3238 ug/L		93
95)	n-Butylbenzene	19.89	91	117398	10.0364 ug/L		96
96)	1,2-Dichlorobenzene	20.22	146	64067	10.2365 ug/L		98
97)	1,2-Dibromo-3-Chloropropan	21.40	75	7444	9.4579 ug/L		93
98)	1,2,4-Trichlorobenzene	22.76	180	45615	10.0816 ug/L		99
99)	Hexachlorobutadiene	22.94	225	26046	10.0659 ug/L		100
100)	Naphthalene	23.20	128	104354	10.0325 ug/L		99
101)	1,2,3-Trichlorobenzene	23.59	180	44630	10.0173 ug/L		99

(#) = qualifier out of range (m) = manual integration
6M137527.D 826_SL.M Mon Feb 29 16:01:40 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

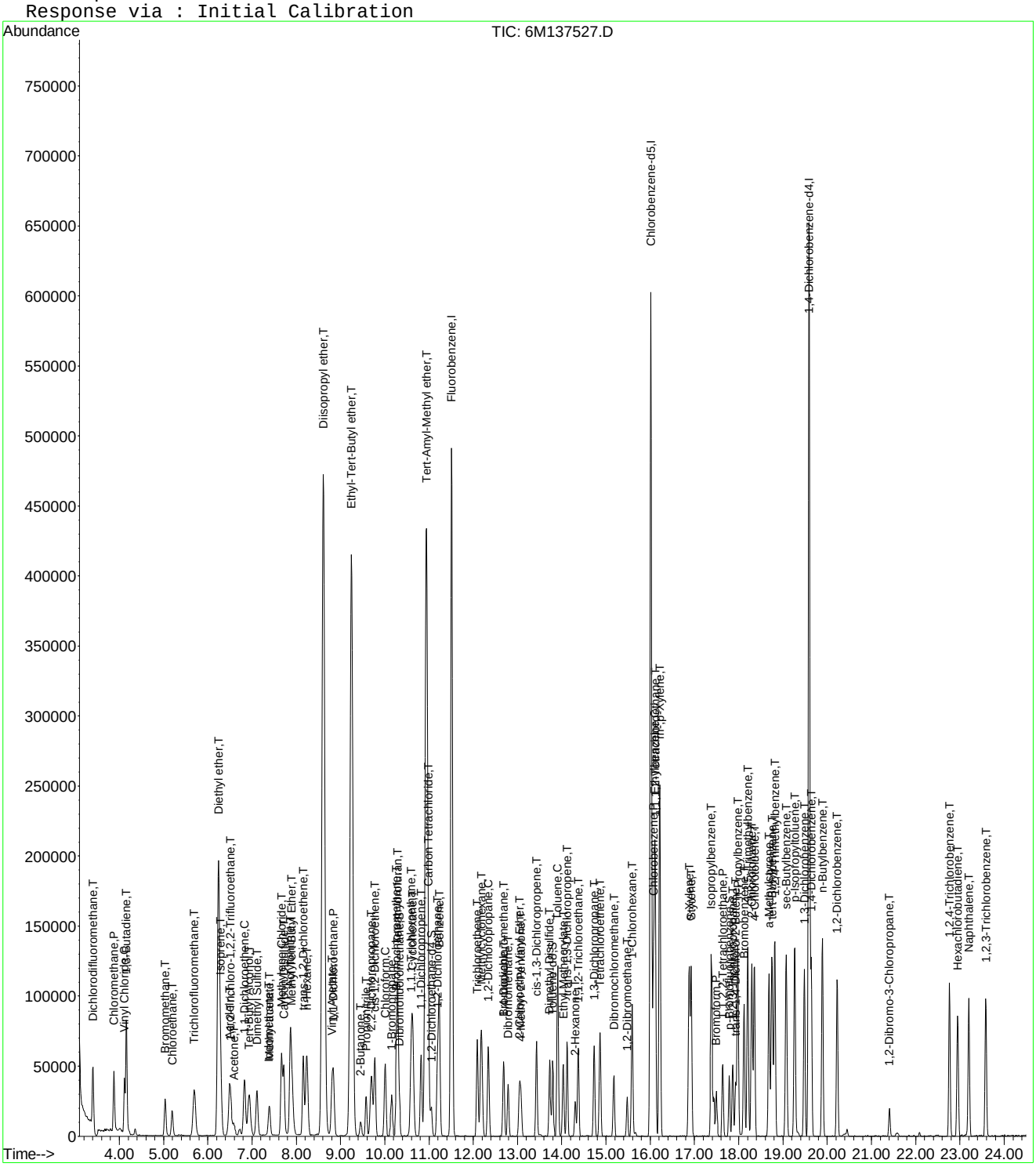

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	10.0000	9.2668	7.3	100	0.00
3	P	Chloromethane	10.0000	10.0267	-0.3	100	0.00
4	C	Vinyl Chloride	10.0000	9.7657	2.3	100	0.00
5	T	1,3-Butadiene	10.0000	10.0495	-0.5	100	-0.01
6	T	Bromomethane	10.0000	10.0321	-0.3	100	0.00
7	T	Chloroethane	10.0000	9.5185	4.8	100	0.00
8	T	Trichlorofluoromethane	10.0000	9.9061	0.9	100	-0.01
9	T	Diethyl ether	65.0000	68.4186	-5.3	100	0.00
10	T	Isoprene	10.0000	9.5415	4.6	100	0.00
11	T	Acrolein	32.5000	35.7163	-9.9	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	10.0000	10.0369	-0.4	100	0.00
13	T	Acetone	10.0000	10.1493	-1.5	100	0.01
14	C	1,1-Dichloroethene	10.0000	9.6871	3.1	100	0.00
15	T	Tert-Butyl Alcohol	130.0000	141.2703	-8.7	100	0.00
16	T	Dimethyl Sulfide	10.0000	9.8712	1.3	100	0.00
17	T	Iodomethane	10.0000	8.8243	11.8	100	0.00
18	T	Methyl acetate	10.0000	10.4113	-4.1	100	0.00
19	T	Methylene Chloride	10.0000	10.0000	0.0	100	0.00
20	T	Carbon Disulfide	10.0000	9.6481	3.5	100	0.00
21	T	Acrylonitrile	32.5000	34.5555	-6.3	100	0.00
22	T	Methyl Tert Butyl Ether	10.0000	10.2663	-2.7	100	0.00
23	T	trans-1,2-Dichloroethene	10.0000	9.9411	0.6	100	0.00
24	T	n-Hexane	10.0000	9.7962	2.0	100	0.00
25	T	Diisopropyl ether	65.0000	67.8382	-4.4	100	0.00
26	T	Vinyl Acetate	10.0000	9.9102	0.9	100	0.00
27	P	1,1-Dichloroethane	10.0000	10.0226	-0.2	100	0.00
28	T	Ethyl-Tert-Butyl ether	65.0000	68.6462	-5.6	100	0.00
29	T	2-Butanone	10.0000	10.1817	-1.8	100	0.00
30	T	Propionitrile	65.0000	68.8953	-6.0	100	0.00
31	T	2,2-Dichloropropane	10.0000	10.1564	-1.6	100	0.00
32	T	cis-1,2-Dichloroethene	10.0000	9.7326	2.7	100	0.00
33	C	Chloroform	10.0000	9.7611	2.4	100	0.00
34		1-Bromopropane	10.0000	9.1261	8.7	100	-0.01
35	T	Bromochloromethane	10.0000	9.5616	4.4	100	0.00
36	T	Tetrahydrofuran	65.0000	67.3892	-3.7	100	0.00
37	S	Dibromofluoromethane	5.0000	5.0625	-1.2	100	0.00
38	T	1,1,1-Trichloroethane	10.0000	10.0919	-0.9	100	0.00
39	T	Cyclohexane	10.0000	9.6977	3.0	100	-0.01
40	T	1,1-Dichloropropene	10.0000	9.7729	2.3	100	0.00
41	T	Tert-Amyl-Methyl ether	65.0000	68.1530	-4.9	100	0.00
42	T	Carbon Tetrachloride	10.0000	9.9495	0.5	100	0.00
43	S	1,2-Dichloroethane-d4	5.0000	4.8445	3.1	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	10.0000	10.1644	-1.6	100	0.00
46	T	Benzene	10.0000	9.7022	3.0	100	0.00
47	T	Trichloroethene	10.0000	9.8646	1.4	100	0.00
48	T	Methylcyclohexane	10.0000	9.7245	2.8	100	0.00
49	C	1,2-Dichloropropane	10.0000	9.8831	1.2	100	0.00
50	T	1,4-Dioxane	130.0000	133.5880	-2.8	100	0.00
51	T	Bromodichloromethane	10.0000	9.5106	4.9	100	0.00
52	T	Dibromomethane	10.0000	9.7551	2.4	100	0.00
53	T	2-Chloroethyl Vinyl Ether	10.0000	9.1546	8.5	100	0.00
54	T	4-Methyl-2-Pentanone	10.0000	9.4122	5.9	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	10.0000	9.6158	3.8	100	0.00
56	T	Dimethyl Disulfide	10.0000	8.5060	14.9	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	5.0000	4.9070	1.9	100	0.00
59	C	Toluene	10.0000	10.0233	-0.2	100	0.00
60	T	Ethyl Methacrylate	10.0000	9.4549	5.5	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	10.0000	9.7357	2.6	100	0.00
63	T	1,1,2-Trichloroethane	10.0000	10.2139	-2.1	100	0.00
64	T	2-Hexanone	10.0000	9.6021	4.0	100	0.00
65	T	1,3-Dichloropropane	10.0000	10.0347	-0.3	100	0.00
66	T	Tetrachloroethene	10.0000	10.2512	-2.5	100	0.00
67	T	Dibromochloromethane	10.0000	9.8381	1.6	100	0.00
68	T	1,2-Dibromoethane	10.0000	9.5966	4.0	100	0.00
69	T	1-Chlorohexane	10.0000	9.5030	5.0	100	0.00
70	P	Chlorobenzene	10.0000	10.0771	-0.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	10.0000	9.9162	0.8	100	0.00
72	C	Ethylbenzene	10.0000	9.8889	1.1	100	0.00
73	T	m-,p-Xylene	20.0000	19.8387	0.8	100	0.00
74	T	o-Xylene	10.0000	9.7060	2.9	100	0.00
75	T	Styrene	10.0000	9.6258	3.7	100	0.00
76	P	Bromoform	10.0000	9.5450	4.6	100	0.00
77	T	Isopropylbenzene	10.0000	9.9391	0.6	100	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	10.0000	10.2123	-2.1	100	0.00
80	S	p-Bromofluorobenzene	5.0000	5.0129	-0.3	100	0.00
81	T	1,2,3-Trichloropropane	10.0000	10.4826	-4.8	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	10.0000	9.8948	1.1	100	0.00
83	T	n-Propylbenzene	10.0000	10.3323	-3.3	100	0.00
84	T	Bromobenzene	10.0000	10.0828	-0.8	100	0.00
85	T	1,3,5-Trimethylbenzene	10.0000	10.1069	-1.1	100	0.00
86	T	2-Chlorotoluene	10.0000	10.4377	-4.4	100	0.00
87	T	4-Chlorotoluene	10.0000	10.2453	-2.5	100	0.00
88	T	a-Methylstyrene	10.0000	9.6043	4.0	100	0.00
89	T	tert-Butylbenzene	10.0000	10.0040	-0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	10.0000	10.3616	-3.6	100	0.00
91	T	sec-Butylbenzene	10.0000	10.0296	-0.3	100	0.00
92	T	p-Isopropyltoluene	10.0000	9.9480	0.5	100	0.00
93	T	1,3-Dichlorobenzene	10.0000	10.4404	-4.4	100	0.00
94	T	1,4-Dichlorobenzene	10.0000	10.3238	-3.2	100	0.00
95	T	n-Butylbenzene	10.0000	10.0364	-0.4	100	0.00
96	T	1,2-Dichlorobenzene	10.0000	10.2365	-2.4	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	10.0000	9.4579	5.4	100	-0.01
98	T	1,2,4-Trichlorobenzene	10.0000	10.0816	-0.8	100	0.00
99	T	Hexachlorobutadiene	10.0000	10.0659	-0.7	100	-0.01
100	T	Naphthalene	10.0000	10.0325	-0.3	100	0.00
101	T	1,2,3-Trichlorobenzene	10.0000	10.0173	-0.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137527.D 826_SL.M Mon Feb 29 16:02:41 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137528.D Vial: 7
Acq On : 26 Feb 2016 16:30 Operator: TMB
Sample : WG558920-07 20ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:40 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	604454	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	432511	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	231578	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	33417	10.3059 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 20.62%#		
43) 1,2-Dichloroethane-d4	11.05	65	44264	10.5140 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 21.02%#		
58) Toluene-d8	13.80	98	105494	10.2589 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 20.52%#		
80) p-Bromofluorobenzene	17.79	95	42856	10.0752 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 20.16%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	124530	22.4325 ug/L	99
3) Chloromethane	3.88	50	120837	20.8884 ug/L	97
4) Vinyl Chloride	4.12	62	100224	21.5249 ug/L	99
5) 1,3-Butadiene	4.17	54	87169	22.5011 ug/L	89
6) Bromomethane	5.03	94	52021	20.9587 ug/L	100
7) Chloroethane	5.20	64	56109	21.2522 ug/L	96
8) Trichlorofluoromethane	5.70	101	126994	20.2979 ug/L	100
9) Diethyl ether	6.24	59	233490	81.1233 ug/L	92
10) Isoprene	6.28	67	78978	19.3770 ug/L	88
11) Acrolein	6.48	56	21732	39.7585 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	61970	20.7512 ug/L	94
13) Acetone	6.60	43	31313	20.3882 ug/L	94
14) 1,1-Dichloroethene	6.83	61	109604	20.7203 ug/L	92
15) Tert-Butyl Alcohol	6.93	59	84577	171.3564 ug/L	95
16) Dimethyl Sulfide	7.12	62	47686	18.5811 ug/L	91
17) Iodomethane	7.38	142	29628	16.5619 ug/L	87
18) Methyl acetate	7.39	43	74780	20.3429 ug/L	95
19) Methylene Chloride	7.67	84	64851	20.3571 ug/L	76
20) Carbon Disulfide	7.72	76	202990	20.0567 ug/L	99
21) Acrylonitrile	7.86	53	61697	40.8381 ug/L	94
22) Methyl Tert Butyl Ether	7.89	73	190370	20.9254 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	59769	20.4535 ug/L	87
24) n-Hexane	8.24	57	105156	19.8169 ug/L	97
25) Diisopropyl ether	8.61	45	1129584	82.1061 ug/L	96
26) Vinyl Acetate	8.80	43	152272	21.4117 ug/L	97
27) 1,1-Dichloroethane	8.83	63	130302	20.6823 ug/L	99
28) Ethyl-Tert-Butyl ether	9.24	59	915394	83.0143 ug/L	96
29) 2-Butanone	9.46	43	42524	20.3527 ug/L	97
30) Propionitrile	9.58	54	48414	83.7237 ug/L	100
31) 2,2-Dichloropropane	9.69	77	100380	19.8495 ug/L	98
32) cis-1,2-Dichloroethene	9.77	96	66403	20.3543 ug/L	100
33) Chloroform	10.01	83	120566	20.4910 ug/L	97
34) 1-Bromopropane	10.15	122	8978	20.0727 ug/L	94
35) Bromochloromethane	10.26	130	39989	20.8618 ug/L	98
36) Tetrahydrofuran	10.29	42	119054	84.5841 ug/L	93
38) 1,1,1-Trichloroethane	10.60	97	105282	20.2577 ug/L	96
39) Cyclohexane	10.63	56	119680	20.3079 ug/L	89
40) 1,1-Dichloropropene	10.82	75	83869	20.0386 ug/L	96
41) Tert-Amyl-Methyl ether	10.94	73	732522	83.7393 ug/L	91
42) Carbon Tetrachloride	10.99	117	99704	20.5318 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M137528.D 826_SL.M Mon Feb 29 16:01:41 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137528.D Vial: 7
Acq On : 26 Feb 2016 16:30 Operator: TMB
Sample : WG558920-07 20ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:40 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	11.19	62	103881	20.6854 ug/L		99
46)	Benzene	11.23	78	247381	19.6467 ug/L		92
47)	Trichloroethene	12.09	130	61373	20.6321 ug/L		91
48)	Methylcyclohexane	12.18	83	97333	20.2407 ug/L		88
49)	1,2-Dichloropropane	12.34	63	69997	20.6607 ug/L		99
50)	1,4-Dioxane	12.68	88	6222	161.0769 ug/L		84
51)	Bromodichloromethane	12.68	83	89367	20.1007 ug/L		96
52)	Dibromomethane	12.79	93	40905	20.6426 ug/L		98
53)	2-Chloroethyl Vinyl Ether	13.04	63	37392	20.0660 ug/L		99
54)	4-Methyl-2-Pentanone	13.07	58	29543	20.9375 ug/L		90
55)	cis-1,3-Dichloropropene	13.43	75	99671	20.3475 ug/L		97
56)	Dimethyl Disulfide	13.72	79	46329	18.7525 ug/L		98
59)	Toluene	13.91	91	246419	20.1412 ug/L		99
60)	Ethyl Methacrylate	14.04	69	79829	20.3638 ug/L		96
62)	trans-1,3-Dichloropropene	14.12	75	96621	20.5377 ug/L		98
63)	1,1,2-Trichloroethane	14.38	97	53425	20.8919 ug/L		97
64)	2-Hexanone	14.31	43	59605	20.4265 ug/L		97
65)	1,3-Dichloropropane	14.74	76	96517	20.8239 ug/L		94
66)	Tetrachloroethene	14.87	166	62111	20.5796 ug/L		96
67)	Dibromochloromethane	15.17	129	68185	20.5019 ug/L		99
68)	1,2-Dibromoethane	15.48	107	53387	20.4138 ug/L		100
69)	1-Chlorohexane	15.59	91	76216	20.0602 ug/L		83
70)	Chlorobenzene	16.07	112	160312	20.3880 ug/L	#	66
71)	1,1,1,2-Tetrachloroethane	16.11	131	64649	20.4768 ug/L		97
72)	Ethylbenzene	16.10	106	86018	20.4427 ug/L		96
73)	m-,p-Xylene	16.22	106	209303	40.6530 ug/L		95
74)	o-Xylene	16.87	106	101781	20.9889 ug/L		94
75)	Styrene	16.92	104	169811	20.5741 ug/L		94
76)	Bromoform	17.49	173	47615	20.2769 ug/L		98
77)	Isopropylbenzene	17.38	105	273784	21.0027 ug/L		97
79)	1,1,2,2-Tetrachloroethane	17.65	83	75470	20.8621 ug/L		95
81)	1,2,3-Trichloropropane	17.87	110	22588	20.3932 ug/L		90
82)	trans-1,4-Dichloro-2-Buten	17.93	53	26581	19.9034 ug/L		88
83)	n-Propylbenzene	17.98	91	330830	21.0359 ug/L		97
84)	Bromobenzene	18.13	156	71833	21.0128 ug/L		95
85)	1,3,5-Trimethylbenzene	18.21	105	230218	20.5655 ug/L		96
86)	2-Chlorotoluene	18.30	91	219979	20.9561 ug/L		97
87)	4-Chlorotoluene	18.35	91	193947	20.2066 ug/L		97
88)	a-Methylstyrene	18.69	118	107098	19.7008 ug/L		96
89)	tert-Butylbenzene	18.75	134	48246	20.6806 ug/L		94
90)	1,2,4-Trimethylbenzene	18.82	105	244152	20.7388 ug/L		84
91)	sec-Butylbenzene	19.08	105	299927	20.9214 ug/L		98
92)	p-Isopropyltoluene	19.27	119	246088	20.8066 ug/L		100
93)	1,3-Dichlorobenzene	19.48	146	134407	20.3198 ug/L		98
94)	1,4-Dichlorobenzene	19.64	146	136759	20.3118 ug/L		97
95)	n-Butylbenzene	19.89	91	245859	20.6677 ug/L		97
96)	1,2-Dichlorobenzene	20.22	146	129420	20.3333 ug/L		96
97)	1,2-Dibromo-3-Chloropropan	21.41	75	16283	20.3429 ug/L		85
98)	1,2,4-Trichlorobenzene	22.76	180	93373	20.2924 ug/L		99
99)	Hexachlorobutadiene	22.95	225	53674	20.3969 ug/L		99
100)	Naphthalene	23.20	128	219058	20.7086 ug/L		99
101)	1,2,3-Trichlorobenzene	23.58	180	91461	20.1860 ug/L		98

(#) = qualifier out of range (m) = manual integration
6M137528.D 826_SL.M Mon Feb 29 16:01:41 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137528.D Vial: 7
Acq On : 26 Feb 2016 16:30 Operator: TMB
Sample : WG558920-07 20ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

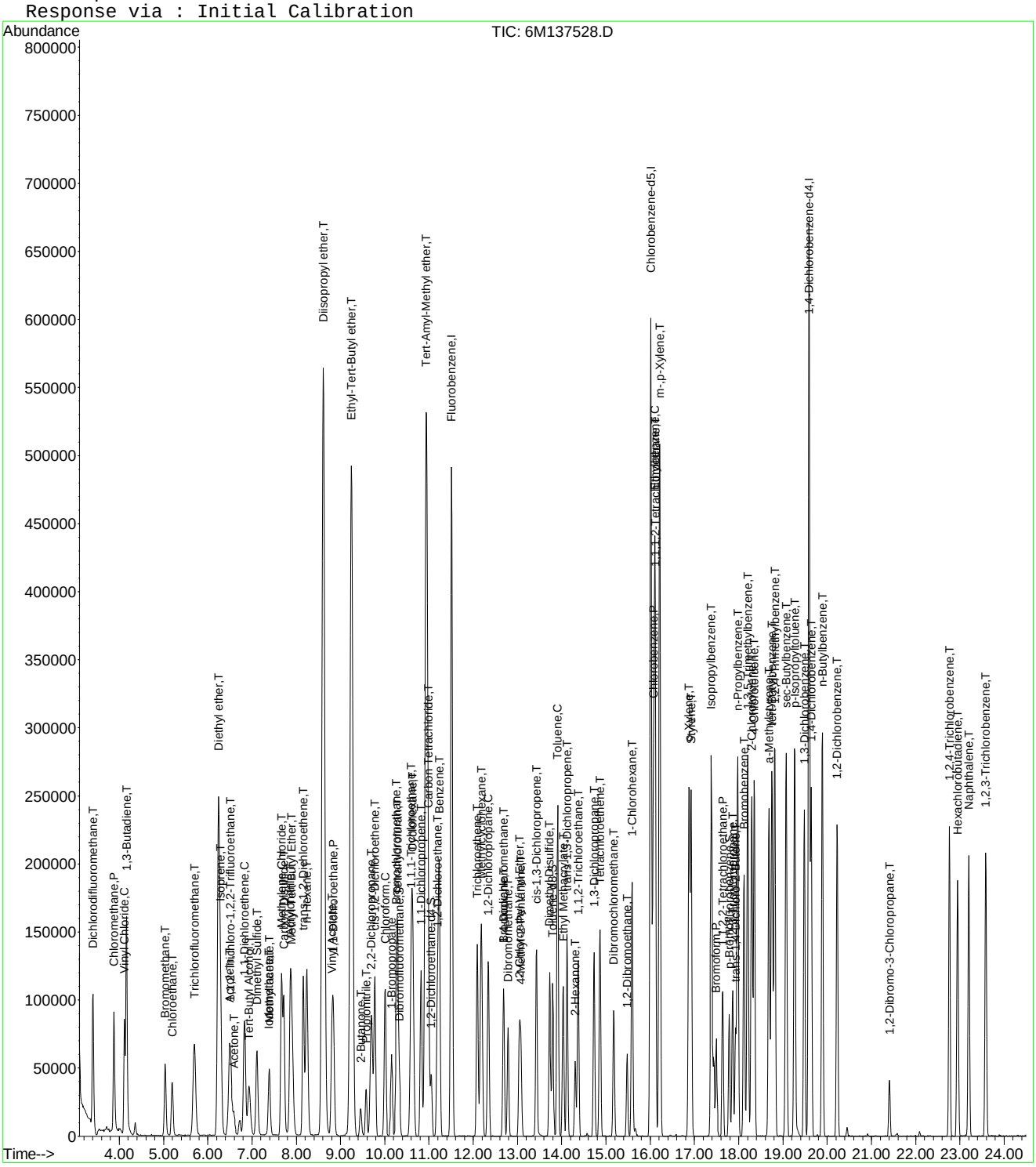

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137529.D Vial: 8
Acq On : 26 Feb 2016 17:03 Operator: TMB
Sample : WG558920-08 50ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:41 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	607631	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	439950	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	237573	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	82729	25.3805 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 50.76%#		
43) 1,2-Dichloroethane-d4	11.06	65	107163	25.3214 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 50.64%#		
58) Toluene-d8	13.80	98	266157	25.4452 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 50.90%#		
80) p-Bromofluorobenzene	17.79	95	111797	25.6197 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 51.24%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	326358	58.4819 ug/L	99
3) Chloromethane	3.88	50	305583	52.5483 ug/L	99
4) Vinyl Chloride	4.11	62	261948	55.9639 ug/L	98
5) 1,3-Butadiene	4.17	54	208973	53.6605 ug/L	91
6) Bromomethane	5.03	94	129157	51.7638 ug/L	100
7) Chloroethane	5.20	64	147959	55.7489 ug/L	95
8) Trichlorofluoromethane	5.70	101	339023	53.9039 ug/L	99
9) Diethyl ether	6.24	59	283385	97.9439 ug/L	93
10) Isoprene	6.28	67	215850	52.6813 ug/L	86
11) Acrolein	6.48	56	25264	45.9786 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	168394	56.0934 ug/L	94
13) Acetone	6.60	43	68176	49.2786 ug/L	100
14) 1,1-Dichloroethene	6.83	61	295734	55.6154 ug/L	92
15) Tert-Butyl Alcohol	6.94	59	97040	195.5789 ug/L	97
16) Dimethyl Sulfide	7.12	62	135657	52.5830 ug/L	94
17) Iodomethane	7.38	142	119726	51.5829 ug/L	91
18) Methyl acetate	7.39	43	187187	50.6554 ug/L	95
19) Methylene Chloride	7.67	84	174497	54.4892 ug/L	80
20) Carbon Disulfide	7.72	76	530150	52.1084 ug/L	98
21) Acrylonitrile	7.86	53	78970	51.9980 ug/L	98
22) Methyl Tert Butyl Ether	7.89	73	506330	55.3647 ug/L	93
23) trans-1,2-Dichloroethene	8.16	96	161116	54.8470 ug/L	86
24) n-Hexane	8.24	57	282956	53.0449 ug/L	98
25) Diisopropyl ether	8.61	45	1357488	98.1559 ug/L	97
26) Vinyl Acetate	8.80	43	361913	50.6243 ug/L	97
27) 1,1-Dichloroethane	8.84	63	345084	54.4873 ug/L	98
28) Ethyl-Tert-Butyl ether	9.24	59	1104598	99.6489 ug/L	96
29) 2-Butanone	9.45	43	102919	49.0011 ug/L	94
30) Propionitrile	9.58	54	57786	99.4084 ug/L	100
31) 2,2-Dichloropropane	9.70	77	275709	54.2347 ug/L	99
32) cis-1,2-Dichloroethene	9.77	96	176368	53.7788 ug/L	98
33) Chloroform	10.01	83	316097	53.4420 ug/L	96
34) 1-Bromopropane	10.16	122	24579	54.6655 ug/L	98
35) Bromochloromethane	10.26	130	106752	55.4000 ug/L	99
36) Tetrahydrofuran	10.29	42	139800	99.1693 ug/L	94
38) 1,1,1-Trichloroethane	10.60	97	287959	55.1175 ug/L	98
39) Cyclohexane	10.63	56	324068	54.7019 ug/L	90
40) 1,1-Dichloropropene	10.82	75	232925	55.3612 ug/L	98
41) Tert-Amyl-Methyl ether	10.95	73	878188	99.8664 ug/L	92
42) Carbon Tetrachloride	10.99	117	270388	55.3891 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137529.D Vial: 8
Acq On : 26 Feb 2016 17:03 Operator: TMB
Sample : WG558920-08 50ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:41 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	11.19	62	272804	54.0384	ug/L		98
46)	Benzene	11.23	78	654918	51.7410	ug/L		91
47)	Trichloroethene	12.09	130	163002	54.5109	ug/L		91
48)	Methylcyclohexane	12.18	83	264045	54.6220	ug/L		88
49)	1,2-Dichloropropane	12.34	63	185139	54.3608	ug/L		99
50)	1,4-Dioxane	12.67	88	7470	186.3872	ug/L		86
51)	Bromodichloromethane	12.68	83	244077	54.6116	ug/L		96
52)	Dibromomethane	12.78	93	112269	56.3600	ug/L		97
53)	2-Chloroethyl Vinyl Ether	13.04	63	99869	53.3134	ug/L		98
54)	4-Methyl-2-Pentanone	13.07	58	71173	50.1774	ug/L		95
55)	cis-1,3-Dichloropropene	13.43	75	275770	56.0032	ug/L		97
56)	Dimethyl Disulfide	13.72	79	136937	55.1380	ug/L		96
59)	Toluene	13.91	91	661797	53.1777	ug/L		100
60)	Ethyl Methacrylate	14.04	69	221335	55.5062	ug/L		94
62)	trans-1,3-Dichloropropene	14.12	75	265281	55.4346	ug/L		99
63)	1,1,2-Trichloroethane	14.38	97	140534	54.0266	ug/L		99
64)	2-Hexanone	14.31	43	150141	50.5831	ug/L		99
65)	1,3-Dichloropropane	14.73	76	254916	54.0691	ug/L		94
66)	Tetrachloroethene	14.87	166	165478	53.9016	ug/L		97
67)	Dibromochloromethane	15.17	129	187125	55.3134	ug/L		98
68)	1,2-Dibromoethane	15.48	107	145905	54.8470	ug/L		99
69)	1-Chlorohexane	15.59	91	213275	55.1854	ug/L		86
70)	Chlorobenzene	16.07	112	421684	52.7217	ug/L	#	68
71)	1,1,1,2-Tetrachloroethane	16.11	131	172886	53.8335	ug/L		98
72)	Ethylbenzene	16.11	106	233514	54.5577	ug/L		98
73)	m-,p-Xylene	16.22	106	560207	106.9693	ug/L		96
74)	o-Xylene	16.88	106	278846	56.5302	ug/L		96
75)	Styrene	16.92	104	471370	56.1451	ug/L		94
76)	Bromoform	17.49	173	131127	54.8964	ug/L		99
77)	Isopropylbenzene	17.38	105	740395	55.8373	ug/L		98
79)	1,1,2,2-Tetrachloroethane	17.65	83	199941	53.8747	ug/L		96
81)	1,2,3-Trichloropropane	17.87	110	61269	53.9200	ug/L		97
82)	trans-1,4-Dichloro-2-Buten	17.93	53	73183	53.4153	ug/L		91
83)	n-Propylbenzene	17.98	91	903295	55.9869	ug/L		98
84)	Bromobenzene	18.12	156	191943	54.7308	ug/L		98
85)	1,3,5-Trimethylbenzene	18.21	105	641908	55.8951	ug/L		95
86)	2-Chlorotoluene	18.30	91	578848	53.7519	ug/L		97
87)	4-Chlorotoluene	18.36	91	530900	53.9168	ug/L		97
88)	a-Methylstyrene	18.69	118	307671	55.1682	ug/L		99
89)	tert-Butylbenzene	18.76	134	134676	56.2719	ug/L		98
90)	1,2,4-Trimethylbenzene	18.82	105	666066	55.1494	ug/L		81
91)	sec-Butylbenzene	19.07	105	825213	56.1103	ug/L		99
92)	p-Isopropyltoluene	19.27	119	685445	56.4914	ug/L		100
93)	1,3-Dichlorobenzene	19.48	146	365219	53.8210	ug/L		96
94)	1,4-Dichlorobenzene	19.64	146	363309	52.5979	ug/L		98
95)	n-Butylbenzene	19.89	91	677494	55.5152	ug/L		98
96)	1,2-Dichlorobenzene	20.23	146	350298	53.6470	ug/L		96
97)	1,2-Dibromo-3-Chloropropan	21.41	75	43537	53.0196	ug/L		90
98)	1,2,4-Trichlorobenzene	22.76	180	262463	55.6006	ug/L		99
99)	Hexachlorobutadiene	22.95	225	150922	55.9053	ug/L		100
100)	Naphthalene	23.20	128	617866	56.9360	ug/L		100
101)	1,2,3-Trichlorobenzene	23.59	180	259953	55.9254	ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137529.D Vial: 8
Acq On : 26 Feb 2016 17:03 Operator: TMB
Sample : WG558920-08 50ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

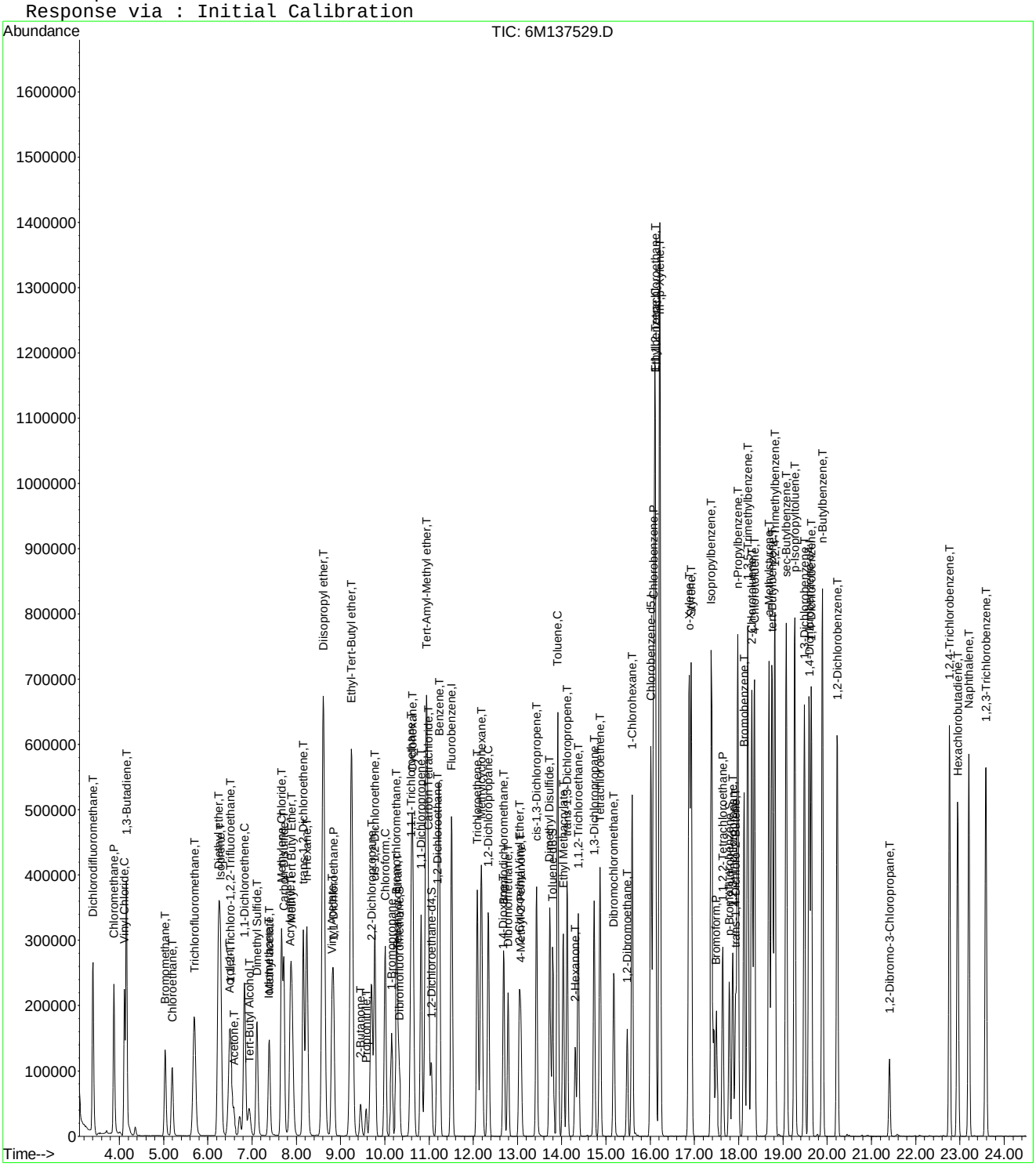

6M137529.D 826_SL.M Mon Feb 29 16:01:42 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137530.D Vial: 9
Acq On : 26 Feb 2016 17:35 Operator: TMB
Sample : WG558920-09 100ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:42 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	642087	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	466249	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	253947	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.32	111	162548	47.1921 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.38%		
43) 1,2-Dichloroethane-d4	11.06	65	210928	47.1653 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.34%		
58) Toluene-d8	13.80	98	518743	46.7957 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 93.60%		
80) p-Bromofluorobenzene	17.79	95	219336	47.0227 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 94.04%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	562397	95.3710 ug/L	99
3) Chloromethane	3.88	50	511342	83.2121 ug/L	98
4) Vinyl Chloride	4.12	62	453722	91.7337 ug/L	97
5) 1,3-Butadiene	4.16	54	371216	90.2064 ug/L	92
6) Bromomethane	5.03	94	236484	89.6925 ug/L	99
7) Chloroethane	5.19	64	259484	92.5233 ug/L	94
8) Trichlorofluoromethane	5.69	101	593589	89.3146 ug/L	99
9) Diethyl ether	6.23	59	599424	196.0563 ug/L	94
10) Isoprene	6.28	67	429478	99.1954 ug/L	86
11) Acrolein	6.48	56	58142	100.1359 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	295880	93.2711 ug/L	94
13) Acetone	6.59	43	134155	95.5525 ug/L	97
14) 1,1-Dichloroethene	6.83	61	525920	93.5964 ug/L	92
15) Tert-Butyl Alcohol	6.94	59	207755	396.2496 ug/L	97
16) Dimethyl Sulfide	7.11	62	269784	98.9613 ug/L	92
17) Iodomethane	7.38	142	252699	98.0787 ug/L	90
18) Methyl acetate	7.39	43	375036	96.0437 ug/L	97
19) Methylene Chloride	7.67	84	311212	91.9654 ug/L	80
20) Carbon Disulfide	7.72	76	1037082	96.4646 ug/L	99
21) Acrylonitrile	7.86	53	165829	103.3311 ug/L	99
22) Methyl Tert Butyl Ether	7.89	73	942489	97.5263 ug/L	93
23) trans-1,2-Dichloroethene	8.16	96	289637	93.3071 ug/L	87
24) n-Hexane	8.23	57	555752	98.5944 ug/L	98
25) Diisopropyl ether	8.61	45	2877959	196.9296 ug/L	96
26) Vinyl Acetate	8.80	43	731541	96.8365 ug/L	99
27) 1,1-Dichloroethane	8.83	63	621539	92.8721 ug/L	98
28) Ethyl-Tert-Butyl ether	9.24	59	2342177	199.9557 ug/L	96
29) 2-Butanone	9.45	43	207126	93.3235 ug/L	95
30) Propionitrile	9.57	54	121992	198.5994 ug/L	98
31) 2,2-Dichloropropane	9.69	77	491609	91.5150 ug/L	98
32) cis-1,2-Dichloroethene	9.77	96	321521	92.7784 ug/L	96
33) Chloroform	10.01	83	568519	90.9606 ug/L	95
34) 1-Bromopropane	10.16	122	47570	100.1217 ug/L	99
35) Bromochloromethane	10.26	130	193434	94.9975 ug/L	100
36) Tetrahydrofuran	10.29	42	287880	195.3143 ug/L	95
38) 1,1,1-Trichloroethane	10.60	97	511473	92.6461 ug/L	98
39) Cyclohexane	10.63	56	631373	100.8552 ug/L	90
40) 1,1-Dichloropropene	10.82	75	416243	93.6230 ug/L	97
41) Tert-Amyl-Methyl ether	10.94	73	1879478	202.2624 ug/L	92
42) Carbon Tetrachloride	10.99	117	485191	94.0581 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137530.D Vial: 9
Acq On : 26 Feb 2016 17:35 Operator: TMB
Sample : WG558920-09 100ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:42 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45) 1,2-Dichloroethane	11.19	62	498315	93.4118 ug/L	98
46) Benzene	11.23	78	1182199	88.3862 ug/L	91
47) Trichloroethene	12.09	130	294176	93.0987 ug/L	90
48) Methylcyclohexane	12.18	83	515585	100.9337 ug/L	88
49) 1,2-Dichloropropane	12.34	63	342055	95.0452 ug/L	100
50) 1,4-Dioxane	12.67	88	17776	381.1583 ug/L	84
51) Bromodichloromethane	12.68	83	452280	95.7660 ug/L	97
52) Dibromomethane	12.79	93	202292	96.1028 ug/L	98
53) 2-Chloroethyl Vinyl Ether	13.04	63	206349	104.2447 ug/L	97
54) 4-Methyl-2-Pentanone	13.07	58	145646	97.1712 ug/L	93
55) cis-1,3-Dichloropropene	13.43	75	509093	97.8384 ug/L	95
56) Dimethyl Disulfide	13.72	79	282091	107.4894 ug/L	96
59) Toluene	13.91	91	1184465	89.8074 ug/L	100
60) Ethyl Methacrylate	14.04	69	445228	105.3560 ug/L	94
62) trans-1,3-Dichloropropene	14.12	75	494673	97.5390 ug/L	99
63) 1,1,2-Trichloroethane	14.38	97	261258	94.7723 ug/L	99
64) 2-Hexanone	14.31	43	305856	97.2318 ug/L	100
65) 1,3-Dichloropropane	14.74	76	469121	93.8906 ug/L	93
66) Tetrachloroethene	14.87	166	296672	91.1851 ug/L	98
67) Dibromochloromethane	15.17	129	347661	96.9706 ug/L	98
68) 1,2-Dibromoethane	15.48	107	270599	95.9830 ug/L	97
69) 1-Chlorohexane	15.59	91	420885	102.7620 ug/L	86
70) Chlorobenzene	16.07	112	765249	90.2797 ug/L	69
71) 1,1,1,2-Tetrachloroethane	16.11	131	320669	94.2184 ug/L	97
72) Ethylbenzene	16.10	106	422350	93.1110 ug/L	97
73) m-,p-Xylene	16.22	106	1018750	183.5539 ug/L	96
74) o-Xylene	16.87	106	503867	96.3867 ug/L	94
75) Styrene	16.92	104	871975	98.0029 ug/L	94
76) Bromoform	17.49	173	243410	96.1558 ug/L	99
77) Isopropylbenzene	17.38	105	1335991	95.0715 ug/L	98
79) 1,1,2,2-Tetrachloroethane	17.65	83	376052	94.7950 ug/L	96
81) 1,2,3-Trichloropropane	17.87	110	114333	94.1314 ug/L	95
82) trans-1,4-Dichloro-2-Buten	17.93	53	150048	102.4566 ug/L	89
83) n-Propylbenzene	17.98	91	1628674	94.4377 ug/L	98
84) Bromobenzene	18.13	156	352357	93.9933 ug/L	98
85) 1,3,5-Trimethylbenzene	18.21	105	1165530	94.9464 ug/L	95
86) 2-Chlorotoluene	18.30	91	1069398	92.9015 ug/L	97
87) 4-Chlorotoluene	18.35	91	957337	90.9557 ug/L	97
88) a-Methylstyrene	18.69	118	626810	105.1459 ug/L	98
89) tert-Butylbenzene	18.75	134	243763	95.2846 ug/L	87
90) 1,2,4-Trimethylbenzene	18.82	105	1211949	93.8776 ug/L	81
91) sec-Butylbenzene	19.08	105	1482811	94.3227 ug/L	99
92) p-Isopropyltoluene	19.27	119	1243718	95.8928 ug/L	100
93) 1,3-Dichlorobenzene	19.48	146	670076	92.3797 ug/L	97
94) 1,4-Dichlorobenzene	19.64	146	665185	90.0925 ug/L	97
95) n-Butylbenzene	19.89	91	1241772	95.1924 ug/L	98
96) 1,2-Dichlorobenzene	20.22	146	649160	93.0065 ug/L	96
97) 1,2-Dibromo-3-Chloropropan	21.41	75	84975	96.8107 ug/L	89
98) 1,2,4-Trichlorobenzene	22.76	180	475402	94.2164 ug/L	99
99) Hexachlorobutadiene	22.95	225	270006	93.5681 ug/L	100
100) Naphthalene	23.20	128	1163220	100.2786 ug/L	100
101) 1,2,3-Trichlorobenzene	23.58	180	465522	93.6933 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M137530.D 826_SL.M Mon Feb 29 16:01:42 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137530.D Vial: 9
Acq On : 26 Feb 2016 17:35 Operator: TMB
Sample : WG558920-09 100ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

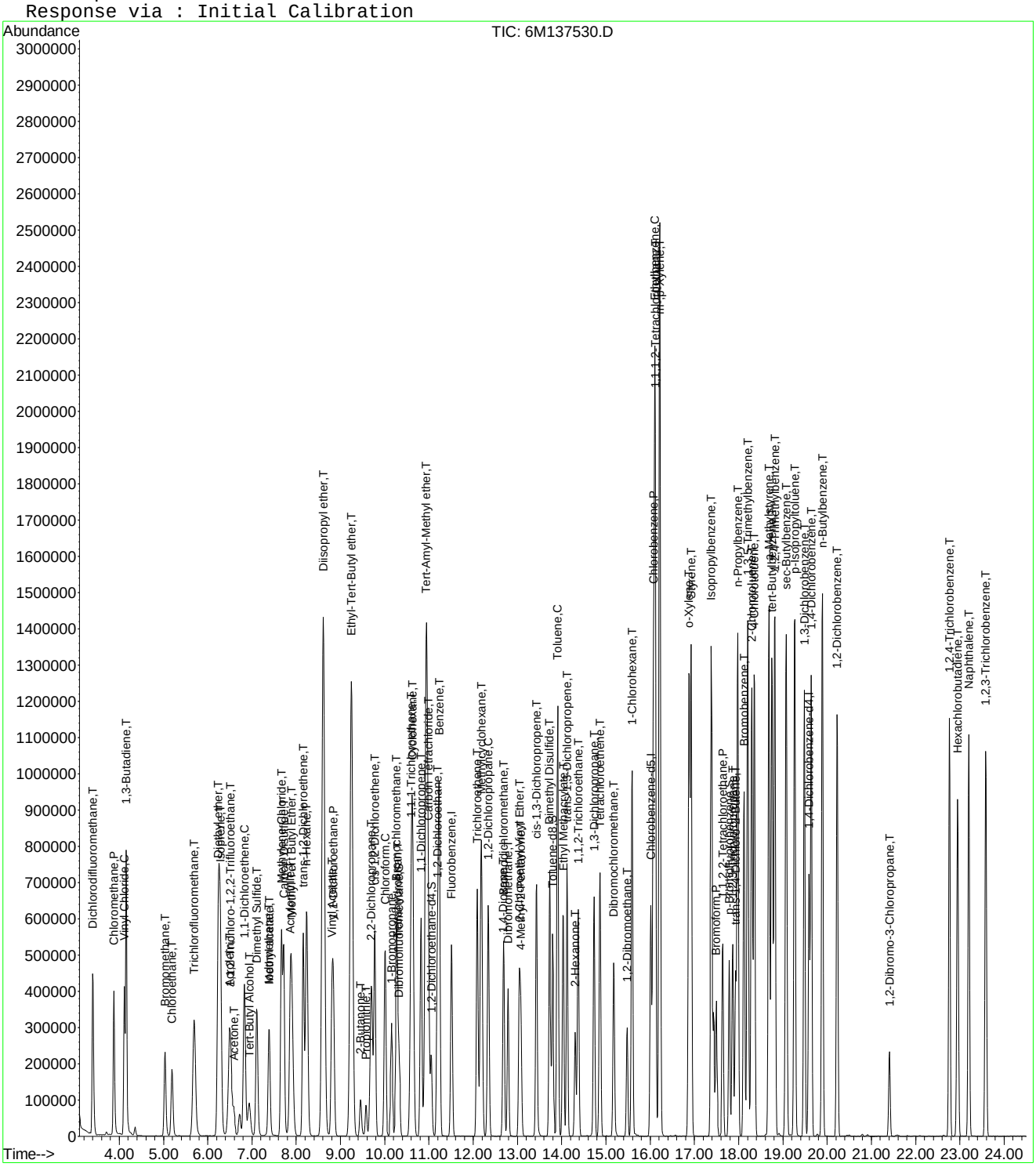

6M137530.D 826_SL.M Mon Feb 29 16:01:43 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137531.D Vial: 10
Acq On : 26 Feb 2016 18:07 Operator: TMB
Sample : WG558920-10 200ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:43 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	661999	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	479329	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	273657	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	351336	98.9344 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 197.86%#		
43) 1,2-Dichloroethane-d4	11.05	65	450300	97.6622 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 195.32%#		
58) Toluene-d8	13.80	98	1096959	96.2561 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 192.52%#		
80) p-Bromofluorobenzene	17.79	95	487968	97.0790 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 194.16%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	1228760	202.1049 ug/L	98
3) Chloromethane	3.88	50	1125279	177.6118 ug/L	98
4) Vinyl Chloride	4.12	62	989076	193.9570 ug/L	97
5) 1,3-Butadiene	4.16	54	745589	175.7303 ug/L	94
6) Bromomethane	5.03	94	548799	201.8852 ug/L	100
7) Chloroethane	5.19	64	579871	200.5435 ug/L	96
8) Trichlorofluoromethane	5.69	101	1297014	189.2858 ug/L	100
9) Diethyl ether	6.23	59	1563	0.4958 ug/L #	49
10) Isoprene	6.27	67	894422	200.3686 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	649915	198.7121 ug/L	93
13) Acetone	6.59	43	290441	205.4763 ug/L	99
14) 1,1-Dichloroethene	6.83	61	1161250	200.4481 ug/L	92
15) Tert-Butyl Alcohol	6.83	59	39858	73.7343 ug/L #	57
16) Dimethyl Sulfide	7.11	62	576142	204.9817 ug/L	92
17) Iodomethane	7.38	142	559892	205.0669 ug/L	91
18) Methyl acetate	7.39	43	775842	192.7107 ug/L	97
19) Methylene Chloride	7.67	84	681801	195.4170 ug/L	78
20) Carbon Disulfide	7.72	76	2184454	197.0763 ug/L	98
21) Acrylonitrile	7.90	53	25391	15.3457 ug/L #	34
22) Methyl Tert Butyl Ether	7.90	73	2079733	208.7322 ug/L	92
23) trans-1,2-Dichloroethene	8.16	96	635434	198.5489 ug/L	86
24) n-Hexane	8.23	57	1159756	199.5603 ug/L	99
25) Diisopropyl ether	8.63	45	8975	0.5957 ug/L #	37
26) Vinyl Acetate	8.80	43	1656751	212.7131 ug/L	98
27) 1,1-Dichloroethane	8.83	63	1360017	197.1051 ug/L	97
28) Ethyl-Tert-Butyl ether	9.23	59	4690	0.3884 ug/L #	76
29) 2-Butanone	9.45	43	450489	196.8688 ug/L	97
30) Propionitrile	9.59	54	193	0.3047 ug/L #	55
31) 2,2-Dichloropropane	9.69	77	1084788	195.8637 ug/L	97
32) cis-1,2-Dichloroethene	9.77	96	711282	199.0746 ug/L	99
33) Chloroform	10.00	83	1259701	195.4845 ug/L	96
34) 1-Bromopropane	10.16	122	101190	206.5710 ug/L	98
35) Bromochloromethane	10.26	130	430294	204.9658 ug/L	100
36) Tetrahydrofuran	10.31	42	4560	0.8620 ug/L #	82
38) 1,1,1-Trichloroethane	10.60	97	1139307	200.1621 ug/L	98
39) Cyclohexane	10.63	56	1322081	204.8363 ug/L	90
40) 1,1-Dichloropropene	10.83	75	913448	199.2765 ug/L	99
41) Tert-Amyl-Methyl ether	10.93	73	3689	0.3851 ug/L #	57
42) Carbon Tetrachloride	10.99	117	1067649	200.7466 ug/L	97
45) 1,2-Dichloroethane	11.19	62	1098127	199.6582 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137531.D Vial: 10
Acq On : 26 Feb 2016 18:07 Operator: TMB
Sample : WG558920-10 200ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:43 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	11.23	78	2576436	186.8313 ug/L		90
47)	Trichloroethene	12.09	130	648704	199.1220 ug/L		90
48)	Methylcyclohexane	12.18	83	1075003	204.1184 ug/L		87
49)	1,2-Dichloropropane	12.34	63	757110	204.0468 ug/L		100
50)	1,4-Dioxane	12.68	88	863	47.3107 ug/L	#	17
51)	Bromodichloromethane	12.68	83	1017483	208.9621 ug/L		97
52)	Dibromomethane	12.79	93	451601	208.0889 ug/L		97
53)	2-Chloroethyl Vinyl Ether	13.03	63	470311	230.4481 ug/L		98
54)	4-Methyl-2-Pentanone	13.07	58	332135	214.9265 ug/L		95
55)	cis-1,3-Dichloropropene	13.43	75	1150962	214.5407 ug/L		96
56)	Dimethyl Disulfide	13.73	79	648612	239.7166 ug/L		96
59)	Toluene	13.91	91	2588299	190.8923 ug/L		99
60)	Ethyl Methacrylate	14.03	69	978791	225.2947 ug/L		94
62)	trans-1,3-Dichloropropene	14.12	75	1110336	212.9604 ug/L		98
63)	1,1,2-Trichloroethane	14.38	97	578586	204.1568 ug/L		99
64)	2-Hexanone	14.31	43	689071	213.0784 ug/L		99
65)	1,3-Dichloropropane	14.74	76	1034423	201.3815 ug/L		93
66)	Tetrachloroethene	14.87	166	644718	192.7530 ug/L		97
67)	Dibromochloromethane	15.18	129	780769	211.8317 ug/L		100
68)	1,2-Dibromoethane	15.48	107	610277	210.5616 ug/L		98
69)	1-Chlorohexane	15.59	91	900931	213.9661 ug/L		86
70)	Chlorobenzene	16.07	112	1706160	195.7904 ug/L	#	68
71)	1,1,1,2-Tetrachloroethane	16.11	131	721225	206.1264 ug/L		97
72)	Ethylbenzene	16.11	106	946980	203.0736 ug/L		98
73)	m-,p-Xylene	16.22	106	2242794	393.0696 ug/L		97
74)	o-Xylene	16.87	106	1130903	210.4315 ug/L		95
75)	Styrene	16.92	104	1988734	217.4182 ug/L		93
76)	Bromoform	17.49	173	561872	215.9030 ug/L		99
77)	Isopropylbenzene	17.38	105	2989967	206.9652 ug/L		98
79)	1,1,2,2-Tetrachloroethane	17.64	83	859540	201.0666 ug/L		95
81)	1,2,3-Trichloropropane	17.87	110	265884	203.1382 ug/L		89
82)	trans-1,4-Dichloro-2-Buten	17.93	53	340440	215.7181 ug/L		90
83)	n-Propylbenzene	17.98	91	3639812	195.8513 ug/L		98
84)	Bromobenzene	18.13	156	802539	198.6628 ug/L		99
85)	1,3,5-Trimethylbenzene	18.21	105	2665531	201.5000 ug/L		96
86)	2-Chlorotoluene	18.30	91	2450953	197.5855 ug/L		97
87)	4-Chlorotoluene	18.35	91	2149568	189.5191 ug/L		97
88)	a-Methylstyrene	18.69	118	1416560	220.5099 ug/L		98
89)	tert-Butylbenzene	18.75	134	559469	202.9400 ug/L		85
90)	1,2,4-Trimethylbenzene	18.82	105	2775173	199.4822 ug/L		81
91)	sec-Butylbenzene	19.08	105	3369131	198.8771 ug/L		100
92)	p-Isopropyltoluene	19.26	119	2833911	202.7621 ug/L		99
93)	1,3-Dichlorobenzene	19.49	146	1523154	194.8646 ug/L		95
94)	1,4-Dichlorobenzene	19.64	146	1521474	191.2260 ug/L		97
95)	n-Butylbenzene	19.89	91	2819417	200.5655 ug/L		98
96)	1,2-Dichlorobenzene	20.22	146	1485290	197.4738 ug/L		95
97)	1,2-Dibromo-3-Chloropropan	21.41	75	195547	206.7378 ug/L		89
98)	1,2,4-Trichlorobenzene	22.76	180	1054519	193.9351 ug/L		98
99)	Hexachlorobutadiene	22.95	225	597195	192.0469 ug/L		99
100)	Naphthalene	23.20	128	2579088	206.3237 ug/L		99
101)	1,2,3-Trichlorobenzene	23.58	180	1038439	193.9482 ug/L		99

(#) = qualifier out of range (m) = manual integration
6M137531.D 826_SL.M Mon Feb 29 16:01:43 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137531.D Vial: 10
Acq On : 26 Feb 2016 18:07 Operator: TMB
Sample : WG558920-10 200ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

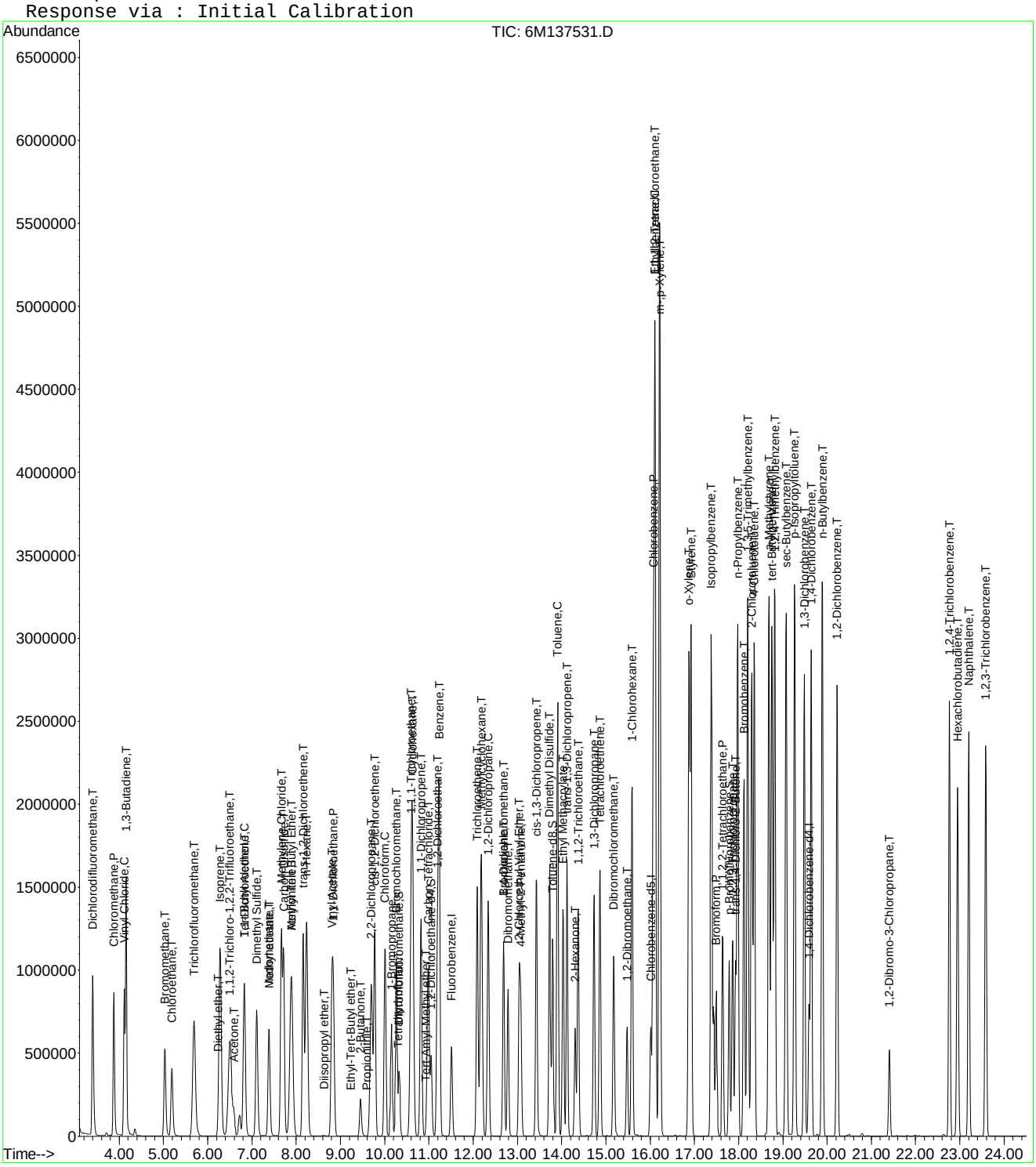

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137532.D Vial: 11
Acq On : 26 Feb 2016 18:39 Operator: TMB
Sample : WG558920-11 300ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:43 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	707233	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	525178	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	308135	50.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.33	111	555974	146.5460 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 293.10%#		
43) 1,2-Dichloroethane-d4	11.05	65	713394	144.8268 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 289.66%#		
58) Toluene-d8	13.80	98	1741152	139.4446 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 278.88%#		
80) p-Bromofluorobenzene	17.79	95	787625	139.1615 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 278.32%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	1997367	307.5122 ug/L	98
3) Chloromethane	3.88	50	1848014	273.0309 ug/L	98
4) Vinyl Chloride	4.11	62	1515327	278.1486 ug/L	97
5) 1,3-Butadiene	4.15	54	1176840	259.6328 ug/L	94
6) Bromomethane	5.03	94	924558	318.3612 ug/L	100
7) Chloroethane	5.18	64	952580	308.3709 ug/L	96
8) Trichlorofluoromethane	5.68	101	2124957	290.2808 ug/L	99
9) Diethyl ether	6.23	59	1011802	300.4509 ug/L	94
10) Isoprene	6.27	67	1489357	312.3064 ug/L	86
11) Acrolein	6.49	56	100305	156.8389 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	1067610	305.5451 ug/L	94
13) Acetone	6.59	43	448789	299.1551 ug/L	99
14) 1,1-Dichloroethene	6.82	61	1895304	306.2315 ug/L	92
15) Tert-Butyl Alcohol	6.95	59	370925	642.2954 ug/L	99
16) Dimethyl Sulfide	7.11	62	950681	316.6032 ug/L	94
17) Iodomethane	7.38	142	877751	298.6036 ug/L	91
18) Methyl acetate	7.40	43	1274555	296.3371 ug/L	98
19) Methylene Chloride	7.66	84	1102725	295.8467 ug/L	79
20) Carbon Disulfide	7.71	76	3583096	302.5832 ug/L	98
21) Acrylonitrile	7.86	53	296066	167.4906 ug/L	98
22) Methyl Tert Butyl Ether	7.90	73	3392519	318.7124 ug/L	92
23) trans-1,2-Dichloroethene	8.16	96	1037130	303.3368 ug/L	86
24) n-Hexane	8.23	57	1917686	308.8729 ug/L	99
25) Diisopropyl ether	8.61	45	4780310	296.9708 ug/L	96
26) Vinyl Acetate	8.80	43	2633859	316.5369 ug/L	99
27) 1,1-Dichloroethane	8.83	63	2210234	299.8379 ug/L	97
28) Ethyl-Tert-Butyl ether	9.24	59	3979837	308.4685 ug/L	96
29) 2-Butanone	9.45	43	727982	297.7887 ug/L	98
30) Propionitrile	9.58	54	209887	310.2156 ug/L	99
31) 2,2-Dichloropropane	9.69	77	1783568	301.4350 ug/L	96
32) cis-1,2-Dichloroethene	9.77	96	1159875	303.8646 ug/L	98
33) Chloroform	10.00	83	2040554	296.4065 ug/L	96
34) 1-Bromopropane	10.15	122	167090	319.2839 ug/L	98
35) Bromochloromethane	10.26	130	694571	309.6903 ug/L	99
36) Tetrahydrofuran	10.30	42	490636	303.4020 ug/L	96
38) 1,1,1-Trichloroethane	10.60	97	1858746	305.6722 ug/L	98
39) Cyclohexane	10.63	56	2201094	319.2142 ug/L	89
40) 1,1-Dichloropropene	10.83	75	1504422	307.2111 ug/L	99
41) Tert-Amyl-Methyl ether	10.94	73	3231746	315.7523 ug/L	93
42) Carbon Tetrachloride	10.99	117	1763858	310.4404 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137532.D Vial: 11
Acq On : 26 Feb 2016 18:39 Operator: TMB
Sample : WG558920-11 300ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:43 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45) 1,2-Dichloroethane	11.19	62	1778788	302.7287 ug/L	98
46) Benzene	11.23	78	4155462	282.0619 ug/L	90
47) Trichloroethene	12.09	130	1058154	304.0300 ug/L	90
48) Methylcyclohexane	12.18	83	1798917	319.7263 ug/L	88
49) 1,2-Dichloropropane	12.34	63	1232481	310.9180 ug/L	100
50) 1,4-Dioxane	12.67	88	32606	614.2458 ug/L	84
51) Bromodichloromethane	12.68	83	1653218	317.8084 ug/L	96
52) Dibromomethane	12.79	93	733410	316.3265 ug/L	98
53) 2-Chloroethyl Vinyl Ether	13.03	63	766489	351.5513 ug/L	97
54) 4-Methyl-2-Pentanone	13.07	58	543988	329.5031 ug/L	95
55) cis-1,3-Dichloropropene	13.42	75	1877090	327.5130 ug/L	95
56) Dimethyl Disulfide	13.73	79	1088350	376.5100 ug/L	96
59) Toluene	13.91	91	4193210	282.2590 ug/L	99
60) Ethyl Methacrylate	14.03	69	1632375	342.9321 ug/L	95
62) trans-1,3-Dichloropropene	14.12	75	1832609	320.8053 ug/L	98
63) 1,1,2-Trichloroethane	14.38	97	942438	303.5120 ug/L	98
64) 2-Hexanone	14.31	43	1154652	325.8770 ug/L	98
65) 1,3-Dichloropropane	14.74	76	1702509	302.5088 ug/L	94
66) Tetrachloroethene	14.87	166	1062175	289.8375 ug/L	97
67) Dibromochloromethane	15.18	129	1292929	320.1624 ug/L	100
68) 1,2-Dibromoethane	15.48	107	1008106	317.4575 ug/L	98
69) 1-Chlorohexane	15.59	91	1494127	323.8681 ug/L	86
70) Chlorobenzene	16.07	112	2773062	290.4413 ug/L #	66
71) 1,1,1,2-Tetrachloroethane	16.11	131	1196001	311.9762 ug/L	97
72) Ethylbenzene	16.11	106	1556732	304.6869 ug/L	100
73) m-,p-Xylene	16.22	106	3653753	584.4488 ug/L	99
74) o-Xylene	16.87	106	1861503	316.1378 ug/L	96
75) Styrene	16.92	104	3280614	327.3419 ug/L	91
76) Bromoform	17.49	173	968059	339.5083 ug/L	100
77) Isopropylbenzene	17.38	105	4859396	307.0014 ug/L	99
79) 1,1,2,2-Tetrachloroethane	17.64	83	1473362	306.0898 ug/L	95
81) 1,2,3-Trichloropropane	17.87	110	450710	305.8173 ug/L	97
82) trans-1,4-Dichloro-2-Buten	17.93	53	587175	330.4298 ug/L	92
83) n-Propylbenzene	17.98	91	5875551	280.7771 ug/L	99
84) Bromobenzene	18.13	156	1329308	292.2413 ug/L	98
85) 1,3,5-Trimethylbenzene	18.21	105	4394146	295.0064 ug/L	96
86) 2-Chlorotoluene	18.30	91	4027318	288.3378 ug/L	97
87) 4-Chlorotoluene	18.35	91	3574535	279.8896 ug/L	97
88) a-Methylstyrene	18.69	118	2387215	330.0275 ug/L	99
89) tert-Butylbenzene	18.75	134	927820	298.8965 ug/L	84
90) 1,2,4-Trimethylbenzene	18.82	105	4532965	289.3756 ug/L	82
91) sec-Butylbenzene	19.08	105	5502198	288.4488 ug/L	100
92) p-Isopropyltoluene	19.27	119	4664534	296.3974 ug/L	98
93) 1,3-Dichlorobenzene	19.49	146	2567994	291.7754 ug/L	95
94) 1,4-Dichlorobenzene	19.64	146	2568075	286.6525 ug/L	96
95) n-Butylbenzene	19.89	91	4738000	299.3349 ug/L	98
96) 1,2-Dichlorobenzene	20.22	146	2506554	295.9653 ug/L	94
97) 1,2-Dibromo-3-Chloropropan	21.41	75	337125	316.5375 ug/L	88
98) 1,2,4-Trichlorobenzene	22.76	180	1820641	297.3664 ug/L	98
99) Hexachlorobutadiene	22.95	225	1055064	301.3252 ug/L	99
100) Naphthalene	23.20	128	4412465	313.4943 ug/L	98
101) 1,2,3-Trichlorobenzene	23.58	180	1777074	294.7650 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M137532.D 826_SL.M Mon Feb 29 16:01:44 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137532.D Vial: 11
Acq On : 26 Feb 2016 18:39 Operator: TMB
Sample : WG558920-11 300ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

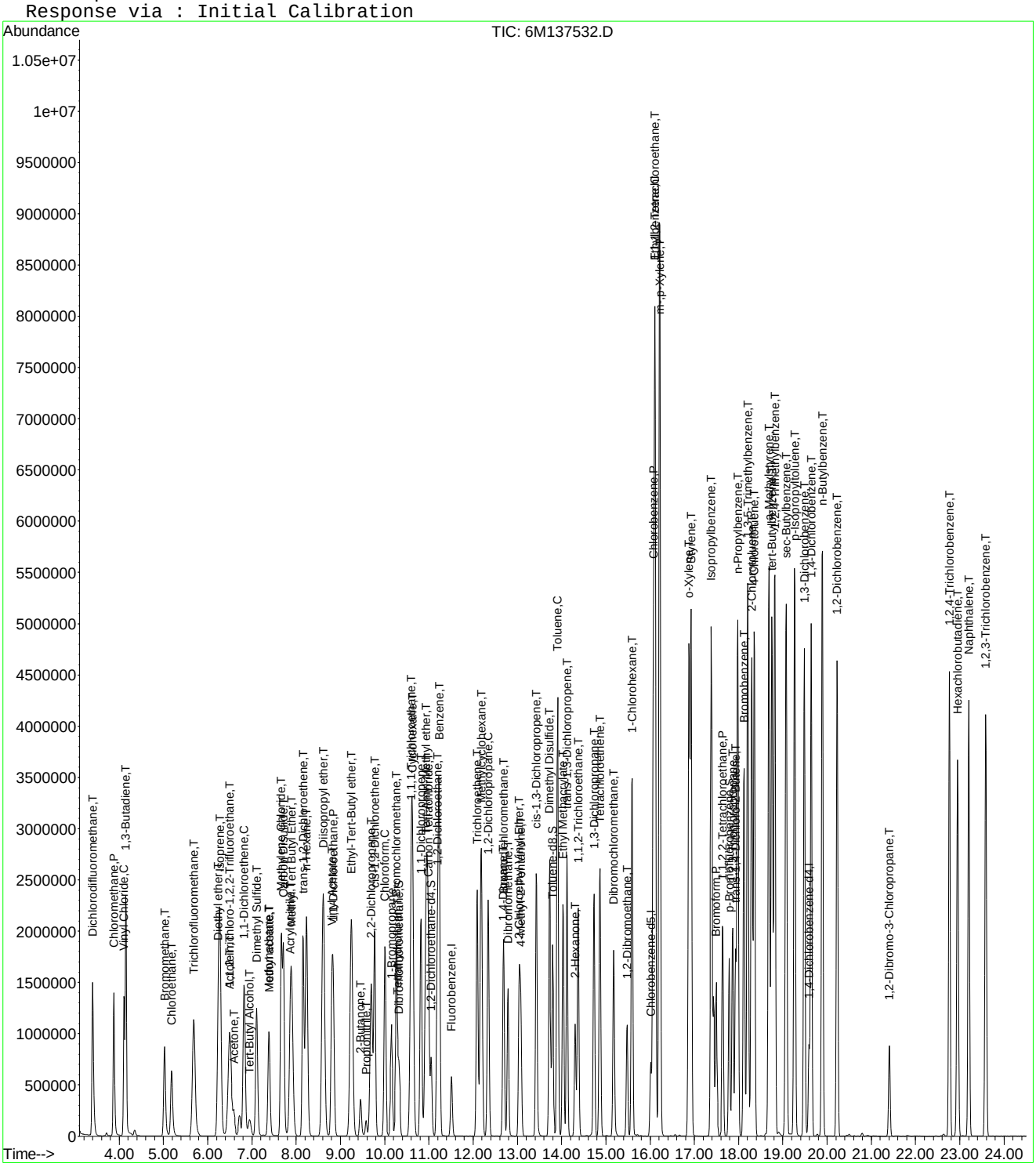

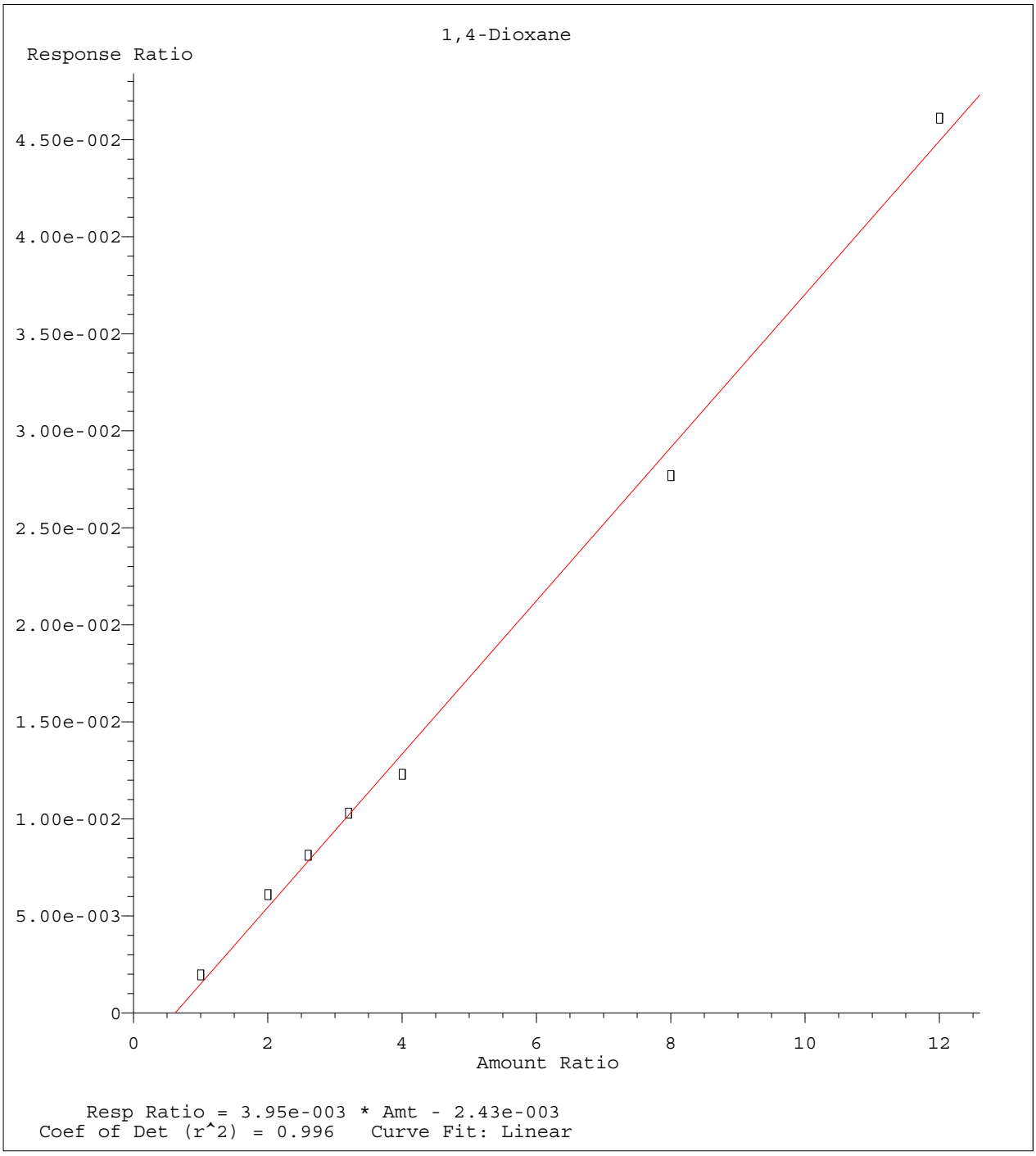

Method Name: C:\MSDCHEM\1\METHODS\826_SL.M
Calibration Table Last Updated: Mon Feb 29 08:51:12 2016

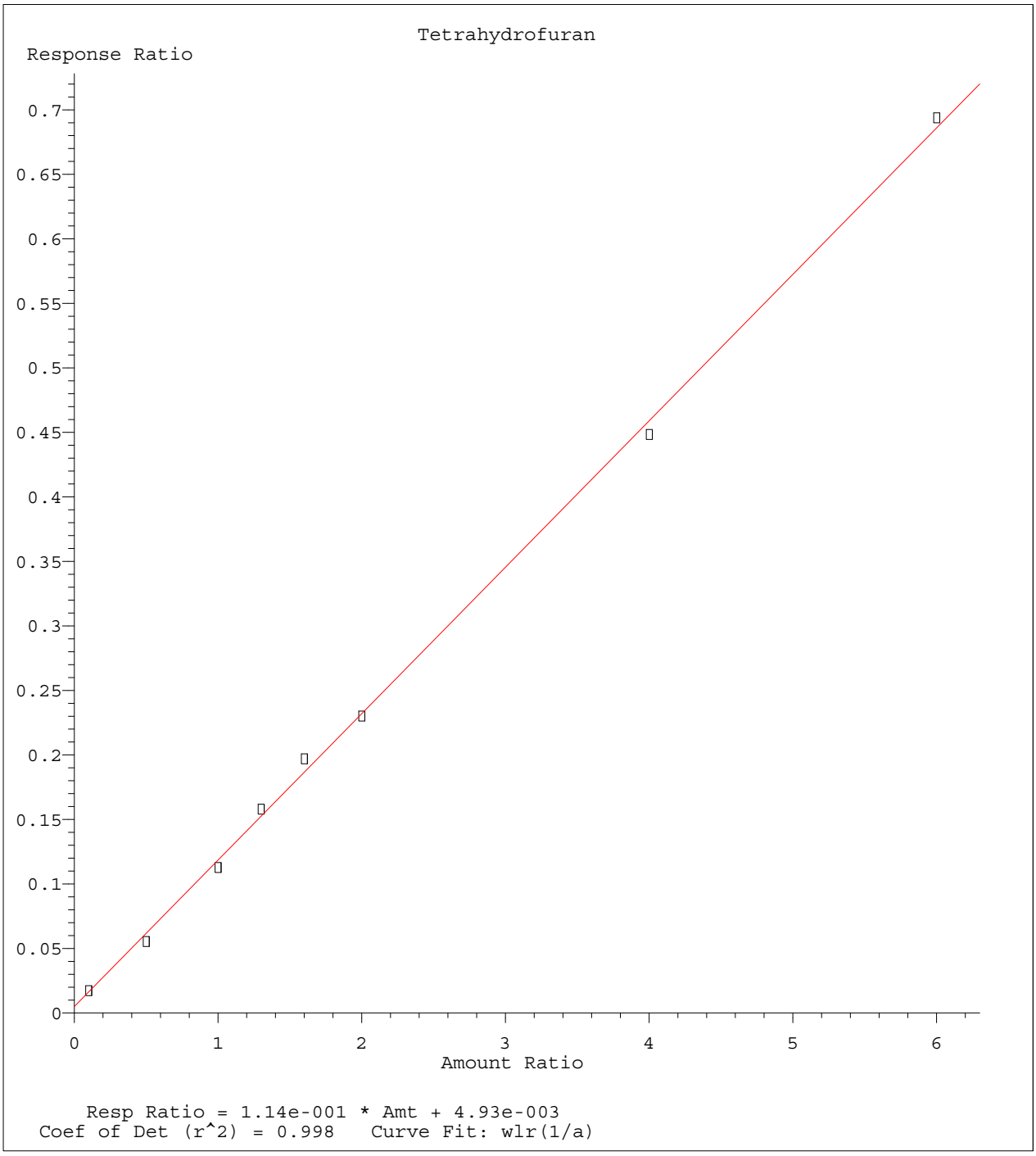

Method Name: C:\MSDCHEM\1\METHODS\826_SL.M
Calibration Table Last Updated: Mon Feb 29 08:51:12 2016

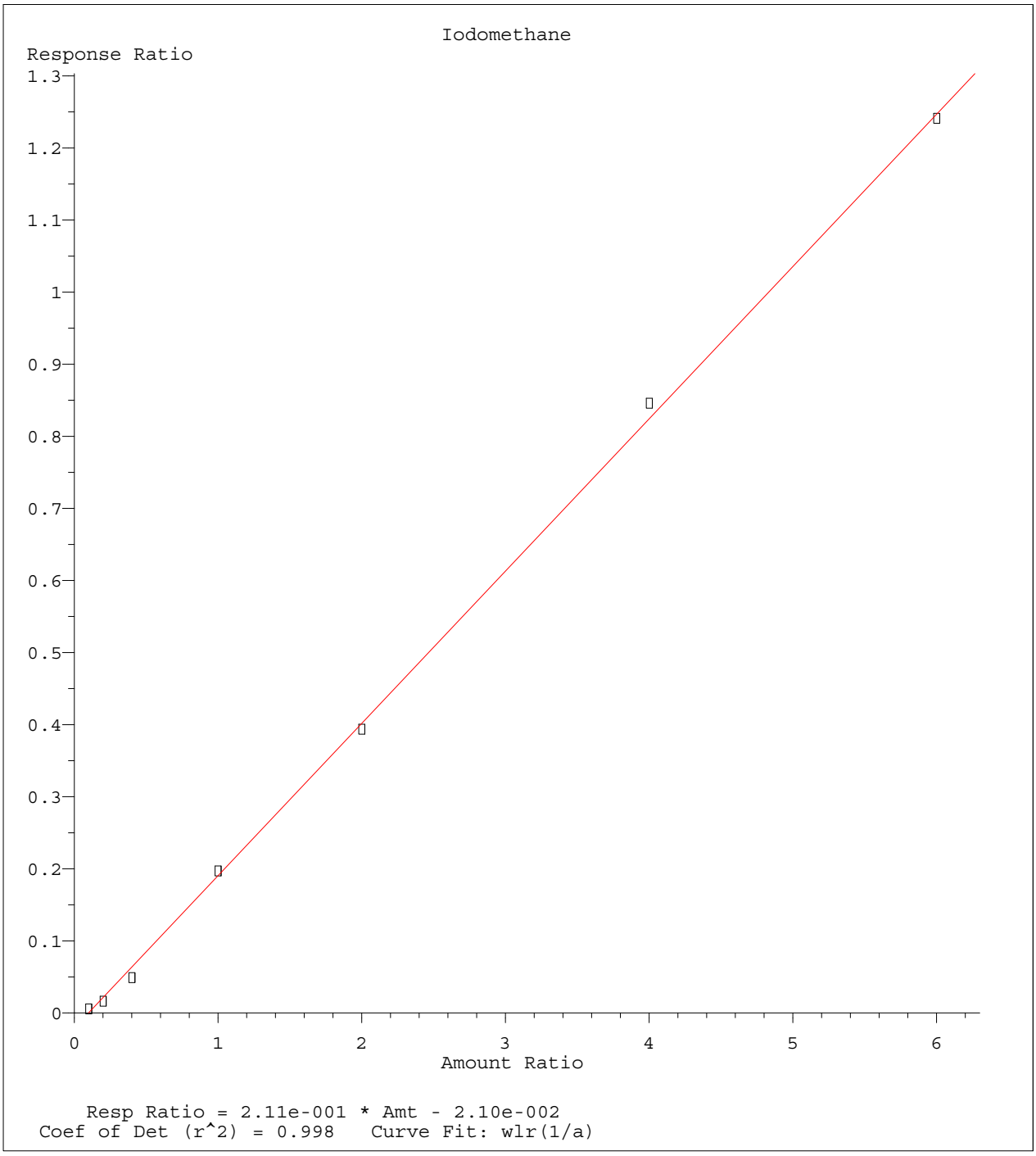

Method Name: C:\MSDCHEM\1\METHODS\826_SL.M
Calibration Table Last Updated: Mon Feb 29 08:51:12 2016

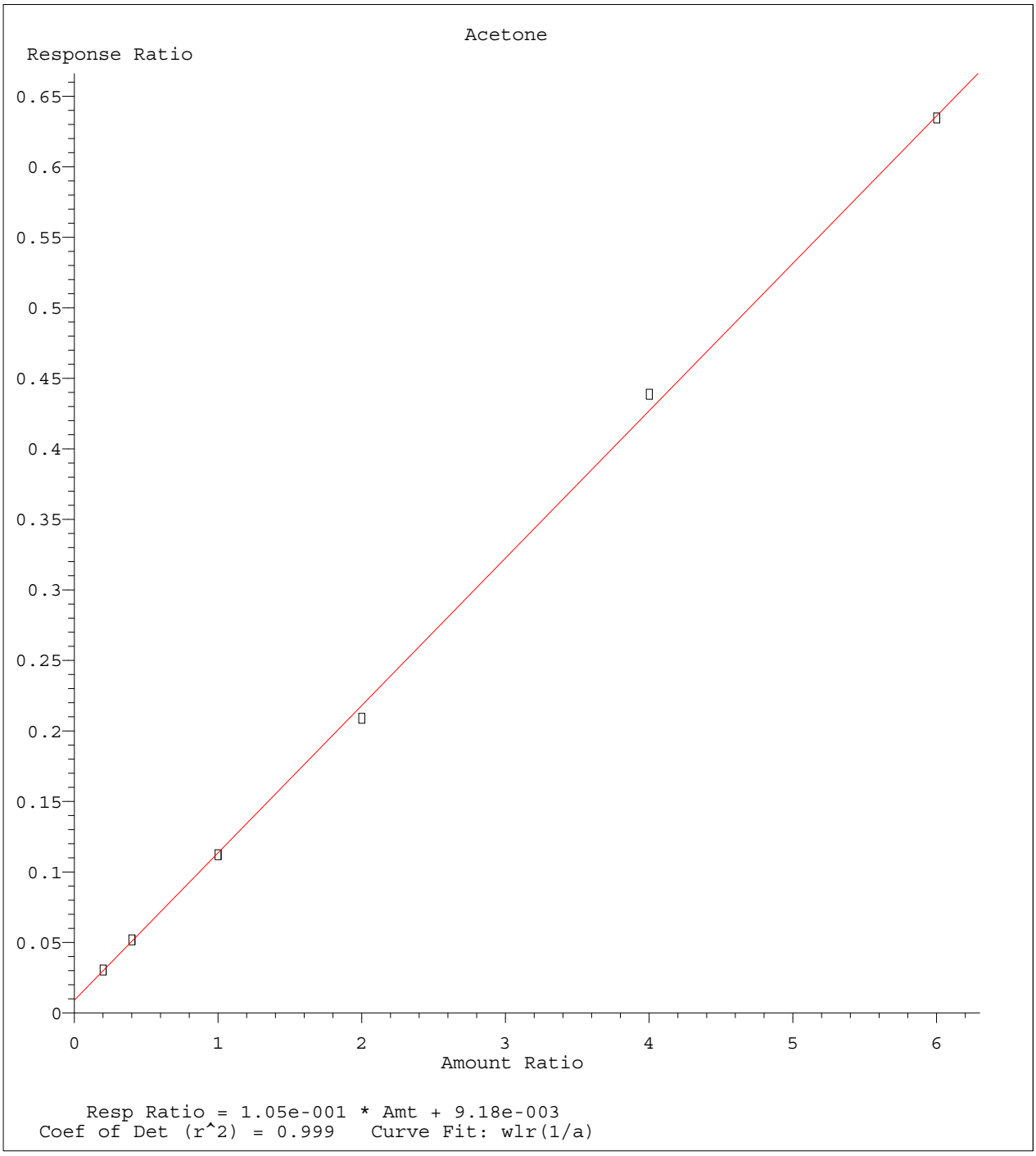

Method Name: C:\MSDCHEM\1\METHODS\826_SL.M
Calibration Table Last Updated: Mon Feb 29 08:51:12 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:44 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	697242	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	504277	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	281494	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.32	111	83790	22.4022 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 44.80%#		
43) 1,2-Dichloroethane-d4	11.05	65	107686	22.1747 ug/L	-0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 44.34%#		
58) Toluene-d8	13.80	98	259069	21.6082 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 43.22%#		
80) p-Bromofluorobenzene	17.79	95	108251	20.9365 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 41.88%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	355154	55.4626 ug/L	99
3) Chloromethane	3.88	50	339693	50.9064 ug/L	98
4) Vinyl Chloride	4.11	62	232790	43.3425 ug/L	98
5) 1,3-Butadiene	4.16	54	191696	42.8977 ug/L	93
6) Bromomethane	5.02	94	167650	58.5556 ug/L	99
7) Chloroethane	5.19	64	172370	56.5995 ug/L	98
8) Trichlorofluoromethane	5.68	101	345771	47.9110 ug/L	99
9) Diethyl ether	6.24	59	244439	73.6254 ug/L	93
10) Isoprene	6.27	67	268171	57.0391 ug/L	88
11) Acrolein	6.48	56	38698	61.3760 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	185858	53.9539 ug/L	94
13) Acetone	6.60	43	77335	48.6644 ug/L	96
14) 1,1-Dichloroethene	6.83	61	315114	51.6437 ug/L	92
15) Tert-Butyl Alcohol	6.95	59	120780	212.1401 ug/L	97
16) Dimethyl Sulfide	7.11	62	234426	79.1891 ug/L	96
17) Iodomethane	7.38	142	96886	37.8412 ug/L	92
18) Methyl acetate	7.39	43	223958	52.8169 ug/L	96
19) Methylene Chloride	7.67	84	196184	53.3878 ug/L	82
20) Carbon Disulfide	7.71	76	518243	44.3914 ug/L	99
21) Acrylonitrile	7.86	53	88595	50.8382 ug/L	99
22) Methyl Tert Butyl Ether	7.89	73	557115	53.0885 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	181115	53.7310 ug/L	84
24) n-Hexane	8.23	57	293885	48.0130 ug/L	99
25) Diisopropyl ether	8.61	45	1440779	90.7892 ug/L	96
26) Vinyl Acetate	8.80	43	309031	37.6715 ug/L	98
27) 1,1-Dichloroethane	8.83	63	365886	50.3469 ug/L	98
28) Ethyl-Tert-Butyl ether	9.25	59	1142199	89.7979 ug/L	96
29) 2-Butanone	9.46	43	118678	49.2421 ug/L	97
30) Propionitrile	9.58	54	62654	93.9303 ug/L	99
31) 2,2-Dichloropropane	9.69	77	309886	53.1233 ug/L	95
32) cis-1,2-Dichloroethene	9.77	96	203750	54.1434 ug/L	96
33) Chloroform	10.01	83	344145	50.7061 ug/L	96
34) 1-Bromopropane	10.15	122	45722	88.6198 ug/L	99
35) Bromochloromethane	10.26	130	115189	52.0956 ug/L	100
36) Tetrahydrofuran	10.29	42	140281	86.4486 ug/L	95
38) 1,1,1-Trichloroethane	10.60	97	311688	51.9918 ug/L	98
39) Cyclohexane	10.63	56	356880	52.4982 ug/L	88
40) 1,1-Dichloropropene	10.82	75	254739	52.7645 ug/L	97
41) Tert-Amyl-Methyl ether	10.95	73	1007162	99.8131 ug/L	93
42) Carbon Tetrachloride	10.99	117	286624	51.1689 ug/L	96

(#) = qualifier out of range (m) = manual integration
6M137535.D 826_SL.M Mon Feb 29 16:01:45 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:44 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	296979	51.2665 ug/L	98
46)	Benzene	11.23	78	732452	50.4293 ug/L	92
47)	Trichloroethene	12.09	130	187775	54.7248 ug/L	93
48)	Methylcyclohexane	12.18	83	293690	52.9463 ug/L	89
49)	1,2-Dichloropropane	12.33	63	215054	55.0291 ug/L	100
50)	1,4-Dioxane	12.67	88	9692	206.7214 ug/L	86
51)	Bromodichloromethane	12.68	83	264833	51.6400 ug/L	97
52)	Dibromomethane	12.78	93	115173	50.3870 ug/L	97
53)	2-Chloroethyl Vinyl Ether	13.04	63	118032	54.9113 ug/L	99
54)	4-Methyl-2-Pentanone	13.07	58	83435	51.2622 ug/L	92
55)	cis-1,3-Dichloropropene	13.43	75	332086	58.7723 ug/L	97
56)	Dimethyl Disulfide	13.72	79	160314	56.2546 ug/L	97
59)	Toluene	13.91	91	733544	51.4239 ug/L	99
60)	Ethyl Methacrylate	14.04	69	253929	55.5569 ug/L	99
62)	trans-1,3-Dichloropropene	14.12	75	289951	52.8608 ug/L	100
63)	1,1,2-Trichloroethane	14.38	97	158637	53.2065 ug/L	98
64)	2-Hexanone	14.31	43	174540	51.3021 ug/L	98
65)	1,3-Dichloropropane	14.73	76	296777	54.9182 ug/L	95
66)	Tetrachloroethene	14.87	166	179884	51.1197 ug/L	98
67)	Dibromochloromethane	15.17	129	201014	51.8393 ug/L	99
68)	1,2-Dibromoethane	15.48	107	163614	53.6583 ug/L	99
69)	1-Chlorohexane	15.59	91	237869	53.6977 ug/L	87
70)	Chlorobenzene	16.07	112	484642	52.8637 ug/L	70
71)	1,1,1,2-Tetrachloroethane	16.11	131	190856	51.8481 ug/L	98
72)	Ethylbenzene	16.10	106	257103	52.4064 ug/L	97
73)	m-,p-Xylene	16.22	106	631680	105.2305 ug/L	96
74)	o-Xylene	16.88	106	321591	56.8793 ug/L	96
75)	Styrene	16.92	104	532085	55.2923 ug/L	95
76)	Bromoform	17.49	173	134827	49.2451 ug/L	99
77)	Isopropylbenzene	17.38	105	829435	54.5730 ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.64	83	229283	52.1415 ug/L	96
81)	1,2,3-Trichloropropane	17.87	110	71564	53.1534 ug/L	99
82)	trans-1,4-Dichloro-2-Buten	17.93	53	68292	42.0681 ug/L	85
83)	n-Propylbenzene	17.98	91	1006100	52.6291 ug/L	98
84)	Bromobenzene	18.12	156	215387	51.8331 ug/L	99
85)	1,3,5-Trimethylbenzene	18.21	105	716527	52.6576 ug/L	95
86)	2-Chlorotoluene	18.30	91	664750	52.0974 ug/L	96
87)	4-Chlorotoluene	18.36	91	607350	52.0569 ug/L	97
88)	a-Methylstyrene	18.69	118	378204	57.2343 ug/L	98
89)	tert-Butylbenzene	18.76	134	150883	53.2071 ug/L	99
90)	1,2,4-Trimethylbenzene	18.82	105	731933	51.1473 ug/L	81
91)	sec-Butylbenzene	19.07	105	883157	50.6807 ug/L	100
92)	p-Isopropyltoluene	19.27	119	732050	50.9189 ug/L	99
93)	1,3-Dichlorobenzene	19.48	146	418127	52.0038 ug/L	96
94)	1,4-Dichlorobenzene	19.64	146	423834	51.7864 ug/L	98
95)	n-Butylbenzene	19.89	91	705101	48.7625 ug/L	98
96)	1,2-Dichlorobenzene	20.22	146	421505	54.4802 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	21.41	75	50722	52.1318 ug/L	89
98)	1,2,4-Trichlorobenzene	22.76	180	285471	51.0389 ug/L	97
99)	Hexachlorobutadiene	22.94	225	152283	47.6080 ug/L	99
100)	Naphthalene	23.20	128	640676	49.8263 ug/L	100
101)	1,2,3-Trichlorobenzene	23.59	180	280768	50.9788 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M137535.D 826_SL.M Mon Feb 29 16:01:45 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

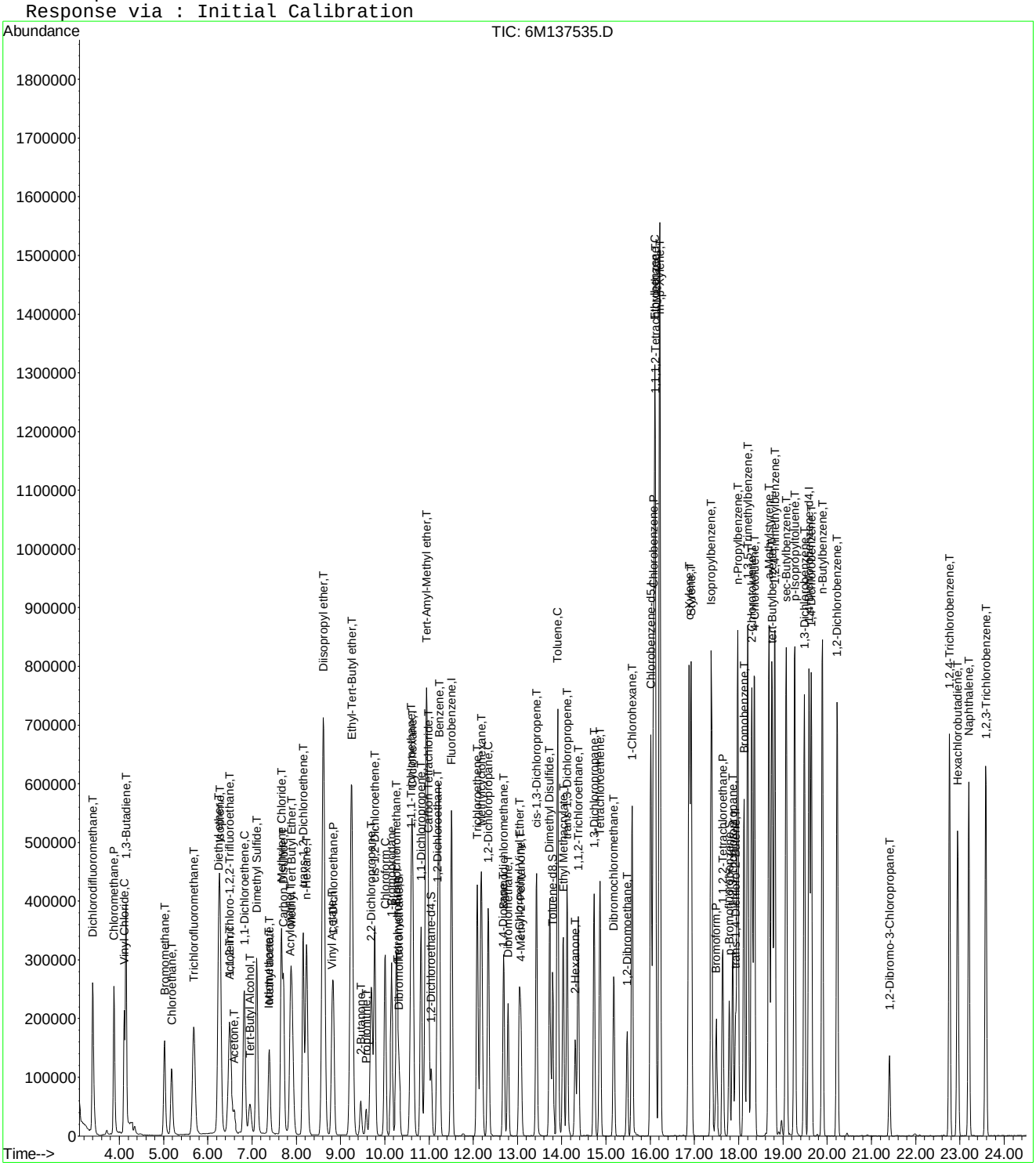

6M137535.D 826_SL.M Mon Feb 29 16:01:45 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	115	0.00
2	T	Dichlorodifluoromethane	50.0000	55.4626	-10.9	109	-0.01
3	P	Chloromethane	50.0000	50.9064	-1.8	111	0.00
4	C	Vinyl Chloride	50.0000	43.3425	13.3	89	0.00
5	T	1,3-Butadiene	50.0000	42.8977	14.2	92	-0.01
6	T	Bromomethane	50.0000	58.5556	-17.1	130	-0.01
7	T	Chloroethane	50.0000	56.5995	-13.2	116	0.00
8	T	Trichlorofluoromethane	50.0000	47.9111	4.2	102	-0.02
9	T	Diethyl ether	100.0000	73.6254	26.4#	86	0.00
10	T	Isoprene	50.0000	57.0391	-14.1	124	-0.01
11	T	Acrolein	50.0000	61.3760	-22.8	153	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	53.9539	-7.9	110	-0.01
13	T	Acetone	50.0000	48.6644	2.7	113	0.01
14	C	1,1-Dichloroethene	50.0000	51.6437	-3.3	107	0.00
15	T	Tert-Butyl Alcohol	200.0000	212.1401	-6.1	124	0.02
16	T	Dimethyl Sulfide	50.0000	79.1891	-58.4#	173	-0.01
17	T	Iodomethane	50.0000	37.8412	24.3	81	0.00
18	T	Methyl acetate	50.0000	52.8169	-5.6	120	0.00
19	T	Methylene Chloride	50.0000	53.3878	-6.8	112	0.00
20	T	Carbon Disulfide	50.0000	44.3914	11.2	98	-0.01
21	T	Acrylonitrile	50.0000	50.8382	-1.7	112	0.00
22	T	Methyl Tert Butyl Ether	50.0000	53.0885	-6.2	110	0.00
23	T	trans-1,2-Dichloroethene	50.0000	53.7311	-7.5	112	0.00
24	T	n-Hexane	50.0000	48.0130	4.0	104	-0.01
25	T	Diisopropyl ether	100.0000	90.7892	9.2	106	0.00
26	T	Vinyl Acetate	50.0000	37.6715	24.7	85	0.00
27	P	1,1-Dichloroethane	50.0000	50.3469	-0.7	106	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	89.7979	10.2	103	0.01
29	T	2-Butanone	50.0000	49.2421	1.5	115	0.00
30	T	Propionitrile	100.0000	93.9303	6.1	108	0.00
31	T	2,2-Dichloropropane	50.0000	53.1233	-6.2	112	0.00
32	T	cis-1,2-Dichloroethene	50.0000	54.1434	-8.3	116	0.00
33	C	Chloroform	50.0000	50.7061	-1.4	109	0.00
34		1-Bromopropane	50.0000	88.6198	-77.2#	186	-0.01
35	T	Bromochloromethane	50.0000	52.0956	-4.2	108	0.00
36	T	Tetrahydrofuran	100.0000	86.4486	13.6	100	0.00
37	S	Dibromofluoromethane	25.0000	22.4022	10.4	101	0.00
38	T	1,1,1-Trichloroethane	50.0000	51.9918	-4.0	108	0.00
39	T	Cyclohexane	50.0000	52.4982	-5.0	110	-0.01
40	T	1,1-Dichloropropene	50.0000	52.7645	-5.5	109	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	99.8131	0.2	115	0.00
42	T	Carbon Tetrachloride	50.0000	51.1689	-2.3	106	0.00
43	S	1,2-Dichloroethane-d4	25.0000	22.1747	11.3	100	-0.01
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	50.0000	51.2666	-2.5	109	0.00
46	T	Benzene	50.0000	50.4293	-0.9	112	0.00
47	T	Trichloroethene	50.0000	54.7248	-9.4	115	0.00
48	T	Methylcyclohexane	50.0000	52.9463	-5.9	111	0.00
49	C	1,2-Dichloropropane	50.0000	55.0291	-10.1	116	0.00
50	T	1,4-Dioxane	200.0000	206.7214	-3.4	130	0.00
51	T	Bromodichloromethane	50.0000	51.6400	-3.3	109	0.00
52	T	Dibromomethane	50.0000	50.3870	-0.8	103	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	54.9113	-9.8	118	0.00
54	T	4-Methyl-2-Pentanone	50.0000	51.2622	-2.5	117	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	58.7723	-17.5	120	0.00
56	T	Dimethyl Disulfide	50.0000	56.2546	-12.5	117	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	115	0.00
58	S	Toluene-d8	25.0000	21.6082	13.6	97	0.00
59	C	Toluene	50.0000	51.4239	-2.8	111	0.00
60	T	Ethyl Methacrylate	50.0000	55.5569	-11.1	115	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	50.0000	52.8608	-5.7	109	0.00
63	T	1,1,2-Trichloroethane	50.0000	53.2065	-6.4	113	0.00
64	T	2-Hexanone	50.0000	51.3021	-2.6	116	0.00
65	T	1,3-Dichloropropane	50.0000	54.9182	-9.8	116	0.00
66	T	Tetrachloroethene	50.0000	51.1197	-2.2	109	0.00
67	T	Dibromochloromethane	50.0000	51.8393	-3.7	107	0.00
68	T	1,2-Dibromoethane	50.0000	53.6583	-7.3	112	0.00
69	T	1-Chlorohexane	50.0000	53.6977	-7.4	112	0.00
70	P	Chlorobenzene	50.0000	52.8637	-5.7	115	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	51.8481	-3.7	110	0.00
72	C	Ethylbenzene	50.0000	52.4064	-4.8	110	0.00
73	T	m-,p-Xylene	100.0000	105.2305	-5.2	113	0.00
74	T	o-Xylene	50.0000	56.8792	-13.8	115	0.00
75	T	Styrene	50.0000	55.2923	-10.6	113	0.00
76	P	Bromoform	50.0000	49.2451	1.5	103	0.00
77	T	Isopropylbenzene	50.0000	54.5730	-9.1	112	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	118	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	52.1415	-4.3	115	0.00
80	S	p-Bromofluorobenzene	25.0000	20.9365	16.3	97	0.00
81	T	1,2,3-Trichloropropane	50.0000	53.1534	-6.3	117	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	42.0681	15.9	93	0.00
83	T	n-Propylbenzene	50.0000	52.6291	-5.3	111	0.00
84	T	Bromobenzene	50.0000	51.8331	-3.7	112	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	52.6576	-5.3	112	0.00
86	T	2-Chlorotoluene	50.0000	52.0974	-4.2	115	0.00
87	T	4-Chlorotoluene	50.0000	52.0569	-4.1	114	0.00
88	T	a-Methylstyrene	50.0000	57.2343	-14.5	123	0.00
89	T	tert-Butylbenzene	50.0000	53.2071	-6.4	112	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	51.1473	-2.3	110	0.00
91	T	sec-Butylbenzene	50.0000	50.6807	-1.4	107	0.00
92	T	p-Isopropyltoluene	50.0000	50.9189	-1.8	107	0.00
93	T	1,3-Dichlorobenzene	50.0000	52.0038	-4.0	114	0.00
94	T	1,4-Dichlorobenzene	50.0000	51.7864	-3.6	117	0.00
95	T	n-Butylbenzene	50.0000	48.7625	2.5	104	0.00
96	T	1,2-Dichlorobenzene	50.0000	54.4802	-9.0	120	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	52.1318	-4.3	117	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	51.0389	-2.1	109	0.00
99	T	Hexachlorobutadiene	50.0000	47.6080	4.8	101	-0.01
100	T	Naphthalene	50.0000	49.8263	0.3	104	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	50.9788	-2.0	108	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137535.D 826_SL.M Mon Feb 29 16:03:13 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030816\6M137646.D Vial: 3
Acq On : 8 Mar 2016 11:58 Operator: TMB
Sample : WG560072-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75017 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 08 12:23:23 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	655391	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	477375	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	256654	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	165815	47.1634 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.32%		
43) 1,2-Dichloroethane-d4	11.05	65	202395	44.3385 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 88.68%		
58) Toluene-d8	13.80	98	561373	49.4611 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.92%		
80) p-Bromofluorobenzene	17.79	95	231509	49.1089 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 98.22%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	320326	53.2180 ug/L	100
3) Chloromethane	3.88	50	261940	41.7609 ug/L	97
4) Vinyl Chloride	4.12	62	254729	50.4558 ug/L	98
5) 1,3-Butadiene	4.16	54	169268	40.2976 ug/L	93
6) Bromomethane	5.04	94	139382	51.7910 ug/L	99
7) Chloroethane	5.19	64	150269	52.4932 ug/L	99
8) Trichlorofluoromethane	5.69	101	343141	50.5828 ug/L	99
9) Diethyl ether	6.23	59	312856	100.2500 ug/L	95
10) Isoprene	6.27	67	228631	51.7344 ug/L	91
11) Acrolein	6.49	56	28217	47.6107 ug/L	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	180673	55.7979 ug/L	95
13) Acetone	6.59	43	80118	54.0836 ug/L	98
14) 1,1-Dichloroethene	6.83	61	299707	52.2553 ug/L	95
15) Tert-Butyl Alcohol	6.94	59	125609	234.7100 ug/L	99
16) Dimethyl Sulfide	7.11	62	133700	48.0478 ug/L	95
17) Iodomethane	7.39	142	101317	41.5401 ug/L	95
18) Methyl acetate	7.40	43	219112	54.9738 ug/L	97
19) Methylene Chloride	7.67	84	174666	50.5673 ug/L	84
20) Carbon Disulfide	7.72	76	548131	49.9497 ug/L	98
21) Acrylonitrile	7.87	53	92258	56.3207 ug/L	99
22) Methyl Tert Butyl Ether	7.90	73	529096	53.6381 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	166269	52.4765 ug/L	88
24) n-Hexane	8.23	57	303098	52.6802 ug/L	98
25) Diisopropyl ether	8.61	45	1454621	97.5146 ug/L	96
26) Vinyl Acetate	8.80	43	402814	52.2394 ug/L	99
27) 1,1-Dichloroethane	8.84	63	344358	50.4104 ug/L	97
28) Ethyl-Tert-Butyl ether	9.24	59	1215176	101.6358 ug/L	96
29) 2-Butanone	9.45	43	124281	54.8598 ug/L	97
30) Propionitrile	9.57	54	69023	110.0865 ug/L	97
31) 2,2-Dichloropropane	9.69	77	285888	52.1389 ug/L	95
32) cis-1,2-Dichloroethene	9.78	96	182649	51.6355 ug/L	96
33) Chloroform	10.00	83	312927	49.0506 ug/L	97
34) 1-Bromopropane	10.16	122	25397	52.3686 ug/L	100
35) Bromochloromethane	10.27	130	107742	51.8392 ug/L	100
36) Tetrahydrofuran	10.30	42	169754	111.9157 ug/L	96
38) 1,1,1-Trichloroethane	10.60	97	288721	51.2361 ug/L	100
39) Cyclohexane	10.63	56	343322	53.7288 ug/L	88
40) 1,1-Dichloropropene	10.83	75	242561	53.4503 ug/L	97
41) Tert-Amyl-Methyl ether	10.94	73	988982	104.2701 ug/L	93
42) Carbon Tetrachloride	10.99	117	269171	51.1217 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M137646.D 826_SL.M Tue Mar 08 12:23:24 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030816\6M137646.D Vial: 3
Acq On : 8 Mar 2016 11:58 Operator: TMB
Sample : WG560072-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75017 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 08 12:23:23 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	263410	48.3753 ug/L	98
46)	Benzene	11.24	78	676028	49.5167 ug/L	93
47)	Trichloroethene	12.09	130	167461	51.9210 ug/L	95
48)	Methylcyclohexane	12.18	83	286451	54.9389 ug/L	90
49)	1,2-Dichloropropane	12.34	63	188005	51.1796 ug/L	99
50)	1,4-Dioxane	12.68	88	9053	205.6160 ug/L	91
51)	Bromodichloromethane	12.69	83	243223	50.4547 ug/L	98
52)	Dibromomethane	12.79	93	107793	50.1697 ug/L	99
53)	2-Chloroethyl Vinyl Ether	13.03	63	119118	58.9552 ug/L	98
54)	4-Methyl-2-Pentanone	13.07	58	88369	57.7607 ug/L	96
55)	cis-1,3-Dichloropropene	13.42	75	280486	52.8101 ug/L	97
56)	Dimethyl Disulfide	13.73	79	141829	52.9462 ug/L	97
59)	Toluene	13.91	91	680892	50.4227 ug/L	99
60)	Ethyl Methacrylate	14.03	69	238157	55.0425 ug/L	98
62)	trans-1,3-Dichloropropene	14.13	75	269546	51.9100 ug/L	100
63)	1,1,2-Trichloroethane	14.38	97	144708	51.2699 ug/L	99
64)	2-Hexanone	14.31	43	182107	56.5426 ug/L	97
65)	1,3-Dichloropropane	14.74	76	259443	50.7151 ug/L	98
66)	Tetrachloroethene	14.87	166	174077	52.2573 ug/L	99
67)	Dibromochloromethane	15.18	129	183850	50.0848 ug/L	99
68)	1,2-Dibromoethane	15.48	107	151409	52.4539 ug/L	99
69)	1-Chlorohexane	15.60	91	232671	55.4843 ug/L	88
70)	Chlorobenzene	16.08	112	433851	49.9904 ug/L	71
71)	1,1,1,2-Tetrachloroethane	16.12	131	172016	49.3635 ug/L	98
72)	Ethylbenzene	16.11	106	240843	51.8586 ug/L	98
73)	m-,p-Xylene	16.21	106	581513	102.3325 ug/L	97
74)	o-Xylene	16.87	106	283334	52.9369 ug/L	97
75)	Styrene	16.92	104	485223	53.2641 ug/L	95
76)	Bromoform	17.49	173	130248	50.2535 ug/L	100
77)	Isopropylbenzene	17.38	105	760214	52.8373 ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.64	83	210478	52.4976 ug/L	96
81)	1,2,3-Trichloropropane	17.87	110	66047	53.8035 ug/L	99
82)	trans-1,4-Dichloro-2-Buten	17.93	53	78511	53.0439 ug/L	92
83)	n-Propylbenzene	17.99	91	918503	52.6971 ug/L	99
84)	Bromobenzene	18.13	156	193221	50.9992 ug/L	98
85)	1,3,5-Trimethylbenzene	18.21	105	645087	51.9958 ug/L	96
86)	2-Chlorotoluene	18.30	91	548923	47.1835 ug/L	92
87)	4-Chlorotoluene	18.35	91	581299	54.6462 ug/L	93
88)	a-Methylstyrene	18.69	118	320647	53.2205 ug/L	99
89)	tert-Butylbenzene	18.75	134	134570	52.0473 ug/L	87
90)	1,2,4-Trimethylbenzene	18.81	105	663949	50.8871 ug/L	83
91)	sec-Butylbenzene	19.08	105	830472	52.2698 ug/L	99
92)	p-Isopropyltoluene	19.26	119	689383	52.5920 ug/L	99
93)	1,3-Dichlorobenzene	19.49	146	368863	50.3168 ug/L	97
94)	1,4-Dichlorobenzene	19.64	146	367923	49.3058 ug/L	98
95)	n-Butylbenzene	19.88	91	679106	51.5102 ug/L	98
96)	1,2-Dichlorobenzene	20.22	146	346975	49.1875 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	21.42	75	45057	50.7913 ug/L	93
98)	1,2,4-Trichlorobenzene	22.76	180	255258	50.0541 ug/L	98
99)	Hexachlorobutadiene	22.95	225	146009	50.0644 ug/L	99
100)	Naphthalene	23.20	128	633606	54.0456 ug/L	100
101)	1,2,3-Trichlorobenzene	23.58	180	247710	49.3295 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M137646.D 826_SL.M Tue Mar 08 12:23:25 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030816\6M137646.D Vial: 3
Acq On : 8 Mar 2016 11:58 Operator: TMB
Sample : WG560072-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75017 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 8 12:23 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

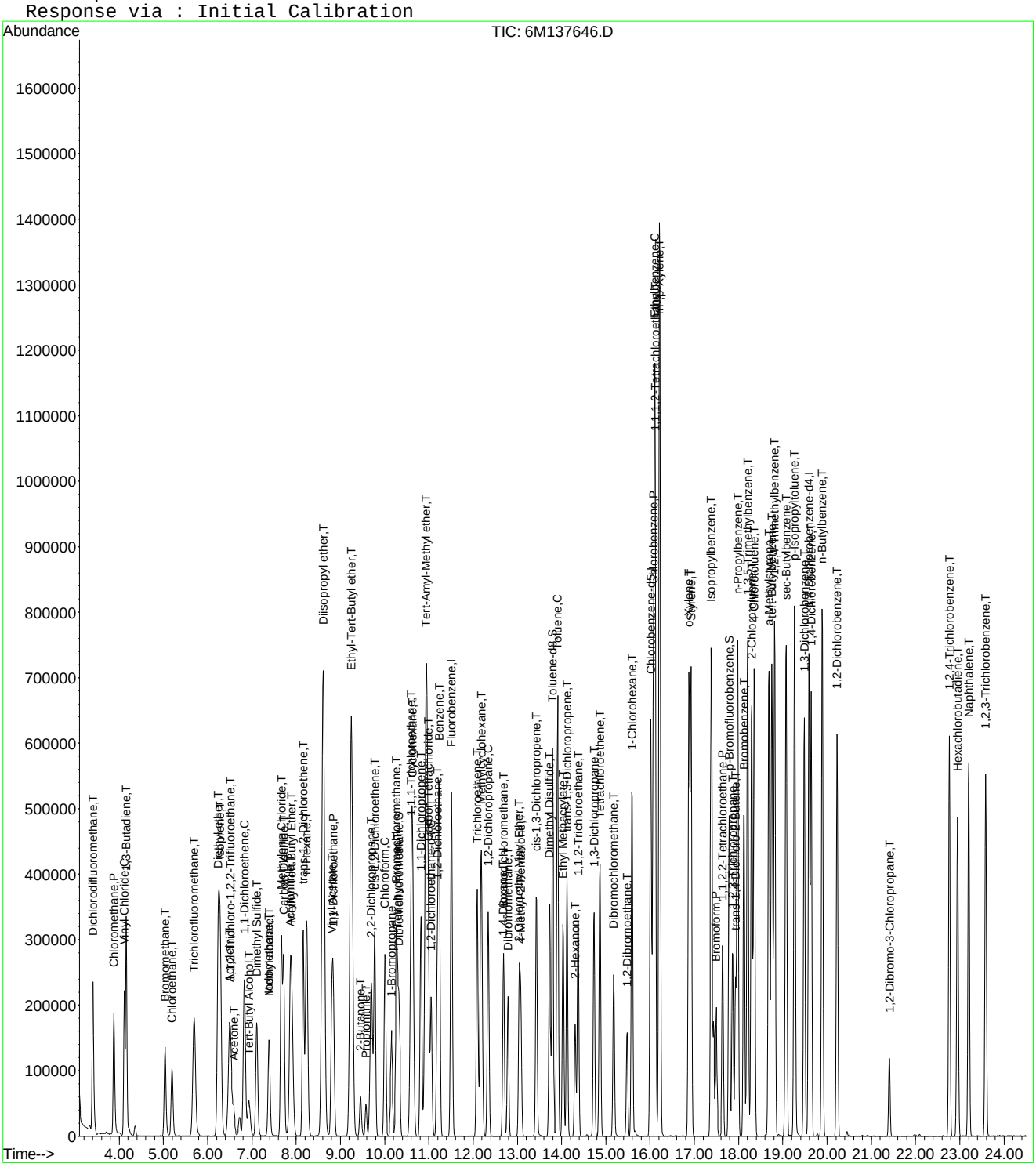

Continuing Calibration Area and RT check

Instrument: HPMS6
Initial cal date: 26 Feb 2016 17:03
CCV date: 8 Mar 2016 11:58
CCV Filename: 6M137646.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	607631	11.51	439950	16.01	237573	19.60
CCV	655391	11.51	477375	16.01	256654	19.59

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\030816\6M137646.D Vial: 3
Acq On : 8 Mar 2016 11:58 Operator: TMB
Sample : WG560072-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75017 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	108	0.00
2	T	Dichlorodifluoromethane	0.4592	0.4888	-6.4	98	0.00
3	P	Chloromethane	0.4785	0.3997	16.5	86	0.00
4	C	Vinyl Chloride	0.3852	0.3887	-0.9	97	0.00
5	T	1,3-Butadiene	0.3205	0.2583	19.4	81	0.00
6	T	Bromomethane	0.2053	0.2127	-3.6	108	0.00
7	T	Chloroethane	0.2184	0.2293	-5.0	102	0.00
8	T	Trichlorofluoromethane	0.5175	0.5236	-1.2	101	0.00
9	T	Diethyl ether	0.2381	0.2387	-0.3	110	0.00
10	T	Isoprene	0.3372	0.3488	-3.5	106	0.00
11	T	Acrolein	0.0452	0.0430	4.8	112	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2470	0.2757	-11.6	107	0.00
13	T	Acetone	0.1189	0.1222	-2.8	118	0.00
14	C	1,1-Dichloroethene	0.4376	0.4573	-4.5	101	0.00
15	T	Tert-Butyl Alcohol	0.0408	0.0479	-17.3	129	0.00
16	T	Dimethyl Sulfide	0.2123	0.2040	3.9	99	0.00
17	T	Iodomethane	0.1531	0.1546	-1.0	85	0.00
18	T	Methyl acetate	0.3041	0.3343	-9.9	117	0.00
19	T	Methylene Chloride	0.2635	0.2665	-1.1	100	0.00
20	T	Carbon Disulfide	0.8372	0.8363	0.1	103	0.00
21	T	Acrylonitrile	0.1250	0.1408	-12.6	117	0.00
22	T	Methyl Tert Butyl Ether	0.7525	0.8073	-7.3	104	0.00
23	T	trans-1,2-Dichloroethene	0.2417	0.2537	-5.0	103	0.00
24	T	n-Hexane	0.4389	0.4625	-5.4	107	0.00
25	T	Diisopropyl ether	1.1380	1.1097	2.5	107	0.00
26	T	Vinyl Acetate	0.5883	0.6146	-4.5	111	0.00
27	P	1,1-Dichloroethane	0.5212	0.5254	-0.8	100	0.00
28	T	Ethyl-Tert-Butyl ether	0.9121	0.9271	-1.6	110	0.00
29	T	2-Butanone	0.1728	0.1896	-9.7	121	0.00
30	T	Propionitrile	0.0478	0.0527	-10.1	119	0.00
31	T	2,2-Dichloropropane	0.4183	0.4362	-4.3	104	0.00
32	T	cis-1,2-Dichloroethene	0.2699	0.2787	-3.3	104	0.00
33	C	Chloroform	0.4867	0.4775	1.9	99	0.00
34		1-Bromopropane	0.0370	0.0388	-4.7	103	0.00
35	T	Bromochloromethane	0.1586	0.1644	-3.7	101	0.00
36	T	Tetrahydrofuran	0.1230	0.1295	-5.3	121	0.00
37	S	Dibromofluoromethane	0.2682	0.5060	-88.7#	200#	0.00
38	T	1,1,1-Trichloroethane	0.4299	0.4405	-2.5	100	0.00
39	T	Cyclohexane	0.4875	0.5238	-7.5	106	0.00
40	T	1,1-Dichloropropene	0.3462	0.3701	-6.9	104	0.00
41	T	Tert-Amyl-Methyl ether	0.7236	0.7545	-4.3	113	0.00
42	T	Carbon Tetrachloride	0.4017	0.4107	-2.2	100	0.00
43	S	1,2-Dichloroethane-d4	0.3483	0.6176	-77.4#	189#	0.00
44		Heptane	0.0000	0.0000	0.0	0#	0.00
45	T	1,2-Dichloroethane	0.4154	0.4019	3.2	97	0.00
46	T	Benzene	1.0416	1.0315	1.0	103	0.00
47	T	Trichloroethene	0.2461	0.2555	-3.8	103	0.00
48	T	Methylcyclohexane	0.3978	0.4371	-9.9	108	0.00
49	C	1,2-Dichloropropane	0.2803	0.2869	-2.4	102	0.00
50	T	1,4-Dioxane	0.0031	0.0034	-11.3	121	0.00
51	T	Bromodichloromethane	0.3678	0.3711	-0.9	100	0.00
52	T	Dibromomethane	0.1639	0.1645	-0.3	96	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1541	0.1817	-17.9	119	0.00
54	T	4-Methyl-2-Pentanone	0.1167	0.1348	-15.5	124	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\030816\6M137646.D Vial: 3
Acq On : 8 Mar 2016 11:58 Operator: TMB
Sample : WG560072-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75017 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4052	0.4280	-5.6	102	0.00
56	T	Dimethyl Disulfide	0.2044	0.2164	-5.9	104	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	109	0.00
58	S	Toluene-d8	1.1888	2.3519	-97.8#	211#	0.00
59	C	Toluene	1.4144	1.4263	-0.8	103	0.00
60	T	Ethyl Methacrylate	0.4532	0.4989	-10.1	108	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-15.13#
62	T	trans-1,3-Dichloropropene	0.5439	0.5646	-3.8	102	0.00
63	T	1,1,2-Trichloroethane	0.2956	0.3031	-2.5	103	0.01
64	T	2-Hexanone	0.3373	0.3815	-13.1	121	0.00
65	T	1,3-Dichloropropane	0.5358	0.5435	-1.4	102	0.00
66	T	Tetrachloroethene	0.3489	0.3646	-4.5	105	0.00
67	T	Dibromochloromethane	0.3845	0.3851	-0.2	98	0.00
68	T	1,2-Dibromoethane	0.3023	0.3172	-4.9	104	0.00
69	T	1-Chlorohexane	0.4392	0.4874	-11.0	109	0.00
70	P	Chlorobenzene	0.9090	0.9088	0.0	103	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3650	0.3603	1.3	99	0.01
72	C	Ethylbenzene	0.4864	0.5045	-3.7	103	0.00
73	T	m-,p-Xylene	0.5952	0.6091	-2.3	104	0.00
74	T	o-Xylene	0.5606	0.5935	-5.9	102	0.00
75	T	Styrene	0.9542	1.0164	-6.5	103	0.00
76	P	Bromoform	0.2715	0.2728	-0.5	99	0.00
77	T	Isopropylbenzene	1.5070	1.5925	-5.7	103	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	108	0.00
79	P	1,1,2,2-Tetrachloroethane	0.7811	0.8201	-5.0	105	0.00
80	S	p-Bromofluorobenzene	0.9184	1.8041	-96.4#	207#	0.00
81	T	1,2,3-Trichloropropane	0.2392	0.2573	-7.6	108	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.2884	0.3059	-6.1	107	0.00
83	T	n-Propylbenzene	3.3956	3.5788	-5.4	102	0.00
84	T	Bromobenzene	0.7381	0.7529	-2.0	101	0.00
85	T	1,3,5-Trimethylbenzene	2.4170	2.5135	-4.0	100	0.00
86	T	2-Chlorotoluene	2.2664	2.1388	5.6	95	0.00
87	T	4-Chlorotoluene	2.0723	2.2649	-9.3	109	0.00
88	T	a-Methylstyrene	1.1737	1.2493	-6.4	104	0.00
89	T	tert-Butylbenzene	0.5037	0.5243	-4.1	100	0.00
90	T	1,2,4-Trimethylbenzene	2.5419	2.5869	-1.8	100	0.00
91	T	sec-Butylbenzene	3.0953	3.2358	-4.5	101	0.00
92	T	p-Isopropyltoluene	2.5537	2.6860	-5.2	101	0.00
93	T	1,3-Dichlorobenzene	1.4282	1.4372	-0.6	101	0.00
94	T	1,4-Dichlorobenzene	1.4537	1.4335	1.4	101	0.00
95	T	n-Butylbenzene	2.5684	2.6460	-3.0	100	0.00
96	T	1,2-Dichlorobenzene	1.3743	1.3519	1.6	99	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1728	0.1756	-1.6	103	0.00
98	T	1,2,4-Trichlorobenzene	0.9935	0.9946	-0.1	97	0.00
99	T	Hexachlorobutadiene	0.5682	0.5689	-0.1	97	0.00
100	T	Naphthalene	2.2839	2.4687	-8.1	103	0.00
101	T	1,2,3-Trichlorobenzene	0.9783	0.9651	1.3	95	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137646.D 826_SL.M Tue Mar 08 12:45:52 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\030816\6M137646.D Vial: 3
Acq On : 8 Mar 2016 11:58 Operator: TMB
Sample : WG560072-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75017 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	108	0.00
2	T	Dichlorodifluoromethane	50.0000	53.2180	-6.4	98	0.00
3	P	Chloromethane	50.0000	41.7610	16.5	86	0.00
4	C	Vinyl Chloride	50.0000	50.4558	-0.9	97	0.00
5	T	1,3-Butadiene	50.0000	40.2976	19.4	81	0.00
6	T	Bromomethane	50.0000	51.7910	-3.6	108	0.00
7	T	Chloroethane	50.0000	52.4933	-5.0	102	0.00
8	T	Trichlorofluoromethane	50.0000	50.5828	-1.2	101	0.00
9	T	Diethyl ether	100.0000	100.2500	-0.3	110	0.00
10	T	Isoprene	50.0000	51.7344	-3.5	106	0.00
11	T	Acrolein	50.0000	47.6107	4.8	112	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	55.7979	-11.6	107	0.00
13	T	Acetone	50.0000	54.0836	-8.2	118	0.00
14	C	1,1-Dichloroethene	50.0000	52.2552	-4.5	101	0.00
15	T	Tert-Butyl Alcohol	200.0000	234.7100	-17.4	129	0.00
16	T	Dimethyl Sulfide	50.0000	48.0478	3.9	99	0.00
17	T	Iodomethane	50.0000	41.5401	16.9	85	0.00
18	T	Methyl acetate	50.0000	54.9738	-9.9	117	0.00
19	T	Methylene Chloride	50.0000	50.5673	-1.1	100	0.00
20	T	Carbon Disulfide	50.0000	49.9497	0.1	103	0.00
21	T	Acrylonitrile	50.0000	56.3207	-12.6	117	0.00
22	T	Methyl Tert Butyl Ether	50.0000	53.6381	-7.3	104	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.4765	-5.0	103	0.00
24	T	n-Hexane	50.0000	52.6802	-5.4	107	0.00
25	T	Diisopropyl ether	100.0000	97.5146	2.5	107	0.00
26	T	Vinyl Acetate	50.0000	52.2394	-4.5	111	0.00
27	P	1,1-Dichloroethane	50.0000	50.4104	-0.8	100	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	101.6358	-1.6	110	0.00
29	T	2-Butanone	50.0000	54.8598	-9.7	121	0.00
30	T	Propionitrile	100.0000	110.0865	-10.1	119	0.00
31	T	2,2-Dichloropropane	50.0000	52.1389	-4.3	104	0.00
32	T	cis-1,2-Dichloroethene	50.0000	51.6355	-3.3	104	0.00
33	C	Chloroform	50.0000	49.0506	1.9	99	0.00
34		1-Bromopropane	50.0000	52.3686	-4.7	103	0.00
35	T	Bromochloromethane	50.0000	51.8392	-3.7	101	0.00
36	T	Tetrahydrofuran	100.0000	111.9157	-11.9	121	0.00
37	S	Dibromofluoromethane	25.0000	47.1634	-88.7#	200	0.00
38	T	1,1,1-Trichloroethane	50.0000	51.2361	-2.5	100	0.00
39	T	Cyclohexane	50.0000	53.7288	-7.5	106	0.00
40	T	1,1-Dichloropropene	50.0000	53.4503	-6.9	104	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	104.2701	-4.3	113	0.00
42	T	Carbon Tetrachloride	50.0000	51.1217	-2.2	100	0.00
43	S	1,2-Dichloroethane-d4	25.0000	44.3385	-77.4#	189	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	50.0000	48.3753	3.2	97	0.00
46	T	Benzene	50.0000	49.5167	1.0	103	0.00
47	T	Trichloroethene	50.0000	51.9210	-3.8	103	0.00
48	T	Methylcyclohexane	50.0000	54.9389	-9.9	108	0.00
49	C	1,2-Dichloropropane	50.0000	51.1796	-2.4	102	0.00
50	T	1,4-Dioxane	200.0000	205.6160	-2.8	121	0.00
51	T	Bromodichloromethane	50.0000	50.4547	-0.9	100	0.00
52	T	Dibromomethane	50.0000	50.1697	-0.3	96	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	58.9552	-17.9	119	0.00
54	T	4-Methyl-2-Pentanone	50.0000	57.7607	-15.5	124	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\030816\6M137646.D Vial: 3
Acq On : 8 Mar 2016 11:58 Operator: TMB
Sample : WG560072-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75017 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	52.8101	-5.6	102	0.00
56	T	Dimethyl Disulfide	50.0000	52.9462	-5.9	104	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	109	0.00
58	S	Toluene-d8	25.0000	49.4611	-97.8#	211	0.00
59	C	Toluene	50.0000	50.4227	-0.8	103	0.00
60	T	Ethyl Methacrylate	50.0000	55.0425	-10.1	108	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	50.0000	51.9100	-3.8	102	0.00
63	T	1,1,2-Trichloroethane	50.0000	51.2699	-2.5	103	0.01
64	T	2-Hexanone	50.0000	56.5426	-13.1	121	0.00
65	T	1,3-Dichloropropane	50.0000	50.7151	-1.4	102	0.00
66	T	Tetrachloroethene	50.0000	52.2573	-4.5	105	0.00
67	T	Dibromochloromethane	50.0000	50.0848	-0.2	98	0.00
68	T	1,2-Dibromoethane	50.0000	52.4539	-4.9	104	0.00
69	T	1-Chlorohexane	50.0000	55.4843	-11.0	109	0.00
70	P	Chlorobenzene	50.0000	49.9904	0.0	103	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	49.3635	1.3	99	0.01
72	C	Ethylbenzene	50.0000	51.8586	-3.7	103	0.00
73	T	m-,p-Xylene	100.0000	102.3325	-2.3	104	0.00
74	T	o-Xylene	50.0000	52.9369	-5.9	102	0.00
75	T	Styrene	50.0000	53.2641	-6.5	103	0.00
76	P	Bromoform	50.0000	50.2535	-0.5	99	0.00
77	T	Isopropylbenzene	50.0000	52.8373	-5.7	103	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	108	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	52.4976	-5.0	105	0.00
80	S	p-Bromofluorobenzene	25.0000	49.1089	-96.4#	207	0.00
81	T	1,2,3-Trichloropropane	50.0000	53.8036	-7.6	108	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	53.0439	-6.1	107	0.00
83	T	n-Propylbenzene	50.0000	52.6971	-5.4	102	0.00
84	T	Bromobenzene	50.0000	50.9992	-2.0	101	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	51.9958	-4.0	100	0.00
86	T	2-Chlorotoluene	50.0000	47.1835	5.6	95	0.00
87	T	4-Chlorotoluene	50.0000	54.6462	-9.3	109	0.00
88	T	a-Methylstyrene	50.0000	53.2205	-6.4	104	0.00
89	T	tert-Butylbenzene	50.0000	52.0473	-4.1	100	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	50.8871	-1.8	100	0.00
91	T	sec-Butylbenzene	50.0000	52.2698	-4.5	101	0.00
92	T	p-Isopropyltoluene	50.0000	52.5920	-5.2	101	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.3168	-0.6	101	0.00
94	T	1,4-Dichlorobenzene	50.0000	49.3058	1.4	101	0.00
95	T	n-Butylbenzene	50.0000	51.5102	-3.0	100	0.00
96	T	1,2-Dichlorobenzene	50.0000	49.1875	1.6	99	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	50.7913	-1.6	103	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	50.0541	-0.1	97	0.00
99	T	Hexachlorobutadiene	50.0000	50.0644	-0.1	97	0.00
100	T	Naphthalene	50.0000	54.0456	-8.1	103	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	49.3295	1.3	95	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137646.D 826_SL.M Tue Mar 08 12:45:54 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\1\DATA\022616\6M137522.D          Vial: 1
Acq On    : 26 Feb 2016  13:16                       Operator: TMB
Sample    : WG558920-01 50ng BFB STD 8260            Inst    : HPMS6
Misc      : 7,1 STD74606                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP: OVL MSV01
```

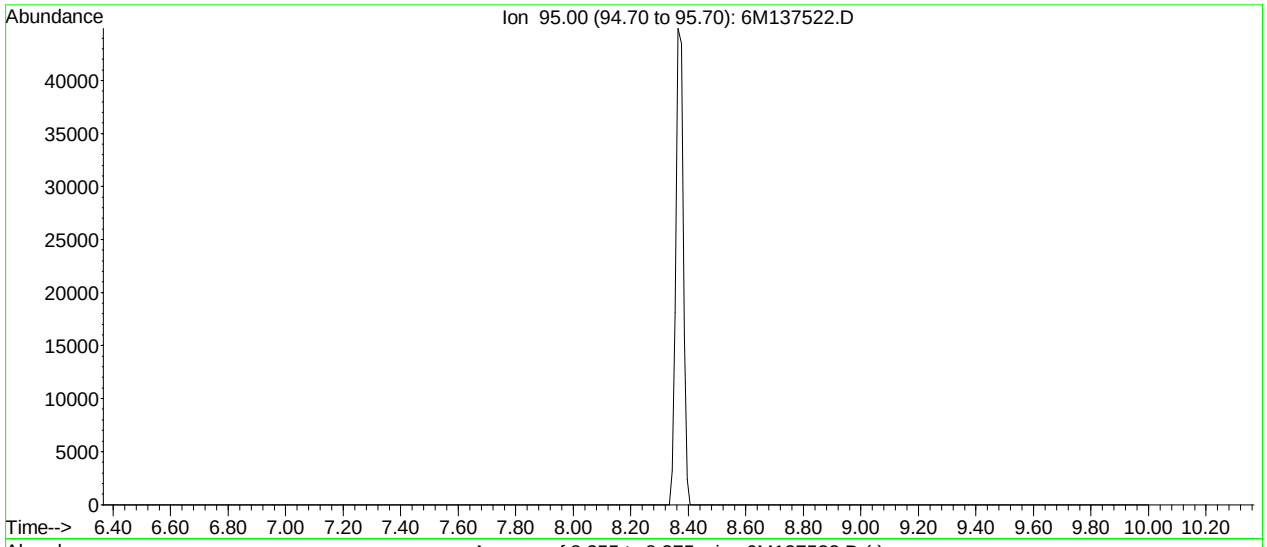

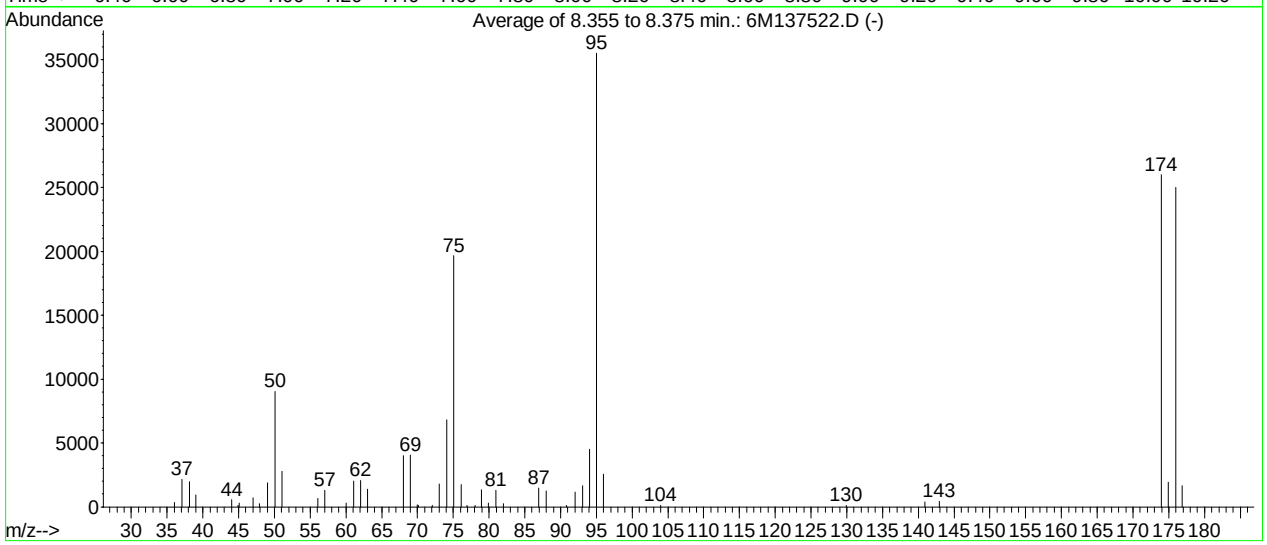

AutoFind: Scans 320, 321, 322; Background Corrected with Scan 316

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	25.4	9030	PASS
75	95	30	60	55.4	19666	PASS
95	95	100	100	100.0	35512	PASS
96	95	5	9	7.3	2576	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	73.2	26011	PASS
175	174	5	9	7.4	1914	PASS
176	174	95	101	96.1	24992	PASS
177	176	5	9	6.6	1660	PASS

6M137522.D BFB.M Fri Feb 26 13:26:46 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\030816\6M137644.D          Vial: 1
Acq On    :  8 Mar 2016  10:59                       Operator: TMB
Sample    : WG560072-01 50ng BFB STD 8260            Inst    : HPMS6
Misc      : 7,1 STD75004                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP: OVL MSV01
```

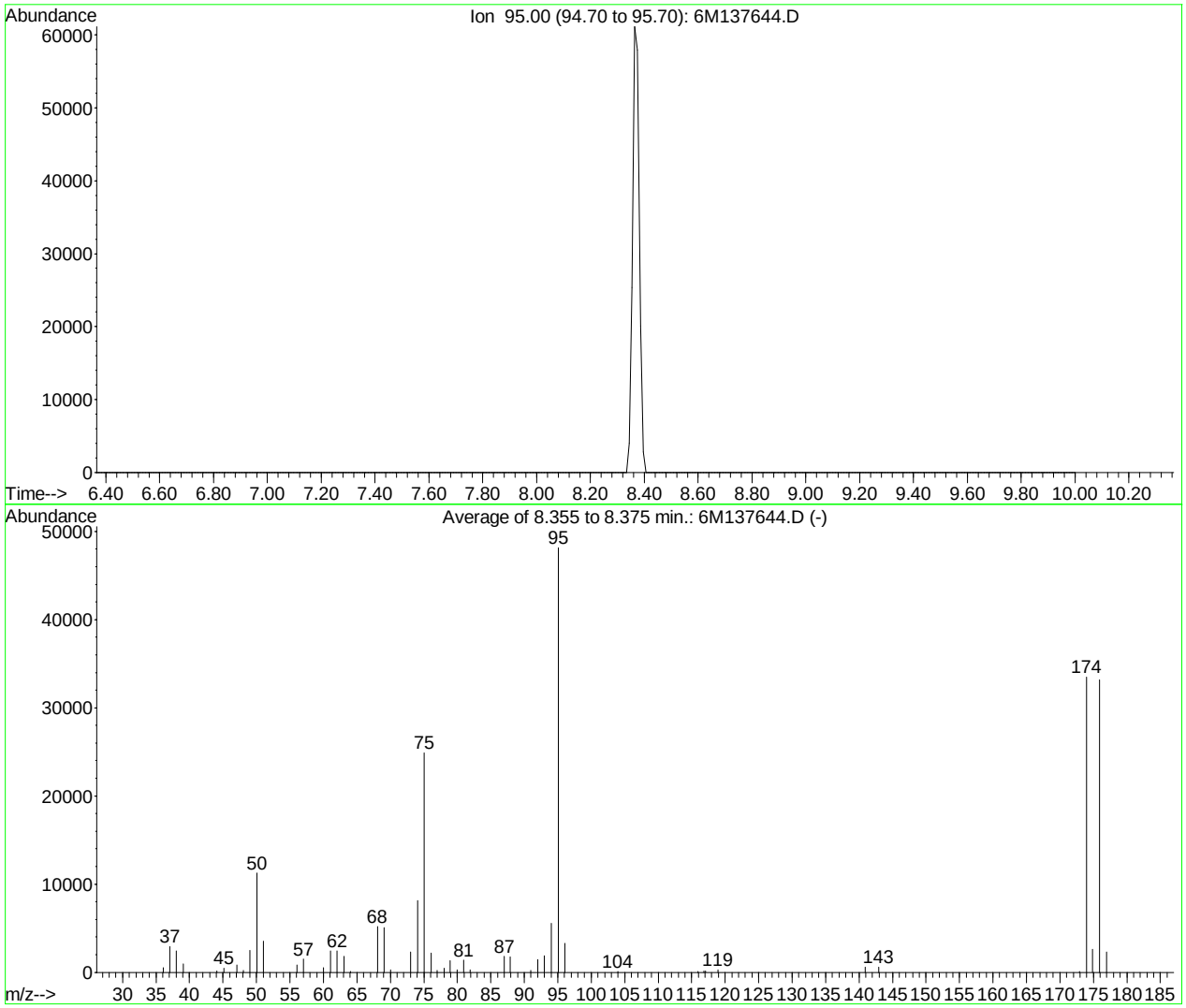

AutoFind: Scans 320, 321, 322; Background Corrected with Scan 316

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	23.4	11246	PASS
75	95	30	60	51.7	24897	PASS
95	95	100	100	100.0	48162	PASS
96	95	5	9	6.9	3304	PASS
173	174	0.00	2	0.3	109	PASS
174	95	50	100	69.5	33487	PASS
175	174	5	9	7.7	2582	PASS
176	174	95	101	99.1	33199	PASS
177	176	5	9	6.9	2283	PASS

6M137644.D BFB.M Tue Mar 08 11:09:45 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030816\6M137648.D Vial: 5
Acq On : 8 Mar 2016 13:05 Operator: TMB
Sample : WG560074-01 VBLK0308 BLANK STD 8260 Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 09 08:30:19 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	570797	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	411041	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	216022	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.34	111	140073	45.7462 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 91.50%		
43) 1,2-Dichloroethane-d4	11.06	65	170484	42.8829 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 85.76%		
58) Toluene-d8	13.80	98	480425	49.1600 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.32%		
80) p-Bromofluorobenzene	17.79	95	194961	49.1349 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 98.26%		

Target Compounds

					Qvalue
13) Acetone	6.60	43	3611	Below Cal	# 74
29) 2-Butanone	9.69	43	1218	0.6173 ug/L	# 56
36) Tetrahydrofuran	10.31	42	1732	Below Cal	# 69
100) Naphthalene	23.20	128	4501	0.4561 ug/L	# 67

(#) = qualifier out of range (m) = manual integration
6M137648.D 826_SL.M Wed Mar 09 08:30:19 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030816\6M137648.D Vial: 5
Acq On : 8 Mar 2016 13:05 Operator: TMB
Sample : WG560074-01 VBLK0308 BLANK STD 8260 Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 8:30 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

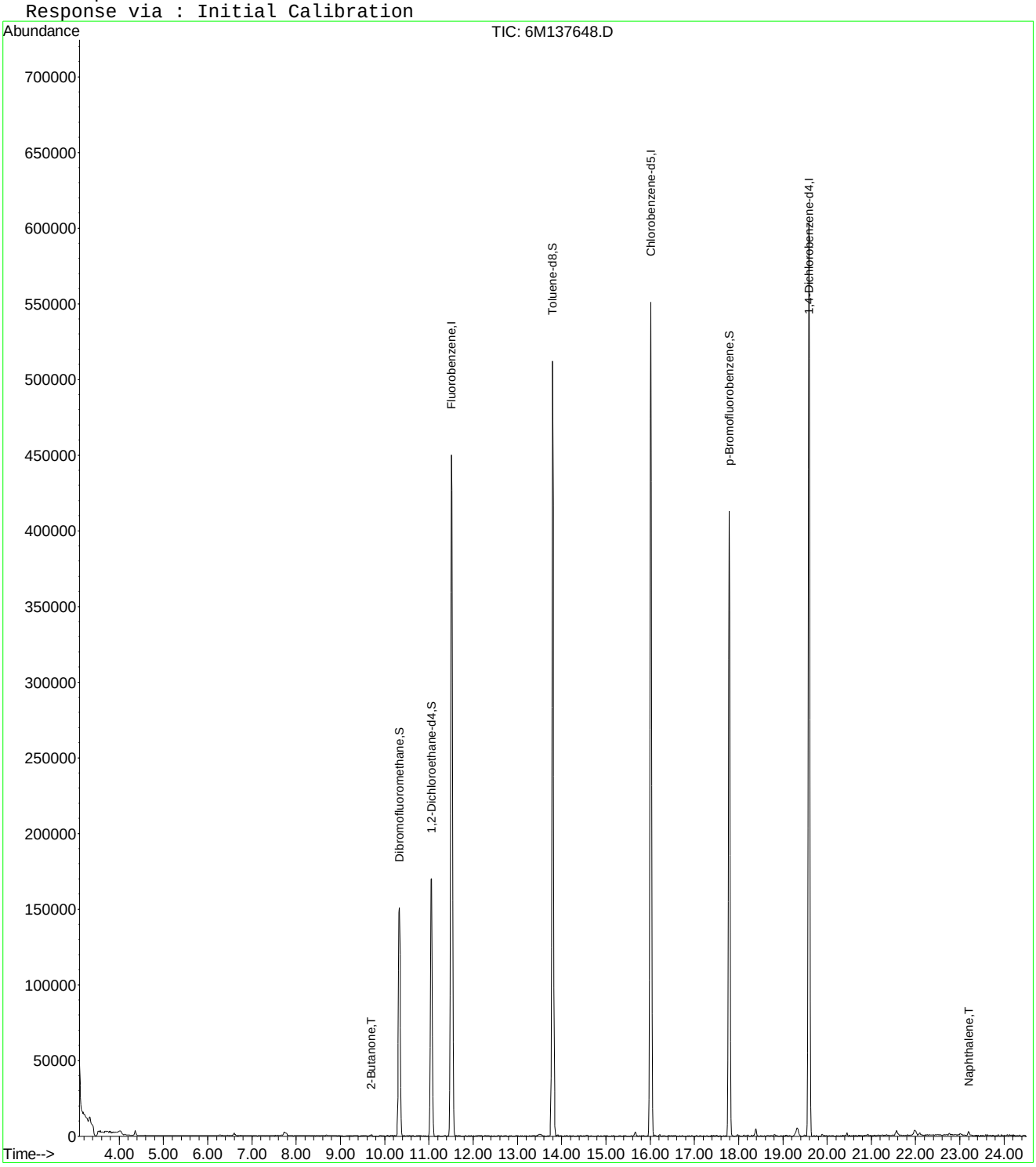

6M137648.D 826_SL.M Wed Mar 09 08:30:19 2016 Page 2

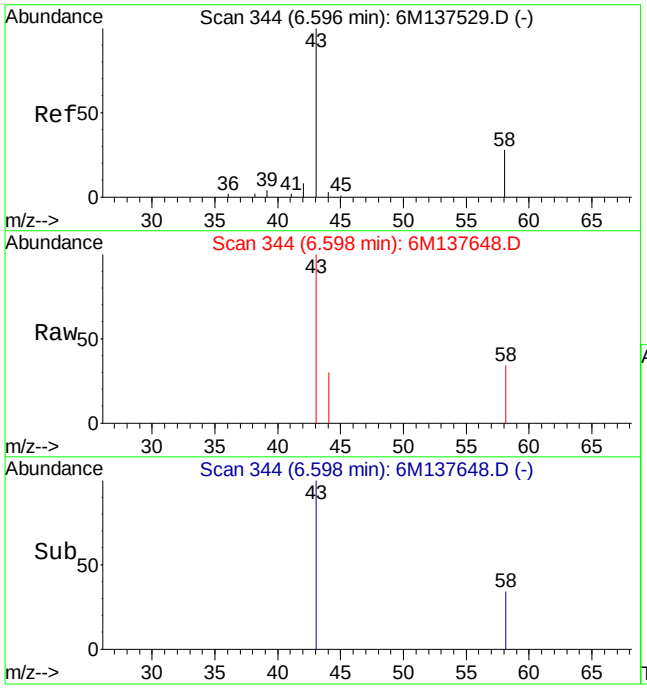

#13
Acetone
Concen: Below Cal
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137648.D
Acq: 8 Mar 2016 13:05

Tgt Ion: 43 Resp: 3611

Ion	Ratio	Lower	Upper
43	100		
58	13.5	16.1	37.7#

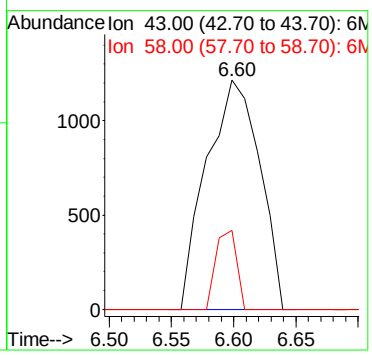

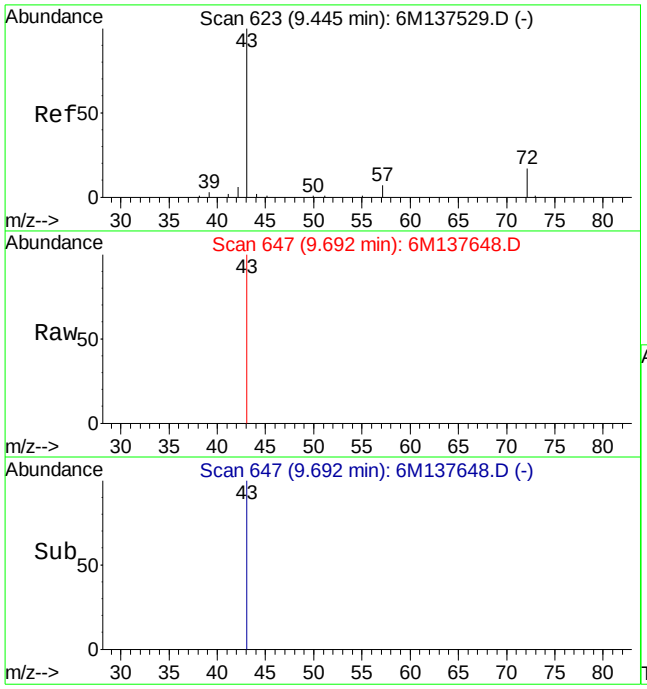

#29
2-Butanone
Concen: 0.62 ug/L
RT: 9.69 min Scan# 647
Delta R.T. 0.25 min
Lab File: 6M137648.D
Acq: 8 Mar 2016 13:05

Tgt Ion: 43 Resp: 1218

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.2	28.4#

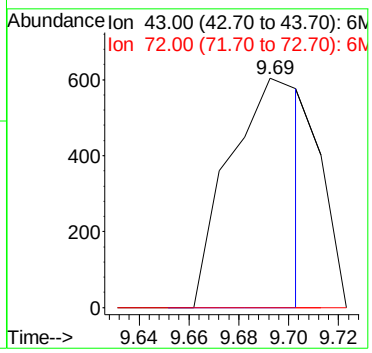

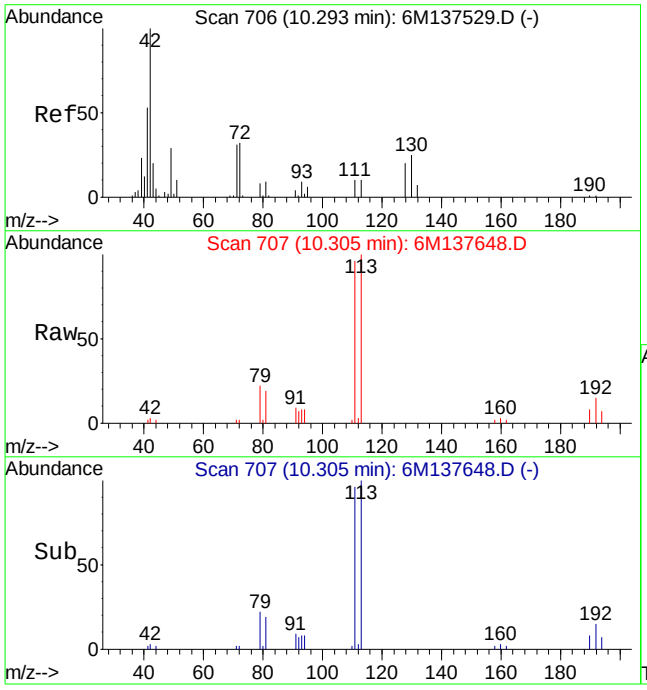

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.31 min Scan# 707
Delta R.T. 0.01 min
Lab File: 6M137648.D
Acq: 8 Mar 2016 13:05

Tgt Ion: 42 Resp: 1732

Ion	Ratio	Lower	Upper
42	100		
72	22.3	21.0	49.0
71	11.3	20.6	48.2#

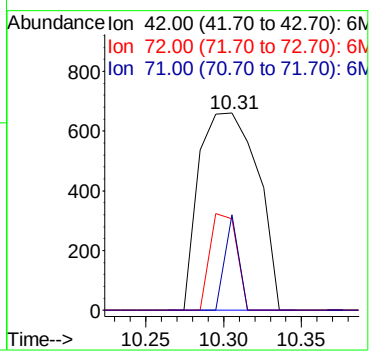

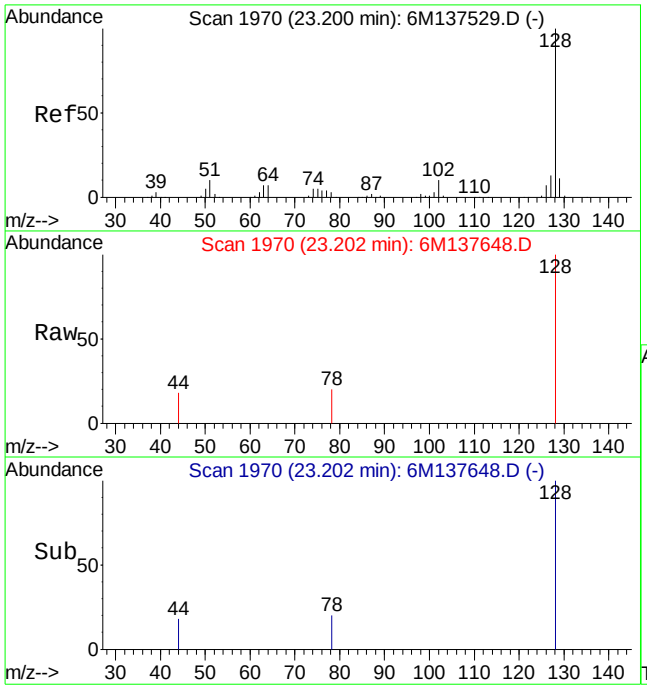

#100
Naphthalene
Concen: 0.46 ug/L
RT: 23.20 min Scan# 1970
Delta R.T. 0.00 min
Lab File: 6M137648.D
Acq: 8 Mar 2016 13:05

Tgt Ion:128 Resp: 4501

Ion	Ratio	Lower	Upper
128	100		
127	0.0	7.7	18.1#

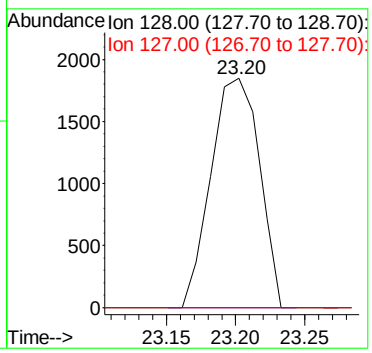

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030816\6M137649.D Vial: 6
Acq On : 8 Mar 2016 13:38 Operator: TMB
Sample : WG560074-02 20ug/Kg LCS STD 8260 Inst : HPMS6
Misc : 7,1 STD74973 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 08 14:03:32 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	578167	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	418780	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	226756	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	145249	46.8319 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.66%		
43) 1,2-Dichloroethane-d4	11.06	65	171673	42.6315 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 85.26%		
58) Toluene-d8	13.80	98	495730	49.7887 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.58%		
80) p-Bromofluorobenzene	17.79	95	203830	48.9384 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 97.88%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	107133	20.1761 ug/L	99
3) Chloromethane	3.88	50	94741	17.1220 ug/L	97
4) Vinyl Chloride	4.11	62	87091	19.5548 ug/L	99
5) 1,3-Butadiene	4.16	54	62661	16.9102 ug/L	95
6) Bromomethane	5.03	94	49122	20.6905 ug/L	99
7) Chloroethane	5.19	64	54932	21.7524 ug/L	99
8) Trichlorofluoromethane	5.69	101	114064	19.0601 ug/L	99
9) Diethyl ether	6.24	59	284959	103.5070 ug/L	95
10) Isoprene	6.28	67	89257	22.8946 ug/L	89
11) Acrolein	6.48	56	48600	92.9559 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	63899	22.3700 ug/L	94
13) Acetone	6.60	43	26407	17.4558 ug/L	94
14) 1,1-Dichloroethene	6.83	61	101871	20.1340 ug/L	95
15) Tert-Butyl Alcohol	6.94	59	88831	188.1579 ug/L	99
16) Dimethyl Sulfide	7.11	62	73097	29.7776 ug/L	97
17) Iodomethane	7.38	142	26145	15.6639 ug/L	95
18) Methyl acetate	7.39	43	63678	18.1103 ug/L	98
19) Methylene Chloride	7.67	84	62770	20.5997 ug/L	83
20) Carbon Disulfide	7.72	76	180582	18.6539 ug/L	99
21) Acrylonitrile	7.86	53	27233	18.8455 ug/L	96
22) Methyl Tert Butyl Ether	7.89	73	185404	21.3062 ug/L	95
23) trans-1,2-Dichloroethene	8.16	96	59981	21.4593 ug/L	89
24) n-Hexane	8.24	57	102750	20.2439 ug/L	100
25) Diisopropyl ether	8.61	45	1288205	97.8931 ug/L	96
26) Vinyl Acetate	8.80	43	127996	18.8164 ug/L	97
27) 1,1-Dichloroethane	8.84	63	118984	19.7445 ug/L	99
28) Ethyl-Tert-Butyl ether	9.25	59	1008316	95.5986 ug/L	96
29) 2-Butanone	9.46	43	37774	18.9012 ug/L	94
30) Propionitrile	9.58	54	49980	90.3615 ug/L	95
31) 2,2-Dichloropropane	9.70	77	97618	20.1810 ug/L	95
32) cis-1,2-Dichloroethene	9.77	96	64635	20.7131 ug/L	97
33) Chloroform	10.01	83	111244	19.7663 ug/L	97
34) 1-Bromopropane	10.16	122	14248	33.3035 ug/L	99
35) Bromochloromethane	10.27	130	35943	19.6035 ug/L	98
36) Tetrahydrofuran	10.29	42	117408	87.2746 ug/L	96
38) 1,1,1-Trichloroethane	10.60	97	101851	20.4885 ug/L	100
39) Cyclohexane	10.63	56	125240	22.2175 ug/L	87
40) 1,1-Dichloropropene	10.82	75	83244	20.7936 ug/L	97
41) Tert-Amyl-Methyl ether	10.95	73	850763	101.6780 ug/L	93
42) Carbon Tetrachloride	10.99	117	93419	20.1122 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030816\6M137649.D Vial: 6
Acq On : 8 Mar 2016 13:38 Operator: TMB
Sample : WG560074-02 20ug/Kg LCS STD 8260 Inst : HPMS6
Misc : 7,1 STD74973 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 08 14:03:32 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	11.19	62	92177	19.1894 ug/L		98
46)	Benzene	11.23	78	243009	20.1770 ug/L		93
47)	Trichloroethene	12.09	130	60967	21.4275 ug/L		95
48)	Methylcyclohexane	12.18	83	104399	22.6972 ug/L		88
49)	1,2-Dichloropropane	12.35	63	67624	20.8678 ug/L		98
50)	1,4-Dioxane	12.68	88	7192	188.2306 ug/L		91
51)	Bromodichloromethane	12.68	83	82848	19.4817 ug/L		98
52)	Dibromomethane	12.78	93	35092	18.5142 ug/L		98
53)	2-Chloroethyl Vinyl Ether	13.04	63	37777	21.1943 ug/L		99
54)	4-Methyl-2-Pentanone	13.08	58	26341	19.5169 ug/L		97
55)	cis-1,3-Dichloropropene	13.43	75	102605	21.8988 ug/L		98
56)	Dimethyl Disulfide	13.72	79	48802	20.6517 ug/L		98
59)	Toluene	13.92	91	245202	20.6988 ug/L		99
60)	Ethyl Methacrylate	14.04	69	80459	21.1974 ug/L		98
62)	trans-1,3-Dichloropropene	14.12	75	88815	19.4975 ug/L		100
63)	1,1,2-Trichloroethane	14.38	97	49081	19.8224 ug/L		99
64)	2-Hexanone	14.31	43	53546	18.9518 ug/L		100
65)	1,3-Dichloropropane	14.73	76	93456	20.8246 ug/L		98
66)	Tetrachloroethene	14.87	166	62172	21.2752 ug/L		99
67)	Dibromochloromethane	15.18	129	61716	19.1652 ug/L		98
68)	1,2-Dibromoethane	15.48	107	50600	19.9825 ug/L		100
69)	1-Chlorohexane	15.59	91	83802	22.7801 ug/L		89
70)	Chlorobenzene	16.07	112	157317	20.6631 ug/L	#	68
71)	1,1,1,2-Tetrachloroethane	16.11	131	60924	19.9296 ug/L		98
72)	Ethylbenzene	16.11	106	86206	21.1591 ug/L		98
73)	m-,p-Xylene	16.22	106	211005	42.3273 ug/L		97
74)	o-Xylene	16.88	106	104559	22.2687 ug/L		95
75)	Styrene	16.92	104	168303	21.0600 ug/L		96
76)	Bromoform	17.50	173	38700	17.0208 ug/L		99
77)	Isopropylbenzene	17.38	105	280118	22.1932 ug/L		98
79)	1,1,2,2-Tetrachloroethane	17.64	83	66505	18.7748 ug/L		95
81)	1,2,3-Trichloropropane	17.87	110	21430	19.7592 ug/L		94
82)	trans-1,4-Dichloro-2-Buten	17.93	53	19803	15.1435 ug/L		85
83)	n-Propylbenzene	17.98	91	339953	22.0757 ug/L		99
84)	Bromobenzene	18.12	156	67717	20.2300 ug/L		98
85)	1,3,5-Trimethylbenzene	18.21	105	237475	21.6649 ug/L		95
86)	2-Chlorotoluene	18.30	91	214831	20.9009 ug/L		96
87)	4-Chlorotoluene	18.36	91	201396	21.4289 ug/L		97
88)	a-Methylstyrene	18.69	118	122197	22.9563 ug/L		97
89)	tert-Butylbenzene	18.76	134	51186	22.4074 ug/L		99
90)	1,2,4-Trimethylbenzene	18.82	105	239314	20.7601 ug/L		81
91)	sec-Butylbenzene	19.07	105	309660	22.0597 ug/L		99
92)	p-Isopropyltoluene	19.27	119	250717	21.6487 ug/L		99
93)	1,3-Dichlorobenzene	19.48	146	132228	20.4155 ug/L		96
94)	1,4-Dichlorobenzene	19.64	146	134756	20.4399 ug/L		96
95)	n-Butylbenzene	19.89	91	238512	20.4765 ug/L		98
96)	1,2-Dichlorobenzene	20.23	146	128271	20.5814 ug/L		97
97)	1,2-Dibromo-3-Chloropropan	21.41	75	14706	18.7634 ug/L		92
98)	1,2,4-Trichlorobenzene	22.77	180	93107	20.6648 ug/L		99
99)	Hexachlorobutadiene	22.95	225	58317	22.6326 ug/L		98
100)	Naphthalene	23.20	128	193175	18.6501 ug/L		99
101)	1,2,3-Trichlorobenzene	23.59	180	88886	20.0348 ug/L		99

(#) = qualifier out of range (m) = manual integration
6M137649.D 826_SL.M Tue Mar 08 14:03:32 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030816\6M137649.D Vial: 6
Acq On : 8 Mar 2016 13:38 Operator: TMB
Sample : WG560074-02 20ug/Kg LCS STD 8260 Inst : HPMS6
Misc : 7,1 STD74973 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 8 14:03 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

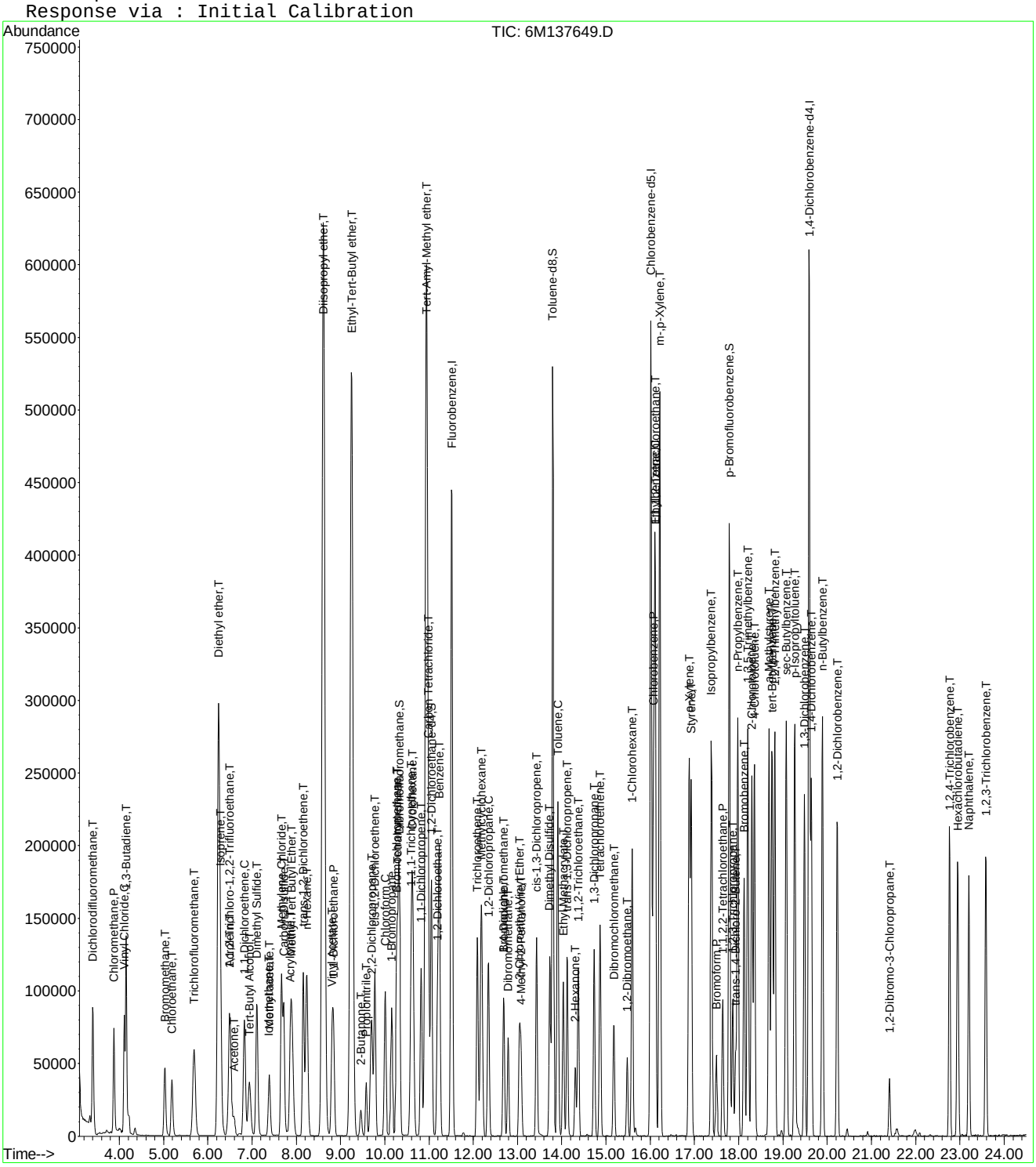

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030816\6M137650.D Vial: 7
Acq On : 8 Mar 2016 14:12 Operator: TMB
Sample : WG560060-02 MS 323-05 8260 5.27g Inst : HPMS6
Misc : 7,1 STD74973 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 08 14:37:20 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	589862	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	437379	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	236090	50.00 ug/L	0.01

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	150317	47.5050 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.02%		
43) 1,2-Dichloroethane-d4	11.06	65	184057	44.8006 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 89.60%		
58) Toluene-d8	13.80	98	507525	48.8058 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 97.62%		
80) p-Bromofluorobenzene	17.79	95	214274	49.4120 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 98.82%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	106551	19.6686 ug/L	98
3) Chloromethane	3.88	50	91256	16.1652 ug/L	98
4) Vinyl Chloride	4.12	62	89171	19.6248 ug/L	98
5) 1,3-Butadiene	4.16	54	11882	3.1430 ug/L	87
6) Bromomethane	5.04	94	47763	19.7192 ug/L	99
7) Chloroethane	5.19	64	54398	21.1138 ug/L	99
8) Trichlorofluoromethane	5.69	101	115788	18.9646 ug/L	98
9) Diethyl ether	6.24	59	2500	0.8901 ug/L #	19
10) Isoprene	6.28	67	89583	22.5227 ug/L	91
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	64190	22.0263 ug/L	96
13) Acetone	6.60	43	30291	20.1724 ug/L	96
14) 1,1-Dichloroethene	6.83	61	101098	19.5851 ug/L	95
15) Tert-Butyl Alcohol	6.94	59	603	1.2519 ug/L #	57
16) Dimethyl Sulfide	7.12	62	73754	29.4495 ug/L	98
17) Iodomethane	7.38	142	30053	17.0192 ug/L	94
18) Methyl acetate	7.39	43	74839	20.8626 ug/L	96
19) Methylene Chloride	7.67	84	63258	20.3483 ug/L	84
20) Carbon Disulfide	7.72	76	180963	18.3226 ug/L	100
21) Acrylonitrile	7.86	53	32458	22.0159 ug/L	100
22) Methyl Tert Butyl Ether	7.89	73	191661	21.5885 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	59772	20.9605 ug/L	91
24) n-Hexane	8.24	57	107625	20.7839 ug/L	100
26) Vinyl Acetate	8.80	43	140577	20.2562 ug/L	99
27) 1,1-Dichloroethane	8.83	63	117288	19.0772 ug/L	99
29) 2-Butanone	9.46	43	44451	21.8012 ug/L	98
31) 2,2-Dichloropropane	9.70	77	101190	20.5047 ug/L	95
32) cis-1,2-Dichloroethene	9.77	96	64463	20.2484 ug/L	85
33) Chloroform	10.01	83	111078	19.3455 ug/L	97
34) 1-Bromopropane	10.16	122	13515	30.9638 ug/L	98
35) Bromochloromethane	10.26	130	36936	19.7457 ug/L	100
36) Tetrahydrofuran	10.30	42	2638	Below Cal #	67
38) 1,1,1-Trichloroethane	10.60	97	101018	19.9180 ug/L	100
39) Cyclohexane	10.63	56	121794	21.1778 ug/L	89
40) 1,1-Dichloropropene	10.82	75	84058	20.5806 ug/L	97
41) Tert-Amyl-Methyl ether	10.82	73	12268	1.4371 ug/L #	52
42) Carbon Tetrachloride	10.99	117	93740	19.7812 ug/L	97
45) 1,2-Dichloroethane	11.19	62	97411	19.8769 ug/L	100
46) Benzene	11.23	78	240735	19.5919 ug/L	93
47) Trichloroethene	12.09	130	62794	21.6321 ug/L	98
48) Methylcyclohexane	12.18	83	104391	22.2455 ug/L	90

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030816\6M137650.D Vial: 7
Acq On : 8 Mar 2016 14:12 Operator: TMB
Sample : WG560060-02 MS 323-05 8260 5.27g Inst : HPMS6
Misc : 7,1 STD74973 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 08 14:37:20 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
49)	1,2-Dichloropropane	12.35	63	69678	21.0753 ug/L	96
51)	Bromodichloromethane	12.68	83	84434	19.4610 ug/L	99
52)	Dibromomethane	12.79	93	38504	19.9116 ug/L	97
53)	2-Chloroethyl Vinyl Ether	13.04	63	39638	21.7975 ug/L	98
54)	4-Methyl-2-Pentanone	13.07	58	31257	22.7002 ug/L	92
55)	cis-1,3-Dichloropropene	13.43	75	105393	22.0479 ug/L	97
56)	Dimethyl Disulfide	13.73	79	49214	20.4131 ug/L	100
59)	Toluene	13.91	91	245351	19.8307 ug/L	99
60)	Ethyl Methacrylate	14.04	69	82484	20.8069 ug/L	96
62)	trans-1,3-Dichloropropene	14.12	75	95145	19.9989 ug/L	100
63)	1,1,2-Trichloroethane	14.38	97	54001	20.8821 ug/L	100
64)	2-Hexanone	14.31	43	62965	21.3378 ug/L	99
65)	1,3-Dichloropropane	14.74	76	101608	21.6783 ug/L	98
66)	Tetrachloroethene	14.87	166	61974	20.3056 ug/L	99
67)	Dibromochloromethane	15.18	129	65639	19.5167 ug/L	99
68)	1,2-Dibromoethane	15.48	107	54102	20.4570 ug/L	96
69)	1-Chlorohexane	15.59	91	83840	21.8213 ug/L	88
70)	Chlorobenzene	16.07	112	159994	20.1211 ug/L #	68
71)	1,1,1,2-Tetrachloroethane	16.11	131	61919	19.3938 ug/L	97
72)	Ethylbenzene	16.10	106	88111	20.7071 ug/L	100
73)	m-,p-Xylene	16.22	106	215625	41.4147 ug/L	98
74)	o-Xylene	16.88	106	105618	21.5377 ug/L	96
75)	Styrene	16.92	104	169918	20.3580 ug/L	96
76)	Bromoform	17.49	173	44349	18.6759 ug/L	97
77)	Isopropylbenzene	17.38	105	279988	21.2396 ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.65	83	79551	21.5699 ug/L	96
81)	1,2,3-Trichloropropane	17.87	110	25315	22.4185 ug/L	94
82)	trans-1,4-Dichloro-2-Buten	17.93	53	23172	17.0192 ug/L	83
83)	n-Propylbenzene	17.98	91	344530	21.4884 ug/L	98
84)	Bromobenzene	18.13	156	69629	19.9788 ug/L	98
85)	1,3,5-Trimethylbenzene	18.21	105	240954	21.1132 ug/L	96
86)	2-Chlorotoluene	18.30	91	221437	20.6918 ug/L	94
87)	4-Chlorotoluene	18.36	91	202568	20.7015 ug/L	97
88)	a-Methylstyrene	18.69	118	119497	21.5615 ug/L	96
89)	tert-Butylbenzene	18.76	134	50676	21.3070 ug/L	93
90)	1,2,4-Trimethylbenzene	18.82	105	241816	20.1478 ug/L	82
91)	sec-Butylbenzene	19.08	105	316920	21.6843 ug/L	98
92)	p-Isopropyltoluene	19.27	119	255947	21.2266 ug/L	99
93)	1,3-Dichlorobenzene	19.48	146	137751	20.4274 ug/L	97
94)	1,4-Dichlorobenzene	19.64	146	140840	20.5181 ug/L	96
95)	n-Butylbenzene	19.89	91	251591	20.7454 ug/L	97
96)	1,2-Dichlorobenzene	20.23	146	134518	20.7304 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	21.41	75	17520	21.4700 ug/L	92
98)	1,2,4-Trichlorobenzene	22.76	180	100615	21.4483 ug/L	99
99)	Hexachlorobutadiene	22.96	225	60834	22.6760 ug/L	97
100)	Naphthalene	23.20	128	230055	21.3326 ug/L	100
101)	1,2,3-Trichlorobenzene	23.59	180	98070	21.2310 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M137650.D 826_SL.M Tue Mar 08 14:37:20 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030816\6M137650.D Vial: 7
Acq On : 8 Mar 2016 14:12 Operator: TMB
Sample : WG560060-02 MS 323-05 8260 5.27g Inst : HPMS6
Misc : 7,1 STD74973 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 8 14:37 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

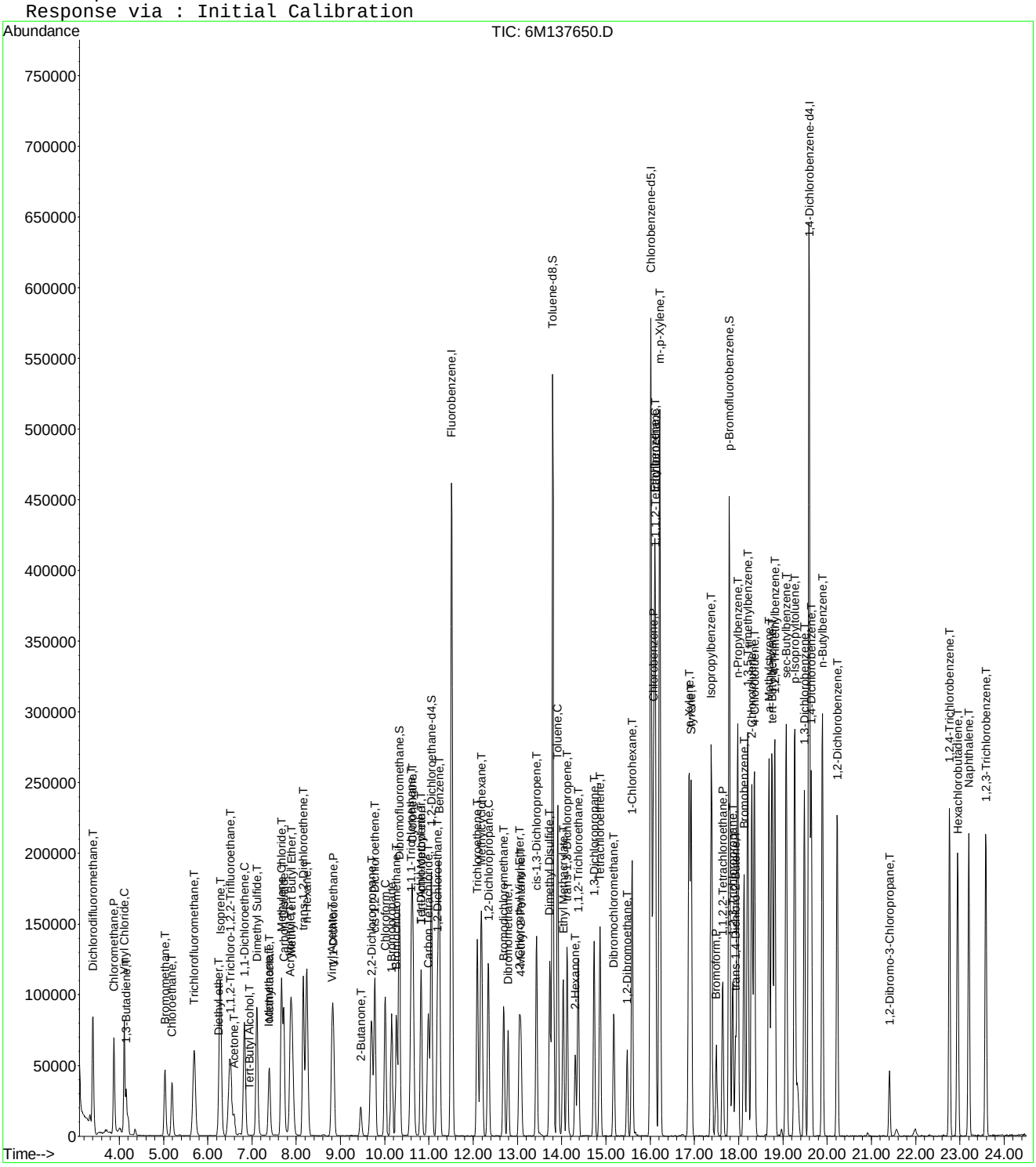

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030816\6M137651.D Vial: 8
Acq On : 8 Mar 2016 14:46 Operator: TMB
Sample : WG560060-03 MSD 323-05 8260 4.76g Inst : HPMS6
Misc : 7,1 STD74973 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 08 15:11:20 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	284633	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	205283	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	106803	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.32	111	70130	45.9304 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 91.86%		
43) 1,2-Dichloroethane-d4	11.06	65	85753	43.2560 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 86.52%		
58) Toluene-d8	13.80	98	241765	49.5350 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.06%		
80) p-Bromofluorobenzene	17.79	95	97853	49.8805 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 99.76%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	46057	17.6188 ug/L	98
3) Chloromethane	3.88	50	40757	14.9619 ug/L	98
4) Vinyl Chloride	4.12	62	39579	18.0515 ug/L	98
5) 1,3-Butadiene	4.16	54	5284	2.8966 ug/L	79
6) Bromomethane	5.03	94	22210	19.0025 ug/L	97
7) Chloroethane	5.19	64	23603	18.9853 ug/L	100
8) Trichlorofluoromethane	5.69	101	50553	17.1590 ug/L	99
10) Isoprene	6.28	67	43061	22.4359 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	27672	19.6780 ug/L	96
13) Acetone	6.59	43	15334	21.3779 ug/L	98
14) 1,1-Dichloroethene	6.83	61	44725	17.9555 ug/L	93
15) Tert-Butyl Alcohol	6.82	59	1556	6.6948 ug/L #	57
16) Dimethyl Sulfide	7.12	62	36452	30.1633 ug/L	99
17) Iodomethane	7.39	142	13770	16.4109 ug/L	97
18) Methyl acetate	7.39	43	37738	21.8014 ug/L	98
19) Methylene Chloride	7.67	84	28782	19.1866 ug/L	87
20) Carbon Disulfide	7.72	76	87969	18.4584 ug/L	98
21) Acrylonitrile	7.86	53	15546	21.8523 ug/L	98
22) Methyl Tert Butyl Ether	7.89	73	91746	21.4161 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	26362	19.1579 ug/L	88
24) n-Hexane	8.24	57	52407	20.9734 ug/L	100
26) Vinyl Acetate	8.80	43	51047	15.2433 ug/L	96
27) 1,1-Dichloroethane	8.83	63	52667	17.7527 ug/L	99
29) 2-Butanone	9.46	43	21211	21.5589 ug/L	93
31) 2,2-Dichloropropane	9.70	77	44611	18.7337 ug/L	94
32) cis-1,2-Dichloroethene	9.77	96	28465	18.5292 ug/L	97
33) Chloroform	10.01	83	49621	17.9095 ug/L	99
34) 1-Bromopropane	10.15	122	6898	32.7512 ug/L	96
35) Bromochloromethane	10.26	130	16468	18.2444 ug/L	99
36) Tetrahydrofuran	10.30	42	1310	Below Cal #	40
38) 1,1,1-Trichloroethane	10.60	97	44641	18.2409 ug/L	98
39) Cyclohexane	10.63	56	59479	21.4331 ug/L	88
40) 1,1-Dichloropropene	10.82	75	36644	18.5929 ug/L	95
41) Tert-Amyl-Methyl ether	10.82	73	4941	1.1995 ug/L #	52
42) Carbon Tetrachloride	10.99	117	40663	17.7824 ug/L	98
45) 1,2-Dichloroethane	11.19	62	43658	18.4616 ug/L	99
46) Benzene	11.23	78	107295	18.0960 ug/L	92
47) Trichloroethene	12.09	130	26832	19.1557 ug/L	98
48) Methylcyclohexane	12.18	83	50050	22.1029 ug/L	88
49) 1,2-Dichloropropane	12.34	63	30571	19.1625 ug/L	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030816\6M137651.D Vial: 8
Acq On : 8 Mar 2016 14:46 Operator: TMB
Sample : WG560060-03 MSD 323-05 8260 4.76g Inst : HPMS6
Misc : 7,1 STD74973 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 08 15:11:20 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
51)	Bromodichloromethane	12.68	83	36553	17.4596 ug/L	96
52)	Dibromomethane	12.79	93	16528	17.7128 ug/L	96
53)	2-Chloroethyl Vinyl Ether	13.04	63	17242	19.6493 ug/L	99
54)	4-Methyl-2-Pentanone	13.08	58	14433	21.7222 ug/L	92
55)	cis-1,3-Dichloropropene	13.43	75	44826	19.4335 ug/L	98
56)	Dimethyl Disulfide	13.72	79	22515	19.3534 ug/L	98
59)	Toluene	13.91	91	110651	19.0550 ug/L	99
60)	Ethyl Methacrylate	14.04	69	38867	20.8892 ug/L	98
62)	trans-1,3-Dichloropropene	14.12	75	40627	18.1945 ug/L	96
63)	1,1,2-Trichloroethane	14.38	97	23302	19.1986 ug/L	99
64)	2-Hexanone	14.31	43	28850	20.8306 ug/L	99
65)	1,3-Dichloropropane	14.74	76	44646	20.2948 ug/L	99
66)	Tetrachloroethene	14.87	166	27200	18.9881 ug/L	100
67)	Dibromochloromethane	15.18	129	27424	17.3732 ug/L	99
68)	1,2-Dibromoethane	15.48	107	23034	18.5568 ug/L	97
69)	1-Chlorohexane	15.59	91	40846	22.6508 ug/L	88
70)	Chlorobenzene	16.07	112	72668	19.4713 ug/L	69
71)	1,1,1,2-Tetrachloroethane	16.11	131	27588	18.4104 ug/L	97
72)	Ethylbenzene	16.10	106	38265	19.1600 ug/L	99
73)	m-,p-Xylene	16.22	106	94061	38.4920 ug/L	95
74)	o-Xylene	16.88	106	44420	19.2994 ug/L	89
75)	Styrene	16.92	104	72344	18.4673 ug/L	94
76)	Bromoform	17.50	173	18056	16.2003 ug/L	99
77)	Isopropylbenzene	17.38	105	122776	19.8438 ug/L	96
79)	1,1,2,2-Tetrachloroethane	17.65	83	33941	20.3433 ug/L	96
81)	1,2,3-Trichloropropane	17.87	110	10808	21.1577 ug/L	91
82)	trans-1,4-Dichloro-2-Buten	17.93	53	10492	17.0344 ug/L	76
83)	n-Propylbenzene	17.98	91	149471	20.6076 ug/L	98
84)	Bromobenzene	18.13	156	30675	19.4562 ug/L	98
85)	1,3,5-Trimethylbenzene	18.21	105	104476	20.2363 ug/L	96
86)	2-Chlorotoluene	18.30	91	97414	20.1217 ug/L	96
87)	4-Chlorotoluene	18.36	91	89354	20.1855 ug/L	97
88)	a-Methylstyrene	18.69	118	55285	22.0508 ug/L	98
89)	tert-Butylbenzene	18.76	134	22432	20.8489 ug/L	87
90)	1,2,4-Trimethylbenzene	18.82	105	106171	19.5543 ug/L	82
91)	sec-Butylbenzene	19.08	105	137287	20.7644 ug/L	98
92)	p-Isopropyltoluene	19.27	119	110053	20.1756 ug/L	98
93)	1,3-Dichlorobenzene	19.48	146	60863	19.9510 ug/L	98
94)	1,4-Dichlorobenzene	19.64	146	60903	19.6130 ug/L	95
95)	n-Butylbenzene	19.89	91	103995	18.9554 ug/L	98
96)	1,2-Dichlorobenzene	20.22	146	58616	19.9681 ug/L	99
97)	1,2-Dibromo-3-Chloropropan	21.41	75	6985	18.9216 ug/L	86
98)	1,2,4-Trichlorobenzene	22.76	180	39273	18.5063 ug/L	99
99)	Hexachlorobutadiene	22.96	225	25490	21.0031 ug/L	98
100)	Naphthalene	23.20	128	84999	17.4229 ug/L	99
101)	1,2,3-Trichlorobenzene	23.58	180	37961	18.1663 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M137651.D 826_SL.M Tue Mar 08 15:11:20 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030816\6M137651.D Vial: 8
Acq On : 8 Mar 2016 14:46 Operator: TMB
Sample : WG560060-03 MSD 323-05 8260 4.76g Inst : HPMS6
Misc : 7,1 STD74973 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 8 15:11 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

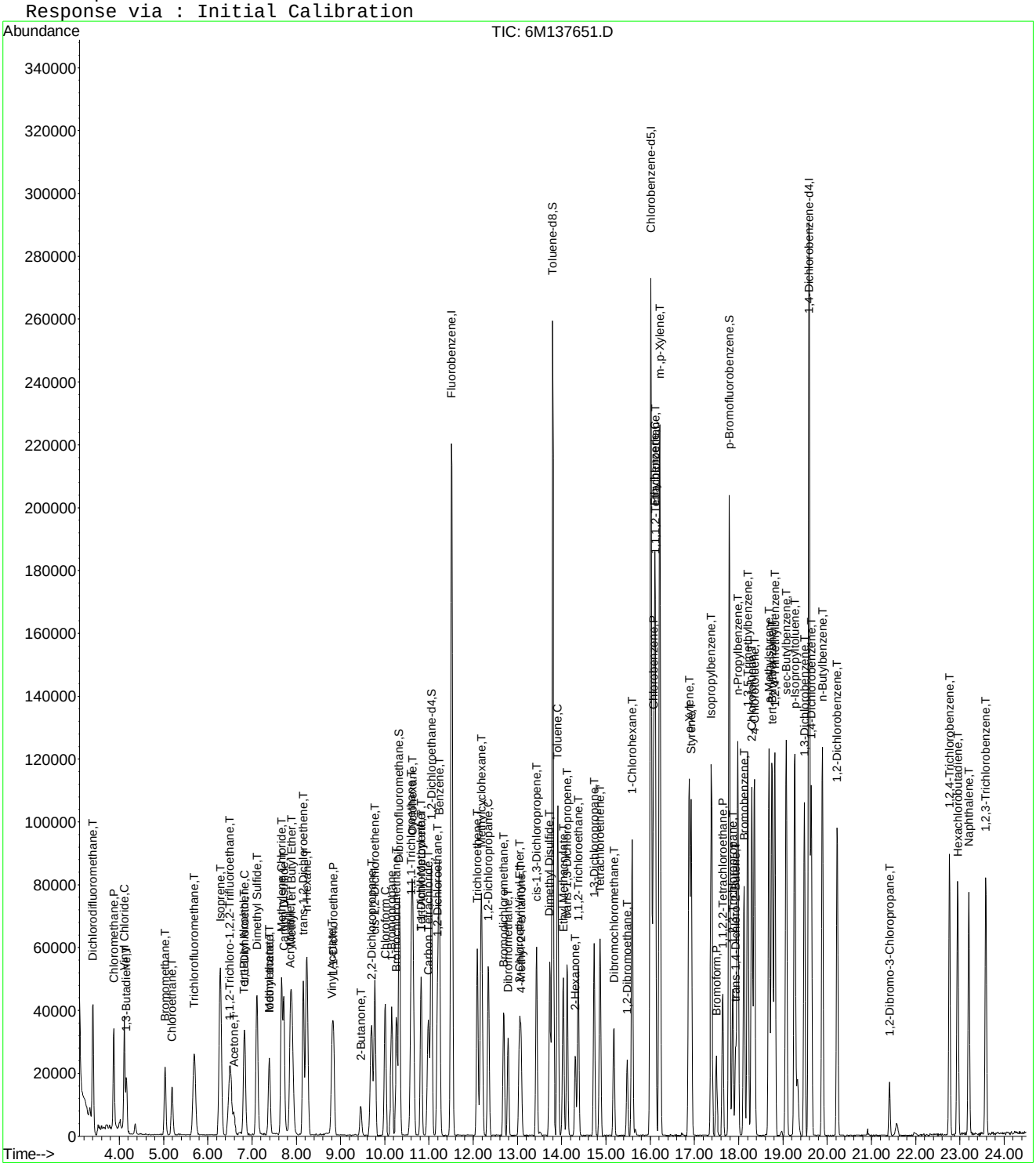

2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030323-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT09(5-5.5)040316	**Prep Method:**	6850	**Prep Date:**	03/07/2016 14:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559975	**Analyst:**	JWR	**Run Date:**	03/07/2016 18:39
Collect Date:	03/04/2016 10:30	**Dilution:**	1	**File ID:**	1LM.LM33757
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	67.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.84	U	5.70	2.84	1.42

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030323-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT09(11-11.5)040316	**Prep Method:**	6850	**Prep Date:**	03/07/2016 14:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559975	**Analyst:**	JWR	**Run Date:**	03/07/2016 18:58
Collect Date:	03/04/2016 10:35	**Dilution:**	1	**File ID:**	1LM.LM33758
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	86.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.26	U	4.51	2.26	1.13

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030323-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT09(13.5-14)040316	**Prep Method:**	6850	**Prep Date:**	03/07/2016 14:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559975	**Analyst:**	JWR	**Run Date:**	03/07/2016 19:17
Collect Date:	03/04/2016 10:40	**Dilution:**	1	**File ID:**	1LM.LM33759
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.44	U	4.89	2.44	1.22

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030323-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT10(5-5.5)040316	**Prep Method:**	6850	**Prep Date:**	03/07/2016 14:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559975	**Analyst:**	JWR	**Run Date:**	03/07/2016 19:36
Collect Date:	03/04/2016 11:25	**Dilution:**	1	**File ID:**	1LM.LM33760
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	74.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.60	U	5.21	2.60	1.30

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030323
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030323-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT10(15.5-16)040316	**Prep Method:**	6850	**Prep Date:**	03/07/2016 14:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559975	**Analyst:**	JWR	**Run Date:**	03/08/2016 11:35
Collect Date:	03/04/2016 11:55	**Dilution:**	10	**File ID:**	1LM.LM33776
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	94.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	175		41.8	21.0	10.5

Certificate of Analysis

Sample #:	L16030323-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT10(23.5-24)040316	**Prep Method:**	6850	**Prep Date:**	03/07/2016 14:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG559975	**Analyst:**	JWR	**Run Date:**	03/07/2016 21:11
Collect Date:	03/04/2016 12:40	**Dilution:**	1	**File ID:**	1LM.LM33765
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	86.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	15.9		4.55	2.28	1.14

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

MICROBAC

Semivolatile Sample Extract Log

Parameter: Perchlorate
SOP #: HPLC 06
Analyst: JWR
Spike/Surrogate analyst: JWR
Surrogate #: NA
Spike # A: STD72686
Ext Solvent: DI-H2O
Ext Solvent: NA
Ext Disk: NA

Matrix: Soils
Rev #: 07
Date/Time Extracted: JWR/03/07/16/14:15
Witness: [illegible]

Spike # B: NA
Lot #: NA
Lot #: NA
Lot #: NA

Extraction Work Group: WG559971
Analytical Work Group: WG559975
Run ID: R4485580

Pipetter(s): Eppendorf #403
Analytical Balance ID: BAL014
Reagent: Tubes Lot #: RGT34011
Reagent: Sand Lot #: COA16150
Other: IS Lot #: COA18071

Color Code
T = Transparent
C = Colored
O = Opaque

	Sample ID	Test Code	pH	Initial Wt / Vol	JWR ~~Surrogate~~ Amount	IS Amount Spike	Final Volume	Extract Color	Comments
1	WG559971-01	6850		5.023 g	0.250 ml	1.0 ml	50 ml		MCT (2ug/kg)(10,000 us)
2	WG559971-02			5.020 g		NA			Blank
3	WG559971-03			5.001 g		1.0 ml			LCS (2ug/kg)
4	L16030323-01			5.194 g		NA			
5	-02			5.142 g		NA			
6	-03			5.141 g		NA			
7	-04			5.192 g		NA			
8	-05			5.033 g		NA			
9	-06			5.039 g		NA			
10	L16030324-01			5.204 g		NA			WG559971-04 Ref
11	MS -01			5.197 g		1.0 ml			WG559971-05 MS (@2ug/kg)
12	MSD -01			5.206 g		1.0 ml			WG559971-06 MSD (@2ug/kg)
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									

JWR 03/07/16

Reviewed by: [illegible] 3-9-16

Analytical WG559975 (soils)

Perchlorate Conductivity Check

(perchlorate1)

Conductivity Probe Calibration Check: 1392 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG559971-01 MCT	10,200.	
WG559971-02 Blank	1.09	
WG559971-03 LCS	1.06	
L16030324-01 Ref	52.4	
-01 MS	54.3	
-01 MSD	54.1	
L16030323-01	8.49	
-02	62.5	
-03	43.2	
-04	4.69	
-05	102.4	
-06	57.6	

Analyst: John Richards

Date/Time: 03/07/16 16:45

DCN#117079

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030216_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015, WG559292

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 MS/MSD STD: STD72685

Comments: L16021262s and L16021255s diluted based on historical data.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM33567	WG559340-01 CCB	1	1		03/02/16 08:34
2	1LM.LM33568	WG559340-02 STD (0.1 ug/L)	1	1	STD72683	03/02/16 08:53
3	1LM.LM33569	WG559340-03 STD (0.2 ug/L)	1	1	STD72683	03/02/16 09:12
4	1LM.LM33570	WG559340-04 STD (0.5 ug/L)	1	1	STD72683	03/02/16 09:31
5	1LM.LM33571	WG559340-05 STD (1.0 ug/L)	1	1	STD72683	03/02/16 09:50
6	1LM.LM33572	WG559340-06 STD (2.0 ug/L)	1	1	STD72683	03/02/16 10:09
7	1LM.LM33573	WG559340-07 STD (5.0 ug/L)	1	1	STD72683	03/02/16 10:28
8	1LM.LM33574	WG559340-08 STD (10 ug/L)	1	1	STD72683	03/02/16 10:46
9	1LM.LM33575	WG559340-09 SSCV (1.0 ug/L)	1	1	STD72685	03/02/16 11:05
10	1LM.LM33576	WG559291-01 CCB	1	1		03/02/16 11:25
11	1LM.LM33577	WG559291-02 CCV (1.0ug/L)	1	1	STD72683	03/02/16 11:44
12	1LM.LM33578	WG559015-05 MRL (0.2ug/L)	1	1	STD72683	03/02/16 12:03
13	1LM.LM33579	WG559015-01 MCT (0.2ug/L)	1	1	STD72685	03/02/16 12:22
14	1LM.LM33580	WG559015-02 BLANK	1	1		03/02/16 12:41
15	1LM.LM33581	WG559015-05 MRL (0.2ug/L)	1	1	STD72683	03/02/16 13:01
16	1LM.LM33582	WG559015-03 LCS (0.2ug/L)	1	1	STD72685	03/02/16 13:20
17	1LM.LM33583	WG559015-04 LCS2 (0.2ug/L)	1	1	STD72685	03/02/16 13:39
18	1LM.LM33584	L16021060-01 ADC	1	1	STD72685	03/02/16 13:58
19	1LM.LM33585	L16021060-02 ADC	1	1	STD72685	03/02/16 14:17
20	1LM.LM33586	L16021060-03 ADC	1	1	STD72685	03/02/16 14:36
21	1LM.LM33587	L16021060-04 ADC	1	1	STD72685	03/02/16 14:55
22	1LM.LM33588	L16021262-01 (20x)	1	20		03/02/16 15:13
23	1LM.LM33589	L16021262-02 (5000x)	1	5000		03/02/16 15:32
24	1LM.LM33590	WG559291-03 CCV (1.0ug/L)	1	1	STD72683	03/02/16 15:51
25	1LM.LM33591	WG559015-06 MRL (0.2ug/L)	1	1	STD72683	03/02/16 16:10
26	1LM.LM33592	WG559291-04 CCB	1	1		03/02/16 16:29
27	1LM.LM33593	L16021262-03 (100X)	1	100		03/02/16 16:48
28	1LM.LM33594	L16021262-04 (2000X)	1	2000		03/02/16 17:07
29	1LM.LM33595	L16021262-05 (1000X)	1	1000		03/02/16 17:26
30	1LM.LM33596	L16021262-06 (10,000X)	1	10000		03/02/16 17:45
31	1LM.LM33597	L16021262-07 (10,000X)	1	10000		03/02/16 18:04
32	1LM.LM33598	L16021262-08 (5000X)	1	5000		03/02/16 18:23
33	1LM.LM33599	L16021262-09 (5000X)	1	5000		03/02/16 18:42

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030216_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015, WG559292

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM33600	L16021262-10 (100,000X)	1	100000		03/02/16 19:01
35	1LM.LM33601	L16021262-11 (10,000X)	1	10000		03/02/16 19:20
36	1LM.LM33602	L16021262-12 (10,000X)	1	10000		03/02/16 19:39
37	1LM.LM33603	WG559291-05 CCV (1.0ug/L)	1	1	STD72683	03/02/16 19:58
38	1LM.LM33604	WG559015-07 MRL (0.2ug/L)	1	1	STD72683	03/02/16 20:17
39	1LM.LM33605	WG559291-06 CCB	1	1		03/02/16 20:35
40	1LM.LM33606	L16021262-13 (10,000X)	1	10000		03/02/16 20:54
41	1LM.LM33607	L16021262-14 (10,000X)	1	10000		03/02/16 21:13
42	1LM.LM33608	WG559291-07 CCV (1.0ug/L)	1	1	STD72683	03/02/16 21:32
43	1LM.LM33609	WG559015-08 MRL (0.2ug/L)	1	1	STD72683	03/02/16 21:51
44	1LM.LM33610	WG559291-08 CCB	1	1		03/02/16 22:10
45	1LM.LM33611	WG559292-07 MRL (0.2ug/L)	1	1	STD72685	03/02/16 22:29
46	1LM.LM33612	WG559292-01 MCT (0.2ug/L)	1	1	STD72685	03/02/16 22:48
47	1LM.LM33613	WG559292-02 BLANK	1	1		03/02/16 23:07
48	1LM.LM33614	WG559292-03 LCS (0.2ug/L)	1	1	STD72685	03/02/16 23:26
93	1LM.LM33615	L16021255-01 REF 100X	1	100		03/02/16 23:45
50	1LM.LM33616	L16021255-02 MS 100X	1	100	STD72685	03/03/16 00:04
51	1LM.LM33617	L16021255-03 MSD 100X	1	100	STD72685	03/03/16 00:23
94	1LM.LM33618	L16021255-04 20X	1	20		03/03/16 00:42
53	1LM.LM33619	L16021255-05 20X	1	20		03/03/16 01:01
54	1LM.LM33620	L16021255-06 200X	1	200		03/03/16 01:20
55	1LM.LM33621	L16021255-07 100X	1	100		03/03/16 01:39
56	1LM.LM33622	WG559291-09 CCV (1.0ug/L)	1	1	STD72685	03/03/16 01:57
57	1LM.LM33623	WG559292-08 MRL (0.2ug/L)	1	1	STD72685	03/03/16 02:16
58	1LM.LM33624	WG559291-10 CCB	1	1		03/03/16 02:35
59	1LM.LM33625	L16021255-08	1	1		03/03/16 02:54
60	1LM.LM33626	L16021255-09 500X	1	500		03/03/16 03:13
61	1LM.LM33627	L16021255-10 5000X	1	5000		03/03/16 03:32
62	1LM.LM33628	L16021255-11 5000X	1	5000		03/03/16 03:51
63	1LM.LM33629	L16021255-12 100X	1	100		03/03/16 04:10
64	1LM.LM33630	L16021255-13 10,000X	1	10000		03/03/16 04:29
65	1LM.LM33631	L16021255-14 10,000X	1	10000		03/03/16 04:48
66	1LM.LM33632	L16030008-01	1	1		03/03/16 05:07
67	1LM.LM33633	L16030008-01 10X	1	10		03/03/16 05:26
68	1LM.LM33634	L16021328-01	1	1		03/03/16 05:45
69	1LM.LM33635	WG559291-11 CCV (1.0ug/L)	1	1	STD72685	03/03/16 06:04

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030216_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015, WG559292

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
70	1LM.LM33636	WG559292-09 MRL (0.2ug/L)	1	1	STD72685	03/03/16 06:23
71	1LM.LM33637	WG559291-12 CCB	1	1		03/03/16 06:41
72	1LM.LM33638	L16021328-02	1	1		03/03/16 07:00
73	1LM.LM33639	L16021328-03	1	1		03/03/16 07:19
74	1LM.LM33640	L16021328-04	1	1		03/03/16 07:38
75	1LM.LM33641	L16021328-05	1	1		03/03/16 07:57
76	1LM.LM33642	WG559291-13 CCV (1.0ug/L)	1	1	STD72685	03/03/16 08:16
77	1LM.LM33643	WG559292-10 MRL (0.2ug/L)	1	1	STD72685	03/03/16 08:35
78	1LM.LM33644	WG559291-14 CCB	1	1		03/03/16 08:54
79	1LM.LM33645	L16021255-05 200X	1	200		03/03/16 09:13
80	1LM.LM33646	L16021255-06	1	1		03/03/16 09:32
81	1LM.LM33647	L16021255-12 1000X	1	1000		03/03/16 09:51
95	1LM.LM33648	L16021255-04	1	1		03/03/16 10:10
96	1LM.LM33649	L16021255-02 MS	1	1	STD72685	03/03/16 10:29
97	1LM.LM33650	L16021255-03 MSD	1	1	STD72685	03/03/16 10:48
85	1LM.LM33651	WG559291-15 CCV (1.0ug/L)	1	1	STD72685	03/03/16 11:07
86	1LM.LM33652	WG559292-11 MRL (0.2ug/L)	1	1	STD72685	03/03/16 11:25
87	1LM.LM33653	WG559291-16 CCB	1	1		03/03/16 11:44

Comments

Seq.	Rerun	Dil.	Reason	Analytes
12	X			
	WG559015-05 incorrect vial location.			
50				
	DNR. Incorrect information on the supplied Chain of Custody.			
51				
	DNR. Incorrect information on the supplied Chain of Custody.			
94	X	1	Analyzed too dilute	
	L16021255-04			
53	X	200	Over Calibration Range	Perchlorate
	L16021255-05			
54	X	1	Analyzed too dilute	
	L16021255-06			
63	X	1000	Over Calibration Range	
	L16021255-12 100X			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030716_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG559975 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD72683 (03/02/2016)

CCV STD: STD72683 LCS STD: STD72685 MS/MSD STD: STD72685

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM33748	WG559981-01 CCB	1	1		03/07/16 15:49
2	1LM.LM33749	WG559981-02 CCV (1.0ug/L)	1	1	STD72683	03/07/16 16:08
3	1LM.LM33750	WG559975-07 MRL (2.0ug/kg)	7	1	STD72683	03/07/16 16:27
4	1LM.LM33751	WG559975-01 MCT (2.0ug/kg)	7	1	STD72685	03/07/16 16:45
5	1LM.LM33752	WG559975-02 BLANK	7	1		03/07/16 17:04
6	1LM.LM33753	WG559975-03 LCS (2.0ug/kg)	7	1	STD72685	03/07/16 17:23
7	1LM.LM33754	L16030324-01 REF (NR)	7	1		03/07/16 17:42
8	1LM.LM33755	L16030324-01 MS (NR)	7	1	STD72685	03/07/16 18:01
9	1LM.LM33756	L16030324-01 MSD (NR)	7	1	STD72685	03/07/16 18:20
10	1LM.LM33757	L16030323-01	7	1		03/07/16 18:39
11	1LM.LM33758	L16030323-02	7	1		03/07/16 18:58
12	1LM.LM33759	L16030323-03	7	1		03/07/16 19:17
13	1LM.LM33760	L16030323-04	7	1		03/07/16 19:36
14	1LM.LM33761	WG559981-03 CCV (1.0ug/L)	1	1	STD72683	03/07/16 19:55
15	1LM.LM33762	WG559975-08 MRL (2.0ug/kg)	7	1	STD72683	03/07/16 20:14
16	1LM.LM33763	WG559981-04 CCB	1	1		03/07/16 20:33
17	1LM.LM33764	L16030323-05 (NR)	7	1		03/07/16 20:52
18	1LM.LM33765	L16030323-06	7	1		03/07/16 21:11
19	1LM.LM33766	Diluent	7	1		03/07/16 21:30
20	1LM.LM33767	WG559981-05 CCV (1.0ug/L)	1	1	STD72683	03/07/16 21:48
21	1LM.LM33768	WG559975-09 MRL (2.0ug/kg)	7	1	STD72683	03/07/16 22:07
22	1LM.LM33769	WG559981-06 CCB	1	1		03/07/16 22:26
23	1LM.LM33770	WG559981-07 CCV (1.0ug/L)	1	1	STD72683	03/08/16 09:41
24	1LM.LM33771	WG559975-10 MRL (2.0ug/kg)	7	1	STD72683	03/08/16 10:00
25	1LM.LM33772	WG559981-08 CCB	1	1		03/08/16 10:19
26	1LM.LM33773	L16030324-01 REF (RR 10x)	10	10		03/08/16 10:38
27	1LM.LM33774	L16030324-01 MS (RR 10x)	7	10	STD72685	03/08/16 10:57
28	1LM.LM33775	L16030324-01 MSD (RR 10x)	7	10	STD72685	03/08/16 11:16
29	1LM.LM33776	L16030323-05 (RR 10x)	7	10		03/08/16 11:35
30	1LM.LM33777	WG559981-09 CCV (1.0ug/L)	1	1	STD72683	03/08/16 11:54
31	1LM.LM33778	WG559975-11 MRL (2.0ug/kg)	7	1	STD72683	03/08/16 12:13
32	1LM.LM33779	WG559981-10 CCB	1	1		03/08/16 12:32

Comments

Page: 1 Approved: 09-MAR-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030716_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG559975 (soils)

Internal STD: COA18071 Surrogate STD: NA STD72683 (03/02/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Comments

Seq.	Rerun	Dil.	Reason	Analytes
7	X	10	Over Calibration Range	
	L16030324-01 REF (NR) : This sample was reanalyzed at a 10x dilution on the end of this run.			
8	X	10	Over Calibration Range	
	L16030324-01 MS (NR) : This sample was reanalyzed at a 10x dilution on the end of this run.			
9	X	10	Over Calibration Range	
	L16030324-01 MSD (NR) : This sample was reanalyzed at a 10x dilution on the end of this run.			
17	X	10	Over Calibration Range	
	L16030323-05 (NR) : This sample was reanalyzed at a 10x dilution on the end of this run.			
27				
	L16030324-01 MS (RR 10x) : The MS %Rec is below the advisory limit. The parent sample to this MS had a perchlorate result 170 times greater than that of the MS-spiked amount. In addition, at this dilution, the spiked amount has been diluted below the method detection limit.			
28				
	L16030324-01 MSD (RR 10x) : The MSD %Rec is below the advisory limit. The parent sample to this MSD had a perchlorate result 170 times greater than that of the MSD-spiked amount. In addition, at this dilution, the spiked amount has been diluted below the method detection limit.			

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Microbac Laboratories Inc.

Data Checklist

Date: 02-MAR-2016
Analyst: WTD
Analyst: ADC
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 73617
Analytical Workgroups: L16021255,L16021328,030008,021262,021060

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	WTD
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MES

Primary Reviewer: 03-MAR-2016

Secondary Reviewer: 04-MAR-2016

CHECKLIST1 - Modified 03/05/2008

Generated: MAR-04-2016 13:53:03

Microbac Laboratories Inc.

Data Checklist

Date: 07-MAR-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 73718
Analytical Workgroups: L16030323, 0324 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	DL @ 10X DILUTION
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 09-MAR-2016 John Richards

Secondary Reviewer: 09-MAR-2016 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-09-2016 13:33:25

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG559975

Login Number: L16030323

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18DPT09(5-5.5)040316	01	03/04/16					03/07/2016	3.2	28		03/07/16	.2	28	
18DPT09(11-11.5)040316	02	03/04/16					03/07/2016	3.2	28		03/07/16	.2	28	
18DPT09(13.5-14)040316	03	03/04/16					03/07/2016	3.1	28		03/07/16	.2	28	
18DPT10(5-5.5)040316	04	03/04/16					03/07/2016	3.1	28		03/07/16	.2	28	
18DPT10(15.5-16)040316	05	03/04/16					03/07/2016	3.1	28		03/08/16	.9	28	
18DPT10(23.5-24)040316	06	03/04/16					03/07/2016	3.1	28		03/07/16	.3	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4663104
Report generated 03/09/2016 13:47

METHOD BLANK SUMMARY

Login Number: L16030323
Blank File ID: 1LM.LM33752
Prep Date: 03/07/16 14:15
Analyzed Date: 03/07/16 17:04
Analyst: JWR

Work Group: WG559975
Blank Sample ID: WG559975-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG559975-07	1LM.LM33750	03/07/16 16:27	01
MCT	WG559975-01	1LM.LM33751	03/07/16 16:45	01
LCS	WG559975-03	1LM.LM33753	03/07/16 17:23	01
18DPT09(5-5.5)040316	L16030323-01	1LM.LM33757	03/07/16 18:39	01
18DPT09(11-11.5)040316	L16030323-02	1LM.LM33758	03/07/16 18:58	01
18DPT09(13.5-14)040316	L16030323-03	1LM.LM33759	03/07/16 19:17	01
18DPT10(5-5.5)040316	L16030323-04	1LM.LM33760	03/07/16 19:36	01
QCMRL	WG559975-08	1LM.LM33762	03/07/16 20:14	01
18DPT10(23.5-24)040316	L16030323-06	1LM.LM33765	03/07/16 21:11	01
QCMRL	WG559975-09	1LM.LM33768	03/07/16 22:07	01
QCMRL	WG559975-10	1LM.LM33771	03/08/16 10:00	01
18DPT10(15.5-16)040316	L16030323-05	1LM.LM33776	03/08/16 11:35	DL01
QCMRL	WG559975-11	1LM.LM33778	03/08/16 12:13	01

Report Name: BLANK_SUMMARY
PDF File ID: 4663105
Report generated 03/09/2016 13:47

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16030323 Prep Date: 03/07/16 14:15 Sample ID: WG559975-02
Instrument ID: LCMS1 Run Date: 03/07/16 17:04 Prep Method: 6850
File ID: 1LM.LM33752 Analyst: JWR Method: 6850
Workgroup (AAB#): WG559975 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.996	3.98	0.996	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4663106
09-MAR-2016 13:47

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030323 Run Date: 03/07/2016 Sample ID: WG559975-03
Instrument ID: LCMS1 Run Time: 17:23 Prep Method: 6850
File ID: 1LM.LM33753 Analyst: JWR Method: 6850
Workgroup (AAB#): WG559975 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD72685 Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	2.00	1.94	97.0	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4663107
Report generated: 03/09/2016 13:47

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16030323
Analytical Method: 6850
ICAL Workgroup: WG559340

Instrument ID: LCMS1
Initial Calibration Date: 02-MAR-16 10:46
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.808	3.97	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4663294
Report generated 03/09/2016 13:47

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16030323

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 02-MAR-16 10:46

Column ID: F

Analyte	WG559340-02			WG559340-03			WG559340-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	18400.0000	1.879	0.200	37000.0000	1.850	0.500	89000.0000	1.810

INT_CAL - Modified 03/06/2008
PDF File ID: 4663294
Report generated 03/09/2016 13:47

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16030323

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 02-MAR-16 10:46

Column ID: F

Analyte	WG559340-05			WG559340-06			WG559340-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	183000.000	1.829	2.00	363000.000	1.777	5.00	871000.000	1.779

INT_CAL - Modified 03/06/2008
PDF File ID: 4663294
Report generated 03/09/2016 13:47

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16030323

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 02-MAR-16 10:46

Column ID: F

Analyte	WG559340-08		
	CONC	RESP	RF
Perchlorate	10.0	1650000.00	1.729

INT_CAL - Modified 03/06/2008

PDF File ID: 4663294

Report generated 03/09/2016 13:47

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16030323 Run Date: 03/02/2016 Sample ID: WG559340-09
Instrument ID: LCMS1 Run Time: 11:05 Method: 6850
File ID: 1LM.LM33575 Analyst: WTD QC Key: DOD4
ICal Workgroup: WG559340 Cal ID: LCMS1 - 02-MAR-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.83	3.00	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4663295
Report generated 03/09/2016 13:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030323
Run Date: 03/07/2016
Sample ID: WG559981-01
Instrument ID: LCMS1
Run Time: 15:49
Method: 6850
File ID: 1LM.LM33748
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG559975
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4663110
Report generated 03/09/2016 13:47

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030323
Run Date: 03/07/2016
Sample ID: WG559981-04
Instrument ID: LCMS1
Run Time: 20:33
Method: 6850
File ID: 1LM.LM33763
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG559975
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4663110
Report generated 03/09/2016 13:47

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030323
Run Date: 03/07/2016
Sample ID: WG559981-06
Instrument ID: LCMS1
Run Time: 22:26
Method: 6850
File ID: 1LM.LM33769
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG559975
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4663110
Report generated 03/09/2016 13:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030323
Run Date: 03/08/2016
Sample ID: WG559981-08
Instrument ID: LCMS1
Run Time: 10:19
Method: 6850
File ID: 1LM.LM33772
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG559975
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4663110
Report generated 03/09/2016 13:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030323
Run Date: 03/08/2016
Sample ID: WG559981-10
Instrument ID: LCMS1
Run Time: 12:32
Method: 6850
File ID: 1LM.LM33779
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG559975
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4663110
Report generated 03/09/2016 13:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030323
Run Date: 03/07/2016
Sample ID: WG559981-02
Instrument ID: LCMS1
Run Time: 16:08
Method: 6850
File ID: 1LM.LM33749
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG559975
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/kg	1.79	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4663109
Report generated 03/09/2016 13:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030323
Run Date: 03/07/2016
Sample ID: WG559981-03
Instrument ID: LCMS1
Run Time: 19:55
Method: 6850
File ID: 1LM.LM33761
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG559975
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.966	ug/kg	1.71	3.40	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4663109
Report generated 03/09/2016 13:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030323
Run Date: 03/07/2016
Sample ID: WG559981-05
Instrument ID: LCMS1
Run Time: 21:48
Method: 6850
File ID: 1LM.LM33767
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG559975
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.981	ug/kg	1.74	1.90	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4663109
Report generated 03/09/2016 13:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030323 Run Date: 03/08/2016 Sample ID: WG559981-07
Instrument ID: LCMS1 Run Time: 09:41 Method: 6850
File ID: 1LM.LM33770 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG559975 Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.984	ug/kg	1.74	1.60	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4663109
Report generated 03/09/2016 13:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030323
Run Date: 03/08/2016
Sample ID: WG559981-09
Instrument ID: LCMS1
Run Time: 11:54
Method: 6850
File ID: 1LM.LM33777
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG559975
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.954	ug/kg	1.69	4.60	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4663109
Report generated 03/09/2016 13:47

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030323 Run Date: 03/07/2016 Sample ID: WG559975-07
Instrument ID: LCMS1 Run Time: 16:27 Prep Method: 6850
File ID: 1LM.LM33750 Analyst: JWR Method: 6850
Workgroup (AAB#): WG559975 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.93	96.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4663108
Report generated 03/09/2016 13:47

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030323 Run Date: 03/07/2016 Sample ID: WG559975-08
Instrument ID: LCMS1 Run Time: 20:14 Prep Method: 6850
File ID: 1LM.LM33762 Analyst: JWR Method: 6850
Workgroup (AAB#): WG559975 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.97	98.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4663108
Report generated 03/09/2016 13:47

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030323 Run Date: 03/07/2016 Sample ID: WG559975-09
Instrument ID: LCMS1 Run Time: 22:07 Prep Method: 6850
File ID: 1LM.LM33768 Analyst: JWR Method: 6850
Workgroup (AAB#): WG559975 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.98	99.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4663108
Report generated 03/09/2016 13:47

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030323 Run Date: 03/08/2016 Sample ID: WG559975-10
Instrument ID: LCMS1 Run Time: 10:00 Prep Method: 6850
File ID: 1LM.LM33771 Analyst: JWR Method: 6850
Workgroup (AAB#): WG559975 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.87	93.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4663108
Report generated 03/09/2016 13:47

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030323 Run Date: 03/08/2016 Sample ID: WG559975-11
Instrument ID: LCMS1 Run Time: 12:13 Prep Method: 6850
File ID: 1LM.LM33778 Analyst: JWR Method: 6850
Workgroup (AAB#): WG559975 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.97	98.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4663108
Report generated 03/09/2016 13:47

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16030323
Instrument ID: LCMS1
Workgroup (AAB#): WG559975

ICAL CCV Number: WG559340-05
CAL ID: LCMS1-02-MAR-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1
WG559340	NA	NA	494000
Upper Limit	NA	NA	741000
Lower Limit	NA	NA	247000
L16030323-01	1.00	01	520000
L16030323-02	1.00	01	524000
L16030323-03	1.00	01	547000
L16030323-04	1.00	01	551000
L16030323-05	10.0	DL01	505000
L16030323-06	1.00	01	567000
WG559975-02	1.00	01	489000
WG559975-03	1.00	01	497000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4663111
Report generated 03/09/2016 13:48

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**	6850	**Samplenum:**	L16030323-01
Instrument:	LCMS1	**Prep Date:**	03/07/2016 14:15	**File ID:**	1LM.LM33757
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559975	**Analysis Date:**	03/07/2016 18:39	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	16500	5760	2.86	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**	6850	**Samplenum:**	L16030323-02
Instrument:	LCMS1	**Prep Date:**	03/07/2016 14:15	**File ID:**	1LM.LM33758
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559975	**Analysis Date:**	03/07/2016 18:58	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**	6850	**Samplenum:**	L16030323-03
Instrument:	LCMS1	**Prep Date:**	03/07/2016 14:15	**File ID:**	1LM.LM33759
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559975	**Analysis Date:**	03/07/2016 19:17	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1430	1220	1.17	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**	6850	**Samplenum:**	L16030323-04
Instrument:	LCMS1	**Prep Date:**	03/07/2016 14:15	**File ID:**	1LM.LM33760
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559975	**Analysis Date:**	03/07/2016 19:36	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	10500	3010	3.49	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**	6850	**Samplenum:**	L16030323-05
Instrument:	LCMS1	**Prep Date:**	03/07/2016 14:15	**File ID:**	1LM.LM33776
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559975	**Analysis Date:**	03/08/2016 11:35	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	298000	97500	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**	6850	**Samplenum:**	L16030323-06
Instrument:	LCMS1	**Prep Date:**	03/07/2016 14:15	**File ID:**	1LM.LM33765
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559975	**Analysis Date:**	03/07/2016 21:11	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	280000	91800	3.05	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**		**Samplenum:**	WG559340-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33568
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559975	**Analysis Date:**	03/02/2016 08:53	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	18400	5910	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**		**Samplenum:**	WG559340-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33569
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559975	**Analysis Date:**	03/02/2016 09:12	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37000	11900	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**		**Samplenum:**	WG559340-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33570
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559975	**Analysis Date:**	03/02/2016 09:31	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	89000	30400	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**		**Samplenum:**	WG559340-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33571
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559975	**Analysis Date:**	03/02/2016 09:50	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	183000	56800	3.22	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**		**Samplenum:**	WG559340-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33572
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559975	**Analysis Date:**	03/02/2016 10:09	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	363000	117000	3.10	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**		**Samplenum:**	WG559340-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33573
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559975	**Analysis Date:**	03/02/2016 10:28	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	871000	282000	3.09	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**		**Samplenum:**	WG559340-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33574
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559975	**Analysis Date:**	03/02/2016 10:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1650000	530000	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**		**Samplenum:**	WG559340-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33575
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559975	**Analysis Date:**	03/02/2016 11:05	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	190000	62200	3.05	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**	6850	**Samplenum:**	WG559975-01
Instrument:	LCMS1	**Prep Date:**	03/07/2016 14:15	**File ID:**	1LM.LM33751
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559975	**Analysis Date:**	03/07/2016 16:45	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35900	12800	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**	6850	**Samplenum:**	WG559975-02
Instrument:	LCMS1	**Prep Date:**	03/07/2016 14:15	**File ID:**	1LM.LM33752
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559975	**Analysis Date:**	03/07/2016 17:04	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**	6850	**Samplenum:**	WG559975-03
Instrument:	LCMS1	**Prep Date:**	03/07/2016 14:15	**File ID:**	1LM.LM33753
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559975	**Analysis Date:**	03/07/2016 17:23	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35800	11800	3.03	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**	6850	**Samplenum:**	WG559975-07
Instrument:	LCMS1	**Prep Date:**	03/07/2016 14:15	**File ID:**	1LM.LM33750
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559975	**Analysis Date:**	03/07/2016 16:27	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36200	11700	3.09	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**	6850	**Samplenum:**	WG559975-08
Instrument:	LCMS1	**Prep Date:**	03/07/2016 14:15	**File ID:**	1LM.LM33762
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559975	**Analysis Date:**	03/07/2016 20:14	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	43000	13900	3.09	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**	6850	**Samplenum:**	WG559975-09
Instrument:	LCMS1	**Prep Date:**	03/07/2016 14:15	**File ID:**	1LM.LM33768
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559975	**Analysis Date:**	03/07/2016 22:07	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	45400	15200	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**	6850	**Samplenum:**	WG559975-10
Instrument:	LCMS1	**Prep Date:**	03/07/2016 14:15	**File ID:**	1LM.LM33771
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559975	**Analysis Date:**	03/08/2016 10:00	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	39100	14300	2.73	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**	6850	**Samplenum:**	WG559975-11
Instrument:	LCMS1	**Prep Date:**	03/07/2016 14:15	**File ID:**	1LM.LM33778
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG559975	**Analysis Date:**	03/08/2016 12:13	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38000	12100	3.14	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**		**Samplenum:**	WG559981-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33748
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559975	**Analysis Date:**	03/07/2016 15:49	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**		**Samplenum:**	WG559981-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33749
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559975	**Analysis Date:**	03/07/2016 16:08	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	174000	55300	3.15	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**		**Samplenum:**	WG559981-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33761
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559975	**Analysis Date:**	03/07/2016 19:55	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	196000	63700	3.08	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**		**Samplenum:**	WG559981-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33763
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559975	**Analysis Date:**	03/07/2016 20:33	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**		**Samplenum:**	WG559981-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33767
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559975	**Analysis Date:**	03/07/2016 21:48	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	209000	67400	3.10	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**		**Samplenum:**	WG559981-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33769
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559975	**Analysis Date:**	03/07/2016 22:26	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**		**Samplenum:**	WG559981-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33770
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559975	**Analysis Date:**	03/08/2016 09:41	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	195000	63100	3.09	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**		**Samplenum:**	WG559981-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33772
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559975	**Analysis Date:**	03/08/2016 10:19	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**		**Samplenum:**	WG559981-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33777
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559975	**Analysis Date:**	03/08/2016 11:54	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	178000	58000	3.07	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030323	**Prep Method:**		**Samplenum:**	WG559981-10
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33779
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG559975	**Analysis Date:**	03/08/2016 12:32	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	640	0.000	2.3	3.8	*

2.2.1.3 Sample Data

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Data File	LM33757.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/7/2016 6:39:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030323-01	**Injection Vial**	10.00
Data File	LM33757.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 6:39:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	L16030323-01	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.200e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.650e+04	9.94	N/A	0.0782
Perchlorate conf	5.760e+03	9.91	N/A	0.0846

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

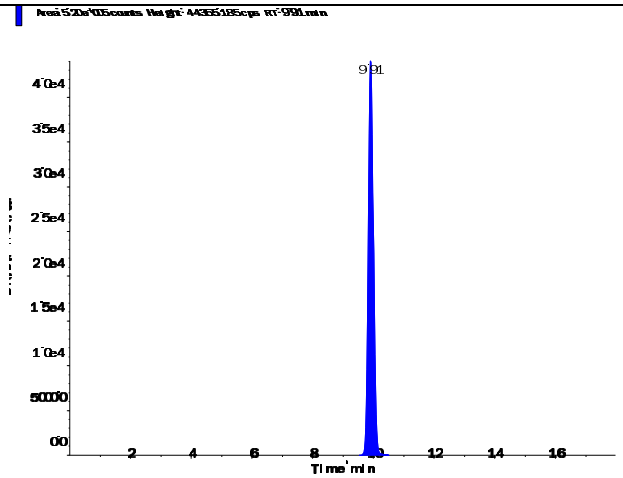

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.0782 ng/ml
Area Ratio:	0.032
Sample Type:	(Unknown)

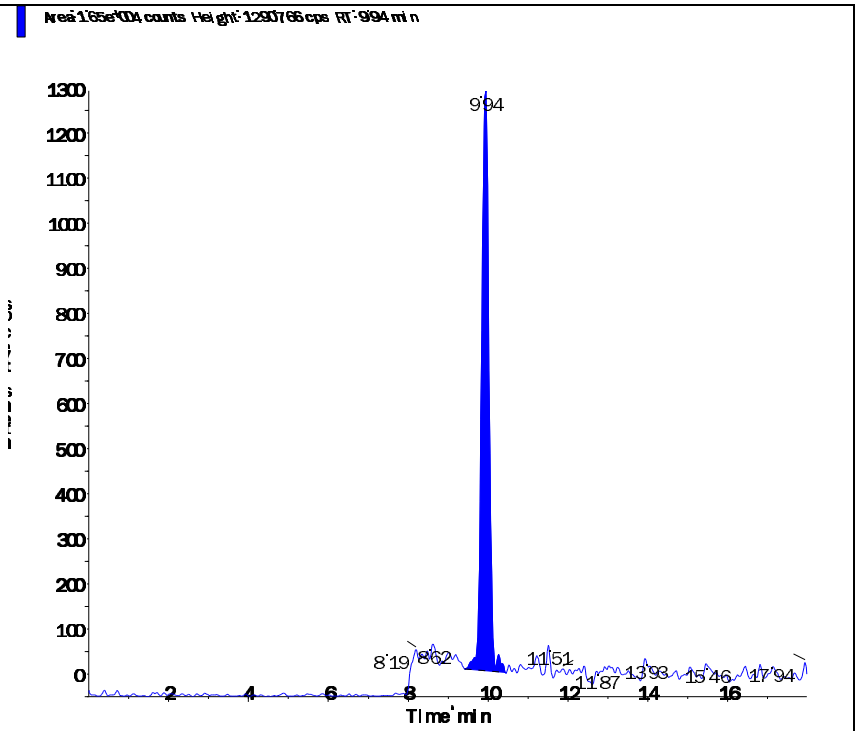

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.92) min
Calculated conc:	0.0846 ng/ml
Area Ratio:	0.011
Sample Type:	(Unknown)

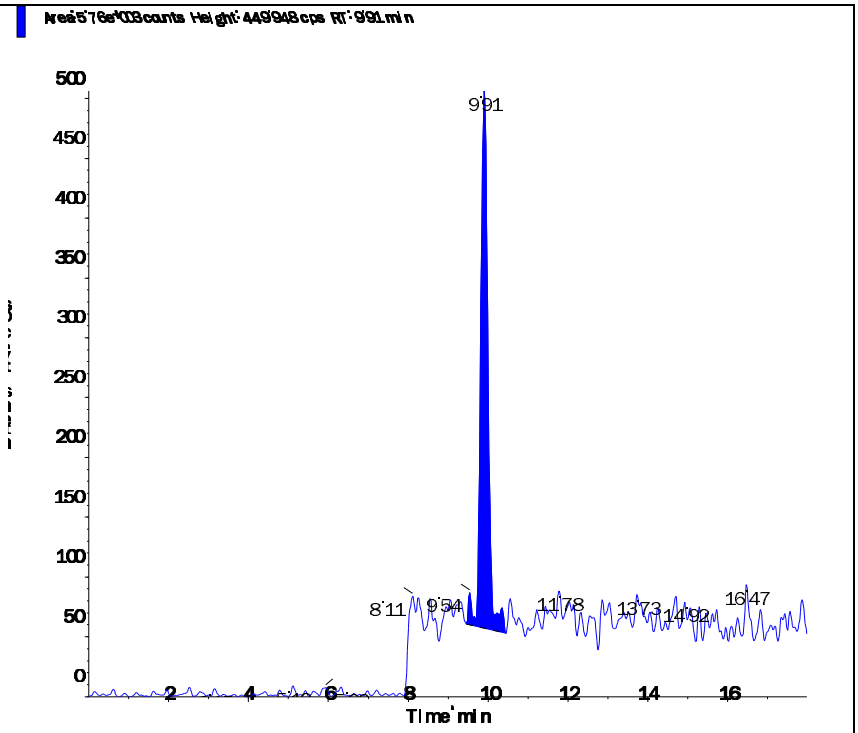

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Printed: 3/8/2016 5:03 PM

Data File	LM33758.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/7/2016 6:58:36 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030323-02	**Injection Vial**	11.00
Data File	LM33758.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 6:58:36 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	L16030323-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.240e+05	9.89	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.89(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

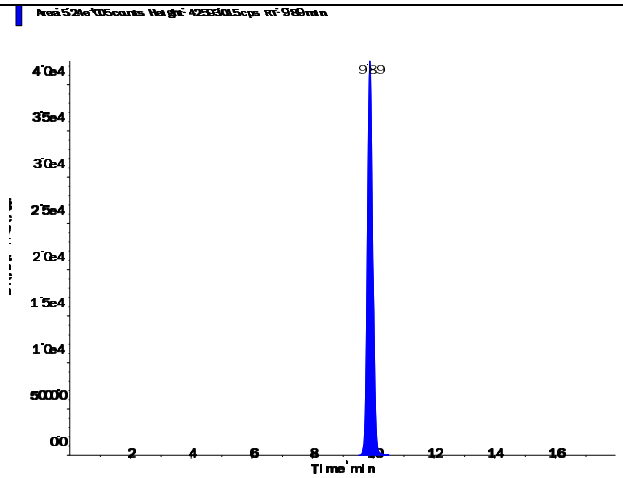

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

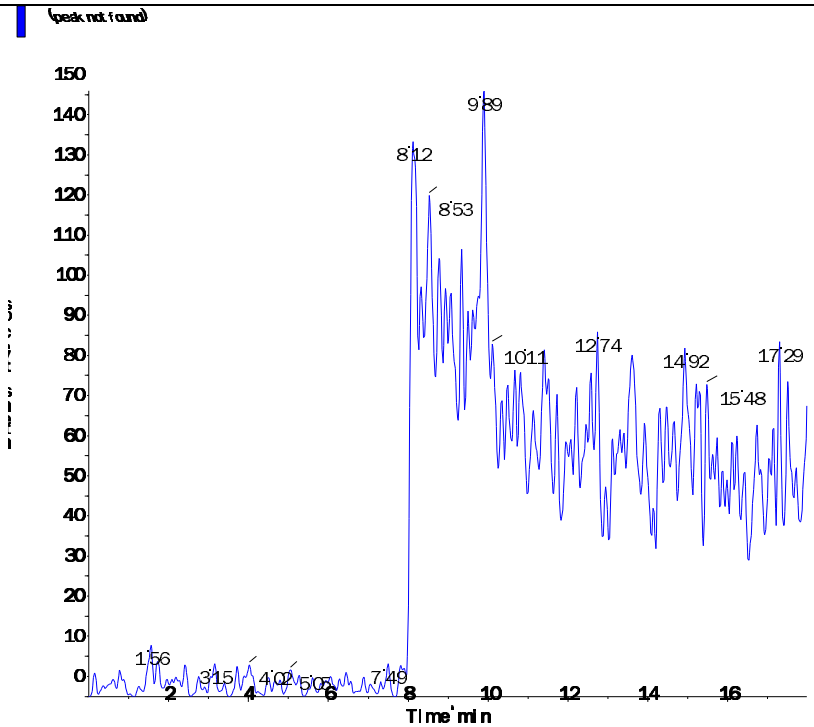

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

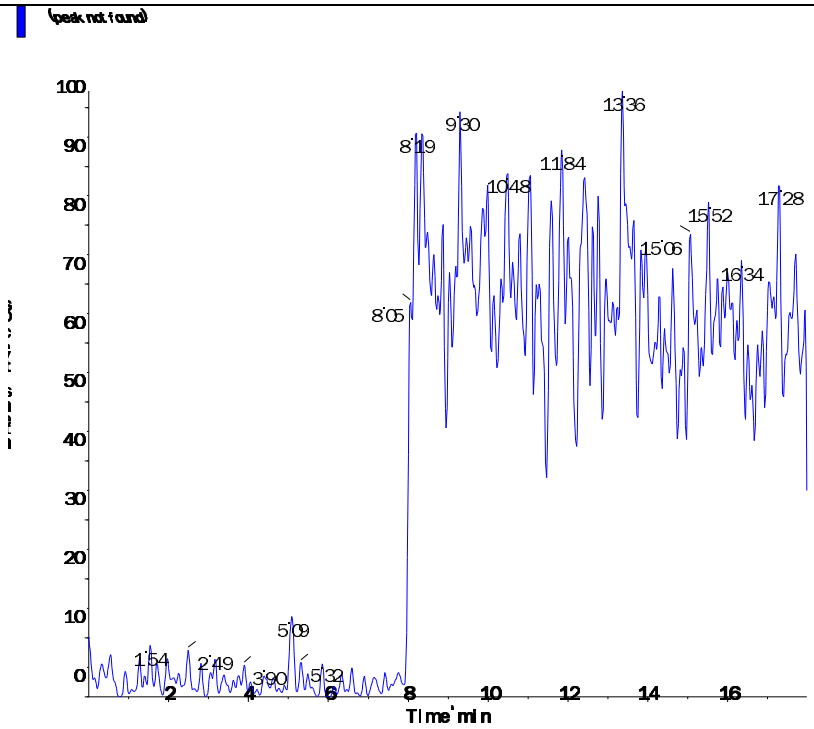

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Data File	LM33759.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/7/2016 7:17:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030323-03	**Injection Vial**	12.00
Data File	LM33759.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 7:17:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	L16030323-03	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.470e+05	9.88	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.430e+03	9.89	N/A	< 0
Perchlorate conf	1.220e+03	9.91	N/A	0.0058

O18LP (Internal Standard)

RT (Exp. RT): 9.88(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

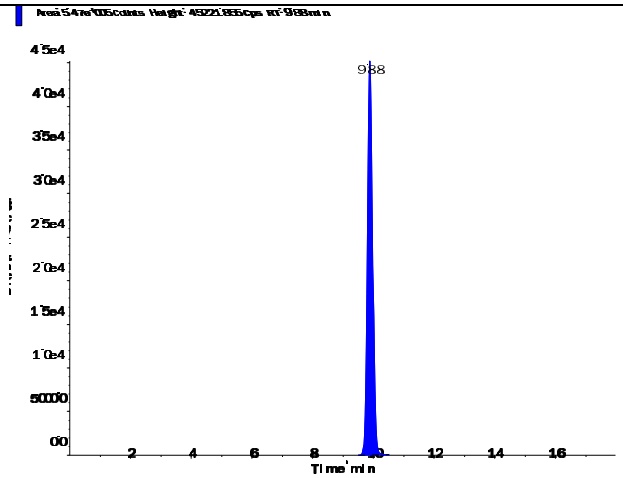

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Printed: 3/8/2016 5:03 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.89 (9.94) min Calculated conc: < 0 ng/ml Area Ratio: 0.003 Sample Type: (Unknown)	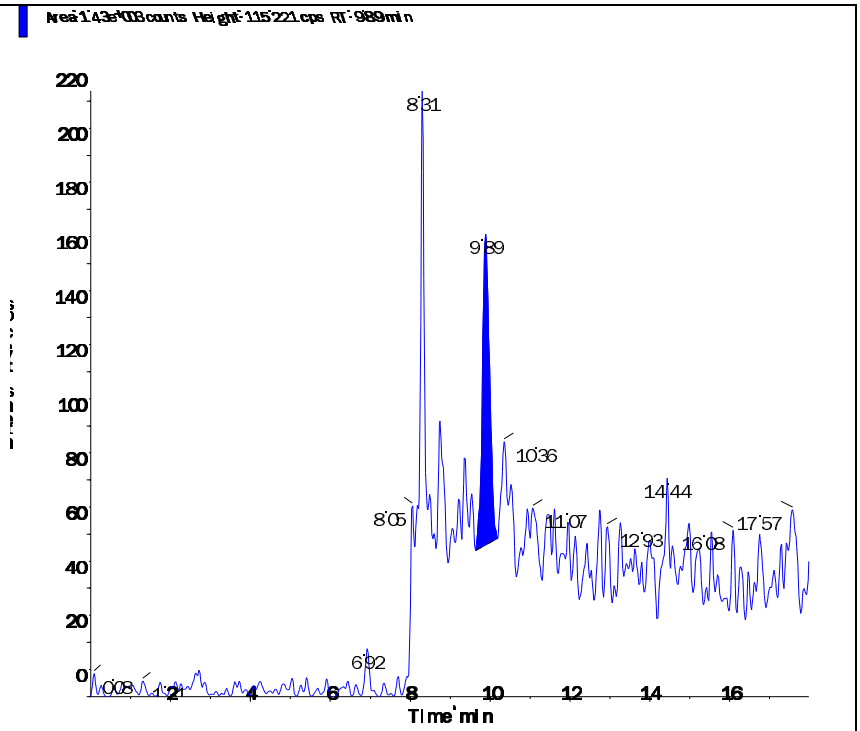
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.91 (9.92) min Calculated conc: 0.0058 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	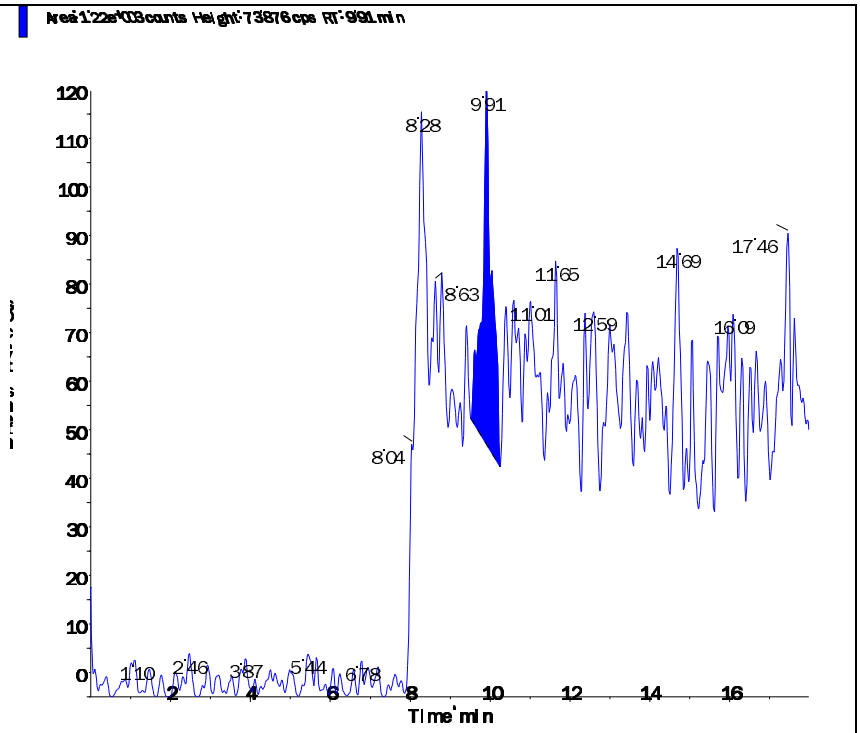

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Printed: 3/8/2016 5:03 PM

Data File	LM33760.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/7/2016 7:36:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030323-04	**Injection Vial**	13.00
Data File	LM33760.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 7:36:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	L16030323-04	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.510e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.050e+04	9.93	N/A	0.0421
Perchlorate conf	3.010e+03	9.90	N/A	0.0347

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

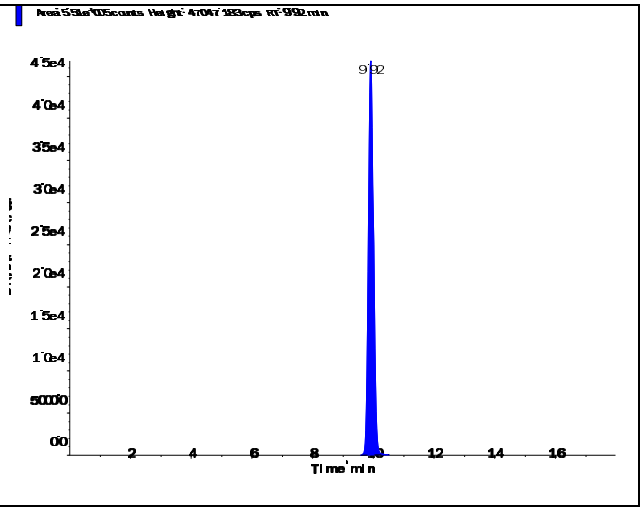

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	0.0421 ng/ml
Area Ratio:	0.019
Sample Type:	(Unknown)

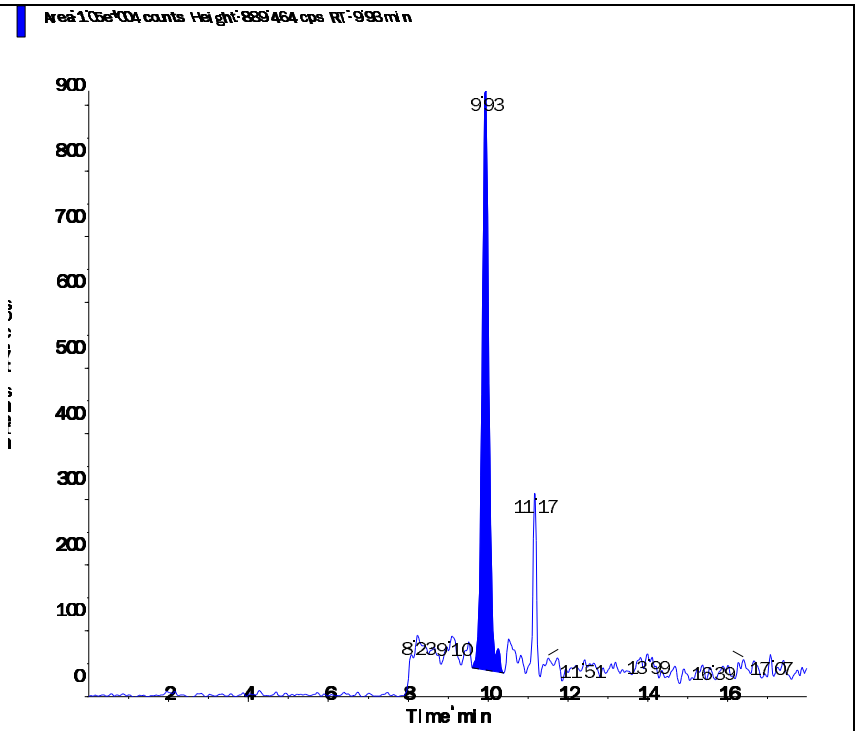

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.90 (9.92) min
Calculated conc:	0.0347 ng/ml
Area Ratio:	0.005
Sample Type:	(Unknown)

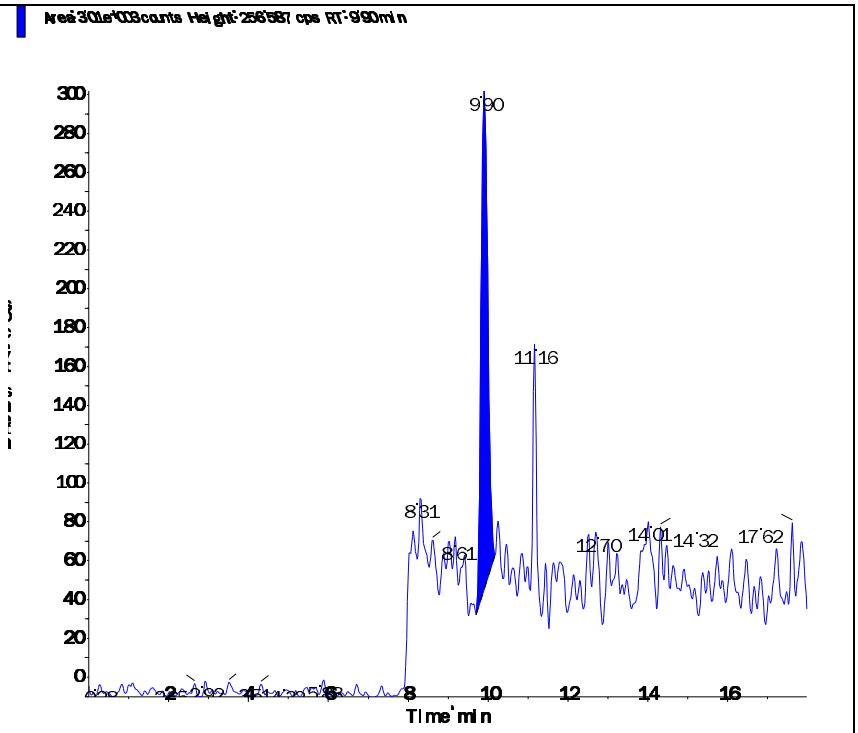

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Created with Analyst Reporter
Printed: 3/8/2016 5:09 PM

Data File	LM33776.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/8/2016 11:35:28 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030323-05 (RR 10x)	**Injection Vial**	20.00
Data File	LM33776.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 11:35:28 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	L16030323-05	**Dilution Factor**	1.00
Sample Comment	710.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.050e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.980e+05	9.94	N/A	1.67
Perchlorate conf	9.750e+04	9.92	N/A	1.71

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

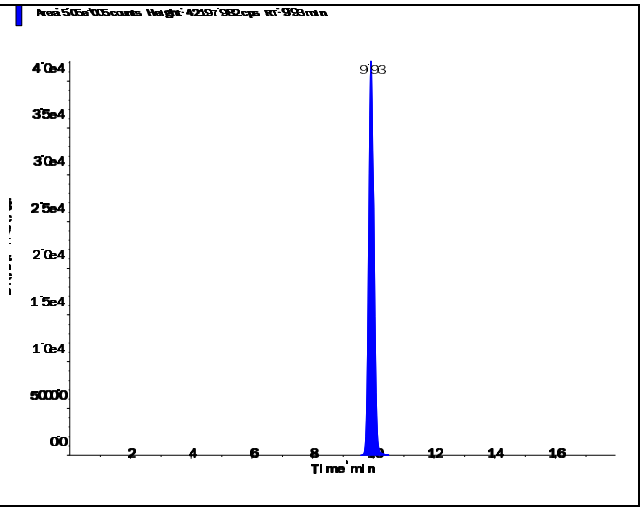

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	1.67 ng/ml
Area Ratio:	0.59
Sample Type:	(Unknown)

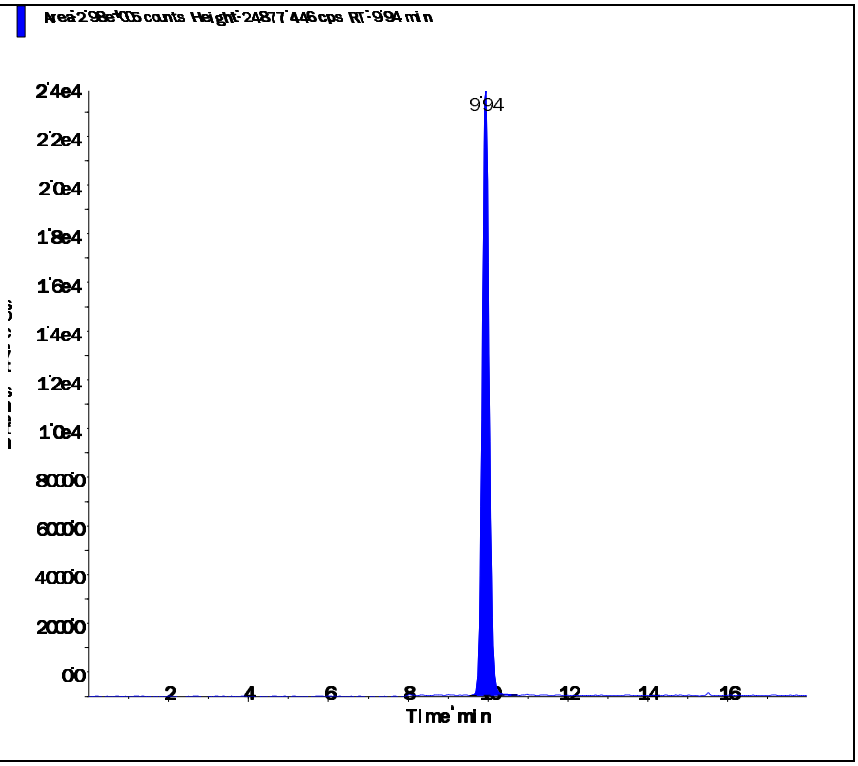

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	1.71 ng/ml
Area Ratio:	0.193
Sample Type:	(Unknown)

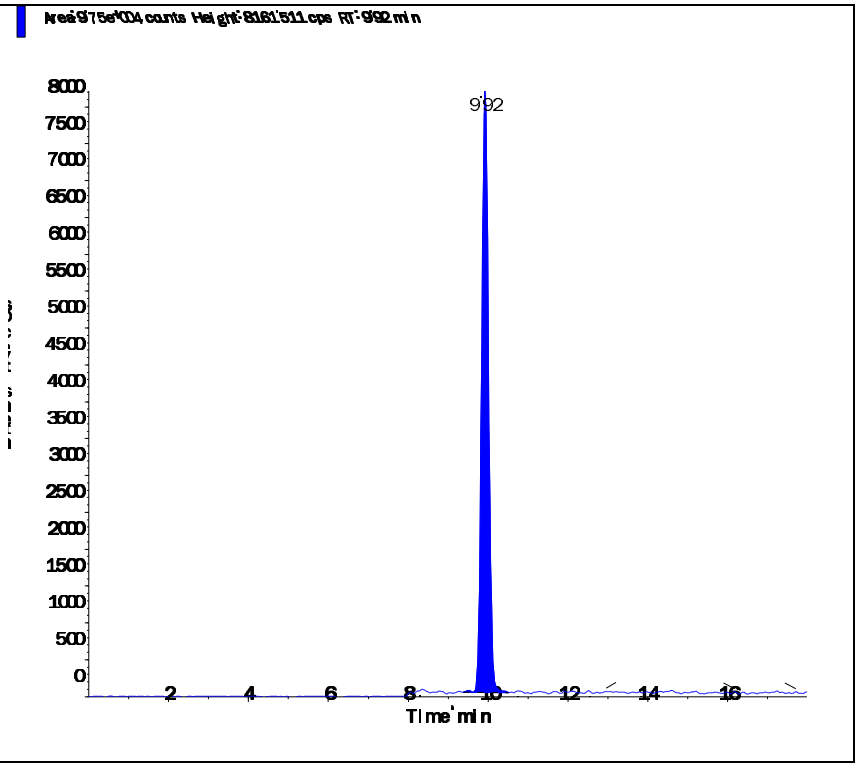

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Data File	LM33765.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/7/2016 9:11:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030323-06	**Injection Vial**	15.00
Data File	LM33765.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 9:11:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	L16030323-06	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.670e+05	9.88	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.800e+05	9.89	N/A	1.40
Perchlorate conf	9.180e+04	9.87	N/A	1.43

O18LP (Internal Standard)

RT (Exp. RT): 9.88(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

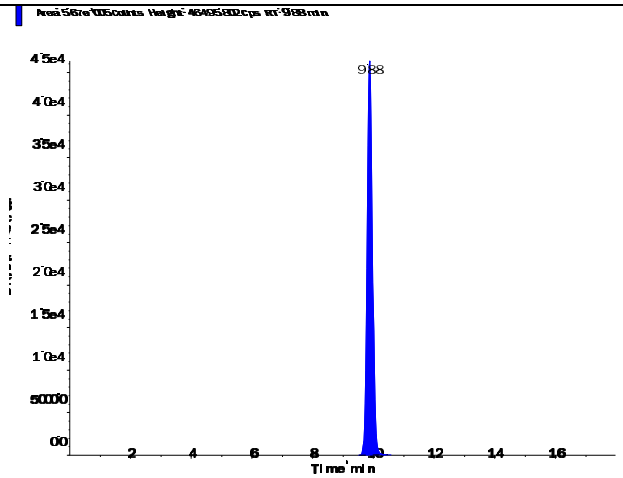

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.89 (9.94) min
Calculated conc:	1.40 ng/ml
Area Ratio:	0.494
Sample Type:	(Unknown)

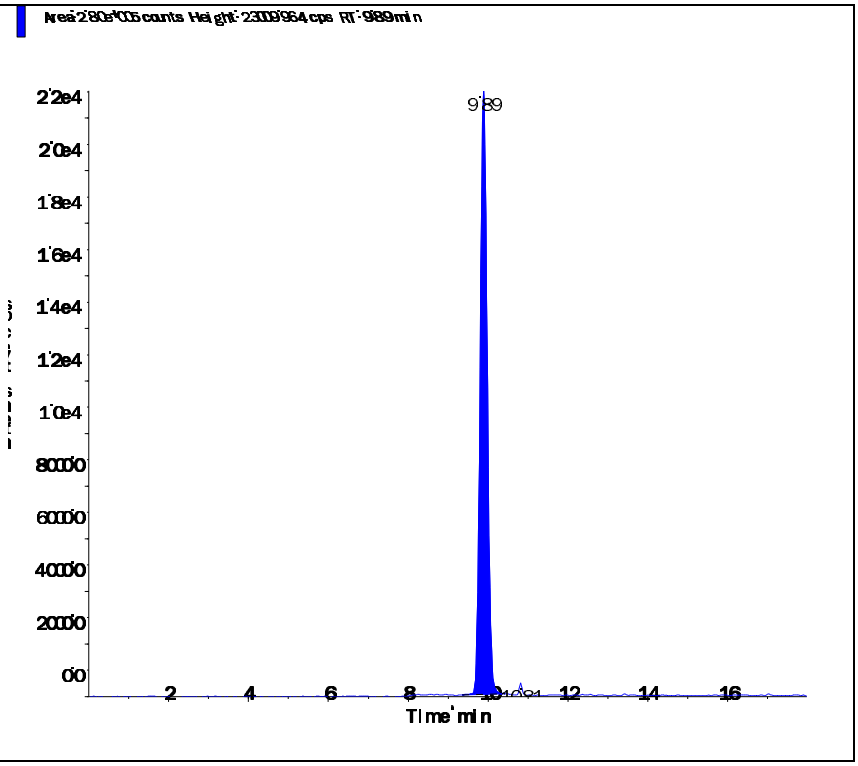

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.87 (9.92) min
Calculated conc:	1.43 ng/ml
Area Ratio:	0.162
Sample Type:	(Unknown)

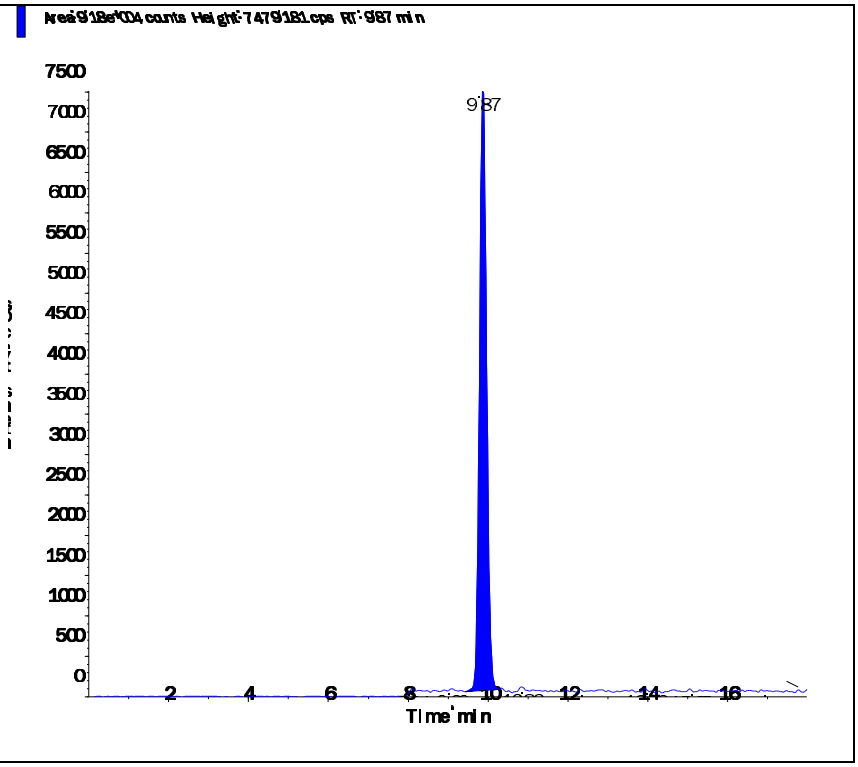

2.2.1.4 Standards Data

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Data File	LM33567.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-01 CCB	**Injection Vial**	51.00
Data File	LM33567.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559340-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.710e+05	9.99	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.99(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

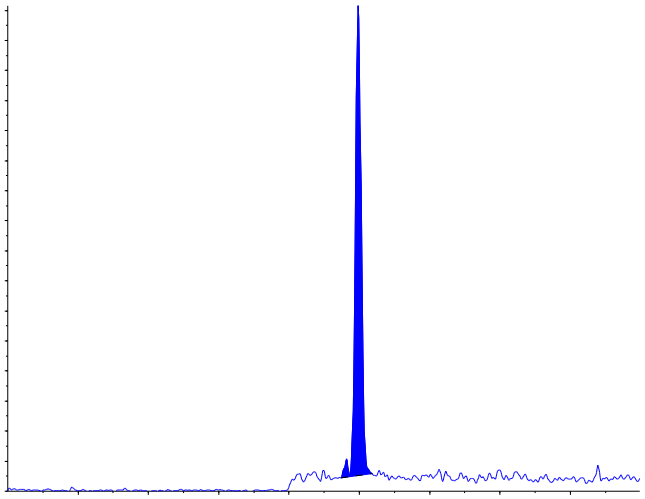

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

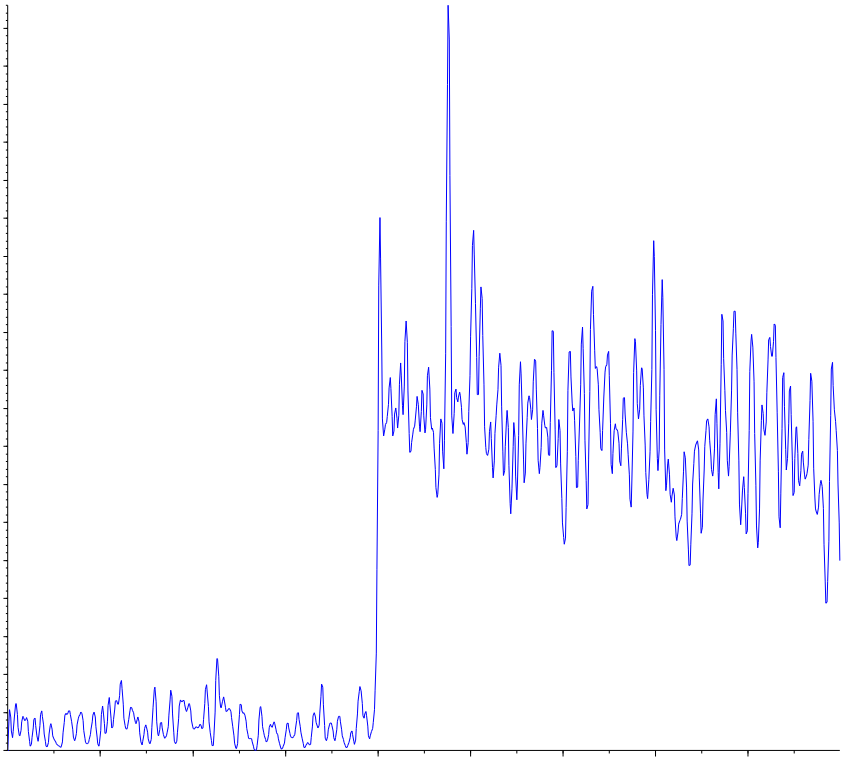

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

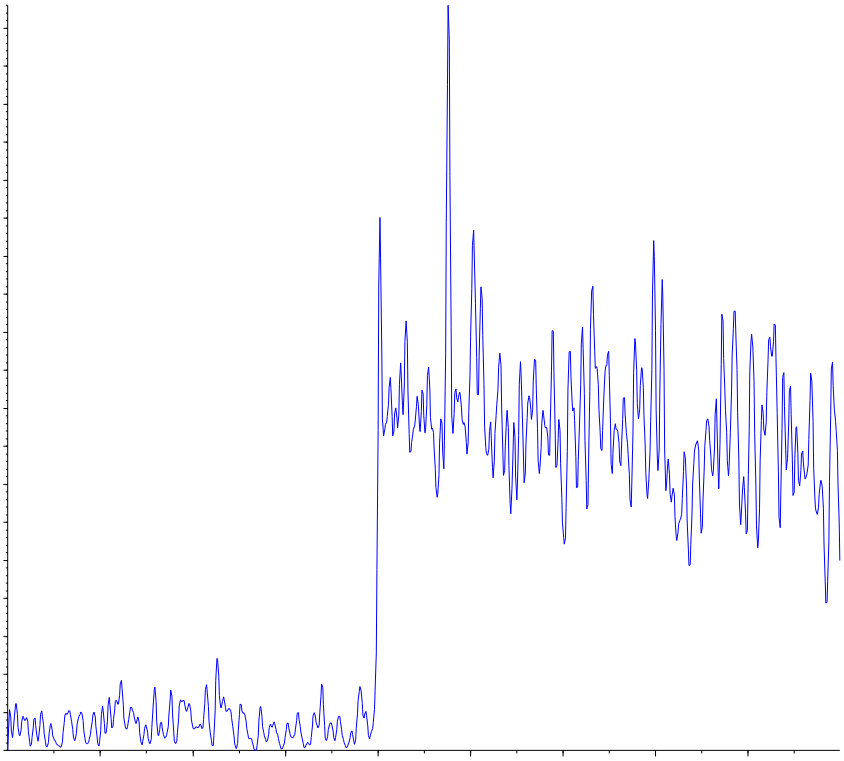

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Printed: 3/3/2016 1:59 PM

Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM33567.wiff	**Result Table**	030216_WTD.rdb
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.75 x + 0.00437 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	95.0	N/A	N/A
0.20	1	0.20	99.5	N/A	N/A
0.50	1	0.50	101.0	N/A	N/A
1.00	1	1.03	103.4	N/A	N/A
2.00	1	2.02	101.0	N/A	N/A
5.00	1	5.07	101.5	N/A	N/A
10.00	1	9.87	98.7	N/A	N/A

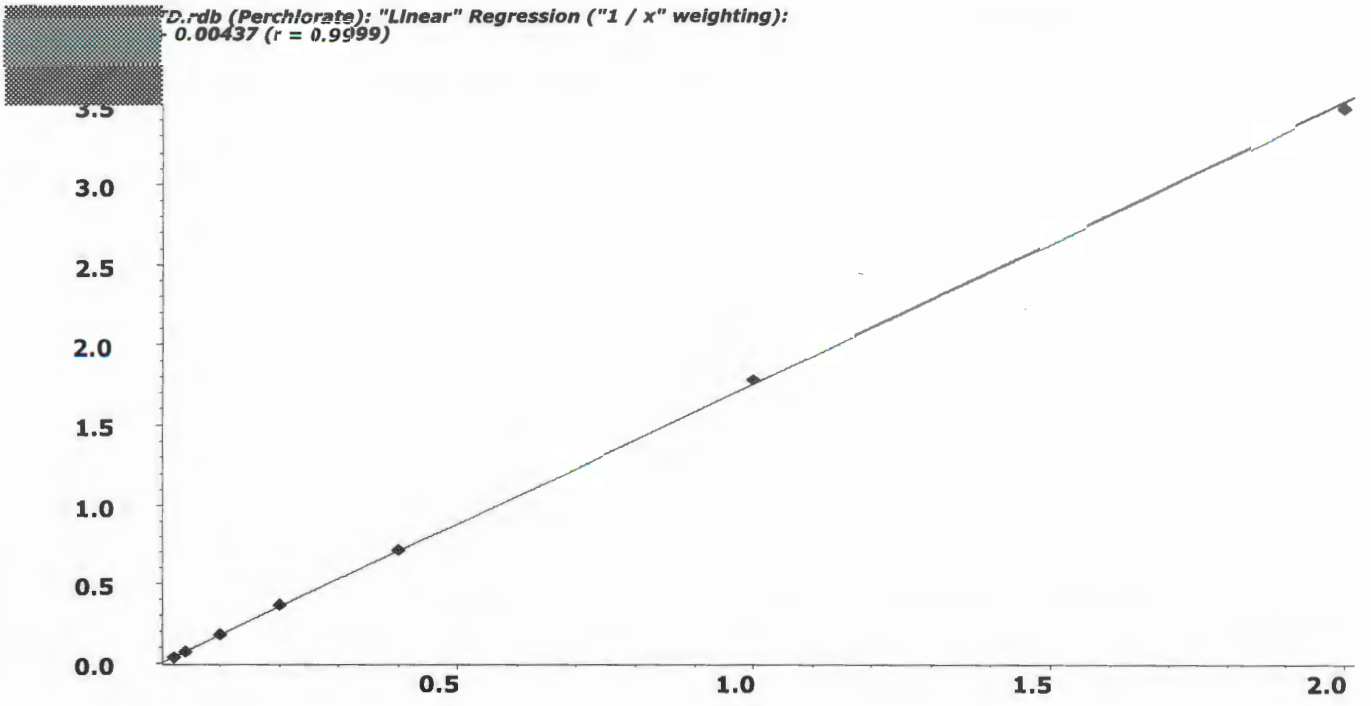

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Created with Analyst Reporter
Printed: 3/3/2016 1:59 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM33567.wiff	**Result Table**	030216_WTD.rdb
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.562 x + 0.00157 (r = 0.9998)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	93.4	N/A	N/A
0.20	1	0.20	98.6	N/A	N/A
0.50	1	0.54	107.2	N/A	N/A
1.00	1	1.00	99.5	N/A	N/A
2.00	1	2.01	100.7	N/A	N/A
5.00	1	5.11	102.2	N/A	N/A
10.00	1	9.85	98.5	N/A	N/A

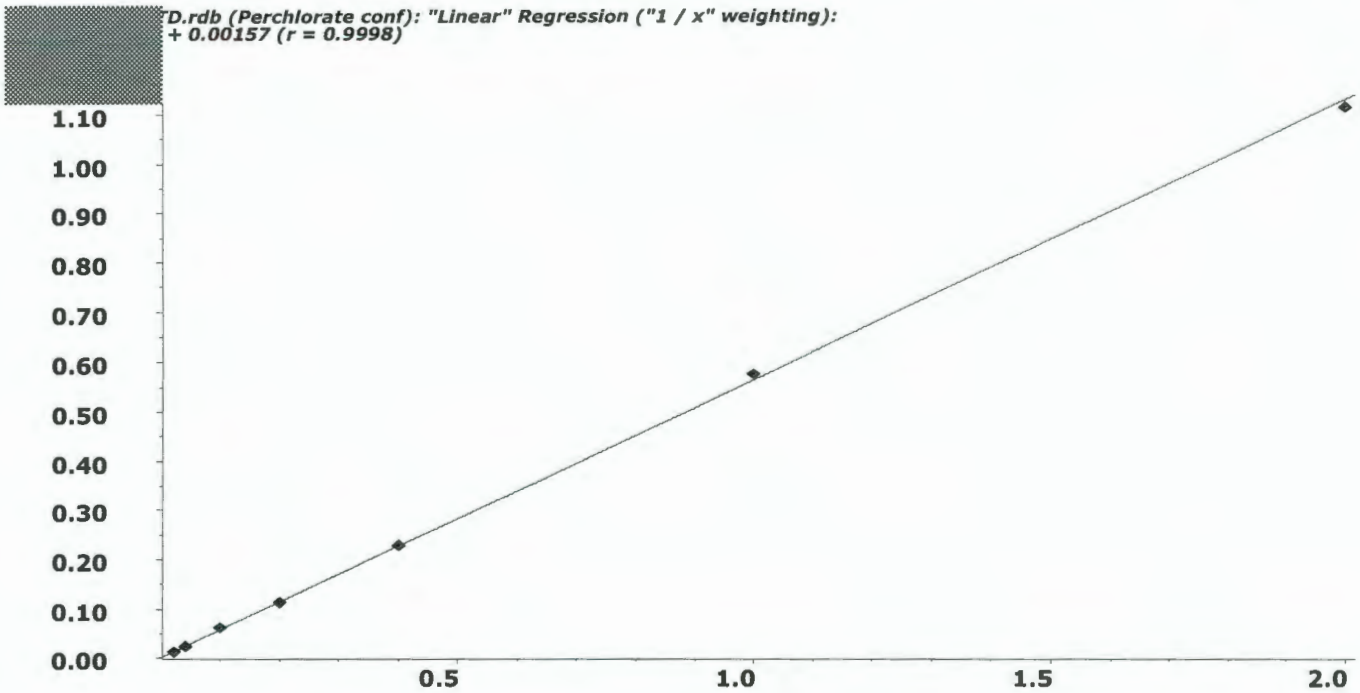

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Printed: 3/8/2016 4:57 PM

Data File	LM33568.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/2/2016 8:53:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-02 STD (0.1 ug/L)	**Injection Vial**	52.00
Data File	LM33568.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 8:53:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559340-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.900e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.840e+04	9.97	0.10	0.095
Perchlorate conf	5.910e+03	9.94	0.10	0.0934

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

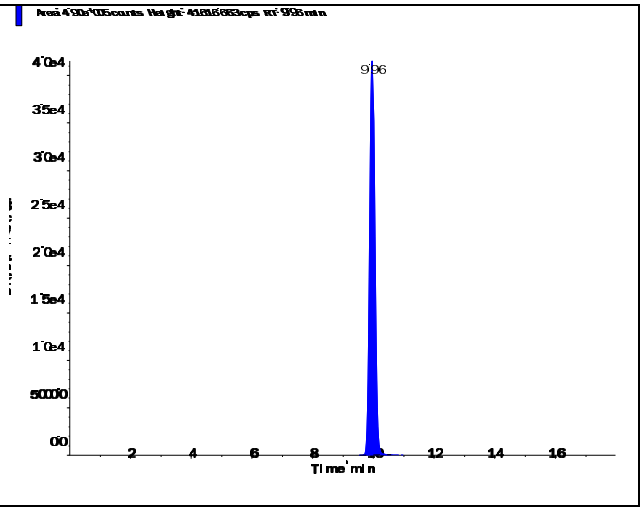

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.97 (9.94) min
Calculated conc:	0.095 ng/ml
Area Ratio:	0.038
Sample Type:	(Standard)

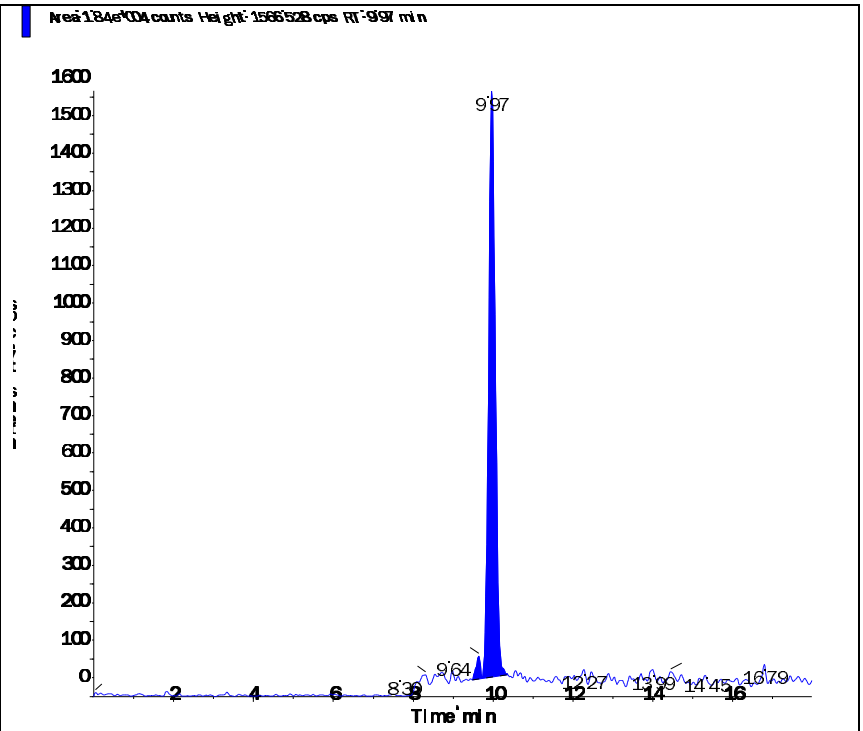

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.0934 ng/ml
Area Ratio:	0.012
Sample Type:	(Standard)

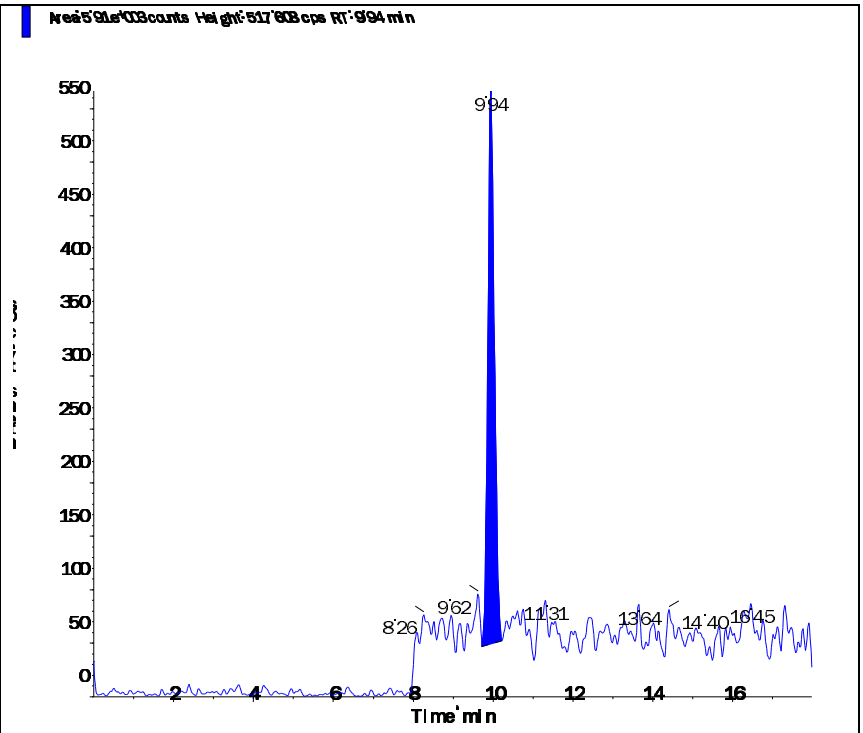

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Data File	LM33569.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/2/2016 9:12:17 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-03 STD (0.2 ug/L)	**Injection Vial**	53.00
Data File	LM33569.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 9:12:17 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559340-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.990e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.700e+04	9.99	0.20	0.199
Perchlorate conf	1.190e+04	9.98	0.20	0.197

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

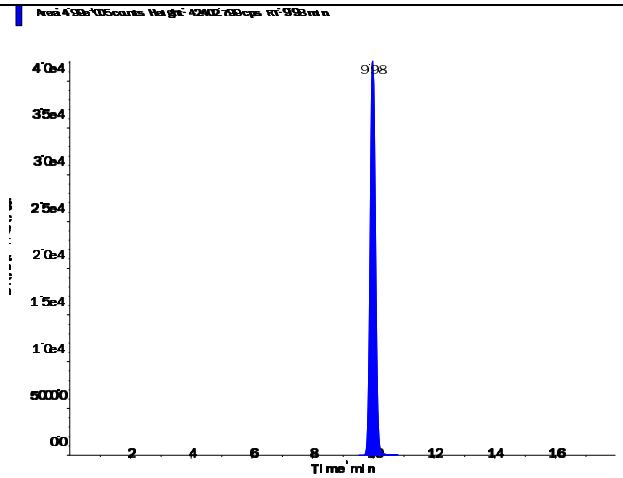

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.99 (9.94) min
Calculated conc:	0.199 ng/ml
Area Ratio:	0.074
Sample Type:	(Standard)

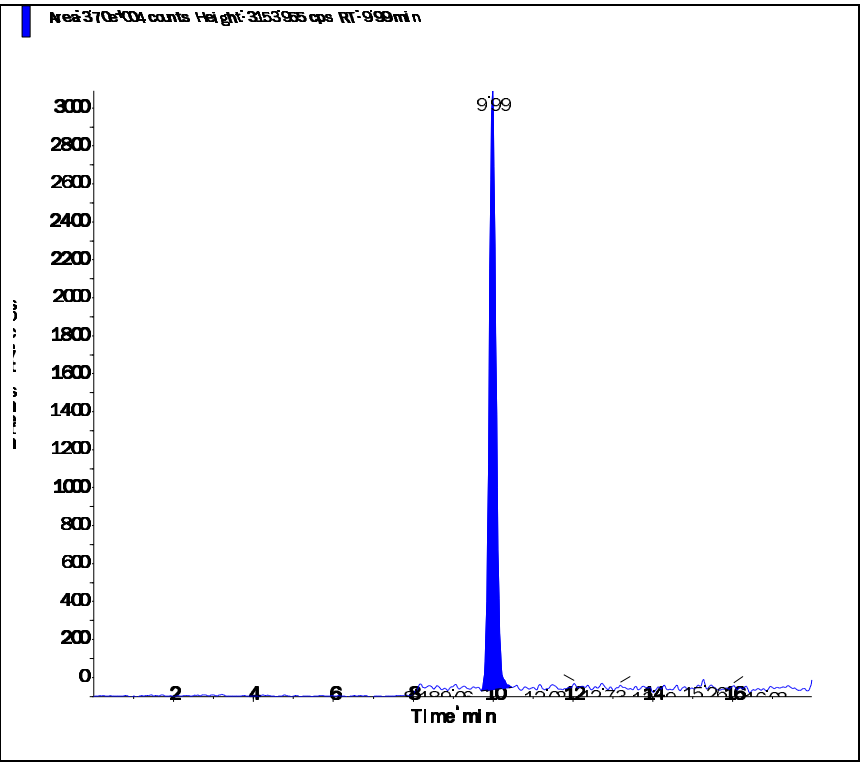

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.98 (9.92) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

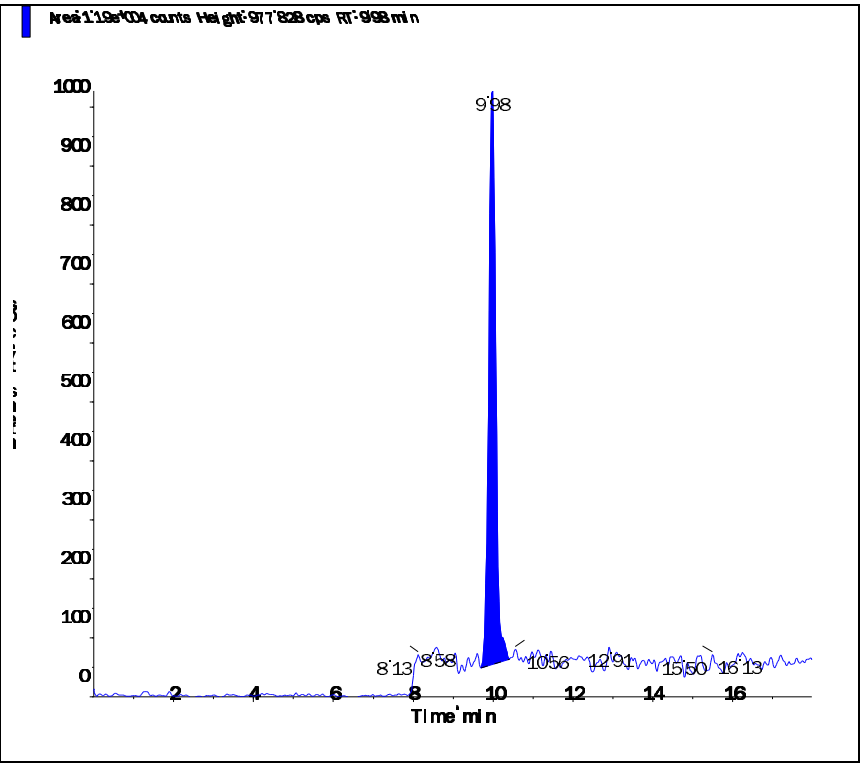

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Data File	LM33570.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/2/2016 9:31:14 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-04 STD (0.5 ug/L)	**Injection Vial**	54.00
Data File	LM33570.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 9:31:14 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559340-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.920e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.900e+04	10.00	0.50	0.505
Perchlorate conf	3.040e+04	9.98	0.50	0.536

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

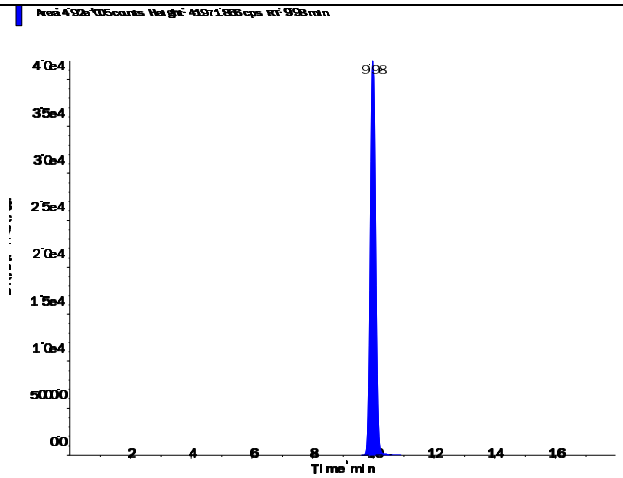

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.00 (9.94) min
Calculated conc:	0.505 ng/ml
Area Ratio:	0.181
Sample Type:	(Standard)

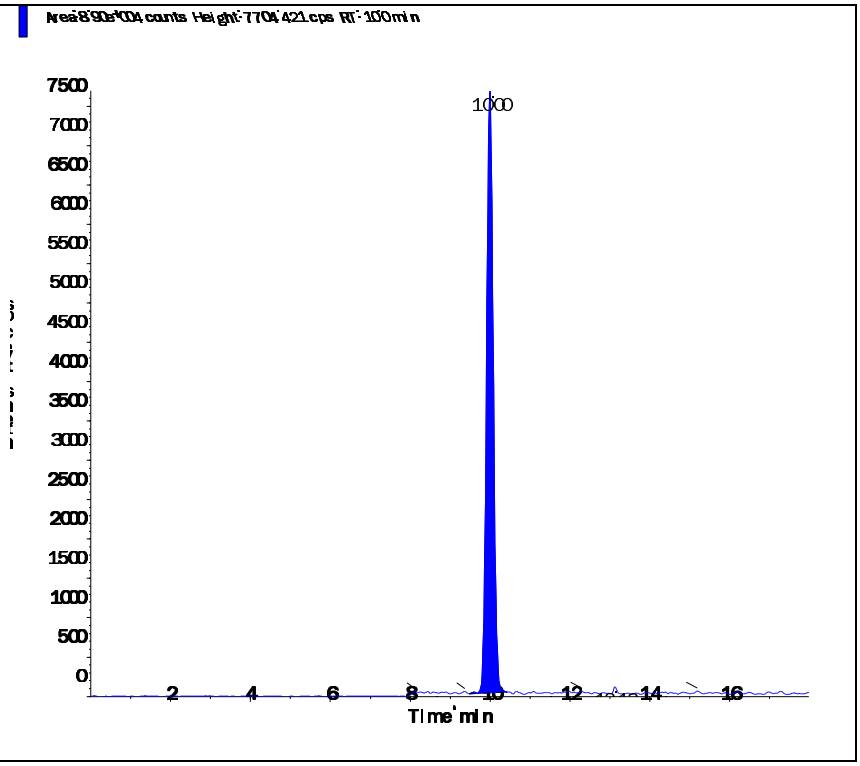

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.98 (9.92) min
Calculated conc:	0.536 ng/ml
Area Ratio:	0.062
Sample Type:	(Standard)

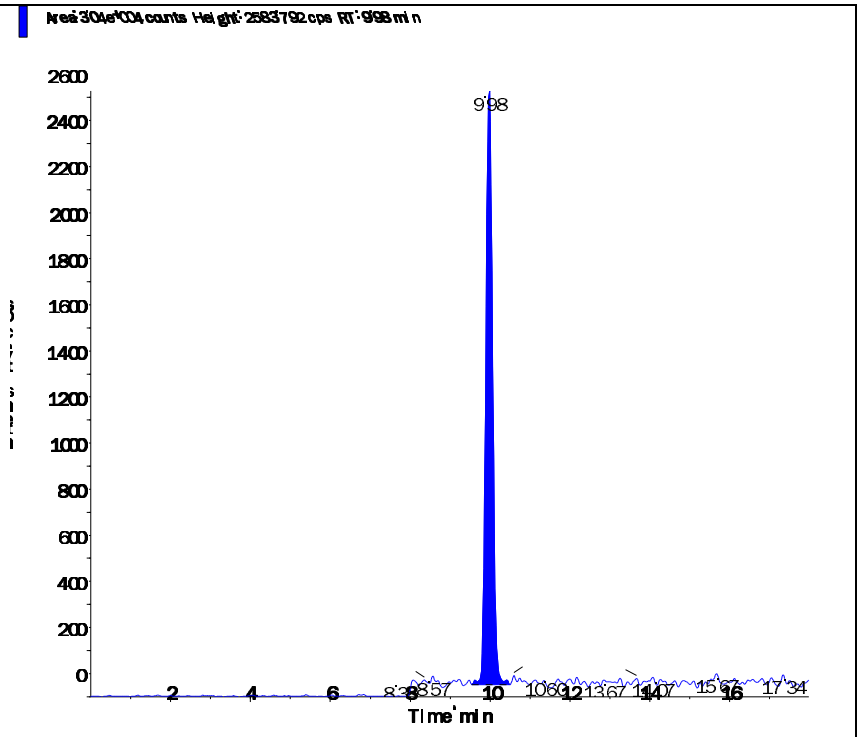

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Data File	LM33571.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/2/2016 9:50:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-05 STD (1.0 ug/L)	**Injection Vial**	55.00
Data File	LM33571.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 9:50:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559340-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.010e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.830e+05	9.99	1.00	1.03
Perchlorate conf	5.680e+04	9.98	1.00	0.995

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

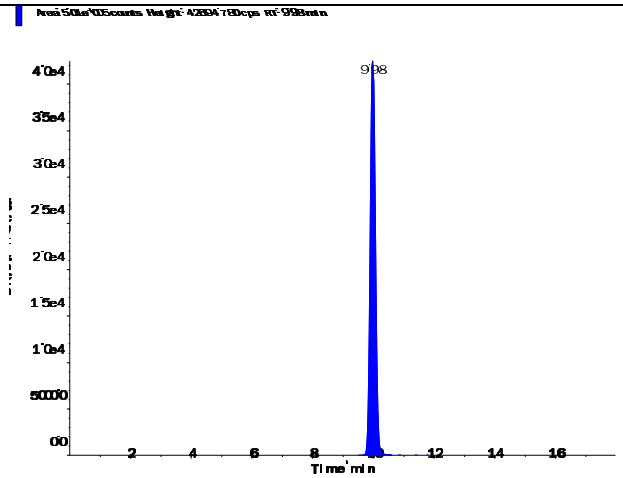

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.99 (9.94) min Calculated conc: 1.03 ng/ml Area Ratio: 0.366 Sample Type: (Standard)	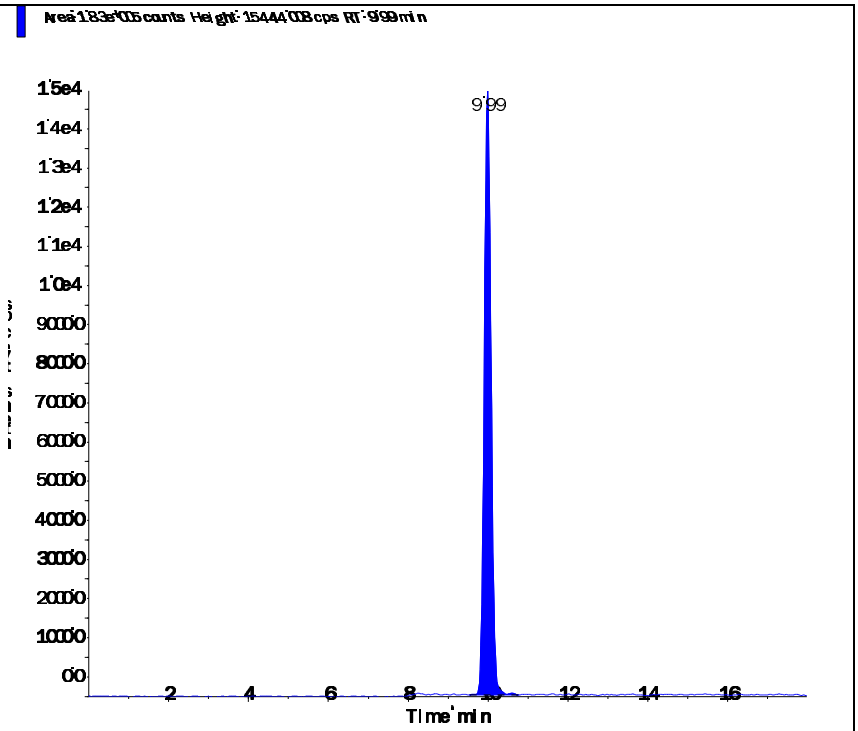
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.98 (9.92) min Calculated conc: 0.995 ng/ml Area Ratio: 0.113 Sample Type: (Standard)	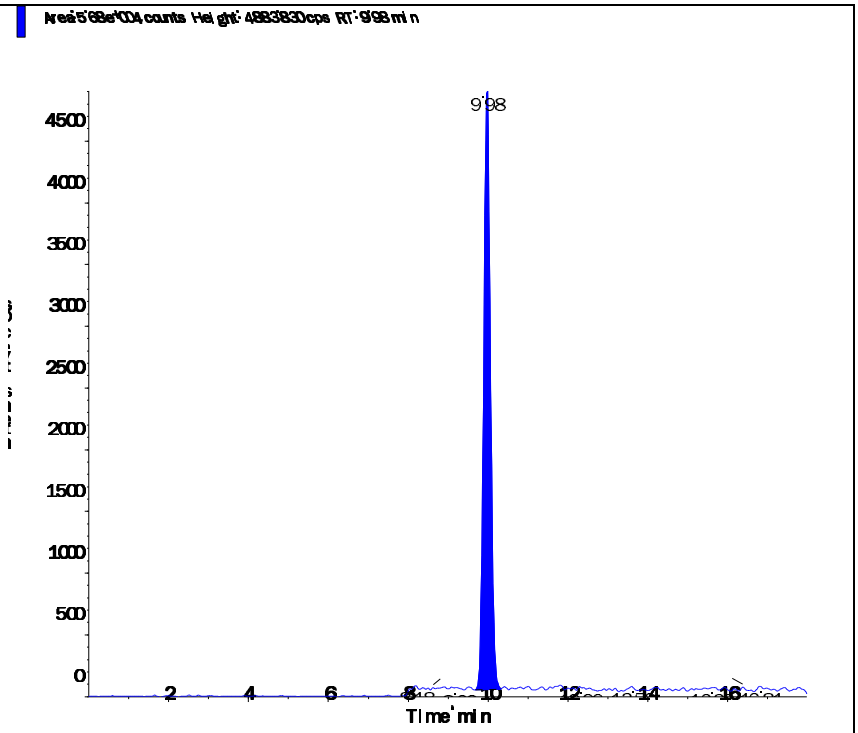

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Data File	LM33572.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/2/2016 10:09:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-06 STD (2.0 ug/L)	**Injection Vial**	56.00
Data File	LM33572.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 10:09:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559340-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.99	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.630e+05	10.00	2.00	2.02
Perchlorate conf	1.170e+05	9.99	2.00	2.01

O18LP (Internal Standard)

RT (Exp. RT): 9.99(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

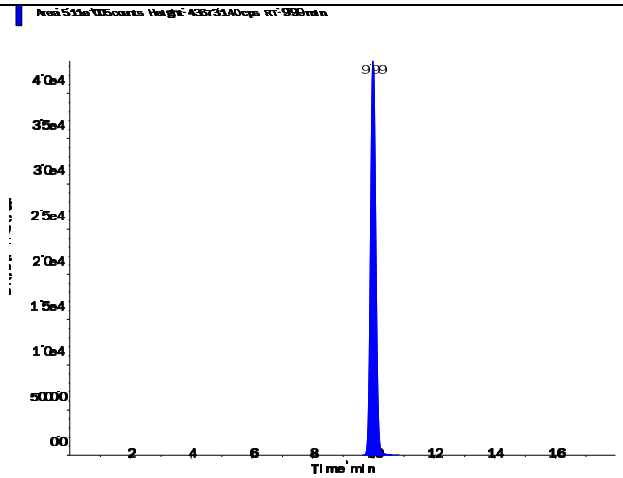

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.00 (9.94) min
Calculated conc:	2.02 ng/ml
Area Ratio:	0.711
Sample Type:	(Standard)

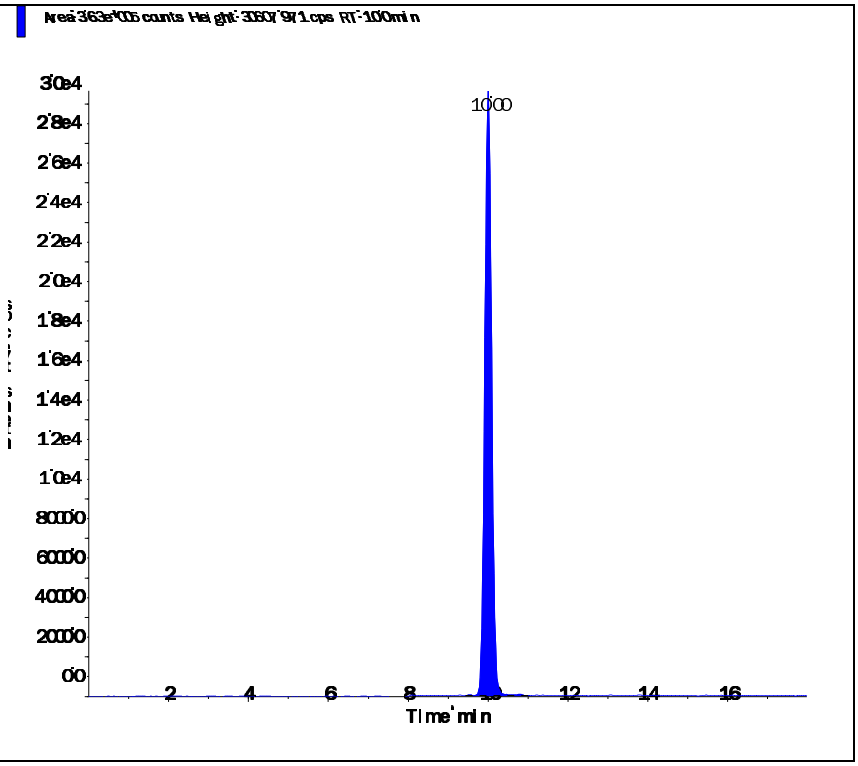

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.99 (9.92) min
Calculated conc:	2.01 ng/ml
Area Ratio:	0.228
Sample Type:	(Standard)

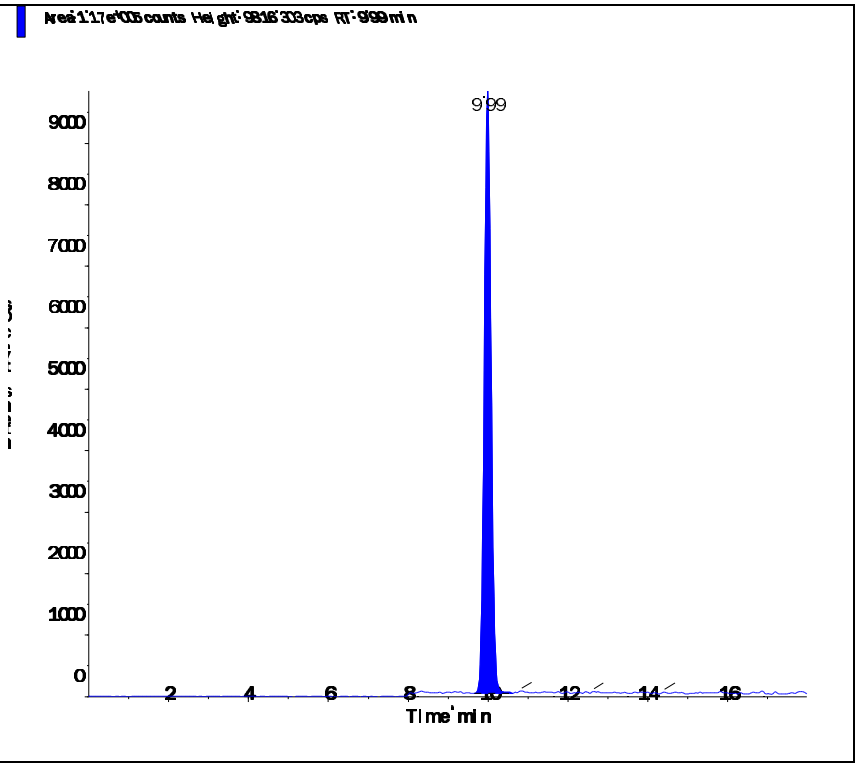

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Data File	LM33573.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/2/2016 10:28:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-07 STD (5.0 ug/L)	**Injection Vial**	57.00
Data File	LM33573.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 10:28:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559340-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.900e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.710e+05	9.98	5.00	5.07
Perchlorate conf	2.820e+05	9.97	5.00	5.11

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

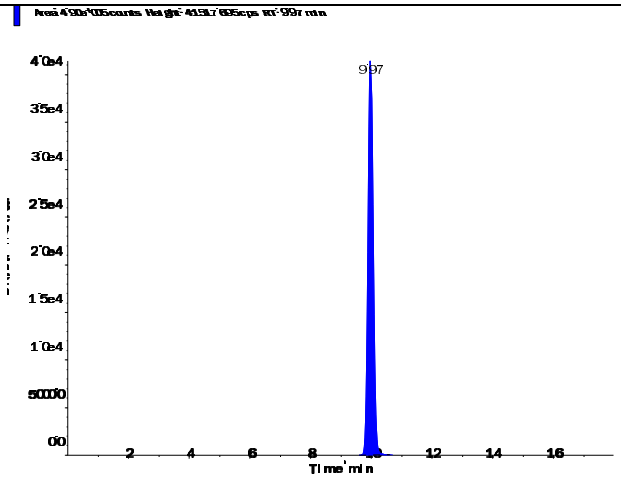

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.98 (9.94) min
Calculated conc:	5.07 ng/ml
Area Ratio:	1.779
Sample Type:	(Standard)

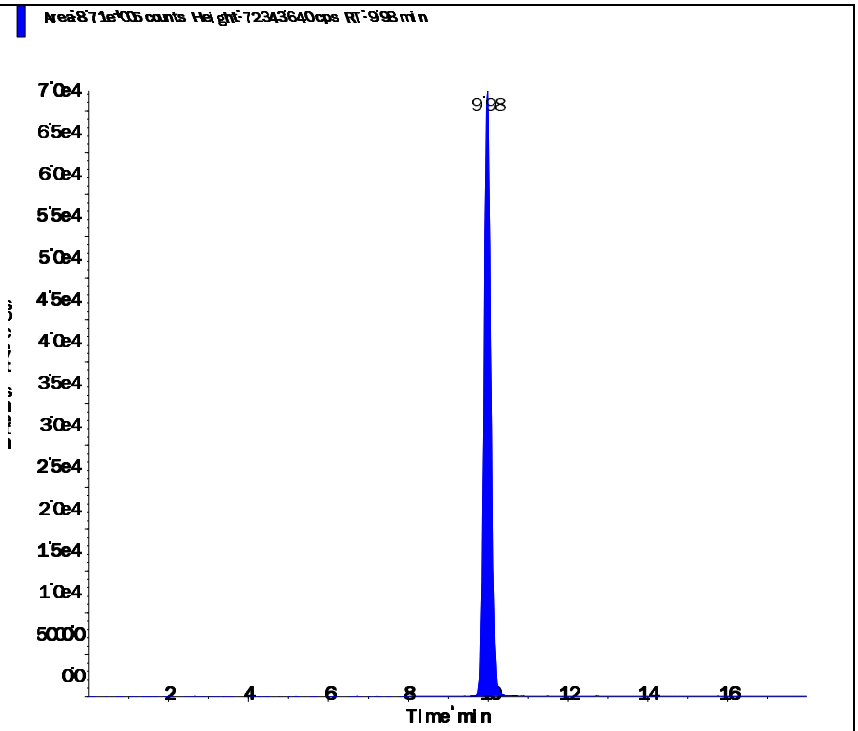

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.97 (9.92) min
Calculated conc:	5.11 ng/ml
Area Ratio:	0.576
Sample Type:	(Standard)

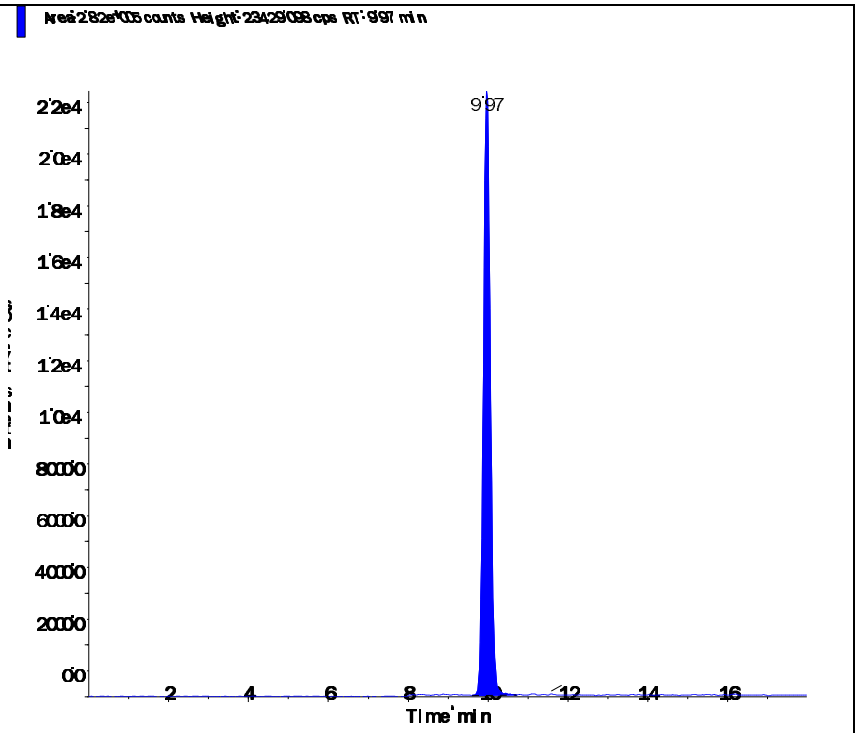

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Data File	LM33574.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/2/2016 10:46:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-08 STD (10 ug/L)	**Injection Vial**	58.00
Data File	LM33574.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 10:46:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559340-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.650e+06	9.98	10.00	9.87
Perchlorate conf	5.300e+05	9.96	10.00	9.85

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

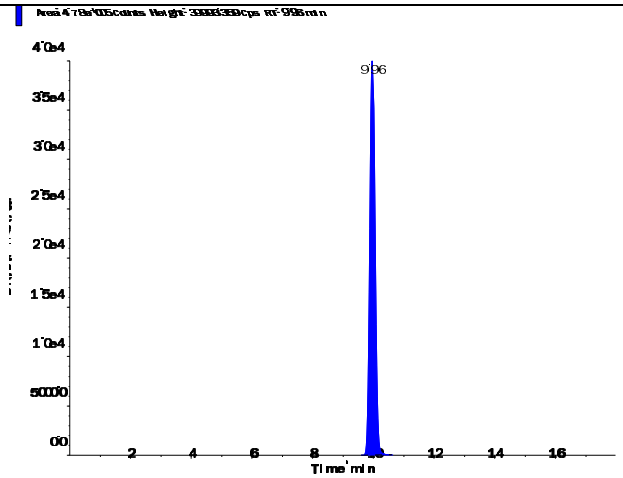

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.98 (9.94) min Calculated conc: 9.87 ng/ml Area Ratio: 3.458 Sample Type: (Standard)	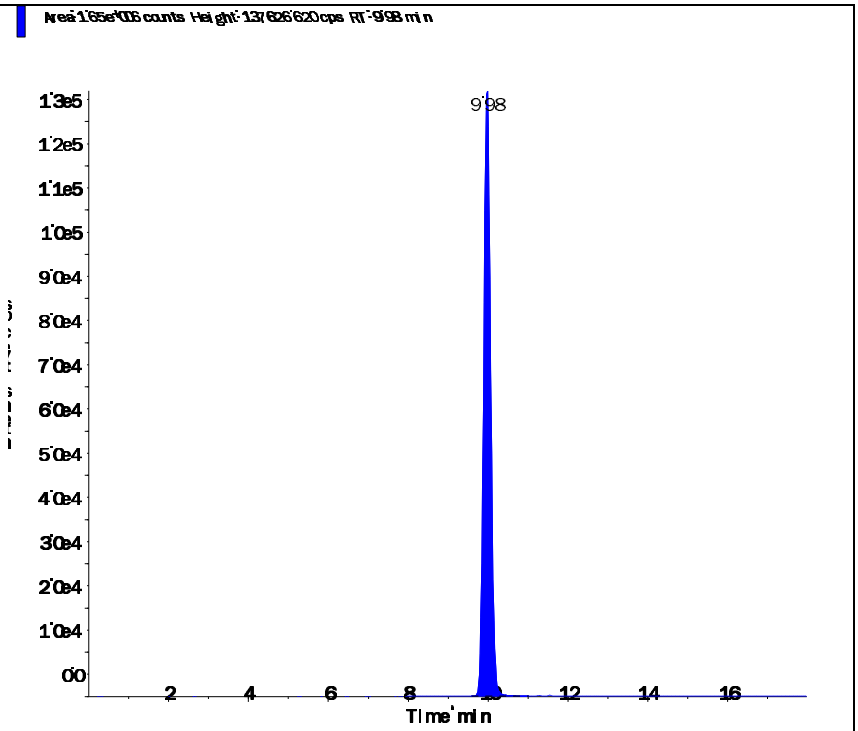
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.96 (9.92) min Calculated conc: 9.85 ng/ml Area Ratio: 1.11 Sample Type: (Standard)	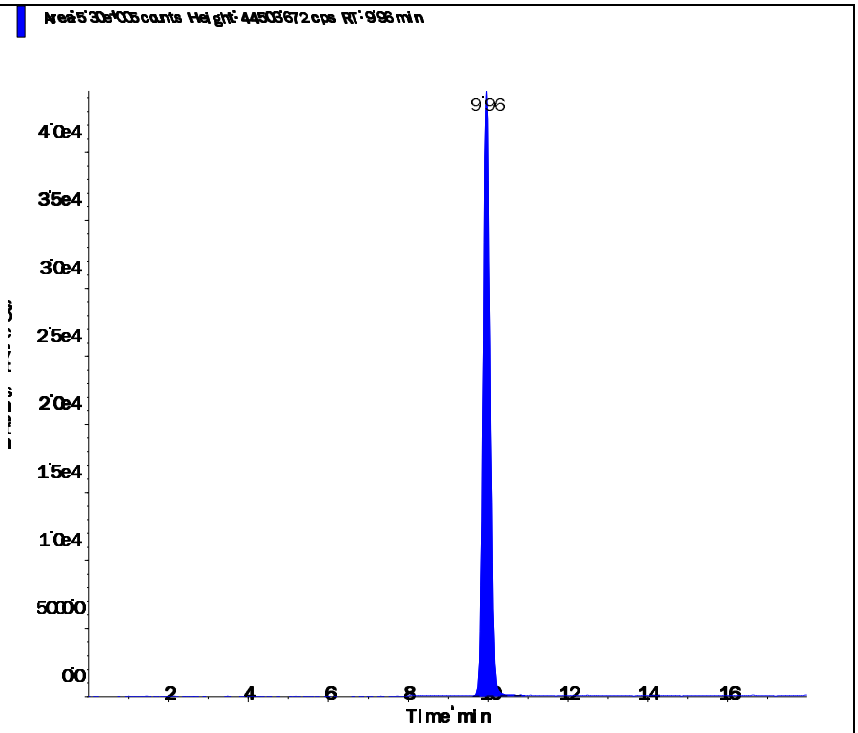

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Data File	LM33575.wiff	**Result Table**	030216_WTD.rdb
Acquisition Date	3/2/2016 11:05:52 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-09 SSCV (1.0 ug/L)	**Injection Vial**	59.00
Data File	LM33575.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 11:05:52 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030216_WTD.rdb
Sample ID	WG559340-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.200e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.900e+05	9.98	1.00	1.03
Perchlorate conf	6.220e+04	9.97	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

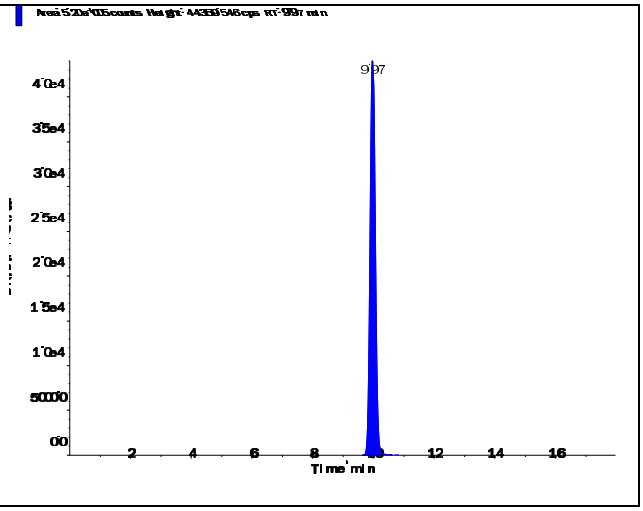

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.98 (9.94) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.366
Sample Type:	(Quality Control)

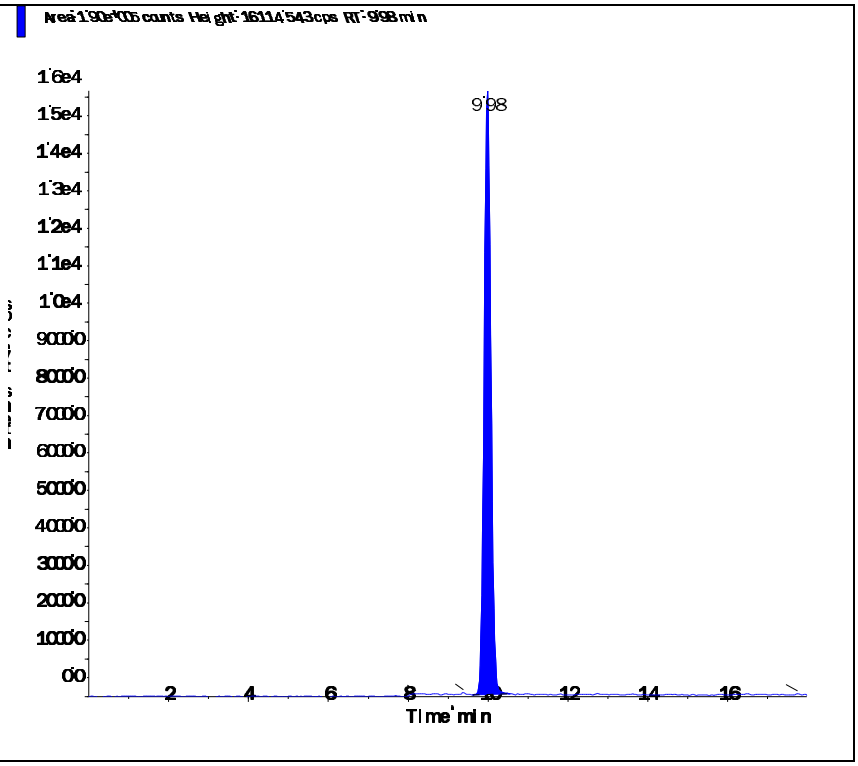

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.97 (9.92) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.12
Sample Type:	(Quality Control)

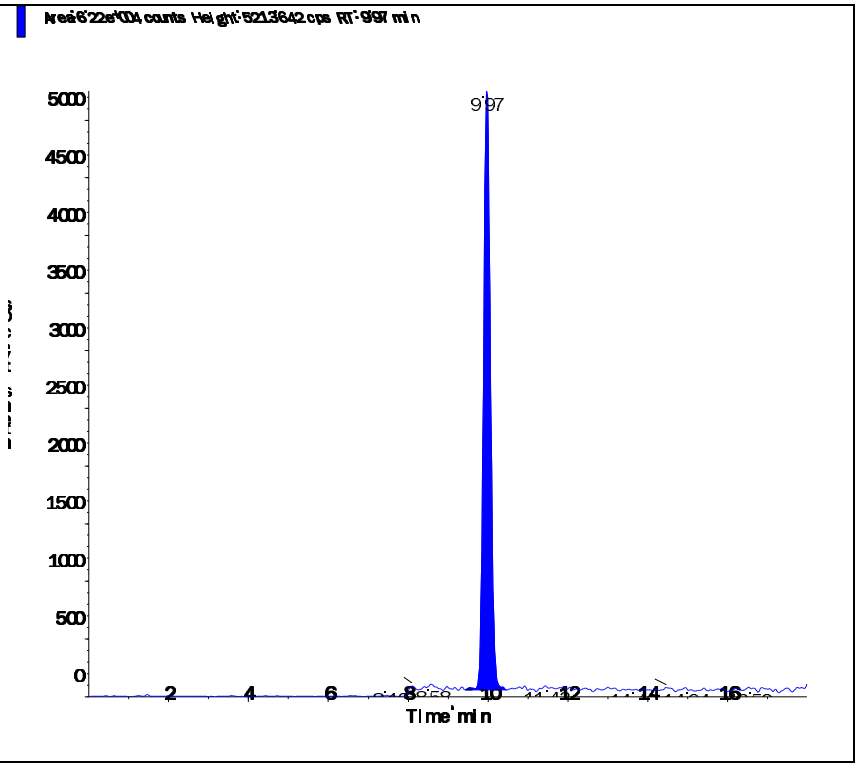

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Data File	LM33749.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/7/2016 4:08:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559981-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33749.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 4:08:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559981-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.860e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.740e+05	9.93	1.00	1.01
Perchlorate conf	5.530e+04	9.91	1.00	0.997

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

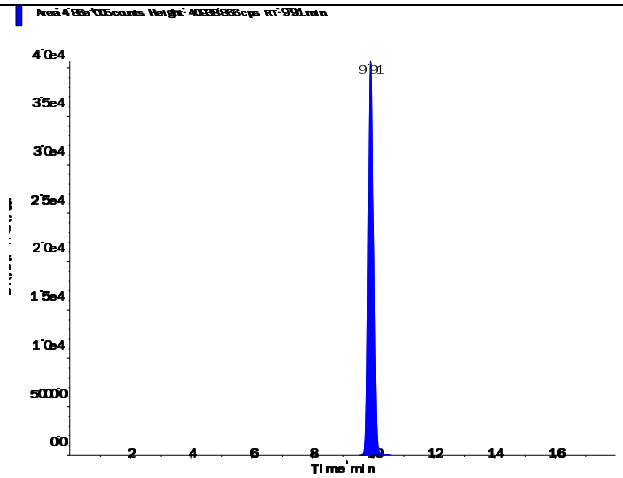

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.357
Sample Type:	(Quality Control)

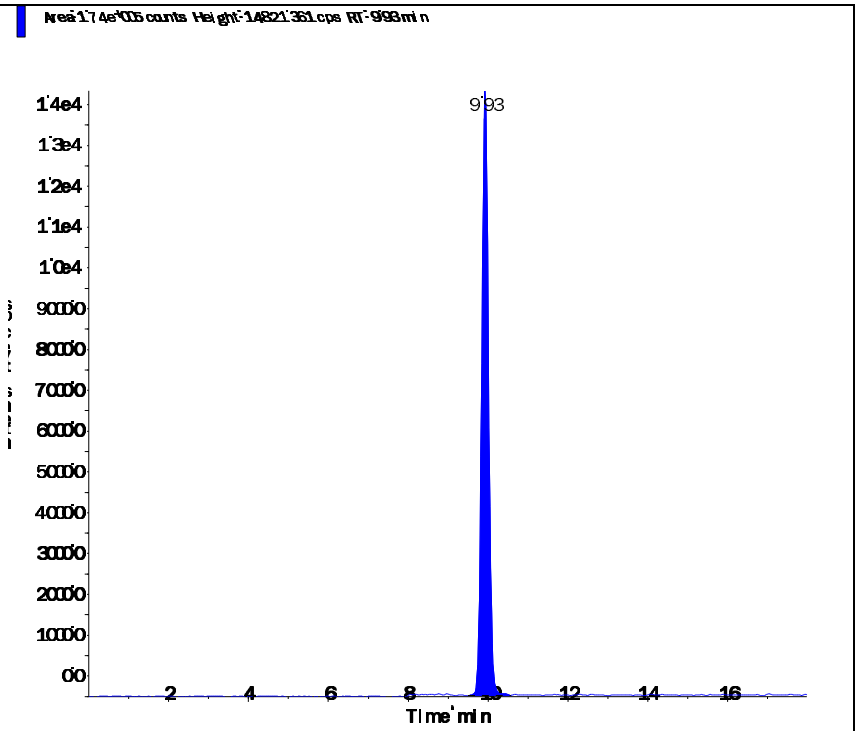

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.92) min
Calculated conc:	0.997 ng/ml
Area Ratio:	0.114
Sample Type:	(Quality Control)

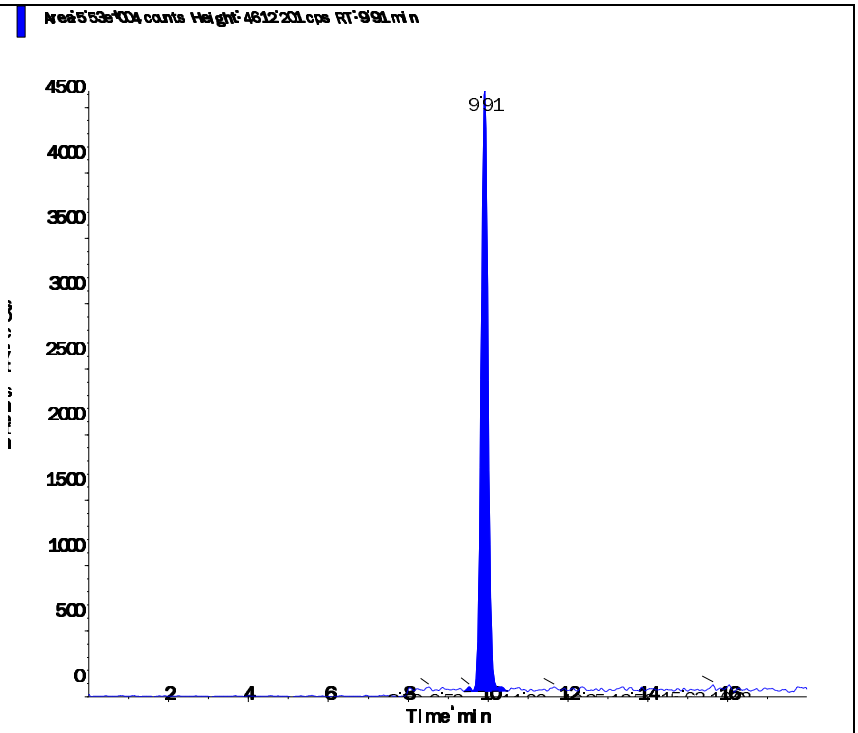

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Data File	LM33761.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/7/2016 7:55:27 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559981-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33761.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 7:55:27 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559981-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.730e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.960e+05	9.92	1.00	0.966
Perchlorate conf	6.370e+04	9.91	1.00	0.975

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

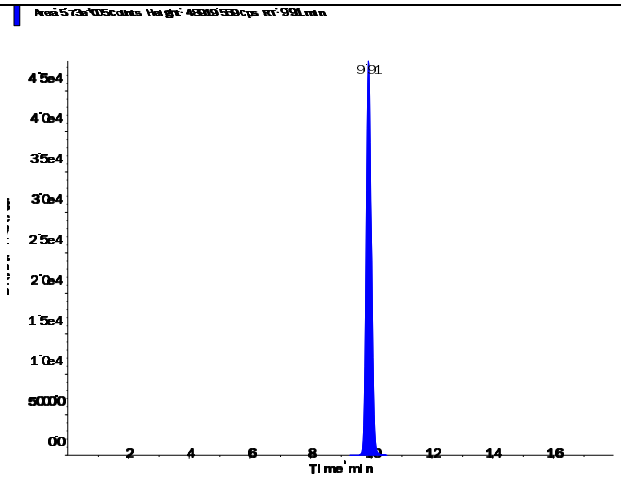

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.92 (9.94) min
Calculated conc:	0.966 ng/ml
Area Ratio:	0.342
Sample Type:	(Quality Control)

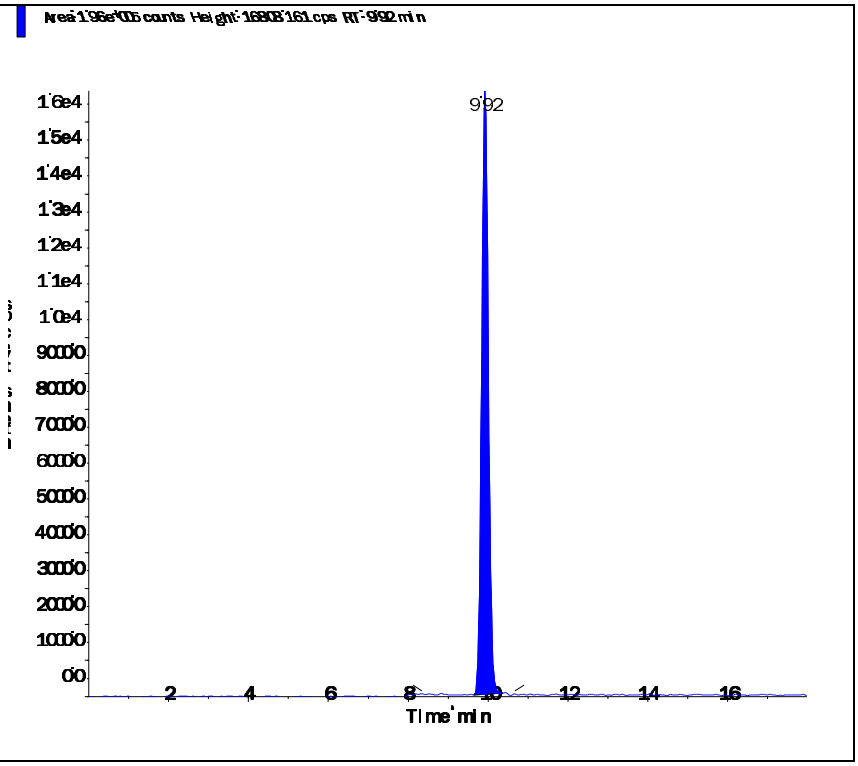

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.92) min
Calculated conc:	0.975 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

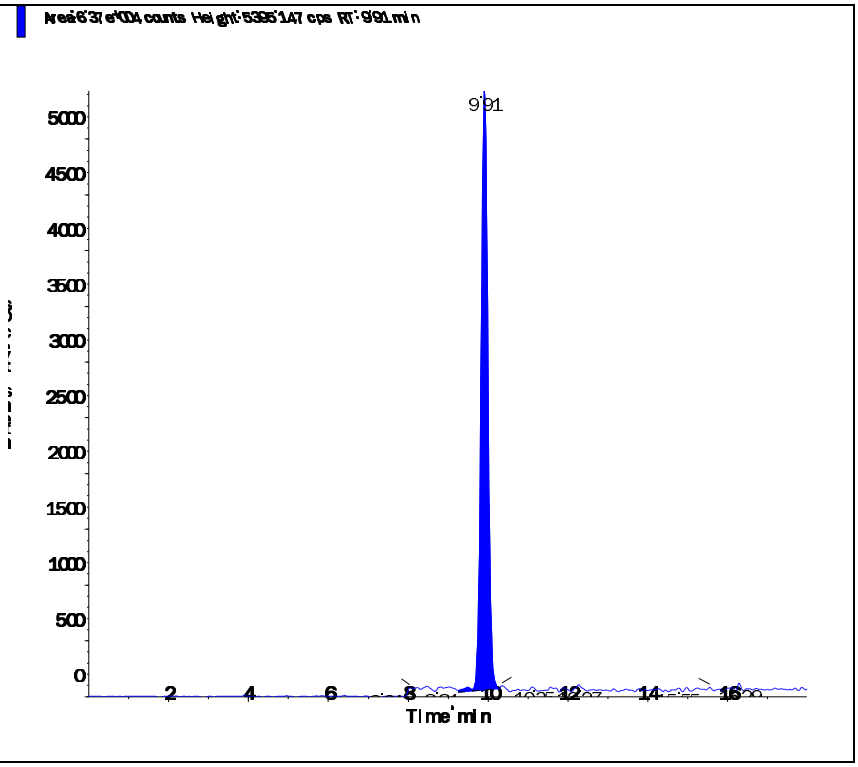

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Data File	LM33767.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/7/2016 9:48:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559981-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33767.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 9:48:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559981-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	6.010e+05	9.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.090e+05	9.91	1.00	0.981
Perchlorate conf	6.740e+04	9.89	1.00	0.983

O18LP (Internal Standard)

RT (Exp. RT): 9.90(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

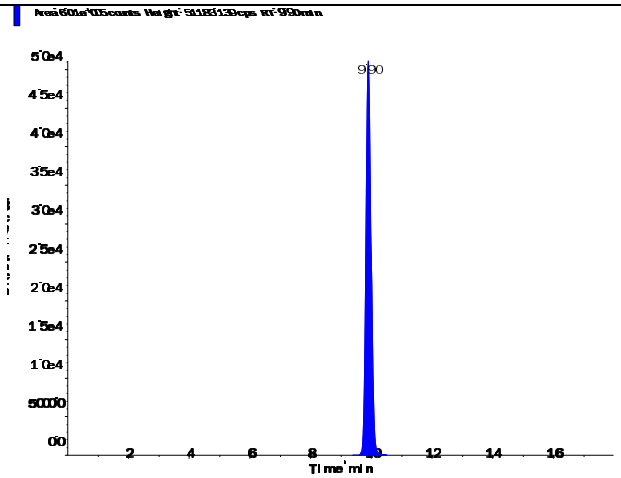

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.91 (9.94) min
Calculated conc:	0.981 ng/ml
Area Ratio:	0.347
Sample Type:	(Quality Control)

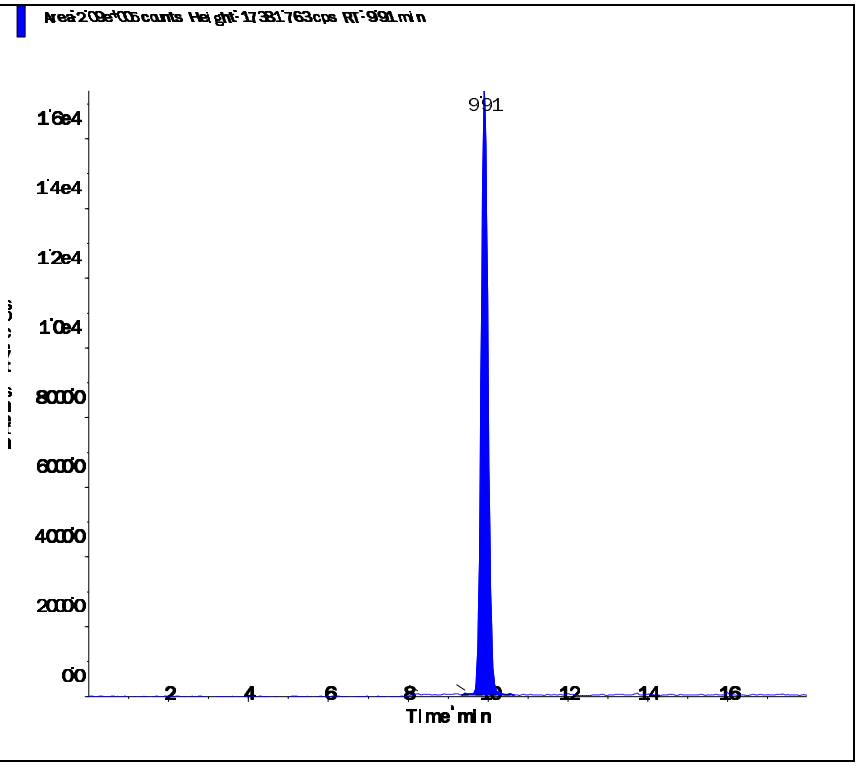

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.89 (9.92) min
Calculated conc:	0.983 ng/ml
Area Ratio:	0.112
Sample Type:	(Quality Control)

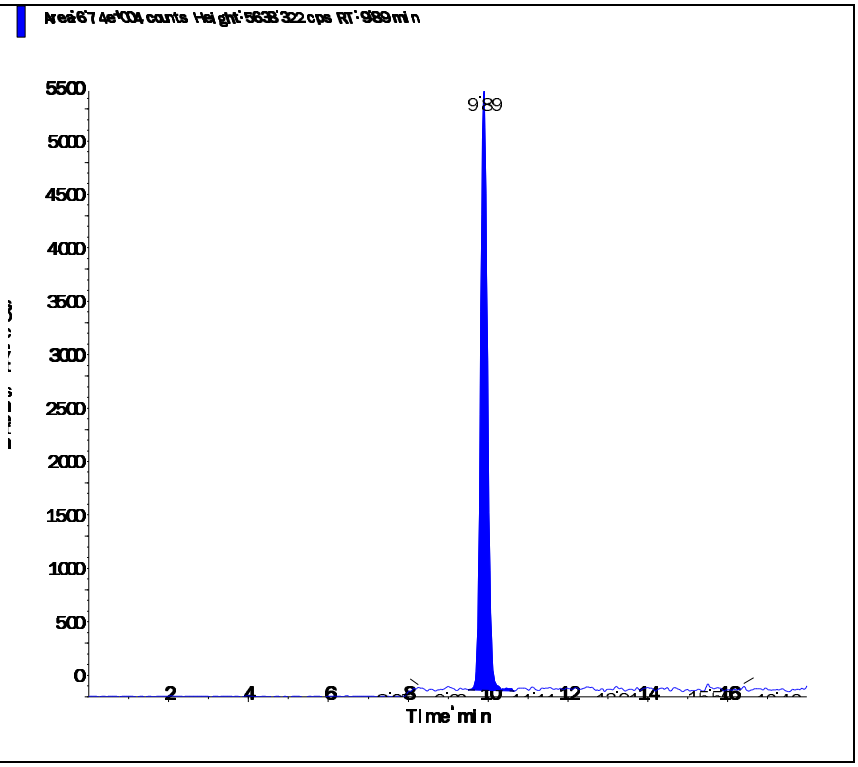

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Data File	LM33770.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/8/2016 9:41:54 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559981-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33770.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 9:41:54 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559981-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.600e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.950e+05	9.93	1.00	0.984
Perchlorate conf	6.310e+04	9.92	1.00	0.987

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

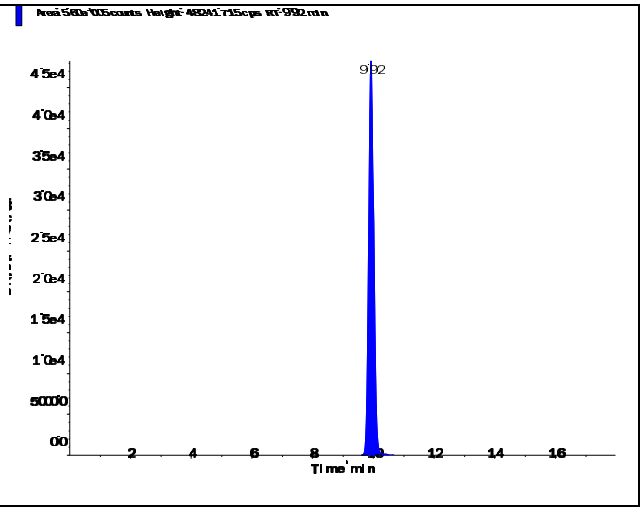

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	0.984 ng/ml
Area Ratio:	0.348
Sample Type:	(Quality Control)

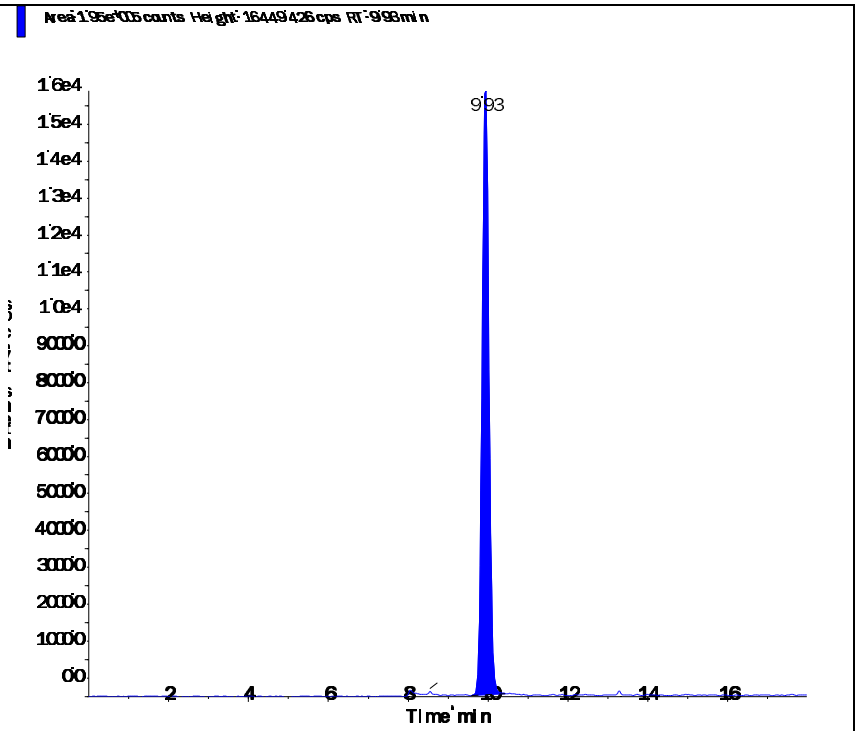

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	0.987 ng/ml
Area Ratio:	0.113
Sample Type:	(Quality Control)

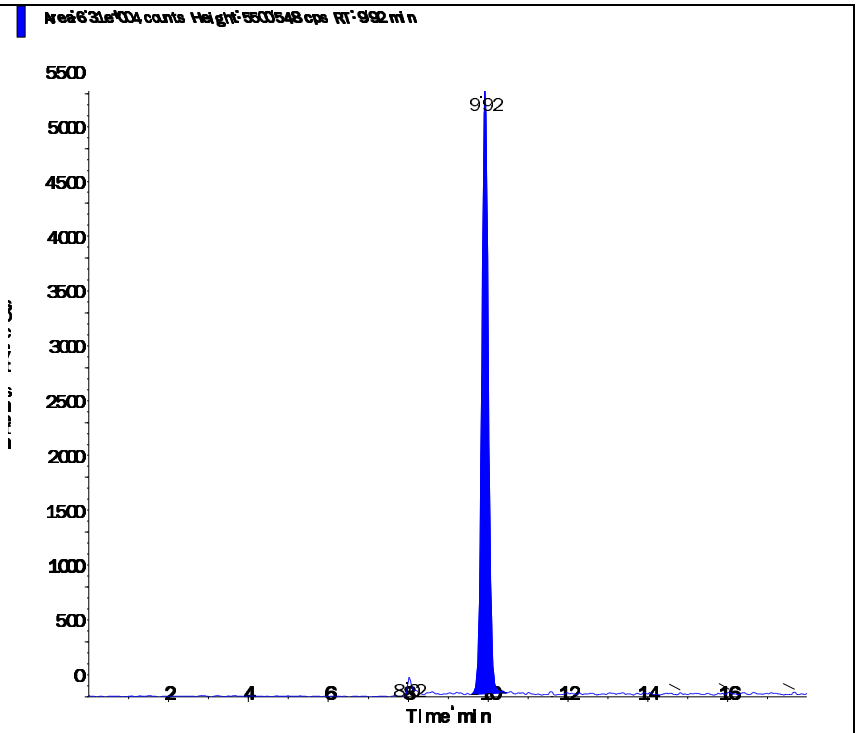

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Data File	LM33777.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/8/2016 11:54:24 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559981-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33777.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 11:54:24 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559981-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.270e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.780e+05	9.96	1.00	0.954
Perchlorate conf	5.800e+04	9.94	1.00	0.964

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

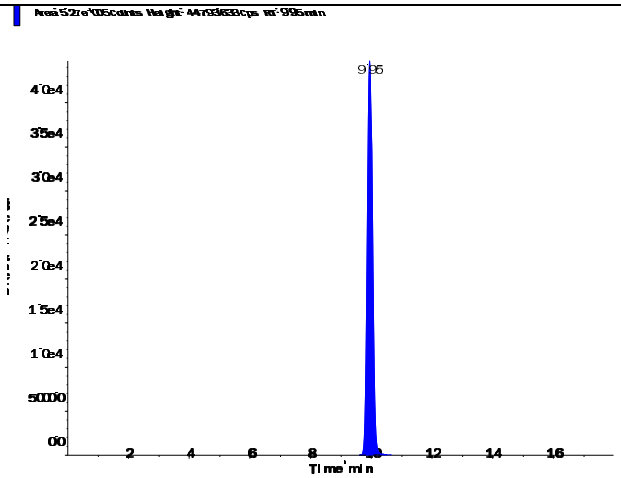

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	0.954 ng/ml
Area Ratio:	0.338
Sample Type:	(Quality Control)

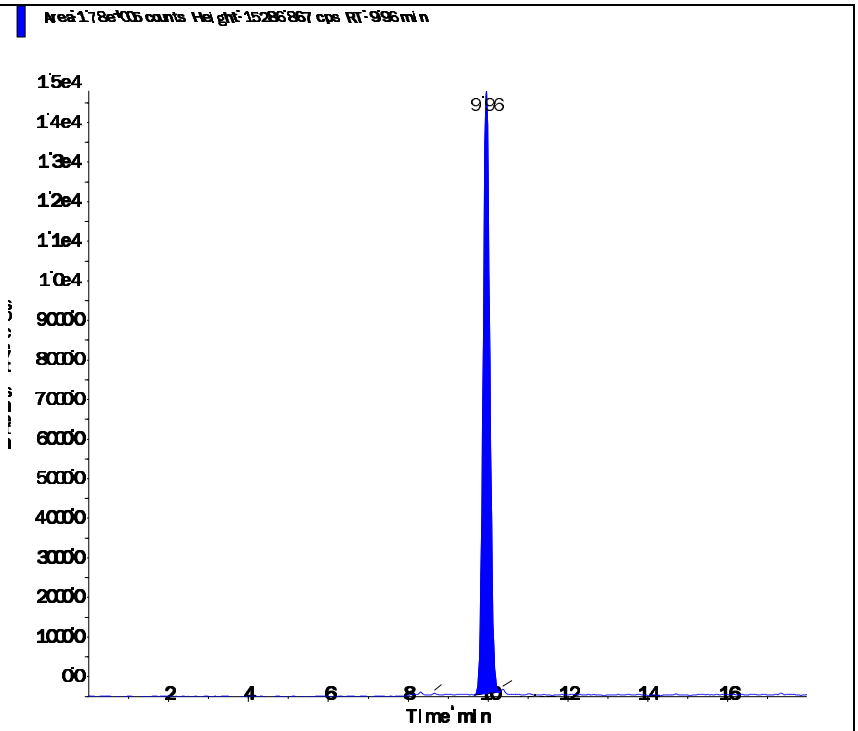

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.964 ng/ml
Area Ratio:	0.11
Sample Type:	(Quality Control)

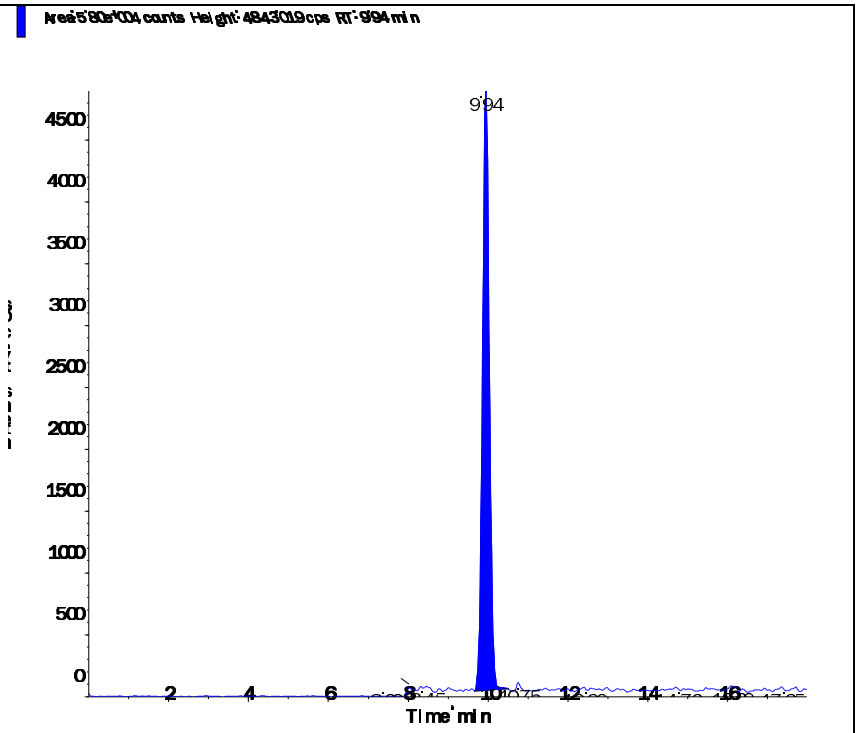

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Data File	LM33750.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/7/2016 4:27:02 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559975-07 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33750.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 4:27:02 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559975-07	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.030e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.620e+04	9.92	N/A	0.193
Perchlorate conf	1.170e+04	9.91	N/A	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

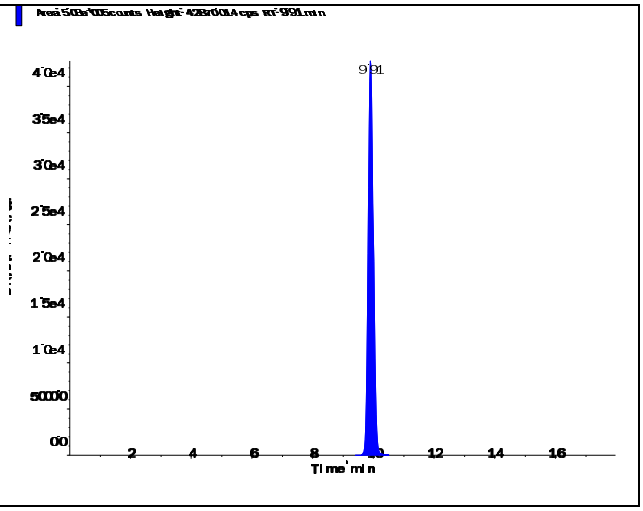

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.92 (9.94) min
Calculated conc:	0.193 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

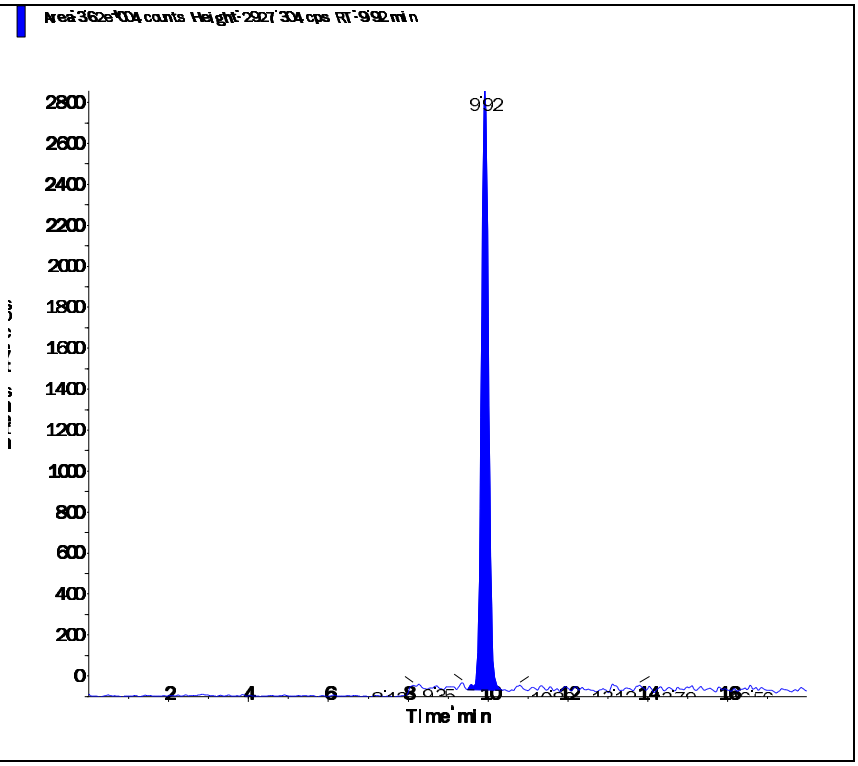

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.92) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

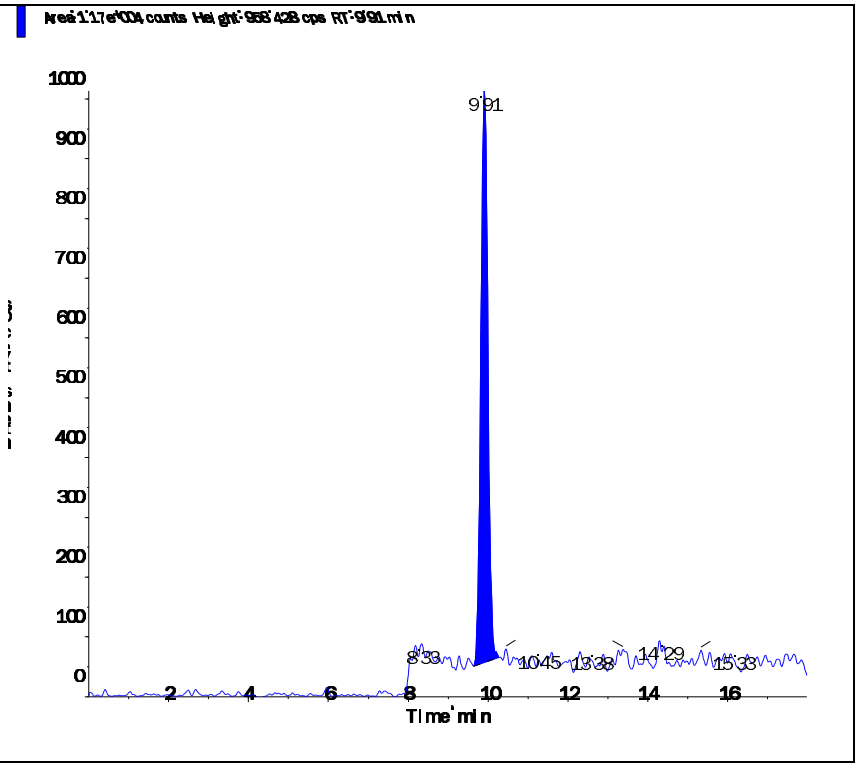

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Data File	LM33762.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/7/2016 8:14:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559975-08 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33762.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 8:14:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559975-08	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.880e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.300e+04	9.92	N/A	0.197
Perchlorate conf	1.390e+04	9.90	N/A	0.196

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

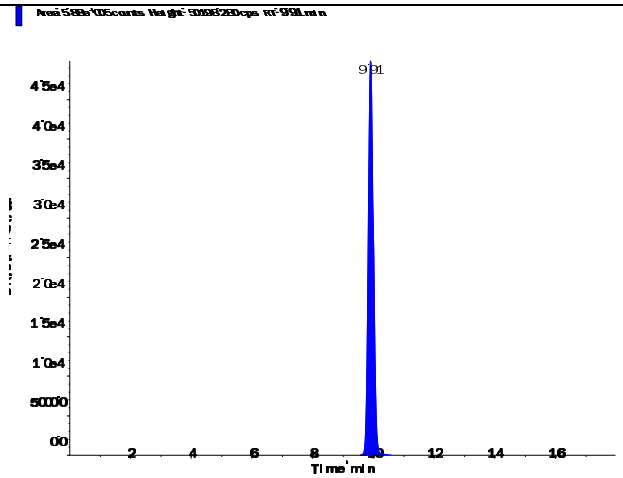

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.92 (9.94) min Calculated conc: 0.197 ng/ml Area Ratio: 0.073 Sample Type: (Unknown)	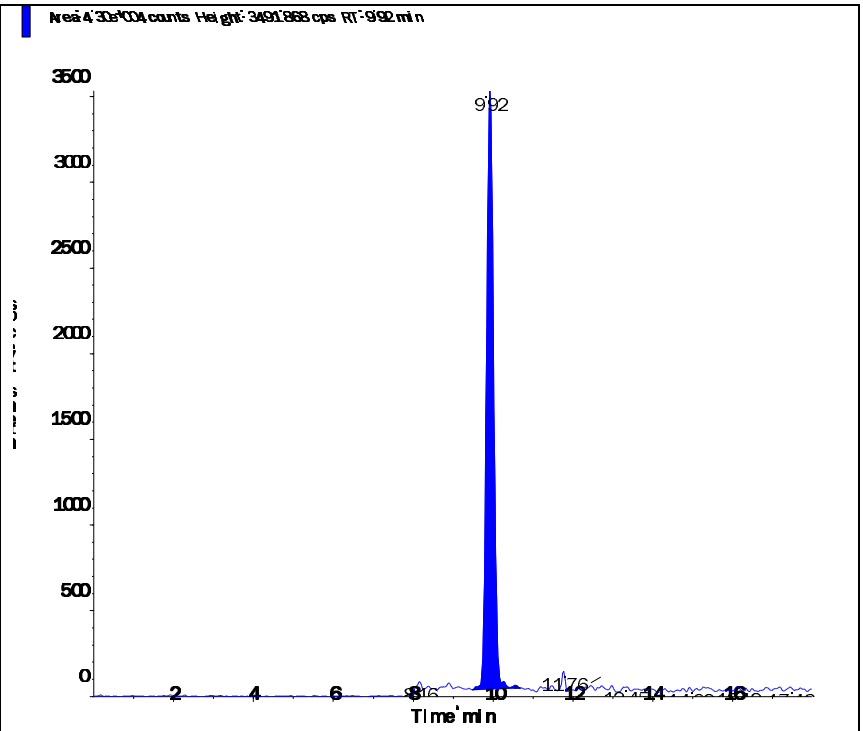
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.90 (9.92) min Calculated conc: 0.196 ng/ml Area Ratio: 0.024 Sample Type: (Unknown)	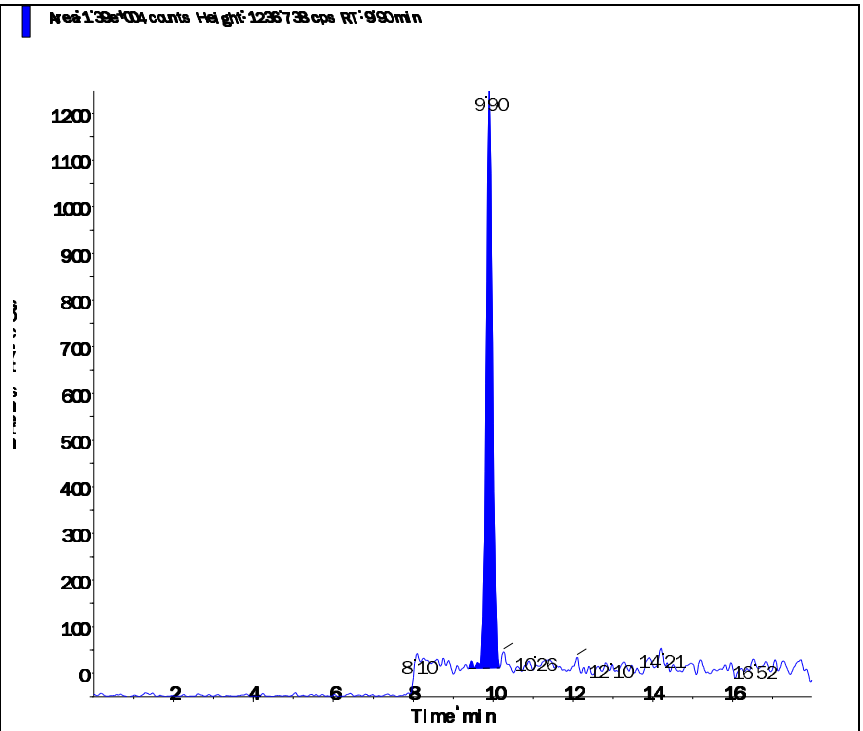

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Data File	LM33768.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/7/2016 10:07:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559975-09 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33768.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 10:07:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559975-09	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	6.160e+05	9.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.540e+04	9.91	N/A	0.198
Perchlorate conf	1.520e+04	9.89	N/A	0.206

O18LP (Internal Standard)

RT (Exp. RT): 9.90(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

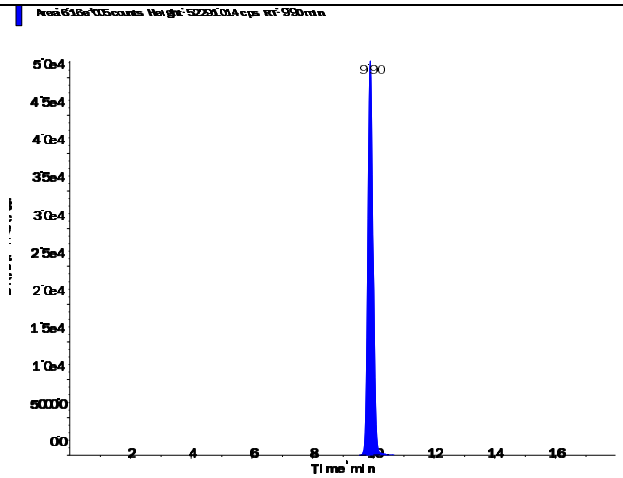

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.91 (9.94) min
Calculated conc:	0.198 ng/ml
Area Ratio:	0.074
Sample Type:	(Unknown)

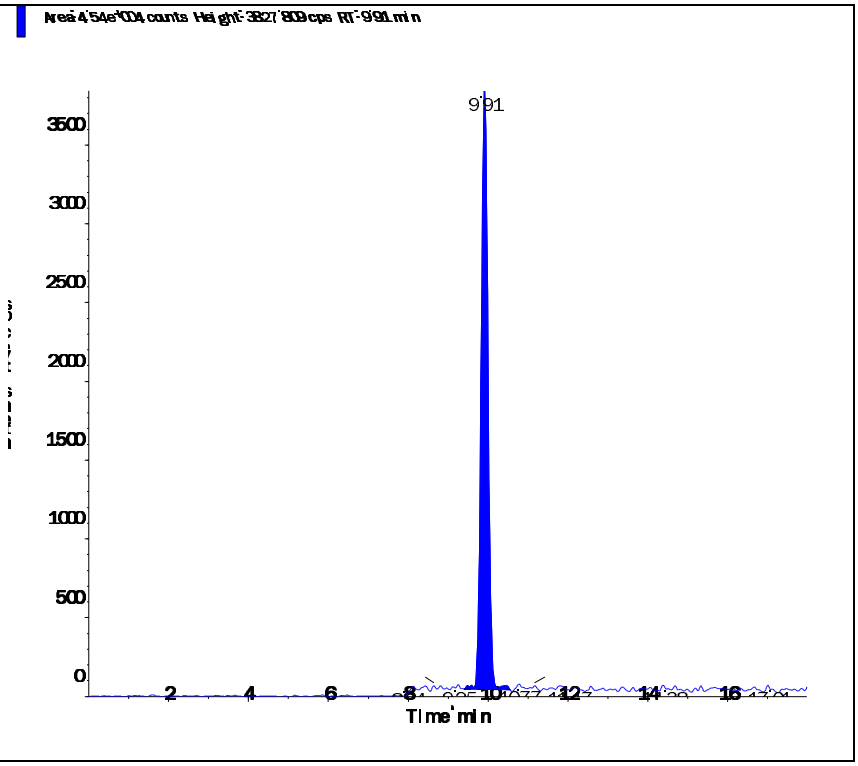

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.89 (9.92) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

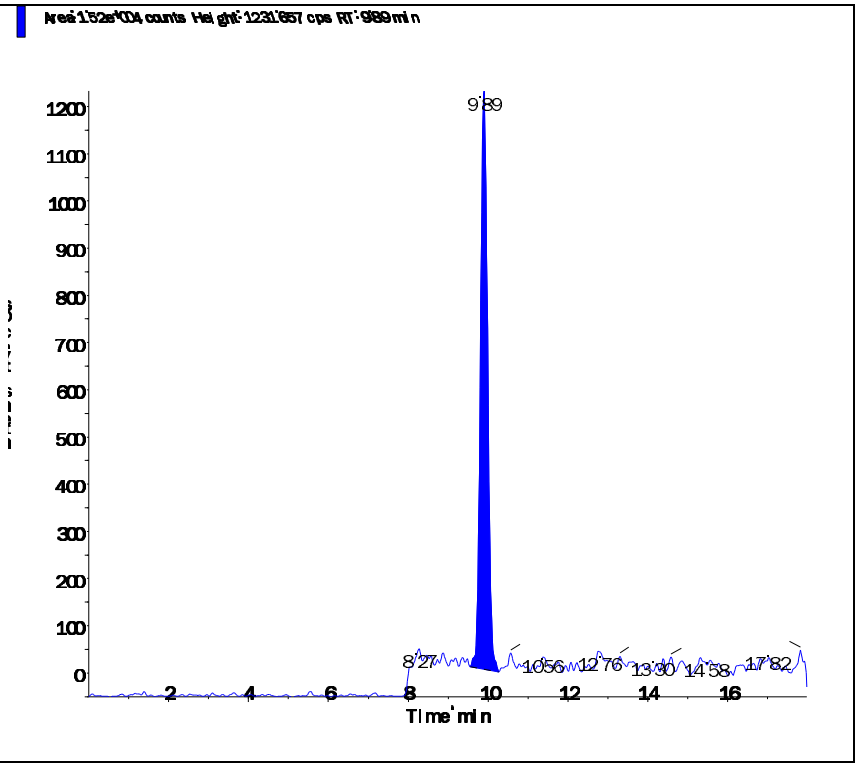

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Data File	LM33771.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/8/2016 10:00:46 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559975-10 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33771.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 10:00:46 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559975-10	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.610e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.910e+04	9.93	N/A	0.187
Perchlorate conf	1.430e+04	9.92	N/A	0.213

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

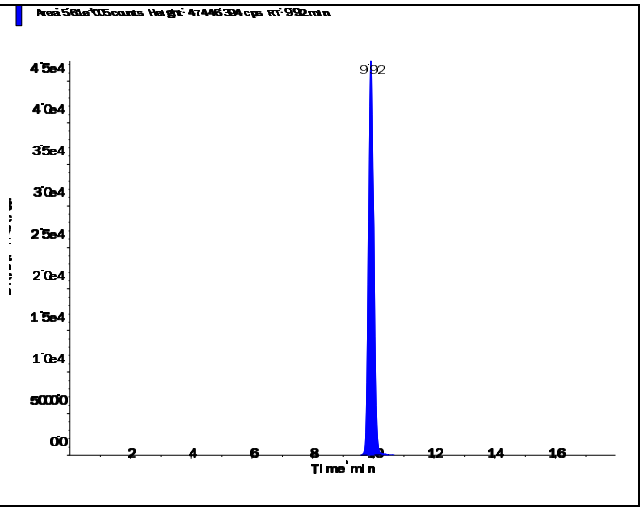

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	0.187 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

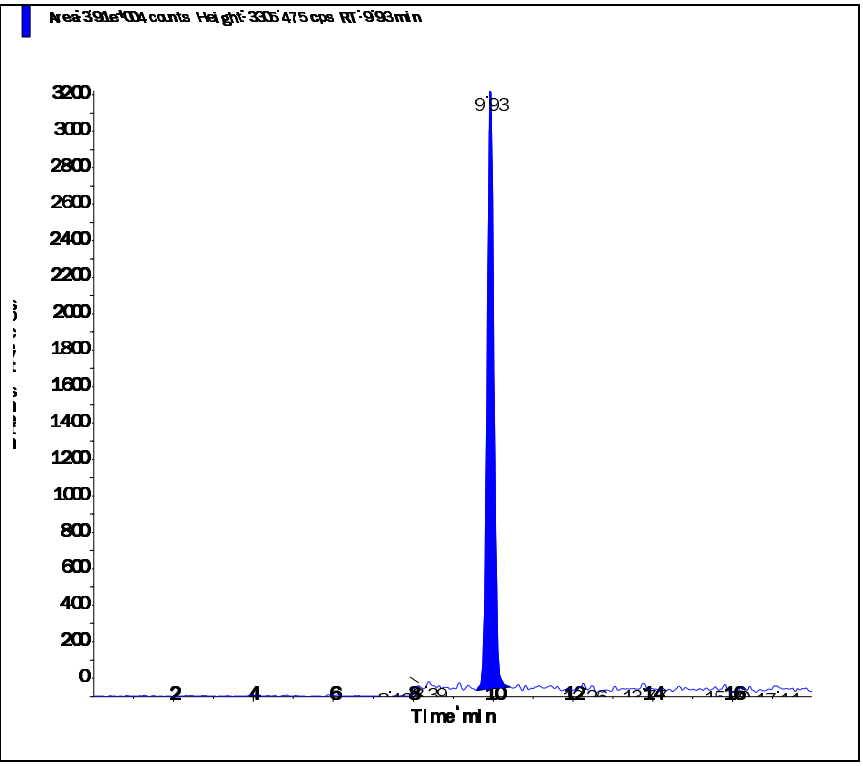

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	0.213 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

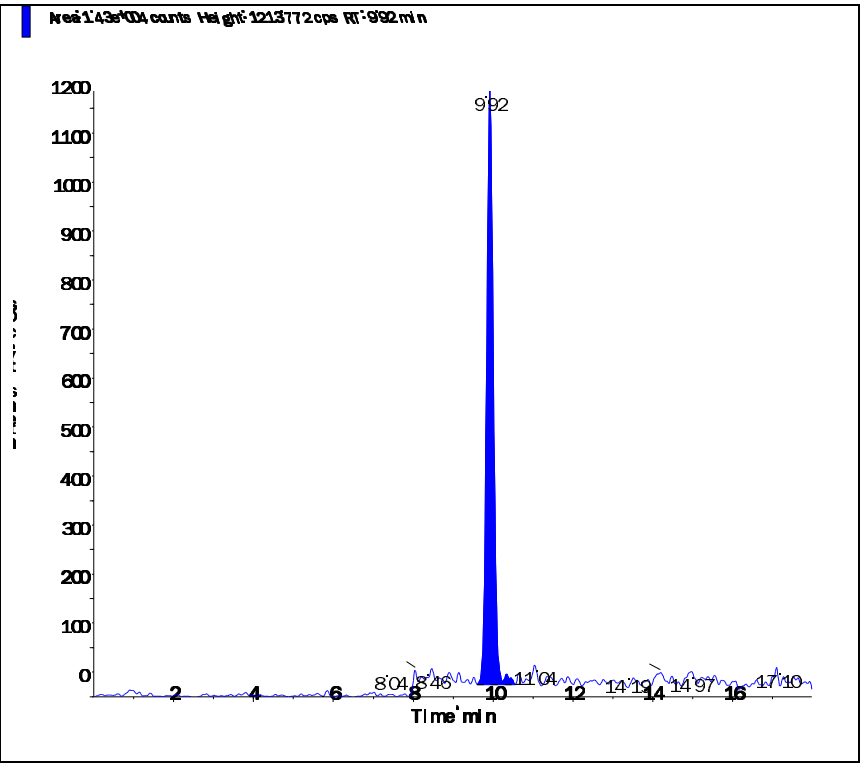

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Data File	LM33778.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/8/2016 12:13:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559975-11 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33778.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 12:13:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559975-11	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.190e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.800e+04	9.93	N/A	0.197
Perchlorate conf	1.210e+04	9.92	N/A	0.193

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

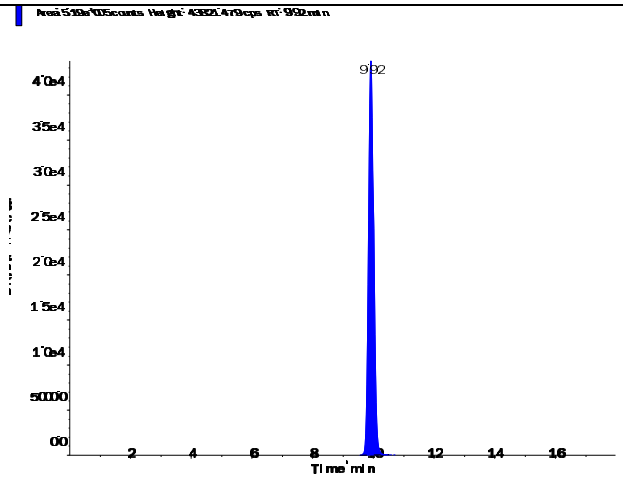

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.073
Sample Type:	(Unknown)

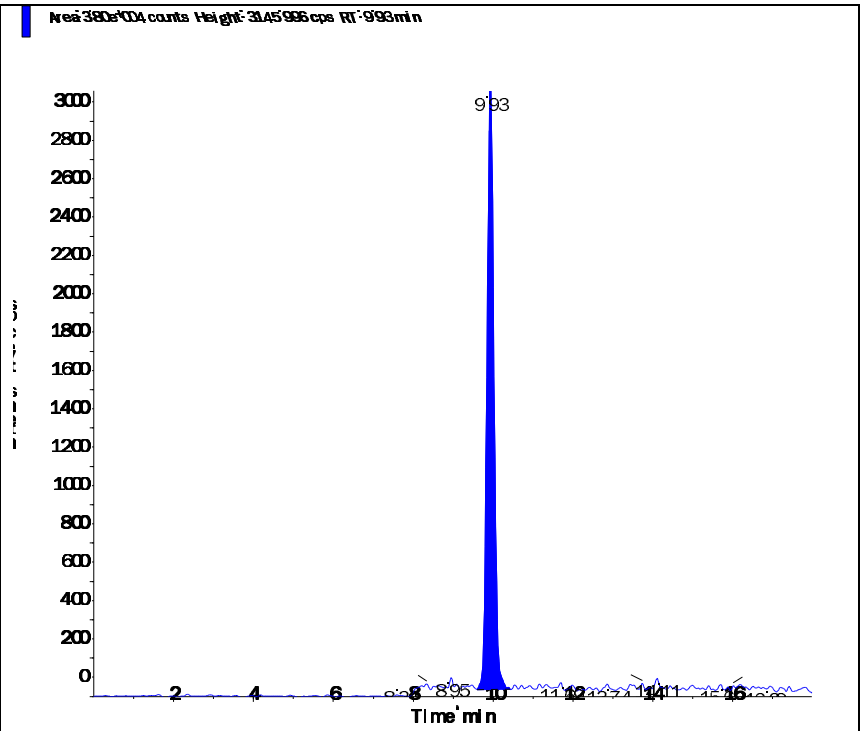

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	0.193 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

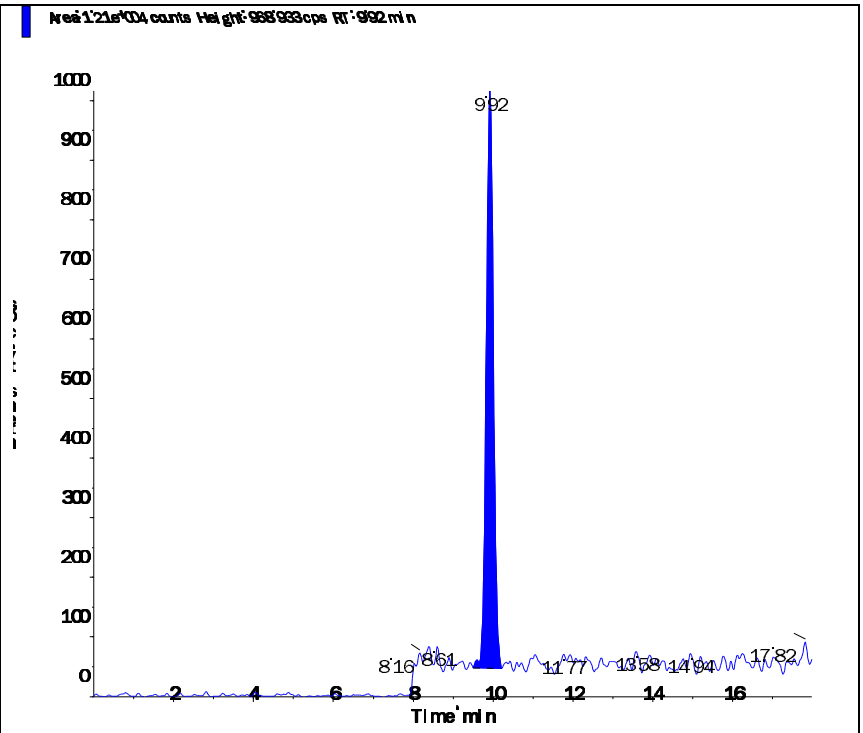

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Data File	LM33748.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/7/2016 3:49:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559981-01 CCB	**Injection Vial**	1.00
Data File	LM33748.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 3:49:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559981-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.710e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

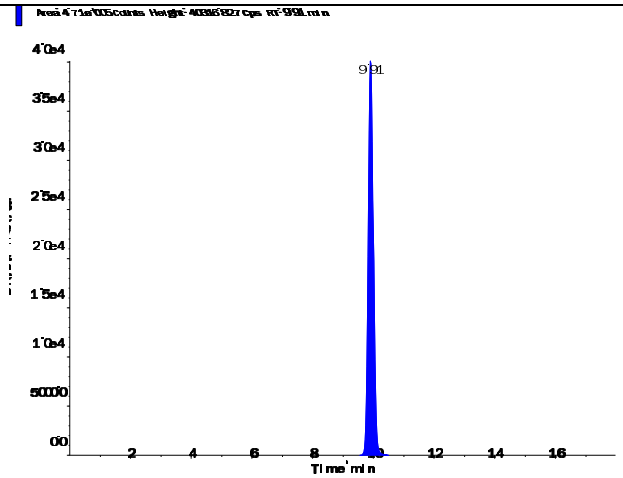

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

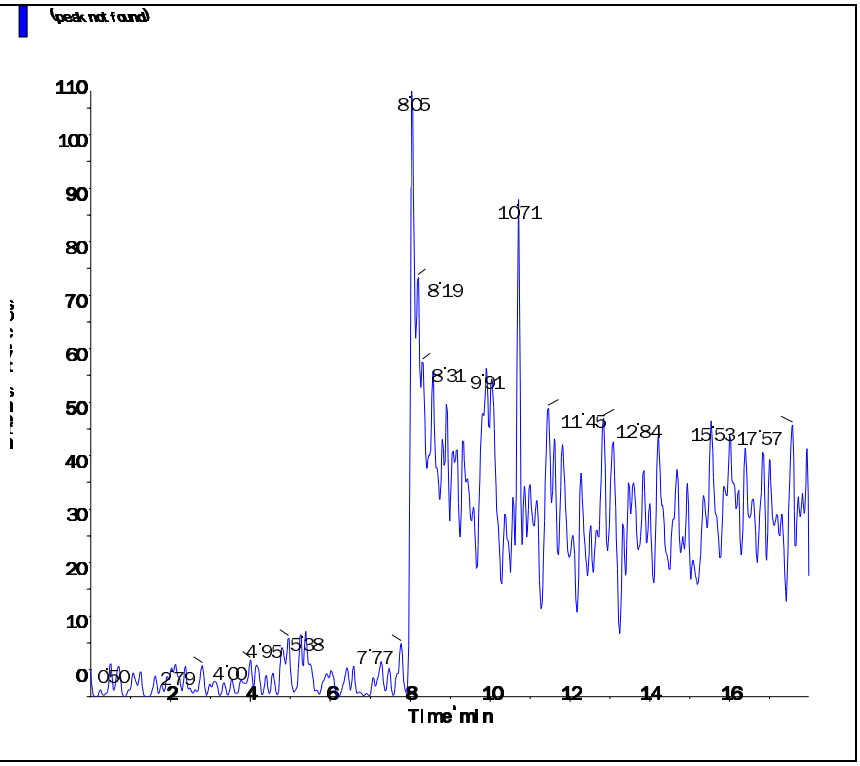

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

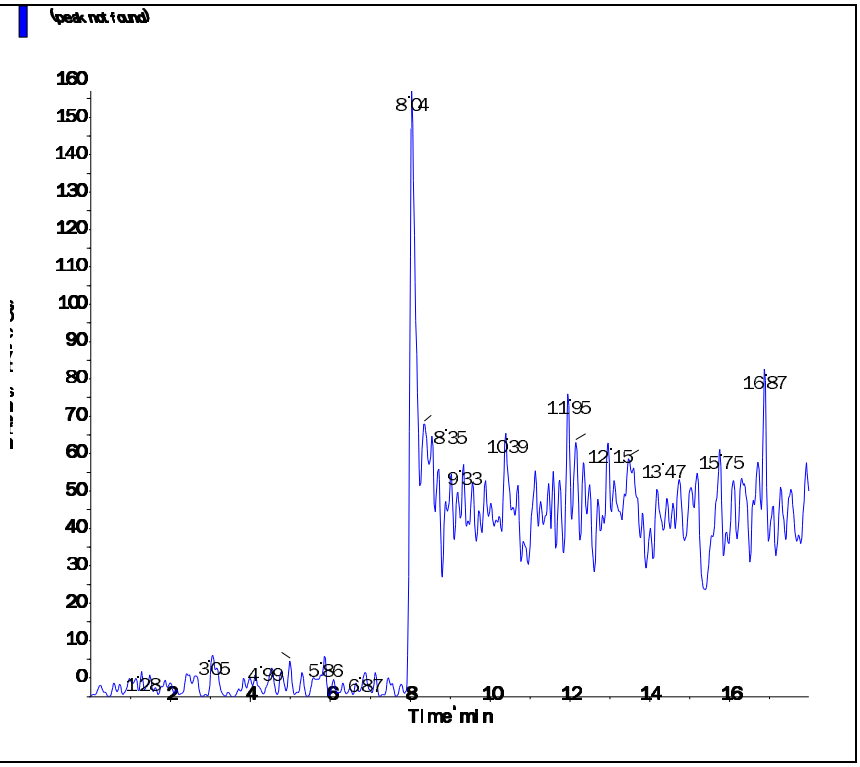

s.dataFile Page 2 of 2

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Created with Analyst Reporter
Printed: 3/8/2016 5:04 PM

Data File	LM33763.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/7/2016 8:33:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559981-04 CCB	**Injection Vial**	1.00
Data File	LM33763.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 8:33:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559981-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.720e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

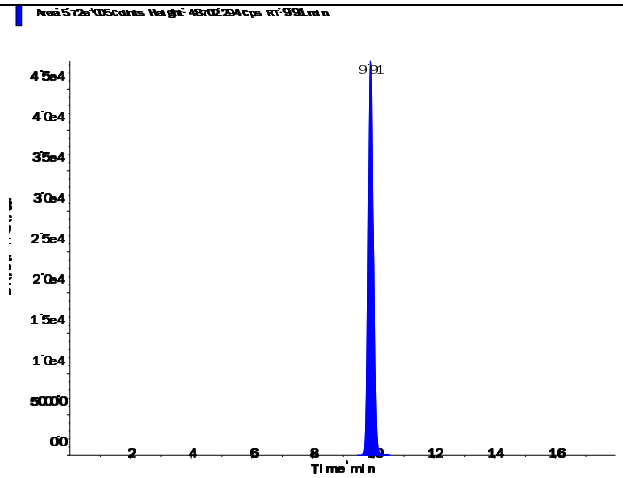

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

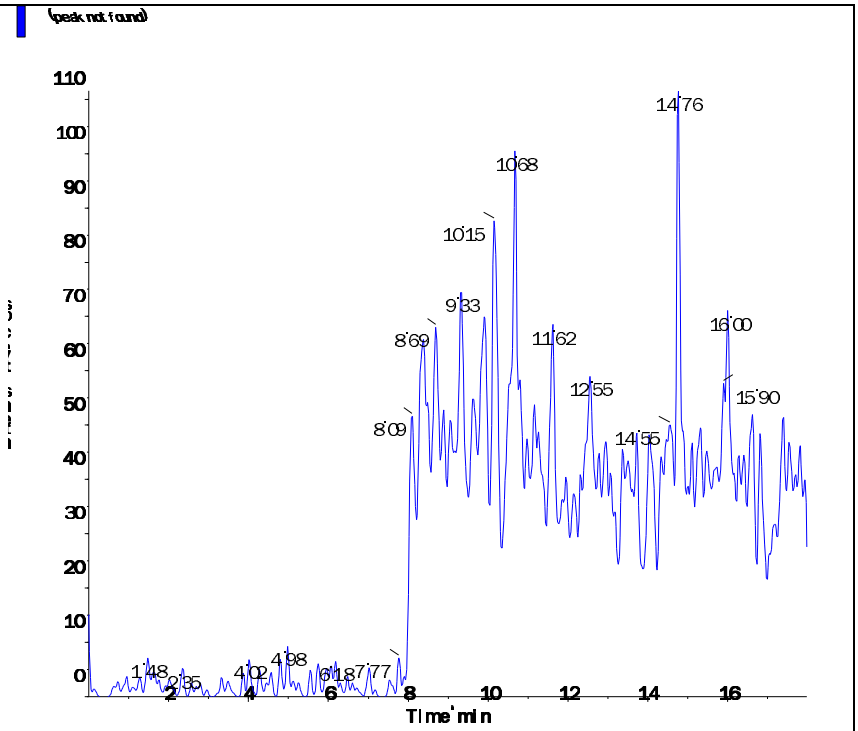

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

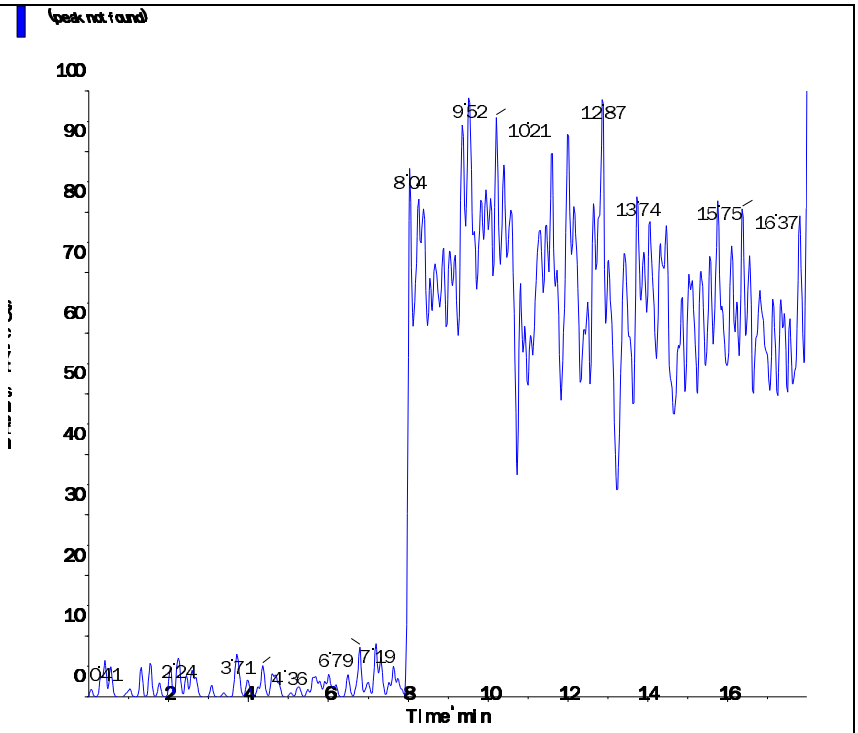

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Created with Analyst Reporter
Printed: 3/8/2016 5:07 PM

Data File	LM33769.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/7/2016 10:26:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559981-06 CCB	**Injection Vial**	1.00
Data File	LM33769.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 10:26:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559981-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	6.010e+05	9.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.90(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

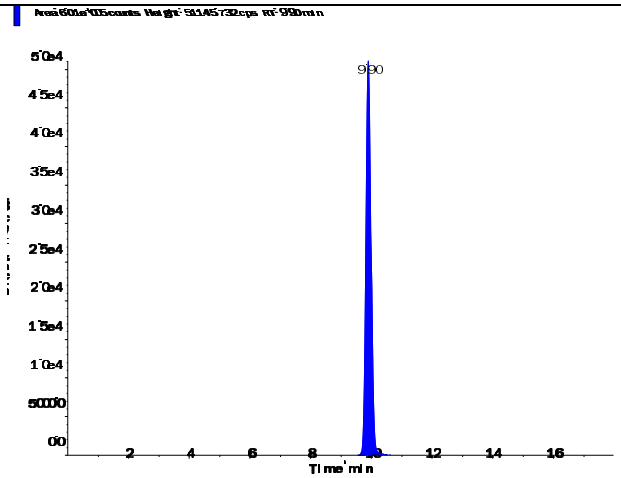

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Created with Analyst Reporter
Printed: 3/8/2016 5:07 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

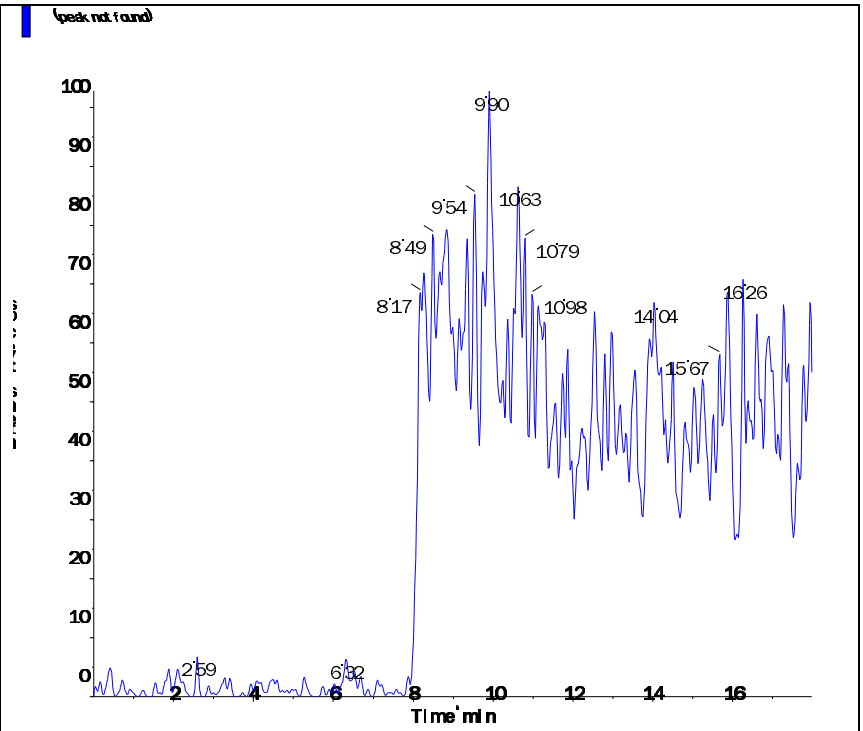

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

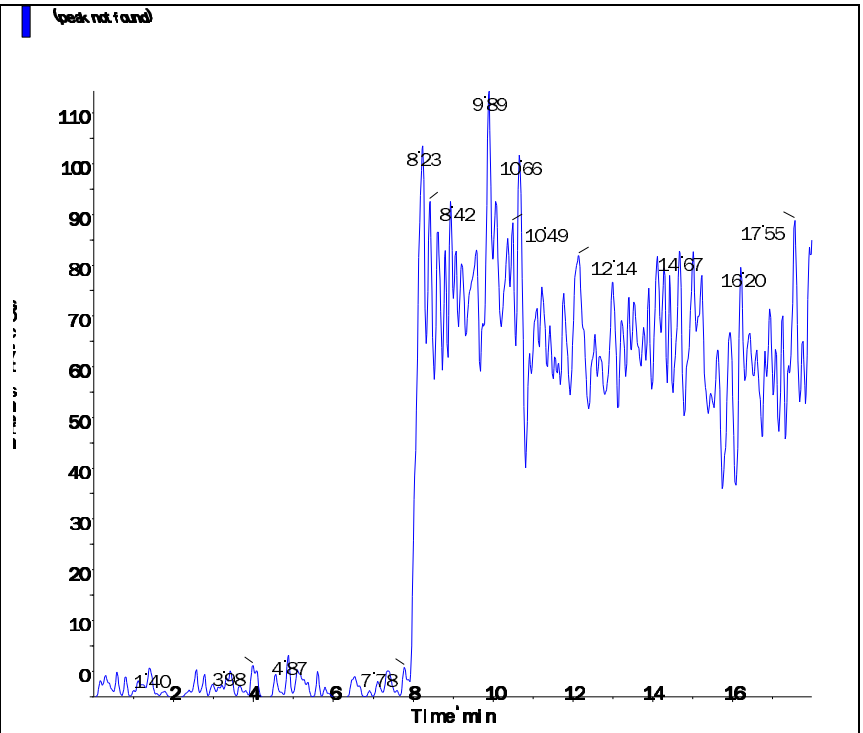

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Created with Analyst Reporter
Printed: 3/8/2016 5:08 PM

Data File	LM33772.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/8/2016 10:19:41 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559981-08 CCB	**Injection Vial**	1.00
Data File	LM33772.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 10:19:41 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559981-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.400e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

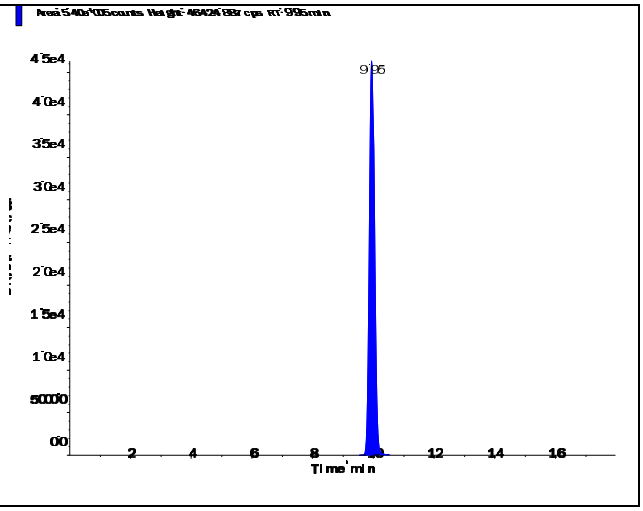

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

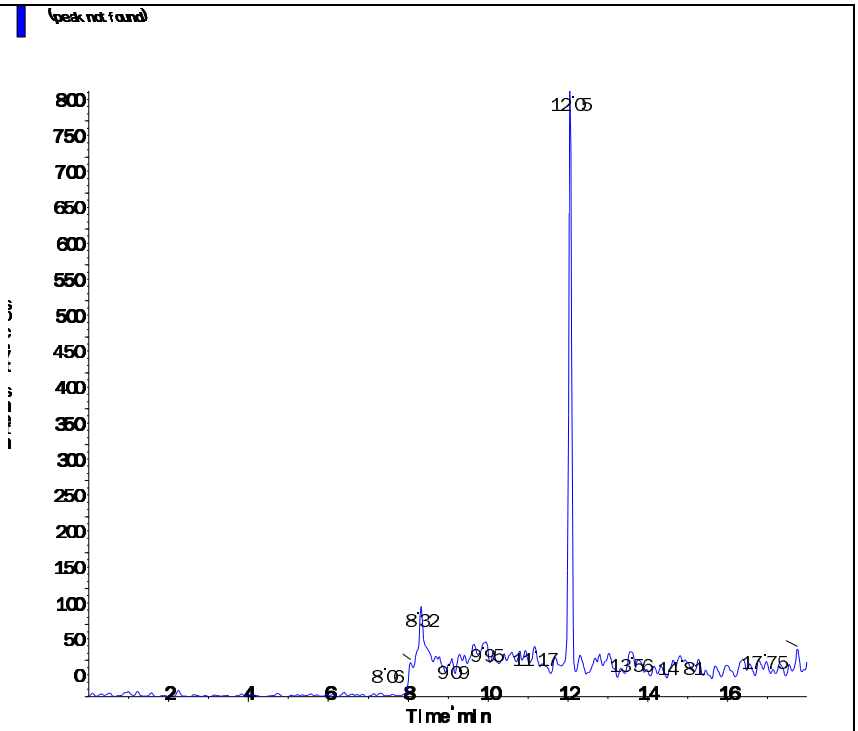

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

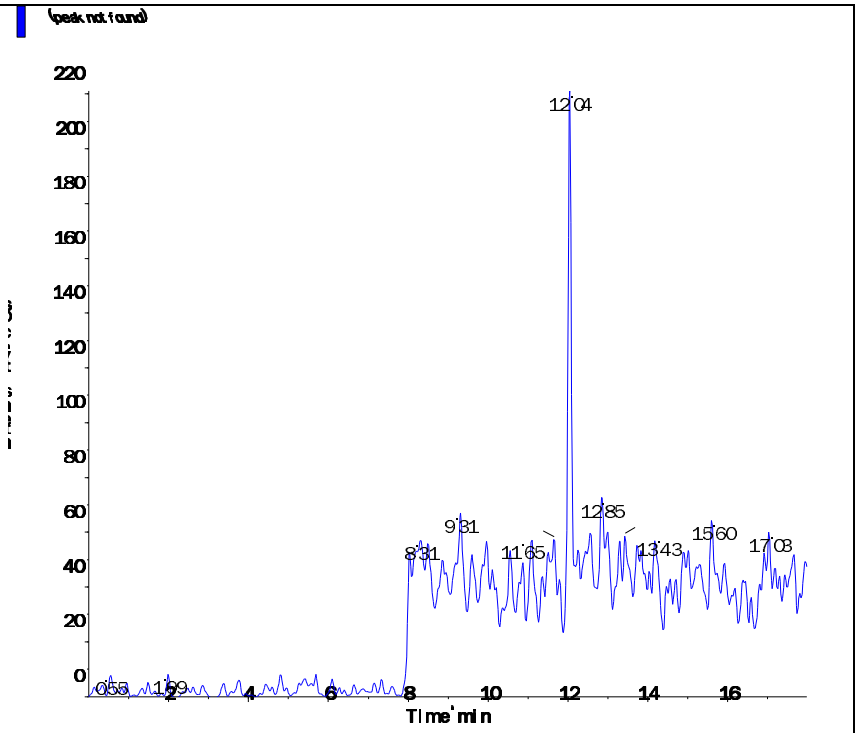

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Printed: 3/8/2016 5:10 PM

Data File	LM33779.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/8/2016 12:32:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559981-10 CCB	**Injection Vial**	1.00
Data File	LM33779.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 12:32:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559981-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.040e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	6.400e+02	9.90	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

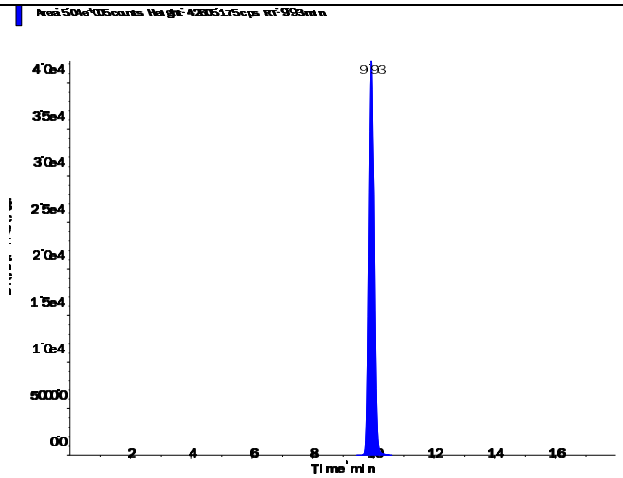

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Printed: 3/8/2016 5:10 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.94) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	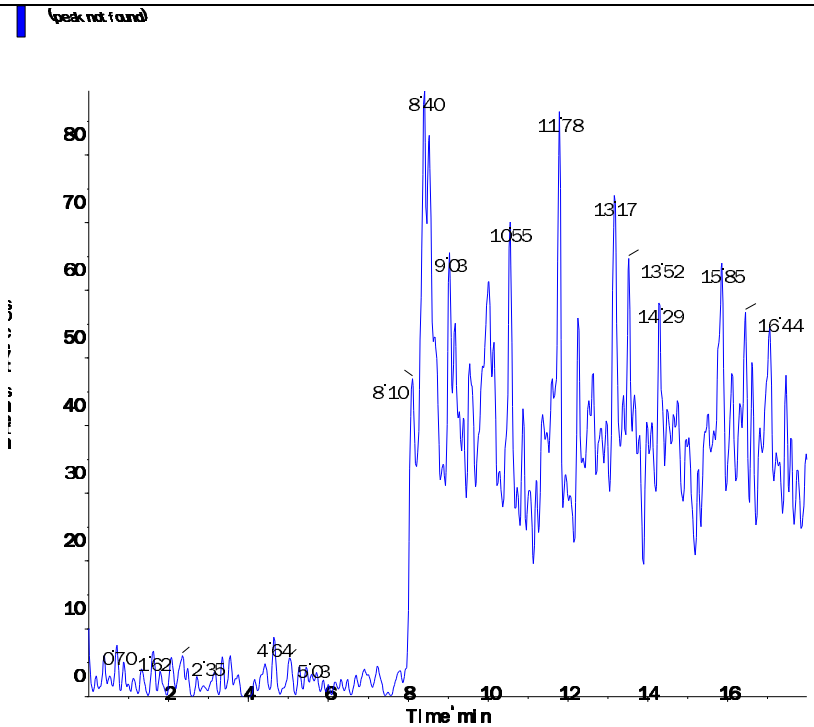
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.90 (9.92) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	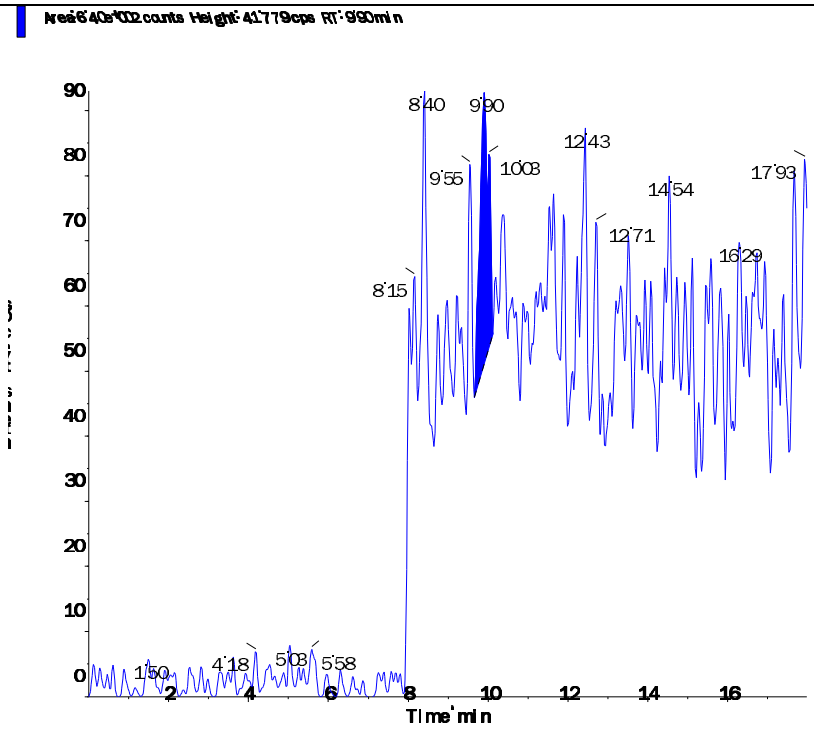

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Created with Analyst Reporter
Printed: 3/8/2016 5:00 PM

Data File	LM33751.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/7/2016 4:45:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559975-01 MCT (2.0ug/kg)	**Injection Vial**	4.00
Data File	LM33751.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 4:45:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559975-01	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.990e+05	9.49	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.590e+04	9.50	N/A	0.193
Perchlorate conf	1.280e+04	9.50	N/A	0.215

O18LP (Internal Standard)

RT (Exp. RT): 9.49(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

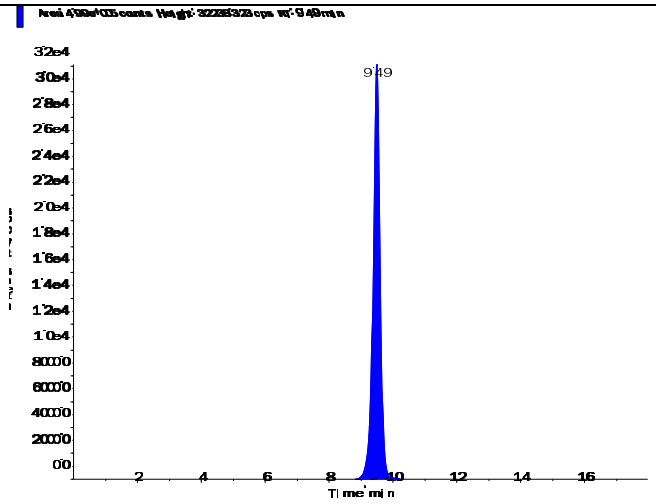

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Printed: 3/8/2016 5:00 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.50 (9.94) min
Calculated conc:	0.193 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

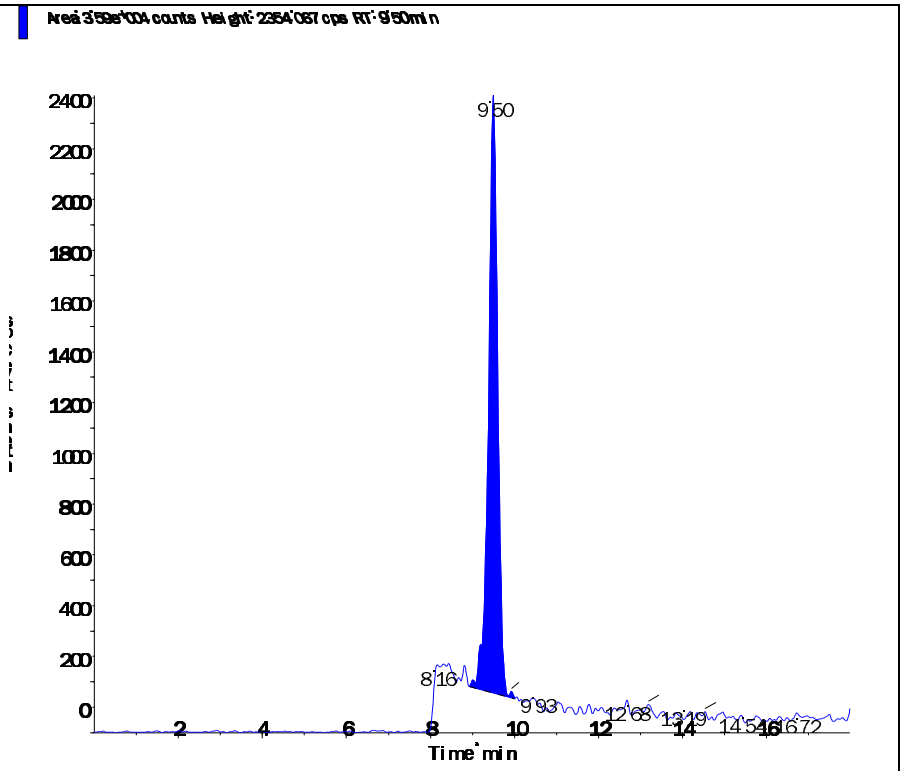

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.50 (9.92) min
Calculated conc:	0.215 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

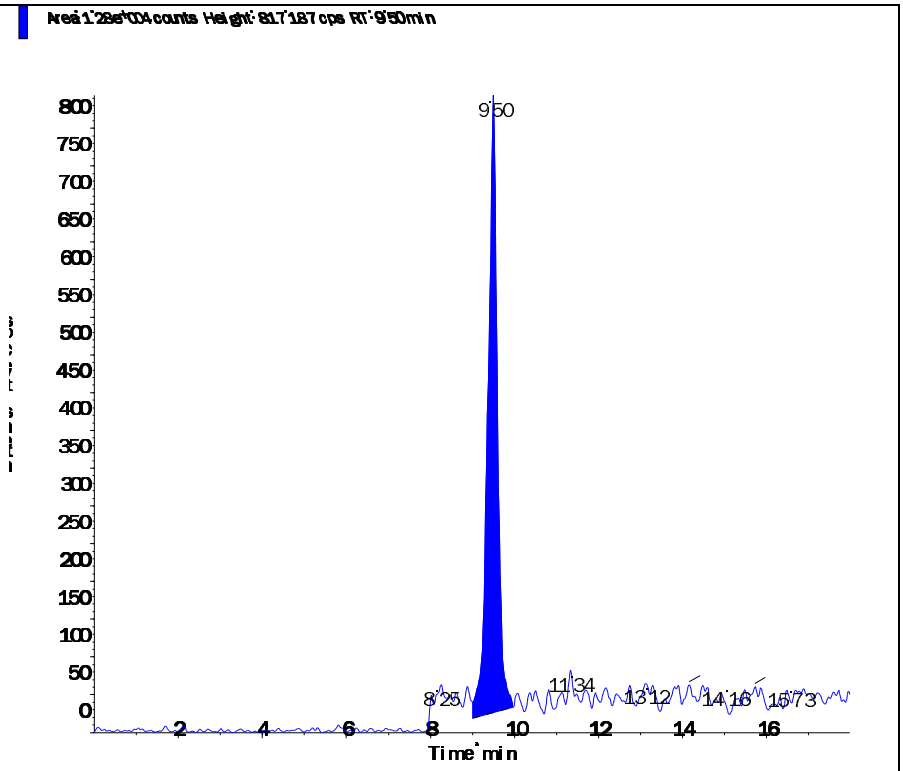

2.2.1.5 Raw QC Data

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Created with Analyst Reporter
Printed: 3/8/2016 5:01 PM

Data File	LM33752.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/7/2016 5:04:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559975-02 BLANK	**Injection Vial**	5.00
Data File	LM33752.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 5:04:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559975-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.890e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

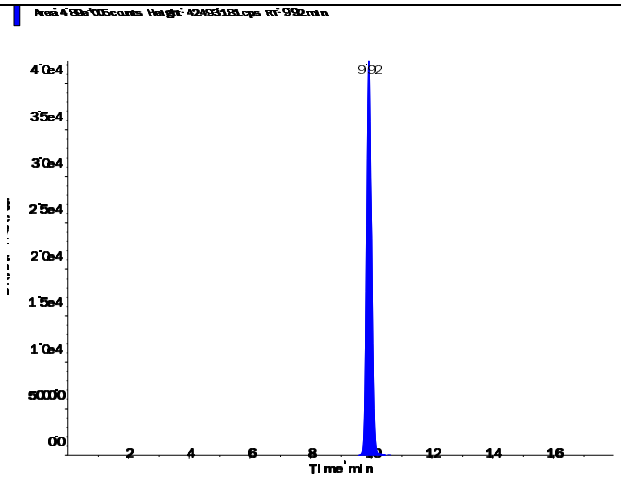

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

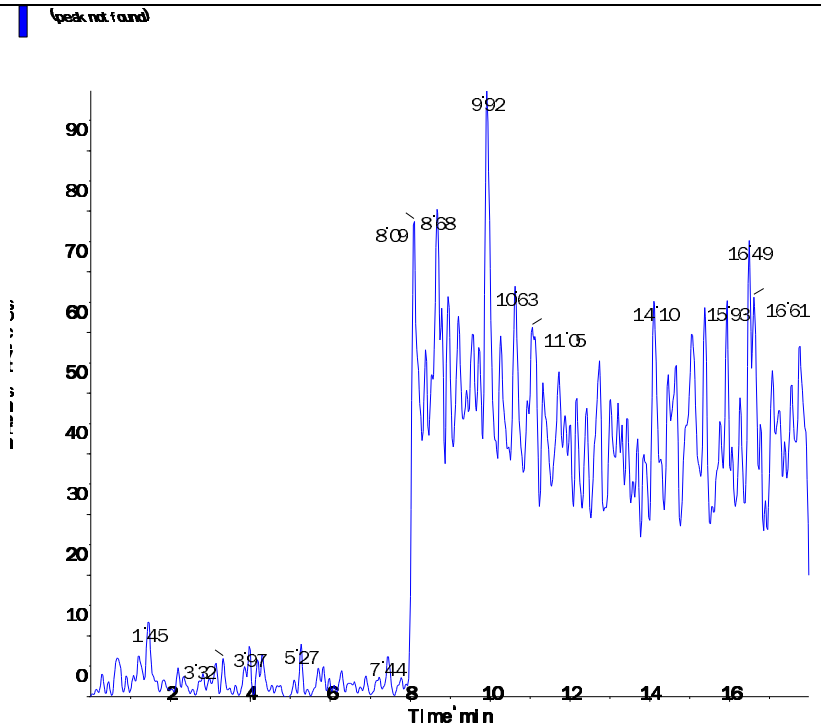

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

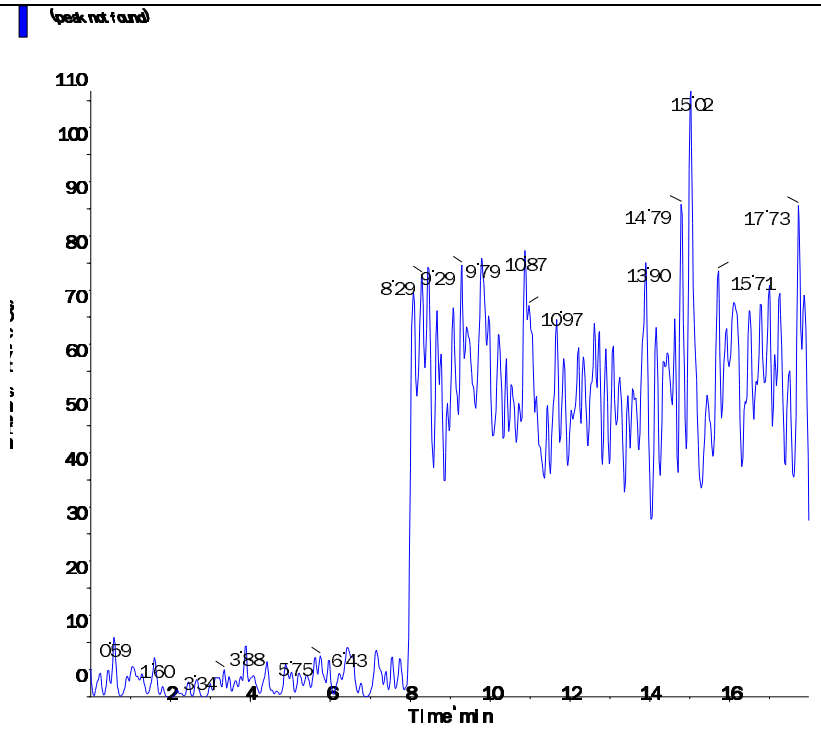

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Printed: 3/8/2016 5:01 PM

Data File	LM33753.wiff	**Result Table**	030716_JWR.rdb
Acquisition Date	3/7/2016 5:23:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559975-03 LCS (2.0ug/kg)	**Injection Vial**	6.00
Data File	LM33753.wiff	**Injection Volume**	10.00
Acquisition Date	3/7/2016 5:23:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030716_JWR.rdb
Sample ID	WG559975-03	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.580e+04	9.95	N/A	0.194
Perchlorate conf	1.180e+04	9.93	N/A	0.198

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

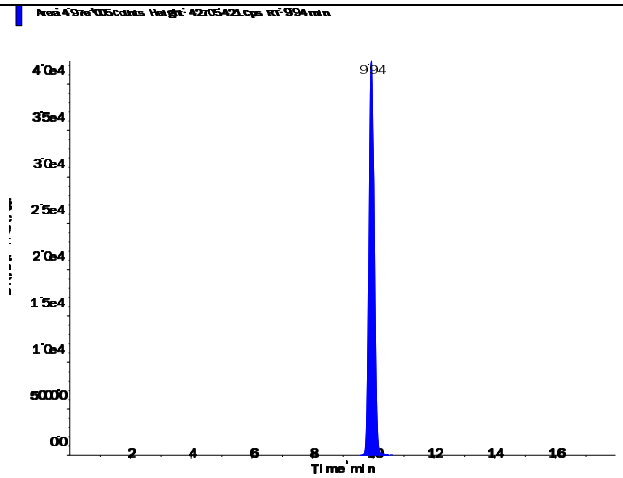

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Printed: 3/8/2016 5:01 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

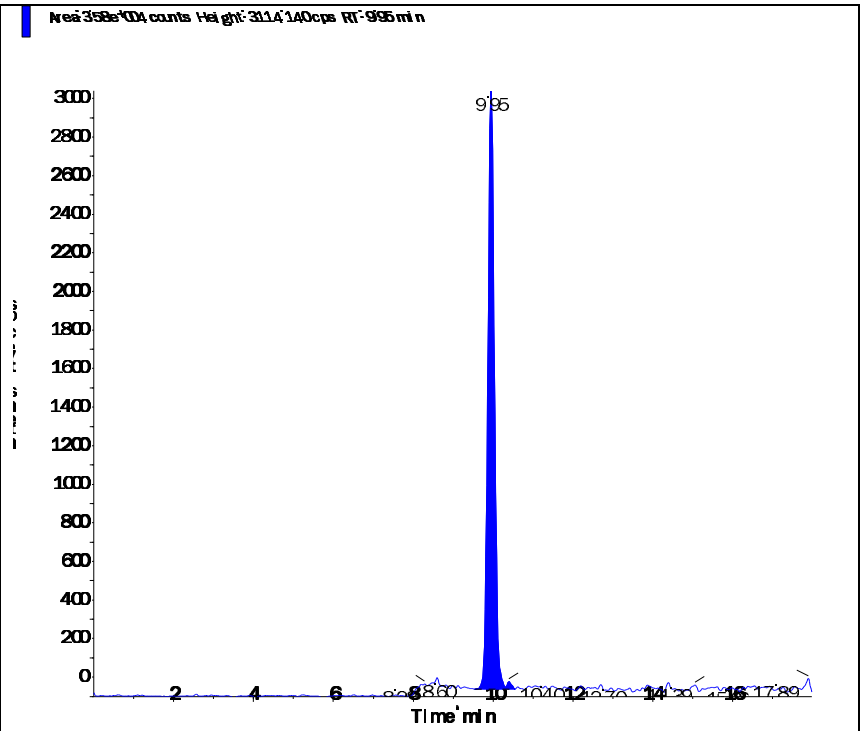

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	0.198 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

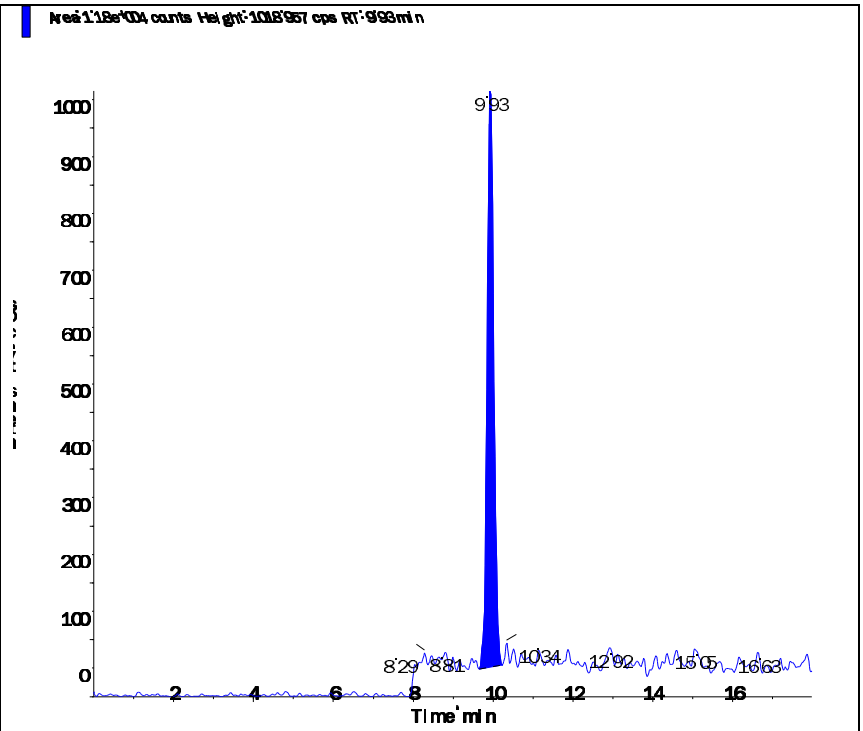

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2.3 General Chemistry Data

2.3.1 Percent Solids Data

2.3.1.1 Raw Data

Example Percent Solids Calculations

1.0 Calculating the percent solids of a sample.

$$\%Solids = \frac{WT3 - WT1}{WT2 - WT1} \times F$$

Where:	
WT1 = Weight, in grams, of the empty container	1.30 g
WT2 = Weight, in grams, of the container and wet sample	21.274 g
WT3 = Weight, in grams, of the container and dried sample	5.21 g
F = Factor to get units as percent weight	100
%Solids = Percent solids present in sample.	19.58%

2.0 Calculating the percent moisture of a sample.

% Moisture = 100 - % Solids from 1.0 calculation

Microbac Laboratories Inc.

PERCENT SOLIDS

Workgroup (AAB#): WG559963 Analyst: AC ADT(on): 03/07/2016 13:41
Method: D2216-90 Instrument: BAL021 ADT(off): 03/08/2016 07:21
SOP: K0003 Rev: 14

SAMPLE NUMBER	EMPTY PAN WT 1	WET WT 2	DRY WT 3A	DRY WT 3B	DRY WT 3C	PERCENT SOLID	PERCENT MOISTURE
L16030323-01	1.292	27.791	19.196			67.56	
L16030323-02	1.291	25.432	22.129			86.32	
L16030323-03	1.292	29.815	23.996			79.60	
L16030323-04	1.292	23.556	17.768			74.00	
L16030323-05	1.297	25.291	23.858			94.03	
L16030323-06	1.297	23.695	20.625			86.29	
WG559963-01	1.297	23.695	20.625			86.29	13.71
WG559963-02	1.292	27.959	24.463			86.89	13.11

Analyst: Andrea R Cochran

PERCENT_SOLIDS - Modified 04/24/2008
PDF ID: 4659892
Report generated: 03/08/2016 07:24

Microbac

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
March 10, 2016

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001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
March 10, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
March 10, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Stephanie Mossburg	Project Manager: Debra Richmon	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): KAYLA PALLANES	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Kayla Pallanes	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205			
Turn Around Time: STANDARD	pH:	Program:	
Project Name/Location: Longhorn			
Project Number: 60274185 11DAS0W16 DGI-RPT OL			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC 8260	Perchlorate 6850	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
	18DPT09(5-5.5)040316			3/4/16	1030		X	S	2	X	X					
	18DPT09(11-11.5)040316			3/4/16	1035		X	S	2	X	X					
	18DPT09(13.5-14)040316			3/4/16	1040		X	S	2	X	X					
	18DPT10(5-5.5)040316			3/4/16	1125		X	S	2	X	X					
	18DPT10(15.5-16)040316			3/4/16	1155		X	S	2	X	X					
	18DPT10(23.5-24)040316			3/4/16	1240		X	S	2	X	X					
	~~18DPT11(5-5.5)040316~~			~~3/4/16~~	~~1500~~		~~X~~	~~S~~	~~2~~	~~X~~	~~X~~					

ERPIMS REQUIRED FIELDS

Comments: ~~STANDARD TAT~~ 48 HR TAT

Relinquished by: (Signature) Kayla Pallanes	Date 3/4/16	Time 1700	Received by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)

Microbac OVD
Received: 03/07/2016 09:22
By: BRENDA GREENWALT 221000082832
Brenda Greenwalt

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030323
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 09-MAR-2016

Samplenum	Container ID	Products
L16030323-01	710484	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	07-MAR-2016 10:40	BRG		
2	ANALYZ	V1	ORG4	07-MAR-2016 10:50	AWE	CLS	

Samplenum	Container ID	Products
L16030323-01	710485	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	07-MAR-2016 10:40	BRG		
2	ANALYZ	L1	SEM	07-MAR-2016 12:50	JWR	BRG	
3	STORE	DIG	A1	07-MAR-2016 13:50	BRG	AC	

Samplenum	Container ID	Products
L16030323-02	710486	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	07-MAR-2016 10:40	BRG		
2	ANALYZ	V1	ORG4	07-MAR-2016 10:50	AWE	CLS	

Samplenum	Container ID	Products
L16030323-02	710487	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	07-MAR-2016 10:40	BRG		
2	ANALYZ	L1	SEM	07-MAR-2016 12:50	JWR	BRG	
3	STORE	DIG	A1	07-MAR-2016 13:50	BRG	AC	

Samplenum	Container ID	Products
L16030323-03	710488	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	07-MAR-2016 10:40	BRG		
2	ANALYZ	V1	ORG4	07-MAR-2016 10:51	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030323
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 09-MAR-2016

Samplenum	Container ID	Products
L16030323-03	710489	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	07-MAR-2016 10:40	BRG		
2	ANALYZ	L1	SEM	07-MAR-2016 12:50	JWR	BRG	
3	STORE	DIG	A1	07-MAR-2016 13:50	BRG	AC	

Samplenum	Container ID	Products
L16030323-04	710490	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	07-MAR-2016 10:40	BRG		
2	ANALYZ	V1	ORG4	07-MAR-2016 10:51	AWE	CLS	

Samplenum	Container ID	Products
L16030323-04	710491	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	07-MAR-2016 10:40	BRG		
2	ANALYZ	L1	SEM	07-MAR-2016 12:50	JWR	BRG	
3	STORE	DIG	A1	07-MAR-2016 13:50	BRG	AC	

Samplenum	Container ID	Products
L16030323-05	710492	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	07-MAR-2016 10:40	BRG		
2	ANALYZ	V1	ORG4	07-MAR-2016 10:51	AWE	CLS	

Samplenum	Container ID	Products
L16030323-05	710493	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	07-MAR-2016 10:40	BRG		
2	ANALYZ	L1	SEM	07-MAR-2016 12:50	JWR	BRG	
3	STORE	DIG	A1	07-MAR-2016 13:50	BRG	AC	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030323
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 09-MAR-2016

Samplenum	Container ID	Products
L16030323-06	710494	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	07-MAR-2016 10:40	BRG		
2	ANALYZ	V1	ORG4	07-MAR-2016 10:51	AWE	CLS	

Samplenum	Container ID	Products
L16030323-06	710495	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	07-MAR-2016 10:40	BRG		
2	ANALYZ	L1	SEM	07-MAR-2016 12:50	JWR	BRG	
3	STORE	DIG	A1	07-MAR-2016 13:50	BRG	AC	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16030366

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on March 11 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00110834	H	2.0		J2317165867	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	NA
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	NA

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18DPT11(5-5.5)040316	L16030366-01	03/04/2016 15:00	03/08/2016 09:50
18DPT11(15-15.5)040316	L16030366-02	03/04/2016 16:00	03/08/2016 09:50
18DPT11(20-20.5)070316	L16030366-03	03/07/2016 11:50	03/08/2016 09:50
18DPT11(29-29.5)070316	L16030366-04	03/07/2016 11:55	03/08/2016 09:50
18DPT11(25-25.5)070316	L16030366-05	03/07/2016 12:00	03/08/2016 09:50
18DPT12(5-5.5)070316	L16030366-06	03/07/2016 14:35	03/08/2016 09:50
18DPT12(8.5-9)070316	L16030366-07	03/07/2016 14:40	03/08/2016 09:50
18DPT12(18-18.5)070316	L16030366-08	03/07/2016 14:45	03/08/2016 09:50
18DPT12(12-12.5)070316	L16030366-09	03/07/2016 15:00	03/08/2016 09:50
18DPT13(5-5.5)070316	L16030366-10	03/07/2016 16:00	03/08/2016 09:50
18DPT13(12-12.5)070316	L16030366-11	03/07/2016 16:05	03/08/2016 09:50
18DPT13(17-17.5)070316	L16030366-12	03/07/2016 16:10	03/08/2016 09:50

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16030366
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.1 Narratives

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030366
Project Name:		**Method:**	8260
Prep Batch Number(s):	560255	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-10 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2016-03-10 15:14:44

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030366
Project Name:		**Method:**	8260
Prep Batch Number(s):	560255	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-10 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030366
Project Name:		**Method:**	8260
Prep Batch Number(s):	560255	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-10 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030366
Project Name:		**Method:**	8260
Prep Batch Number(s):	560255	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-10 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030366
Project Name:		**Method:**	8260
Prep Batch Number(s):	560255	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-10 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030366
Project Name:		**Method:**	8260
Prep Batch Number(s):	560255	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-10 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030366
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG560129	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-11 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-03-11 12:59:25

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030366
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG560129	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-11 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				
Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030366
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG560129	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-11 00:00:00		

Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				
Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030366
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG560129	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-11 00:00:00		

Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					
Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030366
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG560129	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-11 00:00:00		

Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030366
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG560135	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-08 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2016-03-08 20:10:52

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030366
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG560135	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-08 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?			X		
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?			X		
Were sample detection limits reported for all analytes not detected?			X		
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?			X		
Were blanks analyzed at the appropriate frequency?			X		
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?			X		
Were blank concentrations < MQL?			X		
Laboratory control samples (LCS):			X		
Were all COCs included in the LCS?			X		

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030366
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG560135	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-08 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?			X		
Were LCSs analyzed at the required frequency?			X		
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?			X		
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?			X		
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?			X		
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?			X		
Are unadjusted MQLs and DCSs included in the laboratory data package?			X		
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?			X		
Were percent RSDs or correlation coefficient criteria met?			X		

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030366
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG560135	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-08 00:00:00		

Was the number of standards recommended in the method used for all analytes?			X		
Were all points generated between the lowest and highest standard used to calculate the curve?			X		
Are ICAL data available for all instruments used?			X		
Has the initial calibration curve been verified using an appropriate second source standard?			X		
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030366
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG560135	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-08 00:00:00		

Was a MDL study performed for each reported analyte?			X		
Is the MDL either adjusted or supported by the analysis of DCSs?			X		
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?			X		
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030366
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG560135	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-08 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT11(5-5.5)040316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/09/2016 10:01
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560255	**Analyst:**	TMB	**Run Date:**	03/09/2016 15:23
Collect Date:	03/04/2016 15:00	**Dilution:**	1	**File ID:**	6M137684
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.7	U	25.4	12.7	6.36
Benzene	71-43-2	1.27	U	6.36	1.27	0.636
Bromobenzene	108-86-1	1.27	U	6.36	1.27	0.636
Bromochloromethane	74-97-5	2.54	U	6.36	2.54	1.27
Bromodichloromethane	75-27-4	1.27	U	6.36	1.27	0.636
Bromoform	75-25-2	1.27	U	6.36	1.27	0.636
Bromomethane	74-83-9	2.54	U	6.36	2.54	1.27
2-Butanone	78-93-3	6.36	U	12.7	6.36	3.18
n-Butylbenzene	104-51-8	1.27	U	6.36	1.27	0.636
sec-Butylbenzene	135-98-8	1.27	U	6.36	1.27	0.636
tert-Butylbenzene	98-06-6	1.27	U	6.36	1.27	0.636
Carbon disulfide	75-15-0	1.27	U	6.36	1.27	0.636
Carbon tetrachloride	56-23-5	1.27	U	6.36	1.27	0.636
Chlorobenzene	108-90-7	1.27	U	6.36	1.27	0.636
Chlorodibromomethane	124-48-1	1.27	U	6.36	1.27	0.636
Chloroethane	75-00-3	2.54	U	6.36	2.54	1.27
Chloroform	67-66-3	1.27	U	6.36	1.27	0.636
Chloromethane	74-87-3	5.08	U	12.7	5.08	2.54
2-Chlorotoluene	95-49-8	1.27	U	6.36	1.27	0.636
4-Chlorotoluene	106-43-4	1.27	U	6.36	1.27	0.636
1,2-Dibromo-3-chloropropane	96-12-8	5.08	U	12.7	5.08	2.54
1,2-Dibromoethane	106-93-4	1.27	U	6.36	1.27	0.636
Dibromomethane	74-95-3	1.27	U	6.36	1.27	0.636
1,2-Dichlorobenzene	95-50-1	1.27	U	6.36	1.27	0.636
1,3-Dichlorobenzene	541-73-1	1.27	U	6.36	1.27	0.636
1,4-Dichlorobenzene	106-46-7	1.27	U	6.36	1.27	0.636
Dichlorodifluoromethane	75-71-8	2.54	U	6.36	2.54	1.27
1,1-Dichloroethane	75-34-3	2.54	U	6.36	2.54	1.27
1,2-Dichloroethane	107-06-2	1.27	U	6.36	1.27	0.636
1,1-Dichloroethene	75-35-4	1.27	U	6.36	1.27	0.636
cis-1,2-Dichloroethene	156-59-2	1.27	U	6.36	1.27	0.636
trans-1,2-Dichloroethene	156-60-5	1.27	U	6.36	1.27	0.636

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.27	U	6.36	1.27	0.636
1,3-Dichloropropane	142-28-9	1.27	U	6.36	1.27	0.636
2,2-Dichloropropane	594-20-7	1.27	U	6.36	1.27	0.636
cis-1,3-Dichloropropene	10061-01-5	1.27	U	6.36	1.27	0.636
trans-1,3-Dichloropropene	10061-02-6	1.27	U	6.36	1.27	0.636
1,1-Dichloropropene	563-58-6	1.27	U	6.36	1.27	0.636
Ethylbenzene	100-41-4	1.27	U	6.36	1.27	0.636
2-Hexanone	591-78-6	6.36	U	12.7	6.36	3.18
Hexachlorobutadiene	87-68-3	1.27	U	6.36	1.27	0.636
Isopropylbenzene	98-82-8	1.27	U	6.36	1.27	0.636
p-Isopropyltoluene	99-87-6	1.27	U	6.36	1.27	0.636
4-Methyl-2-pentanone	108-10-1	6.36	U	12.7	6.36	3.18
Methylene chloride	75-09-2	2.54	U	6.36	2.54	1.27
Naphthalene	91-20-3	1.27	U	6.36	1.27	0.636
n-Propylbenzene	103-65-1	1.27	U	6.36	1.27	0.636
Styrene	100-42-5	1.27	U	6.36	1.27	0.636
1,1,1,2-Tetrachloroethane	630-20-6	1.27	U	6.36	1.27	0.636
1,1,2,2-Tetrachloroethane	79-34-5	1.27	U	6.36	1.27	0.636
Tetrachloroethene	127-18-4	1.27	U	6.36	1.27	0.636
Toluene	108-88-3	1.27	U	6.36	1.27	0.636
1,2,3-Trichlorobenzene	87-61-6	1.27	U	6.36	1.27	0.636
1,2,4-Trichlorobenzene	120-82-1	1.27	U	6.36	1.27	0.636
1,1,1-Trichloroethane	71-55-6	1.27	U	6.36	1.27	0.636
1,1,2-Trichloroethane	79-00-5	1.27	U	6.36	1.27	0.636
Trichloroethene	79-01-6	1.27	U	6.36	1.27	0.636
Trichlorofluoromethane	75-69-4	2.54	U	6.36	2.54	1.27
1,2,3-Trichloropropane	96-18-4	2.54	U	6.36	2.54	1.27
1,2,4-Trimethylbenzene	95-63-6	1.27	U	6.36	1.27	0.636
1,3,5-Trimethylbenzene	108-67-8	1.27	U	6.36	1.27	0.636
Vinyl chloride	75-01-4	2.54	U	6.36	2.54	1.27
o-Xylene	95-47-6	1.27	U	6.36	1.27	0.636
m-,p-Xylene	179601-23-1	1.27	U	6.36	1.27	0.636

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	90.3	80	120	
1,2-Dichloroethane-d4	84.9	80	120	
Toluene-d8	99.8	85	115	
4-Bromofluorobenzene	100	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT11(5-5.5)040316	**Prep Method:**	6850	**Prep Date:**	03/08/2016 13:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG560129	**Analyst:**	JWR	**Run Date:**	03/08/2016 16:35
Collect Date:	03/04/2016 15:00	**Dilution:**	1	**File ID:**	1LM.LM33786
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.46	U	4.92	2.46	1.23

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT11(15-15.5)040316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/09/2016 10:02
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560255	**Analyst:**	TMB	**Run Date:**	03/09/2016 15:57
Collect Date:	03/04/2016 16:00	**Dilution:**	1	**File ID:**	6M137685
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.3	U	26.7	13.3	6.67
Benzene	71-43-2	1.33	U	6.67	1.33	0.667
Bromobenzene	108-86-1	1.33	U	6.67	1.33	0.667
Bromochloromethane	74-97-5	2.66	U	6.67	2.66	1.33
Bromodichloromethane	75-27-4	1.33	U	6.67	1.33	0.667
Bromoform	75-25-2	1.33	U	6.67	1.33	0.667
Bromomethane	74-83-9	2.66	U	6.67	2.66	1.33
2-Butanone	78-93-3	6.66	U	13.3	6.66	3.33
n-Butylbenzene	104-51-8	1.33	U	6.67	1.33	0.667
sec-Butylbenzene	135-98-8	1.33	U	6.67	1.33	0.667
tert-Butylbenzene	98-06-6	1.33	U	6.67	1.33	0.667
Carbon disulfide	75-15-0	1.33	U	6.67	1.33	0.667
Carbon tetrachloride	56-23-5	1.33	U	6.67	1.33	0.667
Chlorobenzene	108-90-7	1.33	U	6.67	1.33	0.667
Chlorodibromomethane	124-48-1	1.33	U	6.67	1.33	0.667
Chloroethane	75-00-3	2.66	U	6.67	2.66	1.33
Chloroform	67-66-3	1.33	U	6.67	1.33	0.667
Chloromethane	74-87-3	5.34	U	13.3	5.34	2.67
2-Chlorotoluene	95-49-8	1.33	U	6.67	1.33	0.667
4-Chlorotoluene	106-43-4	1.33	U	6.67	1.33	0.667
1,2-Dibromo-3-chloropropane	96-12-8	5.34	U	13.3	5.34	2.67
1,2-Dibromoethane	106-93-4	1.33	U	6.67	1.33	0.667
Dibromomethane	74-95-3	1.33	U	6.67	1.33	0.667
1,2-Dichlorobenzene	95-50-1	1.33	U	6.67	1.33	0.667
1,3-Dichlorobenzene	541-73-1	1.33	U	6.67	1.33	0.667
1,4-Dichlorobenzene	106-46-7	1.33	U	6.67	1.33	0.667
Dichlorodifluoromethane	75-71-8	2.66	U	6.67	2.66	1.33
1,1-Dichloroethane	75-34-3	2.66	U	6.67	2.66	1.33
1,2-Dichloroethane	107-06-2	1.33	U	6.67	1.33	0.667
1,1-Dichloroethene	75-35-4	1.33	U	6.67	1.33	0.667
cis-1,2-Dichloroethene	156-59-2	1.33	U	6.67	1.33	0.667

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.33	U	6.67	1.33	0.667
1,2-Dichloropropane	78-87-5	1.33	U	6.67	1.33	0.667
1,3-Dichloropropane	142-28-9	1.33	U	6.67	1.33	0.667
2,2-Dichloropropane	594-20-7	1.33	U	6.67	1.33	0.667
cis-1,3-Dichloropropene	10061-01-5	1.33	U	6.67	1.33	0.667
trans-1,3-Dichloropropene	10061-02-6	1.33	U	6.67	1.33	0.667
1,1-Dichloropropene	563-58-6	1.33	U	6.67	1.33	0.667
Ethylbenzene	100-41-4	1.33	U	6.67	1.33	0.667
2-Hexanone	591-78-6	6.66	U	13.3	6.66	3.33
Hexachlorobutadiene	87-68-3	1.33	U	6.67	1.33	0.667
Isopropylbenzene	98-82-8	1.33	U	6.67	1.33	0.667
p-Isopropyltoluene	99-87-6	1.33	U	6.67	1.33	0.667
4-Methyl-2-pentanone	108-10-1	6.66	U	13.3	6.66	3.33
Methylene chloride	75-09-2	2.66	U	6.67	2.66	1.33
Naphthalene	91-20-3	1.33	U	6.67	1.33	0.667
n-Propylbenzene	103-65-1	1.33	U	6.67	1.33	0.667
Styrene	100-42-5	1.33	U	6.67	1.33	0.667
1,1,1,2-Tetrachloroethane	630-20-6	1.33	U	6.67	1.33	0.667
1,1,2,2-Tetrachloroethane	79-34-5	1.33	U	6.67	1.33	0.667
Tetrachloroethene	127-18-4	1.33	U	6.67	1.33	0.667
Toluene	108-88-3	1.33	U	6.67	1.33	0.667
1,2,3-Trichlorobenzene	87-61-6	1.33	U	6.67	1.33	0.667
1,2,4-Trichlorobenzene	120-82-1	1.33	U	6.67	1.33	0.667
1,1,1-Trichloroethane	71-55-6	1.33	U	6.67	1.33	0.667
1,1,2-Trichloroethane	79-00-5	1.33	U	6.67	1.33	0.667
Trichloroethene	79-01-6	1.33	U	6.67	1.33	0.667
Trichlorofluoromethane	75-69-4	2.66	U	6.67	2.66	1.33
1,2,3-Trichloropropane	96-18-4	2.66	U	6.67	2.66	1.33
1,2,4-Trimethylbenzene	95-63-6	1.33	U	6.67	1.33	0.667
1,3,5-Trimethylbenzene	108-67-8	1.33	U	6.67	1.33	0.667
Vinyl chloride	75-01-4	2.66	U	6.67	2.66	1.33
o-Xylene	95-47-6	1.33	U	6.67	1.33	0.667
m-,p-Xylene	179601-23-1	1.33	U	6.67	1.33	0.667

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.2	80	120	
1,2-Dichloroethane-d4	86.7	80	120	
Toluene-d8	98.9	85	115	
4-Bromofluorobenzene	99.3	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT11(15-15.5)040316	**Prep Method:**	6850	**Prep Date:**	03/08/2016 13:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG560129	**Analyst:**	JWR	**Run Date:**	03/09/2016 11:29
Collect Date:	03/04/2016 16:00	**Dilution:**	10	**File ID:**	1LM.LM33809
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	81.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	379		48.4	24.2	12.1

Certificate of Analysis

Sample #:	L16030366-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT11(20-20.5)070316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/09/2016 10:03
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560255	**Analyst:**	TMB	**Run Date:**	03/09/2016 16:31
Collect Date:	03/07/2016 11:50	**Dilution:**	1	**File ID:**	6M137686
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	25.0	12.5	6.25
Benzene	71-43-2	1.25	U	6.25	1.25	0.625
Bromobenzene	108-86-1	1.25	U	6.25	1.25	0.625
Bromochloromethane	74-97-5	2.50	U	6.25	2.50	1.25
Bromodichloromethane	75-27-4	1.25	U	6.25	1.25	0.625
Bromoform	75-25-2	1.25	U	6.25	1.25	0.625
Bromomethane	74-83-9	2.50	U	6.25	2.50	1.25
2-Butanone	78-93-3	6.26	U	12.5	6.26	3.13
n-Butylbenzene	104-51-8	1.25	U	6.25	1.25	0.625
sec-Butylbenzene	135-98-8	1.25	U	6.25	1.25	0.625
tert-Butylbenzene	98-06-6	1.25	U	6.25	1.25	0.625
Carbon disulfide	75-15-0	1.25	U	6.25	1.25	0.625
Carbon tetrachloride	56-23-5	1.25	U	6.25	1.25	0.625
Chlorobenzene	108-90-7	1.25	U	6.25	1.25	0.625
Chlorodibromomethane	124-48-1	1.25	U	6.25	1.25	0.625
Chloroethane	75-00-3	2.50	U	6.25	2.50	1.25
Chloroform	67-66-3	1.25	U	6.25	1.25	0.625
Chloromethane	74-87-3	5.00	U	12.5	5.00	2.50
2-Chlorotoluene	95-49-8	1.25	U	6.25	1.25	0.625
4-Chlorotoluene	106-43-4	1.25	U	6.25	1.25	0.625

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	5.00	U	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	6.25	1.25	0.625
Dibromomethane	74-95-3	1.25	U	6.25	1.25	0.625
1,2-Dichlorobenzene	95-50-1	1.25	U	6.25	1.25	0.625
1,3-Dichlorobenzene	541-73-1	1.25	U	6.25	1.25	0.625
1,4-Dichlorobenzene	106-46-7	1.25	U	6.25	1.25	0.625
Dichlorodifluoromethane	75-71-8	2.50	U	6.25	2.50	1.25
1,1-Dichloroethane	75-34-3	2.50	U	6.25	2.50	1.25
1,2-Dichloroethane	107-06-2	1.25	U	6.25	1.25	0.625
1,1-Dichloroethene	75-35-4	1.25	U	6.25	1.25	0.625
cis-1,2-Dichloroethene	156-59-2	1.25	U	6.25	1.25	0.625
trans-1,2-Dichloroethene	156-60-5	1.25	U	6.25	1.25	0.625
1,2-Dichloropropane	78-87-5	1.25	U	6.25	1.25	0.625
1,3-Dichloropropane	142-28-9	1.25	U	6.25	1.25	0.625
2,2-Dichloropropane	594-20-7	1.25	U	6.25	1.25	0.625
cis-1,3-Dichloropropene	10061-01-5	1.25	U	6.25	1.25	0.625
trans-1,3-Dichloropropene	10061-02-6	1.25	U	6.25	1.25	0.625
1,1-Dichloropropene	563-58-6	1.25	U	6.25	1.25	0.625
Ethylbenzene	100-41-4	1.25	U	6.25	1.25	0.625
2-Hexanone	591-78-6	6.26	U	12.5	6.26	3.13
Hexachlorobutadiene	87-68-3	1.25	U	6.25	1.25	0.625
Isopropylbenzene	98-82-8	1.25	U	6.25	1.25	0.625
p-Isopropyltoluene	99-87-6	1.25	U	6.25	1.25	0.625
4-Methyl-2-pentanone	108-10-1	6.26	U	12.5	6.26	3.13
Methylene chloride	75-09-2	2.50	U	6.25	2.50	1.25
Naphthalene	91-20-3	1.25	U	6.25	1.25	0.625
n-Propylbenzene	103-65-1	1.25	U	6.25	1.25	0.625
Styrene	100-42-5	1.25	U	6.25	1.25	0.625
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	6.25	1.25	0.625
1,1,2,2-Tetrachloroethane	79-34-5	1.25	U	6.25	1.25	0.625
Tetrachloroethene	127-18-4	1.25	U	6.25	1.25	0.625
Toluene	108-88-3	1.25	U	6.25	1.25	0.625
1,2,3-Trichlorobenzene	87-61-6	1.25	U	6.25	1.25	0.625
1,2,4-Trichlorobenzene	120-82-1	1.25	U	6.25	1.25	0.625
1,1,1-Trichloroethane	71-55-6	1.25	U	6.25	1.25	0.625
1,1,2-Trichloroethane	79-00-5	1.25	U	6.25	1.25	0.625
Trichloroethene	79-01-6	1.25	U	6.25	1.25	0.625
Trichlorofluoromethane	75-69-4	2.50	U	6.25	2.50	1.25
1,2,3-Trichloropropane	96-18-4	2.50	U	6.25	2.50	1.25

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.25	U	6.25	1.25	0.625
1,3,5-Trimethylbenzene	108-67-8	1.25	U	6.25	1.25	0.625
Vinyl chloride	75-01-4	2.50	U	6.25	2.50	1.25
o-Xylene	95-47-6	1.25	U	6.25	1.25	0.625
m-,p-Xylene	179601-23-1	1.25	U	6.25	1.25	0.625

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.4	80	120	
1,2-Dichloroethane-d4	87.7	80	120	
Toluene-d8	98.0	85	115	
4-Bromofluorobenzene	99.3	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT11(20-20.5)070316	**Prep Method:**	6850	**Prep Date:**	03/08/2016 13:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG560129	**Analyst:**	JWR	**Run Date:**	03/09/2016 11:48
Collect Date:	03/07/2016 11:50	**Dilution:**	100	**File ID:**	1LM.LM33810
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	82.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3940		472	236	118

Certificate of Analysis

Sample #:	L16030366-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT11(29-29.5)070316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/09/2016 10:03
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560255	**Analyst:**	TMB	**Run Date:**	03/09/2016 17:04
Collect Date:	03/07/2016 11:55	**Dilution:**	1	**File ID:**	6M137687
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.0	U	26.1	13.0	6.52
Benzene	71-43-2	1.30	U	6.52	1.30	0.652
Bromobenzene	108-86-1	1.30	U	6.52	1.30	0.652
Bromochloromethane	74-97-5	2.60	U	6.52	2.60	1.30
Bromodichloromethane	75-27-4	1.30	U	6.52	1.30	0.652
Bromoform	75-25-2	1.30	U	6.52	1.30	0.652
Bromomethane	74-83-9	2.60	U	6.52	2.60	1.30
2-Butanone	78-93-3	6.52	U	13.0	6.52	3.26
n-Butylbenzene	104-51-8	1.30	U	6.52	1.30	0.652
sec-Butylbenzene	135-98-8	1.30	U	6.52	1.30	0.652
tert-Butylbenzene	98-06-6	1.30	U	6.52	1.30	0.652
Carbon disulfide	75-15-0	1.30	U	6.52	1.30	0.652
Carbon tetrachloride	56-23-5	1.30	U	6.52	1.30	0.652
Chlorobenzene	108-90-7	1.30	U	6.52	1.30	0.652
Chlorodibromomethane	124-48-1	1.30	U	6.52	1.30	0.652
Chloroethane	75-00-3	2.60	U	6.52	2.60	1.30
Chloroform	67-66-3	1.30	U	6.52	1.30	0.652
Chloromethane	74-87-3	5.22	U	13.0	5.22	2.61
2-Chlorotoluene	95-49-8	1.30	U	6.52	1.30	0.652
4-Chlorotoluene	106-43-4	1.30	U	6.52	1.30	0.652

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	5.22	U	13.0	5.22	2.61
1,2-Dibromoethane	106-93-4	1.30	U	6.52	1.30	0.652
Dibromomethane	74-95-3	1.30	U	6.52	1.30	0.652
1,2-Dichlorobenzene	95-50-1	1.30	U	6.52	1.30	0.652
1,3-Dichlorobenzene	541-73-1	1.30	U	6.52	1.30	0.652
1,4-Dichlorobenzene	106-46-7	1.30	U	6.52	1.30	0.652
Dichlorodifluoromethane	75-71-8	2.60	U	6.52	2.60	1.30
1,1-Dichloroethane	75-34-3	2.60	U	6.52	2.60	1.30
1,2-Dichloroethane	107-06-2	1.30	U	6.52	1.30	0.652
1,1-Dichloroethene	75-35-4	1.30	U	6.52	1.30	0.652
cis-1,2-Dichloroethene	156-59-2	1.30	U	6.52	1.30	0.652
trans-1,2-Dichloroethene	156-60-5	1.30	U	6.52	1.30	0.652
1,2-Dichloropropane	78-87-5	1.30	U	6.52	1.30	0.652
1,3-Dichloropropane	142-28-9	1.30	U	6.52	1.30	0.652
2,2-Dichloropropane	594-20-7	1.30	U	6.52	1.30	0.652
cis-1,3-Dichloropropene	10061-01-5	1.30	U	6.52	1.30	0.652
trans-1,3-Dichloropropene	10061-02-6	1.30	U	6.52	1.30	0.652
1,1-Dichloropropene	563-58-6	1.30	U	6.52	1.30	0.652
Ethylbenzene	100-41-4	1.30	U	6.52	1.30	0.652
2-Hexanone	591-78-6	6.52	U	13.0	6.52	3.26
Hexachlorobutadiene	87-68-3	1.30	U	6.52	1.30	0.652
Isopropylbenzene	98-82-8	1.30	U	6.52	1.30	0.652
p-Isopropyltoluene	99-87-6	1.30	U	6.52	1.30	0.652
4-Methyl-2-pentanone	108-10-1	6.52	U	13.0	6.52	3.26
Methylene chloride	75-09-2	2.60	U	6.52	2.60	1.30
Naphthalene	91-20-3	1.30	U	6.52	1.30	0.652
n-Propylbenzene	103-65-1	1.30	U	6.52	1.30	0.652
Styrene	100-42-5	1.30	U	6.52	1.30	0.652
1,1,1,2-Tetrachloroethane	630-20-6	1.30	U	6.52	1.30	0.652
1,1,2,2-Tetrachloroethane	79-34-5	1.30	U	6.52	1.30	0.652
Tetrachloroethene	127-18-4	1.30	U	6.52	1.30	0.652
Toluene	108-88-3	1.30	U	6.52	1.30	0.652
1,2,3-Trichlorobenzene	87-61-6	1.30	U	6.52	1.30	0.652
1,2,4-Trichlorobenzene	120-82-1	1.30	U	6.52	1.30	0.652
1,1,1-Trichloroethane	71-55-6	1.30	U	6.52	1.30	0.652
1,1,2-Trichloroethane	79-00-5	1.30	U	6.52	1.30	0.652
Trichloroethene	79-01-6	1.30	U	6.52	1.30	0.652
Trichlorofluoromethane	75-69-4	2.60	U	6.52	2.60	1.30
1,2,3-Trichloropropane	96-18-4	2.60	U	6.52	2.60	1.30

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Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.30	U	6.52	1.30	0.652
1,3,5-Trimethylbenzene	108-67-8	1.30	U	6.52	1.30	0.652
Vinyl chloride	75-01-4	2.60	U	6.52	2.60	1.30
o-Xylene	95-47-6	1.30	U	6.52	1.30	0.652
m-,p-Xylene	179601-23-1	1.30	U	6.52	1.30	0.652

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.6	80	120	
1,2-Dichloroethane-d4	89.6	80	120	
Toluene-d8	98.0	85	115	
4-Bromofluorobenzene	101	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT11(29-29.5)070316	**Prep Method:**	6850	**Prep Date:**	03/08/2016 13:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG560129	**Analyst:**	JWR	**Run Date:**	03/09/2016 12:07
Collect Date:	03/07/2016 11:55	**Dilution:**	100	**File ID:**	1LM.LM33811
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	79.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3370		496	248	124

Certificate of Analysis

Sample #:	L16030366-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT11(25-25.5)070316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/09/2016 10:04
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560255	**Analyst:**	TMB	**Run Date:**	03/09/2016 17:37
Collect Date:	03/07/2016 12:00	**Dilution:**	1	**File ID:**	6M137688
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.7	U	27.5	13.7	6.87
Benzene	71-43-2	1.37	U	6.87	1.37	0.687
Bromobenzene	108-86-1	1.37	U	6.87	1.37	0.687
Bromochloromethane	74-97-5	2.74	U	6.87	2.74	1.37
Bromodichloromethane	75-27-4	1.37	U	6.87	1.37	0.687
Bromoform	75-25-2	1.37	U	6.87	1.37	0.687
Bromomethane	74-83-9	2.74	U	6.87	2.74	1.37
2-Butanone	78-93-3	6.88	U	13.7	6.88	3.44
n-Butylbenzene	104-51-8	1.37	U	6.87	1.37	0.687
sec-Butylbenzene	135-98-8	1.37	U	6.87	1.37	0.687
tert-Butylbenzene	98-06-6	1.37	U	6.87	1.37	0.687
Carbon disulfide	75-15-0	1.37	U	6.87	1.37	0.687
Carbon tetrachloride	56-23-5	1.37	U	6.87	1.37	0.687
Chlorobenzene	108-90-7	1.37	U	6.87	1.37	0.687
Chlorodibromomethane	124-48-1	1.37	U	6.87	1.37	0.687
Chloroethane	75-00-3	2.74	U	6.87	2.74	1.37
Chloroform	67-66-3	1.37	U	6.87	1.37	0.687
Chloromethane	74-87-3	5.50	U	13.7	5.50	2.75
2-Chlorotoluene	95-49-8	1.37	U	6.87	1.37	0.687
4-Chlorotoluene	106-43-4	1.37	U	6.87	1.37	0.687

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Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	5.50	U	13.7	5.50	2.75
1,2-Dibromoethane	106-93-4	1.37	U	6.87	1.37	0.687
Dibromomethane	74-95-3	1.37	U	6.87	1.37	0.687
1,2-Dichlorobenzene	95-50-1	1.37	U	6.87	1.37	0.687
1,3-Dichlorobenzene	541-73-1	1.37	U	6.87	1.37	0.687
1,4-Dichlorobenzene	106-46-7	1.37	U	6.87	1.37	0.687
Dichlorodifluoromethane	75-71-8	2.74	U	6.87	2.74	1.37
1,1-Dichloroethane	75-34-3	2.74	U	6.87	2.74	1.37
1,2-Dichloroethane	107-06-2	1.37	U	6.87	1.37	0.687
1,1-Dichloroethene	75-35-4	1.37	U	6.87	1.37	0.687
cis-1,2-Dichloroethene	156-59-2	1.37	U	6.87	1.37	0.687
trans-1,2-Dichloroethene	156-60-5	1.37	U	6.87	1.37	0.687
1,2-Dichloropropane	78-87-5	1.37	U	6.87	1.37	0.687
1,3-Dichloropropane	142-28-9	1.37	U	6.87	1.37	0.687
2,2-Dichloropropane	594-20-7	1.37	U	6.87	1.37	0.687
cis-1,3-Dichloropropene	10061-01-5	1.37	U	6.87	1.37	0.687
trans-1,3-Dichloropropene	10061-02-6	1.37	U	6.87	1.37	0.687
1,1-Dichloropropene	563-58-6	1.37	U	6.87	1.37	0.687
Ethylbenzene	100-41-4	1.37	U	6.87	1.37	0.687
2-Hexanone	591-78-6	6.88	U	13.7	6.88	3.44
Hexachlorobutadiene	87-68-3	1.37	U	6.87	1.37	0.687
Isopropylbenzene	98-82-8	1.37	U	6.87	1.37	0.687
p-Isopropyltoluene	99-87-6	1.37	U	6.87	1.37	0.687
4-Methyl-2-pentanone	108-10-1	6.88	U	13.7	6.88	3.44
Methylene chloride	75-09-2	2.74	U	6.87	2.74	1.37
Naphthalene	91-20-3	1.37	U	6.87	1.37	0.687
n-Propylbenzene	103-65-1	1.37	U	6.87	1.37	0.687
Styrene	100-42-5	1.37	U	6.87	1.37	0.687
1,1,1,2-Tetrachloroethane	630-20-6	1.37	U	6.87	1.37	0.687
1,1,2,2-Tetrachloroethane	79-34-5	1.37	U	6.87	1.37	0.687
Tetrachloroethene	127-18-4	1.37	U	6.87	1.37	0.687
Toluene	108-88-3	1.37	U	6.87	1.37	0.687
1,2,3-Trichlorobenzene	87-61-6	1.37	U	6.87	1.37	0.687
1,2,4-Trichlorobenzene	120-82-1	1.37	U	6.87	1.37	0.687
1,1,1-Trichloroethane	71-55-6	1.37	U	6.87	1.37	0.687
1,1,2-Trichloroethane	79-00-5	1.37	U	6.87	1.37	0.687
Trichloroethene	79-01-6	1.37	U	6.87	1.37	0.687
Trichlorofluoromethane	75-69-4	2.74	U	6.87	2.74	1.37
1,2,3-Trichloropropane	96-18-4	2.74	U	6.87	2.74	1.37

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Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.37	U	6.87	1.37	0.687
1,3,5-Trimethylbenzene	108-67-8	1.37	U	6.87	1.37	0.687
Vinyl chloride	75-01-4	2.74	U	6.87	2.74	1.37
o-Xylene	95-47-6	1.37	U	6.87	1.37	0.687
m-,p-Xylene	179601-23-1	1.37	U	6.87	1.37	0.687

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.9	80	120	
1,2-Dichloroethane-d4	89.1	80	120	
Toluene-d8	97.7	85	115	
4-Bromofluorobenzene	100	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT11(25-25.5)070316	**Prep Method:**	6850	**Prep Date:**	03/08/2016 13:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG560129	**Analyst:**	JWR	**Run Date:**	03/09/2016 12:26
Collect Date:	03/07/2016 12:00	**Dilution:**	10	**File ID:**	1LM.LM33812
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	79.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	424		49.7	24.8	12.4

Certificate of Analysis

Sample #:	L16030366-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT12(5-5.5)070316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/09/2016 10:05
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560255	**Analyst:**	TMB	**Run Date:**	03/09/2016 18:11
Collect Date:	03/07/2016 14:35	**Dilution:**	1	**File ID:**	6M137689
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.9	U	23.7	11.9	5.93
Benzene	71-43-2	1.19	U	5.93	1.19	0.593
Bromobenzene	108-86-1	1.19	U	5.93	1.19	0.593
Bromochloromethane	74-97-5	2.38	U	5.93	2.38	1.19
Bromodichloromethane	75-27-4	1.19	U	5.93	1.19	0.593
Bromoform	75-25-2	1.19	U	5.93	1.19	0.593
Bromomethane	74-83-9	2.38	U	5.93	2.38	1.19
2-Butanone	78-93-3	5.94	U	11.9	5.94	2.97
n-Butylbenzene	104-51-8	1.19	U	5.93	1.19	0.593
sec-Butylbenzene	135-98-8	1.19	U	5.93	1.19	0.593
tert-Butylbenzene	98-06-6	1.19	U	5.93	1.19	0.593
Carbon disulfide	75-15-0	1.19	U	5.93	1.19	0.593
Carbon tetrachloride	56-23-5	1.19	U	5.93	1.19	0.593
Chlorobenzene	108-90-7	1.19	U	5.93	1.19	0.593
Chlorodibromomethane	124-48-1	1.19	U	5.93	1.19	0.593
Chloroethane	75-00-3	2.38	U	5.93	2.38	1.19
Chloroform	67-66-3	1.19	U	5.93	1.19	0.593
Chloromethane	74-87-3	4.74	U	11.9	4.74	2.37
2-Chlorotoluene	95-49-8	1.19	U	5.93	1.19	0.593
4-Chlorotoluene	106-43-4	1.19	U	5.93	1.19	0.593

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Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	4.74	U	11.9	4.74	2.37
1,2-Dibromoethane	106-93-4	1.19	U	5.93	1.19	0.593
Dibromomethane	74-95-3	1.19	U	5.93	1.19	0.593
1,2-Dichlorobenzene	95-50-1	1.19	U	5.93	1.19	0.593
1,3-Dichlorobenzene	541-73-1	1.19	U	5.93	1.19	0.593
1,4-Dichlorobenzene	106-46-7	1.19	U	5.93	1.19	0.593
Dichlorodifluoromethane	75-71-8	2.38	U	5.93	2.38	1.19
1,1-Dichloroethane	75-34-3	2.38	U	5.93	2.38	1.19
1,2-Dichloroethane	107-06-2	1.19	U	5.93	1.19	0.593
1,1-Dichloroethene	75-35-4	1.19	U	5.93	1.19	0.593
cis-1,2-Dichloroethene	156-59-2	1.19	U	5.93	1.19	0.593
trans-1,2-Dichloroethene	156-60-5	1.19	U	5.93	1.19	0.593
1,2-Dichloropropane	78-87-5	1.19	U	5.93	1.19	0.593
1,3-Dichloropropane	142-28-9	1.19	U	5.93	1.19	0.593
2,2-Dichloropropane	594-20-7	1.19	U	5.93	1.19	0.593
cis-1,3-Dichloropropene	10061-01-5	1.19	U	5.93	1.19	0.593
trans-1,3-Dichloropropene	10061-02-6	1.19	U	5.93	1.19	0.593
1,1-Dichloropropene	563-58-6	1.19	U	5.93	1.19	0.593
Ethylbenzene	100-41-4	1.19	U	5.93	1.19	0.593
2-Hexanone	591-78-6	5.94	U	11.9	5.94	2.97
Hexachlorobutadiene	87-68-3	1.19	U	5.93	1.19	0.593
Isopropylbenzene	98-82-8	1.19	U	5.93	1.19	0.593
p-Isopropyltoluene	99-87-6	1.19	U	5.93	1.19	0.593
4-Methyl-2-pentanone	108-10-1	5.94	U	11.9	5.94	2.97
Methylene chloride	75-09-2	2.38	U	5.93	2.38	1.19
Naphthalene	91-20-3	1.19	U	5.93	1.19	0.593
n-Propylbenzene	103-65-1	1.19	U	5.93	1.19	0.593
Styrene	100-42-5	1.19	U	5.93	1.19	0.593
1,1,1,2-Tetrachloroethane	630-20-6	1.19	U	5.93	1.19	0.593
1,1,2,2-Tetrachloroethane	79-34-5	1.19	U	5.93	1.19	0.593
Tetrachloroethene	127-18-4	1.19	U	5.93	1.19	0.593
Toluene	108-88-3	1.19	U	5.93	1.19	0.593
1,2,3-Trichlorobenzene	87-61-6	1.19	U	5.93	1.19	0.593
1,2,4-Trichlorobenzene	120-82-1	1.19	U	5.93	1.19	0.593
1,1,1-Trichloroethane	71-55-6	1.19	U	5.93	1.19	0.593
1,1,2-Trichloroethane	79-00-5	1.19	U	5.93	1.19	0.593
Trichloroethene	79-01-6	1.19	U	5.93	1.19	0.593
Trichlorofluoromethane	75-69-4	2.38	U	5.93	2.38	1.19
1,2,3-Trichloropropane	96-18-4	2.38	U	5.93	2.38	1.19

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.19	U	5.93	1.19	0.593
1,3,5-Trimethylbenzene	108-67-8	1.19	U	5.93	1.19	0.593
Vinyl chloride	75-01-4	2.38	U	5.93	2.38	1.19
o-Xylene	95-47-6	1.19	U	5.93	1.19	0.593
m-,p-Xylene	179601-23-1	1.19	U	5.93	1.19	0.593

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.3	80	120	
1,2-Dichloroethane-d4	92.1	80	120	
Toluene-d8	96.8	85	115	
4-Bromofluorobenzene	98.6	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT12(5-5.5)070316	**Prep Method:**	6850	**Prep Date:**	03/08/2016 13:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG560129	**Analyst:**	JWR	**Run Date:**	03/08/2016 19:44
Collect Date:	03/07/2016 14:35	**Dilution:**	1	**File ID:**	1LM.LM33796
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	5.53		4.73	2.36	1.18

Certificate of Analysis

Sample #:	L16030366-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT12(8.5-9)070316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/09/2016 10:06
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560255	**Analyst:**	TMB	**Run Date:**	03/09/2016 18:44
Collect Date:	03/07/2016 14:40	**Dilution:**	1	**File ID:**	6M137690
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.1	U	26.3	13.1	6.57
Benzene	71-43-2	1.31	U	6.57	1.31	0.657
Bromobenzene	108-86-1	1.31	U	6.57	1.31	0.657
Bromochloromethane	74-97-5	2.62	U	6.57	2.62	1.31
Bromodichloromethane	75-27-4	1.31	U	6.57	1.31	0.657
Bromoform	75-25-2	1.31	U	6.57	1.31	0.657
Bromomethane	74-83-9	2.62	U	6.57	2.62	1.31
2-Butanone	78-93-3	6.56	U	13.1	6.56	3.28
n-Butylbenzene	104-51-8	1.31	U	6.57	1.31	0.657
sec-Butylbenzene	135-98-8	1.31	U	6.57	1.31	0.657
tert-Butylbenzene	98-06-6	1.31	U	6.57	1.31	0.657
Carbon disulfide	75-15-0	1.31	U	6.57	1.31	0.657
Carbon tetrachloride	56-23-5	1.31	U	6.57	1.31	0.657
Chlorobenzene	108-90-7	1.31	U	6.57	1.31	0.657
Chlorodibromomethane	124-48-1	1.31	U	6.57	1.31	0.657
Chloroethane	75-00-3	2.62	U	6.57	2.62	1.31
Chloroform	67-66-3	1.31	U	6.57	1.31	0.657
Chloromethane	74-87-3	5.26	U	13.1	5.26	2.63
2-Chlorotoluene	95-49-8	1.31	U	6.57	1.31	0.657
4-Chlorotoluene	106-43-4	1.31	U	6.57	1.31	0.657

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Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	5.26	U	13.1	5.26	2.63
1,2-Dibromoethane	106-93-4	1.31	U	6.57	1.31	0.657
Dibromomethane	74-95-3	1.31	U	6.57	1.31	0.657
1,2-Dichlorobenzene	95-50-1	1.31	U	6.57	1.31	0.657
1,3-Dichlorobenzene	541-73-1	1.31	U	6.57	1.31	0.657
1,4-Dichlorobenzene	106-46-7	1.31	U	6.57	1.31	0.657
Dichlorodifluoromethane	75-71-8	2.62	U	6.57	2.62	1.31
1,1-Dichloroethane	75-34-3	2.62	U	6.57	2.62	1.31
1,2-Dichloroethane	107-06-2	1.31	U	6.57	1.31	0.657
1,1-Dichloroethene	75-35-4	1.31	U	6.57	1.31	0.657
cis-1,2-Dichloroethene	156-59-2	1.31	U	6.57	1.31	0.657
trans-1,2-Dichloroethene	156-60-5	1.31	U	6.57	1.31	0.657
1,2-Dichloropropane	78-87-5	1.31	U	6.57	1.31	0.657
1,3-Dichloropropane	142-28-9	1.31	U	6.57	1.31	0.657
2,2-Dichloropropane	594-20-7	1.31	U	6.57	1.31	0.657
cis-1,3-Dichloropropene	10061-01-5	1.31	U	6.57	1.31	0.657
trans-1,3-Dichloropropene	10061-02-6	1.31	U	6.57	1.31	0.657
1,1-Dichloropropene	563-58-6	1.31	U	6.57	1.31	0.657
Ethylbenzene	100-41-4	1.31	U	6.57	1.31	0.657
2-Hexanone	591-78-6	6.56	U	13.1	6.56	3.28
Hexachlorobutadiene	87-68-3	1.31	U	6.57	1.31	0.657
Isopropylbenzene	98-82-8	1.31	U	6.57	1.31	0.657
p-Isopropyltoluene	99-87-6	1.31	U	6.57	1.31	0.657
4-Methyl-2-pentanone	108-10-1	6.56	U	13.1	6.56	3.28
Methylene chloride	75-09-2	2.62	U	6.57	2.62	1.31
Naphthalene	91-20-3	1.31	U	6.57	1.31	0.657
n-Propylbenzene	103-65-1	1.31	U	6.57	1.31	0.657
Styrene	100-42-5	1.31	U	6.57	1.31	0.657
1,1,1,2-Tetrachloroethane	630-20-6	1.31	U	6.57	1.31	0.657
1,1,2,2-Tetrachloroethane	79-34-5	1.31	U	6.57	1.31	0.657
Tetrachloroethene	127-18-4	1.31	U	6.57	1.31	0.657
Toluene	108-88-3	1.31	U	6.57	1.31	0.657
1,2,3-Trichlorobenzene	87-61-6	1.31	U	6.57	1.31	0.657
1,2,4-Trichlorobenzene	120-82-1	1.31	U	6.57	1.31	0.657
1,1,1-Trichloroethane	71-55-6	1.31	U	6.57	1.31	0.657
1,1,2-Trichloroethane	79-00-5	1.31	U	6.57	1.31	0.657
Trichloroethene	79-01-6	1.31	U	6.57	1.31	0.657
Trichlorofluoromethane	75-69-4	2.62	U	6.57	2.62	1.31
1,2,3-Trichloropropane	96-18-4	2.62	U	6.57	2.62	1.31

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Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.31	U	6.57	1.31	0.657
1,3,5-Trimethylbenzene	108-67-8	1.31	U	6.57	1.31	0.657
Vinyl chloride	75-01-4	2.62	U	6.57	2.62	1.31
o-Xylene	95-47-6	1.31	U	6.57	1.31	0.657
m-,p-Xylene	179601-23-1	1.31	U	6.57	1.31	0.657

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.4	80	120	
1,2-Dichloroethane-d4	88.1	80	120	
Toluene-d8	98.3	85	115	
4-Bromofluorobenzene	100	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT12(8.5-9)070316	**Prep Method:**	6850	**Prep Date:**	03/08/2016 13:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG560129	**Analyst:**	JWR	**Run Date:**	03/08/2016 20:03
Collect Date:	03/07/2016 14:40	**Dilution:**	1	**File ID:**	1LM.LM33797
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1.99	J	4.93	2.46	1.23

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT12(18-18.5)070316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/09/2016 10:08
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560255	**Analyst:**	TMB	**Run Date:**	03/09/2016 21:30
Collect Date:	03/07/2016 14:45	**Dilution:**	1	**File ID:**	6M137695
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.3	U	26.7	13.3	6.66
Benzene	71-43-2	1.33	U	6.66	1.33	0.666
Bromobenzene	108-86-1	1.33	U	6.66	1.33	0.666
Bromochloromethane	74-97-5	2.66	U	6.66	2.66	1.33
Bromodichloromethane	75-27-4	1.33	U	6.66	1.33	0.666
Bromoform	75-25-2	1.33	U	6.66	1.33	0.666
Bromomethane	74-83-9	2.66	U	6.66	2.66	1.33
2-Butanone	78-93-3	6.66	U	13.3	6.66	3.33
n-Butylbenzene	104-51-8	1.33	U	6.66	1.33	0.666
sec-Butylbenzene	135-98-8	1.33	U	6.66	1.33	0.666
tert-Butylbenzene	98-06-6	1.33	U	6.66	1.33	0.666
Carbon disulfide	75-15-0	1.33	U	6.66	1.33	0.666
Carbon tetrachloride	56-23-5	1.33	U	6.66	1.33	0.666
Chlorobenzene	108-90-7	1.33	U	6.66	1.33	0.666
Chlorodibromomethane	124-48-1	1.33	U	6.66	1.33	0.666
Chloroethane	75-00-3	2.66	U	6.66	2.66	1.33
Chloroform	67-66-3	1.33	U	6.66	1.33	0.666
Chloromethane	74-87-3	5.34	U	13.3	5.34	2.67
2-Chlorotoluene	95-49-8	1.33	U	6.66	1.33	0.666
4-Chlorotoluene	106-43-4	1.33	U	6.66	1.33	0.666
1,2-Dibromo-3-chloropropane	96-12-8	5.34	U	13.3	5.34	2.67
1,2-Dibromoethane	106-93-4	1.33	U	6.66	1.33	0.666
Dibromomethane	74-95-3	1.33	U	6.66	1.33	0.666
1,2-Dichlorobenzene	95-50-1	1.33	U	6.66	1.33	0.666
1,3-Dichlorobenzene	541-73-1	1.33	U	6.66	1.33	0.666
1,4-Dichlorobenzene	106-46-7	1.33	U	6.66	1.33	0.666
Dichlorodifluoromethane	75-71-8	2.66	U	6.66	2.66	1.33
1,1-Dichloroethane	75-34-3	2.66	U	6.66	2.66	1.33
1,2-Dichloroethane	107-06-2	1.33	U	6.66	1.33	0.666
1,1-Dichloroethene	75-35-4	1.33	U	6.66	1.33	0.666
cis-1,2-Dichloroethene	156-59-2	1.33	U	6.66	1.33	0.666

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Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.33	U	6.66	1.33	0.666
1,2-Dichloropropane	78-87-5	1.33	U	6.66	1.33	0.666
1,3-Dichloropropane	142-28-9	1.33	U	6.66	1.33	0.666
2,2-Dichloropropane	594-20-7	1.33	U	6.66	1.33	0.666
cis-1,3-Dichloropropene	10061-01-5	1.33	U	6.66	1.33	0.666
trans-1,3-Dichloropropene	10061-02-6	1.33	U	6.66	1.33	0.666
1,1-Dichloropropene	563-58-6	1.33	U	6.66	1.33	0.666
Ethylbenzene	100-41-4	1.33	U	6.66	1.33	0.666
2-Hexanone	591-78-6	6.66	U	13.3	6.66	3.33
Hexachlorobutadiene	87-68-3	1.33	U	6.66	1.33	0.666
Isopropylbenzene	98-82-8	1.33	U	6.66	1.33	0.666
p-Isopropyltoluene	99-87-6	1.33	U	6.66	1.33	0.666
4-Methyl-2-pentanone	108-10-1	6.66	U	13.3	6.66	3.33
Methylene chloride	75-09-2	2.66	U	6.66	2.66	1.33
Naphthalene	91-20-3	1.33	U	6.66	1.33	0.666
n-Propylbenzene	103-65-1	1.33	U	6.66	1.33	0.666
Styrene	100-42-5	1.33	U	6.66	1.33	0.666
1,1,1,2-Tetrachloroethane	630-20-6	1.33	U	6.66	1.33	0.666
1,1,2,2-Tetrachloroethane	79-34-5	1.33	U	6.66	1.33	0.666
Tetrachloroethene	127-18-4	1.33	U	6.66	1.33	0.666
Toluene	108-88-3	1.33	U	6.66	1.33	0.666
1,2,3-Trichlorobenzene	87-61-6	1.33	U	6.66	1.33	0.666
1,2,4-Trichlorobenzene	120-82-1	1.33	U	6.66	1.33	0.666
1,1,1-Trichloroethane	71-55-6	1.33	U	6.66	1.33	0.666
1,1,2-Trichloroethane	79-00-5	1.33	U	6.66	1.33	0.666
Trichloroethene	79-01-6	50.0		6.66	1.33	0.666
Trichlorofluoromethane	75-69-4	2.66	U	6.66	2.66	1.33
1,2,3-Trichloropropane	96-18-4	2.66	U	6.66	2.66	1.33
1,2,4-Trimethylbenzene	95-63-6	1.33	U	6.66	1.33	0.666
1,3,5-Trimethylbenzene	108-67-8	1.33	U	6.66	1.33	0.666
Vinyl chloride	75-01-4	2.66	U	6.66	2.66	1.33
o-Xylene	95-47-6	1.33	U	6.66	1.33	0.666
m-,p-Xylene	179601-23-1	1.33	U	6.66	1.33	0.666

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.5	80	120	
1,2-Dichloroethane-d4	89.7	80	120	
Toluene-d8	97.4	85	115	
4-Bromofluorobenzene	99.9	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT12(18-18.5)070316	**Prep Method:**	6850	**Prep Date:**	03/08/2016 13:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG560129	**Analyst:**	JWR	**Run Date:**	03/09/2016 12:45
Collect Date:	03/07/2016 14:45	**Dilution:**	500	**File ID:**	1LM.LM33813
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	81.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	15900		2430	1220	609

Certificate of Analysis

Sample #:	L16030366-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT12(12-12.5)070316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/09/2016 10:09
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560255	**Analyst:**	TMB	**Run Date:**	03/09/2016 20:57
Collect Date:	03/07/2016 15:00	**Dilution:**	1	**File ID:**	6M137694
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	77.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.5	U	27.0	13.5	6.75
Benzene	71-43-2	1.35	U	6.75	1.35	0.675
Bromobenzene	108-86-1	1.35	U	6.75	1.35	0.675
Bromochloromethane	74-97-5	2.70	U	6.75	2.70	1.35
Bromodichloromethane	75-27-4	1.35	U	6.75	1.35	0.675
Bromoform	75-25-2	1.35	U	6.75	1.35	0.675
Bromomethane	74-83-9	2.70	U	6.75	2.70	1.35
2-Butanone	78-93-3	6.76	U	13.5	6.76	3.38
n-Butylbenzene	104-51-8	1.35	U	6.75	1.35	0.675
sec-Butylbenzene	135-98-8	1.35	U	6.75	1.35	0.675
tert-Butylbenzene	98-06-6	1.35	U	6.75	1.35	0.675
Carbon disulfide	75-15-0	1.35	U	6.75	1.35	0.675
Carbon tetrachloride	56-23-5	1.35	U	6.75	1.35	0.675
Chlorobenzene	108-90-7	1.35	U	6.75	1.35	0.675
Chlorodibromomethane	124-48-1	1.35	U	6.75	1.35	0.675
Chloroethane	75-00-3	2.70	U	6.75	2.70	1.35
Chloroform	67-66-3	1.35	U	6.75	1.35	0.675
Chloromethane	74-87-3	5.40	U	13.5	5.40	2.70
2-Chlorotoluene	95-49-8	1.35	U	6.75	1.35	0.675
4-Chlorotoluene	106-43-4	1.35	U	6.75	1.35	0.675

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Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	5.40	U	13.5	5.40	2.70
1,2-Dibromoethane	106-93-4	1.35	U	6.75	1.35	0.675
Dibromomethane	74-95-3	1.35	U	6.75	1.35	0.675
1,2-Dichlorobenzene	95-50-1	1.35	U	6.75	1.35	0.675
1,3-Dichlorobenzene	541-73-1	1.35	U	6.75	1.35	0.675
1,4-Dichlorobenzene	106-46-7	1.35	U	6.75	1.35	0.675
Dichlorodifluoromethane	75-71-8	2.70	U	6.75	2.70	1.35
1,1-Dichloroethane	75-34-3	2.70	U	6.75	2.70	1.35
1,2-Dichloroethane	107-06-2	1.35	U	6.75	1.35	0.675
1,1-Dichloroethene	75-35-4	1.35	U	6.75	1.35	0.675
cis-1,2-Dichloroethene	156-59-2	1.35	U	6.75	1.35	0.675
trans-1,2-Dichloroethene	156-60-5	1.35	U	6.75	1.35	0.675
1,2-Dichloropropane	78-87-5	1.35	U	6.75	1.35	0.675
1,3-Dichloropropane	142-28-9	1.35	U	6.75	1.35	0.675
2,2-Dichloropropane	594-20-7	1.35	U	6.75	1.35	0.675
cis-1,3-Dichloropropene	10061-01-5	1.35	U	6.75	1.35	0.675
trans-1,3-Dichloropropene	10061-02-6	1.35	U	6.75	1.35	0.675
1,1-Dichloropropene	563-58-6	1.35	U	6.75	1.35	0.675
Ethylbenzene	100-41-4	1.35	U	6.75	1.35	0.675
2-Hexanone	591-78-6	6.76	U	13.5	6.76	3.38
Hexachlorobutadiene	87-68-3	1.35	U	6.75	1.35	0.675
Isopropylbenzene	98-82-8	1.35	U	6.75	1.35	0.675
p-Isopropyltoluene	99-87-6	1.35	U	6.75	1.35	0.675
4-Methyl-2-pentanone	108-10-1	6.76	U	13.5	6.76	3.38
Methylene chloride	75-09-2	2.70	U	6.75	2.70	1.35
Naphthalene	91-20-3	1.35	U	6.75	1.35	0.675
n-Propylbenzene	103-65-1	1.35	U	6.75	1.35	0.675
Styrene	100-42-5	1.35	U	6.75	1.35	0.675
1,1,1,2-Tetrachloroethane	630-20-6	1.35	U	6.75	1.35	0.675
1,1,2,2-Tetrachloroethane	79-34-5	1.35	U	6.75	1.35	0.675
Tetrachloroethene	127-18-4	1.35	U	6.75	1.35	0.675
Toluene	108-88-3	1.35	U	6.75	1.35	0.675
1,2,3-Trichlorobenzene	87-61-6	1.35	U	6.75	1.35	0.675
1,2,4-Trichlorobenzene	120-82-1	1.35	U	6.75	1.35	0.675
1,1,1-Trichloroethane	71-55-6	1.35	U	6.75	1.35	0.675
1,1,2-Trichloroethane	79-00-5	1.35	U	6.75	1.35	0.675
Trichloroethene	79-01-6	6.14	J	6.75	1.35	0.675
Trichlorofluoromethane	75-69-4	2.70	U	6.75	2.70	1.35
1,2,3-Trichloropropane	96-18-4	2.70	U	6.75	2.70	1.35

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.35	U	6.75	1.35	0.675
1,3,5-Trimethylbenzene	108-67-8	1.35	U	6.75	1.35	0.675
Vinyl chloride	75-01-4	2.70	U	6.75	2.70	1.35
o-Xylene	95-47-6	1.35	U	6.75	1.35	0.675
m-,p-Xylene	179601-23-1	1.35	U	6.75	1.35	0.675

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.4	80	120	
1,2-Dichloroethane-d4	94.3	80	120	
Toluene-d8	96.5	85	115	
4-Bromofluorobenzene	99.0	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-09	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT12(12-12.5)070316	**Prep Method:**	6850	**Prep Date:**	03/08/2016 13:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG560129	**Analyst:**	JWR	**Run Date:**	03/09/2016 13:04
Collect Date:	03/07/2016 15:00	**Dilution:**	100	**File ID:**	1LM.LM33814
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	77.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	7090		510	256	128

Certificate of Analysis

Sample #:	L16030366-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT13(5-5.5)070316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/09/2016 10:10
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560255	**Analyst:**	TMB	**Run Date:**	03/09/2016 19:18
Collect Date:	03/07/2016 16:00	**Dilution:**	1	**File ID:**	6M137691
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	25.0	12.5	6.24
Benzene	71-43-2	1.25	U	6.24	1.25	0.624
Bromobenzene	108-86-1	1.25	U	6.24	1.25	0.624
Bromochloromethane	74-97-5	2.50	U	6.24	2.50	1.25
Bromodichloromethane	75-27-4	1.25	U	6.24	1.25	0.624
Bromoform	75-25-2	1.25	U	6.24	1.25	0.624
Bromomethane	74-83-9	2.50	U	6.24	2.50	1.25
2-Butanone	78-93-3	6.24	U	12.5	6.24	3.12
n-Butylbenzene	104-51-8	1.25	U	6.24	1.25	0.624
sec-Butylbenzene	135-98-8	1.25	U	6.24	1.25	0.624
tert-Butylbenzene	98-06-6	1.25	U	6.24	1.25	0.624
Carbon disulfide	75-15-0	1.25	U	6.24	1.25	0.624
Carbon tetrachloride	56-23-5	1.25	U	6.24	1.25	0.624
Chlorobenzene	108-90-7	1.25	U	6.24	1.25	0.624
Chlorodibromomethane	124-48-1	1.25	U	6.24	1.25	0.624
Chloroethane	75-00-3	2.50	U	6.24	2.50	1.25
Chloroform	67-66-3	1.25	U	6.24	1.25	0.624
Chloromethane	74-87-3	5.00	U	12.5	5.00	2.50
2-Chlorotoluene	95-49-8	1.25	U	6.24	1.25	0.624
4-Chlorotoluene	106-43-4	1.25	U	6.24	1.25	0.624

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Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	5.00	U	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	6.24	1.25	0.624
Dibromomethane	74-95-3	1.25	U	6.24	1.25	0.624
1,2-Dichlorobenzene	95-50-1	1.25	U	6.24	1.25	0.624
1,3-Dichlorobenzene	541-73-1	1.25	U	6.24	1.25	0.624
1,4-Dichlorobenzene	106-46-7	1.25	U	6.24	1.25	0.624
Dichlorodifluoromethane	75-71-8	2.50	U	6.24	2.50	1.25
1,1-Dichloroethane	75-34-3	2.50	U	6.24	2.50	1.25
1,2-Dichloroethane	107-06-2	1.25	U	6.24	1.25	0.624
1,1-Dichloroethene	75-35-4	1.25	U	6.24	1.25	0.624
cis-1,2-Dichloroethene	156-59-2	1.25	U	6.24	1.25	0.624
trans-1,2-Dichloroethene	156-60-5	1.25	U	6.24	1.25	0.624
1,2-Dichloropropane	78-87-5	1.25	U	6.24	1.25	0.624
1,3-Dichloropropane	142-28-9	1.25	U	6.24	1.25	0.624
2,2-Dichloropropane	594-20-7	1.25	U	6.24	1.25	0.624
cis-1,3-Dichloropropene	10061-01-5	1.25	U	6.24	1.25	0.624
trans-1,3-Dichloropropene	10061-02-6	1.25	U	6.24	1.25	0.624
1,1-Dichloropropene	563-58-6	1.25	U	6.24	1.25	0.624
Ethylbenzene	100-41-4	1.25	U	6.24	1.25	0.624
2-Hexanone	591-78-6	6.24	U	12.5	6.24	3.12
Hexachlorobutadiene	87-68-3	1.25	U	6.24	1.25	0.624
Isopropylbenzene	98-82-8	1.25	U	6.24	1.25	0.624
p-Isopropyltoluene	99-87-6	1.25	U	6.24	1.25	0.624
4-Methyl-2-pentanone	108-10-1	6.24	U	12.5	6.24	3.12
Methylene chloride	75-09-2	2.50	U	6.24	2.50	1.25
Naphthalene	91-20-3	1.25	U	6.24	1.25	0.624
n-Propylbenzene	103-65-1	1.25	U	6.24	1.25	0.624
Styrene	100-42-5	1.25	U	6.24	1.25	0.624
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	6.24	1.25	0.624
1,1,2,2-Tetrachloroethane	79-34-5	1.25	U	6.24	1.25	0.624
Tetrachloroethene	127-18-4	1.25	U	6.24	1.25	0.624
Toluene	108-88-3	1.25	U	6.24	1.25	0.624
1,2,3-Trichlorobenzene	87-61-6	1.25	U	6.24	1.25	0.624
1,2,4-Trichlorobenzene	120-82-1	1.25	U	6.24	1.25	0.624
1,1,1-Trichloroethane	71-55-6	1.25	U	6.24	1.25	0.624
1,1,2-Trichloroethane	79-00-5	1.25	U	6.24	1.25	0.624
Trichloroethene	79-01-6	1.25	U	6.24	1.25	0.624
Trichlorofluoromethane	75-69-4	2.50	U	6.24	2.50	1.25
1,2,3-Trichloropropane	96-18-4	2.50	U	6.24	2.50	1.25

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Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.25	U	6.24	1.25	0.624
1,3,5-Trimethylbenzene	108-67-8	1.25	U	6.24	1.25	0.624
Vinyl chloride	75-01-4	2.50	U	6.24	2.50	1.25
o-Xylene	95-47-6	1.25	U	6.24	1.25	0.624
m-,p-Xylene	179601-23-1	1.25	U	6.24	1.25	0.624

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.5	80	120	
1,2-Dichloroethane-d4	86.9	80	120	
Toluene-d8	98.1	85	115	
4-Bromofluorobenzene	99.9	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-10	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT13(5-5.5)070316	**Prep Method:**	6850	**Prep Date:**	03/08/2016 13:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG560129	**Analyst:**	JWR	**Run Date:**	03/08/2016 21:00
Collect Date:	03/07/2016 16:00	**Dilution:**	1	**File ID:**	1LM.LM33800
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.30	U	4.62	2.30	1.15

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT13(12-12.5)070316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/09/2016 10:10
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560255	**Analyst:**	TMB	**Run Date:**	03/09/2016 19:51
Collect Date:	03/07/2016 16:05	**Dilution:**	1	**File ID:**	6M137692
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.3	U	22.6	11.3	5.64
Benzene	71-43-2	1.13	U	5.64	1.13	0.564
Bromobenzene	108-86-1	1.13	U	5.64	1.13	0.564
Bromochloromethane	74-97-5	2.26	U	5.64	2.26	1.13
Bromodichloromethane	75-27-4	1.13	U	5.64	1.13	0.564
Bromoform	75-25-2	1.13	U	5.64	1.13	0.564
Bromomethane	74-83-9	2.26	U	5.64	2.26	1.13
2-Butanone	78-93-3	5.64	U	11.3	5.64	2.82
n-Butylbenzene	104-51-8	1.13	U	5.64	1.13	0.564
sec-Butylbenzene	135-98-8	1.13	U	5.64	1.13	0.564
tert-Butylbenzene	98-06-6	1.13	U	5.64	1.13	0.564
Carbon disulfide	75-15-0	1.13	U	5.64	1.13	0.564
Carbon tetrachloride	56-23-5	1.13	U	5.64	1.13	0.564
Chlorobenzene	108-90-7	1.13	U	5.64	1.13	0.564
Chlorodibromomethane	124-48-1	1.13	U	5.64	1.13	0.564
Chloroethane	75-00-3	2.26	U	5.64	2.26	1.13
Chloroform	67-66-3	1.13	U	5.64	1.13	0.564
Chloromethane	74-87-3	4.52	U	11.3	4.52	2.26
2-Chlorotoluene	95-49-8	1.13	U	5.64	1.13	0.564
4-Chlorotoluene	106-43-4	1.13	U	5.64	1.13	0.564
1,2-Dibromo-3-chloropropane	96-12-8	4.52	U	11.3	4.52	2.26
1,2-Dibromoethane	106-93-4	1.13	U	5.64	1.13	0.564
Dibromomethane	74-95-3	1.13	U	5.64	1.13	0.564
1,2-Dichlorobenzene	95-50-1	1.13	U	5.64	1.13	0.564
1,3-Dichlorobenzene	541-73-1	1.13	U	5.64	1.13	0.564
1,4-Dichlorobenzene	106-46-7	1.13	U	5.64	1.13	0.564
Dichlorodifluoromethane	75-71-8	2.26	U	5.64	2.26	1.13
1,1-Dichloroethane	75-34-3	2.26	U	5.64	2.26	1.13
1,2-Dichloroethane	107-06-2	1.13	U	5.64	1.13	0.564
1,1-Dichloroethene	75-35-4	1.13	U	5.64	1.13	0.564
cis-1,2-Dichloroethene	156-59-2	1.13	U	5.64	1.13	0.564

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Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.13	U	5.64	1.13	0.564
1,2-Dichloropropane	78-87-5	1.13	U	5.64	1.13	0.564
1,3-Dichloropropane	142-28-9	1.13	U	5.64	1.13	0.564
2,2-Dichloropropane	594-20-7	1.13	U	5.64	1.13	0.564
cis-1,3-Dichloropropene	10061-01-5	1.13	U	5.64	1.13	0.564
trans-1,3-Dichloropropene	10061-02-6	1.13	U	5.64	1.13	0.564
1,1-Dichloropropene	563-58-6	1.13	U	5.64	1.13	0.564
Ethylbenzene	100-41-4	1.13	U	5.64	1.13	0.564
2-Hexanone	591-78-6	5.64	U	11.3	5.64	2.82
Hexachlorobutadiene	87-68-3	1.13	U	5.64	1.13	0.564
Isopropylbenzene	98-82-8	1.13	U	5.64	1.13	0.564
p-Isopropyltoluene	99-87-6	1.13	U	5.64	1.13	0.564
4-Methyl-2-pentanone	108-10-1	5.64	U	11.3	5.64	2.82
Methylene chloride	75-09-2	2.26	U	5.64	2.26	1.13
Naphthalene	91-20-3	1.13	U	5.64	1.13	0.564
n-Propylbenzene	103-65-1	1.13	U	5.64	1.13	0.564
Styrene	100-42-5	1.13	U	5.64	1.13	0.564
1,1,1,2-Tetrachloroethane	630-20-6	1.13	U	5.64	1.13	0.564
1,1,2,2-Tetrachloroethane	79-34-5	1.13	U	5.64	1.13	0.564
Tetrachloroethene	127-18-4	1.13	U	5.64	1.13	0.564
Toluene	108-88-3	1.13	U	5.64	1.13	0.564
1,2,3-Trichlorobenzene	87-61-6	1.13	U	5.64	1.13	0.564
1,2,4-Trichlorobenzene	120-82-1	1.13	U	5.64	1.13	0.564
1,1,1-Trichloroethane	71-55-6	1.13	U	5.64	1.13	0.564
1,1,2-Trichloroethane	79-00-5	1.13	U	5.64	1.13	0.564
Trichloroethene	79-01-6	1.13	U	5.64	1.13	0.564
Trichlorofluoromethane	75-69-4	2.26	U	5.64	2.26	1.13
1,2,3-Trichloropropane	96-18-4	2.26	U	5.64	2.26	1.13
1,2,4-Trimethylbenzene	95-63-6	1.13	U	5.64	1.13	0.564
1,3,5-Trimethylbenzene	108-67-8	1.13	U	5.64	1.13	0.564
Vinyl chloride	75-01-4	2.26	U	5.64	2.26	1.13
o-Xylene	95-47-6	1.13	U	5.64	1.13	0.564
m-,p-Xylene	179601-23-1	1.13	U	5.64	1.13	0.564

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	89.8	80	120	
1,2-Dichloroethane-d4	83.1	80	120	
Toluene-d8	98.5	85	115	
4-Bromofluorobenzene	100	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-11	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT13(12-12.5)070316	**Prep Method:**	6850	**Prep Date:**	03/08/2016 13:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG560129	**Analyst:**	JWR	**Run Date:**	03/08/2016 21:19
Collect Date:	03/07/2016 16:05	**Dilution:**	1	**File ID:**	1LM.LM33801
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.44	U	4.88	2.44	1.22

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT13(17-17.5)070316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/09/2016 10:12
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560255	**Analyst:**	TMB	**Run Date:**	03/09/2016 20:24
Collect Date:	03/07/2016 16:10	**Dilution:**	1	**File ID:**	6M137693
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	76.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	14.1	U	28.1	14.1	7.04
Benzene	71-43-2	1.41	U	7.04	1.41	0.704
Bromobenzene	108-86-1	1.41	U	7.04	1.41	0.704
Bromochloromethane	74-97-5	2.82	U	7.04	2.82	1.41
Bromodichloromethane	75-27-4	1.41	U	7.04	1.41	0.704
Bromoform	75-25-2	1.41	U	7.04	1.41	0.704
Bromomethane	74-83-9	2.82	U	7.04	2.82	1.41
2-Butanone	78-93-3	7.04	U	14.1	7.04	3.52
n-Butylbenzene	104-51-8	1.41	U	7.04	1.41	0.704
sec-Butylbenzene	135-98-8	1.41	U	7.04	1.41	0.704
tert-Butylbenzene	98-06-6	1.41	U	7.04	1.41	0.704
Carbon disulfide	75-15-0	1.41	U	7.04	1.41	0.704
Carbon tetrachloride	56-23-5	1.41	U	7.04	1.41	0.704
Chlorobenzene	108-90-7	1.41	U	7.04	1.41	0.704
Chlorodibromomethane	124-48-1	1.41	U	7.04	1.41	0.704
Chloroethane	75-00-3	2.82	U	7.04	2.82	1.41
Chloroform	67-66-3	1.41	U	7.04	1.41	0.704
Chloromethane	74-87-3	5.62	U	14.1	5.62	2.81
2-Chlorotoluene	95-49-8	1.41	U	7.04	1.41	0.704
4-Chlorotoluene	106-43-4	1.41	U	7.04	1.41	0.704
1,2-Dibromo-3-chloropropane	96-12-8	5.62	U	14.1	5.62	2.81
1,2-Dibromoethane	106-93-4	1.41	U	7.04	1.41	0.704
Dibromomethane	74-95-3	1.41	U	7.04	1.41	0.704
1,2-Dichlorobenzene	95-50-1	1.41	U	7.04	1.41	0.704
1,3-Dichlorobenzene	541-73-1	1.41	U	7.04	1.41	0.704
1,4-Dichlorobenzene	106-46-7	1.41	U	7.04	1.41	0.704
Dichlorodifluoromethane	75-71-8	2.82	U	7.04	2.82	1.41
1,1-Dichloroethane	75-34-3	2.82	U	7.04	2.82	1.41
1,2-Dichloroethane	107-06-2	1.41	U	7.04	1.41	0.704
1,1-Dichloroethene	75-35-4	1.41	U	7.04	1.41	0.704
cis-1,2-Dichloroethene	156-59-2	1.41	U	7.04	1.41	0.704

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.41	U	7.04	1.41	0.704
1,2-Dichloropropane	78-87-5	1.41	U	7.04	1.41	0.704
1,3-Dichloropropane	142-28-9	1.41	U	7.04	1.41	0.704
2,2-Dichloropropane	594-20-7	1.41	U	7.04	1.41	0.704
cis-1,3-Dichloropropene	10061-01-5	1.41	U	7.04	1.41	0.704
trans-1,3-Dichloropropene	10061-02-6	1.41	U	7.04	1.41	0.704
1,1-Dichloropropene	563-58-6	1.41	U	7.04	1.41	0.704
Ethylbenzene	100-41-4	1.41	U	7.04	1.41	0.704
2-Hexanone	591-78-6	7.04	U	14.1	7.04	3.52
Hexachlorobutadiene	87-68-3	1.41	U	7.04	1.41	0.704
Isopropylbenzene	98-82-8	1.41	U	7.04	1.41	0.704
p-Isopropyltoluene	99-87-6	1.41	U	7.04	1.41	0.704
4-Methyl-2-pentanone	108-10-1	7.04	U	14.1	7.04	3.52
Methylene chloride	75-09-2	2.82	U	7.04	2.82	1.41
Naphthalene	91-20-3	1.41	U	7.04	1.41	0.704
n-Propylbenzene	103-65-1	1.41	U	7.04	1.41	0.704
Styrene	100-42-5	1.41	U	7.04	1.41	0.704
1,1,1,2-Tetrachloroethane	630-20-6	1.41	U	7.04	1.41	0.704
1,1,2,2-Tetrachloroethane	79-34-5	1.41	U	7.04	1.41	0.704
Tetrachloroethene	127-18-4	1.41	U	7.04	1.41	0.704
Toluene	108-88-3	1.41	U	7.04	1.41	0.704
1,2,3-Trichlorobenzene	87-61-6	1.41	U	7.04	1.41	0.704
1,2,4-Trichlorobenzene	120-82-1	1.41	U	7.04	1.41	0.704
1,1,1-Trichloroethane	71-55-6	1.41	U	7.04	1.41	0.704
1,1,2-Trichloroethane	79-00-5	1.41	U	7.04	1.41	0.704
Trichloroethene	79-01-6	1.41	U	7.04	1.41	0.704
Trichlorofluoromethane	75-69-4	2.82	U	7.04	2.82	1.41
1,2,3-Trichloropropane	96-18-4	2.82	U	7.04	2.82	1.41
1,2,4-Trimethylbenzene	95-63-6	1.41	U	7.04	1.41	0.704
1,3,5-Trimethylbenzene	108-67-8	1.41	U	7.04	1.41	0.704
Vinyl chloride	75-01-4	2.82	U	7.04	2.82	1.41
o-Xylene	95-47-6	1.41	U	7.04	1.41	0.704
m-,p-Xylene	179601-23-1	1.41	U	7.04	1.41	0.704

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.2	80	120	
1,2-Dichloroethane-d4	87.1	80	120	
Toluene-d8	98.6	85	115	
4-Bromofluorobenzene	101	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-12	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT13(17-17.5)070316	**Prep Method:**	6850	**Prep Date:**	03/08/2016 13:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG560129	**Analyst:**	JWR	**Run Date:**	03/08/2016 21:38
Collect Date:	03/07/2016 16:10	**Dilution:**	1	**File ID:**	1LM.LM33802
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	76.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.56	U	5.14	2.56	1.28

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #: L16030366-01 **Client ID:** 18DPT11(5-5.5)040316 **Matrix:** Soil **Collect Date:** 03/04/2016 15:00

Analyte	Result	Units	Qualifier
Percent Solids	79.1	weight %	

Sample #: L16030366-02 **Client ID:** 18DPT11(15-15.5)040316 **Matrix:** Soil **Collect Date:** 03/04/2016 16:00

Analyte	Result	Units	Qualifier
Percent Solids	81.7	weight %	

Sample #: L16030366-03 **Client ID:** 18DPT11(20-20.5)070316 **Matrix:** Soil **Collect Date:** 03/07/2016 11:50

Analyte	Result	Units	Qualifier
Percent Solids	82.9	weight %	

Sample #: L16030366-04 **Client ID:** 18DPT11(29-29.5)070316 **Matrix:** Soil **Collect Date:** 03/07/2016 11:55

Analyte	Result	Units	Qualifier
Percent Solids	79.5	weight %	

Sample #: L16030366-05 **Client ID:** 18DPT11(25-25.5)070316 **Matrix:** Soil **Collect Date:** 03/07/2016 12:00

Analyte	Result	Units	Qualifier
Percent Solids	79.2	weight %	

Sample #: L16030366-06 **Client ID:** 18DPT12(5-5.5)070316 **Matrix:** Soil **Collect Date:** 03/07/2016 14:35

Analyte	Result	Units	Qualifier
Percent Solids	83.6	weight %	

Sample #: L16030366-07 **Client ID:** 18DPT12(8.5-9)070316 **Matrix:** Soil **Collect Date:** 03/07/2016 14:40

Analyte	Result	Units	Qualifier
Percent Solids	79.3	weight %	

Sample #: L16030366-08 **Client ID:** 18DPT12(18-18.5)070316 **Matrix:** Soil **Collect Date:** 03/07/2016 14:45

Analyte	Result	Units	Qualifier
Percent Solids	81.2	weight %	

Sample #: L16030366-09 **Client ID:** 18DPT12(12-12.5)070316 **Matrix:** Soil **Collect Date:** 03/07/2016 15:00

Analyte	Result	Units	Qualifier
Percent Solids	77.6	weight %	

Sample #: L16030366-10 **Client ID:** 18DPT13(5-5.5)070316 **Matrix:** Soil **Collect Date:** 03/07/2016 16:00

Analyte	Result	Units	Qualifier
Percent Solids	85.3	weight %	

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #: L16030366-11 **Client ID:** 18DPT13(12-12.5)070316 **Matrix:** Soil **Collect Date:** 03/07/2016 16:05

Analyte	Result	Units	Qualifier
Percent Solids	81.2	weight %	

Sample #: L16030366-12 **Client ID:** 18DPT13(17-17.5)070316 **Matrix:** Soil **Collect Date:** 03/07/2016 16:10

Analyte	Result	Units	Qualifier
Percent Solids	76.9	weight %	

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT11(5-5.5)040316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/09/2016 10:01
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560255	**Analyst:**	TMB	**Run Date:**	03/09/2016 15:23
Collect Date:	03/04/2016 15:00	**Dilution:**	1	**File ID:**	6M137684
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.7	U	25.4	12.7	6.36
Benzene	71-43-2	1.27	U	6.36	1.27	0.636
Bromobenzene	108-86-1	1.27	U	6.36	1.27	0.636
Bromochloromethane	74-97-5	2.54	U	6.36	2.54	1.27
Bromodichloromethane	75-27-4	1.27	U	6.36	1.27	0.636
Bromoform	75-25-2	1.27	U	6.36	1.27	0.636
Bromomethane	74-83-9	2.54	U	6.36	2.54	1.27
2-Butanone	78-93-3	6.36	U	12.7	6.36	3.18
n-Butylbenzene	104-51-8	1.27	U	6.36	1.27	0.636
sec-Butylbenzene	135-98-8	1.27	U	6.36	1.27	0.636
tert-Butylbenzene	98-06-6	1.27	U	6.36	1.27	0.636
Carbon disulfide	75-15-0	1.27	U	6.36	1.27	0.636
Carbon tetrachloride	56-23-5	1.27	U	6.36	1.27	0.636
Chlorobenzene	108-90-7	1.27	U	6.36	1.27	0.636
Chlorodibromomethane	124-48-1	1.27	U	6.36	1.27	0.636
Chloroethane	75-00-3	2.54	U	6.36	2.54	1.27
Chloroform	67-66-3	1.27	U	6.36	1.27	0.636
Chloromethane	74-87-3	5.08	U	12.7	5.08	2.54
2-Chlorotoluene	95-49-8	1.27	U	6.36	1.27	0.636
4-Chlorotoluene	106-43-4	1.27	U	6.36	1.27	0.636
1,2-Dibromo-3-chloropropane	96-12-8	5.08	U	12.7	5.08	2.54
1,2-Dibromoethane	106-93-4	1.27	U	6.36	1.27	0.636
Dibromomethane	74-95-3	1.27	U	6.36	1.27	0.636
1,2-Dichlorobenzene	95-50-1	1.27	U	6.36	1.27	0.636
1,3-Dichlorobenzene	541-73-1	1.27	U	6.36	1.27	0.636
1,4-Dichlorobenzene	106-46-7	1.27	U	6.36	1.27	0.636
Dichlorodifluoromethane	75-71-8	2.54	U	6.36	2.54	1.27
1,1-Dichloroethane	75-34-3	2.54	U	6.36	2.54	1.27
1,2-Dichloroethane	107-06-2	1.27	U	6.36	1.27	0.636
1,1-Dichloroethene	75-35-4	1.27	U	6.36	1.27	0.636
cis-1,2-Dichloroethene	156-59-2	1.27	U	6.36	1.27	0.636
trans-1,2-Dichloroethene	156-60-5	1.27	U	6.36	1.27	0.636

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.27	U	6.36	1.27	0.636
1,3-Dichloropropane	142-28-9	1.27	U	6.36	1.27	0.636
2,2-Dichloropropane	594-20-7	1.27	U	6.36	1.27	0.636
cis-1,3-Dichloropropene	10061-01-5	1.27	U	6.36	1.27	0.636
trans-1,3-Dichloropropene	10061-02-6	1.27	U	6.36	1.27	0.636
1,1-Dichloropropene	563-58-6	1.27	U	6.36	1.27	0.636
Ethylbenzene	100-41-4	1.27	U	6.36	1.27	0.636
2-Hexanone	591-78-6	6.36	U	12.7	6.36	3.18
Hexachlorobutadiene	87-68-3	1.27	U	6.36	1.27	0.636
Isopropylbenzene	98-82-8	1.27	U	6.36	1.27	0.636
p-Isopropyltoluene	99-87-6	1.27	U	6.36	1.27	0.636
4-Methyl-2-pentanone	108-10-1	6.36	U	12.7	6.36	3.18
Methylene chloride	75-09-2	2.54	U	6.36	2.54	1.27
Naphthalene	91-20-3	1.27	U	6.36	1.27	0.636
n-Propylbenzene	103-65-1	1.27	U	6.36	1.27	0.636
Styrene	100-42-5	1.27	U	6.36	1.27	0.636
1,1,1,2-Tetrachloroethane	630-20-6	1.27	U	6.36	1.27	0.636
1,1,2,2-Tetrachloroethane	79-34-5	1.27	U	6.36	1.27	0.636
Tetrachloroethene	127-18-4	1.27	U	6.36	1.27	0.636
Toluene	108-88-3	1.27	U	6.36	1.27	0.636
1,2,3-Trichlorobenzene	87-61-6	1.27	U	6.36	1.27	0.636
1,2,4-Trichlorobenzene	120-82-1	1.27	U	6.36	1.27	0.636
1,1,1-Trichloroethane	71-55-6	1.27	U	6.36	1.27	0.636
1,1,2-Trichloroethane	79-00-5	1.27	U	6.36	1.27	0.636
Trichloroethene	79-01-6	1.27	U	6.36	1.27	0.636
Trichlorofluoromethane	75-69-4	2.54	U	6.36	2.54	1.27
1,2,3-Trichloropropane	96-18-4	2.54	U	6.36	2.54	1.27
1,2,4-Trimethylbenzene	95-63-6	1.27	U	6.36	1.27	0.636
1,3,5-Trimethylbenzene	108-67-8	1.27	U	6.36	1.27	0.636
Vinyl chloride	75-01-4	2.54	U	6.36	2.54	1.27
o-Xylene	95-47-6	1.27	U	6.36	1.27	0.636
m-,p-Xylene	179601-23-1	1.27	U	6.36	1.27	0.636

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	90.3	80	120	
1,2-Dichloroethane-d4	84.9	80	120	
Toluene-d8	99.8	85	115	
4-Bromofluorobenzene	100	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT11(15-15.5)040316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/09/2016 10:02
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560255	**Analyst:**	TMB	**Run Date:**	03/09/2016 15:57
Collect Date:	03/04/2016 16:00	**Dilution:**	1	**File ID:**	6M137685
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.3	U	26.7	13.3	6.67
Benzene	71-43-2	1.33	U	6.67	1.33	0.667
Bromobenzene	108-86-1	1.33	U	6.67	1.33	0.667
Bromochloromethane	74-97-5	2.66	U	6.67	2.66	1.33
Bromodichloromethane	75-27-4	1.33	U	6.67	1.33	0.667
Bromoform	75-25-2	1.33	U	6.67	1.33	0.667
Bromomethane	74-83-9	2.66	U	6.67	2.66	1.33
2-Butanone	78-93-3	6.66	U	13.3	6.66	3.33
n-Butylbenzene	104-51-8	1.33	U	6.67	1.33	0.667
sec-Butylbenzene	135-98-8	1.33	U	6.67	1.33	0.667
tert-Butylbenzene	98-06-6	1.33	U	6.67	1.33	0.667
Carbon disulfide	75-15-0	1.33	U	6.67	1.33	0.667
Carbon tetrachloride	56-23-5	1.33	U	6.67	1.33	0.667
Chlorobenzene	108-90-7	1.33	U	6.67	1.33	0.667
Chlorodibromomethane	124-48-1	1.33	U	6.67	1.33	0.667
Chloroethane	75-00-3	2.66	U	6.67	2.66	1.33
Chloroform	67-66-3	1.33	U	6.67	1.33	0.667
Chloromethane	74-87-3	5.34	U	13.3	5.34	2.67
2-Chlorotoluene	95-49-8	1.33	U	6.67	1.33	0.667
4-Chlorotoluene	106-43-4	1.33	U	6.67	1.33	0.667
1,2-Dibromo-3-chloropropane	96-12-8	5.34	U	13.3	5.34	2.67
1,2-Dibromoethane	106-93-4	1.33	U	6.67	1.33	0.667
Dibromomethane	74-95-3	1.33	U	6.67	1.33	0.667
1,2-Dichlorobenzene	95-50-1	1.33	U	6.67	1.33	0.667
1,3-Dichlorobenzene	541-73-1	1.33	U	6.67	1.33	0.667
1,4-Dichlorobenzene	106-46-7	1.33	U	6.67	1.33	0.667
Dichlorodifluoromethane	75-71-8	2.66	U	6.67	2.66	1.33
1,1-Dichloroethane	75-34-3	2.66	U	6.67	2.66	1.33
1,2-Dichloroethane	107-06-2	1.33	U	6.67	1.33	0.667
1,1-Dichloroethene	75-35-4	1.33	U	6.67	1.33	0.667
cis-1,2-Dichloroethene	156-59-2	1.33	U	6.67	1.33	0.667

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.33	U	6.67	1.33	0.667
1,2-Dichloropropane	78-87-5	1.33	U	6.67	1.33	0.667
1,3-Dichloropropane	142-28-9	1.33	U	6.67	1.33	0.667
2,2-Dichloropropane	594-20-7	1.33	U	6.67	1.33	0.667
cis-1,3-Dichloropropene	10061-01-5	1.33	U	6.67	1.33	0.667
trans-1,3-Dichloropropene	10061-02-6	1.33	U	6.67	1.33	0.667
1,1-Dichloropropene	563-58-6	1.33	U	6.67	1.33	0.667
Ethylbenzene	100-41-4	1.33	U	6.67	1.33	0.667
2-Hexanone	591-78-6	6.66	U	13.3	6.66	3.33
Hexachlorobutadiene	87-68-3	1.33	U	6.67	1.33	0.667
Isopropylbenzene	98-82-8	1.33	U	6.67	1.33	0.667
p-Isopropyltoluene	99-87-6	1.33	U	6.67	1.33	0.667
4-Methyl-2-pentanone	108-10-1	6.66	U	13.3	6.66	3.33
Methylene chloride	75-09-2	2.66	U	6.67	2.66	1.33
Naphthalene	91-20-3	1.33	U	6.67	1.33	0.667
n-Propylbenzene	103-65-1	1.33	U	6.67	1.33	0.667
Styrene	100-42-5	1.33	U	6.67	1.33	0.667
1,1,1,2-Tetrachloroethane	630-20-6	1.33	U	6.67	1.33	0.667
1,1,2,2-Tetrachloroethane	79-34-5	1.33	U	6.67	1.33	0.667
Tetrachloroethene	127-18-4	1.33	U	6.67	1.33	0.667
Toluene	108-88-3	1.33	U	6.67	1.33	0.667
1,2,3-Trichlorobenzene	87-61-6	1.33	U	6.67	1.33	0.667
1,2,4-Trichlorobenzene	120-82-1	1.33	U	6.67	1.33	0.667
1,1,1-Trichloroethane	71-55-6	1.33	U	6.67	1.33	0.667
1,1,2-Trichloroethane	79-00-5	1.33	U	6.67	1.33	0.667
Trichloroethene	79-01-6	1.33	U	6.67	1.33	0.667
Trichlorofluoromethane	75-69-4	2.66	U	6.67	2.66	1.33
1,2,3-Trichloropropane	96-18-4	2.66	U	6.67	2.66	1.33
1,2,4-Trimethylbenzene	95-63-6	1.33	U	6.67	1.33	0.667
1,3,5-Trimethylbenzene	108-67-8	1.33	U	6.67	1.33	0.667
Vinyl chloride	75-01-4	2.66	U	6.67	2.66	1.33
o-Xylene	95-47-6	1.33	U	6.67	1.33	0.667
m-,p-Xylene	179601-23-1	1.33	U	6.67	1.33	0.667

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.2	80	120	
1,2-Dichloroethane-d4	86.7	80	120	
Toluene-d8	98.9	85	115	
4-Bromofluorobenzene	99.3	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT11(20-20.5)070316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/09/2016 10:03
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560255	**Analyst:**	TMB	**Run Date:**	03/09/2016 16:31
Collect Date:	03/07/2016 11:50	**Dilution:**	1	**File ID:**	6M137686
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	25.0	12.5	6.25
Benzene	71-43-2	1.25	U	6.25	1.25	0.625
Bromobenzene	108-86-1	1.25	U	6.25	1.25	0.625
Bromochloromethane	74-97-5	2.50	U	6.25	2.50	1.25
Bromodichloromethane	75-27-4	1.25	U	6.25	1.25	0.625
Bromoform	75-25-2	1.25	U	6.25	1.25	0.625
Bromomethane	74-83-9	2.50	U	6.25	2.50	1.25
2-Butanone	78-93-3	6.26	U	12.5	6.26	3.13
n-Butylbenzene	104-51-8	1.25	U	6.25	1.25	0.625
sec-Butylbenzene	135-98-8	1.25	U	6.25	1.25	0.625
tert-Butylbenzene	98-06-6	1.25	U	6.25	1.25	0.625
Carbon disulfide	75-15-0	1.25	U	6.25	1.25	0.625
Carbon tetrachloride	56-23-5	1.25	U	6.25	1.25	0.625
Chlorobenzene	108-90-7	1.25	U	6.25	1.25	0.625
Chlorodibromomethane	124-48-1	1.25	U	6.25	1.25	0.625
Chloroethane	75-00-3	2.50	U	6.25	2.50	1.25
Chloroform	67-66-3	1.25	U	6.25	1.25	0.625
Chloromethane	74-87-3	5.00	U	12.5	5.00	2.50
2-Chlorotoluene	95-49-8	1.25	U	6.25	1.25	0.625
4-Chlorotoluene	106-43-4	1.25	U	6.25	1.25	0.625
1,2-Dibromo-3-chloropropane	96-12-8	5.00	U	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	6.25	1.25	0.625
Dibromomethane	74-95-3	1.25	U	6.25	1.25	0.625
1,2-Dichlorobenzene	95-50-1	1.25	U	6.25	1.25	0.625
1,3-Dichlorobenzene	541-73-1	1.25	U	6.25	1.25	0.625
1,4-Dichlorobenzene	106-46-7	1.25	U	6.25	1.25	0.625
Dichlorodifluoromethane	75-71-8	2.50	U	6.25	2.50	1.25
1,1-Dichloroethane	75-34-3	2.50	U	6.25	2.50	1.25
1,2-Dichloroethane	107-06-2	1.25	U	6.25	1.25	0.625
1,1-Dichloroethene	75-35-4	1.25	U	6.25	1.25	0.625
cis-1,2-Dichloroethene	156-59-2	1.25	U	6.25	1.25	0.625

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.25	U	6.25	1.25	0.625
1,2-Dichloropropane	78-87-5	1.25	U	6.25	1.25	0.625
1,3-Dichloropropane	142-28-9	1.25	U	6.25	1.25	0.625
2,2-Dichloropropane	594-20-7	1.25	U	6.25	1.25	0.625
cis-1,3-Dichloropropene	10061-01-5	1.25	U	6.25	1.25	0.625
trans-1,3-Dichloropropene	10061-02-6	1.25	U	6.25	1.25	0.625
1,1-Dichloropropene	563-58-6	1.25	U	6.25	1.25	0.625
Ethylbenzene	100-41-4	1.25	U	6.25	1.25	0.625
2-Hexanone	591-78-6	6.26	U	12.5	6.26	3.13
Hexachlorobutadiene	87-68-3	1.25	U	6.25	1.25	0.625
Isopropylbenzene	98-82-8	1.25	U	6.25	1.25	0.625
p-Isopropyltoluene	99-87-6	1.25	U	6.25	1.25	0.625
4-Methyl-2-pentanone	108-10-1	6.26	U	12.5	6.26	3.13
Methylene chloride	75-09-2	2.50	U	6.25	2.50	1.25
Naphthalene	91-20-3	1.25	U	6.25	1.25	0.625
n-Propylbenzene	103-65-1	1.25	U	6.25	1.25	0.625
Styrene	100-42-5	1.25	U	6.25	1.25	0.625
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	6.25	1.25	0.625
1,1,2,2-Tetrachloroethane	79-34-5	1.25	U	6.25	1.25	0.625
Tetrachloroethene	127-18-4	1.25	U	6.25	1.25	0.625
Toluene	108-88-3	1.25	U	6.25	1.25	0.625
1,2,3-Trichlorobenzene	87-61-6	1.25	U	6.25	1.25	0.625
1,2,4-Trichlorobenzene	120-82-1	1.25	U	6.25	1.25	0.625
1,1,1-Trichloroethane	71-55-6	1.25	U	6.25	1.25	0.625
1,1,2-Trichloroethane	79-00-5	1.25	U	6.25	1.25	0.625
Trichloroethene	79-01-6	1.25	U	6.25	1.25	0.625
Trichlorofluoromethane	75-69-4	2.50	U	6.25	2.50	1.25
1,2,3-Trichloropropane	96-18-4	2.50	U	6.25	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	6.25	1.25	0.625
1,3,5-Trimethylbenzene	108-67-8	1.25	U	6.25	1.25	0.625
Vinyl chloride	75-01-4	2.50	U	6.25	2.50	1.25
o-Xylene	95-47-6	1.25	U	6.25	1.25	0.625
m-,p-Xylene	179601-23-1	1.25	U	6.25	1.25	0.625

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.4	80	120	
1,2-Dichloroethane-d4	87.7	80	120	
Toluene-d8	98.0	85	115	
4-Bromofluorobenzene	99.3	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT11(29-29.5)070316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/09/2016 10:03
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560255	**Analyst:**	TMB	**Run Date:**	03/09/2016 17:04
Collect Date:	03/07/2016 11:55	**Dilution:**	1	**File ID:**	6M137687
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.0	U	26.1	13.0	6.52
Benzene	71-43-2	1.30	U	6.52	1.30	0.652
Bromobenzene	108-86-1	1.30	U	6.52	1.30	0.652
Bromochloromethane	74-97-5	2.60	U	6.52	2.60	1.30
Bromodichloromethane	75-27-4	1.30	U	6.52	1.30	0.652
Bromoform	75-25-2	1.30	U	6.52	1.30	0.652
Bromomethane	74-83-9	2.60	U	6.52	2.60	1.30
2-Butanone	78-93-3	6.52	U	13.0	6.52	3.26
n-Butylbenzene	104-51-8	1.30	U	6.52	1.30	0.652
sec-Butylbenzene	135-98-8	1.30	U	6.52	1.30	0.652
tert-Butylbenzene	98-06-6	1.30	U	6.52	1.30	0.652
Carbon disulfide	75-15-0	1.30	U	6.52	1.30	0.652
Carbon tetrachloride	56-23-5	1.30	U	6.52	1.30	0.652
Chlorobenzene	108-90-7	1.30	U	6.52	1.30	0.652
Chlorodibromomethane	124-48-1	1.30	U	6.52	1.30	0.652
Chloroethane	75-00-3	2.60	U	6.52	2.60	1.30
Chloroform	67-66-3	1.30	U	6.52	1.30	0.652
Chloromethane	74-87-3	5.22	U	13.0	5.22	2.61
2-Chlorotoluene	95-49-8	1.30	U	6.52	1.30	0.652
4-Chlorotoluene	106-43-4	1.30	U	6.52	1.30	0.652
1,2-Dibromo-3-chloropropane	96-12-8	5.22	U	13.0	5.22	2.61
1,2-Dibromoethane	106-93-4	1.30	U	6.52	1.30	0.652
Dibromomethane	74-95-3	1.30	U	6.52	1.30	0.652
1,2-Dichlorobenzene	95-50-1	1.30	U	6.52	1.30	0.652
1,3-Dichlorobenzene	541-73-1	1.30	U	6.52	1.30	0.652
1,4-Dichlorobenzene	106-46-7	1.30	U	6.52	1.30	0.652
Dichlorodifluoromethane	75-71-8	2.60	U	6.52	2.60	1.30
1,1-Dichloroethane	75-34-3	2.60	U	6.52	2.60	1.30
1,2-Dichloroethane	107-06-2	1.30	U	6.52	1.30	0.652
1,1-Dichloroethene	75-35-4	1.30	U	6.52	1.30	0.652
cis-1,2-Dichloroethene	156-59-2	1.30	U	6.52	1.30	0.652

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Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.30	U	6.52	1.30	0.652
1,2-Dichloropropane	78-87-5	1.30	U	6.52	1.30	0.652
1,3-Dichloropropane	142-28-9	1.30	U	6.52	1.30	0.652
2,2-Dichloropropane	594-20-7	1.30	U	6.52	1.30	0.652
cis-1,3-Dichloropropene	10061-01-5	1.30	U	6.52	1.30	0.652
trans-1,3-Dichloropropene	10061-02-6	1.30	U	6.52	1.30	0.652
1,1-Dichloropropene	563-58-6	1.30	U	6.52	1.30	0.652
Ethylbenzene	100-41-4	1.30	U	6.52	1.30	0.652
2-Hexanone	591-78-6	6.52	U	13.0	6.52	3.26
Hexachlorobutadiene	87-68-3	1.30	U	6.52	1.30	0.652
Isopropylbenzene	98-82-8	1.30	U	6.52	1.30	0.652
p-Isopropyltoluene	99-87-6	1.30	U	6.52	1.30	0.652
4-Methyl-2-pentanone	108-10-1	6.52	U	13.0	6.52	3.26
Methylene chloride	75-09-2	2.60	U	6.52	2.60	1.30
Naphthalene	91-20-3	1.30	U	6.52	1.30	0.652
n-Propylbenzene	103-65-1	1.30	U	6.52	1.30	0.652
Styrene	100-42-5	1.30	U	6.52	1.30	0.652
1,1,1,2-Tetrachloroethane	630-20-6	1.30	U	6.52	1.30	0.652
1,1,2,2-Tetrachloroethane	79-34-5	1.30	U	6.52	1.30	0.652
Tetrachloroethene	127-18-4	1.30	U	6.52	1.30	0.652
Toluene	108-88-3	1.30	U	6.52	1.30	0.652
1,2,3-Trichlorobenzene	87-61-6	1.30	U	6.52	1.30	0.652
1,2,4-Trichlorobenzene	120-82-1	1.30	U	6.52	1.30	0.652
1,1,1-Trichloroethane	71-55-6	1.30	U	6.52	1.30	0.652
1,1,2-Trichloroethane	79-00-5	1.30	U	6.52	1.30	0.652
Trichloroethene	79-01-6	1.30	U	6.52	1.30	0.652
Trichlorofluoromethane	75-69-4	2.60	U	6.52	2.60	1.30
1,2,3-Trichloropropane	96-18-4	2.60	U	6.52	2.60	1.30
1,2,4-Trimethylbenzene	95-63-6	1.30	U	6.52	1.30	0.652
1,3,5-Trimethylbenzene	108-67-8	1.30	U	6.52	1.30	0.652
Vinyl chloride	75-01-4	2.60	U	6.52	2.60	1.30
o-Xylene	95-47-6	1.30	U	6.52	1.30	0.652
m-,p-Xylene	179601-23-1	1.30	U	6.52	1.30	0.652

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.6	80	120	
1,2-Dichloroethane-d4	89.6	80	120	
Toluene-d8	98.0	85	115	
4-Bromofluorobenzene	101	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT11(25-25.5)070316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/09/2016 10:04
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560255	**Analyst:**	TMB	**Run Date:**	03/09/2016 17:37
Collect Date:	03/07/2016 12:00	**Dilution:**	1	**File ID:**	6M137688
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.7	U	27.5	13.7	6.87
Benzene	71-43-2	1.37	U	6.87	1.37	0.687
Bromobenzene	108-86-1	1.37	U	6.87	1.37	0.687
Bromochloromethane	74-97-5	2.74	U	6.87	2.74	1.37
Bromodichloromethane	75-27-4	1.37	U	6.87	1.37	0.687
Bromoform	75-25-2	1.37	U	6.87	1.37	0.687
Bromomethane	74-83-9	2.74	U	6.87	2.74	1.37
2-Butanone	78-93-3	6.88	U	13.7	6.88	3.44
n-Butylbenzene	104-51-8	1.37	U	6.87	1.37	0.687
sec-Butylbenzene	135-98-8	1.37	U	6.87	1.37	0.687
tert-Butylbenzene	98-06-6	1.37	U	6.87	1.37	0.687
Carbon disulfide	75-15-0	1.37	U	6.87	1.37	0.687
Carbon tetrachloride	56-23-5	1.37	U	6.87	1.37	0.687
Chlorobenzene	108-90-7	1.37	U	6.87	1.37	0.687
Chlorodibromomethane	124-48-1	1.37	U	6.87	1.37	0.687
Chloroethane	75-00-3	2.74	U	6.87	2.74	1.37
Chloroform	67-66-3	1.37	U	6.87	1.37	0.687
Chloromethane	74-87-3	5.50	U	13.7	5.50	2.75
2-Chlorotoluene	95-49-8	1.37	U	6.87	1.37	0.687
4-Chlorotoluene	106-43-4	1.37	U	6.87	1.37	0.687
1,2-Dibromo-3-chloropropane	96-12-8	5.50	U	13.7	5.50	2.75
1,2-Dibromoethane	106-93-4	1.37	U	6.87	1.37	0.687
Dibromomethane	74-95-3	1.37	U	6.87	1.37	0.687
1,2-Dichlorobenzene	95-50-1	1.37	U	6.87	1.37	0.687
1,3-Dichlorobenzene	541-73-1	1.37	U	6.87	1.37	0.687
1,4-Dichlorobenzene	106-46-7	1.37	U	6.87	1.37	0.687
Dichlorodifluoromethane	75-71-8	2.74	U	6.87	2.74	1.37
1,1-Dichloroethane	75-34-3	2.74	U	6.87	2.74	1.37
1,2-Dichloroethane	107-06-2	1.37	U	6.87	1.37	0.687
1,1-Dichloroethene	75-35-4	1.37	U	6.87	1.37	0.687
cis-1,2-Dichloroethene	156-59-2	1.37	U	6.87	1.37	0.687

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.37	U	6.87	1.37	0.687
1,2-Dichloropropane	78-87-5	1.37	U	6.87	1.37	0.687
1,3-Dichloropropane	142-28-9	1.37	U	6.87	1.37	0.687
2,2-Dichloropropane	594-20-7	1.37	U	6.87	1.37	0.687
cis-1,3-Dichloropropene	10061-01-5	1.37	U	6.87	1.37	0.687
trans-1,3-Dichloropropene	10061-02-6	1.37	U	6.87	1.37	0.687
1,1-Dichloropropene	563-58-6	1.37	U	6.87	1.37	0.687
Ethylbenzene	100-41-4	1.37	U	6.87	1.37	0.687
2-Hexanone	591-78-6	6.88	U	13.7	6.88	3.44
Hexachlorobutadiene	87-68-3	1.37	U	6.87	1.37	0.687
Isopropylbenzene	98-82-8	1.37	U	6.87	1.37	0.687
p-Isopropyltoluene	99-87-6	1.37	U	6.87	1.37	0.687
4-Methyl-2-pentanone	108-10-1	6.88	U	13.7	6.88	3.44
Methylene chloride	75-09-2	2.74	U	6.87	2.74	1.37
Naphthalene	91-20-3	1.37	U	6.87	1.37	0.687
n-Propylbenzene	103-65-1	1.37	U	6.87	1.37	0.687
Styrene	100-42-5	1.37	U	6.87	1.37	0.687
1,1,1,2-Tetrachloroethane	630-20-6	1.37	U	6.87	1.37	0.687
1,1,2,2-Tetrachloroethane	79-34-5	1.37	U	6.87	1.37	0.687
Tetrachloroethene	127-18-4	1.37	U	6.87	1.37	0.687
Toluene	108-88-3	1.37	U	6.87	1.37	0.687
1,2,3-Trichlorobenzene	87-61-6	1.37	U	6.87	1.37	0.687
1,2,4-Trichlorobenzene	120-82-1	1.37	U	6.87	1.37	0.687
1,1,1-Trichloroethane	71-55-6	1.37	U	6.87	1.37	0.687
1,1,2-Trichloroethane	79-00-5	1.37	U	6.87	1.37	0.687
Trichloroethene	79-01-6	1.37	U	6.87	1.37	0.687
Trichlorofluoromethane	75-69-4	2.74	U	6.87	2.74	1.37
1,2,3-Trichloropropane	96-18-4	2.74	U	6.87	2.74	1.37
1,2,4-Trimethylbenzene	95-63-6	1.37	U	6.87	1.37	0.687
1,3,5-Trimethylbenzene	108-67-8	1.37	U	6.87	1.37	0.687
Vinyl chloride	75-01-4	2.74	U	6.87	2.74	1.37
o-Xylene	95-47-6	1.37	U	6.87	1.37	0.687
m-,p-Xylene	179601-23-1	1.37	U	6.87	1.37	0.687

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.9	80	120	
1,2-Dichloroethane-d4	89.1	80	120	
Toluene-d8	97.7	85	115	
4-Bromofluorobenzene	100	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT12(5-5.5)070316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/09/2016 10:05
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560255	**Analyst:**	TMB	**Run Date:**	03/09/2016 18:11
Collect Date:	03/07/2016 14:35	**Dilution:**	1	**File ID:**	6M137689
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.9	U	23.7	11.9	5.93
Benzene	71-43-2	1.19	U	5.93	1.19	0.593
Bromobenzene	108-86-1	1.19	U	5.93	1.19	0.593
Bromochloromethane	74-97-5	2.38	U	5.93	2.38	1.19
Bromodichloromethane	75-27-4	1.19	U	5.93	1.19	0.593
Bromoform	75-25-2	1.19	U	5.93	1.19	0.593
Bromomethane	74-83-9	2.38	U	5.93	2.38	1.19
2-Butanone	78-93-3	5.94	U	11.9	5.94	2.97
n-Butylbenzene	104-51-8	1.19	U	5.93	1.19	0.593
sec-Butylbenzene	135-98-8	1.19	U	5.93	1.19	0.593
tert-Butylbenzene	98-06-6	1.19	U	5.93	1.19	0.593
Carbon disulfide	75-15-0	1.19	U	5.93	1.19	0.593
Carbon tetrachloride	56-23-5	1.19	U	5.93	1.19	0.593
Chlorobenzene	108-90-7	1.19	U	5.93	1.19	0.593
Chlorodibromomethane	124-48-1	1.19	U	5.93	1.19	0.593
Chloroethane	75-00-3	2.38	U	5.93	2.38	1.19
Chloroform	67-66-3	1.19	U	5.93	1.19	0.593
Chloromethane	74-87-3	4.74	U	11.9	4.74	2.37
2-Chlorotoluene	95-49-8	1.19	U	5.93	1.19	0.593
4-Chlorotoluene	106-43-4	1.19	U	5.93	1.19	0.593
1,2-Dibromo-3-chloropropane	96-12-8	4.74	U	11.9	4.74	2.37
1,2-Dibromoethane	106-93-4	1.19	U	5.93	1.19	0.593
Dibromomethane	74-95-3	1.19	U	5.93	1.19	0.593
1,2-Dichlorobenzene	95-50-1	1.19	U	5.93	1.19	0.593
1,3-Dichlorobenzene	541-73-1	1.19	U	5.93	1.19	0.593
1,4-Dichlorobenzene	106-46-7	1.19	U	5.93	1.19	0.593
Dichlorodifluoromethane	75-71-8	2.38	U	5.93	2.38	1.19
1,1-Dichloroethane	75-34-3	2.38	U	5.93	2.38	1.19
1,2-Dichloroethane	107-06-2	1.19	U	5.93	1.19	0.593
1,1-Dichloroethene	75-35-4	1.19	U	5.93	1.19	0.593
cis-1,2-Dichloroethene	156-59-2	1.19	U	5.93	1.19	0.593

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Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.19	U	5.93	1.19	0.593
1,2-Dichloropropane	78-87-5	1.19	U	5.93	1.19	0.593
1,3-Dichloropropane	142-28-9	1.19	U	5.93	1.19	0.593
2,2-Dichloropropane	594-20-7	1.19	U	5.93	1.19	0.593
cis-1,3-Dichloropropene	10061-01-5	1.19	U	5.93	1.19	0.593
trans-1,3-Dichloropropene	10061-02-6	1.19	U	5.93	1.19	0.593
1,1-Dichloropropene	563-58-6	1.19	U	5.93	1.19	0.593
Ethylbenzene	100-41-4	1.19	U	5.93	1.19	0.593
2-Hexanone	591-78-6	5.94	U	11.9	5.94	2.97
Hexachlorobutadiene	87-68-3	1.19	U	5.93	1.19	0.593
Isopropylbenzene	98-82-8	1.19	U	5.93	1.19	0.593
p-Isopropyltoluene	99-87-6	1.19	U	5.93	1.19	0.593
4-Methyl-2-pentanone	108-10-1	5.94	U	11.9	5.94	2.97
Methylene chloride	75-09-2	2.38	U	5.93	2.38	1.19
Naphthalene	91-20-3	1.19	U	5.93	1.19	0.593
n-Propylbenzene	103-65-1	1.19	U	5.93	1.19	0.593
Styrene	100-42-5	1.19	U	5.93	1.19	0.593
1,1,1,2-Tetrachloroethane	630-20-6	1.19	U	5.93	1.19	0.593
1,1,2,2-Tetrachloroethane	79-34-5	1.19	U	5.93	1.19	0.593
Tetrachloroethene	127-18-4	1.19	U	5.93	1.19	0.593
Toluene	108-88-3	1.19	U	5.93	1.19	0.593
1,2,3-Trichlorobenzene	87-61-6	1.19	U	5.93	1.19	0.593
1,2,4-Trichlorobenzene	120-82-1	1.19	U	5.93	1.19	0.593
1,1,1-Trichloroethane	71-55-6	1.19	U	5.93	1.19	0.593
1,1,2-Trichloroethane	79-00-5	1.19	U	5.93	1.19	0.593
Trichloroethene	79-01-6	1.19	U	5.93	1.19	0.593
Trichlorofluoromethane	75-69-4	2.38	U	5.93	2.38	1.19
1,2,3-Trichloropropane	96-18-4	2.38	U	5.93	2.38	1.19
1,2,4-Trimethylbenzene	95-63-6	1.19	U	5.93	1.19	0.593
1,3,5-Trimethylbenzene	108-67-8	1.19	U	5.93	1.19	0.593
Vinyl chloride	75-01-4	2.38	U	5.93	2.38	1.19
o-Xylene	95-47-6	1.19	U	5.93	1.19	0.593
m-,p-Xylene	179601-23-1	1.19	U	5.93	1.19	0.593

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.3	80	120	
1,2-Dichloroethane-d4	92.1	80	120	
Toluene-d8	96.8	85	115	
4-Bromofluorobenzene	98.6	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT12(8.5-9)070316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/09/2016 10:06
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560255	**Analyst:**	TMB	**Run Date:**	03/09/2016 18:44
Collect Date:	03/07/2016 14:40	**Dilution:**	1	**File ID:**	6M137690
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.1	U	26.3	13.1	6.57
Benzene	71-43-2	1.31	U	6.57	1.31	0.657
Bromobenzene	108-86-1	1.31	U	6.57	1.31	0.657
Bromochloromethane	74-97-5	2.62	U	6.57	2.62	1.31
Bromodichloromethane	75-27-4	1.31	U	6.57	1.31	0.657
Bromoform	75-25-2	1.31	U	6.57	1.31	0.657
Bromomethane	74-83-9	2.62	U	6.57	2.62	1.31
2-Butanone	78-93-3	6.56	U	13.1	6.56	3.28
n-Butylbenzene	104-51-8	1.31	U	6.57	1.31	0.657
sec-Butylbenzene	135-98-8	1.31	U	6.57	1.31	0.657
tert-Butylbenzene	98-06-6	1.31	U	6.57	1.31	0.657
Carbon disulfide	75-15-0	1.31	U	6.57	1.31	0.657
Carbon tetrachloride	56-23-5	1.31	U	6.57	1.31	0.657
Chlorobenzene	108-90-7	1.31	U	6.57	1.31	0.657
Chlorodibromomethane	124-48-1	1.31	U	6.57	1.31	0.657
Chloroethane	75-00-3	2.62	U	6.57	2.62	1.31
Chloroform	67-66-3	1.31	U	6.57	1.31	0.657
Chloromethane	74-87-3	5.26	U	13.1	5.26	2.63
2-Chlorotoluene	95-49-8	1.31	U	6.57	1.31	0.657
4-Chlorotoluene	106-43-4	1.31	U	6.57	1.31	0.657
1,2-Dibromo-3-chloropropane	96-12-8	5.26	U	13.1	5.26	2.63
1,2-Dibromoethane	106-93-4	1.31	U	6.57	1.31	0.657
Dibromomethane	74-95-3	1.31	U	6.57	1.31	0.657
1,2-Dichlorobenzene	95-50-1	1.31	U	6.57	1.31	0.657
1,3-Dichlorobenzene	541-73-1	1.31	U	6.57	1.31	0.657
1,4-Dichlorobenzene	106-46-7	1.31	U	6.57	1.31	0.657
Dichlorodifluoromethane	75-71-8	2.62	U	6.57	2.62	1.31
1,1-Dichloroethane	75-34-3	2.62	U	6.57	2.62	1.31
1,2-Dichloroethane	107-06-2	1.31	U	6.57	1.31	0.657
1,1-Dichloroethene	75-35-4	1.31	U	6.57	1.31	0.657
cis-1,2-Dichloroethene	156-59-2	1.31	U	6.57	1.31	0.657

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Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.31	U	6.57	1.31	0.657
1,2-Dichloropropane	78-87-5	1.31	U	6.57	1.31	0.657
1,3-Dichloropropane	142-28-9	1.31	U	6.57	1.31	0.657
2,2-Dichloropropane	594-20-7	1.31	U	6.57	1.31	0.657
cis-1,3-Dichloropropene	10061-01-5	1.31	U	6.57	1.31	0.657
trans-1,3-Dichloropropene	10061-02-6	1.31	U	6.57	1.31	0.657
1,1-Dichloropropene	563-58-6	1.31	U	6.57	1.31	0.657
Ethylbenzene	100-41-4	1.31	U	6.57	1.31	0.657
2-Hexanone	591-78-6	6.56	U	13.1	6.56	3.28
Hexachlorobutadiene	87-68-3	1.31	U	6.57	1.31	0.657
Isopropylbenzene	98-82-8	1.31	U	6.57	1.31	0.657
p-Isopropyltoluene	99-87-6	1.31	U	6.57	1.31	0.657
4-Methyl-2-pentanone	108-10-1	6.56	U	13.1	6.56	3.28
Methylene chloride	75-09-2	2.62	U	6.57	2.62	1.31
Naphthalene	91-20-3	1.31	U	6.57	1.31	0.657
n-Propylbenzene	103-65-1	1.31	U	6.57	1.31	0.657
Styrene	100-42-5	1.31	U	6.57	1.31	0.657
1,1,1,2-Tetrachloroethane	630-20-6	1.31	U	6.57	1.31	0.657
1,1,2,2-Tetrachloroethane	79-34-5	1.31	U	6.57	1.31	0.657
Tetrachloroethene	127-18-4	1.31	U	6.57	1.31	0.657
Toluene	108-88-3	1.31	U	6.57	1.31	0.657
1,2,3-Trichlorobenzene	87-61-6	1.31	U	6.57	1.31	0.657
1,2,4-Trichlorobenzene	120-82-1	1.31	U	6.57	1.31	0.657
1,1,1-Trichloroethane	71-55-6	1.31	U	6.57	1.31	0.657
1,1,2-Trichloroethane	79-00-5	1.31	U	6.57	1.31	0.657
Trichloroethene	79-01-6	1.31	U	6.57	1.31	0.657
Trichlorofluoromethane	75-69-4	2.62	U	6.57	2.62	1.31
1,2,3-Trichloropropane	96-18-4	2.62	U	6.57	2.62	1.31
1,2,4-Trimethylbenzene	95-63-6	1.31	U	6.57	1.31	0.657
1,3,5-Trimethylbenzene	108-67-8	1.31	U	6.57	1.31	0.657
Vinyl chloride	75-01-4	2.62	U	6.57	2.62	1.31
o-Xylene	95-47-6	1.31	U	6.57	1.31	0.657
m-,p-Xylene	179601-23-1	1.31	U	6.57	1.31	0.657

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.4	80	120	
1,2-Dichloroethane-d4	88.1	80	120	
Toluene-d8	98.3	85	115	
4-Bromofluorobenzene	100	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT12(18-18.5)070316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/09/2016 10:08
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560255	**Analyst:**	TMB	**Run Date:**	03/09/2016 21:30
Collect Date:	03/07/2016 14:45	**Dilution:**	1	**File ID:**	6M137695
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.3	U	26.7	13.3	6.66
Benzene	71-43-2	1.33	U	6.66	1.33	0.666
Bromobenzene	108-86-1	1.33	U	6.66	1.33	0.666
Bromochloromethane	74-97-5	2.66	U	6.66	2.66	1.33
Bromodichloromethane	75-27-4	1.33	U	6.66	1.33	0.666
Bromoform	75-25-2	1.33	U	6.66	1.33	0.666
Bromomethane	74-83-9	2.66	U	6.66	2.66	1.33
2-Butanone	78-93-3	6.66	U	13.3	6.66	3.33
n-Butylbenzene	104-51-8	1.33	U	6.66	1.33	0.666
sec-Butylbenzene	135-98-8	1.33	U	6.66	1.33	0.666
tert-Butylbenzene	98-06-6	1.33	U	6.66	1.33	0.666
Carbon disulfide	75-15-0	1.33	U	6.66	1.33	0.666
Carbon tetrachloride	56-23-5	1.33	U	6.66	1.33	0.666
Chlorobenzene	108-90-7	1.33	U	6.66	1.33	0.666
Chlorodibromomethane	124-48-1	1.33	U	6.66	1.33	0.666
Chloroethane	75-00-3	2.66	U	6.66	2.66	1.33
Chloroform	67-66-3	1.33	U	6.66	1.33	0.666
Chloromethane	74-87-3	5.34	U	13.3	5.34	2.67
2-Chlorotoluene	95-49-8	1.33	U	6.66	1.33	0.666
4-Chlorotoluene	106-43-4	1.33	U	6.66	1.33	0.666
1,2-Dibromo-3-chloropropane	96-12-8	5.34	U	13.3	5.34	2.67
1,2-Dibromoethane	106-93-4	1.33	U	6.66	1.33	0.666
Dibromomethane	74-95-3	1.33	U	6.66	1.33	0.666
1,2-Dichlorobenzene	95-50-1	1.33	U	6.66	1.33	0.666
1,3-Dichlorobenzene	541-73-1	1.33	U	6.66	1.33	0.666
1,4-Dichlorobenzene	106-46-7	1.33	U	6.66	1.33	0.666
Dichlorodifluoromethane	75-71-8	2.66	U	6.66	2.66	1.33
1,1-Dichloroethane	75-34-3	2.66	U	6.66	2.66	1.33
1,2-Dichloroethane	107-06-2	1.33	U	6.66	1.33	0.666
1,1-Dichloroethene	75-35-4	1.33	U	6.66	1.33	0.666
cis-1,2-Dichloroethene	156-59-2	1.33	U	6.66	1.33	0.666

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Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.33	U	6.66	1.33	0.666
1,2-Dichloropropane	78-87-5	1.33	U	6.66	1.33	0.666
1,3-Dichloropropane	142-28-9	1.33	U	6.66	1.33	0.666
2,2-Dichloropropane	594-20-7	1.33	U	6.66	1.33	0.666
cis-1,3-Dichloropropene	10061-01-5	1.33	U	6.66	1.33	0.666
trans-1,3-Dichloropropene	10061-02-6	1.33	U	6.66	1.33	0.666
1,1-Dichloropropene	563-58-6	1.33	U	6.66	1.33	0.666
Ethylbenzene	100-41-4	1.33	U	6.66	1.33	0.666
2-Hexanone	591-78-6	6.66	U	13.3	6.66	3.33
Hexachlorobutadiene	87-68-3	1.33	U	6.66	1.33	0.666
Isopropylbenzene	98-82-8	1.33	U	6.66	1.33	0.666
p-Isopropyltoluene	99-87-6	1.33	U	6.66	1.33	0.666
4-Methyl-2-pentanone	108-10-1	6.66	U	13.3	6.66	3.33
Methylene chloride	75-09-2	2.66	U	6.66	2.66	1.33
Naphthalene	91-20-3	1.33	U	6.66	1.33	0.666
n-Propylbenzene	103-65-1	1.33	U	6.66	1.33	0.666
Styrene	100-42-5	1.33	U	6.66	1.33	0.666
1,1,1,2-Tetrachloroethane	630-20-6	1.33	U	6.66	1.33	0.666
1,1,2,2-Tetrachloroethane	79-34-5	1.33	U	6.66	1.33	0.666
Tetrachloroethene	127-18-4	1.33	U	6.66	1.33	0.666
Toluene	108-88-3	1.33	U	6.66	1.33	0.666
1,2,3-Trichlorobenzene	87-61-6	1.33	U	6.66	1.33	0.666
1,2,4-Trichlorobenzene	120-82-1	1.33	U	6.66	1.33	0.666
1,1,1-Trichloroethane	71-55-6	1.33	U	6.66	1.33	0.666
1,1,2-Trichloroethane	79-00-5	1.33	U	6.66	1.33	0.666
Trichloroethene	79-01-6	50.0		6.66	1.33	0.666
Trichlorofluoromethane	75-69-4	2.66	U	6.66	2.66	1.33
1,2,3-Trichloropropane	96-18-4	2.66	U	6.66	2.66	1.33
1,2,4-Trimethylbenzene	95-63-6	1.33	U	6.66	1.33	0.666
1,3,5-Trimethylbenzene	108-67-8	1.33	U	6.66	1.33	0.666
Vinyl chloride	75-01-4	2.66	U	6.66	2.66	1.33
o-Xylene	95-47-6	1.33	U	6.66	1.33	0.666
m-,p-Xylene	179601-23-1	1.33	U	6.66	1.33	0.666

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.5	80	120	
1,2-Dichloroethane-d4	89.7	80	120	
Toluene-d8	97.4	85	115	
4-Bromofluorobenzene	99.9	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT12(12-12.5)070316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/09/2016 10:09
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560255	**Analyst:**	TMB	**Run Date:**	03/09/2016 20:57
Collect Date:	03/07/2016 15:00	**Dilution:**	1	**File ID:**	6M137694
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	77.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.5	U	27.0	13.5	6.75
Benzene	71-43-2	1.35	U	6.75	1.35	0.675
Bromobenzene	108-86-1	1.35	U	6.75	1.35	0.675
Bromochloromethane	74-97-5	2.70	U	6.75	2.70	1.35
Bromodichloromethane	75-27-4	1.35	U	6.75	1.35	0.675
Bromoform	75-25-2	1.35	U	6.75	1.35	0.675
Bromomethane	74-83-9	2.70	U	6.75	2.70	1.35
2-Butanone	78-93-3	6.76	U	13.5	6.76	3.38
n-Butylbenzene	104-51-8	1.35	U	6.75	1.35	0.675
sec-Butylbenzene	135-98-8	1.35	U	6.75	1.35	0.675
tert-Butylbenzene	98-06-6	1.35	U	6.75	1.35	0.675
Carbon disulfide	75-15-0	1.35	U	6.75	1.35	0.675
Carbon tetrachloride	56-23-5	1.35	U	6.75	1.35	0.675
Chlorobenzene	108-90-7	1.35	U	6.75	1.35	0.675
Chlorodibromomethane	124-48-1	1.35	U	6.75	1.35	0.675
Chloroethane	75-00-3	2.70	U	6.75	2.70	1.35
Chloroform	67-66-3	1.35	U	6.75	1.35	0.675
Chloromethane	74-87-3	5.40	U	13.5	5.40	2.70
2-Chlorotoluene	95-49-8	1.35	U	6.75	1.35	0.675
4-Chlorotoluene	106-43-4	1.35	U	6.75	1.35	0.675
1,2-Dibromo-3-chloropropane	96-12-8	5.40	U	13.5	5.40	2.70
1,2-Dibromoethane	106-93-4	1.35	U	6.75	1.35	0.675
Dibromomethane	74-95-3	1.35	U	6.75	1.35	0.675
1,2-Dichlorobenzene	95-50-1	1.35	U	6.75	1.35	0.675
1,3-Dichlorobenzene	541-73-1	1.35	U	6.75	1.35	0.675
1,4-Dichlorobenzene	106-46-7	1.35	U	6.75	1.35	0.675
Dichlorodifluoromethane	75-71-8	2.70	U	6.75	2.70	1.35
1,1-Dichloroethane	75-34-3	2.70	U	6.75	2.70	1.35
1,2-Dichloroethane	107-06-2	1.35	U	6.75	1.35	0.675
1,1-Dichloroethene	75-35-4	1.35	U	6.75	1.35	0.675
cis-1,2-Dichloroethene	156-59-2	1.35	U	6.75	1.35	0.675

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Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.35	U	6.75	1.35	0.675
1,2-Dichloropropane	78-87-5	1.35	U	6.75	1.35	0.675
1,3-Dichloropropane	142-28-9	1.35	U	6.75	1.35	0.675
2,2-Dichloropropane	594-20-7	1.35	U	6.75	1.35	0.675
cis-1,3-Dichloropropene	10061-01-5	1.35	U	6.75	1.35	0.675
trans-1,3-Dichloropropene	10061-02-6	1.35	U	6.75	1.35	0.675
1,1-Dichloropropene	563-58-6	1.35	U	6.75	1.35	0.675
Ethylbenzene	100-41-4	1.35	U	6.75	1.35	0.675
2-Hexanone	591-78-6	6.76	U	13.5	6.76	3.38
Hexachlorobutadiene	87-68-3	1.35	U	6.75	1.35	0.675
Isopropylbenzene	98-82-8	1.35	U	6.75	1.35	0.675
p-Isopropyltoluene	99-87-6	1.35	U	6.75	1.35	0.675
4-Methyl-2-pentanone	108-10-1	6.76	U	13.5	6.76	3.38
Methylene chloride	75-09-2	2.70	U	6.75	2.70	1.35
Naphthalene	91-20-3	1.35	U	6.75	1.35	0.675
n-Propylbenzene	103-65-1	1.35	U	6.75	1.35	0.675
Styrene	100-42-5	1.35	U	6.75	1.35	0.675
1,1,1,2-Tetrachloroethane	630-20-6	1.35	U	6.75	1.35	0.675
1,1,2,2-Tetrachloroethane	79-34-5	1.35	U	6.75	1.35	0.675
Tetrachloroethene	127-18-4	1.35	U	6.75	1.35	0.675
Toluene	108-88-3	1.35	U	6.75	1.35	0.675
1,2,3-Trichlorobenzene	87-61-6	1.35	U	6.75	1.35	0.675
1,2,4-Trichlorobenzene	120-82-1	1.35	U	6.75	1.35	0.675
1,1,1-Trichloroethane	71-55-6	1.35	U	6.75	1.35	0.675
1,1,2-Trichloroethane	79-00-5	1.35	U	6.75	1.35	0.675
Trichloroethene	79-01-6	6.14	J	6.75	1.35	0.675
Trichlorofluoromethane	75-69-4	2.70	U	6.75	2.70	1.35
1,2,3-Trichloropropane	96-18-4	2.70	U	6.75	2.70	1.35
1,2,4-Trimethylbenzene	95-63-6	1.35	U	6.75	1.35	0.675
1,3,5-Trimethylbenzene	108-67-8	1.35	U	6.75	1.35	0.675
Vinyl chloride	75-01-4	2.70	U	6.75	2.70	1.35
o-Xylene	95-47-6	1.35	U	6.75	1.35	0.675
m-,p-Xylene	179601-23-1	1.35	U	6.75	1.35	0.675

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.4	80	120	
1,2-Dichloroethane-d4	94.3	80	120	
Toluene-d8	96.5	85	115	
4-Bromofluorobenzene	99.0	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

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Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT13(5-5.5)070316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/09/2016 10:10
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560255	**Analyst:**	TMB	**Run Date:**	03/09/2016 19:18
Collect Date:	03/07/2016 16:00	**Dilution:**	1	**File ID:**	6M137691
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	25.0	12.5	6.24
Benzene	71-43-2	1.25	U	6.24	1.25	0.624
Bromobenzene	108-86-1	1.25	U	6.24	1.25	0.624
Bromochloromethane	74-97-5	2.50	U	6.24	2.50	1.25
Bromodichloromethane	75-27-4	1.25	U	6.24	1.25	0.624
Bromoform	75-25-2	1.25	U	6.24	1.25	0.624
Bromomethane	74-83-9	2.50	U	6.24	2.50	1.25
2-Butanone	78-93-3	6.24	U	12.5	6.24	3.12
n-Butylbenzene	104-51-8	1.25	U	6.24	1.25	0.624
sec-Butylbenzene	135-98-8	1.25	U	6.24	1.25	0.624
tert-Butylbenzene	98-06-6	1.25	U	6.24	1.25	0.624
Carbon disulfide	75-15-0	1.25	U	6.24	1.25	0.624
Carbon tetrachloride	56-23-5	1.25	U	6.24	1.25	0.624
Chlorobenzene	108-90-7	1.25	U	6.24	1.25	0.624
Chlorodibromomethane	124-48-1	1.25	U	6.24	1.25	0.624
Chloroethane	75-00-3	2.50	U	6.24	2.50	1.25
Chloroform	67-66-3	1.25	U	6.24	1.25	0.624
Chloromethane	74-87-3	5.00	U	12.5	5.00	2.50
2-Chlorotoluene	95-49-8	1.25	U	6.24	1.25	0.624
4-Chlorotoluene	106-43-4	1.25	U	6.24	1.25	0.624
1,2-Dibromo-3-chloropropane	96-12-8	5.00	U	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	6.24	1.25	0.624
Dibromomethane	74-95-3	1.25	U	6.24	1.25	0.624
1,2-Dichlorobenzene	95-50-1	1.25	U	6.24	1.25	0.624
1,3-Dichlorobenzene	541-73-1	1.25	U	6.24	1.25	0.624
1,4-Dichlorobenzene	106-46-7	1.25	U	6.24	1.25	0.624
Dichlorodifluoromethane	75-71-8	2.50	U	6.24	2.50	1.25
1,1-Dichloroethane	75-34-3	2.50	U	6.24	2.50	1.25
1,2-Dichloroethane	107-06-2	1.25	U	6.24	1.25	0.624
1,1-Dichloroethene	75-35-4	1.25	U	6.24	1.25	0.624
cis-1,2-Dichloroethene	156-59-2	1.25	U	6.24	1.25	0.624

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.25	U	6.24	1.25	0.624
1,2-Dichloropropane	78-87-5	1.25	U	6.24	1.25	0.624
1,3-Dichloropropane	142-28-9	1.25	U	6.24	1.25	0.624
2,2-Dichloropropane	594-20-7	1.25	U	6.24	1.25	0.624
cis-1,3-Dichloropropene	10061-01-5	1.25	U	6.24	1.25	0.624
trans-1,3-Dichloropropene	10061-02-6	1.25	U	6.24	1.25	0.624
1,1-Dichloropropene	563-58-6	1.25	U	6.24	1.25	0.624
Ethylbenzene	100-41-4	1.25	U	6.24	1.25	0.624
2-Hexanone	591-78-6	6.24	U	12.5	6.24	3.12
Hexachlorobutadiene	87-68-3	1.25	U	6.24	1.25	0.624
Isopropylbenzene	98-82-8	1.25	U	6.24	1.25	0.624
p-Isopropyltoluene	99-87-6	1.25	U	6.24	1.25	0.624
4-Methyl-2-pentanone	108-10-1	6.24	U	12.5	6.24	3.12
Methylene chloride	75-09-2	2.50	U	6.24	2.50	1.25
Naphthalene	91-20-3	1.25	U	6.24	1.25	0.624
n-Propylbenzene	103-65-1	1.25	U	6.24	1.25	0.624
Styrene	100-42-5	1.25	U	6.24	1.25	0.624
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	6.24	1.25	0.624
1,1,2,2-Tetrachloroethane	79-34-5	1.25	U	6.24	1.25	0.624
Tetrachloroethene	127-18-4	1.25	U	6.24	1.25	0.624
Toluene	108-88-3	1.25	U	6.24	1.25	0.624
1,2,3-Trichlorobenzene	87-61-6	1.25	U	6.24	1.25	0.624
1,2,4-Trichlorobenzene	120-82-1	1.25	U	6.24	1.25	0.624
1,1,1-Trichloroethane	71-55-6	1.25	U	6.24	1.25	0.624
1,1,2-Trichloroethane	79-00-5	1.25	U	6.24	1.25	0.624
Trichloroethene	79-01-6	1.25	U	6.24	1.25	0.624
Trichlorofluoromethane	75-69-4	2.50	U	6.24	2.50	1.25
1,2,3-Trichloropropane	96-18-4	2.50	U	6.24	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	6.24	1.25	0.624
1,3,5-Trimethylbenzene	108-67-8	1.25	U	6.24	1.25	0.624
Vinyl chloride	75-01-4	2.50	U	6.24	2.50	1.25
o-Xylene	95-47-6	1.25	U	6.24	1.25	0.624
m-,p-Xylene	179601-23-1	1.25	U	6.24	1.25	0.624

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.5	80	120	
1,2-Dichloroethane-d4	86.9	80	120	
Toluene-d8	98.1	85	115	
4-Bromofluorobenzene	99.9	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT13(12-12.5)070316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/09/2016 10:10
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560255	**Analyst:**	TMB	**Run Date:**	03/09/2016 19:51
Collect Date:	03/07/2016 16:05	**Dilution:**	1	**File ID:**	6M137692
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.3	U	22.6	11.3	5.64
Benzene	71-43-2	1.13	U	5.64	1.13	0.564
Bromobenzene	108-86-1	1.13	U	5.64	1.13	0.564
Bromochloromethane	74-97-5	2.26	U	5.64	2.26	1.13
Bromodichloromethane	75-27-4	1.13	U	5.64	1.13	0.564
Bromoform	75-25-2	1.13	U	5.64	1.13	0.564
Bromomethane	74-83-9	2.26	U	5.64	2.26	1.13
2-Butanone	78-93-3	5.64	U	11.3	5.64	2.82
n-Butylbenzene	104-51-8	1.13	U	5.64	1.13	0.564
sec-Butylbenzene	135-98-8	1.13	U	5.64	1.13	0.564
tert-Butylbenzene	98-06-6	1.13	U	5.64	1.13	0.564
Carbon disulfide	75-15-0	1.13	U	5.64	1.13	0.564
Carbon tetrachloride	56-23-5	1.13	U	5.64	1.13	0.564
Chlorobenzene	108-90-7	1.13	U	5.64	1.13	0.564
Chlorodibromomethane	124-48-1	1.13	U	5.64	1.13	0.564
Chloroethane	75-00-3	2.26	U	5.64	2.26	1.13
Chloroform	67-66-3	1.13	U	5.64	1.13	0.564
Chloromethane	74-87-3	4.52	U	11.3	4.52	2.26
2-Chlorotoluene	95-49-8	1.13	U	5.64	1.13	0.564
4-Chlorotoluene	106-43-4	1.13	U	5.64	1.13	0.564
1,2-Dibromo-3-chloropropane	96-12-8	4.52	U	11.3	4.52	2.26
1,2-Dibromoethane	106-93-4	1.13	U	5.64	1.13	0.564
Dibromomethane	74-95-3	1.13	U	5.64	1.13	0.564
1,2-Dichlorobenzene	95-50-1	1.13	U	5.64	1.13	0.564
1,3-Dichlorobenzene	541-73-1	1.13	U	5.64	1.13	0.564
1,4-Dichlorobenzene	106-46-7	1.13	U	5.64	1.13	0.564
Dichlorodifluoromethane	75-71-8	2.26	U	5.64	2.26	1.13
1,1-Dichloroethane	75-34-3	2.26	U	5.64	2.26	1.13
1,2-Dichloroethane	107-06-2	1.13	U	5.64	1.13	0.564
1,1-Dichloroethene	75-35-4	1.13	U	5.64	1.13	0.564
cis-1,2-Dichloroethene	156-59-2	1.13	U	5.64	1.13	0.564

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Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.13	U	5.64	1.13	0.564
1,2-Dichloropropane	78-87-5	1.13	U	5.64	1.13	0.564
1,3-Dichloropropane	142-28-9	1.13	U	5.64	1.13	0.564
2,2-Dichloropropane	594-20-7	1.13	U	5.64	1.13	0.564
cis-1,3-Dichloropropene	10061-01-5	1.13	U	5.64	1.13	0.564
trans-1,3-Dichloropropene	10061-02-6	1.13	U	5.64	1.13	0.564
1,1-Dichloropropene	563-58-6	1.13	U	5.64	1.13	0.564
Ethylbenzene	100-41-4	1.13	U	5.64	1.13	0.564
2-Hexanone	591-78-6	5.64	U	11.3	5.64	2.82
Hexachlorobutadiene	87-68-3	1.13	U	5.64	1.13	0.564
Isopropylbenzene	98-82-8	1.13	U	5.64	1.13	0.564
p-Isopropyltoluene	99-87-6	1.13	U	5.64	1.13	0.564
4-Methyl-2-pentanone	108-10-1	5.64	U	11.3	5.64	2.82
Methylene chloride	75-09-2	2.26	U	5.64	2.26	1.13
Naphthalene	91-20-3	1.13	U	5.64	1.13	0.564
n-Propylbenzene	103-65-1	1.13	U	5.64	1.13	0.564
Styrene	100-42-5	1.13	U	5.64	1.13	0.564
1,1,1,2-Tetrachloroethane	630-20-6	1.13	U	5.64	1.13	0.564
1,1,2,2-Tetrachloroethane	79-34-5	1.13	U	5.64	1.13	0.564
Tetrachloroethene	127-18-4	1.13	U	5.64	1.13	0.564
Toluene	108-88-3	1.13	U	5.64	1.13	0.564
1,2,3-Trichlorobenzene	87-61-6	1.13	U	5.64	1.13	0.564
1,2,4-Trichlorobenzene	120-82-1	1.13	U	5.64	1.13	0.564
1,1,1-Trichloroethane	71-55-6	1.13	U	5.64	1.13	0.564
1,1,2-Trichloroethane	79-00-5	1.13	U	5.64	1.13	0.564
Trichloroethene	79-01-6	1.13	U	5.64	1.13	0.564
Trichlorofluoromethane	75-69-4	2.26	U	5.64	2.26	1.13
1,2,3-Trichloropropane	96-18-4	2.26	U	5.64	2.26	1.13
1,2,4-Trimethylbenzene	95-63-6	1.13	U	5.64	1.13	0.564
1,3,5-Trimethylbenzene	108-67-8	1.13	U	5.64	1.13	0.564
Vinyl chloride	75-01-4	2.26	U	5.64	2.26	1.13
o-Xylene	95-47-6	1.13	U	5.64	1.13	0.564
m-,p-Xylene	179601-23-1	1.13	U	5.64	1.13	0.564

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	89.8	80	120	
1,2-Dichloroethane-d4	83.1	80	120	
Toluene-d8	98.5	85	115	
4-Bromofluorobenzene	100	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT13(17-17.5)070316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/09/2016 10:12
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG560255	**Analyst:**	TMB	**Run Date:**	03/09/2016 20:24
Collect Date:	03/07/2016 16:10	**Dilution:**	1	**File ID:**	6M137693
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	76.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	14.1	U	28.1	14.1	7.04
Benzene	71-43-2	1.41	U	7.04	1.41	0.704
Bromobenzene	108-86-1	1.41	U	7.04	1.41	0.704
Bromochloromethane	74-97-5	2.82	U	7.04	2.82	1.41
Bromodichloromethane	75-27-4	1.41	U	7.04	1.41	0.704
Bromoform	75-25-2	1.41	U	7.04	1.41	0.704
Bromomethane	74-83-9	2.82	U	7.04	2.82	1.41
2-Butanone	78-93-3	7.04	U	14.1	7.04	3.52
n-Butylbenzene	104-51-8	1.41	U	7.04	1.41	0.704
sec-Butylbenzene	135-98-8	1.41	U	7.04	1.41	0.704
tert-Butylbenzene	98-06-6	1.41	U	7.04	1.41	0.704
Carbon disulfide	75-15-0	1.41	U	7.04	1.41	0.704
Carbon tetrachloride	56-23-5	1.41	U	7.04	1.41	0.704
Chlorobenzene	108-90-7	1.41	U	7.04	1.41	0.704
Chlorodibromomethane	124-48-1	1.41	U	7.04	1.41	0.704
Chloroethane	75-00-3	2.82	U	7.04	2.82	1.41
Chloroform	67-66-3	1.41	U	7.04	1.41	0.704
Chloromethane	74-87-3	5.62	U	14.1	5.62	2.81
2-Chlorotoluene	95-49-8	1.41	U	7.04	1.41	0.704
4-Chlorotoluene	106-43-4	1.41	U	7.04	1.41	0.704
1,2-Dibromo-3-chloropropane	96-12-8	5.62	U	14.1	5.62	2.81
1,2-Dibromoethane	106-93-4	1.41	U	7.04	1.41	0.704
Dibromomethane	74-95-3	1.41	U	7.04	1.41	0.704
1,2-Dichlorobenzene	95-50-1	1.41	U	7.04	1.41	0.704
1,3-Dichlorobenzene	541-73-1	1.41	U	7.04	1.41	0.704
1,4-Dichlorobenzene	106-46-7	1.41	U	7.04	1.41	0.704
Dichlorodifluoromethane	75-71-8	2.82	U	7.04	2.82	1.41
1,1-Dichloroethane	75-34-3	2.82	U	7.04	2.82	1.41
1,2-Dichloroethane	107-06-2	1.41	U	7.04	1.41	0.704
1,1-Dichloroethene	75-35-4	1.41	U	7.04	1.41	0.704
cis-1,2-Dichloroethene	156-59-2	1.41	U	7.04	1.41	0.704

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.41	U	7.04	1.41	0.704
1,2-Dichloropropane	78-87-5	1.41	U	7.04	1.41	0.704
1,3-Dichloropropane	142-28-9	1.41	U	7.04	1.41	0.704
2,2-Dichloropropane	594-20-7	1.41	U	7.04	1.41	0.704
cis-1,3-Dichloropropene	10061-01-5	1.41	U	7.04	1.41	0.704
trans-1,3-Dichloropropene	10061-02-6	1.41	U	7.04	1.41	0.704
1,1-Dichloropropene	563-58-6	1.41	U	7.04	1.41	0.704
Ethylbenzene	100-41-4	1.41	U	7.04	1.41	0.704
2-Hexanone	591-78-6	7.04	U	14.1	7.04	3.52
Hexachlorobutadiene	87-68-3	1.41	U	7.04	1.41	0.704
Isopropylbenzene	98-82-8	1.41	U	7.04	1.41	0.704
p-Isopropyltoluene	99-87-6	1.41	U	7.04	1.41	0.704
4-Methyl-2-pentanone	108-10-1	7.04	U	14.1	7.04	3.52
Methylene chloride	75-09-2	2.82	U	7.04	2.82	1.41
Naphthalene	91-20-3	1.41	U	7.04	1.41	0.704
n-Propylbenzene	103-65-1	1.41	U	7.04	1.41	0.704
Styrene	100-42-5	1.41	U	7.04	1.41	0.704
1,1,1,2-Tetrachloroethane	630-20-6	1.41	U	7.04	1.41	0.704
1,1,2,2-Tetrachloroethane	79-34-5	1.41	U	7.04	1.41	0.704
Tetrachloroethene	127-18-4	1.41	U	7.04	1.41	0.704
Toluene	108-88-3	1.41	U	7.04	1.41	0.704
1,2,3-Trichlorobenzene	87-61-6	1.41	U	7.04	1.41	0.704
1,2,4-Trichlorobenzene	120-82-1	1.41	U	7.04	1.41	0.704
1,1,1-Trichloroethane	71-55-6	1.41	U	7.04	1.41	0.704
1,1,2-Trichloroethane	79-00-5	1.41	U	7.04	1.41	0.704
Trichloroethene	79-01-6	1.41	U	7.04	1.41	0.704
Trichlorofluoromethane	75-69-4	2.82	U	7.04	2.82	1.41
1,2,3-Trichloropropane	96-18-4	2.82	U	7.04	2.82	1.41
1,2,4-Trimethylbenzene	95-63-6	1.41	U	7.04	1.41	0.704
1,3,5-Trimethylbenzene	108-67-8	1.41	U	7.04	1.41	0.704
Vinyl chloride	75-01-4	2.82	U	7.04	2.82	1.41
o-Xylene	95-47-6	1.41	U	7.04	1.41	0.704
m-,p-Xylene	179601-23-1	1.41	U	7.04	1.41	0.704

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.2	80	120	
1,2-Dichloroethane-d4	87.1	80	120	
Toluene-d8	98.6	85	115	
4-Bromofluorobenzene	101	85	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.
VOA Preparation/Preservation/Extraction Log

Batch #: WG560249
Method: 5030B/5030C/5035
Product: 8260

Analyst: AWE
Run Date: 03/09/2016 10:01
Purge and trap methanol COA18540
Purified Lab Sand Lot # COA18552

SAMPLE #	Fraction	Collected	Preserved	PCT-S	Tare Wt	Total Wt	Sample Wt	Water	MeOH	Vt	Comments
L16030366-01	A	03/04/16 15:00	03/09/16 10:01	79.1			4.97	5		5	
L16030366-02	A	03/04/16 16:00	03/09/16 10:02	81.7			4.59	5		5	
L16030366-03	A	03/07/16 11:50	03/09/16 10:03	82.9			4.82	5		5	
L16030366-04	A	03/07/16 11:55	03/09/16 10:03	79.5			4.82	5		5	
L16030366-05	A	03/07/16 12:00	03/09/16 10:04	79.2			4.59	5		5	
L16030366-06	A	03/07/16 14:35	03/09/16 10:05	83.6			5.04	5		5	
L16030366-07	A	03/07/16 14:40	03/09/16 10:06	79.3			4.80	5		5	
L16030366-08	A	03/07/16 14:45	03/09/16 10:08	81.2			4.62	5		5	
L16030366-09	A	03/07/16 15:00	03/09/16 10:09	77.6			4.77	5		5	
L16030366-10	A	03/07/16 16:00	03/09/16 10:10	85.3			4.70	5		5	
L16030366-11	A	03/07/16 16:05	03/09/16 10:10	81.2			5.46	5		5	
L16030366-12	A	03/07/16 16:10	03/09/16 10:12	76.9			4.62	5		5	
WG560249-01	A		03/09/16 10:06	79.3			4.80	5		5	
WG560249-02	A		03/09/16 10:07	79.3			4.98	5		5	
WG560249-03	A		03/09/16 10:07	79.3			5.36	5		5	

Comments:
1 = improperly sealed cap
2 = preserved out of hold
3 = effervesced
4 = preserved with NaHSO4
5 = preserved by freezing
6 = preserved in field

Analyst: Andrew Casey

VOA_EXT - Modified 05/22/2008
PDF ID: 4662450
Report generated: 03/09/2016 10:12

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 022616
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Method: 8260C SOP: MSV01-C Rev: 2
Maintenance Log ID:

Internal Standard: STD74756 Surrogate Standard: STD74756
CCV: STD74897 LCS: STD74755 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG558920

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M137521	RINSE	NA	7	1		02/26/16 12:22
6M137522	WG558920-01 50ng BFB STD 8260	NA	7	1	STD74606	02/26/16 13:16
6M137523	WG558920-02 0.5ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 13:41
6M137524	WG558920-03 1ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 14:13
6M137525	WG558920-04 2ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 14:46
6M137526	WG558920-05 5ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 15:26
6M137527	WG558920-06 10ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 15:58
6M137528	WG558920-07 20ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 16:30
6M137529	WG558920-08 50ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 17:03
6M137530	WG558920-09 100ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 17:35
6M137531	WG558920-10 200ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 18:07
6M137532	WG558920-11 300ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 18:39
6M137533	RINSE	NA	7	1		02/26/16 19:11
6M137534	RINSE	NA	7	1		02/26/16 19:43
6M137535	WG558920-12 50ug/Kg ALT SRC STD 826	NA	7	1	STD74755	02/26/16 20:15
6M137536	RINSE	NA	7	1		02/26/16 20:48

Comments

Seq.	Rerun	Dil.	Reason	Analytes
15				
File ID: 6M137535				
Surrogates are spiked at 25 not 50.				

Approved: March 02, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 030916
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD74902 Surrogate Standard: STD74902
CCV: STD75017 LCS: STD74973 MS/MSD: STD74973

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG560255

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M137675	WG560254-01 50ng BFB STD 8260	NA	7	1	STD75004	03/09/16 10:29
6M137676	WG560254-02 50ug/Kg CCV STD 8260	NA	7	1	STD75017	03/09/16 10:55
6M137677	WG560254-02 50ug/Kg CCV STD 8260	NA	7	1	STD75017	03/09/16 11:29
6M137678	WG000000-01 100ug/Kg a9 CCV STD 826	NA	7	1	STD74831	03/09/16 12:02
6M137679	WG560255-01 VBLK0309 BLANK STD 826	NA	7	1		03/09/16 12:36
6M137680	WG560255-02 20ug/Kg LCS STD 8260	NA	7	1	STD74973	03/09/16 13:09
6M137681	WG560249-02 MS 366-07 8260 4.98g	NA	7	1	STD74973	03/09/16 13:43
6M137682	WG560249-03 MSD 366-07 8260 5.36g	NA	7	1	STD74973	03/09/16 14:17
6M137683	RINSE	NA	7	1		03/09/16 14:49
6M137684	L16030366-01 8260 4.97g	NA	7	1		03/09/16 15:23
6M137685	L16030366-02 8260 4.59g	NA	7	1		03/09/16 15:57
6M137686	L16030366-03 8260 4.82g	NA	7	1		03/09/16 16:31
6M137687	L16030366-04 8260 4.82g	NA	7	1		03/09/16 17:04
6M137688	L16030366-05 8260 4.59g	NA	7	1		03/09/16 17:37
6M137689	L16030366-06 8260 5.04g	NA	7	1		03/09/16 18:11
6M137690	WG560249-01 L16030366-07 8260 4.80g	NA	7	1		03/09/16 18:44
6M137691	L16030366-10 8260 4.70g	NA	7	1		03/09/16 19:18
6M137692	L16030366-11 8260 5.46g	NA	7	1		03/09/16 19:51
6M137693	L16030366-12 8260 4.62g	NA	7	1		03/09/16 20:24
6M137694	L16030366-09 8260 4.77g	NA	7	1		03/09/16 20:57
6M137695	L16030366-08 8260 4.62g	NA	7	1		03/09/16 21:30
6M137696	L16030470-01 C 100X 826-SPE	NA	7	50		03/09/16 22:03
6M137697	L16030470-02 C 100X 826-SPE	NA	7	50		03/09/16 22:36
6M137698	L16030471-01 C 100X 826-SPE	NA	7	50		03/09/16 23:09
6M137699	L16030471-02 C 100X 826-SPE	NA	7	50		03/09/16 23:42
6M137700	RINSE	NA	7	1		03/10/16 00:15
6M137701	RINSE	NA	7	1		03/10/16 00:47

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 6M137676				
Chloromethane was low, DNR.				

Approved: March 10, 2016

Sarah Vandenberg

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 030916
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD74902 Surrogate Standard: STD74902
CCV: STD75017 LCS: STD74973 MS/MSD: STD74973

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG560255

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
4				
File ID: 6M137678				
	Not needed, DNR.			

Approved: March 10, 2016

Sarah Vandenberg

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 26-FEB-2016
Analyst: TMB
Analyst: NA
Method: 8260B/C
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 73548
Analytical Workgroups: WG558920

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	NA
TCL Hits	NA
Spectra of TCL Hits	NA
Surrogates	NA
Internal Standards Criteria	NA
Library Searches	NA
Calculations & Correct Factors	NA
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
29-FEB-2016
Tiffany Bailey

Secondary Reviewer:
02-MAR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-02-2016 12:31:18

Microbac Laboratories Inc.

Data Checklist

Date: 09-MAR-2016
Analyst: TMB
Analyst: NA
Method: 8260B
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 73742
Analytical Workgroups: WG560255

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
10-MAR-2016
Tiffany Bailey

Secondary Reviewer:
10-MAR-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-10-2016 10:11:51

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG560255

Login Number: L16030366

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18DPT11(5-5.5)040316	01	03/04/16					03/09/2016	4.8	14		03/09/16	5	14	
18DPT11(15-15.5)040316	02	03/04/16					03/09/2016	4.8	14		03/09/16	5	14	
18DPT11(20-20.5)070316	03	03/07/16					03/09/2016	1.9	14		03/09/16	2.2	14	
18DPT11(29-29.5)070316	04	03/07/16					03/09/2016	1.9	14		03/09/16	2.2	14	
18DPT11(25-25.5)070316	05	03/07/16					03/09/2016	1.9	14		03/09/16	2.2	14	
18DPT12(5-5.5)070316	06	03/07/16					03/09/2016	1.8	14		03/09/16	2.2	14	
18DPT12(8.5-9)070316	07	03/07/16					03/09/2016	1.8	14		03/09/16	2.2	14	
18DPT12(18-18.5)070316	08	03/07/16					03/09/2016	1.8	14		03/09/16	2.3	14	
18DPT12(12-12.5)070316	09	03/07/16					03/09/2016	1.8	14		03/09/16	2.2	14	
18DPT13(5-5.5)070316	10	03/07/16					03/09/2016	1.8	14		03/09/16	2.1	14	
18DPT13(12-12.5)070316	11	03/07/16					03/09/2016	1.8	14		03/09/16	2.2	14	
18DPT13(17-17.5)070316	12	03/07/16					03/09/2016	1.8	14		03/09/16	2.2	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4664134
Report generated 03/10/2016 10:09

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16030366
Instrument Id: HPMS6
Workgroup (AAB#): WG560255

Method: 8260
CAL ID: HPMS6-26-FEB-16
Matrix: Soil

Sample Number	Dilution	Tag	1	2	3	4
L16030366-01	1.00	01	84.9	90.3	100	99.8
L16030366-02	1.00	01	86.7	92.2	99.3	98.9
L16030366-03	1.00	01	87.7	92.4	99.3	98.0
L16030366-04	1.00	01	89.6	92.6	101	98.0
L16030366-05	1.00	01	89.1	91.9	100	97.7
L16030366-06	1.00	01	92.1	93.3	98.6	96.8
L16030366-07	1.00	01	88.1	92.4	100	98.3
L16030366-08	1.00	01	89.7	91.5	99.9	97.4
L16030366-09	1.00	01	94.3	93.4	99.0	96.5
L16030366-10	1.00	01	86.9	92.5	99.9	98.1
L16030366-11	1.00	01	83.1	89.8	100	98.5
L16030366-12	1.00	01	87.1	91.2	101	98.6
WG560255-01	1.00	01	86.1	92.2	101	98.1
WG560255-02	1.00	01	85.2	91.2	101	98.2

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	80	-	120
2 - Dibromofluoromethane	80	-	120
3 - 4-Bromofluorobenzene	85	-	120
4 - Toluene-d8	85	-	115

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4664140
Report generated: 03/10/2016 10:09

METHOD BLANK SUMMARY

Login Number: L16030366
Blank File ID: 6M137679
Prep Date: 03/09/16 12:36
Analyzed Date: 03/09/16 12:36
Analyst: TMB

Work Group: WG560255
Blank Sample ID: WG560255-01
Instrument ID: HPMS6
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG560255-02	6M137680	03/09/16 13:09	01
18DPT11(5-5.5)040316	L16030366-01	6M137684	03/09/16 15:23	01
18DPT11(15-15.5)040316	L16030366-02	6M137685	03/09/16 15:57	01
18DPT11(20-20.5)070316	L16030366-03	6M137686	03/09/16 16:31	01
18DPT11(29-29.5)070316	L16030366-04	6M137687	03/09/16 17:04	01
18DPT11(25-25.5)070316	L16030366-05	6M137688	03/09/16 17:37	01
18DPT12(5-5.5)070316	L16030366-06	6M137689	03/09/16 18:11	01
18DPT12(8.5-9)070316	L16030366-07	6M137690	03/09/16 18:44	01
18DPT13(5-5.5)070316	L16030366-10	6M137691	03/09/16 19:18	01
18DPT13(12-12.5)070316	L16030366-11	6M137692	03/09/16 19:51	01
18DPT13(17-17.5)070316	L16030366-12	6M137693	03/09/16 20:24	01
18DPT12(12-12.5)070316	L16030366-09	6M137694	03/09/16 20:57	01
18DPT12(18-18.5)070316	L16030366-08	6M137695	03/09/16 21:30	01

Report Name: BLANK_SUMMARY
PDF File ID: 4664215
Report generated 03/10/2016 10:09

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16030366 Prep Date: 03/09/16 12:36 Sample ID: WG560255-01
Instrument ID: HPMS6 Run Date: 03/09/16 12:36 Prep Method: 5030B/5030C/503
File ID: 6M137679 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG560255 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS6-26-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	5.00	20.0	5.00	1	U
Benzene	0.500	5.00	0.500	1	U
Bromobenzene	0.500	5.00	0.500	1	U
Bromochloromethane	1.00	5.00	1.00	1	U
Bromodichloromethane	0.500	5.00	0.500	1	U
Bromoform	0.500	5.00	0.500	1	U
Bromomethane	1.00	5.00	1.00	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.500	5.00	0.500	1	U
sec-Butylbenzene	0.500	5.00	0.500	1	U
tert-Butylbenzene	0.500	5.00	0.500	1	U
Carbon disulfide	0.500	5.00	0.500	1	U
Carbon tetrachloride	0.500	5.00	0.500	1	U
Chlorobenzene	0.500	5.00	0.500	1	U
Chlorodibromomethane	0.500	5.00	0.500	1	U
Chloroethane	1.00	5.00	1.00	1	U
Chloroform	0.500	5.00	0.500	1	U
Chloromethane	2.00	10.0	2.00	1	U
2-Chlorotoluene	0.500	5.00	0.500	1	U
4-Chlorotoluene	0.500	5.00	0.500	1	U
1,2-Dibromo-3-chloropropane	2.00	10.0	2.00	1	U
1,2-Dibromoethane	0.500	5.00	0.500	1	U
Dibromomethane	0.500	5.00	0.500	1	U
1,2-Dichlorobenzene	0.500	5.00	0.500	1	U
1,3-Dichlorobenzene	0.500	5.00	0.500	1	U
1,4-Dichlorobenzene	0.500	5.00	0.500	1	U
Dichlorodifluoromethane	1.00	5.00	1.00	1	U
1,1-Dichloroethane	1.00	5.00	1.00	1	U
1,2-Dichloroethane	0.500	5.00	0.500	1	U
1,1-Dichloroethene	0.500	5.00	0.500	1	U
cis-1,2-Dichloroethene	0.500	5.00	0.500	1	U
trans-1,2-Dichloroethene	0.500	5.00	0.500	1	U
1,2-Dichloropropane	0.500	5.00	0.500	1	U
1,3-Dichloropropane	0.500	5.00	0.500	1	U
2,2-Dichloropropane	0.500	5.00	0.500	1	U
cis-1,3-Dichloropropene	0.500	5.00	0.500	1	U
trans-1,3-Dichloropropene	0.500	5.00	0.500	1	U
1,1-Dichloropropene	0.500	5.00	0.500	1	U
Ethylbenzene	0.500	5.00	0.500	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.500	5.00	0.500	1	U
Isopropylbenzene	0.500	5.00	0.500	1	U

Report Name:BLANK
PDF ID: 4664216
10-MAR-2016 10:09

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16030366 Prep Date: 03/09/16 12:36 Sample ID: WG560255-01
Instrument ID: HPMS6 Run Date: 03/09/16 12:36 Prep Method: 5030B/5030C/503
File ID: 6M137679 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG560255 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS6-26-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.500	5.00	0.500	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	1.00	5.00	1.00	1	U
Naphthalene	0.500	5.00	0.500	1	U
n-Propylbenzene	0.500	5.00	0.500	1	U
Styrene	0.500	5.00	0.500	1	U
1,1,1,2-Tetrachloroethane	0.500	5.00	0.500	1	U
1,1,2,2-Tetrachloroethane	0.500	5.00	0.500	1	U
Tetrachloroethene	0.500	5.00	0.500	1	U
Toluene	0.500	5.00	0.500	1	U
1,2,3-Trichlorobenzene	0.500	5.00	0.500	1	U
1,2,4-Trichlorobenzene	0.500	5.00	0.500	1	U
1,1,1-Trichloroethane	0.500	5.00	0.500	1	U
1,1,2-Trichloroethane	0.500	5.00	0.500	1	U
Trichloroethene	0.500	5.00	0.500	1	U
Trichlorofluoromethane	1.00	5.00	1.00	1	U
1,2,3-Trichloropropane	1.00	5.00	1.00	1	U
1,2,4-Trimethylbenzene	0.500	5.00	0.500	1	U
1,3,5-Trimethylbenzene	0.500	5.00	0.500	1	U
Vinyl chloride	1.00	5.00	1.00	1	U
o-Xylene	0.500	5.00	0.500	1	U
m-,p-Xylene	0.500	5.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	92.2	80 - 120	PASS
1,2-Dichloroethane-d4	86.1	80 - 120	PASS
Toluene-d8	98.1	85 - 115	PASS
4-Bromofluorobenzene	101	85 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4664216
10-MAR-2016 10:09

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030366 Run Date: 03/09/2016 Sample ID: WG560255-02
Instrument ID: HPMS6 Run Time: 13:09 Prep Method: 5030B/5030C/503
File ID: 6M137680 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG560255 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD74973 Cal ID: HPMS6-26-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	21.0	105	20 - 160	
Benzene	20.0	19.5	97.3	75 - 125	
Bromobenzene	20.0	19.7	98.3	65 - 120	
Bromochloromethane	20.0	19.6	97.9	70 - 125	
Bromodichloromethane	20.0	19.0	95.0	70 - 130	
Bromoform	20.0	17.3	86.4	55 - 135	
Bromomethane	20.0	20.1	100	30 - 160	
2-Butanone	20.0	21.8	109	30 - 160	
n-Butylbenzene	20.0	17.0	85.1	65 - 140	
sec-Butylbenzene	20.0	18.9	94.7	65 - 130	
tert-Butylbenzene	20.0	20.0	99.9	65 - 130	
Carbon disulfide	20.0	19.9	99.3	45 - 160	
Carbon tetrachloride	20.0	18.7	93.5	65 - 135	
Chlorobenzene	20.0	19.8	99.1	75 - 125	
Chlorodibromomethane	20.0	18.9	94.7	65 - 130	
Chloroethane	20.0	21.2	106	40 - 155	
Chloroform	20.0	19.0	94.9	70 - 125	
Chloromethane	20.0	15.5	77.5	50 - 130	
2-Chlorotoluene	20.0	19.7	98.7	70 - 130	
4-Chlorotoluene	20.0	19.9	99.6	75 - 125	
1,2-Dibromo-3-chloropropane	20.0	20.9	105	40 - 135	
1,2-Dibromoethane	20.0	19.9	99.5	70 - 125	
Dibromomethane	20.0	18.6	93.2	75 - 130	
1,2-Dichlorobenzene	20.0	19.9	99.3	75 - 120	
1,3-Dichlorobenzene	20.0	19.2	95.9	70 - 125	
1,4-Dichlorobenzene	20.0	19.2	96.0	70 - 125	
Dichlorodifluoromethane	20.0	17.8	89.1	35 - 135	
1,1-Dichloroethane	20.0	18.9	94.5	75 - 125	
1,2-Dichloroethane	20.0	19.1	95.3	70 - 135	
1,1-Dichloroethene	20.0	19.2	95.9	65 - 135	
cis-1,2-Dichloroethene	20.0	20.5	103	65 - 125	
trans-1,2-Dichloroethene	20.0	20.6	103	65 - 135	
1,2-Dichloropropane	20.0	20.7	104	70 - 120	
1,3-Dichloropropane	20.0	21.0	105	75 - 125	
2,2-Dichloropropane	20.0	19.7	98.6	65 - 135	
cis-1,3-Dichloropropene	20.0	21.4	107	70 - 125	
trans-1,3-Dichloropropene	20.0	19.3	96.6	65 - 125	
1,1-Dichloropropene	20.0	19.7	98.4	70 - 135	
Ethylbenzene	20.0	19.4	97.1	75 - 125	
2-Hexanone	20.0	22.0	110	45 - 145	
Hexachlorobutadiene	20.0	18.0	90.2	55 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4664135
Report generated: 03/10/2016 10:09

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030366 Run Date: 03/09/2016 Sample ID: WG560255-02
Instrument ID: HPMS6 Run Time: 13:09 Prep Method: 5030B/5030C/503
File ID: 6M137680 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG560255 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD74973 Cal ID: HPMS6-26-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	20.0	99.8	75 - 130	
p-Isopropyltoluene	20.0	18.8	93.8	75 - 135	
4-Methyl-2-pentanone	20.0	22.8	114	45 - 145	
Methylene chloride	20.0	20.1	100	55 - 140	
Naphthalene	20.0	19.9	99.3	40 - 125	
n-Propylbenzene	20.0	19.6	97.8	65 - 135	
Styrene	20.0	20.1	100	75 - 125	
1,1,1,2-Tetrachloroethane	20.0	19.1	95.7	75 - 125	
1,1,2,2-Tetrachloroethane	20.0	20.7	104	55 - 130	
Tetrachloroethene	20.0	19.0	94.8	65 - 140	
Toluene	20.0	19.5	97.4	70 - 125	
1,2,3-Trichlorobenzene	20.0	19.0	94.8	60 - 135	
1,2,4-Trichlorobenzene	20.0	18.9	94.7	65 - 130	
1,1,1-Trichloroethane	20.0	19.2	96.1	70 - 135	
1,1,2-Trichloroethane	20.0	20.0	100	60 - 125	
Trichloroethene	20.0	20.7	103	75 - 125	
Trichlorofluoromethane	20.0	17.5	87.5	25 - 185	
1,2,3-Trichloropropane	20.0	21.4	107	65 - 130	
1,2,4-Trimethylbenzene	20.0	18.8	93.9	65 - 135	
1,3,5-Trimethylbenzene	20.0	19.5	97.7	65 - 135	
Vinyl chloride	20.0	18.1	90.7	60 - 125	
o-Xylene	20.0	21.1	105	75 - 125	
m-,p-Xylene	40.0	39.2	98.0	80 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	91.2	80 - 120	PASS
1,2-Dichloroethane-d4	85.2	80 - 120	PASS
Toluene-d8	98.2	85 - 115	PASS
4-Bromofluorobenzene	101	85 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4664135
Report generated: 03/10/2016 10:09

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16030366 Cal ID: HPMS6 - Worknum: WG560255
Instrument ID: HPMS6 Contract #: Method: 8260B
Parent ID: WG560249-01 File ID: 6M137690 Dil: 1 Matrix: SOLID
Sample ID: WG560249-02 MS File ID: 6M137681 Dil: 1 Units: ug/kg
Sample ID: WG560249-03 MSD File ID: 6M137682 Dil: 1 Percent Solid: 79.3

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,1,1,2-Tetrachloroethane	ND	25.3	23.6	93.3	23.5	19.9	84.8	16.9	75 - 125	30	
1,1,1-Trichloroethane	ND	25.3	25.0	98.6	23.5	21.0	89.5	17.0	70 - 135	30	
1,1,2,2-Tetrachloroethane	ND	25.3	24.7	97.5	23.5	20.5	87.0	18.7	55 - 130	30	
1,1,2-Trichloroethane	ND	25.3	24.8	98.0	23.5	20.6	87.6	18.5	60 - 125	30	
1,1-Dichloroethane	ND	25.3	24.0	94.7	23.5	19.9	84.7	18.5	75 - 125	30	
1,1-Dichloroethene	ND	25.3	24.7	97.6	23.5	21.0	89.1	16.4	65 - 135	30	
1,1-Dichloropropene	ND	25.3	26.1	103	23.5	21.5	91.4	19.5	70 - 135	30	
1,2,3-Trichlorobenzene	ND	25.3	25.0	98.9	23.5	20.5	87.0	20.1	60 - 135	30	
1,2,3-Trichloropropane	ND	25.3	25.8	102	23.5	20.3	86.2	23.9	65 - 130	30	
1,2,4-Trichlorobenzene	ND	25.3	25.3	99.8	23.5	20.8	88.2	19.6	65 - 130	30	
1,2,4-Trimethylbenzene	ND	25.3	25.7	101	23.5	21.6	92.0	17.1	65 - 135	30	
1,2-Dibromo-3-chloropropane	ND	25.3	22.9	90.4	23.5	19.6	83.3	15.5	40 - 135	30	
1,2-Dibromoethane	ND	25.3	24.4	96.4	23.5	19.9	84.6	20.3	70 - 125	30	
1,2-Dichlorobenzene	ND	25.3	25.7	102	23.5	21.5	91.3	18.1	75 - 120	30	
1,2-Dichloroethane	ND	25.3	23.5	92.7	23.5	19.8	84.2	17.0	70 - 135	30	
1,2-Dichloropropane	ND	25.3	26.2	104	23.5	21.6	91.7	19.5	70 - 120	30	
1,3,5-Trimethylbenzene	ND	25.3	26.8	106	23.5	22.7	96.4	16.6	65 - 135	30	
1,3-Dichlorobenzene	ND	25.3	25.8	102	23.5	21.6	91.9	17.6	70 - 125	30	
1,3-Dichloropropane	ND	25.3	25.7	101	23.5	21.4	91.1	18.1	75 - 125	30	
1,4-Dichlorobenzene	ND	25.3	25.3	100	23.5	21.3	90.8	17.0	70 - 125	30	
2,2-Dichloropropane	ND	25.3	26.0	103	23.5	21.9	93.2	17.1	65 - 135	30	
2-Butanone	ND	25.3	25.7	101	23.5	21.1	89.8	19.5	30 - 160	30	
2-Chlorotoluene	ND	25.3	26.2	104	23.5	22.2	94.5	16.5	70 - 130	30	
2-Hexanone	ND	25.3	25.5	101	23.5	21.2	90.3	18.1	45 - 145	30	
4-Chlorotoluene	ND	25.3	26.8	106	23.5	22.5	95.7	17.5	75 - 125	30	
4-Methyl-2-pentanone	ND	25.3	27.4	108	23.5	22.8	97.0	18.1	45 - 145	30	
Acetone	ND	25.3	24.5	96.6	23.5	21.2	90.1	14.3	20 - 160	30	
Benzene	ND	25.3	24.5	96.9	23.5	20.9	88.9	15.9	75 - 125	30	
Bromobenzene	ND	25.3	25.0	98.6	23.5	21.4	91.1	15.3	65 - 120	30	
Bromochloromethane	ND	25.3	24.8	98.1	23.5	20.5	87.3	19.0	70 - 125	30	
Bromodichloromethane	ND	25.3	23.7	93.7	23.5	20.3	86.2	15.7	70 - 130	30	
Bromoform	ND	25.3	21.5	85.1	23.5	17.5	74.5	20.5	55 - 135	30	
Bromomethane	ND	25.3	25.0	98.6	23.5	20.1	85.3	21.7	30 - 160	30	
Carbon disulfide	ND	25.3	24.9	98.4	23.5	22.1	93.9	12.0	45 - 160	30	
Carbon tetrachloride	ND	25.3	25.0	98.8	23.5	20.9	88.7	18.1	65 - 135	30	
Chlorobenzene	ND	25.3	25.8	102	23.5	21.5	91.2	18.5	75 - 125	30	
Chlorodibromomethane	ND	25.3	23.2	91.8	23.5	19.8	84.0	16.3	65 - 130	30	
Chloroethane	ND	25.3	26.4	104	23.5	21.8	92.9	18.8	40 - 155	30	
Chloroform	ND	25.3	23.7	93.7	23.5	19.9	84.8	17.3	70 - 125	30	

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4664136
Report generated 03/10/2016 09:13

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16030366 Cal ID: HPMS6 Worknum: WG560255
Instrument ID: HPMS6 Contract #: Method: 8260B
Parent ID: WG560249-01 File ID: 6M137690 Dil: 1 Matrix: SOLID
Sample ID: WG560249-02 MS File ID: 6M137681 Dil: 1 Units: ug/kg
Sample ID: WG560249-03 MSD File ID: 6M137682 Dil: 1 Percent Solid: 79.3

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chloromethane	ND	25.3	19.3	76.1	23.5	15.6	66.4	21.0	50 - 130	30	
Dibromomethane	ND	25.3	23.2	91.5	23.5	19.3	81.9	18.4	75 - 130	30	
Dichlorodifluoromethane	ND	25.3	23.4	92.4	23.5	19.3	82.0	19.3	35 - 135	30	
Ethylbenzene	ND	25.3	26.1	103	23.5	21.7	92.3	18.3	75 - 125	30	
Hexachlorobutadiene	ND	25.3	27.7	110	23.5	23.5	100	16.4	55 - 140	30	
Isopropylbenzene	ND	25.3	27.0	107	23.5	23.2	98.6	15.3	75 - 130	30	
Methylene chloride	ND	25.3	25.7	101	23.5	21.1	89.6	19.7	55 - 140	30	
Naphthalene	ND	25.3	24.1	95.4	23.5	19.9	84.6	19.3	40 - 125	30	
Styrene	ND	25.3	26.1	103	23.5	22.2	94.6	16.0	75 - 125	30	
Tetrachloroethene	ND	25.3	26.0	103	23.5	22.0	93.6	16.4	65 - 140	30	
Toluene	ND	25.3	25.1	99.2	23.5	21.5	91.4	15.5	70 - 125	30	
Trichloroethene	ND	25.3	27.2	107	23.5	22.6	95.9	18.5	75 - 125	30	
Trichlorofluoromethane	ND	25.3	23.4	92.6	23.5	19.7	83.8	17.3	25 - 185	30	
Vinyl chloride	ND	25.3	24.2	95.5	23.5	20.4	86.8	16.9	60 - 125	30	
cis-1,2-Dichloroethene	ND	25.3	25.4	100	23.5	21.5	91.3	16.8	65 - 125	30	
cis-1,3-Dichloropropene	ND	25.3	27.1	107	23.5	22.8	97.1	17.2	70 - 125	30	
m-,p-Xylene	ND	50.6	52.5	104	47.0	44.0	93.4	17.6	80 - 125	30	
n-Butylbenzene	ND	25.3	26.2	103	23.5	21.9	93.2	17.7	65 - 140	30	
n-Propylbenzene	ND	25.3	27.6	109	23.5	23.3	98.9	16.9	65 - 135	30	
o-Xylene	ND	25.3	27.2	107	23.5	23.3	98.9	15.5	75 - 125	30	
p-Isopropyltoluene	ND	25.3	27.1	107	23.5	23.2	98.8	15.5	75 - 135	30	
sec-Butylbenzene	ND	25.3	27.7	109	23.5	23.7	101	15.6	65 - 130	30	
tert-Butylbenzene	ND	25.3	27.8	110	23.5	24.2	103	13.9	65 - 130	30	
trans-1,2-Dichloroethene	ND	25.3	26.5	105	23.5	22.0	93.4	18.8	65 - 135	30	
trans-1,3-Dichloropropene	ND	25.3	23.8	94.0	23.5	20.3	86.1	16.0	65 - 125	30	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4664136
Report generated 03/10/2016 09:13

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16030366
Instrument: HPMS6
Analyst: TMB
Workgroup: WG558920

Tune ID: WG558920-01
Run Date: 02/26/2016
Run Time: 13:16
File ID: 6M137522
Cal ID: HPMS6 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	25.4	9030	PASS
75.0	95.0	30.0	60.0	55.4	19666	PASS
95.0	95.0	100	100	100	35512	PASS
96.0	95.0	5.00	9.00	7.25	2576	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	73.2	26011	PASS
175	174	5.00	9.00	7.36	1914	PASS
176	174	95.0	101	96.1	24992	PASS
177	176	5.00	9.00	6.64	1660	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG558920-02	STD-S	01	02/26/2016 13:41	
WG558920-03	STD-S	01	02/26/2016 14:13	
WG558920-04	STD-S	01	02/26/2016 14:46	
WG558920-05	STD-S	01	02/26/2016 15:26	
WG558920-06	STD-S	01	02/26/2016 15:58	
WG558920-07	STD-S	01	02/26/2016 16:30	
WG558920-08	STD-CCV-S	01	02/26/2016 17:03	
WG558920-09	STD-S	01	02/26/2016 17:35	
WG558920-10	STD-S	01	02/26/2016 18:07	
WG558920-11	STD-S	01	02/26/2016 18:39	
WG558920-12	SSCV-S	01	02/26/2016 20:15	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4664138
Report generated 03/10/2016 10:09

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16030366
Instrument: HPMS6
Analyst: TMB
Workgroup: WG560254

Tune ID: WG560254-01
Run Date: 03/09/2016
Run Time: 10:29
File ID: 6M137675
Cal ID: HPMS6 - 26-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.0	8570	PASS
75.0	95.0	30.0	60.0	50.2	20514	PASS
95.0	95.0	100	100	100	40885	PASS
96.0	95.0	5.00	9.00	6.69	2737	PASS
173	174	0	2.00	0.398	124	PASS
174	95.0	50.0	100	76.2	31152	PASS
175	174	5.00	9.00	7.58	2362	PASS
176	174	95.0	101	100	31210	PASS
177	176	5.00	9.00	6.69	2088	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG560254-02	CCV-S	01	03/09/2016 11:29	
WG560255-01	BLANK	01	03/09/2016 12:36	
WG560255-02	LCS	01	03/09/2016 13:09	
WG560249-02	MS	01	03/09/2016 13:43	
WG560249-03	MSD	01	03/09/2016 14:17	
L16030366-01	18DPT11(5-5.5)040316	01	03/09/2016 15:23	
L16030366-02	18DPT11(15-15.5)040316	01	03/09/2016 15:57	
L16030366-03	18DPT11(20-20.5)070316	01	03/09/2016 16:31	
L16030366-04	18DPT11(29-29.5)070316	01	03/09/2016 17:04	
L16030366-05	18DPT11(25-25.5)070316	01	03/09/2016 17:37	
L16030366-06	18DPT12(5-5.5)070316	01	03/09/2016 18:11	
L16030366-07	18DPT12(8.5-9)070316	01	03/09/2016 18:44	
L16030366-10	18DPT13(5-5.5)070316	01	03/09/2016 19:18	
L16030366-11	18DPT13(12-12.5)070316	01	03/09/2016 19:51	
L16030366-12	18DPT13(17-17.5)070316	01	03/09/2016 20:24	
L16030366-09	18DPT12(12-12.5)070316	01	03/09/2016 20:57	
L16030366-08	18DPT12(18-18.5)070316	01	03/09/2016 21:30	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4664138
Report generated 03/10/2016 10:09

Calibration Table Report
Method: 826_SL.M
Title: 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Calibration: Mon Feb 29 15:59:52 2016
Curve: WG558920
Calibration Files

	Compound	0.5 6M137523.D	1 6M137524.D	2 6M137525.D	5 6M137526.D	10 6M137527.D	20 6M137528.D	50 6M137529.D	100 6M137530.D	200 6M137531.D	300 6M137532.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.386	0.437	0.426	0.515	0.537	0.438	0.464	0.471	0.459	10.647		
P	Chloromethane			0.578	0.509	0.480	0.500	0.503	0.398	0.425	0.436	0.479	11.984		
C	Vinyl Chloride			0.371	0.405	0.376	0.415	0.431	0.353	0.374	0.357	0.385	7.341		
T	1,3-Butadiene				0.369	0.322	0.361	0.344	0.289	0.282	0.277	0.320	11.982		
T	Bromomethane			0.192	0.207	0.206	0.215	0.213	0.184	0.207	0.218	0.205	5.643		
T	Chloroethane			0.199	0.219	0.208	0.232	0.244	0.202	0.219	0.224	0.218	6.941		
T	Trichlorofluoromethane			0.535	0.557	0.513	0.525	0.558	0.462	0.490	0.501	0.518	6.398		
T	Diethyl ether		0.243	0.231	0.234	0.251	0.241	0.233	0.233		0.238	0.238	2.758		
T	Isoprene				0.333	0.322	0.327	0.355	0.334	0.338	0.351	0.337	3.613		
T	Acrolein		0.044	0.045	0.044	0.050	0.045	0.042	0.045		0.047	0.045	5.301		
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.199	0.268	0.248	0.256	0.277	0.230	0.245	0.252	0.247	9.700		
T	Acetone					0.152	0.130	0.112	0.104	0.110	0.106	0.119	15.588	0.999	
C	1,1-Dichloroethene			0.380	0.462	0.424	0.453	0.487	0.410	0.439	0.447	0.438	7.530		
T	Tert-Butyl Alcohol		0.039	0.035	0.040	0.044	0.044	0.040	0.040		0.044	0.041	7.378		
T	Dimethyl Sulfide				0.204	0.210	0.197	0.223	0.210	0.218	0.224	0.212	4.669		
T	Iodomethane				0.056	0.082	0.123	0.197	0.197	0.211	0.207	0.153	42.723	0.998	
T	Methyl acetate				0.309	0.317	0.309	0.308	0.292	0.293	0.300	0.304	3.023		
T	Methylene Chloride			0.256	0.273	0.264	0.268	0.287	0.242	0.257	0.260	0.264	5.015		
T	Carbon Disulfide			0.821	0.880	0.808	0.840	0.872	0.808	0.825	0.844	0.837	3.273		
T	Acrylonitrile		0.108	0.114	0.119	0.133	0.128	0.130	0.129		0.140	0.125	8.391		
T	Methyl Tert Butyl Ether	0.732	0.693	0.663	0.725	0.773	0.787	0.833	0.734	0.785	0.799	0.753	6.930		
T	trans-1,2-Dichloroethene			0.227	0.244	0.240	0.247	0.265	0.226	0.240	0.244	0.242	5.097		
T	n-Hexane			0.407	0.452	0.430	0.435	0.466	0.433	0.438	0.452	0.439	4.050		
T	Diisopropyl ether		1.143	1.120	1.122	1.188	1.168	1.117	1.121		1.127	1.138	2.317		
T	Vinyl Acetate				0.493	0.583	0.630	0.596	0.570	0.626	0.621	0.588	8.090		
P	1,1-Dichloroethane			0.484	0.538	0.522	0.539	0.568	0.484	0.514	0.521	0.521	5.427		
T	Ethyl-Tert-Butyl ether		0.841	0.891	0.897	0.963	0.947	0.909	0.912		0.938	0.912	4.185		
T	2-Butanone				0.186	0.176	0.176	0.169	0.161	0.170	0.172	0.173	4.334		
T	Propionitrile		0.047	0.045	0.045	0.051	0.050	0.048	0.047		0.049	0.048	4.489		
T	2,2-Dichloropropane			0.413	0.427	0.425	0.415	0.454	0.383	0.410	0.420	0.418	4.750		
T	cis-1,2-Dichloroethene			0.265	0.274	0.263	0.275	0.290	0.250	0.269	0.273	0.270	4.259		
C	Chloroform			0.502	0.499	0.475	0.499	0.520	0.443	0.476	0.481	0.487	4.825		
T	1-Bromopropane				0.033	0.034	0.037	0.040	0.037	0.038	0.039	0.037	7.440		
T	Bromochloromethane			0.151	0.148	0.152	0.165	0.176	0.151	0.162	0.164	0.159	6.123		
T	Tetrahydrofuran		0.173	0.111	0.113	0.121	0.123	0.115	0.112		0.116	0.123	16.774	0.998	
S	Dibromofluoromethane			0.280	0.265	0.272	0.276	0.272	0.253	0.265	0.262	0.268	3.189		
T	1,1,1-Trichloroethane			0.412	0.417	0.434	0.435	0.474	0.398	0.430	0.438	0.430	5.218		
T	Cyclohexane			0.396	0.493	0.473	0.495	0.533	0.492	0.499	0.519	0.487	8.433		
T	1,1-Dichloropropene			0.306	0.372	0.338	0.347	0.383	0.324	0.345	0.355	0.346	7.125		
T	Tert-Amyl-Methyl ether		0.664	0.687	0.706	0.759	0.757	0.723	0.732		0.762	0.724	4.986		
T	Carbon Tetrachloride			0.351	0.409	0.4	0.412	0.445	0.378	0.403	0.416	0.4017	6.9015		
S	1,2-Dichloroethane-d4			0.36	0.365	0.337	0.366	0.353	0.329	0.34	0.336	0.3482	4.16		
T	Heptane											0	0		
T	1,2-Dichloroethane			0.387	0.414	0.422	0.43	0.449	0.388	0.415	0.419	0.4154	4.951		
T	Benzene	1.229	1.128	1.036	1.038	1.011	1.023	1.078	0.921	0.973	0.979	1.0416	8.3738		
T	Trichloroethene			0.223	0.257	0.243	0.254	0.268	0.229	0.245	0.249	0.2461	6.0218		
T	Methylcyclohexane			0.321	0.406	0.387	0.403	0.435	0.401	0.406	0.424	0.3978	8.6044		
C	1,2-Dichloropropane			0.249	0.279	0.277	0.29	0.305	0.266	0.286	0.29	0.2802	6.0373		
T	1,4-Dioxane			0.002	0.003	0.003	0.003	0.003	0.003		0.004	0.0031	18.585	0.996	
T	Bromodichloromethane			0.336	0.359	0.35	0.37	0.402	0.352	0.384	0.39	0.3678	6.1125		
T	Dibromomethane			0.145	0.152	0.16	0.169	0.185	0.158	0.171	0.173	0.1639	7.836		
T	2-Chloroethyl Vinyl Ether				0.126	0.141	0.155	0.164	0.161	0.178		0.1541	11.732		
T	4-Methyl-2-Pentanone				0.101	0.11	0.122	0.117	0.113	0.125	0.128	0.1167	8.1948		
T	cis-1,3-Dichloropropene			0.338	0.374	0.39	0.412	0.454	0.396	0.435	0.442	0.4052	9.5304		
T	Dimethyl Disulfide				0.171	0.174	0.192	0.225	0.22	0.245		0.2044	14.756		
I	Chlorobenzene-d5	ISTD													
S	Toluene-d8			1.274	1.278	1.167	1.22	1.21	1.113	1.144	1.105	1.1888	5.6789		
C	Toluene	1.627	1.459	1.33	1.431	1.418	1.424	1.504	1.27	1.35	1.331	1.4144	7.2521		
T	Ethyl Methacrylate			0.326	0.401	0.428	0.461	0.503	0.477	0.511	0.518	0.4532	14.498		
T	Paraldehyde											0	0		
T	trans-1,3-Dichloropropene			0.461	0.507	0.529	0.558	0.603	0.53	0.579	0.582	0.5439	8.4811		
T	1,1,2-Trichloroethane			0.265	0.288	0.302	0.309	0.319	0.28	0.302	0.299	0.2956	5.771		
T	2-Hexanone				0.298	0.324	0.345	0.341	0.328	0.359	0.366	0.3373	6.878		
T	1,3-Dichloropropane			0.488	0.541	0.538	0.558	0.579	0.503	0.54	0.54	0.5358	5.3786		
T	Tetrachloroethene			0.332	0.375	0.358	0.359	0.376	0.318	0.336	0.337	0.3489	6.0417		
T	Dibromochloromethane			0.318	0.369	0.378	0.394	0.425	0.373	0.407	0.41	0.3845	8.6342		
T	1,2-Dibromoethane			0.271	0.289	0.29	0.309	0.332	0.29	0.318	0.32	0.3023	6.7531		
T	1-Chlorohexane			0.358	0.417	0.417	0.441	0.485	0.451	0.47	0.474	0.4392	9.3805		
P	Chlorobenzene			0.915	0.966	0.916	0.927	0.958	0.821	0.89	0.88	0.909	5.1018		
T	1,1,1,2-Tetrachloroethane			0.348	0.343	0.362	0.374	0.393	0.344	0.376	0.38	0.365	5.0679		
C	Ethylbenzene	0.49	0.466	0.473	0.486	0.481	0.497	0.531	0.453	0.494	0.494	0.4864	4.3098		
T	m-,p-Xylene	0.674	0.598	0.537	0.6	0.59	0.605	0.637	0.546	0.585	0.58	0.5952	6.6768		
T	o-Xylene	0.574	0.512	0.494	0.539	0.544	0.588	0.634	0.54	0.59	0.591	0.5606	7.5243		
T	Styrene			0.772	0.876	0.918	0.982	1.071	0.935	1.037	1.041	0.9542	10.466		
P	Bromoform			0.222	0.256	0.259	0.275	0.298	0.261	0.293	0.307	0.2715	10.256		
T	Isopropylbenzene			1.284	1.474	1.498	1.583	1.683	1.433	1.559	1.542	1.507	7.8153		
I	1,4-Dichlorobenzene-d4	ISTD													
P	1,1,2,2-Tetrachloroethane			0.689	0.783	0.798	0.815	0.842	0.74	0.785	0.797	0.7811	6.0053		
S	p-Bromofluorobenzene			0.997	0.956	0.921	0.925	0.941	0.864	0.892	0.852	0.9184	5.2432		

T	1,2,3-Trichloropropane	0.202	0.247	0.251	0.244	0.258	0.225	0.243	0.244	0.2391	7.3405
T	trans-1,4-Dichloro-2-Butene	0.247	0.255	0.285	0.287	0.308	0.295	0.311	0.318	0.2883	8.9009
T	n-Propylbenzene	3.037	3.536	3.508	3.571	3.802	3.207	3.325	3.178	3.3956	7.429
T	Bromobenzene	0.67	0.762	0.744	0.775	0.808	0.694	0.733	0.719	0.7381	6.0417
T	1,3,5-Trimethylbenzene	2.096	2.503	2.443	2.485	2.702	2.295	2.435	2.377	2.417	7.2332
T	2-Chlorotoluene	1.974	2.457	2.366	2.375	2.437	2.106	2.239	2.178	2.2664	7.5835
T	4-Chlorotoluene	2.163	2.182	2.123	2.094	2.235	1.885	1.964	1.933	2.0723	6.208
T	a-Methylstyrene	0.921	1.071	1.127	1.156	1.295	1.234	1.294	1.291	1.1737	11.321
T	tert-Butylbenzene	0.437	0.508	0.504	0.521	0.567	0.48	0.511	0.502	0.5037	7.2697
T	1,2,4-Trimethylbenzene	2.274	2.614	2.634	2.636	2.804	2.386	2.535	2.452	2.5419	6.5668
T	sec-Butylbenzene	2.804	3.169	3.104	3.238	3.474	2.92	3.078	2.976	3.0953	6.6823
T	p-Isopropyltoluene	2.183	2.603	2.54	2.657	2.885	2.449	2.589	2.523	2.5537	7.7414
T	1,3-Dichlorobenzene	1.331	1.516	1.491	1.451	1.537	1.319	1.391	1.389	1.4282	5.8154
T	1,4-Dichlorobenzene	1.528	1.507	1.501	1.476	1.529	1.31	1.39	1.389	1.4537	5.5603
T	n-Butylbenzene	2.282	2.598	2.578	2.654	2.852	2.445	2.576	2.563	2.5684	6.3469
T	1,2-Dichlorobenzene	1.324	1.401	1.407	1.397	1.474	1.278	1.357	1.356	1.3743	4.3244
T	1,2-Dibromo-3-Chloropropane		0.159	0.163	0.176	0.183	0.167	0.179	0.182	0.1728	5.5543
T	1,2,4-Trichlorobenzene	0.968	0.981	1.002	1.008	1.105	0.936	0.963	0.985	0.9935	5.0666
T	Hexachlorobutadiene	0.528	0.583	0.572	0.579	0.635	0.532	0.546	0.571	0.5682	6.0591
T	Naphthalene	1.901	2.081	2.291	2.365	2.601	2.29	2.356	2.387	2.2839	9.2287
T	1,2,3-Trichlorobenzene	0.961	0.977	0.98	0.987	1.094	0.917	0.949	0.961	0.9783	5.2988

Mon Feb 29 16:03:43 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16030366 Run Date: 02/26/2016 Sample ID: WG558920-12
Instrument ID: HPMS6 Run Time: 20:15 Method: 8260B
File ID: 6M137535 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG558920 Cal ID: HPMS6 - 26-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.7	ug/kg	0.494	1.40	20	
1,1-Dichloroethene	CCC	50.0	51.6	ug/kg	0.452	3.30	20	
1,2-Dichloropropane	CCC	50.0	55.0	ug/kg	0.308	10.1	20	
Ethylbenzene	CCC	50.0	52.4	ug/kg	0.510	4.80	20	
Toluene	CCC	50.0	51.4	ug/kg	1.45	2.80	20	
Vinyl Chloride	CCC	50.0	43.3	ug/kg	0.334	13.3	20	
Bromoform	SPCC	50.0	49.2	ug/kg	0.267	1.50	20	
Chlorobenzene	SPCC	50.0	52.9	ug/kg	0.961	5.70	20	
Chloromethane	SPCC	50.0	50.9	ug/kg	0.487	1.80	20	
1,1-Dichloroethane	SPCC	50.0	50.3	ug/kg	0.525	0.700	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	52.1	ug/kg	0.815	4.30	20	
Acetone		50.0	48.7	ug/kg	0.111	2.70	20	
Benzene		50.0	50.4	ug/kg	1.05	0.900	20	
Bromobenzene		50.0	51.8	ug/kg	0.765	3.70	20	
Bromochloromethane		50.0	52.1	ug/kg	0.165	4.20	20	
Bromodichloromethane		50.0	51.6	ug/kg	0.380	3.30	20	
Bromomethane		50.0	58.6	ug/kg	0.240	17.1	20	
2-Butanone		50.0	49.2	ug/kg	0.170	1.50	20	
n-Butylbenzene		50.0	48.8	ug/kg	2.50	2.50	20	
sec-Butylbenzene		50.0	50.7	ug/kg	3.14	1.40	20	
tert-Butylbenzene		50.0	53.2	ug/kg	0.536	6.40	20	
Carbon Disulfide		50.0	44.4	ug/kg	0.743	11.2	20	
Carbon Tetrachloride		50.0	51.2	ug/kg	0.411	2.30	20	
Dibromochloromethane		50.0	51.8	ug/kg	0.399	3.70	20	
Chloroethane		50.0	56.6	ug/kg	0.247	13.2	20	
2-Chlorotoluene		50.0	52.1	ug/kg	2.36	4.20	20	
4-Chlorotoluene		50.0	52.1	ug/kg	2.16	4.10	20	
1,2-Dibromo-3-Chloropropane		50.0	52.1	ug/kg	0.180	4.30	20	
1,2-Dibromoethane		50.0	53.7	ug/kg	0.325	7.30	20	
Dibromomethane		50.0	50.4	ug/kg	0.165	0.800	20	
1,2-Dichlorobenzene		50.0	54.5	ug/kg	1.50	9.00	20	
1,3-Dichlorobenzene		50.0	52.0	ug/kg	1.49	4.00	20	
1,4-Dichlorobenzene		50.0	51.8	ug/kg	1.51	3.60	20	
Dichlorodifluoromethane		50.0	55.5	ug/kg	0.509	10.9	20	
1,2-Dichloroethane		50.0	51.3	ug/kg	0.426	2.50	20	
cis-1,2-Dichloroethene		50.0	54.1	ug/kg	0.292	8.30	20	
trans-1,2-Dichloroethene		50.0	53.7	ug/kg	0.260	7.50	20	
1,3-Dichloropropane		50.0	54.9	ug/kg	0.589	9.80	20	
2,2-Dichloropropane		50.0	53.1	ug/kg	0.444	6.20	20	
cis-1,3-Dichloropropene		50.0	58.8	ug/kg	0.476	17.5	20	
trans-1,3-Dichloropropene		50.0	52.9	ug/kg	0.575	5.70	20	
1,1-Dichloropropene		50.0	52.8	ug/kg	0.365	5.50	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4664137
Report generated 03/10/2016 10:09

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16030366 Run Date: 02/26/2016 Sample ID: WG558920-12
Instrument ID: HPMS6 Run Time: 20:15 Method: 8260B
File ID: 6M137535 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG558920 Cal ID: HPMS6 - 26-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	51.3	ug/kg	0.346	2.60	20	
Hexachlorobutadiene		50.0	47.6	ug/kg	0.541	4.80	20	
Isopropylbenzene		50.0	54.6	ug/kg	1.64	9.10	20	
p-Isopropyltoluene		50.0	50.9	ug/kg	2.60	1.80	20	
4-Methyl-2-Pentanone		50.0	51.3	ug/kg	0.120	2.50	20	
Methylene Chloride		50.0	53.4	ug/kg	0.281	6.80	20	
Naphthalene		50.0	49.8	ug/kg	2.28	0.300	20	
n-Propylbenzene		50.0	52.6	ug/kg	3.57	5.30	20	
Styrene		50.0	55.3	ug/kg	1.06	10.6	20	
1,1,1,2-Tetrachloroethane		50.0	51.8	ug/kg	0.379	3.70	20	
Tetrachloroethene		50.0	51.1	ug/kg	0.357	2.20	20	
1,2,3-Trichlorobenzene		50.0	51.0	ug/kg	0.997	2.00	20	
1,2,4-Trichlorobenzene		50.0	51.0	ug/kg	1.01	2.10	20	
1,1,1-Trichloroethane		50.0	52.0	ug/kg	0.447	4.00	20	
1,1,2-Trichloroethane		50.0	53.2	ug/kg	0.315	6.40	20	
Trichloroethene		50.0	54.7	ug/kg	0.269	9.40	20	
Trichlorofluoromethane		50.0	47.9	ug/kg	0.496	4.20	20	
1,2,3-Trichloropropane		50.0	53.2	ug/kg	0.254	6.30	20	
1,2,4-Trimethylbenzene		50.0	51.1	ug/kg	2.60	2.30	20	
1,3,5-Trimethylbenzene		50.0	52.7	ug/kg	2.55	5.30	20	
o-Xylene		50.0	56.9	ug/kg	0.638	13.8	20	
m-,p-Xylene		100	105	ug/kg	0.626	5.20	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4664137
Report generated 03/10/2016 10:09

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030366 Run Date: 03/09/2016 Sample ID: WG560254-02
Instrument ID: HPMS6 Run Time: 11:29 Method: 8260B
File ID: 6M137677 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG560255 Cal ID: HPMS6 - 26-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.4	ug/kg	0.491	0.857	20	
1,1-Dichloroethene	CCC	50.0	53.1	ug/kg	0.465	6.29	20	
1,2-Dichloropropane	CCC	50.0	52.2	ug/kg	0.293	4.42	20	
Ethylbenzene	CCC	50.0	54.2	ug/kg	0.527	8.37	20	
Toluene	CCC	50.0	52.6	ug/kg	1.49	5.27	20	
Vinyl Chloride	CCC	50.0	50.9	ug/kg	0.392	1.85	20	
Bromoform	SPCC	50.0	49.0	ug/kg	0.266	1.92	20	
Chlorobenzene	SPCC	50.0	51.9	ug/kg	0.943	3.72	20	
Chloromethane	SPCC	50.0	41.4	ug/kg	0.396	17.2	20	
1,1-Dichloroethane	SPCC	50.0	52.0	ug/kg	0.542	4.08	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	51.7	ug/kg	0.807	3.32	20	
Xylenes		150	162	ug/kg	0.629	8.19	40	
Acetone		50.0	46.9	ug/kg	0.107	6.21	20	
Benzene		50.0	51.0	ug/kg	1.06	1.97	20	
Bromobenzene		50.0	53.5	ug/kg	0.790	6.96	20	
Bromochloromethane		50.0	52.3	ug/kg	0.166	4.66	20	
Bromodichloromethane		50.0	50.8	ug/kg	0.374	1.56	20	
Bromomethane		50.0	50.6	ug/kg	0.208	1.26	20	
2-Butanone		50.0	44.4	ug/kg	0.153	11.2	20	
n-Butylbenzene		50.0	55.4	ug/kg	2.85	10.8	20	
sec-Butylbenzene		50.0	56.0	ug/kg	3.46	11.9	20	
tert-Butylbenzene		50.0	56.3	ug/kg	0.567	12.6	20	
Carbon Disulfide		50.0	51.7	ug/kg	0.866	3.39	20	
Carbon Tetrachloride		50.0	52.2	ug/kg	0.419	4.32	20	
Dibromochloromethane		50.0	50.4	ug/kg	0.388	0.815	20	
Chloroethane		50.0	53.5	ug/kg	0.234	6.98	20	
2-Chlorotoluene		50.0	55.2	ug/kg	2.50	10.4	20	
4-Chlorotoluene		50.0	52.3	ug/kg	2.17	4.56	20	
1,2-Dibromo-3-Chloropropane		50.0	49.4	ug/kg	0.171	1.11	20	
1,2-Dibromoethane		50.0	51.2	ug/kg	0.310	2.47	20	
Dibromomethane		50.0	50.2	ug/kg	0.165	0.431	20	
1,2-Dichlorobenzene		50.0	51.7	ug/kg	1.42	3.40	20	
1,3-Dichlorobenzene		50.0	53.0	ug/kg	1.51	6.03	20	
1,4-Dichlorobenzene		50.0	51.8	ug/kg	1.51	3.60	20	
Dichlorodifluoromethane		50.0	53.7	ug/kg	0.493	7.37	20	
1,2-Dichloroethane		50.0	48.5	ug/kg	0.403	3.04	20	
cis-1,2-Dichloroethene		50.0	52.9	ug/kg	0.285	5.73	20	
trans-1,2-Dichloroethene		50.0	54.3	ug/kg	0.263	8.58	20	
1,3-Dichloropropane		50.0	49.9	ug/kg	0.535	0.117	20	
2,2-Dichloropropane		50.0	53.5	ug/kg	0.447	6.93	20	
cis-1,3-Dichloropropene		50.0	53.8	ug/kg	0.436	7.63	20	
trans-1,3-Dichloropropene		50.0	52.2	ug/kg	0.568	4.46	20	

CCV - Modified 03/05/2008
PDF File ID: 4664139
Report generated 03/10/2016 10:09

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030366 Run Date: 03/09/2016 Sample ID: WG560254-02
Instrument ID: HPMS6 Run Time: 11:29 Method: 8260B
File ID: 6M137677 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG560255 Cal ID: HPMS6 - 26-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	55.7	ug/kg	0.386	11.4	20	
2-Hexanone		50.0	47.1	ug/kg	0.318	5.73	20	
Hexachlorobutadiene		50.0	54.0	ug/kg	0.613	7.96	20	
Isopropylbenzene		50.0	55.4	ug/kg	1.67	10.7	20	
p-Isopropyltoluene		50.0	56.7	ug/kg	2.90	13.4	20	
4-Methyl-2-Pentanone		50.0	49.0	ug/kg	0.114	2.01	20	
Methylene Chloride		50.0	51.0	ug/kg	0.269	1.96	20	
Naphthalene		50.0	53.6	ug/kg	2.45	7.20	20	
n-Propylbenzene		50.0	56.1	ug/kg	3.81	12.3	20	
Styrene		50.0	55.3	ug/kg	1.06	10.6	20	
1,1,1,2-Tetrachloroethane		50.0	50.4	ug/kg	0.368	0.829	20	
Tetrachloroethene		50.0	54.5	ug/kg	0.380	8.91	20	
1,2,3-Trichlorobenzene		50.0	50.8	ug/kg	0.993	1.54	20	
1,2,4-Trichlorobenzene		50.0	53.3	ug/kg	1.06	6.56	20	
1,1,1-Trichloroethane		50.0	52.2	ug/kg	0.449	4.46	20	
1,1,2-Trichloroethane		50.0	50.6	ug/kg	0.299	1.24	20	
Trichloroethene		50.0	54.4	ug/kg	0.268	8.88	20	
Trichlorofluoromethane		50.0	51.0	ug/kg	0.528	1.99	20	
1,2,3-Trichloropropane		50.0	51.4	ug/kg	0.246	2.90	20	
1,2,4-Trimethylbenzene		50.0	54.5	ug/kg	2.77	8.91	20	
1,3,5-Trimethylbenzene		50.0	56.0	ug/kg	2.71	12.0	20	
o-Xylene		50.0	55.5	ug/kg	0.622	10.9	20	
m-,p-Xylene		100	107	ug/kg	0.636	6.82	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4664139
Report generated 03/10/2016 10:09

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16030366
Instrument ID: HPMS6
Workgroup (AAB#): WG560255

ICAL CCV Number: WG558920-08
CAL ID: HPMS6-26-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558920-08	NA	NA	237573	439950	607631
Upper Limit	NA	NA	475146	879900	1215262
Lower Limit	NA	NA	118787	219975	303816
L16030366-01	1.00	01	213745	415241	575956
L16030366-02	1.00	01	233231	440539	607492
L16030366-03	1.00	01	232928	441592	604341
L16030366-04	1.00	01	226741	432130	587991
L16030366-05	1.00	01	216941	408503	555698
L16030366-06	1.00	01	239430	452055	607499
L16030366-07	1.00	01	225088	427575	586148
L16030366-08	1.00	01	221497	419729	568490
L16030366-09	1.00	01	228012	425629	570174
L16030366-10	1.00	01	216829	417763	572617
L16030366-11	1.00	01	208054	408843	564192
L16030366-12	1.00	01	199214	382901	527309
WG560255-01	1.00	01	231266	449245	612952
WG560255-02	1.00	01	240680	452269	618893

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4664217
Report generated 03/10/2016 10:09

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16030366
Instrument ID: HPMS6
Workgroup (AAB#): WG560255

ICAL CCV Number: WG558920-08
CAL ID: HPMS6-26-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558920-08	NA	NA	19.6	16.01	11.51
Upper Limit	NA	NA	20.1	16.51	12.01
Lower Limit	NA	NA	19.1	15.51	11.01
L16030366-01	1.00	01	19.59	16.01	11.51
L16030366-02	1.00	01	19.59	16.01	11.52
L16030366-03	1.00	01	19.6	16.01	11.52
L16030366-04	1.00	01	19.6	16.01	11.52
L16030366-05	1.00	01	19.6	16.01	11.52
L16030366-06	1.00	01	19.6	16.01	11.52
L16030366-07	1.00	01	19.6	16.01	11.52
L16030366-08	1.00	01	19.6	16.01	11.52
L16030366-09	1.00	01	19.59	16.01	11.51
L16030366-10	1.00	01	19.59	16.01	11.52
L16030366-11	1.00	01	19.59	16.01	11.51
L16030366-12	1.00	01	19.6	16.01	11.52
WG560255-01	1.00	01	19.6	16.01	11.52
WG560255-02	1.00	01	19.6	16.01	11.52

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4664218
Report generated: 03/10/2016 10:09

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137684.D Vial: 10
Acq On : 9 Mar 2016 15:23 Operator: TMB
Sample : L16030366-01 8260 4.97g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 08:54:55 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	575956	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	415241	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	213745	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	139538	45.1632 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 90.32%		
43) 1,2-Dichloroethane-d4	11.06	65	170338	42.4624 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 84.92%		
58) Toluene-d8	13.80	98	492463	49.8821 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.76%		
80) p-Bromofluorobenzene	17.79	95	196887	50.1489 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 100.30%		

Target Compounds

					Qvalue
13) Acetone	6.60	43	7506	1.8418 ug/L #	12
19) Methylene Chloride	7.67	84	810	0.2668 ug/L #	26
24) n-Hexane	8.24	57	1825	0.3609 ug/L	100
29) 2-Butanone	9.32	43	1157	0.5812 ug/L #	68
36) Tetrahydrofuran	10.31	42	2629	Below Cal #	56
60) Ethyl Methacrylate	13.81	69	1142	0.3034 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M137684.D 826_SL.M Thu Mar 10 08:54:55 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137684.D Vial: 10
Acq On : 9 Mar 2016 15:23 Operator: TMB
Sample : L16030366-01 8260 4.97g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 8:54 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

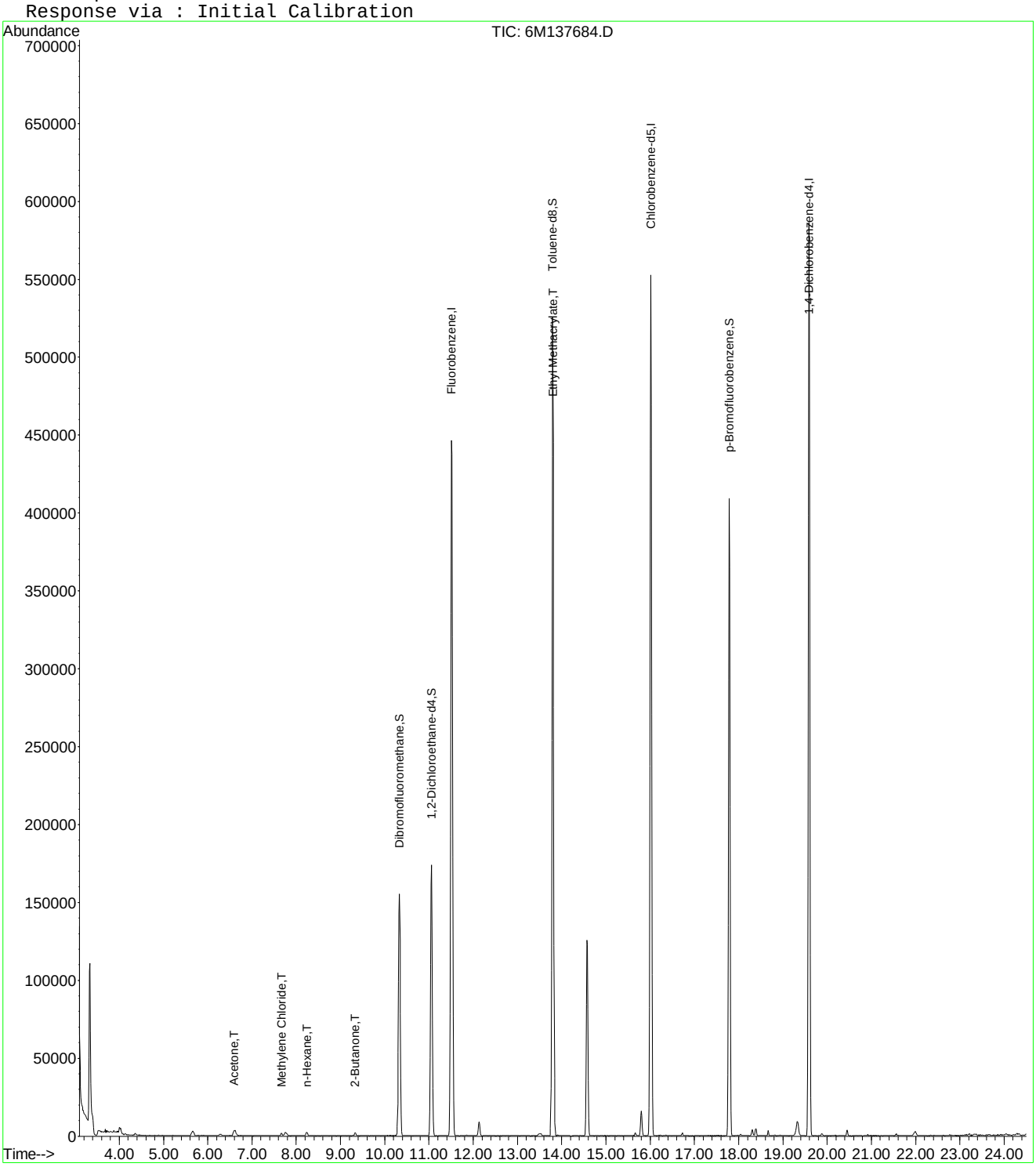

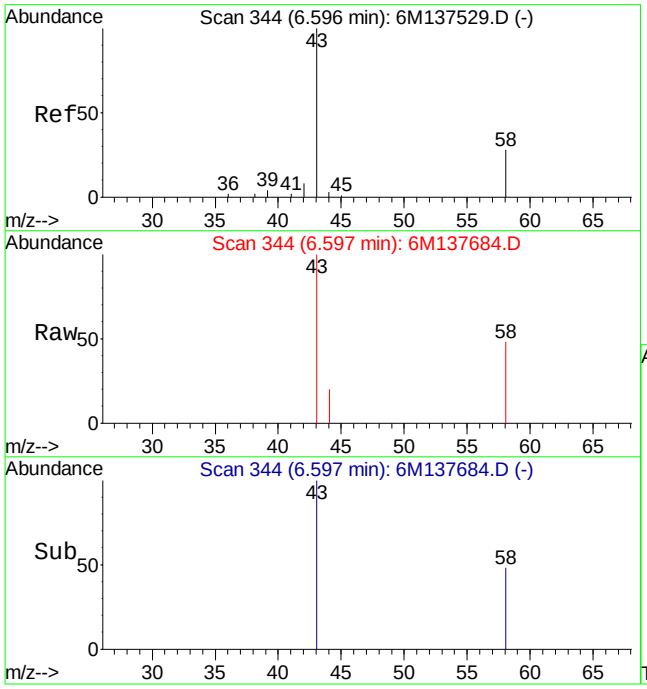

#13
Acetone
Concen: 1.84 ug/L
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137684.D
Acq: 9 Mar 2016 15:23

Tgt Ion: 43 Resp: 7506

Ion	Ratio	Lower	Upper
43	100		
58	72.3	16.1	37.7#

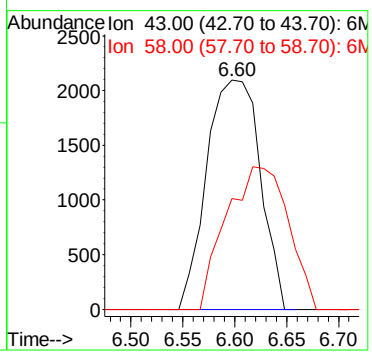

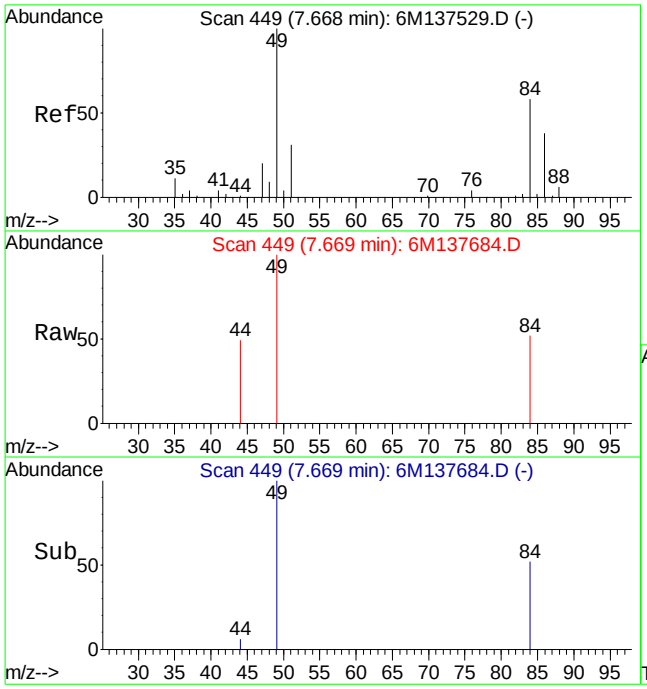

#19
Methylene Chloride
Concen: 0.27 ug/L
RT: 7.67 min Scan# 449
Delta R.T. 0.00 min
Lab File: 6M137684.D
Acq: 9 Mar 2016 15:23

Tgt Ion: 84 Resp: 810

Ion	Ratio	Lower	Upper
84	100		
49	238.6	87.9	205.1#

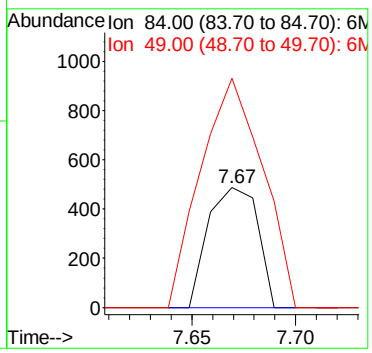

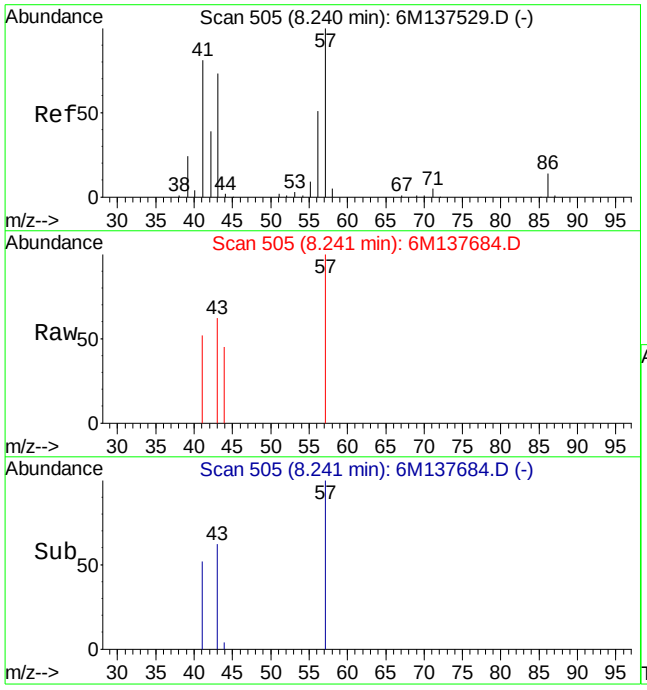

#24
n-Hexane
Concen: 0.36 ug/L
RT: 8.24 min Scan# 505
Delta R.T. 0.00 min
Lab File: 6M137684.D
Acq: 9 Mar 2016 15:23

Tgt Ion: 57 Resp: 1825

Ion	Ratio	Lower	Upper
57	100		
43	73.5	44.0	102.8

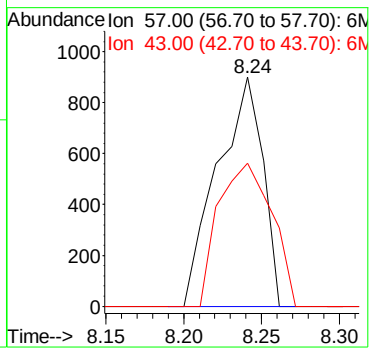

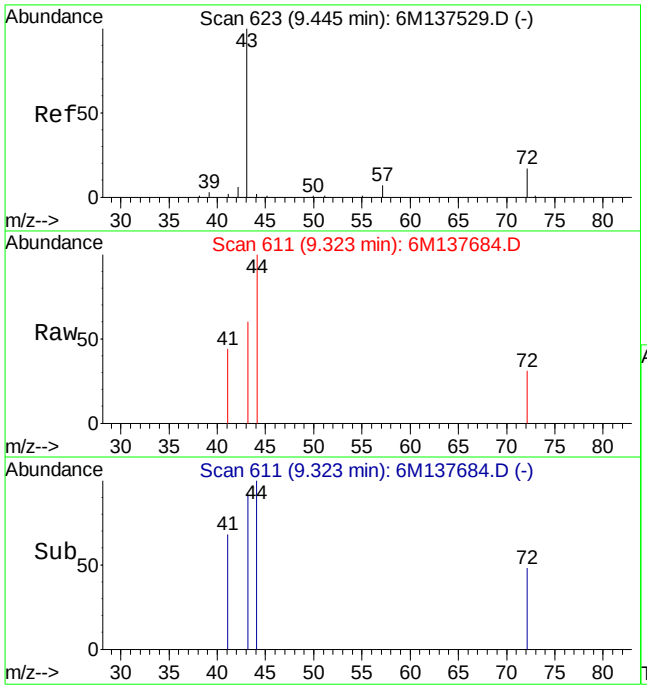

#29
2-Butanone
Concen: 0.58 ug/L
RT: 9.32 min Scan# 611
Delta R.T. -0.12 min
Lab File: 6M137684.D
Acq: 9 Mar 2016 15:23

Tgt Ion: 43 Resp: 1157

Ion	Ratio	Lower	Upper
43	100		
72	35.1	12.2	28.4#

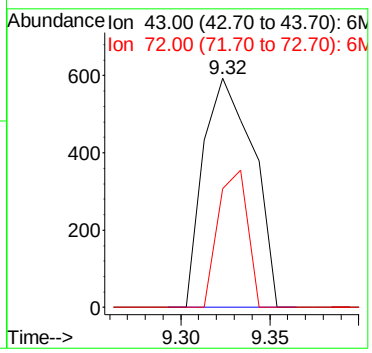

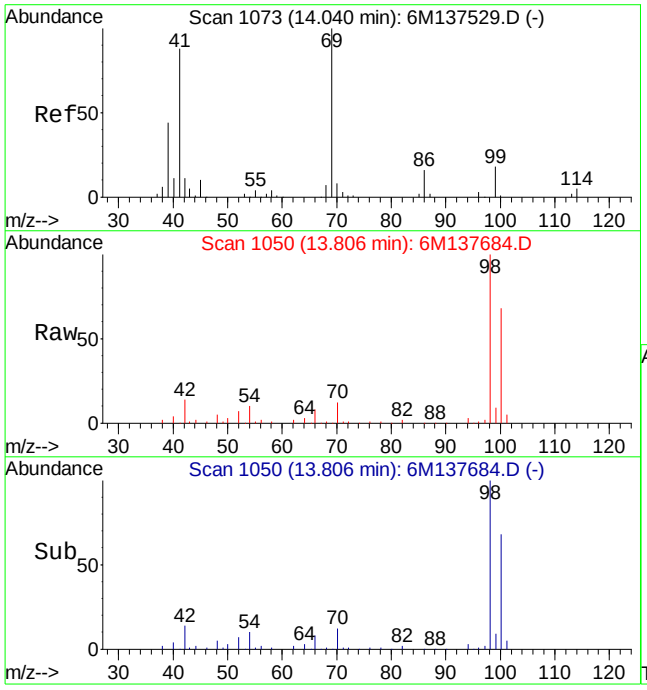

#60
Ethyl Methacrylate
Concen: 0.30 ug/L
RT: 13.81 min Scan# 1050
Delta R.T. -0.22 min
Lab File: 6M137684.D
Acq: 9 Mar 2016 15:23

Tgt Ion: 69 Resp: 1142

Ion	Ratio	Lower	Upper
69	100		
41	96.3	50.6	118.2

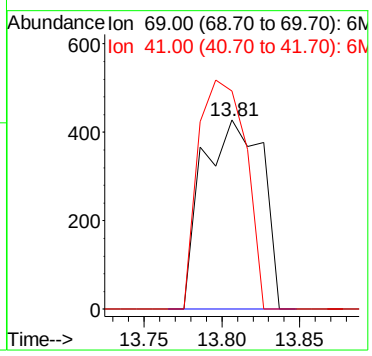

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137685.D Vial: 11
Acq On : 9 Mar 2016 15:57 Operator: TMB
Sample : L16030366-02 8260 4.59g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 08:54:56 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	607492	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	440539	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	233231	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	150240	46.1028 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 92.20%		
43) 1,2-Dichloroethane-d4	11.06	65	183510	43.3712 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 86.74%		
58) Toluene-d8	13.80	98	518063	49.4618 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.92%		
80) p-Bromofluorobenzene	17.79	95	212665	49.6421 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 99.28%		

Target Compounds

					Qvalue
13) Acetone	6.59	43	2971	Below Cal #	48
19) Methylene Chloride	7.68	84	954	0.2980 ug/L	69
24) n-Hexane	8.22	57	1435	0.2691 ug/L	87
36) Tetrahydrofuran	10.30	42	2370	Below Cal #	40
60) Ethyl Methacrylate	13.82	69	1262	0.3161 ug/L	69

(#) = qualifier out of range (m) = manual integration
6M137685.D 826_SL.M Thu Mar 10 08:54:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137685.D Vial: 11
Acq On : 9 Mar 2016 15:57 Operator: TMB
Sample : L16030366-02 8260 4.59g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 8:54 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

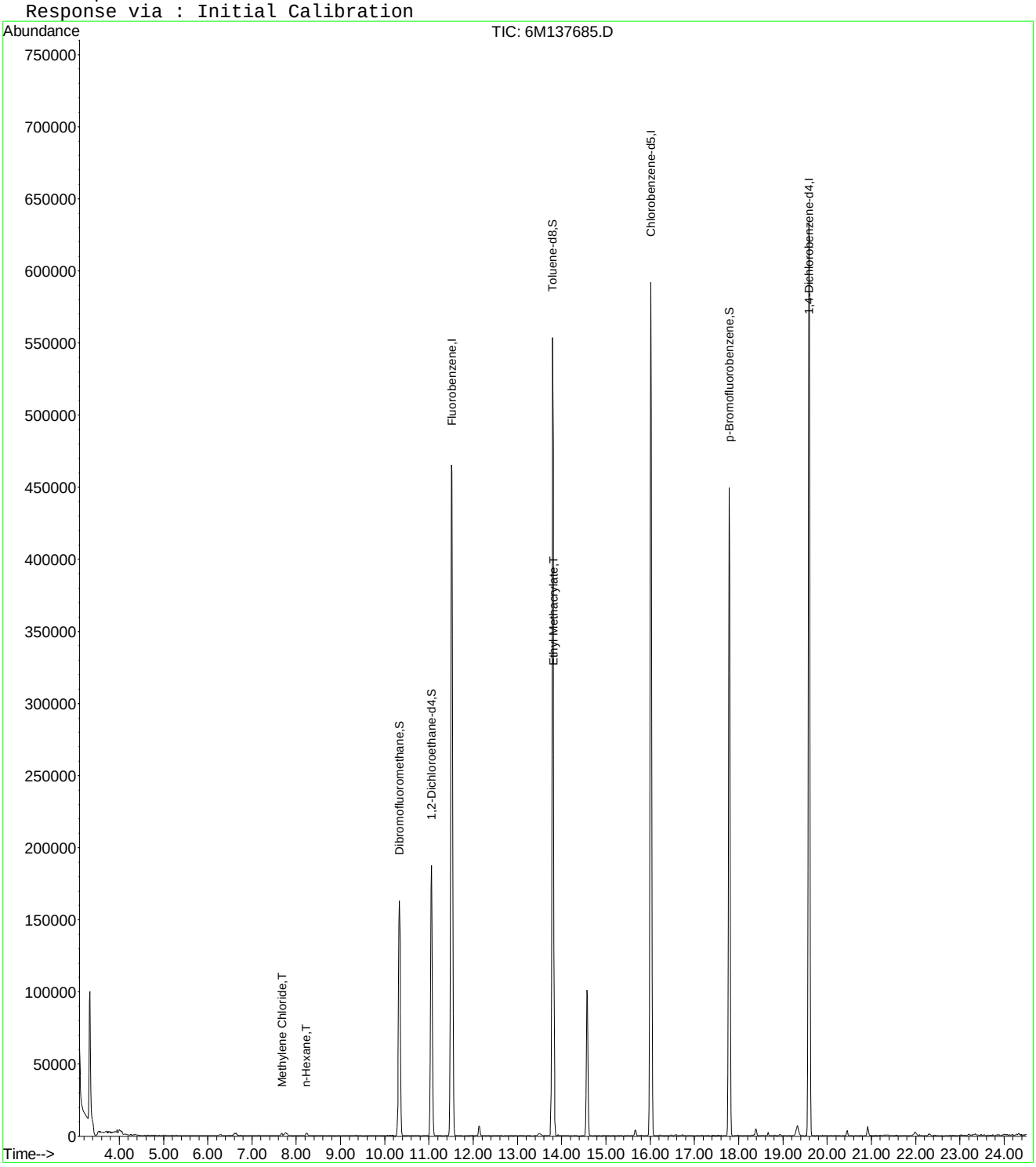

6M137685.D 826_SL.M Thu Mar 10 08:54:57 2016 Page 2

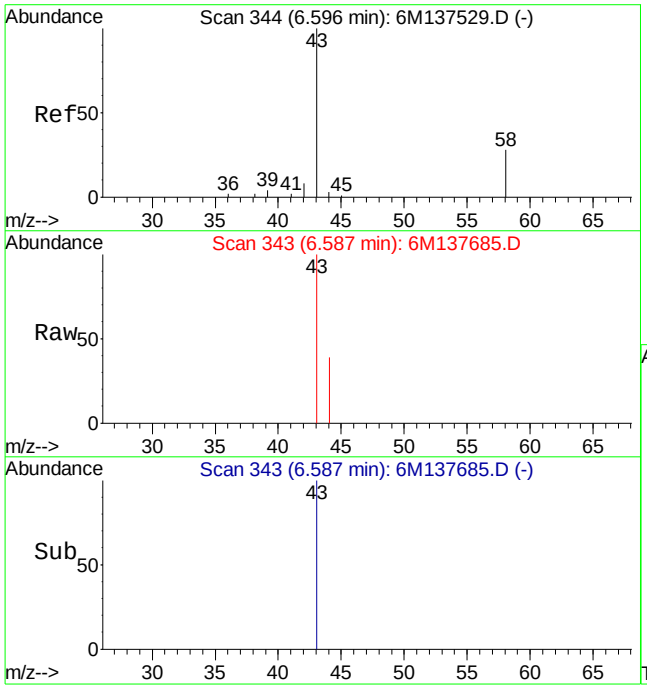

#13
Acetone
Concen: Below Cal
RT: 6.59 min Scan# 343
Delta R.T. 0.00 min
Lab File: 6M137685.D
Acq: 9 Mar 2016 15:57

Tgt Ion: 43 Resp: 2971

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.1	37.7#

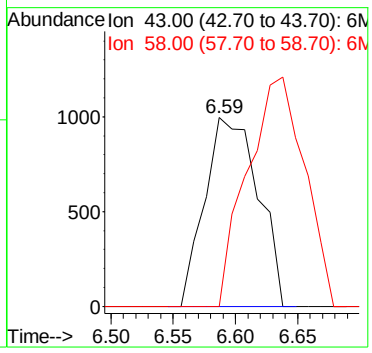

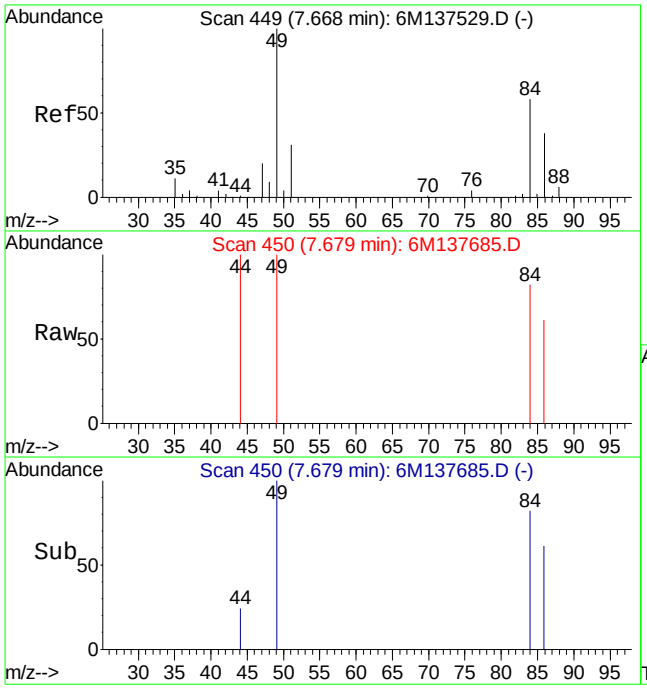

#19
Methylene Chloride
Concen: 0.30 ug/L
RT: 7.68 min Scan# 450
Delta R.T. 0.01 min
Lab File: 6M137685.D
Acq: 9 Mar 2016 15:57

Tgt Ion: 84 Resp: 954

Ion	Ratio	Lower	Upper
84	100		
49	184.7	87.9	205.1

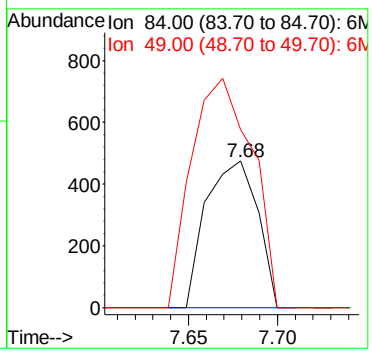

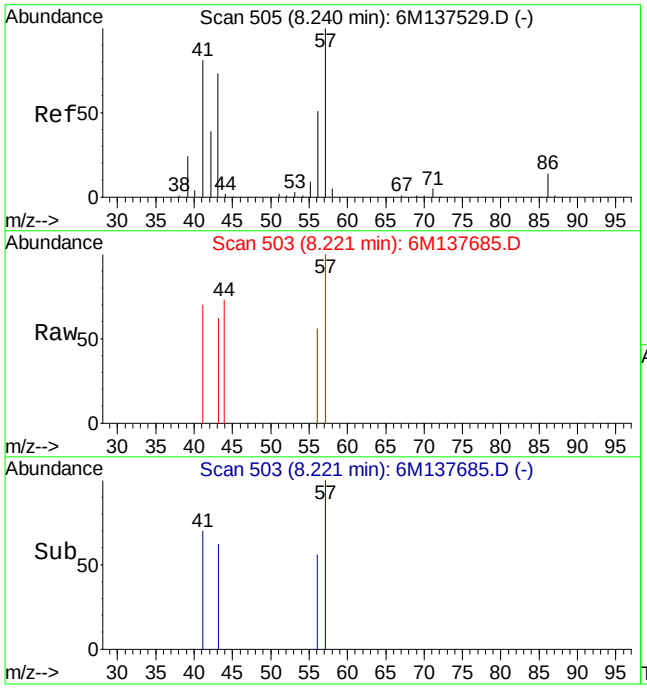

#24
n-Hexane
Concen: 0.27 ug/L
RT: 8.22 min Scan# 503
Delta R.T. -0.02 min
Lab File: 6M137685.D
Acq: 9 Mar 2016 15:57

Tgt Ion: 57 Resp: 1435

Ion	Ratio	Lower	Upper
57	100		
43	62.4	44.0	102.8

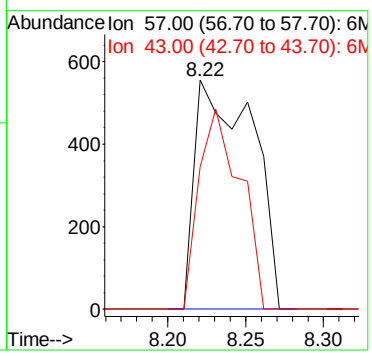

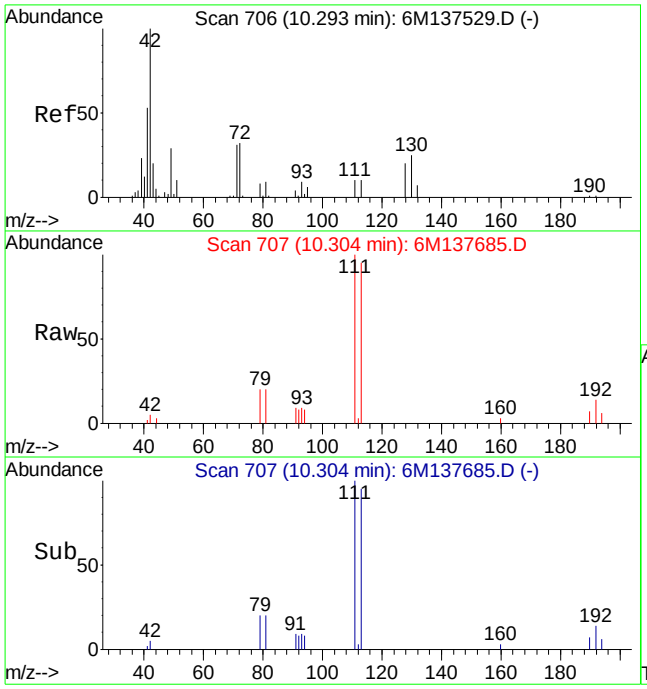

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.30 min Scan# 707
Delta R.T. 0.01 min
Lab File: 6M137685.D
Acq: 9 Mar 2016 15:57

Tgt Ion: 42 Resp: 2370

Ion	Ratio	Lower	Upper
42	100		
72	0.0	21.0	49.0#
71	0.0	20.6	48.2#

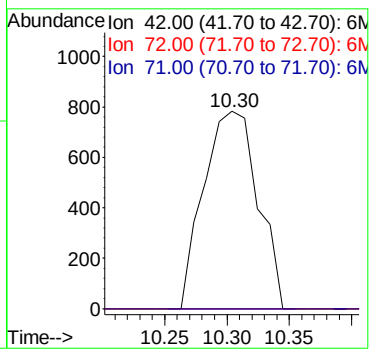

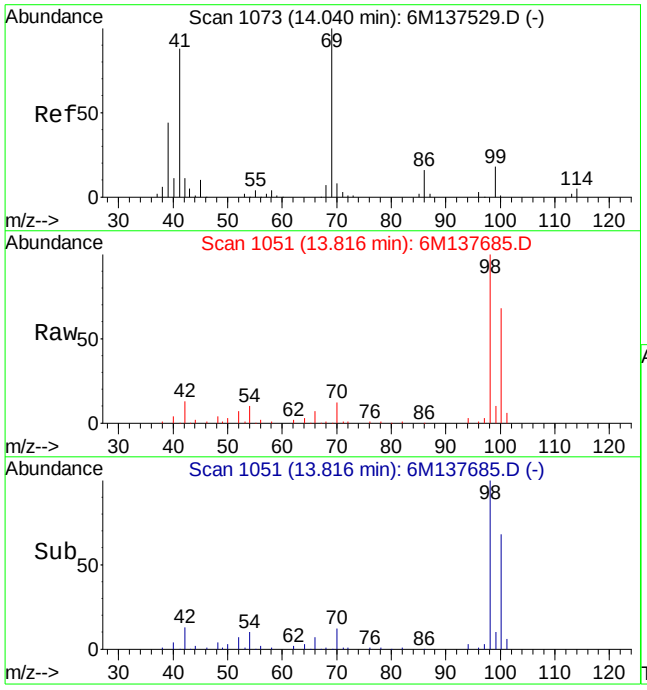

#60
Ethyl Methacrylate
Concen: 0.32 ug/L
RT: 13.82 min Scan# 1051
Delta R.T. -0.21 min
Lab File: 6M137685.D
Acq: 9 Mar 2016 15:57

Tgt Ion: 69 Resp: 1262

Ion	Ratio	Lower	Upper
69	100		
41	112.7	50.6	118.2

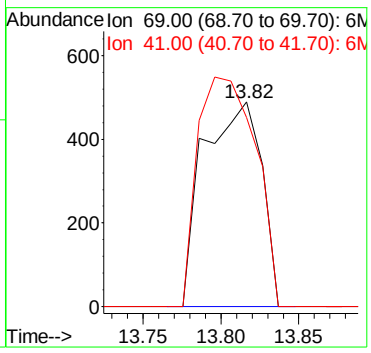

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137686.D Vial: 12
Acq On : 9 Mar 2016 16:31 Operator: TMB
Sample : L16030366-03 8260 4.82g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 08:54:57 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	604341	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	441592	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	232928	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	149739	46.1886 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 92.38%		
43) 1,2-Dichloroethane-d4	11.06	65	184615	43.8598 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 87.72%		
58) Toluene-d8	13.80	98	514591	49.0131 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.02%		
80) p-Bromofluorobenzene	17.79	95	212520	49.6728 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 99.34%		

Target Compounds

					Qvalue
13) Acetone	6.60	43	4092	Below Cal #	1
24) n-Hexane	8.25	57	1558	0.2937 ug/L	81
29) 2-Butanone	9.32	43	1182	0.5658 ug/L	91
36) Tetrahydrofuran	10.31	42	2443	Below Cal #	55

(#) = qualifier out of range (m) = manual integration
6M137686.D 826_SL.M Thu Mar 10 08:54:58 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137686.D Vial: 12
Acq On : 9 Mar 2016 16:31 Operator: TMB
Sample : L16030366-03 8260 4.82g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 8:54 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

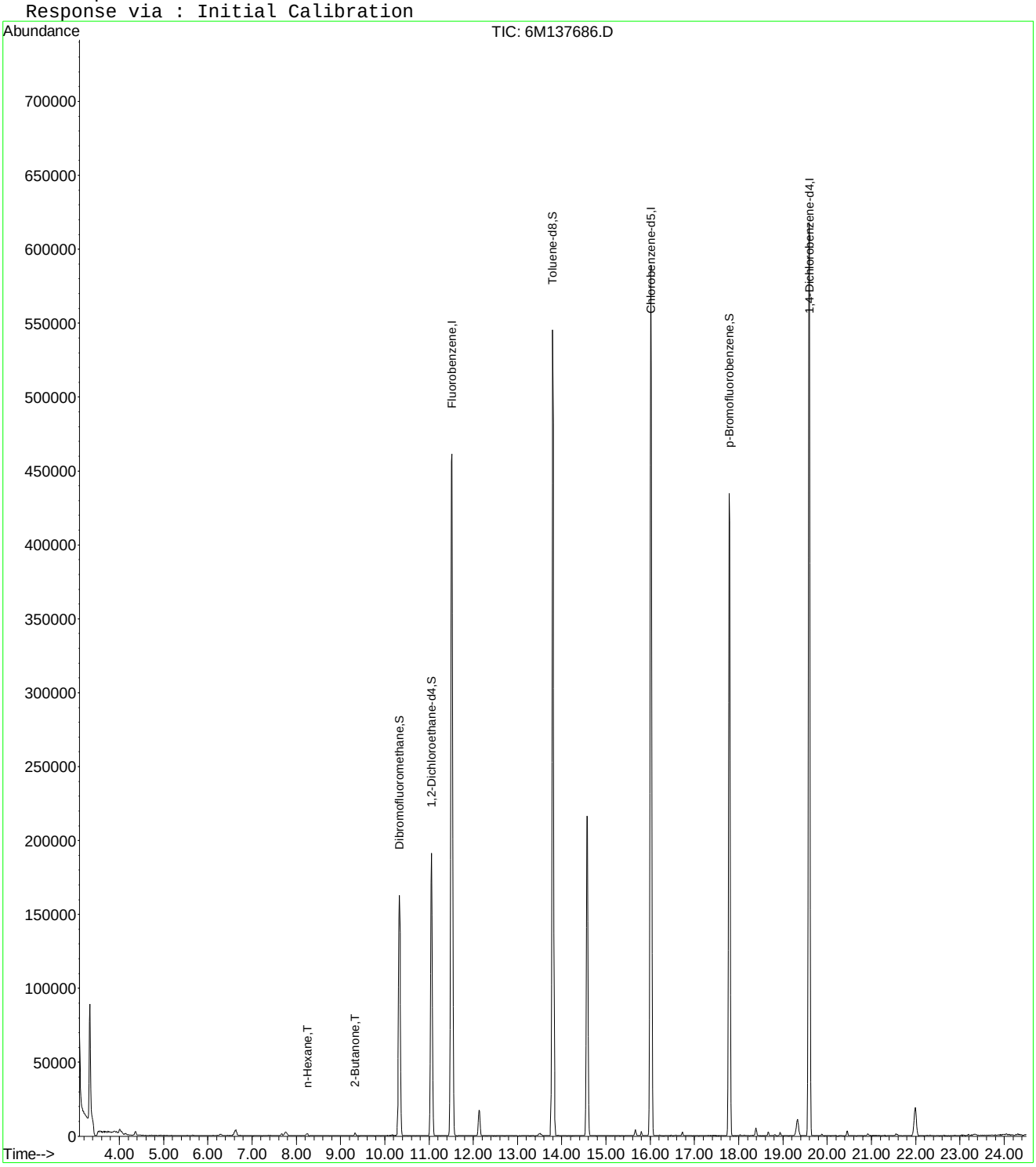

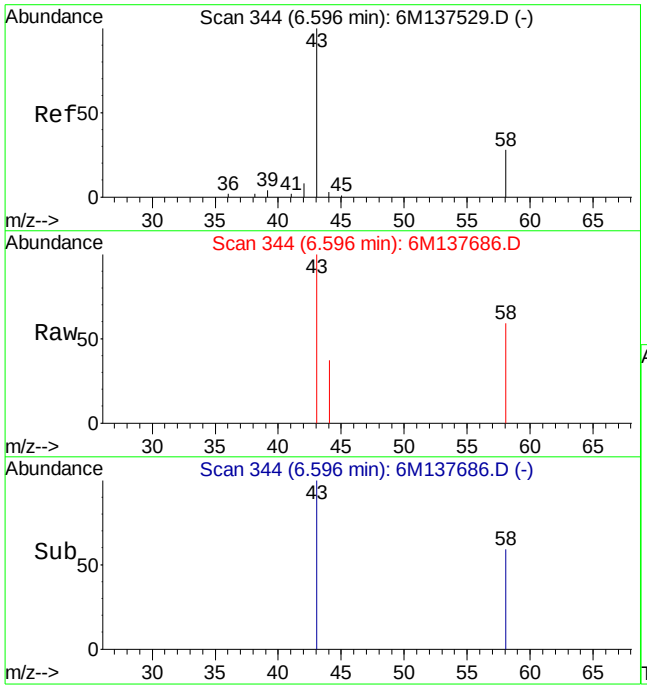

#13
Acetone
Concen: Below Cal
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137686.D
Acq: 9 Mar 2016 16:31

Tgt Ion: 43 Resp: 4092

Ion	Ratio	Lower	Upper
43	100		
58	203.1	16.1	37.7#

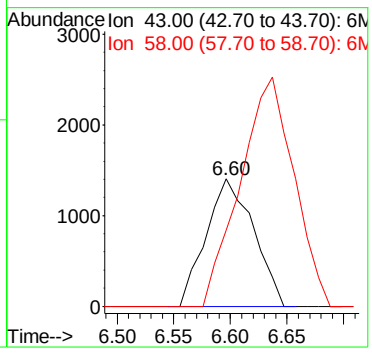

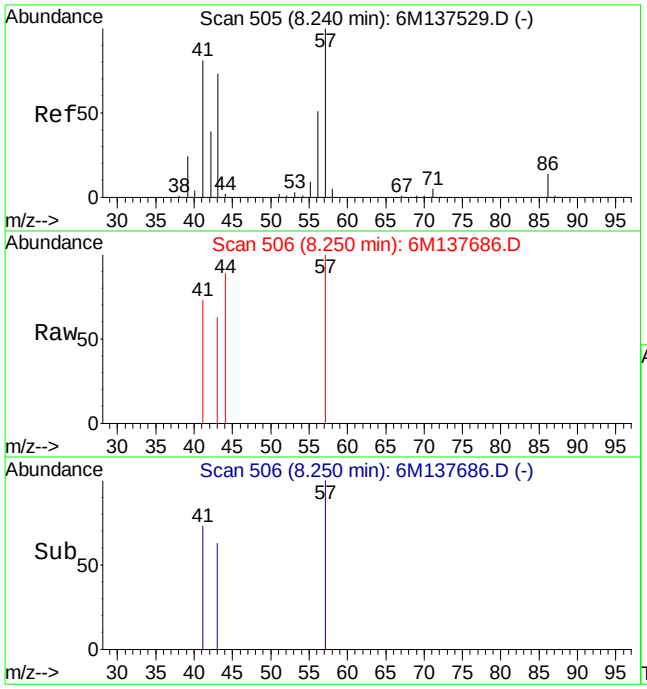

#24
n-Hexane
Concen: 0.29 ug/L
RT: 8.25 min Scan# 506
Delta R.T. 0.01 min
Lab File: 6M137686.D
Acq: 9 Mar 2016 16:31

Tgt Ion: 57 Resp: 1558

Ion	Ratio	Lower	Upper
57	100		
43	57.0	44.0	102.8

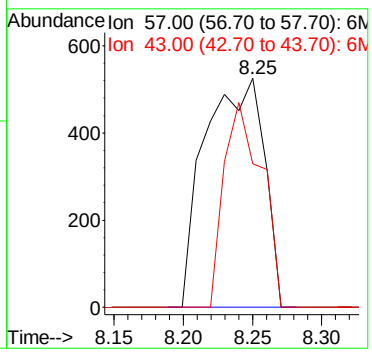

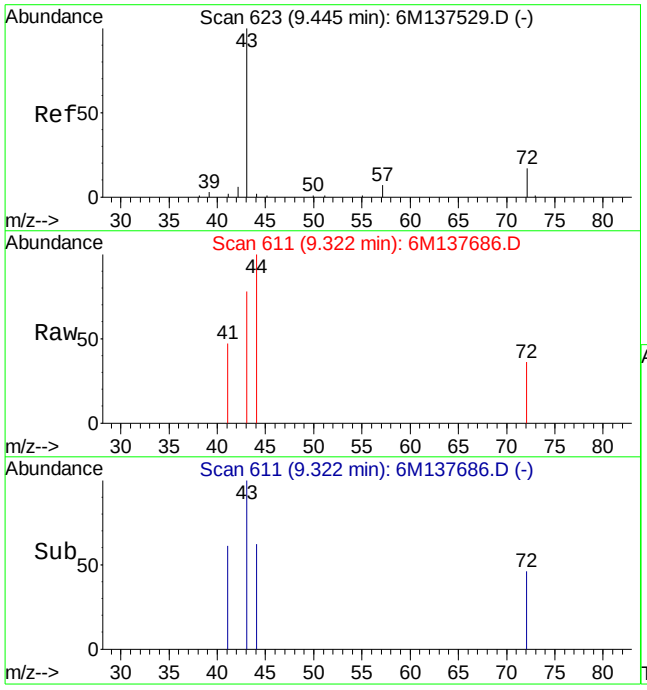

#29
2-Butanone
Concen: 0.57 ug/L
RT: 9.32 min Scan# 611
Delta R.T. -0.12 min
Lab File: 6M137686.D
Acq: 9 Mar 2016 16:31

Tgt Ion: 43 Resp: 1182

Ion	Ratio	Lower	Upper
43	100		
72	16.2	12.2	28.4

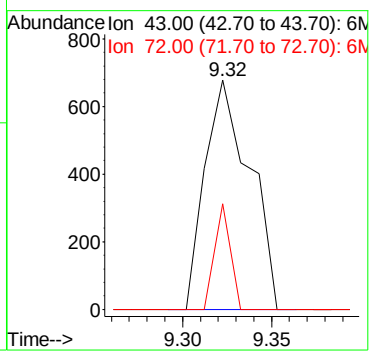

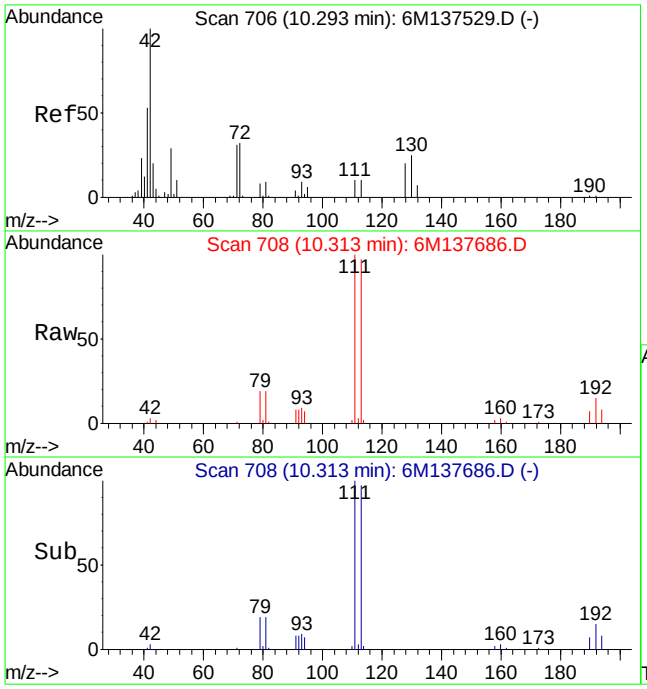

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.31 min Scan# 708
Delta R.T. 0.02 min
Lab File: 6M137686.D
Acq: 9 Mar 2016 16:31

Tgt Ion: 42 Resp: 2443

Ion	Ratio	Lower	Upper
42	100		
72	9.0	21.0	49.0#
71	8.0	20.6	48.2#

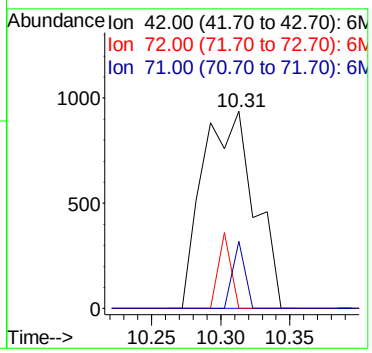

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137687.D Vial: 13
Acq On : 9 Mar 2016 17:04 Operator: TMB
Sample : L16030366-04 8260 4.82g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 08:54:58 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	587991	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	432130	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	226741	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	146014	46.2920 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 92.58%		
43) 1,2-Dichloroethane-d4	11.06	65	183511	44.8098 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 89.62%		
58) Toluene-d8	13.80	98	503289	48.9863 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 97.98%		
80) p-Bromofluorobenzene	17.79	95	209291	50.2529 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 100.50%		

Target Compounds					Qvalue
13) Acetone	6.60	43	3361	Below Cal #	1
24) n-Hexane	8.24	57	1605	0.3109 ug/L	68
36) Tetrahydrofuran	10.30	42	1955	Below Cal #	59

(#) = qualifier out of range (m) = manual integration
6M137687.D 826_SL.M Thu Mar 10 08:54:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137687.D Vial: 13
Acq On : 9 Mar 2016 17:04 Operator: TMB
Sample : L16030366-04 8260 4.82g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 8:54 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

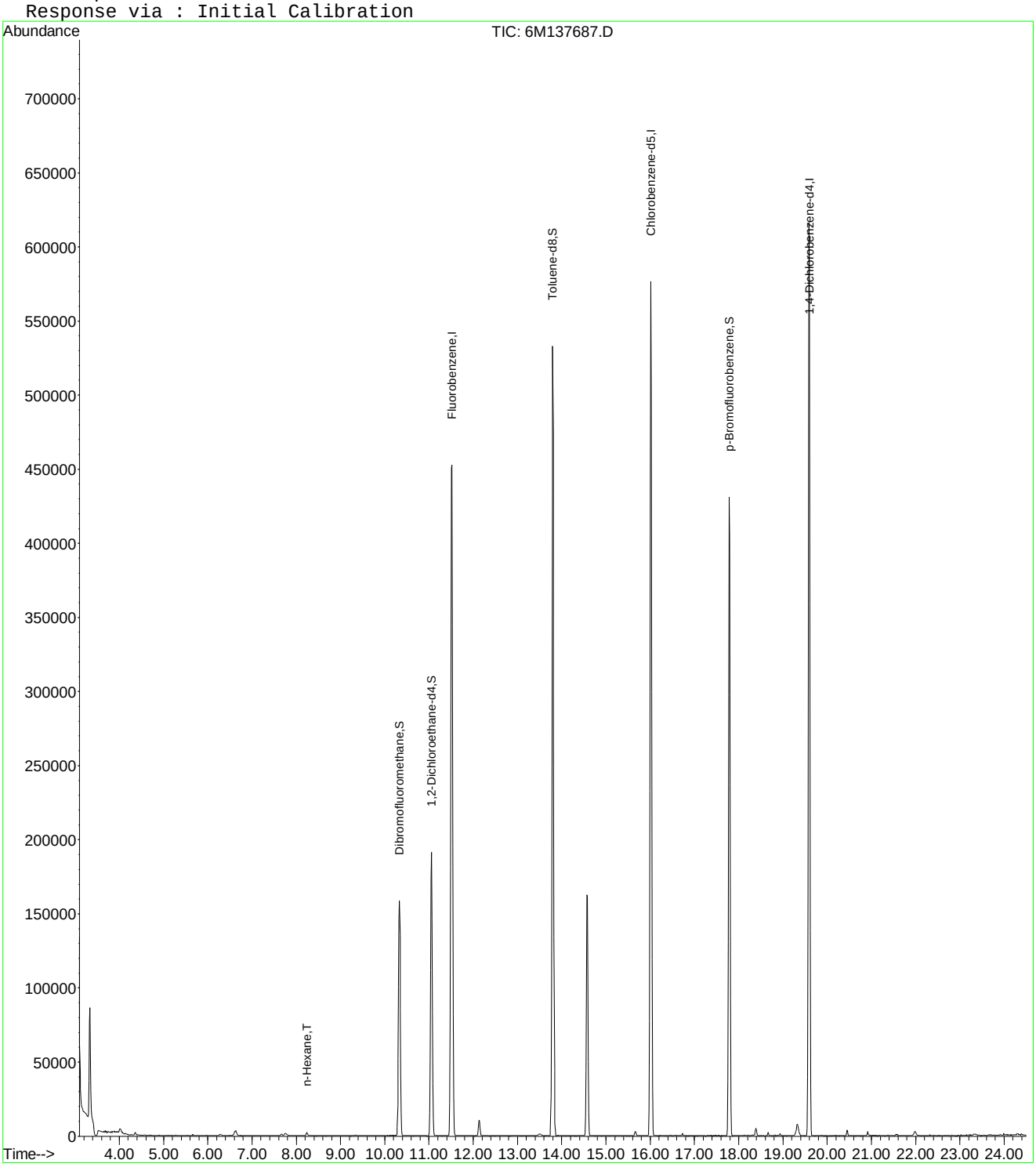

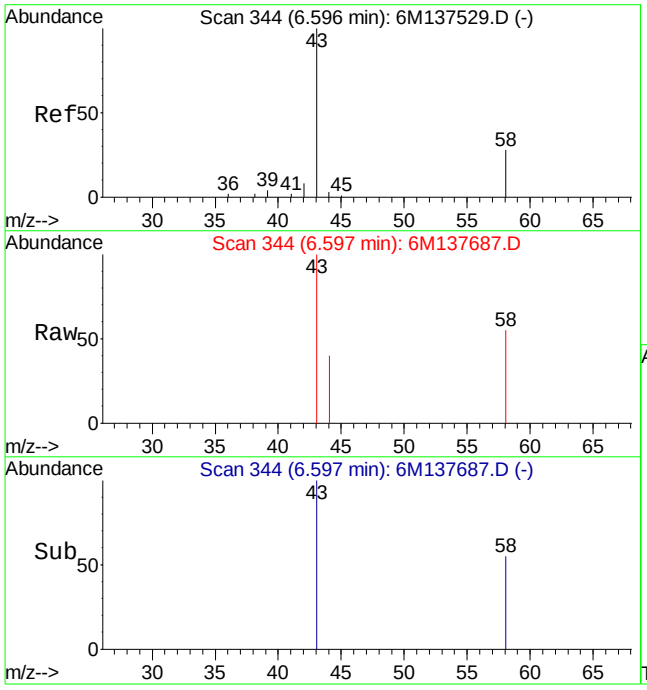

#13
Acetone
Concen: Below Cal
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137687.D
Acq: 9 Mar 2016 17:04

Tgt Ion: 43 Resp: 3361

Ion	Ratio	Lower	Upper
43	100		
58	219.5	16.1	37.7#

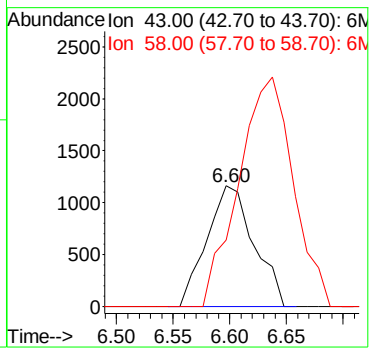

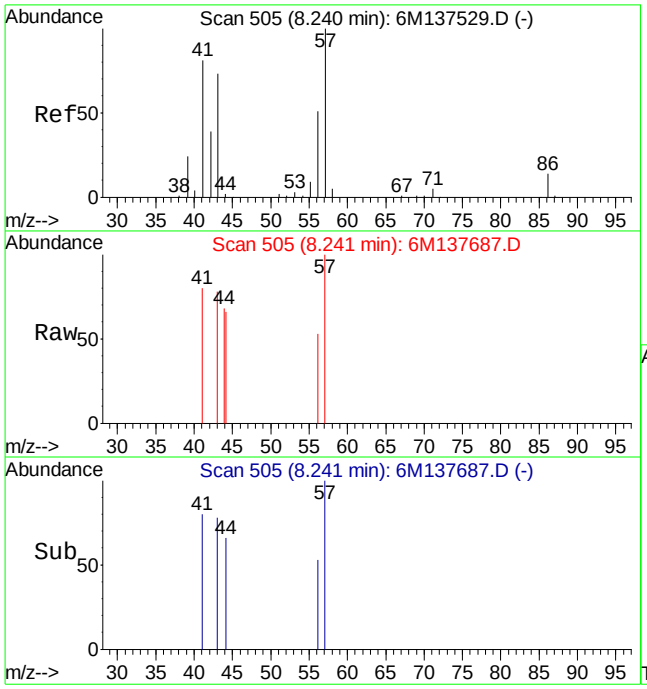

#24
n-Hexane
Concen: 0.31 ug/L
RT: 8.24 min Scan# 505
Delta R.T. -0.00 min
Lab File: 6M137687.D
Acq: 9 Mar 2016 17:04

Tgt Ion: 57 Resp: 1605

Ion	Ratio	Lower	Upper
57	100		
43	46.3	44.0	102.8

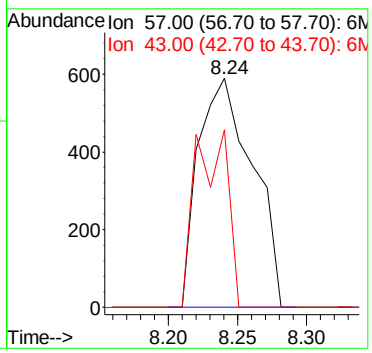

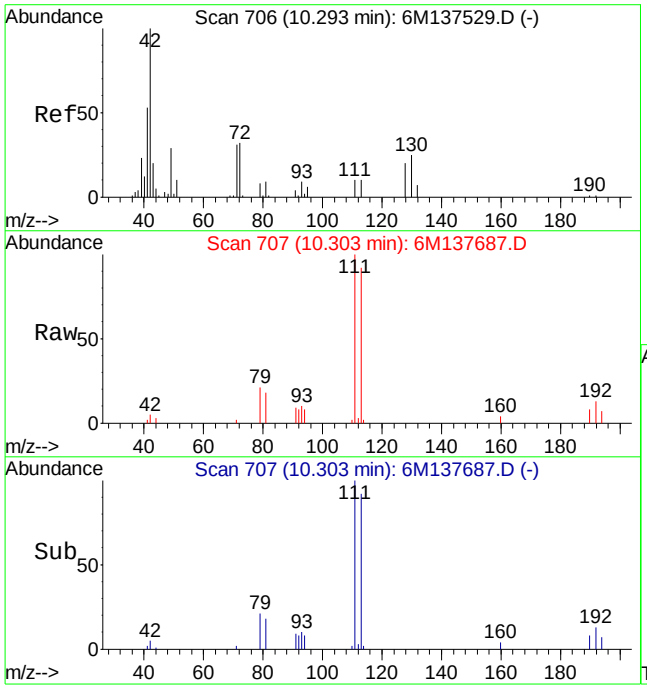

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.30 min Scan# 707
Delta R.T. 0.01 min
Lab File: 6M137687.D
Acq: 9 Mar 2016 17:04

Tgt Ion: 42 Resp: 1955

Ion	Ratio	Lower	Upper
42	100		
72	11.9	21.0	49.0#
71	10.1	20.6	48.2#

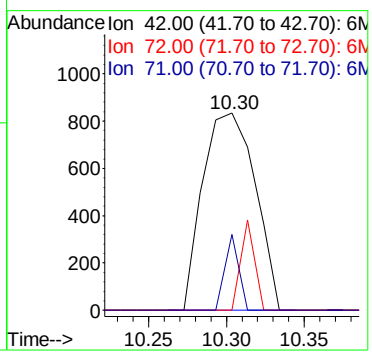

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137688.D Vial: 14
Acq On : 9 Mar 2016 17:37 Operator: TMB
Sample : L16030366-05 8260 4.59g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 08:54:59 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	555698	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	408503	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	216941	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	136987	45.9539 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 91.90%		
43) 1,2-Dichloroethane-d4	11.06	65	172482	44.5643 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 89.12%		
58) Toluene-d8	13.80	98	474325	48.8374 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 97.68%		
80) p-Bromofluorobenzene	17.79	95	199547	50.0777 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 100.16%		

Target Compounds					Qvalue
11) Acrolein	6.48	56	639	1.2716 ug/L #	49
13) Acetone	6.60	43	5864	0.6556 ug/L #	1
19) Methylene Chloride	7.68	84	979	0.3343 ug/L	73
24) n-Hexane	8.24	57	1987	0.4073 ug/L	80

(#) = qualifier out of range (m) = manual integration
6M137688.D 826_SL.M Thu Mar 10 08:54:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137688.D Vial: 14
Acq On : 9 Mar 2016 17:37 Operator: TMB
Sample : L16030366-05 8260 4.59g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 8:54 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

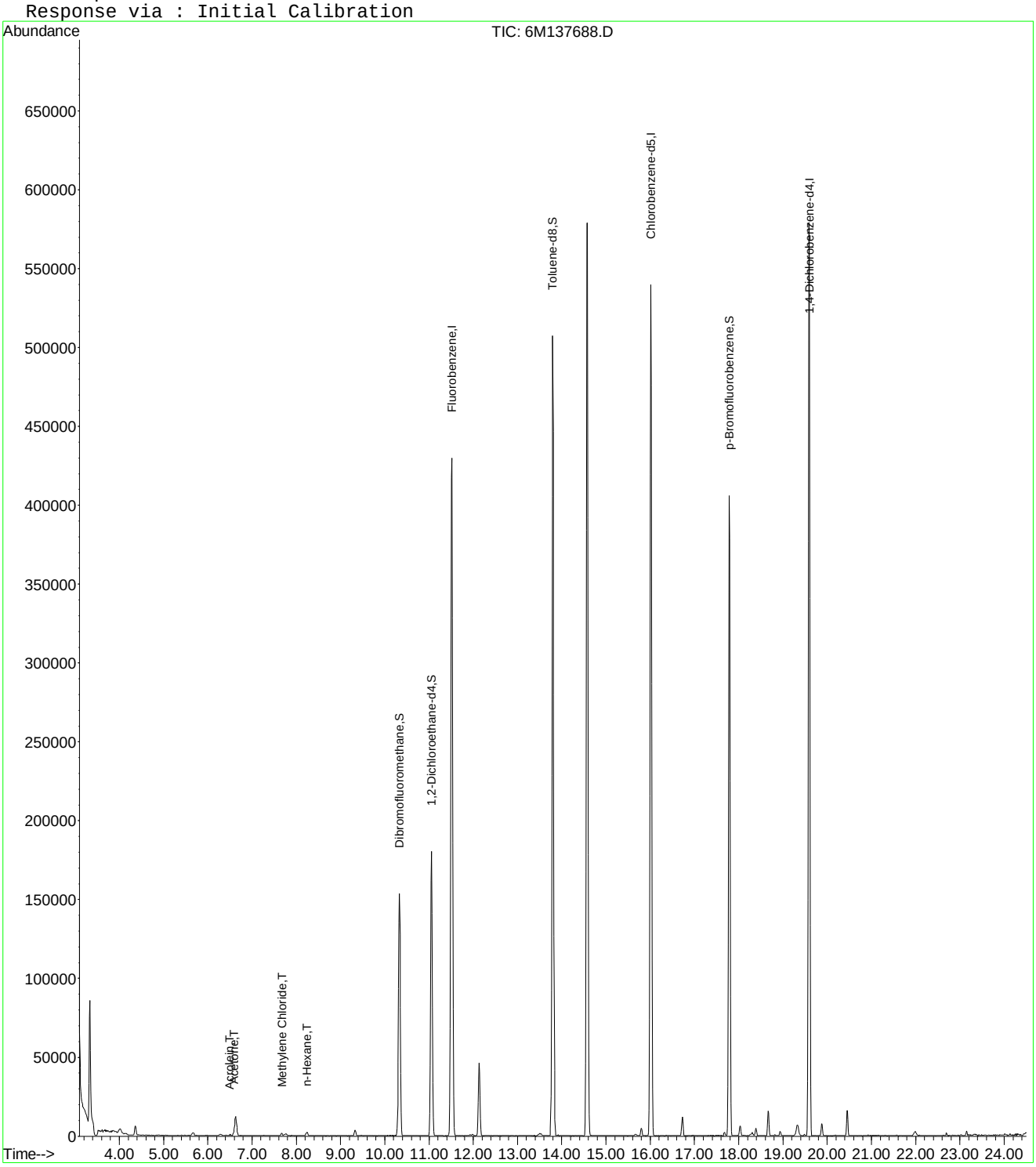

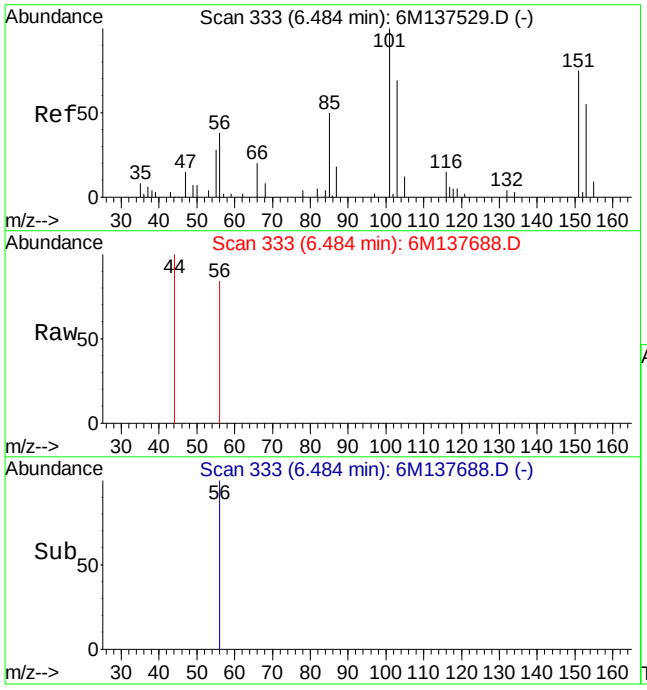

#11
Acrolein
Concen: 1.27 ug/L
RT: 6.48 min Scan# 333
Delta R.T. -0.00 min
Lab File: 6M137688.D
Acq: 9 Mar 2016 17:37

Tgt Ion: 56 Resp: 639

Ion	Ratio	Lower	Upper
56	100		
55	31.3	44.6	104.0#

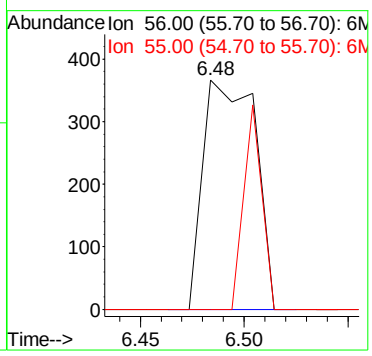

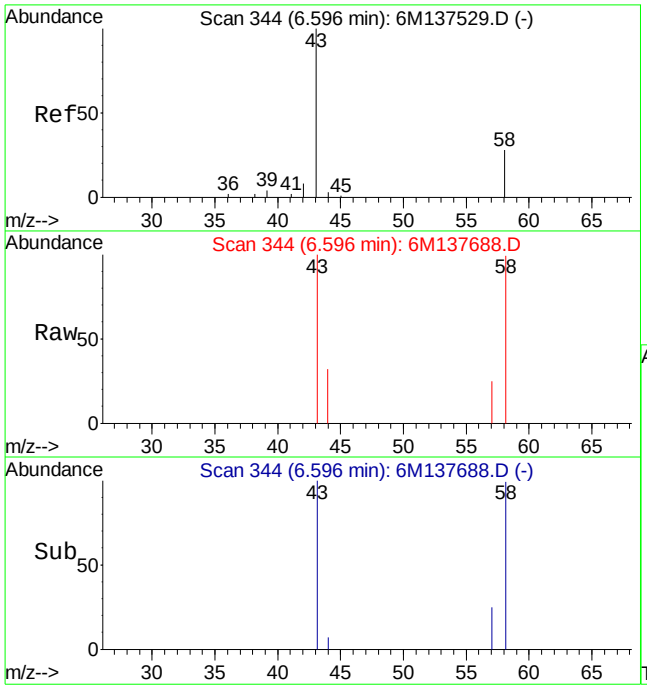

#13
Acetone
Concen: 0.66 ug/L
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137688.D
Acq: 9 Mar 2016 17:37

Tgt Ion: 43 Resp: 5864

Ion	Ratio	Lower	Upper
43	100		
58	401.3	16.1	37.7#

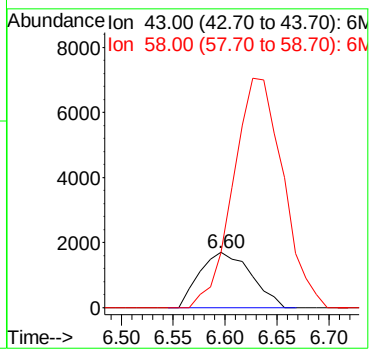

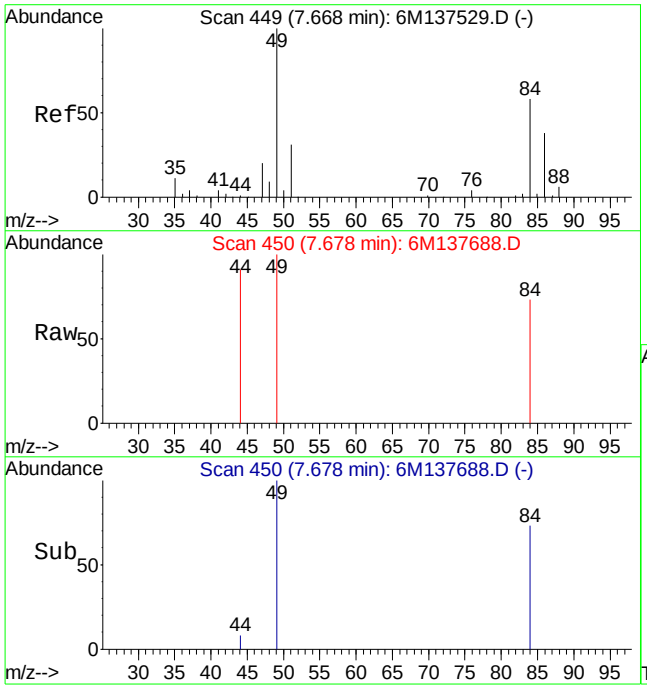

#19
Methylene Chloride
Concen: 0.33 ug/L
RT: 7.68 min Scan# 450
Delta R.T. 0.01 min
Lab File: 6M137688.D
Acq: 9 Mar 2016 17:37

Tgt Ion: 84 Resp: 979

Ion	Ratio	Lower	Upper
84	100		
49	180.8	87.9	205.1

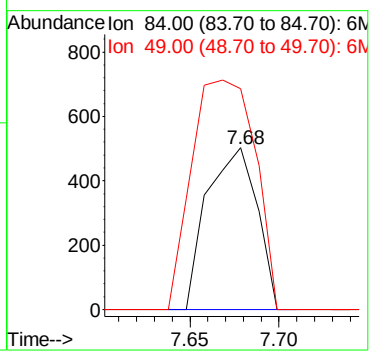

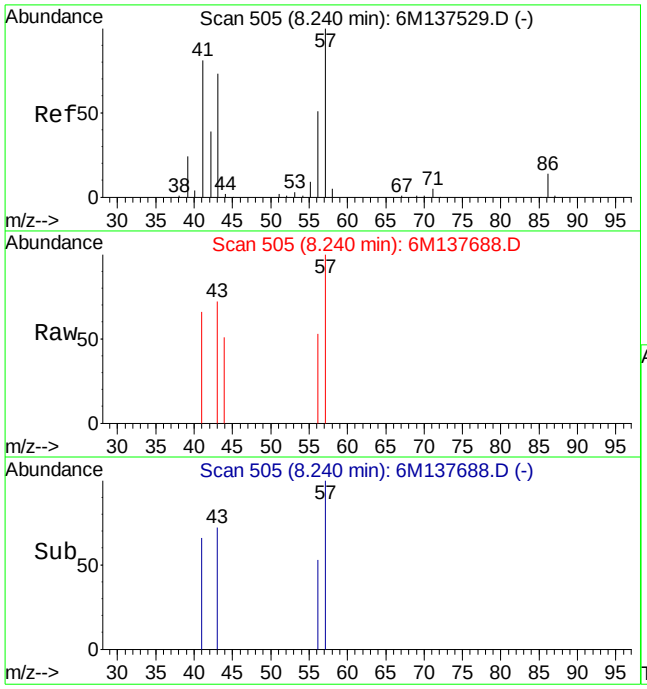

#24
n-Hexane
Concen: 0.41 ug/L
RT: 8.24 min Scan# 505
Delta R.T. -0.00 min
Lab File: 6M137688.D
Acq: 9 Mar 2016 17:37

Tgt Ion: 57 Resp: 1987

Ion	Ratio	Lower	Upper
57	100		
43	90.4	44.0	102.8

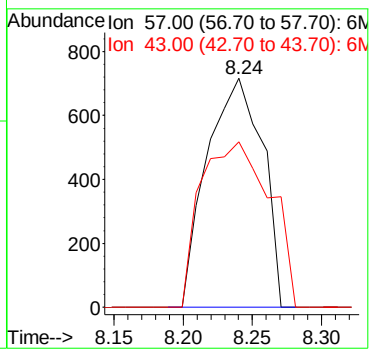

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137689.D Vial: 15
Acq On : 9 Mar 2016 18:11 Operator: TMB
Sample : L16030366-06 8260 5.04g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 08:55:00 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	607499	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	452055	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	239430	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	151955	46.6285 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.26%		
43) 1,2-Dichloroethane-d4	11.06	65	194807	46.0406 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 92.08%		
58) Toluene-d8	13.80	98	520237	48.4040 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 96.80%		
80) p-Bromofluorobenzene	17.79	95	216860	49.3107 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 98.62%		

Target Compounds					Qvalue
13) Acetone	6.61	43	4065	Below Cal #	67
19) Methylene Chloride	7.68	84	903	0.2820 ug/L	65
24) n-Hexane	8.24	57	1991	0.3733 ug/L	93
36) Tetrahydrofuran	10.29	42	2882	Below Cal #	58

(#) = qualifier out of range (m) = manual integration
6M137689.D 826_SL.M Thu Mar 10 08:55:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137689.D Vial: 15
Acq On : 9 Mar 2016 18:11 Operator: TMB
Sample : L16030366-06 8260 5.04g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 8:55 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

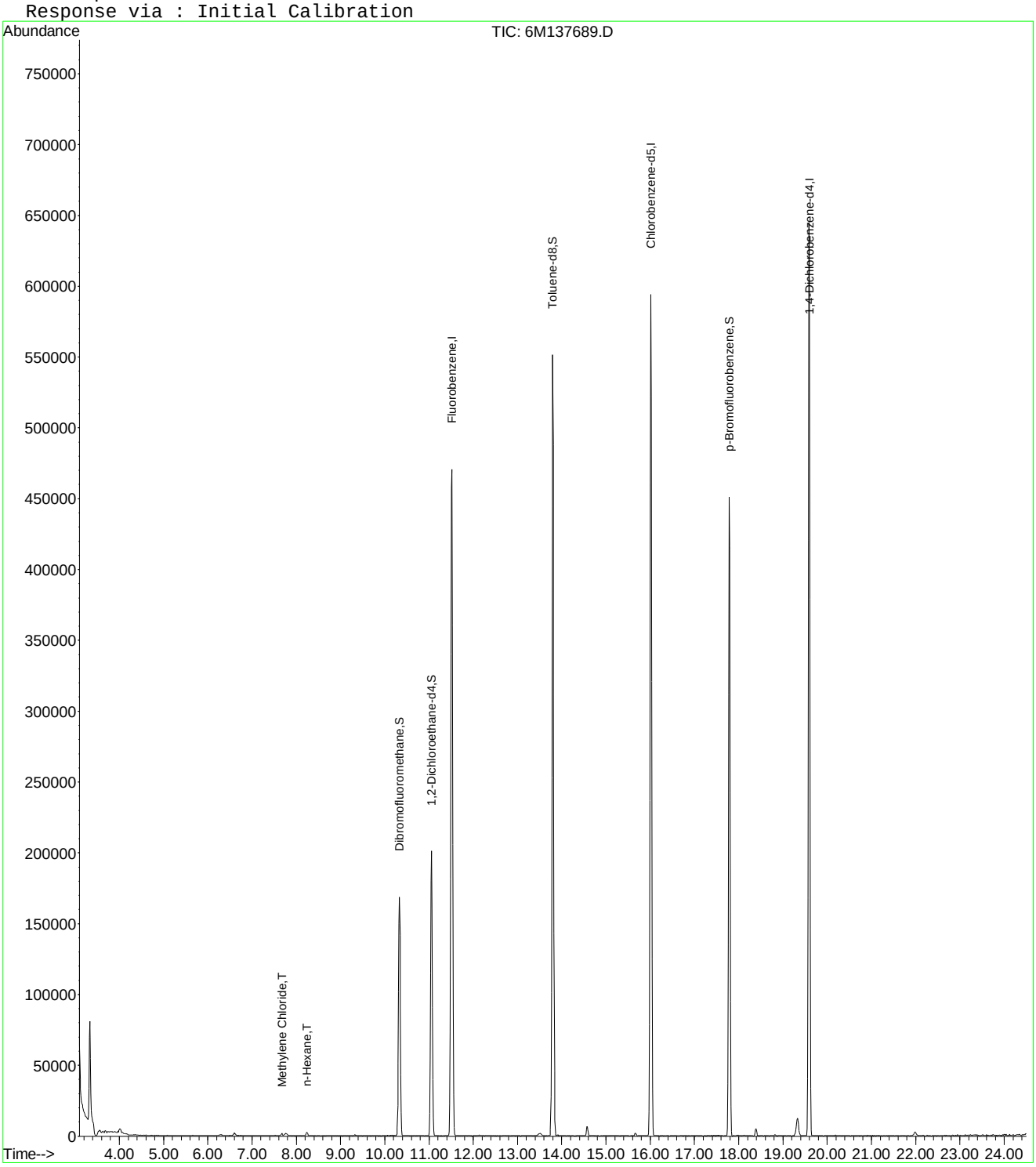

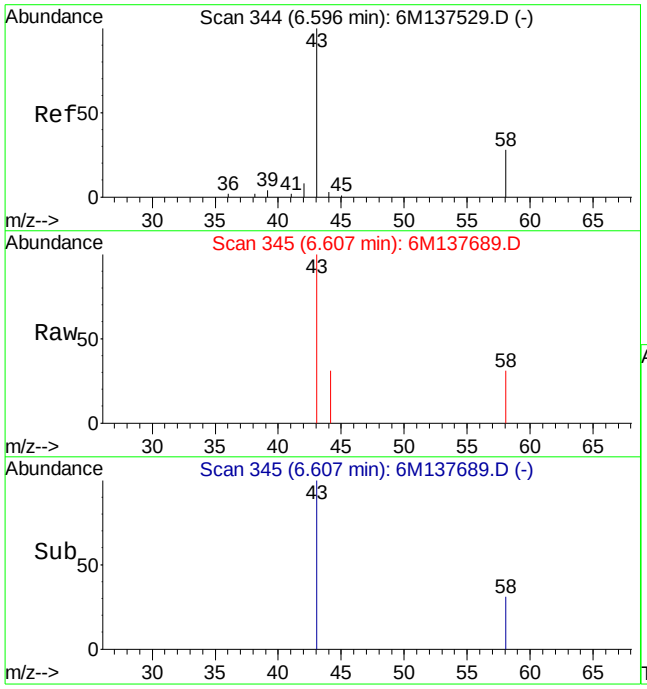

#13
Acetone
Concen: Below Cal
RT: 6.61 min Scan# 345
Delta R.T. 0.02 min
Lab File: 6M137689.D
Acq: 9 Mar 2016 18:11

Tgt Ion: 43 Resp: 4065

Ion	Ratio	Lower	Upper
43	100		
58	10.0	16.1	37.7#

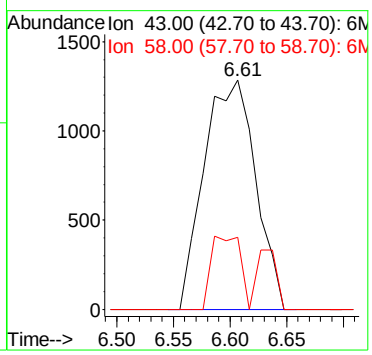

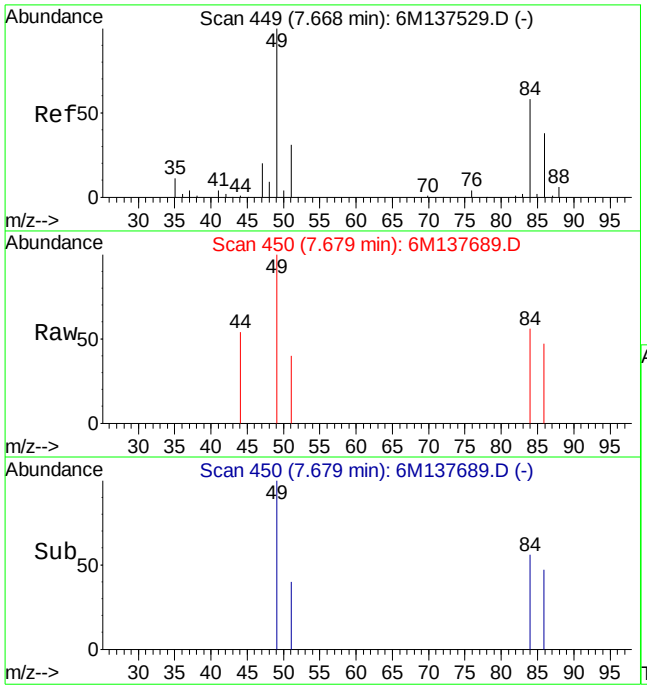

#19
Methylene Chloride
Concen: 0.28 ug/L
RT: 7.68 min Scan# 450
Delta R.T. 0.01 min
Lab File: 6M137689.D
Acq: 9 Mar 2016 18:11

Tgt Ion: 84 Resp: 903

Ion	Ratio	Lower	Upper
84	100		
49	190.7	87.9	205.1

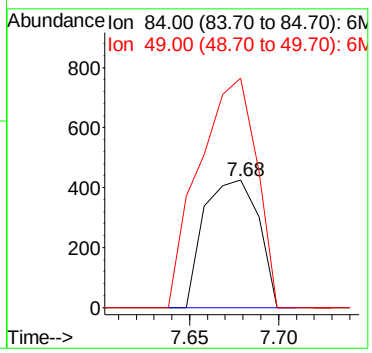

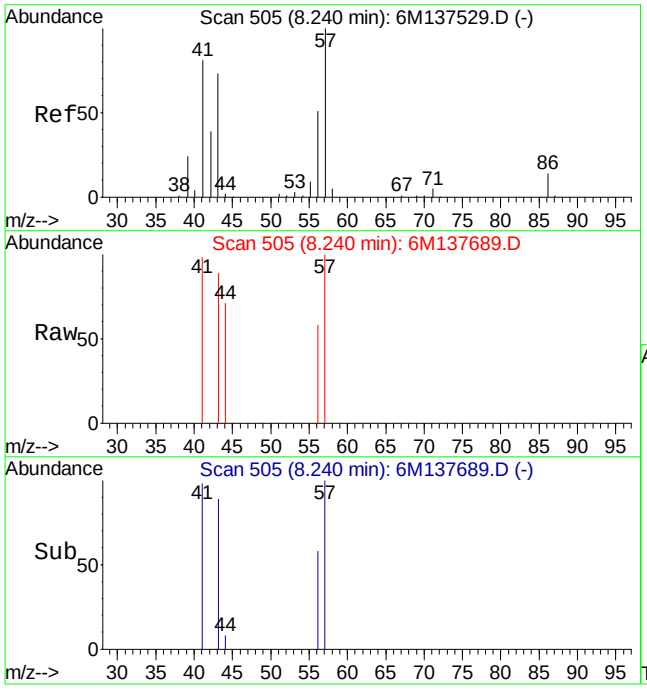

#24
n-Hexane
Concen: 0.37 ug/L
RT: 8.24 min Scan# 505
Delta R.T. -0.00 min
Lab File: 6M137689.D
Acq: 9 Mar 2016 18:11

Tgt Ion: 57 Resp: 1991

Ion	Ratio	Lower	Upper
57	100		
43	67.9	44.0	102.8

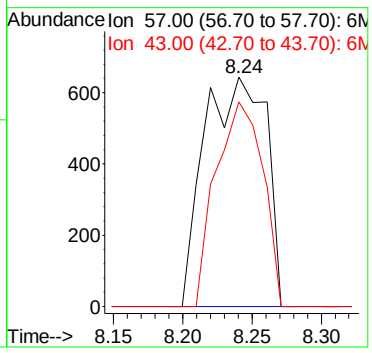

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137690.D Vial: 16
Acq On : 9 Mar 2016 18:44 Operator: TMB
Sample : WG560249-01 L16030366-07 8260 4.80g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 08:55:01 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	586148	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	427575	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	225088	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	145211	46.1821 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 92.36%		
43) 1,2-Dichloroethane-d4	11.06	65	179892	44.0643 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 88.12%		
58) Toluene-d8	13.80	98	499518	49.1372 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.28%		
80) p-Bromofluorobenzene	17.79	95	206872	50.0368 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 100.08%		

Target Compounds					Qvalue
13) Acetone	6.61	43	5747	0.2979 ug/L	90
19) Methylene Chloride	7.67	84	1226	0.3969 ug/L	75
24) n-Hexane	8.24	57	1715	0.3333 ug/L	80
36) Tetrahydrofuran	10.29	42	2124	Below Cal #	64
60) Ethyl Methacrylate	13.81	69	985	0.2542 ug/L	81
75) Styrene	16.93	104	2047	0.2509 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M137690.D 826_SL.M Thu Mar 10 08:55:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137690.D Vial: 16
Acq On : 9 Mar 2016 18:44 Operator: TMB
Sample : WG560249-01 L16030366-07 8260 4.80g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 8:55 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

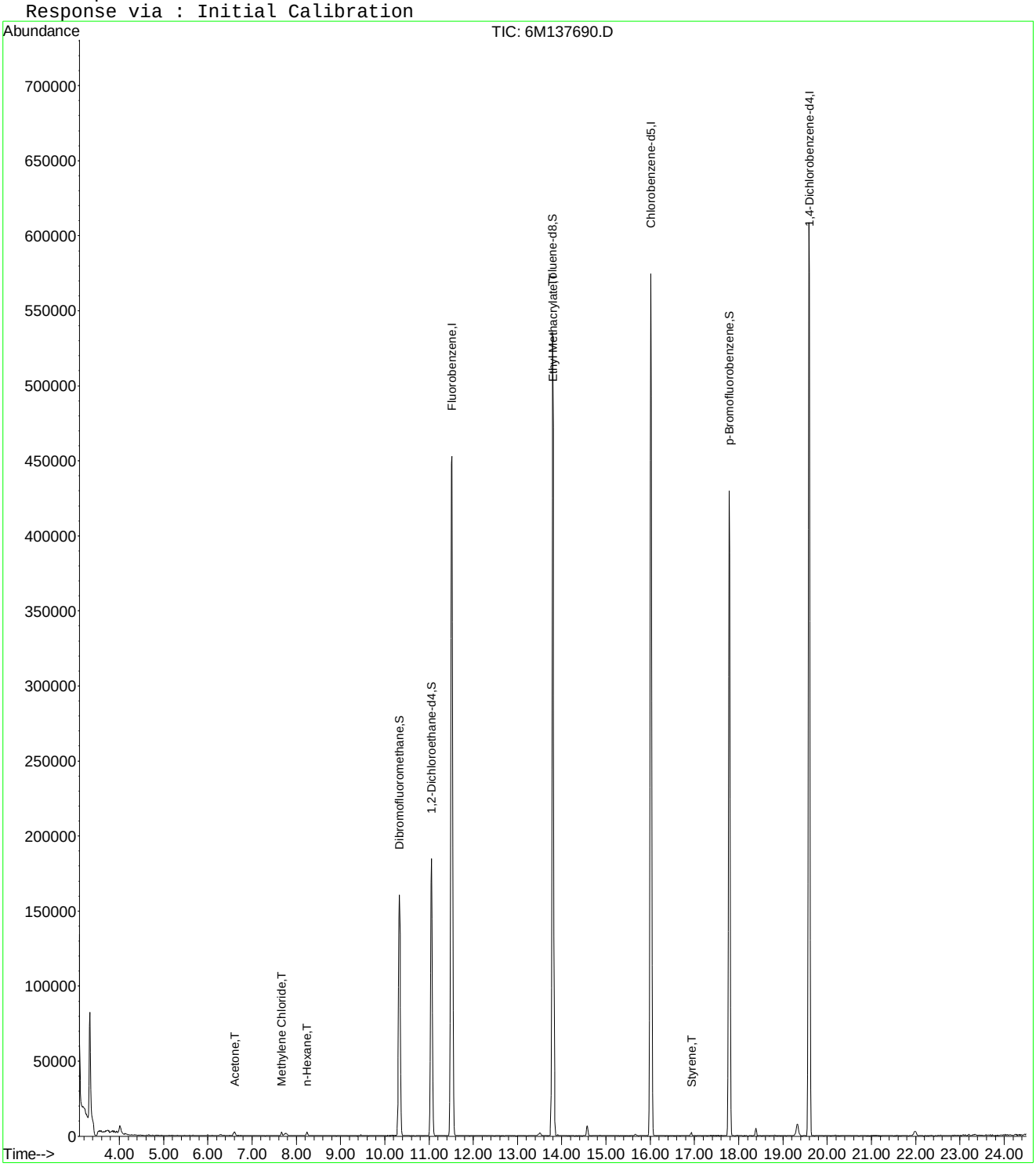

6M137690.D 826_SL.M Thu Mar 10 08:55:01 2016 Page 2

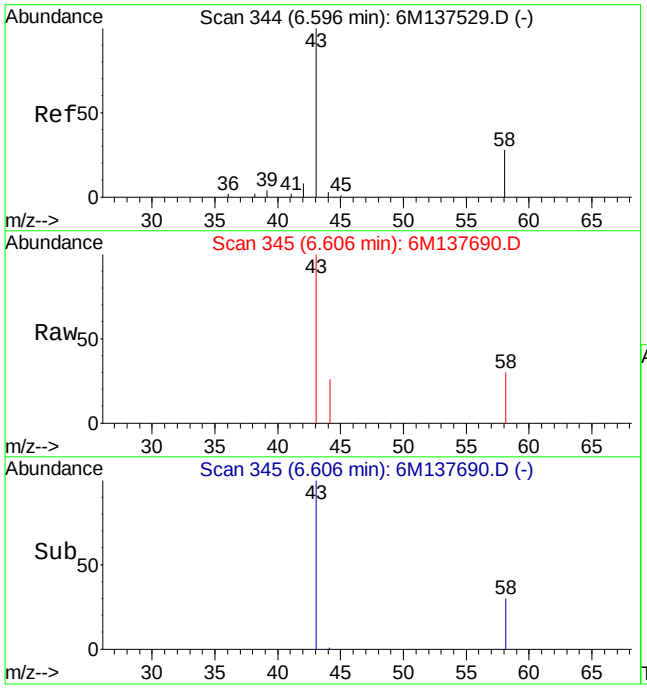

#13
Acetone
Concen: 0.30 ug/L
RT: 6.61 min Scan# 345
Delta R.T. 0.02 min
Lab File: 6M137690.D
Acq: 9 Mar 2016 18:44

Tgt Ion: 43 Resp: 5747

Ion	Ratio	Lower	Upper
43	100		
58	31.9	16.1	37.7

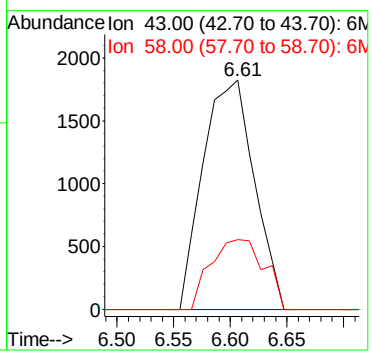

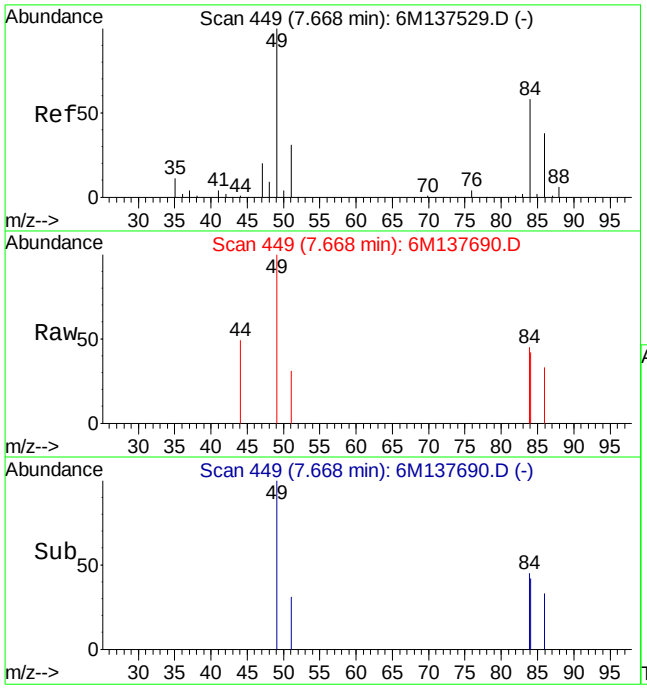

#19
Methylene Chloride
Concen: 0.40 ug/L
RT: 7.67 min Scan# 449
Delta R.T. -0.00 min
Lab File: 6M137690.D
Acq: 9 Mar 2016 18:44

Tgt Ion: 84 Resp: 1226

Ion	Ratio	Lower	Upper
84	100		
49	178.1	87.9	205.1

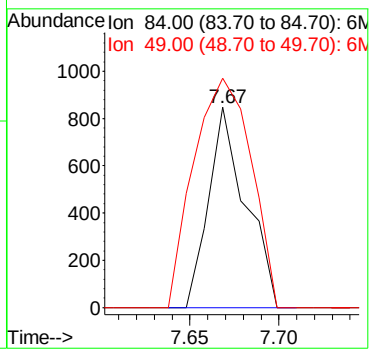

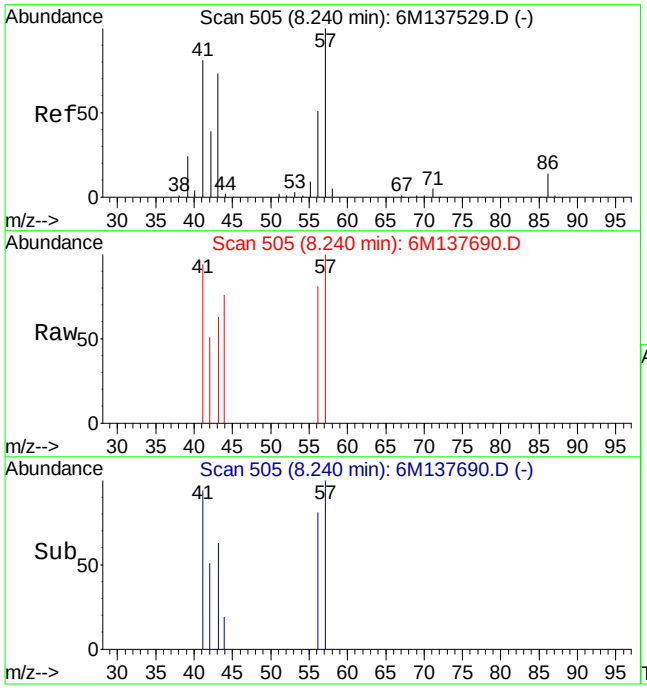

#24
n-Hexane
Concen: 0.33 ug/L
RT: 8.24 min Scan# 505
Delta R.T. -0.00 min
Lab File: 6M137690.D
Acq: 9 Mar 2016 18:44

Tgt Ion: 57 Resp: 1715

Ion	Ratio	Lower	Upper
57	100		
43	56.6	44.0	102.8

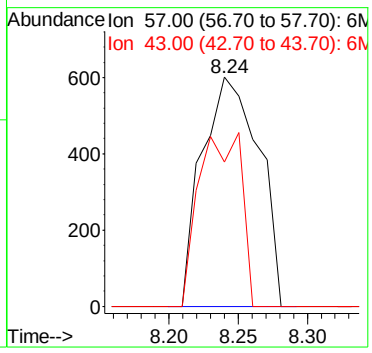

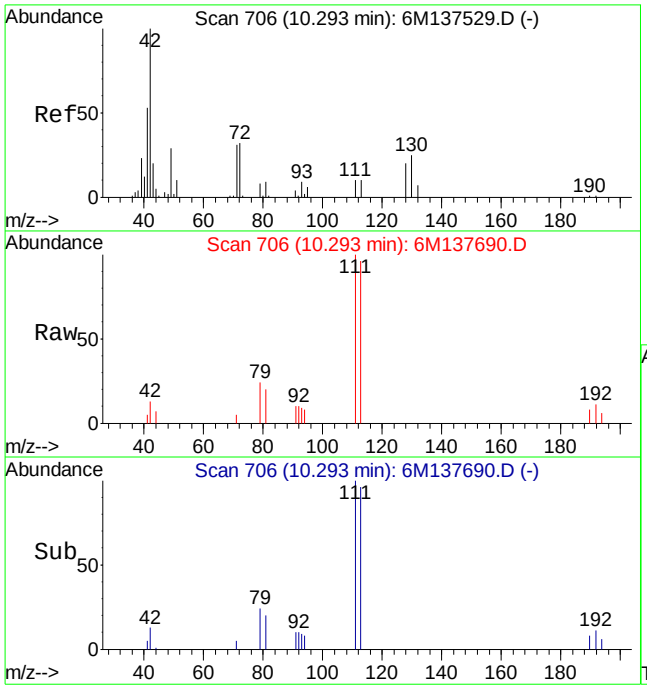

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.29 min Scan# 706
Delta R.T. -0.00 min
Lab File: 6M137690.D
Acq: 9 Mar 2016 18:44

Tgt Ion: 42 Resp: 2124

Ion	Ratio	Lower	Upper
42	100		
72	8.7	21.0	49.0#
71	19.6	20.6	48.2#

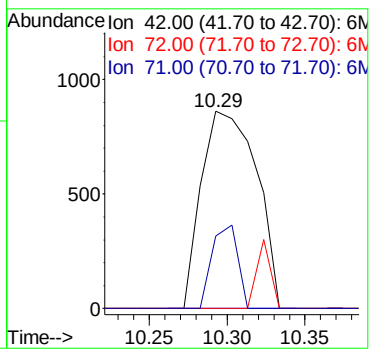

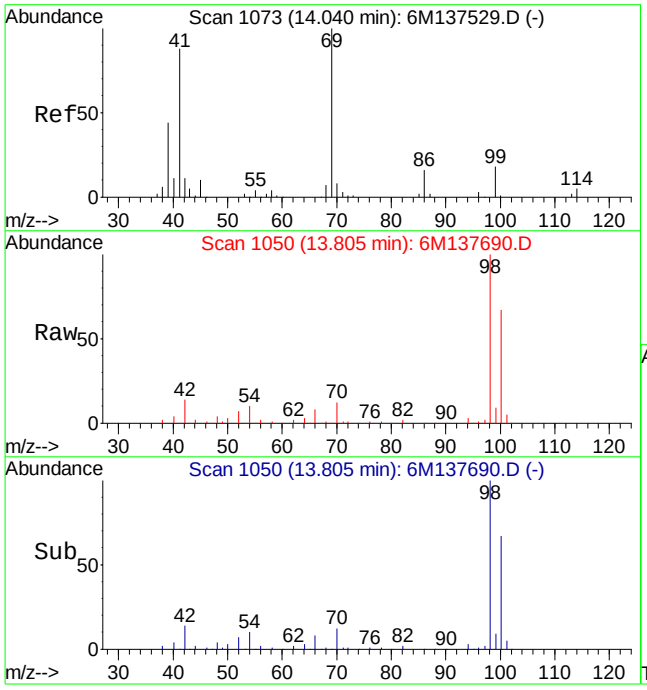

#60
Ethyl Methacrylate
Concen: 0.25 ug/L
RT: 13.81 min Scan# 1050
Delta R.T. -0.23 min
Lab File: 6M137690.D
Acq: 9 Mar 2016 18:44

Tgt Ion: 69 Resp: 985

Ion	Ratio	Lower	Upper
69	100		
41	101.3	50.6	118.2

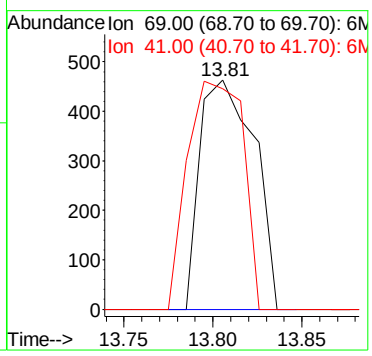

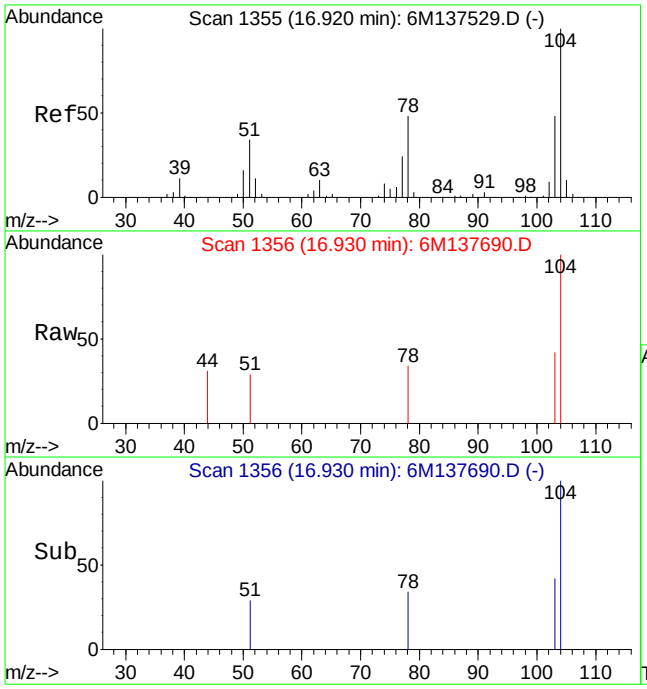

#75
Styrene
Concen: 0.25 ug/L
RT: 16.93 min Scan# 1356
Delta R.T. 0.01 min
Lab File: 6M137690.D
Acq: 9 Mar 2016 18:44

Tgt Ion:104 Resp: 2047

Ion	Ratio	Lower	Upper
104	100		
78	49.4	31.0	72.4

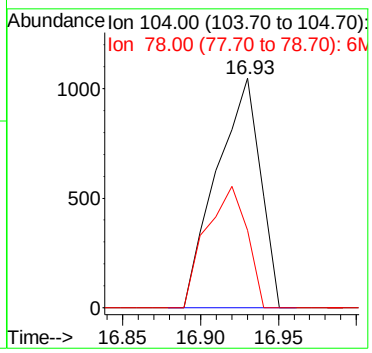

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137695.D Vial: 21
Acq On : 9 Mar 2016 21:30 Operator: TMB
Sample : L16030366-08 8260 4.62g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 08:55:06 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	568490	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	419729	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	221497	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	139581	45.7705 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 91.54%		
43) 1,2-Dichloroethane-d4	11.06	65	177672	44.8723 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 89.74%		
58) Toluene-d8	13.80	98	485828	48.6839 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 97.36%		
80) p-Bromofluorobenzene	17.79	95	203266	49.9617 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 99.92%		

Target Compounds

					Qvalue
11) Acrolein	6.50	56	1048	2.0386 ug/L #	42
13) Acetone	6.60	43	4882	Below Cal #	1
24) n-Hexane	8.24	57	2286	0.4581 ug/L	78
29) 2-Butanone	9.32	43	2810	1.4300 ug/L #	41
33) Chloroform	10.01	83	1699	0.3070 ug/L #	75
36) Tetrahydrofuran	10.30	42	2365	Below Cal #	47
45) 1,2-Dichloroethane	11.20	62	1588	0.3362 ug/L #	44
47) Trichloroethene	12.09	130	104899	37.4955 ug/L	97
48) Methylcyclohexane	12.09	83	1139	0.2518 ug/L #	1
60) Ethyl Methacrylate	13.81	69	1253	0.3294 ug/L	66

(#) = qualifier out of range (m) = manual integration
6M137695.D 826_SL.M Thu Mar 10 08:55:07 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137695.D Vial: 21
Acq On : 9 Mar 2016 21:30 Operator: TMB
Sample : L16030366-08 8260 4.62g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 8:55 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

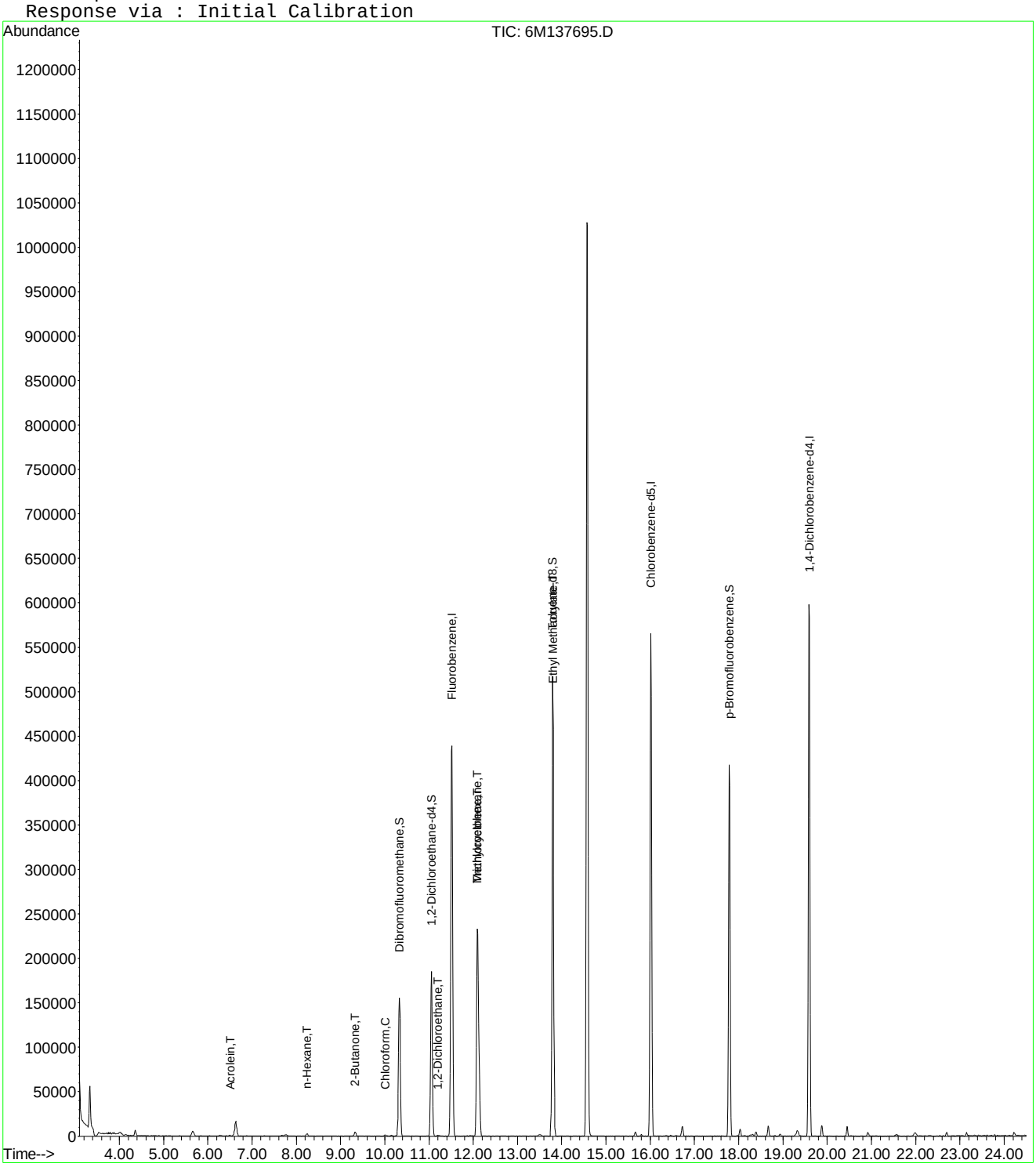

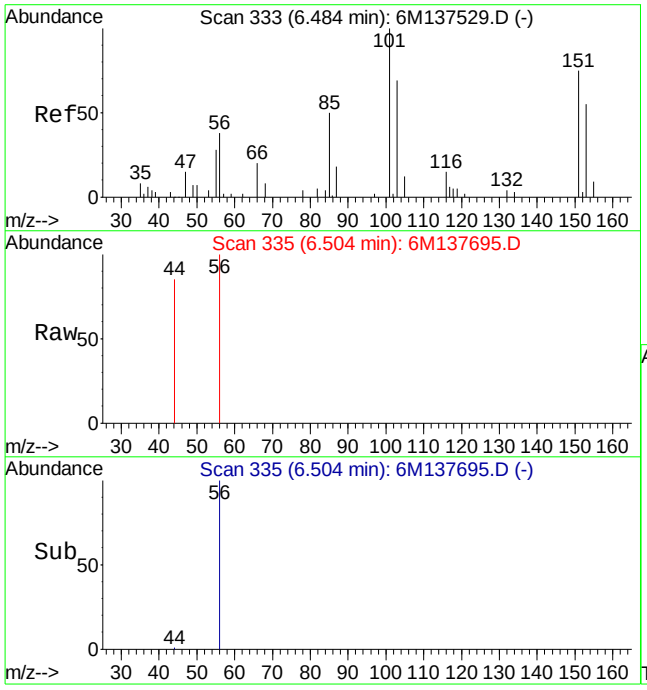

#11
Acrolein
Concen: 2.04 ug/L
RT: 6.50 min Scan# 335
Delta R.T. 0.02 min
Lab File: 6M137695.D
Acq: 9 Mar 2016 21:30

Tgt Ion: 56 Resp: 1048

Ion	Ratio	Lower	Upper
56	100		
55	24.8	44.6	104.0#

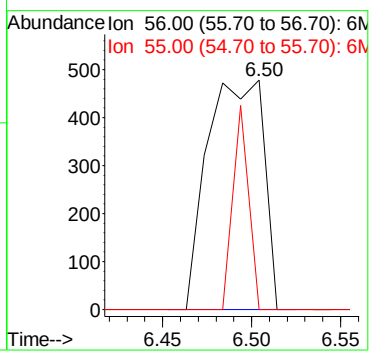

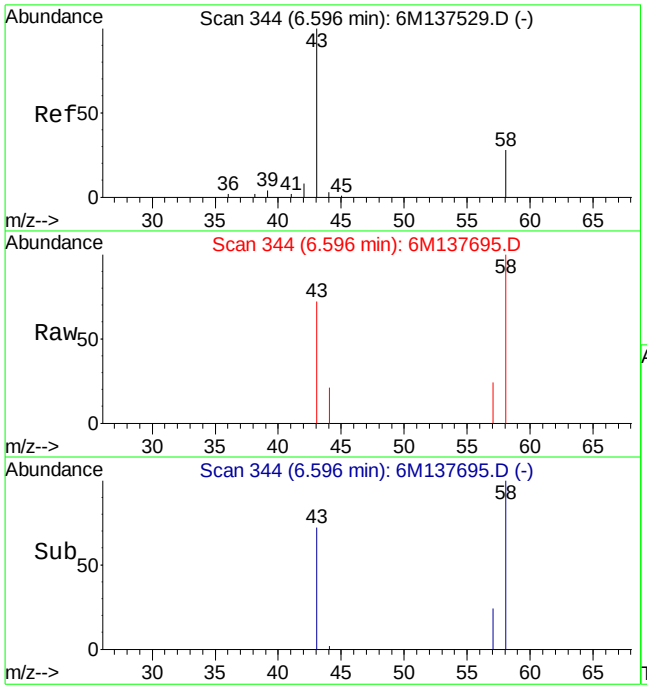

#13
Acetone
Concen: Below Cal
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137695.D
Acq: 9 Mar 2016 21:30

Tgt Ion: 43 Resp: 4882

Ion	Ratio	Lower	Upper
43	100		
58	660.1	16.1	37.7#

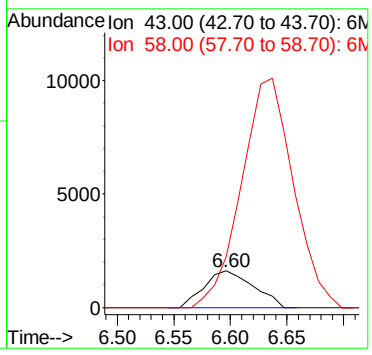

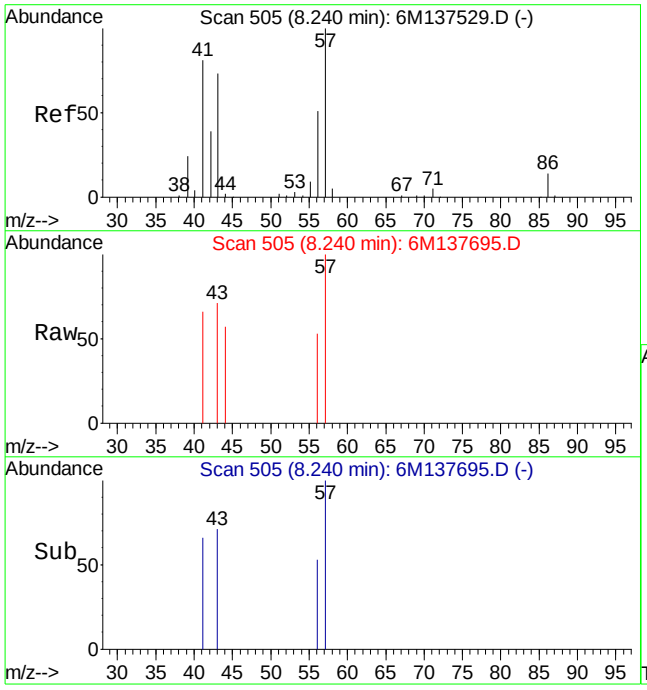

#24
n-Hexane
Concen: 0.46 ug/L
RT: 8.24 min Scan# 505
Delta R.T. -0.00 min
Lab File: 6M137695.D
Acq: 9 Mar 2016 21:30

Tgt Ion: 57 Resp: 2286

Ion	Ratio	Lower	Upper
57	100		
43	54.9	44.0	102.8

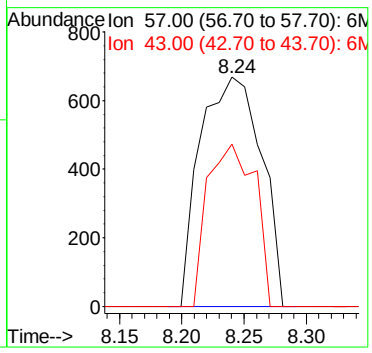

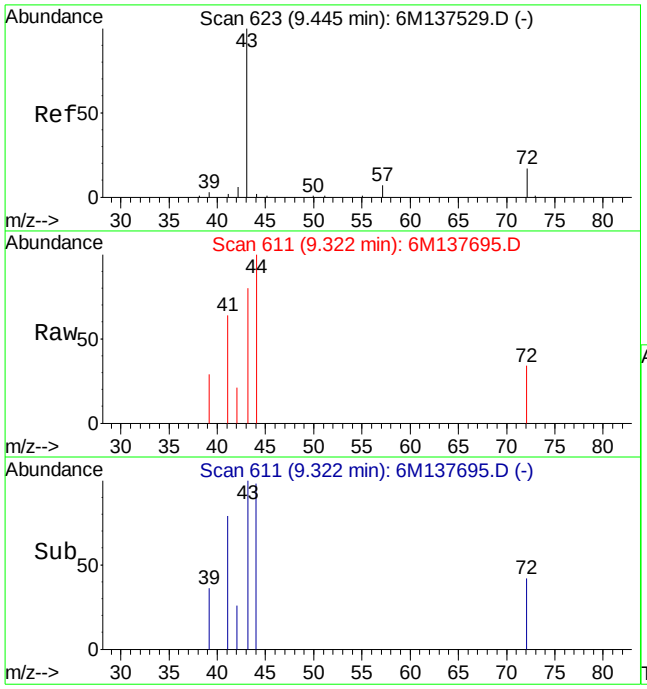

#29
2-Butanone
Concen: 1.43 ug/L
RT: 9.32 min Scan# 611
Delta R.T. -0.12 min
Lab File: 6M137695.D
Acq: 9 Mar 2016 21:30

Tgt Ion: 43 Resp: 2810

Ion	Ratio	Lower	Upper
43	100		
72	47.5	12.2	28.4#

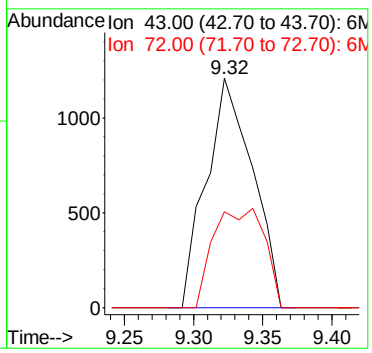

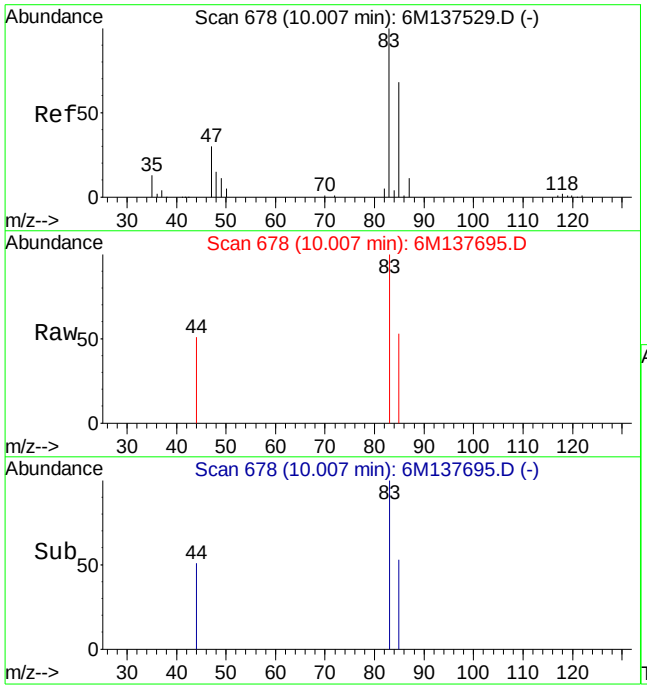

#33
Chloroform
Concen: 0.31 ug/L
RT: 10.01 min Scan# 678
Delta R.T. -0.00 min
Lab File: 6M137695.D
Acq: 9 Mar 2016 21:30

Tgt Ion: 83 Resp: 1699

Ion	Ratio	Lower	Upper
83	100		
85	54.4	38.4	89.6
47	0.0	16.9	39.5#

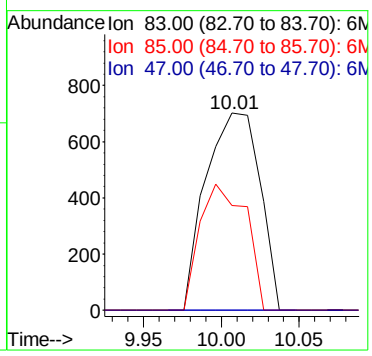

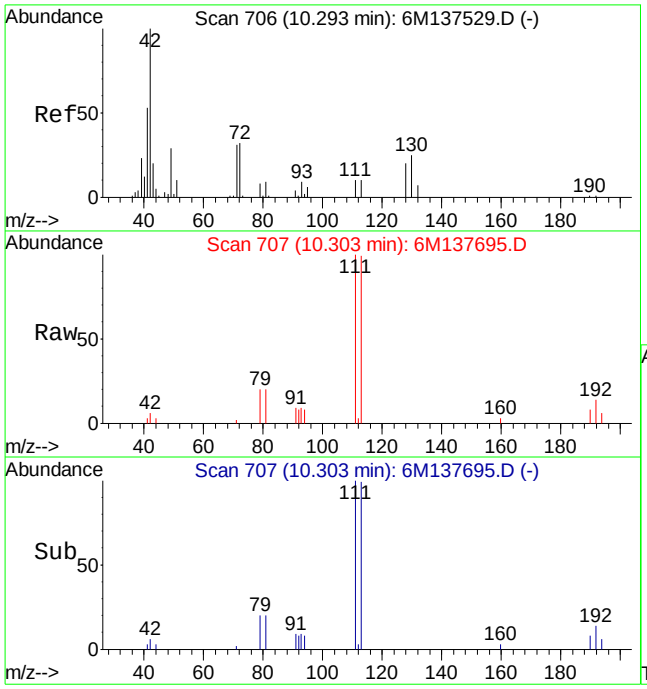

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.30 min Scan# 707
Delta R.T. 0.01 min
Lab File: 6M137695.D
Acq: 9 Mar 2016 21:30

Tgt Ion: 42 Resp: 2365

Ion	Ratio	Lower	Upper
42	100		
72	0.0	21.0	49.0#
71	8.5	20.6	48.2#

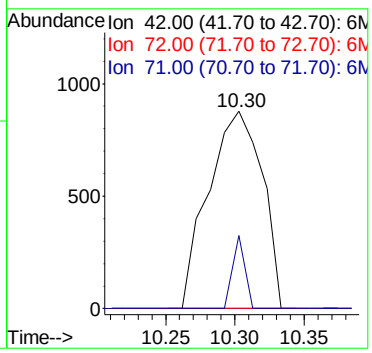

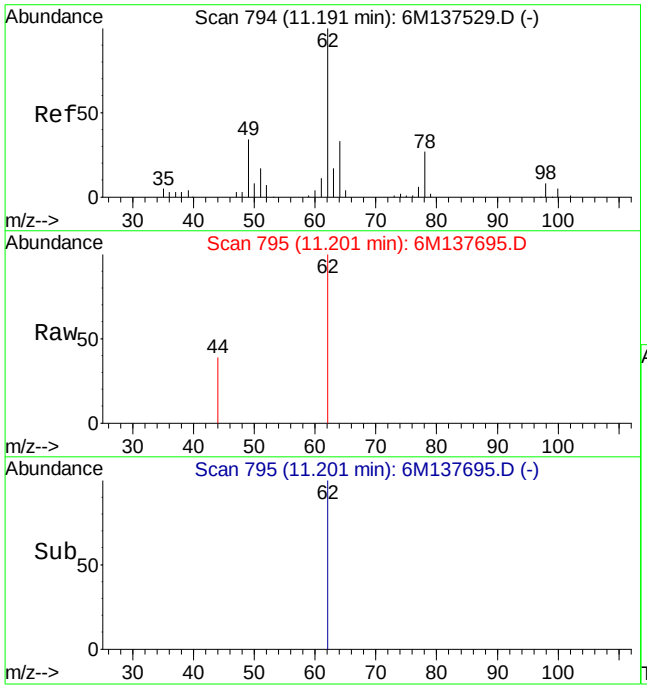

#45
1,2-Dichloroethane
Concen: 0.34 ug/L
RT: 11.20 min Scan# 795
Delta R.T. 0.01 min
Lab File: 6M137695.D
Acq: 9 Mar 2016 21:30

Tgt Ion: 62 Resp: 1588

Ion	Ratio	Lower	Upper
62	100		
49	0.0	22.9	53.3#
98	0.0	4.7	10.9#

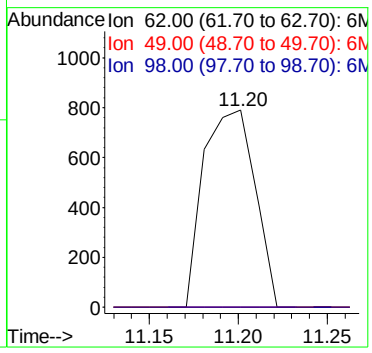

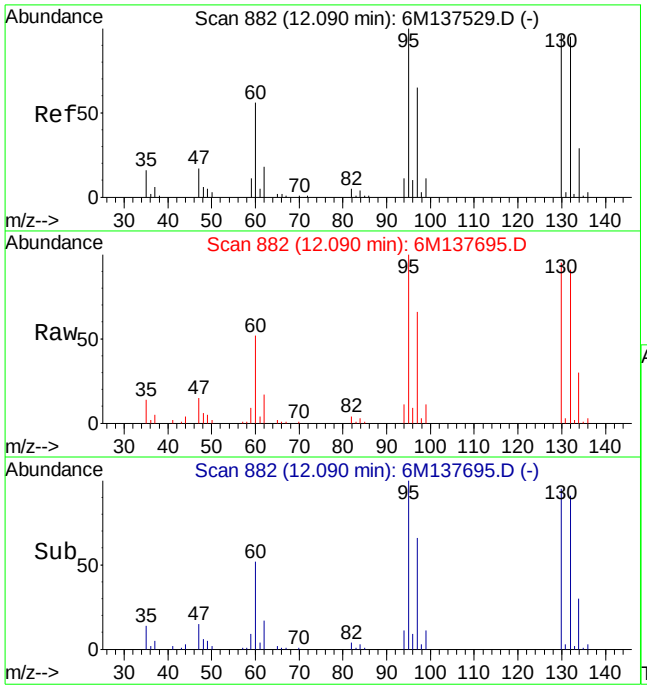

#47
Trichloroethene
Concen: 37.50 ug/L
RT: 12.09 min Scan# 882
Delta R.T. -0.00 min
Lab File: 6M137695.D
Acq: 9 Mar 2016 21:30

Tgt Ion:130 Resp: 104899

Ion	Ratio	Lower	Upper
130	100		
60	53.8	31.2	72.8

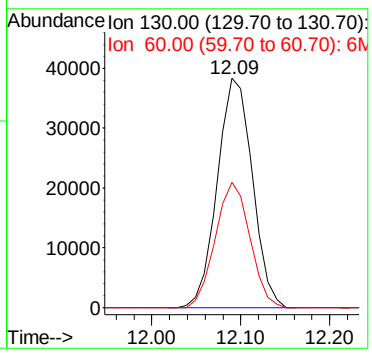

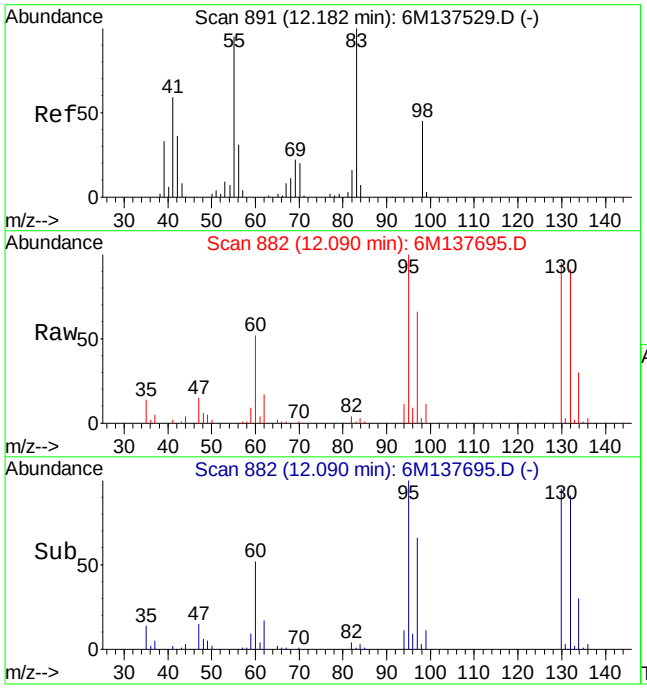

#48
Methylcyclohexane
Concen: 0.25 ug/L
RT: 12.09 min Scan# 882
Delta R.T. -0.09 min
Lab File: 6M137695.D
Acq: 9 Mar 2016 21:30

Tgt Ion: 83 Resp: 1139

Ion	Ratio	Lower	Upper
83	100		
55	330.9	48.3	112.7#
98	216.7	27.5	64.1#

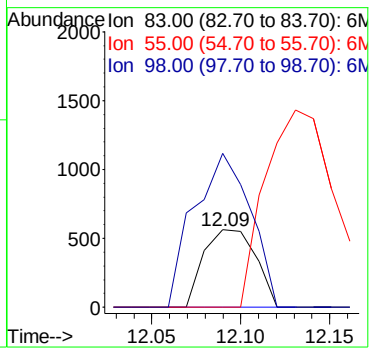

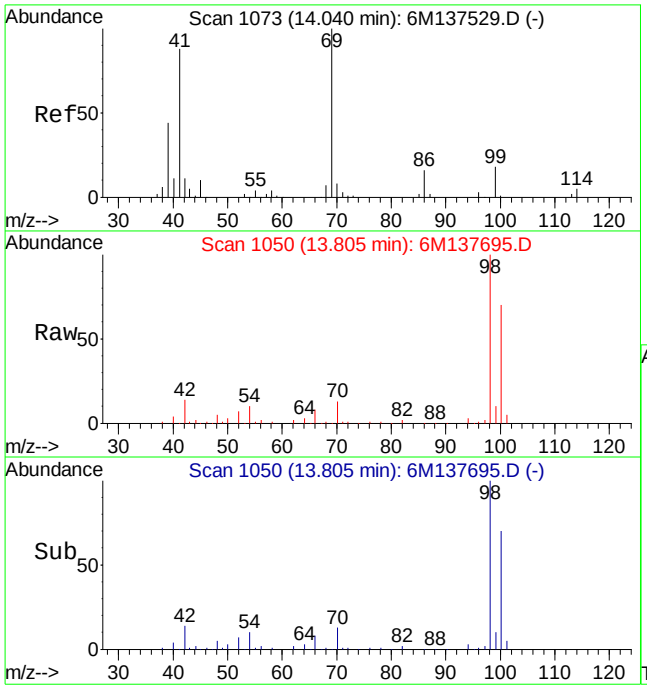

#60
Ethyl Methacrylate
Concen: 0.33 ug/L
RT: 13.81 min Scan# 1050
Delta R.T. -0.23 min
Lab File: 6M137695.D
Acq: 9 Mar 2016 21:30

Tgt Ion: 69 Resp: 1253

Ion	Ratio	Lower	Upper
69	100		
41	114.9	50.6	118.2

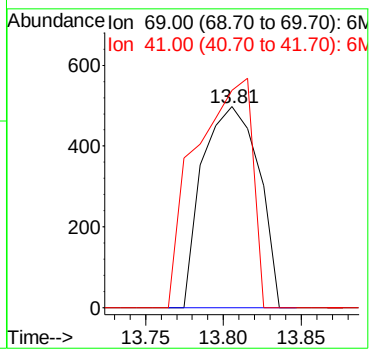

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137694.D Vial: 20
Acq On : 9 Mar 2016 20:57 Operator: TMB
Sample : L16030366-09 8260 4.77g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 08:55:05 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	570174	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	425629	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	228012	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.34	111	142805	46.6894 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.38%		
43) 1,2-Dichloroethane-d4	11.06	65	187233	47.1473 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.30%		
58) Toluene-d8	13.80	98	488442	48.2673 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 96.54%		
80) p-Bromofluorobenzene	17.79	95	207207	49.4752 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 98.96%		

Target Compounds

					Qvalue
13) Acetone	6.60	43	2528	Below Cal #	1
24) n-Hexane	8.24	57	1446	0.2889 ug/L	90
29) 2-Butanone	9.34	43	3779	1.9174 ug/L #	49
36) Tetrahydrofuran	10.31	42	2582	Below Cal #	68
47) Trichloroethene	12.09	130	12748	4.5432 ug/L	96
60) Ethyl Methacrylate	13.80	69	1037	0.2688 ug/L #	43

(#) = qualifier out of range (m) = manual integration
6M137694.D 826_SL.M Thu Mar 10 08:55:06 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137694.D Vial: 20
Acq On : 9 Mar 2016 20:57 Operator: TMB
Sample : L16030366-09 8260 4.77g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 8:55 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

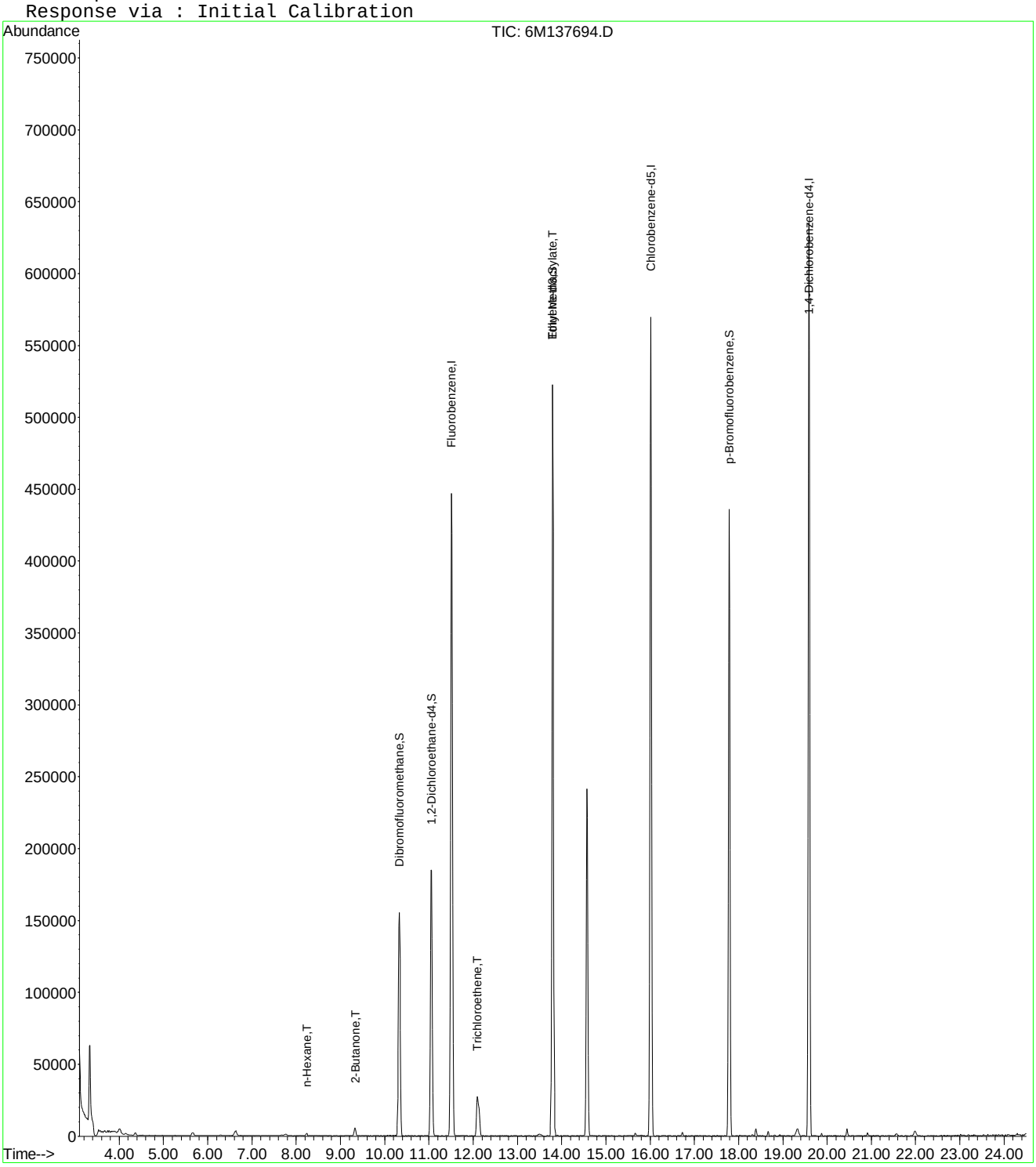

6M137694.D 826_SL.M Thu Mar 10 08:55:06 2016 Page 2

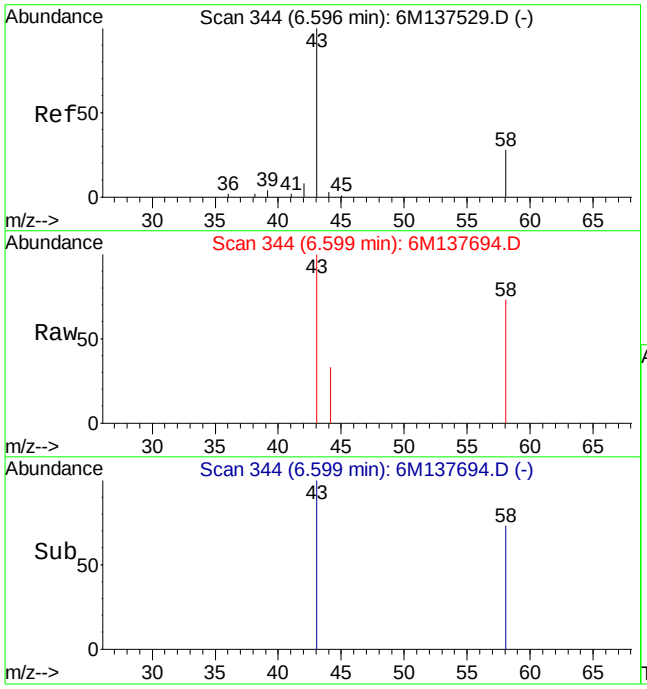

#13
Acetone
Concen: Below Cal
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137694.D
Acq: 9 Mar 2016 20:57

Tgt Ion: 43 Resp: 2528

Ion	Ratio	Lower	Upper
43	100		
58	311.0	16.1	37.7#

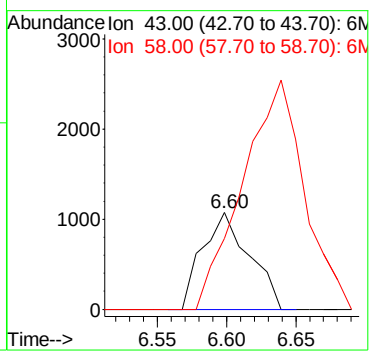

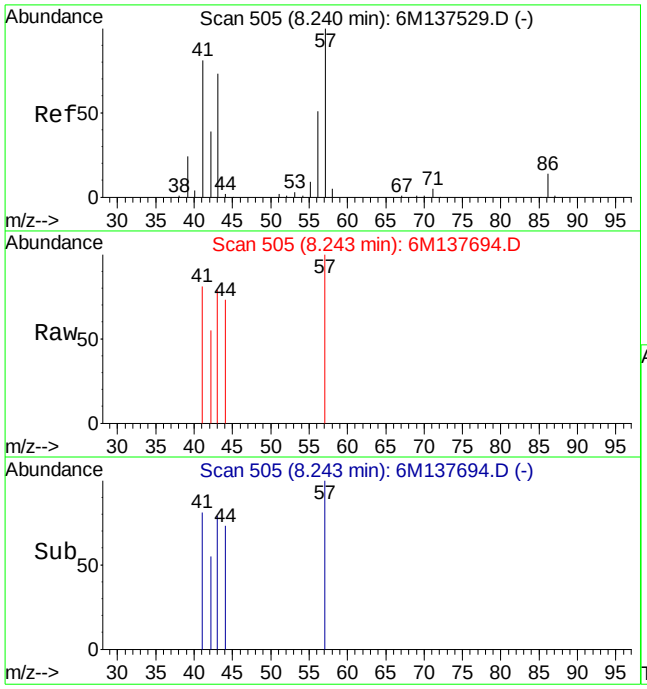

#24
n-Hexane
Concen: 0.29 ug/L
RT: 8.24 min Scan# 505
Delta R.T. 0.00 min
Lab File: 6M137694.D
Acq: 9 Mar 2016 20:57

Tgt Ion: 57 Resp: 1446

Ion	Ratio	Lower	Upper
57	100		
43	65.1	44.0	102.8

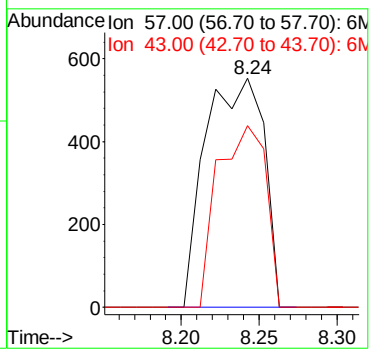

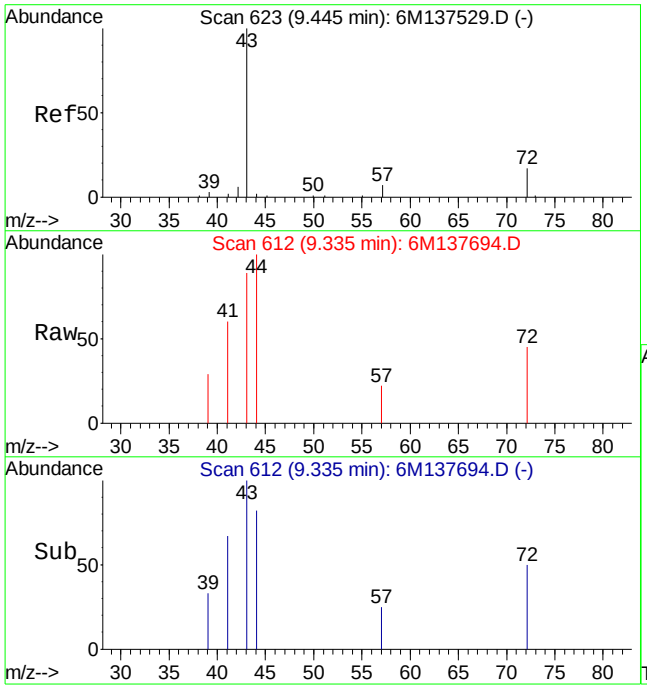

#29
2-Butanone
Concen: 1.92 ug/L
RT: 9.34 min Scan# 612
Delta R.T. -0.11 min
Lab File: 6M137694.D
Acq: 9 Mar 2016 20:57

Tgt Ion: 43 Resp: 3779

Ion	Ratio	Lower	Upper
43	100		
72	43.7	12.2	28.4#

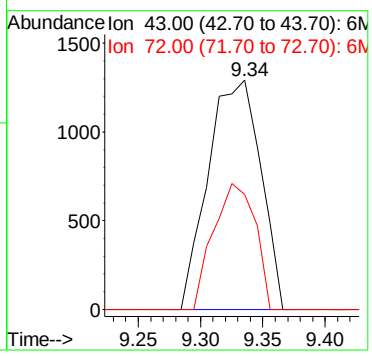

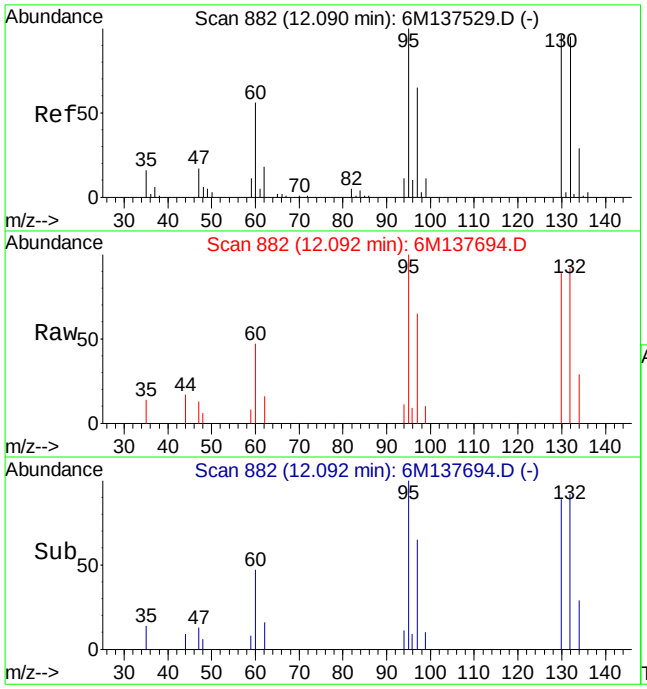

#47
Trichloroethene
Concen: 4.54 ug/L
RT: 12.09 min Scan# 882
Delta R.T. 0.00 min
Lab File: 6M137694.D
Acq: 9 Mar 2016 20:57

Tgt Ion:130 Resp: 12748

Ion	Ratio	Lower	Upper
130	100		
60	49.3	31.2	72.8

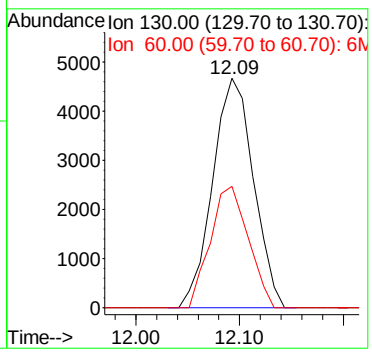

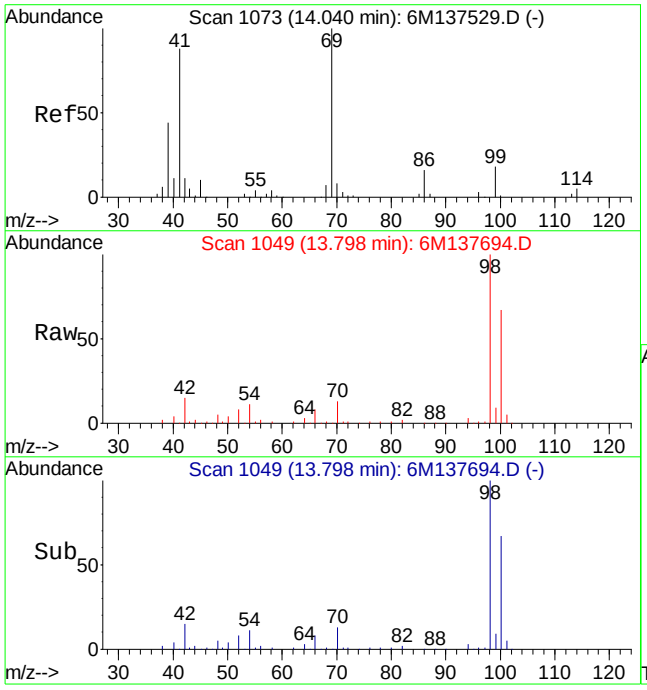

#60
Ethyl Methacrylate
Concen: 0.27 ug/L
RT: 13.80 min Scan# 1049
Delta R.T. -0.23 min
Lab File: 6M137694.D
Acq: 9 Mar 2016 20:57

Tgt Ion: 69 Resp: 1037

Ion	Ratio	Lower	Upper
69	100		
41	136.2	50.6	118.2#

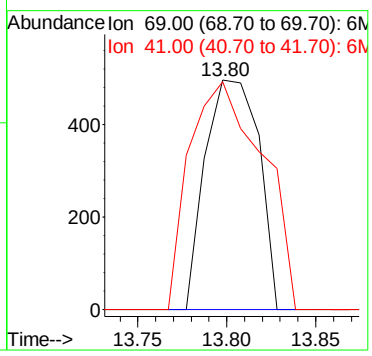

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137691.D Vial: 17
Acq On : 9 Mar 2016 19:18 Operator: TMB
Sample : L16030366-10 8260 4.70g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 08:55:02 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	572617	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	417763	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	216829	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	142089	46.2571 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 92.52%		
43) 1,2-Dichloroethane-d4	11.06	65	173358	43.4672 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 86.94%		
58) Toluene-d8	13.80	98	487227	49.0538 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.10%		
80) p-Bromofluorobenzene	17.79	95	198951	49.9539 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 99.90%		

Target Compounds					Qvalue
13) Acetone	6.60	43	10656	4.5096 ug/L #	26
19) Methylene Chloride	7.67	84	959	0.3178 ug/L	62
24) n-Hexane	8.24	57	2149	0.4275 ug/L	85
29) 2-Butanone	9.46	43	1983	1.0019 ug/L #	56
36) Tetrahydrofuran	10.30	42	2573	Below Cal #	47
86) 2-Chlorotoluene	18.35	91	2808	0.2857 ug/L #	49
87) 4-Chlorotoluene	18.35	91	2808	0.3125 ug/L #	47

(#) = qualifier out of range (m) = manual integration
6M137691.D 826_SL.M Thu Mar 10 08:55:02 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137691.D Vial: 17
Acq On : 9 Mar 2016 19:18 Operator: TMB
Sample : L16030366-10 8260 4.70g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 8:55 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

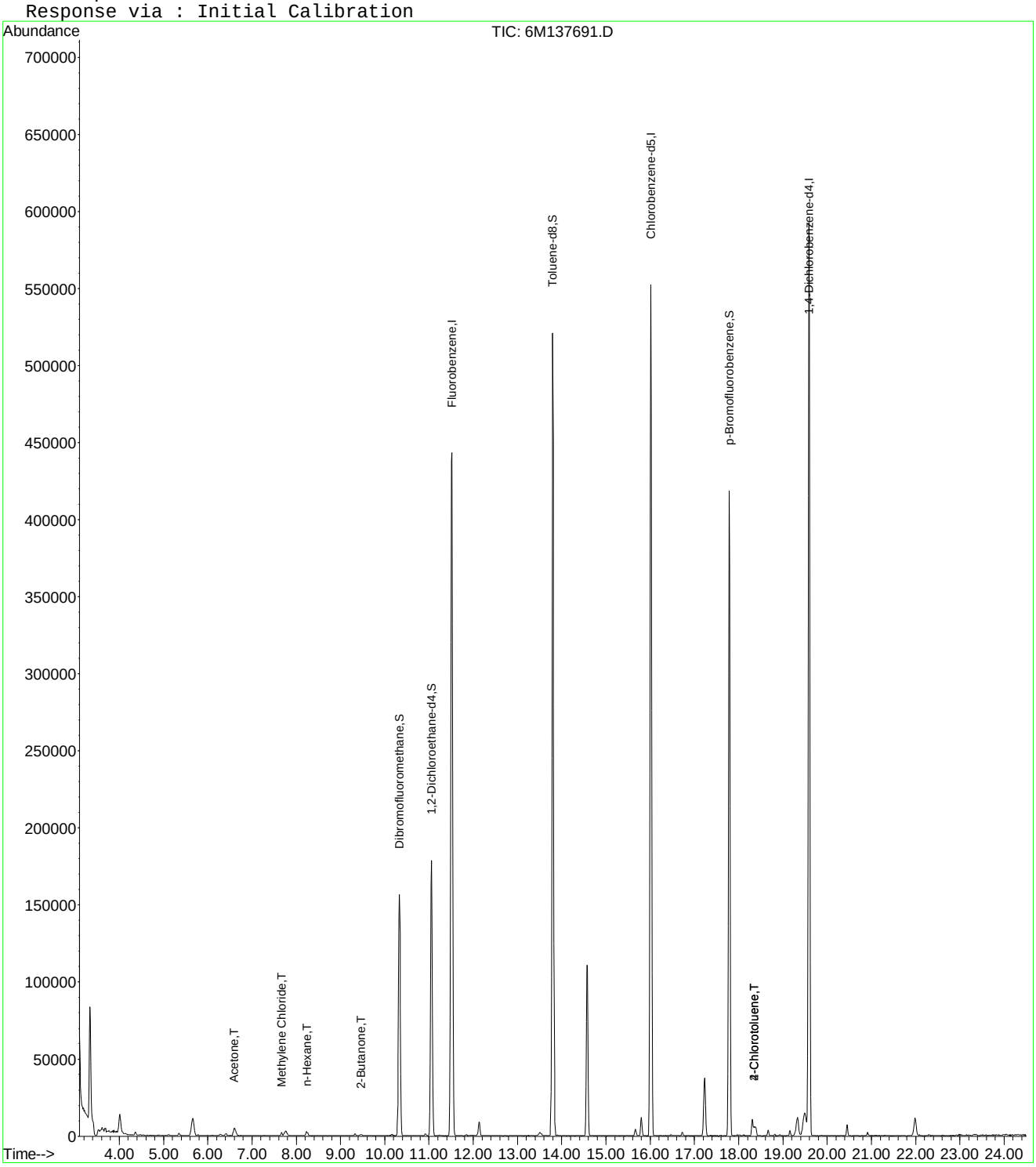

6M137691.D 826_SL.M Thu Mar 10 08:55:03 2016 Page 2

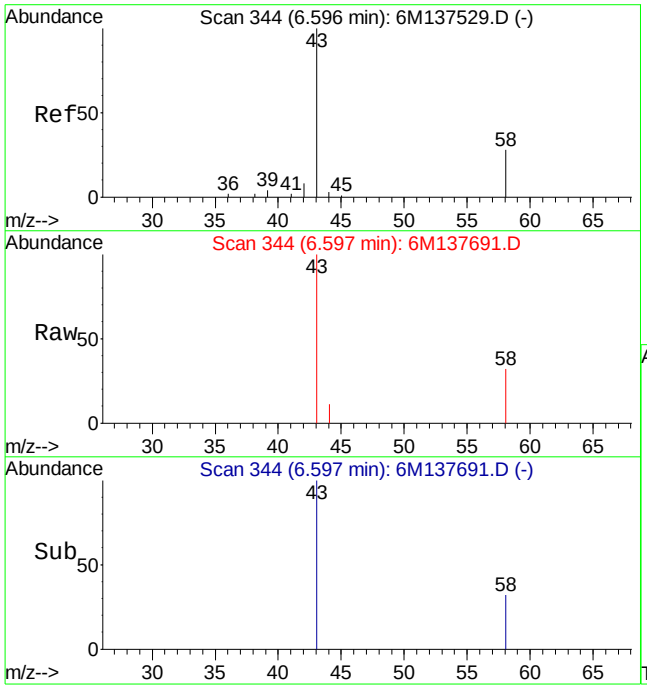

#13
Acetone
Concen: 4.51 ug/L
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137691.D
Acq: 9 Mar 2016 19:18

Tgt Ion: 43 Resp: 10656

Ion	Ratio	Lower	Upper
43	100		
58	64.9	16.1	37.7#

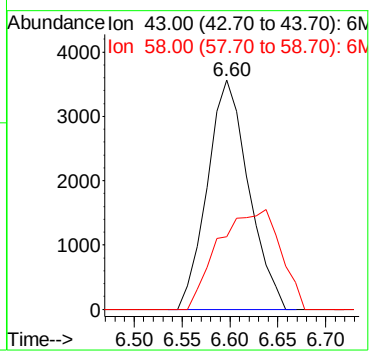

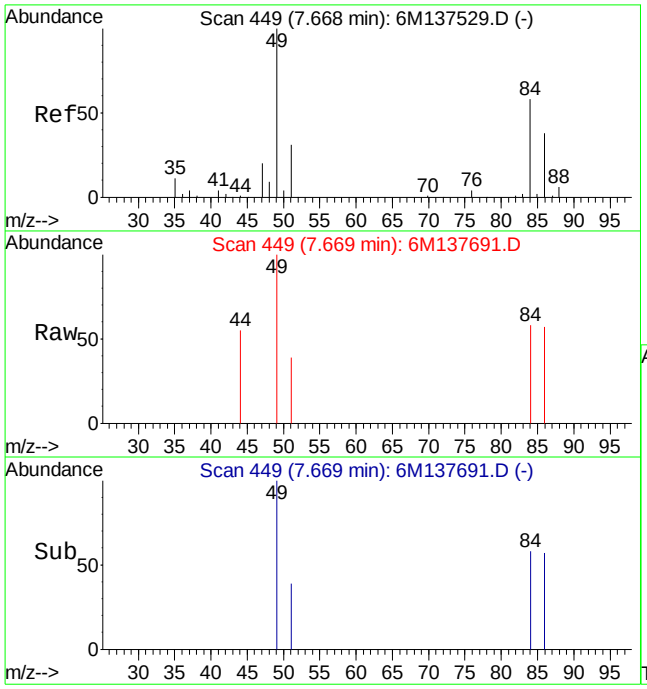

#19
Methylene Chloride
Concen: 0.32 ug/L
RT: 7.67 min Scan# 449
Delta R.T. -0.00 min
Lab File: 6M137691.D
Acq: 9 Mar 2016 19:18

Tgt Ion: 84 Resp: 959

Ion	Ratio	Lower	Upper
84	100		
49	193.6	87.9	205.1

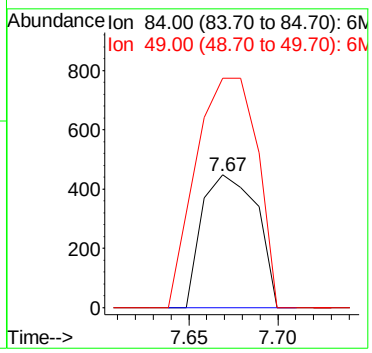

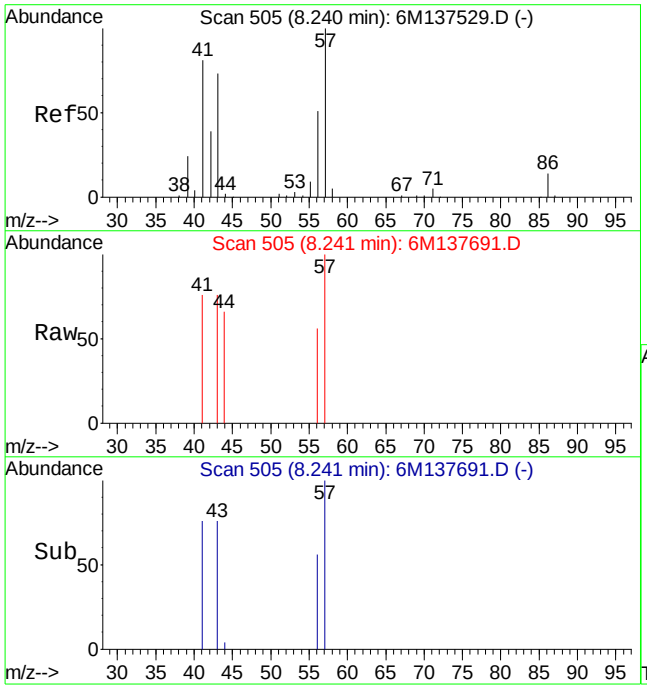

#24
n-Hexane
Concen: 0.43 ug/L
RT: 8.24 min Scan# 505
Delta R.T. -0.00 min
Lab File: 6M137691.D
Acq: 9 Mar 2016 19:18

Tgt Ion: 57 Resp: 2149

Ion	Ratio	Lower	Upper
57	100		
43	85.9	44.0	102.8

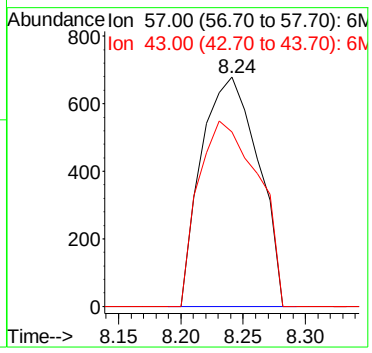

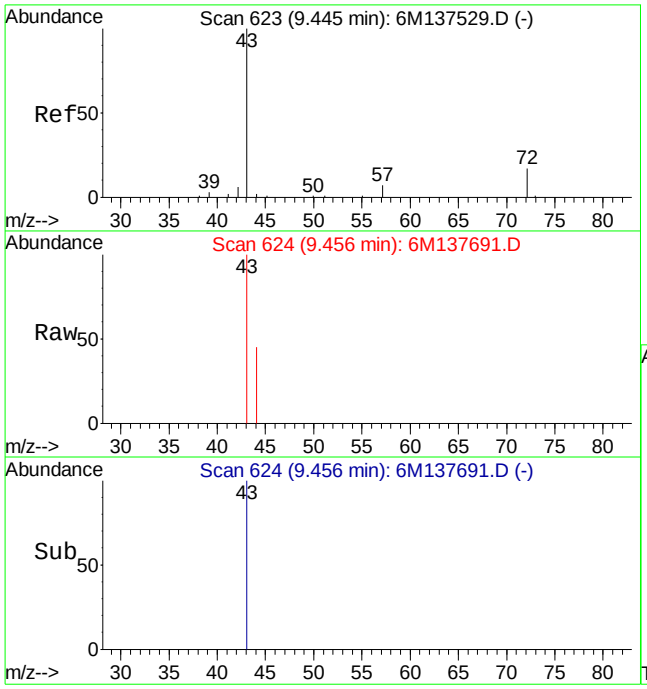

#29
2-Butanone
Concen: 1.00 ug/L
RT: 9.46 min Scan# 624
Delta R.T. 0.01 min
Lab File: 6M137691.D
Acq: 9 Mar 2016 19:18

Tgt Ion: 43 Resp: 1983

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.2	28.4#

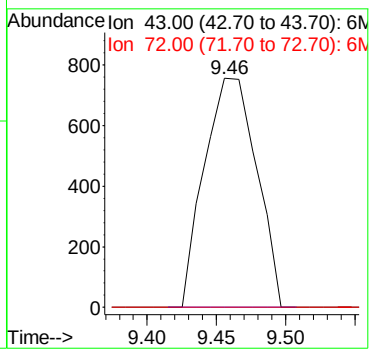

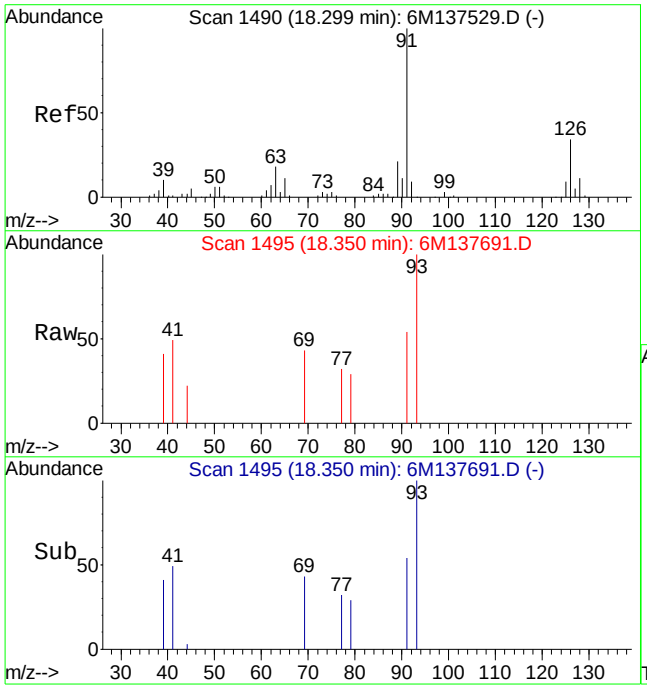

#86
2-Chlorotoluene
Concen: 0.29 ug/L
RT: 18.35 min Scan# 1495
Delta R.T. 0.05 min
Lab File: 6M137691.D
Acq: 9 Mar 2016 19:18

Tgt Ion: 91 Resp: 2808

Ion	Ratio	Lower	Upper
91	100		
126	0.0	18.5	43.3#
63	0.0	11.6	27.2#

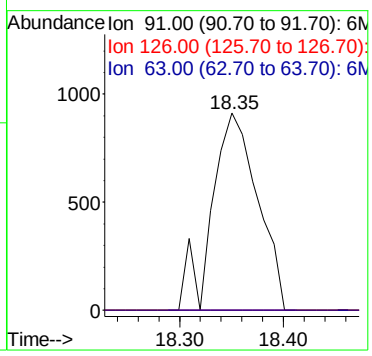

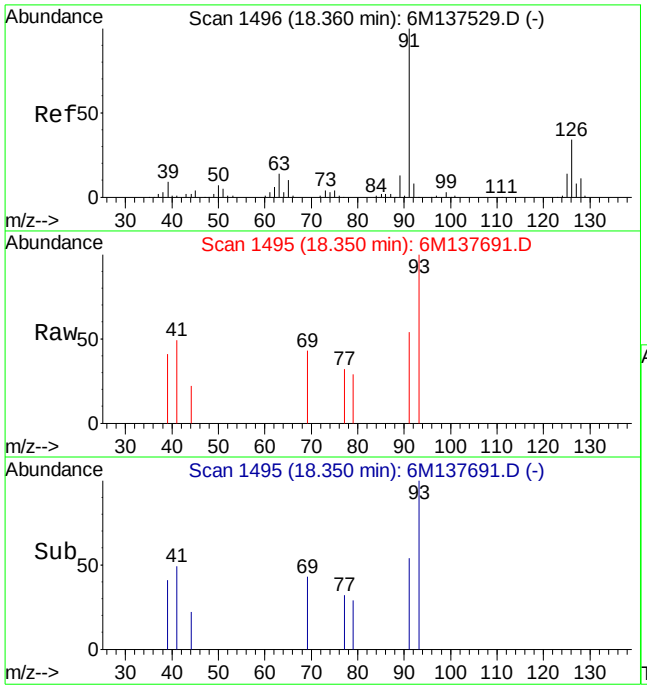

#87
4-Chlorotoluene
Concen: 0.31 ug/L
RT: 18.35 min Scan# 1495
Delta R.T. 0.00 min
Lab File: 6M137691.D
Acq: 9 Mar 2016 19:18

Tgt Ion: 91 Resp: 2808

Ion	Ratio	Lower	Upper
91	100		
126	0.0	21.0	49.0#
63	0.0	8.8	20.6#

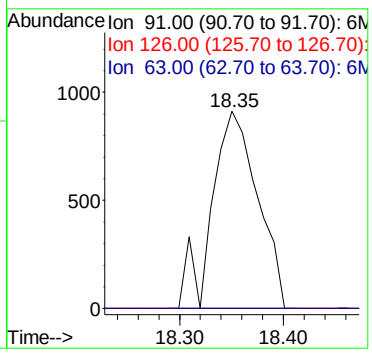

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137692.D Vial: 18
Acq On : 9 Mar 2016 19:51 Operator: TMB
Sample : L16030366-11 8260 5.46g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 08:55:03 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	564192	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	408843	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	208054	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	135857	44.8887 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 89.78%		
43) 1,2-Dichloroethane-d4	11.06	65	163317	41.5610 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 83.12%		
58) Toluene-d8	13.80	98	478612	49.2378 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.48%		
80) p-Bromofluorobenzene	17.79	95	191415	50.0888 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 100.18%		

Target Compounds					Qvalue
13) Acetone	6.60	43	3983	Below Cal #	3
19) Methylene Chloride	7.66	84	901	0.3030 ug/L #	52
24) n-Hexane	8.24	57	1434	0.2895 ug/L	90
36) Tetrahydrofuran	10.30	42	1931	Below Cal #	51
60) Ethyl Methacrylate	13.80	69	1048	0.2828 ug/L	65

(#) = qualifier out of range (m) = manual integration
6M137692.D 826_SL.M Thu Mar 10 08:55:04 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137692.D Vial: 18
Acq On : 9 Mar 2016 19:51 Operator: TMB
Sample : L16030366-11 8260 5.46g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 8:55 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

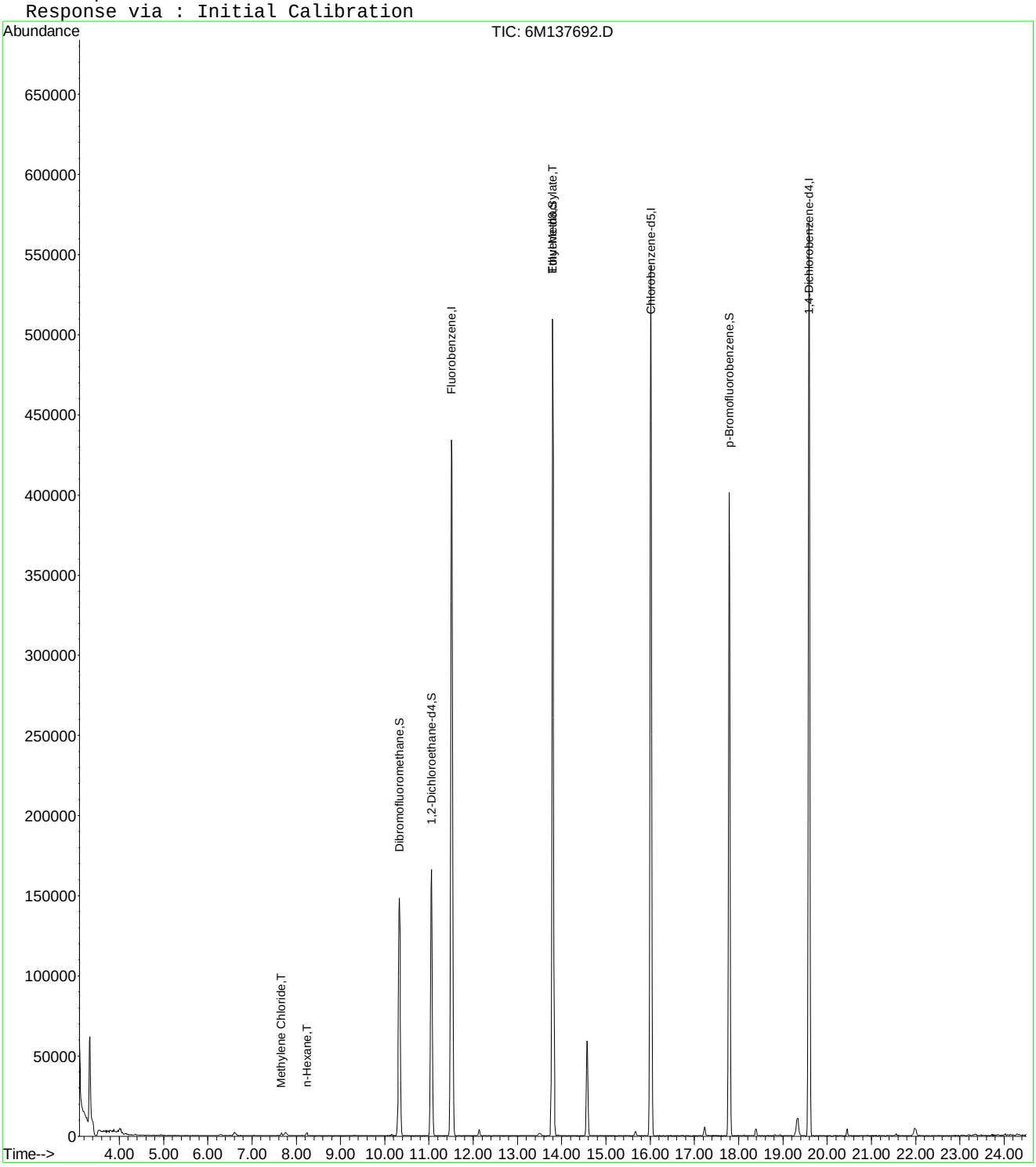

6M137692.D 826_SL.M Thu Mar 10 08:55:04 2016 Page 2

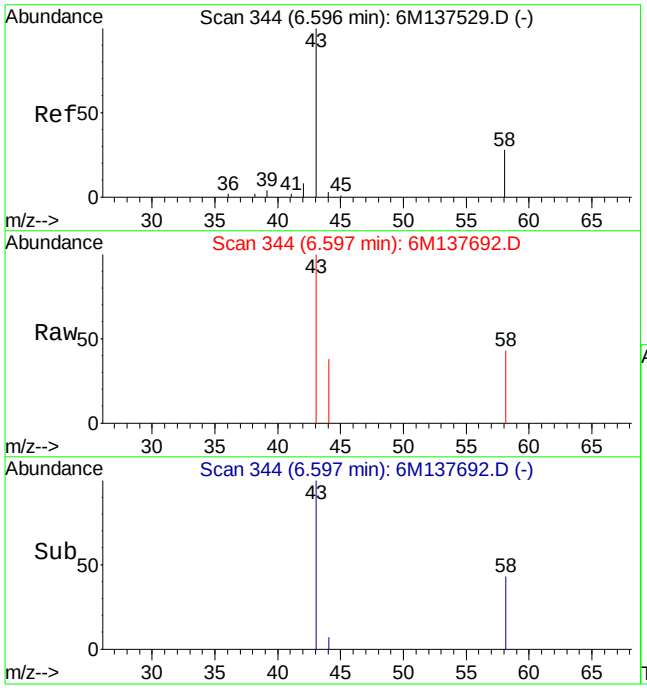

#13
Acetone
Concen: Below Cal
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137692.D
Acq: 9 Mar 2016 19:51

Tgt Ion: 43 Resp: 3983

Ion	Ratio	Lower	Upper
43	100		
58	77.2	16.1	37.7#

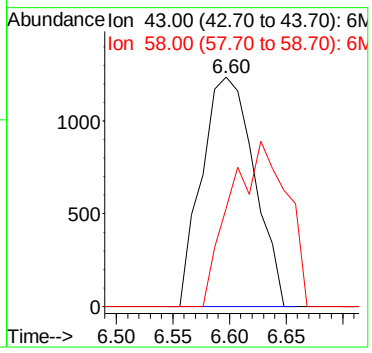

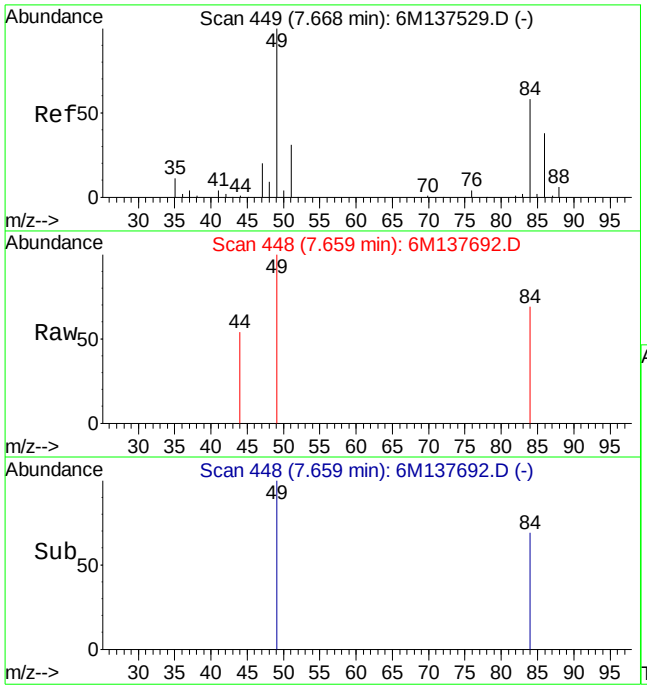

#19
Methylene Chloride
Concen: 0.30 ug/L
RT: 7.66 min Scan# 448
Delta R.T. -0.01 min
Lab File: 6M137692.D
Acq: 9 Mar 2016 19:51

Tgt Ion: 84 Resp: 901

Ion	Ratio	Lower	Upper
84	100		
49	206.3	87.9	205.1#

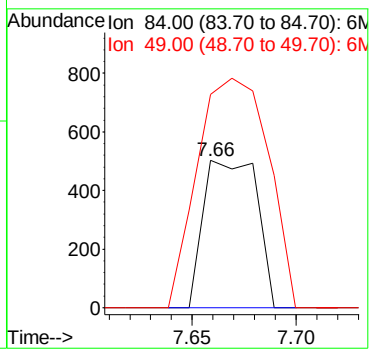

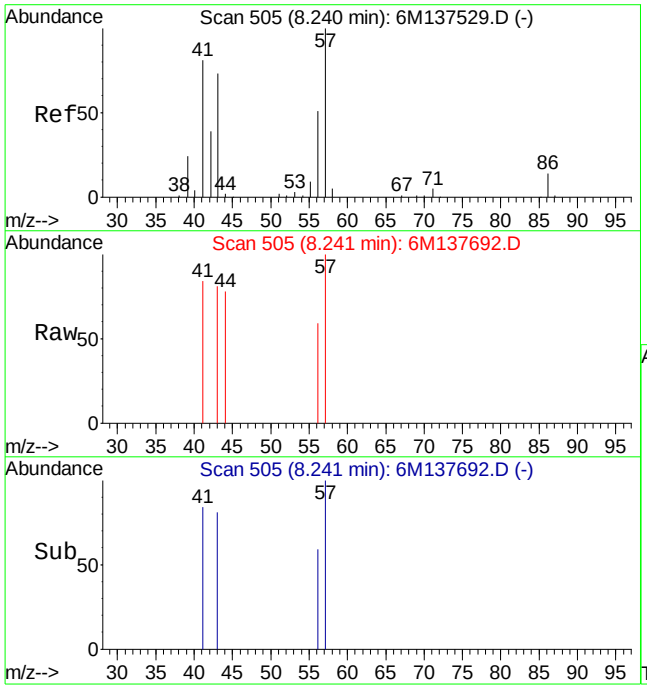

#24
n-Hexane
Concen: 0.29 ug/L
RT: 8.24 min Scan# 505
Delta R.T. -0.00 min
Lab File: 6M137692.D
Acq: 9 Mar 2016 19:51

Tgt Ion: 57 Resp: 1434

Ion	Ratio	Lower	Upper
57	100		
43	64.9	44.0	102.8

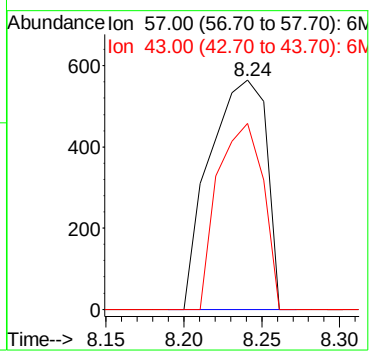

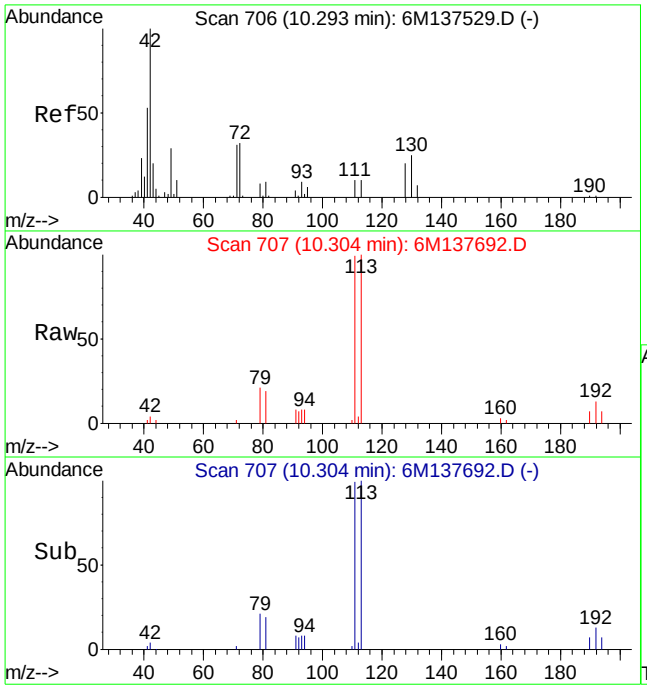

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.30 min Scan# 707
Delta R.T. 0.01 min
Lab File: 6M137692.D
Acq: 9 Mar 2016 19:51

Tgt Ion: 42 Resp: 1931

Ion	Ratio	Lower	Upper
42	100		
72	0.0	21.0	49.0#
71	12.6	20.6	48.2#

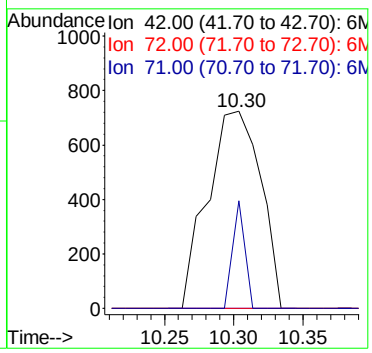

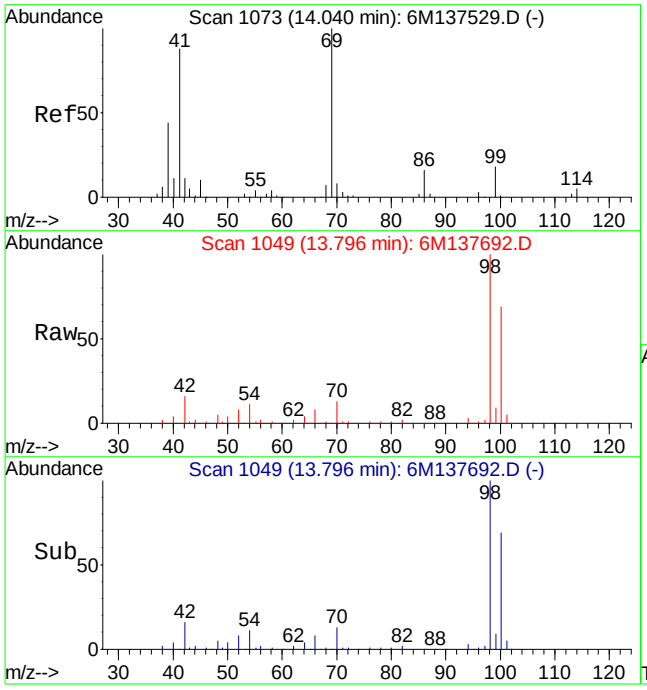

#60
Ethyl Methacrylate
Concen: 0.28 ug/L
RT: 13.80 min Scan# 1049
Delta R.T. -0.24 min
Lab File: 6M137692.D
Acq: 9 Mar 2016 19:51

Tgt Ion: 69 Resp: 1048

Ion	Ratio	Lower	Upper
69	100		
41	116.5	50.6	118.2

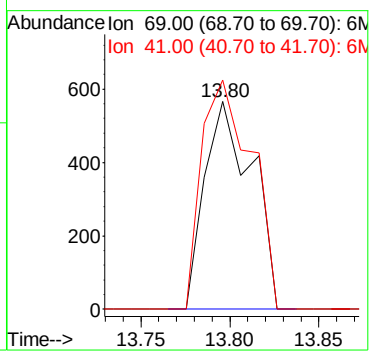

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137693.D Vial: 19
Acq On : 9 Mar 2016 20:24 Operator: TMB
Sample : L16030366-12 8260 4.62g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 08:55:04 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	527309	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	382901	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	199214	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	128942	45.5839 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 91.16%		
43) 1,2-Dichloroethane-d4	11.06	65	160015	43.5690 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 87.14%		
58) Toluene-d8	13.80	98	448664	49.2840 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.56%		
80) p-Bromofluorobenzene	17.79	95	183961	50.2743 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 100.54%		

Target Compounds

					Qvalue
11) Acrolein	6.49	56	1837	3.8525 ug/L	85
15) Tert-Butyl Alcohol	6.64	59	1096	2.5454 ug/L #	1
19) Methylene Chloride	7.67	84	741	0.2666 ug/L #	48
24) n-Hexane	8.24	57	1455	0.3143 ug/L	83
29) 2-Butanone	9.32	43	3039	1.6673 ug/L #	45
36) Tetrahydrofuran	10.30	42	2518	Below Cal #	75
60) Ethyl Methacrylate	13.80	69	1024	0.2951 ug/L #	38

(#) = qualifier out of range (m) = manual integration
6M137693.D 826_SL.M Thu Mar 10 08:55:05 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137693.D Vial: 19
Acq On : 9 Mar 2016 20:24 Operator: TMB
Sample : L16030366-12 8260 4.62g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 8:55 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

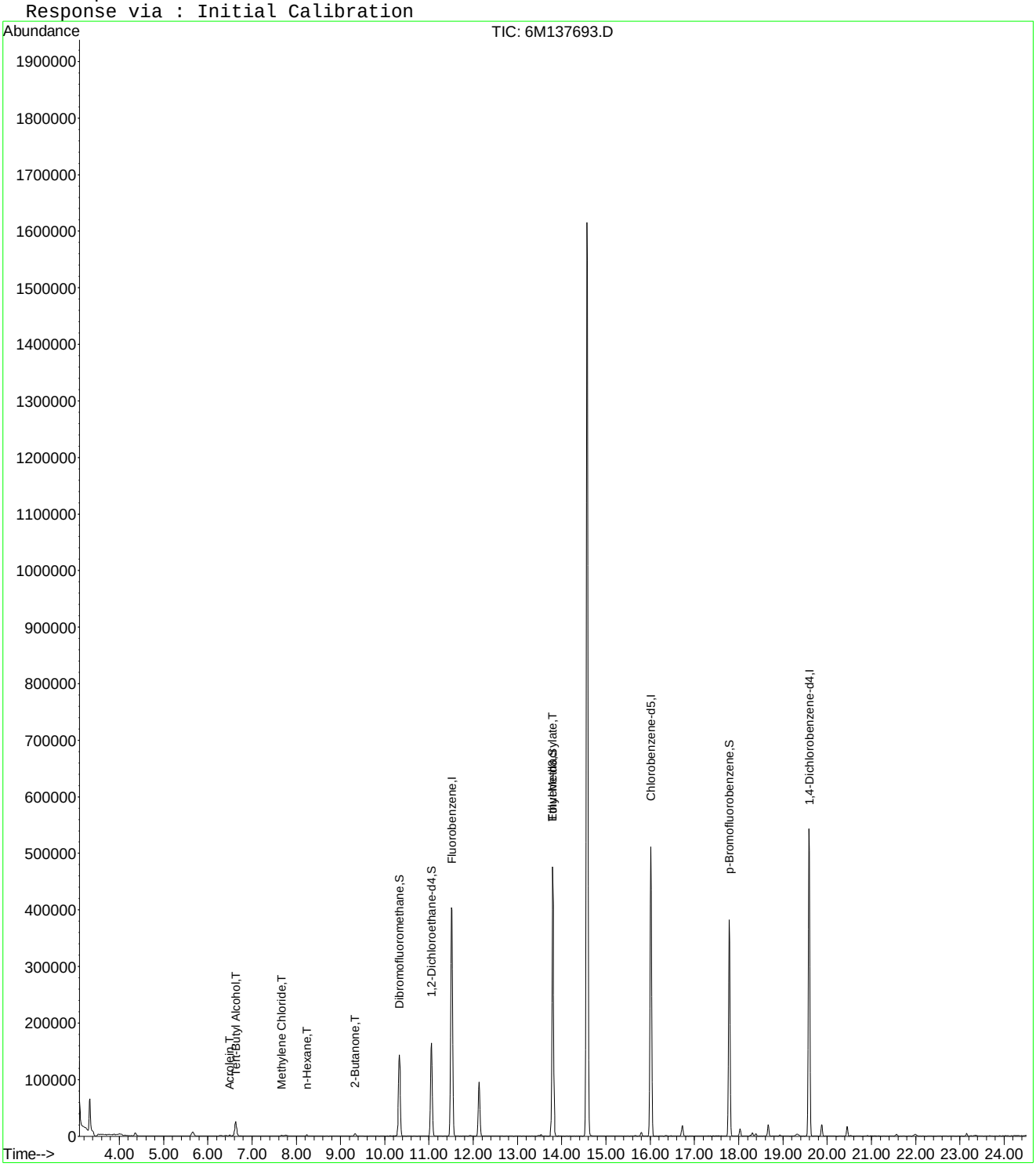

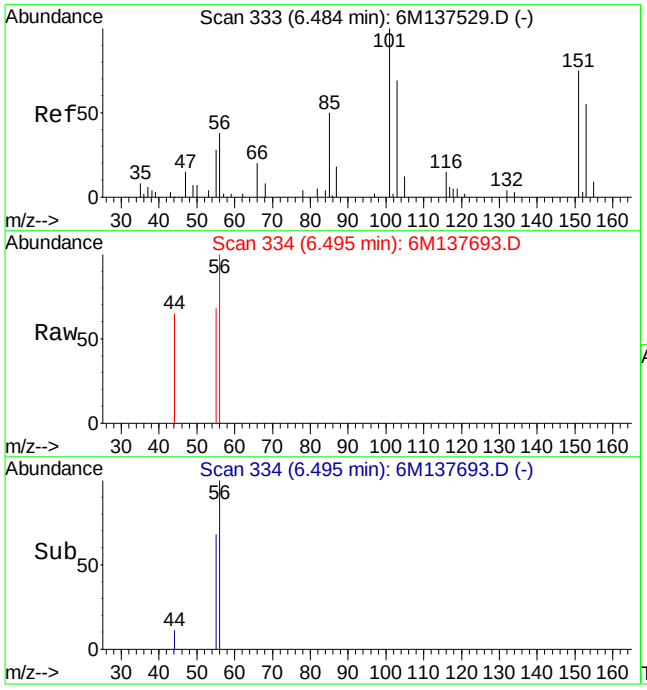

#11
Acrolein
Concen: 3.85 ug/L
RT: 6.49 min Scan# 334
Delta R.T. 0.01 min
Lab File: 6M137693.D
Acq: 9 Mar 2016 20:24

Tgt Ion: 56 Resp: 1837

Ion	Ratio	Lower	Upper
56	100		
55	61.7	44.6	104.0

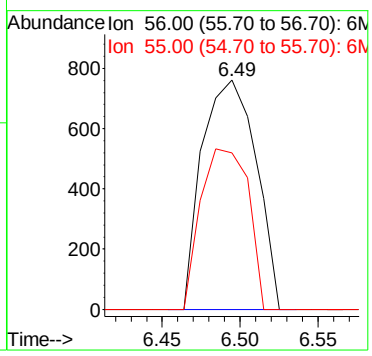

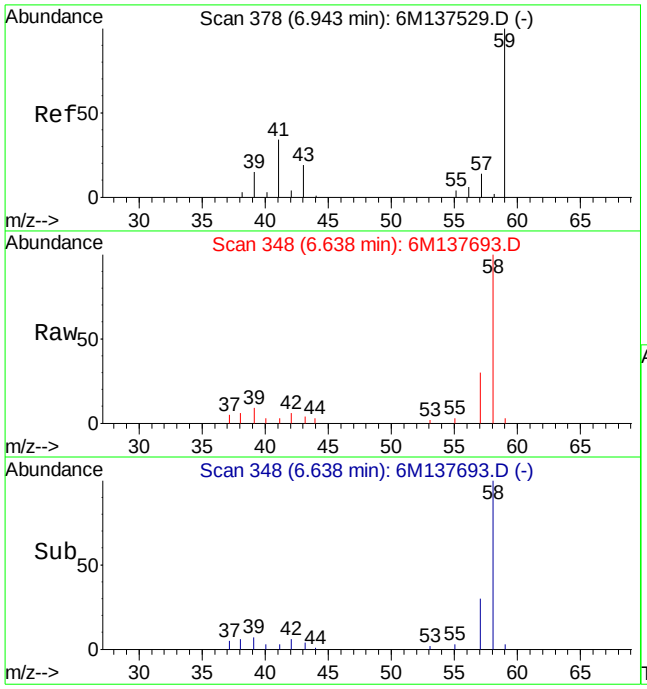

#15
Tert-Butyl Alcohol
Concen: 2.55 ug/L
RT: 6.64 min Scan# 348
Delta R.T. -0.30 min
Lab File: 6M137693.D
Acq: 9 Mar 2016 20:24

Tgt Ion: 59 Resp: 1096

Ion	Ratio	Lower	Upper
59	100		
41	68.3	15.0	35.0#
57	1210.6	5.9	13.9#

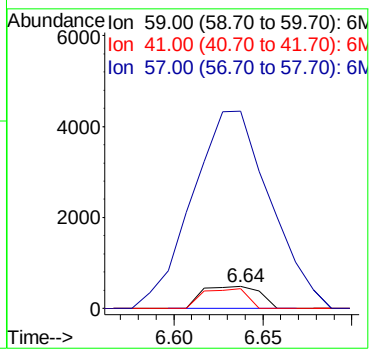

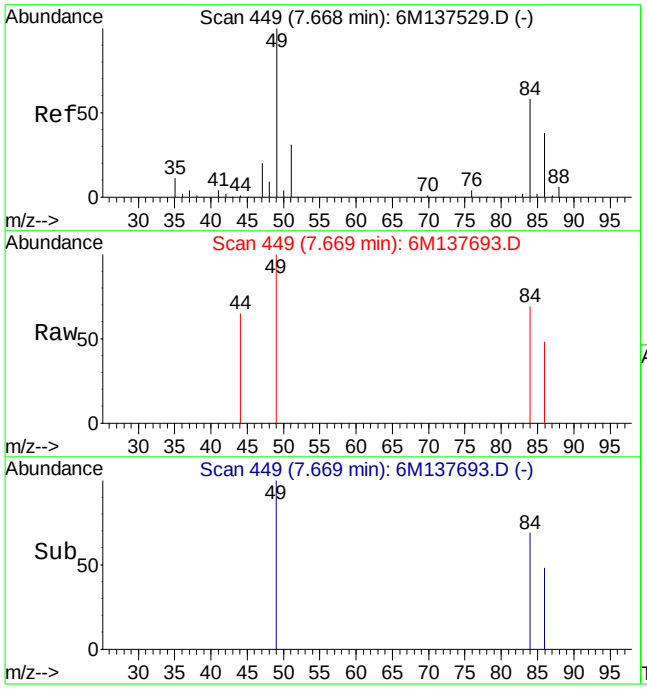

#19
Methylene Chloride
Concen: 0.27 ug/L
RT: 7.67 min Scan# 449
Delta R.T. -0.00 min
Lab File: 6M137693.D
Acq: 9 Mar 2016 20:24

Tgt Ion: 84 Resp: 741

Ion	Ratio	Lower	Upper
84	100		
49	211.9	87.9	205.1#

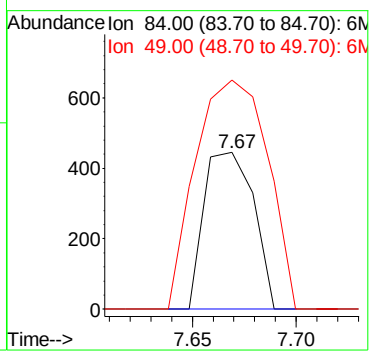

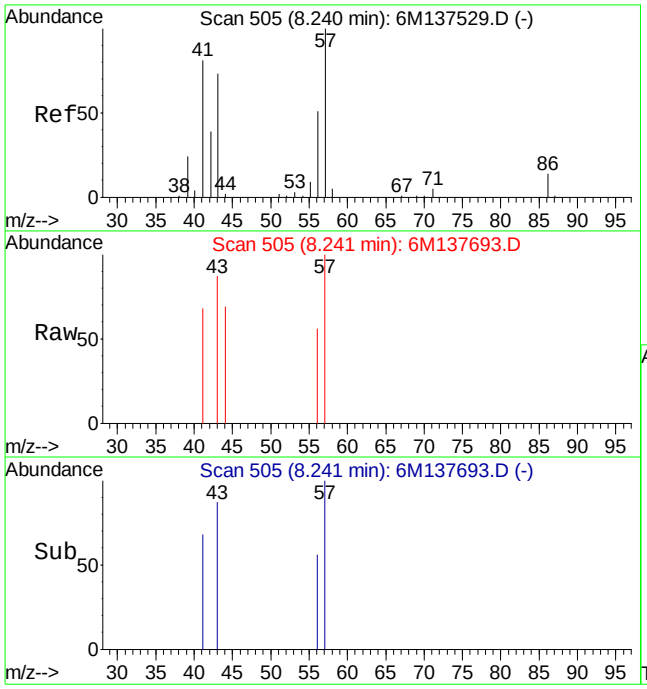

#24
n-Hexane
Concen: 0.31 ug/L
RT: 8.24 min Scan# 505
Delta R.T. -0.00 min
Lab File: 6M137693.D
Acq: 9 Mar 2016 20:24

Tgt Ion: 57 Resp: 1455

Ion	Ratio	Lower	Upper
57	100		
43	59.0	44.0	102.8

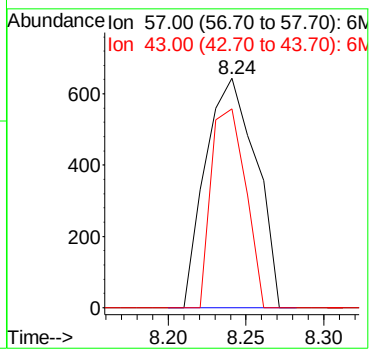

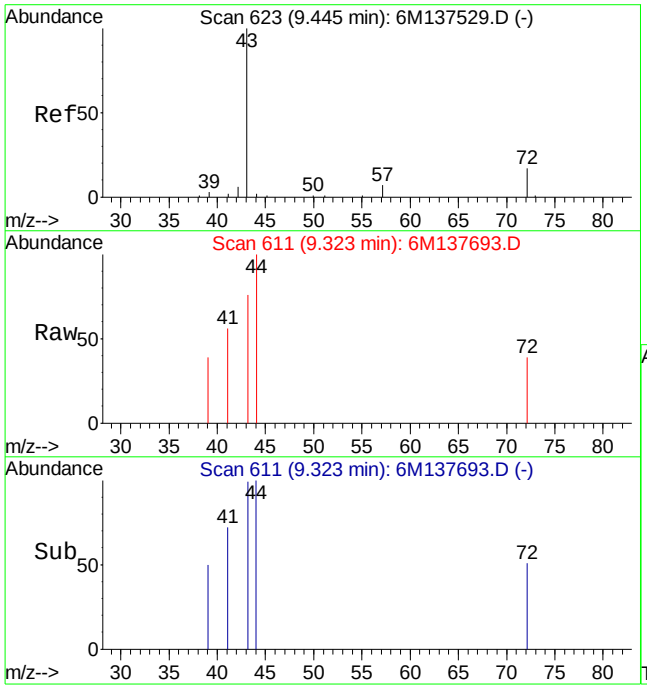

#29
2-Butanone
Concen: 1.67 ug/L
RT: 9.32 min Scan# 611
Delta R.T. -0.12 min
Lab File: 6M137693.D
Acq: 9 Mar 2016 20:24

Tgt Ion: 43 Resp: 3039

Ion	Ratio	Lower	Upper
43	100		
72	45.9	12.2	28.4#

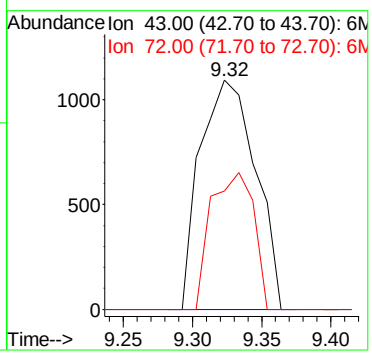

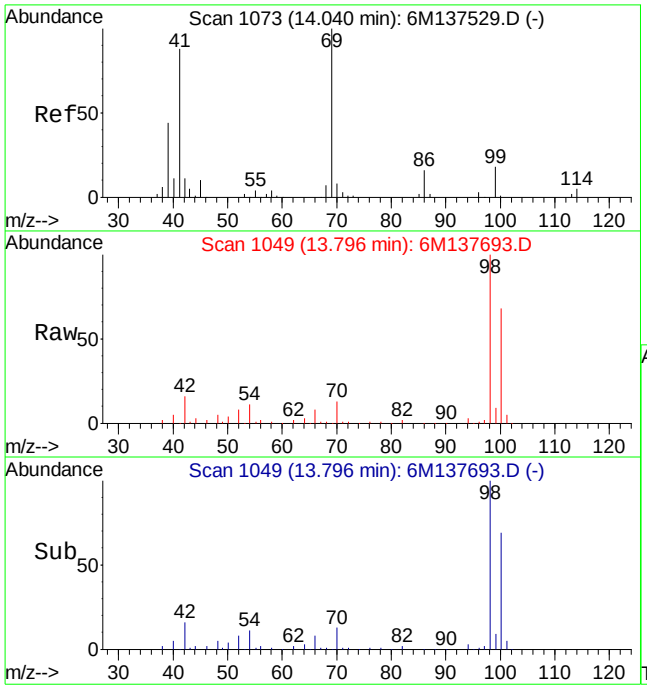

#60
Ethyl Methacrylate
Concen: 0.30 ug/L
RT: 13.80 min Scan# 1049
Delta R.T. -0.24 min
Lab File: 6M137693.D
Acq: 9 Mar 2016 20:24

Tgt Ion: 69 Resp: 1024

Ion	Ratio	Lower	Upper
69	100		
41	140.8	50.6	118.2#

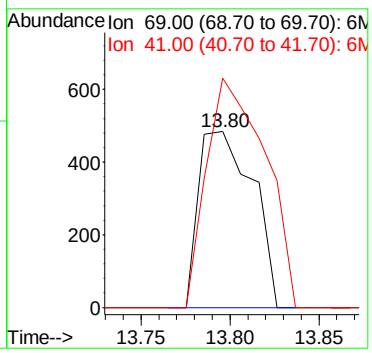

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:35 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:12:24 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	662608	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	467802	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	239669	50.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.32	111	1132	0.3185 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.64%#	
43) 1,2-Dichloroethane-d4	11.05	65	1872	0.4056 ug/L	-0.01
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.82%#	
58) Toluene-d8	13.80	98	5704	0.5128 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	1.02%#	
80) p-Bromofluorobenzene	17.79	95	2210	0.5020 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	1.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	3454	0.5676 ug/L #	66
3) Chloromethane	3.88	50	8579	1.3528 ug/L	90
4) Vinyl Chloride	4.12	62	3760	0.7367 ug/L #	74
5) 1,3-Butadiene	4.18	54	3027	0.7128 ug/L #	61
6) Bromomethane	5.03	94	1550	0.5697 ug/L	88
7) Chloroethane	5.19	64	1482	0.5121 ug/L #	45
8) Trichlorofluoromethane	5.69	101	6717	0.9794 ug/L #	89
10) Isoprene	6.27	67	1888	0.4226 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	1199	0.3663 ug/L #	55
13) Acetone	6.59	43	9375	2.3758 ug/L	94
14) 1,1-Dichloroethene	6.83	61	2956	0.5098 ug/L	84
15) Tert-Butyl Alcohol	6.94	59	200	0.3696 ug/L #	57
18) Methyl acetate	7.39	43	2867	0.7115 ug/L #	64
19) Methylene Chloride	7.67	84	2652	0.7594 ug/L	75
20) Carbon Disulfide	7.72	76	8199	0.7390 ug/L #	82
22) Methyl Tert Butyl Ether	7.88	73	4851	0.4864 ug/L #	63
23) trans-1,2-Dichloroethene	8.16	96	1352	0.4221 ug/L #	10
24) n-Hexane	8.23	57	3942	0.6777 ug/L	92
26) Vinyl Acetate	8.79	43	2062	0.2645 ug/L #	78
27) 1,1-Dichloroethane	8.82	63	3798	0.5499 ug/L #	68
29) 2-Butanone	9.46	43	1832	0.7999 ug/L #	56
31) 2,2-Dichloropropane	9.69	77	2885	0.5204 ug/L	96
32) cis-1,2-Dichloroethene	9.76	96	1812	0.5067 ug/L	93
33) Chloroform	10.01	83	3647	0.5654 ug/L	91
35) Bromochloromethane	10.26	130	694	0.3303 ug/L #	47
36) Tetrahydrofuran	10.29	42	9683	4.2648 ug/L	95
38) 1,1,1-Trichloroethane	10.59	97	2858	0.5017 ug/L	84
39) Cyclohexane	10.62	56	2886	0.4467 ug/L	94
40) 1,1-Dichloropropene	10.82	75	2042	0.4451 ug/L #	76
42) Carbon Tetrachloride	10.99	117	2712	0.5095 ug/L #	85
45) 1,2-Dichloroethane	11.19	62	3101	0.5633 ug/L #	75
46) Benzene	11.23	78	8142	0.5899 ug/L	89
47) Trichloroethene	12.09	130	1950	0.5980 ug/L	81
48) Methylcyclohexane	12.18	83	2990	0.5672 ug/L #	73
49) 1,2-Dichloropropane	12.34	63	1667	0.4489 ug/L #	69
51) Bromodichloromethane	12.68	83	2589	0.5312 ug/L	92
52) Dibromomethane	12.78	93	741	0.3411 ug/L	80
55) cis-1,3-Dichloropropene	13.42	75	2628	0.4894 ug/L #	74
56) Dimethyl Disulfide	13.71	79	853	0.3150 ug/L #	49
59) Toluene	13.92	91	7610	0.5751 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:35 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:12:24 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
60)	Ethyl Methacrylate	14.04	69	1764	0.4160 ug/L		85
62)	trans-1,3-Dichloropropene	14.12	75	2064	0.4056 ug/L	#	71
63)	1,1,2-Trichloroethane	14.37	97	1621	0.5861 ug/L	#	75
64)	2-Hexanone	14.32	43	1822	0.5773 ug/L	#	48
65)	1,3-Dichloropropane	14.75	76	2715	0.5416 ug/L		83
66)	Tetrachloroethene	14.86	166	1836	0.5624 ug/L		91
67)	Dibromochloromethane	15.18	129	1663	0.4623 ug/L		94
68)	1,2-Dibromoethane	15.48	107	1262	0.4462 ug/L		99
69)	1-Chlorohexane	15.59	91	2113	0.5142 ug/L		96
70)	Chlorobenzene	16.07	112	4991	0.5869 ug/L		75
71)	1,1,1,2-Tetrachloroethane	16.11	131	1409	0.4126 ug/L	#	79
72)	Ethylbenzene	16.11	106	2290	0.5032 ug/L		61
73)	m-,p-Xylene	16.22	106	6307	1.1326 ug/L		90
74)	o-Xylene	16.88	106	2685	0.5119 ug/L		71
75)	Styrene	16.92	104	4645	0.5203 ug/L		93
76)	Bromoform	17.49	173	756	0.2977 ug/L	#	62
77)	Isopropylbenzene	17.38	105	7047	0.4998 ug/L		82
79)	1,1,2,2-Tetrachloroethane	17.64	83	1948	0.5203 ug/L		84
83)	n-Propylbenzene	17.98	91	9243	0.5679 ug/L	#	92
84)	Bromobenzene	18.13	156	1885	0.5328 ug/L		100
85)	1,3,5-Trimethylbenzene	18.21	105	6007	0.5185 ug/L		90
86)	2-Chlorotoluene	18.29	91	5403	0.4973 ug/L		88
87)	4-Chlorotoluene	18.35	91	5598	0.5635 ug/L	#	83
88)	a-Methylstyrene	18.69	118	3780	0.6719 ug/L		93
89)	tert-Butylbenzene	18.76	134	1072	0.4440 ug/L		84
90)	1,2,4-Trimethylbenzene	18.82	105	7288	0.5982 ug/L		78
91)	sec-Butylbenzene	19.08	105	8207	0.5532 ug/L		85
92)	p-Isopropyltoluene	19.27	119	6156	0.5029 ug/L		99
93)	1,3-Dichlorobenzene	19.48	146	3876	0.5662 ug/L		99
94)	1,4-Dichlorobenzene	19.64	146	4389	0.6299 ug/L	#	36
95)	n-Butylbenzene	19.89	91	6993	0.5680 ug/L		91
96)	1,2-Dichlorobenzene	20.23	146	3739	0.5676 ug/L		89
98)	1,2,4-Trichlorobenzene	22.76	180	2881	0.6050 ug/L		89
99)	Hexachlorobutadiene	22.95	225	1268	0.4656 ug/L		81
100)	Naphthalene	23.20	128	5965	0.5449 ug/L		95
101)	1,2,3-Trichlorobenzene	23.58	180	2914	0.6214 ug/L	#	69

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

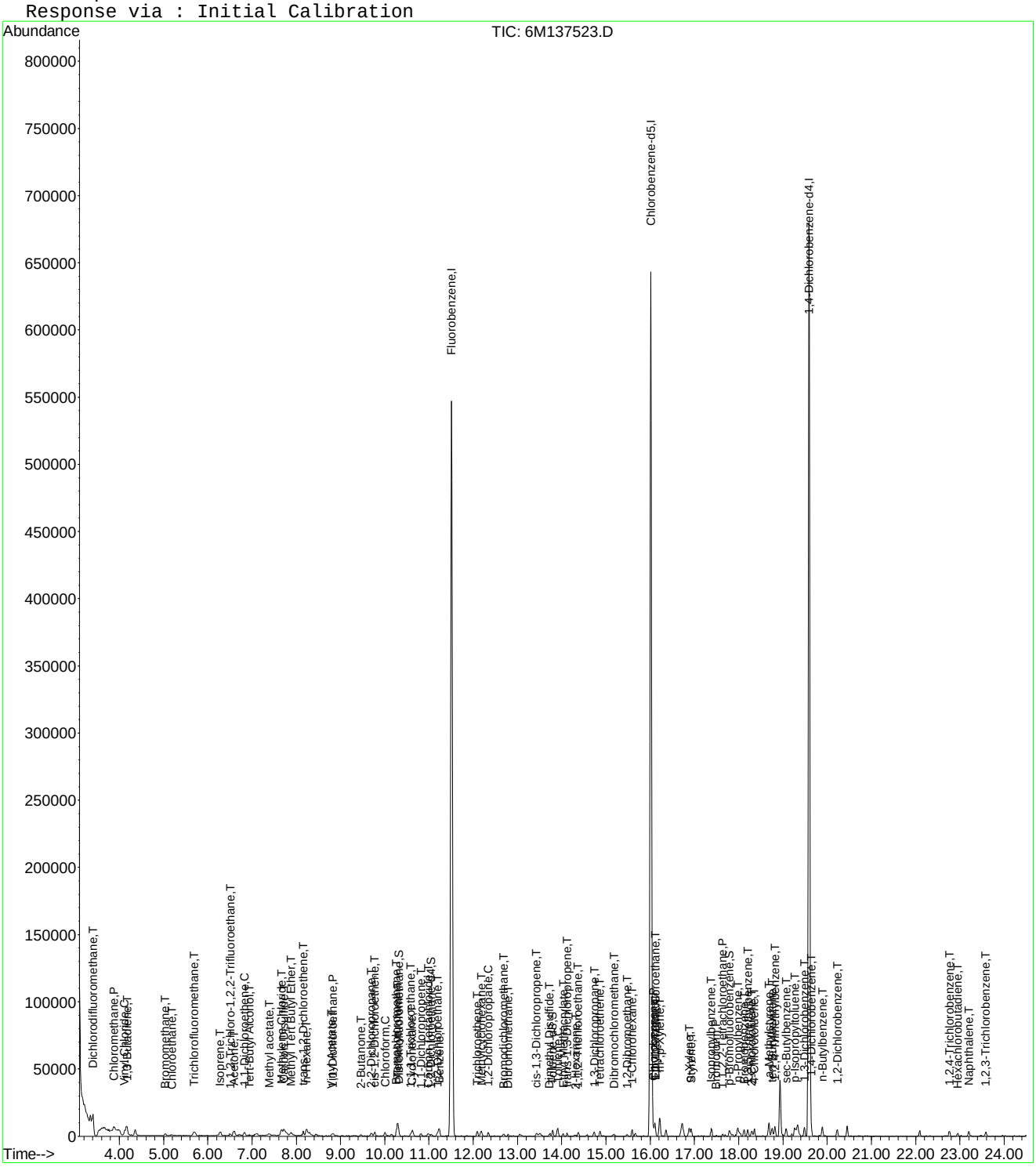

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.5676	0.0	0	0.00
3	P	Chloromethane	-1.0000	1.3528	0.0	0	0.00
4	C	Vinyl Chloride	-1.0000	0.7367	0.0	0	0.00
5	T	1,3-Butadiene	-1.0000	0.7128	0.0	0	0.01
6	T	Bromomethane	-1.0000	0.5697	0.0	0	0.00
7	T	Chloroethane	-1.0000	0.5121	0.0	0	0.00
8	T	Trichlorofluoromethane	-1.0000	0.9794	0.0	0	-0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.24#
10	T	Isoprene	-1.0000	0.4226	0.0	0	-0.01
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.48#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3663	0.0	0	0.00
13	T	Acetone	-1.0000	2.3758	0.0	0	0.00
14	C	1,1-Dichloroethene	-1.0000	0.5098	0.0	0	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.3696	0.0	0	0.00
16	T	Dimethyl Sulfide	-1.0000	0.2328	0.0	0	-0.02
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.38#
18	T	Methyl acetate	-1.0000	0.7115	0.0	0	0.00
19	T	Methylene Chloride	-1.0000	0.7594	0.0	0	0.00
20	T	Carbon Disulfide	-1.0000	0.7390	0.0	0	0.00
21	T	Acrylonitrile	-1.0000	0.1371	0.0	0	0.02
22	T	Methyl Tert Butyl Ether	0.5000	0.4864	2.7	100	-0.01
23	T	trans-1,2-Dichloroethene	-1.0000	0.4221	0.0	0	0.00
24	T	n-Hexane	-1.0000	0.6777	0.0	0	-0.01
25	T	Diisopropyl ether	-1.0000	0.1069	0.0	0	-0.16
26	T	Vinyl Acetate	-1.0000	0.2645	0.0	0	0.00
27	P	1,1-Dichloroethane	-1.0000	0.5499	0.0	0	-0.01
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-9.24#
29	T	2-Butanone	-1.0000	0.7999	0.0	0	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.58#
31	T	2,2-Dichloropropane	-1.0000	0.5204	0.0	0	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.5067	0.0	0	-0.01
33	C	Chloroform	-1.0000	0.5654	0.0	0	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-10.16#
35	T	Bromochloromethane	-1.0000	0.3303	0.0	0	0.00
36	T	Tetrahydrofuran	-1.0000	4.2648	0.0	0	0.00
37	S	Dibromofluoromethane	-1.0000	0.3185	0.0	0	0.00
38	T	1,1,1-Trichloroethane	-1.0000	0.5017	0.0	0	-0.01
39	T	Cyclohexane	-1.0000	0.4467	0.0	0	-0.02
40	T	1,1-Dichloropropene	-1.0000	0.4451	0.0	0	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.94#
42	T	Carbon Tetrachloride	-1.0000	0.5095	0.0	0	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.4056	0.0	0	-0.01
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	-1.0000	0.5633	0.0	0	0.00
46	T	Benzene	0.5000	0.5899	-18.0	100	0.00
47	T	Trichloroethene	-1.0000	0.5980	0.0	0	0.00
48	T	Methylcyclohexane	-1.0000	0.5672	0.0	0	0.00
49	C	1,2-Dichloropropane	-1.0000	0.4489	0.0	0	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-12.67#
51	T	Bromodichloromethane	-1.0000	0.5312	0.0	0	0.00
52	T	Dibromomethane	-1.0000	0.3411	0.0	0	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1346	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-13.07#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.4894	0.0	0	-0.01
56	T	Dimethyl Disulfide	-1.0000	0.3150	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.5128	0.0	0	0.00
59	C	Toluene	0.5000	0.5751	-15.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.4160	0.0	0	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	-1.0000	0.4056	0.0	0	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.5861	0.0	0	0.00
64	T	2-Hexanone	-1.0000	0.5773	0.0	0	0.00
65	T	1,3-Dichloropropane	-1.0000	0.5416	0.0	0	0.00
66	T	Tetrachloroethene	-1.0000	0.5624	0.0	0	-0.01
67	T	Dibromochloromethane	-1.0000	0.4623	0.0	0	0.00
68	T	1,2-Dibromoethane	-1.0000	0.4462	0.0	0	0.00
69	T	1-Chlorohexane	-1.0000	0.5142	0.0	0	0.00
70	P	Chlorobenzene	-1.0000	0.5869	0.0	0	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.4126	0.0	0	0.00
72	C	Ethylbenzene	0.5000	0.5032	-0.6	100	0.00
73	T	m-,p-Xylene	1.0000	1.1326	-13.3	100	0.00
74	T	o-Xylene	0.5000	0.5119	-2.4	100	0.00
75	T	Styrene	-1.0000	0.5203	0.0	0	0.00
76	P	Bromoform	-1.0000	0.2977	0.0	0	0.00
77	T	Isopropylbenzene	-1.0000	0.4998	0.0	0	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.5203	0.0	0	-0.01
80	S	p-Bromofluorobenzene	-1.0000	0.5020	0.0	0	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.1823	0.0	0	0.01
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.1476	0.0	0	0.00
83	T	n-Propylbenzene	-1.0000	0.5679	0.0	0	0.00
84	T	Bromobenzene	-1.0000	0.5328	0.0	0	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.5185	0.0	0	0.00
86	T	2-Chlorotoluene	-1.0000	0.4973	0.0	0	-0.01
87	T	4-Chlorotoluene	-1.0000	0.5635	0.0	0	0.00
88	T	a-Methylstyrene	-1.0000	0.6719	0.0	0	0.00
89	T	tert-Butylbenzene	-1.0000	0.4440	0.0	0	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.5982	0.0	0	0.00
91	T	sec-Butylbenzene	-1.0000	0.5532	0.0	0	0.00
92	T	p-Isopropyltoluene	-1.0000	0.5029	0.0	0	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.5662	0.0	0	0.00
94	T	1,4-Dichlorobenzene	-1.0000	0.6299	0.0	0	0.00
95	T	n-Butylbenzene	-1.0000	0.5680	0.0	0	0.00
96	T	1,2-Dichlorobenzene	-1.0000	0.5676	0.0	0	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-21.41#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.6050	0.0	0	0.00
99	T	Hexachlorobutadiene	-1.0000	0.4656	0.0	0	-0.01
100	T	Naphthalene	-1.0000	0.5449	0.0	0	0.00
101	T	1,2,3-Trichlorobenzene	-1.0000	0.6214	0.0	0	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137523.D 826_SL.M Mon Feb 29 16:01:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:37 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	594307	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	418336	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	217318	50.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.34	111	2084	0.6537 ug/L	0.02
Spiked Amount 50.000	Range 80 - 120		Recovery =	1.30%#	
43) 1,2-Dichloroethane-d4	11.06	65	2834	0.6847 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	1.36%#	
58) Toluene-d8	13.80	98	7503	0.7544 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	1.50%#	
80) p-Bromofluorobenzene	17.79	95	3135	0.7854 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	1.58%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	6025	1.1039 ug/L	88
3) Chloromethane	3.88	50	8942	1.5721 ug/L	80
4) Vinyl Chloride	4.13	62	5159	1.1269 ug/L	96
5) 1,3-Butadiene	4.18	54	4578	1.2019 ug/L #	67
6) Bromomethane	5.03	94	2477	1.0150 ug/L	94
7) Chloroethane	5.20	64	2347	0.9041 ug/L #	77
8) Trichlorofluoromethane	5.70	101	7751	1.2600 ug/L #	92
9) Diethyl ether	6.23	59	14414	5.0935 ug/L	81
10) Isoprene	6.28	67	3598	0.8978 ug/L	94
11) Acrolein	6.48	56	1307	2.4320 ug/L #	51
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	3197	1.0888 ug/L	73
13) Acetone	6.60	43	5933	0.3832 ug/L	97
14) 1,1-Dichloroethene	6.84	61	5455	1.0489 ug/L	83
15) Tert-Butyl Alcohol	6.93	59	4660	9.6025 ug/L #	86
16) Dimethyl Sulfide	7.13	62	2208	0.8750 ug/L	94
18) Methyl acetate	7.40	43	3574	0.9889 ug/L #	64
19) Methylene Chloride	7.66	84	3682	1.1755 ug/L	75
20) Carbon Disulfide	7.72	76	11945	1.2004 ug/L	97
21) Acrylonitrile	7.86	53	3216	2.1651 ug/L	84
22) Methyl Tert Butyl Ether	7.90	73	8242	0.9214 ug/L	91
23) trans-1,2-Dichloroethene	8.17	96	2437	0.8482 ug/L	60
24) n-Hexane	8.23	57	4827	0.9252 ug/L	90
25) Diisopropyl ether	8.62	45	67920	5.0212 ug/L	97
26) Vinyl Acetate	8.80	43	6077	0.8691 ug/L #	78
27) 1,1-Dichloroethane	8.83	63	6295	1.0162 ug/L	88
28) Ethyl-Tert-Butyl ether	9.25	59	49996	4.6114 ug/L	96
29) 2-Butanone	9.47	43	2247	1.0938 ug/L #	56
30) Propionitrile	9.57	54	2816	4.9529 ug/L #	71
31) 2,2-Dichloropropane	9.70	77	5030	1.0116 ug/L	94
32) cis-1,2-Dichloroethene	9.77	96	2740	0.8542 ug/L	83
33) Chloroform	10.00	83	6439	1.1130 ug/L	98
35) Bromochloromethane	10.26	130	1361	0.7221 ug/L	97
36) Tetrahydrofuran	10.29	42	10271	5.4403 ug/L	94
38) 1,1,1-Trichloroethane	10.61	97	5241	1.0257 ug/L	95
39) Cyclohexane	10.63	56	5811	1.0029 ug/L	86
40) 1,1-Dichloropropene	10.82	75	4038	0.9813 ug/L #	89
41) Tert-Amyl-Methyl ether	10.95	73	39464	4.5884 ug/L #	83
42) Carbon Tetrachloride	11.00	117	4871	1.0202 ug/L #	88
45) 1,2-Dichloroethane	11.19	62	4707	0.9533 ug/L #	86
46) Benzene	11.23	78	13412	1.0834 ug/L	93

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:37 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
47)	Trichloroethene	12.09	130	2983	1.0199 ug/L		90
48)	Methylcyclohexane	12.19	83	4295	0.9084 ug/L		77
49)	1,2-Dichloropropane	12.35	63	3111	0.9339 ug/L	#	69
51)	Bromodichloromethane	12.68	83	4337	0.9921 ug/L		97
52)	Dibromomethane	12.77	93	1629	0.8361 ug/L		91
53)	2-Chloroethyl Vinyl Ether	13.04	63	1268	0.6921 ug/L	#	43
54)	4-Methyl-2-Pentanone	13.08	58	633	0.4563 ug/L	#	34
55)	cis-1,3-Dichloropropene	13.43	75	4040	0.8388 ug/L		98
56)	Dimethyl Disulfide	13.72	79	1323	0.5447 ug/L	#	49
59)	Toluene	13.91	91	12207	1.0316 ug/L		97
60)	Ethyl Methacrylate	14.03	69	2818	0.7432 ug/L		100
62)	trans-1,3-Dichloropropene	14.12	75	3878	0.8522 ug/L		100
63)	1,1,2-Trichloroethane	14.38	97	2441	0.9869 ug/L		93
64)	2-Hexanone	14.31	43	2064	0.7313 ug/L		93
65)	1,3-Dichloropropane	14.73	76	4145	0.9246 ug/L		83
66)	Tetrachloroethene	14.87	166	3009	1.0308 ug/L		96
67)	Dibromochloromethane	15.17	129	2840	0.8829 ug/L		96
68)	1,2-Dibromoethane	15.48	107	1912	0.7559 ug/L		85
69)	1-Chlorohexane	15.59	91	3045	0.8286 ug/L	#	59
70)	Chlorobenzene	16.06	112	8053	1.0589 ug/L	#	66
71)	1,1,1,2-Tetrachloroethane	16.11	131	2914	0.9542 ug/L		92
72)	Ethylbenzene	16.10	106	3899	0.9580 ug/L		89
73)	m-,p-Xylene	16.21	106	9999	2.0079 ug/L		90
74)	o-Xylene	16.88	106	4283	0.9131 ug/L		84
75)	Styrene	16.92	104	6414	0.8034 ug/L		92
76)	Bromoform	17.49	173	1706	0.7511 ug/L	#	70
77)	Isopropylbenzene	17.38	105	11886	0.9427 ug/L		95
79)	1,1,2,2-Tetrachloroethane	17.65	83	3500	1.0310 ug/L		95
81)	1,2,3-Trichloropropane	17.87	110	811	0.7802 ug/L	#	55
82)	trans-1,4-Dichloro-2-Buten	17.93	53	959	0.7652 ug/L		70
83)	n-Propylbenzene	17.98	91	14256	0.9660 ug/L	#	91
84)	Bromobenzene	18.13	156	3248	1.0125 ug/L		98
85)	1,3,5-Trimethylbenzene	18.21	105	9438	0.8984 ug/L		95
86)	2-Chlorotoluene	18.30	91	9880	1.0030 ug/L		97
87)	4-Chlorotoluene	18.35	91	8357	0.9278 ug/L		93
88)	a-Methylstyrene	18.68	118	4374	0.8574 ug/L		95
89)	tert-Butylbenzene	18.75	134	1999	0.9131 ug/L		84
90)	1,2,4-Trimethylbenzene	18.82	105	10630	0.9622 ug/L		79
91)	sec-Butylbenzene	19.07	105	13062	0.9709 ug/L		95
92)	p-Isopropyltoluene	19.27	119	10400	0.9370 ug/L		89
93)	1,3-Dichlorobenzene	19.48	146	6397	1.0306 ug/L		97
94)	1,4-Dichlorobenzene	19.64	146	7211	1.1413 ug/L		83
95)	n-Butylbenzene	19.88	91	10811	0.9684 ug/L		88
96)	1,2-Dichlorobenzene	20.22	146	5973	1.0000 ug/L		96
97)	1,2-Dibromo-3-Chloropropan	21.41	75	191	0.2543 ug/L	#	1
98)	1,2,4-Trichlorobenzene	22.76	180	4430	1.0259 ug/L		93
99)	Hexachlorobutadiene	22.94	225	2385	0.9658 ug/L		90
100)	Naphthalene	23.20	128	8770	0.8835 ug/L		92
101)	1,2,3-Trichlorobenzene	23.59	180	4309	1.0134 ug/L		95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

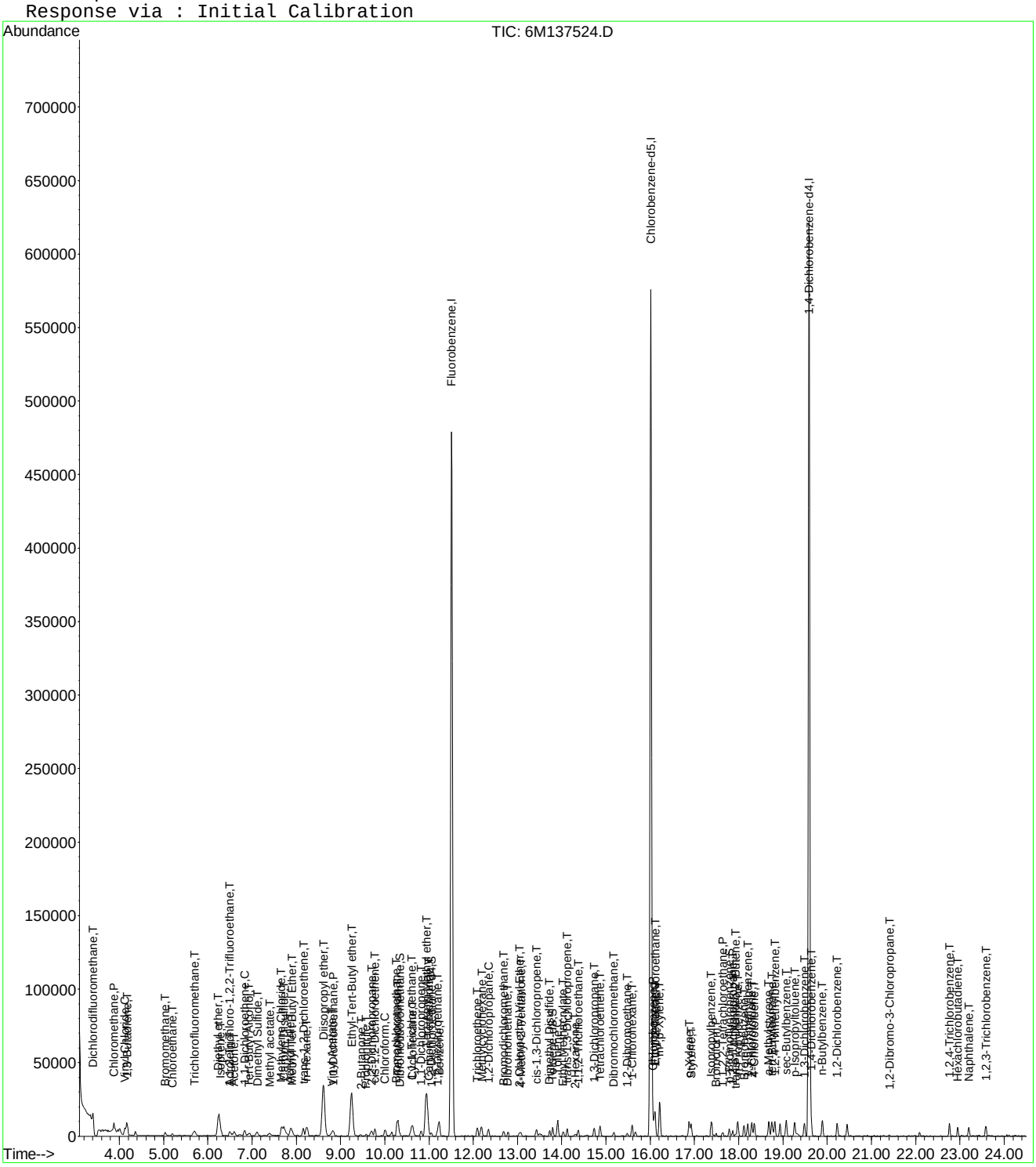

6M137524.D 826_SL.M Mon Feb 29 16:01:38 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	1.1039	0.0	0	0.00
3	P	Chloromethane	-1.0000	1.5721	0.0	0	0.00
4	C	Vinyl Chloride	-1.0000	1.1269	0.0	0	0.01
5	T	1,3-Butadiene	-1.0000	1.2019	0.0	0	0.01
6	T	Bromomethane	-1.0000	1.0150	0.0	0	0.00
7	T	Chloroethane	-1.0000	0.9041	0.0	0	0.00
8	T	Trichlorofluoromethane	-1.0000	1.2600	0.0	0	0.00
9	T	Diethyl ether	5.0000	5.0935	-1.9	100	-0.01
10	T	Isoprene	-1.0000	0.8978	0.0	0	0.00
11	T	Acrolein	2.5000	2.4320	2.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	1.0888	0.0	0	-0.01
13	T	Acetone	-1.0000	0.3832	0.0	0	0.01
14	C	1,1-Dichloroethene	-1.0000	1.0489	0.0	0	0.00
15	T	Tert-Butyl Alcohol	10.0000	9.6025	4.0	100	0.00
16	T	Dimethyl Sulfide	-1.0000	0.8750	0.0	0	0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.38#
18	T	Methyl acetate	-1.0000	0.9889	0.0	0	0.01
19	T	Methylene Chloride	-1.0000	1.1755	0.0	0	-0.01
20	T	Carbon Disulfide	-1.0000	1.2004	0.0	0	0.00
21	T	Acrylonitrile	2.5000	2.1651	13.4	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9214	7.9	100	0.00
23	T	trans-1,2-Dichloroethene	-1.0000	0.8482	0.0	0	0.00
24	T	n-Hexane	-1.0000	0.9252	0.0	0	-0.01
25	T	Diisopropyl ether	5.0000	5.0212	-0.4	100	0.01
26	T	Vinyl Acetate	-1.0000	0.8691	0.0	0	0.00
27	P	1,1-Dichloroethane	-1.0000	1.0162	0.0	0	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.6114	7.8	100	0.01
29	T	2-Butanone	-1.0000	1.0938	0.0	0	0.02
30	T	Propionitrile	5.0000	4.9529	0.9	100	-0.01
31	T	2,2-Dichloropropane	-1.0000	1.0116	0.0	0	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.8542	0.0	0	0.00
33	C	Chloroform	-1.0000	1.1130	0.0	0	-0.01
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-10.16#
35	T	Bromochloromethane	-1.0000	0.7221	0.0	0	0.00
36	T	Tetrahydrofuran	5.0000	5.4403	-8.8	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.6537	0.0	0	0.02
38	T	1,1,1-Trichloroethane	-1.0000	1.0257	0.0	0	0.00
39	T	Cyclohexane	-1.0000	1.0029	0.0	0	-0.01
40	T	1,1-Dichloropropene	-1.0000	0.9813	0.0	0	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	4.5884	8.2	100	0.00
42	T	Carbon Tetrachloride	-1.0000	1.0202	0.0	0	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.6847	0.0	0	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	-1.0000	0.9533	0.0	0	0.00
46	T	Benzene	1.0000	1.0834	-8.3	100	0.00
47	T	Trichloroethene	-1.0000	1.0199	0.0	0	0.00
48	T	Methylcyclohexane	-1.0000	0.9084	0.0	0	0.01
49	C	1,2-Dichloropropane	-1.0000	0.9339	0.0	0	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-12.67#
51	T	Bromodichloromethane	-1.0000	0.9921	0.0	0	0.00
52	T	Dibromomethane	-1.0000	0.8361	0.0	0	-0.01
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.6921	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.4563	0.0	0	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.8388	0.0	0	0.00
56	T	Dimethyl Disulfide	-1.0000	0.5447	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.7544	0.0	0	0.00
59	C	Toluene	1.0000	1.0316	-3.2	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.7432	0.0	0	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	-1.0000	0.8522	0.0	0	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.9869	0.0	0	0.00
64	T	2-Hexanone	-1.0000	0.7313	0.0	0	0.00
65	T	1,3-Dichloropropane	-1.0000	0.9246	0.0	0	0.00
66	T	Tetrachloroethene	-1.0000	1.0308	0.0	0	0.00
67	T	Dibromochloromethane	-1.0000	0.8829	0.0	0	0.00
68	T	1,2-Dibromoethane	-1.0000	0.7559	0.0	0	0.00
69	T	1-Chlorohexane	-1.0000	0.8286	0.0	0	0.00
70	P	Chlorobenzene	-1.0000	1.0589	0.0	0	-0.01
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.9542	0.0	0	0.00
72	C	Ethylbenzene	1.0000	0.9580	4.2	100	0.00
73	T	m-,p-Xylene	2.0000	2.0079	-0.4	100	-0.01
74	T	o-Xylene	1.0000	0.9132	8.7	100	0.00
75	T	Styrene	-1.0000	0.8034	0.0	0	0.00
76	P	Bromoform	-1.0000	0.7511	0.0	0	0.00
77	T	Isopropylbenzene	-1.0000	0.9427	0.0	0	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	1.0310	0.0	0	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.7854	0.0	0	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.7802	0.0	0	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.7652	0.0	0	0.00
83	T	n-Propylbenzene	-1.0000	0.9660	0.0	0	0.00
84	T	Bromobenzene	-1.0000	1.0125	0.0	0	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.8984	0.0	0	0.00
86	T	2-Chlorotoluene	-1.0000	1.0030	0.0	0	0.00
87	T	4-Chlorotoluene	-1.0000	0.9278	0.0	0	0.00
88	T	a-Methylstyrene	-1.0000	0.8574	0.0	0	-0.01
89	T	tert-Butylbenzene	-1.0000	0.9131	0.0	0	-0.01
90	T	1,2,4-Trimethylbenzene	-1.0000	0.9622	0.0	0	0.00
91	T	sec-Butylbenzene	-1.0000	0.9709	0.0	0	0.00
92	T	p-Isopropyltoluene	-1.0000	0.9370	0.0	0	0.00
93	T	1,3-Dichlorobenzene	-1.0000	1.0306	0.0	0	0.00
94	T	1,4-Dichlorobenzene	-1.0000	1.1413	0.0	0	0.00
95	T	n-Butylbenzene	-1.0000	0.9684	0.0	0	-0.01
96	T	1,2-Dichlorobenzene	-1.0000	1.0000	0.0	0	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.2543	0.0	0	0.00
98	T	1,2,4-Trichlorobenzene	-1.0000	1.0259	0.0	0	0.00
99	T	Hexachlorobutadiene	-1.0000	0.9658	0.0	0	-0.01
100	T	Naphthalene	-1.0000	0.8835	0.0	0	0.00
101	T	1,2,3-Trichlorobenzene	-1.0000	1.0134	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137524.D 826_SL.M Mon Feb 29 16:02:09 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:38 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	572212	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	404562	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	206668	50.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.32	111	3202	1.0431 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	2.08%#	
43) 1,2-Dichloroethane-d4	11.05	65	4123	1.0345 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	2.06%#	
58) Toluene-d8	13.80	98	10309	1.0718 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	2.14%#	
80) p-Bromofluorobenzene	17.79	95	4120	1.0853 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	2.18%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	8843	1.6827 ug/L	90
3) Chloromethane	3.88	50	13225	2.4149 ug/L	95
4) Vinyl Chloride	4.12	62	8482	1.9243 ug/L	95
5) 1,3-Butadiene	4.18	54	8044	2.1934 ug/L	77
6) Bromomethane	5.04	94	4396	1.8709 ug/L	94
7) Chloroethane	5.20	64	4555	1.8225 ug/L	99
8) Trichlorofluoromethane	5.70	101	12235	2.0657 ug/L #	96
9) Diethyl ether	6.24	59	66018	24.2296 ug/L	90
10) Isoprene	6.28	67	6318	1.6374 ug/L	84
11) Acrolein	6.49	56	6390	12.3492 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	4561	1.6133 ug/L	91
13) Acetone	6.60	43	7504	1.8809 ug/L	97
14) 1,1-Dichloroethene	6.83	61	8701	1.7376 ug/L	89
15) Tert-Butyl Alcohol	6.94	59	20238	43.3134 ug/L	94
16) Dimethyl Sulfide	7.11	62	4075	1.6773 ug/L	98
17) Iodomethane	7.39	142	581	5.2052 ug/L #	30
18) Methyl acetate	7.39	43	6390	1.8363 ug/L #	70
19) Methylene Chloride	7.67	84	5869	1.9461 ug/L	65
20) Carbon Disulfide	7.71	76	18795	1.9617 ug/L	99
21) Acrylonitrile	7.86	53	16272	11.3775 ug/L	99
22) Methyl Tert Butyl Ether	7.89	73	15172	1.7617 ug/L	96
23) trans-1,2-Dichloroethene	8.16	96	5205	1.8816 ug/L	79
24) n-Hexane	8.23	57	9310	1.8534 ug/L	99
25) Diisopropyl ether	8.61	45	320400	24.6012 ug/L	97
26) Vinyl Acetate	8.80	43	10816	1.6066 ug/L #	78
27) 1,1-Dichloroethane	8.83	63	11076	1.8571 ug/L	98
28) Ethyl-Tert-Butyl ether	9.25	59	254827	24.4116 ug/L	95
29) 2-Butanone	9.45	43	4021	2.0330 ug/L #	56
30) Propionitrile	9.58	54	12821	23.4210 ug/L	98
31) 2,2-Dichloropropane	9.69	77	9442	1.9723 ug/L	95
32) cis-1,2-Dichloroethene	9.77	96	6066	1.9642 ug/L	93
33) Chloroform	10.01	83	11484	2.0618 ug/L	99
34) 1-Bromopropane	10.16	122	398	0.9400 ug/L	97
35) Bromochloromethane	10.27	130	3448	1.9001 ug/L	92
36) Tetrahydrofuran	10.29	42	31678	22.2128 ug/L	93
38) 1,1,1-Trichloroethane	10.60	97	9432	1.9171 ug/L	98
39) Cyclohexane	10.63	56	9073	1.6263 ug/L	92
40) 1,1-Dichloropropene	10.82	75	7003	1.7675 ug/L	93
41) Tert-Amyl-Methyl ether	10.95	73	196452	23.7231 ug/L #	87
42) Carbon Tetrachloride	10.99	117	8034	1.7476 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:38 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45) 1,2-Dichloroethane	11.19	62	8853	1.8622 ug/L #	93
46) Benzene	11.23	78	23723	1.9902 ug/L	97
47) Trichloroethene	12.09	130	5099	1.8107 ug/L	92
48) Methylcyclohexane	12.17	83	7350	1.6146 ug/L	79
49) 1,2-Dichloropropane	12.34	63	5698	1.7766 ug/L	95
50) 1,4-Dioxane	12.67	88	1122	55.6272 ug/L	88
51) Bromodichloromethane	12.68	83	7699	1.8293 ug/L	96
52) Dibromomethane	12.79	93	3316	1.7677 ug/L	91
53) 2-Chloroethyl Vinyl Ether	13.04	63	2386	1.3526 ug/L #	61
54) 4-Methyl-2-Pentanone	13.06	58	1423	1.0653 ug/L #	60
55) cis-1,3-Dichloropropene	13.43	75	7739	1.6689 ug/L	96
56) Dimethyl Disulfide	13.72	79	3072	1.3135 ug/L #	66
59) Toluene	13.91	91	21516	1.8801 ug/L	99
60) Ethyl Methacrylate	14.03	69	5274	1.4383 ug/L	90
62) trans-1,3-Dichloropropene	14.12	75	7466	1.6966 ug/L	95
63) 1,1,2-Trichloroethane	14.37	97	4294	1.7952 ug/L	96
64) 2-Hexanone	14.32	43	4342	1.5908 ug/L	87
65) 1,3-Dichloropropane	14.74	76	7896	1.8213 ug/L	99
66) Tetrachloroethene	14.88	166	5376	1.9043 ug/L	96
67) Dibromochloromethane	15.17	129	5153	1.6564 ug/L	94
68) 1,2-Dibromoethane	15.47	107	4387	1.7934 ug/L	97
69) 1-Chlorohexane	15.58	91	5799	1.6318 ug/L	88
70) Chlorobenzene	16.07	112	14803	2.0127 ug/L	82
71) 1,1,1,2-Tetrachloroethane	16.11	131	5636	1.9085 ug/L	89
72) Ethylbenzene	16.10	106	7654	1.9447 ug/L	97
73) m-,p-Xylene	16.22	106	17383	3.6096 ug/L	95
74) o-Xylene	16.88	106	7997	1.7630 ug/L	95
75) Styrene	16.92	104	12496	1.6186 ug/L	87
76) Bromoform	17.49	173	3589	1.6340 ug/L	95
77) Isopropylbenzene	17.38	105	20776	1.7039 ug/L	96
79) 1,1,2,2-Tetrachloroethane	17.64	83	5699	1.7652 ug/L	97
81) 1,2,3-Trichloropropane	17.86	110	1672	1.6915 ug/L	85
82) trans-1,4-Dichloro-2-Buten	17.93	53	2042	1.7133 ug/L	78
83) n-Propylbenzene	17.98	91	25104	1.7886 ug/L #	95
84) Bromobenzene	18.13	156	5535	1.8143 ug/L	100
85) 1,3,5-Trimethylbenzene	18.21	105	17326	1.7343 ug/L	94
86) 2-Chlorotoluene	18.30	91	16320	1.7421 ug/L	90
87) 4-Chlorotoluene	18.35	91	17884	2.0879 ug/L	93
88) a-Methylstyrene	18.69	118	7613	1.5692 ug/L	95
89) tert-Butylbenzene	18.76	134	3612	1.7349 ug/L	82
90) 1,2,4-Trimethylbenzene	18.82	105	18800	1.7894 ug/L	86
91) sec-Butylbenzene	19.08	105	23176	1.8115 ug/L	95
92) p-Isopropyltoluene	19.26	119	18048	1.7099 ug/L	98
93) 1,3-Dichlorobenzene	19.48	146	10999	1.8633 ug/L	93
94) 1,4-Dichlorobenzene	19.64	146	12629	2.1018 ug/L	96
95) n-Butylbenzene	19.89	91	18864	1.7769 ug/L	98
96) 1,2-Dichlorobenzene	20.23	146	10946	1.9270 ug/L	93
97) 1,2-Dibromo-3-Chloropropan	21.40	75	890	1.2459 ug/L	91
98) 1,2,4-Trichlorobenzene	22.77	180	8004	1.9491 ug/L	94
99) Hexachlorobutadiene	22.95	225	4367	1.8595 ug/L	98
100) Naphthalene	23.20	128	15712	1.6644 ug/L	96
101) 1,2,3-Trichlorobenzene	23.59	180	7942	1.9641 ug/L	93

(#) = qualifier out of range (m) = manual integration
6M137525.D 826_SL.M Mon Feb 29 16:01:38 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

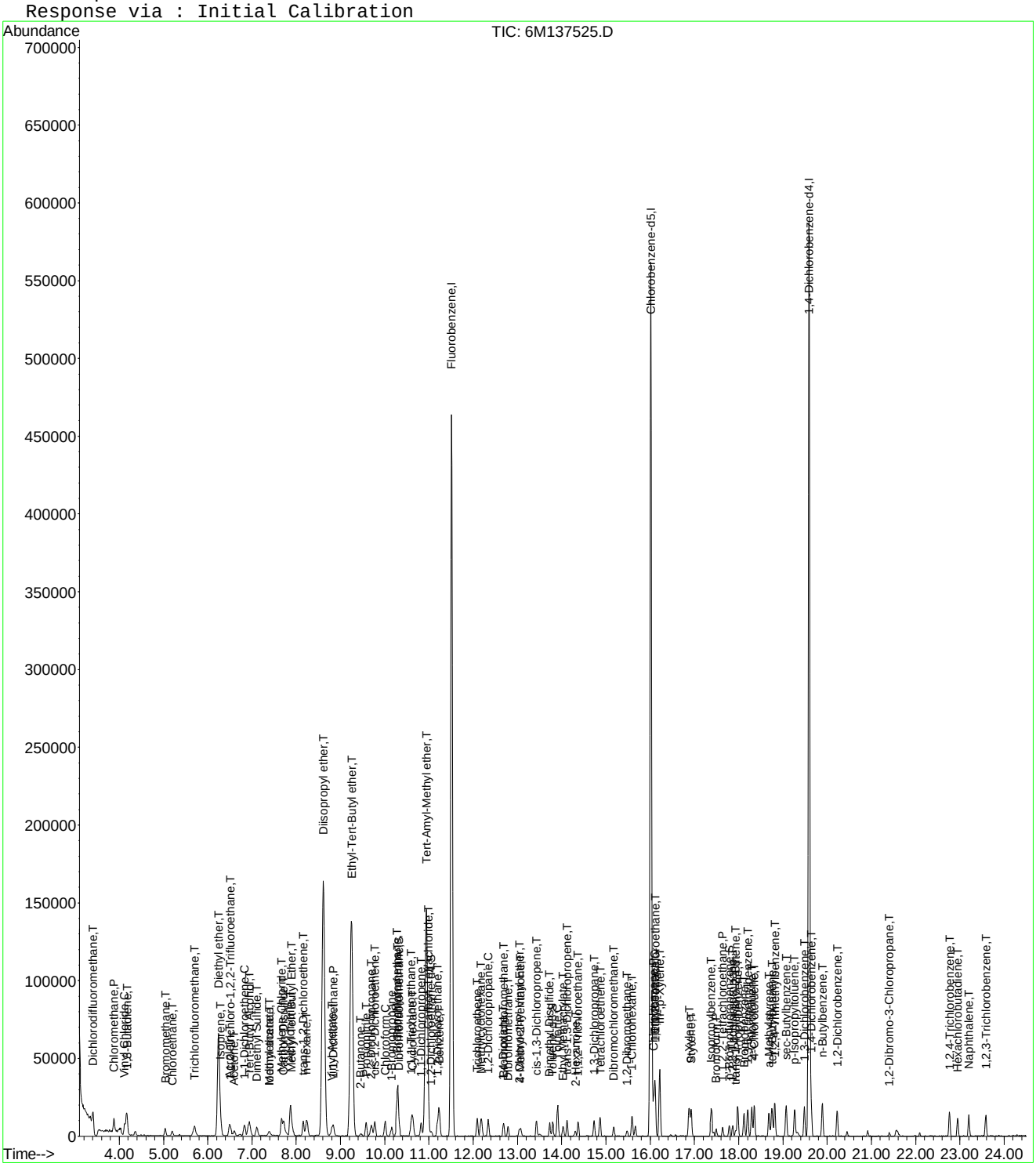

6M137525.D 826_SL.M Mon Feb 29 16:01:39 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.6827	15.9	100	0.00
3	P	Chloromethane	2.0000	2.4150	-20.7	100	0.00
4	C	Vinyl Chloride	2.0000	1.9243	3.8	100	0.00
5	T	1,3-Butadiene	-1.0000	2.1934	0.0	0	0.01
6	T	Bromomethane	2.0000	1.8709	6.5	100	0.01
7	T	Chloroethane	2.0000	1.8225	8.9	100	0.01
8	T	Trichlorofluoromethane	2.0000	2.0658	-3.3	100	0.00
9	T	Diethyl ether	25.0000	24.2296	3.1	100	0.00
10	T	Isoprene	-1.0000	1.6374	0.0	0	0.00
11	T	Acrolein	12.5000	12.3492	1.2	100	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.6134	19.3	100	0.00
13	T	Acetone	-1.0000	1.8809	0.0	0	0.01
14	C	1,1-Dichloroethene	2.0000	1.7376	13.1	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	43.3134	13.4	100	0.01
16	T	Dimethyl Sulfide	-1.0000	1.6773	0.0	0	0.00
17	T	Iodomethane	-1.0000	5.2052	0.0	0	0.01
18	T	Methyl acetate	-1.0000	1.8363	0.0	0	0.00
19	T	Methylene Chloride	2.0000	1.9461	2.7	100	0.00
20	T	Carbon Disulfide	2.0000	1.9617	1.9	100	0.00
21	T	Acrylonitrile	12.5000	11.3775	9.0	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.7617	11.9	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.8816	5.9	100	0.00
24	T	n-Hexane	2.0000	1.8534	7.3	100	-0.01
25	T	Diisopropyl ether	25.0000	24.6012	1.6	100	0.00
26	T	Vinyl Acetate	-1.0000	1.6066	0.0	0	0.00
27	P	1,1-Dichloroethane	2.0000	1.8571	7.1	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	24.4116	2.4	100	0.01
29	T	2-Butanone	-1.0000	2.0330	0.0	0	0.00
30	T	Propionitrile	25.0000	23.4210	6.3	100	0.00
31	T	2,2-Dichloropropane	2.0000	1.9723	1.4	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	1.9642	1.8	100	0.00
33	C	Chloroform	2.0000	2.0618	-3.1	100	0.00
34		1-Bromopropane	-1.0000	0.9400	0.0	0	0.00
35	T	Bromochloromethane	2.0000	1.9001	5.0	100	0.01
36	T	Tetrahydrofuran	25.0000	22.2128	11.1	100	0.00
37	S	Dibromofluoromethane	1.0000	1.0432	-4.3	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.9171	4.1	100	0.00
39	T	Cyclohexane	2.0000	1.6263	18.7	100	-0.01
40	T	1,1-Dichloropropene	2.0000	1.7675	11.6	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	23.7231	5.1	100	0.01
42	T	Carbon Tetrachloride	2.0000	1.7476	12.6	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0345	-3.5	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	2.0000	1.8622	6.9	100	0.00
46	T	Benzene	2.0000	1.9902	0.5	100	0.00
47	T	Trichloroethene	2.0000	1.8108	9.5	100	0.00
48	T	Methylcyclohexane	2.0000	1.6146	19.3	100	0.00
49	C	1,2-Dichloropropane	2.0000	1.7766	11.2	100	0.00
50	T	1,4-Dioxane	50.0000	55.6272	-11.3	100	0.00
51	T	Bromodichloromethane	2.0000	1.8293	8.5	100	0.00
52	T	Dibromomethane	2.0000	1.7677	11.6	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	1.3526	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.0653	0.0	0	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.6689	16.6	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.3135	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	1.0718	-7.2	100	0.00
59	C	Toluene	2.0000	1.8801	6.0	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.4383	28.1#	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	2.0000	1.6966	15.2	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.7952	10.2	100	0.00
64	T	2-Hexanone	-1.0000	1.5908	0.0	0	0.01
65	T	1,3-Dichloropropane	2.0000	1.8213	8.9	100	0.00
66	T	Tetrachloroethene	2.0000	1.9043	4.8	100	0.01
67	T	Dibromochloromethane	2.0000	1.6565	17.2	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.7934	10.3	100	-0.01
69	T	1-Chlorohexane	2.0000	1.6318	18.4	100	-0.01
70	P	Chlorobenzene	2.0000	2.0127	-0.6	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.9085	4.6	100	0.01
72	C	Ethylbenzene	2.0000	1.9447	2.8	100	0.00
73	T	m-,p-Xylene	4.0000	3.6096	9.8	100	0.00
74	T	o-Xylene	2.0000	1.7630	11.8	100	0.00
75	T	Styrene	2.0000	1.6186	19.1	100	0.00
76	P	Bromoform	2.0000	1.6340	18.3	100	0.00
77	T	Isopropylbenzene	2.0000	1.7039	14.8	100	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	1.7653	11.7	100	-0.01
80	S	p-Bromofluorobenzene	1.0000	1.0853	-8.5	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	1.6915	15.4	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	1.7133	14.3	100	0.00
83	T	n-Propylbenzene	2.0000	1.7886	10.6	100	0.00
84	T	Bromobenzene	2.0000	1.8143	9.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	1.7343	13.3	100	0.00
86	T	2-Chlorotoluene	2.0000	1.7421	12.9	100	0.00
87	T	4-Chlorotoluene	2.0000	2.0879	-4.4	100	0.00
88	T	a-Methylstyrene	2.0000	1.5692	21.5	100	0.00
89	T	tert-Butylbenzene	2.0000	1.7349	13.3	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	1.7894	10.5	100	0.00
91	T	sec-Butylbenzene	2.0000	1.8115	9.4	100	0.00
92	T	p-Isopropyltoluene	2.0000	1.7099	14.5	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	1.8633	6.8	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.1018	-5.1	100	0.00
95	T	n-Butylbenzene	2.0000	1.7769	11.2	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	1.9270	3.6	100	0.01
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.2459	0.0	0	-0.01
98	T	1,2,4-Trichlorobenzene	2.0000	1.9491	2.5	100	0.01
99	T	Hexachlorobutadiene	2.0000	1.8596	7.0	100	-0.01
100	T	Naphthalene	2.0000	1.6644	16.8	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9641	1.8	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137525.D 826_SL.M Mon Feb 29 16:02:19 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:39 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	643219	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	454348	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	233655	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.32	111	8526	2.4710 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	4.94%#	
43) 1,2-Dichloroethane-d4	11.06	65	11725	2.6172 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	5.24%#	
58) Toluene-d8	13.80	98	29032	2.6876 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	5.38%#	
80) p-Bromofluorobenzene	17.79	95	11167	2.6020 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	5.20%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	28102	4.7571 ug/L	100
3) Chloromethane	3.88	50	32755	5.3209 ug/L	91
4) Vinyl Chloride	4.12	62	26049	5.2573 ug/L	99
5) 1,3-Butadiene	4.17	54	23717	5.7531 ug/L	82
6) Bromomethane	5.03	94	13346	5.0529 ug/L	95
7) Chloroethane	5.19	64	14096	5.0173 ug/L	95
8) Trichlorofluoromethane	5.70	101	35831	5.3818 ug/L	98
9) Diethyl ether	6.24	59	150730	49.2132 ug/L	93
10) Isoprene	6.28	67	21438	4.9428 ug/L	81
11) Acrolein	6.48	56	14248	24.4956 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	17247	5.4273 ug/L	95
13) Acetone	6.59	43	13051	5.3136 ug/L	94
14) 1,1-Dichloroethene	6.83	61	29698	5.2760 ug/L	91
15) Tert-Butyl Alcohol	6.93	59	51304	97.6795 ug/L	93
16) Dimethyl Sulfide	7.12	62	13140	4.8115 ug/L	98
17) Iodomethane	7.38	142	3580	6.2818 ug/L	92
18) Methyl acetate	7.39	43	19888	5.0842 ug/L	93
19) Methylene Chloride	7.67	84	17567	5.1820 ug/L	73
20) Carbon Disulfide	7.72	76	56579	5.2535 ug/L	99
21) Acrylonitrile	7.86	53	38170	23.7426 ug/L	95
22) Methyl Tert Butyl Ether	7.89	73	46633	4.8170 ug/L	97
23) trans-1,2-Dichloroethene	8.16	96	15681	5.0428 ug/L	87
24) n-Hexane	8.24	57	29042	5.1432 ug/L	92
25) Diisopropyl ether	8.61	45	721466	49.2807 ug/L	97
26) Vinyl Acetate	8.80	43	31741	4.1943 ug/L	93
27) 1,1-Dichloroethane	8.83	63	34581	5.1581 ug/L	100
28) Ethyl-Tert-Butyl ether	9.24	59	576725	49.1494 ug/L	95
29) 2-Butanone	9.45	43	11939	5.3698 ug/L	87
30) Propionitrile	9.58	54	29074	47.2483 ug/L	96
31) 2,2-Dichloropropane	9.69	77	27493	5.1089 ug/L	98
32) cis-1,2-Dichloroethene	9.77	96	17624	5.0766 ug/L	93
33) Chloroform	10.01	83	32075	5.1228 ug/L	96
34) 1-Bromopropane	10.16	122	2123	4.4605 ug/L	82
35) Bromochloromethane	10.26	130	9542	4.6779 ug/L	100
36) Tetrahydrofuran	10.29	42	72518	47.4879 ug/L	94
38) 1,1,1-Trichloroethane	10.60	97	26846	4.8542 ug/L	94
39) Cyclohexane	10.64	56	31697	5.0544 ug/L	89
40) 1,1-Dichloropropene	10.82	75	23898	5.3658 ug/L	97
41) Tert-Amyl-Methyl ether	10.94	73	454105	48.7831 ug/L #	89
42) Carbon Tetrachloride	10.99	117	26296	5.0887 ug/L	96

(#) = qualifier out of range (m) = manual integration
6M137526.D 826_SL.M Mon Feb 29 16:01:39 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:39 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45) 1,2-Dichloroethane	11.19	62	26611	4.9796 ug/L	97
46) Benzene	11.23	78	66739	4.9809 ug/L	93
47) Trichloroethene	12.09	130	16560	5.2316 ug/L	93
48) Methylcyclohexane	12.18	83	26100	5.1005 ug/L	86
49) 1,2-Dichloropropane	12.34	63	17955	4.9803 ug/L	94
50) 1,4-Dioxane	12.67	88	3919	107.9166 ug/L	93
51) Bromodichloromethane	12.68	83	23069	4.8760 ug/L	92
52) Dibromomethane	12.79	93	9757	4.6271 ug/L	97
53) 2-Chloroethyl Vinyl Ether	13.04	63	8133	4.1014 ug/L	99
54) 4-Methyl-2-Pentanone	13.07	58	6484	4.3183 ug/L	81
55) cis-1,3-Dichloropropene	13.43	75	24075	4.6186 ug/L	98
56) Dimethyl Disulfide	13.72	79	10983	4.1777 ug/L	91
59) Toluene	13.91	91	65025	5.0594 ug/L	100
60) Ethyl Methacrylate	14.03	69	18200	4.4195 ug/L	95
62) trans-1,3-Dichloropropene	14.12	75	23055	4.6650 ug/L	96
63) 1,1,2-Trichloroethane	14.37	97	13105	4.8784 ug/L	97
64) 2-Hexanone	14.31	43	13531	4.4142 ug/L	93
65) 1,3-Dichloropropane	14.74	76	24567	5.0457 ug/L	96
66) Tetrachloroethene	14.87	166	17025	5.3699 ug/L	96
67) Dibromochloromethane	15.17	129	16779	4.8026 ug/L	98
68) 1,2-Dibromoethane	15.48	107	13121	4.7760 ug/L	98
69) 1-Chlorohexane	15.59	91	18960	4.7505 ug/L	75
70) Chlorobenzene	16.07	112	43871	5.3112 ug/L #	60
71) 1,1,1,2-Tetrachloroethane	16.10	131	15603	4.7045 ug/L	95
72) Ethylbenzene	16.10	106	22079	4.9950 ug/L	94
73) m-,p-Xylene	16.22	106	54549	10.0858 ug/L	96
74) o-Xylene	16.88	106	24478	4.8051 ug/L	92
75) Styrene	16.92	104	39808	4.5913 ug/L	95
76) Bromoform	17.49	173	11643	4.7199 ug/L	97
77) Isopropylbenzene	17.38	105	66989	4.8919 ug/L	99
79) 1,1,2,2-Tetrachloroethane	17.65	83	18286	5.0098 ug/L	96
81) 1,2,3-Trichloropropane	17.87	110	5764	5.1577 ug/L	93
82) trans-1,4-Dichloro-2-Buten	17.93	53	5968	4.4290 ug/L	92
83) n-Propylbenzene	17.98	91	82621	5.2068 ug/L	98
84) Bromobenzene	18.13	156	17797	5.1598 ug/L	96
85) 1,3,5-Trimethylbenzene	18.21	105	58488	5.1783 ug/L	94
86) 2-Chlorotoluene	18.30	91	57419	5.4213 ug/L	96
87) 4-Chlorotoluene	18.35	91	50976	5.2638 ug/L	97
88) a-Methylstyrene	18.69	118	25024	4.5623 ug/L	100
89) tert-Butylbenzene	18.76	134	11873	5.0441 ug/L	95
90) 1,2,4-Trimethylbenzene	18.82	105	61081	5.1422 ug/L	83
91) sec-Butylbenzene	19.08	105	74051	5.1195 ug/L	98
92) p-Isopropyltoluene	19.26	119	60824	5.0969 ug/L	97
93) 1,3-Dichlorobenzene	19.48	146	35412	5.3060 ug/L	98
94) 1,4-Dichlorobenzene	19.64	146	35211	5.1831 ug/L	83
95) n-Butylbenzene	19.89	91	60714	5.0584 ug/L	95
96) 1,2-Dichlorobenzene	20.22	146	32728	5.0962 ug/L	95
97) 1,2-Dibromo-3-Chloropropan	21.41	75	3714	4.5988 ug/L	88
98) 1,2,4-Trichlorobenzene	22.76	180	22925	4.9379 ug/L	93
99) Hexachlorobutadiene	22.96	225	13612	5.1268 ug/L	94
100) Naphthalene	23.20	128	48617	4.5551 ug/L	99
101) 1,2,3-Trichlorobenzene	23.59	180	22839	4.9959 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

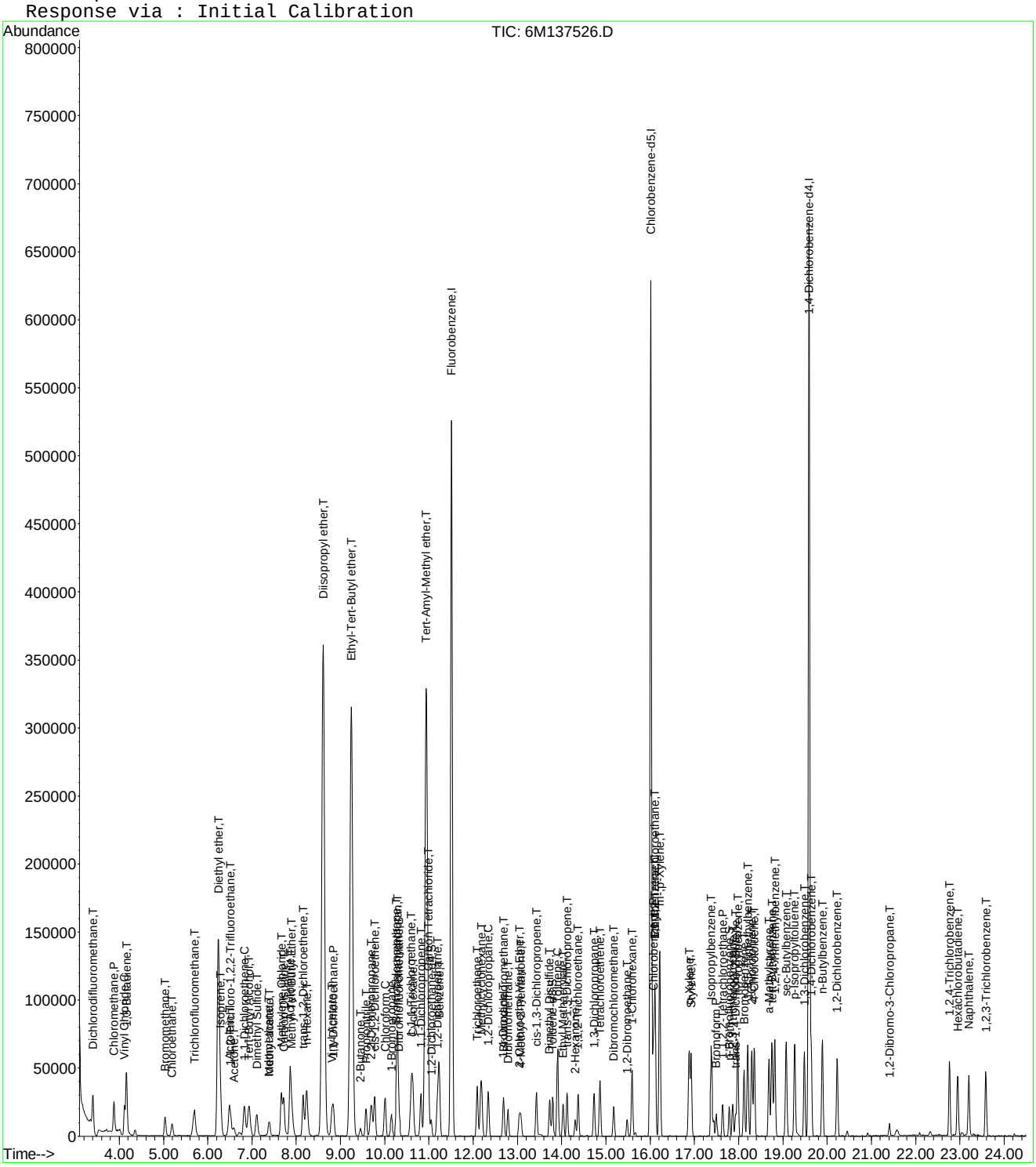

6M137526.D 826_SL.M Mon Feb 29 16:01:39 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.7571	4.9	100	0.00
3	P	Chloromethane	5.0000	5.3209	-6.4	100	0.00
4	C	Vinyl Chloride	5.0000	5.2573	-5.1	100	0.00
5	T	1,3-Butadiene	5.0000	5.7531	-15.1	100	0.00
6	T	Bromomethane	5.0000	5.0529	-1.1	100	0.00
7	T	Chloroethane	5.0000	5.0173	-0.3	100	0.00
8	T	Trichlorofluoromethane	5.0000	5.3818	-7.6	100	0.00
9	T	Diethyl ether	50.0000	49.2132	1.6	100	0.00
10	T	Isoprene	5.0000	4.9428	1.1	100	0.00
11	T	Acrolein	25.0000	24.4957	2.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	5.4272	-8.5	100	0.00
13	T	Acetone	-1.0000	5.3136	0.0	0	0.00
14	C	1,1-Dichloroethene	5.0000	5.2760	-5.5	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	97.6795	2.3	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.8115	3.8	100	0.00
17	T	Iodomethane	5.0000	6.2818	-25.6#	100	0.00
18	T	Methyl acetate	5.0000	5.0842	-1.7	100	0.00
19	T	Methylene Chloride	5.0000	5.1820	-3.6	100	0.00
20	T	Carbon Disulfide	5.0000	5.2535	-5.1	100	0.00
21	T	Acrylonitrile	25.0000	23.7426	5.0	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.8170	3.7	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	5.0428	-0.9	100	0.00
24	T	n-Hexane	5.0000	5.1432	-2.9	100	0.00
25	T	Diisopropyl ether	50.0000	49.2807	1.4	100	0.00
26	T	Vinyl Acetate	5.0000	4.1943	16.1	100	0.00
27	P	1,1-Dichloroethane	5.0000	5.1581	-3.2	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	49.1494	1.7	100	0.00
29	T	2-Butanone	5.0000	5.3698	-7.4	100	0.00
30	T	Propionitrile	50.0000	47.2483	5.5	100	0.00
31	T	2,2-Dichloropropane	5.0000	5.1089	-2.2	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	5.0766	-1.5	100	0.00
33	C	Chloroform	5.0000	5.1228	-2.5	100	0.00
34		1-Bromopropane	5.0000	4.4605	10.8	100	0.00
35	T	Bromochloromethane	5.0000	4.6779	6.4	100	0.00
36	T	Tetrahydrofuran	50.0000	47.4879	5.0	100	0.00
37	S	Dibromofluoromethane	2.5000	2.4710	1.2	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.8542	2.9	100	0.00
39	T	Cyclohexane	5.0000	5.0544	-1.1	100	0.00
40	T	1,1-Dichloropropene	5.0000	5.3658	-7.3	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	48.7831	2.4	100	0.00
42	T	Carbon Tetrachloride	5.0000	5.0887	-1.8	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.6172	-4.7	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	5.0000	4.9796	0.4	100	0.00
46	T	Benzene	5.0000	4.9809	0.4	100	0.00
47	T	Trichloroethene	5.0000	5.2316	-4.6	100	0.00
48	T	Methylcyclohexane	5.0000	5.1005	-2.0	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.9803	0.4	100	0.00
50	T	1,4-Dioxane	100.0000	107.9166	-7.9	100	0.00
51	T	Bromodichloromethane	5.0000	4.8760	2.5	100	0.00
52	T	Dibromomethane	5.0000	4.6271	7.5	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.1014	18.0	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.3183	13.6	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.6186	7.6	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.1777	16.4	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.6876	-7.5	100	0.00
59	C	Toluene	5.0000	5.0594	-1.2	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.4195	11.6	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	5.0000	4.6650	6.7	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.8784	2.4	100	0.00
64	T	2-Hexanone	5.0000	4.4142	11.7	100	0.00
65	T	1,3-Dichloropropane	5.0000	5.0457	-0.9	100	0.00
66	T	Tetrachloroethene	5.0000	5.3699	-7.4	100	0.00
67	T	Dibromochloromethane	5.0000	4.8026	3.9	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.7760	4.5	100	0.00
69	T	1-Chlorohexane	5.0000	4.7505	5.0	100	0.00
70	P	Chlorobenzene	5.0000	5.3112	-6.2	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.7045	5.9	100	0.00
72	C	Ethylbenzene	5.0000	4.9950	0.1	100	0.00
73	T	m-,p-Xylene	10.0000	10.0858	-0.9	100	0.00
74	T	o-Xylene	5.0000	4.8051	3.9	100	0.00
75	T	Styrene	5.0000	4.5913	8.2	100	0.00
76	P	Bromoform	5.0000	4.7199	5.6	100	0.00
77	T	Isopropylbenzene	5.0000	4.8919	2.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	5.0098	-0.2	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.6020	-4.1	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.1577	-3.2	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.4290	11.4	100	0.00
83	T	n-Propylbenzene	5.0000	5.2068	-4.1	100	0.00
84	T	Bromobenzene	5.0000	5.1597	-3.2	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	5.1783	-3.6	100	0.00
86	T	2-Chlorotoluene	5.0000	5.4214	-8.4	100	0.00
87	T	4-Chlorotoluene	5.0000	5.2638	-5.3	100	0.00
88	T	a-Methylstyrene	5.0000	4.5623	8.8	100	0.00
89	T	tert-Butylbenzene	5.0000	5.0441	-0.9	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.1422	-2.8	100	0.00
91	T	sec-Butylbenzene	5.0000	5.1195	-2.4	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.0969	-1.9	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	5.3060	-6.1	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	5.1831	-3.7	100	0.00
95	T	n-Butylbenzene	5.0000	5.0584	-1.2	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	5.0962	-1.9	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	4.5988	8.0	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.9379	1.2	100	0.00
99	T	Hexachlorobutadiene	5.0000	5.1268	-2.5	100	0.00
100	T	Naphthalene	5.0000	4.5552	8.9	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.9959	0.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:40 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	607286	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	435504	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	227713	50.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.33	111	16492	5.0625 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 10.12%#		
43) 1,2-Dichloroethane-d4	11.06	65	20491	4.8445 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 9.68%#		
58) Toluene-d8	13.80	98	50808	4.9069 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 9.82%#		
80) p-Bromofluorobenzene	17.79	95	20967	5.0129 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 10.02%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	51684	9.2668 ug/L	100
3) Chloromethane	3.88	50	58275	10.0267 ug/L	97
4) Vinyl Chloride	4.12	62	45684	9.7657 ug/L	98
5) 1,3-Butadiene	4.16	54	39114	10.0495 ug/L	90
6) Bromomethane	5.03	94	25017	10.0321 ug/L	98
7) Chloroethane	5.20	64	25248	9.5185 ug/L	95
8) Trichlorofluoromethane	5.69	101	62268	9.9061 ug/L	98
9) Diethyl ether	6.24	59	197846	68.4186 ug/L	92
10) Isoprene	6.28	67	39072	9.5415 ug/L	91
11) Acrolein	6.48	56	19614	35.7163 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	30114	10.0369 ug/L	94
13) Acetone	6.60	43	18461	10.1493 ug/L	97
14) 1,1-Dichloroethene	6.83	61	51482	9.6871 ug/L	94
15) Tert-Butyl Alcohol	6.93	59	70054	141.2703 ug/L	95
16) Dimethyl Sulfide	7.12	62	25452	9.8712 ug/L	97
17) Iodomethane	7.38	142	9906	8.8243 ug/L	91
18) Methyl acetate	7.39	43	38451	10.4113 ug/L	93
19) Methylene Chloride	7.67	84	32006	10.0000 ug/L	78
20) Carbon Disulfide	7.72	76	98104	9.6481 ug/L	100
21) Acrylonitrile	7.86	53	52450	34.5555 ug/L	97
22) Methyl Tert Butyl Ether	7.89	73	93836	10.2663 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	29186	9.9411 ug/L	85
24) n-Hexane	8.24	57	52226	9.7962 ug/L	99
25) Diisopropyl ether	8.61	45	937664	67.8382 ug/L	97
26) Vinyl Acetate	8.80	43	70808	9.9102 ug/L	96
27) 1,1-Dichloroethane	8.83	63	63440	10.0226 ug/L	98
28) Ethyl-Tert-Butyl ether	9.24	59	760504	68.6462 ug/L	96
29) 2-Butanone	9.45	43	21373	10.1817 ug/L	94
30) Propionitrile	9.58	54	40026	68.8953 ug/L	100
31) 2,2-Dichloropropane	9.69	77	51602	10.1564 ug/L	98
32) cis-1,2-Dichloroethene	9.77	96	31900	9.7326 ug/L	99
33) Chloroform	10.01	83	57702	9.7611 ug/L	96
34) 1-Bromopropane	10.15	122	4101	9.1261 ug/L	96
35) Bromochloromethane	10.26	130	18414	9.5616 ug/L	96
36) Tetrahydrofuran	10.29	42	95905	67.3892 ug/L	94
38) 1,1,1-Trichloroethane	10.60	97	52695	10.0919 ug/L	100
39) Cyclohexane	10.63	56	57419	9.6977 ug/L	90
40) 1,1-Dichloropropene	10.82	75	41095	9.7729 ug/L	98
41) Tert-Amyl-Methyl ether	10.95	73	598972	68.1530 ug/L	90
42) Carbon Tetrachloride	10.99	117	48542	9.9495 ug/L	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:40 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	11.19	62	51284	10.1644	ug/L		99
46)	Benzene	11.23	78	122737	9.7022	ug/L		94
47)	Trichloroethene	12.09	130	29481	9.8646	ug/L		92
48)	Methylcyclohexane	12.18	83	46982	9.7245	ug/L		87
49)	1,2-Dichloropropane	12.34	63	33640	9.8830	ug/L		97
50)	1,4-Dioxane	12.68	88	4932	133.5880	ug/L		83
51)	Bromodichloromethane	12.68	83	42482	9.5106	ug/L		92
52)	Dibromomethane	12.78	93	19421	9.7551	ug/L		99
53)	2-Chloroethyl Vinyl Ether	13.04	63	17139	9.1546	ug/L		98
54)	4-Methyl-2-Pentanone	13.07	58	13343	9.4122	ug/L		90
55)	cis-1,3-Dichloropropene	13.43	75	47323	9.6158	ug/L		96
56)	Dimethyl Disulfide	13.72	79	21113	8.5060	ug/L		97
59)	Toluene	13.91	91	123480	10.0233	ug/L		99
60)	Ethyl Methacrylate	14.04	69	37321	9.4549	ug/L		94
62)	trans-1,3-Dichloropropene	14.12	75	46119	9.7357	ug/L		96
63)	1,1,2-Trichloroethane	14.38	97	26300	10.2139	ug/L		99
64)	2-Hexanone	14.31	43	28213	9.6021	ug/L		99
65)	1,3-Dichloropropane	14.73	76	46832	10.0347	ug/L		94
66)	Tetrachloroethene	14.87	166	31153	10.2512	ug/L		97
67)	Dibromochloromethane	15.18	129	32946	9.8381	ug/L		99
68)	1,2-Dibromoethane	15.48	107	25271	9.5966	ug/L		95
69)	1-Chlorohexane	15.59	91	36355	9.5030	ug/L		82
70)	Chlorobenzene	16.07	112	79785	10.0771	ug/L	#	63
71)	1,1,1,2-Tetrachloroethane	16.11	131	31524	9.9162	ug/L		97
72)	Ethylbenzene	16.10	106	41898	9.8889	ug/L		95
73)	m-,p-Xylene	16.22	106	102847	19.8387	ug/L		96
74)	o-Xylene	16.88	106	47393	9.7060	ug/L		93
75)	Styrene	16.92	104	79997	9.6257	ug/L		97
76)	Bromoform	17.49	173	22569	9.5450	ug/L		99
77)	Isopropylbenzene	17.38	105	130459	9.9391	ug/L		96
79)	1,1,2,2-Tetrachloroethane	17.65	83	36327	10.2123	ug/L		95
81)	1,2,3-Trichloropropane	17.87	110	11417	10.4826	ug/L		96
82)	trans-1,4-Dichloro-2-Buten	17.93	53	12994	9.8948	ug/L		85
83)	n-Propylbenzene	17.98	91	159783	10.3323	ug/L		98
84)	Bromobenzene	18.13	156	33893	10.0828	ug/L		95
85)	1,3,5-Trimethylbenzene	18.21	105	111252	10.1069	ug/L		94
86)	2-Chlorotoluene	18.30	91	107737	10.4377	ug/L		98
87)	4-Chlorotoluene	18.36	91	96695	10.2453	ug/L		95
88)	a-Methylstyrene	18.69	118	51340	9.6043	ug/L		97
89)	tert-Butylbenzene	18.76	134	22949	10.0040	ug/L		90
90)	1,2,4-Trimethylbenzene	18.82	105	119948	10.3616	ug/L		79
91)	sec-Butylbenzene	19.07	105	141383	10.0296	ug/L		97
92)	p-Isopropyltoluene	19.27	119	115695	9.9480	ug/L		99
93)	1,3-Dichlorobenzene	19.48	146	67906	10.4404	ug/L		100
94)	1,4-Dichlorobenzene	19.64	146	68350	10.3238	ug/L		93
95)	n-Butylbenzene	19.89	91	117398	10.0364	ug/L		96
96)	1,2-Dichlorobenzene	20.22	146	64067	10.2365	ug/L		98
97)	1,2-Dibromo-3-Chloropropan	21.40	75	7444	9.4579	ug/L		93
98)	1,2,4-Trichlorobenzene	22.76	180	45615	10.0816	ug/L		99
99)	Hexachlorobutadiene	22.94	225	26046	10.0659	ug/L		100
100)	Naphthalene	23.20	128	104354	10.0325	ug/L		99
101)	1,2,3-Trichlorobenzene	23.59	180	44630	10.0173	ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

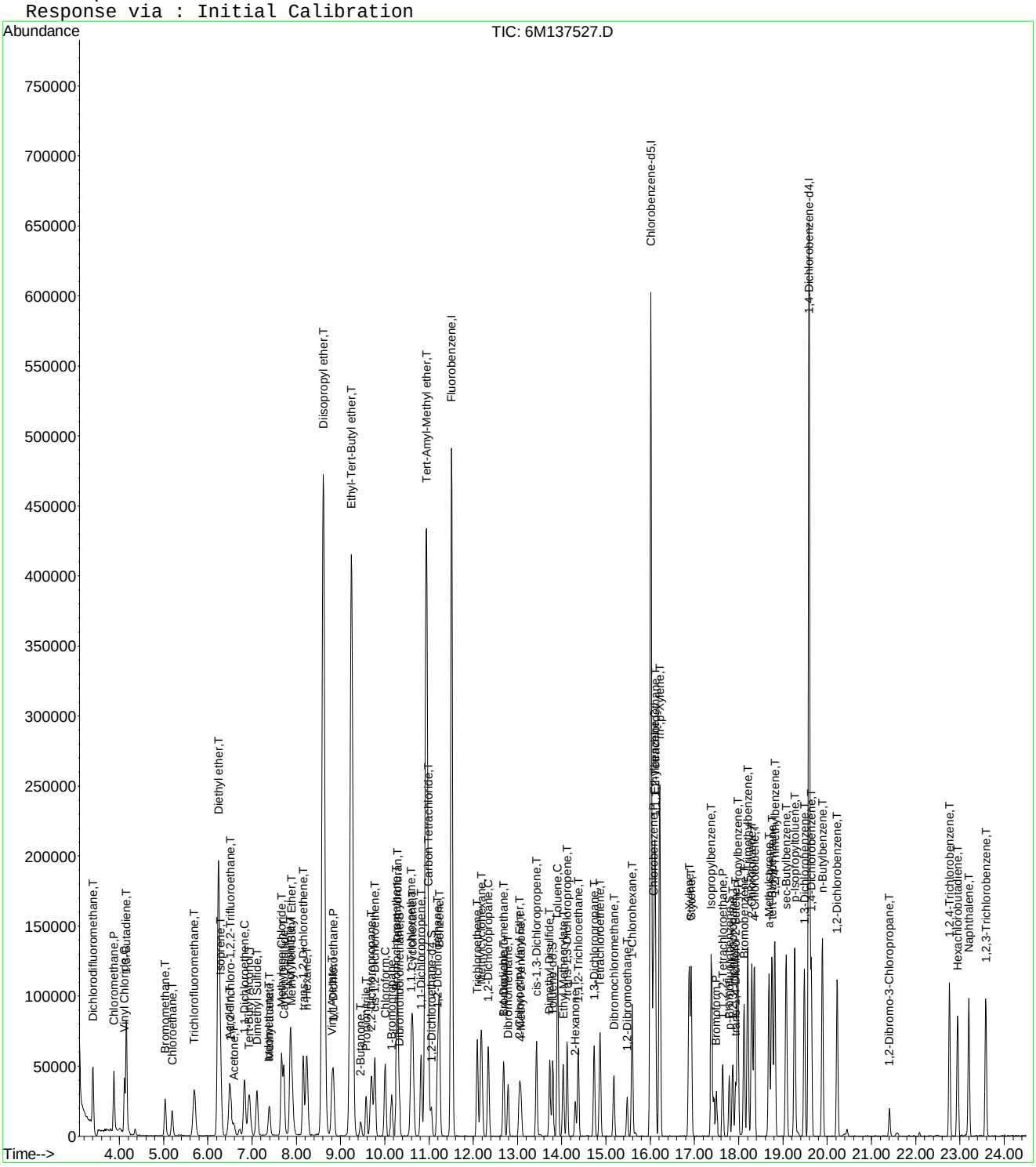

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	10.0000	9.2668	7.3	100	0.00
3	P	Chloromethane	10.0000	10.0267	-0.3	100	0.00
4	C	Vinyl Chloride	10.0000	9.7657	2.3	100	0.00
5	T	1,3-Butadiene	10.0000	10.0495	-0.5	100	-0.01
6	T	Bromomethane	10.0000	10.0321	-0.3	100	0.00
7	T	Chloroethane	10.0000	9.5185	4.8	100	0.00
8	T	Trichlorofluoromethane	10.0000	9.9061	0.9	100	-0.01
9	T	Diethyl ether	65.0000	68.4186	-5.3	100	0.00
10	T	Isoprene	10.0000	9.5415	4.6	100	0.00
11	T	Acrolein	32.5000	35.7163	-9.9	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	10.0000	10.0369	-0.4	100	0.00
13	T	Acetone	10.0000	10.1493	-1.5	100	0.01
14	C	1,1-Dichloroethene	10.0000	9.6871	3.1	100	0.00
15	T	Tert-Butyl Alcohol	130.0000	141.2703	-8.7	100	0.00
16	T	Dimethyl Sulfide	10.0000	9.8712	1.3	100	0.00
17	T	Iodomethane	10.0000	8.8243	11.8	100	0.00
18	T	Methyl acetate	10.0000	10.4113	-4.1	100	0.00
19	T	Methylene Chloride	10.0000	10.0000	0.0	100	0.00
20	T	Carbon Disulfide	10.0000	9.6481	3.5	100	0.00
21	T	Acrylonitrile	32.5000	34.5555	-6.3	100	0.00
22	T	Methyl Tert Butyl Ether	10.0000	10.2663	-2.7	100	0.00
23	T	trans-1,2-Dichloroethene	10.0000	9.9411	0.6	100	0.00
24	T	n-Hexane	10.0000	9.7962	2.0	100	0.00
25	T	Diisopropyl ether	65.0000	67.8382	-4.4	100	0.00
26	T	Vinyl Acetate	10.0000	9.9102	0.9	100	0.00
27	P	1,1-Dichloroethane	10.0000	10.0226	-0.2	100	0.00
28	T	Ethyl-Tert-Butyl ether	65.0000	68.6462	-5.6	100	0.00
29	T	2-Butanone	10.0000	10.1817	-1.8	100	0.00
30	T	Propionitrile	65.0000	68.8953	-6.0	100	0.00
31	T	2,2-Dichloropropane	10.0000	10.1564	-1.6	100	0.00
32	T	cis-1,2-Dichloroethene	10.0000	9.7326	2.7	100	0.00
33	C	Chloroform	10.0000	9.7611	2.4	100	0.00
34		1-Bromopropane	10.0000	9.1261	8.7	100	-0.01
35	T	Bromochloromethane	10.0000	9.5616	4.4	100	0.00
36	T	Tetrahydrofuran	65.0000	67.3892	-3.7	100	0.00
37	S	Dibromofluoromethane	5.0000	5.0625	-1.2	100	0.00
38	T	1,1,1-Trichloroethane	10.0000	10.0919	-0.9	100	0.00
39	T	Cyclohexane	10.0000	9.6977	3.0	100	-0.01
40	T	1,1-Dichloropropene	10.0000	9.7729	2.3	100	0.00
41	T	Tert-Amyl-Methyl ether	65.0000	68.1530	-4.9	100	0.00
42	T	Carbon Tetrachloride	10.0000	9.9495	0.5	100	0.00
43	S	1,2-Dichloroethane-d4	5.0000	4.8445	3.1	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	10.0000	10.1644	-1.6	100	0.00
46	T	Benzene	10.0000	9.7022	3.0	100	0.00
47	T	Trichloroethene	10.0000	9.8646	1.4	100	0.00
48	T	Methylcyclohexane	10.0000	9.7245	2.8	100	0.00
49	C	1,2-Dichloropropane	10.0000	9.8831	1.2	100	0.00
50	T	1,4-Dioxane	130.0000	133.5880	-2.8	100	0.00
51	T	Bromodichloromethane	10.0000	9.5106	4.9	100	0.00
52	T	Dibromomethane	10.0000	9.7551	2.4	100	0.00
53	T	2-Chloroethyl Vinyl Ether	10.0000	9.1546	8.5	100	0.00
54	T	4-Methyl-2-Pentanone	10.0000	9.4122	5.9	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	10.0000	9.6158	3.8	100	0.00
56	T	Dimethyl Disulfide	10.0000	8.5060	14.9	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	5.0000	4.9070	1.9	100	0.00
59	C	Toluene	10.0000	10.0233	-0.2	100	0.00
60	T	Ethyl Methacrylate	10.0000	9.4549	5.5	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	10.0000	9.7357	2.6	100	0.00
63	T	1,1,2-Trichloroethane	10.0000	10.2139	-2.1	100	0.00
64	T	2-Hexanone	10.0000	9.6021	4.0	100	0.00
65	T	1,3-Dichloropropane	10.0000	10.0347	-0.3	100	0.00
66	T	Tetrachloroethene	10.0000	10.2512	-2.5	100	0.00
67	T	Dibromochloromethane	10.0000	9.8381	1.6	100	0.00
68	T	1,2-Dibromoethane	10.0000	9.5966	4.0	100	0.00
69	T	1-Chlorohexane	10.0000	9.5030	5.0	100	0.00
70	P	Chlorobenzene	10.0000	10.0771	-0.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	10.0000	9.9162	0.8	100	0.00
72	C	Ethylbenzene	10.0000	9.8889	1.1	100	0.00
73	T	m-,p-Xylene	20.0000	19.8387	0.8	100	0.00
74	T	o-Xylene	10.0000	9.7060	2.9	100	0.00
75	T	Styrene	10.0000	9.6258	3.7	100	0.00
76	P	Bromoform	10.0000	9.5450	4.6	100	0.00
77	T	Isopropylbenzene	10.0000	9.9391	0.6	100	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	10.0000	10.2123	-2.1	100	0.00
80	S	p-Bromofluorobenzene	5.0000	5.0129	-0.3	100	0.00
81	T	1,2,3-Trichloropropane	10.0000	10.4826	-4.8	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	10.0000	9.8948	1.1	100	0.00
83	T	n-Propylbenzene	10.0000	10.3323	-3.3	100	0.00
84	T	Bromobenzene	10.0000	10.0828	-0.8	100	0.00
85	T	1,3,5-Trimethylbenzene	10.0000	10.1069	-1.1	100	0.00
86	T	2-Chlorotoluene	10.0000	10.4377	-4.4	100	0.00
87	T	4-Chlorotoluene	10.0000	10.2453	-2.5	100	0.00
88	T	a-Methylstyrene	10.0000	9.6043	4.0	100	0.00
89	T	tert-Butylbenzene	10.0000	10.0040	-0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	10.0000	10.3616	-3.6	100	0.00
91	T	sec-Butylbenzene	10.0000	10.0296	-0.3	100	0.00
92	T	p-Isopropyltoluene	10.0000	9.9480	0.5	100	0.00
93	T	1,3-Dichlorobenzene	10.0000	10.4404	-4.4	100	0.00
94	T	1,4-Dichlorobenzene	10.0000	10.3238	-3.2	100	0.00
95	T	n-Butylbenzene	10.0000	10.0364	-0.4	100	0.00
96	T	1,2-Dichlorobenzene	10.0000	10.2365	-2.4	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	10.0000	9.4579	5.4	100	-0.01
98	T	1,2,4-Trichlorobenzene	10.0000	10.0816	-0.8	100	0.00
99	T	Hexachlorobutadiene	10.0000	10.0659	-0.7	100	-0.01
100	T	Naphthalene	10.0000	10.0325	-0.3	100	0.00
101	T	1,2,3-Trichlorobenzene	10.0000	10.0173	-0.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137527.D 826_SL.M Mon Feb 29 16:02:41 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137528.D Vial: 7
Acq On : 26 Feb 2016 16:30 Operator: TMB
Sample : WG558920-07 20ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:40 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	604454	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	432511	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	231578	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	33417	10.3059 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 20.62%#		
43) 1,2-Dichloroethane-d4	11.05	65	44264	10.5140 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 21.02%#		
58) Toluene-d8	13.80	98	105494	10.2589 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 20.52%#		
80) p-Bromofluorobenzene	17.79	95	42856	10.0752 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 20.16%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	124530	22.4325 ug/L	99
3) Chloromethane	3.88	50	120837	20.8884 ug/L	97
4) Vinyl Chloride	4.12	62	100224	21.5249 ug/L	99
5) 1,3-Butadiene	4.17	54	87169	22.5011 ug/L	89
6) Bromomethane	5.03	94	52021	20.9587 ug/L	100
7) Chloroethane	5.20	64	56109	21.2522 ug/L	96
8) Trichlorofluoromethane	5.70	101	126994	20.2979 ug/L	100
9) Diethyl ether	6.24	59	233490	81.1233 ug/L	92
10) Isoprene	6.28	67	78978	19.3770 ug/L	88
11) Acrolein	6.48	56	21732	39.7585 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	61970	20.7512 ug/L	94
13) Acetone	6.60	43	31313	20.3882 ug/L	94
14) 1,1-Dichloroethene	6.83	61	109604	20.7203 ug/L	92
15) Tert-Butyl Alcohol	6.93	59	84577	171.3564 ug/L	95
16) Dimethyl Sulfide	7.12	62	47686	18.5811 ug/L	91
17) Iodomethane	7.38	142	29628	16.5619 ug/L	87
18) Methyl acetate	7.39	43	74780	20.3429 ug/L	95
19) Methylene Chloride	7.67	84	64851	20.3571 ug/L	76
20) Carbon Disulfide	7.72	76	202990	20.0567 ug/L	99
21) Acrylonitrile	7.86	53	61697	40.8381 ug/L	94
22) Methyl Tert Butyl Ether	7.89	73	190370	20.9254 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	59769	20.4535 ug/L	87
24) n-Hexane	8.24	57	105156	19.8169 ug/L	97
25) Diisopropyl ether	8.61	45	1129584	82.1061 ug/L	96
26) Vinyl Acetate	8.80	43	152272	21.4117 ug/L	97
27) 1,1-Dichloroethane	8.83	63	130302	20.6823 ug/L	99
28) Ethyl-Tert-Butyl ether	9.24	59	915394	83.0143 ug/L	96
29) 2-Butanone	9.46	43	42524	20.3527 ug/L	97
30) Propionitrile	9.58	54	48414	83.7237 ug/L	100
31) 2,2-Dichloropropane	9.69	77	100380	19.8495 ug/L	98
32) cis-1,2-Dichloroethene	9.77	96	66403	20.3543 ug/L	100
33) Chloroform	10.01	83	120566	20.4910 ug/L	97
34) 1-Bromopropane	10.15	122	8978	20.0727 ug/L	94
35) Bromochloromethane	10.26	130	39989	20.8618 ug/L	98
36) Tetrahydrofuran	10.29	42	119054	84.5841 ug/L	93
38) 1,1,1-Trichloroethane	10.60	97	105282	20.2577 ug/L	96
39) Cyclohexane	10.63	56	119680	20.3079 ug/L	89
40) 1,1-Dichloropropene	10.82	75	83869	20.0386 ug/L	96
41) Tert-Amyl-Methyl ether	10.94	73	732522	83.7393 ug/L	91
42) Carbon Tetrachloride	10.99	117	99704	20.5318 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M137528.D 826_SL.M Mon Feb 29 16:01:41 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137528.D Vial: 7
Acq On : 26 Feb 2016 16:30 Operator: TMB
Sample : WG558920-07 20ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:40 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	11.19	62	103881	20.6854 ug/L		99
46)	Benzene	11.23	78	247381	19.6467 ug/L		92
47)	Trichloroethene	12.09	130	61373	20.6321 ug/L		91
48)	Methylcyclohexane	12.18	83	97333	20.2407 ug/L		88
49)	1,2-Dichloropropane	12.34	63	69997	20.6607 ug/L		99
50)	1,4-Dioxane	12.68	88	6222	161.0769 ug/L		84
51)	Bromodichloromethane	12.68	83	89367	20.1007 ug/L		96
52)	Dibromomethane	12.79	93	40905	20.6426 ug/L		98
53)	2-Chloroethyl Vinyl Ether	13.04	63	37392	20.0660 ug/L		99
54)	4-Methyl-2-Pentanone	13.07	58	29543	20.9375 ug/L		90
55)	cis-1,3-Dichloropropene	13.43	75	99671	20.3475 ug/L		97
56)	Dimethyl Disulfide	13.72	79	46329	18.7525 ug/L		98
59)	Toluene	13.91	91	246419	20.1412 ug/L		99
60)	Ethyl Methacrylate	14.04	69	79829	20.3638 ug/L		96
62)	trans-1,3-Dichloropropene	14.12	75	96621	20.5377 ug/L		98
63)	1,1,2-Trichloroethane	14.38	97	53425	20.8919 ug/L		97
64)	2-Hexanone	14.31	43	59605	20.4265 ug/L		97
65)	1,3-Dichloropropane	14.74	76	96517	20.8239 ug/L		94
66)	Tetrachloroethene	14.87	166	62111	20.5796 ug/L		96
67)	Dibromochloromethane	15.17	129	68185	20.5019 ug/L		99
68)	1,2-Dibromoethane	15.48	107	53387	20.4138 ug/L		100
69)	1-Chlorohexane	15.59	91	76216	20.0602 ug/L		83
70)	Chlorobenzene	16.07	112	160312	20.3880 ug/L	#	66
71)	1,1,1,2-Tetrachloroethane	16.11	131	64649	20.4768 ug/L		97
72)	Ethylbenzene	16.10	106	86018	20.4427 ug/L		96
73)	m-,p-Xylene	16.22	106	209303	40.6530 ug/L		95
74)	o-Xylene	16.87	106	101781	20.9889 ug/L		94
75)	Styrene	16.92	104	169811	20.5741 ug/L		94
76)	Bromoform	17.49	173	47615	20.2769 ug/L		98
77)	Isopropylbenzene	17.38	105	273784	21.0027 ug/L		97
79)	1,1,2,2-Tetrachloroethane	17.65	83	75470	20.8621 ug/L		95
81)	1,2,3-Trichloropropane	17.87	110	22588	20.3932 ug/L		90
82)	trans-1,4-Dichloro-2-Buten	17.93	53	26581	19.9034 ug/L		88
83)	n-Propylbenzene	17.98	91	330830	21.0359 ug/L		97
84)	Bromobenzene	18.13	156	71833	21.0128 ug/L		95
85)	1,3,5-Trimethylbenzene	18.21	105	230218	20.5655 ug/L		96
86)	2-Chlorotoluene	18.30	91	219979	20.9561 ug/L		97
87)	4-Chlorotoluene	18.35	91	193947	20.2066 ug/L		97
88)	a-Methylstyrene	18.69	118	107098	19.7008 ug/L		96
89)	tert-Butylbenzene	18.75	134	48246	20.6806 ug/L		94
90)	1,2,4-Trimethylbenzene	18.82	105	244152	20.7388 ug/L		84
91)	sec-Butylbenzene	19.08	105	299927	20.9214 ug/L		98
92)	p-Isopropyltoluene	19.27	119	246088	20.8066 ug/L		100
93)	1,3-Dichlorobenzene	19.48	146	134407	20.3198 ug/L		98
94)	1,4-Dichlorobenzene	19.64	146	136759	20.3118 ug/L		97
95)	n-Butylbenzene	19.89	91	245859	20.6677 ug/L		97
96)	1,2-Dichlorobenzene	20.22	146	129420	20.3333 ug/L		96
97)	1,2-Dibromo-3-Chloropropan	21.41	75	16283	20.3429 ug/L		85
98)	1,2,4-Trichlorobenzene	22.76	180	93373	20.2924 ug/L		99
99)	Hexachlorobutadiene	22.95	225	53674	20.3969 ug/L		99
100)	Naphthalene	23.20	128	219058	20.7086 ug/L		99
101)	1,2,3-Trichlorobenzene	23.58	180	91461	20.1860 ug/L		98

(#) = qualifier out of range (m) = manual integration
6M137528.D 826_SL.M Mon Feb 29 16:01:41 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137528.D Vial: 7
Acq On : 26 Feb 2016 16:30 Operator: TMB
Sample : WG558920-07 20ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

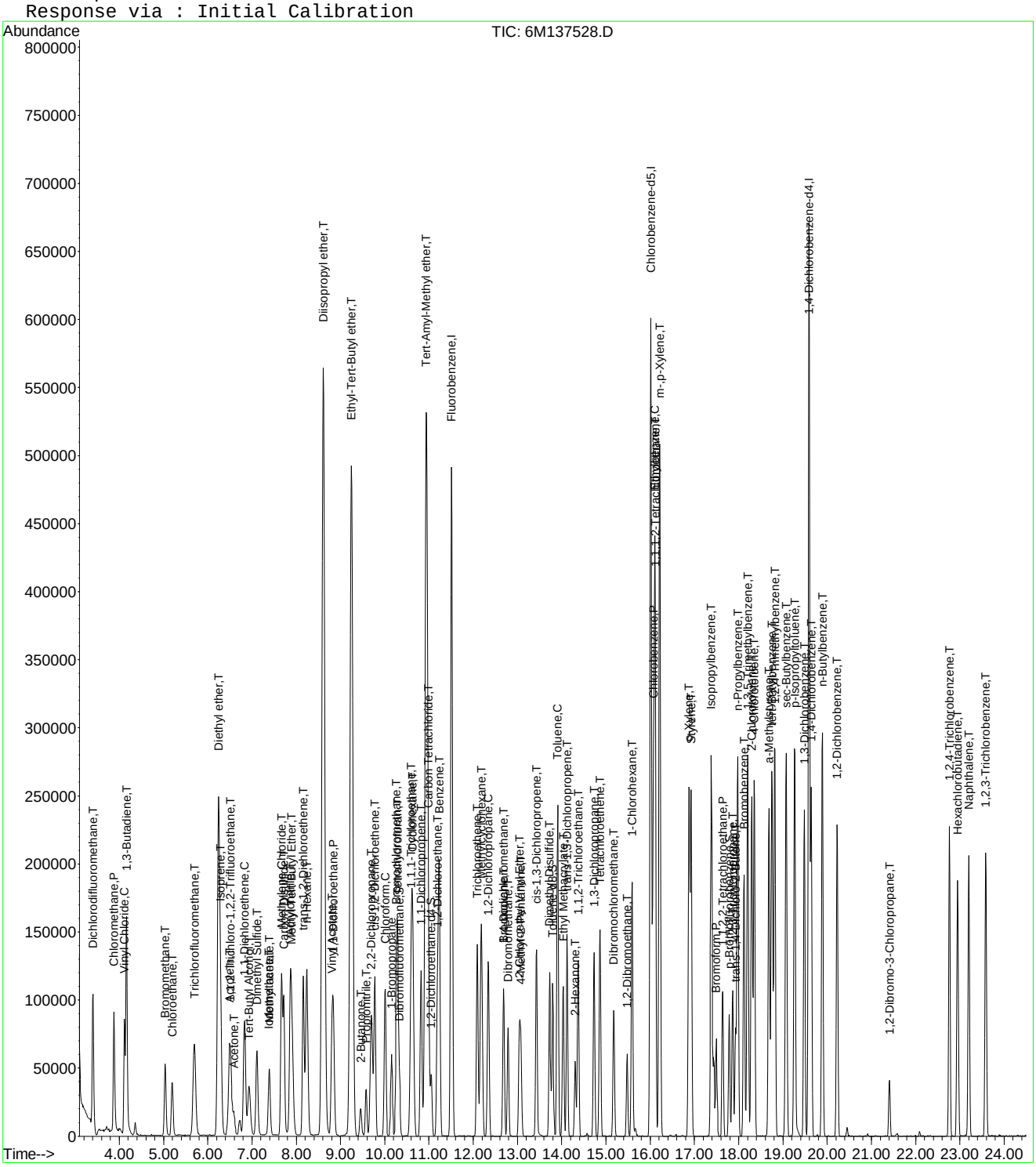

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137529.D Vial: 8
Acq On : 26 Feb 2016 17:03 Operator: TMB
Sample : WG558920-08 50ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:41 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	607631	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	439950	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	237573	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	82729	25.3805 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 50.76%#		
43) 1,2-Dichloroethane-d4	11.06	65	107163	25.3214 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 50.64%#		
58) Toluene-d8	13.80	98	266157	25.4452 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 50.90%#		
80) p-Bromofluorobenzene	17.79	95	111797	25.6197 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 51.24%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	326358	58.4819 ug/L	99
3) Chloromethane	3.88	50	305583	52.5483 ug/L	99
4) Vinyl Chloride	4.11	62	261948	55.9639 ug/L	98
5) 1,3-Butadiene	4.17	54	208973	53.6605 ug/L	91
6) Bromomethane	5.03	94	129157	51.7638 ug/L	100
7) Chloroethane	5.20	64	147959	55.7489 ug/L	95
8) Trichlorofluoromethane	5.70	101	339023	53.9039 ug/L	99
9) Diethyl ether	6.24	59	283385	97.9439 ug/L	93
10) Isoprene	6.28	67	215850	52.6813 ug/L	86
11) Acrolein	6.48	56	25264	45.9786 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	168394	56.0934 ug/L	94
13) Acetone	6.60	43	68176	49.2786 ug/L	100
14) 1,1-Dichloroethene	6.83	61	295734	55.6154 ug/L	92
15) Tert-Butyl Alcohol	6.94	59	97040	195.5789 ug/L	97
16) Dimethyl Sulfide	7.12	62	135657	52.5830 ug/L	94
17) Iodomethane	7.38	142	119726	51.5829 ug/L	91
18) Methyl acetate	7.39	43	187187	50.6554 ug/L	95
19) Methylene Chloride	7.67	84	174497	54.4892 ug/L	80
20) Carbon Disulfide	7.72	76	530150	52.1084 ug/L	98
21) Acrylonitrile	7.86	53	78970	51.9980 ug/L	98
22) Methyl Tert Butyl Ether	7.89	73	506330	55.3647 ug/L	93
23) trans-1,2-Dichloroethene	8.16	96	161116	54.8470 ug/L	86
24) n-Hexane	8.24	57	282956	53.0449 ug/L	98
25) Diisopropyl ether	8.61	45	1357488	98.1559 ug/L	97
26) Vinyl Acetate	8.80	43	361913	50.6243 ug/L	97
27) 1,1-Dichloroethane	8.84	63	345084	54.4873 ug/L	98
28) Ethyl-Tert-Butyl ether	9.24	59	1104598	99.6489 ug/L	96
29) 2-Butanone	9.45	43	102919	49.0011 ug/L	94
30) Propionitrile	9.58	54	57786	99.4084 ug/L	100
31) 2,2-Dichloropropane	9.70	77	275709	54.2347 ug/L	99
32) cis-1,2-Dichloroethene	9.77	96	176368	53.7788 ug/L	98
33) Chloroform	10.01	83	316097	53.4420 ug/L	96
34) 1-Bromopropane	10.16	122	24579	54.6655 ug/L	98
35) Bromochloromethane	10.26	130	106752	55.4000 ug/L	99
36) Tetrahydrofuran	10.29	42	139800	99.1693 ug/L	94
38) 1,1,1-Trichloroethane	10.60	97	287959	55.1175 ug/L	98
39) Cyclohexane	10.63	56	324068	54.7019 ug/L	90
40) 1,1-Dichloropropene	10.82	75	232925	55.3612 ug/L	98
41) Tert-Amyl-Methyl ether	10.95	73	878188	99.8664 ug/L	92
42) Carbon Tetrachloride	10.99	117	270388	55.3891 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137529.D Vial: 8
Acq On : 26 Feb 2016 17:03 Operator: TMB
Sample : WG558920-08 50ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:41 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	272804	54.0384 ug/L	98
46)	Benzene	11.23	78	654918	51.7410 ug/L	91
47)	Trichloroethene	12.09	130	163002	54.5109 ug/L	91
48)	Methylcyclohexane	12.18	83	264045	54.6220 ug/L	88
49)	1,2-Dichloropropane	12.34	63	185139	54.3608 ug/L	99
50)	1,4-Dioxane	12.67	88	7470	186.3872 ug/L	86
51)	Bromodichloromethane	12.68	83	244077	54.6116 ug/L	96
52)	Dibromomethane	12.78	93	112269	56.3600 ug/L	97
53)	2-Chloroethyl Vinyl Ether	13.04	63	99869	53.3134 ug/L	98
54)	4-Methyl-2-Pentanone	13.07	58	71173	50.1774 ug/L	95
55)	cis-1,3-Dichloropropene	13.43	75	275770	56.0032 ug/L	97
56)	Dimethyl Disulfide	13.72	79	136937	55.1380 ug/L	96
59)	Toluene	13.91	91	661797	53.1777 ug/L	100
60)	Ethyl Methacrylate	14.04	69	221335	55.5062 ug/L	94
62)	trans-1,3-Dichloropropene	14.12	75	265281	55.4346 ug/L	99
63)	1,1,2-Trichloroethane	14.38	97	140534	54.0266 ug/L	99
64)	2-Hexanone	14.31	43	150141	50.5831 ug/L	99
65)	1,3-Dichloropropane	14.73	76	254916	54.0691 ug/L	94
66)	Tetrachloroethene	14.87	166	165478	53.9016 ug/L	97
67)	Dibromochloromethane	15.17	129	187125	55.3134 ug/L	98
68)	1,2-Dibromoethane	15.48	107	145905	54.8470 ug/L	99
69)	1-Chlorohexane	15.59	91	213275	55.1854 ug/L	86
70)	Chlorobenzene	16.07	112	421684	52.7217 ug/L #	68
71)	1,1,1,2-Tetrachloroethane	16.11	131	172886	53.8335 ug/L	98
72)	Ethylbenzene	16.11	106	233514	54.5577 ug/L	98
73)	m-,p-Xylene	16.22	106	560207	106.9693 ug/L	96
74)	o-Xylene	16.88	106	278846	56.5302 ug/L	96
75)	Styrene	16.92	104	471370	56.1451 ug/L	94
76)	Bromoform	17.49	173	131127	54.8964 ug/L	99
77)	Isopropylbenzene	17.38	105	740395	55.8373 ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.65	83	199941	53.8747 ug/L	96
81)	1,2,3-Trichloropropane	17.87	110	61269	53.9200 ug/L	97
82)	trans-1,4-Dichloro-2-Buten	17.93	53	73183	53.4153 ug/L	91
83)	n-Propylbenzene	17.98	91	903295	55.9869 ug/L	98
84)	Bromobenzene	18.12	156	191943	54.7308 ug/L	98
85)	1,3,5-Trimethylbenzene	18.21	105	641908	55.8951 ug/L	95
86)	2-Chlorotoluene	18.30	91	578848	53.7519 ug/L	97
87)	4-Chlorotoluene	18.36	91	530900	53.9168 ug/L	97
88)	a-Methylstyrene	18.69	118	307671	55.1682 ug/L	99
89)	tert-Butylbenzene	18.76	134	134676	56.2719 ug/L	98
90)	1,2,4-Trimethylbenzene	18.82	105	666066	55.1494 ug/L	81
91)	sec-Butylbenzene	19.07	105	825213	56.1103 ug/L	99
92)	p-Isopropyltoluene	19.27	119	685445	56.4914 ug/L	100
93)	1,3-Dichlorobenzene	19.48	146	365219	53.8210 ug/L	96
94)	1,4-Dichlorobenzene	19.64	146	363309	52.5979 ug/L	98
95)	n-Butylbenzene	19.89	91	677494	55.5152 ug/L	98
96)	1,2-Dichlorobenzene	20.23	146	350298	53.6470 ug/L	96
97)	1,2-Dibromo-3-Chloropropan	21.41	75	43537	53.0196 ug/L	90
98)	1,2,4-Trichlorobenzene	22.76	180	262463	55.6006 ug/L	99
99)	Hexachlorobutadiene	22.95	225	150922	55.9053 ug/L	100
100)	Naphthalene	23.20	128	617866	56.9360 ug/L	100
101)	1,2,3-Trichlorobenzene	23.59	180	259953	55.9254 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137529.D Vial: 8
Acq On : 26 Feb 2016 17:03 Operator: TMB
Sample : WG558920-08 50ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

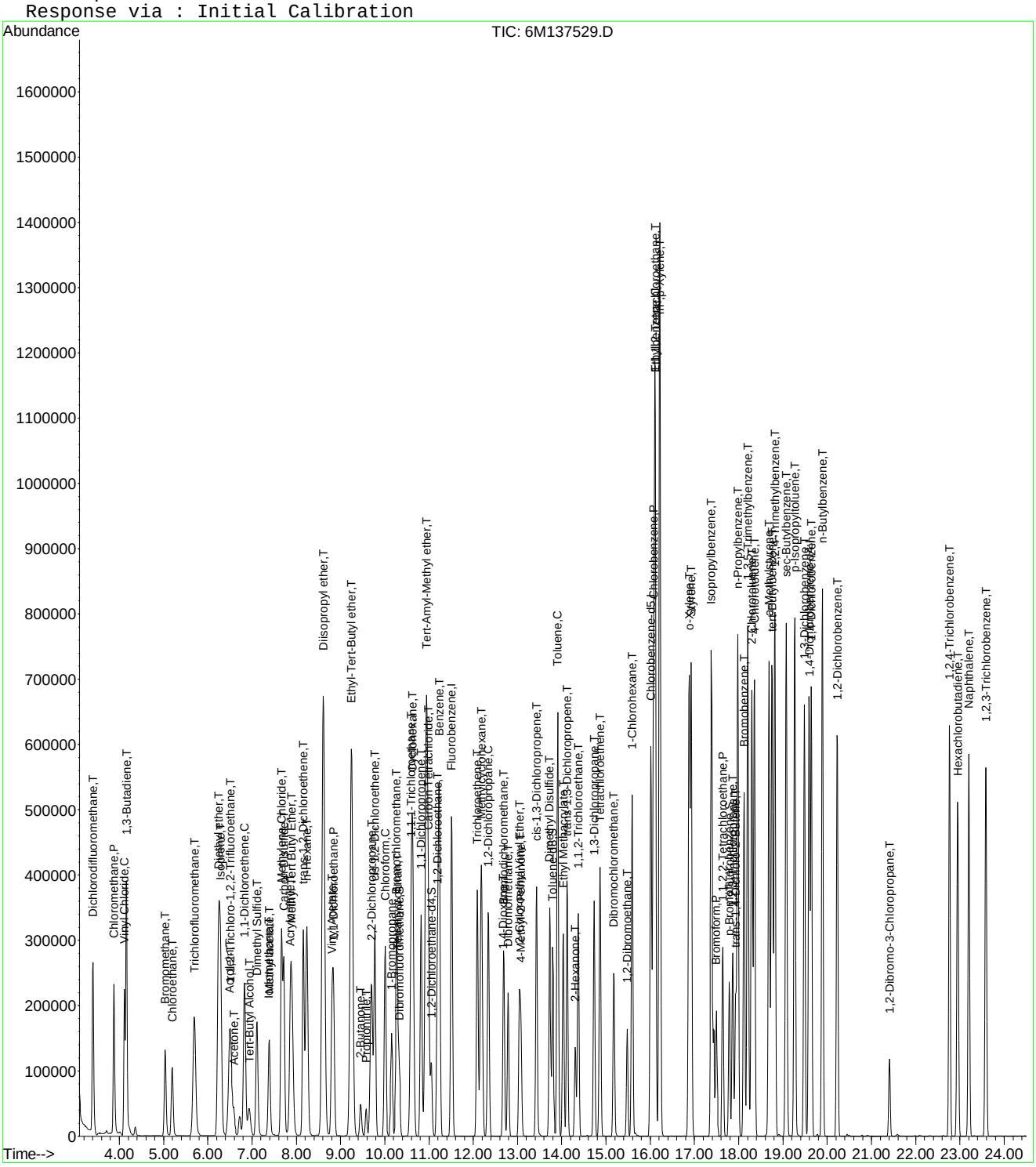

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137530.D Vial: 9
Acq On : 26 Feb 2016 17:35 Operator: TMB
Sample : WG558920-09 100ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:42 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	642087	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	466249	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	253947	50.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.32	111	162548	47.1921 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.38%		
43) 1,2-Dichloroethane-d4	11.06	65	210928	47.1653 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.34%		
58) Toluene-d8	13.80	98	518743	46.7957 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 93.60%		
80) p-Bromofluorobenzene	17.79	95	219336	47.0227 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 94.04%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	562397	95.3710 ug/L	99
3) Chloromethane	3.88	50	511342	83.2121 ug/L	98
4) Vinyl Chloride	4.12	62	453722	91.7337 ug/L	97
5) 1,3-Butadiene	4.16	54	371216	90.2064 ug/L	92
6) Bromomethane	5.03	94	236484	89.6925 ug/L	99
7) Chloroethane	5.19	64	259484	92.5233 ug/L	94
8) Trichlorofluoromethane	5.69	101	593589	89.3146 ug/L	99
9) Diethyl ether	6.23	59	599424	196.0563 ug/L	94
10) Isoprene	6.28	67	429478	99.1954 ug/L	86
11) Acrolein	6.48	56	58142	100.1359 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	295880	93.2711 ug/L	94
13) Acetone	6.59	43	134155	95.5525 ug/L	97
14) 1,1-Dichloroethene	6.83	61	525920	93.5964 ug/L	92
15) Tert-Butyl Alcohol	6.94	59	207755	396.2496 ug/L	97
16) Dimethyl Sulfide	7.11	62	269784	98.9613 ug/L	92
17) Iodomethane	7.38	142	252699	98.0787 ug/L	90
18) Methyl acetate	7.39	43	375036	96.0437 ug/L	97
19) Methylene Chloride	7.67	84	311212	91.9654 ug/L	80
20) Carbon Disulfide	7.72	76	1037082	96.4646 ug/L	99
21) Acrylonitrile	7.86	53	165829	103.3311 ug/L	99
22) Methyl Tert Butyl Ether	7.89	73	942489	97.5263 ug/L	93
23) trans-1,2-Dichloroethene	8.16	96	289637	93.3071 ug/L	87
24) n-Hexane	8.23	57	555752	98.5944 ug/L	98
25) Diisopropyl ether	8.61	45	2877959	196.9296 ug/L	96
26) Vinyl Acetate	8.80	43	731541	96.8365 ug/L	99
27) 1,1-Dichloroethane	8.83	63	621539	92.8721 ug/L	98
28) Ethyl-Tert-Butyl ether	9.24	59	2342177	199.9557 ug/L	96
29) 2-Butanone	9.45	43	207126	93.3235 ug/L	95
30) Propionitrile	9.57	54	121992	198.5994 ug/L	98
31) 2,2-Dichloropropane	9.69	77	491609	91.5150 ug/L	98
32) cis-1,2-Dichloroethene	9.77	96	321521	92.7784 ug/L	96
33) Chloroform	10.01	83	568519	90.9606 ug/L	95
34) 1-Bromopropane	10.16	122	47570	100.1217 ug/L	99
35) Bromochloromethane	10.26	130	193434	94.9975 ug/L	100
36) Tetrahydrofuran	10.29	42	287880	195.3143 ug/L	95
38) 1,1,1-Trichloroethane	10.60	97	511473	92.6461 ug/L	98
39) Cyclohexane	10.63	56	631373	100.8552 ug/L	90
40) 1,1-Dichloropropene	10.82	75	416243	93.6230 ug/L	97
41) Tert-Amyl-Methyl ether	10.94	73	1879478	202.2624 ug/L	92
42) Carbon Tetrachloride	10.99	117	485191	94.0581 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137530.D Vial: 9
Acq On : 26 Feb 2016 17:35 Operator: TMB
Sample : WG558920-09 100ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:42 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	498315	93.4118	ug/L	98
46)	Benzene	11.23	78	1182199	88.3862	ug/L	91
47)	Trichloroethene	12.09	130	294176	93.0987	ug/L	90
48)	Methylcyclohexane	12.18	83	515585	100.9337	ug/L	88
49)	1,2-Dichloropropane	12.34	63	342055	95.0452	ug/L	100
50)	1,4-Dioxane	12.67	88	17776	381.1583	ug/L	84
51)	Bromodichloromethane	12.68	83	452280	95.7660	ug/L	97
52)	Dibromomethane	12.79	93	202292	96.1028	ug/L	98
53)	2-Chloroethyl Vinyl Ether	13.04	63	206349	104.2447	ug/L	97
54)	4-Methyl-2-Pentanone	13.07	58	145646	97.1712	ug/L	93
55)	cis-1,3-Dichloropropene	13.43	75	509093	97.8384	ug/L	95
56)	Dimethyl Disulfide	13.72	79	282091	107.4894	ug/L	96
59)	Toluene	13.91	91	1184465	89.8074	ug/L	100
60)	Ethyl Methacrylate	14.04	69	445228	105.3560	ug/L	94
62)	trans-1,3-Dichloropropene	14.12	75	494673	97.5390	ug/L	99
63)	1,1,2-Trichloroethane	14.38	97	261258	94.7723	ug/L	99
64)	2-Hexanone	14.31	43	305856	97.2318	ug/L	100
65)	1,3-Dichloropropane	14.74	76	469121	93.8906	ug/L	93
66)	Tetrachloroethene	14.87	166	296672	91.1851	ug/L	98
67)	Dibromochloromethane	15.17	129	347661	96.9706	ug/L	98
68)	1,2-Dibromoethane	15.48	107	270599	95.9830	ug/L	97
69)	1-Chlorohexane	15.59	91	420885	102.7620	ug/L	86
70)	Chlorobenzene	16.07	112	765249	90.2797	ug/L	69
71)	1,1,1,2-Tetrachloroethane	16.11	131	320669	94.2184	ug/L	97
72)	Ethylbenzene	16.10	106	422350	93.1110	ug/L	97
73)	m-,p-Xylene	16.22	106	1018750	183.5539	ug/L	96
74)	o-Xylene	16.87	106	503867	96.3867	ug/L	94
75)	Styrene	16.92	104	871975	98.0029	ug/L	94
76)	Bromoform	17.49	173	243410	96.1558	ug/L	99
77)	Isopropylbenzene	17.38	105	1335991	95.0715	ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.65	83	376052	94.7950	ug/L	96
81)	1,2,3-Trichloropropane	17.87	110	114333	94.1314	ug/L	95
82)	trans-1,4-Dichloro-2-Buten	17.93	53	150048	102.4566	ug/L	89
83)	n-Propylbenzene	17.98	91	1628674	94.4377	ug/L	98
84)	Bromobenzene	18.13	156	352357	93.9933	ug/L	98
85)	1,3,5-Trimethylbenzene	18.21	105	1165530	94.9464	ug/L	95
86)	2-Chlorotoluene	18.30	91	1069398	92.9015	ug/L	97
87)	4-Chlorotoluene	18.35	91	957337	90.9557	ug/L	97
88)	a-Methylstyrene	18.69	118	626810	105.1459	ug/L	98
89)	tert-Butylbenzene	18.75	134	243763	95.2846	ug/L	87
90)	1,2,4-Trimethylbenzene	18.82	105	1211949	93.8776	ug/L	81
91)	sec-Butylbenzene	19.08	105	1482811	94.3227	ug/L	99
92)	p-Isopropyltoluene	19.27	119	1243718	95.8928	ug/L	100
93)	1,3-Dichlorobenzene	19.48	146	670076	92.3797	ug/L	97
94)	1,4-Dichlorobenzene	19.64	146	665185	90.0925	ug/L	97
95)	n-Butylbenzene	19.89	91	1241772	95.1924	ug/L	98
96)	1,2-Dichlorobenzene	20.22	146	649160	93.0065	ug/L	96
97)	1,2-Dibromo-3-Chloropropan	21.41	75	84975	96.8107	ug/L	89
98)	1,2,4-Trichlorobenzene	22.76	180	475402	94.2164	ug/L	99
99)	Hexachlorobutadiene	22.95	225	270006	93.5681	ug/L	100
100)	Naphthalene	23.20	128	1163220	100.2786	ug/L	100
101)	1,2,3-Trichlorobenzene	23.58	180	465522	93.6933	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137530.D Vial: 9
Acq On : 26 Feb 2016 17:35 Operator: TMB
Sample : WG558920-09 100ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

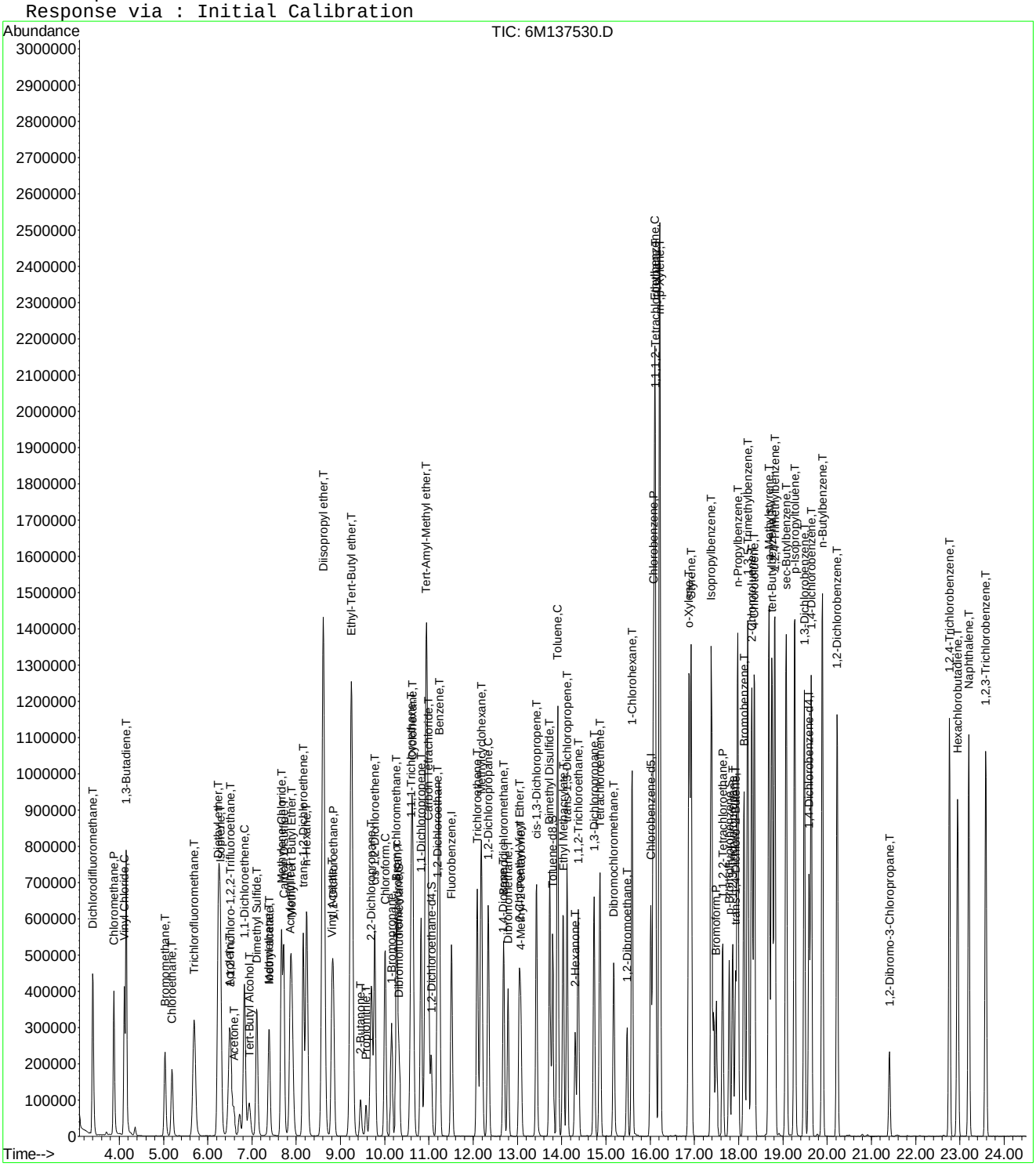

6M137530.D 826_SL.M Mon Feb 29 16:01:43 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137531.D Vial: 10
Acq On : 26 Feb 2016 18:07 Operator: TMB
Sample : WG558920-10 200ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:43 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	661999	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	479329	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	273657	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	351336	98.9344 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 197.86%#		
43) 1,2-Dichloroethane-d4	11.05	65	450300	97.6622 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 195.32%#		
58) Toluene-d8	13.80	98	1096959	96.2561 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 192.52%#		
80) p-Bromofluorobenzene	17.79	95	487968	97.0790 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 194.16%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	1228760	202.1049 ug/L	98
3) Chloromethane	3.88	50	1125279	177.6118 ug/L	98
4) Vinyl Chloride	4.12	62	989076	193.9570 ug/L	97
5) 1,3-Butadiene	4.16	54	745589	175.7303 ug/L	94
6) Bromomethane	5.03	94	548799	201.8852 ug/L	100
7) Chloroethane	5.19	64	579871	200.5435 ug/L	96
8) Trichlorofluoromethane	5.69	101	1297014	189.2858 ug/L	100
9) Diethyl ether	6.23	59	1563	0.4958 ug/L #	49
10) Isoprene	6.27	67	894422	200.3686 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	649915	198.7121 ug/L	93
13) Acetone	6.59	43	290441	205.4763 ug/L	99
14) 1,1-Dichloroethene	6.83	61	1161250	200.4481 ug/L	92
15) Tert-Butyl Alcohol	6.83	59	39858	73.7343 ug/L #	57
16) Dimethyl Sulfide	7.11	62	576142	204.9817 ug/L	92
17) Iodomethane	7.38	142	559892	205.0669 ug/L	91
18) Methyl acetate	7.39	43	775842	192.7107 ug/L	97
19) Methylene Chloride	7.67	84	681801	195.4170 ug/L	78
20) Carbon Disulfide	7.72	76	2184454	197.0763 ug/L	98
21) Acrylonitrile	7.90	53	25391	15.3457 ug/L #	34
22) Methyl Tert Butyl Ether	7.90	73	2079733	208.7322 ug/L	92
23) trans-1,2-Dichloroethene	8.16	96	635434	198.5489 ug/L	86
24) n-Hexane	8.23	57	1159756	199.5603 ug/L	99
25) Diisopropyl ether	8.63	45	8975	0.5957 ug/L #	37
26) Vinyl Acetate	8.80	43	1656751	212.7131 ug/L	98
27) 1,1-Dichloroethane	8.83	63	1360017	197.1051 ug/L	97
28) Ethyl-Tert-Butyl ether	9.23	59	4690	0.3884 ug/L #	76
29) 2-Butanone	9.45	43	450489	196.8688 ug/L	97
30) Propionitrile	9.59	54	193	0.3047 ug/L #	55
31) 2,2-Dichloropropane	9.69	77	1084788	195.8637 ug/L	97
32) cis-1,2-Dichloroethene	9.77	96	711282	199.0746 ug/L	99
33) Chloroform	10.00	83	1259701	195.4845 ug/L	96
34) 1-Bromopropane	10.16	122	101190	206.5710 ug/L	98
35) Bromochloromethane	10.26	130	430294	204.9658 ug/L	100
36) Tetrahydrofuran	10.31	42	4560	0.8620 ug/L #	82
38) 1,1,1-Trichloroethane	10.60	97	1139307	200.1621 ug/L	98
39) Cyclohexane	10.63	56	1322081	204.8363 ug/L	90
40) 1,1-Dichloropropene	10.83	75	913448	199.2765 ug/L	99
41) Tert-Amyl-Methyl ether	10.93	73	3689	0.3851 ug/L #	57
42) Carbon Tetrachloride	10.99	117	1067649	200.7466 ug/L	97
45) 1,2-Dichloroethane	11.19	62	1098127	199.6582 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M137531.D 826_SL.M Mon Feb 29 16:01:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137531.D Vial: 10
Acq On : 26 Feb 2016 18:07 Operator: TMB
Sample : WG558920-10 200ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:43 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	11.23	78	2576436	186.8313 ug/L		90
47)	Trichloroethene	12.09	130	648704	199.1220 ug/L		90
48)	Methylcyclohexane	12.18	83	1075003	204.1184 ug/L		87
49)	1,2-Dichloropropane	12.34	63	757110	204.0468 ug/L		100
50)	1,4-Dioxane	12.68	88	863	47.3107 ug/L	#	17
51)	Bromodichloromethane	12.68	83	1017483	208.9621 ug/L		97
52)	Dibromomethane	12.79	93	451601	208.0889 ug/L		97
53)	2-Chloroethyl Vinyl Ether	13.03	63	470311	230.4481 ug/L		98
54)	4-Methyl-2-Pentanone	13.07	58	332135	214.9265 ug/L		95
55)	cis-1,3-Dichloropropene	13.43	75	1150962	214.5407 ug/L		96
56)	Dimethyl Disulfide	13.73	79	648612	239.7166 ug/L		96
59)	Toluene	13.91	91	2588299	190.8923 ug/L		99
60)	Ethyl Methacrylate	14.03	69	978791	225.2947 ug/L		94
62)	trans-1,3-Dichloropropene	14.12	75	1110336	212.9604 ug/L		98
63)	1,1,2-Trichloroethane	14.38	97	578586	204.1568 ug/L		99
64)	2-Hexanone	14.31	43	689071	213.0784 ug/L		99
65)	1,3-Dichloropropane	14.74	76	1034423	201.3815 ug/L		93
66)	Tetrachloroethene	14.87	166	644718	192.7530 ug/L		97
67)	Dibromochloromethane	15.18	129	780769	211.8317 ug/L		100
68)	1,2-Dibromoethane	15.48	107	610277	210.5616 ug/L		98
69)	1-Chlorohexane	15.59	91	900931	213.9661 ug/L		86
70)	Chlorobenzene	16.07	112	1706160	195.7904 ug/L	#	68
71)	1,1,1,2-Tetrachloroethane	16.11	131	721225	206.1264 ug/L		97
72)	Ethylbenzene	16.11	106	946980	203.0736 ug/L		98
73)	m-,p-Xylene	16.22	106	2242794	393.0696 ug/L		97
74)	o-Xylene	16.87	106	1130903	210.4315 ug/L		95
75)	Styrene	16.92	104	1988734	217.4182 ug/L		93
76)	Bromoform	17.49	173	561872	215.9030 ug/L		99
77)	Isopropylbenzene	17.38	105	2989967	206.9652 ug/L		98
79)	1,1,2,2-Tetrachloroethane	17.64	83	859540	201.0666 ug/L		95
81)	1,2,3-Trichloropropane	17.87	110	265884	203.1382 ug/L		89
82)	trans-1,4-Dichloro-2-Buten	17.93	53	340440	215.7181 ug/L		90
83)	n-Propylbenzene	17.98	91	3639812	195.8513 ug/L		98
84)	Bromobenzene	18.13	156	802539	198.6628 ug/L		99
85)	1,3,5-Trimethylbenzene	18.21	105	2665531	201.5000 ug/L		96
86)	2-Chlorotoluene	18.30	91	2450953	197.5855 ug/L		97
87)	4-Chlorotoluene	18.35	91	2149568	189.5191 ug/L		97
88)	a-Methylstyrene	18.69	118	1416560	220.5099 ug/L		98
89)	tert-Butylbenzene	18.75	134	559469	202.9400 ug/L		85
90)	1,2,4-Trimethylbenzene	18.82	105	2775173	199.4822 ug/L		81
91)	sec-Butylbenzene	19.08	105	3369131	198.8771 ug/L		100
92)	p-Isopropyltoluene	19.26	119	2833911	202.7621 ug/L		99
93)	1,3-Dichlorobenzene	19.49	146	1523154	194.8646 ug/L		95
94)	1,4-Dichlorobenzene	19.64	146	1521474	191.2260 ug/L		97
95)	n-Butylbenzene	19.89	91	2819417	200.5655 ug/L		98
96)	1,2-Dichlorobenzene	20.22	146	1485290	197.4738 ug/L		95
97)	1,2-Dibromo-3-Chloropropan	21.41	75	195547	206.7378 ug/L		89
98)	1,2,4-Trichlorobenzene	22.76	180	1054519	193.9351 ug/L		98
99)	Hexachlorobutadiene	22.95	225	597195	192.0469 ug/L		99
100)	Naphthalene	23.20	128	2579088	206.3237 ug/L		99
101)	1,2,3-Trichlorobenzene	23.58	180	1038439	193.9482 ug/L		99

(#) = qualifier out of range (m) = manual integration
6M137531.D 826_SL.M Mon Feb 29 16:01:43 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137531.D Vial: 10
Acq On : 26 Feb 2016 18:07 Operator: TMB
Sample : WG558920-10 200ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

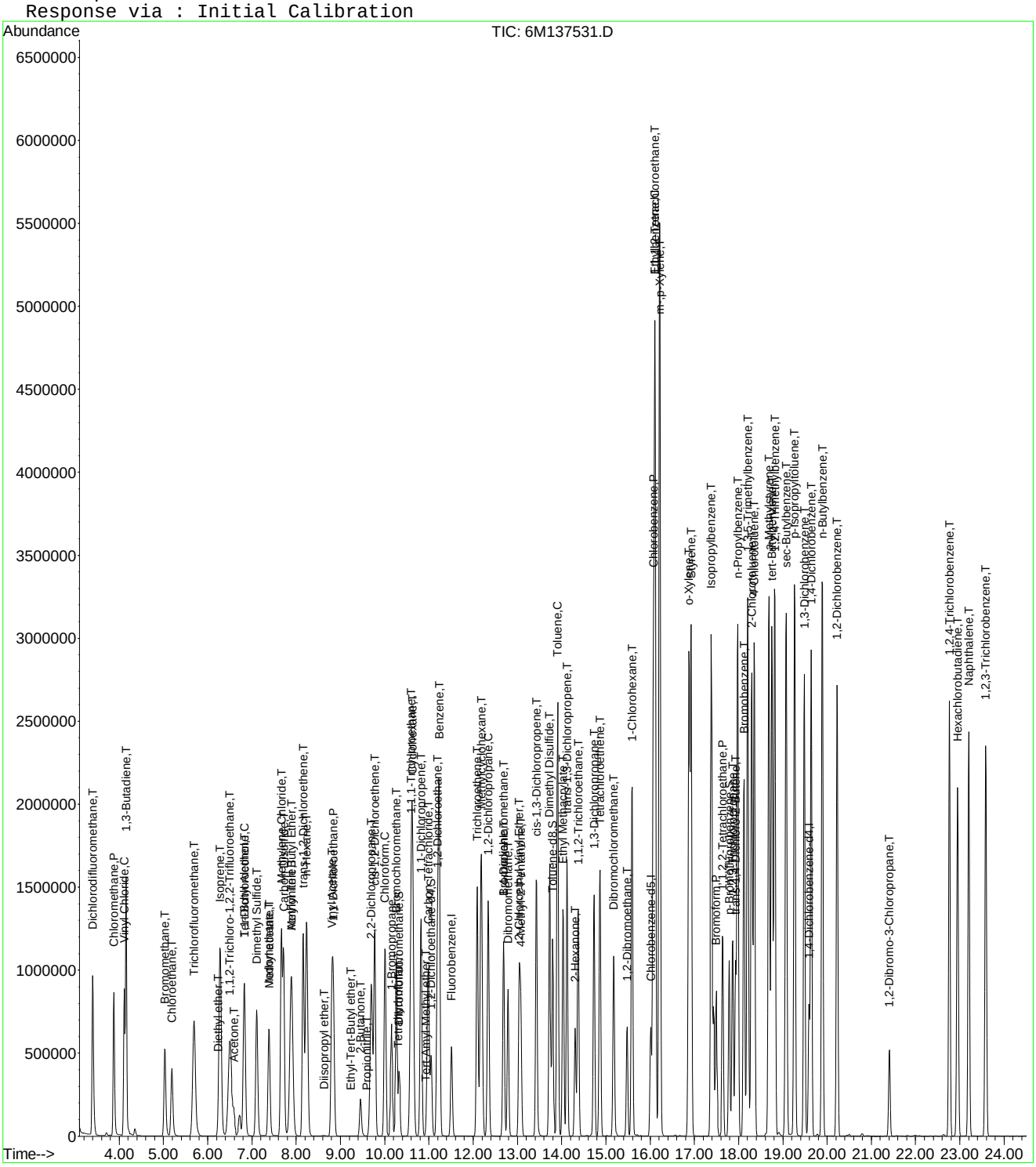

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137532.D Vial: 11
Acq On : 26 Feb 2016 18:39 Operator: TMB
Sample : WG558920-11 300ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:43 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	707233	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	525178	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	308135	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	555974	146.5460 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 293.10%#		
43) 1,2-Dichloroethane-d4	11.05	65	713394	144.8268 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 289.66%#		
58) Toluene-d8	13.80	98	1741152	139.4446 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 278.88%#		
80) p-Bromofluorobenzene	17.79	95	787625	139.1615 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 278.32%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	1997367	307.5122 ug/L	98
3) Chloromethane	3.88	50	1848014	273.0309 ug/L	98
4) Vinyl Chloride	4.11	62	1515327	278.1486 ug/L	97
5) 1,3-Butadiene	4.15	54	1176840	259.6328 ug/L	94
6) Bromomethane	5.03	94	924558	318.3612 ug/L	100
7) Chloroethane	5.18	64	952580	308.3709 ug/L	96
8) Trichlorofluoromethane	5.68	101	2124957	290.2808 ug/L	99
9) Diethyl ether	6.23	59	1011802	300.4509 ug/L	94
10) Isoprene	6.27	67	1489357	312.3064 ug/L	86
11) Acrolein	6.49	56	100305	156.8389 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	1067610	305.5451 ug/L	94
13) Acetone	6.59	43	448789	299.1551 ug/L	99
14) 1,1-Dichloroethene	6.82	61	1895304	306.2315 ug/L	92
15) Tert-Butyl Alcohol	6.95	59	370925	642.2954 ug/L	99
16) Dimethyl Sulfide	7.11	62	950681	316.6032 ug/L	94
17) Iodomethane	7.38	142	877751	298.6036 ug/L	91
18) Methyl acetate	7.40	43	1274555	296.3371 ug/L	98
19) Methylene Chloride	7.66	84	1102725	295.8467 ug/L	79
20) Carbon Disulfide	7.71	76	3583096	302.5832 ug/L	98
21) Acrylonitrile	7.86	53	296066	167.4906 ug/L	98
22) Methyl Tert Butyl Ether	7.90	73	3392519	318.7124 ug/L	92
23) trans-1,2-Dichloroethene	8.16	96	1037130	303.3368 ug/L	86
24) n-Hexane	8.23	57	1917686	308.8729 ug/L	99
25) Diisopropyl ether	8.61	45	4780310	296.9708 ug/L	96
26) Vinyl Acetate	8.80	43	2633859	316.5369 ug/L	99
27) 1,1-Dichloroethane	8.83	63	2210234	299.8379 ug/L	97
28) Ethyl-Tert-Butyl ether	9.24	59	3979837	308.4685 ug/L	96
29) 2-Butanone	9.45	43	727982	297.7887 ug/L	98
30) Propionitrile	9.58	54	209887	310.2156 ug/L	99
31) 2,2-Dichloropropane	9.69	77	1783568	301.4350 ug/L	96
32) cis-1,2-Dichloroethene	9.77	96	1159875	303.8646 ug/L	98
33) Chloroform	10.00	83	2040554	296.4065 ug/L	96
34) 1-Bromopropane	10.15	122	167090	319.2839 ug/L	98
35) Bromochloromethane	10.26	130	694571	309.6903 ug/L	99
36) Tetrahydrofuran	10.30	42	490636	303.4020 ug/L	96
38) 1,1,1-Trichloroethane	10.60	97	1858746	305.6722 ug/L	98
39) Cyclohexane	10.63	56	2201094	319.2142 ug/L	89
40) 1,1-Dichloropropene	10.83	75	1504422	307.2111 ug/L	99
41) Tert-Amyl-Methyl ether	10.94	73	3231746	315.7523 ug/L	93
42) Carbon Tetrachloride	10.99	117	1763858	310.4404 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M137532.D 826_SL.M Mon Feb 29 16:01:44 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137532.D Vial: 11
Acq On : 26 Feb 2016 18:39 Operator: TMB
Sample : WG558920-11 300ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:43 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45) 1,2-Dichloroethane	11.19	62	1778788	302.7287 ug/L	98
46) Benzene	11.23	78	4155462	282.0619 ug/L	90
47) Trichloroethene	12.09	130	1058154	304.0300 ug/L	90
48) Methylcyclohexane	12.18	83	1798917	319.7263 ug/L	88
49) 1,2-Dichloropropane	12.34	63	1232481	310.9180 ug/L	100
50) 1,4-Dioxane	12.67	88	32606	614.2458 ug/L	84
51) Bromodichloromethane	12.68	83	1653218	317.8084 ug/L	96
52) Dibromomethane	12.79	93	733410	316.3265 ug/L	98
53) 2-Chloroethyl Vinyl Ether	13.03	63	766489	351.5513 ug/L	97
54) 4-Methyl-2-Pentanone	13.07	58	543988	329.5031 ug/L	95
55) cis-1,3-Dichloropropene	13.42	75	1877090	327.5130 ug/L	95
56) Dimethyl Disulfide	13.73	79	1088350	376.5100 ug/L	96
59) Toluene	13.91	91	4193210	282.2590 ug/L	99
60) Ethyl Methacrylate	14.03	69	1632375	342.9321 ug/L	95
62) trans-1,3-Dichloropropene	14.12	75	1832609	320.8053 ug/L	98
63) 1,1,2-Trichloroethane	14.38	97	942438	303.5120 ug/L	98
64) 2-Hexanone	14.31	43	1154652	325.8770 ug/L	98
65) 1,3-Dichloropropane	14.74	76	1702509	302.5088 ug/L	94
66) Tetrachloroethene	14.87	166	1062175	289.8375 ug/L	97
67) Dibromochloromethane	15.18	129	1292929	320.1624 ug/L	100
68) 1,2-Dibromoethane	15.48	107	1008106	317.4575 ug/L	98
69) 1-Chlorohexane	15.59	91	1494127	323.8681 ug/L	86
70) Chlorobenzene	16.07	112	2773062	290.4413 ug/L #	66
71) 1,1,1,2-Tetrachloroethane	16.11	131	1196001	311.9762 ug/L	97
72) Ethylbenzene	16.11	106	1556732	304.6869 ug/L	100
73) m-,p-Xylene	16.22	106	3653753	584.4488 ug/L	99
74) o-Xylene	16.87	106	1861503	316.1378 ug/L	96
75) Styrene	16.92	104	3280614	327.3419 ug/L	91
76) Bromoform	17.49	173	968059	339.5083 ug/L	100
77) Isopropylbenzene	17.38	105	4859396	307.0014 ug/L	99
79) 1,1,2,2-Tetrachloroethane	17.64	83	1473362	306.0898 ug/L	95
81) 1,2,3-Trichloropropane	17.87	110	450710	305.8173 ug/L	97
82) trans-1,4-Dichloro-2-Buten	17.93	53	587175	330.4298 ug/L	92
83) n-Propylbenzene	17.98	91	5875551	280.7771 ug/L	99
84) Bromobenzene	18.13	156	1329308	292.2413 ug/L	98
85) 1,3,5-Trimethylbenzene	18.21	105	4394146	295.0064 ug/L	96
86) 2-Chlorotoluene	18.30	91	4027318	288.3378 ug/L	97
87) 4-Chlorotoluene	18.35	91	3574535	279.8896 ug/L	97
88) a-Methylstyrene	18.69	118	2387215	330.0275 ug/L	99
89) tert-Butylbenzene	18.75	134	927820	298.8965 ug/L	84
90) 1,2,4-Trimethylbenzene	18.82	105	4532965	289.3756 ug/L	82
91) sec-Butylbenzene	19.08	105	5502198	288.4488 ug/L	100
92) p-Isopropyltoluene	19.27	119	4664534	296.3974 ug/L	98
93) 1,3-Dichlorobenzene	19.49	146	2567994	291.7754 ug/L	95
94) 1,4-Dichlorobenzene	19.64	146	2568075	286.6525 ug/L	96
95) n-Butylbenzene	19.89	91	4738000	299.3349 ug/L	98
96) 1,2-Dichlorobenzene	20.22	146	2506554	295.9653 ug/L	94
97) 1,2-Dibromo-3-Chloropropan	21.41	75	337125	316.5375 ug/L	88
98) 1,2,4-Trichlorobenzene	22.76	180	1820641	297.3664 ug/L	98
99) Hexachlorobutadiene	22.95	225	1055064	301.3252 ug/L	99
100) Naphthalene	23.20	128	4412465	313.4943 ug/L	98
101) 1,2,3-Trichlorobenzene	23.58	180	1777074	294.7650 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137532.D Vial: 11
Acq On : 26 Feb 2016 18:39 Operator: TMB
Sample : WG558920-11 300ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

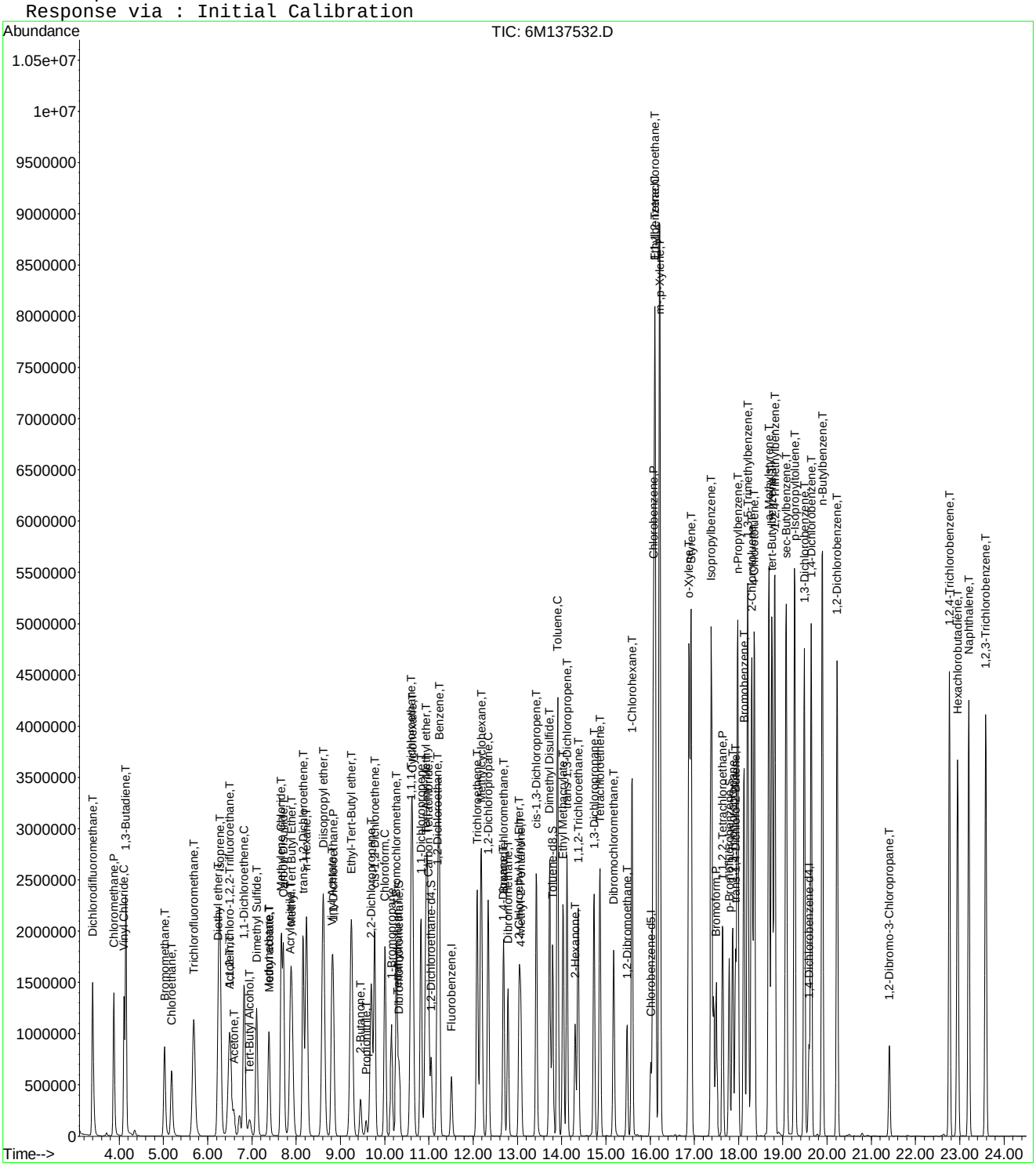

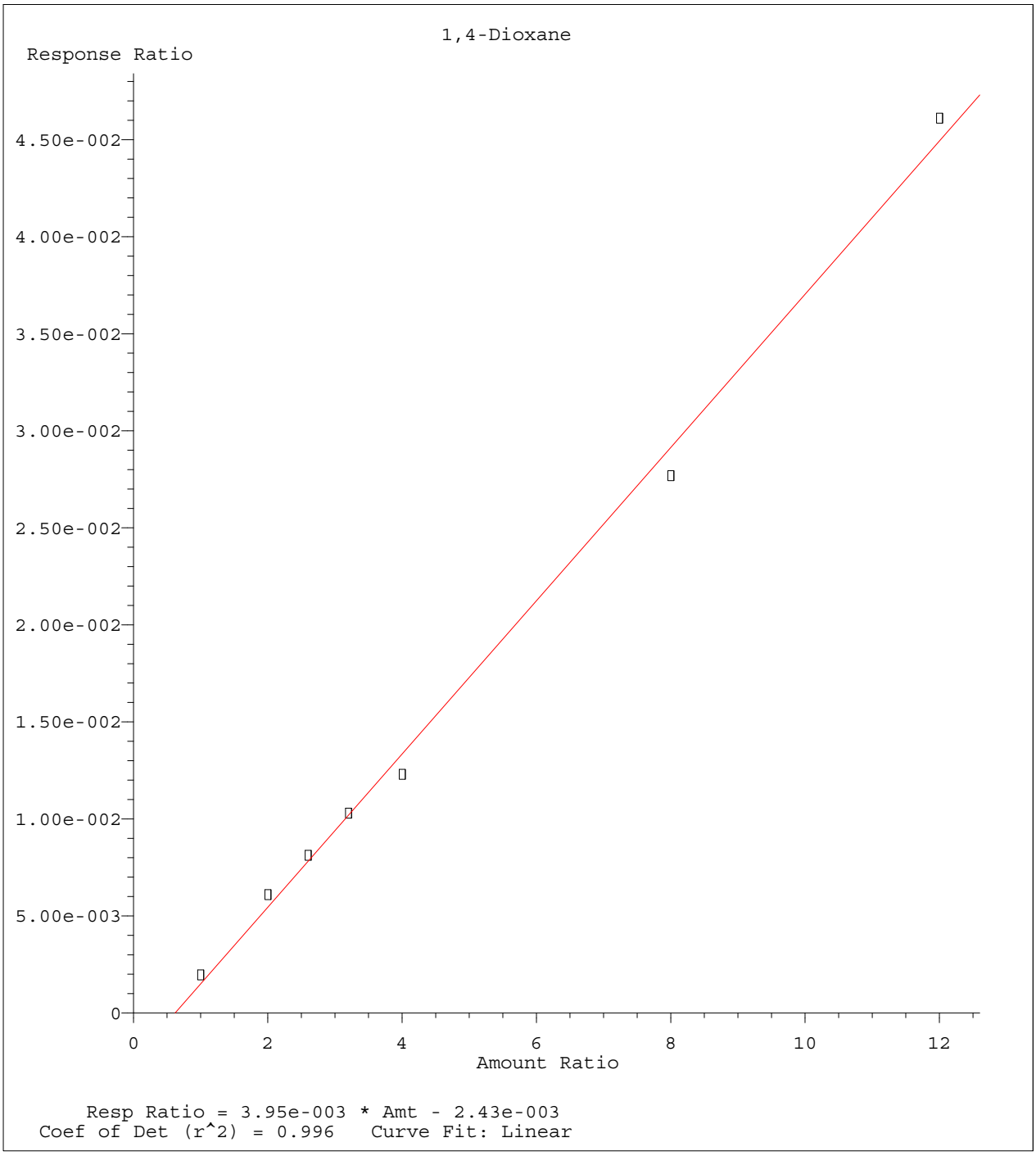

Method Name: C:\MSDCHEM\1\METHODS\826_SL.M
Calibration Table Last Updated: Mon Feb 29 08:51:12 2016

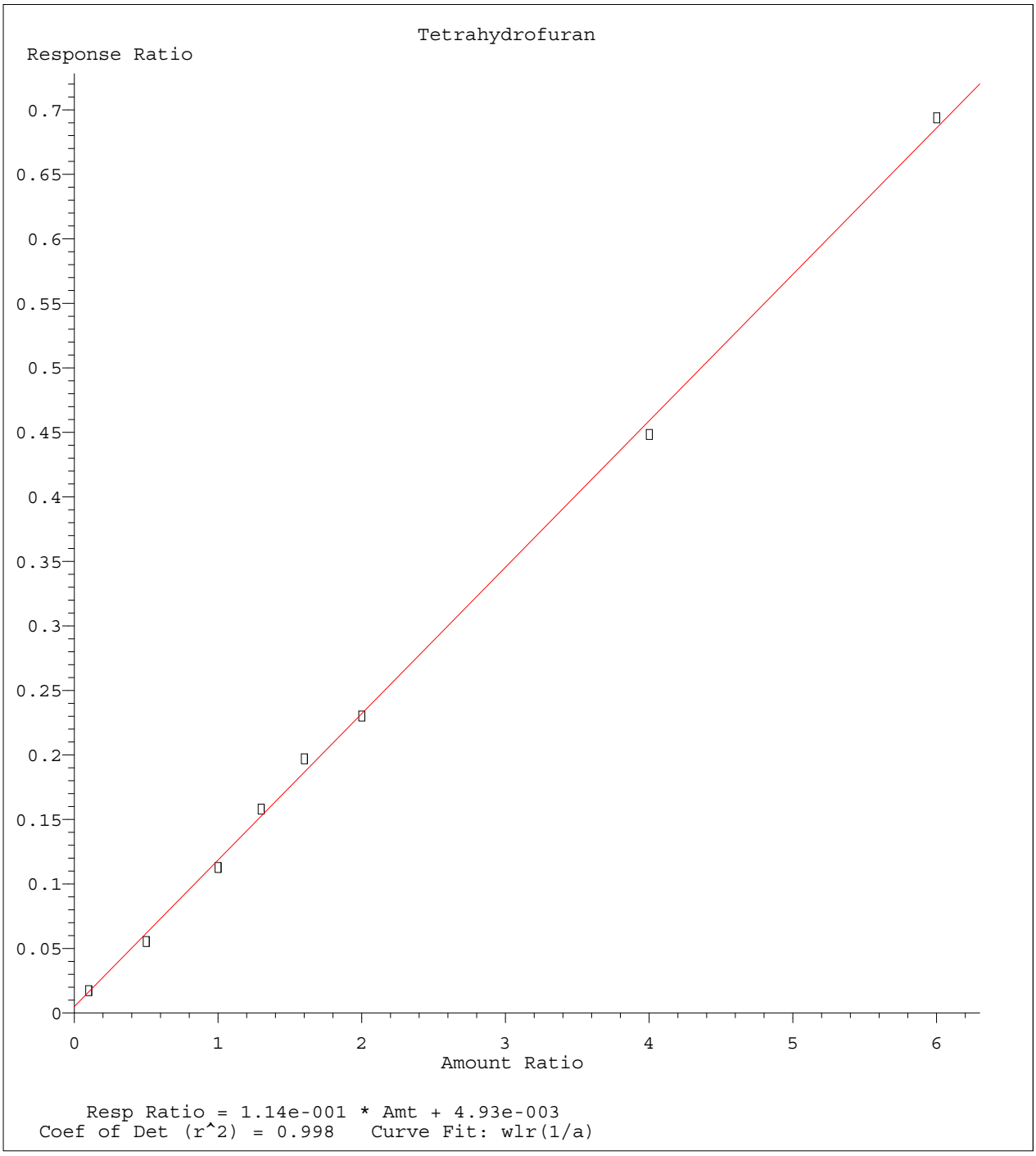

Method Name: C:\MSDCHEM\1\METHODS\826_SL.M
Calibration Table Last Updated: Mon Feb 29 08:51:12 2016

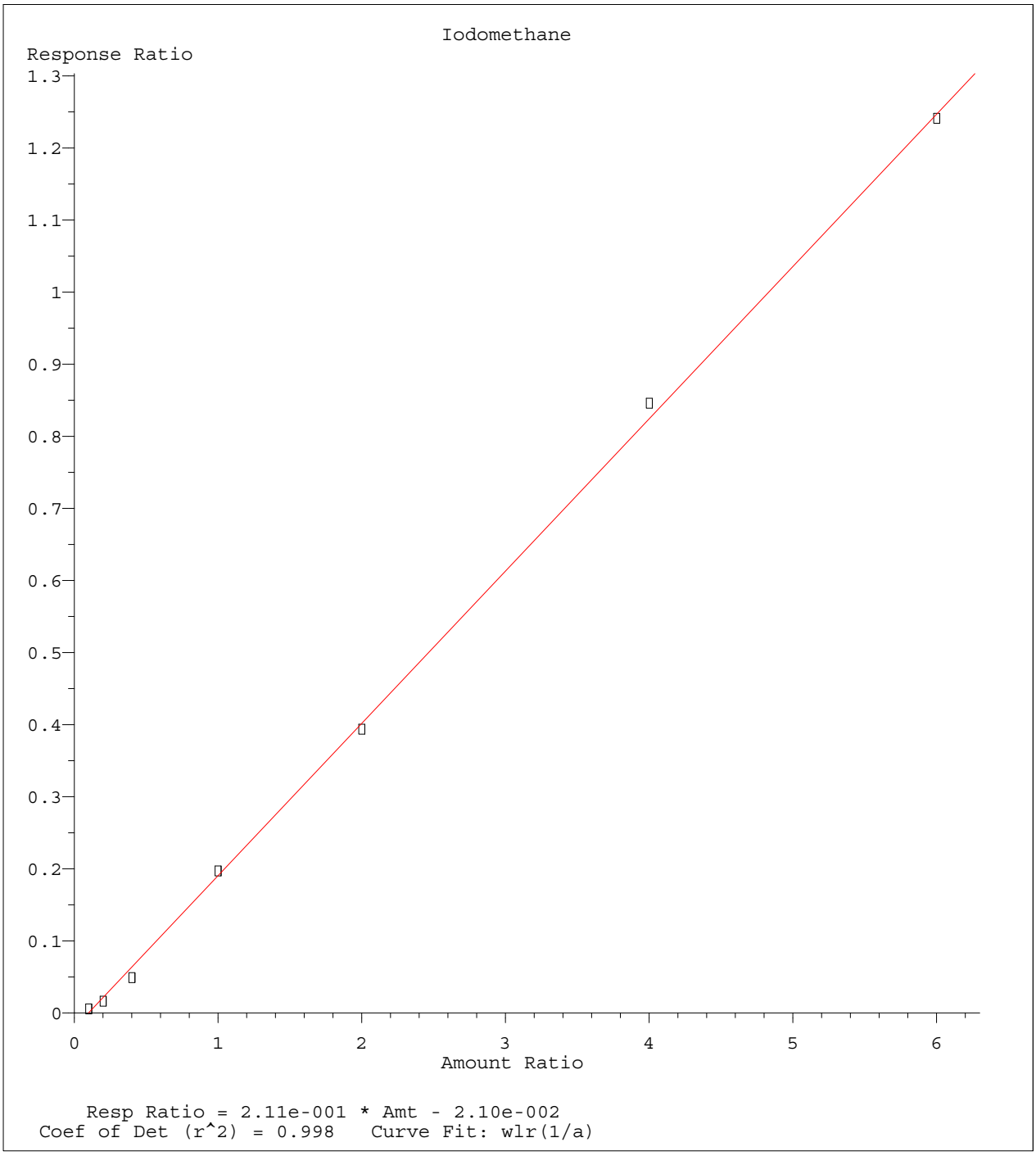

Method Name: C:\MSDCHEM\1\METHODS\826_SL.M
Calibration Table Last Updated: Mon Feb 29 08:51:12 2016

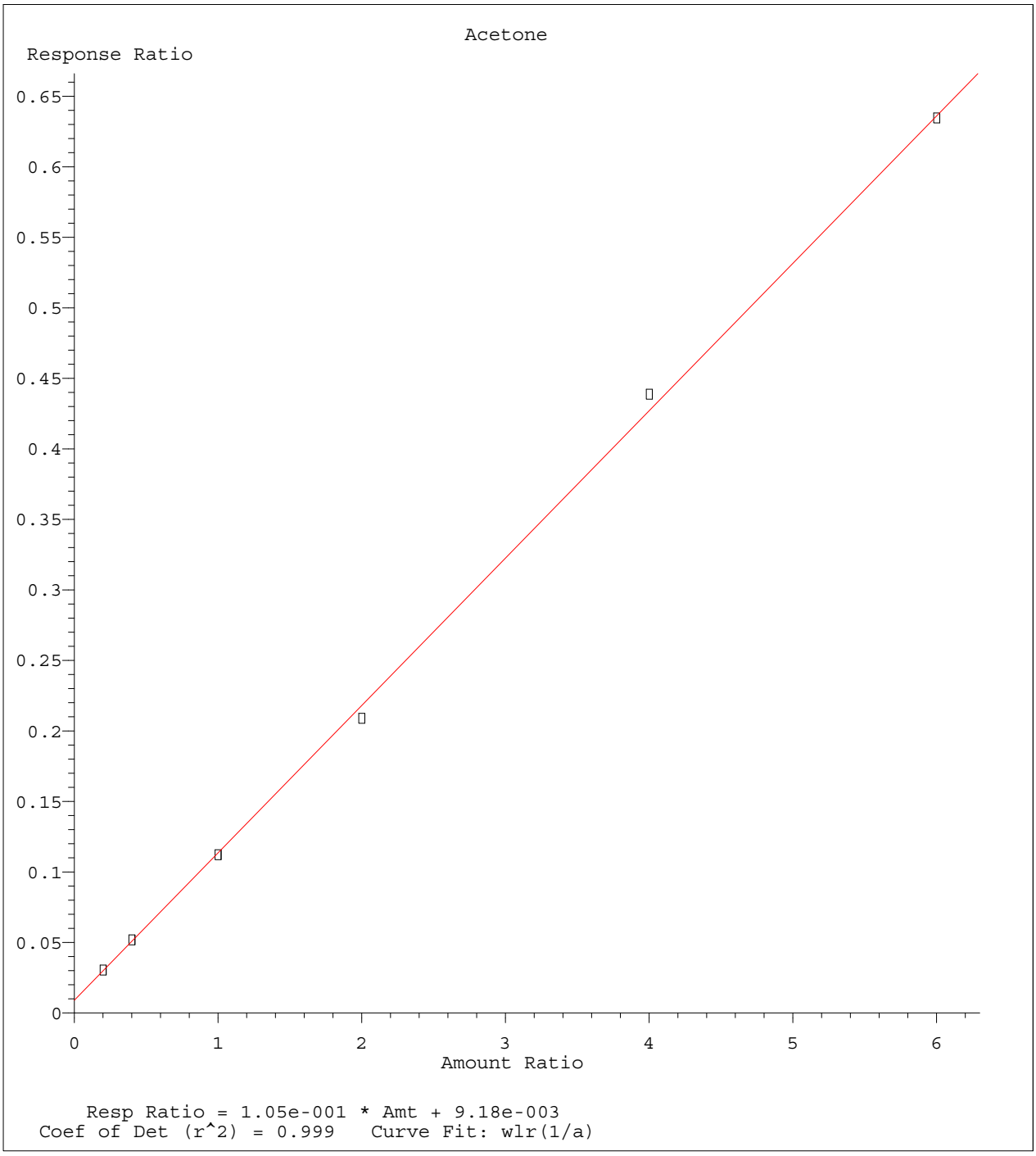

Method Name: C:\MSDCHEM\1\METHODS\826_SL.M
Calibration Table Last Updated: Mon Feb 29 08:51:12 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:44 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	697242	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	504277	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	281494	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.32	111	83790	22.4022 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 44.80%#		
43) 1,2-Dichloroethane-d4	11.05	65	107686	22.1747 ug/L	-0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 44.34%#		
58) Toluene-d8	13.80	98	259069	21.6082 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 43.22%#		
80) p-Bromofluorobenzene	17.79	95	108251	20.9365 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 41.88%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	355154	55.4626 ug/L	99
3) Chloromethane	3.88	50	339693	50.9064 ug/L	98
4) Vinyl Chloride	4.11	62	232790	43.3425 ug/L	98
5) 1,3-Butadiene	4.16	54	191696	42.8977 ug/L	93
6) Bromomethane	5.02	94	167650	58.5556 ug/L	99
7) Chloroethane	5.19	64	172370	56.5995 ug/L	98
8) Trichlorofluoromethane	5.68	101	345771	47.9110 ug/L	99
9) Diethyl ether	6.24	59	244439	73.6254 ug/L	93
10) Isoprene	6.27	67	268171	57.0391 ug/L	88
11) Acrolein	6.48	56	38698	61.3760 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	185858	53.9539 ug/L	94
13) Acetone	6.60	43	77335	48.6644 ug/L	96
14) 1,1-Dichloroethene	6.83	61	315114	51.6437 ug/L	92
15) Tert-Butyl Alcohol	6.95	59	120780	212.1401 ug/L	97
16) Dimethyl Sulfide	7.11	62	234426	79.1891 ug/L	96
17) Iodomethane	7.38	142	96886	37.8412 ug/L	92
18) Methyl acetate	7.39	43	223958	52.8169 ug/L	96
19) Methylene Chloride	7.67	84	196184	53.3878 ug/L	82
20) Carbon Disulfide	7.71	76	518243	44.3914 ug/L	99
21) Acrylonitrile	7.86	53	88595	50.8382 ug/L	99
22) Methyl Tert Butyl Ether	7.89	73	557115	53.0885 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	181115	53.7310 ug/L	84
24) n-Hexane	8.23	57	293885	48.0130 ug/L	99
25) Diisopropyl ether	8.61	45	1440779	90.7892 ug/L	96
26) Vinyl Acetate	8.80	43	309031	37.6715 ug/L	98
27) 1,1-Dichloroethane	8.83	63	365886	50.3469 ug/L	98
28) Ethyl-Tert-Butyl ether	9.25	59	1142199	89.7979 ug/L	96
29) 2-Butanone	9.46	43	118678	49.2421 ug/L	97
30) Propionitrile	9.58	54	62654	93.9303 ug/L	99
31) 2,2-Dichloropropane	9.69	77	309886	53.1233 ug/L	95
32) cis-1,2-Dichloroethene	9.77	96	203750	54.1434 ug/L	96
33) Chloroform	10.01	83	344145	50.7061 ug/L	96
34) 1-Bromopropane	10.15	122	45722	88.6198 ug/L	99
35) Bromochloromethane	10.26	130	115189	52.0956 ug/L	100
36) Tetrahydrofuran	10.29	42	140281	86.4486 ug/L	95
38) 1,1,1-Trichloroethane	10.60	97	311688	51.9918 ug/L	98
39) Cyclohexane	10.63	56	356880	52.4982 ug/L	88
40) 1,1-Dichloropropene	10.82	75	254739	52.7645 ug/L	97
41) Tert-Amyl-Methyl ether	10.95	73	1007162	99.8131 ug/L	93
42) Carbon Tetrachloride	10.99	117	286624	51.1689 ug/L	96

(#) = qualifier out of range (m) = manual integration
6M137535.D 826_SL.M Mon Feb 29 16:01:45 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:44 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	296979	51.2665 ug/L	98
46)	Benzene	11.23	78	732452	50.4293 ug/L	92
47)	Trichloroethene	12.09	130	187775	54.7248 ug/L	93
48)	Methylcyclohexane	12.18	83	293690	52.9463 ug/L	89
49)	1,2-Dichloropropane	12.33	63	215054	55.0291 ug/L	100
50)	1,4-Dioxane	12.67	88	9692	206.7214 ug/L	86
51)	Bromodichloromethane	12.68	83	264833	51.6400 ug/L	97
52)	Dibromomethane	12.78	93	115173	50.3870 ug/L	97
53)	2-Chloroethyl Vinyl Ether	13.04	63	118032	54.9113 ug/L	99
54)	4-Methyl-2-Pentanone	13.07	58	83435	51.2622 ug/L	92
55)	cis-1,3-Dichloropropene	13.43	75	332086	58.7723 ug/L	97
56)	Dimethyl Disulfide	13.72	79	160314	56.2546 ug/L	97
59)	Toluene	13.91	91	733544	51.4239 ug/L	99
60)	Ethyl Methacrylate	14.04	69	253929	55.5569 ug/L	99
62)	trans-1,3-Dichloropropene	14.12	75	289951	52.8608 ug/L	100
63)	1,1,2-Trichloroethane	14.38	97	158637	53.2065 ug/L	98
64)	2-Hexanone	14.31	43	174540	51.3021 ug/L	98
65)	1,3-Dichloropropane	14.73	76	296777	54.9182 ug/L	95
66)	Tetrachloroethene	14.87	166	179884	51.1197 ug/L	98
67)	Dibromochloromethane	15.17	129	201014	51.8393 ug/L	99
68)	1,2-Dibromoethane	15.48	107	163614	53.6583 ug/L	99
69)	1-Chlorohexane	15.59	91	237869	53.6977 ug/L	87
70)	Chlorobenzene	16.07	112	484642	52.8637 ug/L	70
71)	1,1,1,2-Tetrachloroethane	16.11	131	190856	51.8481 ug/L	98
72)	Ethylbenzene	16.10	106	257103	52.4064 ug/L	97
73)	m-,p-Xylene	16.22	106	631680	105.2305 ug/L	96
74)	o-Xylene	16.88	106	321591	56.8793 ug/L	96
75)	Styrene	16.92	104	532085	55.2923 ug/L	95
76)	Bromoform	17.49	173	134827	49.2451 ug/L	99
77)	Isopropylbenzene	17.38	105	829435	54.5730 ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.64	83	229283	52.1415 ug/L	96
81)	1,2,3-Trichloropropane	17.87	110	71564	53.1534 ug/L	99
82)	trans-1,4-Dichloro-2-Buten	17.93	53	68292	42.0681 ug/L	85
83)	n-Propylbenzene	17.98	91	1006100	52.6291 ug/L	98
84)	Bromobenzene	18.12	156	215387	51.8331 ug/L	99
85)	1,3,5-Trimethylbenzene	18.21	105	716527	52.6576 ug/L	95
86)	2-Chlorotoluene	18.30	91	664750	52.0974 ug/L	96
87)	4-Chlorotoluene	18.36	91	607350	52.0569 ug/L	97
88)	a-Methylstyrene	18.69	118	378204	57.2343 ug/L	98
89)	tert-Butylbenzene	18.76	134	150883	53.2071 ug/L	99
90)	1,2,4-Trimethylbenzene	18.82	105	731933	51.1473 ug/L	81
91)	sec-Butylbenzene	19.07	105	883157	50.6807 ug/L	100
92)	p-Isopropyltoluene	19.27	119	732050	50.9189 ug/L	99
93)	1,3-Dichlorobenzene	19.48	146	418127	52.0038 ug/L	96
94)	1,4-Dichlorobenzene	19.64	146	423834	51.7864 ug/L	98
95)	n-Butylbenzene	19.89	91	705101	48.7625 ug/L	98
96)	1,2-Dichlorobenzene	20.22	146	421505	54.4802 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	21.41	75	50722	52.1318 ug/L	89
98)	1,2,4-Trichlorobenzene	22.76	180	285471	51.0389 ug/L	97
99)	Hexachlorobutadiene	22.94	225	152283	47.6080 ug/L	99
100)	Naphthalene	23.20	128	640676	49.8263 ug/L	100
101)	1,2,3-Trichlorobenzene	23.59	180	280768	50.9788 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

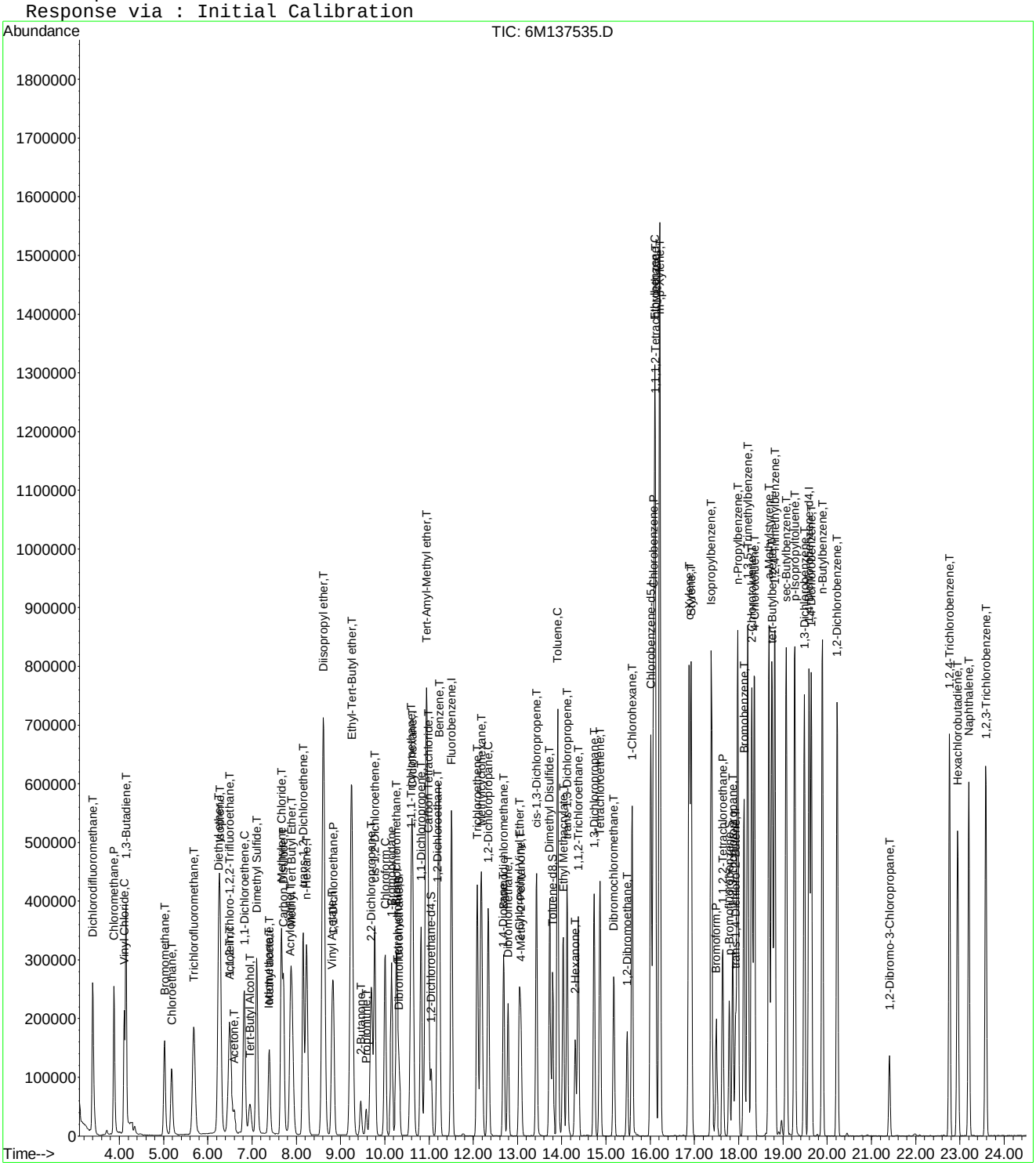

6M137535.D 826_SL.M Mon Feb 29 16:01:45 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	115	0.00
2	T	Dichlorodifluoromethane	50.0000	55.4626	-10.9	109	-0.01
3	P	Chloromethane	50.0000	50.9064	-1.8	111	0.00
4	C	Vinyl Chloride	50.0000	43.3425	13.3	89	0.00
5	T	1,3-Butadiene	50.0000	42.8977	14.2	92	-0.01
6	T	Bromomethane	50.0000	58.5556	-17.1	130	-0.01
7	T	Chloroethane	50.0000	56.5995	-13.2	116	0.00
8	T	Trichlorofluoromethane	50.0000	47.9111	4.2	102	-0.02
9	T	Diethyl ether	100.0000	73.6254	26.4#	86	0.00
10	T	Isoprene	50.0000	57.0391	-14.1	124	-0.01
11	T	Acrolein	50.0000	61.3760	-22.8	153	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	53.9539	-7.9	110	-0.01
13	T	Acetone	50.0000	48.6644	2.7	113	0.01
14	C	1,1-Dichloroethene	50.0000	51.6437	-3.3	107	0.00
15	T	Tert-Butyl Alcohol	200.0000	212.1401	-6.1	124	0.02
16	T	Dimethyl Sulfide	50.0000	79.1891	-58.4#	173	-0.01
17	T	Iodomethane	50.0000	37.8412	24.3	81	0.00
18	T	Methyl acetate	50.0000	52.8169	-5.6	120	0.00
19	T	Methylene Chloride	50.0000	53.3878	-6.8	112	0.00
20	T	Carbon Disulfide	50.0000	44.3914	11.2	98	-0.01
21	T	Acrylonitrile	50.0000	50.8382	-1.7	112	0.00
22	T	Methyl Tert Butyl Ether	50.0000	53.0885	-6.2	110	0.00
23	T	trans-1,2-Dichloroethene	50.0000	53.7311	-7.5	112	0.00
24	T	n-Hexane	50.0000	48.0130	4.0	104	-0.01
25	T	Diisopropyl ether	100.0000	90.7892	9.2	106	0.00
26	T	Vinyl Acetate	50.0000	37.6715	24.7	85	0.00
27	P	1,1-Dichloroethane	50.0000	50.3469	-0.7	106	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	89.7979	10.2	103	0.01
29	T	2-Butanone	50.0000	49.2421	1.5	115	0.00
30	T	Propionitrile	100.0000	93.9303	6.1	108	0.00
31	T	2,2-Dichloropropane	50.0000	53.1233	-6.2	112	0.00
32	T	cis-1,2-Dichloroethene	50.0000	54.1434	-8.3	116	0.00
33	C	Chloroform	50.0000	50.7061	-1.4	109	0.00
34		1-Bromopropane	50.0000	88.6198	-77.2#	186	-0.01
35	T	Bromochloromethane	50.0000	52.0956	-4.2	108	0.00
36	T	Tetrahydrofuran	100.0000	86.4486	13.6	100	0.00
37	S	Dibromofluoromethane	25.0000	22.4022	10.4	101	0.00
38	T	1,1,1-Trichloroethane	50.0000	51.9918	-4.0	108	0.00
39	T	Cyclohexane	50.0000	52.4982	-5.0	110	-0.01
40	T	1,1-Dichloropropene	50.0000	52.7645	-5.5	109	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	99.8131	0.2	115	0.00
42	T	Carbon Tetrachloride	50.0000	51.1689	-2.3	106	0.00
43	S	1,2-Dichloroethane-d4	25.0000	22.1747	11.3	100	-0.01
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	50.0000	51.2666	-2.5	109	0.00
46	T	Benzene	50.0000	50.4293	-0.9	112	0.00
47	T	Trichloroethene	50.0000	54.7248	-9.4	115	0.00
48	T	Methylcyclohexane	50.0000	52.9463	-5.9	111	0.00
49	C	1,2-Dichloropropane	50.0000	55.0291	-10.1	116	0.00
50	T	1,4-Dioxane	200.0000	206.7214	-3.4	130	0.00
51	T	Bromodichloromethane	50.0000	51.6400	-3.3	109	0.00
52	T	Dibromomethane	50.0000	50.3870	-0.8	103	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	54.9113	-9.8	118	0.00
54	T	4-Methyl-2-Pentanone	50.0000	51.2622	-2.5	117	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	58.7723	-17.5	120	0.00
56	T	Dimethyl Disulfide	50.0000	56.2546	-12.5	117	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	115	0.00
58	S	Toluene-d8	25.0000	21.6082	13.6	97	0.00
59	C	Toluene	50.0000	51.4239	-2.8	111	0.00
60	T	Ethyl Methacrylate	50.0000	55.5569	-11.1	115	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	50.0000	52.8608	-5.7	109	0.00
63	T	1,1,2-Trichloroethane	50.0000	53.2065	-6.4	113	0.00
64	T	2-Hexanone	50.0000	51.3021	-2.6	116	0.00
65	T	1,3-Dichloropropane	50.0000	54.9182	-9.8	116	0.00
66	T	Tetrachloroethene	50.0000	51.1197	-2.2	109	0.00
67	T	Dibromochloromethane	50.0000	51.8393	-3.7	107	0.00
68	T	1,2-Dibromoethane	50.0000	53.6583	-7.3	112	0.00
69	T	1-Chlorohexane	50.0000	53.6977	-7.4	112	0.00
70	P	Chlorobenzene	50.0000	52.8637	-5.7	115	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	51.8481	-3.7	110	0.00
72	C	Ethylbenzene	50.0000	52.4064	-4.8	110	0.00
73	T	m-,p-Xylene	100.0000	105.2305	-5.2	113	0.00
74	T	o-Xylene	50.0000	56.8792	-13.8	115	0.00
75	T	Styrene	50.0000	55.2923	-10.6	113	0.00
76	P	Bromoform	50.0000	49.2451	1.5	103	0.00
77	T	Isopropylbenzene	50.0000	54.5730	-9.1	112	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	118	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	52.1415	-4.3	115	0.00
80	S	p-Bromofluorobenzene	25.0000	20.9365	16.3	97	0.00
81	T	1,2,3-Trichloropropane	50.0000	53.1534	-6.3	117	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	42.0681	15.9	93	0.00
83	T	n-Propylbenzene	50.0000	52.6291	-5.3	111	0.00
84	T	Bromobenzene	50.0000	51.8331	-3.7	112	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	52.6576	-5.3	112	0.00
86	T	2-Chlorotoluene	50.0000	52.0974	-4.2	115	0.00
87	T	4-Chlorotoluene	50.0000	52.0569	-4.1	114	0.00
88	T	a-Methylstyrene	50.0000	57.2343	-14.5	123	0.00
89	T	tert-Butylbenzene	50.0000	53.2071	-6.4	112	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	51.1473	-2.3	110	0.00
91	T	sec-Butylbenzene	50.0000	50.6807	-1.4	107	0.00
92	T	p-Isopropyltoluene	50.0000	50.9189	-1.8	107	0.00
93	T	1,3-Dichlorobenzene	50.0000	52.0038	-4.0	114	0.00
94	T	1,4-Dichlorobenzene	50.0000	51.7864	-3.6	117	0.00
95	T	n-Butylbenzene	50.0000	48.7625	2.5	104	0.00
96	T	1,2-Dichlorobenzene	50.0000	54.4802	-9.0	120	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	52.1318	-4.3	117	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	51.0389	-2.1	109	0.00
99	T	Hexachlorobutadiene	50.0000	47.6080	4.8	101	-0.01
100	T	Naphthalene	50.0000	49.8263	0.3	104	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	50.9788	-2.0	108	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137535.D 826_SL.M Mon Feb 29 16:03:13 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030916\6M137677.D Vial: 3
Acq On : 9 Mar 2016 11:29 Operator: TMB
Sample : WG560254-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75017 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 09 11:53:36 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	694031	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	501733	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	264273	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	173374	46.5679 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.14%		
43) 1,2-Dichloroethane-d4	11.05	65	204847	42.3772 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 84.76%		
58) Toluene-d8	13.80	98	594654	49.8498 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.70%		
80) p-Bromofluorobenzene	17.79	95	245387	50.5521 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 101.10%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	342182	53.6841 ug/L	100
3) Chloromethane	3.88	50	274857	41.3806 ug/L	98
4) Vinyl Chloride	4.12	62	272246	50.9232 ug/L	97
5) 1,3-Butadiene	4.16	54	178783	40.1931 ug/L	94
6) Bromomethane	5.04	94	144296	50.6319 ug/L	100
7) Chloroethane	5.19	64	162150	53.4900 ug/L	98
8) Trichlorofluoromethane	5.69	101	366319	50.9931 ug/L	100
9) Diethyl ether	6.23	59	313789	94.9509 ug/L	96
10) Isoprene	6.27	67	247482	52.8822 ug/L	90
11) Acrolein	6.49	56	25607	40.8013 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	194355	56.6816 ug/L	94
13) Acetone	6.59	43	74415	46.8973 ug/L	98
14) 1,1-Dichloroethene	6.83	61	322768	53.1429 ug/L	96
15) Tert-Butyl Alcohol	6.94	59	115577	203.9406 ug/L	98
16) Dimethyl Sulfide	7.11	62	146549	49.7333 ug/L	96
17) Iodomethane	7.38	142	114499	43.9975 ug/L	96
18) Methyl acetate	7.40	43	210180	49.7969 ug/L	98
19) Methylene Chloride	7.67	84	186479	50.9816 ug/L	84
20) Carbon Disulfide	7.72	76	600717	51.6940 ug/L	99
21) Acrylonitrile	7.86	53	86169	49.6748 ug/L	99
22) Methyl Tert Butyl Ether	7.90	73	555296	53.1600 ug/L	93
23) trans-1,2-Dichloroethene	8.16	96	182157	54.2902 ug/L	89
24) n-Hexane	8.23	57	337897	55.4588 ug/L	98
25) Diisopropyl ether	8.61	45	1498935	94.8908 ug/L	95
26) Vinyl Acetate	8.80	43	374097	45.8142 ug/L	99
27) 1,1-Dichloroethane	8.83	63	376463	52.0420 ug/L	98
28) Ethyl-Tert-Butyl ether	9.24	59	1250235	98.7463 ug/L	96
29) 2-Butanone	9.45	43	106457	44.3757 ug/L	98
30) Propionitrile	9.57	54	63693	95.9298 ug/L	96
31) 2,2-Dichloropropane	9.69	77	310451	53.4664 ug/L	93
32) cis-1,2-Dichloroethene	9.77	96	198030	52.8669 ug/L	96
33) Chloroform	10.00	83	340684	50.4284 ug/L	98
34) 1-Bromopropane	10.16	122	28113	54.7416 ug/L	99
35) Bromochloromethane	10.26	130	115176	52.3307 ug/L	100
36) Tetrahydrofuran	10.30	42	152354	94.5208 ug/L	97
38) 1,1,1-Trichloroethane	10.60	97	311676	52.2304 ug/L	100
39) Cyclohexane	10.63	56	378150	55.8845 ug/L	88
40) 1,1-Dichloropropene	10.83	75	267728	55.7115 ug/L	97
41) Tert-Amyl-Methyl ether	10.94	73	1015082	101.0634 ug/L	94
42) Carbon Tetrachloride	10.99	117	290816	52.1575 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M137677.D 826_SL.M Wed Mar 09 11:53:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030916\6M137677.D Vial: 3
Acq On : 9 Mar 2016 11:29 Operator: TMB
Sample : WG560254-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75017 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 09 11:53:36 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	279550	48.4811 ug/L	98
46)	Benzene	11.23	78	737127	50.9860 ug/L	93
47)	Trichloroethene	12.09	130	185937	54.4399 ug/L	96
48)	Methylcyclohexane	12.18	83	317418	57.4887 ug/L	89
49)	1,2-Dichloropropane	12.34	63	203090	52.2081 ug/L	98
50)	1,4-Dioxane	12.67	88	9123	197.1603 ug/L	87
51)	Bromodichloromethane	12.68	83	259212	50.7778 ug/L	96
52)	Dibromomethane	12.79	93	114252	50.2153 ug/L	98
53)	2-Chloroethyl Vinyl Ether	13.04	63	112700	52.6733 ug/L	100
54)	4-Methyl-2-Pentanone	13.07	58	79378	48.9952 ug/L	96
55)	cis-1,3-Dichloropropene	13.43	75	302667	53.8136 ug/L	97
56)	Dimethyl Disulfide	13.73	79	155099	54.6765 ug/L	98
59)	Toluene	13.91	91	747019	52.6340 ug/L	99
60)	Ethyl Methacrylate	14.04	69	245489	53.9826 ug/L	99
62)	trans-1,3-Dichloropropene	14.12	75	285055	52.2317 ug/L	100
63)	1,1,2-Trichloroethane	14.38	97	150166	50.6207 ug/L	98
64)	2-Hexanone	14.31	43	159547	47.1330 ug/L	98
65)	1,3-Dichloropropane	14.74	76	268521	49.9414 ug/L	97
66)	Tetrachloroethene	14.87	166	190651	54.4542 ug/L	99
67)	Dibromochloromethane	15.18	129	194476	50.4075 ug/L	100
68)	1,2-Dibromoethane	15.48	107	155441	51.2364 ug/L	96
69)	1-Chlorohexane	15.59	91	261315	59.2896 ug/L	90
70)	Chlorobenzene	16.07	112	473020	51.8576 ug/L	70
71)	1,1,1,2-Tetrachloroethane	16.12	131	184643	50.4146 ug/L	99
72)	Ethylbenzene	16.11	106	264492	54.1859 ug/L	98
73)	m-,p-Xylene	16.22	106	637963	106.8161 ug/L	98
74)	o-Xylene	16.87	106	312062	55.4737 ug/L	96
75)	Styrene	16.92	104	529362	55.2883 ug/L	96
76)	Bromoform	17.49	173	133585	49.0388 ug/L	99
77)	Isopropylbenzene	17.38	105	837110	55.3572 ug/L	99
79)	1,1,2,2-Tetrachloroethane	17.65	83	213261	51.6582 ug/L	95
81)	1,2,3-Trichloropropane	17.87	110	65031	51.4486 ug/L	98
82)	trans-1,4-Dichloro-2-Buten	17.93	53	78166	51.2882 ug/L	94
83)	n-Propylbenzene	17.98	91	1007616	56.1431 ug/L	98
84)	Bromobenzene	18.13	156	208643	53.4820 ug/L	98
85)	1,3,5-Trimethylbenzene	18.21	105	715359	55.9976 ug/L	97
86)	2-Chlorotoluene	18.30	91	661179	55.1941 ug/L	95
87)	4-Chlorotoluene	18.35	91	572623	52.2786 ug/L	97
88)	a-Methylstyrene	18.69	118	357526	57.6308 ug/L	99
89)	tert-Butylbenzene	18.75	134	149870	56.2937 ug/L	85
90)	1,2,4-Trimethylbenzene	18.81	105	731563	54.4527 ug/L	84
91)	sec-Butylbenzene	19.08	105	915372	55.9523 ug/L	99
92)	p-Isopropyltoluene	19.26	119	765129	56.6877 ug/L	100
93)	1,3-Dichlorobenzene	19.49	146	400163	53.0127 ug/L	97
94)	1,4-Dichlorobenzene	19.64	146	398003	51.7991 ug/L	97
95)	n-Butylbenzene	19.89	91	752147	55.4056 ug/L	99
96)	1,2-Dichlorobenzene	20.22	146	375517	51.6989 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	21.42	75	45166	49.4463 ug/L	90
98)	1,2,4-Trichlorobenzene	22.76	180	279773	53.2797 ug/L	99
99)	Hexachlorobutadiene	22.95	225	162097	53.9784 ug/L	99
100)	Naphthalene	23.20	128	647055	53.6016 ug/L	99
101)	1,2,3-Trichlorobenzene	23.58	180	262508	50.7693 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M137677.D 826_SL.M Wed Mar 09 11:53:36 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030916\6M137677.D Vial: 3
Acq On : 9 Mar 2016 11:29 Operator: TMB
Sample : WG560254-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75017 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 11:53 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

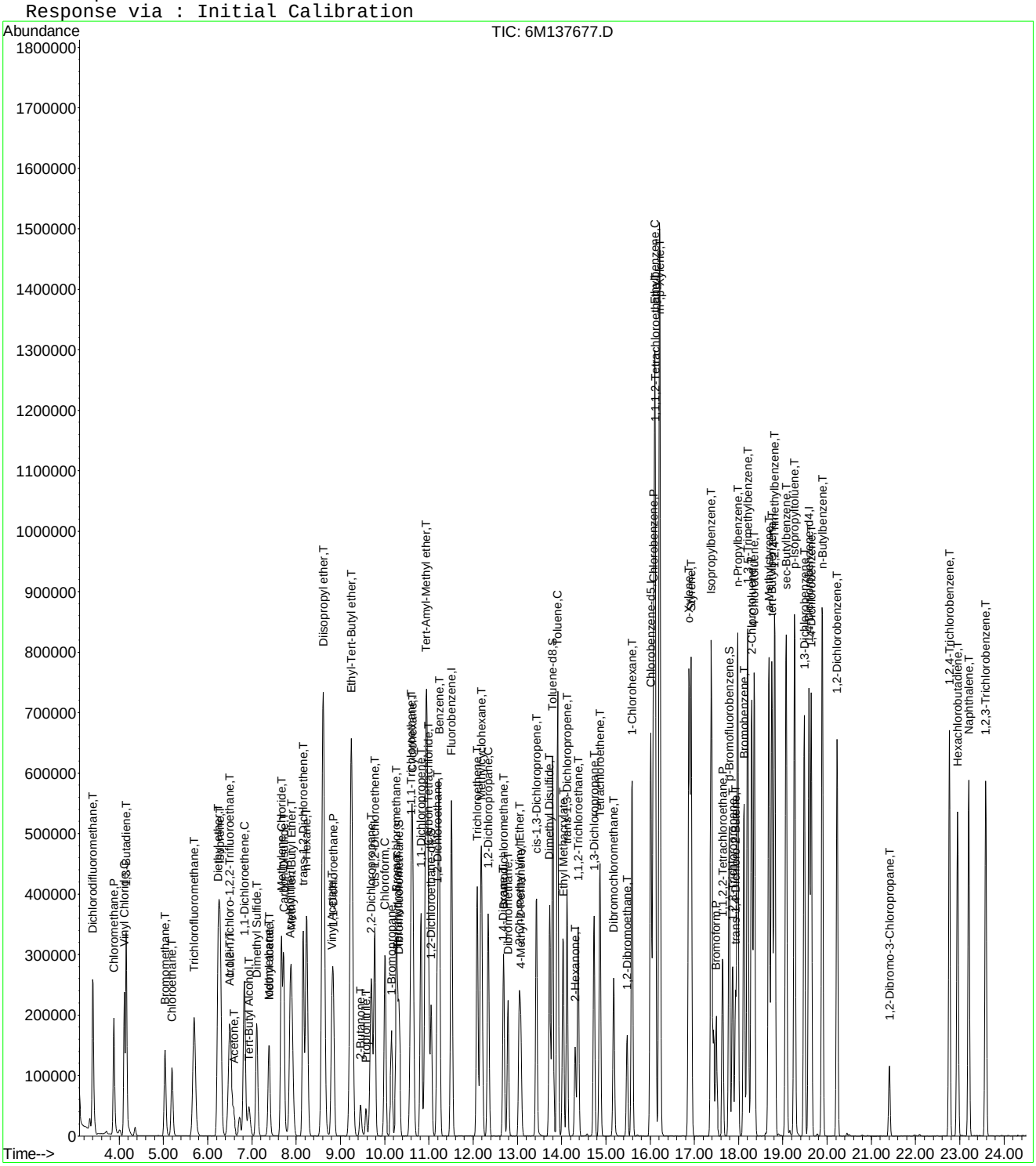

6M137677.D 826_SL.M Wed Mar 09 11:53:36 2016 Page 3

Continuing Calibration Area and RT check

Instrument: HPMS6
Initial cal date: 26 Feb 2016 17:03
CCV date: 9 Mar 2016 11:29
CCV Filename: 6M137677.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	607631	11.51	439950	16.01	237573	19.60
CCV	694031	11.51	501733	16.01	264273	19.59

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\030916\6M137677.D Vial: 3
Acq On : 9 Mar 2016 11:29 Operator: TMB
Sample : WG560254-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75017 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	114	0.00
2	T	Dichlorodifluoromethane	0.4592	0.4930	-7.4	105	0.00
3	P	Chloromethane	0.4785	0.3960	17.2	90	0.00
4	C	Vinyl Chloride	0.3852	0.3923	-1.8	104	0.00
5	T	1,3-Butadiene	0.3205	0.2576	19.6	86	0.00
6	T	Bromomethane	0.2053	0.2079	-1.3	112	0.00
7	T	Chloroethane	0.2184	0.2336	-7.0	110	0.00
8	T	Trichlorofluoromethane	0.5175	0.5278	-2.0	108	0.00
9	T	Diethyl ether	0.2381	0.2261	5.0	111	0.00
10	T	Isoprene	0.3372	0.3566	-5.8	115	0.00
11	T	Acrolein	0.0452	0.0369	18.4	101	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2470	0.2800	-13.4	115	0.00
13	T	Acetone	0.1189	0.1072	9.9	109	0.00
14	C	1,1-Dichloroethene	0.4376	0.4651	-6.3	109	0.00
15	T	Tert-Butyl Alcohol	0.0408	0.0416	-2.0	119	0.00
16	T	Dimethyl Sulfide	0.2123	0.2112	0.5	108	0.00
17	T	Iodomethane	0.1531	0.1650	-7.7	96	0.00
18	T	Methyl acetate	0.3041	0.3028	0.4	112	0.00
19	T	Methylene Chloride	0.2635	0.2687	-2.0	107	0.00
20	T	Carbon Disulfide	0.8372	0.8656	-3.4	113	0.00
21	T	Acrylonitrile	0.1250	0.1242	0.6	109	0.00
22	T	Methyl Tert Butyl Ether	0.7525	0.8001	-6.3	110	0.00
23	T	trans-1,2-Dichloroethene	0.2417	0.2625	-8.6	113	0.00
24	T	n-Hexane	0.4389	0.4869	-10.9	119	0.00
25	T	Diisopropyl ether	1.1380	1.0799	5.1	110	0.00
26	T	Vinyl Acetate	0.5883	0.5390	8.4	103	0.00
27	P	1,1-Dichloroethane	0.5212	0.5424	-4.1	109	0.00
28	T	Ethyl-Tert-Butyl ether	0.9121	0.9007	1.3	113	0.00
29	T	2-Butanone	0.1728	0.1534	11.2	103	0.00
30	T	Propionitrile	0.0478	0.0459	4.1	110	0.00
31	T	2,2-Dichloropropane	0.4183	0.4473	-6.9	113	0.00
32	T	cis-1,2-Dichloroethene	0.2699	0.2853	-5.7	112	0.00
33	C	Chloroform	0.4867	0.4909	-0.9	108	0.00
34		1-Bromopropane	0.0370	0.0405	-9.5	114	0.00
35	T	Bromochloromethane	0.1586	0.1659	-4.7	108	0.00
36	T	Tetrahydrofuran	0.1230	0.1098	10.7	109	0.00
37	S	Dibromofluoromethane	0.2682	0.4996	-86.3#	210#	0.00
38	T	1,1,1-Trichloroethane	0.4299	0.4491	-4.5	108	0.00
39	T	Cyclohexane	0.4875	0.5449	-11.8	117	0.00
40	T	1,1-Dichloropropene	0.3462	0.3858	-11.4	115	0.00
41	T	Tert-Amyl-Methyl ether	0.7236	0.7313	-1.1	116	0.00
42	T	Carbon Tetrachloride	0.4017	0.4190	-4.3	108	0.00
43	S	1,2-Dichloroethane-d4	0.3483	0.5903	-69.5#	191#	0.00
44		Heptane	0.0000	0.0000	0.0	0#	0.00
45	T	1,2-Dichloroethane	0.4154	0.4028	3.0	102	0.00
46	T	Benzene	1.0416	1.0621	-2.0	113	0.00
47	T	Trichloroethene	0.2461	0.2679	-8.9	114	0.00
48	T	Methylcyclohexane	0.3978	0.4573	-15.0	120	0.00
49	C	1,2-Dichloropropane	0.2803	0.2926	-4.4	110	0.00
50	T	1,4-Dioxane	0.0031	0.0033	-6.1	122	0.00
51	T	Bromodichloromethane	0.3678	0.3735	-1.6	106	0.00
52	T	Dibromomethane	0.1639	0.1646	-0.4	102	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1541	0.1624	-5.3	113	0.00
54	T	4-Methyl-2-Pentanone	0.1167	0.1144	2.0	112	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\030916\6M137677.D Vial: 3
Acq On : 9 Mar 2016 11:29 Operator: TMB
Sample : WG560254-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75017 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4052	0.4361	-7.6	110	0.00
56	T	Dimethyl Disulfide	0.2044	0.2235	-9.4	113	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	114	0.00
58	S	Toluene-d8	1.1888	2.3704	-99.4#	223#	0.00
59	C	Toluene	1.4144	1.4889	-5.3	113	0.00
60	T	Ethyl Methacrylate	0.4532	0.4893	-8.0	111	0.01
61		Paraldehyde	0.0000	0.0000	0.0	0#	-15.13#
62	T	trans-1,3-Dichloropropene	0.5439	0.5681	-4.5	107	0.00
63	T	1,1,2-Trichloroethane	0.2956	0.2993	-1.2	107	0.01
64	T	2-Hexanone	0.3373	0.3180	5.7	106	0.00
65	T	1,3-Dichloropropane	0.5358	0.5352	0.1	105	0.00
66	T	Tetrachloroethene	0.3489	0.3800	-8.9	115	0.00
67	T	Dibromochloromethane	0.3845	0.3876	-0.8	104	0.00
68	T	1,2-Dibromoethane	0.3023	0.3098	-2.5	107	0.00
69	T	1-Chlorohexane	0.4392	0.5208	-18.6	123	0.00
70	P	Chlorobenzene	0.9090	0.9428	-3.7	112	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3650	0.3680	-0.8	107	0.01
72	C	Ethylbenzene	0.4864	0.5272	-8.4	113	0.00
73	T	m-,p-Xylene	0.5952	0.6358	-6.8	114	0.00
74	T	o-Xylene	0.5606	0.6220	-10.9	112	0.00
75	T	Styrene	0.9542	1.0551	-10.6	112	0.00
76	P	Bromoform	0.2715	0.2662	1.9	102	0.00
77	T	Isopropylbenzene	1.5070	1.6684	-10.7	113	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	111	0.00
79	P	1,1,2,2-Tetrachloroethane	0.7811	0.8070	-3.3	107	0.00
80	S	p-Bromofluorobenzene	0.9184	1.8571	-102.2#	219#	0.00
81	T	1,2,3-Trichloropropane	0.2392	0.2461	-2.9	106	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.2884	0.2958	-2.6	107	0.00
83	T	n-Propylbenzene	3.3956	3.8128	-12.3	112	0.00
84	T	Bromobenzene	0.7381	0.7895	-7.0	109	0.00
85	T	1,3,5-Trimethylbenzene	2.4170	2.7069	-12.0	111	0.00
86	T	2-Chlorotoluene	2.2664	2.5019	-10.4	114	0.00
87	T	4-Chlorotoluene	2.0723	2.1668	-4.6	108	0.00
88	T	a-Methylstyrene	1.1737	1.3529	-15.3	116	0.00
89	T	tert-Butylbenzene	0.5037	0.5671	-12.6	111	0.00
90	T	1,2,4-Trimethylbenzene	2.5419	2.7682	-8.9	110	0.00
91	T	sec-Butylbenzene	3.0953	3.4637	-11.9	111	0.00
92	T	p-Isopropyltoluene	2.5537	2.8952	-13.4	112	0.00
93	T	1,3-Dichlorobenzene	1.4282	1.5142	-6.0	110	0.00
94	T	1,4-Dichlorobenzene	1.4537	1.5060	-3.6	110	0.00
95	T	n-Butylbenzene	2.5684	2.8461	-10.8	111	0.00
96	T	1,2-Dichlorobenzene	1.3743	1.4209	-3.4	107	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1728	0.1709	1.1	104	0.00
98	T	1,2,4-Trichlorobenzene	0.9935	1.0587	-6.6	107	0.00
99	T	Hexachlorobutadiene	0.5682	0.6134	-8.0	107	0.00
100	T	Naphthalene	2.2839	2.4484	-7.2	105	0.00
101	T	1,2,3-Trichlorobenzene	0.9783	0.9933	-1.5	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137677.D 826_SL.M Wed Mar 09 12:03:19 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\030916\6M137677.D Vial: 3
Acq On : 9 Mar 2016 11:29 Operator: TMB
Sample : WG560254-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75017 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	114	0.00
2	T	Dichlorodifluoromethane	50.0000	53.6840	-7.4	105	0.00
3	P	Chloromethane	50.0000	41.3806	17.2	90	0.00
4	C	Vinyl Chloride	50.0000	50.9232	-1.8	104	0.00
5	T	1,3-Butadiene	50.0000	40.1931	19.6	86	0.00
6	T	Bromomethane	50.0000	50.6319	-1.3	112	0.00
7	T	Chloroethane	50.0000	53.4900	-7.0	110	0.00
8	T	Trichlorofluoromethane	50.0000	50.9931	-2.0	108	0.00
9	T	Diethyl ether	100.0000	94.9510	5.0	111	0.00
10	T	Isoprene	50.0000	52.8822	-5.8	115	0.00
11	T	Acrolein	50.0000	40.8013	18.4	101	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	56.6816	-13.4	115	0.00
13	T	Acetone	50.0000	46.8973	6.2	109	0.00
14	C	1,1-Dichloroethene	50.0000	53.1429	-6.3	109	0.00
15	T	Tert-Butyl Alcohol	200.0000	203.9406	-2.0	119	0.00
16	T	Dimethyl Sulfide	50.0000	49.7333	0.5	108	0.00
17	T	Iodomethane	50.0000	43.9975	12.0	96	0.00
18	T	Methyl acetate	50.0000	49.7969	0.4	112	0.00
19	T	Methylene Chloride	50.0000	50.9816	-2.0	107	0.00
20	T	Carbon Disulfide	50.0000	51.6940	-3.4	113	0.00
21	T	Acrylonitrile	50.0000	49.6748	0.7	109	0.00
22	T	Methyl Tert Butyl Ether	50.0000	53.1600	-6.3	110	0.00
23	T	trans-1,2-Dichloroethene	50.0000	54.2902	-8.6	113	0.00
24	T	n-Hexane	50.0000	55.4588	-10.9	119	0.00
25	T	Diisopropyl ether	100.0000	94.8908	5.1	110	0.00
26	T	Vinyl Acetate	50.0000	45.8142	8.4	103	0.00
27	P	1,1-Dichloroethane	50.0000	52.0420	-4.1	109	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.7463	1.3	113	0.00
29	T	2-Butanone	50.0000	44.3757	11.2	103	0.00
30	T	Propionitrile	100.0000	95.9298	4.1	110	0.00
31	T	2,2-Dichloropropane	50.0000	53.4664	-6.9	113	0.00
32	T	cis-1,2-Dichloroethene	50.0000	52.8669	-5.7	112	0.00
33	C	Chloroform	50.0000	50.4284	-0.9	108	0.00
34		1-Bromopropane	50.0000	54.7416	-9.5	114	0.00
35	T	Bromochloromethane	50.0000	52.3307	-4.7	108	0.00
36	T	Tetrahydrofuran	100.0000	94.5208	5.5	109	0.00
37	S	Dibromofluoromethane	25.0000	46.5679	-86.3#	210	0.00
38	T	1,1,1-Trichloroethane	50.0000	52.2304	-4.5	108	0.00
39	T	Cyclohexane	50.0000	55.8845	-11.8	117	0.00
40	T	1,1-Dichloropropene	50.0000	55.7115	-11.4	115	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	101.0634	-1.1	116	0.00
42	T	Carbon Tetrachloride	50.0000	52.1575	-4.3	108	0.00
43	S	1,2-Dichloroethane-d4	25.0000	42.3772	-69.5#	191	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	50.0000	48.4811	3.0	102	0.00
46	T	Benzene	50.0000	50.9860	-2.0	113	0.00
47	T	Trichloroethene	50.0000	54.4399	-8.9	114	0.00
48	T	Methylcyclohexane	50.0000	57.4887	-15.0	120	0.00
49	C	1,2-Dichloropropane	50.0000	52.2081	-4.4	110	0.00
50	T	1,4-Dioxane	200.0000	197.1602	1.4	122	0.00
51	T	Bromodichloromethane	50.0000	50.7778	-1.6	106	0.00
52	T	Dibromomethane	50.0000	50.2153	-0.4	102	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	52.6733	-5.3	113	0.00
54	T	4-Methyl-2-Pentanone	50.0000	48.9952	2.0	112	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\030916\6M137677.D Vial: 3
Acq On : 9 Mar 2016 11:29 Operator: TMB
Sample : WG560254-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75017 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.8136	-7.6	110	0.00
56	T	Dimethyl Disulfide	50.0000	54.6765	-9.4	113	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	114	0.00
58	S	Toluene-d8	25.0000	49.8498	-99.4#	223	0.00
59	C	Toluene	50.0000	52.6340	-5.3	113	0.00
60	T	Ethyl Methacrylate	50.0000	53.9826	-8.0	111	0.01
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	50.0000	52.2317	-4.5	107	0.00
63	T	1,1,2-Trichloroethane	50.0000	50.6208	-1.2	107	0.01
64	T	2-Hexanone	50.0000	47.1330	5.7	106	0.00
65	T	1,3-Dichloropropane	50.0000	49.9414	0.1	105	0.00
66	T	Tetrachloroethene	50.0000	54.4542	-8.9	115	0.00
67	T	Dibromochloromethane	50.0000	50.4075	-0.8	104	0.00
68	T	1,2-Dibromoethane	50.0000	51.2364	-2.5	107	0.00
69	T	1-Chlorohexane	50.0000	59.2897	-18.6	123	0.00
70	P	Chlorobenzene	50.0000	51.8576	-3.7	112	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	50.4146	-0.8	107	0.01
72	C	Ethylbenzene	50.0000	54.1859	-8.4	113	0.00
73	T	m-,p-Xylene	100.0000	106.8161	-6.8	114	0.00
74	T	o-Xylene	50.0000	55.4737	-10.9	112	0.00
75	T	Styrene	50.0000	55.2883	-10.6	112	0.00
76	P	Bromoform	50.0000	49.0388	1.9	102	0.00
77	T	Isopropylbenzene	50.0000	55.3573	-10.7	113	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	111	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	51.6582	-3.3	107	0.00
80	S	p-Bromofluorobenzene	25.0000	50.5521	-102.2#	219	0.00
81	T	1,2,3-Trichloropropane	50.0000	51.4486	-2.9	106	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	51.2882	-2.6	107	0.00
83	T	n-Propylbenzene	50.0000	56.1431	-12.3	112	0.00
84	T	Bromobenzene	50.0000	53.4820	-7.0	109	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	55.9976	-12.0	111	0.00
86	T	2-Chlorotoluene	50.0000	55.1941	-10.4	114	0.00
87	T	4-Chlorotoluene	50.0000	52.2786	-4.6	108	0.00
88	T	a-Methylstyrene	50.0000	57.6308	-15.3	116	0.00
89	T	tert-Butylbenzene	50.0000	56.2937	-12.6	111	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	54.4527	-8.9	110	0.00
91	T	sec-Butylbenzene	50.0000	55.9524	-11.9	111	0.00
92	T	p-Isopropyltoluene	50.0000	56.6877	-13.4	112	0.00
93	T	1,3-Dichlorobenzene	50.0000	53.0127	-6.0	110	0.00
94	T	1,4-Dichlorobenzene	50.0000	51.7991	-3.6	110	0.00
95	T	n-Butylbenzene	50.0000	55.4055	-10.8	111	0.00
96	T	1,2-Dichlorobenzene	50.0000	51.6989	-3.4	107	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	49.4463	1.1	104	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	53.2797	-6.6	107	0.00
99	T	Hexachlorobutadiene	50.0000	53.9784	-8.0	107	0.00
100	T	Naphthalene	50.0000	53.6016	-7.2	105	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	50.7693	-1.5	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137677.D 826_SL.M Wed Mar 09 12:03:20 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\1\DATA\022616\6M137522.D          Vial: 1
Acq On    : 26 Feb 2016  13:16                       Operator: TMB
Sample    : WG558920-01 50ng BFB STD 8260            Inst    : HPMS6
Misc      : 7,1 STD74606                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP: OVL MSV01
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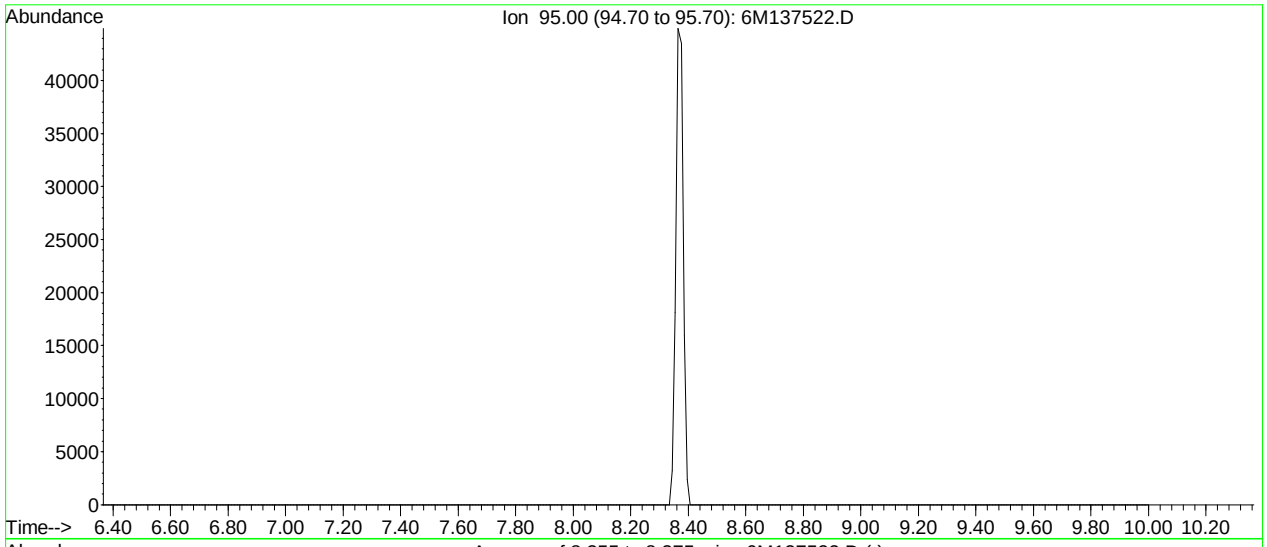

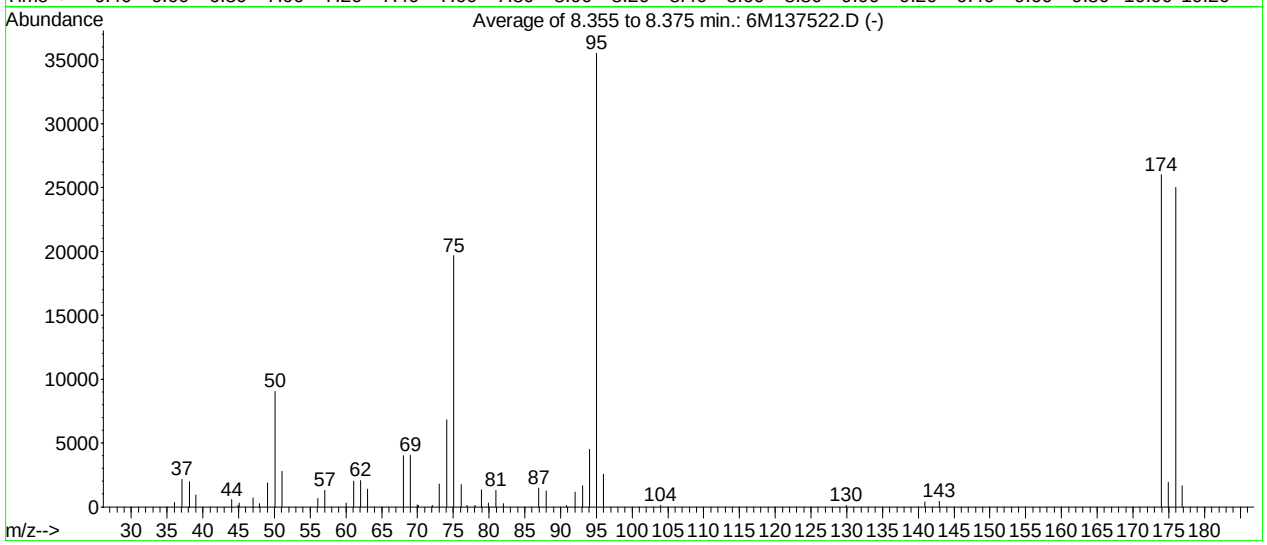

AutoFind: Scans 320, 321, 322; Background Corrected with Scan 316

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	25.4	9030	PASS
75	95	30	60	55.4	19666	PASS
95	95	100	100	100.0	35512	PASS
96	95	5	9	7.3	2576	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	73.2	26011	PASS
175	174	5	9	7.4	1914	PASS
176	174	95	101	96.1	24992	PASS
177	176	5	9	6.6	1660	PASS

6M137522.D BFB.M Fri Feb 26 13:26:46 2016

BFB

Data File : C:\MSDCHEM\1\DATA\030916\6M137675.D Vial: 1
Acq On : 9 Mar 2016 10:29 Operator: TMB
Sample : WG560254-01 50ng BFB STD 8260 Inst : HPMS6
Misc : 7,1 STD75004 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title : SOP: OVL MSV01

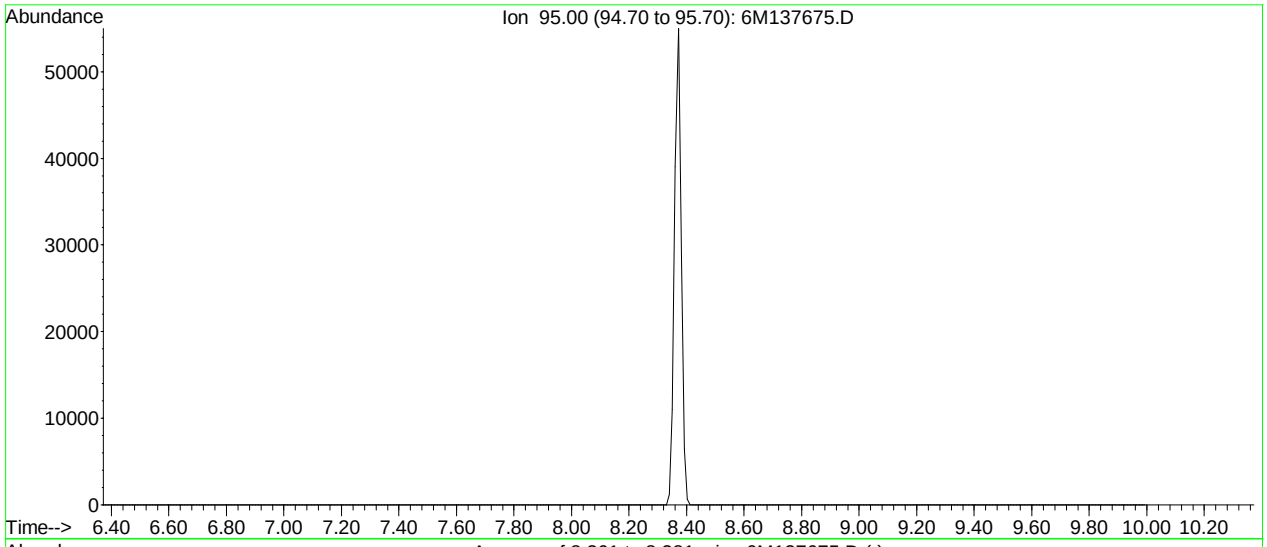

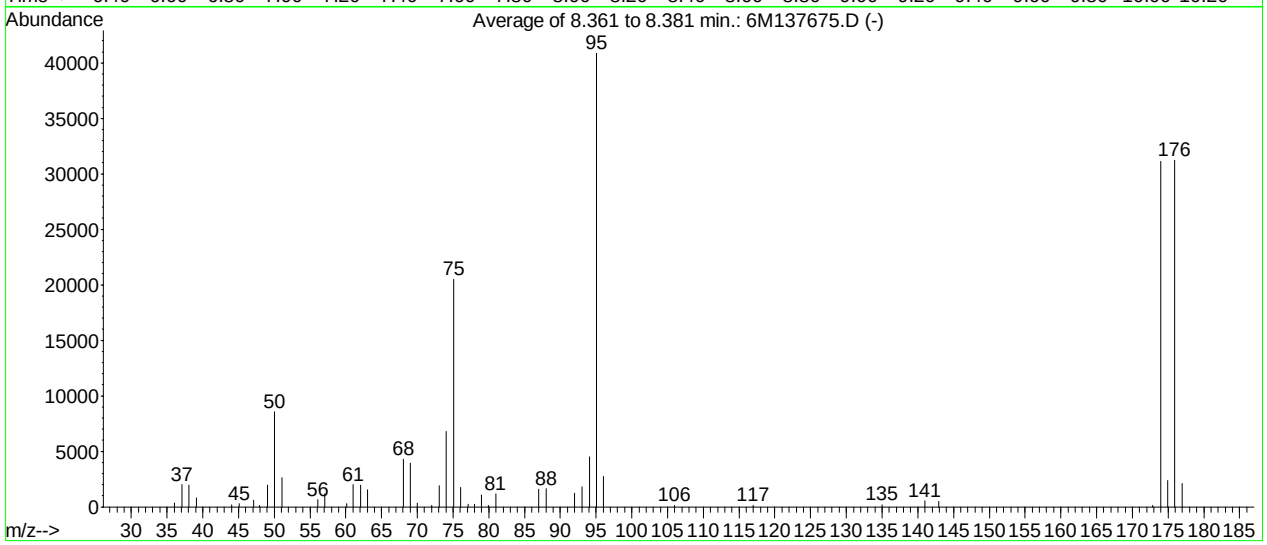

AutoFind: Scans 321, 322, 323; Background Corrected with Scan 316

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.0	8570	PASS
75	95	30	60	50.2	20514	PASS
95	95	100	100	100.0	40885	PASS
96	95	5	9	6.7	2737	PASS
173	174	0.00	2	0.4	124	PASS
174	95	50	100	76.2	31152	PASS
175	174	5	9	7.6	2362	PASS
176	174	95	101	100.2	31210	PASS
177	176	5	9	6.7	2088	PASS

6M137675.D BFB.M Wed Mar 09 10:40:24 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137679.D Vial: 5
Acq On : 9 Mar 2016 12:36 Operator: TMB
Sample : WG560255-01 VBLK0309 BLANK STD 8260 Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 08:54:53 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	612952	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	449245	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	231266	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	151533	46.0853 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 92.18%		
43) 1,2-Dichloroethane-d4	11.06	65	183728	43.0359 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 86.08%		
58) Toluene-d8	13.80	98	523959	49.0553 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.12%		
80) p-Bromofluorobenzene	17.79	95	214801	50.5667 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 101.14%		

Target Compounds					Qvalue
13) Acetone	6.60	43	5437	Below Cal	95
36) Tetrahydrofuran	10.30	42	2747	Below Cal #	59
60) Ethyl Methacrylate	13.80	69	1050	0.2579 ug/L	81
100) Naphthalene	23.20	128	3105	0.2939 ug/L #	67

(#) = qualifier out of range (m) = manual integration
6M137679.D 826_SL.M Thu Mar 10 08:54:53 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137679.D Vial: 5
Acq On : 9 Mar 2016 12:36 Operator: TMB
Sample : WG560255-01 VBLK0309 BLANK STD 8260 Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 8:54 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

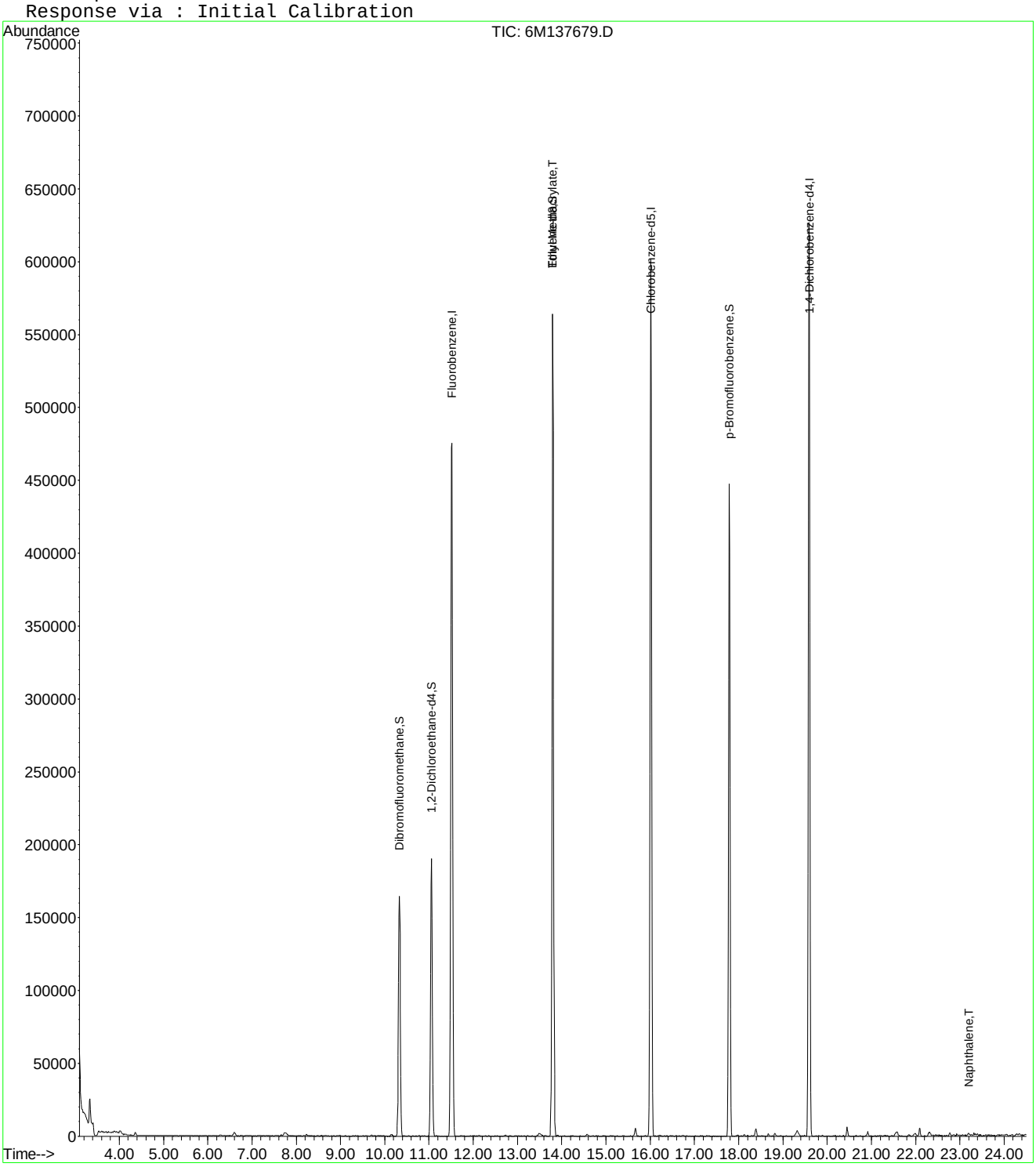

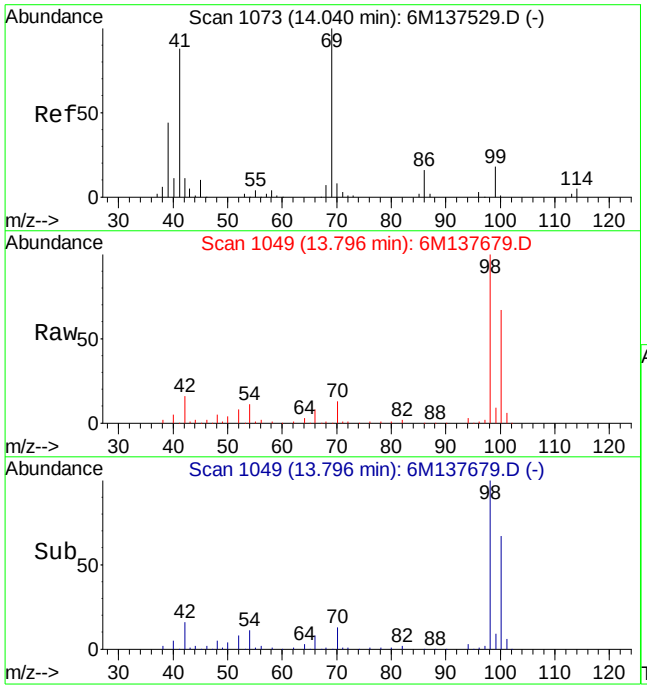

#60
Ethyl Methacrylate
Concen: 0.26 ug/L
RT: 13.80 min Scan# 1049
Delta R.T. -0.24 min
Lab File: 6M137679.D
Acq: 9 Mar 2016 12:36

Tgt Ion: 69 Resp: 1050

Ion	Ratio	Lower	Upper
69	100		
41	101.6	50.6	118.2

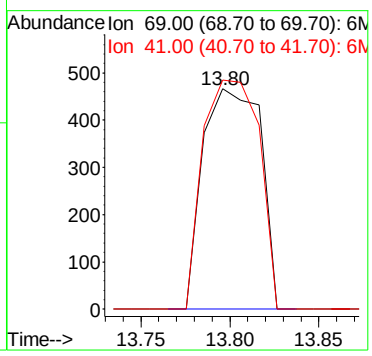

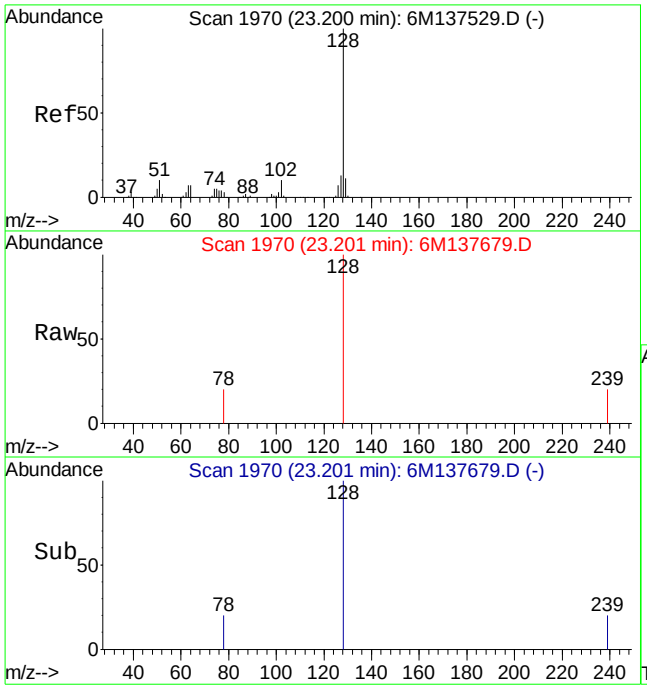

#100
Naphthalene
Concen: 0.29 ug/L
RT: 23.20 min Scan# 1970
Delta R.T. -0.00 min
Lab File: 6M137679.D
Acq: 9 Mar 2016 12:36

Tgt Ion:128 Resp: 3105

Ion	Ratio	Lower	Upper
128	100		
127	0.0	7.7	18.1#

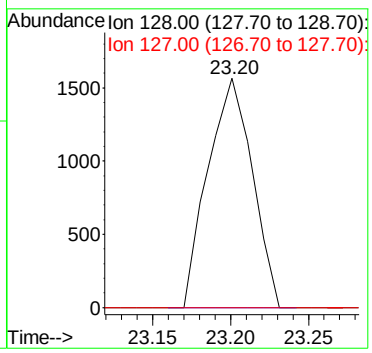

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137680.D Vial: 6
Acq On : 9 Mar 2016 13:09 Operator: TMB
Sample : WG560255-02 20ug/Kg LCS STD 8260 Inst : HPMS6
Misc : 7,1 STD74973 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 08:51:09 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	618893	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	452269	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	240680	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	151450	45.6179 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 91.24%		
43) 1,2-Dichloroethane-d4	11.06	65	183601	42.5933 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 85.18%		
58) Toluene-d8	13.80	98	528078	49.1103 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.22%		
80) p-Bromofluorobenzene	17.79	95	222813	50.4012 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 100.80%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	101272	17.8173 ug/L	99
3) Chloromethane	3.88	50	91766	15.4930 ug/L	96
4) Vinyl Chloride	4.12	62	86459	18.1354 ug/L	98
5) 1,3-Butadiene	4.16	54	60979	15.3734 ug/L	92
6) Bromomethane	5.02	94	51041	20.0841 ug/L	99
7) Chloroethane	5.19	64	57373	21.2240 ug/L	97
8) Trichlorofluoromethane	5.69	101	112054	17.4921 ug/L	99
9) Diethyl ether	6.24	59	298200	101.1888 ug/L	95
10) Isoprene	6.28	67	102296	24.5125 ug/L	92
11) Acrolein	6.48	56	51324	91.7062 ug/L	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	62290	20.3717 ug/L	96
13) Acetone	6.60	43	32789	20.9509 ug/L	96
14) 1,1-Dichloroethene	6.83	61	103831	19.1710 ug/L	94
15) Tert-Butyl Alcohol	6.94	59	111935	221.4938 ug/L	98
16) Dimethyl Sulfide	7.12	62	83978	31.9590 ug/L	98
17) Iodomethane	7.38	142	30836	16.7531 ug/L	95
18) Methyl acetate	7.39	43	78709	20.9122 ug/L	97
19) Methylene Chloride	7.67	84	65452	20.0664 ug/L	83
20) Carbon Disulfide	7.72	76	205902	19.8698 ug/L	99
21) Acrylonitrile	7.86	53	34473	22.2858 ug/L	98
22) Methyl Tert Butyl Ether	7.89	73	211126	22.6655 ug/L	93
23) trans-1,2-Dichloroethene	8.16	96	61555	20.5732 ug/L	89
24) n-Hexane	8.24	57	114512	21.0766 ug/L	99
25) Diisopropyl ether	8.61	45	1327031	94.2075 ug/L	95
26) Vinyl Acetate	8.80	43	140824	19.3400 ug/L	98
27) 1,1-Dichloroethane	8.83	63	121964	18.9072 ug/L	99
28) Ethyl-Tert-Butyl ether	9.24	59	1051261	93.1114 ug/L	96
29) 2-Butanone	9.46	43	46605	21.7855 ug/L	97
30) Propionitrile	9.58	54	56704	95.7720 ug/L	98
31) 2,2-Dichloropropane	9.69	77	102059	19.7107 ug/L	93
32) cis-1,2-Dichloroethene	9.77	96	68581	20.5315 ug/L	94
33) Chloroform	10.01	83	114306	18.9739 ug/L	97
34) 1-Bromopropane	10.16	122	15333	33.4812 ug/L	97
35) Bromochloromethane	10.26	130	38427	19.5792 ug/L	99
36) Tetrahydrofuran	10.29	42	137165	95.4498 ug/L	97
38) 1,1,1-Trichloroethane	10.60	97	102243	19.2139 ug/L	100
39) Cyclohexane	10.64	56	138903	23.0198 ug/L	88
40) 1,1-Dichloropropene	10.82	75	84311	19.6743 ug/L	97
41) Tert-Amyl-Methyl ether	10.95	73	901515	100.6536 ug/L	94
42) Carbon Tetrachloride	10.99	117	92936	18.6916 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M137680.D 826_SL.M Thu Mar 10 08:51:09 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137680.D Vial: 6
Acq On : 9 Mar 2016 13:09 Operator: TMB
Sample : WG560255-02 20ug/Kg LCS STD 8260 Inst : HPMS6
Misc : 7,1 STD74973 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 08:51:09 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	97958	19.0509	ug/L	100
46)	Benzene	11.23	78	250842	19.4568	ug/L	93
47)	Trichloroethene	12.09	130	63017	20.6906	ug/L	96
48)	Methylcyclohexane	12.18	83	114721	23.3001	ug/L	89
49)	1,2-Dichloropropane	12.34	63	71862	20.7163	ug/L	97
50)	1,4-Dioxane	12.68	88	8418	202.9404	ug/L	87
51)	Bromodichloromethane	12.68	83	86508	19.0037	ug/L	97
52)	Dibromomethane	12.79	93	37838	18.6494	ug/L	98
53)	2-Chloroethyl Vinyl Ether	13.04	63	43788	22.9501	ug/L	98
54)	4-Methyl-2-Pentanone	13.07	58	32957	22.8121	ug/L	95
55)	cis-1,3-Dichloropropene	13.43	75	107415	21.4168	ug/L	97
56)	Dimethyl Disulfide	13.72	79	55787	22.0540	ug/L	96
59)	Toluene	13.91	91	249185	19.4775	ug/L	99
60)	Ethyl Methacrylate	14.04	69	93750	22.8702	ug/L	99
62)	trans-1,3-Dichloropropene	14.12	75	95082	19.3277	ug/L	99
63)	1,1,2-Trichloroethane	14.38	97	53581	20.0375	ug/L	99
64)	2-Hexanone	14.32	43	66977	21.9502	ug/L	96
65)	1,3-Dichloropropane	14.74	76	101575	20.9578	ug/L	97
66)	Tetrachloroethene	14.87	166	59860	18.9673	ug/L	98
67)	Dibromochloromethane	15.18	129	65835	18.9305	ug/L	98
68)	1,2-Dibromoethane	15.48	107	54431	19.9038	ug/L	99
69)	1-Chlorohexane	15.59	91	90947	22.8917	ug/L	87
70)	Chlorobenzene	16.07	112	162912	19.8135	ug/L	69
71)	1,1,1,2-Tetrachloroethane	16.11	131	63185	19.1388	ug/L	96
72)	Ethylbenzene	16.10	106	85483	19.4281	ug/L	97
73)	m-,p-Xylene	16.22	106	211102	39.2111	ug/L	97
74)	o-Xylene	16.88	106	106863	21.0741	ug/L	97
75)	Styrene	16.92	104	173150	20.0622	ug/L	96
76)	Bromoform	17.49	173	42455	17.2897	ug/L	99
77)	Isopropylbenzene	17.38	105	271983	19.9531	ug/L	97
79)	1,1,2,2-Tetrachloroethane	17.65	83	77852	20.7067	ug/L	96
81)	1,2,3-Trichloropropane	17.87	110	24632	21.3976	ug/L	93
82)	trans-1,4-Dichloro-2-Buten	17.93	53	24056	17.3315	ug/L	86
83)	n-Propylbenzene	17.98	91	319613	19.5541	ug/L	98
84)	Bromobenzene	18.13	156	69857	19.6620	ug/L	97
85)	1,3,5-Trimethylbenzene	18.21	105	227369	19.5429	ug/L	97
86)	2-Chlorotoluene	18.30	91	215420	19.7457	ug/L	96
87)	4-Chlorotoluene	18.36	91	198622	19.9111	ug/L	96
88)	a-Methylstyrene	18.69	118	132723	23.4912	ug/L	98
89)	tert-Butylbenzene	18.76	134	48454	19.9842	ug/L	99
90)	1,2,4-Trimethylbenzene	18.82	105	229858	18.7863	ug/L	82
91)	sec-Butylbenzene	19.08	105	282106	18.9342	ug/L	97
92)	p-Isopropyltoluene	19.27	119	230487	18.7505	ug/L	100
93)	1,3-Dichlorobenzene	19.48	146	131862	19.1812	ug/L	98
94)	1,4-Dichlorobenzene	19.64	146	134349	19.1992	ug/L	96
95)	n-Butylbenzene	19.89	91	210382	17.0166	ug/L	98
96)	1,2-Dichlorobenzene	20.23	146	131360	19.8577	ug/L	97
97)	1,2-Dibromo-3-Chloropropan	21.41	75	17394	20.9091	ug/L	89
98)	1,2,4-Trichlorobenzene	22.76	180	90540	18.9326	ug/L	99
99)	Hexachlorobutadiene	22.96	225	49331	18.0375	ug/L	100
100)	Naphthalene	23.20	128	218389	19.8646	ug/L	99
101)	1,2,3-Trichlorobenzene	23.59	180	89287	18.9609	ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\030916\6M137680.D Vial: 6
Acq On : 9 Mar 2016 13:09 Operator: TMB
Sample : WG560255-02 20ug/Kg LCS STD 8260 Inst : HPMS6
Misc : 7,1 STD74973 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 10 8:51 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

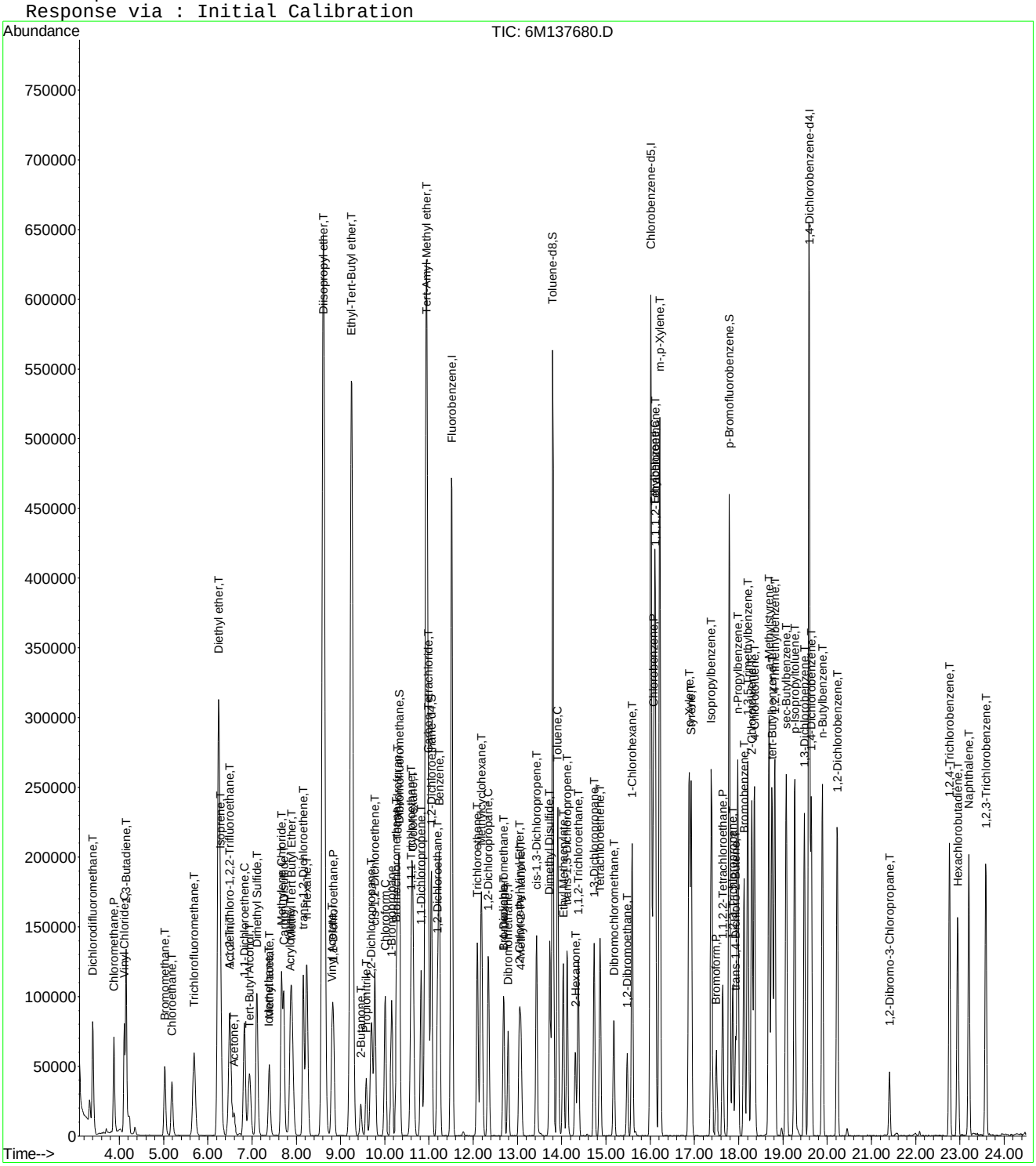

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030916\6M137681.D Vial: 7
Acq On : 9 Mar 2016 13:43 Operator: TMB
Sample : WG560249-02 MS 366-07 8260 4.98g Inst : HPMS6
Misc : 7,1 STD74973 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 09 14:08:15 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	603276	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	446649	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	239656	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	150263	46.4321 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 92.86%		
43) 1,2-Dichloroethane-d4	11.06	65	183653	43.7083 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 87.42%		
58) Toluene-d8	13.80	98	519375	48.9087 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 97.82%		
80) p-Bromofluorobenzene	17.79	95	219553	49.8760 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 99.76%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.41	85	102392	18.4806 ug/L	98
3) Chloromethane	3.88	50	87924	15.2286 ug/L	97
4) Vinyl Chloride	4.12	62	88769	19.1020 ug/L	97
5) 1,3-Butadiene	4.16	54	9970	2.5786 ug/L	85
6) Bromomethane	5.03	94	48845	19.7175 ug/L	97
7) Chloroethane	5.19	64	54890	20.8311 ug/L	100
8) Trichlorofluoromethane	5.69	101	115641	18.5194 ug/L	98
9) Diethyl ether	6.26	59	1685	0.5866 ug/L #	1
10) Isoprene	6.28	67	103122	25.3501 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	65237	21.8879 ug/L	94
13) Acetone	6.60	43	29915	19.3281 ug/L	90
14) 1,1-Dichloroethene	6.83	61	103026	19.5148 ug/L	95
15) Tert-Butyl Alcohol	6.83	59	4123	8.3697 ug/L #	57
16) Dimethyl Sulfide	7.12	62	79699	31.1157 ug/L	97
17) Iodomethane	7.39	142	38961	20.2448 ug/L	96
18) Methyl acetate	7.39	43	74942	20.4267 ug/L	98
19) Methylene Chloride	7.67	84	64502	20.2871 ug/L	86
20) Carbon Disulfide	7.72	76	198800	19.6811 ug/L	99
21) Acrylonitrile	7.86	53	32061	21.2630 ug/L	98
22) Methyl Tert Butyl Ether	7.89	73	200906	22.1267 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	61110	20.9532 ug/L	90
24) n-Hexane	8.24	57	124278	23.4662 ug/L	98
26) Vinyl Acetate	8.80	43	119975	16.9032 ug/L	98
27) 1,1-Dichloroethane	8.84	63	119152	18.9494 ug/L	99
29) 2-Butanone	9.46	43	42314	20.2917 ug/L	96
31) 2,2-Dichloropropane	9.70	77	103711	20.5483 ug/L	94
32) cis-1,2-Dichloroethene	9.77	96	65428	20.0946 ug/L	96
33) Chloroform	10.01	83	110075	18.7445 ug/L	96
34) 1-Bromopropane	10.16	122	15581	34.9034 ug/L	99
35) Bromochloromethane	10.27	130	37549	19.6271 ug/L	96
36) Tetrahydrofuran	10.29	42	2709	Below Cal #	60
38) 1,1,1-Trichloroethane	10.61	97	102278	19.7181 ug/L	100
39) Cyclohexane	10.64	56	140215	23.8388 ug/L	87
40) 1,1-Dichloropropene	10.82	75	86226	20.6420 ug/L	96
41) Tert-Amyl-Methyl ether	10.82	73	12549	1.4374 ug/L #	52
42) Carbon Tetrachloride	10.99	117	95775	19.7612 ug/L	96
45) 1,2-Dichloroethane	11.19	62	92929	18.5407 ug/L	99
46) Benzene	11.23	78	243484	19.3750 ug/L	93
47) Trichloroethene	12.09	130	63708	21.4589 ug/L	98
48) Methylcyclohexane	12.18	83	118793	24.7517 ug/L	89

(#) = qualifier out of range (m) = manual integration
6M137681.D 826_SL.M Wed Mar 09 14:08:15 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030916\6M137681.D Vial: 7
Acq On : 9 Mar 2016 13:43 Operator: TMB
Sample : WG560249-02 MS 366-07 8260 4.98g Inst : HPMS6
Misc : 7,1 STD74973 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 09 14:08:15 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
49)	1,2-Dichloropropane	12.35	63	70114	20.7356 ug/L	97
51)	Bromodichloromethane	12.68	83	83159	18.7409 ug/L	97
52)	Dibromomethane	12.78	93	36182	18.2948 ug/L	97
53)	2-Chloroethyl Vinyl Ether	13.04	63	40716	21.8925 ug/L	98
54)	4-Methyl-2-Pentanone	13.07	58	30435	21.6117 ug/L	94
55)	cis-1,3-Dichloropropene	13.43	75	104858	21.4482 ug/L	97
56)	Dimethyl Disulfide	13.73	79	54183	21.9744 ug/L	96
59)	Toluene	13.91	91	250598	19.8344 ug/L	99
60)	Ethyl Methacrylate	14.04	69	84486	20.8696 ug/L	100
62)	trans-1,3-Dichloropropene	14.12	75	91306	18.7937 ug/L	99
63)	1,1,2-Trichloroethane	14.38	97	51736	19.5910 ug/L	98
64)	2-Hexanone	14.31	43	60597	20.1092 ug/L	98
65)	1,3-Dichloropropane	14.74	76	97088	20.2840 ug/L	97
66)	Tetrachloroethene	14.87	166	63933	20.5127 ug/L	98
67)	Dibromochloromethane	15.18	129	63083	18.3674 ug/L	100
68)	1,2-Dibromoethane	15.48	107	52052	19.2733 ug/L	99
69)	1-Chlorohexane	15.59	91	95762	24.4070 ug/L	90
70)	Chlorobenzene	16.07	112	165743	20.4115 ug/L	70
71)	1,1,1,2-Tetrachloroethane	16.11	131	60863	18.6674 ug/L	98
72)	Ethylbenzene	16.10	106	89490	20.5947 ug/L	98
73)	m-,p-Xylene	16.22	106	220322	41.4386 ug/L	98
74)	o-Xylene	16.88	106	107433	21.4531 ug/L	94
75)	Styrene	16.92	104	175799	20.6254 ug/L	96
76)	Bromoform	17.50	173	41250	17.0103 ug/L	97
77)	Isopropylbenzene	17.38	105	287534	21.3593 ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.65	83	73029	19.5069 ug/L	95
81)	1,2,3-Trichloropropane	17.87	110	23337	20.3593 ug/L	96
82)	trans-1,4-Dichloro-2-Buten	17.93	53	22615	16.3629 ug/L	86
83)	n-Propylbenzene	17.98	91	354398	21.7749 ug/L	99
84)	Bromobenzene	18.13	156	69786	19.7259 ug/L	100
85)	1,3,5-Trimethylbenzene	18.21	105	244992	21.1476 ug/L	96
86)	2-Chlorotoluene	18.30	91	225005	20.7124 ug/L	97
87)	4-Chlorotoluene	18.36	91	210317	21.1736 ug/L	96
88)	a-Methylstyrene	18.69	118	134534	23.9135 ug/L	98
89)	tert-Butylbenzene	18.75	134	53078	21.9849 ug/L	85
90)	1,2,4-Trimethylbenzene	18.82	105	247284	20.2968 ug/L	82
91)	sec-Butylbenzene	19.08	105	324493	21.8721 ug/L	99
92)	p-Isopropyltoluene	19.27	119	262527	21.4483 ug/L	99
93)	1,3-Dichlorobenzene	19.48	146	139496	20.3784 ug/L	98
94)	1,4-Dichlorobenzene	19.64	146	139385	20.0040 ug/L	95
95)	n-Butylbenzene	19.89	91	254675	20.6872 ug/L	98
96)	1,2-Dichlorobenzene	20.23	146	133966	20.3381 ug/L	98
97)	1,2-Dibromo-3-Chloropropan	21.41	75	14978	18.0818 ug/L	94
98)	1,2,4-Trichlorobenzene	22.77	180	95059	19.9624 ug/L	99
99)	Hexachlorobutadiene	22.96	225	59658	21.9068 ug/L	98
100)	Naphthalene	23.20	128	208819	19.0753 ug/L	100
101)	1,2,3-Trichlorobenzene	23.59	180	92771	19.7850 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030916\6M137681.D Vial: 7
Acq On : 9 Mar 2016 13:43 Operator: TMB
Sample : WG560249-02 MS 366-07 8260 4.98g Inst : HPMS6
Misc : 7,1 STD74973 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 14:08 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

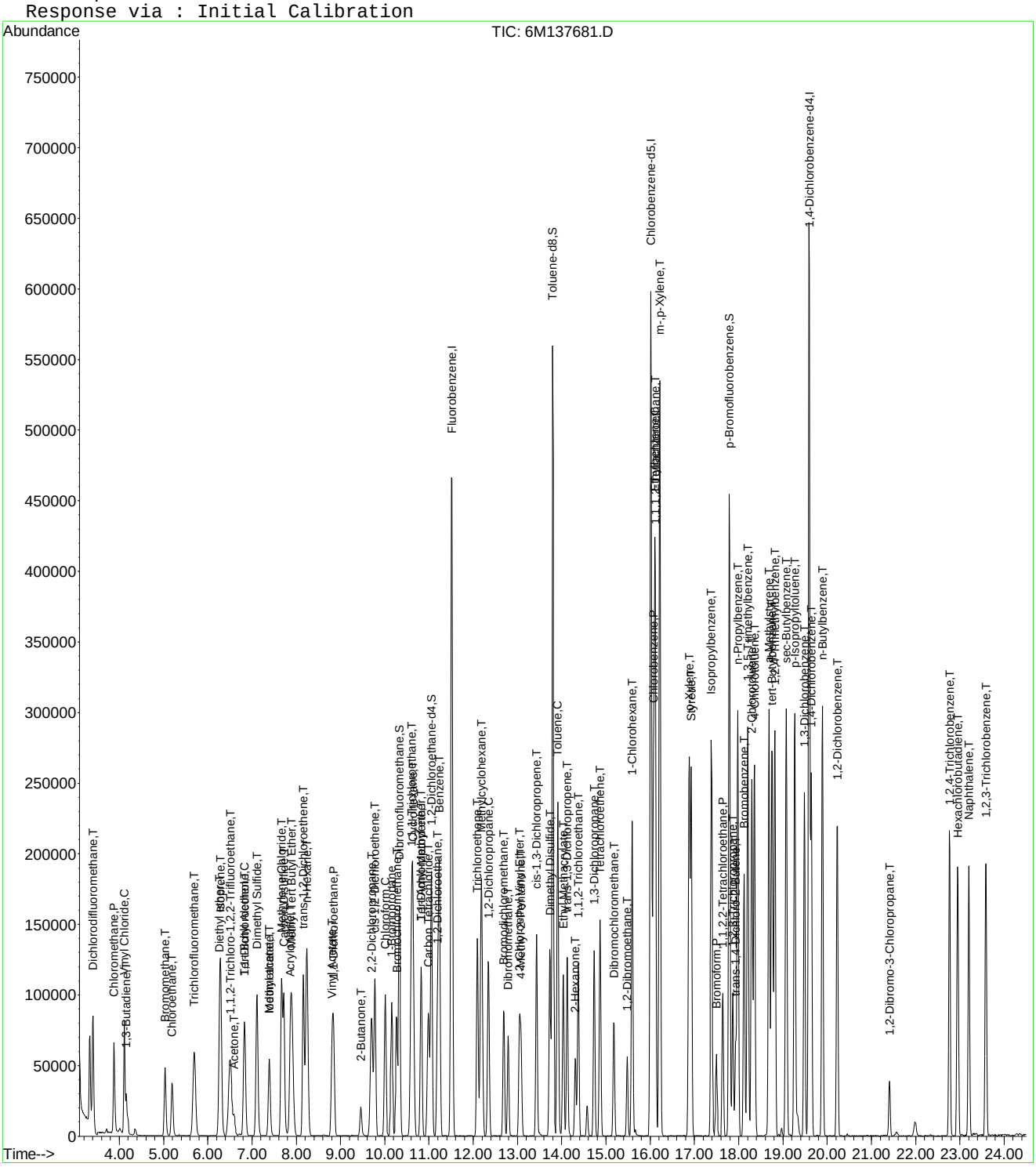

6M137681.D 826_SL.M Wed Mar 09 14:08:15 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030916\6M137682.D Vial: 8
Acq On : 9 Mar 2016 14:17 Operator: TMB
Sample : WG560249-03 MSD 366-07 8260 5.36g Inst : HPMS6
Misc : 7,1 STD74973 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 09 14:41:50 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	624478	50.00 ug/L	0.01
57) Chlorobenzene-d5	16.01	117	456215	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	244105	50.00 ug/L	0.01

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	152304	45.4649 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 90.92%		
43) 1,2-Dichloroethane-d4	11.06	65	184398	42.3956 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 84.80%		
58) Toluene-d8	13.80	98	539931	49.7783 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.56%		
80) p-Bromofluorobenzene	17.79	95	223838	49.9227 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 99.84%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	94046	16.3980 ug/L	97
3) Chloromethane	3.88	50	79314	13.2709 ug/L	96
4) Vinyl Chloride	4.12	62	83517	17.3616 ug/L	99
5) 1,3-Butadiene	4.16	54	9009	2.2509 ug/L	87
6) Bromomethane	5.03	94	43768	17.0682 ug/L	99
7) Chloroethane	5.19	64	50659	18.5727 ug/L	99
8) Trichlorofluoromethane	5.69	101	108311	16.7566 ug/L	99
9) Diethyl ether	6.24	59	1172	0.3941 ug/L #	19
10) Isoprene	6.28	67	100089	23.7692 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	60226	19.5206 ug/L	96
13) Acetone	6.60	43	29268	18.0271 ug/L	96
14) 1,1-Dichloroethene	6.83	61	97377	17.8186 ug/L	93
15) Tert-Butyl Alcohol	6.83	59	3465	6.7951 ug/L #	57
16) Dimethyl Sulfide	7.12	62	76611	28.8946 ug/L	96
17) Iodomethane	7.38	142	40440	20.2863 ug/L	97
18) Methyl acetate	7.39	43	75457	19.8688 ug/L	98
19) Methylene Chloride	7.67	84	58994	17.9247 ug/L	82
20) Carbon Disulfide	7.72	76	196342	18.7778 ug/L	99
21) Acrylonitrile	7.87	53	29102	18.6453 ug/L	98
22) Methyl Tert Butyl Ether	7.89	73	192455	20.4763 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	56386	18.6771 ug/L	88
24) n-Hexane	8.24	57	120618	22.0019 ug/L	98
26) Vinyl Acetate	8.80	43	92833	12.6351 ug/L	98
27) 1,1-Dichloroethane	8.84	63	110238	16.9365 ug/L	97
29) 2-Butanone	9.46	43	38770	17.9609 ug/L	97
31) 2,2-Dichloropropane	9.70	77	97353	18.6337 ug/L	93
32) cis-1,2-Dichloroethene	9.77	96	61577	18.2698 ug/L	99
33) Chloroform	10.01	83	103101	16.9609 ug/L	97
34) 1-Bromopropane	10.16	122	15020	32.5044 ug/L	100
35) Bromochloromethane	10.27	130	34575	17.4590 ug/L	98
36) Tetrahydrofuran	10.30	42	2270	Below Cal #	70
38) 1,1,1-Trichloroethane	10.60	97	96105	17.8989 ug/L	100
39) Cyclohexane	10.64	56	136674	22.4479 ug/L	88
40) 1,1-Dichloropropene	10.82	75	79019	18.2744 ug/L	97
41) Tert-Amyl-Methyl ether	10.82	73	11837	1.3098 ug/L #	52
42) Carbon Tetrachloride	10.99	117	88970	17.7339 ug/L	96
45) 1,2-Dichloroethane	11.19	62	87340	16.8340 ug/L	99
46) Benzene	11.23	78	231373	17.7862 ug/L	94
47) Trichloroethene	12.09	130	58954	19.1834 ug/L	96
48) Methylcyclohexane	12.18	83	115169	23.1819 ug/L	88

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030916\6M137682.D Vial: 8
Acq On : 9 Mar 2016 14:17 Operator: TMB
Sample : WG560249-03 MSD 366-07 8260 5.36g Inst : HPMS6
Misc : 7,1 STD74973 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 09 14:41:50 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
49)	1,2-Dichloropropane	12.34	63	64222	18.3483	ug/L	99
51)	Bromodichloromethane	12.68	83	79152	17.2323	ug/L	97
52)	Dibromomethane	12.79	93	33529	16.3778	ug/L	95
53)	2-Chloroethyl Vinyl Ether	13.04	63	37181	19.3130	ug/L	98
54)	4-Methyl-2-Pentanone	13.07	58	28288	19.4052	ug/L	91
55)	cis-1,3-Dichloropropene	13.43	75	98325	19.4291	ug/L	98
56)	Dimethyl Disulfide	13.72	79	52363	20.5153	ug/L	97
59)	Toluene	13.91	91	235812	18.2728	ug/L	100
60)	Ethyl Methacrylate	14.04	69	79982	19.3427	ug/L	98
62)	trans-1,3-Dichloropropene	14.12	75	85486	17.2268	ug/L	99
63)	1,1,2-Trichloroethane	14.38	97	47251	17.5175	ug/L	99
64)	2-Hexanone	14.31	43	55583	18.0585	ug/L	97
65)	1,3-Dichloropropane	14.74	76	89032	18.2109	ug/L	97
66)	Tetrachloroethene	14.87	166	59612	18.7253	ug/L	98
67)	Dibromochloromethane	15.18	129	58918	16.7950	ug/L	98
68)	1,2-Dibromoethane	15.48	107	46693	16.9265	ug/L	97
69)	1-Chlorohexane	15.59	91	93788	23.4026	ug/L	90
70)	Chlorobenzene	16.07	112	151332	18.2460	ug/L	69
71)	1,1,1,2-Tetrachloroethane	16.11	131	56458	16.9532	ug/L	98
72)	Ethylbenzene	16.11	106	81894	18.4514	ug/L	96
73)	m-,p-Xylene	16.22	106	202996	37.3793	ug/L	98
74)	o-Xylene	16.88	106	101130	19.7710	ug/L	98
75)	Styrene	16.92	104	164634	18.9105	ug/L	96
76)	Bromoform	17.50	173	36930	14.9096	ug/L	99
77)	Isopropylbenzene	17.38	105	271234	19.7260	ug/L	97
79)	1,1,2,2-Tetrachloroethane	17.65	83	66384	17.4087	ug/L	96
81)	1,2,3-Trichloropropane	17.87	110	20123	17.2354	ug/L	88
82)	trans-1,4-Dichloro-2-Buten	17.93	53	20986	14.9075	ug/L	84
83)	n-Propylbenzene	17.98	91	327852	19.7768	ug/L	98
84)	Bromobenzene	18.13	156	65646	18.2175	ug/L	100
85)	1,3,5-Trimethylbenzene	18.21	105	227465	19.2768	ug/L	95
86)	2-Chlorotoluene	18.30	91	209054	18.8933	ug/L	96
87)	4-Chlorotoluene	18.36	91	193554	19.1308	ug/L	96
88)	a-Methylstyrene	18.69	118	129414	22.5842	ug/L	98
89)	tert-Butylbenzene	18.76	134	50650	20.5969	ug/L	99
90)	1,2,4-Trimethylbenzene	18.82	105	228403	18.4054	ug/L	82
91)	sec-Butylbenzene	19.08	105	304223	20.1321	ug/L	99
92)	p-Isopropyltoluene	19.27	119	246280	19.7542	ug/L	100
93)	1,3-Dichlorobenzene	19.48	146	128214	18.3888	ug/L	98
94)	1,4-Dichlorobenzene	19.64	146	128843	18.1540	ug/L	95
95)	n-Butylbenzene	19.89	91	233813	18.6464	ug/L	98
96)	1,2-Dichlorobenzene	20.23	146	122515	18.2607	ug/L	97
97)	1,2-Dibromo-3-Chloropropan	21.40	75	14059	16.6630	ug/L	88
98)	1,2,4-Trichlorobenzene	22.76	180	85582	17.6447	ug/L	98
99)	Hexachlorobutadiene	22.96	225	55515	20.0139	ug/L	99
100)	Naphthalene	23.20	128	188720	16.9251	ug/L	100
101)	1,2,3-Trichlorobenzene	23.59	180	83119	17.4034	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\030916\6M137682.D Vial: 8
Acq On : 9 Mar 2016 14:17 Operator: TMB
Sample : WG560249-03 MSD 366-07 8260 5.36g Inst : HPMS6
Misc : 7,1 STD74973 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 9 14:41 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

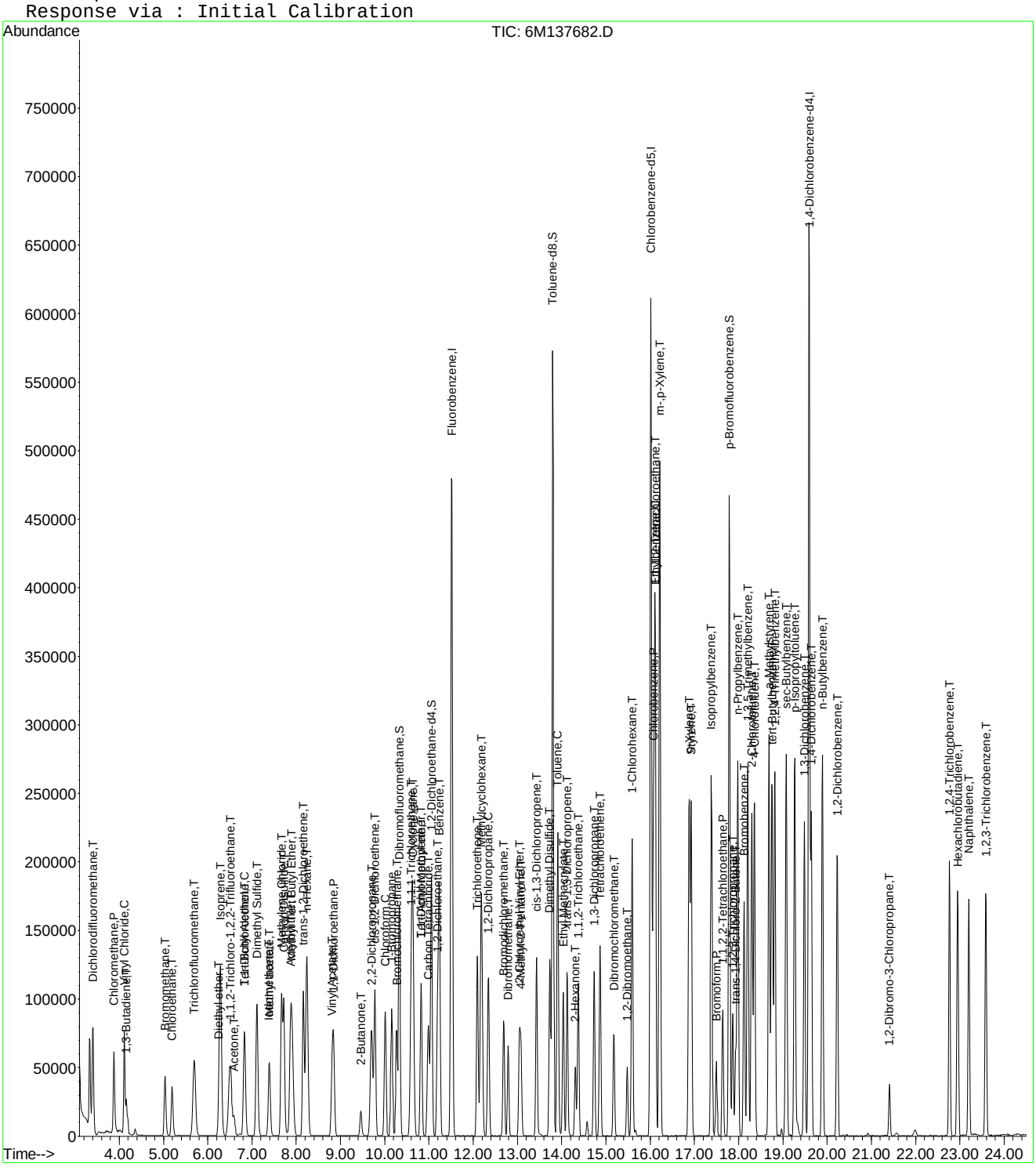

6M137682.D 826_SL.M Wed Mar 09 14:41:50 2016 Page 3

2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT11(5-5.5)040316	**Prep Method:**	6850	**Prep Date:**	03/08/2016 13:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG560129	**Analyst:**	JWR	**Run Date:**	03/08/2016 16:35
Collect Date:	03/04/2016 15:00	**Dilution:**	1	**File ID:**	1LM.LM33786
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.46	U	4.92	2.46	1.23

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT11(15-15.5)040316	**Prep Method:**	6850	**Prep Date:**	03/08/2016 13:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG560129	**Analyst:**	JWR	**Run Date:**	03/09/2016 11:29
Collect Date:	03/04/2016 16:00	**Dilution:**	10	**File ID:**	1LM.LM33809
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	81.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	379		48.4	24.2	12.1

Certificate of Analysis

Sample #:	L16030366-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT11(20-20.5)070316	**Prep Method:**	6850	**Prep Date:**	03/08/2016 13:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG560129	**Analyst:**	JWR	**Run Date:**	03/09/2016 11:48
Collect Date:	03/07/2016 11:50	**Dilution:**	100	**File ID:**	1LM.LM33810
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	82.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3940		472	236	118

Certificate of Analysis

Sample #:	L16030366-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT11(29-29.5)070316	**Prep Method:**	6850	**Prep Date:**	03/08/2016 13:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG560129	**Analyst:**	JWR	**Run Date:**	03/09/2016 12:07
Collect Date:	03/07/2016 11:55	**Dilution:**	100	**File ID:**	1LM.LM33811
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	79.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3370		496	248	124

Certificate of Analysis

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L16030366-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT11(25-25.5)070316	**Prep Method:**	6850	**Prep Date:**	03/08/2016 13:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG560129	**Analyst:**	JWR	**Run Date:**	03/09/2016 12:26
Collect Date:	03/07/2016 12:00	**Dilution:**	10	**File ID:**	1LM.LM33812
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	79.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	424		49.7	24.8	12.4

Certificate of Analysis

Sample #:	L16030366-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT12(5-5.5)070316	**Prep Method:**	6850	**Prep Date:**	03/08/2016 13:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG560129	**Analyst:**	JWR	**Run Date:**	03/08/2016 19:44
Collect Date:	03/07/2016 14:35	**Dilution:**	1	**File ID:**	1LM.LM33796
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	5.53		4.73	2.36	1.18

Certificate of Analysis

Sample #:	L16030366-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT12(8.5-9)070316	**Prep Method:**	6850	**Prep Date:**	03/08/2016 13:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG560129	**Analyst:**	JWR	**Run Date:**	03/08/2016 20:03
Collect Date:	03/07/2016 14:40	**Dilution:**	1	**File ID:**	1LM.LM33797
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1.99	J	4.93	2.46	1.23

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT12(18-18.5)070316	**Prep Method:**	6850	**Prep Date:**	03/08/2016 13:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG560129	**Analyst:**	JWR	**Run Date:**	03/09/2016 12:45
Collect Date:	03/07/2016 14:45	**Dilution:**	500	**File ID:**	1LM.LM33813
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	81.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	15900		2430	1220	609

Certificate of Analysis

Sample #:	L16030366-09	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT12(12-12.5)070316	**Prep Method:**	6850	**Prep Date:**	03/08/2016 13:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG560129	**Analyst:**	JWR	**Run Date:**	03/09/2016 13:04
Collect Date:	03/07/2016 15:00	**Dilution:**	100	**File ID:**	1LM.LM33814
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	77.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	7090		510	256	128

Certificate of Analysis

Sample #:	L16030366-10	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT13(5-5.5)070316	**Prep Method:**	6850	**Prep Date:**	03/08/2016 13:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG560129	**Analyst:**	JWR	**Run Date:**	03/08/2016 21:00
Collect Date:	03/07/2016 16:00	**Dilution:**	1	**File ID:**	1LM.LM33800
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.30	U	4.62	2.30	1.15

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-11	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT13(12-12.5)070316	**Prep Method:**	6850	**Prep Date:**	03/08/2016 13:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG560129	**Analyst:**	JWR	**Run Date:**	03/08/2016 21:19
Collect Date:	03/07/2016 16:05	**Dilution:**	1	**File ID:**	1LM.LM33801
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.44	U	4.88	2.44	1.22

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030366-12	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT13(17-17.5)070316	**Prep Method:**	6850	**Prep Date:**	03/08/2016 13:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG560129	**Analyst:**	JWR	**Run Date:**	03/08/2016 21:38
Collect Date:	03/07/2016 16:10	**Dilution:**	1	**File ID:**	1LM.LM33802
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	76.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.56	U	5.14	2.56	1.28

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030366
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

MICROBAC

Semivolatile Sample Extract Log

Parameter: Perchlorate
SOP #: HPLC 06
Analyst: JWR
Spike/Surrogate analyst: JWR
Surrogate #: NA
Spike # A: STD72686
Ext Solvent: DI-H20
Ext Solvent: NA
Ext Disk: NA

Matrix: Soils
Rev #: 07
Date/Time Extracted: 03/08/16/1300
Witness: WD

Spike # B: NA
Lot #: NA
Lot #: NA
Lot #: NA

Extraction Work Group: WG560109
Analytical Work Group: WG560129
Run ID: R4489371

Pipetter(s): Eppendorf #403
Analytical Balance ID: BAL017
Reagent: Tubes Lot #: RGT 34011
Reagent: Sand Lot #: COA 16150
Other: IS Lot #: COA 18071

Color Code
T = Transparent
C = Colored
O = Opaque

	Sample ID	Test Code	pH	Initial Wt / Vol	JWR ~~Surrogate~~ Amount IS	Amount Spike	Final Volume	Extract Color	Comments
1	WG560109-01	6850		5.022g	0.250ml	1.0ml	50ml		MCT (2ug/kg)(10,000us)
2	WG560109-02			5.014g		NA			Blank
3	WG560109-03			5.012g		1.0ml			LCS (2ug/kg)
4	L16030366-01			5.134g		NA			WG560109-04 Ref
5	MS -01			5.165g		1.0ml			WG560109-05 MS (@2ug/kg)
6	MSD -01			5.138g		1.0ml			WG560109-06 MSD (@2ug/kg)
7	-02			5.059g		NA			
8	-03			5.112g		NA			
9	-04			5.071g		NA			
10	-05			5.074g		NA			
11	-06			5.059g		NA			
12	-07			5.110g		NA			
13	-08			5.058g		NA			
14	-09			5.049g		NA			
15	-10			5.078g		NA			
16	-11			5.043g		NA			
17	-12			5.060g		NA			
18									
19									
20									
21									
22									
23									
24									

JWR 03/08/16

Reviewed by: Wade T. Doll 3-9-16

Analytical WG560129 (soils)

Perchlorate Conductivity Check

(perchlorate1)

Conductivity Probe Calibration Check: 1414 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG560109-01 MCT	9,840.	
WG560109-02 Blank	1.08	
WG560109-03 LCS	1.01	
L16030366-01 Ref	5.68	
-01 MS	5.44	
-01 MSD	5.13	
-02	73.7	
-03	88.8	
-04	61.7	
-05	109.4	
-06	81.3	
-07	21.6	
-08	29.4	
-09	40.7	
-10	5.68	
-11	3.11	
-12	19.06	

Analyst: John Richards

Date/Time: 03/08/16 / 1600

DCN#117104

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030216_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015, WG559292

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 MS/MSD STD: STD72685

Comments: L16021262s and L16021255s diluted based on historical data.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM33567	WG559340-01 CCB	1	1		03/02/16 08:34
2	1LM.LM33568	WG559340-02 STD (0.1 ug/L)	1	1	STD72683	03/02/16 08:53
3	1LM.LM33569	WG559340-03 STD (0.2 ug/L)	1	1	STD72683	03/02/16 09:12
4	1LM.LM33570	WG559340-04 STD (0.5 ug/L)	1	1	STD72683	03/02/16 09:31
5	1LM.LM33571	WG559340-05 STD (1.0 ug/L)	1	1	STD72683	03/02/16 09:50
6	1LM.LM33572	WG559340-06 STD (2.0 ug/L)	1	1	STD72683	03/02/16 10:09
7	1LM.LM33573	WG559340-07 STD (5.0 ug/L)	1	1	STD72683	03/02/16 10:28
8	1LM.LM33574	WG559340-08 STD (10 ug/L)	1	1	STD72683	03/02/16 10:46
9	1LM.LM33575	WG559340-09 SSCV (1.0 ug/L)	1	1	STD72685	03/02/16 11:05
10	1LM.LM33576	WG559291-01 CCB	1	1		03/02/16 11:25
11	1LM.LM33577	WG559291-02 CCV (1.0ug/L)	1	1	STD72683	03/02/16 11:44
12	1LM.LM33578	WG559015-05 MRL (0.2ug/L)	1	1	STD72683	03/02/16 12:03
13	1LM.LM33579	WG559015-01 MCT (0.2ug/L)	1	1	STD72685	03/02/16 12:22
14	1LM.LM33580	WG559015-02 BLANK	1	1		03/02/16 12:41
15	1LM.LM33581	WG559015-05 MRL (0.2ug/L)	1	1	STD72683	03/02/16 13:01
16	1LM.LM33582	WG559015-03 LCS (0.2ug/L)	1	1	STD72685	03/02/16 13:20
17	1LM.LM33583	WG559015-04 LCS2 (0.2ug/L)	1	1	STD72685	03/02/16 13:39
18	1LM.LM33584	L16021060-01 ADC	1	1	STD72685	03/02/16 13:58
19	1LM.LM33585	L16021060-02 ADC	1	1	STD72685	03/02/16 14:17
20	1LM.LM33586	L16021060-03 ADC	1	1	STD72685	03/02/16 14:36
21	1LM.LM33587	L16021060-04 ADC	1	1	STD72685	03/02/16 14:55
22	1LM.LM33588	L16021262-01 (20x)	1	20		03/02/16 15:13
23	1LM.LM33589	L16021262-02 (5000x)	1	5000		03/02/16 15:32
24	1LM.LM33590	WG559291-03 CCV (1.0ug/L)	1	1	STD72683	03/02/16 15:51
25	1LM.LM33591	WG559015-06 MRL (0.2ug/L)	1	1	STD72683	03/02/16 16:10
26	1LM.LM33592	WG559291-04 CCB	1	1		03/02/16 16:29
27	1LM.LM33593	L16021262-03 (100X)	1	100		03/02/16 16:48
28	1LM.LM33594	L16021262-04 (2000X)	1	2000		03/02/16 17:07
29	1LM.LM33595	L16021262-05 (1000X)	1	1000		03/02/16 17:26
30	1LM.LM33596	L16021262-06 (10,000X)	1	10000		03/02/16 17:45
31	1LM.LM33597	L16021262-07 (10,000X)	1	10000		03/02/16 18:04
32	1LM.LM33598	L16021262-08 (5000X)	1	5000		03/02/16 18:23
33	1LM.LM33599	L16021262-09 (5000X)	1	5000		03/02/16 18:42

Page: 1 Approved: 04-MAR-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030216_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015, WG559292

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM33600	L16021262-10 (100,000X)	1	100000		03/02/16 19:01
35	1LM.LM33601	L16021262-11 (10,000X)	1	10000		03/02/16 19:20
36	1LM.LM33602	L16021262-12 (10,000X)	1	10000		03/02/16 19:39
37	1LM.LM33603	WG559291-05 CCV (1.0ug/L)	1	1	STD72683	03/02/16 19:58
38	1LM.LM33604	WG559015-07 MRL (0.2ug/L)	1	1	STD72683	03/02/16 20:17
39	1LM.LM33605	WG559291-06 CCB	1	1		03/02/16 20:35
40	1LM.LM33606	L16021262-13 (10,000X)	1	10000		03/02/16 20:54
41	1LM.LM33607	L16021262-14 (10,000X)	1	10000		03/02/16 21:13
42	1LM.LM33608	WG559291-07 CCV (1.0ug/L)	1	1	STD72683	03/02/16 21:32
43	1LM.LM33609	WG559015-08 MRL (0.2ug/L)	1	1	STD72683	03/02/16 21:51
44	1LM.LM33610	WG559291-08 CCB	1	1		03/02/16 22:10
45	1LM.LM33611	WG559292-07 MRL (0.2ug/L)	1	1	STD72685	03/02/16 22:29
46	1LM.LM33612	WG559292-01 MCT (0.2ug/L)	1	1	STD72685	03/02/16 22:48
47	1LM.LM33613	WG559292-02 BLANK	1	1		03/02/16 23:07
48	1LM.LM33614	WG559292-03 LCS (0.2ug/L)	1	1	STD72685	03/02/16 23:26
93	1LM.LM33615	L16021255-01 REF 100X	1	100		03/02/16 23:45
50	1LM.LM33616	L16021255-02 MS 100X	1	100	STD72685	03/03/16 00:04
51	1LM.LM33617	L16021255-03 MSD 100X	1	100	STD72685	03/03/16 00:23
94	1LM.LM33618	L16021255-04 20X	1	20		03/03/16 00:42
53	1LM.LM33619	L16021255-05 20X	1	20		03/03/16 01:01
54	1LM.LM33620	L16021255-06 200X	1	200		03/03/16 01:20
55	1LM.LM33621	L16021255-07 100X	1	100		03/03/16 01:39
56	1LM.LM33622	WG559291-09 CCV (1.0ug/L)	1	1	STD72685	03/03/16 01:57
57	1LM.LM33623	WG559292-08 MRL (0.2ug/L)	1	1	STD72685	03/03/16 02:16
58	1LM.LM33624	WG559291-10 CCB	1	1		03/03/16 02:35
59	1LM.LM33625	L16021255-08	1	1		03/03/16 02:54
60	1LM.LM33626	L16021255-09 500X	1	500		03/03/16 03:13
61	1LM.LM33627	L16021255-10 5000X	1	5000		03/03/16 03:32
62	1LM.LM33628	L16021255-11 5000X	1	5000		03/03/16 03:51
63	1LM.LM33629	L16021255-12 100X	1	100		03/03/16 04:10
64	1LM.LM33630	L16021255-13 10,000X	1	10000		03/03/16 04:29
65	1LM.LM33631	L16021255-14 10,000X	1	10000		03/03/16 04:48
66	1LM.LM33632	L16030008-01	1	1		03/03/16 05:07
67	1LM.LM33633	L16030008-01 10X	1	10		03/03/16 05:26
68	1LM.LM33634	L16021328-01	1	1		03/03/16 05:45
69	1LM.LM33635	WG559291-11 CCV (1.0ug/L)	1	1	STD72685	03/03/16 06:04

Page: 2 Approved: 04-MAR-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030216_WTD.TXT

Analyst1: WTD Analyst2: ADC

Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015, WG559292

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
70	1LM.LM33636	WG559292-09 MRL (0.2ug/L)	1	1	STD72685	03/03/16 06:23
71	1LM.LM33637	WG559291-12 CCB	1	1		03/03/16 06:41
72	1LM.LM33638	L16021328-02	1	1		03/03/16 07:00
73	1LM.LM33639	L16021328-03	1	1		03/03/16 07:19
74	1LM.LM33640	L16021328-04	1	1		03/03/16 07:38
75	1LM.LM33641	L16021328-05	1	1		03/03/16 07:57
76	1LM.LM33642	WG559291-13 CCV (1.0ug/L)	1	1	STD72685	03/03/16 08:16
77	1LM.LM33643	WG559292-10 MRL (0.2ug/L)	1	1	STD72685	03/03/16 08:35
78	1LM.LM33644	WG559291-14 CCB	1	1		03/03/16 08:54
79	1LM.LM33645	L16021255-05 200X	1	200		03/03/16 09:13
80	1LM.LM33646	L16021255-06	1	1		03/03/16 09:32
81	1LM.LM33647	L16021255-12 1000X	1	1000		03/03/16 09:51
95	1LM.LM33648	L16021255-04	1	1		03/03/16 10:10
96	1LM.LM33649	L16021255-02 MS	1	1	STD72685	03/03/16 10:29
97	1LM.LM33650	L16021255-03 MSD	1	1	STD72685	03/03/16 10:48
85	1LM.LM33651	WG559291-15 CCV (1.0ug/L)	1	1	STD72685	03/03/16 11:07
86	1LM.LM33652	WG559292-11 MRL (0.2ug/L)	1	1	STD72685	03/03/16 11:25
87	1LM.LM33653	WG559291-16 CCB	1	1		03/03/16 11:44

Comments

Seq.	Rerun	Dil.	Reason	Analytes
12	X			
	WG559015-05 incorrect vial location.			
50				
	DNR. Incorrect information on the supplied Chain of Custody.			
51				
	DNR. Incorrect information on the supplied Chain of Custody.			
94	X	1	Analyzed too dilute	
	L16021255-04			
53	X	200	Over Calibration Range	Perchlorate
	L16021255-05			
54	X	1	Analyzed too dilute	
	L16021255-06			
63	X	1000	Over Calibration Range	
	L16021255-12 100X			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030816_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG560129 (waters)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD72683 (03/02/2016)

CCV STD: STD72683 LCS STD: STD72685 MS/MSD STD: STD72685

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM33780	WG560141-01 CCB	1	1		03/08/16 14:41
2	1LM.LM33781	WG560141-02 CCV (1.0ug/L)	1	1	STD72683	03/08/16 15:00
3	1LM.LM33782	WG560129-07 MRL (2.0ug/kg)	7	1	STD72683	03/08/16 15:19
4	1LM.LM33783	WG560129-01 MCT (2.0ug/kg)	7	1	STD72685	03/08/16 15:38
5	1LM.LM33784	WG560129-02 BLANK	7	1		03/08/16 15:57
6	1LM.LM33785	WG560129-03 LCS (2.0ug/kg)	7	1	STD72685	03/08/16 16:16
7	1LM.LM33786	L16030366-01 RS	7	1		03/08/16 16:35
8	1LM.LM33787	L16030366-01 MS	7	1	STD72685	03/08/16 16:54
9	1LM.LM33788	L16030366-01 MSD	7	1	STD72685	03/08/16 17:13
10	1LM.LM33789	L16030366-02 (NR)	7	1		03/08/16 17:32
11	1LM.LM33790	L16030366-03 (NR)	7	1		03/08/16 17:51
12	1LM.LM33791	L16030366-04 (NR)	7	1		03/08/16 18:10
13	1LM.LM33792	L16030366-05 (NR)	7	1		03/08/16 18:29
14	1LM.LM33793	WG560141-03 CCV (1.0ug/L)	1	1	STD72683	03/08/16 18:47
15	1LM.LM33794	WG560129-08 MRL (2.0ug/kg)	7	1	STD72683	03/08/16 19:06
16	1LM.LM33795	WG560141-04 CCB	1	1		03/08/16 19:25
17	1LM.LM33796	L16030366-06	7	1		03/08/16 19:44
18	1LM.LM33797	L16030366-07	7	1		03/08/16 20:03
19	1LM.LM33798	L16030366-08 (NR)	7	1		03/08/16 20:22
20	1LM.LM33799	L16030366-09 (NR)	7	1		03/08/16 20:41
21	1LM.LM33800	L16030366-10	7	1		03/08/16 21:00
22	1LM.LM33801	L16030366-11	7	1		03/08/16 21:19
23	1LM.LM33802	L16030366-12	7	1		03/08/16 21:38
24	1LM.LM33803	WG560141-05 CCV (1.0ug/L)	1	1	STD72683	03/08/16 21:57
25	1LM.LM33804	WG560129-09 MRL (2.0ug/kg)	7	1	STD72683	03/08/16 22:16
26	1LM.LM33805	WG560141-06 CCB	1	1		03/08/16 22:35
27	1LM.LM33806	WG560141-07 CCV (1.0ug/L)	1	1	STD72683	03/09/16 10:32
28	1LM.LM33807	WG560129-10 MRL (2.0ug/kg)	7	1	STD72683	03/09/16 10:51
29	1LM.LM33808	WG560141-08 CCB	1	1		03/09/16 11:10
30	1LM.LM33809	L16030366-02 (RR 10x)	7	10		03/09/16 11:29
31	1LM.LM33810	L16030366-03 (RR 100x)	7	100		03/09/16 11:48
32	1LM.LM33811	L16030366-04 (RR 100x)	7	100		03/09/16 12:07
33	1LM.LM33812	L16030366-05 (RR 10x)	7	10		03/09/16 12:26

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Wadei D

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030816_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG560129 (waters)

Internal STD: COA18071 Surrogate STD: NA STD72683 (03/02/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM33813	L16030366-08 (RR 500x)	7	500		03/09/16 12:45
35	1LM.LM33814	L16030366-09 (RR 100x)	7	100		03/09/16 13:04
36	1LM.LM33815	WG560141-09 CCV (1.0ug/L)	1	1	STD72683	03/09/16 13:23
37	1LM.LM33816	WG560129-11 MRL (2.0ug/kg)	7	1	STD72683	03/09/16 13:42
38	1LM.LM33817	WG560141-10 CCB	1	1		03/09/16 14:01

Comments

Seq.	Rerun	Dil.	Reason	Analytes
10	X	10	Over Calibration Range	
	L16030366-02 (NR) : This sample was reanalyzed at a 10x dilution on the end of this run.			
11	X	100	Over Calibration Range	
	L16030366-03 (NR) : This sample was reanalyzed at a 100x dilution on the end of this run.			
12	X	100	Over Calibration Range	
	L16030366-04 (NR) : This sample was reanalyzed at a 100x dilution on the end of this run.			
13	X	10	Over Calibration Range	
	L16030366-05 (NR) : This sample was reanalyzed at a 10x dilution on the end of this run.			
19	X	500	Over Calibration Range	
	L16030366-08 (NR) : This sample was reanalyzed at a 500x dilution on the end of this run.			
20	X	100	Over Calibration Range	
	L16030366-09 (NR) : This sample was reanalyzed at a 100x dilution on the end of this run.			

Page: 2 Approved: 10-MAR-16

Microbac Laboratories Inc.

Data Checklist

Date: 02-MAR-2016
Analyst: WTD
Analyst: ADC
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 73617
Analytical Workgroups: L16021255,L16021328,030008,021262,021060

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	WTD
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MES

Primary Reviewer: 03-MAR-2016

Secondary Reviewer: 04-MAR-2016

CHECKLIST1 - Modified 03/05/2008

Generated: MAR-04-2016 13:53:03

Microbac Laboratories Inc.

Data Checklist

Date: 08-MAR-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 73746
Analytical Workgroups: L16030366 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
10-MAR-2016
John Richards

Secondary Reviewer:
10-MAR-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-10-2016 11:53:34

Microbac Laboratories Inc.

00696989

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG560129

Login Number: L16030366

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18DPT11(5-5.5)040316	01	03/04/16					03/08/2016	3.9	28		03/08/16	.1	28	
18DPT11(15-15.5)040316	02	03/04/16					03/08/2016	3.9	28		03/09/16	.9	28	
18DPT11(20-20.5)070316	03	03/07/16					03/08/2016	1	28		03/09/16	1	28	
18DPT11(29-29.5)070316	04	03/07/16					03/08/2016	1	28		03/09/16	1	28	
18DPT11(25-25.5)070316	05	03/07/16					03/08/2016	1	28		03/09/16	1	28	
18DPT12(5-5.5)070316	06	03/07/16					03/08/2016	.9	28		03/08/16	.3	28	
18DPT12(8.5-9)070316	07	03/07/16					03/08/2016	.9	28		03/08/16	.3	28	
18DPT12(18-18.5)070316	08	03/07/16					03/08/2016	.9	28		03/09/16	1	28	
18DPT12(12-12.5)070316	09	03/07/16					03/08/2016	.9	28		03/09/16	1	28	
18DPT13(5-5.5)070316	10	03/07/16					03/08/2016	.9	28		03/08/16	.3	28	
18DPT13(12-12.5)070316	11	03/07/16					03/08/2016	.9	28		03/08/16	.3	28	
18DPT13(17-17.5)070316	12	03/07/16					03/08/2016	.9	28		03/08/16	.4	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4664374
Report generated 03/10/2016 13:32

METHOD BLANK SUMMARY

Login Number: L16030366
Blank File ID: 1LM.LM33784
Prep Date: 03/08/16 13:00
Analyzed Date: 03/08/16 15:57
Analyst: JWR

Work Group: WG560129
Blank Sample ID: WG560129-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG560129-07	1LM.LM33782	03/08/16 15:19	01
MCT	WG560129-01	1LM.LM33783	03/08/16 15:38	01
LCS	WG560129-03	1LM.LM33785	03/08/16 16:16	01
18DPT11(5-5.5)040316	L16030366-01	1LM.LM33786	03/08/16 16:35	01
QCMRL	WG560129-08	1LM.LM33794	03/08/16 19:06	01
18DPT12(5-5.5)070316	L16030366-06	1LM.LM33796	03/08/16 19:44	01
18DPT12(8.5-9)070316	L16030366-07	1LM.LM33797	03/08/16 20:03	01
18DPT13(5-5.5)070316	L16030366-10	1LM.LM33800	03/08/16 21:00	01
18DPT13(12-12.5)070316	L16030366-11	1LM.LM33801	03/08/16 21:19	01
18DPT13(17-17.5)070316	L16030366-12	1LM.LM33802	03/08/16 21:38	01
QCMRL	WG560129-09	1LM.LM33804	03/08/16 22:16	01
QCMRL	WG560129-10	1LM.LM33807	03/09/16 10:51	01
18DPT11(15-15.5)040316	L16030366-02	1LM.LM33809	03/09/16 11:29	DL01
18DPT11(20-20.5)070316	L16030366-03	1LM.LM33810	03/09/16 11:48	DL01
18DPT11(29-29.5)070316	L16030366-04	1LM.LM33811	03/09/16 12:07	DL01
18DPT11(25-25.5)070316	L16030366-05	1LM.LM33812	03/09/16 12:26	DL01
18DPT12(18-18.5)070316	L16030366-08	1LM.LM33813	03/09/16 12:45	DL01
18DPT12(12-12.5)070316	L16030366-09	1LM.LM33814	03/09/16 13:04	DL01
QCMRL	WG560129-11	1LM.LM33816	03/09/16 13:42	01

Report Name: BLANK_SUMMARY
PDF File ID: 4664375
Report generated 03/10/2016 13:32

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16030366 Prep Date: 03/08/16 13:00 Sample ID: WG560129-02
Instrument ID: LCMS1 Run Date: 03/08/16 15:57 Prep Method: 6850
File ID: 1LM.LM33784 Analyst: JWR Method: 6850
Workgroup (AAB#): WG560129 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.997	3.99	0.997	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4664376
10-MAR-2016 13:32

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030366 Run Date: 03/08/2016 Sample ID: WG560129-03
Instrument ID: LCMS1 Run Time: 16:16 Prep Method: 6850
File ID: 1LM.LM33785 Analyst: JWR Method: 6850
Workgroup (AAB#): WG560129 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD72685 Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	2.00	2.01	101	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4664377
Report generated: 03/10/2016 13:32

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16030366 Cal ID: LCMS1 - Worknum: WG560129
Instrument ID: LCMS1 Contract #: Method: 6850
Parent ID: WG560129-04 File ID: 1LM.LM33786 Dil: 1 Matrix: SOLID
Sample ID: WG560129-05 MS File ID: 1LM.LM33787 Dil: 1 Units: ug/kg
Sample ID: WG560129-06 MSD File ID: 1LM.LM33788 Dil: 1 Percent Solid: 79.1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Perchlorate	ND	2.45	2.48	102	2.46	2.45	99.5	1.47	80 - 120	15	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4664378
Report generated 03/10/2016 13:32

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16030366
Analytical Method: 6850
ICAL Workgroup: WG559340

Instrument ID: LCMS1
Initial Calibration Date: 02-MAR-16 10:46
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.808	3.97	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4664862
Report generated 03/10/2016 13:32

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16030366

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 02-MAR-16 10:46

Column ID: F

Analyte	WG559340-02			WG559340-03			WG559340-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	18400.0000	1.879	0.200	37000.0000	1.850	0.500	89000.0000	1.810

INT_CAL - Modified 03/06/2008
PDF File ID: 4664862
Report generated 03/10/2016 13:32

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16030366

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 02-MAR-16 10:46

Column ID: F

Analyte	WG559340-05			WG559340-06			WG559340-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	183000.000	1.829	2.00	363000.000	1.777	5.00	871000.000	1.779

INT_CAL - Modified 03/06/2008
PDF File ID: 4664862
Report generated 03/10/2016 13:32

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16030366

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 02-MAR-16 10:46

Column ID: F

Analyte	WG559340-08		
	CONC	RESP	RF
Perchlorate	10.0	1650000.00	1.729

INT_CAL - Modified 03/06/2008

PDF File ID: 4664862

Report generated 03/10/2016 13:32

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16030366 Run Date: 03/02/2016 Sample ID: WG559340-09
Instrument ID: LCMS1 Run Time: 11:05 Method: 6850
File ID: 1LM.LM33575 Analyst: WTD QC Key: DOD4
ICal Workgroup: WG559340 Cal ID: LCMS1 - 02-MAR-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.83	3.00	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4664863
Report generated 03/10/2016 13:32

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030366
Run Date: 03/08/2016
Sample ID: WG560141-01
Instrument ID: LCMS1
Run Time: 14:41
Method: 6850
File ID: 1LM.LM33780
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG560129
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4664381
Report generated 03/10/2016 13:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030366
Run Date: 03/08/2016
Sample ID: WG560141-04
Instrument ID: LCMS1
Run Time: 19:25
Method: 6850
File ID: 1LM.LM33795
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG560129
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4664381
Report generated 03/10/2016 13:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030366
Run Date: 03/08/2016
Sample ID: WG560141-06
Instrument ID: LCMS1
Run Time: 22:35
Method: 6850
File ID: 1LM.LM33805
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG560129
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4664381
Report generated 03/10/2016 13:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030366
Run Date: 03/09/2016
Sample ID: WG560141-08
Instrument ID: LCMS1
Run Time: 11:10
Method: 6850
File ID: 1LM.LM33808
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG560129
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4664381
Report generated 03/10/2016 13:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030366
Run Date: 03/09/2016
Sample ID: WG560141-10
Instrument ID: LCMS1
Run Time: 14:01
Method: 6850
File ID: 1LM.LM33817
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG560129
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4664381
Report generated 03/10/2016 13:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030366
Run Date: 03/08/2016
Sample ID: WG560141-02
Instrument ID: LCMS1
Run Time: 15:00
Method: 6850
File ID: 1LM.LM33781
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG560129
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.988	ug/kg	1.75	1.20	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4664380
Report generated 03/10/2016 13:32

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030366
Run Date: 03/08/2016
Sample ID: WG560141-03
Instrument ID: LCMS1
Run Time: 18:47
Method: 6850
File ID: 1LM.LM33793
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG560129
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.974	ug/kg	1.73	2.60	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4664380
Report generated 03/10/2016 13:32

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030366
Run Date: 03/08/2016
Sample ID: WG560141-05
Instrument ID: LCMS1
Run Time: 21:57
Method: 6850
File ID: 1LM.LM33803
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG560129
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/kg	1.75	1.50	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4664380
Report generated 03/10/2016 13:32

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030366
Run Date: 03/09/2016
Sample ID: WG560141-07
Instrument ID: LCMS1
Run Time: 10:32
Method: 6850
File ID: 1LM.LM33806
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG560129
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.973	ug/kg	1.72	2.70	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4664380
Report generated 03/10/2016 13:32

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030366 Run Date: 03/09/2016 Sample ID: WG560141-09
Instrument ID: LCMS1 Run Time: 13:23 Method: 6850
File ID: 1LM.LM33815 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG560129 Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.993	ug/kg	1.76	0.700	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4664380
Report generated 03/10/2016 13:32

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030366 Run Date: 03/08/2016 Sample ID: WG560129-07

Instrument ID: LCMS1 Run Time: 15:19 Prep Method: 6850

File ID: 1LM.LM33782 Analyst: JWR Method: 6850

Workgroup (AAB#): WG560129 Matrix: Soil Units: ug/kg

Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.95	97.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4664379
Report generated 03/10/2016 13:32

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030366 Run Date: 03/08/2016 Sample ID: WG560129-08

Instrument ID: LCMS1 Run Time: 19:06 Prep Method: 6850

File ID: 1LM.LM33794 Analyst: JWR Method: 6850

Workgroup (AAB#): WG560129 Matrix: Soil Units: ug/kg

Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.85	92.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4664379
Report generated 03/10/2016 13:32

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030366 Run Date: 03/08/2016 Sample ID: WG560129-09

Instrument ID: LCMS1 Run Time: 22:16 Prep Method: 6850

File ID: 1LM.LM33804 Analyst: JWR Method: 6850

Workgroup (AAB#): WG560129 Matrix: Soil Units: ug/kg

Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.93	96.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4664379
Report generated 03/10/2016 13:32

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030366 Run Date: 03/09/2016 Sample ID: WG560129-10

Instrument ID: LCMS1 Run Time: 10:51 Prep Method: 6850

File ID: 1LM.LM33807 Analyst: JWR Method: 6850

Workgroup (AAB#): WG560129 Matrix: Soil Units: ug/kg

Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.90	95.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4664379
Report generated 03/10/2016 13:32

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030366 Run Date: 03/09/2016 Sample ID: WG560129-11

Instrument ID: LCMS1 Run Time: 13:42 Prep Method: 6850

File ID: 1LM.LM33816 Analyst: JWR Method: 6850

Workgroup (AAB#): WG560129 Matrix: Soil Units: ug/kg

Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.90	95.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4664379
Report generated 03/10/2016 13:32

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16030366
Instrument ID: LCMS1
Workgroup (AAB#): WG560129

ICAL CCV Number: WG559340-05
CAL ID: LCMS1-02-MAR-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1
WG559340	NA	NA	494000
Upper Limit	NA	NA	741000
Lower Limit	NA	NA	247000
L16030366-01	1.00	01	495000
L16030366-02	10.0	DL01	474000
L16030366-03	100	DL01	477000
L16030366-04	100	DL01	471000
L16030366-05	10.0	DL01	463000
L16030366-06	1.00	01	525000
L16030366-07	1.00	01	535000
L16030366-08	500	DL01	467000
L16030366-09	100	DL01	457000
L16030366-10	1.00	01	542000
L16030366-11	1.00	01	555000
L16030366-12	1.00	01	569000
WG560129-02	1.00	01	484000
WG560129-03	1.00	01	484000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4664386
Report generated 03/10/2016 13:33

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**	6850	**Samplenum:**	L16030366-01
Instrument:	LCMS1	**Prep Date:**	03/08/2016 13:00	**File ID:**	1LM.LM33786
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG560129	**Analysis Date:**	03/08/2016 16:35	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	325	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**	6850	**Samplenum:**	L16030366-02
Instrument:	LCMS1	**Prep Date:**	03/08/2016 13:00	**File ID:**	1LM.LM33809
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG560129	**Analysis Date:**	03/09/2016 11:29	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	522000	170000	3.07	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**	6850	**Samplenum:**	L16030366-03
Instrument:	LCMS1	**Prep Date:**	03/08/2016 13:00	**File ID:**	1LM.LM33810
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG560129	**Analysis Date:**	03/09/2016 11:48	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	559000	182000	3.07	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**	6850	**Samplenum:**	L16030366-04
Instrument:	LCMS1	**Prep Date:**	03/08/2016 13:00	**File ID:**	1LM.LM33811
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG560129	**Analysis Date:**	03/09/2016 12:07	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	450000	144000	3.13	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**	6850	**Samplenum:**	L16030366-05
Instrument:	LCMS1	**Prep Date:**	03/08/2016 13:00	**File ID:**	1LM.LM33812
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG560129	**Analysis Date:**	03/09/2016 12:26	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	554000	181000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**	6850	**Samplenum:**	L16030366-06
Instrument:	LCMS1	**Prep Date:**	03/08/2016 13:00	**File ID:**	1LM.LM33796
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG560129	**Analysis Date:**	03/08/2016 19:44	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	88200	29100	3.03	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**	6850	**Samplenum:**	L16030366-07
Instrument:	LCMS1	**Prep Date:**	03/08/2016 13:00	**File ID:**	1LM.LM33797
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG560129	**Analysis Date:**	03/08/2016 20:03	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32600	10700	3.05	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**	6850	**Samplenum:**	L16030366-08
Instrument:	LCMS1	**Prep Date:**	03/08/2016 13:00	**File ID:**	1LM.LM33813
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG560129	**Analysis Date:**	03/09/2016 12:45	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	429000	139000	3.09	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**	6850	**Samplenum:**	L16030366-09
Instrument:	LCMS1	**Prep Date:**	03/08/2016 13:00	**File ID:**	1LM.LM33814
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG560129	**Analysis Date:**	03/09/2016 13:04	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	892000	290000	3.08	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**	6850	**Samplenum:**	L16030366-10
Instrument:	LCMS1	**Prep Date:**	03/08/2016 13:00	**File ID:**	1LM.LM33800
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG560129	**Analysis Date:**	03/08/2016 21:00	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	4160	2440	1.70	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**	6850	**Samplenum:**	L16030366-11
Instrument:	LCMS1	**Prep Date:**	03/08/2016 13:00	**File ID:**	1LM.LM33801
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG560129	**Analysis Date:**	03/08/2016 21:19	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	5110	2120	2.41	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**	6850	**Samplenum:**	L16030366-12
Instrument:	LCMS1	**Prep Date:**	03/08/2016 13:00	**File ID:**	1LM.LM33802
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG560129	**Analysis Date:**	03/08/2016 21:38	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**		**Samplenum:**	WG559340-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33568
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG560129	**Analysis Date:**	03/02/2016 08:53	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	18400	5910	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**		**Samplenum:**	WG559340-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33569
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG560129	**Analysis Date:**	03/02/2016 09:12	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37000	11900	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**		**Samplenum:**	WG559340-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33570
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG560129	**Analysis Date:**	03/02/2016 09:31	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	89000	30400	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**		**Samplenum:**	WG559340-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33571
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG560129	**Analysis Date:**	03/02/2016 09:50	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	183000	56800	3.22	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**		**Samplenum:**	WG559340-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33572
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG560129	**Analysis Date:**	03/02/2016 10:09	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	363000	117000	3.10	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**		**Samplenum:**	WG559340-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33573
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG560129	**Analysis Date:**	03/02/2016 10:28	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	871000	282000	3.09	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**		**Samplenum:**	WG559340-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33574
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG560129	**Analysis Date:**	03/02/2016 10:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1650000	530000	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**		**Samplenum:**	WG559340-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33575
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG560129	**Analysis Date:**	03/02/2016 11:05	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	190000	62200	3.05	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**	6850	**Samplenum:**	WG560129-01
Instrument:	LCMS1	**Prep Date:**	03/08/2016 13:00	**File ID:**	1LM.LM33783
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG560129	**Analysis Date:**	03/08/2016 15:38	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35600	11300	3.15	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**	6850	**Samplenum:**	WG560129-02
Instrument:	LCMS1	**Prep Date:**	03/08/2016 13:00	**File ID:**	1LM.LM33784
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG560129	**Analysis Date:**	03/08/2016 15:57	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**	6850	**Samplenum:**	WG560129-03
Instrument:	LCMS1	**Prep Date:**	03/08/2016 13:00	**File ID:**	1LM.LM33785
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG560129	**Analysis Date:**	03/08/2016 16:16	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36200	11800	3.07	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**	6850	**Samplenum:**	WG560129-05
Instrument:	LCMS1	**Prep Date:**	03/08/2016 13:00	**File ID:**	1LM.LM33787
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG560129	**Analysis Date:**	03/08/2016 16:54	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37700	12800	2.95	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**	6850	**Samplenum:**	WG560129-06
Instrument:	LCMS1	**Prep Date:**	03/08/2016 13:00	**File ID:**	1LM.LM33788
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG560129	**Analysis Date:**	03/08/2016 17:13	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36900	12200	3.02	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**	6850	**Samplenum:**	WG560129-07
Instrument:	LCMS1	**Prep Date:**	03/08/2016 13:00	**File ID:**	1LM.LM33782
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG560129	**Analysis Date:**	03/08/2016 15:19	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36000	13200	2.73	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**	6850	**Samplenum:**	WG560129-08
Instrument:	LCMS1	**Prep Date:**	03/08/2016 13:00	**File ID:**	1LM.LM33794
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG560129	**Analysis Date:**	03/08/2016 19:06	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36800	12500	2.94	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**	6850	**Samplenum:**	WG560129-09
Instrument:	LCMS1	**Prep Date:**	03/08/2016 13:00	**File ID:**	1LM.LM33804
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG560129	**Analysis Date:**	03/08/2016 22:16	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	42700	13900	3.07	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**	6850	**Samplenum:**	WG560129-10
Instrument:	LCMS1	**Prep Date:**	03/08/2016 13:00	**File ID:**	1LM.LM33807
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG560129	**Analysis Date:**	03/09/2016 10:51	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36100	12000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**	6850	**Samplenum:**	WG560129-11
Instrument:	LCMS1	**Prep Date:**	03/08/2016 13:00	**File ID:**	1LM.LM33816
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG560129	**Analysis Date:**	03/09/2016 13:42	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35500	11200	3.17	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**		**Samplenum:**	WG560141-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33780
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG560129	**Analysis Date:**	03/08/2016 14:41	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	167	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**		**Samplenum:**	WG560141-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33781
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG560129	**Analysis Date:**	03/08/2016 15:00	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	55500	3.05	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**		**Samplenum:**	WG560141-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33793
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG560129	**Analysis Date:**	03/08/2016 18:47	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	177000	59700	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**		**Samplenum:**	WG560141-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33795
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG560129	**Analysis Date:**	03/08/2016 19:25	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1960	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**		**Samplenum:**	WG560141-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33803
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG560129	**Analysis Date:**	03/08/2016 21:57	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	204000	63100	3.23	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**		**Samplenum:**	WG560141-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33805
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG560129	**Analysis Date:**	03/08/2016 22:35	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	236	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**		**Samplenum:**	WG560141-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33806
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG560129	**Analysis Date:**	03/09/2016 10:32	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	175000	57700	3.03	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**		**Samplenum:**	WG560141-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33808
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG560129	**Analysis Date:**	03/09/2016 11:10	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**		**Samplenum:**	WG560141-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33815
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG560129	**Analysis Date:**	03/09/2016 13:23	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	172000	55800	3.08	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030366	**Prep Method:**		**Samplenum:**	WG560141-10
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33817
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG560129	**Analysis Date:**	03/09/2016 14:01	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

2.2.1.3 Sample Data

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Data File	LM33786.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/8/2016 4:35:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030366-01 RS	**Injection Vial**	7.00
Data File	LM33786.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 4:35:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG560129-04	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	3.250e+02	9.97	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

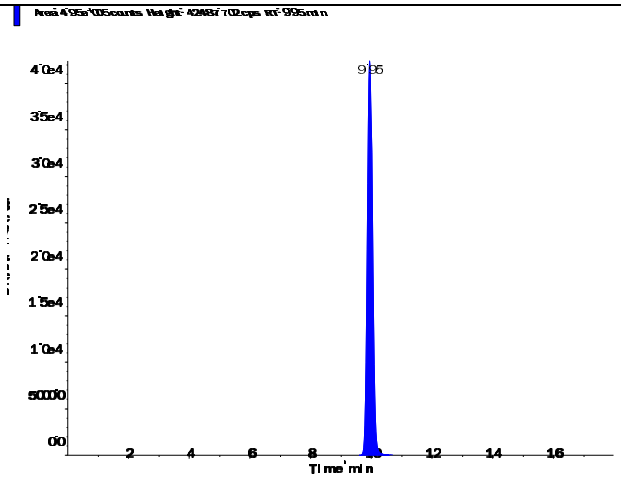

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.94) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	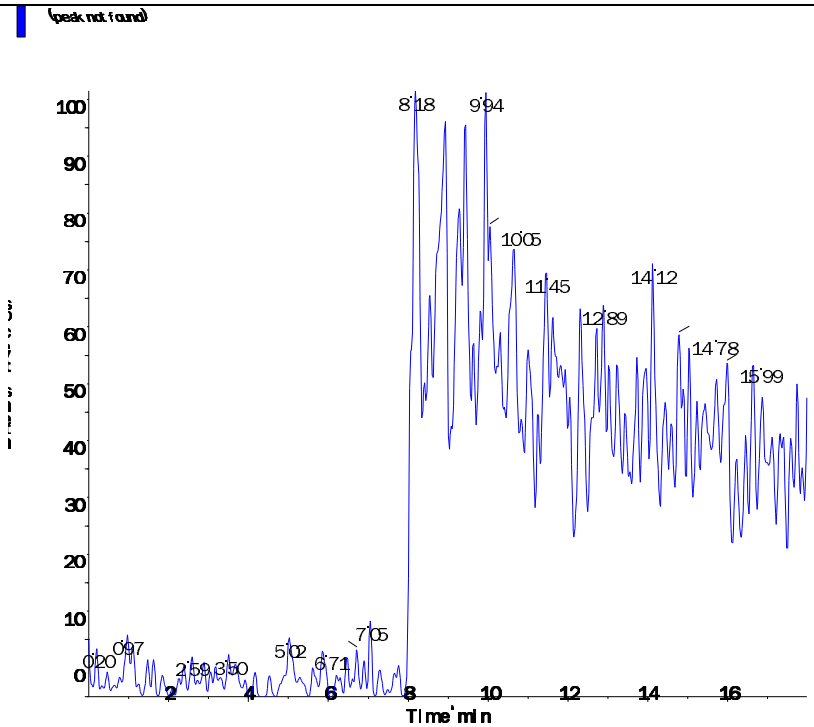
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.97 (9.92) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	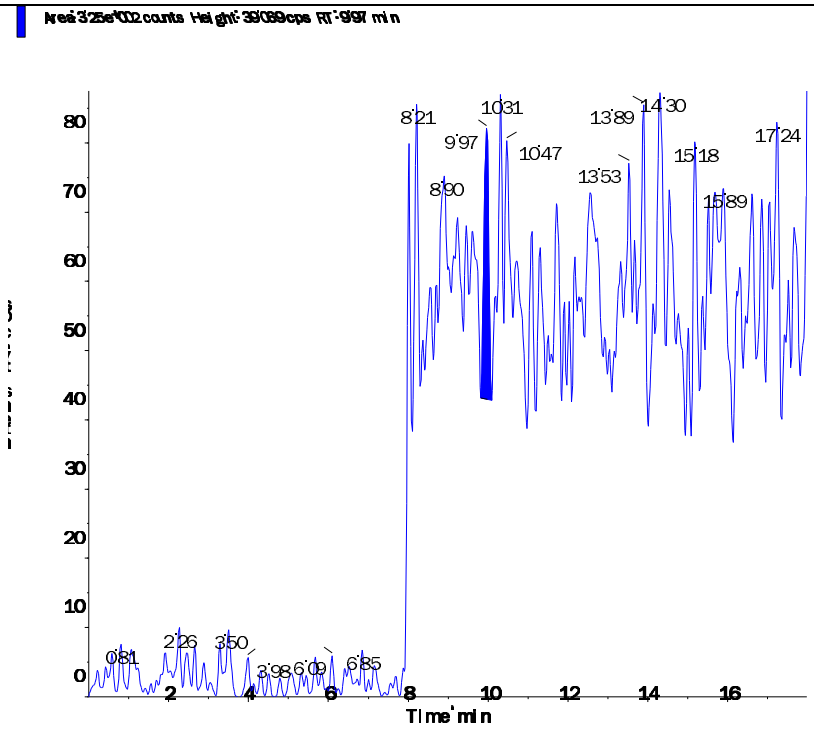

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Printed: 3/9/2016 2:54 PM

Data File	LM33809.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/9/2016 11:29:43 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030366-02 (RR 10x)	**Injection Vial**	21.00
Data File	LM33809.wiff	**Injection Volume**	10.00
Acquisition Date	3/9/2016 11:29:43 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	L16030366-02	**Dilution Factor**	1.00
Sample Comment	710.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.740e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.220e+05	9.94	N/A	3.13
Perchlorate conf	1.700e+05	9.92	N/A	3.18

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

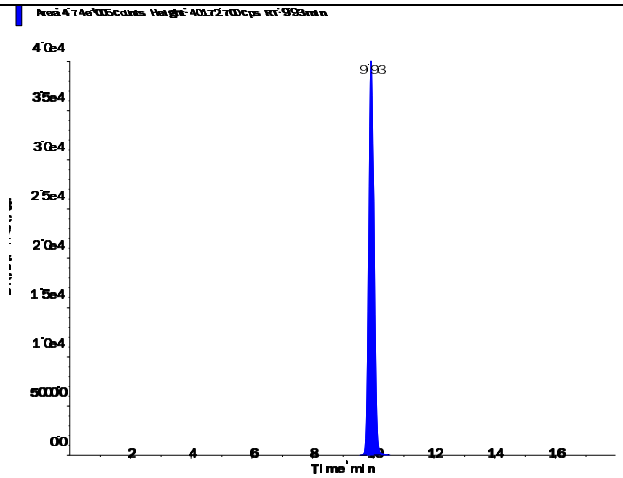

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.94 (9.94) min Calculated conc: 3.13 ng/ml Area Ratio: 1.101 Sample Type: (Unknown)	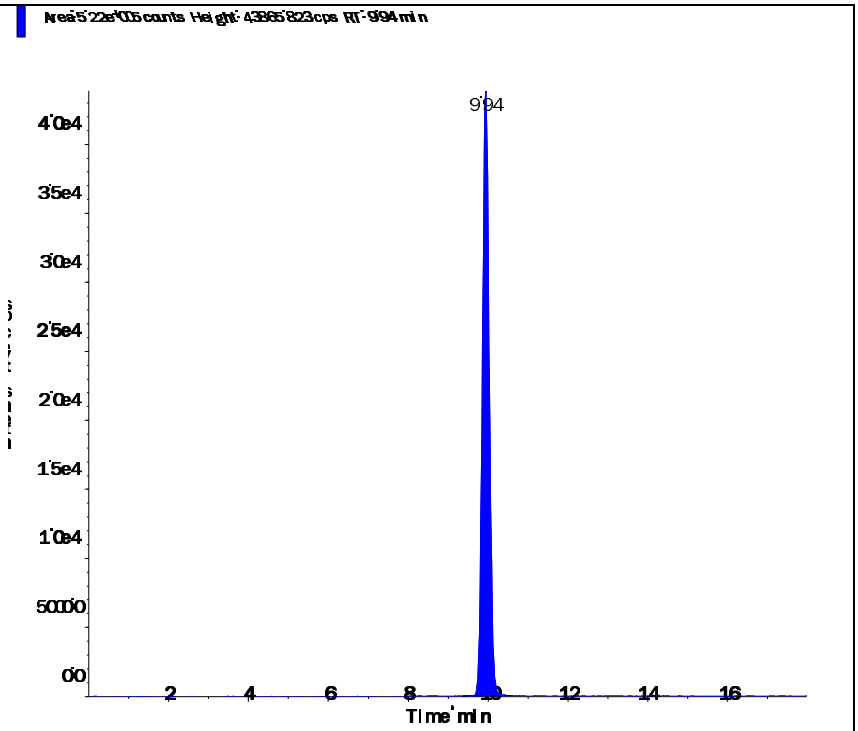
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.92 (9.92) min Calculated conc: 3.18 ng/ml Area Ratio: 0.359 Sample Type: (Unknown)	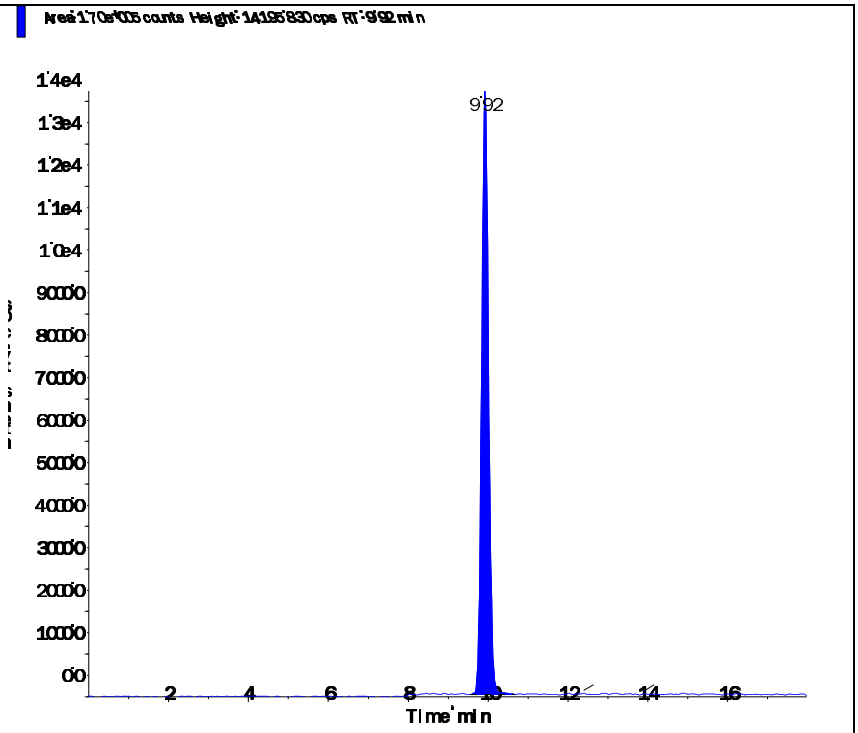

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Data File	LM33810.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/9/2016 11:48:38 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030366-03 (RR 100x)	**Injection Vial**	22.00
Data File	LM33810.wiff	**Injection Volume**	10.00
Acquisition Date	3/9/2016 11:48:38 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	L16030366-03	**Dilution Factor**	1.00
Sample Comment	7,100.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.770e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.590e+05	9.95	N/A	3.34
Perchlorate conf	1.820e+05	9.93	N/A	3.38

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

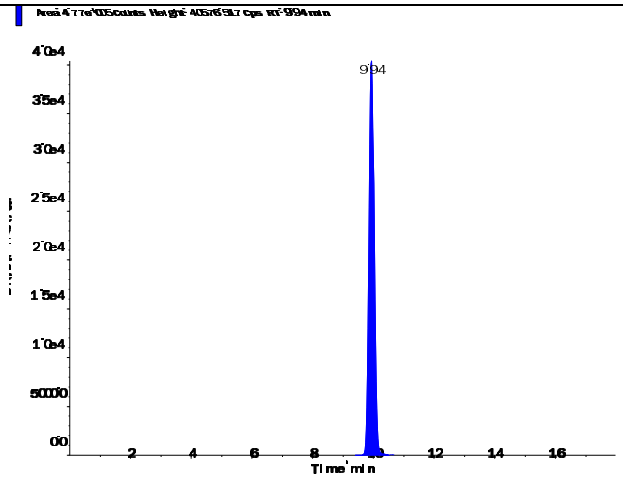

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	3.34 ng/ml
Area Ratio:	1.171
Sample Type:	(Unknown)

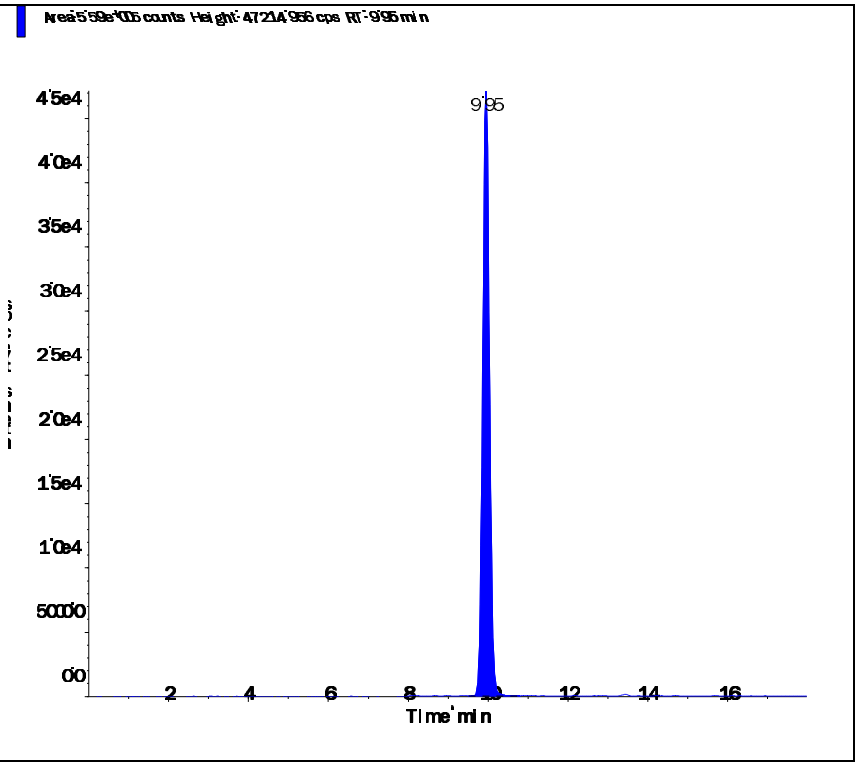

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	3.38 ng/ml
Area Ratio:	0.381
Sample Type:	(Unknown)

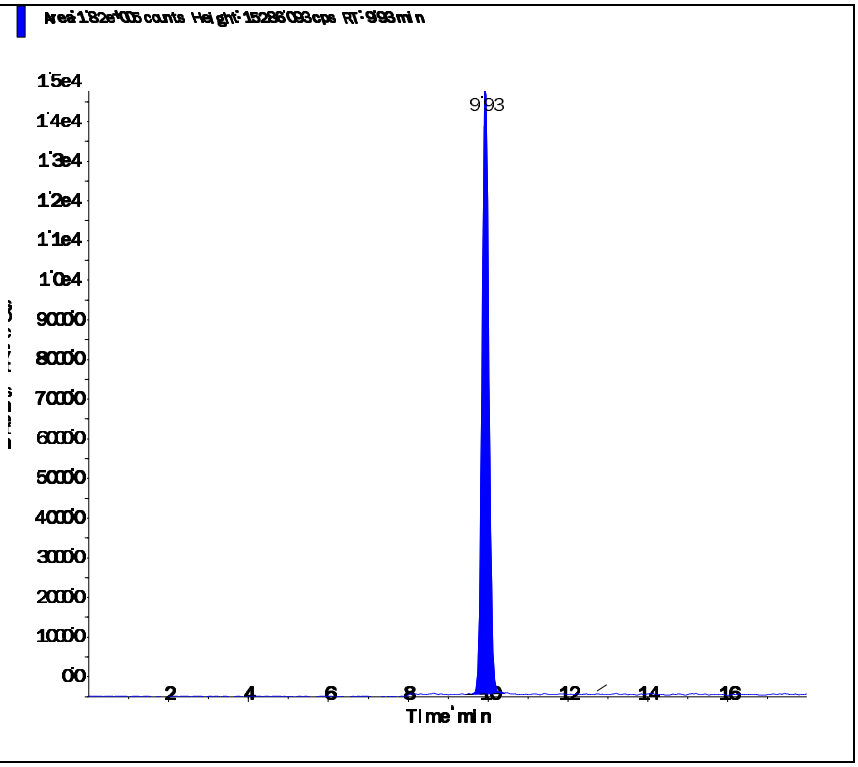

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Data File	LM33811.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/9/2016 12:07:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030366-04 (RR 100x)	**Injection Vial**	23.00
Data File	LM33811.wiff	**Injection Volume**	10.00
Acquisition Date	3/9/2016 12:07:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	L16030366-04	**Dilution Factor**	1.00
Sample Comment	7,100.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.710e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.500e+05	9.95	N/A	2.72
Perchlorate conf	1.440e+05	9.93	N/A	2.71

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

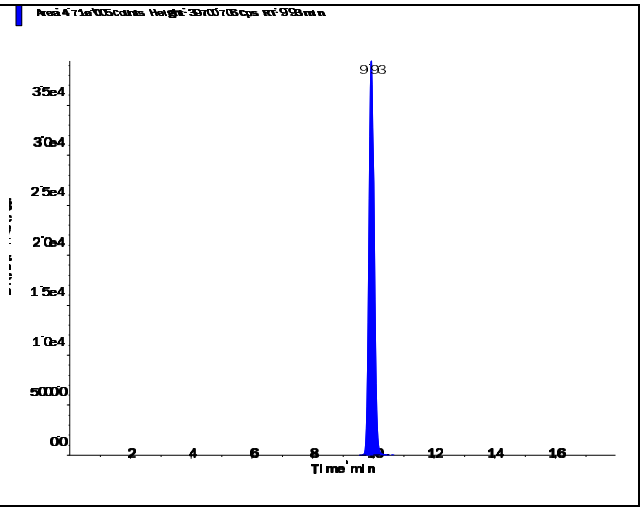

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.95 (9.94) min Calculated conc: 2.72 ng/ml Area Ratio: 0.956 Sample Type: (Unknown)	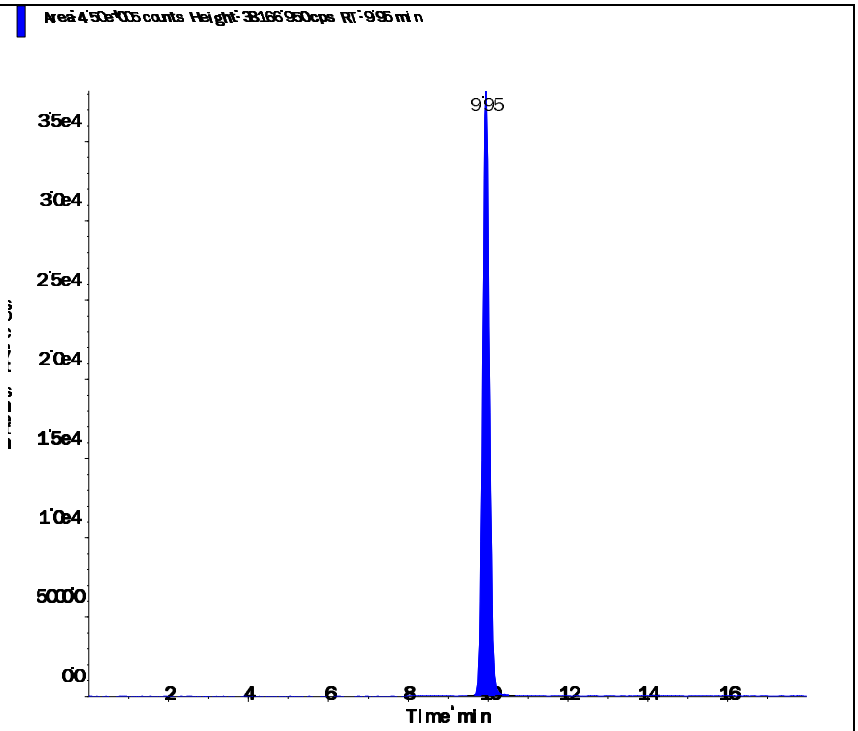
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.93 (9.92) min Calculated conc: 2.71 ng/ml Area Ratio: 0.306 Sample Type: (Unknown)	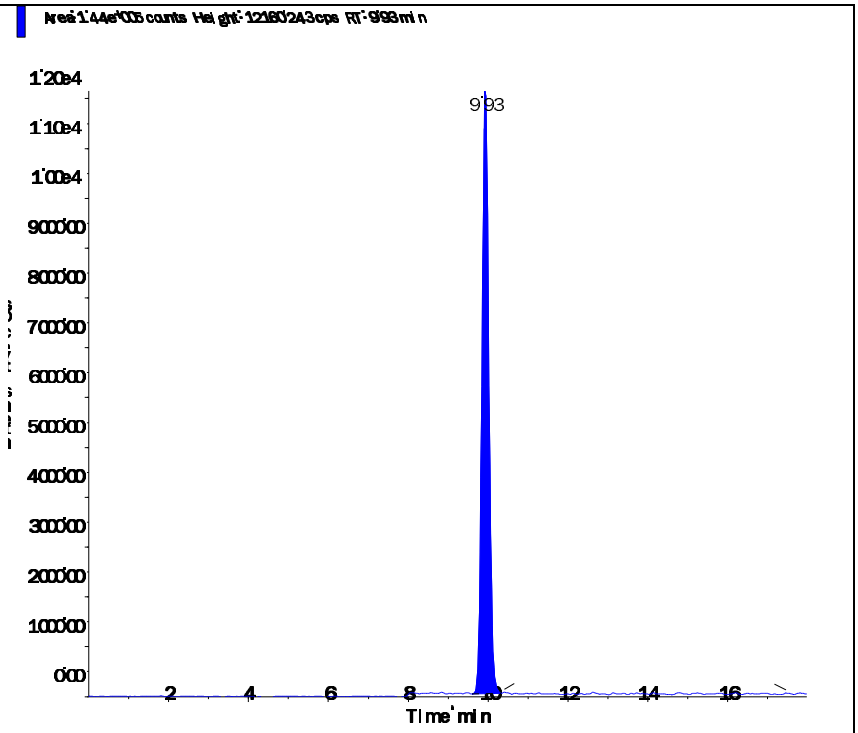

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Data File	LM33812.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/9/2016 12:26:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030366-05 (RR 10x)	**Injection Vial**	24.00
Data File	LM33812.wiff	**Injection Volume**	10.00
Acquisition Date	3/9/2016 12:26:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	L16030366-05	**Dilution Factor**	1.00
Sample Comment	710.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.630e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.540e+05	9.95	N/A	3.41
Perchlorate conf	1.810e+05	9.94	N/A	3.46

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

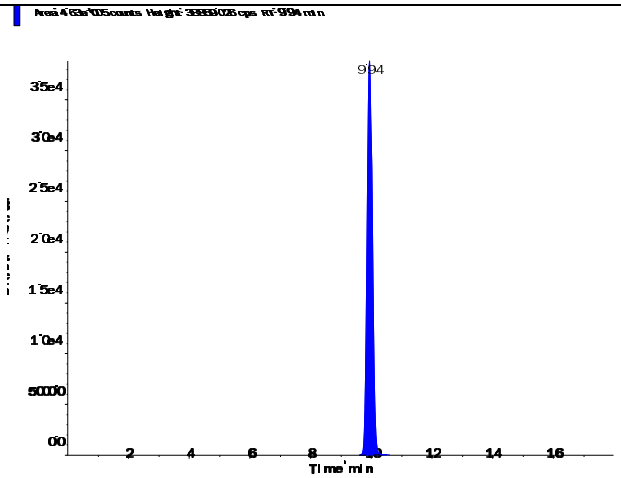

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	3.41 ng/ml
Area Ratio:	1.196
Sample Type:	(Unknown)

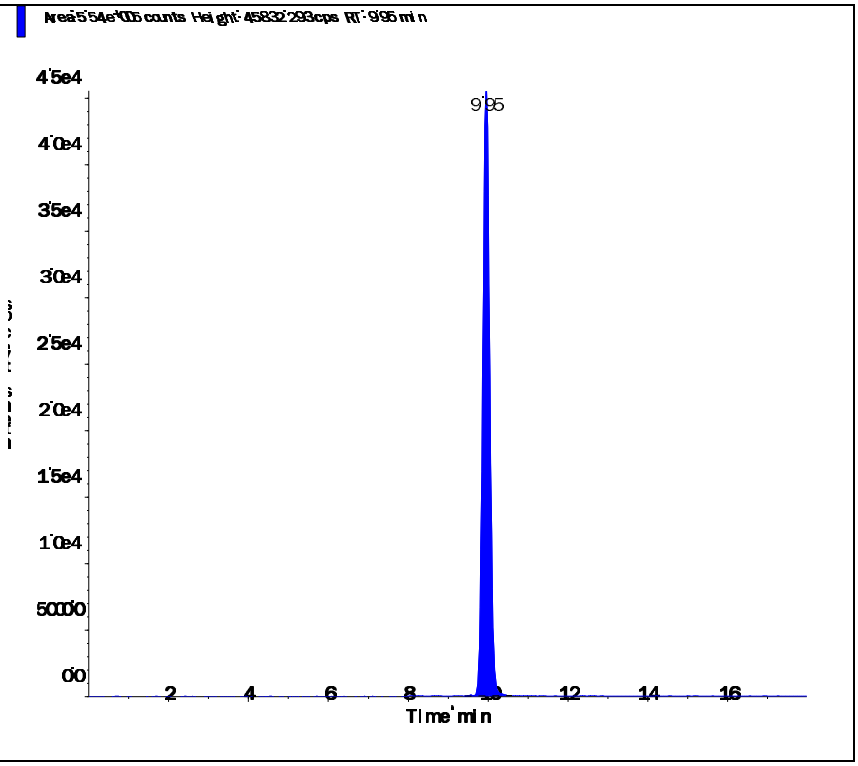

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	3.46 ng/ml
Area Ratio:	0.39
Sample Type:	(Unknown)

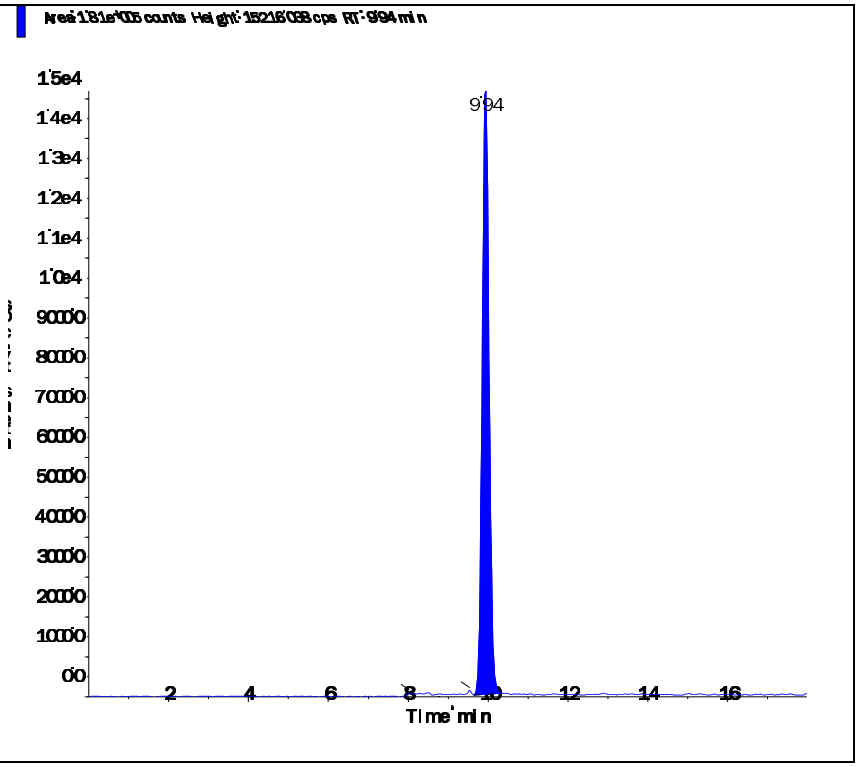

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Data File	LM33796.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/8/2016 7:44:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030366-06	**Injection Vial**	14.00
Data File	LM33796.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 7:44:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	L16030366-06	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.250e+05	9.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.820e+04	9.91	N/A	0.468
Perchlorate conf	2.910e+04	9.89	N/A	0.479

O18LP (Internal Standard)

RT (Exp. RT): 9.90(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

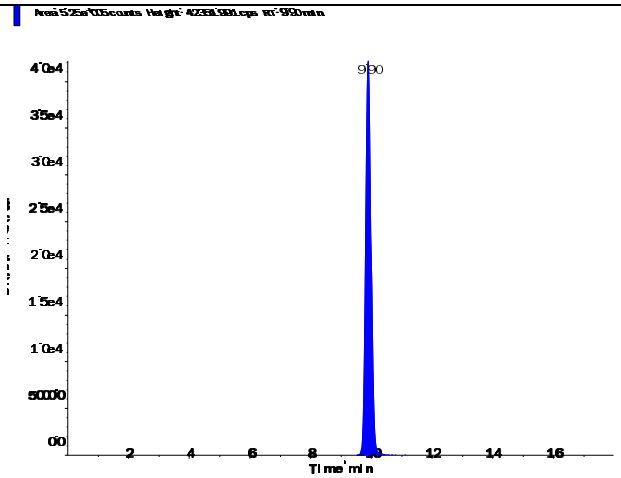

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.91 (9.94) min
Calculated conc:	0.468 ng/ml
Area Ratio:	0.168
Sample Type:	(Unknown)

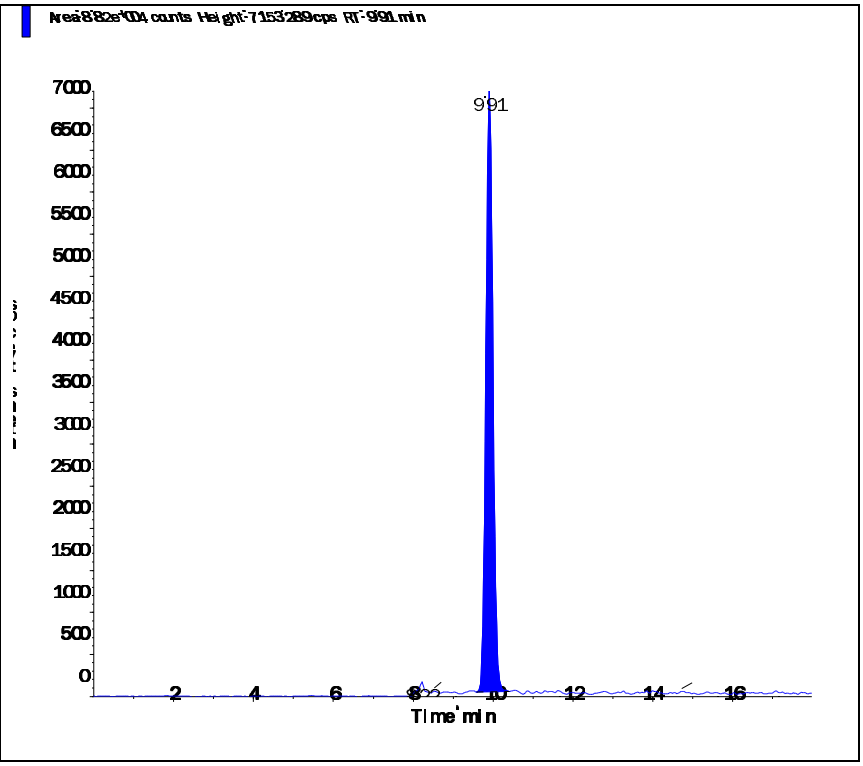

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.89 (9.92) min
Calculated conc:	0.479 ng/ml
Area Ratio:	0.055
Sample Type:	(Unknown)

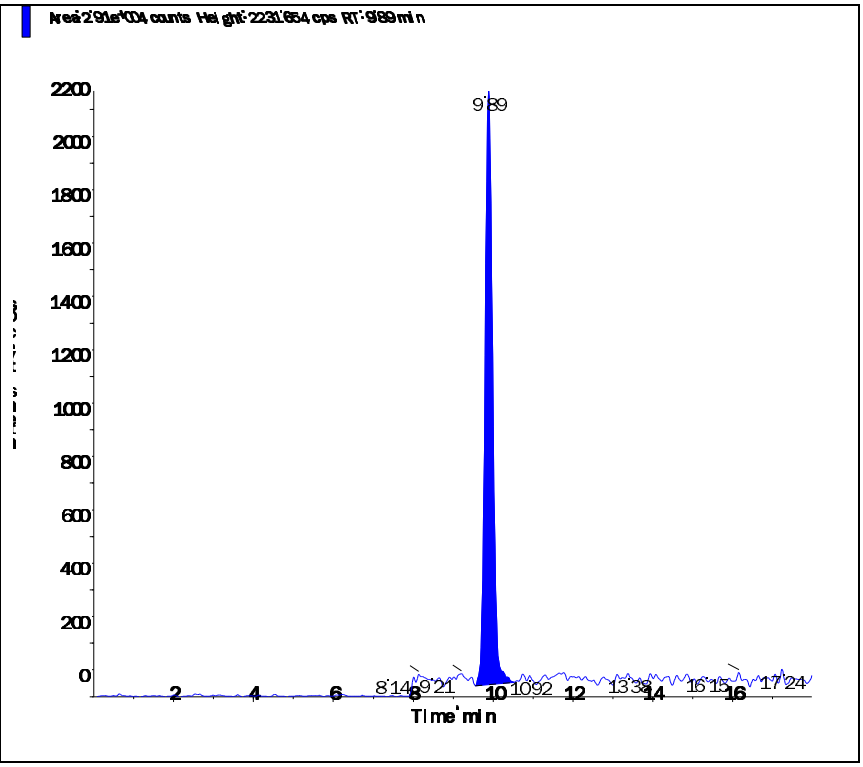

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Data File	LM33797.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/8/2016 8:03:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030366-07	**Injection Vial**	15.00
Data File	LM33797.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 8:03:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	L16030366-07	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.350e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.260e+04	9.95	N/A	0.161
Perchlorate conf	1.070e+04	9.92	N/A	0.164

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

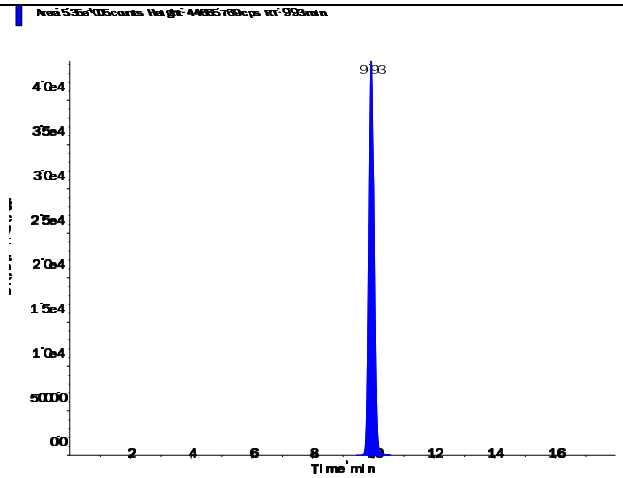

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	0.161 ng/ml
Area Ratio:	0.061
Sample Type:	(Unknown)

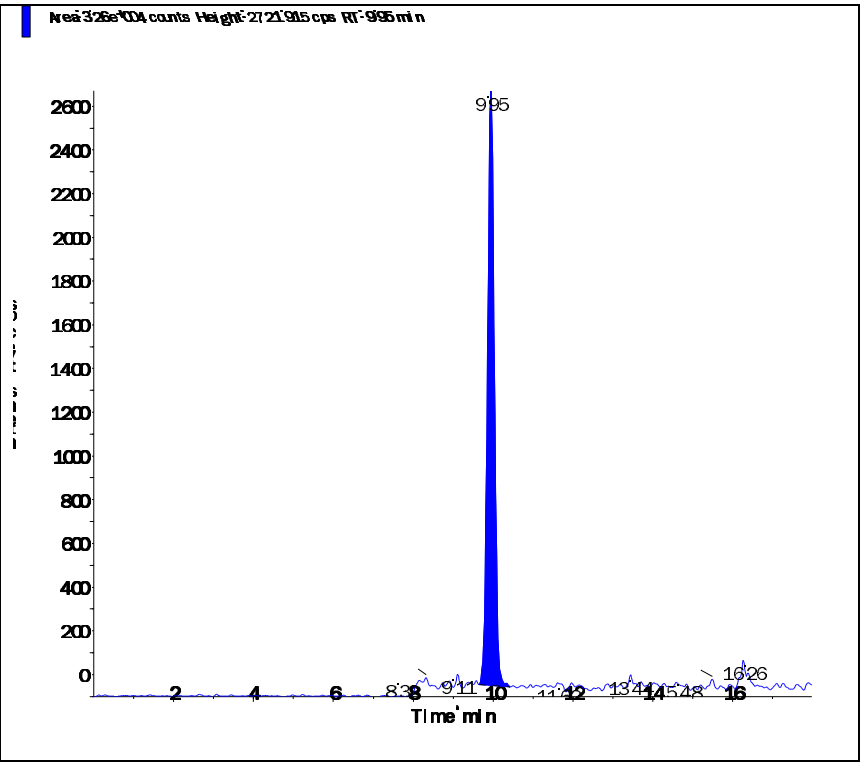

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	0.164 ng/ml
Area Ratio:	0.02
Sample Type:	(Unknown)

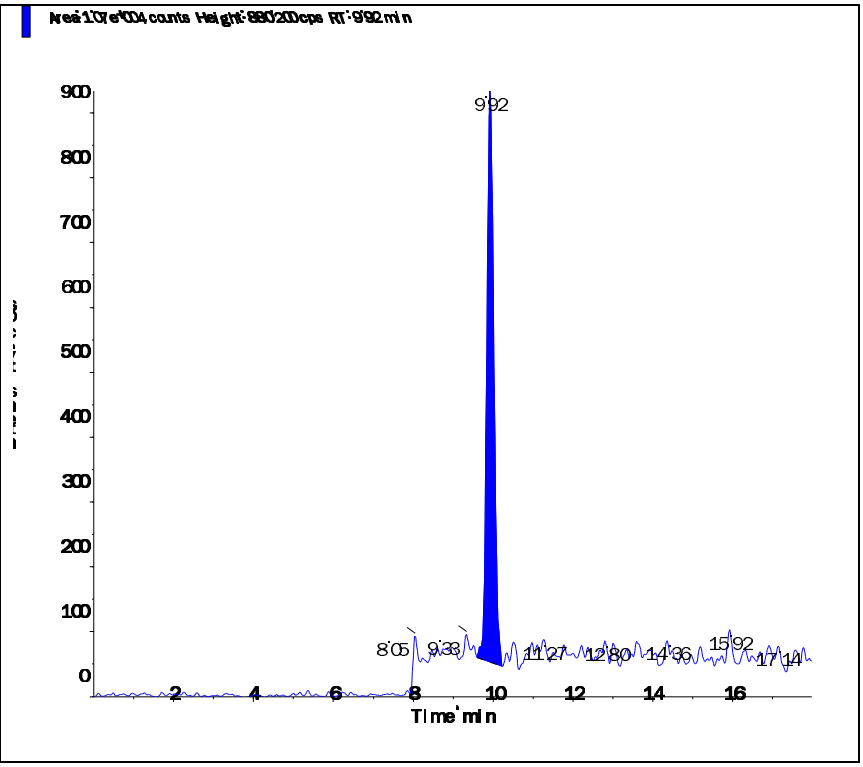

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Data File	LM33813.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/9/2016 12:45:26 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030366-08 (RR 500x)	**Injection Vial**	25.00
Data File	LM33813.wiff	**Injection Volume**	10.00
Acquisition Date	3/9/2016 12:45:26 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	L16030366-08	**Dilution Factor**	1.00
Sample Comment	7,500.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.670e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.290e+05	9.95	N/A	2.61
Perchlorate conf	1.390e+05	9.93	N/A	2.64

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

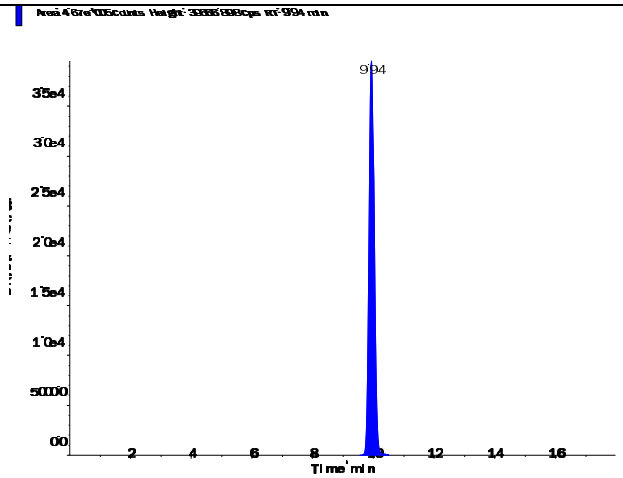

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	2.61 ng/ml
Area Ratio:	0.919
Sample Type:	(Unknown)

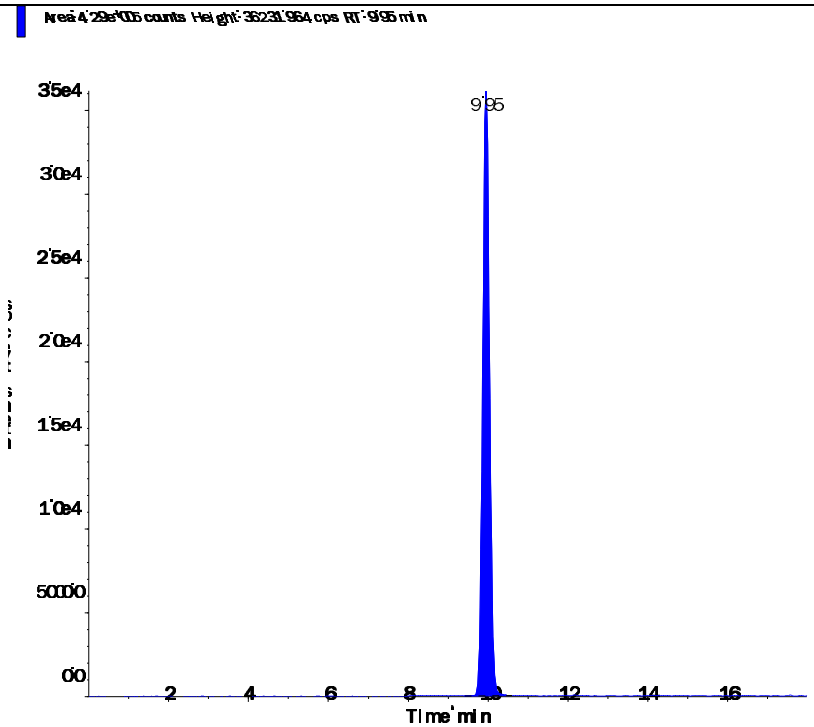

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	2.64 ng/ml
Area Ratio:	0.298
Sample Type:	(Unknown)

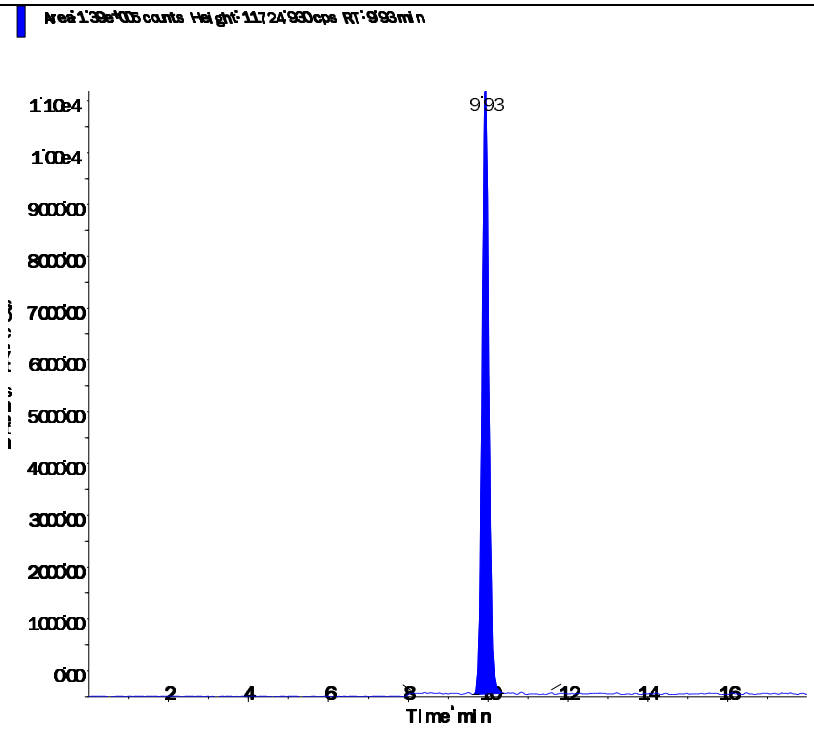

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Data File	LM33814.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/9/2016 1:04:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030366-09 (RR 100x)	**Injection Vial**	26.00
Data File	LM33814.wiff	**Injection Volume**	10.00
Acquisition Date	3/9/2016 1:04:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	L16030366-09	**Dilution Factor**	1.00
Sample Comment	7,100.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.570e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.920e+05	9.96	N/A	5.56
Perchlorate conf	2.900e+05	9.95	N/A	5.63

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

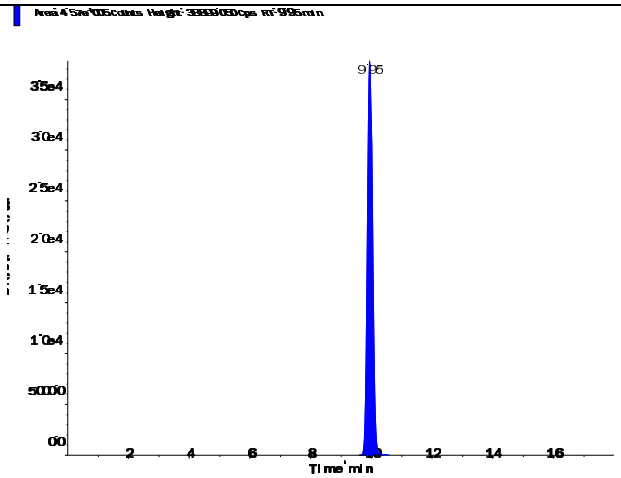

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	5.56 ng/ml
Area Ratio:	1.95
Sample Type:	(Unknown)

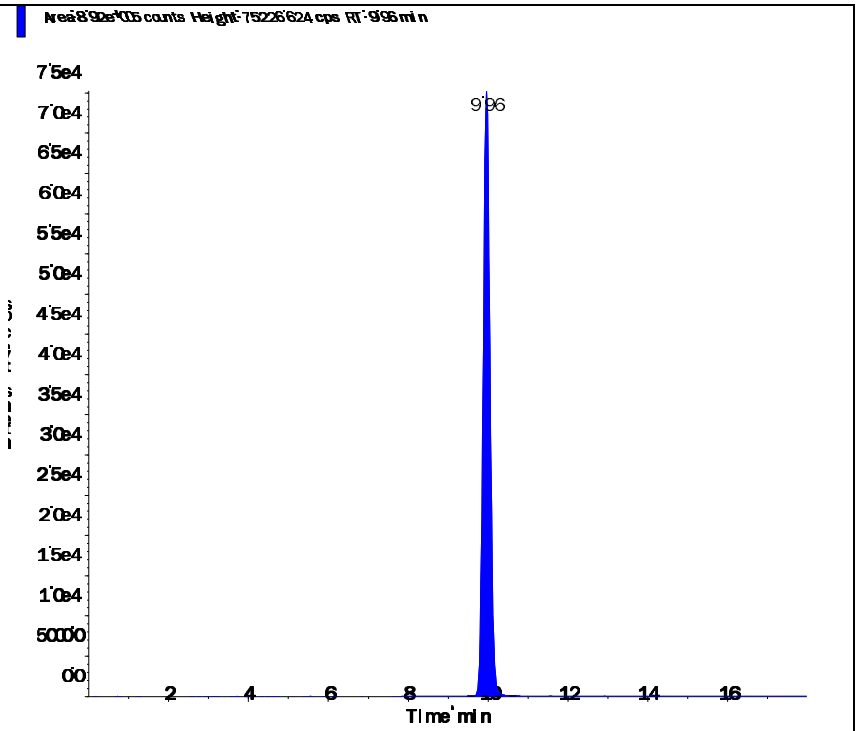

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.95 (9.92) min
Calculated conc:	5.63 ng/ml
Area Ratio:	0.634
Sample Type:	(Unknown)

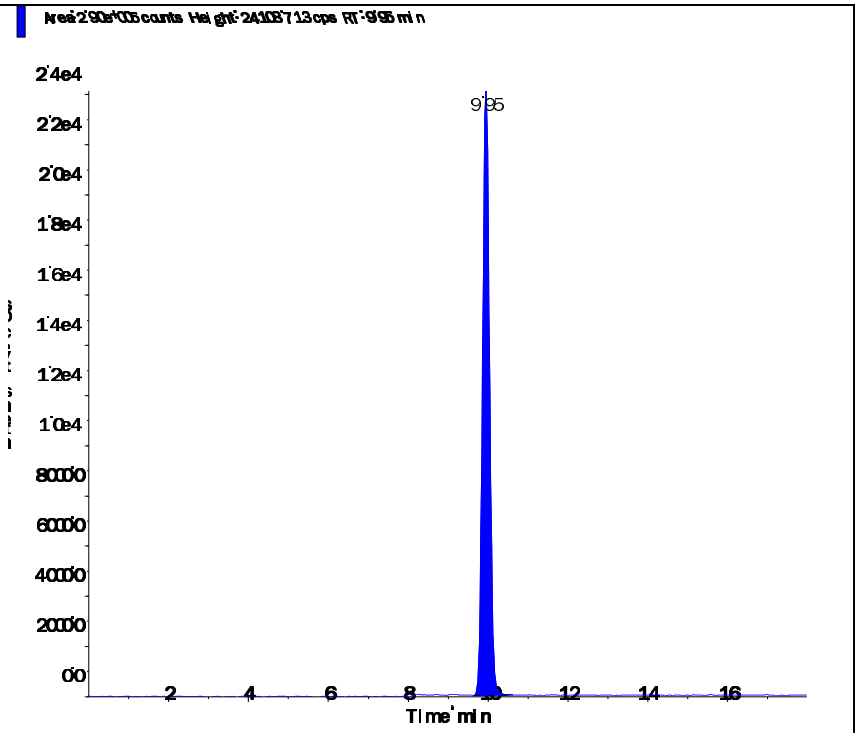

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Data File	LM33800.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/8/2016 9:00:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030366-10	**Injection Vial**	18.00
Data File	LM33800.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 9:00:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	L16030366-10	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.420e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.160e+03	9.97	N/A	0.0094
Perchlorate conf	2.440e+03	9.93	N/A	0.0259

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

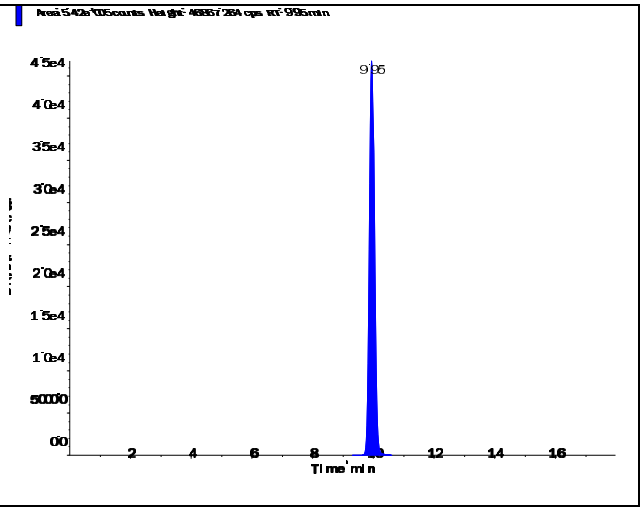

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.97 (9.94) min
Calculated conc:	0.0094 ng/ml
Area Ratio:	0.008
Sample Type:	(Unknown)

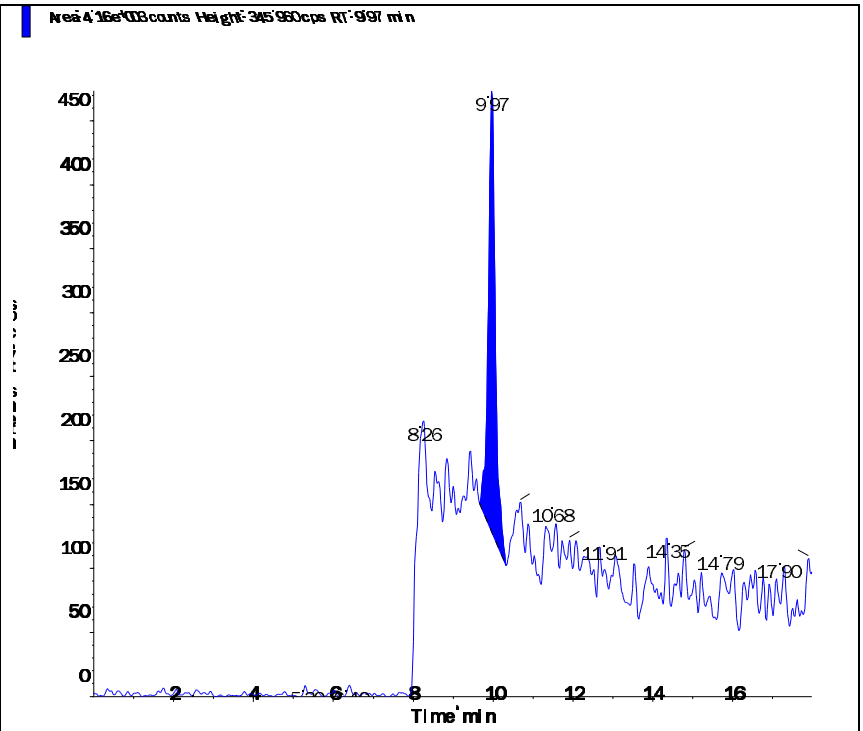

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	0.0259 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)

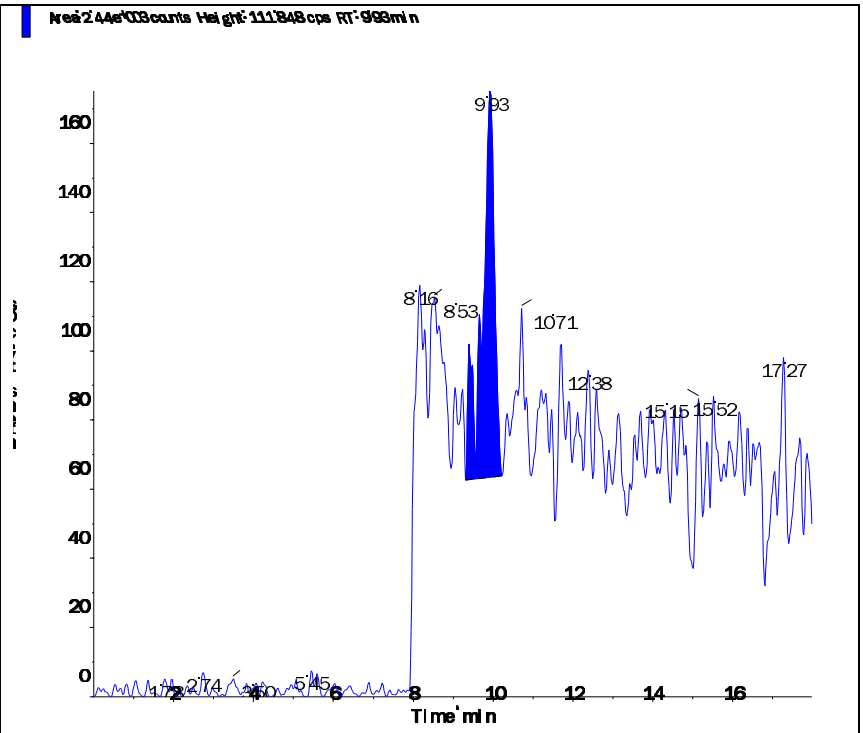

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Data File	LM33801.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/8/2016 9:19:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030366-11	**Injection Vial**	19.00
Data File	LM33801.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 9:19:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	L16030366-11	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.550e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.110e+03	9.94	N/A	0.0138
Perchlorate conf	2.120e+03	9.95	N/A	0.02

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

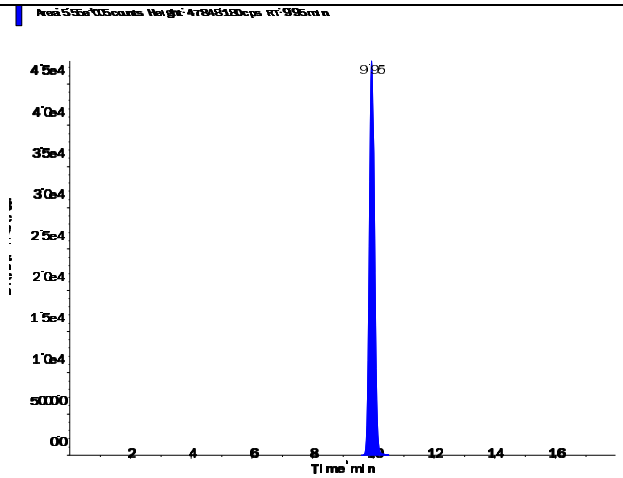

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.0138 ng/ml
Area Ratio:	0.009
Sample Type:	(Unknown)

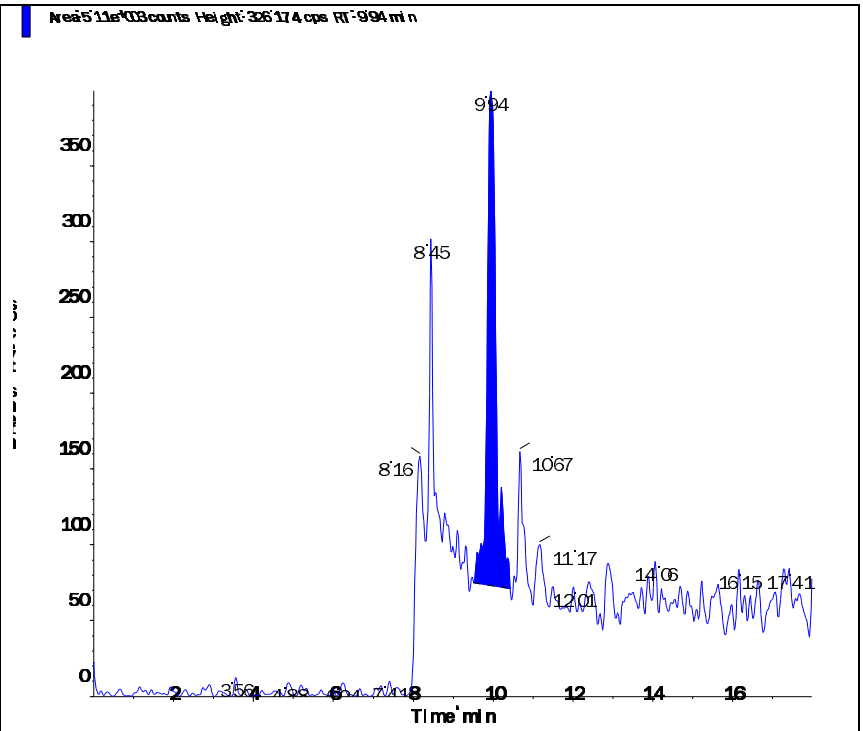

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.95 (9.92) min
Calculated conc:	0.02 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)

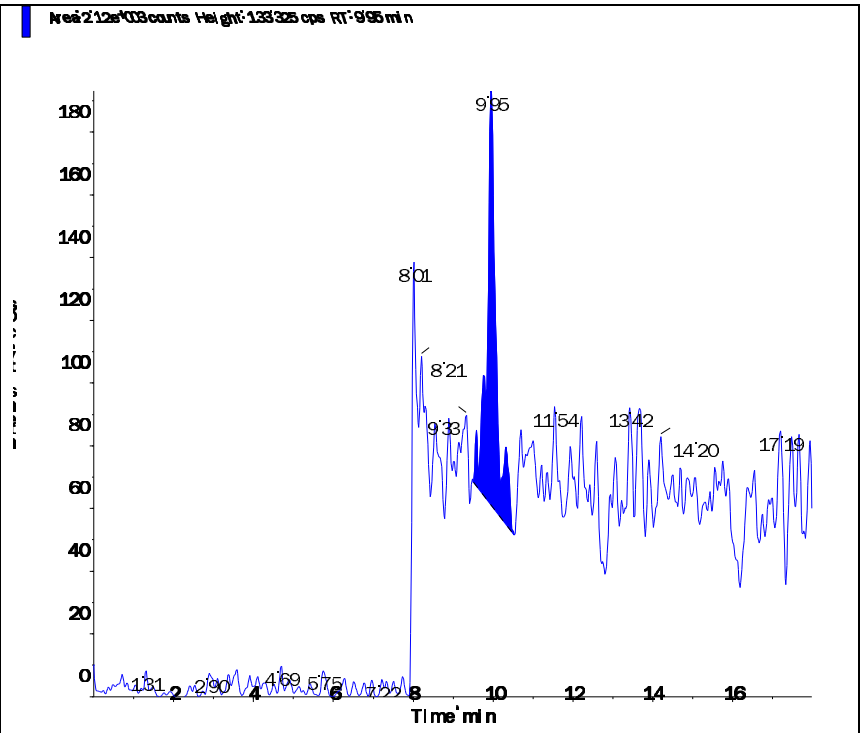

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Data File	LM33802.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/8/2016 9:38:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030366-12	**Injection Vial**	20.00
Data File	LM33802.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 9:38:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	L16030366-12	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.690e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

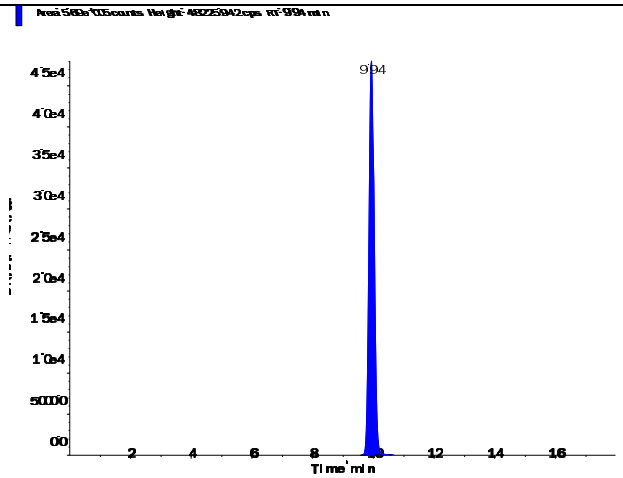

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

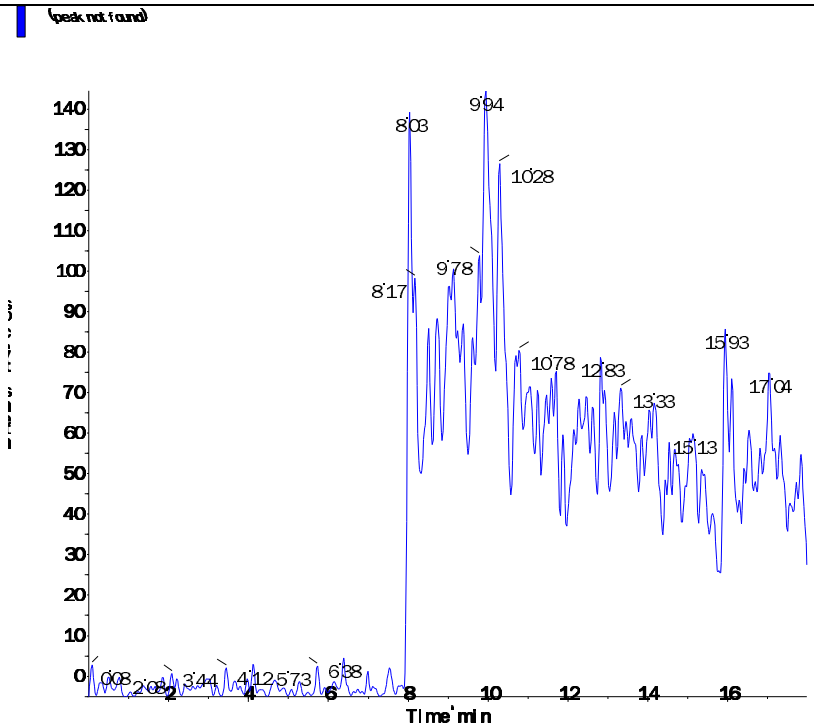

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

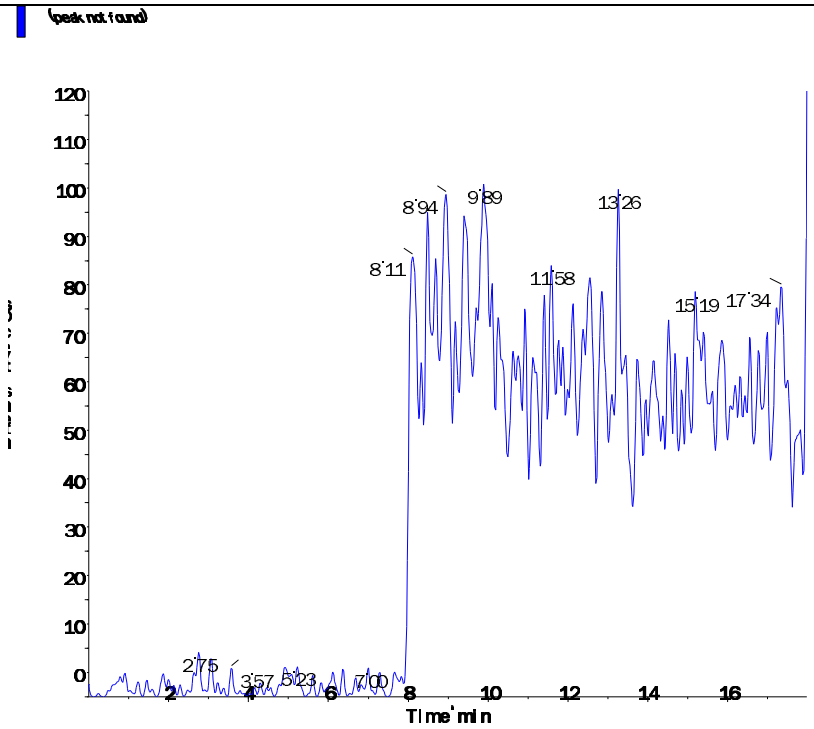

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2.2.1.4 Standards Data

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Data File	LM33567.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-01 CCB	**Injection Vial**	51.00
Data File	LM33567.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG559340-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.710e+05	9.99	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.99(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

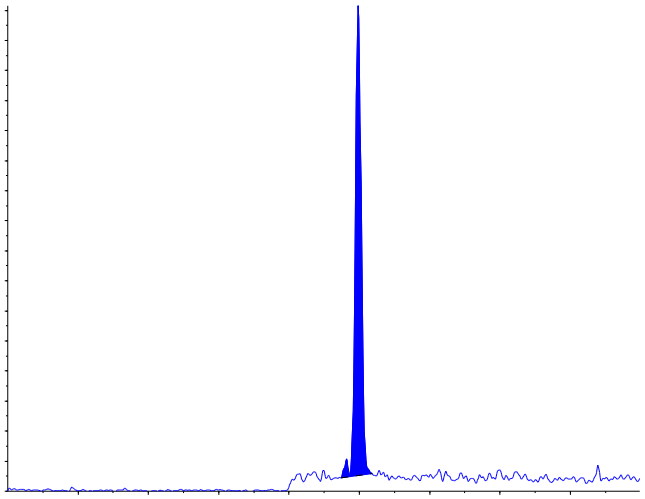

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

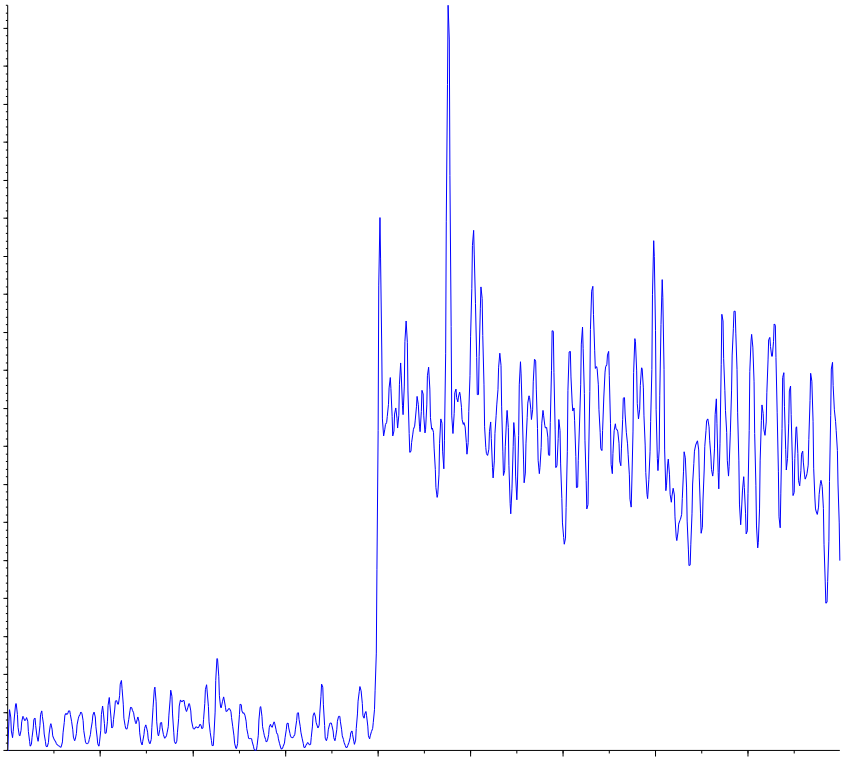

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

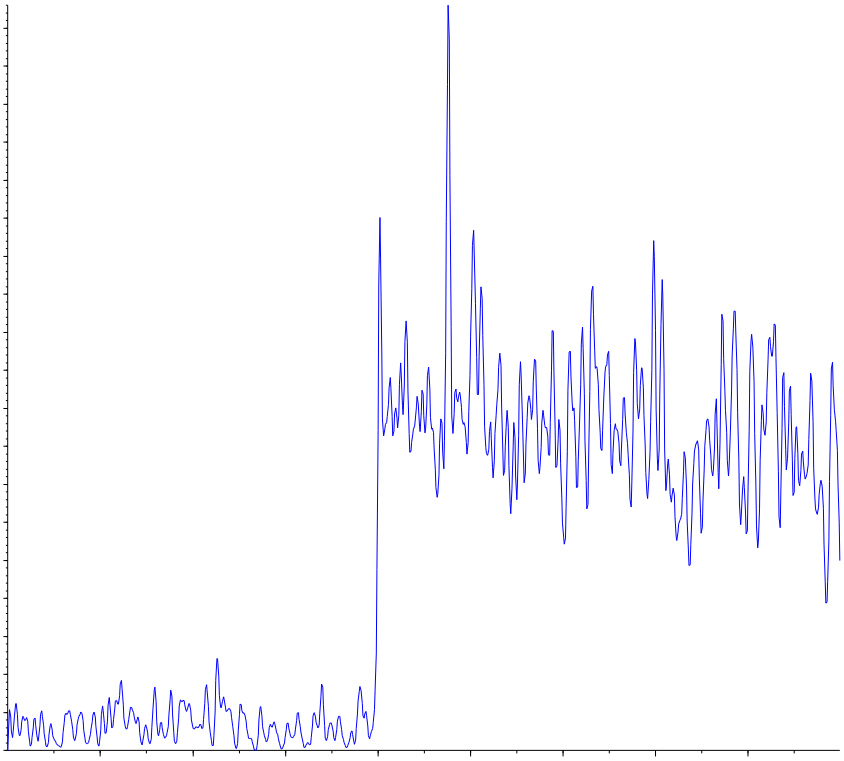

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Created with Analyst Reporter
Printed: 3/3/2016 1:59 PM

Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM33567.wiff	**Result Table**	030216_WTD.rdb
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.75 x + 0.00437 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	95.0	N/A	N/A
0.20	1	0.20	99.5	N/A	N/A
0.50	1	0.50	101.0	N/A	N/A
1.00	1	1.03	103.4	N/A	N/A
2.00	1	2.02	101.0	N/A	N/A
5.00	1	5.07	101.5	N/A	N/A
10.00	1	9.87	98.7	N/A	N/A

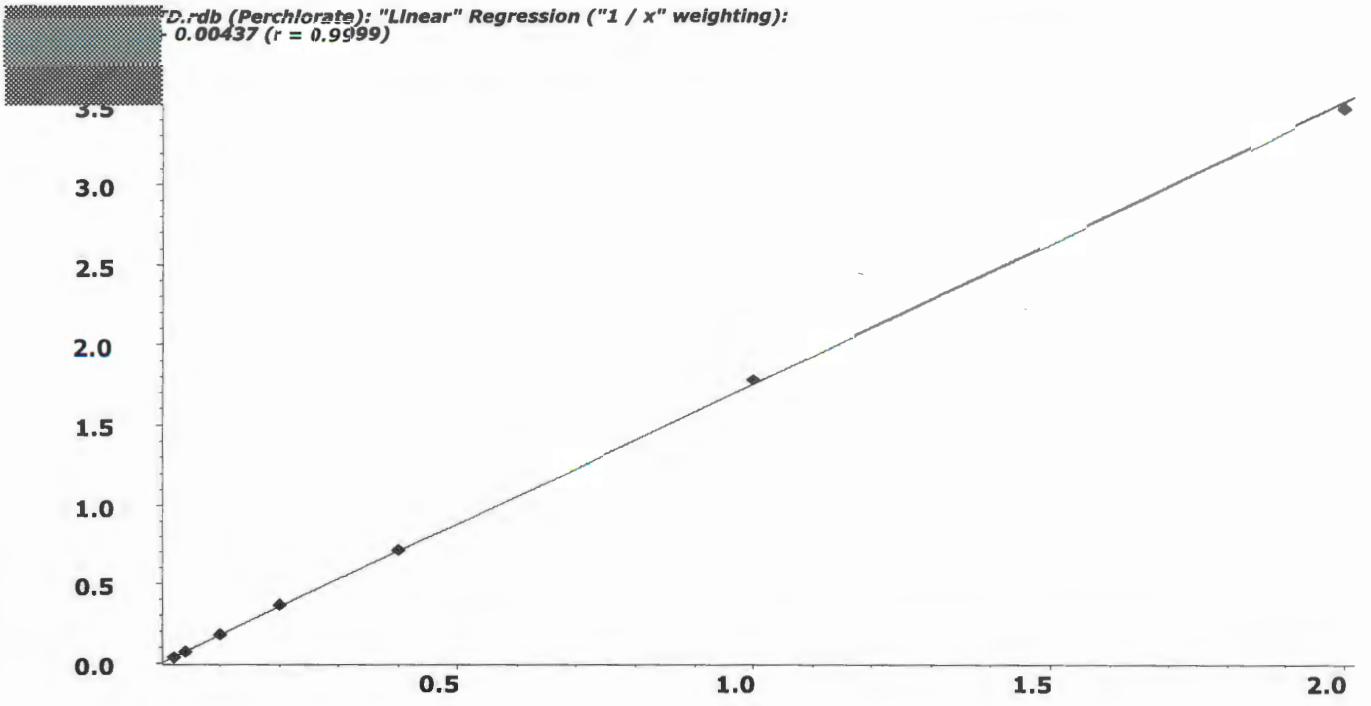

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Created with Analyst Reporter
Printed: 3/3/2016 1:59 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM33567.wiff	**Result Table**	030216_WTD.rdb
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.562 x + 0.00157 (r = 0.9998)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	93.4	N/A	N/A
0.20	1	0.20	98.6	N/A	N/A
0.50	1	0.54	107.2	N/A	N/A
1.00	1	1.00	99.5	N/A	N/A
2.00	1	2.01	100.7	N/A	N/A
5.00	1	5.11	102.2	N/A	N/A
10.00	1	9.85	98.5	N/A	N/A

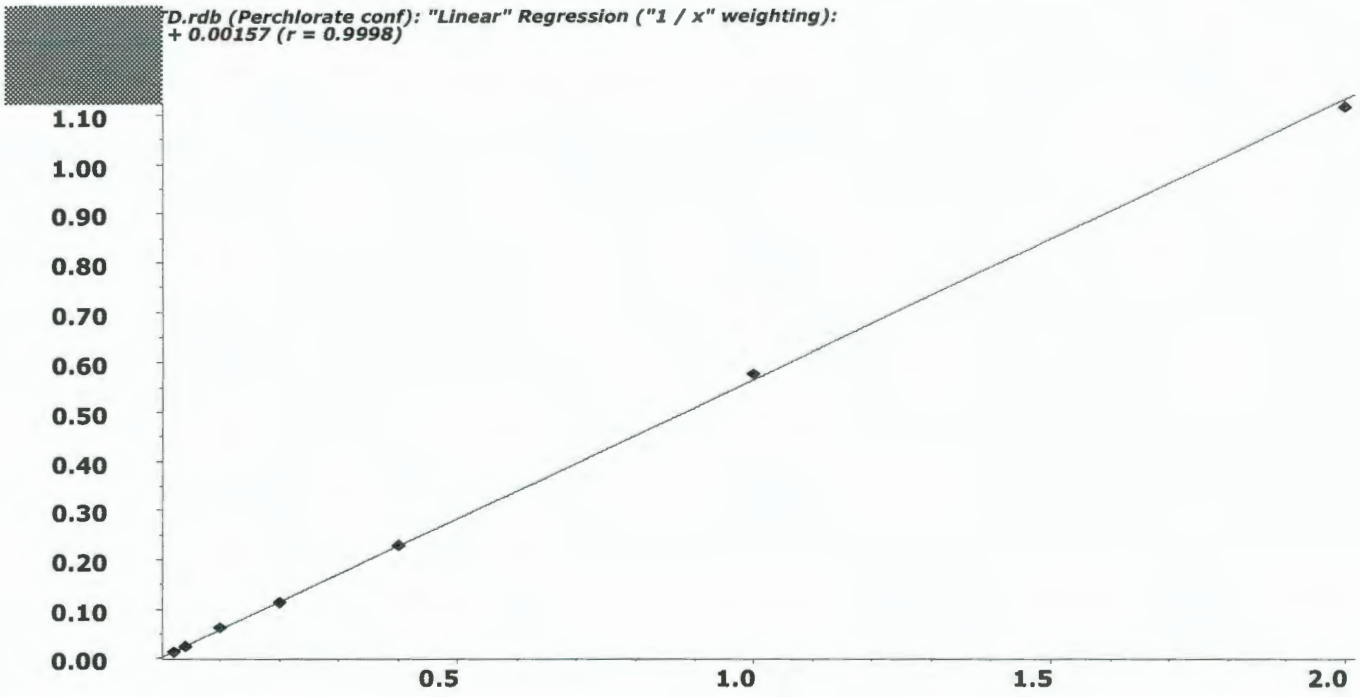

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Printed: 3/9/2016 2:40 PM

Data File	LM33568.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/2/2016 8:53:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-02 STD (0.1 ug/L)	**Injection Vial**	52.00
Data File	LM33568.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 8:53:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG559340-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.900e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.840e+04	9.97	0.10	0.095
Perchlorate conf	5.910e+03	9.94	0.10	0.0934

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

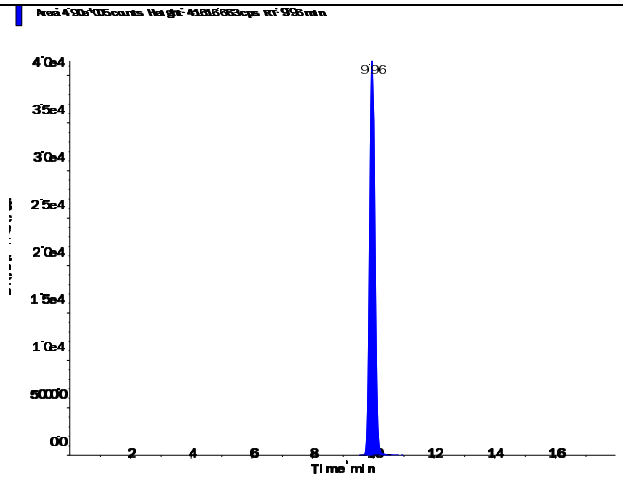

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.97 (9.94) min
Calculated conc:	0.095 ng/ml
Area Ratio:	0.038
Sample Type:	(Standard)

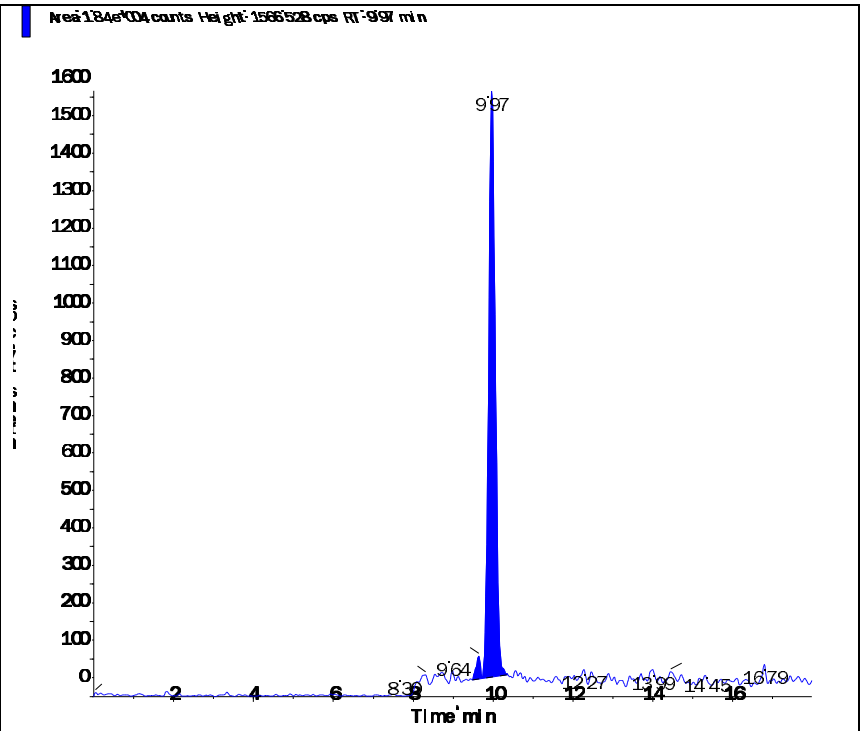

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.0934 ng/ml
Area Ratio:	0.012
Sample Type:	(Standard)

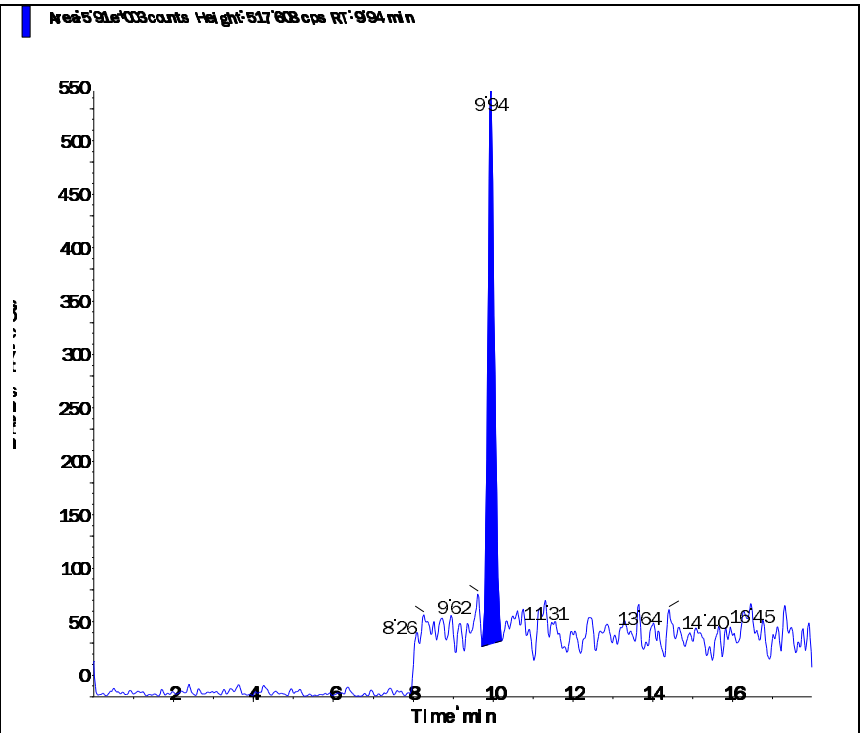

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Data File	LM33569.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/2/2016 9:12:17 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-03 STD (0.2 ug/L)	**Injection Vial**	53.00
Data File	LM33569.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 9:12:17 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG559340-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.990e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.700e+04	9.99	0.20	0.199
Perchlorate conf	1.190e+04	9.98	0.20	0.197

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

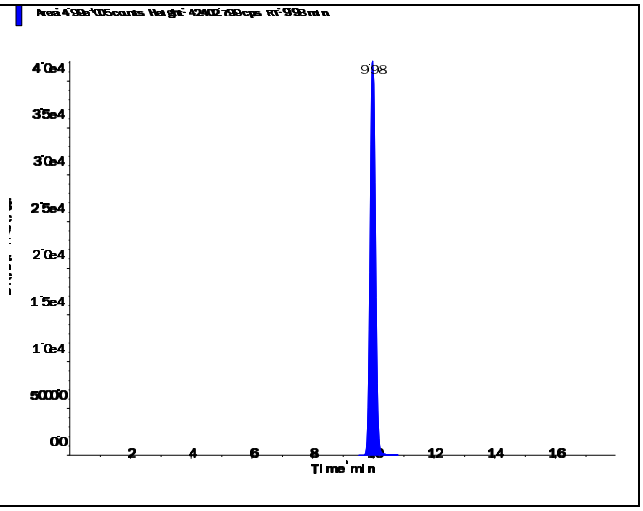

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.99 (9.94) min
Calculated conc:	0.199 ng/ml
Area Ratio:	0.074
Sample Type:	(Standard)

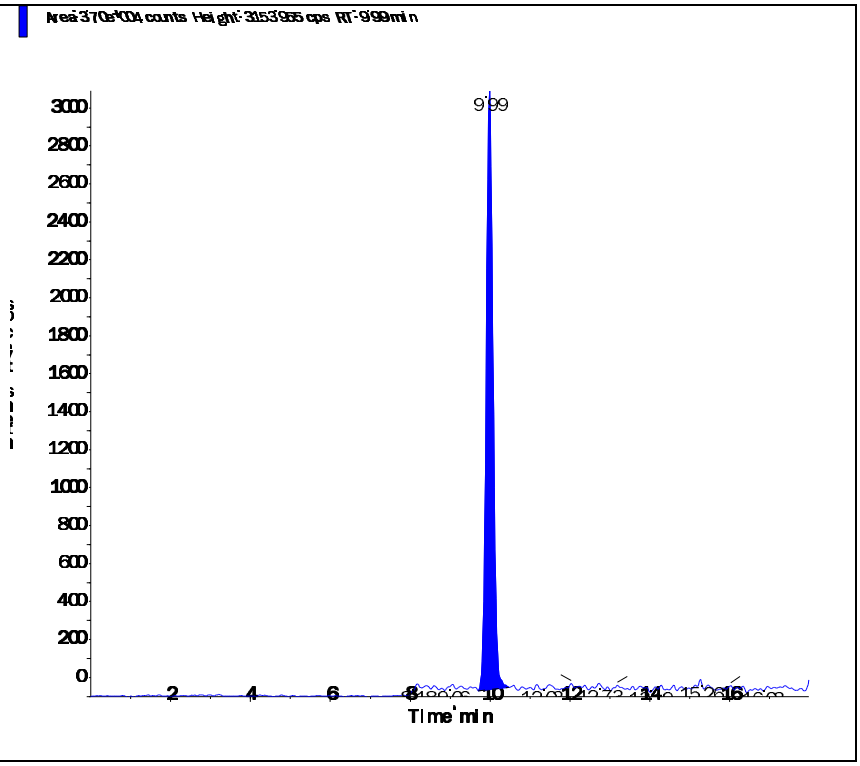

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.98 (9.92) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

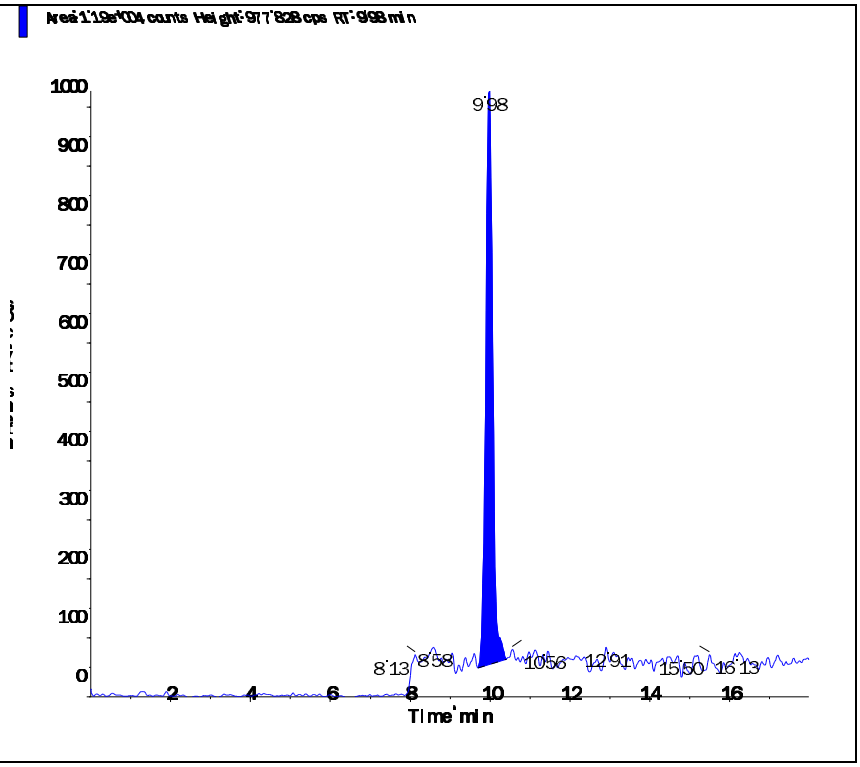

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Data File	LM33570.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/2/2016 9:31:14 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-04 STD (0.5 ug/L)	**Injection Vial**	54.00
Data File	LM33570.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 9:31:14 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG559340-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.920e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.900e+04	10.00	0.50	0.505
Perchlorate conf	3.040e+04	9.98	0.50	0.536

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

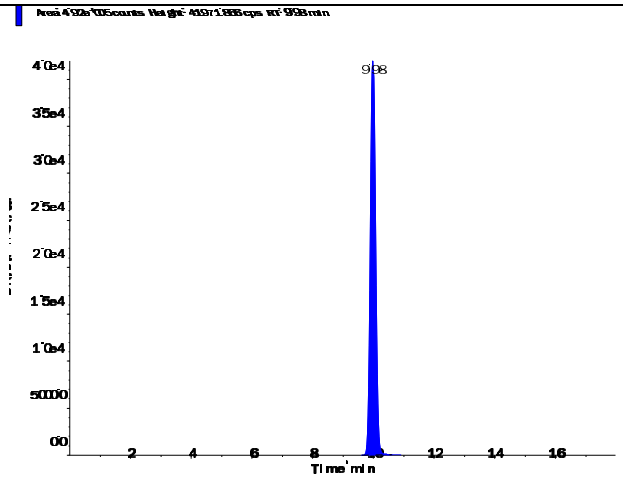

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.00 (9.94) min
Calculated conc:	0.505 ng/ml
Area Ratio:	0.181
Sample Type:	(Standard)

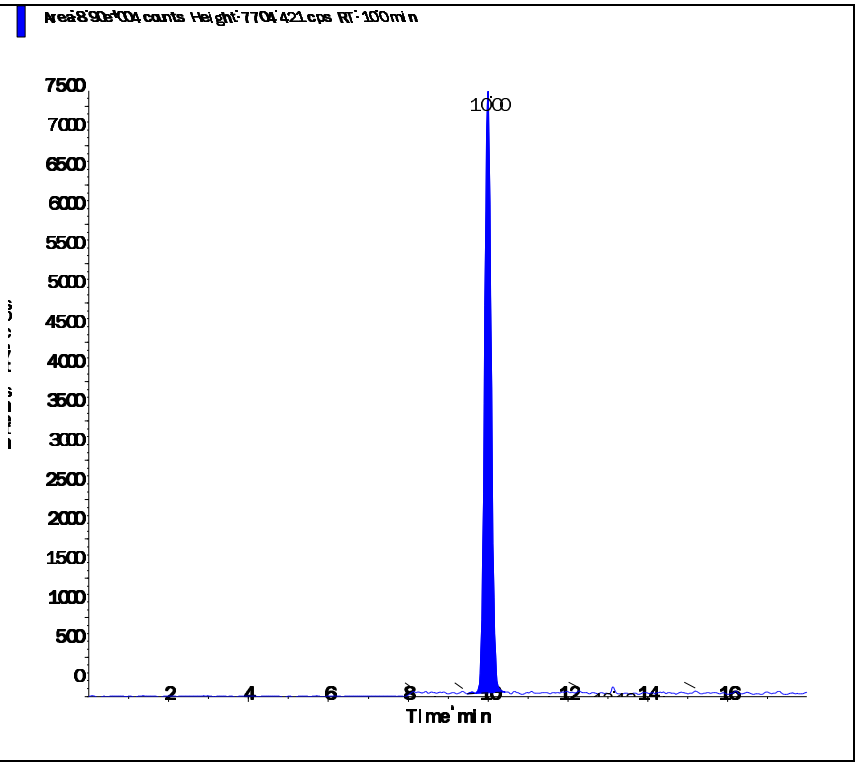

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.98 (9.92) min
Calculated conc:	0.536 ng/ml
Area Ratio:	0.062
Sample Type:	(Standard)

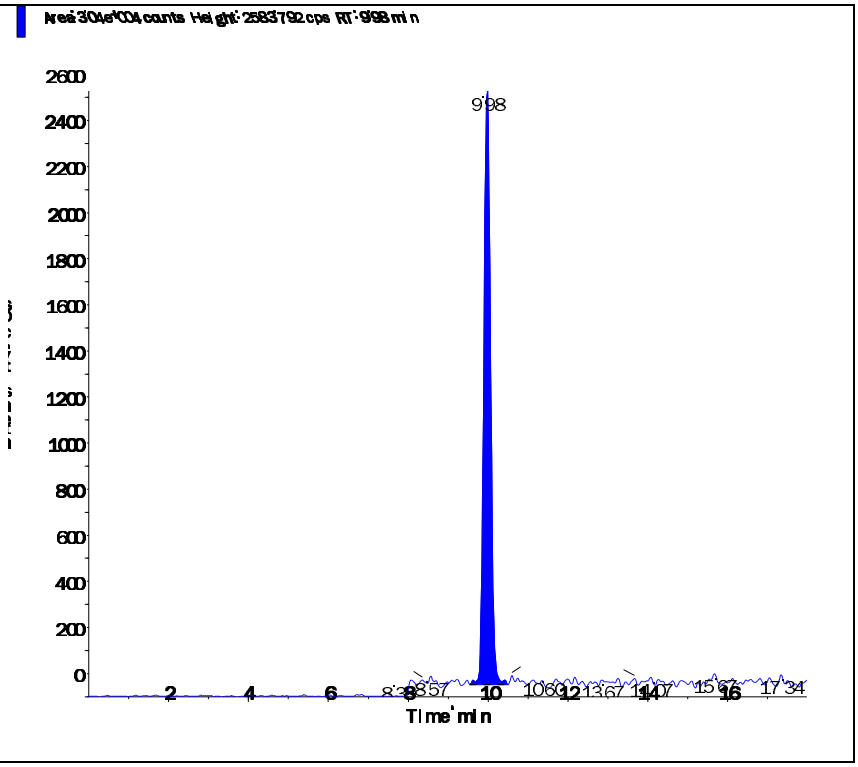

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Data File	LM33571.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/2/2016 9:50:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-05 STD (1.0 ug/L)	**Injection Vial**	55.00
Data File	LM33571.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 9:50:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG559340-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.010e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.830e+05	9.99	1.00	1.03
Perchlorate conf	5.680e+04	9.98	1.00	0.995

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

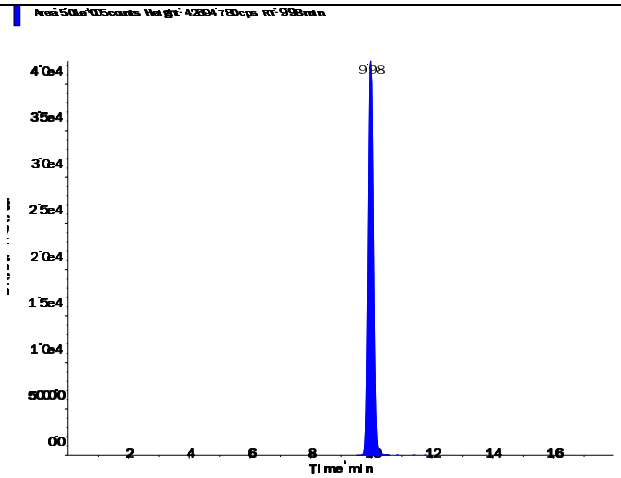

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.99 (9.94) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.366
Sample Type:	(Standard)

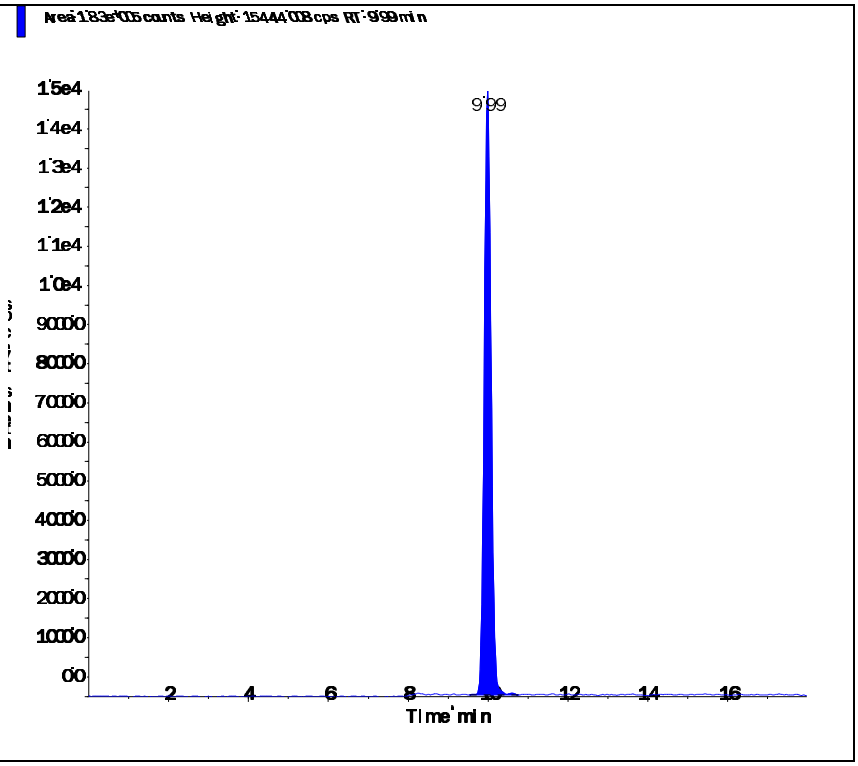

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.98 (9.92) min
Calculated conc:	0.995 ng/ml
Area Ratio:	0.113
Sample Type:	(Standard)

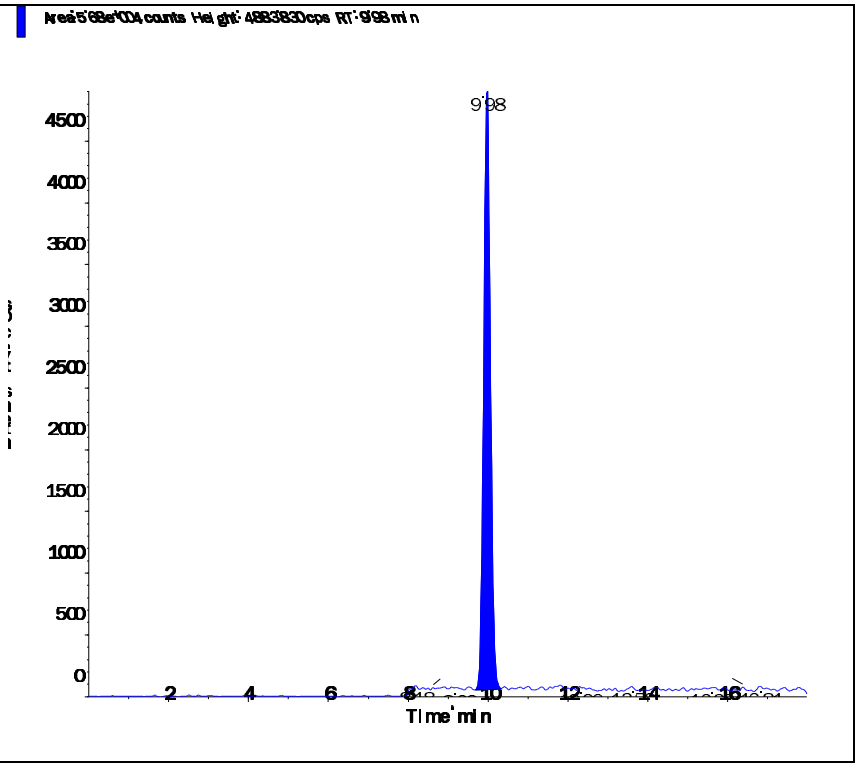

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Data File	LM33572.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/2/2016 10:09:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-06 STD (2.0 ug/L)	**Injection Vial**	56.00
Data File	LM33572.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 10:09:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG559340-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.99	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.630e+05	10.00	2.00	2.02
Perchlorate conf	1.170e+05	9.99	2.00	2.01

O18LP (Internal Standard)

RT (Exp. RT): 9.99(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

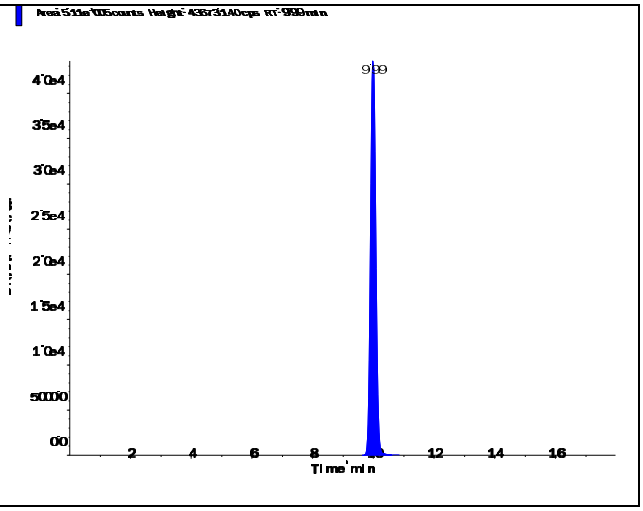

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.00 (9.94) min
Calculated conc:	2.02 ng/ml
Area Ratio:	0.711
Sample Type:	(Standard)

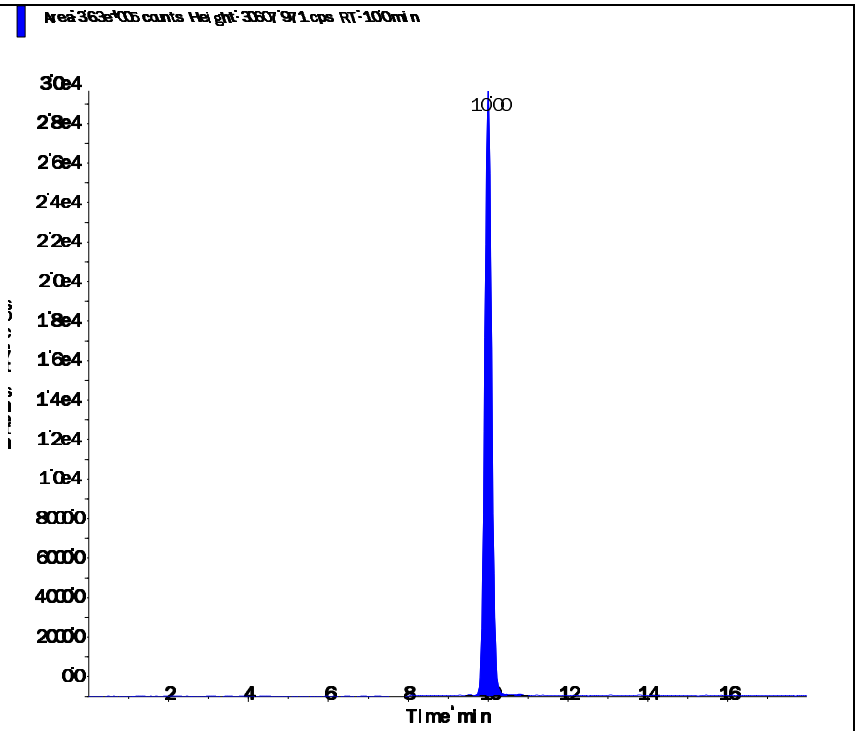

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.99 (9.92) min
Calculated conc:	2.01 ng/ml
Area Ratio:	0.228
Sample Type:	(Standard)

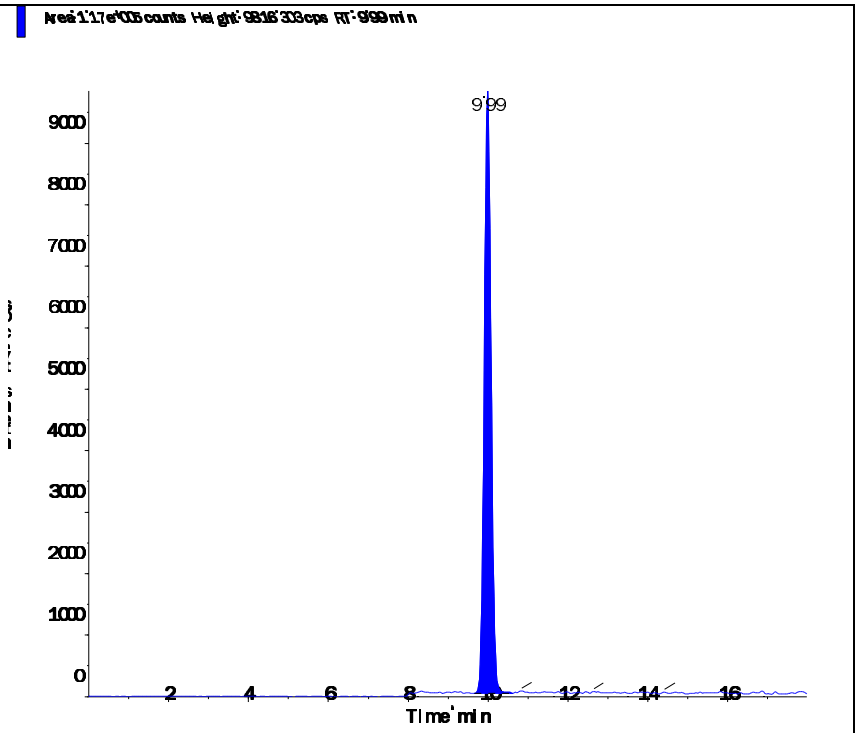

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Data File	LM33573.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/2/2016 10:28:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-07 STD (5.0 ug/L)	**Injection Vial**	57.00
Data File	LM33573.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 10:28:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG559340-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.900e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.710e+05	9.98	5.00	5.07
Perchlorate conf	2.820e+05	9.97	5.00	5.11

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

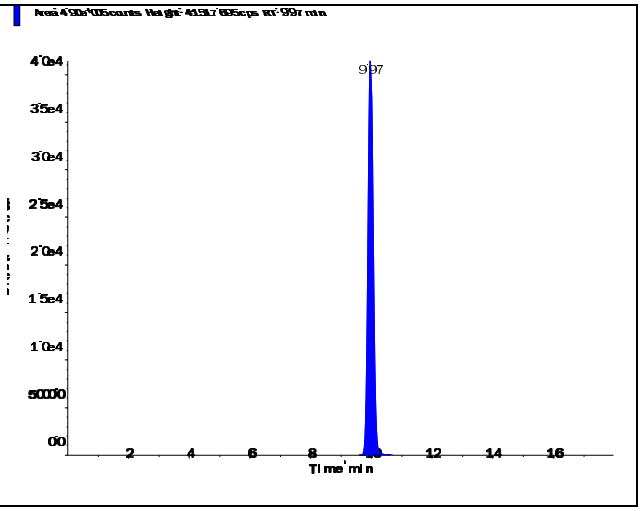

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.98 (9.94) min
Calculated conc:	5.07 ng/ml
Area Ratio:	1.779
Sample Type:	(Standard)

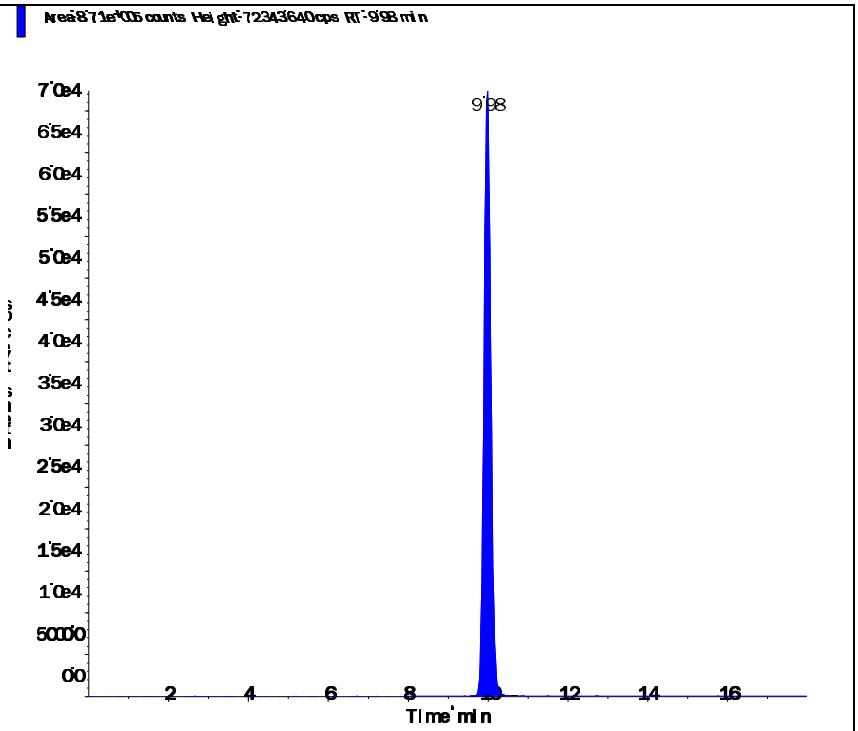

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.97 (9.92) min
Calculated conc:	5.11 ng/ml
Area Ratio:	0.576
Sample Type:	(Standard)

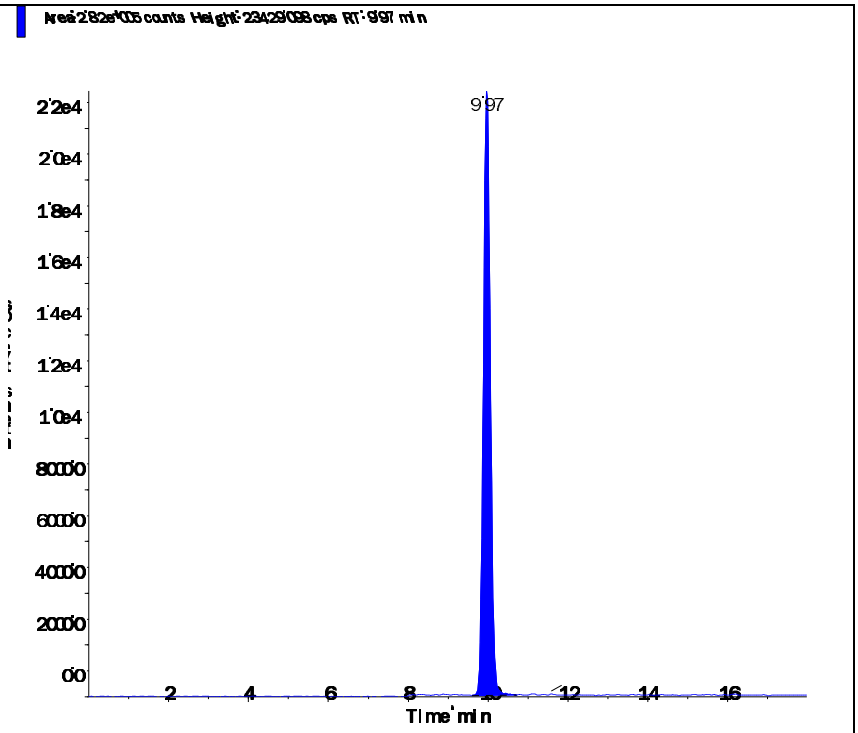

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Data File	LM33574.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/2/2016 10:46:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-08 STD (10 ug/L)	**Injection Vial**	58.00
Data File	LM33574.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 10:46:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG559340-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.650e+06	9.98	10.00	9.87
Perchlorate conf	5.300e+05	9.96	10.00	9.85

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

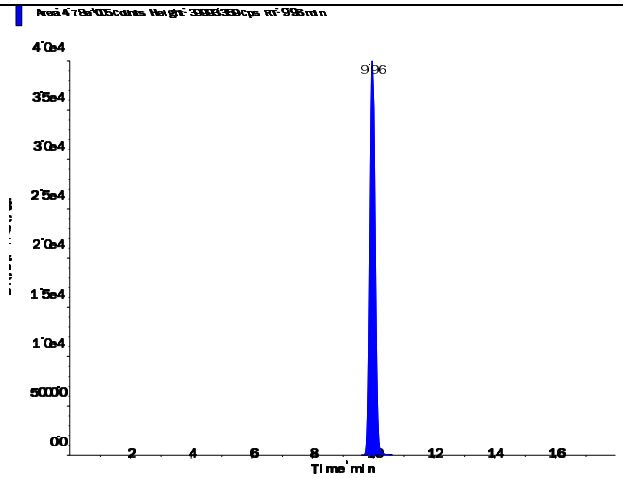

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.98 (9.94) min Calculated conc: 9.87 ng/ml Area Ratio: 3.458 Sample Type: (Standard)	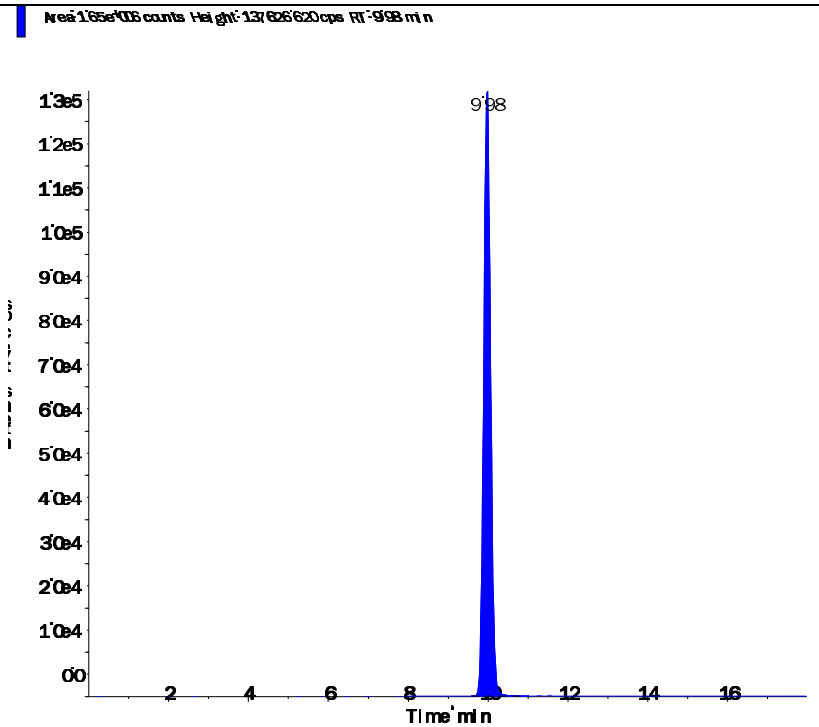
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.96 (9.92) min Calculated conc: 9.85 ng/ml Area Ratio: 1.11 Sample Type: (Standard)	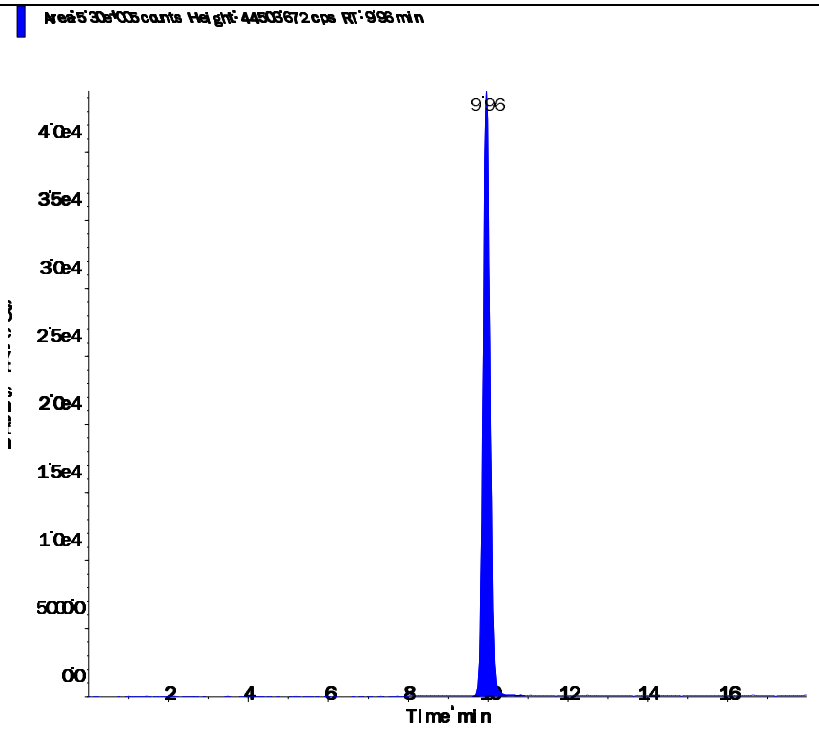

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Data File	LM33575.wiff	**Result Table**	030216_WTD.rdb
Acquisition Date	3/2/2016 11:05:52 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-09 SSCV (1.0 ug/L)	**Injection Vial**	59.00
Data File	LM33575.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 11:05:52 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030216_WTD.rdb
Sample ID	WG559340-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.200e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.900e+05	9.98	1.00	1.03
Perchlorate conf	6.220e+04	9.97	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

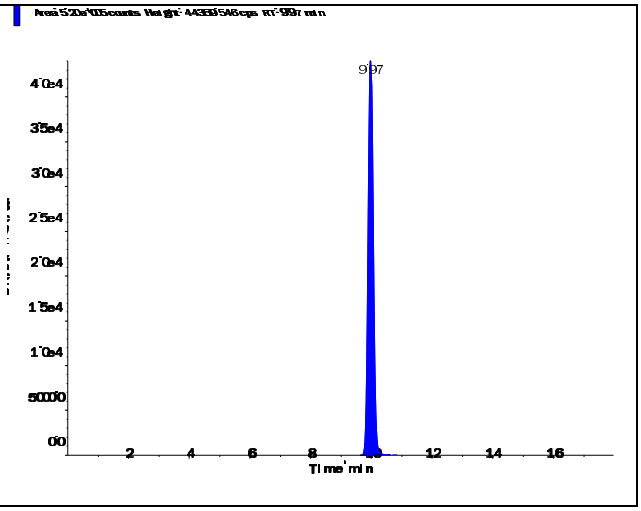

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.98 (9.94) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.366
Sample Type:	(Quality Control)

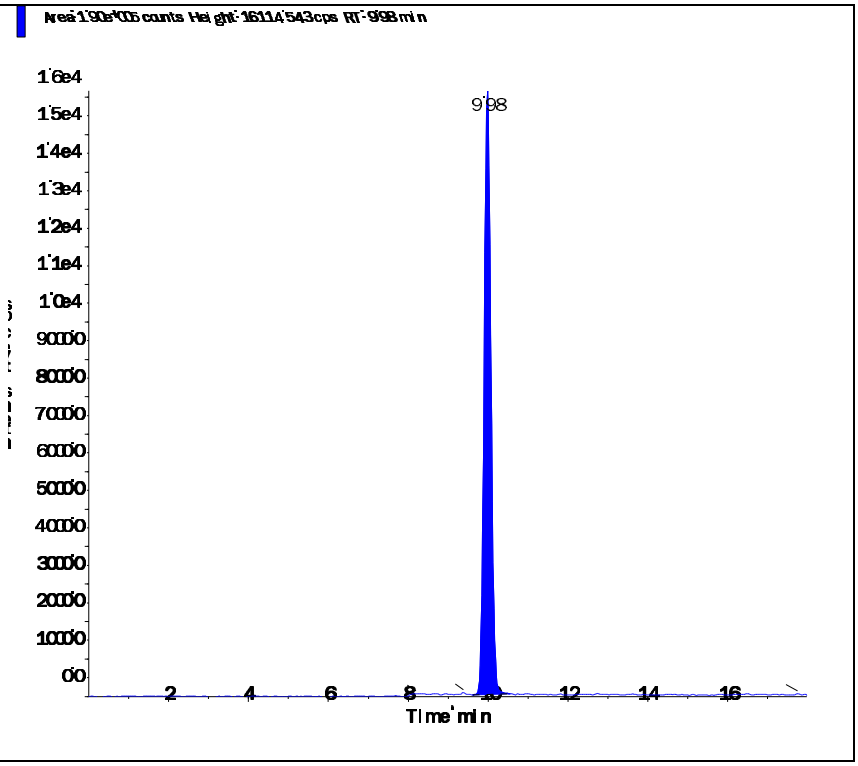

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.97 (9.92) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.12
Sample Type:	(Quality Control)

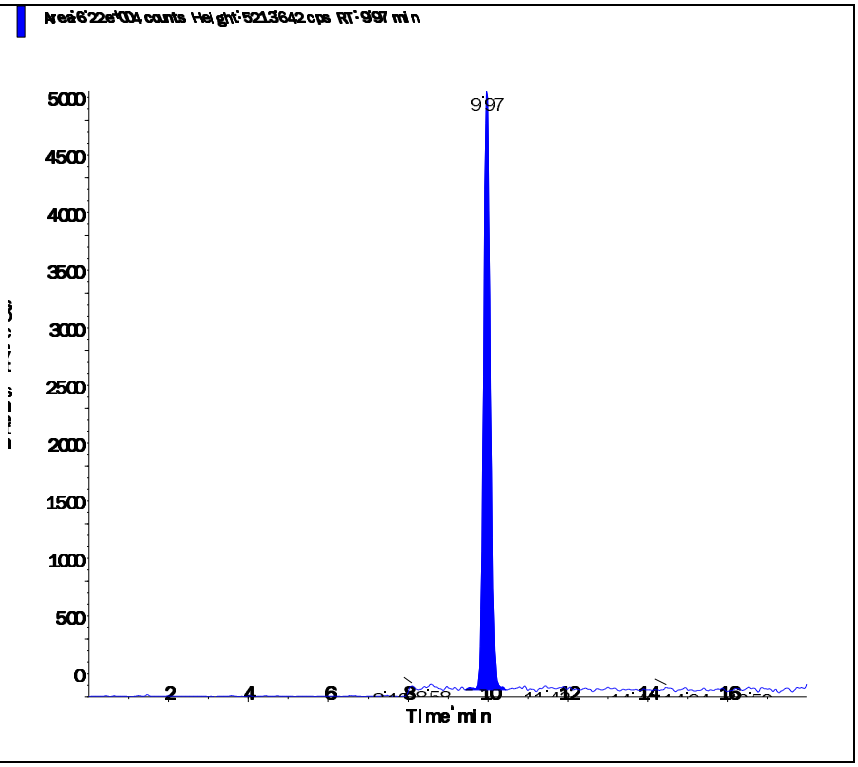

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Data File	LM33781.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/8/2016 3:00:41 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG560141-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33781.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 3:00:41 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG560141-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.830e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.95	1.00	0.988
Perchlorate conf	5.550e+04	9.94	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

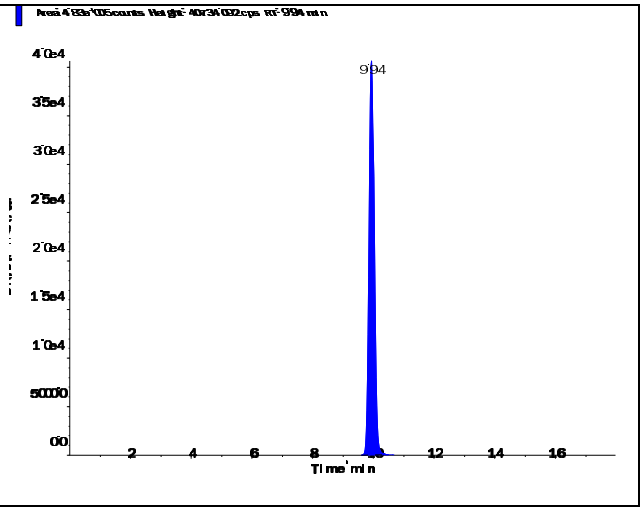

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	0.988 ng/ml
Area Ratio:	0.35
Sample Type:	(Quality Control)

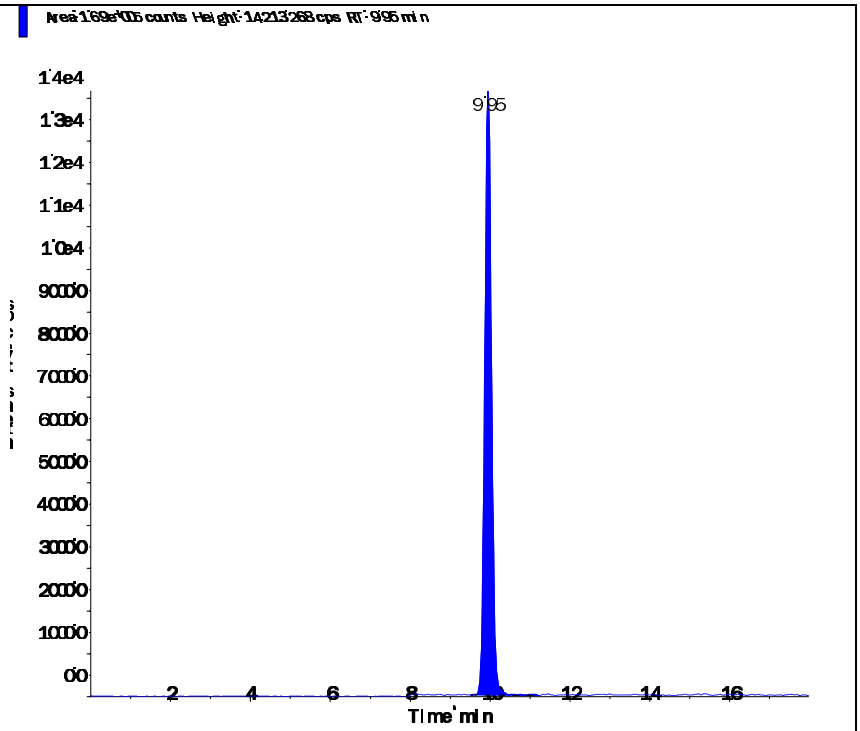

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.115
Sample Type:	(Quality Control)

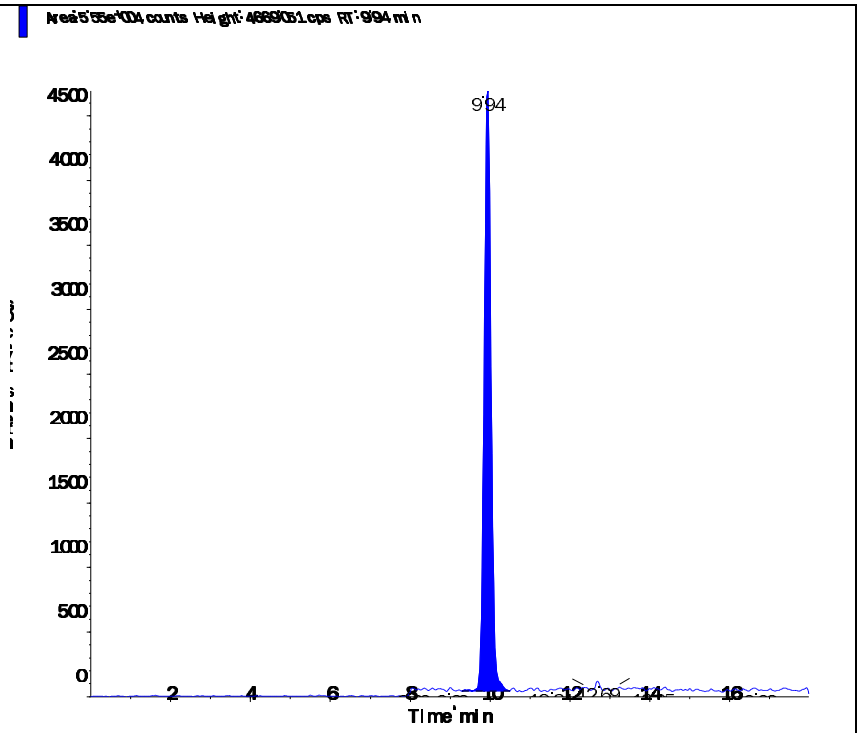

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Data File	LM33793.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/8/2016 6:47:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG560141-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33793.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 6:47:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG560141-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.130e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.770e+05	9.95	1.00	0.974
Perchlorate conf	5.970e+04	9.93	1.00	1.02

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

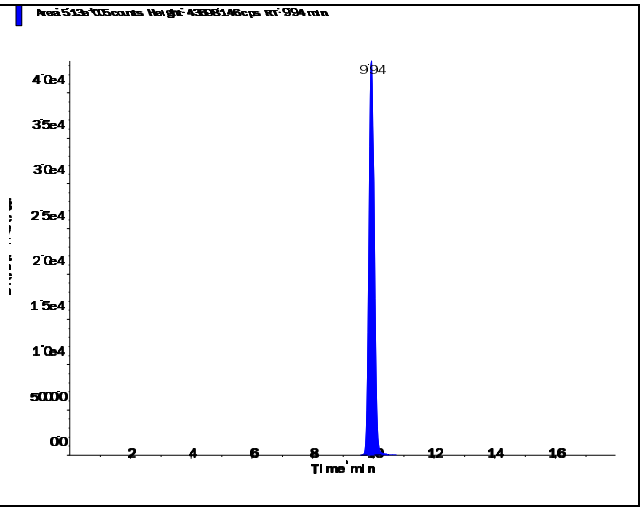

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	0.974 ng/ml
Area Ratio:	0.345
Sample Type:	(Quality Control)

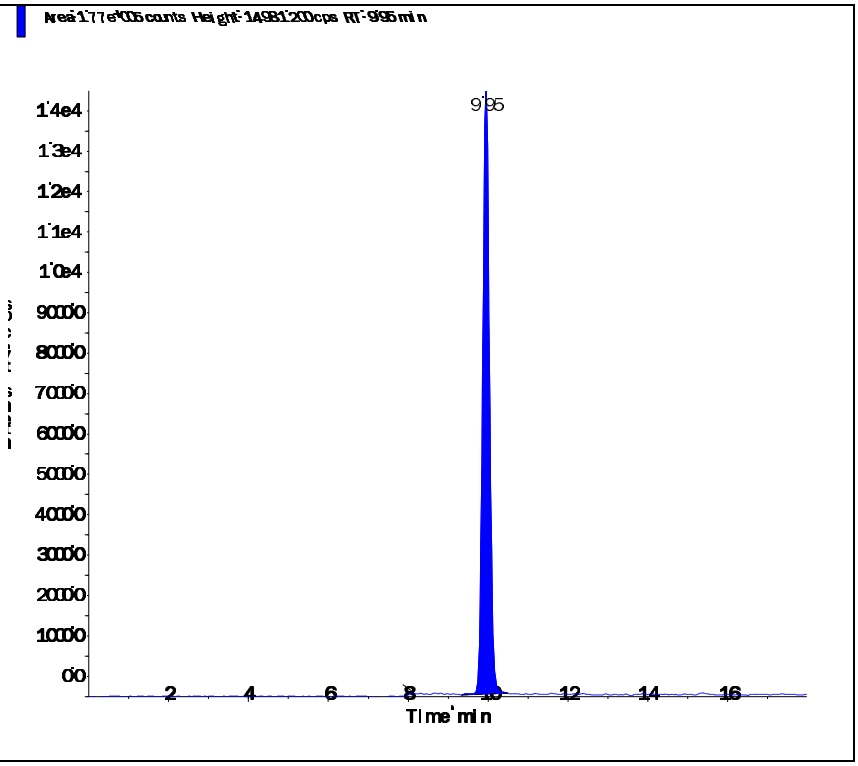

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.117
Sample Type:	(Quality Control)

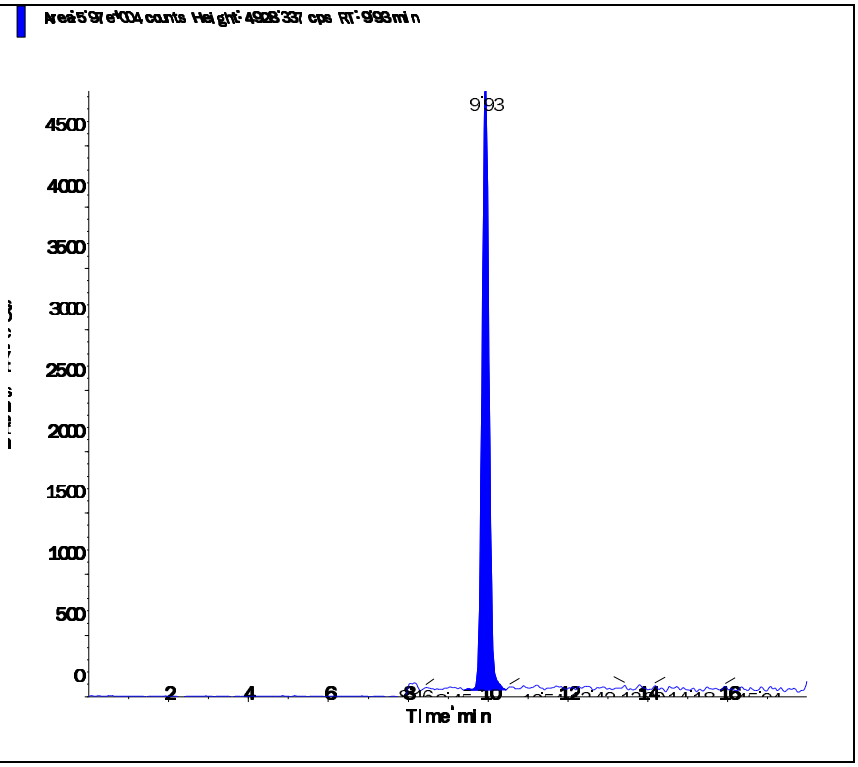

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Data File	LM33803.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/8/2016 9:57:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG560141-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33803.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 9:57:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG560141-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.860e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.040e+05	9.95	1.00	0.985
Perchlorate conf	6.310e+04	9.94	1.00	0.943

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

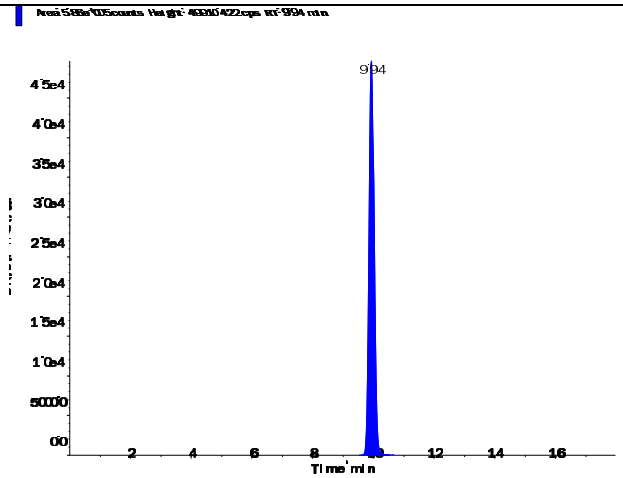

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.349
Sample Type:	(Quality Control)

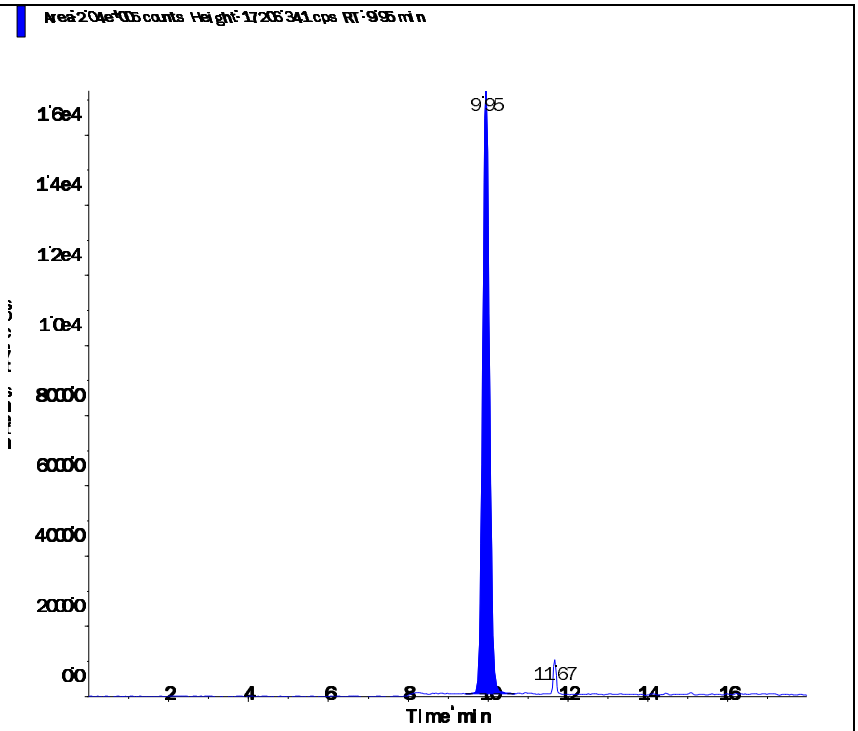

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.943 ng/ml
Area Ratio:	0.108
Sample Type:	(Quality Control)

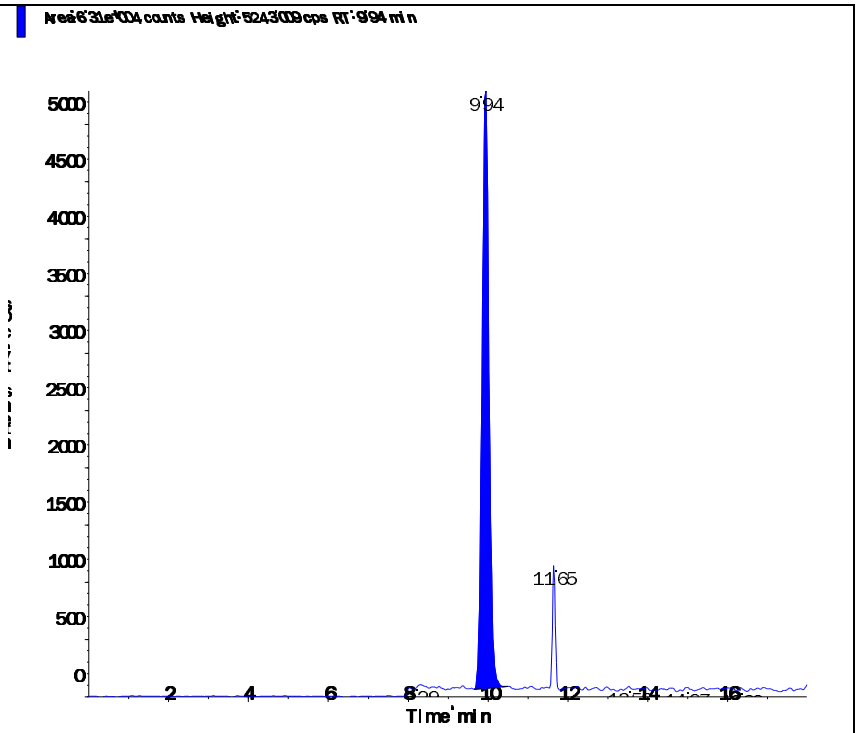

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Data File	LM33806.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/9/2016 10:32:58 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG560141-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33806.wiff	**Injection Volume**	10.00
Acquisition Date	3/9/2016 10:32:58 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG560141-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.070e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.750e+05	9.93	1.00	0.973
Perchlorate conf	5.770e+04	9.91	1.00	0.999

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Quality Control)

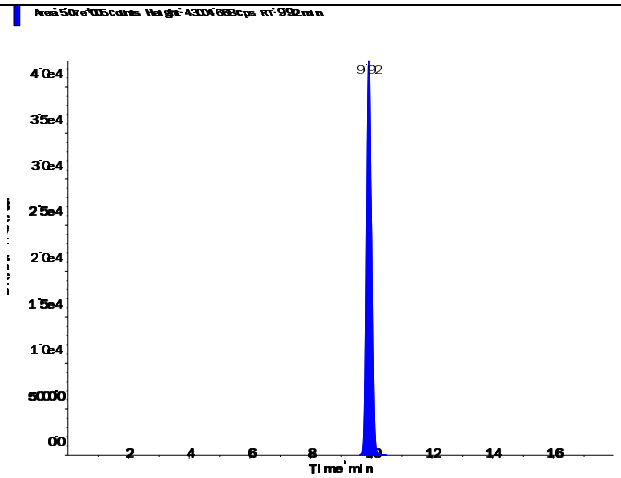

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.345
Sample Type:	(Quality Control)

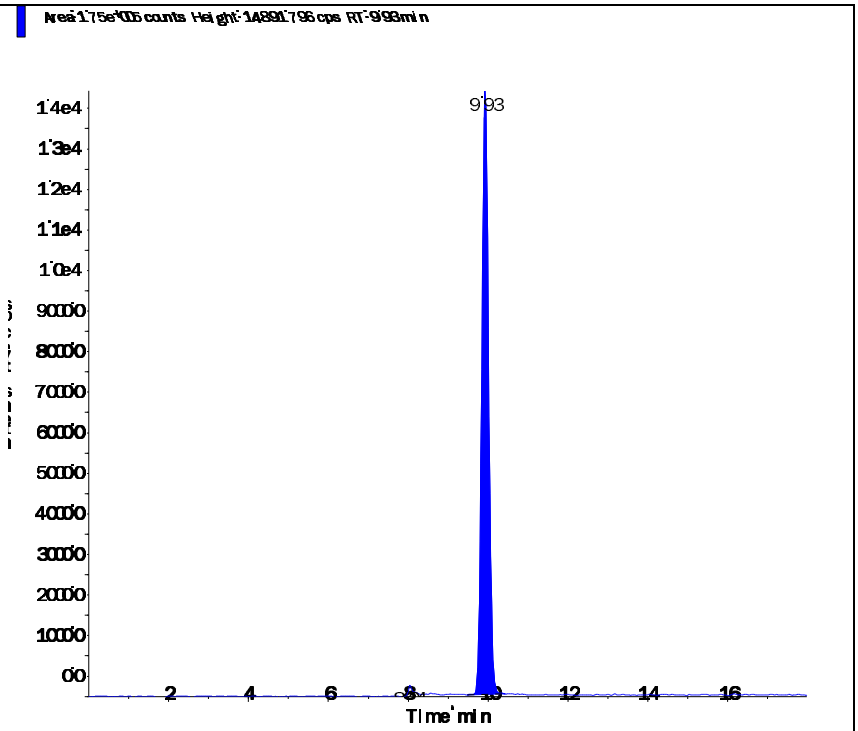

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.92) min
Calculated conc:	0.999 ng/ml
Area Ratio:	0.114
Sample Type:	(Quality Control)

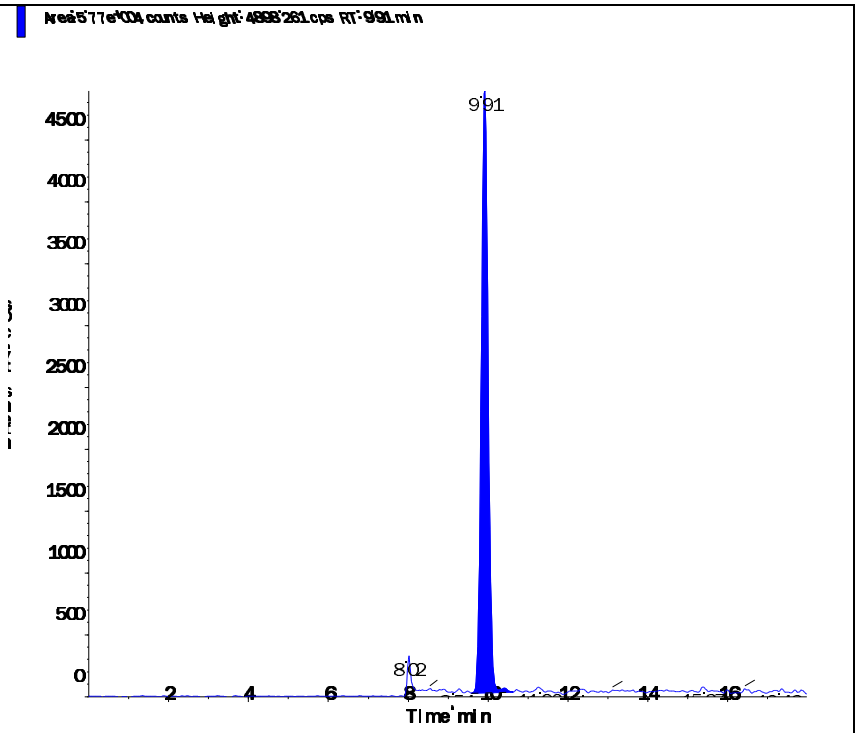

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Data File	LM33815.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/9/2016 1:23:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG560141-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33815.wiff	**Injection Volume**	10.00
Acquisition Date	3/9/2016 1:23:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG560141-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.900e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.720e+05	9.95	1.00	0.993
Perchlorate conf	5.580e+04	9.94	1.00	0.998

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

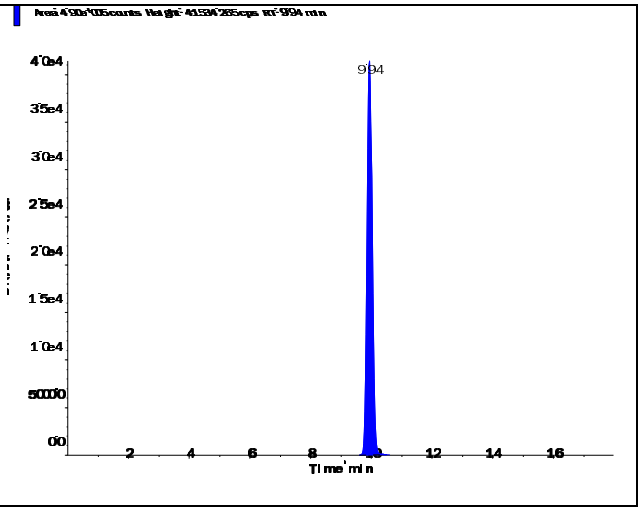

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	0.993 ng/ml
Area Ratio:	0.352
Sample Type:	(Quality Control)

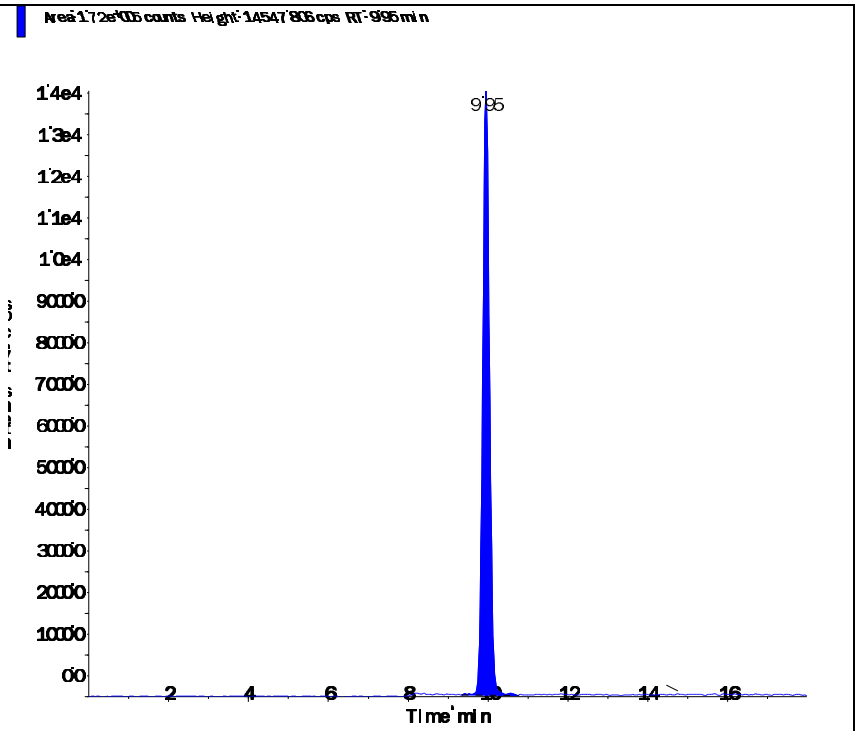

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.998 ng/ml
Area Ratio:	0.114
Sample Type:	(Quality Control)

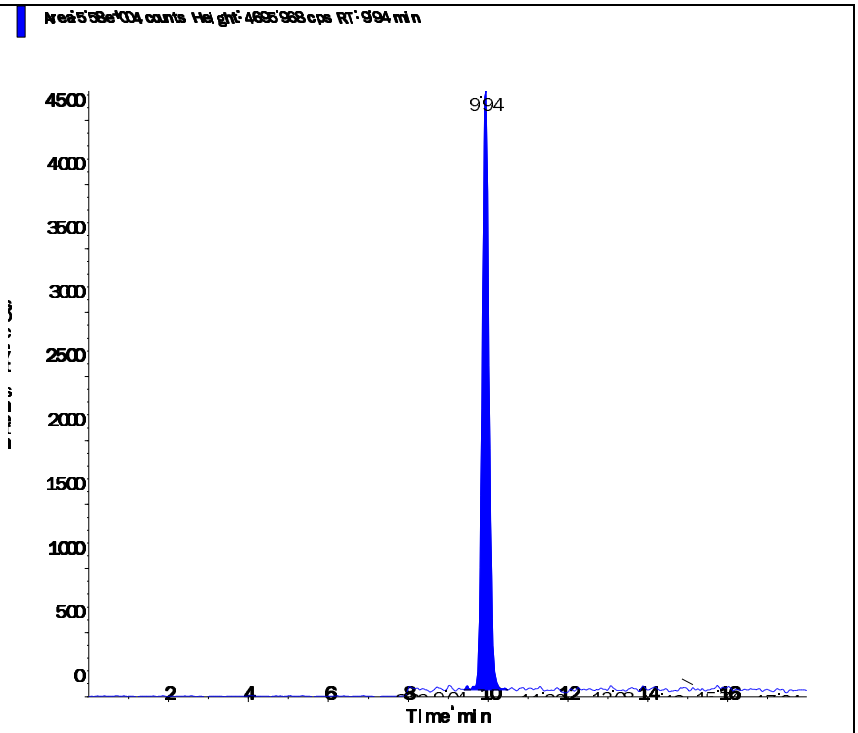

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Printed: 3/9/2016 2:44 PM

Data File	LM33782.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/8/2016 3:19:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG560129-07 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33782.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 3:19:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG560129-07	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.600e+04	9.95	N/A	0.195
Perchlorate conf	1.320e+04	9.94	N/A	0.223

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

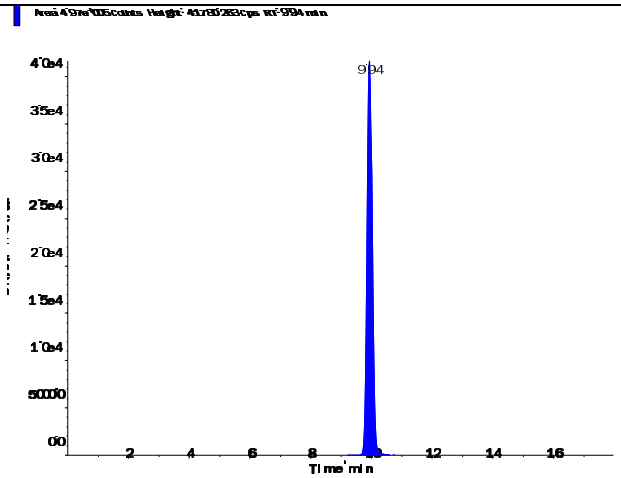

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.95 (9.94) min Calculated conc: 0.195 ng/ml Area Ratio: 0.072 Sample Type: (Unknown)	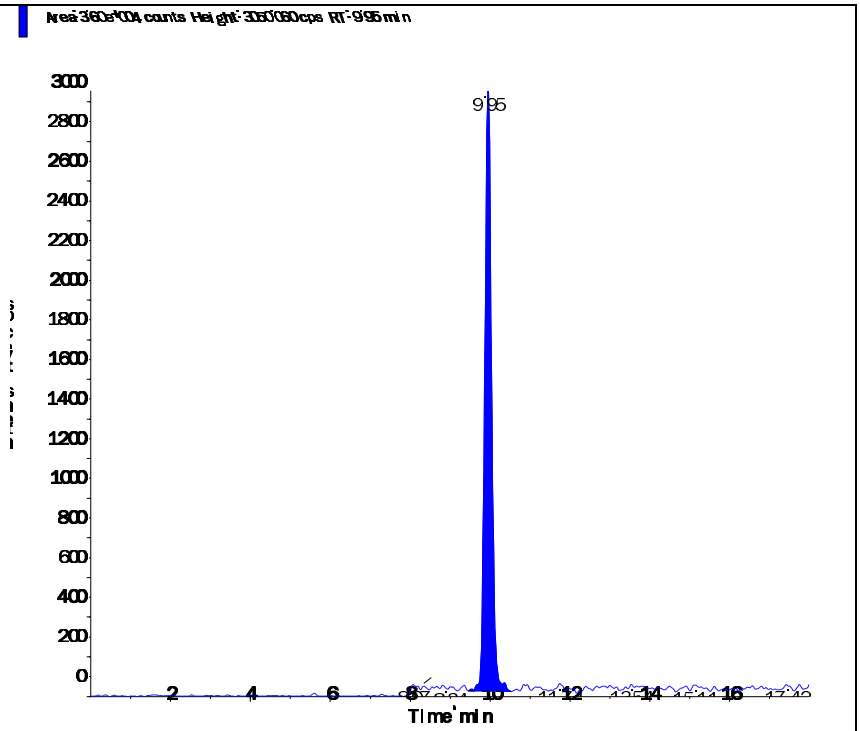
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.94 (9.92) min Calculated conc: 0.223 ng/ml Area Ratio: 0.027 Sample Type: (Unknown)	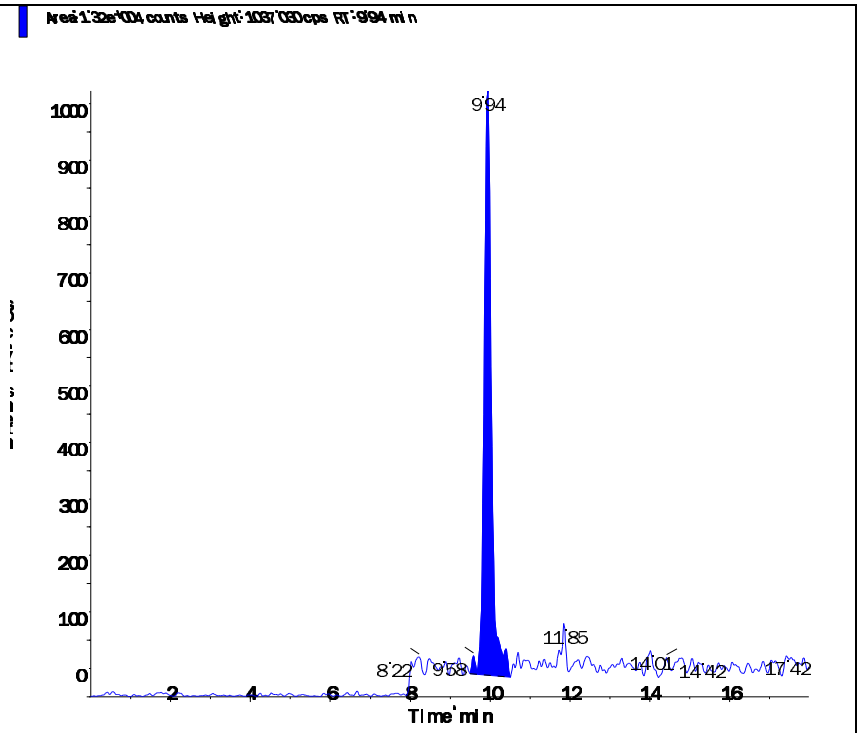

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Data File	LM33794.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/8/2016 7:06:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG560129-08 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33794.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 7:06:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG560129-08	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.310e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.680e+04	9.94	N/A	0.185
Perchlorate conf	1.250e+04	9.93	N/A	0.195

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

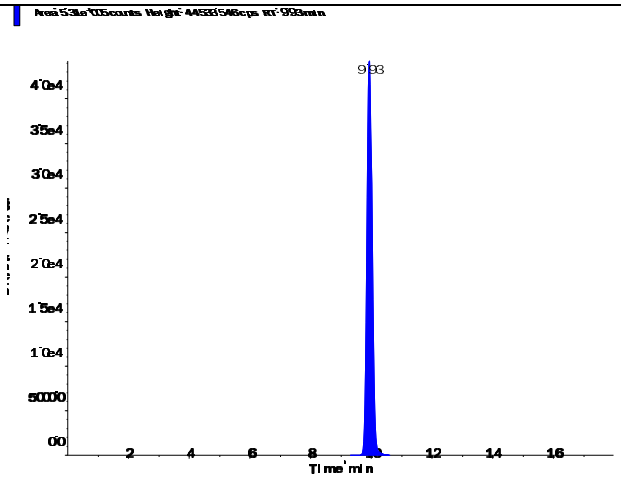

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.185 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

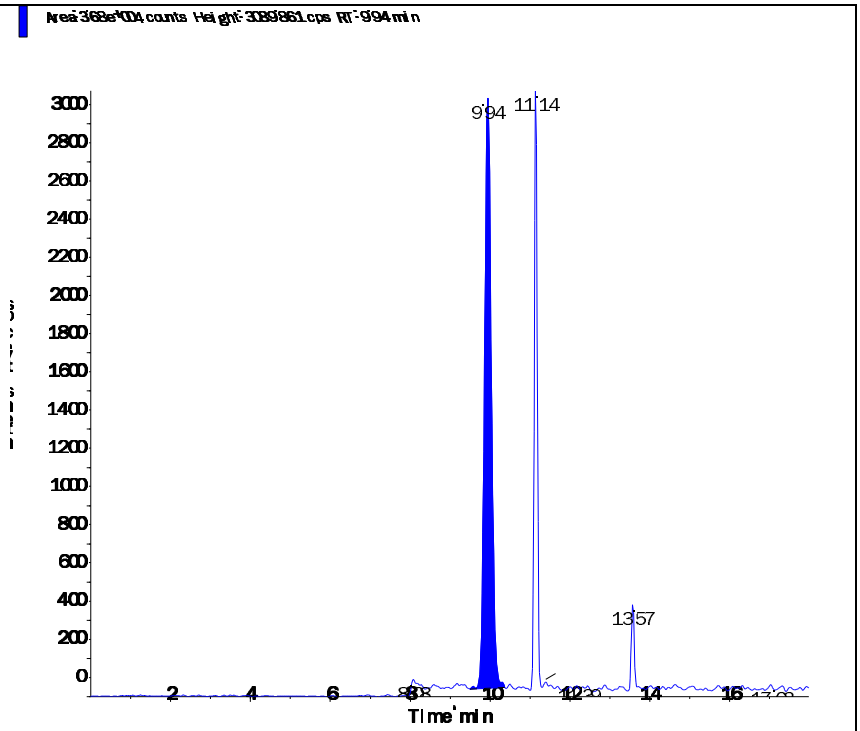

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	0.195 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

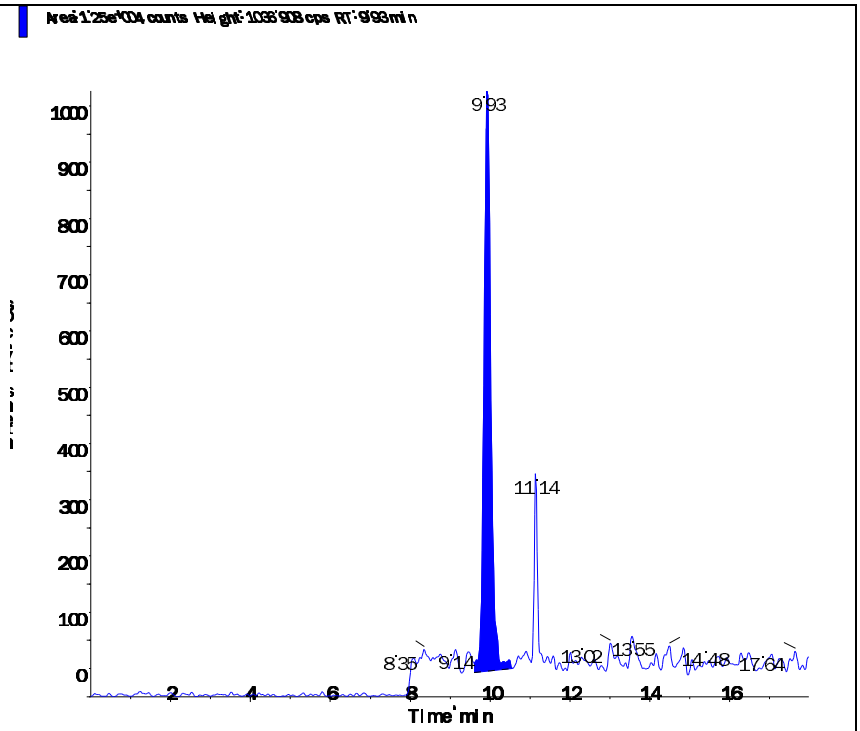

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Data File	LM33804.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/8/2016 10:16:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG560129-09 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33804.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 10:16:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG560129-09	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.940e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.270e+04	9.92	N/A	0.193
Perchlorate conf	1.390e+04	9.90	N/A	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

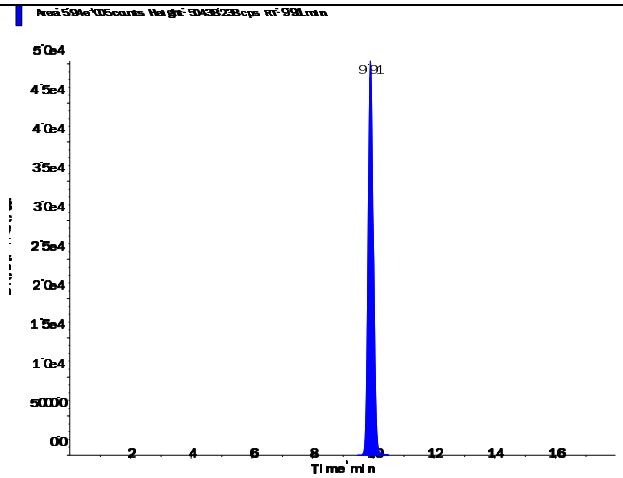

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.92 (9.94) min Calculated conc: 0.193 ng/ml Area Ratio: 0.072 Sample Type: (Unknown)	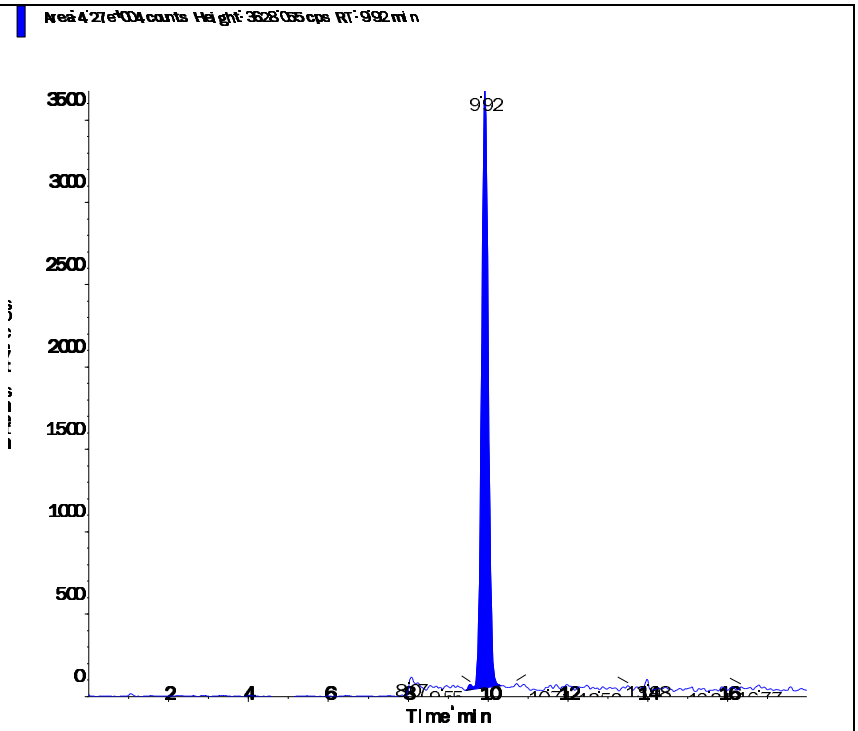
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.90 (9.92) min Calculated conc: 0.194 ng/ml Area Ratio: 0.023 Sample Type: (Unknown)	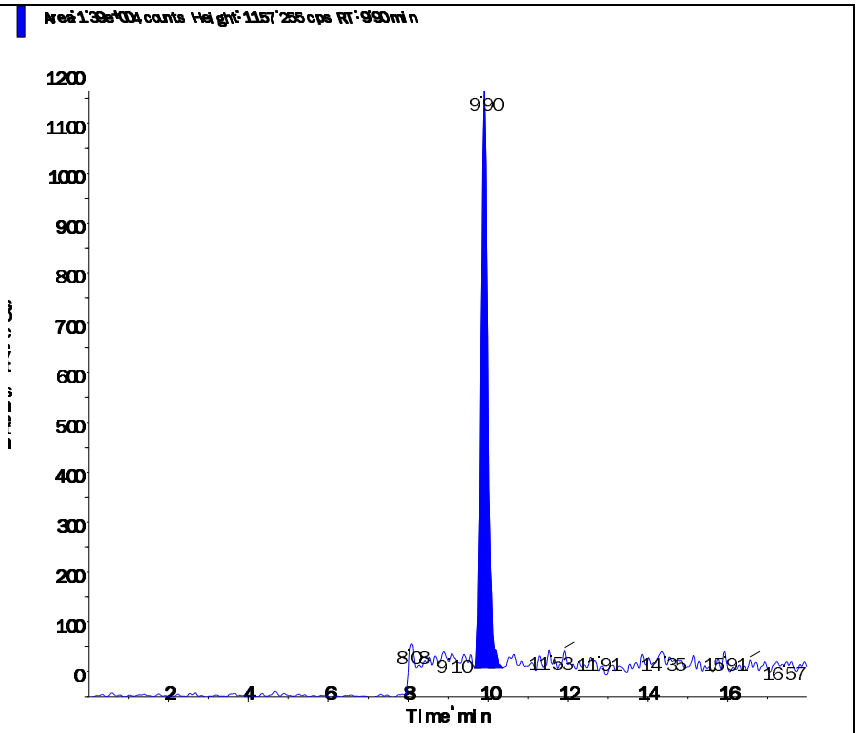

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Data File	LM33807.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/9/2016 10:51:50 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG560129-10 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33807.wiff	**Injection Volume**	10.00
Acquisition Date	3/9/2016 10:51:50 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG560129-10	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.100e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.610e+04	9.93	N/A	0.19
Perchlorate conf	1.200e+04	9.91	N/A	0.196

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

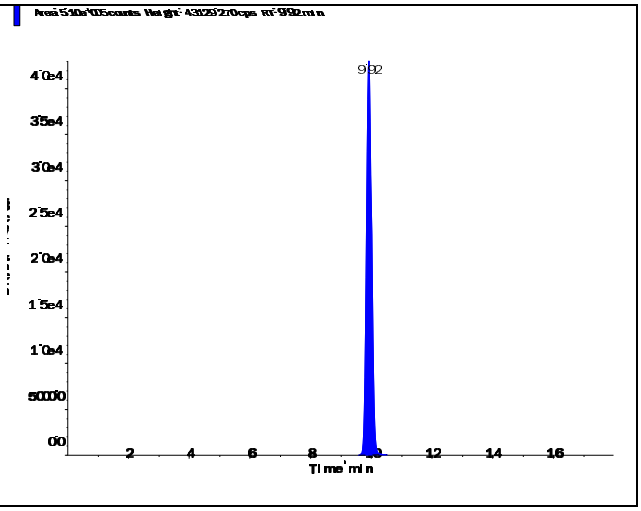

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	0.19 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

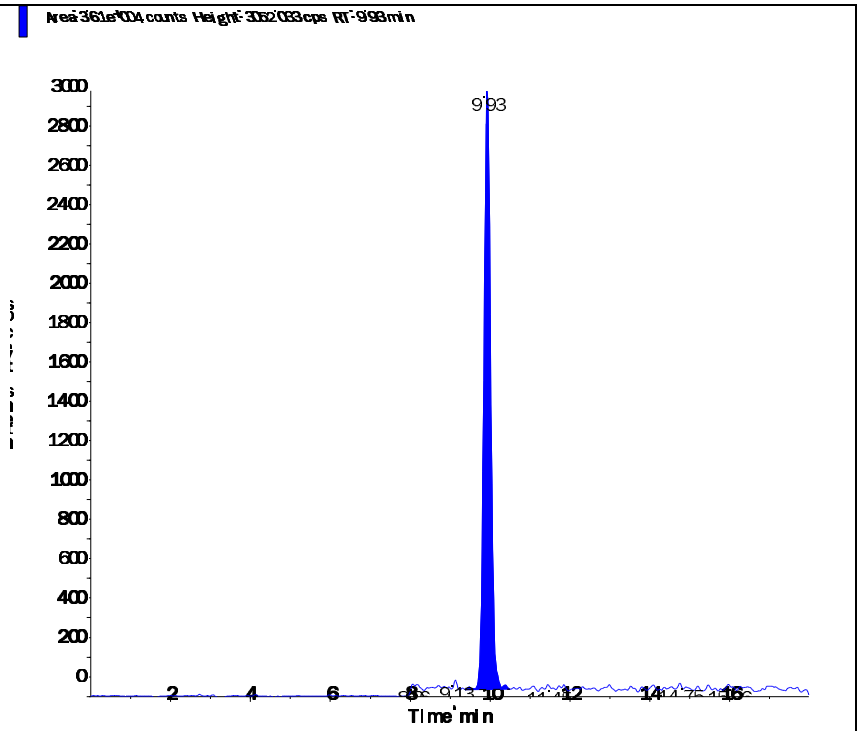

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.92) min
Calculated conc:	0.196 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

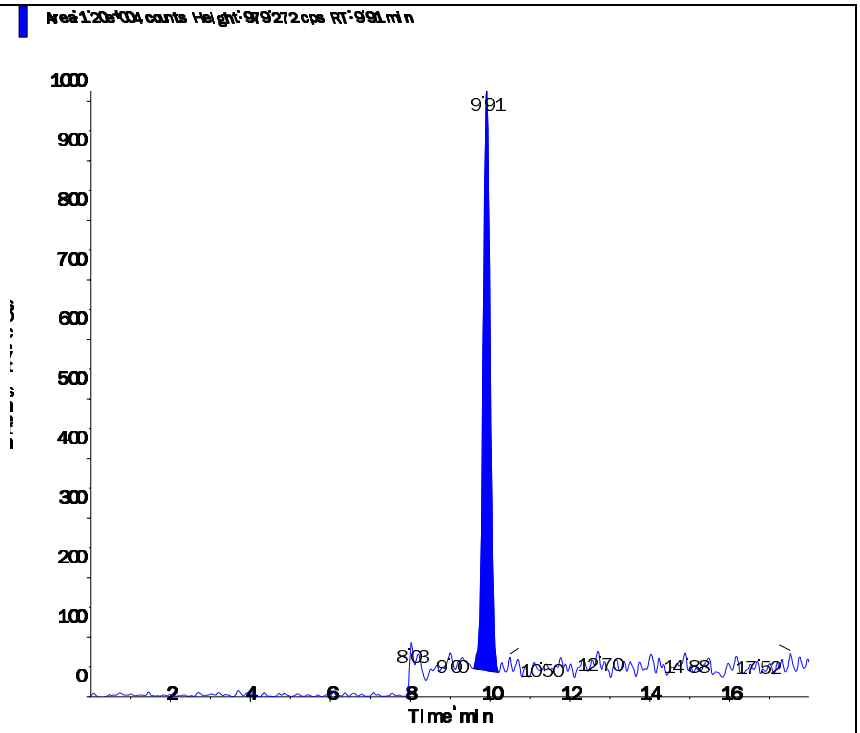

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Data File	LM33816.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/9/2016 1:42:11 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG560129-11 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33816.wiff	**Injection Volume**	10.00
Acquisition Date	3/9/2016 1:42:11 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG560129-11	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.550e+04	9.95	N/A	0.19
Perchlorate conf	1.120e+04	9.95	N/A	0.184

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

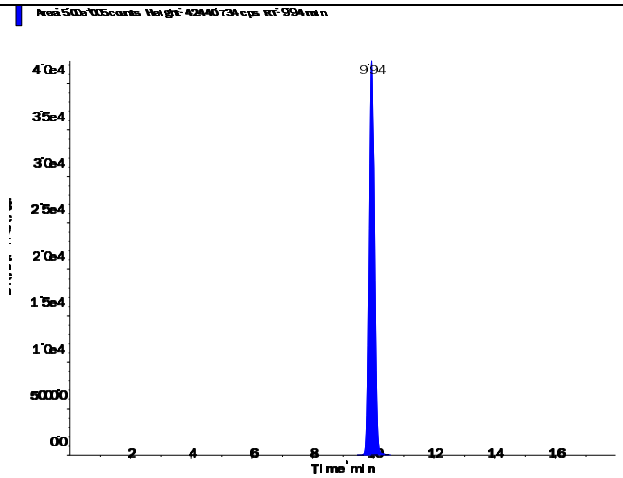

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	0.19 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

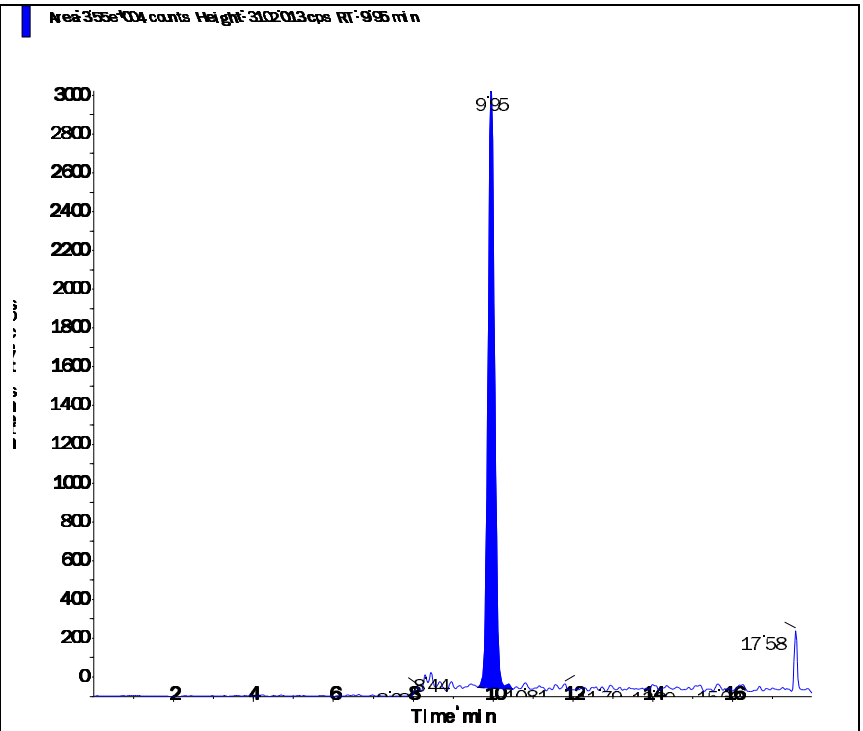

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.95 (9.92) min
Calculated conc:	0.184 ng/ml
Area Ratio:	0.022
Sample Type:	(Unknown)

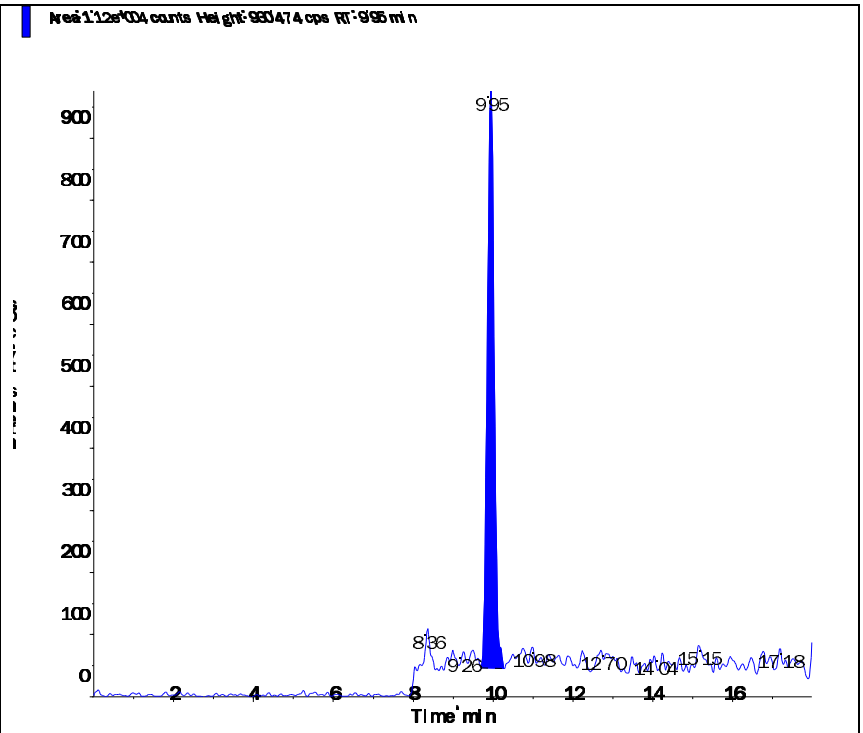

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Data File	LM33780.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/8/2016 2:41:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG560141-01 CCB	**Injection Vial**	1.00
Data File	LM33780.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 2:41:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG560141-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.590e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	1.670e+02	9.79	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

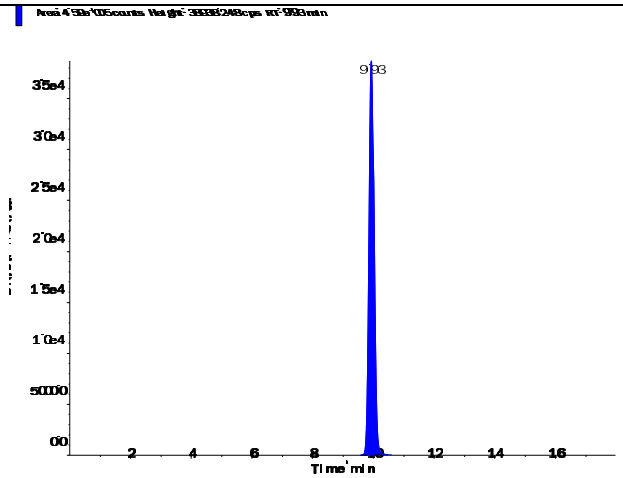

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

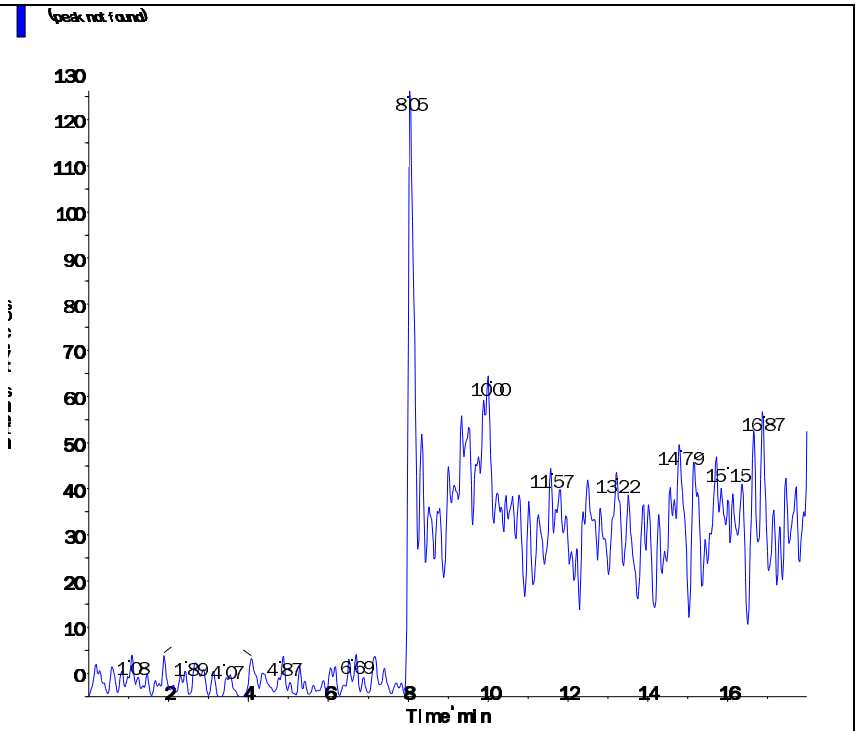

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.79 (9.92) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

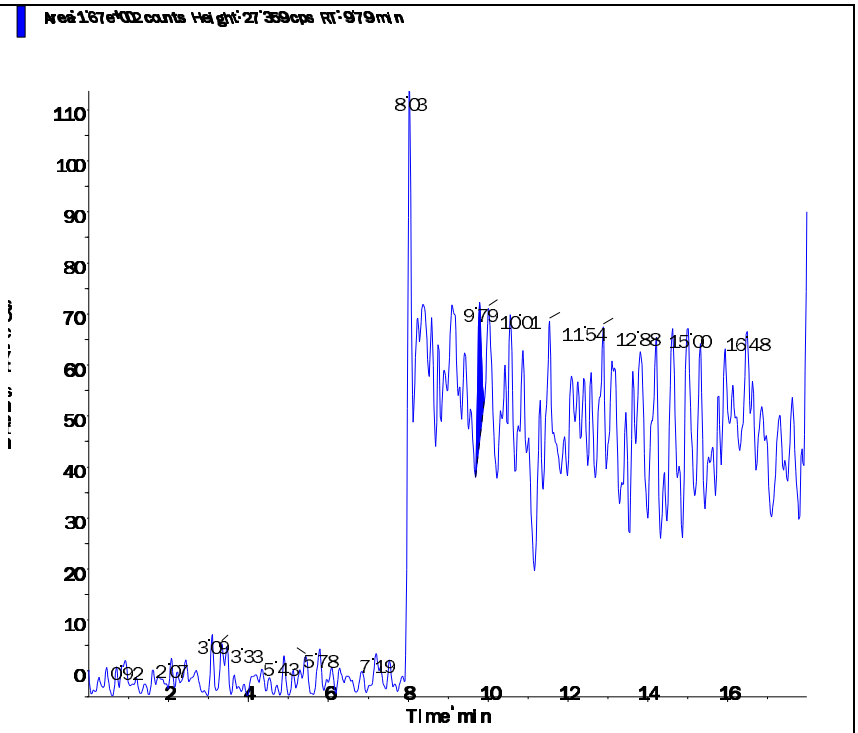

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Data File	LM33795.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/8/2016 7:25:47 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG560141-04 CCB	**Injection Vial**	1.00
Data File	LM33795.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 7:25:47 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG560141-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.230e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.960e+03	9.90	N/A	< 0
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

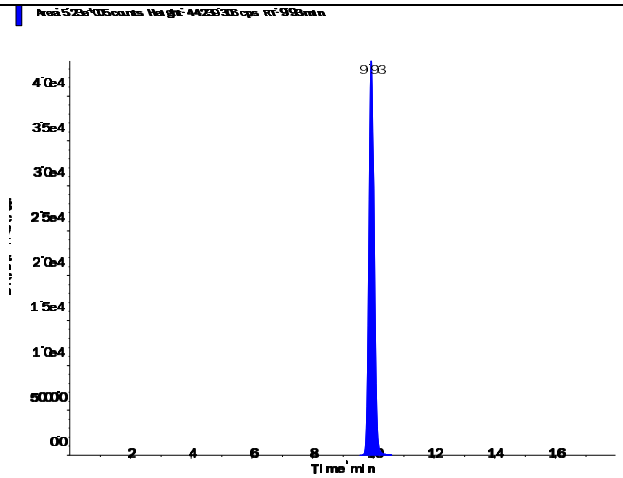

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.90 (9.94) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)

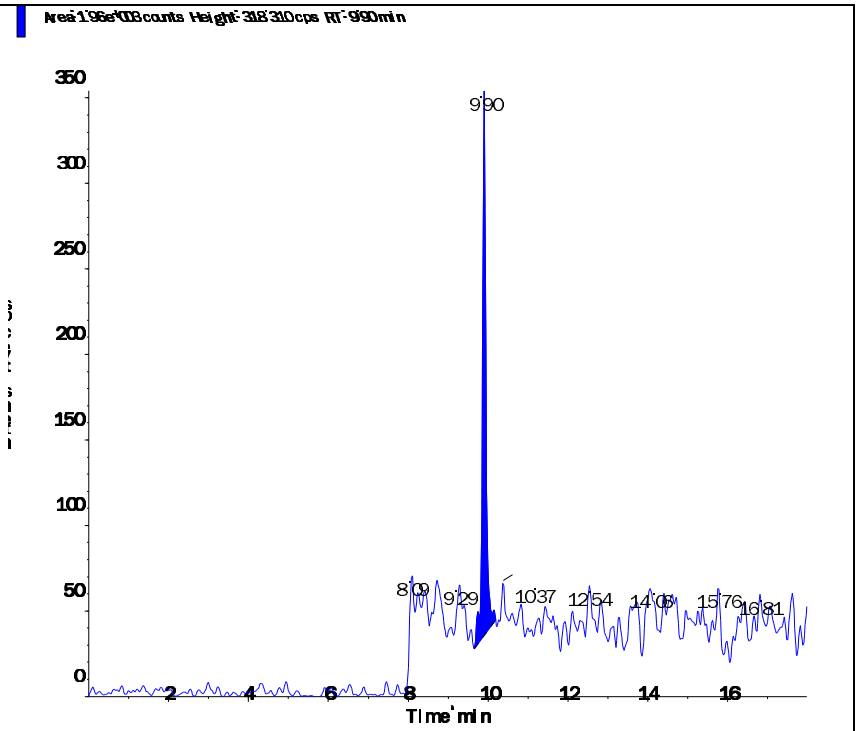

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

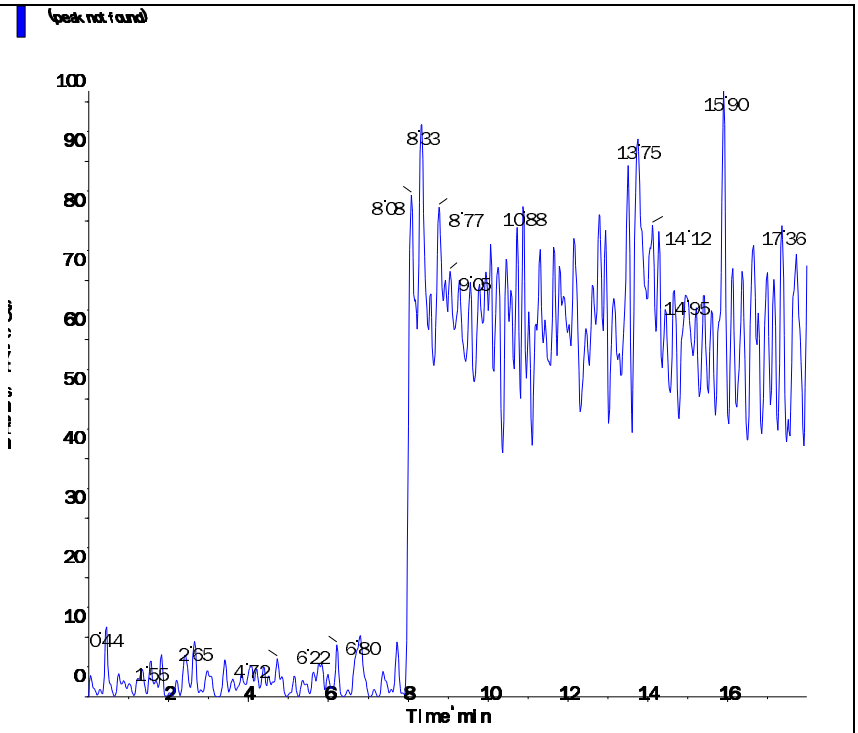

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Data File	LM33805.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/8/2016 10:35:12 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG560141-06 CCB	**Injection Vial**	1.00
Data File	LM33805.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 10:35:12 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG560141-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.740e+05	9.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	2.360e+02	9.68	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.90(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

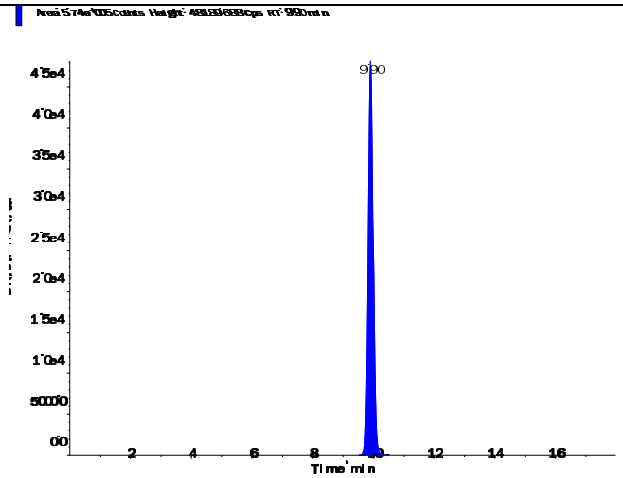

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

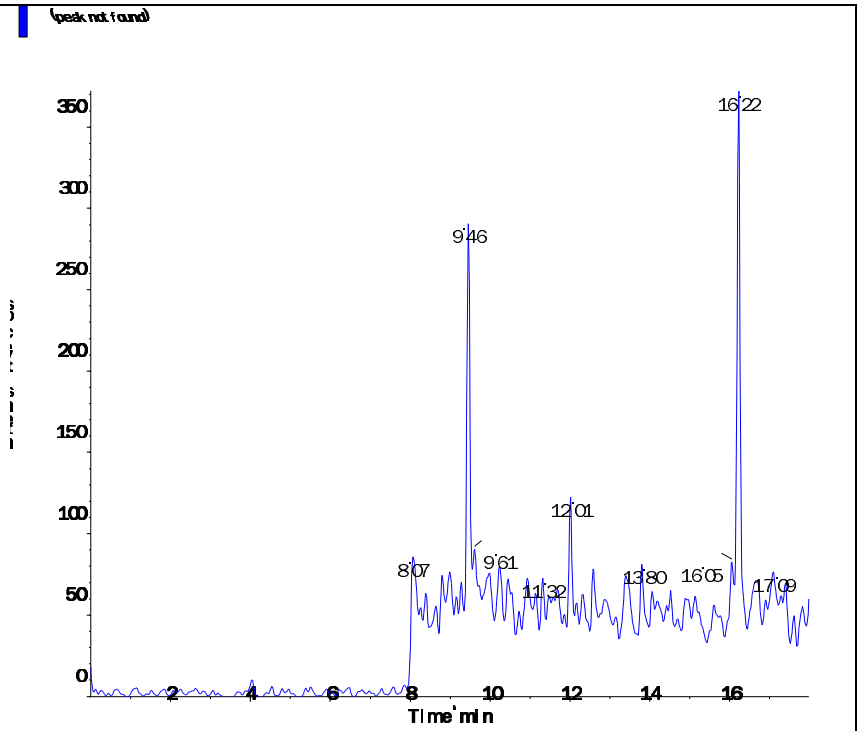

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.68 (9.92) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

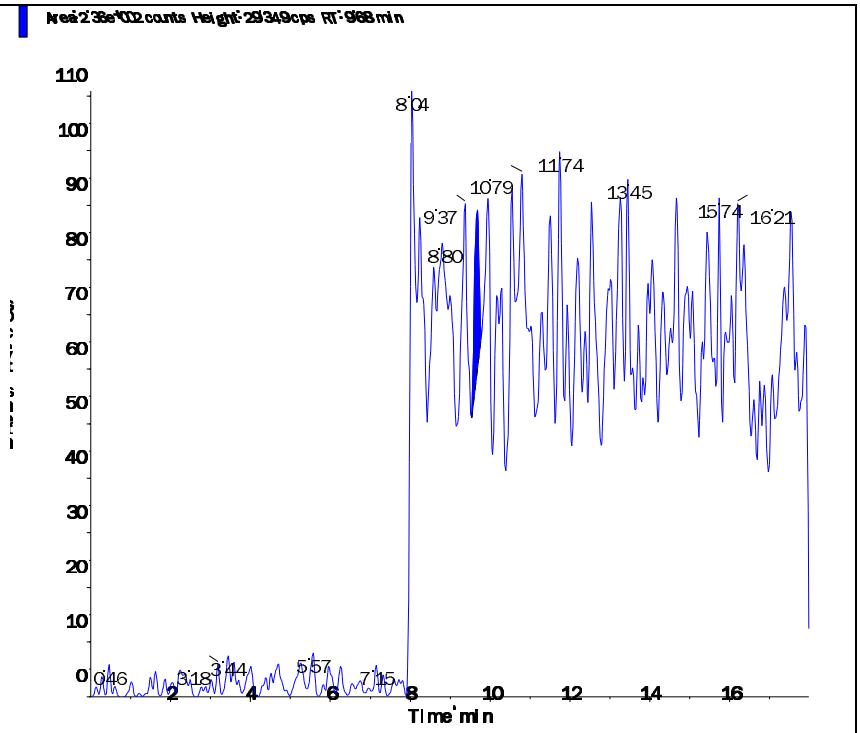

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Printed: 3/9/2016 2:53 PM

Data File	LM33808.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/9/2016 11:10:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG560141-08 CCB	**Injection Vial**	1.00
Data File	LM33808.wiff	**Injection Volume**	10.00
Acquisition Date	3/9/2016 11:10:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG560141-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.980e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

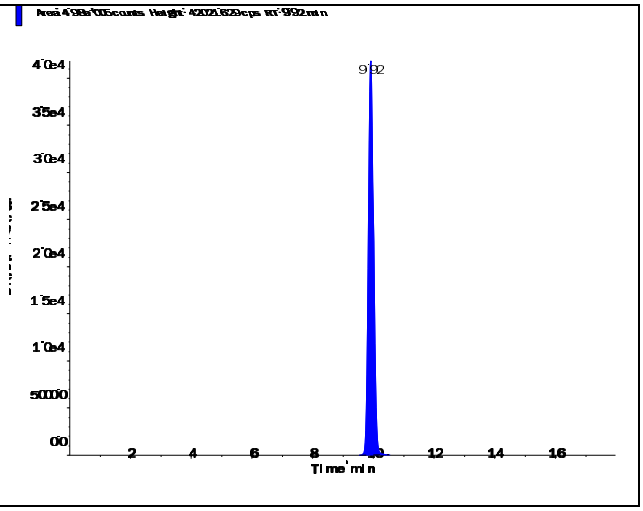

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

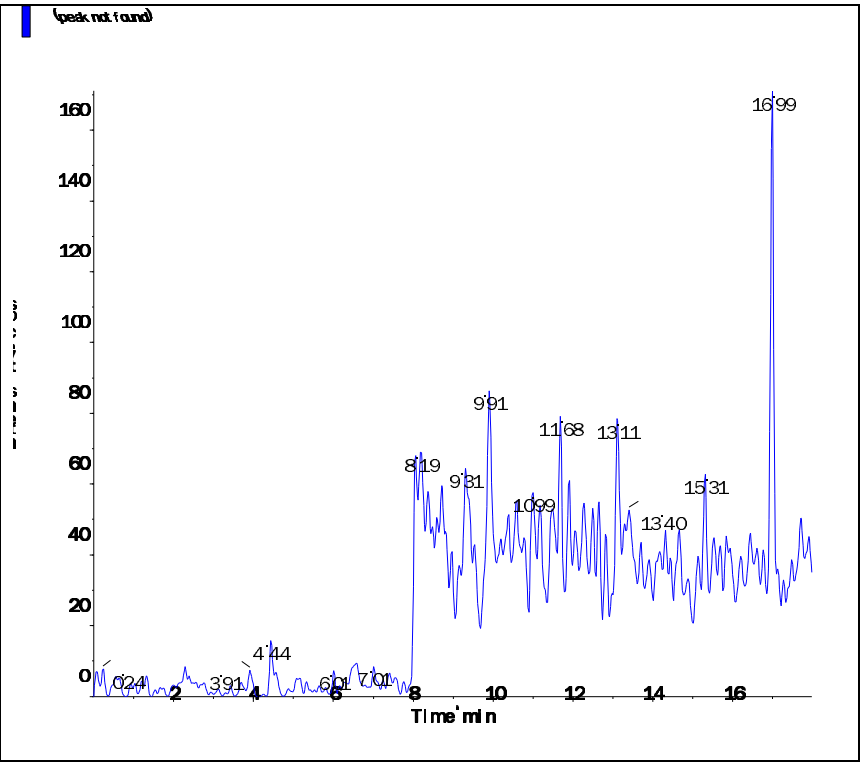

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

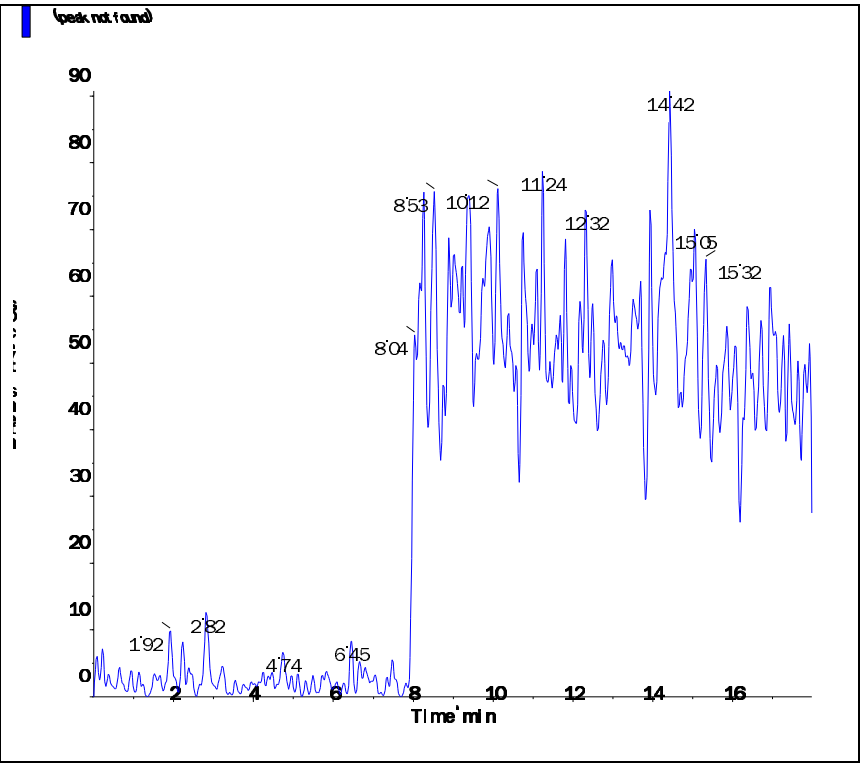

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Printed: 3/9/2016 2:57 PM

Data File	LM33817.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/9/2016 2:01:07 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG560141-10 CCB	**Injection Vial**	1.00
Data File	LM33817.wiff	**Injection Volume**	10.00
Acquisition Date	3/9/2016 2:01:07 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG560141-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.880e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

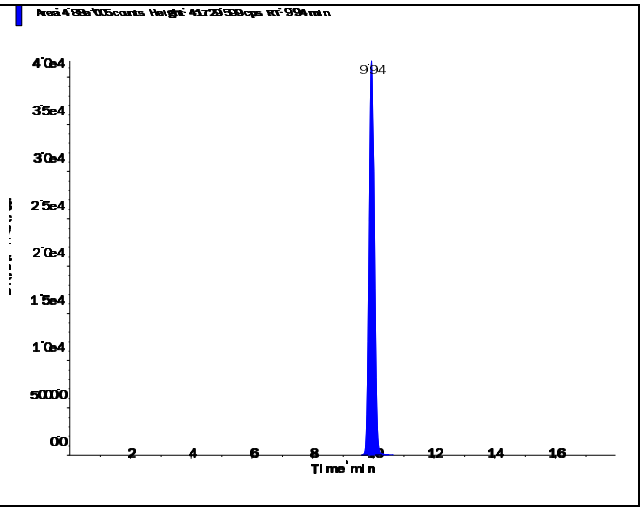

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Printed: 3/9/2016 2:57 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

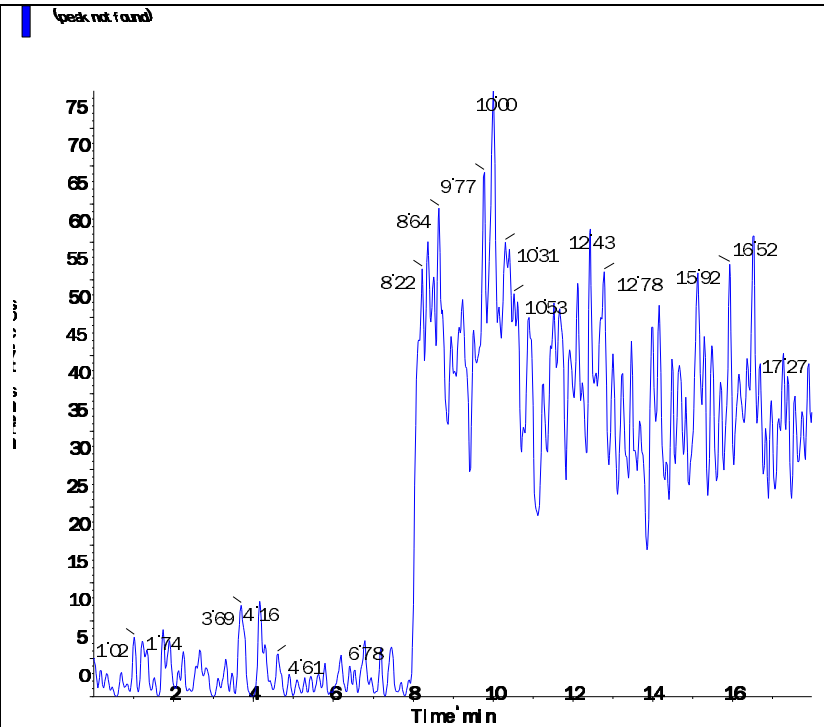

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

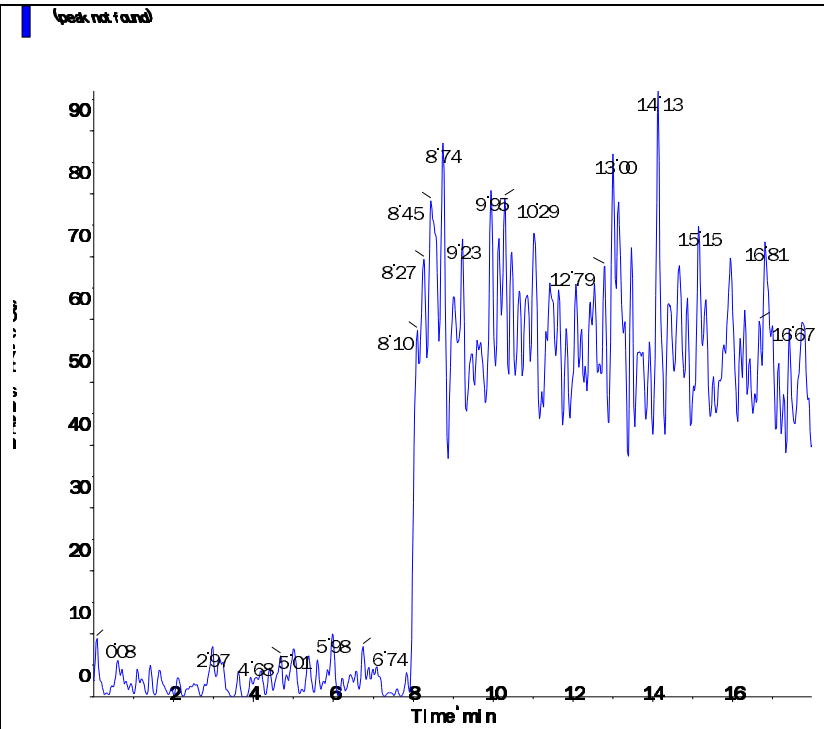

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Printed: 3/9/2016 2:44 PM

Data File	LM33783.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/8/2016 3:38:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG560129-01 MCT (2.0ug/kg)	**Injection Vial**	4.00
Data File	LM33783.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 3:38:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG560129-01	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.48	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.560e+04	9.48	N/A	0.194
Perchlorate conf	1.130e+04	9.48	N/A	0.19

O18LP (Internal Standard)

RT (Exp. RT): 9.48(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

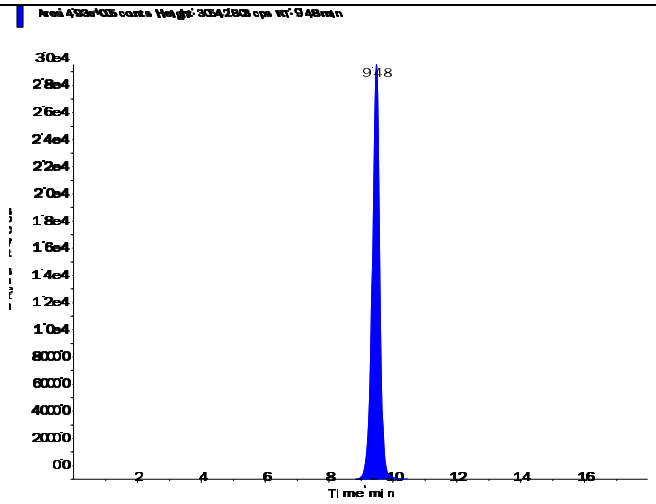

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.48 (9.94) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

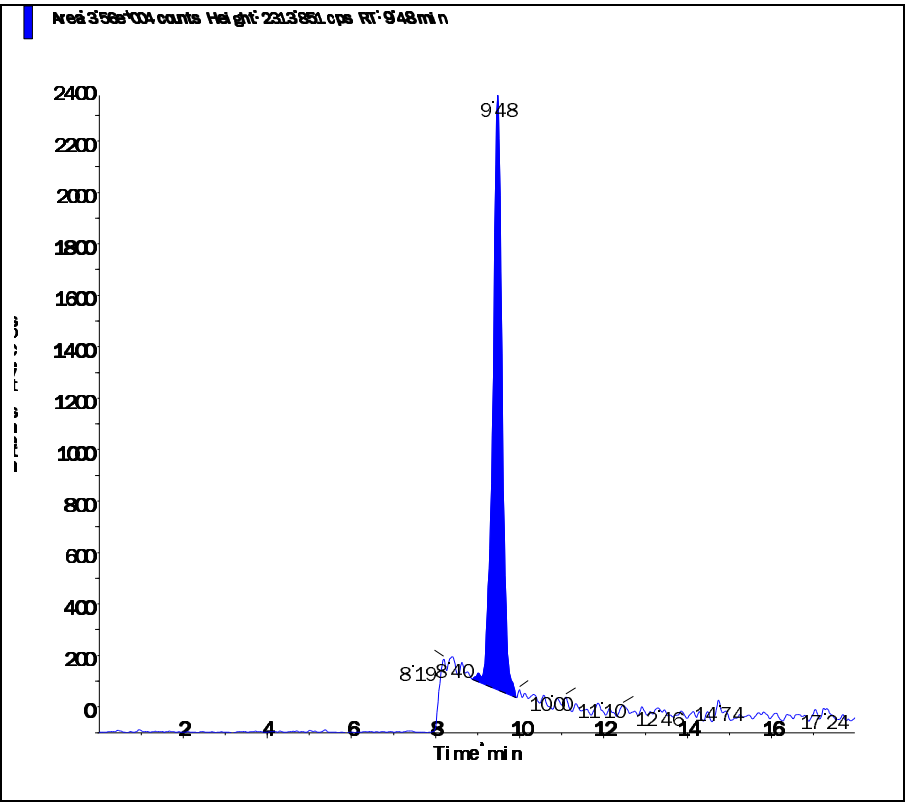

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.48 (9.92) min
Calculated conc:	0.19 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

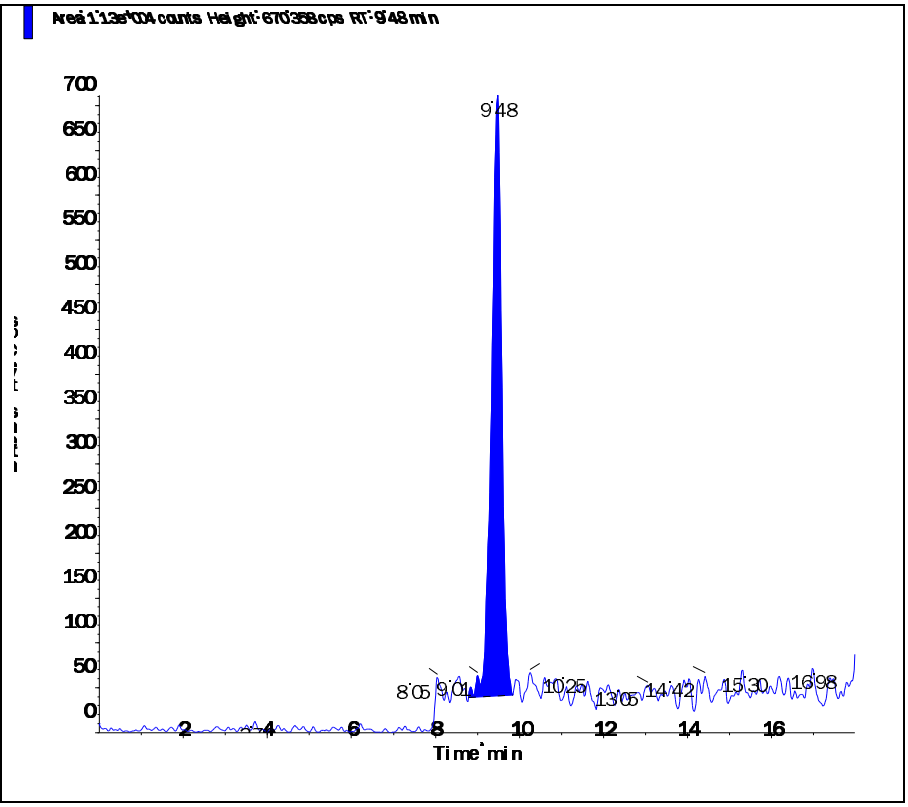

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2.2.1.5 Raw QC Data

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Data File	LM33784.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/8/2016 3:57:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG560129-02 BLANK	**Injection Vial**	5.00
Data File	LM33784.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 3:57:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG560129-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.840e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

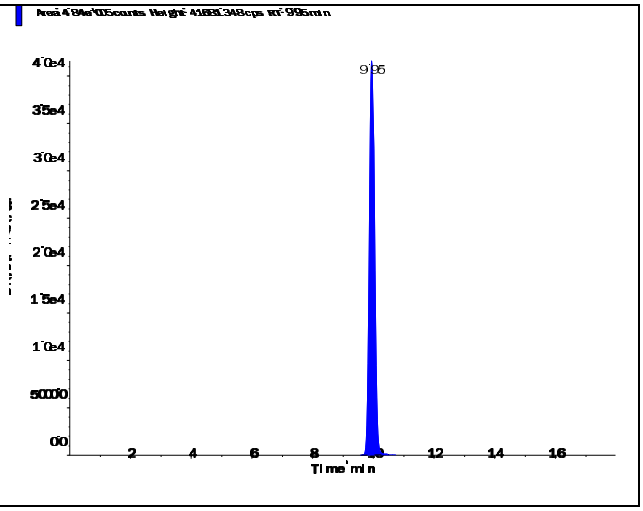

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

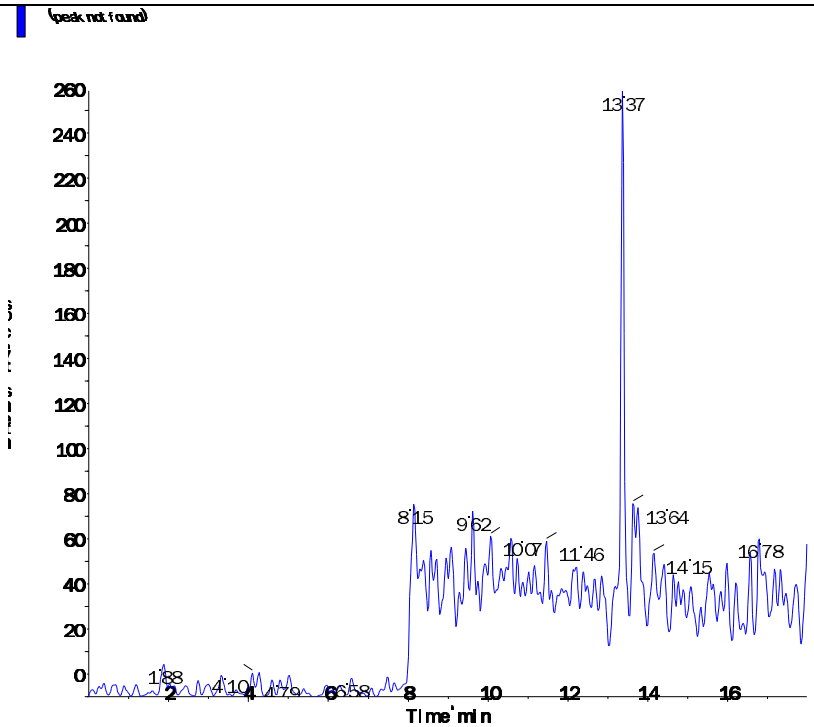

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

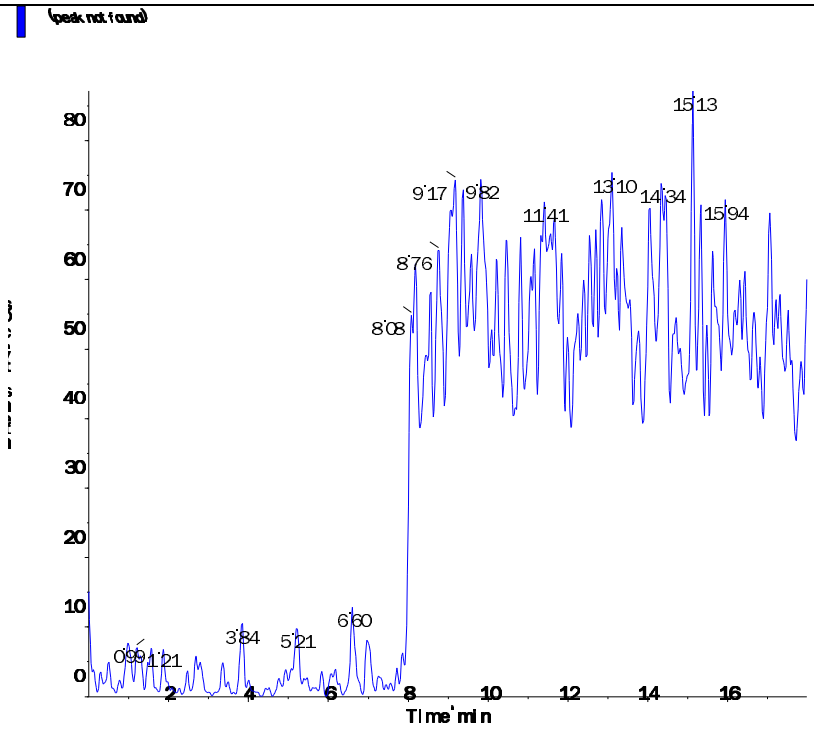

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Data File	LM33785.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/8/2016 4:16:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG560129-03 LCS (2.0ug/kg)	**Injection Vial**	6.00
Data File	LM33785.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 4:16:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG560129-03	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.840e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.620e+04	9.96	N/A	0.201
Perchlorate conf	1.180e+04	9.94	N/A	0.202

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

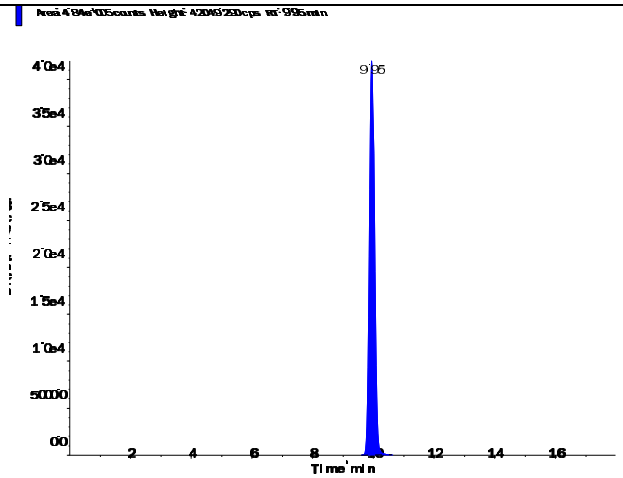

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.075
Sample Type:	(Unknown)

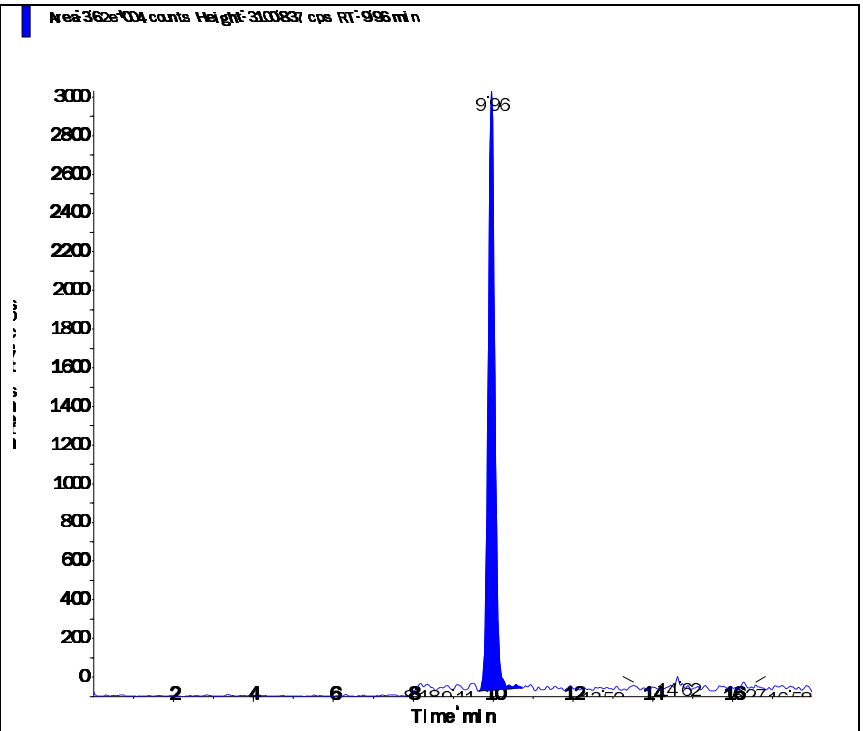

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.202 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

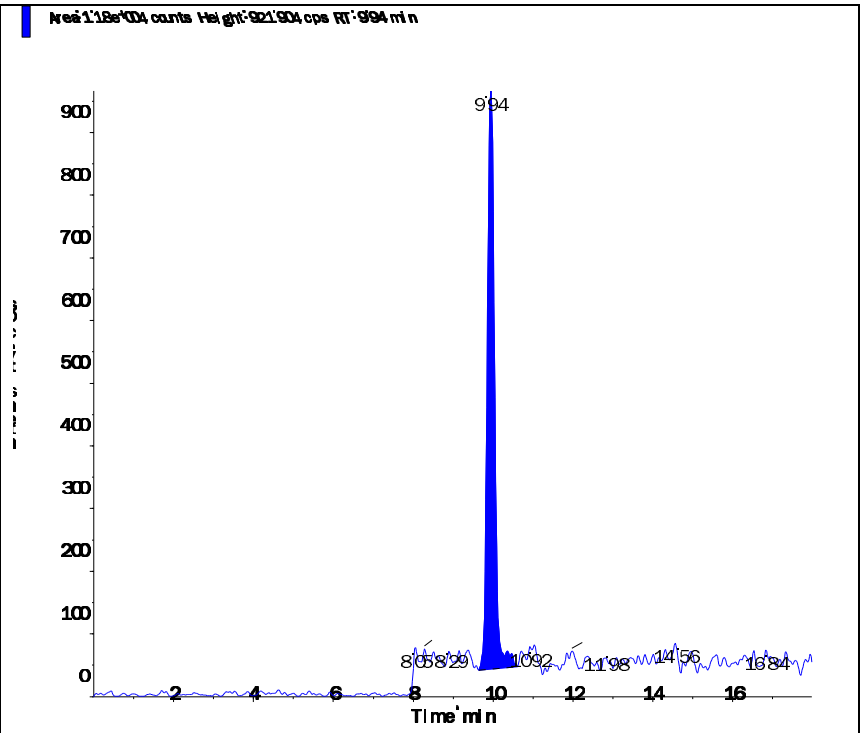

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Data File	LM33787.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/8/2016 4:54:19 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030366-01 MS	**Injection Vial**	8.00
Data File	LM33787.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 4:54:19 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG560129-05	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.010e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.770e+04	9.96	N/A	0.203
Perchlorate conf	1.280e+04	9.94	N/A	0.213

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

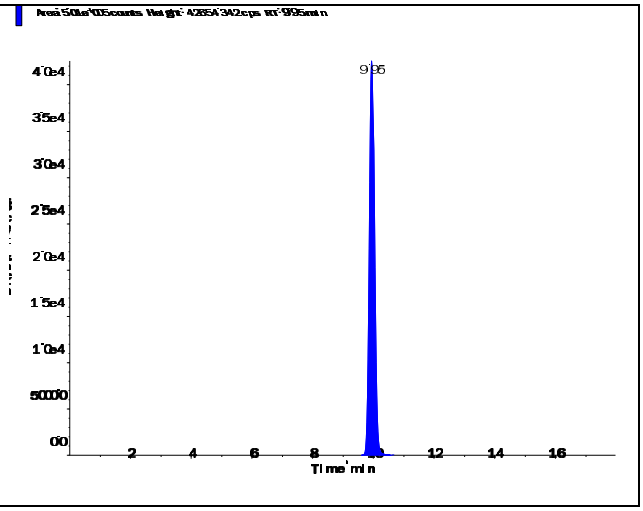

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	0.203 ng/ml
Area Ratio:	0.075
Sample Type:	(Unknown)

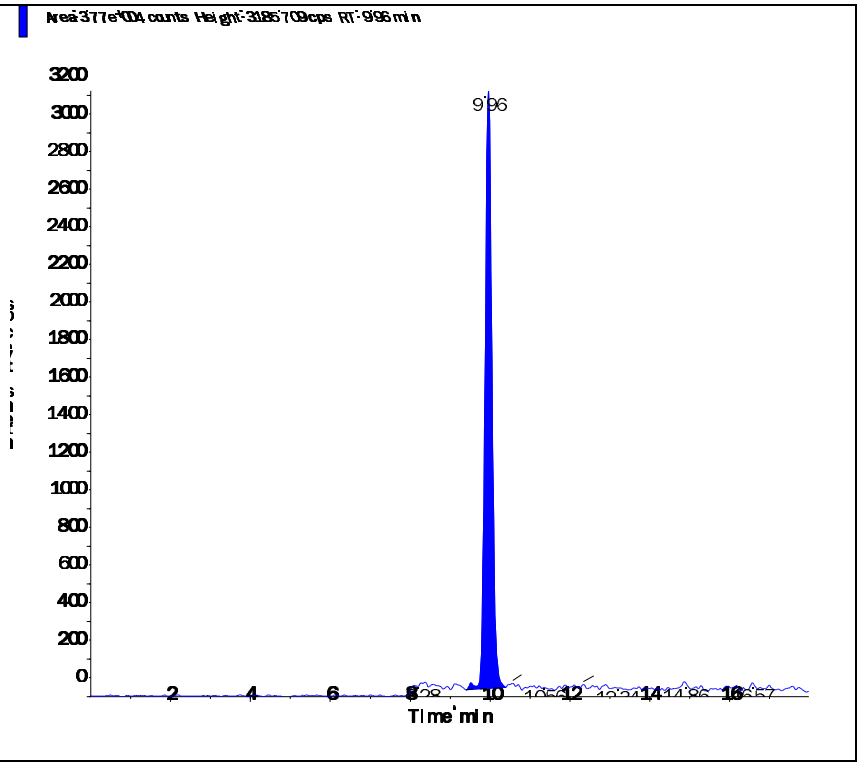

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.213 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

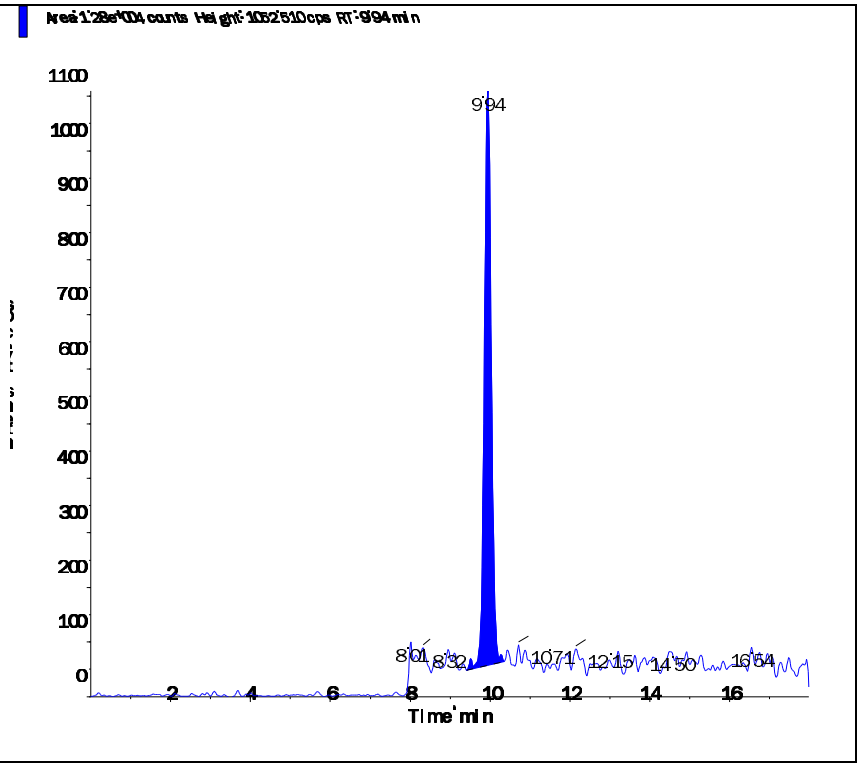

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Data File	LM33788.wiff	**Result Table**	030816_JWR.rdb
Acquisition Date	3/8/2016 5:13:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030366-01 MSD	**Injection Vial**	9.00
Data File	LM33788.wiff	**Injection Volume**	10.00
Acquisition Date	3/8/2016 5:13:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	030816_JWR.rdb
Sample ID	WG560129-06	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.690e+04	9.97	N/A	0.199
Perchlorate conf	1.220e+04	9.96	N/A	0.203

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

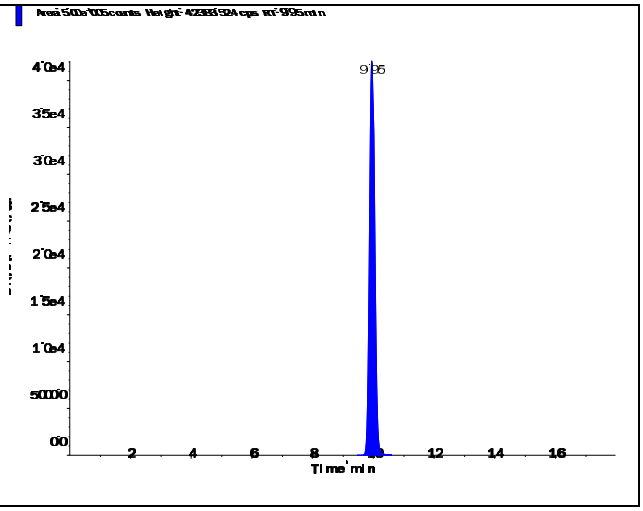

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.97 (9.94) min
Calculated conc:	0.199 ng/ml
Area Ratio:	0.074
Sample Type:	(Unknown)

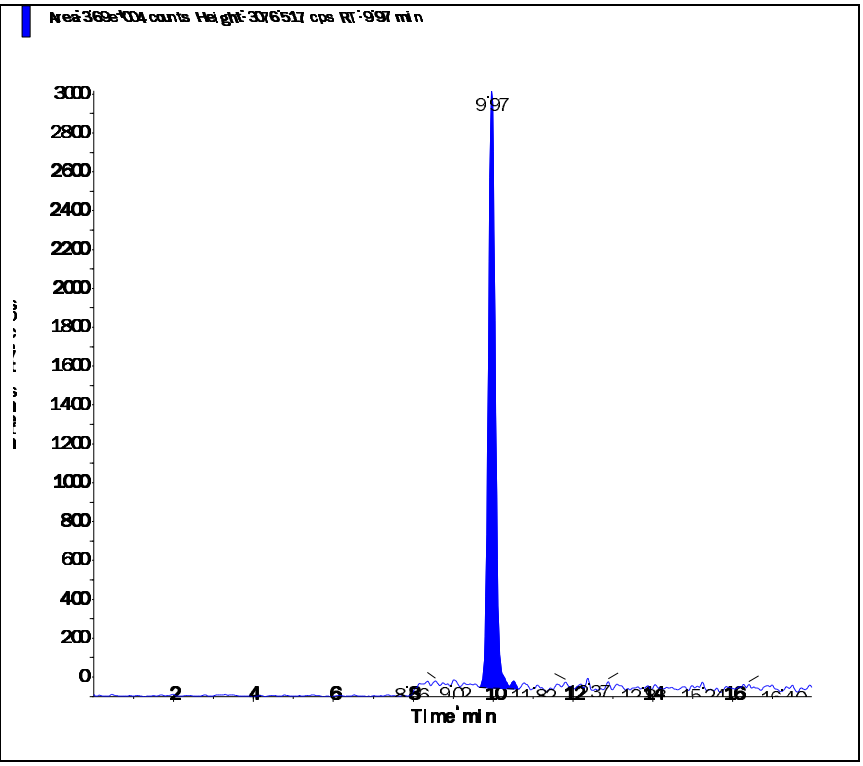

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.96 (9.92) min
Calculated conc:	0.203 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

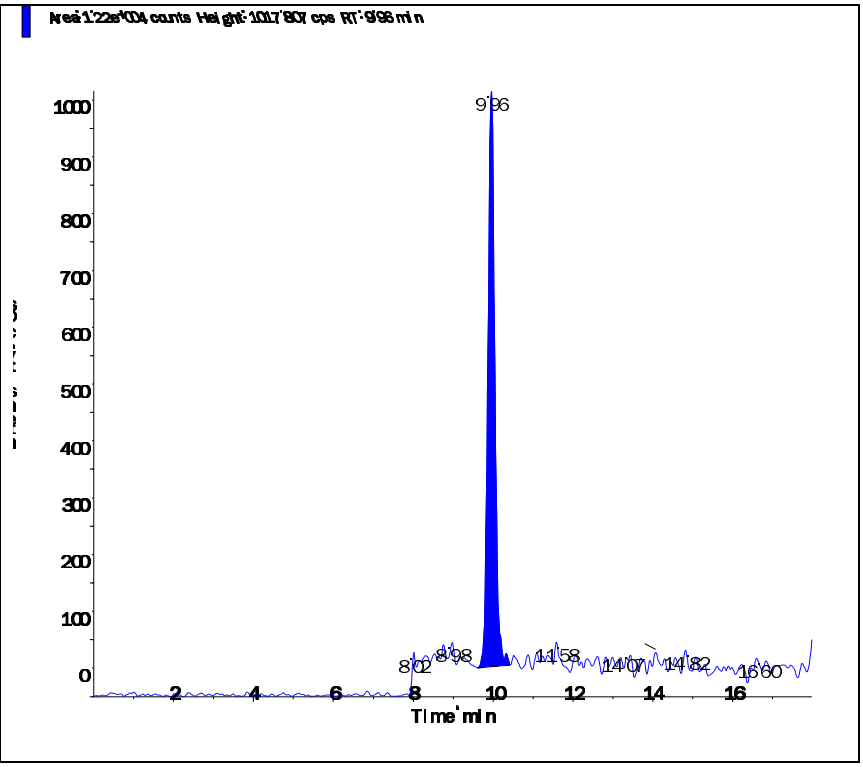

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2.3 General Chemistry Data

2.3.1 Percent Solids Data

2.3.1.1 Raw Data

Example Percent Solids Calculations

1.0 Calculating the percent solids of a sample.

$$\%Solids = \frac{WT3 - WT1}{WT2 - WT1} \times F$$

Where:	
WT1 = Weight, in grams, of the empty container	1.30 g
WT2 = Weight, in grams, of the container and wet sample	21.274 g
WT3 = Weight, in grams, of the container and dried sample	5.21 g
F = Factor to get units as percent weight	100
%Solids = Percent solids present in sample.	19.58%

2.0 Calculating the percent moisture of a sample.

% Moisture = 100 - % Solids from 1.0 calculation

Microbac Laboratories Inc.

PERCENT SOLIDS

Workgroup (AAB#): WG560135 Analyst: AC ADT(on): 03/08/2016 13:49
Method: D2216-90 Instrument: BAL021 ADT(off): 03/09/2016 08:19
SOP: K0003 Rev: 14

SAMPLE NUMBER	EMPTY PAN WT 1	WET WT 2	DRY WT 3A	DRY WT 3B	DRY WT 3C	PERCENT SOLID	PERCENT MOISTURE
L16030366-01	1.287	37.105	29.62			79.10	
L16030366-02	1.287	20.158	16.705			81.70	
L16030366-03	1.298	22.505	18.888			82.94	
L16030366-04	1.286	24.425	19.693			79.55	
L16030366-05	1.295	22.265	17.912			79.24	
L16030366-06	1.29	22.184	18.76			83.61	
L16030366-07	1.287	28.794	23.106			79.32	
L16030366-08	1.297	20.424	16.829			81.20	
L16030366-09	1.295	30.502	23.962			77.61	
L16030366-10	1.294	30.993	26.616			85.26	
L16030366-11	1.295	22.023	18.128			81.21	
L16030366-12	1.301	21.945	17.179			76.91	
WG560135-01	1.301	21.945	17.179			76.91	23.09
WG560135-02	1.295	20.159	15.829			77.05	22.95

Analyst: Andrew R Cochrane

PERCENT_SOLIDS - Modified 04/24/2008
PDF ID: 4662085
Report generated: 03/09/2016 08:22

Microbac

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
March 11, 2016

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001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
March 11, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
March 11, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Stephanie Mossburg	Project Manager: Debra Richmon	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): KAYLA PALLANES	San Antonio, TX 78205	
Phone: 1-800-373-4071	Signature: Kayla Pallanes	210-296-2000	
Client: AECOM		Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400	pH:	Program:	
San Antonio, TX 78205			
Turn Around Time: STANDARD			
Project Name/Location: Longhorn			
Project Number: 60274185 11DASOW16 DGI RPT OL			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp-	Grab	Matrix	Number of Containers	VOCs 8260	Perchlorate 6850	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
	18DPT11(5-5.5)040316			3/4/16	1500		X	S	2	X	X					
	18DPT11(15-15.5)040316			3/4/16	1600		X	S	2	X	X					
	18DPT11(20-20.5)070316			3/7/16	1150		X	S	2	X	X					
	18DPT11(29-29.5)070316			3/7/16	1155		X	S	2	X	X					
	18DPT11(25-25.5)070316			3/7/16	1200		X	S	2	X	X					
	18DPT12(5-5.5)070316			3/7/16	1435		X	S	2	X	X					
	18DPT12(8.5-9)070316			3/7/16	1440		X	S	2	X	X					
	18DPT12(18-18.5)070316			3/7/16	1445		X	S	2	X	X					
	18DPT12(12-12.5)070316			3/7/16	1500		X	S	2	X	X					
	18DPT13(5-5.5)070316			3/7/16	1600		X	S	2	X	X					
	18DPT13(12-12.5)070316			3/7/16	1605		X	S	2	X	X					
	18DPT13(17-17.5)070316			3/7/16	1610		X	S	2	X	X					

ERPIMS REQUIRED FIELDS

Comments: ~~STANDARD TAT~~ 48HR TAT

Microbac OVD
Received: 03/08/2016 09:50
By: BRENDA GREENWALT 221000082860
Brenda Greenwalt

Relinquished by: (Signature) Kayla Pallanes	Date 3/7/16	Time 1700	Received by: (Signature)	y: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	

•Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030366
Account: 2551
Project: 2551.096
Samples: 12
Due Date: 10-MAR-2016

Samplenum	Container ID	Products
L16030366-01	710889	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	08-MAR-2016 10:55	BRG		
2	ANALYZ	L1	ORG4	08-MAR-2016 11:13	TMB	BRG	

Samplenum	Container ID	Products
L16030366-01	710890	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	08-MAR-2016 10:55	BRG		
2	ANALYZ	L1	SEM	08-MAR-2016 11:07	JWR	BRG	
3	STORE	SEM	A1	09-MAR-2016 10:50	BRG	JWR	

Samplenum	Container ID	Products
L16030366-02	710891	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	08-MAR-2016 10:55	BRG		
2	ANALYZ	L1	ORG4	08-MAR-2016 11:13	TMB	BRG	

Samplenum	Container ID	Products
L16030366-02	710892	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	08-MAR-2016 10:55	BRG		
2	ANALYZ	L1	SEM	08-MAR-2016 11:07	JWR	BRG	
3	STORE	SEM	A1	09-MAR-2016 10:50	BRG	JWR	

Samplenum	Container ID	Products
L16030366-03	710893	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	08-MAR-2016 10:55	BRG		
2	ANALYZ	L1	ORG4	08-MAR-2016 11:13	TMB	BRG	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030366
Account: 2551
Project: 2551.096
Samples: 12
Due Date: 10-MAR-2016

Samplenum	Container ID	Products
L16030366-03	710894	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	08-MAR-2016 10:55	BRG		
2	ANALYZ	L1	SEM	08-MAR-2016 11:07	JWR	BRG	
3	STORE	SEM	A1	09-MAR-2016 10:50	BRG	JWR	

Samplenum	Container ID	Products
L16030366-04	710895	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	08-MAR-2016 10:55	BRG		
2	ANALYZ	L1	ORG4	08-MAR-2016 11:13	TMB	BRG	

Samplenum	Container ID	Products
L16030366-04	710896	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	08-MAR-2016 10:55	BRG		
2	ANALYZ	L1	SEM	08-MAR-2016 11:06	JWR	BRG	
3	STORE	SEM	A1	09-MAR-2016 10:50	BRG	JWR	

Samplenum	Container ID	Products
L16030366-05	710897	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	08-MAR-2016 10:55	BRG		
2	ANALYZ	L1	ORG4	08-MAR-2016 11:13	TMB	BRG	

Samplenum	Container ID	Products
L16030366-05	710898	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	08-MAR-2016 10:55	BRG		
2	ANALYZ	L1	SEM	08-MAR-2016 11:06	JWR	BRG	
3	STORE	SEM	A1	09-MAR-2016 10:50	BRG	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030366
Account: 2551
Project: 2551.096
Samples: 12
Due Date: 10-MAR-2016

Samplenum	Container ID	Products
L16030366-06	710899	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	08-MAR-2016 10:55	BRG		
2	ANALYZ	L1	ORG4	08-MAR-2016 11:13	TMB	BRG	

Samplenum	Container ID	Products
L16030366-06	710900	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	08-MAR-2016 10:55	BRG		
2	ANALYZ	L1	SEM	08-MAR-2016 11:06	JWR	BRG	
3	STORE	SEM	A1	09-MAR-2016 10:50	BRG	JWR	

Samplenum	Container ID	Products
L16030366-07	710901	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	08-MAR-2016 10:55	BRG		
2	ANALYZ	L1	ORG4	08-MAR-2016 11:13	TMB	BRG	

Samplenum	Container ID	Products
L16030366-07	710902	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	08-MAR-2016 10:55	BRG		
2	ANALYZ	L1	SEM	08-MAR-2016 11:06	JWR	BRG	
3	STORE	SEM	A1	09-MAR-2016 10:50	BRG	JWR	

Samplenum	Container ID	Products
L16030366-08	710903	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	08-MAR-2016 10:55	BRG		
2	ANALYZ	L1	ORG4	08-MAR-2016 11:13	TMB	BRG	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030366
Account: 2551
Project: 2551.096
Samples: 12
Due Date: 10-MAR-2016

Samplenum	Container ID	Products
L16030366-08	710904	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	08-MAR-2016 10:55	BRG		
2	ANALYZ	L1	SEM	08-MAR-2016 11:06	JWR	BRG	
3	STORE	SEM	A1	09-MAR-2016 10:50	BRG	JWR	

Samplenum	Container ID	Products
L16030366-09	710905	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	08-MAR-2016 10:55	BRG		
2	ANALYZ	L1	ORG4	08-MAR-2016 11:13	TMB	BRG	

Samplenum	Container ID	Products
L16030366-09	710906	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	08-MAR-2016 10:55	BRG		
2	ANALYZ	L1	SEM	08-MAR-2016 11:06	JWR	BRG	
3	STORE	SEM	A1	09-MAR-2016 10:50	BRG	JWR	

Samplenum	Container ID	Products
L16030366-10	710907	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	08-MAR-2016 10:55	BRG		
2	ANALYZ	L1	ORG4	08-MAR-2016 11:13	TMB	BRG	

Samplenum	Container ID	Products
L16030366-10	710908	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	08-MAR-2016 10:55	BRG		
2	ANALYZ	L1	SEM	08-MAR-2016 11:06	JWR	BRG	
3	STORE	SEM	A1	09-MAR-2016 10:50	BRG	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030366
Account: 2551
Project: 2551.096
Samples: 12
Due Date: 10-MAR-2016

Samplenum	Container ID	Products
L16030366-11	710909	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	08-MAR-2016 10:55	BRG		
2	ANALYZ	L1	ORG4	08-MAR-2016 11:13	TMB	BRG	

Samplenum	Container ID	Products
L16030366-11	710910	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	08-MAR-2016 10:55	BRG		
2	ANALYZ	L1	SEM	08-MAR-2016 11:06	JWR	BRG	
3	STORE	SEM	A1	09-MAR-2016 10:50	BRG	JWR	

Samplenum	Container ID	Products
L16030366-12	710911	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	08-MAR-2016 10:55	BRG		
2	ANALYZ	L1	ORG4	08-MAR-2016 11:13	TMB	BRG	

Samplenum	Container ID	Products
L16030366-12	710912	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	L1	08-MAR-2016 10:55	BRG		
2	ANALYZ	L1	SEM	08-MAR-2016 11:06	JWR	BRG	
3	STORE	SEM	A1	09-MAR-2016 10:50	BRG	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16030861

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on March 25 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00112171	I	6.0		J2317165849	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	NA
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	NA

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18DPT14(5-5.5)140316	L16030861-01	03/14/2016 12:32	03/16/2016 10:03
18DPT14(10-10.5)140316	L16030861-02	03/14/2016 13:15	03/16/2016 10:03
18DPT14(10-10.5)140316FD	L16030861-03	03/14/2016 13:15	03/16/2016 10:03
18DPT14(17-17.5)140316	L16030861-04	03/14/2016 13:20	03/16/2016 10:03
18DPT14(23-23.5)140316	L16030861-05	03/14/2016 13:25	03/16/2016 10:03
18DPT15(5-5.5)140316	L16030861-06	03/14/2016 16:40	03/16/2016 10:03
18DPT15(12-12.5)140316	L16030861-07	03/14/2016 16:41	03/16/2016 10:03
18DPT15(21-21.5)140316	L16030861-08	03/14/2016 16:42	03/16/2016 10:03
18DPT15(23.5-24)140316	L16030861-09	03/14/2016 16:43	03/16/2016 10:03
18DPT15(26.5-27)140316	L16030861-10	03/14/2016 16:45	03/16/2016 10:03

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16030861
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030861
Project Name:		**Method:**	8260
Prep Batch Number(s):	561881,562075	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-25 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2016-03-25 16:22:26

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030861
Project Name:		**Method:**	8260
Prep Batch Number(s):	561881,562075	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-25 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030861
Project Name:		**Method:**	8260
Prep Batch Number(s):	561881,562075	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-25 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030861
Project Name:		**Method:**	8260
Prep Batch Number(s):	561881,562075	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-25 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030861
Project Name:		**Method:**	8260
Prep Batch Number(s):	561881,562075	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-25 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030861
Project Name:		**Method:**	8260
Prep Batch Number(s):	561881,562075	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-25 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Chloromethane and 4-Methyl-2-Pentanone exceeded theUCL in the CCV analyzed 03/22/2016 on HPMS6.
Chloromethane and Naphthalene exceeded the UCL in the CCV analyzed 03/23/2106 on HPMS6.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030861
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG561316	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-22 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson	Eric C. Lawson	Chemist III	2016-03-22 15:08:17

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030861
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG561316	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-22 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030861
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG561316	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-22 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030861
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG561316	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-22 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030861
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG561316	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-22 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030861
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG561316	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-22 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030861
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG561146	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-18 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2016-03-18 15:41:22

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030861
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG561146	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-18 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?			X		
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?			X		
Were sample detection limits reported for all analytes not detected?			X		
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?			X		
Were blanks analyzed at the appropriate frequency?			X		
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?			X		
Were blank concentrations < MQL?			X		
Laboratory control samples (LCS):			X		
Were all COCs included in the LCS?			X		

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030861
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG561146	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-18 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?			X		
Were LCSs analyzed at the required frequency?			X		
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?			X		
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?			X		
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?			X		
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?			X		
Are unadjusted MQLs and DCSs included in the laboratory data package?			X		
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?			X		
Were percent RSDs or correlation coefficient criteria met?			X		

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030861
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG561146	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-18 00:00:00		

Was the number of standards recommended in the method used for all analytes?			X		
Were all points generated between the lowest and highest standard used to calculate the curve?			X		
Are ICAL data available for all instruments used?			X		
Has the initial calibration curve been verified using an appropriate second source standard?			X		
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030861
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG561146	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-18 00:00:00		

Was a MDL study performed for each reported analyte?			X		
Is the MDL either adjusted or supported by the analysis of DCSs?			X		
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?			X		
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030861
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG561146	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-18 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT14(5-5.5)140316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:07
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG561881	**Analyst:**	TMB	**Run Date:**	03/22/2016 20:49
Collect Date:	03/14/2016 12:32	**Dilution:**	1	**File ID:**	6M137955
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.8	U	25.7	12.8	6.42
Benzene	71-43-2	1.28	U	6.42	1.28	0.642
Bromobenzene	108-86-1	1.28	U	6.42	1.28	0.642
Bromochloromethane	74-97-5	2.56	U	6.42	2.56	1.28
Bromodichloromethane	75-27-4	1.28	U	6.42	1.28	0.642
Bromoform	75-25-2	1.28	U	6.42	1.28	0.642
Bromomethane	74-83-9	2.56	U	6.42	2.56	1.28
2-Butanone	78-93-3	6.42	U	12.8	6.42	3.21
n-Butylbenzene	104-51-8	1.28	U	6.42	1.28	0.642
sec-Butylbenzene	135-98-8	1.28	U	6.42	1.28	0.642
tert-Butylbenzene	98-06-6	1.28	U	6.42	1.28	0.642
Carbon disulfide	75-15-0	1.28	U	6.42	1.28	0.642
Carbon tetrachloride	56-23-5	1.28	U	6.42	1.28	0.642
Chlorobenzene	108-90-7	1.28	U	6.42	1.28	0.642
Chlorodibromomethane	124-48-1	1.28	U	6.42	1.28	0.642
Chloroethane	75-00-3	2.56	U	6.42	2.56	1.28
Chloroform	67-66-3	1.28	U	6.42	1.28	0.642
Chloromethane	74-87-3	5.14	Q	12.8	5.14	2.57
2-Chlorotoluene	95-49-8	1.28	U	6.42	1.28	0.642
4-Chlorotoluene	106-43-4	1.28	U	6.42	1.28	0.642
1,2-Dibromo-3-chloropropane	96-12-8	5.14	U	12.8	5.14	2.57
1,2-Dibromoethane	106-93-4	1.28	U	6.42	1.28	0.642
Dibromomethane	74-95-3	1.28	U	6.42	1.28	0.642
1,2-Dichlorobenzene	95-50-1	1.28	U	6.42	1.28	0.642
1,3-Dichlorobenzene	541-73-1	1.28	U	6.42	1.28	0.642
1,4-Dichlorobenzene	106-46-7	1.28	U	6.42	1.28	0.642
Dichlorodifluoromethane	75-71-8	2.56	U	6.42	2.56	1.28
1,1-Dichloroethane	75-34-3	2.56	U	6.42	2.56	1.28
1,2-Dichloroethane	107-06-2	1.28	U	6.42	1.28	0.642
1,1-Dichloroethene	75-35-4	1.28	U	6.42	1.28	0.642
cis-1,2-Dichloroethene	156-59-2	1.28	U	6.42	1.28	0.642
trans-1,2-Dichloroethene	156-60-5	1.28	U	6.42	1.28	0.642

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.28	U	6.42	1.28	0.642
1,3-Dichloropropane	142-28-9	1.28	U	6.42	1.28	0.642
2,2-Dichloropropane	594-20-7	1.28	U	6.42	1.28	0.642
cis-1,3-Dichloropropene	10061-01-5	1.28	U	6.42	1.28	0.642
trans-1,3-Dichloropropene	10061-02-6	1.28	U	6.42	1.28	0.642
1,1-Dichloropropene	563-58-6	1.28	U	6.42	1.28	0.642
Ethylbenzene	100-41-4	1.28	U	6.42	1.28	0.642
2-Hexanone	591-78-6	6.42	U	12.8	6.42	3.21
Hexachlorobutadiene	87-68-3	1.28	U	6.42	1.28	0.642
Isopropylbenzene	98-82-8	1.28	U	6.42	1.28	0.642
p-Isopropyltoluene	99-87-6	1.28	U	6.42	1.28	0.642
4-Methyl-2-pentanone	108-10-1	6.42	Q	12.8	6.42	3.21
Methylene chloride	75-09-2	2.56	U	6.42	2.56	1.28
Naphthalene	91-20-3	1.28	U	6.42	1.28	0.642
n-Propylbenzene	103-65-1	1.28	U	6.42	1.28	0.642
Styrene	100-42-5	1.28	U	6.42	1.28	0.642
1,1,1,2-Tetrachloroethane	630-20-6	1.28	U	6.42	1.28	0.642
1,1,2,2-Tetrachloroethane	79-34-5	1.28	U	6.42	1.28	0.642
Tetrachloroethene	127-18-4	1.28	U	6.42	1.28	0.642
Toluene	108-88-3	1.28	U	6.42	1.28	0.642
1,2,3-Trichlorobenzene	87-61-6	1.28	U	6.42	1.28	0.642
1,2,4-Trichlorobenzene	120-82-1	1.28	U	6.42	1.28	0.642
1,1,1-Trichloroethane	71-55-6	1.28	U	6.42	1.28	0.642
1,1,2-Trichloroethane	79-00-5	1.28	U	6.42	1.28	0.642
Trichloroethene	79-01-6	1.28	U	6.42	1.28	0.642
Trichlorofluoromethane	75-69-4	2.56	U	6.42	2.56	1.28
1,2,3-Trichloropropane	96-18-4	2.56	U	6.42	2.56	1.28
1,2,4-Trimethylbenzene	95-63-6	1.28	U	6.42	1.28	0.642
1,3,5-Trimethylbenzene	108-67-8	1.28	U	6.42	1.28	0.642
Vinyl chloride	75-01-4	2.56	U	6.42	2.56	1.28
o-Xylene	95-47-6	1.28	U	6.42	1.28	0.642
m-,p-Xylene	179601-23-1	1.28	U	6.42	1.28	0.642

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.7	80	120	
1,2-Dichloroethane-d4	89.8	80	120	
Toluene-d8	101	85	115	
4-Bromofluorobenzene	101	85	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT14(5-5.5)140316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561316	**Analyst:**	JWR	**Run Date:**	03/17/2016 16:54
Collect Date:	03/14/2016 12:32	**Dilution:**	1	**File ID:**	1LM.LM33887
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.38	U	4.77	2.38	1.19

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT14(10-10.5)140316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:09
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG561881	**Analyst:**	TMB	**Run Date:**	03/22/2016 20:16
Collect Date:	03/14/2016 13:15	**Dilution:**	1	**File ID:**	6M137954
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	89.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.6	U	23.3	11.6	5.82
Benzene	71-43-2	1.16	U	5.82	1.16	0.582
Bromobenzene	108-86-1	1.16	U	5.82	1.16	0.582
Bromochloromethane	74-97-5	2.32	U	5.82	2.32	1.16
Bromodichloromethane	75-27-4	1.16	U	5.82	1.16	0.582
Bromoform	75-25-2	1.16	U	5.82	1.16	0.582
Bromomethane	74-83-9	2.32	U	5.82	2.32	1.16
2-Butanone	78-93-3	5.82	U	11.6	5.82	2.91
n-Butylbenzene	104-51-8	1.16	U	5.82	1.16	0.582
sec-Butylbenzene	135-98-8	1.16	U	5.82	1.16	0.582
tert-Butylbenzene	98-06-6	1.16	U	5.82	1.16	0.582
Carbon disulfide	75-15-0	1.16	U	5.82	1.16	0.582
Carbon tetrachloride	56-23-5	1.16	U	5.82	1.16	0.582
Chlorobenzene	108-90-7	1.16	U	5.82	1.16	0.582
Chlorodibromomethane	124-48-1	1.16	U	5.82	1.16	0.582
Chloroethane	75-00-3	2.32	U	5.82	2.32	1.16
Chloroform	67-66-3	1.16	U	5.82	1.16	0.582
Chloromethane	74-87-3	4.66	Q	11.6	4.66	2.33
2-Chlorotoluene	95-49-8	1.16	U	5.82	1.16	0.582
4-Chlorotoluene	106-43-4	1.16	U	5.82	1.16	0.582
1,2-Dibromo-3-chloropropane	96-12-8	4.66	U	11.6	4.66	2.33
1,2-Dibromoethane	106-93-4	1.16	U	5.82	1.16	0.582
Dibromomethane	74-95-3	1.16	U	5.82	1.16	0.582
1,2-Dichlorobenzene	95-50-1	1.16	U	5.82	1.16	0.582
1,3-Dichlorobenzene	541-73-1	1.16	U	5.82	1.16	0.582
1,4-Dichlorobenzene	106-46-7	1.16	U	5.82	1.16	0.582
Dichlorodifluoromethane	75-71-8	2.32	U	5.82	2.32	1.16
1,1-Dichloroethane	75-34-3	2.32	U	5.82	2.32	1.16
1,2-Dichloroethane	107-06-2	1.16	U	5.82	1.16	0.582
1,1-Dichloroethene	75-35-4	1.16	U	5.82	1.16	0.582
cis-1,2-Dichloroethene	156-59-2	1.16	U	5.82	1.16	0.582

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.16	U	5.82	1.16	0.582
1,2-Dichloropropane	78-87-5	1.16	U	5.82	1.16	0.582
1,3-Dichloropropane	142-28-9	1.16	U	5.82	1.16	0.582
2,2-Dichloropropane	594-20-7	1.16	U	5.82	1.16	0.582
cis-1,3-Dichloropropene	10061-01-5	1.16	U	5.82	1.16	0.582
trans-1,3-Dichloropropene	10061-02-6	1.16	U	5.82	1.16	0.582
1,1-Dichloropropene	563-58-6	1.16	U	5.82	1.16	0.582
Ethylbenzene	100-41-4	1.16	U	5.82	1.16	0.582
2-Hexanone	591-78-6	5.82	U	11.6	5.82	2.91
Hexachlorobutadiene	87-68-3	1.16	U	5.82	1.16	0.582
Isopropylbenzene	98-82-8	1.16	U	5.82	1.16	0.582
p-Isopropyltoluene	99-87-6	1.16	U	5.82	1.16	0.582
4-Methyl-2-pentanone	108-10-1	5.82	Q	11.6	5.82	2.91
Methylene chloride	75-09-2	2.32	U	5.82	2.32	1.16
Naphthalene	91-20-3	1.16	U	5.82	1.16	0.582
n-Propylbenzene	103-65-1	1.16	U	5.82	1.16	0.582
Styrene	100-42-5	1.16	U	5.82	1.16	0.582
1,1,1,2-Tetrachloroethane	630-20-6	1.16	U	5.82	1.16	0.582
1,1,2,2-Tetrachloroethane	79-34-5	1.16	U	5.82	1.16	0.582
Tetrachloroethene	127-18-4	1.16	U	5.82	1.16	0.582
Toluene	108-88-3	1.16	U	5.82	1.16	0.582
1,2,3-Trichlorobenzene	87-61-6	1.16	U	5.82	1.16	0.582
1,2,4-Trichlorobenzene	120-82-1	1.16	U	5.82	1.16	0.582
1,1,1-Trichloroethane	71-55-6	1.16	U	5.82	1.16	0.582
1,1,2-Trichloroethane	79-00-5	1.16	U	5.82	1.16	0.582
Trichloroethene	79-01-6	1.16	U	5.82	1.16	0.582
Trichlorofluoromethane	75-69-4	2.32	U	5.82	2.32	1.16
1,2,3-Trichloropropane	96-18-4	2.32	U	5.82	2.32	1.16
1,2,4-Trimethylbenzene	95-63-6	1.16	U	5.82	1.16	0.582
1,3,5-Trimethylbenzene	108-67-8	1.16	U	5.82	1.16	0.582
Vinyl chloride	75-01-4	2.32	U	5.82	2.32	1.16
o-Xylene	95-47-6	1.16	U	5.82	1.16	0.582
m-,p-Xylene	179601-23-1	1.16	U	5.82	1.16	0.582

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.8	80	120	
1,2-Dichloroethane-d4	85.7	80	120	
Toluene-d8	103	85	115	
4-Bromofluorobenzene	103	85	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT14(10-10.5)140316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561316	**Analyst:**	JWR	**Run Date:**	03/17/2016 17:51
Collect Date:	03/14/2016 13:15	**Dilution:**	1	**File ID:**	1LM.LM33890
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	89.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.16	U	4.32	2.16	1.08

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT14(10-10.5)140316FD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/23/2016 16:52
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 17:43
Collect Date:	03/14/2016 13:15	**Dilution:**	1	**File ID:**	6M137974
Sample Tag:	02	**Units:**	ug/kg	**Percent Solid:**	90.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.0	U	21.9	11.0	5.49
Benzene	71-43-2	1.10	U	5.49	1.10	0.549
Bromobenzene	108-86-1	1.10	U	5.49	1.10	0.549
Bromochloromethane	74-97-5	2.20	U	5.49	2.20	1.10
Bromodichloromethane	75-27-4	1.10	U	5.49	1.10	0.549
Bromoform	75-25-2	1.10	U	5.49	1.10	0.549
Bromomethane	74-83-9	2.20	U	5.49	2.20	1.10
2-Butanone	78-93-3	5.48	U	11.0	5.48	2.74
n-Butylbenzene	104-51-8	1.10	U	5.49	1.10	0.549
sec-Butylbenzene	135-98-8	1.10	U	5.49	1.10	0.549
tert-Butylbenzene	98-06-6	1.10	U	5.49	1.10	0.549
Carbon disulfide	75-15-0	1.10	U	5.49	1.10	0.549
Carbon tetrachloride	56-23-5	1.10	U	5.49	1.10	0.549
Chlorobenzene	108-90-7	1.10	U	5.49	1.10	0.549
Chlorodibromomethane	124-48-1	1.10	U	5.49	1.10	0.549
Chloroethane	75-00-3	2.20	U	5.49	2.20	1.10
Chloroform	67-66-3	1.10	U	5.49	1.10	0.549
Chloromethane	74-87-3	4.38	Q	11.0	4.38	2.19
2-Chlorotoluene	95-49-8	1.10	U	5.49	1.10	0.549
4-Chlorotoluene	106-43-4	1.10	U	5.49	1.10	0.549
1,2-Dibromo-3-chloropropane	96-12-8	4.38	U	11.0	4.38	2.19
1,2-Dibromoethane	106-93-4	1.10	U	5.49	1.10	0.549
Dibromomethane	74-95-3	1.10	U	5.49	1.10	0.549
1,2-Dichlorobenzene	95-50-1	1.10	U	5.49	1.10	0.549
1,3-Dichlorobenzene	541-73-1	1.10	U	5.49	1.10	0.549
1,4-Dichlorobenzene	106-46-7	1.10	U	5.49	1.10	0.549
Dichlorodifluoromethane	75-71-8	2.20	U	5.49	2.20	1.10
1,1-Dichloroethane	75-34-3	2.20	U	5.49	2.20	1.10
1,2-Dichloroethane	107-06-2	1.10	U	5.49	1.10	0.549
1,1-Dichloroethene	75-35-4	1.10	U	5.49	1.10	0.549
cis-1,2-Dichloroethene	156-59-2	1.10	U	5.49	1.10	0.549

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.10	U	5.49	1.10	0.549
1,2-Dichloropropane	78-87-5	1.10	U	5.49	1.10	0.549
1,3-Dichloropropane	142-28-9	1.10	U	5.49	1.10	0.549
2,2-Dichloropropane	594-20-7	1.10	U	5.49	1.10	0.549
cis-1,3-Dichloropropene	10061-01-5	1.10	U	5.49	1.10	0.549
trans-1,3-Dichloropropene	10061-02-6	1.10	U	5.49	1.10	0.549
1,1-Dichloropropene	563-58-6	1.10	U	5.49	1.10	0.549
Ethylbenzene	100-41-4	1.10	U	5.49	1.10	0.549
2-Hexanone	591-78-6	5.48	U	11.0	5.48	2.74
Hexachlorobutadiene	87-68-3	1.10	U	5.49	1.10	0.549
Isopropylbenzene	98-82-8	1.10	U	5.49	1.10	0.549
p-Isopropyltoluene	99-87-6	1.10	U	5.49	1.10	0.549
4-Methyl-2-pentanone	108-10-1	5.48	U	11.0	5.48	2.74
Methylene chloride	75-09-2	2.20	U	5.49	2.20	1.10
Naphthalene	91-20-3	1.10	Q	5.49	1.10	0.549
n-Propylbenzene	103-65-1	1.10	U	5.49	1.10	0.549
Styrene	100-42-5	1.10	U	5.49	1.10	0.549
1,1,1,2-Tetrachloroethane	630-20-6	1.10	U	5.49	1.10	0.549
1,1,2,2-Tetrachloroethane	79-34-5	1.10	U	5.49	1.10	0.549
Tetrachloroethene	127-18-4	1.10	U	5.49	1.10	0.549
Toluene	108-88-3	1.10	U	5.49	1.10	0.549
1,2,3-Trichlorobenzene	87-61-6	1.10	U	5.49	1.10	0.549
1,2,4-Trichlorobenzene	120-82-1	1.10	U	5.49	1.10	0.549
1,1,1-Trichloroethane	71-55-6	1.10	U	5.49	1.10	0.549
1,1,2-Trichloroethane	79-00-5	1.10	U	5.49	1.10	0.549
Trichloroethene	79-01-6	1.10	U	5.49	1.10	0.549
Trichlorofluoromethane	75-69-4	2.20	U	5.49	2.20	1.10
1,2,3-Trichloropropane	96-18-4	2.20	U	5.49	2.20	1.10
1,2,4-Trimethylbenzene	95-63-6	1.10	U	5.49	1.10	0.549
1,3,5-Trimethylbenzene	108-67-8	1.10	U	5.49	1.10	0.549
Vinyl chloride	75-01-4	2.20	U	5.49	2.20	1.10
o-Xylene	95-47-6	1.10	U	5.49	1.10	0.549
m-,p-Xylene	179601-23-1	1.10	U	5.49	1.10	0.549

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.6	80	120	
1,2-Dichloroethane-d4	90.3	80	120	
Toluene-d8	101	85	115	
4-Bromofluorobenzene	102	85	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT14(10-10.5)140316FD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:09
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG561881	**Analyst:**	TMB	**Run Date:**	03/22/2016 19:43
Collect Date:	03/14/2016 13:15	**Dilution:**	1	**File ID:**	6M137953
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	90.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	9.15	J	23.5	11.8	5.88
Benzene	71-43-2	1.18	U	5.88	1.18	0.588
Bromobenzene	108-86-1	1.18	U	5.88	1.18	0.588
Bromochloromethane	74-97-5	2.36	U	5.88	2.36	1.18
Bromodichloromethane	75-27-4	1.18	U	5.88	1.18	0.588
Bromoform	75-25-2	1.18	U	5.88	1.18	0.588
Bromomethane	74-83-9	2.36	U	5.88	2.36	1.18
2-Butanone	78-93-3	5.88	U	11.8	5.88	2.94
n-Butylbenzene	104-51-8	1.18	U	5.88	1.18	0.588
sec-Butylbenzene	135-98-8	1.18	U	5.88	1.18	0.588
tert-Butylbenzene	98-06-6	1.18	U	5.88	1.18	0.588
Carbon disulfide	75-15-0	1.18	U	5.88	1.18	0.588
Carbon tetrachloride	56-23-5	1.18	U	5.88	1.18	0.588
Chlorobenzene	108-90-7	1.18	U	5.88	1.18	0.588
Chlorodibromomethane	124-48-1	1.18	U	5.88	1.18	0.588
Chloroethane	75-00-3	2.36	U	5.88	2.36	1.18
Chloroform	67-66-3	1.18	U	5.88	1.18	0.588
Chloromethane	74-87-3	4.70	Q	11.8	4.70	2.35
2-Chlorotoluene	95-49-8	1.18	U	5.88	1.18	0.588
4-Chlorotoluene	106-43-4	1.18	U	5.88	1.18	0.588
1,2-Dibromo-3-chloropropane	96-12-8	4.70	U	11.8	4.70	2.35
1,2-Dibromoethane	106-93-4	1.18	U	5.88	1.18	0.588
Dibromomethane	74-95-3	1.18	U	5.88	1.18	0.588
1,2-Dichlorobenzene	95-50-1	1.18	U	5.88	1.18	0.588
1,3-Dichlorobenzene	541-73-1	1.18	U	5.88	1.18	0.588
1,4-Dichlorobenzene	106-46-7	1.18	U	5.88	1.18	0.588
Dichlorodifluoromethane	75-71-8	2.36	U	5.88	2.36	1.18
1,1-Dichloroethane	75-34-3	2.36	U	5.88	2.36	1.18
1,2-Dichloroethane	107-06-2	1.18	U	5.88	1.18	0.588
1,1-Dichloroethene	75-35-4	1.18	U	5.88	1.18	0.588
cis-1,2-Dichloroethene	156-59-2	1.18	U	5.88	1.18	0.588

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.18	U	5.88	1.18	0.588
1,2-Dichloropropane	78-87-5	1.18	U	5.88	1.18	0.588
1,3-Dichloropropane	142-28-9	1.18	U	5.88	1.18	0.588
2,2-Dichloropropane	594-20-7	1.18	U	5.88	1.18	0.588
cis-1,3-Dichloropropene	10061-01-5	1.18	U	5.88	1.18	0.588
trans-1,3-Dichloropropene	10061-02-6	1.18	U	5.88	1.18	0.588
1,1-Dichloropropene	563-58-6	1.18	U	5.88	1.18	0.588
Ethylbenzene	100-41-4	1.18	U	5.88	1.18	0.588
2-Hexanone	591-78-6	5.88	U	11.8	5.88	2.94
Hexachlorobutadiene	87-68-3	1.18	U	5.88	1.18	0.588
Isopropylbenzene	98-82-8	1.18	U	5.88	1.18	0.588
p-Isopropyltoluene	99-87-6	1.18	U	5.88	1.18	0.588
4-Methyl-2-pentanone	108-10-1	5.88	Q	11.8	5.88	2.94
Methylene chloride	75-09-2	2.36	U	5.88	2.36	1.18
Naphthalene	91-20-3	1.18	U	5.88	1.18	0.588
n-Propylbenzene	103-65-1	1.18	U	5.88	1.18	0.588
Styrene	100-42-5	1.18	U	5.88	1.18	0.588
1,1,1,2-Tetrachloroethane	630-20-6	1.18	U	5.88	1.18	0.588
1,1,2,2-Tetrachloroethane	79-34-5	1.18	U	5.88	1.18	0.588
Tetrachloroethene	127-18-4	1.18	U	5.88	1.18	0.588
Toluene	108-88-3	1.18	U	5.88	1.18	0.588
1,2,3-Trichlorobenzene	87-61-6	1.18	U	5.88	1.18	0.588
1,2,4-Trichlorobenzene	120-82-1	1.18	U	5.88	1.18	0.588
1,1,1-Trichloroethane	71-55-6	1.18	U	5.88	1.18	0.588
1,1,2-Trichloroethane	79-00-5	1.18	U	5.88	1.18	0.588
Trichloroethene	79-01-6	1.18	U	5.88	1.18	0.588
Trichlorofluoromethane	75-69-4	2.36	U	5.88	2.36	1.18
1,2,3-Trichloropropane	96-18-4	2.36	U	5.88	2.36	1.18
1,2,4-Trimethylbenzene	95-63-6	0.941	J	5.88	1.18	0.588
1,3,5-Trimethylbenzene	108-67-8	1.18	U	5.88	1.18	0.588
Vinyl chloride	75-01-4	2.36	U	5.88	2.36	1.18
o-Xylene	95-47-6	1.18	U	5.88	1.18	0.588
m-,p-Xylene	179601-23-1	1.18	U	5.88	1.18	0.588

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.2	80	120	
1,2-Dichloroethane-d4	85.8	80	120	
Toluene-d8	103	85	115	
4-Bromofluorobenzene	105	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT14(10-10.5)140316FD	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561316	**Analyst:**	JWR	**Run Date:**	03/17/2016 18:10
Collect Date:	03/14/2016 13:15	**Dilution:**	1	**File ID:**	1LM.LM33891
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	90.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.20	U	4.40	2.20	1.10

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT14(17-17.5)140316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:10
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG561881	**Analyst:**	TMB	**Run Date:**	03/22/2016 19:09
Collect Date:	03/14/2016 13:20	**Dilution:**	1	**File ID:**	6M137952
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	91.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.95	J	21.6	10.8	5.39
Benzene	71-43-2	1.08	U	5.39	1.08	0.539
Bromobenzene	108-86-1	1.08	U	5.39	1.08	0.539
Bromochloromethane	74-97-5	2.16	U	5.39	2.16	1.08
Bromodichloromethane	75-27-4	1.08	U	5.39	1.08	0.539
Bromoform	75-25-2	1.08	U	5.39	1.08	0.539
Bromomethane	74-83-9	2.16	U	5.39	2.16	1.08
2-Butanone	78-93-3	5.38	U	10.8	5.38	2.69
n-Butylbenzene	104-51-8	1.08	U	5.39	1.08	0.539
sec-Butylbenzene	135-98-8	1.08	U	5.39	1.08	0.539
tert-Butylbenzene	98-06-6	1.08	U	5.39	1.08	0.539
Carbon disulfide	75-15-0	1.08	U	5.39	1.08	0.539
Carbon tetrachloride	56-23-5	1.08	U	5.39	1.08	0.539
Chlorobenzene	108-90-7	1.08	U	5.39	1.08	0.539
Chlorodibromomethane	124-48-1	1.08	U	5.39	1.08	0.539
Chloroethane	75-00-3	2.16	U	5.39	2.16	1.08
Chloroform	67-66-3	1.08	U	5.39	1.08	0.539
Chloromethane	74-87-3	4.32	Q	10.8	4.32	2.16
2-Chlorotoluene	95-49-8	1.08	U	5.39	1.08	0.539
4-Chlorotoluene	106-43-4	1.08	U	5.39	1.08	0.539
1,2-Dibromo-3-chloropropane	96-12-8	4.32	U	10.8	4.32	2.16
1,2-Dibromoethane	106-93-4	1.08	U	5.39	1.08	0.539
Dibromomethane	74-95-3	1.08	U	5.39	1.08	0.539
1,2-Dichlorobenzene	95-50-1	1.08	U	5.39	1.08	0.539
1,3-Dichlorobenzene	541-73-1	1.08	U	5.39	1.08	0.539
1,4-Dichlorobenzene	106-46-7	1.08	U	5.39	1.08	0.539
Dichlorodifluoromethane	75-71-8	2.16	U	5.39	2.16	1.08
1,1-Dichloroethane	75-34-3	2.16	U	5.39	2.16	1.08
1,2-Dichloroethane	107-06-2	1.08	U	5.39	1.08	0.539
1,1-Dichloroethene	75-35-4	1.08	U	5.39	1.08	0.539
cis-1,2-Dichloroethene	156-59-2	1.08	U	5.39	1.08	0.539

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.08	U	5.39	1.08	0.539
1,2-Dichloropropane	78-87-5	1.08	U	5.39	1.08	0.539
1,3-Dichloropropane	142-28-9	1.08	U	5.39	1.08	0.539
2,2-Dichloropropane	594-20-7	1.08	U	5.39	1.08	0.539
cis-1,3-Dichloropropene	10061-01-5	1.08	U	5.39	1.08	0.539
trans-1,3-Dichloropropene	10061-02-6	1.08	U	5.39	1.08	0.539
1,1-Dichloropropene	563-58-6	1.08	U	5.39	1.08	0.539
Ethylbenzene	100-41-4	1.08	U	5.39	1.08	0.539
2-Hexanone	591-78-6	5.38	U	10.8	5.38	2.69
Hexachlorobutadiene	87-68-3	1.08	U	5.39	1.08	0.539
Isopropylbenzene	98-82-8	1.08	U	5.39	1.08	0.539
p-Isopropyltoluene	99-87-6	1.08	U	5.39	1.08	0.539
4-Methyl-2-pentanone	108-10-1	5.38	Q	10.8	5.38	2.69
Methylene chloride	75-09-2	2.16	U	5.39	2.16	1.08
Naphthalene	91-20-3	1.08	U	5.39	1.08	0.539
n-Propylbenzene	103-65-1	1.08	U	5.39	1.08	0.539
Styrene	100-42-5	1.08	U	5.39	1.08	0.539
1,1,1,2-Tetrachloroethane	630-20-6	1.08	U	5.39	1.08	0.539
1,1,2,2-Tetrachloroethane	79-34-5	1.08	U	5.39	1.08	0.539
Tetrachloroethene	127-18-4	1.08	U	5.39	1.08	0.539
Toluene	108-88-3	1.08	U	5.39	1.08	0.539
1,2,3-Trichlorobenzene	87-61-6	1.08	U	5.39	1.08	0.539
1,2,4-Trichlorobenzene	120-82-1	1.08	U	5.39	1.08	0.539
1,1,1-Trichloroethane	71-55-6	1.08	U	5.39	1.08	0.539
1,1,2-Trichloroethane	79-00-5	1.08	U	5.39	1.08	0.539
Trichloroethene	79-01-6	1.08	U	5.39	1.08	0.539
Trichlorofluoromethane	75-69-4	2.16	U	5.39	2.16	1.08
1,2,3-Trichloropropane	96-18-4	2.16	U	5.39	2.16	1.08
1,2,4-Trimethylbenzene	95-63-6	1.08	U	5.39	1.08	0.539
1,3,5-Trimethylbenzene	108-67-8	1.08	U	5.39	1.08	0.539
Vinyl chloride	75-01-4	2.16	U	5.39	2.16	1.08
o-Xylene	95-47-6	1.08	U	5.39	1.08	0.539
m-,p-Xylene	179601-23-1	1.08	U	5.39	1.08	0.539

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.1	80	120	
1,2-Dichloroethane-d4	87.5	80	120	
Toluene-d8	102	85	115	
4-Bromofluorobenzene	105	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT14(17-17.5)140316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561316	**Analyst:**	JWR	**Run Date:**	03/17/2016 18:29
Collect Date:	03/14/2016 13:20	**Dilution:**	1	**File ID:**	1LM.LM33892
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	91.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.10	U	4.21	2.10	1.05

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT14(23-23.5)140316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/23/2016 09:01
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 18:15
Collect Date:	03/14/2016 13:25	**Dilution:**	1	**File ID:**	6M137975
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.9	J	25.4	12.7	6.35
Benzene	71-43-2	1.27	U	6.35	1.27	0.635
Bromobenzene	108-86-1	1.27	U	6.35	1.27	0.635
Bromochloromethane	74-97-5	2.54	U	6.35	2.54	1.27
Bromodichloromethane	75-27-4	1.27	U	6.35	1.27	0.635
Bromoform	75-25-2	1.27	U	6.35	1.27	0.635
Bromomethane	74-83-9	2.54	U	6.35	2.54	1.27
2-Butanone	78-93-3	6.34	U	12.7	6.34	3.17
n-Butylbenzene	104-51-8	1.27	U	6.35	1.27	0.635
sec-Butylbenzene	135-98-8	1.27	U	6.35	1.27	0.635
tert-Butylbenzene	98-06-6	1.27	U	6.35	1.27	0.635
Carbon disulfide	75-15-0	1.27	U	6.35	1.27	0.635
Carbon tetrachloride	56-23-5	1.27	U	6.35	1.27	0.635
Chlorobenzene	108-90-7	1.27	U	6.35	1.27	0.635
Chlorodibromomethane	124-48-1	1.27	U	6.35	1.27	0.635
Chloroethane	75-00-3	2.54	U	6.35	2.54	1.27
Chloroform	67-66-3	1.27	U	6.35	1.27	0.635
Chloromethane	74-87-3	5.08	Q	12.7	5.08	2.54
2-Chlorotoluene	95-49-8	1.27	U	6.35	1.27	0.635
4-Chlorotoluene	106-43-4	1.27	U	6.35	1.27	0.635
1,2-Dibromo-3-chloropropane	96-12-8	5.08	U	12.7	5.08	2.54
1,2-Dibromoethane	106-93-4	1.27	U	6.35	1.27	0.635
Dibromomethane	74-95-3	1.27	U	6.35	1.27	0.635
1,2-Dichlorobenzene	95-50-1	1.27	U	6.35	1.27	0.635
1,3-Dichlorobenzene	541-73-1	1.27	U	6.35	1.27	0.635
1,4-Dichlorobenzene	106-46-7	1.27	U	6.35	1.27	0.635
Dichlorodifluoromethane	75-71-8	2.54	U	6.35	2.54	1.27
1,1-Dichloroethane	75-34-3	2.54	U	6.35	2.54	1.27
1,2-Dichloroethane	107-06-2	1.27	U	6.35	1.27	0.635
1,1-Dichloroethene	75-35-4	1.27	U	6.35	1.27	0.635
cis-1,2-Dichloroethene	156-59-2	1.27	U	6.35	1.27	0.635

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.27	U	6.35	1.27	0.635
1,2-Dichloropropane	78-87-5	1.27	U	6.35	1.27	0.635
1,3-Dichloropropane	142-28-9	1.27	U	6.35	1.27	0.635
2,2-Dichloropropane	594-20-7	1.27	U	6.35	1.27	0.635
cis-1,3-Dichloropropene	10061-01-5	1.27	U	6.35	1.27	0.635
trans-1,3-Dichloropropene	10061-02-6	1.27	U	6.35	1.27	0.635
1,1-Dichloropropene	563-58-6	1.27	U	6.35	1.27	0.635
Ethylbenzene	100-41-4	1.27	U	6.35	1.27	0.635
2-Hexanone	591-78-6	6.34	U	12.7	6.34	3.17
Hexachlorobutadiene	87-68-3	1.27	U	6.35	1.27	0.635
Isopropylbenzene	98-82-8	1.27	U	6.35	1.27	0.635
p-Isopropyltoluene	99-87-6	1.27	U	6.35	1.27	0.635
4-Methyl-2-pentanone	108-10-1	6.34	U	12.7	6.34	3.17
Methylene chloride	75-09-2	2.54	U	6.35	2.54	1.27
Naphthalene	91-20-3	1.27	Q	6.35	1.27	0.635
n-Propylbenzene	103-65-1	1.27	U	6.35	1.27	0.635
Styrene	100-42-5	1.27	U	6.35	1.27	0.635
1,1,1,2-Tetrachloroethane	630-20-6	1.27	U	6.35	1.27	0.635
1,1,2,2-Tetrachloroethane	79-34-5	1.27	U	6.35	1.27	0.635
Tetrachloroethene	127-18-4	1.27	U	6.35	1.27	0.635
Toluene	108-88-3	1.27	U	6.35	1.27	0.635
1,2,3-Trichlorobenzene	87-61-6	1.27	U	6.35	1.27	0.635
1,2,4-Trichlorobenzene	120-82-1	1.27	U	6.35	1.27	0.635
1,1,1-Trichloroethane	71-55-6	1.27	U	6.35	1.27	0.635
1,1,2-Trichloroethane	79-00-5	1.27	U	6.35	1.27	0.635
Trichloroethene	79-01-6	1.27	U	6.35	1.27	0.635
Trichlorofluoromethane	75-69-4	2.54	U	6.35	2.54	1.27
1,2,3-Trichloropropane	96-18-4	2.54	U	6.35	2.54	1.27
1,2,4-Trimethylbenzene	95-63-6	0.752	J	6.35	1.27	0.635
1,3,5-Trimethylbenzene	108-67-8	1.27	U	6.35	1.27	0.635
Vinyl chloride	75-01-4	2.54	U	6.35	2.54	1.27
o-Xylene	95-47-6	1.27	U	6.35	1.27	0.635
m-,p-Xylene	179601-23-1	1.27	U	6.35	1.27	0.635

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.7	80	120	
1,2-Dichloroethane-d4	84.7	80	120	
Toluene-d8	104	85	115	
4-Bromofluorobenzene	112	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT14(23-23.5)140316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561316	**Analyst:**	JWR	**Run Date:**	03/17/2016 18:48
Collect Date:	03/14/2016 13:25	**Dilution:**	1	**File ID:**	1LM.LM33893
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.40	U	4.80	2.40	1.20

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT15(5-5.5)140316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:12
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 18:48
Collect Date:	03/14/2016 16:40	**Dilution:**	1	**File ID:**	6M137976
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.1	U	22.3	11.1	5.57
Benzene	71-43-2	1.11	U	5.57	1.11	0.557
Bromobenzene	108-86-1	1.11	U	5.57	1.11	0.557
Bromochloromethane	74-97-5	2.22	U	5.57	2.22	1.11
Bromodichloromethane	75-27-4	1.11	U	5.57	1.11	0.557
Bromoform	75-25-2	1.11	U	5.57	1.11	0.557
Bromomethane	74-83-9	2.22	U	5.57	2.22	1.11
2-Butanone	78-93-3	5.58	U	11.1	5.58	2.79
n-Butylbenzene	104-51-8	1.11	U	5.57	1.11	0.557
sec-Butylbenzene	135-98-8	1.11	U	5.57	1.11	0.557
tert-Butylbenzene	98-06-6	1.11	U	5.57	1.11	0.557
Carbon disulfide	75-15-0	1.11	U	5.57	1.11	0.557
Carbon tetrachloride	56-23-5	1.11	U	5.57	1.11	0.557
Chlorobenzene	108-90-7	1.11	U	5.57	1.11	0.557
Chlorodibromomethane	124-48-1	1.11	U	5.57	1.11	0.557
Chloroethane	75-00-3	2.22	U	5.57	2.22	1.11
Chloroform	67-66-3	1.11	U	5.57	1.11	0.557
Chloromethane	74-87-3	4.46	Q	11.1	4.46	2.23
2-Chlorotoluene	95-49-8	1.11	U	5.57	1.11	0.557
4-Chlorotoluene	106-43-4	1.11	U	5.57	1.11	0.557
1,2-Dibromo-3-chloropropane	96-12-8	4.46	U	11.1	4.46	2.23
1,2-Dibromoethane	106-93-4	1.11	U	5.57	1.11	0.557
Dibromomethane	74-95-3	1.11	U	5.57	1.11	0.557
1,2-Dichlorobenzene	95-50-1	1.11	U	5.57	1.11	0.557
1,3-Dichlorobenzene	541-73-1	1.11	U	5.57	1.11	0.557
1,4-Dichlorobenzene	106-46-7	1.11	U	5.57	1.11	0.557
Dichlorodifluoromethane	75-71-8	2.22	U	5.57	2.22	1.11
1,1-Dichloroethane	75-34-3	2.22	U	5.57	2.22	1.11
1,2-Dichloroethane	107-06-2	1.11	U	5.57	1.11	0.557
1,1-Dichloroethene	75-35-4	1.11	U	5.57	1.11	0.557
cis-1,2-Dichloroethene	156-59-2	1.11	U	5.57	1.11	0.557

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.11	U	5.57	1.11	0.557
1,2-Dichloropropane	78-87-5	1.11	U	5.57	1.11	0.557
1,3-Dichloropropane	142-28-9	1.11	U	5.57	1.11	0.557
2,2-Dichloropropane	594-20-7	1.11	U	5.57	1.11	0.557
cis-1,3-Dichloropropene	10061-01-5	1.11	U	5.57	1.11	0.557
trans-1,3-Dichloropropene	10061-02-6	1.11	U	5.57	1.11	0.557
1,1-Dichloropropene	563-58-6	1.11	U	5.57	1.11	0.557
Ethylbenzene	100-41-4	1.11	U	5.57	1.11	0.557
2-Hexanone	591-78-6	5.58	U	11.1	5.58	2.79
Hexachlorobutadiene	87-68-3	1.11	U	5.57	1.11	0.557
Isopropylbenzene	98-82-8	1.11	U	5.57	1.11	0.557
p-Isopropyltoluene	99-87-6	1.11	U	5.57	1.11	0.557
4-Methyl-2-pentanone	108-10-1	5.58	U	11.1	5.58	2.79
Methylene chloride	75-09-2	2.22	U	5.57	2.22	1.11
Naphthalene	91-20-3	1.11	Q	5.57	1.11	0.557
n-Propylbenzene	103-65-1	1.11	U	5.57	1.11	0.557
Styrene	100-42-5	1.11	U	5.57	1.11	0.557
1,1,1,2-Tetrachloroethane	630-20-6	1.11	U	5.57	1.11	0.557
1,1,2,2-Tetrachloroethane	79-34-5	1.11	U	5.57	1.11	0.557
Tetrachloroethene	127-18-4	1.11	U	5.57	1.11	0.557
Toluene	108-88-3	1.11	U	5.57	1.11	0.557
1,2,3-Trichlorobenzene	87-61-6	1.11	U	5.57	1.11	0.557
1,2,4-Trichlorobenzene	120-82-1	1.11	U	5.57	1.11	0.557
1,1,1-Trichloroethane	71-55-6	1.11	U	5.57	1.11	0.557
1,1,2-Trichloroethane	79-00-5	1.11	U	5.57	1.11	0.557
Trichloroethene	79-01-6	1.11	U	5.57	1.11	0.557
Trichlorofluoromethane	75-69-4	2.22	U	5.57	2.22	1.11
1,2,3-Trichloropropane	96-18-4	2.22	U	5.57	2.22	1.11
1,2,4-Trimethylbenzene	95-63-6	1.11	U	5.57	1.11	0.557
1,3,5-Trimethylbenzene	108-67-8	1.11	U	5.57	1.11	0.557
Vinyl chloride	75-01-4	2.22	U	5.57	2.22	1.11
o-Xylene	95-47-6	1.11	U	5.57	1.11	0.557
m-,p-Xylene	179601-23-1	1.11	U	5.57	1.11	0.557

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.6	80	120	
1,2-Dichloroethane-d4	87.3	80	120	
Toluene-d8	102	85	115	
4-Bromofluorobenzene	104	85	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT15(5-5.5)140316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561316	**Analyst:**	JWR	**Run Date:**	03/17/2016 20:03
Collect Date:	03/14/2016 16:40	**Dilution:**	1	**File ID:**	1LM.LM33897
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.34	U	4.70	2.34	1.17

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT15(12-12.5)140316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:13
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 19:21
Collect Date:	03/14/2016 16:41	**Dilution:**	1	**File ID:**	6M137977
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.4	U	24.9	12.4	6.22
Benzene	71-43-2	1.24	U	6.22	1.24	0.622
Bromobenzene	108-86-1	1.24	U	6.22	1.24	0.622
Bromochloromethane	74-97-5	2.48	U	6.22	2.48	1.24
Bromodichloromethane	75-27-4	1.24	U	6.22	1.24	0.622
Bromoform	75-25-2	1.24	U	6.22	1.24	0.622
Bromomethane	74-83-9	2.48	U	6.22	2.48	1.24
2-Butanone	78-93-3	6.22	U	12.4	6.22	3.11
n-Butylbenzene	104-51-8	1.24	U	6.22	1.24	0.622
sec-Butylbenzene	135-98-8	1.24	U	6.22	1.24	0.622
tert-Butylbenzene	98-06-6	1.24	U	6.22	1.24	0.622
Carbon disulfide	75-15-0	1.24	U	6.22	1.24	0.622
Carbon tetrachloride	56-23-5	1.24	U	6.22	1.24	0.622
Chlorobenzene	108-90-7	1.24	U	6.22	1.24	0.622
Chlorodibromomethane	124-48-1	1.24	U	6.22	1.24	0.622
Chloroethane	75-00-3	2.48	U	6.22	2.48	1.24
Chloroform	67-66-3	1.24	U	6.22	1.24	0.622
Chloromethane	74-87-3	4.98	Q	12.4	4.98	2.49
2-Chlorotoluene	95-49-8	1.24	U	6.22	1.24	0.622
4-Chlorotoluene	106-43-4	1.24	U	6.22	1.24	0.622
1,2-Dibromo-3-chloropropane	96-12-8	4.98	U	12.4	4.98	2.49
1,2-Dibromoethane	106-93-4	1.24	U	6.22	1.24	0.622
Dibromomethane	74-95-3	1.24	U	6.22	1.24	0.622
1,2-Dichlorobenzene	95-50-1	1.24	U	6.22	1.24	0.622
1,3-Dichlorobenzene	541-73-1	1.24	U	6.22	1.24	0.622
1,4-Dichlorobenzene	106-46-7	1.24	U	6.22	1.24	0.622
Dichlorodifluoromethane	75-71-8	2.48	U	6.22	2.48	1.24
1,1-Dichloroethane	75-34-3	2.48	U	6.22	2.48	1.24
1,2-Dichloroethane	107-06-2	1.24	U	6.22	1.24	0.622
1,1-Dichloroethene	75-35-4	1.24	U	6.22	1.24	0.622
cis-1,2-Dichloroethene	156-59-2	1.24	U	6.22	1.24	0.622

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.24	U	6.22	1.24	0.622
1,2-Dichloropropane	78-87-5	1.24	U	6.22	1.24	0.622
1,3-Dichloropropane	142-28-9	1.24	U	6.22	1.24	0.622
2,2-Dichloropropane	594-20-7	1.24	U	6.22	1.24	0.622
cis-1,3-Dichloropropene	10061-01-5	1.24	U	6.22	1.24	0.622
trans-1,3-Dichloropropene	10061-02-6	1.24	U	6.22	1.24	0.622
1,1-Dichloropropene	563-58-6	1.24	U	6.22	1.24	0.622
Ethylbenzene	100-41-4	1.24	U	6.22	1.24	0.622
2-Hexanone	591-78-6	6.22	U	12.4	6.22	3.11
Hexachlorobutadiene	87-68-3	1.24	U	6.22	1.24	0.622
Isopropylbenzene	98-82-8	1.24	U	6.22	1.24	0.622
p-Isopropyltoluene	99-87-6	1.24	U	6.22	1.24	0.622
4-Methyl-2-pentanone	108-10-1	6.22	U	12.4	6.22	3.11
Methylene chloride	75-09-2	2.48	U	6.22	2.48	1.24
Naphthalene	91-20-3	1.24	Q	6.22	1.24	0.622
n-Propylbenzene	103-65-1	1.24	U	6.22	1.24	0.622
Styrene	100-42-5	1.24	U	6.22	1.24	0.622
1,1,1,2-Tetrachloroethane	630-20-6	1.24	U	6.22	1.24	0.622
1,1,2,2-Tetrachloroethane	79-34-5	1.24	U	6.22	1.24	0.622
Tetrachloroethene	127-18-4	1.24	U	6.22	1.24	0.622
Toluene	108-88-3	1.24	U	6.22	1.24	0.622
1,2,3-Trichlorobenzene	87-61-6	1.24	U	6.22	1.24	0.622
1,2,4-Trichlorobenzene	120-82-1	1.24	U	6.22	1.24	0.622
1,1,1-Trichloroethane	71-55-6	1.24	U	6.22	1.24	0.622
1,1,2-Trichloroethane	79-00-5	1.24	U	6.22	1.24	0.622
Trichloroethene	79-01-6	1.24	U	6.22	1.24	0.622
Trichlorofluoromethane	75-69-4	2.48	U	6.22	2.48	1.24
1,2,3-Trichloropropane	96-18-4	2.48	U	6.22	2.48	1.24
1,2,4-Trimethylbenzene	95-63-6	1.24	U	6.22	1.24	0.622
1,3,5-Trimethylbenzene	108-67-8	1.24	U	6.22	1.24	0.622
Vinyl chloride	75-01-4	2.48	U	6.22	2.48	1.24
o-Xylene	95-47-6	1.24	U	6.22	1.24	0.622
m-,p-Xylene	179601-23-1	1.24	U	6.22	1.24	0.622

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.6	80	120	
1,2-Dichloroethane-d4	83.2	80	120	
Toluene-d8	102	85	115	
4-Bromofluorobenzene	102	85	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT15(12-12.5)140316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561316	**Analyst:**	JWR	**Run Date:**	03/17/2016 20:22
Collect Date:	03/14/2016 16:41	**Dilution:**	1	**File ID:**	1LM.LM33898
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	44.1		4.64	2.32	1.16

Certificate of Analysis

Sample #:	L16030861-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT15(21-21.5)140316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:14
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 19:54
Collect Date:	03/14/2016 16:42	**Dilution:**	1	**File ID:**	6M137978
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.9	U	23.8	11.9	5.95
Benzene	71-43-2	1.19	U	5.95	1.19	0.595
Bromobenzene	108-86-1	1.19	U	5.95	1.19	0.595
Bromochloromethane	74-97-5	2.38	U	5.95	2.38	1.19
Bromodichloromethane	75-27-4	1.19	U	5.95	1.19	0.595
Bromoform	75-25-2	1.19	U	5.95	1.19	0.595
Bromomethane	74-83-9	2.38	U	5.95	2.38	1.19
2-Butanone	78-93-3	5.94	U	11.9	5.94	2.97
n-Butylbenzene	104-51-8	1.19	U	5.95	1.19	0.595
sec-Butylbenzene	135-98-8	1.19	U	5.95	1.19	0.595
tert-Butylbenzene	98-06-6	1.19	U	5.95	1.19	0.595
Carbon disulfide	75-15-0	1.19	U	5.95	1.19	0.595
Carbon tetrachloride	56-23-5	1.19	U	5.95	1.19	0.595
Chlorobenzene	108-90-7	1.19	U	5.95	1.19	0.595
Chlorodibromomethane	124-48-1	1.19	U	5.95	1.19	0.595
Chloroethane	75-00-3	2.38	U	5.95	2.38	1.19
Chloroform	67-66-3	1.19	U	5.95	1.19	0.595
Chloromethane	74-87-3	4.76	Q	11.9	4.76	2.38
2-Chlorotoluene	95-49-8	1.19	U	5.95	1.19	0.595
4-Chlorotoluene	106-43-4	1.19	U	5.95	1.19	0.595

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	4.76	U	11.9	4.76	2.38
1,2-Dibromoethane	106-93-4	1.19	U	5.95	1.19	0.595
Dibromomethane	74-95-3	1.19	U	5.95	1.19	0.595
1,2-Dichlorobenzene	95-50-1	1.19	U	5.95	1.19	0.595
1,3-Dichlorobenzene	541-73-1	1.19	U	5.95	1.19	0.595
1,4-Dichlorobenzene	106-46-7	1.19	U	5.95	1.19	0.595
Dichlorodifluoromethane	75-71-8	2.38	U	5.95	2.38	1.19
1,1-Dichloroethane	75-34-3	2.38	U	5.95	2.38	1.19
1,2-Dichloroethane	107-06-2	1.19	U	5.95	1.19	0.595
1,1-Dichloroethene	75-35-4	1.19	U	5.95	1.19	0.595
cis-1,2-Dichloroethene	156-59-2	1.19	U	5.95	1.19	0.595
trans-1,2-Dichloroethene	156-60-5	1.19	U	5.95	1.19	0.595
1,2-Dichloropropane	78-87-5	1.19	U	5.95	1.19	0.595
1,3-Dichloropropane	142-28-9	1.19	U	5.95	1.19	0.595
2,2-Dichloropropane	594-20-7	1.19	U	5.95	1.19	0.595
cis-1,3-Dichloropropene	10061-01-5	1.19	U	5.95	1.19	0.595
trans-1,3-Dichloropropene	10061-02-6	1.19	U	5.95	1.19	0.595
1,1-Dichloropropene	563-58-6	1.19	U	5.95	1.19	0.595
Ethylbenzene	100-41-4	1.19	U	5.95	1.19	0.595
2-Hexanone	591-78-6	5.94	U	11.9	5.94	2.97
Hexachlorobutadiene	87-68-3	1.19	U	5.95	1.19	0.595
Isopropylbenzene	98-82-8	1.19	U	5.95	1.19	0.595
p-Isopropyltoluene	99-87-6	1.19	U	5.95	1.19	0.595
4-Methyl-2-pentanone	108-10-1	5.94	U	11.9	5.94	2.97
Methylene chloride	75-09-2	2.38	U	5.95	2.38	1.19
Naphthalene	91-20-3	1.19	Q	5.95	1.19	0.595
n-Propylbenzene	103-65-1	1.19	U	5.95	1.19	0.595
Styrene	100-42-5	1.19	U	5.95	1.19	0.595
1,1,1,2-Tetrachloroethane	630-20-6	1.19	U	5.95	1.19	0.595
1,1,2,2-Tetrachloroethane	79-34-5	1.19	U	5.95	1.19	0.595
Tetrachloroethene	127-18-4	1.19	U	5.95	1.19	0.595
Toluene	108-88-3	1.19	U	5.95	1.19	0.595
1,2,3-Trichlorobenzene	87-61-6	1.19	U	5.95	1.19	0.595
1,2,4-Trichlorobenzene	120-82-1	1.19	U	5.95	1.19	0.595
1,1,1-Trichloroethane	71-55-6	1.19	U	5.95	1.19	0.595
1,1,2-Trichloroethane	79-00-5	1.19	U	5.95	1.19	0.595
Trichloroethene	79-01-6	1.19	U	5.95	1.19	0.595
Trichlorofluoromethane	75-69-4	2.38	U	5.95	2.38	1.19
1,2,3-Trichloropropane	96-18-4	2.38	U	5.95	2.38	1.19

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.19	U	5.95	1.19	0.595
1,3,5-Trimethylbenzene	108-67-8	1.19	U	5.95	1.19	0.595
Vinyl chloride	75-01-4	2.38	U	5.95	2.38	1.19
o-Xylene	95-47-6	1.19	U	5.95	1.19	0.595
m-,p-Xylene	179601-23-1	1.19	U	5.95	1.19	0.595

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.1	80	120	
1,2-Dichloroethane-d4	86.0	80	120	
Toluene-d8	101	85	115	
4-Bromofluorobenzene	103	85	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT15(21-21.5)140316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561316	**Analyst:**	JWR	**Run Date:**	03/18/2016 13:31
Collect Date:	03/14/2016 16:42	**Dilution:**	100	**File ID:**	1LM.LM33933
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	82.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3440		476	238	119

Certificate of Analysis

Sample #:	L16030861-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT15(23.5-24)140316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:14
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 20:27
Collect Date:	03/14/2016 16:43	**Dilution:**	1	**File ID:**	6M137979
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.8	U	23.5	11.8	5.88
Benzene	71-43-2	1.18	U	5.88	1.18	0.588
Bromobenzene	108-86-1	1.18	U	5.88	1.18	0.588
Bromochloromethane	74-97-5	2.36	U	5.88	2.36	1.18
Bromodichloromethane	75-27-4	1.18	U	5.88	1.18	0.588
Bromoform	75-25-2	1.18	U	5.88	1.18	0.588
Bromomethane	74-83-9	2.36	U	5.88	2.36	1.18
2-Butanone	78-93-3	5.88	U	11.8	5.88	2.94
n-Butylbenzene	104-51-8	1.18	U	5.88	1.18	0.588
sec-Butylbenzene	135-98-8	1.18	U	5.88	1.18	0.588
tert-Butylbenzene	98-06-6	1.18	U	5.88	1.18	0.588
Carbon disulfide	75-15-0	1.18	U	5.88	1.18	0.588
Carbon tetrachloride	56-23-5	1.18	U	5.88	1.18	0.588
Chlorobenzene	108-90-7	1.18	U	5.88	1.18	0.588
Chlorodibromomethane	124-48-1	1.18	U	5.88	1.18	0.588
Chloroethane	75-00-3	2.36	U	5.88	2.36	1.18
Chloroform	67-66-3	0.714	J	5.88	1.18	0.588
Chloromethane	74-87-3	4.70	Q	11.8	4.70	2.35
2-Chlorotoluene	95-49-8	1.18	U	5.88	1.18	0.588
4-Chlorotoluene	106-43-4	1.18	U	5.88	1.18	0.588

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Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	4.70	U	11.8	4.70	2.35
1,2-Dibromoethane	106-93-4	1.18	U	5.88	1.18	0.588
Dibromomethane	74-95-3	1.18	U	5.88	1.18	0.588
1,2-Dichlorobenzene	95-50-1	1.18	U	5.88	1.18	0.588
1,3-Dichlorobenzene	541-73-1	1.18	U	5.88	1.18	0.588
1,4-Dichlorobenzene	106-46-7	1.18	U	5.88	1.18	0.588
Dichlorodifluoromethane	75-71-8	2.36	U	5.88	2.36	1.18
1,1-Dichloroethane	75-34-3	2.36	U	5.88	2.36	1.18
1,2-Dichloroethane	107-06-2	3.58	J	5.88	1.18	0.588
1,1-Dichloroethene	75-35-4	1.18	U	5.88	1.18	0.588
cis-1,2-Dichloroethene	156-59-2	1.18	U	5.88	1.18	0.588
trans-1,2-Dichloroethene	156-60-5	1.18	U	5.88	1.18	0.588
1,2-Dichloropropane	78-87-5	1.18	U	5.88	1.18	0.588
1,3-Dichloropropane	142-28-9	1.18	U	5.88	1.18	0.588
2,2-Dichloropropane	594-20-7	1.18	U	5.88	1.18	0.588
cis-1,3-Dichloropropene	10061-01-5	1.18	U	5.88	1.18	0.588
trans-1,3-Dichloropropene	10061-02-6	1.18	U	5.88	1.18	0.588
1,1-Dichloropropene	563-58-6	1.18	U	5.88	1.18	0.588
Ethylbenzene	100-41-4	1.18	U	5.88	1.18	0.588
2-Hexanone	591-78-6	5.88	U	11.8	5.88	2.94
Hexachlorobutadiene	87-68-3	1.18	U	5.88	1.18	0.588
Isopropylbenzene	98-82-8	1.18	U	5.88	1.18	0.588
p-Isopropyltoluene	99-87-6	1.18	U	5.88	1.18	0.588
4-Methyl-2-pentanone	108-10-1	5.88	U	11.8	5.88	2.94
Methylene chloride	75-09-2	2.36	U	5.88	2.36	1.18
Naphthalene	91-20-3	1.18	Q	5.88	1.18	0.588
n-Propylbenzene	103-65-1	1.18	U	5.88	1.18	0.588
Styrene	100-42-5	1.18	U	5.88	1.18	0.588
1,1,1,2-Tetrachloroethane	630-20-6	1.18	U	5.88	1.18	0.588
1,1,2,2-Tetrachloroethane	79-34-5	1.18	U	5.88	1.18	0.588
Tetrachloroethene	127-18-4	1.18	U	5.88	1.18	0.588
Toluene	108-88-3	1.18	U	5.88	1.18	0.588
1,2,3-Trichlorobenzene	87-61-6	1.18	U	5.88	1.18	0.588
1,2,4-Trichlorobenzene	120-82-1	1.18	U	5.88	1.18	0.588
1,1,1-Trichloroethane	71-55-6	1.18	U	5.88	1.18	0.588
1,1,2-Trichloroethane	79-00-5	1.18	U	5.88	1.18	0.588
Trichloroethene	79-01-6	58.8		5.88	1.18	0.588
Trichlorofluoromethane	75-69-4	2.36	U	5.88	2.36	1.18
1,2,3-Trichloropropane	96-18-4	2.36	U	5.88	2.36	1.18

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.18	U	5.88	1.18	0.588
1,3,5-Trimethylbenzene	108-67-8	1.18	U	5.88	1.18	0.588
Vinyl chloride	75-01-4	2.36	U	5.88	2.36	1.18
o-Xylene	95-47-6	1.18	U	5.88	1.18	0.588
m-,p-Xylene	179601-23-1	1.18	U	5.88	1.18	0.588

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.4	80	120	
1,2-Dichloroethane-d4	93.1	80	120	
Toluene-d8	99.6	85	115	
4-Bromofluorobenzene	103	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-09	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT15(23.5-24)140316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561316	**Analyst:**	JWR	**Run Date:**	03/18/2016 13:50
Collect Date:	03/14/2016 16:43	**Dilution:**	100	**File ID:**	1LM.LM33934
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	81.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	6010		485	242	121

Certificate of Analysis

Sample #:	L16030861-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT15(26.5-27)140316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:15
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 21:00
Collect Date:	03/14/2016 16:45	**Dilution:**	1	**File ID:**	6M137980
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.8	U	25.6	12.8	6.39
Benzene	71-43-2	1.28	U	6.39	1.28	0.639
Bromobenzene	108-86-1	1.28	U	6.39	1.28	0.639
Bromochloromethane	74-97-5	2.56	U	6.39	2.56	1.28
Bromodichloromethane	75-27-4	1.28	U	6.39	1.28	0.639
Bromoform	75-25-2	1.28	U	6.39	1.28	0.639
Bromomethane	74-83-9	2.56	U	6.39	2.56	1.28
2-Butanone	78-93-3	6.38	U	12.8	6.38	3.19
n-Butylbenzene	104-51-8	1.28	U	6.39	1.28	0.639
sec-Butylbenzene	135-98-8	1.28	U	6.39	1.28	0.639
tert-Butylbenzene	98-06-6	1.28	U	6.39	1.28	0.639
Carbon disulfide	75-15-0	1.28	U	6.39	1.28	0.639
Carbon tetrachloride	56-23-5	1.28	U	6.39	1.28	0.639
Chlorobenzene	108-90-7	1.28	U	6.39	1.28	0.639
Chlorodibromomethane	124-48-1	1.28	U	6.39	1.28	0.639
Chloroethane	75-00-3	2.56	U	6.39	2.56	1.28
Chloroform	67-66-3	1.28	U	6.39	1.28	0.639
Chloromethane	74-87-3	5.12	Q	12.8	5.12	2.56
2-Chlorotoluene	95-49-8	1.28	U	6.39	1.28	0.639
4-Chlorotoluene	106-43-4	1.28	U	6.39	1.28	0.639

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	5.12	U	12.8	5.12	2.56
1,2-Dibromoethane	106-93-4	1.28	U	6.39	1.28	0.639
Dibromomethane	74-95-3	1.28	U	6.39	1.28	0.639
1,2-Dichlorobenzene	95-50-1	1.28	U	6.39	1.28	0.639
1,3-Dichlorobenzene	541-73-1	1.28	U	6.39	1.28	0.639
1,4-Dichlorobenzene	106-46-7	1.28	U	6.39	1.28	0.639
Dichlorodifluoromethane	75-71-8	2.56	U	6.39	2.56	1.28
1,1-Dichloroethane	75-34-3	2.56	U	6.39	2.56	1.28
1,2-Dichloroethane	107-06-2	1.11	J	6.39	1.28	0.639
1,1-Dichloroethene	75-35-4	1.28	U	6.39	1.28	0.639
cis-1,2-Dichloroethene	156-59-2	1.28	U	6.39	1.28	0.639
trans-1,2-Dichloroethene	156-60-5	1.28	U	6.39	1.28	0.639
1,2-Dichloropropane	78-87-5	1.28	U	6.39	1.28	0.639
1,3-Dichloropropane	142-28-9	1.28	U	6.39	1.28	0.639
2,2-Dichloropropane	594-20-7	1.28	U	6.39	1.28	0.639
cis-1,3-Dichloropropene	10061-01-5	1.28	U	6.39	1.28	0.639
trans-1,3-Dichloropropene	10061-02-6	1.28	U	6.39	1.28	0.639
1,1-Dichloropropene	563-58-6	1.28	U	6.39	1.28	0.639
Ethylbenzene	100-41-4	1.28	U	6.39	1.28	0.639
2-Hexanone	591-78-6	6.38	U	12.8	6.38	3.19
Hexachlorobutadiene	87-68-3	1.28	U	6.39	1.28	0.639
Isopropylbenzene	98-82-8	1.28	U	6.39	1.28	0.639
p-Isopropyltoluene	99-87-6	1.28	U	6.39	1.28	0.639
4-Methyl-2-pentanone	108-10-1	6.38	U	12.8	6.38	3.19
Methylene chloride	75-09-2	2.56	U	6.39	2.56	1.28
Naphthalene	91-20-3	1.28	Q	6.39	1.28	0.639
n-Propylbenzene	103-65-1	1.28	U	6.39	1.28	0.639
Styrene	100-42-5	1.28	U	6.39	1.28	0.639
1,1,1,2-Tetrachloroethane	630-20-6	1.28	U	6.39	1.28	0.639
1,1,2,2-Tetrachloroethane	79-34-5	1.28	U	6.39	1.28	0.639
Tetrachloroethene	127-18-4	1.28	U	6.39	1.28	0.639
Toluene	108-88-3	1.28	U	6.39	1.28	0.639
1,2,3-Trichlorobenzene	87-61-6	1.28	U	6.39	1.28	0.639
1,2,4-Trichlorobenzene	120-82-1	1.28	U	6.39	1.28	0.639
1,1,1-Trichloroethane	71-55-6	1.28	U	6.39	1.28	0.639
1,1,2-Trichloroethane	79-00-5	1.28	U	6.39	1.28	0.639
Trichloroethene	79-01-6	18.9		6.39	1.28	0.639
Trichlorofluoromethane	75-69-4	2.56	U	6.39	2.56	1.28
1,2,3-Trichloropropane	96-18-4	2.56	U	6.39	2.56	1.28

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.28	U	6.39	1.28	0.639
1,3,5-Trimethylbenzene	108-67-8	1.28	U	6.39	1.28	0.639
Vinyl chloride	75-01-4	2.56	U	6.39	2.56	1.28
o-Xylene	95-47-6	1.28	U	6.39	1.28	0.639
m-,p-Xylene	179601-23-1	1.28	U	6.39	1.28	0.639

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.8	80	120	
1,2-Dichloroethane-d4	96.1	80	120	
Toluene-d8	99.5	85	115	
4-Bromofluorobenzene	102	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-10	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT15(26.5-27)140316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561316	**Analyst:**	JWR	**Run Date:**	03/18/2016 14:09
Collect Date:	03/14/2016 16:45	**Dilution:**	100	**File ID:**	1LM.LM33935
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	79.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	6530		505	252	126

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #: L16030861-01 **Client ID:** 18DPT14(5-5.5)140316 **Matrix:** Soil **Collect Date:** 03/14/2016 12:32

Analyte	Result	Units	Qualifier
Percent Solids	82.5	weight %	

Sample #: L16030861-02 **Client ID:** 18DPT14(10-10.5)140316 **Matrix:** Soil **Collect Date:** 03/14/2016 13:15

Analyte	Result	Units	Qualifier
Percent Solids	89.3	weight %	

Sample #: L16030861-03 **Client ID:** 18DPT14(10-10.5)140316FD **Matrix:** Soil **Collect Date:** 03/14/2016 13:15

Analyte	Result	Units	Qualifier
Percent Solids	90.4	weight %	

Sample #: L16030861-04 **Client ID:** 18DPT14(17-17.5)140316 **Matrix:** Soil **Collect Date:** 03/14/2016 13:20

Analyte	Result	Units	Qualifier
Percent Solids	91.0	weight %	

Sample #: L16030861-05 **Client ID:** 18DPT14(23-23.5)140316 **Matrix:** Soil **Collect Date:** 03/14/2016 13:25

Analyte	Result	Units	Qualifier
Percent Solids	79.9	weight %	

Sample #: L16030861-06 **Client ID:** 18DPT15(5-5.5)140316 **Matrix:** Soil **Collect Date:** 03/14/2016 16:40

Analyte	Result	Units	Qualifier
Percent Solids	82.5	weight %	

Sample #: L16030861-07 **Client ID:** 18DPT15(12-12.5)140316 **Matrix:** Soil **Collect Date:** 03/14/2016 16:41

Analyte	Result	Units	Qualifier
Percent Solids	85.0	weight %	

Sample #: L16030861-08 **Client ID:** 18DPT15(21-21.5)140316 **Matrix:** Soil **Collect Date:** 03/14/2016 16:42

Analyte	Result	Units	Qualifier
Percent Solids	82.9	weight %	

Sample #: L16030861-09 **Client ID:** 18DPT15(23.5-24)140316 **Matrix:** Soil **Collect Date:** 03/14/2016 16:43

Analyte	Result	Units	Qualifier
Percent Solids	81.2	weight %	

Sample #: L16030861-10 **Client ID:** 18DPT15(26.5-27)140316 **Matrix:** Soil **Collect Date:** 03/14/2016 16:45

Analyte	Result	Units	Qualifier
Percent Solids	79.1	weight %	

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT14(5-5.5)140316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:07
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG561881	**Analyst:**	TMB	**Run Date:**	03/22/2016 20:49
Collect Date:	03/14/2016 12:32	**Dilution:**	1	**File ID:**	6M137955
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.8	U	25.7	12.8	6.42
Benzene	71-43-2	1.28	U	6.42	1.28	0.642
Bromobenzene	108-86-1	1.28	U	6.42	1.28	0.642
Bromochloromethane	74-97-5	2.56	U	6.42	2.56	1.28
Bromodichloromethane	75-27-4	1.28	U	6.42	1.28	0.642
Bromoform	75-25-2	1.28	U	6.42	1.28	0.642
Bromomethane	74-83-9	2.56	U	6.42	2.56	1.28
2-Butanone	78-93-3	6.42	U	12.8	6.42	3.21
n-Butylbenzene	104-51-8	1.28	U	6.42	1.28	0.642
sec-Butylbenzene	135-98-8	1.28	U	6.42	1.28	0.642
tert-Butylbenzene	98-06-6	1.28	U	6.42	1.28	0.642
Carbon disulfide	75-15-0	1.28	U	6.42	1.28	0.642
Carbon tetrachloride	56-23-5	1.28	U	6.42	1.28	0.642
Chlorobenzene	108-90-7	1.28	U	6.42	1.28	0.642
Chlorodibromomethane	124-48-1	1.28	U	6.42	1.28	0.642
Chloroethane	75-00-3	2.56	U	6.42	2.56	1.28
Chloroform	67-66-3	1.28	U	6.42	1.28	0.642
Chloromethane	74-87-3	5.14	Q	12.8	5.14	2.57
2-Chlorotoluene	95-49-8	1.28	U	6.42	1.28	0.642
4-Chlorotoluene	106-43-4	1.28	U	6.42	1.28	0.642
1,2-Dibromo-3-chloropropane	96-12-8	5.14	U	12.8	5.14	2.57
1,2-Dibromoethane	106-93-4	1.28	U	6.42	1.28	0.642
Dibromomethane	74-95-3	1.28	U	6.42	1.28	0.642
1,2-Dichlorobenzene	95-50-1	1.28	U	6.42	1.28	0.642
1,3-Dichlorobenzene	541-73-1	1.28	U	6.42	1.28	0.642
1,4-Dichlorobenzene	106-46-7	1.28	U	6.42	1.28	0.642
Dichlorodifluoromethane	75-71-8	2.56	U	6.42	2.56	1.28
1,1-Dichloroethane	75-34-3	2.56	U	6.42	2.56	1.28
1,2-Dichloroethane	107-06-2	1.28	U	6.42	1.28	0.642
1,1-Dichloroethene	75-35-4	1.28	U	6.42	1.28	0.642
cis-1,2-Dichloroethene	156-59-2	1.28	U	6.42	1.28	0.642
trans-1,2-Dichloroethene	156-60-5	1.28	U	6.42	1.28	0.642

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Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.28	U	6.42	1.28	0.642
1,3-Dichloropropane	142-28-9	1.28	U	6.42	1.28	0.642
2,2-Dichloropropane	594-20-7	1.28	U	6.42	1.28	0.642
cis-1,3-Dichloropropene	10061-01-5	1.28	U	6.42	1.28	0.642
trans-1,3-Dichloropropene	10061-02-6	1.28	U	6.42	1.28	0.642
1,1-Dichloropropene	563-58-6	1.28	U	6.42	1.28	0.642
Ethylbenzene	100-41-4	1.28	U	6.42	1.28	0.642
2-Hexanone	591-78-6	6.42	U	12.8	6.42	3.21
Hexachlorobutadiene	87-68-3	1.28	U	6.42	1.28	0.642
Isopropylbenzene	98-82-8	1.28	U	6.42	1.28	0.642
p-Isopropyltoluene	99-87-6	1.28	U	6.42	1.28	0.642
4-Methyl-2-pentanone	108-10-1	6.42	Q	12.8	6.42	3.21
Methylene chloride	75-09-2	2.56	U	6.42	2.56	1.28
Naphthalene	91-20-3	1.28	U	6.42	1.28	0.642
n-Propylbenzene	103-65-1	1.28	U	6.42	1.28	0.642
Styrene	100-42-5	1.28	U	6.42	1.28	0.642
1,1,1,2-Tetrachloroethane	630-20-6	1.28	U	6.42	1.28	0.642
1,1,2,2-Tetrachloroethane	79-34-5	1.28	U	6.42	1.28	0.642
Tetrachloroethene	127-18-4	1.28	U	6.42	1.28	0.642
Toluene	108-88-3	1.28	U	6.42	1.28	0.642
1,2,3-Trichlorobenzene	87-61-6	1.28	U	6.42	1.28	0.642
1,2,4-Trichlorobenzene	120-82-1	1.28	U	6.42	1.28	0.642
1,1,1-Trichloroethane	71-55-6	1.28	U	6.42	1.28	0.642
1,1,2-Trichloroethane	79-00-5	1.28	U	6.42	1.28	0.642
Trichloroethene	79-01-6	1.28	U	6.42	1.28	0.642
Trichlorofluoromethane	75-69-4	2.56	U	6.42	2.56	1.28
1,2,3-Trichloropropane	96-18-4	2.56	U	6.42	2.56	1.28
1,2,4-Trimethylbenzene	95-63-6	1.28	U	6.42	1.28	0.642
1,3,5-Trimethylbenzene	108-67-8	1.28	U	6.42	1.28	0.642
Vinyl chloride	75-01-4	2.56	U	6.42	2.56	1.28
o-Xylene	95-47-6	1.28	U	6.42	1.28	0.642
m-,p-Xylene	179601-23-1	1.28	U	6.42	1.28	0.642

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.7	80	120	
1,2-Dichloroethane-d4	89.8	80	120	
Toluene-d8	101	85	115	
4-Bromofluorobenzene	101	85	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT14(10-10.5)140316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:09
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG561881	**Analyst:**	TMB	**Run Date:**	03/22/2016 20:16
Collect Date:	03/14/2016 13:15	**Dilution:**	1	**File ID:**	6M137954
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	89.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.6	U	23.3	11.6	5.82
Benzene	71-43-2	1.16	U	5.82	1.16	0.582
Bromobenzene	108-86-1	1.16	U	5.82	1.16	0.582
Bromochloromethane	74-97-5	2.32	U	5.82	2.32	1.16
Bromodichloromethane	75-27-4	1.16	U	5.82	1.16	0.582
Bromoform	75-25-2	1.16	U	5.82	1.16	0.582
Bromomethane	74-83-9	2.32	U	5.82	2.32	1.16
2-Butanone	78-93-3	5.82	U	11.6	5.82	2.91
n-Butylbenzene	104-51-8	1.16	U	5.82	1.16	0.582
sec-Butylbenzene	135-98-8	1.16	U	5.82	1.16	0.582
tert-Butylbenzene	98-06-6	1.16	U	5.82	1.16	0.582
Carbon disulfide	75-15-0	1.16	U	5.82	1.16	0.582
Carbon tetrachloride	56-23-5	1.16	U	5.82	1.16	0.582
Chlorobenzene	108-90-7	1.16	U	5.82	1.16	0.582
Chlorodibromomethane	124-48-1	1.16	U	5.82	1.16	0.582
Chloroethane	75-00-3	2.32	U	5.82	2.32	1.16
Chloroform	67-66-3	1.16	U	5.82	1.16	0.582
Chloromethane	74-87-3	4.66	Q	11.6	4.66	2.33
2-Chlorotoluene	95-49-8	1.16	U	5.82	1.16	0.582
4-Chlorotoluene	106-43-4	1.16	U	5.82	1.16	0.582
1,2-Dibromo-3-chloropropane	96-12-8	4.66	U	11.6	4.66	2.33
1,2-Dibromoethane	106-93-4	1.16	U	5.82	1.16	0.582
Dibromomethane	74-95-3	1.16	U	5.82	1.16	0.582
1,2-Dichlorobenzene	95-50-1	1.16	U	5.82	1.16	0.582
1,3-Dichlorobenzene	541-73-1	1.16	U	5.82	1.16	0.582
1,4-Dichlorobenzene	106-46-7	1.16	U	5.82	1.16	0.582
Dichlorodifluoromethane	75-71-8	2.32	U	5.82	2.32	1.16
1,1-Dichloroethane	75-34-3	2.32	U	5.82	2.32	1.16
1,2-Dichloroethane	107-06-2	1.16	U	5.82	1.16	0.582
1,1-Dichloroethene	75-35-4	1.16	U	5.82	1.16	0.582
cis-1,2-Dichloroethene	156-59-2	1.16	U	5.82	1.16	0.582

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Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.16	U	5.82	1.16	0.582
1,2-Dichloropropane	78-87-5	1.16	U	5.82	1.16	0.582
1,3-Dichloropropane	142-28-9	1.16	U	5.82	1.16	0.582
2,2-Dichloropropane	594-20-7	1.16	U	5.82	1.16	0.582
cis-1,3-Dichloropropene	10061-01-5	1.16	U	5.82	1.16	0.582
trans-1,3-Dichloropropene	10061-02-6	1.16	U	5.82	1.16	0.582
1,1-Dichloropropene	563-58-6	1.16	U	5.82	1.16	0.582
Ethylbenzene	100-41-4	1.16	U	5.82	1.16	0.582
2-Hexanone	591-78-6	5.82	U	11.6	5.82	2.91
Hexachlorobutadiene	87-68-3	1.16	U	5.82	1.16	0.582
Isopropylbenzene	98-82-8	1.16	U	5.82	1.16	0.582
p-Isopropyltoluene	99-87-6	1.16	U	5.82	1.16	0.582
4-Methyl-2-pentanone	108-10-1	5.82	Q	11.6	5.82	2.91
Methylene chloride	75-09-2	2.32	U	5.82	2.32	1.16
Naphthalene	91-20-3	1.16	U	5.82	1.16	0.582
n-Propylbenzene	103-65-1	1.16	U	5.82	1.16	0.582
Styrene	100-42-5	1.16	U	5.82	1.16	0.582
1,1,1,2-Tetrachloroethane	630-20-6	1.16	U	5.82	1.16	0.582
1,1,2,2-Tetrachloroethane	79-34-5	1.16	U	5.82	1.16	0.582
Tetrachloroethene	127-18-4	1.16	U	5.82	1.16	0.582
Toluene	108-88-3	1.16	U	5.82	1.16	0.582
1,2,3-Trichlorobenzene	87-61-6	1.16	U	5.82	1.16	0.582
1,2,4-Trichlorobenzene	120-82-1	1.16	U	5.82	1.16	0.582
1,1,1-Trichloroethane	71-55-6	1.16	U	5.82	1.16	0.582
1,1,2-Trichloroethane	79-00-5	1.16	U	5.82	1.16	0.582
Trichloroethene	79-01-6	1.16	U	5.82	1.16	0.582
Trichlorofluoromethane	75-69-4	2.32	U	5.82	2.32	1.16
1,2,3-Trichloropropane	96-18-4	2.32	U	5.82	2.32	1.16
1,2,4-Trimethylbenzene	95-63-6	1.16	U	5.82	1.16	0.582
1,3,5-Trimethylbenzene	108-67-8	1.16	U	5.82	1.16	0.582
Vinyl chloride	75-01-4	2.32	U	5.82	2.32	1.16
o-Xylene	95-47-6	1.16	U	5.82	1.16	0.582
m-,p-Xylene	179601-23-1	1.16	U	5.82	1.16	0.582

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.8	80	120	
1,2-Dichloroethane-d4	85.7	80	120	
Toluene-d8	103	85	115	
4-Bromofluorobenzene	103	85	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT14(10-10.5)140316FD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:09
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG561881	**Analyst:**	TMB	**Run Date:**	03/22/2016 19:43
Collect Date:	03/14/2016 13:15	**Dilution:**	1	**File ID:**	6M137953
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	90.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	9.15	J	23.5	11.8	5.88
Benzene	71-43-2	1.18	U	5.88	1.18	0.588
Bromobenzene	108-86-1	1.18	U	5.88	1.18	0.588
Bromochloromethane	74-97-5	2.36	U	5.88	2.36	1.18
Bromodichloromethane	75-27-4	1.18	U	5.88	1.18	0.588
Bromoform	75-25-2	1.18	U	5.88	1.18	0.588
Bromomethane	74-83-9	2.36	U	5.88	2.36	1.18
2-Butanone	78-93-3	5.88	U	11.8	5.88	2.94
n-Butylbenzene	104-51-8	1.18	U	5.88	1.18	0.588
sec-Butylbenzene	135-98-8	1.18	U	5.88	1.18	0.588
tert-Butylbenzene	98-06-6	1.18	U	5.88	1.18	0.588
Carbon disulfide	75-15-0	1.18	U	5.88	1.18	0.588
Carbon tetrachloride	56-23-5	1.18	U	5.88	1.18	0.588
Chlorobenzene	108-90-7	1.18	U	5.88	1.18	0.588
Chlorodibromomethane	124-48-1	1.18	U	5.88	1.18	0.588
Chloroethane	75-00-3	2.36	U	5.88	2.36	1.18
Chloroform	67-66-3	1.18	U	5.88	1.18	0.588
Chloromethane	74-87-3	4.70	Q	11.8	4.70	2.35
2-Chlorotoluene	95-49-8	1.18	U	5.88	1.18	0.588
4-Chlorotoluene	106-43-4	1.18	U	5.88	1.18	0.588
1,2-Dibromo-3-chloropropane	96-12-8	4.70	U	11.8	4.70	2.35
1,2-Dibromoethane	106-93-4	1.18	U	5.88	1.18	0.588
Dibromomethane	74-95-3	1.18	U	5.88	1.18	0.588
1,2-Dichlorobenzene	95-50-1	1.18	U	5.88	1.18	0.588
1,3-Dichlorobenzene	541-73-1	1.18	U	5.88	1.18	0.588
1,4-Dichlorobenzene	106-46-7	1.18	U	5.88	1.18	0.588
Dichlorodifluoromethane	75-71-8	2.36	U	5.88	2.36	1.18
1,1-Dichloroethane	75-34-3	2.36	U	5.88	2.36	1.18
1,2-Dichloroethane	107-06-2	1.18	U	5.88	1.18	0.588
1,1-Dichloroethene	75-35-4	1.18	U	5.88	1.18	0.588
cis-1,2-Dichloroethene	156-59-2	1.18	U	5.88	1.18	0.588

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.18	U	5.88	1.18	0.588
1,2-Dichloropropane	78-87-5	1.18	U	5.88	1.18	0.588
1,3-Dichloropropane	142-28-9	1.18	U	5.88	1.18	0.588
2,2-Dichloropropane	594-20-7	1.18	U	5.88	1.18	0.588
cis-1,3-Dichloropropene	10061-01-5	1.18	U	5.88	1.18	0.588
trans-1,3-Dichloropropene	10061-02-6	1.18	U	5.88	1.18	0.588
1,1-Dichloropropene	563-58-6	1.18	U	5.88	1.18	0.588
Ethylbenzene	100-41-4	1.18	U	5.88	1.18	0.588
2-Hexanone	591-78-6	5.88	U	11.8	5.88	2.94
Hexachlorobutadiene	87-68-3	1.18	U	5.88	1.18	0.588
Isopropylbenzene	98-82-8	1.18	U	5.88	1.18	0.588
p-Isopropyltoluene	99-87-6	1.18	U	5.88	1.18	0.588
4-Methyl-2-pentanone	108-10-1	5.88	Q	11.8	5.88	2.94
Methylene chloride	75-09-2	2.36	U	5.88	2.36	1.18
Naphthalene	91-20-3	1.18	U	5.88	1.18	0.588
n-Propylbenzene	103-65-1	1.18	U	5.88	1.18	0.588
Styrene	100-42-5	1.18	U	5.88	1.18	0.588
1,1,1,2-Tetrachloroethane	630-20-6	1.18	U	5.88	1.18	0.588
1,1,2,2-Tetrachloroethane	79-34-5	1.18	U	5.88	1.18	0.588
Tetrachloroethene	127-18-4	1.18	U	5.88	1.18	0.588
Toluene	108-88-3	1.18	U	5.88	1.18	0.588
1,2,3-Trichlorobenzene	87-61-6	1.18	U	5.88	1.18	0.588
1,2,4-Trichlorobenzene	120-82-1	1.18	U	5.88	1.18	0.588
1,1,1-Trichloroethane	71-55-6	1.18	U	5.88	1.18	0.588
1,1,2-Trichloroethane	79-00-5	1.18	U	5.88	1.18	0.588
Trichloroethene	79-01-6	1.18	U	5.88	1.18	0.588
Trichlorofluoromethane	75-69-4	2.36	U	5.88	2.36	1.18
1,2,3-Trichloropropane	96-18-4	2.36	U	5.88	2.36	1.18
1,2,4-Trimethylbenzene	95-63-6	0.941	J	5.88	1.18	0.588
1,3,5-Trimethylbenzene	108-67-8	1.18	U	5.88	1.18	0.588
Vinyl chloride	75-01-4	2.36	U	5.88	2.36	1.18
o-Xylene	95-47-6	1.18	U	5.88	1.18	0.588
m-,p-Xylene	179601-23-1	1.18	U	5.88	1.18	0.588

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.2	80	120	
1,2-Dichloroethane-d4	85.8	80	120	
Toluene-d8	103	85	115	
4-Bromofluorobenzene	105	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT14(10-10.5)140316FD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/23/2016 16:52
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 17:43
Collect Date:	03/14/2016 13:15	**Dilution:**	1	**File ID:**	6M137974
Sample Tag:	02	**Units:**	ug/kg	**Percent Solid:**	90.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.0	U	21.9	11.0	5.49
Benzene	71-43-2	1.10	U	5.49	1.10	0.549
Bromobenzene	108-86-1	1.10	U	5.49	1.10	0.549
Bromochloromethane	74-97-5	2.20	U	5.49	2.20	1.10
Bromodichloromethane	75-27-4	1.10	U	5.49	1.10	0.549
Bromoform	75-25-2	1.10	U	5.49	1.10	0.549
Bromomethane	74-83-9	2.20	U	5.49	2.20	1.10
2-Butanone	78-93-3	5.48	U	11.0	5.48	2.74
n-Butylbenzene	104-51-8	1.10	U	5.49	1.10	0.549
sec-Butylbenzene	135-98-8	1.10	U	5.49	1.10	0.549
tert-Butylbenzene	98-06-6	1.10	U	5.49	1.10	0.549
Carbon disulfide	75-15-0	1.10	U	5.49	1.10	0.549
Carbon tetrachloride	56-23-5	1.10	U	5.49	1.10	0.549
Chlorobenzene	108-90-7	1.10	U	5.49	1.10	0.549
Chlorodibromomethane	124-48-1	1.10	U	5.49	1.10	0.549
Chloroethane	75-00-3	2.20	U	5.49	2.20	1.10
Chloroform	67-66-3	1.10	U	5.49	1.10	0.549
Chloromethane	74-87-3	4.38	Q	11.0	4.38	2.19
2-Chlorotoluene	95-49-8	1.10	U	5.49	1.10	0.549
4-Chlorotoluene	106-43-4	1.10	U	5.49	1.10	0.549
1,2-Dibromo-3-chloropropane	96-12-8	4.38	U	11.0	4.38	2.19
1,2-Dibromoethane	106-93-4	1.10	U	5.49	1.10	0.549
Dibromomethane	74-95-3	1.10	U	5.49	1.10	0.549
1,2-Dichlorobenzene	95-50-1	1.10	U	5.49	1.10	0.549
1,3-Dichlorobenzene	541-73-1	1.10	U	5.49	1.10	0.549
1,4-Dichlorobenzene	106-46-7	1.10	U	5.49	1.10	0.549
Dichlorodifluoromethane	75-71-8	2.20	U	5.49	2.20	1.10
1,1-Dichloroethane	75-34-3	2.20	U	5.49	2.20	1.10
1,2-Dichloroethane	107-06-2	1.10	U	5.49	1.10	0.549
1,1-Dichloroethene	75-35-4	1.10	U	5.49	1.10	0.549
cis-1,2-Dichloroethene	156-59-2	1.10	U	5.49	1.10	0.549

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.10	U	5.49	1.10	0.549
1,2-Dichloropropane	78-87-5	1.10	U	5.49	1.10	0.549
1,3-Dichloropropane	142-28-9	1.10	U	5.49	1.10	0.549
2,2-Dichloropropane	594-20-7	1.10	U	5.49	1.10	0.549
cis-1,3-Dichloropropene	10061-01-5	1.10	U	5.49	1.10	0.549
trans-1,3-Dichloropropene	10061-02-6	1.10	U	5.49	1.10	0.549
1,1-Dichloropropene	563-58-6	1.10	U	5.49	1.10	0.549
Ethylbenzene	100-41-4	1.10	U	5.49	1.10	0.549
2-Hexanone	591-78-6	5.48	U	11.0	5.48	2.74
Hexachlorobutadiene	87-68-3	1.10	U	5.49	1.10	0.549
Isopropylbenzene	98-82-8	1.10	U	5.49	1.10	0.549
p-Isopropyltoluene	99-87-6	1.10	U	5.49	1.10	0.549
4-Methyl-2-pentanone	108-10-1	5.48	U	11.0	5.48	2.74
Methylene chloride	75-09-2	2.20	U	5.49	2.20	1.10
Naphthalene	91-20-3	1.10	Q	5.49	1.10	0.549
n-Propylbenzene	103-65-1	1.10	U	5.49	1.10	0.549
Styrene	100-42-5	1.10	U	5.49	1.10	0.549
1,1,1,2-Tetrachloroethane	630-20-6	1.10	U	5.49	1.10	0.549
1,1,2,2-Tetrachloroethane	79-34-5	1.10	U	5.49	1.10	0.549
Tetrachloroethene	127-18-4	1.10	U	5.49	1.10	0.549
Toluene	108-88-3	1.10	U	5.49	1.10	0.549
1,2,3-Trichlorobenzene	87-61-6	1.10	U	5.49	1.10	0.549
1,2,4-Trichlorobenzene	120-82-1	1.10	U	5.49	1.10	0.549
1,1,1-Trichloroethane	71-55-6	1.10	U	5.49	1.10	0.549
1,1,2-Trichloroethane	79-00-5	1.10	U	5.49	1.10	0.549
Trichloroethene	79-01-6	1.10	U	5.49	1.10	0.549
Trichlorofluoromethane	75-69-4	2.20	U	5.49	2.20	1.10
1,2,3-Trichloropropane	96-18-4	2.20	U	5.49	2.20	1.10
1,2,4-Trimethylbenzene	95-63-6	1.10	U	5.49	1.10	0.549
1,3,5-Trimethylbenzene	108-67-8	1.10	U	5.49	1.10	0.549
Vinyl chloride	75-01-4	2.20	U	5.49	2.20	1.10
o-Xylene	95-47-6	1.10	U	5.49	1.10	0.549
m-,p-Xylene	179601-23-1	1.10	U	5.49	1.10	0.549

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.6	80	120	
1,2-Dichloroethane-d4	90.3	80	120	
Toluene-d8	101	85	115	
4-Bromofluorobenzene	102	85	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT14(17-17.5)140316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:10
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG561881	**Analyst:**	TMB	**Run Date:**	03/22/2016 19:09
Collect Date:	03/14/2016 13:20	**Dilution:**	1	**File ID:**	6M137952
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	91.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.95	J	21.6	10.8	5.39
Benzene	71-43-2	1.08	U	5.39	1.08	0.539
Bromobenzene	108-86-1	1.08	U	5.39	1.08	0.539
Bromochloromethane	74-97-5	2.16	U	5.39	2.16	1.08
Bromodichloromethane	75-27-4	1.08	U	5.39	1.08	0.539
Bromoform	75-25-2	1.08	U	5.39	1.08	0.539
Bromomethane	74-83-9	2.16	U	5.39	2.16	1.08
2-Butanone	78-93-3	5.38	U	10.8	5.38	2.69
n-Butylbenzene	104-51-8	1.08	U	5.39	1.08	0.539
sec-Butylbenzene	135-98-8	1.08	U	5.39	1.08	0.539
tert-Butylbenzene	98-06-6	1.08	U	5.39	1.08	0.539
Carbon disulfide	75-15-0	1.08	U	5.39	1.08	0.539
Carbon tetrachloride	56-23-5	1.08	U	5.39	1.08	0.539
Chlorobenzene	108-90-7	1.08	U	5.39	1.08	0.539
Chlorodibromomethane	124-48-1	1.08	U	5.39	1.08	0.539
Chloroethane	75-00-3	2.16	U	5.39	2.16	1.08
Chloroform	67-66-3	1.08	U	5.39	1.08	0.539
Chloromethane	74-87-3	4.32	Q	10.8	4.32	2.16
2-Chlorotoluene	95-49-8	1.08	U	5.39	1.08	0.539
4-Chlorotoluene	106-43-4	1.08	U	5.39	1.08	0.539
1,2-Dibromo-3-chloropropane	96-12-8	4.32	U	10.8	4.32	2.16
1,2-Dibromoethane	106-93-4	1.08	U	5.39	1.08	0.539
Dibromomethane	74-95-3	1.08	U	5.39	1.08	0.539
1,2-Dichlorobenzene	95-50-1	1.08	U	5.39	1.08	0.539
1,3-Dichlorobenzene	541-73-1	1.08	U	5.39	1.08	0.539
1,4-Dichlorobenzene	106-46-7	1.08	U	5.39	1.08	0.539
Dichlorodifluoromethane	75-71-8	2.16	U	5.39	2.16	1.08
1,1-Dichloroethane	75-34-3	2.16	U	5.39	2.16	1.08
1,2-Dichloroethane	107-06-2	1.08	U	5.39	1.08	0.539
1,1-Dichloroethene	75-35-4	1.08	U	5.39	1.08	0.539
cis-1,2-Dichloroethene	156-59-2	1.08	U	5.39	1.08	0.539

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.08	U	5.39	1.08	0.539
1,2-Dichloropropane	78-87-5	1.08	U	5.39	1.08	0.539
1,3-Dichloropropane	142-28-9	1.08	U	5.39	1.08	0.539
2,2-Dichloropropane	594-20-7	1.08	U	5.39	1.08	0.539
cis-1,3-Dichloropropene	10061-01-5	1.08	U	5.39	1.08	0.539
trans-1,3-Dichloropropene	10061-02-6	1.08	U	5.39	1.08	0.539
1,1-Dichloropropene	563-58-6	1.08	U	5.39	1.08	0.539
Ethylbenzene	100-41-4	1.08	U	5.39	1.08	0.539
2-Hexanone	591-78-6	5.38	U	10.8	5.38	2.69
Hexachlorobutadiene	87-68-3	1.08	U	5.39	1.08	0.539
Isopropylbenzene	98-82-8	1.08	U	5.39	1.08	0.539
p-Isopropyltoluene	99-87-6	1.08	U	5.39	1.08	0.539
4-Methyl-2-pentanone	108-10-1	5.38	Q	10.8	5.38	2.69
Methylene chloride	75-09-2	2.16	U	5.39	2.16	1.08
Naphthalene	91-20-3	1.08	U	5.39	1.08	0.539
n-Propylbenzene	103-65-1	1.08	U	5.39	1.08	0.539
Styrene	100-42-5	1.08	U	5.39	1.08	0.539
1,1,1,2-Tetrachloroethane	630-20-6	1.08	U	5.39	1.08	0.539
1,1,2,2-Tetrachloroethane	79-34-5	1.08	U	5.39	1.08	0.539
Tetrachloroethene	127-18-4	1.08	U	5.39	1.08	0.539
Toluene	108-88-3	1.08	U	5.39	1.08	0.539
1,2,3-Trichlorobenzene	87-61-6	1.08	U	5.39	1.08	0.539
1,2,4-Trichlorobenzene	120-82-1	1.08	U	5.39	1.08	0.539
1,1,1-Trichloroethane	71-55-6	1.08	U	5.39	1.08	0.539
1,1,2-Trichloroethane	79-00-5	1.08	U	5.39	1.08	0.539
Trichloroethene	79-01-6	1.08	U	5.39	1.08	0.539
Trichlorofluoromethane	75-69-4	2.16	U	5.39	2.16	1.08
1,2,3-Trichloropropane	96-18-4	2.16	U	5.39	2.16	1.08
1,2,4-Trimethylbenzene	95-63-6	1.08	U	5.39	1.08	0.539
1,3,5-Trimethylbenzene	108-67-8	1.08	U	5.39	1.08	0.539
Vinyl chloride	75-01-4	2.16	U	5.39	2.16	1.08
o-Xylene	95-47-6	1.08	U	5.39	1.08	0.539
m-,p-Xylene	179601-23-1	1.08	U	5.39	1.08	0.539

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.1	80	120	
1,2-Dichloroethane-d4	87.5	80	120	
Toluene-d8	102	85	115	
4-Bromofluorobenzene	105	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT14(23-23.5)140316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/23/2016 09:01
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 18:15
Collect Date:	03/14/2016 13:25	**Dilution:**	1	**File ID:**	6M137975
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.9	J	25.4	12.7	6.35
Benzene	71-43-2	1.27	U	6.35	1.27	0.635
Bromobenzene	108-86-1	1.27	U	6.35	1.27	0.635
Bromochloromethane	74-97-5	2.54	U	6.35	2.54	1.27
Bromodichloromethane	75-27-4	1.27	U	6.35	1.27	0.635
Bromoform	75-25-2	1.27	U	6.35	1.27	0.635
Bromomethane	74-83-9	2.54	U	6.35	2.54	1.27
2-Butanone	78-93-3	6.34	U	12.7	6.34	3.17
n-Butylbenzene	104-51-8	1.27	U	6.35	1.27	0.635
sec-Butylbenzene	135-98-8	1.27	U	6.35	1.27	0.635
tert-Butylbenzene	98-06-6	1.27	U	6.35	1.27	0.635
Carbon disulfide	75-15-0	1.27	U	6.35	1.27	0.635
Carbon tetrachloride	56-23-5	1.27	U	6.35	1.27	0.635
Chlorobenzene	108-90-7	1.27	U	6.35	1.27	0.635
Chlorodibromomethane	124-48-1	1.27	U	6.35	1.27	0.635
Chloroethane	75-00-3	2.54	U	6.35	2.54	1.27
Chloroform	67-66-3	1.27	U	6.35	1.27	0.635
Chloromethane	74-87-3	5.08	Q	12.7	5.08	2.54
2-Chlorotoluene	95-49-8	1.27	U	6.35	1.27	0.635
4-Chlorotoluene	106-43-4	1.27	U	6.35	1.27	0.635
1,2-Dibromo-3-chloropropane	96-12-8	5.08	U	12.7	5.08	2.54
1,2-Dibromoethane	106-93-4	1.27	U	6.35	1.27	0.635
Dibromomethane	74-95-3	1.27	U	6.35	1.27	0.635
1,2-Dichlorobenzene	95-50-1	1.27	U	6.35	1.27	0.635
1,3-Dichlorobenzene	541-73-1	1.27	U	6.35	1.27	0.635
1,4-Dichlorobenzene	106-46-7	1.27	U	6.35	1.27	0.635
Dichlorodifluoromethane	75-71-8	2.54	U	6.35	2.54	1.27
1,1-Dichloroethane	75-34-3	2.54	U	6.35	2.54	1.27
1,2-Dichloroethane	107-06-2	1.27	U	6.35	1.27	0.635
1,1-Dichloroethene	75-35-4	1.27	U	6.35	1.27	0.635
cis-1,2-Dichloroethene	156-59-2	1.27	U	6.35	1.27	0.635

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.27	U	6.35	1.27	0.635
1,2-Dichloropropane	78-87-5	1.27	U	6.35	1.27	0.635
1,3-Dichloropropane	142-28-9	1.27	U	6.35	1.27	0.635
2,2-Dichloropropane	594-20-7	1.27	U	6.35	1.27	0.635
cis-1,3-Dichloropropene	10061-01-5	1.27	U	6.35	1.27	0.635
trans-1,3-Dichloropropene	10061-02-6	1.27	U	6.35	1.27	0.635
1,1-Dichloropropene	563-58-6	1.27	U	6.35	1.27	0.635
Ethylbenzene	100-41-4	1.27	U	6.35	1.27	0.635
2-Hexanone	591-78-6	6.34	U	12.7	6.34	3.17
Hexachlorobutadiene	87-68-3	1.27	U	6.35	1.27	0.635
Isopropylbenzene	98-82-8	1.27	U	6.35	1.27	0.635
p-Isopropyltoluene	99-87-6	1.27	U	6.35	1.27	0.635
4-Methyl-2-pentanone	108-10-1	6.34	U	12.7	6.34	3.17
Methylene chloride	75-09-2	2.54	U	6.35	2.54	1.27
Naphthalene	91-20-3	1.27	Q	6.35	1.27	0.635
n-Propylbenzene	103-65-1	1.27	U	6.35	1.27	0.635
Styrene	100-42-5	1.27	U	6.35	1.27	0.635
1,1,1,2-Tetrachloroethane	630-20-6	1.27	U	6.35	1.27	0.635
1,1,2,2-Tetrachloroethane	79-34-5	1.27	U	6.35	1.27	0.635
Tetrachloroethene	127-18-4	1.27	U	6.35	1.27	0.635
Toluene	108-88-3	1.27	U	6.35	1.27	0.635
1,2,3-Trichlorobenzene	87-61-6	1.27	U	6.35	1.27	0.635
1,2,4-Trichlorobenzene	120-82-1	1.27	U	6.35	1.27	0.635
1,1,1-Trichloroethane	71-55-6	1.27	U	6.35	1.27	0.635
1,1,2-Trichloroethane	79-00-5	1.27	U	6.35	1.27	0.635
Trichloroethene	79-01-6	1.27	U	6.35	1.27	0.635
Trichlorofluoromethane	75-69-4	2.54	U	6.35	2.54	1.27
1,2,3-Trichloropropane	96-18-4	2.54	U	6.35	2.54	1.27
1,2,4-Trimethylbenzene	95-63-6	0.752	J	6.35	1.27	0.635
1,3,5-Trimethylbenzene	108-67-8	1.27	U	6.35	1.27	0.635
Vinyl chloride	75-01-4	2.54	U	6.35	2.54	1.27
o-Xylene	95-47-6	1.27	U	6.35	1.27	0.635
m-,p-Xylene	179601-23-1	1.27	U	6.35	1.27	0.635

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.7	80	120	
1,2-Dichloroethane-d4	84.7	80	120	
Toluene-d8	104	85	115	
4-Bromofluorobenzene	112	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT15(5-5.5)140316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:12
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 18:48
Collect Date:	03/14/2016 16:40	**Dilution:**	1	**File ID:**	6M137976
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.1	U	22.3	11.1	5.57
Benzene	71-43-2	1.11	U	5.57	1.11	0.557
Bromobenzene	108-86-1	1.11	U	5.57	1.11	0.557
Bromochloromethane	74-97-5	2.22	U	5.57	2.22	1.11
Bromodichloromethane	75-27-4	1.11	U	5.57	1.11	0.557
Bromoform	75-25-2	1.11	U	5.57	1.11	0.557
Bromomethane	74-83-9	2.22	U	5.57	2.22	1.11
2-Butanone	78-93-3	5.58	U	11.1	5.58	2.79
n-Butylbenzene	104-51-8	1.11	U	5.57	1.11	0.557
sec-Butylbenzene	135-98-8	1.11	U	5.57	1.11	0.557
tert-Butylbenzene	98-06-6	1.11	U	5.57	1.11	0.557
Carbon disulfide	75-15-0	1.11	U	5.57	1.11	0.557
Carbon tetrachloride	56-23-5	1.11	U	5.57	1.11	0.557
Chlorobenzene	108-90-7	1.11	U	5.57	1.11	0.557
Chlorodibromomethane	124-48-1	1.11	U	5.57	1.11	0.557
Chloroethane	75-00-3	2.22	U	5.57	2.22	1.11
Chloroform	67-66-3	1.11	U	5.57	1.11	0.557
Chloromethane	74-87-3	4.46	Q	11.1	4.46	2.23
2-Chlorotoluene	95-49-8	1.11	U	5.57	1.11	0.557
4-Chlorotoluene	106-43-4	1.11	U	5.57	1.11	0.557
1,2-Dibromo-3-chloropropane	96-12-8	4.46	U	11.1	4.46	2.23
1,2-Dibromoethane	106-93-4	1.11	U	5.57	1.11	0.557
Dibromomethane	74-95-3	1.11	U	5.57	1.11	0.557
1,2-Dichlorobenzene	95-50-1	1.11	U	5.57	1.11	0.557
1,3-Dichlorobenzene	541-73-1	1.11	U	5.57	1.11	0.557
1,4-Dichlorobenzene	106-46-7	1.11	U	5.57	1.11	0.557
Dichlorodifluoromethane	75-71-8	2.22	U	5.57	2.22	1.11
1,1-Dichloroethane	75-34-3	2.22	U	5.57	2.22	1.11
1,2-Dichloroethane	107-06-2	1.11	U	5.57	1.11	0.557
1,1-Dichloroethene	75-35-4	1.11	U	5.57	1.11	0.557
cis-1,2-Dichloroethene	156-59-2	1.11	U	5.57	1.11	0.557

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.11	U	5.57	1.11	0.557
1,2-Dichloropropane	78-87-5	1.11	U	5.57	1.11	0.557
1,3-Dichloropropane	142-28-9	1.11	U	5.57	1.11	0.557
2,2-Dichloropropane	594-20-7	1.11	U	5.57	1.11	0.557
cis-1,3-Dichloropropene	10061-01-5	1.11	U	5.57	1.11	0.557
trans-1,3-Dichloropropene	10061-02-6	1.11	U	5.57	1.11	0.557
1,1-Dichloropropene	563-58-6	1.11	U	5.57	1.11	0.557
Ethylbenzene	100-41-4	1.11	U	5.57	1.11	0.557
2-Hexanone	591-78-6	5.58	U	11.1	5.58	2.79
Hexachlorobutadiene	87-68-3	1.11	U	5.57	1.11	0.557
Isopropylbenzene	98-82-8	1.11	U	5.57	1.11	0.557
p-Isopropyltoluene	99-87-6	1.11	U	5.57	1.11	0.557
4-Methyl-2-pentanone	108-10-1	5.58	U	11.1	5.58	2.79
Methylene chloride	75-09-2	2.22	U	5.57	2.22	1.11
Naphthalene	91-20-3	1.11	Q	5.57	1.11	0.557
n-Propylbenzene	103-65-1	1.11	U	5.57	1.11	0.557
Styrene	100-42-5	1.11	U	5.57	1.11	0.557
1,1,1,2-Tetrachloroethane	630-20-6	1.11	U	5.57	1.11	0.557
1,1,2,2-Tetrachloroethane	79-34-5	1.11	U	5.57	1.11	0.557
Tetrachloroethene	127-18-4	1.11	U	5.57	1.11	0.557
Toluene	108-88-3	1.11	U	5.57	1.11	0.557
1,2,3-Trichlorobenzene	87-61-6	1.11	U	5.57	1.11	0.557
1,2,4-Trichlorobenzene	120-82-1	1.11	U	5.57	1.11	0.557
1,1,1-Trichloroethane	71-55-6	1.11	U	5.57	1.11	0.557
1,1,2-Trichloroethane	79-00-5	1.11	U	5.57	1.11	0.557
Trichloroethene	79-01-6	1.11	U	5.57	1.11	0.557
Trichlorofluoromethane	75-69-4	2.22	U	5.57	2.22	1.11
1,2,3-Trichloropropane	96-18-4	2.22	U	5.57	2.22	1.11
1,2,4-Trimethylbenzene	95-63-6	1.11	U	5.57	1.11	0.557
1,3,5-Trimethylbenzene	108-67-8	1.11	U	5.57	1.11	0.557
Vinyl chloride	75-01-4	2.22	U	5.57	2.22	1.11
o-Xylene	95-47-6	1.11	U	5.57	1.11	0.557
m-,p-Xylene	179601-23-1	1.11	U	5.57	1.11	0.557

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.6	80	120	
1,2-Dichloroethane-d4	87.3	80	120	
Toluene-d8	102	85	115	
4-Bromofluorobenzene	104	85	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT15(12-12.5)140316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:13
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 19:21
Collect Date:	03/14/2016 16:41	**Dilution:**	1	**File ID:**	6M137977
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.4	U	24.9	12.4	6.22
Benzene	71-43-2	1.24	U	6.22	1.24	0.622
Bromobenzene	108-86-1	1.24	U	6.22	1.24	0.622
Bromochloromethane	74-97-5	2.48	U	6.22	2.48	1.24
Bromodichloromethane	75-27-4	1.24	U	6.22	1.24	0.622
Bromoform	75-25-2	1.24	U	6.22	1.24	0.622
Bromomethane	74-83-9	2.48	U	6.22	2.48	1.24
2-Butanone	78-93-3	6.22	U	12.4	6.22	3.11
n-Butylbenzene	104-51-8	1.24	U	6.22	1.24	0.622
sec-Butylbenzene	135-98-8	1.24	U	6.22	1.24	0.622
tert-Butylbenzene	98-06-6	1.24	U	6.22	1.24	0.622
Carbon disulfide	75-15-0	1.24	U	6.22	1.24	0.622
Carbon tetrachloride	56-23-5	1.24	U	6.22	1.24	0.622
Chlorobenzene	108-90-7	1.24	U	6.22	1.24	0.622
Chlorodibromomethane	124-48-1	1.24	U	6.22	1.24	0.622
Chloroethane	75-00-3	2.48	U	6.22	2.48	1.24
Chloroform	67-66-3	1.24	U	6.22	1.24	0.622
Chloromethane	74-87-3	4.98	Q	12.4	4.98	2.49
2-Chlorotoluene	95-49-8	1.24	U	6.22	1.24	0.622
4-Chlorotoluene	106-43-4	1.24	U	6.22	1.24	0.622
1,2-Dibromo-3-chloropropane	96-12-8	4.98	U	12.4	4.98	2.49
1,2-Dibromoethane	106-93-4	1.24	U	6.22	1.24	0.622
Dibromomethane	74-95-3	1.24	U	6.22	1.24	0.622
1,2-Dichlorobenzene	95-50-1	1.24	U	6.22	1.24	0.622
1,3-Dichlorobenzene	541-73-1	1.24	U	6.22	1.24	0.622
1,4-Dichlorobenzene	106-46-7	1.24	U	6.22	1.24	0.622
Dichlorodifluoromethane	75-71-8	2.48	U	6.22	2.48	1.24
1,1-Dichloroethane	75-34-3	2.48	U	6.22	2.48	1.24
1,2-Dichloroethane	107-06-2	1.24	U	6.22	1.24	0.622
1,1-Dichloroethene	75-35-4	1.24	U	6.22	1.24	0.622
cis-1,2-Dichloroethene	156-59-2	1.24	U	6.22	1.24	0.622

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.24	U	6.22	1.24	0.622
1,2-Dichloropropane	78-87-5	1.24	U	6.22	1.24	0.622
1,3-Dichloropropane	142-28-9	1.24	U	6.22	1.24	0.622
2,2-Dichloropropane	594-20-7	1.24	U	6.22	1.24	0.622
cis-1,3-Dichloropropene	10061-01-5	1.24	U	6.22	1.24	0.622
trans-1,3-Dichloropropene	10061-02-6	1.24	U	6.22	1.24	0.622
1,1-Dichloropropene	563-58-6	1.24	U	6.22	1.24	0.622
Ethylbenzene	100-41-4	1.24	U	6.22	1.24	0.622
2-Hexanone	591-78-6	6.22	U	12.4	6.22	3.11
Hexachlorobutadiene	87-68-3	1.24	U	6.22	1.24	0.622
Isopropylbenzene	98-82-8	1.24	U	6.22	1.24	0.622
p-Isopropyltoluene	99-87-6	1.24	U	6.22	1.24	0.622
4-Methyl-2-pentanone	108-10-1	6.22	U	12.4	6.22	3.11
Methylene chloride	75-09-2	2.48	U	6.22	2.48	1.24
Naphthalene	91-20-3	1.24	Q	6.22	1.24	0.622
n-Propylbenzene	103-65-1	1.24	U	6.22	1.24	0.622
Styrene	100-42-5	1.24	U	6.22	1.24	0.622
1,1,1,2-Tetrachloroethane	630-20-6	1.24	U	6.22	1.24	0.622
1,1,2,2-Tetrachloroethane	79-34-5	1.24	U	6.22	1.24	0.622
Tetrachloroethene	127-18-4	1.24	U	6.22	1.24	0.622
Toluene	108-88-3	1.24	U	6.22	1.24	0.622
1,2,3-Trichlorobenzene	87-61-6	1.24	U	6.22	1.24	0.622
1,2,4-Trichlorobenzene	120-82-1	1.24	U	6.22	1.24	0.622
1,1,1-Trichloroethane	71-55-6	1.24	U	6.22	1.24	0.622
1,1,2-Trichloroethane	79-00-5	1.24	U	6.22	1.24	0.622
Trichloroethene	79-01-6	1.24	U	6.22	1.24	0.622
Trichlorofluoromethane	75-69-4	2.48	U	6.22	2.48	1.24
1,2,3-Trichloropropane	96-18-4	2.48	U	6.22	2.48	1.24
1,2,4-Trimethylbenzene	95-63-6	1.24	U	6.22	1.24	0.622
1,3,5-Trimethylbenzene	108-67-8	1.24	U	6.22	1.24	0.622
Vinyl chloride	75-01-4	2.48	U	6.22	2.48	1.24
o-Xylene	95-47-6	1.24	U	6.22	1.24	0.622
m-,p-Xylene	179601-23-1	1.24	U	6.22	1.24	0.622

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.6	80	120	
1,2-Dichloroethane-d4	83.2	80	120	
Toluene-d8	102	85	115	
4-Bromofluorobenzene	102	85	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT15(21-21.5)140316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:14
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 19:54
Collect Date:	03/14/2016 16:42	**Dilution:**	1	**File ID:**	6M137978
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.9	U	23.8	11.9	5.95
Benzene	71-43-2	1.19	U	5.95	1.19	0.595
Bromobenzene	108-86-1	1.19	U	5.95	1.19	0.595
Bromochloromethane	74-97-5	2.38	U	5.95	2.38	1.19
Bromodichloromethane	75-27-4	1.19	U	5.95	1.19	0.595
Bromoform	75-25-2	1.19	U	5.95	1.19	0.595
Bromomethane	74-83-9	2.38	U	5.95	2.38	1.19
2-Butanone	78-93-3	5.94	U	11.9	5.94	2.97
n-Butylbenzene	104-51-8	1.19	U	5.95	1.19	0.595
sec-Butylbenzene	135-98-8	1.19	U	5.95	1.19	0.595
tert-Butylbenzene	98-06-6	1.19	U	5.95	1.19	0.595
Carbon disulfide	75-15-0	1.19	U	5.95	1.19	0.595
Carbon tetrachloride	56-23-5	1.19	U	5.95	1.19	0.595
Chlorobenzene	108-90-7	1.19	U	5.95	1.19	0.595
Chlorodibromomethane	124-48-1	1.19	U	5.95	1.19	0.595
Chloroethane	75-00-3	2.38	U	5.95	2.38	1.19
Chloroform	67-66-3	1.19	U	5.95	1.19	0.595
Chloromethane	74-87-3	4.76	Q	11.9	4.76	2.38
2-Chlorotoluene	95-49-8	1.19	U	5.95	1.19	0.595
4-Chlorotoluene	106-43-4	1.19	U	5.95	1.19	0.595
1,2-Dibromo-3-chloropropane	96-12-8	4.76	U	11.9	4.76	2.38
1,2-Dibromoethane	106-93-4	1.19	U	5.95	1.19	0.595
Dibromomethane	74-95-3	1.19	U	5.95	1.19	0.595
1,2-Dichlorobenzene	95-50-1	1.19	U	5.95	1.19	0.595
1,3-Dichlorobenzene	541-73-1	1.19	U	5.95	1.19	0.595
1,4-Dichlorobenzene	106-46-7	1.19	U	5.95	1.19	0.595
Dichlorodifluoromethane	75-71-8	2.38	U	5.95	2.38	1.19
1,1-Dichloroethane	75-34-3	2.38	U	5.95	2.38	1.19
1,2-Dichloroethane	107-06-2	1.19	U	5.95	1.19	0.595
1,1-Dichloroethene	75-35-4	1.19	U	5.95	1.19	0.595
cis-1,2-Dichloroethene	156-59-2	1.19	U	5.95	1.19	0.595

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Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.19	U	5.95	1.19	0.595
1,2-Dichloropropane	78-87-5	1.19	U	5.95	1.19	0.595
1,3-Dichloropropane	142-28-9	1.19	U	5.95	1.19	0.595
2,2-Dichloropropane	594-20-7	1.19	U	5.95	1.19	0.595
cis-1,3-Dichloropropene	10061-01-5	1.19	U	5.95	1.19	0.595
trans-1,3-Dichloropropene	10061-02-6	1.19	U	5.95	1.19	0.595
1,1-Dichloropropene	563-58-6	1.19	U	5.95	1.19	0.595
Ethylbenzene	100-41-4	1.19	U	5.95	1.19	0.595
2-Hexanone	591-78-6	5.94	U	11.9	5.94	2.97
Hexachlorobutadiene	87-68-3	1.19	U	5.95	1.19	0.595
Isopropylbenzene	98-82-8	1.19	U	5.95	1.19	0.595
p-Isopropyltoluene	99-87-6	1.19	U	5.95	1.19	0.595
4-Methyl-2-pentanone	108-10-1	5.94	U	11.9	5.94	2.97
Methylene chloride	75-09-2	2.38	U	5.95	2.38	1.19
Naphthalene	91-20-3	1.19	Q	5.95	1.19	0.595
n-Propylbenzene	103-65-1	1.19	U	5.95	1.19	0.595
Styrene	100-42-5	1.19	U	5.95	1.19	0.595
1,1,1,2-Tetrachloroethane	630-20-6	1.19	U	5.95	1.19	0.595
1,1,2,2-Tetrachloroethane	79-34-5	1.19	U	5.95	1.19	0.595
Tetrachloroethene	127-18-4	1.19	U	5.95	1.19	0.595
Toluene	108-88-3	1.19	U	5.95	1.19	0.595
1,2,3-Trichlorobenzene	87-61-6	1.19	U	5.95	1.19	0.595
1,2,4-Trichlorobenzene	120-82-1	1.19	U	5.95	1.19	0.595
1,1,1-Trichloroethane	71-55-6	1.19	U	5.95	1.19	0.595
1,1,2-Trichloroethane	79-00-5	1.19	U	5.95	1.19	0.595
Trichloroethene	79-01-6	1.19	U	5.95	1.19	0.595
Trichlorofluoromethane	75-69-4	2.38	U	5.95	2.38	1.19
1,2,3-Trichloropropane	96-18-4	2.38	U	5.95	2.38	1.19
1,2,4-Trimethylbenzene	95-63-6	1.19	U	5.95	1.19	0.595
1,3,5-Trimethylbenzene	108-67-8	1.19	U	5.95	1.19	0.595
Vinyl chloride	75-01-4	2.38	U	5.95	2.38	1.19
o-Xylene	95-47-6	1.19	U	5.95	1.19	0.595
m-,p-Xylene	179601-23-1	1.19	U	5.95	1.19	0.595

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.1	80	120	
1,2-Dichloroethane-d4	86.0	80	120	
Toluene-d8	101	85	115	
4-Bromofluorobenzene	103	85	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT15(23.5-24)140316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:14
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 20:27
Collect Date:	03/14/2016 16:43	**Dilution:**	1	**File ID:**	6M137979
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.8	U	23.5	11.8	5.88
Benzene	71-43-2	1.18	U	5.88	1.18	0.588
Bromobenzene	108-86-1	1.18	U	5.88	1.18	0.588
Bromochloromethane	74-97-5	2.36	U	5.88	2.36	1.18
Bromodichloromethane	75-27-4	1.18	U	5.88	1.18	0.588
Bromoform	75-25-2	1.18	U	5.88	1.18	0.588
Bromomethane	74-83-9	2.36	U	5.88	2.36	1.18
2-Butanone	78-93-3	5.88	U	11.8	5.88	2.94
n-Butylbenzene	104-51-8	1.18	U	5.88	1.18	0.588
sec-Butylbenzene	135-98-8	1.18	U	5.88	1.18	0.588
tert-Butylbenzene	98-06-6	1.18	U	5.88	1.18	0.588
Carbon disulfide	75-15-0	1.18	U	5.88	1.18	0.588
Carbon tetrachloride	56-23-5	1.18	U	5.88	1.18	0.588
Chlorobenzene	108-90-7	1.18	U	5.88	1.18	0.588
Chlorodibromomethane	124-48-1	1.18	U	5.88	1.18	0.588
Chloroethane	75-00-3	2.36	U	5.88	2.36	1.18
Chloroform	67-66-3	0.714	J	5.88	1.18	0.588
Chloromethane	74-87-3	4.70	Q	11.8	4.70	2.35
2-Chlorotoluene	95-49-8	1.18	U	5.88	1.18	0.588
4-Chlorotoluene	106-43-4	1.18	U	5.88	1.18	0.588
1,2-Dibromo-3-chloropropane	96-12-8	4.70	U	11.8	4.70	2.35
1,2-Dibromoethane	106-93-4	1.18	U	5.88	1.18	0.588
Dibromomethane	74-95-3	1.18	U	5.88	1.18	0.588
1,2-Dichlorobenzene	95-50-1	1.18	U	5.88	1.18	0.588
1,3-Dichlorobenzene	541-73-1	1.18	U	5.88	1.18	0.588
1,4-Dichlorobenzene	106-46-7	1.18	U	5.88	1.18	0.588
Dichlorodifluoromethane	75-71-8	2.36	U	5.88	2.36	1.18
1,1-Dichloroethane	75-34-3	2.36	U	5.88	2.36	1.18
1,2-Dichloroethane	107-06-2	3.58	J	5.88	1.18	0.588
1,1-Dichloroethene	75-35-4	1.18	U	5.88	1.18	0.588
cis-1,2-Dichloroethene	156-59-2	1.18	U	5.88	1.18	0.588

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.18	U	5.88	1.18	0.588
1,2-Dichloropropane	78-87-5	1.18	U	5.88	1.18	0.588
1,3-Dichloropropane	142-28-9	1.18	U	5.88	1.18	0.588
2,2-Dichloropropane	594-20-7	1.18	U	5.88	1.18	0.588
cis-1,3-Dichloropropene	10061-01-5	1.18	U	5.88	1.18	0.588
trans-1,3-Dichloropropene	10061-02-6	1.18	U	5.88	1.18	0.588
1,1-Dichloropropene	563-58-6	1.18	U	5.88	1.18	0.588
Ethylbenzene	100-41-4	1.18	U	5.88	1.18	0.588
2-Hexanone	591-78-6	5.88	U	11.8	5.88	2.94
Hexachlorobutadiene	87-68-3	1.18	U	5.88	1.18	0.588
Isopropylbenzene	98-82-8	1.18	U	5.88	1.18	0.588
p-Isopropyltoluene	99-87-6	1.18	U	5.88	1.18	0.588
4-Methyl-2-pentanone	108-10-1	5.88	U	11.8	5.88	2.94
Methylene chloride	75-09-2	2.36	U	5.88	2.36	1.18
Naphthalene	91-20-3	1.18	Q	5.88	1.18	0.588
n-Propylbenzene	103-65-1	1.18	U	5.88	1.18	0.588
Styrene	100-42-5	1.18	U	5.88	1.18	0.588
1,1,1,2-Tetrachloroethane	630-20-6	1.18	U	5.88	1.18	0.588
1,1,2,2-Tetrachloroethane	79-34-5	1.18	U	5.88	1.18	0.588
Tetrachloroethene	127-18-4	1.18	U	5.88	1.18	0.588
Toluene	108-88-3	1.18	U	5.88	1.18	0.588
1,2,3-Trichlorobenzene	87-61-6	1.18	U	5.88	1.18	0.588
1,2,4-Trichlorobenzene	120-82-1	1.18	U	5.88	1.18	0.588
1,1,1-Trichloroethane	71-55-6	1.18	U	5.88	1.18	0.588
1,1,2-Trichloroethane	79-00-5	1.18	U	5.88	1.18	0.588
Trichloroethene	79-01-6	58.8		5.88	1.18	0.588
Trichlorofluoromethane	75-69-4	2.36	U	5.88	2.36	1.18
1,2,3-Trichloropropane	96-18-4	2.36	U	5.88	2.36	1.18
1,2,4-Trimethylbenzene	95-63-6	1.18	U	5.88	1.18	0.588
1,3,5-Trimethylbenzene	108-67-8	1.18	U	5.88	1.18	0.588
Vinyl chloride	75-01-4	2.36	U	5.88	2.36	1.18
o-Xylene	95-47-6	1.18	U	5.88	1.18	0.588
m-,p-Xylene	179601-23-1	1.18	U	5.88	1.18	0.588

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.4	80	120	
1,2-Dichloroethane-d4	93.1	80	120	
Toluene-d8	99.6	85	115	
4-Bromofluorobenzene	103	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT15(26.5-27)140316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:15
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 21:00
Collect Date:	03/14/2016 16:45	**Dilution:**	1	**File ID:**	6M137980
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.8	U	25.6	12.8	6.39
Benzene	71-43-2	1.28	U	6.39	1.28	0.639
Bromobenzene	108-86-1	1.28	U	6.39	1.28	0.639
Bromochloromethane	74-97-5	2.56	U	6.39	2.56	1.28
Bromodichloromethane	75-27-4	1.28	U	6.39	1.28	0.639
Bromoform	75-25-2	1.28	U	6.39	1.28	0.639
Bromomethane	74-83-9	2.56	U	6.39	2.56	1.28
2-Butanone	78-93-3	6.38	U	12.8	6.38	3.19
n-Butylbenzene	104-51-8	1.28	U	6.39	1.28	0.639
sec-Butylbenzene	135-98-8	1.28	U	6.39	1.28	0.639
tert-Butylbenzene	98-06-6	1.28	U	6.39	1.28	0.639
Carbon disulfide	75-15-0	1.28	U	6.39	1.28	0.639
Carbon tetrachloride	56-23-5	1.28	U	6.39	1.28	0.639
Chlorobenzene	108-90-7	1.28	U	6.39	1.28	0.639
Chlorodibromomethane	124-48-1	1.28	U	6.39	1.28	0.639
Chloroethane	75-00-3	2.56	U	6.39	2.56	1.28
Chloroform	67-66-3	1.28	U	6.39	1.28	0.639
Chloromethane	74-87-3	5.12	Q	12.8	5.12	2.56
2-Chlorotoluene	95-49-8	1.28	U	6.39	1.28	0.639
4-Chlorotoluene	106-43-4	1.28	U	6.39	1.28	0.639
1,2-Dibromo-3-chloropropane	96-12-8	5.12	U	12.8	5.12	2.56
1,2-Dibromoethane	106-93-4	1.28	U	6.39	1.28	0.639
Dibromomethane	74-95-3	1.28	U	6.39	1.28	0.639
1,2-Dichlorobenzene	95-50-1	1.28	U	6.39	1.28	0.639
1,3-Dichlorobenzene	541-73-1	1.28	U	6.39	1.28	0.639
1,4-Dichlorobenzene	106-46-7	1.28	U	6.39	1.28	0.639
Dichlorodifluoromethane	75-71-8	2.56	U	6.39	2.56	1.28
1,1-Dichloroethane	75-34-3	2.56	U	6.39	2.56	1.28
1,2-Dichloroethane	107-06-2	1.11	J	6.39	1.28	0.639
1,1-Dichloroethene	75-35-4	1.28	U	6.39	1.28	0.639
cis-1,2-Dichloroethene	156-59-2	1.28	U	6.39	1.28	0.639

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Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.28	U	6.39	1.28	0.639
1,2-Dichloropropane	78-87-5	1.28	U	6.39	1.28	0.639
1,3-Dichloropropane	142-28-9	1.28	U	6.39	1.28	0.639
2,2-Dichloropropane	594-20-7	1.28	U	6.39	1.28	0.639
cis-1,3-Dichloropropene	10061-01-5	1.28	U	6.39	1.28	0.639
trans-1,3-Dichloropropene	10061-02-6	1.28	U	6.39	1.28	0.639
1,1-Dichloropropene	563-58-6	1.28	U	6.39	1.28	0.639
Ethylbenzene	100-41-4	1.28	U	6.39	1.28	0.639
2-Hexanone	591-78-6	6.38	U	12.8	6.38	3.19
Hexachlorobutadiene	87-68-3	1.28	U	6.39	1.28	0.639
Isopropylbenzene	98-82-8	1.28	U	6.39	1.28	0.639
p-Isopropyltoluene	99-87-6	1.28	U	6.39	1.28	0.639
4-Methyl-2-pentanone	108-10-1	6.38	U	12.8	6.38	3.19
Methylene chloride	75-09-2	2.56	U	6.39	2.56	1.28
Naphthalene	91-20-3	1.28	Q	6.39	1.28	0.639
n-Propylbenzene	103-65-1	1.28	U	6.39	1.28	0.639
Styrene	100-42-5	1.28	U	6.39	1.28	0.639
1,1,1,2-Tetrachloroethane	630-20-6	1.28	U	6.39	1.28	0.639
1,1,2,2-Tetrachloroethane	79-34-5	1.28	U	6.39	1.28	0.639
Tetrachloroethene	127-18-4	1.28	U	6.39	1.28	0.639
Toluene	108-88-3	1.28	U	6.39	1.28	0.639
1,2,3-Trichlorobenzene	87-61-6	1.28	U	6.39	1.28	0.639
1,2,4-Trichlorobenzene	120-82-1	1.28	U	6.39	1.28	0.639
1,1,1-Trichloroethane	71-55-6	1.28	U	6.39	1.28	0.639
1,1,2-Trichloroethane	79-00-5	1.28	U	6.39	1.28	0.639
Trichloroethene	79-01-6	18.9		6.39	1.28	0.639
Trichlorofluoromethane	75-69-4	2.56	U	6.39	2.56	1.28
1,2,3-Trichloropropane	96-18-4	2.56	U	6.39	2.56	1.28
1,2,4-Trimethylbenzene	95-63-6	1.28	U	6.39	1.28	0.639
1,3,5-Trimethylbenzene	108-67-8	1.28	U	6.39	1.28	0.639
Vinyl chloride	75-01-4	2.56	U	6.39	2.56	1.28
o-Xylene	95-47-6	1.28	U	6.39	1.28	0.639
m-,p-Xylene	179601-23-1	1.28	U	6.39	1.28	0.639

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	96.8	80	120	
1,2-Dichloroethane-d4	96.1	80	120	
Toluene-d8	99.5	85	115	
4-Bromofluorobenzene	102	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.
VOA Preparation/Preservation/Extraction Log

Batch #: WG561608
Analyst: AWE
Method: 5030B/5030C/5035
Run Date: 03/21/2016 08:07
Product: 8260
Purge and trap methanol COA18540
Purified Lab Sand Lot # COA18552

SAMPLE #	Fraction	Collected	Preserved	PCT-S	Tare Wt	Total Wt	Sample Wt	Water	MeOH	Vt	Comments
L16030861-01	A	03/14/16 12:32	03/21/16 08:07	82.5			4.72	5		5	
L16030861-02	A	03/14/16 13:15	03/21/16 08:09	89.3			4.81	5		5	
L16030861-03	A	03/14/16 13:15	03/21/16 08:09	90.4			4.70	5		5	
L16030861-04	A	03/14/16 13:20	03/21/16 08:10	91.0			5.10	5		5	
L16030861-05	A	03/14/16 13:25	03/21/16 08:11	79.9			4.52	5		5	
L16030861-06	A	03/14/16 16:40	03/21/16 08:12	82.5			5.44	5		5	
L16030861-07	A	03/14/16 16:41	03/21/16 08:13	85.0			4.73	5		5	
L16030861-08	A	03/14/16 16:42	03/21/16 08:14	82.9			5.07	5		5	
L16030861-09	A	03/14/16 16:43	03/21/16 08:14	81.2			5.24	5		5	
L16030861-10	A	03/14/16 16:45	03/21/16 08:15	79.1			4.95	5		5	
L16030863-01	A	03/15/16 09:20	03/21/16 08:17	79.3			4.96	5		5	
L16030863-02	A	03/15/16 09:20	03/21/16 08:17	79.3			5.34	5		5	
L16030863-03	A	03/15/16 09:20	03/21/16 08:18	79.3			4.54	5		5	
L16030863-04	A	03/15/16 09:25	03/21/16 08:19	86.1			4.97	5		5	
L16030863-05	A	03/15/16 10:35	03/21/16 08:19	81.2			4.68	5		5	
L16030863-06	A	03/15/16 10:40	03/21/16 08:20	79.6			5.07	5		5	
L16030863-07	A	03/15/16 10:45	03/21/16 08:20	77.7			4.79	5		5	
L16030863-08	A	03/15/16 11:50	03/21/16 08:21	84.2			5.41	5		5	
L16030863-09	A	03/15/16 11:50	03/21/16 08:22	83.5			5.14	5		5	
L16030863-10	A	03/15/16 11:55	03/21/16 08:23	78.8			4.83	5		5	
L16030863-11	A	03/15/16 12:00	03/21/16 08:23	80.4			5.03	5		5	
L16030863-12	A	03/15/16 12:30	03/21/16 08:25	83.0			5.05	5		5	
L16030863-13	A	03/15/16 12:45	03/21/16 08:25	78.8			5.10	5		5	
L16030863-14	A	03/15/16 13:00	03/21/16 08:26	82.4			5.30	5		5	
WG561608-01	A		03/21/16 08:07	82.5			4.72	5		5	
WG561608-02	A		03/21/16 08:07	82.5			5.02	5		5	
WG561608-03	A		03/21/16 08:08	82.5			5.24	5		5	

Comments:
1 = improperly sealed cap
2 = preserved out of hold
3 = effervesced
4 = preserved with NaHSO4
5 = preserved by freezing
6 = preserved in field

Analyst: Andrew Craig

VOA_EXT - Modified 05/22/2008
PDF ID: 4679635
Report generated: 03/24/2016 12:47

Microbac Laboratories Inc.
VOA Preparation/Preservation/Extraction Log

Batch #: WG562018
Analyst: AWE
Method: 5030B/5030C/5035
Run Date: 03/23/2016 09:01
Product: 826-VAP2
Purge and trap methanol COA18540
Purified Lab Sand Lot # COA18552

SAMPLE #	Fraction	Collected	Preserved	PCT-S	Tare Wt	Total Wt	Sample Wt	Water	MeOH	Vt	Comments
L16030861-05	A	03/14/16 13:25	03/23/16 09:01	79.9			4.93	5		5	
L16031066-09	A	03/17/16 00:00	03/23/16 09:02	80.1			5.30	5		5	
L16031066-10	A	03/17/16 00:00	03/23/16 09:03	90.8			4.89	5		5	

Comments:
1 = improperly sealed cap
2 = preserved out of hold
3 = effervesced
4 = preserved with NaHSO4
5 = preserved by freezing
6 = preserved in field

Analyst: Andrew Gaig

VOA_EXT - Modified 05/22/2008
PDF ID: 4684031
Report generated: 03/23/2016 09:03

Microbac Laboratories Inc.
VOA Preparation/Preservation/Extraction Log

Batch #: WG562140
Analyst: AWE
Method: 5030B/5030C/5035
Run Date: 03/23/2016 16:52
Product: 826-SPE
Purge and trap methanol COA18540
Purified Lab Sand Lot # COA18552

SAMPLE #	Fraction	Collected	Preserved	PCT-S	Tare Wt	Total Wt	Sample Wt	Water	MeOH	Vt	Comments
L16030861-03	A	03/14/16 13:15	03/23/16 16:52	90.4			5.04	5		5	
L16030965-02	A	03/16/16 06:00	03/23/16 15:09	76.8			5.02	5		5	
L16030974-01	A	03/16/16 10:35	03/23/16 15:04	84.0	34.71	39.05	4.34	5		5	
L16030974-02	A	03/16/16 10:40	03/23/16 15:04	87.2	36.45	42.08	5.63	5		5	
L16030974-03	A	03/16/16 10:45	03/23/16 15:05	87.6	35.76	41.36	5.60	5		5	
L16030974-04	A	03/16/16 10:50	03/23/16 15:05	87.2	35.93	40.00	4.07	5		5	
L16030974-05	A	03/16/16 10:55	03/23/16 15:06	87.3	34.66	40.16	5.50	5		5	
L16030974-06	A	03/16/16 11:00	03/23/16 15:06	89.3	34.85	39.41	4.56	5		5	
L16030974-07	A	03/16/16 11:05	03/23/16 15:06	86.9	35.87	39.56	3.69	5		5	
L16030974-08	A	03/16/16 11:10	03/23/16 15:07	87.0	35.71	41.05	5.34	5		5	

Comments:
1 = improperly sealed cap
2 = preserved out of hold
3 = effervesced
4 = preserved with NaHSO4
5 = preserved by freezing
6 = preserved in field

Analyst: Andrew Casey

VOA_EXT - Modified 05/22/2008
PDF ID: 4686102
Report generated: 03/23/2016 16:54

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 022616
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Method: 8260C SOP: MSV01-C Rev: 2
Maintenance Log ID:

Internal Standard: STD74756 Surrogate Standard: STD74756
CCV: STD74897 LCS: STD74755 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG558920

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M137521	RINSE	NA	7	1		02/26/16 12:22
6M137522	WG558920-01 50ng BFB STD 8260	NA	7	1	STD74606	02/26/16 13:16
6M137523	WG558920-02 0.5ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 13:41
6M137524	WG558920-03 1ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 14:13
6M137525	WG558920-04 2ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 14:46
6M137526	WG558920-05 5ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 15:26
6M137527	WG558920-06 10ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 15:58
6M137528	WG558920-07 20ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 16:30
6M137529	WG558920-08 50ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 17:03
6M137530	WG558920-09 100ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 17:35
6M137531	WG558920-10 200ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 18:07
6M137532	WG558920-11 300ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 18:39
6M137533	RINSE	NA	7	1		02/26/16 19:11
6M137534	RINSE	NA	7	1		02/26/16 19:43
6M137535	WG558920-12 50ug/Kg ALT SRC STD 826	NA	7	1	STD74755	02/26/16 20:15
6M137536	RINSE	NA	7	1		02/26/16 20:48

Comments

Seq.	Rerun	Dil.	Reason	Analytes
15				
File ID: 6M137535				
Surrogates are spiked at 25 not 50.				

Approved: March 02, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 032216
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75149 Surrogate Standard: STD75149
CCV: STD75238 LCS: STD75209 MS/MSD: STD75209

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG561881

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M137936	RINSE	NA	7	1		03/22/16 10:09
6M137937	RINSE	NA	7	1		03/22/16 10:52
6M137938	WG561879-01 50ng BFB STD 8260	NA	7	1	STD75004	03/22/16 11:26
6M137939	WG561879-02 50ug/Kg CCV STD 8260	NA	7	1	STD75238	03/22/16 11:51
6M137940	WG000000-01 100ug/Kg A9 CCV STD 826	NA	7	1	STD74831	03/22/16 12:35
6M137941	WG561881-01 VBLK0322 BLANK STD 826	NA	7	1		03/22/16 13:08
6M137942	L16030196-09 A 826-REF-BLK	NA	7	1		03/22/16 13:40
6M137943	L16030196-08 A 826-REF-BLK	NA	7	1		03/22/16 14:12
6M137944	L16030196-07 B 826-REF-BLK A1	NA	7	1		03/22/16 14:45
6M137945	L16030196-06 B 826-REF-BLK A1	NA	7	1		03/22/16 15:19
6M137946	WG561881-02 20ug/Kg LCS STD 8260	NA	7	1	STD75209	03/22/16 15:52
6M137947	WG561608-02 MS 861-01 8260 5.02g	NA	7	1	STD75209	03/22/16 16:24
6M137948	WG561608-03 MSD 861-01 8260 5.24g	NA	7	1	STD75209	03/22/16 16:57
6M137949	L16030813-10 B 826-BETX 6.29g	NA	7	1		03/22/16 17:30
6M137950	L16030813-12 B 826-BETX 6.30g	NA	7	1		03/22/16 18:03
6M137951	L16030861-05 8260 4.52g	NA	7	1		03/22/16 18:37
6M137952	L16030861-04 8260 5.10g	NA	7	1		03/22/16 19:09
6M137953	L16030861-03 8260 4.70g	NA	7	1		03/22/16 19:43
6M137954	L16030861-02 8260 4.81g	NA	7	1		03/22/16 20:16
6M137955	L16030861-01 8260 4.72g	NA	7	1		03/22/16 20:49
6M137956	L16031066-09 826-VAP2 5.04g P1	NA	7	1		03/22/16 21:22
6M137957	L16031066-06 826-VAP2 4.66g	NA	7	1		03/22/16 21:55
6M137958	L16031066-08 826-VAP2 4.70g	NA	7	1		03/22/16 22:27
6M137959	L16031066-01 826-VAP2 4.76g	NA	7	1		03/22/16 23:00
6M137960	L16031066-10 5X 826-VAP2 1.05g P1	NA	7	1		03/22/16 23:33
6M137961	RINSE	NA	7	1		03/23/16 00:06
6M137962	RINSE	NA	7	1		03/23/16 00:38

Comments

Seq.	Rerun	Dil.	Reason	Analytes
5				
File ID: 6M137940				
Not needed, DNR.				

Approved: March 24, 2016
Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 032216
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75149 Surrogate Standard: STD75149
CCV: STD75238 LCS: STD75209 MS/MSD: STD75209

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG561881

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
14	X	100	Surrogate standard failure	
File ID: 6M137949				
Changed the lid because it had sample in it.				
15	X	100	Internal standard and surrogate standard failure	
File ID: 6M137950				
Benzene wa also over the ical.				
16	X	1	Carry-over contamination	
File ID: 6M137951				
Possible 124-tmb carry over, DNR.				
21	X	1	Internal standard failure	
File ID: 6M137956				
Vial leaked?				
25	X	1	Missed Tune	
File ID: 6M137960				
Use for prelims.				

Approved: March 24, 2016
Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 032316
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75149 Surrogate Standard: STD75149
CCV: STD75238 LCS: STD75209 MS/MSD: STD75209

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG562075

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M137963	WG562074-01 50ng BFB STD 8260	NA	7	1	STD75004	03/23/16 11:50
6M137964	WG562074-02 50ug/Kg CCV STD 8260	NA	7	1	STD75238	03/23/16 12:15
6M137965	WG562074-02 50ug/Kg CCV STD 8260	NA	7	1	STD75238	03/23/16 12:47
6M137966	WG000000-01 100ug/Kg a9 CCV STD 826	NA	7	1	STD74843	03/23/16 13:20
6M137967	WG562075-01 VBLK0323 BLANK STD 826	NA	7	1		03/23/16 13:53
6M137968	WG562075-02 20ug/Kg LCS STD 8260	NA	7	1	STD75209	03/23/16 14:26
6M137969	L16030863-02 MS 8260 5.34g	NA	7	1	STD75209	03/23/16 14:59
6M137970	L16030863-03 MSD 8260 4.54g	NA	7	1	STD75209	03/23/16 15:32
6M137971	RINSE	NA	7	1		03/23/16 16:04
6M137972	L16031066-09 826-VAP2 5.30g	NA	7	1		03/23/16 16:37
6M137973	L16030863-01 REF 8260 4.96g	NA	7	1		03/23/16 17:10
6M137974	L16030861-03 8260 5.04g	NA	7	1		03/23/16 17:43
6M137975	L16030861-05 8260 4.93g	NA	7	1		03/23/16 18:15
6M137976	L16030861-06 8260 5.44g	NA	7	1		03/23/16 18:48
6M137977	L16030861-07 8260 4.73g	NA	7	1		03/23/16 19:21
6M137978	L16030861-08 8260 5.07g	NA	7	1		03/23/16 19:54
6M137979	L16030861-09 8260 5.24g	NA	7	1		03/23/16 20:27
6M137980	L16030861-10 8260 4.95g	NA	7	1		03/23/16 21:00
6M137981	L16030863-04 8260 4.97g	NA	7	1		03/23/16 21:32
6M137982	L16030863-05 8260 4.68g	NA	7	1		03/23/16 22:05
6M137983	L16030863-06 8260 5.07g	NA	7	1		03/23/16 22:38
6M137984	L16030863-07 8260 4.79g	NA	7	1		03/23/16 23:10
6M137985	L16031066-10 826-VAP2 4.89g	NA	7	1		03/23/16 23:43
6M137986	RINSE	NA	7	1		03/24/16 00:16
6M137987	RINSE	NA	7	1		03/24/16 00:48

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 6M137964				
			Acetone was high. DNR.	
4				
File ID: 6M137966				

Approved: March 24, 2016

Sarah Vandenberg

Microbac

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Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS6	Dataset:	032316		
Analyst1:	TMB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	23
Method:	OVAP	SOP:	MSV01/PAT01	Rev:	0
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:					

Internal Standard: STD75149 Surrogate Standard: STD75149

CCV: STD75238 LCS: STD75209 MS/MSD: STD75209

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG562075

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			Not needed. DNR.	
15	X	1	Carry-over contamination	
File ID: 6M137975				
	Possible carry over of 124-tmb.			

Approved: March 24, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Data Checklist

Date: 26-FEB-2016
Analyst: TMB
Analyst: NA
Method: 8260B/C
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 73548
Analytical Workgroups: WG558920

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	NA
TCL Hits	NA
Spectra of TCL Hits	NA
Surrogates	NA
Internal Standards Criteria	NA
Library Searches	NA
Calculations & Correct Factors	NA
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
29-FEB-2016
Tiffany Bailey

Secondary Reviewer:
02-MAR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-02-2016 12:31:18

Microbac Laboratories Inc.

Data Checklist

Date: 22-MAR-2016
Analyst: TMB
Analyst: NA
Method: 8260B/OVAP
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 74011
Analytical Workgroups: WG561881

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
23-MAR-2016
Tiffany Bailey

Secondary Reviewer:
24-MAR-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-24-2016 11:26:52

Microbac Laboratories Inc.

Data Checklist

Date: 23-MAR-2016
Analyst: TMB
Analyst: NA
Method: 8260B/OVAP
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 74013
Analytical Workgroups: WG562075

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
24-MAR-2016
Tiffany Bailey

Secondary Reviewer:
24-MAR-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-24-2016 13:48:21

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG561881

Login Number: L16030861

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18DPT14(5-5.5)140316	01	03/14/16					03/21/2016	6.8	14		03/22/16	8.3	14	
18DPT14(10-10.5)140316	02	03/14/16					03/21/2016	6.8	14		03/22/16	8.3	14	
18DPT14(10-10.5)140316FD	03	03/14/16					03/21/2016	6.8	14		03/22/16	8.3	14	
18DPT14(17-17.5)140316	04	03/14/16					03/21/2016	6.8	14		03/22/16	8.2	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4686001
Report generated 03/25/2016 12:16

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG562075

Login Number: L16030861

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18DPT14(10-10.5)140316FD	03	03/14/16					03/23/2016	9.2	14		03/23/16	9.2	14	
18DPT14(23-23.5)140316	05	03/14/16					03/23/2016	8.8	14		03/23/16	9.2	14	
18DPT15(5-5.5)140316	06	03/14/16					03/21/2016	6.6	14		03/23/16	9.1	14	
18DPT15(12-12.5)140316	07	03/14/16					03/21/2016	6.6	14		03/23/16	9.1	14	
18DPT15(21-21.5)140316	08	03/14/16					03/21/2016	6.6	14		03/23/16	9.1	14	
18DPT15(23.5-24)140316	09	03/14/16					03/21/2016	6.6	14		03/23/16	9.2	14	
18DPT15(26.5-27)140316	10	03/14/16					03/21/2016	6.6	14		03/23/16	9.2	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4686001
Report generated 03/25/2016 12:16

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16030861
Instrument Id: HPMS6
Workgroup (AAB#): WG561881

Method: 8260
CAL ID: HPMS6-26-FEB-16
Matrix: Soil

Sample Number	Dilution	Tag	1	2	3	4
L16030861-01	1.00	01	89.8	93.7	101	101
L16030861-02	1.00	01	85.7	91.8	103	103
L16030861-03	1.00	01	85.8	92.2	105	103
L16030861-04	1.00	01	87.5	93.1	105	102
WG561881-01	1.00	01	88.3	94.3	102	101
WG561881-02	1.00	01	88.0	96.1	101	102

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	80	-	120
2 - Dibromofluoromethane	80	-	120
3 - 4-Bromofluorobenzene	85	-	120
4 - Toluene-d8	85	-	115

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4686012
Report generated: 03/25/2016 12:16

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16030861
Instrument Id: HPMS6
Workgroup (AAB#): WG562075

Method: 8260
CAL ID: HPMS6-26-FEB-16
Matrix: Soil

Sample Number	Dilution	Tag	1	2	3	4
L16030861-03	1.00	02	90.3	95.6	102	101
L16030861-05	1.00	01	84.7	92.7	112	104
L16030861-06	1.00	01	87.3	94.6	104	102
L16030861-07	1.00	01	83.2	91.6	102	102
L16030861-08	1.00	01	86.0	94.1	103	101
L16030861-09	1.00	01	93.1	95.4	103	99.6
L16030861-10	1.00	01	96.1	96.8	102	99.5
WG562075-01	1.00	01	90.5	94.6	103	101
WG562075-02	1.00	01	87.3	95.2	100	101

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	80	-	120
2 - Dibromofluoromethane	80	-	120
3 - 4-Bromofluorobenzene	85	-	120
4 - Toluene-d8	85	-	115

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4686012
Report generated: 03/25/2016 12:16

METHOD BLANK SUMMARY

Login Number: L16030861
Blank File ID: 6M137941
Prep Date: 03/22/16 13:08
Analyzed Date: 03/22/16 13:08
Analyst: TMB

Work Group: WG561881
Blank Sample ID: WG561881-01
Instrument ID: HPMS6
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG561881-02	6M137946	03/22/16 15:52	01
18DPT14(17-17.5)140316	L16030861-04	6M137952	03/22/16 19:09	01
18DPT14(10-10.5)140316FD	L16030861-03	6M137953	03/22/16 19:43	01
18DPT14(10-10.5)140316	L16030861-02	6M137954	03/22/16 20:16	01
18DPT14(5-5.5)140316	L16030861-01	6M137955	03/22/16 20:49	01

Report Name: BLANK_SUMMARY
PDF File ID: 4689205
Report generated 03/25/2016 12:16

METHOD BLANK SUMMARY

Login Number: L16030861
Blank File ID: 6M137967
Prep Date: 03/23/16 13:53
Analyzed Date: 03/23/16 13:53
Analyst: TMB

Work Group: WG562075
Blank Sample ID: WG562075-01
Instrument ID: HPMS6
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG562075-02	6M137968	03/23/16 14:26	01
18DPT14(10-10.5)140316FD	L16030861-03	6M137974	03/23/16 17:43	02
18DPT14(23-23.5)140316	L16030861-05	6M137975	03/23/16 18:15	01
18DPT15(5-5.5)140316	L16030861-06	6M137976	03/23/16 18:48	01
18DPT15(12-12.5)140316	L16030861-07	6M137977	03/23/16 19:21	01
18DPT15(21-21.5)140316	L16030861-08	6M137978	03/23/16 19:54	01
18DPT15(23.5-24)140316	L16030861-09	6M137979	03/23/16 20:27	01
18DPT15(26.5-27)140316	L16030861-10	6M137980	03/23/16 21:00	01

Report Name: BLANK_SUMMARY
PDF File ID: 4689205
Report generated 03/25/2016 12:16

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16030861 Prep Date: 03/22/16 13:08 Sample ID: WG561881-01
Instrument ID: HPMS6 Run Date: 03/22/16 13:08 Prep Method: 5030B/5030C/503
File ID: 6M137941 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG561881 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS6-26-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	5.00	20.0	5.00	1	U
Benzene	0.500	5.00	0.500	1	U
Bromobenzene	0.500	5.00	0.500	1	U
Bromochloromethane	1.00	5.00	1.00	1	U
Bromodichloromethane	0.500	5.00	0.500	1	U
Bromoform	0.500	5.00	0.500	1	U
Bromomethane	1.00	5.00	1.00	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.500	5.00	0.500	1	U
sec-Butylbenzene	0.500	5.00	0.500	1	U
tert-Butylbenzene	0.500	5.00	0.500	1	U
Carbon disulfide	0.500	5.00	0.500	1	U
Carbon tetrachloride	0.500	5.00	0.500	1	U
Chlorobenzene	0.500	5.00	0.500	1	U
Chlorodibromomethane	0.500	5.00	0.500	1	U
Chloroethane	1.00	5.00	1.00	1	U
Chloroform	0.500	5.00	0.500	1	U
Chloromethane	2.00	10.0	2.00	1	U
2-Chlorotoluene	0.500	5.00	0.500	1	U
4-Chlorotoluene	0.500	5.00	0.500	1	U
1,2-Dibromo-3-chloropropane	2.00	10.0	2.00	1	U
1,2-Dibromoethane	0.500	5.00	0.500	1	U
Dibromomethane	0.500	5.00	0.500	1	U
1,2-Dichlorobenzene	0.500	5.00	0.500	1	U
1,3-Dichlorobenzene	0.500	5.00	0.500	1	U
1,4-Dichlorobenzene	0.500	5.00	0.500	1	U
Dichlorodifluoromethane	1.00	5.00	1.00	1	U
1,1-Dichloroethane	1.00	5.00	1.00	1	U
1,2-Dichloroethane	0.500	5.00	0.500	1	U
1,1-Dichloroethene	0.500	5.00	0.500	1	U
cis-1,2-Dichloroethene	0.500	5.00	0.500	1	U
trans-1,2-Dichloroethene	0.500	5.00	0.500	1	U
1,2-Dichloropropane	0.500	5.00	0.500	1	U
1,3-Dichloropropane	0.500	5.00	0.500	1	U
2,2-Dichloropropane	0.500	5.00	0.500	1	U
cis-1,3-Dichloropropene	0.500	5.00	0.500	1	U
trans-1,3-Dichloropropene	0.500	5.00	0.500	1	U
1,1-Dichloropropene	0.500	5.00	0.500	1	U
Ethylbenzene	0.500	5.00	0.500	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.500	5.00	0.500	1	U
Isopropylbenzene	0.500	5.00	0.500	1	U

Report Name: BLANK
PDF ID: 4689206
25-MAR-2016 12:16

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16030861 Prep Date: 03/22/16 13:08 Sample ID: WG561881-01
Instrument ID: HPMS6 Run Date: 03/22/16 13:08 Prep Method: 5030B/5030C/503
File ID: 6M137941 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG561881 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS6-26-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.500	5.00	0.500	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	1.00	5.00	1.00	1	U
Naphthalene	0.500	5.00	0.500	1	U
n-Propylbenzene	0.500	5.00	0.500	1	U
Styrene	0.500	5.00	0.500	1	U
1,1,1,2-Tetrachloroethane	0.500	5.00	0.500	1	U
1,1,2,2-Tetrachloroethane	0.500	5.00	0.500	1	U
Tetrachloroethene	0.500	5.00	0.500	1	U
Toluene	0.500	5.00	0.500	1	U
1,2,3-Trichlorobenzene	0.500	5.00	0.500	1	U
1,2,4-Trichlorobenzene	0.500	5.00	0.500	1	U
1,1,1-Trichloroethane	0.500	5.00	0.500	1	U
1,1,2-Trichloroethane	0.500	5.00	0.500	1	U
Trichloroethene	0.500	5.00	0.500	1	U
Trichlorofluoromethane	1.00	5.00	1.00	1	U
1,2,3-Trichloropropane	1.00	5.00	1.00	1	U
1,2,4-Trimethylbenzene	0.500	5.00	0.586	1	J
1,3,5-Trimethylbenzene	0.500	5.00	0.500	1	U
Vinyl chloride	1.00	5.00	1.00	1	U
o-Xylene	0.500	5.00	0.500	1	U
m-,p-Xylene	0.500	5.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	94.3	80 - 120	PASS
1,2-Dichloroethane-d4	88.3	80 - 120	PASS
Toluene-d8	101	85 - 115	PASS
4-Bromofluorobenzene	102	85 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4689206
25-MAR-2016 12:16

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16030861 Prep Date: 03/23/16 13:53 Sample ID: WG562075-01
Instrument ID: HPMS6 Run Date: 03/23/16 13:53 Prep Method: 5030B/5030C/503
File ID: 6M137967 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG562075 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS6-26-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	5.00	20.0	5.00	1	U
Benzene	0.500	5.00	0.500	1	U
Bromobenzene	0.500	5.00	0.500	1	U
Bromochloromethane	1.00	5.00	1.00	1	U
Bromodichloromethane	0.500	5.00	0.500	1	U
Bromoform	0.500	5.00	0.500	1	U
Bromomethane	1.00	5.00	1.00	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.500	5.00	0.500	1	U
sec-Butylbenzene	0.500	5.00	0.500	1	U
tert-Butylbenzene	0.500	5.00	0.500	1	U
Carbon disulfide	0.500	5.00	0.500	1	U
Carbon tetrachloride	0.500	5.00	0.500	1	U
Chlorobenzene	0.500	5.00	0.500	1	U
Chlorodibromomethane	0.500	5.00	0.500	1	U
Chloroethane	1.00	5.00	1.00	1	U
Chloroform	0.500	5.00	0.500	1	U
Chloromethane	2.00	10.0	2.00	1	U
2-Chlorotoluene	0.500	5.00	0.500	1	U
4-Chlorotoluene	0.500	5.00	0.500	1	U
1,2-Dibromo-3-chloropropane	2.00	10.0	2.00	1	U
1,2-Dibromoethane	0.500	5.00	0.500	1	U
Dibromomethane	0.500	5.00	0.500	1	U
1,2-Dichlorobenzene	0.500	5.00	0.500	1	U
1,3-Dichlorobenzene	0.500	5.00	0.500	1	U
1,4-Dichlorobenzene	0.500	5.00	0.500	1	U
Dichlorodifluoromethane	1.00	5.00	1.00	1	U
1,1-Dichloroethane	1.00	5.00	1.00	1	U
1,2-Dichloroethane	0.500	5.00	0.500	1	U
1,1-Dichloroethene	0.500	5.00	0.500	1	U
cis-1,2-Dichloroethene	0.500	5.00	0.500	1	U
trans-1,2-Dichloroethene	0.500	5.00	0.500	1	U
1,2-Dichloropropane	0.500	5.00	0.500	1	U
1,3-Dichloropropane	0.500	5.00	0.500	1	U
2,2-Dichloropropane	0.500	5.00	0.500	1	U
cis-1,3-Dichloropropene	0.500	5.00	0.500	1	U
trans-1,3-Dichloropropene	0.500	5.00	0.500	1	U
1,1-Dichloropropene	0.500	5.00	0.500	1	U
Ethylbenzene	0.500	5.00	0.500	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.500	5.00	0.500	1	U
Isopropylbenzene	0.500	5.00	0.500	1	U

Report Name:BLANK
PDF ID: 4689206
25-MAR-2016 12:16

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16030861 Prep Date: 03/23/16 13:53 Sample ID: WG562075-01
Instrument ID: HPMS6 Run Date: 03/23/16 13:53 Prep Method: 5030B/5030C/503
File ID: 6M137967 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG562075 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS6-26-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.500	5.00	0.500	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	1.00	5.00	1.00	1	U
Naphthalene	0.500	5.00	0.500	1	U
n-Propylbenzene	0.500	5.00	0.500	1	U
Styrene	0.500	5.00	0.500	1	U
1,1,1,2-Tetrachloroethane	0.500	5.00	0.500	1	U
1,1,2,2-Tetrachloroethane	0.500	5.00	0.500	1	U
Tetrachloroethene	0.500	5.00	0.500	1	U
Toluene	0.500	5.00	0.500	1	U
1,2,3-Trichlorobenzene	0.500	5.00	0.500	1	U
1,2,4-Trichlorobenzene	0.500	5.00	0.500	1	U
1,1,1-Trichloroethane	0.500	5.00	0.500	1	U
1,1,2-Trichloroethane	0.500	5.00	0.500	1	U
Trichloroethene	0.500	5.00	0.500	1	U
Trichlorofluoromethane	1.00	5.00	1.00	1	U
1,2,3-Trichloropropane	1.00	5.00	1.00	1	U
1,2,4-Trimethylbenzene	0.500	5.00	0.568	1	J
1,3,5-Trimethylbenzene	0.500	5.00	0.500	1	U
Vinyl chloride	1.00	5.00	1.00	1	U
o-Xylene	0.500	5.00	0.500	1	U
m-,p-Xylene	0.500	5.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	94.6	80 - 120	PASS
1,2-Dichloroethane-d4	90.5	80 - 120	PASS
Toluene-d8	101	85 - 115	PASS
4-Bromofluorobenzene	103	85 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4689206
25-MAR-2016 12:16

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030861 | Run Date: 03/22/2016 | Sample ID: WG561881-02
Instrument ID: HPMS6 | Run Time: 15:52 | Prep Method: 5030B/5030C/503
File ID: 6M137946 | Analyst: TMB | Method: 8260B
Workgroup (AAB#): WG561881 | Matrix: Soil | Units: ug/kg
QC Key: DOD4 | Lot#: STD75209 | Cal ID: HPMS6-26-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	18.8	94.0	20 - 160	
Benzene	20.0	21.2	106	75 - 125	
Bromobenzene	20.0	21.6	108	65 - 120	
Bromochloromethane	20.0	21.6	108	70 - 125	
Bromodichloromethane	20.0	20.5	102	70 - 130	
Bromoform	20.0	19.0	95.0	55 - 135	
Bromomethane	20.0	21.6	108	30 - 160	
2-Butanone	20.0	20.5	102	30 - 160	
n-Butylbenzene	20.0	18.5	92.5	65 - 140	
sec-Butylbenzene	20.0	21.1	106	65 - 130	
tert-Butylbenzene	20.0	22.0	110	65 - 130	
Carbon disulfide	20.0	19.5	97.4	45 - 160	
Carbon tetrachloride	20.0	20.1	100	65 - 135	
Chlorobenzene	20.0	21.6	108	75 - 125	
Chlorodibromomethane	20.0	20.8	104	65 - 130	
Chloroethane	20.0	23.2	116	40 - 155	
Chloroform	20.0	20.5	102	70 - 125	
Chloromethane	20.0	16.9	84.3	50 - 130	
2-Chlorotoluene	20.0	21.1	106	70 - 130	
4-Chlorotoluene	20.0	21.8	109	75 - 125	
1,2-Dibromo-3-chloropropane	20.0	20.9	104	40 - 135	
1,2-Dibromoethane	20.0	21.5	107	70 - 125	
Dibromomethane	20.0	20.4	102	75 - 130	
1,2-Dichlorobenzene	20.0	21.6	108	75 - 120	
1,3-Dichlorobenzene	20.0	21.1	105	70 - 125	
1,4-Dichlorobenzene	20.0	21.0	105	70 - 125	
Dichlorodifluoromethane	20.0	21.2	106	35 - 135	
1,1-Dichloroethane	20.0	20.5	103	75 - 125	
1,2-Dichloroethane	20.0	20.4	102	70 - 135	
1,1-Dichloroethene	20.0	20.3	101	65 - 135	
cis-1,2-Dichloroethene	20.0	21.9	110	65 - 125	
trans-1,2-Dichloroethene	20.0	22.2	111	65 - 135	
1,2-Dichloropropane	20.0	22.3	112	70 - 120	
1,3-Dichloropropane	20.0	22.4	112	75 - 125	
2,2-Dichloropropane	20.0	20.7	104	65 - 135	
cis-1,3-Dichloropropene	20.0	23.3	116	70 - 125	
trans-1,3-Dichloropropene	20.0	20.6	103	65 - 125	
1,1-Dichloropropene	20.0	20.7	104	70 - 135	
Ethylbenzene	20.0	21.2	106	75 - 125	
2-Hexanone	20.0	20.0	100	45 - 145	
Hexachlorobutadiene	20.0	18.9	94.7	55 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4686002
Report generated: 03/25/2016 12:16

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030861 Run Date: 03/22/2016 Sample ID: WG561881-02
Instrument ID: HPMS6 Run Time: 15:52 Prep Method: 5030B/5030C/503
File ID: 6M137946 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG561881 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD75209 Cal ID: HPMS6-26-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	21.9	109	75 - 130	
p-Isopropyltoluene	20.0	20.8	104	75 - 135	
4-Methyl-2-pentanone	20.0	21.5	108	45 - 145	
Methylene chloride	20.0	22.0	110	55 - 140	
Naphthalene	20.0	19.9	99.5	40 - 125	
n-Propylbenzene	20.0	21.5	107	65 - 135	
Styrene	20.0	21.7	109	75 - 125	
1,1,1,2-Tetrachloroethane	20.0	20.7	103	75 - 125	
1,1,2,2-Tetrachloroethane	20.0	20.8	104	55 - 130	
Tetrachloroethene	20.0	21.3	106	65 - 140	
Toluene	20.0	21.4	107	70 - 125	
1,2,3-Trichlorobenzene	20.0	19.8	98.9	60 - 135	
1,2,4-Trichlorobenzene	20.0	19.5	97.5	65 - 130	
1,1,1-Trichloroethane	20.0	21.1	105	70 - 135	
1,1,2-Trichloroethane	20.0	21.4	107	60 - 125	
Trichloroethene	20.0	22.6	113	75 - 125	
Trichlorofluoromethane	20.0	19.4	96.8	25 - 185	
1,2,3-Trichloropropane	20.0	22.6	113	65 - 130	
1,2,4-Trimethylbenzene	20.0	20.7	103	65 - 135	
1,3,5-Trimethylbenzene	20.0	21.8	109	65 - 135	
Vinyl chloride	20.0	20.6	103	60 - 125	
o-Xylene	20.0	23.2	116	75 - 125	
m-,p-Xylene	40.0	43.2	108	80 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	96.1	80 - 120	PASS
1,2-Dichloroethane-d4	88.0	80 - 120	PASS
Toluene-d8	102	85 - 115	PASS
4-Bromofluorobenzene	101	85 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4686002
Report generated: 03/25/2016 12:16

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030861 | Run Date: 03/23/2016 | Sample ID: WG562075-02
Instrument ID: HPMS6 | Run Time: 14:26 | Prep Method: 5030B/5030C/503
File ID: 6M137968 | Analyst: TMB | Method: 8260B
Workgroup (AAB#): WG562075 | Matrix: Soil | Units: ug/kg
QC Key: DOD4 | Lot#: STD75209 | Cal ID: HPMS6-26-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	21.8	109	20 - 160	
Benzene	20.0	21.6	108	75 - 125	
Bromobenzene	20.0	22.1	110	65 - 120	
Bromochloromethane	20.0	21.7	108	70 - 125	
Bromodichloromethane	20.0	21.0	105	70 - 130	
Bromoform	20.0	18.7	93.4	55 - 135	
Bromomethane	20.0	22.0	110	30 - 160	
2-Butanone	20.0	20.1	100	30 - 160	
n-Butylbenzene	20.0	21.3	107	65 - 140	
sec-Butylbenzene	20.0	22.9	114	65 - 130	
tert-Butylbenzene	20.0	23.2	116	65 - 130	
Carbon disulfide	20.0	20.0	100	45 - 160	
Carbon tetrachloride	20.0	21.2	106	65 - 135	
Chlorobenzene	20.0	22.0	110	75 - 125	
Chlorodibromomethane	20.0	20.0	100	65 - 130	
Chloroethane	20.0	23.8	119	40 - 155	
Chloroform	20.0	20.7	103	70 - 125	
Chloromethane	20.0	17.5	87.3	50 - 130	
2-Chlorotoluene	20.0	22.6	113	70 - 130	
4-Chlorotoluene	20.0	22.6	113	75 - 125	
1,2-Dibromo-3-chloropropane	20.0	20.0	99.9	40 - 135	
1,2-Dibromoethane	20.0	21.1	106	70 - 125	
Dibromomethane	20.0	20.0	100	75 - 130	
1,2-Dichlorobenzene	20.0	22.5	112	75 - 120	
1,3-Dichlorobenzene	20.0	22.1	111	70 - 125	
1,4-Dichlorobenzene	20.0	21.7	109	70 - 125	
Dichlorodifluoromethane	20.0	21.7	108	35 - 135	
1,1-Dichloroethane	20.0	20.9	105	75 - 125	
1,2-Dichloroethane	20.0	20.9	104	70 - 135	
1,1-Dichloroethene	20.0	21.3	107	65 - 135	
cis-1,2-Dichloroethene	20.0	22.5	113	65 - 125	
trans-1,2-Dichloroethene	20.0	22.5	113	65 - 135	
1,2-Dichloropropane	20.0	22.7	113	70 - 120	
1,3-Dichloropropane	20.0	22.2	111	75 - 125	
2,2-Dichloropropane	20.0	21.8	109	65 - 135	
cis-1,3-Dichloropropene	20.0	23.9	120	70 - 125	
trans-1,3-Dichloropropene	20.0	20.9	104	65 - 125	
1,1-Dichloropropene	20.0	21.9	110	70 - 135	
Ethylbenzene	20.0	22.5	113	75 - 125	
2-Hexanone	20.0	19.5	97.4	45 - 145	
Hexachlorobutadiene	20.0	22.5	112	55 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4686002
Report generated: 03/25/2016 12:16

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030861 Run Date: 03/23/2016 Sample ID: WG562075-02
Instrument ID: HPMS6 Run Time: 14:26 Prep Method: 5030B/5030C/503
File ID: 6M137968 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG562075 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD75209 Cal ID: HPMS6-26-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	23.1	116	75 - 130	
p-Isopropyltoluene	20.0	22.7	113	75 - 135	
4-Methyl-2-pentanone	20.0	21.5	107	45 - 145	
Methylene chloride	20.0	21.7	109	55 - 140	
Naphthalene	20.0	20.6	103	40 - 125	
n-Propylbenzene	20.0	23.0	115	65 - 135	
Styrene	20.0	22.1	111	75 - 125	
1,1,1,2-Tetrachloroethane	20.0	20.9	104	75 - 125	
1,1,2,2-Tetrachloroethane	20.0	20.9	104	55 - 130	
Tetrachloroethene	20.0	21.7	108	65 - 140	
Toluene	20.0	21.8	109	70 - 125	
1,2,3-Trichlorobenzene	20.0	21.3	107	60 - 135	
1,2,4-Trichlorobenzene	20.0	21.5	108	65 - 130	
1,1,1-Trichloroethane	20.0	21.7	108	70 - 135	
1,1,2-Trichloroethane	20.0	21.2	106	60 - 125	
Trichloroethene	20.0	23.5	117	75 - 125	
Trichlorofluoromethane	20.0	20.3	102	25 - 185	
1,2,3-Trichloropropane	20.0	21.4	107	65 - 130	
1,2,4-Trimethylbenzene	20.0	22.4	112	65 - 135	
1,3,5-Trimethylbenzene	20.0	23.3	116	65 - 135	
Vinyl chloride	20.0	20.3	101	60 - 125	
o-Xylene	20.0	23.6	118	75 - 125	
m-,p-Xylene	40.0	44.4	111	80 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	95.2	80 - 120	PASS
1,2-Dichloroethane-d4	87.3	80 - 120	PASS
Toluene-d8	101	85 - 115	PASS
4-Bromofluorobenzene	100	85 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4686002
Report generated: 03/25/2016 12:16

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16030861 Cal ID: HPMS6 - Worknum: WG561881
Instrument ID: HPMS6 Contract #: Method: 8260B
Parent ID: WG561608-01 File ID: 6M137955 Dil: 1 Matrix: SOLID
Sample ID: WG561608-02 MS File ID: 6M137947 Dil: 1 Units: ug/kg
Sample ID: WG561608-03 MSD File ID: 6M137948 Dil: 1 Percent Solid: 82.5

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,1,1,2-Tetrachloroethane	ND	24.1	23.2	96.0	23.1	22.5	97.1	3.14	75 - 125	30	
1,1,1-Trichloroethane	ND	24.1	24.7	102	23.1	24.9	108	0.573	70 - 135	30	
1,1,2,2-Tetrachloroethane	ND	24.1	23.3	96.5	23.1	23.2	100	0.335	55 - 130	30	
1,1,2-Trichloroethane	ND	24.1	24.0	99.5	23.1	23.6	102	1.78	60 - 125	30	
1,1-Dichloroethane	ND	24.1	23.4	96.9	23.1	23.4	101	0.0175	75 - 125	30	
1,1-Dichloroethene	ND	24.1	24.2	100	23.1	24.2	104	0.172	65 - 135	30	
1,1-Dichloropropene	ND	24.1	25.0	104	23.1	25.4	110	1.69	70 - 135	30	
1,2,3-Trichlorobenzene	ND	24.1	22.1	91.6	23.1	21.9	94.9	0.812	60 - 135	30	
1,2,3-Trichloropropane	ND	24.1	24.0	99.4	23.1	23.9	103	0.618	65 - 130	30	
1,2,4-Trichlorobenzene	ND	24.1	22.4	92.8	23.1	22.2	96.1	0.763	65 - 130	30	
1,2,4-Trimethylbenzene	ND	24.1	24.1	99.9	23.1	23.7	102	1.74	65 - 135	30	
1,2-Dibromo-3-chloropropane	ND	24.1	22.3	92.3	23.1	22.6	97.6	1.30	40 - 135	30	
1,2-Dibromoethane	ND	24.1	23.4	96.9	23.1	23.3	101	0.473	70 - 125	30	
1,2-Dichlorobenzene	ND	24.1	24.0	99.4	23.1	23.7	102	1.45	75 - 120	30	
1,2-Dichloroethane	ND	24.1	22.7	94.1	23.1	22.3	96.4	1.94	70 - 135	30	
1,2-Dichloropropane	ND	24.1	25.3	105	23.1	24.8	107	1.79	70 - 120	30	
1,3,5-Trimethylbenzene	ND	24.1	25.7	106	23.1	24.8	107	3.43	65 - 135	30	
1,3-Dichlorobenzene	ND	24.1	23.9	98.9	23.1	23.1	100	3.19	70 - 125	30	
1,3-Dichloropropane	ND	24.1	24.9	103	23.1	24.3	105	2.12	75 - 125	30	
1,4-Dichlorobenzene	ND	24.1	23.4	97.1	23.1	22.9	98.9	2.44	70 - 125	30	
2,2-Dichloropropane	ND	24.1	25.0	104	23.1	24.9	108	0.435	65 - 135	30	
2-Butanone	ND	24.1	20.6	85.2	23.1	22.6	97.7	9.38	30 - 160	30	
2-Chlorotoluene	ND	24.1	22.5	93.4	23.1	24.3	105	7.32	70 - 130	30	
2-Hexanone	ND	24.1	19.7	81.6	23.1	21.5	93.2	8.91	45 - 145	30	
4-Chlorotoluene	ND	24.1	26.4	109	23.1	23.9	103	10.1	75 - 125	30	
4-Methyl-2-pentanone	ND	24.1	22.3	92.3	23.1	23.5	102	5.34	45 - 145	30	
Acetone	ND	24.1	18.8	77.8	23.1	21.0	90.9	11.3	20 - 160	30	
Benzene	ND	24.1	24.3	101	23.1	23.7	103	2.37	75 - 125	30	
Bromobenzene	ND	24.1	23.7	98.0	23.1	23.7	103	0.213	65 - 120	30	
Bromochloromethane	ND	24.1	23.8	98.7	23.1	23.6	102	1.03	70 - 125	30	
Bromodichloromethane	ND	24.1	23.2	96.0	23.1	22.9	98.9	1.38	70 - 130	30	
Bromoform	ND	24.1	20.8	86.1	23.1	20.5	88.4	1.62	55 - 135	30	
Bromomethane	ND	24.1	24.5	101	23.1	24.1	104	1.57	30 - 160	30	
Carbon disulfide	ND	24.1	22.1	91.7	23.1	23.0	99.4	3.68	45 - 160	30	
Carbon tetrachloride	ND	24.1	24.8	103	23.1	24.9	108	0.281	65 - 135	30	
Chlorobenzene	ND	24.1	24.8	103	23.1	23.7	102	4.68	75 - 125	30	
Chlorodibromomethane	ND	24.1	22.7	93.9	23.1	22.0	95.3	2.86	65 - 130	30	
Chloroethane	ND	24.1	27.1	112	23.1	26.8	116	1.02	40 - 155	30	
Chloroform	ND	24.1	23.1	95.7	23.1	23.0	99.3	0.602	70 - 125	30	

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4686003
Report generated 03/23/2016 16:27

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16030861 Cal ID: HPMS6 Worknum: WG561881
Instrument ID: HPMS6 Contract #: Method: 8260B
Parent ID: WG561608-01 File ID: 6M137955 Dil: 1 Matrix: SOLID
Sample ID: WG561608-02 MS File ID: 6M137947 Dil: 1 Units: ug/kg
Sample ID: WG561608-03 MSD File ID: 6M137948 Dil: 1 Percent Solid: 82.5

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chloromethane	ND	24.1	21.6	89.4	23.1	21.4	92.5	0.866	50 - 130	30	
Dibromomethane	ND	24.1	22.5	93.1	23.1	22.1	95.7	1.62	75 - 130	30	
Dichlorodifluoromethane	ND	24.1	26.9	111	23.1	26.7	116	0.512	35 - 135	30	
Ethylbenzene	ND	24.1	25.0	103	23.1	24.0	104	3.84	75 - 125	30	
Hexachlorobutadiene	ND	24.1	25.2	104	23.1	25.2	109	0.0212	55 - 140	30	
Isopropylbenzene	ND	24.1	26.4	109	23.1	25.5	110	3.50	75 - 130	30	
Methylene chloride	ND	24.1	24.4	101	23.1	24.1	104	1.05	55 - 140	30	
Naphthalene	ND	24.1	21.9	90.6	23.1	21.9	94.5	0.0493	40 - 125	30	
Styrene	ND	24.1	22.9	94.8	23.1	22.6	97.6	1.36	75 - 125	30	
Tetrachloroethene	ND	24.1	25.4	105	23.1	24.7	107	3.15	65 - 140	30	
Toluene	ND	24.1	24.7	102	23.1	23.9	103	3.07	70 - 125	30	
Trichloroethene	ND	24.1	26.1	108	23.1	26.1	113	0.0933	75 - 125	30	
Trichlorofluoromethane	ND	24.1	23.7	98.1	23.1	24.1	104	1.64	25 - 185	30	
Vinyl chloride	ND	24.1	19.4	80.2	23.1	19.4	84.0	0.409	60 - 125	30	
cis-1,2-Dichloroethene	ND	24.1	24.9	103	23.1	24.9	107	0.201	65 - 125	30	
cis-1,3-Dichloropropene	ND	24.1	25.7	106	23.1	25.4	110	1.11	70 - 125	30	
m-,p-Xylene	ND	48.3	50.5	105	46.3	49.2	106	2.49	80 - 125	30	
n-Butylbenzene	ND	24.1	23.5	97.4	23.1	23.2	100	1.51	65 - 140	30	
n-Propylbenzene	ND	24.1	25.7	106	23.1	25.2	109	1.88	65 - 135	30	
o-Xylene	ND	24.1	26.4	109	23.1	25.2	109	4.61	75 - 125	30	
p-Isopropyltoluene	ND	24.1	25.2	104	23.1	24.5	106	2.87	75 - 135	30	
sec-Butylbenzene	ND	24.1	26.1	108	23.1	25.6	111	2.08	65 - 130	30	
tert-Butylbenzene	ND	24.1	26.2	108	23.1	25.7	111	1.85	65 - 130	30	
trans-1,2-Dichloroethene	ND	24.1	25.8	107	23.1	25.8	111	0.0201	65 - 135	30	
trans-1,3-Dichloropropene	ND	24.1	22.5	93.4	23.1	22.1	95.7	1.84	65 - 125	30	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4686003
Report generated 03/23/2016 16:27

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16030861
Instrument: HPMS6
Analyst: TMB
Workgroup: WG558920

Tune ID: WG558920-01
Run Date: 02/26/2016
Run Time: 13:16
File ID: 6M137522
Cal ID: HPMS6 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	25.4	9030	PASS
75.0	95.0	30.0	60.0	55.4	19666	PASS
95.0	95.0	100	100	100	35512	PASS
96.0	95.0	5.00	9.00	7.25	2576	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	73.2	26011	PASS
175	174	5.00	9.00	7.36	1914	PASS
176	174	95.0	101	96.1	24992	PASS
177	176	5.00	9.00	6.64	1660	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG558920-02	STD-S	01	02/26/2016 13:41	
WG558920-03	STD-S	01	02/26/2016 14:13	
WG558920-04	STD-S	01	02/26/2016 14:46	
WG558920-05	STD-S	01	02/26/2016 15:26	
WG558920-06	STD-S	01	02/26/2016 15:58	
WG558920-07	STD-S	01	02/26/2016 16:30	
WG558920-08	STD-CCV-S	01	02/26/2016 17:03	
WG558920-09	STD-S	01	02/26/2016 17:35	
WG558920-10	STD-S	01	02/26/2016 18:07	
WG558920-11	STD-S	01	02/26/2016 18:39	
WG558920-12	SSCV-S	01	02/26/2016 20:15	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4686009
Report generated 03/25/2016 12:16

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16030861
Instrument: HPMS6
Analyst: TMB
Workgroup: WG561879

Tune ID: WG561879-01
Run Date: 03/22/2016
Run Time: 11:26
File ID: 6M137938
Cal ID: HPMS6 - 26-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.8	6808	PASS
75.0	95.0	30.0	60.0	49.6	15508	PASS
95.0	95.0	100	100	100	31245	PASS
96.0	95.0	5.00	9.00	7.25	2265	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	70.0	21873	PASS
175	174	5.00	9.00	7.27	1591	PASS
176	174	95.0	101	99.0	21662	PASS
177	176	5.00	9.00	7.15	1548	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG561879-02	CCV-S	01	03/22/2016 11:51	
WG561881-01	BLANK	01	03/22/2016 13:08	
WG561881-02	LCS	01	03/22/2016 15:52	
WG561608-02	MS	01	03/22/2016 16:24	
WG561608-03	MSD	01	03/22/2016 16:57	
L16030861-04	18DPT14(17-17.5)140316	01	03/22/2016 19:09	
L16030861-03	18DPT14(10-10.5)140316FD	01	03/22/2016 19:43	
L16030861-02	18DPT14(10-10.5)140316	01	03/22/2016 20:16	
L16030861-01	18DPT14(5-5.5)140316	01	03/22/2016 20:49	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4686009
Report generated 03/25/2016 12:16

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16030861
Instrument: HPMS6
Analyst: TMB
Workgroup: WG562074

Tune ID: WG562074-01
Run Date: 03/23/2016
Run Time: 11:50
File ID: 6M137963
Cal ID: HPMS6 - 26-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.2	6567	PASS
75.0	95.0	30.0	60.0	49.2	15945	PASS
95.0	95.0	100	100	100	32432	PASS
96.0	95.0	5.00	9.00	6.96	2256	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	80.4	26074	PASS
175	174	5.00	9.00	7.57	1973	PASS
176	174	95.0	101	99.3	25896	PASS
177	176	5.00	9.00	6.56	1699	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG562074-02	CCV-S	01	03/23/2016 12:47	
WG562075-01	BLANK	01	03/23/2016 13:53	
WG562075-02	LCS	01	03/23/2016 14:26	
L16030861-03	18DPT14(10-10.5)140316FD	02	03/23/2016 17:43	
L16030861-05	18DPT14(23-23.5)140316	01	03/23/2016 18:15	
L16030861-06	18DPT15(5-5.5)140316	01	03/23/2016 18:48	
L16030861-07	18DPT15(12-12.5)140316	01	03/23/2016 19:21	
L16030861-08	18DPT15(21-21.5)140316	01	03/23/2016 19:54	
L16030861-09	18DPT15(23.5-24)140316	01	03/23/2016 20:27	
L16030861-10	18DPT15(26.5-27)140316	01	03/23/2016 21:00	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4686009
Report generated 03/25/2016 12:16

Calibration Table Report
Method: 826_SL.M
Title: 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Calibration: Mon Feb 29 15:59:52 2016
Curve: WG558920
Calibration Files

	Compound	0.5 6M137523.D	1 6M137524.D	2 6M137525.D	5 6M137526.D	10 6M137527.D	20 6M137528.D	50 6M137529.D	100 6M137530.D	200 6M137531.D	300 6M137532.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.386	0.437	0.426	0.515	0.537	0.438	0.464	0.471	0.459	10.647		
P	Chloromethane			0.578	0.509	0.480	0.500	0.503	0.398	0.425	0.436	0.479	11.984		
C	Vinyl Chloride			0.371	0.405	0.376	0.415	0.431	0.353	0.374	0.357	0.385	7.341		
T	1,3-Butadiene				0.369	0.322	0.361	0.344	0.289	0.282	0.277	0.320	11.982		
T	Bromomethane			0.192	0.207	0.206	0.215	0.213	0.184	0.207	0.218	0.205	5.643		
T	Chloroethane			0.199	0.219	0.208	0.232	0.244	0.202	0.219	0.224	0.218	6.941		
T	Trichlorofluoromethane			0.535	0.557	0.513	0.525	0.558	0.462	0.490	0.501	0.518	6.398		
T	Diethyl ether		0.243	0.231	0.234	0.251	0.241	0.233	0.233		0.238	0.238	2.758		
T	Isoprene				0.333	0.322	0.327	0.355	0.334	0.338	0.351	0.337	3.613		
T	Acrolein		0.044	0.045	0.044	0.050	0.045	0.042	0.045		0.047	0.045	5.301		
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.199	0.268	0.248	0.256	0.277	0.230	0.245	0.252	0.247	9.700		
T	Acetone					0.152	0.130	0.112	0.104	0.110	0.106	0.119	15.588	0.999	
C	1,1-Dichloroethene			0.380	0.462	0.424	0.453	0.487	0.410	0.439	0.447	0.438	7.530		
T	Tert-Butyl Alcohol		0.039	0.035	0.040	0.044	0.044	0.040	0.040		0.044	0.041	7.378		
T	Dimethyl Sulfide				0.204	0.210	0.197	0.223	0.210	0.218	0.224	0.212	4.669		
T	Iodomethane				0.056	0.082	0.123	0.197	0.197	0.211	0.207	0.153	42.723	0.998	
T	Methyl acetate				0.309	0.317	0.309	0.308	0.292	0.293	0.300	0.304	3.023		
T	Methylene Chloride			0.256	0.273	0.264	0.268	0.287	0.242	0.257	0.260	0.264	5.015		
T	Carbon Disulfide			0.821	0.880	0.808	0.840	0.872	0.808	0.825	0.844	0.837	3.273		
T	Acrylonitrile		0.108	0.114	0.119	0.133	0.128	0.130	0.129		0.140	0.125	8.391		
T	Methyl Tert Butyl Ether	0.732	0.693	0.663	0.725	0.773	0.787	0.833	0.734	0.785	0.799	0.753	6.930		
T	trans-1,2-Dichloroethene			0.227	0.244	0.240	0.247	0.265	0.226	0.240	0.244	0.242	5.097		
T	n-Hexane			0.407	0.452	0.430	0.435	0.466	0.433	0.438	0.452	0.439	4.050		
T	Diisopropyl ether		1.143	1.120	1.122	1.188	1.168	1.117	1.121		1.127	1.138	2.317		
T	Vinyl Acetate				0.493	0.583	0.630	0.596	0.570	0.626	0.621	0.588	8.090		
P	1,1-Dichloroethane			0.484	0.538	0.522	0.539	0.568	0.484	0.514	0.521	0.521	5.427		
T	Ethyl-Tert-Butyl ether		0.841	0.891	0.897	0.963	0.947	0.909	0.912		0.938	0.912	4.185		
T	2-Butanone				0.186	0.176	0.176	0.169	0.161	0.170	0.172	0.173	4.334		
T	Propionitrile		0.047	0.045	0.045	0.051	0.050	0.048	0.047		0.049	0.048	4.489		
T	2,2-Dichloropropane			0.413	0.427	0.425	0.415	0.454	0.383	0.410	0.420	0.418	4.750		
T	cis-1,2-Dichloroethene			0.265	0.274	0.263	0.275	0.290	0.250	0.269	0.273	0.270	4.259		
C	Chloroform			0.502	0.499	0.475	0.499	0.520	0.443	0.476	0.481	0.487	4.825		
T	1-Bromopropane				0.033	0.034	0.037	0.040	0.037	0.038	0.039	0.037	7.440		
T	Bromochloromethane			0.151	0.148	0.152	0.165	0.176	0.151	0.162	0.164	0.159	6.123		
T	Tetrahydrofuran		0.173	0.111	0.113	0.121	0.123	0.115	0.112		0.116	0.123	16.774	0.998	
S	Dibromofluoromethane			0.280	0.265	0.272	0.276	0.272	0.253	0.265	0.262	0.268	3.189		
T	1,1,1-Trichloroethane			0.412	0.417	0.434	0.435	0.474	0.398	0.430	0.438	0.430	5.218		
T	Cyclohexane			0.396	0.493	0.473	0.495	0.533	0.492	0.499	0.519	0.487	8.433		
T	1,1-Dichloropropene			0.306	0.372	0.338	0.347	0.383	0.324	0.345	0.355	0.346	7.125		
T	Tert-Amyl-Methyl ether		0.664	0.687	0.706	0.759	0.757	0.723	0.732		0.762	0.724	4.986		
T	Carbon Tetrachloride			0.351	0.409	0.4	0.412	0.445	0.378	0.403	0.416	0.4017	6.9015		
S	1,2-Dichloroethane-d4			0.36	0.365	0.337	0.366	0.353	0.329	0.34	0.336	0.3482	4.16		
T	Heptane											0	0		
T	1,2-Dichloroethane			0.387	0.414	0.422	0.43	0.449	0.388	0.415	0.419	0.4154	4.951		
T	Benzene	1.229	1.128	1.036	1.038	1.011	1.023	1.078	0.921	0.973	0.979	1.0416	8.3738		
T	Trichloroethene			0.223	0.257	0.243	0.254	0.268	0.229	0.245	0.249	0.2461	6.0218		
T	Methylcyclohexane			0.321	0.406	0.387	0.403	0.435	0.401	0.406	0.424	0.3978	8.6044		
C	1,2-Dichloropropane			0.249	0.279	0.277	0.29	0.305	0.266	0.286	0.29	0.2802	6.0373		
T	1,4-Dioxane			0.002	0.003	0.003	0.003	0.003	0.003		0.004	0.0031	18.585	0.996	
T	Bromodichloromethane			0.336	0.359	0.35	0.37	0.402	0.352	0.384	0.39	0.3678	6.1125		
T	Dibromomethane			0.145	0.152	0.16	0.169	0.185	0.158	0.171	0.173	0.1639	7.836		
T	2-Chloroethyl Vinyl Ether				0.126	0.141	0.155	0.164	0.161	0.178		0.1541	11.732		
T	4-Methyl-2-Pentanone				0.101	0.11	0.122	0.117	0.113	0.125	0.128	0.1167	8.1948		
T	cis-1,3-Dichloropropene			0.338	0.374	0.39	0.412	0.454	0.396	0.435	0.442	0.4052	9.5304		
T	Dimethyl Disulfide				0.171	0.174	0.192	0.225	0.22	0.245		0.2044	14.756		
I	Chlorobenzene-d5	ISTD													
S	Toluene-d8			1.274	1.278	1.167	1.22	1.21	1.113	1.144	1.105	1.1888	5.6789		
C	Toluene	1.627	1.459	1.33	1.431	1.418	1.424	1.504	1.27	1.35	1.331	1.4144	7.2521		
T	Ethyl Methacrylate			0.326	0.401	0.428	0.461	0.503	0.477	0.511	0.518	0.4532	14.498		
T	Paraldehyde											0	0		
T	trans-1,3-Dichloropropene			0.461	0.507	0.529	0.558	0.603	0.53	0.579	0.582	0.5439	8.4811		
T	1,1,2-Trichloroethane			0.265	0.288	0.302	0.309	0.319	0.28	0.302	0.299	0.2956	5.771		
T	2-Hexanone				0.298	0.324	0.345	0.341	0.328	0.359	0.366	0.3373	6.878		
T	1,3-Dichloropropane			0.488	0.541	0.538	0.558	0.579	0.503	0.54	0.54	0.5358	5.3786		
T	Tetrachloroethene			0.332	0.375	0.358	0.359	0.376	0.318	0.336	0.337	0.3489	6.0417		
T	Dibromochloromethane			0.318	0.369	0.378	0.394	0.425	0.373	0.407	0.41	0.3845	8.6342		
T	1,2-Dibromoethane			0.271	0.289	0.29	0.309	0.332	0.29	0.318	0.32	0.3023	6.7531		
T	1-Chlorohexane			0.358	0.417	0.417	0.441	0.485	0.451	0.47	0.474	0.4392	9.3805		
P	Chlorobenzene			0.915	0.966	0.916	0.927	0.958	0.821	0.89	0.88	0.909	5.1018		
T	1,1,1,2-Tetrachloroethane			0.348	0.343	0.362	0.374	0.393	0.344	0.376	0.38	0.365	5.0679		
C	Ethylbenzene	0.49	0.466	0.473	0.486	0.481	0.497	0.531	0.453	0.494	0.494	0.4864	4.3098		
T	m-,p-Xylene	0.674	0.598	0.537	0.6	0.59	0.605	0.637	0.546	0.585	0.58	0.5952	6.6768		
T	o-Xylene	0.574	0.512	0.494	0.539	0.544	0.588	0.634	0.54	0.59	0.591	0.5606	7.5243		
T	Styrene			0.772	0.876	0.918	0.982	1.071	0.935	1.037	1.041	0.9542	10.466		
P	Bromoform			0.222	0.256	0.259	0.275	0.298	0.261	0.293	0.307	0.2715	10.256		
T	Isopropylbenzene			1.284	1.474	1.498	1.583	1.683	1.433	1.559	1.542	1.507	7.8153		
I	1,4-Dichlorobenzene-d4	ISTD													
P	1,1,2,2-Tetrachloroethane			0.689	0.783	0.798	0.815	0.842	0.74	0.785	0.797	0.7811	6.0053		
S	p-Bromofluorobenzene			0.997	0.956	0.921	0.925	0.941	0.864	0.892	0.852	0.9184	5.2432		

T	1,2,3-Trichloropropane	0.202	0.247	0.251	0.244	0.258	0.225	0.243	0.244	0.2391	7.3405
T	trans-1,4-Dichloro-2-Butene	0.247	0.255	0.285	0.287	0.308	0.295	0.311	0.318	0.2883	8.9009
T	n-Propylbenzene	3.037	3.536	3.508	3.571	3.802	3.207	3.325	3.178	3.3956	7.429
T	Bromobenzene	0.67	0.762	0.744	0.775	0.808	0.694	0.733	0.719	0.7381	6.0417
T	1,3,5-Trimethylbenzene	2.096	2.503	2.443	2.485	2.702	2.295	2.435	2.377	2.417	7.2332
T	2-Chlorotoluene	1.974	2.457	2.366	2.375	2.437	2.106	2.239	2.178	2.2664	7.5835
T	4-Chlorotoluene	2.163	2.182	2.123	2.094	2.235	1.885	1.964	1.933	2.0723	6.208
T	a-Methylstyrene	0.921	1.071	1.127	1.156	1.295	1.234	1.294	1.291	1.1737	11.321
T	tert-Butylbenzene	0.437	0.508	0.504	0.521	0.567	0.48	0.511	0.502	0.5037	7.2697
T	1,2,4-Trimethylbenzene	2.274	2.614	2.634	2.636	2.804	2.386	2.535	2.452	2.5419	6.5668
T	sec-Butylbenzene	2.804	3.169	3.104	3.238	3.474	2.92	3.078	2.976	3.0953	6.6823
T	p-Isopropyltoluene	2.183	2.603	2.54	2.657	2.885	2.449	2.589	2.523	2.5537	7.7414
T	1,3-Dichlorobenzene	1.331	1.516	1.491	1.451	1.537	1.319	1.391	1.389	1.4282	5.8154
T	1,4-Dichlorobenzene	1.528	1.507	1.501	1.476	1.529	1.31	1.39	1.389	1.4537	5.5603
T	n-Butylbenzene	2.282	2.598	2.578	2.654	2.852	2.445	2.576	2.563	2.5684	6.3469
T	1,2-Dichlorobenzene	1.324	1.401	1.407	1.397	1.474	1.278	1.357	1.356	1.3743	4.3244
T	1,2-Dibromo-3-Chloropropane		0.159	0.163	0.176	0.183	0.167	0.179	0.182	0.1728	5.5543
T	1,2,4-Trichlorobenzene	0.968	0.981	1.002	1.008	1.105	0.936	0.963	0.985	0.9935	5.0666
T	Hexachlorobutadiene	0.528	0.583	0.572	0.579	0.635	0.532	0.546	0.571	0.5682	6.0591
T	Naphthalene	1.901	2.081	2.291	2.365	2.601	2.29	2.356	2.387	2.2839	9.2287
T	1,2,3-Trichlorobenzene	0.961	0.977	0.98	0.987	1.094	0.917	0.949	0.961	0.9783	5.2988

Mon Feb 29 16:03:43 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16030861 Run Date: 02/26/2016 Sample ID: WG558920-12
Instrument ID: HPMS6 Run Time: 20:15 Method: 8260B
File ID: 6M137535 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG558920 Cal ID: HPMS6 - 26-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.7	ug/kg	0.494	1.40	20	
1,1-Dichloroethene	CCC	50.0	51.6	ug/kg	0.452	3.30	20	
1,2-Dichloropropane	CCC	50.0	55.0	ug/kg	0.308	10.1	20	
Ethylbenzene	CCC	50.0	52.4	ug/kg	0.510	4.80	20	
Toluene	CCC	50.0	51.4	ug/kg	1.45	2.80	20	
Vinyl Chloride	CCC	50.0	43.3	ug/kg	0.334	13.3	20	
Bromoform	SPCC	50.0	49.2	ug/kg	0.267	1.50	20	
Chlorobenzene	SPCC	50.0	52.9	ug/kg	0.961	5.70	20	
Chloromethane	SPCC	50.0	50.9	ug/kg	0.487	1.80	20	
1,1-Dichloroethane	SPCC	50.0	50.3	ug/kg	0.525	0.700	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	52.1	ug/kg	0.815	4.30	20	
Acetone		50.0	48.7	ug/kg	0.111	2.70	20	
Benzene		50.0	50.4	ug/kg	1.05	0.900	20	
Bromobenzene		50.0	51.8	ug/kg	0.765	3.70	20	
Bromochloromethane		50.0	52.1	ug/kg	0.165	4.20	20	
Bromodichloromethane		50.0	51.6	ug/kg	0.380	3.30	20	
Bromomethane		50.0	58.6	ug/kg	0.240	17.1	20	
2-Butanone		50.0	49.2	ug/kg	0.170	1.50	20	
n-Butylbenzene		50.0	48.8	ug/kg	2.50	2.50	20	
sec-Butylbenzene		50.0	50.7	ug/kg	3.14	1.40	20	
tert-Butylbenzene		50.0	53.2	ug/kg	0.536	6.40	20	
Carbon Disulfide		50.0	44.4	ug/kg	0.743	11.2	20	
Carbon Tetrachloride		50.0	51.2	ug/kg	0.411	2.30	20	
Dibromochloromethane		50.0	51.8	ug/kg	0.399	3.70	20	
Chloroethane		50.0	56.6	ug/kg	0.247	13.2	20	
2-Chlorotoluene		50.0	52.1	ug/kg	2.36	4.20	20	
4-Chlorotoluene		50.0	52.1	ug/kg	2.16	4.10	20	
1,2-Dibromo-3-Chloropropane		50.0	52.1	ug/kg	0.180	4.30	20	
1,2-Dibromoethane		50.0	53.7	ug/kg	0.325	7.30	20	
Dibromomethane		50.0	50.4	ug/kg	0.165	0.800	20	
1,2-Dichlorobenzene		50.0	54.5	ug/kg	1.50	9.00	20	
1,3-Dichlorobenzene		50.0	52.0	ug/kg	1.49	4.00	20	
1,4-Dichlorobenzene		50.0	51.8	ug/kg	1.51	3.60	20	
Dichlorodifluoromethane		50.0	55.5	ug/kg	0.509	10.9	20	
1,2-Dichloroethane		50.0	51.3	ug/kg	0.426	2.50	20	
cis-1,2-Dichloroethene		50.0	54.1	ug/kg	0.292	8.30	20	
trans-1,2-Dichloroethene		50.0	53.7	ug/kg	0.260	7.50	20	
1,3-Dichloropropane		50.0	54.9	ug/kg	0.589	9.80	20	
2,2-Dichloropropane		50.0	53.1	ug/kg	0.444	6.20	20	
cis-1,3-Dichloropropene		50.0	58.8	ug/kg	0.476	17.5	20	
trans-1,3-Dichloropropene		50.0	52.9	ug/kg	0.575	5.70	20	
1,1-Dichloropropene		50.0	52.8	ug/kg	0.365	5.50	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4686004
Report generated 03/25/2016 12:16

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16030861 Run Date: 02/26/2016 Sample ID: WG558920-12
Instrument ID: HPMS6 Run Time: 20:15 Method: 8260B
File ID: 6M137535 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG558920 Cal ID: HPMS6 - 26-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	51.3	ug/kg	0.346	2.60	20	
Hexachlorobutadiene		50.0	47.6	ug/kg	0.541	4.80	20	
Isopropylbenzene		50.0	54.6	ug/kg	1.64	9.10	20	
p-Isopropyltoluene		50.0	50.9	ug/kg	2.60	1.80	20	
4-Methyl-2-Pentanone		50.0	51.3	ug/kg	0.120	2.50	20	
Methylene Chloride		50.0	53.4	ug/kg	0.281	6.80	20	
Naphthalene		50.0	49.8	ug/kg	2.28	0.300	20	
n-Propylbenzene		50.0	52.6	ug/kg	3.57	5.30	20	
Styrene		50.0	55.3	ug/kg	1.06	10.6	20	
1,1,1,2-Tetrachloroethane		50.0	51.8	ug/kg	0.379	3.70	20	
Tetrachloroethene		50.0	51.1	ug/kg	0.357	2.20	20	
1,2,3-Trichlorobenzene		50.0	51.0	ug/kg	0.997	2.00	20	
1,2,4-Trichlorobenzene		50.0	51.0	ug/kg	1.01	2.10	20	
1,1,1-Trichloroethane		50.0	52.0	ug/kg	0.447	4.00	20	
1,1,2-Trichloroethane		50.0	53.2	ug/kg	0.315	6.40	20	
Trichloroethene		50.0	54.7	ug/kg	0.269	9.40	20	
Trichlorofluoromethane		50.0	47.9	ug/kg	0.496	4.20	20	
1,2,3-Trichloropropane		50.0	53.2	ug/kg	0.254	6.30	20	
1,2,4-Trimethylbenzene		50.0	51.1	ug/kg	2.60	2.30	20	
1,3,5-Trimethylbenzene		50.0	52.7	ug/kg	2.55	5.30	20	
o-Xylene		50.0	56.9	ug/kg	0.638	13.8	20	
m-,p-Xylene		100	105	ug/kg	0.626	5.20	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4686004
Report generated 03/25/2016 12:16

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030861 Run Date: 03/22/2016 Sample ID: WG561879-02
Instrument ID: HPMS6 Run Time: 11:51 Method: 8260B
File ID: 6M137939 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG561881 Cal ID: HPMS6 - 26-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.2	ug/kg	0.489	0.420	20	
1,1-Dichloroethene	CCC	50.0	51.9	ug/kg	0.454	3.75	20	
1,2-Dichloropropane	CCC	50.0	52.5	ug/kg	0.294	5.01	20	
Ethylbenzene	CCC	50.0	53.1	ug/kg	0.517	6.22	20	
Toluene	CCC	50.0	51.6	ug/kg	1.46	3.14	20	
Vinyl Chloride	CCC	50.0	47.7	ug/kg	0.368	4.50	20	
Bromoform	SPCC	50.0	53.2	ug/kg	0.289	6.35	20	
Chlorobenzene	SPCC	50.0	51.4	ug/kg	0.934	2.73	20	
Chloromethane	SPCC	50.0	38.2	ug/kg	0.366	23.5	20	*
1,1-Dichloroethane	SPCC	50.0	51.4	ug/kg	0.536	2.83	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	55.5	ug/kg	0.868	11.1	20	
Xylenes		150	160	ug/kg	0.621	6.92	40	
Acetone		50.0	56.1	ug/kg	0.126	12.2	20	
Benzene		50.0	50.6	ug/kg	1.05	1.19	20	
Bromobenzene		50.0	53.3	ug/kg	0.787	6.58	20	
Bromochloromethane		50.0	54.7	ug/kg	0.173	9.30	20	
Bromodichloromethane		50.0	51.1	ug/kg	0.376	2.23	20	
Bromomethane		50.0	54.1	ug/kg	0.222	8.22	20	
2-Butanone		50.0	57.2	ug/kg	0.198	14.3	20	
n-Butylbenzene		50.0	53.1	ug/kg	2.73	6.27	20	
sec-Butylbenzene		50.0	54.1	ug/kg	3.35	8.20	20	
tert-Butylbenzene		50.0	54.9	ug/kg	0.553	9.84	20	
Carbon Disulfide		50.0	53.1	ug/kg	0.889	6.23	20	
Carbon Tetrachloride		50.0	51.0	ug/kg	0.410	2.05	20	
Dibromochloromethane		50.0	52.0	ug/kg	0.400	3.93	20	
Chloroethane		50.0	52.9	ug/kg	0.231	5.81	20	
2-Chlorotoluene		50.0	53.1	ug/kg	2.41	6.16	20	
4-Chlorotoluene		50.0	52.3	ug/kg	2.17	4.66	20	
1,2-Dibromo-3-Chloropropane		50.0	54.8	ug/kg	0.190	9.65	20	
1,2-Dibromoethane		50.0	54.0	ug/kg	0.327	8.06	20	
Dibromomethane		50.0	52.8	ug/kg	0.173	5.68	20	
1,2-Dichlorobenzene		50.0	51.8	ug/kg	1.42	3.51	20	
1,3-Dichlorobenzene		50.0	52.5	ug/kg	1.50	5.06	20	
1,4-Dichlorobenzene		50.0	51.4	ug/kg	1.49	2.79	20	
Dichlorodifluoromethane		50.0	49.1	ug/kg	0.451	1.74	20	
1,2-Dichloroethane		50.0	49.6	ug/kg	0.412	0.778	20	
cis-1,2-Dichloroethene		50.0	53.2	ug/kg	0.287	6.39	20	
trans-1,2-Dichloroethene		50.0	54.1	ug/kg	0.262	8.28	20	
1,3-Dichloropropane		50.0	51.9	ug/kg	0.556	3.76	20	
2,2-Dichloropropane		50.0	52.8	ug/kg	0.442	5.65	20	
cis-1,3-Dichloropropene		50.0	54.1	ug/kg	0.439	8.23	20	
trans-1,3-Dichloropropene		50.0	53.6	ug/kg	0.583	7.19	20	

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030861 Run Date: 03/22/2016 Sample ID: WG561879-02
Instrument ID: HPMS6 Run Time: 11:51 Method: 8260B
File ID: 6M137939 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG561881 Cal ID: HPMS6 - 26-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	53.8	ug/kg	0.373	7.67	20	
2-Hexanone		50.0	57.8	ug/kg	0.390	15.5	20	
Hexachlorobutadiene		50.0	52.9	ug/kg	0.601	5.84	20	
Isopropylbenzene		50.0	54.6	ug/kg	1.65	9.29	20	
p-Isopropyltoluene		50.0	55.2	ug/kg	2.82	10.4	20	
4-Methyl-2-Pentanone		50.0	61.9	ug/kg	0.145	23.8	20	*
Methylene Chloride		50.0	51.8	ug/kg	0.273	3.58	20	
Naphthalene		50.0	56.1	ug/kg	2.56	12.2	20	
n-Propylbenzene		50.0	54.3	ug/kg	3.69	8.62	20	
Styrene		50.0	55.1	ug/kg	1.05	10.2	20	
1,1,1,2-Tetrachloroethane		50.0	51.0	ug/kg	0.373	2.08	20	
Tetrachloroethene		50.0	54.3	ug/kg	0.379	8.50	20	
1,2,3-Trichlorobenzene		50.0	51.4	ug/kg	1.00	2.71	20	
1,2,4-Trichlorobenzene		50.0	52.4	ug/kg	1.04	4.90	20	
1,1,1-Trichloroethane		50.0	51.3	ug/kg	0.441	2.60	20	
1,1,2-Trichloroethane		50.0	53.4	ug/kg	0.316	6.73	20	
Trichloroethene		50.0	54.4	ug/kg	0.268	8.81	20	
Trichlorofluoromethane		50.0	49.2	ug/kg	0.510	1.50	20	
1,2,3-Trichloropropane		50.0	55.1	ug/kg	0.264	10.2	20	
1,2,4-Trimethylbenzene		50.0	52.9	ug/kg	2.69	5.70	20	
1,3,5-Trimethylbenzene		50.0	54.3	ug/kg	2.63	8.61	20	
o-Xylene		50.0	54.7	ug/kg	0.613	9.38	20	
m-,p-Xylene		100	106	ug/kg	0.629	5.69	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4686011
Report generated 03/25/2016 12:16

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030861 Run Date: 03/23/2016 Sample ID: WG562074-02
Instrument ID: HPMS6 Run Time: 12:47 Method: 8260B
File ID: 6M137965 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG562075 Cal ID: HPMS6 - 26-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	49.2	ug/kg	0.479	1.50	20	
1,1-Dichloroethene	CCC	50.0	51.3	ug/kg	0.449	2.59	20	
1,2-Dichloropropane	CCC	50.0	52.5	ug/kg	0.294	4.98	20	
Ethylbenzene	CCC	50.0	53.5	ug/kg	0.520	6.93	20	
Toluene	CCC	50.0	51.2	ug/kg	1.45	2.46	20	
Vinyl Chloride	CCC	50.0	45.8	ug/kg	0.353	8.35	20	
Bromoform	SPCC	50.0	52.3	ug/kg	0.284	4.69	20	
Chlorobenzene	SPCC	50.0	51.4	ug/kg	0.934	2.77	20	
Chloromethane	SPCC	50.0	38.7	ug/kg	0.370	22.7	20	*
1,1-Dichloroethane	SPCC	50.0	50.5	ug/kg	0.526	0.916	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	55.7	ug/kg	0.870	11.3	20	
Xylenes		150	160	ug/kg	0.623	7.00	40	
Acetone		50.0	56.3	ug/kg	0.127	12.6	20	
Benzene		50.0	49.6	ug/kg	1.03	0.769	20	
Bromobenzene		50.0	53.5	ug/kg	0.790	6.97	20	
Bromochloromethane		50.0	53.5	ug/kg	0.170	7.03	20	
Bromodichloromethane		50.0	51.0	ug/kg	0.375	1.91	20	
Bromomethane		50.0	52.2	ug/kg	0.215	4.49	20	
2-Butanone		50.0	54.8	ug/kg	0.189	9.53	20	
n-Butylbenzene		50.0	54.3	ug/kg	2.79	8.52	20	
sec-Butylbenzene		50.0	54.9	ug/kg	3.40	9.80	20	
tert-Butylbenzene		50.0	54.6	ug/kg	0.550	9.26	20	
Carbon Disulfide		50.0	53.1	ug/kg	0.888	6.11	20	
Carbon Tetrachloride		50.0	50.8	ug/kg	0.408	1.51	20	
Dibromochloromethane		50.0	52.2	ug/kg	0.402	4.44	20	
Chloroethane		50.0	51.4	ug/kg	0.225	2.87	20	
2-Chlorotoluene		50.0	52.7	ug/kg	2.39	5.45	20	
4-Chlorotoluene		50.0	53.1	ug/kg	2.20	6.17	20	
1,2-Dibromo-3-Chloropropane		50.0	57.6	ug/kg	0.199	15.1	20	
1,2-Dibromoethane		50.0	54.3	ug/kg	0.329	8.68	20	
Dibromomethane		50.0	51.8	ug/kg	0.170	3.63	20	
1,2-Dichlorobenzene		50.0	52.8	ug/kg	1.45	5.70	20	
1,3-Dichlorobenzene		50.0	53.2	ug/kg	1.52	6.44	20	
1,4-Dichlorobenzene		50.0	52.2	ug/kg	1.52	4.44	20	
Dichlorodifluoromethane		50.0	47.7	ug/kg	0.438	4.70	20	
1,2-Dichloroethane		50.0	48.8	ug/kg	0.405	2.45	20	
cis-1,2-Dichloroethene		50.0	52.6	ug/kg	0.284	5.30	20	
trans-1,2-Dichloroethene		50.0	52.7	ug/kg	0.255	5.49	20	
1,3-Dichloropropane		50.0	51.9	ug/kg	0.556	3.71	20	
2,2-Dichloropropane		50.0	52.4	ug/kg	0.438	4.70	20	
cis-1,3-Dichloropropene		50.0	54.2	ug/kg	0.439	8.33	20	
trans-1,3-Dichloropropene		50.0	53.0	ug/kg	0.577	6.03	20	

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030861 Run Date: 03/23/2016 Sample ID: WG562074-02
Instrument ID: HPMS6 Run Time: 12:47 Method: 8260B
File ID: 6M137965 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG562075 Cal ID: HPMS6 - 26-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	52.8	ug/kg	0.366	5.69	20	
2-Hexanone		50.0	56.5	ug/kg	0.381	13.0	20	
Hexachlorobutadiene		50.0	54.8	ug/kg	0.623	9.63	20	
Isopropylbenzene		50.0	54.5	ug/kg	1.64	9.09	20	
p-Isopropyltoluene		50.0	56.2	ug/kg	2.87	12.3	20	
4-Methyl-2-Pentanone		50.0	59.4	ug/kg	0.139	18.8	20	
Methylene Chloride		50.0	50.7	ug/kg	0.267	1.30	20	
Naphthalene		50.0	60.3	ug/kg	2.76	20.7	20	*
n-Propylbenzene		50.0	54.4	ug/kg	3.69	8.80	20	
Styrene		50.0	55.3	ug/kg	1.06	10.6	20	
1,1,1,2-Tetrachloroethane		50.0	50.8	ug/kg	0.371	1.70	20	
Tetrachloroethene		50.0	54.1	ug/kg	0.377	8.17	20	
1,2,3-Trichlorobenzene		50.0	54.9	ug/kg	1.07	9.73	20	
1,2,4-Trichlorobenzene		50.0	55.6	ug/kg	1.11	11.2	20	
1,1,1-Trichloroethane		50.0	50.8	ug/kg	0.437	1.53	20	
1,1,2-Trichloroethane		50.0	52.6	ug/kg	0.311	5.26	20	
Trichloroethene		50.0	53.2	ug/kg	0.262	6.45	20	
Trichlorofluoromethane		50.0	48.3	ug/kg	0.500	3.42	20	
1,2,3-Trichloropropane		50.0	56.1	ug/kg	0.268	12.2	20	
1,2,4-Trimethylbenzene		50.0	54.3	ug/kg	2.76	8.69	20	
1,3,5-Trimethylbenzene		50.0	55.1	ug/kg	2.66	10.2	20	
o-Xylene		50.0	55.4	ug/kg	0.621	10.7	20	
m-,p-Xylene		100	105	ug/kg	0.626	5.14	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4686011
Report generated 03/25/2016 12:16

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16030861
Instrument ID: HPMS6
Workgroup (AAB#): WG561881

ICAL CCV Number: WG558920-08
CAL ID: HPMS6-26-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558920-08	NA	NA	237573	439950	607631
Upper Limit	NA	NA	475146	879900	1215262
Lower Limit	NA	NA	118787	219975	303816
L16030861-01	1.00	01	221948	414840	566348
L16030861-02	1.00	01	194004	376397	522721
L16030861-03	1.00	01	205242	401983	555754
L16030861-04	1.00	01	210645	415043	570669
WG561881-01	1.00	01	218601	414845	568180
WG561881-02	1.00	01	221382	411330	563138

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4689207
Report generated 03/25/2016 12:16

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16030861
Instrument ID: HPMS6
Workgroup (AAB#): WG562075

ICAL CCV Number: WG558920-08
CAL ID: HPMS6-26-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558920-08	NA	NA	237573	439950	607631
Upper Limit	NA	NA	475146	879900	1215262
Lower Limit	NA	NA	118787	219975	303816
L16030861-03	1.00	02	208071	399628	543112
L16030861-05	1.00	01	169378	370792	530731
L16030861-06	1.00	01	199403	391274	538576
L16030861-07	1.00	01	202516	391017	542135
L16030861-08	1.00	01	215736	415316	568224
L16030861-09	1.00	01	215078	409079	548404
L16030861-10	1.00	01	223093	414551	553814
WG562075-01	1.00	01	220763	420780	568472
WG562075-02	1.00	01	231205	431283	579730

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4689207
Report generated 03/25/2016 12:16

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16030861
Instrument ID: HPMS6
Workgroup (AAB#): WG561881

ICAL CCV Number: WG558920-08
CAL ID: HPMS6-26-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558920-08	NA	NA	19.6	16.01	11.51
Upper Limit	NA	NA	20.1	16.51	12.01
Lower Limit	NA	NA	19.1	15.51	11.01
L16030861-01	1.00	01	19.6	16.01	11.51
L16030861-02	1.00	01	19.59	16.01	11.51
L16030861-03	1.00	01	19.6	16.01	11.51
L16030861-04	1.00	01	19.59	16.01	11.51
WG561881-01	1.00	01	19.6	16.01	11.52
WG561881-02	1.00	01	19.6	16.01	11.51

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4689208
Report generated: 03/25/2016 12:16

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16030861
Instrument ID: HPMS6
Workgroup (AAB#): WG562075

ICAL CCV Number: WG558920-08
CAL ID: HPMS6-26-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558920-08	NA	NA	19.6	16.01	11.51
Upper Limit	NA	NA	20.1	16.51	12.01
Lower Limit	NA	NA	19.1	15.51	11.01
L16030861-03	1.00	02	19.59	16.01	11.51
L16030861-05	1.00	01	19.6	16.01	11.52
L16030861-06	1.00	01	19.59	16.01	11.51
L16030861-07	1.00	01	19.59	16.02	11.51
L16030861-08	1.00	01	19.59	16.01	11.51
L16030861-09	1.00	01	19.6	16.01	11.52
L16030861-10	1.00	01	19.59	16.01	11.51
WG562075-01	1.00	01	19.59	16.01	11.51
WG562075-02	1.00	01	19.59	16.01	11.51

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4689208
Report generated: 03/25/2016 12:16

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032216\6M137955.D Vial: 18
Acq On : 22 Mar 2016 20:49 Operator: TMB
Sample : L16030861-01 8260 4.72g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 08:53:25 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	566348	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	414840	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	221948	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	142374	46.8629 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.72%		
43) 1,2-Dichloroethane-d4	11.06	65	177109	44.8993 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 89.80%		
58) Toluene-d8	13.80	98	499617	50.6557 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.32%		
80) p-Bromofluorobenzene	17.79	95	204911	50.2637 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 100.52%		

Target Compounds

					Qvalue
13) Acetone	6.61	43	2295	Below Cal #	48
15) Tert-Butyl Alcohol	6.95	59	211	0.4563 ug/L #	57
36) Tetrahydrofuran	10.30	42	2322	Below Cal #	55
60) Ethyl Methacrylate	13.80	69	1016	0.2702 ug/L	67

(#) = qualifier out of range (m) = manual integration
6M137955.D 826_SL.M Wed Mar 23 08:53:26 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032216\6M137955.D Vial: 18
Acq On : 22 Mar 2016 20:49 Operator: TMB
Sample : L16030861-01 8260 4.72g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 8:53 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

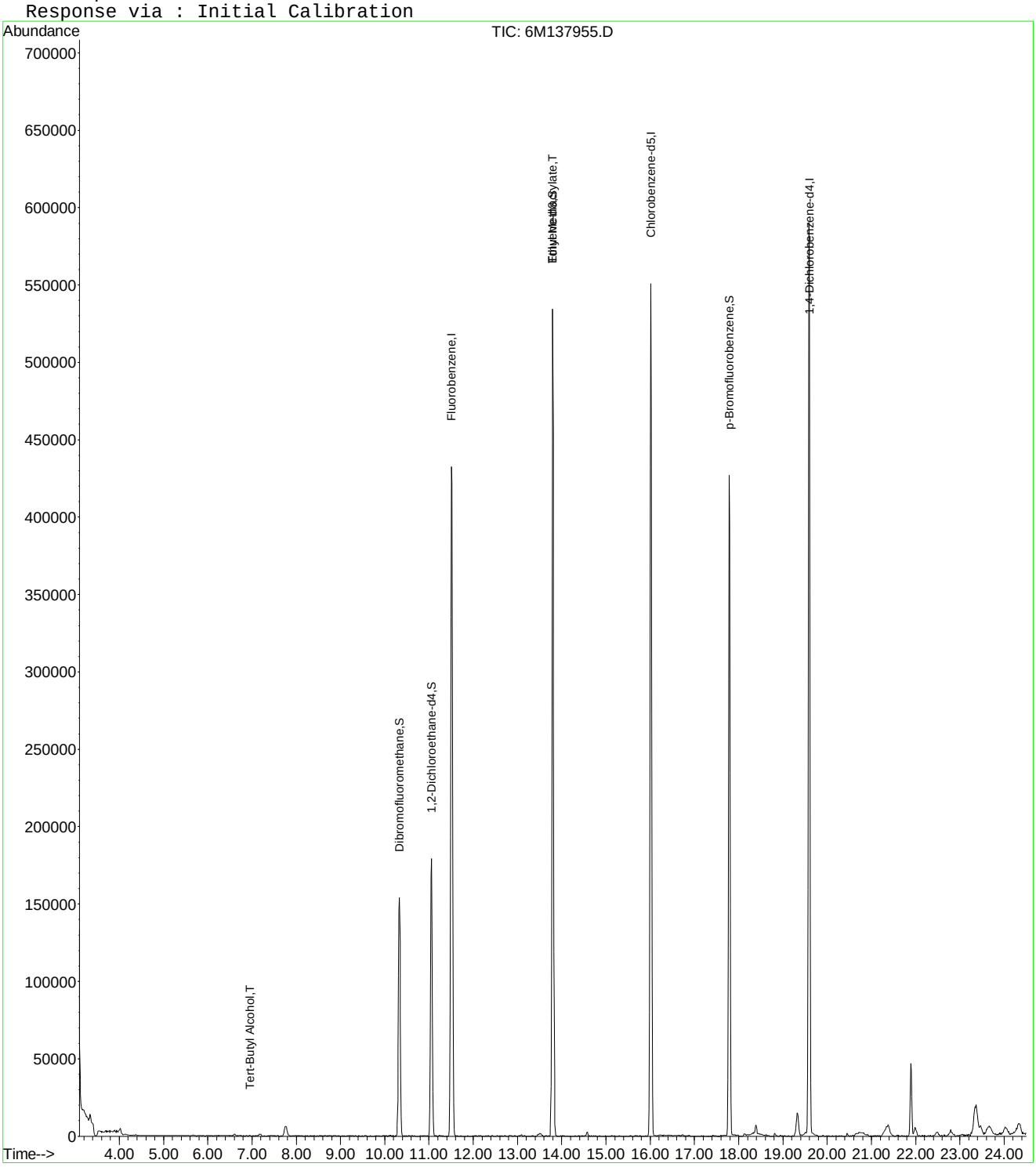

6M137955.D 826_SL.M Wed Mar 23 08:53:26 2016 Page 2

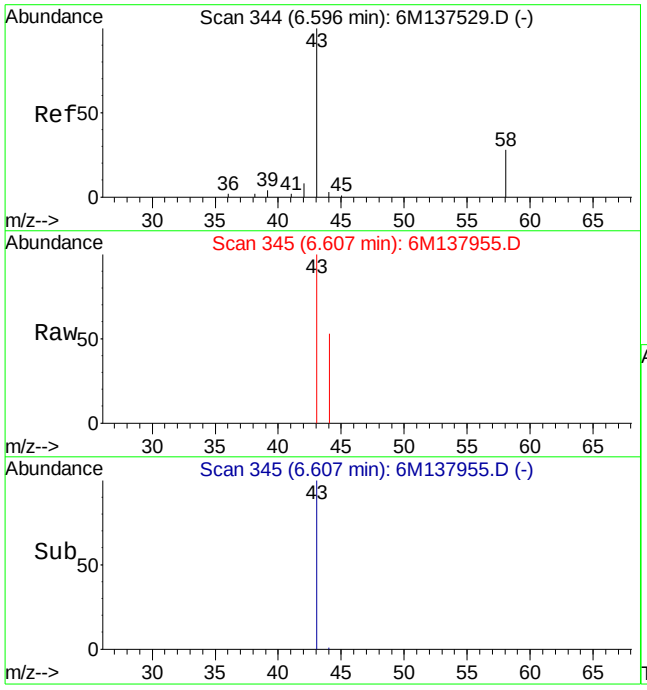

#13
Acetone
Concen: Below Cal
RT: 6.61 min Scan# 345
Delta R.T. 0.02 min
Lab File: 6M137955.D
Acq: 22 Mar 2016 20:49

Tgt Ion: 43 Resp: 2295

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.1	37.7#

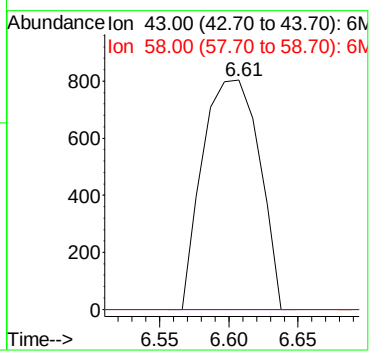

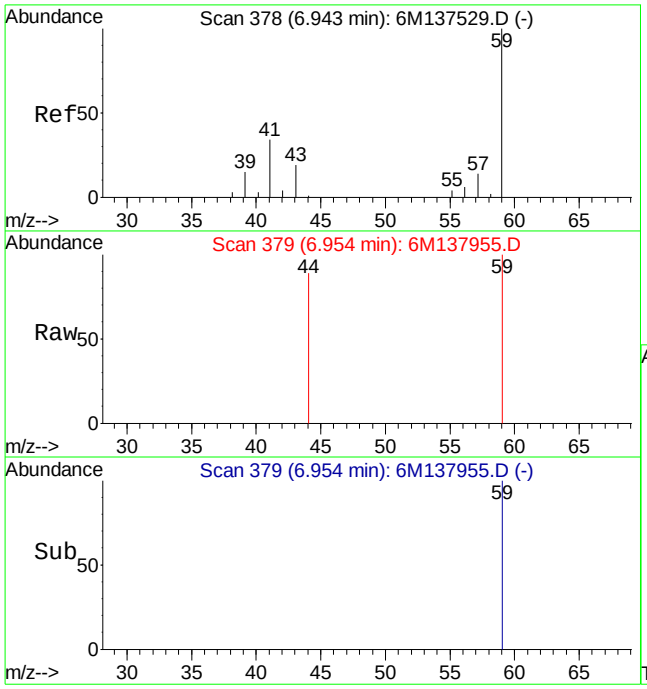

#15
Tert-Butyl Alcohol
Concen: 0.46 ug/L
RT: 6.95 min Scan# 379
Delta R.T. 0.02 min
Lab File: 6M137955.D
Acq: 22 Mar 2016 20:49

Tgt Ion: 59 Resp: 211

Ion	Ratio	Lower	Upper
59	100		
41	0.0	15.0	35.0#
57	0.0	5.9	13.9#

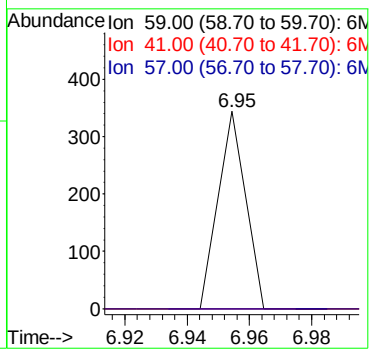

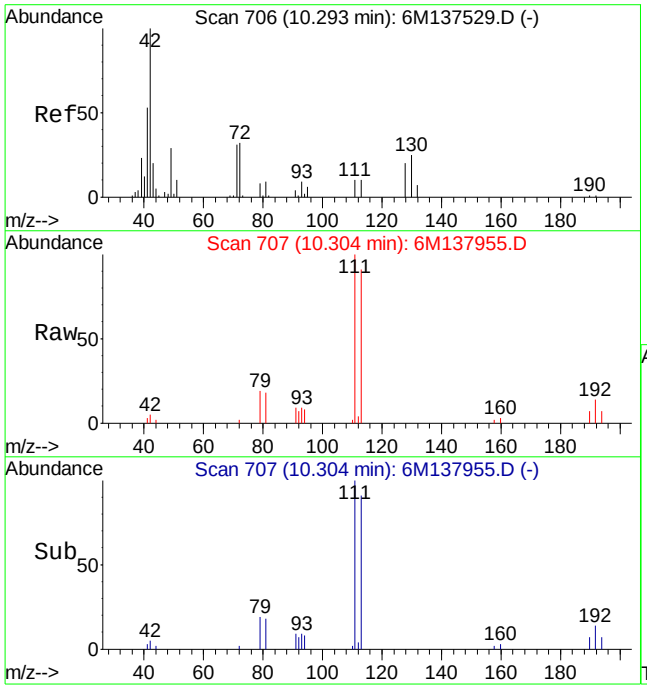

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.30 min Scan# 707
Delta R.T. 0.01 min
Lab File: 6M137955.D
Acq: 22 Mar 2016 20:49

Tgt Ion: 42 Resp: 2322

Ion	Ratio	Lower	Upper
42	100		
72	17.3	21.0	49.0#
71	0.0	20.6	48.2#

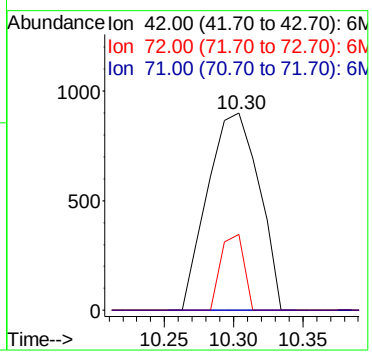

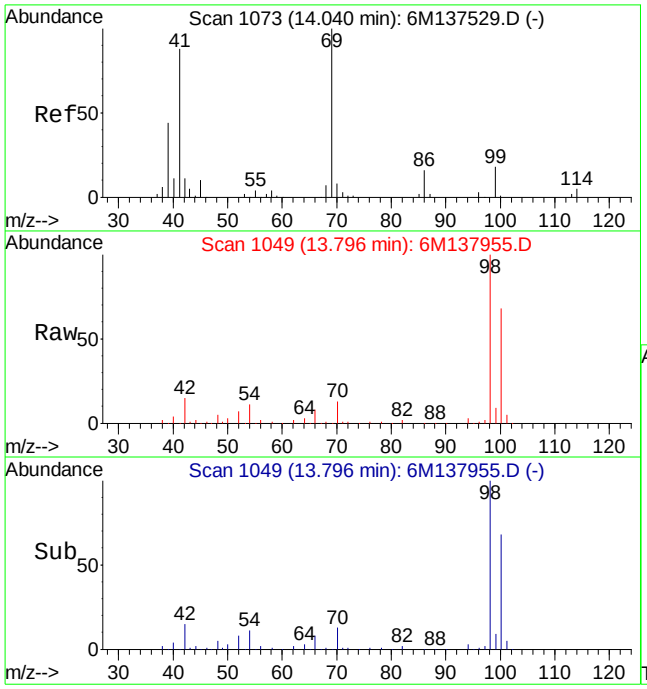

#60
Ethyl Methacrylate
Concen: 0.27 ug/L
RT: 13.80 min Scan# 1049
Delta R.T. -0.24 min
Lab File: 6M137955.D
Acq: 22 Mar 2016 20:49

Tgt Ion: 69 Resp: 1016

Ion	Ratio	Lower	Upper
69	100		
41	114.0	50.6	118.2

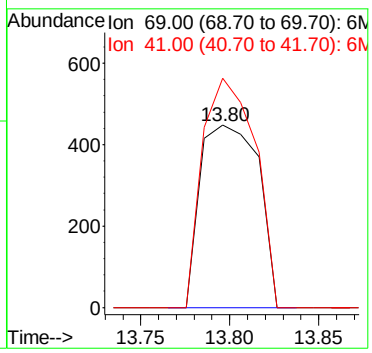

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032216\6M137954.D Vial: 17
Acq On : 22 Mar 2016 20:16 Operator: TMB
Sample : L16030861-02 8260 4.81g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 08:53:24 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	522721	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	376397	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	194004	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.34	111	128732	45.9091 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 91.82%		
43) 1,2-Dichloroethane-d4	11.05	65	156020	42.8541 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 85.70%		
58) Toluene-d8	13.80	98	461594	51.5805 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 103.16%		
80) p-Bromofluorobenzene	17.79	95	184147	51.6767 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 103.36%		

Target Compounds					Qvalue
13) Acetone	6.59	43	9188	4.0159 ug/L #	1
29) 2-Butanone	9.45	43	457	0.2529 ug/L #	56
36) Tetrahydrofuran	10.30	42	2961	0.3230 ug/L #	67
86) 2-Chlorotoluene	18.30	91	20881	2.3745 ug/L #	49
87) 4-Chlorotoluene	18.30	91	20881	2.5969 ug/L #	47
90) 1,2,4-Trimethylbenzene	18.82	105	3077	0.3120 ug/L	77

(#) = qualifier out of range (m) = manual integration
6M137954.D 826_SL.M Wed Mar 23 08:53:25 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032216\6M137954.D Vial: 17
Acq On : 22 Mar 2016 20:16 Operator: TMB
Sample : L16030861-02 8260 4.81g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 8:53 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

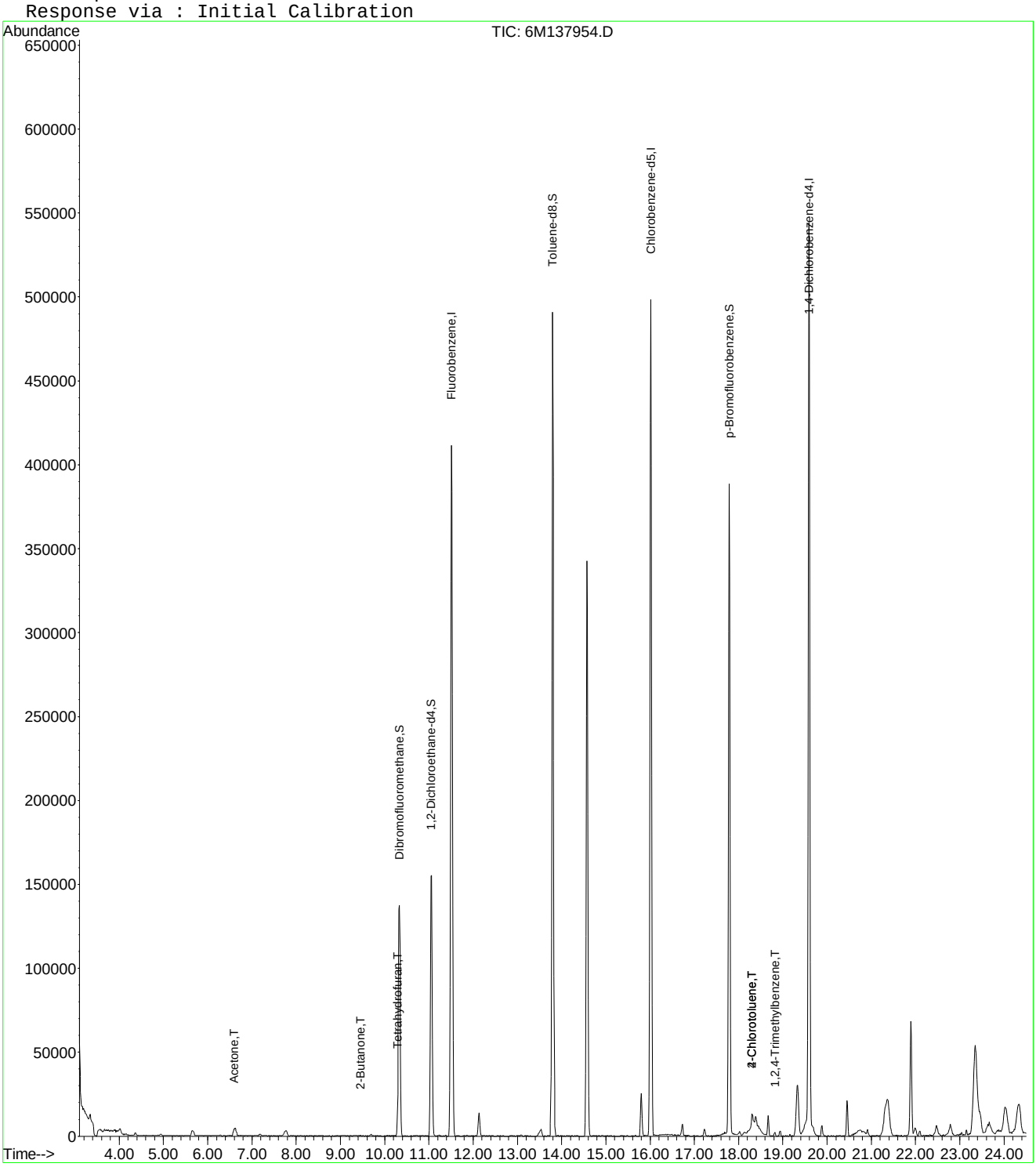

6M137954.D 826_SL.M Wed Mar 23 08:53:25 2016 Page 2

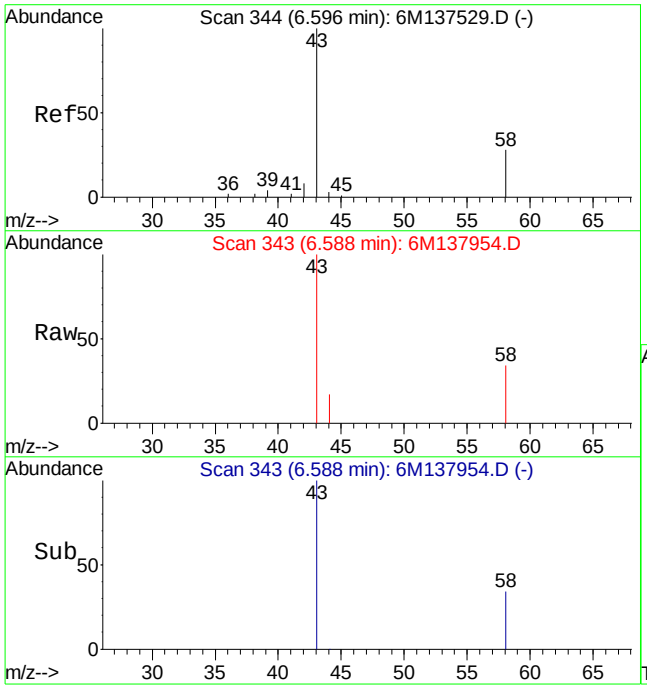

#13
Acetone
Concen: 4.02 ug/L
RT: 6.59 min Scan# 343
Delta R.T. 0.00 min
Lab File: 6M137954.D
Acq: 22 Mar 2016 20:16

Tgt Ion: 43 Resp: 9188

Ion	Ratio	Lower	Upper
43	100		
58	93.6	16.1	37.7#

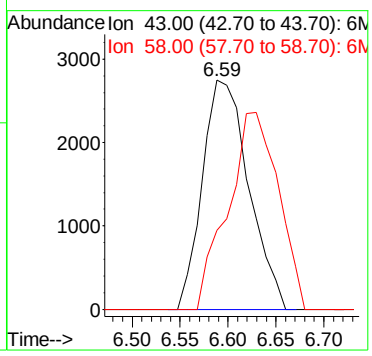

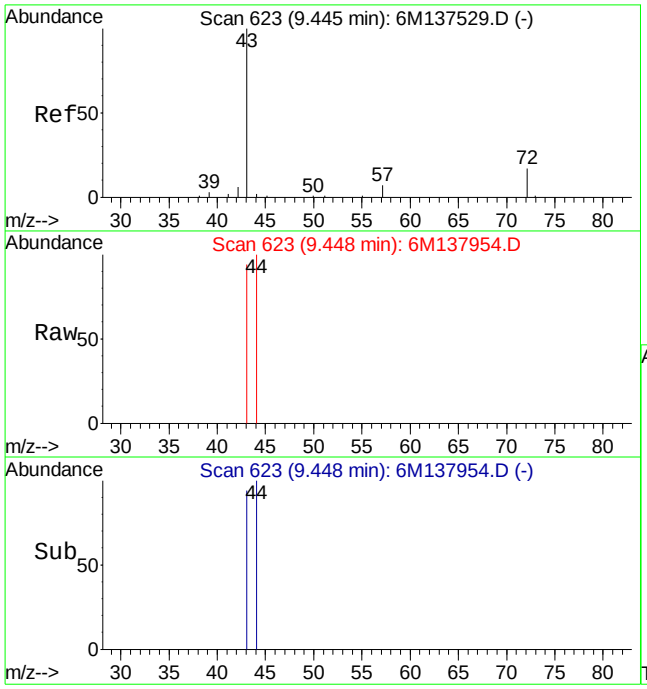

#29
2-Butanone
Concen: 0.25 ug/L
RT: 9.45 min Scan# 623
Delta R.T. 0.00 min
Lab File: 6M137954.D
Acq: 22 Mar 2016 20:16

Tgt Ion: 43 Resp: 457

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.2	28.4#

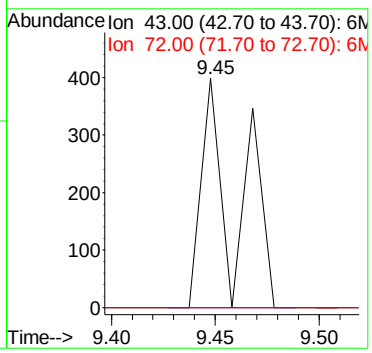

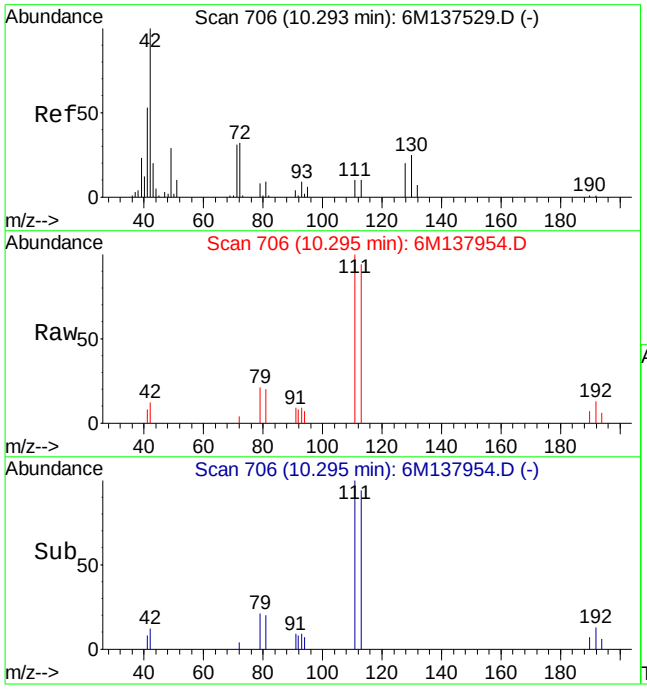

#36
Tetrahydrofuran
Concen: 0.32 ug/L
RT: 10.30 min Scan# 706
Delta R.T. 0.00 min
Lab File: 6M137954.D
Acq: 22 Mar 2016 20:16

Tgt Ion: 42 Resp: 2961

Ion	Ratio	Lower	Upper
42	100		
72	14.4	21.0	49.0#
71	16.3	20.6	48.2#

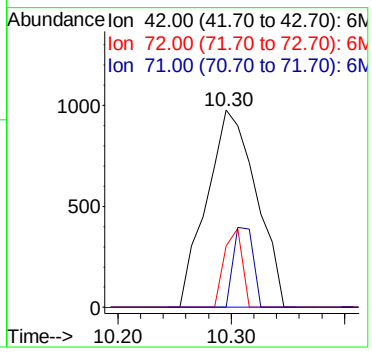

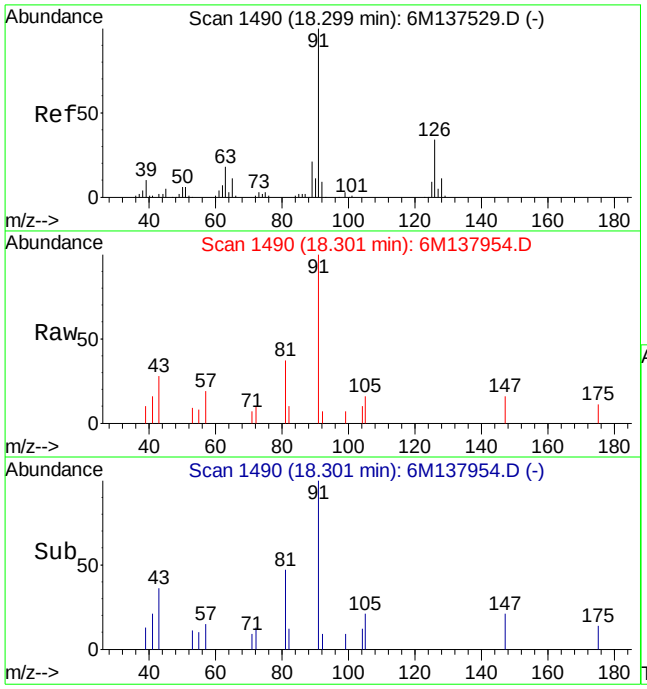

#86
2-Chlorotoluene
Concen: 2.37 ug/L
RT: 18.30 min Scan# 1490
Delta R.T. 0.00 min
Lab File: 6M137954.D
Acq: 22 Mar 2016 20:16

Tgt Ion: 91 Resp: 20881

Ion	Ratio	Lower	Upper
91	100		
126	0.0	18.5	43.3#
63	0.0	11.6	27.2#

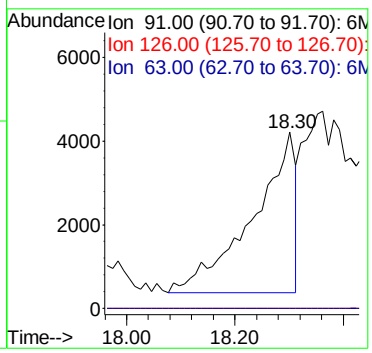

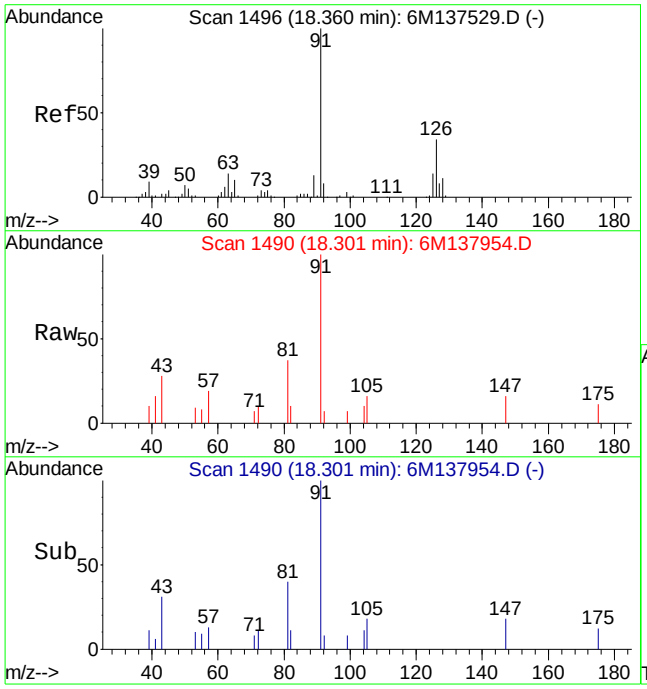

#87
4-Chlorotoluene
Concen: 2.60 ug/L
RT: 18.30 min Scan# 1490
Delta R.T. -0.05 min
Lab File: 6M137954.D
Acq: 22 Mar 2016 20:16

Tgt Ion: 91 Resp: 20881

Ion	Ratio	Lower	Upper
91	100		
126	0.0	21.0	49.0#
63	0.0	8.8	20.6#

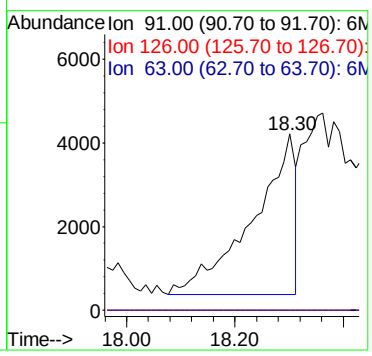

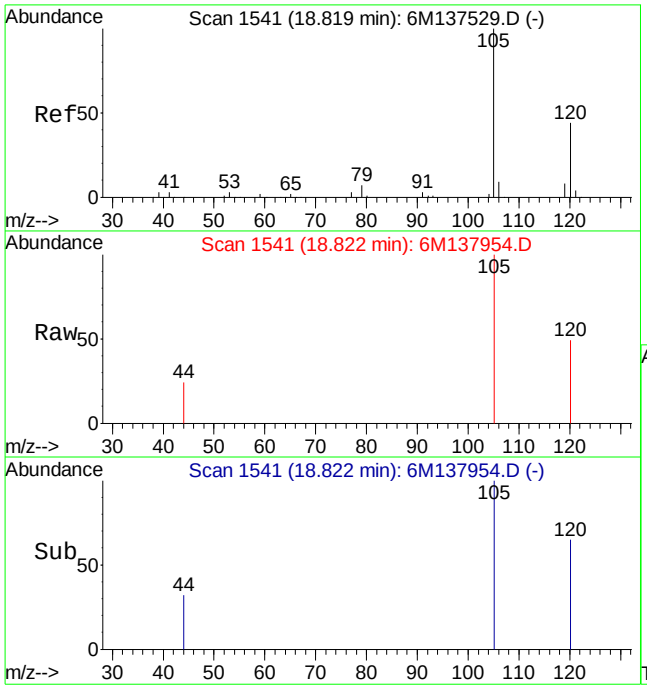

#90
1,2,4-Trimethylbenzene
Concen: 0.31 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. 0.00 min
Lab File: 6M137954.D
Acq: 22 Mar 2016 20:16

Tgt Ion:105 Resp: 3077

Ion	Ratio	Lower	Upper
105	100		
120	40.4	34.3	79.9

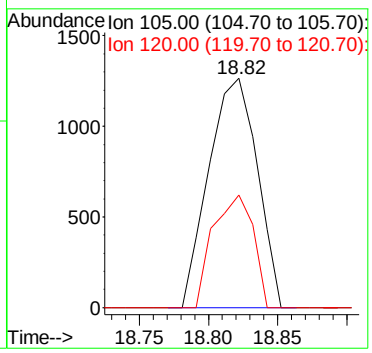

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032216\6M137953.D Vial: 16
Acq On : 22 Mar 2016 19:43 Operator: TMB
Sample : L16030861-03 8260 4.70g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 08:53:23 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	555754	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	401983	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	205242	50.00 ug/L	0.01

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	137493	46.1190 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 92.24%		
43) 1,2-Dichloroethane-d4	11.06	65	166011	42.8880 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 85.78%		
58) Toluene-d8	13.80	98	490202	51.2907 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 102.58%		
80) p-Bromofluorobenzene	17.79	95	198462	52.6443 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 105.28%		

Target Compounds

					Qvalue
13) Acetone	6.60	43	14141	7.7793 ug/L #	71
15) Tert-Butyl Alcohol	6.96	59	888	1.9568 ug/L #	57
29) 2-Butanone	9.45	43	1492	0.7767 ug/L #	56
36) Tetrahydrofuran	10.29	42	3739	0.7913 ug/L #	76
60) Ethyl Methacrylate	13.80	69	996	0.2734 ug/L #	56
83) n-Propylbenzene	17.82	91	28811	2.0670 ug/L #	58
86) 2-Chlorotoluene	18.37	91	223783	24.0540 ug/L #	49
87) 4-Chlorotoluene	18.37	91	224946	26.4436 ug/L #	47
90) 1,2,4-Trimethylbenzene	18.82	105	8340	0.7993 ug/L	74

(#) = qualifier out of range (m) = manual integration
6M137953.D 826_SL.M Wed Mar 23 08:53:23 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032216\6M137953.D Vial: 16
Acq On : 22 Mar 2016 19:43 Operator: TMB
Sample : L16030861-03 8260 4.70g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 8:53 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

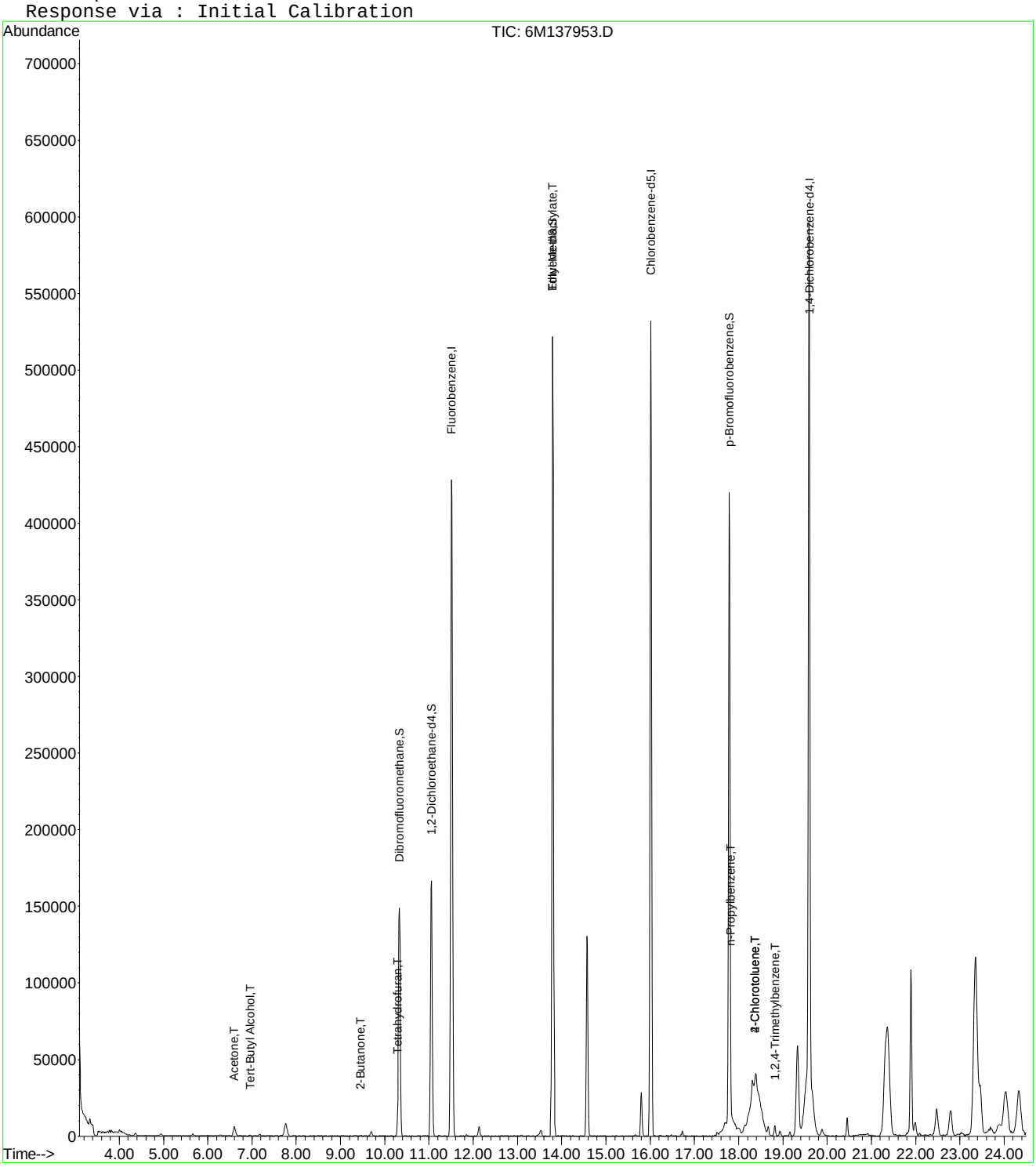

6M137953.D 826_SL.M Wed Mar 23 08:53:23 2016 Page 2

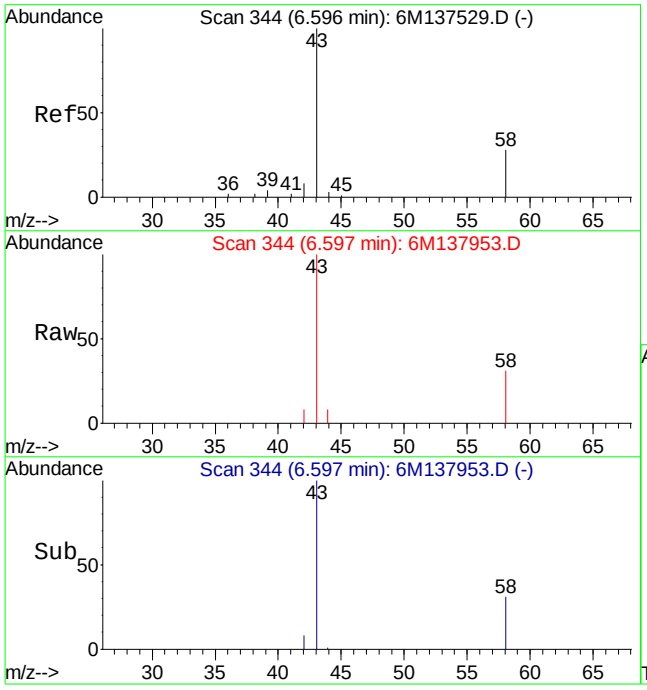

#13
Acetone
Concen: 7.78 ug/L
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137953.D
Acq: 22 Mar 2016 19:43

Tgt Ion: 43 Resp: 14141

Ion	Ratio	Lower	Upper
43	100		
58	41.8	16.1	37.7#

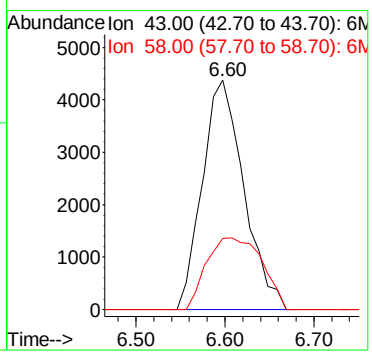

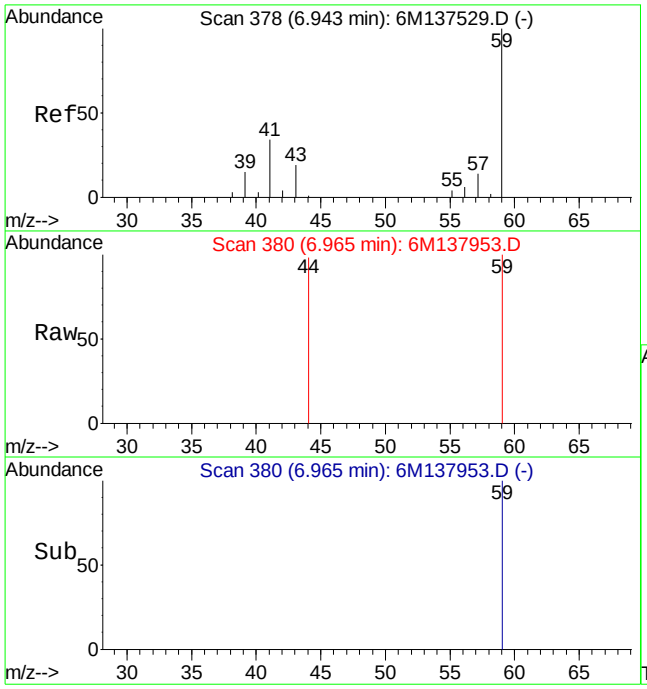

#15
Tert-Butyl Alcohol
Concen: 1.96 ug/L
RT: 6.96 min Scan# 380
Delta R.T. 0.03 min
Lab File: 6M137953.D
Acq: 22 Mar 2016 19:43

Tgt Ion: 59 Resp: 888

Ion	Ratio	Lower	Upper
59	100		
41	0.0	15.0	35.0#
57	0.0	5.9	13.9#

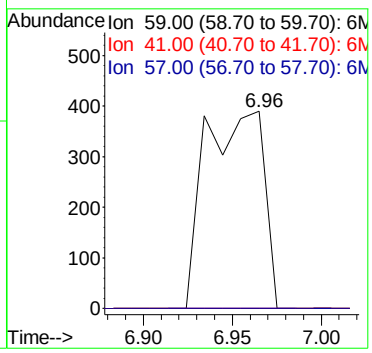

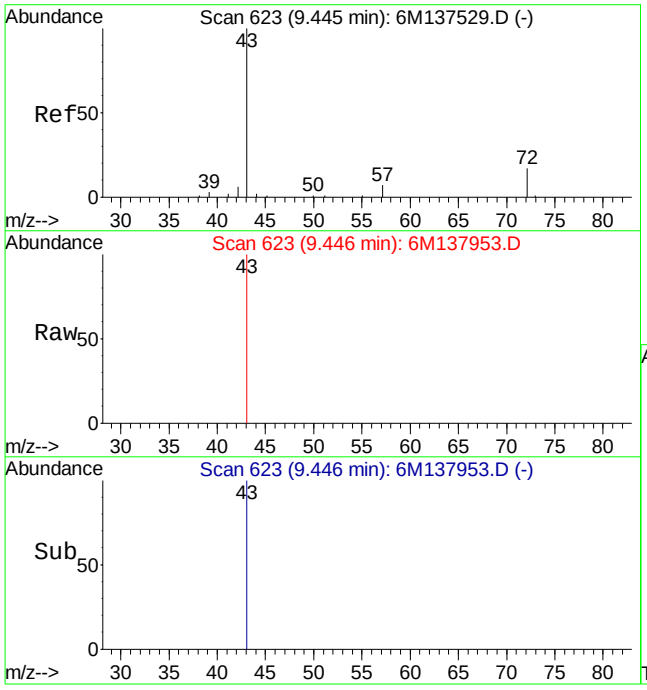

#29
2-Butanone
Concen: 0.78 ug/L
RT: 9.45 min Scan# 623
Delta R.T. 0.00 min
Lab File: 6M137953.D
Acq: 22 Mar 2016 19:43

Tgt Ion: 43 Resp: 1492

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.2	28.4#

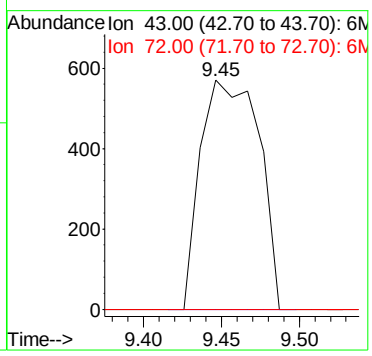

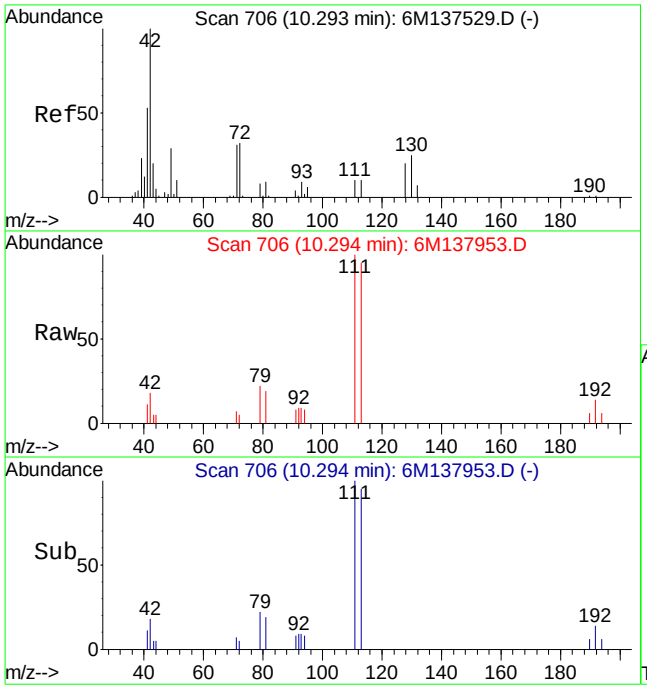

#36
Tetrahydrofuran
Concen: 0.79 ug/L
RT: 10.29 min Scan# 706
Delta R.T. 0.00 min
Lab File: 6M137953.D
Acq: 22 Mar 2016 19:43

Tgt Ion: 42 Resp: 3739

Ion	Ratio	Lower	Upper
42	100		
72	14.2	21.0	49.0#
71	27.5	20.6	48.2

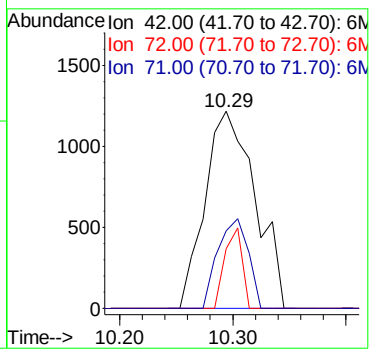

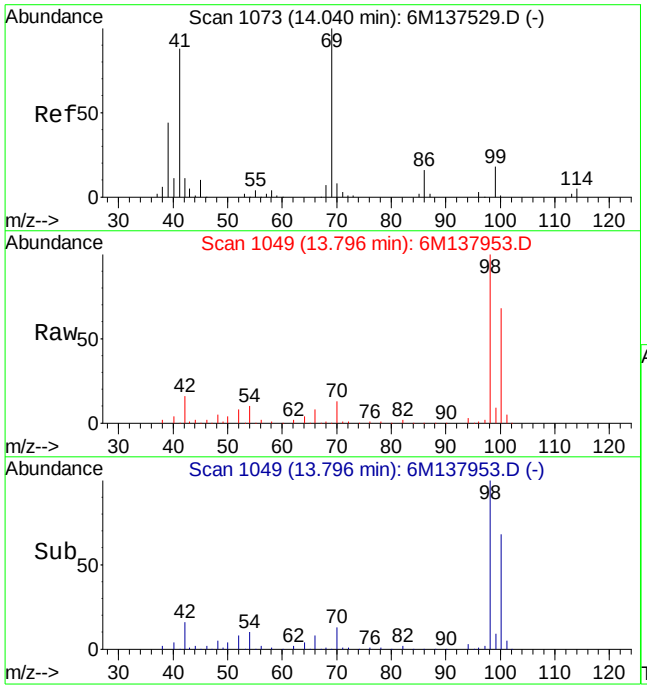

#60
Ethyl Methacrylate
Concen: 0.27 ug/L
RT: 13.80 min Scan# 1049
Delta R.T. -0.23 min
Lab File: 6M137953.D
Acq: 22 Mar 2016 19:43

Tgt Ion: 69 Resp: 996

Ion	Ratio	Lower	Upper
69	100		
41	124.0	50.6	118.2#

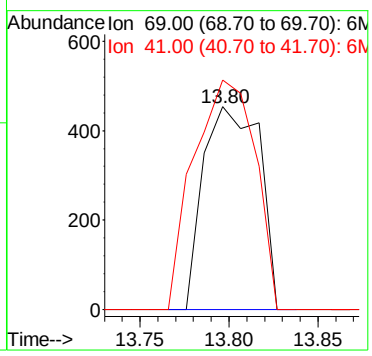

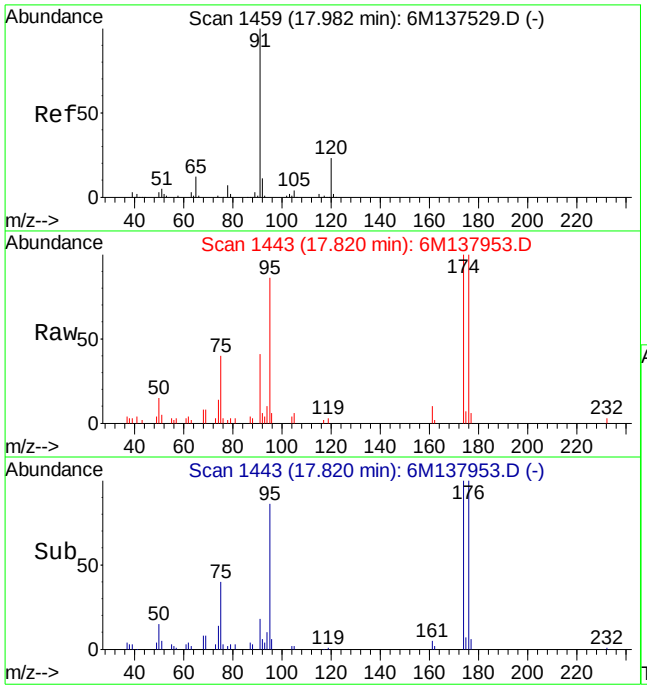

#83
n-Propylbenzene
Concen: 2.07 ug/L
RT: 17.82 min Scan# 1443
Delta R.T. -0.16 min
Lab File: 6M137953.D
Acq: 22 Mar 2016 19:43

Tgt Ion: 91 Resp: 28811

Ion	Ratio	Lower	Upper
91	100		
120	0.0	13.8	32.2#
105	4.6	2.1	4.9

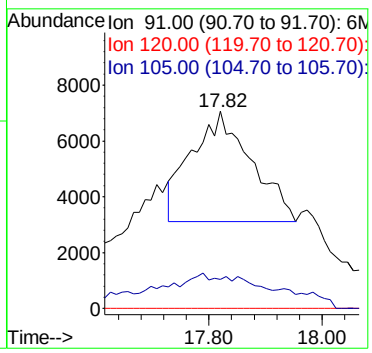

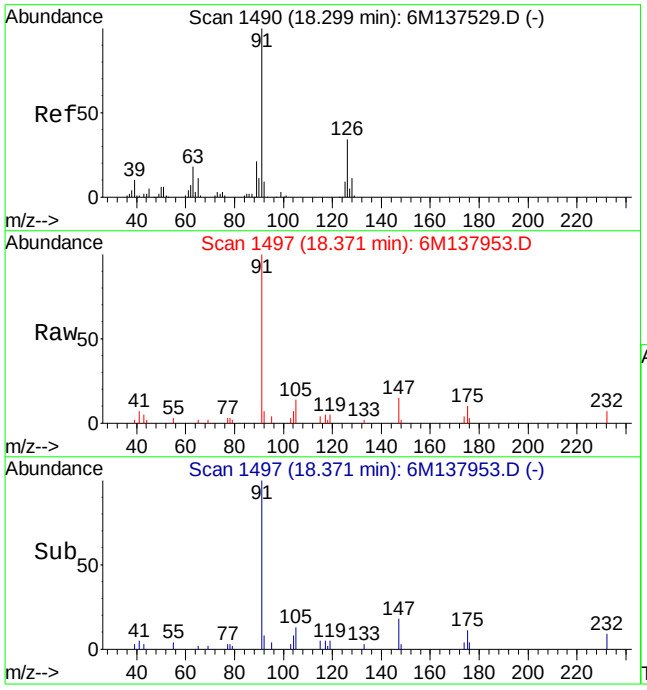

#86
2-Chlorotoluene
Concen: 24.05 ug/L
RT: 18.37 min Scan# 1497
Delta R.T. 0.07 min
Lab File: 6M137953.D
Acq: 22 Mar 2016 19:43

Tgt Ion: 91 Resp: 223783

Ion	Ratio	Lower	Upper
91	100		
126	0.0	18.5	43.3#
63	0.0	11.6	27.2#

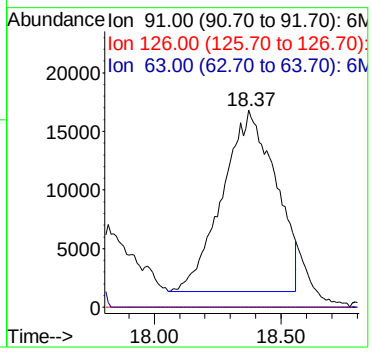

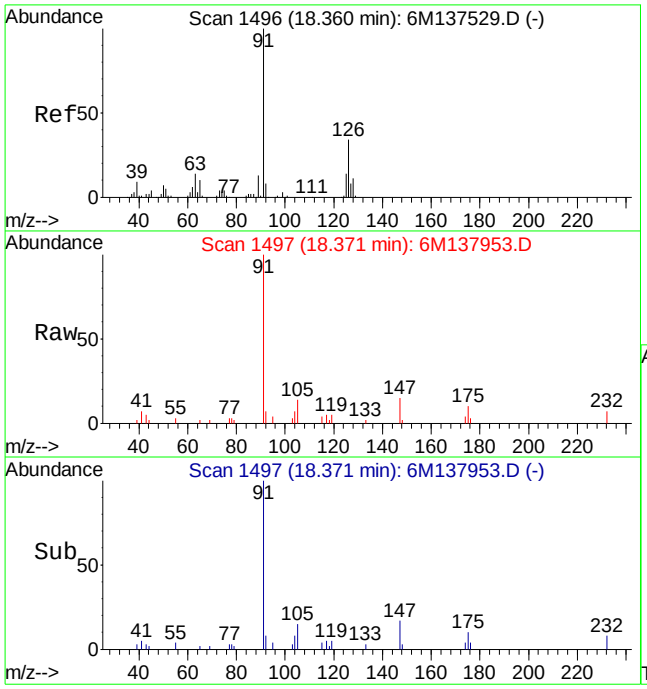

#87
4-Chlorotoluene
Concen: 26.44 ug/L
RT: 18.37 min Scan# 1497
Delta R.T. 0.02 min
Lab File: 6M137953.D
Acq: 22 Mar 2016 19:43

Tgt Ion: 91 Resp: 224946

Ion	Ratio	Lower	Upper
91	100		
126	0.0	21.0	49.0#
63	0.0	8.8	20.6#

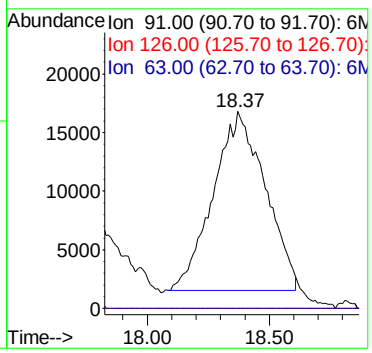

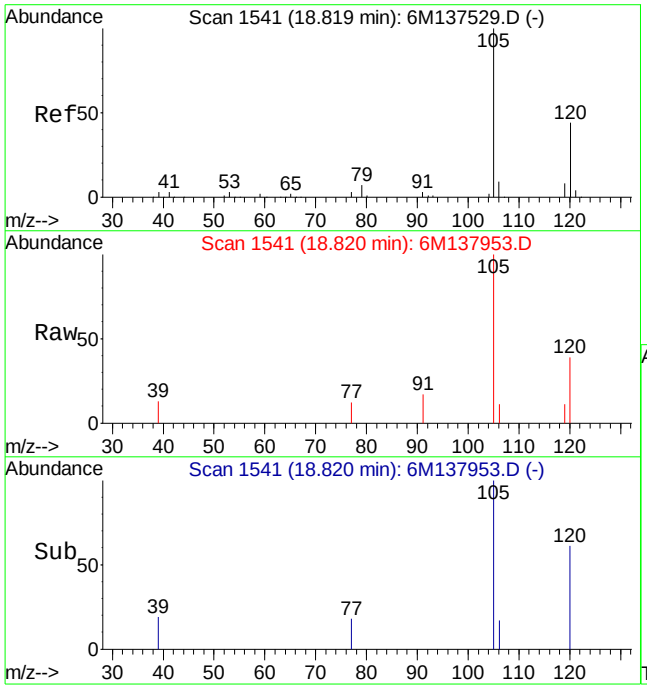

#90
1,2,4-Trimethylbenzene
Concen: 0.80 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. 0.00 min
Lab File: 6M137953.D
Acq: 22 Mar 2016 19:43

Tgt Ion:105 Resp: 8340

Ion	Ratio	Lower	Upper
105	100		
120	38.1	34.3	79.9

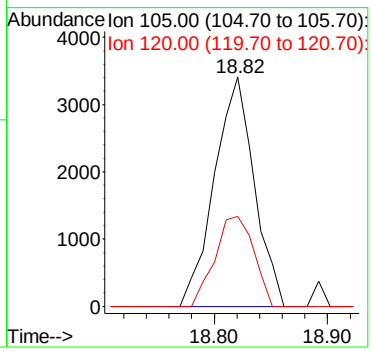

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137974.D Vial: 12
Acq On : 23 Mar 2016 17:43 Operator: TMB
Sample : L16030861-03 8260 5.04g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 08:29:35 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	543112	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	399628	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	208071	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.34	111	139279	47.8055 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.62%		
43) 1,2-Dichloroethane-d4	11.05	65	170752	45.1397 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 90.28%		
58) Toluene-d8	13.80	98	480831	50.6067 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.22%		
80) p-Bromofluorobenzene	17.79	95	195703	51.2067 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.42%		

Target Compounds

					Qvalue
13) Acetone	6.60	43	10656	4.9932 ug/L #	79
15) Tert-Butyl Alcohol	6.95	59	2148	4.8435 ug/L #	57
29) 2-Butanone	9.68	43	672	0.3580 ug/L #	56
60) Ethyl Methacrylate	13.81	69	970	0.2678 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M137974.D 826_SL.M Thu Mar 24 08:29:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137974.D Vial: 12
Acq On : 23 Mar 2016 17:43 Operator: TMB
Sample : L16030861-03 8260 5.04g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 8:29 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

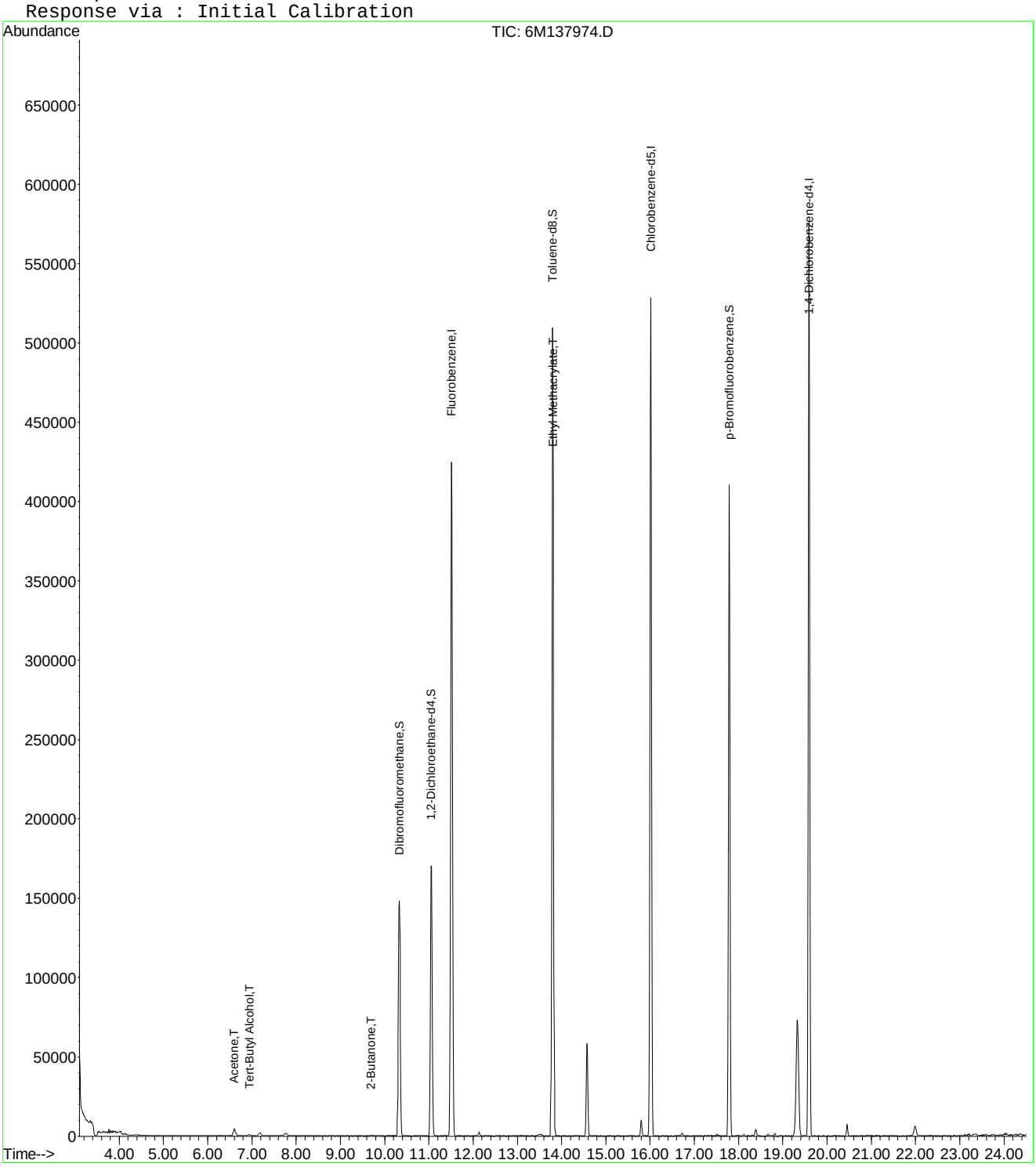

6M137974.D 826_SL.M Thu Mar 24 08:29:36 2016 Page 2

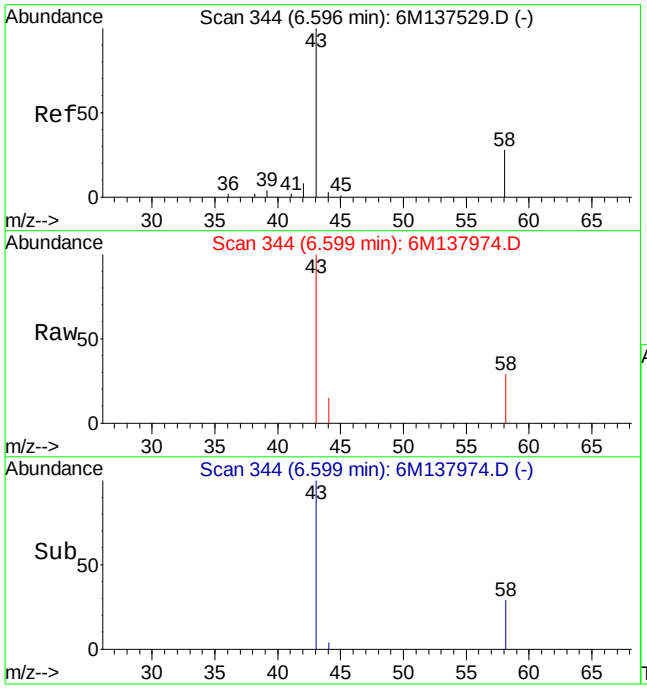

#13
Acetone
Concen: 4.99 ug/L
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137974.D
Acq: 23 Mar 2016 17:43

Tgt Ion: 43 Resp: 10656

Ion	Ratio	Lower	Upper
43	100		
58	38.0	16.1	37.7#

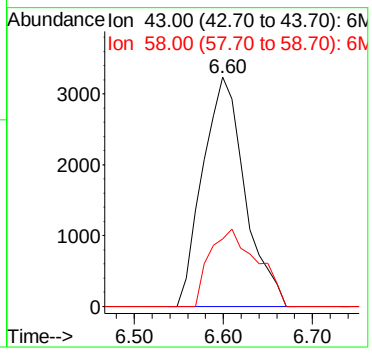

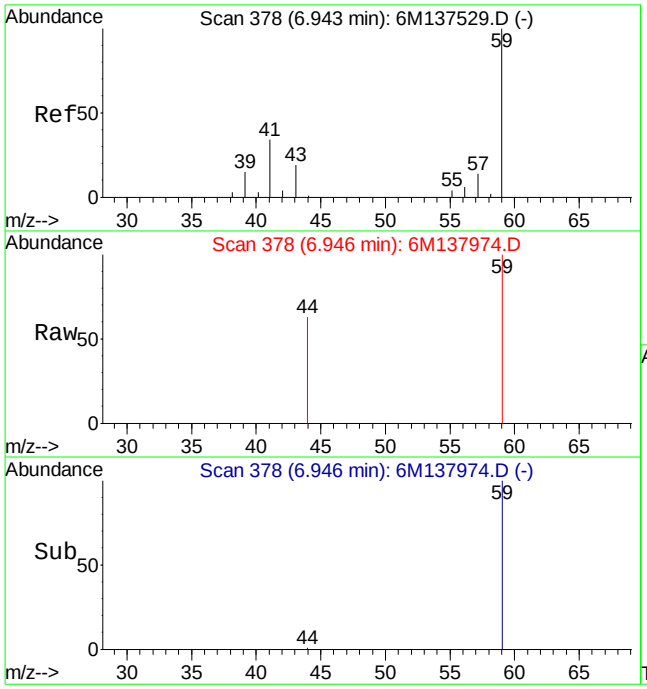

#15
Tert-Butyl Alcohol
Concen: 4.84 ug/L
RT: 6.95 min Scan# 378
Delta R.T. 0.01 min
Lab File: 6M137974.D
Acq: 23 Mar 2016 17:43

Tgt Ion: 59 Resp: 2148

Ion	Ratio	Lower	Upper
59	100		
41	0.0	15.0	35.0#
57	0.0	5.9	13.9#

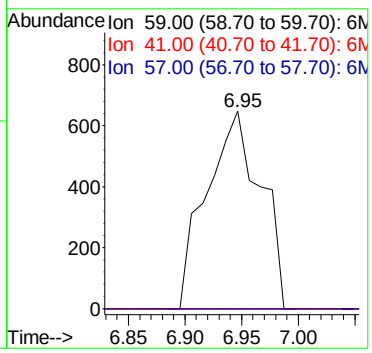

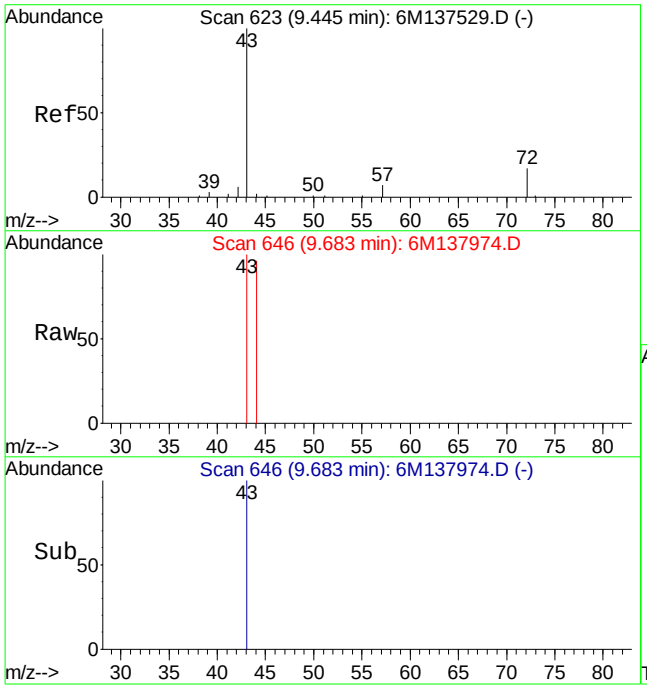

#29
2-Butanone
Concen: 0.36 ug/L
RT: 9.68 min Scan# 646
Delta R.T. 0.24 min
Lab File: 6M137974.D
Acq: 23 Mar 2016 17:43

Tgt Ion: 43 Resp: 672

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.2	28.4#

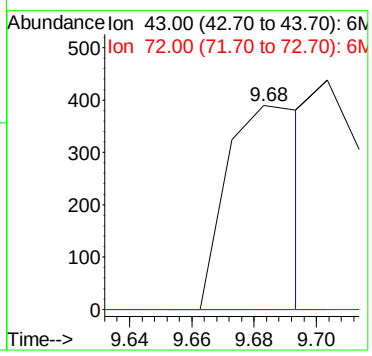

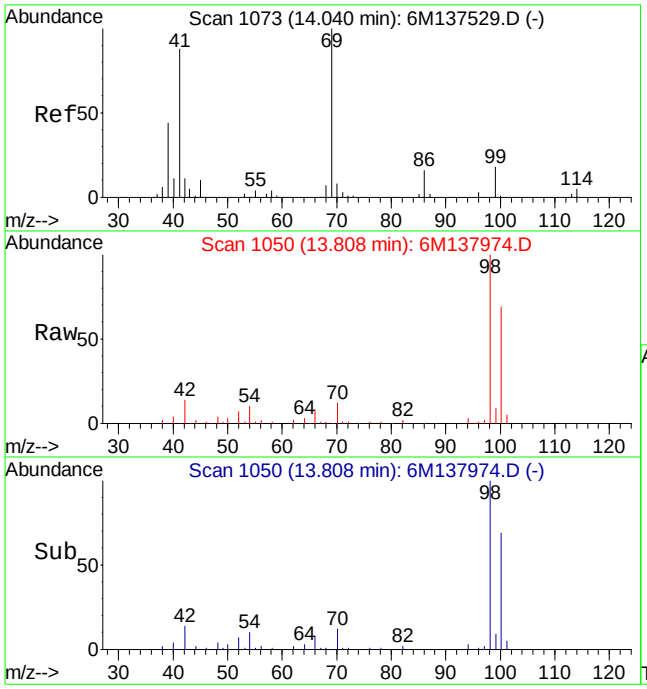

#60
Ethyl Methacrylate
Concen: 0.27 ug/L
RT: 13.81 min Scan# 1050
Delta R.T. -0.22 min
Lab File: 6M137974.D
Acq: 23 Mar 2016 17:43

Tgt Ion: 69 Resp: 970

Ion	Ratio	Lower	Upper
69	100		
41	81.2	50.6	118.2

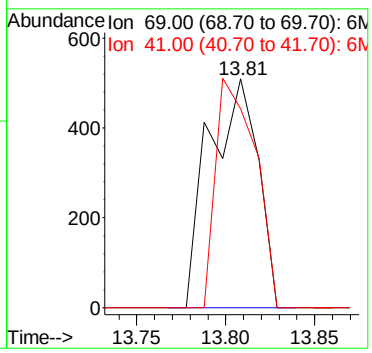

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032216\6M137952.D Vial: 15
Acq On : 22 Mar 2016 19:09 Operator: TMB
Sample : L16030861-04 8260 5.10g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 08:53:22 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	570669	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	415043	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	210645	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	142533	46.5600 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.12%		
43) 1,2-Dichloroethane-d4	11.06	65	173846	43.7384 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 87.48%		
58) Toluene-d8	13.80	98	504346	51.1101 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 102.22%		
80) p-Bromofluorobenzene	17.79	95	203984	52.7212 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 105.44%		

Target Compounds

					Qvalue
13) Acetone	6.59	43	11829	5.5232 ug/L #	1
15) Tert-Butyl Alcohol	6.94	59	203	0.4356 ug/L #	57
29) 2-Butanone	9.46	43	1020	0.5171 ug/L #	56
36) Tetrahydrofuran	10.30	42	4271	1.1245 ug/L #	79
60) Ethyl Methacrylate	13.81	69	1066	0.2834 ug/L #	23
82) trans-1,4-Dichloro-2-Buten	18.02	53	422	0.3474 ug/L #	1
83) n-Propylbenzene	17.80	91	44794	3.1313 ug/L #	58
86) 2-Chlorotoluene	18.39	91	134424	14.0784 ug/L #	49
87) 4-Chlorotoluene	18.39	91	138556	15.8702 ug/L #	47
90) 1,2,4-Trimethylbenzene	18.81	105	5024	0.4692 ug/L	74

(#) = qualifier out of range (m) = manual integration
6M137952.D 826_SL.M Wed Mar 23 08:53:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032216\6M137952.D Vial: 15
Acq On : 22 Mar 2016 19:09 Operator: TMB
Sample : L16030861-04 8260 5.10g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 8:53 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

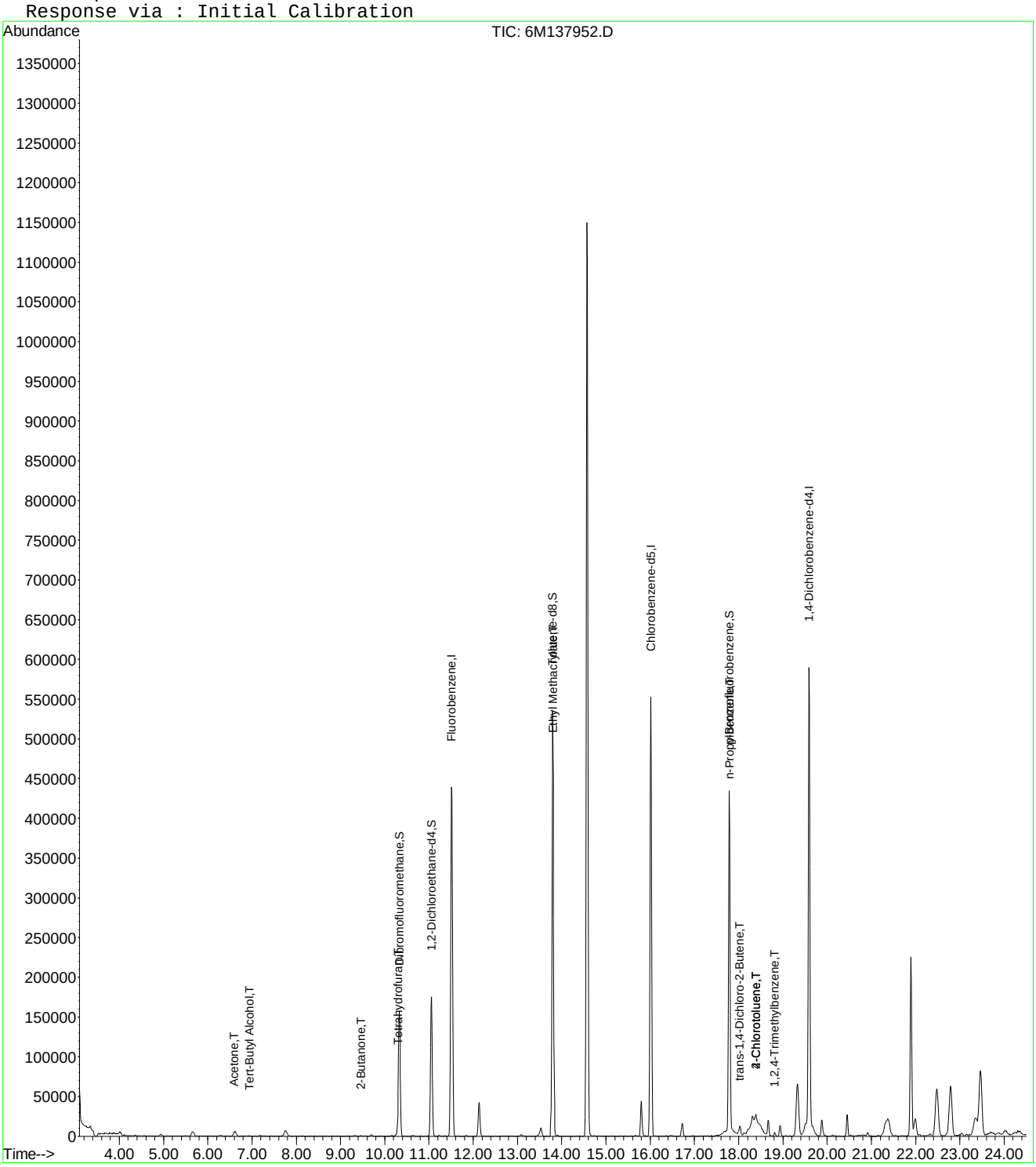

6M137952.D 826_SL.M Wed Mar 23 08:53:22 2016 Page 2

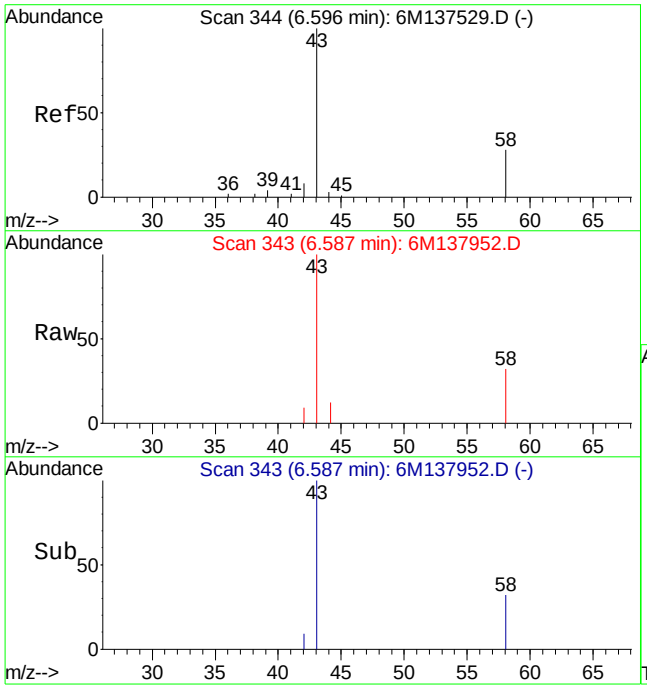

#13
Acetone
Concen: 5.52 ug/L
RT: 6.59 min Scan# 343
Delta R.T. 0.00 min
Lab File: 6M137952.D
Acq: 22 Mar 2016 19:09

Tgt Ion: 43 Resp: 11829

Ion	Ratio	Lower	Upper
43	100		
58	78.1	16.1	37.7#

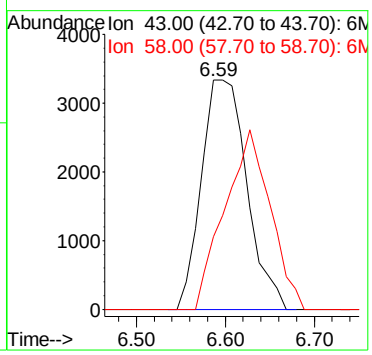

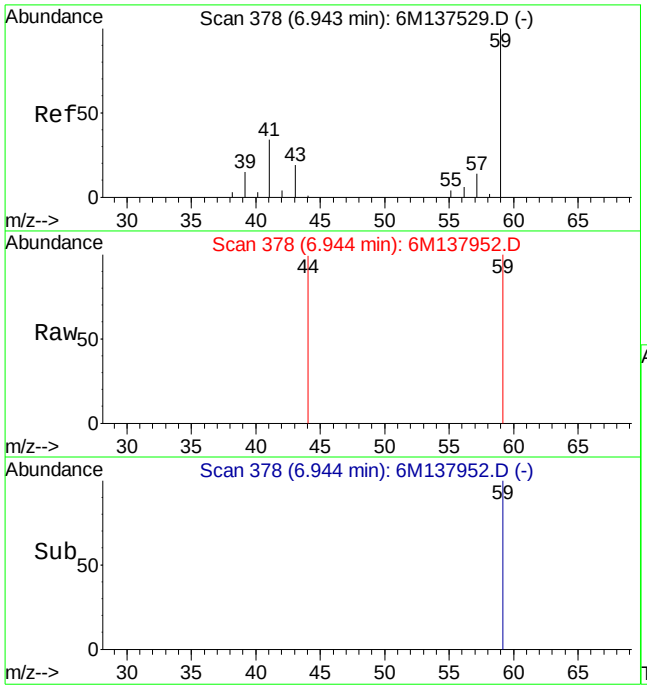

#15
Tert-Butyl Alcohol
Concen: 0.44 ug/L
RT: 6.94 min Scan# 378
Delta R.T. 0.01 min
Lab File: 6M137952.D
Acq: 22 Mar 2016 19:09

Tgt Ion: 59 Resp: 203

Ion	Ratio	Lower	Upper
59	100		
41	0.0	15.0	35.0#
57	0.0	5.9	13.9#

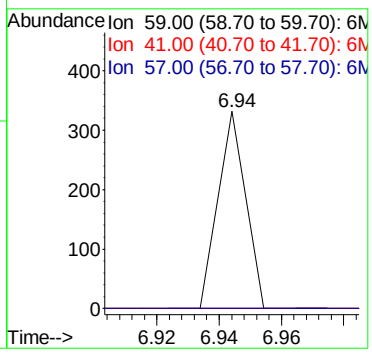

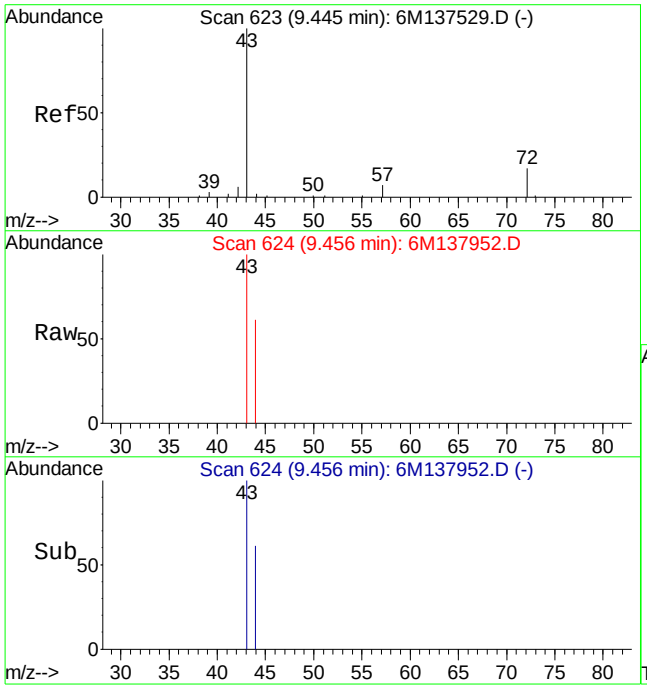

#29
2-Butanone
Concen: 0.52 ug/L
RT: 9.46 min Scan# 624
Delta R.T. 0.01 min
Lab File: 6M137952.D
Acq: 22 Mar 2016 19:09

Tgt Ion: 43 Resp: 1020

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.2	28.4#

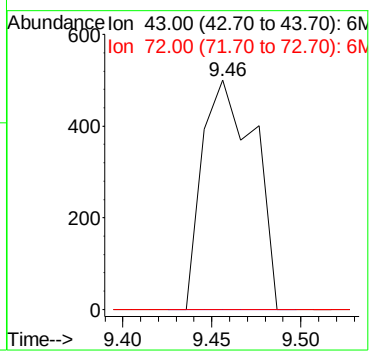

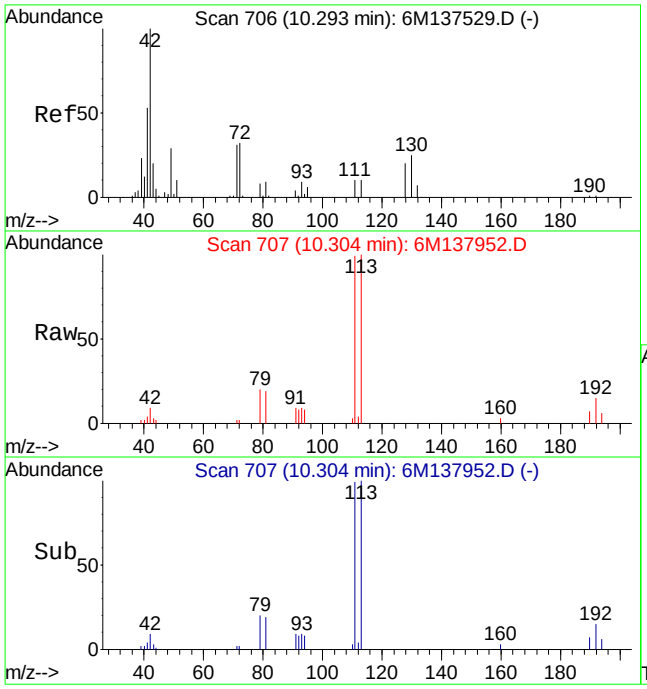

#36
Tetrahydrofuran
Concen: 1.12 ug/L
RT: 10.30 min Scan# 707
Delta R.T. 0.01 min
Lab File: 6M137952.D
Acq: 22 Mar 2016 19:09

Tgt Ion: 42 Resp: 4271

Ion	Ratio	Lower	Upper
42	100		
72	18.8	21.0	49.0#
71	26.3	20.6	48.2

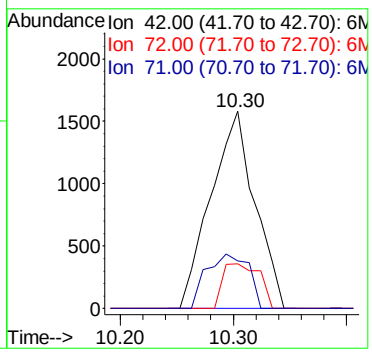

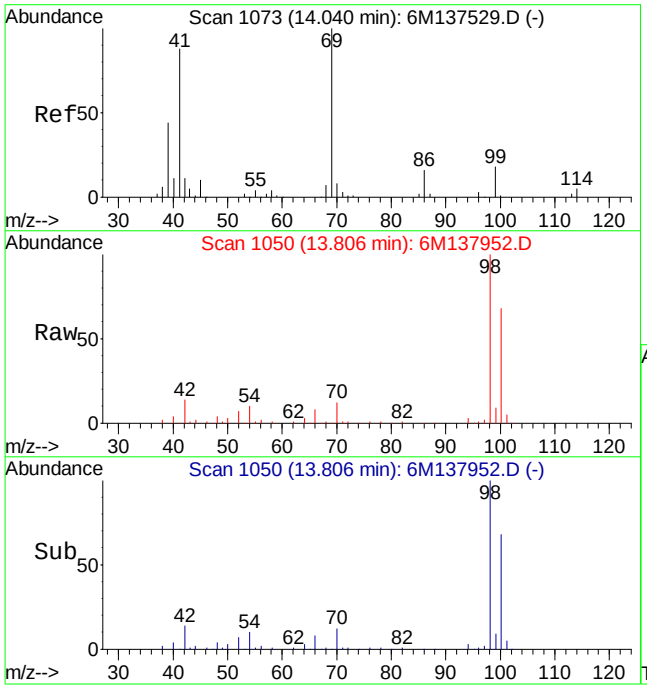

#60
Ethyl Methacrylate
Concen: 0.28 ug/L
RT: 13.81 min Scan# 1050
Delta R.T. -0.22 min
Lab File: 6M137952.D
Acq: 22 Mar 2016 19:09

Tgt Ion: 69 Resp: 1066

Ion	Ratio	Lower	Upper
69	100		
41	154.2	50.6	118.2#

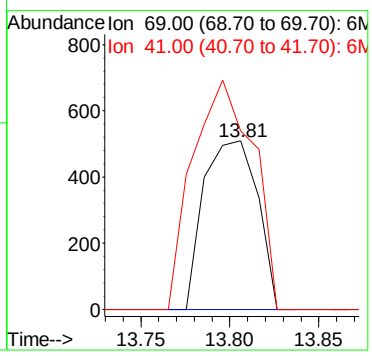

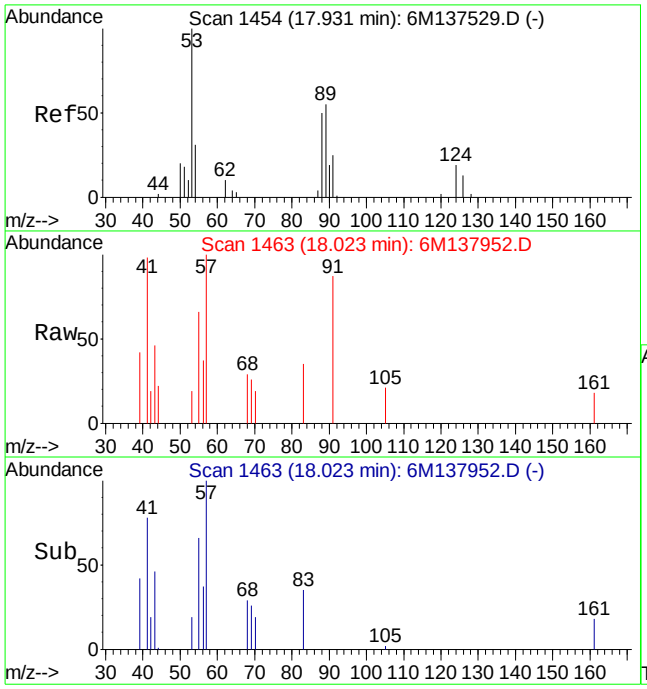

#82
trans-1,4-Dichloro-2-Butene
Concen: 0.35 ug/L
RT: 18.02 min Scan# 1463
Delta R.T. 0.09 min
Lab File: 6M137952.D
Acq: 22 Mar 2016 19:09

Tgt Ion: 53 Resp: 422

Ion	Ratio	Lower	Upper
53	100		
75	0.0	69.2	161.6#

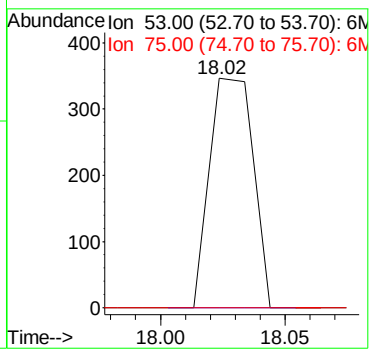

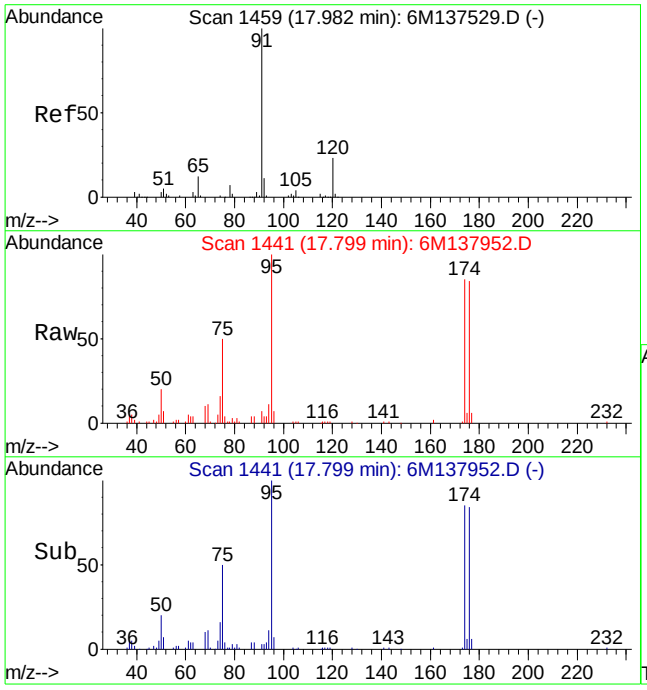

#83
n-Propylbenzene
Concen: 3.13 ug/L
RT: 17.80 min Scan# 1441
Delta R.T. -0.18 min
Lab File: 6M137952.D
Acq: 22 Mar 2016 19:09

Tgt Ion: 91 Resp: 44794

Ion	Ratio	Lower	Upper
91	100		
120	0.0	13.8	32.2#
105	1.7	2.1	4.9#

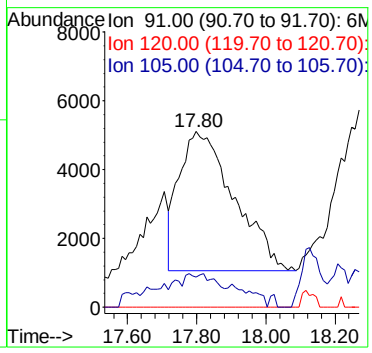

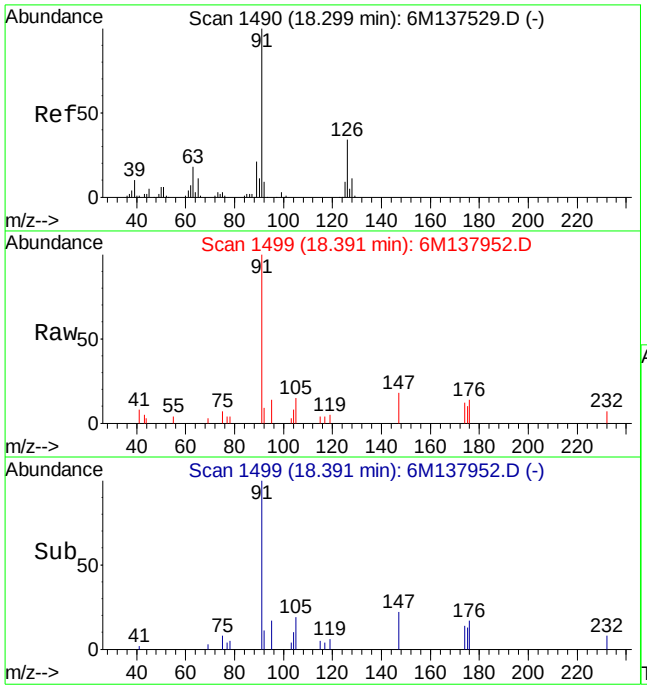

#86
2-Chlorotoluene
Concen: 14.08 ug/L
RT: 18.39 min Scan# 1499
Delta R.T. 0.09 min
Lab File: 6M137952.D
Acq: 22 Mar 2016 19:09

Tgt Ion: 91 Resp: 134424

Ion	Ratio	Lower	Upper
91	100		
126	0.0	18.5	43.3#
63	0.0	11.6	27.2#

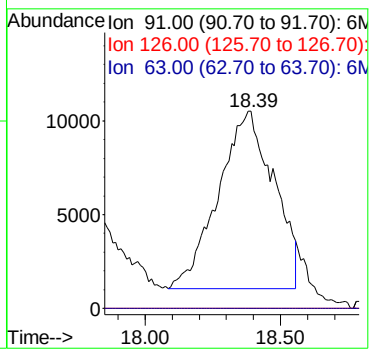

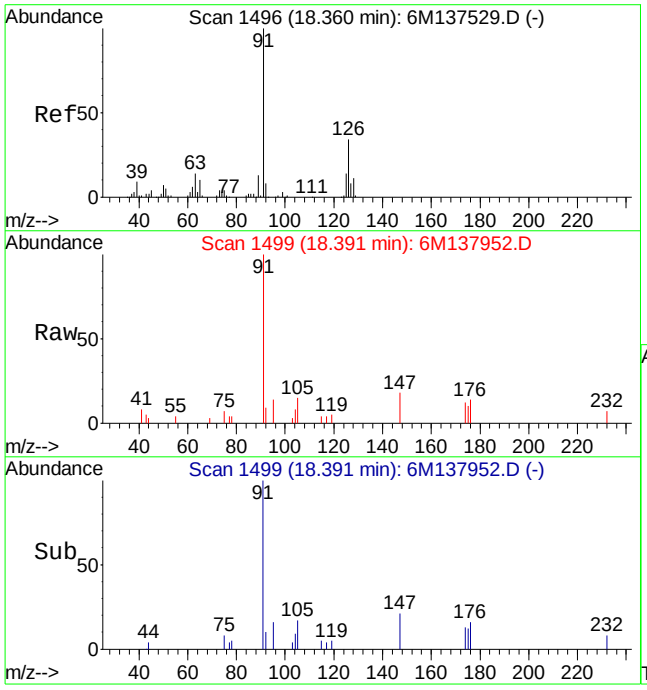

#87
4-Chlorotoluene
Concen: 15.87 ug/L
RT: 18.39 min Scan# 1499
Delta R.T. 0.04 min
Lab File: 6M137952.D
Acq: 22 Mar 2016 19:09

Tgt Ion: 91 Resp: 138556

Ion	Ratio	Lower	Upper
91	100		
126	0.0	21.0	49.0#
63	0.0	8.8	20.6#

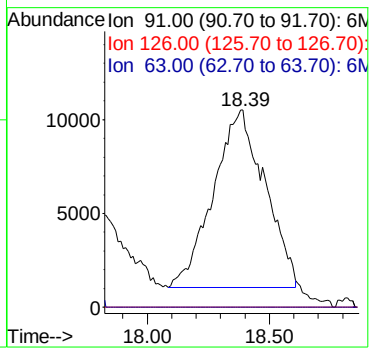

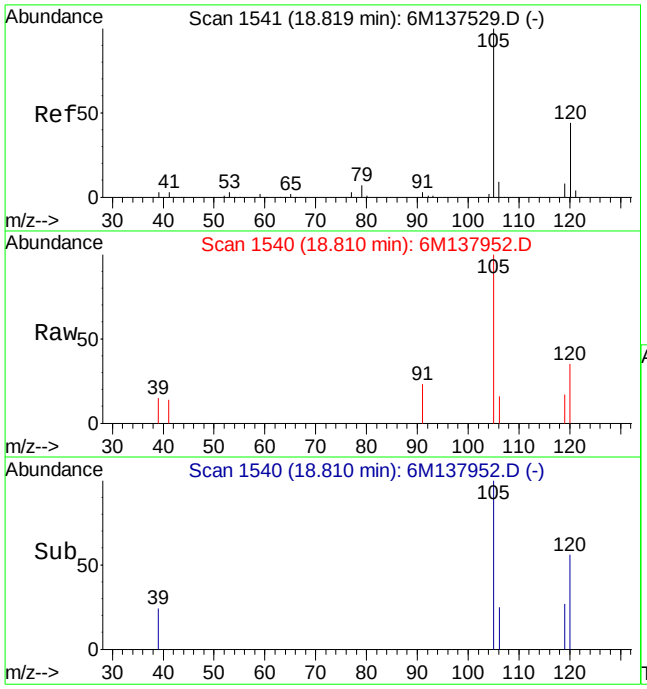

#90
1,2,4-Trimethylbenzene
Concen: 0.47 ug/L
RT: 18.81 min Scan# 1540
Delta R.T. -0.01 min
Lab File: 6M137952.D
Acq: 22 Mar 2016 19:09

Tgt Ion:105 Resp: 5024

Ion	Ratio	Lower	Upper
105	100		
120	38.1	34.3	79.9

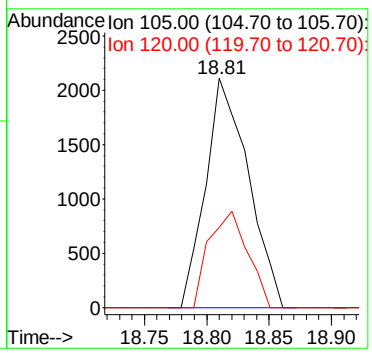

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137975.D Vial: 13
Acq On : 23 Mar 2016 18:15 Operator: TMB
Sample : L16030861-05 8260 4.93g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 08:29:36 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	530731	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	370792	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	169378	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	131956	46.3486 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 92.70%		
43) 1,2-Dichloroethane-d4	11.06	65	156612	42.3675 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 84.74%		
58) Toluene-d8	13.80	98	460559	52.2428 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 104.48%		
80) p-Bromofluorobenzene	17.79	95	174759	56.1724 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 112.34%		

Target Compounds

					Qvalue
11) Acrolein	6.49	56	4100	8.5429 ug/L	94
13) Acetone	6.60	43	16110	10.1278 ug/L #	1
15) Tert-Butyl Alcohol	6.63	59	4293	9.9060 ug/L #	1
24) n-Hexane	8.24	57	4061	0.8716 ug/L	71
29) 2-Butanone	9.47	43	1903	1.0373 ug/L #	56
36) Tetrahydrofuran	10.30	42	1979	Below Cal #	40
60) Ethyl Methacrylate	13.80	69	1056	0.3142 ug/L #	1
79) 1,1,2,2-Tetrachloroethane	17.79	83	2131	0.8054 ug/L #	19
82) trans-1,4-Dichloro-2-Buten	18.04	53	5094	5.2150 ug/L #	1
90) 1,2,4-Trimethylbenzene	18.82	105	5103	0.5926 ug/L	74
91) sec-Butylbenzene	18.82	105	4135	0.3944 ug/L #	56
92) p-Isopropyltoluene	19.26	119	2213	0.2558 ug/L #	67

(#) = qualifier out of range (m) = manual integration
6M137975.D 826_SL.M Thu Mar 24 08:29:37 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137975.D Vial: 13
Acq On : 23 Mar 2016 18:15 Operator: TMB
Sample : L16030861-05 8260 4.93g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 8:29 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

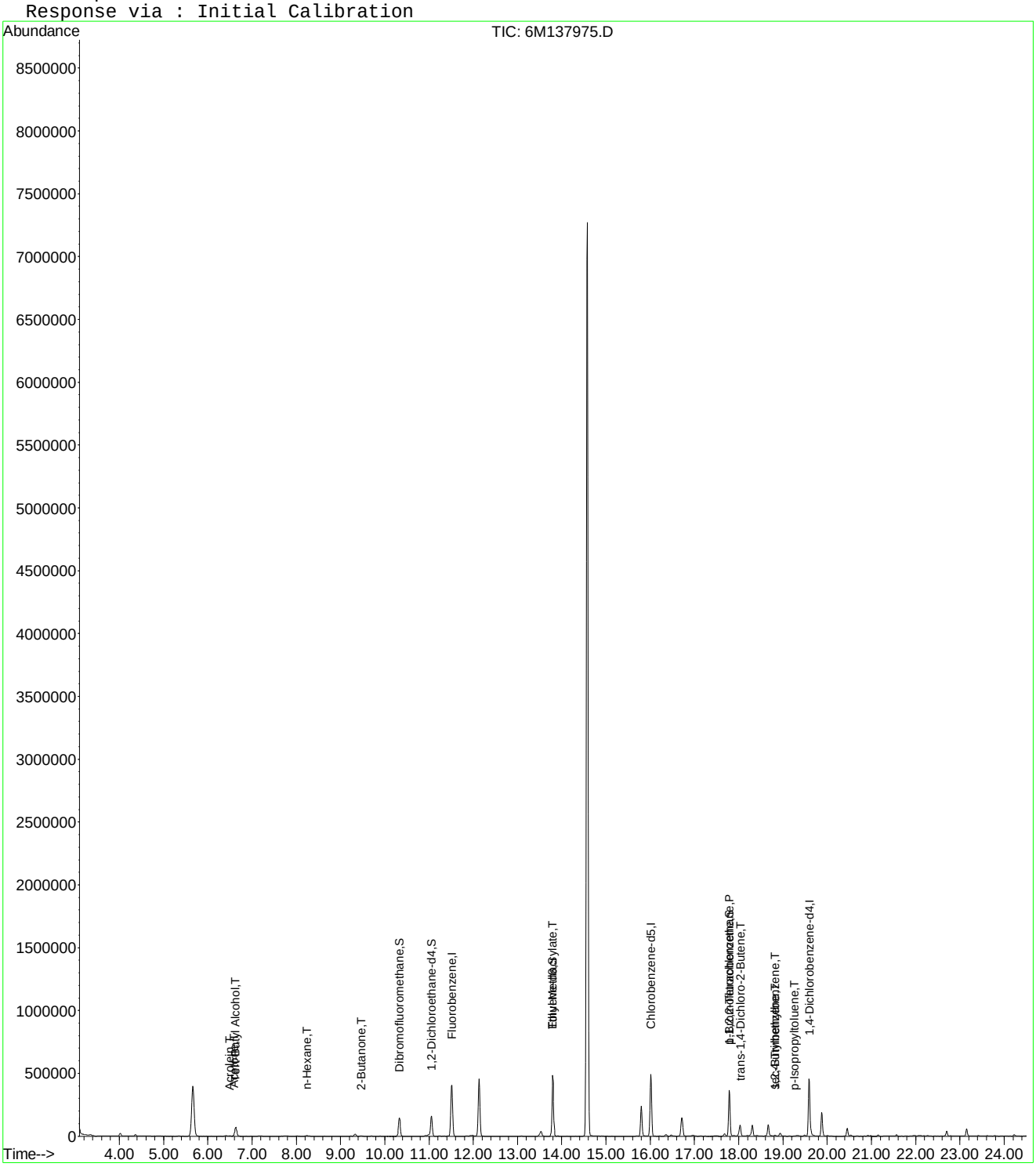

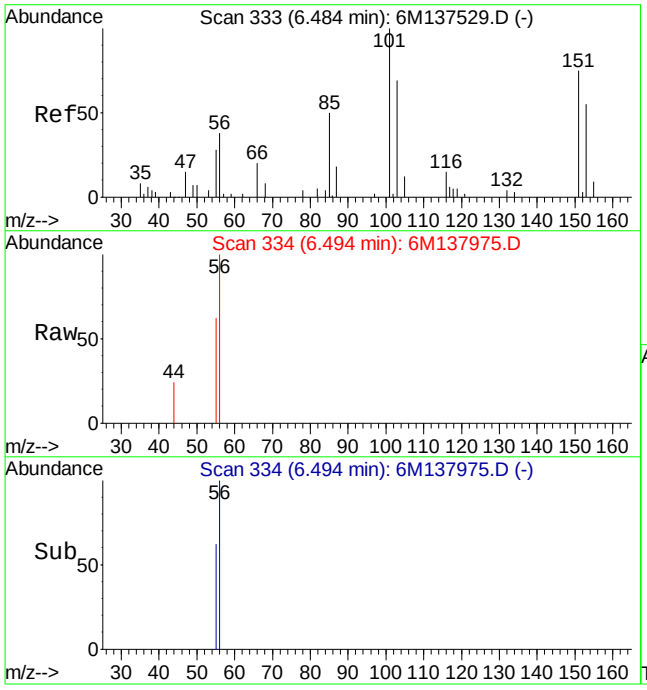

#11
Acrolein
Concen: 8.54 ug/L
RT: 6.49 min Scan# 334
Delta R.T. 0.01 min
Lab File: 6M137975.D
Acq: 23 Mar 2016 18:15

Tgt Ion: 56 Resp: 4100

Ion	Ratio	Lower	Upper
56	100		
55	69.3	44.6	104.0

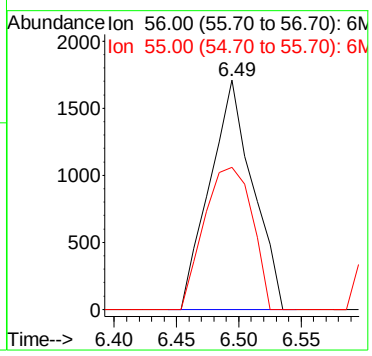

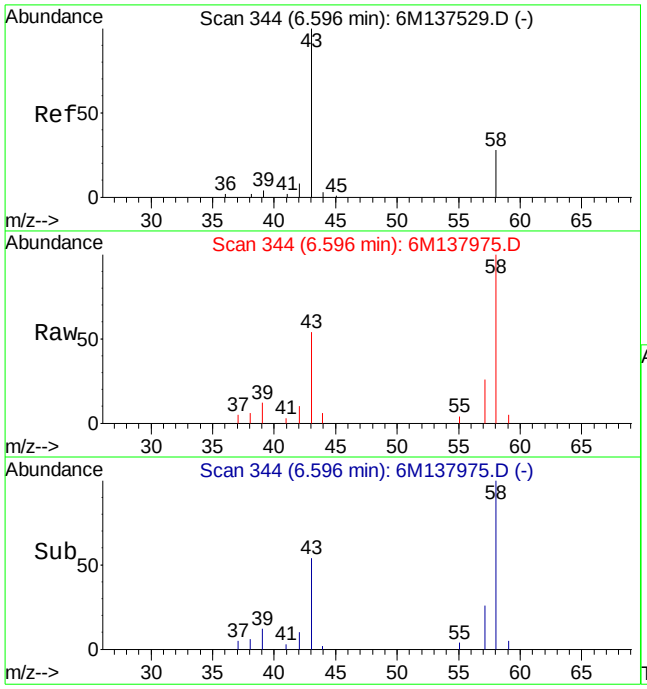

#13
Acetone
Concen: 10.13 ug/L
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137975.D
Acq: 23 Mar 2016 18:15

Tgt Ion: 43 Resp: 16110

Ion	Ratio	Lower	Upper
43	100		
58	835.1	16.1	37.7#

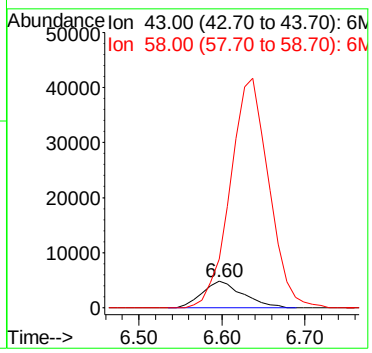

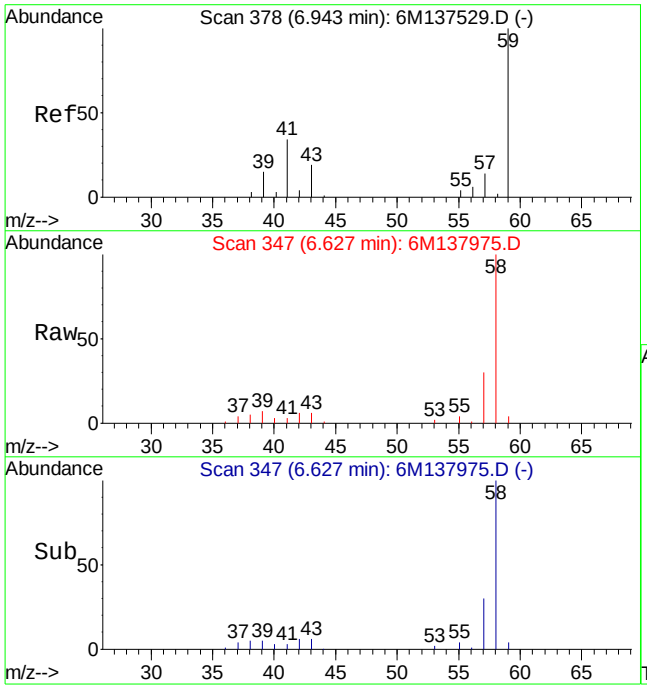

#15
Tert-Butyl Alcohol
Concen: 9.91 ug/L
RT: 6.63 min Scan# 347
Delta R.T. -0.31 min
Lab File: 6M137975.D
Acq: 23 Mar 2016 18:15

Tgt Ion: 59 Resp: 4293

Ion	Ratio	Lower	Upper
59	100		
41	81.4	15.0	35.0#
57	877.1	5.9	13.9#

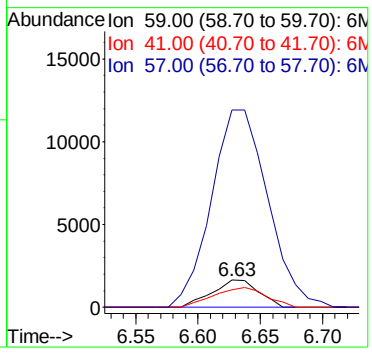

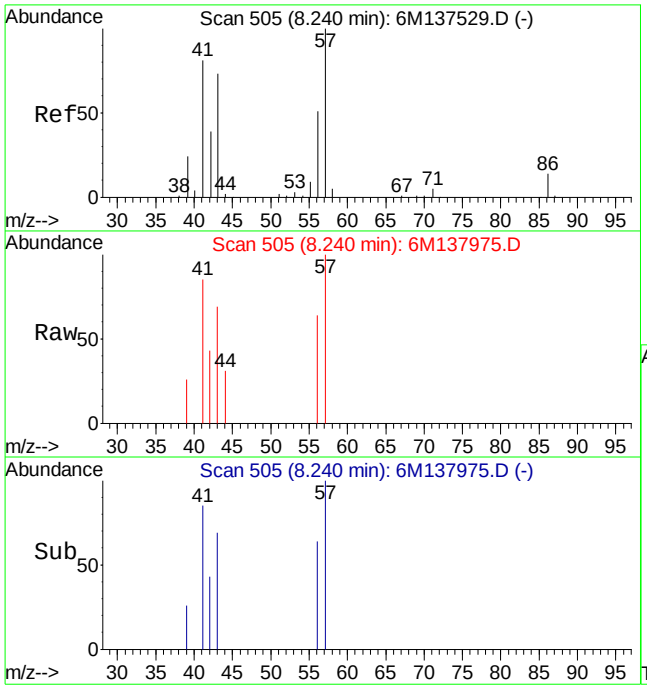

#24
n-Hexane
Concen: 0.87 ug/L
RT: 8.24 min Scan# 505
Delta R.T. -0.00 min
Lab File: 6M137975.D
Acq: 23 Mar 2016 18:15

Tgt Ion: 57 Resp: 4061

Ion	Ratio	Lower	Upper
57	100		
43	98.0	44.0	102.8

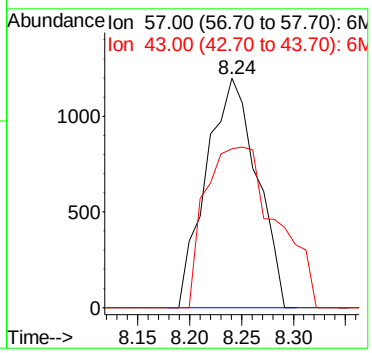

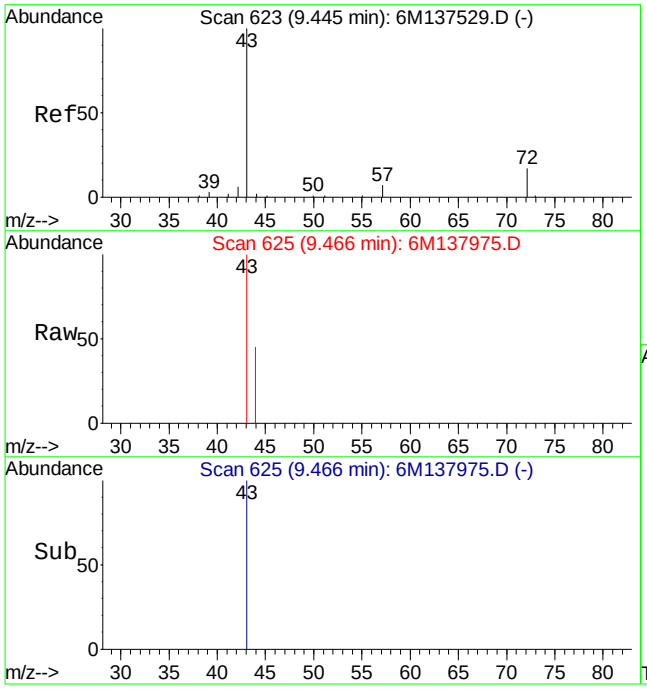

#29
2-Butanone
Concen: 1.04 ug/L
RT: 9.47 min Scan# 625
Delta R.T. 0.02 min
Lab File: 6M137975.D
Acq: 23 Mar 2016 18:15

Tgt Ion: 43 Resp: 1903

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.2	28.4#

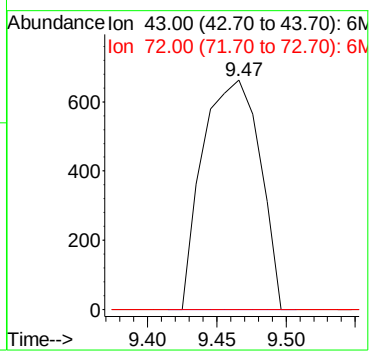

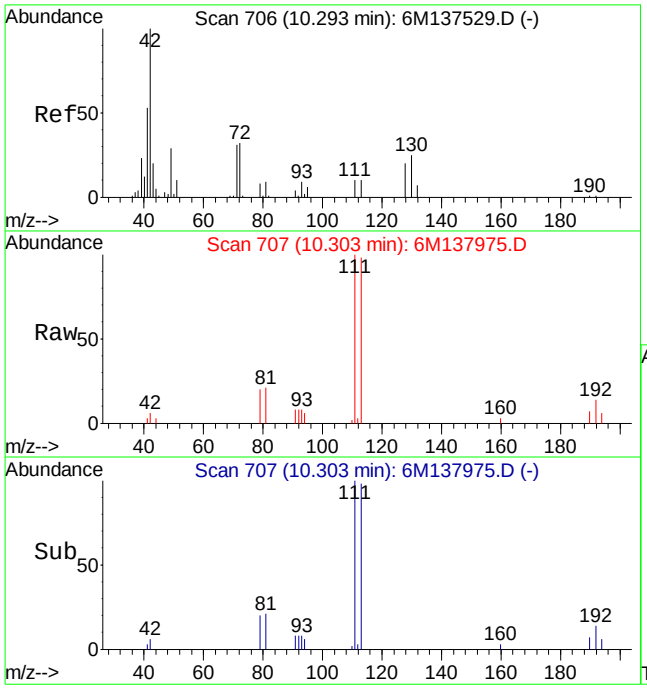

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.30 min Scan# 707
Delta R.T. 0.01 min
Lab File: 6M137975.D
Acq: 23 Mar 2016 18:15

Tgt Ion: 42 Resp: 1979

Ion	Ratio	Lower	Upper
42	100		
72	0.0	21.0	49.0#
71	0.0	20.6	48.2#

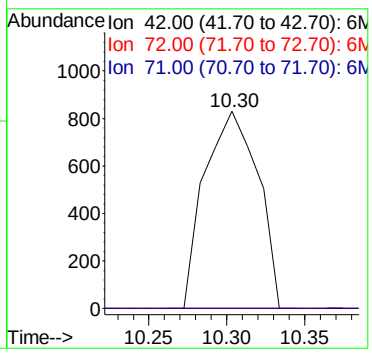

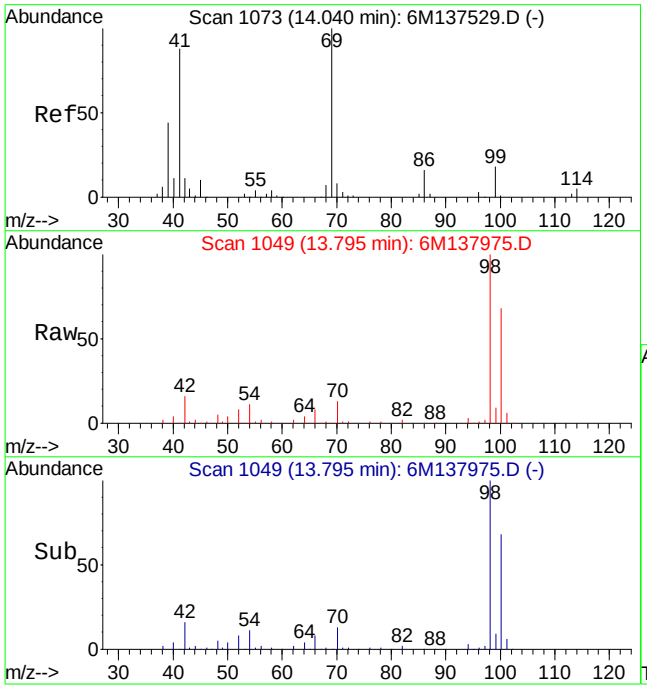

#60
Ethyl Methacrylate
Concen: 0.31 ug/L
RT: 13.80 min Scan# 1049
Delta R.T. -0.24 min
Lab File: 6M137975.D
Acq: 23 Mar 2016 18:15

Tgt Ion: 69 Resp: 1056

Ion	Ratio	Lower	Upper
69	100		
41	247.0	50.6	118.2#

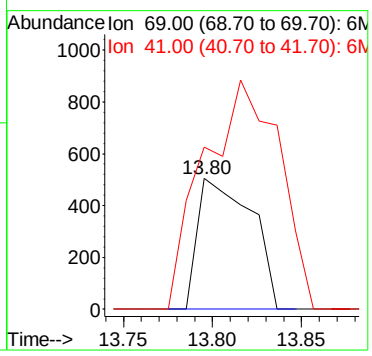

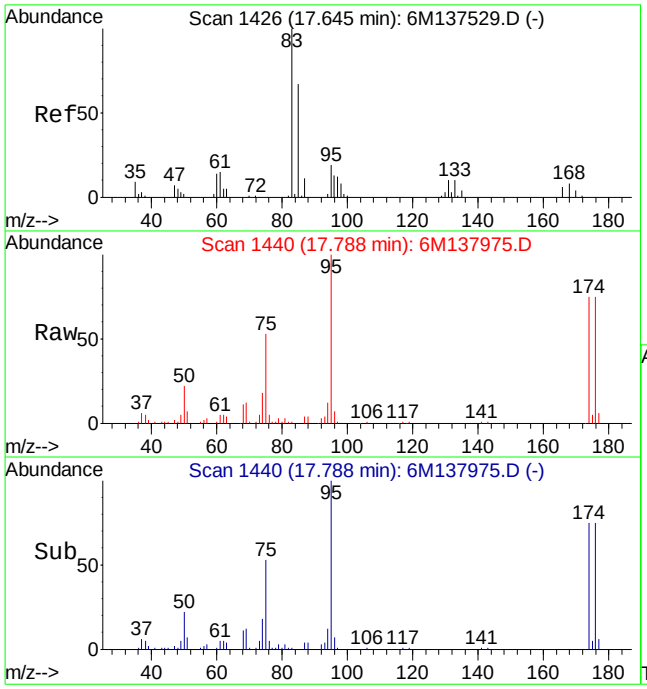

#79
1,1,2,2-Tetrachloroethane
Concen: 0.81 ug/L
RT: 17.79 min Scan# 1440
Delta R.T. 0.14 min
Lab File: 6M137975.D
Acq: 23 Mar 2016 18:15

Tgt Ion: 83 Resp: 2131

Ion	Ratio	Lower	Upper
83	100		
85	0.0	37.7	88.1#

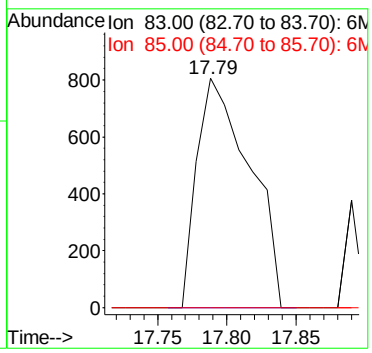

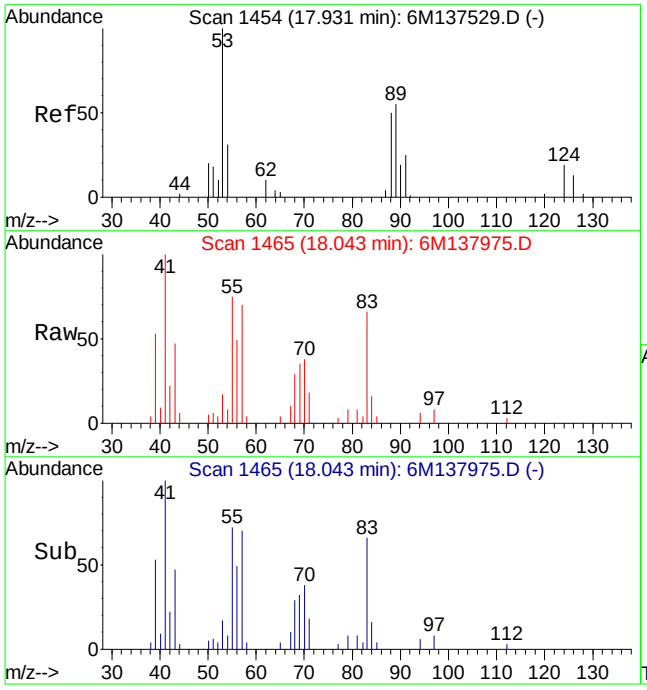

#82
trans-1,4-Dichloro-2-Butene
Concen: 5.22 ug/L
RT: 18.04 min Scan# 1465
Delta R.T. 0.11 min
Lab File: 6M137975.D
Acq: 23 Mar 2016 18:15

Tgt Ion: 53 Resp: 5094

Ion	Ratio	Lower	Upper
53	100		
75	0.0	69.2	161.6#

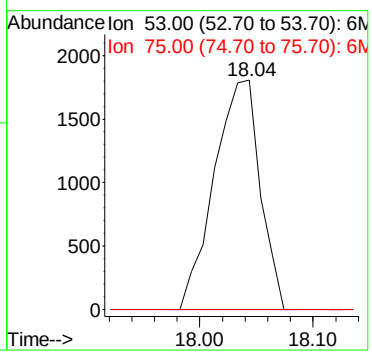

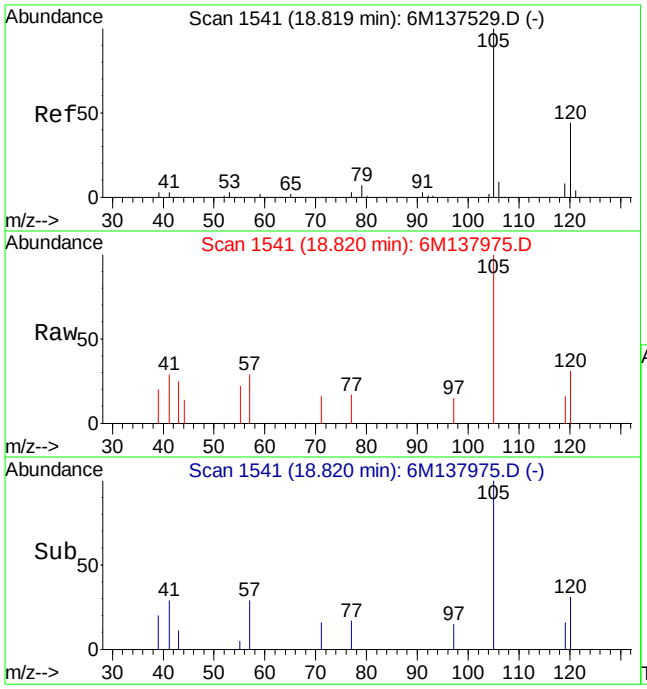

#90
1,2,4-Trimethylbenzene
Concen: 0.59 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. -0.00 min
Lab File: 6M137975.D
Acq: 23 Mar 2016 18:15

Tgt Ion:105 Resp: 5103

Ion	Ratio	Lower	Upper
105	100		
120	37.9	34.3	79.9

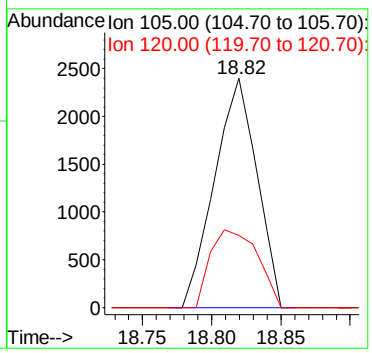

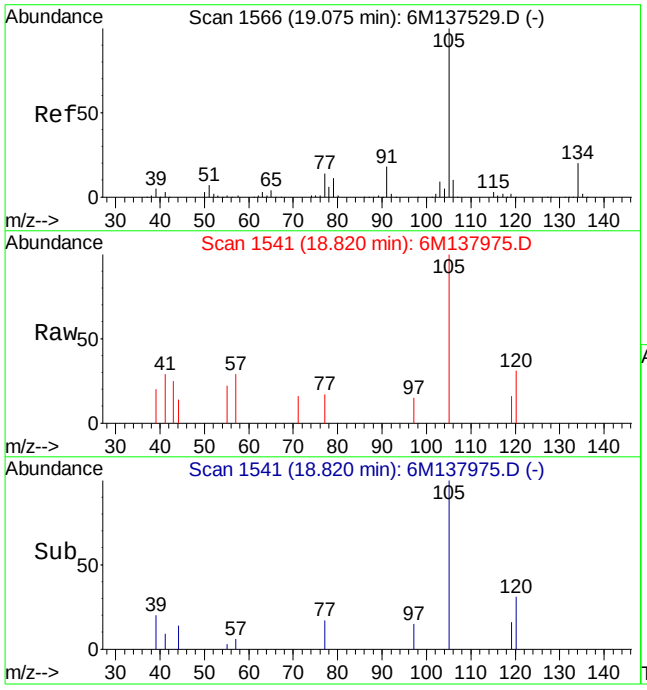

#91
sec-Butylbenzene
Concen: 0.39 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. -0.26 min
Lab File: 6M137975.D
Acq: 23 Mar 2016 18:15

Tgt Ion:105 Resp: 4135

Ion	Ratio	Lower	Upper
105	100		
134	0.0	12.2	28.6#

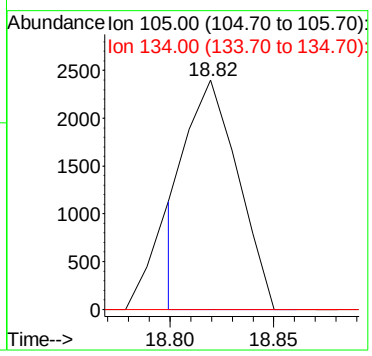

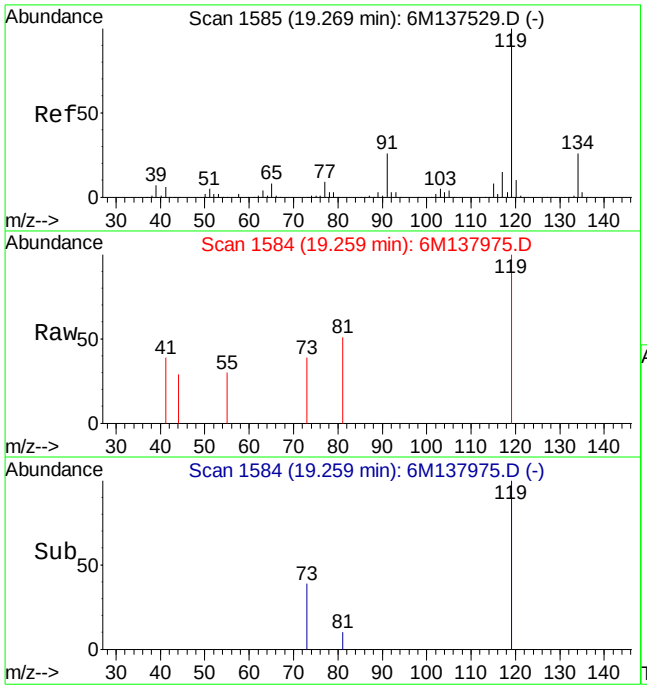

#92
p-Isopropyltoluene
Concen: 0.26 ug/L
RT: 19.26 min Scan# 1584
Delta R.T. -0.00 min
Lab File: 6M137975.D
Acq: 23 Mar 2016 18:15

Tgt Ion:119 Resp: 2213

Ion	Ratio	Lower	Upper
119	100		
134	9.4	15.6	36.4#

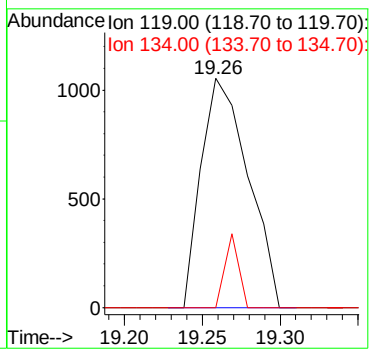

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137976.D Vial: 14
Acq On : 23 Mar 2016 18:48 Operator: TMB
Sample : L16030861-06 8260 5.44g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 08:29:38 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	538576	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	391274	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	199403	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.34	111	136606	47.2830 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.56%		
43) 1,2-Dichloroethane-d4	11.06	65	163737	43.6498 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 87.30%		
58) Toluene-d8	13.80	98	474438	51.0000 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 102.00%		
80) p-Bromofluorobenzene	17.79	95	191164	52.1933 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 104.38%		

Target Compounds					Qvalue
13) Acetone	6.60	43	1488	Below Cal #	73
36) Tetrahydrofuran	10.30	42	2479	Below Cal #	55
60) Ethyl Methacrylate	13.80	69	983	0.2772 ug/L	89

(#) = qualifier out of range (m) = manual integration
6M137976.D 826_SL.M Thu Mar 24 08:29:39 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137976.D Vial: 14
Acq On : 23 Mar 2016 18:48 Operator: TMB
Sample : L16030861-06 8260 5.44g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 8:29 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

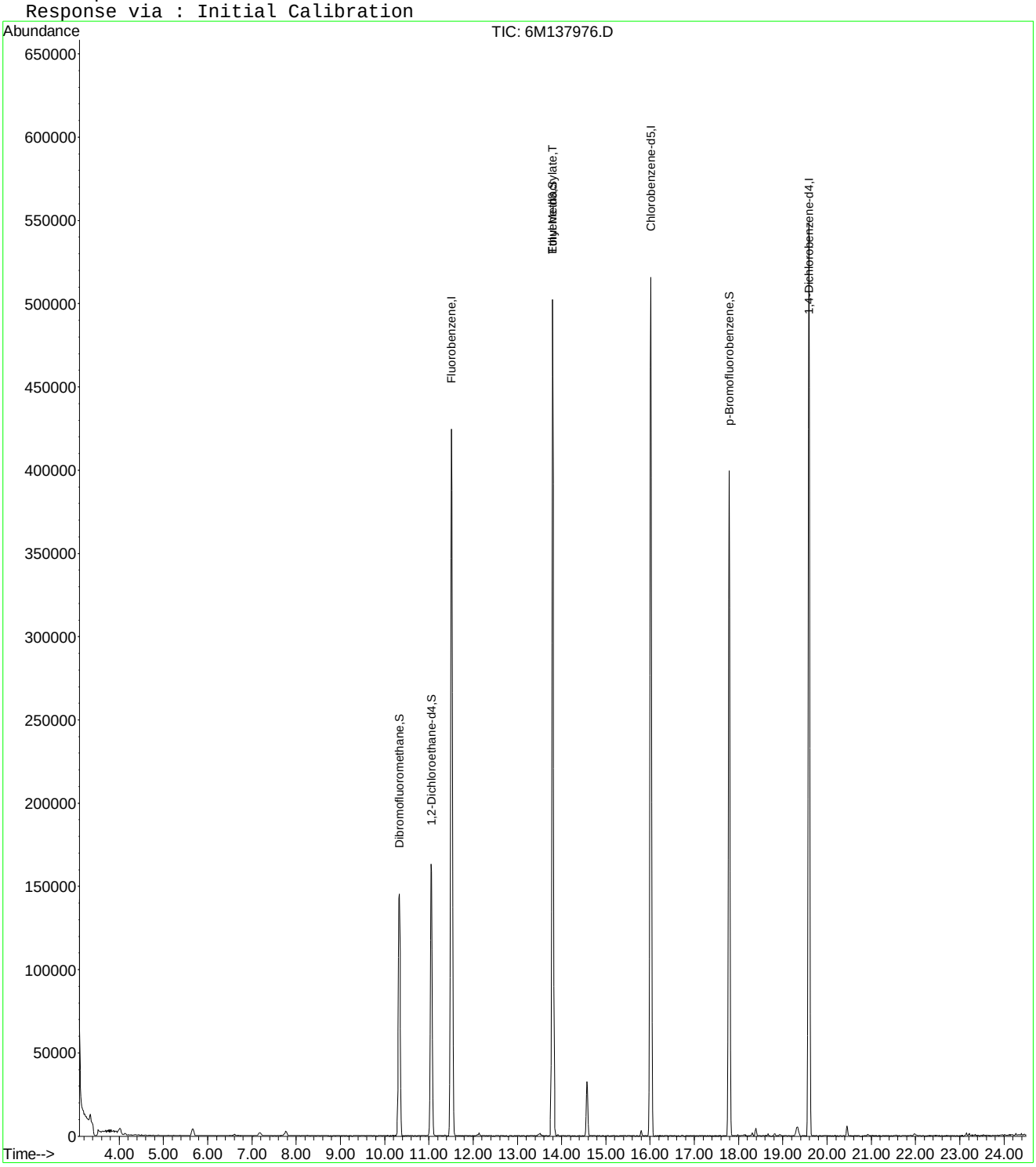

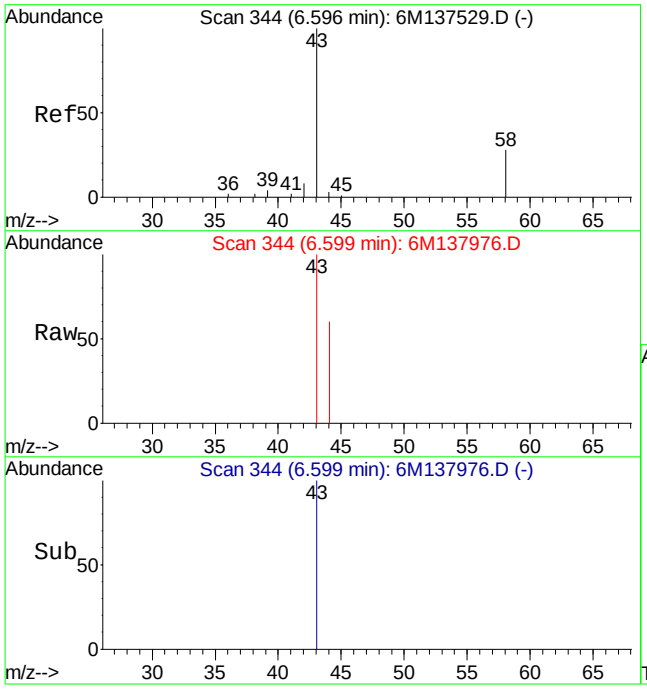

#13
Acetone
Concen: Below Cal
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137976.D
Acq: 23 Mar 2016 18:48

Tgt Ion: 43 Resp: 1488

Ion	Ratio	Lower	Upper
43	100		
58	12.7	16.1	37.7#

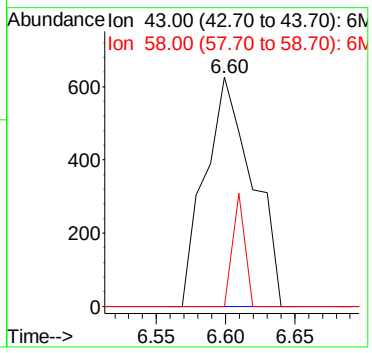

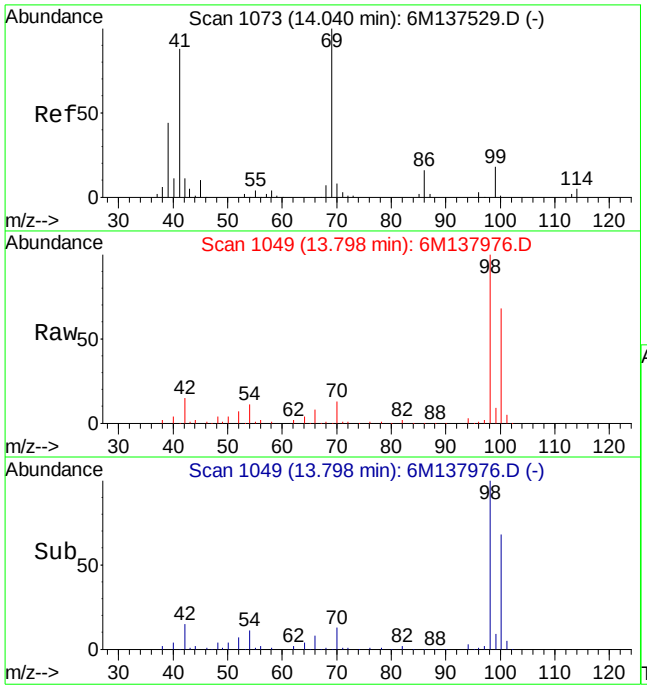

#60
Ethyl Methacrylate
Concen: 0.28 ug/L
RT: 13.80 min Scan# 1049
Delta R.T. -0.23 min
Lab File: 6M137976.D
Acq: 23 Mar 2016 18:48

Tgt Ion: 69 Resp: 983

Ion	Ratio	Lower	Upper
69	100		
41	74.3	50.6	118.2

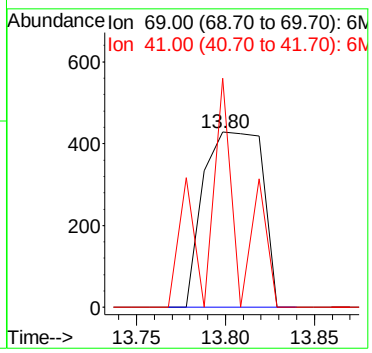

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137977.D Vial: 15
Acq On : 23 Mar 2016 19:21 Operator: TMB
Sample : L16030861-07 8260 4.73g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 08:29:39 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	542135	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.02	117	391017	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	202516	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.34	111	133221	45.8086 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 91.62%		
43) 1,2-Dichloroethane-d4	11.05	65	157058	41.5944 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 83.18%		
58) Toluene-d8	13.80	98	473629	50.9465 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.90%		
80) p-Bromofluorobenzene	17.79	95	189024	50.8157 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 101.64%		

Target Compounds					Qvalue
11) Acrolein	6.49	56	780	1.5910 ug/L #	46
13) Acetone	6.60	43	8244	2.8819 ug/L #	1
15) Tert-Butyl Alcohol	6.64	59	812	1.8343 ug/L #	1
29) 2-Butanone	9.34	43	3663	1.9547 ug/L #	40
36) Tetrahydrofuran	10.30	42	2282	Below Cal #	71
90) 1,2,4-Trimethylbenzene	18.82	105	3553	0.3451 ug/L #	67
91) sec-Butylbenzene	18.82	105	3233	0.2579 ug/L #	56

(#) = qualifier out of range (m) = manual integration
6M137977.D 826_SL.M Thu Mar 24 08:29:40 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137977.D Vial: 15
Acq On : 23 Mar 2016 19:21 Operator: TMB
Sample : L16030861-07 8260 4.73g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 8:29 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

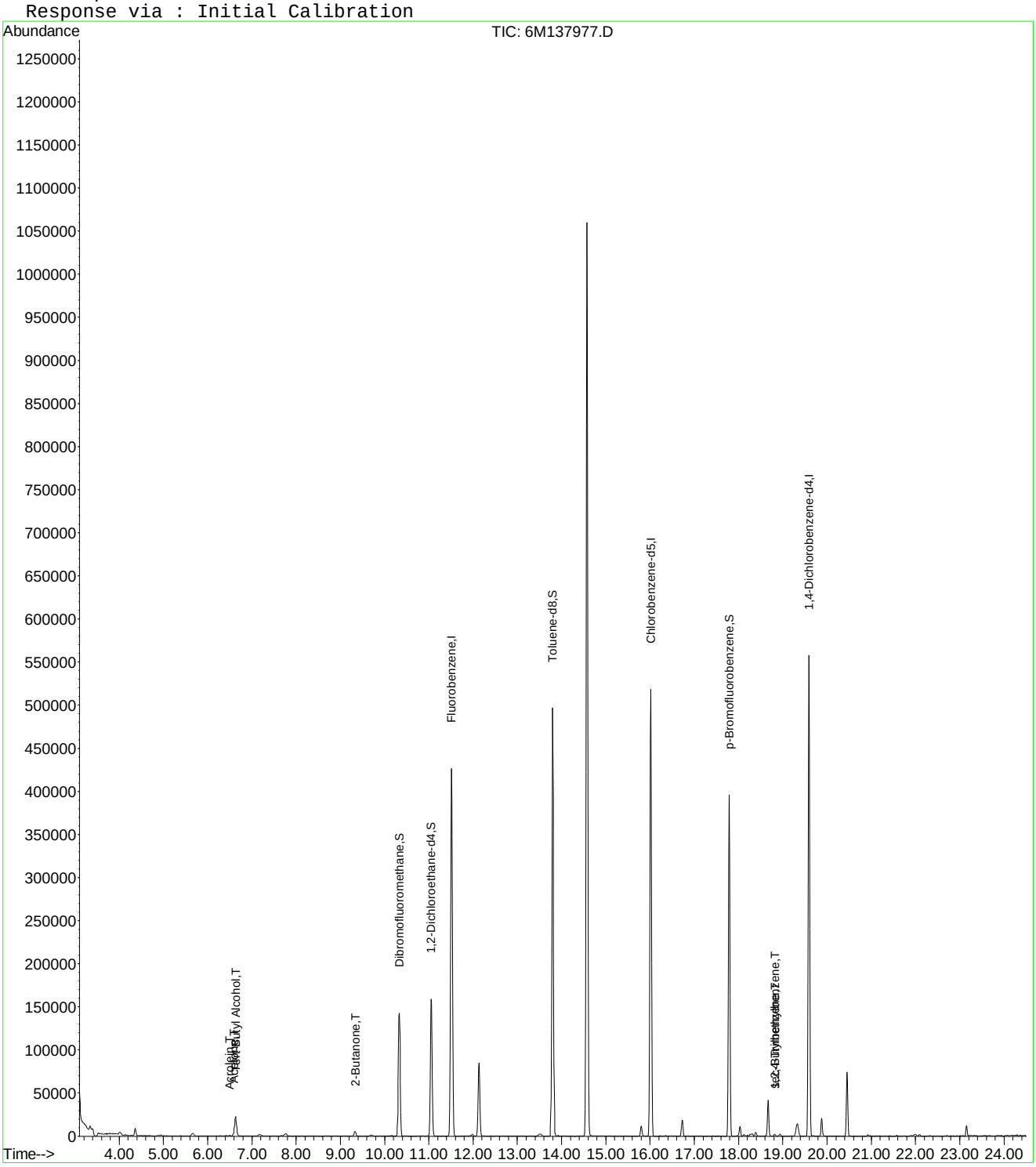

6M137977.D 826_SL.M Thu Mar 24 08:29:40 2016 Page 2

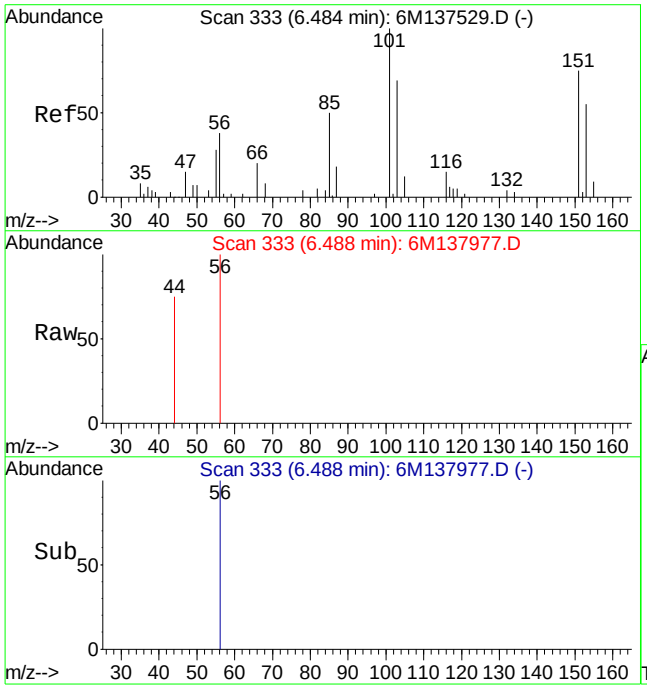

#11
Acrolein
Concen: 1.59 ug/L
RT: 6.49 min Scan# 333
Delta R.T. 0.00 min
Lab File: 6M137977.D
Acq: 23 Mar 2016 19:21

Tgt Ion: 56 Resp: 780

Ion	Ratio	Lower	Upper
56	100		
55	28.3	44.6	104.0#

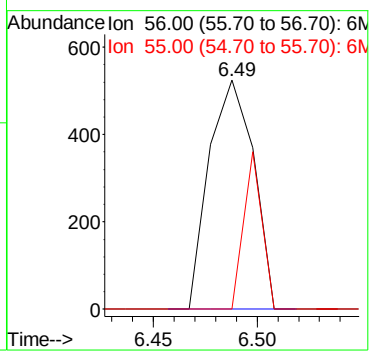

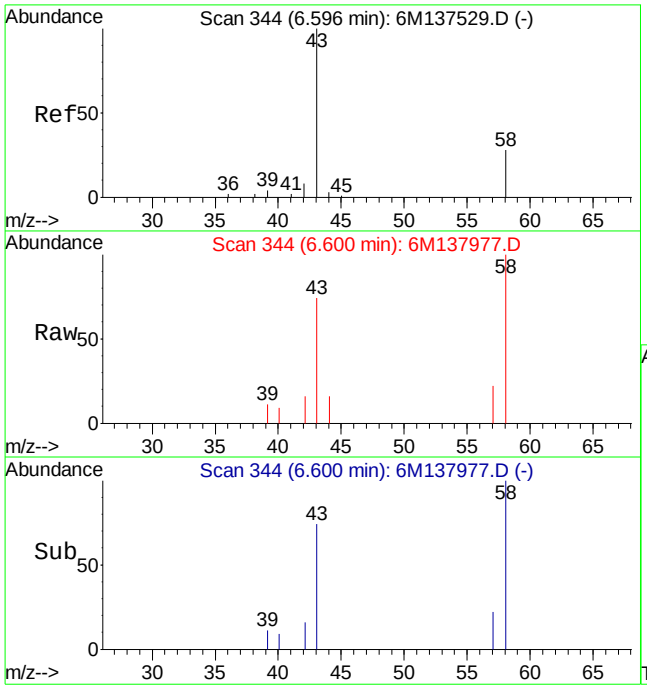

#13
Acetone
Concen: 2.88 ug/L
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137977.D
Acq: 23 Mar 2016 19:21

Tgt Ion: 43 Resp: 8244

Ion	Ratio	Lower	Upper
43	100		
58	513.6	16.1	37.7#

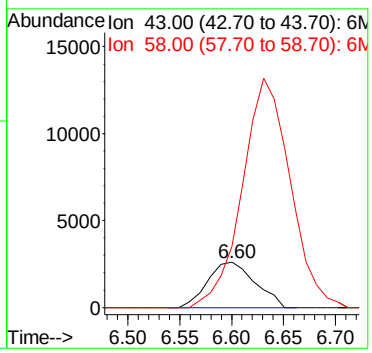

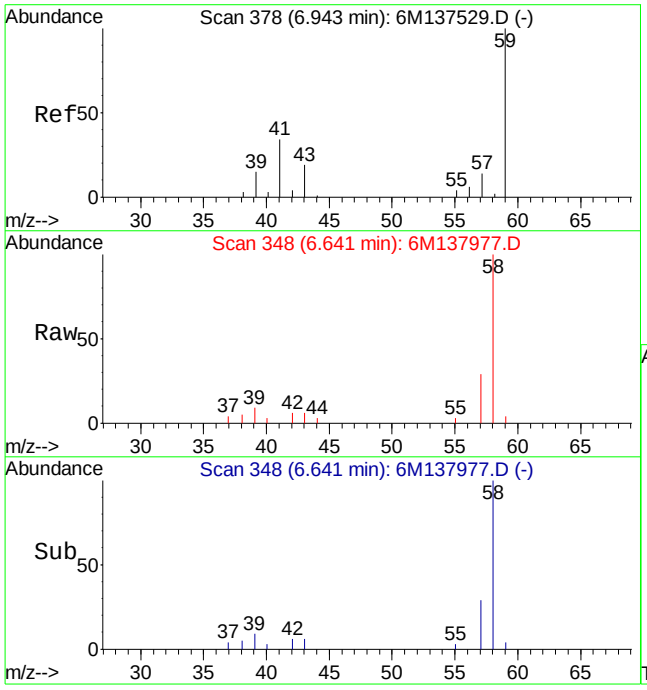

#15
Tert-Butyl Alcohol
Concen: 1.83 ug/L
RT: 6.64 min Scan# 348
Delta R.T. -0.29 min
Lab File: 6M137977.D
Acq: 23 Mar 2016 19:21

Tgt Ion: 59 Resp: 812

Ion	Ratio	Lower	Upper
59	100		
41	51.0	15.0	35.0#
57	1376.0	5.9	13.9#

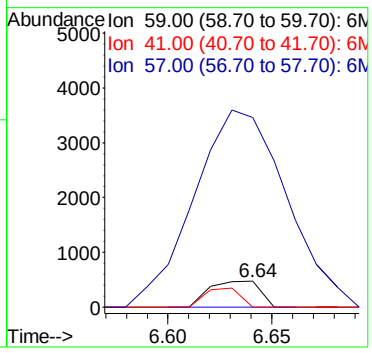

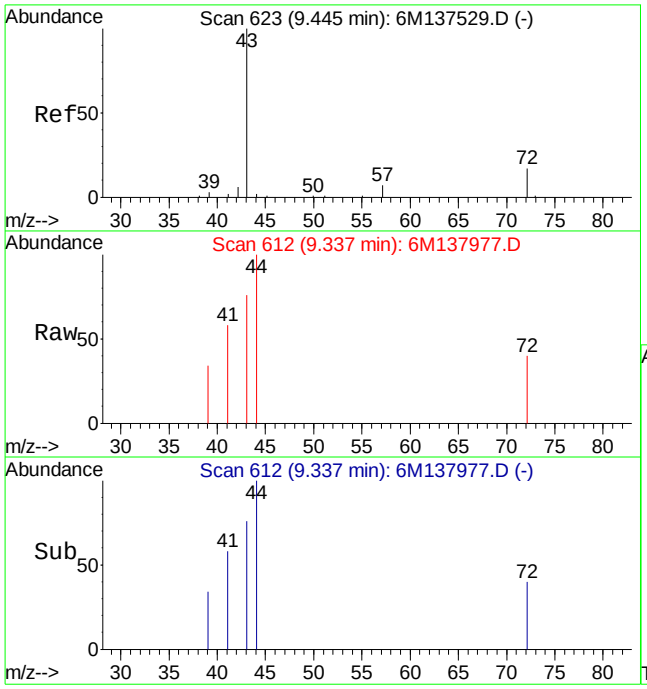

#29
2-Butanone
Concen: 1.95 ug/L
RT: 9.34 min Scan# 612
Delta R.T. -0.11 min
Lab File: 6M137977.D
Acq: 23 Mar 2016 19:21

Tgt Ion: 43 Resp: 3663

Ion	Ratio	Lower	Upper
43	100		
72	48.1	12.2	28.4#

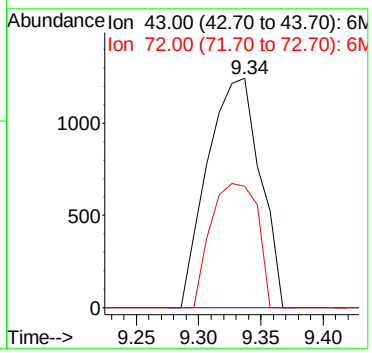

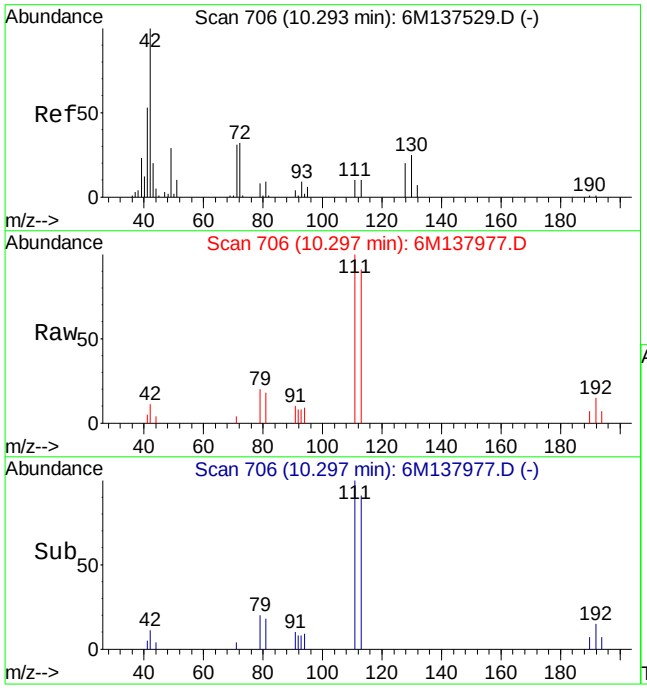

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.30 min Scan# 706
Delta R.T. 0.00 min
Lab File: 6M137977.D
Acq: 23 Mar 2016 19:21

Tgt Ion: 42 Resp: 2282

Ion	Ratio	Lower	Upper
42	100		
72	17.8	21.0	49.0#
71	18.5	20.6	48.2#

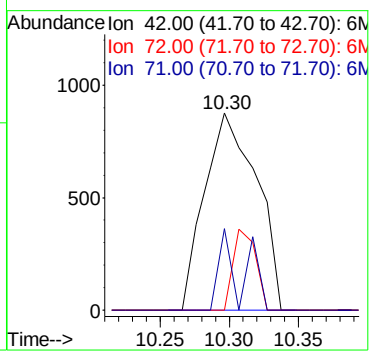

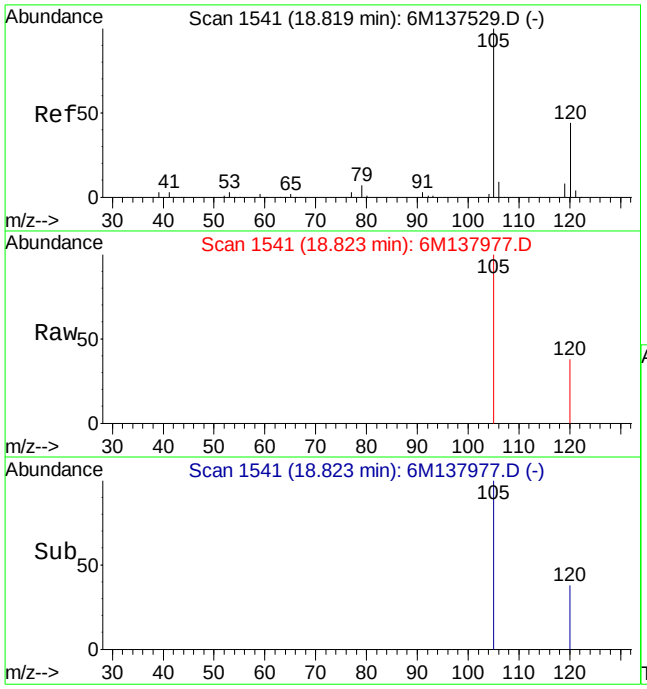

#90
1,2,4-Trimethylbenzene
Concen: 0.35 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. 0.00 min
Lab File: 6M137977.D
Acq: 23 Mar 2016 19:21

Tgt Ion:105 Resp: 3553

Ion	Ratio	Lower	Upper
105	100		
120	32.6	34.3	79.9#

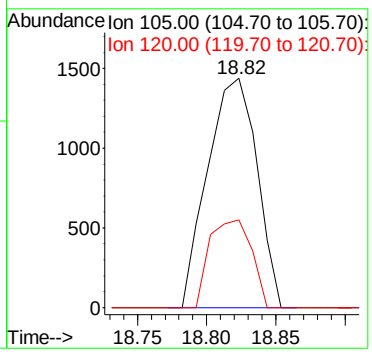

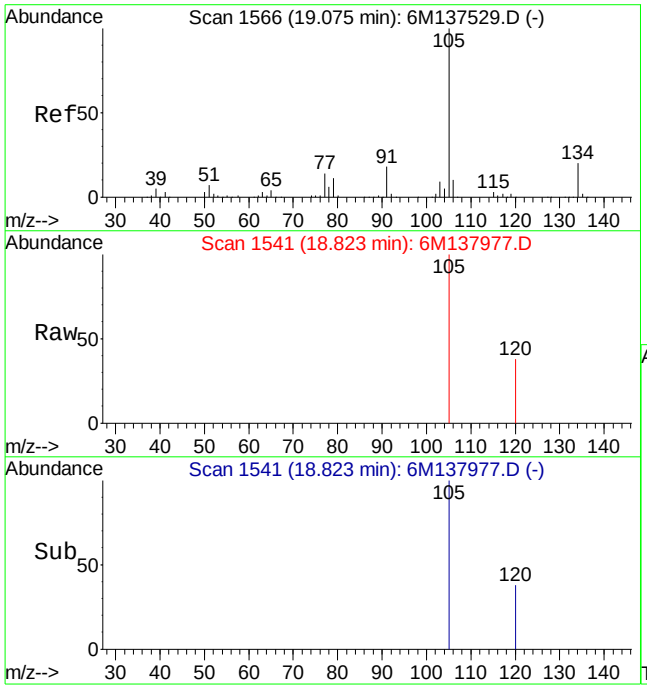

#91
sec-Butylbenzene
Concen: 0.26 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. -0.25 min
Lab File: 6M137977.D
Acq: 23 Mar 2016 19:21

Tgt Ion:105 Resp: 3233

Ion	Ratio	Lower	Upper
105	100		
134	0.0	12.2	28.6#

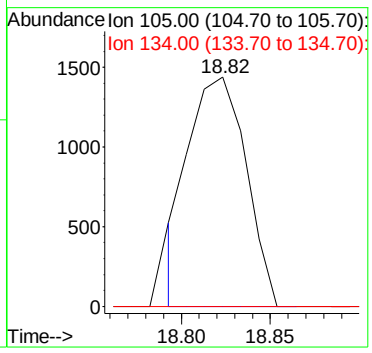

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137978.D Vial: 16
Acq On : 23 Mar 2016 19:54 Operator: TMB
Sample : L16030861-08 8260 5.07g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 08:29:40 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	568224	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	415316	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	215736	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.34	111	143454	47.0625 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.12%		
43) 1,2-Dichloroethane-d4	11.05	65	170141	42.9904 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 85.98%		
58) Toluene-d8	13.80	98	498595	50.4941 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 100.98%		
80) p-Bromofluorobenzene	17.79	95	204963	51.7241 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 103.44%		

Target Compounds					Qvalue
13) Acetone	6.60	43	8454	2.7247 ug/L	89
36) Tetrahydrofuran	10.30	42	2802	Below Cal #	59
47) Trichloroethene	12.09	130	1227	0.4388 ug/L #	54
60) Ethyl Methacrylate	13.81	69	995	0.2643 ug/L #	46
90) 1,2,4-Trimethylbenzene	18.82	105	4356	0.3972 ug/L	76
91) sec-Butylbenzene	18.82	105	4001	0.2996 ug/L #	56

(#) = qualifier out of range (m) = manual integration
6M137978.D 826_SL.M Thu Mar 24 08:29:41 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137978.D Vial: 16
Acq On : 23 Mar 2016 19:54 Operator: TMB
Sample : L16030861-08 8260 5.07g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 8:29 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

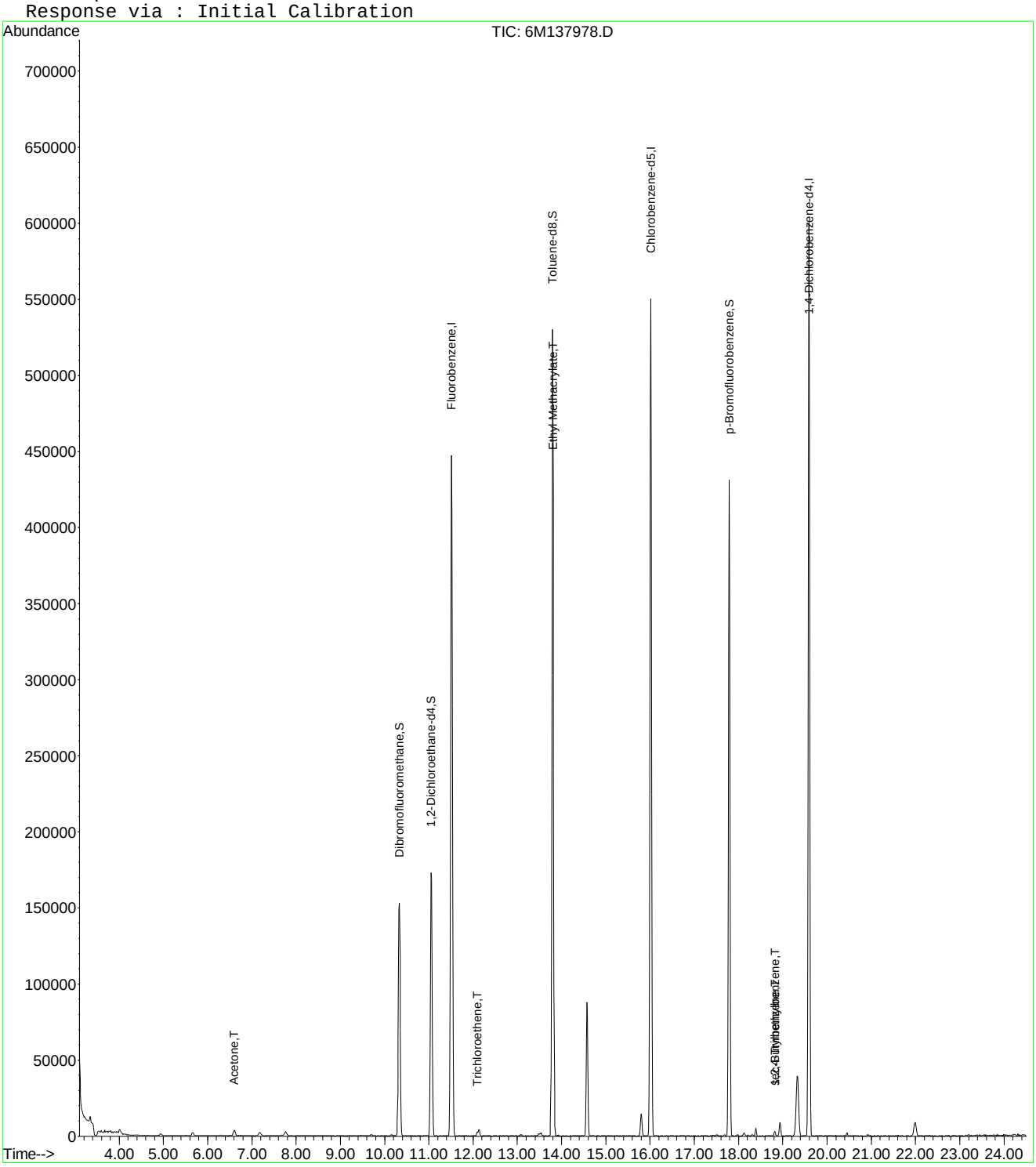

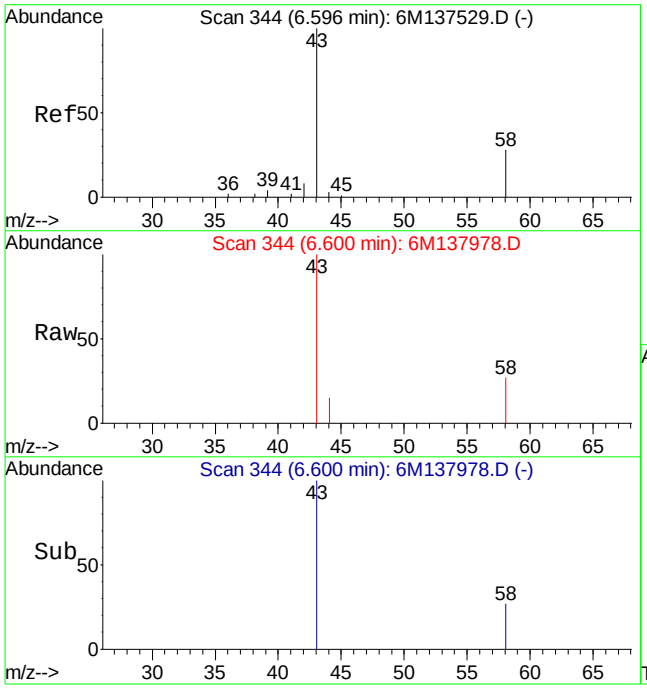

#13
Acetone
Concen: 2.72 ug/L
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137978.D
Acq: 23 Mar 2016 19:54

Tgt Ion: 43 Resp: 8454

Ion	Ratio	Lower	Upper
43	100		
58	32.6	16.1	37.7

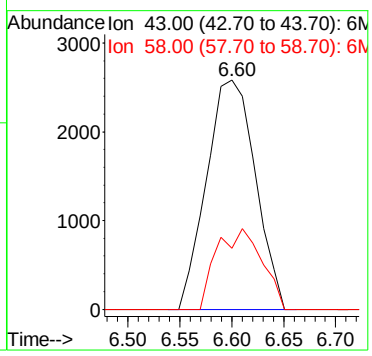

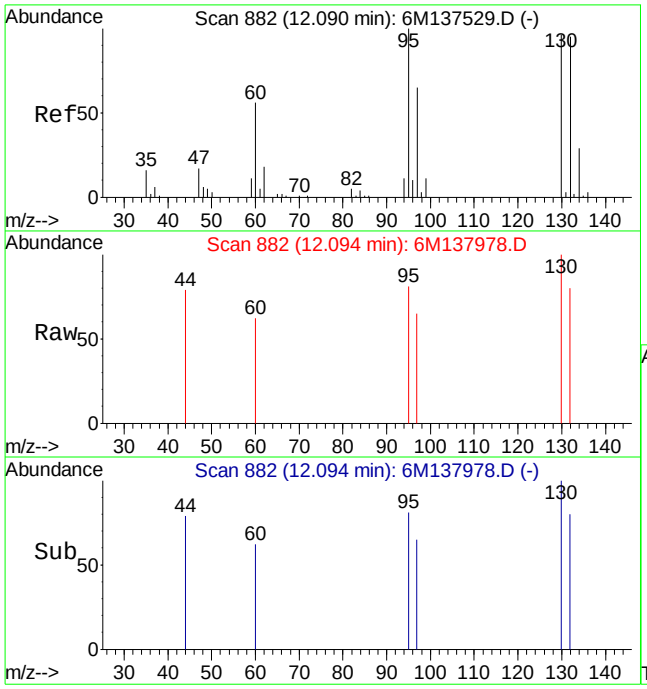

#47
Trichloroethene
Concen: 0.44 ug/L
RT: 12.09 min Scan# 882
Delta R.T. 0.00 min
Lab File: 6M137978.D
Acq: 23 Mar 2016 19:54

Tgt Ion:130 Resp: 1227

Ion	Ratio	Lower	Upper
130	100		
60	19.6	31.2	72.8#

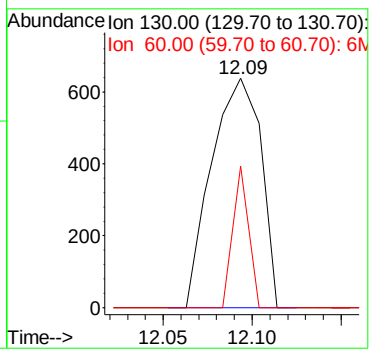

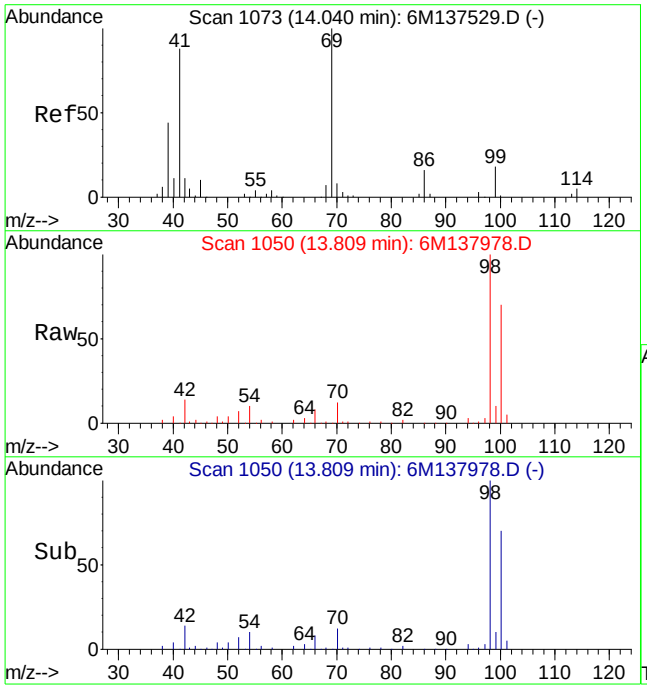

#60
Ethyl Methacrylate
Concen: 0.26 ug/L
RT: 13.81 min Scan# 1050
Delta R.T. -0.22 min
Lab File: 6M137978.D
Acq: 23 Mar 2016 19:54

Tgt Ion: 69 Resp: 995

Ion	Ratio	Lower	Upper
69	100		
41	133.9	50.6	118.2#

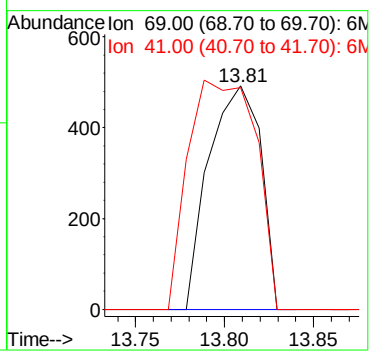

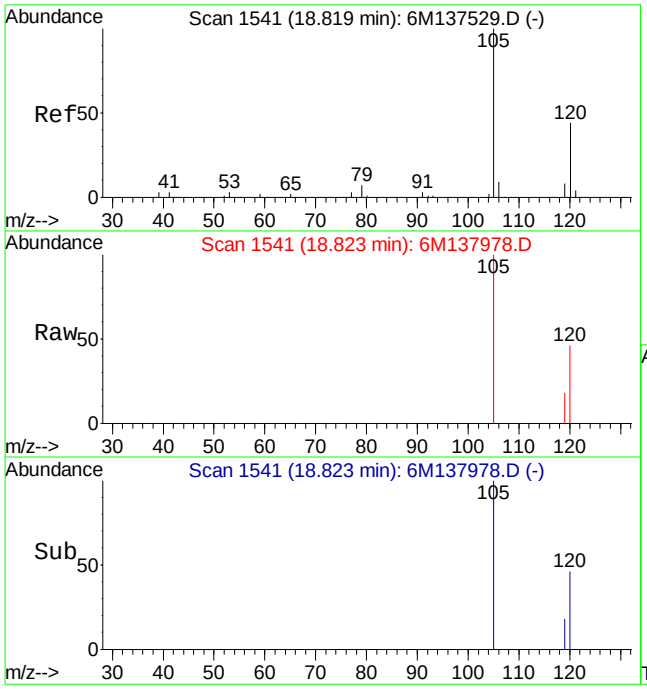

#90
1,2,4-Trimethylbenzene
Concen: 0.40 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. 0.00 min
Lab File: 6M137978.D
Acq: 23 Mar 2016 19:54

Tgt Ion:105 Resp: 4356

Ion	Ratio	Lower	Upper
105	100		
120	39.5	34.3	79.9

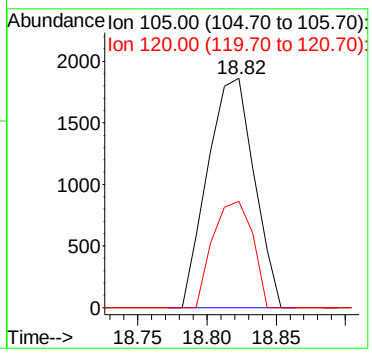

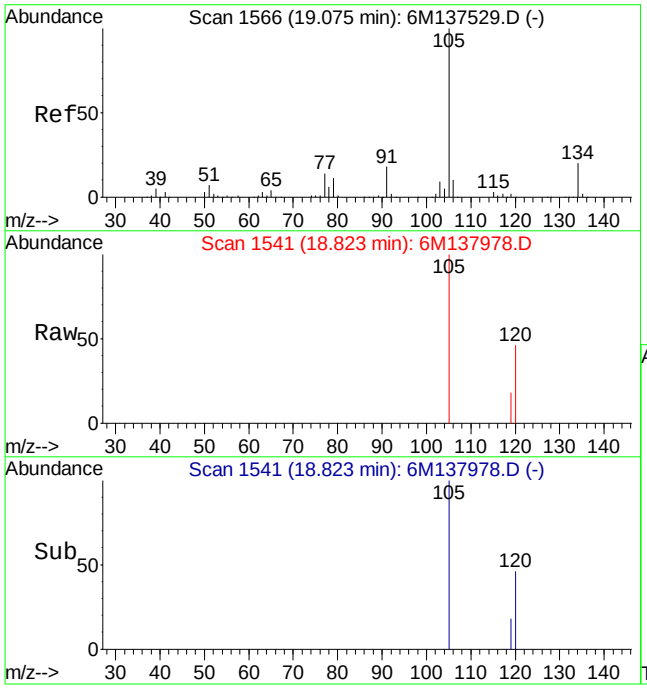

#91
sec-Butylbenzene
Concen: 0.30 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. -0.25 min
Lab File: 6M137978.D
Acq: 23 Mar 2016 19:54

Tgt Ion:105 Resp: 4001

Ion	Ratio	Lower	Upper
105	100		
134	0.0	12.2	28.6#

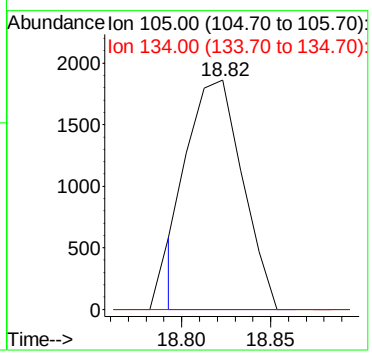

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137979.D Vial: 17
Acq On : 23 Mar 2016 20:27 Operator: TMB
Sample : L16030861-09 8260 5.24g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 08:29:42 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	548404	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	409079	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	215078	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	140342	47.7056 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.42%		
43) 1,2-Dichloroethane-d4	11.06	65	177777	46.5433 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.08%		
58) Toluene-d8	13.80	98	484191	49.7830 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.56%		
80) p-Bromofluorobenzene	17.79	95	203095	51.4095 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.82%		

Target Compounds					Qvalue
29) 2-Butanone	9.33	43	931	0.4911 ug/L	98
33) Chloroform	10.01	83	3245	0.6079 ug/L #	82
36) Tetrahydrofuran	10.31	42	2247	Below Cal #	56
45) 1,2-Dichloroethane	11.19	62	13867	3.0435 ug/L	89
47) Trichloroethene	12.09	130	135069	50.0478 ug/L	97
48) Methylcyclohexane	12.10	83	1745	0.4000 ug/L #	1

(#) = qualifier out of range (m) = manual integration
6M137979.D 826_SL.M Thu Mar 24 08:29:42 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137979.D Vial: 17
Acq On : 23 Mar 2016 20:27 Operator: TMB
Sample : L16030861-09 8260 5.24g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 8:29 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

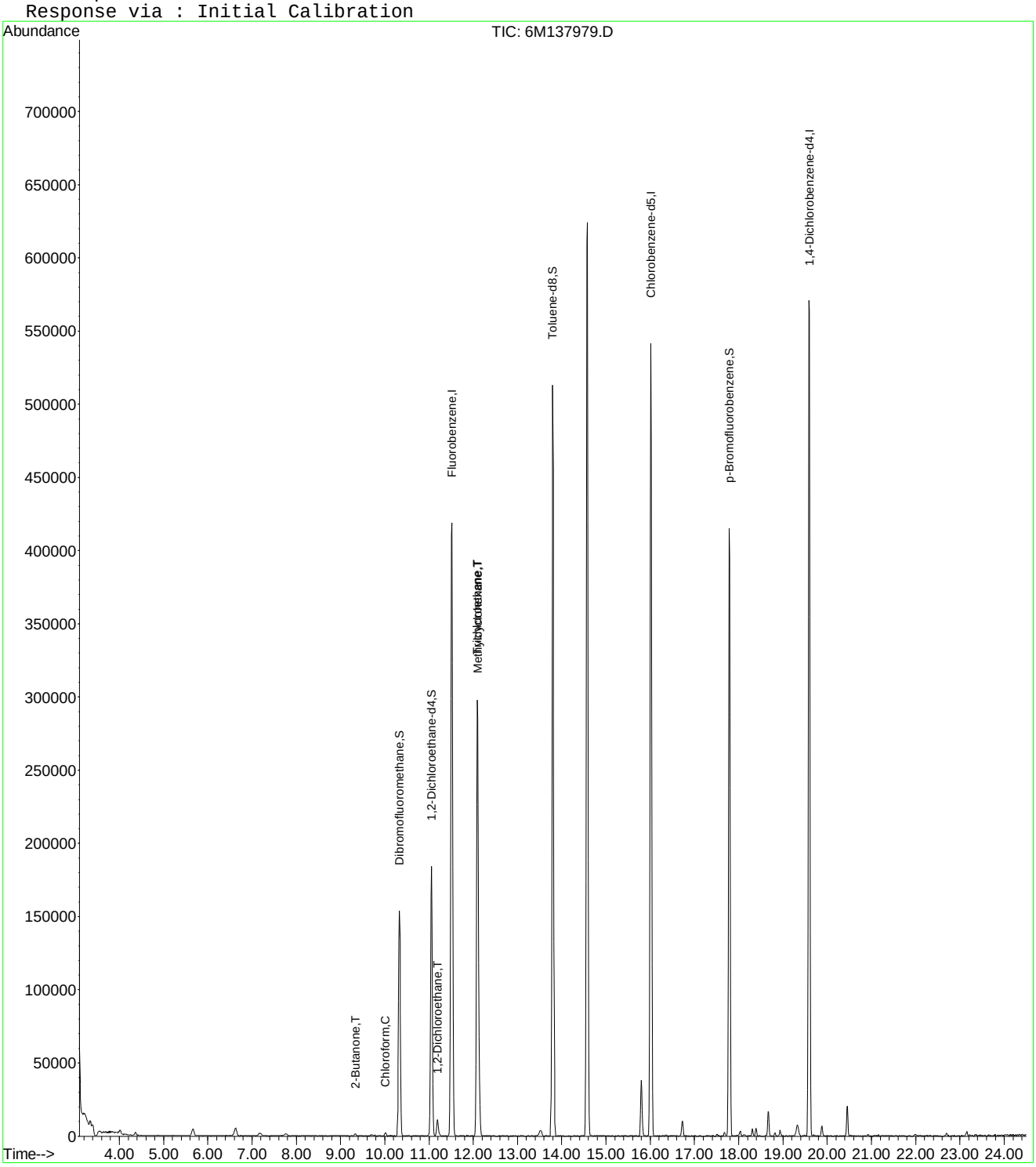

6M137979.D 826_SL.M Thu Mar 24 08:29:42 2016 Page 2

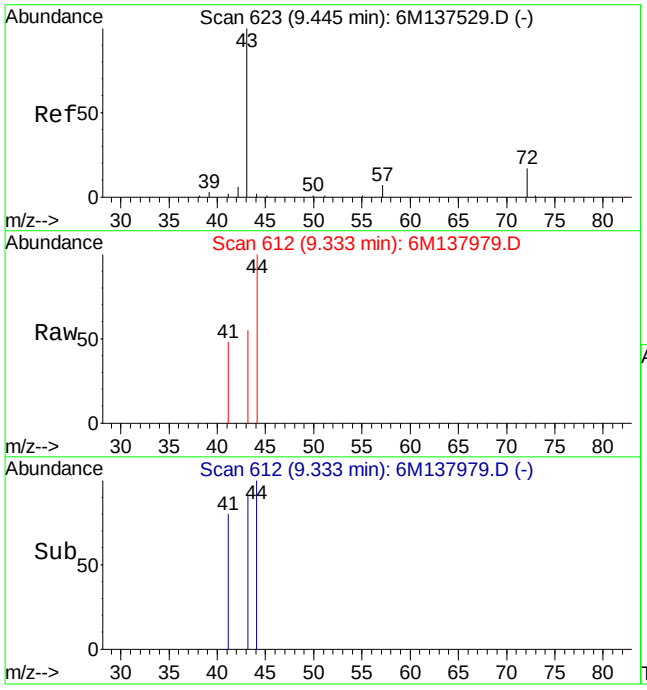

#29
2-Butanone
Concen: 0.49 ug/L
RT: 9.33 min Scan# 612
Delta R.T. -0.11 min
Lab File: 6M137979.D
Acq: 23 Mar 2016 20:27

Tgt Ion: 43 Resp: 931

Ion	Ratio	Lower	Upper
43	100		
72	21.2	12.2	28.4

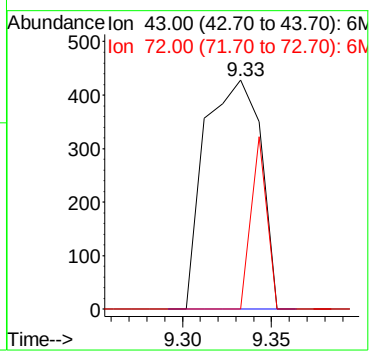

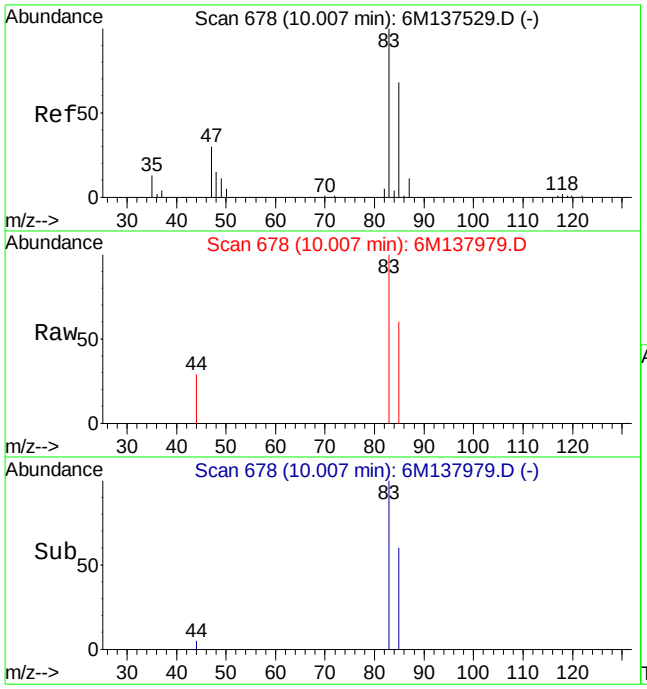

#33
Chloroform
Concen: 0.61 ug/L
RT: 10.01 min Scan# 678
Delta R.T. -0.00 min
Lab File: 6M137979.D
Acq: 23 Mar 2016 20:27

Tgt Ion: 83 Resp: 3245

Ion	Ratio	Lower	Upper
83	100		
85	66.3	38.4	89.6
47	0.0	16.9	39.5#

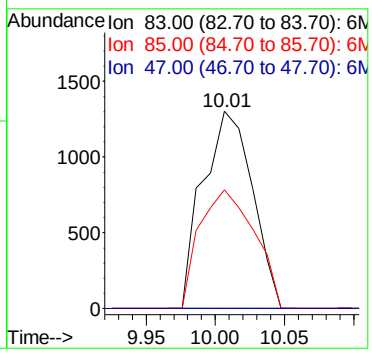

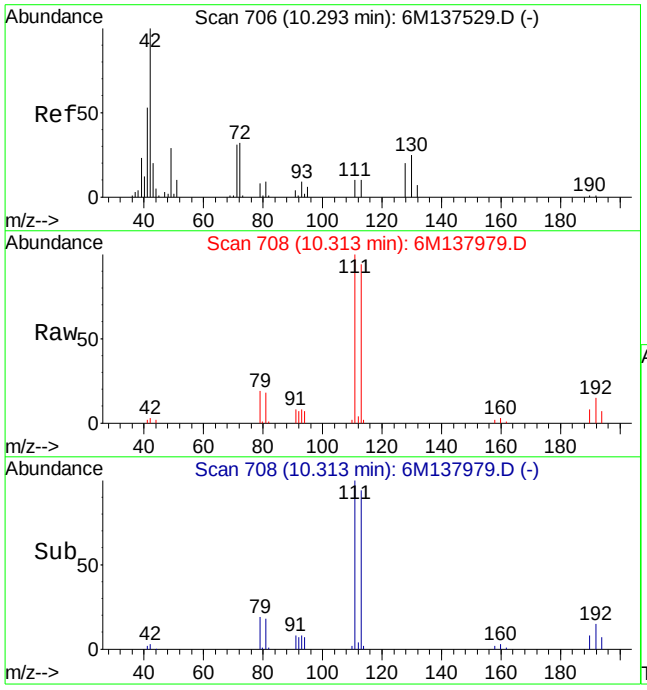

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.31 min Scan# 708
Delta R.T. 0.02 min
Lab File: 6M137979.D
Acq: 23 Mar 2016 20:27

Tgt Ion: 42 Resp: 2247

Ion	Ratio	Lower	Upper
42	100		
72	8.7	21.0	49.0#
71	9.7	20.6	48.2#

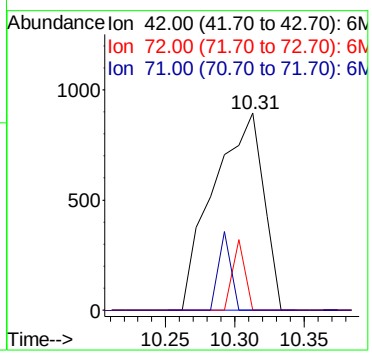

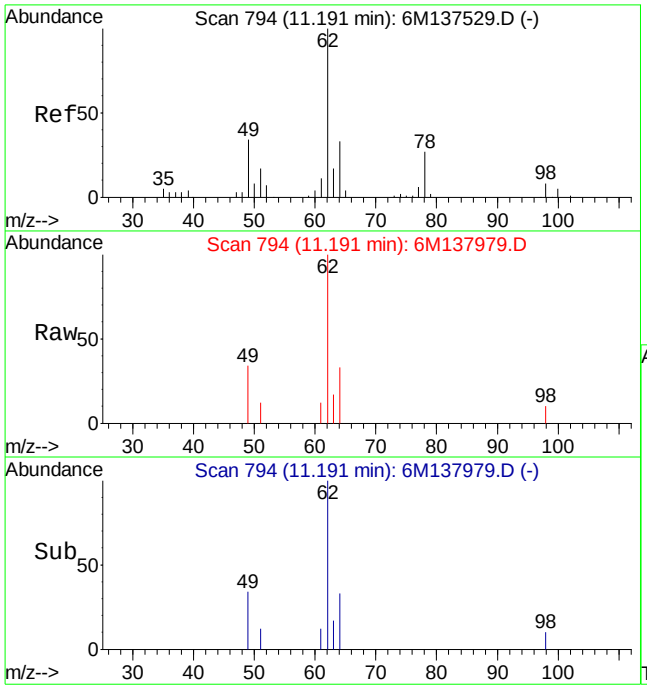

#45
1,2-Dichloroethane
Concen: 3.04 ug/L
RT: 11.19 min Scan# 794
Delta R.T. -0.00 min
Lab File: 6M137979.D
Acq: 23 Mar 2016 20:27

Tgt Ion: 62 Resp: 13867

Ion	Ratio	Lower	Upper
62	100		
49	31.1	22.9	53.3
98	5.3	4.7	10.9

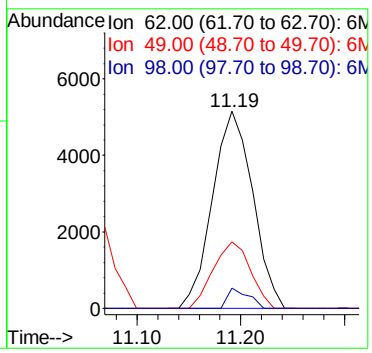

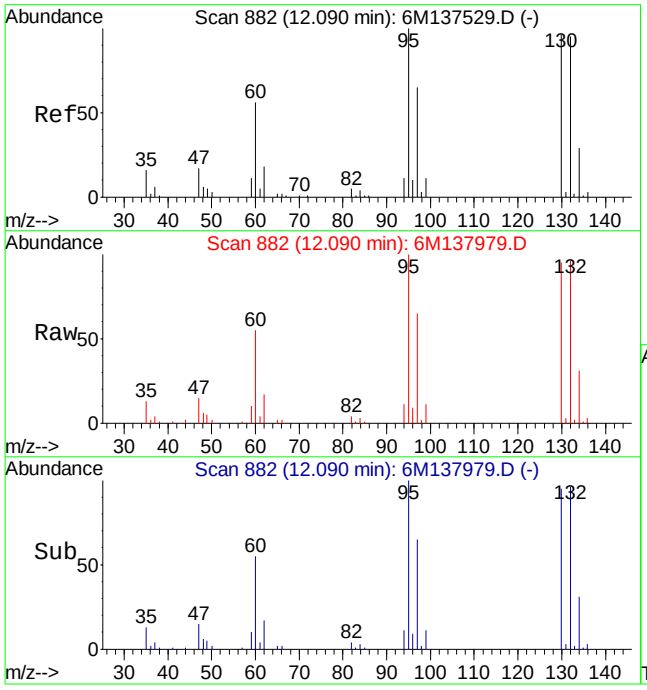

#47
Trichloroethene
Concen: 50.05 ug/L
RT: 12.09 min Scan# 882
Delta R.T. -0.00 min
Lab File: 6M137979.D
Acq: 23 Mar 2016 20:27

Tgt Ion:130 Resp: 135069

Ion	Ratio	Lower	Upper
130	100		
60	54.4	31.2	72.8

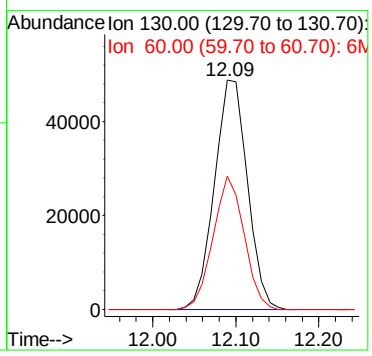

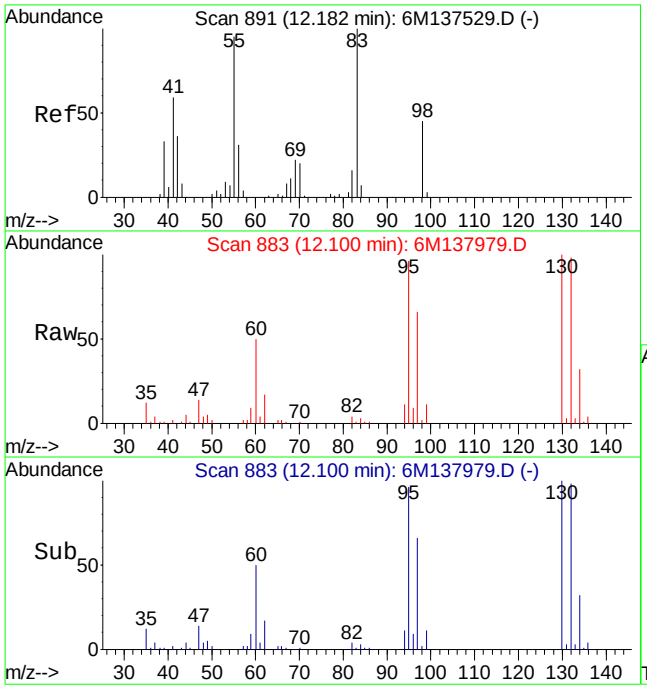

#48
Methylcyclohexane
Concen: 0.40 ug/L
RT: 12.10 min Scan# 883
Delta R.T. -0.08 min
Lab File: 6M137979.D
Acq: 23 Mar 2016 20:27

Tgt Ion: 83 Resp: 1745

Ion	Ratio	Lower	Upper
83	100		
55	0.0	48.3	112.7#
98	195.6	27.5	64.1#

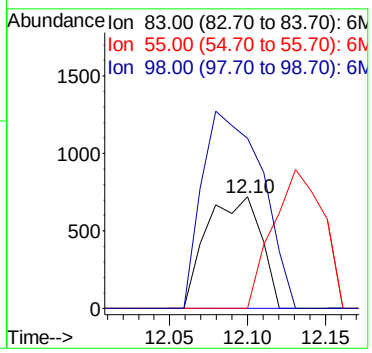

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137980.D Vial: 18
Acq On : 23 Mar 2016 21:00 Operator: TMB
Sample : L16030861-10 8260 4.95g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 08:29:43 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	553814	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	414551	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	223093	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.34	111	143853	48.4213 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.84%		
43) 1,2-Dichloroethane-d4	11.05	65	185337	48.0485 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.10%		
58) Toluene-d8	13.80	98	490272	49.7429 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.48%		
80) p-Bromofluorobenzene	17.79	95	209287	51.0736 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.14%		

Target Compounds

					Qvalue
13) Acetone	6.59	43	3739	Below Cal	# 1
36) Tetrahydrofuran	10.31	42	2433	Below Cal	# 47
45) 1,2-Dichloroethane	11.20	62	4007	0.8709 ug/L	# 77
47) Trichloroethene	12.09	130	40268	14.7750 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M137980.D 826_SL.M Thu Mar 24 08:29:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137980.D Vial: 18
Acq On : 23 Mar 2016 21:00 Operator: TMB
Sample : L16030861-10 8260 4.95g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 8:29 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

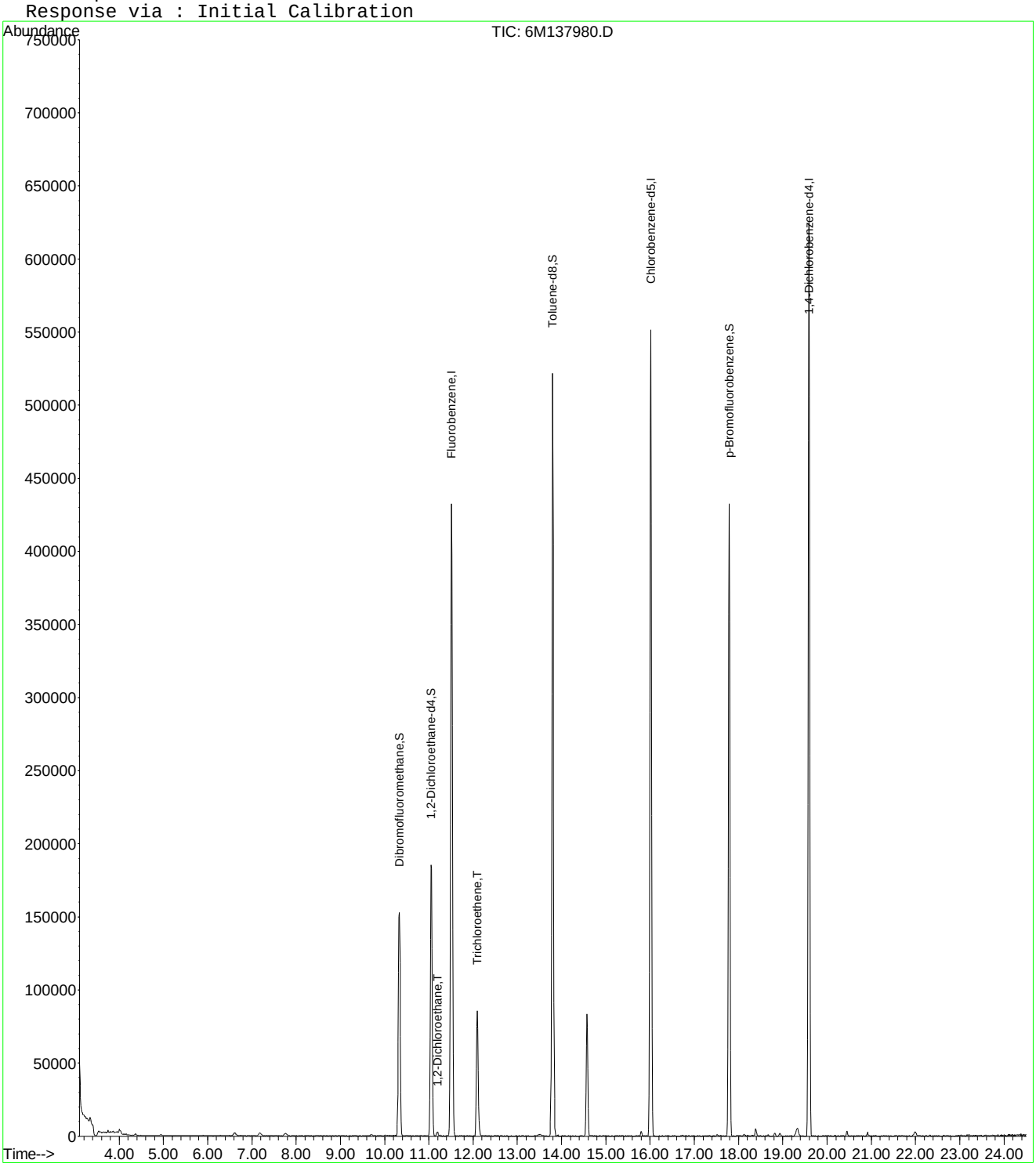

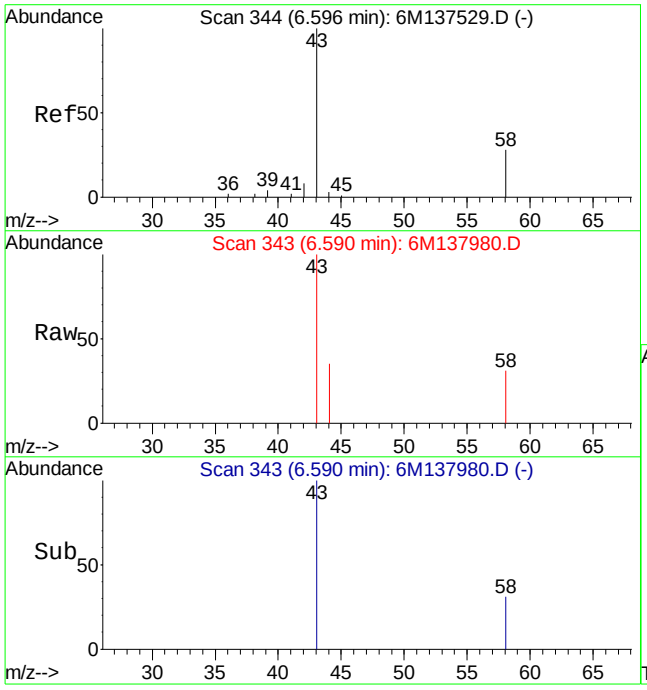

#13
Acetone
Concen: Below Cal
RT: 6.59 min Scan# 343
Delta R.T. 0.00 min
Lab File: 6M137980.D
Acq: 23 Mar 2016 21:00

Tgt Ion: 43 Resp: 3739

Ion	Ratio	Lower	Upper
43	100		
58	92.6	16.1	37.7#

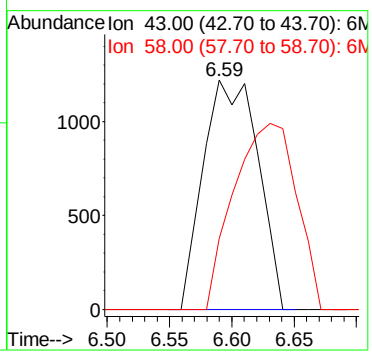

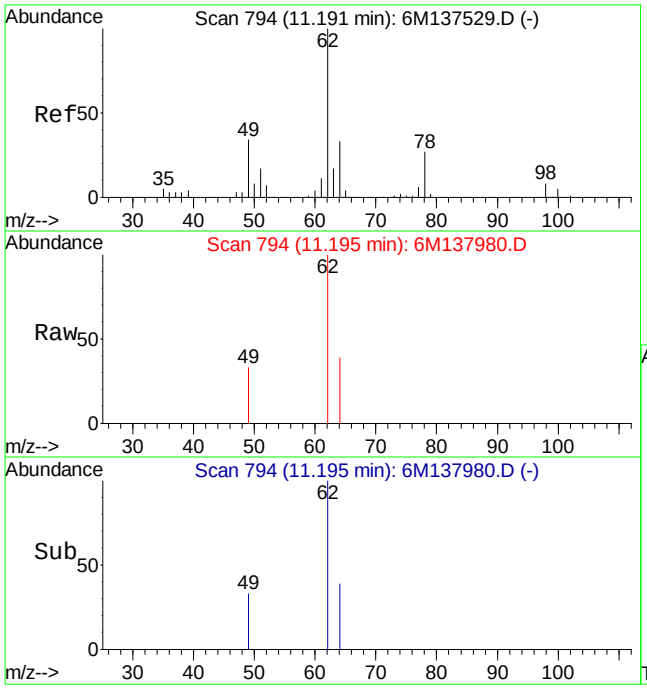

#45
1,2-Dichloroethane
Concen: 0.87 ug/L
RT: 11.20 min Scan# 794
Delta R.T. 0.00 min
Lab File: 6M137980.D
Acq: 23 Mar 2016 21:00

Tgt Ion: 62 Resp: 4007

Ion	Ratio	Lower	Upper
62	100		
49	23.8	22.9	53.3
98	0.0	4.7	10.9#

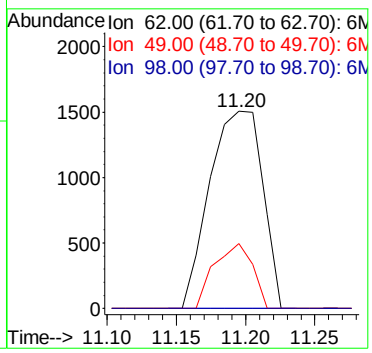

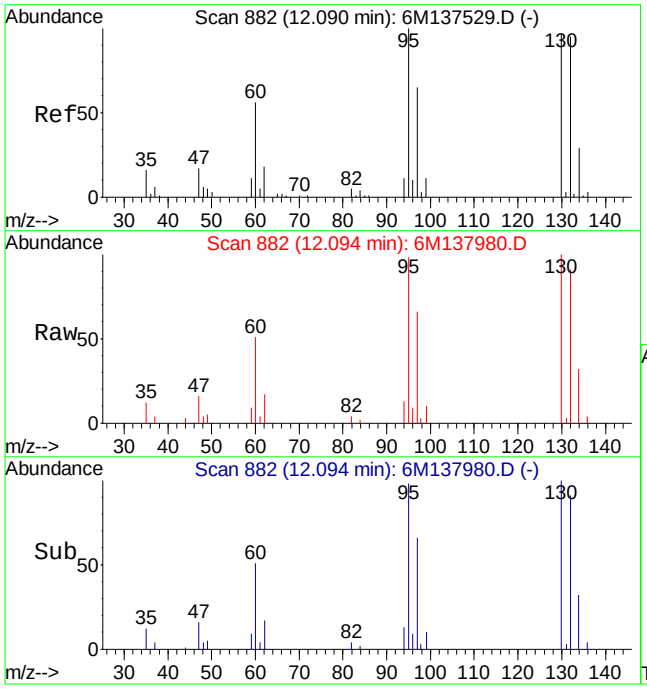

#47
Trichloroethene
Concen: 14.77 ug/L
RT: 12.09 min Scan# 882
Delta R.T. 0.00 min
Lab File: 6M137980.D
Acq: 23 Mar 2016 21:00

Tgt Ion:130 Resp: 40268

Ion	Ratio	Lower	Upper
130	100		
60	52.2	31.2	72.8

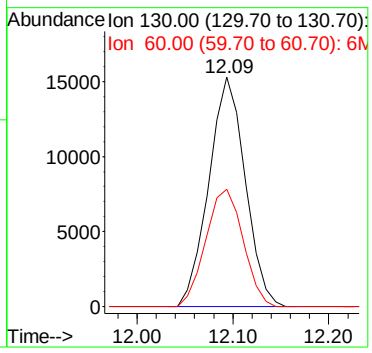

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:35 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:12:24 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	662608	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	467802	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	239669	50.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.32	111	1132	0.3185 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.64%#	
43) 1,2-Dichloroethane-d4	11.05	65	1872	0.4056 ug/L	-0.01
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.82%#	
58) Toluene-d8	13.80	98	5704	0.5128 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	1.02%#	
80) p-Bromofluorobenzene	17.79	95	2210	0.5020 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	1.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	3454	0.5676 ug/L #	66
3) Chloromethane	3.88	50	8579	1.3528 ug/L	90
4) Vinyl Chloride	4.12	62	3760	0.7367 ug/L #	74
5) 1,3-Butadiene	4.18	54	3027	0.7128 ug/L #	61
6) Bromomethane	5.03	94	1550	0.5697 ug/L	88
7) Chloroethane	5.19	64	1482	0.5121 ug/L #	45
8) Trichlorofluoromethane	5.69	101	6717	0.9794 ug/L #	89
10) Isoprene	6.27	67	1888	0.4226 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	1199	0.3663 ug/L #	55
13) Acetone	6.59	43	9375	2.3758 ug/L	94
14) 1,1-Dichloroethene	6.83	61	2956	0.5098 ug/L	84
15) Tert-Butyl Alcohol	6.94	59	200	0.3696 ug/L #	57
18) Methyl acetate	7.39	43	2867	0.7115 ug/L #	64
19) Methylene Chloride	7.67	84	2652	0.7594 ug/L	75
20) Carbon Disulfide	7.72	76	8199	0.7390 ug/L #	82
22) Methyl Tert Butyl Ether	7.88	73	4851	0.4864 ug/L #	63
23) trans-1,2-Dichloroethene	8.16	96	1352	0.4221 ug/L #	10
24) n-Hexane	8.23	57	3942	0.6777 ug/L	92
26) Vinyl Acetate	8.79	43	2062	0.2645 ug/L #	78
27) 1,1-Dichloroethane	8.82	63	3798	0.5499 ug/L #	68
29) 2-Butanone	9.46	43	1832	0.7999 ug/L #	56
31) 2,2-Dichloropropane	9.69	77	2885	0.5204 ug/L	96
32) cis-1,2-Dichloroethene	9.76	96	1812	0.5067 ug/L	93
33) Chloroform	10.01	83	3647	0.5654 ug/L	91
35) Bromochloromethane	10.26	130	694	0.3303 ug/L #	47
36) Tetrahydrofuran	10.29	42	9683	4.2648 ug/L	95
38) 1,1,1-Trichloroethane	10.59	97	2858	0.5017 ug/L	84
39) Cyclohexane	10.62	56	2886	0.4467 ug/L	94
40) 1,1-Dichloropropene	10.82	75	2042	0.4451 ug/L #	76
42) Carbon Tetrachloride	10.99	117	2712	0.5095 ug/L #	85
45) 1,2-Dichloroethane	11.19	62	3101	0.5633 ug/L #	75
46) Benzene	11.23	78	8142	0.5899 ug/L	89
47) Trichloroethene	12.09	130	1950	0.5980 ug/L	81
48) Methylcyclohexane	12.18	83	2990	0.5672 ug/L #	73
49) 1,2-Dichloropropane	12.34	63	1667	0.4489 ug/L #	69
51) Bromodichloromethane	12.68	83	2589	0.5312 ug/L	92
52) Dibromomethane	12.78	93	741	0.3411 ug/L	80
55) cis-1,3-Dichloropropene	13.42	75	2628	0.4894 ug/L #	74
56) Dimethyl Disulfide	13.71	79	853	0.3150 ug/L #	49
59) Toluene	13.92	91	7610	0.5751 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:35 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:12:24 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
60)	Ethyl Methacrylate	14.04	69	1764	0.4160 ug/L		85
62)	trans-1,3-Dichloropropene	14.12	75	2064	0.4056 ug/L	#	71
63)	1,1,2-Trichloroethane	14.37	97	1621	0.5861 ug/L	#	75
64)	2-Hexanone	14.32	43	1822	0.5773 ug/L	#	48
65)	1,3-Dichloropropane	14.75	76	2715	0.5416 ug/L		83
66)	Tetrachloroethene	14.86	166	1836	0.5624 ug/L		91
67)	Dibromochloromethane	15.18	129	1663	0.4623 ug/L		94
68)	1,2-Dibromoethane	15.48	107	1262	0.4462 ug/L		99
69)	1-Chlorohexane	15.59	91	2113	0.5142 ug/L		96
70)	Chlorobenzene	16.07	112	4991	0.5869 ug/L		75
71)	1,1,1,2-Tetrachloroethane	16.11	131	1409	0.4126 ug/L	#	79
72)	Ethylbenzene	16.11	106	2290	0.5032 ug/L		61
73)	m-,p-Xylene	16.22	106	6307	1.1326 ug/L		90
74)	o-Xylene	16.88	106	2685	0.5119 ug/L		71
75)	Styrene	16.92	104	4645	0.5203 ug/L		93
76)	Bromoform	17.49	173	756	0.2977 ug/L	#	62
77)	Isopropylbenzene	17.38	105	7047	0.4998 ug/L		82
79)	1,1,2,2-Tetrachloroethane	17.64	83	1948	0.5203 ug/L		84
83)	n-Propylbenzene	17.98	91	9243	0.5679 ug/L	#	92
84)	Bromobenzene	18.13	156	1885	0.5328 ug/L		100
85)	1,3,5-Trimethylbenzene	18.21	105	6007	0.5185 ug/L		90
86)	2-Chlorotoluene	18.29	91	5403	0.4973 ug/L		88
87)	4-Chlorotoluene	18.35	91	5598	0.5635 ug/L	#	83
88)	a-Methylstyrene	18.69	118	3780	0.6719 ug/L		93
89)	tert-Butylbenzene	18.76	134	1072	0.4440 ug/L		84
90)	1,2,4-Trimethylbenzene	18.82	105	7288	0.5982 ug/L		78
91)	sec-Butylbenzene	19.08	105	8207	0.5532 ug/L		85
92)	p-Isopropyltoluene	19.27	119	6156	0.5029 ug/L		99
93)	1,3-Dichlorobenzene	19.48	146	3876	0.5662 ug/L		99
94)	1,4-Dichlorobenzene	19.64	146	4389	0.6299 ug/L	#	36
95)	n-Butylbenzene	19.89	91	6993	0.5680 ug/L		91
96)	1,2-Dichlorobenzene	20.23	146	3739	0.5676 ug/L		89
98)	1,2,4-Trichlorobenzene	22.76	180	2881	0.6050 ug/L		89
99)	Hexachlorobutadiene	22.95	225	1268	0.4656 ug/L		81
100)	Naphthalene	23.20	128	5965	0.5449 ug/L		95
101)	1,2,3-Trichlorobenzene	23.58	180	2914	0.6214 ug/L	#	69

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

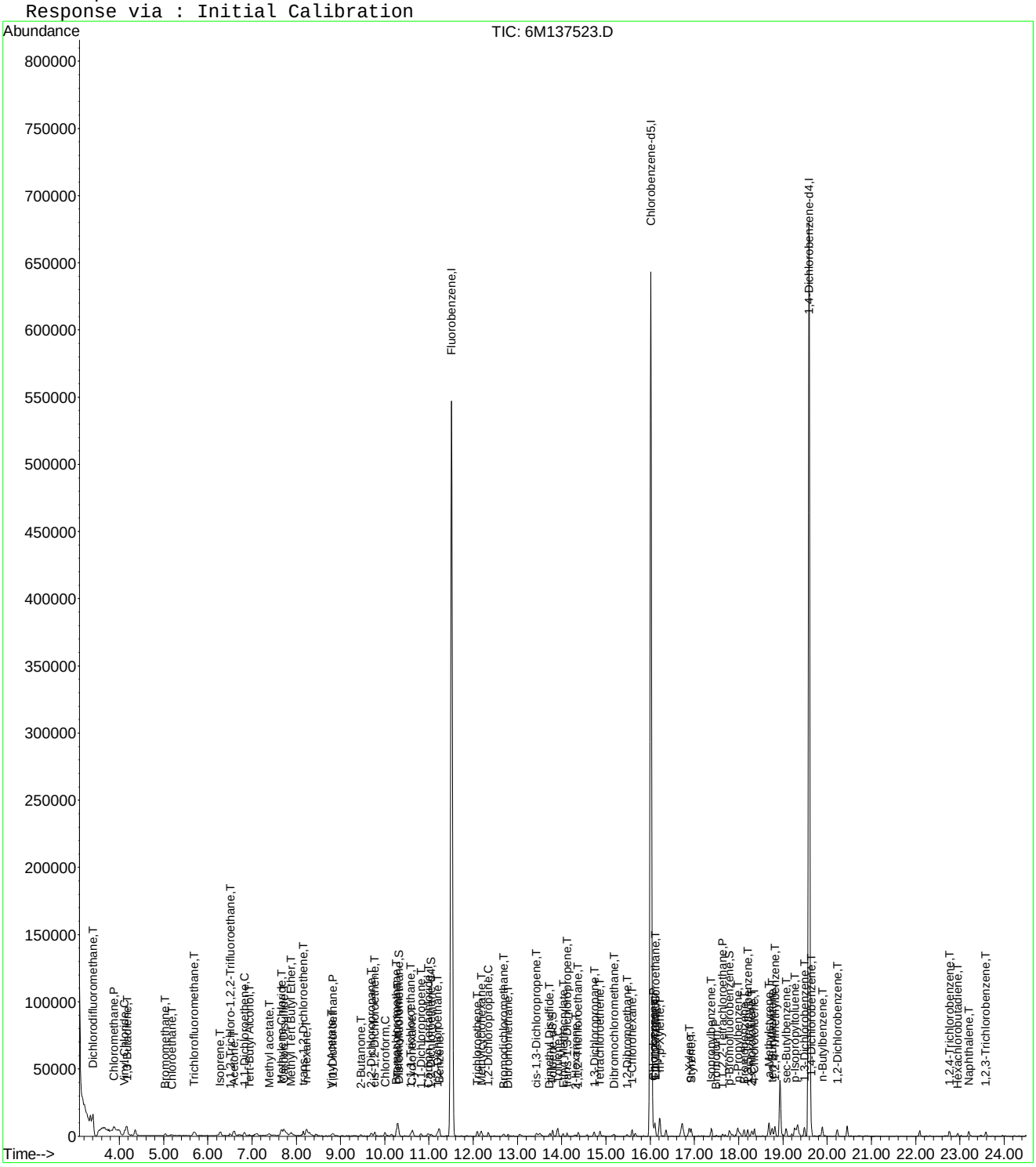

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.5676	0.0	0	0.00
3	P	Chloromethane	-1.0000	1.3528	0.0	0	0.00
4	C	Vinyl Chloride	-1.0000	0.7367	0.0	0	0.00
5	T	1,3-Butadiene	-1.0000	0.7128	0.0	0	0.01
6	T	Bromomethane	-1.0000	0.5697	0.0	0	0.00
7	T	Chloroethane	-1.0000	0.5121	0.0	0	0.00
8	T	Trichlorofluoromethane	-1.0000	0.9794	0.0	0	-0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.24#
10	T	Isoprene	-1.0000	0.4226	0.0	0	-0.01
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.48#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3663	0.0	0	0.00
13	T	Acetone	-1.0000	2.3758	0.0	0	0.00
14	C	1,1-Dichloroethene	-1.0000	0.5098	0.0	0	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.3696	0.0	0	0.00
16	T	Dimethyl Sulfide	-1.0000	0.2328	0.0	0	-0.02
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.38#
18	T	Methyl acetate	-1.0000	0.7115	0.0	0	0.00
19	T	Methylene Chloride	-1.0000	0.7594	0.0	0	0.00
20	T	Carbon Disulfide	-1.0000	0.7390	0.0	0	0.00
21	T	Acrylonitrile	-1.0000	0.1371	0.0	0	0.02
22	T	Methyl Tert Butyl Ether	0.5000	0.4864	2.7	100	-0.01
23	T	trans-1,2-Dichloroethene	-1.0000	0.4221	0.0	0	0.00
24	T	n-Hexane	-1.0000	0.6777	0.0	0	-0.01
25	T	Diisopropyl ether	-1.0000	0.1069	0.0	0	-0.16
26	T	Vinyl Acetate	-1.0000	0.2645	0.0	0	0.00
27	P	1,1-Dichloroethane	-1.0000	0.5499	0.0	0	-0.01
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-9.24#
29	T	2-Butanone	-1.0000	0.7999	0.0	0	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.58#
31	T	2,2-Dichloropropane	-1.0000	0.5204	0.0	0	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.5067	0.0	0	-0.01
33	C	Chloroform	-1.0000	0.5654	0.0	0	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-10.16#
35	T	Bromochloromethane	-1.0000	0.3303	0.0	0	0.00
36	T	Tetrahydrofuran	-1.0000	4.2648	0.0	0	0.00
37	S	Dibromofluoromethane	-1.0000	0.3185	0.0	0	0.00
38	T	1,1,1-Trichloroethane	-1.0000	0.5017	0.0	0	-0.01
39	T	Cyclohexane	-1.0000	0.4467	0.0	0	-0.02
40	T	1,1-Dichloropropene	-1.0000	0.4451	0.0	0	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.94#
42	T	Carbon Tetrachloride	-1.0000	0.5095	0.0	0	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.4056	0.0	0	-0.01
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	-1.0000	0.5633	0.0	0	0.00
46	T	Benzene	0.5000	0.5899	-18.0	100	0.00
47	T	Trichloroethene	-1.0000	0.5980	0.0	0	0.00
48	T	Methylcyclohexane	-1.0000	0.5672	0.0	0	0.00
49	C	1,2-Dichloropropane	-1.0000	0.4489	0.0	0	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-12.67#
51	T	Bromodichloromethane	-1.0000	0.5312	0.0	0	0.00
52	T	Dibromomethane	-1.0000	0.3411	0.0	0	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1346	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-13.07#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.4894	0.0	0	-0.01
56	T	Dimethyl Disulfide	-1.0000	0.3150	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.5128	0.0	0	0.00
59	C	Toluene	0.5000	0.5751	-15.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.4160	0.0	0	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	-1.0000	0.4056	0.0	0	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.5861	0.0	0	0.00
64	T	2-Hexanone	-1.0000	0.5773	0.0	0	0.00
65	T	1,3-Dichloropropane	-1.0000	0.5416	0.0	0	0.00
66	T	Tetrachloroethene	-1.0000	0.5624	0.0	0	-0.01
67	T	Dibromochloromethane	-1.0000	0.4623	0.0	0	0.00
68	T	1,2-Dibromoethane	-1.0000	0.4462	0.0	0	0.00
69	T	1-Chlorohexane	-1.0000	0.5142	0.0	0	0.00
70	P	Chlorobenzene	-1.0000	0.5869	0.0	0	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.4126	0.0	0	0.00
72	C	Ethylbenzene	0.5000	0.5032	-0.6	100	0.00
73	T	m-,p-Xylene	1.0000	1.1326	-13.3	100	0.00
74	T	o-Xylene	0.5000	0.5119	-2.4	100	0.00
75	T	Styrene	-1.0000	0.5203	0.0	0	0.00
76	P	Bromoform	-1.0000	0.2977	0.0	0	0.00
77	T	Isopropylbenzene	-1.0000	0.4998	0.0	0	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.5203	0.0	0	-0.01
80	S	p-Bromofluorobenzene	-1.0000	0.5020	0.0	0	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.1823	0.0	0	0.01
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.1476	0.0	0	0.00
83	T	n-Propylbenzene	-1.0000	0.5679	0.0	0	0.00
84	T	Bromobenzene	-1.0000	0.5328	0.0	0	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.5185	0.0	0	0.00
86	T	2-Chlorotoluene	-1.0000	0.4973	0.0	0	-0.01
87	T	4-Chlorotoluene	-1.0000	0.5635	0.0	0	0.00
88	T	a-Methylstyrene	-1.0000	0.6719	0.0	0	0.00
89	T	tert-Butylbenzene	-1.0000	0.4440	0.0	0	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.5982	0.0	0	0.00
91	T	sec-Butylbenzene	-1.0000	0.5532	0.0	0	0.00
92	T	p-Isopropyltoluene	-1.0000	0.5029	0.0	0	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.5662	0.0	0	0.00
94	T	1,4-Dichlorobenzene	-1.0000	0.6299	0.0	0	0.00
95	T	n-Butylbenzene	-1.0000	0.5680	0.0	0	0.00
96	T	1,2-Dichlorobenzene	-1.0000	0.5676	0.0	0	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-21.41#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.6050	0.0	0	0.00
99	T	Hexachlorobutadiene	-1.0000	0.4656	0.0	0	-0.01
100	T	Naphthalene	-1.0000	0.5449	0.0	0	0.00
101	T	1,2,3-Trichlorobenzene	-1.0000	0.6214	0.0	0	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137523.D 826_SL.M Mon Feb 29 16:01:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:37 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	594307	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	418336	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	217318	50.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.34	111	2084	0.6537 ug/L	0.02
Spiked Amount 50.000	Range 80 - 120		Recovery =	1.30%#	
43) 1,2-Dichloroethane-d4	11.06	65	2834	0.6847 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	1.36%#	
58) Toluene-d8	13.80	98	7503	0.7544 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	1.50%#	
80) p-Bromofluorobenzene	17.79	95	3135	0.7854 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	1.58%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	6025	1.1039 ug/L	88
3) Chloromethane	3.88	50	8942	1.5721 ug/L	80
4) Vinyl Chloride	4.13	62	5159	1.1269 ug/L	96
5) 1,3-Butadiene	4.18	54	4578	1.2019 ug/L #	67
6) Bromomethane	5.03	94	2477	1.0150 ug/L	94
7) Chloroethane	5.20	64	2347	0.9041 ug/L #	77
8) Trichlorofluoromethane	5.70	101	7751	1.2600 ug/L #	92
9) Diethyl ether	6.23	59	14414	5.0935 ug/L	81
10) Isoprene	6.28	67	3598	0.8978 ug/L	94
11) Acrolein	6.48	56	1307	2.4320 ug/L #	51
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	3197	1.0888 ug/L	73
13) Acetone	6.60	43	5933	0.3832 ug/L	97
14) 1,1-Dichloroethene	6.84	61	5455	1.0489 ug/L	83
15) Tert-Butyl Alcohol	6.93	59	4660	9.6025 ug/L #	86
16) Dimethyl Sulfide	7.13	62	2208	0.8750 ug/L	94
18) Methyl acetate	7.40	43	3574	0.9889 ug/L #	64
19) Methylene Chloride	7.66	84	3682	1.1755 ug/L	75
20) Carbon Disulfide	7.72	76	11945	1.2004 ug/L	97
21) Acrylonitrile	7.86	53	3216	2.1651 ug/L	84
22) Methyl Tert Butyl Ether	7.90	73	8242	0.9214 ug/L	91
23) trans-1,2-Dichloroethene	8.17	96	2437	0.8482 ug/L	60
24) n-Hexane	8.23	57	4827	0.9252 ug/L	90
25) Diisopropyl ether	8.62	45	67920	5.0212 ug/L	97
26) Vinyl Acetate	8.80	43	6077	0.8691 ug/L #	78
27) 1,1-Dichloroethane	8.83	63	6295	1.0162 ug/L	88
28) Ethyl-Tert-Butyl ether	9.25	59	49996	4.6114 ug/L	96
29) 2-Butanone	9.47	43	2247	1.0938 ug/L #	56
30) Propionitrile	9.57	54	2816	4.9529 ug/L #	71
31) 2,2-Dichloropropane	9.70	77	5030	1.0116 ug/L	94
32) cis-1,2-Dichloroethene	9.77	96	2740	0.8542 ug/L	83
33) Chloroform	10.00	83	6439	1.1130 ug/L	98
35) Bromochloromethane	10.26	130	1361	0.7221 ug/L	97
36) Tetrahydrofuran	10.29	42	10271	5.4403 ug/L	94
38) 1,1,1-Trichloroethane	10.61	97	5241	1.0257 ug/L	95
39) Cyclohexane	10.63	56	5811	1.0029 ug/L	86
40) 1,1-Dichloropropene	10.82	75	4038	0.9813 ug/L #	89
41) Tert-Amyl-Methyl ether	10.95	73	39464	4.5884 ug/L #	83
42) Carbon Tetrachloride	11.00	117	4871	1.0202 ug/L #	88
45) 1,2-Dichloroethane	11.19	62	4707	0.9533 ug/L #	86
46) Benzene	11.23	78	13412	1.0834 ug/L	93

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:37 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
47)	Trichloroethene	12.09	130	2983	1.0199 ug/L		90
48)	Methylcyclohexane	12.19	83	4295	0.9084 ug/L		77
49)	1,2-Dichloropropane	12.35	63	3111	0.9339 ug/L	#	69
51)	Bromodichloromethane	12.68	83	4337	0.9921 ug/L		97
52)	Dibromomethane	12.77	93	1629	0.8361 ug/L		91
53)	2-Chloroethyl Vinyl Ether	13.04	63	1268	0.6921 ug/L	#	43
54)	4-Methyl-2-Pentanone	13.08	58	633	0.4563 ug/L	#	34
55)	cis-1,3-Dichloropropene	13.43	75	4040	0.8388 ug/L		98
56)	Dimethyl Disulfide	13.72	79	1323	0.5447 ug/L	#	49
59)	Toluene	13.91	91	12207	1.0316 ug/L		97
60)	Ethyl Methacrylate	14.03	69	2818	0.7432 ug/L		100
62)	trans-1,3-Dichloropropene	14.12	75	3878	0.8522 ug/L		100
63)	1,1,2-Trichloroethane	14.38	97	2441	0.9869 ug/L		93
64)	2-Hexanone	14.31	43	2064	0.7313 ug/L		93
65)	1,3-Dichloropropane	14.73	76	4145	0.9246 ug/L		83
66)	Tetrachloroethene	14.87	166	3009	1.0308 ug/L		96
67)	Dibromochloromethane	15.17	129	2840	0.8829 ug/L		96
68)	1,2-Dibromoethane	15.48	107	1912	0.7559 ug/L		85
69)	1-Chlorohexane	15.59	91	3045	0.8286 ug/L	#	59
70)	Chlorobenzene	16.06	112	8053	1.0589 ug/L	#	66
71)	1,1,1,2-Tetrachloroethane	16.11	131	2914	0.9542 ug/L		92
72)	Ethylbenzene	16.10	106	3899	0.9580 ug/L		89
73)	m-,p-Xylene	16.21	106	9999	2.0079 ug/L		90
74)	o-Xylene	16.88	106	4283	0.9131 ug/L		84
75)	Styrene	16.92	104	6414	0.8034 ug/L		92
76)	Bromoform	17.49	173	1706	0.7511 ug/L	#	70
77)	Isopropylbenzene	17.38	105	11886	0.9427 ug/L		95
79)	1,1,2,2-Tetrachloroethane	17.65	83	3500	1.0310 ug/L		95
81)	1,2,3-Trichloropropane	17.87	110	811	0.7802 ug/L	#	55
82)	trans-1,4-Dichloro-2-Buten	17.93	53	959	0.7652 ug/L		70
83)	n-Propylbenzene	17.98	91	14256	0.9660 ug/L	#	91
84)	Bromobenzene	18.13	156	3248	1.0125 ug/L		98
85)	1,3,5-Trimethylbenzene	18.21	105	9438	0.8984 ug/L		95
86)	2-Chlorotoluene	18.30	91	9880	1.0030 ug/L		97
87)	4-Chlorotoluene	18.35	91	8357	0.9278 ug/L		93
88)	a-Methylstyrene	18.68	118	4374	0.8574 ug/L		95
89)	tert-Butylbenzene	18.75	134	1999	0.9131 ug/L		84
90)	1,2,4-Trimethylbenzene	18.82	105	10630	0.9622 ug/L		79
91)	sec-Butylbenzene	19.07	105	13062	0.9709 ug/L		95
92)	p-Isopropyltoluene	19.27	119	10400	0.9370 ug/L		89
93)	1,3-Dichlorobenzene	19.48	146	6397	1.0306 ug/L		97
94)	1,4-Dichlorobenzene	19.64	146	7211	1.1413 ug/L		83
95)	n-Butylbenzene	19.88	91	10811	0.9684 ug/L		88
96)	1,2-Dichlorobenzene	20.22	146	5973	1.0000 ug/L		96
97)	1,2-Dibromo-3-Chloropropan	21.41	75	191	0.2543 ug/L	#	1
98)	1,2,4-Trichlorobenzene	22.76	180	4430	1.0259 ug/L		93
99)	Hexachlorobutadiene	22.94	225	2385	0.9658 ug/L		90
100)	Naphthalene	23.20	128	8770	0.8835 ug/L		92
101)	1,2,3-Trichlorobenzene	23.59	180	4309	1.0134 ug/L		95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

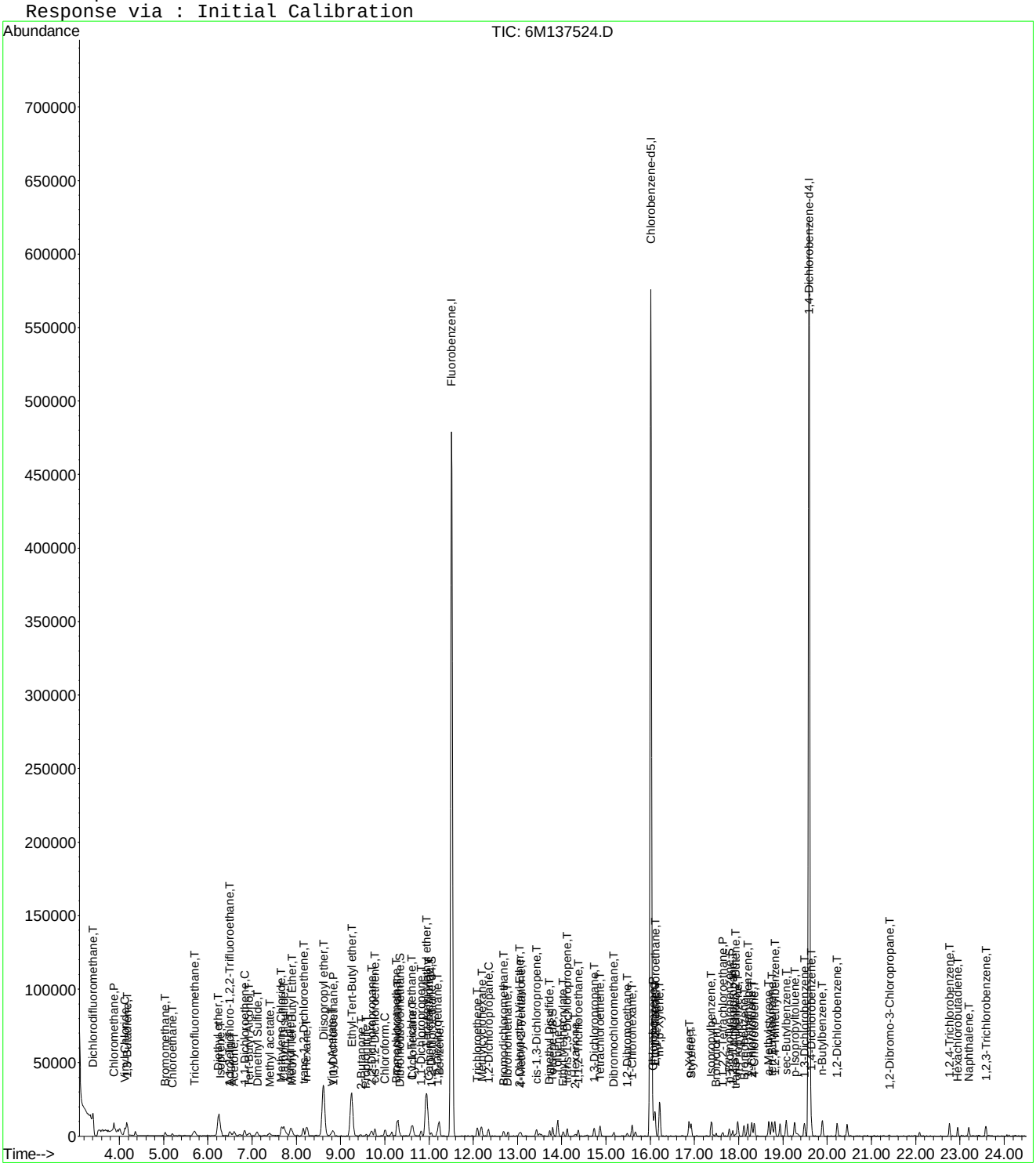

6M137524.D 826_SL.M Mon Feb 29 16:01:38 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	1.1039	0.0	0	0.00
3	P	Chloromethane	-1.0000	1.5721	0.0	0	0.00
4	C	Vinyl Chloride	-1.0000	1.1269	0.0	0	0.01
5	T	1,3-Butadiene	-1.0000	1.2019	0.0	0	0.01
6	T	Bromomethane	-1.0000	1.0150	0.0	0	0.00
7	T	Chloroethane	-1.0000	0.9041	0.0	0	0.00
8	T	Trichlorofluoromethane	-1.0000	1.2600	0.0	0	0.00
9	T	Diethyl ether	5.0000	5.0935	-1.9	100	-0.01
10	T	Isoprene	-1.0000	0.8978	0.0	0	0.00
11	T	Acrolein	2.5000	2.4320	2.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	1.0888	0.0	0	-0.01
13	T	Acetone	-1.0000	0.3832	0.0	0	0.01
14	C	1,1-Dichloroethene	-1.0000	1.0489	0.0	0	0.00
15	T	Tert-Butyl Alcohol	10.0000	9.6025	4.0	100	0.00
16	T	Dimethyl Sulfide	-1.0000	0.8750	0.0	0	0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.38#
18	T	Methyl acetate	-1.0000	0.9889	0.0	0	0.01
19	T	Methylene Chloride	-1.0000	1.1755	0.0	0	-0.01
20	T	Carbon Disulfide	-1.0000	1.2004	0.0	0	0.00
21	T	Acrylonitrile	2.5000	2.1651	13.4	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9214	7.9	100	0.00
23	T	trans-1,2-Dichloroethene	-1.0000	0.8482	0.0	0	0.00
24	T	n-Hexane	-1.0000	0.9252	0.0	0	-0.01
25	T	Diisopropyl ether	5.0000	5.0212	-0.4	100	0.01
26	T	Vinyl Acetate	-1.0000	0.8691	0.0	0	0.00
27	P	1,1-Dichloroethane	-1.0000	1.0162	0.0	0	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.6114	7.8	100	0.01
29	T	2-Butanone	-1.0000	1.0938	0.0	0	0.02
30	T	Propionitrile	5.0000	4.9529	0.9	100	-0.01
31	T	2,2-Dichloropropane	-1.0000	1.0116	0.0	0	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.8542	0.0	0	0.00
33	C	Chloroform	-1.0000	1.1130	0.0	0	-0.01
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-10.16#
35	T	Bromochloromethane	-1.0000	0.7221	0.0	0	0.00
36	T	Tetrahydrofuran	5.0000	5.4403	-8.8	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.6537	0.0	0	0.02
38	T	1,1,1-Trichloroethane	-1.0000	1.0257	0.0	0	0.00
39	T	Cyclohexane	-1.0000	1.0029	0.0	0	-0.01
40	T	1,1-Dichloropropene	-1.0000	0.9813	0.0	0	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	4.5884	8.2	100	0.00
42	T	Carbon Tetrachloride	-1.0000	1.0202	0.0	0	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.6847	0.0	0	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	-1.0000	0.9533	0.0	0	0.00
46	T	Benzene	1.0000	1.0834	-8.3	100	0.00
47	T	Trichloroethene	-1.0000	1.0199	0.0	0	0.00
48	T	Methylcyclohexane	-1.0000	0.9084	0.0	0	0.01
49	C	1,2-Dichloropropane	-1.0000	0.9339	0.0	0	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-12.67#
51	T	Bromodichloromethane	-1.0000	0.9921	0.0	0	0.00
52	T	Dibromomethane	-1.0000	0.8361	0.0	0	-0.01
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.6921	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.4563	0.0	0	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.8388	0.0	0	0.00
56	T	Dimethyl Disulfide	-1.0000	0.5447	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.7544	0.0	0	0.00
59	C	Toluene	1.0000	1.0316	-3.2	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.7432	0.0	0	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	-1.0000	0.8522	0.0	0	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.9869	0.0	0	0.00
64	T	2-Hexanone	-1.0000	0.7313	0.0	0	0.00
65	T	1,3-Dichloropropane	-1.0000	0.9246	0.0	0	0.00
66	T	Tetrachloroethene	-1.0000	1.0308	0.0	0	0.00
67	T	Dibromochloromethane	-1.0000	0.8829	0.0	0	0.00
68	T	1,2-Dibromoethane	-1.0000	0.7559	0.0	0	0.00
69	T	1-Chlorohexane	-1.0000	0.8286	0.0	0	0.00
70	P	Chlorobenzene	-1.0000	1.0589	0.0	0	-0.01
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.9542	0.0	0	0.00
72	C	Ethylbenzene	1.0000	0.9580	4.2	100	0.00
73	T	m-,p-Xylene	2.0000	2.0079	-0.4	100	-0.01
74	T	o-Xylene	1.0000	0.9132	8.7	100	0.00
75	T	Styrene	-1.0000	0.8034	0.0	0	0.00
76	P	Bromoform	-1.0000	0.7511	0.0	0	0.00
77	T	Isopropylbenzene	-1.0000	0.9427	0.0	0	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	1.0310	0.0	0	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.7854	0.0	0	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.7802	0.0	0	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.7652	0.0	0	0.00
83	T	n-Propylbenzene	-1.0000	0.9660	0.0	0	0.00
84	T	Bromobenzene	-1.0000	1.0125	0.0	0	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.8984	0.0	0	0.00
86	T	2-Chlorotoluene	-1.0000	1.0030	0.0	0	0.00
87	T	4-Chlorotoluene	-1.0000	0.9278	0.0	0	0.00
88	T	a-Methylstyrene	-1.0000	0.8574	0.0	0	-0.01
89	T	tert-Butylbenzene	-1.0000	0.9131	0.0	0	-0.01
90	T	1,2,4-Trimethylbenzene	-1.0000	0.9622	0.0	0	0.00
91	T	sec-Butylbenzene	-1.0000	0.9709	0.0	0	0.00
92	T	p-Isopropyltoluene	-1.0000	0.9370	0.0	0	0.00
93	T	1,3-Dichlorobenzene	-1.0000	1.0306	0.0	0	0.00
94	T	1,4-Dichlorobenzene	-1.0000	1.1413	0.0	0	0.00
95	T	n-Butylbenzene	-1.0000	0.9684	0.0	0	-0.01
96	T	1,2-Dichlorobenzene	-1.0000	1.0000	0.0	0	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.2543	0.0	0	0.00
98	T	1,2,4-Trichlorobenzene	-1.0000	1.0259	0.0	0	0.00
99	T	Hexachlorobutadiene	-1.0000	0.9658	0.0	0	-0.01
100	T	Naphthalene	-1.0000	0.8835	0.0	0	0.00
101	T	1,2,3-Trichlorobenzene	-1.0000	1.0134	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137524.D 826_SL.M Mon Feb 29 16:02:09 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:38 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	572212	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	404562	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	206668	50.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.32	111	3202	1.0431 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	2.08%#	
43) 1,2-Dichloroethane-d4	11.05	65	4123	1.0345 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	2.06%#	
58) Toluene-d8	13.80	98	10309	1.0718 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	2.14%#	
80) p-Bromofluorobenzene	17.79	95	4120	1.0853 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	2.18%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	8843	1.6827 ug/L	90
3) Chloromethane	3.88	50	13225	2.4149 ug/L	95
4) Vinyl Chloride	4.12	62	8482	1.9243 ug/L	95
5) 1,3-Butadiene	4.18	54	8044	2.1934 ug/L	77
6) Bromomethane	5.04	94	4396	1.8709 ug/L	94
7) Chloroethane	5.20	64	4555	1.8225 ug/L	99
8) Trichlorofluoromethane	5.70	101	12235	2.0657 ug/L #	96
9) Diethyl ether	6.24	59	66018	24.2296 ug/L	90
10) Isoprene	6.28	67	6318	1.6374 ug/L	84
11) Acrolein	6.49	56	6390	12.3492 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	4561	1.6133 ug/L	91
13) Acetone	6.60	43	7504	1.8809 ug/L	97
14) 1,1-Dichloroethene	6.83	61	8701	1.7376 ug/L	89
15) Tert-Butyl Alcohol	6.94	59	20238	43.3134 ug/L	94
16) Dimethyl Sulfide	7.11	62	4075	1.6773 ug/L	98
17) Iodomethane	7.39	142	581	5.2052 ug/L #	30
18) Methyl acetate	7.39	43	6390	1.8363 ug/L #	70
19) Methylene Chloride	7.67	84	5869	1.9461 ug/L	65
20) Carbon Disulfide	7.71	76	18795	1.9617 ug/L	99
21) Acrylonitrile	7.86	53	16272	11.3775 ug/L	99
22) Methyl Tert Butyl Ether	7.89	73	15172	1.7617 ug/L	96
23) trans-1,2-Dichloroethene	8.16	96	5205	1.8816 ug/L	79
24) n-Hexane	8.23	57	9310	1.8534 ug/L	99
25) Diisopropyl ether	8.61	45	320400	24.6012 ug/L	97
26) Vinyl Acetate	8.80	43	10816	1.6066 ug/L #	78
27) 1,1-Dichloroethane	8.83	63	11076	1.8571 ug/L	98
28) Ethyl-Tert-Butyl ether	9.25	59	254827	24.4116 ug/L	95
29) 2-Butanone	9.45	43	4021	2.0330 ug/L #	56
30) Propionitrile	9.58	54	12821	23.4210 ug/L	98
31) 2,2-Dichloropropane	9.69	77	9442	1.9723 ug/L	95
32) cis-1,2-Dichloroethene	9.77	96	6066	1.9642 ug/L	93
33) Chloroform	10.01	83	11484	2.0618 ug/L	99
34) 1-Bromopropane	10.16	122	398	0.9400 ug/L	97
35) Bromochloromethane	10.27	130	3448	1.9001 ug/L	92
36) Tetrahydrofuran	10.29	42	31678	22.2128 ug/L	93
38) 1,1,1-Trichloroethane	10.60	97	9432	1.9171 ug/L	98
39) Cyclohexane	10.63	56	9073	1.6263 ug/L	92
40) 1,1-Dichloropropene	10.82	75	7003	1.7675 ug/L	93
41) Tert-Amyl-Methyl ether	10.95	73	196452	23.7231 ug/L #	87
42) Carbon Tetrachloride	10.99	117	8034	1.7476 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:38 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	8853	1.8622 ug/L #	93
46)	Benzene	11.23	78	23723	1.9902 ug/L	97
47)	Trichloroethene	12.09	130	5099	1.8107 ug/L	92
48)	Methylcyclohexane	12.17	83	7350	1.6146 ug/L	79
49)	1,2-Dichloropropane	12.34	63	5698	1.7766 ug/L	95
50)	1,4-Dioxane	12.67	88	1122	55.6272 ug/L	88
51)	Bromodichloromethane	12.68	83	7699	1.8293 ug/L	96
52)	Dibromomethane	12.79	93	3316	1.7677 ug/L	91
53)	2-Chloroethyl Vinyl Ether	13.04	63	2386	1.3526 ug/L #	61
54)	4-Methyl-2-Pentanone	13.06	58	1423	1.0653 ug/L #	60
55)	cis-1,3-Dichloropropene	13.43	75	7739	1.6689 ug/L	96
56)	Dimethyl Disulfide	13.72	79	3072	1.3135 ug/L #	66
59)	Toluene	13.91	91	21516	1.8801 ug/L	99
60)	Ethyl Methacrylate	14.03	69	5274	1.4383 ug/L	90
62)	trans-1,3-Dichloropropene	14.12	75	7466	1.6966 ug/L	95
63)	1,1,2-Trichloroethane	14.37	97	4294	1.7952 ug/L	96
64)	2-Hexanone	14.32	43	4342	1.5908 ug/L	87
65)	1,3-Dichloropropane	14.74	76	7896	1.8213 ug/L	99
66)	Tetrachloroethene	14.88	166	5376	1.9043 ug/L	96
67)	Dibromochloromethane	15.17	129	5153	1.6564 ug/L	94
68)	1,2-Dibromoethane	15.47	107	4387	1.7934 ug/L	97
69)	1-Chlorohexane	15.58	91	5799	1.6318 ug/L	88
70)	Chlorobenzene	16.07	112	14803	2.0127 ug/L	82
71)	1,1,1,2-Tetrachloroethane	16.11	131	5636	1.9085 ug/L	89
72)	Ethylbenzene	16.10	106	7654	1.9447 ug/L	97
73)	m-,p-Xylene	16.22	106	17383	3.6096 ug/L	95
74)	o-Xylene	16.88	106	7997	1.7630 ug/L	95
75)	Styrene	16.92	104	12496	1.6186 ug/L	87
76)	Bromoform	17.49	173	3589	1.6340 ug/L	95
77)	Isopropylbenzene	17.38	105	20776	1.7039 ug/L	96
79)	1,1,2,2-Tetrachloroethane	17.64	83	5699	1.7652 ug/L	97
81)	1,2,3-Trichloropropane	17.86	110	1672	1.6915 ug/L	85
82)	trans-1,4-Dichloro-2-Buten	17.93	53	2042	1.7133 ug/L	78
83)	n-Propylbenzene	17.98	91	25104	1.7886 ug/L #	95
84)	Bromobenzene	18.13	156	5535	1.8143 ug/L	100
85)	1,3,5-Trimethylbenzene	18.21	105	17326	1.7343 ug/L	94
86)	2-Chlorotoluene	18.30	91	16320	1.7421 ug/L	90
87)	4-Chlorotoluene	18.35	91	17884	2.0879 ug/L	93
88)	a-Methylstyrene	18.69	118	7613	1.5692 ug/L	95
89)	tert-Butylbenzene	18.76	134	3612	1.7349 ug/L	82
90)	1,2,4-Trimethylbenzene	18.82	105	18800	1.7894 ug/L	86
91)	sec-Butylbenzene	19.08	105	23176	1.8115 ug/L	95
92)	p-Isopropyltoluene	19.26	119	18048	1.7099 ug/L	98
93)	1,3-Dichlorobenzene	19.48	146	10999	1.8633 ug/L	93
94)	1,4-Dichlorobenzene	19.64	146	12629	2.1018 ug/L	96
95)	n-Butylbenzene	19.89	91	18864	1.7769 ug/L	98
96)	1,2-Dichlorobenzene	20.23	146	10946	1.9270 ug/L	93
97)	1,2-Dibromo-3-Chloropropan	21.40	75	890	1.2459 ug/L	91
98)	1,2,4-Trichlorobenzene	22.77	180	8004	1.9491 ug/L	94
99)	Hexachlorobutadiene	22.95	225	4367	1.8595 ug/L	98
100)	Naphthalene	23.20	128	15712	1.6644 ug/L	96
101)	1,2,3-Trichlorobenzene	23.59	180	7942	1.9641 ug/L	93

(#) = qualifier out of range (m) = manual integration
6M137525.D 826_SL.M Mon Feb 29 16:01:38 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

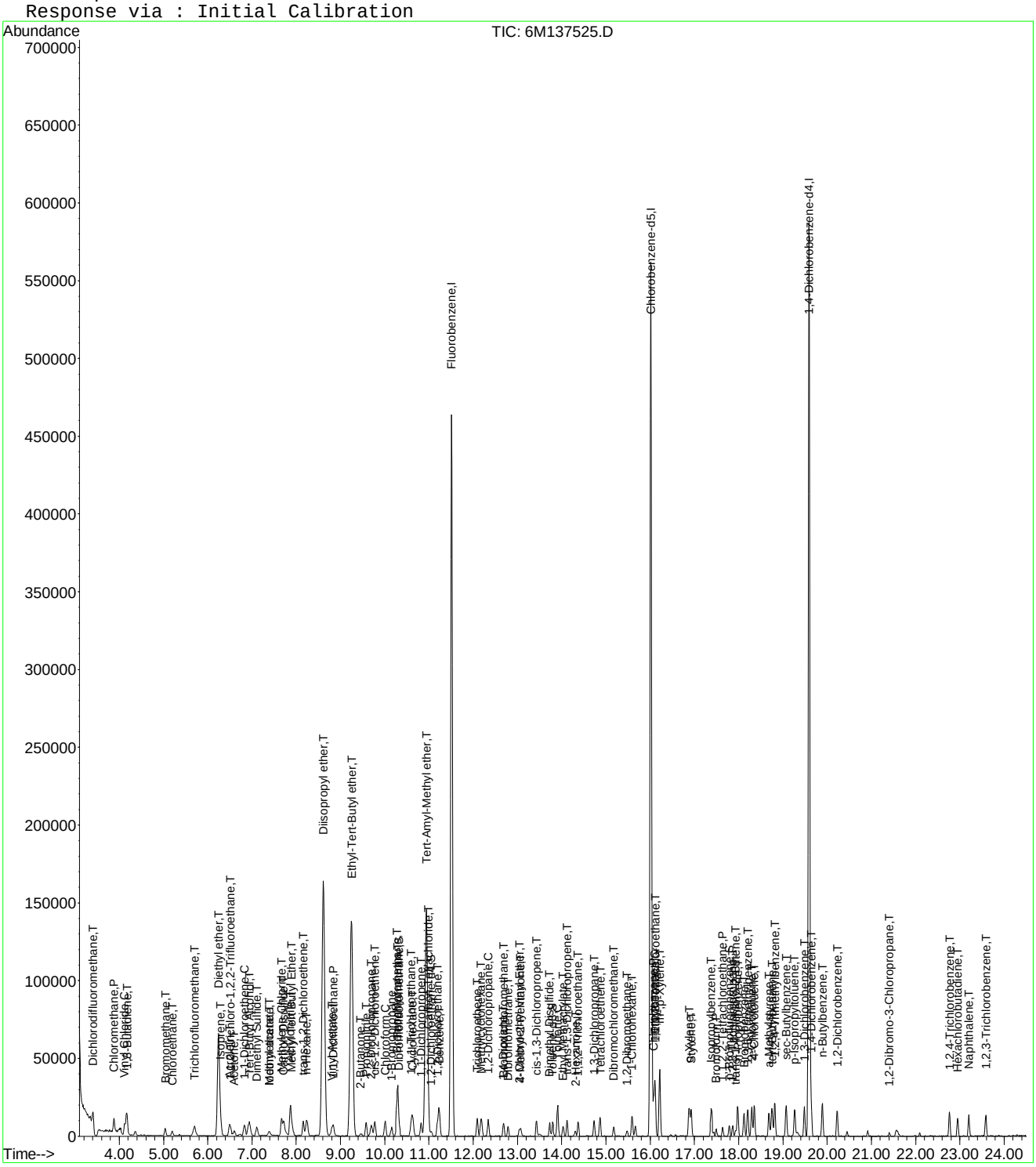

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.6827	15.9	100	0.00
3	P	Chloromethane	2.0000	2.4150	-20.7	100	0.00
4	C	Vinyl Chloride	2.0000	1.9243	3.8	100	0.00
5	T	1,3-Butadiene	-1.0000	2.1934	0.0	0	0.01
6	T	Bromomethane	2.0000	1.8709	6.5	100	0.01
7	T	Chloroethane	2.0000	1.8225	8.9	100	0.01
8	T	Trichlorofluoromethane	2.0000	2.0658	-3.3	100	0.00
9	T	Diethyl ether	25.0000	24.2296	3.1	100	0.00
10	T	Isoprene	-1.0000	1.6374	0.0	0	0.00
11	T	Acrolein	12.5000	12.3492	1.2	100	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.6134	19.3	100	0.00
13	T	Acetone	-1.0000	1.8809	0.0	0	0.01
14	C	1,1-Dichloroethene	2.0000	1.7376	13.1	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	43.3134	13.4	100	0.01
16	T	Dimethyl Sulfide	-1.0000	1.6773	0.0	0	0.00
17	T	Iodomethane	-1.0000	5.2052	0.0	0	0.01
18	T	Methyl acetate	-1.0000	1.8363	0.0	0	0.00
19	T	Methylene Chloride	2.0000	1.9461	2.7	100	0.00
20	T	Carbon Disulfide	2.0000	1.9617	1.9	100	0.00
21	T	Acrylonitrile	12.5000	11.3775	9.0	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.7617	11.9	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.8816	5.9	100	0.00
24	T	n-Hexane	2.0000	1.8534	7.3	100	-0.01
25	T	Diisopropyl ether	25.0000	24.6012	1.6	100	0.00
26	T	Vinyl Acetate	-1.0000	1.6066	0.0	0	0.00
27	P	1,1-Dichloroethane	2.0000	1.8571	7.1	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	24.4116	2.4	100	0.01
29	T	2-Butanone	-1.0000	2.0330	0.0	0	0.00
30	T	Propionitrile	25.0000	23.4210	6.3	100	0.00
31	T	2,2-Dichloropropane	2.0000	1.9723	1.4	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	1.9642	1.8	100	0.00
33	C	Chloroform	2.0000	2.0618	-3.1	100	0.00
34		1-Bromopropane	-1.0000	0.9400	0.0	0	0.00
35	T	Bromochloromethane	2.0000	1.9001	5.0	100	0.01
36	T	Tetrahydrofuran	25.0000	22.2128	11.1	100	0.00
37	S	Dibromofluoromethane	1.0000	1.0432	-4.3	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.9171	4.1	100	0.00
39	T	Cyclohexane	2.0000	1.6263	18.7	100	-0.01
40	T	1,1-Dichloropropene	2.0000	1.7675	11.6	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	23.7231	5.1	100	0.01
42	T	Carbon Tetrachloride	2.0000	1.7476	12.6	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0345	-3.5	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	2.0000	1.8622	6.9	100	0.00
46	T	Benzene	2.0000	1.9902	0.5	100	0.00
47	T	Trichloroethene	2.0000	1.8108	9.5	100	0.00
48	T	Methylcyclohexane	2.0000	1.6146	19.3	100	0.00
49	C	1,2-Dichloropropane	2.0000	1.7766	11.2	100	0.00
50	T	1,4-Dioxane	50.0000	55.6272	-11.3	100	0.00
51	T	Bromodichloromethane	2.0000	1.8293	8.5	100	0.00
52	T	Dibromomethane	2.0000	1.7677	11.6	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	1.3526	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.0653	0.0	0	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.6689	16.6	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.3135	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	1.0718	-7.2	100	0.00
59	C	Toluene	2.0000	1.8801	6.0	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.4383	28.1#	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	2.0000	1.6966	15.2	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.7952	10.2	100	0.00
64	T	2-Hexanone	-1.0000	1.5908	0.0	0	0.01
65	T	1,3-Dichloropropane	2.0000	1.8213	8.9	100	0.00
66	T	Tetrachloroethene	2.0000	1.9043	4.8	100	0.01
67	T	Dibromochloromethane	2.0000	1.6565	17.2	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.7934	10.3	100	-0.01
69	T	1-Chlorohexane	2.0000	1.6318	18.4	100	-0.01
70	P	Chlorobenzene	2.0000	2.0127	-0.6	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.9085	4.6	100	0.01
72	C	Ethylbenzene	2.0000	1.9447	2.8	100	0.00
73	T	m-,p-Xylene	4.0000	3.6096	9.8	100	0.00
74	T	o-Xylene	2.0000	1.7630	11.8	100	0.00
75	T	Styrene	2.0000	1.6186	19.1	100	0.00
76	P	Bromoform	2.0000	1.6340	18.3	100	0.00
77	T	Isopropylbenzene	2.0000	1.7039	14.8	100	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	1.7653	11.7	100	-0.01
80	S	p-Bromofluorobenzene	1.0000	1.0853	-8.5	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	1.6915	15.4	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	1.7133	14.3	100	0.00
83	T	n-Propylbenzene	2.0000	1.7886	10.6	100	0.00
84	T	Bromobenzene	2.0000	1.8143	9.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	1.7343	13.3	100	0.00
86	T	2-Chlorotoluene	2.0000	1.7421	12.9	100	0.00
87	T	4-Chlorotoluene	2.0000	2.0879	-4.4	100	0.00
88	T	a-Methylstyrene	2.0000	1.5692	21.5	100	0.00
89	T	tert-Butylbenzene	2.0000	1.7349	13.3	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	1.7894	10.5	100	0.00
91	T	sec-Butylbenzene	2.0000	1.8115	9.4	100	0.00
92	T	p-Isopropyltoluene	2.0000	1.7099	14.5	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	1.8633	6.8	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.1018	-5.1	100	0.00
95	T	n-Butylbenzene	2.0000	1.7769	11.2	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	1.9270	3.6	100	0.01
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.2459	0.0	0	-0.01
98	T	1,2,4-Trichlorobenzene	2.0000	1.9491	2.5	100	0.01
99	T	Hexachlorobutadiene	2.0000	1.8596	7.0	100	-0.01
100	T	Naphthalene	2.0000	1.6644	16.8	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9641	1.8	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137525.D 826_SL.M Mon Feb 29 16:02:19 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:39 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	643219	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	454348	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	233655	50.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.32	111	8526	2.4710 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	4.94%#	
43) 1,2-Dichloroethane-d4	11.06	65	11725	2.6172 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	5.24%#	
58) Toluene-d8	13.80	98	29032	2.6876 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	5.38%#	
80) p-Bromofluorobenzene	17.79	95	11167	2.6020 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	5.20%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	28102	4.7571 ug/L	100
3) Chloromethane	3.88	50	32755	5.3209 ug/L	91
4) Vinyl Chloride	4.12	62	26049	5.2573 ug/L	99
5) 1,3-Butadiene	4.17	54	23717	5.7531 ug/L	82
6) Bromomethane	5.03	94	13346	5.0529 ug/L	95
7) Chloroethane	5.19	64	14096	5.0173 ug/L	95
8) Trichlorofluoromethane	5.70	101	35831	5.3818 ug/L	98
9) Diethyl ether	6.24	59	150730	49.2132 ug/L	93
10) Isoprene	6.28	67	21438	4.9428 ug/L	81
11) Acrolein	6.48	56	14248	24.4956 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	17247	5.4273 ug/L	95
13) Acetone	6.59	43	13051	5.3136 ug/L	94
14) 1,1-Dichloroethene	6.83	61	29698	5.2760 ug/L	91
15) Tert-Butyl Alcohol	6.93	59	51304	97.6795 ug/L	93
16) Dimethyl Sulfide	7.12	62	13140	4.8115 ug/L	98
17) Iodomethane	7.38	142	3580	6.2818 ug/L	92
18) Methyl acetate	7.39	43	19888	5.0842 ug/L	93
19) Methylene Chloride	7.67	84	17567	5.1820 ug/L	73
20) Carbon Disulfide	7.72	76	56579	5.2535 ug/L	99
21) Acrylonitrile	7.86	53	38170	23.7426 ug/L	95
22) Methyl Tert Butyl Ether	7.89	73	46633	4.8170 ug/L	97
23) trans-1,2-Dichloroethene	8.16	96	15681	5.0428 ug/L	87
24) n-Hexane	8.24	57	29042	5.1432 ug/L	92
25) Diisopropyl ether	8.61	45	721466	49.2807 ug/L	97
26) Vinyl Acetate	8.80	43	31741	4.1943 ug/L	93
27) 1,1-Dichloroethane	8.83	63	34581	5.1581 ug/L	100
28) Ethyl-Tert-Butyl ether	9.24	59	576725	49.1494 ug/L	95
29) 2-Butanone	9.45	43	11939	5.3698 ug/L	87
30) Propionitrile	9.58	54	29074	47.2483 ug/L	96
31) 2,2-Dichloropropane	9.69	77	27493	5.1089 ug/L	98
32) cis-1,2-Dichloroethene	9.77	96	17624	5.0766 ug/L	93
33) Chloroform	10.01	83	32075	5.1228 ug/L	96
34) 1-Bromopropane	10.16	122	2123	4.4605 ug/L	82
35) Bromochloromethane	10.26	130	9542	4.6779 ug/L	100
36) Tetrahydrofuran	10.29	42	72518	47.4879 ug/L	94
38) 1,1,1-Trichloroethane	10.60	97	26846	4.8542 ug/L	94
39) Cyclohexane	10.64	56	31697	5.0544 ug/L	89
40) 1,1-Dichloropropene	10.82	75	23898	5.3658 ug/L	97
41) Tert-Amyl-Methyl ether	10.94	73	454105	48.7831 ug/L #	89
42) Carbon Tetrachloride	10.99	117	26296	5.0887 ug/L	96

(#) = qualifier out of range (m) = manual integration
6M137526.D 826_SL.M Mon Feb 29 16:01:39 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:39 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45) 1,2-Dichloroethane	11.19	62	26611	4.9796 ug/L	97
46) Benzene	11.23	78	66739	4.9809 ug/L	93
47) Trichloroethene	12.09	130	16560	5.2316 ug/L	93
48) Methylcyclohexane	12.18	83	26100	5.1005 ug/L	86
49) 1,2-Dichloropropane	12.34	63	17955	4.9803 ug/L	94
50) 1,4-Dioxane	12.67	88	3919	107.9166 ug/L	93
51) Bromodichloromethane	12.68	83	23069	4.8760 ug/L	92
52) Dibromomethane	12.79	93	9757	4.6271 ug/L	97
53) 2-Chloroethyl Vinyl Ether	13.04	63	8133	4.1014 ug/L	99
54) 4-Methyl-2-Pentanone	13.07	58	6484	4.3183 ug/L	81
55) cis-1,3-Dichloropropene	13.43	75	24075	4.6186 ug/L	98
56) Dimethyl Disulfide	13.72	79	10983	4.1777 ug/L	91
59) Toluene	13.91	91	65025	5.0594 ug/L	100
60) Ethyl Methacrylate	14.03	69	18200	4.4195 ug/L	95
62) trans-1,3-Dichloropropene	14.12	75	23055	4.6650 ug/L	96
63) 1,1,2-Trichloroethane	14.37	97	13105	4.8784 ug/L	97
64) 2-Hexanone	14.31	43	13531	4.4142 ug/L	93
65) 1,3-Dichloropropane	14.74	76	24567	5.0457 ug/L	96
66) Tetrachloroethene	14.87	166	17025	5.3699 ug/L	96
67) Dibromochloromethane	15.17	129	16779	4.8026 ug/L	98
68) 1,2-Dibromoethane	15.48	107	13121	4.7760 ug/L	98
69) 1-Chlorohexane	15.59	91	18960	4.7505 ug/L	75
70) Chlorobenzene	16.07	112	43871	5.3112 ug/L #	60
71) 1,1,1,2-Tetrachloroethane	16.10	131	15603	4.7045 ug/L	95
72) Ethylbenzene	16.10	106	22079	4.9950 ug/L	94
73) m-,p-Xylene	16.22	106	54549	10.0858 ug/L	96
74) o-Xylene	16.88	106	24478	4.8051 ug/L	92
75) Styrene	16.92	104	39808	4.5913 ug/L	95
76) Bromoform	17.49	173	11643	4.7199 ug/L	97
77) Isopropylbenzene	17.38	105	66989	4.8919 ug/L	99
79) 1,1,2,2-Tetrachloroethane	17.65	83	18286	5.0098 ug/L	96
81) 1,2,3-Trichloropropane	17.87	110	5764	5.1577 ug/L	93
82) trans-1,4-Dichloro-2-Buten	17.93	53	5968	4.4290 ug/L	92
83) n-Propylbenzene	17.98	91	82621	5.2068 ug/L	98
84) Bromobenzene	18.13	156	17797	5.1598 ug/L	96
85) 1,3,5-Trimethylbenzene	18.21	105	58488	5.1783 ug/L	94
86) 2-Chlorotoluene	18.30	91	57419	5.4213 ug/L	96
87) 4-Chlorotoluene	18.35	91	50976	5.2638 ug/L	97
88) a-Methylstyrene	18.69	118	25024	4.5623 ug/L	100
89) tert-Butylbenzene	18.76	134	11873	5.0441 ug/L	95
90) 1,2,4-Trimethylbenzene	18.82	105	61081	5.1422 ug/L	83
91) sec-Butylbenzene	19.08	105	74051	5.1195 ug/L	98
92) p-Isopropyltoluene	19.26	119	60824	5.0969 ug/L	97
93) 1,3-Dichlorobenzene	19.48	146	35412	5.3060 ug/L	98
94) 1,4-Dichlorobenzene	19.64	146	35211	5.1831 ug/L	83
95) n-Butylbenzene	19.89	91	60714	5.0584 ug/L	95
96) 1,2-Dichlorobenzene	20.22	146	32728	5.0962 ug/L	95
97) 1,2-Dibromo-3-Chloropropan	21.41	75	3714	4.5988 ug/L	88
98) 1,2,4-Trichlorobenzene	22.76	180	22925	4.9379 ug/L	93
99) Hexachlorobutadiene	22.96	225	13612	5.1268 ug/L	94
100) Naphthalene	23.20	128	48617	4.5551 ug/L	99
101) 1,2,3-Trichlorobenzene	23.59	180	22839	4.9959 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

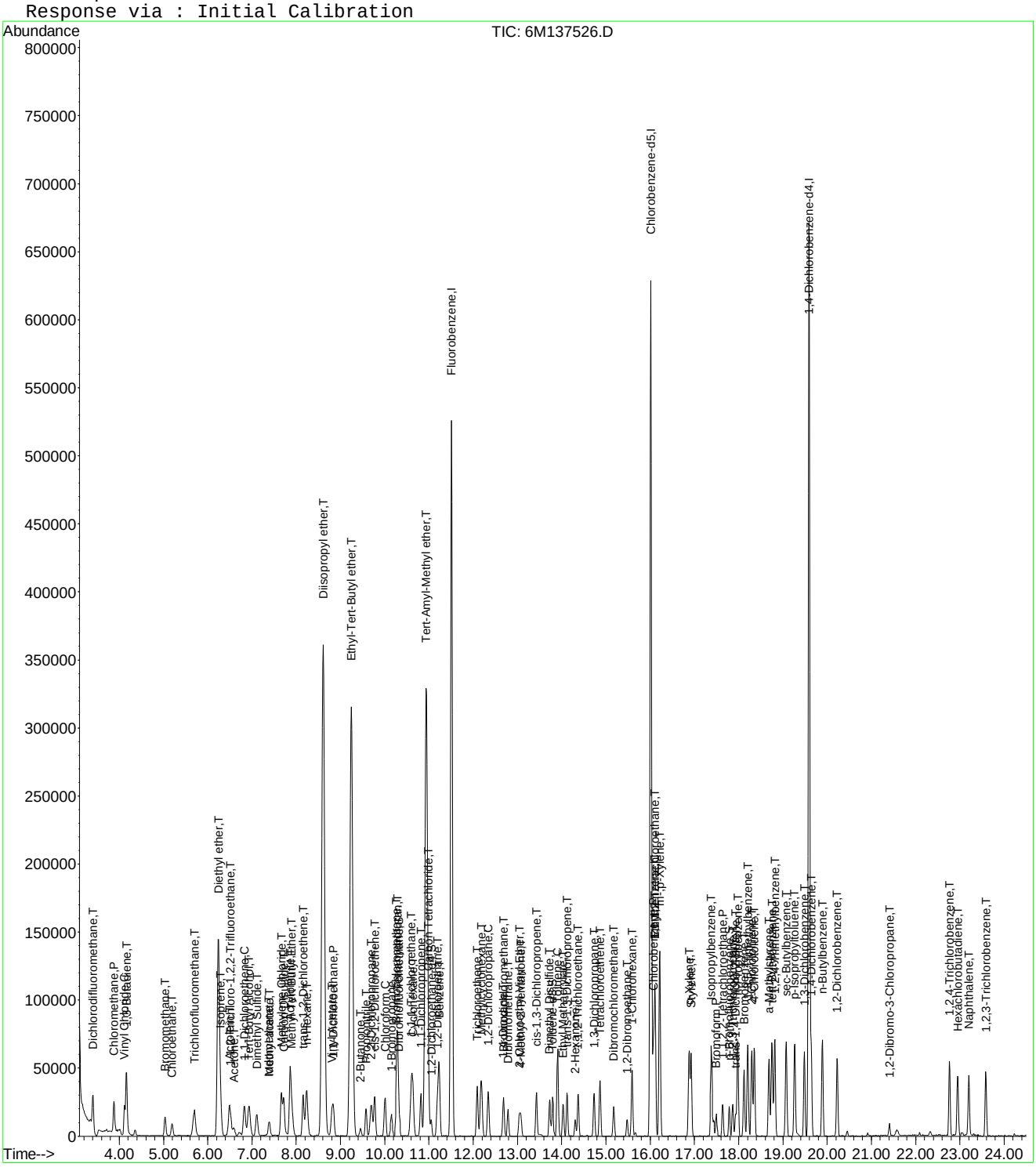

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.7571	4.9	100	0.00
3	P	Chloromethane	5.0000	5.3209	-6.4	100	0.00
4	C	Vinyl Chloride	5.0000	5.2573	-5.1	100	0.00
5	T	1,3-Butadiene	5.0000	5.7531	-15.1	100	0.00
6	T	Bromomethane	5.0000	5.0529	-1.1	100	0.00
7	T	Chloroethane	5.0000	5.0173	-0.3	100	0.00
8	T	Trichlorofluoromethane	5.0000	5.3818	-7.6	100	0.00
9	T	Diethyl ether	50.0000	49.2132	1.6	100	0.00
10	T	Isoprene	5.0000	4.9428	1.1	100	0.00
11	T	Acrolein	25.0000	24.4957	2.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	5.4272	-8.5	100	0.00
13	T	Acetone	-1.0000	5.3136	0.0	0	0.00
14	C	1,1-Dichloroethene	5.0000	5.2760	-5.5	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	97.6795	2.3	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.8115	3.8	100	0.00
17	T	Iodomethane	5.0000	6.2818	-25.6#	100	0.00
18	T	Methyl acetate	5.0000	5.0842	-1.7	100	0.00
19	T	Methylene Chloride	5.0000	5.1820	-3.6	100	0.00
20	T	Carbon Disulfide	5.0000	5.2535	-5.1	100	0.00
21	T	Acrylonitrile	25.0000	23.7426	5.0	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.8170	3.7	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	5.0428	-0.9	100	0.00
24	T	n-Hexane	5.0000	5.1432	-2.9	100	0.00
25	T	Diisopropyl ether	50.0000	49.2807	1.4	100	0.00
26	T	Vinyl Acetate	5.0000	4.1943	16.1	100	0.00
27	P	1,1-Dichloroethane	5.0000	5.1581	-3.2	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	49.1494	1.7	100	0.00
29	T	2-Butanone	5.0000	5.3698	-7.4	100	0.00
30	T	Propionitrile	50.0000	47.2483	5.5	100	0.00
31	T	2,2-Dichloropropane	5.0000	5.1089	-2.2	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	5.0766	-1.5	100	0.00
33	C	Chloroform	5.0000	5.1228	-2.5	100	0.00
34		1-Bromopropane	5.0000	4.4605	10.8	100	0.00
35	T	Bromochloromethane	5.0000	4.6779	6.4	100	0.00
36	T	Tetrahydrofuran	50.0000	47.4879	5.0	100	0.00
37	S	Dibromofluoromethane	2.5000	2.4710	1.2	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.8542	2.9	100	0.00
39	T	Cyclohexane	5.0000	5.0544	-1.1	100	0.00
40	T	1,1-Dichloropropene	5.0000	5.3658	-7.3	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	48.7831	2.4	100	0.00
42	T	Carbon Tetrachloride	5.0000	5.0887	-1.8	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.6172	-4.7	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	5.0000	4.9796	0.4	100	0.00
46	T	Benzene	5.0000	4.9809	0.4	100	0.00
47	T	Trichloroethene	5.0000	5.2316	-4.6	100	0.00
48	T	Methylcyclohexane	5.0000	5.1005	-2.0	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.9803	0.4	100	0.00
50	T	1,4-Dioxane	100.0000	107.9166	-7.9	100	0.00
51	T	Bromodichloromethane	5.0000	4.8760	2.5	100	0.00
52	T	Dibromomethane	5.0000	4.6271	7.5	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.1014	18.0	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.3183	13.6	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.6186	7.6	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.1777	16.4	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.6876	-7.5	100	0.00
59	C	Toluene	5.0000	5.0594	-1.2	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.4195	11.6	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	5.0000	4.6650	6.7	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.8784	2.4	100	0.00
64	T	2-Hexanone	5.0000	4.4142	11.7	100	0.00
65	T	1,3-Dichloropropane	5.0000	5.0457	-0.9	100	0.00
66	T	Tetrachloroethene	5.0000	5.3699	-7.4	100	0.00
67	T	Dibromochloromethane	5.0000	4.8026	3.9	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.7760	4.5	100	0.00
69	T	1-Chlorohexane	5.0000	4.7505	5.0	100	0.00
70	P	Chlorobenzene	5.0000	5.3112	-6.2	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.7045	5.9	100	0.00
72	C	Ethylbenzene	5.0000	4.9950	0.1	100	0.00
73	T	m-,p-Xylene	10.0000	10.0858	-0.9	100	0.00
74	T	o-Xylene	5.0000	4.8051	3.9	100	0.00
75	T	Styrene	5.0000	4.5913	8.2	100	0.00
76	P	Bromoform	5.0000	4.7199	5.6	100	0.00
77	T	Isopropylbenzene	5.0000	4.8919	2.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	5.0098	-0.2	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.6020	-4.1	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.1577	-3.2	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.4290	11.4	100	0.00
83	T	n-Propylbenzene	5.0000	5.2068	-4.1	100	0.00
84	T	Bromobenzene	5.0000	5.1597	-3.2	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	5.1783	-3.6	100	0.00
86	T	2-Chlorotoluene	5.0000	5.4214	-8.4	100	0.00
87	T	4-Chlorotoluene	5.0000	5.2638	-5.3	100	0.00
88	T	a-Methylstyrene	5.0000	4.5623	8.8	100	0.00
89	T	tert-Butylbenzene	5.0000	5.0441	-0.9	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.1422	-2.8	100	0.00
91	T	sec-Butylbenzene	5.0000	5.1195	-2.4	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.0969	-1.9	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	5.3060	-6.1	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	5.1831	-3.7	100	0.00
95	T	n-Butylbenzene	5.0000	5.0584	-1.2	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	5.0962	-1.9	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	4.5988	8.0	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.9379	1.2	100	0.00
99	T	Hexachlorobutadiene	5.0000	5.1268	-2.5	100	0.00
100	T	Naphthalene	5.0000	4.5552	8.9	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.9959	0.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137526.D 826_SL.M Mon Feb 29 16:02:29 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:40 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	607286	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	435504	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	227713	50.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.33	111	16492	5.0625 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 10.12%#		
43) 1,2-Dichloroethane-d4	11.06	65	20491	4.8445 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 9.68%#		
58) Toluene-d8	13.80	98	50808	4.9069 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 9.82%#		
80) p-Bromofluorobenzene	17.79	95	20967	5.0129 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 10.02%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	51684	9.2668 ug/L	100
3) Chloromethane	3.88	50	58275	10.0267 ug/L	97
4) Vinyl Chloride	4.12	62	45684	9.7657 ug/L	98
5) 1,3-Butadiene	4.16	54	39114	10.0495 ug/L	90
6) Bromomethane	5.03	94	25017	10.0321 ug/L	98
7) Chloroethane	5.20	64	25248	9.5185 ug/L	95
8) Trichlorofluoromethane	5.69	101	62268	9.9061 ug/L	98
9) Diethyl ether	6.24	59	197846	68.4186 ug/L	92
10) Isoprene	6.28	67	39072	9.5415 ug/L	91
11) Acrolein	6.48	56	19614	35.7163 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	30114	10.0369 ug/L	94
13) Acetone	6.60	43	18461	10.1493 ug/L	97
14) 1,1-Dichloroethene	6.83	61	51482	9.6871 ug/L	94
15) Tert-Butyl Alcohol	6.93	59	70054	141.2703 ug/L	95
16) Dimethyl Sulfide	7.12	62	25452	9.8712 ug/L	97
17) Iodomethane	7.38	142	9906	8.8243 ug/L	91
18) Methyl acetate	7.39	43	38451	10.4113 ug/L	93
19) Methylene Chloride	7.67	84	32006	10.0000 ug/L	78
20) Carbon Disulfide	7.72	76	98104	9.6481 ug/L	100
21) Acrylonitrile	7.86	53	52450	34.5555 ug/L	97
22) Methyl Tert Butyl Ether	7.89	73	93836	10.2663 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	29186	9.9411 ug/L	85
24) n-Hexane	8.24	57	52226	9.7962 ug/L	99
25) Diisopropyl ether	8.61	45	937664	67.8382 ug/L	97
26) Vinyl Acetate	8.80	43	70808	9.9102 ug/L	96
27) 1,1-Dichloroethane	8.83	63	63440	10.0226 ug/L	98
28) Ethyl-Tert-Butyl ether	9.24	59	760504	68.6462 ug/L	96
29) 2-Butanone	9.45	43	21373	10.1817 ug/L	94
30) Propionitrile	9.58	54	40026	68.8953 ug/L	100
31) 2,2-Dichloropropane	9.69	77	51602	10.1564 ug/L	98
32) cis-1,2-Dichloroethene	9.77	96	31900	9.7326 ug/L	99
33) Chloroform	10.01	83	57702	9.7611 ug/L	96
34) 1-Bromopropane	10.15	122	4101	9.1261 ug/L	96
35) Bromochloromethane	10.26	130	18414	9.5616 ug/L	96
36) Tetrahydrofuran	10.29	42	95905	67.3892 ug/L	94
38) 1,1,1-Trichloroethane	10.60	97	52695	10.0919 ug/L	100
39) Cyclohexane	10.63	56	57419	9.6977 ug/L	90
40) 1,1-Dichloropropene	10.82	75	41095	9.7729 ug/L	98
41) Tert-Amyl-Methyl ether	10.95	73	598972	68.1530 ug/L	90
42) Carbon Tetrachloride	10.99	117	48542	9.9495 ug/L	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:40 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	11.19	62	51284	10.1644	ug/L		99
46)	Benzene	11.23	78	122737	9.7022	ug/L		94
47)	Trichloroethene	12.09	130	29481	9.8646	ug/L		92
48)	Methylcyclohexane	12.18	83	46982	9.7245	ug/L		87
49)	1,2-Dichloropropane	12.34	63	33640	9.8830	ug/L		97
50)	1,4-Dioxane	12.68	88	4932	133.5880	ug/L		83
51)	Bromodichloromethane	12.68	83	42482	9.5106	ug/L		92
52)	Dibromomethane	12.78	93	19421	9.7551	ug/L		99
53)	2-Chloroethyl Vinyl Ether	13.04	63	17139	9.1546	ug/L		98
54)	4-Methyl-2-Pentanone	13.07	58	13343	9.4122	ug/L		90
55)	cis-1,3-Dichloropropene	13.43	75	47323	9.6158	ug/L		96
56)	Dimethyl Disulfide	13.72	79	21113	8.5060	ug/L		97
59)	Toluene	13.91	91	123480	10.0233	ug/L		99
60)	Ethyl Methacrylate	14.04	69	37321	9.4549	ug/L		94
62)	trans-1,3-Dichloropropene	14.12	75	46119	9.7357	ug/L		96
63)	1,1,2-Trichloroethane	14.38	97	26300	10.2139	ug/L		99
64)	2-Hexanone	14.31	43	28213	9.6021	ug/L		99
65)	1,3-Dichloropropane	14.73	76	46832	10.0347	ug/L		94
66)	Tetrachloroethene	14.87	166	31153	10.2512	ug/L		97
67)	Dibromochloromethane	15.18	129	32946	9.8381	ug/L		99
68)	1,2-Dibromoethane	15.48	107	25271	9.5966	ug/L		95
69)	1-Chlorohexane	15.59	91	36355	9.5030	ug/L		82
70)	Chlorobenzene	16.07	112	79785	10.0771	ug/L	#	63
71)	1,1,1,2-Tetrachloroethane	16.11	131	31524	9.9162	ug/L		97
72)	Ethylbenzene	16.10	106	41898	9.8889	ug/L		95
73)	m-,p-Xylene	16.22	106	102847	19.8387	ug/L		96
74)	o-Xylene	16.88	106	47393	9.7060	ug/L		93
75)	Styrene	16.92	104	79997	9.6257	ug/L		97
76)	Bromoform	17.49	173	22569	9.5450	ug/L		99
77)	Isopropylbenzene	17.38	105	130459	9.9391	ug/L		96
79)	1,1,2,2-Tetrachloroethane	17.65	83	36327	10.2123	ug/L		95
81)	1,2,3-Trichloropropane	17.87	110	11417	10.4826	ug/L		96
82)	trans-1,4-Dichloro-2-Buten	17.93	53	12994	9.8948	ug/L		85
83)	n-Propylbenzene	17.98	91	159783	10.3323	ug/L		98
84)	Bromobenzene	18.13	156	33893	10.0828	ug/L		95
85)	1,3,5-Trimethylbenzene	18.21	105	111252	10.1069	ug/L		94
86)	2-Chlorotoluene	18.30	91	107737	10.4377	ug/L		98
87)	4-Chlorotoluene	18.36	91	96695	10.2453	ug/L		95
88)	a-Methylstyrene	18.69	118	51340	9.6043	ug/L		97
89)	tert-Butylbenzene	18.76	134	22949	10.0040	ug/L		90
90)	1,2,4-Trimethylbenzene	18.82	105	119948	10.3616	ug/L		79
91)	sec-Butylbenzene	19.07	105	141383	10.0296	ug/L		97
92)	p-Isopropyltoluene	19.27	119	115695	9.9480	ug/L		99
93)	1,3-Dichlorobenzene	19.48	146	67906	10.4404	ug/L		100
94)	1,4-Dichlorobenzene	19.64	146	68350	10.3238	ug/L		93
95)	n-Butylbenzene	19.89	91	117398	10.0364	ug/L		96
96)	1,2-Dichlorobenzene	20.22	146	64067	10.2365	ug/L		98
97)	1,2-Dibromo-3-Chloropropan	21.40	75	7444	9.4579	ug/L		93
98)	1,2,4-Trichlorobenzene	22.76	180	45615	10.0816	ug/L		99
99)	Hexachlorobutadiene	22.94	225	26046	10.0659	ug/L		100
100)	Naphthalene	23.20	128	104354	10.0325	ug/L		99
101)	1,2,3-Trichlorobenzene	23.59	180	44630	10.0173	ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

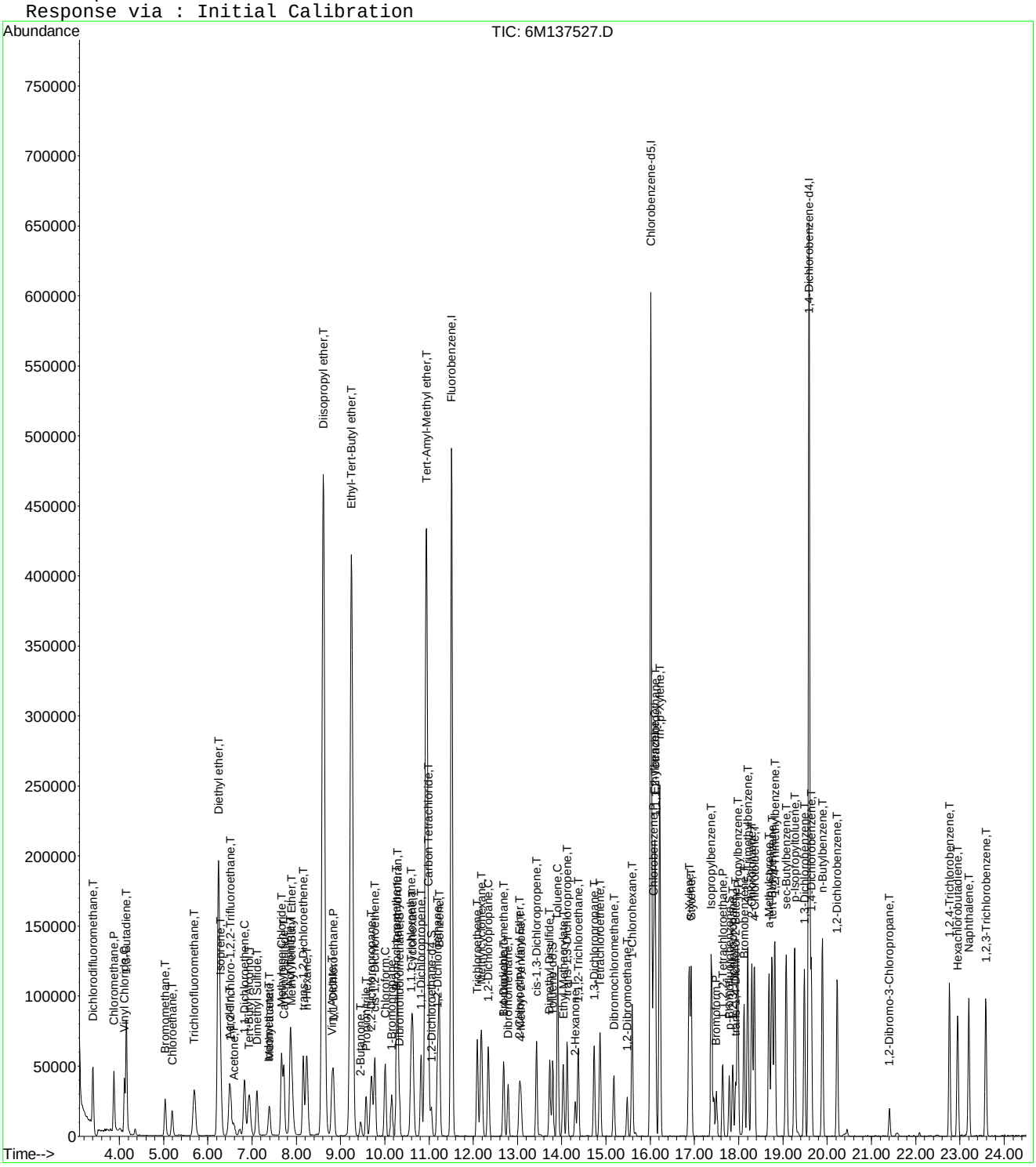

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	10.0000	9.2668	7.3	100	0.00
3	P	Chloromethane	10.0000	10.0267	-0.3	100	0.00
4	C	Vinyl Chloride	10.0000	9.7657	2.3	100	0.00
5	T	1,3-Butadiene	10.0000	10.0495	-0.5	100	-0.01
6	T	Bromomethane	10.0000	10.0321	-0.3	100	0.00
7	T	Chloroethane	10.0000	9.5185	4.8	100	0.00
8	T	Trichlorofluoromethane	10.0000	9.9061	0.9	100	-0.01
9	T	Diethyl ether	65.0000	68.4186	-5.3	100	0.00
10	T	Isoprene	10.0000	9.5415	4.6	100	0.00
11	T	Acrolein	32.5000	35.7163	-9.9	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	10.0000	10.0369	-0.4	100	0.00
13	T	Acetone	10.0000	10.1493	-1.5	100	0.01
14	C	1,1-Dichloroethene	10.0000	9.6871	3.1	100	0.00
15	T	Tert-Butyl Alcohol	130.0000	141.2703	-8.7	100	0.00
16	T	Dimethyl Sulfide	10.0000	9.8712	1.3	100	0.00
17	T	Iodomethane	10.0000	8.8243	11.8	100	0.00
18	T	Methyl acetate	10.0000	10.4113	-4.1	100	0.00
19	T	Methylene Chloride	10.0000	10.0000	0.0	100	0.00
20	T	Carbon Disulfide	10.0000	9.6481	3.5	100	0.00
21	T	Acrylonitrile	32.5000	34.5555	-6.3	100	0.00
22	T	Methyl Tert Butyl Ether	10.0000	10.2663	-2.7	100	0.00
23	T	trans-1,2-Dichloroethene	10.0000	9.9411	0.6	100	0.00
24	T	n-Hexane	10.0000	9.7962	2.0	100	0.00
25	T	Diisopropyl ether	65.0000	67.8382	-4.4	100	0.00
26	T	Vinyl Acetate	10.0000	9.9102	0.9	100	0.00
27	P	1,1-Dichloroethane	10.0000	10.0226	-0.2	100	0.00
28	T	Ethyl-Tert-Butyl ether	65.0000	68.6462	-5.6	100	0.00
29	T	2-Butanone	10.0000	10.1817	-1.8	100	0.00
30	T	Propionitrile	65.0000	68.8953	-6.0	100	0.00
31	T	2,2-Dichloropropane	10.0000	10.1564	-1.6	100	0.00
32	T	cis-1,2-Dichloroethene	10.0000	9.7326	2.7	100	0.00
33	C	Chloroform	10.0000	9.7611	2.4	100	0.00
34		1-Bromopropane	10.0000	9.1261	8.7	100	-0.01
35	T	Bromochloromethane	10.0000	9.5616	4.4	100	0.00
36	T	Tetrahydrofuran	65.0000	67.3892	-3.7	100	0.00
37	S	Dibromofluoromethane	5.0000	5.0625	-1.2	100	0.00
38	T	1,1,1-Trichloroethane	10.0000	10.0919	-0.9	100	0.00
39	T	Cyclohexane	10.0000	9.6977	3.0	100	-0.01
40	T	1,1-Dichloropropene	10.0000	9.7729	2.3	100	0.00
41	T	Tert-Amyl-Methyl ether	65.0000	68.1530	-4.9	100	0.00
42	T	Carbon Tetrachloride	10.0000	9.9495	0.5	100	0.00
43	S	1,2-Dichloroethane-d4	5.0000	4.8445	3.1	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	10.0000	10.1644	-1.6	100	0.00
46	T	Benzene	10.0000	9.7022	3.0	100	0.00
47	T	Trichloroethene	10.0000	9.8646	1.4	100	0.00
48	T	Methylcyclohexane	10.0000	9.7245	2.8	100	0.00
49	C	1,2-Dichloropropane	10.0000	9.8831	1.2	100	0.00
50	T	1,4-Dioxane	130.0000	133.5880	-2.8	100	0.00
51	T	Bromodichloromethane	10.0000	9.5106	4.9	100	0.00
52	T	Dibromomethane	10.0000	9.7551	2.4	100	0.00
53	T	2-Chloroethyl Vinyl Ether	10.0000	9.1546	8.5	100	0.00
54	T	4-Methyl-2-Pentanone	10.0000	9.4122	5.9	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	10.0000	9.6158	3.8	100	0.00
56	T	Dimethyl Disulfide	10.0000	8.5060	14.9	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	5.0000	4.9070	1.9	100	0.00
59	C	Toluene	10.0000	10.0233	-0.2	100	0.00
60	T	Ethyl Methacrylate	10.0000	9.4549	5.5	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	10.0000	9.7357	2.6	100	0.00
63	T	1,1,2-Trichloroethane	10.0000	10.2139	-2.1	100	0.00
64	T	2-Hexanone	10.0000	9.6021	4.0	100	0.00
65	T	1,3-Dichloropropane	10.0000	10.0347	-0.3	100	0.00
66	T	Tetrachloroethene	10.0000	10.2512	-2.5	100	0.00
67	T	Dibromochloromethane	10.0000	9.8381	1.6	100	0.00
68	T	1,2-Dibromoethane	10.0000	9.5966	4.0	100	0.00
69	T	1-Chlorohexane	10.0000	9.5030	5.0	100	0.00
70	P	Chlorobenzene	10.0000	10.0771	-0.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	10.0000	9.9162	0.8	100	0.00
72	C	Ethylbenzene	10.0000	9.8889	1.1	100	0.00
73	T	m-,p-Xylene	20.0000	19.8387	0.8	100	0.00
74	T	o-Xylene	10.0000	9.7060	2.9	100	0.00
75	T	Styrene	10.0000	9.6258	3.7	100	0.00
76	P	Bromoform	10.0000	9.5450	4.6	100	0.00
77	T	Isopropylbenzene	10.0000	9.9391	0.6	100	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	10.0000	10.2123	-2.1	100	0.00
80	S	p-Bromofluorobenzene	5.0000	5.0129	-0.3	100	0.00
81	T	1,2,3-Trichloropropane	10.0000	10.4826	-4.8	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	10.0000	9.8948	1.1	100	0.00
83	T	n-Propylbenzene	10.0000	10.3323	-3.3	100	0.00
84	T	Bromobenzene	10.0000	10.0828	-0.8	100	0.00
85	T	1,3,5-Trimethylbenzene	10.0000	10.1069	-1.1	100	0.00
86	T	2-Chlorotoluene	10.0000	10.4377	-4.4	100	0.00
87	T	4-Chlorotoluene	10.0000	10.2453	-2.5	100	0.00
88	T	a-Methylstyrene	10.0000	9.6043	4.0	100	0.00
89	T	tert-Butylbenzene	10.0000	10.0040	-0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	10.0000	10.3616	-3.6	100	0.00
91	T	sec-Butylbenzene	10.0000	10.0296	-0.3	100	0.00
92	T	p-Isopropyltoluene	10.0000	9.9480	0.5	100	0.00
93	T	1,3-Dichlorobenzene	10.0000	10.4404	-4.4	100	0.00
94	T	1,4-Dichlorobenzene	10.0000	10.3238	-3.2	100	0.00
95	T	n-Butylbenzene	10.0000	10.0364	-0.4	100	0.00
96	T	1,2-Dichlorobenzene	10.0000	10.2365	-2.4	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	10.0000	9.4579	5.4	100	-0.01
98	T	1,2,4-Trichlorobenzene	10.0000	10.0816	-0.8	100	0.00
99	T	Hexachlorobutadiene	10.0000	10.0659	-0.7	100	-0.01
100	T	Naphthalene	10.0000	10.0325	-0.3	100	0.00
101	T	1,2,3-Trichlorobenzene	10.0000	10.0173	-0.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137527.D 826_SL.M Mon Feb 29 16:02:41 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137528.D Vial: 7
Acq On : 26 Feb 2016 16:30 Operator: TMB
Sample : WG558920-07 20ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:40 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	604454	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	432511	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	231578	50.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.33	111	33417	10.3059 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 20.62%#		
43) 1,2-Dichloroethane-d4	11.05	65	44264	10.5140 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 21.02%#		
58) Toluene-d8	13.80	98	105494	10.2589 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 20.52%#		
80) p-Bromofluorobenzene	17.79	95	42856	10.0752 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 20.16%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	124530	22.4325 ug/L	99
3) Chloromethane	3.88	50	120837	20.8884 ug/L	97
4) Vinyl Chloride	4.12	62	100224	21.5249 ug/L	99
5) 1,3-Butadiene	4.17	54	87169	22.5011 ug/L	89
6) Bromomethane	5.03	94	52021	20.9587 ug/L	100
7) Chloroethane	5.20	64	56109	21.2522 ug/L	96
8) Trichlorofluoromethane	5.70	101	126994	20.2979 ug/L	100
9) Diethyl ether	6.24	59	233490	81.1233 ug/L	92
10) Isoprene	6.28	67	78978	19.3770 ug/L	88
11) Acrolein	6.48	56	21732	39.7585 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	61970	20.7512 ug/L	94
13) Acetone	6.60	43	31313	20.3882 ug/L	94
14) 1,1-Dichloroethene	6.83	61	109604	20.7203 ug/L	92
15) Tert-Butyl Alcohol	6.93	59	84577	171.3564 ug/L	95
16) Dimethyl Sulfide	7.12	62	47686	18.5811 ug/L	91
17) Iodomethane	7.38	142	29628	16.5619 ug/L	87
18) Methyl acetate	7.39	43	74780	20.3429 ug/L	95
19) Methylene Chloride	7.67	84	64851	20.3571 ug/L	76
20) Carbon Disulfide	7.72	76	202990	20.0567 ug/L	99
21) Acrylonitrile	7.86	53	61697	40.8381 ug/L	94
22) Methyl Tert Butyl Ether	7.89	73	190370	20.9254 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	59769	20.4535 ug/L	87
24) n-Hexane	8.24	57	105156	19.8169 ug/L	97
25) Diisopropyl ether	8.61	45	1129584	82.1061 ug/L	96
26) Vinyl Acetate	8.80	43	152272	21.4117 ug/L	97
27) 1,1-Dichloroethane	8.83	63	130302	20.6823 ug/L	99
28) Ethyl-Tert-Butyl ether	9.24	59	915394	83.0143 ug/L	96
29) 2-Butanone	9.46	43	42524	20.3527 ug/L	97
30) Propionitrile	9.58	54	48414	83.7237 ug/L	100
31) 2,2-Dichloropropane	9.69	77	100380	19.8495 ug/L	98
32) cis-1,2-Dichloroethene	9.77	96	66403	20.3543 ug/L	100
33) Chloroform	10.01	83	120566	20.4910 ug/L	97
34) 1-Bromopropane	10.15	122	8978	20.0727 ug/L	94
35) Bromochloromethane	10.26	130	39989	20.8618 ug/L	98
36) Tetrahydrofuran	10.29	42	119054	84.5841 ug/L	93
38) 1,1,1-Trichloroethane	10.60	97	105282	20.2577 ug/L	96
39) Cyclohexane	10.63	56	119680	20.3079 ug/L	89
40) 1,1-Dichloropropene	10.82	75	83869	20.0386 ug/L	96
41) Tert-Amyl-Methyl ether	10.94	73	732522	83.7393 ug/L	91
42) Carbon Tetrachloride	10.99	117	99704	20.5318 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M137528.D 826_SL.M Mon Feb 29 16:01:41 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137528.D Vial: 7
Acq On : 26 Feb 2016 16:30 Operator: TMB
Sample : WG558920-07 20ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:40 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	11.19	62	103881	20.6854 ug/L		99
46)	Benzene	11.23	78	247381	19.6467 ug/L		92
47)	Trichloroethene	12.09	130	61373	20.6321 ug/L		91
48)	Methylcyclohexane	12.18	83	97333	20.2407 ug/L		88
49)	1,2-Dichloropropane	12.34	63	69997	20.6607 ug/L		99
50)	1,4-Dioxane	12.68	88	6222	161.0769 ug/L		84
51)	Bromodichloromethane	12.68	83	89367	20.1007 ug/L		96
52)	Dibromomethane	12.79	93	40905	20.6426 ug/L		98
53)	2-Chloroethyl Vinyl Ether	13.04	63	37392	20.0660 ug/L		99
54)	4-Methyl-2-Pentanone	13.07	58	29543	20.9375 ug/L		90
55)	cis-1,3-Dichloropropene	13.43	75	99671	20.3475 ug/L		97
56)	Dimethyl Disulfide	13.72	79	46329	18.7525 ug/L		98
59)	Toluene	13.91	91	246419	20.1412 ug/L		99
60)	Ethyl Methacrylate	14.04	69	79829	20.3638 ug/L		96
62)	trans-1,3-Dichloropropene	14.12	75	96621	20.5377 ug/L		98
63)	1,1,2-Trichloroethane	14.38	97	53425	20.8919 ug/L		97
64)	2-Hexanone	14.31	43	59605	20.4265 ug/L		97
65)	1,3-Dichloropropane	14.74	76	96517	20.8239 ug/L		94
66)	Tetrachloroethene	14.87	166	62111	20.5796 ug/L		96
67)	Dibromochloromethane	15.17	129	68185	20.5019 ug/L		99
68)	1,2-Dibromoethane	15.48	107	53387	20.4138 ug/L		100
69)	1-Chlorohexane	15.59	91	76216	20.0602 ug/L		83
70)	Chlorobenzene	16.07	112	160312	20.3880 ug/L	#	66
71)	1,1,1,2-Tetrachloroethane	16.11	131	64649	20.4768 ug/L		97
72)	Ethylbenzene	16.10	106	86018	20.4427 ug/L		96
73)	m-,p-Xylene	16.22	106	209303	40.6530 ug/L		95
74)	o-Xylene	16.87	106	101781	20.9889 ug/L		94
75)	Styrene	16.92	104	169811	20.5741 ug/L		94
76)	Bromoform	17.49	173	47615	20.2769 ug/L		98
77)	Isopropylbenzene	17.38	105	273784	21.0027 ug/L		97
79)	1,1,2,2-Tetrachloroethane	17.65	83	75470	20.8621 ug/L		95
81)	1,2,3-Trichloropropane	17.87	110	22588	20.3932 ug/L		90
82)	trans-1,4-Dichloro-2-Buten	17.93	53	26581	19.9034 ug/L		88
83)	n-Propylbenzene	17.98	91	330830	21.0359 ug/L		97
84)	Bromobenzene	18.13	156	71833	21.0128 ug/L		95
85)	1,3,5-Trimethylbenzene	18.21	105	230218	20.5655 ug/L		96
86)	2-Chlorotoluene	18.30	91	219979	20.9561 ug/L		97
87)	4-Chlorotoluene	18.35	91	193947	20.2066 ug/L		97
88)	a-Methylstyrene	18.69	118	107098	19.7008 ug/L		96
89)	tert-Butylbenzene	18.75	134	48246	20.6806 ug/L		94
90)	1,2,4-Trimethylbenzene	18.82	105	244152	20.7388 ug/L		84
91)	sec-Butylbenzene	19.08	105	299927	20.9214 ug/L		98
92)	p-Isopropyltoluene	19.27	119	246088	20.8066 ug/L		100
93)	1,3-Dichlorobenzene	19.48	146	134407	20.3198 ug/L		98
94)	1,4-Dichlorobenzene	19.64	146	136759	20.3118 ug/L		97
95)	n-Butylbenzene	19.89	91	245859	20.6677 ug/L		97
96)	1,2-Dichlorobenzene	20.22	146	129420	20.3333 ug/L		96
97)	1,2-Dibromo-3-Chloropropan	21.41	75	16283	20.3429 ug/L		85
98)	1,2,4-Trichlorobenzene	22.76	180	93373	20.2924 ug/L		99
99)	Hexachlorobutadiene	22.95	225	53674	20.3969 ug/L		99
100)	Naphthalene	23.20	128	219058	20.7086 ug/L		99
101)	1,2,3-Trichlorobenzene	23.58	180	91461	20.1860 ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137528.D Vial: 7
Acq On : 26 Feb 2016 16:30 Operator: TMB
Sample : WG558920-07 20ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

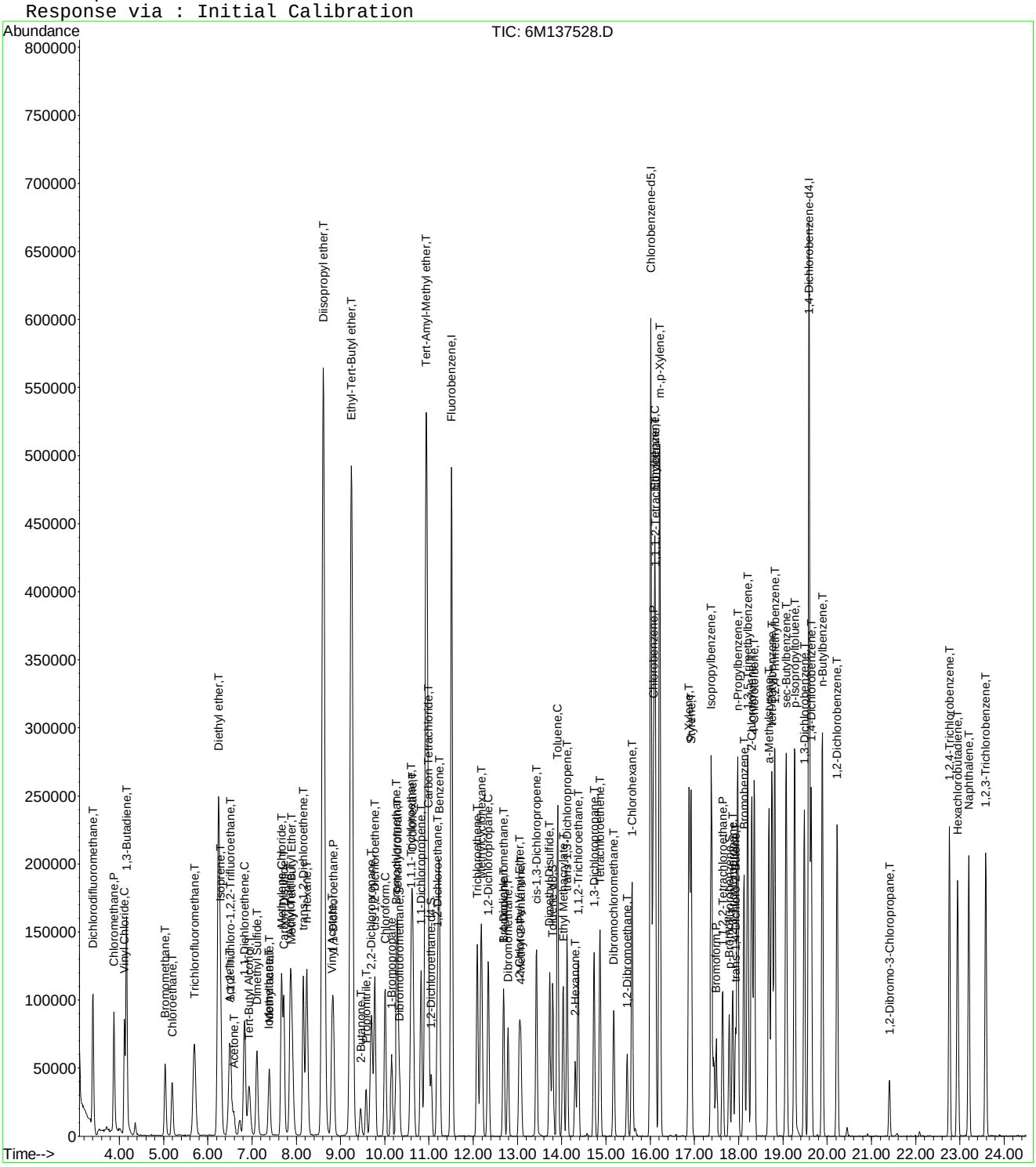

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137529.D Vial: 8
Acq On : 26 Feb 2016 17:03 Operator: TMB
Sample : WG558920-08 50ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:41 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	607631	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	439950	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	237573	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	82729	25.3805 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 50.76%#		
43) 1,2-Dichloroethane-d4	11.06	65	107163	25.3214 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 50.64%#		
58) Toluene-d8	13.80	98	266157	25.4452 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 50.90%#		
80) p-Bromofluorobenzene	17.79	95	111797	25.6197 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 51.24%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	326358	58.4819 ug/L	99
3) Chloromethane	3.88	50	305583	52.5483 ug/L	99
4) Vinyl Chloride	4.11	62	261948	55.9639 ug/L	98
5) 1,3-Butadiene	4.17	54	208973	53.6605 ug/L	91
6) Bromomethane	5.03	94	129157	51.7638 ug/L	100
7) Chloroethane	5.20	64	147959	55.7489 ug/L	95
8) Trichlorofluoromethane	5.70	101	339023	53.9039 ug/L	99
9) Diethyl ether	6.24	59	283385	97.9439 ug/L	93
10) Isoprene	6.28	67	215850	52.6813 ug/L	86
11) Acrolein	6.48	56	25264	45.9786 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	168394	56.0934 ug/L	94
13) Acetone	6.60	43	68176	49.2786 ug/L	100
14) 1,1-Dichloroethene	6.83	61	295734	55.6154 ug/L	92
15) Tert-Butyl Alcohol	6.94	59	97040	195.5789 ug/L	97
16) Dimethyl Sulfide	7.12	62	135657	52.5830 ug/L	94
17) Iodomethane	7.38	142	119726	51.5829 ug/L	91
18) Methyl acetate	7.39	43	187187	50.6554 ug/L	95
19) Methylene Chloride	7.67	84	174497	54.4892 ug/L	80
20) Carbon Disulfide	7.72	76	530150	52.1084 ug/L	98
21) Acrylonitrile	7.86	53	78970	51.9980 ug/L	98
22) Methyl Tert Butyl Ether	7.89	73	506330	55.3647 ug/L	93
23) trans-1,2-Dichloroethene	8.16	96	161116	54.8470 ug/L	86
24) n-Hexane	8.24	57	282956	53.0449 ug/L	98
25) Diisopropyl ether	8.61	45	1357488	98.1559 ug/L	97
26) Vinyl Acetate	8.80	43	361913	50.6243 ug/L	97
27) 1,1-Dichloroethane	8.84	63	345084	54.4873 ug/L	98
28) Ethyl-Tert-Butyl ether	9.24	59	1104598	99.6489 ug/L	96
29) 2-Butanone	9.45	43	102919	49.0011 ug/L	94
30) Propionitrile	9.58	54	57786	99.4084 ug/L	100
31) 2,2-Dichloropropane	9.70	77	275709	54.2347 ug/L	99
32) cis-1,2-Dichloroethene	9.77	96	176368	53.7788 ug/L	98
33) Chloroform	10.01	83	316097	53.4420 ug/L	96
34) 1-Bromopropane	10.16	122	24579	54.6655 ug/L	98
35) Bromochloromethane	10.26	130	106752	55.4000 ug/L	99
36) Tetrahydrofuran	10.29	42	139800	99.1693 ug/L	94
38) 1,1,1-Trichloroethane	10.60	97	287959	55.1175 ug/L	98
39) Cyclohexane	10.63	56	324068	54.7019 ug/L	90
40) 1,1-Dichloropropene	10.82	75	232925	55.3612 ug/L	98
41) Tert-Amyl-Methyl ether	10.95	73	878188	99.8664 ug/L	92
42) Carbon Tetrachloride	10.99	117	270388	55.3891 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137529.D Vial: 8
Acq On : 26 Feb 2016 17:03 Operator: TMB
Sample : WG558920-08 50ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:41 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	272804	54.0384 ug/L	98
46)	Benzene	11.23	78	654918	51.7410 ug/L	91
47)	Trichloroethene	12.09	130	163002	54.5109 ug/L	91
48)	Methylcyclohexane	12.18	83	264045	54.6220 ug/L	88
49)	1,2-Dichloropropane	12.34	63	185139	54.3608 ug/L	99
50)	1,4-Dioxane	12.67	88	7470	186.3872 ug/L	86
51)	Bromodichloromethane	12.68	83	244077	54.6116 ug/L	96
52)	Dibromomethane	12.78	93	112269	56.3600 ug/L	97
53)	2-Chloroethyl Vinyl Ether	13.04	63	99869	53.3134 ug/L	98
54)	4-Methyl-2-Pentanone	13.07	58	71173	50.1774 ug/L	95
55)	cis-1,3-Dichloropropene	13.43	75	275770	56.0032 ug/L	97
56)	Dimethyl Disulfide	13.72	79	136937	55.1380 ug/L	96
59)	Toluene	13.91	91	661797	53.1777 ug/L	100
60)	Ethyl Methacrylate	14.04	69	221335	55.5062 ug/L	94
62)	trans-1,3-Dichloropropene	14.12	75	265281	55.4346 ug/L	99
63)	1,1,2-Trichloroethane	14.38	97	140534	54.0266 ug/L	99
64)	2-Hexanone	14.31	43	150141	50.5831 ug/L	99
65)	1,3-Dichloropropane	14.73	76	254916	54.0691 ug/L	94
66)	Tetrachloroethene	14.87	166	165478	53.9016 ug/L	97
67)	Dibromochloromethane	15.17	129	187125	55.3134 ug/L	98
68)	1,2-Dibromoethane	15.48	107	145905	54.8470 ug/L	99
69)	1-Chlorohexane	15.59	91	213275	55.1854 ug/L	86
70)	Chlorobenzene	16.07	112	421684	52.7217 ug/L #	68
71)	1,1,1,2-Tetrachloroethane	16.11	131	172886	53.8335 ug/L	98
72)	Ethylbenzene	16.11	106	233514	54.5577 ug/L	98
73)	m-,p-Xylene	16.22	106	560207	106.9693 ug/L	96
74)	o-Xylene	16.88	106	278846	56.5302 ug/L	96
75)	Styrene	16.92	104	471370	56.1451 ug/L	94
76)	Bromoform	17.49	173	131127	54.8964 ug/L	99
77)	Isopropylbenzene	17.38	105	740395	55.8373 ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.65	83	199941	53.8747 ug/L	96
81)	1,2,3-Trichloropropane	17.87	110	61269	53.9200 ug/L	97
82)	trans-1,4-Dichloro-2-Buten	17.93	53	73183	53.4153 ug/L	91
83)	n-Propylbenzene	17.98	91	903295	55.9869 ug/L	98
84)	Bromobenzene	18.12	156	191943	54.7308 ug/L	98
85)	1,3,5-Trimethylbenzene	18.21	105	641908	55.8951 ug/L	95
86)	2-Chlorotoluene	18.30	91	578848	53.7519 ug/L	97
87)	4-Chlorotoluene	18.36	91	530900	53.9168 ug/L	97
88)	a-Methylstyrene	18.69	118	307671	55.1682 ug/L	99
89)	tert-Butylbenzene	18.76	134	134676	56.2719 ug/L	98
90)	1,2,4-Trimethylbenzene	18.82	105	666066	55.1494 ug/L	81
91)	sec-Butylbenzene	19.07	105	825213	56.1103 ug/L	99
92)	p-Isopropyltoluene	19.27	119	685445	56.4914 ug/L	100
93)	1,3-Dichlorobenzene	19.48	146	365219	53.8210 ug/L	96
94)	1,4-Dichlorobenzene	19.64	146	363309	52.5979 ug/L	98
95)	n-Butylbenzene	19.89	91	677494	55.5152 ug/L	98
96)	1,2-Dichlorobenzene	20.23	146	350298	53.6470 ug/L	96
97)	1,2-Dibromo-3-Chloropropan	21.41	75	43537	53.0196 ug/L	90
98)	1,2,4-Trichlorobenzene	22.76	180	262463	55.6006 ug/L	99
99)	Hexachlorobutadiene	22.95	225	150922	55.9053 ug/L	100
100)	Naphthalene	23.20	128	617866	56.9360 ug/L	100
101)	1,2,3-Trichlorobenzene	23.59	180	259953	55.9254 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137529.D Vial: 8
Acq On : 26 Feb 2016 17:03 Operator: TMB
Sample : WG558920-08 50ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

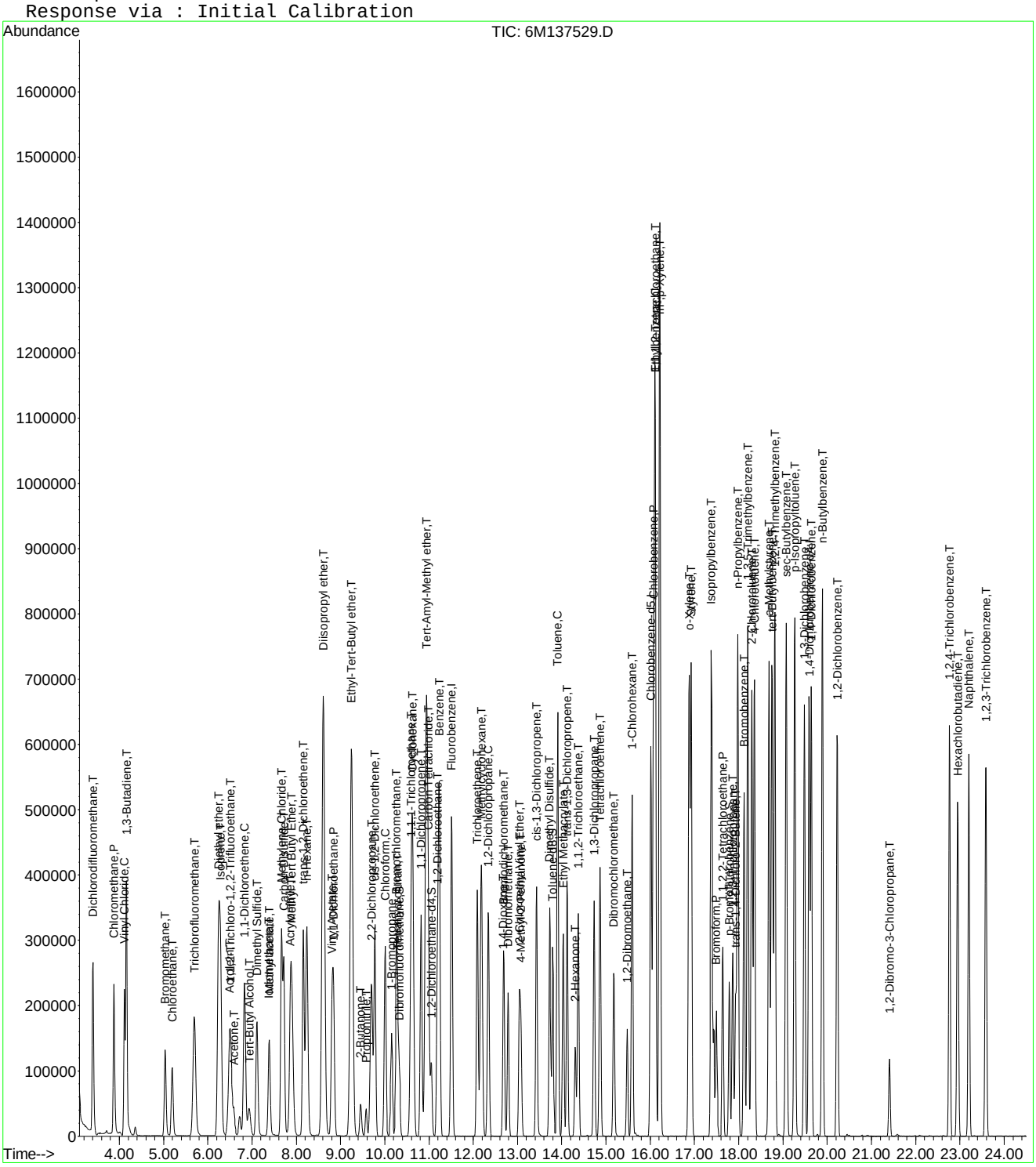

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137530.D Vial: 9
Acq On : 26 Feb 2016 17:35 Operator: TMB
Sample : WG558920-09 100ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:42 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	642087	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	466249	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	253947	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.32	111	162548	47.1921 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.38%		
43) 1,2-Dichloroethane-d4	11.06	65	210928	47.1653 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.34%		
58) Toluene-d8	13.80	98	518743	46.7957 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 93.60%		
80) p-Bromofluorobenzene	17.79	95	219336	47.0227 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 94.04%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	562397	95.3710 ug/L	99
3) Chloromethane	3.88	50	511342	83.2121 ug/L	98
4) Vinyl Chloride	4.12	62	453722	91.7337 ug/L	97
5) 1,3-Butadiene	4.16	54	371216	90.2064 ug/L	92
6) Bromomethane	5.03	94	236484	89.6925 ug/L	99
7) Chloroethane	5.19	64	259484	92.5233 ug/L	94
8) Trichlorofluoromethane	5.69	101	593589	89.3146 ug/L	99
9) Diethyl ether	6.23	59	599424	196.0563 ug/L	94
10) Isoprene	6.28	67	429478	99.1954 ug/L	86
11) Acrolein	6.48	56	58142	100.1359 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	295880	93.2711 ug/L	94
13) Acetone	6.59	43	134155	95.5525 ug/L	97
14) 1,1-Dichloroethene	6.83	61	525920	93.5964 ug/L	92
15) Tert-Butyl Alcohol	6.94	59	207755	396.2496 ug/L	97
16) Dimethyl Sulfide	7.11	62	269784	98.9613 ug/L	92
17) Iodomethane	7.38	142	252699	98.0787 ug/L	90
18) Methyl acetate	7.39	43	375036	96.0437 ug/L	97
19) Methylene Chloride	7.67	84	311212	91.9654 ug/L	80
20) Carbon Disulfide	7.72	76	1037082	96.4646 ug/L	99
21) Acrylonitrile	7.86	53	165829	103.3311 ug/L	99
22) Methyl Tert Butyl Ether	7.89	73	942489	97.5263 ug/L	93
23) trans-1,2-Dichloroethene	8.16	96	289637	93.3071 ug/L	87
24) n-Hexane	8.23	57	555752	98.5944 ug/L	98
25) Diisopropyl ether	8.61	45	2877959	196.9296 ug/L	96
26) Vinyl Acetate	8.80	43	731541	96.8365 ug/L	99
27) 1,1-Dichloroethane	8.83	63	621539	92.8721 ug/L	98
28) Ethyl-Tert-Butyl ether	9.24	59	2342177	199.9557 ug/L	96
29) 2-Butanone	9.45	43	207126	93.3235 ug/L	95
30) Propionitrile	9.57	54	121992	198.5994 ug/L	98
31) 2,2-Dichloropropane	9.69	77	491609	91.5150 ug/L	98
32) cis-1,2-Dichloroethene	9.77	96	321521	92.7784 ug/L	96
33) Chloroform	10.01	83	568519	90.9606 ug/L	95
34) 1-Bromopropane	10.16	122	47570	100.1217 ug/L	99
35) Bromochloromethane	10.26	130	193434	94.9975 ug/L	100
36) Tetrahydrofuran	10.29	42	287880	195.3143 ug/L	95
38) 1,1,1-Trichloroethane	10.60	97	511473	92.6461 ug/L	98
39) Cyclohexane	10.63	56	631373	100.8552 ug/L	90
40) 1,1-Dichloropropene	10.82	75	416243	93.6230 ug/L	97
41) Tert-Amyl-Methyl ether	10.94	73	1879478	202.2624 ug/L	92
42) Carbon Tetrachloride	10.99	117	485191	94.0581 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137530.D Vial: 9
Acq On : 26 Feb 2016 17:35 Operator: TMB
Sample : WG558920-09 100ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:42 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	498315	93.4118	ug/L	98
46)	Benzene	11.23	78	1182199	88.3862	ug/L	91
47)	Trichloroethene	12.09	130	294176	93.0987	ug/L	90
48)	Methylcyclohexane	12.18	83	515585	100.9337	ug/L	88
49)	1,2-Dichloropropane	12.34	63	342055	95.0452	ug/L	100
50)	1,4-Dioxane	12.67	88	17776	381.1583	ug/L	84
51)	Bromodichloromethane	12.68	83	452280	95.7660	ug/L	97
52)	Dibromomethane	12.79	93	202292	96.1028	ug/L	98
53)	2-Chloroethyl Vinyl Ether	13.04	63	206349	104.2447	ug/L	97
54)	4-Methyl-2-Pentanone	13.07	58	145646	97.1712	ug/L	93
55)	cis-1,3-Dichloropropene	13.43	75	509093	97.8384	ug/L	95
56)	Dimethyl Disulfide	13.72	79	282091	107.4894	ug/L	96
59)	Toluene	13.91	91	1184465	89.8074	ug/L	100
60)	Ethyl Methacrylate	14.04	69	445228	105.3560	ug/L	94
62)	trans-1,3-Dichloropropene	14.12	75	494673	97.5390	ug/L	99
63)	1,1,2-Trichloroethane	14.38	97	261258	94.7723	ug/L	99
64)	2-Hexanone	14.31	43	305856	97.2318	ug/L	100
65)	1,3-Dichloropropane	14.74	76	469121	93.8906	ug/L	93
66)	Tetrachloroethene	14.87	166	296672	91.1851	ug/L	98
67)	Dibromochloromethane	15.17	129	347661	96.9706	ug/L	98
68)	1,2-Dibromoethane	15.48	107	270599	95.9830	ug/L	97
69)	1-Chlorohexane	15.59	91	420885	102.7620	ug/L	86
70)	Chlorobenzene	16.07	112	765249	90.2797	ug/L	69
71)	1,1,1,2-Tetrachloroethane	16.11	131	320669	94.2184	ug/L	97
72)	Ethylbenzene	16.10	106	422350	93.1110	ug/L	97
73)	m-,p-Xylene	16.22	106	1018750	183.5539	ug/L	96
74)	o-Xylene	16.87	106	503867	96.3867	ug/L	94
75)	Styrene	16.92	104	871975	98.0029	ug/L	94
76)	Bromoform	17.49	173	243410	96.1558	ug/L	99
77)	Isopropylbenzene	17.38	105	1335991	95.0715	ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.65	83	376052	94.7950	ug/L	96
81)	1,2,3-Trichloropropane	17.87	110	114333	94.1314	ug/L	95
82)	trans-1,4-Dichloro-2-Buten	17.93	53	150048	102.4566	ug/L	89
83)	n-Propylbenzene	17.98	91	1628674	94.4377	ug/L	98
84)	Bromobenzene	18.13	156	352357	93.9933	ug/L	98
85)	1,3,5-Trimethylbenzene	18.21	105	1165530	94.9464	ug/L	95
86)	2-Chlorotoluene	18.30	91	1069398	92.9015	ug/L	97
87)	4-Chlorotoluene	18.35	91	957337	90.9557	ug/L	97
88)	a-Methylstyrene	18.69	118	626810	105.1459	ug/L	98
89)	tert-Butylbenzene	18.75	134	243763	95.2846	ug/L	87
90)	1,2,4-Trimethylbenzene	18.82	105	1211949	93.8776	ug/L	81
91)	sec-Butylbenzene	19.08	105	1482811	94.3227	ug/L	99
92)	p-Isopropyltoluene	19.27	119	1243718	95.8928	ug/L	100
93)	1,3-Dichlorobenzene	19.48	146	670076	92.3797	ug/L	97
94)	1,4-Dichlorobenzene	19.64	146	665185	90.0925	ug/L	97
95)	n-Butylbenzene	19.89	91	1241772	95.1924	ug/L	98
96)	1,2-Dichlorobenzene	20.22	146	649160	93.0065	ug/L	96
97)	1,2-Dibromo-3-Chloropropan	21.41	75	84975	96.8107	ug/L	89
98)	1,2,4-Trichlorobenzene	22.76	180	475402	94.2164	ug/L	99
99)	Hexachlorobutadiene	22.95	225	270006	93.5681	ug/L	100
100)	Naphthalene	23.20	128	1163220	100.2786	ug/L	100
101)	1,2,3-Trichlorobenzene	23.58	180	465522	93.6933	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137530.D Vial: 9
Acq On : 26 Feb 2016 17:35 Operator: TMB
Sample : WG558920-09 100ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

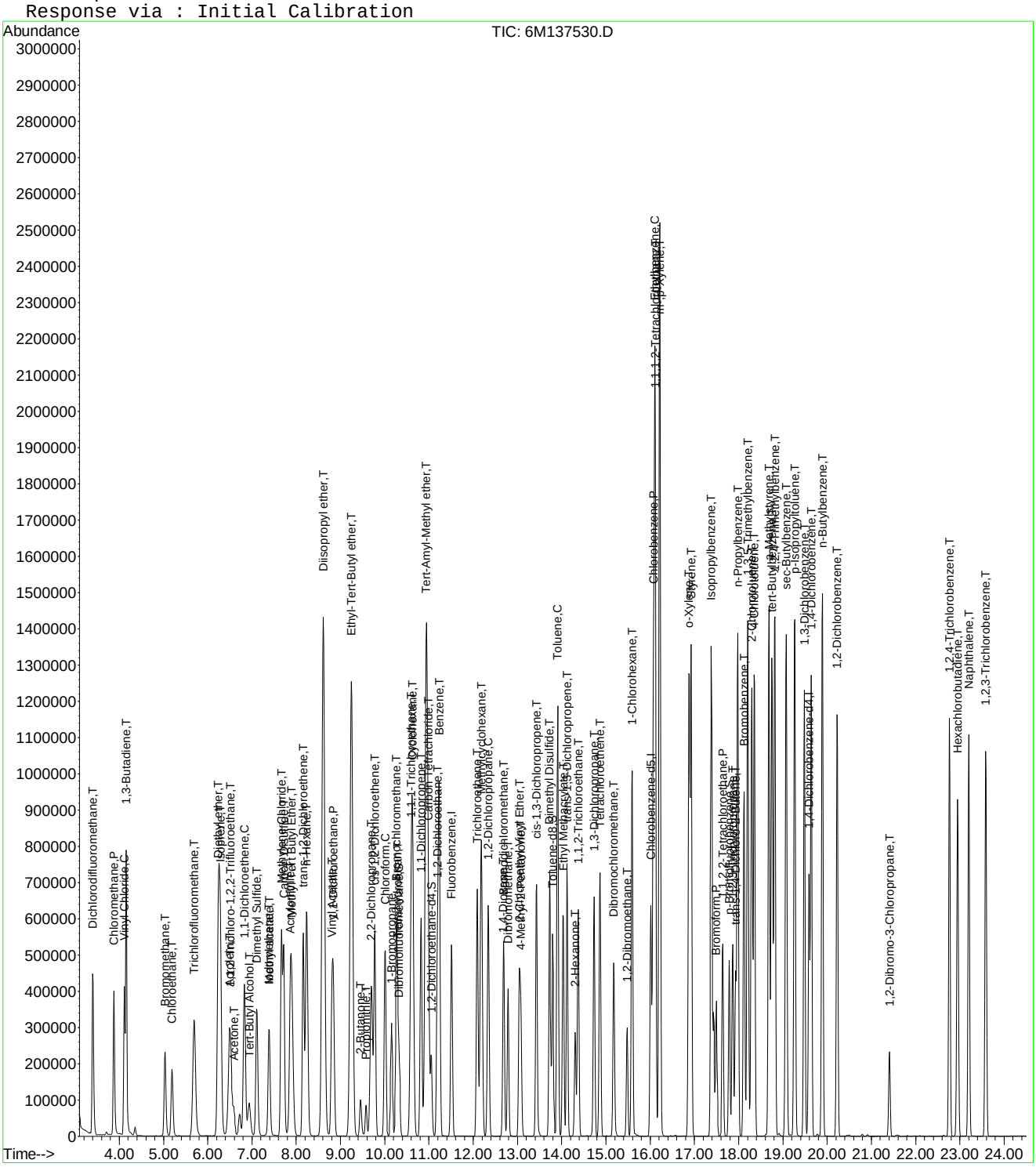

6M137530.D 826_SL.M Mon Feb 29 16:01:43 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137531.D Vial: 10
Acq On : 26 Feb 2016 18:07 Operator: TMB
Sample : WG558920-10 200ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:43 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	661999	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	479329	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	273657	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	351336	98.9344 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 197.86%#		
43) 1,2-Dichloroethane-d4	11.05	65	450300	97.6622 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 195.32%#		
58) Toluene-d8	13.80	98	1096959	96.2561 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 192.52%#		
80) p-Bromofluorobenzene	17.79	95	487968	97.0790 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 194.16%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	1228760	202.1049 ug/L	98
3) Chloromethane	3.88	50	1125279	177.6118 ug/L	98
4) Vinyl Chloride	4.12	62	989076	193.9570 ug/L	97
5) 1,3-Butadiene	4.16	54	745589	175.7303 ug/L	94
6) Bromomethane	5.03	94	548799	201.8852 ug/L	100
7) Chloroethane	5.19	64	579871	200.5435 ug/L	96
8) Trichlorofluoromethane	5.69	101	1297014	189.2858 ug/L	100
9) Diethyl ether	6.23	59	1563	0.4958 ug/L #	49
10) Isoprene	6.27	67	894422	200.3686 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	649915	198.7121 ug/L	93
13) Acetone	6.59	43	290441	205.4763 ug/L	99
14) 1,1-Dichloroethene	6.83	61	1161250	200.4481 ug/L	92
15) Tert-Butyl Alcohol	6.83	59	39858	73.7343 ug/L #	57
16) Dimethyl Sulfide	7.11	62	576142	204.9817 ug/L	92
17) Iodomethane	7.38	142	559892	205.0669 ug/L	91
18) Methyl acetate	7.39	43	775842	192.7107 ug/L	97
19) Methylene Chloride	7.67	84	681801	195.4170 ug/L	78
20) Carbon Disulfide	7.72	76	2184454	197.0763 ug/L	98
21) Acrylonitrile	7.90	53	25391	15.3457 ug/L #	34
22) Methyl Tert Butyl Ether	7.90	73	2079733	208.7322 ug/L	92
23) trans-1,2-Dichloroethene	8.16	96	635434	198.5489 ug/L	86
24) n-Hexane	8.23	57	1159756	199.5603 ug/L	99
25) Diisopropyl ether	8.63	45	8975	0.5957 ug/L #	37
26) Vinyl Acetate	8.80	43	1656751	212.7131 ug/L	98
27) 1,1-Dichloroethane	8.83	63	1360017	197.1051 ug/L	97
28) Ethyl-Tert-Butyl ether	9.23	59	4690	0.3884 ug/L #	76
29) 2-Butanone	9.45	43	450489	196.8688 ug/L	97
30) Propionitrile	9.59	54	193	0.3047 ug/L #	55
31) 2,2-Dichloropropane	9.69	77	1084788	195.8637 ug/L	97
32) cis-1,2-Dichloroethene	9.77	96	711282	199.0746 ug/L	99
33) Chloroform	10.00	83	1259701	195.4845 ug/L	96
34) 1-Bromopropane	10.16	122	101190	206.5710 ug/L	98
35) Bromochloromethane	10.26	130	430294	204.9658 ug/L	100
36) Tetrahydrofuran	10.31	42	4560	0.8620 ug/L #	82
38) 1,1,1-Trichloroethane	10.60	97	1139307	200.1621 ug/L	98
39) Cyclohexane	10.63	56	1322081	204.8363 ug/L	90
40) 1,1-Dichloropropene	10.83	75	913448	199.2765 ug/L	99
41) Tert-Amyl-Methyl ether	10.93	73	3689	0.3851 ug/L #	57
42) Carbon Tetrachloride	10.99	117	1067649	200.7466 ug/L	97
45) 1,2-Dichloroethane	11.19	62	1098127	199.6582 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M137531.D 826_SL.M Mon Feb 29 16:01:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137531.D Vial: 10
Acq On : 26 Feb 2016 18:07 Operator: TMB
Sample : WG558920-10 200ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:43 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	11.23	78	2576436	186.8313 ug/L		90
47)	Trichloroethene	12.09	130	648704	199.1220 ug/L		90
48)	Methylcyclohexane	12.18	83	1075003	204.1184 ug/L		87
49)	1,2-Dichloropropane	12.34	63	757110	204.0468 ug/L		100
50)	1,4-Dioxane	12.68	88	863	47.3107 ug/L	#	17
51)	Bromodichloromethane	12.68	83	1017483	208.9621 ug/L		97
52)	Dibromomethane	12.79	93	451601	208.0889 ug/L		97
53)	2-Chloroethyl Vinyl Ether	13.03	63	470311	230.4481 ug/L		98
54)	4-Methyl-2-Pentanone	13.07	58	332135	214.9265 ug/L		95
55)	cis-1,3-Dichloropropene	13.43	75	1150962	214.5407 ug/L		96
56)	Dimethyl Disulfide	13.73	79	648612	239.7166 ug/L		96
59)	Toluene	13.91	91	2588299	190.8923 ug/L		99
60)	Ethyl Methacrylate	14.03	69	978791	225.2947 ug/L		94
62)	trans-1,3-Dichloropropene	14.12	75	1110336	212.9604 ug/L		98
63)	1,1,2-Trichloroethane	14.38	97	578586	204.1568 ug/L		99
64)	2-Hexanone	14.31	43	689071	213.0784 ug/L		99
65)	1,3-Dichloropropane	14.74	76	1034423	201.3815 ug/L		93
66)	Tetrachloroethene	14.87	166	644718	192.7530 ug/L		97
67)	Dibromochloromethane	15.18	129	780769	211.8317 ug/L		100
68)	1,2-Dibromoethane	15.48	107	610277	210.5616 ug/L		98
69)	1-Chlorohexane	15.59	91	900931	213.9661 ug/L		86
70)	Chlorobenzene	16.07	112	1706160	195.7904 ug/L	#	68
71)	1,1,1,2-Tetrachloroethane	16.11	131	721225	206.1264 ug/L		97
72)	Ethylbenzene	16.11	106	946980	203.0736 ug/L		98
73)	m-,p-Xylene	16.22	106	2242794	393.0696 ug/L		97
74)	o-Xylene	16.87	106	1130903	210.4315 ug/L		95
75)	Styrene	16.92	104	1988734	217.4182 ug/L		93
76)	Bromoform	17.49	173	561872	215.9030 ug/L		99
77)	Isopropylbenzene	17.38	105	2989967	206.9652 ug/L		98
79)	1,1,2,2-Tetrachloroethane	17.64	83	859540	201.0666 ug/L		95
81)	1,2,3-Trichloropropane	17.87	110	265884	203.1382 ug/L		89
82)	trans-1,4-Dichloro-2-Buten	17.93	53	340440	215.7181 ug/L		90
83)	n-Propylbenzene	17.98	91	3639812	195.8513 ug/L		98
84)	Bromobenzene	18.13	156	802539	198.6628 ug/L		99
85)	1,3,5-Trimethylbenzene	18.21	105	2665531	201.5000 ug/L		96
86)	2-Chlorotoluene	18.30	91	2450953	197.5855 ug/L		97
87)	4-Chlorotoluene	18.35	91	2149568	189.5191 ug/L		97
88)	a-Methylstyrene	18.69	118	1416560	220.5099 ug/L		98
89)	tert-Butylbenzene	18.75	134	559469	202.9400 ug/L		85
90)	1,2,4-Trimethylbenzene	18.82	105	2775173	199.4822 ug/L		81
91)	sec-Butylbenzene	19.08	105	3369131	198.8771 ug/L		100
92)	p-Isopropyltoluene	19.26	119	2833911	202.7621 ug/L		99
93)	1,3-Dichlorobenzene	19.49	146	1523154	194.8646 ug/L		95
94)	1,4-Dichlorobenzene	19.64	146	1521474	191.2260 ug/L		97
95)	n-Butylbenzene	19.89	91	2819417	200.5655 ug/L		98
96)	1,2-Dichlorobenzene	20.22	146	1485290	197.4738 ug/L		95
97)	1,2-Dibromo-3-Chloropropan	21.41	75	195547	206.7378 ug/L		89
98)	1,2,4-Trichlorobenzene	22.76	180	1054519	193.9351 ug/L		98
99)	Hexachlorobutadiene	22.95	225	597195	192.0469 ug/L		99
100)	Naphthalene	23.20	128	2579088	206.3237 ug/L		99
101)	1,2,3-Trichlorobenzene	23.58	180	1038439	193.9482 ug/L		99

(#) = qualifier out of range (m) = manual integration
6M137531.D 826_SL.M Mon Feb 29 16:01:43 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137531.D Vial: 10
Acq On : 26 Feb 2016 18:07 Operator: TMB
Sample : WG558920-10 200ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

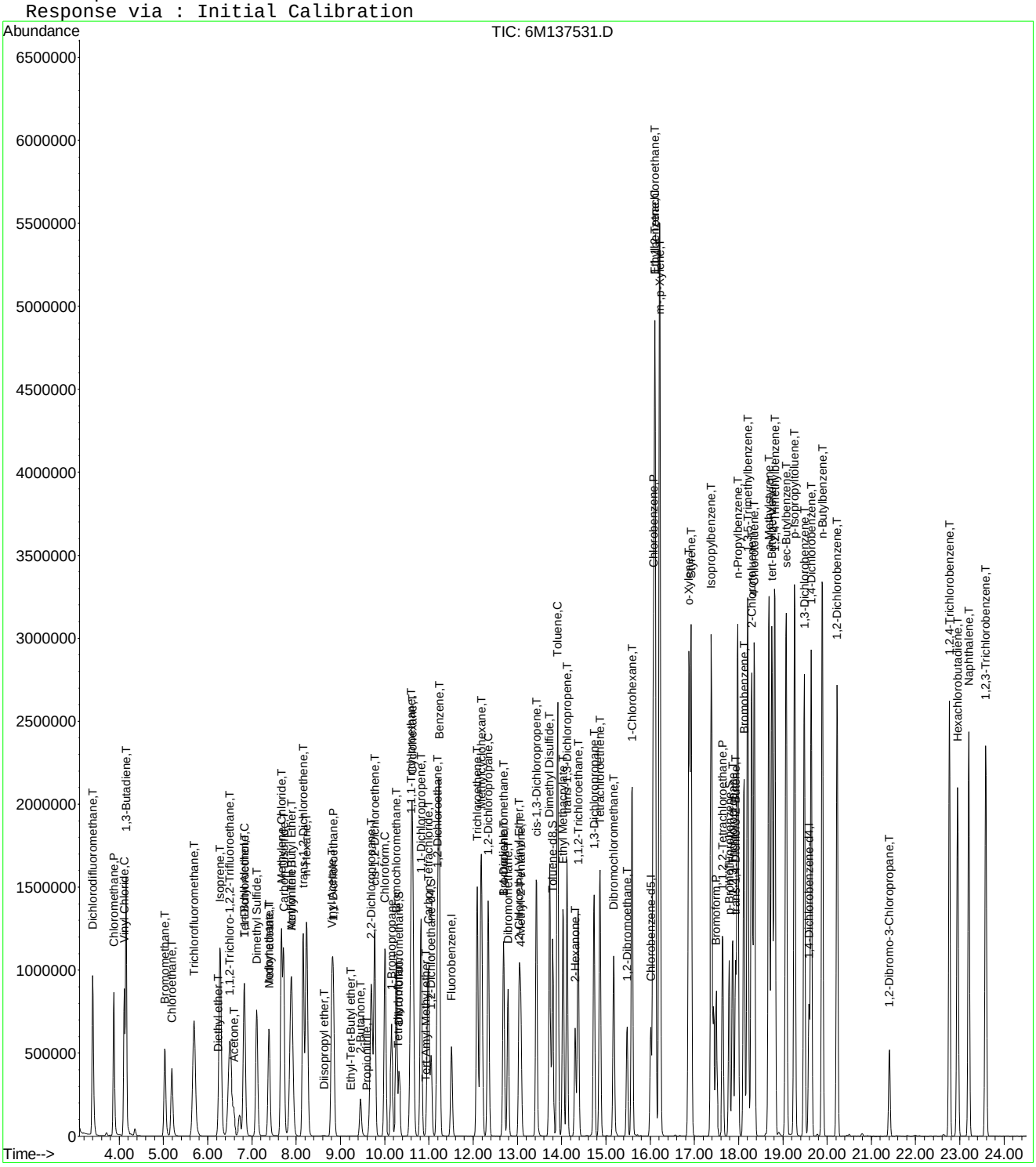

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137532.D Vial: 11
Acq On : 26 Feb 2016 18:39 Operator: TMB
Sample : WG558920-11 300ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:43 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	707233	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	525178	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	308135	50.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.33	111	555974	146.5460 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 293.10%#		
43) 1,2-Dichloroethane-d4	11.05	65	713394	144.8268 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 289.66%#		
58) Toluene-d8	13.80	98	1741152	139.4446 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 278.88%#		
80) p-Bromofluorobenzene	17.79	95	787625	139.1615 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 278.32%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	1997367	307.5122 ug/L	98
3) Chloromethane	3.88	50	1848014	273.0309 ug/L	98
4) Vinyl Chloride	4.11	62	1515327	278.1486 ug/L	97
5) 1,3-Butadiene	4.15	54	1176840	259.6328 ug/L	94
6) Bromomethane	5.03	94	924558	318.3612 ug/L	100
7) Chloroethane	5.18	64	952580	308.3709 ug/L	96
8) Trichlorofluoromethane	5.68	101	2124957	290.2808 ug/L	99
9) Diethyl ether	6.23	59	1011802	300.4509 ug/L	94
10) Isoprene	6.27	67	1489357	312.3064 ug/L	86
11) Acrolein	6.49	56	100305	156.8389 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	1067610	305.5451 ug/L	94
13) Acetone	6.59	43	448789	299.1551 ug/L	99
14) 1,1-Dichloroethene	6.82	61	1895304	306.2315 ug/L	92
15) Tert-Butyl Alcohol	6.95	59	370925	642.2954 ug/L	99
16) Dimethyl Sulfide	7.11	62	950681	316.6032 ug/L	94
17) Iodomethane	7.38	142	877751	298.6036 ug/L	91
18) Methyl acetate	7.40	43	1274555	296.3371 ug/L	98
19) Methylene Chloride	7.66	84	1102725	295.8467 ug/L	79
20) Carbon Disulfide	7.71	76	3583096	302.5832 ug/L	98
21) Acrylonitrile	7.86	53	296066	167.4906 ug/L	98
22) Methyl Tert Butyl Ether	7.90	73	3392519	318.7124 ug/L	92
23) trans-1,2-Dichloroethene	8.16	96	1037130	303.3368 ug/L	86
24) n-Hexane	8.23	57	1917686	308.8729 ug/L	99
25) Diisopropyl ether	8.61	45	4780310	296.9708 ug/L	96
26) Vinyl Acetate	8.80	43	2633859	316.5369 ug/L	99
27) 1,1-Dichloroethane	8.83	63	2210234	299.8379 ug/L	97
28) Ethyl-Tert-Butyl ether	9.24	59	3979837	308.4685 ug/L	96
29) 2-Butanone	9.45	43	727982	297.7887 ug/L	98
30) Propionitrile	9.58	54	209887	310.2156 ug/L	99
31) 2,2-Dichloropropane	9.69	77	1783568	301.4350 ug/L	96
32) cis-1,2-Dichloroethene	9.77	96	1159875	303.8646 ug/L	98
33) Chloroform	10.00	83	2040554	296.4065 ug/L	96
34) 1-Bromopropane	10.15	122	167090	319.2839 ug/L	98
35) Bromochloromethane	10.26	130	694571	309.6903 ug/L	99
36) Tetrahydrofuran	10.30	42	490636	303.4020 ug/L	96
38) 1,1,1-Trichloroethane	10.60	97	1858746	305.6722 ug/L	98
39) Cyclohexane	10.63	56	2201094	319.2142 ug/L	89
40) 1,1-Dichloropropene	10.83	75	1504422	307.2111 ug/L	99
41) Tert-Amyl-Methyl ether	10.94	73	3231746	315.7523 ug/L	93
42) Carbon Tetrachloride	10.99	117	1763858	310.4404 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M137532.D 826_SL.M Mon Feb 29 16:01:44 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137532.D Vial: 11
Acq On : 26 Feb 2016 18:39 Operator: TMB
Sample : WG558920-11 300ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:43 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45) 1,2-Dichloroethane	11.19	62	1778788	302.7287 ug/L	98
46) Benzene	11.23	78	4155462	282.0619 ug/L	90
47) Trichloroethene	12.09	130	1058154	304.0300 ug/L	90
48) Methylcyclohexane	12.18	83	1798917	319.7263 ug/L	88
49) 1,2-Dichloropropane	12.34	63	1232481	310.9180 ug/L	100
50) 1,4-Dioxane	12.67	88	32606	614.2458 ug/L	84
51) Bromodichloromethane	12.68	83	1653218	317.8084 ug/L	96
52) Dibromomethane	12.79	93	733410	316.3265 ug/L	98
53) 2-Chloroethyl Vinyl Ether	13.03	63	766489	351.5513 ug/L	97
54) 4-Methyl-2-Pentanone	13.07	58	543988	329.5031 ug/L	95
55) cis-1,3-Dichloropropene	13.42	75	1877090	327.5130 ug/L	95
56) Dimethyl Disulfide	13.73	79	1088350	376.5100 ug/L	96
59) Toluene	13.91	91	4193210	282.2590 ug/L	99
60) Ethyl Methacrylate	14.03	69	1632375	342.9321 ug/L	95
62) trans-1,3-Dichloropropene	14.12	75	1832609	320.8053 ug/L	98
63) 1,1,2-Trichloroethane	14.38	97	942438	303.5120 ug/L	98
64) 2-Hexanone	14.31	43	1154652	325.8770 ug/L	98
65) 1,3-Dichloropropane	14.74	76	1702509	302.5088 ug/L	94
66) Tetrachloroethene	14.87	166	1062175	289.8375 ug/L	97
67) Dibromochloromethane	15.18	129	1292929	320.1624 ug/L	100
68) 1,2-Dibromoethane	15.48	107	1008106	317.4575 ug/L	98
69) 1-Chlorohexane	15.59	91	1494127	323.8681 ug/L	86
70) Chlorobenzene	16.07	112	2773062	290.4413 ug/L #	66
71) 1,1,1,2-Tetrachloroethane	16.11	131	1196001	311.9762 ug/L	97
72) Ethylbenzene	16.11	106	1556732	304.6869 ug/L	100
73) m-,p-Xylene	16.22	106	3653753	584.4488 ug/L	99
74) o-Xylene	16.87	106	1861503	316.1378 ug/L	96
75) Styrene	16.92	104	3280614	327.3419 ug/L	91
76) Bromoform	17.49	173	968059	339.5083 ug/L	100
77) Isopropylbenzene	17.38	105	4859396	307.0014 ug/L	99
79) 1,1,2,2-Tetrachloroethane	17.64	83	1473362	306.0898 ug/L	95
81) 1,2,3-Trichloropropane	17.87	110	450710	305.8173 ug/L	97
82) trans-1,4-Dichloro-2-Buten	17.93	53	587175	330.4298 ug/L	92
83) n-Propylbenzene	17.98	91	5875551	280.7771 ug/L	99
84) Bromobenzene	18.13	156	1329308	292.2413 ug/L	98
85) 1,3,5-Trimethylbenzene	18.21	105	4394146	295.0064 ug/L	96
86) 2-Chlorotoluene	18.30	91	4027318	288.3378 ug/L	97
87) 4-Chlorotoluene	18.35	91	3574535	279.8896 ug/L	97
88) a-Methylstyrene	18.69	118	2387215	330.0275 ug/L	99
89) tert-Butylbenzene	18.75	134	927820	298.8965 ug/L	84
90) 1,2,4-Trimethylbenzene	18.82	105	4532965	289.3756 ug/L	82
91) sec-Butylbenzene	19.08	105	5502198	288.4488 ug/L	100
92) p-Isopropyltoluene	19.27	119	4664534	296.3974 ug/L	98
93) 1,3-Dichlorobenzene	19.49	146	2567994	291.7754 ug/L	95
94) 1,4-Dichlorobenzene	19.64	146	2568075	286.6525 ug/L	96
95) n-Butylbenzene	19.89	91	4738000	299.3349 ug/L	98
96) 1,2-Dichlorobenzene	20.22	146	2506554	295.9653 ug/L	94
97) 1,2-Dibromo-3-Chloropropan	21.41	75	337125	316.5375 ug/L	88
98) 1,2,4-Trichlorobenzene	22.76	180	1820641	297.3664 ug/L	98
99) Hexachlorobutadiene	22.95	225	1055064	301.3252 ug/L	99
100) Naphthalene	23.20	128	4412465	313.4943 ug/L	98
101) 1,2,3-Trichlorobenzene	23.58	180	1777074	294.7650 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137532.D Vial: 11
Acq On : 26 Feb 2016 18:39 Operator: TMB
Sample : WG558920-11 300ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

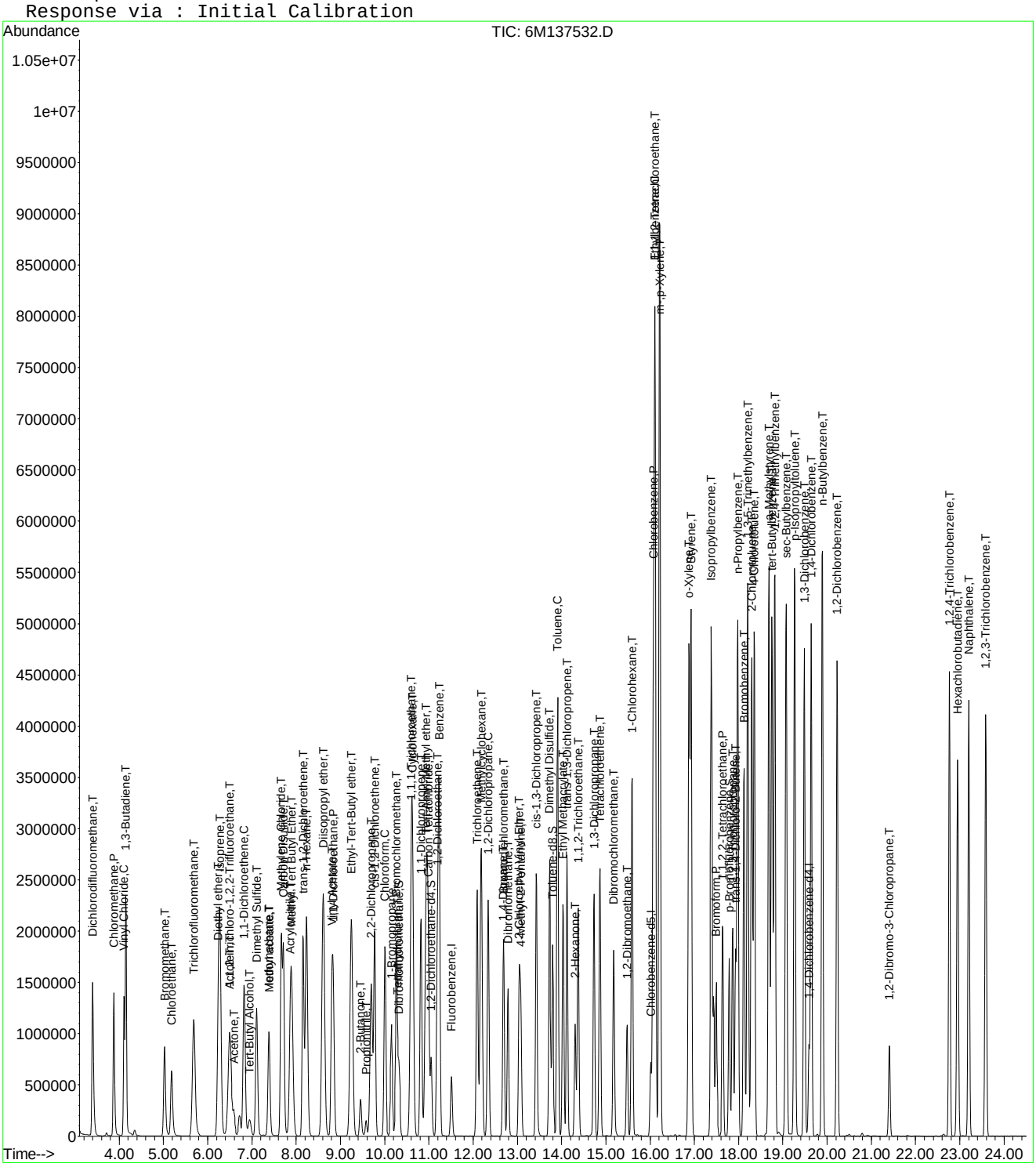

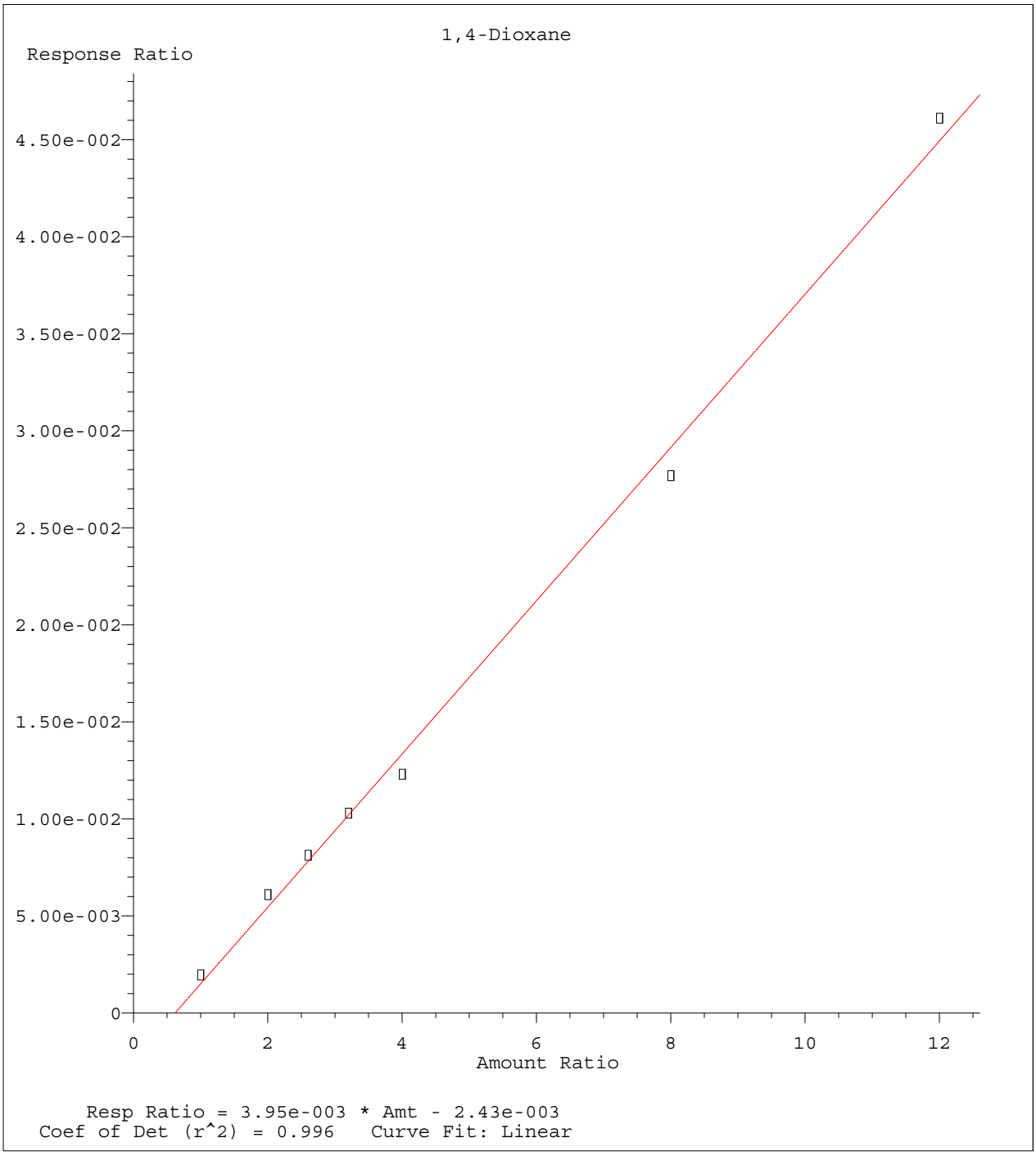

Method Name: C:\MSDCHEM\1\METHODS\826_SL.M
Calibration Table Last Updated: Mon Feb 29 08:51:12 2016

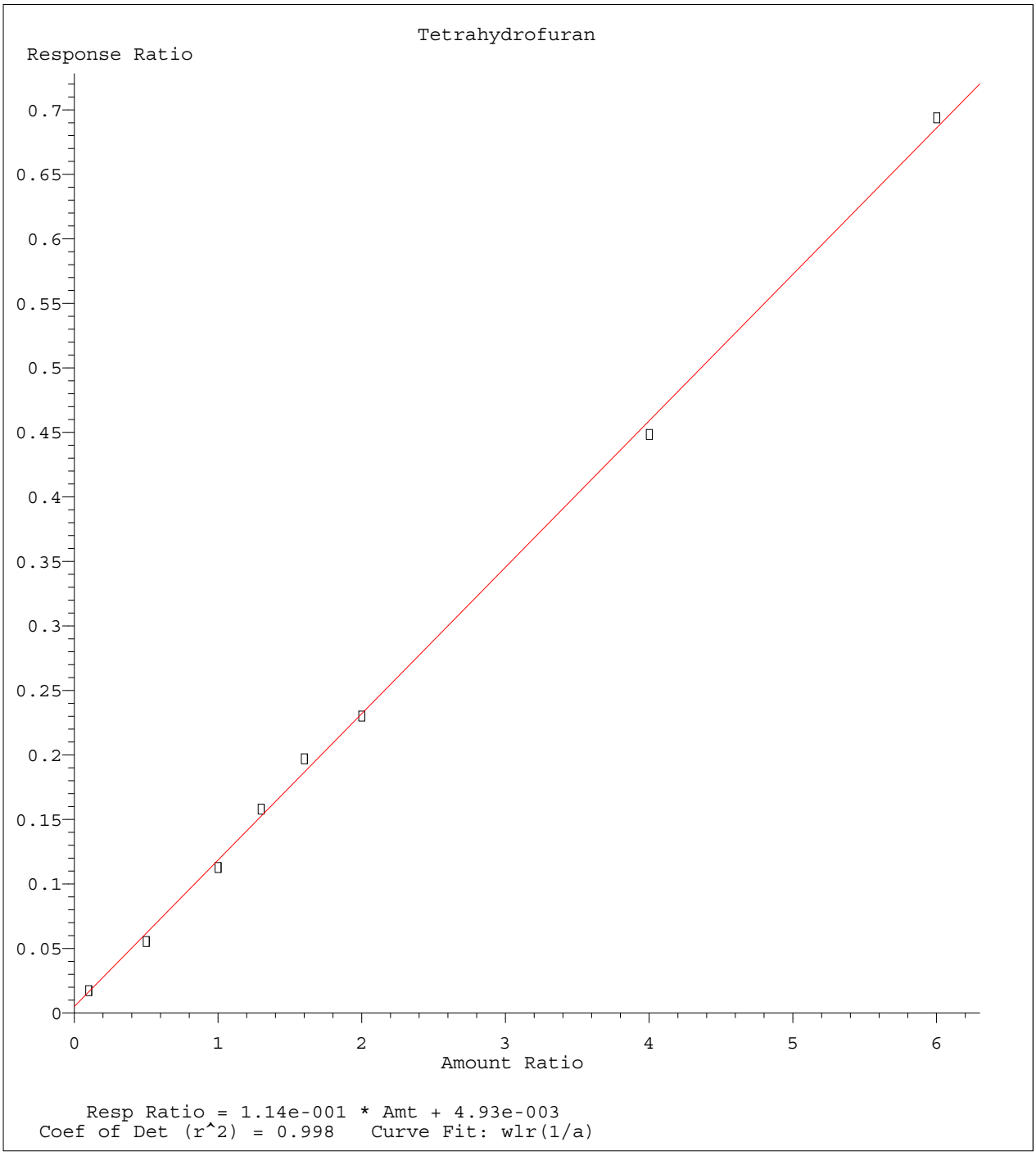

Method Name: C:\MSDCHEM\1\METHODS\826_SL.M
Calibration Table Last Updated: Mon Feb 29 08:51:12 2016

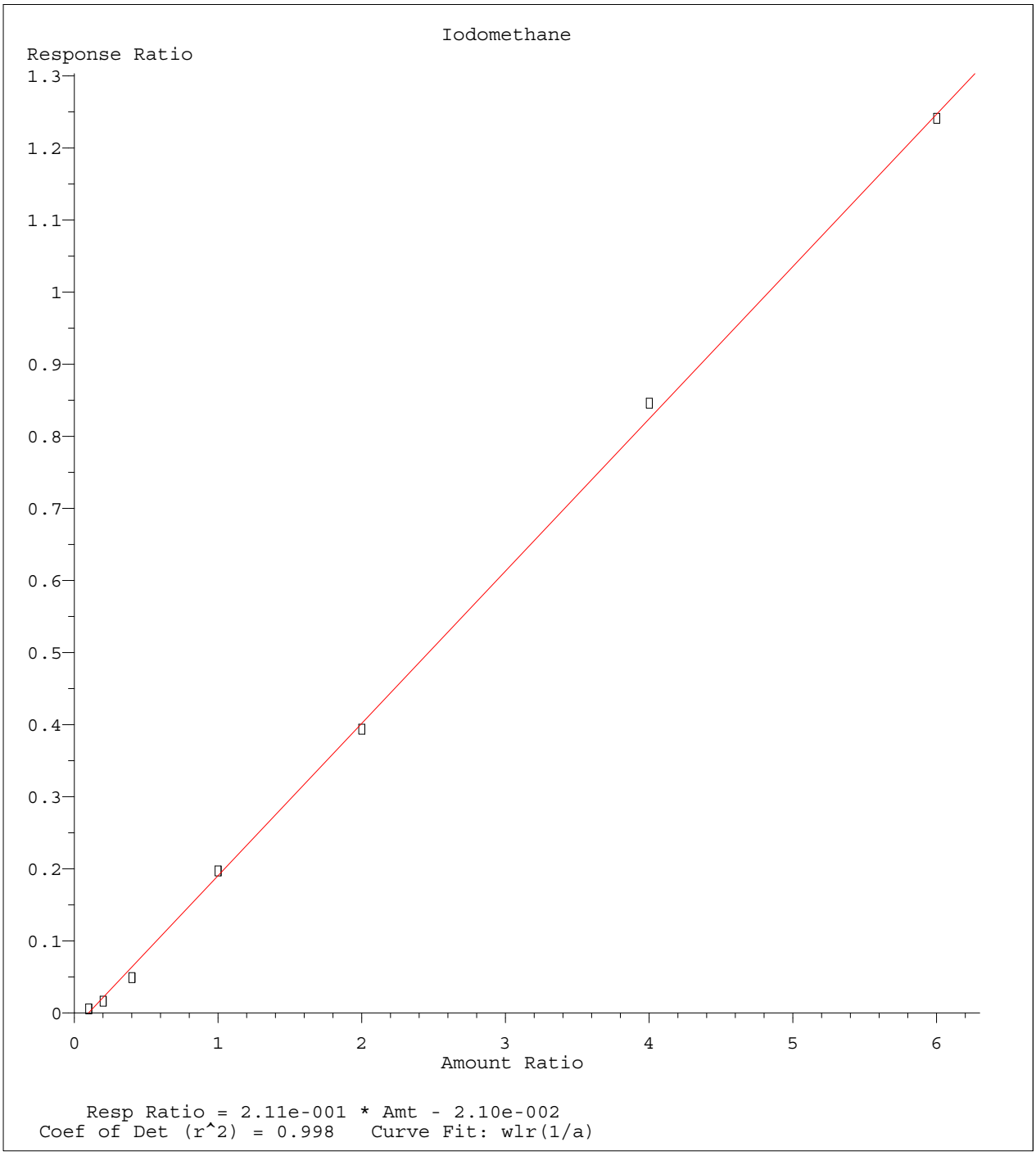

Method Name: C:\MSDCHEM\1\METHODS\826_SL.M
Calibration Table Last Updated: Mon Feb 29 08:51:12 2016

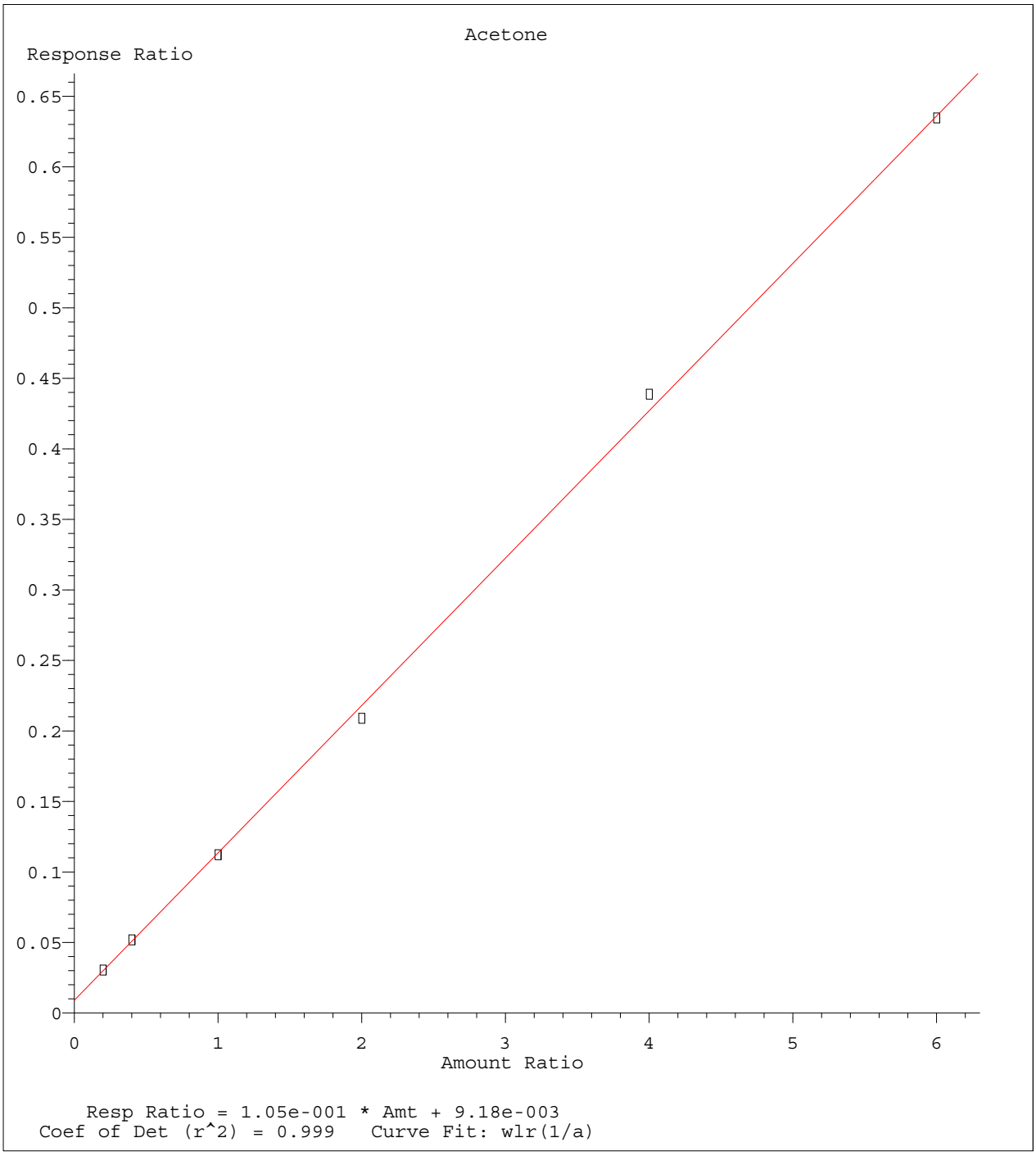

Method Name: C:\MSDCHEM\1\METHODS\826_SL.M
Calibration Table Last Updated: Mon Feb 29 08:51:12 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:44 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	697242	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	504277	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	281494	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.32	111	83790	22.4022 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 44.80%#		
43) 1,2-Dichloroethane-d4	11.05	65	107686	22.1747 ug/L	-0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 44.34%#		
58) Toluene-d8	13.80	98	259069	21.6082 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 43.22%#		
80) p-Bromofluorobenzene	17.79	95	108251	20.9365 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 41.88%#		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.40	85	355154	55.4626 ug/L	99
3) Chloromethane	3.88	50	339693	50.9064 ug/L	98
4) Vinyl Chloride	4.11	62	232790	43.3425 ug/L	98
5) 1,3-Butadiene	4.16	54	191696	42.8977 ug/L	93
6) Bromomethane	5.02	94	167650	58.5556 ug/L	99
7) Chloroethane	5.19	64	172370	56.5995 ug/L	98
8) Trichlorofluoromethane	5.68	101	345771	47.9110 ug/L	99
9) Diethyl ether	6.24	59	244439	73.6254 ug/L	93
10) Isoprene	6.27	67	268171	57.0391 ug/L	88
11) Acrolein	6.48	56	38698	61.3760 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	185858	53.9539 ug/L	94
13) Acetone	6.60	43	77335	48.6644 ug/L	96
14) 1,1-Dichloroethene	6.83	61	315114	51.6437 ug/L	92
15) Tert-Butyl Alcohol	6.95	59	120780	212.1401 ug/L	97
16) Dimethyl Sulfide	7.11	62	234426	79.1891 ug/L	96
17) Iodomethane	7.38	142	96886	37.8412 ug/L	92
18) Methyl acetate	7.39	43	223958	52.8169 ug/L	96
19) Methylene Chloride	7.67	84	196184	53.3878 ug/L	82
20) Carbon Disulfide	7.71	76	518243	44.3914 ug/L	99
21) Acrylonitrile	7.86	53	88595	50.8382 ug/L	99
22) Methyl Tert Butyl Ether	7.89	73	557115	53.0885 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	181115	53.7310 ug/L	84
24) n-Hexane	8.23	57	293885	48.0130 ug/L	99
25) Diisopropyl ether	8.61	45	1440779	90.7892 ug/L	96
26) Vinyl Acetate	8.80	43	309031	37.6715 ug/L	98
27) 1,1-Dichloroethane	8.83	63	365886	50.3469 ug/L	98
28) Ethyl-Tert-Butyl ether	9.25	59	1142199	89.7979 ug/L	96
29) 2-Butanone	9.46	43	118678	49.2421 ug/L	97
30) Propionitrile	9.58	54	62654	93.9303 ug/L	99
31) 2,2-Dichloropropane	9.69	77	309886	53.1233 ug/L	95
32) cis-1,2-Dichloroethene	9.77	96	203750	54.1434 ug/L	96
33) Chloroform	10.01	83	344145	50.7061 ug/L	96
34) 1-Bromopropane	10.15	122	45722	88.6198 ug/L	99
35) Bromochloromethane	10.26	130	115189	52.0956 ug/L	100
36) Tetrahydrofuran	10.29	42	140281	86.4486 ug/L	95
38) 1,1,1-Trichloroethane	10.60	97	311688	51.9918 ug/L	98
39) Cyclohexane	10.63	56	356880	52.4982 ug/L	88
40) 1,1-Dichloropropene	10.82	75	254739	52.7645 ug/L	97
41) Tert-Amyl-Methyl ether	10.95	73	1007162	99.8131 ug/L	93
42) Carbon Tetrachloride	10.99	117	286624	51.1689 ug/L	96

(#) = qualifier out of range (m) = manual integration
6M137535.D 826_SL.M Mon Feb 29 16:01:45 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:44 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	296979	51.2665 ug/L	98
46)	Benzene	11.23	78	732452	50.4293 ug/L	92
47)	Trichloroethene	12.09	130	187775	54.7248 ug/L	93
48)	Methylcyclohexane	12.18	83	293690	52.9463 ug/L	89
49)	1,2-Dichloropropane	12.33	63	215054	55.0291 ug/L	100
50)	1,4-Dioxane	12.67	88	9692	206.7214 ug/L	86
51)	Bromodichloromethane	12.68	83	264833	51.6400 ug/L	97
52)	Dibromomethane	12.78	93	115173	50.3870 ug/L	97
53)	2-Chloroethyl Vinyl Ether	13.04	63	118032	54.9113 ug/L	99
54)	4-Methyl-2-Pentanone	13.07	58	83435	51.2622 ug/L	92
55)	cis-1,3-Dichloropropene	13.43	75	332086	58.7723 ug/L	97
56)	Dimethyl Disulfide	13.72	79	160314	56.2546 ug/L	97
59)	Toluene	13.91	91	733544	51.4239 ug/L	99
60)	Ethyl Methacrylate	14.04	69	253929	55.5569 ug/L	99
62)	trans-1,3-Dichloropropene	14.12	75	289951	52.8608 ug/L	100
63)	1,1,2-Trichloroethane	14.38	97	158637	53.2065 ug/L	98
64)	2-Hexanone	14.31	43	174540	51.3021 ug/L	98
65)	1,3-Dichloropropane	14.73	76	296777	54.9182 ug/L	95
66)	Tetrachloroethene	14.87	166	179884	51.1197 ug/L	98
67)	Dibromochloromethane	15.17	129	201014	51.8393 ug/L	99
68)	1,2-Dibromoethane	15.48	107	163614	53.6583 ug/L	99
69)	1-Chlorohexane	15.59	91	237869	53.6977 ug/L	87
70)	Chlorobenzene	16.07	112	484642	52.8637 ug/L	70
71)	1,1,1,2-Tetrachloroethane	16.11	131	190856	51.8481 ug/L	98
72)	Ethylbenzene	16.10	106	257103	52.4064 ug/L	97
73)	m-,p-Xylene	16.22	106	631680	105.2305 ug/L	96
74)	o-Xylene	16.88	106	321591	56.8793 ug/L	96
75)	Styrene	16.92	104	532085	55.2923 ug/L	95
76)	Bromoform	17.49	173	134827	49.2451 ug/L	99
77)	Isopropylbenzene	17.38	105	829435	54.5730 ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.64	83	229283	52.1415 ug/L	96
81)	1,2,3-Trichloropropane	17.87	110	71564	53.1534 ug/L	99
82)	trans-1,4-Dichloro-2-Buten	17.93	53	68292	42.0681 ug/L	85
83)	n-Propylbenzene	17.98	91	1006100	52.6291 ug/L	98
84)	Bromobenzene	18.12	156	215387	51.8331 ug/L	99
85)	1,3,5-Trimethylbenzene	18.21	105	716527	52.6576 ug/L	95
86)	2-Chlorotoluene	18.30	91	664750	52.0974 ug/L	96
87)	4-Chlorotoluene	18.36	91	607350	52.0569 ug/L	97
88)	a-Methylstyrene	18.69	118	378204	57.2343 ug/L	98
89)	tert-Butylbenzene	18.76	134	150883	53.2071 ug/L	99
90)	1,2,4-Trimethylbenzene	18.82	105	731933	51.1473 ug/L	81
91)	sec-Butylbenzene	19.07	105	883157	50.6807 ug/L	100
92)	p-Isopropyltoluene	19.27	119	732050	50.9189 ug/L	99
93)	1,3-Dichlorobenzene	19.48	146	418127	52.0038 ug/L	96
94)	1,4-Dichlorobenzene	19.64	146	423834	51.7864 ug/L	98
95)	n-Butylbenzene	19.89	91	705101	48.7625 ug/L	98
96)	1,2-Dichlorobenzene	20.22	146	421505	54.4802 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	21.41	75	50722	52.1318 ug/L	89
98)	1,2,4-Trichlorobenzene	22.76	180	285471	51.0389 ug/L	97
99)	Hexachlorobutadiene	22.94	225	152283	47.6080 ug/L	99
100)	Naphthalene	23.20	128	640676	49.8263 ug/L	100
101)	1,2,3-Trichlorobenzene	23.59	180	280768	50.9788 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

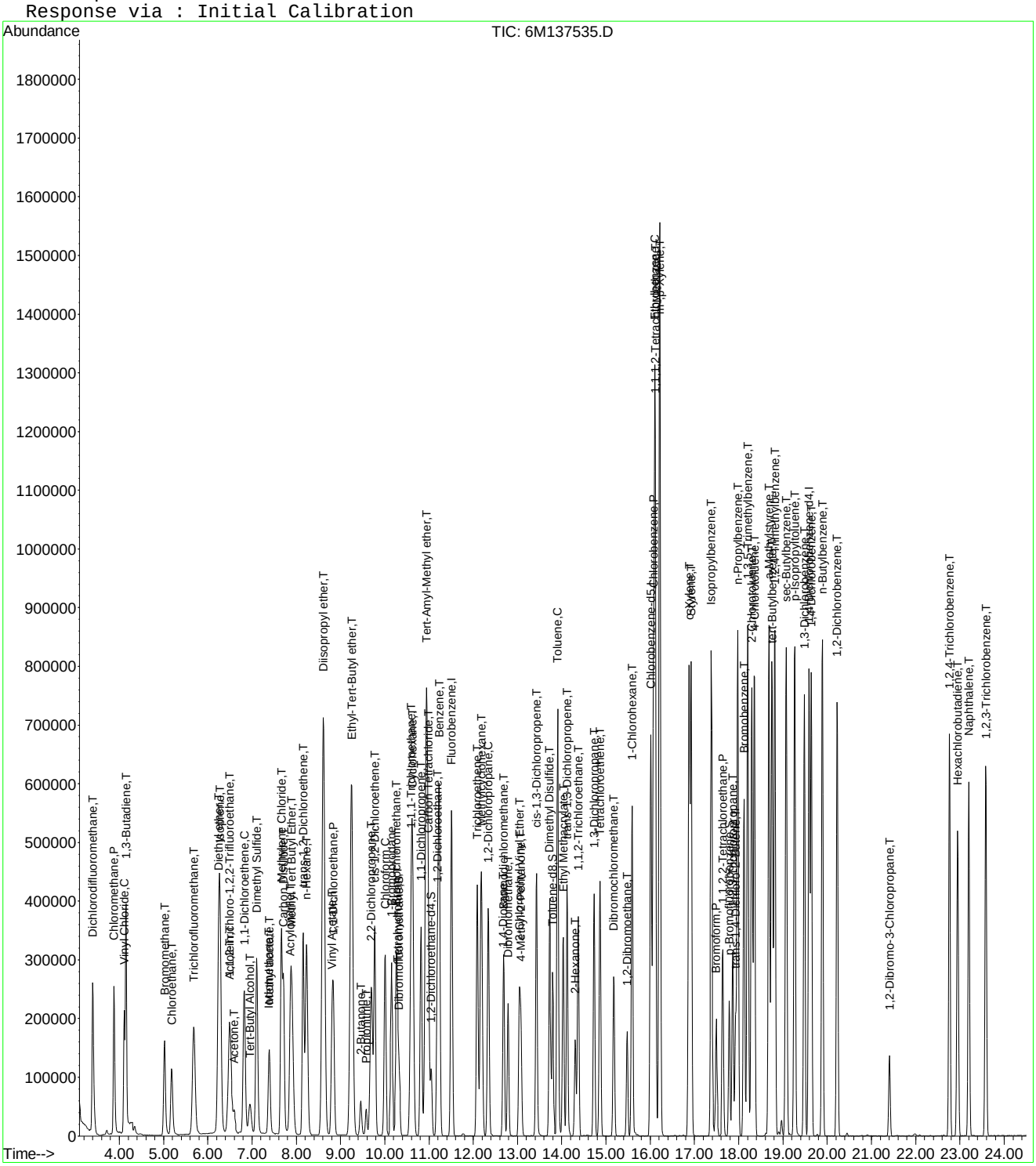

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	115	0.00
2	T	Dichlorodifluoromethane	50.0000	55.4626	-10.9	109	-0.01
3	P	Chloromethane	50.0000	50.9064	-1.8	111	0.00
4	C	Vinyl Chloride	50.0000	43.3425	13.3	89	0.00
5	T	1,3-Butadiene	50.0000	42.8977	14.2	92	-0.01
6	T	Bromomethane	50.0000	58.5556	-17.1	130	-0.01
7	T	Chloroethane	50.0000	56.5995	-13.2	116	0.00
8	T	Trichlorofluoromethane	50.0000	47.9111	4.2	102	-0.02
9	T	Diethyl ether	100.0000	73.6254	26.4#	86	0.00
10	T	Isoprene	50.0000	57.0391	-14.1	124	-0.01
11	T	Acrolein	50.0000	61.3760	-22.8	153	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	53.9539	-7.9	110	-0.01
13	T	Acetone	50.0000	48.6644	2.7	113	0.01
14	C	1,1-Dichloroethene	50.0000	51.6437	-3.3	107	0.00
15	T	Tert-Butyl Alcohol	200.0000	212.1401	-6.1	124	0.02
16	T	Dimethyl Sulfide	50.0000	79.1891	-58.4#	173	-0.01
17	T	Iodomethane	50.0000	37.8412	24.3	81	0.00
18	T	Methyl acetate	50.0000	52.8169	-5.6	120	0.00
19	T	Methylene Chloride	50.0000	53.3878	-6.8	112	0.00
20	T	Carbon Disulfide	50.0000	44.3914	11.2	98	-0.01
21	T	Acrylonitrile	50.0000	50.8382	-1.7	112	0.00
22	T	Methyl Tert Butyl Ether	50.0000	53.0885	-6.2	110	0.00
23	T	trans-1,2-Dichloroethene	50.0000	53.7311	-7.5	112	0.00
24	T	n-Hexane	50.0000	48.0130	4.0	104	-0.01
25	T	Diisopropyl ether	100.0000	90.7892	9.2	106	0.00
26	T	Vinyl Acetate	50.0000	37.6715	24.7	85	0.00
27	P	1,1-Dichloroethane	50.0000	50.3469	-0.7	106	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	89.7979	10.2	103	0.01
29	T	2-Butanone	50.0000	49.2421	1.5	115	0.00
30	T	Propionitrile	100.0000	93.9303	6.1	108	0.00
31	T	2,2-Dichloropropane	50.0000	53.1233	-6.2	112	0.00
32	T	cis-1,2-Dichloroethene	50.0000	54.1434	-8.3	116	0.00
33	C	Chloroform	50.0000	50.7061	-1.4	109	0.00
34		1-Bromopropane	50.0000	88.6198	-77.2#	186	-0.01
35	T	Bromochloromethane	50.0000	52.0956	-4.2	108	0.00
36	T	Tetrahydrofuran	100.0000	86.4486	13.6	100	0.00
37	S	Dibromofluoromethane	25.0000	22.4022	10.4	101	0.00
38	T	1,1,1-Trichloroethane	50.0000	51.9918	-4.0	108	0.00
39	T	Cyclohexane	50.0000	52.4982	-5.0	110	-0.01
40	T	1,1-Dichloropropene	50.0000	52.7645	-5.5	109	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	99.8131	0.2	115	0.00
42	T	Carbon Tetrachloride	50.0000	51.1689	-2.3	106	0.00
43	S	1,2-Dichloroethane-d4	25.0000	22.1747	11.3	100	-0.01
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	50.0000	51.2666	-2.5	109	0.00
46	T	Benzene	50.0000	50.4293	-0.9	112	0.00
47	T	Trichloroethene	50.0000	54.7248	-9.4	115	0.00
48	T	Methylcyclohexane	50.0000	52.9463	-5.9	111	0.00
49	C	1,2-Dichloropropane	50.0000	55.0291	-10.1	116	0.00
50	T	1,4-Dioxane	200.0000	206.7214	-3.4	130	0.00
51	T	Bromodichloromethane	50.0000	51.6400	-3.3	109	0.00
52	T	Dibromomethane	50.0000	50.3870	-0.8	103	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	54.9113	-9.8	118	0.00
54	T	4-Methyl-2-Pentanone	50.0000	51.2622	-2.5	117	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	58.7723	-17.5	120	0.00
56	T	Dimethyl Disulfide	50.0000	56.2546	-12.5	117	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	115	0.00
58	S	Toluene-d8	25.0000	21.6082	13.6	97	0.00
59	C	Toluene	50.0000	51.4239	-2.8	111	0.00
60	T	Ethyl Methacrylate	50.0000	55.5569	-11.1	115	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	50.0000	52.8608	-5.7	109	0.00
63	T	1,1,2-Trichloroethane	50.0000	53.2065	-6.4	113	0.00
64	T	2-Hexanone	50.0000	51.3021	-2.6	116	0.00
65	T	1,3-Dichloropropane	50.0000	54.9182	-9.8	116	0.00
66	T	Tetrachloroethene	50.0000	51.1197	-2.2	109	0.00
67	T	Dibromochloromethane	50.0000	51.8393	-3.7	107	0.00
68	T	1,2-Dibromoethane	50.0000	53.6583	-7.3	112	0.00
69	T	1-Chlorohexane	50.0000	53.6977	-7.4	112	0.00
70	P	Chlorobenzene	50.0000	52.8637	-5.7	115	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	51.8481	-3.7	110	0.00
72	C	Ethylbenzene	50.0000	52.4064	-4.8	110	0.00
73	T	m-,p-Xylene	100.0000	105.2305	-5.2	113	0.00
74	T	o-Xylene	50.0000	56.8792	-13.8	115	0.00
75	T	Styrene	50.0000	55.2923	-10.6	113	0.00
76	P	Bromoform	50.0000	49.2451	1.5	103	0.00
77	T	Isopropylbenzene	50.0000	54.5730	-9.1	112	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	118	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	52.1415	-4.3	115	0.00
80	S	p-Bromofluorobenzene	25.0000	20.9365	16.3	97	0.00
81	T	1,2,3-Trichloropropane	50.0000	53.1534	-6.3	117	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	42.0681	15.9	93	0.00
83	T	n-Propylbenzene	50.0000	52.6291	-5.3	111	0.00
84	T	Bromobenzene	50.0000	51.8331	-3.7	112	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	52.6576	-5.3	112	0.00
86	T	2-Chlorotoluene	50.0000	52.0974	-4.2	115	0.00
87	T	4-Chlorotoluene	50.0000	52.0569	-4.1	114	0.00
88	T	a-Methylstyrene	50.0000	57.2343	-14.5	123	0.00
89	T	tert-Butylbenzene	50.0000	53.2071	-6.4	112	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	51.1473	-2.3	110	0.00
91	T	sec-Butylbenzene	50.0000	50.6807	-1.4	107	0.00
92	T	p-Isopropyltoluene	50.0000	50.9189	-1.8	107	0.00
93	T	1,3-Dichlorobenzene	50.0000	52.0038	-4.0	114	0.00
94	T	1,4-Dichlorobenzene	50.0000	51.7864	-3.6	117	0.00
95	T	n-Butylbenzene	50.0000	48.7625	2.5	104	0.00
96	T	1,2-Dichlorobenzene	50.0000	54.4802	-9.0	120	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	52.1318	-4.3	117	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	51.0389	-2.1	109	0.00
99	T	Hexachlorobutadiene	50.0000	47.6080	4.8	101	-0.01
100	T	Naphthalene	50.0000	49.8263	0.3	104	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	50.9788	-2.0	108	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137535.D 826_SL.M Mon Feb 29 16:03:13 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032216\6M137939.D Vial: 2
Acq On : 22 Mar 2016 11:51 Operator: TMB
Sample : WG561879-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 22 12:15:59 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	655388	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	480340	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	256895	50.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.32	111	168709	47.9868 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.98%		
43) 1,2-Dichloroethane-d4	11.05	65	205170	44.9467 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 89.90%		
58) Toluene-d8	13.80	98	578904	50.6908 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.38%		
80) p-Bromofluorobenzene	17.79	95	240767	51.0249 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.04%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	295732	49.1323 ug/L	99
3) Chloromethane	3.88	50	239812	38.2333 ug/L	97
4) Vinyl Chloride	4.12	62	241061	47.7487 ug/L	98
5) 1,3-Butadiene	4.16	54	163925	39.0258 ug/L	94
6) Bromomethane	5.03	94	145617	54.1081 ug/L	100
7) Chloroethane	5.19	64	151443	52.9036 ug/L	99
8) Trichlorofluoromethane	5.69	101	334092	49.2491 ug/L	99
9) Diethyl ether	6.23	59	335685	107.5657 ug/L	96
10) Isoprene	6.28	67	246844	55.8558 ug/L	91
11) Acrolein	6.48	56	36449	61.5008 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	180312	55.6867 ug/L	95
13) Acetone	6.59	43	82853	56.0801 ug/L	95
14) 1,1-Dichloroethene	6.83	61	297516	51.8735 ug/L	97
15) Tert-Butyl Alcohol	6.93	59	135980	254.0901 ug/L	99
16) Dimethyl Sulfide	7.11	62	149099	53.5820 ug/L	98
17) Iodomethane	7.38	142	137030	54.4326 ug/L	97
18) Methyl acetate	7.39	43	227271	57.0211 ug/L	98
19) Methylene Chloride	7.67	84	178880	51.7876 ug/L	86
20) Carbon Disulfide	7.72	76	582851	53.1139 ug/L	99
21) Acrylonitrile	7.86	53	96087	58.6584 ug/L	99
22) Methyl Tert Butyl Ether	7.89	73	548274	55.5825 ug/L	93
23) trans-1,2-Dichloroethene	8.16	96	171538	54.1398 ug/L	91
24) n-Hexane	8.23	57	318910	55.4287 ug/L	97
25) Diisopropyl ether	8.61	45	1500768	100.6086 ug/L	95
26) Vinyl Acetate	8.80	43	429419	55.6900 ug/L	100
27) 1,1-Dichloroethane	8.83	63	351229	51.4165 ug/L	98
28) Ethyl-Tert-Butyl ether	9.24	59	1275177	106.6547 ug/L	96
29) 2-Butanone	9.45	43	129512	57.1691 ug/L	97
30) Propionitrile	9.57	54	72916	116.2960 ug/L	98
31) 2,2-Dichloropropane	9.69	77	289653	52.8258 ug/L	92
32) cis-1,2-Dichloroethene	9.77	96	188162	53.1943 ug/L	94
33) Chloroform	10.01	83	320323	50.2102 ug/L	97
34) 1-Bromopropane	10.15	122	32389	66.7864 ug/L	98
35) Bromochloromethane	10.26	130	113584	54.6502 ug/L	100
36) Tetrahydrofuran	10.29	42	176637	116.5422 ug/L	97
38) 1,1,1-Trichloroethane	10.60	97	289080	51.3001 ug/L	99
39) Cyclohexane	10.63	56	358263	56.0673 ug/L	88
40) 1,1-Dichloropropene	10.82	75	244301	53.8340 ug/L	97
41) Tert-Amyl-Methyl ether	10.94	73	1036997	109.3329 ug/L	94
42) Carbon Tetrachloride	10.99	117	268652	51.0233 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M137939.D 826_SL.M Tue Mar 22 12:16:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032216\6M137939.D Vial: 2
Acq On : 22 Mar 2016 11:51 Operator: TMB
Sample : WG561879-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 22 12:15:59 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	270138	49.6111 ug/L	100
46)	Benzene	11.23	78	690769	50.5967 ug/L	93
47)	Trichloroethene	12.09	130	175465	54.4029 ug/L	99
48)	Methylcyclohexane	12.18	83	301275	57.7822 ug/L	89
49)	1,2-Dichloropropane	12.34	63	192871	52.5045 ug/L	98
50)	1,4-Dioxane	12.67	88	10443	232.4561 ug/L	92
51)	Bromodichloromethane	12.68	83	246411	51.1163 ug/L	96
52)	Dibromomethane	12.79	93	113530	52.8401 ug/L	97
53)	2-Chloroethyl Vinyl Ether	13.04	63	124000	61.3718 ug/L	98
54)	4-Methyl-2-Pentanone	13.07	58	94691	61.8932 ug/L	95
55)	cis-1,3-Dichloropropene	13.43	75	287415	54.1149 ug/L	97
56)	Dimethyl Disulfide	13.72	79	151523	56.5654 ug/L	97
59)	Toluene	13.91	91	700700	51.5693 ug/L	98
60)	Ethyl Methacrylate	14.04	69	253431	58.2111 ug/L	99
62)	trans-1,3-Dichloropropene	14.12	75	280016	53.5935 ug/L	99
63)	1,1,2-Trichloroethane	14.38	97	151552	53.3633 ug/L	99
64)	2-Hexanone	14.31	43	187160	57.7528 ug/L	96
65)	1,3-Dichloropropane	14.74	76	267045	51.8789 ug/L	99
66)	Tetrachloroethene	14.87	166	181841	54.2510 ug/L	99
67)	Dibromochloromethane	15.17	129	191936	51.9649 ug/L	99
68)	1,2-Dibromoethane	15.48	107	156923	54.0286 ug/L	97
69)	1-Chlorohexane	15.59	91	243934	57.8110 ug/L	90
70)	Chlorobenzene	16.07	112	448548	51.3648 ug/L	70
71)	1,1,1,2-Tetrachloroethane	16.11	131	178963	51.0400 ug/L	98
72)	Ethylbenzene	16.10	106	248178	53.1081 ug/L	98
73)	m-,p-Xylene	16.22	106	604321	105.6897 ug/L	98
74)	o-Xylene	16.88	106	294526	54.6883 ug/L	96
75)	Styrene	16.92	104	505182	55.1128 ug/L	97
76)	Bromoform	17.49	173	138670	53.1727 ug/L	99
77)	Isopropylbenzene	17.38	105	791104	54.6449 ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.65	83	222869	55.5360 ug/L	96
81)	1,2,3-Trichloropropane	17.87	110	67731	55.1236 ug/L	98
82)	trans-1,4-Dichloro-2-Buten	17.93	53	80608	54.4096 ug/L	97
83)	n-Propylbenzene	17.98	91	947531	54.3115 ug/L	99
84)	Bromobenzene	18.13	156	202087	53.2893 ug/L	99
85)	1,3,5-Trimethylbenzene	18.21	105	674347	54.3032 ug/L	97
86)	2-Chlorotoluene	18.30	91	618081	53.0782 ug/L	96
87)	4-Chlorotoluene	18.36	91	557203	52.3318 ug/L	97
88)	a-Methylstyrene	18.69	118	344009	57.0445 ug/L	98
89)	tert-Butylbenzene	18.75	134	142131	54.9201 ug/L	84
90)	1,2,4-Trimethylbenzene	18.82	105	690224	52.8512 ug/L	82
91)	sec-Butylbenzene	19.08	105	860391	54.1020 ug/L	100
92)	p-Isopropyltoluene	19.27	119	724331	55.2063 ug/L	99
93)	1,3-Dichlorobenzene	19.48	146	385449	52.5300 ug/L	98
94)	1,4-Dichlorobenzene	19.64	146	383876	51.3954 ug/L	98
95)	n-Butylbenzene	19.89	91	701171	53.1339 ug/L	100
96)	1,2-Dichlorobenzene	20.23	146	365417	51.7533 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	21.41	75	48679	54.8228 ug/L	94
98)	1,2,4-Trichlorobenzene	22.76	180	267720	52.4486 ug/L	97
99)	Hexachlorobutadiene	22.96	225	154485	52.9210 ug/L	99
100)	Naphthalene	23.20	128	658066	56.0794 ug/L	99
101)	1,2,3-Trichlorobenzene	23.59	180	258135	51.3574 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M137939.D 826_SL.M Tue Mar 22 12:16:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032216\6M137939.D Vial: 2
Acq On : 22 Mar 2016 11:51 Operator: TMB
Sample : WG561879-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 22 12:16 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

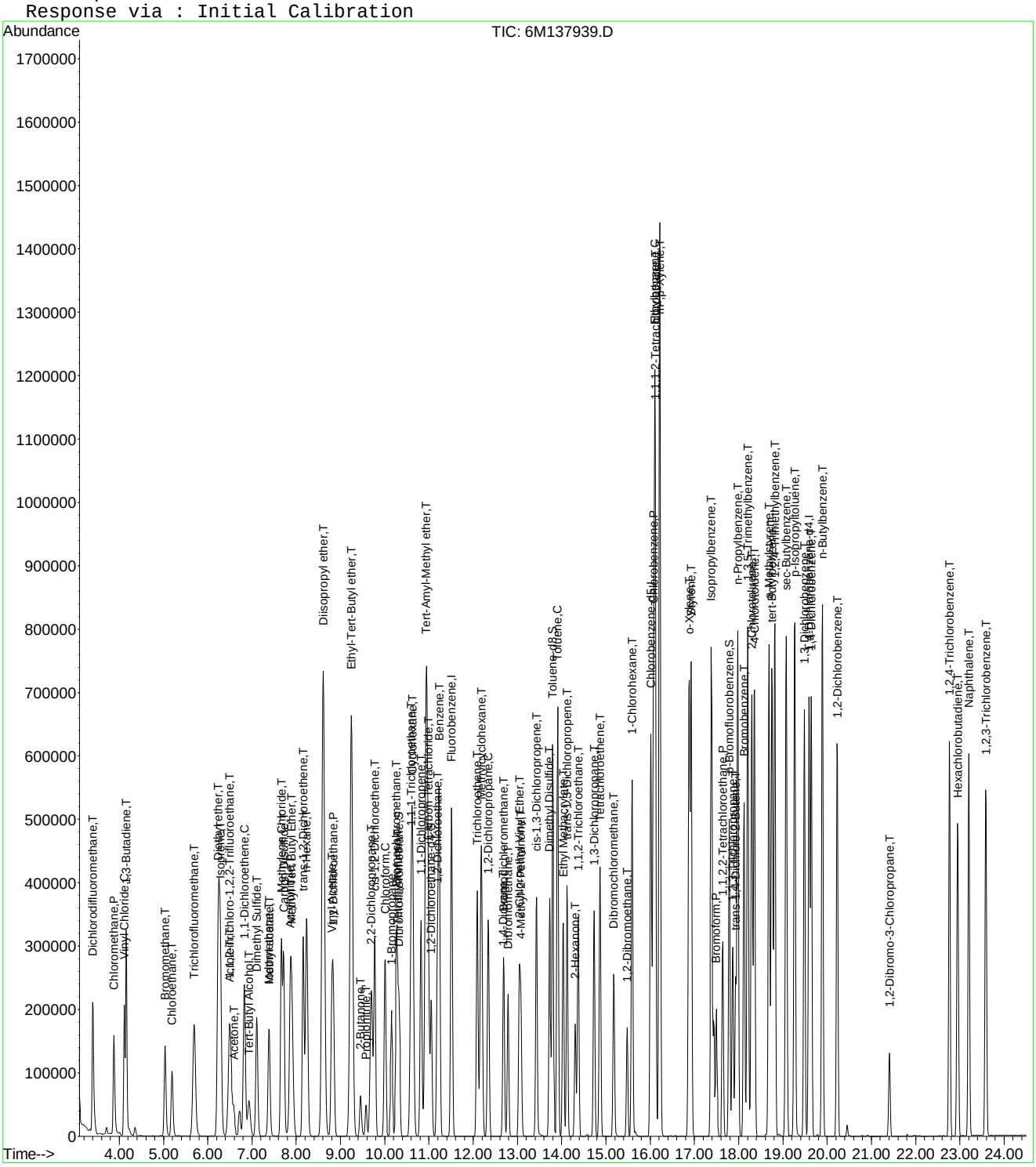

6M137939.D 826_SL.M Tue Mar 22 12:16:00 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\032216\6M137939.D Vial: 2
Acq On : 22 Mar 2016 11:51 Operator: TMB
Sample : WG561879-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	108	0.00
2	T	Dichlorodifluoromethane	0.4592	0.4512	1.7	91	-0.01
3	P	Chloromethane	0.4785	0.3659	23.5	78	0.00
4	C	Vinyl Chloride	0.3852	0.3678	4.5	92	0.00
5	T	1,3-Butadiene	0.3205	0.2501	21.9	78	0.00
6	T	Bromomethane	0.2053	0.2222	-8.2	113	0.00
7	T	Chloroethane	0.2184	0.2311	-5.8	102	0.00
8	T	Trichlorofluoromethane	0.5175	0.5098	1.5	99	0.00
9	T	Diethyl ether	0.2381	0.2561	-7.6	118	0.00
10	T	Isoprene	0.3372	0.3766	-11.7	114	0.00
11	T	Acrolein	0.0452	0.0556	-23.0	144	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2470	0.2751	-11.4	107	0.00
13	T	Acetone	0.1189	0.1264	-6.3	122	0.00
14	C	1,1-Dichloroethene	0.4376	0.4540	-3.7	101	0.00
15	T	Tert-Butyl Alcohol	0.0408	0.0519	-27.0#	140	0.00
16	T	Dimethyl Sulfide	0.2123	0.2275	-7.2	110	0.00
17	T	Iodomethane	0.1531	0.2091	-36.5#	114	0.00
18	T	Methyl acetate	0.3041	0.3468	-14.0	121	0.00
19	T	Methylene Chloride	0.2635	0.2729	-3.6	103	0.00
20	T	Carbon Disulfide	0.8372	0.8893	-6.2	110	0.00
21	T	Acrylonitrile	0.1250	0.1466	-17.3	122	0.00
22	T	Methyl Tert Butyl Ether	0.7525	0.8366	-11.2	108	0.00
23	T	trans-1,2-Dichloroethene	0.2417	0.2617	-8.3	106	0.00
24	T	n-Hexane	0.4389	0.4866	-10.9	113	0.00
25	T	Diisopropyl ether	1.1380	1.1449	-0.6	111	0.00
26	T	Vinyl Acetate	0.5883	0.6552	-11.4	119	0.00
27	P	1,1-Dichloroethane	0.5212	0.5359	-2.8	102	0.00
28	T	Ethyl-Tert-Butyl ether	0.9121	0.9728	-6.7	115	0.00
29	T	2-Butanone	0.1728	0.1976	-14.3	126	0.00
30	T	Propionitrile	0.0478	0.0556	-16.3	126	0.00
31	T	2,2-Dichloropropane	0.4183	0.4420	-5.7	105	0.00
32	T	cis-1,2-Dichloroethene	0.2699	0.2871	-6.4	107	0.00
33	C	Chloroform	0.4867	0.4888	-0.4	101	0.00
34		1-Bromopropane	0.0370	0.0494	-33.6#	132	0.00
35	T	Bromochloromethane	0.1586	0.1733	-9.3	106	0.00
36	T	Tetrahydrofuran	0.1230	0.1348	-9.6	126	0.00
37	S	Dibromofluoromethane	0.2682	0.5148	-91.9#	204#	0.00
38	T	1,1,1-Trichloroethane	0.4299	0.4411	-2.6	100	0.00
39	T	Cyclohexane	0.4875	0.5466	-12.1	111	-0.01
40	T	1,1-Dichloropropene	0.3462	0.3728	-7.7	105	0.00
41	T	Tert-Amyl-Methyl ether	0.7236	0.7911	-9.3	118	0.00
42	T	Carbon Tetrachloride	0.4017	0.4099	-2.0	99	0.00
43	S	1,2-Dichloroethane-d4	0.3483	0.6261	-79.8#	191#	0.00
44		Heptane	0.0000	0.0000	0.0	0#	0.00
45	T	1,2-Dichloroethane	0.4154	0.4122	0.8	99	0.00
46	T	Benzene	1.0416	1.0540	-1.2	105	0.00
47	T	Trichloroethene	0.2461	0.2677	-8.8	108	0.00
48	T	Methylcyclohexane	0.3978	0.4597	-15.6	114	0.00
49	C	1,2-Dichloropropane	0.2803	0.2943	-5.0	104	0.00
50	T	1,4-Dioxane	0.0031	0.0040	-28.4#	140	0.00
51	T	Bromodichloromethane	0.3678	0.3760	-2.2	101	0.00
52	T	Dibromomethane	0.1639	0.1732	-5.7	101	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1541	0.1892	-22.7	124	0.00
54	T	4-Methyl-2-Pentanone	0.1167	0.1445	-23.8	133	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\032216\6M137939.D Vial: 2
Acq On : 22 Mar 2016 11:51 Operator: TMB
Sample : WG561879-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4052	0.4385	-8.2	104	0.00
56	T	Dimethyl Disulfide	0.2044	0.2312	-13.1	111	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	109	0.00
58	S	Toluene-d8	1.1888	2.4104	-102.8#	218#	0.00
59	C	Toluene	1.4144	1.4588	-3.1	106	0.00
60	T	Ethyl Methacrylate	0.4532	0.5276	-16.4	115	0.01
61		Paraldehyde	0.0000	0.0000	0.0	0#	-15.13#
62	T	trans-1,3-Dichloropropene	0.5439	0.5829	-7.2	106	0.00
63	T	1,1,2-Trichloroethane	0.2956	0.3155	-6.7	108	0.01
64	T	2-Hexanone	0.3373	0.3896	-15.5	125	0.00
65	T	1,3-Dichloropropane	0.5358	0.5560	-3.8	105	0.00
66	T	Tetrachloroethene	0.3489	0.3786	-8.5	110	0.00
67	T	Dibromochloromethane	0.3845	0.3996	-3.9	103	0.00
68	T	1,2-Dibromoethane	0.3023	0.3267	-8.1	108	0.00
69	T	1-Chlorohexane	0.4392	0.5078	-15.6	114	0.00
70	P	Chlorobenzene	0.9090	0.9338	-2.7	106	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3650	0.3726	-2.1	104	0.01
72	C	Ethylbenzene	0.4864	0.5167	-6.2	106	0.00
73	T	m-,p-Xylene	0.5952	0.6291	-5.7	108	0.00
74	T	o-Xylene	0.5606	0.6132	-9.4	106	0.00
75	T	Styrene	0.9542	1.0517	-10.2	107	0.00
76	P	Bromoform	0.2715	0.2887	-6.3	106	0.00
77	T	Isopropylbenzene	1.5070	1.6470	-9.3	107	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	108	0.00
79	P	1,1,2,2-Tetrachloroethane	0.7811	0.8676	-11.1	111	0.00
80	S	p-Bromofluorobenzene	0.9184	1.8744	-104.1#	215#	0.00
81	T	1,2,3-Trichloropropane	0.2392	0.2637	-10.2	111	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.2884	0.3138	-8.8	110	0.00
83	T	n-Propylbenzene	3.3956	3.6884	-8.6	105	0.00
84	T	Bromobenzene	0.7381	0.7866	-6.6	105	0.00
85	T	1,3,5-Trimethylbenzene	2.4170	2.6250	-8.6	105	0.00
86	T	2-Chlorotoluene	2.2664	2.4060	-6.2	107	0.00
87	T	4-Chlorotoluene	2.0723	2.1690	-4.7	105	0.01
88	T	a-Methylstyrene	1.1737	1.3391	-14.1	112	0.00
89	T	tert-Butylbenzene	0.5037	0.5533	-9.8	106	-0.01
90	T	1,2,4-Trimethylbenzene	2.5419	2.6868	-5.7	104	0.00
91	T	sec-Butylbenzene	3.0953	3.3492	-8.2	104	0.00
92	T	p-Isopropyltoluene	2.5537	2.8196	-10.4	106	0.01
93	T	1,3-Dichlorobenzene	1.4282	1.5004	-5.1	106	0.00
94	T	1,4-Dichlorobenzene	1.4537	1.4943	-2.8	106	0.00
95	T	n-Butylbenzene	2.5684	2.7294	-6.3	103	0.00
96	T	1,2-Dichlorobenzene	1.3743	1.4224	-3.5	104	0.01
97	T	1,2-Dibromo-3-Chloropropane	0.1728	0.1895	-9.6	112	0.00
98	T	1,2,4-Trichlorobenzene	0.9935	1.0421	-4.9	102	0.00
99	T	Hexachlorobutadiene	0.5682	0.6014	-5.8	102	0.00
100	T	Naphthalene	2.2839	2.5616	-12.2	107	0.00
101	T	1,2,3-Trichlorobenzene	0.9783	1.0048	-2.7	99	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137939.D 826_SL.M Tue Mar 22 12:17:27 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\032216\6M137939.D Vial: 2
Acq On : 22 Mar 2016 11:51 Operator: TMB
Sample : WG561879-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	108	0.00
2	T	Dichlorodifluoromethane	50.0000	49.1323	1.7	91	-0.01
3	P	Chloromethane	50.0000	38.2333	23.5	78	0.00
4	C	Vinyl Chloride	50.0000	47.7487	4.5	92	0.00
5	T	1,3-Butadiene	50.0000	39.0258	21.9	78	0.00
6	T	Bromomethane	50.0000	54.1081	-8.2	113	0.00
7	T	Chloroethane	50.0000	52.9036	-5.8	102	0.00
8	T	Trichlorofluoromethane	50.0000	49.2491	1.5	99	0.00
9	T	Diethyl ether	100.0000	107.5657	-7.6	118	0.00
10	T	Isoprene	50.0000	55.8558	-11.7	114	0.00
11	T	Acrolein	50.0000	61.5008	-23.0	144	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	55.6867	-11.4	107	0.00
13	T	Acetone	50.0000	56.0801	-12.2	122	0.00
14	C	1,1-Dichloroethene	50.0000	51.8735	-3.7	101	0.00
15	T	Tert-Butyl Alcohol	200.0000	254.0901	-27.0#	140	0.00
16	T	Dimethyl Sulfide	50.0000	53.5820	-7.2	110	0.00
17	T	Iodomethane	50.0000	54.4326	-8.9	114	0.00
18	T	Methyl acetate	50.0000	57.0211	-14.0	121	0.00
19	T	Methylene Chloride	50.0000	51.7876	-3.6	103	0.00
20	T	Carbon Disulfide	50.0000	53.1139	-6.2	110	0.00
21	T	Acrylonitrile	50.0000	58.6584	-17.3	122	0.00
22	T	Methyl Tert Butyl Ether	50.0000	55.5825	-11.2	108	0.00
23	T	trans-1,2-Dichloroethene	50.0000	54.1397	-8.3	106	0.00
24	T	n-Hexane	50.0000	55.4287	-10.9	113	0.00
25	T	Diisopropyl ether	100.0000	100.6086	-0.6	111	0.00
26	T	Vinyl Acetate	50.0000	55.6900	-11.4	119	0.00
27	P	1,1-Dichloroethane	50.0000	51.4165	-2.8	102	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	106.6547	-6.7	115	0.00
29	T	2-Butanone	50.0000	57.1691	-14.3	126	0.00
30	T	Propionitrile	100.0000	116.2960	-16.3	126	0.00
31	T	2,2-Dichloropropane	50.0000	52.8258	-5.7	105	0.00
32	T	cis-1,2-Dichloroethene	50.0000	53.1943	-6.4	107	0.00
33	C	Chloroform	50.0000	50.2102	-0.4	101	0.00
34		1-Bromopropane	50.0000	66.7864	-33.6#	132	0.00
35	T	Bromochloromethane	50.0000	54.6503	-9.3	106	0.00
36	T	Tetrahydrofuran	100.0000	116.5422	-16.5	126	0.00
37	S	Dibromofluoromethane	25.0000	47.9868	-91.9#	204	0.00
38	T	1,1,1-Trichloroethane	50.0000	51.3001	-2.6	100	0.00
39	T	Cyclohexane	50.0000	56.0673	-12.1	111	-0.01
40	T	1,1-Dichloropropene	50.0000	53.8340	-7.7	105	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	109.3329	-9.3	118	0.00
42	T	Carbon Tetrachloride	50.0000	51.0233	-2.0	99	0.00
43	S	1,2-Dichloroethane-d4	25.0000	44.9466	-79.8#	191	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	50.0000	49.6111	0.8	99	0.00
46	T	Benzene	50.0000	50.5967	-1.2	105	0.00
47	T	Trichloroethene	50.0000	54.4029	-8.8	108	0.00
48	T	Methylcyclohexane	50.0000	57.7822	-15.6	114	0.00
49	C	1,2-Dichloropropane	50.0000	52.5045	-5.0	104	0.00
50	T	1,4-Dioxane	200.0000	232.4561	-16.2	140	0.00
51	T	Bromodichloromethane	50.0000	51.1163	-2.2	101	0.00
52	T	Dibromomethane	50.0000	52.8401	-5.7	101	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	61.3717	-22.7	124	0.00
54	T	4-Methyl-2-Pentanone	50.0000	61.8932	-23.8	133	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\032216\6M137939.D Vial: 2
Acq On : 22 Mar 2016 11:51 Operator: TMB
Sample : WG561879-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	54.1149	-8.2	104	0.00
56	T	Dimethyl Disulfide	50.0000	56.5654	-13.1	111	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	109	0.00
58	S	Toluene-d8	25.0000	50.6908	-102.8#	218	0.00
59	C	Toluene	50.0000	51.5693	-3.1	106	0.00
60	T	Ethyl Methacrylate	50.0000	58.2111	-16.4	115	0.01
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	50.0000	53.5935	-7.2	106	0.00
63	T	1,1,2-Trichloroethane	50.0000	53.3633	-6.7	108	0.01
64	T	2-Hexanone	50.0000	57.7528	-15.5	125	0.00
65	T	1,3-Dichloropropane	50.0000	51.8789	-3.8	105	0.00
66	T	Tetrachloroethene	50.0000	54.2510	-8.5	110	0.00
67	T	Dibromochloromethane	50.0000	51.9649	-3.9	103	0.00
68	T	1,2-Dibromoethane	50.0000	54.0286	-8.1	108	0.00
69	T	1-Chlorohexane	50.0000	57.8110	-15.6	114	0.00
70	P	Chlorobenzene	50.0000	51.3648	-2.7	106	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	51.0400	-2.1	104	0.01
72	C	Ethylbenzene	50.0000	53.1081	-6.2	106	0.00
73	T	m-,p-Xylene	100.0000	105.6897	-5.7	108	0.00
74	T	o-Xylene	50.0000	54.6882	-9.4	106	0.00
75	T	Styrene	50.0000	55.1127	-10.2	107	0.00
76	P	Bromoform	50.0000	53.1727	-6.3	106	0.00
77	T	Isopropylbenzene	50.0000	54.6449	-9.3	107	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	108	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	55.5360	-11.1	111	0.00
80	S	p-Bromofluorobenzene	25.0000	51.0249	-104.1#	215	0.00
81	T	1,2,3-Trichloropropane	50.0000	55.1236	-10.2	111	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	54.4096	-8.8	110	0.00
83	T	n-Propylbenzene	50.0000	54.3115	-8.6	105	0.00
84	T	Bromobenzene	50.0000	53.2893	-6.6	105	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	54.3032	-8.6	105	0.00
86	T	2-Chlorotoluene	50.0000	53.0782	-6.2	107	0.00
87	T	4-Chlorotoluene	50.0000	52.3319	-4.7	105	0.01
88	T	a-Methylstyrene	50.0000	57.0445	-14.1	112	0.00
89	T	tert-Butylbenzene	50.0000	54.9201	-9.8	106	-0.01
90	T	1,2,4-Trimethylbenzene	50.0000	52.8512	-5.7	104	0.00
91	T	sec-Butylbenzene	50.0000	54.1020	-8.2	104	0.00
92	T	p-Isopropyltoluene	50.0000	55.2063	-10.4	106	0.01
93	T	1,3-Dichlorobenzene	50.0000	52.5300	-5.1	106	0.00
94	T	1,4-Dichlorobenzene	50.0000	51.3954	-2.8	106	0.00
95	T	n-Butylbenzene	50.0000	53.1339	-6.3	103	0.00
96	T	1,2-Dichlorobenzene	50.0000	51.7533	-3.5	104	0.01
97	T	1,2-Dibromo-3-Chloropropane	50.0000	54.8228	-9.6	112	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	52.4486	-4.9	102	0.00
99	T	Hexachlorobutadiene	50.0000	52.9210	-5.8	102	0.00
100	T	Naphthalene	50.0000	56.0794	-12.2	107	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	51.3573	-2.7	99	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137939.D 826_SL.M Tue Mar 22 12:17:29 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032316\6M137965.D Vial: 3
Acq On : 23 Mar 2016 12:47 Operator: TMB
Sample : WG562074-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 13:12:21 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	604908	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	444556	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	238804	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	155374	47.8818 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.76%		
43) 1,2-Dichloroethane-d4	11.06	65	187452	44.4921 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 88.98%		
58) Toluene-d8	13.80	98	531186	50.2564 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 100.52%		
80) p-Bromofluorobenzene	17.79	95	226957	51.7419 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 103.48%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	264728	47.6516 ug/L	98
3) Chloromethane	3.88	50	223801	38.6582 ug/L	98
4) Vinyl Chloride	4.12	62	213539	45.8270 ug/L	97
5) 1,3-Butadiene	4.17	54	149974	38.6840 ug/L	94
6) Bromomethane	5.03	94	129774	52.2453 ug/L	99
7) Chloroethane	5.20	64	135902	51.4365 ug/L	100
8) Trichlorofluoromethane	5.70	101	302350	48.2893 ug/L	99
9) Diethyl ether	6.24	59	297388	103.2463 ug/L	95
10) Isoprene	6.28	67	224828	55.1195 ug/L	92
11) Acrolein	6.48	56	32711	59.7996 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	161466	54.0278 ug/L	96
13) Acetone	6.60	43	76723	56.2790 ug/L	97
14) 1,1-Dichloroethene	6.84	61	271533	51.2940 ug/L	94
15) Tert-Butyl Alcohol	6.94	59	122688	248.3842 ug/L	97
16) Dimethyl Sulfide	7.12	62	138871	54.0711 ug/L	99
17) Iodomethane	7.38	142	129251	55.5182 ug/L	97
18) Methyl acetate	7.39	43	211719	57.5520 ug/L	97
19) Methylene Chloride	7.67	84	161480	50.6514 ug/L	86
20) Carbon Disulfide	7.72	76	537374	53.0562 ug/L	98
21) Acrylonitrile	7.87	53	86624	57.2945 ug/L	98
22) Methyl Tert Butyl Ether	7.89	73	501919	55.1294 ug/L	93
23) trans-1,2-Dichloroethene	8.16	96	154240	52.7427 ug/L	90
24) n-Hexane	8.24	57	295089	55.5685 ug/L	98
25) Diisopropyl ether	8.61	45	1324423	96.1961 ug/L	95
26) Vinyl Acetate	8.80	43	381473	53.6005 ug/L	99
27) 1,1-Dichloroethane	8.84	63	318133	50.4580 ug/L	98
28) Ethyl-Tert-Butyl ether	9.25	59	1137230	103.0545 ug/L	97
29) 2-Butanone	9.46	43	114514	54.7671 ug/L	98
30) Propionitrile	9.58	54	66145	114.3005 ug/L	98
31) 2,2-Dichloropropane	9.69	77	264942	52.3514 ug/L	92
32) cis-1,2-Dichloroethene	9.77	96	171887	52.6484 ug/L	93
33) Chloroform	10.01	83	289995	49.2497 ug/L	98
34) 1-Bromopropane	10.16	122	29541	65.9971 ug/L	96
35) Bromochloromethane	10.27	130	102654	53.5131 ug/L	99
36) Tetrahydrofuran	10.29	42	158553	113.2808 ug/L	98
38) 1,1,1-Trichloroethane	10.60	97	264018	50.7625 ug/L	98
39) Cyclohexane	10.64	56	335587	56.9013 ug/L	88
40) 1,1-Dichloropropene	10.82	75	221339	52.8443 ug/L	97
41) Tert-Amyl-Methyl ether	10.95	73	937278	107.0658 ug/L	94
42) Carbon Tetrachloride	10.99	117	246653	50.7545 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M137965.D 826_SL.M Wed Mar 23 13:12:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032316\6M137965.D Vial: 3
Acq On : 23 Mar 2016 12:47 Operator: TMB
Sample : WG562074-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 13:12:21 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	245138	48.7768	ug/L	99
46)	Benzene	11.23	78	625201	49.6156	ug/L	93
47)	Trichloroethene	12.09	130	158447	53.2261	ug/L	98
48)	Methylcyclohexane	12.18	83	281797	58.5567	ug/L	90
49)	1,2-Dichloropropane	12.34	63	177972	52.4917	ug/L	98
50)	1,4-Dioxane	12.68	88	8976	218.5934	ug/L	87
51)	Bromodichloromethane	12.68	83	226703	50.9525	ug/L	96
52)	Dibromomethane	12.79	93	102748	51.8126	ug/L	99
53)	2-Chloroethyl Vinyl Ether	13.04	63	109067	58.4857	ug/L	99
54)	4-Methyl-2-Pentanone	13.07	58	83870	59.3950	ug/L	95
55)	cis-1,3-Dichloropropene	13.43	75	265529	54.1662	ug/L	98
56)	Dimethyl Disulfide	13.72	79	144370	58.3926	ug/L	97
59)	Toluene	13.91	91	644211	51.2282	ug/L	99
60)	Ethyl Methacrylate	14.04	69	242866	60.2747	ug/L	98
62)	trans-1,3-Dichloropropene	14.12	75	256369	53.0173	ug/L	100
63)	1,1,2-Trichloroethane	14.38	97	138333	52.6295	ug/L	99
64)	2-Hexanone	14.31	43	169409	56.4832	ug/L	96
65)	1,3-Dichloropropane	14.74	76	247046	51.8569	ug/L	99
66)	Tetrachloroethene	14.87	166	167778	54.0846	ug/L	97
67)	Dibromochloromethane	15.17	129	178502	52.2178	ug/L	99
68)	1,2-Dibromoethane	15.48	107	146067	54.3390	ug/L	98
69)	1-Chlorohexane	15.59	91	230162	58.9379	ug/L	90
70)	Chlorobenzene	16.07	112	415312	51.3870	ug/L	72
71)	1,1,1,2-Tetrachloroethane	16.11	131	165013	50.8497	ug/L	98
72)	Ethylbenzene	16.10	106	231239	53.4664	ug/L	100
73)	m-,p-Xylene	16.22	106	556389	105.1395	ug/L	97
74)	o-Xylene	16.88	106	275903	55.3540	ug/L	97
75)	Styrene	16.92	104	469288	55.3179	ug/L	97
76)	Bromoform	17.49	173	126342	52.3451	ug/L	99
77)	Isopropylbenzene	17.38	105	730839	54.5456	ug/L	99
79)	1,1,2,2-Tetrachloroethane	17.65	83	207652	55.6641	ug/L	95
81)	1,2,3-Trichloropropane	17.87	110	64069	56.0935	ug/L	98
82)	trans-1,4-Dichloro-2-Buten	17.93	53	78029	56.6588	ug/L	98
83)	n-Propylbenzene	17.98	91	882270	54.4019	ug/L	99
84)	Bromobenzene	18.13	156	188552	53.4868	ug/L	99
85)	1,3,5-Trimethylbenzene	18.21	105	636299	55.1211	ug/L	97
86)	2-Chlorotoluene	18.30	91	570720	52.7240	ug/L	96
87)	4-Chlorotoluene	18.36	91	525422	53.0854	ug/L	97
88)	a-Methylstyrene	18.69	118	331132	59.0689	ug/L	98
89)	tert-Butylbenzene	18.76	134	131427	54.6313	ug/L	86
90)	1,2,4-Trimethylbenzene	18.82	105	659733	54.3435	ug/L	82
91)	sec-Butylbenzene	19.08	105	811614	54.9011	ug/L	99
92)	p-Isopropyltoluene	19.27	119	684922	56.1574	ug/L	99
93)	1,3-Dichlorobenzene	19.48	146	362995	53.2175	ug/L	97
94)	1,4-Dichlorobenzene	19.64	146	362568	52.2200	ug/L	98
95)	n-Butylbenzene	19.89	91	665585	54.2582	ug/L	99
96)	1,2-Dichlorobenzene	20.23	146	346877	52.8492	ug/L	97
97)	1,2-Dibromo-3-Chloropropan	21.41	75	47504	57.5525	ug/L	90
98)	1,2,4-Trichlorobenzene	22.76	180	263930	55.6232	ug/L	98
99)	Hexachlorobutadiene	22.96	225	148742	54.8138	ug/L	100
100)	Naphthalene	23.20	128	658289	60.3482	ug/L	100
101)	1,2,3-Trichlorobenzene	23.59	180	256338	54.8634	ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032316\6M137965.D Vial: 3
Acq On : 23 Mar 2016 12:47 Operator: TMB
Sample : WG562074-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 13:12 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

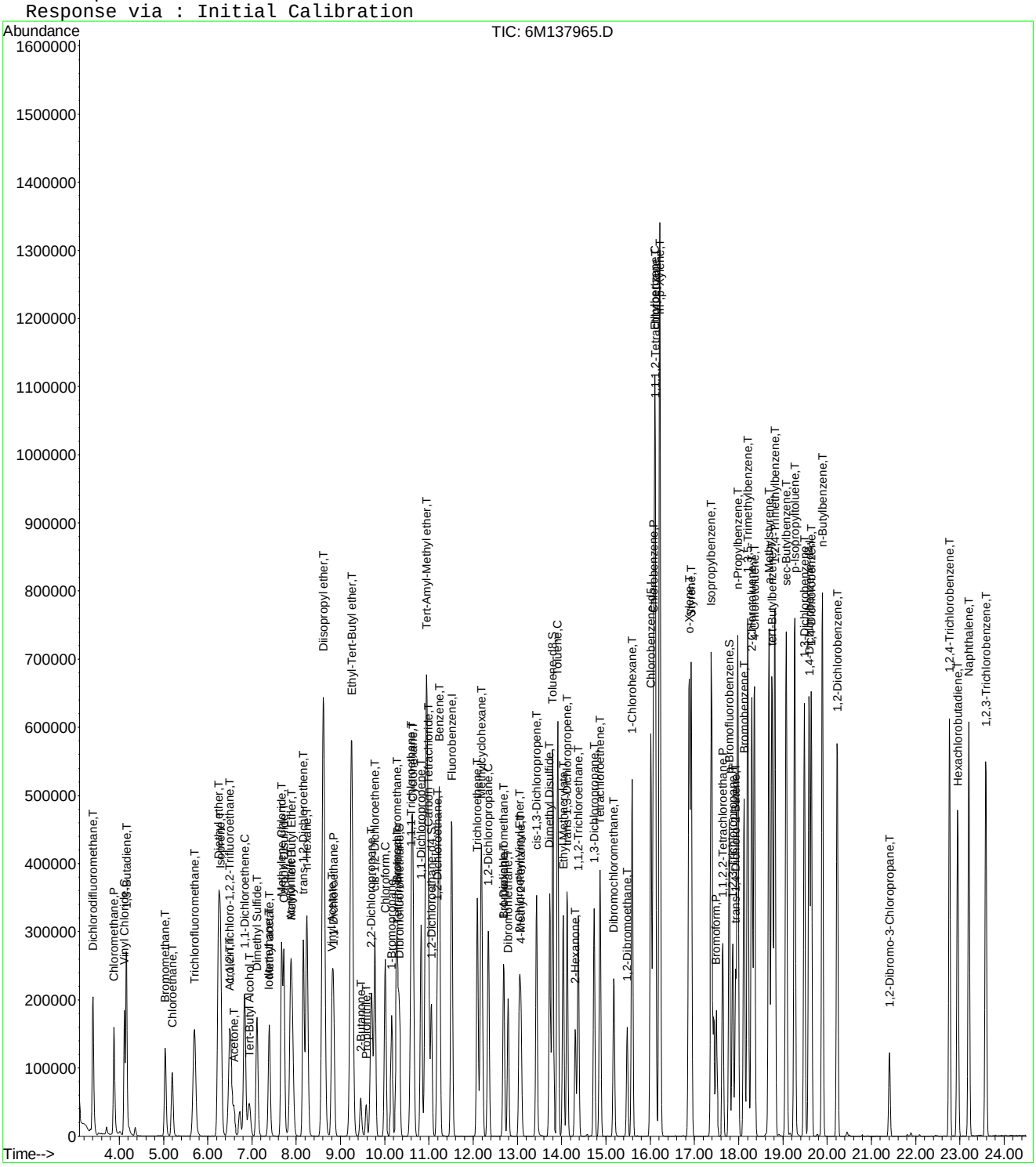

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\032316\6M137965.D Vial: 3
Acq On : 23 Mar 2016 12:47 Operator: TMB
Sample : WG562074-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	0.4592	0.4376	4.7	81	0.00
3	P	Chloromethane	0.4785	0.3700	22.7	73	0.00
4	C	Vinyl Chloride	0.3852	0.3530	8.3	82	0.00
5	T	1,3-Butadiene	0.3205	0.2479	22.6	72	0.00
6	T	Bromomethane	0.2053	0.2145	-4.5	100	0.00
7	T	Chloroethane	0.2184	0.2247	-2.9	92	0.00
8	T	Trichlorofluoromethane	0.5175	0.4998	3.4	89	0.00
9	T	Diethyl ether	0.2381	0.2458	-3.2	105	0.00
10	T	Isoprene	0.3372	0.3717	-10.2	104	0.00
11	T	Acrolein	0.0452	0.0541	-19.6	129	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2470	0.2669	-8.1	96	-0.01
13	T	Acetone	0.1189	0.1268	-6.6	113	0.01
14	C	1,1-Dichloroethene	0.4376	0.4489	-2.6	92	0.00
15	T	Tert-Butyl Alcohol	0.0408	0.0507	-24.2	126	0.01
16	T	Dimethyl Sulfide	0.2123	0.2296	-8.1	102	0.00
17	T	Iodomethane	0.1531	0.2137	-39.5#	108	0.00
18	T	Methyl acetate	0.3041	0.3500	-15.1	113	0.00
19	T	Methylene Chloride	0.2635	0.2670	-1.3	93	0.00
20	T	Carbon Disulfide	0.8372	0.8884	-6.1	101	0.00
21	T	Acrylonitrile	0.1250	0.1432	-14.6	110	0.01
22	T	Methyl Tert Butyl Ether	0.7525	0.8297	-10.3	99	0.00
23	T	trans-1,2-Dichloroethene	0.2417	0.2550	-5.5	96	0.00
24	T	n-Hexane	0.4389	0.4878	-11.1	104	0.00
25	T	Diisopropyl ether	1.1380	1.0947	3.8	98	0.00
26	T	Vinyl Acetate	0.5883	0.6306	-7.2	105	0.00
27	P	1,1-Dichloroethane	0.5212	0.5259	-0.9	92	0.00
28	T	Ethyl-Tert-Butyl ether	0.9121	0.9400	-3.1	103	0.01
29	T	2-Butanone	0.1728	0.1893	-9.5	111	0.01
30	T	Propionitrile	0.0478	0.0547	-14.3	114	0.00
31	T	2,2-Dichloropropane	0.4183	0.4380	-4.7	96	0.00
32	T	cis-1,2-Dichloroethene	0.2699	0.2842	-5.3	97	0.00
33	C	Chloroform	0.4867	0.4794	1.5	92	0.00
34		1-Bromopropane	0.0370	0.0488	-32.0#	120	0.00
35	T	Bromochloromethane	0.1586	0.1697	-7.0	96	0.01
36	T	Tetrahydrofuran	0.1230	0.1311	-6.6	113	0.00
37	S	Dibromofluoromethane	0.2682	0.5137	-91.5#	188#	0.01
38	T	1,1,1-Trichloroethane	0.4299	0.4365	-1.5	92	0.00
39	T	Cyclohexane	0.4875	0.5548	-13.8	104	0.00
40	T	1,1-Dichloropropene	0.3462	0.3659	-5.7	95	0.00
41	T	Tert-Amyl-Methyl ether	0.7236	0.7747	-7.1	107	0.01
42	T	Carbon Tetrachloride	0.4017	0.4078	-1.5	91	0.00
43	S	1,2-Dichloroethane-d4	0.3483	0.6198	-78.0#	175#	0.00
44		Heptane	0.0000	0.0000	0.0	0#	0.00
45	T	1,2-Dichloroethane	0.4154	0.4053	2.4	90	0.00
46	T	Benzene	1.0416	1.0336	0.8	95	0.00
47	T	Trichloroethene	0.2461	0.2619	-6.5	97	0.00
48	T	Methylcyclohexane	0.3978	0.4658	-17.1	107	0.00
49	C	1,2-Dichloropropane	0.2803	0.2942	-5.0	96	0.00
50	T	1,4-Dioxane	0.0031	0.0037	-19.7	120	0.00
51	T	Bromodichloromethane	0.3678	0.3748	-1.9	93	0.00
52	T	Dibromomethane	0.1639	0.1699	-3.6	92	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1541	0.1803	-17.0	109	0.00
54	T	4-Methyl-2-Pentanone	0.1167	0.1387	-18.8	118	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\032316\6M137965.D Vial: 3
Acq On : 23 Mar 2016 12:47 Operator: TMB
Sample : WG562074-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4052	0.4390	-8.3	96	0.00
56	T	Dimethyl Disulfide	0.2044	0.2387	-16.8	105	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	101	0.00
58	S	Toluene-d8	1.1888	2.3897	-101.0#	200#	0.00
59	C	Toluene	1.4144	1.4491	-2.5	97	0.00
60	T	Ethyl Methacrylate	0.4532	0.5463	-20.6	110	0.01
61		Paraldehyde	0.0000	0.0000	0.0	0#	-15.13#
62	T	trans-1,3-Dichloropropene	0.5439	0.5767	-6.0	97	0.00
63	T	1,1,2-Trichloroethane	0.2956	0.3112	-5.3	98	0.00
64	T	2-Hexanone	0.3373	0.3811	-13.0	113	0.00
65	T	1,3-Dichloropropane	0.5358	0.5557	-3.7	97	0.00
66	T	Tetrachloroethene	0.3489	0.3774	-8.2	101	0.00
67	T	Dibromochloromethane	0.3845	0.4015	-4.4	95	0.00
68	T	1,2-Dibromoethane	0.3023	0.3286	-8.7	100	0.00
69	T	1-Chlorohexane	0.4392	0.5177	-17.9	108	0.00
70	P	Chlorobenzene	0.9090	0.9342	-2.8	98	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3650	0.3712	-1.7	95	0.00
72	C	Ethylbenzene	0.4864	0.5202	-6.9	99	0.00
73	T	m-,p-Xylene	0.5952	0.6258	-5.1	99	0.00
74	T	o-Xylene	0.5606	0.6206	-10.7	99	0.00
75	T	Styrene	0.9542	1.0556	-10.6	100	0.00
76	P	Bromoform	0.2715	0.2842	-4.7	96	0.00
77	T	Isopropylbenzene	1.5070	1.6440	-9.1	99	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	101	0.00
79	P	1,1,2,2-Tetrachloroethane	0.7811	0.8696	-11.3	104	0.00
80	S	p-Bromofluorobenzene	0.9184	1.9008	-107.0#	203#	0.00
81	T	1,2,3-Trichloropropane	0.2392	0.2683	-12.2	105	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.2884	0.3267	-13.3	107	0.00
83	T	n-Propylbenzene	3.3956	3.6945	-8.8	98	0.00
84	T	Bromobenzene	0.7381	0.7896	-7.0	98	0.00
85	T	1,3,5-Trimethylbenzene	2.4170	2.6645	-10.2	99	0.00
86	T	2-Chlorotoluene	2.2664	2.3899	-5.4	99	0.00
87	T	4-Chlorotoluene	2.0723	2.2002	-6.2	99	0.01
88	T	a-Methylstyrene	1.1737	1.3866	-18.1	108	0.00
89	T	tert-Butylbenzene	0.5037	0.5504	-9.3	98	0.00
90	T	1,2,4-Trimethylbenzene	2.5419	2.7626	-8.7	99	0.00
91	T	sec-Butylbenzene	3.0953	3.3987	-9.8	98	0.00
92	T	p-Isopropyltoluene	2.5537	2.8681	-12.3	100	0.01
93	T	1,3-Dichlorobenzene	1.4282	1.5200	-6.4	99	0.00
94	T	1,4-Dichlorobenzene	1.4537	1.5183	-4.4	100	0.00
95	T	n-Butylbenzene	2.5684	2.7872	-8.5	98	0.00
96	T	1,2-Dichlorobenzene	1.3743	1.4526	-5.7	99	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1728	0.1989	-15.1	109	0.00
98	T	1,2,4-Trichlorobenzene	0.9935	1.1052	-11.2	101	0.00
99	T	Hexachlorobutadiene	0.5682	0.6229	-9.6	99	0.00
100	T	Naphthalene	2.2839	2.7566	-20.7	107	0.00
101	T	1,2,3-Trichlorobenzene	0.9783	1.0734	-9.7	99	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137965.D 826_SL.M Wed Mar 23 13:13:07 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\032316\6M137965.D Vial: 3
Acq On : 23 Mar 2016 12:47 Operator: TMB
Sample : WG562074-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	50.0000	47.6516	4.7	81	0.00
3	P	Chloromethane	50.0000	38.6582	22.7	73	0.00
4	C	Vinyl Chloride	50.0000	45.8269	8.3	82	0.00
5	T	1,3-Butadiene	50.0000	38.6840	22.6	72	0.00
6	T	Bromomethane	50.0000	52.2452	-4.5	100	0.00
7	T	Chloroethane	50.0000	51.4365	-2.9	92	0.00
8	T	Trichlorofluoromethane	50.0000	48.2893	3.4	89	0.00
9	T	Diethyl ether	100.0000	103.2463	-3.2	105	0.00
10	T	Isoprene	50.0000	55.1195	-10.2	104	0.00
11	T	Acrolein	50.0000	59.7996	-19.6	129	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	54.0278	-8.1	96	-0.01
13	T	Acetone	50.0000	56.2790	-12.6	113	0.01
14	C	1,1-Dichloroethene	50.0000	51.2940	-2.6	92	0.00
15	T	Tert-Butyl Alcohol	200.0000	248.3842	-24.2	126	0.01
16	T	Dimethyl Sulfide	50.0000	54.0711	-8.1	102	0.00
17	T	Iodomethane	50.0000	55.5182	-11.0	108	0.00
18	T	Methyl acetate	50.0000	57.5520	-15.1	113	0.00
19	T	Methylene Chloride	50.0000	50.6514	-1.3	93	0.00
20	T	Carbon Disulfide	50.0000	53.0562	-6.1	101	0.00
21	T	Acrylonitrile	50.0000	57.2946	-14.6	110	0.01
22	T	Methyl Tert Butyl Ether	50.0000	55.1294	-10.3	99	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.7427	-5.5	96	0.00
24	T	n-Hexane	50.0000	55.5685	-11.1	104	0.00
25	T	Diisopropyl ether	100.0000	96.1961	3.8	98	0.00
26	T	Vinyl Acetate	50.0000	53.6005	-7.2	105	0.00
27	P	1,1-Dichloroethane	50.0000	50.4580	-0.9	92	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	103.0545	-3.1	103	0.01
29	T	2-Butanone	50.0000	54.7671	-9.5	111	0.01
30	T	Propionitrile	100.0000	114.3005	-14.3	114	0.00
31	T	2,2-Dichloropropane	50.0000	52.3514	-4.7	96	0.00
32	T	cis-1,2-Dichloroethene	50.0000	52.6484	-5.3	97	0.00
33	C	Chloroform	50.0000	49.2497	1.5	92	0.00
34		1-Bromopropane	50.0000	65.9971	-32.0#	120	0.00
35	T	Bromochloromethane	50.0000	53.5131	-7.0	96	0.01
36	T	Tetrahydrofuran	100.0000	113.2808	-13.3	113	0.00
37	S	Dibromofluoromethane	25.0000	47.8819	-91.5#	188	0.01
38	T	1,1,1-Trichloroethane	50.0000	50.7625	-1.5	92	0.00
39	T	Cyclohexane	50.0000	56.9013	-13.8	104	0.00
40	T	1,1-Dichloropropene	50.0000	52.8443	-5.7	95	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	107.0658	-7.1	107	0.01
42	T	Carbon Tetrachloride	50.0000	50.7545	-1.5	91	0.00
43	S	1,2-Dichloroethane-d4	25.0000	44.4921	-78.0#	175	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	50.0000	48.7768	2.4	90	0.00
46	T	Benzene	50.0000	49.6156	0.8	95	0.00
47	T	Trichloroethene	50.0000	53.2261	-6.5	97	0.00
48	T	Methylcyclohexane	50.0000	58.5567	-17.1	107	0.00
49	C	1,2-Dichloropropane	50.0000	52.4917	-5.0	96	0.00
50	T	1,4-Dioxane	200.0000	218.5934	-9.3	120	0.00
51	T	Bromodichloromethane	50.0000	50.9525	-1.9	93	0.00
52	T	Dibromomethane	50.0000	51.8126	-3.6	92	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	58.4857	-17.0	109	0.00
54	T	4-Methyl-2-Pentanone	50.0000	59.3950	-18.8	118	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\032316\6M137965.D Vial: 3
Acq On : 23 Mar 2016 12:47 Operator: TMB
Sample : WG562074-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	54.1662	-8.3	96	0.00
56	T	Dimethyl Disulfide	50.0000	58.3926	-16.8	105	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	101	0.00
58	S	Toluene-d8	25.0000	50.2564	-101.0#	200	0.00
59	C	Toluene	50.0000	51.2282	-2.5	97	0.00
60	T	Ethyl Methacrylate	50.0000	60.2747	-20.5	110	0.01
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	50.0000	53.0173	-6.0	97	0.00
63	T	1,1,2-Trichloroethane	50.0000	52.6295	-5.3	98	0.00
64	T	2-Hexanone	50.0000	56.4832	-13.0	113	0.00
65	T	1,3-Dichloropropane	50.0000	51.8569	-3.7	97	0.00
66	T	Tetrachloroethene	50.0000	54.0846	-8.2	101	0.00
67	T	Dibromochloromethane	50.0000	52.2178	-4.4	95	0.00
68	T	1,2-Dibromoethane	50.0000	54.3390	-8.7	100	0.00
69	T	1-Chlorohexane	50.0000	58.9379	-17.9	108	0.00
70	P	Chlorobenzene	50.0000	51.3870	-2.8	98	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	50.8497	-1.7	95	0.00
72	C	Ethylbenzene	50.0000	53.4664	-6.9	99	0.00
73	T	m-,p-Xylene	100.0000	105.1395	-5.1	99	0.00
74	T	o-Xylene	50.0000	55.3540	-10.7	99	0.00
75	T	Styrene	50.0000	55.3179	-10.6	100	0.00
76	P	Bromoform	50.0000	52.3451	-4.7	96	0.00
77	T	Isopropylbenzene	50.0000	54.5456	-9.1	99	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	101	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	55.6641	-11.3	104	0.00
80	S	p-Bromofluorobenzene	25.0000	51.7419	-107.0#	203	0.00
81	T	1,2,3-Trichloropropane	50.0000	56.0935	-12.2	105	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	56.6588	-13.3	107	0.00
83	T	n-Propylbenzene	50.0000	54.4019	-8.8	98	0.00
84	T	Bromobenzene	50.0000	53.4868	-7.0	98	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	55.1211	-10.2	99	0.00
86	T	2-Chlorotoluene	50.0000	52.7240	-5.4	99	0.00
87	T	4-Chlorotoluene	50.0000	53.0854	-6.2	99	0.01
88	T	a-Methylstyrene	50.0000	59.0689	-18.1	108	0.00
89	T	tert-Butylbenzene	50.0000	54.6313	-9.3	98	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	54.3435	-8.7	99	0.00
91	T	sec-Butylbenzene	50.0000	54.9012	-9.8	98	0.00
92	T	p-Isopropyltoluene	50.0000	56.1574	-12.3	100	0.01
93	T	1,3-Dichlorobenzene	50.0000	53.2175	-6.4	99	0.00
94	T	1,4-Dichlorobenzene	50.0000	52.2200	-4.4	100	0.00
95	T	n-Butylbenzene	50.0000	54.2582	-8.5	98	0.00
96	T	1,2-Dichlorobenzene	50.0000	52.8492	-5.7	99	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	57.5525	-15.1	109	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	55.6232	-11.2	101	0.00
99	T	Hexachlorobutadiene	50.0000	54.8138	-9.6	99	0.00
100	T	Naphthalene	50.0000	60.3482	-20.7	107	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	54.8634	-9.7	99	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137965.D 826_SL.M Wed Mar 23 13:13:08 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\1\DATA\022616\6M137522.D          Vial: 1
Acq On    : 26 Feb 2016  13:16                       Operator: TMB
Sample    : WG558920-01 50ng BFB STD 8260            Inst    : HPMS6
Misc      : 7,1 STD74606                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP: OVL MSV01
```

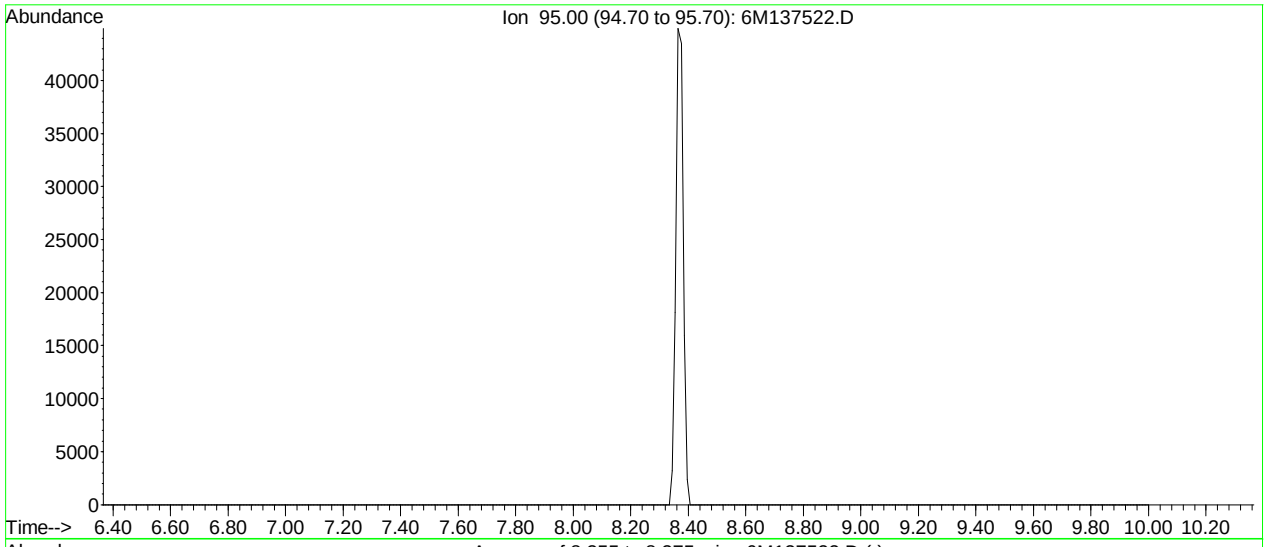

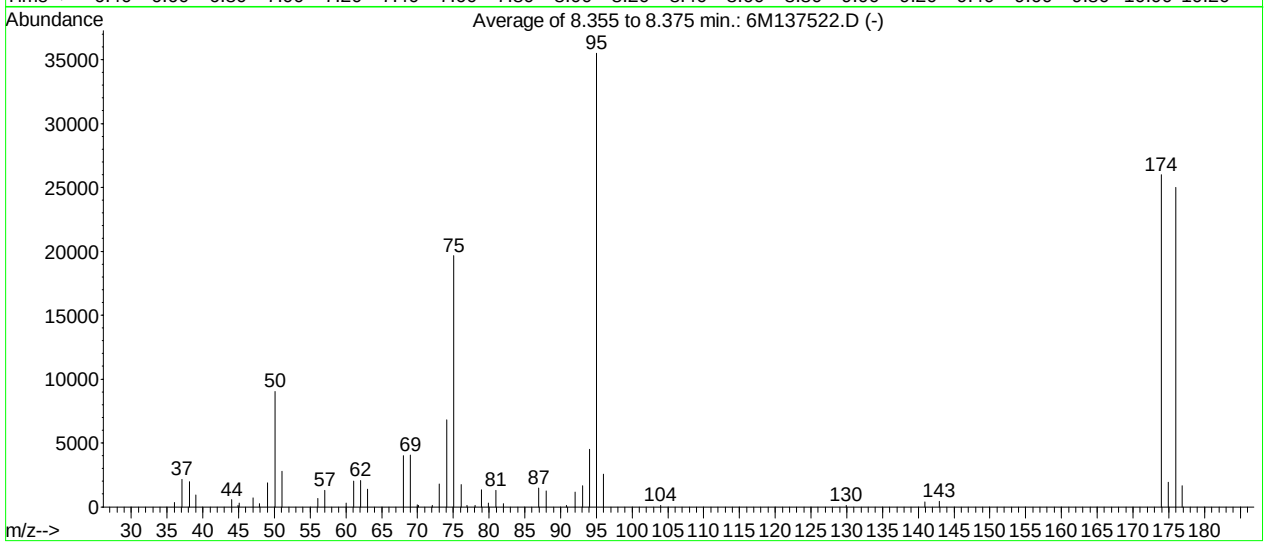

AutoFind: Scans 320, 321, 322; Background Corrected with Scan 316

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	25.4	9030	PASS
75	95	30	60	55.4	19666	PASS
95	95	100	100	100.0	35512	PASS
96	95	5	9	7.3	2576	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	73.2	26011	PASS
175	174	5	9	7.4	1914	PASS
176	174	95	101	96.1	24992	PASS
177	176	5	9	6.6	1660	PASS

6M137522.D BFB.M Fri Feb 26 13:26:46 2016

BFB

Data File : C:\MSDCHEM\1\DATA\032216\6M137938.D Vial: 1
Acq On : 22 Mar 2016 11:26 Operator: TMB
Sample : WG561879-01 50ng BFB STD 8260 Inst : HPMS6
Misc : 7,1 STD75004 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title : SOP: OVL MSV01

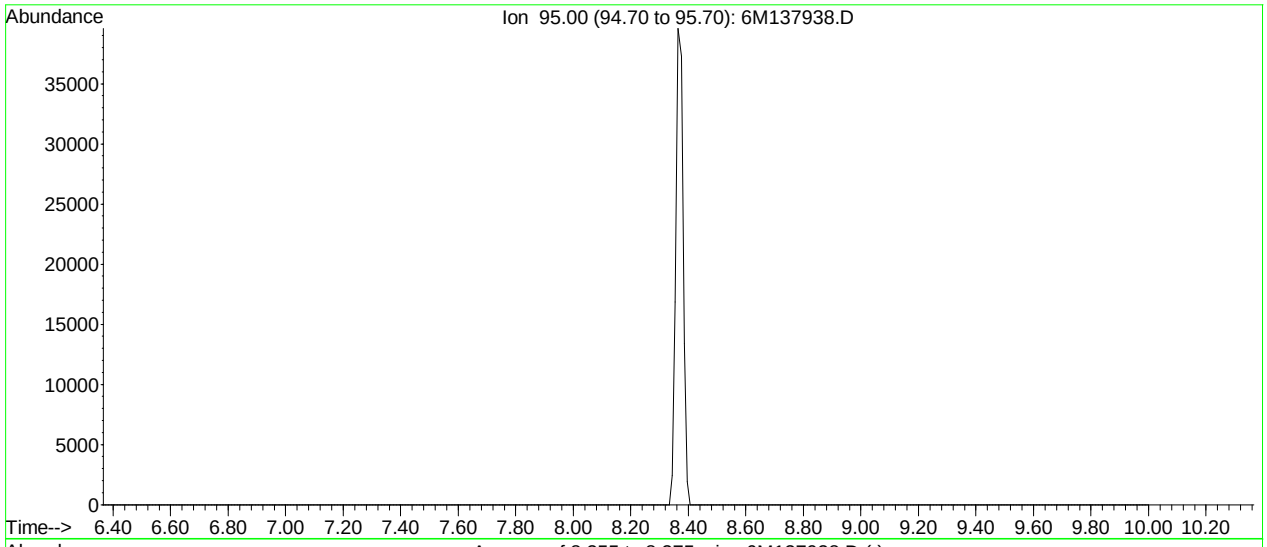

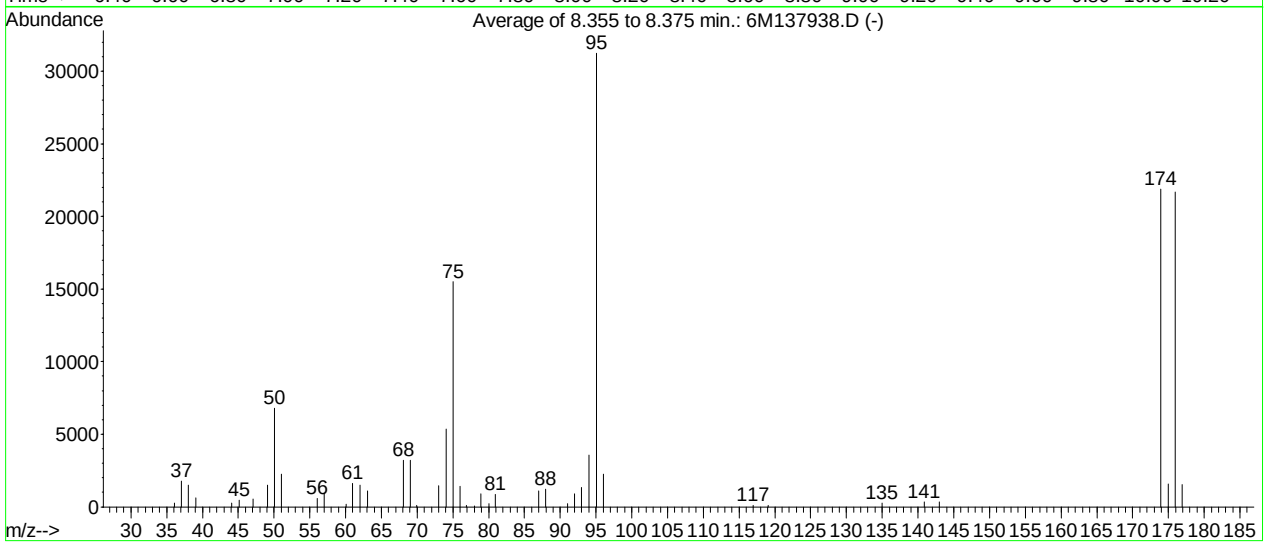

AutoFind: Scans 320, 321, 322; Background Corrected with Scan 316

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.8	6808	PASS
75	95	30	60	49.6	15508	PASS
95	95	100	100	100.0	31245	PASS
96	95	5	9	7.2	2265	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	70.0	21873	PASS
175	174	5	9	7.3	1591	PASS
176	174	95	101	99.0	21662	PASS
177	176	5	9	7.1	1548	PASS

6M137938.D BFB.M Tue Mar 22 11:50:13 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\032316\6M137963.D          Vial: 1
Acq On    : 23 Mar 2016  11:50                       Operator: TMB
Sample    : WG562074-01 50ng BFB STD 8260            Inst    : HPMS6
Misc      : 7,1 STD75004                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP: OVL MSV01
```

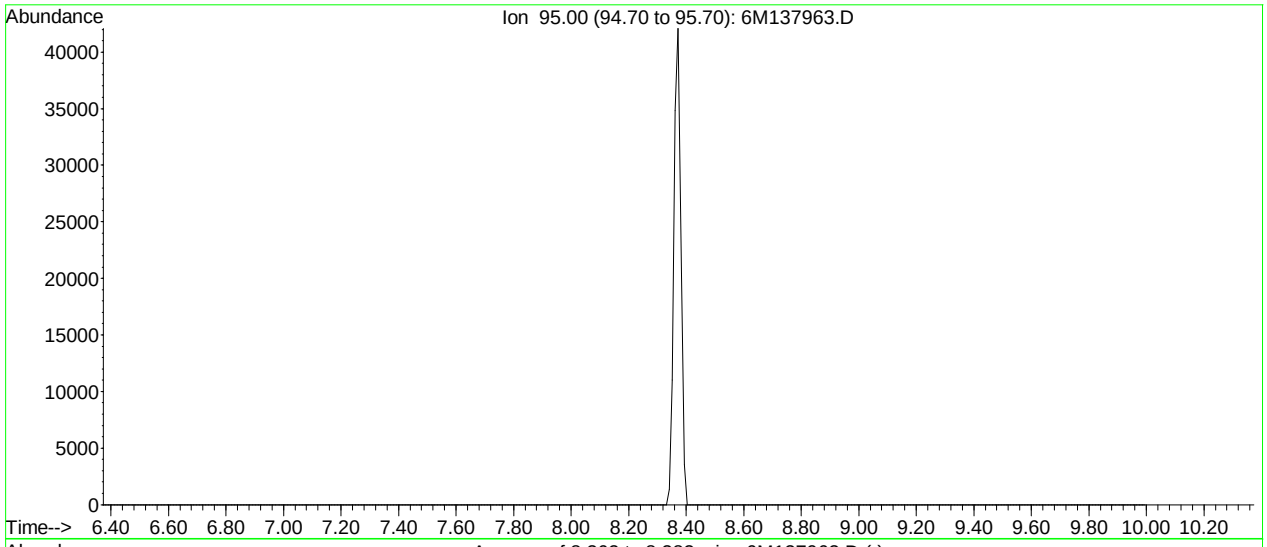

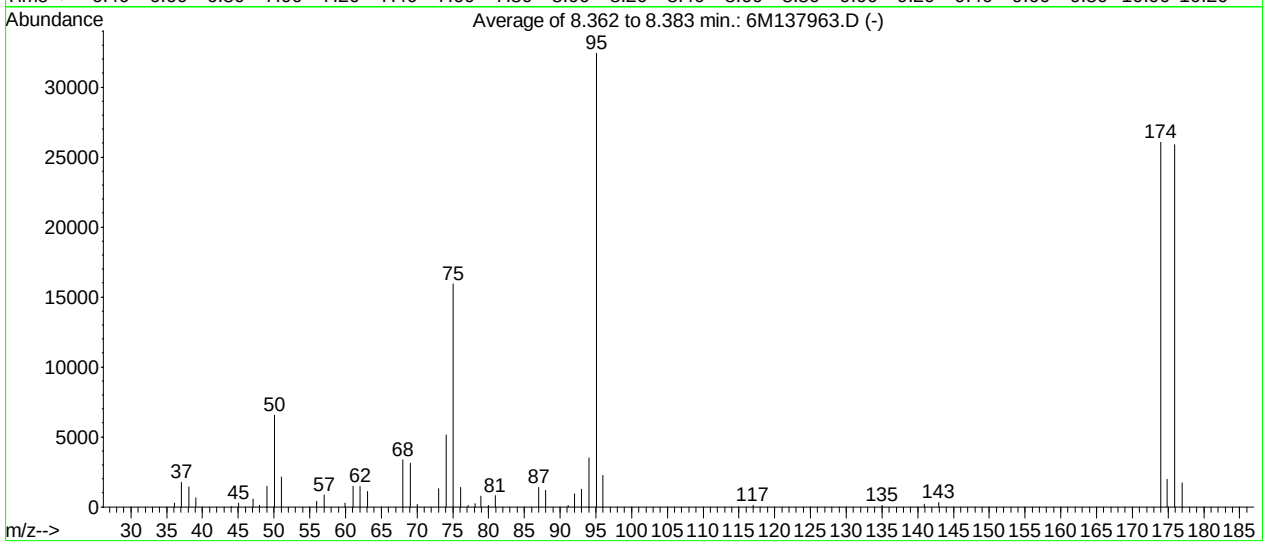

AutoFind: Scans 321, 322, 323; Background Corrected with Scan 316

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.2	6567	PASS
75	95	30	60	49.2	15945	PASS
95	95	100	100	100.0	32432	PASS
96	95	5	9	7.0	2256	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	80.4	26074	PASS
175	174	5	9	7.6	1973	PASS
176	174	95	101	99.3	25896	PASS
177	176	5	9	6.6	1699	PASS

6M137963.D BFB.M Wed Mar 23 12:13:51 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032216\6M137941.D Vial: 4
Acq On : 22 Mar 2016 13:08 Operator: TMB
Sample : WG561881-01 VBLK0322 BLANK STD 8260 Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 08:53:06 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	568180	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	414845	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	218601	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	143661	47.1341 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.26%		
43) 1,2-Dichloroethane-d4	11.06	65	174702	44.1463 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 88.30%		
58) Toluene-d8	13.80	98	498531	50.5450 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.08%		
80) p-Bromofluorobenzene	17.79	95	203826	50.7631 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 101.52%		

Target Compounds

					Qvalue
13) Acetone	6.60	43	9004	3.1883 ug/L	96
29) 2-Butanone	9.69	43	8998	4.5815 ug/L #	56
36) Tetrahydrofuran	10.30	42	2220	Below Cal #	65
60) Ethyl Methacrylate	13.81	69	967	0.2572 ug/L #	59
90) 1,2,4-Trimethylbenzene	18.82	105	6510	0.5858 ug/L	77
91) sec-Butylbenzene	18.82	105	5188	0.3834 ug/L #	56

(#) = qualifier out of range (m) = manual integration
6M137941.D 826_SL.M Wed Mar 23 08:53:06 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032216\6M137941.D Vial: 4
Acq On : 22 Mar 2016 13:08 Operator: TMB
Sample : WG561881-01 VBLK0322 BLANK STD 8260 Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 8:53 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

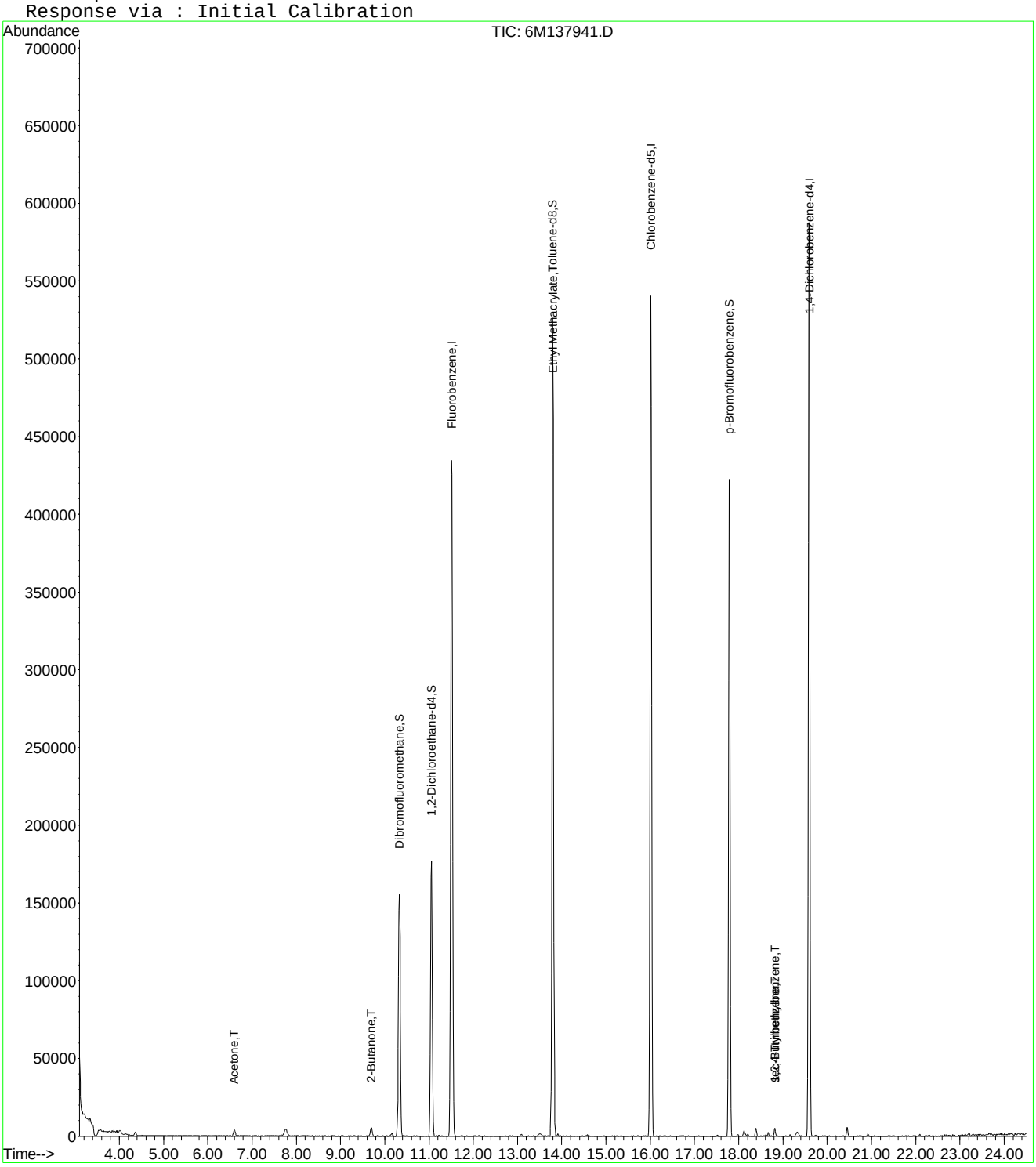

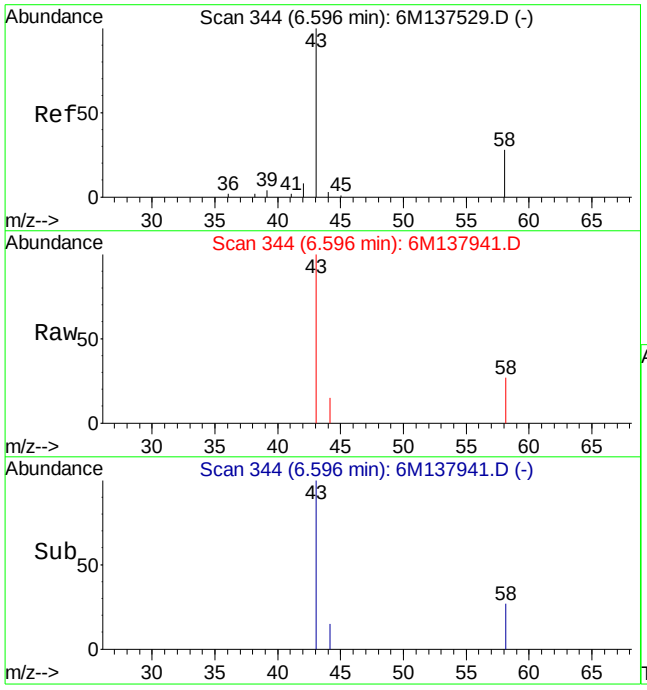

#13
Acetone
Concen: 3.19 ug/L
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137941.D
Acq: 22 Mar 2016 13:08

Tgt Ion: 43 Resp: 9004

Ion	Ratio	Lower	Upper
43	100		
58	25.1	16.1	37.7

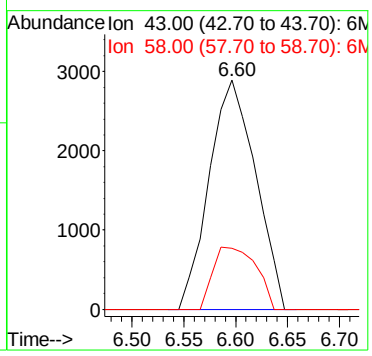

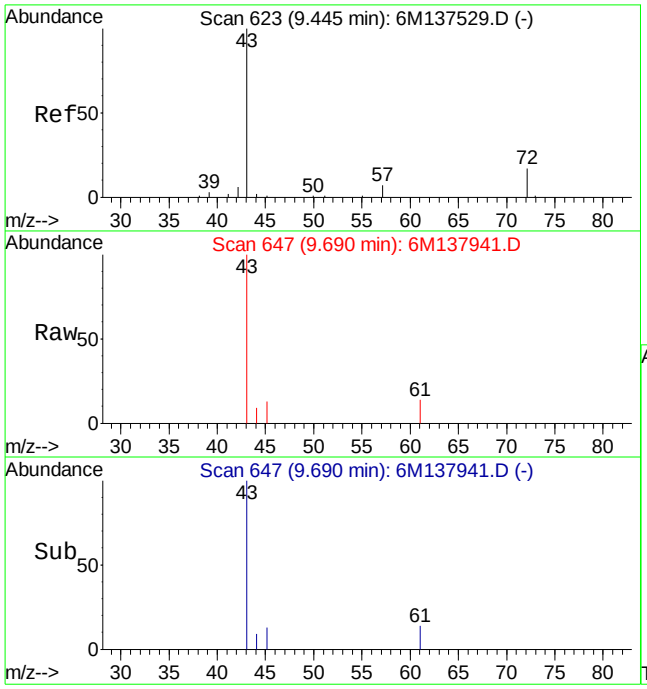

#29
2-Butanone
Concen: 4.58 ug/L
RT: 9.69 min Scan# 647
Delta R.T. 0.24 min
Lab File: 6M137941.D
Acq: 22 Mar 2016 13:08

Tgt Ion: 43 Resp: 8998

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.2	28.4#

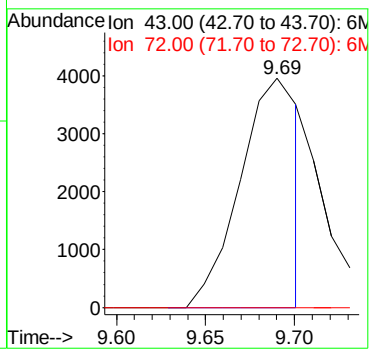

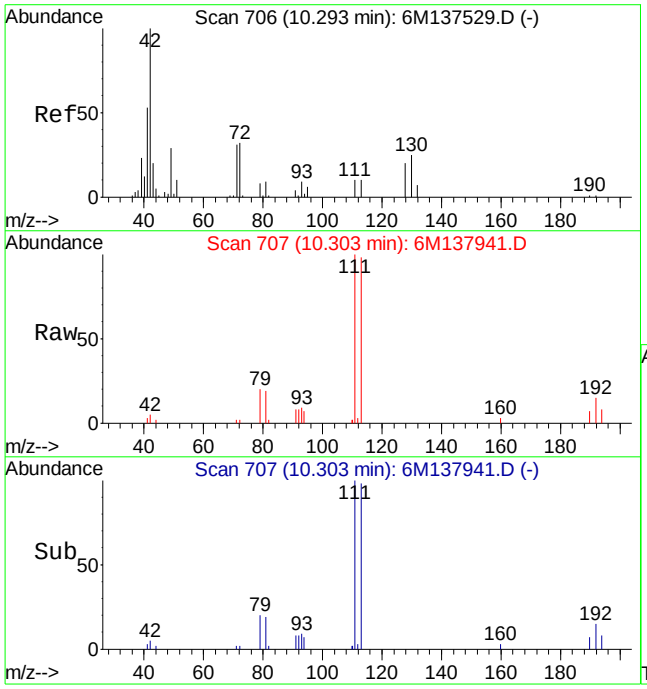

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.30 min Scan# 707
Delta R.T. 0.01 min
Lab File: 6M137941.D
Acq: 22 Mar 2016 13:08

Tgt Ion: 42 Resp: 2220

Ion	Ratio	Lower	Upper
42	100		
72	19.7	21.0	49.0#
71	8.9	20.6	48.2#

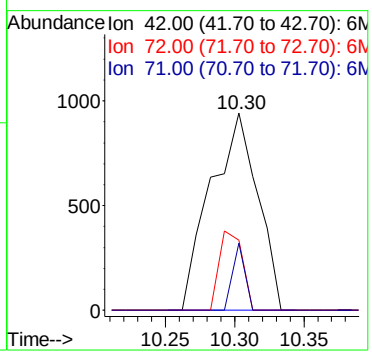

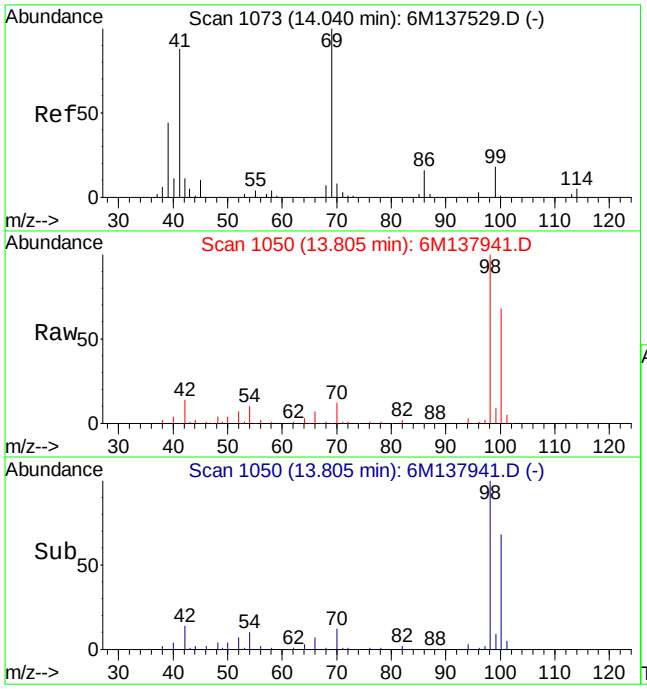

#60
Ethyl Methacrylate
Concen: 0.26 ug/L
RT: 13.81 min Scan# 1050
Delta R.T. -0.23 min
Lab File: 6M137941.D
Acq: 22 Mar 2016 13:08

Tgt Ion: 69 Resp: 967

Ion	Ratio	Lower	Upper
69	100		
41	121.5	50.6	118.2#

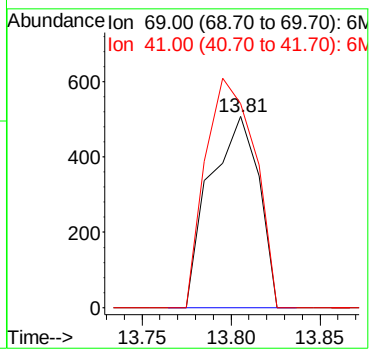

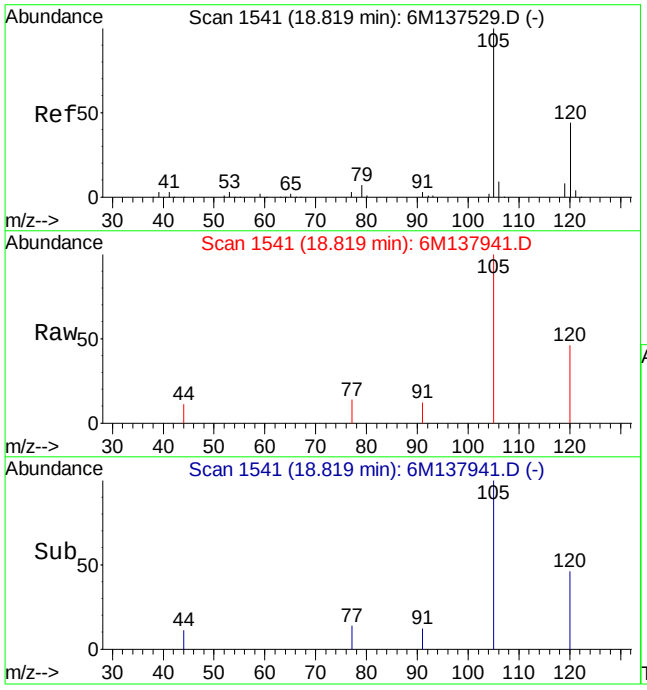

#90
1,2,4-Trimethylbenzene
Concen: 0.59 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. -0.00 min
Lab File: 6M137941.D
Acq: 22 Mar 2016 13:08

Tgt Ion:105 Resp: 6510

Ion	Ratio	Lower	Upper
105	100		
120	39.9	34.3	79.9

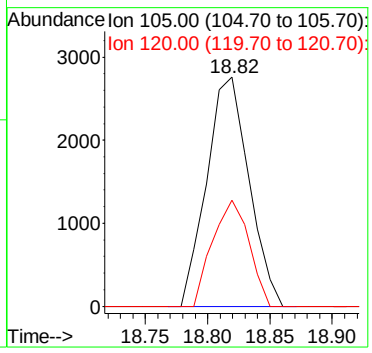

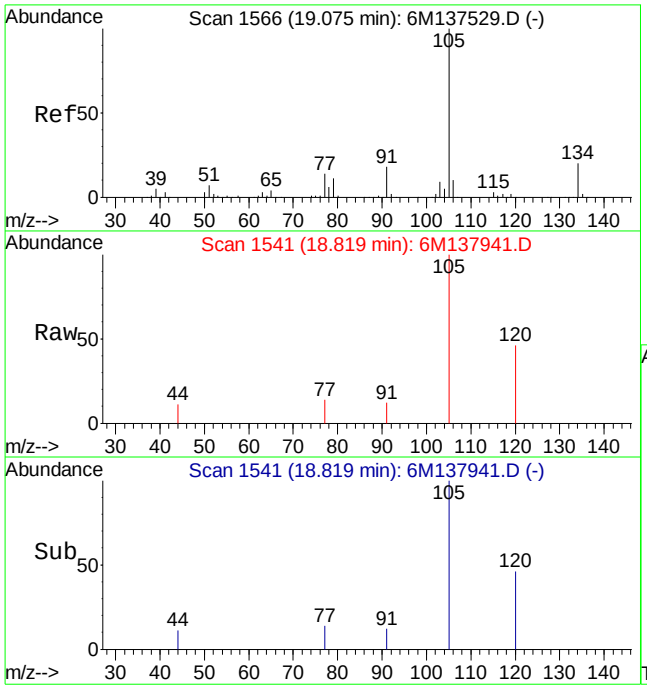

#91
sec-Butylbenzene
Concen: 0.38 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. -0.26 min
Lab File: 6M137941.D
Acq: 22 Mar 2016 13:08

Tgt Ion:105 Resp: 5188

Ion	Ratio	Lower	Upper
105	100		
134	0.0	12.2	28.6#

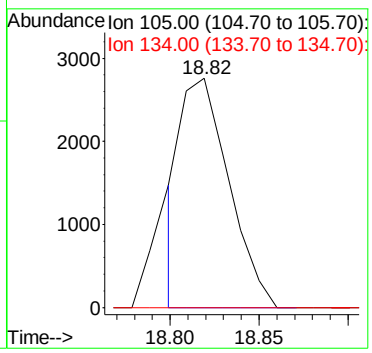

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137967.D Vial: 5
Acq On : 23 Mar 2016 13:53 Operator: TMB
Sample : WG562075-01 VBLK0323 BLANK STD 8260 Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 17:03:56 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	568472	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	420780	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	220763	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	144183	47.2810 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.56%		
43) 1,2-Dichloroethane-d4	11.06	65	179216	45.2637 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 90.52%		
58) Toluene-d8	13.80	98	504541	50.4328 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 100.86%		
80) p-Bromofluorobenzene	17.79	95	208247	51.3562 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.72%		

Target Compounds					Qvalue
13) Acetone	6.60	43	7695	2.0829 ug/L	99
29) 2-Butanone	9.69	43	2551	1.2982 ug/L #	56
36) Tetrahydrofuran	10.29	42	2714	Below Cal #	74
60) Ethyl Methacrylate	13.80	69	961	0.2520 ug/L #	47
90) 1,2,4-Trimethylbenzene	18.81	105	6379	0.5684 ug/L	93
100) Naphthalene	23.20	128	2997	0.2972 ug/L #	67

(#) = qualifier out of range (m) = manual integration
6M137967.D 826_SL.M Wed Mar 23 17:03:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137967.D Vial: 5
Acq On : 23 Mar 2016 13:53 Operator: TMB
Sample : WG562075-01 VBLK0323 BLANK STD 8260 Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 17:03 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

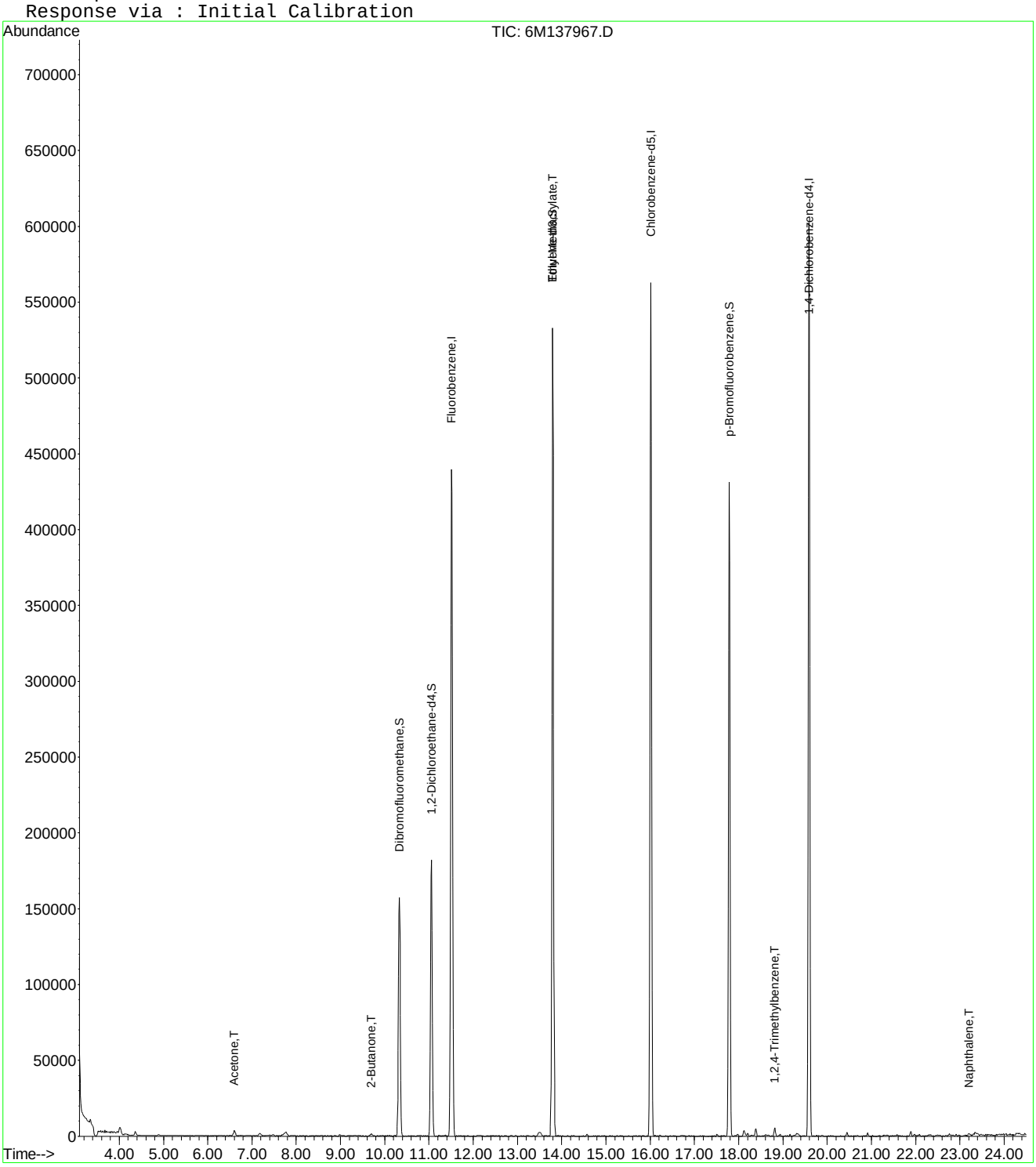

6M137967.D 826_SL.M Wed Mar 23 17:03:57 2016 Page 2

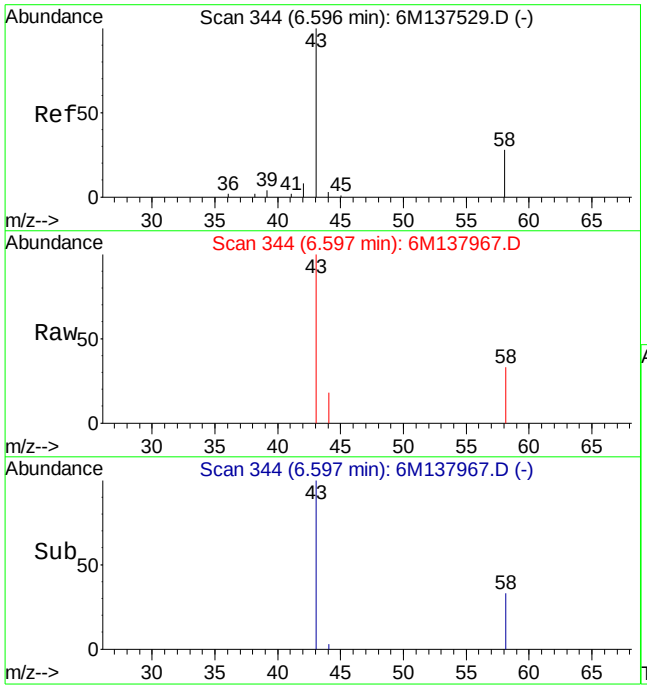

#13
Acetone
Concen: 2.08 ug/L
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137967.D
Acq: 23 Mar 2016 13:53

Tgt Ion: 43 Resp: 7695

Ion	Ratio	Lower	Upper
43	100		
58	27.5	16.1	37.7

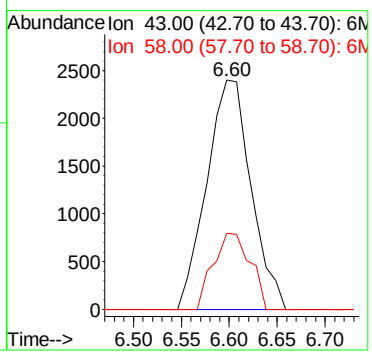

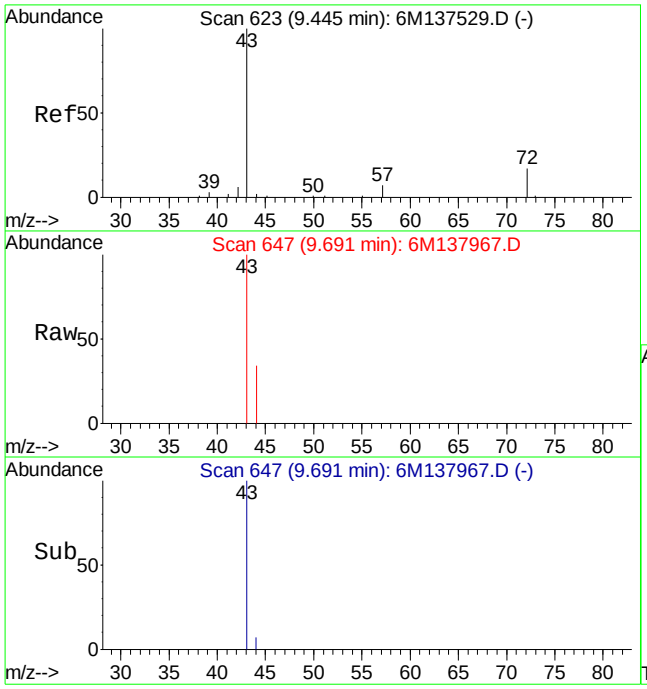

#29
2-Butanone
Concen: 1.30 ug/L
RT: 9.69 min Scan# 647
Delta R.T. 0.25 min
Lab File: 6M137967.D
Acq: 23 Mar 2016 13:53

Tgt Ion: 43 Resp: 2551

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.2	28.4#

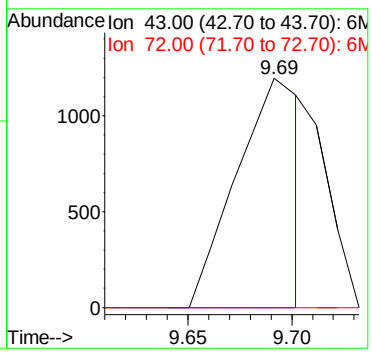

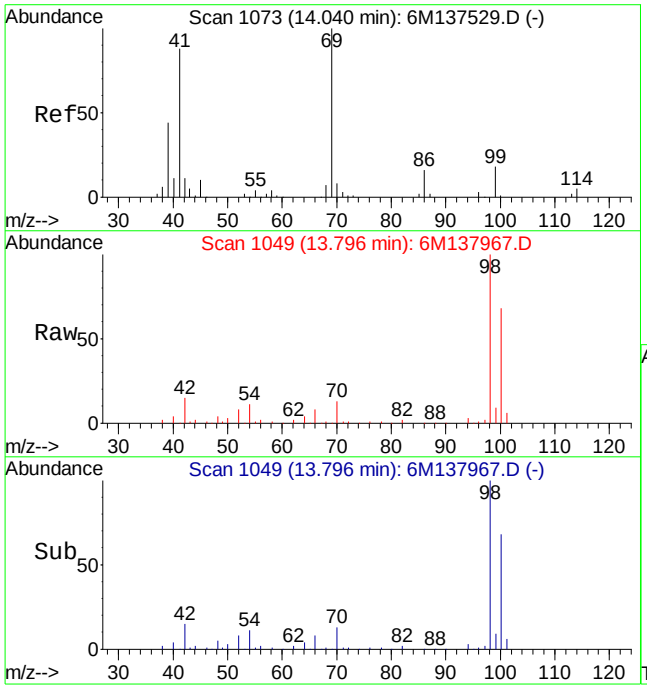

#60
Ethyl Methacrylate
Concen: 0.25 ug/L
RT: 13.80 min Scan# 1049
Delta R.T. -0.23 min
Lab File: 6M137967.D
Acq: 23 Mar 2016 13:53

Tgt Ion: 69 Resp: 961

Ion	Ratio	Lower	Upper
69	100		
41	132.2	50.6	118.2#

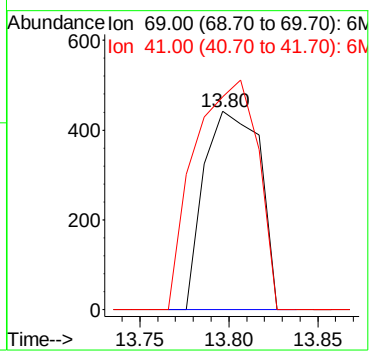

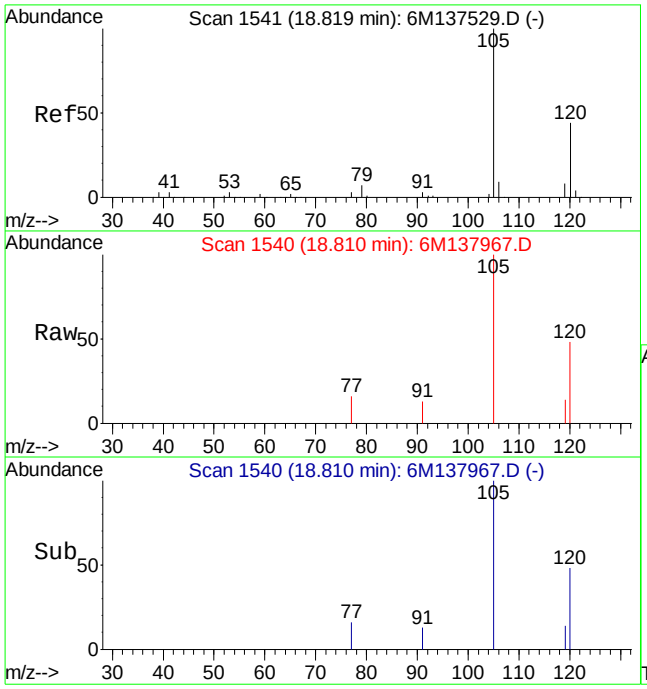

#90
1,2,4-Trimethylbenzene
Concen: 0.57 ug/L
RT: 18.81 min Scan# 1540
Delta R.T. -0.01 min
Lab File: 6M137967.D
Acq: 23 Mar 2016 13:53

Tgt Ion:105 Resp: 6379

Ion	Ratio	Lower	Upper
105	100		
120	51.7	34.3	79.9

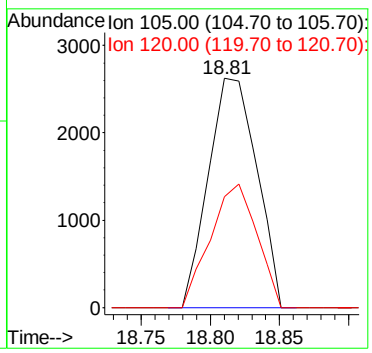

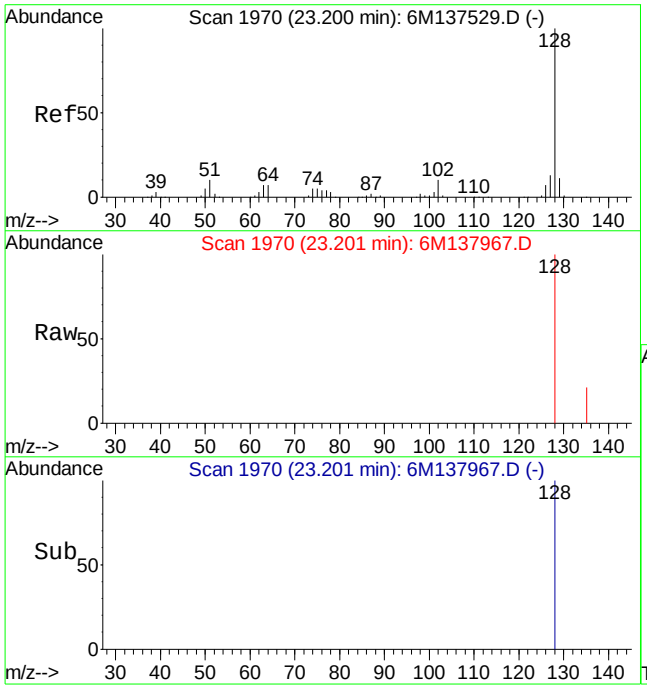

#100
Naphthalene
Concen: 0.30 ug/L
RT: 23.20 min Scan# 1970
Delta R.T. 0.00 min
Lab File: 6M137967.D
Acq: 23 Mar 2016 13:53

Tgt Ion:128 Resp: 2997

Ion	Ratio	Lower	Upper
128	100		
127	0.0	7.7	18.1#

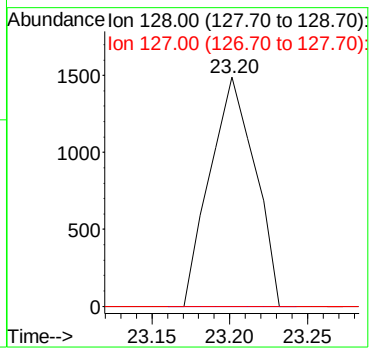

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032216\6M137946.D Vial: 9
Acq On : 22 Mar 2016 15:52 Operator: TMB
Sample : WG561881-02 20ug/Kg LCS STD 8260 Inst : HPMS6
Misc : 7,1 STD75209 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 22 16:16:56 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	563138	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	411330	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	221382	50.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.33	111	145201	48.0659 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.14%		
43) 1,2-Dichloroethane-d4	11.06	65	172522	43.9857 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 87.98%		
58) Toluene-d8	13.79	98	501178	51.2476 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 102.50%		
80) p-Bromofluorobenzene	17.79	95	205095	50.4375 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 100.88%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	109390	21.1509 ug/L	97
3) Chloromethane	3.88	50	90910	16.8681 ug/L	97
4) Vinyl Chloride	4.11	62	89514	20.6352 ug/L	99
5) 1,3-Butadiene	4.16	54	41462	11.4879 ug/L	93
6) Bromomethane	5.03	94	50000	21.6224 ug/L	100
7) Chloroethane	5.19	64	57144	23.2322 ug/L	99
8) Trichlorofluoromethane	5.69	101	112879	19.3655 ug/L	99
9) Diethyl ether	6.24	59	283351	105.6697 ug/L	96
10) Isoprene	6.28	67	90580	23.8540 ug/L	90
11) Acrolein	6.49	56	37561	73.7592 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	61351	22.0512 ug/L	94
13) Acetone	6.60	43	27306	18.8026 ug/L	92
14) 1,1-Dichloroethene	6.83	61	99804	20.2519 ug/L	96
15) Tert-Butyl Alcohol	6.94	59	89439	194.5017 ug/L	99
16) Dimethyl Sulfide	7.12	62	72817	30.4552 ug/L	94
17) Iodomethane	7.38	142	45023	23.8807 ug/L	95
18) Methyl acetate	7.39	43	66295	19.3578 ug/L	98
19) Methylene Chloride	7.67	84	65246	21.9837 ug/L	85
20) Carbon Disulfide	7.72	76	183605	19.4724 ug/L	99
21) Acrylonitrile	7.86	53	30328	21.5473 ug/L	100
22) Methyl Tert Butyl Ether	7.89	73	192093	22.6640 ug/L	95
23) trans-1,2-Dichloroethene	8.16	96	60517	22.2288 ug/L	91
24) n-Hexane	8.24	57	102153	20.6634 ug/L	98
25) Diisopropyl ether	8.61	45	1215402	94.8255 ug/L	95
26) Vinyl Acetate	8.80	43	147194	22.2162 ug/L	98
27) 1,1-Dichloroethane	8.83	63	120350	20.5042 ug/L	100
28) Ethyl-Tert-Butyl ether	9.25	59	979883	95.3822 ug/L	97
29) 2-Butanone	9.46	43	39835	20.4645 ug/L	97
30) Propionitrile	9.58	54	51161	94.9653 ug/L	96
31) 2,2-Dichloropropane	9.70	77	97664	20.7294 ug/L	92
32) cis-1,2-Dichloroethene	9.77	96	66690	21.9421 ug/L	94
33) Chloroform	10.01	83	112354	20.4963 ug/L	97
34) 1-Bromopropane	10.16	122	14535	34.8810 ug/L	94
35) Bromochloromethane	10.26	130	38542	21.5821 ug/L	99
36) Tetrahydrofuran	10.29	42	120668	92.2116 ug/L	97
38) 1,1,1-Trichloroethane	10.60	97	102030	21.0723 ug/L	99
39) Cyclohexane	10.64	56	123088	22.4185 ug/L	87
40) 1,1-Dichloropropene	10.82	75	80843	20.7328 ug/L	97
41) Tert-Amyl-Methyl ether	10.95	73	846523	103.8713 ug/L	94
42) Carbon Tetrachloride	10.99	117	90749	20.0588 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M137946.D 826_SL.M Tue Mar 22 16:16:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032216\6M137946.D Vial: 9
Acq On : 22 Mar 2016 15:52 Operator: TMB
Sample : WG561881-02 20ug/Kg LCS STD 8260 Inst : HPMS6
Misc : 7,1 STD75209 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 22 16:16:56 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	95455	20.4021 ug/L	100
46)	Benzene	11.23	78	248129	21.1519 ug/L	93
47)	Trichloroethene	12.09	130	62588	22.5843 ug/L	100
48)	Methylcyclohexane	12.18	83	102224	22.8175 ug/L	90
49)	1,2-Dichloropropane	12.34	63	70533	22.3463 ug/L	98
50)	1,4-Dioxane	12.67	88	6973	187.5104 ug/L	89
51)	Bromodichloromethane	12.68	83	84771	20.4659 ug/L	96
52)	Dibromomethane	12.78	93	37639	20.3880 ug/L	98
53)	2-Chloroethyl Vinyl Ether	13.04	63	38767	22.3302 ug/L	100
54)	4-Methyl-2-Pentanone	13.07	58	28325	21.5470 ug/L	98
55)	cis-1,3-Dichloropropene	13.43	75	106157	23.2616 ug/L	98
56)	Dimethyl Disulfide	13.72	79	50343	21.8723 ug/L	96
59)	Toluene	13.92	91	249200	21.4173 ug/L	100
60)	Ethyl Methacrylate	14.04	69	82616	22.1599 ug/L	96
62)	trans-1,3-Dichloropropene	14.12	75	92106	20.5862 ug/L	99
63)	1,1,2-Trichloroethane	14.38	97	51997	21.3805 ug/L	99
64)	2-Hexanone	14.31	43	55559	20.0204 ug/L	96
65)	1,3-Dichloropropane	14.73	76	98765	22.4062 ug/L	99
66)	Tetrachloroethene	14.87	166	61045	21.2679 ug/L	97
67)	Dibromochloromethane	15.18	129	65851	20.8197 ug/L	97
68)	1,2-Dibromoethane	15.48	107	53418	21.4775 ug/L	97
69)	1-Chlorohexane	15.59	91	79936	22.1228 ug/L	89
70)	Chlorobenzene	16.07	112	161359	21.5778 ug/L	71
71)	1,1,1,2-Tetrachloroethane	16.11	131	62015	20.6539 ug/L	99
72)	Ethylbenzene	16.10	106	84875	21.2098 ug/L	95
73)	m-,p-Xylene	16.22	106	211374	43.1693 ug/L	98
74)	o-Xylene	16.88	106	106932	23.1866 ug/L	98
75)	Styrene	16.92	104	170406	21.7094 ug/L	97
76)	Bromoform	17.50	173	42433	19.0006 ug/L	98
77)	Isopropylbenzene	17.38	105	271443	21.8954 ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.64	83	72068	20.8392 ug/L	95
81)	1,2,3-Trichloropropane	17.87	110	23983	22.6499 ug/L	97
82)	trans-1,4-Dichloro-2-Buten	17.93	53	19869	15.5628 ug/L	86
83)	n-Propylbenzene	17.98	91	322859	21.4746 ug/L	99
84)	Bromobenzene	18.12	156	70716	21.6388 ug/L	98
85)	1,3,5-Trimethylbenzene	18.21	105	233440	21.8138 ug/L	96
86)	2-Chlorotoluene	18.30	91	211947	21.1209 ug/L	94
87)	4-Chlorotoluene	18.36	91	199682	21.7623 ug/L	96
88)	a-Methylstyrene	18.69	118	118988	22.8960 ug/L	97
89)	tert-Butylbenzene	18.76	134	49003	21.9725 ug/L	95
90)	1,2,4-Trimethylbenzene	18.82	105	232508	20.6593 ug/L	82
91)	sec-Butylbenzene	19.07	105	289851	21.1498 ug/L	99
92)	p-Isopropyltoluene	19.27	119	235016	20.7856 ug/L	100
93)	1,3-Dichlorobenzene	19.48	146	133387	21.0944 ug/L	99
94)	1,4-Dichlorobenzene	19.65	146	135254	21.0134 ug/L	97
95)	n-Butylbenzene	19.89	91	210323	18.4947 ug/L	99
96)	1,2-Dichlorobenzene	20.23	146	131592	21.6268 ug/L	96
97)	1,2-Dibromo-3-Chloropropan	21.41	75	15971	20.8720 ug/L	89
98)	1,2,4-Trichlorobenzene	22.77	180	85774	19.4994 ug/L	99
99)	Hexachlorobutadiene	22.95	225	47628	18.9329 ug/L	100
100)	Naphthalene	23.20	128	201155	19.8920 ug/L	99
101)	1,2,3-Trichlorobenzene	23.59	180	85657	19.7757 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M137946.D 826_SL.M Tue Mar 22 16:16:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032216\6M137946.D Vial: 9
Acq On : 22 Mar 2016 15:52 Operator: TMB
Sample : WG561881-02 20ug/Kg LCS STD 8260 Inst : HPMS6
Misc : 7,1 STD75209 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 22 16:16 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

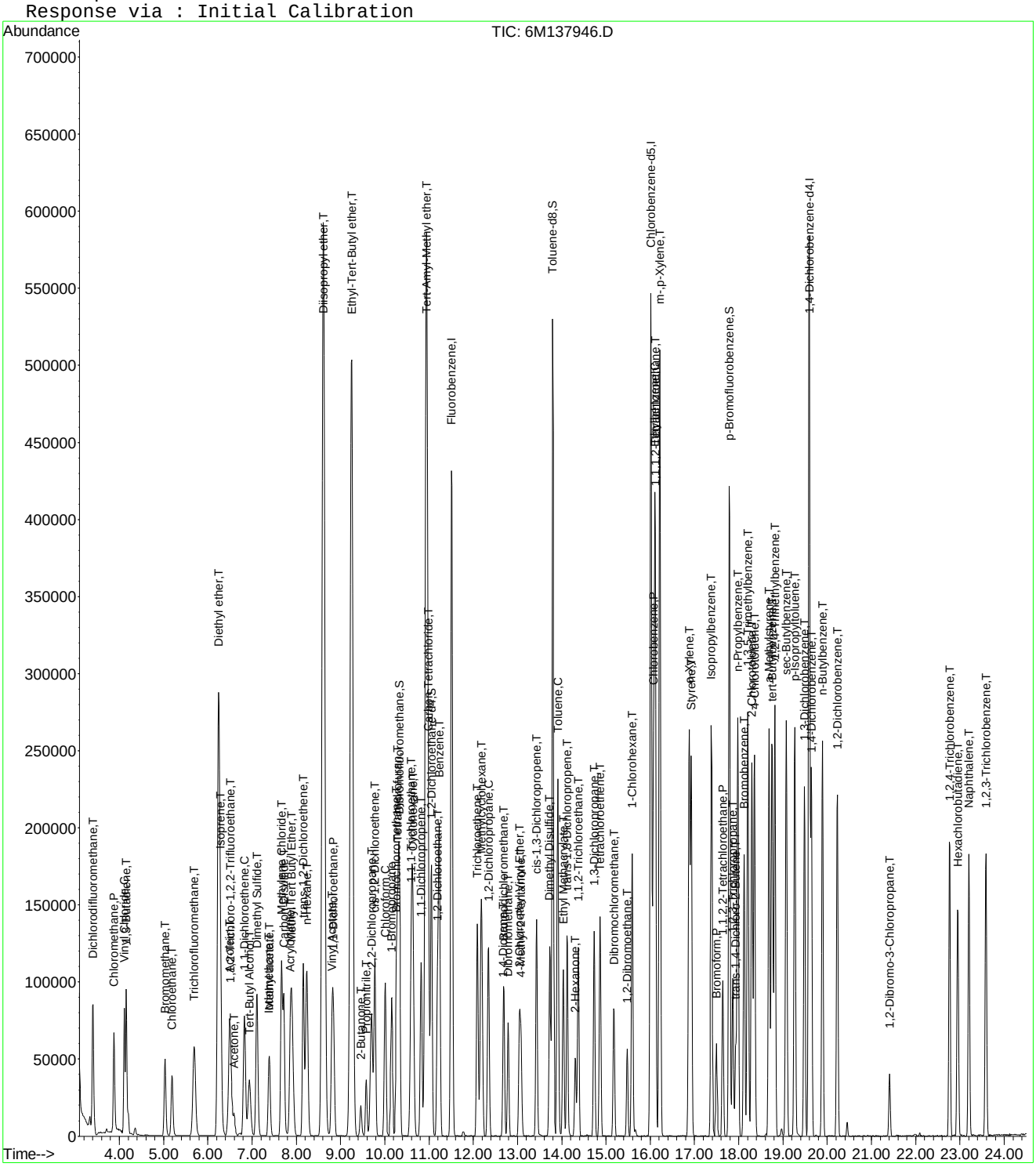

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032316\6M137968.D Vial: 6
Acq On : 23 Mar 2016 14:26 Operator: TMB
Sample : WG562075-02 20ug/Kg LCS STD 8260 Inst : HPMS6
Misc : 7,1 STD75209 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 14:51:25 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	579730	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	431283	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	231205	50.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.33	111	147978	47.5832 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.16%		
43) 1,2-Dichloroethane-d4	11.06	65	176231	43.6454 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 87.30%		
58) Toluene-d8	13.80	98	518030	50.5201 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.04%		
80) p-Bromofluorobenzene	17.79	95	212255	49.9806 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 99.96%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	115533	21.6994 ug/L	99
3) Chloromethane	3.88	50	96875	17.4604 ug/L	97
4) Vinyl Chloride	4.12	62	90596	20.2869 ug/L	99
5) 1,3-Butadiene	4.16	54	41605	11.1976 ug/L	93
6) Bromomethane	5.03	94	52485	22.0474 ug/L	100
7) Chloroethane	5.19	64	60320	23.8216 ug/L	99
8) Trichlorofluoromethane	5.69	101	122043	20.3384 ug/L	100
9) Diethyl ether	6.24	59	292890	106.1009 ug/L	96
10) Isoprene	6.28	67	95722	24.4867 ug/L	89
11) Acrolein	6.48	56	34941	66.6505 ug/L	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	67320	23.5041 ug/L	95
13) Acetone	6.60	43	31704	21.7676 ug/L	93
14) 1,1-Dichloroethene	6.83	61	108067	21.3010 ug/L	94
15) Tert-Butyl Alcohol	6.94	59	94488	199.6007 ug/L	99
16) Dimethyl Sulfide	7.12	62	74623	30.3173 ug/L	96
17) Iodomethane	7.38	142	44576	23.1569 ug/L	98
18) Methyl acetate	7.39	43	65972	18.7122 ug/L	98
19) Methylene Chloride	7.67	84	66371	21.7227 ug/L	85
20) Carbon Disulfide	7.72	76	194167	20.0032 ug/L	99
21) Acrylonitrile	7.87	53	29870	20.6145 ug/L	98
22) Methyl Tert Butyl Ether	7.89	73	195115	22.3617 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	63179	22.5425 ug/L	88
24) n-Hexane	8.24	57	109762	21.5671 ug/L	97
25) Diisopropyl ether	8.61	45	1303599	98.7958 ug/L	95
26) Vinyl Acetate	8.80	43	149448	21.9108 ug/L	98
27) 1,1-Dichloroethane	8.84	63	126368	20.9133 ug/L	99
28) Ethyl-Tert-Butyl ether	9.24	59	1042923	98.6131 ug/L	96
29) 2-Butanone	9.46	43	40223	20.0724 ug/L	98
30) Propionitrile	9.58	54	53739	96.8957 ug/L	99
31) 2,2-Dichloropropane	9.69	77	105935	21.8414 ug/L	92
32) cis-1,2-Dichloroethene	9.77	96	70451	22.5161 ug/L	96
33) Chloroform	10.01	83	116681	20.6765 ug/L	96
34) 1-Bromopropane	10.16	122	15946	37.1719 ug/L	98
35) Bromochloromethane	10.27	130	39818	21.6584 ug/L	100
36) Tetrahydrofuran	10.29	42	126176	93.6952 ug/L	97
38) 1,1,1-Trichloroethane	10.60	97	107996	21.6661 ug/L	100
39) Cyclohexane	10.63	56	130073	23.0127 ug/L	88
40) 1,1-Dichloropropene	10.82	75	87999	21.9221 ug/L	96
41) Tert-Amyl-Methyl ether	10.95	73	898862	107.1369 ug/L	94
42) Carbon Tetrachloride	10.99	117	98570	21.1639 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M137968.D 826_SL.M Wed Mar 23 14:51:26 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032316\6M137968.D Vial: 6
Acq On : 23 Mar 2016 14:26 Operator: TMB
Sample : WG562075-02 20ug/Kg LCS STD 8260 Inst : HPMS6
Misc : 7,1 STD75209 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 14:51:25 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	100537	20.8733	ug/L	99
46)	Benzene	11.23	78	261214	21.6301	ug/L	93
47)	Trichloroethene	12.09	130	66918	23.4556	ug/L	99
48)	Methylcyclohexane	12.18	83	108751	23.5796	ug/L	89
49)	1,2-Dichloropropane	12.34	63	73675	22.6737	ug/L	99
50)	1,4-Dioxane	12.67	88	7263	189.3560	ug/L	83
51)	Bromodichloromethane	12.68	83	89533	20.9969	ug/L	97
52)	Dibromomethane	12.79	93	38004	19.9965	ug/L	98
53)	2-Chloroethyl Vinyl Ether	13.04	63	39396	22.0430	ug/L	97
54)	4-Methyl-2-Pentanone	13.07	58	29050	21.4661	ug/L	92
55)	cis-1,3-Dichloropropene	13.43	75	112363	23.9168	ug/L	98
56)	Dimethyl Disulfide	13.72	79	53153	22.4322	ug/L	96
59)	Toluene	13.92	91	265823	21.7890	ug/L	99
60)	Ethyl Methacrylate	14.04	69	85396	21.8459	ug/L	98
62)	trans-1,3-Dichloropropene	14.12	75	97830	20.8539	ug/L	100
63)	1,1,2-Trichloroethane	14.38	97	54038	21.1917	ug/L	99
64)	2-Hexanone	14.31	43	56682	19.4801	ug/L	98
65)	1,3-Dichloropropane	14.74	76	102465	22.1701	ug/L	99
66)	Tetrachloroethene	14.87	166	65164	21.6526	ug/L	99
67)	Dibromochloromethane	15.17	129	66417	20.0271	ug/L	100
68)	1,2-Dibromoethane	15.48	107	55063	21.1146	ug/L	97
69)	1-Chlorohexane	15.59	91	86267	22.7703	ug/L	88
70)	Chlorobenzene	16.07	112	172795	22.0381	ug/L	71
71)	1,1,1,2-Tetrachloroethane	16.11	131	65682	20.8632	ug/L	95
72)	Ethylbenzene	16.10	106	94609	22.5484	ug/L	99
73)	m-,p-Xylene	16.22	106	227852	44.3817	ug/L	96
74)	o-Xylene	16.88	106	114068	23.5896	ug/L	95
75)	Styrene	16.92	104	182254	22.1446	ug/L	95
76)	Bromoform	17.49	173	43746	18.6823	ug/L	98
77)	Isopropylbenzene	17.38	105	300373	23.1080	ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.65	83	75366	20.8669	ug/L	95
81)	1,2,3-Trichloropropane	17.87	110	23710	21.4408	ug/L	90
82)	trans-1,4-Dichloro-2-Buten	17.93	53	20263	15.1970	ug/L	91
83)	n-Propylbenzene	17.98	91	361052	22.9946	ug/L	99
84)	Bromobenzene	18.13	156	75422	22.0982	ug/L	98
85)	1,3,5-Trimethylbenzene	18.21	105	260340	23.2939	ug/L	97
86)	2-Chlorotoluene	18.30	91	237249	22.6378	ug/L	96
87)	4-Chlorotoluene	18.36	91	216226	22.5642	ug/L	97
88)	a-Methylstyrene	18.69	118	126927	23.3860	ug/L	99
89)	tert-Butylbenzene	18.75	134	53940	23.1586	ug/L	94
90)	1,2,4-Trimethylbenzene	18.82	105	263268	22.3986	ug/L	83
91)	sec-Butylbenzene	19.08	105	327661	22.8929	ug/L	99
92)	p-Isopropyltoluene	19.27	119	267924	22.6893	ug/L	99
93)	1,3-Dichlorobenzene	19.48	146	146035	22.1134	ug/L	98
94)	1,4-Dichlorobenzene	19.64	146	145979	21.7161	ug/L	97
95)	n-Butylbenzene	19.89	91	253278	21.3257	ug/L	98
96)	1,2-Dichlorobenzene	20.23	146	142712	22.4578	ug/L	97
97)	1,2-Dibromo-3-Chloropropan	21.41	75	15967	19.9803	ug/L	98
98)	1,2,4-Trichlorobenzene	22.76	180	98796	21.5056	ug/L	99
99)	Hexachlorobutadiene	22.96	225	59057	22.4787	ug/L	99
100)	Naphthalene	23.20	128	217178	20.5640	ug/L	100
101)	1,2,3-Trichlorobenzene	23.59	180	96490	21.3303	ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032316\6M137968.D Vial: 6
Acq On : 23 Mar 2016 14:26 Operator: TMB
Sample : WG562075-02 20ug/Kg LCS STD 8260 Inst : HPMS6
Misc : 7,1 STD75209 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 14:51 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

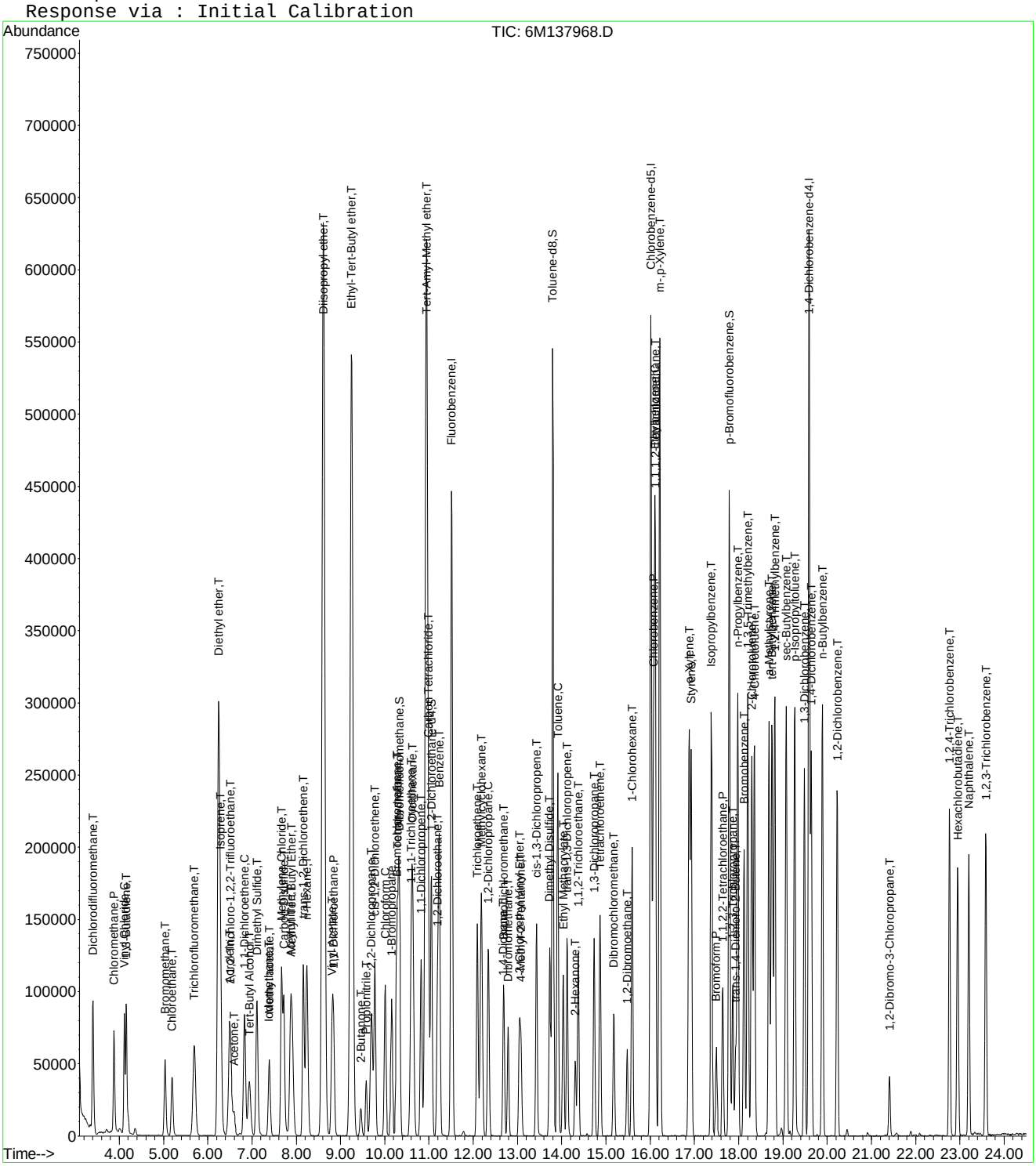

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032216\6M137947.D Vial: 10
Acq On : 22 Mar 2016 16:24 Operator: TMB
Sample : WG561608-02 MS 861-01 8260 5.02g Inst : HPMS6
Misc : 7,1 STD75209 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 22 16:49:31 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	543230	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	401013	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	217199	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	139525	47.8796 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.76%		
43) 1,2-Dichloroethane-d4	11.05	65	168855	44.6285 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 89.26%		
58) Toluene-d8	13.80	98	483597	50.7220 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.44%		
80) p-Bromofluorobenzene	17.79	95	202239	50.6930 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 101.38%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	111006	22.2500 ug/L	97
3) Chloromethane	3.88	50	92953	17.8792 ug/L	100
4) Vinyl Chloride	4.12	62	67103	16.0358 ug/L	98
5) 1,3-Butadiene	4.16	54	37250	10.6991 ug/L	93
6) Bromomethane	5.04	94	45206	20.2657 ug/L	100
7) Chloroethane	5.19	64	53256	22.4450 ug/L	100
8) Trichlorofluoromethane	5.69	101	110371	19.6292 ug/L	98
9) Diethyl ether	6.24	59	1079	0.4171 ug/L #	23
10) Isoprene	6.28	67	84708	23.1252 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	63091	23.5076 ug/L	95
13) Acetone	6.60	43	22649	15.5518 ug/L	95
14) 1,1-Dichloroethene	6.83	61	95319	20.0507 ug/L	95
15) Tert-Butyl Alcohol	6.96	59	197	0.4441 ug/L #	57
16) Dimethyl Sulfide	7.11	62	61128	26.5033 ug/L	97
17) Iodomethane	7.38	142	41933	23.2281 ug/L	99
18) Methyl acetate	7.39	43	74101	22.4301 ug/L	97
19) Methylene Chloride	7.67	84	57794	20.1865 ug/L	83
20) Carbon Disulfide	7.72	76	166893	18.3486 ug/L	99
21) Acrylonitrile	7.86	53	25146	18.5204 ug/L	99
22) Methyl Tert Butyl Ether	7.90	73	161978	19.8112 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	56090	21.3578 ug/L	90
24) n-Hexane	8.24	57	102485	21.4902 ug/L	97
26) Vinyl Acetate	8.80	43	47147	7.3767 ug/L	98
27) 1,1-Dichloroethane	8.83	63	109730	19.3799 ug/L	98
28) Ethyl-Tert-Butyl ether	9.23	59	3104	0.3132 ug/L #	61
29) 2-Butanone	9.45	43	32009	17.0466 ug/L	95
31) 2,2-Dichloropropane	9.70	77	94106	20.7062 ug/L	93
32) cis-1,2-Dichloroethene	9.77	96	60487	20.6305 ug/L	95
33) Chloroform	10.00	83	101203	19.1387 ug/L	96
34) 1-Bromopropane	10.15	122	13218	32.8830 ug/L	98
35) Bromochloromethane	10.26	130	34003	19.7382 ug/L	99
36) Tetrahydrofuran	10.31	42	2634	Below Cal #	69
38) 1,1,1-Trichloroethane	10.60	97	95733	20.4963 ug/L	99
39) Cyclohexane	10.63	56	113063	21.3473 ug/L	89
40) 1,1-Dichloropropene	10.83	75	77967	20.7280 ug/L	96
42) Carbon Tetrachloride	10.99	117	89767	20.5689 ug/L	96
45) 1,2-Dichloroethane	11.19	62	84957	18.8238 ug/L	100
46) Benzene	11.23	78	227932	20.1423 ug/L	93
47) Trichloroethene	12.09	130	57709	21.5869 ug/L	98
48) Methylcyclohexane	12.18	83	96387	22.3031 ug/L	90

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032216\6M137947.D Vial: 10
Acq On : 22 Mar 2016 16:24 Operator: TMB
Sample : WG561608-02 MS 861-01 8260 5.02g Inst : HPMS6
Misc : 7,1 STD75209 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 22 16:49:31 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
49)	1,2-Dichloropropane	12.34	63	63780	20.9473 ug/L	98
51)	Bromodichloromethane	12.68	83	76755	19.2097 ug/L	97
52)	Dibromomethane	12.79	93	33174	18.6280 ug/L	98
53)	2-Chloroethyl Vinyl Ether	13.04	63	28081	16.7677 ug/L	98
54)	4-Methyl-2-Pentanone	13.07	58	23412	18.4624 ug/L	93
55)	cis-1,3-Dichloropropene	13.43	75	93581	21.2574 ug/L	98
56)	Dimethyl Disulfide	13.73	79	43469	19.5779 ug/L	99
59)	Toluene	13.91	91	231973	20.4497 ug/L	99
60)	Ethyl Methacrylate	14.03	69	49804	13.7025 ug/L	100
62)	trans-1,3-Dichloropropene	14.12	75	81456	18.6742 ug/L	99
63)	1,1,2-Trichloroethane	14.38	97	47198	19.9065 ug/L	99
64)	2-Hexanone	14.31	43	44172	16.3267 ug/L	96
65)	1,3-Dichloropropane	14.74	76	88492	20.5921 ug/L	100
66)	Tetrachloroethene	14.87	166	58977	21.0761 ug/L	99
67)	Dibromochloromethane	15.18	129	57912	18.7807 ug/L	99
68)	1,2-Dibromoethane	15.48	107	47010	19.3873 ug/L	98
69)	1-Chlorohexane	15.59	91	75104	21.3202 ug/L	89
70)	Chlorobenzene	16.07	112	149703	20.5342 ug/L	70
71)	1,1,1,2-Tetrachloroethane	16.11	131	56183	19.1930 ug/L	98
72)	Ethylbenzene	16.11	106	80650	20.6725 ug/L	98
73)	m-,p-Xylene	16.22	106	199554	41.8038 ug/L	98
74)	o-Xylene	16.87	106	98443	21.8950 ug/L	97
75)	Styrene	16.92	104	145133	18.9653 ug/L	94
76)	Bromoform	17.49	173	37486	17.2173 ug/L	98
77)	Isopropylbenzene	17.38	105	264000	21.8429 ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.64	83	65461	19.2932 ug/L	96
81)	1,2,3-Trichloropropane	17.87	110	20656	19.8836 ug/L	97
82)	trans-1,4-Dichloro-2-Buten	17.93	53	16082	12.8391 ug/L	82
83)	n-Propylbenzene	17.98	91	313440	21.2496 ug/L	99
84)	Bromobenzene	18.13	156	62872	19.6090 ug/L	97
85)	1,3,5-Trimethylbenzene	18.21	105	223508	21.2879 ug/L	96
86)	2-Chlorotoluene	18.30	91	183913	18.6802 ug/L	93
87)	4-Chlorotoluene	18.35	91	197129	21.8978 ug/L	92
88)	a-Methylstyrene	18.69	118	99682	19.5505 ug/L	99
89)	tert-Butylbenzene	18.75	134	47410	21.6676 ug/L	89
90)	1,2,4-Trimethylbenzene	18.81	105	220600	19.9788 ug/L	83
91)	sec-Butylbenzene	19.08	105	290831	21.6300 ug/L	98
92)	p-Isopropyltoluene	19.26	119	231356	20.8560 ug/L	100
93)	1,3-Dichlorobenzene	19.49	146	122701	19.7782 ug/L	98
94)	1,4-Dichlorobenzene	19.64	146	122625	19.4183 ug/L	95
95)	n-Butylbenzene	19.89	91	217398	19.4850 ug/L	100
96)	1,2-Dichlorobenzene	20.22	146	118672	19.8790 ug/L	99
97)	1,2-Dibromo-3-Chloropropan	21.41	75	13859	18.4607 ug/L	93
98)	1,2,4-Trichlorobenzene	22.76	180	80064	18.5519 ug/L	99
99)	Hexachlorobutadiene	22.95	225	51502	20.8672 ug/L	99
100)	Naphthalene	23.20	128	179804	18.1230 ug/L	99
101)	1,2,3-Trichlorobenzene	23.59	180	77873	18.3249 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M137947.D 826_SL.M Tue Mar 22 16:49:31 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032216\6M137947.D Vial: 10
Acq On : 22 Mar 2016 16:24 Operator: TMB
Sample : WG561608-02 MS 861-01 8260 5.02g Inst : HPMS6
Misc : 7,1 STD75209 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 22 16:49 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

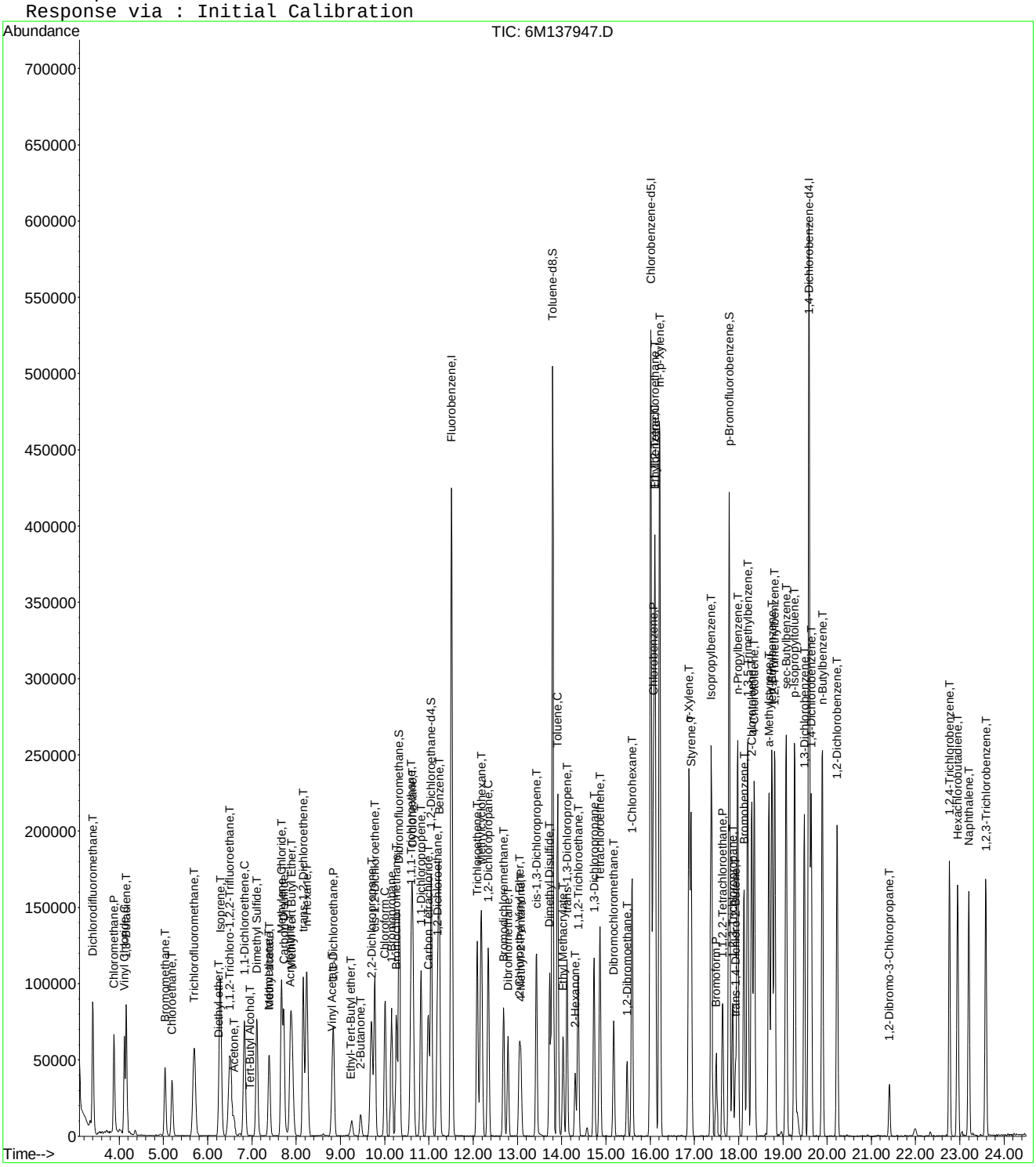

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032216\6M137948.D Vial: 11
Acq On : 22 Mar 2016 16:57 Operator: TMB
Sample : WG561608-03 MSD 861-01 8260 5.24g Inst : HPMS6
Misc : 7,1 STD75209 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 22 17:22:13 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	527136	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	390753	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	211458	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	136408	48.2391 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.48%		
43) 1,2-Dichloroethane-d4	11.06	65	168031	45.7666 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 91.54%		
58) Toluene-d8	13.79	98	468853	50.4668 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 100.94%		
80) p-Bromofluorobenzene	17.79	95	196319	50.5451 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 101.10%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	111864	23.1065 ug/L	99
3) Chloromethane	3.89	50	93340	18.5018 ug/L	96
4) Vinyl Chloride	4.11	62	68247	16.8071 ug/L	99
5) 1,3-Butadiene	4.16	54	31932	9.4517 ug/L	93
6) Bromomethane	5.03	94	45078	20.8253 ug/L	98
7) Chloroethane	5.20	64	53396	23.1911 ug/L	98
8) Trichlorofluoromethane	5.69	101	113648	20.8291 ug/L	99
9) Diethyl ether	6.24	59	798	0.3179 ug/L #	1
10) Isoprene	6.28	67	88326	24.8491 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	63413	24.3490 ug/L	95
13) Acetone	6.60	43	24879	18.1843 ug/L	95
14) 1,1-Dichloroethene	6.83	61	96383	20.8935 ug/L	96
15) Tert-Butyl Alcohol	6.84	59	3141	7.2972 ug/L #	57
16) Dimethyl Sulfide	7.12	62	65299	29.1761 ug/L	96
17) Iodomethane	7.38	142	45075	25.1960 ug/L	96
18) Methyl acetate	7.39	43	73793	23.0188 ug/L	99
19) Methylene Chloride	7.67	84	57928	20.8511 ug/L	86
20) Carbon Disulfide	7.72	76	175384	19.8708 ug/L	98
21) Acrylonitrile	7.87	53	26004	19.7370 ug/L	96
22) Methyl Tert Butyl Ether	7.89	73	172832	21.7842 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	56825	22.2983 ug/L	90
24) n-Hexane	8.24	57	104006	22.4750 ug/L	100
26) Vinyl Acetate	8.81	43	52045	8.3917 ug/L	99
27) 1,1-Dichloroethane	8.84	63	111165	20.2328 ug/L	100
29) 2-Butanone	9.45	43	35613	19.5450 ug/L	93
31) 2,2-Dichloropropane	9.70	77	94906	21.5198 ug/L	93
32) cis-1,2-Dichloroethene	9.77	96	61144	21.4913 ug/L	94
33) Chloroform	10.01	83	101893	19.8575 ug/L	97
34) 1-Bromopropane	10.16	122	13808	35.3995 ug/L	96
35) Bromochloromethane	10.26	130	34090	20.3928 ug/L	99
36) Tetrahydrofuran	10.30	42	2038	Below Cal #	48
38) 1,1,1-Trichloroethane	10.60	97	97525	21.5175 ug/L	97
39) Cyclohexane	10.63	56	120379	23.4225 ug/L	88
40) 1,1-Dichloropropene	10.82	75	80315	22.0041 ug/L	95
41) Tert-Amyl-Methyl ether	10.82	73	11506	1.5083 ug/L #	52
42) Carbon Tetrachloride	10.99	117	91181	21.5307 ug/L	95
45) 1,2-Dichloroethane	11.19	62	84402	19.2718 ug/L	98
46) Benzene	11.23	78	225455	20.5317 ug/L	94
47) Trichloroethene	12.09	130	58508	22.5540 ug/L	98
48) Methylcyclohexane	12.18	83	102100	24.3463 ug/L	90

(#) = qualifier out of range (m) = manual integration
6M137948.D 826_SL.M Tue Mar 22 17:22:14 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032216\6M137948.D Vial: 11
Acq On : 22 Mar 2016 16:57 Operator: TMB
Sample : WG561608-03 MSD 861-01 8260 5.24g Inst : HPMS6
Misc : 7,1 STD75209 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 22 17:22:13 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
49)	1,2-Dichloropropane	12.33	63	63459	21.4782 ug/L	98
51)	Bromodichloromethane	12.68	83	76680	19.7769 ug/L	96
52)	Dibromomethane	12.78	93	33063	19.1325 ug/L	97
53)	2-Chloroethyl Vinyl Ether	13.04	63	28490	17.5313 ug/L	100
54)	4-Methyl-2-Pentanone	13.07	58	25016	20.3296 ug/L	96
55)	cis-1,3-Dichloropropene	13.43	75	93741	21.9439 ug/L	98
56)	Dimethyl Disulfide	13.72	79	46097	21.3954 ug/L	100
59)	Toluene	13.91	91	228802	20.6998 ug/L	99
60)	Ethyl Methacrylate	14.04	69	57545	16.2480 ug/L	98
62)	trans-1,3-Dichloropropene	14.13	75	81336	19.1363 ug/L	100
63)	1,1,2-Trichloroethane	14.38	97	47158	20.4119 ug/L	99
64)	2-Hexanone	14.31	43	49118	18.6315 ug/L	96
65)	1,3-Dichloropropane	14.73	76	88119	21.0437 ug/L	99
66)	Tetrachloroethene	14.87	166	58127	21.3177 ug/L	98
67)	Dibromochloromethane	15.18	129	57243	19.0512 ug/L	100
68)	1,2-Dibromoethane	15.48	107	47589	20.1414 ug/L	99
69)	1-Chlorohexane	15.59	91	76540	22.2984 ug/L	88
70)	Chlorobenzene	16.07	112	145305	20.4543 ug/L #	68
71)	1,1,1,2-Tetrachloroethane	16.11	131	55377	19.4144 ug/L	98
72)	Ethylbenzene	16.10	106	78941	20.7657 ug/L	97
73)	m-,p-Xylene	16.21	106	197971	42.5611 ug/L	99
74)	o-Xylene	16.88	106	95621	21.8258 ug/L	96
75)	Styrene	16.92	104	145622	19.5289 ug/L	95
76)	Bromoform	17.49	173	37516	17.6835 ug/L	99
77)	Isopropylbenzene	17.38	105	259287	22.0162 ug/L	99
79)	1,1,2,2-Tetrachloroethane	17.64	83	66301	20.0713 ug/L	96
81)	1,2,3-Trichloropropane	17.87	110	20862	20.6271 ug/L	93
82)	trans-1,4-Dichloro-2-Buten	17.93	53	18036	14.7900 ug/L	82
83)	n-Propylbenzene	17.98	91	312610	21.7687 ug/L	99
84)	Bromobenzene	18.12	156	64029	20.5121 ug/L	99
85)	1,3,5-Trimethylbenzene	18.21	105	219471	21.4709 ug/L	97
86)	2-Chlorotoluene	18.30	91	201094	20.9798 ug/L	96
87)	4-Chlorotoluene	18.36	91	181145	20.6686 ug/L	97
88)	a-Methylstyrene	18.69	118	107690	21.6946 ug/L	97
89)	tert-Butylbenzene	18.76	134	47296	22.2023 ug/L	96
90)	1,2,4-Trimethylbenzene	18.82	105	220318	20.4949 ug/L	83
91)	sec-Butylbenzene	19.07	105	289465	22.1129 ug/L	98
92)	p-Isopropyltoluene	19.27	119	228464	21.1544 ug/L	100
93)	1,3-Dichlorobenzene	19.48	146	120777	19.9966 ug/L	96
94)	1,4-Dichlorobenzene	19.64	146	121612	19.7807 ug/L	96
95)	n-Butylbenzene	19.89	91	217613	20.0338 ug/L	98
96)	1,2-Dichlorobenzene	20.23	146	118857	20.4506 ug/L	99
97)	1,2-Dibromo-3-Chloropropan	21.41	75	14268	19.5215 ug/L	95
98)	1,2,4-Trichlorobenzene	22.77	180	80745	19.2176 ug/L	98
99)	Hexachlorobutadiene	22.95	225	52327	21.7771 ug/L	99
100)	Naphthalene	23.20	128	182633	18.9080 ug/L	99
101)	1,2,3-Trichlorobenzene	23.59	180	78497	18.9732 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M137948.D 826_SL.M Tue Mar 22 17:22:14 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032216\6M137948.D Vial: 11
Acq On : 22 Mar 2016 16:57 Operator: TMB
Sample : WG561608-03 MSD 861-01 8260 5.24g Inst : HPMS6
Misc : 7,1 STD75209 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 22 17:22 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

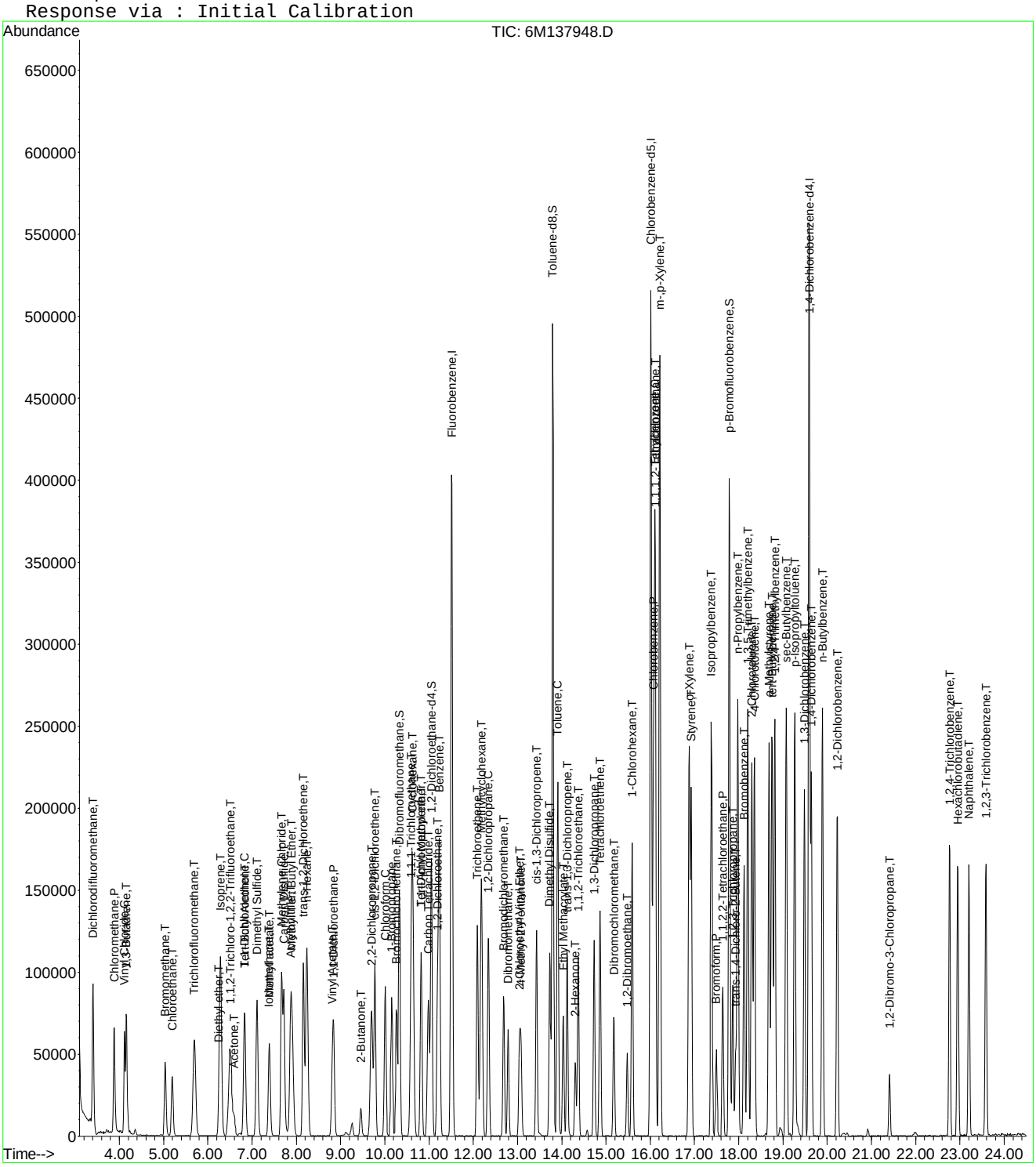

2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT14(5-5.5)140316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561316	**Analyst:**	JWR	**Run Date:**	03/17/2016 16:54
Collect Date:	03/14/2016 12:32	**Dilution:**	1	**File ID:**	1LM.LM33887
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.38	U	4.77	2.38	1.19

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT14(10-10.5)140316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561316	**Analyst:**	JWR	**Run Date:**	03/17/2016 17:51
Collect Date:	03/14/2016 13:15	**Dilution:**	1	**File ID:**	1LM.LM33890
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	89.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.16	U	4.32	2.16	1.08

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT14(10-10.5)140316FD	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561316	**Analyst:**	JWR	**Run Date:**	03/17/2016 18:10
Collect Date:	03/14/2016 13:15	**Dilution:**	1	**File ID:**	1LM.LM33891
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	90.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.20	U	4.40	2.20	1.10

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT14(17-17.5)140316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561316	**Analyst:**	JWR	**Run Date:**	03/17/2016 18:29
Collect Date:	03/14/2016 13:20	**Dilution:**	1	**File ID:**	1LM.LM33892
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	91.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.10	U	4.21	2.10	1.05

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT14(23-23.5)140316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561316	**Analyst:**	JWR	**Run Date:**	03/17/2016 18:48
Collect Date:	03/14/2016 13:25	**Dilution:**	1	**File ID:**	1LM.LM33893
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.40	U	4.80	2.40	1.20

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT15(5-5.5)140316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561316	**Analyst:**	JWR	**Run Date:**	03/17/2016 20:03
Collect Date:	03/14/2016 16:40	**Dilution:**	1	**File ID:**	1LM.LM33897
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.34	U	4.70	2.34	1.17

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030861-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT15(12-12.5)140316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561316	**Analyst:**	JWR	**Run Date:**	03/17/2016 20:22
Collect Date:	03/14/2016 16:41	**Dilution:**	1	**File ID:**	1LM.LM33898
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	44.1		4.64	2.32	1.16

Certificate of Analysis

Sample #:	L16030861-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT15(21-21.5)140316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561316	**Analyst:**	JWR	**Run Date:**	03/18/2016 13:31
Collect Date:	03/14/2016 16:42	**Dilution:**	100	**File ID:**	1LM.LM33933
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	82.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3440		476	238	119

Certificate of Analysis

Sample #:	L16030861-09	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT15(23.5-24)140316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561316	**Analyst:**	JWR	**Run Date:**	03/18/2016 13:50
Collect Date:	03/14/2016 16:43	**Dilution:**	100	**File ID:**	1LM.LM33934
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	81.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	6010		485	242	121

Certificate of Analysis

Microbac

Lab Report #: L16030861
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L16030861-10	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT15(26.5-27)140316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561316	**Analyst:**	JWR	**Run Date:**	03/18/2016 14:09
Collect Date:	03/14/2016 16:45	**Dilution:**	100	**File ID:**	1LM.LM33935
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	79.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	6530		505	252	126

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

MICROBAC

Semivolatile Sample Extract Log

Parameter: Perchlorate
SOP #: HPLC 06
Analyst: JWR
Spike/Surrogate analyst: JWR
Surrogate #: NA
Spike # A: STD72686
Ext Solvent: DI-H2O
Ext Solvent: NA
Ext Disk: NA

Matrix: Soils
Rev #: 07
Date/Time Extracted: 03/17/16/1200
Witness: WT
Spike # B: NA
Lot #: NA
Lot #: NA
Lot #: NA

Extraction Work Group: WG561289
Analytical Work Group: WG561316
Run ID: R4502800
Pipetter(s): Eppendorf #403
Analytical Balance ID: BAL014
Reagent: Tubes Lot #: RGT34011
Reagent: Sand Lot #: COA16150
Other: IS Lot #: COA18071

Color Code
T = Transparent
C = Colored
O = Opaque

	Sample ID	Test Code	pH	Initial Wt / Vol	JWR ~~Surrogate~~ Amount IS	Amount Spike	Final Volume	Extract Color	Comments
1	WG561289-01	6850		5.009g	0.250ml	1.0ml	50ml		MCT (2ug/kg)(10,000 us)
2	WG561289-02			5.008g		NA			Blank
3	WG561289-03			5.003g		1.0ml			LCS (2ug/kg)
4	L16030861-01Ref			5.082g		NA			WG561289-04 Ref
5	-01MS			5.084g		1.0ml			WG561289-05 MS (@2ug/kg)
6	-01MSD			5.087g		1.0ml			WG561289-06 MSD (@2ug/kg)
7	-02			5.182g		NA			
8	-03			5.033g		NA			
9	-04			5.220g		NA			
10	-05			5.216g		NA			
11	-06			5.164g		NA			
12	-07			5.071g		NA			
13	-08			5.071g		NA			
14	-09			5.075g		NA			
15	-10			5.005g		NA			
16									
17									
18									
19									
20									
21									
22									
23									
24									

JWR 03/17/16

Reviewed by: Wade T. [illegible] 3-17-16

Analytical WG561316 (soils)

Perchlorate Conductivity Check

(perchlorate1)

Conductivity Probe Calibration Check: 1403 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG561289-01 MCT	9,880.	
WG561289-02 Blank	1.76	
WG561289-LCS	2.05	
L16030861-01 Ref	4.96	
-01 MS	5.02	
-01 MSD	4.99	
-02	5.47	
-03	5.39	
-04	65.5	
-05	77.0	
-06	33.6	
-07	17.77	
-08	13.98	
-09	25.3	
-10	34.6	

Analyst: John Richards

Date/Time: 03/18/16 / 1300

DCN#117300

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030216_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015, WG559292

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 MS/MSD STD: STD72685

Comments: L16021262s and L16021255s diluted based on historical data.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM33567	WG559340-01 CCB	1	1		03/02/16 08:34
2	1LM.LM33568	WG559340-02 STD (0.1 ug/L)	1	1	STD72683	03/02/16 08:53
3	1LM.LM33569	WG559340-03 STD (0.2 ug/L)	1	1	STD72683	03/02/16 09:12
4	1LM.LM33570	WG559340-04 STD (0.5 ug/L)	1	1	STD72683	03/02/16 09:31
5	1LM.LM33571	WG559340-05 STD (1.0 ug/L)	1	1	STD72683	03/02/16 09:50
6	1LM.LM33572	WG559340-06 STD (2.0 ug/L)	1	1	STD72683	03/02/16 10:09
7	1LM.LM33573	WG559340-07 STD (5.0 ug/L)	1	1	STD72683	03/02/16 10:28
8	1LM.LM33574	WG559340-08 STD (10 ug/L)	1	1	STD72683	03/02/16 10:46
9	1LM.LM33575	WG559340-09 SSCV (1.0 ug/L)	1	1	STD72685	03/02/16 11:05
10	1LM.LM33576	WG559291-01 CCB	1	1		03/02/16 11:25
11	1LM.LM33577	WG559291-02 CCV (1.0ug/L)	1	1	STD72683	03/02/16 11:44
12	1LM.LM33578	WG559015-05 MRL (0.2ug/L)	1	1	STD72683	03/02/16 12:03
13	1LM.LM33579	WG559015-01 MCT (0.2ug/L)	1	1	STD72685	03/02/16 12:22
14	1LM.LM33580	WG559015-02 BLANK	1	1		03/02/16 12:41
15	1LM.LM33581	WG559015-05 MRL (0.2ug/L)	1	1	STD72683	03/02/16 13:01
16	1LM.LM33582	WG559015-03 LCS (0.2ug/L)	1	1	STD72685	03/02/16 13:20
17	1LM.LM33583	WG559015-04 LCS2 (0.2ug/L)	1	1	STD72685	03/02/16 13:39
18	1LM.LM33584	L16021060-01 ADC	1	1	STD72685	03/02/16 13:58
19	1LM.LM33585	L16021060-02 ADC	1	1	STD72685	03/02/16 14:17
20	1LM.LM33586	L16021060-03 ADC	1	1	STD72685	03/02/16 14:36
21	1LM.LM33587	L16021060-04 ADC	1	1	STD72685	03/02/16 14:55
22	1LM.LM33588	L16021262-01 (20x)	1	20		03/02/16 15:13
23	1LM.LM33589	L16021262-02 (5000x)	1	5000		03/02/16 15:32
24	1LM.LM33590	WG559291-03 CCV (1.0ug/L)	1	1	STD72683	03/02/16 15:51
25	1LM.LM33591	WG559015-06 MRL (0.2ug/L)	1	1	STD72683	03/02/16 16:10
26	1LM.LM33592	WG559291-04 CCB	1	1		03/02/16 16:29
27	1LM.LM33593	L16021262-03 (100X)	1	100		03/02/16 16:48
28	1LM.LM33594	L16021262-04 (2000X)	1	2000		03/02/16 17:07
29	1LM.LM33595	L16021262-05 (1000X)	1	1000		03/02/16 17:26
30	1LM.LM33596	L16021262-06 (10,000X)	1	10000		03/02/16 17:45
31	1LM.LM33597	L16021262-07 (10,000X)	1	10000		03/02/16 18:04
32	1LM.LM33598	L16021262-08 (5000X)	1	5000		03/02/16 18:23
33	1LM.LM33599	L16021262-09 (5000X)	1	5000		03/02/16 18:42

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030216_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015, WG559292

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM33600	L16021262-10 (100,000X)	1	100000		03/02/16 19:01
35	1LM.LM33601	L16021262-11 (10,000X)	1	10000		03/02/16 19:20
36	1LM.LM33602	L16021262-12 (10,000X)	1	10000		03/02/16 19:39
37	1LM.LM33603	WG559291-05 CCV (1.0ug/L)	1	1	STD72683	03/02/16 19:58
38	1LM.LM33604	WG559015-07 MRL (0.2ug/L)	1	1	STD72683	03/02/16 20:17
39	1LM.LM33605	WG559291-06 CCB	1	1		03/02/16 20:35
40	1LM.LM33606	L16021262-13 (10,000X)	1	10000		03/02/16 20:54
41	1LM.LM33607	L16021262-14 (10,000X)	1	10000		03/02/16 21:13
42	1LM.LM33608	WG559291-07 CCV (1.0ug/L)	1	1	STD72683	03/02/16 21:32
43	1LM.LM33609	WG559015-08 MRL (0.2ug/L)	1	1	STD72683	03/02/16 21:51
44	1LM.LM33610	WG559291-08 CCB	1	1		03/02/16 22:10
45	1LM.LM33611	WG559292-07 MRL (0.2ug/L)	1	1	STD72685	03/02/16 22:29
46	1LM.LM33612	WG559292-01 MCT (0.2ug/L)	1	1	STD72685	03/02/16 22:48
47	1LM.LM33613	WG559292-02 BLANK	1	1		03/02/16 23:07
48	1LM.LM33614	WG559292-03 LCS (0.2ug/L)	1	1	STD72685	03/02/16 23:26
93	1LM.LM33615	L16021255-01 REF 100X	1	100		03/02/16 23:45
50	1LM.LM33616	L16021255-02 MS 100X	1	100	STD72685	03/03/16 00:04
51	1LM.LM33617	L16021255-03 MSD 100X	1	100	STD72685	03/03/16 00:23
94	1LM.LM33618	L16021255-04 20X	1	20		03/03/16 00:42
53	1LM.LM33619	L16021255-05 20X	1	20		03/03/16 01:01
54	1LM.LM33620	L16021255-06 200X	1	200		03/03/16 01:20
55	1LM.LM33621	L16021255-07 100X	1	100		03/03/16 01:39
56	1LM.LM33622	WG559291-09 CCV (1.0ug/L)	1	1	STD72685	03/03/16 01:57
57	1LM.LM33623	WG559292-08 MRL (0.2ug/L)	1	1	STD72685	03/03/16 02:16
58	1LM.LM33624	WG559291-10 CCB	1	1		03/03/16 02:35
59	1LM.LM33625	L16021255-08	1	1		03/03/16 02:54
60	1LM.LM33626	L16021255-09 500X	1	500		03/03/16 03:13
61	1LM.LM33627	L16021255-10 5000X	1	5000		03/03/16 03:32
62	1LM.LM33628	L16021255-11 5000X	1	5000		03/03/16 03:51
63	1LM.LM33629	L16021255-12 100X	1	100		03/03/16 04:10
64	1LM.LM33630	L16021255-13 10,000X	1	10000		03/03/16 04:29
65	1LM.LM33631	L16021255-14 10,000X	1	10000		03/03/16 04:48
66	1LM.LM33632	L16030008-01	1	1		03/03/16 05:07
67	1LM.LM33633	L16030008-01 10X	1	10		03/03/16 05:26
68	1LM.LM33634	L16021328-01	1	1		03/03/16 05:45
69	1LM.LM33635	WG559291-11 CCV (1.0ug/L)	1	1	STD72685	03/03/16 06:04

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030216_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015, WG559292

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
70	1LM.LM33636	WG559292-09 MRL (0.2ug/L)	1	1	STD72685	03/03/16 06:23
71	1LM.LM33637	WG559291-12 CCB	1	1		03/03/16 06:41
72	1LM.LM33638	L16021328-02	1	1		03/03/16 07:00
73	1LM.LM33639	L16021328-03	1	1		03/03/16 07:19
74	1LM.LM33640	L16021328-04	1	1		03/03/16 07:38
75	1LM.LM33641	L16021328-05	1	1		03/03/16 07:57
76	1LM.LM33642	WG559291-13 CCV (1.0ug/L)	1	1	STD72685	03/03/16 08:16
77	1LM.LM33643	WG559292-10 MRL (0.2ug/L)	1	1	STD72685	03/03/16 08:35
78	1LM.LM33644	WG559291-14 CCB	1	1		03/03/16 08:54
79	1LM.LM33645	L16021255-05 200X	1	200		03/03/16 09:13
80	1LM.LM33646	L16021255-06	1	1		03/03/16 09:32
81	1LM.LM33647	L16021255-12 1000X	1	1000		03/03/16 09:51
95	1LM.LM33648	L16021255-04	1	1		03/03/16 10:10
96	1LM.LM33649	L16021255-02 MS	1	1	STD72685	03/03/16 10:29
97	1LM.LM33650	L16021255-03 MSD	1	1	STD72685	03/03/16 10:48
85	1LM.LM33651	WG559291-15 CCV (1.0ug/L)	1	1	STD72685	03/03/16 11:07
86	1LM.LM33652	WG559292-11 MRL (0.2ug/L)	1	1	STD72685	03/03/16 11:25
87	1LM.LM33653	WG559291-16 CCB	1	1		03/03/16 11:44

Comments

Seq.	Rerun	Dil.	Reason	Analytes
12	X			
	WG559015-05 incorrect vial location.			
50				
	DNR. Incorrect information on the supplied Chain of Custody.			
51				
	DNR. Incorrect information on the supplied Chain of Custody.			
94	X	1	Analyzed too dilute	
	L16021255-04			
53	X	200	Over Calibration Range	Perchlorate
	L16021255-05			
54	X	1	Analyzed too dilute	
	L16021255-06			
63	X	1000	Over Calibration Range	
	L16021255-12 100X			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 031716_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG561316 (soils) Analytical WG561318 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD72683 (03/02/2016)

CCV STD: STD72683 LCS STD: STD72685 MS/MSD STD: STD72685

Comments: Samples tagged with (NR) had "On Column" results over the calibration range when analyzed neat. These samples were reanalyzed at dilutions on the end of the run.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM33881	WG561324-01 CCB	1	1		03/17/16 15:00
2	1LM.LM33882	WG561324-02 CCV (1.0ug/L)	1	1	STD72683	03/17/16 15:19
3	1LM.LM33883	WG561316-07 MRL (2.0ug/kg)	7	1	STD72683	03/17/16 15:38
4	1LM.LM33884	WG561316-01 MCT (2.0ug/kg)	7	1	STD72685	03/17/16 15:57
5	1LM.LM33885	WG561316-02 BLANK	7	1		03/17/16 16:16
6	1LM.LM33886	WG561316-03 LCS (2.0ug/kg)	7	1	STD72685	03/17/16 16:35
7	1LM.LM33887	L16030861-01 REF	7	1		03/17/16 16:54
8	1LM.LM33888	L16030861-01 MS	7	1	STD72685	03/17/16 17:13
9	1LM.LM33889	L16030861-01 MSD	7	1	STD72685	03/17/16 17:32
10	1LM.LM33890	L16030861-02	7	1		03/17/16 17:51
11	1LM.LM33891	L16030861-03	7	1		03/17/16 18:10
12	1LM.LM33892	L16030861-04	7	1		03/17/16 18:29
13	1LM.LM33893	L16030861-05	7	1		03/17/16 18:48
14	1LM.LM33894	WG561324-03 CCV (1.0ug/L)	1	1	STD72683	03/17/16 19:07
15	1LM.LM33895	WG561316-08 MRL (2.0ug/kg)	7	1	STD72683	03/17/16 19:25
16	1LM.LM33896	WG561324-04 CCB	1	1		03/17/16 19:44
17	1LM.LM33897	L16030861-06	7	1		03/17/16 20:03
18	1LM.LM33898	L16030861-07	7	1		03/17/16 20:22
19	1LM.LM33899	L16030861-08 (NR)	7	1		03/17/16 20:41
20	1LM.LM33900	L16030861-09 (NR)	7	1		03/17/16 21:00
21	1LM.LM33901	L16030861-10 (NR)	7	1		03/17/16 21:19
22	1LM.LM33902	WG561324-05 CCV (1.0ug/L)	1	1	STD72683	03/17/16 21:38
23	1LM.LM33903	WG561316-09 MRL (2.0ug/kg)	7	1	STD72683	03/17/16 21:57
24	1LM.LM33904	WG561318-07 MRL (2.0ug/kg)	7	1	STD72683	03/17/16 22:16
25	1LM.LM33905	WG561324-06 CCB	1	1		03/17/16 22:35
26	1LM.LM33906	WG561318-01 MCT (2.0ug/kg)	7	1	STD72685	03/17/16 22:54
27	1LM.LM33907	WG561318-02 BLANK	7	1		03/17/16 23:13
28	1LM.LM33908	WG561318-03 LCS (2.0ug/kg)	7	1	STD72685	03/17/16 23:32
29	1LM.LM33909	L16030863-01 RS	7	1		03/17/16 23:51
30	1LM.LM33910	L16030863-02 MS	7	1	STD72685	03/18/16 00:09
31	1LM.LM33911	L16030863-03 MSD	7	1	STD72685	03/18/16 00:28
32	1LM.LM33912	L16030863-04	7	1		03/18/16 00:47
33	1LM.LM33913	L16030863-05 (NR)	7	1		03/18/16 01:06

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 031716_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG561316 (soils) Analytical WG561318 (soils)

Internal STD: COA18071 Surrogate STD: NA STD72683 (03/02/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM33914	L16030863-06 (NR)	7	1		03/18/16 01:25
35	1LM.LM33915	L16030863-07 (NR)	7	1		03/18/16 01:44
36	1LM.LM33916	WG561324-07 CCV (1.0ug/L)	1	1	STD72683	03/18/16 02:03
37	1LM.LM33917	WG561318-08 MRL (2.0ug/kg)	7	1	STD72683	03/18/16 02:22
38	1LM.LM33918	WG561324-08 CCB	1	1		03/18/16 02:41
39	1LM.LM33919	L16030863-08	7	1		03/18/16 03:00
40	1LM.LM33920	L16030863-09	7	1		03/18/16 03:19
41	1LM.LM33921	L16030863-10	7	1		03/18/16 03:38
42	1LM.LM33922	L16030863-11	7	1		03/18/16 03:57
43	1LM.LM33923	L16030863-12 (NR)	7	1		03/18/16 04:16
44	1LM.LM33924	L16030863-13 (NR)	7	1		03/18/16 04:35
45	1LM.LM33925	L16030863-14 (NR)	7	1		03/18/16 04:54
46	1LM.LM33926	WG561324-09 CCV (1.0ug/L)	1	1	STD72683	03/18/16 05:12
47	1LM.LM33927	WG561318-09 MRL (2.0ug/kg)	7	1	STD72683	03/18/16 05:31
48	1LM.LM33928	WG561324-10 CCB	1	1		03/18/16 05:50
49	1LM.LM33929	WG561324-11 CCV (1.0ug/L)	1	1	STD72683	03/18/16 12:15
50	1LM.LM33930	WG561316-10 MRL (2.0ug/kg)	7	1	STD72683	03/18/16 12:34
51	1LM.LM33931	WG561318-10 MRL (2.0ug/kg)	7	1	STD72683	03/18/16 12:53
52	1LM.LM33932	WG561324-12 CCB	1	1		03/18/16 13:12
53	1LM.LM33933	L16030861-08 (RR 100x)	7	100		03/18/16 13:31
54	1LM.LM33934	L16030861-09 (RR 100x)	7	100		03/18/16 13:50
55	1LM.LM33935	L16030861-10 (RR 100x)	7	100		03/18/16 14:09
56	1LM.LM33936	L16030863-05 (RR 10x)	7	10		03/18/16 14:28
57	1LM.LM33937	L16030863-06 (RR 50x)	7	50		03/18/16 14:46
58	1LM.LM33938	L16030863-07 (RR 100x)	7	100		03/18/16 15:05
59	1LM.LM33939	L16030863-12 (RR 10x)	7	10		03/18/16 15:24
60	1LM.LM33940	L16030863-13 (RR 100x)	7	100		03/18/16 15:43
61	1LM.LM33941	L16030863-14 (RR 50x)	7	50		03/18/16 16:02
62	1LM.LM33942	WG561324-13 CCV (1.0ug/L)	1	1	STD72683	03/18/16 16:21
63	1LM.LM33943	WG561316-11 MRL (2.0ug/kg)	7	1	STD72683	03/18/16 16:40
64	1LM.LM33944	WG561318-11 MRL (2.0ug/kg)	7	1	STD72683	03/18/16 16:59
65	1LM.LM33945	WG561324-14 CCB	1	1		03/18/16 17:18

Comments

Seq.	Rerun	Dil.	Reason	Analytes
30				

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 031716_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG561316 (soils) Analytical WG561318 (soils)

Internal STD: COA18071 Surrogate STD: NA STD72683 (03/02/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Comments

Seq.	Rerun	Dil.	Reason	Analytes
31			L16030863-02 MS : The MS %Rec is below the advisory limit. The parent sample to this MS had a result 17 times greater than that of the spiked amount. This sample's matrix is a non-homogeneous mixture of brown, red and white colored "clay-like" soils.	
			L16030863-03 MSD : The MSD %Rec is above the advisory limit. The parent sample to this MSD had a result 17 times greater than that of the spiked amount. This sample's matrix is a non-homogeneous mixture of brown, red and white colored "clay-like" soils.	

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Microbac Laboratories Inc.

Data Checklist

Date: 02-MAR-2016
Analyst: WTD
Analyst: ADC
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 73617
Analytical Workgroups: L16021255,L16021328,030008,021262,021060

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	WTD
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MES

Primary Reviewer: 03-MAR-2016

Secondary Reviewer: 04-MAR-2016

CHECKLIST1 - Modified 03/05/2008

Generated: MAR-04-2016 13:53:03

Microbac Laboratories Inc.

Data Checklist

Date: 17-MAR-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 73926
Analytical Workgroups: L16030861, 0863 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
18-MAR-2016
John Richards

Secondary Reviewer:
21-MAR-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-21-2016 10:23:48

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG561316

Login Number: L16030861

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18DPT14(5-5.5)140316	01	03/14/16					03/17/2016	3	28		03/17/16	.2	28	
18DPT14(10-10.5)140316	02	03/14/16					03/17/2016	2.9	28		03/17/16	.2	28	
18DPT14(10-10.5)140316FD	03	03/14/16					03/17/2016	2.9	28		03/17/16	.3	28	
18DPT14(17-17.5)140316	04	03/14/16					03/17/2016	2.9	28		03/17/16	.3	28	
18DPT14(23-23.5)140316	05	03/14/16					03/17/2016	2.9	28		03/17/16	.3	28	
18DPT15(5-5.5)140316	06	03/14/16					03/17/2016	2.8	28		03/17/16	.3	28	
18DPT15(12-12.5)140316	07	03/14/16					03/17/2016	2.8	28		03/17/16	.3	28	
18DPT15(21-21.5)140316	08	03/14/16					03/17/2016	2.8	28		03/18/16	1.1	28	
18DPT15(23.5-24)140316	09	03/14/16					03/17/2016	2.8	28		03/18/16	1.1	28	
18DPT15(26.5-27)140316	10	03/14/16					03/17/2016	2.8	28		03/18/16	1.1	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4679306
Report generated 03/22/2016 09:53

METHOD BLANK SUMMARY

Login Number: L16030861
Blank File ID: 1LM.LM33885
Prep Date: 03/17/16 12:00
Analyzed Date: 03/17/16 16:16
Analyst: JWR

Work Group: WG561316
Blank Sample ID: WG561316-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG561316-07	1LM.LM33883	03/17/16 15:38	01
MCT	WG561316-01	1LM.LM33884	03/17/16 15:57	01
LCS	WG561316-03	1LM.LM33886	03/17/16 16:35	01
18DPT14(5-5.5)140316	L16030861-01	1LM.LM33887	03/17/16 16:54	01
18DPT14(10-10.5)140316	L16030861-02	1LM.LM33890	03/17/16 17:51	01
18DPT14(10-10.5)140316FD	L16030861-03	1LM.LM33891	03/17/16 18:10	01
18DPT14(17-17.5)140316	L16030861-04	1LM.LM33892	03/17/16 18:29	01
18DPT14(23-23.5)140316	L16030861-05	1LM.LM33893	03/17/16 18:48	01
QCMRL	WG561316-08	1LM.LM33895	03/17/16 19:25	01
18DPT15(5-5.5)140316	L16030861-06	1LM.LM33897	03/17/16 20:03	01
18DPT15(12-12.5)140316	L16030861-07	1LM.LM33898	03/17/16 20:22	01
QCMRL	WG561316-09	1LM.LM33903	03/17/16 21:57	01
QCMRL	WG561316-10	1LM.LM33930	03/18/16 12:34	01
18DPT15(21-21.5)140316	L16030861-08	1LM.LM33933	03/18/16 13:31	DL01
18DPT15(23.5-24)140316	L16030861-09	1LM.LM33934	03/18/16 13:50	DL01
18DPT15(26.5-27)140316	L16030861-10	1LM.LM33935	03/18/16 14:09	DL01
QCMRL	WG561316-11	1LM.LM33943	03/18/16 16:40	01

Report Name: BLANK_SUMMARY
PDF File ID: 4679307
Report generated 03/22/2016 09:54

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16030861 Prep Date: 03/17/16 12:00 Sample ID: WG561316-02
Instrument ID: LCMS1 Run Date: 03/17/16 16:16 Prep Method: 6850
File ID: 1LM.LM33885 Analyst: JWR Method: 6850
Workgroup (AAB#): WG561316 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.998	3.99	0.998	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4679308
22-MAR-2016 09:54

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030861 Run Date: 03/17/2016 Sample ID: WG561316-03
Instrument ID: LCMS1 Run Time: 16:35 Prep Method: 6850
File ID: 1LM.LM33886 Analyst: JWR Method: 6850
Workgroup (AAB#): WG561316 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD72685 Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	2.00	2.03	102	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4679309
Report generated: 03/22/2016 09:54

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16030861 Cal ID: LCMS1 - Worknum: WG561316
Instrument ID: LCMS1 Contract #: Method: 6850
Parent ID: WG561316-04 File ID: 1LM.LM33887 Dil: 1 Matrix: SOLID
Sample ID: WG561316-05 MS File ID: 1LM.LM33888 Dil: 1 Units: ug/kg
Sample ID: WG561316-06 MSD File ID: 1LM.LM33889 Dil: 1 Percent Solid: 82.5

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Perchlorate	ND	2.38	2.42	102	2.38	2.37	99.5	2.05	80 - 120	15	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4679310
Report generated 03/22/2016 09:54

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16030861
Analytical Method: 6850
ICAL Workgroup: WG559340

Instrument ID: LCMS1
Initial Calibration Date: 02-MAR-16 10:46
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.808	3.97	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4680047
Report generated 03/22/2016 09:54

Login Number: L16030861
Analytical Method: 6850
Instrument ID: LCMS1
Initial Calibration Date: 02-MAR-16 10:46
Column ID: F

Analyte	WG559340-02			WG559340-03			WG559340-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	18400.0000	1.879	0.200	37000.0000	1.850	0.500	89000.0000	1.810

INT_CAL - Modified 03/06/2008
PDF File ID: 4680047
Report generated 03/22/2016 09:54

INITIAL CALIBRATION DATA

Login Number: L16030861
Analytical Method: 6850

Instrument ID: LCMS1
Initial Calibration Date: 02-MAR-16 10:46
Column ID: F

Analyte	WG559340-05			WG559340-06			WG559340-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	183000.000	1.829	2.00	363000.000	1.777	5.00	871000.000	1.779

INT_CAL - Modified 03/06/2008
PDF File ID: 4680047
Report generated 03/22/2016 09:54

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16030861
Analytical Method: 6850

Instrument ID: LCMS1
Initial Calibration Date: 02-MAR-16 10:46
Column ID: F

Analyte	WG559340-08		
	CONC	RESP	RF
Perchlorate	10.0	1650000.00	1.729

INT_CAL - Modified 03/06/2008
PDF File ID: 4680047
Report generated 03/22/2016 09:54

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16030861 Run Date: 03/02/2016 Sample ID: WG559340-09
Instrument ID: LCMS1 Run Time: 11:05 Method: 6850
File ID: 1LM.LM33575 Analyst: WTD QC Key: DOD4
ICal Workgroup: WG559340 Cal ID: LCMS1 - 02-MAR-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.83	3.00	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4680048
Report generated 03/22/2016 09:54

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030861
Run Date: 03/17/2016
Sample ID: WG561324-01
Instrument ID: LCMS1
Run Time: 15:00
Method: 6850
File ID: 1LM.LM33881
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG561316
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4679313
Report generated 03/22/2016 09:54

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030861
Run Date: 03/17/2016
Sample ID: WG561324-04
Instrument ID: LCMS1
Run Time: 19:44
Method: 6850
File ID: 1LM.LM33896
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG561316
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4679313
Report generated 03/22/2016 09:54

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030861
Run Date: 03/17/2016
Sample ID: WG561324-06
Instrument ID: LCMS1
Run Time: 22:35
Method: 6850
File ID: 1LM.LM33905
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG561316
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4679313
Report generated 03/22/2016 09:54

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030861
Run Date: 03/18/2016
Sample ID: WG561324-10
Instrument ID: LCMS1
Run Time: 05:50
Method: 6850
File ID: 1LM.LM33928
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG561316
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4679313
Report generated 03/22/2016 09:54

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030861
Run Date: 03/18/2016
Sample ID: WG561324-12
Instrument ID: LCMS1
Run Time: 13:12
Method: 6850
File ID: 1LM.LM33932
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG561316
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4679313
Report generated 03/22/2016 09:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030861
Run Date: 03/18/2016
Sample ID: WG561324-14
Instrument ID: LCMS1
Run Time: 17:18
Method: 6850
File ID: 1LM.LM33945
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG561316
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4679313
Report generated 03/22/2016 09:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030861 Run Date: 03/17/2016 Sample ID: WG561324-02
Instrument ID: LCMS1 Run Time: 15:19 Method: 6850
File ID: 1LM.LM33882 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG561316 Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.975	ug/kg	1.73	2.50	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4679312
Report generated 03/22/2016 09:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030861 Run Date: 03/17/2016 Sample ID: WG561324-03
Instrument ID: LCMS1 Run Time: 19:07 Method: 6850
File ID: 1LM.LM33894 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG561316 Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/kg	1.74	1.50	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4679312
Report generated 03/22/2016 09:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030861 Run Date: 03/17/2016 Sample ID: WG561324-05
Instrument ID: LCMS1 Run Time: 21:38 Method: 6850
File ID: 1LM.LM33902 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG561316 Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.993	ug/kg	1.76	0.700	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4679312
Report generated 03/22/2016 09:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030861 Run Date: 03/18/2016 Sample ID: WG561324-07
Instrument ID: LCMS1 Run Time: 02:03 Method: 6850
File ID: 1LM.LM33916 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG561316 Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.993	ug/kg	1.76	0.700	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4679312
Report generated 03/22/2016 09:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030861
Run Date: 03/18/2016
Sample ID: WG561324-11
Instrument ID: LCMS1
Run Time: 12:15
Method: 6850
File ID: 1LM.LM33929
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG561316
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.976	ug/kg	1.73	2.40	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4679312
Report generated 03/22/2016 09:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030861
Run Date: 03/18/2016
Sample ID: WG561324-13
Instrument ID: LCMS1
Run Time: 16:21
Method: 6850
File ID: 1LM.LM33942
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG561316
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.978	ug/kg	1.73	2.20	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4679312
Report generated 03/22/2016 09:54

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030861 Run Date: 03/17/2016 Sample ID: WG561316-07

Instrument ID: LCMS1 Run Time: 15:38 Prep Method: 6850

File ID: 1LM.LM33883 Analyst: JWR Method: 6850

Workgroup (AAB#): WG561316 Matrix: Soil Units: ug/kg

Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.88	94.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4679311
Report generated 03/22/2016 09:54

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030861 Run Date: 03/17/2016 Sample ID: WG561316-08
Instrument ID: LCMS1 Run Time: 19:25 Prep Method: 6850
File ID: 1LM.LM33895 Analyst: JWR Method: 6850
Workgroup (AAB#): WG561316 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.89	94.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4679311
Report generated 03/22/2016 09:54

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030861 Run Date: 03/17/2016 Sample ID: WG561316-09

Instrument ID: LCMS1 Run Time: 21:57 Prep Method: 6850

File ID: 1LM.LM33903 Analyst: JWR Method: 6850

Workgroup (AAB#): WG561316 Matrix: Soil Units: ug/kg

Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.94	97.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4679311
Report generated 03/22/2016 09:54

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030861 Run Date: 03/18/2016 Sample ID: WG561316-10

Instrument ID: LCMS1 Run Time: 12:34 Prep Method: 6850

File ID: 1LM.LM33930 Analyst: JWR Method: 6850

Workgroup (AAB#): WG561316 Matrix: Soil Units: ug/kg

Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.93	96.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4679311
Report generated 03/22/2016 09:54

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030861 Run Date: 03/18/2016 Sample ID: WG561316-11

Instrument ID: LCMS1 Run Time: 16:40 Prep Method: 6850

File ID: 1LM.LM33943 Analyst: JWR Method: 6850

Workgroup (AAB#): WG561316 Matrix: Soil Units: ug/kg

Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.95	97.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4679311
Report generated 03/22/2016 09:54

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16030861
Instrument ID: LCMS1
Workgroup (AAB#): WG561316

ICAL CCV Number: WG559340-05
CAL ID: LCMS1-02-MAR-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1
WG559340	NA	NA	494000
Upper Limit	NA	NA	741000
Lower Limit	NA	NA	247000
L16030861-01	1.00	01	479000
L16030861-02	1.00	01	491000
L16030861-03	1.00	01	518000
L16030861-04	1.00	01	505000
L16030861-05	1.00	01	533000
L16030861-06	1.00	01	538000
L16030861-07	1.00	01	520000
L16030861-08	100	DL01	457000
L16030861-09	100	DL01	452000
L16030861-10	100	DL01	451000
WG561316-02	1.00	01	483000
WG561316-03	1.00	01	460000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4679314
Report generated 03/22/2016 09:54

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**	6850	**Samplenum:**	L16030861-01
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:00	**File ID:**	1LM.LM33887
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561316	**Analysis Date:**	03/17/2016 16:54	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1600	884	1.81	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**	6850	**Samplenum:**	L16030861-02
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:00	**File ID:**	1LM.LM33890
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561316	**Analysis Date:**	03/17/2016 17:51	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1270	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**	6850	**Samplenum:**	L16030861-03
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:00	**File ID:**	1LM.LM33891
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561316	**Analysis Date:**	03/17/2016 18:10	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1510	1050	1.44	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**	6850	**Samplenum:**	L16030861-04
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:00	**File ID:**	1LM.LM33892
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561316	**Analysis Date:**	03/17/2016 18:29	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	810	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**	6850	**Samplenum:**	L16030861-05
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:00	**File ID:**	1LM.LM33893
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561316	**Analysis Date:**	03/17/2016 18:48	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1460	603	2.42	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**	6850	**Samplenum:**	L16030861-06
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:00	**File ID:**	1LM.LM33897
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561316	**Analysis Date:**	03/17/2016 20:03	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1850	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**	6850	**Samplenum:**	L16030861-07
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:00	**File ID:**	1LM.LM33898
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561316	**Analysis Date:**	03/17/2016 20:22	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	693000	225000	3.08	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**	6850	**Samplenum:**	L16030861-08
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:00	**File ID:**	1LM.LM33933
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561316	**Analysis Date:**	03/18/2016 13:31	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	464000	154000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**	6850	**Samplenum:**	L16030861-09
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:00	**File ID:**	1LM.LM33934
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561316	**Analysis Date:**	03/18/2016 13:50	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	786000	252000	3.12	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**	6850	**Samplenum:**	L16030861-10
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:00	**File ID:**	1LM.LM33935
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561316	**Analysis Date:**	03/18/2016 14:09	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	819000	265000	3.09	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**		**Samplenum:**	WG559340-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33568
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561316	**Analysis Date:**	03/02/2016 08:53	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	18400	5910	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**		**Samplenum:**	WG559340-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33569
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561316	**Analysis Date:**	03/02/2016 09:12	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37000	11900	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**		**Samplenum:**	WG559340-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33570
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561316	**Analysis Date:**	03/02/2016 09:31	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	89000	30400	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**		**Samplenum:**	WG559340-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33571
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561316	**Analysis Date:**	03/02/2016 09:50	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	183000	56800	3.22	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**		**Samplenum:**	WG559340-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33572
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561316	**Analysis Date:**	03/02/2016 10:09	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	363000	117000	3.10	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**		**Samplenum:**	WG559340-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33573
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561316	**Analysis Date:**	03/02/2016 10:28	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	871000	282000	3.09	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**		**Samplenum:**	WG559340-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33574
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561316	**Analysis Date:**	03/02/2016 10:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1650000	530000	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**		**Samplenum:**	WG559340-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33575
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561316	**Analysis Date:**	03/02/2016 11:05	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	190000	62200	3.05	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**	6850	**Samplenum:**	WG561316-01
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:00	**File ID:**	1LM.LM33884
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561316	**Analysis Date:**	03/17/2016 15:57	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	33100	11000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**	6850	**Samplenum:**	WG561316-02
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:00	**File ID:**	1LM.LM33885
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561316	**Analysis Date:**	03/17/2016 16:16	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**	6850	**Samplenum:**	WG561316-03
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:00	**File ID:**	1LM.LM33886
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561316	**Analysis Date:**	03/17/2016 16:35	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34700	11800	2.94	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**	6850	**Samplenum:**	WG561316-05
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:00	**File ID:**	1LM.LM33888
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561316	**Analysis Date:**	03/17/2016 17:13	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36400	12300	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**	6850	**Samplenum:**	WG561316-06
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:00	**File ID:**	1LM.LM33889
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561316	**Analysis Date:**	03/17/2016 17:32	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36100	13200	2.73	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**	6850	**Samplenum:**	WG561316-07
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:00	**File ID:**	1LM.LM33883
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561316	**Analysis Date:**	03/17/2016 15:38	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32500	11300	2.88	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**	6850	**Samplenum:**	WG561316-08
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:00	**File ID:**	1LM.LM33895
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561316	**Analysis Date:**	03/17/2016 19:25	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	39000	13200	2.95	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**	6850	**Samplenum:**	WG561316-09
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:00	**File ID:**	1LM.LM33903
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561316	**Analysis Date:**	03/17/2016 21:57	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	39900	13100	3.05	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**	6850	**Samplenum:**	WG561316-10
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:00	**File ID:**	1LM.LM33930
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561316	**Analysis Date:**	03/18/2016 12:34	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35400	11200	3.16	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**	6850	**Samplenum:**	WG561316-11
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:00	**File ID:**	1LM.LM33943
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561316	**Analysis Date:**	03/18/2016 16:40	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37700	12900	2.92	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**		**Samplenum:**	WG561324-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33881
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561316	**Analysis Date:**	03/17/2016 15:00	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**		**Samplenum:**	WG561324-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33882
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561316	**Analysis Date:**	03/17/2016 15:19	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	154000	51700	2.98	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**		**Samplenum:**	WG561324-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33894
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561316	**Analysis Date:**	03/17/2016 19:07	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	185000	61800	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**		**Samplenum:**	WG561324-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33896
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561316	**Analysis Date:**	03/17/2016 19:44	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	268	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**		**Samplenum:**	WG561324-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33902
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561316	**Analysis Date:**	03/17/2016 21:38	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	185000	61400	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**		**Samplenum:**	WG561324-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33905
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561316	**Analysis Date:**	03/17/2016 22:35	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**		**Samplenum:**	WG561324-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33916
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561316	**Analysis Date:**	03/18/2016 02:03	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	187000	61300	3.05	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**		**Samplenum:**	WG561324-10
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33928
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561316	**Analysis Date:**	03/18/2016 05:50	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**		**Samplenum:**	WG561324-11
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33929
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561316	**Analysis Date:**	03/18/2016 12:15	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	162000	54600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**		**Samplenum:**	WG561324-12
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33932
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561316	**Analysis Date:**	03/18/2016 13:12	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	389	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**		**Samplenum:**	WG561324-13
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33942
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561316	**Analysis Date:**	03/18/2016 16:21	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	174000	56500	3.08	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030861	**Prep Method:**		**Samplenum:**	WG561324-14
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33945
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561316	**Analysis Date:**	03/18/2016 17:18	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	548	0.000	2.3	3.8	*

2.2.1.3 Sample Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 3/18/2016 6:13 PM

Data File	LM33887.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 4:54:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030861-01 REF	**Injection Vial**	7.00
Data File	LM33887.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 4:54:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561316-04	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.790e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.600e+03	9.95	N/A	< 0
Perchlorate conf	8.840e+02	9.92	N/A	0.0025

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

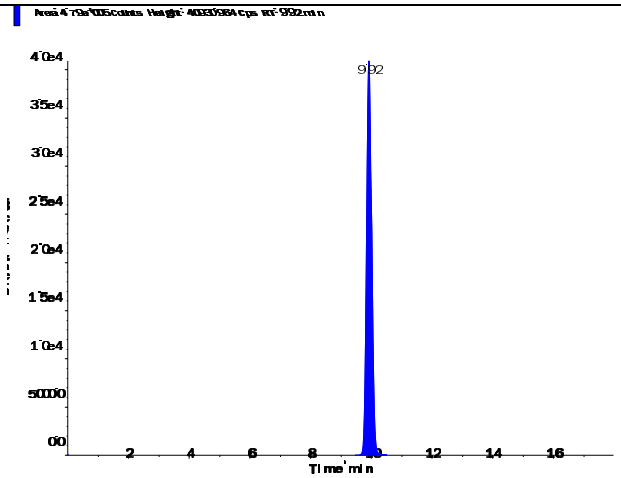

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.003
Sample Type:	(Unknown)

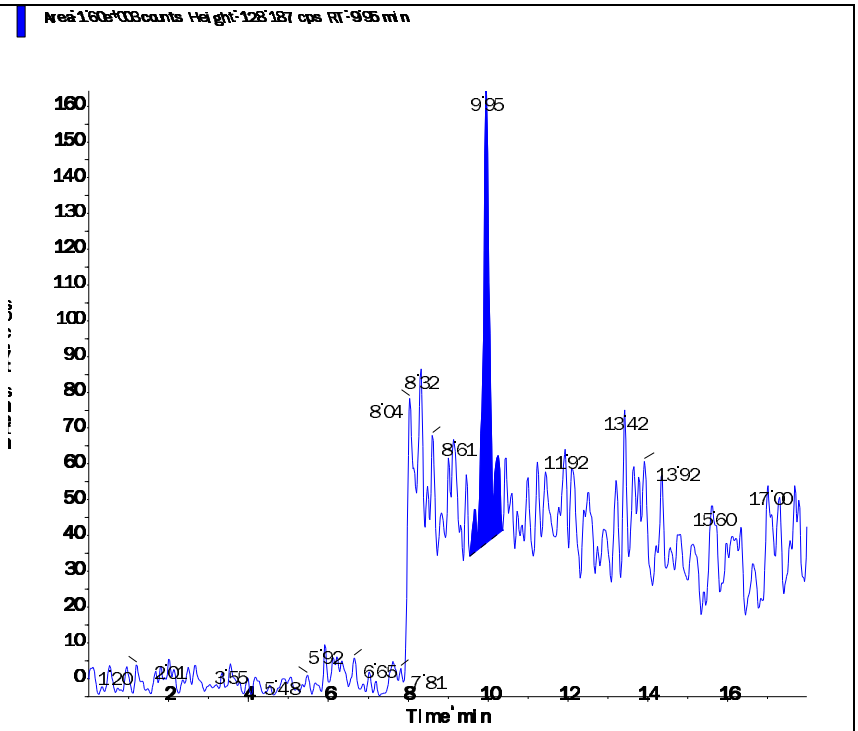

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	0.0025 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

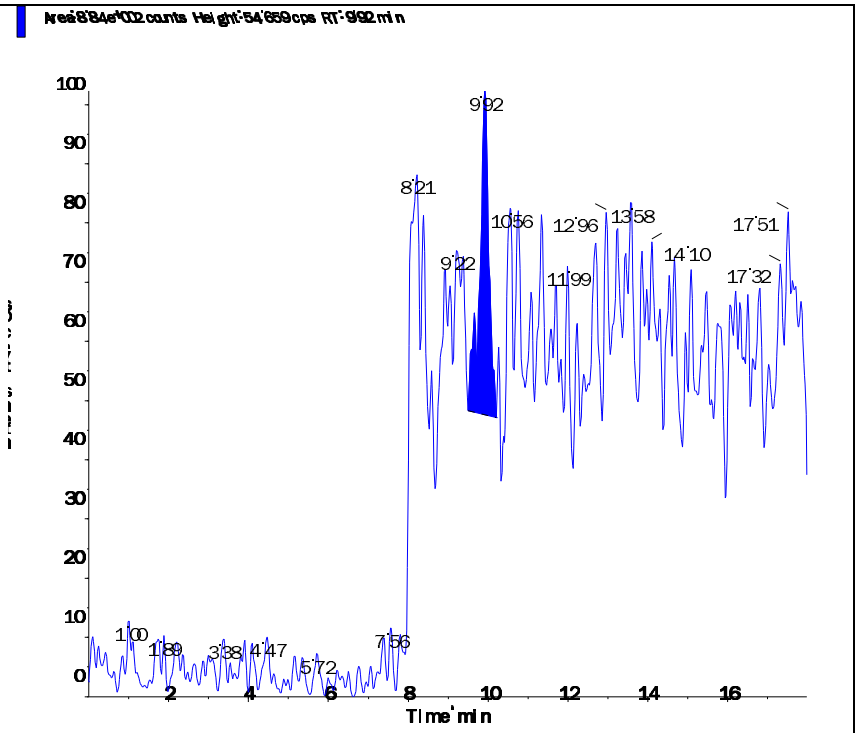

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Created with Analyst Reporter
Printed: 3/18/2016 6:14 PM

Data File	LM33890.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 5:51:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030861-02	**Injection Vial**	10.00
Data File	LM33890.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 5:51:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	L16030861-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.910e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.270e+03	9.93	N/A	< 0
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

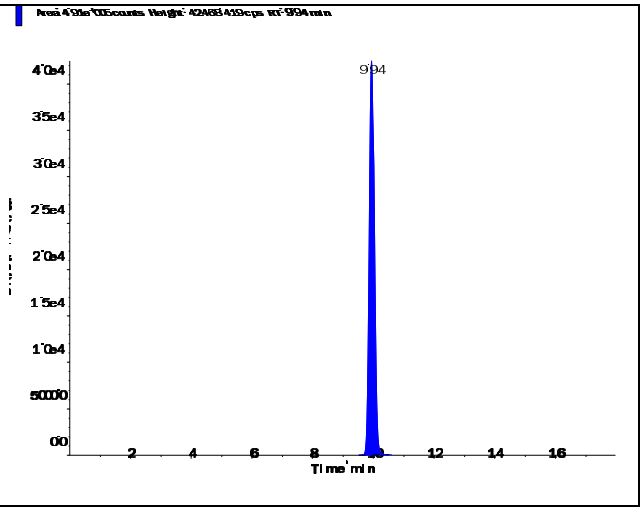

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.003
Sample Type:	(Unknown)

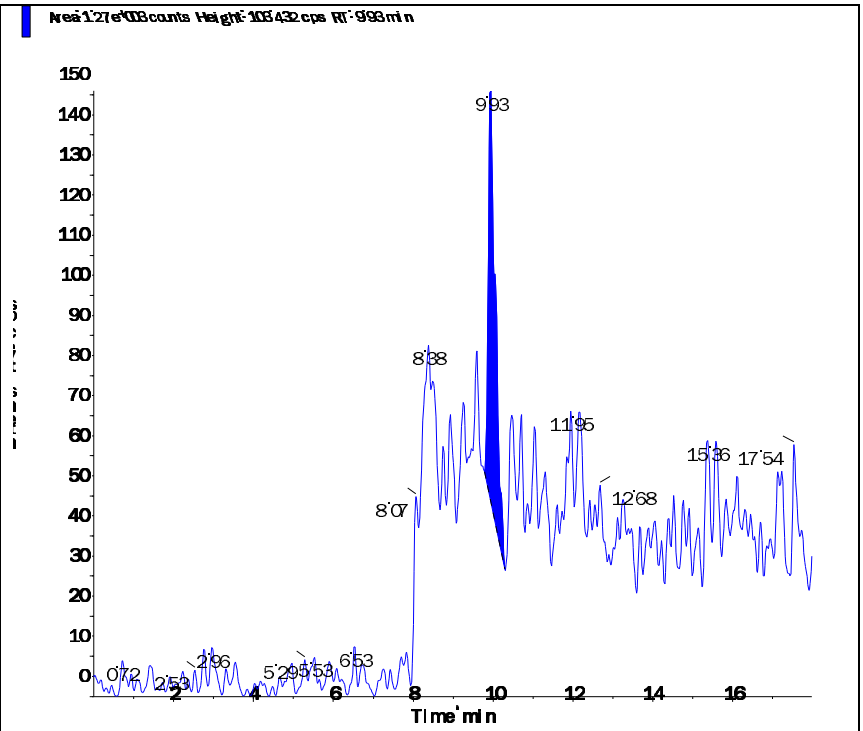

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

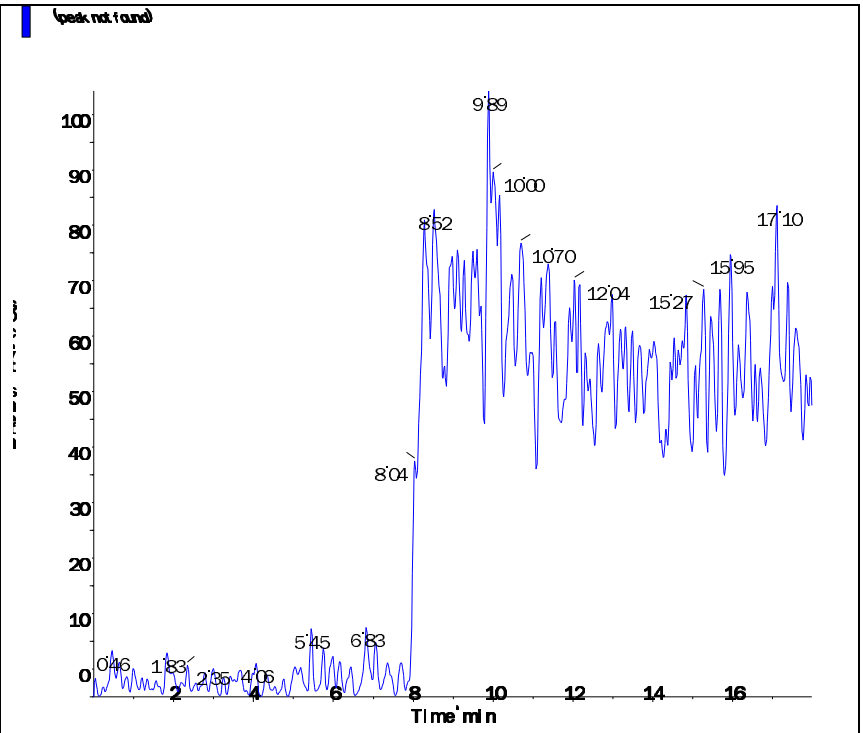

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Created with Analyst Reporter
Printed: 3/18/2016 6:15 PM

Data File	LM33891.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 6:10:12 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030861-03	**Injection Vial**	11.00
Data File	LM33891.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 6:10:12 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	L16030861-03	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.180e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.510e+03	9.90	N/A	< 0
Perchlorate conf	1.050e+03	9.91	N/A	0.0041

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

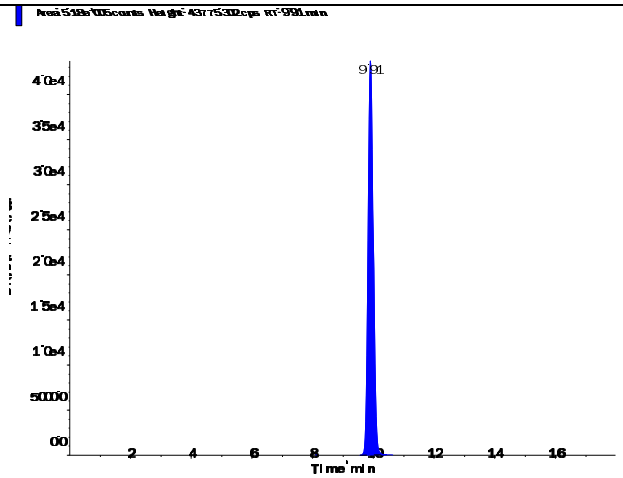

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.90 (9.94) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.003
Sample Type:	(Unknown)

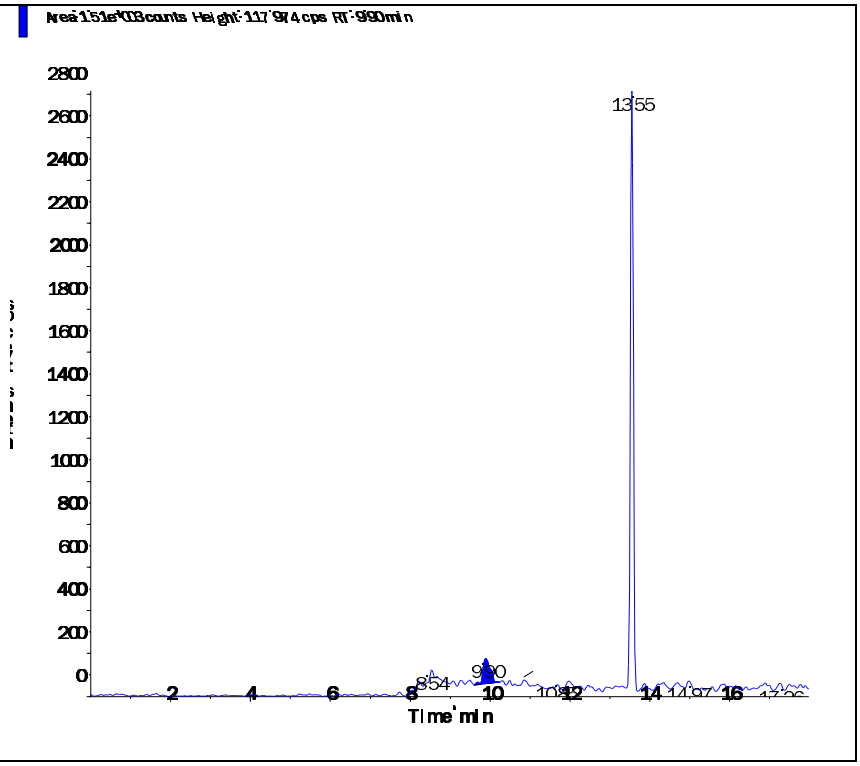

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.92) min
Calculated conc:	0.0041 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

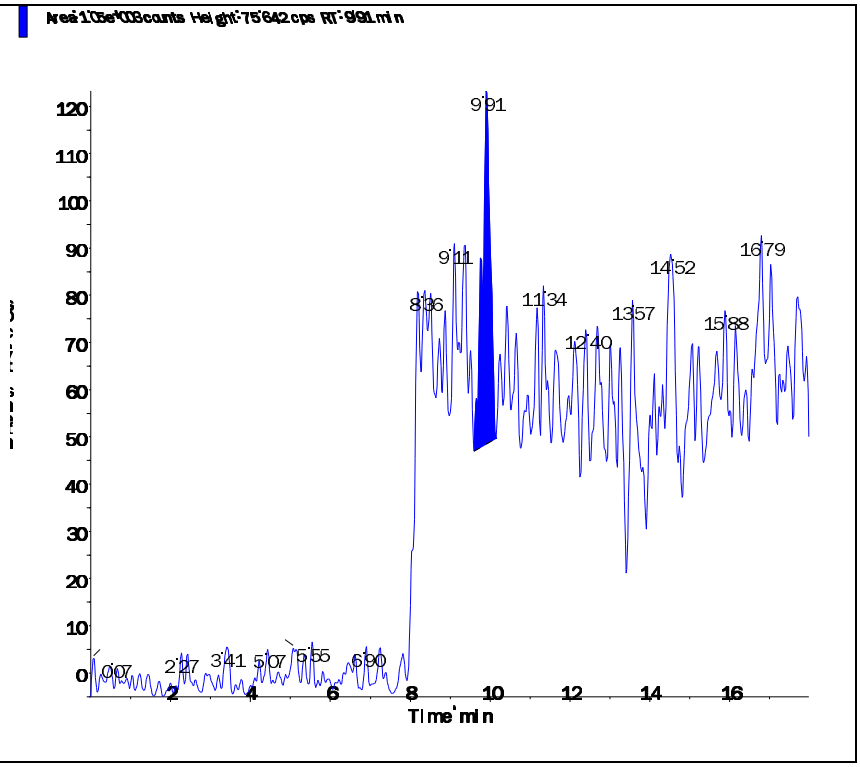

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Data File	LM33892.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 6:29:08 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030861-04	**Injection Vial**	12.00
Data File	LM33892.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 6:29:08 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	L16030861-04	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.050e+05	9.89	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	8.100e+02	9.90	N/A	0.0003

O18LP (Internal Standard)

RT (Exp. RT): 9.89(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

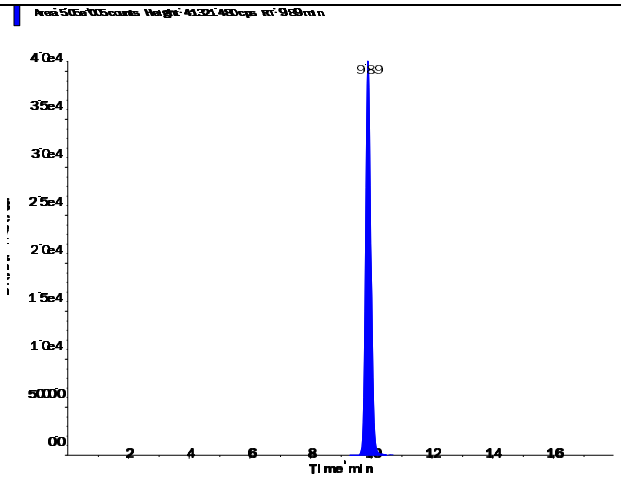

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.94) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	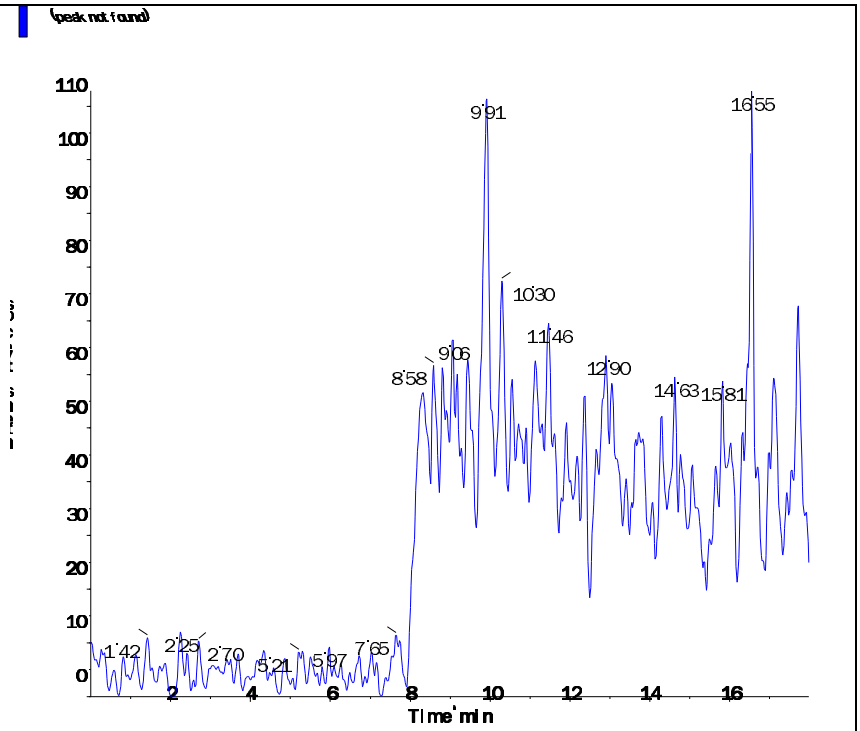
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.90 (9.92) min Calculated conc: 0.0003 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	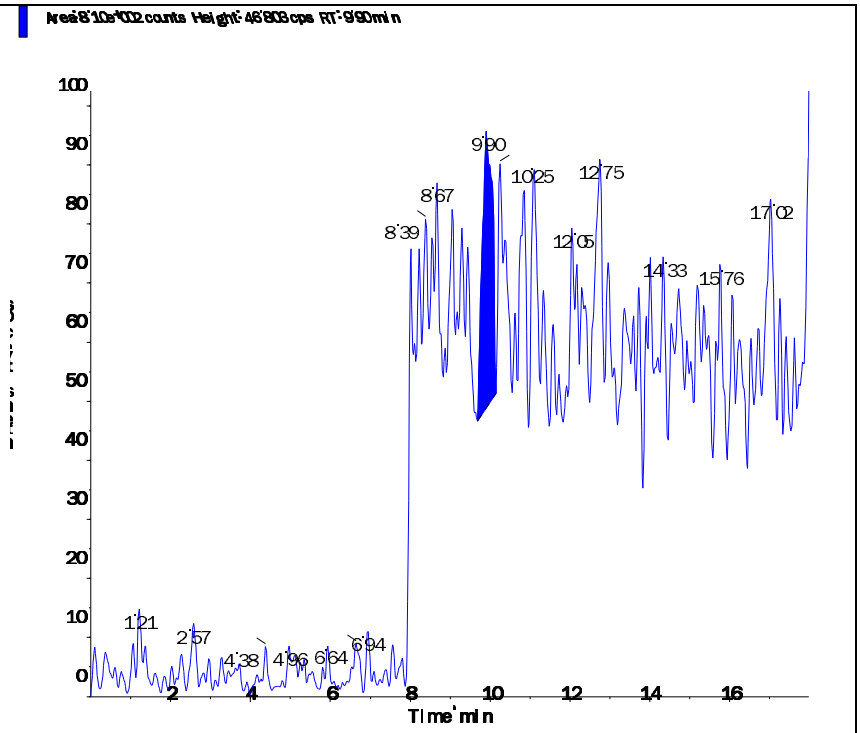

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Data File	LM33893.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 6:48:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030861-05	**Injection Vial**	13.00
Data File	LM33893.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 6:48:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	L16030861-05	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.330e+05	9.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.460e+03	9.91	N/A	< 0
Perchlorate conf	6.030e+02	9.91	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.90(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

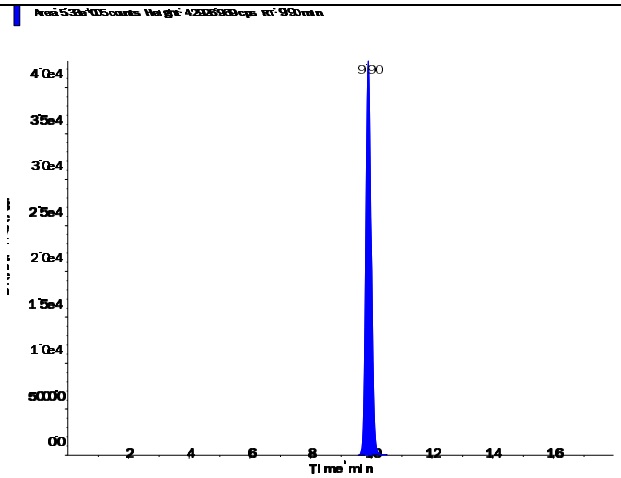

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.91 (9.94) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.003
Sample Type:	(Unknown)

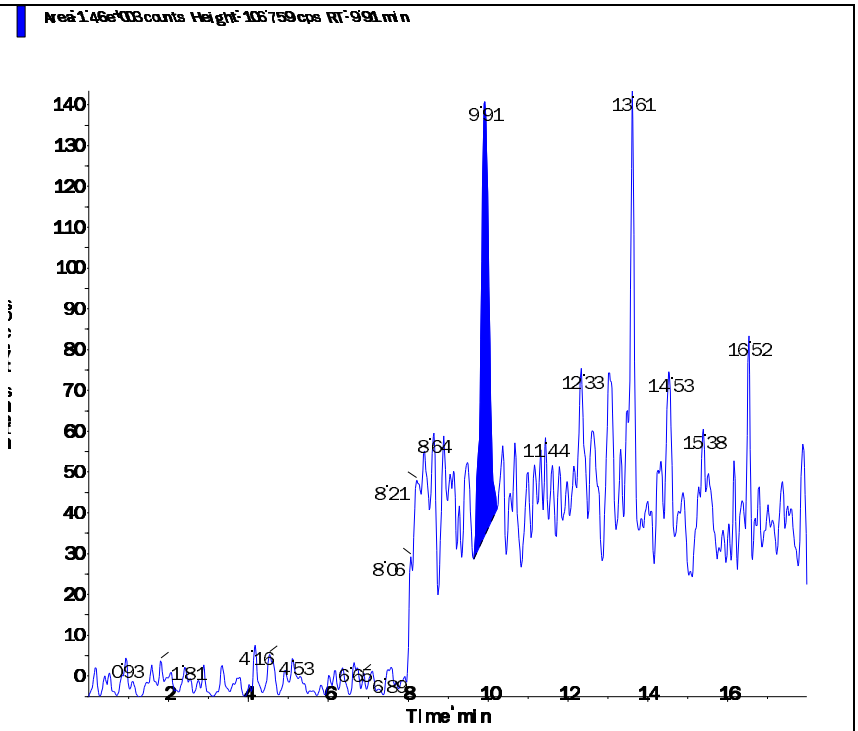

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.92) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

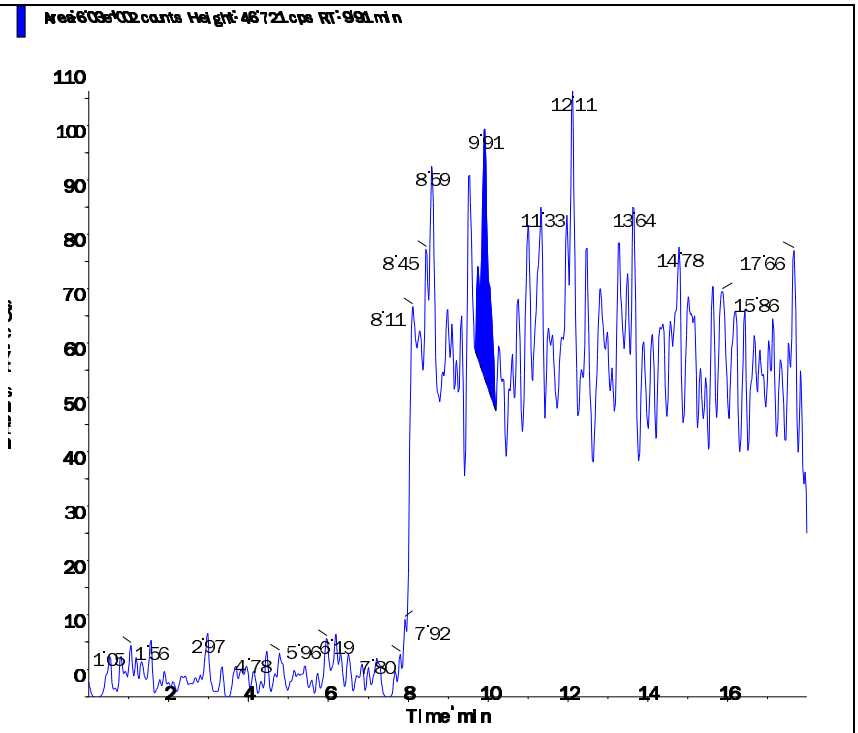

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Data File	LM33897.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 8:03:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030861-06	**Injection Vial**	14.00
Data File	LM33897.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 8:03:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	L16030861-06	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.380e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.850e+03	9.97	N/A	< 0
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

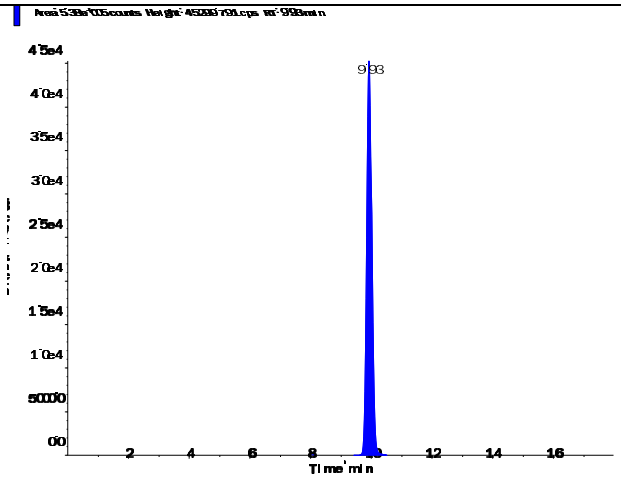

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.97 (9.94) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.003
Sample Type:	(Unknown)

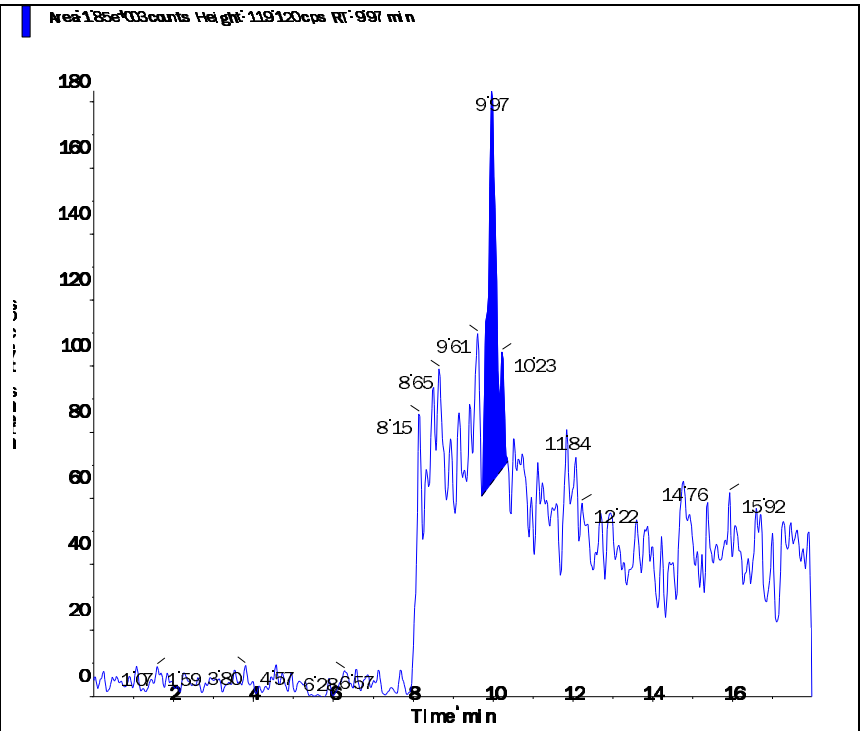

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

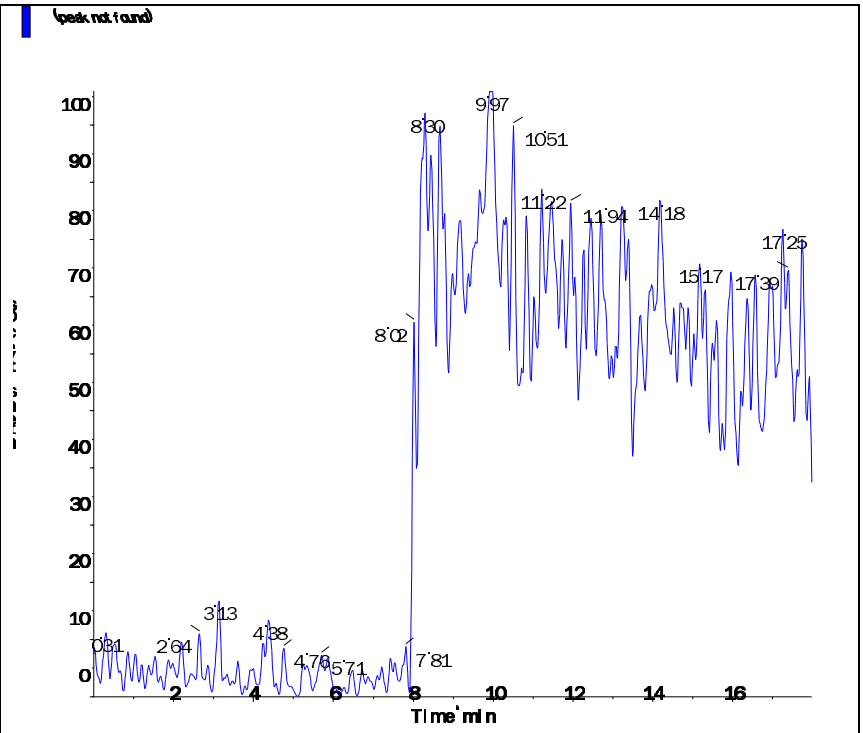

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Data File	LM33898.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 8:22:44 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030861-07	**Injection Vial**	15.00
Data File	LM33898.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 8:22:44 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	L16030861-07	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.200e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	6.930e+05	9.94	N/A	3.80
Perchlorate conf	2.250e+05	9.93	N/A	3.83

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

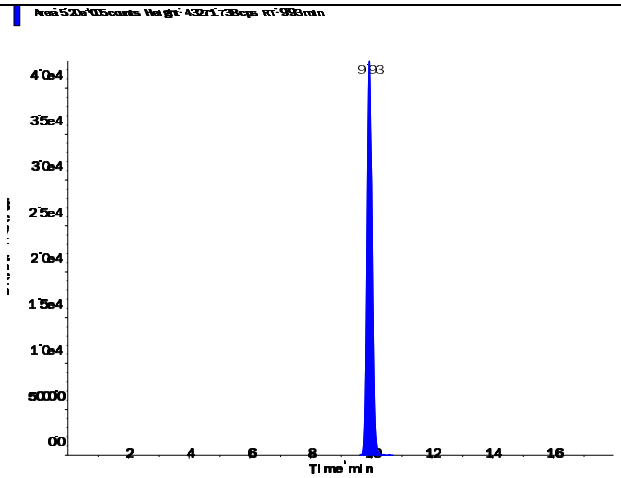

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.94 (9.94) min Calculated conc: 3.80 ng/ml Area Ratio: 1.334 Sample Type: (Unknown)	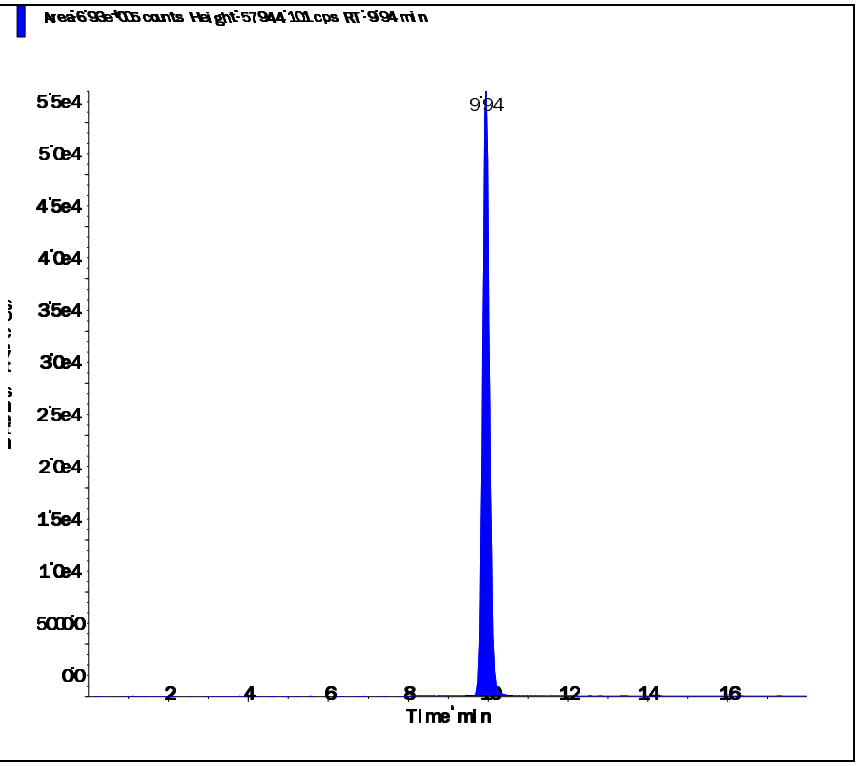
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.93 (9.92) min Calculated conc: 3.83 ng/ml Area Ratio: 0.433 Sample Type: (Unknown)	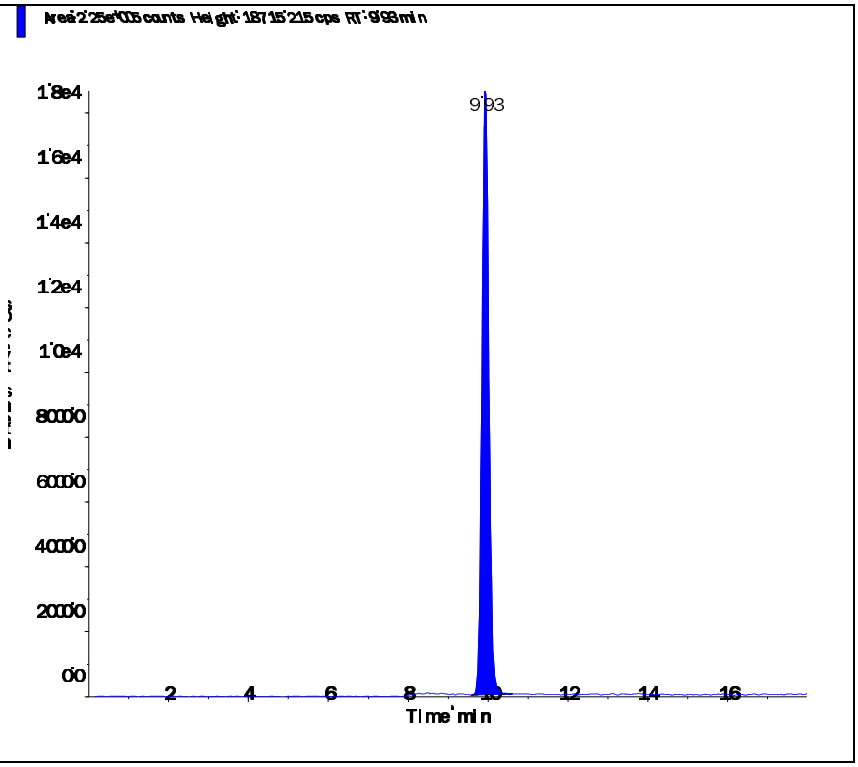

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Data File	LM33933.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 1:31:10 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030861-08 (RR 100x)	**Injection Vial**	36.00
Data File	LM33933.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 1:31:10 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	L16030861-08	**Dilution Factor**	1.00
Sample Comment	7,100.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.570e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.640e+05	9.98	N/A	2.89
Perchlorate conf	1.540e+05	9.97	N/A	2.97

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

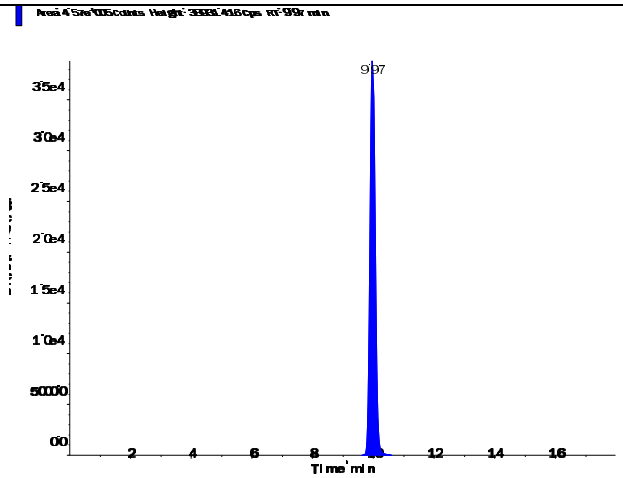

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.98 (9.94) min
Calculated conc:	2.89 ng/ml
Area Ratio:	1.014
Sample Type:	(Unknown)

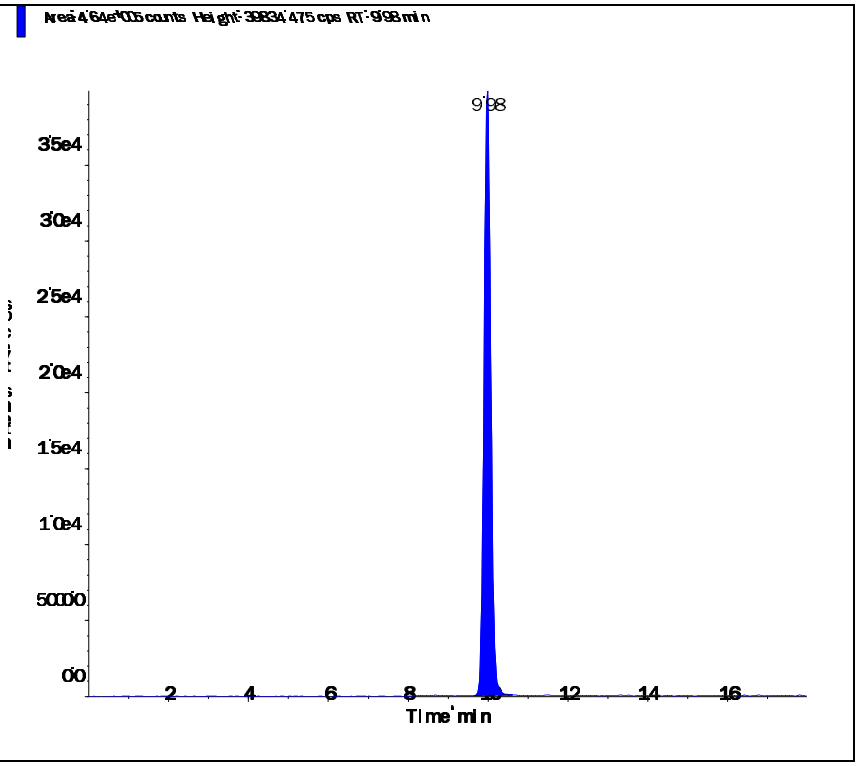

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.97 (9.92) min
Calculated conc:	2.97 ng/ml
Area Ratio:	0.336
Sample Type:	(Unknown)

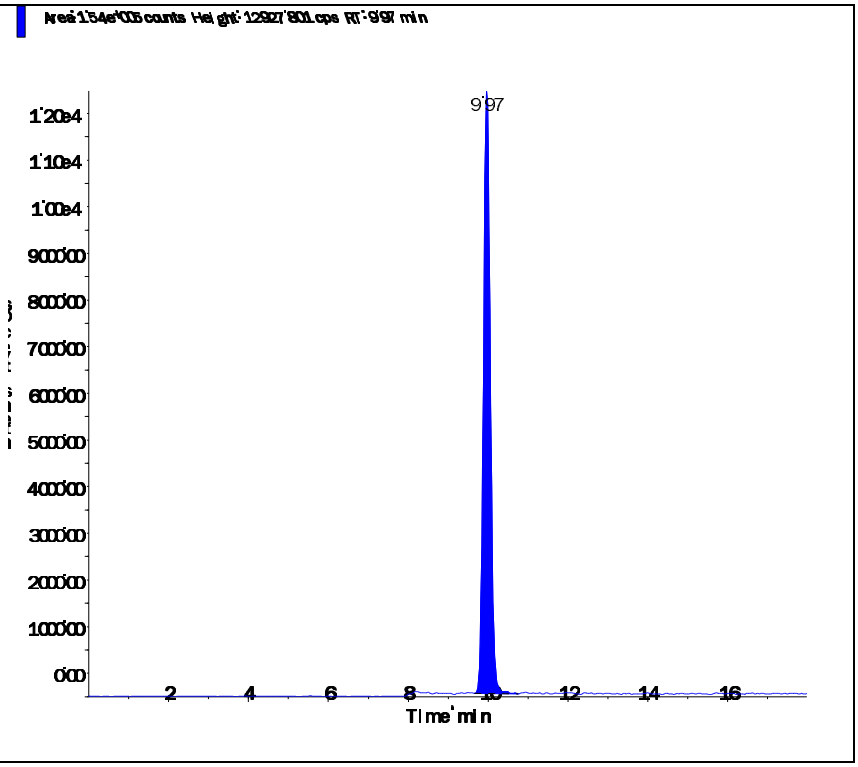

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Data File	LM33934.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 1:50:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030861-09 (RR 100x)	**Injection Vial**	37.00
Data File	LM33934.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 1:50:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	L16030861-09	**Dilution Factor**	1.00
Sample Comment	7,100.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.520e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.860e+05	9.98	N/A	4.95
Perchlorate conf	2.520e+05	9.96	N/A	4.95

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

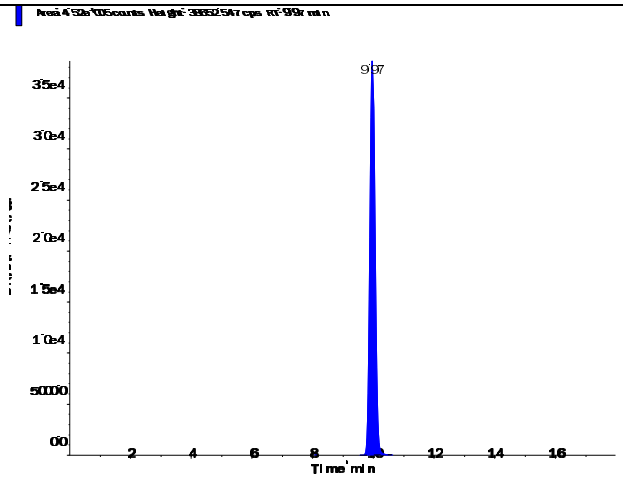

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.98 (9.94) min
Calculated conc:	4.95 ng/ml
Area Ratio:	1.737
Sample Type:	(Unknown)

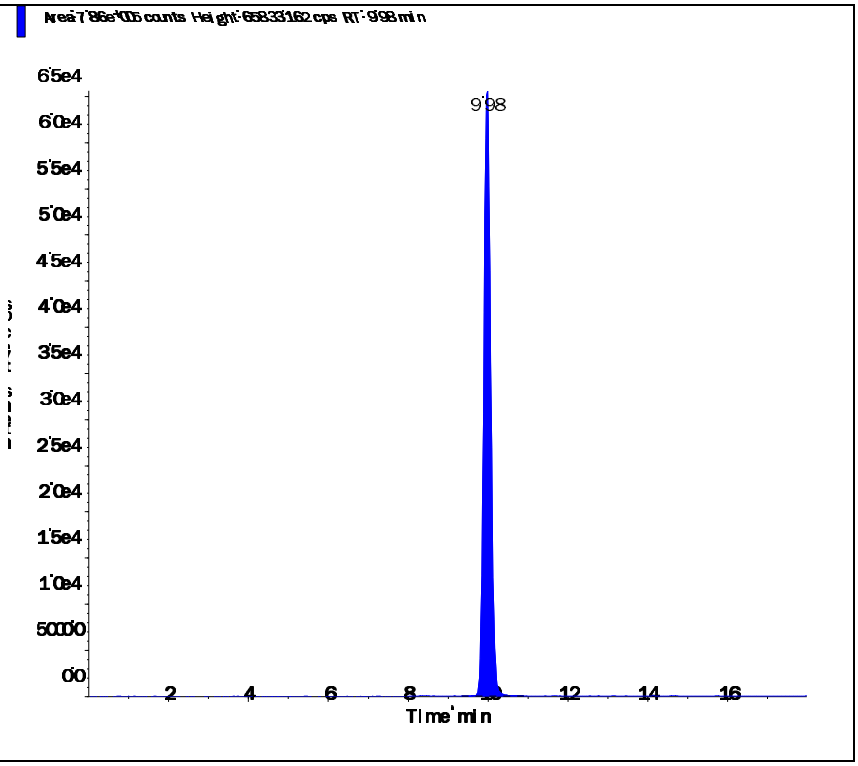

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.96 (9.92) min
Calculated conc:	4.95 ng/ml
Area Ratio:	0.558
Sample Type:	(Unknown)

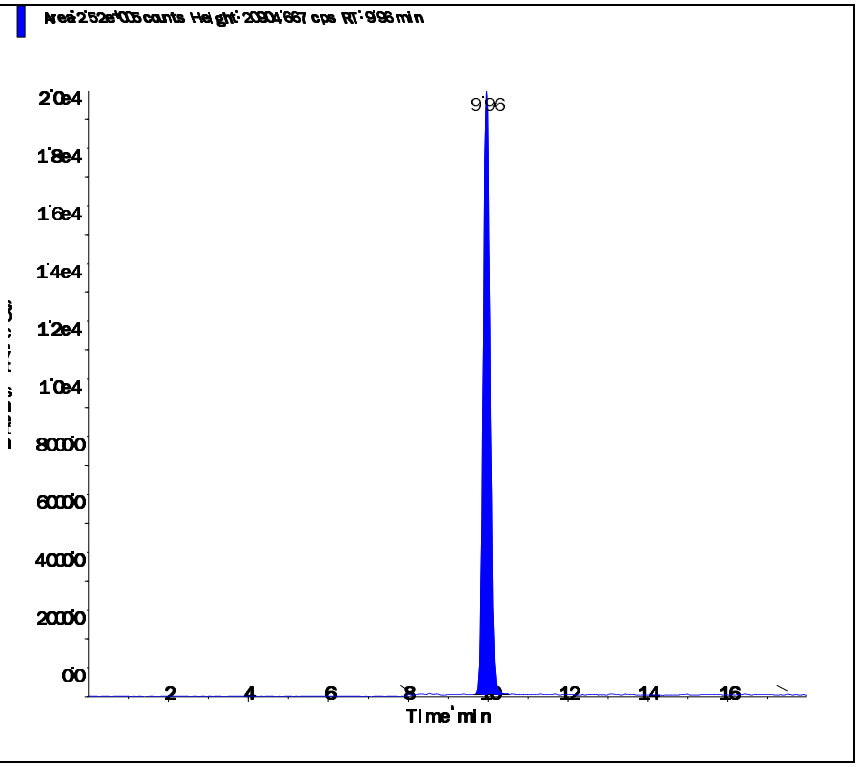

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Data File	LM33935.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 2:09:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030861-10 (RR 100x)	**Injection Vial**	38.00
Data File	LM33935.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 2:09:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	L16030861-10	**Dilution Factor**	1.00
Sample Comment	7,100.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.510e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.190e+05	9.98	N/A	5.17
Perchlorate conf	2.650e+05	9.97	N/A	5.21

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

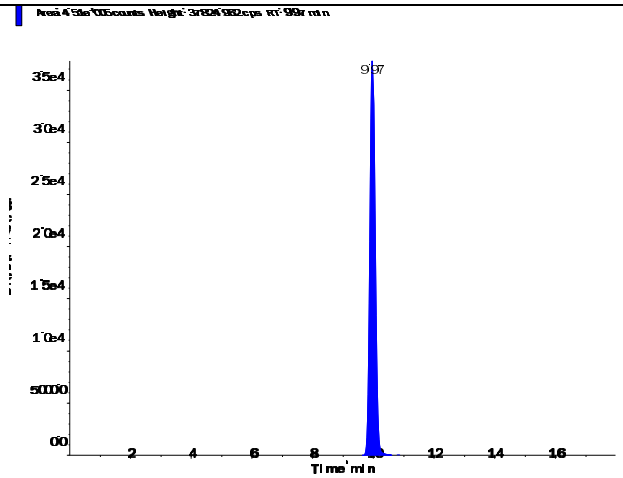

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.98 (9.94) min
Calculated conc:	5.17 ng/ml
Area Ratio:	1.814
Sample Type:	(Unknown)

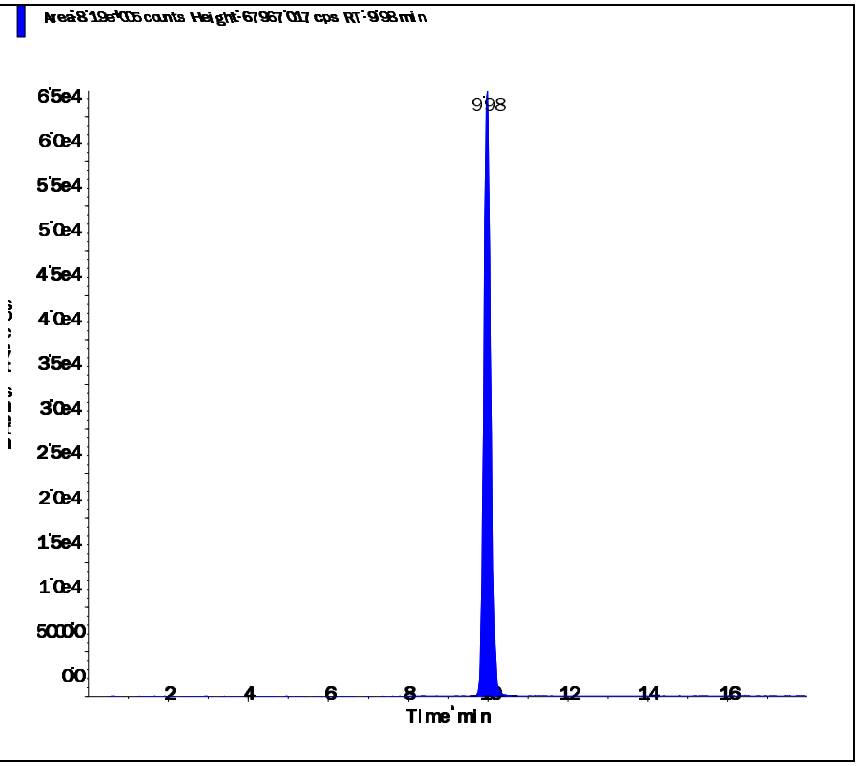

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.97 (9.92) min
Calculated conc:	5.21 ng/ml
Area Ratio:	0.588
Sample Type:	(Unknown)

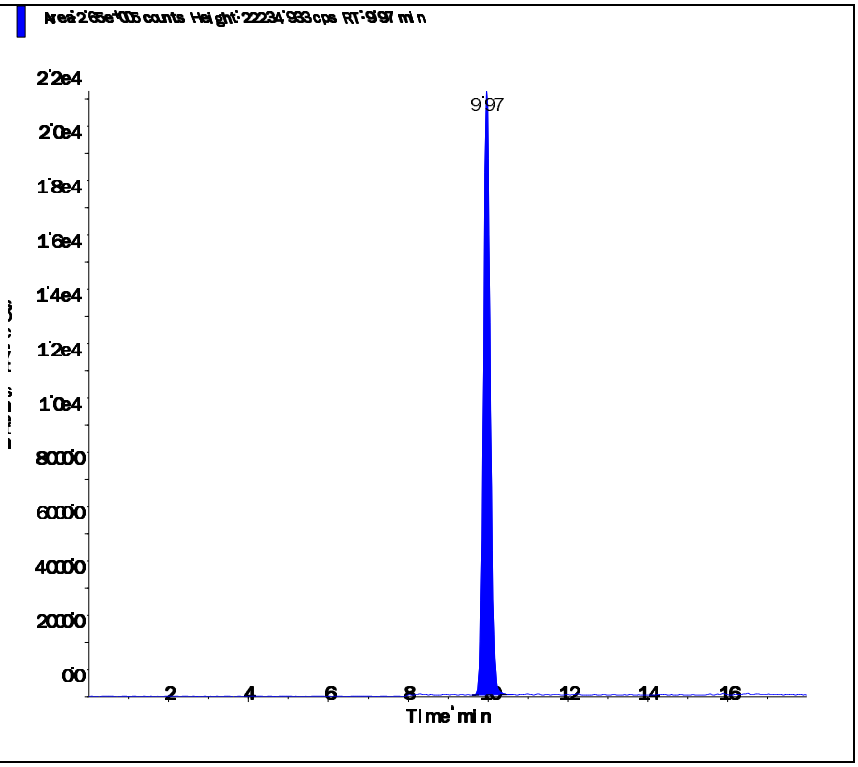

2.2.1.4 Standards Data

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Data File	LM33567.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-01 CCB	**Injection Vial**	51.00
Data File	LM33567.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG559340-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.710e+05	9.99	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.99(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

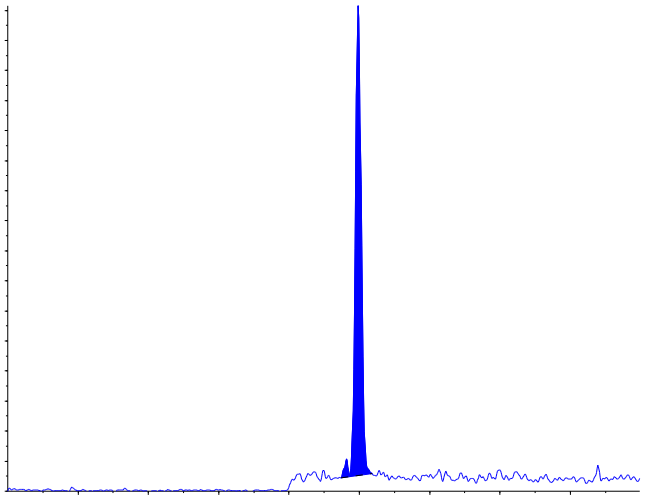

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

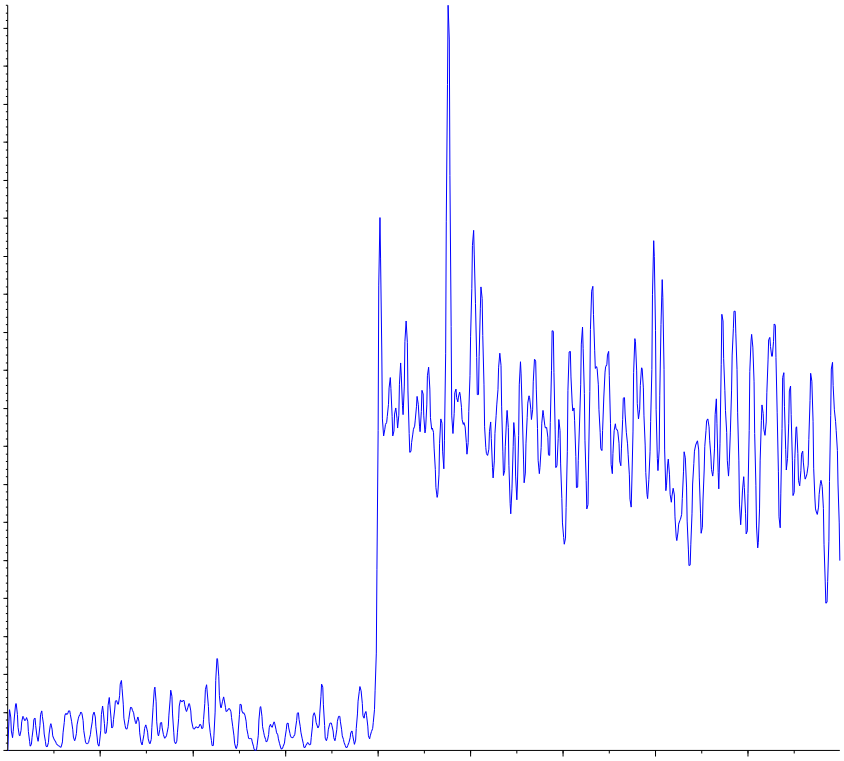

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

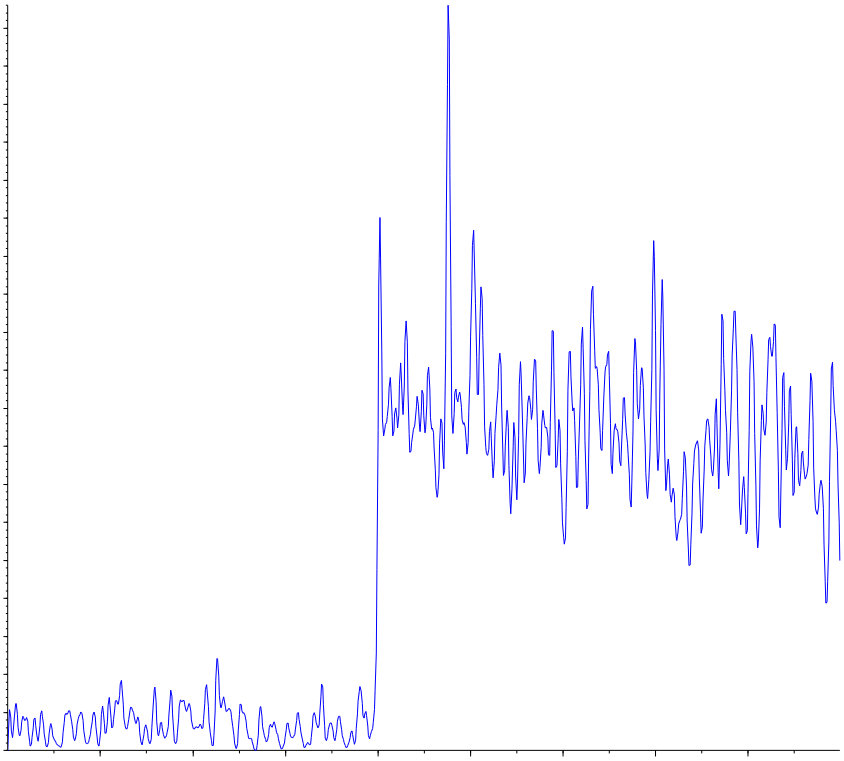

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Printed: 3/3/2016 1:59 PM

Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM33567.wiff	**Result Table**	030216_WTD.rdb
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.75 x + 0.00437 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	95.0	N/A	N/A
0.20	1	0.20	99.5	N/A	N/A
0.50	1	0.50	101.0	N/A	N/A
1.00	1	1.03	103.4	N/A	N/A
2.00	1	2.02	101.0	N/A	N/A
5.00	1	5.07	101.5	N/A	N/A
10.00	1	9.87	98.7	N/A	N/A

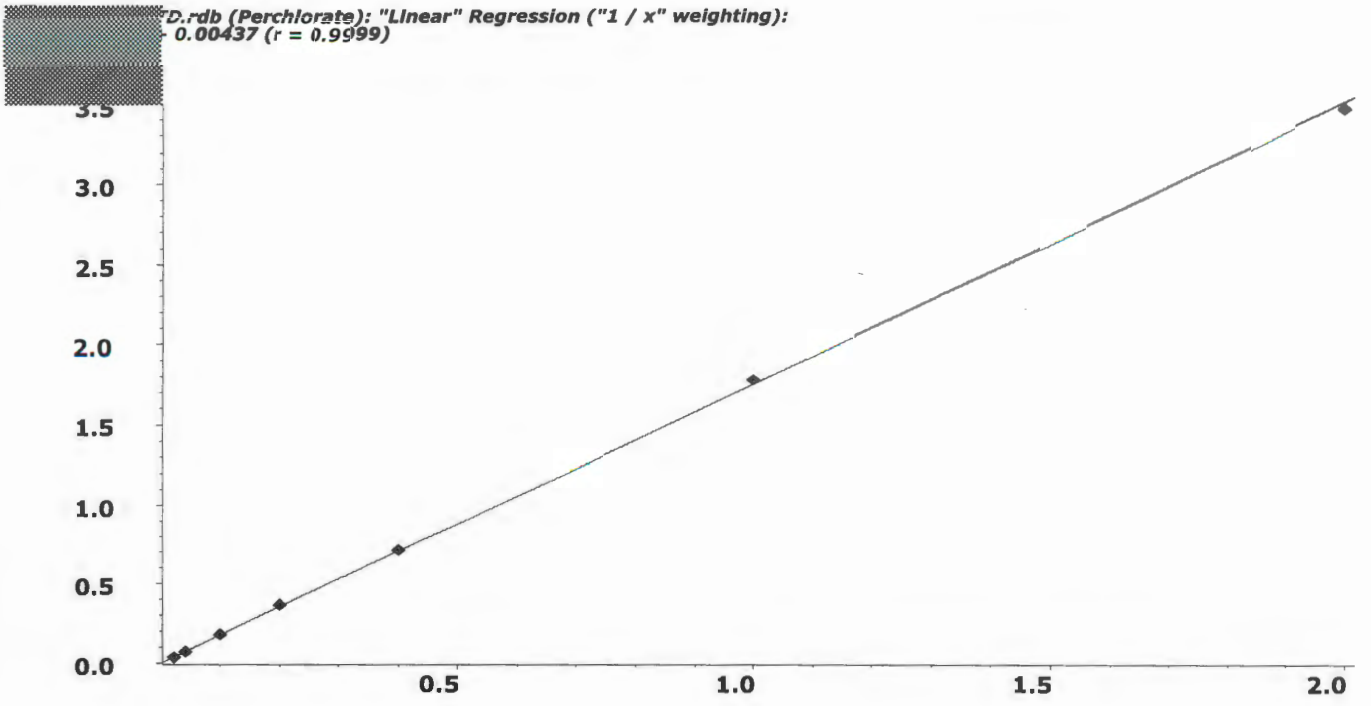

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Created with Analyst Reporter
Printed: 3/3/2016 1:59 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM33567.wiff	**Result Table**	030216_WTD.rdb
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.562 x + 0.00157 (r = 0.9998)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	93.4	N/A	N/A
0.20	1	0.20	98.6	N/A	N/A
0.50	1	0.54	107.2	N/A	N/A
1.00	1	1.00	99.5	N/A	N/A
2.00	1	2.01	100.7	N/A	N/A
5.00	1	5.11	102.2	N/A	N/A
10.00	1	9.85	98.5	N/A	N/A

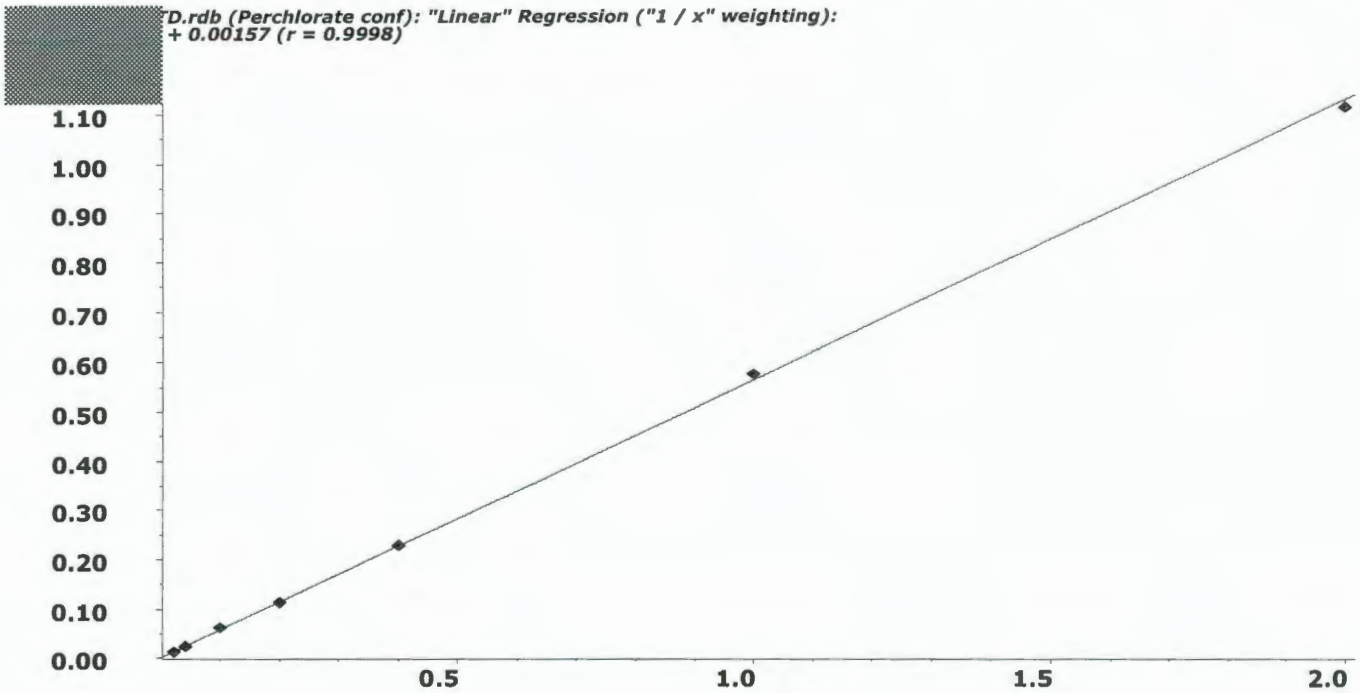

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Data File	LM33568.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/2/2016 8:53:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-02 STD (0.1 ug/L)	**Injection Vial**	52.00
Data File	LM33568.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 8:53:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG559340-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.900e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.840e+04	9.97	0.10	0.095
Perchlorate conf	5.910e+03	9.94	0.10	0.0934

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

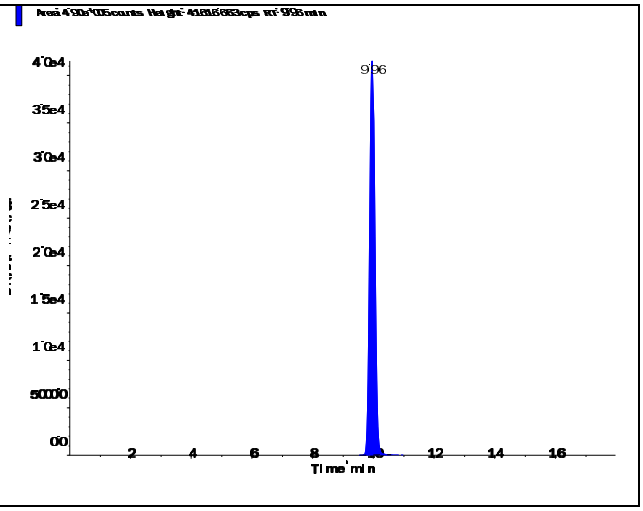

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.97 (9.94) min
Calculated conc:	0.095 ng/ml
Area Ratio:	0.038
Sample Type:	(Standard)

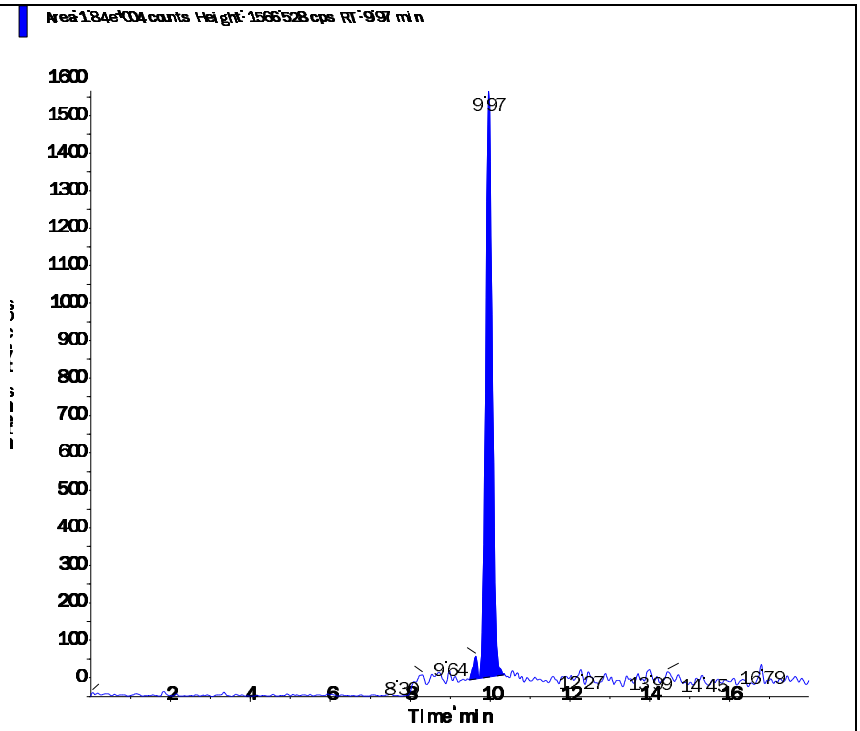

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.0934 ng/ml
Area Ratio:	0.012
Sample Type:	(Standard)

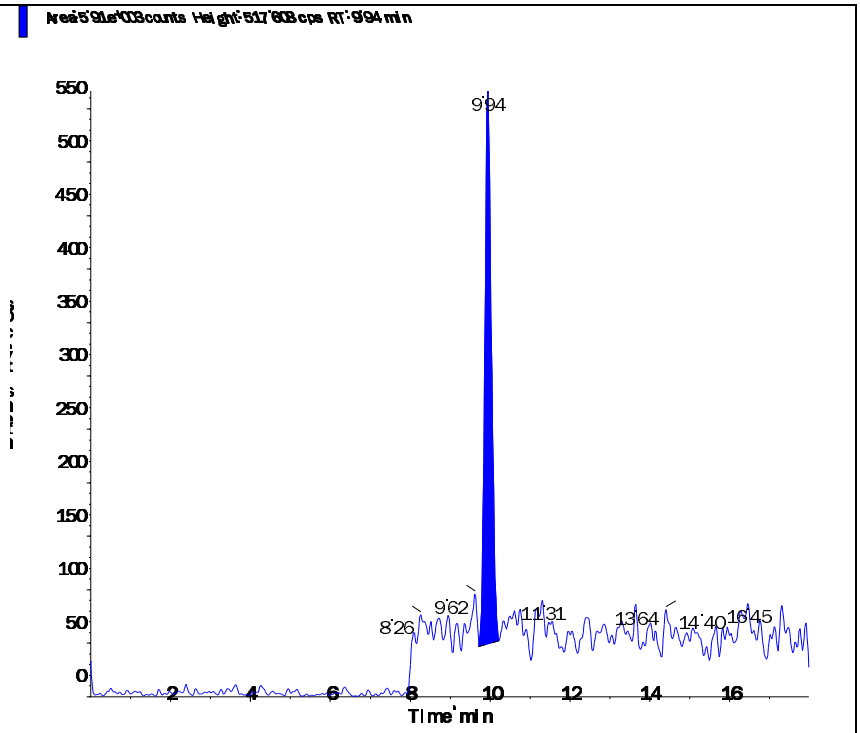

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Data File	LM33569.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/2/2016 9:12:17 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-03 STD (0.2 ug/L)	**Injection Vial**	53.00
Data File	LM33569.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 9:12:17 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG559340-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.990e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.700e+04	9.99	0.20	0.199
Perchlorate conf	1.190e+04	9.98	0.20	0.197

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

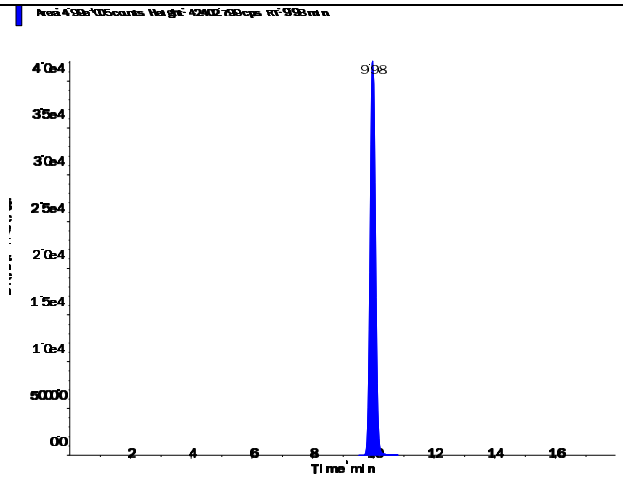

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.99 (9.94) min
Calculated conc:	0.199 ng/ml
Area Ratio:	0.074
Sample Type:	(Standard)

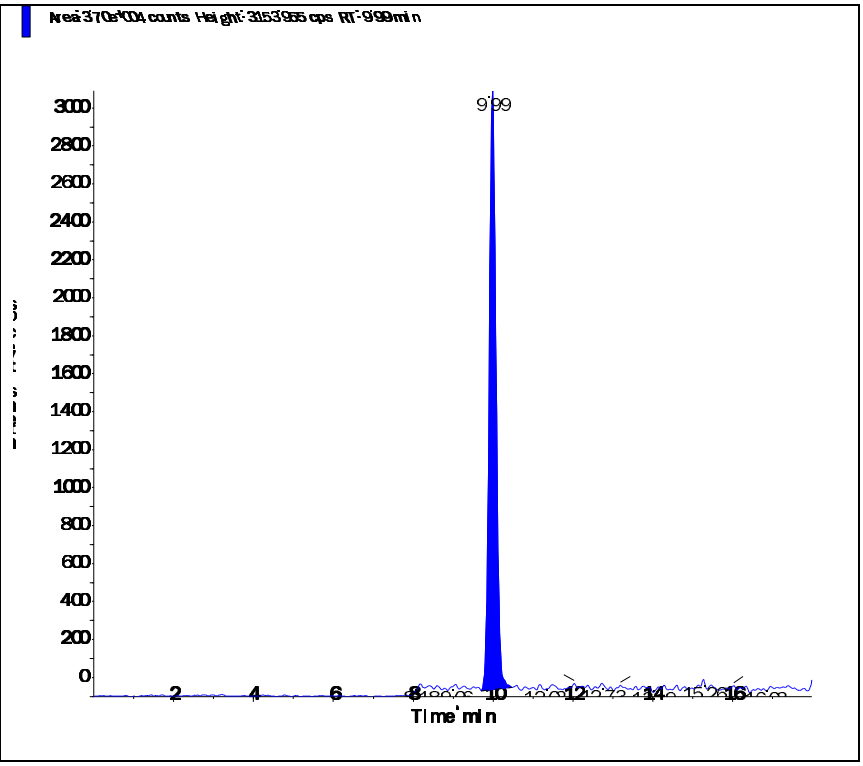

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.98 (9.92) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

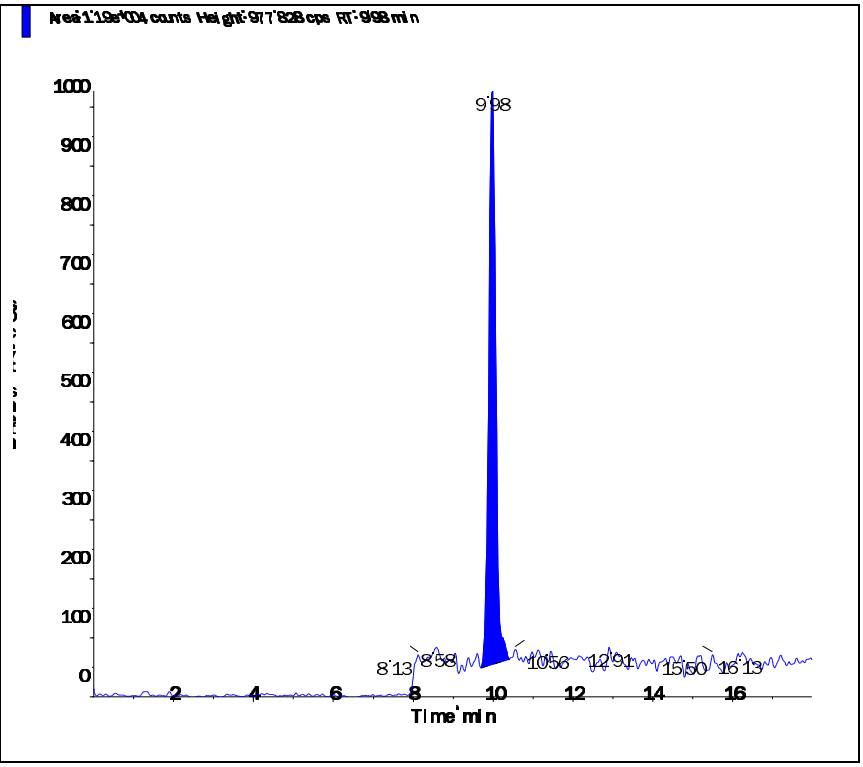

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Data File	LM33570.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/2/2016 9:31:14 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-04 STD (0.5 ug/L)	**Injection Vial**	54.00
Data File	LM33570.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 9:31:14 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG559340-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.920e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.900e+04	10.00	0.50	0.505
Perchlorate conf	3.040e+04	9.98	0.50	0.536

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

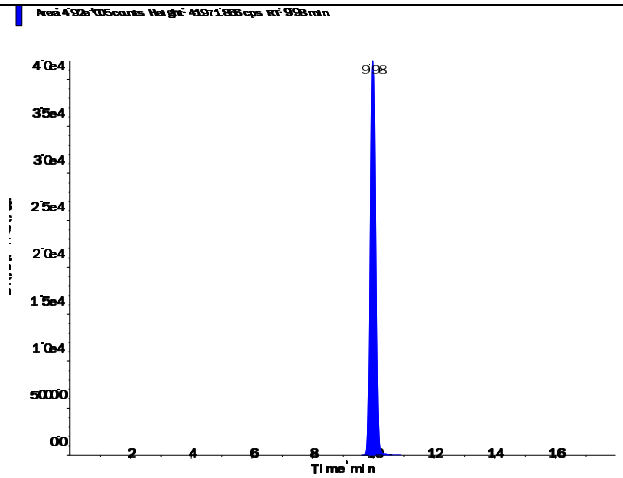

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.00 (9.94) min
Calculated conc:	0.505 ng/ml
Area Ratio:	0.181
Sample Type:	(Standard)

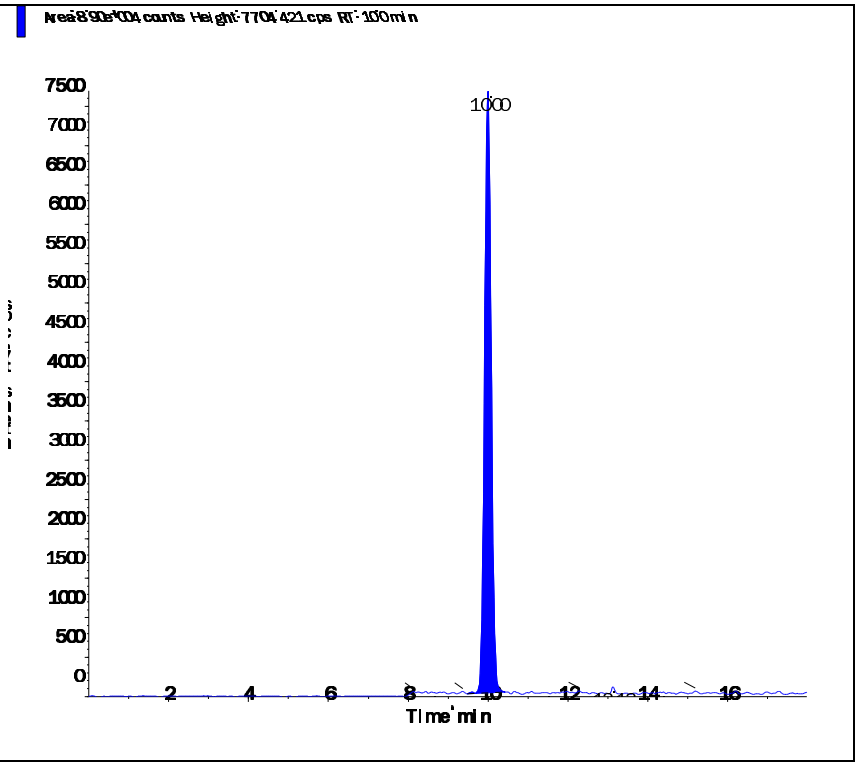

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.98 (9.92) min
Calculated conc:	0.536 ng/ml
Area Ratio:	0.062
Sample Type:	(Standard)

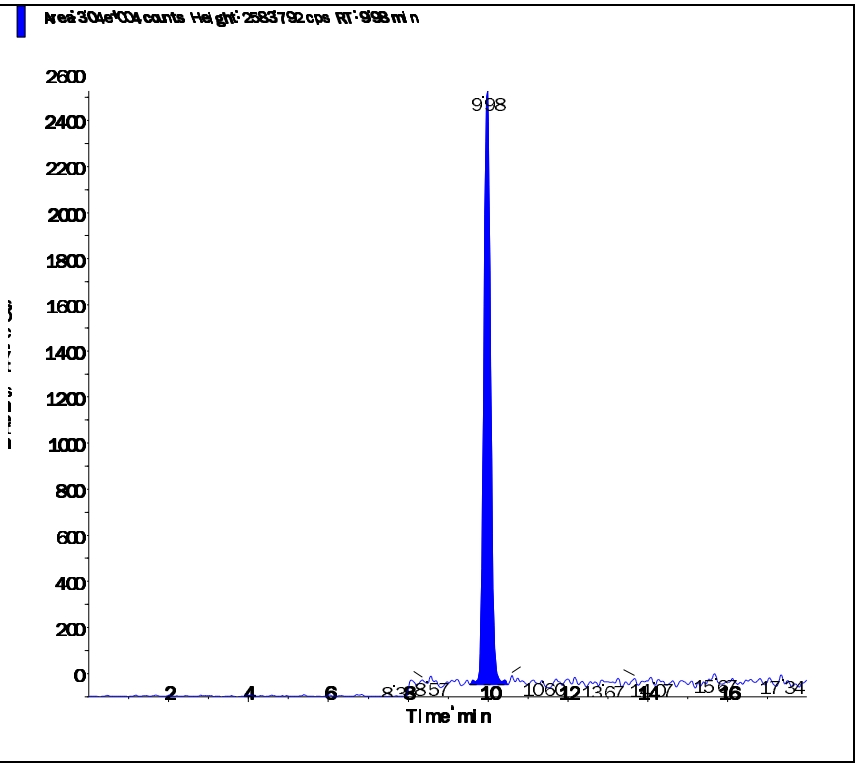

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Data File	LM33571.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/2/2016 9:50:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-05 STD (1.0 ug/L)	**Injection Vial**	55.00
Data File	LM33571.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 9:50:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG559340-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.010e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.830e+05	9.99	1.00	1.03
Perchlorate conf	5.680e+04	9.98	1.00	0.995

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

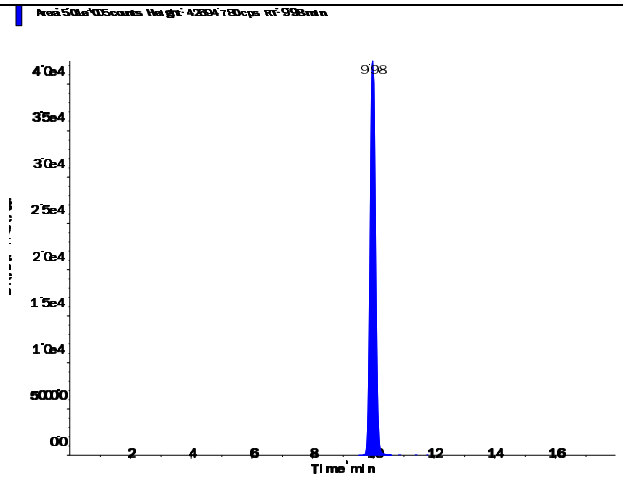

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.99 (9.94) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.366
Sample Type:	(Standard)

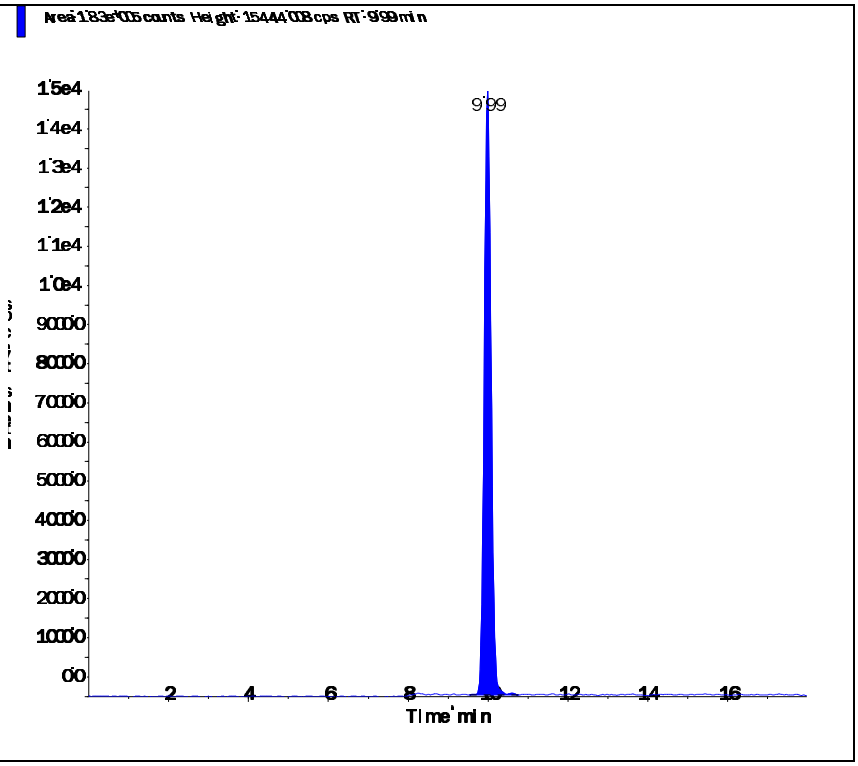

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.98 (9.92) min
Calculated conc:	0.995 ng/ml
Area Ratio:	0.113
Sample Type:	(Standard)

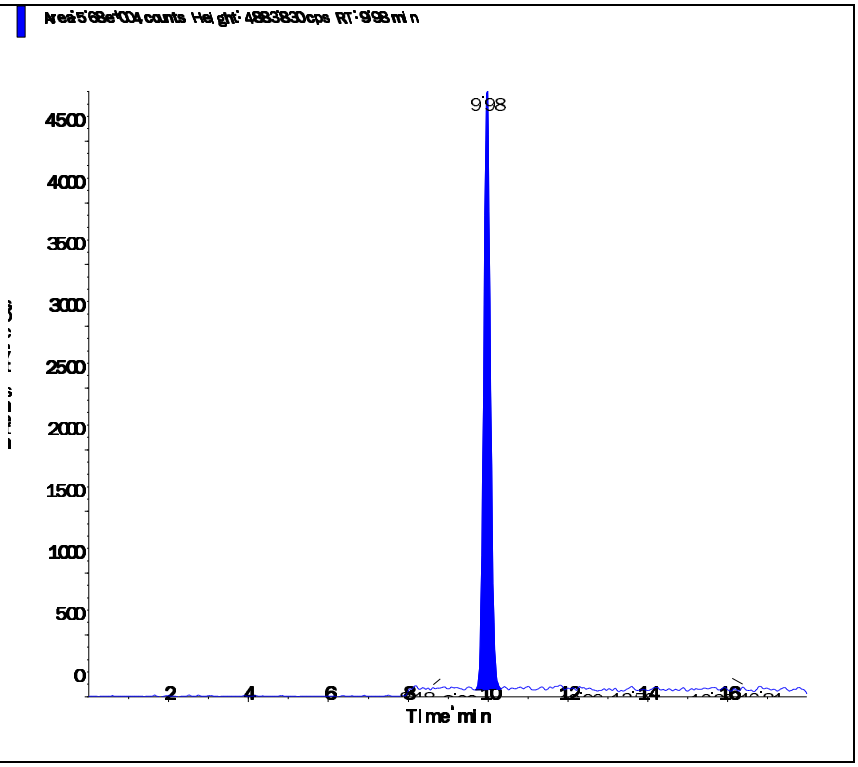

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Data File	LM33572.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/2/2016 10:09:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-06 STD (2.0 ug/L)	**Injection Vial**	56.00
Data File	LM33572.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 10:09:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG559340-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.99	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.630e+05	10.00	2.00	2.02
Perchlorate conf	1.170e+05	9.99	2.00	2.01

O18LP (Internal Standard)

RT (Exp. RT): 9.99(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

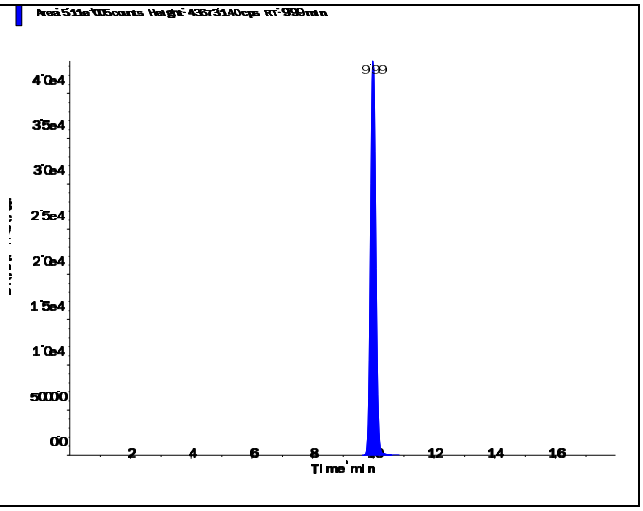

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.00 (9.94) min
Calculated conc:	2.02 ng/ml
Area Ratio:	0.711
Sample Type:	(Standard)

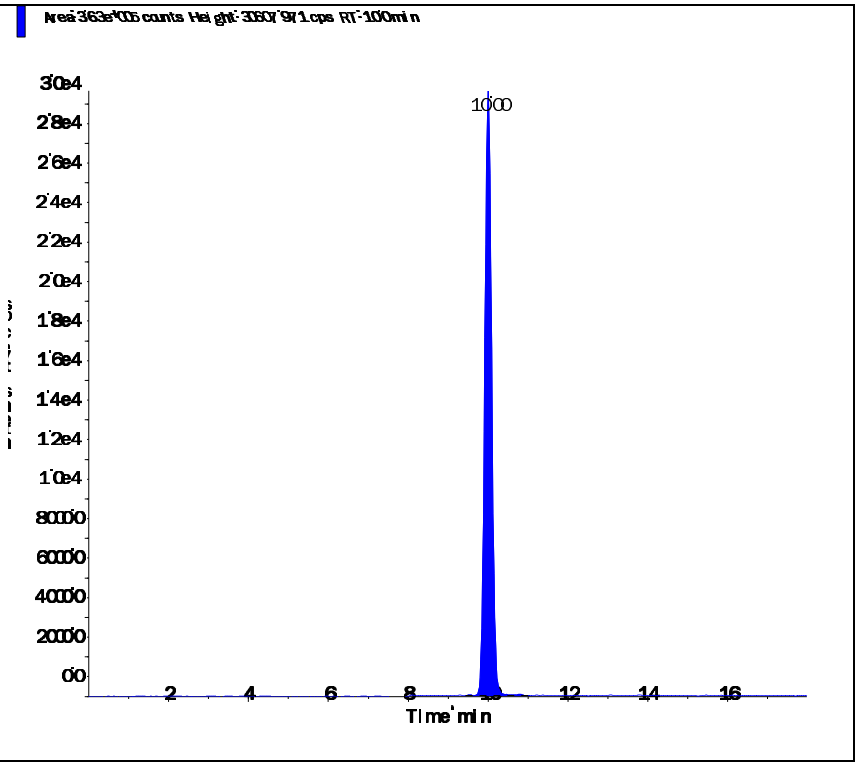

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.99 (9.92) min
Calculated conc:	2.01 ng/ml
Area Ratio:	0.228
Sample Type:	(Standard)

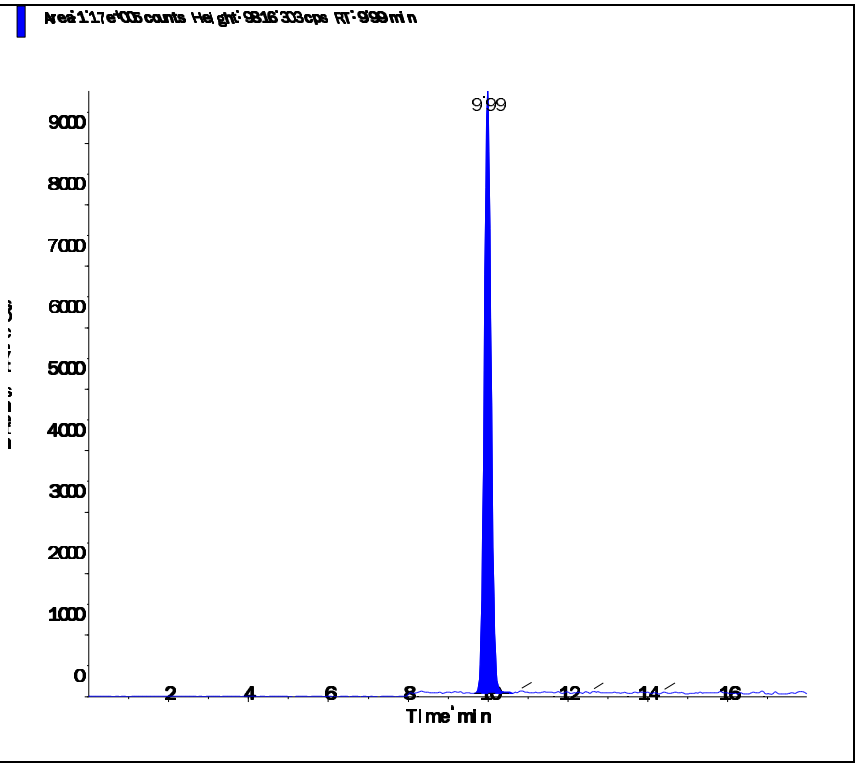

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Data File	LM33573.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/2/2016 10:28:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-07 STD (5.0 ug/L)	**Injection Vial**	57.00
Data File	LM33573.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 10:28:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG559340-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.900e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.710e+05	9.98	5.00	5.07
Perchlorate conf	2.820e+05	9.97	5.00	5.11

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

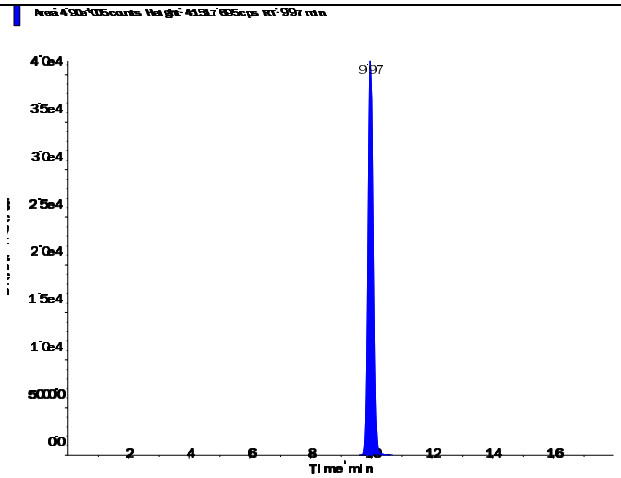

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.98 (9.94) min Calculated conc: 5.07 ng/ml Area Ratio: 1.779 Sample Type: (Standard)	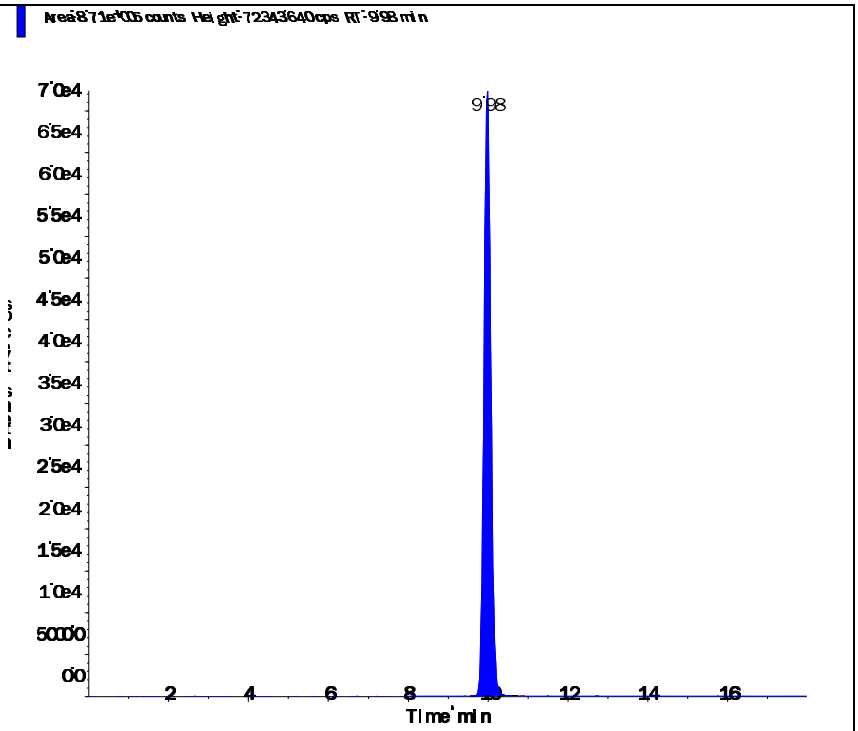
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.97 (9.92) min Calculated conc: 5.11 ng/ml Area Ratio: 0.576 Sample Type: (Standard)	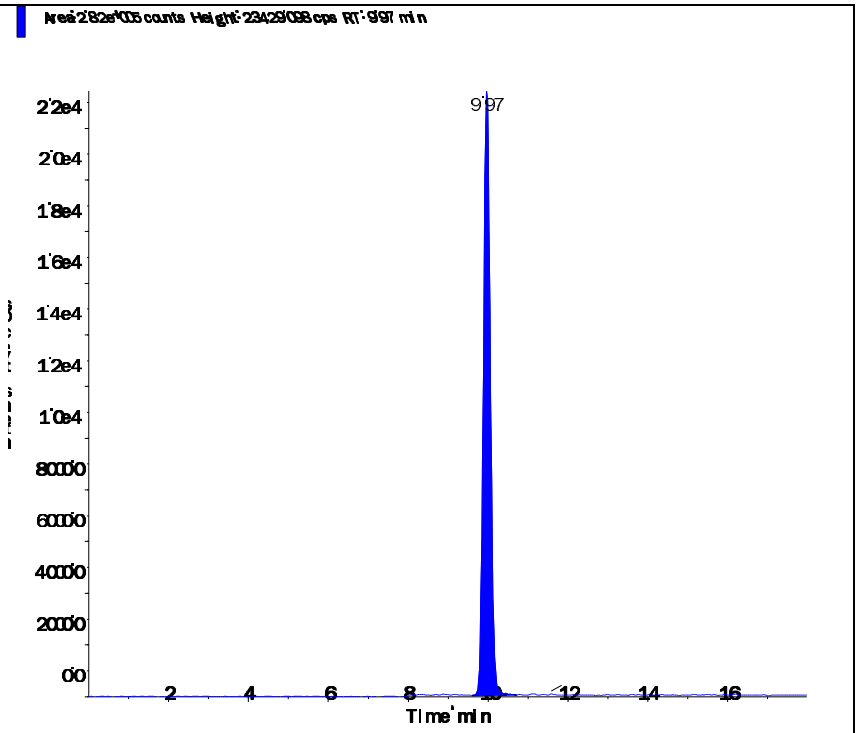

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Printed: 3/18/2016 6:11 PM

Data File	LM33574.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/2/2016 10:46:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-08 STD (10 ug/L)	**Injection Vial**	58.00
Data File	LM33574.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 10:46:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG559340-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.650e+06	9.98	10.00	9.87
Perchlorate conf	5.300e+05	9.96	10.00	9.85

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

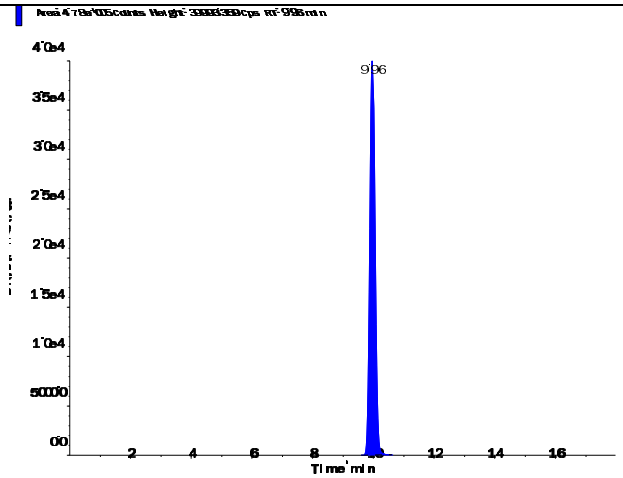

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.98 (9.94) min
Calculated conc:	9.87 ng/ml
Area Ratio:	3.458
Sample Type:	(Standard)

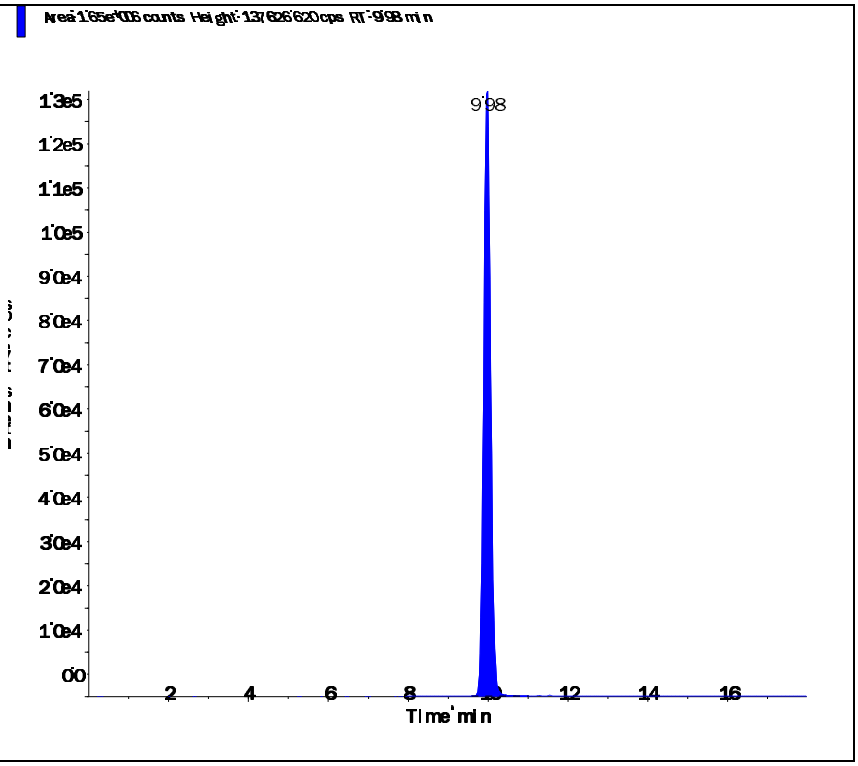

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.96 (9.92) min
Calculated conc:	9.85 ng/ml
Area Ratio:	1.11
Sample Type:	(Standard)

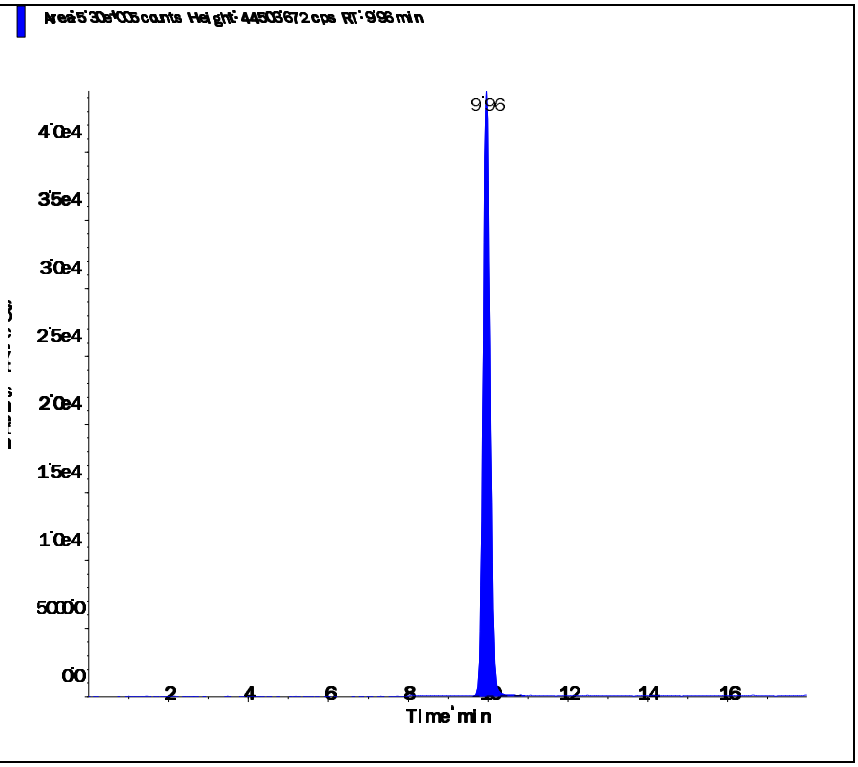

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Data File	LM33575.wiff	**Result Table**	030216_WTD.rdb
Acquisition Date	3/2/2016 11:05:52 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-09 SSCV (1.0 ug/L)	**Injection Vial**	59.00
Data File	LM33575.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 11:05:52 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030216_WTD.rdb
Sample ID	WG559340-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.200e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.900e+05	9.98	1.00	1.03
Perchlorate conf	6.220e+04	9.97	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

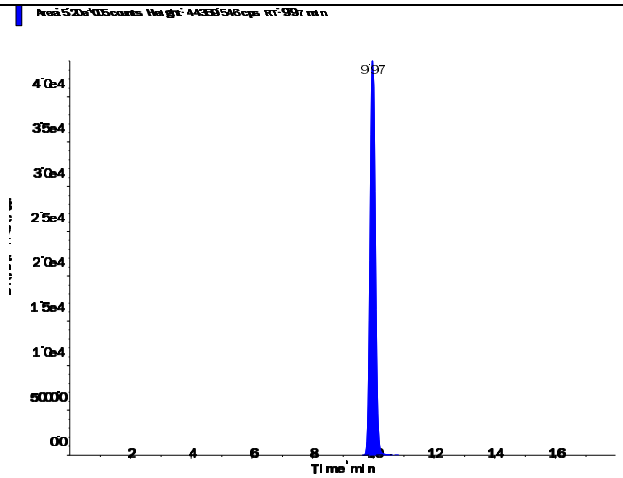

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.98 (9.94) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.366
Sample Type:	(Quality Control)

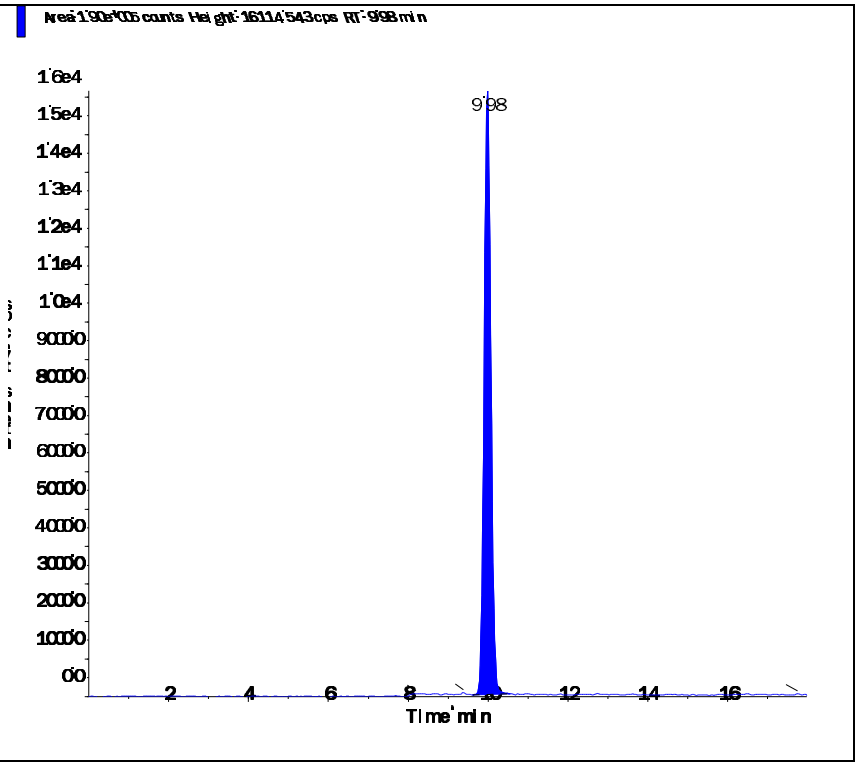

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.97 (9.92) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.12
Sample Type:	(Quality Control)

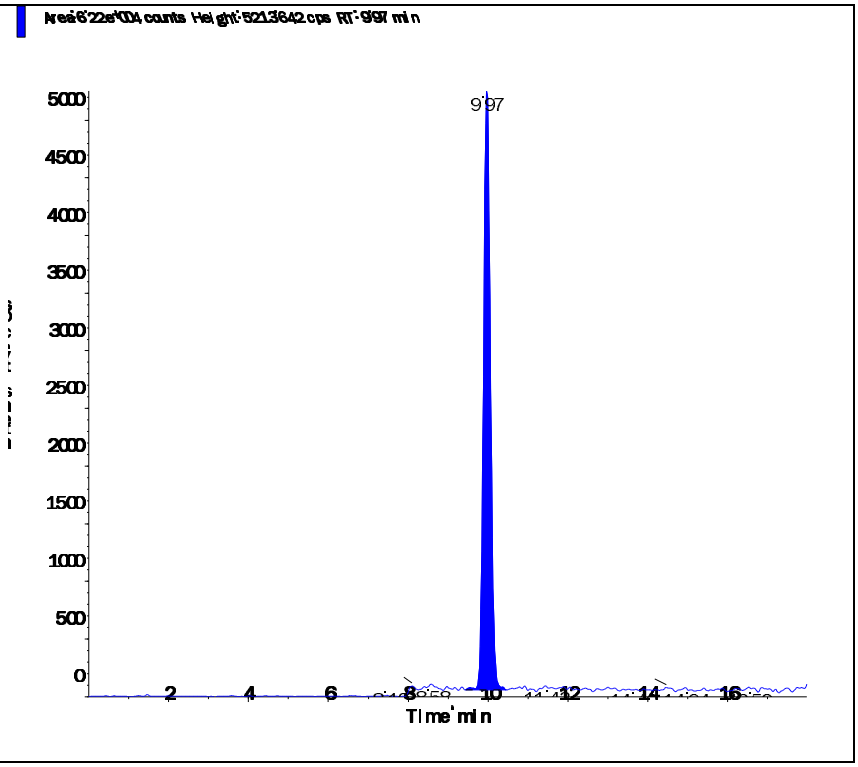

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Data File	LM33882.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 3:19:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561324-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33882.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 3:19:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561324-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.460e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.540e+05	9.94	1.00	0.975
Perchlorate conf	5.170e+04	9.93	1.00	1.02

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

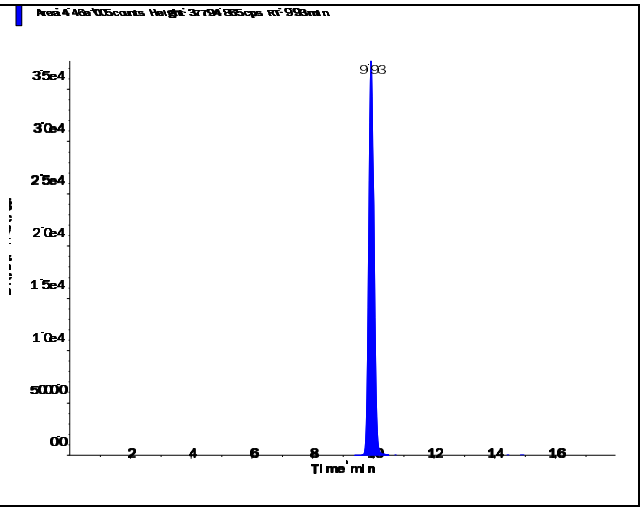

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.94 (9.94) min Calculated conc: 0.975 ng/ml Area Ratio: 0.345 Sample Type: (Quality Control)	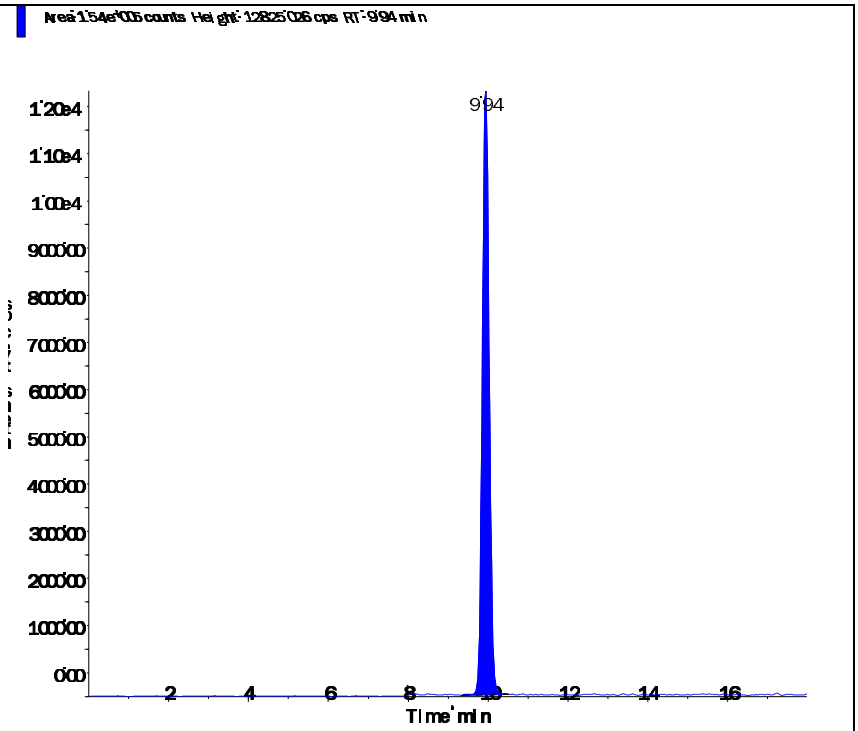
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.93 (9.92) min Calculated conc: 1.02 ng/ml Area Ratio: 0.116 Sample Type: (Quality Control)	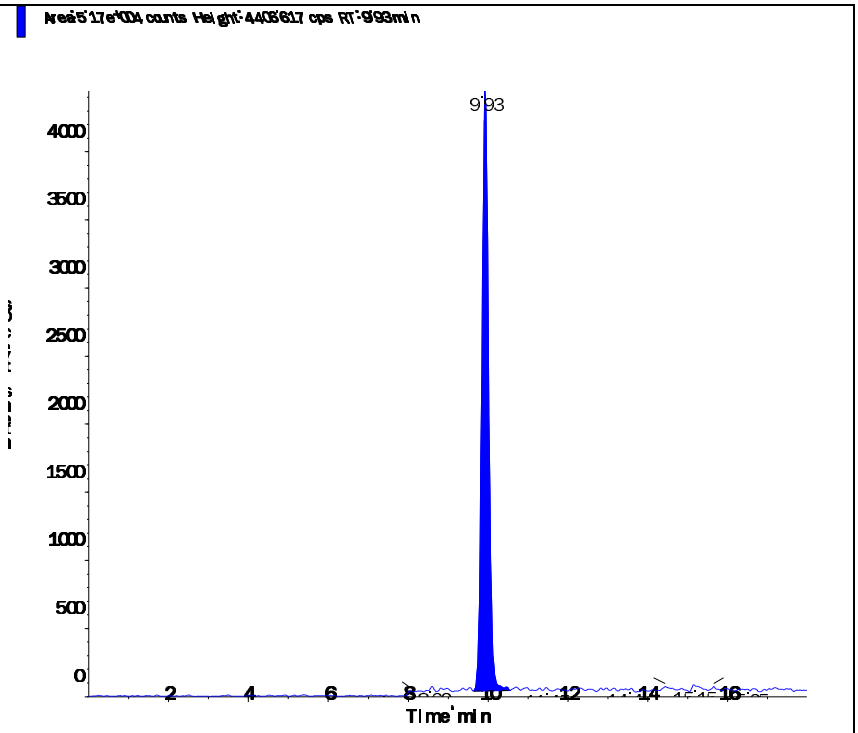

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Data File	LM33894.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 7:07:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561324-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33894.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 7:07:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561324-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.300e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.850e+05	9.94	1.00	0.985
Perchlorate conf	6.180e+04	9.92	1.00	1.02

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

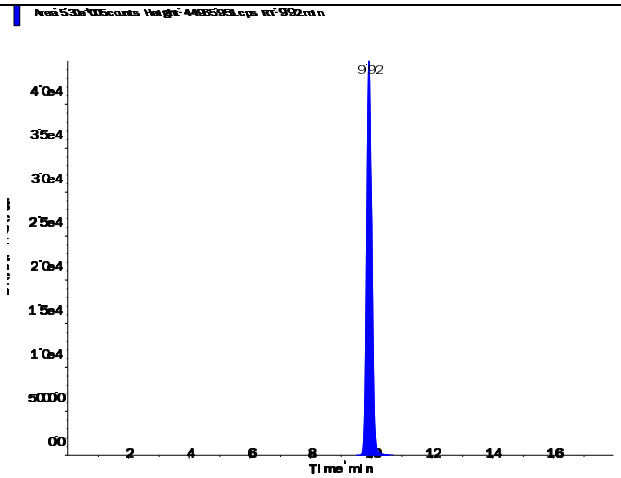

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.349
Sample Type:	(Quality Control)

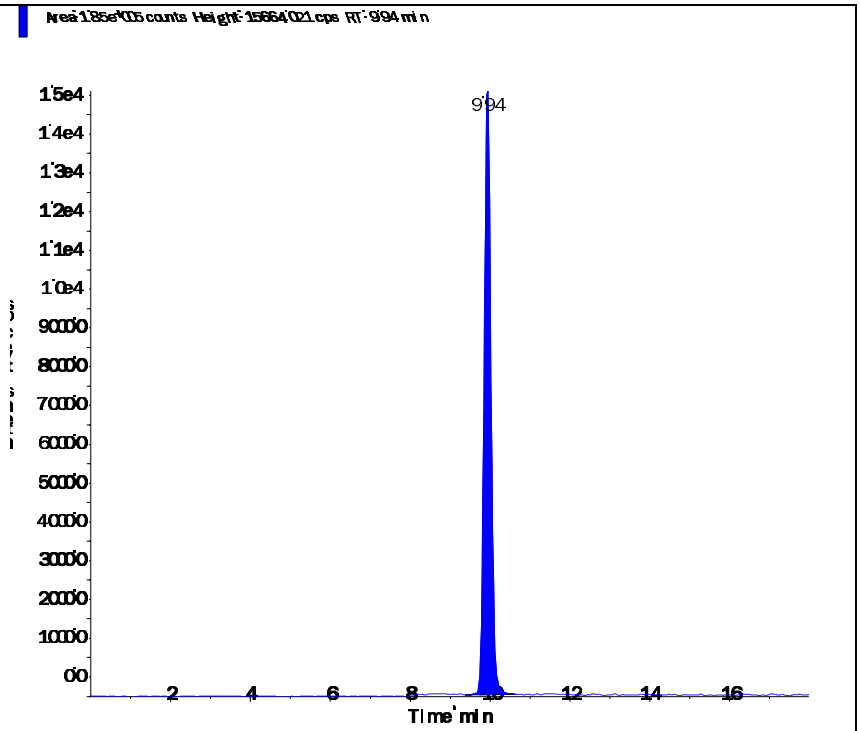

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.117
Sample Type:	(Quality Control)

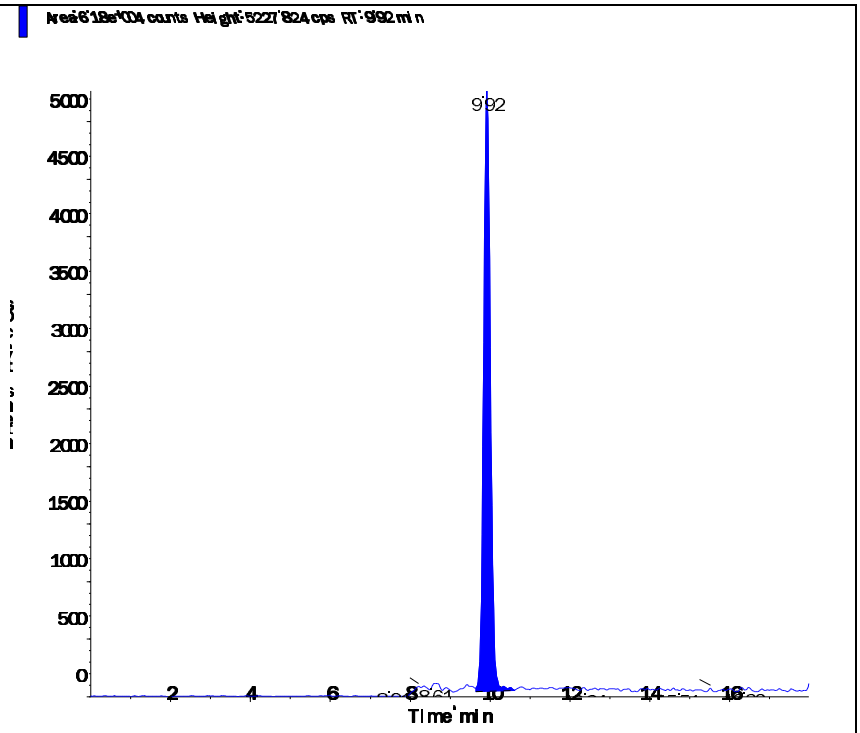

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Data File	LM33902.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 9:38:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561324-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33902.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 9:38:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561324-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.260e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.850e+05	9.93	1.00	0.993
Perchlorate conf	6.140e+04	9.91	1.00	1.02

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

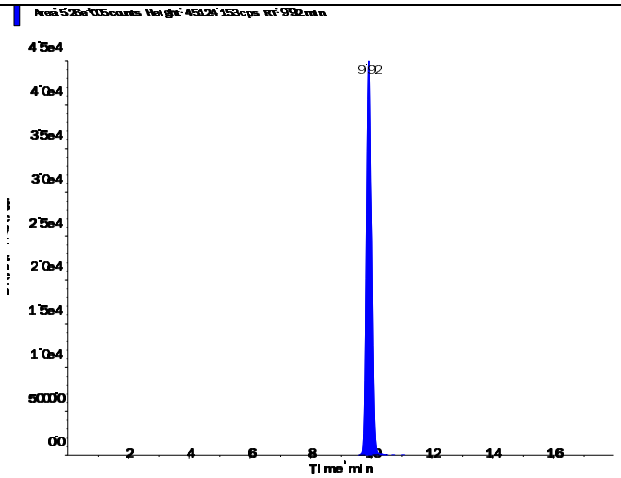

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	0.993 ng/ml
Area Ratio:	0.352
Sample Type:	(Quality Control)

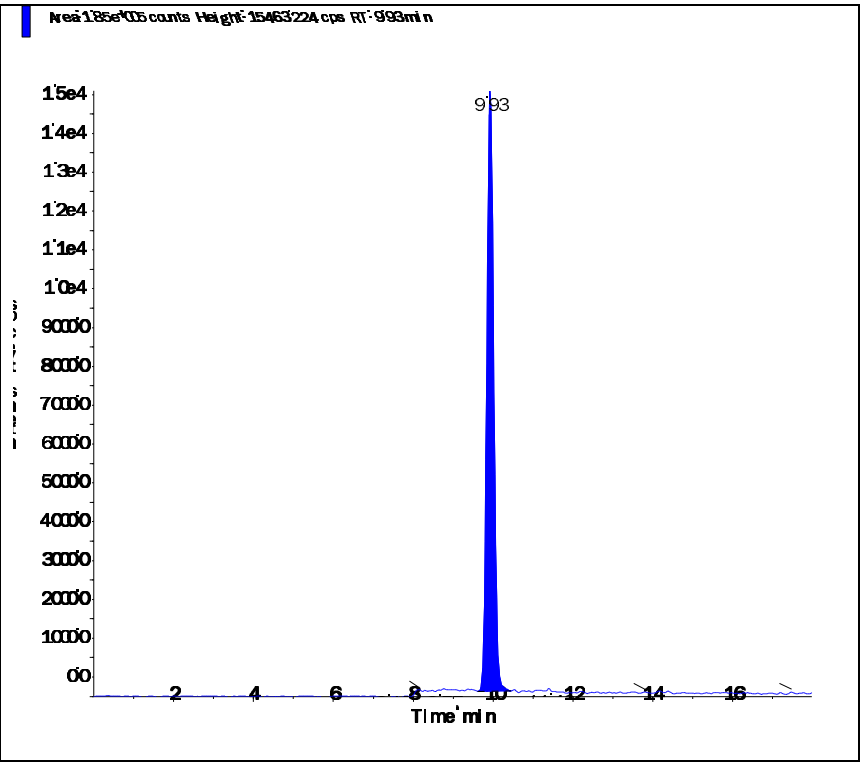

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.92) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.117
Sample Type:	(Quality Control)

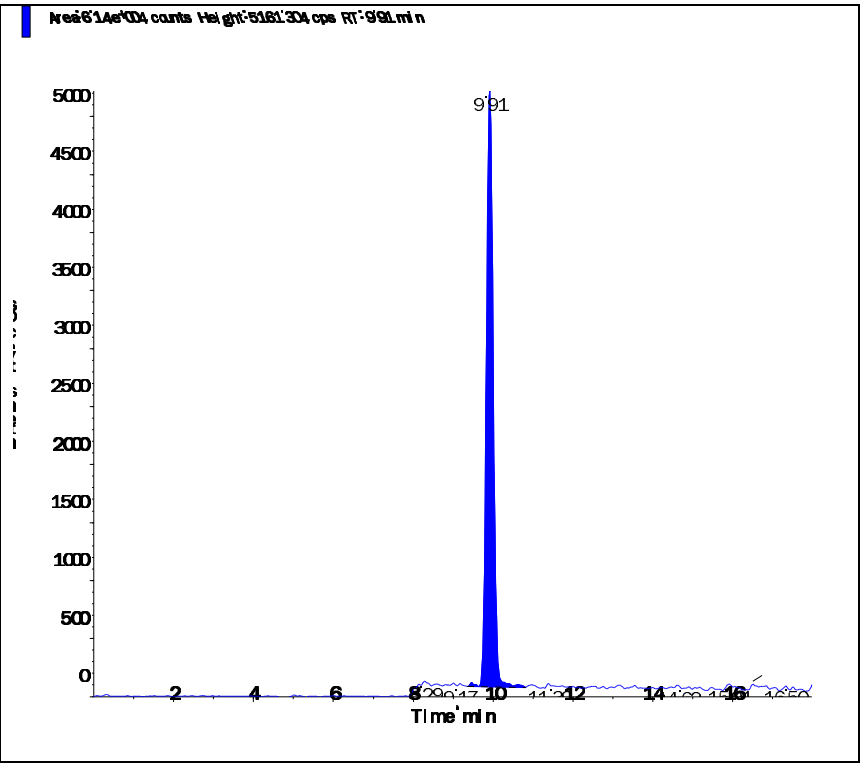

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Data File	LM33916.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 2:03:35 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561324-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33916.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 2:03:35 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561324-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.320e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.870e+05	9.93	1.00	0.993
Perchlorate conf	6.130e+04	9.91	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

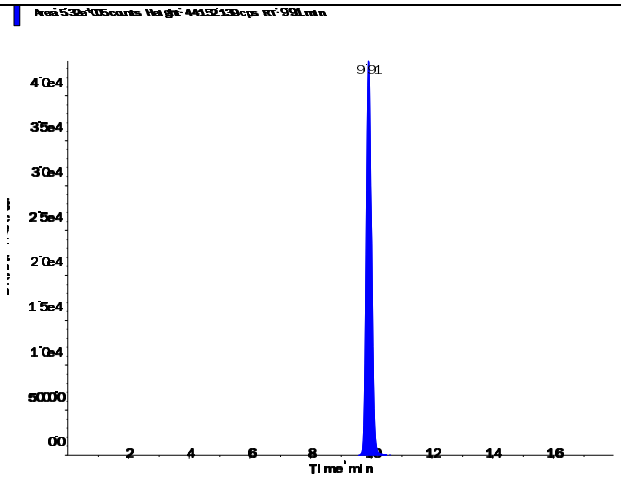

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	0.993 ng/ml
Area Ratio:	0.352
Sample Type:	(Quality Control)

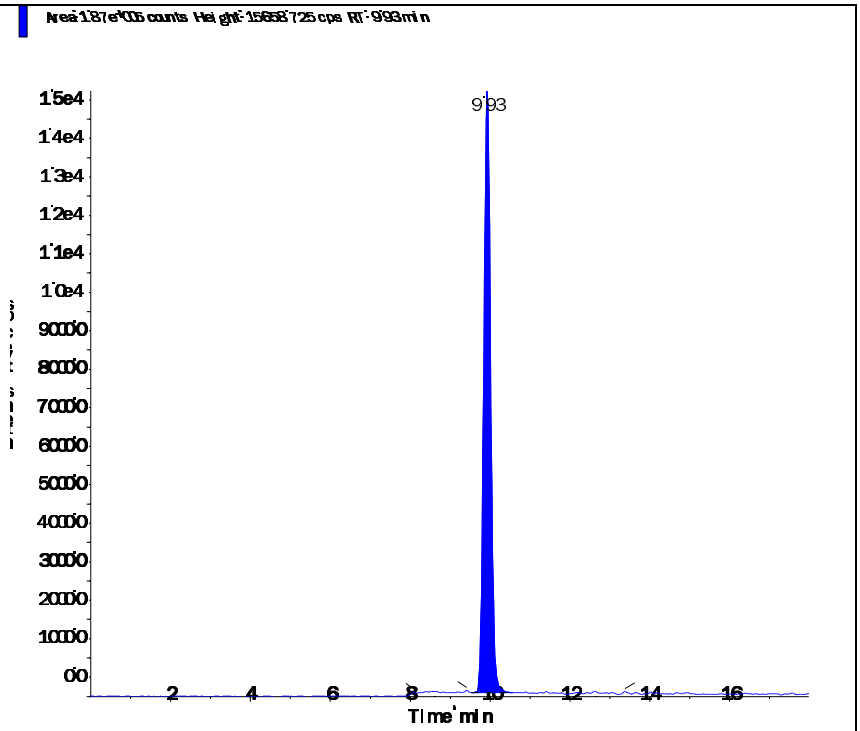

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.92) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.115
Sample Type:	(Quality Control)

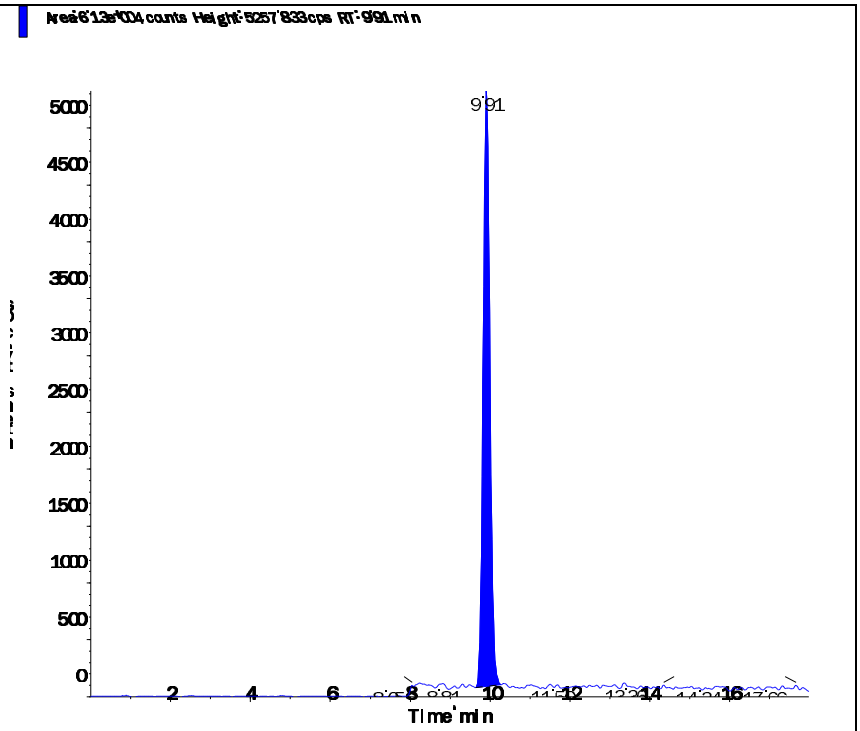

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Data File	LM33929.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 12:15:27 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561324-11 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33929.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 12:15:27 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561324-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.700e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.620e+05	9.95	1.00	0.976
Perchlorate conf	5.460e+04	9.93	1.00	1.02

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

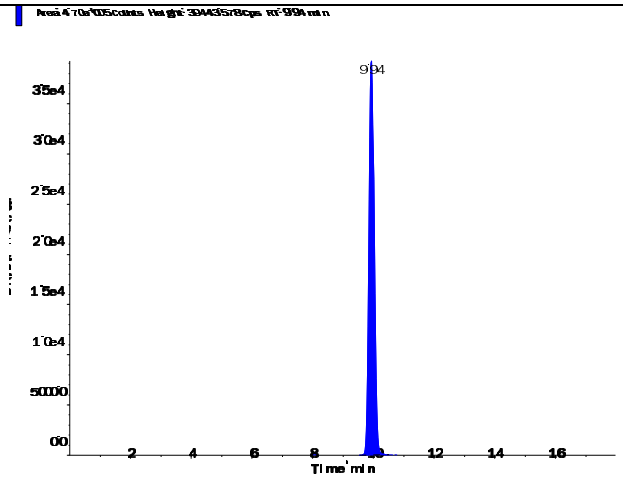

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	0.976 ng/ml
Area Ratio:	0.346
Sample Type:	(Quality Control)

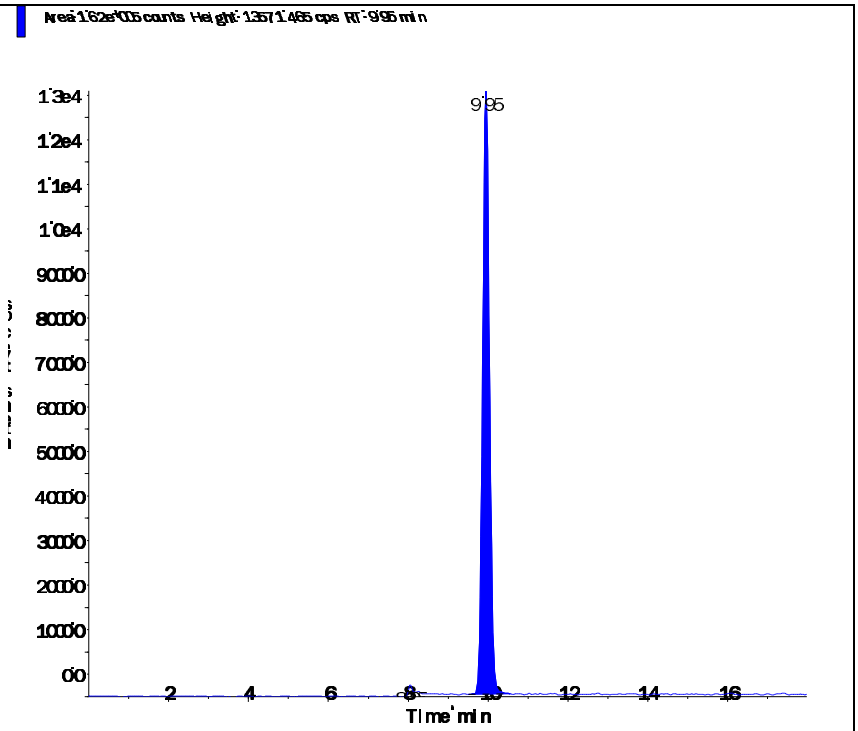

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.116
Sample Type:	(Quality Control)

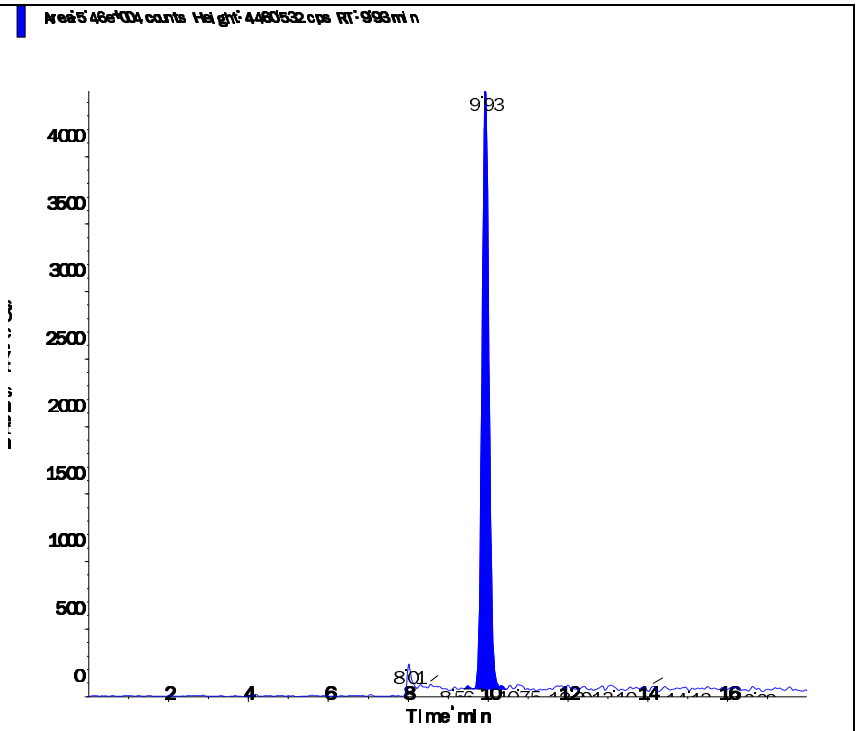

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Data File	LM33942.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 4:21:36 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561324-13 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33942.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 4:21:36 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561324-13	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.040e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.740e+05	9.96	1.00	0.978
Perchlorate conf	5.650e+04	9.94	1.00	0.984

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

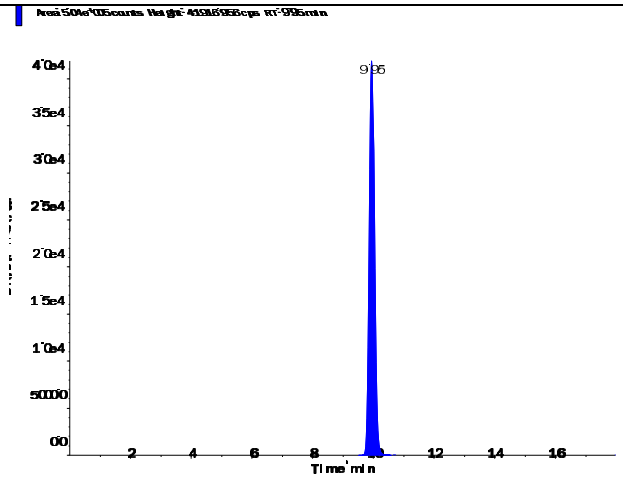

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	0.978 ng/ml
Area Ratio:	0.347
Sample Type:	(Quality Control)

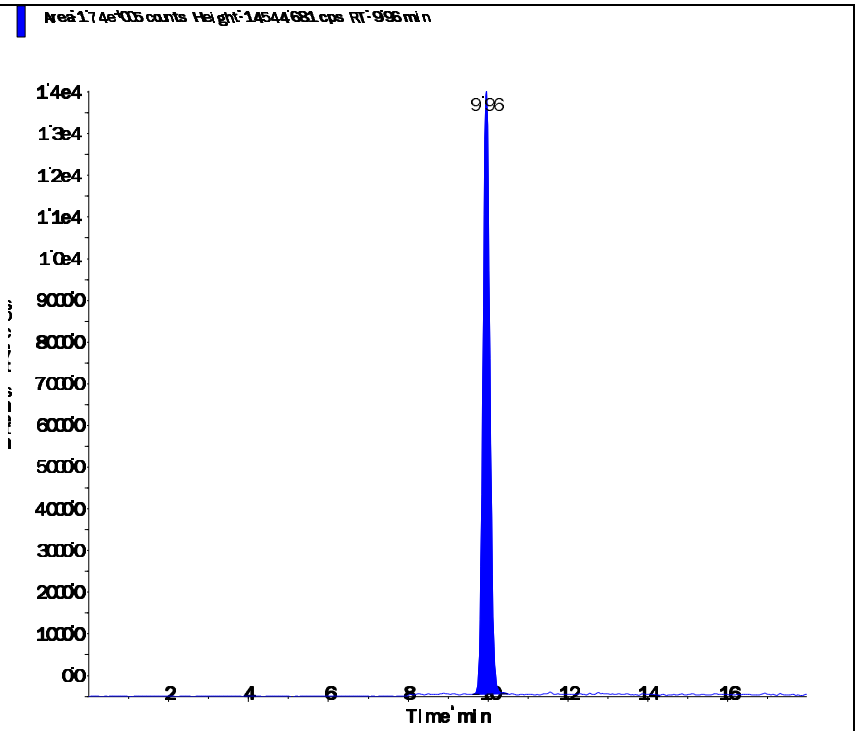

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.984 ng/ml
Area Ratio:	0.112
Sample Type:	(Quality Control)

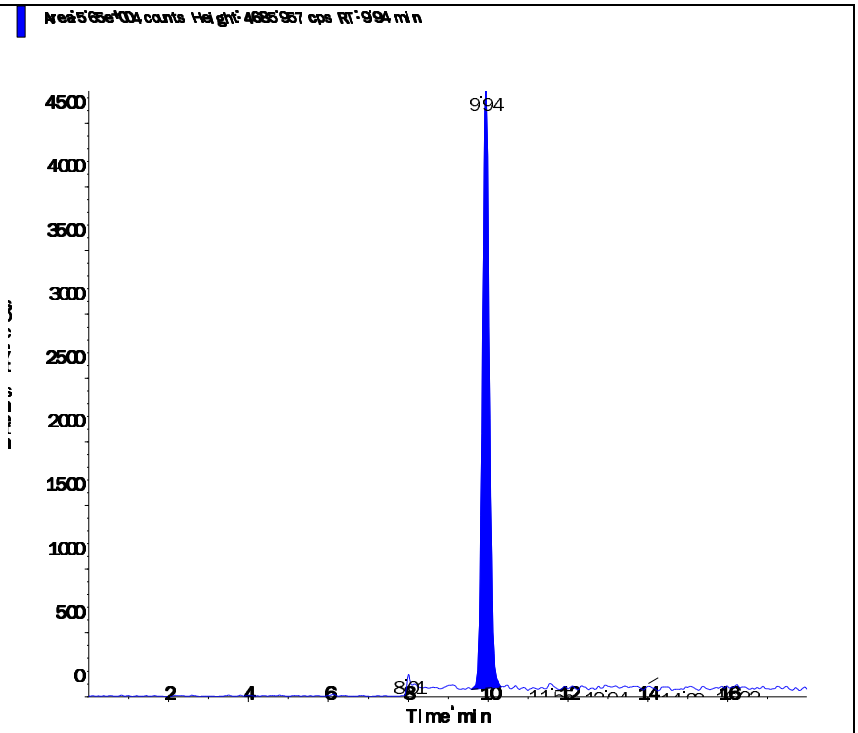

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Data File	LM33883.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 3:38:41 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561316-07 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33883.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 3:38:41 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561316-07	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.650e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.250e+04	9.94	N/A	0.188
Perchlorate conf	1.130e+04	9.92	N/A	0.201

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

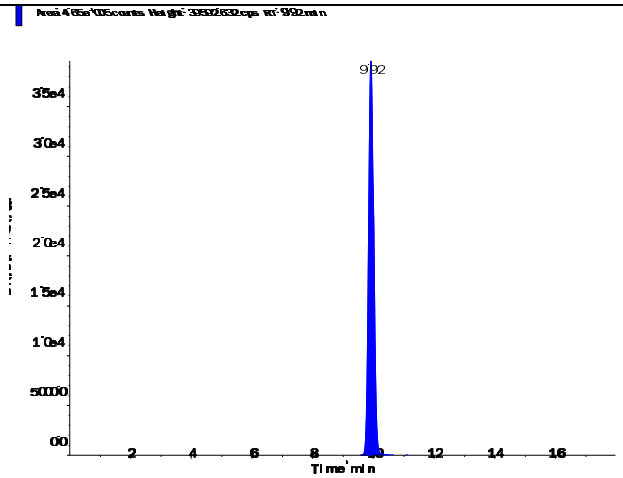

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.188 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

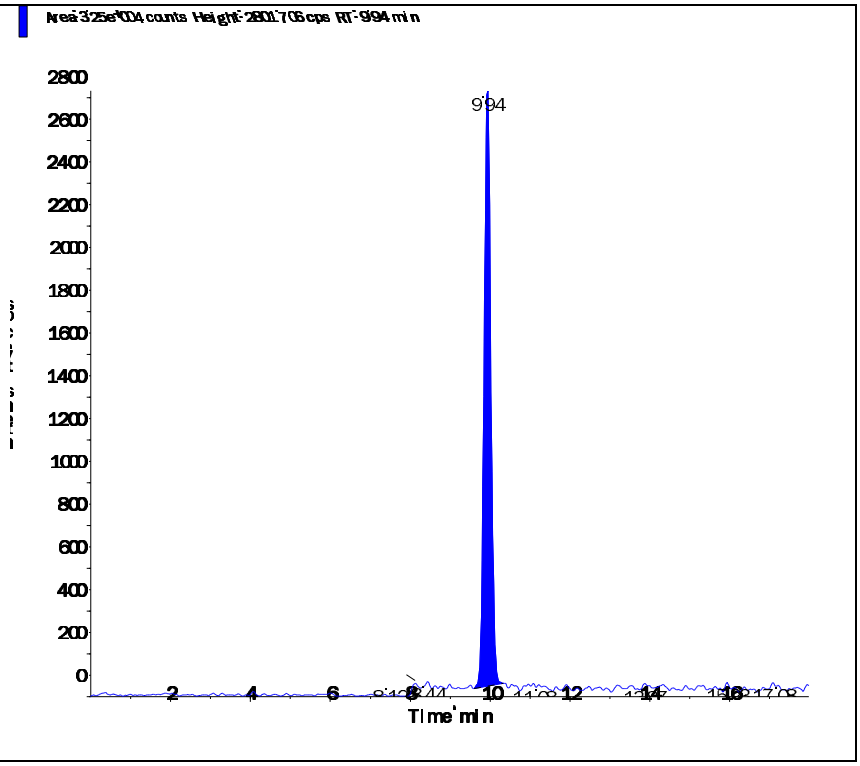

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

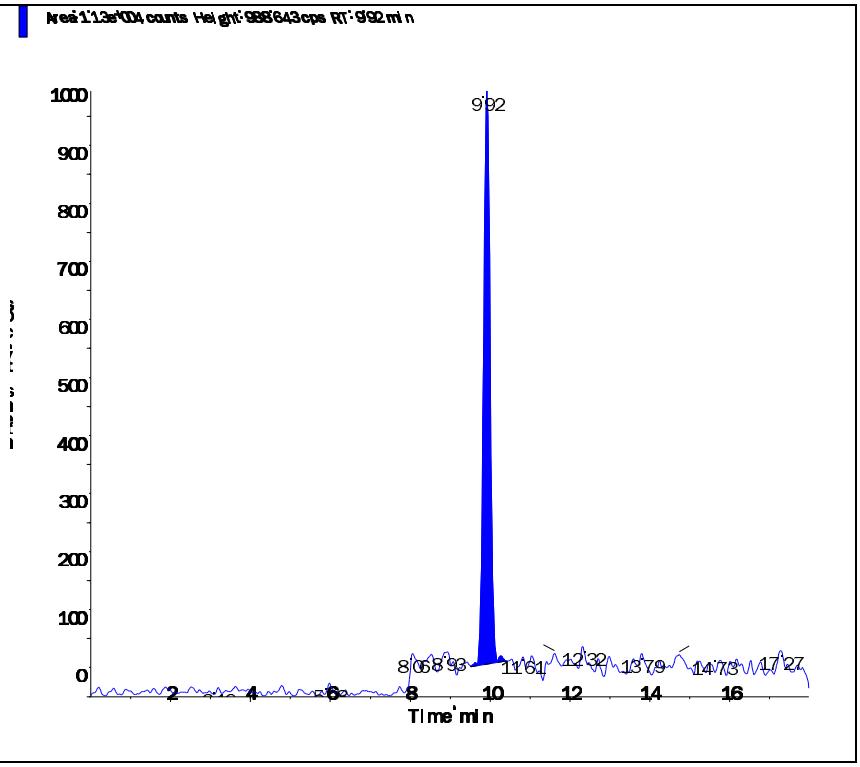

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Printed: 3/18/2016 6:16 PM

Data File	LM33895.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 7:25:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561316-08 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33895.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 7:25:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561316-08	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.530e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.900e+04	9.95	N/A	0.189
Perchlorate conf	1.320e+04	9.94	N/A	0.198

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

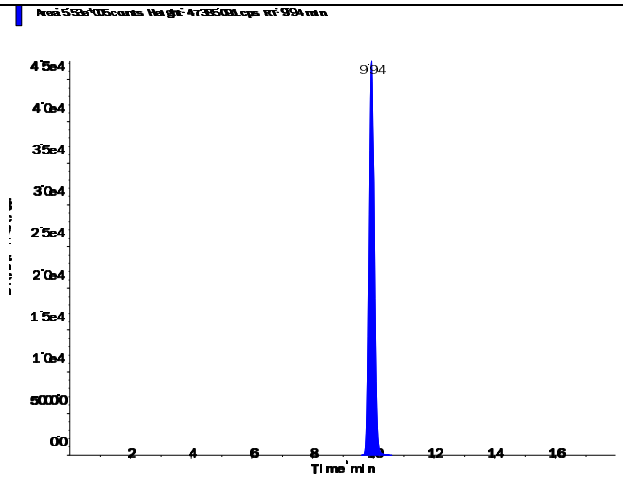

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	0.189 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

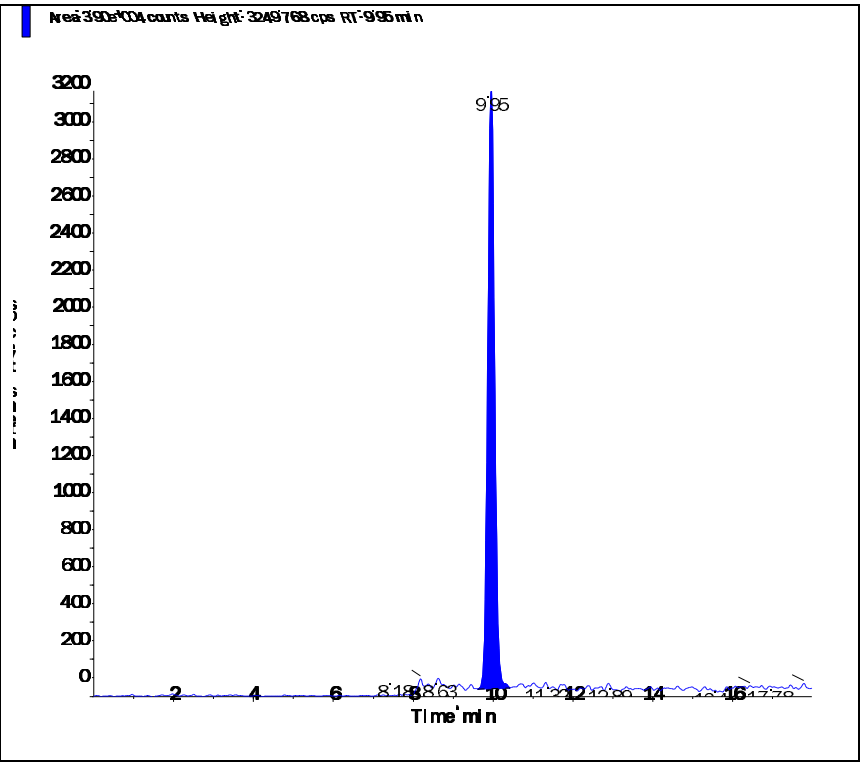

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.198 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

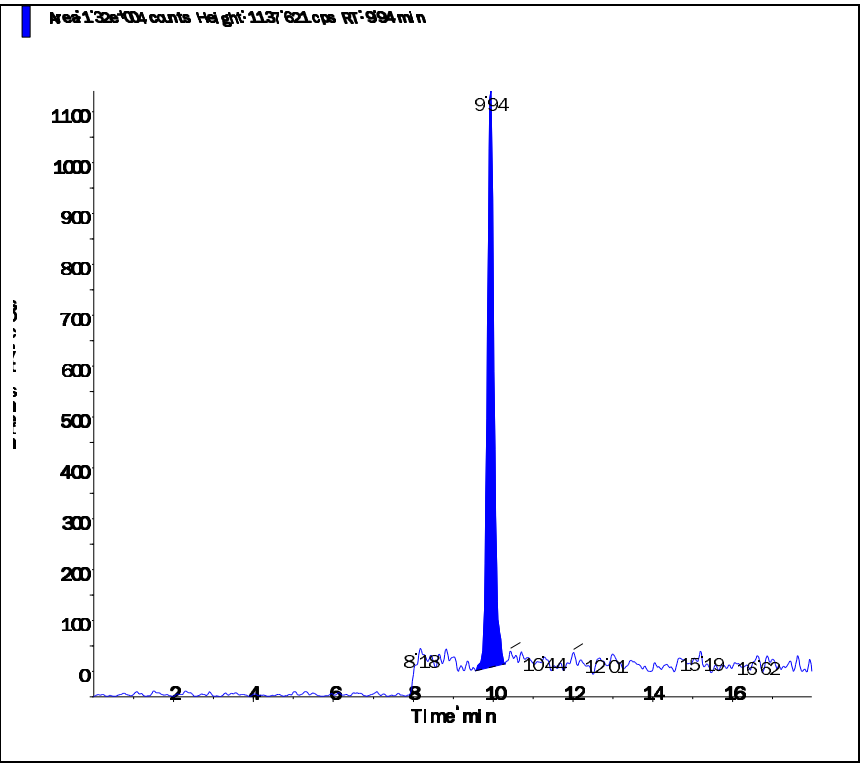

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Data File	LM33903.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 9:57:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561316-09 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33903.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 9:57:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561316-09	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.520e+05	9.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.990e+04	9.92	N/A	0.194
Perchlorate conf	1.310e+04	9.90	N/A	0.198

O18LP (Internal Standard)

RT (Exp. RT): 9.90(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

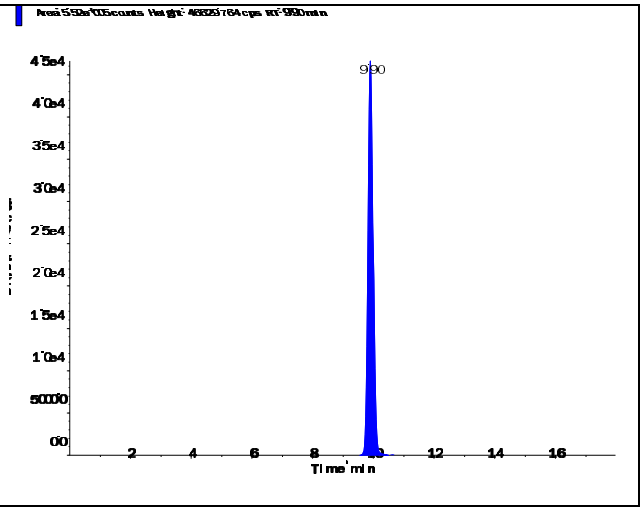

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.92 (9.94) min Calculated conc: 0.194 ng/ml Area Ratio: 0.072 Sample Type: (Unknown)	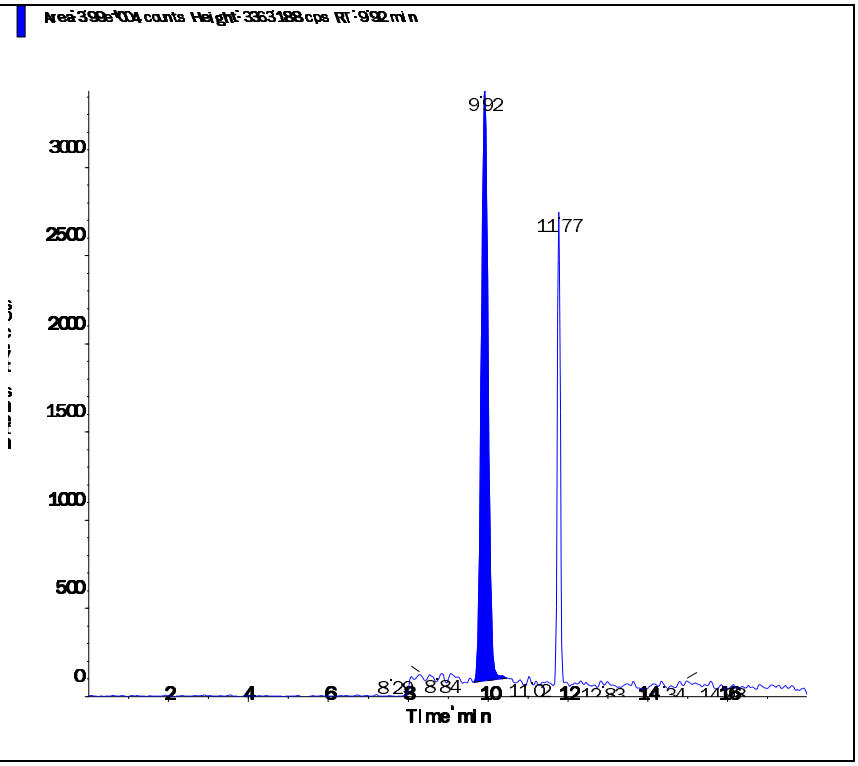
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.90 (9.92) min Calculated conc: 0.198 ng/ml Area Ratio: 0.024 Sample Type: (Unknown)	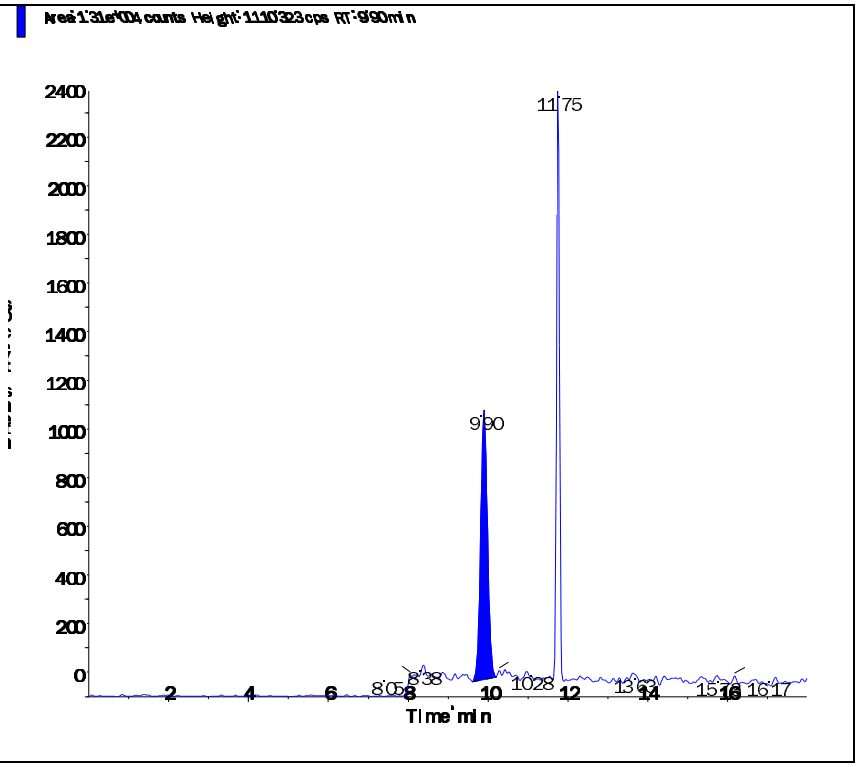

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Data File	LM33930.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 12:34:23 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561316-10 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33930.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 12:34:23 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561316-10	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.910e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.540e+04	9.96	N/A	0.193
Perchlorate conf	1.120e+04	9.94	N/A	0.189

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

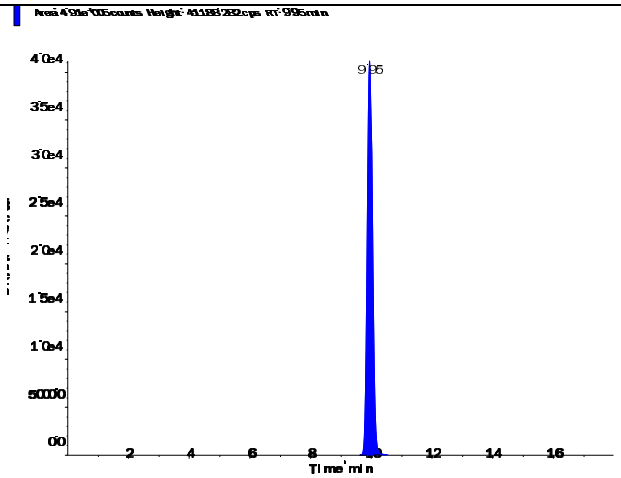

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	0.193 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

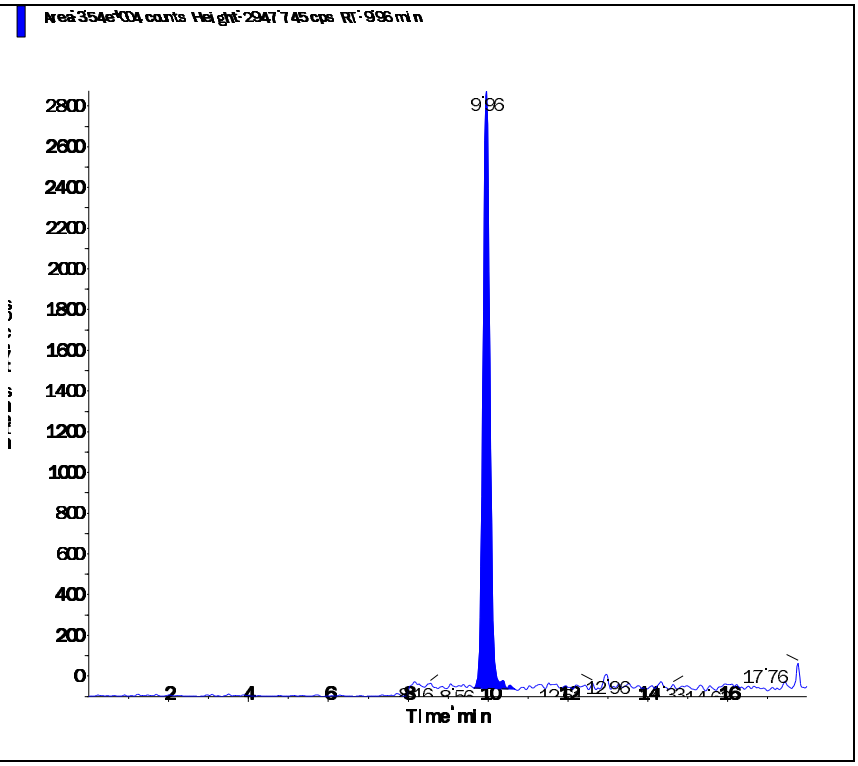

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.189 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

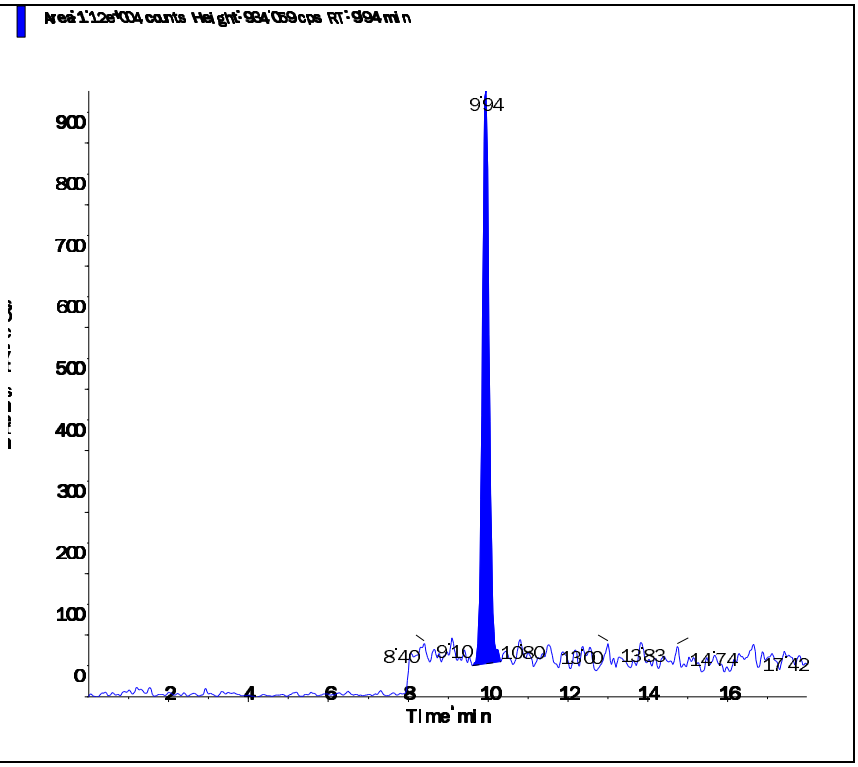

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Data File	LM33943.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 4:40:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561316-11 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33943.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 4:40:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561316-11	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.200e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.770e+04	9.95	N/A	0.195
Perchlorate conf	1.290e+04	9.94	N/A	0.208

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

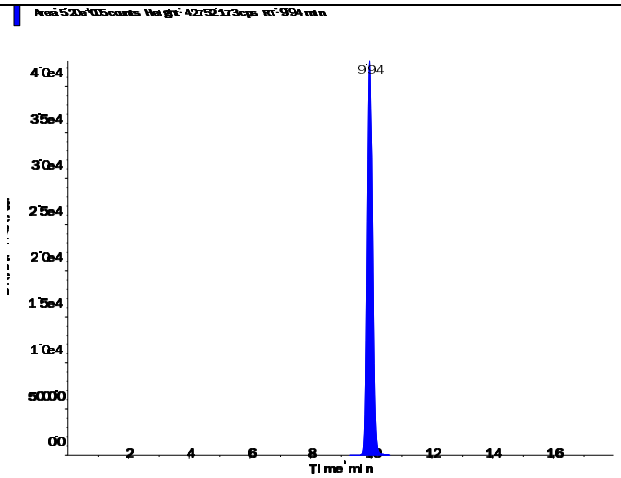

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	0.195 ng/ml
Area Ratio:	0.073
Sample Type:	(Unknown)

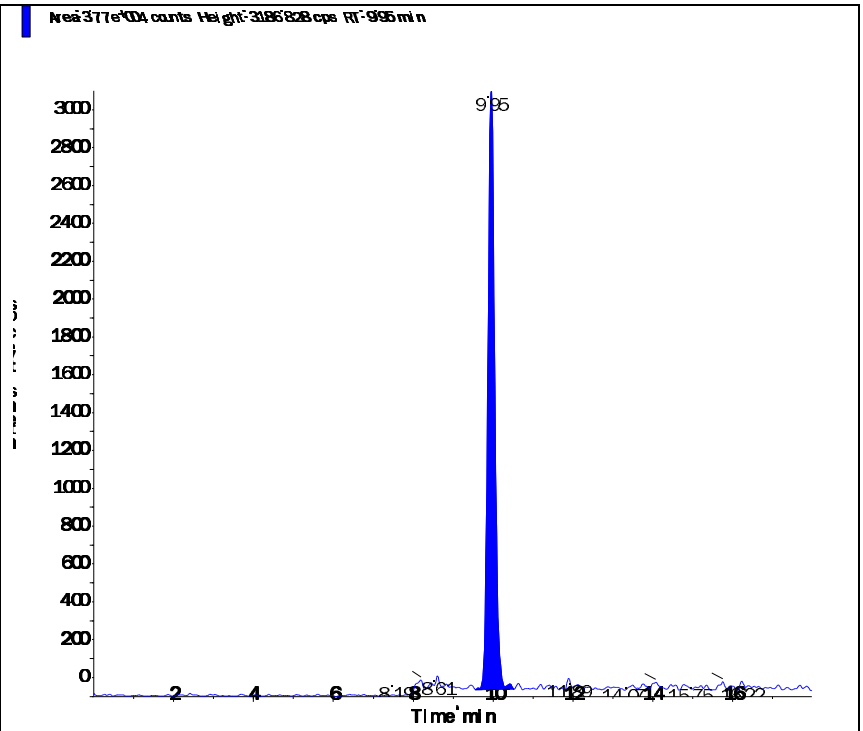

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.208 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

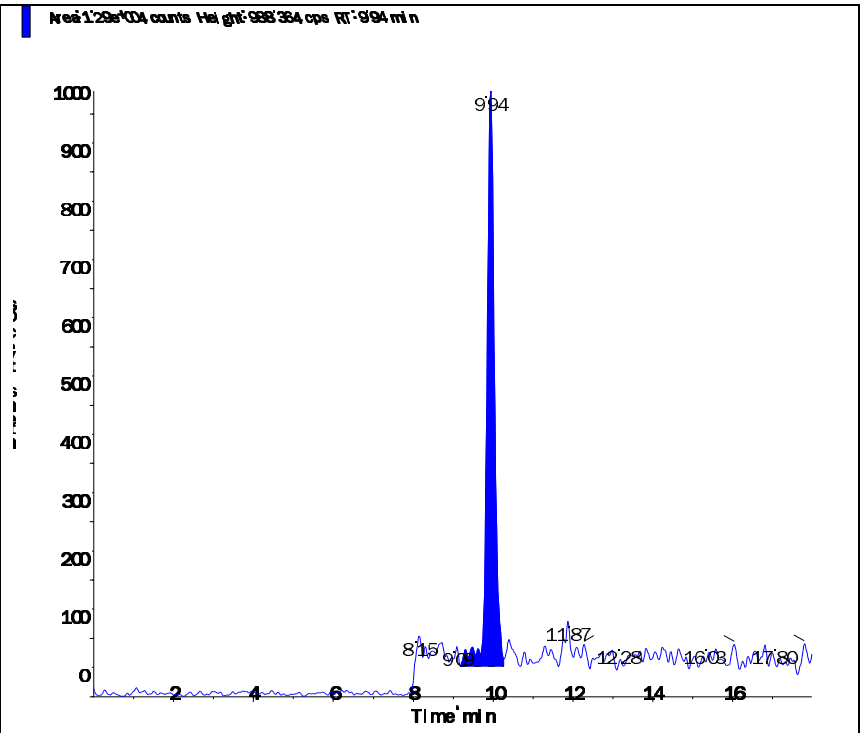

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Data File	LM33881.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 3:00:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561324-01 CCB	**Injection Vial**	1.00
Data File	LM33881.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 3:00:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561324-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.460e+05	9.89	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.89(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

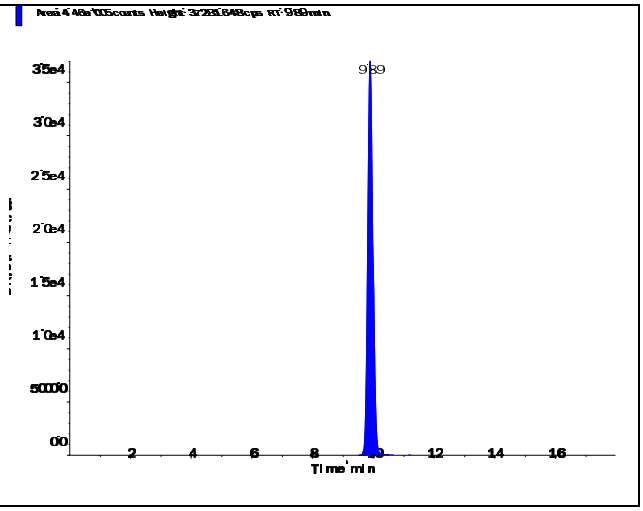

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

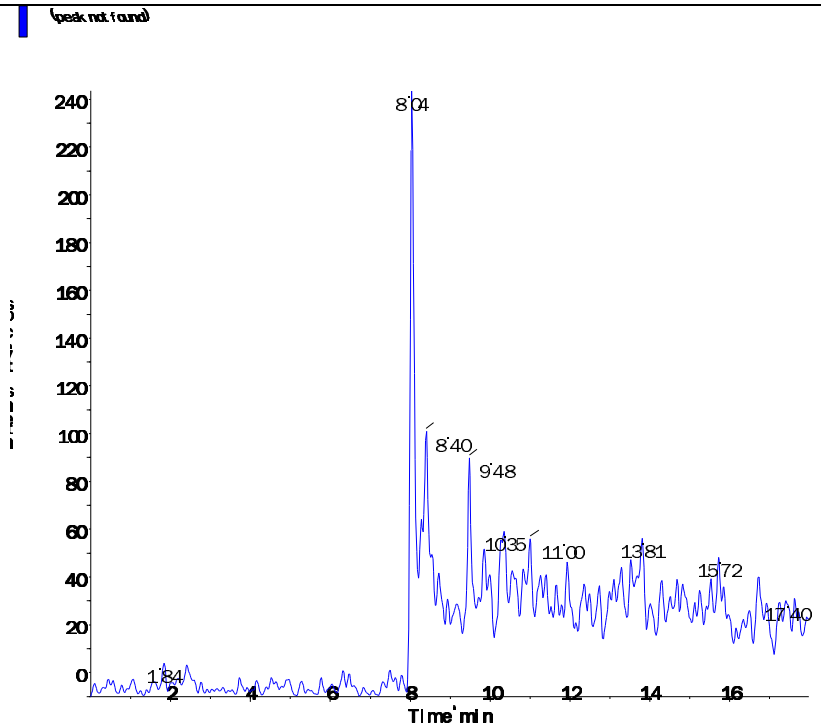

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

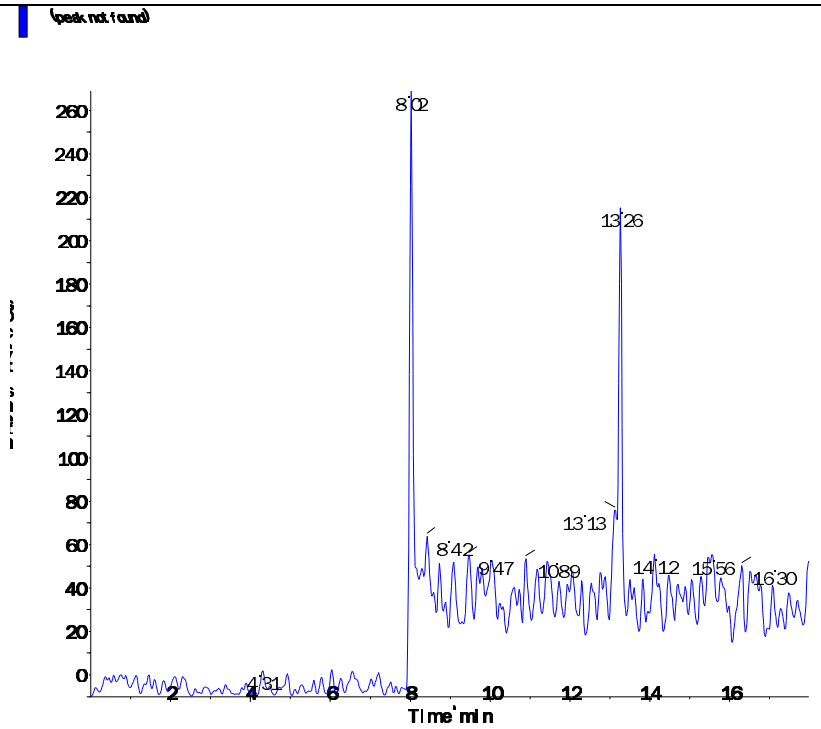

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Data File	LM33896.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 7:44:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561324-04 CCB	**Injection Vial**	1.00
Data File	LM33896.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 7:44:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561324-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.360e+05	9.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	2.680e+02	9.76	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.90(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

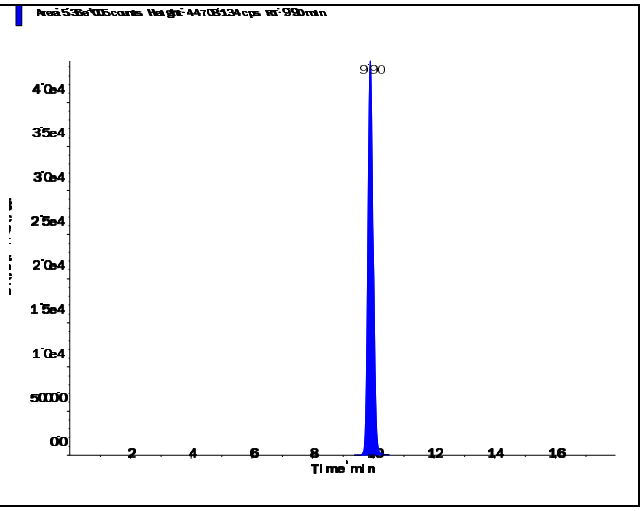

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

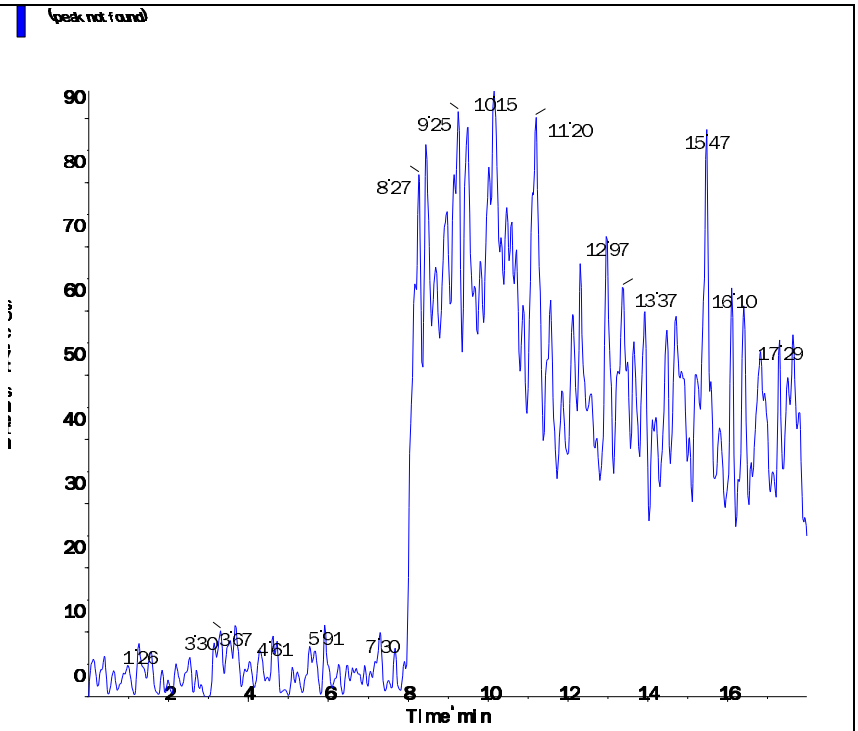

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.76 (9.92) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

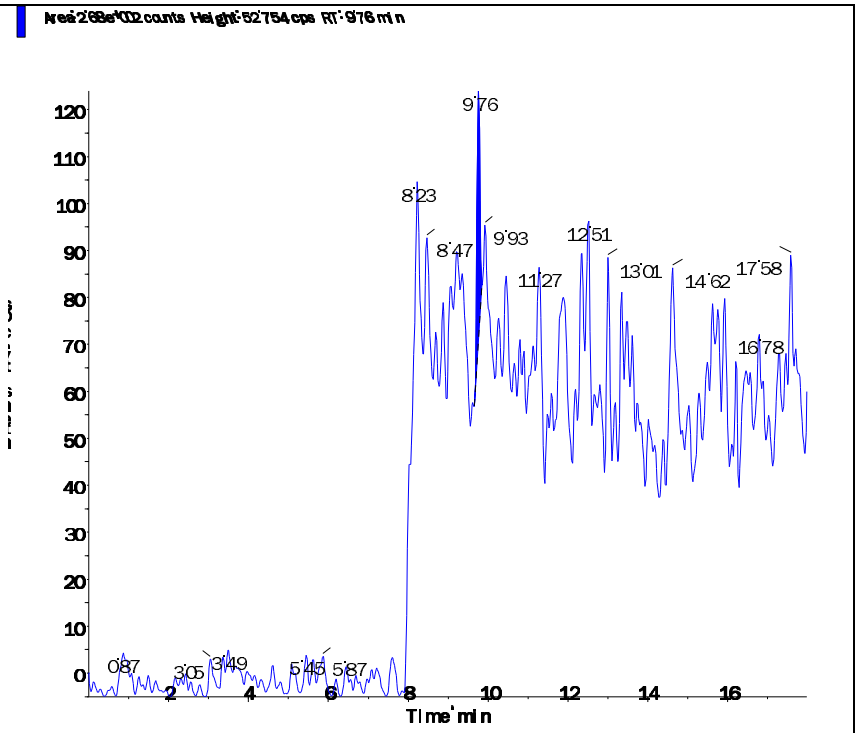

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Data File	LM33905.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 10:35:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561324-06 CCB	**Injection Vial**	1.00
Data File	LM33905.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 10:35:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561324-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.450e+05	9.85	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.85(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

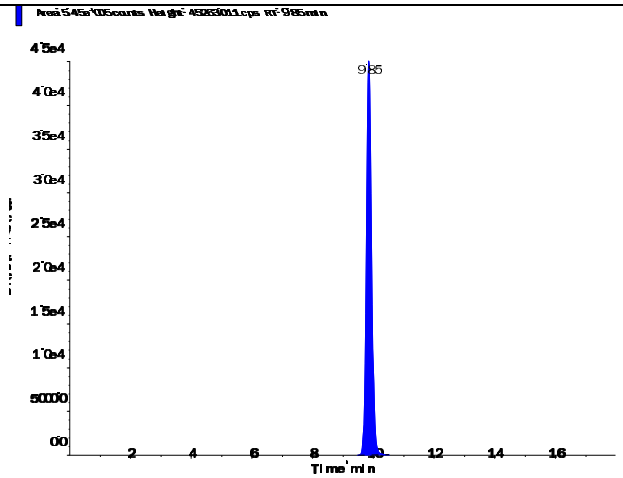

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

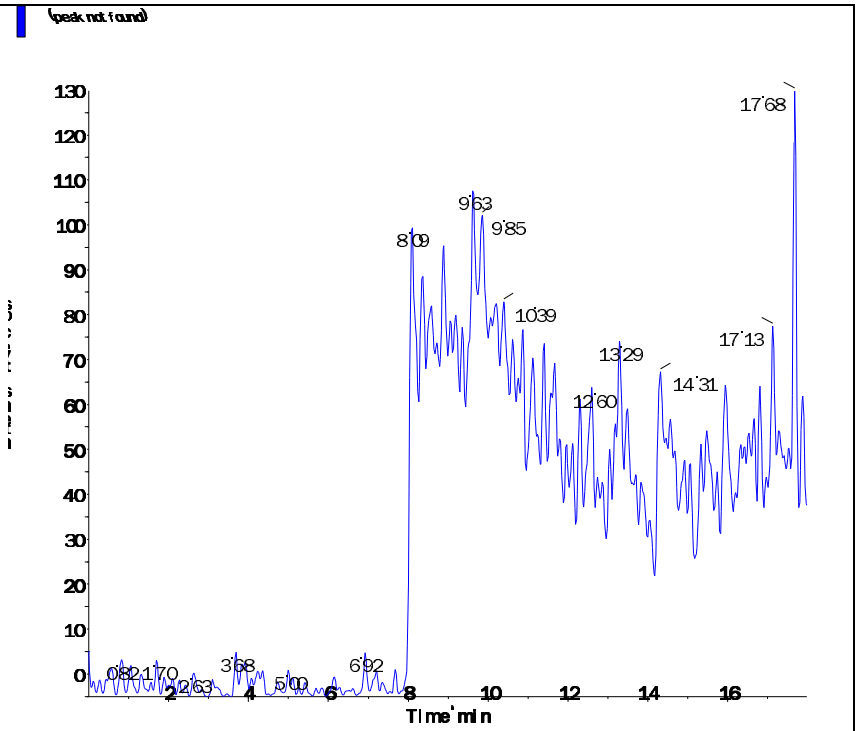

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

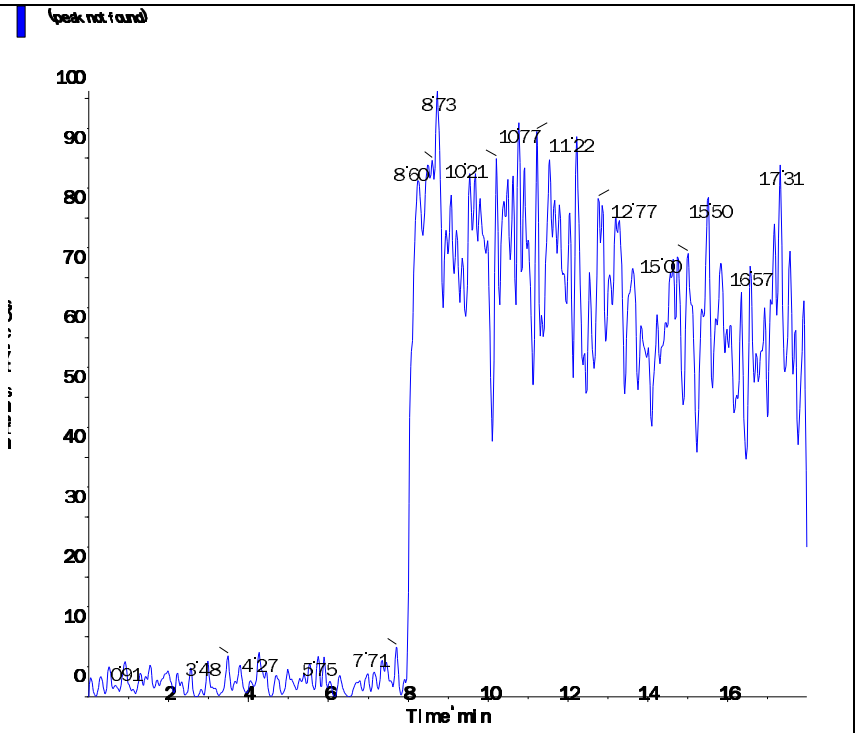

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Printed: 3/18/2016 6:27 PM

Data File	LM33928.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 5:50:47 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561324-10 CCB	**Injection Vial**	1.00
Data File	LM33928.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 5:50:47 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561324-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.450e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

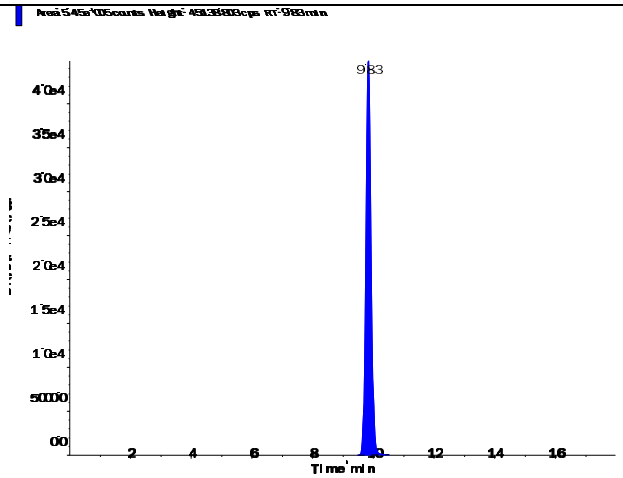

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

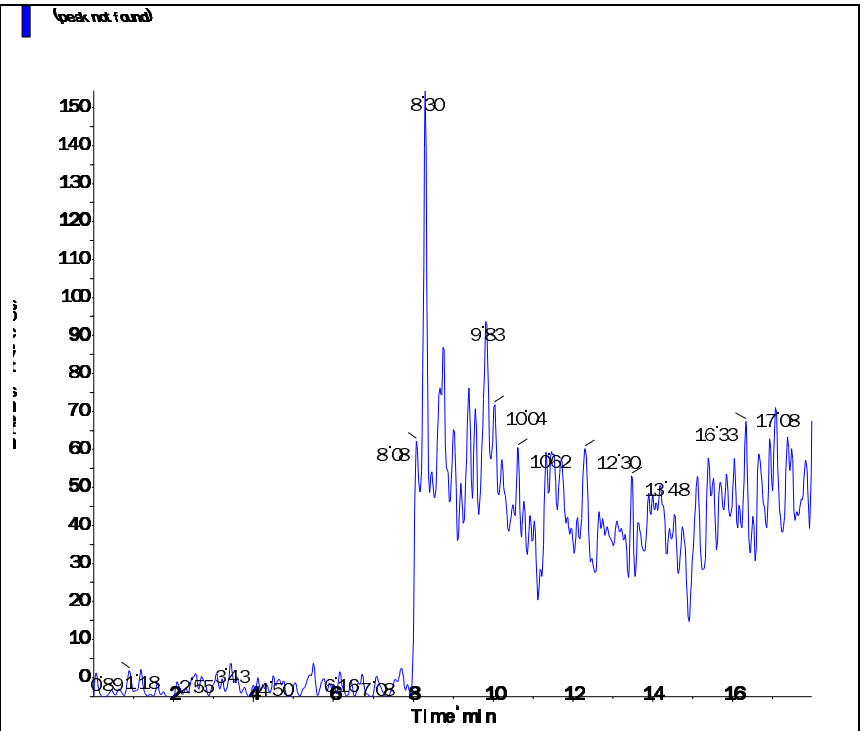

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

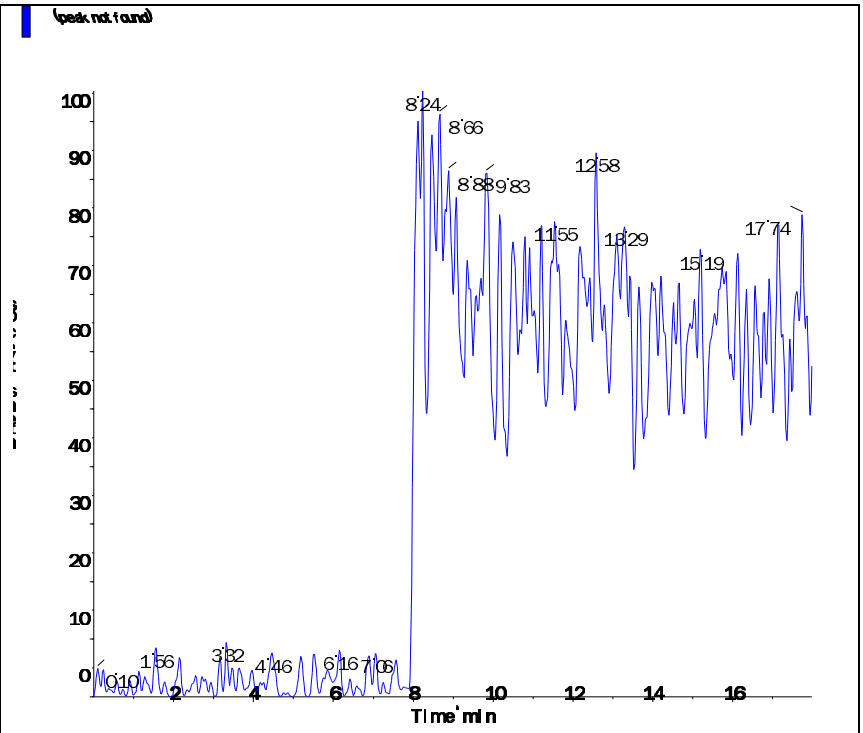

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Data File	LM33932.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 1:12:15 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561324-12 CCB	**Injection Vial**	1.00
Data File	LM33932.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 1:12:15 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561324-12	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.89	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	3.890e+02	9.97	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.89(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

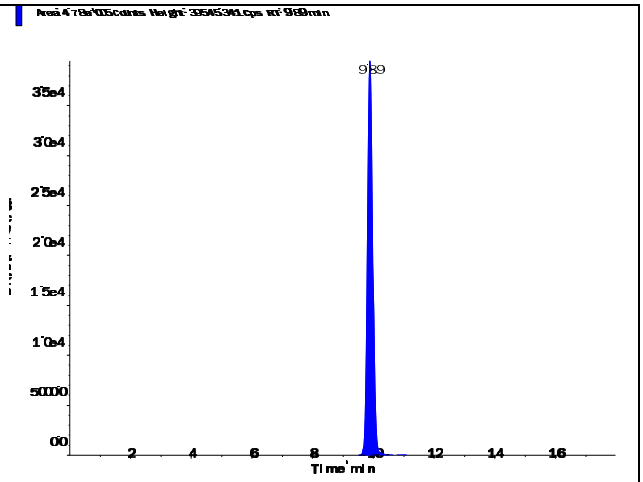

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

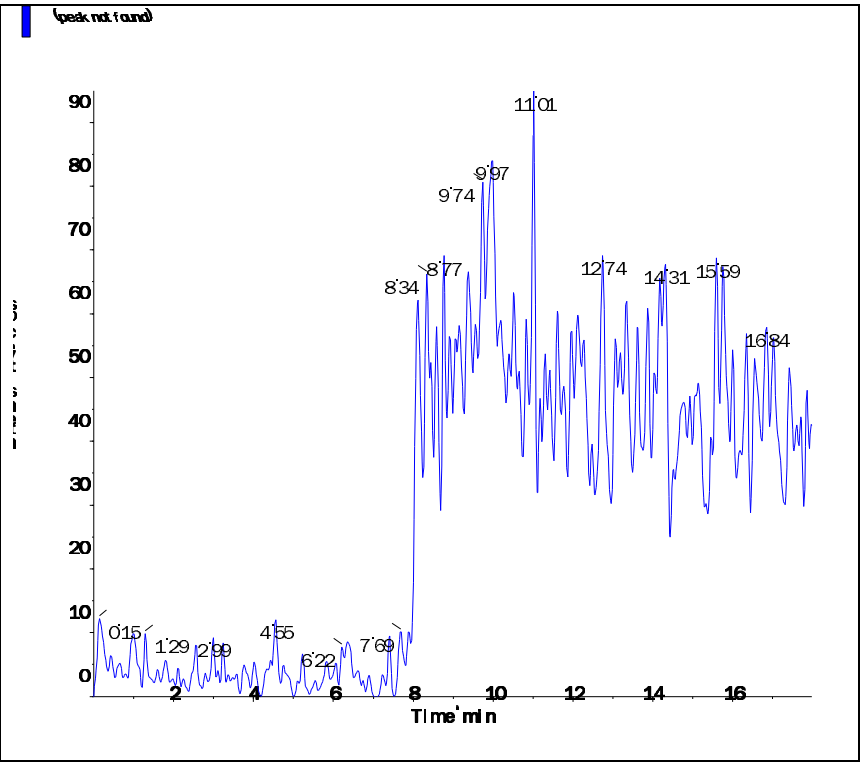

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.97 (9.92) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

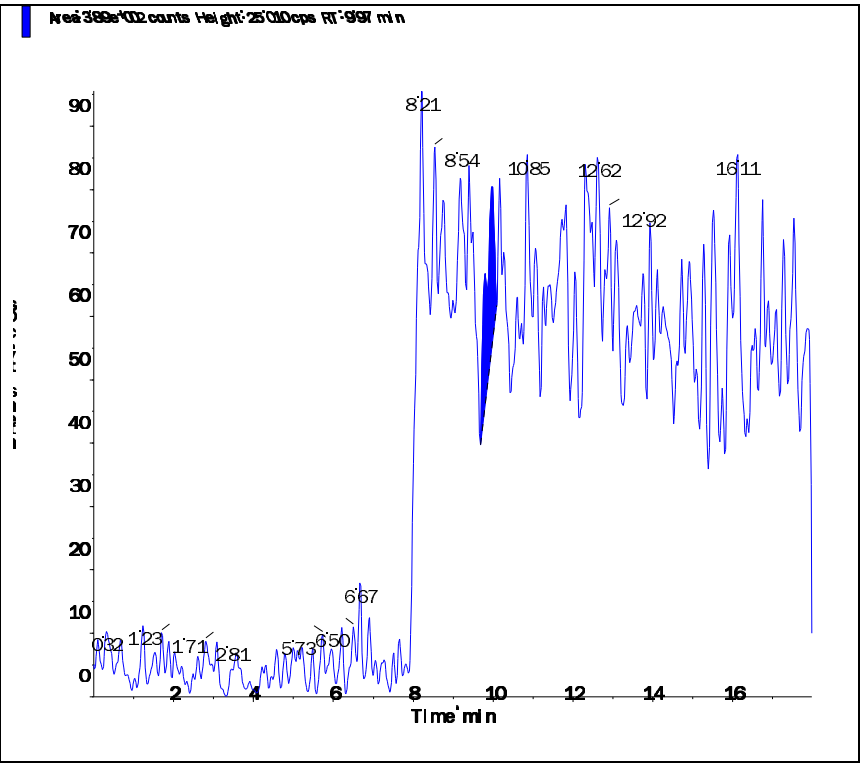

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Data File	LM33945.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 5:18:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561324-14 CCB	**Injection Vial**	1.00
Data File	LM33945.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 5:18:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561324-14	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.86	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	5.480e+02	9.82	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.86(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

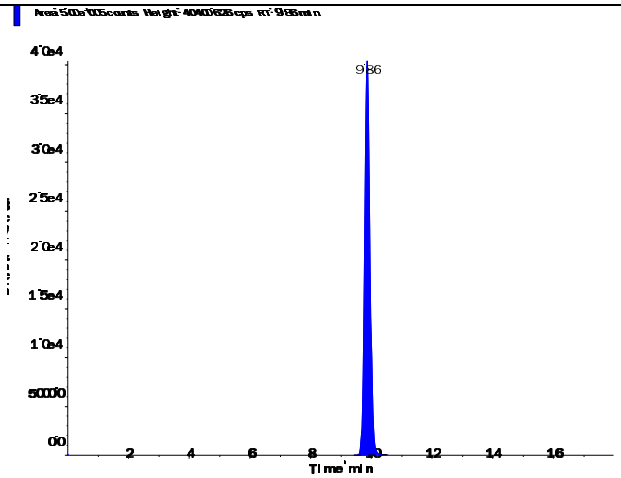

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

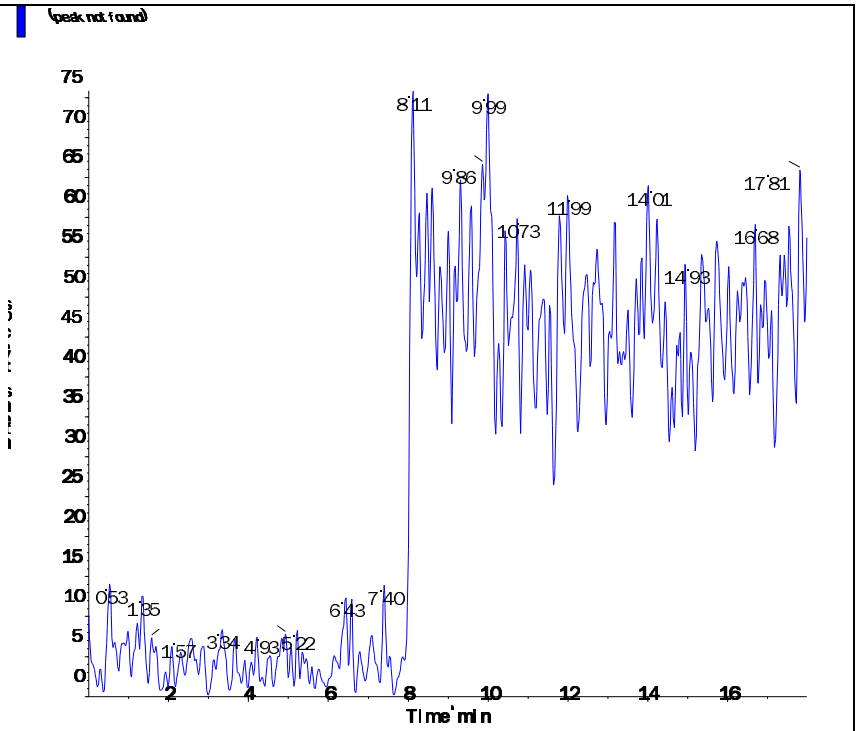

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.82 (9.92) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

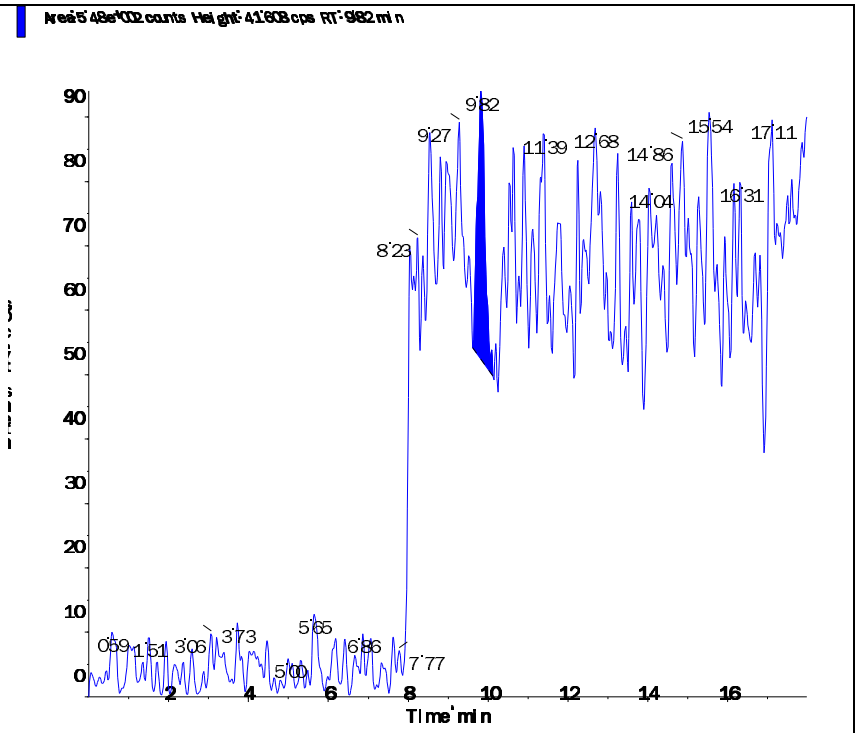

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Data File	LM33884.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 3:57:36 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561316-01 MCT (2.0ug/kg)	**Injection Vial**	4.00
Data File	LM33884.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 3:57:36 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561316-01	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.580e+05	9.49	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.310e+04	9.50	N/A	0.194
Perchlorate conf	1.100e+04	9.48	N/A	0.20

O18LP (Internal Standard)

RT (Exp. RT): 9.49(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

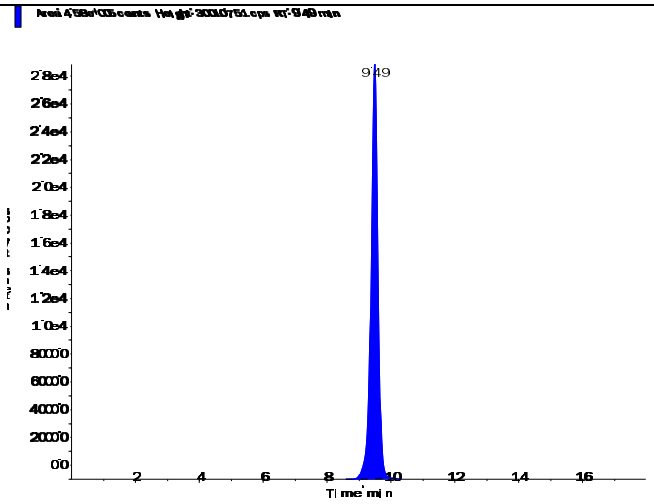

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Printed: 3/18/2016 6:12 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.50 (9.94) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

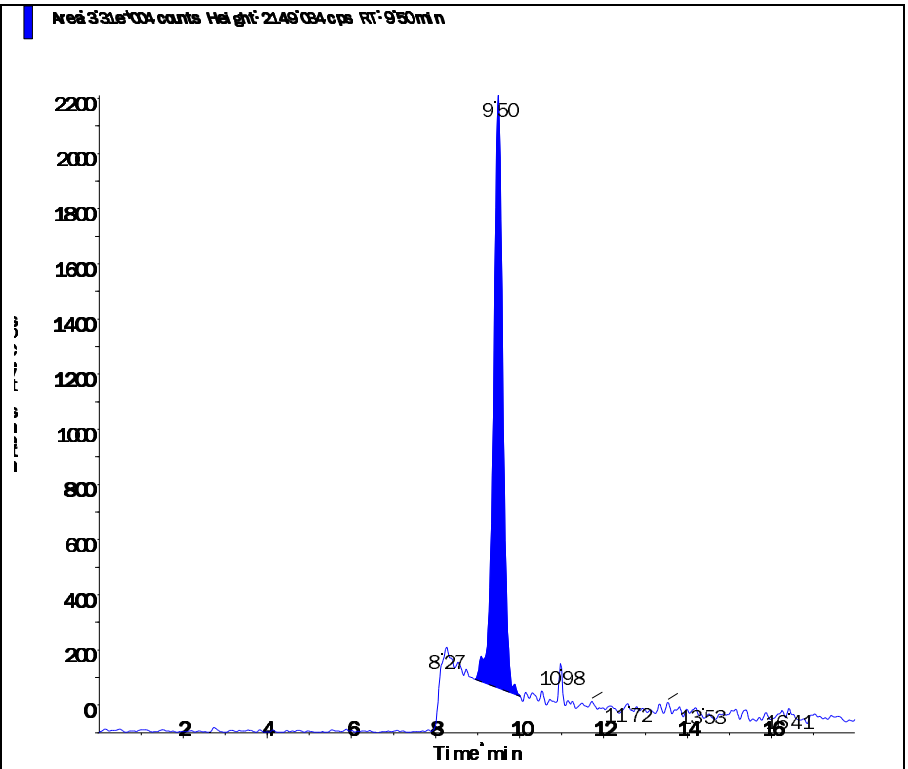

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.48 (9.92) min
Calculated conc:	0.20 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

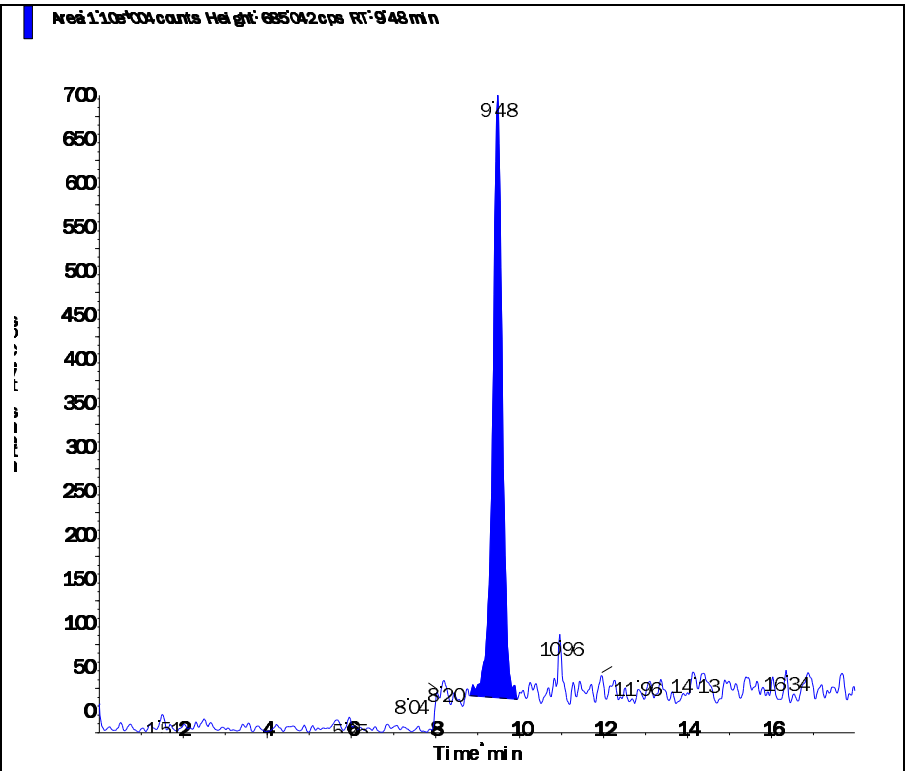

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Printing Time: 4:38:06 PM
Printing Date: Thursday, March 17, 2016

Sample Name: "WG561316-01 MCT (2.0ug/kg)" Sample ID: "WG561316-01" File: "LM33884.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "7,1 STD72685" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.213 ug/L
Acq. Date:	3/17/2016
Acq. Time:	3:57:36 PM
Modified:	No
Proc. Algorithm:	Analyst Classic
Bunching Factor:	3
Noise Threshold:	18.48 cps
Area Threshold:	82.40 cps
Num. Smooths:	5
Sep. Width:	0.20
Sep. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.94 min
Use Relative RT:	Yes
Int. Type:	Valley
Retention Time:	9.50 min
Area:	3.62e+004 counts
Height:	2194.740 cps
Start Time:	8.951 min
End Time:	9.943 min

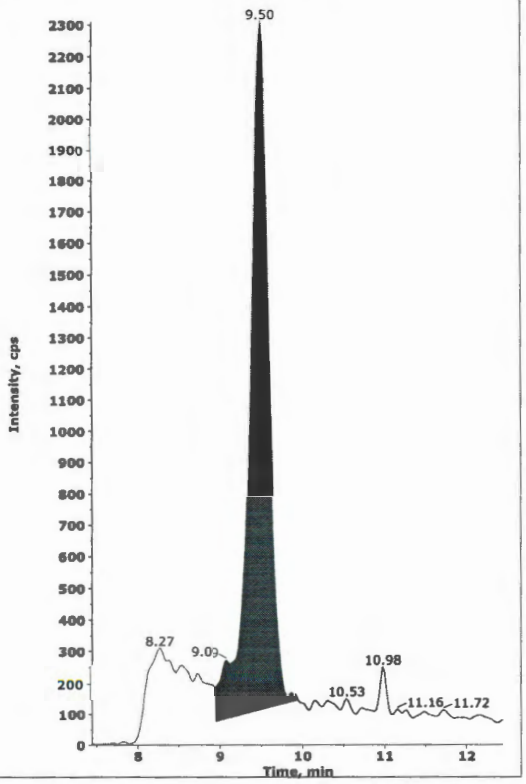

Collected by: N/A
Electronic Signature: no
Operator: lcms1

Printing Time: 4:39:16 PM
Printing Date: Thursday, March 17, 2016

Sample Name: "WG561316-01 MCT (2.0ug/kg)" Sample ID: "WG561316-01" File: "LM33884.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "7,1 STD72685" Annotation: ""

Sample Index:	1	
Sample Type:	Unknown	
Concentration:	N/A	
Calculated Conc:	0.194	ug/L
Acq. Date:	3/17/2016	
Acq. Time:	3:57:36 PM	
Modified:	Yes	
Proc. Algorithm:	Analyst Classic	
Smoothing Factor:	2	
Noise Threshold:	18.48	cps
Area Threshold:	92.40	cps
Num. Smooths:	5	
Exp. Width:	0.20	
Exp. Height:	0.01	
Exp. Peak Ratio:	5.00	
Exp. Adj. Ratio:	4.00	
Exp. Val. Ratio:	3.00	
RT Window:	30.000	sec
Expected RT:	9.94	min
Use Relative RT:	Yes	
Int. Type:	Base To Base	
Retention Time:	9.50	min
Area:	3.31e+004	counts
Height:	2149.034	cps
Start Time:	8.951	min
End Time:	10.024	min

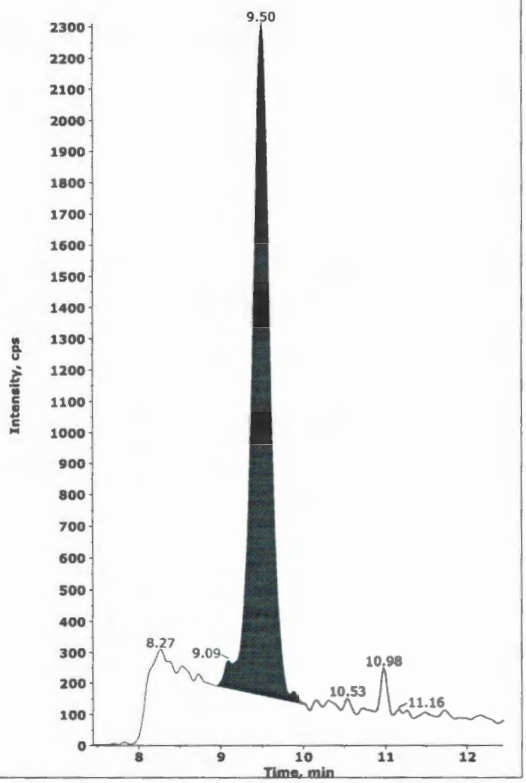

#4
JWR/03/17/16

3-21-16

Collected by: N/A
Electronic Signature: no
Operator: 1cms1

2.2.1.5 Raw QC Data

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Data File	LM33885.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 4:16:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561316-02 BLANK	**Injection Vial**	5.00
Data File	LM33885.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 4:16:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561316-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.830e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

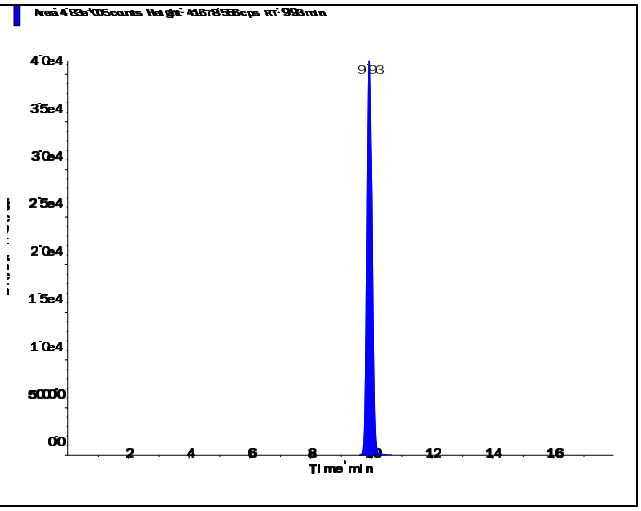

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

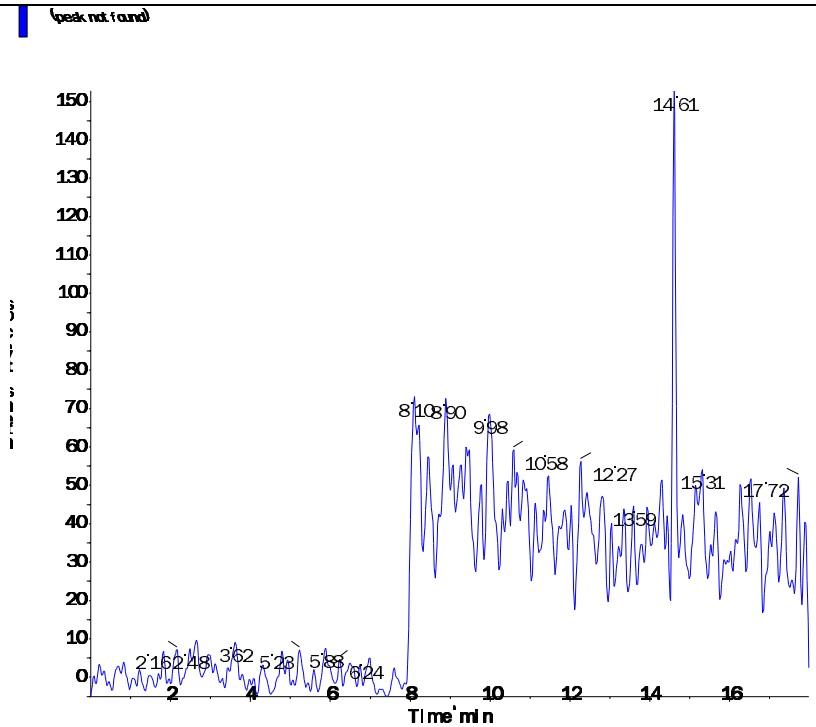

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

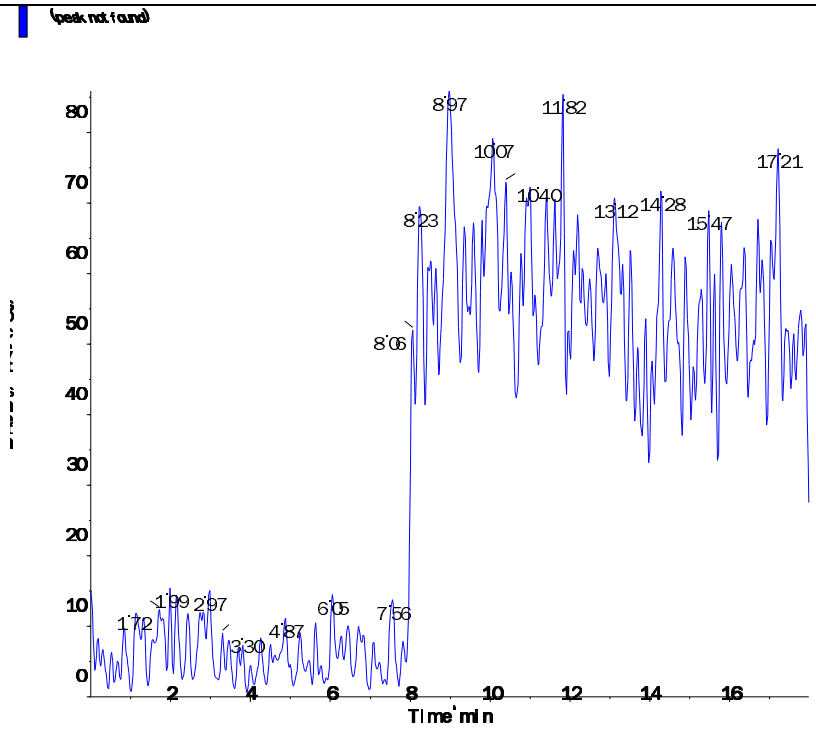

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Data File	LM33886.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 4:35:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561316-03 LCS (2.0ug/kg)	**Injection Vial**	6.00
Data File	LM33886.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 4:35:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561316-03	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.600e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.470e+04	9.93	N/A	0.203
Perchlorate conf	1.180e+04	9.92	N/A	0.214

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

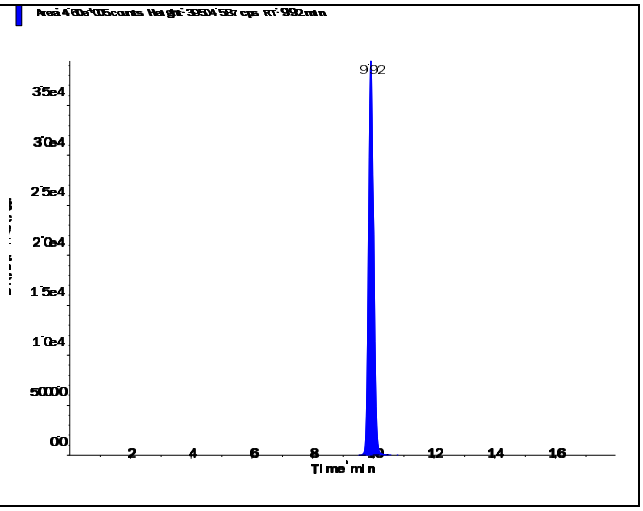

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	0.203 ng/ml
Area Ratio:	0.075
Sample Type:	(Unknown)

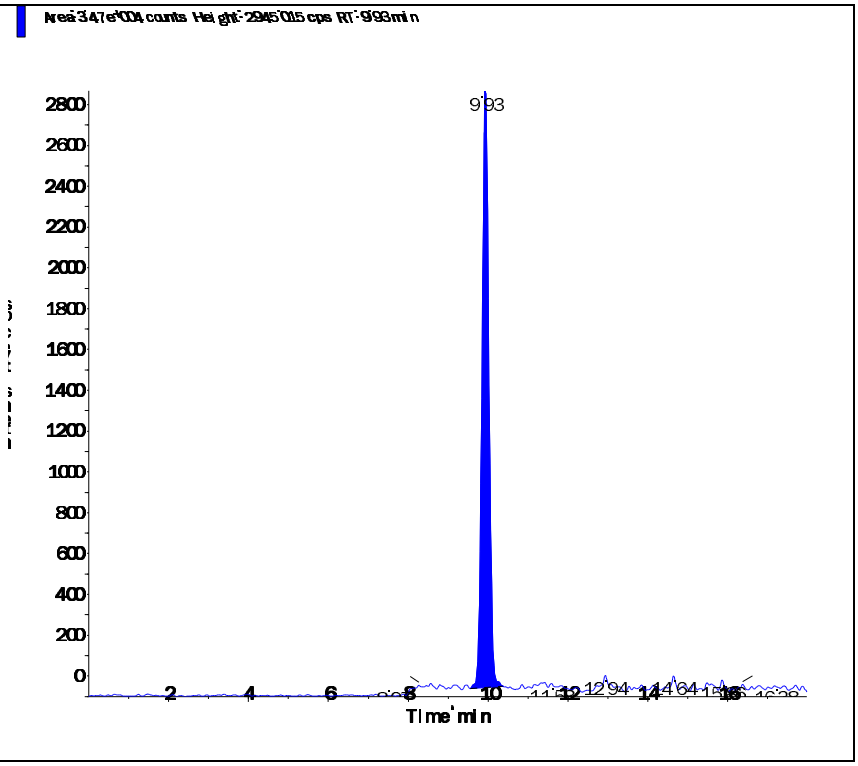

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	0.214 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

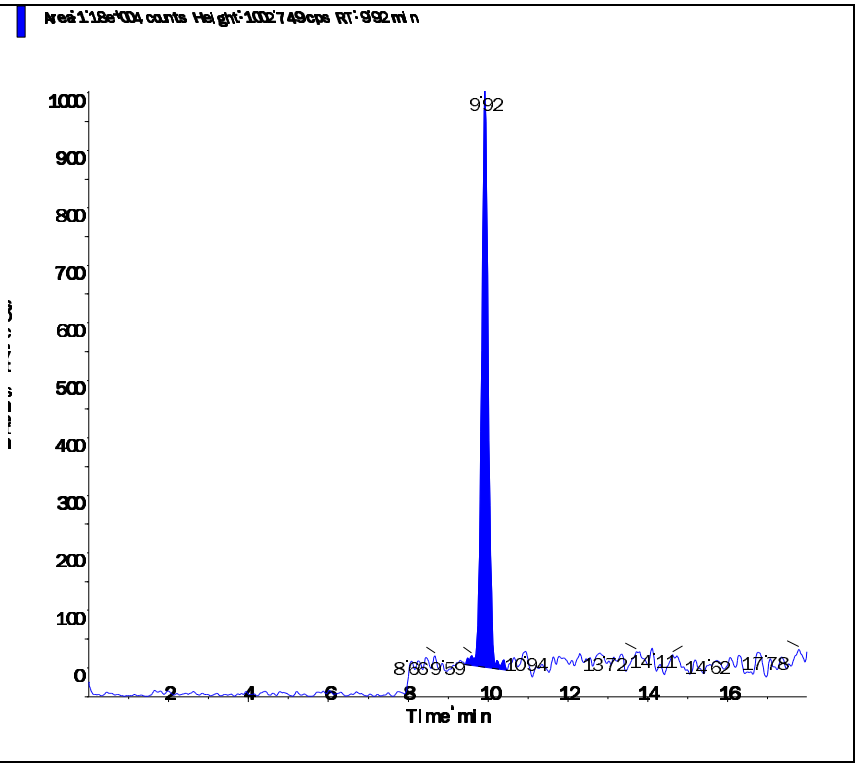

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 3/18/2016 6:14 PM

Data File	LM33888.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 5:13:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030861-01 MS	**Injection Vial**	8.00
Data File	LM33888.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 5:13:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561316-05	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.840e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.640e+04	9.96	N/A	0.203
Perchlorate conf	1.230e+04	9.94	N/A	0.213

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

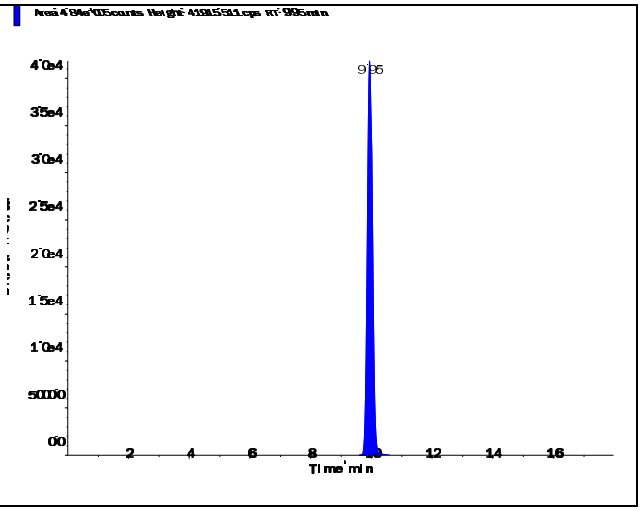

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	0.203 ng/ml
Area Ratio:	0.075
Sample Type:	(Unknown)

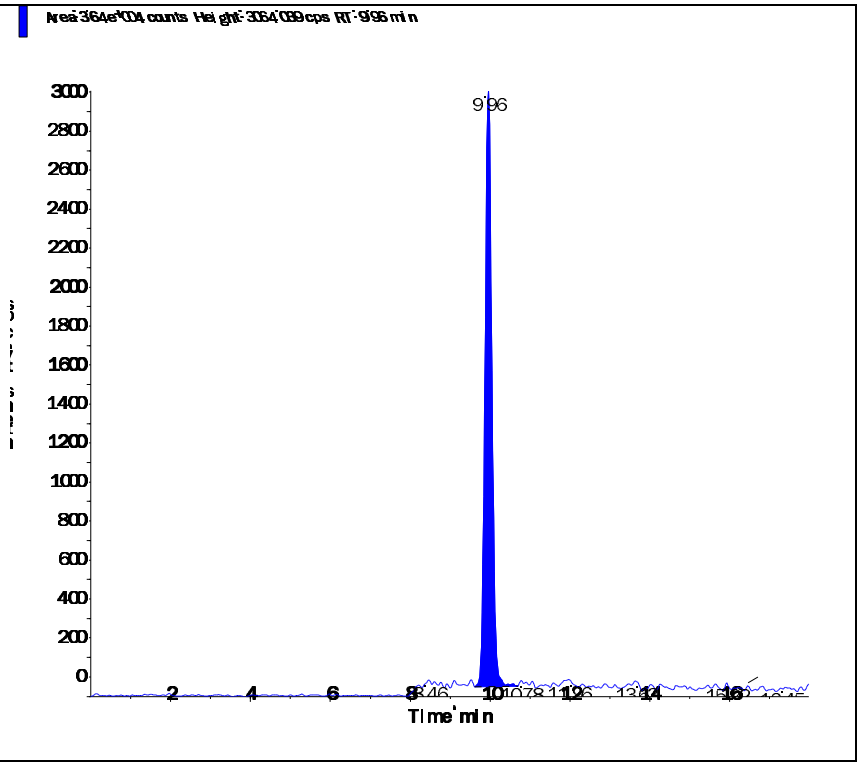

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.213 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

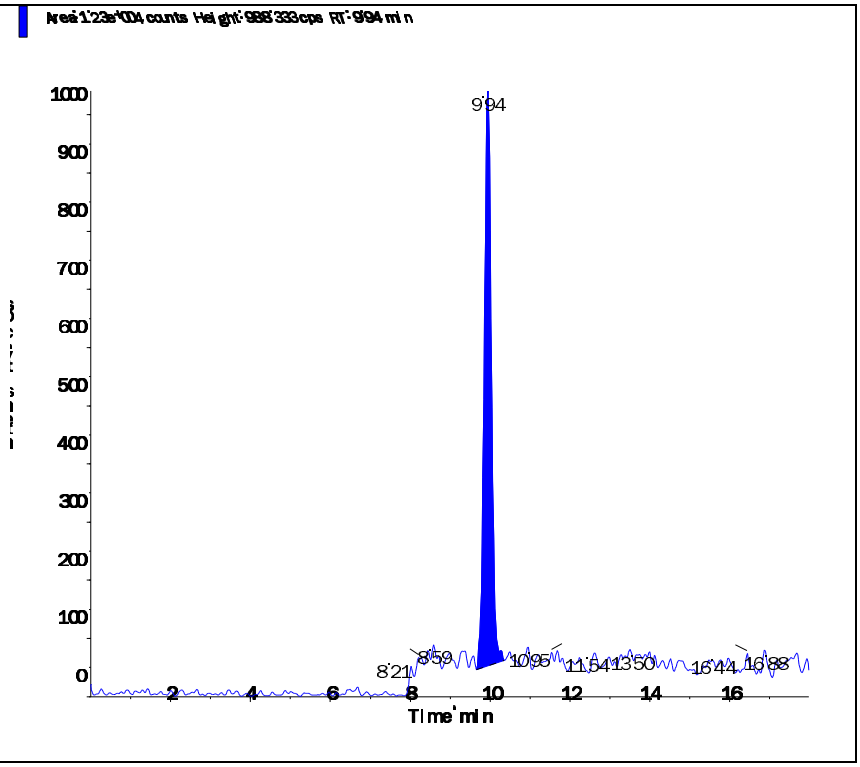

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 3/18/2016 6:14 PM

Data File	LM33889.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 5:32:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030861-01 MSD	**Injection Vial**	9.00
Data File	LM33889.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 5:32:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561316-06	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.890e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.610e+04	9.96	N/A	0.199
Perchlorate conf	1.320e+04	9.95	N/A	0.226

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

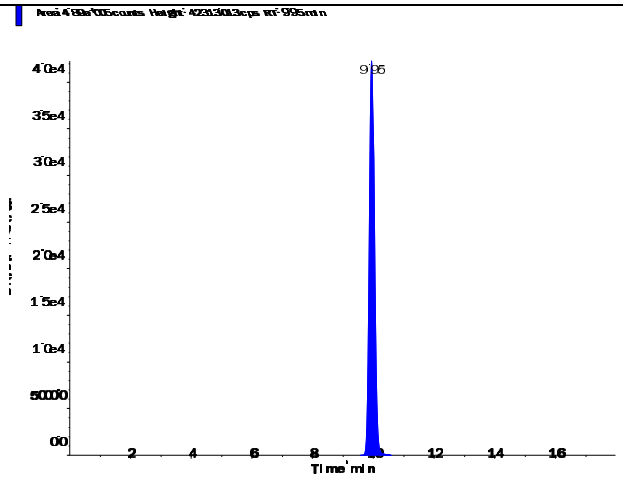

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	0.199 ng/ml
Area Ratio:	0.074
Sample Type:	(Unknown)

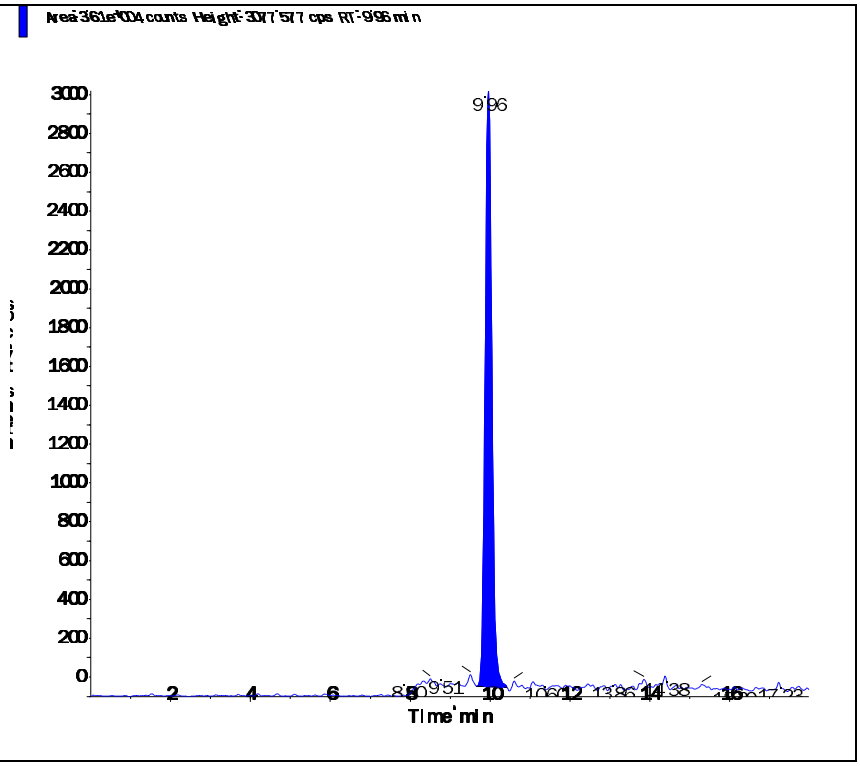

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.95 (9.92) min
Calculated conc:	0.226 ng/ml
Area Ratio:	0.027
Sample Type:	(Unknown)

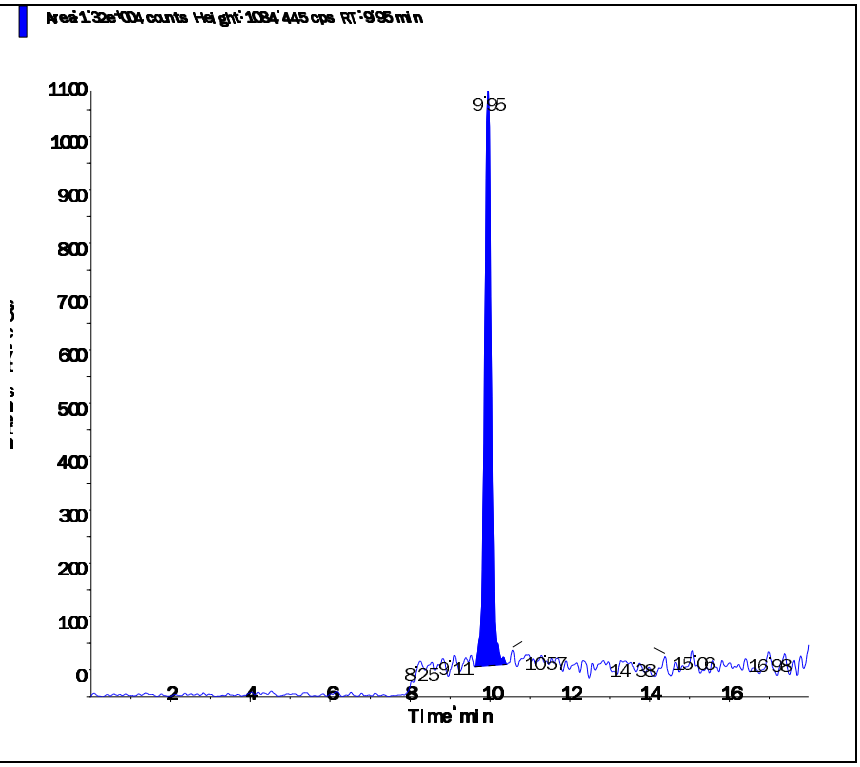

s.dataFile Page 2 of 2

2.3 General Chemistry Data

2.3.1 Percent Solids Data

2.3.1.1 Raw Data

Example Percent Solids Calculations

1.0 Calculating the percent solids of a sample.

$$\%Solids = \frac{WT3 - WT1}{WT2 - WT1} \times F$$

Where:	
WT1 = Weight, in grams, of the empty container	1.30 g
WT2 = Weight, in grams, of the container and wet sample	21.274 g
WT3 = Weight, in grams, of the container and dried sample	5.21 g
F = Factor to get units as percent weight	100
%Solids = Percent solids present in sample.	19.58%

2.0 Calculating the percent moisture of a sample.

% Moisture = 100 - % Solids from 1.0 calculation

Microbac Laboratories Inc.

PERCENT SOLIDS

Workgroup (AAB#): WG561146 Analyst: AC ADT(on): 03/16/2016 13:49
Method: D2216-90 Instrument: BAL021 ADT(off): 03/17/2016 07:16
SOP: K0003 Rev: 14

SAMPLE NUMBER	EMPTY PAN WT 1	WET WT 2	DRY WT 3A	DRY WT 3B	DRY WT 3C	PERCENT SOLID	PERCENT MOISTURE
L16030809-01	1.279	21.726	18.572			84.57	
L16030809-02	1.279	15.733	13.1			81.78	
L16030809-03	1.283	21.267	17.938			83.34	
L16030809-04	1.29	21.251	17.636			81.89	
L16030809-05	1.29	19.062	15.225			78.41	
L16030809-06	1.277	24.425	19.943			80.64	
L16030809-07	1.28	27.597	22.244			79.66	
L16030809-09	1.276	22.278	19.054			84.65	
L16030809-10	1.257	20.809	17.351			82.31	
L16030809-11	1.274	21.716	18.39			83.73	
L16030809-12	1.276	21.924	18.465			83.25	
L16030809-13	1.281	23.244	18.895			80.20	
L16030809-14	1.284	21.898	17.465			78.50	
L16030809-15	1.286	26.585	21.553			80.11	
L16030813-01	1.286	24.949	21.026			83.42	
L16030813-03	1.284	22.517	18.411			80.66	
L16030813-04	1.282	20.187	16.745			81.79	
L16030813-05	1.278	20.583	16.912			80.98	
L16030813-06	1.281	22.146	18.141			80.81	
L16030813-07	1.287	23.088	18.61			79.46	
L16030813-08	1.283	25.335	20.277			78.97	
L16030813-10	1.284	20.021	16.832			82.98	
L16030813-11	1.277	27.265	22.379			81.20	
L16030813-12	1.286	20.892	17.25			81.42	
L16030813-13	1.283	25.078	20.941			82.61	
L16030813-14	1.292	20.894	16.603			78.11	
L16030813-15	1.292	25.359	20.495			79.79	
L16030813-16	1.297	27.687	22.199			79.20	
L16030861-01	1.288	20.745	17.342			82.51	
L16030861-02	1.291	34.105	30.606			89.34	
L16030861-03	1.282	23.778	21.621			90.41	
L16030861-04	1.279	24.359	22.271			90.95	
L16030861-05	1.277	37.668	30.344			79.87	
L16030861-06	1.276	32.396	26.94			82.47	
L16030861-07	1.277	22.539	19.341			84.96	
L16030861-08	1.273	27.281	22.834			82.90	
L16030861-09	1.286	22.206	18.269			81.18	
L16030861-10	1.278	15.708	12.687			79.06	
WG561146-01	1.284	20.021	16.832			82.98	17.02
WG561146-02	1.286	22.206	18.269			81.18	18.82
WG561146-03	1.291	20.708	17.41			83.01	16.99
WG561146-04	1.289	21.788	18.004			81.54	18.46

PERCENT_SOLIDS - Modified 04/24/2008
PDF ID: 4674323
Report generated: 03/17/2016 07:23

Microbac Laboratories Inc.

PERCENT SOLIDS

Workgroup (AAB#): WG561146 Analyst: AC ADT(on): 03/16/2016 13:49
Method: D2216-90 Instrument: BAL021 ADT(off): 03/17/2016 07:16
SOP: K0003 Rev: 14

SAMPLE NUMBER	EMPTY PAN WT 1	WET WT 2	DRY WT 3A	DRY WT 3B	DRY WT 3C	PERCENT SOLID	PERCENT MOISTURE

Analyst: [signature]

PERCENT_SOLIDS - Modified 04/24/2008
PDF ID: 4674323
Report generated: 03/17/2016 07:23

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
March 25, 2016

001 - BIO-CHEM TESTING WVDEP 220	002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental	004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES	006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES	008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND	AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER	ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS	ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG	AZH - AFTER HOURS
BJO - BRIAN J. OGDEN	BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT	BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN	CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES	CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD	CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS	CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL	DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE	DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON	DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE	DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR	ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK	ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN	JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON	JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE	JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG	JLL - JOHN L. LENT
JMW - JEANA M. WHITE	JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS	JWS - JACK W. SHEAVES
JYH - JI Y. HU	KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER	KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES	KHR - KIM H. RHODES
KKB - KERRI K. BUCK	KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER	KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER	LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS	LSB - LESLIE S. BUCINA
MAP - MARLA A. PORTER	MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON	MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING	MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY	MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON	PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE	PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB	QX - QIN XU
RAH - ROY A. HALSTEAD	REK - BOB E. KYER
RLB - BOB BUCHANAN	RM - RAYMOND MALEKE
RNP - RICK N. PETTY	RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG	SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY	SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF	TB - TODD BOYLE
TGF - TIM G. FELTON	TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS	VC - VICKI COLLIER
WJB - WILL J. BEASLEY	WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG	XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
March 25, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
March 25, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

23-27412

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Stephanie Mossburg	Project Manager: Debra Richmon	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): Kayla Pallanes	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Kayla Pallanes	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205	pH:	Program:	
Turn Around Time:			
Project Name/Location: Longhorn			
Project Number: 60274185			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOCs 8260	Perchlorate	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
	18DPT14 (5-5.5) 140316			3/14/16	1232		X	S	2	X	X					
	18DPT14 (10-10.5) 140316			3/14/16	1315		X	S	2	X	X					
	18DPT14 (10-10.5) 140316 FD			3/14/16	1315		X	S	2	X	X					
	18DPT14 (17-17.5) 140316			3/14/16	1325		X	S	2	X	X					
	18DPT14 (23-23.5) 140316			3/14/16	1325		X	S	2	X	X					
	18DPT15 (5-5.5) 140316			3/14/16	1640		X	S	2	X	X					
	18DPT15 (12-12.5) 140316			3/14/16	1641		X	S	2	X	X					
	18DPT15 (21-21.5) 140316			3/14/16	1642		X	S	2	X	X					
	18DPT15 (23.5-24) 140316			3/14/16	1643		X	S	2	X	X					
	18DPT15 (26.5-27) 140316			3/14/16	1645		X	S	2	X	X					

ERPIMS REQUIRED FIELDS

Comments: ~~48 HR TAT~~ STANDARD TAT

Relinquished by: (Signature) Kayla Pallanes	Date 3/14/16	Time 1700	Received by: (Signature)	Rec
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	

Microbac OVD
Received: 03/16/2016 10:03
By: CARA STRICKLER 221000083276
Cara Strickler

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

00697646

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030861
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 25-MAR-2016

Samplenum	Container ID	Products
L16030861-01	715070	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-MAR-2016 12:52	CLS		
2	ANALYZ	V1	ORG4	16-MAR-2016 15:34	AWE	CLS	

Samplenum	Container ID	Products
L16030861-01	715071	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-MAR-2016 12:52	CLS		
2	PREP	W1	DIG	16-MAR-2016 15:44	AC	BRG	
3	STORE	DIG	W1	16-MAR-2016 16:52	BRG	AC	
4	ANALYZ	W1	SEM	17-MAR-2016 10:26	JWR	BRG	
5	STORE	SEM	A1	18-MAR-2016 18:18	AZH	JWR	
6	ANALYZ*	DIG	SEMI	18-MAR-2016 19:19	JWR	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16030861-02	715072	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-MAR-2016 12:52	CLS		

Samplenum	Container ID	Products
L16030861-02	715073	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-MAR-2016 12:52	CLS		
2	PREP	W1	DIG	16-MAR-2016 15:44	AC	BRG	
3	STORE	DIG	W1	16-MAR-2016 16:52	BRG	AC	
4	ANALYZ	W1	SEM	17-MAR-2016 10:26	JWR	BRG	
5	STORE	SEM	A1	18-MAR-2016 18:18	AZH	JWR	
6	ANALYZ*	DIG	SEMI	18-MAR-2016 19:19	JWR	AC	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030861
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 25-MAR-2016

Samplenum	Container ID	Products
L16030861-03	715074	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-MAR-2016 12:52	CLS		
2	ANALYZ	V1	ORG4	16-MAR-2016 15:35	AWE	CLS	

Samplenum	Container ID	Products
L16030861-03	715075	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-MAR-2016 12:52	CLS		
2	PREP	W1	DIG	16-MAR-2016 15:44	AC	BRG	
3	STORE	DIG	W1	16-MAR-2016 16:52	BRG	AC	
4	ANALYZ	W1	SEM	17-MAR-2016 10:26	JWR	BRG	
5	STORE	SEM	A1	18-MAR-2016 18:18	AZH	JWR	
6	ANALYZ*	DIG	SEMI	18-MAR-2016 19:19	JWR	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16030861-04	715076	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-MAR-2016 12:52	CLS		

Samplenum	Container ID	Products
L16030861-04	715077	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-MAR-2016 12:52	CLS		
2	PREP	W1	DIG	16-MAR-2016 15:44	AC	BRG	
3	STORE	DIG	W1	16-MAR-2016 16:52	BRG	AC	
4	ANALYZ	W1	SEM	17-MAR-2016 10:26	JWR	BRG	
5	STORE	SEM	A1	18-MAR-2016 18:18	AZH	JWR	
6	ANALYZ*	DIG	SEMI	18-MAR-2016 19:19	JWR	AC	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030861
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 25-MAR-2016

Samplenum	Container ID	Products
L16030861-05	715078	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-MAR-2016 12:52	CLS		
2	ANALYZ	V1	ORG4	16-MAR-2016 15:34	AWE	CLS	

Samplenum	Container ID	Products
L16030861-05	715079	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-MAR-2016 12:52	CLS		
2	PREP	W1	DIG	16-MAR-2016 15:44	AC	BRG	
3	STORE	DIG	W1	16-MAR-2016 16:52	BRG	AC	
4	ANALYZ	W1	SEM	17-MAR-2016 10:26	JWR	BRG	
5	STORE	SEM	A1	18-MAR-2016 18:18	AZH	JWR	
6	ANALYZ*	DIG	SEMI	18-MAR-2016 19:19	JWR	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16030861-06	715080	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-MAR-2016 12:52	CLS		
2	ANALYZ	V1	ORG4	16-MAR-2016 15:34	AWE	CLS	

Samplenum	Container ID	Products
L16030861-06	715081	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-MAR-2016 12:52	CLS		
2	PREP	W1	DIG	16-MAR-2016 15:44	AC	BRG	
3	STORE	DIG	W1	16-MAR-2016 16:52	BRG	AC	
4	ANALYZ	W1	SEM	17-MAR-2016 10:26	JWR	BRG	
5	STORE	SEM	A1	18-MAR-2016 18:18	AZH	JWR	
6	ANALYZ*	DIG	SEMI	18-MAR-2016 19:19	JWR	AC	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030861
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 25-MAR-2016

Samplenum	Container ID	Products
L16030861-07	715082	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-MAR-2016 12:52	CLS		
2	ANALYZ	V1	ORG4	16-MAR-2016 15:34	AWE	CLS	

Samplenum	Container ID	Products
L16030861-07	715083	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-MAR-2016 12:52	CLS		
2	PREP	W1	DIG	16-MAR-2016 15:44	AC	BRG	
3	STORE	DIG	W1	16-MAR-2016 16:52	BRG	AC	
4	ANALYZ	W1	SEM	17-MAR-2016 10:26	JWR	BRG	
5	STORE	SEM	A1	18-MAR-2016 18:18	AZH	JWR	
6	ANALYZ*	DIG	SEMI	18-MAR-2016 19:19	JWR	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16030861-08	715084	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-MAR-2016 12:52	CLS		
2	ANALYZ	V1	ORG4	16-MAR-2016 15:34	AWE	CLS	

Samplenum	Container ID	Products
L16030861-08	715085	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-MAR-2016 12:52	CLS		
2	PREP	W1	DIG	16-MAR-2016 15:44	AC	BRG	
3	STORE	DIG	W1	16-MAR-2016 16:52	BRG	AC	
4	ANALYZ	W1	SEM	17-MAR-2016 10:26	JWR	BRG	
5	STORE	SEM	A1	18-MAR-2016 18:18	AZH	JWR	
6	ANALYZ*	DIG	SEMI	18-MAR-2016 19:19	JWR	AC	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030861
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 25-MAR-2016

Samplenum	Container ID	Products
L16030861-09	715086	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-MAR-2016 12:52	CLS		
2	ANALYZ	V1	ORG4	16-MAR-2016 15:34	AWE	CLS	

Samplenum	Container ID	Products
L16030861-09	715087	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-MAR-2016 12:52	CLS		
2	PREP	W1	DIG	16-MAR-2016 15:44	AC	BRG	
3	STORE	DIG	W1	16-MAR-2016 16:52	BRG	AC	
4	ANALYZ	W1	SEM	17-MAR-2016 10:26	JWR	BRG	
5	STORE	SEM	A1	18-MAR-2016 18:18	AZH	JWR	
6	ANALYZ*	DIG	SEMI	18-MAR-2016 19:19	JWR	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16030861-10	715088	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-MAR-2016 12:52	CLS		
2	ANALYZ	V1	ORG4	16-MAR-2016 15:34	AWE	CLS	

Samplenum	Container ID	Products
L16030861-10	715089	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-MAR-2016 12:52	CLS		
2	PREP	W1	DIG	16-MAR-2016 15:44	AC	BRG	
3	STORE	DIG	W1	16-MAR-2016 16:52	BRG	AC	
4	ANALYZ	W1	SEM	17-MAR-2016 10:26	JWR	BRG	
5	STORE	SEM	A1	18-MAR-2016 18:18	AZH	JWR	
6	ANALYZ*	DIG	SEMI	18-MAR-2016 19:19	JWR	AC	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16030863

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on March 25 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

The following discrepancies were noted:

Discrepancy	Resolution
18DPT16(5-5.5)150316 / MS / MSD: the label says "5-6" and the chain says "5-5.5". We will log using the chain of custody. CLS	Please log per the COC. SLM

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00112171	I	6.0		J2317165849	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	No
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	Were correct preservatives used? (water only)	NA
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	NA

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18DPT16(5-5.5)150316	L16030863-01	03/15/2016 09:20	03/16/2016 10:03
18DPT16(5-5.5)150316MS	L16030863-02	03/15/2016 09:20	03/16/2016 10:03
18DPT16(5-5.5)150316MSD	L16030863-03	03/15/2016 09:20	03/16/2016 10:03
18DPT16(15-15.5)150316	L16030863-04	03/15/2016 09:25	03/16/2016 10:03
18DPT16(25-25.5)150316	L16030863-05	03/15/2016 10:35	03/16/2016 10:03
18CPT16(30-30.5)150316	L16030863-06	03/15/2016 10:40	03/16/2016 10:03
18DPT16(33-33.5)150316	L16030863-07	03/15/2016 10:45	03/16/2016 10:03
18DPT17(2.5-3)150316	L16030863-08	03/15/2016 11:50	03/16/2016 10:03
18DPT17(2.5-3)150316FD	L16030863-09	03/15/2016 11:50	03/16/2016 10:03
18DPT17(5-5.5)150316	L16030863-10	03/15/2016 11:55	03/16/2016 10:03
18DPT17(10-10.5)150316	L16030863-11	03/15/2016 12:00	03/16/2016 10:03
18DPT17(18-18.5)150316	L16030863-12	03/15/2016 12:30	03/16/2016 10:03
18DPT17(27-27.5)150316	L16030863-13	03/15/2016 12:45	03/16/2016 10:03
18DPT17(21.5-22)150316	L16030863-14	03/15/2016 13:00	03/16/2016 10:03

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16030863
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030863
Project Name:		**Method:**	8260
Prep Batch Number(s):	562075,562236	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-25 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2016-03-25 16:30:47

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030863
Project Name:		**Method:**	8260
Prep Batch Number(s):	562075,562236	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-25 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030863
Project Name:		**Method:**	8260
Prep Batch Number(s):	562075,562236	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-25 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030863
Project Name:		**Method:**	8260
Prep Batch Number(s):	562075,562236	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-25 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030863
Project Name:		**Method:**	8260
Prep Batch Number(s):	562075,562236	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-25 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030863
Project Name:		**Method:**	8260
Prep Batch Number(s):	562075,562236	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-03-25 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1)Chloromethane and Naphthalene exceeded theUCL in the CCV analyzed 03/23/2016 on HPMS6. Chloromethane exceeded the UCL in the CCV analyzed 03/24/2016 on HPMS6.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030863
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG561318	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-22 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-03-22 15:02:52

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030863
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG561318	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-22 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030863
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG561318	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-22 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			1
Were MS/MSD RPDs within laboratory QC limits?		X			1
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030863
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG561318	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-22 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030863
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG561318	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-22 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030863
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG561318	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-03-22 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. Perchlorate failed low in the MS and high in the MSD, and the RPD was beyond acceptance limits. This was due to the presence of a large amount of perchlorate in the reference sample.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030863
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG561160	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-18 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2016-03-18 15:42:04

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030863
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG561160	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-18 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?			X		
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?			X		
Were sample detection limits reported for all analytes not detected?			X		
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?			X		
Were blanks analyzed at the appropriate frequency?			X		
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?			X		
Were blank concentrations < MQL?			X		
Laboratory control samples (LCS):			X		
Were all COCs included in the LCS?			X		

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030863
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG561160	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-18 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?			X		
Were LCSs analyzed at the required frequency?			X		
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?			X		
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?			X		
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?			X		
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?			X		
Are unadjusted MQLs and DCSs included in the laboratory data package?			X		
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?			X		
Were percent RSDs or correlation coefficient criteria met?			X		

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030863
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG561160	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-18 00:00:00		

Was the number of standards recommended in the method used for all analytes?			X		
Were all points generated between the lowest and highest standard used to calculate the curve?			X		
Are ICAL data available for all instruments used?			X		
Has the initial calibration curve been verified using an appropriate second source standard?			X		
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030863
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG561160	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-18 00:00:00		

Was a MDL study performed for each reported analyte?			X		
Is the MDL either adjusted or supported by the analysis of DCSs?			X		
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?			X		
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16030863
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG561160	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-03-18 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT16(5-5.5)150316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:17
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 17:10
Collect Date:	03/15/2016 09:20	**Dilution:**	1	**File ID:**	6M137973
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.7	U	25.4	12.7	6.35
Benzene	71-43-2	1.27	U	6.35	1.27	0.635
Bromobenzene	108-86-1	1.27	U	6.35	1.27	0.635
Bromochloromethane	74-97-5	2.54	U	6.35	2.54	1.27
Bromodichloromethane	75-27-4	1.27	U	6.35	1.27	0.635
Bromoform	75-25-2	1.27	U	6.35	1.27	0.635
Bromomethane	74-83-9	2.54	U	6.35	2.54	1.27
2-Butanone	78-93-3	6.36	U	12.7	6.36	3.18
n-Butylbenzene	104-51-8	1.27	U	6.35	1.27	0.635
sec-Butylbenzene	135-98-8	1.27	U	6.35	1.27	0.635
tert-Butylbenzene	98-06-6	1.27	U	6.35	1.27	0.635
Carbon disulfide	75-15-0	1.27	U	6.35	1.27	0.635
Carbon tetrachloride	56-23-5	1.27	U	6.35	1.27	0.635
Chlorobenzene	108-90-7	1.27	U	6.35	1.27	0.635
Chlorodibromomethane	124-48-1	1.27	U	6.35	1.27	0.635
Chloroethane	75-00-3	2.54	U	6.35	2.54	1.27
Chloroform	67-66-3	1.27	U	6.35	1.27	0.635
Chloromethane	74-87-3	5.08	Q	12.7	5.08	2.54
2-Chlorotoluene	95-49-8	1.27	U	6.35	1.27	0.635
4-Chlorotoluene	106-43-4	1.27	U	6.35	1.27	0.635
1,2-Dibromo-3-chloropropane	96-12-8	5.08	U	12.7	5.08	2.54
1,2-Dibromoethane	106-93-4	1.27	U	6.35	1.27	0.635
Dibromomethane	74-95-3	1.27	U	6.35	1.27	0.635
1,2-Dichlorobenzene	95-50-1	1.27	U	6.35	1.27	0.635
1,3-Dichlorobenzene	541-73-1	1.27	U	6.35	1.27	0.635
1,4-Dichlorobenzene	106-46-7	1.27	U	6.35	1.27	0.635
Dichlorodifluoromethane	75-71-8	2.54	U	6.35	2.54	1.27
1,1-Dichloroethane	75-34-3	2.54	U	6.35	2.54	1.27
1,2-Dichloroethane	107-06-2	1.27	U	6.35	1.27	0.635
1,1-Dichloroethene	75-35-4	1.27	U	6.35	1.27	0.635
cis-1,2-Dichloroethene	156-59-2	1.27	U	6.35	1.27	0.635
trans-1,2-Dichloroethene	156-60-5	1.27	U	6.35	1.27	0.635

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.27	U	6.35	1.27	0.635
1,3-Dichloropropane	142-28-9	1.27	U	6.35	1.27	0.635
2,2-Dichloropropane	594-20-7	1.27	U	6.35	1.27	0.635
cis-1,3-Dichloropropene	10061-01-5	1.27	U	6.35	1.27	0.635
trans-1,3-Dichloropropene	10061-02-6	1.27	U	6.35	1.27	0.635
1,1-Dichloropropene	563-58-6	1.27	U	6.35	1.27	0.635
Ethylbenzene	100-41-4	1.27	U	6.35	1.27	0.635
2-Hexanone	591-78-6	6.36	U	12.7	6.36	3.18
Hexachlorobutadiene	87-68-3	1.27	U	6.35	1.27	0.635
Isopropylbenzene	98-82-8	1.27	U	6.35	1.27	0.635
p-Isopropyltoluene	99-87-6	1.27	U	6.35	1.27	0.635
4-Methyl-2-pentanone	108-10-1	6.36	U	12.7	6.36	3.18
Methylene chloride	75-09-2	2.54	U	6.35	2.54	1.27
Naphthalene	91-20-3	1.27	Q	6.35	1.27	0.635
n-Propylbenzene	103-65-1	1.27	U	6.35	1.27	0.635
Styrene	100-42-5	1.27	U	6.35	1.27	0.635
1,1,1,2-Tetrachloroethane	630-20-6	1.27	U	6.35	1.27	0.635
1,1,2,2-Tetrachloroethane	79-34-5	1.27	U	6.35	1.27	0.635
Tetrachloroethene	127-18-4	1.27	U	6.35	1.27	0.635
Toluene	108-88-3	1.27	U	6.35	1.27	0.635
1,2,3-Trichlorobenzene	87-61-6	1.27	U	6.35	1.27	0.635
1,2,4-Trichlorobenzene	120-82-1	1.27	U	6.35	1.27	0.635
1,1,1-Trichloroethane	71-55-6	1.27	U	6.35	1.27	0.635
1,1,2-Trichloroethane	79-00-5	1.27	U	6.35	1.27	0.635
Trichloroethene	79-01-6	1.27	U	6.35	1.27	0.635
Trichlorofluoromethane	75-69-4	2.54	U	6.35	2.54	1.27
1,2,3-Trichloropropane	96-18-4	2.54	U	6.35	2.54	1.27
1,2,4-Trimethylbenzene	95-63-6	1.27	U	6.35	1.27	0.635
1,3,5-Trimethylbenzene	108-67-8	1.27	U	6.35	1.27	0.635
Vinyl chloride	75-01-4	2.54	U	6.35	2.54	1.27
o-Xylene	95-47-6	1.27	U	6.35	1.27	0.635
m-,p-Xylene	179601-23-1	1.27	U	6.35	1.27	0.635

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.8	80	120	
1,2-Dichloroethane-d4	87.9	80	120	
Toluene-d8	101	85	115	
4-Bromofluorobenzene	103	85	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT16(5-5.5)150316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/17/2016 23:51
Collect Date:	03/15/2016 09:20	**Dilution:**	1	**File ID:**	1LM.LM33909
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	41.8		4.92	2.46	1.23

Certificate of Analysis

Sample #:	L16030863-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT16(5-5.5)150316MS	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:17
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 14:59
Collect Date:	03/15/2016 09:20	**Dilution:**	1	**File ID:**	6M137969
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	20.1	J	23.6	11.8	5.90
Benzene	71-43-2	25.7		5.90	1.18	0.590
Bromobenzene	108-86-1	26.5		5.90	1.18	0.590
Bromochloromethane	74-97-5	26.0		5.90	2.36	1.18
Bromodichloromethane	75-27-4	24.9		5.90	1.18	0.590
Bromoform	75-25-2	22.1		5.90	1.18	0.590
Bromomethane	74-83-9	25.6		5.90	2.36	1.18
2-Butanone	78-93-3	24.2		11.8	5.90	2.95
n-Butylbenzene	104-51-8	27.0		5.90	1.18	0.590
sec-Butylbenzene	135-98-8	28.5		5.90	1.18	0.590
tert-Butylbenzene	98-06-6	28.5		5.90	1.18	0.590
Carbon disulfide	75-15-0	24.5		5.90	1.18	0.590
Carbon tetrachloride	56-23-5	25.1		5.90	1.18	0.590
Chlorobenzene	108-90-7	26.6		5.90	1.18	0.590
Chlorodibromomethane	124-48-1	24.3		5.90	1.18	0.590
Chloroethane	75-00-3	28.1		5.90	2.36	1.18
Chloroform	67-66-3	24.9		5.90	1.18	0.590
Chloromethane	74-87-3	19.3	Q	11.8	4.72	2.36
2-Chlorotoluene	95-49-8	27.6		5.90	1.18	0.590
4-Chlorotoluene	106-43-4	27.9		5.90	1.18	0.590

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Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	24.3		11.8	4.72	2.36
1,2-Dibromoethane	106-93-4	25.4		5.90	1.18	0.590
Dibromomethane	74-95-3	24.4		5.90	1.18	0.590
1,2-Dichlorobenzene	95-50-1	27.2		5.90	1.18	0.590
1,3-Dichlorobenzene	541-73-1	27.3		5.90	1.18	0.590
1,4-Dichlorobenzene	106-46-7	27.0		5.90	1.18	0.590
Dichlorodifluoromethane	75-71-8	27.1		5.90	2.36	1.18
1,1-Dichloroethane	75-34-3	24.5		5.90	2.36	1.18
1,2-Dichloroethane	107-06-2	24.6		5.90	1.18	0.590
1,1-Dichloroethene	75-35-4	25.2		5.90	1.18	0.590
cis-1,2-Dichloroethene	156-59-2	26.7		5.90	1.18	0.590
trans-1,2-Dichloroethene	156-60-5	27.0		5.90	1.18	0.590
1,2-Dichloropropane	78-87-5	26.9		5.90	1.18	0.590
1,3-Dichloropropane	142-28-9	26.6		5.90	1.18	0.590
2,2-Dichloropropane	594-20-7	26.9		5.90	1.18	0.590
cis-1,3-Dichloropropene	10061-01-5	29.1		5.90	1.18	0.590
trans-1,3-Dichloropropene	10061-02-6	25.4		5.90	1.18	0.590
1,1-Dichloropropene	563-58-6	26.8		5.90	1.18	0.590
Ethylbenzene	100-41-4	26.3		5.90	1.18	0.590
2-Hexanone	591-78-6	24.0		11.8	5.90	2.95
Hexachlorobutadiene	87-68-3	28.5		5.90	1.18	0.590
Isopropylbenzene	98-82-8	27.9		5.90	1.18	0.590
p-Isopropyltoluene	99-87-6	28.4		5.90	1.18	0.590
4-Methyl-2-pentanone	108-10-1	26.1		11.8	5.90	2.95
Methylene chloride	75-09-2	26.3		5.90	2.36	1.18
Naphthalene	91-20-3	24.5	Q	5.90	1.18	0.590
n-Propylbenzene	103-65-1	28.7		5.90	1.18	0.590
Styrene	100-42-5	26.7		5.90	1.18	0.590
1,1,1,2-Tetrachloroethane	630-20-6	24.6		5.90	1.18	0.590
1,1,2,2-Tetrachloroethane	79-34-5	25.6		5.90	1.18	0.590
Tetrachloroethene	127-18-4	26.8		5.90	1.18	0.590
Toluene	108-88-3	25.8		5.90	1.18	0.590
1,2,3-Trichlorobenzene	87-61-6	26.2		5.90	1.18	0.590
1,2,4-Trichlorobenzene	120-82-1	27.0		5.90	1.18	0.590
1,1,1-Trichloroethane	71-55-6	25.4		5.90	1.18	0.590
1,1,2-Trichloroethane	79-00-5	25.9		5.90	1.18	0.590
Trichloroethene	79-01-6	27.8		5.90	1.18	0.590
Trichlorofluoromethane	75-69-4	24.2		5.90	2.36	1.18
1,2,3-Trichloropropane	96-18-4	26.4		5.90	2.36	1.18

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Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	27.4		5.90	1.18	0.590
1,3,5-Trimethylbenzene	108-67-8	28.6		5.90	1.18	0.590
Vinyl chloride	75-01-4	25.7		5.90	2.36	1.18
o-Xylene	95-47-6	28.2		5.90	1.18	0.590
m-,p-Xylene	179601-23-1	53.7		5.90	1.18	0.590

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.7	80	120	
1,2-Dichloroethane-d4	88.1	80	120	
Toluene-d8	101	85	115	
4-Bromofluorobenzene	103	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT16(5-5.5)150316MS	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 00:09
Collect Date:	03/15/2016 09:20	**Dilution:**	1	**File ID:**	1LM.LM33910
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	41.4		4.92	2.46	1.23

Certificate of Analysis

Sample #:	L16030863-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT16(5-5.5)150316MSD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:18
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 15:32
Collect Date:	03/15/2016 09:20	**Dilution:**	1	**File ID:**	6M137970
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	24.1	J	27.8	13.9	6.94
Benzene	71-43-2	29.7		6.94	1.39	0.694
Bromobenzene	108-86-1	30.1		6.94	1.39	0.694
Bromochloromethane	74-97-5	29.6		6.94	2.78	1.39
Bromodichloromethane	75-27-4	28.4		6.94	1.39	0.694
Bromoform	75-25-2	26.0		6.94	1.39	0.694
Bromomethane	74-83-9	30.1		6.94	2.78	1.39
2-Butanone	78-93-3	28.5		13.9	6.94	3.47
n-Butylbenzene	104-51-8	30.3		6.94	1.39	0.694
sec-Butylbenzene	135-98-8	32.3		6.94	1.39	0.694
tert-Butylbenzene	98-06-6	32.9		6.94	1.39	0.694
Carbon disulfide	75-15-0	27.8		6.94	1.39	0.694
Carbon tetrachloride	56-23-5	29.8		6.94	1.39	0.694
Chlorobenzene	108-90-7	30.4		6.94	1.39	0.694
Chlorodibromomethane	124-48-1	28.0		6.94	1.39	0.694
Chloroethane	75-00-3	32.9		6.94	2.78	1.39
Chloroform	67-66-3	28.7		6.94	1.39	0.694
Chloromethane	74-87-3	23.4	Q	13.9	5.56	2.78
2-Chlorotoluene	95-49-8	31.4		6.94	1.39	0.694
4-Chlorotoluene	106-43-4	31.1		6.94	1.39	0.694

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Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	29.9		13.9	5.56	2.78
1,2-Dibromoethane	106-93-4	29.1		6.94	1.39	0.694
Dibromomethane	74-95-3	27.8		6.94	1.39	0.694
1,2-Dichlorobenzene	95-50-1	30.8		6.94	1.39	0.694
1,3-Dichlorobenzene	541-73-1	30.7		6.94	1.39	0.694
1,4-Dichlorobenzene	106-46-7	30.7		6.94	1.39	0.694
Dichlorodifluoromethane	75-71-8	31.4		6.94	2.78	1.39
1,1-Dichloroethane	75-34-3	28.5		6.94	2.78	1.39
1,2-Dichloroethane	107-06-2	28.4		6.94	1.39	0.694
1,1-Dichloroethene	75-35-4	29.5		6.94	1.39	0.694
cis-1,2-Dichloroethene	156-59-2	30.8		6.94	1.39	0.694
trans-1,2-Dichloroethene	156-60-5	31.8		6.94	1.39	0.694
1,2-Dichloropropane	78-87-5	31.6		6.94	1.39	0.694
1,3-Dichloropropane	142-28-9	30.4		6.94	1.39	0.694
2,2-Dichloropropane	594-20-7	31.1		6.94	1.39	0.694
cis-1,3-Dichloropropene	10061-01-5	32.4		6.94	1.39	0.694
trans-1,3-Dichloropropene	10061-02-6	28.3		6.94	1.39	0.694
1,1-Dichloropropene	563-58-6	30.6		6.94	1.39	0.694
Ethylbenzene	100-41-4	30.7		6.94	1.39	0.694
2-Hexanone	591-78-6	28.0		13.9	6.94	3.47
Hexachlorobutadiene	87-68-3	32.1		6.94	1.39	0.694
Isopropylbenzene	98-82-8	32.1		6.94	1.39	0.694
p-Isopropyltoluene	99-87-6	31.9		6.94	1.39	0.694
4-Methyl-2-pentanone	108-10-1	31.0		13.9	6.94	3.47
Methylene chloride	75-09-2	29.9		6.94	2.78	1.39
Naphthalene	91-20-3	29.4	Q	6.94	1.39	0.694
n-Propylbenzene	103-65-1	32.2		6.94	1.39	0.694
Styrene	100-42-5	30.8		6.94	1.39	0.694
1,1,1,2-Tetrachloroethane	630-20-6	28.4		6.94	1.39	0.694
1,1,2,2-Tetrachloroethane	79-34-5	30.0		6.94	1.39	0.694
Tetrachloroethene	127-18-4	30.5		6.94	1.39	0.694
Toluene	108-88-3	30.1		6.94	1.39	0.694
1,2,3-Trichlorobenzene	87-61-6	30.1		6.94	1.39	0.694
1,2,4-Trichlorobenzene	120-82-1	30.2		6.94	1.39	0.694
1,1,1-Trichloroethane	71-55-6	29.4		6.94	1.39	0.694
1,1,2-Trichloroethane	79-00-5	29.2		6.94	1.39	0.694
Trichloroethene	79-01-6	32.2		6.94	1.39	0.694
Trichlorofluoromethane	75-69-4	28.5		6.94	2.78	1.39
1,2,3-Trichloropropane	96-18-4	31.0		6.94	2.78	1.39

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Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	30.9		6.94	1.39	0.694
1,3,5-Trimethylbenzene	108-67-8	32.3		6.94	1.39	0.694
Vinyl chloride	75-01-4	29.3		6.94	2.78	1.39
o-Xylene	95-47-6	32.3		6.94	1.39	0.694
m-,p-Xylene	179601-23-1	62.5		6.94	1.39	0.694

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.8	80	120	
1,2-Dichloroethane-d4	85.8	80	120	
Toluene-d8	101	85	115	
4-Bromofluorobenzene	101	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

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Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT16(5-5.5)150316MSD	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 00:28
Collect Date:	03/15/2016 09:20	**Dilution:**	1	**File ID:**	1LM.LM33911
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	51.0		4.91	2.46	1.23

Certificate of Analysis

Sample #:	L16030863-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT16(15-15.5)150316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:19
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 21:32
Collect Date:	03/15/2016 09:25	**Dilution:**	1	**File ID:**	6M137981
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	86.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	6.34	J	23.4	11.7	5.84
Benzene	71-43-2	1.17	U	5.84	1.17	0.584
Bromobenzene	108-86-1	1.17	U	5.84	1.17	0.584
Bromochloromethane	74-97-5	2.34	U	5.84	2.34	1.17
Bromodichloromethane	75-27-4	1.17	U	5.84	1.17	0.584
Bromoform	75-25-2	1.17	U	5.84	1.17	0.584
Bromomethane	74-83-9	2.34	U	5.84	2.34	1.17
2-Butanone	78-93-3	5.84	U	11.7	5.84	2.92
n-Butylbenzene	104-51-8	1.17	U	5.84	1.17	0.584
sec-Butylbenzene	135-98-8	1.17	U	5.84	1.17	0.584
tert-Butylbenzene	98-06-6	1.17	U	5.84	1.17	0.584
Carbon disulfide	75-15-0	1.17	U	5.84	1.17	0.584
Carbon tetrachloride	56-23-5	1.17	U	5.84	1.17	0.584
Chlorobenzene	108-90-7	1.17	U	5.84	1.17	0.584
Chlorodibromomethane	124-48-1	1.17	U	5.84	1.17	0.584
Chloroethane	75-00-3	2.34	U	5.84	2.34	1.17
Chloroform	67-66-3	1.17	U	5.84	1.17	0.584
Chloromethane	74-87-3	4.68	Q	11.7	4.68	2.34
2-Chlorotoluene	95-49-8	1.17	U	5.84	1.17	0.584
4-Chlorotoluene	106-43-4	1.17	U	5.84	1.17	0.584

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Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	4.68	U	11.7	4.68	2.34
1,2-Dibromoethane	106-93-4	1.17	U	5.84	1.17	0.584
Dibromomethane	74-95-3	1.17	U	5.84	1.17	0.584
1,2-Dichlorobenzene	95-50-1	1.17	U	5.84	1.17	0.584
1,3-Dichlorobenzene	541-73-1	1.17	U	5.84	1.17	0.584
1,4-Dichlorobenzene	106-46-7	1.17	U	5.84	1.17	0.584
Dichlorodifluoromethane	75-71-8	2.34	U	5.84	2.34	1.17
1,1-Dichloroethane	75-34-3	2.34	U	5.84	2.34	1.17
1,2-Dichloroethane	107-06-2	1.17	U	5.84	1.17	0.584
1,1-Dichloroethene	75-35-4	1.17	U	5.84	1.17	0.584
cis-1,2-Dichloroethene	156-59-2	1.17	U	5.84	1.17	0.584
trans-1,2-Dichloroethene	156-60-5	1.17	U	5.84	1.17	0.584
1,2-Dichloropropane	78-87-5	1.17	U	5.84	1.17	0.584
1,3-Dichloropropane	142-28-9	1.17	U	5.84	1.17	0.584
2,2-Dichloropropane	594-20-7	1.17	U	5.84	1.17	0.584
cis-1,3-Dichloropropene	10061-01-5	1.17	U	5.84	1.17	0.584
trans-1,3-Dichloropropene	10061-02-6	1.17	U	5.84	1.17	0.584
1,1-Dichloropropene	563-58-6	1.17	U	5.84	1.17	0.584
Ethylbenzene	100-41-4	1.17	U	5.84	1.17	0.584
2-Hexanone	591-78-6	5.84	U	11.7	5.84	2.92
Hexachlorobutadiene	87-68-3	1.17	U	5.84	1.17	0.584
Isopropylbenzene	98-82-8	1.17	U	5.84	1.17	0.584
p-Isopropyltoluene	99-87-6	1.17	U	5.84	1.17	0.584
4-Methyl-2-pentanone	108-10-1	5.84	U	11.7	5.84	2.92
Methylene chloride	75-09-2	2.34	U	5.84	2.34	1.17
Naphthalene	91-20-3	1.17	Q	5.84	1.17	0.584
n-Propylbenzene	103-65-1	1.17	U	5.84	1.17	0.584
Styrene	100-42-5	1.17	U	5.84	1.17	0.584
1,1,1,2-Tetrachloroethane	630-20-6	1.17	U	5.84	1.17	0.584
1,1,2,2-Tetrachloroethane	79-34-5	1.17	U	5.84	1.17	0.584
Tetrachloroethene	127-18-4	1.17	U	5.84	1.17	0.584
Toluene	108-88-3	1.17	U	5.84	1.17	0.584
1,2,3-Trichlorobenzene	87-61-6	1.17	U	5.84	1.17	0.584
1,2,4-Trichlorobenzene	120-82-1	1.17	U	5.84	1.17	0.584
1,1,1-Trichloroethane	71-55-6	1.17	U	5.84	1.17	0.584
1,1,2-Trichloroethane	79-00-5	1.17	U	5.84	1.17	0.584
Trichloroethene	79-01-6	1.17	U	5.84	1.17	0.584
Trichlorofluoromethane	75-69-4	2.34	U	5.84	2.34	1.17
1,2,3-Trichloropropane	96-18-4	2.34	U	5.84	2.34	1.17

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Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.17	U	5.84	1.17	0.584
1,3,5-Trimethylbenzene	108-67-8	1.17	U	5.84	1.17	0.584
Vinyl chloride	75-01-4	2.34	U	5.84	2.34	1.17
o-Xylene	95-47-6	1.17	U	5.84	1.17	0.584
m-,p-Xylene	179601-23-1	1.17	U	5.84	1.17	0.584

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.2	80	120	
1,2-Dichloroethane-d4	86.0	80	120	
Toluene-d8	103	85	115	
4-Bromofluorobenzene	103	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT16(15-15.5)150316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 00:47
Collect Date:	03/15/2016 09:25	**Dilution:**	1	**File ID:**	1LM.LM33912
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	86.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	11.3		4.60	2.30	1.15

Certificate of Analysis

Sample #:	L16030863-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT16(25-25.5)150316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:19
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 22:05
Collect Date:	03/15/2016 10:35	**Dilution:**	1	**File ID:**	6M137982
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.2	U	26.3	13.2	6.58
Benzene	71-43-2	1.32	U	6.58	1.32	0.658
Bromobenzene	108-86-1	1.32	U	6.58	1.32	0.658
Bromochloromethane	74-97-5	2.64	U	6.58	2.64	1.32
Bromodichloromethane	75-27-4	1.32	U	6.58	1.32	0.658
Bromoform	75-25-2	1.32	U	6.58	1.32	0.658
Bromomethane	74-83-9	2.64	U	6.58	2.64	1.32
2-Butanone	78-93-3	6.58	U	13.2	6.58	3.29
n-Butylbenzene	104-51-8	1.32	U	6.58	1.32	0.658
sec-Butylbenzene	135-98-8	1.32	U	6.58	1.32	0.658
tert-Butylbenzene	98-06-6	1.32	U	6.58	1.32	0.658
Carbon disulfide	75-15-0	1.32	U	6.58	1.32	0.658
Carbon tetrachloride	56-23-5	1.32	U	6.58	1.32	0.658
Chlorobenzene	108-90-7	1.32	U	6.58	1.32	0.658
Chlorodibromomethane	124-48-1	1.32	U	6.58	1.32	0.658
Chloroethane	75-00-3	2.64	U	6.58	2.64	1.32
Chloroform	67-66-3	1.32	U	6.58	1.32	0.658
Chloromethane	74-87-3	5.26	Q	13.2	5.26	2.63
2-Chlorotoluene	95-49-8	1.32	U	6.58	1.32	0.658
4-Chlorotoluene	106-43-4	1.32	U	6.58	1.32	0.658

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Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	5.26	U	13.2	5.26	2.63
1,2-Dibromoethane	106-93-4	1.32	U	6.58	1.32	0.658
Dibromomethane	74-95-3	1.32	U	6.58	1.32	0.658
1,2-Dichlorobenzene	95-50-1	1.32	U	6.58	1.32	0.658
1,3-Dichlorobenzene	541-73-1	1.32	U	6.58	1.32	0.658
1,4-Dichlorobenzene	106-46-7	1.32	U	6.58	1.32	0.658
Dichlorodifluoromethane	75-71-8	2.64	U	6.58	2.64	1.32
1,1-Dichloroethane	75-34-3	2.64	U	6.58	2.64	1.32
1,2-Dichloroethane	107-06-2	1.32	U	6.58	1.32	0.658
1,1-Dichloroethene	75-35-4	1.32	U	6.58	1.32	0.658
cis-1,2-Dichloroethene	156-59-2	1.32	U	6.58	1.32	0.658
trans-1,2-Dichloroethene	156-60-5	1.32	U	6.58	1.32	0.658
1,2-Dichloropropane	78-87-5	1.32	U	6.58	1.32	0.658
1,3-Dichloropropane	142-28-9	1.32	U	6.58	1.32	0.658
2,2-Dichloropropane	594-20-7	1.32	U	6.58	1.32	0.658
cis-1,3-Dichloropropene	10061-01-5	1.32	U	6.58	1.32	0.658
trans-1,3-Dichloropropene	10061-02-6	1.32	U	6.58	1.32	0.658
1,1-Dichloropropene	563-58-6	1.32	U	6.58	1.32	0.658
Ethylbenzene	100-41-4	1.32	U	6.58	1.32	0.658
2-Hexanone	591-78-6	6.58	U	13.2	6.58	3.29
Hexachlorobutadiene	87-68-3	1.32	U	6.58	1.32	0.658
Isopropylbenzene	98-82-8	1.32	U	6.58	1.32	0.658
p-Isopropyltoluene	99-87-6	1.32	U	6.58	1.32	0.658
4-Methyl-2-pentanone	108-10-1	6.58	U	13.2	6.58	3.29
Methylene chloride	75-09-2	2.64	U	6.58	2.64	1.32
Naphthalene	91-20-3	1.32	Q	6.58	1.32	0.658
n-Propylbenzene	103-65-1	1.32	U	6.58	1.32	0.658
Styrene	100-42-5	1.32	U	6.58	1.32	0.658
1,1,1,2-Tetrachloroethane	630-20-6	1.32	U	6.58	1.32	0.658
1,1,2,2-Tetrachloroethane	79-34-5	1.32	U	6.58	1.32	0.658
Tetrachloroethene	127-18-4	1.32	U	6.58	1.32	0.658
Toluene	108-88-3	1.32	U	6.58	1.32	0.658
1,2,3-Trichlorobenzene	87-61-6	1.32	U	6.58	1.32	0.658
1,2,4-Trichlorobenzene	120-82-1	1.32	U	6.58	1.32	0.658
1,1,1-Trichloroethane	71-55-6	1.32	U	6.58	1.32	0.658
1,1,2-Trichloroethane	79-00-5	1.32	U	6.58	1.32	0.658
Trichloroethene	79-01-6	1.32	U	6.58	1.32	0.658
Trichlorofluoromethane	75-69-4	2.64	U	6.58	2.64	1.32
1,2,3-Trichloropropane	96-18-4	2.64	U	6.58	2.64	1.32

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Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.32	U	6.58	1.32	0.658
1,3,5-Trimethylbenzene	108-67-8	1.32	U	6.58	1.32	0.658
Vinyl chloride	75-01-4	2.64	U	6.58	2.64	1.32
o-Xylene	95-47-6	1.32	U	6.58	1.32	0.658
m-,p-Xylene	179601-23-1	1.32	U	6.58	1.32	0.658

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.5	80	120	
1,2-Dichloroethane-d4	87.5	80	120	
Toluene-d8	102	85	115	
4-Bromofluorobenzene	104	85	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT16(25-25.5)150316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 14:28
Collect Date:	03/15/2016 10:35	**Dilution:**	10	**File ID:**	1LM.LM33936
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	81.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	434		48.0	24.0	12.0

Certificate of Analysis

Sample #:	L16030863-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPT16(30-30.5)150316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:20
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 22:38
Collect Date:	03/15/2016 10:40	**Dilution:**	1	**File ID:**	6M137983
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.4	U	24.8	12.4	6.20
Benzene	71-43-2	1.24	U	6.20	1.24	0.620
Bromobenzene	108-86-1	1.24	U	6.20	1.24	0.620
Bromochloromethane	74-97-5	2.48	U	6.20	2.48	1.24
Bromodichloromethane	75-27-4	1.24	U	6.20	1.24	0.620
Bromoform	75-25-2	1.24	U	6.20	1.24	0.620
Bromomethane	74-83-9	2.48	U	6.20	2.48	1.24
2-Butanone	78-93-3	6.20	U	12.4	6.20	3.10
n-Butylbenzene	104-51-8	1.24	U	6.20	1.24	0.620
sec-Butylbenzene	135-98-8	1.24	U	6.20	1.24	0.620
tert-Butylbenzene	98-06-6	1.24	U	6.20	1.24	0.620
Carbon disulfide	75-15-0	1.24	U	6.20	1.24	0.620
Carbon tetrachloride	56-23-5	1.24	U	6.20	1.24	0.620
Chlorobenzene	108-90-7	1.24	U	6.20	1.24	0.620
Chlorodibromomethane	124-48-1	1.24	U	6.20	1.24	0.620
Chloroethane	75-00-3	2.48	U	6.20	2.48	1.24
Chloroform	67-66-3	1.24	U	6.20	1.24	0.620
Chloromethane	74-87-3	4.96	Q	12.4	4.96	2.48
2-Chlorotoluene	95-49-8	1.24	U	6.20	1.24	0.620
4-Chlorotoluene	106-43-4	1.24	U	6.20	1.24	0.620

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Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	4.96	U	12.4	4.96	2.48
1,2-Dibromoethane	106-93-4	1.24	U	6.20	1.24	0.620
Dibromomethane	74-95-3	1.24	U	6.20	1.24	0.620
1,2-Dichlorobenzene	95-50-1	1.24	U	6.20	1.24	0.620
1,3-Dichlorobenzene	541-73-1	1.24	U	6.20	1.24	0.620
1,4-Dichlorobenzene	106-46-7	1.24	U	6.20	1.24	0.620
Dichlorodifluoromethane	75-71-8	2.48	U	6.20	2.48	1.24
1,1-Dichloroethane	75-34-3	2.48	U	6.20	2.48	1.24
1,2-Dichloroethane	107-06-2	1.24	U	6.20	1.24	0.620
1,1-Dichloroethene	75-35-4	1.24	U	6.20	1.24	0.620
cis-1,2-Dichloroethene	156-59-2	1.24	U	6.20	1.24	0.620
trans-1,2-Dichloroethene	156-60-5	1.24	U	6.20	1.24	0.620
1,2-Dichloropropane	78-87-5	1.24	U	6.20	1.24	0.620
1,3-Dichloropropane	142-28-9	1.24	U	6.20	1.24	0.620
2,2-Dichloropropane	594-20-7	1.24	U	6.20	1.24	0.620
cis-1,3-Dichloropropene	10061-01-5	1.24	U	6.20	1.24	0.620
trans-1,3-Dichloropropene	10061-02-6	1.24	U	6.20	1.24	0.620
1,1-Dichloropropene	563-58-6	1.24	U	6.20	1.24	0.620
Ethylbenzene	100-41-4	1.24	U	6.20	1.24	0.620
2-Hexanone	591-78-6	6.20	U	12.4	6.20	3.10
Hexachlorobutadiene	87-68-3	1.24	U	6.20	1.24	0.620
Isopropylbenzene	98-82-8	1.24	U	6.20	1.24	0.620
p-Isopropyltoluene	99-87-6	1.24	U	6.20	1.24	0.620
4-Methyl-2-pentanone	108-10-1	6.20	U	12.4	6.20	3.10
Methylene chloride	75-09-2	2.48	U	6.20	2.48	1.24
Naphthalene	91-20-3	1.24	Q	6.20	1.24	0.620
n-Propylbenzene	103-65-1	1.24	U	6.20	1.24	0.620
Styrene	100-42-5	1.24	U	6.20	1.24	0.620
1,1,1,2-Tetrachloroethane	630-20-6	1.24	U	6.20	1.24	0.620
1,1,2,2-Tetrachloroethane	79-34-5	1.24	U	6.20	1.24	0.620
Tetrachloroethene	127-18-4	1.24	U	6.20	1.24	0.620
Toluene	108-88-3	1.24	U	6.20	1.24	0.620
1,2,3-Trichlorobenzene	87-61-6	1.24	U	6.20	1.24	0.620
1,2,4-Trichlorobenzene	120-82-1	1.24	U	6.20	1.24	0.620
1,1,1-Trichloroethane	71-55-6	1.24	U	6.20	1.24	0.620
1,1,2-Trichloroethane	79-00-5	1.24	U	6.20	1.24	0.620
Trichloroethene	79-01-6	2.94	J	6.20	1.24	0.620
Trichlorofluoromethane	75-69-4	2.48	U	6.20	2.48	1.24
1,2,3-Trichloropropane	96-18-4	2.48	U	6.20	2.48	1.24

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Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.24	U	6.20	1.24	0.620
1,3,5-Trimethylbenzene	108-67-8	1.24	U	6.20	1.24	0.620
Vinyl chloride	75-01-4	2.48	U	6.20	2.48	1.24
o-Xylene	95-47-6	1.24	U	6.20	1.24	0.620
m-,p-Xylene	179601-23-1	1.24	U	6.20	1.24	0.620

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.6	80	120	
1,2-Dichloroethane-d4	87.9	80	120	
Toluene-d8	102	85	115	
4-Bromofluorobenzene	102	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPT16(30-30.5)150316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 14:46
Collect Date:	03/15/2016 10:40	**Dilution:**	50	**File ID:**	1LM.LM33937
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	79.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1230		237	119	59.3

Certificate of Analysis

Sample #:	L16030863-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT16(33-33.5)150316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:20
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 23:10
Collect Date:	03/15/2016 10:45	**Dilution:**	1	**File ID:**	6M137984
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	77.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.4	U	26.9	13.4	6.72
Benzene	71-43-2	1.34	U	6.72	1.34	0.672
Bromobenzene	108-86-1	1.34	U	6.72	1.34	0.672
Bromochloromethane	74-97-5	2.68	U	6.72	2.68	1.34
Bromodichloromethane	75-27-4	1.34	U	6.72	1.34	0.672
Bromoform	75-25-2	1.34	U	6.72	1.34	0.672
Bromomethane	74-83-9	2.68	U	6.72	2.68	1.34
2-Butanone	78-93-3	6.72	U	13.4	6.72	3.36
n-Butylbenzene	104-51-8	1.34	U	6.72	1.34	0.672
sec-Butylbenzene	135-98-8	1.34	U	6.72	1.34	0.672
tert-Butylbenzene	98-06-6	1.34	U	6.72	1.34	0.672
Carbon disulfide	75-15-0	1.34	U	6.72	1.34	0.672
Carbon tetrachloride	56-23-5	1.34	U	6.72	1.34	0.672
Chlorobenzene	108-90-7	1.34	U	6.72	1.34	0.672
Chlorodibromomethane	124-48-1	1.34	U	6.72	1.34	0.672
Chloroethane	75-00-3	2.68	U	6.72	2.68	1.34
Chloroform	67-66-3	1.34	U	6.72	1.34	0.672
Chloromethane	74-87-3	5.38	Q	13.4	5.38	2.69
2-Chlorotoluene	95-49-8	1.34	U	6.72	1.34	0.672
4-Chlorotoluene	106-43-4	1.34	U	6.72	1.34	0.672

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Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	5.38	U	13.4	5.38	2.69
1,2-Dibromoethane	106-93-4	1.34	U	6.72	1.34	0.672
Dibromomethane	74-95-3	1.34	U	6.72	1.34	0.672
1,2-Dichlorobenzene	95-50-1	1.34	U	6.72	1.34	0.672
1,3-Dichlorobenzene	541-73-1	1.34	U	6.72	1.34	0.672
1,4-Dichlorobenzene	106-46-7	1.34	U	6.72	1.34	0.672
Dichlorodifluoromethane	75-71-8	2.68	U	6.72	2.68	1.34
1,1-Dichloroethane	75-34-3	2.68	U	6.72	2.68	1.34
1,2-Dichloroethane	107-06-2	1.34	U	6.72	1.34	0.672
1,1-Dichloroethene	75-35-4	1.34	U	6.72	1.34	0.672
cis-1,2-Dichloroethene	156-59-2	1.34	U	6.72	1.34	0.672
trans-1,2-Dichloroethene	156-60-5	1.34	U	6.72	1.34	0.672
1,2-Dichloropropane	78-87-5	1.34	U	6.72	1.34	0.672
1,3-Dichloropropane	142-28-9	1.34	U	6.72	1.34	0.672
2,2-Dichloropropane	594-20-7	1.34	U	6.72	1.34	0.672
cis-1,3-Dichloropropene	10061-01-5	1.34	U	6.72	1.34	0.672
trans-1,3-Dichloropropene	10061-02-6	1.34	U	6.72	1.34	0.672
1,1-Dichloropropene	563-58-6	1.34	U	6.72	1.34	0.672
Ethylbenzene	100-41-4	1.34	U	6.72	1.34	0.672
2-Hexanone	591-78-6	6.72	U	13.4	6.72	3.36
Hexachlorobutadiene	87-68-3	1.34	U	6.72	1.34	0.672
Isopropylbenzene	98-82-8	1.34	U	6.72	1.34	0.672
p-Isopropyltoluene	99-87-6	1.34	U	6.72	1.34	0.672
4-Methyl-2-pentanone	108-10-1	6.72	U	13.4	6.72	3.36
Methylene chloride	75-09-2	2.68	U	6.72	2.68	1.34
Naphthalene	91-20-3	1.34	Q	6.72	1.34	0.672
n-Propylbenzene	103-65-1	1.34	U	6.72	1.34	0.672
Styrene	100-42-5	1.34	U	6.72	1.34	0.672
1,1,1,2-Tetrachloroethane	630-20-6	1.34	U	6.72	1.34	0.672
1,1,2,2-Tetrachloroethane	79-34-5	1.34	U	6.72	1.34	0.672
Tetrachloroethene	127-18-4	1.34	U	6.72	1.34	0.672
Toluene	108-88-3	1.34	U	6.72	1.34	0.672
1,2,3-Trichlorobenzene	87-61-6	1.34	U	6.72	1.34	0.672
1,2,4-Trichlorobenzene	120-82-1	1.34	U	6.72	1.34	0.672
1,1,1-Trichloroethane	71-55-6	1.34	U	6.72	1.34	0.672
1,1,2-Trichloroethane	79-00-5	1.34	U	6.72	1.34	0.672
Trichloroethene	79-01-6	5.26	J	6.72	1.34	0.672
Trichlorofluoromethane	75-69-4	2.68	U	6.72	2.68	1.34
1,2,3-Trichloropropane	96-18-4	2.68	U	6.72	2.68	1.34

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Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.34	U	6.72	1.34	0.672
1,3,5-Trimethylbenzene	108-67-8	1.34	U	6.72	1.34	0.672
Vinyl chloride	75-01-4	2.68	U	6.72	2.68	1.34
o-Xylene	95-47-6	1.34	U	6.72	1.34	0.672
m-,p-Xylene	179601-23-1	1.34	U	6.72	1.34	0.672

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.8	80	120	
1,2-Dichloroethane-d4	94.6	80	120	
Toluene-d8	99.2	85	115	
4-Bromofluorobenzene	103	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT16(33-33.5)150316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 15:05
Collect Date:	03/15/2016 10:45	**Dilution:**	100	**File ID:**	1LM.LM33938
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	77.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3090		507	254	127

Certificate of Analysis

Sample #:	L16030863-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT17(2.5-3)150316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:21
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562236	**Analyst:**	TMB	**Run Date:**	03/24/2016 17:52
Collect Date:	03/15/2016 11:50	**Dilution:**	1	**File ID:**	6M138000
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.0	U	22.0	11.0	5.49
Benzene	71-43-2	1.10	U	5.49	1.10	0.549
Bromobenzene	108-86-1	1.10	U	5.49	1.10	0.549
Bromochloromethane	74-97-5	2.20	U	5.49	2.20	1.10
Bromodichloromethane	75-27-4	1.10	U	5.49	1.10	0.549
Bromoform	75-25-2	1.10	U	5.49	1.10	0.549
Bromomethane	74-83-9	2.20	U	5.49	2.20	1.10
2-Butanone	78-93-3	5.50	U	11.0	5.50	2.75
n-Butylbenzene	104-51-8	1.10	U	5.49	1.10	0.549
sec-Butylbenzene	135-98-8	1.10	U	5.49	1.10	0.549
tert-Butylbenzene	98-06-6	1.10	U	5.49	1.10	0.549
Carbon disulfide	75-15-0	1.10	U	5.49	1.10	0.549
Carbon tetrachloride	56-23-5	1.10	U	5.49	1.10	0.549
Chlorobenzene	108-90-7	1.10	U	5.49	1.10	0.549
Chlorodibromomethane	124-48-1	1.10	U	5.49	1.10	0.549
Chloroethane	75-00-3	2.20	U	5.49	2.20	1.10
Chloroform	67-66-3	1.10	U	5.49	1.10	0.549
Chloromethane	74-87-3	4.40	Q	11.0	4.40	2.20
2-Chlorotoluene	95-49-8	1.10	U	5.49	1.10	0.549
4-Chlorotoluene	106-43-4	1.10	U	5.49	1.10	0.549

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Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	4.40	U	11.0	4.40	2.20
1,2-Dibromoethane	106-93-4	1.10	U	5.49	1.10	0.549
Dibromomethane	74-95-3	1.10	U	5.49	1.10	0.549
1,2-Dichlorobenzene	95-50-1	1.10	U	5.49	1.10	0.549
1,3-Dichlorobenzene	541-73-1	1.10	U	5.49	1.10	0.549
1,4-Dichlorobenzene	106-46-7	1.10	U	5.49	1.10	0.549
Dichlorodifluoromethane	75-71-8	2.20	U	5.49	2.20	1.10
1,1-Dichloroethane	75-34-3	2.20	U	5.49	2.20	1.10
1,2-Dichloroethane	107-06-2	1.10	U	5.49	1.10	0.549
1,1-Dichloroethene	75-35-4	1.10	U	5.49	1.10	0.549
cis-1,2-Dichloroethene	156-59-2	1.10	U	5.49	1.10	0.549
trans-1,2-Dichloroethene	156-60-5	1.10	U	5.49	1.10	0.549
1,2-Dichloropropane	78-87-5	1.10	U	5.49	1.10	0.549
1,3-Dichloropropane	142-28-9	1.10	U	5.49	1.10	0.549
2,2-Dichloropropane	594-20-7	1.10	U	5.49	1.10	0.549
cis-1,3-Dichloropropene	10061-01-5	1.10	U	5.49	1.10	0.549
trans-1,3-Dichloropropene	10061-02-6	1.10	U	5.49	1.10	0.549
1,1-Dichloropropene	563-58-6	1.10	U	5.49	1.10	0.549
Ethylbenzene	100-41-4	1.10	U	5.49	1.10	0.549
2-Hexanone	591-78-6	5.50	U	11.0	5.50	2.75
Hexachlorobutadiene	87-68-3	1.10	U	5.49	1.10	0.549
Isopropylbenzene	98-82-8	1.10	U	5.49	1.10	0.549
p-Isopropyltoluene	99-87-6	1.10	U	5.49	1.10	0.549
4-Methyl-2-pentanone	108-10-1	5.50	U	11.0	5.50	2.75
Methylene chloride	75-09-2	2.20	U	5.49	2.20	1.10
Naphthalene	91-20-3	1.10	U	5.49	1.10	0.549
n-Propylbenzene	103-65-1	1.10	U	5.49	1.10	0.549
Styrene	100-42-5	1.10	U	5.49	1.10	0.549
1,1,1,2-Tetrachloroethane	630-20-6	1.10	U	5.49	1.10	0.549
1,1,2,2-Tetrachloroethane	79-34-5	1.10	U	5.49	1.10	0.549
Tetrachloroethene	127-18-4	1.10	U	5.49	1.10	0.549
Toluene	108-88-3	1.10	U	5.49	1.10	0.549
1,2,3-Trichlorobenzene	87-61-6	1.10	U	5.49	1.10	0.549
1,2,4-Trichlorobenzene	120-82-1	1.10	U	5.49	1.10	0.549
1,1,1-Trichloroethane	71-55-6	1.10	U	5.49	1.10	0.549
1,1,2-Trichloroethane	79-00-5	1.10	U	5.49	1.10	0.549
Trichloroethene	79-01-6	1.10	U	5.49	1.10	0.549
Trichlorofluoromethane	75-69-4	2.20	U	5.49	2.20	1.10
1,2,3-Trichloropropane	96-18-4	2.20	U	5.49	2.20	1.10

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Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.10	U	5.49	1.10	0.549
1,3,5-Trimethylbenzene	108-67-8	1.10	U	5.49	1.10	0.549
Vinyl chloride	75-01-4	2.20	U	5.49	2.20	1.10
o-Xylene	95-47-6	1.10	U	5.49	1.10	0.549
m-,p-Xylene	179601-23-1	1.10	U	5.49	1.10	0.549

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.5	80	120	
1,2-Dichloroethane-d4	85.7	80	120	
Toluene-d8	103	85	115	
4-Bromofluorobenzene	108	85	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT17(2.5-3)150316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 03:00
Collect Date:	03/15/2016 11:50	**Dilution:**	1	**File ID:**	1LM.LM33919
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.36	U	4.72	2.36	1.18

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT17(2.5-3)150316FD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:22
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562236	**Analyst:**	TMB	**Run Date:**	03/24/2016 18:26
Collect Date:	03/15/2016 11:50	**Dilution:**	1	**File ID:**	6M138001
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.7	U	23.3	11.7	5.83
Benzene	71-43-2	1.17	U	5.83	1.17	0.583
Bromobenzene	108-86-1	1.17	U	5.83	1.17	0.583
Bromochloromethane	74-97-5	2.34	U	5.83	2.34	1.17
Bromodichloromethane	75-27-4	1.17	U	5.83	1.17	0.583
Bromoform	75-25-2	1.17	U	5.83	1.17	0.583
Bromomethane	74-83-9	2.34	U	5.83	2.34	1.17
2-Butanone	78-93-3	5.82	U	11.7	5.82	2.91
n-Butylbenzene	104-51-8	1.17	U	5.83	1.17	0.583
sec-Butylbenzene	135-98-8	1.17	U	5.83	1.17	0.583
tert-Butylbenzene	98-06-6	1.17	U	5.83	1.17	0.583
Carbon disulfide	75-15-0	1.17	U	5.83	1.17	0.583
Carbon tetrachloride	56-23-5	1.17	U	5.83	1.17	0.583
Chlorobenzene	108-90-7	1.17	U	5.83	1.17	0.583
Chlorodibromomethane	124-48-1	1.17	U	5.83	1.17	0.583
Chloroethane	75-00-3	2.34	U	5.83	2.34	1.17
Chloroform	67-66-3	1.17	U	5.83	1.17	0.583
Chloromethane	74-87-3	4.66	Q	11.7	4.66	2.33
2-Chlorotoluene	95-49-8	1.17	U	5.83	1.17	0.583
4-Chlorotoluene	106-43-4	1.17	U	5.83	1.17	0.583
1,2-Dibromo-3-chloropropane	96-12-8	4.66	U	11.7	4.66	2.33
1,2-Dibromoethane	106-93-4	1.17	U	5.83	1.17	0.583
Dibromomethane	74-95-3	1.17	U	5.83	1.17	0.583
1,2-Dichlorobenzene	95-50-1	1.17	U	5.83	1.17	0.583
1,3-Dichlorobenzene	541-73-1	1.17	U	5.83	1.17	0.583
1,4-Dichlorobenzene	106-46-7	1.17	U	5.83	1.17	0.583
Dichlorodifluoromethane	75-71-8	2.34	U	5.83	2.34	1.17
1,1-Dichloroethane	75-34-3	2.34	U	5.83	2.34	1.17
1,2-Dichloroethane	107-06-2	1.17	U	5.83	1.17	0.583
1,1-Dichloroethene	75-35-4	1.17	U	5.83	1.17	0.583
cis-1,2-Dichloroethene	156-59-2	1.17	U	5.83	1.17	0.583

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Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.17	U	5.83	1.17	0.583
1,2-Dichloropropane	78-87-5	1.17	U	5.83	1.17	0.583
1,3-Dichloropropane	142-28-9	1.17	U	5.83	1.17	0.583
2,2-Dichloropropane	594-20-7	1.17	U	5.83	1.17	0.583
cis-1,3-Dichloropropene	10061-01-5	1.17	U	5.83	1.17	0.583
trans-1,3-Dichloropropene	10061-02-6	1.17	U	5.83	1.17	0.583
1,1-Dichloropropene	563-58-6	1.17	U	5.83	1.17	0.583
Ethylbenzene	100-41-4	1.17	U	5.83	1.17	0.583
2-Hexanone	591-78-6	5.82	U	11.7	5.82	2.91
Hexachlorobutadiene	87-68-3	1.17	U	5.83	1.17	0.583
Isopropylbenzene	98-82-8	1.17	U	5.83	1.17	0.583
p-Isopropyltoluene	99-87-6	1.17	U	5.83	1.17	0.583
4-Methyl-2-pentanone	108-10-1	5.82	U	11.7	5.82	2.91
Methylene chloride	75-09-2	2.34	U	5.83	2.34	1.17
Naphthalene	91-20-3	1.17	U	5.83	1.17	0.583
n-Propylbenzene	103-65-1	1.17	U	5.83	1.17	0.583
Styrene	100-42-5	1.17	U	5.83	1.17	0.583
1,1,1,2-Tetrachloroethane	630-20-6	1.17	U	5.83	1.17	0.583
1,1,2,2-Tetrachloroethane	79-34-5	1.17	U	5.83	1.17	0.583
Tetrachloroethene	127-18-4	1.17	U	5.83	1.17	0.583
Toluene	108-88-3	1.17	U	5.83	1.17	0.583
1,2,3-Trichlorobenzene	87-61-6	1.17	U	5.83	1.17	0.583
1,2,4-Trichlorobenzene	120-82-1	1.17	U	5.83	1.17	0.583
1,1,1-Trichloroethane	71-55-6	1.17	U	5.83	1.17	0.583
1,1,2-Trichloroethane	79-00-5	1.17	U	5.83	1.17	0.583
Trichloroethene	79-01-6	1.17	U	5.83	1.17	0.583
Trichlorofluoromethane	75-69-4	2.34	U	5.83	2.34	1.17
1,2,3-Trichloropropane	96-18-4	2.34	U	5.83	2.34	1.17
1,2,4-Trimethylbenzene	95-63-6	1.17	U	5.83	1.17	0.583
1,3,5-Trimethylbenzene	108-67-8	1.17	U	5.83	1.17	0.583
Vinyl chloride	75-01-4	2.34	U	5.83	2.34	1.17
o-Xylene	95-47-6	1.17	U	5.83	1.17	0.583
m-,p-Xylene	179601-23-1	1.17	U	5.83	1.17	0.583

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.5	80	120	
1,2-Dichloroethane-d4	85.3	80	120	
Toluene-d8	102	85	115	
4-Bromofluorobenzene	105	85	120	

Q	One or more quality control criteria failed. See narrative.

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Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-09	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT17(2.5-3)150316FD	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 03:19
Collect Date:	03/15/2016 11:50	**Dilution:**	1	**File ID:**	1LM.LM33920
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.32	U	4.63	2.32	1.16

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT17(5-5.5)150316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:23
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562236	**Analyst:**	TMB	**Run Date:**	03/24/2016 18:59
Collect Date:	03/15/2016 11:55	**Dilution:**	1	**File ID:**	6M138002
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	78.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.1	U	26.3	13.1	6.57
Benzene	71-43-2	1.31	U	6.57	1.31	0.657
Bromobenzene	108-86-1	1.31	U	6.57	1.31	0.657
Bromochloromethane	74-97-5	2.62	U	6.57	2.62	1.31
Bromodichloromethane	75-27-4	1.31	U	6.57	1.31	0.657
Bromoform	75-25-2	1.31	U	6.57	1.31	0.657
Bromomethane	74-83-9	2.62	U	6.57	2.62	1.31
2-Butanone	78-93-3	6.56	U	13.1	6.56	3.28
n-Butylbenzene	104-51-8	1.31	U	6.57	1.31	0.657
sec-Butylbenzene	135-98-8	1.31	U	6.57	1.31	0.657
tert-Butylbenzene	98-06-6	1.31	U	6.57	1.31	0.657
Carbon disulfide	75-15-0	1.31	U	6.57	1.31	0.657
Carbon tetrachloride	56-23-5	1.31	U	6.57	1.31	0.657
Chlorobenzene	108-90-7	1.31	U	6.57	1.31	0.657
Chlorodibromomethane	124-48-1	1.31	U	6.57	1.31	0.657
Chloroethane	75-00-3	2.62	U	6.57	2.62	1.31
Chloroform	67-66-3	1.31	U	6.57	1.31	0.657
Chloromethane	74-87-3	5.26	Q	13.1	5.26	2.63
2-Chlorotoluene	95-49-8	1.31	U	6.57	1.31	0.657
4-Chlorotoluene	106-43-4	1.31	U	6.57	1.31	0.657
1,2-Dibromo-3-chloropropane	96-12-8	5.26	U	13.1	5.26	2.63
1,2-Dibromoethane	106-93-4	1.31	U	6.57	1.31	0.657
Dibromomethane	74-95-3	1.31	U	6.57	1.31	0.657
1,2-Dichlorobenzene	95-50-1	1.31	U	6.57	1.31	0.657
1,3-Dichlorobenzene	541-73-1	1.31	U	6.57	1.31	0.657
1,4-Dichlorobenzene	106-46-7	1.31	U	6.57	1.31	0.657
Dichlorodifluoromethane	75-71-8	2.62	U	6.57	2.62	1.31
1,1-Dichloroethane	75-34-3	2.62	U	6.57	2.62	1.31
1,2-Dichloroethane	107-06-2	1.31	U	6.57	1.31	0.657
1,1-Dichloroethene	75-35-4	1.31	U	6.57	1.31	0.657
cis-1,2-Dichloroethene	156-59-2	1.31	U	6.57	1.31	0.657

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.31	U	6.57	1.31	0.657
1,2-Dichloropropane	78-87-5	1.31	U	6.57	1.31	0.657
1,3-Dichloropropane	142-28-9	1.31	U	6.57	1.31	0.657
2,2-Dichloropropane	594-20-7	1.31	U	6.57	1.31	0.657
cis-1,3-Dichloropropene	10061-01-5	1.31	U	6.57	1.31	0.657
trans-1,3-Dichloropropene	10061-02-6	1.31	U	6.57	1.31	0.657
1,1-Dichloropropene	563-58-6	1.31	U	6.57	1.31	0.657
Ethylbenzene	100-41-4	1.31	U	6.57	1.31	0.657
2-Hexanone	591-78-6	6.56	U	13.1	6.56	3.28
Hexachlorobutadiene	87-68-3	1.31	U	6.57	1.31	0.657
Isopropylbenzene	98-82-8	1.31	U	6.57	1.31	0.657
p-Isopropyltoluene	99-87-6	1.31	U	6.57	1.31	0.657
4-Methyl-2-pentanone	108-10-1	6.56	U	13.1	6.56	3.28
Methylene chloride	75-09-2	2.62	U	6.57	2.62	1.31
Naphthalene	91-20-3	1.31	U	6.57	1.31	0.657
n-Propylbenzene	103-65-1	1.31	U	6.57	1.31	0.657
Styrene	100-42-5	1.31	U	6.57	1.31	0.657
1,1,1,2-Tetrachloroethane	630-20-6	1.31	U	6.57	1.31	0.657
1,1,2,2-Tetrachloroethane	79-34-5	1.31	U	6.57	1.31	0.657
Tetrachloroethene	127-18-4	1.31	U	6.57	1.31	0.657
Toluene	108-88-3	1.31	U	6.57	1.31	0.657
1,2,3-Trichlorobenzene	87-61-6	1.31	U	6.57	1.31	0.657
1,2,4-Trichlorobenzene	120-82-1	1.31	U	6.57	1.31	0.657
1,1,1-Trichloroethane	71-55-6	1.31	U	6.57	1.31	0.657
1,1,2-Trichloroethane	79-00-5	1.31	U	6.57	1.31	0.657
Trichloroethene	79-01-6	1.31	U	6.57	1.31	0.657
Trichlorofluoromethane	75-69-4	2.62	U	6.57	2.62	1.31
1,2,3-Trichloropropane	96-18-4	2.62	U	6.57	2.62	1.31
1,2,4-Trimethylbenzene	95-63-6	1.31	U	6.57	1.31	0.657
1,3,5-Trimethylbenzene	108-67-8	1.31	U	6.57	1.31	0.657
Vinyl chloride	75-01-4	2.62	U	6.57	2.62	1.31
o-Xylene	95-47-6	1.31	U	6.57	1.31	0.657
m-,p-Xylene	179601-23-1	1.31	U	6.57	1.31	0.657

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.5	80	120	
1,2-Dichloroethane-d4	87.6	80	120	
Toluene-d8	101	85	115	
4-Bromofluorobenzene	104	85	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-10	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT17(5-5.5)150316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 03:38
Collect Date:	03/15/2016 11:55	**Dilution:**	1	**File ID:**	1LM.LM33921
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	78.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.54	U	5.06	2.54	1.27

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT17(10-10.5)150316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:23
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562236	**Analyst:**	TMB	**Run Date:**	03/24/2016 19:33
Collect Date:	03/15/2016 12:00	**Dilution:**	1	**File ID:**	6M138003
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.8	J	24.7	12.4	6.18
Benzene	71-43-2	1.24	U	6.18	1.24	0.618
Bromobenzene	108-86-1	1.24	U	6.18	1.24	0.618
Bromochloromethane	74-97-5	2.48	U	6.18	2.48	1.24
Bromodichloromethane	75-27-4	1.24	U	6.18	1.24	0.618
Bromoform	75-25-2	1.24	U	6.18	1.24	0.618
Bromomethane	74-83-9	2.48	U	6.18	2.48	1.24
2-Butanone	78-93-3	6.18	U	12.4	6.18	3.09
n-Butylbenzene	104-51-8	1.24	U	6.18	1.24	0.618
sec-Butylbenzene	135-98-8	1.24	U	6.18	1.24	0.618
tert-Butylbenzene	98-06-6	1.24	U	6.18	1.24	0.618
Carbon disulfide	75-15-0	1.24	U	6.18	1.24	0.618
Carbon tetrachloride	56-23-5	1.24	U	6.18	1.24	0.618
Chlorobenzene	108-90-7	1.24	U	6.18	1.24	0.618
Chlorodibromomethane	124-48-1	1.24	U	6.18	1.24	0.618
Chloroethane	75-00-3	2.48	U	6.18	2.48	1.24
Chloroform	67-66-3	1.24	U	6.18	1.24	0.618
Chloromethane	74-87-3	4.94	Q	12.4	4.94	2.47
2-Chlorotoluene	95-49-8	1.24	U	6.18	1.24	0.618
4-Chlorotoluene	106-43-4	1.24	U	6.18	1.24	0.618
1,2-Dibromo-3-chloropropane	96-12-8	4.94	U	12.4	4.94	2.47
1,2-Dibromoethane	106-93-4	1.24	U	6.18	1.24	0.618
Dibromomethane	74-95-3	1.24	U	6.18	1.24	0.618
1,2-Dichlorobenzene	95-50-1	1.24	U	6.18	1.24	0.618
1,3-Dichlorobenzene	541-73-1	1.24	U	6.18	1.24	0.618
1,4-Dichlorobenzene	106-46-7	1.24	U	6.18	1.24	0.618
Dichlorodifluoromethane	75-71-8	2.48	U	6.18	2.48	1.24
1,1-Dichloroethane	75-34-3	2.48	U	6.18	2.48	1.24
1,2-Dichloroethane	107-06-2	1.24	U	6.18	1.24	0.618
1,1-Dichloroethene	75-35-4	1.24	U	6.18	1.24	0.618
cis-1,2-Dichloroethene	156-59-2	1.24	U	6.18	1.24	0.618

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.24	U	6.18	1.24	0.618
1,2-Dichloropropane	78-87-5	1.24	U	6.18	1.24	0.618
1,3-Dichloropropane	142-28-9	1.24	U	6.18	1.24	0.618
2,2-Dichloropropane	594-20-7	1.24	U	6.18	1.24	0.618
cis-1,3-Dichloropropene	10061-01-5	1.24	U	6.18	1.24	0.618
trans-1,3-Dichloropropene	10061-02-6	1.24	U	6.18	1.24	0.618
1,1-Dichloropropene	563-58-6	1.24	U	6.18	1.24	0.618
Ethylbenzene	100-41-4	1.24	U	6.18	1.24	0.618
2-Hexanone	591-78-6	6.18	U	12.4	6.18	3.09
Hexachlorobutadiene	87-68-3	1.24	U	6.18	1.24	0.618
Isopropylbenzene	98-82-8	1.24	U	6.18	1.24	0.618
p-Isopropyltoluene	99-87-6	1.24	U	6.18	1.24	0.618
4-Methyl-2-pentanone	108-10-1	6.18	U	12.4	6.18	3.09
Methylene chloride	75-09-2	2.48	U	6.18	2.48	1.24
Naphthalene	91-20-3	1.24	U	6.18	1.24	0.618
n-Propylbenzene	103-65-1	1.24	U	6.18	1.24	0.618
Styrene	100-42-5	1.24	U	6.18	1.24	0.618
1,1,1,2-Tetrachloroethane	630-20-6	1.24	U	6.18	1.24	0.618
1,1,2,2-Tetrachloroethane	79-34-5	1.24	U	6.18	1.24	0.618
Tetrachloroethene	127-18-4	1.24	U	6.18	1.24	0.618
Toluene	108-88-3	1.24	U	6.18	1.24	0.618
1,2,3-Trichlorobenzene	87-61-6	1.24	U	6.18	1.24	0.618
1,2,4-Trichlorobenzene	120-82-1	1.24	U	6.18	1.24	0.618
1,1,1-Trichloroethane	71-55-6	1.24	U	6.18	1.24	0.618
1,1,2-Trichloroethane	79-00-5	1.24	U	6.18	1.24	0.618
Trichloroethene	79-01-6	1.24	U	6.18	1.24	0.618
Trichlorofluoromethane	75-69-4	2.48	U	6.18	2.48	1.24
1,2,3-Trichloropropane	96-18-4	2.48	U	6.18	2.48	1.24
1,2,4-Trimethylbenzene	95-63-6	1.24	U	6.18	1.24	0.618
1,3,5-Trimethylbenzene	108-67-8	1.24	U	6.18	1.24	0.618
Vinyl chloride	75-01-4	2.48	U	6.18	2.48	1.24
o-Xylene	95-47-6	1.24	U	6.18	1.24	0.618
m-,p-Xylene	179601-23-1	1.24	U	6.18	1.24	0.618

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.0	80	120	
1,2-Dichloroethane-d4	92.4	80	120	
Toluene-d8	99.1	85	115	
4-Bromofluorobenzene	104	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-11	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT17(10-10.5)150316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 03:57
Collect Date:	03/15/2016 12:00	**Dilution:**	1	**File ID:**	1LM.LM33922
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.48	U	4.95	2.48	1.24

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT17(18-18.5)150316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:25
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562236	**Analyst:**	TMB	**Run Date:**	03/24/2016 21:12
Collect Date:	03/15/2016 12:30	**Dilution:**	1	**File ID:**	6M138006
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.4	J	23.9	11.9	5.97
Benzene	71-43-2	1.19	U	5.97	1.19	0.597
Bromobenzene	108-86-1	1.19	U	5.97	1.19	0.597
Bromochloromethane	74-97-5	2.38	U	5.97	2.38	1.19
Bromodichloromethane	75-27-4	1.19	U	5.97	1.19	0.597
Bromoform	75-25-2	1.19	U	5.97	1.19	0.597
Bromomethane	74-83-9	2.38	U	5.97	2.38	1.19
2-Butanone	78-93-3	5.96	U	11.9	5.96	2.98
n-Butylbenzene	104-51-8	1.19	U	5.97	1.19	0.597
sec-Butylbenzene	135-98-8	1.19	U	5.97	1.19	0.597
tert-Butylbenzene	98-06-6	1.19	U	5.97	1.19	0.597
Carbon disulfide	75-15-0	1.19	U	5.97	1.19	0.597
Carbon tetrachloride	56-23-5	1.19	U	5.97	1.19	0.597
Chlorobenzene	108-90-7	1.19	U	5.97	1.19	0.597
Chlorodibromomethane	124-48-1	1.19	U	5.97	1.19	0.597
Chloroethane	75-00-3	2.38	U	5.97	2.38	1.19
Chloroform	67-66-3	1.19	U	5.97	1.19	0.597
Chloromethane	74-87-3	4.78	Q	11.9	4.78	2.39
2-Chlorotoluene	95-49-8	1.19	U	5.97	1.19	0.597
4-Chlorotoluene	106-43-4	1.19	U	5.97	1.19	0.597
1,2-Dibromo-3-chloropropane	96-12-8	4.78	U	11.9	4.78	2.39
1,2-Dibromoethane	106-93-4	1.19	U	5.97	1.19	0.597
Dibromomethane	74-95-3	1.19	U	5.97	1.19	0.597
1,2-Dichlorobenzene	95-50-1	1.19	U	5.97	1.19	0.597
1,3-Dichlorobenzene	541-73-1	1.19	U	5.97	1.19	0.597
1,4-Dichlorobenzene	106-46-7	1.19	U	5.97	1.19	0.597
Dichlorodifluoromethane	75-71-8	2.38	U	5.97	2.38	1.19
1,1-Dichloroethane	75-34-3	2.38	U	5.97	2.38	1.19
1,2-Dichloroethane	107-06-2	1.19	U	5.97	1.19	0.597
1,1-Dichloroethene	75-35-4	1.19	U	5.97	1.19	0.597
cis-1,2-Dichloroethene	156-59-2	1.19	U	5.97	1.19	0.597

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.19	U	5.97	1.19	0.597
1,2-Dichloropropane	78-87-5	1.19	U	5.97	1.19	0.597
1,3-Dichloropropane	142-28-9	1.19	U	5.97	1.19	0.597
2,2-Dichloropropane	594-20-7	1.19	U	5.97	1.19	0.597
cis-1,3-Dichloropropene	10061-01-5	1.19	U	5.97	1.19	0.597
trans-1,3-Dichloropropene	10061-02-6	1.19	U	5.97	1.19	0.597
1,1-Dichloropropene	563-58-6	1.19	U	5.97	1.19	0.597
Ethylbenzene	100-41-4	1.19	U	5.97	1.19	0.597
2-Hexanone	591-78-6	5.96	U	11.9	5.96	2.98
Hexachlorobutadiene	87-68-3	1.19	U	5.97	1.19	0.597
Isopropylbenzene	98-82-8	1.19	U	5.97	1.19	0.597
p-Isopropyltoluene	99-87-6	1.19	U	5.97	1.19	0.597
4-Methyl-2-pentanone	108-10-1	5.96	U	11.9	5.96	2.98
Methylene chloride	75-09-2	2.38	U	5.97	2.38	1.19
Naphthalene	91-20-3	1.19	U	5.97	1.19	0.597
n-Propylbenzene	103-65-1	1.19	U	5.97	1.19	0.597
Styrene	100-42-5	1.19	U	5.97	1.19	0.597
1,1,1,2-Tetrachloroethane	630-20-6	1.19	U	5.97	1.19	0.597
1,1,2,2-Tetrachloroethane	79-34-5	1.19	U	5.97	1.19	0.597
Tetrachloroethene	127-18-4	1.19	U	5.97	1.19	0.597
Toluene	108-88-3	1.19	U	5.97	1.19	0.597
1,2,3-Trichlorobenzene	87-61-6	1.19	U	5.97	1.19	0.597
1,2,4-Trichlorobenzene	120-82-1	1.19	U	5.97	1.19	0.597
1,1,1-Trichloroethane	71-55-6	1.19	U	5.97	1.19	0.597
1,1,2-Trichloroethane	79-00-5	1.19	U	5.97	1.19	0.597
Trichloroethene	79-01-6	0.855	J	5.97	1.19	0.597
Trichlorofluoromethane	75-69-4	2.38	U	5.97	2.38	1.19
1,2,3-Trichloropropane	96-18-4	2.38	U	5.97	2.38	1.19
1,2,4-Trimethylbenzene	95-63-6	1.19	U	5.97	1.19	0.597
1,3,5-Trimethylbenzene	108-67-8	1.19	U	5.97	1.19	0.597
Vinyl chloride	75-01-4	2.38	U	5.97	2.38	1.19
o-Xylene	95-47-6	1.19	U	5.97	1.19	0.597
m-,p-Xylene	179601-23-1	1.19	U	5.97	1.19	0.597

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.9	80	120	
1,2-Dichloroethane-d4	90.0	80	120	
Toluene-d8	101	85	115	
4-Bromofluorobenzene	104	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-12	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT17(18-18.5)150316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 15:24
Collect Date:	03/15/2016 12:30	**Dilution:**	10	**File ID:**	1LM.LM33939
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	83.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	172		48.1	24.0	12.0

Certificate of Analysis

Sample #:	L16030863-13	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT17(27-27.5)150316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:25
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562236	**Analyst:**	TMB	**Run Date:**	03/24/2016 20:06
Collect Date:	03/15/2016 12:45	**Dilution:**	1	**File ID:**	6M138004
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	78.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	6.75	J	24.9	12.4	6.22
Benzene	71-43-2	1.24	U	6.22	1.24	0.622
Bromobenzene	108-86-1	1.24	U	6.22	1.24	0.622
Bromochloromethane	74-97-5	2.48	U	6.22	2.48	1.24
Bromodichloromethane	75-27-4	1.24	U	6.22	1.24	0.622
Bromoform	75-25-2	1.24	U	6.22	1.24	0.622
Bromomethane	74-83-9	2.48	U	6.22	2.48	1.24
2-Butanone	78-93-3	6.22	U	12.4	6.22	3.11
n-Butylbenzene	104-51-8	1.24	U	6.22	1.24	0.622
sec-Butylbenzene	135-98-8	1.24	U	6.22	1.24	0.622
tert-Butylbenzene	98-06-6	1.24	U	6.22	1.24	0.622
Carbon disulfide	75-15-0	1.24	U	6.22	1.24	0.622
Carbon tetrachloride	56-23-5	1.24	U	6.22	1.24	0.622
Chlorobenzene	108-90-7	1.24	U	6.22	1.24	0.622
Chlorodibromomethane	124-48-1	1.24	U	6.22	1.24	0.622
Chloroethane	75-00-3	2.48	U	6.22	2.48	1.24
Chloroform	67-66-3	1.24	U	6.22	1.24	0.622
Chloromethane	74-87-3	4.98	Q	12.4	4.98	2.49
2-Chlorotoluene	95-49-8	1.24	U	6.22	1.24	0.622
4-Chlorotoluene	106-43-4	1.24	U	6.22	1.24	0.622

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	4.98	U	12.4	4.98	2.49
1,2-Dibromoethane	106-93-4	1.24	U	6.22	1.24	0.622
Dibromomethane	74-95-3	1.24	U	6.22	1.24	0.622
1,2-Dichlorobenzene	95-50-1	1.24	U	6.22	1.24	0.622
1,3-Dichlorobenzene	541-73-1	1.24	U	6.22	1.24	0.622
1,4-Dichlorobenzene	106-46-7	1.24	U	6.22	1.24	0.622
Dichlorodifluoromethane	75-71-8	2.48	U	6.22	2.48	1.24
1,1-Dichloroethane	75-34-3	2.48	U	6.22	2.48	1.24
1,2-Dichloroethane	107-06-2	1.24	U	6.22	1.24	0.622
1,1-Dichloroethene	75-35-4	1.24	U	6.22	1.24	0.622
cis-1,2-Dichloroethene	156-59-2	1.24	U	6.22	1.24	0.622
trans-1,2-Dichloroethene	156-60-5	1.24	U	6.22	1.24	0.622
1,2-Dichloropropane	78-87-5	1.24	U	6.22	1.24	0.622
1,3-Dichloropropane	142-28-9	1.24	U	6.22	1.24	0.622
2,2-Dichloropropane	594-20-7	1.24	U	6.22	1.24	0.622
cis-1,3-Dichloropropene	10061-01-5	1.24	U	6.22	1.24	0.622
trans-1,3-Dichloropropene	10061-02-6	1.24	U	6.22	1.24	0.622
1,1-Dichloropropene	563-58-6	1.24	U	6.22	1.24	0.622
Ethylbenzene	100-41-4	1.24	U	6.22	1.24	0.622
2-Hexanone	591-78-6	6.22	U	12.4	6.22	3.11
Hexachlorobutadiene	87-68-3	1.24	U	6.22	1.24	0.622
Isopropylbenzene	98-82-8	1.24	U	6.22	1.24	0.622
p-Isopropyltoluene	99-87-6	1.24	U	6.22	1.24	0.622
4-Methyl-2-pentanone	108-10-1	6.22	U	12.4	6.22	3.11
Methylene chloride	75-09-2	2.48	U	6.22	2.48	1.24
Naphthalene	91-20-3	1.24	U	6.22	1.24	0.622
n-Propylbenzene	103-65-1	1.24	U	6.22	1.24	0.622
Styrene	100-42-5	1.24	U	6.22	1.24	0.622
1,1,1,2-Tetrachloroethane	630-20-6	1.24	U	6.22	1.24	0.622
1,1,2,2-Tetrachloroethane	79-34-5	1.24	U	6.22	1.24	0.622
Tetrachloroethene	127-18-4	1.24	U	6.22	1.24	0.622
Toluene	108-88-3	1.24	U	6.22	1.24	0.622
1,2,3-Trichlorobenzene	87-61-6	1.24	U	6.22	1.24	0.622
1,2,4-Trichlorobenzene	120-82-1	1.24	U	6.22	1.24	0.622
1,1,1-Trichloroethane	71-55-6	1.24	U	6.22	1.24	0.622
1,1,2-Trichloroethane	79-00-5	1.24	U	6.22	1.24	0.622
Trichloroethene	79-01-6	8.36		6.22	1.24	0.622
Trichlorofluoromethane	75-69-4	2.48	U	6.22	2.48	1.24
1,2,3-Trichloropropane	96-18-4	2.48	U	6.22	2.48	1.24

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.24	U	6.22	1.24	0.622
1,3,5-Trimethylbenzene	108-67-8	1.24	U	6.22	1.24	0.622
Vinyl chloride	75-01-4	2.48	U	6.22	2.48	1.24
o-Xylene	95-47-6	1.24	U	6.22	1.24	0.622
m-,p-Xylene	179601-23-1	1.24	U	6.22	1.24	0.622

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.2	80	120	
1,2-Dichloroethane-d4	83.7	80	120	
Toluene-d8	101	85	115	
4-Bromofluorobenzene	103	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-13	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT17(27-27.5)150316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 15:43
Collect Date:	03/15/2016 12:45	**Dilution:**	100	**File ID:**	1LM.LM33940
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	78.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2170		498	248	124

Certificate of Analysis

Sample #:	L16030863-14	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT17(21.5-22)150316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:26
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562236	**Analyst:**	TMB	**Run Date:**	03/24/2016 20:39
Collect Date:	03/15/2016 13:00	**Dilution:**	1	**File ID:**	6M138005
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.5	U	22.9	11.5	5.73
Benzene	71-43-2	1.15	U	5.73	1.15	0.573
Bromobenzene	108-86-1	1.15	U	5.73	1.15	0.573
Bromochloromethane	74-97-5	2.30	U	5.73	2.30	1.15
Bromodichloromethane	75-27-4	1.15	U	5.73	1.15	0.573
Bromoform	75-25-2	1.15	U	5.73	1.15	0.573
Bromomethane	74-83-9	2.30	U	5.73	2.30	1.15
2-Butanone	78-93-3	5.72	U	11.5	5.72	2.86
n-Butylbenzene	104-51-8	1.15	U	5.73	1.15	0.573
sec-Butylbenzene	135-98-8	1.15	U	5.73	1.15	0.573
tert-Butylbenzene	98-06-6	1.15	U	5.73	1.15	0.573
Carbon disulfide	75-15-0	1.15	U	5.73	1.15	0.573
Carbon tetrachloride	56-23-5	1.15	U	5.73	1.15	0.573
Chlorobenzene	108-90-7	1.15	U	5.73	1.15	0.573
Chlorodibromomethane	124-48-1	1.15	U	5.73	1.15	0.573
Chloroethane	75-00-3	2.30	U	5.73	2.30	1.15
Chloroform	67-66-3	1.15	U	5.73	1.15	0.573
Chloromethane	74-87-3	4.58	Q	11.5	4.58	2.29
2-Chlorotoluene	95-49-8	1.15	U	5.73	1.15	0.573
4-Chlorotoluene	106-43-4	1.15	U	5.73	1.15	0.573

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	4.58	U	11.5	4.58	2.29
1,2-Dibromoethane	106-93-4	1.15	U	5.73	1.15	0.573
Dibromomethane	74-95-3	1.15	U	5.73	1.15	0.573
1,2-Dichlorobenzene	95-50-1	1.15	U	5.73	1.15	0.573
1,3-Dichlorobenzene	541-73-1	1.15	U	5.73	1.15	0.573
1,4-Dichlorobenzene	106-46-7	1.15	U	5.73	1.15	0.573
Dichlorodifluoromethane	75-71-8	2.30	U	5.73	2.30	1.15
1,1-Dichloroethane	75-34-3	2.30	U	5.73	2.30	1.15
1,2-Dichloroethane	107-06-2	1.15	U	5.73	1.15	0.573
1,1-Dichloroethene	75-35-4	1.15	U	5.73	1.15	0.573
cis-1,2-Dichloroethene	156-59-2	1.15	U	5.73	1.15	0.573
trans-1,2-Dichloroethene	156-60-5	1.15	U	5.73	1.15	0.573
1,2-Dichloropropane	78-87-5	1.15	U	5.73	1.15	0.573
1,3-Dichloropropane	142-28-9	1.15	U	5.73	1.15	0.573
2,2-Dichloropropane	594-20-7	1.15	U	5.73	1.15	0.573
cis-1,3-Dichloropropene	10061-01-5	1.15	U	5.73	1.15	0.573
trans-1,3-Dichloropropene	10061-02-6	1.15	U	5.73	1.15	0.573
1,1-Dichloropropene	563-58-6	1.15	U	5.73	1.15	0.573
Ethylbenzene	100-41-4	1.15	U	5.73	1.15	0.573
2-Hexanone	591-78-6	5.72	U	11.5	5.72	2.86
Hexachlorobutadiene	87-68-3	1.15	U	5.73	1.15	0.573
Isopropylbenzene	98-82-8	1.15	U	5.73	1.15	0.573
p-Isopropyltoluene	99-87-6	1.15	U	5.73	1.15	0.573
4-Methyl-2-pentanone	108-10-1	5.72	U	11.5	5.72	2.86
Methylene chloride	75-09-2	2.30	U	5.73	2.30	1.15
Naphthalene	91-20-3	1.15	U	5.73	1.15	0.573
n-Propylbenzene	103-65-1	1.15	U	5.73	1.15	0.573
Styrene	100-42-5	1.15	U	5.73	1.15	0.573
1,1,1,2-Tetrachloroethane	630-20-6	1.15	U	5.73	1.15	0.573
1,1,2,2-Tetrachloroethane	79-34-5	1.15	U	5.73	1.15	0.573
Tetrachloroethene	127-18-4	1.15	U	5.73	1.15	0.573
Toluene	108-88-3	1.15	U	5.73	1.15	0.573
1,2,3-Trichlorobenzene	87-61-6	1.15	U	5.73	1.15	0.573
1,2,4-Trichlorobenzene	120-82-1	1.15	U	5.73	1.15	0.573
1,1,1-Trichloroethane	71-55-6	1.15	U	5.73	1.15	0.573
1,1,2-Trichloroethane	79-00-5	1.15	U	5.73	1.15	0.573
Trichloroethene	79-01-6	0.995	J	5.73	1.15	0.573
Trichlorofluoromethane	75-69-4	2.30	U	5.73	2.30	1.15
1,2,3-Trichloropropane	96-18-4	2.30	U	5.73	2.30	1.15

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.15	U	5.73	1.15	0.573
1,3,5-Trimethylbenzene	108-67-8	1.15	U	5.73	1.15	0.573
Vinyl chloride	75-01-4	2.30	U	5.73	2.30	1.15
o-Xylene	95-47-6	1.15	U	5.73	1.15	0.573
m-,p-Xylene	179601-23-1	1.15	U	5.73	1.15	0.573

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.5	80	120	
1,2-Dichloroethane-d4	84.3	80	120	
Toluene-d8	102	85	115	
4-Bromofluorobenzene	104	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-14	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT17(21.5-22)150316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 16:02
Collect Date:	03/15/2016 13:00	**Dilution:**	50	**File ID:**	1LM.LM33941
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	82.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1500		240	120	60.1

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #: L16030863-01 **Client ID:** 18DPT16(5-5.5)150316 **Matrix:** Soil **Collect Date:** 03/15/2016 09:20

Analyte	Result	Units	Qualifier
Percent Solids	79.3	weight %	

Sample #: L16030863-02 **Client ID:** 18DPT16(5-5.5)150316MS **Matrix:** Soil **Collect Date:** 03/15/2016 09:20

Analyte	Result	Units	Qualifier
Percent Solids	79.3	weight %	

Sample #: L16030863-03 **Client ID:** 18DPT16(5-5.5)150316MSD **Matrix:** Soil **Collect Date:** 03/15/2016 09:20

Analyte	Result	Units	Qualifier
Percent Solids	79.3	weight %	

Sample #: L16030863-04 **Client ID:** 18DPT16(15-15.5)150316 **Matrix:** Soil **Collect Date:** 03/15/2016 09:25

Analyte	Result	Units	Qualifier
Percent Solids	86.1	weight %	

Sample #: L16030863-05 **Client ID:** 18DPT16(25-25.5)150316 **Matrix:** Soil **Collect Date:** 03/15/2016 10:35

Analyte	Result	Units	Qualifier
Percent Solids	81.2	weight %	

Sample #: L16030863-06 **Client ID:** 18CPT16(30-30.5)150316 **Matrix:** Soil **Collect Date:** 03/15/2016 10:40

Analyte	Result	Units	Qualifier
Percent Solids	79.6	weight %	

Sample #: L16030863-07 **Client ID:** 18DPT16(33-33.5)150316 **Matrix:** Soil **Collect Date:** 03/15/2016 10:45

Analyte	Result	Units	Qualifier
Percent Solids	77.7	weight %	

Sample #: L16030863-08 **Client ID:** 18DPT17(2.5-3)150316 **Matrix:** Soil **Collect Date:** 03/15/2016 11:50

Analyte	Result	Units	Qualifier
Percent Solids	84.2	weight %	

Sample #: L16030863-09 **Client ID:** 18DPT17(2.5-3)150316FD **Matrix:** Soil **Collect Date:** 03/15/2016 11:50

Analyte	Result	Units	Qualifier
Percent Solids	83.5	weight %	

Sample #: L16030863-10 **Client ID:** 18DPT17(5-5.5)150316 **Matrix:** Soil **Collect Date:** 03/15/2016 11:55

Analyte	Result	Units	Qualifier
Percent Solids	78.8	weight %	

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #: L16030863-11 **Client ID:** 18DPT17(10-10.5)150316 **Matrix:** Soil **Collect Date:** 03/15/2016 12:00

Analyte	Result	Units	Qualifier
Percent Solids	80.4	weight %	

Sample #: L16030863-12 **Client ID:** 18DPT17(18-18.5)150316 **Matrix:** Soil **Collect Date:** 03/15/2016 12:30

Analyte	Result	Units	Qualifier
Percent Solids	83.0	weight %	

Sample #: L16030863-13 **Client ID:** 18DPT17(27-27.5)150316 **Matrix:** Soil **Collect Date:** 03/15/2016 12:45

Analyte	Result	Units	Qualifier
Percent Solids	78.8	weight %	

Sample #: L16030863-14 **Client ID:** 18DPT17(21.5-22)150316 **Matrix:** Soil **Collect Date:** 03/15/2016 13:00

Analyte	Result	Units	Qualifier
Percent Solids	82.4	weight %	

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT16(5-5.5)150316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:17
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 17:10
Collect Date:	03/15/2016 09:20	**Dilution:**	1	**File ID:**	6M137973
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.7	U	25.4	12.7	6.35
Benzene	71-43-2	1.27	U	6.35	1.27	0.635
Bromobenzene	108-86-1	1.27	U	6.35	1.27	0.635
Bromochloromethane	74-97-5	2.54	U	6.35	2.54	1.27
Bromodichloromethane	75-27-4	1.27	U	6.35	1.27	0.635
Bromoform	75-25-2	1.27	U	6.35	1.27	0.635
Bromomethane	74-83-9	2.54	U	6.35	2.54	1.27
2-Butanone	78-93-3	6.36	U	12.7	6.36	3.18
n-Butylbenzene	104-51-8	1.27	U	6.35	1.27	0.635
sec-Butylbenzene	135-98-8	1.27	U	6.35	1.27	0.635
tert-Butylbenzene	98-06-6	1.27	U	6.35	1.27	0.635
Carbon disulfide	75-15-0	1.27	U	6.35	1.27	0.635
Carbon tetrachloride	56-23-5	1.27	U	6.35	1.27	0.635
Chlorobenzene	108-90-7	1.27	U	6.35	1.27	0.635
Chlorodibromomethane	124-48-1	1.27	U	6.35	1.27	0.635
Chloroethane	75-00-3	2.54	U	6.35	2.54	1.27
Chloroform	67-66-3	1.27	U	6.35	1.27	0.635
Chloromethane	74-87-3	5.08	Q	12.7	5.08	2.54
2-Chlorotoluene	95-49-8	1.27	U	6.35	1.27	0.635
4-Chlorotoluene	106-43-4	1.27	U	6.35	1.27	0.635
1,2-Dibromo-3-chloropropane	96-12-8	5.08	U	12.7	5.08	2.54
1,2-Dibromoethane	106-93-4	1.27	U	6.35	1.27	0.635
Dibromomethane	74-95-3	1.27	U	6.35	1.27	0.635
1,2-Dichlorobenzene	95-50-1	1.27	U	6.35	1.27	0.635
1,3-Dichlorobenzene	541-73-1	1.27	U	6.35	1.27	0.635
1,4-Dichlorobenzene	106-46-7	1.27	U	6.35	1.27	0.635
Dichlorodifluoromethane	75-71-8	2.54	U	6.35	2.54	1.27
1,1-Dichloroethane	75-34-3	2.54	U	6.35	2.54	1.27
1,2-Dichloroethane	107-06-2	1.27	U	6.35	1.27	0.635
1,1-Dichloroethene	75-35-4	1.27	U	6.35	1.27	0.635
cis-1,2-Dichloroethene	156-59-2	1.27	U	6.35	1.27	0.635
trans-1,2-Dichloroethene	156-60-5	1.27	U	6.35	1.27	0.635

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Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.27	U	6.35	1.27	0.635
1,3-Dichloropropane	142-28-9	1.27	U	6.35	1.27	0.635
2,2-Dichloropropane	594-20-7	1.27	U	6.35	1.27	0.635
cis-1,3-Dichloropropene	10061-01-5	1.27	U	6.35	1.27	0.635
trans-1,3-Dichloropropene	10061-02-6	1.27	U	6.35	1.27	0.635
1,1-Dichloropropene	563-58-6	1.27	U	6.35	1.27	0.635
Ethylbenzene	100-41-4	1.27	U	6.35	1.27	0.635
2-Hexanone	591-78-6	6.36	U	12.7	6.36	3.18
Hexachlorobutadiene	87-68-3	1.27	U	6.35	1.27	0.635
Isopropylbenzene	98-82-8	1.27	U	6.35	1.27	0.635
p-Isopropyltoluene	99-87-6	1.27	U	6.35	1.27	0.635
4-Methyl-2-pentanone	108-10-1	6.36	U	12.7	6.36	3.18
Methylene chloride	75-09-2	2.54	U	6.35	2.54	1.27
Naphthalene	91-20-3	1.27	Q	6.35	1.27	0.635
n-Propylbenzene	103-65-1	1.27	U	6.35	1.27	0.635
Styrene	100-42-5	1.27	U	6.35	1.27	0.635
1,1,1,2-Tetrachloroethane	630-20-6	1.27	U	6.35	1.27	0.635
1,1,2,2-Tetrachloroethane	79-34-5	1.27	U	6.35	1.27	0.635
Tetrachloroethene	127-18-4	1.27	U	6.35	1.27	0.635
Toluene	108-88-3	1.27	U	6.35	1.27	0.635
1,2,3-Trichlorobenzene	87-61-6	1.27	U	6.35	1.27	0.635
1,2,4-Trichlorobenzene	120-82-1	1.27	U	6.35	1.27	0.635
1,1,1-Trichloroethane	71-55-6	1.27	U	6.35	1.27	0.635
1,1,2-Trichloroethane	79-00-5	1.27	U	6.35	1.27	0.635
Trichloroethene	79-01-6	1.27	U	6.35	1.27	0.635
Trichlorofluoromethane	75-69-4	2.54	U	6.35	2.54	1.27
1,2,3-Trichloropropane	96-18-4	2.54	U	6.35	2.54	1.27
1,2,4-Trimethylbenzene	95-63-6	1.27	U	6.35	1.27	0.635
1,3,5-Trimethylbenzene	108-67-8	1.27	U	6.35	1.27	0.635
Vinyl chloride	75-01-4	2.54	U	6.35	2.54	1.27
o-Xylene	95-47-6	1.27	U	6.35	1.27	0.635
m-,p-Xylene	179601-23-1	1.27	U	6.35	1.27	0.635

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.8	80	120	
1,2-Dichloroethane-d4	87.9	80	120	
Toluene-d8	101	85	115	
4-Bromofluorobenzene	103	85	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT16(5-5.5)150316MS	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:17
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 14:59
Collect Date:	03/15/2016 09:20	**Dilution:**	1	**File ID:**	6M137969
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	20.1	J	23.6	11.8	5.90
Benzene	71-43-2	25.7		5.90	1.18	0.590
Bromobenzene	108-86-1	26.5		5.90	1.18	0.590
Bromochloromethane	74-97-5	26.0		5.90	2.36	1.18
Bromodichloromethane	75-27-4	24.9		5.90	1.18	0.590
Bromoform	75-25-2	22.1		5.90	1.18	0.590
Bromomethane	74-83-9	25.6		5.90	2.36	1.18
2-Butanone	78-93-3	24.2		11.8	5.90	2.95
n-Butylbenzene	104-51-8	27.0		5.90	1.18	0.590
sec-Butylbenzene	135-98-8	28.5		5.90	1.18	0.590
tert-Butylbenzene	98-06-6	28.5		5.90	1.18	0.590
Carbon disulfide	75-15-0	24.5		5.90	1.18	0.590
Carbon tetrachloride	56-23-5	25.1		5.90	1.18	0.590
Chlorobenzene	108-90-7	26.6		5.90	1.18	0.590
Chlorodibromomethane	124-48-1	24.3		5.90	1.18	0.590
Chloroethane	75-00-3	28.1		5.90	2.36	1.18
Chloroform	67-66-3	24.9		5.90	1.18	0.590
Chloromethane	74-87-3	19.3	Q	11.8	4.72	2.36
2-Chlorotoluene	95-49-8	27.6		5.90	1.18	0.590
4-Chlorotoluene	106-43-4	27.9		5.90	1.18	0.590
1,2-Dibromo-3-chloropropane	96-12-8	24.3		11.8	4.72	2.36
1,2-Dibromoethane	106-93-4	25.4		5.90	1.18	0.590
Dibromomethane	74-95-3	24.4		5.90	1.18	0.590
1,2-Dichlorobenzene	95-50-1	27.2		5.90	1.18	0.590
1,3-Dichlorobenzene	541-73-1	27.3		5.90	1.18	0.590
1,4-Dichlorobenzene	106-46-7	27.0		5.90	1.18	0.590
Dichlorodifluoromethane	75-71-8	27.1		5.90	2.36	1.18
1,1-Dichloroethane	75-34-3	24.5		5.90	2.36	1.18
1,2-Dichloroethane	107-06-2	24.6		5.90	1.18	0.590
1,1-Dichloroethene	75-35-4	25.2		5.90	1.18	0.590
cis-1,2-Dichloroethene	156-59-2	26.7		5.90	1.18	0.590

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Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	27.0		5.90	1.18	0.590
1,2-Dichloropropane	78-87-5	26.9		5.90	1.18	0.590
1,3-Dichloropropane	142-28-9	26.6		5.90	1.18	0.590
2,2-Dichloropropane	594-20-7	26.9		5.90	1.18	0.590
cis-1,3-Dichloropropene	10061-01-5	29.1		5.90	1.18	0.590
trans-1,3-Dichloropropene	10061-02-6	25.4		5.90	1.18	0.590
1,1-Dichloropropene	563-58-6	26.8		5.90	1.18	0.590
Ethylbenzene	100-41-4	26.3		5.90	1.18	0.590
2-Hexanone	591-78-6	24.0		11.8	5.90	2.95
Hexachlorobutadiene	87-68-3	28.5		5.90	1.18	0.590
Isopropylbenzene	98-82-8	27.9		5.90	1.18	0.590
p-Isopropyltoluene	99-87-6	28.4		5.90	1.18	0.590
4-Methyl-2-pentanone	108-10-1	26.1		11.8	5.90	2.95
Methylene chloride	75-09-2	26.3		5.90	2.36	1.18
Naphthalene	91-20-3	24.5	Q	5.90	1.18	0.590
n-Propylbenzene	103-65-1	28.7		5.90	1.18	0.590
Styrene	100-42-5	26.7		5.90	1.18	0.590
1,1,1,2-Tetrachloroethane	630-20-6	24.6		5.90	1.18	0.590
1,1,2,2-Tetrachloroethane	79-34-5	25.6		5.90	1.18	0.590
Tetrachloroethene	127-18-4	26.8		5.90	1.18	0.590
Toluene	108-88-3	25.8		5.90	1.18	0.590
1,2,3-Trichlorobenzene	87-61-6	26.2		5.90	1.18	0.590
1,2,4-Trichlorobenzene	120-82-1	27.0		5.90	1.18	0.590
1,1,1-Trichloroethane	71-55-6	25.4		5.90	1.18	0.590
1,1,2-Trichloroethane	79-00-5	25.9		5.90	1.18	0.590
Trichloroethene	79-01-6	27.8		5.90	1.18	0.590
Trichlorofluoromethane	75-69-4	24.2		5.90	2.36	1.18
1,2,3-Trichloropropane	96-18-4	26.4		5.90	2.36	1.18
1,2,4-Trimethylbenzene	95-63-6	27.4		5.90	1.18	0.590
1,3,5-Trimethylbenzene	108-67-8	28.6		5.90	1.18	0.590
Vinyl chloride	75-01-4	25.7		5.90	2.36	1.18
o-Xylene	95-47-6	28.2		5.90	1.18	0.590
m-,p-Xylene	179601-23-1	53.7		5.90	1.18	0.590

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.7	80	120	
1,2-Dichloroethane-d4	88.1	80	120	
Toluene-d8	101	85	115	
4-Bromofluorobenzene	103	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT16(5-5.5)150316MSD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:18
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 15:32
Collect Date:	03/15/2016 09:20	**Dilution:**	1	**File ID:**	6M137970
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	24.1	J	27.8	13.9	6.94
Benzene	71-43-2	29.7		6.94	1.39	0.694
Bromobenzene	108-86-1	30.1		6.94	1.39	0.694
Bromochloromethane	74-97-5	29.6		6.94	2.78	1.39
Bromodichloromethane	75-27-4	28.4		6.94	1.39	0.694
Bromoform	75-25-2	26.0		6.94	1.39	0.694
Bromomethane	74-83-9	30.1		6.94	2.78	1.39
2-Butanone	78-93-3	28.5		13.9	6.94	3.47
n-Butylbenzene	104-51-8	30.3		6.94	1.39	0.694
sec-Butylbenzene	135-98-8	32.3		6.94	1.39	0.694
tert-Butylbenzene	98-06-6	32.9		6.94	1.39	0.694
Carbon disulfide	75-15-0	27.8		6.94	1.39	0.694
Carbon tetrachloride	56-23-5	29.8		6.94	1.39	0.694
Chlorobenzene	108-90-7	30.4		6.94	1.39	0.694
Chlorodibromomethane	124-48-1	28.0		6.94	1.39	0.694
Chloroethane	75-00-3	32.9		6.94	2.78	1.39
Chloroform	67-66-3	28.7		6.94	1.39	0.694
Chloromethane	74-87-3	23.4	Q	13.9	5.56	2.78
2-Chlorotoluene	95-49-8	31.4		6.94	1.39	0.694
4-Chlorotoluene	106-43-4	31.1		6.94	1.39	0.694
1,2-Dibromo-3-chloropropane	96-12-8	29.9		13.9	5.56	2.78
1,2-Dibromoethane	106-93-4	29.1		6.94	1.39	0.694
Dibromomethane	74-95-3	27.8		6.94	1.39	0.694
1,2-Dichlorobenzene	95-50-1	30.8		6.94	1.39	0.694
1,3-Dichlorobenzene	541-73-1	30.7		6.94	1.39	0.694
1,4-Dichlorobenzene	106-46-7	30.7		6.94	1.39	0.694
Dichlorodifluoromethane	75-71-8	31.4		6.94	2.78	1.39
1,1-Dichloroethane	75-34-3	28.5		6.94	2.78	1.39
1,2-Dichloroethane	107-06-2	28.4		6.94	1.39	0.694
1,1-Dichloroethene	75-35-4	29.5		6.94	1.39	0.694
cis-1,2-Dichloroethene	156-59-2	30.8		6.94	1.39	0.694

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	31.8		6.94	1.39	0.694
1,2-Dichloropropane	78-87-5	31.6		6.94	1.39	0.694
1,3-Dichloropropane	142-28-9	30.4		6.94	1.39	0.694
2,2-Dichloropropane	594-20-7	31.1		6.94	1.39	0.694
cis-1,3-Dichloropropene	10061-01-5	32.4		6.94	1.39	0.694
trans-1,3-Dichloropropene	10061-02-6	28.3		6.94	1.39	0.694
1,1-Dichloropropene	563-58-6	30.6		6.94	1.39	0.694
Ethylbenzene	100-41-4	30.7		6.94	1.39	0.694
2-Hexanone	591-78-6	28.0		13.9	6.94	3.47
Hexachlorobutadiene	87-68-3	32.1		6.94	1.39	0.694
Isopropylbenzene	98-82-8	32.1		6.94	1.39	0.694
p-Isopropyltoluene	99-87-6	31.9		6.94	1.39	0.694
4-Methyl-2-pentanone	108-10-1	31.0		13.9	6.94	3.47
Methylene chloride	75-09-2	29.9		6.94	2.78	1.39
Naphthalene	91-20-3	29.4	Q	6.94	1.39	0.694
n-Propylbenzene	103-65-1	32.2		6.94	1.39	0.694
Styrene	100-42-5	30.8		6.94	1.39	0.694
1,1,1,2-Tetrachloroethane	630-20-6	28.4		6.94	1.39	0.694
1,1,2,2-Tetrachloroethane	79-34-5	30.0		6.94	1.39	0.694
Tetrachloroethene	127-18-4	30.5		6.94	1.39	0.694
Toluene	108-88-3	30.1		6.94	1.39	0.694
1,2,3-Trichlorobenzene	87-61-6	30.1		6.94	1.39	0.694
1,2,4-Trichlorobenzene	120-82-1	30.2		6.94	1.39	0.694
1,1,1-Trichloroethane	71-55-6	29.4		6.94	1.39	0.694
1,1,2-Trichloroethane	79-00-5	29.2		6.94	1.39	0.694
Trichloroethene	79-01-6	32.2		6.94	1.39	0.694
Trichlorofluoromethane	75-69-4	28.5		6.94	2.78	1.39
1,2,3-Trichloropropane	96-18-4	31.0		6.94	2.78	1.39
1,2,4-Trimethylbenzene	95-63-6	30.9		6.94	1.39	0.694
1,3,5-Trimethylbenzene	108-67-8	32.3		6.94	1.39	0.694
Vinyl chloride	75-01-4	29.3		6.94	2.78	1.39
o-Xylene	95-47-6	32.3		6.94	1.39	0.694
m-,p-Xylene	179601-23-1	62.5		6.94	1.39	0.694

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.8	80	120	
1,2-Dichloroethane-d4	85.8	80	120	
Toluene-d8	101	85	115	
4-Bromofluorobenzene	101	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT16(15-15.5)150316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:19
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 21:32
Collect Date:	03/15/2016 09:25	**Dilution:**	1	**File ID:**	6M137981
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	86.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	6.34	J	23.4	11.7	5.84
Benzene	71-43-2	1.17	U	5.84	1.17	0.584
Bromobenzene	108-86-1	1.17	U	5.84	1.17	0.584
Bromochloromethane	74-97-5	2.34	U	5.84	2.34	1.17
Bromodichloromethane	75-27-4	1.17	U	5.84	1.17	0.584
Bromoform	75-25-2	1.17	U	5.84	1.17	0.584
Bromomethane	74-83-9	2.34	U	5.84	2.34	1.17
2-Butanone	78-93-3	5.84	U	11.7	5.84	2.92
n-Butylbenzene	104-51-8	1.17	U	5.84	1.17	0.584
sec-Butylbenzene	135-98-8	1.17	U	5.84	1.17	0.584
tert-Butylbenzene	98-06-6	1.17	U	5.84	1.17	0.584
Carbon disulfide	75-15-0	1.17	U	5.84	1.17	0.584
Carbon tetrachloride	56-23-5	1.17	U	5.84	1.17	0.584
Chlorobenzene	108-90-7	1.17	U	5.84	1.17	0.584
Chlorodibromomethane	124-48-1	1.17	U	5.84	1.17	0.584
Chloroethane	75-00-3	2.34	U	5.84	2.34	1.17
Chloroform	67-66-3	1.17	U	5.84	1.17	0.584
Chloromethane	74-87-3	4.68	Q	11.7	4.68	2.34
2-Chlorotoluene	95-49-8	1.17	U	5.84	1.17	0.584
4-Chlorotoluene	106-43-4	1.17	U	5.84	1.17	0.584
1,2-Dibromo-3-chloropropane	96-12-8	4.68	U	11.7	4.68	2.34
1,2-Dibromoethane	106-93-4	1.17	U	5.84	1.17	0.584
Dibromomethane	74-95-3	1.17	U	5.84	1.17	0.584
1,2-Dichlorobenzene	95-50-1	1.17	U	5.84	1.17	0.584
1,3-Dichlorobenzene	541-73-1	1.17	U	5.84	1.17	0.584
1,4-Dichlorobenzene	106-46-7	1.17	U	5.84	1.17	0.584
Dichlorodifluoromethane	75-71-8	2.34	U	5.84	2.34	1.17
1,1-Dichloroethane	75-34-3	2.34	U	5.84	2.34	1.17
1,2-Dichloroethane	107-06-2	1.17	U	5.84	1.17	0.584
1,1-Dichloroethene	75-35-4	1.17	U	5.84	1.17	0.584
cis-1,2-Dichloroethene	156-59-2	1.17	U	5.84	1.17	0.584

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.17	U	5.84	1.17	0.584
1,2-Dichloropropane	78-87-5	1.17	U	5.84	1.17	0.584
1,3-Dichloropropane	142-28-9	1.17	U	5.84	1.17	0.584
2,2-Dichloropropane	594-20-7	1.17	U	5.84	1.17	0.584
cis-1,3-Dichloropropene	10061-01-5	1.17	U	5.84	1.17	0.584
trans-1,3-Dichloropropene	10061-02-6	1.17	U	5.84	1.17	0.584
1,1-Dichloropropene	563-58-6	1.17	U	5.84	1.17	0.584
Ethylbenzene	100-41-4	1.17	U	5.84	1.17	0.584
2-Hexanone	591-78-6	5.84	U	11.7	5.84	2.92
Hexachlorobutadiene	87-68-3	1.17	U	5.84	1.17	0.584
Isopropylbenzene	98-82-8	1.17	U	5.84	1.17	0.584
p-Isopropyltoluene	99-87-6	1.17	U	5.84	1.17	0.584
4-Methyl-2-pentanone	108-10-1	5.84	U	11.7	5.84	2.92
Methylene chloride	75-09-2	2.34	U	5.84	2.34	1.17
Naphthalene	91-20-3	1.17	Q	5.84	1.17	0.584
n-Propylbenzene	103-65-1	1.17	U	5.84	1.17	0.584
Styrene	100-42-5	1.17	U	5.84	1.17	0.584
1,1,1,2-Tetrachloroethane	630-20-6	1.17	U	5.84	1.17	0.584
1,1,2,2-Tetrachloroethane	79-34-5	1.17	U	5.84	1.17	0.584
Tetrachloroethene	127-18-4	1.17	U	5.84	1.17	0.584
Toluene	108-88-3	1.17	U	5.84	1.17	0.584
1,2,3-Trichlorobenzene	87-61-6	1.17	U	5.84	1.17	0.584
1,2,4-Trichlorobenzene	120-82-1	1.17	U	5.84	1.17	0.584
1,1,1-Trichloroethane	71-55-6	1.17	U	5.84	1.17	0.584
1,1,2-Trichloroethane	79-00-5	1.17	U	5.84	1.17	0.584
Trichloroethene	79-01-6	1.17	U	5.84	1.17	0.584
Trichlorofluoromethane	75-69-4	2.34	U	5.84	2.34	1.17
1,2,3-Trichloropropane	96-18-4	2.34	U	5.84	2.34	1.17
1,2,4-Trimethylbenzene	95-63-6	1.17	U	5.84	1.17	0.584
1,3,5-Trimethylbenzene	108-67-8	1.17	U	5.84	1.17	0.584
Vinyl chloride	75-01-4	2.34	U	5.84	2.34	1.17
o-Xylene	95-47-6	1.17	U	5.84	1.17	0.584
m-,p-Xylene	179601-23-1	1.17	U	5.84	1.17	0.584

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.2	80	120	
1,2-Dichloroethane-d4	86.0	80	120	
Toluene-d8	103	85	115	
4-Bromofluorobenzene	103	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT16(25-25.5)150316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:19
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 22:05
Collect Date:	03/15/2016 10:35	**Dilution:**	1	**File ID:**	6M137982
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.2	U	26.3	13.2	6.58
Benzene	71-43-2	1.32	U	6.58	1.32	0.658
Bromobenzene	108-86-1	1.32	U	6.58	1.32	0.658
Bromochloromethane	74-97-5	2.64	U	6.58	2.64	1.32
Bromodichloromethane	75-27-4	1.32	U	6.58	1.32	0.658
Bromoform	75-25-2	1.32	U	6.58	1.32	0.658
Bromomethane	74-83-9	2.64	U	6.58	2.64	1.32
2-Butanone	78-93-3	6.58	U	13.2	6.58	3.29
n-Butylbenzene	104-51-8	1.32	U	6.58	1.32	0.658
sec-Butylbenzene	135-98-8	1.32	U	6.58	1.32	0.658
tert-Butylbenzene	98-06-6	1.32	U	6.58	1.32	0.658
Carbon disulfide	75-15-0	1.32	U	6.58	1.32	0.658
Carbon tetrachloride	56-23-5	1.32	U	6.58	1.32	0.658
Chlorobenzene	108-90-7	1.32	U	6.58	1.32	0.658
Chlorodibromomethane	124-48-1	1.32	U	6.58	1.32	0.658
Chloroethane	75-00-3	2.64	U	6.58	2.64	1.32
Chloroform	67-66-3	1.32	U	6.58	1.32	0.658
Chloromethane	74-87-3	5.26	Q	13.2	5.26	2.63
2-Chlorotoluene	95-49-8	1.32	U	6.58	1.32	0.658
4-Chlorotoluene	106-43-4	1.32	U	6.58	1.32	0.658
1,2-Dibromo-3-chloropropane	96-12-8	5.26	U	13.2	5.26	2.63
1,2-Dibromoethane	106-93-4	1.32	U	6.58	1.32	0.658
Dibromomethane	74-95-3	1.32	U	6.58	1.32	0.658
1,2-Dichlorobenzene	95-50-1	1.32	U	6.58	1.32	0.658
1,3-Dichlorobenzene	541-73-1	1.32	U	6.58	1.32	0.658
1,4-Dichlorobenzene	106-46-7	1.32	U	6.58	1.32	0.658
Dichlorodifluoromethane	75-71-8	2.64	U	6.58	2.64	1.32
1,1-Dichloroethane	75-34-3	2.64	U	6.58	2.64	1.32
1,2-Dichloroethane	107-06-2	1.32	U	6.58	1.32	0.658
1,1-Dichloroethene	75-35-4	1.32	U	6.58	1.32	0.658
cis-1,2-Dichloroethene	156-59-2	1.32	U	6.58	1.32	0.658

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.32	U	6.58	1.32	0.658
1,2-Dichloropropane	78-87-5	1.32	U	6.58	1.32	0.658
1,3-Dichloropropane	142-28-9	1.32	U	6.58	1.32	0.658
2,2-Dichloropropane	594-20-7	1.32	U	6.58	1.32	0.658
cis-1,3-Dichloropropene	10061-01-5	1.32	U	6.58	1.32	0.658
trans-1,3-Dichloropropene	10061-02-6	1.32	U	6.58	1.32	0.658
1,1-Dichloropropene	563-58-6	1.32	U	6.58	1.32	0.658
Ethylbenzene	100-41-4	1.32	U	6.58	1.32	0.658
2-Hexanone	591-78-6	6.58	U	13.2	6.58	3.29
Hexachlorobutadiene	87-68-3	1.32	U	6.58	1.32	0.658
Isopropylbenzene	98-82-8	1.32	U	6.58	1.32	0.658
p-Isopropyltoluene	99-87-6	1.32	U	6.58	1.32	0.658
4-Methyl-2-pentanone	108-10-1	6.58	U	13.2	6.58	3.29
Methylene chloride	75-09-2	2.64	U	6.58	2.64	1.32
Naphthalene	91-20-3	1.32	Q	6.58	1.32	0.658
n-Propylbenzene	103-65-1	1.32	U	6.58	1.32	0.658
Styrene	100-42-5	1.32	U	6.58	1.32	0.658
1,1,1,2-Tetrachloroethane	630-20-6	1.32	U	6.58	1.32	0.658
1,1,2,2-Tetrachloroethane	79-34-5	1.32	U	6.58	1.32	0.658
Tetrachloroethene	127-18-4	1.32	U	6.58	1.32	0.658
Toluene	108-88-3	1.32	U	6.58	1.32	0.658
1,2,3-Trichlorobenzene	87-61-6	1.32	U	6.58	1.32	0.658
1,2,4-Trichlorobenzene	120-82-1	1.32	U	6.58	1.32	0.658
1,1,1-Trichloroethane	71-55-6	1.32	U	6.58	1.32	0.658
1,1,2-Trichloroethane	79-00-5	1.32	U	6.58	1.32	0.658
Trichloroethene	79-01-6	1.32	U	6.58	1.32	0.658
Trichlorofluoromethane	75-69-4	2.64	U	6.58	2.64	1.32
1,2,3-Trichloropropane	96-18-4	2.64	U	6.58	2.64	1.32
1,2,4-Trimethylbenzene	95-63-6	1.32	U	6.58	1.32	0.658
1,3,5-Trimethylbenzene	108-67-8	1.32	U	6.58	1.32	0.658
Vinyl chloride	75-01-4	2.64	U	6.58	2.64	1.32
o-Xylene	95-47-6	1.32	U	6.58	1.32	0.658
m-,p-Xylene	179601-23-1	1.32	U	6.58	1.32	0.658

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.5	80	120	
1,2-Dichloroethane-d4	87.5	80	120	
Toluene-d8	102	85	115	
4-Bromofluorobenzene	104	85	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPT16(30-30.5)150316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:20
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 22:38
Collect Date:	03/15/2016 10:40	**Dilution:**	1	**File ID:**	6M137983
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.4	U	24.8	12.4	6.20
Benzene	71-43-2	1.24	U	6.20	1.24	0.620
Bromobenzene	108-86-1	1.24	U	6.20	1.24	0.620
Bromochloromethane	74-97-5	2.48	U	6.20	2.48	1.24
Bromodichloromethane	75-27-4	1.24	U	6.20	1.24	0.620
Bromoform	75-25-2	1.24	U	6.20	1.24	0.620
Bromomethane	74-83-9	2.48	U	6.20	2.48	1.24
2-Butanone	78-93-3	6.20	U	12.4	6.20	3.10
n-Butylbenzene	104-51-8	1.24	U	6.20	1.24	0.620
sec-Butylbenzene	135-98-8	1.24	U	6.20	1.24	0.620
tert-Butylbenzene	98-06-6	1.24	U	6.20	1.24	0.620
Carbon disulfide	75-15-0	1.24	U	6.20	1.24	0.620
Carbon tetrachloride	56-23-5	1.24	U	6.20	1.24	0.620
Chlorobenzene	108-90-7	1.24	U	6.20	1.24	0.620
Chlorodibromomethane	124-48-1	1.24	U	6.20	1.24	0.620
Chloroethane	75-00-3	2.48	U	6.20	2.48	1.24
Chloroform	67-66-3	1.24	U	6.20	1.24	0.620
Chloromethane	74-87-3	4.96	Q	12.4	4.96	2.48
2-Chlorotoluene	95-49-8	1.24	U	6.20	1.24	0.620
4-Chlorotoluene	106-43-4	1.24	U	6.20	1.24	0.620
1,2-Dibromo-3-chloropropane	96-12-8	4.96	U	12.4	4.96	2.48
1,2-Dibromoethane	106-93-4	1.24	U	6.20	1.24	0.620
Dibromomethane	74-95-3	1.24	U	6.20	1.24	0.620
1,2-Dichlorobenzene	95-50-1	1.24	U	6.20	1.24	0.620
1,3-Dichlorobenzene	541-73-1	1.24	U	6.20	1.24	0.620
1,4-Dichlorobenzene	106-46-7	1.24	U	6.20	1.24	0.620
Dichlorodifluoromethane	75-71-8	2.48	U	6.20	2.48	1.24
1,1-Dichloroethane	75-34-3	2.48	U	6.20	2.48	1.24
1,2-Dichloroethane	107-06-2	1.24	U	6.20	1.24	0.620
1,1-Dichloroethene	75-35-4	1.24	U	6.20	1.24	0.620
cis-1,2-Dichloroethene	156-59-2	1.24	U	6.20	1.24	0.620

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Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.24	U	6.20	1.24	0.620
1,2-Dichloropropane	78-87-5	1.24	U	6.20	1.24	0.620
1,3-Dichloropropane	142-28-9	1.24	U	6.20	1.24	0.620
2,2-Dichloropropane	594-20-7	1.24	U	6.20	1.24	0.620
cis-1,3-Dichloropropene	10061-01-5	1.24	U	6.20	1.24	0.620
trans-1,3-Dichloropropene	10061-02-6	1.24	U	6.20	1.24	0.620
1,1-Dichloropropene	563-58-6	1.24	U	6.20	1.24	0.620
Ethylbenzene	100-41-4	1.24	U	6.20	1.24	0.620
2-Hexanone	591-78-6	6.20	U	12.4	6.20	3.10
Hexachlorobutadiene	87-68-3	1.24	U	6.20	1.24	0.620
Isopropylbenzene	98-82-8	1.24	U	6.20	1.24	0.620
p-Isopropyltoluene	99-87-6	1.24	U	6.20	1.24	0.620
4-Methyl-2-pentanone	108-10-1	6.20	U	12.4	6.20	3.10
Methylene chloride	75-09-2	2.48	U	6.20	2.48	1.24
Naphthalene	91-20-3	1.24	Q	6.20	1.24	0.620
n-Propylbenzene	103-65-1	1.24	U	6.20	1.24	0.620
Styrene	100-42-5	1.24	U	6.20	1.24	0.620
1,1,1,2-Tetrachloroethane	630-20-6	1.24	U	6.20	1.24	0.620
1,1,2,2-Tetrachloroethane	79-34-5	1.24	U	6.20	1.24	0.620
Tetrachloroethene	127-18-4	1.24	U	6.20	1.24	0.620
Toluene	108-88-3	1.24	U	6.20	1.24	0.620
1,2,3-Trichlorobenzene	87-61-6	1.24	U	6.20	1.24	0.620
1,2,4-Trichlorobenzene	120-82-1	1.24	U	6.20	1.24	0.620
1,1,1-Trichloroethane	71-55-6	1.24	U	6.20	1.24	0.620
1,1,2-Trichloroethane	79-00-5	1.24	U	6.20	1.24	0.620
Trichloroethene	79-01-6	2.94	J	6.20	1.24	0.620
Trichlorofluoromethane	75-69-4	2.48	U	6.20	2.48	1.24
1,2,3-Trichloropropane	96-18-4	2.48	U	6.20	2.48	1.24
1,2,4-Trimethylbenzene	95-63-6	1.24	U	6.20	1.24	0.620
1,3,5-Trimethylbenzene	108-67-8	1.24	U	6.20	1.24	0.620
Vinyl chloride	75-01-4	2.48	U	6.20	2.48	1.24
o-Xylene	95-47-6	1.24	U	6.20	1.24	0.620
m-,p-Xylene	179601-23-1	1.24	U	6.20	1.24	0.620

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.6	80	120	
1,2-Dichloroethane-d4	87.9	80	120	
Toluene-d8	102	85	115	
4-Bromofluorobenzene	102	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT16(33-33.5)150316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:20
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562075	**Analyst:**	TMB	**Run Date:**	03/23/2016 23:10
Collect Date:	03/15/2016 10:45	**Dilution:**	1	**File ID:**	6M137984
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	77.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.4	U	26.9	13.4	6.72
Benzene	71-43-2	1.34	U	6.72	1.34	0.672
Bromobenzene	108-86-1	1.34	U	6.72	1.34	0.672
Bromochloromethane	74-97-5	2.68	U	6.72	2.68	1.34
Bromodichloromethane	75-27-4	1.34	U	6.72	1.34	0.672
Bromoform	75-25-2	1.34	U	6.72	1.34	0.672
Bromomethane	74-83-9	2.68	U	6.72	2.68	1.34
2-Butanone	78-93-3	6.72	U	13.4	6.72	3.36
n-Butylbenzene	104-51-8	1.34	U	6.72	1.34	0.672
sec-Butylbenzene	135-98-8	1.34	U	6.72	1.34	0.672
tert-Butylbenzene	98-06-6	1.34	U	6.72	1.34	0.672
Carbon disulfide	75-15-0	1.34	U	6.72	1.34	0.672
Carbon tetrachloride	56-23-5	1.34	U	6.72	1.34	0.672
Chlorobenzene	108-90-7	1.34	U	6.72	1.34	0.672
Chlorodibromomethane	124-48-1	1.34	U	6.72	1.34	0.672
Chloroethane	75-00-3	2.68	U	6.72	2.68	1.34
Chloroform	67-66-3	1.34	U	6.72	1.34	0.672
Chloromethane	74-87-3	5.38	Q	13.4	5.38	2.69
2-Chlorotoluene	95-49-8	1.34	U	6.72	1.34	0.672
4-Chlorotoluene	106-43-4	1.34	U	6.72	1.34	0.672
1,2-Dibromo-3-chloropropane	96-12-8	5.38	U	13.4	5.38	2.69
1,2-Dibromoethane	106-93-4	1.34	U	6.72	1.34	0.672
Dibromomethane	74-95-3	1.34	U	6.72	1.34	0.672
1,2-Dichlorobenzene	95-50-1	1.34	U	6.72	1.34	0.672
1,3-Dichlorobenzene	541-73-1	1.34	U	6.72	1.34	0.672
1,4-Dichlorobenzene	106-46-7	1.34	U	6.72	1.34	0.672
Dichlorodifluoromethane	75-71-8	2.68	U	6.72	2.68	1.34
1,1-Dichloroethane	75-34-3	2.68	U	6.72	2.68	1.34
1,2-Dichloroethane	107-06-2	1.34	U	6.72	1.34	0.672
1,1-Dichloroethene	75-35-4	1.34	U	6.72	1.34	0.672
cis-1,2-Dichloroethene	156-59-2	1.34	U	6.72	1.34	0.672

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.34	U	6.72	1.34	0.672
1,2-Dichloropropane	78-87-5	1.34	U	6.72	1.34	0.672
1,3-Dichloropropane	142-28-9	1.34	U	6.72	1.34	0.672
2,2-Dichloropropane	594-20-7	1.34	U	6.72	1.34	0.672
cis-1,3-Dichloropropene	10061-01-5	1.34	U	6.72	1.34	0.672
trans-1,3-Dichloropropene	10061-02-6	1.34	U	6.72	1.34	0.672
1,1-Dichloropropene	563-58-6	1.34	U	6.72	1.34	0.672
Ethylbenzene	100-41-4	1.34	U	6.72	1.34	0.672
2-Hexanone	591-78-6	6.72	U	13.4	6.72	3.36
Hexachlorobutadiene	87-68-3	1.34	U	6.72	1.34	0.672
Isopropylbenzene	98-82-8	1.34	U	6.72	1.34	0.672
p-Isopropyltoluene	99-87-6	1.34	U	6.72	1.34	0.672
4-Methyl-2-pentanone	108-10-1	6.72	U	13.4	6.72	3.36
Methylene chloride	75-09-2	2.68	U	6.72	2.68	1.34
Naphthalene	91-20-3	1.34	Q	6.72	1.34	0.672
n-Propylbenzene	103-65-1	1.34	U	6.72	1.34	0.672
Styrene	100-42-5	1.34	U	6.72	1.34	0.672
1,1,1,2-Tetrachloroethane	630-20-6	1.34	U	6.72	1.34	0.672
1,1,2,2-Tetrachloroethane	79-34-5	1.34	U	6.72	1.34	0.672
Tetrachloroethene	127-18-4	1.34	U	6.72	1.34	0.672
Toluene	108-88-3	1.34	U	6.72	1.34	0.672
1,2,3-Trichlorobenzene	87-61-6	1.34	U	6.72	1.34	0.672
1,2,4-Trichlorobenzene	120-82-1	1.34	U	6.72	1.34	0.672
1,1,1-Trichloroethane	71-55-6	1.34	U	6.72	1.34	0.672
1,1,2-Trichloroethane	79-00-5	1.34	U	6.72	1.34	0.672
Trichloroethene	79-01-6	5.26	J	6.72	1.34	0.672
Trichlorofluoromethane	75-69-4	2.68	U	6.72	2.68	1.34
1,2,3-Trichloropropane	96-18-4	2.68	U	6.72	2.68	1.34
1,2,4-Trimethylbenzene	95-63-6	1.34	U	6.72	1.34	0.672
1,3,5-Trimethylbenzene	108-67-8	1.34	U	6.72	1.34	0.672
Vinyl chloride	75-01-4	2.68	U	6.72	2.68	1.34
o-Xylene	95-47-6	1.34	U	6.72	1.34	0.672
m-,p-Xylene	179601-23-1	1.34	U	6.72	1.34	0.672

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.8	80	120	
1,2-Dichloroethane-d4	94.6	80	120	
Toluene-d8	99.2	85	115	
4-Bromofluorobenzene	103	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT17(2.5-3)150316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:21
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562236	**Analyst:**	TMB	**Run Date:**	03/24/2016 17:52
Collect Date:	03/15/2016 11:50	**Dilution:**	1	**File ID:**	6M138000
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.0	U	22.0	11.0	5.49
Benzene	71-43-2	1.10	U	5.49	1.10	0.549
Bromobenzene	108-86-1	1.10	U	5.49	1.10	0.549
Bromochloromethane	74-97-5	2.20	U	5.49	2.20	1.10
Bromodichloromethane	75-27-4	1.10	U	5.49	1.10	0.549
Bromoform	75-25-2	1.10	U	5.49	1.10	0.549
Bromomethane	74-83-9	2.20	U	5.49	2.20	1.10
2-Butanone	78-93-3	5.50	U	11.0	5.50	2.75
n-Butylbenzene	104-51-8	1.10	U	5.49	1.10	0.549
sec-Butylbenzene	135-98-8	1.10	U	5.49	1.10	0.549
tert-Butylbenzene	98-06-6	1.10	U	5.49	1.10	0.549
Carbon disulfide	75-15-0	1.10	U	5.49	1.10	0.549
Carbon tetrachloride	56-23-5	1.10	U	5.49	1.10	0.549
Chlorobenzene	108-90-7	1.10	U	5.49	1.10	0.549
Chlorodibromomethane	124-48-1	1.10	U	5.49	1.10	0.549
Chloroethane	75-00-3	2.20	U	5.49	2.20	1.10
Chloroform	67-66-3	1.10	U	5.49	1.10	0.549
Chloromethane	74-87-3	4.40	Q	11.0	4.40	2.20
2-Chlorotoluene	95-49-8	1.10	U	5.49	1.10	0.549
4-Chlorotoluene	106-43-4	1.10	U	5.49	1.10	0.549
1,2-Dibromo-3-chloropropane	96-12-8	4.40	U	11.0	4.40	2.20
1,2-Dibromoethane	106-93-4	1.10	U	5.49	1.10	0.549
Dibromomethane	74-95-3	1.10	U	5.49	1.10	0.549
1,2-Dichlorobenzene	95-50-1	1.10	U	5.49	1.10	0.549
1,3-Dichlorobenzene	541-73-1	1.10	U	5.49	1.10	0.549
1,4-Dichlorobenzene	106-46-7	1.10	U	5.49	1.10	0.549
Dichlorodifluoromethane	75-71-8	2.20	U	5.49	2.20	1.10
1,1-Dichloroethane	75-34-3	2.20	U	5.49	2.20	1.10
1,2-Dichloroethane	107-06-2	1.10	U	5.49	1.10	0.549
1,1-Dichloroethene	75-35-4	1.10	U	5.49	1.10	0.549
cis-1,2-Dichloroethene	156-59-2	1.10	U	5.49	1.10	0.549

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.10	U	5.49	1.10	0.549
1,2-Dichloropropane	78-87-5	1.10	U	5.49	1.10	0.549
1,3-Dichloropropane	142-28-9	1.10	U	5.49	1.10	0.549
2,2-Dichloropropane	594-20-7	1.10	U	5.49	1.10	0.549
cis-1,3-Dichloropropene	10061-01-5	1.10	U	5.49	1.10	0.549
trans-1,3-Dichloropropene	10061-02-6	1.10	U	5.49	1.10	0.549
1,1-Dichloropropene	563-58-6	1.10	U	5.49	1.10	0.549
Ethylbenzene	100-41-4	1.10	U	5.49	1.10	0.549
2-Hexanone	591-78-6	5.50	U	11.0	5.50	2.75
Hexachlorobutadiene	87-68-3	1.10	U	5.49	1.10	0.549
Isopropylbenzene	98-82-8	1.10	U	5.49	1.10	0.549
p-Isopropyltoluene	99-87-6	1.10	U	5.49	1.10	0.549
4-Methyl-2-pentanone	108-10-1	5.50	U	11.0	5.50	2.75
Methylene chloride	75-09-2	2.20	U	5.49	2.20	1.10
Naphthalene	91-20-3	1.10	U	5.49	1.10	0.549
n-Propylbenzene	103-65-1	1.10	U	5.49	1.10	0.549
Styrene	100-42-5	1.10	U	5.49	1.10	0.549
1,1,1,2-Tetrachloroethane	630-20-6	1.10	U	5.49	1.10	0.549
1,1,2,2-Tetrachloroethane	79-34-5	1.10	U	5.49	1.10	0.549
Tetrachloroethene	127-18-4	1.10	U	5.49	1.10	0.549
Toluene	108-88-3	1.10	U	5.49	1.10	0.549
1,2,3-Trichlorobenzene	87-61-6	1.10	U	5.49	1.10	0.549
1,2,4-Trichlorobenzene	120-82-1	1.10	U	5.49	1.10	0.549
1,1,1-Trichloroethane	71-55-6	1.10	U	5.49	1.10	0.549
1,1,2-Trichloroethane	79-00-5	1.10	U	5.49	1.10	0.549
Trichloroethene	79-01-6	1.10	U	5.49	1.10	0.549
Trichlorofluoromethane	75-69-4	2.20	U	5.49	2.20	1.10
1,2,3-Trichloropropane	96-18-4	2.20	U	5.49	2.20	1.10
1,2,4-Trimethylbenzene	95-63-6	1.10	U	5.49	1.10	0.549
1,3,5-Trimethylbenzene	108-67-8	1.10	U	5.49	1.10	0.549
Vinyl chloride	75-01-4	2.20	U	5.49	2.20	1.10
o-Xylene	95-47-6	1.10	U	5.49	1.10	0.549
m-,p-Xylene	179601-23-1	1.10	U	5.49	1.10	0.549

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.5	80	120	
1,2-Dichloroethane-d4	85.7	80	120	
Toluene-d8	103	85	115	
4-Bromofluorobenzene	108	85	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT17(2.5-3)150316FD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:22
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562236	**Analyst:**	TMB	**Run Date:**	03/24/2016 18:26
Collect Date:	03/15/2016 11:50	**Dilution:**	1	**File ID:**	6M138001
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.7	U	23.3	11.7	5.83
Benzene	71-43-2	1.17	U	5.83	1.17	0.583
Bromobenzene	108-86-1	1.17	U	5.83	1.17	0.583
Bromochloromethane	74-97-5	2.34	U	5.83	2.34	1.17
Bromodichloromethane	75-27-4	1.17	U	5.83	1.17	0.583
Bromoform	75-25-2	1.17	U	5.83	1.17	0.583
Bromomethane	74-83-9	2.34	U	5.83	2.34	1.17
2-Butanone	78-93-3	5.82	U	11.7	5.82	2.91
n-Butylbenzene	104-51-8	1.17	U	5.83	1.17	0.583
sec-Butylbenzene	135-98-8	1.17	U	5.83	1.17	0.583
tert-Butylbenzene	98-06-6	1.17	U	5.83	1.17	0.583
Carbon disulfide	75-15-0	1.17	U	5.83	1.17	0.583
Carbon tetrachloride	56-23-5	1.17	U	5.83	1.17	0.583
Chlorobenzene	108-90-7	1.17	U	5.83	1.17	0.583
Chlorodibromomethane	124-48-1	1.17	U	5.83	1.17	0.583
Chloroethane	75-00-3	2.34	U	5.83	2.34	1.17
Chloroform	67-66-3	1.17	U	5.83	1.17	0.583
Chloromethane	74-87-3	4.66	Q	11.7	4.66	2.33
2-Chlorotoluene	95-49-8	1.17	U	5.83	1.17	0.583
4-Chlorotoluene	106-43-4	1.17	U	5.83	1.17	0.583
1,2-Dibromo-3-chloropropane	96-12-8	4.66	U	11.7	4.66	2.33
1,2-Dibromoethane	106-93-4	1.17	U	5.83	1.17	0.583
Dibromomethane	74-95-3	1.17	U	5.83	1.17	0.583
1,2-Dichlorobenzene	95-50-1	1.17	U	5.83	1.17	0.583
1,3-Dichlorobenzene	541-73-1	1.17	U	5.83	1.17	0.583
1,4-Dichlorobenzene	106-46-7	1.17	U	5.83	1.17	0.583
Dichlorodifluoromethane	75-71-8	2.34	U	5.83	2.34	1.17
1,1-Dichloroethane	75-34-3	2.34	U	5.83	2.34	1.17
1,2-Dichloroethane	107-06-2	1.17	U	5.83	1.17	0.583
1,1-Dichloroethene	75-35-4	1.17	U	5.83	1.17	0.583
cis-1,2-Dichloroethene	156-59-2	1.17	U	5.83	1.17	0.583

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.17	U	5.83	1.17	0.583
1,2-Dichloropropane	78-87-5	1.17	U	5.83	1.17	0.583
1,3-Dichloropropane	142-28-9	1.17	U	5.83	1.17	0.583
2,2-Dichloropropane	594-20-7	1.17	U	5.83	1.17	0.583
cis-1,3-Dichloropropene	10061-01-5	1.17	U	5.83	1.17	0.583
trans-1,3-Dichloropropene	10061-02-6	1.17	U	5.83	1.17	0.583
1,1-Dichloropropene	563-58-6	1.17	U	5.83	1.17	0.583
Ethylbenzene	100-41-4	1.17	U	5.83	1.17	0.583
2-Hexanone	591-78-6	5.82	U	11.7	5.82	2.91
Hexachlorobutadiene	87-68-3	1.17	U	5.83	1.17	0.583
Isopropylbenzene	98-82-8	1.17	U	5.83	1.17	0.583
p-Isopropyltoluene	99-87-6	1.17	U	5.83	1.17	0.583
4-Methyl-2-pentanone	108-10-1	5.82	U	11.7	5.82	2.91
Methylene chloride	75-09-2	2.34	U	5.83	2.34	1.17
Naphthalene	91-20-3	1.17	U	5.83	1.17	0.583
n-Propylbenzene	103-65-1	1.17	U	5.83	1.17	0.583
Styrene	100-42-5	1.17	U	5.83	1.17	0.583
1,1,1,2-Tetrachloroethane	630-20-6	1.17	U	5.83	1.17	0.583
1,1,2,2-Tetrachloroethane	79-34-5	1.17	U	5.83	1.17	0.583
Tetrachloroethene	127-18-4	1.17	U	5.83	1.17	0.583
Toluene	108-88-3	1.17	U	5.83	1.17	0.583
1,2,3-Trichlorobenzene	87-61-6	1.17	U	5.83	1.17	0.583
1,2,4-Trichlorobenzene	120-82-1	1.17	U	5.83	1.17	0.583
1,1,1-Trichloroethane	71-55-6	1.17	U	5.83	1.17	0.583
1,1,2-Trichloroethane	79-00-5	1.17	U	5.83	1.17	0.583
Trichloroethene	79-01-6	1.17	U	5.83	1.17	0.583
Trichlorofluoromethane	75-69-4	2.34	U	5.83	2.34	1.17
1,2,3-Trichloropropane	96-18-4	2.34	U	5.83	2.34	1.17
1,2,4-Trimethylbenzene	95-63-6	1.17	U	5.83	1.17	0.583
1,3,5-Trimethylbenzene	108-67-8	1.17	U	5.83	1.17	0.583
Vinyl chloride	75-01-4	2.34	U	5.83	2.34	1.17
o-Xylene	95-47-6	1.17	U	5.83	1.17	0.583
m-,p-Xylene	179601-23-1	1.17	U	5.83	1.17	0.583

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.5	80	120	
1,2-Dichloroethane-d4	85.3	80	120	
Toluene-d8	102	85	115	
4-Bromofluorobenzene	105	85	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT17(5-5.5)150316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:23
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562236	**Analyst:**	TMB	**Run Date:**	03/24/2016 18:59
Collect Date:	03/15/2016 11:55	**Dilution:**	1	**File ID:**	6M138002
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	78.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.1	U	26.3	13.1	6.57
Benzene	71-43-2	1.31	U	6.57	1.31	0.657
Bromobenzene	108-86-1	1.31	U	6.57	1.31	0.657
Bromochloromethane	74-97-5	2.62	U	6.57	2.62	1.31
Bromodichloromethane	75-27-4	1.31	U	6.57	1.31	0.657
Bromoform	75-25-2	1.31	U	6.57	1.31	0.657
Bromomethane	74-83-9	2.62	U	6.57	2.62	1.31
2-Butanone	78-93-3	6.56	U	13.1	6.56	3.28
n-Butylbenzene	104-51-8	1.31	U	6.57	1.31	0.657
sec-Butylbenzene	135-98-8	1.31	U	6.57	1.31	0.657
tert-Butylbenzene	98-06-6	1.31	U	6.57	1.31	0.657
Carbon disulfide	75-15-0	1.31	U	6.57	1.31	0.657
Carbon tetrachloride	56-23-5	1.31	U	6.57	1.31	0.657
Chlorobenzene	108-90-7	1.31	U	6.57	1.31	0.657
Chlorodibromomethane	124-48-1	1.31	U	6.57	1.31	0.657
Chloroethane	75-00-3	2.62	U	6.57	2.62	1.31
Chloroform	67-66-3	1.31	U	6.57	1.31	0.657
Chloromethane	74-87-3	5.26	Q	13.1	5.26	2.63
2-Chlorotoluene	95-49-8	1.31	U	6.57	1.31	0.657
4-Chlorotoluene	106-43-4	1.31	U	6.57	1.31	0.657
1,2-Dibromo-3-chloropropane	96-12-8	5.26	U	13.1	5.26	2.63
1,2-Dibromoethane	106-93-4	1.31	U	6.57	1.31	0.657
Dibromomethane	74-95-3	1.31	U	6.57	1.31	0.657
1,2-Dichlorobenzene	95-50-1	1.31	U	6.57	1.31	0.657
1,3-Dichlorobenzene	541-73-1	1.31	U	6.57	1.31	0.657
1,4-Dichlorobenzene	106-46-7	1.31	U	6.57	1.31	0.657
Dichlorodifluoromethane	75-71-8	2.62	U	6.57	2.62	1.31
1,1-Dichloroethane	75-34-3	2.62	U	6.57	2.62	1.31
1,2-Dichloroethane	107-06-2	1.31	U	6.57	1.31	0.657
1,1-Dichloroethene	75-35-4	1.31	U	6.57	1.31	0.657
cis-1,2-Dichloroethene	156-59-2	1.31	U	6.57	1.31	0.657

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.31	U	6.57	1.31	0.657
1,2-Dichloropropane	78-87-5	1.31	U	6.57	1.31	0.657
1,3-Dichloropropane	142-28-9	1.31	U	6.57	1.31	0.657
2,2-Dichloropropane	594-20-7	1.31	U	6.57	1.31	0.657
cis-1,3-Dichloropropene	10061-01-5	1.31	U	6.57	1.31	0.657
trans-1,3-Dichloropropene	10061-02-6	1.31	U	6.57	1.31	0.657
1,1-Dichloropropene	563-58-6	1.31	U	6.57	1.31	0.657
Ethylbenzene	100-41-4	1.31	U	6.57	1.31	0.657
2-Hexanone	591-78-6	6.56	U	13.1	6.56	3.28
Hexachlorobutadiene	87-68-3	1.31	U	6.57	1.31	0.657
Isopropylbenzene	98-82-8	1.31	U	6.57	1.31	0.657
p-Isopropyltoluene	99-87-6	1.31	U	6.57	1.31	0.657
4-Methyl-2-pentanone	108-10-1	6.56	U	13.1	6.56	3.28
Methylene chloride	75-09-2	2.62	U	6.57	2.62	1.31
Naphthalene	91-20-3	1.31	U	6.57	1.31	0.657
n-Propylbenzene	103-65-1	1.31	U	6.57	1.31	0.657
Styrene	100-42-5	1.31	U	6.57	1.31	0.657
1,1,1,2-Tetrachloroethane	630-20-6	1.31	U	6.57	1.31	0.657
1,1,2,2-Tetrachloroethane	79-34-5	1.31	U	6.57	1.31	0.657
Tetrachloroethene	127-18-4	1.31	U	6.57	1.31	0.657
Toluene	108-88-3	1.31	U	6.57	1.31	0.657
1,2,3-Trichlorobenzene	87-61-6	1.31	U	6.57	1.31	0.657
1,2,4-Trichlorobenzene	120-82-1	1.31	U	6.57	1.31	0.657
1,1,1-Trichloroethane	71-55-6	1.31	U	6.57	1.31	0.657
1,1,2-Trichloroethane	79-00-5	1.31	U	6.57	1.31	0.657
Trichloroethene	79-01-6	1.31	U	6.57	1.31	0.657
Trichlorofluoromethane	75-69-4	2.62	U	6.57	2.62	1.31
1,2,3-Trichloropropane	96-18-4	2.62	U	6.57	2.62	1.31
1,2,4-Trimethylbenzene	95-63-6	1.31	U	6.57	1.31	0.657
1,3,5-Trimethylbenzene	108-67-8	1.31	U	6.57	1.31	0.657
Vinyl chloride	75-01-4	2.62	U	6.57	2.62	1.31
o-Xylene	95-47-6	1.31	U	6.57	1.31	0.657
m-,p-Xylene	179601-23-1	1.31	U	6.57	1.31	0.657

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.5	80	120	
1,2-Dichloroethane-d4	87.6	80	120	
Toluene-d8	101	85	115	
4-Bromofluorobenzene	104	85	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT17(10-10.5)150316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:23
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562236	**Analyst:**	TMB	**Run Date:**	03/24/2016 19:33
Collect Date:	03/15/2016 12:00	**Dilution:**	1	**File ID:**	6M138003
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.8	J	24.7	12.4	6.18
Benzene	71-43-2	1.24	U	6.18	1.24	0.618
Bromobenzene	108-86-1	1.24	U	6.18	1.24	0.618
Bromochloromethane	74-97-5	2.48	U	6.18	2.48	1.24
Bromodichloromethane	75-27-4	1.24	U	6.18	1.24	0.618
Bromoform	75-25-2	1.24	U	6.18	1.24	0.618
Bromomethane	74-83-9	2.48	U	6.18	2.48	1.24
2-Butanone	78-93-3	6.18	U	12.4	6.18	3.09
n-Butylbenzene	104-51-8	1.24	U	6.18	1.24	0.618
sec-Butylbenzene	135-98-8	1.24	U	6.18	1.24	0.618
tert-Butylbenzene	98-06-6	1.24	U	6.18	1.24	0.618
Carbon disulfide	75-15-0	1.24	U	6.18	1.24	0.618
Carbon tetrachloride	56-23-5	1.24	U	6.18	1.24	0.618
Chlorobenzene	108-90-7	1.24	U	6.18	1.24	0.618
Chlorodibromomethane	124-48-1	1.24	U	6.18	1.24	0.618
Chloroethane	75-00-3	2.48	U	6.18	2.48	1.24
Chloroform	67-66-3	1.24	U	6.18	1.24	0.618
Chloromethane	74-87-3	4.94	Q	12.4	4.94	2.47
2-Chlorotoluene	95-49-8	1.24	U	6.18	1.24	0.618
4-Chlorotoluene	106-43-4	1.24	U	6.18	1.24	0.618
1,2-Dibromo-3-chloropropane	96-12-8	4.94	U	12.4	4.94	2.47
1,2-Dibromoethane	106-93-4	1.24	U	6.18	1.24	0.618
Dibromomethane	74-95-3	1.24	U	6.18	1.24	0.618
1,2-Dichlorobenzene	95-50-1	1.24	U	6.18	1.24	0.618
1,3-Dichlorobenzene	541-73-1	1.24	U	6.18	1.24	0.618
1,4-Dichlorobenzene	106-46-7	1.24	U	6.18	1.24	0.618
Dichlorodifluoromethane	75-71-8	2.48	U	6.18	2.48	1.24
1,1-Dichloroethane	75-34-3	2.48	U	6.18	2.48	1.24
1,2-Dichloroethane	107-06-2	1.24	U	6.18	1.24	0.618
1,1-Dichloroethene	75-35-4	1.24	U	6.18	1.24	0.618
cis-1,2-Dichloroethene	156-59-2	1.24	U	6.18	1.24	0.618

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.24	U	6.18	1.24	0.618
1,2-Dichloropropane	78-87-5	1.24	U	6.18	1.24	0.618
1,3-Dichloropropane	142-28-9	1.24	U	6.18	1.24	0.618
2,2-Dichloropropane	594-20-7	1.24	U	6.18	1.24	0.618
cis-1,3-Dichloropropene	10061-01-5	1.24	U	6.18	1.24	0.618
trans-1,3-Dichloropropene	10061-02-6	1.24	U	6.18	1.24	0.618
1,1-Dichloropropene	563-58-6	1.24	U	6.18	1.24	0.618
Ethylbenzene	100-41-4	1.24	U	6.18	1.24	0.618
2-Hexanone	591-78-6	6.18	U	12.4	6.18	3.09
Hexachlorobutadiene	87-68-3	1.24	U	6.18	1.24	0.618
Isopropylbenzene	98-82-8	1.24	U	6.18	1.24	0.618
p-Isopropyltoluene	99-87-6	1.24	U	6.18	1.24	0.618
4-Methyl-2-pentanone	108-10-1	6.18	U	12.4	6.18	3.09
Methylene chloride	75-09-2	2.48	U	6.18	2.48	1.24
Naphthalene	91-20-3	1.24	U	6.18	1.24	0.618
n-Propylbenzene	103-65-1	1.24	U	6.18	1.24	0.618
Styrene	100-42-5	1.24	U	6.18	1.24	0.618
1,1,1,2-Tetrachloroethane	630-20-6	1.24	U	6.18	1.24	0.618
1,1,2,2-Tetrachloroethane	79-34-5	1.24	U	6.18	1.24	0.618
Tetrachloroethene	127-18-4	1.24	U	6.18	1.24	0.618
Toluene	108-88-3	1.24	U	6.18	1.24	0.618
1,2,3-Trichlorobenzene	87-61-6	1.24	U	6.18	1.24	0.618
1,2,4-Trichlorobenzene	120-82-1	1.24	U	6.18	1.24	0.618
1,1,1-Trichloroethane	71-55-6	1.24	U	6.18	1.24	0.618
1,1,2-Trichloroethane	79-00-5	1.24	U	6.18	1.24	0.618
Trichloroethene	79-01-6	1.24	U	6.18	1.24	0.618
Trichlorofluoromethane	75-69-4	2.48	U	6.18	2.48	1.24
1,2,3-Trichloropropane	96-18-4	2.48	U	6.18	2.48	1.24
1,2,4-Trimethylbenzene	95-63-6	1.24	U	6.18	1.24	0.618
1,3,5-Trimethylbenzene	108-67-8	1.24	U	6.18	1.24	0.618
Vinyl chloride	75-01-4	2.48	U	6.18	2.48	1.24
o-Xylene	95-47-6	1.24	U	6.18	1.24	0.618
m-,p-Xylene	179601-23-1	1.24	U	6.18	1.24	0.618

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.0	80	120	
1,2-Dichloroethane-d4	92.4	80	120	
Toluene-d8	99.1	85	115	
4-Bromofluorobenzene	104	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT17(18-18.5)150316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:25
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562236	**Analyst:**	TMB	**Run Date:**	03/24/2016 21:12
Collect Date:	03/15/2016 12:30	**Dilution:**	1	**File ID:**	6M138006
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.4	J	23.9	11.9	5.97
Benzene	71-43-2	1.19	U	5.97	1.19	0.597
Bromobenzene	108-86-1	1.19	U	5.97	1.19	0.597
Bromochloromethane	74-97-5	2.38	U	5.97	2.38	1.19
Bromodichloromethane	75-27-4	1.19	U	5.97	1.19	0.597
Bromoform	75-25-2	1.19	U	5.97	1.19	0.597
Bromomethane	74-83-9	2.38	U	5.97	2.38	1.19
2-Butanone	78-93-3	5.96	U	11.9	5.96	2.98
n-Butylbenzene	104-51-8	1.19	U	5.97	1.19	0.597
sec-Butylbenzene	135-98-8	1.19	U	5.97	1.19	0.597
tert-Butylbenzene	98-06-6	1.19	U	5.97	1.19	0.597
Carbon disulfide	75-15-0	1.19	U	5.97	1.19	0.597
Carbon tetrachloride	56-23-5	1.19	U	5.97	1.19	0.597
Chlorobenzene	108-90-7	1.19	U	5.97	1.19	0.597
Chlorodibromomethane	124-48-1	1.19	U	5.97	1.19	0.597
Chloroethane	75-00-3	2.38	U	5.97	2.38	1.19
Chloroform	67-66-3	1.19	U	5.97	1.19	0.597
Chloromethane	74-87-3	4.78	Q	11.9	4.78	2.39
2-Chlorotoluene	95-49-8	1.19	U	5.97	1.19	0.597
4-Chlorotoluene	106-43-4	1.19	U	5.97	1.19	0.597
1,2-Dibromo-3-chloropropane	96-12-8	4.78	U	11.9	4.78	2.39
1,2-Dibromoethane	106-93-4	1.19	U	5.97	1.19	0.597
Dibromomethane	74-95-3	1.19	U	5.97	1.19	0.597
1,2-Dichlorobenzene	95-50-1	1.19	U	5.97	1.19	0.597
1,3-Dichlorobenzene	541-73-1	1.19	U	5.97	1.19	0.597
1,4-Dichlorobenzene	106-46-7	1.19	U	5.97	1.19	0.597
Dichlorodifluoromethane	75-71-8	2.38	U	5.97	2.38	1.19
1,1-Dichloroethane	75-34-3	2.38	U	5.97	2.38	1.19
1,2-Dichloroethane	107-06-2	1.19	U	5.97	1.19	0.597
1,1-Dichloroethene	75-35-4	1.19	U	5.97	1.19	0.597
cis-1,2-Dichloroethene	156-59-2	1.19	U	5.97	1.19	0.597

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.19	U	5.97	1.19	0.597
1,2-Dichloropropane	78-87-5	1.19	U	5.97	1.19	0.597
1,3-Dichloropropane	142-28-9	1.19	U	5.97	1.19	0.597
2,2-Dichloropropane	594-20-7	1.19	U	5.97	1.19	0.597
cis-1,3-Dichloropropene	10061-01-5	1.19	U	5.97	1.19	0.597
trans-1,3-Dichloropropene	10061-02-6	1.19	U	5.97	1.19	0.597
1,1-Dichloropropene	563-58-6	1.19	U	5.97	1.19	0.597
Ethylbenzene	100-41-4	1.19	U	5.97	1.19	0.597
2-Hexanone	591-78-6	5.96	U	11.9	5.96	2.98
Hexachlorobutadiene	87-68-3	1.19	U	5.97	1.19	0.597
Isopropylbenzene	98-82-8	1.19	U	5.97	1.19	0.597
p-Isopropyltoluene	99-87-6	1.19	U	5.97	1.19	0.597
4-Methyl-2-pentanone	108-10-1	5.96	U	11.9	5.96	2.98
Methylene chloride	75-09-2	2.38	U	5.97	2.38	1.19
Naphthalene	91-20-3	1.19	U	5.97	1.19	0.597
n-Propylbenzene	103-65-1	1.19	U	5.97	1.19	0.597
Styrene	100-42-5	1.19	U	5.97	1.19	0.597
1,1,1,2-Tetrachloroethane	630-20-6	1.19	U	5.97	1.19	0.597
1,1,2,2-Tetrachloroethane	79-34-5	1.19	U	5.97	1.19	0.597
Tetrachloroethene	127-18-4	1.19	U	5.97	1.19	0.597
Toluene	108-88-3	1.19	U	5.97	1.19	0.597
1,2,3-Trichlorobenzene	87-61-6	1.19	U	5.97	1.19	0.597
1,2,4-Trichlorobenzene	120-82-1	1.19	U	5.97	1.19	0.597
1,1,1-Trichloroethane	71-55-6	1.19	U	5.97	1.19	0.597
1,1,2-Trichloroethane	79-00-5	1.19	U	5.97	1.19	0.597
Trichloroethene	79-01-6	0.855	J	5.97	1.19	0.597
Trichlorofluoromethane	75-69-4	2.38	U	5.97	2.38	1.19
1,2,3-Trichloropropane	96-18-4	2.38	U	5.97	2.38	1.19
1,2,4-Trimethylbenzene	95-63-6	1.19	U	5.97	1.19	0.597
1,3,5-Trimethylbenzene	108-67-8	1.19	U	5.97	1.19	0.597
Vinyl chloride	75-01-4	2.38	U	5.97	2.38	1.19
o-Xylene	95-47-6	1.19	U	5.97	1.19	0.597
m-,p-Xylene	179601-23-1	1.19	U	5.97	1.19	0.597

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.9	80	120	
1,2-Dichloroethane-d4	90.0	80	120	
Toluene-d8	101	85	115	
4-Bromofluorobenzene	104	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-13	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT17(27-27.5)150316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:25
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562236	**Analyst:**	TMB	**Run Date:**	03/24/2016 20:06
Collect Date:	03/15/2016 12:45	**Dilution:**	1	**File ID:**	6M138004
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	78.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	6.75	J	24.9	12.4	6.22
Benzene	71-43-2	1.24	U	6.22	1.24	0.622
Bromobenzene	108-86-1	1.24	U	6.22	1.24	0.622
Bromochloromethane	74-97-5	2.48	U	6.22	2.48	1.24
Bromodichloromethane	75-27-4	1.24	U	6.22	1.24	0.622
Bromoform	75-25-2	1.24	U	6.22	1.24	0.622
Bromomethane	74-83-9	2.48	U	6.22	2.48	1.24
2-Butanone	78-93-3	6.22	U	12.4	6.22	3.11
n-Butylbenzene	104-51-8	1.24	U	6.22	1.24	0.622
sec-Butylbenzene	135-98-8	1.24	U	6.22	1.24	0.622
tert-Butylbenzene	98-06-6	1.24	U	6.22	1.24	0.622
Carbon disulfide	75-15-0	1.24	U	6.22	1.24	0.622
Carbon tetrachloride	56-23-5	1.24	U	6.22	1.24	0.622
Chlorobenzene	108-90-7	1.24	U	6.22	1.24	0.622
Chlorodibromomethane	124-48-1	1.24	U	6.22	1.24	0.622
Chloroethane	75-00-3	2.48	U	6.22	2.48	1.24
Chloroform	67-66-3	1.24	U	6.22	1.24	0.622
Chloromethane	74-87-3	4.98	Q	12.4	4.98	2.49
2-Chlorotoluene	95-49-8	1.24	U	6.22	1.24	0.622
4-Chlorotoluene	106-43-4	1.24	U	6.22	1.24	0.622
1,2-Dibromo-3-chloropropane	96-12-8	4.98	U	12.4	4.98	2.49
1,2-Dibromoethane	106-93-4	1.24	U	6.22	1.24	0.622
Dibromomethane	74-95-3	1.24	U	6.22	1.24	0.622
1,2-Dichlorobenzene	95-50-1	1.24	U	6.22	1.24	0.622
1,3-Dichlorobenzene	541-73-1	1.24	U	6.22	1.24	0.622
1,4-Dichlorobenzene	106-46-7	1.24	U	6.22	1.24	0.622
Dichlorodifluoromethane	75-71-8	2.48	U	6.22	2.48	1.24
1,1-Dichloroethane	75-34-3	2.48	U	6.22	2.48	1.24
1,2-Dichloroethane	107-06-2	1.24	U	6.22	1.24	0.622
1,1-Dichloroethene	75-35-4	1.24	U	6.22	1.24	0.622
cis-1,2-Dichloroethene	156-59-2	1.24	U	6.22	1.24	0.622

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.24	U	6.22	1.24	0.622
1,2-Dichloropropane	78-87-5	1.24	U	6.22	1.24	0.622
1,3-Dichloropropane	142-28-9	1.24	U	6.22	1.24	0.622
2,2-Dichloropropane	594-20-7	1.24	U	6.22	1.24	0.622
cis-1,3-Dichloropropene	10061-01-5	1.24	U	6.22	1.24	0.622
trans-1,3-Dichloropropene	10061-02-6	1.24	U	6.22	1.24	0.622
1,1-Dichloropropene	563-58-6	1.24	U	6.22	1.24	0.622
Ethylbenzene	100-41-4	1.24	U	6.22	1.24	0.622
2-Hexanone	591-78-6	6.22	U	12.4	6.22	3.11
Hexachlorobutadiene	87-68-3	1.24	U	6.22	1.24	0.622
Isopropylbenzene	98-82-8	1.24	U	6.22	1.24	0.622
p-Isopropyltoluene	99-87-6	1.24	U	6.22	1.24	0.622
4-Methyl-2-pentanone	108-10-1	6.22	U	12.4	6.22	3.11
Methylene chloride	75-09-2	2.48	U	6.22	2.48	1.24
Naphthalene	91-20-3	1.24	U	6.22	1.24	0.622
n-Propylbenzene	103-65-1	1.24	U	6.22	1.24	0.622
Styrene	100-42-5	1.24	U	6.22	1.24	0.622
1,1,1,2-Tetrachloroethane	630-20-6	1.24	U	6.22	1.24	0.622
1,1,2,2-Tetrachloroethane	79-34-5	1.24	U	6.22	1.24	0.622
Tetrachloroethene	127-18-4	1.24	U	6.22	1.24	0.622
Toluene	108-88-3	1.24	U	6.22	1.24	0.622
1,2,3-Trichlorobenzene	87-61-6	1.24	U	6.22	1.24	0.622
1,2,4-Trichlorobenzene	120-82-1	1.24	U	6.22	1.24	0.622
1,1,1-Trichloroethane	71-55-6	1.24	U	6.22	1.24	0.622
1,1,2-Trichloroethane	79-00-5	1.24	U	6.22	1.24	0.622
Trichloroethene	79-01-6	8.36		6.22	1.24	0.622
Trichlorofluoromethane	75-69-4	2.48	U	6.22	2.48	1.24
1,2,3-Trichloropropane	96-18-4	2.48	U	6.22	2.48	1.24
1,2,4-Trimethylbenzene	95-63-6	1.24	U	6.22	1.24	0.622
1,3,5-Trimethylbenzene	108-67-8	1.24	U	6.22	1.24	0.622
Vinyl chloride	75-01-4	2.48	U	6.22	2.48	1.24
o-Xylene	95-47-6	1.24	U	6.22	1.24	0.622
m-,p-Xylene	179601-23-1	1.24	U	6.22	1.24	0.622

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	92.2	80	120	
1,2-Dichloroethane-d4	83.7	80	120	
Toluene-d8	101	85	115	
4-Bromofluorobenzene	103	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-14	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18DPT17(21.5-22)150316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	03/21/2016 08:26
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG562236	**Analyst:**	TMB	**Run Date:**	03/24/2016 20:39
Collect Date:	03/15/2016 13:00	**Dilution:**	1	**File ID:**	6M138005
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.5	U	22.9	11.5	5.73
Benzene	71-43-2	1.15	U	5.73	1.15	0.573
Bromobenzene	108-86-1	1.15	U	5.73	1.15	0.573
Bromochloromethane	74-97-5	2.30	U	5.73	2.30	1.15
Bromodichloromethane	75-27-4	1.15	U	5.73	1.15	0.573
Bromoform	75-25-2	1.15	U	5.73	1.15	0.573
Bromomethane	74-83-9	2.30	U	5.73	2.30	1.15
2-Butanone	78-93-3	5.72	U	11.5	5.72	2.86
n-Butylbenzene	104-51-8	1.15	U	5.73	1.15	0.573
sec-Butylbenzene	135-98-8	1.15	U	5.73	1.15	0.573
tert-Butylbenzene	98-06-6	1.15	U	5.73	1.15	0.573
Carbon disulfide	75-15-0	1.15	U	5.73	1.15	0.573
Carbon tetrachloride	56-23-5	1.15	U	5.73	1.15	0.573
Chlorobenzene	108-90-7	1.15	U	5.73	1.15	0.573
Chlorodibromomethane	124-48-1	1.15	U	5.73	1.15	0.573
Chloroethane	75-00-3	2.30	U	5.73	2.30	1.15
Chloroform	67-66-3	1.15	U	5.73	1.15	0.573
Chloromethane	74-87-3	4.58	Q	11.5	4.58	2.29
2-Chlorotoluene	95-49-8	1.15	U	5.73	1.15	0.573
4-Chlorotoluene	106-43-4	1.15	U	5.73	1.15	0.573
1,2-Dibromo-3-chloropropane	96-12-8	4.58	U	11.5	4.58	2.29
1,2-Dibromoethane	106-93-4	1.15	U	5.73	1.15	0.573
Dibromomethane	74-95-3	1.15	U	5.73	1.15	0.573
1,2-Dichlorobenzene	95-50-1	1.15	U	5.73	1.15	0.573
1,3-Dichlorobenzene	541-73-1	1.15	U	5.73	1.15	0.573
1,4-Dichlorobenzene	106-46-7	1.15	U	5.73	1.15	0.573
Dichlorodifluoromethane	75-71-8	2.30	U	5.73	2.30	1.15
1,1-Dichloroethane	75-34-3	2.30	U	5.73	2.30	1.15
1,2-Dichloroethane	107-06-2	1.15	U	5.73	1.15	0.573
1,1-Dichloroethene	75-35-4	1.15	U	5.73	1.15	0.573
cis-1,2-Dichloroethene	156-59-2	1.15	U	5.73	1.15	0.573

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.15	U	5.73	1.15	0.573
1,2-Dichloropropane	78-87-5	1.15	U	5.73	1.15	0.573
1,3-Dichloropropane	142-28-9	1.15	U	5.73	1.15	0.573
2,2-Dichloropropane	594-20-7	1.15	U	5.73	1.15	0.573
cis-1,3-Dichloropropene	10061-01-5	1.15	U	5.73	1.15	0.573
trans-1,3-Dichloropropene	10061-02-6	1.15	U	5.73	1.15	0.573
1,1-Dichloropropene	563-58-6	1.15	U	5.73	1.15	0.573
Ethylbenzene	100-41-4	1.15	U	5.73	1.15	0.573
2-Hexanone	591-78-6	5.72	U	11.5	5.72	2.86
Hexachlorobutadiene	87-68-3	1.15	U	5.73	1.15	0.573
Isopropylbenzene	98-82-8	1.15	U	5.73	1.15	0.573
p-Isopropyltoluene	99-87-6	1.15	U	5.73	1.15	0.573
4-Methyl-2-pentanone	108-10-1	5.72	U	11.5	5.72	2.86
Methylene chloride	75-09-2	2.30	U	5.73	2.30	1.15
Naphthalene	91-20-3	1.15	U	5.73	1.15	0.573
n-Propylbenzene	103-65-1	1.15	U	5.73	1.15	0.573
Styrene	100-42-5	1.15	U	5.73	1.15	0.573
1,1,1,2-Tetrachloroethane	630-20-6	1.15	U	5.73	1.15	0.573
1,1,2,2-Tetrachloroethane	79-34-5	1.15	U	5.73	1.15	0.573
Tetrachloroethene	127-18-4	1.15	U	5.73	1.15	0.573
Toluene	108-88-3	1.15	U	5.73	1.15	0.573
1,2,3-Trichlorobenzene	87-61-6	1.15	U	5.73	1.15	0.573
1,2,4-Trichlorobenzene	120-82-1	1.15	U	5.73	1.15	0.573
1,1,1-Trichloroethane	71-55-6	1.15	U	5.73	1.15	0.573
1,1,2-Trichloroethane	79-00-5	1.15	U	5.73	1.15	0.573
Trichloroethene	79-01-6	0.995	J	5.73	1.15	0.573
Trichlorofluoromethane	75-69-4	2.30	U	5.73	2.30	1.15
1,2,3-Trichloropropane	96-18-4	2.30	U	5.73	2.30	1.15
1,2,4-Trimethylbenzene	95-63-6	1.15	U	5.73	1.15	0.573
1,3,5-Trimethylbenzene	108-67-8	1.15	U	5.73	1.15	0.573
Vinyl chloride	75-01-4	2.30	U	5.73	2.30	1.15
o-Xylene	95-47-6	1.15	U	5.73	1.15	0.573
m-,p-Xylene	179601-23-1	1.15	U	5.73	1.15	0.573

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.5	80	120	
1,2-Dichloroethane-d4	84.3	80	120	
Toluene-d8	102	85	115	
4-Bromofluorobenzene	104	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.
VOA Preparation/Preservation/Extraction Log

Batch #: WG561608
Analyst: AWE
Method: 5030B/5030C/5035
Run Date: 03/21/2016 08:07
Product: 8260
Purge and trap methanol COA18540
Purified Lab Sand Lot # COA18552

SAMPLE #	Fraction	Collected	Preserved	PCT-S	Tare Wt	Total Wt	Sample Wt	Water	MeOH	Vt	Comments
L16030861-01	A	03/14/16 12:32	03/21/16 08:07	82.5			4.72	5		5	
L16030861-02	A	03/14/16 13:15	03/21/16 08:09	89.3			4.81	5		5	
L16030861-03	A	03/14/16 13:15	03/21/16 08:09	90.4			4.70	5		5	
L16030861-04	A	03/14/16 13:20	03/21/16 08:10	91.0			5.10	5		5	
L16030861-05	A	03/14/16 13:25	03/21/16 08:11	79.9			4.52	5		5	
L16030861-06	A	03/14/16 16:40	03/21/16 08:12	82.5			5.44	5		5	
L16030861-07	A	03/14/16 16:41	03/21/16 08:13	85.0			4.73	5		5	
L16030861-08	A	03/14/16 16:42	03/21/16 08:14	82.9			5.07	5		5	
L16030861-09	A	03/14/16 16:43	03/21/16 08:14	81.2			5.24	5		5	
L16030861-10	A	03/14/16 16:45	03/21/16 08:15	79.1			4.95	5		5	
L16030863-01	A	03/15/16 09:20	03/21/16 08:17	79.3			4.96	5		5	
L16030863-02	A	03/15/16 09:20	03/21/16 08:17	79.3			5.34	5		5	
L16030863-03	A	03/15/16 09:20	03/21/16 08:18	79.3			4.54	5		5	
L16030863-04	A	03/15/16 09:25	03/21/16 08:19	86.1			4.97	5		5	
L16030863-05	A	03/15/16 10:35	03/21/16 08:19	81.2			4.68	5		5	
L16030863-06	A	03/15/16 10:40	03/21/16 08:20	79.6			5.07	5		5	
L16030863-07	A	03/15/16 10:45	03/21/16 08:20	77.7			4.79	5		5	
L16030863-08	A	03/15/16 11:50	03/21/16 08:21	84.2			5.41	5		5	
L16030863-09	A	03/15/16 11:50	03/21/16 08:22	83.5			5.14	5		5	
L16030863-10	A	03/15/16 11:55	03/21/16 08:23	78.8			4.83	5		5	
L16030863-11	A	03/15/16 12:00	03/21/16 08:23	80.4			5.03	5		5	
L16030863-12	A	03/15/16 12:30	03/21/16 08:25	83.0			5.05	5		5	
L16030863-13	A	03/15/16 12:45	03/21/16 08:25	78.8			5.10	5		5	
L16030863-14	A	03/15/16 13:00	03/21/16 08:26	82.4			5.30	5		5	
WG561608-01	A		03/21/16 08:07	82.5			4.72	5		5	
WG561608-02	A		03/21/16 08:07	82.5			5.02	5		5	
WG561608-03	A		03/21/16 08:08	82.5			5.24	5		5	

Comments:
1 = improperly sealed cap
2 = preserved out of hold
3 = effervesced
4 = preserved with NaHSO4
5 = preserved by freezing
6 = preserved in field

Analyst: Andrew Craig

VOA_EXT - Modified 05/22/2008
PDF ID: 4679636
Report generated: 03/24/2016 12:47

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 022616
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Method: 8260C SOP: MSV01-C Rev: 2
Maintenance Log ID:

Internal Standard: STD74756 Surrogate Standard: STD74756
CCV: STD74897 LCS: STD74755 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG558920

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M137521	RINSE	NA	7	1		02/26/16 12:22
6M137522	WG558920-01 50ng BFB STD 8260	NA	7	1	STD74606	02/26/16 13:16
6M137523	WG558920-02 0.5ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 13:41
6M137524	WG558920-03 1ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 14:13
6M137525	WG558920-04 2ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 14:46
6M137526	WG558920-05 5ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 15:26
6M137527	WG558920-06 10ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 15:58
6M137528	WG558920-07 20ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 16:30
6M137529	WG558920-08 50ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 17:03
6M137530	WG558920-09 100ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 17:35
6M137531	WG558920-10 200ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 18:07
6M137532	WG558920-11 300ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 18:39
6M137533	RINSE	NA	7	1		02/26/16 19:11
6M137534	RINSE	NA	7	1		02/26/16 19:43
6M137535	WG558920-12 50ug/Kg ALT SRC STD 826	NA	7	1	STD74755	02/26/16 20:15
6M137536	RINSE	NA	7	1		02/26/16 20:48

Comments

Seq.	Rerun	Dil.	Reason	Analytes
15				
File ID: 6M137535				
Surrogates are spiked at 25 not 50.				

Approved: March 02, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 032316
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75149 Surrogate Standard: STD75149
CCV: STD75238 LCS: STD75209 MS/MSD: STD75209

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG562075

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M137963	WG562074-01 50ng BFB STD 8260	NA	7	1	STD75004	03/23/16 11:50
6M137964	WG562074-02 50ug/Kg CCV STD 8260	NA	7	1	STD75238	03/23/16 12:15
6M137965	WG562074-02 50ug/Kg CCV STD 8260	NA	7	1	STD75238	03/23/16 12:47
6M137966	WG000000-01 100ug/Kg a9 CCV STD 826	NA	7	1	STD74843	03/23/16 13:20
6M137967	WG562075-01 VBLK0323 BLANK STD 826	NA	7	1		03/23/16 13:53
6M137968	WG562075-02 20ug/Kg LCS STD 8260	NA	7	1	STD75209	03/23/16 14:26
6M137969	L16030863-02 MS 8260 5.34g	NA	7	1	STD75209	03/23/16 14:59
6M137970	L16030863-03 MSD 8260 4.54g	NA	7	1	STD75209	03/23/16 15:32
6M137971	RINSE	NA	7	1		03/23/16 16:04
6M137972	L16031066-09 826-VAP2 5.30g	NA	7	1		03/23/16 16:37
6M137973	L16030863-01 REF 8260 4.96g	NA	7	1		03/23/16 17:10
6M137974	L16030861-03 8260 5.04g	NA	7	1		03/23/16 17:43
6M137975	L16030861-05 8260 4.93g	NA	7	1		03/23/16 18:15
6M137976	L16030861-06 8260 5.44g	NA	7	1		03/23/16 18:48
6M137977	L16030861-07 8260 4.73g	NA	7	1		03/23/16 19:21
6M137978	L16030861-08 8260 5.07g	NA	7	1		03/23/16 19:54
6M137979	L16030861-09 8260 5.24g	NA	7	1		03/23/16 20:27
6M137980	L16030861-10 8260 4.95g	NA	7	1		03/23/16 21:00
6M137981	L16030863-04 8260 4.97g	NA	7	1		03/23/16 21:32
6M137982	L16030863-05 8260 4.68g	NA	7	1		03/23/16 22:05
6M137983	L16030863-06 8260 5.07g	NA	7	1		03/23/16 22:38
6M137984	L16030863-07 8260 4.79g	NA	7	1		03/23/16 23:10
6M137985	L16031066-10 826-VAP2 4.89g	NA	7	1		03/23/16 23:43
6M137986	RINSE	NA	7	1		03/24/16 00:16
6M137987	RINSE	NA	7	1		03/24/16 00:48

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 6M137964				
			Acetone was high. DNR.	
4				
File ID: 6M137966				

Approved: March 24, 2016

Sarah Vandenberg

Microbac

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 032316
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75149 Surrogate Standard: STD75149
CCV: STD75238 LCS: STD75209 MS/MSD: STD75209

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG562075

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			Not needed. DNR.	
15	X	1	Carry-over contamination	
File ID: 6M137975				
	Possible carry over of 124-tmb.			

Approved: March 24, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 032416
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD75149 Surrogate Standard: STD75149
CCV: STD75238 LCS: STD75209 MS/MSD: STD75209

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG562236

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M137988	WG562235-01 50ng BFB STD 8260	NA	7	1	STD75004	03/24/16 11:14
6M137989	WG562235-02 50u/Kg CCV STD 8260	NA	7	1	STD75238	03/24/16 11:38
6M137990	WG000000-01 100u/Kg A9 CCV STD 8260	NA	7	1	STD75328	03/24/16 12:20
6M137991	WG562236-01 VBLK0324 BLANK STD 826	NA	7	1		03/24/16 12:53
6M137992	L16030965-02 5X 8260 0.91g	NA	7	1		03/24/16 13:27
6M137993	RINSE	NA	7	1		03/24/16 14:00
6M137994	WG562236-02 20ug/Kg LCS STD 8260	NA	7	1	STD75209	03/24/16 14:32
6M137995	WG562193-02 MS 8260 5.15g	NA	7	1	STD75209	03/24/16 15:05
6M137996	WG562193-03 MSD 8260 5.06g	NA	7	1	STD75209	03/24/16 15:38
6M137997	RINSE	NA	7	1	STD75209	03/24/16 16:11
6M137998	RINSE	NA	7	1	STD75209	03/24/16 16:45
6M137999	WG562193-01 L16030861-05 8260 5.19g	NA	7	1		03/24/16 17:19
6M138000	L16030863-08 8260 5.41g	NA	7	1		03/24/16 17:52
6M138001	L16030863-09 8260 5.14g	NA	7	1		03/24/16 18:26
6M138002	L16030863-10 8260 4.83g	NA	7	1		03/24/16 18:59
6M138003	L16030863-11 8260 5.03g	NA	7	1		03/24/16 19:33
6M138004	L16030863-13 8260 5.10g	NA	7	1		03/24/16 20:06
6M138005	L16030863-14 8260 5.30g	NA	7	1		03/24/16 20:39
6M138006	L16030863-12 8260 5.05g	NA	7	1		03/24/16 21:12
6M138007	L16030863-12 8260 5.30g	NA	7	1		03/24/16 21:45
6M138008	RINSE	NA	7	1		03/24/16 22:18
6M138009	RINSE	NA	7	1		03/24/16 22:51

Comments

Seq.	Rerun	Dil.	Reason	Analytes
3				
File ID: 6M137990				
			Not needed. DNR.	
12				
File ID: 6M137999				
			QC only. Confirms 124-tmb.	
20				
File ID: 6M138007				
			Not needed, DNR.	

Approved: March 25, 2016

Sarah Vandenberg

Page: 1

Microbac Laboratories Inc.

Data Checklist

Date: 26-FEB-2016
Analyst: TMB
Analyst: NA
Method: 8260B/C
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 73548
Analytical Workgroups: WG558920

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	NA
TCL Hits	NA
Spectra of TCL Hits	NA
Surrogates	NA
Internal Standards Criteria	NA
Library Searches	NA
Calculations & Correct Factors	NA
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
29-FEB-2016
Tiffany Bailey

Secondary Reviewer:
02-MAR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-02-2016 12:31:18

Microbac Laboratories Inc.

Data Checklist

Date: 23-MAR-2016
Analyst: TMB
Analyst: NA
Method: 8260B/OVAP
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 74013
Analytical Workgroups: WG562075

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
24-MAR-2016
Tiffany Bailey

Secondary Reviewer:
24-MAR-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-24-2016 13:48:21

Microbac Laboratories Inc.

Data Checklist

Date: 24-MAR-2016
Analyst: TMB
Analyst: NA
Method: 8260B
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 74044
Analytical Workgroups: WG562236

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
24-MAR-2016
Tiffany Bailey

Secondary Reviewer:
25-MAR-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-25-2016 10:32:43

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG562075

Login Number: L16030863

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18DPT16(5-5.5)150316	01	03/15/16					03/21/2016	6	14		03/23/16	8.3	14	
18DPT16(5-5.5)150316MS	02	03/15/16					03/21/2016	6	14		03/23/16	8.2	14	
18DPT16(5-5.5)150316MSD	03	03/15/16					03/21/2016	6	14		03/23/16	8.3	14	
18DPT16(15-15.5)150316	04	03/15/16					03/21/2016	6	14		03/23/16	8.5	14	
18DPT16(25-25.5)150316	05	03/15/16					03/21/2016	5.9	14		03/23/16	8.5	14	
18CPT16(30-30.5)150316	06	03/15/16					03/21/2016	5.9	14		03/23/16	8.5	14	
18DPT16(33-33.5)150316	07	03/15/16					03/21/2016	5.9	14		03/23/16	8.5	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4686936
Report generated 03/25/2016 10:31

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG562236

Login Number: L16030863

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18DPT17(2.5-3)150316	08	03/15/16					03/21/2016	5.9	14		03/24/16	9.3	14	
18DPT17(2.5-3)150316FD	09	03/15/16					03/21/2016	5.9	14		03/24/16	9.3	14	
18DPT17(5-5.5)150316	10	03/15/16					03/21/2016	5.9	14		03/24/16	9.3	14	
18DPT17(10-10.5)150316	11	03/15/16					03/21/2016	5.8	14		03/24/16	9.3	14	
18DPT17(18-18.5)150316	12	03/15/16					03/21/2016	5.8	14		03/24/16	9.4	14	
18DPT17(27-27.5)150316	13	03/15/16					03/21/2016	5.8	14		03/24/16	9.3	14	
18DPT17(21.5-22)150316	14	03/15/16					03/21/2016	5.8	14		03/24/16	9.3	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4686936
Report generated 03/25/2016 10:31

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16030863
Instrument Id: HPMS6
Workgroup (AAB#): WG562236

Method: 8260
CAL ID: HPMS6-26-FEB-16
Matrix: Soil

Sample Number	Dilution	Tag	1	2	3	4
L16030863-08	1.00	01	85.7	93.5	108	103
L16030863-09	1.00	01	85.3	92.5	105	102
L16030863-10	1.00	01	87.6	93.5	104	101
L16030863-11	1.00	01	92.4	94.0	104	99.1
L16030863-12	1.00	01	90.0	92.9	104	101
L16030863-13	1.00	01	83.7	92.2	103	101
L16030863-14	1.00	01	84.3	91.5	104	102
WG562236-01	1.00	01	91.7	96.2	101	100
WG562236-02	1.00	01	88.8	95.7	103	100

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	80	-	120
2 - Dibromofluoromethane	80	-	120
3 - 4-Bromofluorobenzene	85	-	120
4 - Toluene-d8	85	-	115

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4686945
Report generated: 03/25/2016 10:31

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16030863
Instrument Id: HPMS6
Workgroup (AAB#): WG562075

Method: 8260
CAL ID: HPMS6-26-FEB-16
Matrix: Soil

Sample Number	Dilution	Tag	1	2	3	4
L16030863-01	1.00	01	87.9	93.8	103	101
L16030863-02	1.00	01	88.1	95.7	103	101
L16030863-03	1.00	01	85.8	93.8	101	101
L16030863-04	1.00	01	86.0	94.2	103	103
L16030863-05	1.00	01	87.5	94.5	104	102
L16030863-06	1.00	01	87.9	93.6	102	102
L16030863-07	1.00	01	94.6	95.8	103	99.2
WG562075-01	1.00	01	90.5	94.6	103	101
WG562075-02	1.00	01	87.3	95.2	100	101

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	80	-	120
2 - Dibromofluoromethane	80	-	120
3 - 4-Bromofluorobenzene	85	-	120
4 - Toluene-d8	85	-	115

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4686945
Report generated: 03/25/2016 10:31

METHOD BLANK SUMMARY

Login Number: L16030863
Blank File ID: 6M137967
Prep Date: 03/23/16 13:53
Analyzed Date: 03/23/16 13:53
Analyst: TMB

Work Group: WG562075
Blank Sample ID: WG562075-01
Instrument ID: HPMS6
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG562075-02	6M137968	03/23/16 14:26	01
18DPT16(5-5.5)150316MS	L16030863-02	6M137969	03/23/16 14:59	01
18DPT16(5-5.5)150316MSD	L16030863-03	6M137970	03/23/16 15:32	01
18DPT16(5-5.5)150316	L16030863-01	6M137973	03/23/16 17:10	01
18DPT16(15-15.5)150316	L16030863-04	6M137981	03/23/16 21:32	01
18DPT16(25-25.5)150316	L16030863-05	6M137982	03/23/16 22:05	01
18CPT16(30-30.5)150316	L16030863-06	6M137983	03/23/16 22:38	01
18DPT16(33-33.5)150316	L16030863-07	6M137984	03/23/16 23:10	01

Report Name: BLANK_SUMMARY
PDF File ID: 4687206
Report generated 03/25/2016 10:31

METHOD BLANK SUMMARY

Login Number: L16030863
Blank File ID: 6M137991
Prep Date: 03/24/16 12:53
Analyzed Date: 03/24/16 12:53
Analyst: TMB

Work Group: WG562236
Blank Sample ID: WG562236-01
Instrument ID: HPMS6
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG562236-02	6M137994	03/24/16 14:32	01
18DPT17(2.5-3)150316	L16030863-08	6M138000	03/24/16 17:52	01
18DPT17(2.5-3)150316FD	L16030863-09	6M138001	03/24/16 18:26	01
18DPT17(5-5.5)150316	L16030863-10	6M138002	03/24/16 18:59	01
18DPT17(10-10.5)150316	L16030863-11	6M138003	03/24/16 19:33	01
18DPT17(27-27.5)150316	L16030863-13	6M138004	03/24/16 20:06	01
18DPT17(21.5-22)150316	L16030863-14	6M138005	03/24/16 20:39	01
18DPT17(18-18.5)150316	L16030863-12	6M138006	03/24/16 21:12	01

Report Name: BLANK_SUMMARY
PDF File ID: 4687206
Report generated 03/25/2016 10:31

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16030863 Prep Date: 03/23/16 13:53 Sample ID: WG562075-01
Instrument ID: HPMS6 Run Date: 03/23/16 13:53 Prep Method: 5030B/5030C/503
File ID: 6M137967 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG562075 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS6-26-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	5.00	20.0	5.00	1	U
Benzene	0.500	5.00	0.500	1	U
Bromobenzene	0.500	5.00	0.500	1	U
Bromochloromethane	1.00	5.00	1.00	1	U
Bromodichloromethane	0.500	5.00	0.500	1	U
Bromoform	0.500	5.00	0.500	1	U
Bromomethane	1.00	5.00	1.00	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.500	5.00	0.500	1	U
sec-Butylbenzene	0.500	5.00	0.500	1	U
tert-Butylbenzene	0.500	5.00	0.500	1	U
Carbon disulfide	0.500	5.00	0.500	1	U
Carbon tetrachloride	0.500	5.00	0.500	1	U
Chlorobenzene	0.500	5.00	0.500	1	U
Chlorodibromomethane	0.500	5.00	0.500	1	U
Chloroethane	1.00	5.00	1.00	1	U
Chloroform	0.500	5.00	0.500	1	U
Chloromethane	2.00	10.0	2.00	1	U
2-Chlorotoluene	0.500	5.00	0.500	1	U
4-Chlorotoluene	0.500	5.00	0.500	1	U
1,2-Dibromo-3-chloropropane	2.00	10.0	2.00	1	U
1,2-Dibromoethane	0.500	5.00	0.500	1	U
Dibromomethane	0.500	5.00	0.500	1	U
1,2-Dichlorobenzene	0.500	5.00	0.500	1	U
1,3-Dichlorobenzene	0.500	5.00	0.500	1	U
1,4-Dichlorobenzene	0.500	5.00	0.500	1	U
Dichlorodifluoromethane	1.00	5.00	1.00	1	U
1,1-Dichloroethane	1.00	5.00	1.00	1	U
1,2-Dichloroethane	0.500	5.00	0.500	1	U
1,1-Dichloroethene	0.500	5.00	0.500	1	U
cis-1,2-Dichloroethene	0.500	5.00	0.500	1	U
trans-1,2-Dichloroethene	0.500	5.00	0.500	1	U
1,2-Dichloropropane	0.500	5.00	0.500	1	U
1,3-Dichloropropane	0.500	5.00	0.500	1	U
2,2-Dichloropropane	0.500	5.00	0.500	1	U
cis-1,3-Dichloropropene	0.500	5.00	0.500	1	U
trans-1,3-Dichloropropene	0.500	5.00	0.500	1	U
1,1-Dichloropropene	0.500	5.00	0.500	1	U
Ethylbenzene	0.500	5.00	0.500	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.500	5.00	0.500	1	U
Isopropylbenzene	0.500	5.00	0.500	1	U

Report Name:BLANK
PDF ID: 4687207
25-MAR-2016 10:31

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16030863 Prep Date: 03/23/16 13:53 Sample ID: WG562075-01
Instrument ID: HPMS6 Run Date: 03/23/16 13:53 Prep Method: 5030B/5030C/503
File ID: 6M137967 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG562075 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS6-26-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.500	5.00	0.500	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	1.00	5.00	1.00	1	U
Naphthalene	0.500	5.00	0.500	1	U
n-Propylbenzene	0.500	5.00	0.500	1	U
Styrene	0.500	5.00	0.500	1	U
1,1,1,2-Tetrachloroethane	0.500	5.00	0.500	1	U
1,1,2,2-Tetrachloroethane	0.500	5.00	0.500	1	U
Tetrachloroethene	0.500	5.00	0.500	1	U
Toluene	0.500	5.00	0.500	1	U
1,2,3-Trichlorobenzene	0.500	5.00	0.500	1	U
1,2,4-Trichlorobenzene	0.500	5.00	0.500	1	U
1,1,1-Trichloroethane	0.500	5.00	0.500	1	U
1,1,2-Trichloroethane	0.500	5.00	0.500	1	U
Trichloroethene	0.500	5.00	0.500	1	U
Trichlorofluoromethane	1.00	5.00	1.00	1	U
1,2,3-Trichloropropane	1.00	5.00	1.00	1	U
1,2,4-Trimethylbenzene	0.500	5.00	0.568	1	J
1,3,5-Trimethylbenzene	0.500	5.00	0.500	1	U
Vinyl chloride	1.00	5.00	1.00	1	U
o-Xylene	0.500	5.00	0.500	1	U
m-,p-Xylene	0.500	5.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	94.6	80 - 120	PASS
1,2-Dichloroethane-d4	90.5	80 - 120	PASS
Toluene-d8	101	85 - 115	PASS
4-Bromofluorobenzene	103	85 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4687207
25-MAR-2016 10:31

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16030863 Prep Date: 03/24/16 12:53 Sample ID: WG562236-01
Instrument ID: HPMS6 Run Date: 03/24/16 12:53 Prep Method: 5030B/5030C/503
File ID: 6M137991 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG562236 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS6-26-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	5.00	20.0	5.00	1	U
Benzene	0.500	5.00	0.500	1	U
Bromobenzene	0.500	5.00	0.500	1	U
Bromochloromethane	1.00	5.00	1.00	1	U
Bromodichloromethane	0.500	5.00	0.500	1	U
Bromoform	0.500	5.00	0.500	1	U
Bromomethane	1.00	5.00	1.00	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.500	5.00	0.500	1	U
sec-Butylbenzene	0.500	5.00	0.500	1	U
tert-Butylbenzene	0.500	5.00	0.500	1	U
Carbon disulfide	0.500	5.00	0.500	1	U
Carbon tetrachloride	0.500	5.00	0.500	1	U
Chlorobenzene	0.500	5.00	0.500	1	U
Chlorodibromomethane	0.500	5.00	0.500	1	U
Chloroethane	1.00	5.00	1.00	1	U
Chloroform	0.500	5.00	0.500	1	U
Chloromethane	2.00	10.0	2.00	1	U
2-Chlorotoluene	0.500	5.00	0.500	1	U
4-Chlorotoluene	0.500	5.00	0.500	1	U
1,2-Dibromo-3-chloropropane	2.00	10.0	2.00	1	U
1,2-Dibromoethane	0.500	5.00	0.500	1	U
Dibromomethane	0.500	5.00	0.500	1	U
1,2-Dichlorobenzene	0.500	5.00	0.500	1	U
1,3-Dichlorobenzene	0.500	5.00	0.500	1	U
1,4-Dichlorobenzene	0.500	5.00	0.500	1	U
Dichlorodifluoromethane	1.00	5.00	1.00	1	U
1,1-Dichloroethane	1.00	5.00	1.00	1	U
1,2-Dichloroethane	0.500	5.00	0.500	1	U
1,1-Dichloroethene	0.500	5.00	0.500	1	U
cis-1,2-Dichloroethene	0.500	5.00	0.500	1	U
trans-1,2-Dichloroethene	0.500	5.00	0.500	1	U
1,2-Dichloropropane	0.500	5.00	0.500	1	U
1,3-Dichloropropane	0.500	5.00	0.500	1	U
2,2-Dichloropropane	0.500	5.00	0.500	1	U
cis-1,3-Dichloropropene	0.500	5.00	0.500	1	U
trans-1,3-Dichloropropene	0.500	5.00	0.500	1	U
1,1-Dichloropropene	0.500	5.00	0.500	1	U
Ethylbenzene	0.500	5.00	0.500	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.500	5.00	0.500	1	U
Isopropylbenzene	0.500	5.00	0.500	1	U

Report Name:BLANK
PDF ID: 4687207
25-MAR-2016 10:31

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16030863 Prep Date: 03/24/16 12:53 Sample ID: WG562236-01
Instrument ID: HPMS6 Run Date: 03/24/16 12:53 Prep Method: 5030B/5030C/503
File ID: 6M137991 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG562236 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS6-26-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.500	5.00	0.500	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	1.00	5.00	1.00	1	U
Naphthalene	0.500	5.00	0.500	1	U
n-Propylbenzene	0.500	5.00	0.500	1	U
Styrene	0.500	5.00	0.500	1	U
1,1,1,2-Tetrachloroethane	0.500	5.00	0.500	1	U
1,1,2,2-Tetrachloroethane	0.500	5.00	0.500	1	U
Tetrachloroethene	0.500	5.00	0.500	1	U
Toluene	0.500	5.00	0.500	1	U
1,2,3-Trichlorobenzene	0.500	5.00	0.500	1	U
1,2,4-Trichlorobenzene	0.500	5.00	0.500	1	U
1,1,1-Trichloroethane	0.500	5.00	0.500	1	U
1,1,2-Trichloroethane	0.500	5.00	0.500	1	U
Trichloroethene	0.500	5.00	0.500	1	U
Trichlorofluoromethane	1.00	5.00	1.00	1	U
1,2,3-Trichloropropane	1.00	5.00	1.00	1	U
1,2,4-Trimethylbenzene	0.500	5.00	0.500	1	U
1,3,5-Trimethylbenzene	0.500	5.00	0.500	1	U
Vinyl chloride	1.00	5.00	1.00	1	U
o-Xylene	0.500	5.00	0.500	1	U
m-,p-Xylene	0.500	5.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	96.2	80 - 120	PASS
1,2-Dichloroethane-d4	91.7	80 - 120	PASS
Toluene-d8	100	85 - 115	PASS
4-Bromofluorobenzene	101	85 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4687207
25-MAR-2016 10:31

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030863 Run Date: 03/23/2016 Sample ID: WG562075-02
Instrument ID: HPMS6 Run Time: 14:26 Prep Method: 5030B/5030C/503
File ID: 6M137968 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG562075 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD75209 Cal ID: HPMS6-26-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	21.8	109	20 - 160	
Benzene	20.0	21.6	108	75 - 125	
Bromobenzene	20.0	22.1	110	65 - 120	
Bromochloromethane	20.0	21.7	108	70 - 125	
Bromodichloromethane	20.0	21.0	105	70 - 130	
Bromoform	20.0	18.7	93.4	55 - 135	
Bromomethane	20.0	22.0	110	30 - 160	
2-Butanone	20.0	20.1	100	30 - 160	
n-Butylbenzene	20.0	21.3	107	65 - 140	
sec-Butylbenzene	20.0	22.9	114	65 - 130	
tert-Butylbenzene	20.0	23.2	116	65 - 130	
Carbon disulfide	20.0	20.0	100	45 - 160	
Carbon tetrachloride	20.0	21.2	106	65 - 135	
Chlorobenzene	20.0	22.0	110	75 - 125	
Chlorodibromomethane	20.0	20.0	100	65 - 130	
Chloroethane	20.0	23.8	119	40 - 155	
Chloroform	20.0	20.7	103	70 - 125	
Chloromethane	20.0	17.5	87.3	50 - 130	
2-Chlorotoluene	20.0	22.6	113	70 - 130	
4-Chlorotoluene	20.0	22.6	113	75 - 125	
1,2-Dibromo-3-chloropropane	20.0	20.0	99.9	40 - 135	
1,2-Dibromoethane	20.0	21.1	106	70 - 125	
Dibromomethane	20.0	20.0	100	75 - 130	
1,2-Dichlorobenzene	20.0	22.5	112	75 - 120	
1,3-Dichlorobenzene	20.0	22.1	111	70 - 125	
1,4-Dichlorobenzene	20.0	21.7	109	70 - 125	
Dichlorodifluoromethane	20.0	21.7	108	35 - 135	
1,1-Dichloroethane	20.0	20.9	105	75 - 125	
1,2-Dichloroethane	20.0	20.9	104	70 - 135	
1,1-Dichloroethene	20.0	21.3	107	65 - 135	
cis-1,2-Dichloroethene	20.0	22.5	113	65 - 125	
trans-1,2-Dichloroethene	20.0	22.5	113	65 - 135	
1,2-Dichloropropane	20.0	22.7	113	70 - 120	
1,3-Dichloropropane	20.0	22.2	111	75 - 125	
2,2-Dichloropropane	20.0	21.8	109	65 - 135	
cis-1,3-Dichloropropene	20.0	23.9	120	70 - 125	
trans-1,3-Dichloropropene	20.0	20.9	104	65 - 125	
1,1-Dichloropropene	20.0	21.9	110	70 - 135	
Ethylbenzene	20.0	22.5	113	75 - 125	
2-Hexanone	20.0	19.5	97.4	45 - 145	
Hexachlorobutadiene	20.0	22.5	112	55 - 140	

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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030863 Run Date: 03/23/2016 Sample ID: WG562075-02
Instrument ID: HPMS6 Run Time: 14:26 Prep Method: 5030B/5030C/503
File ID: 6M137968 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG562075 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD75209 Cal ID: HPMS6-26-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	23.1	116	75 - 130	
p-Isopropyltoluene	20.0	22.7	113	75 - 135	
4-Methyl-2-pentanone	20.0	21.5	107	45 - 145	
Methylene chloride	20.0	21.7	109	55 - 140	
Naphthalene	20.0	20.6	103	40 - 125	
n-Propylbenzene	20.0	23.0	115	65 - 135	
Styrene	20.0	22.1	111	75 - 125	
1,1,1,2-Tetrachloroethane	20.0	20.9	104	75 - 125	
1,1,2,2-Tetrachloroethane	20.0	20.9	104	55 - 130	
Tetrachloroethene	20.0	21.7	108	65 - 140	
Toluene	20.0	21.8	109	70 - 125	
1,2,3-Trichlorobenzene	20.0	21.3	107	60 - 135	
1,2,4-Trichlorobenzene	20.0	21.5	108	65 - 130	
1,1,1-Trichloroethane	20.0	21.7	108	70 - 135	
1,1,2-Trichloroethane	20.0	21.2	106	60 - 125	
Trichloroethene	20.0	23.5	117	75 - 125	
Trichlorofluoromethane	20.0	20.3	102	25 - 185	
1,2,3-Trichloropropane	20.0	21.4	107	65 - 130	
1,2,4-Trimethylbenzene	20.0	22.4	112	65 - 135	
1,3,5-Trimethylbenzene	20.0	23.3	116	65 - 135	
Vinyl chloride	20.0	20.3	101	60 - 125	
o-Xylene	20.0	23.6	118	75 - 125	
m-,p-Xylene	40.0	44.4	111	80 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	95.2	80 - 120	PASS
1,2-Dichloroethane-d4	87.3	80 - 120	PASS
Toluene-d8	101	85 - 115	PASS
4-Bromofluorobenzene	100	85 - 120	PASS

* EXCEEDS %REC LIMIT

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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030863 Run Date: 03/24/2016 Sample ID: WG562236-02
Instrument ID: HPMS6 Run Time: 14:32 Prep Method: 5030B/5030C/503
File ID: 6M137994 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG562236 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD75209 Cal ID: HPMS6-26-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	22.6	113	20 - 160	
Benzene	20.0	22.4	112	75 - 125	
Bromobenzene	20.0	22.5	112	65 - 120	
Bromochloromethane	20.0	22.8	114	70 - 125	
Bromodichloromethane	20.0	21.6	108	70 - 130	
Bromoform	20.0	19.7	98.6	55 - 135	
Bromomethane	20.0	21.6	108	30 - 160	
2-Butanone	20.0	21.8	109	30 - 160	
n-Butylbenzene	20.0	21.8	109	65 - 140	
sec-Butylbenzene	20.0	23.3	117	65 - 130	
tert-Butylbenzene	20.0	23.9	119	65 - 130	
Carbon disulfide	20.0	20.0	100	45 - 160	
Carbon tetrachloride	20.0	22.1	110	65 - 135	
Chlorobenzene	20.0	22.4	112	75 - 125	
Chlorodibromomethane	20.0	20.9	104	65 - 130	
Chloroethane	20.0	23.8	119	40 - 155	
Chloroform	20.0	21.5	108	70 - 125	
Chloromethane	20.0	19.6	97.9	50 - 130	
2-Chlorotoluene	20.0	22.6	113	70 - 130	
4-Chlorotoluene	20.0	23.1	115	75 - 125	
1,2-Dibromo-3-chloropropane	20.0	23.0	115	40 - 135	
1,2-Dibromoethane	20.0	22.3	111	70 - 125	
Dibromomethane	20.0	21.0	105	75 - 130	
1,2-Dichlorobenzene	20.0	23.2	116	75 - 120	
1,3-Dichlorobenzene	20.0	22.8	114	70 - 125	
1,4-Dichlorobenzene	20.0	22.3	112	70 - 125	
Dichlorodifluoromethane	20.0	21.8	109	35 - 135	
1,1-Dichloroethane	20.0	21.7	108	75 - 125	
1,2-Dichloroethane	20.0	21.4	107	70 - 135	
1,1-Dichloroethene	20.0	21.8	109	65 - 135	
cis-1,2-Dichloroethene	20.0	23.0	115	65 - 125	
trans-1,2-Dichloroethene	20.0	23.3	116	65 - 135	
1,2-Dichloropropane	20.0	23.6	118	70 - 120	
1,3-Dichloropropane	20.0	23.1	116	75 - 125	
2,2-Dichloropropane	20.0	23.0	115	65 - 135	
cis-1,3-Dichloropropene	20.0	24.9	124	70 - 125	
trans-1,3-Dichloropropene	20.0	21.6	108	65 - 125	
1,1-Dichloropropene	20.0	22.7	113	70 - 135	
Ethylbenzene	20.0	22.6	113	75 - 125	
2-Hexanone	20.0	21.4	107	45 - 145	
Hexachlorobutadiene	20.0	23.0	115	55 - 140	

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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030863 Run Date: 03/24/2016 Sample ID: WG562236-02
Instrument ID: HPMS6 Run Time: 14:32 Prep Method: 5030B/5030C/503
File ID: 6M137994 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG562236 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD75209 Cal ID: HPMS6-26-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	23.9	119	75 - 130	
p-Isopropyltoluene	20.0	23.5	117	75 - 135	
4-Methyl-2-pentanone	20.0	23.2	116	45 - 145	
Methylene chloride	20.0	22.5	112	55 - 140	
Naphthalene	20.0	22.3	112	40 - 125	
n-Propylbenzene	20.0	23.6	118	65 - 135	
Styrene	20.0	22.9	115	75 - 125	
1,1,1,2-Tetrachloroethane	20.0	21.8	109	75 - 125	
1,1,2,2-Tetrachloroethane	20.0	22.7	114	55 - 130	
Tetrachloroethene	20.0	22.1	111	65 - 140	
Toluene	20.0	22.4	112	70 - 125	
1,2,3-Trichlorobenzene	20.0	21.9	109	60 - 135	
1,2,4-Trichlorobenzene	20.0	22.7	113	65 - 130	
1,1,1-Trichloroethane	20.0	22.4	112	70 - 135	
1,1,2-Trichloroethane	20.0	22.0	110	60 - 125	
Trichloroethene	20.0	24.0	120	75 - 125	
Trichlorofluoromethane	20.0	20.5	103	25 - 185	
1,2,3-Trichloropropane	20.0	23.0	115	65 - 130	
1,2,4-Trimethylbenzene	20.0	22.8	114	65 - 135	
1,3,5-Trimethylbenzene	20.0	23.9	120	65 - 135	
Vinyl chloride	20.0	16.7	83.4	60 - 125	
o-Xylene	20.0	24.3	121	75 - 125	
m-,p-Xylene	40.0	45.9	115	80 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	95.7	80 - 120	PASS
1,2-Dichloroethane-d4	88.8	80 - 120	PASS
Toluene-d8	100	85 - 115	PASS
4-Bromofluorobenzene	103	85 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4686937
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Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16030863 Cal ID: HPMS6- 26-FEB-16 Worknum: WG562075

Instrument ID: HPMS6 Contract #: Prep Method: 5030B/5030C/

Parent ID: L16030863-01 File ID: 6M137973 Dil: 1 Method: 5035A

Sample ID: L16030863-02 MS File ID: 6M137969 Dil: 1 Matrix: 8260B

Sample ID: L16030863-03 MSD File ID: 6M137970 Dil: 1 Units: Soil

ug/kg

Percent Solid: 79.3

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,1,1,2-Tetrachloroethane	U	23.6	24.6	104	27.8	28.4	102	14.1	75 - 125	30	
1,1,1-Trichloroethane	U	23.6	25.4	108	27.8	29.4	106	14.6	70 - 135	30	
1,1,2,2-Tetrachloroethane	U	23.6	25.6	108	27.8	30.0	108	15.9	55 - 130	30	
1,1,2-Trichloroethane	U	23.6	25.9	110	27.8	29.2	105	12.1	60 - 125	30	
1,1-Dichloroethane	U	23.6	24.5	104	27.8	28.5	103	15.0	75 - 125	30	
1,1-Dichloroethene	U	23.6	25.2	107	27.8	29.5	106	15.7	65 - 135	30	
1,1-Dichloropropene	U	23.6	26.8	113	27.8	30.6	110	13.4	70 - 135	30	
1,2,3-Trichlorobenzene	U	23.6	26.2	111	27.8	30.1	108	13.9	60 - 135	30	
1,2,3-Trichloropropane	U	23.6	26.4	112	27.8	31.0	112	16.2	65 - 130	30	
1,2,4-Trichlorobenzene	U	23.6	27.0	114	27.8	30.2	109	11.3	65 - 130	30	
1,2,4-Trimethylbenzene	U	23.6	27.4	116	27.8	30.9	111	12.3	65 - 135	30	
1,2-Dibromo-3-chloropropane	U	23.6	24.3	103	27.8	29.9	108	21.0	40 - 135	30	
1,2-Dibromoethane	U	23.6	25.4	108	27.8	29.1	105	13.6	70 - 125	30	
1,2-Dichlorobenzene	U	23.6	27.2	115	27.8	30.8	111	12.4	75 - 120	30	
1,2-Dichloroethane	U	23.6	24.6	104	27.8	28.4	102	14.5	70 - 135	30	
1,2-Dichloropropane	U	23.6	26.9	114	27.8	31.6	114	16.0	70 - 120	30	
1,3,5-Trimethylbenzene	U	23.6	28.6	121	27.8	32.3	116	12.1	65 - 135	30	
1,3-Dichlorobenzene	U	23.6	27.3	116	27.8	30.7	110	11.6	70 - 125	30	
1,3-Dichloropropane	U	23.6	26.6	113	27.8	30.4	110	13.5	75 - 125	30	
1,4-Dichlorobenzene	U	23.6	27.0	115	27.8	30.7	110	12.6	70 - 125	30	
2,2-Dichloropropane	U	23.6	26.9	114	27.8	31.1	112	14.4	65 - 135	30	
2-Butanone	U	23.6	24.2	103	27.8	28.5	103	16.2	30 - 160	30	
2-Chlorotoluene	U	23.6	27.6	117	27.8	31.4	113	12.9	70 - 130	30	
2-Hexanone	U	23.6	24.0	102	27.8	28.0	101	15.3	45 - 145	30	
4-Chlorotoluene	U	23.6	27.9	118	27.8	31.1	112	10.8	75 - 125	30	
4-Methyl-2-pentanone	U	23.6	26.1	111	27.8	31.0	112	17.0	45 - 145	30	
Acetone	U	23.6	20.1	85.3	27.8	24.1	86.8	17.9	20 - 160	30	
Benzene	U	23.6	25.7	109	27.8	29.7	107	14.5	75 - 125	30	
Bromobenzene	U	23.6	26.5	112	27.8	30.1	109	12.8	65 - 120	30	
Bromochloromethane	U	23.6	26.0	110	27.8	29.6	107	13.0	70 - 125	30	
Bromodichloromethane	U	23.6	24.9	106	27.8	28.4	102	13.2	70 - 130	30	
Bromoform	U	23.6	22.1	93.8	27.8	26.0	93.7	16.1	55 - 135	30	
Bromomethane	U	23.6	25.6	109	27.8	30.1	109	16.1	30 - 160	30	
Carbon disulfide	U	23.6	24.5	104	27.8	27.8	100	12.5	45 - 160	30	
Carbon tetrachloride	U	23.6	25.1	107	27.8	29.8	107	17.1	65 - 135	30	
Chlorobenzene	U	23.6	26.6	112	27.8	30.4	110	13.6	75 - 125	30	
Chloroethane	U	23.6	28.1	119	27.8	32.9	119	16.0	40 - 155	30	
Chloroform	U	23.6	24.9	105	27.8	28.7	103	14.4	70 - 125	30	
Chloromethane	U	23.6	19.3	81.6	27.8	23.4	84.1	19.3	50 - 130	30	
cis-1,2-Dichloroethene	U	23.6	26.7	113	27.8	30.8	111	14.5	65 - 125	30	
cis-1,3-Dichloropropene	U	23.6	29.1	123	27.8	32.4	117	11.0	70 - 125	30	

MS_MSD - Modified 03/06/2008
PDF File ID: 4686938
Report generated 03/25/2016 10:31

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16030863 Cal ID: HPMS6 26-FEB-16 Worknum: WG562075

Instrument ID: HPMS6 Contract #: Prep Method: 5030B/5030C/

Parent ID: L16030863-01 File ID: 6M137973 Dil: 1 Method: 5035A

Sample ID: L16030863-02 MS File ID: 6M137969 Dil: 1 Matrix: 8260B

Sample ID: L16030863-03 MSD File ID: 6M137970 Dil: 1 Units: Soil

ug/kg

Percent Solid: 79.3

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chlorodibromomethane	U	23.6	24.3	103	27.8	28.0	101	14.0	65 - 130	30	
Dibromomethane	U	23.6	24.4	104	27.8	27.8	100	12.8	75 - 130	30	
Dichlorodifluoromethane	U	23.6	27.1	115	27.8	31.4	113	14.9	35 - 135	30	
Ethylbenzene	U	23.6	26.3	111	27.8	30.7	111	15.5	75 - 125	30	
Hexachlorobutadiene	U	23.6	28.5	121	27.8	32.1	116	12.2	55 - 140	30	
Isopropylbenzene	U	23.6	27.9	118	27.8	32.1	116	14.1	75 - 130	30	
m-,p-Xylene	U	47.2	53.7	114	55.5	62.5	113	15.2	80 - 125	30	
Methylene chloride	U	23.6	26.3	111	27.8	29.9	108	13.1	55 - 140	30	
n-Butylbenzene	U	23.6	27.0	114	27.8	30.3	109	11.5	65 - 140	30	
n-Propylbenzene	U	23.6	28.7	122	27.8	32.2	116	11.5	65 - 135	30	
Naphthalene	U	23.6	24.5	104	27.8	29.4	106	18.2	40 - 125	30	
o-Xylene	U	23.6	28.2	119	27.8	32.3	116	13.5	75 - 125	30	
p-Isopropyltoluene	U	23.6	28.4	120	27.8	31.9	115	11.6	75 - 135	30	
sec-Butylbenzene	U	23.6	28.5	121	27.8	32.3	116	12.5	65 - 130	30	
Styrene	U	23.6	26.7	113	27.8	30.8	111	14.0	75 - 125	30	
tert-Butylbenzene	U	23.6	28.5	121	27.8	32.9	119	14.3	65 - 130	30	
Tetrachloroethene	U	23.6	26.8	113	27.8	30.5	110	12.9	65 - 140	30	
Toluene	U	23.6	25.8	109	27.8	30.1	109	15.6	70 - 125	30	
trans-1,2-Dichloroethene	U	23.6	27.0	114	27.8	31.8	115	16.3	65 - 135	30	
trans-1,3-Dichloropropene	U	23.6	25.4	107	27.8	28.3	102	11.0	65 - 125	30	
Trichloroethene	U	23.6	27.8	118	27.8	32.2	116	14.7	75 - 125	30	
Trichlorofluoromethane	U	23.6	24.2	102	27.8	28.5	103	16.4	25 - 185	30	
Vinyl chloride	U	23.6	25.7	109	27.8	29.3	106	13.3	60 - 125	30	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4686938
Report generated 03/25/2016 10:31

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16030863
Instrument: HPMS6
Analyst: TMB
Workgroup: WG558920

Tune ID: WG558920-01
Run Date: 02/26/2016
Run Time: 13:16
File ID: 6M137522
Cal ID: HPMS6 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	25.4	9030	PASS
75.0	95.0	30.0	60.0	55.4	19666	PASS
95.0	95.0	100	100	100	35512	PASS
96.0	95.0	5.00	9.00	7.25	2576	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	73.2	26011	PASS
175	174	5.00	9.00	7.36	1914	PASS
176	174	95.0	101	96.1	24992	PASS
177	176	5.00	9.00	6.64	1660	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG558920-02	STD-S	01	02/26/2016 13:41	
WG558920-03	STD-S	01	02/26/2016 14:13	
WG558920-04	STD-S	01	02/26/2016 14:46	
WG558920-05	STD-S	01	02/26/2016 15:26	
WG558920-06	STD-S	01	02/26/2016 15:58	
WG558920-07	STD-S	01	02/26/2016 16:30	
WG558920-08	STD-CCV-S	01	02/26/2016 17:03	
WG558920-09	STD-S	01	02/26/2016 17:35	
WG558920-10	STD-S	01	02/26/2016 18:07	
WG558920-11	STD-S	01	02/26/2016 18:39	
WG558920-12	SSCV-S	01	02/26/2016 20:15	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4686940
Report generated 03/25/2016 10:31

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16030863
Instrument: HPMS6
Analyst: TMB
Workgroup: WG562074

Tune ID: WG562074-01
Run Date: 03/23/2016
Run Time: 11:50
File ID: 6M137963
Cal ID: HPMS6 - 26-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.2	6567	PASS
75.0	95.0	30.0	60.0	49.2	15945	PASS
95.0	95.0	100	100	100	32432	PASS
96.0	95.0	5.00	9.00	6.96	2256	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	80.4	26074	PASS
175	174	5.00	9.00	7.57	1973	PASS
176	174	95.0	101	99.3	25896	PASS
177	176	5.00	9.00	6.56	1699	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG562074-02	CCV-S	01	03/23/2016 12:47	
WG562075-01	BLANK	01	03/23/2016 13:53	
WG562075-02	LCS	01	03/23/2016 14:26	
L16030863-02	18DPT16(5-5.5)150316MS	01	03/23/2016 14:59	
L16030863-03	18DPT16(5-5.5)150316MSD	01	03/23/2016 15:32	
L16030863-01	18DPT16(5-5.5)150316	01	03/23/2016 17:10	
L16030863-04	18DPT16(15-15.5)150316	01	03/23/2016 21:32	
L16030863-05	18DPT16(25-25.5)150316	01	03/23/2016 22:05	
L16030863-06	18CPT16(30-30.5)150316	01	03/23/2016 22:38	
L16030863-07	18DPT16(33-33.5)150316	01	03/23/2016 23:10	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4686940
Report generated 03/25/2016 10:31

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16030863
Instrument: HPMS6
Analyst: TMB
Workgroup: WG562235

Tune ID: WG562235-01
Run Date: 03/24/2016
Run Time: 11:14
File ID: 6M137988
Cal ID: HPMS6 - 26-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.7	6323	PASS
75.0	95.0	30.0	60.0	52.2	14507	PASS
95.0	95.0	100	100	100	27812	PASS
96.0	95.0	5.00	9.00	6.86	1908	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	70.4	19568	PASS
175	174	5.00	9.00	7.63	1494	PASS
176	174	95.0	101	96.3	18848	PASS
177	176	5.00	9.00	7.09	1337	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG562235-02	CCV-S	01	03/24/2016 11:38	
WG562236-01	BLANK	01	03/24/2016 12:53	
WG562236-02	LCS	01	03/24/2016 14:32	
L16030863-08	18DPT17(2.5-3)150316	01	03/24/2016 17:52	
L16030863-09	18DPT17(2.5-3)150316FD	01	03/24/2016 18:26	
L16030863-10	18DPT17(5-5.5)150316	01	03/24/2016 18:59	
L16030863-11	18DPT17(10-10.5)150316	01	03/24/2016 19:33	
L16030863-13	18DPT17(27-27.5)150316	01	03/24/2016 20:06	
L16030863-14	18DPT17(21.5-22)150316	01	03/24/2016 20:39	
L16030863-12	18DPT17(18-18.5)150316	01	03/24/2016 21:12	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4686940
Report generated 03/25/2016 10:31

Calibration Table Report
Method: 826_SL.M
Title: 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Calibration: Mon Feb 29 15:59:52 2016
Curve: WG558920
Calibration Files

	Compound	0.5 6M137523.D	1 6M137524.D	2 6M137525.D	5 6M137526.D	10 6M137527.D	20 6M137528.D	50 6M137529.D	100 6M137530.D	200 6M137531.D	300 6M137532.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.386	0.437	0.426	0.515	0.537	0.438	0.464	0.471	0.459	10.647		
P	Chloromethane			0.578	0.509	0.480	0.500	0.503	0.398	0.425	0.436	0.479	11.984		
C	Vinyl Chloride			0.371	0.405	0.376	0.415	0.431	0.353	0.374	0.357	0.385	7.341		
T	1,3-Butadiene				0.369	0.322	0.361	0.344	0.289	0.282	0.277	0.320	11.982		
T	Bromomethane			0.192	0.207	0.206	0.215	0.213	0.184	0.207	0.218	0.205	5.643		
T	Chloroethane			0.199	0.219	0.208	0.232	0.244	0.202	0.219	0.224	0.218	6.941		
T	Trichlorofluoromethane			0.535	0.557	0.513	0.525	0.558	0.462	0.490	0.501	0.518	6.398		
T	Diethyl ether		0.243	0.231	0.234	0.251	0.241	0.233	0.233		0.238	0.238	2.758		
T	Isoprene				0.333	0.322	0.327	0.355	0.334	0.338	0.351	0.337	3.613		
T	Acrolein		0.044	0.045	0.044	0.050	0.045	0.042	0.045		0.047	0.045	5.301		
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.199	0.268	0.248	0.256	0.277	0.230	0.245	0.252	0.247	9.700		
T	Acetone					0.152	0.130	0.112	0.104	0.110	0.106	0.119	15.588	0.999	
C	1,1-Dichloroethene			0.380	0.462	0.424	0.453	0.487	0.410	0.439	0.447	0.438	7.530		
T	Tert-Butyl Alcohol		0.039	0.035	0.040	0.044	0.044	0.040	0.040		0.044	0.041	7.378		
T	Dimethyl Sulfide				0.204	0.210	0.197	0.223	0.210	0.218	0.224	0.212	4.669		
T	Iodomethane				0.056	0.082	0.123	0.197	0.197	0.211	0.207	0.153	42.723	0.998	
T	Methyl acetate				0.309	0.317	0.309	0.308	0.292	0.293	0.300	0.304	3.023		
T	Methylene Chloride			0.256	0.273	0.264	0.268	0.287	0.242	0.257	0.260	0.264	5.015		
T	Carbon Disulfide			0.821	0.880	0.808	0.840	0.872	0.808	0.825	0.844	0.837	3.273		
T	Acrylonitrile		0.108	0.114	0.119	0.133	0.128	0.130	0.129		0.140	0.125	8.391		
T	Methyl Tert Butyl Ether	0.732	0.693	0.663	0.725	0.773	0.787	0.833	0.734	0.785	0.799	0.753	6.930		
T	trans-1,2-Dichloroethene			0.227	0.244	0.240	0.247	0.265	0.226	0.240	0.244	0.242	5.097		
T	n-Hexane			0.407	0.452	0.430	0.435	0.466	0.433	0.438	0.452	0.439	4.050		
T	Diisopropyl ether		1.143	1.120	1.122	1.188	1.168	1.117	1.121		1.127	1.138	2.317		
T	Vinyl Acetate				0.493	0.583	0.630	0.596	0.570	0.626	0.621	0.588	8.090		
P	1,1-Dichloroethane			0.484	0.538	0.522	0.539	0.568	0.484	0.514	0.521	0.521	5.427		
T	Ethyl-Tert-Butyl ether		0.841	0.891	0.897	0.963	0.947	0.909	0.912		0.938	0.912	4.185		
T	2-Butanone				0.186	0.176	0.176	0.169	0.161	0.170	0.172	0.173	4.334		
T	Propionitrile		0.047	0.045	0.045	0.051	0.050	0.048	0.047		0.049	0.048	4.489		
T	2,2-Dichloropropane			0.413	0.427	0.425	0.415	0.454	0.383	0.410	0.420	0.418	4.750		
T	cis-1,2-Dichloroethene			0.265	0.274	0.263	0.275	0.290	0.250	0.269	0.273	0.270	4.259		
C	Chloroform			0.502	0.499	0.475	0.499	0.520	0.443	0.476	0.481	0.487	4.825		
T	1-Bromopropane				0.033	0.034	0.037	0.040	0.037	0.038	0.039	0.037	7.440		
T	Bromochloromethane			0.151	0.148	0.152	0.165	0.176	0.151	0.162	0.164	0.159	6.123		
T	Tetrahydrofuran		0.173	0.111	0.113	0.121	0.123	0.115	0.112		0.116	0.123	16.774	0.998	
S	Dibromofluoromethane			0.280	0.265	0.272	0.276	0.272	0.253	0.265	0.262	0.268	3.189		
T	1,1,1-Trichloroethane			0.412	0.417	0.434	0.435	0.474	0.398	0.430	0.438	0.430	5.218		
T	Cyclohexane			0.396	0.493	0.473	0.495	0.533	0.492	0.499	0.519	0.487	8.433		
T	1,1-Dichloropropene			0.306	0.372	0.338	0.347	0.383	0.324	0.345	0.355	0.346	7.125		
T	Tert-Amyl-Methyl ether		0.664	0.687	0.706	0.759	0.757	0.723	0.732		0.762	0.724	4.986		
T	Carbon Tetrachloride			0.351	0.409	0.4	0.412	0.445	0.378	0.403	0.416	0.4017	6.9015		
S	1,2-Dichloroethane-d4			0.36	0.365	0.337	0.366	0.353	0.329	0.34	0.336	0.3482	4.16		
T	Heptane											0	0		
T	1,2-Dichloroethane			0.387	0.414	0.422	0.43	0.449	0.388	0.415	0.419	0.4154	4.951		
T	Benzene	1.229	1.128	1.036	1.038	1.011	1.023	1.078	0.921	0.973	0.979	1.0416	8.3738		
T	Trichloroethene			0.223	0.257	0.243	0.254	0.268	0.229	0.245	0.249	0.2461	6.0218		
T	Methylcyclohexane			0.321	0.406	0.387	0.403	0.435	0.401	0.406	0.424	0.3978	8.6044		
C	1,2-Dichloropropane			0.249	0.279	0.277	0.29	0.305	0.266	0.286	0.29	0.2802	6.0373		
T	1,4-Dioxane			0.002	0.003	0.003	0.003	0.003	0.003		0.004	0.0031	18.585	0.996	
T	Bromodichloromethane			0.336	0.359	0.35	0.37	0.402	0.352	0.384	0.39	0.3678	6.1125		
T	Dibromomethane			0.145	0.152	0.16	0.169	0.185	0.158	0.171	0.173	0.1639	7.836		
T	2-Chloroethyl Vinyl Ether				0.126	0.141	0.155	0.164	0.161	0.178		0.1541	11.732		
T	4-Methyl-2-Pentanone				0.101	0.11	0.122	0.117	0.113	0.125	0.128	0.1167	8.1948		
T	cis-1,3-Dichloropropene			0.338	0.374	0.39	0.412	0.454	0.396	0.435	0.442	0.4052	9.5304		
T	Dimethyl Disulfide				0.171	0.174	0.192	0.225	0.22	0.245		0.2044	14.756		
I	Chlorobenzene-d5	ISTD													
S	Toluene-d8			1.274	1.278	1.167	1.22	1.21	1.113	1.144	1.105	1.1888	5.6789		
C	Toluene	1.627	1.459	1.33	1.431	1.418	1.424	1.504	1.27	1.35	1.331	1.4144	7.2521		
T	Ethyl Methacrylate			0.326	0.401	0.428	0.461	0.503	0.477	0.511	0.518	0.4532	14.498		
T	Paraldehyde											0	0		
T	trans-1,3-Dichloropropene			0.461	0.507	0.529	0.558	0.603	0.53	0.579	0.582	0.5439	8.4811		
T	1,1,2-Trichloroethane			0.265	0.288	0.302	0.309	0.319	0.28	0.302	0.299	0.2956	5.771		
T	2-Hexanone				0.298	0.324	0.345	0.341	0.328	0.359	0.366	0.3373	6.878		
T	1,3-Dichloropropane			0.488	0.541	0.538	0.558	0.579	0.503	0.54	0.54	0.5358	5.3786		
T	Tetrachloroethene			0.332	0.375	0.358	0.359	0.376	0.318	0.336	0.337	0.3489	6.0417		
T	Dibromochloromethane			0.318	0.369	0.378	0.394	0.425	0.373	0.407	0.41	0.3845	8.6342		
T	1,2-Dibromoethane			0.271	0.289	0.29	0.309	0.332	0.29	0.318	0.32	0.3023	6.7531		
T	1-Chlorohexane			0.358	0.417	0.417	0.441	0.485	0.451	0.47	0.474	0.4392	9.3805		
P	Chlorobenzene			0.915	0.966	0.916	0.927	0.958	0.821	0.89	0.88	0.909	5.1018		
T	1,1,1,2-Tetrachloroethane			0.348	0.343	0.362	0.374	0.393	0.344	0.376	0.38	0.365	5.0679		
C	Ethylbenzene	0.49	0.466	0.473	0.486	0.481	0.497	0.531	0.453	0.494	0.494	0.4864	4.3098		
T	m-,p-Xylene	0.674	0.598	0.537	0.6	0.59	0.605	0.637	0.546	0.585	0.58	0.5952	6.6768		
T	o-Xylene	0.574	0.512	0.494	0.539	0.544	0.588	0.634	0.54	0.59	0.591	0.5606	7.5243		
T	Styrene			0.772	0.876	0.918	0.982	1.071	0.935	1.037	1.041	0.9542	10.466		
P	Bromoform			0.222	0.256	0.259	0.275	0.298	0.261	0.293	0.307	0.2715	10.256		
T	Isopropylbenzene			1.284	1.474	1.498	1.583	1.683	1.433	1.559	1.542	1.507	7.8153		
I	1,4-Dichlorobenzene-d4	ISTD													
P	1,1,2,2-Tetrachloroethane			0.689	0.783	0.798	0.815	0.842	0.74	0.785	0.797	0.7811	6.0053		
S	p-Bromofluorobenzene			0.997	0.956	0.921	0.925	0.941	0.864	0.892	0.852	0.9184	5.2432		

T	1,2,3-Trichloropropane	0.202	0.247	0.251	0.244	0.258	0.225	0.243	0.244	0.2391	7.3405
T	trans-1,4-Dichloro-2-Butene	0.247	0.255	0.285	0.287	0.308	0.295	0.311	0.318	0.2883	8.9009
T	n-Propylbenzene	3.037	3.536	3.508	3.571	3.802	3.207	3.325	3.178	3.3956	7.429
T	Bromobenzene	0.67	0.762	0.744	0.775	0.808	0.694	0.733	0.719	0.7381	6.0417
T	1,3,5-Trimethylbenzene	2.096	2.503	2.443	2.485	2.702	2.295	2.435	2.377	2.417	7.2332
T	2-Chlorotoluene	1.974	2.457	2.366	2.375	2.437	2.106	2.239	2.178	2.2664	7.5835
T	4-Chlorotoluene	2.163	2.182	2.123	2.094	2.235	1.885	1.964	1.933	2.0723	6.208
T	a-Methylstyrene	0.921	1.071	1.127	1.156	1.295	1.234	1.294	1.291	1.1737	11.321
T	tert-Butylbenzene	0.437	0.508	0.504	0.521	0.567	0.48	0.511	0.502	0.5037	7.2697
T	1,2,4-Trimethylbenzene	2.274	2.614	2.634	2.636	2.804	2.386	2.535	2.452	2.5419	6.5668
T	sec-Butylbenzene	2.804	3.169	3.104	3.238	3.474	2.92	3.078	2.976	3.0953	6.6823
T	p-Isopropyltoluene	2.183	2.603	2.54	2.657	2.885	2.449	2.589	2.523	2.5537	7.7414
T	1,3-Dichlorobenzene	1.331	1.516	1.491	1.451	1.537	1.319	1.391	1.389	1.4282	5.8154
T	1,4-Dichlorobenzene	1.528	1.507	1.501	1.476	1.529	1.31	1.39	1.389	1.4537	5.5603
T	n-Butylbenzene	2.282	2.598	2.578	2.654	2.852	2.445	2.576	2.563	2.5684	6.3469
T	1,2-Dichlorobenzene	1.324	1.401	1.407	1.397	1.474	1.278	1.357	1.356	1.3743	4.3244
T	1,2-Dibromo-3-Chloropropane		0.159	0.163	0.176	0.183	0.167	0.179	0.182	0.1728	5.5543
T	1,2,4-Trichlorobenzene	0.968	0.981	1.002	1.008	1.105	0.936	0.963	0.985	0.9935	5.0666
T	Hexachlorobutadiene	0.528	0.583	0.572	0.579	0.635	0.532	0.546	0.571	0.5682	6.0591
T	Naphthalene	1.901	2.081	2.291	2.365	2.601	2.29	2.356	2.387	2.2839	9.2287
T	1,2,3-Trichlorobenzene	0.961	0.977	0.98	0.987	1.094	0.917	0.949	0.961	0.9783	5.2988

Mon Feb 29 16:03:43 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16030863 Run Date: 02/26/2016 Sample ID: WG558920-12
Instrument ID: HPMS6 Run Time: 20:15 Method: 8260B
File ID: 6M137535 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG558920 Cal ID: HPMS6 - 26-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.7	ug/kg	0.494	1.40	20	
1,1-Dichloroethene	CCC	50.0	51.6	ug/kg	0.452	3.30	20	
1,2-Dichloropropane	CCC	50.0	55.0	ug/kg	0.308	10.1	20	
Ethylbenzene	CCC	50.0	52.4	ug/kg	0.510	4.80	20	
Toluene	CCC	50.0	51.4	ug/kg	1.45	2.80	20	
Vinyl Chloride	CCC	50.0	43.3	ug/kg	0.334	13.3	20	
Bromoform	SPCC	50.0	49.2	ug/kg	0.267	1.50	20	
Chlorobenzene	SPCC	50.0	52.9	ug/kg	0.961	5.70	20	
Chloromethane	SPCC	50.0	50.9	ug/kg	0.487	1.80	20	
1,1-Dichloroethane	SPCC	50.0	50.3	ug/kg	0.525	0.700	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	52.1	ug/kg	0.815	4.30	20	
Acetone		50.0	48.7	ug/kg	0.111	2.70	20	
Benzene		50.0	50.4	ug/kg	1.05	0.900	20	
Bromobenzene		50.0	51.8	ug/kg	0.765	3.70	20	
Bromochloromethane		50.0	52.1	ug/kg	0.165	4.20	20	
Bromodichloromethane		50.0	51.6	ug/kg	0.380	3.30	20	
Bromomethane		50.0	58.6	ug/kg	0.240	17.1	20	
2-Butanone		50.0	49.2	ug/kg	0.170	1.50	20	
n-Butylbenzene		50.0	48.8	ug/kg	2.50	2.50	20	
sec-Butylbenzene		50.0	50.7	ug/kg	3.14	1.40	20	
tert-Butylbenzene		50.0	53.2	ug/kg	0.536	6.40	20	
Carbon Disulfide		50.0	44.4	ug/kg	0.743	11.2	20	
Carbon Tetrachloride		50.0	51.2	ug/kg	0.411	2.30	20	
Dibromochloromethane		50.0	51.8	ug/kg	0.399	3.70	20	
Chloroethane		50.0	56.6	ug/kg	0.247	13.2	20	
2-Chlorotoluene		50.0	52.1	ug/kg	2.36	4.20	20	
4-Chlorotoluene		50.0	52.1	ug/kg	2.16	4.10	20	
1,2-Dibromo-3-Chloropropane		50.0	52.1	ug/kg	0.180	4.30	20	
1,2-Dibromoethane		50.0	53.7	ug/kg	0.325	7.30	20	
Dibromomethane		50.0	50.4	ug/kg	0.165	0.800	20	
1,2-Dichlorobenzene		50.0	54.5	ug/kg	1.50	9.00	20	
1,3-Dichlorobenzene		50.0	52.0	ug/kg	1.49	4.00	20	
1,4-Dichlorobenzene		50.0	51.8	ug/kg	1.51	3.60	20	
Dichlorodifluoromethane		50.0	55.5	ug/kg	0.509	10.9	20	
1,2-Dichloroethane		50.0	51.3	ug/kg	0.426	2.50	20	
cis-1,2-Dichloroethene		50.0	54.1	ug/kg	0.292	8.30	20	
trans-1,2-Dichloroethene		50.0	53.7	ug/kg	0.260	7.50	20	
1,3-Dichloropropane		50.0	54.9	ug/kg	0.589	9.80	20	
2,2-Dichloropropane		50.0	53.1	ug/kg	0.444	6.20	20	
cis-1,3-Dichloropropene		50.0	58.8	ug/kg	0.476	17.5	20	
trans-1,3-Dichloropropene		50.0	52.9	ug/kg	0.575	5.70	20	
1,1-Dichloropropene		50.0	52.8	ug/kg	0.365	5.50	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4686939
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Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16030863 Run Date: 02/26/2016 Sample ID: WG558920-12
Instrument ID: HPMS6 Run Time: 20:15 Method: 8260B
File ID: 6M137535 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG558920 Cal ID: HPMS6 - 26-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	51.3	ug/kg	0.346	2.60	20	
Hexachlorobutadiene		50.0	47.6	ug/kg	0.541	4.80	20	
Isopropylbenzene		50.0	54.6	ug/kg	1.64	9.10	20	
p-Isopropyltoluene		50.0	50.9	ug/kg	2.60	1.80	20	
4-Methyl-2-Pentanone		50.0	51.3	ug/kg	0.120	2.50	20	
Methylene Chloride		50.0	53.4	ug/kg	0.281	6.80	20	
Naphthalene		50.0	49.8	ug/kg	2.28	0.300	20	
n-Propylbenzene		50.0	52.6	ug/kg	3.57	5.30	20	
Styrene		50.0	55.3	ug/kg	1.06	10.6	20	
1,1,1,2-Tetrachloroethane		50.0	51.8	ug/kg	0.379	3.70	20	
Tetrachloroethene		50.0	51.1	ug/kg	0.357	2.20	20	
1,2,3-Trichlorobenzene		50.0	51.0	ug/kg	0.997	2.00	20	
1,2,4-Trichlorobenzene		50.0	51.0	ug/kg	1.01	2.10	20	
1,1,1-Trichloroethane		50.0	52.0	ug/kg	0.447	4.00	20	
1,1,2-Trichloroethane		50.0	53.2	ug/kg	0.315	6.40	20	
Trichloroethene		50.0	54.7	ug/kg	0.269	9.40	20	
Trichlorofluoromethane		50.0	47.9	ug/kg	0.496	4.20	20	
1,2,3-Trichloropropane		50.0	53.2	ug/kg	0.254	6.30	20	
1,2,4-Trimethylbenzene		50.0	51.1	ug/kg	2.60	2.30	20	
1,3,5-Trimethylbenzene		50.0	52.7	ug/kg	2.55	5.30	20	
o-Xylene		50.0	56.9	ug/kg	0.638	13.8	20	
m-,p-Xylene		100	105	ug/kg	0.626	5.20	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4686939
Report generated 03/25/2016 10:31

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030863 Run Date: 03/23/2016 Sample ID: WG562074-02
Instrument ID: HPMS6 Run Time: 12:47 Method: 8260B
File ID: 6M137965 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG562075 Cal ID: HPMS6 - 26-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	49.2	ug/kg	0.479	1.50	20	
1,1-Dichloroethene	CCC	50.0	51.3	ug/kg	0.449	2.59	20	
1,2-Dichloropropane	CCC	50.0	52.5	ug/kg	0.294	4.98	20	
Ethylbenzene	CCC	50.0	53.5	ug/kg	0.520	6.93	20	
Toluene	CCC	50.0	51.2	ug/kg	1.45	2.46	20	
Vinyl Chloride	CCC	50.0	45.8	ug/kg	0.353	8.35	20	
Bromoform	SPCC	50.0	52.3	ug/kg	0.284	4.69	20	
Chlorobenzene	SPCC	50.0	51.4	ug/kg	0.934	2.77	20	
Chloromethane	SPCC	50.0	38.7	ug/kg	0.370	22.7	20	*
1,1-Dichloroethane	SPCC	50.0	50.5	ug/kg	0.526	0.916	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	55.7	ug/kg	0.870	11.3	20	
Xylenes		150	160	ug/kg	0.623	7.00	40	
Acetone		50.0	56.3	ug/kg	0.127	12.6	20	
Benzene		50.0	49.6	ug/kg	1.03	0.769	20	
Bromobenzene		50.0	53.5	ug/kg	0.790	6.97	20	
Bromochloromethane		50.0	53.5	ug/kg	0.170	7.03	20	
Bromodichloromethane		50.0	51.0	ug/kg	0.375	1.91	20	
Bromomethane		50.0	52.2	ug/kg	0.215	4.49	20	
2-Butanone		50.0	54.8	ug/kg	0.189	9.53	20	
n-Butylbenzene		50.0	54.3	ug/kg	2.79	8.52	20	
sec-Butylbenzene		50.0	54.9	ug/kg	3.40	9.80	20	
tert-Butylbenzene		50.0	54.6	ug/kg	0.550	9.26	20	
Carbon Disulfide		50.0	53.1	ug/kg	0.888	6.11	20	
Carbon Tetrachloride		50.0	50.8	ug/kg	0.408	1.51	20	
Dibromochloromethane		50.0	52.2	ug/kg	0.402	4.44	20	
Chloroethane		50.0	51.4	ug/kg	0.225	2.87	20	
2-Chlorotoluene		50.0	52.7	ug/kg	2.39	5.45	20	
4-Chlorotoluene		50.0	53.1	ug/kg	2.20	6.17	20	
1,2-Dibromo-3-Chloropropane		50.0	57.6	ug/kg	0.199	15.1	20	
1,2-Dibromoethane		50.0	54.3	ug/kg	0.329	8.68	20	
Dibromomethane		50.0	51.8	ug/kg	0.170	3.63	20	
1,2-Dichlorobenzene		50.0	52.8	ug/kg	1.45	5.70	20	
1,3-Dichlorobenzene		50.0	53.2	ug/kg	1.52	6.44	20	
1,4-Dichlorobenzene		50.0	52.2	ug/kg	1.52	4.44	20	
Dichlorodifluoromethane		50.0	47.7	ug/kg	0.438	4.70	20	
1,2-Dichloroethane		50.0	48.8	ug/kg	0.405	2.45	20	
cis-1,2-Dichloroethene		50.0	52.6	ug/kg	0.284	5.30	20	
trans-1,2-Dichloroethene		50.0	52.7	ug/kg	0.255	5.49	20	
1,3-Dichloropropane		50.0	51.9	ug/kg	0.556	3.71	20	
2,2-Dichloropropane		50.0	52.4	ug/kg	0.438	4.70	20	
cis-1,3-Dichloropropene		50.0	54.2	ug/kg	0.439	8.33	20	
trans-1,3-Dichloropropene		50.0	53.0	ug/kg	0.577	6.03	20	

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030863 Run Date: 03/23/2016 Sample ID: WG562074-02
Instrument ID: HPMS6 Run Time: 12:47 Method: 8260B
File ID: 6M137965 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG562075 Cal ID: HPMS6 - 26-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	52.8	ug/kg	0.366	5.69	20	
2-Hexanone		50.0	56.5	ug/kg	0.381	13.0	20	
Hexachlorobutadiene		50.0	54.8	ug/kg	0.623	9.63	20	
Isopropylbenzene		50.0	54.5	ug/kg	1.64	9.09	20	
p-Isopropyltoluene		50.0	56.2	ug/kg	2.87	12.3	20	
4-Methyl-2-Pentanone		50.0	59.4	ug/kg	0.139	18.8	20	
Methylene Chloride		50.0	50.7	ug/kg	0.267	1.30	20	
Naphthalene		50.0	60.3	ug/kg	2.76	20.7	20	*
n-Propylbenzene		50.0	54.4	ug/kg	3.69	8.80	20	
Styrene		50.0	55.3	ug/kg	1.06	10.6	20	
1,1,1,2-Tetrachloroethane		50.0	50.8	ug/kg	0.371	1.70	20	
Tetrachloroethene		50.0	54.1	ug/kg	0.377	8.17	20	
1,2,3-Trichlorobenzene		50.0	54.9	ug/kg	1.07	9.73	20	
1,2,4-Trichlorobenzene		50.0	55.6	ug/kg	1.11	11.2	20	
1,1,1-Trichloroethane		50.0	50.8	ug/kg	0.437	1.53	20	
1,1,2-Trichloroethane		50.0	52.6	ug/kg	0.311	5.26	20	
Trichloroethene		50.0	53.2	ug/kg	0.262	6.45	20	
Trichlorofluoromethane		50.0	48.3	ug/kg	0.500	3.42	20	
1,2,3-Trichloropropane		50.0	56.1	ug/kg	0.268	12.2	20	
1,2,4-Trimethylbenzene		50.0	54.3	ug/kg	2.76	8.69	20	
1,3,5-Trimethylbenzene		50.0	55.1	ug/kg	2.66	10.2	20	
o-Xylene		50.0	55.4	ug/kg	0.621	10.7	20	
m-,p-Xylene		100	105	ug/kg	0.626	5.14	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030863 Run Date: 03/24/2016 Sample ID: WG562235-02
Instrument ID: HPMS6 Run Time: 11:38 Method: 8260B
File ID: 6M137989 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG562236 Cal ID: HPMS6 - 26-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	51.3	ug/kg	0.499	2.55	20	
1,1-Dichloroethene	CCC	50.0	53.1	ug/kg	0.465	6.23	20	
1,2-Dichloropropane	CCC	50.0	54.1	ug/kg	0.303	8.25	20	
Ethylbenzene	CCC	50.0	54.4	ug/kg	0.529	8.84	20	
Toluene	CCC	50.0	52.7	ug/kg	1.49	5.48	20	
Vinyl Chloride	CCC	50.0	45.4	ug/kg	0.350	9.13	20	
Bromoform	SPCC	50.0	52.4	ug/kg	0.285	4.81	20	
Chlorobenzene	SPCC	50.0	52.4	ug/kg	0.954	4.89	20	
Chloromethane	SPCC	50.0	38.2	ug/kg	0.366	23.5	20	*
1,1-Dichloroethane	SPCC	50.0	52.5	ug/kg	0.548	5.06	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	54.4	ug/kg	0.850	8.84	20	
Xylenes		150	164	ug/kg	0.636	9.30	40	
Acetone		50.0	58.7	ug/kg	0.132	17.3	20	
Benzene		50.0	51.9	ug/kg	1.08	3.80	20	
Bromobenzene		50.0	54.5	ug/kg	0.805	9.08	20	
Bromochloromethane		50.0	56.2	ug/kg	0.178	12.4	20	
Bromodichloromethane		50.0	52.4	ug/kg	0.386	4.89	20	
Bromomethane		50.0	51.8	ug/kg	0.213	3.56	20	
2-Butanone		50.0	54.2	ug/kg	0.188	8.50	20	
n-Butylbenzene		50.0	53.9	ug/kg	2.77	7.76	20	
sec-Butylbenzene		50.0	55.1	ug/kg	3.41	10.1	20	
tert-Butylbenzene		50.0	54.9	ug/kg	0.553	9.85	20	
Carbon Disulfide		50.0	54.6	ug/kg	0.915	9.25	20	
Carbon Tetrachloride		50.0	52.9	ug/kg	0.425	5.78	20	
Dibromochloromethane		50.0	53.0	ug/kg	0.407	5.95	20	
Chloroethane		50.0	53.3	ug/kg	0.233	6.56	20	
2-Chlorotoluene		50.0	54.3	ug/kg	2.46	8.52	20	
4-Chlorotoluene		50.0	52.0	ug/kg	2.16	4.09	20	
1,2-Dibromo-3-Chloropropane		50.0	53.6	ug/kg	0.185	7.24	20	
1,2-Dibromoethane		50.0	54.0	ug/kg	0.326	7.94	20	
Dibromomethane		50.0	52.9	ug/kg	0.174	5.88	20	
1,2-Dichlorobenzene		50.0	52.1	ug/kg	1.43	4.24	20	
1,3-Dichlorobenzene		50.0	53.3	ug/kg	1.52	6.55	20	
1,4-Dichlorobenzene		50.0	51.8	ug/kg	1.51	3.61	20	
Dichlorodifluoromethane		50.0	48.5	ug/kg	0.445	3.04	20	
1,2-Dichloroethane		50.0	50.1	ug/kg	0.416	0.113	20	
cis-1,2-Dichloroethene		50.0	55.0	ug/kg	0.297	9.92	20	
trans-1,2-Dichloroethene		50.0	55.7	ug/kg	0.269	11.4	20	
1,3-Dichloropropane		50.0	52.0	ug/kg	0.558	4.07	20	
2,2-Dichloropropane		50.0	53.6	ug/kg	0.449	7.22	20	
cis-1,3-Dichloropropene		50.0	55.9	ug/kg	0.453	11.9	20	
trans-1,3-Dichloropropene		50.0	53.1	ug/kg	0.578	6.26	20	

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030863 Run Date: 03/24/2016 Sample ID: WG562235-02
Instrument ID: HPMS6 Run Time: 11:38 Method: 8260B
File ID: 6M137989 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG562236 Cal ID: HPMS6 - 26-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	55.2	ug/kg	0.382	10.5	20	
2-Hexanone		50.0	54.7	ug/kg	0.369	9.45	20	
Hexachlorobutadiene		50.0	53.2	ug/kg	0.605	6.43	20	
Isopropylbenzene		50.0	55.5	ug/kg	1.67	11.0	20	
p-Isopropyltoluene		50.0	56.0	ug/kg	2.86	12.0	20	
4-Methyl-2-Pentanone		50.0	59.2	ug/kg	0.138	18.4	20	
Methylene Chloride		50.0	53.5	ug/kg	0.282	7.04	20	
Naphthalene		50.0	56.2	ug/kg	2.57	12.4	20	
n-Propylbenzene		50.0	55.0	ug/kg	3.73	9.95	20	
Styrene		50.0	56.0	ug/kg	1.07	12.0	20	
1,1,1,2-Tetrachloroethane		50.0	51.6	ug/kg	0.377	3.26	20	
Tetrachloroethene		50.0	54.7	ug/kg	0.382	9.41	20	
1,2,3-Trichlorobenzene		50.0	52.1	ug/kg	1.02	4.25	20	
1,2,4-Trichlorobenzene		50.0	53.5	ug/kg	1.06	6.90	20	
1,1,1-Trichloroethane		50.0	52.9	ug/kg	0.455	5.72	20	
1,1,2-Trichloroethane		50.0	53.3	ug/kg	0.315	6.65	20	
Trichloroethene		50.0	55.7	ug/kg	0.274	11.4	20	
Trichlorofluoromethane		50.0	51.2	ug/kg	0.530	2.30	20	
1,2,3-Trichloropropane		50.0	54.5	ug/kg	0.261	9.08	20	
1,2,4-Trimethylbenzene		50.0	54.2	ug/kg	2.75	8.34	20	
1,3,5-Trimethylbenzene		50.0	55.3	ug/kg	2.68	10.7	20	
o-Xylene		50.0	56.3	ug/kg	0.631	12.6	20	
m-,p-Xylene		100	108	ug/kg	0.641	7.65	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4686941
Report generated 03/25/2016 10:31

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16030863
Instrument ID: HPMS6
Workgroup (AAB#): WG562075

ICAL CCV Number: WG558920-08
CAL ID: HPMS6-26-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558920-08	NA	NA	237573	439950	607631
Upper Limit	NA	NA	475146	879900	1215262
Lower Limit	NA	NA	118787	219975	303816
L16030863-01	1.00	01	213419	410845	560258
L16030863-02	1.00	01	220797	419602	562982
L16030863-03	1.00	01	221130	412191	555350
L16030863-04	1.00	01	213820	407934	558551
L16030863-05	1.00	01	200556	393377	536787
L16030863-06	1.00	01	215852	409329	558510
L16030863-07	1.00	01	220608	416422	552300
WG562075-01	1.00	01	220763	420780	568472
WG562075-02	1.00	01	231205	431283	579730

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4687208
Report generated 03/25/2016 10:31

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16030863
Instrument ID: HPMS6
Workgroup (AAB#): WG562236

ICAL CCV Number: WG558920-08
CAL ID: HPMS6-26-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558920-08	NA	NA	237573	439950	607631
Upper Limit	NA	NA	475146	879900	1215262
Lower Limit	NA	NA	118787	219975	303816
L16030863-08	1.00	01	202530	416564	582040
L16030863-09	1.00	01	199512	398818	554838
L16030863-10	1.00	01	228996	434397	587000
L16030863-11	1.00	01	224623	427761	568271
L16030863-12	1.00	01	205737	394609	540095
L16030863-13	1.00	01	222418	427612	582773
L16030863-14	1.00	01	207682	404209	554060
WG562236-01	1.00	01	220949	414863	556296
WG562236-02	1.00	01	234089	434319	574597

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4687208
Report generated 03/25/2016 10:31

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16030863
Instrument ID: HPMS6
Workgroup (AAB#): WG562075

ICAL CCV Number: WG558920-08
CAL ID: HPMS6-26-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558920-08	NA	NA	19.6	16.01	11.51
Upper Limit	NA	NA	20.1	16.51	12.01
Lower Limit	NA	NA	19.1	15.51	11.01
L16030863-01	1.00	01	19.6	16.01	11.52
L16030863-02	1.00	01	19.6	16.01	11.52
L16030863-03	1.00	01	19.59	16.01	11.51
L16030863-04	1.00	01	19.6	16.01	11.52
L16030863-05	1.00	01	19.59	16.01	11.51
L16030863-06	1.00	01	19.6	16.01	11.52
L16030863-07	1.00	01	19.6	16.01	11.52
WG562075-01	1.00	01	19.59	16.01	11.51
WG562075-02	1.00	01	19.59	16.01	11.51

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4687209
Report generated: 03/25/2016 10:31

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16030863
Instrument ID: HPMS6
Workgroup (AAB#): WG562236

ICAL CCV Number: WG558920-08
CAL ID: HPMS6-26-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558920-08	NA	NA	19.6	16.01	11.51
Upper Limit	NA	NA	20.1	16.51	12.01
Lower Limit	NA	NA	19.1	15.51	11.01
L16030863-08	1.00	01	19.6	16.01	11.52
L16030863-09	1.00	01	19.59	16.01	11.51
L16030863-10	1.00	01	19.6	16.01	11.52
L16030863-11	1.00	01	19.6	16.01	11.52
L16030863-12	1.00	01	19.59	16.01	11.51
L16030863-13	1.00	01	19.59	16.01	11.51
L16030863-14	1.00	01	19.59	16.01	11.52
WG562236-01	1.00	01	19.59	16.01	11.51
WG562236-02	1.00	01	19.6	16.01	11.52

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4687209
Report generated: 03/25/2016 10:31

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137973.D Vial: 11
Acq On : 23 Mar 2016 17:10 Operator: TMB
Sample : L16030863-01 REF 8260 4.96g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 08:29:33 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	560258	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	410845	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	213419	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	141005	46.9168 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.84%		
43) 1,2-Dichloroethane-d4	11.06	65	171500	43.9499 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 87.90%		
58) Toluene-d8	13.80	98	493916	50.5646 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.12%		
80) p-Bromofluorobenzene	17.79	95	202708	51.7105 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 103.42%		

Target Compounds					Qvalue
13) Acetone	6.60	43	1395	Below Cal	# 48
36) Tetrahydrofuran	10.30	42	2307	Below Cal	# 56
90) 1,2,4-Trimethylbenzene	18.81	105	3503	0.3229 ug/L	76

(#) = qualifier out of range (m) = manual integration
6M137973.D 826_SL.M Thu Mar 24 08:29:34 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137973.D Vial: 11
Acq On : 23 Mar 2016 17:10 Operator: TMB
Sample : L16030863-01 REF 8260 4.96g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 8:29 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

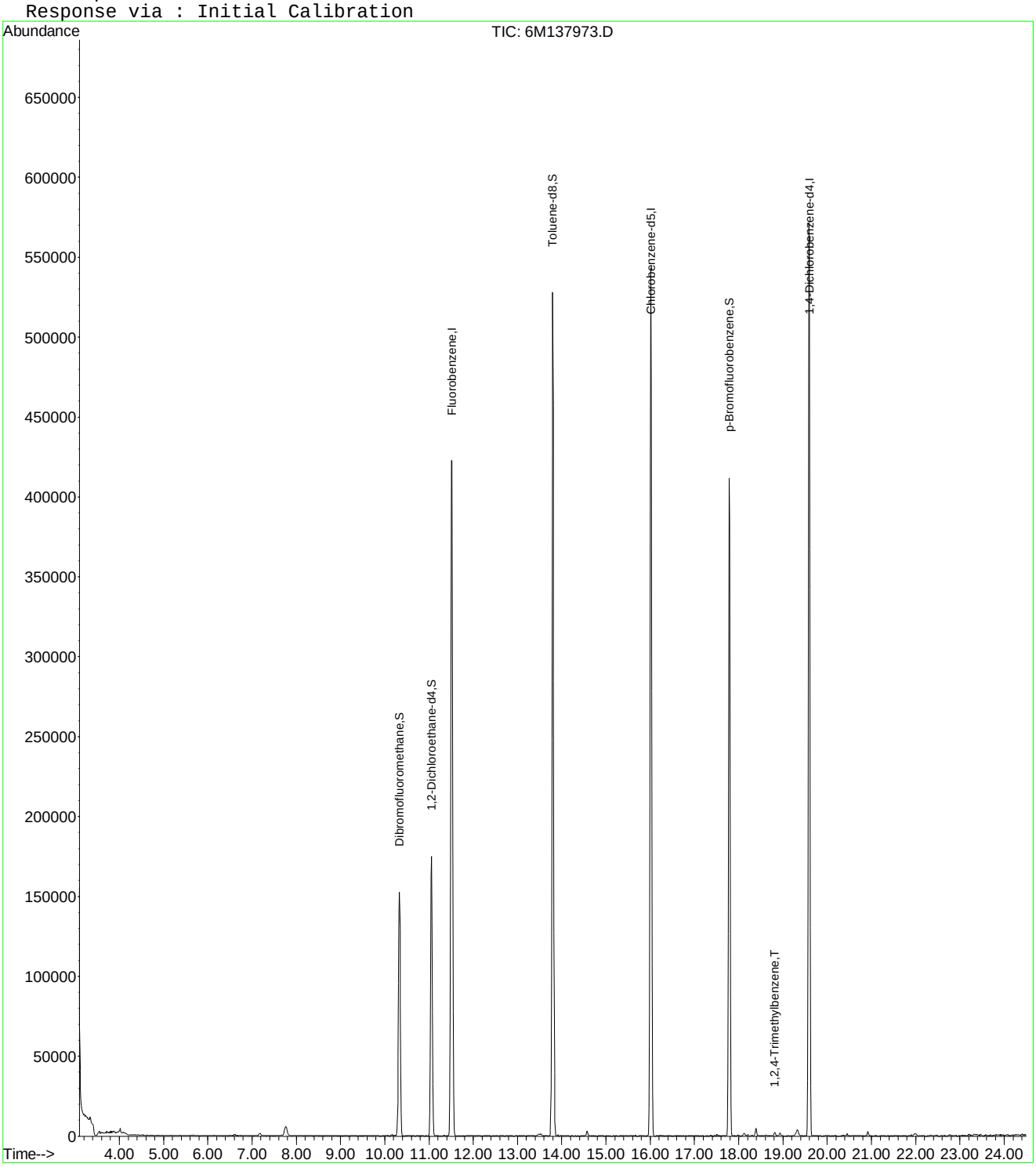

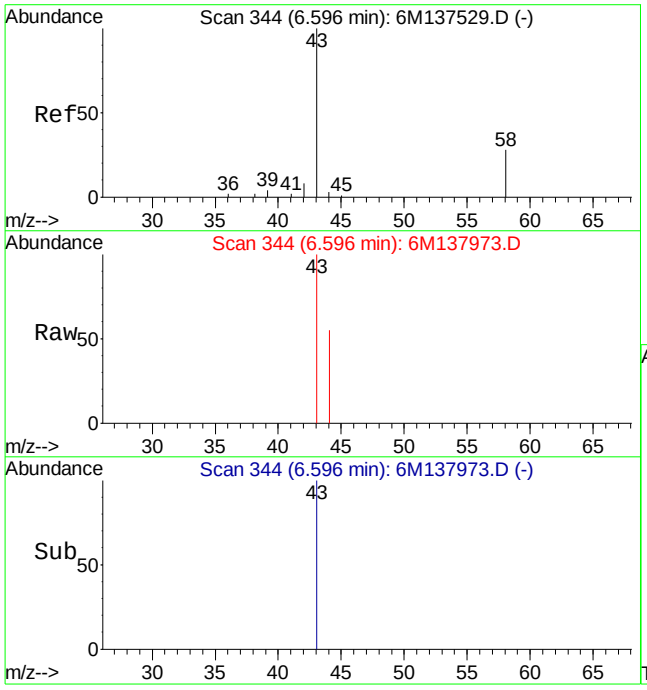

#13
Acetone
Concen: Below Cal
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137973.D
Acq: 23 Mar 2016 17:10

Tgt Ion: 43 Resp: 1395

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.1	37.7#

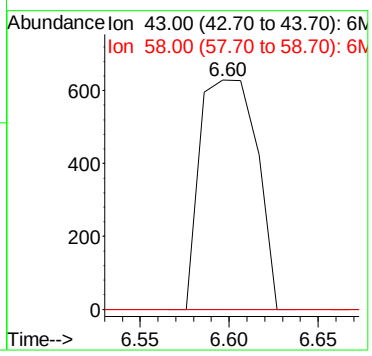

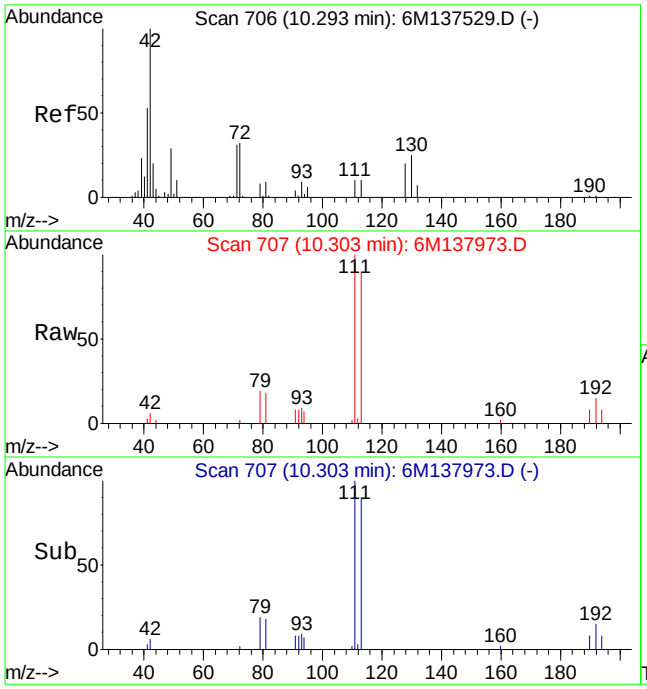

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.30 min Scan# 707
Delta R.T. 0.01 min
Lab File: 6M137973.D
Acq: 23 Mar 2016 17:10

Tgt Ion: 42 Resp: 2307

Ion	Ratio	Lower	Upper
42	100		
72	9.6	21.0	49.0#
71	9.0	20.6	48.2#

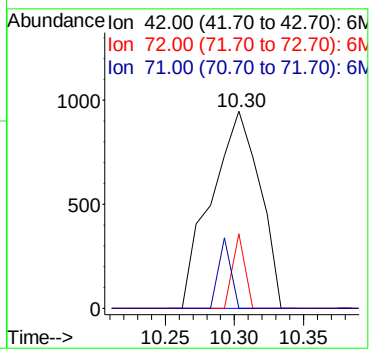

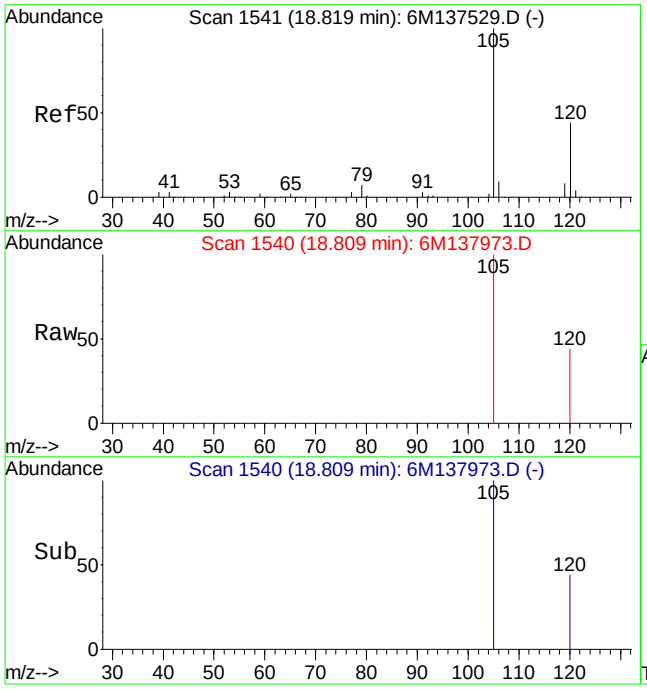

#90
1,2,4-Trimethylbenzene
Concen: 0.32 ug/L
RT: 18.81 min Scan# 1540
Delta R.T. -0.01 min
Lab File: 6M137973.D
Acq: 23 Mar 2016 17:10

Tgt Ion:105 Resp: 3503

Ion	Ratio	Lower	Upper
105	100		
120	39.5	34.3	79.9

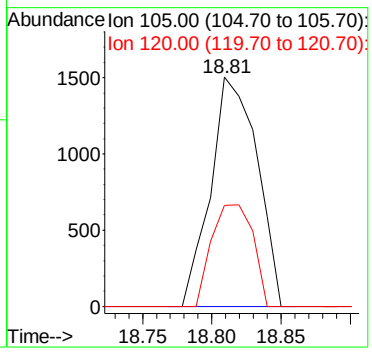

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032316\6M137969.D Vial: 7
Acq On : 23 Mar 2016 14:59 Operator: TMB
Sample : L16030863-02 MS 8260 5.34g Inst : HPMS6
Misc : 7,1 STD75209 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 15:24:08 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	562982	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	419602	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	220797	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	144445	47.8288 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.66%		
43) 1,2-Dichloroethane-d4	11.06	65	172815	44.0726 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 88.14%		
58) Toluene-d8	13.80	98	504530	50.5733 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.14%		
80) p-Bromofluorobenzene	17.79	95	209273	51.6013 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 103.20%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.41	85	118578	22.9338 ug/L	97
3) Chloromethane	3.88	50	87883	16.3110 ug/L	95
4) Vinyl Chloride	4.12	62	94290	21.7422 ug/L	98
5) 1,3-Butadiene	4.16	54	43028	11.9251 ug/L	93
6) Bromomethane	5.03	94	50201	21.7153 ug/L	98
7) Chloroethane	5.20	64	58472	23.7787 ug/L	98
8) Trichlorofluoromethane	5.70	101	119305	20.4736 ug/L	99
9) Diethyl ether	6.25	59	1701	0.6345 ug/L	84
10) Isoprene	6.28	67	98795	26.0247 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	68807	24.7379 ug/L	94
13) Acetone	6.60	43	25247	17.0595 ug/L	94
14) 1,1-Dichloroethene	6.83	61	105328	21.3788 ug/L	94
15) Tert-Butyl Alcohol	6.84	59	3686	8.0181 ug/L #	57
16) Dimethyl Sulfide	7.12	62	76677	32.0785 ug/L	96
17) Iodomethane	7.38	142	48312	25.2682 ug/L	97
18) Methyl acetate	7.39	43	69979	20.4392 ug/L	97
19) Methylene Chloride	7.67	84	66015	22.2490 ug/L	86
20) Carbon Disulfide	7.72	76	195902	20.7823 ug/L	98
21) Acrylonitrile	7.87	53	30190	21.4552 ug/L	98
22) Methyl Tert Butyl Ether	7.89	73	197943	23.3606 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	62302	22.8908 ug/L	88
24) n-Hexane	8.24	57	116070	23.4850 ug/L	99
26) Vinyl Acetate	8.80	43	135343	20.4332 ug/L	99
27) 1,1-Dichloroethane	8.84	63	121765	20.7510 ug/L	97
29) 2-Butanone	9.46	43	39934	20.5210 ug/L	97
31) 2,2-Dichloropropane	9.69	77	107291	22.7790 ug/L	93
32) cis-1,2-Dichloroethene	9.77	96	68657	22.5955 ug/L	96
33) Chloroform	10.01	83	115468	21.0702 ug/L	97
34) 1-Bromopropane	10.16	122	15624	37.5048 ug/L	99
35) Bromochloromethane	10.27	130	39295	22.0098 ug/L	100
36) Tetrahydrofuran	10.29	42	2252	Below Cal #	57
38) 1,1,1-Trichloroethane	10.60	97	104274	21.5417 ug/L	99
39) Cyclohexane	10.63	56	134528	24.5089 ug/L	87
40) 1,1-Dichloropropene	10.82	75	88414	22.6807 ug/L	95
42) Carbon Tetrachloride	10.99	117	96341	21.3007 ug/L	97
45) 1,2-Dichloroethane	11.19	62	97293	20.8007 ug/L	99
46) Benzene	11.23	78	254990	21.7428 ug/L	93
47) Trichloroethene	12.09	130	65218	23.5398 ug/L	98
48) Methylcyclohexane	12.18	83	113778	25.4035 ug/L	90
49) 1,2-Dichloropropane	12.34	63	71880	22.7794 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M137969.D 826_SL.M Wed Mar 23 15:24:08 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032316\6M137969.D Vial: 7
Acq On : 23 Mar 2016 14:59 Operator: TMB
Sample : L16030863-02 MS 8260 5.34g Inst : HPMS6
Misc : 7,1 STD75209 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 15:24:08 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
51)	Bromodichloromethane	12.68	83	87445	21.1173 ug/L	96
52)	Dibromomethane	12.78	93	38212	20.7041 ug/L	98
53)	2-Chloroethyl Vinyl Ether	13.04	63	39956	23.0215 ug/L	98
54)	4-Methyl-2-Pentanone	13.07	58	29085	22.1313 ug/L	96
55)	cis-1,3-Dichloropropene	13.43	75	112316	24.6180 ug/L	98
56)	Dimethyl Disulfide	13.72	79	55377	24.0661 ug/L	98
59)	Toluene	13.91	91	259164	21.8346 ug/L	98
60)	Ethyl Methacrylate	14.04	69	85127	22.3833 ug/L	97
62)	trans-1,3-Dichloropropene	14.12	75	98078	21.4888 ug/L	99
63)	1,1,2-Trichloroethane	14.38	97	54373	21.9167 ug/L	98
64)	2-Hexanone	14.31	43	57550	20.3290 ug/L	97
65)	1,3-Dichloropropane	14.73	76	101312	22.5309 ug/L	99
66)	Tetrachloroethene	14.87	166	66363	22.6649 ug/L	98
67)	Dibromochloromethane	15.18	129	66442	20.5924 ug/L	100
68)	1,2-Dibromoethane	15.48	107	54675	21.5495 ug/L	99
69)	1-Chlorohexane	15.59	91	89419	24.2594 ug/L	88
70)	Chlorobenzene	16.07	112	171622	22.4978 ug/L	70
71)	1,1,1,2-Tetrachloroethane	16.11	131	63896	20.8609 ug/L	97
72)	Ethylbenzene	16.10	106	90834	22.2514 ug/L	95
73)	m-,p-Xylene	16.22	106	227060	45.4587 ug/L	97
74)	o-Xylene	16.88	106	112387	23.8890 ug/L	96
75)	Styrene	16.92	104	181320	22.6444 ug/L	96
76)	Bromoform	17.49	173	42716	18.7503 ug/L	99
77)	Isopropylbenzene	17.38	105	298915	23.6360 ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.65	83	74715	21.6618 ug/L	95
81)	1,2,3-Trichloropropane	17.87	110	23610	22.3568 ug/L	94
82)	trans-1,4-Dichloro-2-Buten	17.93	53	21547	16.9218 ug/L	86
83)	n-Propylbenzene	17.98	91	364556	24.3123 ug/L	99
84)	Bromobenzene	18.13	156	73166	22.4478 ug/L	98
85)	1,3,5-Trimethylbenzene	18.21	105	258915	24.2584 ug/L	97
86)	2-Chlorotoluene	18.30	91	233883	23.3686 ug/L	96
87)	4-Chlorotoluene	18.36	91	216614	23.6702 ug/L	96
88)	a-Methylstyrene	18.69	118	128370	24.7668 ug/L	99
89)	tert-Butylbenzene	18.76	134	53756	24.1675 ug/L	96
90)	1,2,4-Trimethylbenzene	18.82	105	260068	23.1694 ug/L	82
91)	sec-Butylbenzene	19.07	105	329879	24.1343 ug/L	99
92)	p-Isopropyltoluene	19.27	119	271065	24.0374 ug/L	100
93)	1,3-Dichlorobenzene	19.48	146	145818	23.1214 ug/L	98
94)	1,4-Dichlorobenzene	19.64	146	147018	22.9016 ug/L	97
95)	n-Butylbenzene	19.89	91	259673	22.8948 ug/L	98
96)	1,2-Dichlorobenzene	20.23	146	139848	23.0445 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	21.41	75	15683	20.5500 ug/L	92
98)	1,2,4-Trichlorobenzene	22.76	180	100299	22.8619 ug/L	98
99)	Hexachlorobutadiene	22.96	225	60481	24.1059 ug/L	99
100)	Naphthalene	23.20	128	209308	20.7531 ug/L	99
101)	1,2,3-Trichlorobenzene	23.59	180	95851	22.1878 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M137969.D 826_SL.M Wed Mar 23 15:24:09 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032316\6M137969.D Vial: 7
Acq On : 23 Mar 2016 14:59 Operator: TMB
Sample : L16030863-02 MS 8260 5.34g Inst : HPMS6
Misc : 7,1 STD75209 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 15:24 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

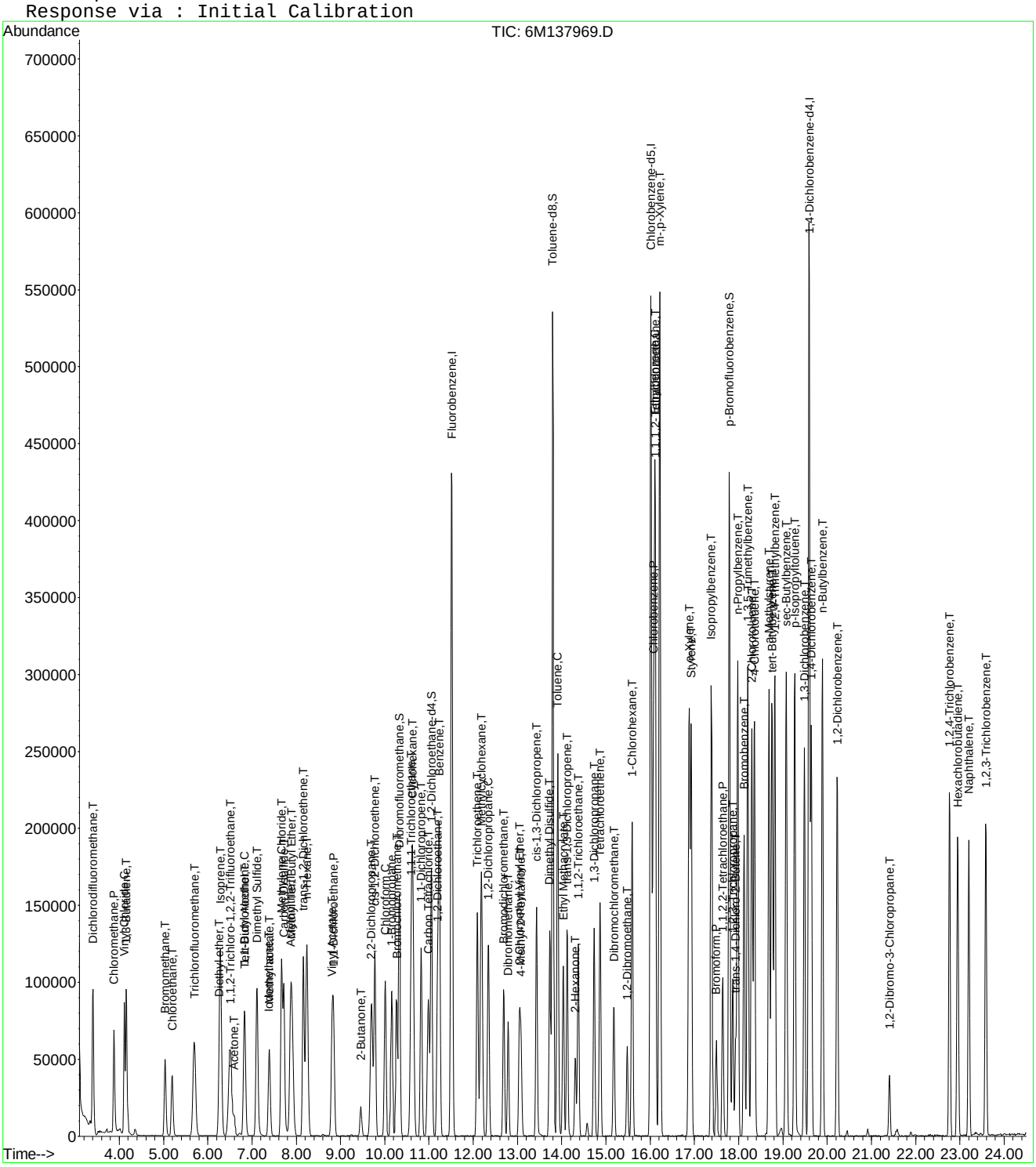

6M137969.D 826_SL.M Wed Mar 23 15:24:09 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032316\6M137970.D Vial: 8
Acq On : 23 Mar 2016 15:32 Operator: TMB
Sample : L16030863-03 MSD 8260 4.54g Inst : HPMS6
Misc : 7,1 STD75209 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 15:56:51 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	555350	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	412191	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	221130	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	139718	46.8994 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.80%		
43) 1,2-Dichloroethane-d4	11.06	65	165925	42.8970 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 85.80%		
58) Toluene-d8	13.80	98	495316	50.5424 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.08%		
80) p-Bromofluorobenzene	17.79	95	205069	50.4885 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 100.98%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	115420	22.6298 ug/L	98
3) Chloromethane	3.88	50	89443	16.8286 ug/L	97
4) Vinyl Chloride	4.12	62	90373	21.1254 ug/L	99
5) 1,3-Butadiene	4.16	54	44025	12.3691 ug/L	95
6) Bromomethane	5.04	94	49488	21.7011 ug/L	100
7) Chloroethane	5.19	64	57542	23.7221 ug/L	99
8) Trichlorofluoromethane	5.70	101	117918	20.5137 ug/L	99
9) Diethyl ether	6.24	59	1322	0.4999 ug/L #	78
10) Isoprene	6.28	67	94819	25.3205 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	64925	23.6630 ug/L	95
13) Acetone	6.60	43	25250	17.3569 ug/L	95
14) 1,1-Dichloroethene	6.83	61	103424	21.2808 ug/L	95
15) Tert-Butyl Alcohol	6.93	59	186	0.4102 ug/L #	57
16) Dimethyl Sulfide	7.12	62	72288	30.6579 ug/L	97
17) Iodomethane	7.38	142	46132	24.6184 ug/L	95
18) Methyl acetate	7.39	43	76016	22.5075 ug/L	97
19) Methylene Chloride	7.67	84	63128	21.5684 ug/L	84
20) Carbon Disulfide	7.72	76	186287	20.0339 ug/L	100
21) Acrylonitrile	7.86	53	29489	21.2450 ug/L	98
22) Methyl Tert Butyl Ether	7.89	73	185401	22.1812 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	61499	22.9063 ug/L	91
24) n-Hexane	8.24	57	110501	22.6654 ug/L	98
26) Vinyl Acetate	8.80	43	107446	16.4444 ug/L	98
27) 1,1-Dichloroethane	8.83	63	118714	20.5091 ug/L	99
29) 2-Butanone	9.46	43	39394	20.5217 ug/L	99
31) 2,2-Dichloropropane	9.70	77	103974	22.3782 ug/L	93
32) cis-1,2-Dichloroethene	9.77	96	66577	22.2121 ug/L	96
33) Chloroform	10.01	83	111891	20.6981 ug/L	97
34) 1-Bromopropane	10.16	122	15262	37.1393 ug/L	100
35) Bromochloromethane	10.26	130	37545	21.3186 ug/L	98
36) Tetrahydrofuran	10.29	42	3088	0.2772 ug/L #	66
38) 1,1,1-Trichloroethane	10.60	97	101181	21.1900 ug/L	99
39) Cyclohexane	10.64	56	127756	23.5950 ug/L	87
40) 1,1-Dichloropropene	10.83	75	84774	22.0458 ug/L	96
41) Tert-Amyl-Methyl ether	10.83	73	12142	1.5108 ug/L #	53
42) Carbon Tetrachloride	10.99	117	95879	21.4899 ug/L	95
45) 1,2-Dichloroethane	11.19	62	94351	20.4490 ug/L	99
46) Benzene	11.23	78	247181	21.3666 ug/L	94
47) Trichloroethene	12.09	130	63404	23.1996 ug/L	96
48) Methylcyclohexane	12.18	83	106473	24.0992 ug/L	89

(#) = qualifier out of range (m) = manual integration
6M137970.D 826_SL.M Wed Mar 23 15:56:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032316\6M137970.D Vial: 8
Acq On : 23 Mar 2016 15:32 Operator: TMB
Sample : L16030863-03 MSD 8260 4.54g Inst : HPMS6
Misc : 7,1 STD75209 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 15:56:51 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
49)	1,2-Dichloropropane	12.34	63	70757	22.7316	ug/L	98
51)	Bromodichloromethane	12.68	83	83669	20.4831	ug/L	95
52)	Dibromomethane	12.79	93	36443	20.0170	ug/L	97
53)	2-Chloroethyl Vinyl Ether	13.04	63	35438	20.6989	ug/L	99
54)	4-Methyl-2-Pentanone	13.07	58	28935	22.3198	ug/L	95
55)	cis-1,3-Dichloropropene	13.43	75	105177	23.3701	ug/L	97
56)	Dimethyl Disulfide	13.73	79	49868	21.9698	ug/L	96
59)	Toluene	13.91	91	253133	21.7099	ug/L	99
60)	Ethyl Methacrylate	14.04	69	73735	19.7365	ug/L	98
62)	trans-1,3-Dichloropropene	14.12	75	91409	20.3877	ug/L	99
63)	1,1,2-Trichloroethane	14.38	97	51274	21.0392	ug/L	98
64)	2-Hexanone	14.31	43	56003	20.1383	ug/L	95
65)	1,3-Dichloropropane	14.74	76	96856	21.9272	ug/L	98
66)	Tetrachloroethene	14.87	166	63093	21.9355	ug/L	99
67)	Dibromochloromethane	15.18	129	63825	20.1370	ug/L	99
68)	1,2-Dibromoethane	15.48	107	52312	20.9889	ug/L	98
69)	1-Chlorohexane	15.59	91	85038	23.4856	ug/L	90
70)	Chlorobenzene	16.07	112	164228	21.9156	ug/L	70
71)	1,1,1,2-Tetrachloroethane	16.11	131	61475	20.4313	ug/L	97
72)	Ethylbenzene	16.10	106	88632	22.1024	ug/L	97
73)	m-,p-Xylene	16.22	106	220850	45.0104	ug/L	98
74)	o-Xylene	16.88	106	107415	23.2426	ug/L	94
75)	Styrene	16.92	104	174280	22.1565	ug/L	96
76)	Bromoform	17.49	173	41938	18.7398	ug/L	98
77)	Isopropylbenzene	17.38	105	287541	23.1455	ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.64	83	74582	21.5907	ug/L	97
81)	1,2,3-Trichloropropane	17.87	110	23646	22.3571	ug/L	98
82)	trans-1,4-Dichloro-2-Buten	17.93	53	20539	16.1059	ug/L	84
83)	n-Propylbenzene	17.98	91	348311	23.1939	ug/L	98
84)	Bromobenzene	18.13	156	70850	21.7045	ug/L	100
85)	1,3,5-Trimethylbenzene	18.21	105	248935	23.2882	ug/L	96
86)	2-Chlorotoluene	18.30	91	226595	22.6063	ug/L	96
87)	4-Chlorotoluene	18.35	91	205424	22.4136	ug/L	96
88)	a-Methylstyrene	18.69	118	122170	23.5351	ug/L	98
89)	tert-Butylbenzene	18.76	134	52840	23.7199	ug/L	85
90)	1,2,4-Trimethylbenzene	18.82	105	250443	22.2783	ug/L	81
91)	sec-Butylbenzene	19.08	105	318468	23.2644	ug/L	98
92)	p-Isopropyltoluene	19.27	119	259249	22.9550	ug/L	100
93)	1,3-Dichlorobenzene	19.48	146	139482	22.0834	ug/L	97
94)	1,4-Dichlorobenzene	19.64	146	142064	22.0966	ug/L	98
95)	n-Butylbenzene	19.89	91	248002	21.8329	ug/L	98
96)	1,2-Dichlorobenzene	20.23	146	134764	22.1733	ug/L	97
97)	1,2-Dibromo-3-Chloropropan	21.41	75	16485	21.5683	ug/L	90
98)	1,2,4-Trichlorobenzene	22.76	180	95607	21.7596	ug/L	98
99)	Hexachlorobutadiene	22.96	225	58173	23.1511	ug/L	98
100)	Naphthalene	23.20	128	213934	21.1798	ug/L	99
101)	1,2,3-Trichlorobenzene	23.59	180	93853	21.6926	ug/L	99

(#) = qualifier out of range (m) = manual integration
6M137970.D 826_SL.M Wed Mar 23 15:56:51 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032316\6M137970.D Vial: 8
Acq On : 23 Mar 2016 15:32 Operator: TMB
Sample : L16030863-03 MSD 8260 4.54g Inst : HPMS6
Misc : 7,1 STD75209 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 15:56 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

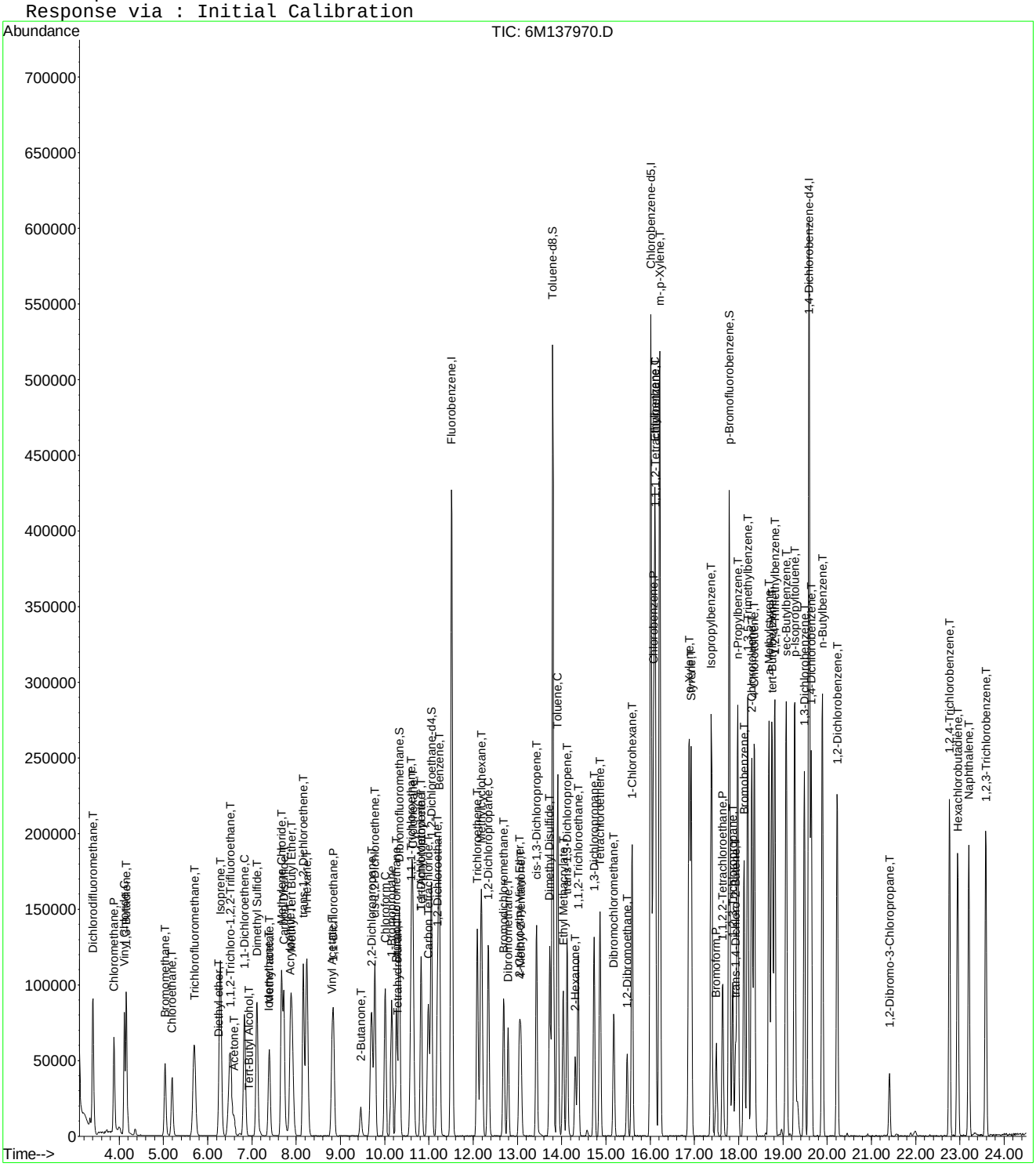

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137981.D Vial: 19
Acq On : 23 Mar 2016 21:32 Operator: TMB
Sample : L16030863-04 8260 4.97g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 08:29:44 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	558551	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	407934	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	213820	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	141077	47.0842 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.16%		
43) 1,2-Dichloroethane-d4	11.06	65	167351	43.0177 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 86.04%		
58) Toluene-d8	13.80	98	497566	51.3018 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 102.60%		
80) p-Bromofluorobenzene	17.79	95	201820	51.3874 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.78%		

Target Compounds					Qvalue
11) Acrolein	6.50	56	1173	2.3224 ug/L	84
13) Acetone	6.60	43	11465	5.4266 ug/L #	1
15) Tert-Butyl Alcohol	6.64	59	1092	2.3943 ug/L #	1
20) Carbon Disulfide	7.73	76	3027	0.3237 ug/L #	75
29) 2-Butanone	9.46	43	909	0.4708 ug/L #	56
36) Tetrahydrofuran	10.30	42	2553	Below Cal #	53
82) trans-1,4-Dichloro-2-Buten	18.03	53	649	0.5263 ug/L #	1
90) 1,2,4-Trimethylbenzene	18.81	105	5268	0.4846 ug/L	80
91) sec-Butylbenzene	18.81	105	4330	0.3271 ug/L #	56

(#) = qualifier out of range (m) = manual integration
6M137981.D 826_SL.M Thu Mar 24 08:29:44 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137981.D Vial: 19
Acq On : 23 Mar 2016 21:32 Operator: TMB
Sample : L16030863-04 8260 4.97g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 8:29 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

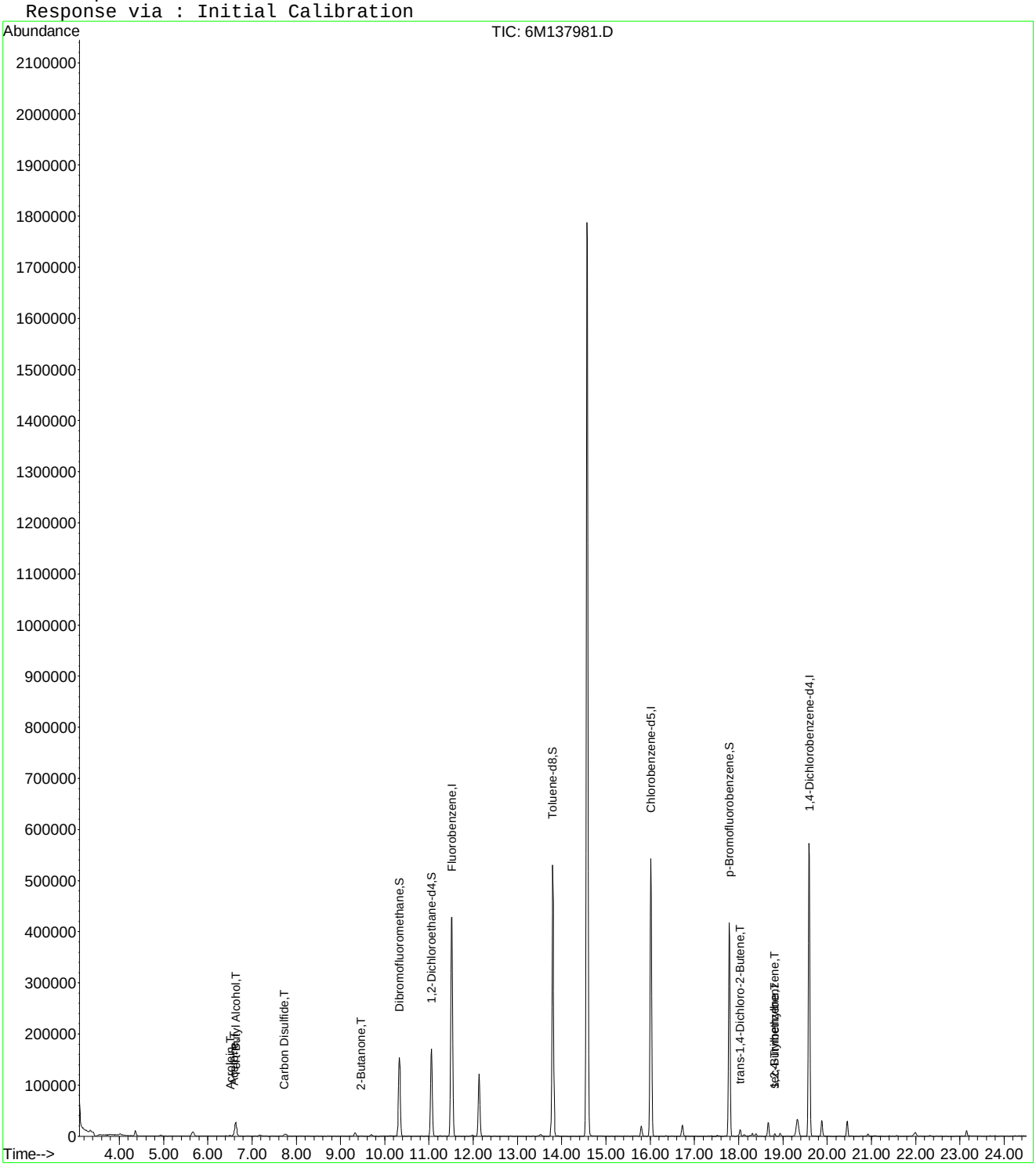

6M137981.D 826_SL.M Thu Mar 24 08:29:44 2016 Page 2

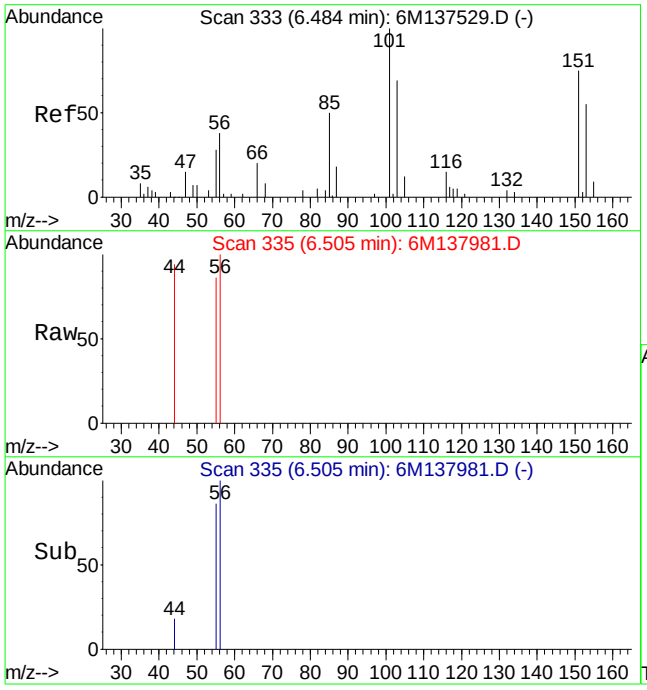

#11
Acrolein
Concen: 2.32 ug/L
RT: 6.50 min Scan# 335
Delta R.T. 0.02 min
Lab File: 6M137981.D
Acq: 23 Mar 2016 21:32

Tgt Ion: 56 Resp: 1173

Ion	Ratio	Lower	Upper
56	100		
55	61.0	44.6	104.0

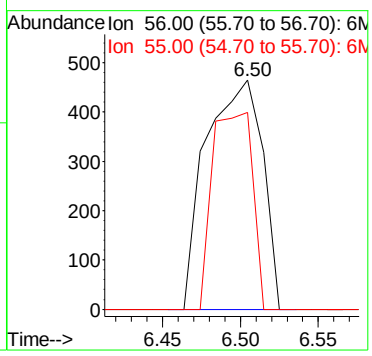

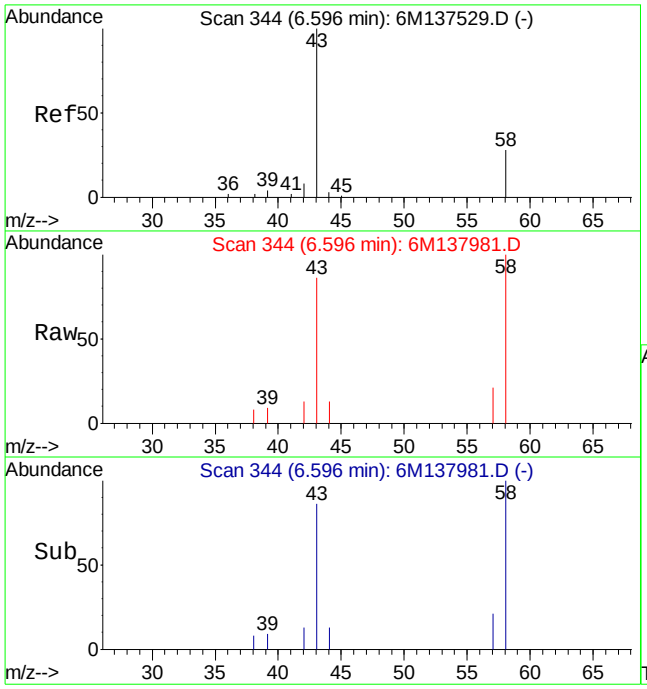

#13
Acetone
Concen: 5.43 ug/L
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137981.D
Acq: 23 Mar 2016 21:32

Tgt Ion: 43 Resp: 11465

Ion	Ratio	Lower	Upper
43	100		
58	445.6	16.1	37.7#

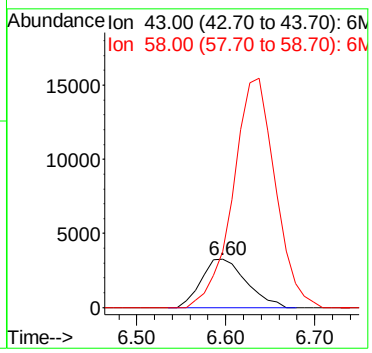

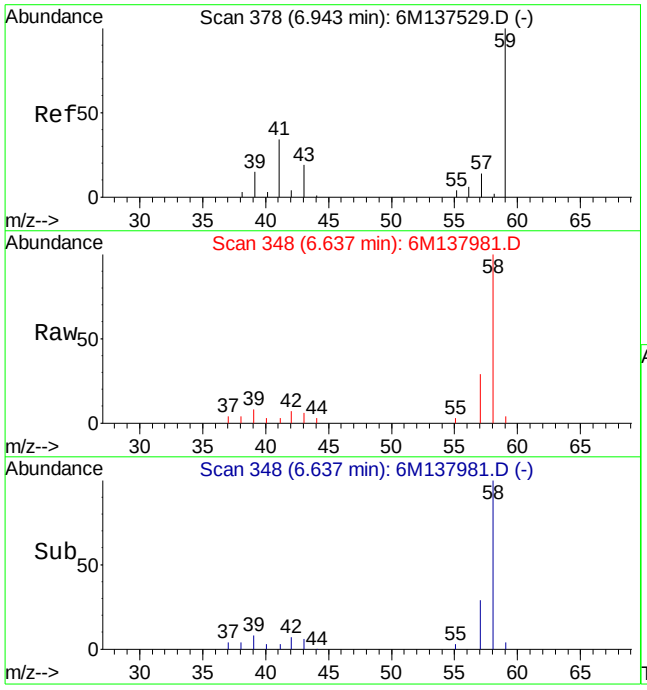

#15
Tert-Butyl Alcohol
Concen: 2.39 ug/L
RT: 6.64 min Scan# 348
Delta R.T. -0.30 min
Lab File: 6M137981.D
Acq: 23 Mar 2016 21:32

Tgt Ion: 59 Resp: 1092

Ion	Ratio	Lower	Upper
59	100		
41	70.3	15.0	35.0#
57	1280.4	5.9	13.9#

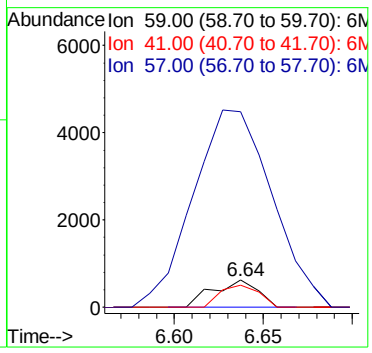

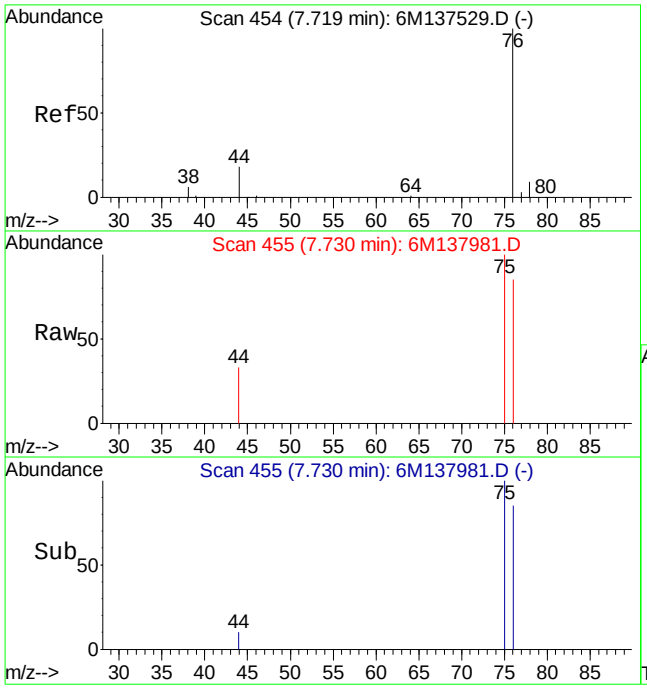

#20
Carbon Disulfide
Concen: 0.32 ug/L
RT: 7.73 min Scan# 455
Delta R.T. 0.01 min
Lab File: 6M137981.D
Acq: 23 Mar 2016 21:32

Tgt Ion: 76 Resp: 3027

Ion	Ratio	Lower	Upper
76	100		
78	0.0	5.3	12.5#

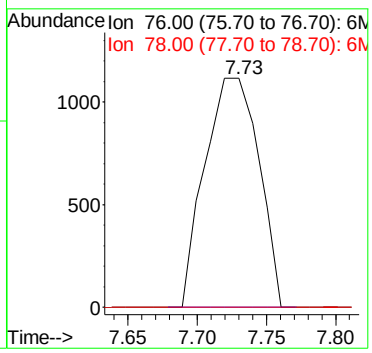

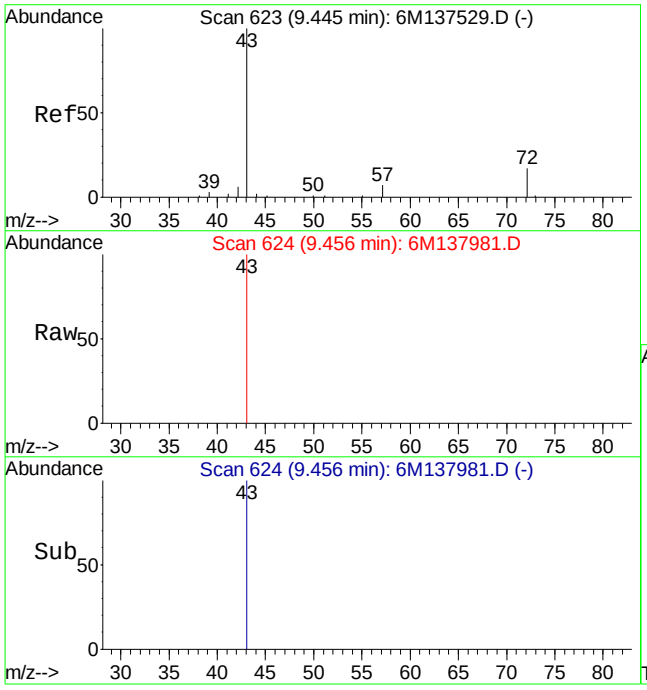

#29
2-Butanone
Concen: 0.47 ug/L
RT: 9.46 min Scan# 624
Delta R.T. 0.01 min
Lab File: 6M137981.D
Acq: 23 Mar 2016 21:32

Tgt Ion: 43 Resp: 909

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.2	28.4#

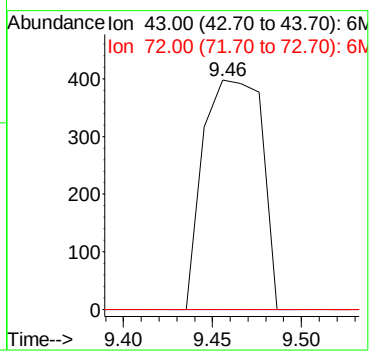

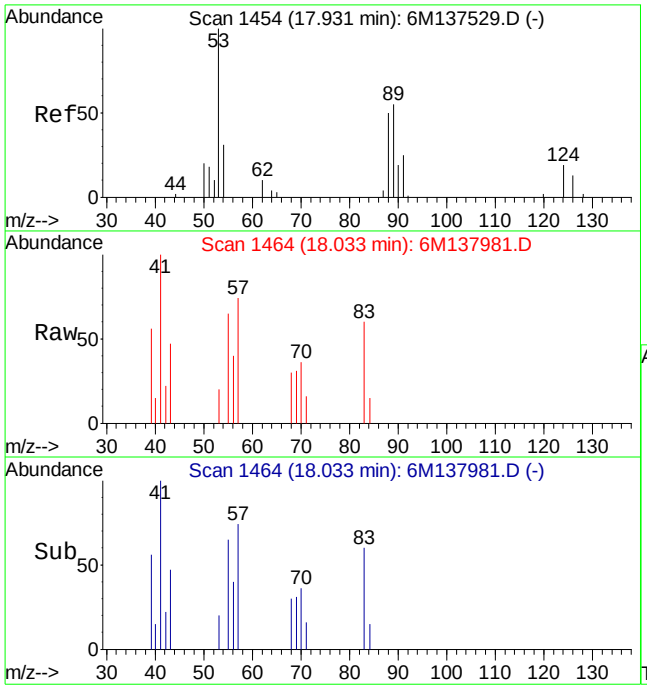

#82
trans-1,4-Dichloro-2-Butene
Concen: 0.53 ug/L
RT: 18.03 min Scan# 1464
Delta R.T. 0.10 min
Lab File: 6M137981.D
Acq: 23 Mar 2016 21:32

Tgt Ion: 53 Resp: 649

Ion	Ratio	Lower	Upper
53	100		
75	0.0	69.2	161.6#

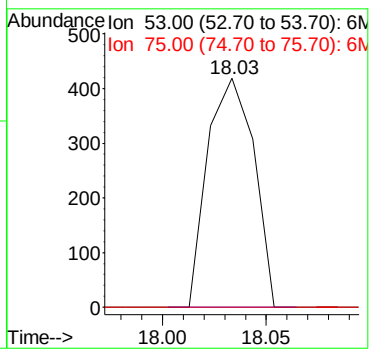

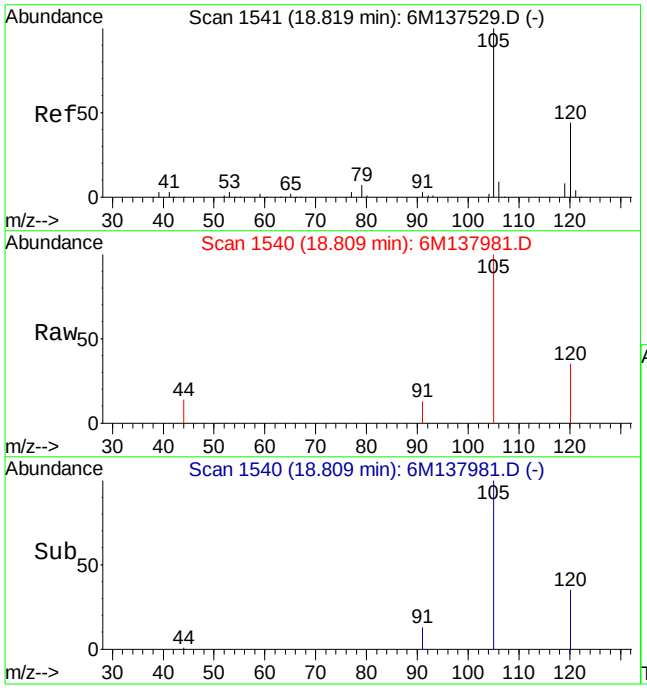

#90
1,2,4-Trimethylbenzene
Concen: 0.48 ug/L
RT: 18.81 min Scan# 1540
Delta R.T. -0.01 min
Lab File: 6M137981.D
Acq: 23 Mar 2016 21:32

Tgt Ion:105 Resp: 5268

Ion	Ratio	Lower	Upper
105	100		
120	42.2	34.3	79.9

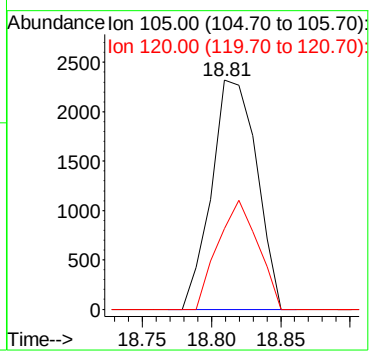

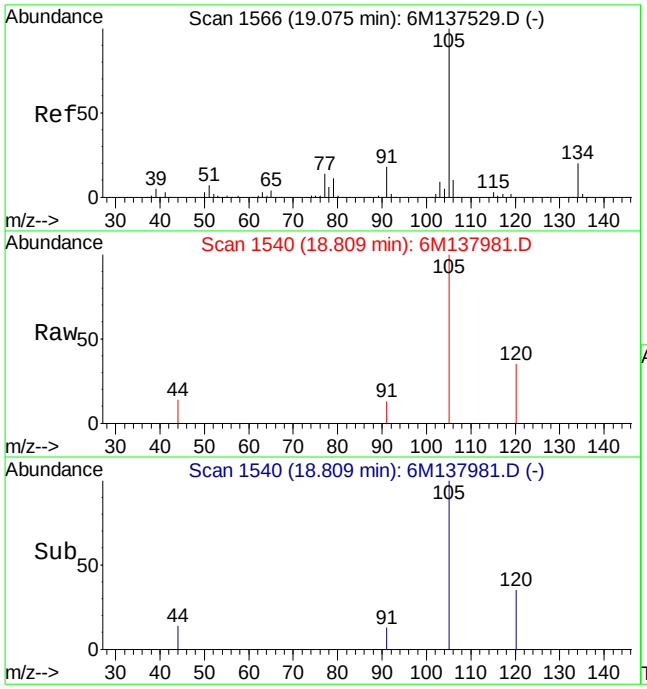

#91
sec-Butylbenzene
Concen: 0.33 ug/L
RT: 18.81 min Scan# 1540
Delta R.T. -0.27 min
Lab File: 6M137981.D
Acq: 23 Mar 2016 21:32

Tgt Ion:105 Resp: 4330

Ion	Ratio	Lower	Upper
105	100		
134	0.0	12.2	28.6#

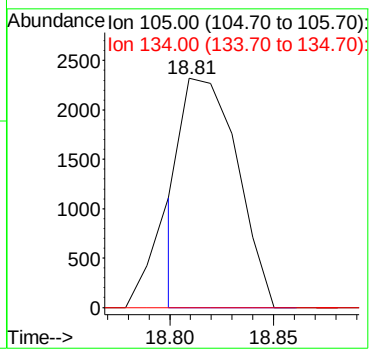

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137982.D Vial: 20
Acq On : 23 Mar 2016 22:05 Operator: TMB
Sample : L16030863-05 8260 4.68g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 08:29:45 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	536787	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	393377	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	200556	50.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.33	111	136071	47.2547 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.50%		
43) 1,2-Dichloroethane-d4	11.06	65	163649	43.7717 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 87.54%		
58) Toluene-d8	13.80	98	476294	50.9258 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.86%		
80) p-Bromofluorobenzene	17.79	95	191413	51.9609 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 103.92%		
Target Compounds					Qvalue
13) Acetone	6.60	43	10264	4.7544 ug/L #	1
36) Tetrahydrofuran	10.30	42	2309	Below Cal #	48
90) 1,2,4-Trimethylbenzene	18.82	105	4445	0.4360 ug/L	72
91) sec-Butylbenzene	18.82	105	3459	0.2786 ug/L #	56

(#) = qualifier out of range (m) = manual integration
6M137982.D 826_SL.M Thu Mar 24 08:29:45 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137982.D Vial: 20
Acq On : 23 Mar 2016 22:05 Operator: TMB
Sample : L16030863-05 8260 4.68g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 8:29 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

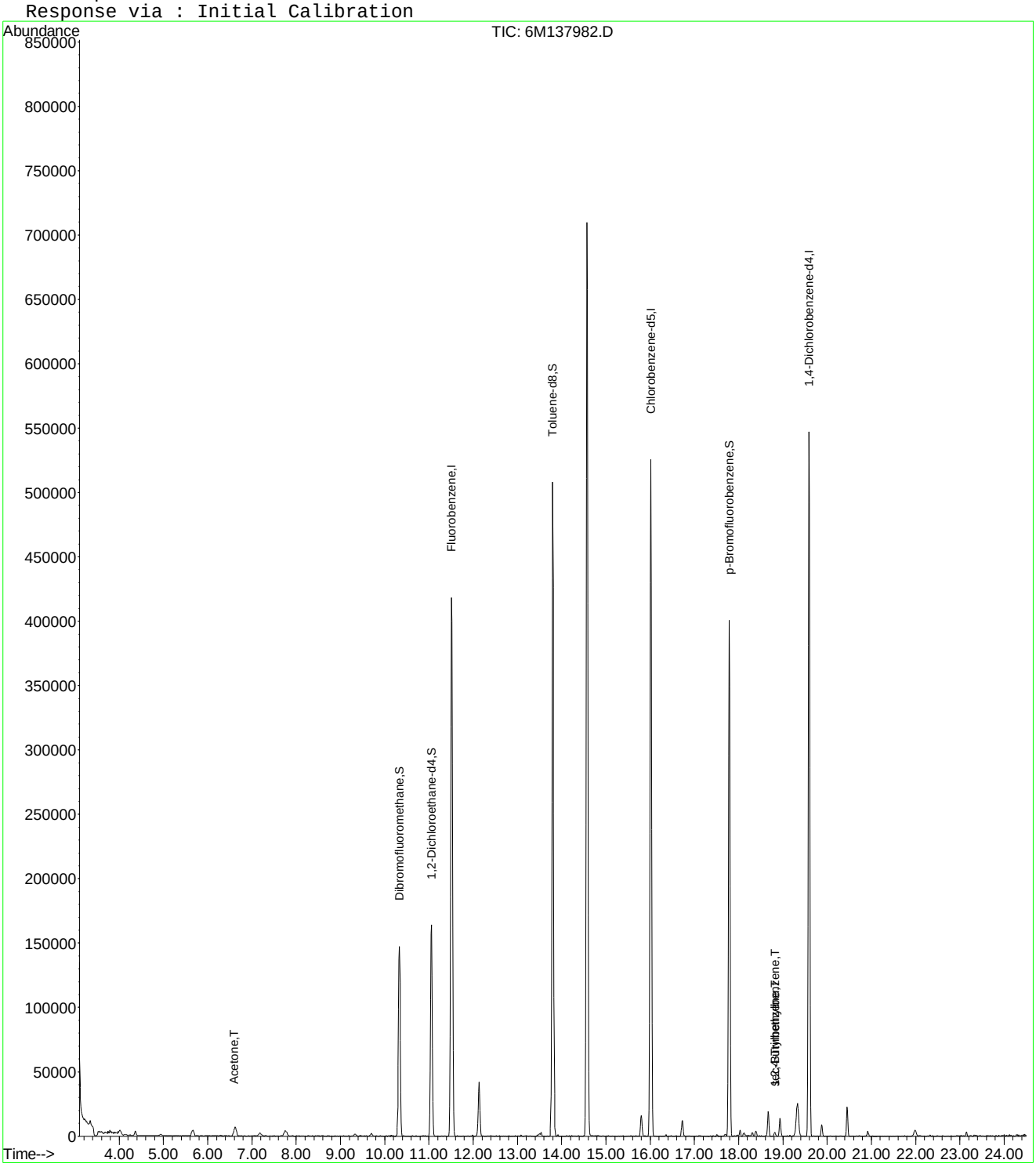

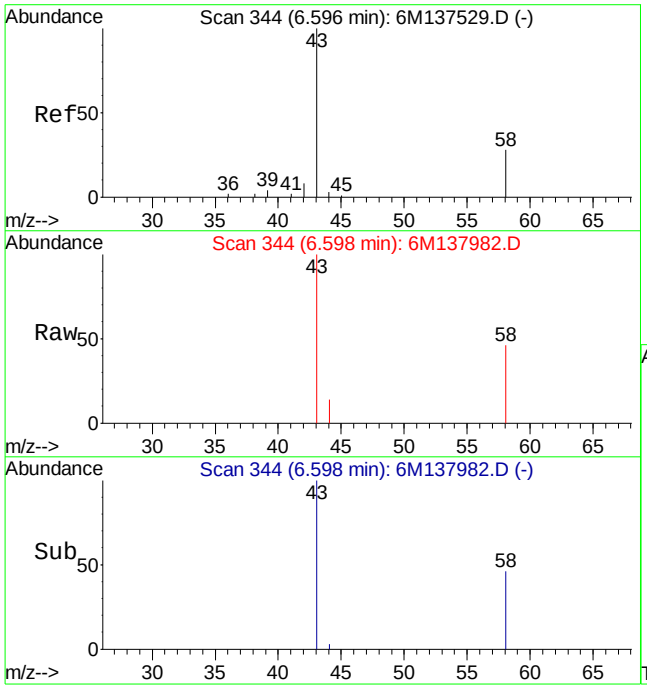

#13
Acetone
Concen: 4.75 ug/L
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137982.D
Acq: 23 Mar 2016 22:05

Tgt Ion: 43 Resp: 10264

Ion	Ratio	Lower	Upper
43	100		
58	127.1	16.1	37.7#

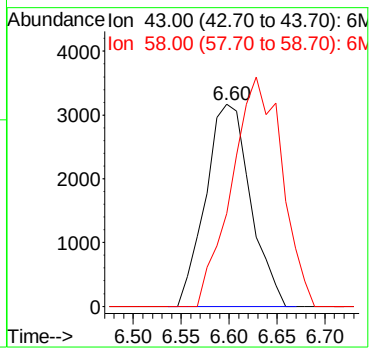

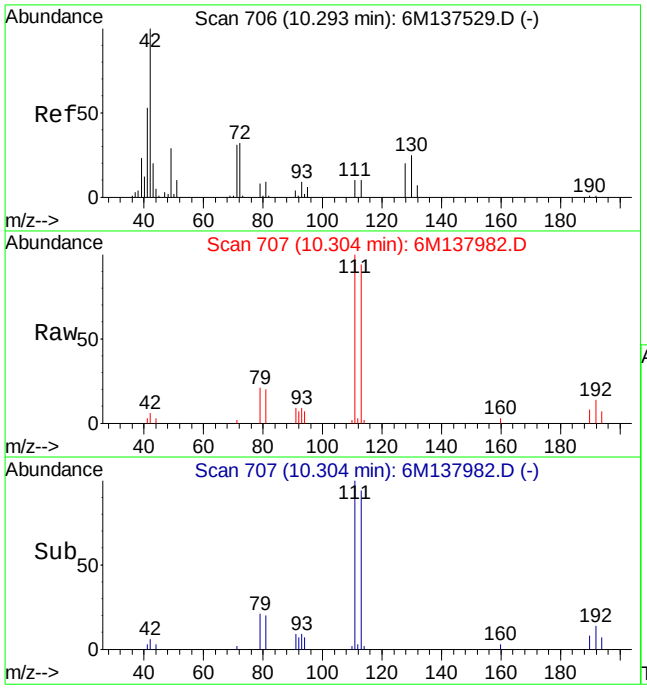

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.30 min Scan# 707
Delta R.T. 0.01 min
Lab File: 6M137982.D
Acq: 23 Mar 2016 22:05

Tgt Ion: 42 Resp: 2309

Ion	Ratio	Lower	Upper
42	100		
72	0.0	21.0	49.0#
71	9.0	20.6	48.2#

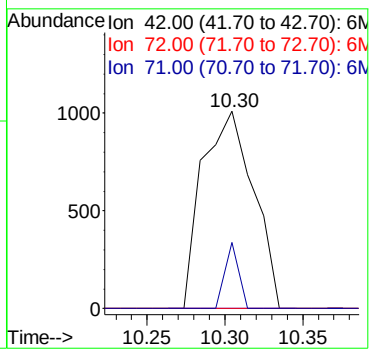

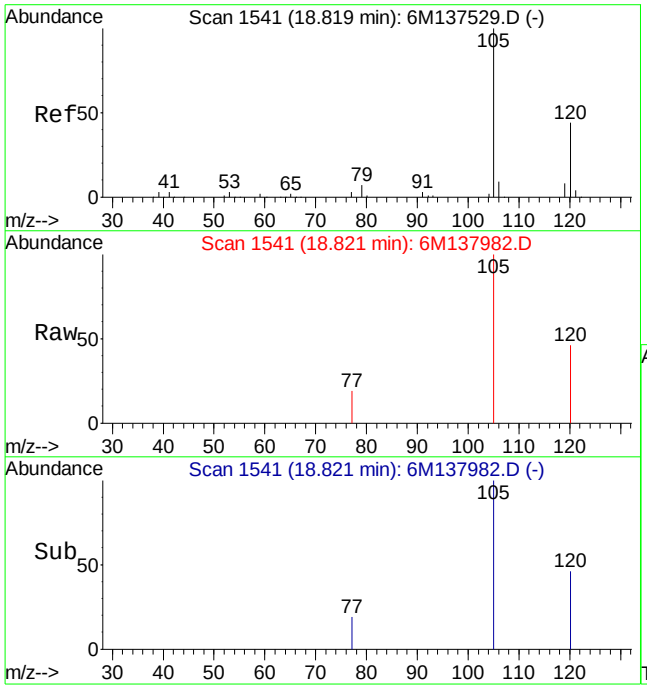

#90
1,2,4-Trimethylbenzene
Concen: 0.44 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. 0.00 min
Lab File: 6M137982.D
Acq: 23 Mar 2016 22:05

Tgt Ion:105 Resp: 4445

Ion	Ratio	Lower	Upper
105	100		
120	36.2	34.3	79.9

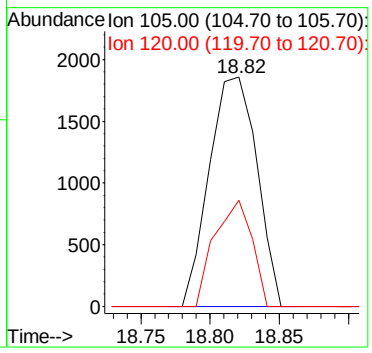

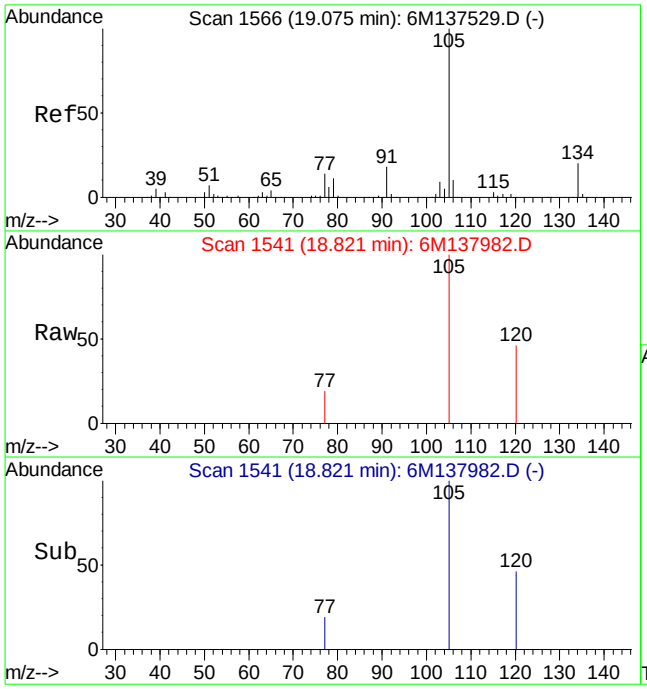

#91
sec-Butylbenzene
Concen: 0.28 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. -0.25 min
Lab File: 6M137982.D
Acq: 23 Mar 2016 22:05

Tgt Ion:105 Resp: 3459

Ion	Ratio	Lower	Upper
105	100		
134	0.0	12.2	28.6#

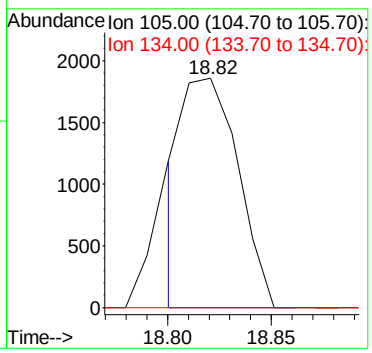

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137983.D Vial: 21
Acq On : 23 Mar 2016 22:38 Operator: TMB
Sample : L16030863-06 8260 5.07g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 08:29:46 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	558510	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	409329	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	215852	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	140281	46.8220 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.64%		
43) 1,2-Dichloroethane-d4	11.06	65	171035	43.9679 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 87.94%		
58) Toluene-d8	13.80	98	495304	50.8945 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.78%		
80) p-Bromofluorobenzene	17.79	95	202968	51.1932 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.38%		

Target Compounds					Qvalue
13) Acetone	6.60	43	9662	3.8831 ug/L #	1
29) 2-Butanone	9.47	43	1604	0.8309 ug/L #	56
36) Tetrahydrofuran	10.30	42	2260	Below Cal #	47
47) Trichloroethene	12.10	130	6514	2.3700 ug/L	99
60) Ethyl Methacrylate	13.81	69	933	0.2515 ug/L	66
90) 1,2,4-Trimethylbenzene	18.82	105	4409	0.4018 ug/L	78
91) sec-Butylbenzene	18.82	105	3486	0.2609 ug/L #	56

(#) = qualifier out of range (m) = manual integration
6M137983.D 826_SL.M Thu Mar 24 08:29:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137983.D Vial: 21
Acq On : 23 Mar 2016 22:38 Operator: TMB
Sample : L16030863-06 8260 5.07g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 8:29 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

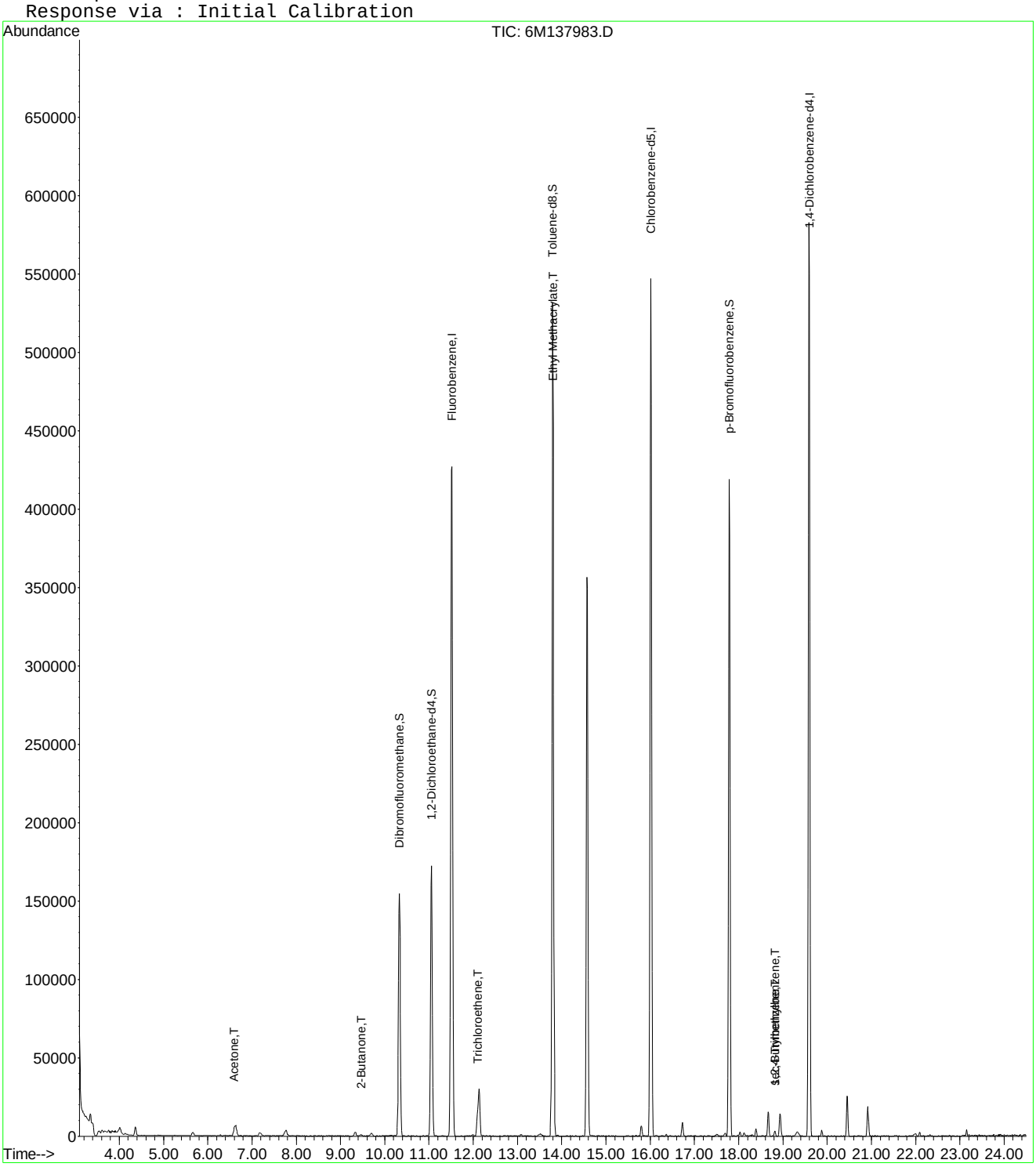

6M137983.D 826_SL.M Thu Mar 24 08:29:46 2016 Page 2

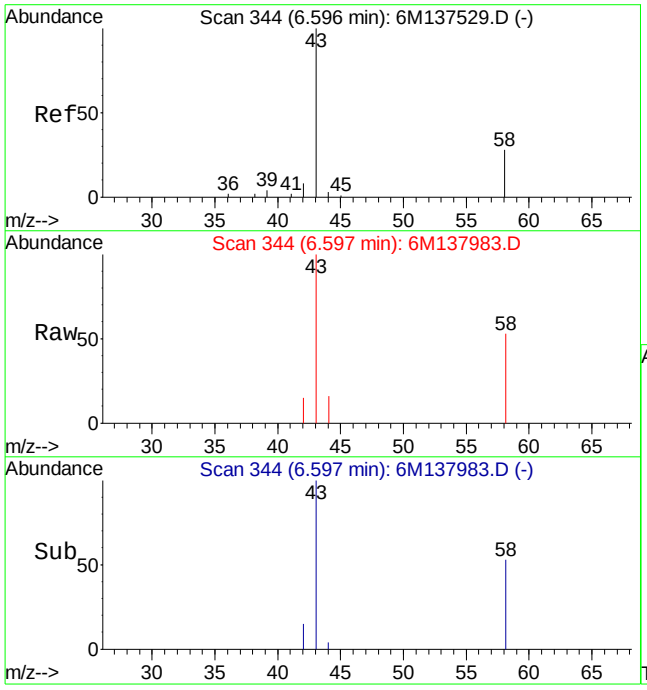

#13
Acetone
Concen: 3.88 ug/L
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137983.D
Acq: 23 Mar 2016 22:38

Tgt Ion: 43 Resp: 9662

Ion	Ratio	Lower	Upper
43	100		
58	143.0	16.1	37.7#

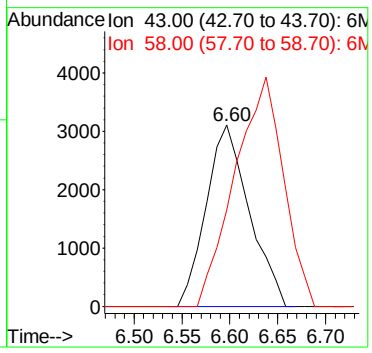

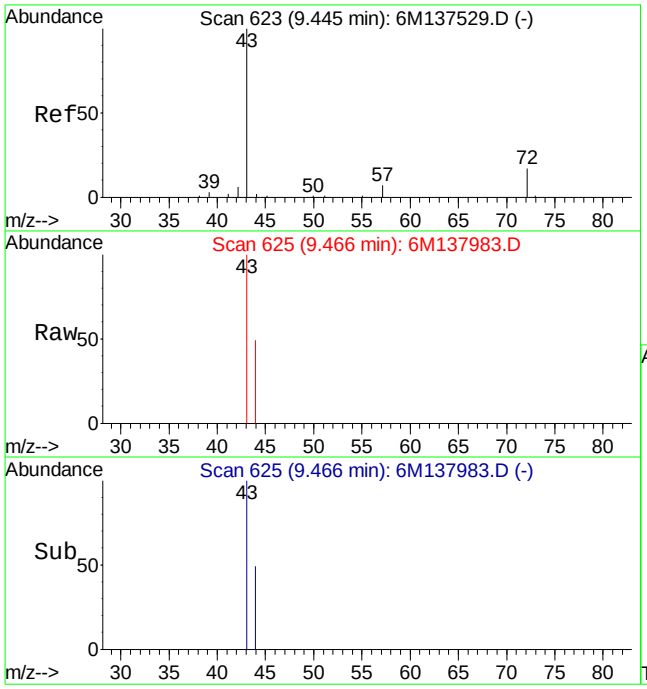

#29
2-Butanone
Concen: 0.83 ug/L
RT: 9.47 min Scan# 625
Delta R.T. 0.02 min
Lab File: 6M137983.D
Acq: 23 Mar 2016 22:38

Tgt Ion: 43 Resp: 1604

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.2	28.4#

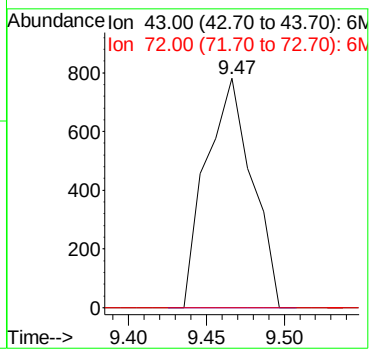

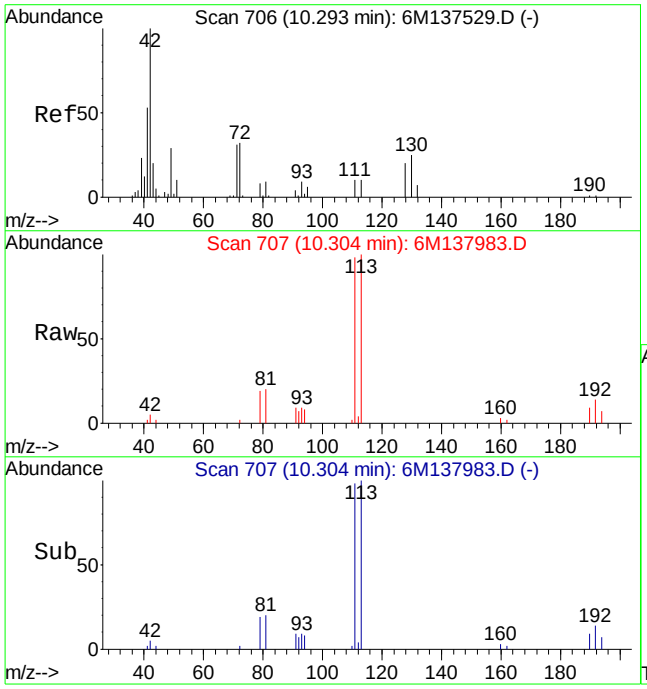

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.30 min Scan# 707
Delta R.T. 0.01 min
Lab File: 6M137983.D
Acq: 23 Mar 2016 22:38

Tgt Ion: 42 Resp: 2260

Ion	Ratio	Lower	Upper
42	100		
72	8.6	21.0	49.0#
71	0.0	20.6	48.2#

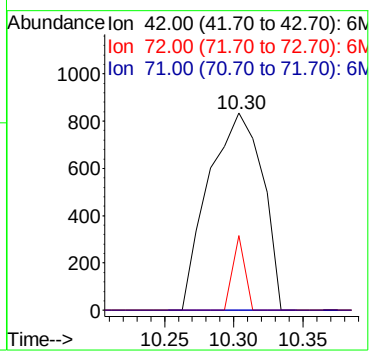

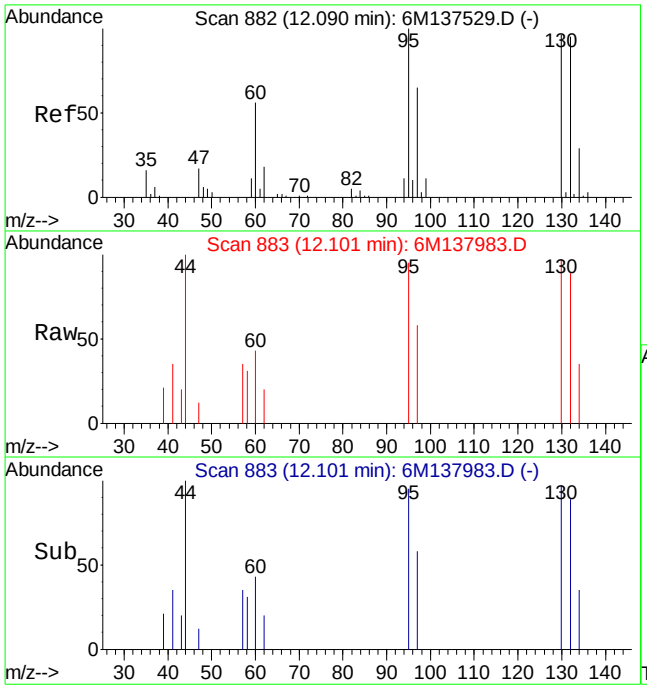

#47
Trichloroethene
Concen: 2.37 ug/L
RT: 12.10 min Scan# 883
Delta R.T. 0.01 min
Lab File: 6M137983.D
Acq: 23 Mar 2016 22:38

Tgt Ion:130 Resp: 6514

Ion	Ratio	Lower	Upper
130	100		
60	52.4	31.2	72.8

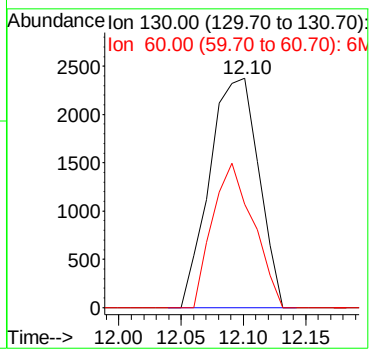

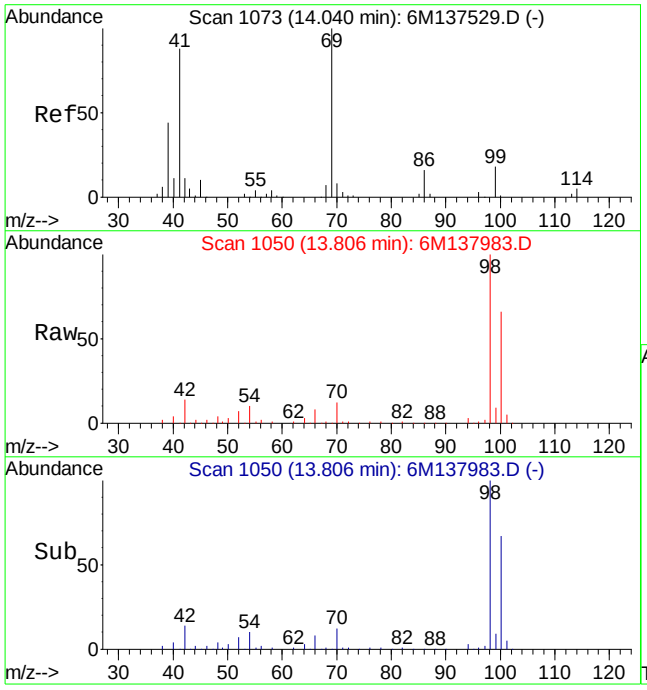

#60
Ethyl Methacrylate
Concen: 0.25 ug/L
RT: 13.81 min Scan# 1050
Delta R.T. -0.22 min
Lab File: 6M137983.D
Acq: 23 Mar 2016 22:38

Tgt Ion: 69 Resp: 933

Ion	Ratio	Lower	Upper
69	100		
41	115.0	50.6	118.2

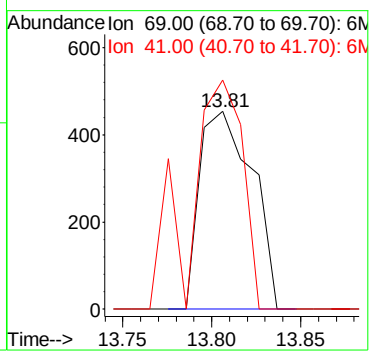

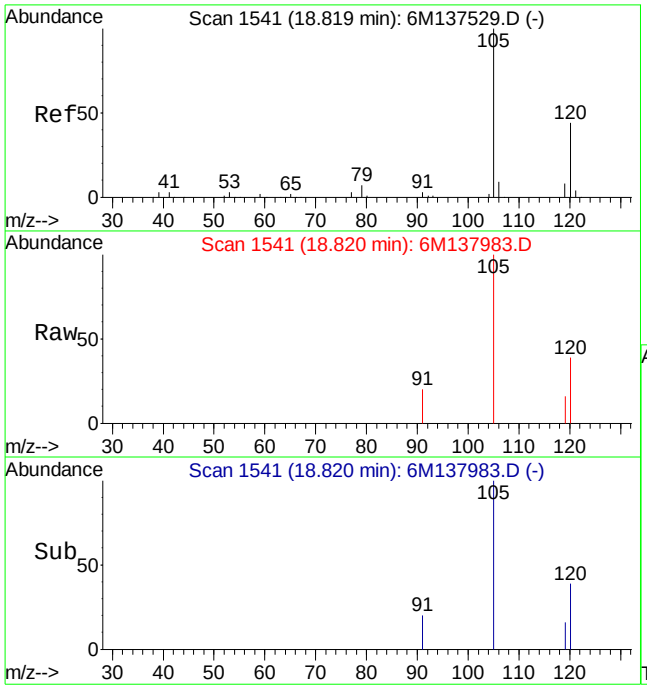

#90
1,2,4-Trimethylbenzene
Concen: 0.40 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. -0.00 min
Lab File: 6M137983.D
Acq: 23 Mar 2016 22:38

Tgt Ion:105 Resp: 4409

Ion	Ratio	Lower	Upper
105	100		
120	40.9	34.3	79.9

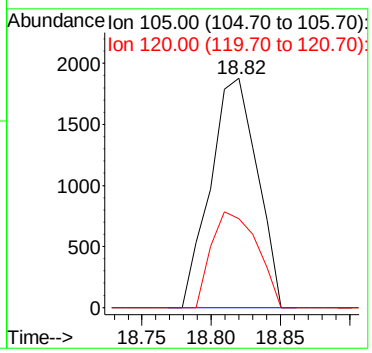

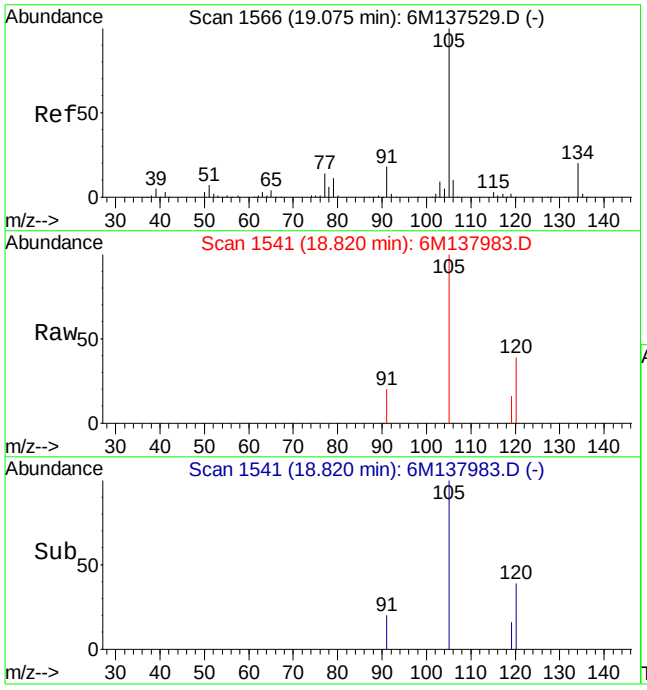

#91
sec-Butylbenzene
Concen: 0.26 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. -0.26 min
Lab File: 6M137983.D
Acq: 23 Mar 2016 22:38

Tgt Ion:105 Resp: 3486

Ion	Ratio	Lower	Upper
105	100		
134	0.0	12.2	28.6#

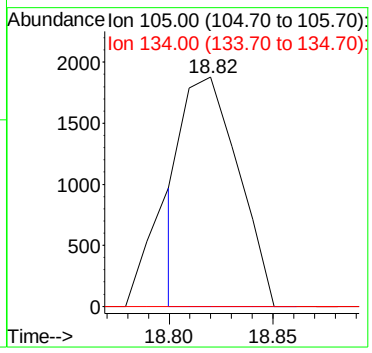

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137984.D Vial: 22
Acq On : 23 Mar 2016 23:10 Operator: TMB
Sample : L16030863-07 8260 4.79g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 08:29:47 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	552300	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	416422	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	220608	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	141889	47.8912 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.78%		
43) 1,2-Dichloroethane-d4	11.06	65	181884	47.2826 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.56%		
58) Toluene-d8	13.80	98	491204	49.6135 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.22%		
80) p-Bromofluorobenzene	17.79	95	208439	51.4397 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.88%		

Target Compounds					Qvalue
36) Tetrahydrofuran	10.29	42	1889	Below Cal #	40
47) Trichloroethene	12.09	130	10630	3.9110 ug/L	99
60) Ethyl Methacrylate	13.81	69	1041	0.2758 ug/L	66
90) 1,2,4-Trimethylbenzene	18.82	105	4179	0.3726 ug/L	79

(#) = qualifier out of range (m) = manual integration
6M137984.D 826_SL.M Thu Mar 24 08:29:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137984.D Vial: 22
Acq On : 23 Mar 2016 23:10 Operator: TMB
Sample : L16030863-07 8260 4.79g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 8:29 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

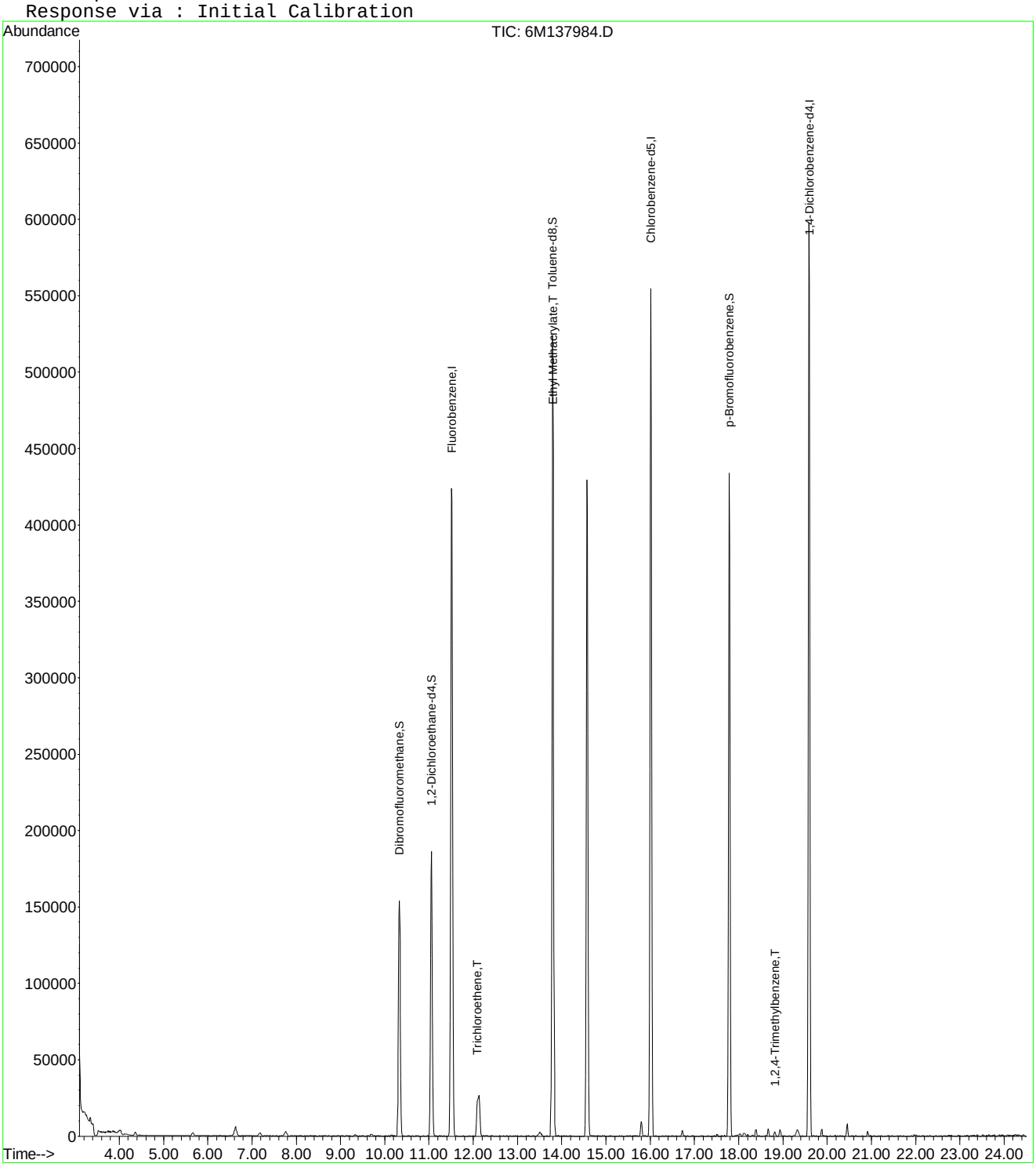

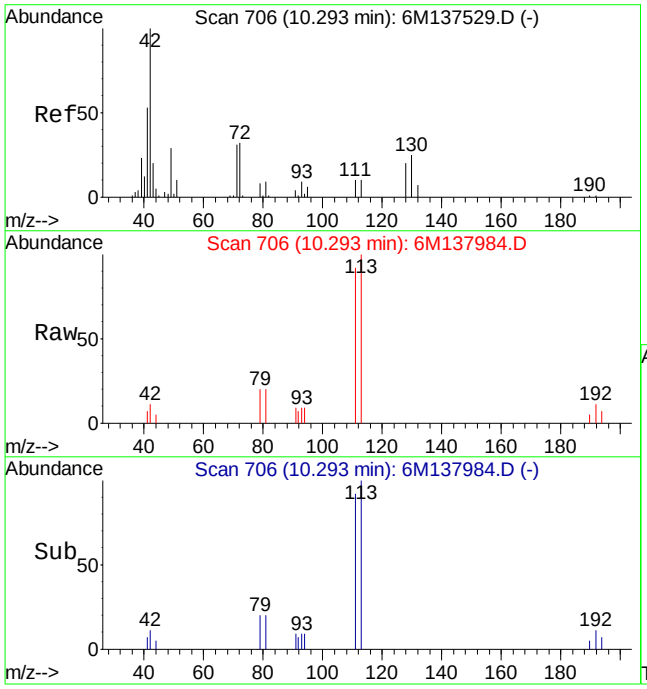

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.29 min Scan# 706
Delta R.T. 0.00 min
Lab File: 6M137984.D
Acq: 23 Mar 2016 23:10

Tgt Ion: 42 Resp: 1889

Ion	Ratio	Lower	Upper
42	100		
72	0.0	21.0	49.0#
71	0.0	20.6	48.2#

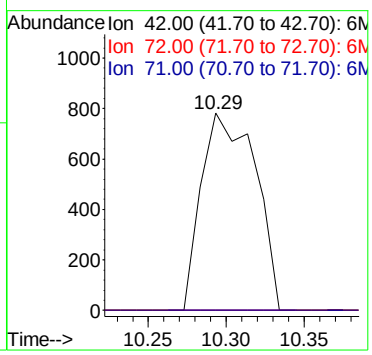

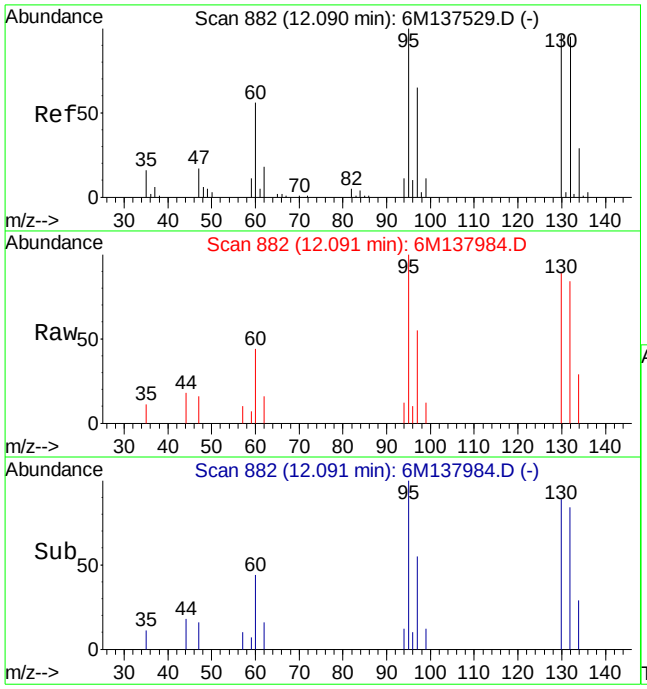

#47
Trichloroethene
Concen: 3.91 ug/L
RT: 12.09 min Scan# 882
Delta R.T. -0.00 min
Lab File: 6M137984.D
Acq: 23 Mar 2016 23:10

Tgt Ion:130 Resp: 10630

Ion	Ratio	Lower	Upper
130	100		
60	51.4	31.2	72.8

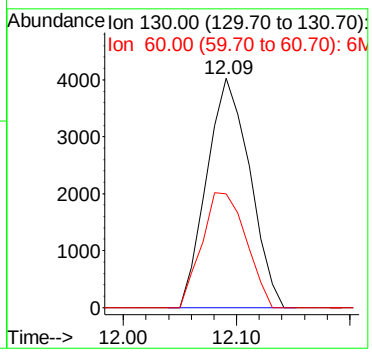

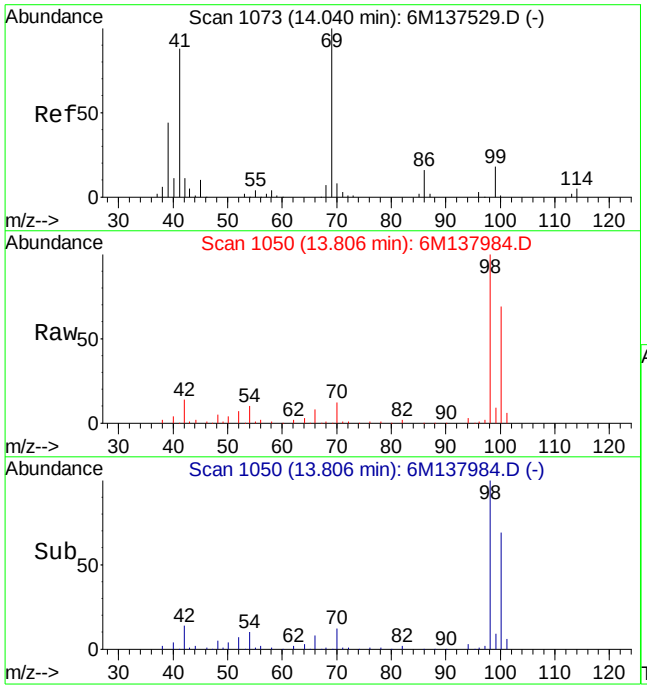

#60
Ethyl Methacrylate
Concen: 0.28 ug/L
RT: 13.81 min Scan# 1050
Delta R.T. -0.22 min
Lab File: 6M137984.D
Acq: 23 Mar 2016 23:10

Tgt Ion: 69 Resp: 1041

Ion	Ratio	Lower	Upper
69	100		
41	115.3	50.6	118.2

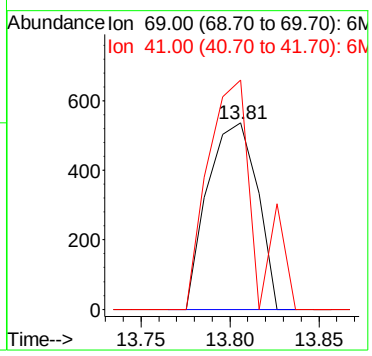

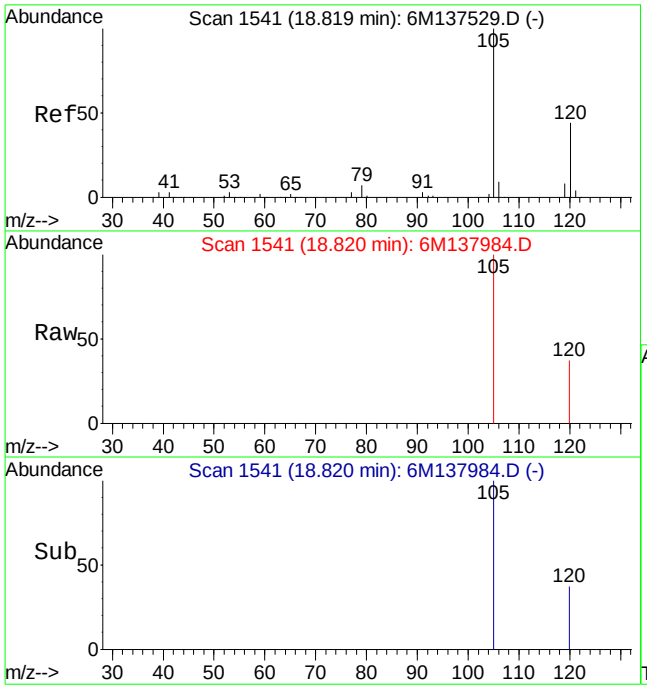

#90
1,2,4-Trimethylbenzene
Concen: 0.37 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. -0.00 min
Lab File: 6M137984.D
Acq: 23 Mar 2016 23:10

Tgt Ion:105 Resp: 4179

Ion	Ratio	Lower	Upper
105	100		
120	41.8	34.3	79.9

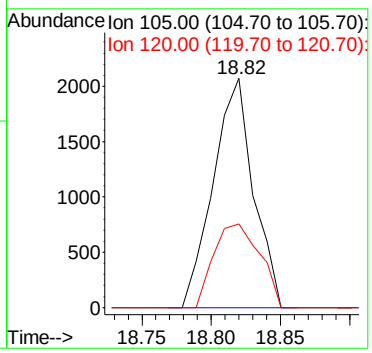

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032416\6M138000.D Vial: 13
Acq On : 24 Mar 2016 17:52 Operator: TMB
Sample : L16030863-08 8260 5.41g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 25 08:37:52 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	582040	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	416564	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	202530	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	145984	46.7557 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.52%		
43) 1,2-Dichloroethane-d4	11.06	65	173809	42.8747 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 85.74%		
58) Toluene-d8	13.80	98	510770	51.5722 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 103.14%		
80) p-Bromofluorobenzene	17.79	95	201088	54.0552 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 108.12%		

Target Compounds					Qvalue
13) Acetone	6.60	43	6555	0.9950 ug/L	85
36) Tetrahydrofuran	10.31	42	2799	Below Cal #	66
46) Benzene	11.23	78	4089	0.3372 ug/L #	60
60) Ethyl Methacrylate	13.80	69	993	0.2630 ug/L	69
90) 1,2,4-Trimethylbenzene	18.82	105	4668	0.4534 ug/L	75
91) sec-Butylbenzene	18.82	105	3843	0.3065 ug/L #	56

(#) = qualifier out of range (m) = manual integration
6M138000.D 826_SL.M Fri Mar 25 08:37:52 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032416\6M138000.D Vial: 13
Acq On : 24 Mar 2016 17:52 Operator: TMB
Sample : L16030863-08 8260 5.41g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 25 8:37 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

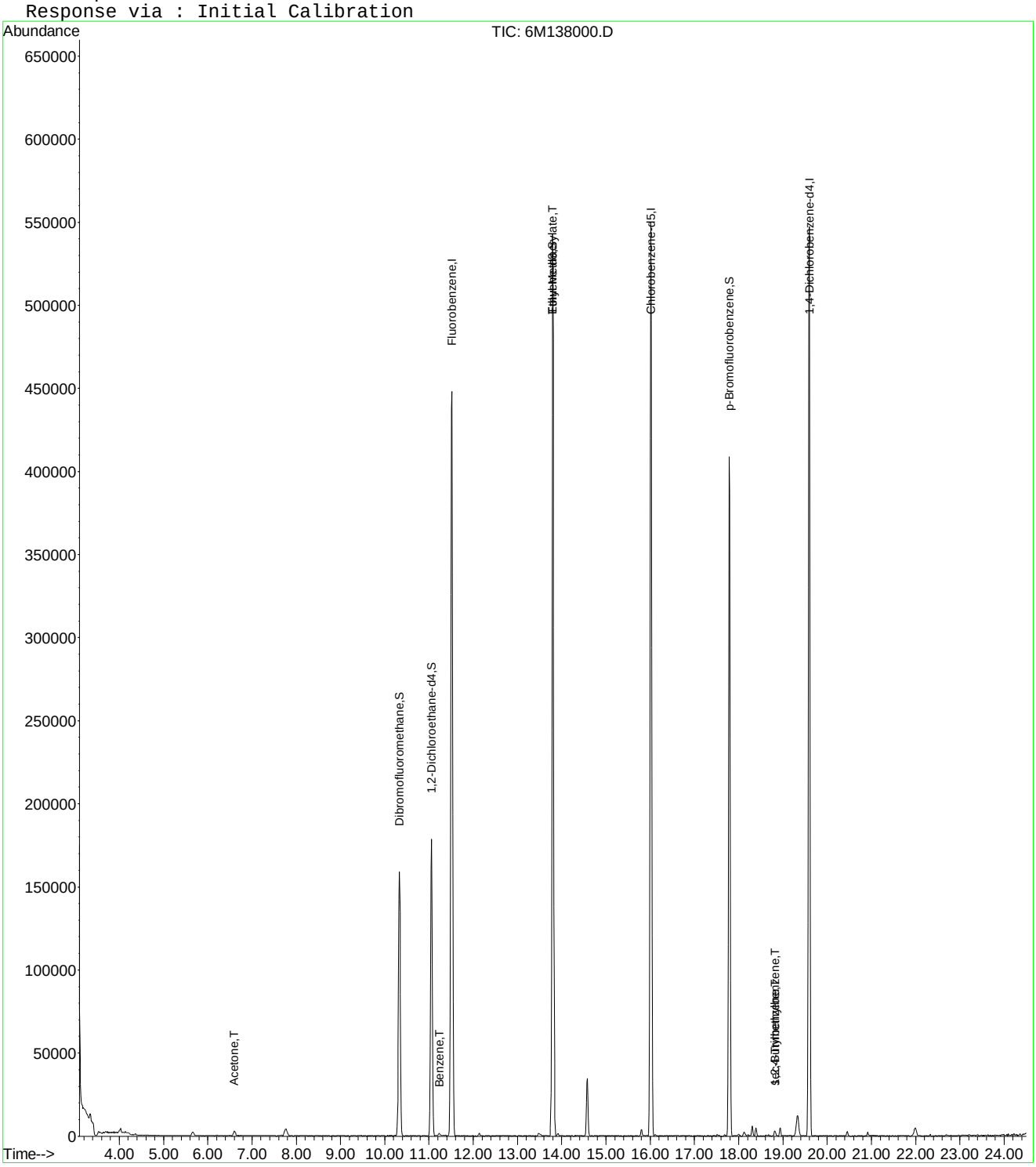

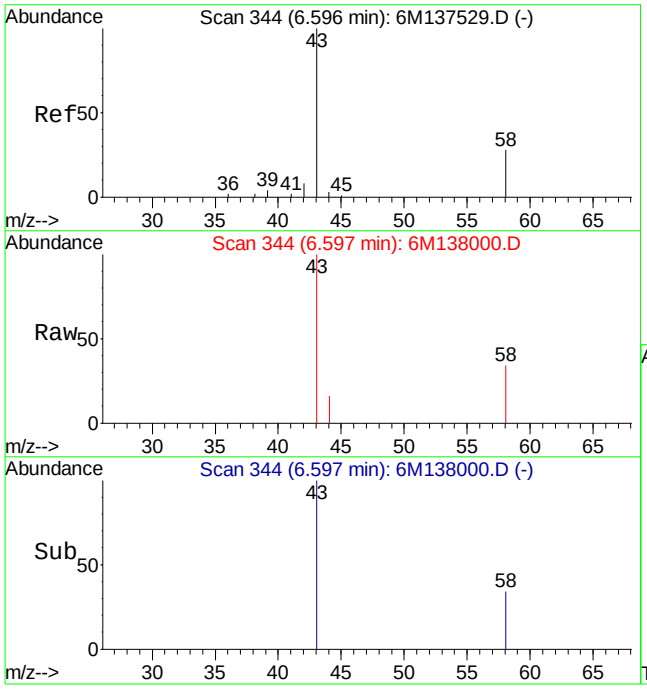

#13
Acetone
Concen: 1.00 ug/L
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M138000.D
Acq: 24 Mar 2016 17:52

Tgt Ion: 43 Resp: 6555

Ion	Ratio	Lower	Upper
43	100		
58	34.5	16.1	37.7

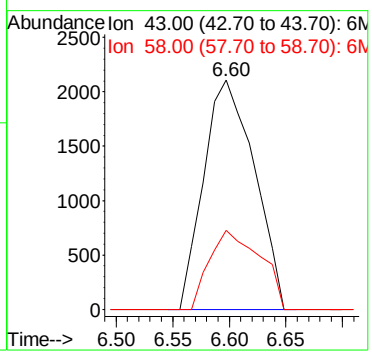

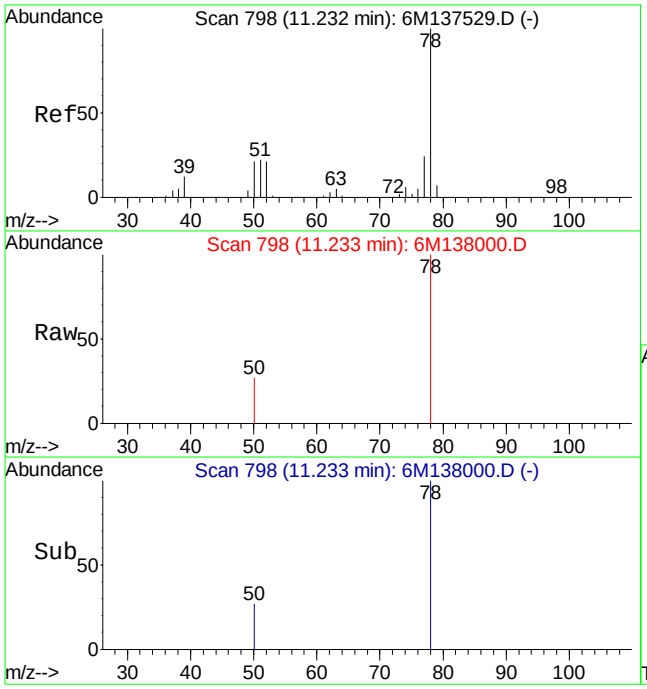

#46
Benzene
Concen: 0.34 ug/L
RT: 11.23 min Scan# 798
Delta R.T. -0.00 min
Lab File: 6M138000.D
Acq: 24 Mar 2016 17:52

Tgt Ion: 78 Resp: 4089

Ion	Ratio	Lower	Upper
78	100		
52	0.0	10.4	24.4#

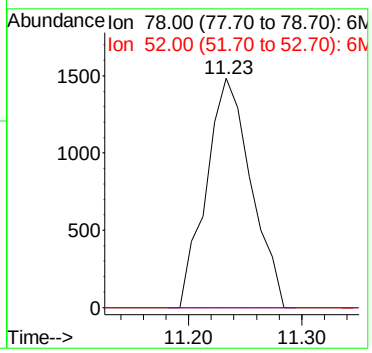

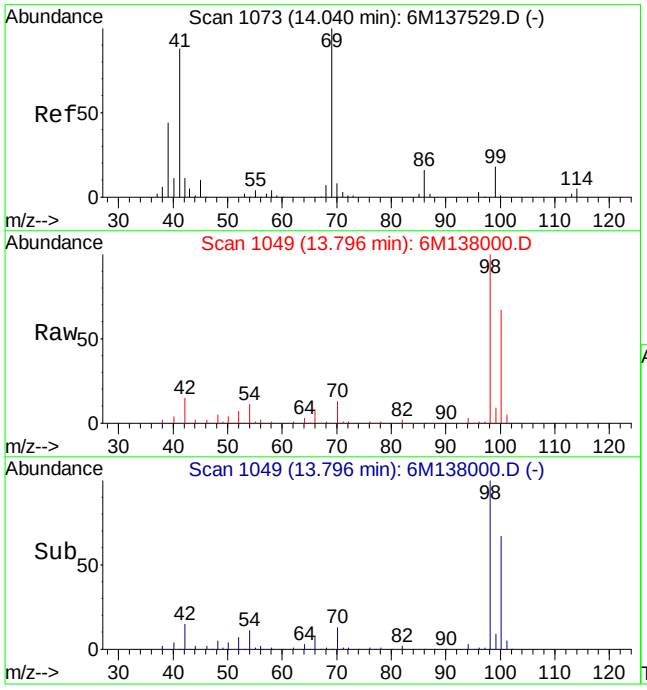

#60
Ethyl Methacrylate
Concen: 0.26 ug/L
RT: 13.80 min Scan# 1049
Delta R.T. -0.23 min
Lab File: 6M138000.D
Acq: 24 Mar 2016 17:52

Tgt Ion: 69 Resp: 993

Ion	Ratio	Lower	Upper
69	100		
41	112.6	50.6	118.2

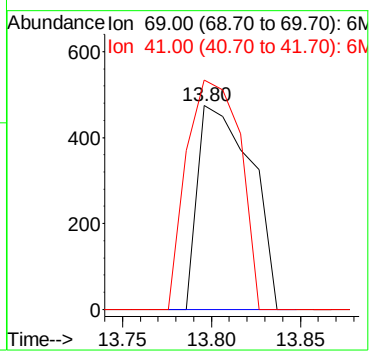

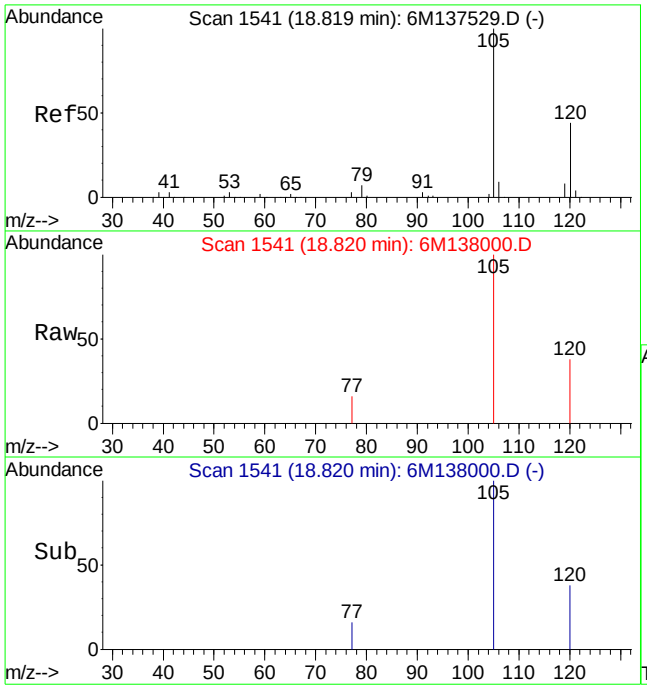

#90
1,2,4-Trimethylbenzene
Concen: 0.45 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. -0.00 min
Lab File: 6M138000.D
Acq: 24 Mar 2016 17:52

Tgt Ion:105 Resp: 4668

Ion	Ratio	Lower	Upper
105	100		
120	38.9	34.3	79.9

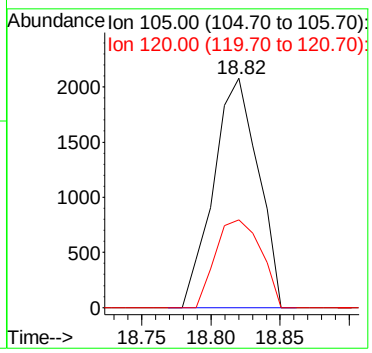

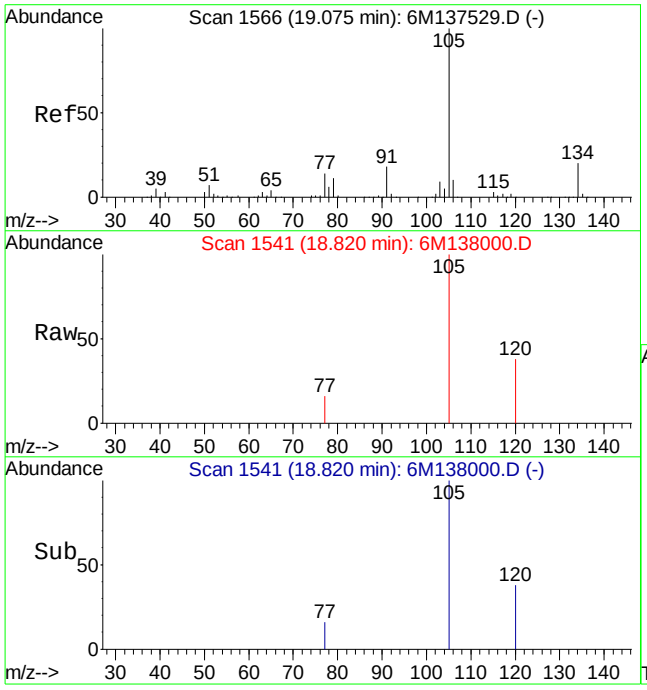

#91
sec-Butylbenzene
Concen: 0.31 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. -0.26 min
Lab File: 6M138000.D
Acq: 24 Mar 2016 17:52

Tgt Ion:105 Resp: 3843

Ion	Ratio	Lower	Upper
105	100		
134	0.0	12.2	28.6#

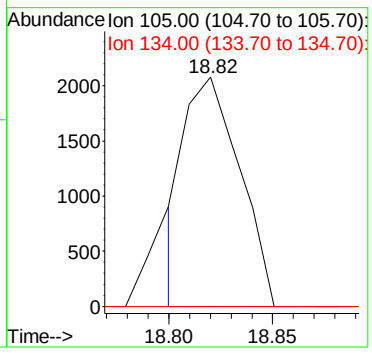

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032416\6M138001.D Vial: 14
Acq On : 24 Mar 2016 18:26 Operator: TMB
Sample : L16030863-09 8260 5.14g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 25 08:37:53 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	554838	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	398818	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	199512	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.34	111	137634	46.2425 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 92.48%		
43) 1,2-Dichloroethane-d4	11.05	65	164823	42.6514 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 85.30%		
58) Toluene-d8	13.80	98	484184	51.0631 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 102.12%		
80) p-Bromofluorobenzene	17.79	95	191792	52.3362 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 104.68%		

Target Compounds					Qvalue
13) Acetone	6.59	43	4165	Below Cal	# 73
36) Tetrahydrofuran	10.32	42	1861	Below Cal	# 68
46) Benzene	11.24	78	4111	0.3557 ug/L	# 83
60) Ethyl Methacrylate	13.81	69	967	0.2675 ug/L	# 36
90) 1,2,4-Trimethylbenzene	18.81	105	3382	0.3334 ug/L	74
91) sec-Butylbenzene	18.81	105	3161	0.2559 ug/L	# 56

(#) = qualifier out of range (m) = manual integration
6M138001.D 826_SL.M Fri Mar 25 08:37:53 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032416\6M138001.D Vial: 14
Acq On : 24 Mar 2016 18:26 Operator: TMB
Sample : L16030863-09 8260 5.14g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 25 8:37 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

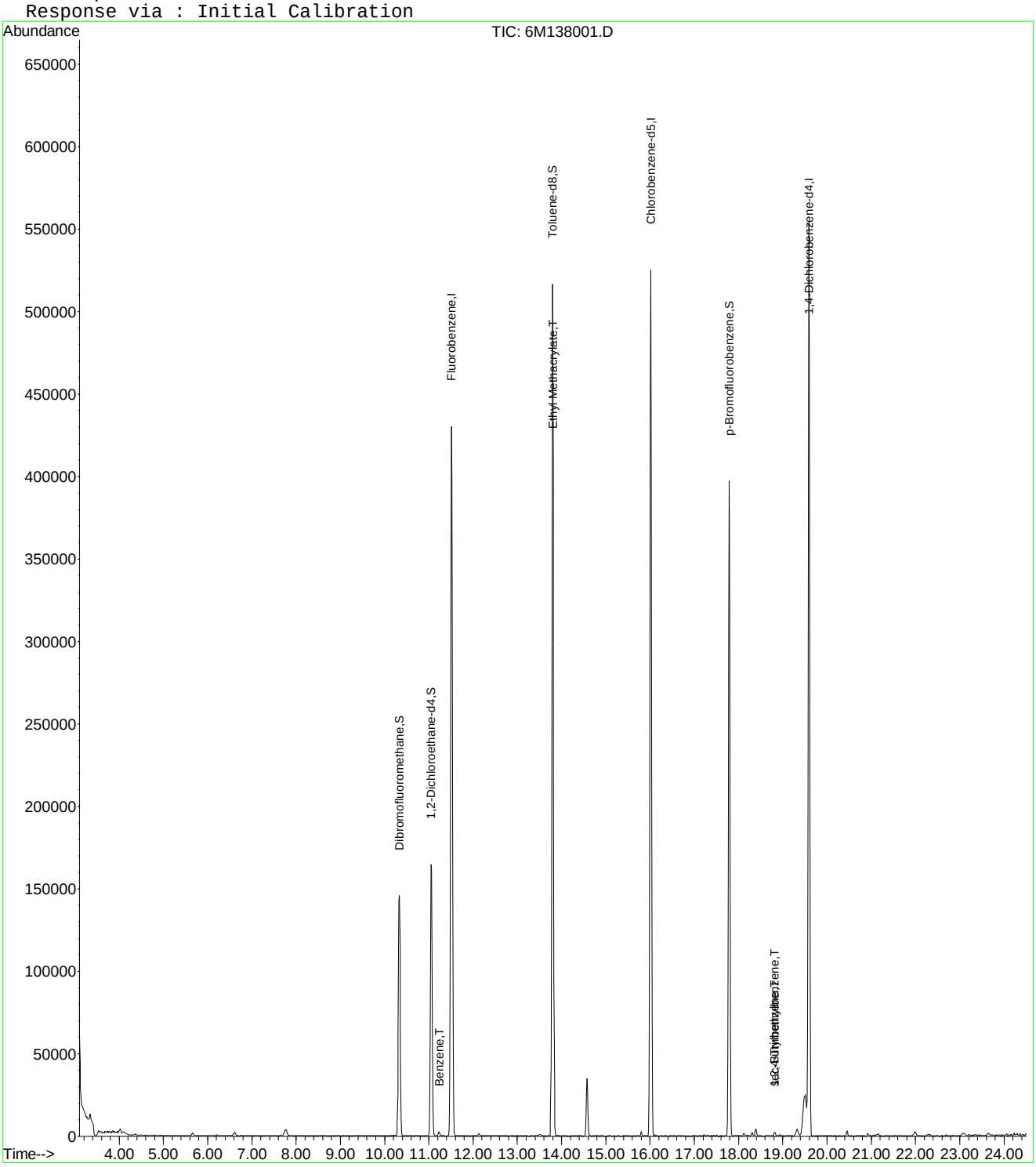

6M138001.D 826_SL.M Fri Mar 25 08:37:53 2016 Page 2

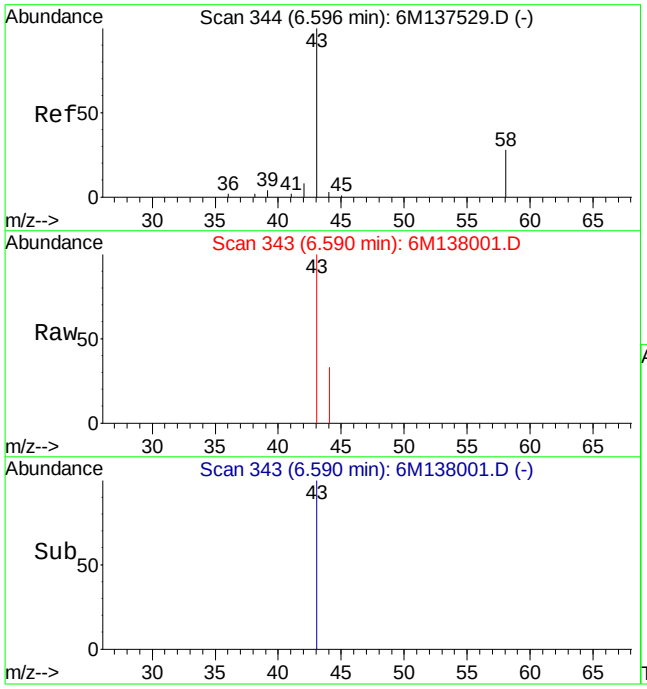

#13
Acetone
Concen: Below Cal
RT: 6.59 min Scan# 343
Delta R.T. 0.00 min
Lab File: 6M138001.D
Acq: 24 Mar 2016 18:26

Tgt Ion: 43 Resp: 4165

Ion	Ratio	Lower	Upper
43	100		
58	41.1	16.1	37.7#

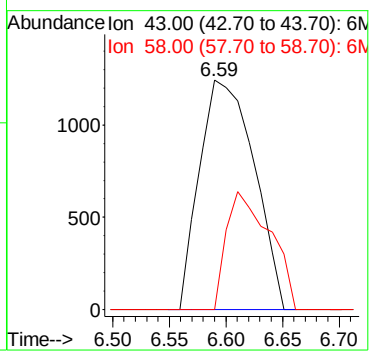

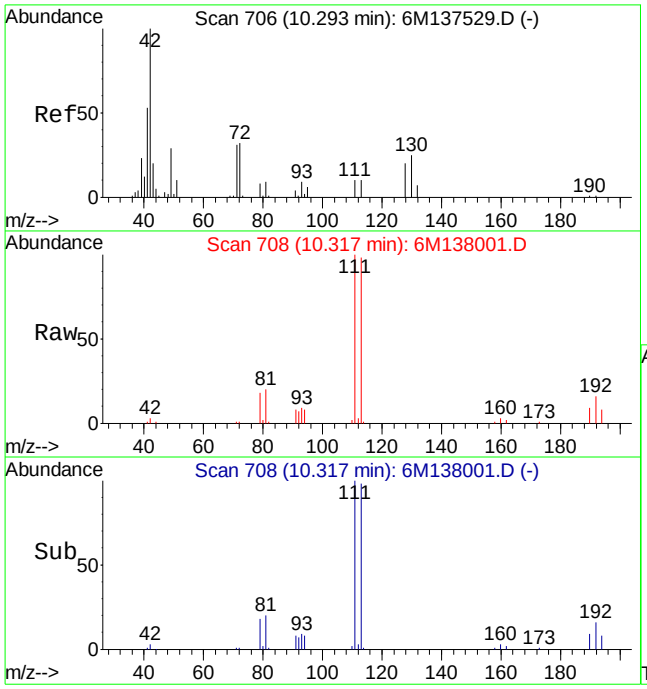

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.32 min Scan# 708
Delta R.T. 0.02 min
Lab File: 6M138001.D
Acq: 24 Mar 2016 18:26

Tgt Ion: 42 Resp: 1861

Ion	Ratio	Lower	Upper
42	100		
72	21.4	21.0	49.0
71	11.4	20.6	48.2#

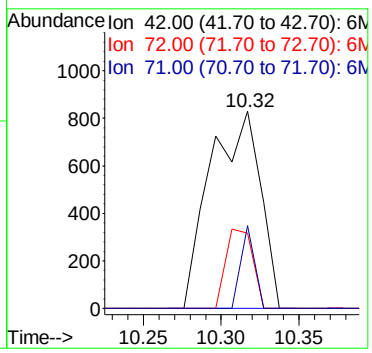

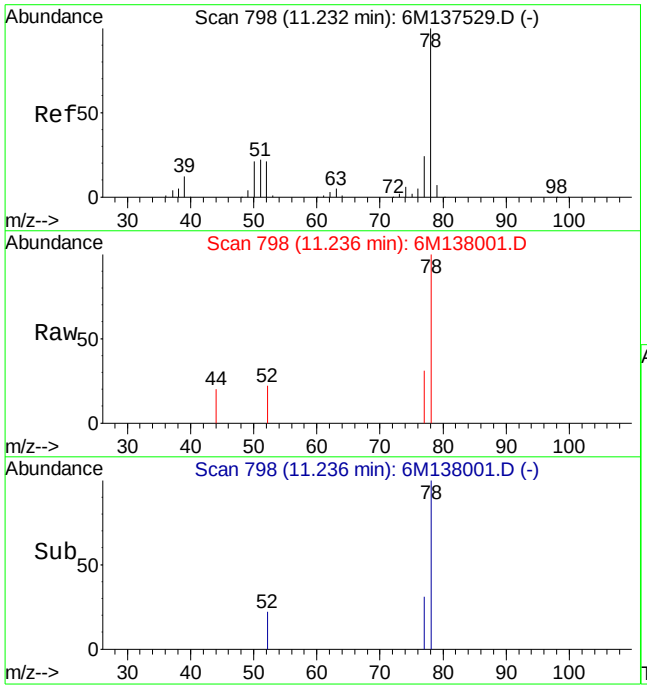

#46
Benzene
Concen: 0.36 ug/L
RT: 11.24 min Scan# 798
Delta R.T. 0.00 min
Lab File: 6M138001.D
Acq: 24 Mar 2016 18:26

Tgt Ion: 78 Resp: 4111

Ion	Ratio	Lower	Upper
78	100		
52	10.2	10.4	24.4#

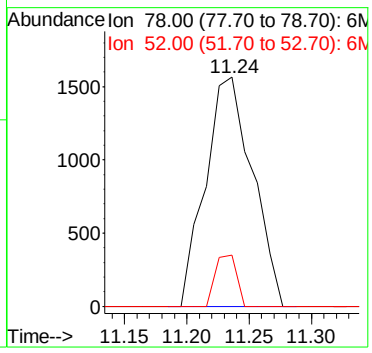

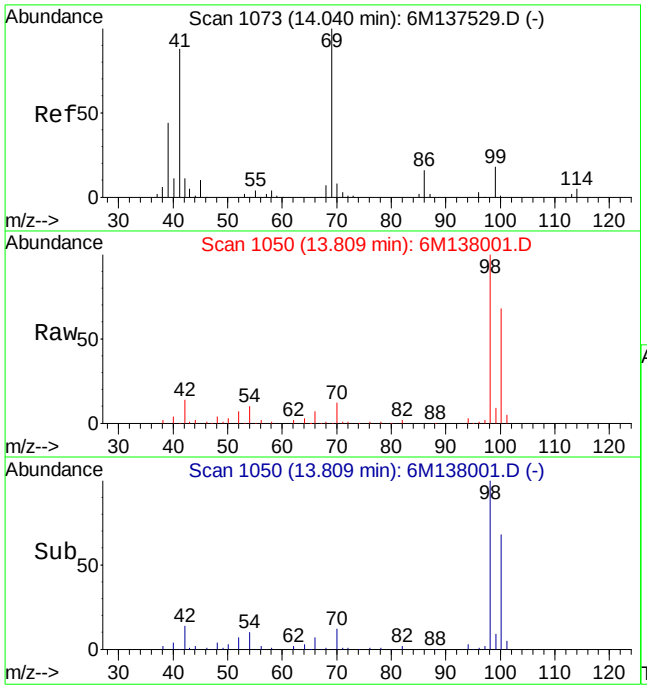

#60
Ethyl Methacrylate
Concen: 0.27 ug/L
RT: 13.81 min Scan# 1050
Delta R.T. -0.22 min
Lab File: 6M138001.D
Acq: 24 Mar 2016 18:26

Tgt Ion: 69 Resp: 967

Ion	Ratio	Lower	Upper
69	100		
41	142.3	50.6	118.2#

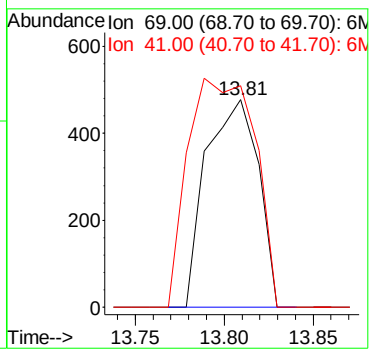

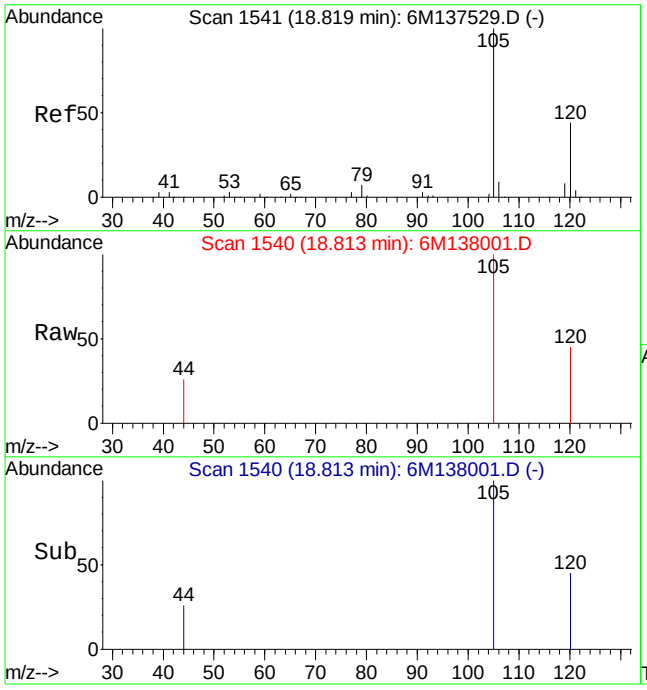

#90
1,2,4-Trimethylbenzene
Concen: 0.33 ug/L
RT: 18.81 min Scan# 1540
Delta R.T. -0.01 min
Lab File: 6M138001.D
Acq: 24 Mar 2016 18:26

Tgt Ion:105 Resp: 3382

Ion	Ratio	Lower	Upper
105	100		
120	37.6	34.3	79.9

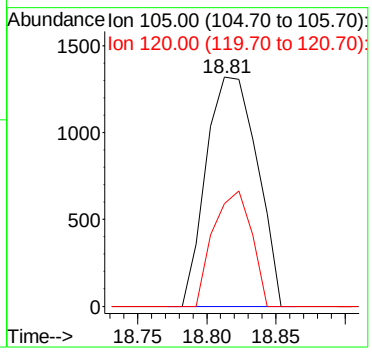

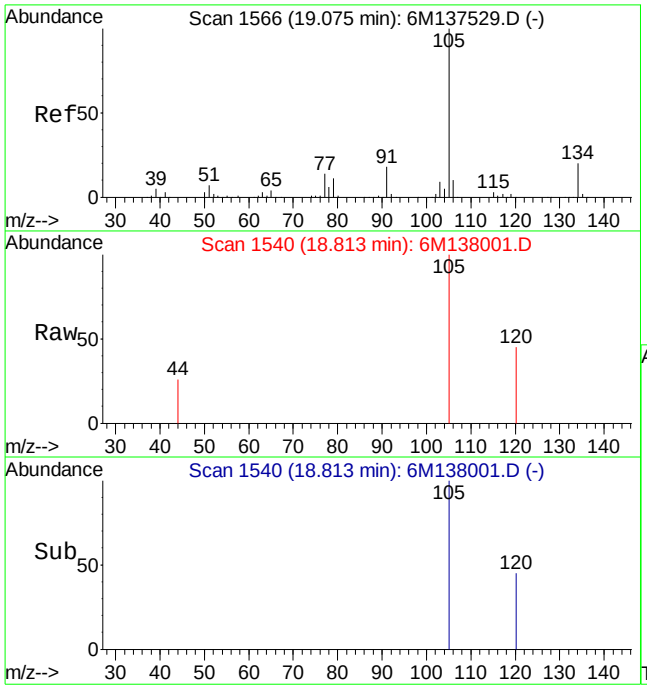

#91
sec-Butylbenzene
Concen: 0.26 ug/L
RT: 18.81 min Scan# 1540
Delta R.T. -0.26 min
Lab File: 6M138001.D
Acq: 24 Mar 2016 18:26

Tgt Ion:105 Resp: 3161

Ion	Ratio	Lower	Upper
105	100		
134	0.0	12.2	28.6#

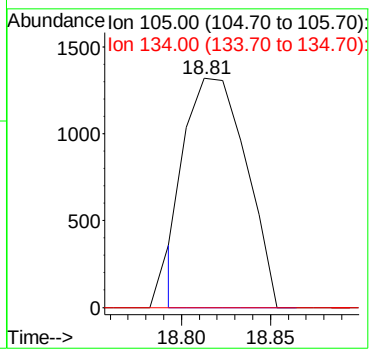

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032416\6M138002.D Vial: 15
Acq On : 24 Mar 2016 18:59 Operator: TMB
Sample : L16030863-10 8260 4.83g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 25 08:37:54 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	587000	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	434397	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	228996	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	147217	46.7522 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.50%		
43) 1,2-Dichloroethane-d4	11.06	65	179138	43.8159 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 87.64%		
58) Toluene-d8	13.80	98	520049	50.3534 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 100.70%		
80) p-Bromofluorobenzene	17.79	95	217698	51.7568 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 103.52%		

Target Compounds					Qvalue
13) Acetone	6.60	43	1830	Below Cal	# 1
36) Tetrahydrofuran	10.30	42	2260	Below Cal	# 57
46) Benzene	11.23	78	4878	0.3989 ug/L	# 80
60) Ethyl Methacrylate	13.81	69	1047	0.2659 ug/L	63
90) 1,2,4-Trimethylbenzene	18.82	105	4596	0.3948 ug/L	76
93) 1,3-Dichlorobenzene	19.47	146	2477	0.3787 ug/L	# 1
94) 1,4-Dichlorobenzene	19.47	146	2477	0.3720 ug/L	# 1

(#) = qualifier out of range (m) = manual integration
6M138002.D 826_SL.M Fri Mar 25 08:37:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032416\6M138002.D Vial: 15
Acq On : 24 Mar 2016 18:59 Operator: TMB
Sample : L16030863-10 8260 4.83g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 25 8:37 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

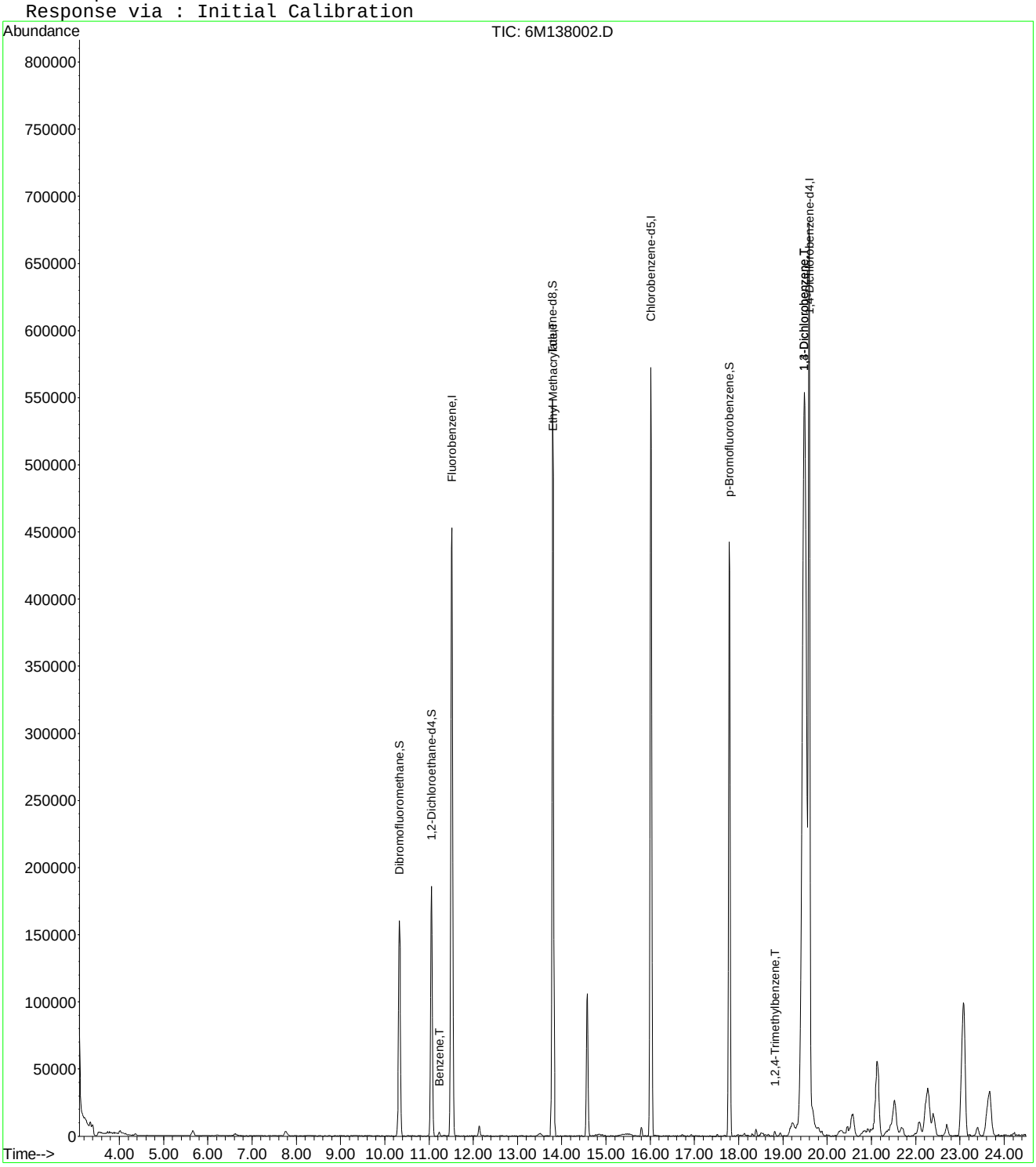

6M138002.D 826_SL.M Fri Mar 25 08:37:54 2016 Page 2

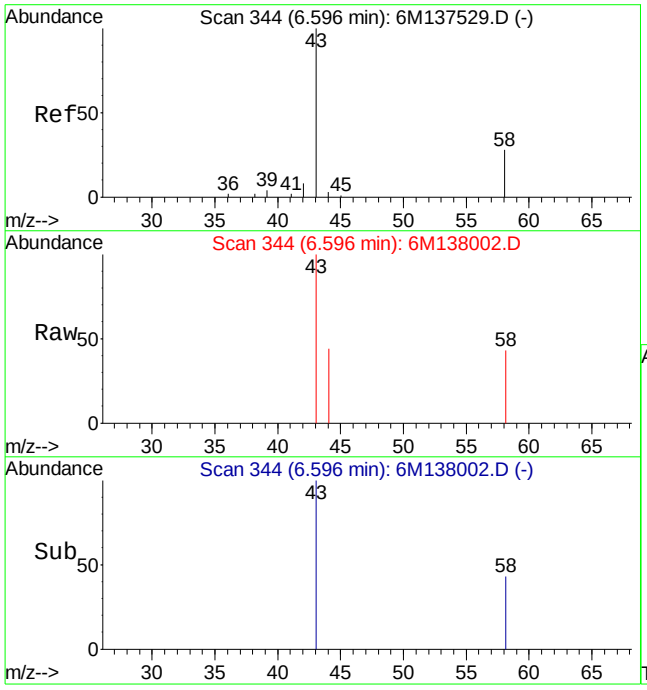

#13
Acetone
Concen: Below Cal
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M138002.D
Acq: 24 Mar 2016 18:59

Tgt Ion: 43 Resp: 1830

Ion	Ratio	Lower	Upper
43	100		
58	175.4	16.1	37.7#

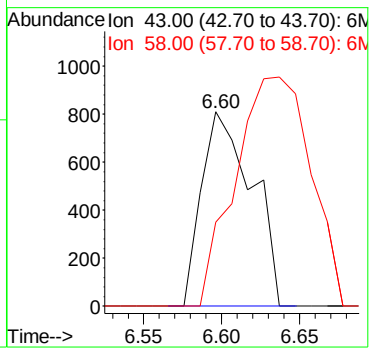

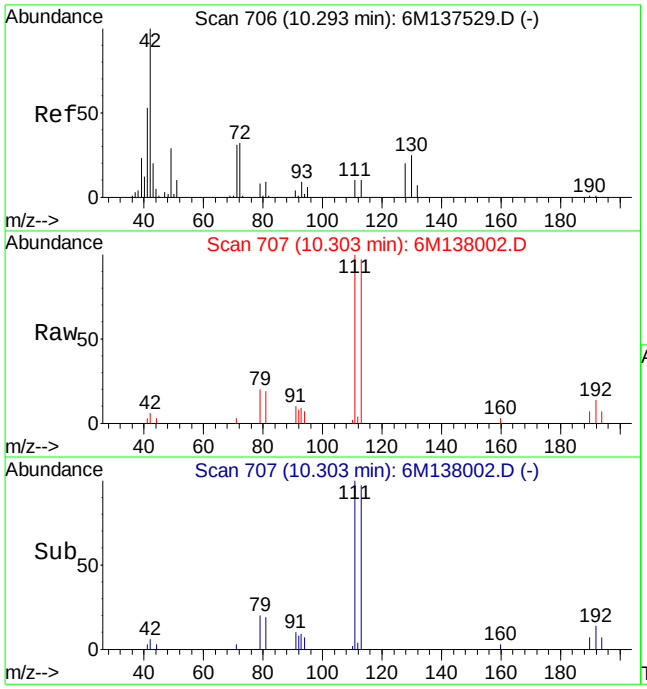

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.30 min Scan# 707
Delta R.T. 0.01 min
Lab File: 6M138002.D
Acq: 24 Mar 2016 18:59

Tgt Ion: 42 Resp: 2260

Ion	Ratio	Lower	Upper
42	100		
72	0.0	21.0	49.0#
71	19.8	20.6	48.2#

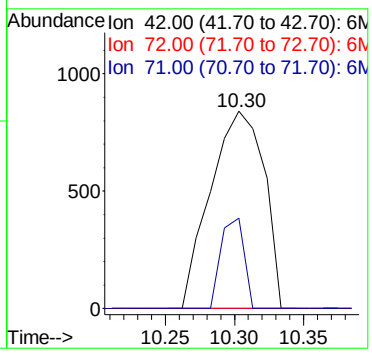

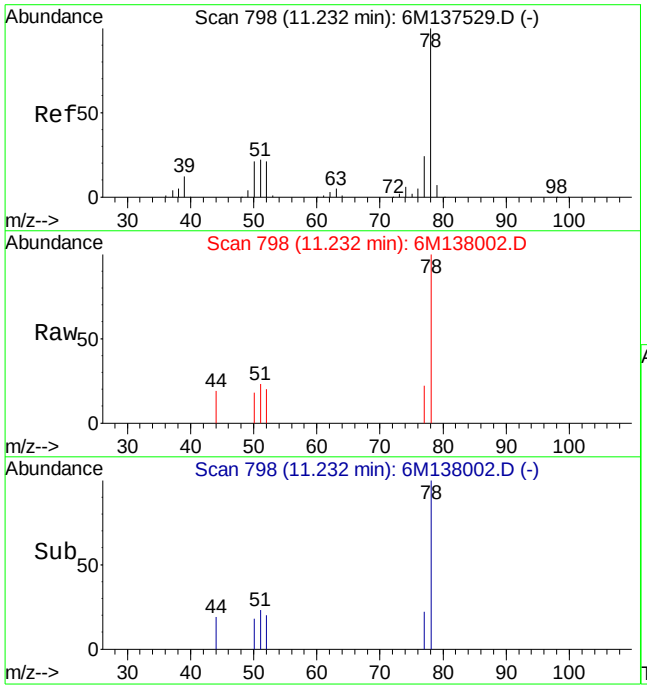

#46
Benzene
Concen: 0.40 ug/L
RT: 11.23 min Scan# 798
Delta R.T. -0.00 min
Lab File: 6M138002.D
Acq: 24 Mar 2016 18:59

Tgt Ion: 78 Resp: 4878

Ion	Ratio	Lower	Upper
78	100		
52	8.7	10.4	24.4#

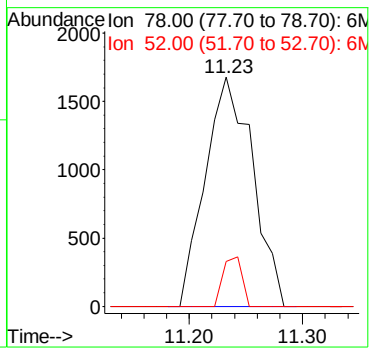

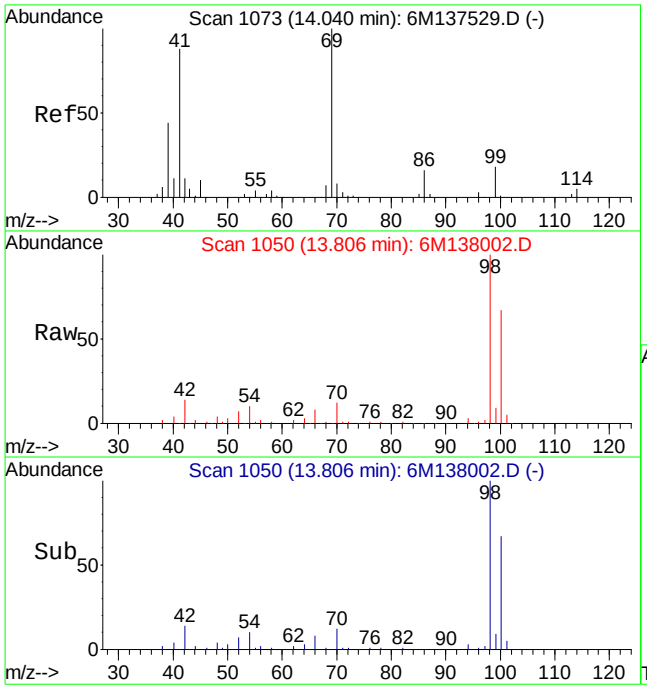

#60
Ethyl Methacrylate
Concen: 0.27 ug/L
RT: 13.81 min Scan# 1050
Delta R.T. -0.23 min
Lab File: 6M138002.D
Acq: 24 Mar 2016 18:59

Tgt Ion: 69 Resp: 1047

Ion	Ratio	Lower	Upper
69	100		
41	118.1	50.6	118.2

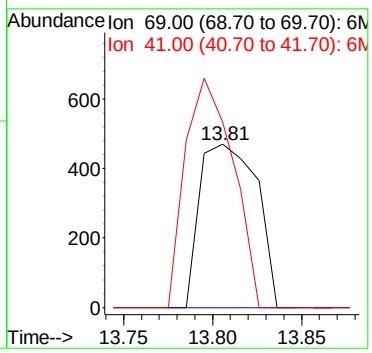

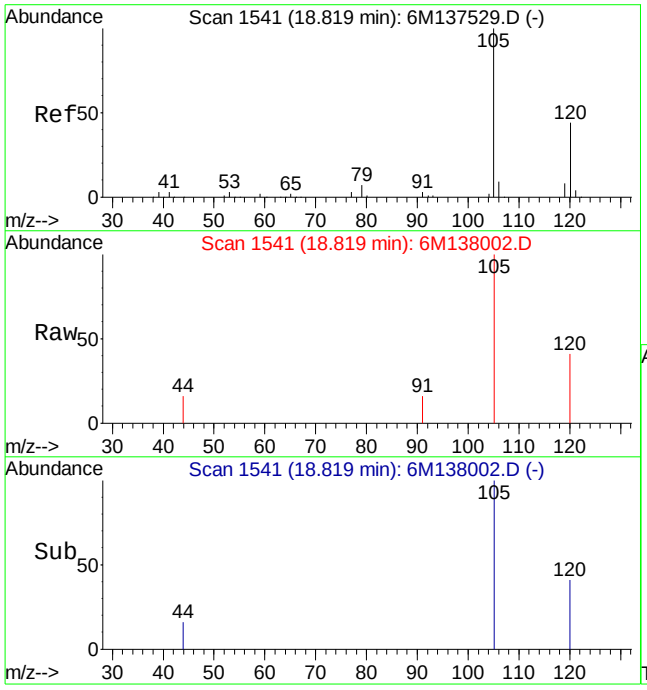

#90
1,2,4-Trimethylbenzene
Concen: 0.39 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. -0.00 min
Lab File: 6M138002.D
Acq: 24 Mar 2016 18:59

Tgt Ion:105 Resp: 4596

Ion	Ratio	Lower	Upper
105	100		
120	39.3	34.3	79.9

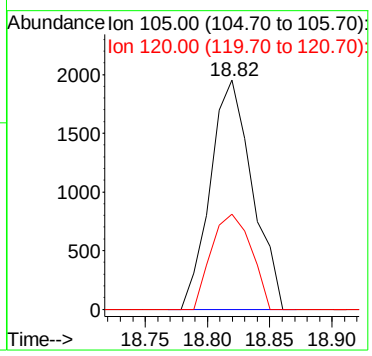

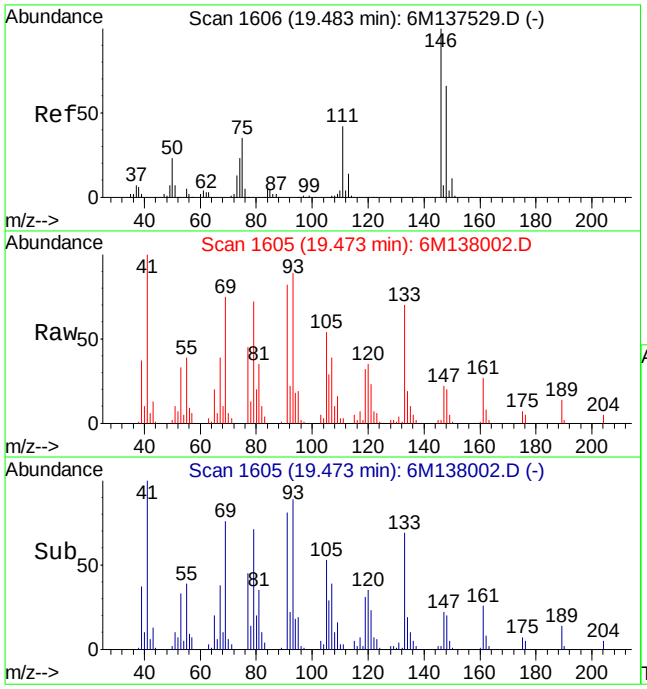

#93
1,3-Dichlorobenzene
Concen: 0.38 ug/L
RT: 19.47 min Scan# 1605
Delta R.T. -0.01 min
Lab File: 6M138002.D
Acq: 24 Mar 2016 18:59

Tgt Ion:146 Resp: 2477

Ion	Ratio	Lower	Upper
146	100		
111	258.0	23.6	55.0#

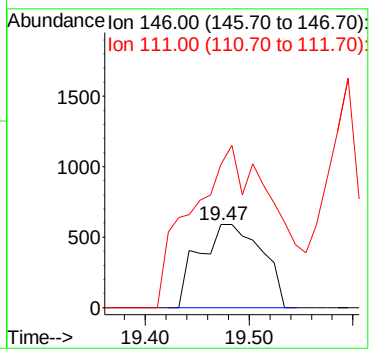

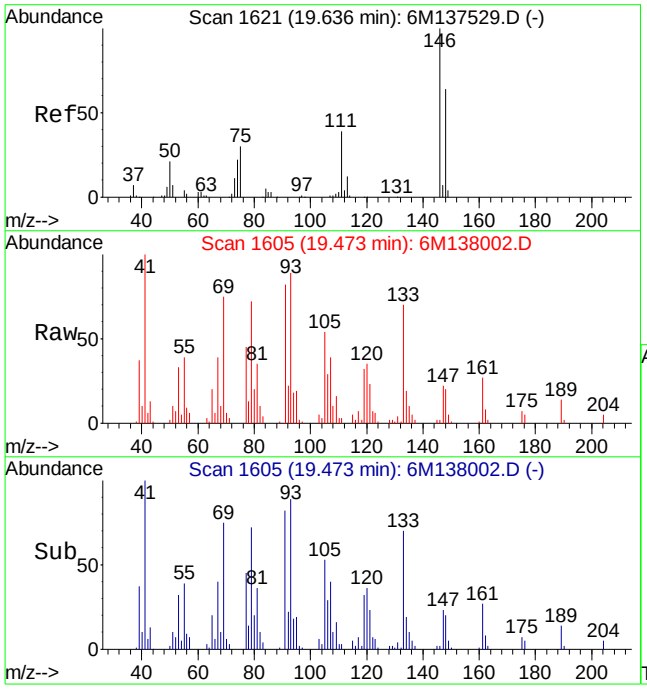

#94
1,4-Dichlorobenzene
Concen: 0.37 ug/L
RT: 19.47 min Scan# 1605
Delta R.T. -0.16 min
Lab File: 6M138002.D
Acq: 24 Mar 2016 18:59

Tgt Ion:146 Resp: 2477

Ion	Ratio	Lower	Upper
146	100		
111	258.0	23.5	54.9#

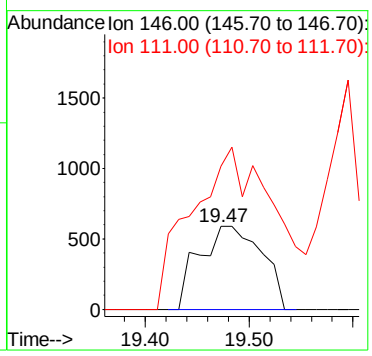

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032416\6M138003.D Vial: 16
Acq On : 24 Mar 2016 19:33 Operator: TMB
Sample : L16030863-11 8260 5.03g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 25 08:37:55 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	568271	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	427761	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	224623	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	143237	46.9874 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.98%		
43) 1,2-Dichloroethane-d4	11.06	65	182875	46.2041 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 92.40%		
58) Toluene-d8	13.80	98	503934	49.5500 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 99.10%		
80) p-Bromofluorobenzene	17.79	95	214782	52.0576 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 104.12%		

Target Compounds

					Qvalue
13) Acetone	6.60	43	16561	9.5483 ug/L #	1
29) 2-Butanone	9.47	43	1979	1.0075 ug/L #	56
36) Tetrahydrofuran	10.31	42	3170	0.2850 ug/L #	69
46) Benzene	11.23	78	3353	0.2832 ug/L #	60
90) 1,2,4-Trimethylbenzene	18.82	105	4801	0.4204 ug/L #	69

(#) = qualifier out of range (m) = manual integration
6M138003.D 826_SL.M Fri Mar 25 08:37:55 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032416\6M138003.D Vial: 16
Acq On : 24 Mar 2016 19:33 Operator: TMB
Sample : L16030863-11 8260 5.03g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 25 8:37 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

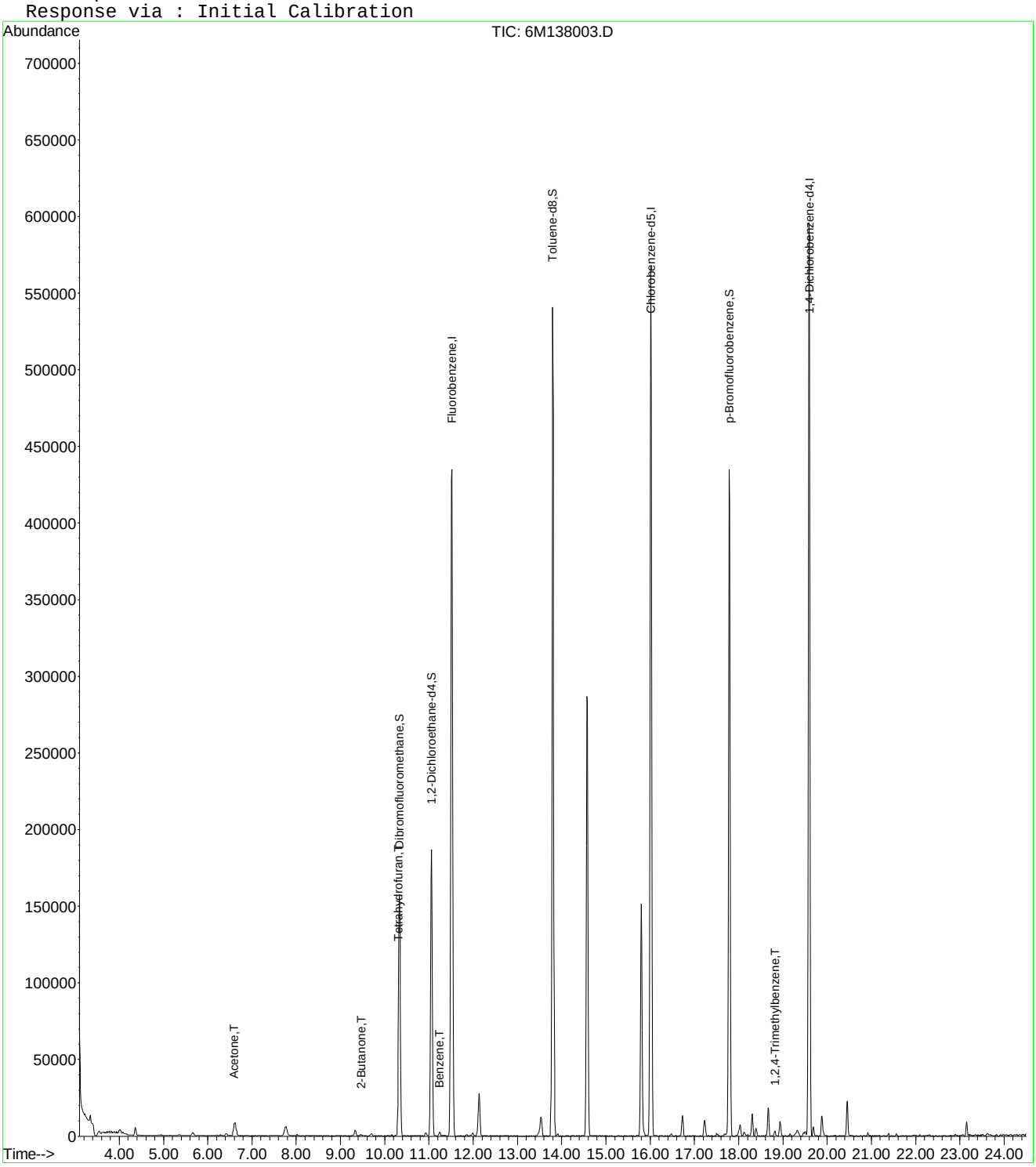

6M138003.D 826_SL.M Fri Mar 25 08:37:56 2016 Page 2

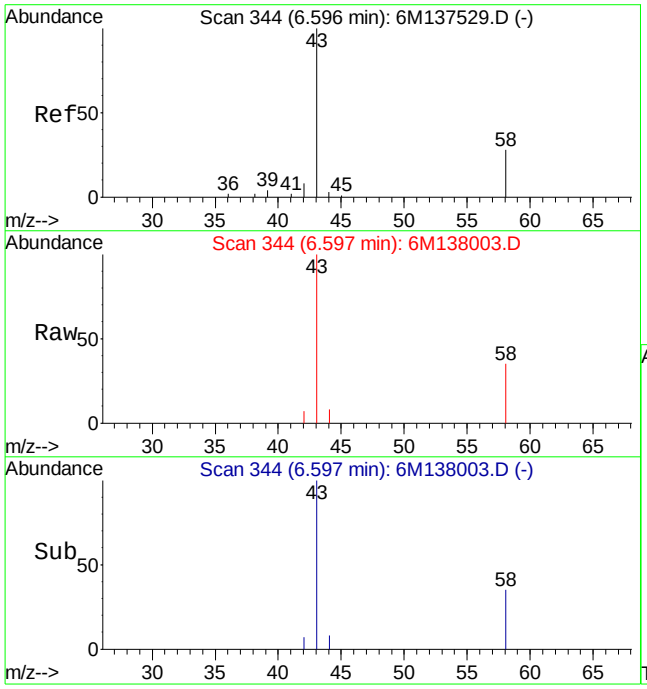

#13
Acetone
Concen: 9.55 ug/L
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M138003.D
Acq: 24 Mar 2016 19:33

Tgt Ion: 43 Resp: 16561

Ion	Ratio	Lower	Upper
43	100		
58	84.4	16.1	37.7#

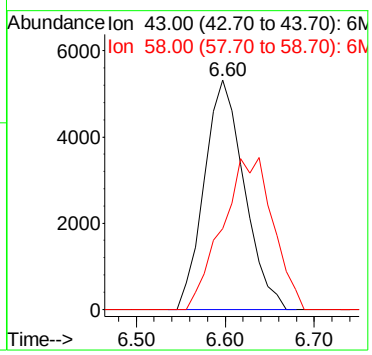

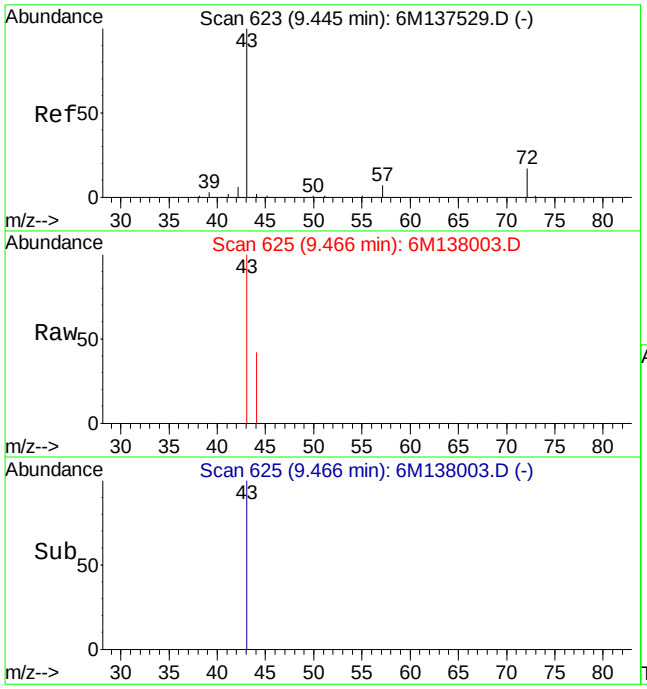

#29
2-Butanone
Concen: 1.01 ug/L
RT: 9.47 min Scan# 625
Delta R.T. 0.02 min
Lab File: 6M138003.D
Acq: 24 Mar 2016 19:33

Tgt Ion: 43 Resp: 1979

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.2	28.4#

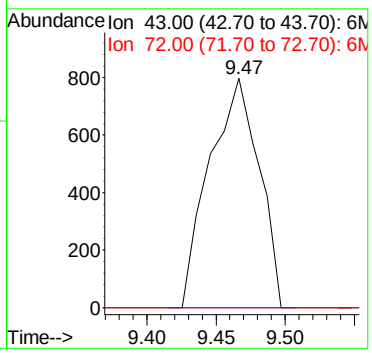

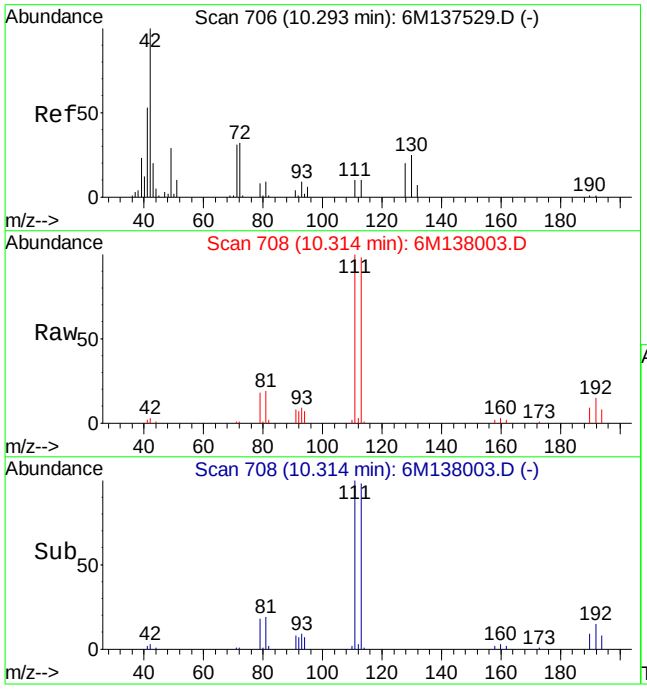

#36
Tetrahydrofuran
Concen: 0.29 ug/L
RT: 10.31 min Scan# 708
Delta R.T. 0.02 min
Lab File: 6M138003.D
Acq: 24 Mar 2016 19:33

Tgt Ion: 42 Resp: 3170

Ion	Ratio	Lower	Upper
42	100		
72	19.5	21.0	49.0#
71	13.9	20.6	48.2#

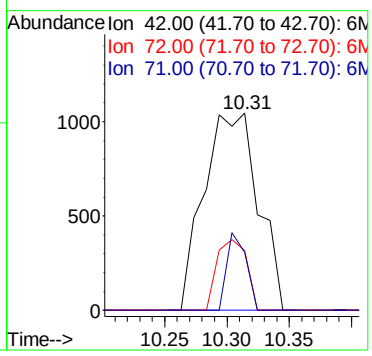

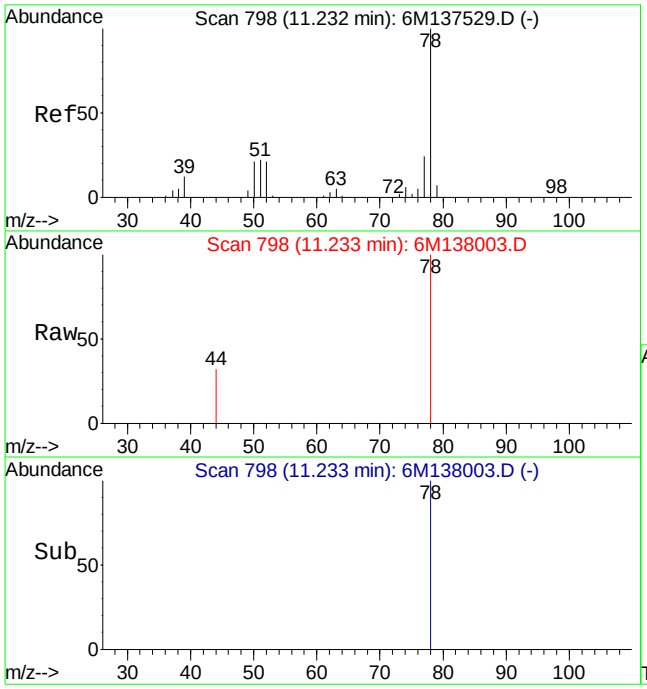

#46
Benzene
Concen: 0.28 ug/L
RT: 11.23 min Scan# 798
Delta R.T. -0.00 min
Lab File: 6M138003.D
Acq: 24 Mar 2016 19:33

Tgt Ion: 78 Resp: 3353

Ion	Ratio	Lower	Upper
78	100		
52	0.0	10.4	24.4#

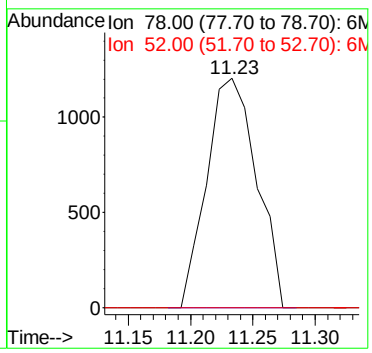

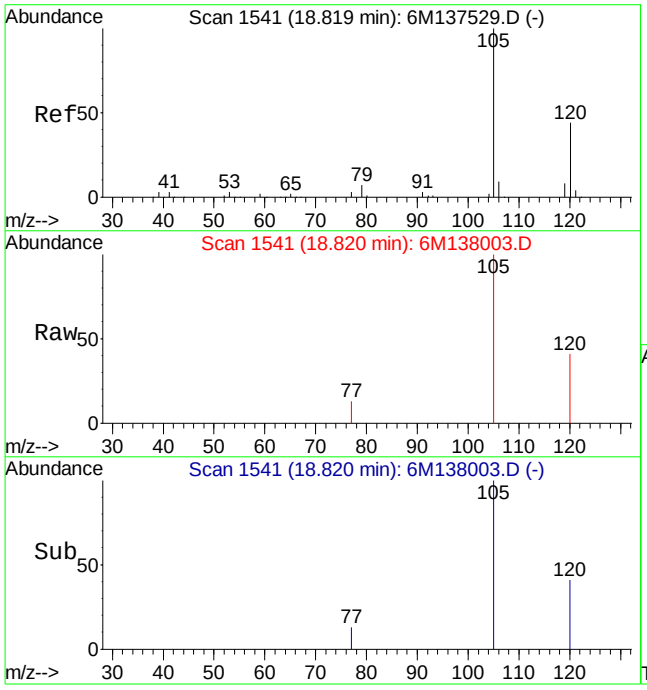

#90
1,2,4-Trimethylbenzene
Concen: 0.42 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. -0.00 min
Lab File: 6M138003.D
Acq: 24 Mar 2016 19:33

Tgt Ion:105 Resp: 4801

Ion	Ratio	Lower	Upper
105	100		
120	34.0	34.3	79.9#

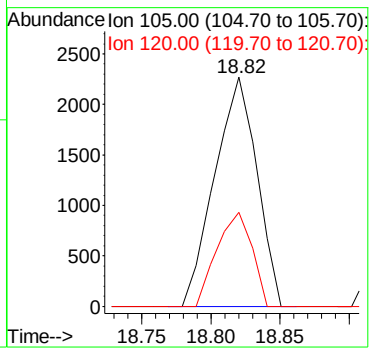

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032416\6M138006.D Vial: 19
Acq On : 24 Mar 2016 21:12 Operator: TMB
Sample : L16030863-12 8260 5.05g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 25 08:37:58 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	540095	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	394609	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	205737	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.34	111	134649	46.4745 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 92.94%		
43) 1,2-Dichloroethane-d4	11.06	65	169370	45.0244 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 90.04%		
58) Toluene-d8	13.80	98	476047	50.7405 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.48%		
80) p-Bromofluorobenzene	17.79	95	197261	52.1999 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 104.40%		

Target Compounds

					Qvalue
11) Acrolein	6.50	56	8276	16.9451 ug/L	89
13) Acetone	6.60	43	15717	9.5280 ug/L #	1
15) Tert-Butyl Alcohol	6.63	59	7159	16.2328 ug/L #	1
24) n-Hexane	8.25	57	1747	0.3685 ug/L #	1
29) 2-Butanone	9.46	43	1368	0.7328 ug/L #	56
36) Tetrahydrofuran	10.31	42	2587	Below Cal #	60
46) Benzene	11.23	78	3222	0.2864 ug/L #	60
47) Trichloroethene	12.09	130	1905	0.7167 ug/L #	39
60) Ethyl Methacrylate	13.81	69	1388	0.3881 ug/L #	1
79) 1,1,2,2-Tetrachloroethane	17.79	83	1235	0.3843 ug/L #	19
82) trans-1,4-Dichloro-2-Buten	18.04	53	4439	3.7413 ug/L #	1
90) 1,2,4-Trimethylbenzene	18.82	105	4358	0.4167 ug/L	80
91) sec-Butylbenzene	18.82	105	4033	0.3167 ug/L #	56

(#) = qualifier out of range (m) = manual integration
6M138006.D 826_SL.M Fri Mar 25 08:37:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032416\6M138006.D Vial: 19
Acq On : 24 Mar 2016 21:12 Operator: TMB
Sample : L16030863-12 8260 5.05g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 25 8:37 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

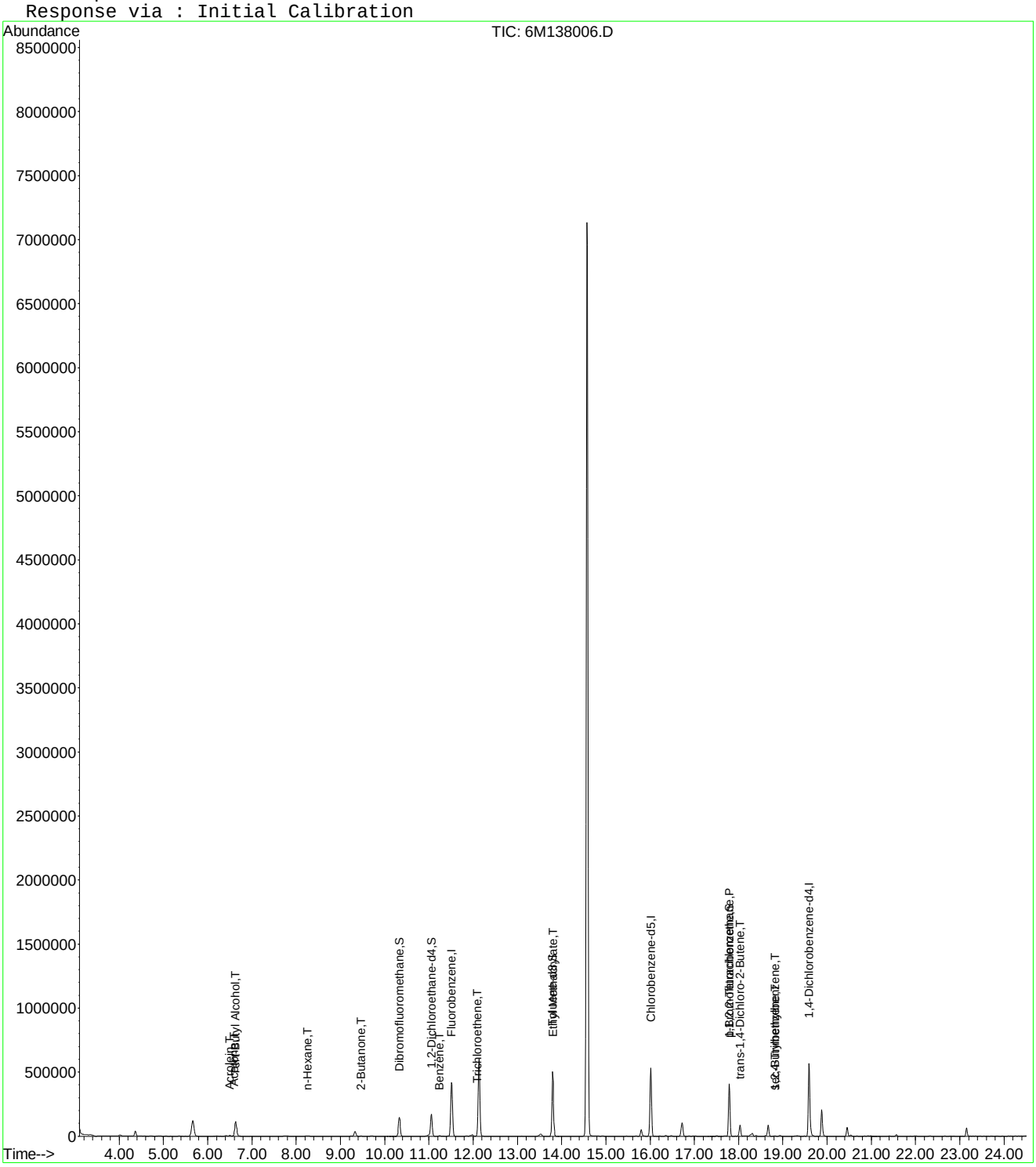

6M138006.D 826_SL.M Fri Mar 25 08:37:59 2016 Page 2

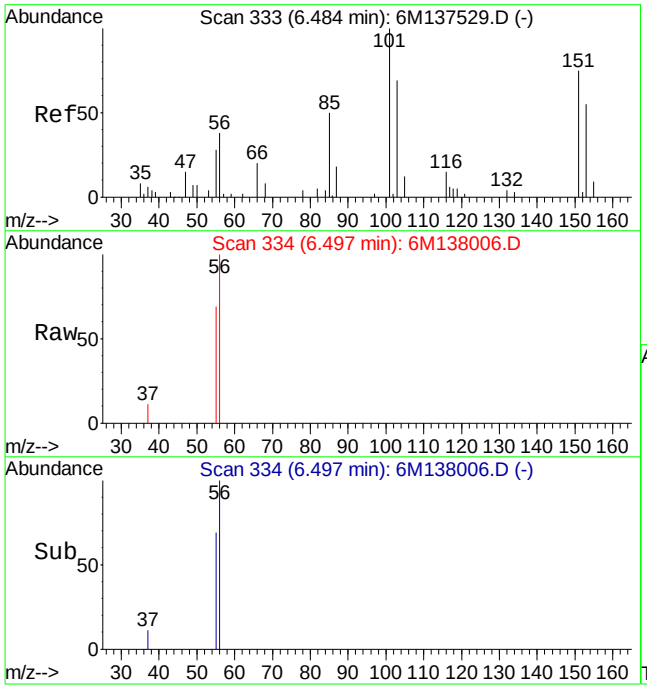

#11
Acrolein
Concen: 16.95 ug/L
RT: 6.50 min Scan# 334
Delta R.T. 0.01 min
Lab File: 6M138006.D
Acq: 24 Mar 2016 21:12

Tgt Ion: 56 Resp: 8276

Ion	Ratio	Lower	Upper
56	100		
55	65.2	44.6	104.0

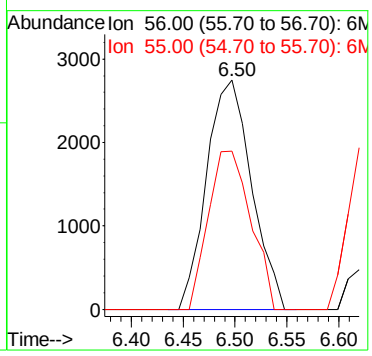

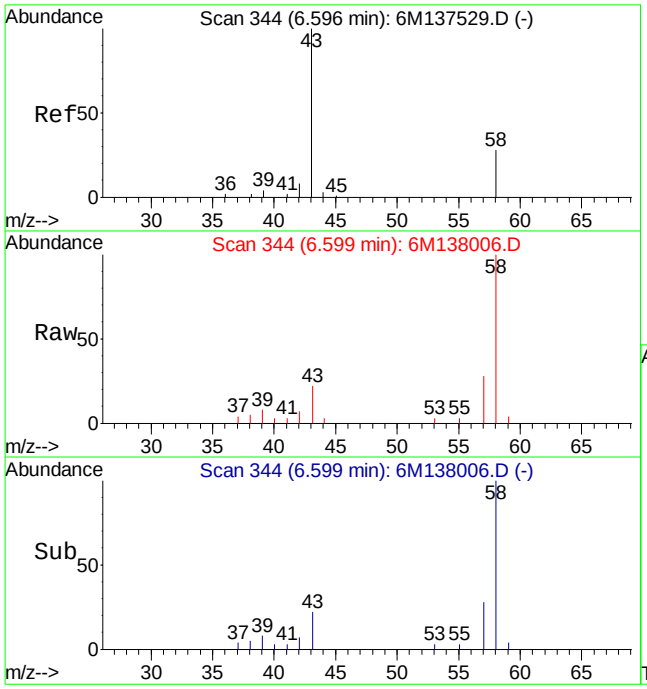

#13
Acetone
Concen: 9.53 ug/L
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M138006.D
Acq: 24 Mar 2016 21:12

Tgt Ion: 43 Resp: 15717

Ion	Ratio	Lower	Upper
43	100		
58	1375.4	16.1	37.7#

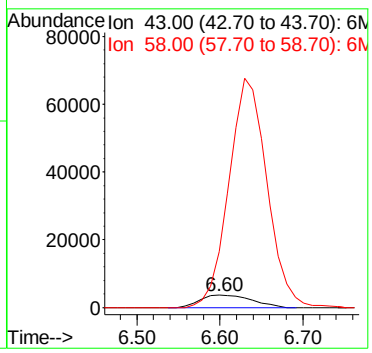

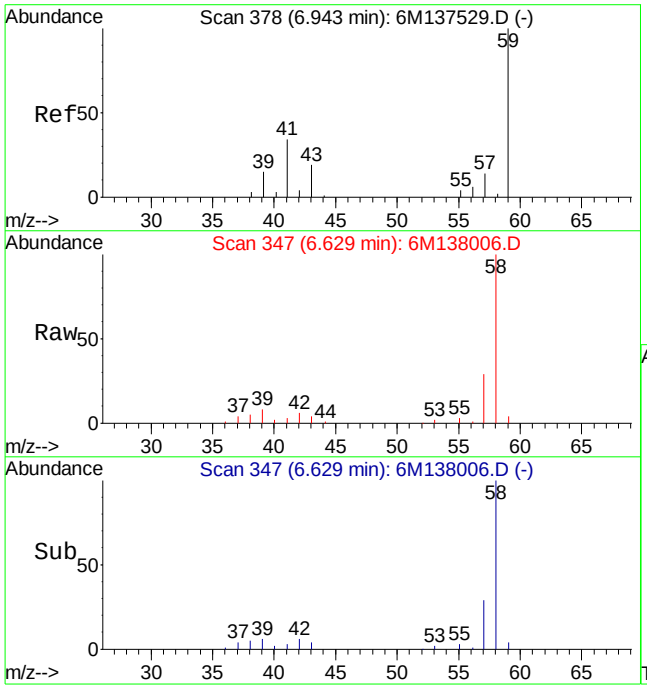

#15
Tert-Butyl Alcohol
Concen: 16.23 ug/L
RT: 6.63 min Scan# 347
Delta R.T. -0.30 min
Lab File: 6M138006.D
Acq: 24 Mar 2016 21:12

Tgt Ion: 59 Resp: 7159

Ion	Ratio	Lower	Upper
59	100		
41	75.1	15.0	35.0#
57	853.0	5.9	13.9#

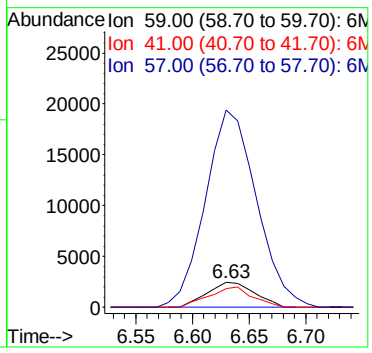

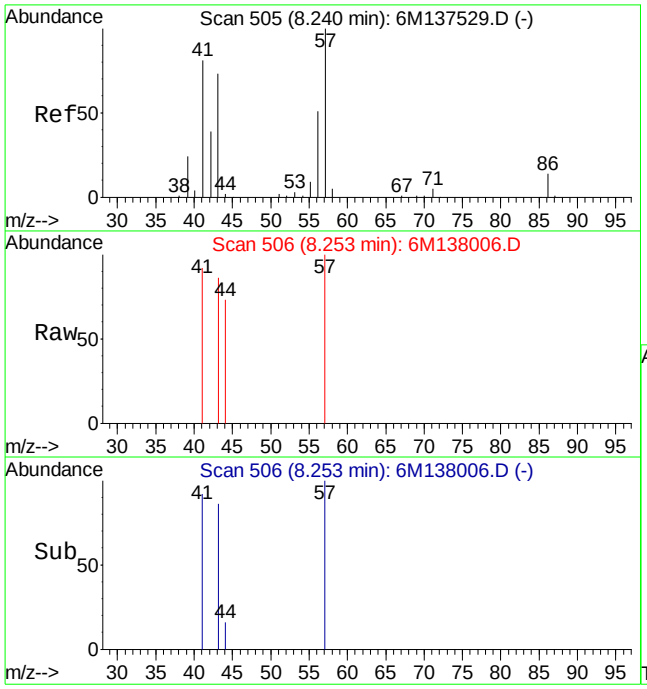

#24
n-Hexane
Concen: 0.37 ug/L
RT: 8.25 min Scan# 506
Delta R.T. 0.01 min
Lab File: 6M138006.D
Acq: 24 Mar 2016 21:12

Tgt Ion: 57 Resp: 1747

Ion	Ratio	Lower	Upper
57	100		
43	157.1	44.0	102.8#

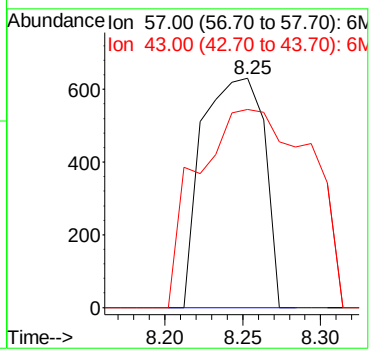

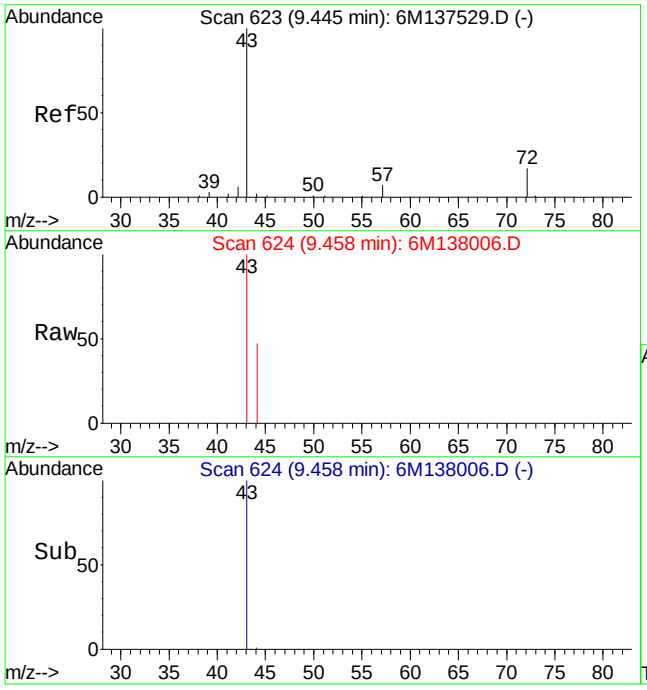

#29
2-Butanone
Concen: 0.73 ug/L
RT: 9.46 min Scan# 624
Delta R.T. 0.01 min
Lab File: 6M138006.D
Acq: 24 Mar 2016 21:12

Tgt Ion: 43 Resp: 1368

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.2	28.4#

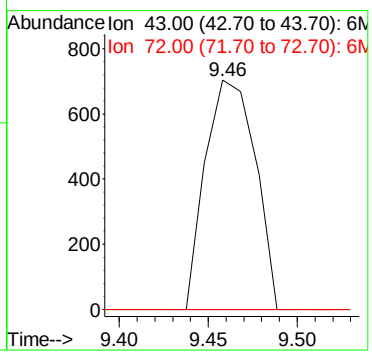

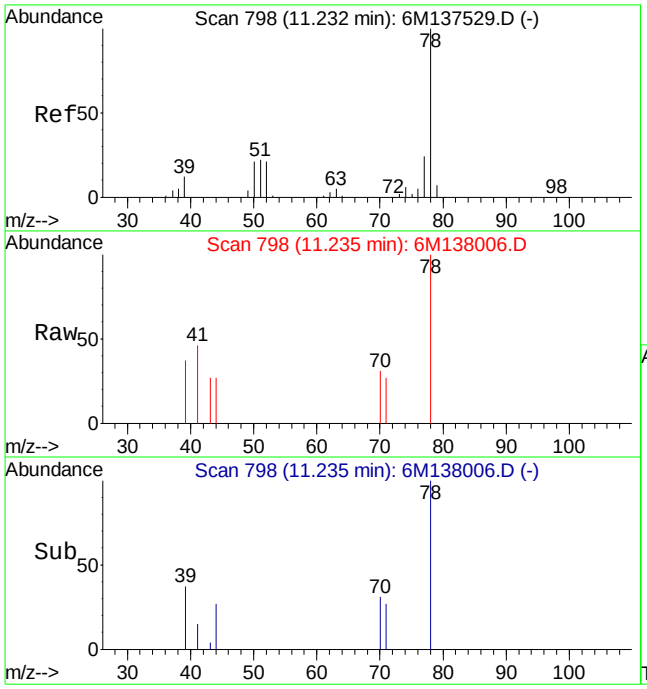

#46
Benzene
Concen: 0.29 ug/L
RT: 11.23 min Scan# 798
Delta R.T. 0.00 min
Lab File: 6M138006.D
Acq: 24 Mar 2016 21:12

Tgt Ion: 78 Resp: 3222

Ion	Ratio	Lower	Upper
78	100		
52	0.0	10.4	24.4#

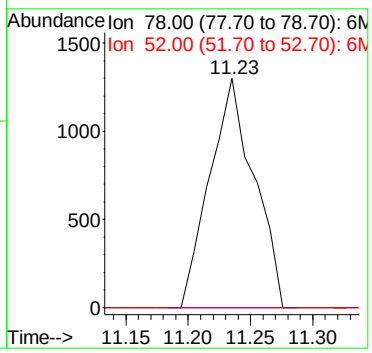

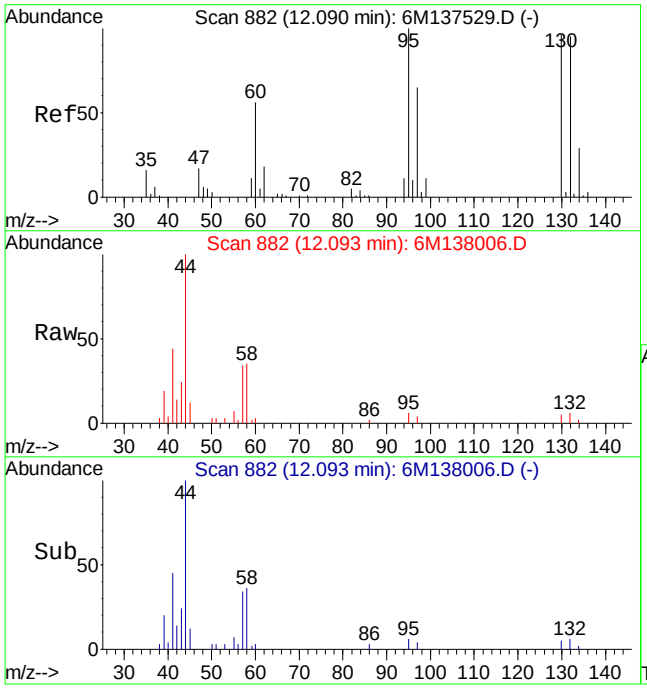

#47
Trichloroethene
Concen: 0.72 ug/L
RT: 12.09 min Scan# 882
Delta R.T. 0.00 min
Lab File: 6M138006.D
Acq: 24 Mar 2016 21:12

Tgt Ion:130 Resp: 1905

Ion	Ratio	Lower	Upper
130	100		
60	95.2	31.2	72.8#

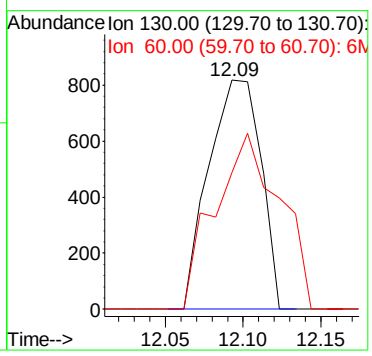

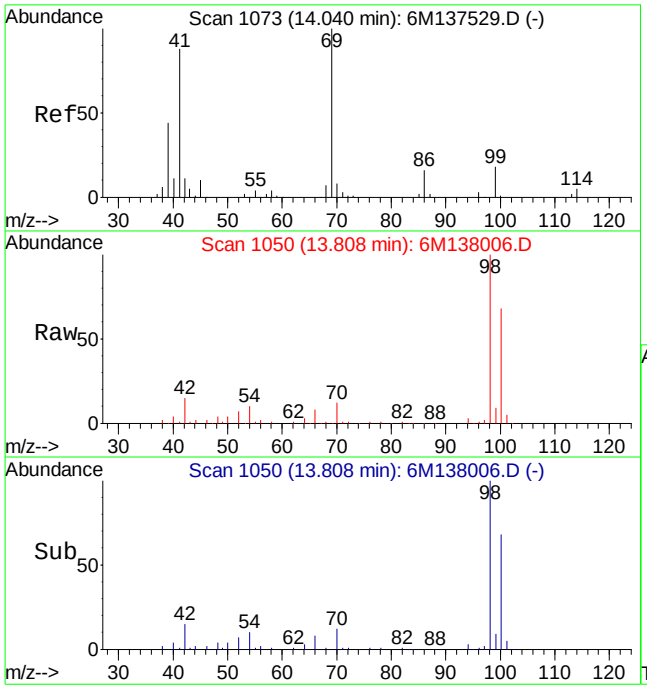

#60
Ethyl Methacrylate
Concen: 0.39 ug/L
RT: 13.81 min Scan# 1050
Delta R.T. -0.22 min
Lab File: 6M138006.D
Acq: 24 Mar 2016 21:12

Tgt Ion: 69 Resp: 1388

Ion	Ratio	Lower	Upper
69	100		
41	223.0	50.6	118.2#

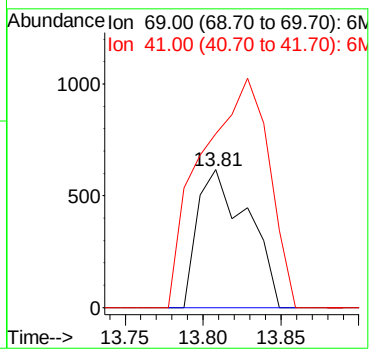

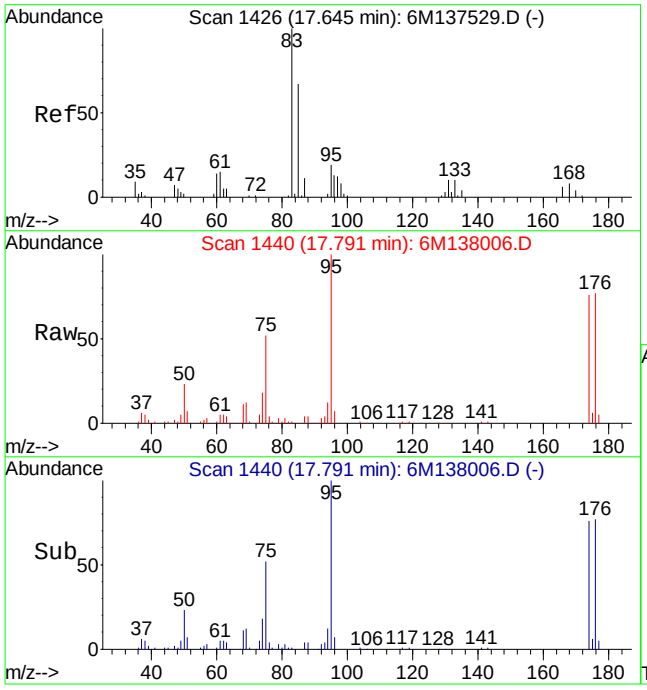

#79
1,1,2,2-Tetrachloroethane
Concen: 0.38 ug/L
RT: 17.79 min Scan# 1440
Delta R.T. 0.14 min
Lab File: 6M138006.D
Acq: 24 Mar 2016 21:12

Tgt Ion: 83 Resp: 1235

Ion	Ratio	Lower	Upper
83	100		
85	0.0	37.7	88.1#

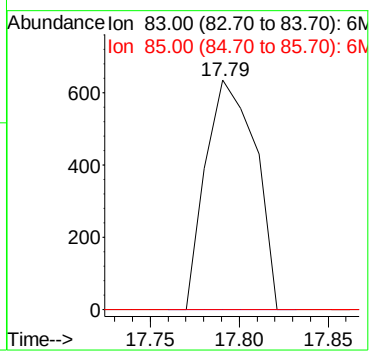

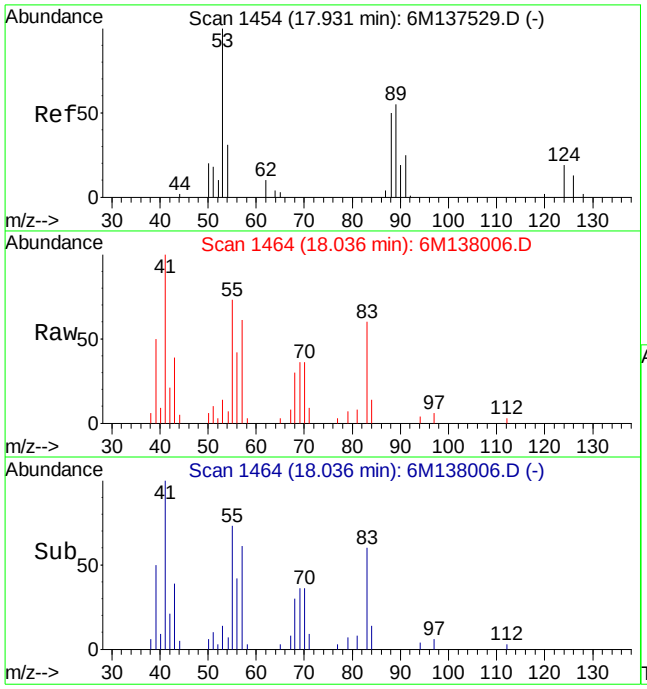

#82
trans-1,4-Dichloro-2-Butene
Concen: 3.74 ug/L
RT: 18.04 min Scan# 1464
Delta R.T. 0.10 min
Lab File: 6M138006.D
Acq: 24 Mar 2016 21:12

Tgt Ion: 53 Resp: 4439

Ion	Ratio	Lower	Upper
53	100		
75	0.0	69.2	161.6#

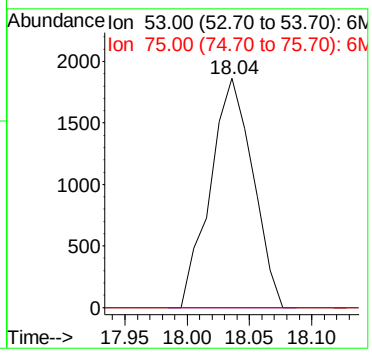

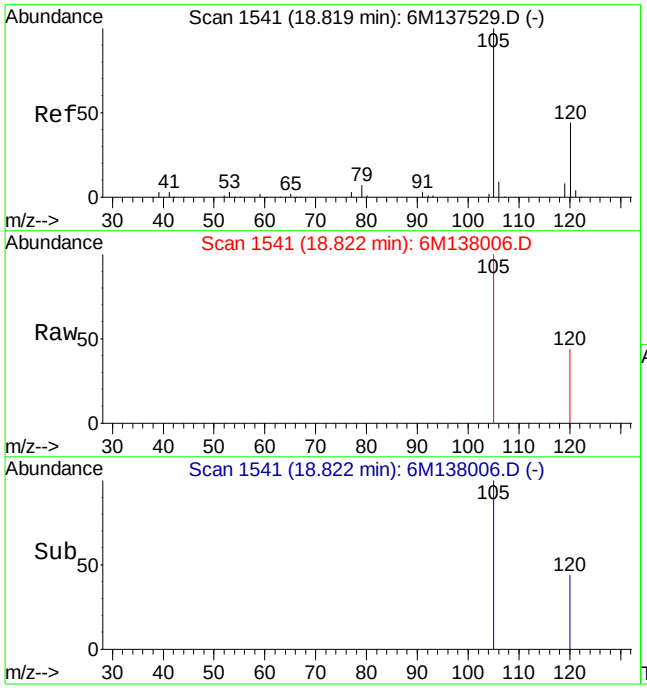

#90
1,2,4-Trimethylbenzene
Concen: 0.42 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. 0.00 min
Lab File: 6M138006.D
Acq: 24 Mar 2016 21:12

Tgt Ion:105 Resp: 4358

Ion	Ratio	Lower	Upper
105	100		
120	42.4	34.3	79.9

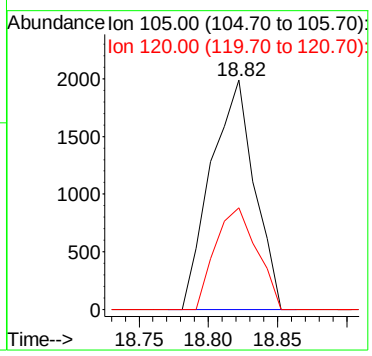

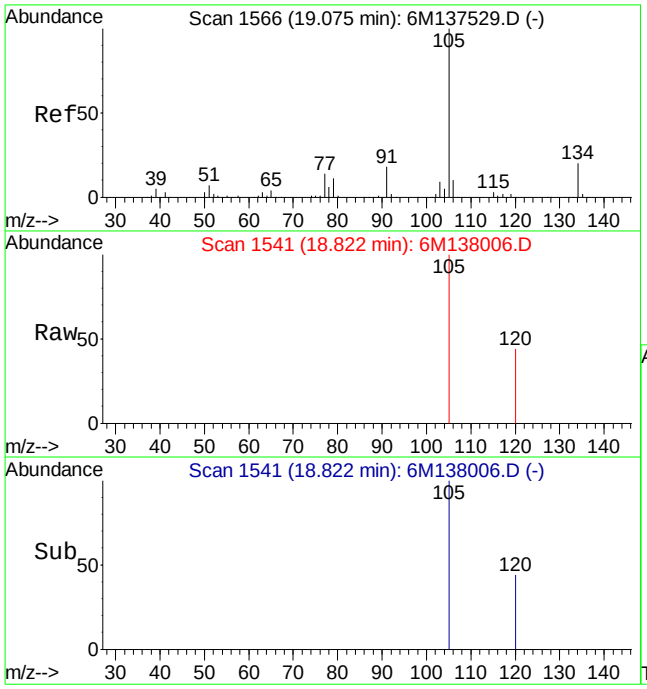

#91
sec-Butylbenzene
Concen: 0.32 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. -0.25 min
Lab File: 6M138006.D
Acq: 24 Mar 2016 21:12

Tgt Ion:105 Resp: 4033

Ion	Ratio	Lower	Upper
105	100		
134	0.0	12.2	28.6#

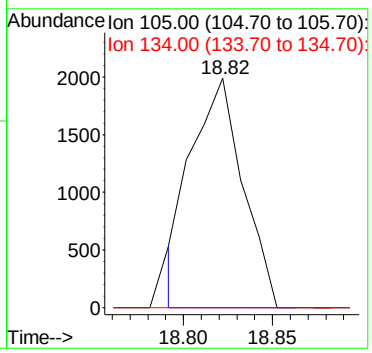

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032416\6M138004.D Vial: 17
Acq On : 24 Mar 2016 20:06 Operator: TMB
Sample : L16030863-13 8260 5.10g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 25 08:37:56 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	582773	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	427612	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	222418	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	144170	46.1166 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 92.24%		
43) 1,2-Dichloroethane-d4	11.05	65	169802	41.8336 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 83.66%		
58) Toluene-d8	13.80	98	515110	50.6666 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.34%		
80) p-Bromofluorobenzene	17.79	95	210276	51.4707 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.94%		

Target Compounds

					Qvalue
13) Acetone	6.60	43	11958	5.4231 ug/L #	74
15) Tert-Butyl Alcohol	6.94	59	1077	2.2632 ug/L #	57
29) 2-Butanone	9.69	43	3800	1.8864 ug/L #	56
36) Tetrahydrofuran	10.31	42	2511	Below Cal #	54
47) Trichloroethene	12.09	130	19263	6.7167 ug/L	96
90) 1,2,4-Trimethylbenzene	18.81	105	5274	0.4664 ug/L	83
91) sec-Butylbenzene	18.81	105	4869	0.3536 ug/L #	56
92) p-Isopropyltoluene	19.49	119	3937	0.3466 ug/L #	35

(#) = qualifier out of range (m) = manual integration
6M138004.D 826_SL.M Fri Mar 25 08:37:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032416\6M138004.D Vial: 17
Acq On : 24 Mar 2016 20:06 Operator: TMB
Sample : L16030863-13 8260 5.10g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 25 8:37 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

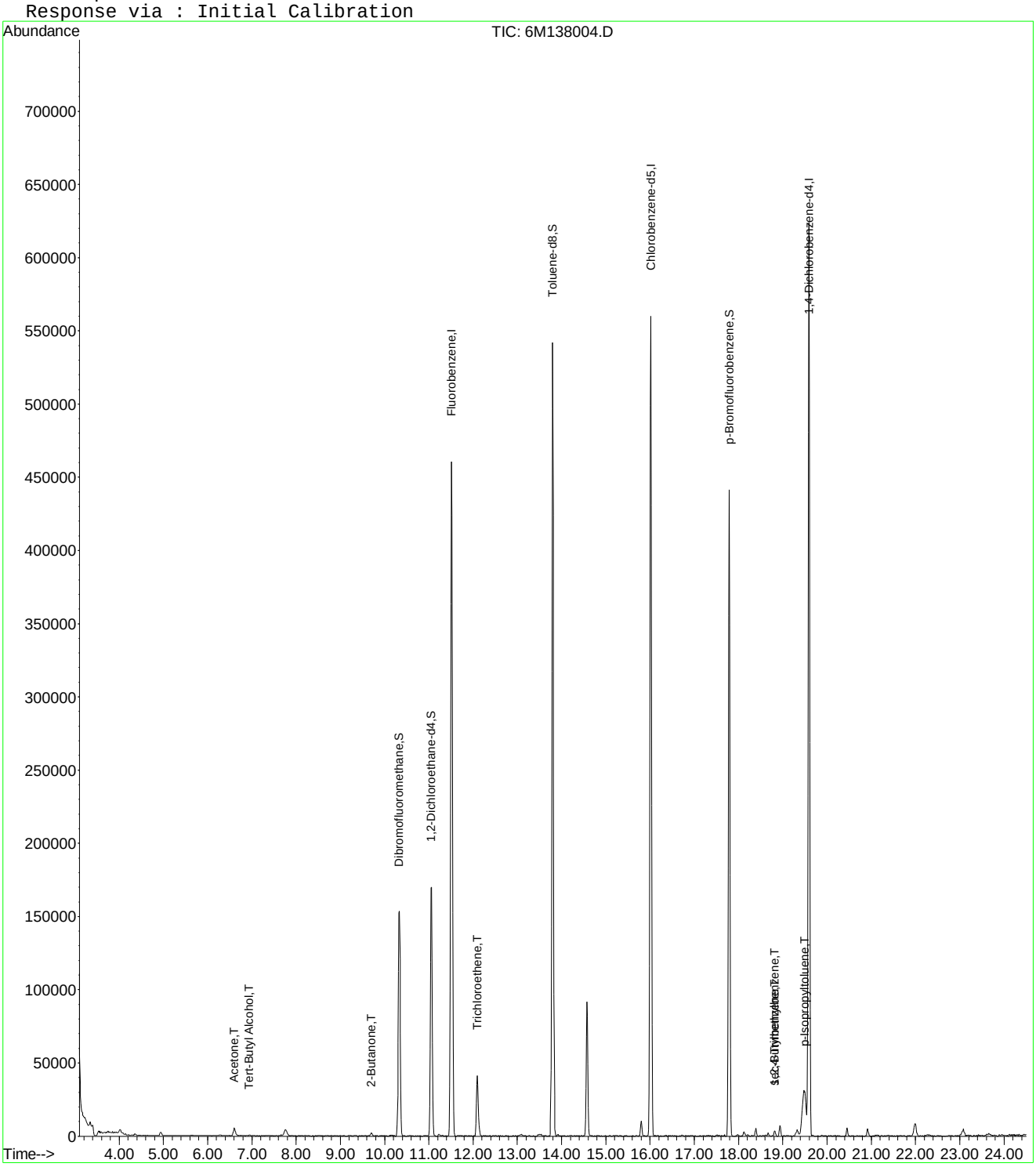

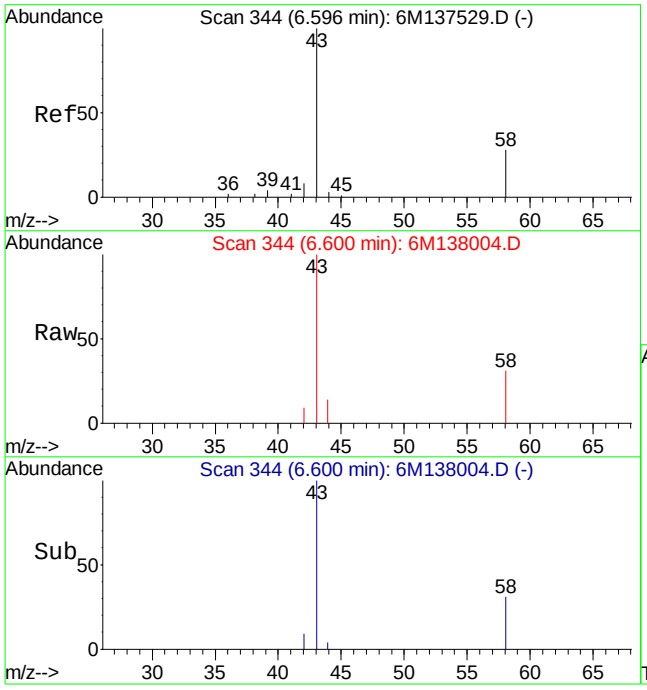

#13
Acetone
Concen: 5.42 ug/L
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M138004.D
Acq: 24 Mar 2016 20:06

Tgt Ion: 43 Resp: 11958

Ion	Ratio	Lower	Upper
43	100		
58	40.1	16.1	37.7#

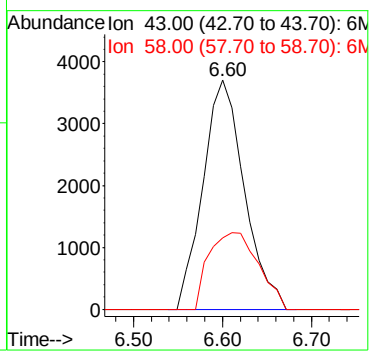

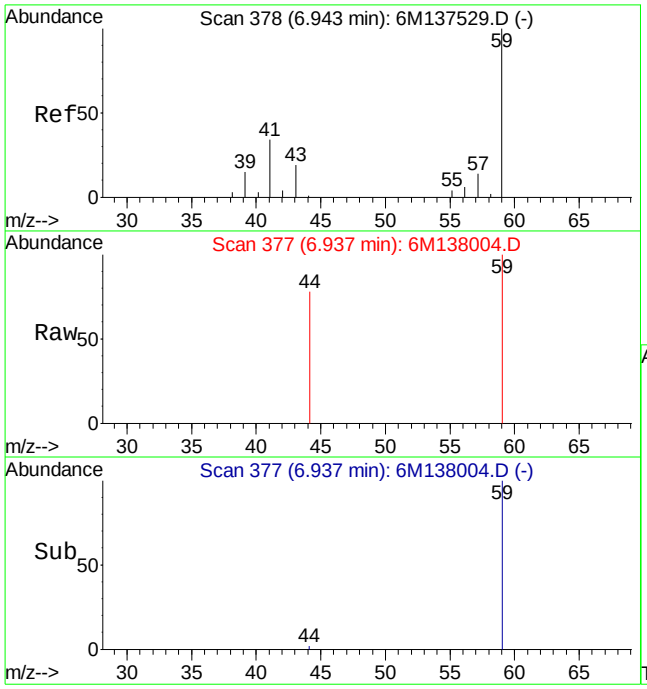

#15
Tert-Butyl Alcohol
Concen: 2.26 ug/L
RT: 6.94 min Scan# 377
Delta R.T. 0.00 min
Lab File: 6M138004.D
Acq: 24 Mar 2016 20:06

Tgt Ion: 59 Resp: 1077

Ion	Ratio	Lower	Upper
59	100		
41	0.0	15.0	35.0#
57	0.0	5.9	13.9#

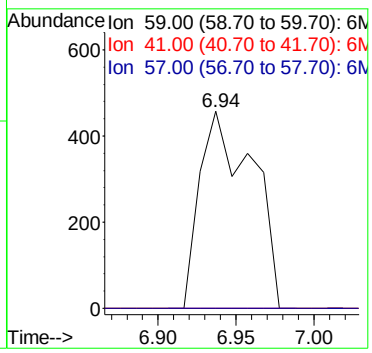

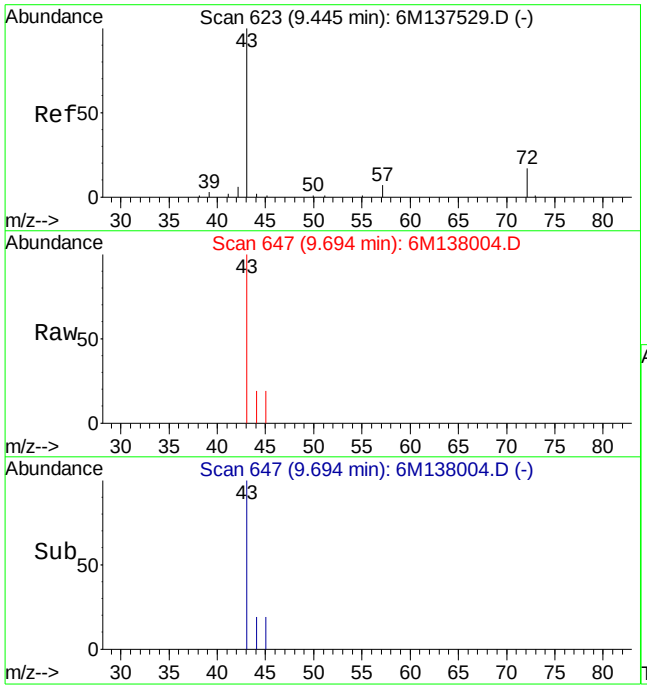

#29
2-Butanone
Concen: 1.89 ug/L
RT: 9.69 min Scan# 647
Delta R.T. 0.25 min
Lab File: 6M138004.D
Acq: 24 Mar 2016 20:06

Tgt Ion: 43 Resp: 3800

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.2	28.4#

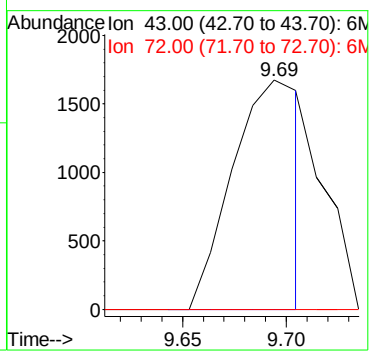

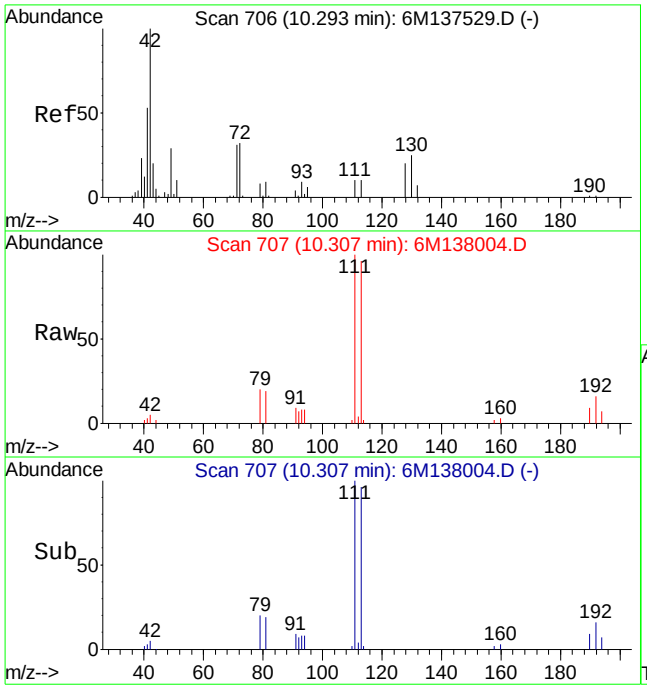

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.31 min Scan# 707
Delta R.T. 0.01 min
Lab File: 6M138004.D
Acq: 24 Mar 2016 20:06

Tgt Ion: 42 Resp: 2511

Ion	Ratio	Lower	Upper
42	100		
72	8.3	21.0	49.0#
71	7.4	20.6	48.2#

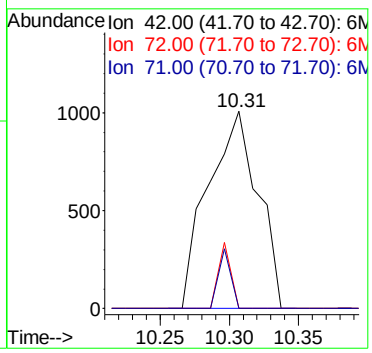

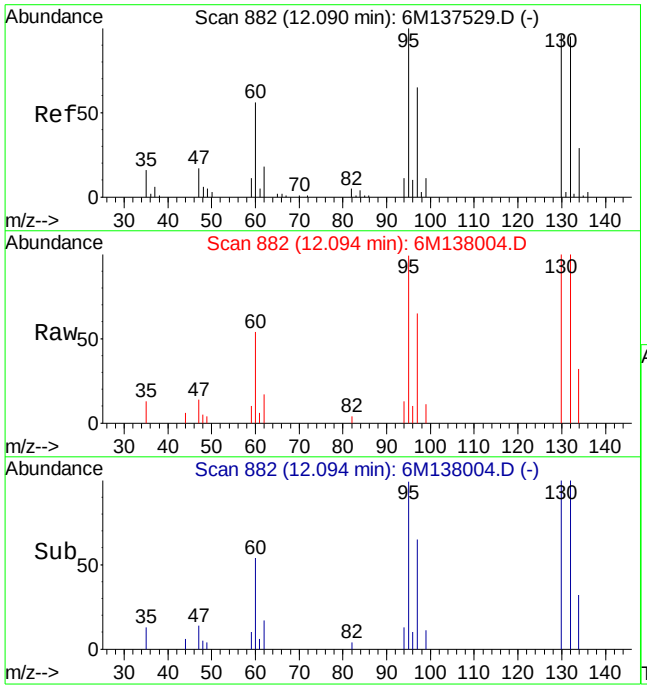

#47
Trichloroethene
Concen: 6.72 ug/L
RT: 12.09 min Scan# 882
Delta R.T. 0.00 min
Lab File: 6M138004.D
Acq: 24 Mar 2016 20:06

Tgt Ion:130 Resp: 19263

Ion	Ratio	Lower	Upper
130	100		
60	54.5	31.2	72.8

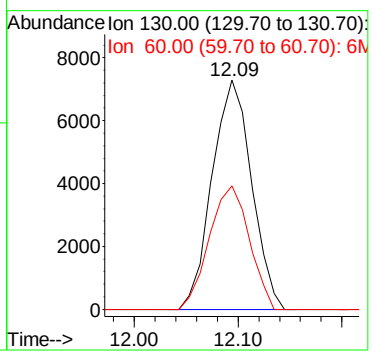

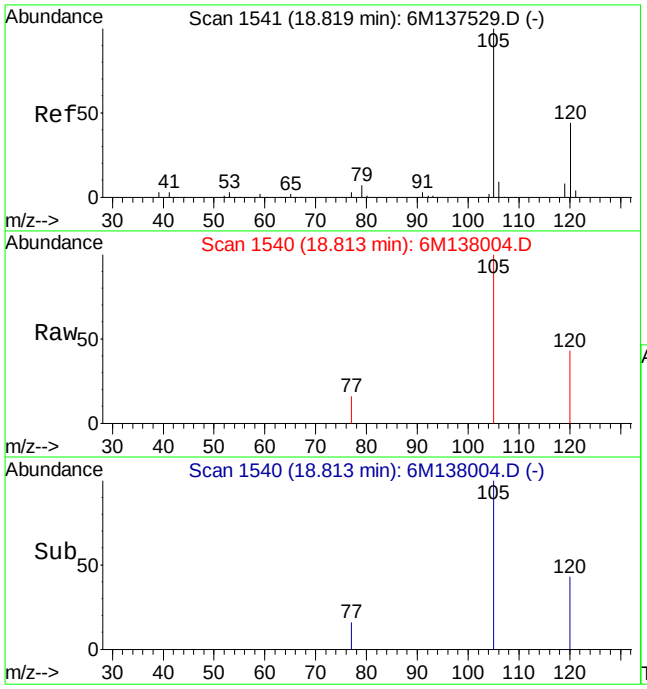

#90
1,2,4-Trimethylbenzene
Concen: 0.47 ug/L
RT: 18.81 min Scan# 1540
Delta R.T. -0.01 min
Lab File: 6M138004.D
Acq: 24 Mar 2016 20:06

Tgt Ion:105 Resp: 5274

Ion	Ratio	Lower	Upper
105	100		
120	44.4	34.3	79.9

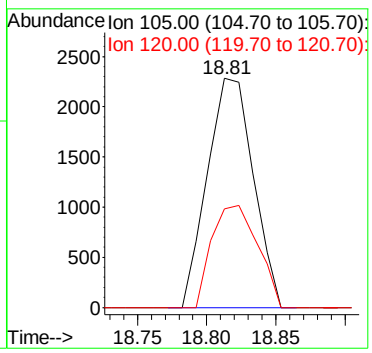

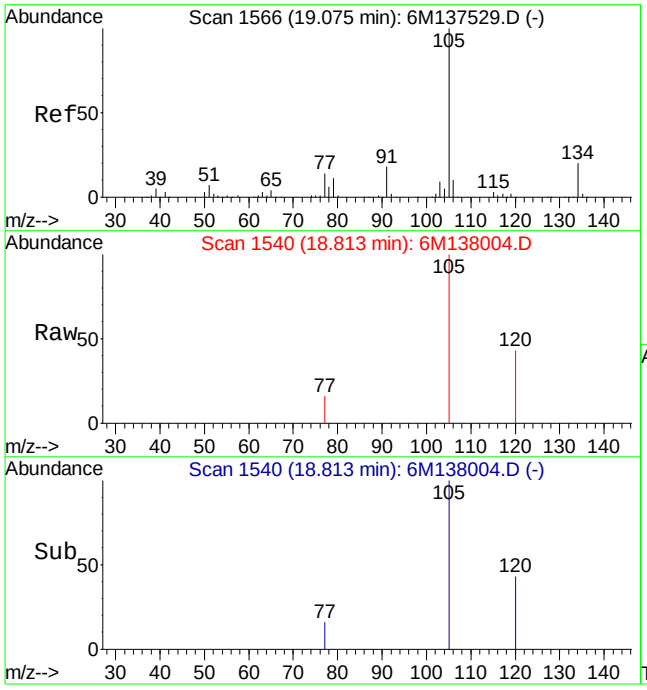

#91
sec-Butylbenzene
Concen: 0.35 ug/L
RT: 18.81 min Scan# 1540
Delta R.T. -0.26 min
Lab File: 6M138004.D
Acq: 24 Mar 2016 20:06

Tgt Ion:105 Resp: 4869

Ion	Ratio	Lower	Upper
105	100		
134	0.0	12.2	28.6#

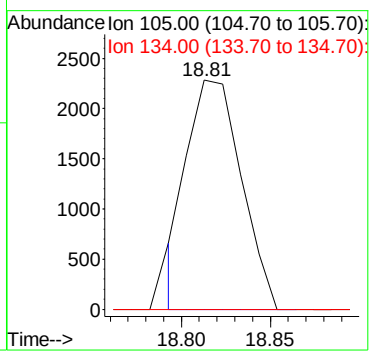

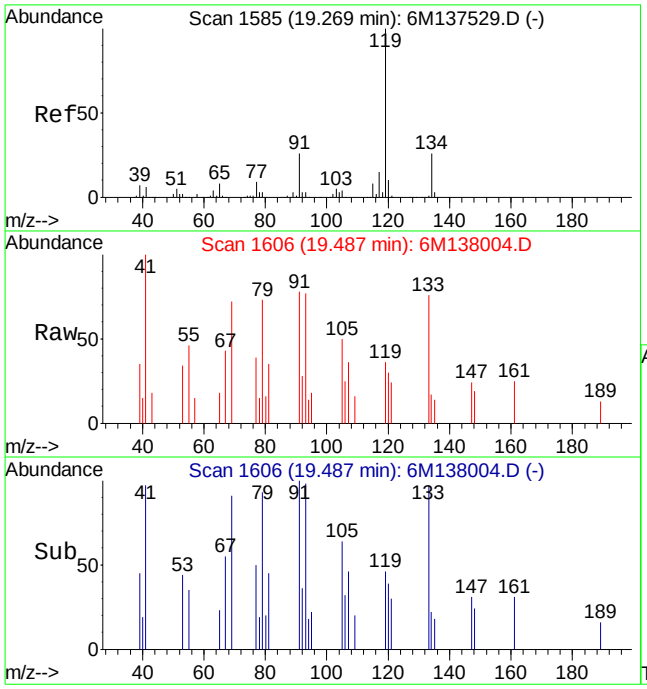

#92
p-Isopropyltoluene
Concen: 0.35 ug/L
RT: 19.49 min Scan# 1606
Delta R.T. 0.23 min
Lab File: 6M138004.D
Acq: 24 Mar 2016 20:06

Tgt Ion:119 Resp: 3937

Ion	Ratio	Lower	Upper
119	100		
134	59.0	15.6	36.4#

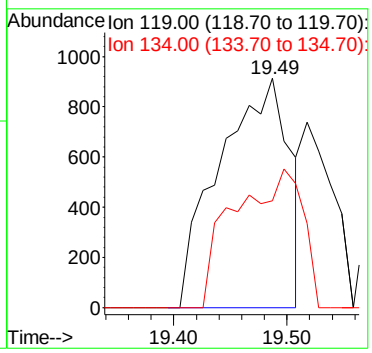

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032416\6M138005.D Vial: 18
Acq On : 24 Mar 2016 20:39 Operator: TMB
Sample : L16030863-14 8260 5.30g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 25 08:37:57 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	554060	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	404209	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	207682	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	135917	45.7298 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 91.46%		
43) 1,2-Dichloroethane-d4	11.06	65	162648	42.1477 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 84.30%		
58) Toluene-d8	13.80	98	492385	51.2354 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 102.48%		
80) p-Bromofluorobenzene	17.79	95	197784	51.8481 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 103.70%		

Target Compounds

					Qvalue
13) Acetone	6.59	43	7691	2.2479 ug/L #	48
46) Benzene	11.23	78	3635	0.3149 ug/L #	72
47) Trichloroethene	12.09	130	2368	0.8685 ug/L	75
60) Ethyl Methacrylate	13.81	69	999	0.2727 ug/L	72
90) 1,2,4-Trimethylbenzene	18.82	105	4608	0.4364 ug/L	84
91) sec-Butylbenzene	18.82	105	3808	0.2962 ug/L #	56

(#) = qualifier out of range (m) = manual integration
6M138005.D 826_SL.M Fri Mar 25 08:37:58 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032416\6M138005.D Vial: 18
Acq On : 24 Mar 2016 20:39 Operator: TMB
Sample : L16030863-14 8260 5.30g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 25 8:37 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

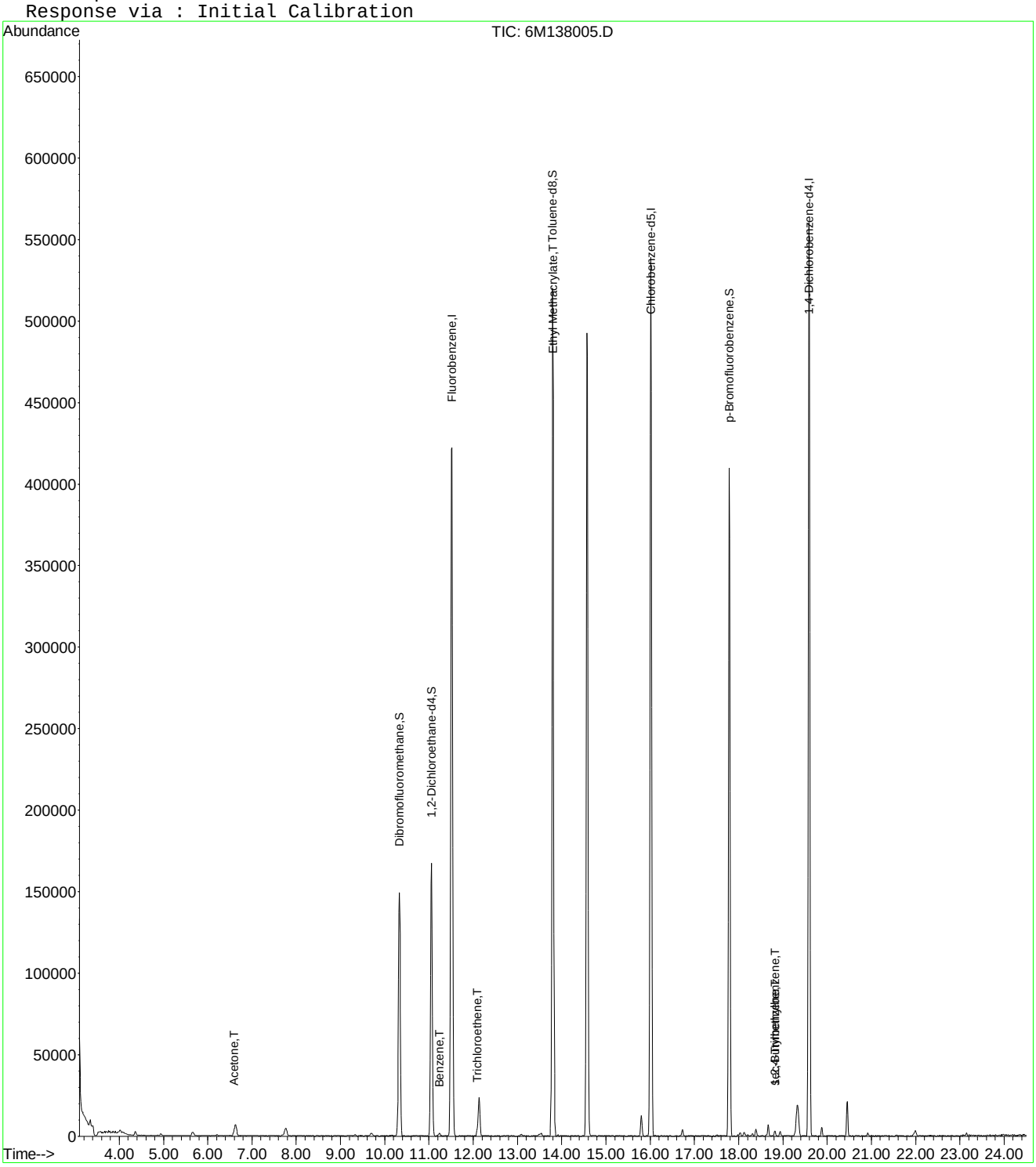

6M138005.D 826_SL.M Fri Mar 25 08:37:58 2016 Page 2

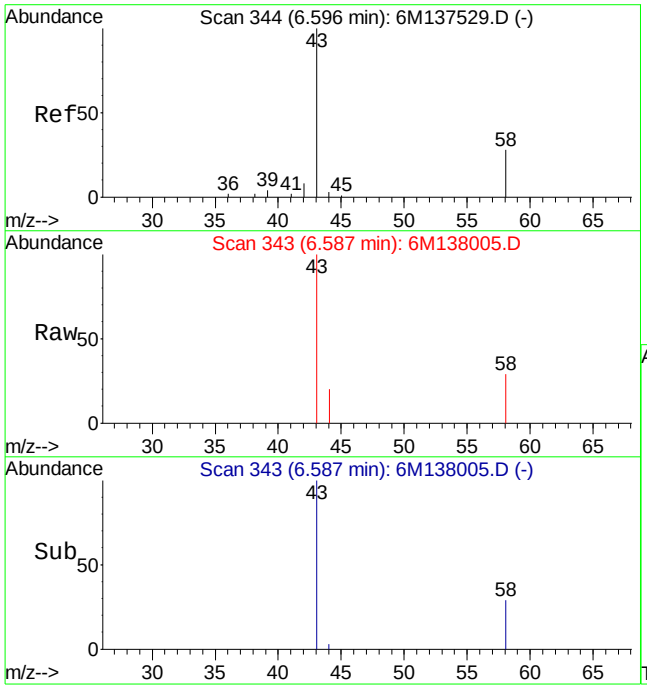

#13
Acetone
Concen: 2.25 ug/L
RT: 6.59 min Scan# 343
Delta R.T. 0.00 min
Lab File: 6M138005.D
Acq: 24 Mar 2016 20:39

Tgt Ion: 43 Resp: 7691

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.1	37.7#

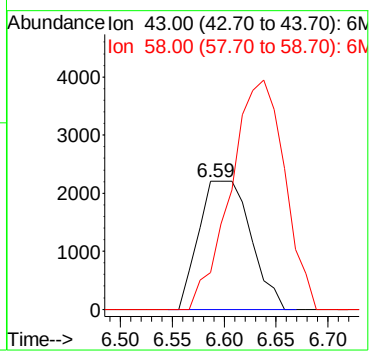

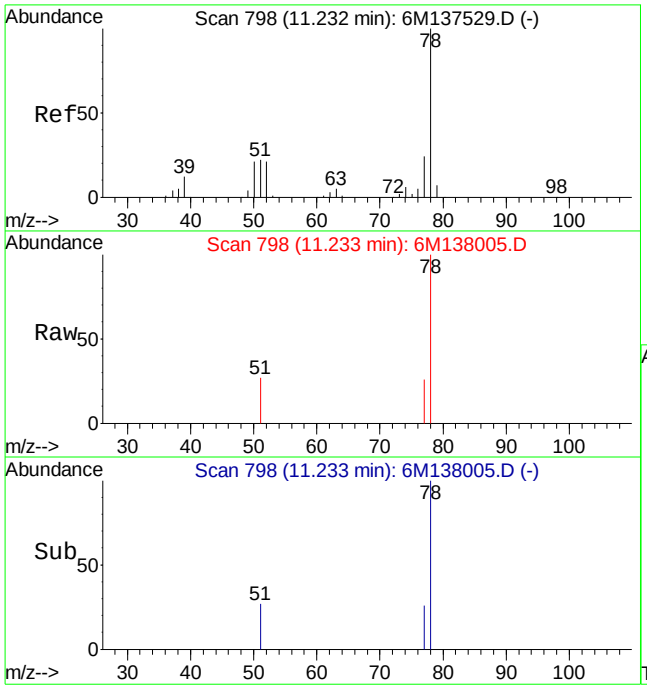

#46
Benzene
Concen: 0.31 ug/L
RT: 11.23 min Scan# 798
Delta R.T. -0.00 min
Lab File: 6M138005.D
Acq: 24 Mar 2016 20:39

Tgt Ion: 78 Resp: 3635

Ion	Ratio	Lower	Upper
78	100		
52	5.3	10.4	24.4#

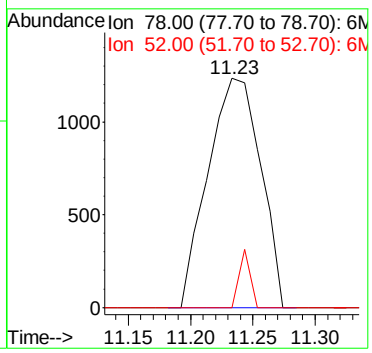

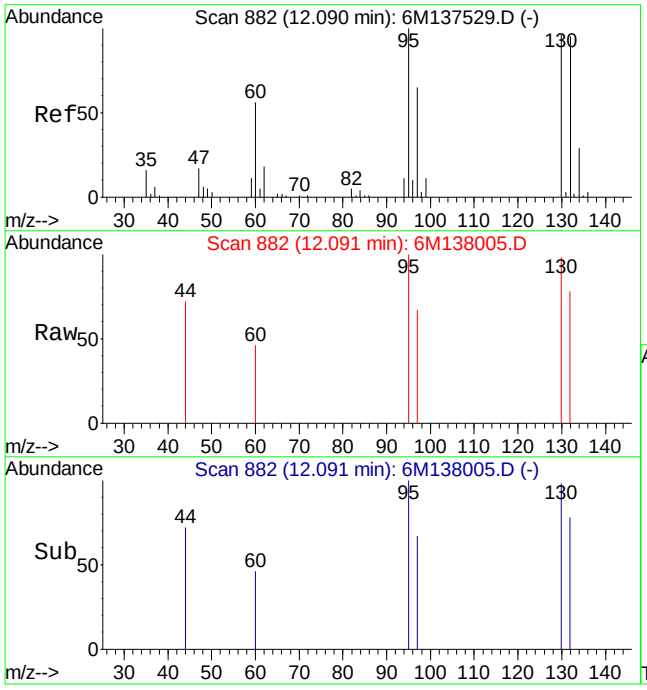

#47
Trichloroethene
Concen: 0.87 ug/L
RT: 12.09 min Scan# 882
Delta R.T. -0.00 min
Lab File: 6M138005.D
Acq: 24 Mar 2016 20:39

Tgt Ion:130 Resp: 2368

Ion	Ratio	Lower	Upper
130	100		
60	34.6	31.2	72.8

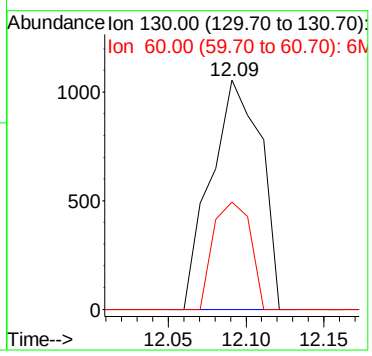

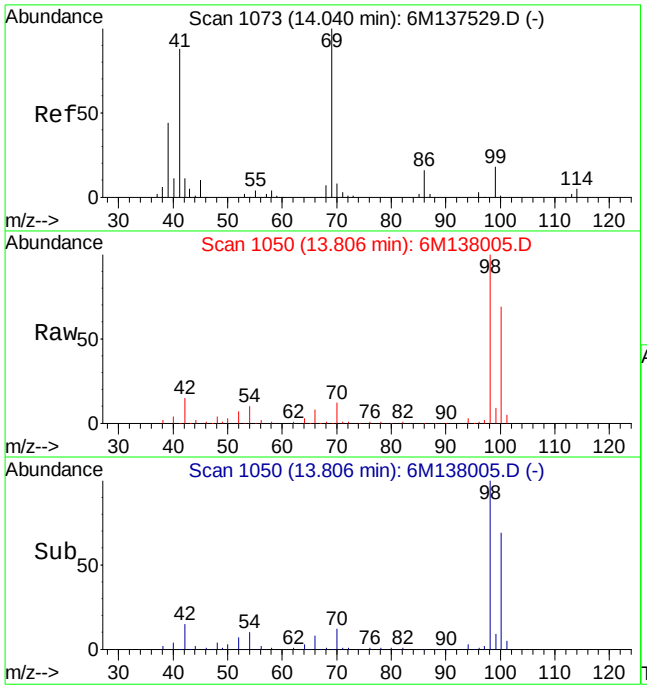

#60
Ethyl Methacrylate
Concen: 0.27 ug/L
RT: 13.81 min Scan# 1050
Delta R.T. -0.22 min
Lab File: 6M138005.D
Acq: 24 Mar 2016 20:39

Tgt Ion: 69 Resp: 999

Ion	Ratio	Lower	Upper
69	100		
41	110.1	50.6	118.2

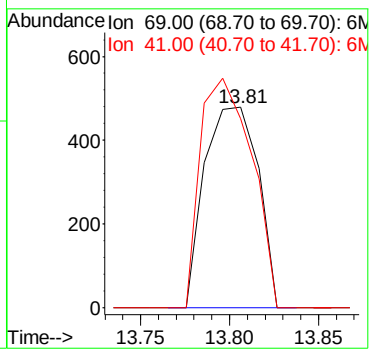

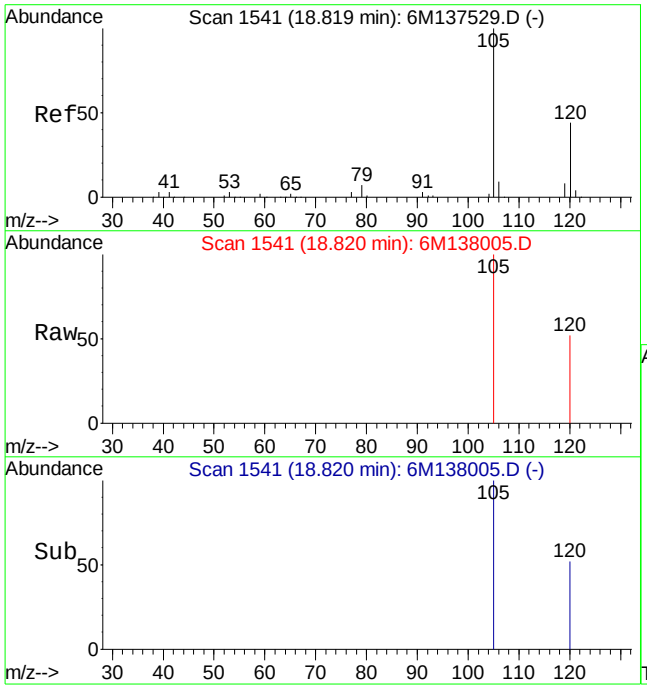

#90
1,2,4-Trimethylbenzene
Concen: 0.44 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. -0.00 min
Lab File: 6M138005.D
Acq: 24 Mar 2016 20:39

Tgt Ion:105 Resp: 4608

Ion	Ratio	Lower	Upper
105	100		
120	45.5	34.3	79.9

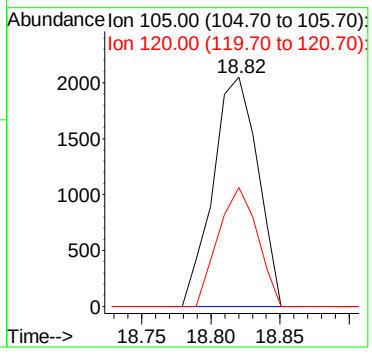

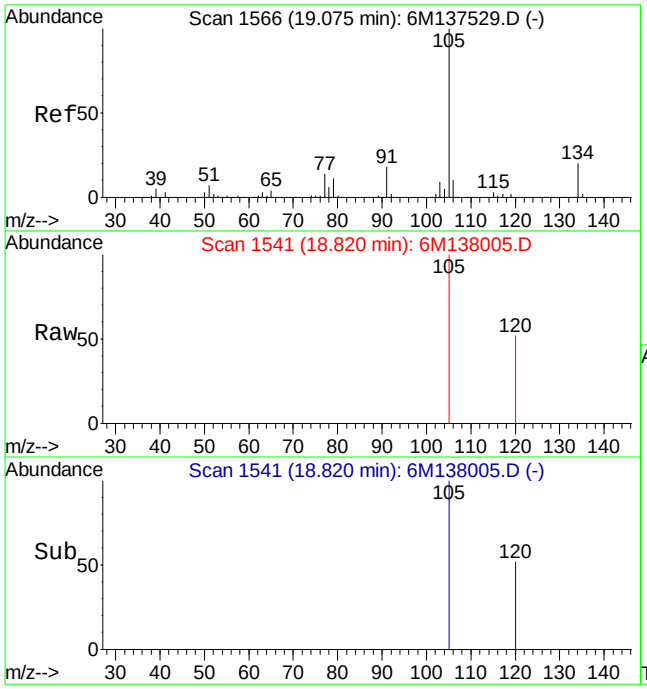

#91
sec-Butylbenzene
Concen: 0.30 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. -0.26 min
Lab File: 6M138005.D
Acq: 24 Mar 2016 20:39

Tgt Ion:105 Resp: 3808

Ion	Ratio	Lower	Upper
105	100		
134	0.0	12.2	28.6#

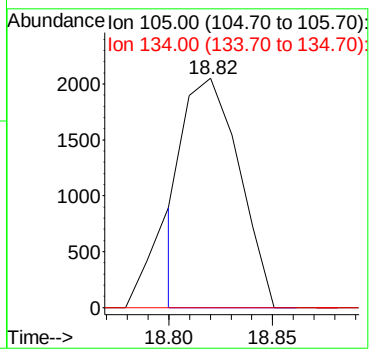

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:35 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:12:24 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	662608	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	467802	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	239669	50.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.32	111	1132	0.3185 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.64%#	
43) 1,2-Dichloroethane-d4	11.05	65	1872	0.4056 ug/L	-0.01
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.82%#	
58) Toluene-d8	13.80	98	5704	0.5128 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	1.02%#	
80) p-Bromofluorobenzene	17.79	95	2210	0.5020 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	1.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	3454	0.5676 ug/L #	66
3) Chloromethane	3.88	50	8579	1.3528 ug/L	90
4) Vinyl Chloride	4.12	62	3760	0.7367 ug/L #	74
5) 1,3-Butadiene	4.18	54	3027	0.7128 ug/L #	61
6) Bromomethane	5.03	94	1550	0.5697 ug/L	88
7) Chloroethane	5.19	64	1482	0.5121 ug/L #	45
8) Trichlorofluoromethane	5.69	101	6717	0.9794 ug/L #	89
10) Isoprene	6.27	67	1888	0.4226 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	1199	0.3663 ug/L #	55
13) Acetone	6.59	43	9375	2.3758 ug/L	94
14) 1,1-Dichloroethene	6.83	61	2956	0.5098 ug/L	84
15) Tert-Butyl Alcohol	6.94	59	200	0.3696 ug/L #	57
18) Methyl acetate	7.39	43	2867	0.7115 ug/L #	64
19) Methylene Chloride	7.67	84	2652	0.7594 ug/L	75
20) Carbon Disulfide	7.72	76	8199	0.7390 ug/L #	82
22) Methyl Tert Butyl Ether	7.88	73	4851	0.4864 ug/L #	63
23) trans-1,2-Dichloroethene	8.16	96	1352	0.4221 ug/L #	10
24) n-Hexane	8.23	57	3942	0.6777 ug/L	92
26) Vinyl Acetate	8.79	43	2062	0.2645 ug/L #	78
27) 1,1-Dichloroethane	8.82	63	3798	0.5499 ug/L #	68
29) 2-Butanone	9.46	43	1832	0.7999 ug/L #	56
31) 2,2-Dichloropropane	9.69	77	2885	0.5204 ug/L	96
32) cis-1,2-Dichloroethene	9.76	96	1812	0.5067 ug/L	93
33) Chloroform	10.01	83	3647	0.5654 ug/L	91
35) Bromochloromethane	10.26	130	694	0.3303 ug/L #	47
36) Tetrahydrofuran	10.29	42	9683	4.2648 ug/L	95
38) 1,1,1-Trichloroethane	10.59	97	2858	0.5017 ug/L	84
39) Cyclohexane	10.62	56	2886	0.4467 ug/L	94
40) 1,1-Dichloropropene	10.82	75	2042	0.4451 ug/L #	76
42) Carbon Tetrachloride	10.99	117	2712	0.5095 ug/L #	85
45) 1,2-Dichloroethane	11.19	62	3101	0.5633 ug/L #	75
46) Benzene	11.23	78	8142	0.5899 ug/L	89
47) Trichloroethene	12.09	130	1950	0.5980 ug/L	81
48) Methylcyclohexane	12.18	83	2990	0.5672 ug/L #	73
49) 1,2-Dichloropropane	12.34	63	1667	0.4489 ug/L #	69
51) Bromodichloromethane	12.68	83	2589	0.5312 ug/L	92
52) Dibromomethane	12.78	93	741	0.3411 ug/L	80
55) cis-1,3-Dichloropropene	13.42	75	2628	0.4894 ug/L #	74
56) Dimethyl Disulfide	13.71	79	853	0.3150 ug/L #	49
59) Toluene	13.92	91	7610	0.5751 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:35 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:12:24 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
60)	Ethyl Methacrylate	14.04	69	1764	0.4160 ug/L		85
62)	trans-1,3-Dichloropropene	14.12	75	2064	0.4056 ug/L	#	71
63)	1,1,2-Trichloroethane	14.37	97	1621	0.5861 ug/L	#	75
64)	2-Hexanone	14.32	43	1822	0.5773 ug/L	#	48
65)	1,3-Dichloropropane	14.75	76	2715	0.5416 ug/L		83
66)	Tetrachloroethene	14.86	166	1836	0.5624 ug/L		91
67)	Dibromochloromethane	15.18	129	1663	0.4623 ug/L		94
68)	1,2-Dibromoethane	15.48	107	1262	0.4462 ug/L		99
69)	1-Chlorohexane	15.59	91	2113	0.5142 ug/L		96
70)	Chlorobenzene	16.07	112	4991	0.5869 ug/L		75
71)	1,1,1,2-Tetrachloroethane	16.11	131	1409	0.4126 ug/L	#	79
72)	Ethylbenzene	16.11	106	2290	0.5032 ug/L		61
73)	m-,p-Xylene	16.22	106	6307	1.1326 ug/L		90
74)	o-Xylene	16.88	106	2685	0.5119 ug/L		71
75)	Styrene	16.92	104	4645	0.5203 ug/L		93
76)	Bromoform	17.49	173	756	0.2977 ug/L	#	62
77)	Isopropylbenzene	17.38	105	7047	0.4998 ug/L		82
79)	1,1,2,2-Tetrachloroethane	17.64	83	1948	0.5203 ug/L		84
83)	n-Propylbenzene	17.98	91	9243	0.5679 ug/L	#	92
84)	Bromobenzene	18.13	156	1885	0.5328 ug/L		100
85)	1,3,5-Trimethylbenzene	18.21	105	6007	0.5185 ug/L		90
86)	2-Chlorotoluene	18.29	91	5403	0.4973 ug/L		88
87)	4-Chlorotoluene	18.35	91	5598	0.5635 ug/L	#	83
88)	a-Methylstyrene	18.69	118	3780	0.6719 ug/L		93
89)	tert-Butylbenzene	18.76	134	1072	0.4440 ug/L		84
90)	1,2,4-Trimethylbenzene	18.82	105	7288	0.5982 ug/L		78
91)	sec-Butylbenzene	19.08	105	8207	0.5532 ug/L		85
92)	p-Isopropyltoluene	19.27	119	6156	0.5029 ug/L		99
93)	1,3-Dichlorobenzene	19.48	146	3876	0.5662 ug/L		99
94)	1,4-Dichlorobenzene	19.64	146	4389	0.6299 ug/L	#	36
95)	n-Butylbenzene	19.89	91	6993	0.5680 ug/L		91
96)	1,2-Dichlorobenzene	20.23	146	3739	0.5676 ug/L		89
98)	1,2,4-Trichlorobenzene	22.76	180	2881	0.6050 ug/L		89
99)	Hexachlorobutadiene	22.95	225	1268	0.4656 ug/L		81
100)	Naphthalene	23.20	128	5965	0.5449 ug/L		95
101)	1,2,3-Trichlorobenzene	23.58	180	2914	0.6214 ug/L	#	69

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

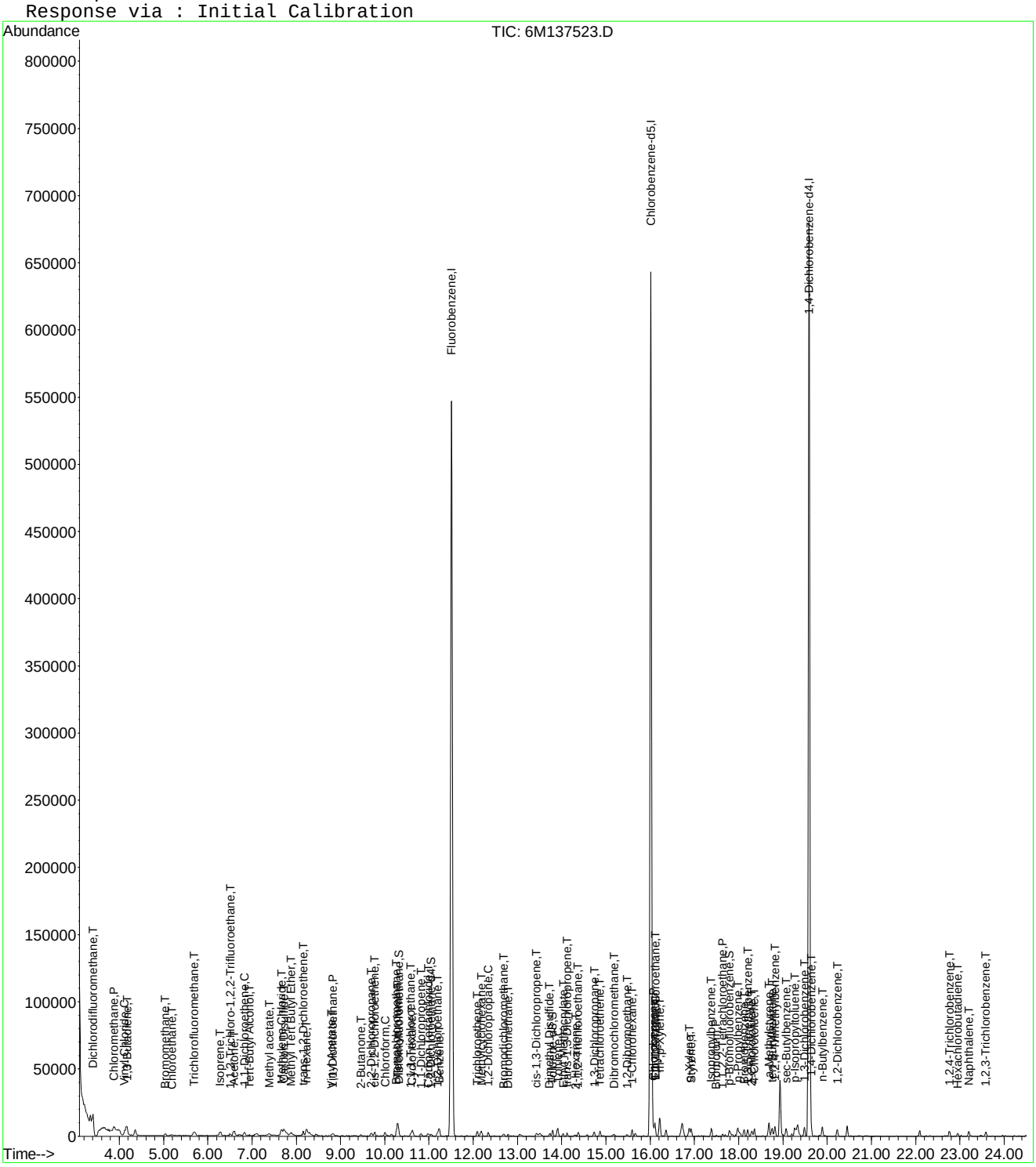

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.5676	0.0	0	0.00
3	P	Chloromethane	-1.0000	1.3528	0.0	0	0.00
4	C	Vinyl Chloride	-1.0000	0.7367	0.0	0	0.00
5	T	1,3-Butadiene	-1.0000	0.7128	0.0	0	0.01
6	T	Bromomethane	-1.0000	0.5697	0.0	0	0.00
7	T	Chloroethane	-1.0000	0.5121	0.0	0	0.00
8	T	Trichlorofluoromethane	-1.0000	0.9794	0.0	0	-0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.24#
10	T	Isoprene	-1.0000	0.4226	0.0	0	-0.01
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.48#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3663	0.0	0	0.00
13	T	Acetone	-1.0000	2.3758	0.0	0	0.00
14	C	1,1-Dichloroethene	-1.0000	0.5098	0.0	0	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.3696	0.0	0	0.00
16	T	Dimethyl Sulfide	-1.0000	0.2328	0.0	0	-0.02
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.38#
18	T	Methyl acetate	-1.0000	0.7115	0.0	0	0.00
19	T	Methylene Chloride	-1.0000	0.7594	0.0	0	0.00
20	T	Carbon Disulfide	-1.0000	0.7390	0.0	0	0.00
21	T	Acrylonitrile	-1.0000	0.1371	0.0	0	0.02
22	T	Methyl Tert Butyl Ether	0.5000	0.4864	2.7	100	-0.01
23	T	trans-1,2-Dichloroethene	-1.0000	0.4221	0.0	0	0.00
24	T	n-Hexane	-1.0000	0.6777	0.0	0	-0.01
25	T	Diisopropyl ether	-1.0000	0.1069	0.0	0	-0.16
26	T	Vinyl Acetate	-1.0000	0.2645	0.0	0	0.00
27	P	1,1-Dichloroethane	-1.0000	0.5499	0.0	0	-0.01
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-9.24#
29	T	2-Butanone	-1.0000	0.7999	0.0	0	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.58#
31	T	2,2-Dichloropropane	-1.0000	0.5204	0.0	0	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.5067	0.0	0	-0.01
33	C	Chloroform	-1.0000	0.5654	0.0	0	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-10.16#
35	T	Bromochloromethane	-1.0000	0.3303	0.0	0	0.00
36	T	Tetrahydrofuran	-1.0000	4.2648	0.0	0	0.00
37	S	Dibromofluoromethane	-1.0000	0.3185	0.0	0	0.00
38	T	1,1,1-Trichloroethane	-1.0000	0.5017	0.0	0	-0.01
39	T	Cyclohexane	-1.0000	0.4467	0.0	0	-0.02
40	T	1,1-Dichloropropene	-1.0000	0.4451	0.0	0	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.94#
42	T	Carbon Tetrachloride	-1.0000	0.5095	0.0	0	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.4056	0.0	0	-0.01
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	-1.0000	0.5633	0.0	0	0.00
46	T	Benzene	0.5000	0.5899	-18.0	100	0.00
47	T	Trichloroethene	-1.0000	0.5980	0.0	0	0.00
48	T	Methylcyclohexane	-1.0000	0.5672	0.0	0	0.00
49	C	1,2-Dichloropropane	-1.0000	0.4489	0.0	0	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-12.67#
51	T	Bromodichloromethane	-1.0000	0.5312	0.0	0	0.00
52	T	Dibromomethane	-1.0000	0.3411	0.0	0	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1346	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-13.07#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.4894	0.0	0	-0.01
56	T	Dimethyl Disulfide	-1.0000	0.3150	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.5128	0.0	0	0.00
59	C	Toluene	0.5000	0.5751	-15.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.4160	0.0	0	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	-1.0000	0.4056	0.0	0	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.5861	0.0	0	0.00
64	T	2-Hexanone	-1.0000	0.5773	0.0	0	0.00
65	T	1,3-Dichloropropane	-1.0000	0.5416	0.0	0	0.00
66	T	Tetrachloroethene	-1.0000	0.5624	0.0	0	-0.01
67	T	Dibromochloromethane	-1.0000	0.4623	0.0	0	0.00
68	T	1,2-Dibromoethane	-1.0000	0.4462	0.0	0	0.00
69	T	1-Chlorohexane	-1.0000	0.5142	0.0	0	0.00
70	P	Chlorobenzene	-1.0000	0.5869	0.0	0	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.4126	0.0	0	0.00
72	C	Ethylbenzene	0.5000	0.5032	-0.6	100	0.00
73	T	m-,p-Xylene	1.0000	1.1326	-13.3	100	0.00
74	T	o-Xylene	0.5000	0.5119	-2.4	100	0.00
75	T	Styrene	-1.0000	0.5203	0.0	0	0.00
76	P	Bromoform	-1.0000	0.2977	0.0	0	0.00
77	T	Isopropylbenzene	-1.0000	0.4998	0.0	0	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.5203	0.0	0	-0.01
80	S	p-Bromofluorobenzene	-1.0000	0.5020	0.0	0	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.1823	0.0	0	0.01
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.1476	0.0	0	0.00
83	T	n-Propylbenzene	-1.0000	0.5679	0.0	0	0.00
84	T	Bromobenzene	-1.0000	0.5328	0.0	0	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.5185	0.0	0	0.00
86	T	2-Chlorotoluene	-1.0000	0.4973	0.0	0	-0.01
87	T	4-Chlorotoluene	-1.0000	0.5635	0.0	0	0.00
88	T	a-Methylstyrene	-1.0000	0.6719	0.0	0	0.00
89	T	tert-Butylbenzene	-1.0000	0.4440	0.0	0	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.5982	0.0	0	0.00
91	T	sec-Butylbenzene	-1.0000	0.5532	0.0	0	0.00
92	T	p-Isopropyltoluene	-1.0000	0.5029	0.0	0	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.5662	0.0	0	0.00
94	T	1,4-Dichlorobenzene	-1.0000	0.6299	0.0	0	0.00
95	T	n-Butylbenzene	-1.0000	0.5680	0.0	0	0.00
96	T	1,2-Dichlorobenzene	-1.0000	0.5676	0.0	0	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-21.41#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.6050	0.0	0	0.00
99	T	Hexachlorobutadiene	-1.0000	0.4656	0.0	0	-0.01
100	T	Naphthalene	-1.0000	0.5449	0.0	0	0.00
101	T	1,2,3-Trichlorobenzene	-1.0000	0.6214	0.0	0	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137523.D 826_SL.M Mon Feb 29 16:01:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:37 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	594307	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	418336	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	217318	50.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.34	111	2084	0.6537 ug/L	0.02
Spiked Amount 50.000	Range 80 - 120		Recovery =	1.30%#	
43) 1,2-Dichloroethane-d4	11.06	65	2834	0.6847 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	1.36%#	
58) Toluene-d8	13.80	98	7503	0.7544 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	1.50%#	
80) p-Bromofluorobenzene	17.79	95	3135	0.7854 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	1.58%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	6025	1.1039 ug/L	88
3) Chloromethane	3.88	50	8942	1.5721 ug/L	80
4) Vinyl Chloride	4.13	62	5159	1.1269 ug/L	96
5) 1,3-Butadiene	4.18	54	4578	1.2019 ug/L #	67
6) Bromomethane	5.03	94	2477	1.0150 ug/L	94
7) Chloroethane	5.20	64	2347	0.9041 ug/L #	77
8) Trichlorofluoromethane	5.70	101	7751	1.2600 ug/L #	92
9) Diethyl ether	6.23	59	14414	5.0935 ug/L	81
10) Isoprene	6.28	67	3598	0.8978 ug/L	94
11) Acrolein	6.48	56	1307	2.4320 ug/L #	51
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	3197	1.0888 ug/L	73
13) Acetone	6.60	43	5933	0.3832 ug/L	97
14) 1,1-Dichloroethene	6.84	61	5455	1.0489 ug/L	83
15) Tert-Butyl Alcohol	6.93	59	4660	9.6025 ug/L #	86
16) Dimethyl Sulfide	7.13	62	2208	0.8750 ug/L	94
18) Methyl acetate	7.40	43	3574	0.9889 ug/L #	64
19) Methylene Chloride	7.66	84	3682	1.1755 ug/L	75
20) Carbon Disulfide	7.72	76	11945	1.2004 ug/L	97
21) Acrylonitrile	7.86	53	3216	2.1651 ug/L	84
22) Methyl Tert Butyl Ether	7.90	73	8242	0.9214 ug/L	91
23) trans-1,2-Dichloroethene	8.17	96	2437	0.8482 ug/L	60
24) n-Hexane	8.23	57	4827	0.9252 ug/L	90
25) Diisopropyl ether	8.62	45	67920	5.0212 ug/L	97
26) Vinyl Acetate	8.80	43	6077	0.8691 ug/L #	78
27) 1,1-Dichloroethane	8.83	63	6295	1.0162 ug/L	88
28) Ethyl-Tert-Butyl ether	9.25	59	49996	4.6114 ug/L	96
29) 2-Butanone	9.47	43	2247	1.0938 ug/L #	56
30) Propionitrile	9.57	54	2816	4.9529 ug/L #	71
31) 2,2-Dichloropropane	9.70	77	5030	1.0116 ug/L	94
32) cis-1,2-Dichloroethene	9.77	96	2740	0.8542 ug/L	83
33) Chloroform	10.00	83	6439	1.1130 ug/L	98
35) Bromochloromethane	10.26	130	1361	0.7221 ug/L	97
36) Tetrahydrofuran	10.29	42	10271	5.4403 ug/L	94
38) 1,1,1-Trichloroethane	10.61	97	5241	1.0257 ug/L	95
39) Cyclohexane	10.63	56	5811	1.0029 ug/L	86
40) 1,1-Dichloropropene	10.82	75	4038	0.9813 ug/L #	89
41) Tert-Amyl-Methyl ether	10.95	73	39464	4.5884 ug/L #	83
42) Carbon Tetrachloride	11.00	117	4871	1.0202 ug/L #	88
45) 1,2-Dichloroethane	11.19	62	4707	0.9533 ug/L #	86
46) Benzene	11.23	78	13412	1.0834 ug/L	93

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:37 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
47)	Trichloroethene	12.09	130	2983	1.0199 ug/L		90
48)	Methylcyclohexane	12.19	83	4295	0.9084 ug/L		77
49)	1,2-Dichloropropane	12.35	63	3111	0.9339 ug/L	#	69
51)	Bromodichloromethane	12.68	83	4337	0.9921 ug/L		97
52)	Dibromomethane	12.77	93	1629	0.8361 ug/L		91
53)	2-Chloroethyl Vinyl Ether	13.04	63	1268	0.6921 ug/L	#	43
54)	4-Methyl-2-Pentanone	13.08	58	633	0.4563 ug/L	#	34
55)	cis-1,3-Dichloropropene	13.43	75	4040	0.8388 ug/L		98
56)	Dimethyl Disulfide	13.72	79	1323	0.5447 ug/L	#	49
59)	Toluene	13.91	91	12207	1.0316 ug/L		97
60)	Ethyl Methacrylate	14.03	69	2818	0.7432 ug/L		100
62)	trans-1,3-Dichloropropene	14.12	75	3878	0.8522 ug/L		100
63)	1,1,2-Trichloroethane	14.38	97	2441	0.9869 ug/L		93
64)	2-Hexanone	14.31	43	2064	0.7313 ug/L		93
65)	1,3-Dichloropropane	14.73	76	4145	0.9246 ug/L		83
66)	Tetrachloroethene	14.87	166	3009	1.0308 ug/L		96
67)	Dibromochloromethane	15.17	129	2840	0.8829 ug/L		96
68)	1,2-Dibromoethane	15.48	107	1912	0.7559 ug/L		85
69)	1-Chlorohexane	15.59	91	3045	0.8286 ug/L	#	59
70)	Chlorobenzene	16.06	112	8053	1.0589 ug/L	#	66
71)	1,1,1,2-Tetrachloroethane	16.11	131	2914	0.9542 ug/L		92
72)	Ethylbenzene	16.10	106	3899	0.9580 ug/L		89
73)	m-,p-Xylene	16.21	106	9999	2.0079 ug/L		90
74)	o-Xylene	16.88	106	4283	0.9131 ug/L		84
75)	Styrene	16.92	104	6414	0.8034 ug/L		92
76)	Bromoform	17.49	173	1706	0.7511 ug/L	#	70
77)	Isopropylbenzene	17.38	105	11886	0.9427 ug/L		95
79)	1,1,2,2-Tetrachloroethane	17.65	83	3500	1.0310 ug/L		95
81)	1,2,3-Trichloropropane	17.87	110	811	0.7802 ug/L	#	55
82)	trans-1,4-Dichloro-2-Buten	17.93	53	959	0.7652 ug/L		70
83)	n-Propylbenzene	17.98	91	14256	0.9660 ug/L	#	91
84)	Bromobenzene	18.13	156	3248	1.0125 ug/L		98
85)	1,3,5-Trimethylbenzene	18.21	105	9438	0.8984 ug/L		95
86)	2-Chlorotoluene	18.30	91	9880	1.0030 ug/L		97
87)	4-Chlorotoluene	18.35	91	8357	0.9278 ug/L		93
88)	a-Methylstyrene	18.68	118	4374	0.8574 ug/L		95
89)	tert-Butylbenzene	18.75	134	1999	0.9131 ug/L		84
90)	1,2,4-Trimethylbenzene	18.82	105	10630	0.9622 ug/L		79
91)	sec-Butylbenzene	19.07	105	13062	0.9709 ug/L		95
92)	p-Isopropyltoluene	19.27	119	10400	0.9370 ug/L		89
93)	1,3-Dichlorobenzene	19.48	146	6397	1.0306 ug/L		97
94)	1,4-Dichlorobenzene	19.64	146	7211	1.1413 ug/L		83
95)	n-Butylbenzene	19.88	91	10811	0.9684 ug/L		88
96)	1,2-Dichlorobenzene	20.22	146	5973	1.0000 ug/L		96
97)	1,2-Dibromo-3-Chloropropan	21.41	75	191	0.2543 ug/L	#	1
98)	1,2,4-Trichlorobenzene	22.76	180	4430	1.0259 ug/L		93
99)	Hexachlorobutadiene	22.94	225	2385	0.9658 ug/L		90
100)	Naphthalene	23.20	128	8770	0.8835 ug/L		92
101)	1,2,3-Trichlorobenzene	23.59	180	4309	1.0134 ug/L		95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

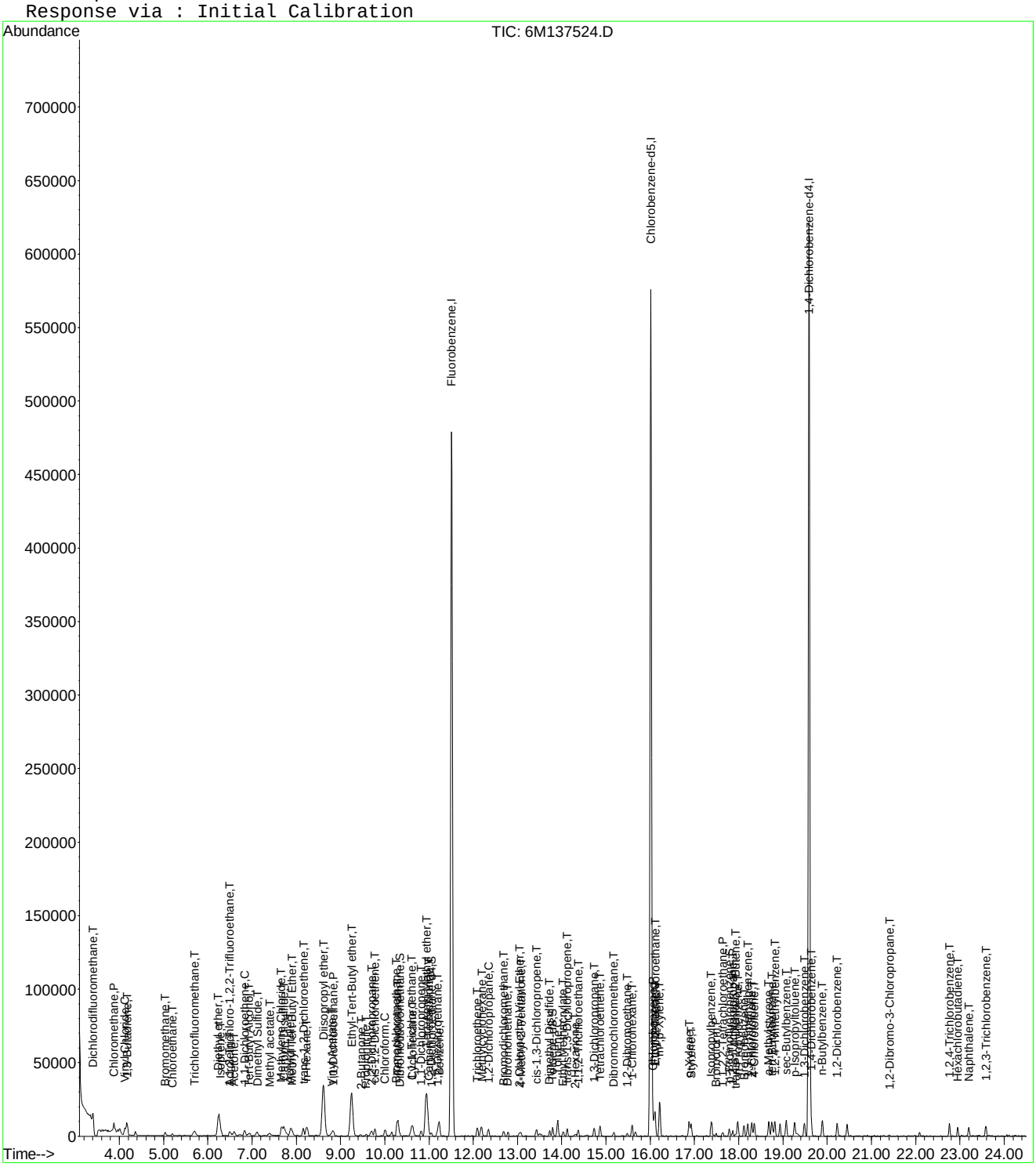

6M137524.D 826_SL.M Mon Feb 29 16:01:38 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	1.1039	0.0	0	0.00
3	P	Chloromethane	-1.0000	1.5721	0.0	0	0.00
4	C	Vinyl Chloride	-1.0000	1.1269	0.0	0	0.01
5	T	1,3-Butadiene	-1.0000	1.2019	0.0	0	0.01
6	T	Bromomethane	-1.0000	1.0150	0.0	0	0.00
7	T	Chloroethane	-1.0000	0.9041	0.0	0	0.00
8	T	Trichlorofluoromethane	-1.0000	1.2600	0.0	0	0.00
9	T	Diethyl ether	5.0000	5.0935	-1.9	100	-0.01
10	T	Isoprene	-1.0000	0.8978	0.0	0	0.00
11	T	Acrolein	2.5000	2.4320	2.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	1.0888	0.0	0	-0.01
13	T	Acetone	-1.0000	0.3832	0.0	0	0.01
14	C	1,1-Dichloroethene	-1.0000	1.0489	0.0	0	0.00
15	T	Tert-Butyl Alcohol	10.0000	9.6025	4.0	100	0.00
16	T	Dimethyl Sulfide	-1.0000	0.8750	0.0	0	0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.38#
18	T	Methyl acetate	-1.0000	0.9889	0.0	0	0.01
19	T	Methylene Chloride	-1.0000	1.1755	0.0	0	-0.01
20	T	Carbon Disulfide	-1.0000	1.2004	0.0	0	0.00
21	T	Acrylonitrile	2.5000	2.1651	13.4	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9214	7.9	100	0.00
23	T	trans-1,2-Dichloroethene	-1.0000	0.8482	0.0	0	0.00
24	T	n-Hexane	-1.0000	0.9252	0.0	0	-0.01
25	T	Diisopropyl ether	5.0000	5.0212	-0.4	100	0.01
26	T	Vinyl Acetate	-1.0000	0.8691	0.0	0	0.00
27	P	1,1-Dichloroethane	-1.0000	1.0162	0.0	0	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.6114	7.8	100	0.01
29	T	2-Butanone	-1.0000	1.0938	0.0	0	0.02
30	T	Propionitrile	5.0000	4.9529	0.9	100	-0.01
31	T	2,2-Dichloropropane	-1.0000	1.0116	0.0	0	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.8542	0.0	0	0.00
33	C	Chloroform	-1.0000	1.1130	0.0	0	-0.01
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-10.16#
35	T	Bromochloromethane	-1.0000	0.7221	0.0	0	0.00
36	T	Tetrahydrofuran	5.0000	5.4403	-8.8	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.6537	0.0	0	0.02
38	T	1,1,1-Trichloroethane	-1.0000	1.0257	0.0	0	0.00
39	T	Cyclohexane	-1.0000	1.0029	0.0	0	-0.01
40	T	1,1-Dichloropropene	-1.0000	0.9813	0.0	0	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	4.5884	8.2	100	0.00
42	T	Carbon Tetrachloride	-1.0000	1.0202	0.0	0	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.6847	0.0	0	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	-1.0000	0.9533	0.0	0	0.00
46	T	Benzene	1.0000	1.0834	-8.3	100	0.00
47	T	Trichloroethene	-1.0000	1.0199	0.0	0	0.00
48	T	Methylcyclohexane	-1.0000	0.9084	0.0	0	0.01
49	C	1,2-Dichloropropane	-1.0000	0.9339	0.0	0	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-12.67#
51	T	Bromodichloromethane	-1.0000	0.9921	0.0	0	0.00
52	T	Dibromomethane	-1.0000	0.8361	0.0	0	-0.01
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.6921	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.4563	0.0	0	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.8388	0.0	0	0.00
56	T	Dimethyl Disulfide	-1.0000	0.5447	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.7544	0.0	0	0.00
59	C	Toluene	1.0000	1.0316	-3.2	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.7432	0.0	0	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	-1.0000	0.8522	0.0	0	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.9869	0.0	0	0.00
64	T	2-Hexanone	-1.0000	0.7313	0.0	0	0.00
65	T	1,3-Dichloropropane	-1.0000	0.9246	0.0	0	0.00
66	T	Tetrachloroethene	-1.0000	1.0308	0.0	0	0.00
67	T	Dibromochloromethane	-1.0000	0.8829	0.0	0	0.00
68	T	1,2-Dibromoethane	-1.0000	0.7559	0.0	0	0.00
69	T	1-Chlorohexane	-1.0000	0.8286	0.0	0	0.00
70	P	Chlorobenzene	-1.0000	1.0589	0.0	0	-0.01
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.9542	0.0	0	0.00
72	C	Ethylbenzene	1.0000	0.9580	4.2	100	0.00
73	T	m-,p-Xylene	2.0000	2.0079	-0.4	100	-0.01
74	T	o-Xylene	1.0000	0.9132	8.7	100	0.00
75	T	Styrene	-1.0000	0.8034	0.0	0	0.00
76	P	Bromoform	-1.0000	0.7511	0.0	0	0.00
77	T	Isopropylbenzene	-1.0000	0.9427	0.0	0	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	1.0310	0.0	0	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.7854	0.0	0	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.7802	0.0	0	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.7652	0.0	0	0.00
83	T	n-Propylbenzene	-1.0000	0.9660	0.0	0	0.00
84	T	Bromobenzene	-1.0000	1.0125	0.0	0	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.8984	0.0	0	0.00
86	T	2-Chlorotoluene	-1.0000	1.0030	0.0	0	0.00
87	T	4-Chlorotoluene	-1.0000	0.9278	0.0	0	0.00
88	T	a-Methylstyrene	-1.0000	0.8574	0.0	0	-0.01
89	T	tert-Butylbenzene	-1.0000	0.9131	0.0	0	-0.01
90	T	1,2,4-Trimethylbenzene	-1.0000	0.9622	0.0	0	0.00
91	T	sec-Butylbenzene	-1.0000	0.9709	0.0	0	0.00
92	T	p-Isopropyltoluene	-1.0000	0.9370	0.0	0	0.00
93	T	1,3-Dichlorobenzene	-1.0000	1.0306	0.0	0	0.00
94	T	1,4-Dichlorobenzene	-1.0000	1.1413	0.0	0	0.00
95	T	n-Butylbenzene	-1.0000	0.9684	0.0	0	-0.01
96	T	1,2-Dichlorobenzene	-1.0000	1.0000	0.0	0	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.2543	0.0	0	0.00
98	T	1,2,4-Trichlorobenzene	-1.0000	1.0259	0.0	0	0.00
99	T	Hexachlorobutadiene	-1.0000	0.9658	0.0	0	-0.01
100	T	Naphthalene	-1.0000	0.8835	0.0	0	0.00
101	T	1,2,3-Trichlorobenzene	-1.0000	1.0134	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137524.D 826_SL.M Mon Feb 29 16:02:09 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:38 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	572212	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	404562	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	206668	50.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.32	111	3202	1.0431 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	2.08%#	
43) 1,2-Dichloroethane-d4	11.05	65	4123	1.0345 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	2.06%#	
58) Toluene-d8	13.80	98	10309	1.0718 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	2.14%#	
80) p-Bromofluorobenzene	17.79	95	4120	1.0853 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	2.18%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	8843	1.6827 ug/L	90
3) Chloromethane	3.88	50	13225	2.4149 ug/L	95
4) Vinyl Chloride	4.12	62	8482	1.9243 ug/L	95
5) 1,3-Butadiene	4.18	54	8044	2.1934 ug/L	77
6) Bromomethane	5.04	94	4396	1.8709 ug/L	94
7) Chloroethane	5.20	64	4555	1.8225 ug/L	99
8) Trichlorofluoromethane	5.70	101	12235	2.0657 ug/L #	96
9) Diethyl ether	6.24	59	66018	24.2296 ug/L	90
10) Isoprene	6.28	67	6318	1.6374 ug/L	84
11) Acrolein	6.49	56	6390	12.3492 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	4561	1.6133 ug/L	91
13) Acetone	6.60	43	7504	1.8809 ug/L	97
14) 1,1-Dichloroethene	6.83	61	8701	1.7376 ug/L	89
15) Tert-Butyl Alcohol	6.94	59	20238	43.3134 ug/L	94
16) Dimethyl Sulfide	7.11	62	4075	1.6773 ug/L	98
17) Iodomethane	7.39	142	581	5.2052 ug/L #	30
18) Methyl acetate	7.39	43	6390	1.8363 ug/L #	70
19) Methylene Chloride	7.67	84	5869	1.9461 ug/L	65
20) Carbon Disulfide	7.71	76	18795	1.9617 ug/L	99
21) Acrylonitrile	7.86	53	16272	11.3775 ug/L	99
22) Methyl Tert Butyl Ether	7.89	73	15172	1.7617 ug/L	96
23) trans-1,2-Dichloroethene	8.16	96	5205	1.8816 ug/L	79
24) n-Hexane	8.23	57	9310	1.8534 ug/L	99
25) Diisopropyl ether	8.61	45	320400	24.6012 ug/L	97
26) Vinyl Acetate	8.80	43	10816	1.6066 ug/L #	78
27) 1,1-Dichloroethane	8.83	63	11076	1.8571 ug/L	98
28) Ethyl-Tert-Butyl ether	9.25	59	254827	24.4116 ug/L	95
29) 2-Butanone	9.45	43	4021	2.0330 ug/L #	56
30) Propionitrile	9.58	54	12821	23.4210 ug/L	98
31) 2,2-Dichloropropane	9.69	77	9442	1.9723 ug/L	95
32) cis-1,2-Dichloroethene	9.77	96	6066	1.9642 ug/L	93
33) Chloroform	10.01	83	11484	2.0618 ug/L	99
34) 1-Bromopropane	10.16	122	398	0.9400 ug/L	97
35) Bromochloromethane	10.27	130	3448	1.9001 ug/L	92
36) Tetrahydrofuran	10.29	42	31678	22.2128 ug/L	93
38) 1,1,1-Trichloroethane	10.60	97	9432	1.9171 ug/L	98
39) Cyclohexane	10.63	56	9073	1.6263 ug/L	92
40) 1,1-Dichloropropene	10.82	75	7003	1.7675 ug/L	93
41) Tert-Amyl-Methyl ether	10.95	73	196452	23.7231 ug/L #	87
42) Carbon Tetrachloride	10.99	117	8034	1.7476 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M137525.D 826_SL.M Mon Feb 29 16:01:38 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:38 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	8853	1.8622 ug/L #	93
46)	Benzene	11.23	78	23723	1.9902 ug/L	97
47)	Trichloroethene	12.09	130	5099	1.8107 ug/L	92
48)	Methylcyclohexane	12.17	83	7350	1.6146 ug/L	79
49)	1,2-Dichloropropane	12.34	63	5698	1.7766 ug/L	95
50)	1,4-Dioxane	12.67	88	1122	55.6272 ug/L	88
51)	Bromodichloromethane	12.68	83	7699	1.8293 ug/L	96
52)	Dibromomethane	12.79	93	3316	1.7677 ug/L	91
53)	2-Chloroethyl Vinyl Ether	13.04	63	2386	1.3526 ug/L #	61
54)	4-Methyl-2-Pentanone	13.06	58	1423	1.0653 ug/L #	60
55)	cis-1,3-Dichloropropene	13.43	75	7739	1.6689 ug/L	96
56)	Dimethyl Disulfide	13.72	79	3072	1.3135 ug/L #	66
59)	Toluene	13.91	91	21516	1.8801 ug/L	99
60)	Ethyl Methacrylate	14.03	69	5274	1.4383 ug/L	90
62)	trans-1,3-Dichloropropene	14.12	75	7466	1.6966 ug/L	95
63)	1,1,2-Trichloroethane	14.37	97	4294	1.7952 ug/L	96
64)	2-Hexanone	14.32	43	4342	1.5908 ug/L	87
65)	1,3-Dichloropropane	14.74	76	7896	1.8213 ug/L	99
66)	Tetrachloroethene	14.88	166	5376	1.9043 ug/L	96
67)	Dibromochloromethane	15.17	129	5153	1.6564 ug/L	94
68)	1,2-Dibromoethane	15.47	107	4387	1.7934 ug/L	97
69)	1-Chlorohexane	15.58	91	5799	1.6318 ug/L	88
70)	Chlorobenzene	16.07	112	14803	2.0127 ug/L	82
71)	1,1,1,2-Tetrachloroethane	16.11	131	5636	1.9085 ug/L	89
72)	Ethylbenzene	16.10	106	7654	1.9447 ug/L	97
73)	m-,p-Xylene	16.22	106	17383	3.6096 ug/L	95
74)	o-Xylene	16.88	106	7997	1.7630 ug/L	95
75)	Styrene	16.92	104	12496	1.6186 ug/L	87
76)	Bromoform	17.49	173	3589	1.6340 ug/L	95
77)	Isopropylbenzene	17.38	105	20776	1.7039 ug/L	96
79)	1,1,2,2-Tetrachloroethane	17.64	83	5699	1.7652 ug/L	97
81)	1,2,3-Trichloropropane	17.86	110	1672	1.6915 ug/L	85
82)	trans-1,4-Dichloro-2-Buten	17.93	53	2042	1.7133 ug/L	78
83)	n-Propylbenzene	17.98	91	25104	1.7886 ug/L #	95
84)	Bromobenzene	18.13	156	5535	1.8143 ug/L	100
85)	1,3,5-Trimethylbenzene	18.21	105	17326	1.7343 ug/L	94
86)	2-Chlorotoluene	18.30	91	16320	1.7421 ug/L	90
87)	4-Chlorotoluene	18.35	91	17884	2.0879 ug/L	93
88)	a-Methylstyrene	18.69	118	7613	1.5692 ug/L	95
89)	tert-Butylbenzene	18.76	134	3612	1.7349 ug/L	82
90)	1,2,4-Trimethylbenzene	18.82	105	18800	1.7894 ug/L	86
91)	sec-Butylbenzene	19.08	105	23176	1.8115 ug/L	95
92)	p-Isopropyltoluene	19.26	119	18048	1.7099 ug/L	98
93)	1,3-Dichlorobenzene	19.48	146	10999	1.8633 ug/L	93
94)	1,4-Dichlorobenzene	19.64	146	12629	2.1018 ug/L	96
95)	n-Butylbenzene	19.89	91	18864	1.7769 ug/L	98
96)	1,2-Dichlorobenzene	20.23	146	10946	1.9270 ug/L	93
97)	1,2-Dibromo-3-Chloropropan	21.40	75	890	1.2459 ug/L	91
98)	1,2,4-Trichlorobenzene	22.77	180	8004	1.9491 ug/L	94
99)	Hexachlorobutadiene	22.95	225	4367	1.8595 ug/L	98
100)	Naphthalene	23.20	128	15712	1.6644 ug/L	96
101)	1,2,3-Trichlorobenzene	23.59	180	7942	1.9641 ug/L	93

(#) = qualifier out of range (m) = manual integration
6M137525.D 826_SL.M Mon Feb 29 16:01:38 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

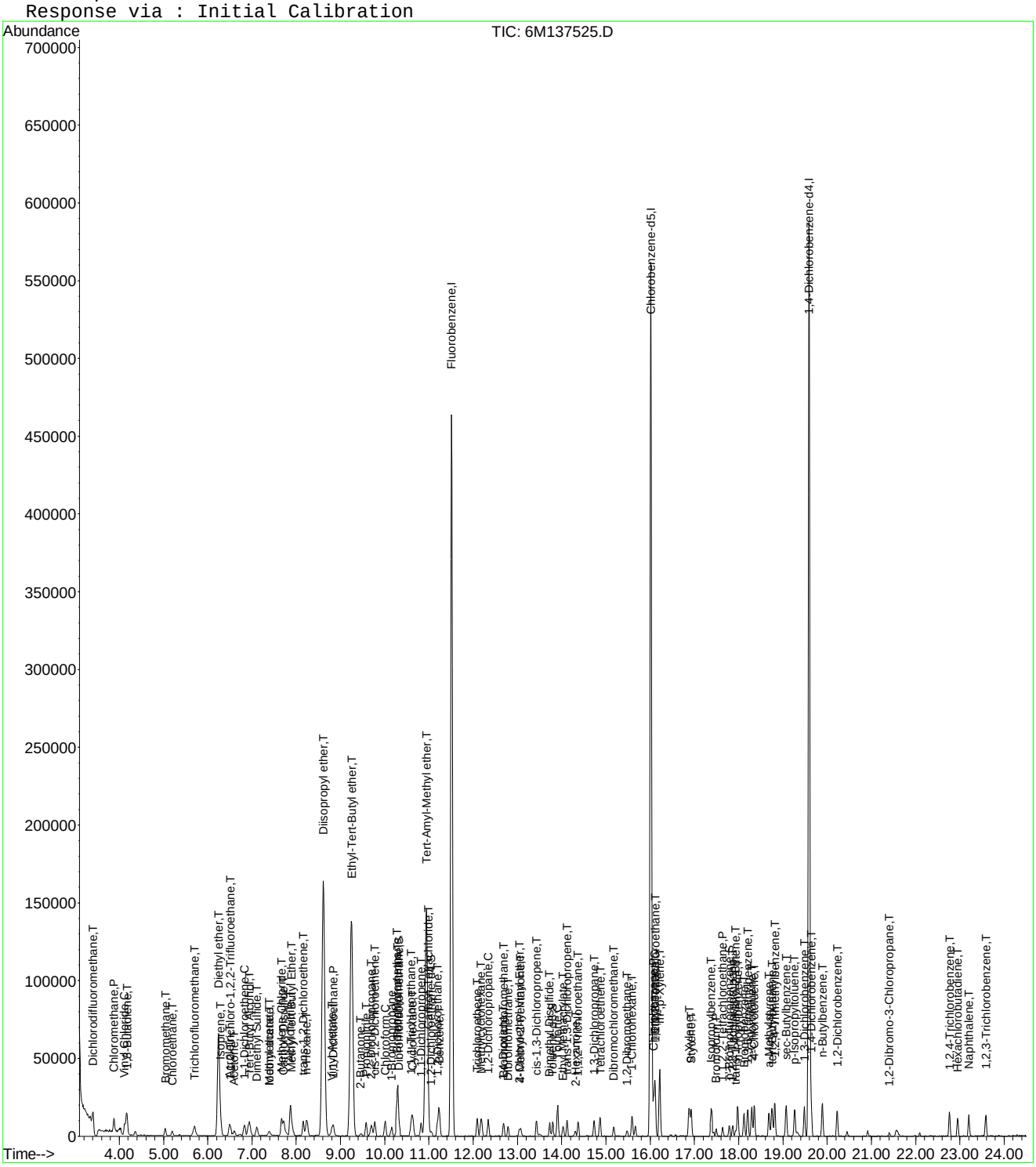

6M137525.D 826_SL.M Mon Feb 29 16:01:39 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.6827	15.9	100	0.00
3	P	Chloromethane	2.0000	2.4150	-20.7	100	0.00
4	C	Vinyl Chloride	2.0000	1.9243	3.8	100	0.00
5	T	1,3-Butadiene	-1.0000	2.1934	0.0	0	0.01
6	T	Bromomethane	2.0000	1.8709	6.5	100	0.01
7	T	Chloroethane	2.0000	1.8225	8.9	100	0.01
8	T	Trichlorofluoromethane	2.0000	2.0658	-3.3	100	0.00
9	T	Diethyl ether	25.0000	24.2296	3.1	100	0.00
10	T	Isoprene	-1.0000	1.6374	0.0	0	0.00
11	T	Acrolein	12.5000	12.3492	1.2	100	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.6134	19.3	100	0.00
13	T	Acetone	-1.0000	1.8809	0.0	0	0.01
14	C	1,1-Dichloroethene	2.0000	1.7376	13.1	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	43.3134	13.4	100	0.01
16	T	Dimethyl Sulfide	-1.0000	1.6773	0.0	0	0.00
17	T	Iodomethane	-1.0000	5.2052	0.0	0	0.01
18	T	Methyl acetate	-1.0000	1.8363	0.0	0	0.00
19	T	Methylene Chloride	2.0000	1.9461	2.7	100	0.00
20	T	Carbon Disulfide	2.0000	1.9617	1.9	100	0.00
21	T	Acrylonitrile	12.5000	11.3775	9.0	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.7617	11.9	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.8816	5.9	100	0.00
24	T	n-Hexane	2.0000	1.8534	7.3	100	-0.01
25	T	Diisopropyl ether	25.0000	24.6012	1.6	100	0.00
26	T	Vinyl Acetate	-1.0000	1.6066	0.0	0	0.00
27	P	1,1-Dichloroethane	2.0000	1.8571	7.1	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	24.4116	2.4	100	0.01
29	T	2-Butanone	-1.0000	2.0330	0.0	0	0.00
30	T	Propionitrile	25.0000	23.4210	6.3	100	0.00
31	T	2,2-Dichloropropane	2.0000	1.9723	1.4	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	1.9642	1.8	100	0.00
33	C	Chloroform	2.0000	2.0618	-3.1	100	0.00
34		1-Bromopropane	-1.0000	0.9400	0.0	0	0.00
35	T	Bromochloromethane	2.0000	1.9001	5.0	100	0.01
36	T	Tetrahydrofuran	25.0000	22.2128	11.1	100	0.00
37	S	Dibromofluoromethane	1.0000	1.0432	-4.3	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.9171	4.1	100	0.00
39	T	Cyclohexane	2.0000	1.6263	18.7	100	-0.01
40	T	1,1-Dichloropropene	2.0000	1.7675	11.6	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	23.7231	5.1	100	0.01
42	T	Carbon Tetrachloride	2.0000	1.7476	12.6	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0345	-3.5	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	2.0000	1.8622	6.9	100	0.00
46	T	Benzene	2.0000	1.9902	0.5	100	0.00
47	T	Trichloroethene	2.0000	1.8108	9.5	100	0.00
48	T	Methylcyclohexane	2.0000	1.6146	19.3	100	0.00
49	C	1,2-Dichloropropane	2.0000	1.7766	11.2	100	0.00
50	T	1,4-Dioxane	50.0000	55.6272	-11.3	100	0.00
51	T	Bromodichloromethane	2.0000	1.8293	8.5	100	0.00
52	T	Dibromomethane	2.0000	1.7677	11.6	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	1.3526	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.0653	0.0	0	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.6689	16.6	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.3135	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	1.0718	-7.2	100	0.00
59	C	Toluene	2.0000	1.8801	6.0	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.4383	28.1#	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	2.0000	1.6966	15.2	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.7952	10.2	100	0.00
64	T	2-Hexanone	-1.0000	1.5908	0.0	0	0.01
65	T	1,3-Dichloropropane	2.0000	1.8213	8.9	100	0.00
66	T	Tetrachloroethene	2.0000	1.9043	4.8	100	0.01
67	T	Dibromochloromethane	2.0000	1.6565	17.2	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.7934	10.3	100	-0.01
69	T	1-Chlorohexane	2.0000	1.6318	18.4	100	-0.01
70	P	Chlorobenzene	2.0000	2.0127	-0.6	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.9085	4.6	100	0.01
72	C	Ethylbenzene	2.0000	1.9447	2.8	100	0.00
73	T	m-,p-Xylene	4.0000	3.6096	9.8	100	0.00
74	T	o-Xylene	2.0000	1.7630	11.8	100	0.00
75	T	Styrene	2.0000	1.6186	19.1	100	0.00
76	P	Bromoform	2.0000	1.6340	18.3	100	0.00
77	T	Isopropylbenzene	2.0000	1.7039	14.8	100	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	1.7653	11.7	100	-0.01
80	S	p-Bromofluorobenzene	1.0000	1.0853	-8.5	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	1.6915	15.4	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	1.7133	14.3	100	0.00
83	T	n-Propylbenzene	2.0000	1.7886	10.6	100	0.00
84	T	Bromobenzene	2.0000	1.8143	9.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	1.7343	13.3	100	0.00
86	T	2-Chlorotoluene	2.0000	1.7421	12.9	100	0.00
87	T	4-Chlorotoluene	2.0000	2.0879	-4.4	100	0.00
88	T	a-Methylstyrene	2.0000	1.5692	21.5	100	0.00
89	T	tert-Butylbenzene	2.0000	1.7349	13.3	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	1.7894	10.5	100	0.00
91	T	sec-Butylbenzene	2.0000	1.8115	9.4	100	0.00
92	T	p-Isopropyltoluene	2.0000	1.7099	14.5	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	1.8633	6.8	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.1018	-5.1	100	0.00
95	T	n-Butylbenzene	2.0000	1.7769	11.2	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	1.9270	3.6	100	0.01
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.2459	0.0	0	-0.01
98	T	1,2,4-Trichlorobenzene	2.0000	1.9491	2.5	100	0.01
99	T	Hexachlorobutadiene	2.0000	1.8596	7.0	100	-0.01
100	T	Naphthalene	2.0000	1.6644	16.8	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9641	1.8	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137525.D 826_SL.M Mon Feb 29 16:02:19 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:39 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	643219	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	454348	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	233655	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.32	111	8526	2.4710 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	4.94%#	
43) 1,2-Dichloroethane-d4	11.06	65	11725	2.6172 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	5.24%#	
58) Toluene-d8	13.80	98	29032	2.6876 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	5.38%#	
80) p-Bromofluorobenzene	17.79	95	11167	2.6020 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	5.20%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	28102	4.7571 ug/L	100
3) Chloromethane	3.88	50	32755	5.3209 ug/L	91
4) Vinyl Chloride	4.12	62	26049	5.2573 ug/L	99
5) 1,3-Butadiene	4.17	54	23717	5.7531 ug/L	82
6) Bromomethane	5.03	94	13346	5.0529 ug/L	95
7) Chloroethane	5.19	64	14096	5.0173 ug/L	95
8) Trichlorofluoromethane	5.70	101	35831	5.3818 ug/L	98
9) Diethyl ether	6.24	59	150730	49.2132 ug/L	93
10) Isoprene	6.28	67	21438	4.9428 ug/L	81
11) Acrolein	6.48	56	14248	24.4956 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	17247	5.4273 ug/L	95
13) Acetone	6.59	43	13051	5.3136 ug/L	94
14) 1,1-Dichloroethene	6.83	61	29698	5.2760 ug/L	91
15) Tert-Butyl Alcohol	6.93	59	51304	97.6795 ug/L	93
16) Dimethyl Sulfide	7.12	62	13140	4.8115 ug/L	98
17) Iodomethane	7.38	142	3580	6.2818 ug/L	92
18) Methyl acetate	7.39	43	19888	5.0842 ug/L	93
19) Methylene Chloride	7.67	84	17567	5.1820 ug/L	73
20) Carbon Disulfide	7.72	76	56579	5.2535 ug/L	99
21) Acrylonitrile	7.86	53	38170	23.7426 ug/L	95
22) Methyl Tert Butyl Ether	7.89	73	46633	4.8170 ug/L	97
23) trans-1,2-Dichloroethene	8.16	96	15681	5.0428 ug/L	87
24) n-Hexane	8.24	57	29042	5.1432 ug/L	92
25) Diisopropyl ether	8.61	45	721466	49.2807 ug/L	97
26) Vinyl Acetate	8.80	43	31741	4.1943 ug/L	93
27) 1,1-Dichloroethane	8.83	63	34581	5.1581 ug/L	100
28) Ethyl-Tert-Butyl ether	9.24	59	576725	49.1494 ug/L	95
29) 2-Butanone	9.45	43	11939	5.3698 ug/L	87
30) Propionitrile	9.58	54	29074	47.2483 ug/L	96
31) 2,2-Dichloropropane	9.69	77	27493	5.1089 ug/L	98
32) cis-1,2-Dichloroethene	9.77	96	17624	5.0766 ug/L	93
33) Chloroform	10.01	83	32075	5.1228 ug/L	96
34) 1-Bromopropane	10.16	122	2123	4.4605 ug/L	82
35) Bromochloromethane	10.26	130	9542	4.6779 ug/L	100
36) Tetrahydrofuran	10.29	42	72518	47.4879 ug/L	94
38) 1,1,1-Trichloroethane	10.60	97	26846	4.8542 ug/L	94
39) Cyclohexane	10.64	56	31697	5.0544 ug/L	89
40) 1,1-Dichloropropene	10.82	75	23898	5.3658 ug/L	97
41) Tert-Amyl-Methyl ether	10.94	73	454105	48.7831 ug/L #	89
42) Carbon Tetrachloride	10.99	117	26296	5.0887 ug/L	96

(#) = qualifier out of range (m) = manual integration
6M137526.D 826_SL.M Mon Feb 29 16:01:39 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:39 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45) 1,2-Dichloroethane	11.19	62	26611	4.9796 ug/L	97
46) Benzene	11.23	78	66739	4.9809 ug/L	93
47) Trichloroethene	12.09	130	16560	5.2316 ug/L	93
48) Methylcyclohexane	12.18	83	26100	5.1005 ug/L	86
49) 1,2-Dichloropropane	12.34	63	17955	4.9803 ug/L	94
50) 1,4-Dioxane	12.67	88	3919	107.9166 ug/L	93
51) Bromodichloromethane	12.68	83	23069	4.8760 ug/L	92
52) Dibromomethane	12.79	93	9757	4.6271 ug/L	97
53) 2-Chloroethyl Vinyl Ether	13.04	63	8133	4.1014 ug/L	99
54) 4-Methyl-2-Pentanone	13.07	58	6484	4.3183 ug/L	81
55) cis-1,3-Dichloropropene	13.43	75	24075	4.6186 ug/L	98
56) Dimethyl Disulfide	13.72	79	10983	4.1777 ug/L	91
59) Toluene	13.91	91	65025	5.0594 ug/L	100
60) Ethyl Methacrylate	14.03	69	18200	4.4195 ug/L	95
62) trans-1,3-Dichloropropene	14.12	75	23055	4.6650 ug/L	96
63) 1,1,2-Trichloroethane	14.37	97	13105	4.8784 ug/L	97
64) 2-Hexanone	14.31	43	13531	4.4142 ug/L	93
65) 1,3-Dichloropropane	14.74	76	24567	5.0457 ug/L	96
66) Tetrachloroethene	14.87	166	17025	5.3699 ug/L	96
67) Dibromochloromethane	15.17	129	16779	4.8026 ug/L	98
68) 1,2-Dibromoethane	15.48	107	13121	4.7760 ug/L	98
69) 1-Chlorohexane	15.59	91	18960	4.7505 ug/L	75
70) Chlorobenzene	16.07	112	43871	5.3112 ug/L #	60
71) 1,1,1,2-Tetrachloroethane	16.10	131	15603	4.7045 ug/L	95
72) Ethylbenzene	16.10	106	22079	4.9950 ug/L	94
73) m-,p-Xylene	16.22	106	54549	10.0858 ug/L	96
74) o-Xylene	16.88	106	24478	4.8051 ug/L	92
75) Styrene	16.92	104	39808	4.5913 ug/L	95
76) Bromoform	17.49	173	11643	4.7199 ug/L	97
77) Isopropylbenzene	17.38	105	66989	4.8919 ug/L	99
79) 1,1,2,2-Tetrachloroethane	17.65	83	18286	5.0098 ug/L	96
81) 1,2,3-Trichloropropane	17.87	110	5764	5.1577 ug/L	93
82) trans-1,4-Dichloro-2-Buten	17.93	53	5968	4.4290 ug/L	92
83) n-Propylbenzene	17.98	91	82621	5.2068 ug/L	98
84) Bromobenzene	18.13	156	17797	5.1598 ug/L	96
85) 1,3,5-Trimethylbenzene	18.21	105	58488	5.1783 ug/L	94
86) 2-Chlorotoluene	18.30	91	57419	5.4213 ug/L	96
87) 4-Chlorotoluene	18.35	91	50976	5.2638 ug/L	97
88) a-Methylstyrene	18.69	118	25024	4.5623 ug/L	100
89) tert-Butylbenzene	18.76	134	11873	5.0441 ug/L	95
90) 1,2,4-Trimethylbenzene	18.82	105	61081	5.1422 ug/L	83
91) sec-Butylbenzene	19.08	105	74051	5.1195 ug/L	98
92) p-Isopropyltoluene	19.26	119	60824	5.0969 ug/L	97
93) 1,3-Dichlorobenzene	19.48	146	35412	5.3060 ug/L	98
94) 1,4-Dichlorobenzene	19.64	146	35211	5.1831 ug/L	83
95) n-Butylbenzene	19.89	91	60714	5.0584 ug/L	95
96) 1,2-Dichlorobenzene	20.22	146	32728	5.0962 ug/L	95
97) 1,2-Dibromo-3-Chloropropan	21.41	75	3714	4.5988 ug/L	88
98) 1,2,4-Trichlorobenzene	22.76	180	22925	4.9379 ug/L	93
99) Hexachlorobutadiene	22.96	225	13612	5.1268 ug/L	94
100) Naphthalene	23.20	128	48617	4.5551 ug/L	99
101) 1,2,3-Trichlorobenzene	23.59	180	22839	4.9959 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

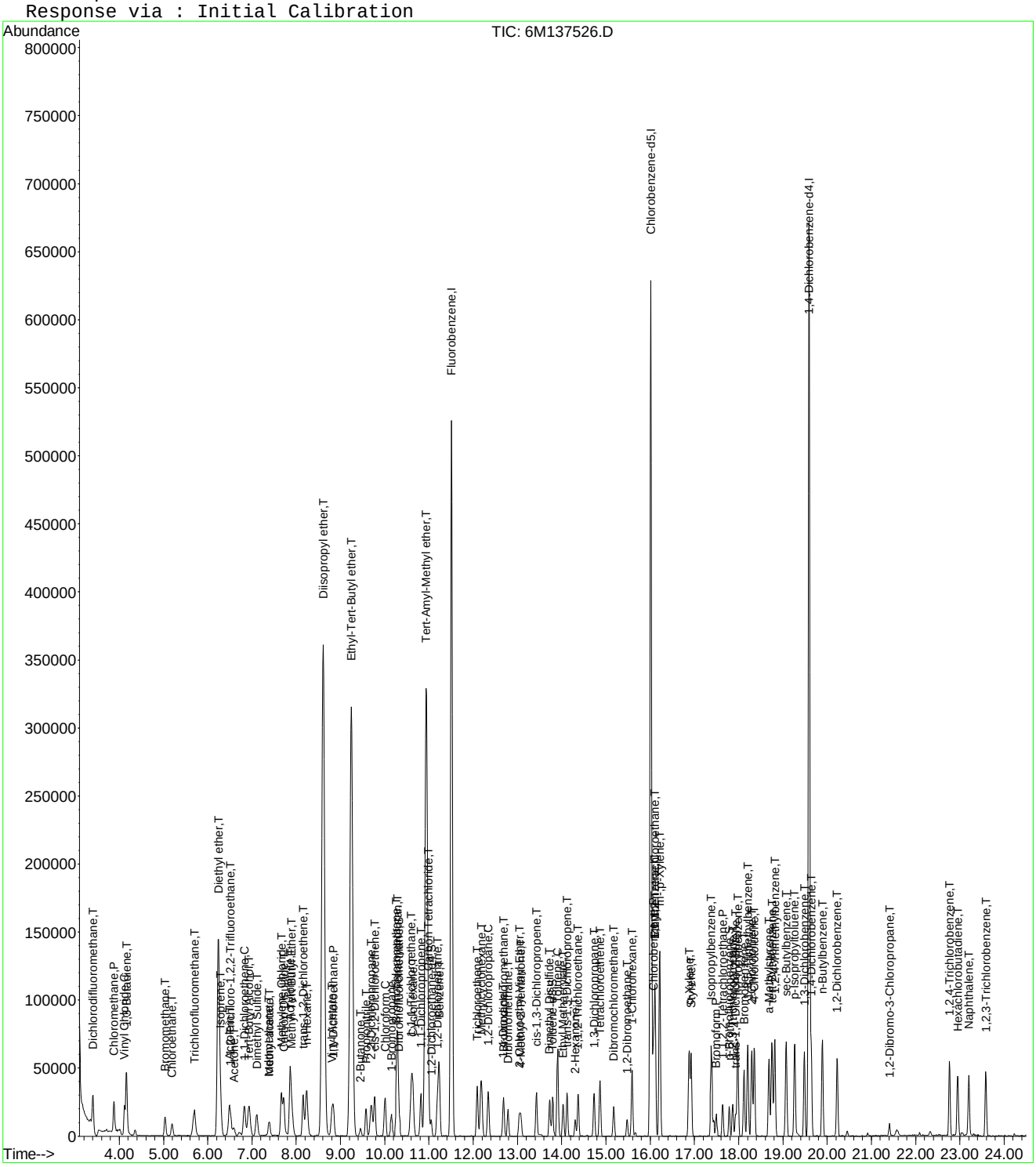

6M137526.D 826_SL.M Mon Feb 29 16:01:39 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.7571	4.9	100	0.00
3	P	Chloromethane	5.0000	5.3209	-6.4	100	0.00
4	C	Vinyl Chloride	5.0000	5.2573	-5.1	100	0.00
5	T	1,3-Butadiene	5.0000	5.7531	-15.1	100	0.00
6	T	Bromomethane	5.0000	5.0529	-1.1	100	0.00
7	T	Chloroethane	5.0000	5.0173	-0.3	100	0.00
8	T	Trichlorofluoromethane	5.0000	5.3818	-7.6	100	0.00
9	T	Diethyl ether	50.0000	49.2132	1.6	100	0.00
10	T	Isoprene	5.0000	4.9428	1.1	100	0.00
11	T	Acrolein	25.0000	24.4957	2.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	5.4272	-8.5	100	0.00
13	T	Acetone	-1.0000	5.3136	0.0	0	0.00
14	C	1,1-Dichloroethene	5.0000	5.2760	-5.5	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	97.6795	2.3	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.8115	3.8	100	0.00
17	T	Iodomethane	5.0000	6.2818	-25.6#	100	0.00
18	T	Methyl acetate	5.0000	5.0842	-1.7	100	0.00
19	T	Methylene Chloride	5.0000	5.1820	-3.6	100	0.00
20	T	Carbon Disulfide	5.0000	5.2535	-5.1	100	0.00
21	T	Acrylonitrile	25.0000	23.7426	5.0	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.8170	3.7	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	5.0428	-0.9	100	0.00
24	T	n-Hexane	5.0000	5.1432	-2.9	100	0.00
25	T	Diisopropyl ether	50.0000	49.2807	1.4	100	0.00
26	T	Vinyl Acetate	5.0000	4.1943	16.1	100	0.00
27	P	1,1-Dichloroethane	5.0000	5.1581	-3.2	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	49.1494	1.7	100	0.00
29	T	2-Butanone	5.0000	5.3698	-7.4	100	0.00
30	T	Propionitrile	50.0000	47.2483	5.5	100	0.00
31	T	2,2-Dichloropropane	5.0000	5.1089	-2.2	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	5.0766	-1.5	100	0.00
33	C	Chloroform	5.0000	5.1228	-2.5	100	0.00
34		1-Bromopropane	5.0000	4.4605	10.8	100	0.00
35	T	Bromochloromethane	5.0000	4.6779	6.4	100	0.00
36	T	Tetrahydrofuran	50.0000	47.4879	5.0	100	0.00
37	S	Dibromofluoromethane	2.5000	2.4710	1.2	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.8542	2.9	100	0.00
39	T	Cyclohexane	5.0000	5.0544	-1.1	100	0.00
40	T	1,1-Dichloropropene	5.0000	5.3658	-7.3	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	48.7831	2.4	100	0.00
42	T	Carbon Tetrachloride	5.0000	5.0887	-1.8	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.6172	-4.7	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	5.0000	4.9796	0.4	100	0.00
46	T	Benzene	5.0000	4.9809	0.4	100	0.00
47	T	Trichloroethene	5.0000	5.2316	-4.6	100	0.00
48	T	Methylcyclohexane	5.0000	5.1005	-2.0	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.9803	0.4	100	0.00
50	T	1,4-Dioxane	100.0000	107.9166	-7.9	100	0.00
51	T	Bromodichloromethane	5.0000	4.8760	2.5	100	0.00
52	T	Dibromomethane	5.0000	4.6271	7.5	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.1014	18.0	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.3183	13.6	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.6186	7.6	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.1777	16.4	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.6876	-7.5	100	0.00
59	C	Toluene	5.0000	5.0594	-1.2	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.4195	11.6	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	5.0000	4.6650	6.7	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.8784	2.4	100	0.00
64	T	2-Hexanone	5.0000	4.4142	11.7	100	0.00
65	T	1,3-Dichloropropane	5.0000	5.0457	-0.9	100	0.00
66	T	Tetrachloroethene	5.0000	5.3699	-7.4	100	0.00
67	T	Dibromochloromethane	5.0000	4.8026	3.9	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.7760	4.5	100	0.00
69	T	1-Chlorohexane	5.0000	4.7505	5.0	100	0.00
70	P	Chlorobenzene	5.0000	5.3112	-6.2	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.7045	5.9	100	0.00
72	C	Ethylbenzene	5.0000	4.9950	0.1	100	0.00
73	T	m-,p-Xylene	10.0000	10.0858	-0.9	100	0.00
74	T	o-Xylene	5.0000	4.8051	3.9	100	0.00
75	T	Styrene	5.0000	4.5913	8.2	100	0.00
76	P	Bromoform	5.0000	4.7199	5.6	100	0.00
77	T	Isopropylbenzene	5.0000	4.8919	2.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	5.0098	-0.2	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.6020	-4.1	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.1577	-3.2	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.4290	11.4	100	0.00
83	T	n-Propylbenzene	5.0000	5.2068	-4.1	100	0.00
84	T	Bromobenzene	5.0000	5.1597	-3.2	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	5.1783	-3.6	100	0.00
86	T	2-Chlorotoluene	5.0000	5.4214	-8.4	100	0.00
87	T	4-Chlorotoluene	5.0000	5.2638	-5.3	100	0.00
88	T	a-Methylstyrene	5.0000	4.5623	8.8	100	0.00
89	T	tert-Butylbenzene	5.0000	5.0441	-0.9	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.1422	-2.8	100	0.00
91	T	sec-Butylbenzene	5.0000	5.1195	-2.4	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.0969	-1.9	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	5.3060	-6.1	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	5.1831	-3.7	100	0.00
95	T	n-Butylbenzene	5.0000	5.0584	-1.2	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	5.0962	-1.9	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	4.5988	8.0	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.9379	1.2	100	0.00
99	T	Hexachlorobutadiene	5.0000	5.1268	-2.5	100	0.00
100	T	Naphthalene	5.0000	4.5552	8.9	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.9959	0.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:40 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	607286	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	435504	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	227713	50.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.33	111	16492	5.0625 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 10.12%#		
43) 1,2-Dichloroethane-d4	11.06	65	20491	4.8445 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 9.68%#		
58) Toluene-d8	13.80	98	50808	4.9069 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 9.82%#		
80) p-Bromofluorobenzene	17.79	95	20967	5.0129 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 10.02%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	51684	9.2668 ug/L	100
3) Chloromethane	3.88	50	58275	10.0267 ug/L	97
4) Vinyl Chloride	4.12	62	45684	9.7657 ug/L	98
5) 1,3-Butadiene	4.16	54	39114	10.0495 ug/L	90
6) Bromomethane	5.03	94	25017	10.0321 ug/L	98
7) Chloroethane	5.20	64	25248	9.5185 ug/L	95
8) Trichlorofluoromethane	5.69	101	62268	9.9061 ug/L	98
9) Diethyl ether	6.24	59	197846	68.4186 ug/L	92
10) Isoprene	6.28	67	39072	9.5415 ug/L	91
11) Acrolein	6.48	56	19614	35.7163 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	30114	10.0369 ug/L	94
13) Acetone	6.60	43	18461	10.1493 ug/L	97
14) 1,1-Dichloroethene	6.83	61	51482	9.6871 ug/L	94
15) Tert-Butyl Alcohol	6.93	59	70054	141.2703 ug/L	95
16) Dimethyl Sulfide	7.12	62	25452	9.8712 ug/L	97
17) Iodomethane	7.38	142	9906	8.8243 ug/L	91
18) Methyl acetate	7.39	43	38451	10.4113 ug/L	93
19) Methylene Chloride	7.67	84	32006	10.0000 ug/L	78
20) Carbon Disulfide	7.72	76	98104	9.6481 ug/L	100
21) Acrylonitrile	7.86	53	52450	34.5555 ug/L	97
22) Methyl Tert Butyl Ether	7.89	73	93836	10.2663 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	29186	9.9411 ug/L	85
24) n-Hexane	8.24	57	52226	9.7962 ug/L	99
25) Diisopropyl ether	8.61	45	937664	67.8382 ug/L	97
26) Vinyl Acetate	8.80	43	70808	9.9102 ug/L	96
27) 1,1-Dichloroethane	8.83	63	63440	10.0226 ug/L	98
28) Ethyl-Tert-Butyl ether	9.24	59	760504	68.6462 ug/L	96
29) 2-Butanone	9.45	43	21373	10.1817 ug/L	94
30) Propionitrile	9.58	54	40026	68.8953 ug/L	100
31) 2,2-Dichloropropane	9.69	77	51602	10.1564 ug/L	98
32) cis-1,2-Dichloroethene	9.77	96	31900	9.7326 ug/L	99
33) Chloroform	10.01	83	57702	9.7611 ug/L	96
34) 1-Bromopropane	10.15	122	4101	9.1261 ug/L	96
35) Bromochloromethane	10.26	130	18414	9.5616 ug/L	96
36) Tetrahydrofuran	10.29	42	95905	67.3892 ug/L	94
38) 1,1,1-Trichloroethane	10.60	97	52695	10.0919 ug/L	100
39) Cyclohexane	10.63	56	57419	9.6977 ug/L	90
40) 1,1-Dichloropropene	10.82	75	41095	9.7729 ug/L	98
41) Tert-Amyl-Methyl ether	10.95	73	598972	68.1530 ug/L	90
42) Carbon Tetrachloride	10.99	117	48542	9.9495 ug/L	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:40 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	11.19	62	51284	10.1644	ug/L		99
46)	Benzene	11.23	78	122737	9.7022	ug/L		94
47)	Trichloroethene	12.09	130	29481	9.8646	ug/L		92
48)	Methylcyclohexane	12.18	83	46982	9.7245	ug/L		87
49)	1,2-Dichloropropane	12.34	63	33640	9.8830	ug/L		97
50)	1,4-Dioxane	12.68	88	4932	133.5880	ug/L		83
51)	Bromodichloromethane	12.68	83	42482	9.5106	ug/L		92
52)	Dibromomethane	12.78	93	19421	9.7551	ug/L		99
53)	2-Chloroethyl Vinyl Ether	13.04	63	17139	9.1546	ug/L		98
54)	4-Methyl-2-Pentanone	13.07	58	13343	9.4122	ug/L		90
55)	cis-1,3-Dichloropropene	13.43	75	47323	9.6158	ug/L		96
56)	Dimethyl Disulfide	13.72	79	21113	8.5060	ug/L		97
59)	Toluene	13.91	91	123480	10.0233	ug/L		99
60)	Ethyl Methacrylate	14.04	69	37321	9.4549	ug/L		94
62)	trans-1,3-Dichloropropene	14.12	75	46119	9.7357	ug/L		96
63)	1,1,2-Trichloroethane	14.38	97	26300	10.2139	ug/L		99
64)	2-Hexanone	14.31	43	28213	9.6021	ug/L		99
65)	1,3-Dichloropropane	14.73	76	46832	10.0347	ug/L		94
66)	Tetrachloroethene	14.87	166	31153	10.2512	ug/L		97
67)	Dibromochloromethane	15.18	129	32946	9.8381	ug/L		99
68)	1,2-Dibromoethane	15.48	107	25271	9.5966	ug/L		95
69)	1-Chlorohexane	15.59	91	36355	9.5030	ug/L		82
70)	Chlorobenzene	16.07	112	79785	10.0771	ug/L	#	63
71)	1,1,1,2-Tetrachloroethane	16.11	131	31524	9.9162	ug/L		97
72)	Ethylbenzene	16.10	106	41898	9.8889	ug/L		95
73)	m-,p-Xylene	16.22	106	102847	19.8387	ug/L		96
74)	o-Xylene	16.88	106	47393	9.7060	ug/L		93
75)	Styrene	16.92	104	79997	9.6257	ug/L		97
76)	Bromoform	17.49	173	22569	9.5450	ug/L		99
77)	Isopropylbenzene	17.38	105	130459	9.9391	ug/L		96
79)	1,1,2,2-Tetrachloroethane	17.65	83	36327	10.2123	ug/L		95
81)	1,2,3-Trichloropropane	17.87	110	11417	10.4826	ug/L		96
82)	trans-1,4-Dichloro-2-Buten	17.93	53	12994	9.8948	ug/L		85
83)	n-Propylbenzene	17.98	91	159783	10.3323	ug/L		98
84)	Bromobenzene	18.13	156	33893	10.0828	ug/L		95
85)	1,3,5-Trimethylbenzene	18.21	105	111252	10.1069	ug/L		94
86)	2-Chlorotoluene	18.30	91	107737	10.4377	ug/L		98
87)	4-Chlorotoluene	18.36	91	96695	10.2453	ug/L		95
88)	a-Methylstyrene	18.69	118	51340	9.6043	ug/L		97
89)	tert-Butylbenzene	18.76	134	22949	10.0040	ug/L		90
90)	1,2,4-Trimethylbenzene	18.82	105	119948	10.3616	ug/L		79
91)	sec-Butylbenzene	19.07	105	141383	10.0296	ug/L		97
92)	p-Isopropyltoluene	19.27	119	115695	9.9480	ug/L		99
93)	1,3-Dichlorobenzene	19.48	146	67906	10.4404	ug/L		100
94)	1,4-Dichlorobenzene	19.64	146	68350	10.3238	ug/L		93
95)	n-Butylbenzene	19.89	91	117398	10.0364	ug/L		96
96)	1,2-Dichlorobenzene	20.22	146	64067	10.2365	ug/L		98
97)	1,2-Dibromo-3-Chloropropan	21.40	75	7444	9.4579	ug/L		93
98)	1,2,4-Trichlorobenzene	22.76	180	45615	10.0816	ug/L		99
99)	Hexachlorobutadiene	22.94	225	26046	10.0659	ug/L		100
100)	Naphthalene	23.20	128	104354	10.0325	ug/L		99
101)	1,2,3-Trichlorobenzene	23.59	180	44630	10.0173	ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

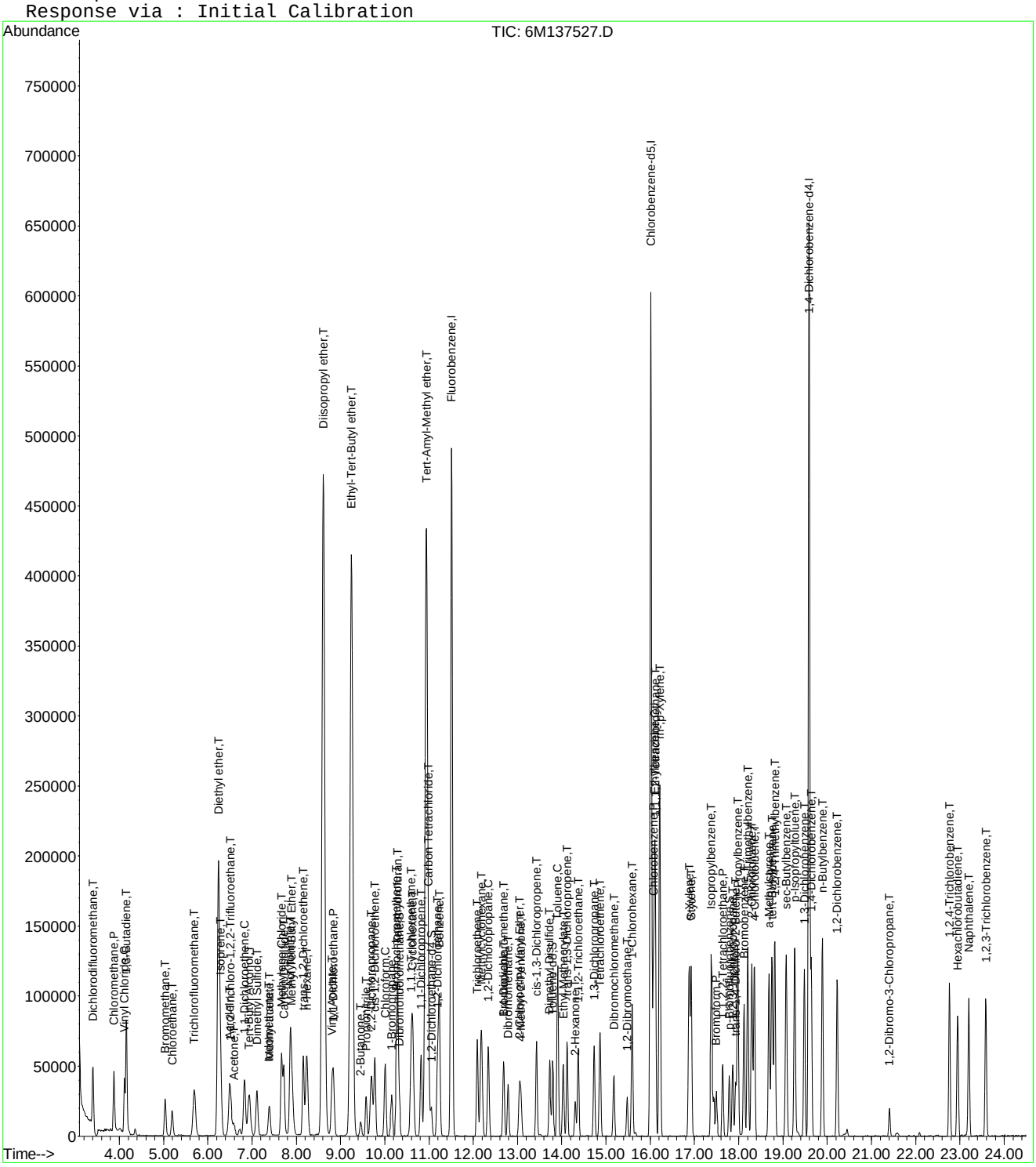

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	10.0000	9.2668	7.3	100	0.00
3	P	Chloromethane	10.0000	10.0267	-0.3	100	0.00
4	C	Vinyl Chloride	10.0000	9.7657	2.3	100	0.00
5	T	1,3-Butadiene	10.0000	10.0495	-0.5	100	-0.01
6	T	Bromomethane	10.0000	10.0321	-0.3	100	0.00
7	T	Chloroethane	10.0000	9.5185	4.8	100	0.00
8	T	Trichlorofluoromethane	10.0000	9.9061	0.9	100	-0.01
9	T	Diethyl ether	65.0000	68.4186	-5.3	100	0.00
10	T	Isoprene	10.0000	9.5415	4.6	100	0.00
11	T	Acrolein	32.5000	35.7163	-9.9	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	10.0000	10.0369	-0.4	100	0.00
13	T	Acetone	10.0000	10.1493	-1.5	100	0.01
14	C	1,1-Dichloroethene	10.0000	9.6871	3.1	100	0.00
15	T	Tert-Butyl Alcohol	130.0000	141.2703	-8.7	100	0.00
16	T	Dimethyl Sulfide	10.0000	9.8712	1.3	100	0.00
17	T	Iodomethane	10.0000	8.8243	11.8	100	0.00
18	T	Methyl acetate	10.0000	10.4113	-4.1	100	0.00
19	T	Methylene Chloride	10.0000	10.0000	0.0	100	0.00
20	T	Carbon Disulfide	10.0000	9.6481	3.5	100	0.00
21	T	Acrylonitrile	32.5000	34.5555	-6.3	100	0.00
22	T	Methyl Tert Butyl Ether	10.0000	10.2663	-2.7	100	0.00
23	T	trans-1,2-Dichloroethene	10.0000	9.9411	0.6	100	0.00
24	T	n-Hexane	10.0000	9.7962	2.0	100	0.00
25	T	Diisopropyl ether	65.0000	67.8382	-4.4	100	0.00
26	T	Vinyl Acetate	10.0000	9.9102	0.9	100	0.00
27	P	1,1-Dichloroethane	10.0000	10.0226	-0.2	100	0.00
28	T	Ethyl-Tert-Butyl ether	65.0000	68.6462	-5.6	100	0.00
29	T	2-Butanone	10.0000	10.1817	-1.8	100	0.00
30	T	Propionitrile	65.0000	68.8953	-6.0	100	0.00
31	T	2,2-Dichloropropane	10.0000	10.1564	-1.6	100	0.00
32	T	cis-1,2-Dichloroethene	10.0000	9.7326	2.7	100	0.00
33	C	Chloroform	10.0000	9.7611	2.4	100	0.00
34		1-Bromopropane	10.0000	9.1261	8.7	100	-0.01
35	T	Bromochloromethane	10.0000	9.5616	4.4	100	0.00
36	T	Tetrahydrofuran	65.0000	67.3892	-3.7	100	0.00
37	S	Dibromofluoromethane	5.0000	5.0625	-1.2	100	0.00
38	T	1,1,1-Trichloroethane	10.0000	10.0919	-0.9	100	0.00
39	T	Cyclohexane	10.0000	9.6977	3.0	100	-0.01
40	T	1,1-Dichloropropene	10.0000	9.7729	2.3	100	0.00
41	T	Tert-Amyl-Methyl ether	65.0000	68.1530	-4.9	100	0.00
42	T	Carbon Tetrachloride	10.0000	9.9495	0.5	100	0.00
43	S	1,2-Dichloroethane-d4	5.0000	4.8445	3.1	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	10.0000	10.1644	-1.6	100	0.00
46	T	Benzene	10.0000	9.7022	3.0	100	0.00
47	T	Trichloroethene	10.0000	9.8646	1.4	100	0.00
48	T	Methylcyclohexane	10.0000	9.7245	2.8	100	0.00
49	C	1,2-Dichloropropane	10.0000	9.8831	1.2	100	0.00
50	T	1,4-Dioxane	130.0000	133.5880	-2.8	100	0.00
51	T	Bromodichloromethane	10.0000	9.5106	4.9	100	0.00
52	T	Dibromomethane	10.0000	9.7551	2.4	100	0.00
53	T	2-Chloroethyl Vinyl Ether	10.0000	9.1546	8.5	100	0.00
54	T	4-Methyl-2-Pentanone	10.0000	9.4122	5.9	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	10.0000	9.6158	3.8	100	0.00
56	T	Dimethyl Disulfide	10.0000	8.5060	14.9	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	5.0000	4.9070	1.9	100	0.00
59	C	Toluene	10.0000	10.0233	-0.2	100	0.00
60	T	Ethyl Methacrylate	10.0000	9.4549	5.5	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	10.0000	9.7357	2.6	100	0.00
63	T	1,1,2-Trichloroethane	10.0000	10.2139	-2.1	100	0.00
64	T	2-Hexanone	10.0000	9.6021	4.0	100	0.00
65	T	1,3-Dichloropropane	10.0000	10.0347	-0.3	100	0.00
66	T	Tetrachloroethene	10.0000	10.2512	-2.5	100	0.00
67	T	Dibromochloromethane	10.0000	9.8381	1.6	100	0.00
68	T	1,2-Dibromoethane	10.0000	9.5966	4.0	100	0.00
69	T	1-Chlorohexane	10.0000	9.5030	5.0	100	0.00
70	P	Chlorobenzene	10.0000	10.0771	-0.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	10.0000	9.9162	0.8	100	0.00
72	C	Ethylbenzene	10.0000	9.8889	1.1	100	0.00
73	T	m-,p-Xylene	20.0000	19.8387	0.8	100	0.00
74	T	o-Xylene	10.0000	9.7060	2.9	100	0.00
75	T	Styrene	10.0000	9.6258	3.7	100	0.00
76	P	Bromoform	10.0000	9.5450	4.6	100	0.00
77	T	Isopropylbenzene	10.0000	9.9391	0.6	100	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	10.0000	10.2123	-2.1	100	0.00
80	S	p-Bromofluorobenzene	5.0000	5.0129	-0.3	100	0.00
81	T	1,2,3-Trichloropropane	10.0000	10.4826	-4.8	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	10.0000	9.8948	1.1	100	0.00
83	T	n-Propylbenzene	10.0000	10.3323	-3.3	100	0.00
84	T	Bromobenzene	10.0000	10.0828	-0.8	100	0.00
85	T	1,3,5-Trimethylbenzene	10.0000	10.1069	-1.1	100	0.00
86	T	2-Chlorotoluene	10.0000	10.4377	-4.4	100	0.00
87	T	4-Chlorotoluene	10.0000	10.2453	-2.5	100	0.00
88	T	a-Methylstyrene	10.0000	9.6043	4.0	100	0.00
89	T	tert-Butylbenzene	10.0000	10.0040	-0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	10.0000	10.3616	-3.6	100	0.00
91	T	sec-Butylbenzene	10.0000	10.0296	-0.3	100	0.00
92	T	p-Isopropyltoluene	10.0000	9.9480	0.5	100	0.00
93	T	1,3-Dichlorobenzene	10.0000	10.4404	-4.4	100	0.00
94	T	1,4-Dichlorobenzene	10.0000	10.3238	-3.2	100	0.00
95	T	n-Butylbenzene	10.0000	10.0364	-0.4	100	0.00
96	T	1,2-Dichlorobenzene	10.0000	10.2365	-2.4	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	10.0000	9.4579	5.4	100	-0.01
98	T	1,2,4-Trichlorobenzene	10.0000	10.0816	-0.8	100	0.00
99	T	Hexachlorobutadiene	10.0000	10.0659	-0.7	100	-0.01
100	T	Naphthalene	10.0000	10.0325	-0.3	100	0.00
101	T	1,2,3-Trichlorobenzene	10.0000	10.0173	-0.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137527.D 826_SL.M Mon Feb 29 16:02:41 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137528.D Vial: 7
Acq On : 26 Feb 2016 16:30 Operator: TMB
Sample : WG558920-07 20ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:40 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	604454	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	432511	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	231578	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	33417	10.3059 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 20.62%#		
43) 1,2-Dichloroethane-d4	11.05	65	44264	10.5140 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 21.02%#		
58) Toluene-d8	13.80	98	105494	10.2589 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 20.52%#		
80) p-Bromofluorobenzene	17.79	95	42856	10.0752 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 20.16%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	124530	22.4325 ug/L	99
3) Chloromethane	3.88	50	120837	20.8884 ug/L	97
4) Vinyl Chloride	4.12	62	100224	21.5249 ug/L	99
5) 1,3-Butadiene	4.17	54	87169	22.5011 ug/L	89
6) Bromomethane	5.03	94	52021	20.9587 ug/L	100
7) Chloroethane	5.20	64	56109	21.2522 ug/L	96
8) Trichlorofluoromethane	5.70	101	126994	20.2979 ug/L	100
9) Diethyl ether	6.24	59	233490	81.1233 ug/L	92
10) Isoprene	6.28	67	78978	19.3770 ug/L	88
11) Acrolein	6.48	56	21732	39.7585 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	61970	20.7512 ug/L	94
13) Acetone	6.60	43	31313	20.3882 ug/L	94
14) 1,1-Dichloroethene	6.83	61	109604	20.7203 ug/L	92
15) Tert-Butyl Alcohol	6.93	59	84577	171.3564 ug/L	95
16) Dimethyl Sulfide	7.12	62	47686	18.5811 ug/L	91
17) Iodomethane	7.38	142	29628	16.5619 ug/L	87
18) Methyl acetate	7.39	43	74780	20.3429 ug/L	95
19) Methylene Chloride	7.67	84	64851	20.3571 ug/L	76
20) Carbon Disulfide	7.72	76	202990	20.0567 ug/L	99
21) Acrylonitrile	7.86	53	61697	40.8381 ug/L	94
22) Methyl Tert Butyl Ether	7.89	73	190370	20.9254 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	59769	20.4535 ug/L	87
24) n-Hexane	8.24	57	105156	19.8169 ug/L	97
25) Diisopropyl ether	8.61	45	1129584	82.1061 ug/L	96
26) Vinyl Acetate	8.80	43	152272	21.4117 ug/L	97
27) 1,1-Dichloroethane	8.83	63	130302	20.6823 ug/L	99
28) Ethyl-Tert-Butyl ether	9.24	59	915394	83.0143 ug/L	96
29) 2-Butanone	9.46	43	42524	20.3527 ug/L	97
30) Propionitrile	9.58	54	48414	83.7237 ug/L	100
31) 2,2-Dichloropropane	9.69	77	100380	19.8495 ug/L	98
32) cis-1,2-Dichloroethene	9.77	96	66403	20.3543 ug/L	100
33) Chloroform	10.01	83	120566	20.4910 ug/L	97
34) 1-Bromopropane	10.15	122	8978	20.0727 ug/L	94
35) Bromochloromethane	10.26	130	39989	20.8618 ug/L	98
36) Tetrahydrofuran	10.29	42	119054	84.5841 ug/L	93
38) 1,1,1-Trichloroethane	10.60	97	105282	20.2577 ug/L	96
39) Cyclohexane	10.63	56	119680	20.3079 ug/L	89
40) 1,1-Dichloropropene	10.82	75	83869	20.0386 ug/L	96
41) Tert-Amyl-Methyl ether	10.94	73	732522	83.7393 ug/L	91
42) Carbon Tetrachloride	10.99	117	99704	20.5318 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M137528.D 826_SL.M Mon Feb 29 16:01:41 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137528.D Vial: 7
Acq On : 26 Feb 2016 16:30 Operator: TMB
Sample : WG558920-07 20ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:40 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	11.19	62	103881	20.6854 ug/L		99
46)	Benzene	11.23	78	247381	19.6467 ug/L		92
47)	Trichloroethene	12.09	130	61373	20.6321 ug/L		91
48)	Methylcyclohexane	12.18	83	97333	20.2407 ug/L		88
49)	1,2-Dichloropropane	12.34	63	69997	20.6607 ug/L		99
50)	1,4-Dioxane	12.68	88	6222	161.0769 ug/L		84
51)	Bromodichloromethane	12.68	83	89367	20.1007 ug/L		96
52)	Dibromomethane	12.79	93	40905	20.6426 ug/L		98
53)	2-Chloroethyl Vinyl Ether	13.04	63	37392	20.0660 ug/L		99
54)	4-Methyl-2-Pentanone	13.07	58	29543	20.9375 ug/L		90
55)	cis-1,3-Dichloropropene	13.43	75	99671	20.3475 ug/L		97
56)	Dimethyl Disulfide	13.72	79	46329	18.7525 ug/L		98
59)	Toluene	13.91	91	246419	20.1412 ug/L		99
60)	Ethyl Methacrylate	14.04	69	79829	20.3638 ug/L		96
62)	trans-1,3-Dichloropropene	14.12	75	96621	20.5377 ug/L		98
63)	1,1,2-Trichloroethane	14.38	97	53425	20.8919 ug/L		97
64)	2-Hexanone	14.31	43	59605	20.4265 ug/L		97
65)	1,3-Dichloropropane	14.74	76	96517	20.8239 ug/L		94
66)	Tetrachloroethene	14.87	166	62111	20.5796 ug/L		96
67)	Dibromochloromethane	15.17	129	68185	20.5019 ug/L		99
68)	1,2-Dibromoethane	15.48	107	53387	20.4138 ug/L		100
69)	1-Chlorohexane	15.59	91	76216	20.0602 ug/L		83
70)	Chlorobenzene	16.07	112	160312	20.3880 ug/L	#	66
71)	1,1,1,2-Tetrachloroethane	16.11	131	64649	20.4768 ug/L		97
72)	Ethylbenzene	16.10	106	86018	20.4427 ug/L		96
73)	m-,p-Xylene	16.22	106	209303	40.6530 ug/L		95
74)	o-Xylene	16.87	106	101781	20.9889 ug/L		94
75)	Styrene	16.92	104	169811	20.5741 ug/L		94
76)	Bromoform	17.49	173	47615	20.2769 ug/L		98
77)	Isopropylbenzene	17.38	105	273784	21.0027 ug/L		97
79)	1,1,2,2-Tetrachloroethane	17.65	83	75470	20.8621 ug/L		95
81)	1,2,3-Trichloropropane	17.87	110	22588	20.3932 ug/L		90
82)	trans-1,4-Dichloro-2-Buten	17.93	53	26581	19.9034 ug/L		88
83)	n-Propylbenzene	17.98	91	330830	21.0359 ug/L		97
84)	Bromobenzene	18.13	156	71833	21.0128 ug/L		95
85)	1,3,5-Trimethylbenzene	18.21	105	230218	20.5655 ug/L		96
86)	2-Chlorotoluene	18.30	91	219979	20.9561 ug/L		97
87)	4-Chlorotoluene	18.35	91	193947	20.2066 ug/L		97
88)	a-Methylstyrene	18.69	118	107098	19.7008 ug/L		96
89)	tert-Butylbenzene	18.75	134	48246	20.6806 ug/L		94
90)	1,2,4-Trimethylbenzene	18.82	105	244152	20.7388 ug/L		84
91)	sec-Butylbenzene	19.08	105	299927	20.9214 ug/L		98
92)	p-Isopropyltoluene	19.27	119	246088	20.8066 ug/L		100
93)	1,3-Dichlorobenzene	19.48	146	134407	20.3198 ug/L		98
94)	1,4-Dichlorobenzene	19.64	146	136759	20.3118 ug/L		97
95)	n-Butylbenzene	19.89	91	245859	20.6677 ug/L		97
96)	1,2-Dichlorobenzene	20.22	146	129420	20.3333 ug/L		96
97)	1,2-Dibromo-3-Chloropropan	21.41	75	16283	20.3429 ug/L		85
98)	1,2,4-Trichlorobenzene	22.76	180	93373	20.2924 ug/L		99
99)	Hexachlorobutadiene	22.95	225	53674	20.3969 ug/L		99
100)	Naphthalene	23.20	128	219058	20.7086 ug/L		99
101)	1,2,3-Trichlorobenzene	23.58	180	91461	20.1860 ug/L		98

(#) = qualifier out of range (m) = manual integration
6M137528.D 826_SL.M Mon Feb 29 16:01:41 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137528.D Vial: 7
Acq On : 26 Feb 2016 16:30 Operator: TMB
Sample : WG558920-07 20ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

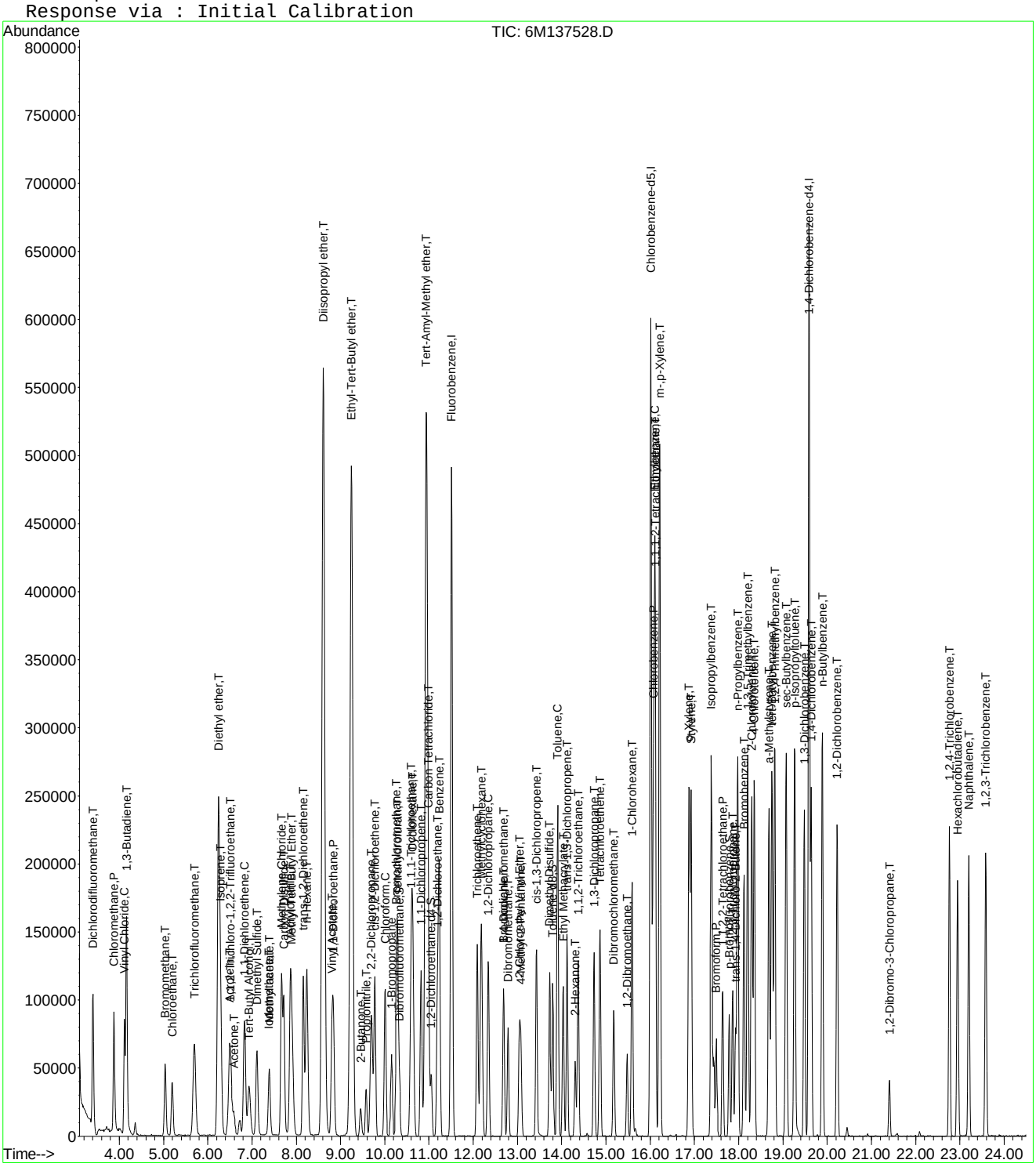

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137529.D Vial: 8
Acq On : 26 Feb 2016 17:03 Operator: TMB
Sample : WG558920-08 50ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:41 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	607631	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	439950	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	237573	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	82729	25.3805 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 50.76%#		
43) 1,2-Dichloroethane-d4	11.06	65	107163	25.3214 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 50.64%#		
58) Toluene-d8	13.80	98	266157	25.4452 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 50.90%#		
80) p-Bromofluorobenzene	17.79	95	111797	25.6197 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 51.24%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	326358	58.4819 ug/L	99
3) Chloromethane	3.88	50	305583	52.5483 ug/L	99
4) Vinyl Chloride	4.11	62	261948	55.9639 ug/L	98
5) 1,3-Butadiene	4.17	54	208973	53.6605 ug/L	91
6) Bromomethane	5.03	94	129157	51.7638 ug/L	100
7) Chloroethane	5.20	64	147959	55.7489 ug/L	95
8) Trichlorofluoromethane	5.70	101	339023	53.9039 ug/L	99
9) Diethyl ether	6.24	59	283385	97.9439 ug/L	93
10) Isoprene	6.28	67	215850	52.6813 ug/L	86
11) Acrolein	6.48	56	25264	45.9786 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	168394	56.0934 ug/L	94
13) Acetone	6.60	43	68176	49.2786 ug/L	100
14) 1,1-Dichloroethene	6.83	61	295734	55.6154 ug/L	92
15) Tert-Butyl Alcohol	6.94	59	97040	195.5789 ug/L	97
16) Dimethyl Sulfide	7.12	62	135657	52.5830 ug/L	94
17) Iodomethane	7.38	142	119726	51.5829 ug/L	91
18) Methyl acetate	7.39	43	187187	50.6554 ug/L	95
19) Methylene Chloride	7.67	84	174497	54.4892 ug/L	80
20) Carbon Disulfide	7.72	76	530150	52.1084 ug/L	98
21) Acrylonitrile	7.86	53	78970	51.9980 ug/L	98
22) Methyl Tert Butyl Ether	7.89	73	506330	55.3647 ug/L	93
23) trans-1,2-Dichloroethene	8.16	96	161116	54.8470 ug/L	86
24) n-Hexane	8.24	57	282956	53.0449 ug/L	98
25) Diisopropyl ether	8.61	45	1357488	98.1559 ug/L	97
26) Vinyl Acetate	8.80	43	361913	50.6243 ug/L	97
27) 1,1-Dichloroethane	8.84	63	345084	54.4873 ug/L	98
28) Ethyl-Tert-Butyl ether	9.24	59	1104598	99.6489 ug/L	96
29) 2-Butanone	9.45	43	102919	49.0011 ug/L	94
30) Propionitrile	9.58	54	57786	99.4084 ug/L	100
31) 2,2-Dichloropropane	9.70	77	275709	54.2347 ug/L	99
32) cis-1,2-Dichloroethene	9.77	96	176368	53.7788 ug/L	98
33) Chloroform	10.01	83	316097	53.4420 ug/L	96
34) 1-Bromopropane	10.16	122	24579	54.6655 ug/L	98
35) Bromochloromethane	10.26	130	106752	55.4000 ug/L	99
36) Tetrahydrofuran	10.29	42	139800	99.1693 ug/L	94
38) 1,1,1-Trichloroethane	10.60	97	287959	55.1175 ug/L	98
39) Cyclohexane	10.63	56	324068	54.7019 ug/L	90
40) 1,1-Dichloropropene	10.82	75	232925	55.3612 ug/L	98
41) Tert-Amyl-Methyl ether	10.95	73	878188	99.8664 ug/L	92
42) Carbon Tetrachloride	10.99	117	270388	55.3891 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137529.D Vial: 8
Acq On : 26 Feb 2016 17:03 Operator: TMB
Sample : WG558920-08 50ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:41 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	272804	54.0384 ug/L	98
46)	Benzene	11.23	78	654918	51.7410 ug/L	91
47)	Trichloroethene	12.09	130	163002	54.5109 ug/L	91
48)	Methylcyclohexane	12.18	83	264045	54.6220 ug/L	88
49)	1,2-Dichloropropane	12.34	63	185139	54.3608 ug/L	99
50)	1,4-Dioxane	12.67	88	7470	186.3872 ug/L	86
51)	Bromodichloromethane	12.68	83	244077	54.6116 ug/L	96
52)	Dibromomethane	12.78	93	112269	56.3600 ug/L	97
53)	2-Chloroethyl Vinyl Ether	13.04	63	99869	53.3134 ug/L	98
54)	4-Methyl-2-Pentanone	13.07	58	71173	50.1774 ug/L	95
55)	cis-1,3-Dichloropropene	13.43	75	275770	56.0032 ug/L	97
56)	Dimethyl Disulfide	13.72	79	136937	55.1380 ug/L	96
59)	Toluene	13.91	91	661797	53.1777 ug/L	100
60)	Ethyl Methacrylate	14.04	69	221335	55.5062 ug/L	94
62)	trans-1,3-Dichloropropene	14.12	75	265281	55.4346 ug/L	99
63)	1,1,2-Trichloroethane	14.38	97	140534	54.0266 ug/L	99
64)	2-Hexanone	14.31	43	150141	50.5831 ug/L	99
65)	1,3-Dichloropropane	14.73	76	254916	54.0691 ug/L	94
66)	Tetrachloroethene	14.87	166	165478	53.9016 ug/L	97
67)	Dibromochloromethane	15.17	129	187125	55.3134 ug/L	98
68)	1,2-Dibromoethane	15.48	107	145905	54.8470 ug/L	99
69)	1-Chlorohexane	15.59	91	213275	55.1854 ug/L	86
70)	Chlorobenzene	16.07	112	421684	52.7217 ug/L #	68
71)	1,1,1,2-Tetrachloroethane	16.11	131	172886	53.8335 ug/L	98
72)	Ethylbenzene	16.11	106	233514	54.5577 ug/L	98
73)	m-,p-Xylene	16.22	106	560207	106.9693 ug/L	96
74)	o-Xylene	16.88	106	278846	56.5302 ug/L	96
75)	Styrene	16.92	104	471370	56.1451 ug/L	94
76)	Bromoform	17.49	173	131127	54.8964 ug/L	99
77)	Isopropylbenzene	17.38	105	740395	55.8373 ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.65	83	199941	53.8747 ug/L	96
81)	1,2,3-Trichloropropane	17.87	110	61269	53.9200 ug/L	97
82)	trans-1,4-Dichloro-2-Buten	17.93	53	73183	53.4153 ug/L	91
83)	n-Propylbenzene	17.98	91	903295	55.9869 ug/L	98
84)	Bromobenzene	18.12	156	191943	54.7308 ug/L	98
85)	1,3,5-Trimethylbenzene	18.21	105	641908	55.8951 ug/L	95
86)	2-Chlorotoluene	18.30	91	578848	53.7519 ug/L	97
87)	4-Chlorotoluene	18.36	91	530900	53.9168 ug/L	97
88)	a-Methylstyrene	18.69	118	307671	55.1682 ug/L	99
89)	tert-Butylbenzene	18.76	134	134676	56.2719 ug/L	98
90)	1,2,4-Trimethylbenzene	18.82	105	666066	55.1494 ug/L	81
91)	sec-Butylbenzene	19.07	105	825213	56.1103 ug/L	99
92)	p-Isopropyltoluene	19.27	119	685445	56.4914 ug/L	100
93)	1,3-Dichlorobenzene	19.48	146	365219	53.8210 ug/L	96
94)	1,4-Dichlorobenzene	19.64	146	363309	52.5979 ug/L	98
95)	n-Butylbenzene	19.89	91	677494	55.5152 ug/L	98
96)	1,2-Dichlorobenzene	20.23	146	350298	53.6470 ug/L	96
97)	1,2-Dibromo-3-Chloropropan	21.41	75	43537	53.0196 ug/L	90
98)	1,2,4-Trichlorobenzene	22.76	180	262463	55.6006 ug/L	99
99)	Hexachlorobutadiene	22.95	225	150922	55.9053 ug/L	100
100)	Naphthalene	23.20	128	617866	56.9360 ug/L	100
101)	1,2,3-Trichlorobenzene	23.59	180	259953	55.9254 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137529.D Vial: 8
Acq On : 26 Feb 2016 17:03 Operator: TMB
Sample : WG558920-08 50ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

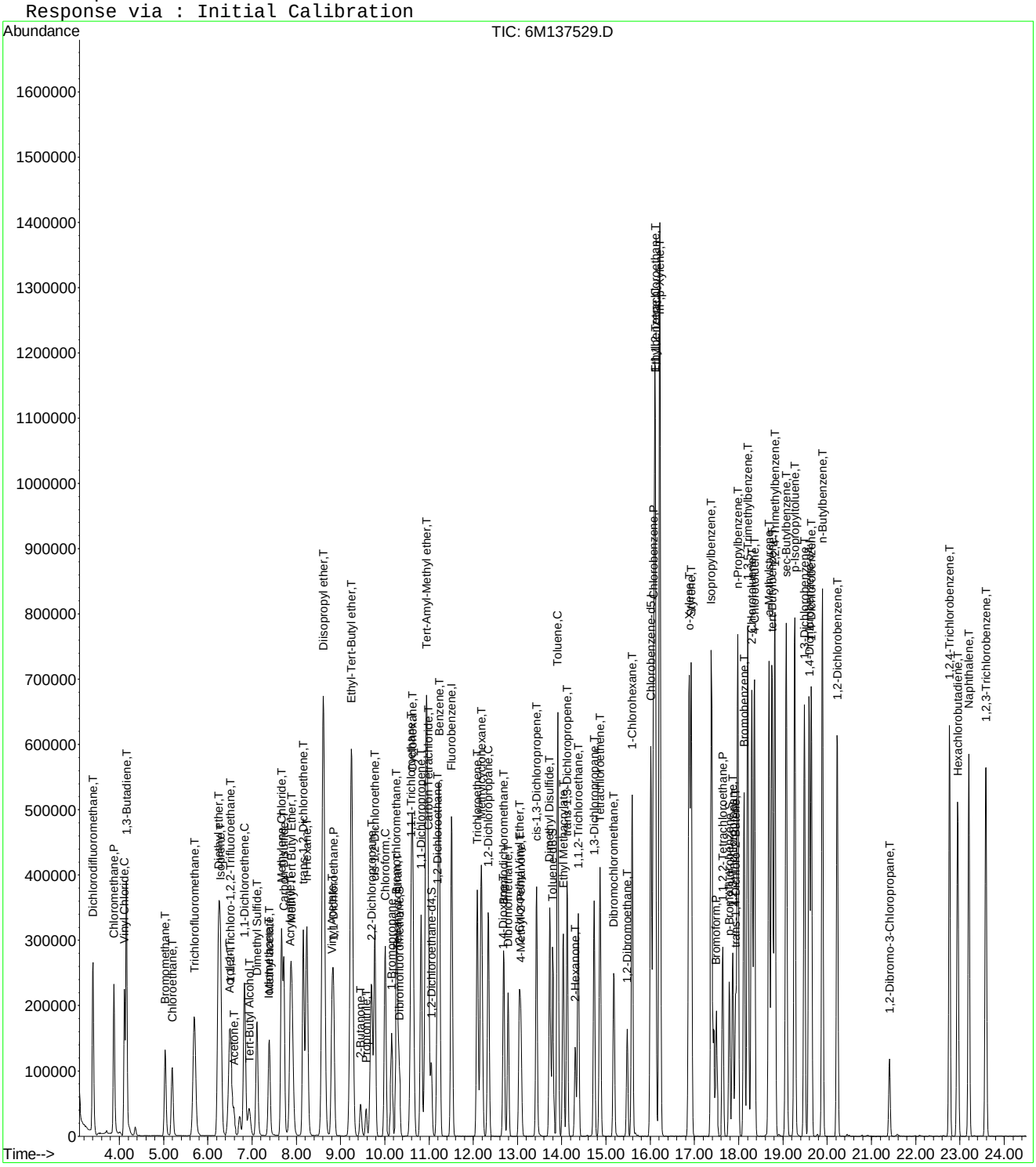

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137530.D Vial: 9
Acq On : 26 Feb 2016 17:35 Operator: TMB
Sample : WG558920-09 100ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:42 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	642087	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	466249	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	253947	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.32	111	162548	47.1921 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.38%		
43) 1,2-Dichloroethane-d4	11.06	65	210928	47.1653 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.34%		
58) Toluene-d8	13.80	98	518743	46.7957 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 93.60%		
80) p-Bromofluorobenzene	17.79	95	219336	47.0227 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 94.04%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	562397	95.3710 ug/L	99
3) Chloromethane	3.88	50	511342	83.2121 ug/L	98
4) Vinyl Chloride	4.12	62	453722	91.7337 ug/L	97
5) 1,3-Butadiene	4.16	54	371216	90.2064 ug/L	92
6) Bromomethane	5.03	94	236484	89.6925 ug/L	99
7) Chloroethane	5.19	64	259484	92.5233 ug/L	94
8) Trichlorofluoromethane	5.69	101	593589	89.3146 ug/L	99
9) Diethyl ether	6.23	59	599424	196.0563 ug/L	94
10) Isoprene	6.28	67	429478	99.1954 ug/L	86
11) Acrolein	6.48	56	58142	100.1359 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	295880	93.2711 ug/L	94
13) Acetone	6.59	43	134155	95.5525 ug/L	97
14) 1,1-Dichloroethene	6.83	61	525920	93.5964 ug/L	92
15) Tert-Butyl Alcohol	6.94	59	207755	396.2496 ug/L	97
16) Dimethyl Sulfide	7.11	62	269784	98.9613 ug/L	92
17) Iodomethane	7.38	142	252699	98.0787 ug/L	90
18) Methyl acetate	7.39	43	375036	96.0437 ug/L	97
19) Methylene Chloride	7.67	84	311212	91.9654 ug/L	80
20) Carbon Disulfide	7.72	76	1037082	96.4646 ug/L	99
21) Acrylonitrile	7.86	53	165829	103.3311 ug/L	99
22) Methyl Tert Butyl Ether	7.89	73	942489	97.5263 ug/L	93
23) trans-1,2-Dichloroethene	8.16	96	289637	93.3071 ug/L	87
24) n-Hexane	8.23	57	555752	98.5944 ug/L	98
25) Diisopropyl ether	8.61	45	2877959	196.9296 ug/L	96
26) Vinyl Acetate	8.80	43	731541	96.8365 ug/L	99
27) 1,1-Dichloroethane	8.83	63	621539	92.8721 ug/L	98
28) Ethyl-Tert-Butyl ether	9.24	59	2342177	199.9557 ug/L	96
29) 2-Butanone	9.45	43	207126	93.3235 ug/L	95
30) Propionitrile	9.57	54	121992	198.5994 ug/L	98
31) 2,2-Dichloropropane	9.69	77	491609	91.5150 ug/L	98
32) cis-1,2-Dichloroethene	9.77	96	321521	92.7784 ug/L	96
33) Chloroform	10.01	83	568519	90.9606 ug/L	95
34) 1-Bromopropane	10.16	122	47570	100.1217 ug/L	99
35) Bromochloromethane	10.26	130	193434	94.9975 ug/L	100
36) Tetrahydrofuran	10.29	42	287880	195.3143 ug/L	95
38) 1,1,1-Trichloroethane	10.60	97	511473	92.6461 ug/L	98
39) Cyclohexane	10.63	56	631373	100.8552 ug/L	90
40) 1,1-Dichloropropene	10.82	75	416243	93.6230 ug/L	97
41) Tert-Amyl-Methyl ether	10.94	73	1879478	202.2624 ug/L	92
42) Carbon Tetrachloride	10.99	117	485191	94.0581 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137530.D Vial: 9
Acq On : 26 Feb 2016 17:35 Operator: TMB
Sample : WG558920-09 100ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:42 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45) 1,2-Dichloroethane	11.19	62	498315	93.4118	ug/L	98
46) Benzene	11.23	78	1182199	88.3862	ug/L	91
47) Trichloroethene	12.09	130	294176	93.0987	ug/L	90
48) Methylcyclohexane	12.18	83	515585	100.9337	ug/L	88
49) 1,2-Dichloropropane	12.34	63	342055	95.0452	ug/L	100
50) 1,4-Dioxane	12.67	88	17776	381.1583	ug/L	84
51) Bromodichloromethane	12.68	83	452280	95.7660	ug/L	97
52) Dibromomethane	12.79	93	202292	96.1028	ug/L	98
53) 2-Chloroethyl Vinyl Ether	13.04	63	206349	104.2447	ug/L	97
54) 4-Methyl-2-Pentanone	13.07	58	145646	97.1712	ug/L	93
55) cis-1,3-Dichloropropene	13.43	75	509093	97.8384	ug/L	95
56) Dimethyl Disulfide	13.72	79	282091	107.4894	ug/L	96
59) Toluene	13.91	91	1184465	89.8074	ug/L	100
60) Ethyl Methacrylate	14.04	69	445228	105.3560	ug/L	94
62) trans-1,3-Dichloropropene	14.12	75	494673	97.5390	ug/L	99
63) 1,1,2-Trichloroethane	14.38	97	261258	94.7723	ug/L	99
64) 2-Hexanone	14.31	43	305856	97.2318	ug/L	100
65) 1,3-Dichloropropane	14.74	76	469121	93.8906	ug/L	93
66) Tetrachloroethene	14.87	166	296672	91.1851	ug/L	98
67) Dibromochloromethane	15.17	129	347661	96.9706	ug/L	98
68) 1,2-Dibromoethane	15.48	107	270599	95.9830	ug/L	97
69) 1-Chlorohexane	15.59	91	420885	102.7620	ug/L	86
70) Chlorobenzene	16.07	112	765249	90.2797	ug/L	69
71) 1,1,1,2-Tetrachloroethane	16.11	131	320669	94.2184	ug/L	97
72) Ethylbenzene	16.10	106	422350	93.1110	ug/L	97
73) m-,p-Xylene	16.22	106	1018750	183.5539	ug/L	96
74) o-Xylene	16.87	106	503867	96.3867	ug/L	94
75) Styrene	16.92	104	871975	98.0029	ug/L	94
76) Bromoform	17.49	173	243410	96.1558	ug/L	99
77) Isopropylbenzene	17.38	105	1335991	95.0715	ug/L	98
79) 1,1,2,2-Tetrachloroethane	17.65	83	376052	94.7950	ug/L	96
81) 1,2,3-Trichloropropane	17.87	110	114333	94.1314	ug/L	95
82) trans-1,4-Dichloro-2-Buten	17.93	53	150048	102.4566	ug/L	89
83) n-Propylbenzene	17.98	91	1628674	94.4377	ug/L	98
84) Bromobenzene	18.13	156	352357	93.9933	ug/L	98
85) 1,3,5-Trimethylbenzene	18.21	105	1165530	94.9464	ug/L	95
86) 2-Chlorotoluene	18.30	91	1069398	92.9015	ug/L	97
87) 4-Chlorotoluene	18.35	91	957337	90.9557	ug/L	97
88) a-Methylstyrene	18.69	118	626810	105.1459	ug/L	98
89) tert-Butylbenzene	18.75	134	243763	95.2846	ug/L	87
90) 1,2,4-Trimethylbenzene	18.82	105	1211949	93.8776	ug/L	81
91) sec-Butylbenzene	19.08	105	1482811	94.3227	ug/L	99
92) p-Isopropyltoluene	19.27	119	1243718	95.8928	ug/L	100
93) 1,3-Dichlorobenzene	19.48	146	670076	92.3797	ug/L	97
94) 1,4-Dichlorobenzene	19.64	146	665185	90.0925	ug/L	97
95) n-Butylbenzene	19.89	91	1241772	95.1924	ug/L	98
96) 1,2-Dichlorobenzene	20.22	146	649160	93.0065	ug/L	96
97) 1,2-Dibromo-3-Chloropropan	21.41	75	84975	96.8107	ug/L	89
98) 1,2,4-Trichlorobenzene	22.76	180	475402	94.2164	ug/L	99
99) Hexachlorobutadiene	22.95	225	270006	93.5681	ug/L	100
100) Naphthalene	23.20	128	1163220	100.2786	ug/L	100
101) 1,2,3-Trichlorobenzene	23.58	180	465522	93.6933	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137530.D Vial: 9
Acq On : 26 Feb 2016 17:35 Operator: TMB
Sample : WG558920-09 100ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

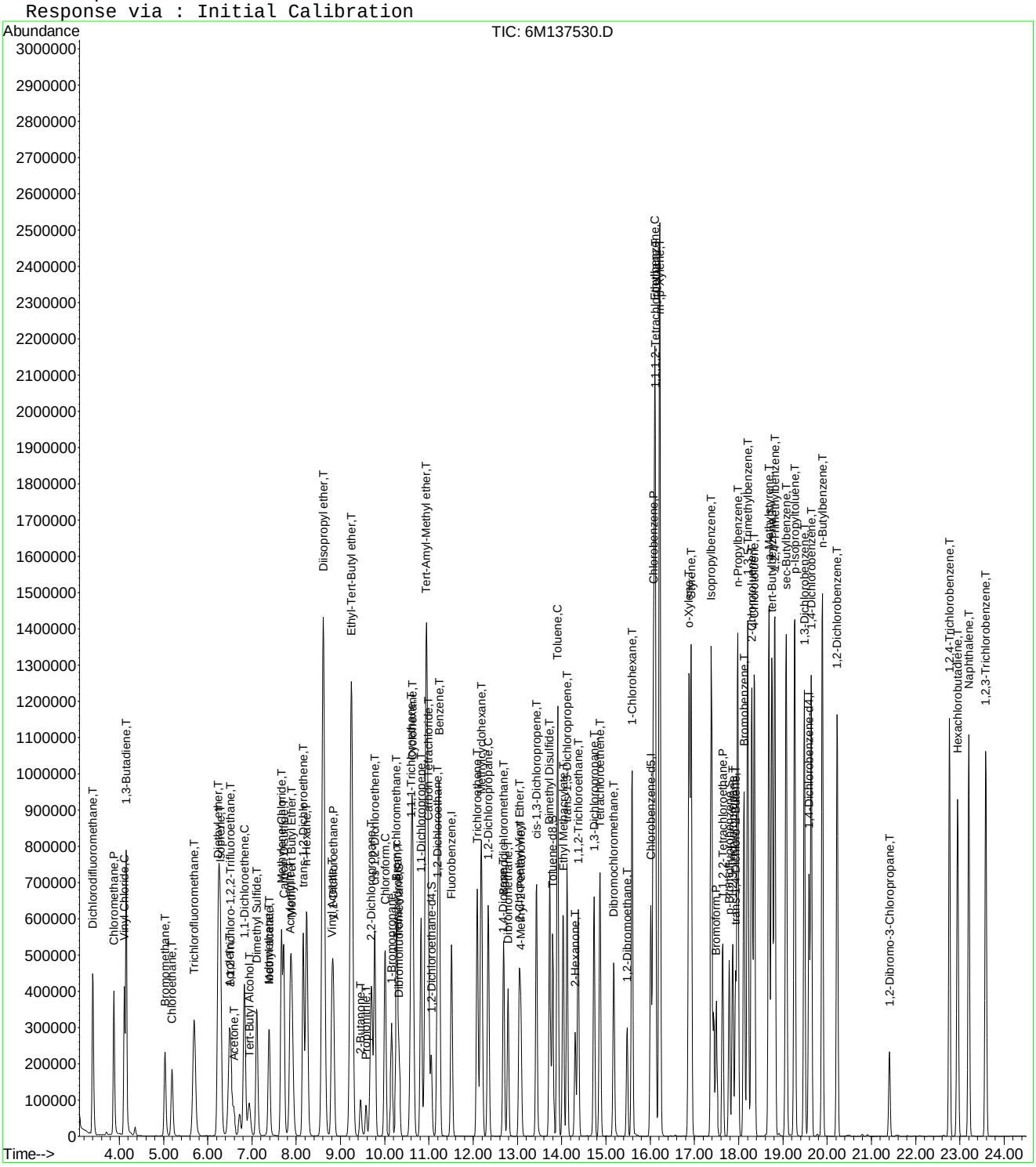

6M137530.D 826_SL.M Mon Feb 29 16:01:43 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137531.D Vial: 10
Acq On : 26 Feb 2016 18:07 Operator: TMB
Sample : WG558920-10 200ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:43 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	661999	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	479329	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	273657	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	351336	98.9344 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 197.86%#		
43) 1,2-Dichloroethane-d4	11.05	65	450300	97.6622 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 195.32%#		
58) Toluene-d8	13.80	98	1096959	96.2561 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 192.52%#		
80) p-Bromofluorobenzene	17.79	95	487968	97.0790 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 194.16%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	1228760	202.1049 ug/L	98
3) Chloromethane	3.88	50	1125279	177.6118 ug/L	98
4) Vinyl Chloride	4.12	62	989076	193.9570 ug/L	97
5) 1,3-Butadiene	4.16	54	745589	175.7303 ug/L	94
6) Bromomethane	5.03	94	548799	201.8852 ug/L	100
7) Chloroethane	5.19	64	579871	200.5435 ug/L	96
8) Trichlorofluoromethane	5.69	101	1297014	189.2858 ug/L	100
9) Diethyl ether	6.23	59	1563	0.4958 ug/L #	49
10) Isoprene	6.27	67	894422	200.3686 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	649915	198.7121 ug/L	93
13) Acetone	6.59	43	290441	205.4763 ug/L	99
14) 1,1-Dichloroethene	6.83	61	1161250	200.4481 ug/L	92
15) Tert-Butyl Alcohol	6.83	59	39858	73.7343 ug/L #	57
16) Dimethyl Sulfide	7.11	62	576142	204.9817 ug/L	92
17) Iodomethane	7.38	142	559892	205.0669 ug/L	91
18) Methyl acetate	7.39	43	775842	192.7107 ug/L	97
19) Methylene Chloride	7.67	84	681801	195.4170 ug/L	78
20) Carbon Disulfide	7.72	76	2184454	197.0763 ug/L	98
21) Acrylonitrile	7.90	53	25391	15.3457 ug/L #	34
22) Methyl Tert Butyl Ether	7.90	73	2079733	208.7322 ug/L	92
23) trans-1,2-Dichloroethene	8.16	96	635434	198.5489 ug/L	86
24) n-Hexane	8.23	57	1159756	199.5603 ug/L	99
25) Diisopropyl ether	8.63	45	8975	0.5957 ug/L #	37
26) Vinyl Acetate	8.80	43	1656751	212.7131 ug/L	98
27) 1,1-Dichloroethane	8.83	63	1360017	197.1051 ug/L	97
28) Ethyl-Tert-Butyl ether	9.23	59	4690	0.3884 ug/L #	76
29) 2-Butanone	9.45	43	450489	196.8688 ug/L	97
30) Propionitrile	9.59	54	193	0.3047 ug/L #	55
31) 2,2-Dichloropropane	9.69	77	1084788	195.8637 ug/L	97
32) cis-1,2-Dichloroethene	9.77	96	711282	199.0746 ug/L	99
33) Chloroform	10.00	83	1259701	195.4845 ug/L	96
34) 1-Bromopropane	10.16	122	101190	206.5710 ug/L	98
35) Bromochloromethane	10.26	130	430294	204.9658 ug/L	100
36) Tetrahydrofuran	10.31	42	4560	0.8620 ug/L #	82
38) 1,1,1-Trichloroethane	10.60	97	1139307	200.1621 ug/L	98
39) Cyclohexane	10.63	56	1322081	204.8363 ug/L	90
40) 1,1-Dichloropropene	10.83	75	913448	199.2765 ug/L	99
41) Tert-Amyl-Methyl ether	10.93	73	3689	0.3851 ug/L #	57
42) Carbon Tetrachloride	10.99	117	1067649	200.7466 ug/L	97
45) 1,2-Dichloroethane	11.19	62	1098127	199.6582 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M137531.D 826_SL.M Mon Feb 29 16:01:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137531.D Vial: 10
Acq On : 26 Feb 2016 18:07 Operator: TMB
Sample : WG558920-10 200ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:43 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	11.23	78	2576436	186.8313 ug/L		90
47)	Trichloroethene	12.09	130	648704	199.1220 ug/L		90
48)	Methylcyclohexane	12.18	83	1075003	204.1184 ug/L		87
49)	1,2-Dichloropropane	12.34	63	757110	204.0468 ug/L		100
50)	1,4-Dioxane	12.68	88	863	47.3107 ug/L	#	17
51)	Bromodichloromethane	12.68	83	1017483	208.9621 ug/L		97
52)	Dibromomethane	12.79	93	451601	208.0889 ug/L		97
53)	2-Chloroethyl Vinyl Ether	13.03	63	470311	230.4481 ug/L		98
54)	4-Methyl-2-Pentanone	13.07	58	332135	214.9265 ug/L		95
55)	cis-1,3-Dichloropropene	13.43	75	1150962	214.5407 ug/L		96
56)	Dimethyl Disulfide	13.73	79	648612	239.7166 ug/L		96
59)	Toluene	13.91	91	2588299	190.8923 ug/L		99
60)	Ethyl Methacrylate	14.03	69	978791	225.2947 ug/L		94
62)	trans-1,3-Dichloropropene	14.12	75	1110336	212.9604 ug/L		98
63)	1,1,2-Trichloroethane	14.38	97	578586	204.1568 ug/L		99
64)	2-Hexanone	14.31	43	689071	213.0784 ug/L		99
65)	1,3-Dichloropropane	14.74	76	1034423	201.3815 ug/L		93
66)	Tetrachloroethene	14.87	166	644718	192.7530 ug/L		97
67)	Dibromochloromethane	15.18	129	780769	211.8317 ug/L		100
68)	1,2-Dibromoethane	15.48	107	610277	210.5616 ug/L		98
69)	1-Chlorohexane	15.59	91	900931	213.9661 ug/L		86
70)	Chlorobenzene	16.07	112	1706160	195.7904 ug/L	#	68
71)	1,1,1,2-Tetrachloroethane	16.11	131	721225	206.1264 ug/L		97
72)	Ethylbenzene	16.11	106	946980	203.0736 ug/L		98
73)	m-,p-Xylene	16.22	106	2242794	393.0696 ug/L		97
74)	o-Xylene	16.87	106	1130903	210.4315 ug/L		95
75)	Styrene	16.92	104	1988734	217.4182 ug/L		93
76)	Bromoform	17.49	173	561872	215.9030 ug/L		99
77)	Isopropylbenzene	17.38	105	2989967	206.9652 ug/L		98
79)	1,1,2,2-Tetrachloroethane	17.64	83	859540	201.0666 ug/L		95
81)	1,2,3-Trichloropropane	17.87	110	265884	203.1382 ug/L		89
82)	trans-1,4-Dichloro-2-Buten	17.93	53	340440	215.7181 ug/L		90
83)	n-Propylbenzene	17.98	91	3639812	195.8513 ug/L		98
84)	Bromobenzene	18.13	156	802539	198.6628 ug/L		99
85)	1,3,5-Trimethylbenzene	18.21	105	2665531	201.5000 ug/L		96
86)	2-Chlorotoluene	18.30	91	2450953	197.5855 ug/L		97
87)	4-Chlorotoluene	18.35	91	2149568	189.5191 ug/L		97
88)	a-Methylstyrene	18.69	118	1416560	220.5099 ug/L		98
89)	tert-Butylbenzene	18.75	134	559469	202.9400 ug/L		85
90)	1,2,4-Trimethylbenzene	18.82	105	2775173	199.4822 ug/L		81
91)	sec-Butylbenzene	19.08	105	3369131	198.8771 ug/L		100
92)	p-Isopropyltoluene	19.26	119	2833911	202.7621 ug/L		99
93)	1,3-Dichlorobenzene	19.49	146	1523154	194.8646 ug/L		95
94)	1,4-Dichlorobenzene	19.64	146	1521474	191.2260 ug/L		97
95)	n-Butylbenzene	19.89	91	2819417	200.5655 ug/L		98
96)	1,2-Dichlorobenzene	20.22	146	1485290	197.4738 ug/L		95
97)	1,2-Dibromo-3-Chloropropan	21.41	75	195547	206.7378 ug/L		89
98)	1,2,4-Trichlorobenzene	22.76	180	1054519	193.9351 ug/L		98
99)	Hexachlorobutadiene	22.95	225	597195	192.0469 ug/L		99
100)	Naphthalene	23.20	128	2579088	206.3237 ug/L		99
101)	1,2,3-Trichlorobenzene	23.58	180	1038439	193.9482 ug/L		99

(#) = qualifier out of range (m) = manual integration
6M137531.D 826_SL.M Mon Feb 29 16:01:43 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137531.D Vial: 10
Acq On : 26 Feb 2016 18:07 Operator: TMB
Sample : WG558920-10 200ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

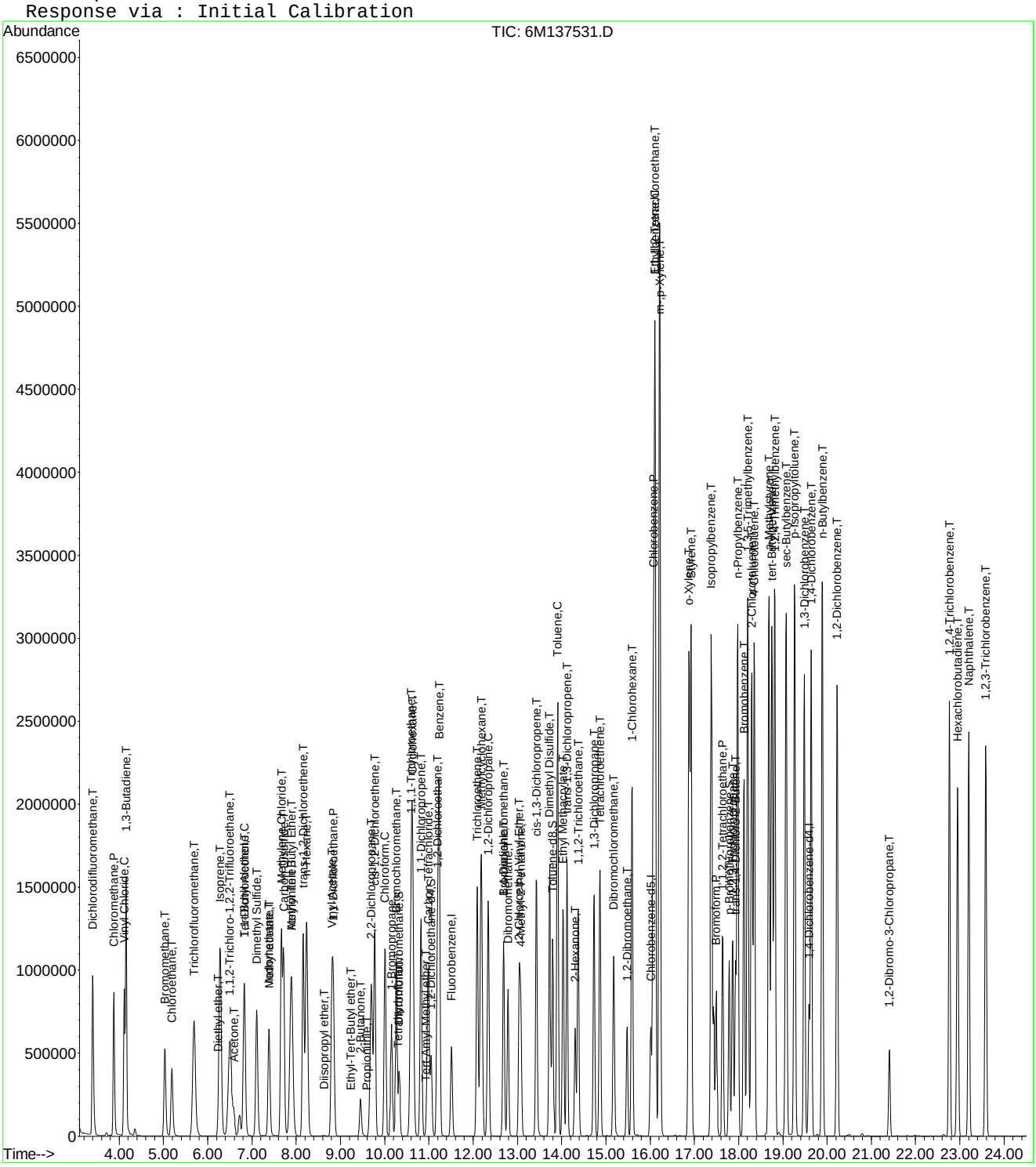

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137532.D Vial: 11
Acq On : 26 Feb 2016 18:39 Operator: TMB
Sample : WG558920-11 300ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:43 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	707233	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	525178	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	308135	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	555974	146.5460 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 293.10%#		
43) 1,2-Dichloroethane-d4	11.05	65	713394	144.8268 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 289.66%#		
58) Toluene-d8	13.80	98	1741152	139.4446 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 278.88%#		
80) p-Bromofluorobenzene	17.79	95	787625	139.1615 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 278.32%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	1997367	307.5122 ug/L	98
3) Chloromethane	3.88	50	1848014	273.0309 ug/L	98
4) Vinyl Chloride	4.11	62	1515327	278.1486 ug/L	97
5) 1,3-Butadiene	4.15	54	1176840	259.6328 ug/L	94
6) Bromomethane	5.03	94	924558	318.3612 ug/L	100
7) Chloroethane	5.18	64	952580	308.3709 ug/L	96
8) Trichlorofluoromethane	5.68	101	2124957	290.2808 ug/L	99
9) Diethyl ether	6.23	59	1011802	300.4509 ug/L	94
10) Isoprene	6.27	67	1489357	312.3064 ug/L	86
11) Acrolein	6.49	56	100305	156.8389 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	1067610	305.5451 ug/L	94
13) Acetone	6.59	43	448789	299.1551 ug/L	99
14) 1,1-Dichloroethene	6.82	61	1895304	306.2315 ug/L	92
15) Tert-Butyl Alcohol	6.95	59	370925	642.2954 ug/L	99
16) Dimethyl Sulfide	7.11	62	950681	316.6032 ug/L	94
17) Iodomethane	7.38	142	877751	298.6036 ug/L	91
18) Methyl acetate	7.40	43	1274555	296.3371 ug/L	98
19) Methylene Chloride	7.66	84	1102725	295.8467 ug/L	79
20) Carbon Disulfide	7.71	76	3583096	302.5832 ug/L	98
21) Acrylonitrile	7.86	53	296066	167.4906 ug/L	98
22) Methyl Tert Butyl Ether	7.90	73	3392519	318.7124 ug/L	92
23) trans-1,2-Dichloroethene	8.16	96	1037130	303.3368 ug/L	86
24) n-Hexane	8.23	57	1917686	308.8729 ug/L	99
25) Diisopropyl ether	8.61	45	4780310	296.9708 ug/L	96
26) Vinyl Acetate	8.80	43	2633859	316.5369 ug/L	99
27) 1,1-Dichloroethane	8.83	63	2210234	299.8379 ug/L	97
28) Ethyl-Tert-Butyl ether	9.24	59	3979837	308.4685 ug/L	96
29) 2-Butanone	9.45	43	727982	297.7887 ug/L	98
30) Propionitrile	9.58	54	209887	310.2156 ug/L	99
31) 2,2-Dichloropropane	9.69	77	1783568	301.4350 ug/L	96
32) cis-1,2-Dichloroethene	9.77	96	1159875	303.8646 ug/L	98
33) Chloroform	10.00	83	2040554	296.4065 ug/L	96
34) 1-Bromopropane	10.15	122	167090	319.2839 ug/L	98
35) Bromochloromethane	10.26	130	694571	309.6903 ug/L	99
36) Tetrahydrofuran	10.30	42	490636	303.4020 ug/L	96
38) 1,1,1-Trichloroethane	10.60	97	1858746	305.6722 ug/L	98
39) Cyclohexane	10.63	56	2201094	319.2142 ug/L	89
40) 1,1-Dichloropropene	10.83	75	1504422	307.2111 ug/L	99
41) Tert-Amyl-Methyl ether	10.94	73	3231746	315.7523 ug/L	93
42) Carbon Tetrachloride	10.99	117	1763858	310.4404 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M137532.D 826_SL.M Mon Feb 29 16:01:44 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137532.D Vial: 11
Acq On : 26 Feb 2016 18:39 Operator: TMB
Sample : WG558920-11 300ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:43 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45) 1,2-Dichloroethane	11.19	62	1778788	302.7287 ug/L	98
46) Benzene	11.23	78	4155462	282.0619 ug/L	90
47) Trichloroethene	12.09	130	1058154	304.0300 ug/L	90
48) Methylcyclohexane	12.18	83	1798917	319.7263 ug/L	88
49) 1,2-Dichloropropane	12.34	63	1232481	310.9180 ug/L	100
50) 1,4-Dioxane	12.67	88	32606	614.2458 ug/L	84
51) Bromodichloromethane	12.68	83	1653218	317.8084 ug/L	96
52) Dibromomethane	12.79	93	733410	316.3265 ug/L	98
53) 2-Chloroethyl Vinyl Ether	13.03	63	766489	351.5513 ug/L	97
54) 4-Methyl-2-Pentanone	13.07	58	543988	329.5031 ug/L	95
55) cis-1,3-Dichloropropene	13.42	75	1877090	327.5130 ug/L	95
56) Dimethyl Disulfide	13.73	79	1088350	376.5100 ug/L	96
59) Toluene	13.91	91	4193210	282.2590 ug/L	99
60) Ethyl Methacrylate	14.03	69	1632375	342.9321 ug/L	95
62) trans-1,3-Dichloropropene	14.12	75	1832609	320.8053 ug/L	98
63) 1,1,2-Trichloroethane	14.38	97	942438	303.5120 ug/L	98
64) 2-Hexanone	14.31	43	1154652	325.8770 ug/L	98
65) 1,3-Dichloropropane	14.74	76	1702509	302.5088 ug/L	94
66) Tetrachloroethene	14.87	166	1062175	289.8375 ug/L	97
67) Dibromochloromethane	15.18	129	1292929	320.1624 ug/L	100
68) 1,2-Dibromoethane	15.48	107	1008106	317.4575 ug/L	98
69) 1-Chlorohexane	15.59	91	1494127	323.8681 ug/L	86
70) Chlorobenzene	16.07	112	2773062	290.4413 ug/L #	66
71) 1,1,1,2-Tetrachloroethane	16.11	131	1196001	311.9762 ug/L	97
72) Ethylbenzene	16.11	106	1556732	304.6869 ug/L	100
73) m-,p-Xylene	16.22	106	3653753	584.4488 ug/L	99
74) o-Xylene	16.87	106	1861503	316.1378 ug/L	96
75) Styrene	16.92	104	3280614	327.3419 ug/L	91
76) Bromoform	17.49	173	968059	339.5083 ug/L	100
77) Isopropylbenzene	17.38	105	4859396	307.0014 ug/L	99
79) 1,1,2,2-Tetrachloroethane	17.64	83	1473362	306.0898 ug/L	95
81) 1,2,3-Trichloropropane	17.87	110	450710	305.8173 ug/L	97
82) trans-1,4-Dichloro-2-Buten	17.93	53	587175	330.4298 ug/L	92
83) n-Propylbenzene	17.98	91	5875551	280.7771 ug/L	99
84) Bromobenzene	18.13	156	1329308	292.2413 ug/L	98
85) 1,3,5-Trimethylbenzene	18.21	105	4394146	295.0064 ug/L	96
86) 2-Chlorotoluene	18.30	91	4027318	288.3378 ug/L	97
87) 4-Chlorotoluene	18.35	91	3574535	279.8896 ug/L	97
88) a-Methylstyrene	18.69	118	2387215	330.0275 ug/L	99
89) tert-Butylbenzene	18.75	134	927820	298.8965 ug/L	84
90) 1,2,4-Trimethylbenzene	18.82	105	4532965	289.3756 ug/L	82
91) sec-Butylbenzene	19.08	105	5502198	288.4488 ug/L	100
92) p-Isopropyltoluene	19.27	119	4664534	296.3974 ug/L	98
93) 1,3-Dichlorobenzene	19.49	146	2567994	291.7754 ug/L	95
94) 1,4-Dichlorobenzene	19.64	146	2568075	286.6525 ug/L	96
95) n-Butylbenzene	19.89	91	4738000	299.3349 ug/L	98
96) 1,2-Dichlorobenzene	20.22	146	2506554	295.9653 ug/L	94
97) 1,2-Dibromo-3-Chloropropan	21.41	75	337125	316.5375 ug/L	88
98) 1,2,4-Trichlorobenzene	22.76	180	1820641	297.3664 ug/L	98
99) Hexachlorobutadiene	22.95	225	1055064	301.3252 ug/L	99
100) Naphthalene	23.20	128	4412465	313.4943 ug/L	98
101) 1,2,3-Trichlorobenzene	23.58	180	1777074	294.7650 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137532.D Vial: 11
Acq On : 26 Feb 2016 18:39 Operator: TMB
Sample : WG558920-11 300ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

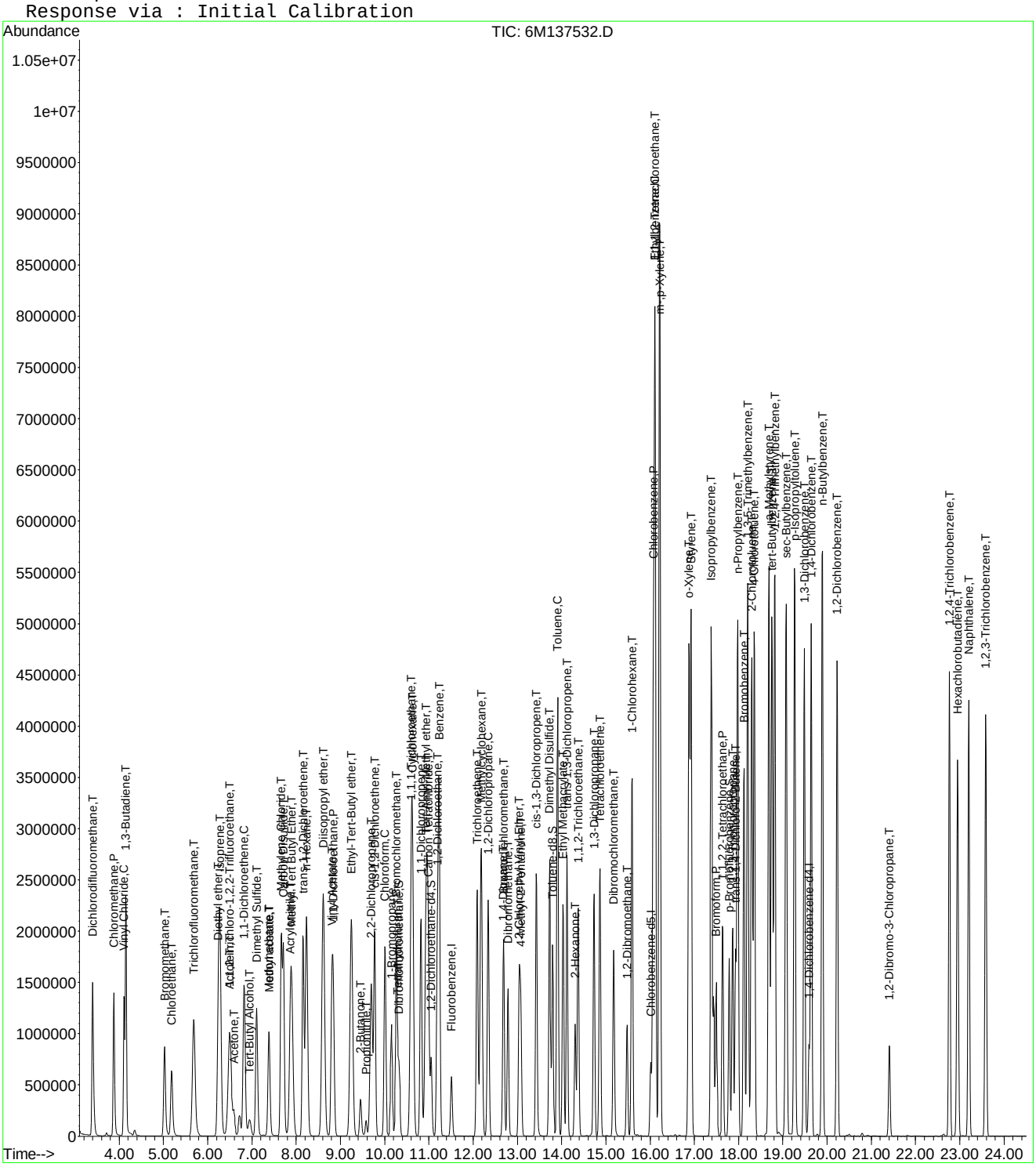

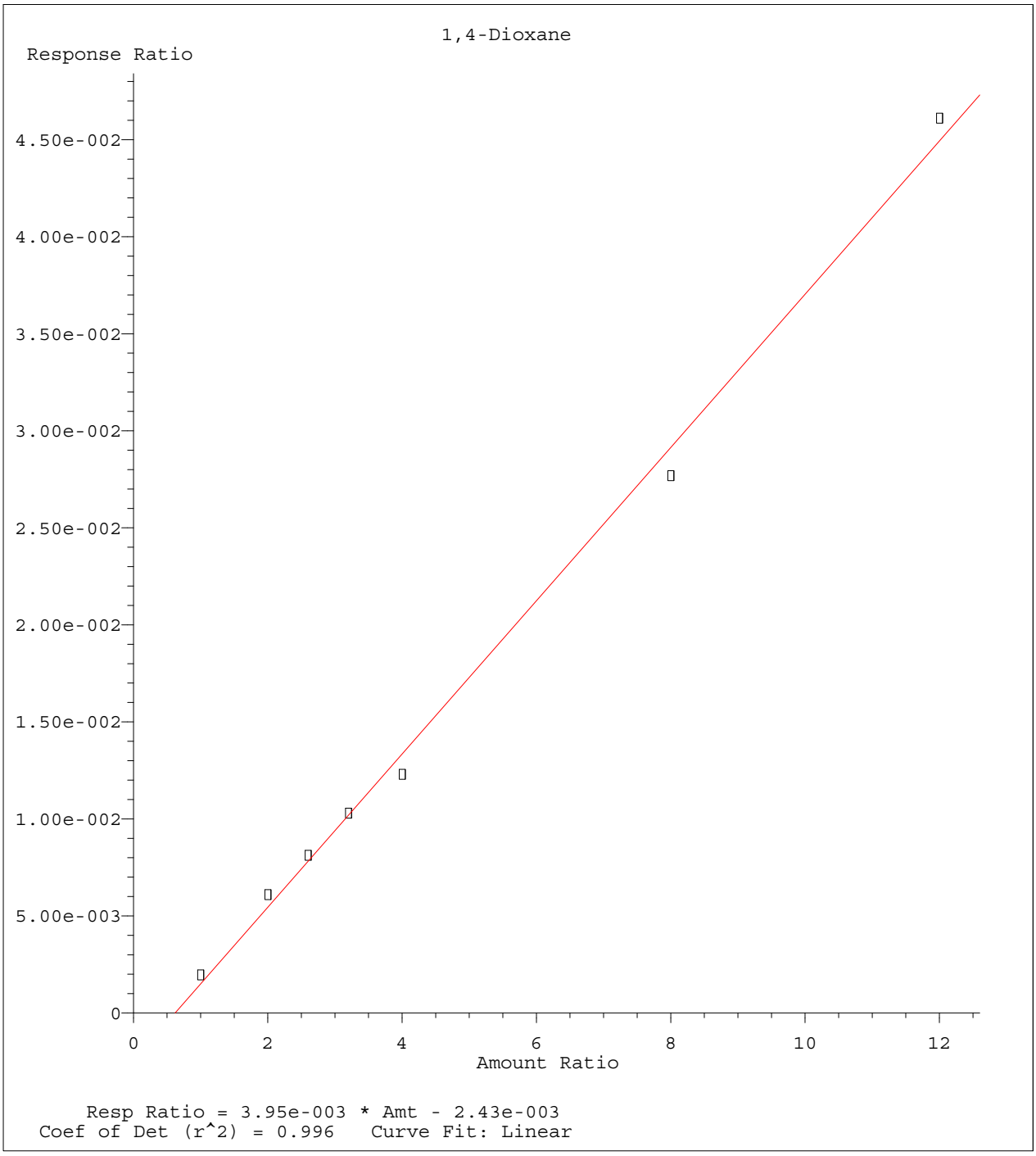

Method Name: C:\MSDCHEM\1\METHODS\826_SL.M
Calibration Table Last Updated: Mon Feb 29 08:51:12 2016

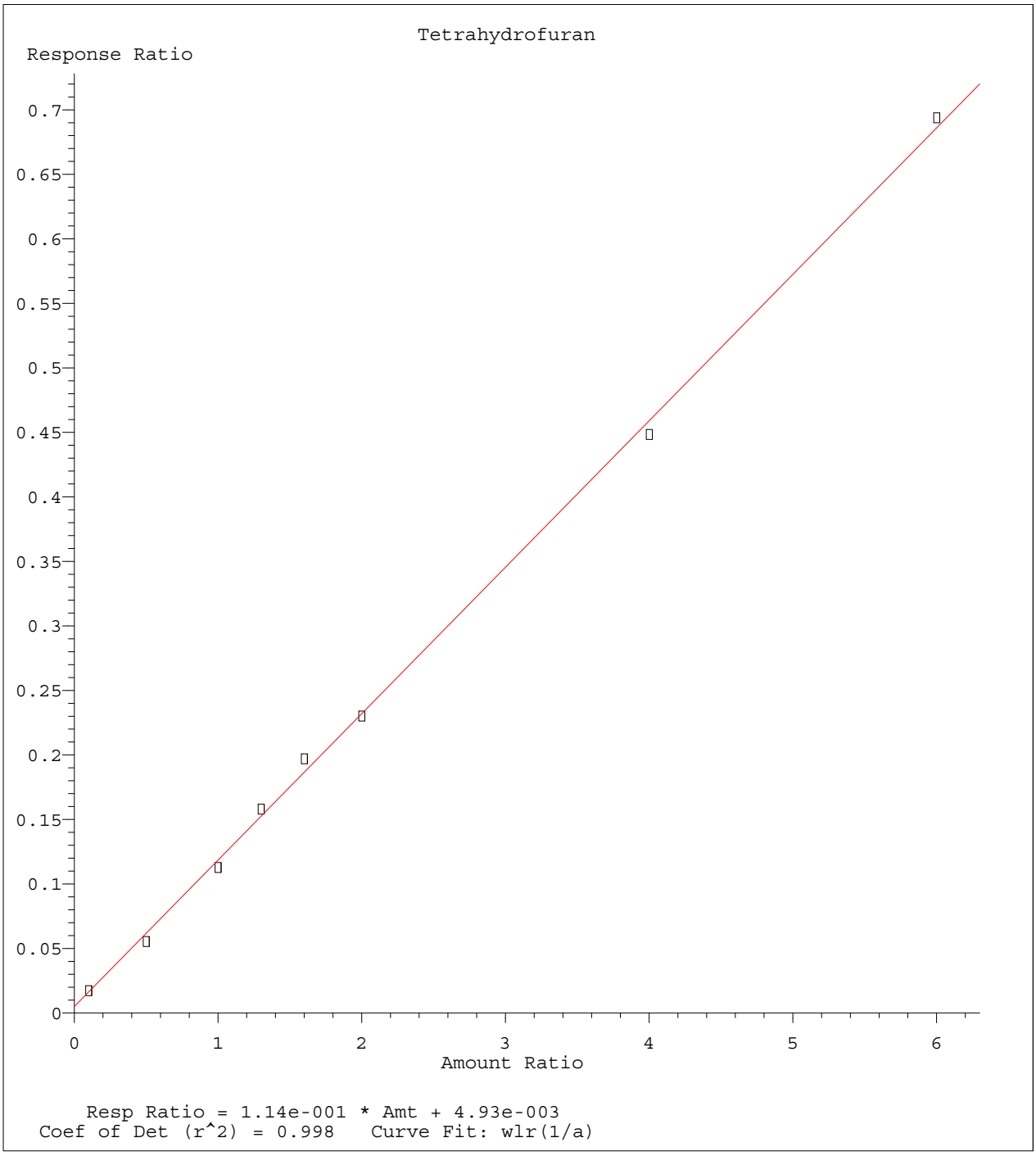

Method Name: C:\MSDCHEM\1\METHODS\826_SL.M
Calibration Table Last Updated: Mon Feb 29 08:51:12 2016

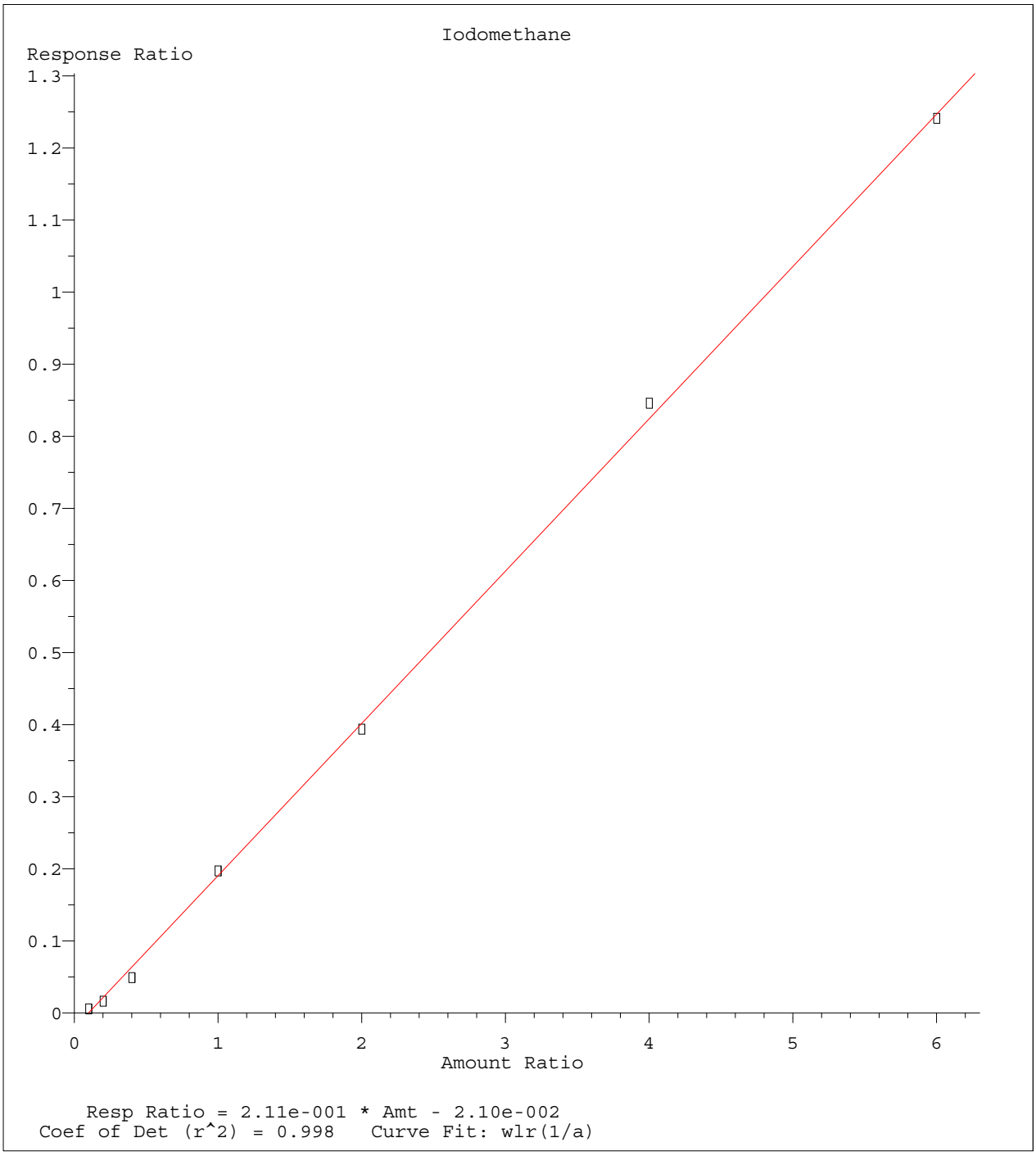

Method Name: C:\MSDCHEM\1\METHODS\826_SL.M
Calibration Table Last Updated: Mon Feb 29 08:51:12 2016

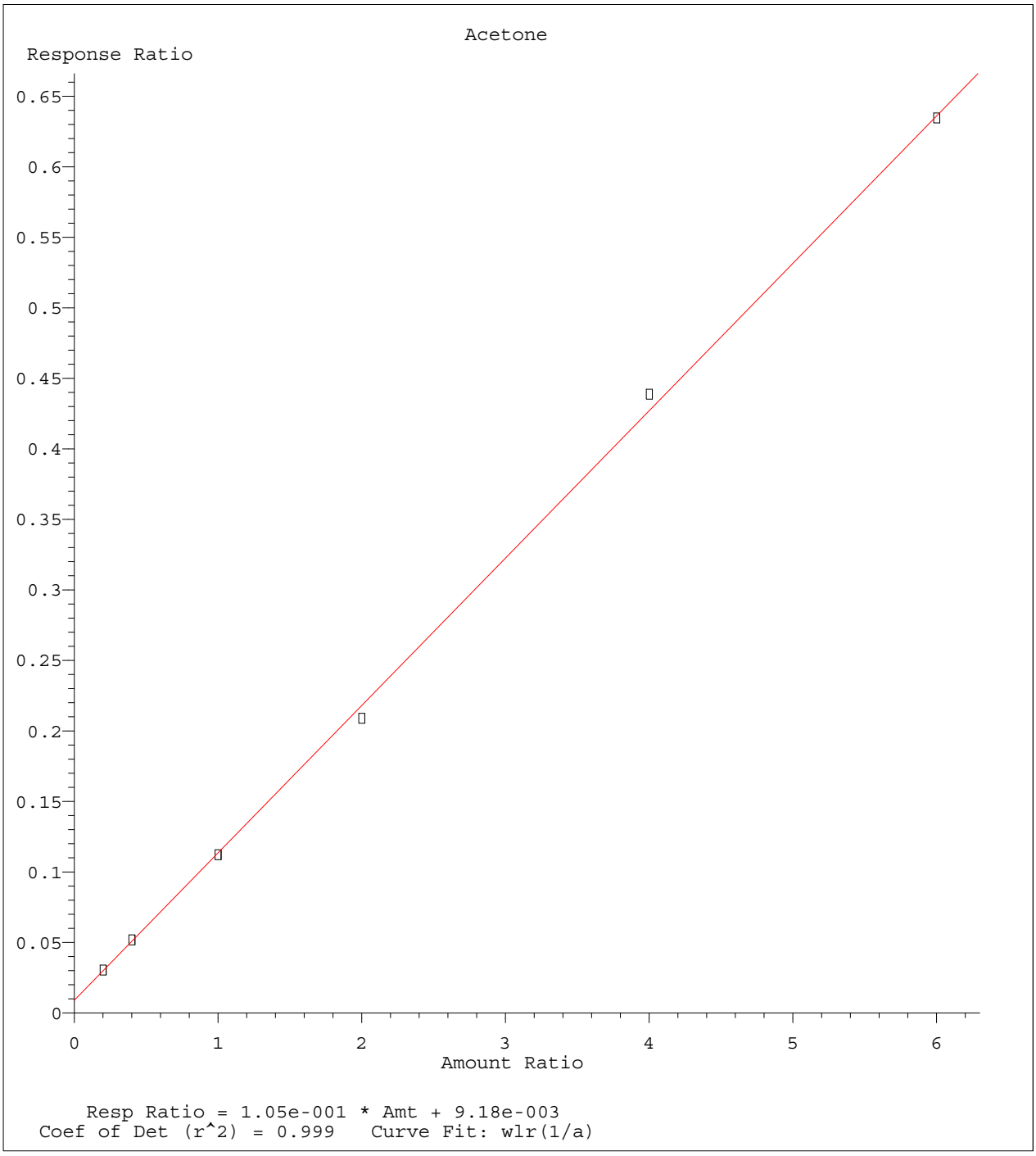

Method Name: C:\MSDCHEM\1\METHODS\826_SL.M
Calibration Table Last Updated: Mon Feb 29 08:51:12 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:44 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	697242	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	504277	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	281494	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.32	111	83790	22.4022 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 44.80%#		
43) 1,2-Dichloroethane-d4	11.05	65	107686	22.1747 ug/L	-0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 44.34%#		
58) Toluene-d8	13.80	98	259069	21.6082 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 43.22%#		
80) p-Bromofluorobenzene	17.79	95	108251	20.9365 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 41.88%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	355154	55.4626 ug/L	99
3) Chloromethane	3.88	50	339693	50.9064 ug/L	98
4) Vinyl Chloride	4.11	62	232790	43.3425 ug/L	98
5) 1,3-Butadiene	4.16	54	191696	42.8977 ug/L	93
6) Bromomethane	5.02	94	167650	58.5556 ug/L	99
7) Chloroethane	5.19	64	172370	56.5995 ug/L	98
8) Trichlorofluoromethane	5.68	101	345771	47.9110 ug/L	99
9) Diethyl ether	6.24	59	244439	73.6254 ug/L	93
10) Isoprene	6.27	67	268171	57.0391 ug/L	88
11) Acrolein	6.48	56	38698	61.3760 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	185858	53.9539 ug/L	94
13) Acetone	6.60	43	77335	48.6644 ug/L	96
14) 1,1-Dichloroethene	6.83	61	315114	51.6437 ug/L	92
15) Tert-Butyl Alcohol	6.95	59	120780	212.1401 ug/L	97
16) Dimethyl Sulfide	7.11	62	234426	79.1891 ug/L	96
17) Iodomethane	7.38	142	96886	37.8412 ug/L	92
18) Methyl acetate	7.39	43	223958	52.8169 ug/L	96
19) Methylene Chloride	7.67	84	196184	53.3878 ug/L	82
20) Carbon Disulfide	7.71	76	518243	44.3914 ug/L	99
21) Acrylonitrile	7.86	53	88595	50.8382 ug/L	99
22) Methyl Tert Butyl Ether	7.89	73	557115	53.0885 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	181115	53.7310 ug/L	84
24) n-Hexane	8.23	57	293885	48.0130 ug/L	99
25) Diisopropyl ether	8.61	45	1440779	90.7892 ug/L	96
26) Vinyl Acetate	8.80	43	309031	37.6715 ug/L	98
27) 1,1-Dichloroethane	8.83	63	365886	50.3469 ug/L	98
28) Ethyl-Tert-Butyl ether	9.25	59	1142199	89.7979 ug/L	96
29) 2-Butanone	9.46	43	118678	49.2421 ug/L	97
30) Propionitrile	9.58	54	62654	93.9303 ug/L	99
31) 2,2-Dichloropropane	9.69	77	309886	53.1233 ug/L	95
32) cis-1,2-Dichloroethene	9.77	96	203750	54.1434 ug/L	96
33) Chloroform	10.01	83	344145	50.7061 ug/L	96
34) 1-Bromopropane	10.15	122	45722	88.6198 ug/L	99
35) Bromochloromethane	10.26	130	115189	52.0956 ug/L	100
36) Tetrahydrofuran	10.29	42	140281	86.4486 ug/L	95
38) 1,1,1-Trichloroethane	10.60	97	311688	51.9918 ug/L	98
39) Cyclohexane	10.63	56	356880	52.4982 ug/L	88
40) 1,1-Dichloropropene	10.82	75	254739	52.7645 ug/L	97
41) Tert-Amyl-Methyl ether	10.95	73	1007162	99.8131 ug/L	93
42) Carbon Tetrachloride	10.99	117	286624	51.1689 ug/L	96

(#) = qualifier out of range (m) = manual integration
6M137535.D 826_SL.M Mon Feb 29 16:01:45 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:44 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	296979	51.2665 ug/L	98
46)	Benzene	11.23	78	732452	50.4293 ug/L	92
47)	Trichloroethene	12.09	130	187775	54.7248 ug/L	93
48)	Methylcyclohexane	12.18	83	293690	52.9463 ug/L	89
49)	1,2-Dichloropropane	12.33	63	215054	55.0291 ug/L	100
50)	1,4-Dioxane	12.67	88	9692	206.7214 ug/L	86
51)	Bromodichloromethane	12.68	83	264833	51.6400 ug/L	97
52)	Dibromomethane	12.78	93	115173	50.3870 ug/L	97
53)	2-Chloroethyl Vinyl Ether	13.04	63	118032	54.9113 ug/L	99
54)	4-Methyl-2-Pentanone	13.07	58	83435	51.2622 ug/L	92
55)	cis-1,3-Dichloropropene	13.43	75	332086	58.7723 ug/L	97
56)	Dimethyl Disulfide	13.72	79	160314	56.2546 ug/L	97
59)	Toluene	13.91	91	733544	51.4239 ug/L	99
60)	Ethyl Methacrylate	14.04	69	253929	55.5569 ug/L	99
62)	trans-1,3-Dichloropropene	14.12	75	289951	52.8608 ug/L	100
63)	1,1,2-Trichloroethane	14.38	97	158637	53.2065 ug/L	98
64)	2-Hexanone	14.31	43	174540	51.3021 ug/L	98
65)	1,3-Dichloropropane	14.73	76	296777	54.9182 ug/L	95
66)	Tetrachloroethene	14.87	166	179884	51.1197 ug/L	98
67)	Dibromochloromethane	15.17	129	201014	51.8393 ug/L	99
68)	1,2-Dibromoethane	15.48	107	163614	53.6583 ug/L	99
69)	1-Chlorohexane	15.59	91	237869	53.6977 ug/L	87
70)	Chlorobenzene	16.07	112	484642	52.8637 ug/L	70
71)	1,1,1,2-Tetrachloroethane	16.11	131	190856	51.8481 ug/L	98
72)	Ethylbenzene	16.10	106	257103	52.4064 ug/L	97
73)	m-,p-Xylene	16.22	106	631680	105.2305 ug/L	96
74)	o-Xylene	16.88	106	321591	56.8793 ug/L	96
75)	Styrene	16.92	104	532085	55.2923 ug/L	95
76)	Bromoform	17.49	173	134827	49.2451 ug/L	99
77)	Isopropylbenzene	17.38	105	829435	54.5730 ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.64	83	229283	52.1415 ug/L	96
81)	1,2,3-Trichloropropane	17.87	110	71564	53.1534 ug/L	99
82)	trans-1,4-Dichloro-2-Buten	17.93	53	68292	42.0681 ug/L	85
83)	n-Propylbenzene	17.98	91	1006100	52.6291 ug/L	98
84)	Bromobenzene	18.12	156	215387	51.8331 ug/L	99
85)	1,3,5-Trimethylbenzene	18.21	105	716527	52.6576 ug/L	95
86)	2-Chlorotoluene	18.30	91	664750	52.0974 ug/L	96
87)	4-Chlorotoluene	18.36	91	607350	52.0569 ug/L	97
88)	a-Methylstyrene	18.69	118	378204	57.2343 ug/L	98
89)	tert-Butylbenzene	18.76	134	150883	53.2071 ug/L	99
90)	1,2,4-Trimethylbenzene	18.82	105	731933	51.1473 ug/L	81
91)	sec-Butylbenzene	19.07	105	883157	50.6807 ug/L	100
92)	p-Isopropyltoluene	19.27	119	732050	50.9189 ug/L	99
93)	1,3-Dichlorobenzene	19.48	146	418127	52.0038 ug/L	96
94)	1,4-Dichlorobenzene	19.64	146	423834	51.7864 ug/L	98
95)	n-Butylbenzene	19.89	91	705101	48.7625 ug/L	98
96)	1,2-Dichlorobenzene	20.22	146	421505	54.4802 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	21.41	75	50722	52.1318 ug/L	89
98)	1,2,4-Trichlorobenzene	22.76	180	285471	51.0389 ug/L	97
99)	Hexachlorobutadiene	22.94	225	152283	47.6080 ug/L	99
100)	Naphthalene	23.20	128	640676	49.8263 ug/L	100
101)	1,2,3-Trichlorobenzene	23.59	180	280768	50.9788 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

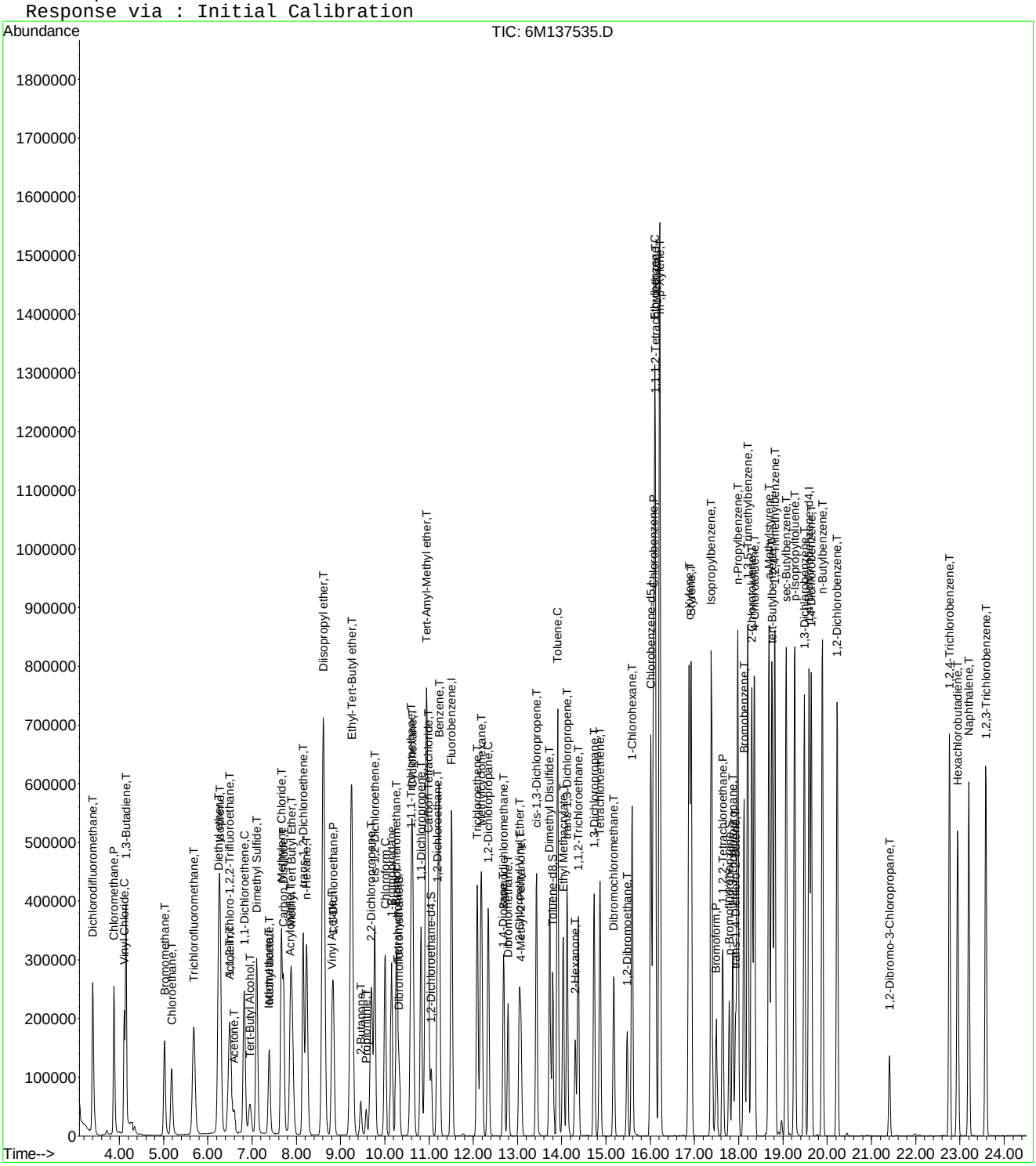

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	115	0.00
2	T	Dichlorodifluoromethane	50.0000	55.4626	-10.9	109	-0.01
3	P	Chloromethane	50.0000	50.9064	-1.8	111	0.00
4	C	Vinyl Chloride	50.0000	43.3425	13.3	89	0.00
5	T	1,3-Butadiene	50.0000	42.8977	14.2	92	-0.01
6	T	Bromomethane	50.0000	58.5556	-17.1	130	-0.01
7	T	Chloroethane	50.0000	56.5995	-13.2	116	0.00
8	T	Trichlorofluoromethane	50.0000	47.9111	4.2	102	-0.02
9	T	Diethyl ether	100.0000	73.6254	26.4#	86	0.00
10	T	Isoprene	50.0000	57.0391	-14.1	124	-0.01
11	T	Acrolein	50.0000	61.3760	-22.8	153	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	53.9539	-7.9	110	-0.01
13	T	Acetone	50.0000	48.6644	2.7	113	0.01
14	C	1,1-Dichloroethene	50.0000	51.6437	-3.3	107	0.00
15	T	Tert-Butyl Alcohol	200.0000	212.1401	-6.1	124	0.02
16	T	Dimethyl Sulfide	50.0000	79.1891	-58.4#	173	-0.01
17	T	Iodomethane	50.0000	37.8412	24.3	81	0.00
18	T	Methyl acetate	50.0000	52.8169	-5.6	120	0.00
19	T	Methylene Chloride	50.0000	53.3878	-6.8	112	0.00
20	T	Carbon Disulfide	50.0000	44.3914	11.2	98	-0.01
21	T	Acrylonitrile	50.0000	50.8382	-1.7	112	0.00
22	T	Methyl Tert Butyl Ether	50.0000	53.0885	-6.2	110	0.00
23	T	trans-1,2-Dichloroethene	50.0000	53.7311	-7.5	112	0.00
24	T	n-Hexane	50.0000	48.0130	4.0	104	-0.01
25	T	Diisopropyl ether	100.0000	90.7892	9.2	106	0.00
26	T	Vinyl Acetate	50.0000	37.6715	24.7	85	0.00
27	P	1,1-Dichloroethane	50.0000	50.3469	-0.7	106	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	89.7979	10.2	103	0.01
29	T	2-Butanone	50.0000	49.2421	1.5	115	0.00
30	T	Propionitrile	100.0000	93.9303	6.1	108	0.00
31	T	2,2-Dichloropropane	50.0000	53.1233	-6.2	112	0.00
32	T	cis-1,2-Dichloroethene	50.0000	54.1434	-8.3	116	0.00
33	C	Chloroform	50.0000	50.7061	-1.4	109	0.00
34		1-Bromopropane	50.0000	88.6198	-77.2#	186	-0.01
35	T	Bromochloromethane	50.0000	52.0956	-4.2	108	0.00
36	T	Tetrahydrofuran	100.0000	86.4486	13.6	100	0.00
37	S	Dibromofluoromethane	25.0000	22.4022	10.4	101	0.00
38	T	1,1,1-Trichloroethane	50.0000	51.9918	-4.0	108	0.00
39	T	Cyclohexane	50.0000	52.4982	-5.0	110	-0.01
40	T	1,1-Dichloropropene	50.0000	52.7645	-5.5	109	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	99.8131	0.2	115	0.00
42	T	Carbon Tetrachloride	50.0000	51.1689	-2.3	106	0.00
43	S	1,2-Dichloroethane-d4	25.0000	22.1747	11.3	100	-0.01
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	50.0000	51.2666	-2.5	109	0.00
46	T	Benzene	50.0000	50.4293	-0.9	112	0.00
47	T	Trichloroethene	50.0000	54.7248	-9.4	115	0.00
48	T	Methylcyclohexane	50.0000	52.9463	-5.9	111	0.00
49	C	1,2-Dichloropropane	50.0000	55.0291	-10.1	116	0.00
50	T	1,4-Dioxane	200.0000	206.7214	-3.4	130	0.00
51	T	Bromodichloromethane	50.0000	51.6400	-3.3	109	0.00
52	T	Dibromomethane	50.0000	50.3870	-0.8	103	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	54.9113	-9.8	118	0.00
54	T	4-Methyl-2-Pentanone	50.0000	51.2622	-2.5	117	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	58.7723	-17.5	120	0.00
56	T	Dimethyl Disulfide	50.0000	56.2546	-12.5	117	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	115	0.00
58	S	Toluene-d8	25.0000	21.6082	13.6	97	0.00
59	C	Toluene	50.0000	51.4239	-2.8	111	0.00
60	T	Ethyl Methacrylate	50.0000	55.5569	-11.1	115	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	50.0000	52.8608	-5.7	109	0.00
63	T	1,1,2-Trichloroethane	50.0000	53.2065	-6.4	113	0.00
64	T	2-Hexanone	50.0000	51.3021	-2.6	116	0.00
65	T	1,3-Dichloropropane	50.0000	54.9182	-9.8	116	0.00
66	T	Tetrachloroethene	50.0000	51.1197	-2.2	109	0.00
67	T	Dibromochloromethane	50.0000	51.8393	-3.7	107	0.00
68	T	1,2-Dibromoethane	50.0000	53.6583	-7.3	112	0.00
69	T	1-Chlorohexane	50.0000	53.6977	-7.4	112	0.00
70	P	Chlorobenzene	50.0000	52.8637	-5.7	115	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	51.8481	-3.7	110	0.00
72	C	Ethylbenzene	50.0000	52.4064	-4.8	110	0.00
73	T	m-,p-Xylene	100.0000	105.2305	-5.2	113	0.00
74	T	o-Xylene	50.0000	56.8792	-13.8	115	0.00
75	T	Styrene	50.0000	55.2923	-10.6	113	0.00
76	P	Bromoform	50.0000	49.2451	1.5	103	0.00
77	T	Isopropylbenzene	50.0000	54.5730	-9.1	112	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	118	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	52.1415	-4.3	115	0.00
80	S	p-Bromofluorobenzene	25.0000	20.9365	16.3	97	0.00
81	T	1,2,3-Trichloropropane	50.0000	53.1534	-6.3	117	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	42.0681	15.9	93	0.00
83	T	n-Propylbenzene	50.0000	52.6291	-5.3	111	0.00
84	T	Bromobenzene	50.0000	51.8331	-3.7	112	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	52.6576	-5.3	112	0.00
86	T	2-Chlorotoluene	50.0000	52.0974	-4.2	115	0.00
87	T	4-Chlorotoluene	50.0000	52.0569	-4.1	114	0.00
88	T	a-Methylstyrene	50.0000	57.2343	-14.5	123	0.00
89	T	tert-Butylbenzene	50.0000	53.2071	-6.4	112	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	51.1473	-2.3	110	0.00
91	T	sec-Butylbenzene	50.0000	50.6807	-1.4	107	0.00
92	T	p-Isopropyltoluene	50.0000	50.9189	-1.8	107	0.00
93	T	1,3-Dichlorobenzene	50.0000	52.0038	-4.0	114	0.00
94	T	1,4-Dichlorobenzene	50.0000	51.7864	-3.6	117	0.00
95	T	n-Butylbenzene	50.0000	48.7625	2.5	104	0.00
96	T	1,2-Dichlorobenzene	50.0000	54.4802	-9.0	120	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	52.1318	-4.3	117	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	51.0389	-2.1	109	0.00
99	T	Hexachlorobutadiene	50.0000	47.6080	4.8	101	-0.01
100	T	Naphthalene	50.0000	49.8263	0.3	104	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	50.9788	-2.0	108	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137535.D 826_SL.M Mon Feb 29 16:03:13 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032316\6M137965.D Vial: 3
Acq On : 23 Mar 2016 12:47 Operator: TMB
Sample : WG562074-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 13:12:21 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	604908	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	444556	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	238804	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	155374	47.8818 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.76%		
43) 1,2-Dichloroethane-d4	11.06	65	187452	44.4921 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 88.98%		
58) Toluene-d8	13.80	98	531186	50.2564 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 100.52%		
80) p-Bromofluorobenzene	17.79	95	226957	51.7419 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 103.48%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	264728	47.6516 ug/L	98
3) Chloromethane	3.88	50	223801	38.6582 ug/L	98
4) Vinyl Chloride	4.12	62	213539	45.8270 ug/L	97
5) 1,3-Butadiene	4.17	54	149974	38.6840 ug/L	94
6) Bromomethane	5.03	94	129774	52.2453 ug/L	99
7) Chloroethane	5.20	64	135902	51.4365 ug/L	100
8) Trichlorofluoromethane	5.70	101	302350	48.2893 ug/L	99
9) Diethyl ether	6.24	59	297388	103.2463 ug/L	95
10) Isoprene	6.28	67	224828	55.1195 ug/L	92
11) Acrolein	6.48	56	32711	59.7996 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	161466	54.0278 ug/L	96
13) Acetone	6.60	43	76723	56.2790 ug/L	97
14) 1,1-Dichloroethene	6.84	61	271533	51.2940 ug/L	94
15) Tert-Butyl Alcohol	6.94	59	122688	248.3842 ug/L	97
16) Dimethyl Sulfide	7.12	62	138871	54.0711 ug/L	99
17) Iodomethane	7.38	142	129251	55.5182 ug/L	97
18) Methyl acetate	7.39	43	211719	57.5520 ug/L	97
19) Methylene Chloride	7.67	84	161480	50.6514 ug/L	86
20) Carbon Disulfide	7.72	76	537374	53.0562 ug/L	98
21) Acrylonitrile	7.87	53	86624	57.2945 ug/L	98
22) Methyl Tert Butyl Ether	7.89	73	501919	55.1294 ug/L	93
23) trans-1,2-Dichloroethene	8.16	96	154240	52.7427 ug/L	90
24) n-Hexane	8.24	57	295089	55.5685 ug/L	98
25) Diisopropyl ether	8.61	45	1324423	96.1961 ug/L	95
26) Vinyl Acetate	8.80	43	381473	53.6005 ug/L	99
27) 1,1-Dichloroethane	8.84	63	318133	50.4580 ug/L	98
28) Ethyl-Tert-Butyl ether	9.25	59	1137230	103.0545 ug/L	97
29) 2-Butanone	9.46	43	114514	54.7671 ug/L	98
30) Propionitrile	9.58	54	66145	114.3005 ug/L	98
31) 2,2-Dichloropropane	9.69	77	264942	52.3514 ug/L	92
32) cis-1,2-Dichloroethene	9.77	96	171887	52.6484 ug/L	93
33) Chloroform	10.01	83	289995	49.2497 ug/L	98
34) 1-Bromopropane	10.16	122	29541	65.9971 ug/L	96
35) Bromochloromethane	10.27	130	102654	53.5131 ug/L	99
36) Tetrahydrofuran	10.29	42	158553	113.2808 ug/L	98
38) 1,1,1-Trichloroethane	10.60	97	264018	50.7625 ug/L	98
39) Cyclohexane	10.64	56	335587	56.9013 ug/L	88
40) 1,1-Dichloropropene	10.82	75	221339	52.8443 ug/L	97
41) Tert-Amyl-Methyl ether	10.95	73	937278	107.0658 ug/L	94
42) Carbon Tetrachloride	10.99	117	246653	50.7545 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M137965.D 826_SL.M Wed Mar 23 13:12:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032316\6M137965.D Vial: 3
Acq On : 23 Mar 2016 12:47 Operator: TMB
Sample : WG562074-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 13:12:21 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	245138	48.7768	ug/L	99
46)	Benzene	11.23	78	625201	49.6156	ug/L	93
47)	Trichloroethene	12.09	130	158447	53.2261	ug/L	98
48)	Methylcyclohexane	12.18	83	281797	58.5567	ug/L	90
49)	1,2-Dichloropropane	12.34	63	177972	52.4917	ug/L	98
50)	1,4-Dioxane	12.68	88	8976	218.5934	ug/L	87
51)	Bromodichloromethane	12.68	83	226703	50.9525	ug/L	96
52)	Dibromomethane	12.79	93	102748	51.8126	ug/L	99
53)	2-Chloroethyl Vinyl Ether	13.04	63	109067	58.4857	ug/L	99
54)	4-Methyl-2-Pentanone	13.07	58	83870	59.3950	ug/L	95
55)	cis-1,3-Dichloropropene	13.43	75	265529	54.1662	ug/L	98
56)	Dimethyl Disulfide	13.72	79	144370	58.3926	ug/L	97
59)	Toluene	13.91	91	644211	51.2282	ug/L	99
60)	Ethyl Methacrylate	14.04	69	242866	60.2747	ug/L	98
62)	trans-1,3-Dichloropropene	14.12	75	256369	53.0173	ug/L	100
63)	1,1,2-Trichloroethane	14.38	97	138333	52.6295	ug/L	99
64)	2-Hexanone	14.31	43	169409	56.4832	ug/L	96
65)	1,3-Dichloropropane	14.74	76	247046	51.8569	ug/L	99
66)	Tetrachloroethene	14.87	166	167778	54.0846	ug/L	97
67)	Dibromochloromethane	15.17	129	178502	52.2178	ug/L	99
68)	1,2-Dibromoethane	15.48	107	146067	54.3390	ug/L	98
69)	1-Chlorohexane	15.59	91	230162	58.9379	ug/L	90
70)	Chlorobenzene	16.07	112	415312	51.3870	ug/L	72
71)	1,1,1,2-Tetrachloroethane	16.11	131	165013	50.8497	ug/L	98
72)	Ethylbenzene	16.10	106	231239	53.4664	ug/L	100
73)	m-,p-Xylene	16.22	106	556389	105.1395	ug/L	97
74)	o-Xylene	16.88	106	275903	55.3540	ug/L	97
75)	Styrene	16.92	104	469288	55.3179	ug/L	97
76)	Bromoform	17.49	173	126342	52.3451	ug/L	99
77)	Isopropylbenzene	17.38	105	730839	54.5456	ug/L	99
79)	1,1,2,2-Tetrachloroethane	17.65	83	207652	55.6641	ug/L	95
81)	1,2,3-Trichloropropane	17.87	110	64069	56.0935	ug/L	98
82)	trans-1,4-Dichloro-2-Buten	17.93	53	78029	56.6588	ug/L	98
83)	n-Propylbenzene	17.98	91	882270	54.4019	ug/L	99
84)	Bromobenzene	18.13	156	188552	53.4868	ug/L	99
85)	1,3,5-Trimethylbenzene	18.21	105	636299	55.1211	ug/L	97
86)	2-Chlorotoluene	18.30	91	570720	52.7240	ug/L	96
87)	4-Chlorotoluene	18.36	91	525422	53.0854	ug/L	97
88)	a-Methylstyrene	18.69	118	331132	59.0689	ug/L	98
89)	tert-Butylbenzene	18.76	134	131427	54.6313	ug/L	86
90)	1,2,4-Trimethylbenzene	18.82	105	659733	54.3435	ug/L	82
91)	sec-Butylbenzene	19.08	105	811614	54.9011	ug/L	99
92)	p-Isopropyltoluene	19.27	119	684922	56.1574	ug/L	99
93)	1,3-Dichlorobenzene	19.48	146	362995	53.2175	ug/L	97
94)	1,4-Dichlorobenzene	19.64	146	362568	52.2200	ug/L	98
95)	n-Butylbenzene	19.89	91	665585	54.2582	ug/L	99
96)	1,2-Dichlorobenzene	20.23	146	346877	52.8492	ug/L	97
97)	1,2-Dibromo-3-Chloropropan	21.41	75	47504	57.5525	ug/L	90
98)	1,2,4-Trichlorobenzene	22.76	180	263930	55.6232	ug/L	98
99)	Hexachlorobutadiene	22.96	225	148742	54.8138	ug/L	100
100)	Naphthalene	23.20	128	658289	60.3482	ug/L	100
101)	1,2,3-Trichlorobenzene	23.59	180	256338	54.8634	ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032316\6M137965.D Vial: 3
Acq On : 23 Mar 2016 12:47 Operator: TMB
Sample : WG562074-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 13:12 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

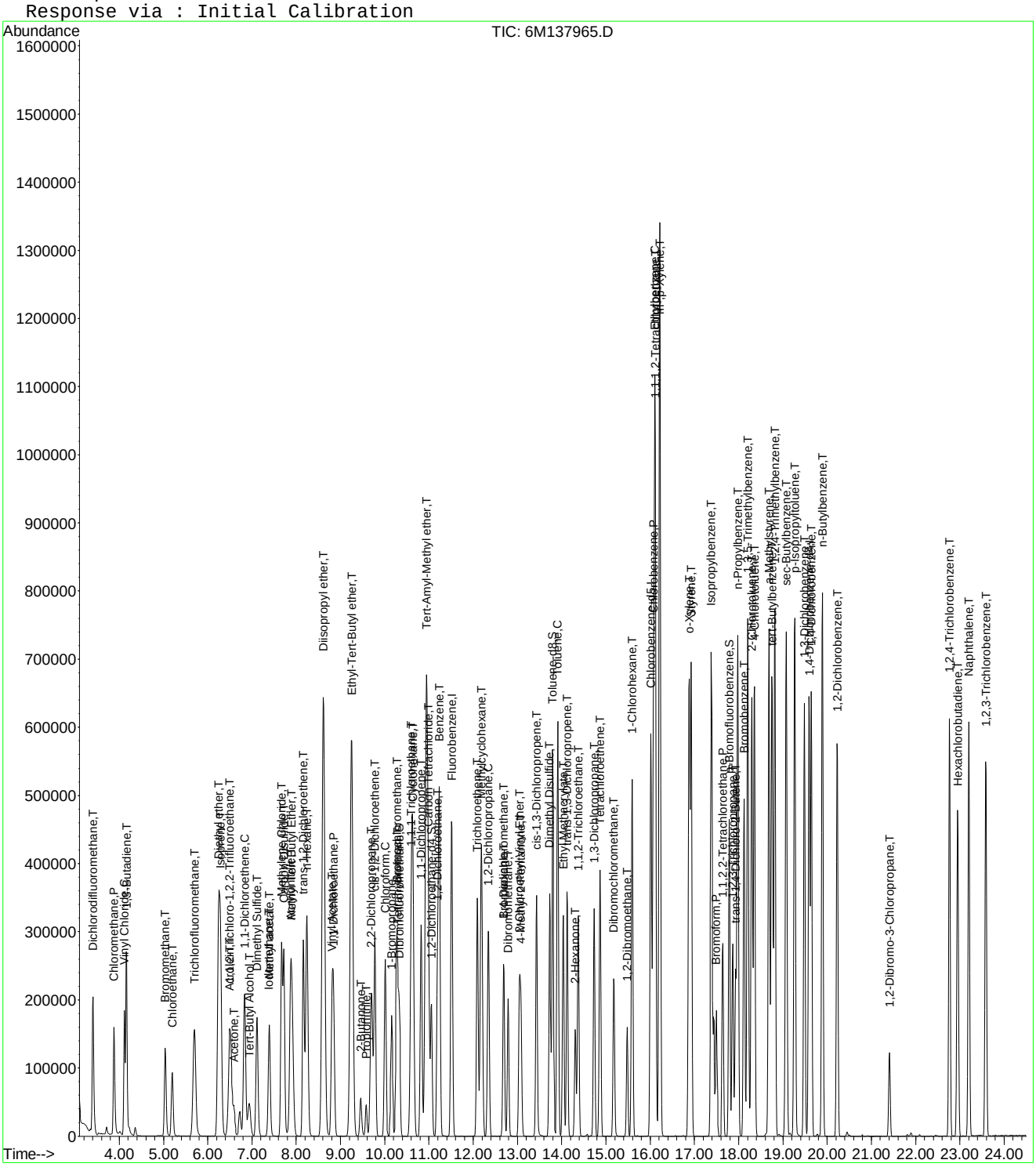

6M137965.D 826_SL.M Wed Mar 23 13:12:22 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\032316\6M137965.D Vial: 3
Acq On : 23 Mar 2016 12:47 Operator: TMB
Sample : WG562074-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	0.4592	0.4376	4.7	81	0.00
3	P	Chloromethane	0.4785	0.3700	22.7	73	0.00
4	C	Vinyl Chloride	0.3852	0.3530	8.3	82	0.00
5	T	1,3-Butadiene	0.3205	0.2479	22.6	72	0.00
6	T	Bromomethane	0.2053	0.2145	-4.5	100	0.00
7	T	Chloroethane	0.2184	0.2247	-2.9	92	0.00
8	T	Trichlorofluoromethane	0.5175	0.4998	3.4	89	0.00
9	T	Diethyl ether	0.2381	0.2458	-3.2	105	0.00
10	T	Isoprene	0.3372	0.3717	-10.2	104	0.00
11	T	Acrolein	0.0452	0.0541	-19.6	129	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2470	0.2669	-8.1	96	-0.01
13	T	Acetone	0.1189	0.1268	-6.6	113	0.01
14	C	1,1-Dichloroethene	0.4376	0.4489	-2.6	92	0.00
15	T	Tert-Butyl Alcohol	0.0408	0.0507	-24.2	126	0.01
16	T	Dimethyl Sulfide	0.2123	0.2296	-8.1	102	0.00
17	T	Iodomethane	0.1531	0.2137	-39.5#	108	0.00
18	T	Methyl acetate	0.3041	0.3500	-15.1	113	0.00
19	T	Methylene Chloride	0.2635	0.2670	-1.3	93	0.00
20	T	Carbon Disulfide	0.8372	0.8884	-6.1	101	0.00
21	T	Acrylonitrile	0.1250	0.1432	-14.6	110	0.01
22	T	Methyl Tert Butyl Ether	0.7525	0.8297	-10.3	99	0.00
23	T	trans-1,2-Dichloroethene	0.2417	0.2550	-5.5	96	0.00
24	T	n-Hexane	0.4389	0.4878	-11.1	104	0.00
25	T	Diisopropyl ether	1.1380	1.0947	3.8	98	0.00
26	T	Vinyl Acetate	0.5883	0.6306	-7.2	105	0.00
27	P	1,1-Dichloroethane	0.5212	0.5259	-0.9	92	0.00
28	T	Ethyl-Tert-Butyl ether	0.9121	0.9400	-3.1	103	0.01
29	T	2-Butanone	0.1728	0.1893	-9.5	111	0.01
30	T	Propionitrile	0.0478	0.0547	-14.3	114	0.00
31	T	2,2-Dichloropropane	0.4183	0.4380	-4.7	96	0.00
32	T	cis-1,2-Dichloroethene	0.2699	0.2842	-5.3	97	0.00
33	C	Chloroform	0.4867	0.4794	1.5	92	0.00
34		1-Bromopropane	0.0370	0.0488	-32.0#	120	0.00
35	T	Bromochloromethane	0.1586	0.1697	-7.0	96	0.01
36	T	Tetrahydrofuran	0.1230	0.1311	-6.6	113	0.00
37	S	Dibromofluoromethane	0.2682	0.5137	-91.5#	188#	0.01
38	T	1,1,1-Trichloroethane	0.4299	0.4365	-1.5	92	0.00
39	T	Cyclohexane	0.4875	0.5548	-13.8	104	0.00
40	T	1,1-Dichloropropene	0.3462	0.3659	-5.7	95	0.00
41	T	Tert-Amyl-Methyl ether	0.7236	0.7747	-7.1	107	0.01
42	T	Carbon Tetrachloride	0.4017	0.4078	-1.5	91	0.00
43	S	1,2-Dichloroethane-d4	0.3483	0.6198	-78.0#	175#	0.00
44		Heptane	0.0000	0.0000	0.0	0#	0.00
45	T	1,2-Dichloroethane	0.4154	0.4053	2.4	90	0.00
46	T	Benzene	1.0416	1.0336	0.8	95	0.00
47	T	Trichloroethene	0.2461	0.2619	-6.5	97	0.00
48	T	Methylcyclohexane	0.3978	0.4658	-17.1	107	0.00
49	C	1,2-Dichloropropane	0.2803	0.2942	-5.0	96	0.00
50	T	1,4-Dioxane	0.0031	0.0037	-19.7	120	0.00
51	T	Bromodichloromethane	0.3678	0.3748	-1.9	93	0.00
52	T	Dibromomethane	0.1639	0.1699	-3.6	92	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1541	0.1803	-17.0	109	0.00
54	T	4-Methyl-2-Pentanone	0.1167	0.1387	-18.8	118	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\032316\6M137965.D Vial: 3
Acq On : 23 Mar 2016 12:47 Operator: TMB
Sample : WG562074-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4052	0.4390	-8.3	96	0.00
56	T	Dimethyl Disulfide	0.2044	0.2387	-16.8	105	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	101	0.00
58	S	Toluene-d8	1.1888	2.3897	-101.0#	200#	0.00
59	C	Toluene	1.4144	1.4491	-2.5	97	0.00
60	T	Ethyl Methacrylate	0.4532	0.5463	-20.6	110	0.01
61		Paraldehyde	0.0000	0.0000	0.0	0#	-15.13#
62	T	trans-1,3-Dichloropropene	0.5439	0.5767	-6.0	97	0.00
63	T	1,1,2-Trichloroethane	0.2956	0.3112	-5.3	98	0.00
64	T	2-Hexanone	0.3373	0.3811	-13.0	113	0.00
65	T	1,3-Dichloropropane	0.5358	0.5557	-3.7	97	0.00
66	T	Tetrachloroethene	0.3489	0.3774	-8.2	101	0.00
67	T	Dibromochloromethane	0.3845	0.4015	-4.4	95	0.00
68	T	1,2-Dibromoethane	0.3023	0.3286	-8.7	100	0.00
69	T	1-Chlorohexane	0.4392	0.5177	-17.9	108	0.00
70	P	Chlorobenzene	0.9090	0.9342	-2.8	98	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3650	0.3712	-1.7	95	0.00
72	C	Ethylbenzene	0.4864	0.5202	-6.9	99	0.00
73	T	m-,p-Xylene	0.5952	0.6258	-5.1	99	0.00
74	T	o-Xylene	0.5606	0.6206	-10.7	99	0.00
75	T	Styrene	0.9542	1.0556	-10.6	100	0.00
76	P	Bromoform	0.2715	0.2842	-4.7	96	0.00
77	T	Isopropylbenzene	1.5070	1.6440	-9.1	99	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	101	0.00
79	P	1,1,2,2-Tetrachloroethane	0.7811	0.8696	-11.3	104	0.00
80	S	p-Bromofluorobenzene	0.9184	1.9008	-107.0#	203#	0.00
81	T	1,2,3-Trichloropropane	0.2392	0.2683	-12.2	105	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.2884	0.3267	-13.3	107	0.00
83	T	n-Propylbenzene	3.3956	3.6945	-8.8	98	0.00
84	T	Bromobenzene	0.7381	0.7896	-7.0	98	0.00
85	T	1,3,5-Trimethylbenzene	2.4170	2.6645	-10.2	99	0.00
86	T	2-Chlorotoluene	2.2664	2.3899	-5.4	99	0.00
87	T	4-Chlorotoluene	2.0723	2.2002	-6.2	99	0.01
88	T	a-Methylstyrene	1.1737	1.3866	-18.1	108	0.00
89	T	tert-Butylbenzene	0.5037	0.5504	-9.3	98	0.00
90	T	1,2,4-Trimethylbenzene	2.5419	2.7626	-8.7	99	0.00
91	T	sec-Butylbenzene	3.0953	3.3987	-9.8	98	0.00
92	T	p-Isopropyltoluene	2.5537	2.8681	-12.3	100	0.01
93	T	1,3-Dichlorobenzene	1.4282	1.5200	-6.4	99	0.00
94	T	1,4-Dichlorobenzene	1.4537	1.5183	-4.4	100	0.00
95	T	n-Butylbenzene	2.5684	2.7872	-8.5	98	0.00
96	T	1,2-Dichlorobenzene	1.3743	1.4526	-5.7	99	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1728	0.1989	-15.1	109	0.00
98	T	1,2,4-Trichlorobenzene	0.9935	1.1052	-11.2	101	0.00
99	T	Hexachlorobutadiene	0.5682	0.6229	-9.6	99	0.00
100	T	Naphthalene	2.2839	2.7566	-20.7	107	0.00
101	T	1,2,3-Trichlorobenzene	0.9783	1.0734	-9.7	99	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137965.D 826_SL.M Wed Mar 23 13:13:07 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\032316\6M137965.D Vial: 3
Acq On : 23 Mar 2016 12:47 Operator: TMB
Sample : WG562074-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	50.0000	47.6516	4.7	81	0.00
3	P	Chloromethane	50.0000	38.6582	22.7	73	0.00
4	C	Vinyl Chloride	50.0000	45.8269	8.3	82	0.00
5	T	1,3-Butadiene	50.0000	38.6840	22.6	72	0.00
6	T	Bromomethane	50.0000	52.2452	-4.5	100	0.00
7	T	Chloroethane	50.0000	51.4365	-2.9	92	0.00
8	T	Trichlorofluoromethane	50.0000	48.2893	3.4	89	0.00
9	T	Diethyl ether	100.0000	103.2463	-3.2	105	0.00
10	T	Isoprene	50.0000	55.1195	-10.2	104	0.00
11	T	Acrolein	50.0000	59.7996	-19.6	129	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	54.0278	-8.1	96	-0.01
13	T	Acetone	50.0000	56.2790	-12.6	113	0.01
14	C	1,1-Dichloroethene	50.0000	51.2940	-2.6	92	0.00
15	T	Tert-Butyl Alcohol	200.0000	248.3842	-24.2	126	0.01
16	T	Dimethyl Sulfide	50.0000	54.0711	-8.1	102	0.00
17	T	Iodomethane	50.0000	55.5182	-11.0	108	0.00
18	T	Methyl acetate	50.0000	57.5520	-15.1	113	0.00
19	T	Methylene Chloride	50.0000	50.6514	-1.3	93	0.00
20	T	Carbon Disulfide	50.0000	53.0562	-6.1	101	0.00
21	T	Acrylonitrile	50.0000	57.2946	-14.6	110	0.01
22	T	Methyl Tert Butyl Ether	50.0000	55.1294	-10.3	99	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.7427	-5.5	96	0.00
24	T	n-Hexane	50.0000	55.5685	-11.1	104	0.00
25	T	Diisopropyl ether	100.0000	96.1961	3.8	98	0.00
26	T	Vinyl Acetate	50.0000	53.6005	-7.2	105	0.00
27	P	1,1-Dichloroethane	50.0000	50.4580	-0.9	92	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	103.0545	-3.1	103	0.01
29	T	2-Butanone	50.0000	54.7671	-9.5	111	0.01
30	T	Propionitrile	100.0000	114.3005	-14.3	114	0.00
31	T	2,2-Dichloropropane	50.0000	52.3514	-4.7	96	0.00
32	T	cis-1,2-Dichloroethene	50.0000	52.6484	-5.3	97	0.00
33	C	Chloroform	50.0000	49.2497	1.5	92	0.00
34		1-Bromopropane	50.0000	65.9971	-32.0#	120	0.00
35	T	Bromochloromethane	50.0000	53.5131	-7.0	96	0.01
36	T	Tetrahydrofuran	100.0000	113.2808	-13.3	113	0.00
37	S	Dibromofluoromethane	25.0000	47.8819	-91.5#	188	0.01
38	T	1,1,1-Trichloroethane	50.0000	50.7625	-1.5	92	0.00
39	T	Cyclohexane	50.0000	56.9013	-13.8	104	0.00
40	T	1,1-Dichloropropene	50.0000	52.8443	-5.7	95	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	107.0658	-7.1	107	0.01
42	T	Carbon Tetrachloride	50.0000	50.7545	-1.5	91	0.00
43	S	1,2-Dichloroethane-d4	25.0000	44.4921	-78.0#	175	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	50.0000	48.7768	2.4	90	0.00
46	T	Benzene	50.0000	49.6156	0.8	95	0.00
47	T	Trichloroethene	50.0000	53.2261	-6.5	97	0.00
48	T	Methylcyclohexane	50.0000	58.5567	-17.1	107	0.00
49	C	1,2-Dichloropropane	50.0000	52.4917	-5.0	96	0.00
50	T	1,4-Dioxane	200.0000	218.5934	-9.3	120	0.00
51	T	Bromodichloromethane	50.0000	50.9525	-1.9	93	0.00
52	T	Dibromomethane	50.0000	51.8126	-3.6	92	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	58.4857	-17.0	109	0.00
54	T	4-Methyl-2-Pentanone	50.0000	59.3950	-18.8	118	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\032316\6M137965.D Vial: 3
Acq On : 23 Mar 2016 12:47 Operator: TMB
Sample : WG562074-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	54.1662	-8.3	96	0.00
56	T	Dimethyl Disulfide	50.0000	58.3926	-16.8	105	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	101	0.00
58	S	Toluene-d8	25.0000	50.2564	-101.0#	200	0.00
59	C	Toluene	50.0000	51.2282	-2.5	97	0.00
60	T	Ethyl Methacrylate	50.0000	60.2747	-20.5	110	0.01
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	50.0000	53.0173	-6.0	97	0.00
63	T	1,1,2-Trichloroethane	50.0000	52.6295	-5.3	98	0.00
64	T	2-Hexanone	50.0000	56.4832	-13.0	113	0.00
65	T	1,3-Dichloropropane	50.0000	51.8569	-3.7	97	0.00
66	T	Tetrachloroethene	50.0000	54.0846	-8.2	101	0.00
67	T	Dibromochloromethane	50.0000	52.2178	-4.4	95	0.00
68	T	1,2-Dibromoethane	50.0000	54.3390	-8.7	100	0.00
69	T	1-Chlorohexane	50.0000	58.9379	-17.9	108	0.00
70	P	Chlorobenzene	50.0000	51.3870	-2.8	98	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	50.8497	-1.7	95	0.00
72	C	Ethylbenzene	50.0000	53.4664	-6.9	99	0.00
73	T	m-,p-Xylene	100.0000	105.1395	-5.1	99	0.00
74	T	o-Xylene	50.0000	55.3540	-10.7	99	0.00
75	T	Styrene	50.0000	55.3179	-10.6	100	0.00
76	P	Bromoform	50.0000	52.3451	-4.7	96	0.00
77	T	Isopropylbenzene	50.0000	54.5456	-9.1	99	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	101	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	55.6641	-11.3	104	0.00
80	S	p-Bromofluorobenzene	25.0000	51.7419	-107.0#	203	0.00
81	T	1,2,3-Trichloropropane	50.0000	56.0935	-12.2	105	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	56.6588	-13.3	107	0.00
83	T	n-Propylbenzene	50.0000	54.4019	-8.8	98	0.00
84	T	Bromobenzene	50.0000	53.4868	-7.0	98	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	55.1211	-10.2	99	0.00
86	T	2-Chlorotoluene	50.0000	52.7240	-5.4	99	0.00
87	T	4-Chlorotoluene	50.0000	53.0854	-6.2	99	0.01
88	T	a-Methylstyrene	50.0000	59.0689	-18.1	108	0.00
89	T	tert-Butylbenzene	50.0000	54.6313	-9.3	98	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	54.3435	-8.7	99	0.00
91	T	sec-Butylbenzene	50.0000	54.9012	-9.8	98	0.00
92	T	p-Isopropyltoluene	50.0000	56.1574	-12.3	100	0.01
93	T	1,3-Dichlorobenzene	50.0000	53.2175	-6.4	99	0.00
94	T	1,4-Dichlorobenzene	50.0000	52.2200	-4.4	100	0.00
95	T	n-Butylbenzene	50.0000	54.2582	-8.5	98	0.00
96	T	1,2-Dichlorobenzene	50.0000	52.8492	-5.7	99	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	57.5525	-15.1	109	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	55.6232	-11.2	101	0.00
99	T	Hexachlorobutadiene	50.0000	54.8138	-9.6	99	0.00
100	T	Naphthalene	50.0000	60.3482	-20.7	107	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	54.8634	-9.7	99	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137965.D 826_SL.M Wed Mar 23 13:13:08 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032416\6M137989.D Vial: 2
Acq On : 24 Mar 2016 11:38 Operator: TMB
Sample : WG562235-02 50u/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 12:03:30 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	646309	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	477381	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	256809	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	168366	48.5619 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.12%		
43) 1,2-Dichloroethane-d4	11.05	65	204653	45.4632 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 90.92%		
58) Toluene-d8	13.80	98	575039	50.6645 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.32%		
80) p-Bromofluorobenzene	17.79	95	239818	50.8408 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 101.68%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	287764	48.4801 ug/L	99
3) Chloromethane	3.88	50	236494	38.2339 ug/L	96
4) Vinyl Chloride	4.12	62	226209	45.4363 ug/L	96
5) 1,3-Butadiene	4.16	54	162660	39.2686 ug/L	93
6) Bromomethane	5.04	94	137425	51.7814 ug/L	99
7) Chloroethane	5.19	64	150414	53.2823 ug/L	100
8) Trichlorofluoromethane	5.69	101	342190	51.1514 ug/L	100
9) Diethyl ether	6.23	59	325306	105.7042 ug/L	96
10) Isoprene	6.28	67	244529	56.1093 ug/L	90
11) Acrolein	6.49	56	32822	56.1589 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	182078	57.0220 ug/L	96
13) Acetone	6.59	43	85196	58.6637 ug/L	97
14) 1,1-Dichloroethene	6.83	61	300410	53.1138 ug/L	96
15) Tert-Butyl Alcohol	6.94	59	113900	215.8215 ug/L	98
16) Dimethyl Sulfide	7.11	62	150974	55.0180 ug/L	98
17) Iodomethane	7.39	142	142646	57.1834 ug/L	97
18) Methyl acetate	7.40	43	217611	55.3644 ug/L	99
19) Methylene Chloride	7.67	84	182304	53.5202 ug/L	87
20) Carbon Disulfide	7.72	76	591144	54.6263 ug/L	99
21) Acrylonitrile	7.87	53	90090	55.7700 ug/L	98
22) Methyl Tert Butyl Ether	7.90	73	548346	56.3707 ug/L	93
23) trans-1,2-Dichloroethene	8.16	96	174090	55.7170 ug/L	91
24) n-Hexane	8.23	57	326120	57.4781 ug/L	98
25) Diisopropyl ether	8.61	45	1465737	99.6405 ug/L	95
26) Vinyl Acetate	8.80	43	370881	48.7740 ug/L	100
27) 1,1-Dichloroethane	8.84	63	353879	52.5322 ug/L	98
28) Ethyl-Tert-Butyl ether	9.24	59	1239538	105.1302 ug/L	97
29) 2-Butanone	9.45	43	121194	54.2489 ug/L	98
30) Propionitrile	9.57	54	65628	106.1426 ug/L	98
31) 2,2-Dichloropropane	9.69	77	289889	53.6115 ug/L	93
32) cis-1,2-Dichloroethene	9.77	96	191708	54.9581 ug/L	94
33) Chloroform	10.00	83	322571	51.2728 ug/L	97
34) 1-Bromopropane	10.15	122	33183	69.3848 ug/L	99
35) Bromochloromethane	10.26	130	115165	56.1893 ug/L	99
36) Tetrahydrofuran	10.30	42	159608	106.6042 ug/L	98
38) 1,1,1-Trichloroethane	10.60	97	293733	52.8580 ug/L	99
39) Cyclohexane	10.63	56	365276	57.9678 ug/L	88
40) 1,1-Dichloropropene	10.83	75	247174	55.2322 ug/L	97
41) Tert-Amyl-Methyl ether	10.94	73	1008600	107.8327 ug/L	93
42) Carbon Tetrachloride	10.99	117	274622	52.8898 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M137989.D 826_SL.M Thu Mar 24 12:03:30 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032416\6M137989.D Vial: 2
Acq On : 24 Mar 2016 11:38 Operator: TMB
Sample : WG562235-02 50u/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 12:03:30 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	268787	50.0564	ug/L	99
46)	Benzene	11.24	78	698777	51.9022	ug/L	92
47)	Trichloroethene	12.09	130	177180	55.7063	ug/L	99
48)	Methylcyclohexane	12.18	83	308776	60.0528	ug/L	90
49)	1,2-Dichloropropane	12.34	63	196071	54.1254	ug/L	97
50)	1,4-Dioxane	12.67	88	8671	200.5927	ug/L	83
51)	Bromodichloromethane	12.69	83	249319	52.4461	ug/L	96
52)	Dibromomethane	12.79	93	112169	52.9400	ug/L	99
53)	2-Chloroethyl Vinyl Ether	13.04	63	117644	59.0439	ug/L	99
54)	4-Methyl-2-Pentanone	13.07	58	89327	59.2073	ug/L	95
55)	cis-1,3-Dichloropropene	13.43	75	293010	55.9433	ug/L	98
56)	Dimethyl Disulfide	13.73	79	155458	58.8496	ug/L	97
59)	Toluene	13.91	91	712194	52.7401	ug/L	99
60)	Ethyl Methacrylate	14.04	69	250956	57.9999	ug/L	99
62)	trans-1,3-Dichloropropene	14.12	75	275891	53.1313	ug/L	100
63)	1,1,2-Trichloroethane	14.38	97	150511	53.3252	ug/L	99
64)	2-Hexanone	14.31	43	176259	54.7262	ug/L	96
65)	1,3-Dichloropropane	14.74	76	266210	52.0373	ug/L	98
66)	Tetrachloroethene	14.87	166	182240	54.7071	ug/L	98
67)	Dibromochloromethane	15.18	129	194463	52.9754	ug/L	98
68)	1,2-Dibromoethane	15.48	107	155786	53.9696	ug/L	97
69)	1-Chlorohexane	15.60	91	248685	59.3023	ug/L	90
70)	Chlorobenzene	16.08	112	455160	52.4450	ug/L	71
71)	1,1,1,2-Tetrachloroethane	16.12	131	179922	51.6316	ug/L	98
72)	Ethylbenzene	16.11	106	252740	54.4196	ug/L	100
73)	m-,p-Xylene	16.22	106	611729	107.6484	ug/L	98
74)	o-Xylene	16.88	106	301345	56.3012	ug/L	98
75)	Styrene	16.92	104	510353	56.0220	ug/L	96
76)	Bromoform	17.49	173	135821	52.4031	ug/L	99
77)	Isopropylbenzene	17.38	105	798329	55.4857	ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.64	83	218319	54.4204	ug/L	95
81)	1,2,3-Trichloropropane	17.87	110	66991	54.5396	ug/L	89
82)	trans-1,4-Dichloro-2-Buten	17.93	53	77949	52.6324	ug/L	96
83)	n-Propylbenzene	17.98	91	958791	54.9753	ug/L	99
84)	Bromobenzene	18.13	156	206769	54.5421	ug/L	99
85)	1,3,5-Trimethylbenzene	18.21	105	687049	55.3446	ug/L	97
86)	2-Chlorotoluene	18.30	91	631652	54.2618	ug/L	95
87)	4-Chlorotoluene	18.35	91	553986	52.0471	ug/L	97
88)	a-Methylstyrene	18.69	118	347750	57.6841	ug/L	98
89)	tert-Butylbenzene	18.76	134	142101	54.9269	ug/L	88
90)	1,2,4-Trimethylbenzene	18.82	105	707200	54.1692	ug/L	84
91)	sec-Butylbenzene	19.08	105	875524	55.0721	ug/L	100
92)	p-Isopropyltoluene	19.27	119	734509	56.0008	ug/L	100
93)	1,3-Dichlorobenzene	19.49	146	390779	53.2742	ug/L	97
94)	1,4-Dichlorobenzene	19.64	146	386817	51.8065	ug/L	98
95)	n-Butylbenzene	19.89	91	710790	53.8809	ug/L	98
96)	1,2-Dichlorobenzene	20.22	146	367894	52.1215	ug/L	96
97)	1,2-Dibromo-3-Chloropropan	21.42	75	47593	53.6177	ug/L	91
98)	1,2,4-Trichlorobenzene	22.76	180	272748	53.4515	ug/L	98
99)	Hexachlorobutadiene	22.95	225	155298	53.2173	ug/L	98
100)	Naphthalene	23.20	128	658978	56.1759	ug/L	100
101)	1,2,3-Trichlorobenzene	23.58	180	261914	52.1267	ug/L	98

(#) = qualifier out of range (m) = manual integration
6M137989.D 826_SL.M Thu Mar 24 12:03:31 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032416\6M137989.D Vial: 2
Acq On : 24 Mar 2016 11:38 Operator: TMB
Sample : WG562235-02 50u/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 12:03 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

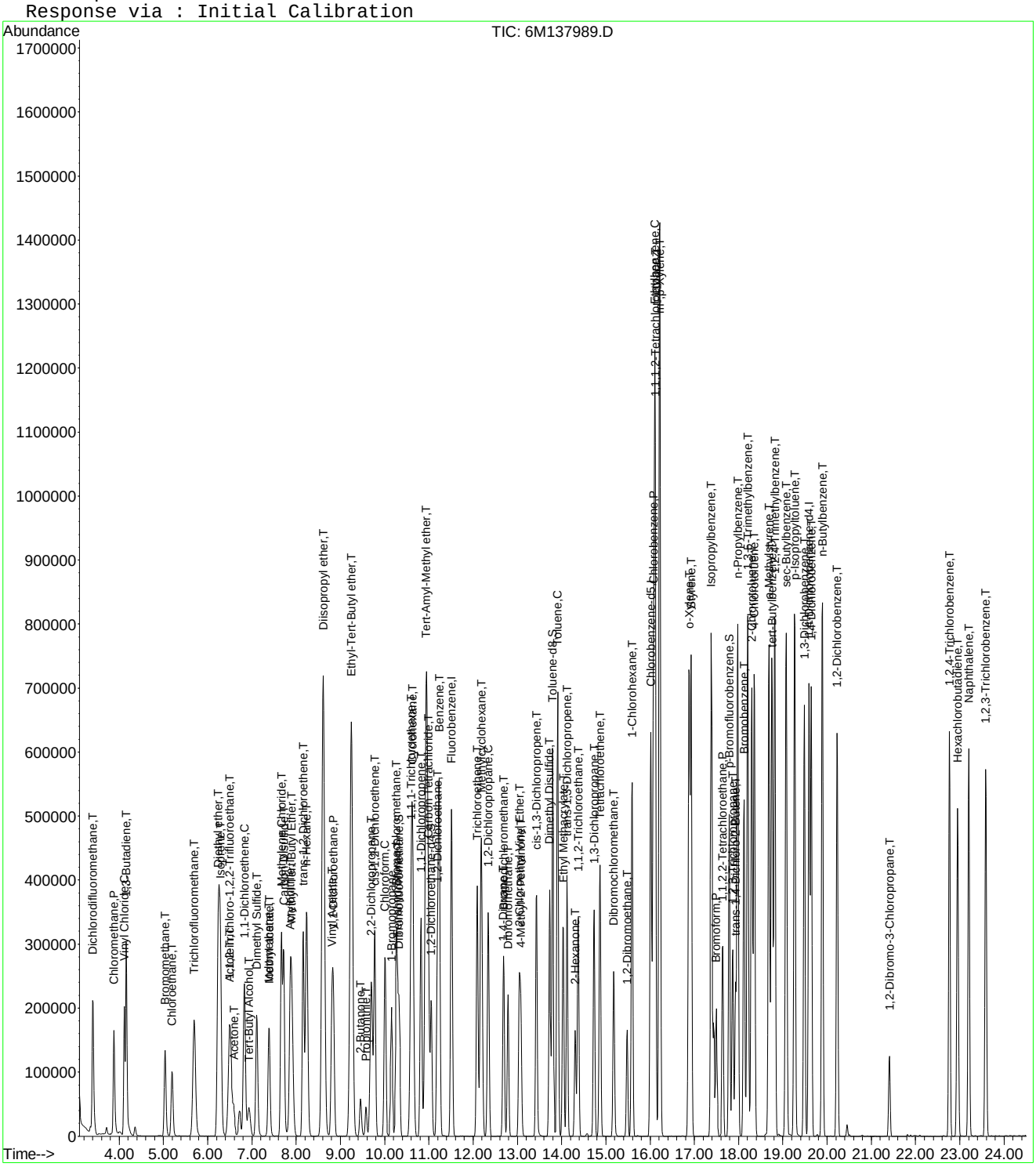

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\032416\6M137989.D Vial: 2
Acq On : 24 Mar 2016 11:38 Operator: TMB
Sample : WG562235-02 50u/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	106	0.00
2	T	Dichlorodifluoromethane	0.4592	0.4452	3.0	88	0.00
3	P	Chloromethane	0.4785	0.3659	23.5	77	0.00
4	C	Vinyl Chloride	0.3852	0.3500	9.1	86	0.00
5	T	1,3-Butadiene	0.3205	0.2517	21.5	78	0.00
6	T	Bromomethane	0.2053	0.2126	-3.6	106	0.00
7	T	Chloroethane	0.2184	0.2327	-6.6	102	0.00
8	T	Trichlorofluoromethane	0.5175	0.5294	-2.3	101	0.00
9	T	Diethyl ether	0.2381	0.2517	-5.7	115	0.00
10	T	Isoprene	0.3372	0.3784	-12.2	113	0.00
11	T	Acrolein	0.0452	0.0508	-12.3	130	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2470	0.2817	-14.0	108	0.00
13	T	Acetone	0.1189	0.1318	-10.8	125	0.00
14	C	1,1-Dichloroethene	0.4376	0.4648	-6.2	102	0.00
15	T	Tert-Butyl Alcohol	0.0408	0.0441	-7.9	117	0.00
16	T	Dimethyl Sulfide	0.2123	0.2336	-10.0	111	0.00
17	T	Iodomethane	0.1531	0.2207	-44.1#	119	0.00
18	T	Methyl acetate	0.3041	0.3367	-10.7	116	0.00
19	T	Methylene Chloride	0.2635	0.2821	-7.0	104	0.00
20	T	Carbon Disulfide	0.8372	0.9146	-9.3	112	0.00
21	T	Acrylonitrile	0.1250	0.1394	-11.5	114	0.00
22	T	Methyl Tert Butyl Ether	0.7525	0.8484	-12.7	108	0.00
23	T	trans-1,2-Dichloroethene	0.2417	0.2694	-11.4	108	0.00
24	T	n-Hexane	0.4389	0.5046	-15.0	115	0.00
25	T	Diisopropyl ether	1.1380	1.1339	0.4	108	0.00
26	T	Vinyl Acetate	0.5883	0.5738	2.5	102	0.00
27	P	1,1-Dichloroethane	0.5212	0.5475	-5.1	103	0.00
28	T	Ethyl-Tert-Butyl ether	0.9121	0.9589	-5.1	112	0.00
29	T	2-Butanone	0.1728	0.1875	-8.5	118	0.00
30	T	Propionitrile	0.0478	0.0508	-6.1	114	0.00
31	T	2,2-Dichloropropane	0.4183	0.4485	-7.2	105	0.00
32	T	cis-1,2-Dichloroethene	0.2699	0.2966	-9.9	109	0.00
33	C	Chloroform	0.4867	0.4991	-2.5	102	0.00
34		1-Bromopropane	0.0370	0.0513	-38.8#	135	0.00
35	T	Bromochloromethane	0.1586	0.1782	-12.4	108	0.00
36	T	Tetrahydrofuran	0.1230	0.1235	-0.4	114	0.00
37	S	Dibromofluoromethane	0.2682	0.5210	-94.2#	204#	0.00
38	T	1,1,1-Trichloroethane	0.4299	0.4545	-5.7	102	0.00
39	T	Cyclohexane	0.4875	0.5652	-15.9	113	0.00
40	T	1,1-Dichloropropene	0.3462	0.3824	-10.5	106	0.00
41	T	Tert-Amyl-Methyl ether	0.7236	0.7803	-7.8	115	0.00
42	T	Carbon Tetrachloride	0.4017	0.4249	-5.8	102	0.00
43	S	1,2-Dichloroethane-d4	0.3483	0.6333	-81.9#	191#	0.00
44		Heptane	0.0000	0.0000	0.0	0#	0.00
45	T	1,2-Dichloroethane	0.4154	0.4159	-0.1	99	0.00
46	T	Benzene	1.0416	1.0812	-3.8	107	0.00
47	T	Trichloroethene	0.2461	0.2741	-11.4	109	0.00
48	T	Methylcyclohexane	0.3978	0.4778	-20.1	117	0.00
49	C	1,2-Dichloropropane	0.2803	0.3034	-8.2	106	0.00
50	T	1,4-Dioxane	0.0031	0.0034	-8.1	116	0.00
51	T	Bromodichloromethane	0.3678	0.3858	-4.9	102	0.00
52	T	Dibromomethane	0.1639	0.1736	-5.9	100	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1541	0.1820	-18.1	118	0.00
54	T	4-Methyl-2-Pentanone	0.1167	0.1382	-18.4	126	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\032416\6M137989.D Vial: 2
Acq On : 24 Mar 2016 11:38 Operator: TMB
Sample : WG562235-02 50u/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4052	0.4534	-11.9	106	0.00
56	T	Dimethyl Disulfide	0.2044	0.2405	-17.7	114	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	109	0.00
58	S	Toluene-d8	1.1888	2.4091	-102.7#	216#	0.00
59	C	Toluene	1.4144	1.4919	-5.5	108	0.00
60	T	Ethyl Methacrylate	0.4532	0.5257	-16.0	113	0.01
61		Paraldehyde	0.0000	0.0000	0.0	0#	-15.13#
62	T	trans-1,3-Dichloropropene	0.5439	0.5779	-6.3	104	0.00
63	T	1,1,2-Trichloroethane	0.2956	0.3153	-6.7	107	0.01
64	T	2-Hexanone	0.3373	0.3692	-9.5	117	0.00
65	T	1,3-Dichloropropane	0.5358	0.5576	-4.1	104	0.00
66	T	Tetrachloroethene	0.3489	0.3817	-9.4	110	0.00
67	T	Dibromochloromethane	0.3845	0.4073	-6.0	104	0.00
68	T	1,2-Dibromoethane	0.3023	0.3263	-7.9	107	0.00
69	T	1-Chlorohexane	0.4392	0.5209	-18.6	117	0.00
70	P	Chlorobenzene	0.9090	0.9535	-4.9	108	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3650	0.3769	-3.3	104	0.01
72	C	Ethylbenzene	0.4864	0.5294	-8.8	108	0.00
73	T	m-,p-Xylene	0.5952	0.6407	-7.6	109	0.00
74	T	o-Xylene	0.5606	0.6312	-12.6	108	0.00
75	T	Styrene	0.9542	1.0691	-12.0	108	0.00
76	P	Bromoform	0.2715	0.2845	-4.8	104	0.00
77	T	Isopropylbenzene	1.5070	1.6723	-11.0	108	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	108	0.00
79	P	1,1,2,2-Tetrachloroethane	0.7811	0.8501	-8.8	109	0.00
80	S	p-Bromofluorobenzene	0.9184	1.8677	-103.4#	215#	0.00
81	T	1,2,3-Trichloropropane	0.2392	0.2609	-9.1	109	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.2884	0.3035	-5.3	107	0.00
83	T	n-Propylbenzene	3.3956	3.7335	-10.0	106	0.00
84	T	Bromobenzene	0.7381	0.8052	-9.1	108	0.00
85	T	1,3,5-Trimethylbenzene	2.4170	2.6753	-10.7	107	0.00
86	T	2-Chlorotoluene	2.2664	2.4596	-8.5	109	0.00
87	T	4-Chlorotoluene	2.0723	2.1572	-4.1	104	0.00
88	T	a-Methylstyrene	1.1737	1.3541	-15.4	113	0.00
89	T	tert-Butylbenzene	0.5037	0.5533	-9.9	106	0.00
90	T	1,2,4-Trimethylbenzene	2.5419	2.7538	-8.3	106	0.00
91	T	sec-Butylbenzene	3.0953	3.4092	-10.1	106	0.00
92	T	p-Isopropyltoluene	2.5537	2.8601	-12.0	107	0.01
93	T	1,3-Dichlorobenzene	1.4282	1.5217	-6.5	107	0.00
94	T	1,4-Dichlorobenzene	1.4537	1.5062	-3.6	106	0.00
95	T	n-Butylbenzene	2.5684	2.7678	-7.8	105	0.00
96	T	1,2-Dichlorobenzene	1.3743	1.4326	-4.2	105	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1728	0.1853	-7.2	109	0.00
98	T	1,2,4-Trichlorobenzene	0.9935	1.0621	-6.9	104	0.00
99	T	Hexachlorobutadiene	0.5682	0.6047	-6.4	103	0.00
100	T	Naphthalene	2.2839	2.5660	-12.4	107	0.00
101	T	1,2,3-Trichlorobenzene	0.9783	1.0199	-4.3	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137989.D 826_SL.M Thu Mar 24 12:08:41 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\032416\6M137989.D Vial: 2
Acq On : 24 Mar 2016 11:38 Operator: TMB
Sample : WG562235-02 50u/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	106	0.00
2	T	Dichlorodifluoromethane	50.0000	48.4801	3.0	88	0.00
3	P	Chloromethane	50.0000	38.2339	23.5	77	0.00
4	C	Vinyl Chloride	50.0000	45.4363	9.1	86	0.00
5	T	1,3-Butadiene	50.0000	39.2686	21.5	78	0.00
6	T	Bromomethane	50.0000	51.7814	-3.6	106	0.00
7	T	Chloroethane	50.0000	53.2822	-6.6	102	0.00
8	T	Trichlorofluoromethane	50.0000	51.1514	-2.3	101	0.00
9	T	Diethyl ether	100.0000	105.7042	-5.7	115	0.00
10	T	Isoprene	50.0000	56.1093	-12.2	113	0.00
11	T	Acrolein	50.0000	56.1589	-12.3	130	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	57.0220	-14.0	108	0.00
13	T	Acetone	50.0000	58.6637	-17.3	125	0.00
14	C	1,1-Dichloroethene	50.0000	53.1138	-6.2	102	0.00
15	T	Tert-Butyl Alcohol	200.0000	215.8215	-7.9	117	0.00
16	T	Dimethyl Sulfide	50.0000	55.0180	-10.0	111	0.00
17	T	Iodomethane	50.0000	57.1834	-14.4	119	0.00
18	T	Methyl acetate	50.0000	55.3644	-10.7	116	0.00
19	T	Methylene Chloride	50.0000	53.5202	-7.0	104	0.00
20	T	Carbon Disulfide	50.0000	54.6263	-9.3	112	0.00
21	T	Acrylonitrile	50.0000	55.7700	-11.5	114	0.00
22	T	Methyl Tert Butyl Ether	50.0000	56.3707	-12.7	108	0.00
23	T	trans-1,2-Dichloroethene	50.0000	55.7170	-11.4	108	0.00
24	T	n-Hexane	50.0000	57.4781	-15.0	115	0.00
25	T	Diisopropyl ether	100.0000	99.6405	0.4	108	0.00
26	T	Vinyl Acetate	50.0000	48.7740	2.5	102	0.00
27	P	1,1-Dichloroethane	50.0000	52.5322	-5.1	103	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	105.1302	-5.1	112	0.00
29	T	2-Butanone	50.0000	54.2489	-8.5	118	0.00
30	T	Propionitrile	100.0000	106.1426	-6.1	114	0.00
31	T	2,2-Dichloropropane	50.0000	53.6115	-7.2	105	0.00
32	T	cis-1,2-Dichloroethene	50.0000	54.9581	-9.9	109	0.00
33	C	Chloroform	50.0000	51.2728	-2.5	102	0.00
34		1-Bromopropane	50.0000	69.3848	-38.8#	135	0.00
35	T	Bromochloromethane	50.0000	56.1893	-12.4	108	0.00
36	T	Tetrahydrofuran	100.0000	106.6042	-6.6	114	0.00
37	S	Dibromofluoromethane	25.0000	48.5619	-94.2#	204	0.00
38	T	1,1,1-Trichloroethane	50.0000	52.8580	-5.7	102	0.00
39	T	Cyclohexane	50.0000	57.9678	-15.9	113	0.00
40	T	1,1-Dichloropropene	50.0000	55.2322	-10.5	106	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	107.8327	-7.8	115	0.00
42	T	Carbon Tetrachloride	50.0000	52.8898	-5.8	102	0.00
43	S	1,2-Dichloroethane-d4	25.0000	45.4632	-81.9#	191	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	50.0000	50.0564	-0.1	99	0.00
46	T	Benzene	50.0000	51.9022	-3.8	107	0.00
47	T	Trichloroethene	50.0000	55.7063	-11.4	109	0.00
48	T	Methylcyclohexane	50.0000	60.0528	-20.1	117	0.00
49	C	1,2-Dichloropropane	50.0000	54.1254	-8.3	106	0.00
50	T	1,4-Dioxane	200.0000	200.5927	-0.3	116	0.00
51	T	Bromodichloromethane	50.0000	52.4461	-4.9	102	0.00
52	T	Dibromomethane	50.0000	52.9400	-5.9	100	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	59.0439	-18.1	118	0.00
54	T	4-Methyl-2-Pentanone	50.0000	59.2073	-18.4	126	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\032416\6M137989.D Vial: 2
Acq On : 24 Mar 2016 11:38 Operator: TMB
Sample : WG562235-02 50u/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	55.9433	-11.9	106	0.00
56	T	Dimethyl Disulfide	50.0000	58.8496	-17.7	114	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	109	0.00
58	S	Toluene-d8	25.0000	50.6645	-102.7#	216	0.00
59	C	Toluene	50.0000	52.7401	-5.5	108	0.00
60	T	Ethyl Methacrylate	50.0000	57.9999	-16.0	113	0.01
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	50.0000	53.1313	-6.3	104	0.00
63	T	1,1,2-Trichloroethane	50.0000	53.3252	-6.7	107	0.01
64	T	2-Hexanone	50.0000	54.7262	-9.5	117	0.00
65	T	1,3-Dichloropropane	50.0000	52.0373	-4.1	104	0.00
66	T	Tetrachloroethene	50.0000	54.7071	-9.4	110	0.00
67	T	Dibromochloromethane	50.0000	52.9754	-6.0	104	0.00
68	T	1,2-Dibromoethane	50.0000	53.9696	-7.9	107	0.00
69	T	1-Chlorohexane	50.0000	59.3023	-18.6	117	0.00
70	P	Chlorobenzene	50.0000	52.4450	-4.9	108	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	51.6316	-3.3	104	0.01
72	C	Ethylbenzene	50.0000	54.4196	-8.8	108	0.00
73	T	m-,p-Xylene	100.0000	107.6484	-7.6	109	0.00
74	T	o-Xylene	50.0000	56.3013	-12.6	108	0.00
75	T	Styrene	50.0000	56.0220	-12.0	108	0.00
76	P	Bromoform	50.0000	52.4031	-4.8	104	0.00
77	T	Isopropylbenzene	50.0000	55.4857	-11.0	108	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	108	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	54.4204	-8.8	109	0.00
80	S	p-Bromofluorobenzene	25.0000	50.8408	-103.4#	215	0.00
81	T	1,2,3-Trichloropropane	50.0000	54.5396	-9.1	109	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	52.6324	-5.3	107	0.00
83	T	n-Propylbenzene	50.0000	54.9753	-10.0	106	0.00
84	T	Bromobenzene	50.0000	54.5421	-9.1	108	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	55.3446	-10.7	107	0.00
86	T	2-Chlorotoluene	50.0000	54.2618	-8.5	109	0.00
87	T	4-Chlorotoluene	50.0000	52.0471	-4.1	104	0.00
88	T	a-Methylstyrene	50.0000	57.6842	-15.4	113	0.00
89	T	tert-Butylbenzene	50.0000	54.9269	-9.9	106	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	54.1692	-8.3	106	0.00
91	T	sec-Butylbenzene	50.0000	55.0721	-10.1	106	0.00
92	T	p-Isopropyltoluene	50.0000	56.0008	-12.0	107	0.01
93	T	1,3-Dichlorobenzene	50.0000	53.2742	-6.5	107	0.00
94	T	1,4-Dichlorobenzene	50.0000	51.8065	-3.6	106	0.00
95	T	n-Butylbenzene	50.0000	53.8809	-7.8	105	0.00
96	T	1,2-Dichlorobenzene	50.0000	52.1215	-4.2	105	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	53.6177	-7.2	109	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	53.4515	-6.9	104	0.00
99	T	Hexachlorobutadiene	50.0000	53.2174	-6.4	103	0.00
100	T	Naphthalene	50.0000	56.1759	-12.4	107	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	52.1266	-4.3	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137989.D 826_SL.M Thu Mar 24 12:08:42 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\1\DATA\022616\6M137522.D          Vial: 1
Acq On    : 26 Feb 2016  13:16                       Operator: TMB
Sample    : WG558920-01 50ng BFB STD 8260            Inst    : HPMS6
Misc      : 7,1 STD74606                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP: OVL MSV01
```

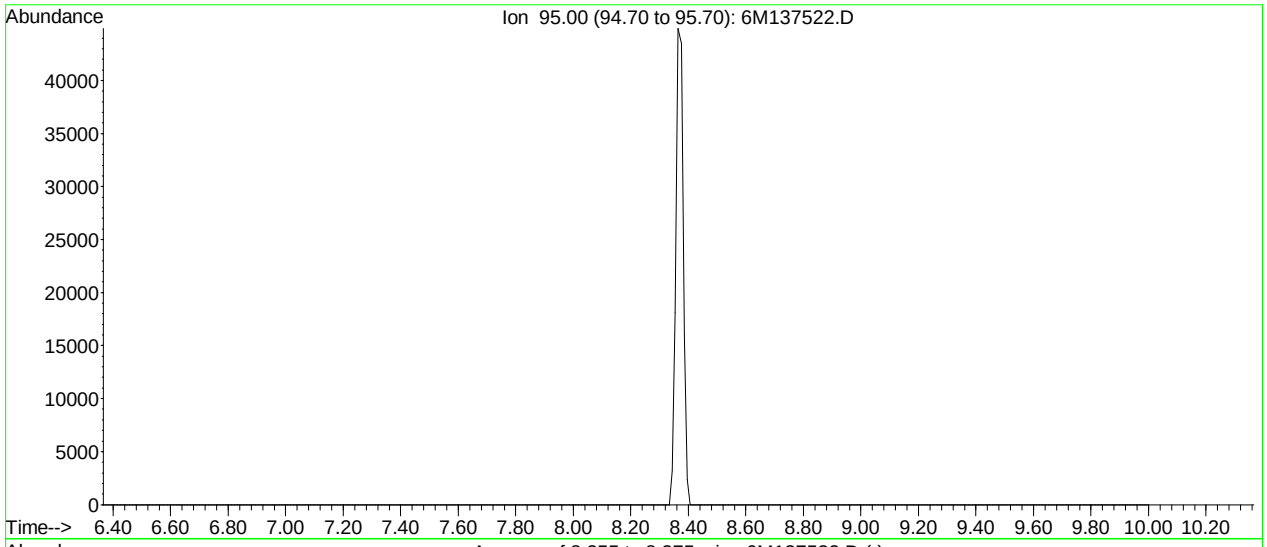

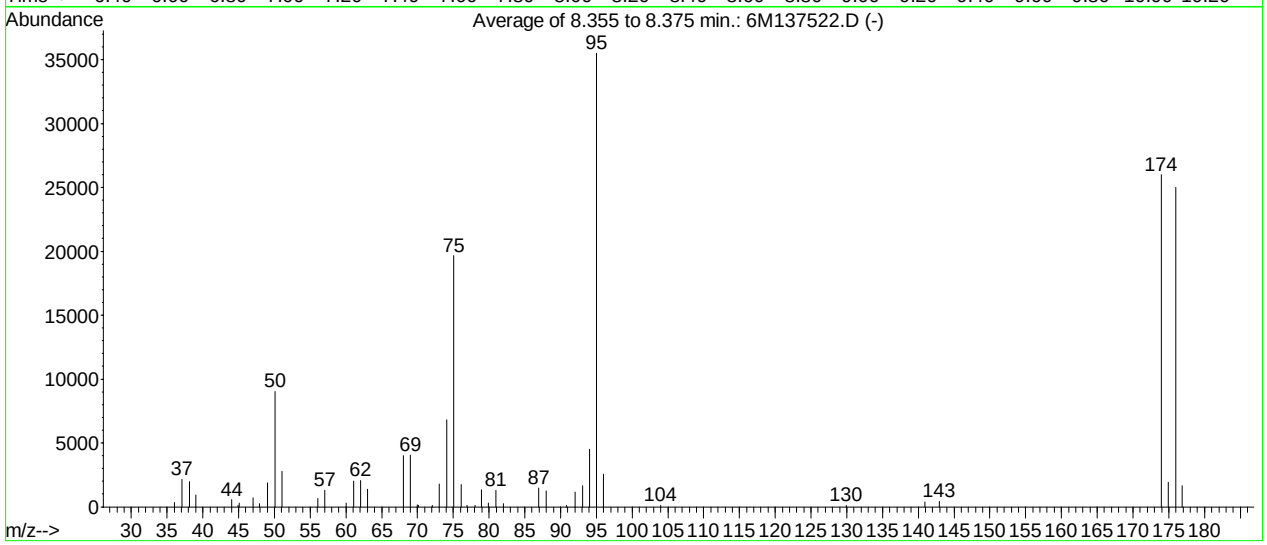

AutoFind: Scans 320, 321, 322; Background Corrected with Scan 316

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	25.4	9030	PASS
75	95	30	60	55.4	19666	PASS
95	95	100	100	100.0	35512	PASS
96	95	5	9	7.3	2576	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	73.2	26011	PASS
175	174	5	9	7.4	1914	PASS
176	174	95	101	96.1	24992	PASS
177	176	5	9	6.6	1660	PASS

6M137522.D BFB.M Fri Feb 26 13:26:46 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\032316\6M137963.D          Vial: 1
Acq On    : 23 Mar 2016  11:50                       Operator: TMB
Sample    : WG562074-01 50ng BFB STD 8260            Inst    : HPMS6
Misc      : 7,1 STD75004                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP: OVL MSV01
```

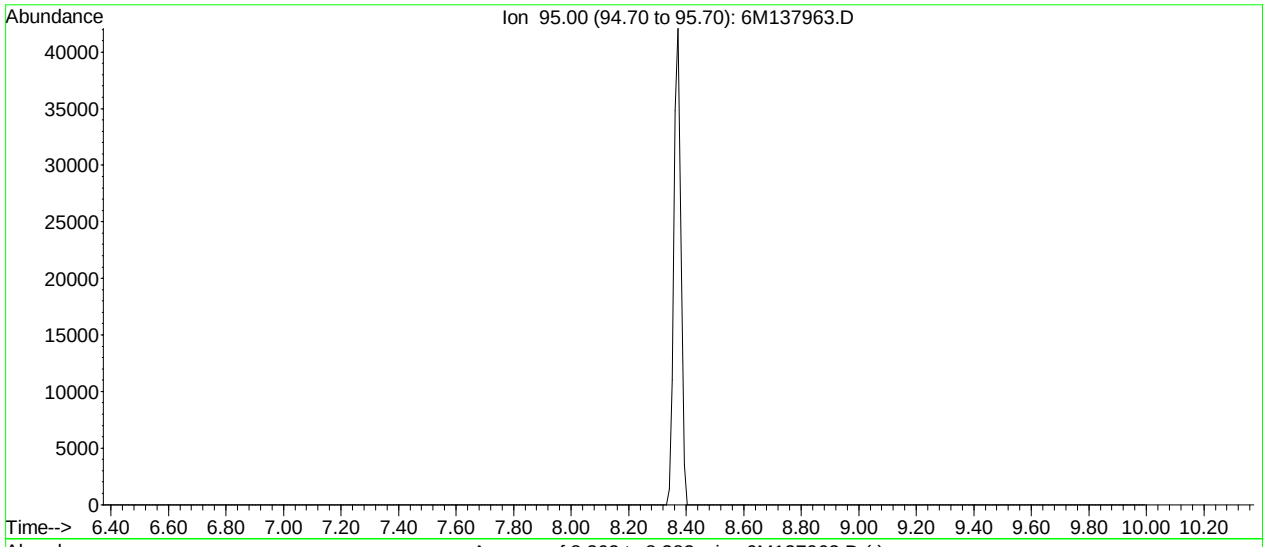

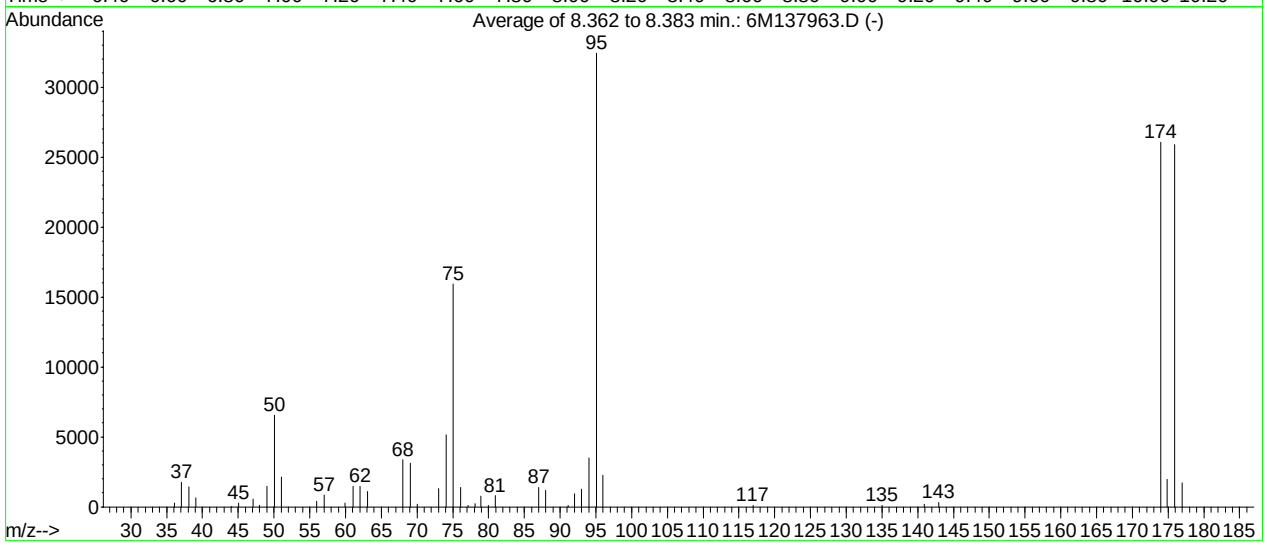

AutoFind: Scans 321, 322, 323; Background Corrected with Scan 316

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.2	6567	PASS
75	95	30	60	49.2	15945	PASS
95	95	100	100	100.0	32432	PASS
96	95	5	9	7.0	2256	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	80.4	26074	PASS
175	174	5	9	7.6	1973	PASS
176	174	95	101	99.3	25896	PASS
177	176	5	9	6.6	1699	PASS

6M137963.D BFB.M Wed Mar 23 12:13:51 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\032416\6M137988.D          Vial: 1
Acq On    : 24 Mar 2016  11:14                       Operator: TMB
Sample    : WG562235-01 50ng BFB STD 8260            Inst    : HPMS6
Misc      : 7,1 STD75004                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP: OVL MSV01
```

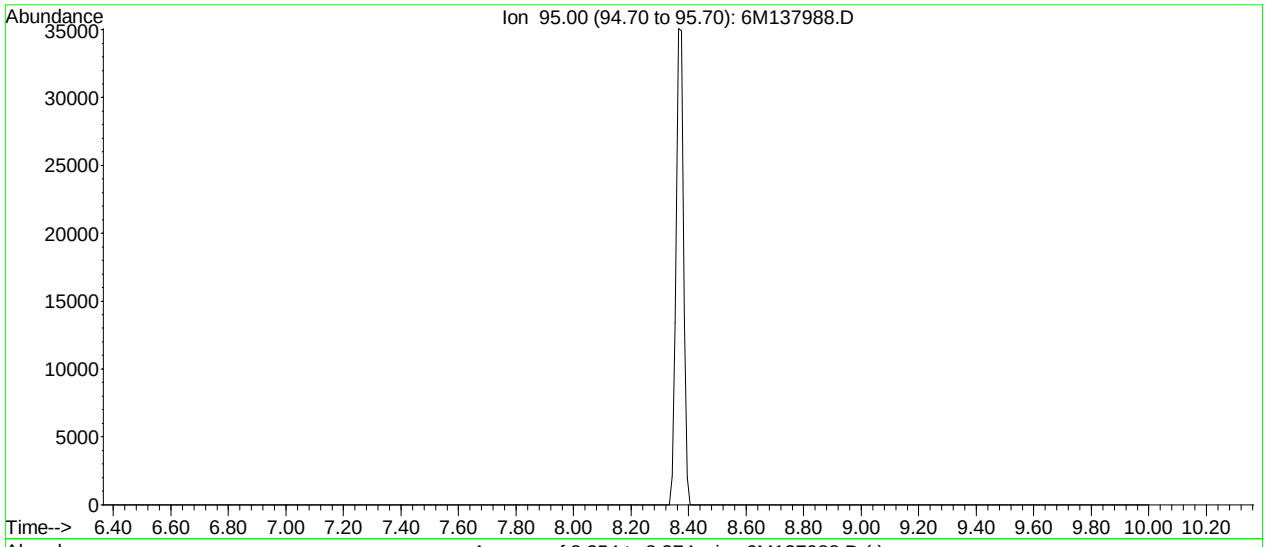

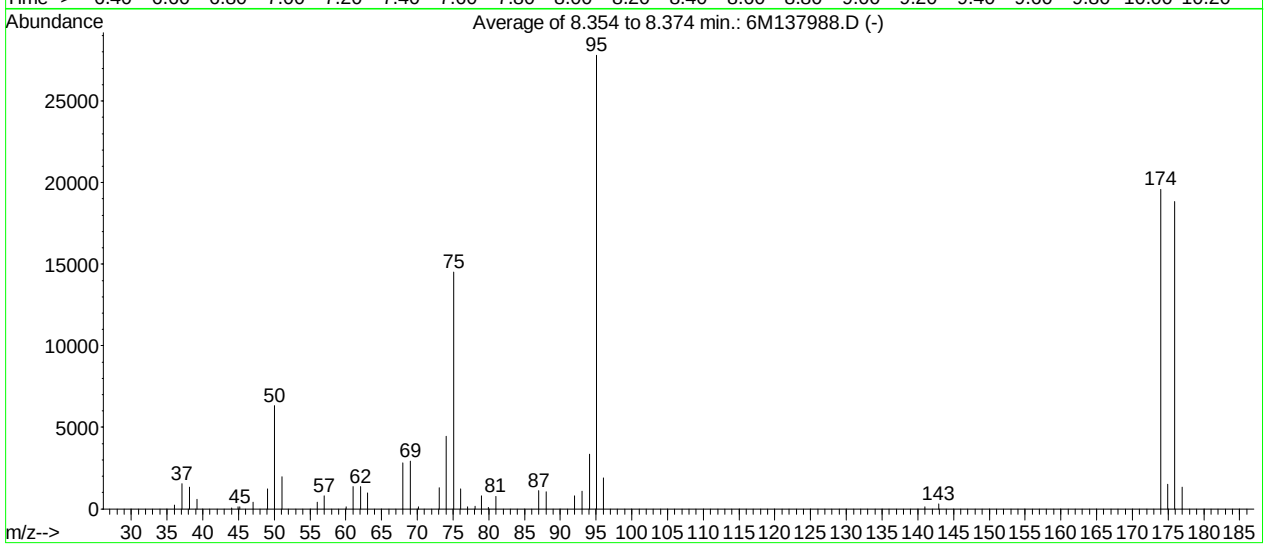

AutoFind: Scans 320, 321, 322; Background Corrected with Scan 316

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.7	6323	PASS
75	95	30	60	52.2	14507	PASS
95	95	100	100	100.0	27812	PASS
96	95	5	9	6.9	1908	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	70.4	19568	PASS
175	174	5	9	7.6	1494	PASS
176	174	95	101	96.3	18848	PASS
177	176	5	9	7.1	1337	PASS

6M137988.D BFB.M Thu Mar 24 11:25:17 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137967.D Vial: 5
Acq On : 23 Mar 2016 13:53 Operator: TMB
Sample : WG562075-01 VBLK0323 BLANK STD 8260 Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 17:03:56 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	568472	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	420780	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	220763	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	144183	47.2810 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.56%		
43) 1,2-Dichloroethane-d4	11.06	65	179216	45.2637 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 90.52%		
58) Toluene-d8	13.80	98	504541	50.4328 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 100.86%		
80) p-Bromofluorobenzene	17.79	95	208247	51.3562 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.72%		

Target Compounds					Qvalue
13) Acetone	6.60	43	7695	2.0829 ug/L	99
29) 2-Butanone	9.69	43	2551	1.2982 ug/L #	56
36) Tetrahydrofuran	10.29	42	2714	Below Cal #	74
60) Ethyl Methacrylate	13.80	69	961	0.2520 ug/L #	47
90) 1,2,4-Trimethylbenzene	18.81	105	6379	0.5684 ug/L	93
100) Naphthalene	23.20	128	2997	0.2972 ug/L #	67

(#) = qualifier out of range (m) = manual integration
6M137967.D 826_SL.M Wed Mar 23 17:03:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032316\6M137967.D Vial: 5
Acq On : 23 Mar 2016 13:53 Operator: TMB
Sample : WG562075-01 VBLK0323 BLANK STD 8260 Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 17:03 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

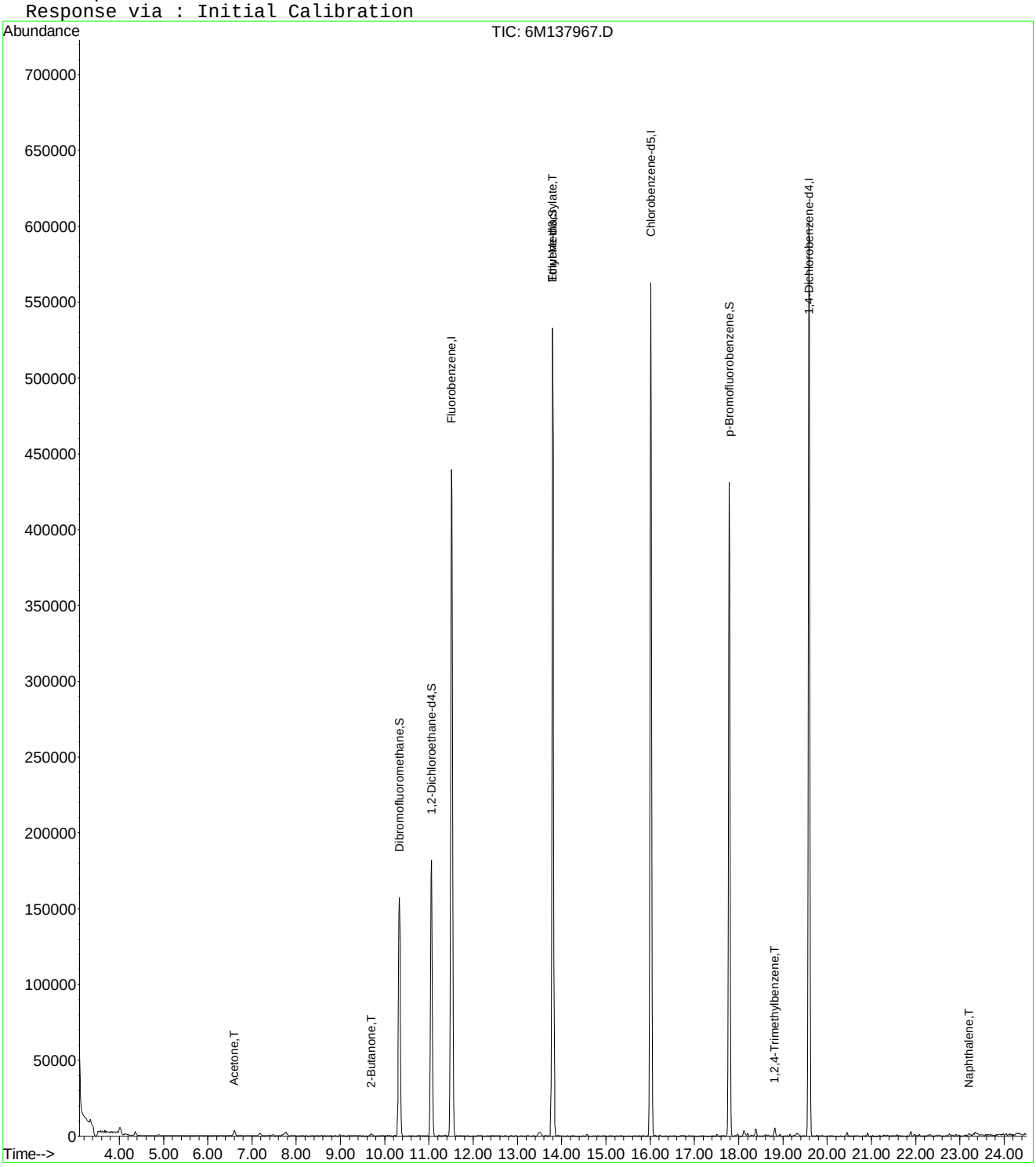

6M137967.D 826_SL.M Wed Mar 23 17:03:57 2016 Page 2

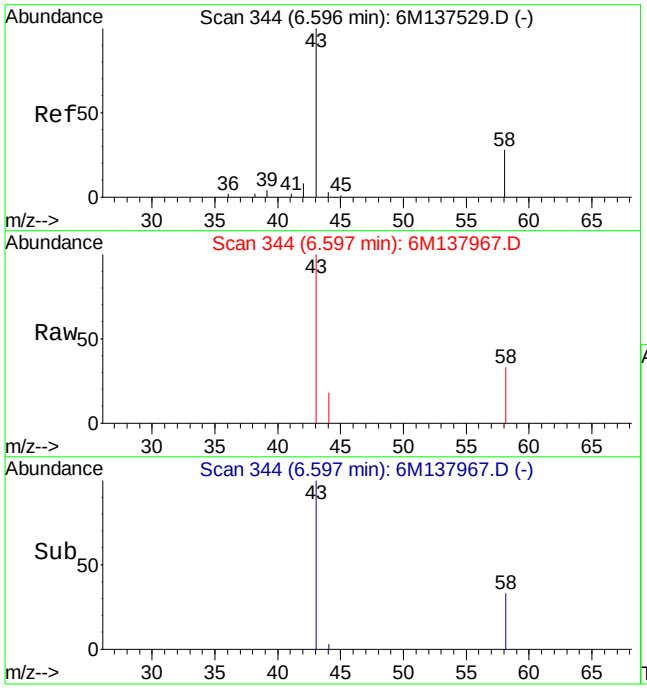

#13
Acetone
Concen: 2.08 ug/L
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M137967.D
Acq: 23 Mar 2016 13:53

Tgt Ion: 43 Resp: 7695

Ion	Ratio	Lower	Upper
43	100		
58	27.5	16.1	37.7

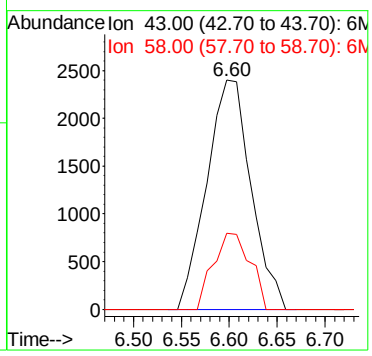

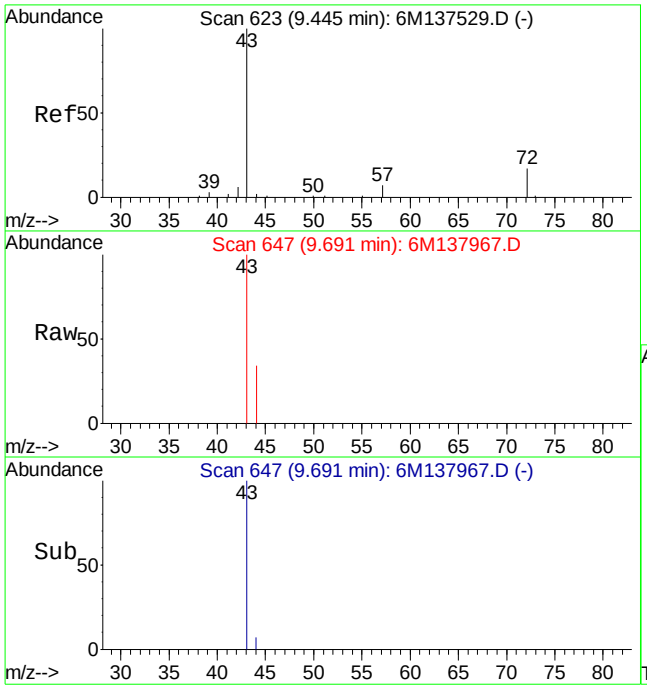

#29
2-Butanone
Concen: 1.30 ug/L
RT: 9.69 min Scan# 647
Delta R.T. 0.25 min
Lab File: 6M137967.D
Acq: 23 Mar 2016 13:53

Tgt Ion: 43 Resp: 2551

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.2	28.4#

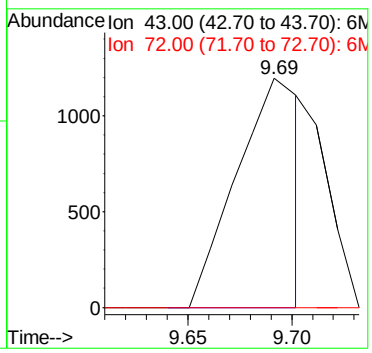

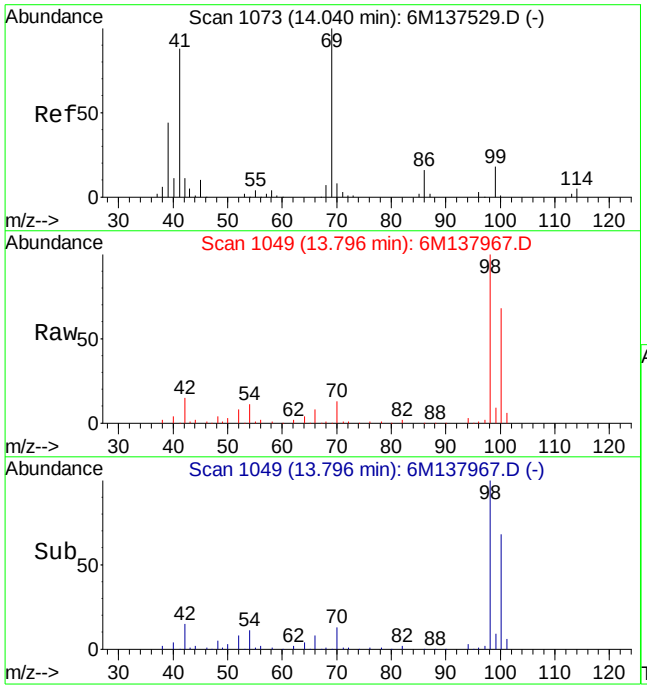

#60
Ethyl Methacrylate
Concen: 0.25 ug/L
RT: 13.80 min Scan# 1049
Delta R.T. -0.23 min
Lab File: 6M137967.D
Acq: 23 Mar 2016 13:53

Tgt Ion: 69 Resp: 961

Ion	Ratio	Lower	Upper
69	100		
41	132.2	50.6	118.2#

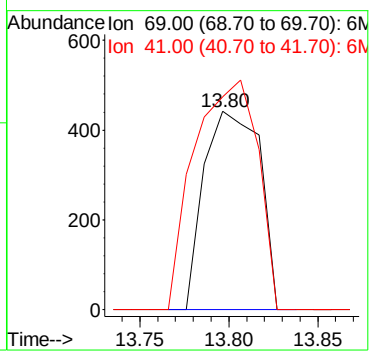

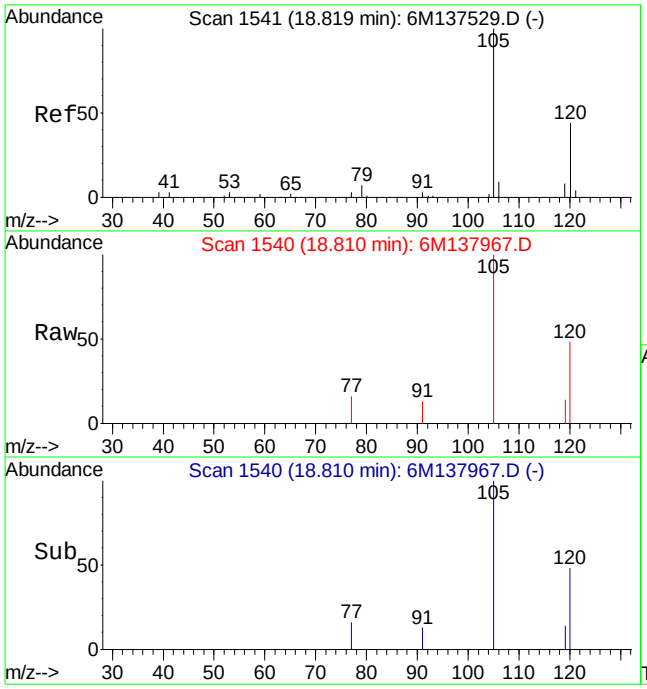

#90
1,2,4-Trimethylbenzene
Concen: 0.57 ug/L
RT: 18.81 min Scan# 1540
Delta R.T. -0.01 min
Lab File: 6M137967.D
Acq: 23 Mar 2016 13:53

Tgt Ion:105 Resp: 6379

Ion	Ratio	Lower	Upper
105	100		
120	51.7	34.3	79.9

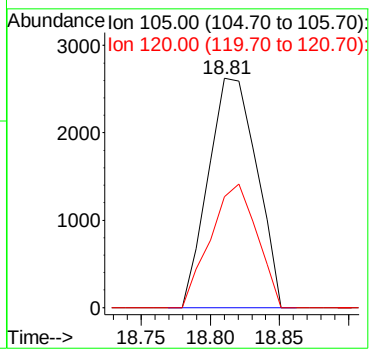

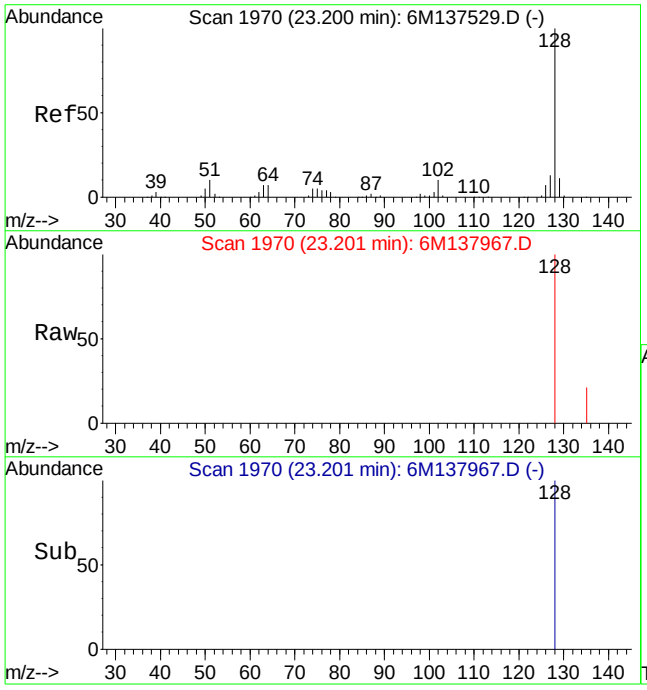

#100
Naphthalene
Concen: 0.30 ug/L
RT: 23.20 min Scan# 1970
Delta R.T. 0.00 min
Lab File: 6M137967.D
Acq: 23 Mar 2016 13:53

Tgt Ion:128 Resp: 2997

Ion	Ratio	Lower	Upper
128	100		
127	0.0	7.7	18.1#

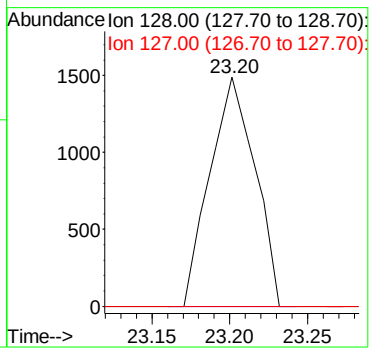

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032416\6M137991.D Vial: 4
Acq On : 24 Mar 2016 12:53 Operator: TMB
Sample : WG562236-01 VBLK0324 BLANK STD 8260 Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 14:22:29 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	556296	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	414863	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	220949	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.34	111	143518	48.0930 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 96.18%		
43) 1,2-Dichloroethane-d4	11.05	65	177637	45.8468 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 91.70%		
58) Toluene-d8	13.80	98	493353	50.0178 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 100.04%		
80) p-Bromofluorobenzene	17.79	95	204837	50.4727 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 100.94%		

Target Compounds

					Qvalue
13) Acetone	6.60	43	4981	Below Cal	80
29) 2-Butanone	9.69	43	2712	1.4104 ug/L #	56
36) Tetrahydrofuran	10.31	42	2422	Below Cal #	63
90) 1,2,4-Trimethylbenzene	18.82	105	4230	0.3766 ug/L	79
91) sec-Butylbenzene	18.82	105	3804	0.2781 ug/L #	56

(#) = qualifier out of range (m) = manual integration
6M137991.D 826_SL.M Thu Mar 24 14:22:30 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\032416\6M137991.D Vial: 4
Acq On : 24 Mar 2016 12:53 Operator: TMB
Sample : WG562236-01 VBLK0324 BLANK STD 8260 Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 14:22 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

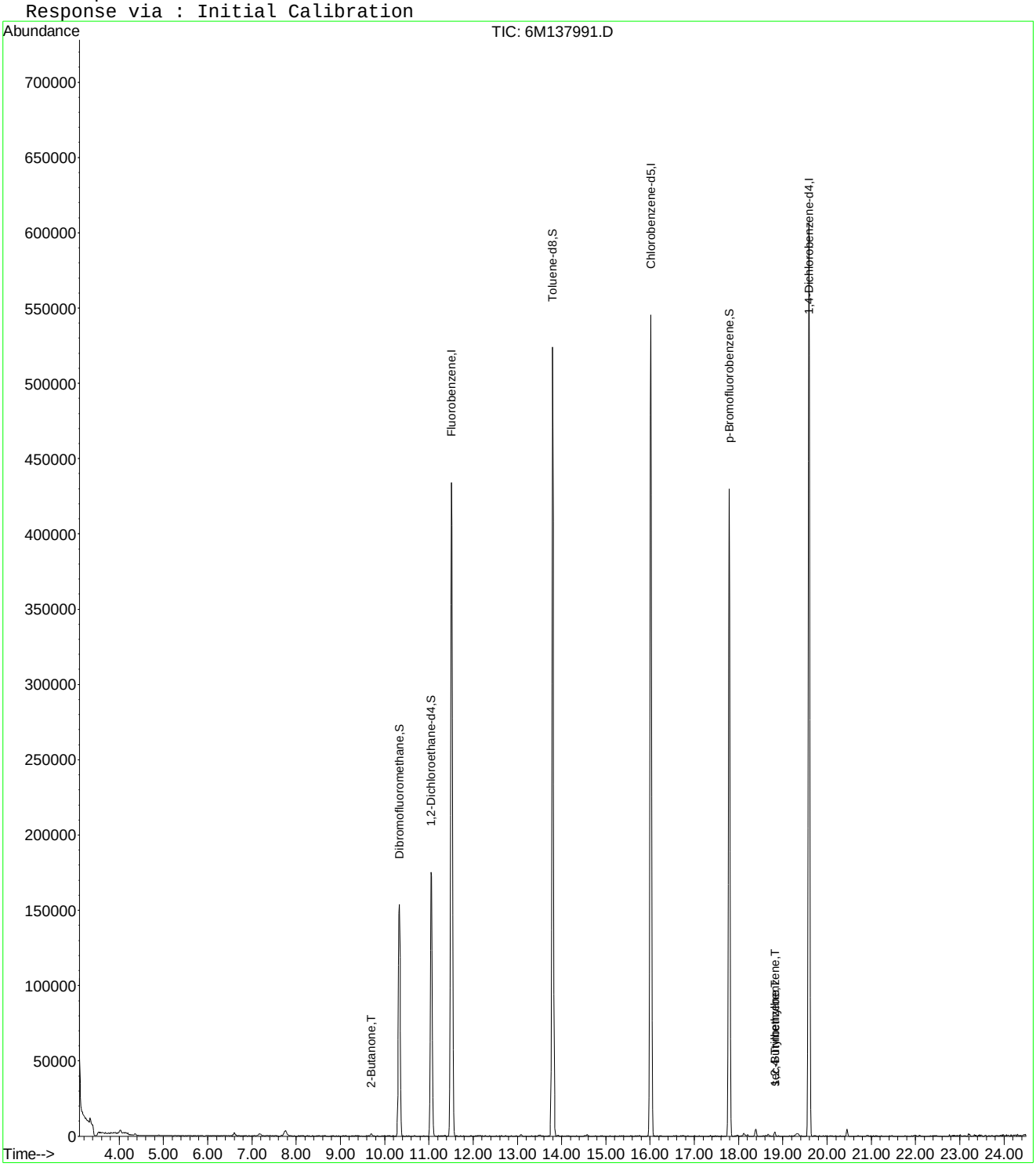

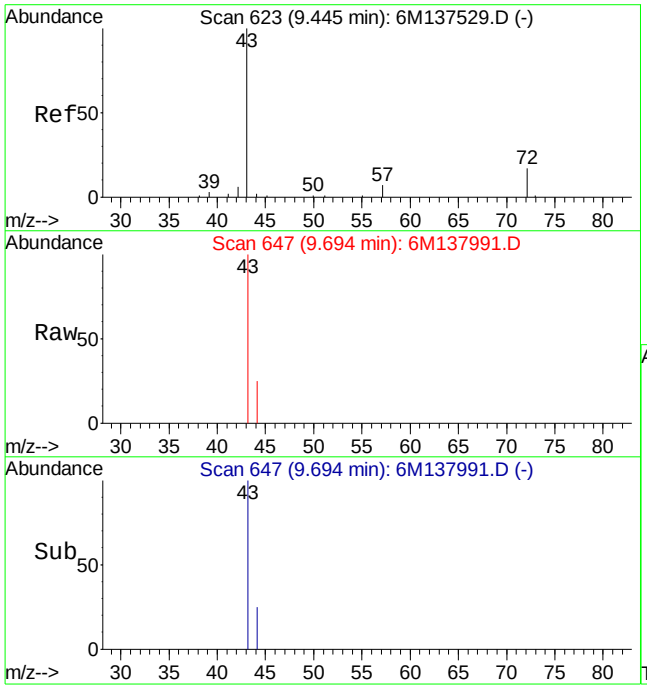

#29
2-Butanone
Concen: 1.41 ug/L
RT: 9.69 min Scan# 647
Delta R.T. 0.25 min
Lab File: 6M137991.D
Acq: 24 Mar 2016 12:53

Tgt Ion: 43 Resp: 2712

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.2	28.4#

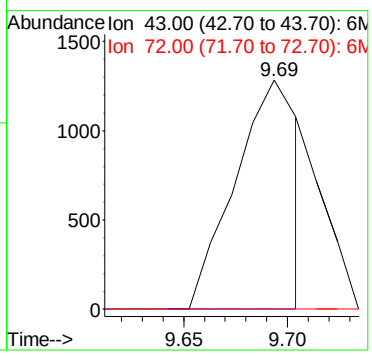

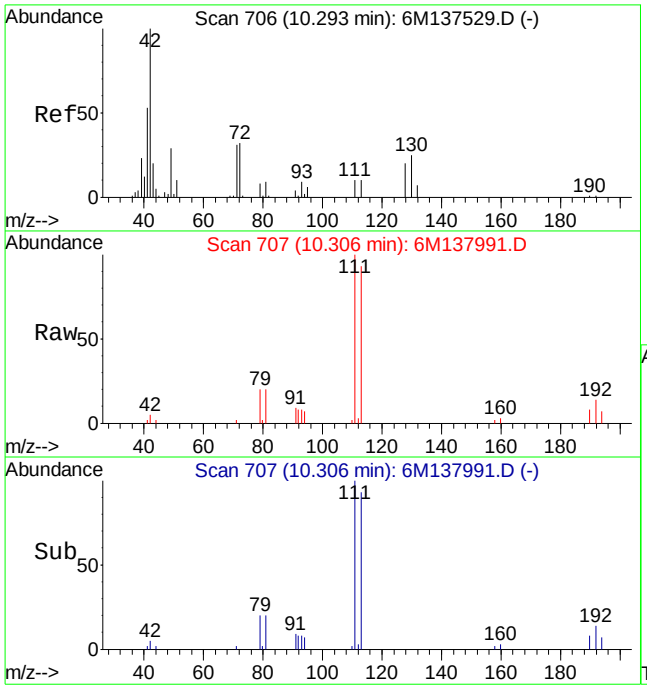

#36
Tetrahydrofuran
Concen: Below Cal
RT: 10.31 min Scan# 707
Delta R.T. 0.01 min
Lab File: 6M137991.D
Acq: 24 Mar 2016 12:53

Tgt Ion: 42 Resp: 2422

Ion	Ratio	Lower	Upper
42	100		
72	8.1	21.0	49.0#
71	18.8	20.6	48.2#

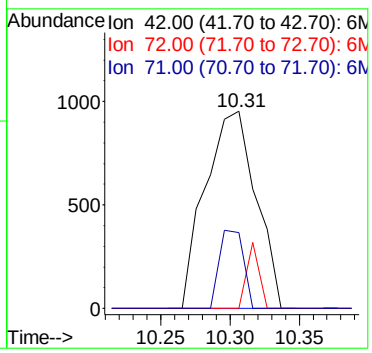

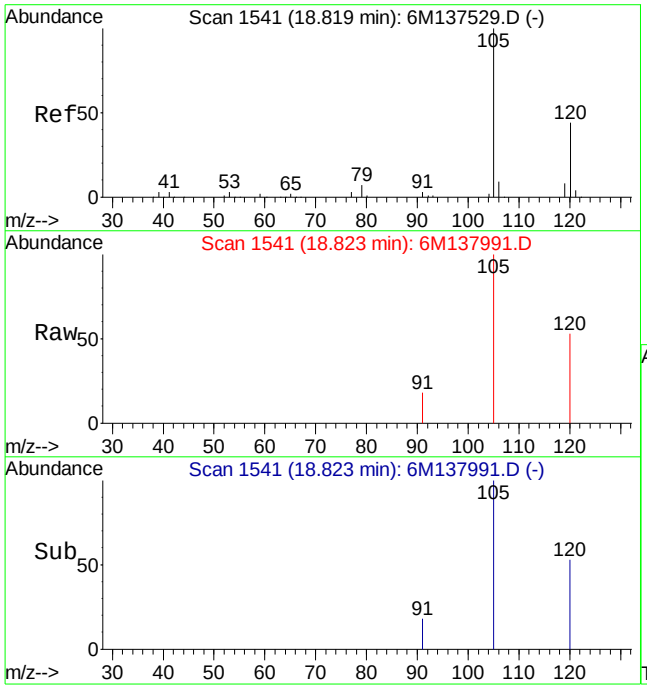

#90
1,2,4-Trimethylbenzene
Concen: 0.38 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. 0.00 min
Lab File: 6M137991.D
Acq: 24 Mar 2016 12:53

Tgt Ion:105 Resp: 4230

Ion	Ratio	Lower	Upper
105	100		
120	41.3	34.3	79.9

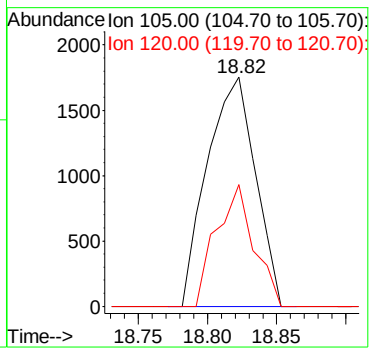

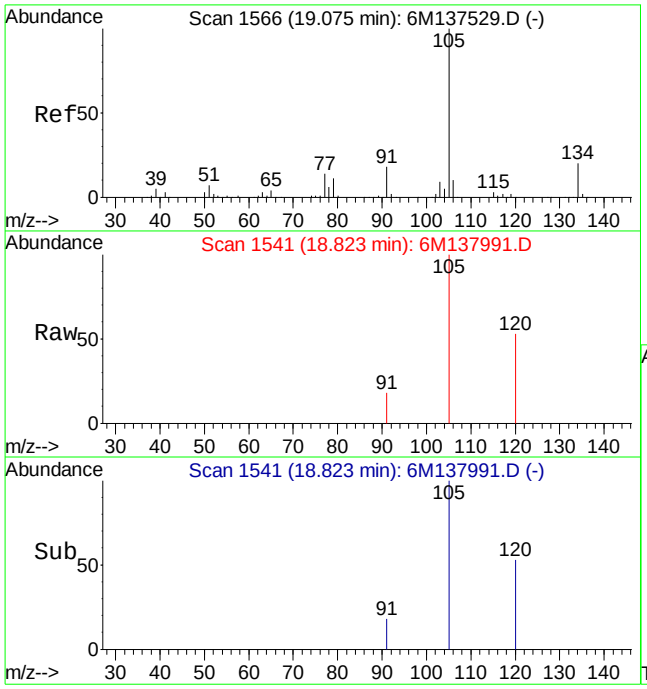

#91
sec-Butylbenzene
Concen: 0.28 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. -0.25 min
Lab File: 6M137991.D
Acq: 24 Mar 2016 12:53

Tgt Ion:105 Resp: 3804

Ion	Ratio	Lower	Upper
105	100		
134	0.0	12.2	28.6#

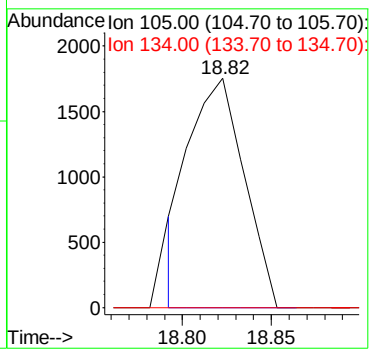

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032316\6M137968.D Vial: 6
Acq On : 23 Mar 2016 14:26 Operator: TMB
Sample : WG562075-02 20ug/Kg LCS STD 8260 Inst : HPMS6
Misc : 7,1 STD75209 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 14:51:25 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	579730	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	431283	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	231205	50.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.33	111	147978	47.5832 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.16%		
43) 1,2-Dichloroethane-d4	11.06	65	176231	43.6454 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 87.30%		
58) Toluene-d8	13.80	98	518030	50.5201 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.04%		
80) p-Bromofluorobenzene	17.79	95	212255	49.9806 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 99.96%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	115533	21.6994 ug/L	99
3) Chloromethane	3.88	50	96875	17.4604 ug/L	97
4) Vinyl Chloride	4.12	62	90596	20.2869 ug/L	99
5) 1,3-Butadiene	4.16	54	41605	11.1976 ug/L	93
6) Bromomethane	5.03	94	52485	22.0474 ug/L	100
7) Chloroethane	5.19	64	60320	23.8216 ug/L	99
8) Trichlorofluoromethane	5.69	101	122043	20.3384 ug/L	100
9) Diethyl ether	6.24	59	292890	106.1009 ug/L	96
10) Isoprene	6.28	67	95722	24.4867 ug/L	89
11) Acrolein	6.48	56	34941	66.6505 ug/L	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	67320	23.5041 ug/L	95
13) Acetone	6.60	43	31704	21.7676 ug/L	93
14) 1,1-Dichloroethene	6.83	61	108067	21.3010 ug/L	94
15) Tert-Butyl Alcohol	6.94	59	94488	199.6007 ug/L	99
16) Dimethyl Sulfide	7.12	62	74623	30.3173 ug/L	96
17) Iodomethane	7.38	142	44576	23.1569 ug/L	98
18) Methyl acetate	7.39	43	65972	18.7122 ug/L	98
19) Methylene Chloride	7.67	84	66371	21.7227 ug/L	85
20) Carbon Disulfide	7.72	76	194167	20.0032 ug/L	99
21) Acrylonitrile	7.87	53	29870	20.6145 ug/L	98
22) Methyl Tert Butyl Ether	7.89	73	195115	22.3617 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	63179	22.5425 ug/L	88
24) n-Hexane	8.24	57	109762	21.5671 ug/L	97
25) Diisopropyl ether	8.61	45	1303599	98.7958 ug/L	95
26) Vinyl Acetate	8.80	43	149448	21.9108 ug/L	98
27) 1,1-Dichloroethane	8.84	63	126368	20.9133 ug/L	99
28) Ethyl-Tert-Butyl ether	9.24	59	1042923	98.6131 ug/L	96
29) 2-Butanone	9.46	43	40223	20.0724 ug/L	98
30) Propionitrile	9.58	54	53739	96.8957 ug/L	99
31) 2,2-Dichloropropane	9.69	77	105935	21.8414 ug/L	92
32) cis-1,2-Dichloroethene	9.77	96	70451	22.5161 ug/L	96
33) Chloroform	10.01	83	116681	20.6765 ug/L	96
34) 1-Bromopropane	10.16	122	15946	37.1719 ug/L	98
35) Bromochloromethane	10.27	130	39818	21.6584 ug/L	100
36) Tetrahydrofuran	10.29	42	126176	93.6952 ug/L	97
38) 1,1,1-Trichloroethane	10.60	97	107996	21.6661 ug/L	100
39) Cyclohexane	10.63	56	130073	23.0127 ug/L	88
40) 1,1-Dichloropropene	10.82	75	87999	21.9221 ug/L	96
41) Tert-Amyl-Methyl ether	10.95	73	898862	107.1369 ug/L	94
42) Carbon Tetrachloride	10.99	117	98570	21.1639 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M137968.D 826_SL.M Wed Mar 23 14:51:26 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032316\6M137968.D Vial: 6
Acq On : 23 Mar 2016 14:26 Operator: TMB
Sample : WG562075-02 20ug/Kg LCS STD 8260 Inst : HPMS6
Misc : 7,1 STD75209 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 14:51:25 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	100537	20.8733 ug/L	99
46)	Benzene	11.23	78	261214	21.6301 ug/L	93
47)	Trichloroethene	12.09	130	66918	23.4556 ug/L	99
48)	Methylcyclohexane	12.18	83	108751	23.5796 ug/L	89
49)	1,2-Dichloropropane	12.34	63	73675	22.6737 ug/L	99
50)	1,4-Dioxane	12.67	88	7263	189.3560 ug/L	83
51)	Bromodichloromethane	12.68	83	89533	20.9969 ug/L	97
52)	Dibromomethane	12.79	93	38004	19.9965 ug/L	98
53)	2-Chloroethyl Vinyl Ether	13.04	63	39396	22.0430 ug/L	97
54)	4-Methyl-2-Pentanone	13.07	58	29050	21.4661 ug/L	92
55)	cis-1,3-Dichloropropene	13.43	75	112363	23.9168 ug/L	98
56)	Dimethyl Disulfide	13.72	79	53153	22.4322 ug/L	96
59)	Toluene	13.92	91	265823	21.7890 ug/L	99
60)	Ethyl Methacrylate	14.04	69	85396	21.8459 ug/L	98
62)	trans-1,3-Dichloropropene	14.12	75	97830	20.8539 ug/L	100
63)	1,1,2-Trichloroethane	14.38	97	54038	21.1917 ug/L	99
64)	2-Hexanone	14.31	43	56682	19.4801 ug/L	98
65)	1,3-Dichloropropane	14.74	76	102465	22.1701 ug/L	99
66)	Tetrachloroethene	14.87	166	65164	21.6526 ug/L	99
67)	Dibromochloromethane	15.17	129	66417	20.0271 ug/L	100
68)	1,2-Dibromoethane	15.48	107	55063	21.1146 ug/L	97
69)	1-Chlorohexane	15.59	91	86267	22.7703 ug/L	88
70)	Chlorobenzene	16.07	112	172795	22.0381 ug/L	71
71)	1,1,1,2-Tetrachloroethane	16.11	131	65682	20.8632 ug/L	95
72)	Ethylbenzene	16.10	106	94609	22.5484 ug/L	99
73)	m-,p-Xylene	16.22	106	227852	44.3817 ug/L	96
74)	o-Xylene	16.88	106	114068	23.5896 ug/L	95
75)	Styrene	16.92	104	182254	22.1446 ug/L	95
76)	Bromoform	17.49	173	43746	18.6823 ug/L	98
77)	Isopropylbenzene	17.38	105	300373	23.1080 ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.65	83	75366	20.8669 ug/L	95
81)	1,2,3-Trichloropropane	17.87	110	23710	21.4408 ug/L	90
82)	trans-1,4-Dichloro-2-Buten	17.93	53	20263	15.1970 ug/L	91
83)	n-Propylbenzene	17.98	91	361052	22.9946 ug/L	99
84)	Bromobenzene	18.13	156	75422	22.0982 ug/L	98
85)	1,3,5-Trimethylbenzene	18.21	105	260340	23.2939 ug/L	97
86)	2-Chlorotoluene	18.30	91	237249	22.6378 ug/L	96
87)	4-Chlorotoluene	18.36	91	216226	22.5642 ug/L	97
88)	a-Methylstyrene	18.69	118	126927	23.3860 ug/L	99
89)	tert-Butylbenzene	18.75	134	53940	23.1586 ug/L	94
90)	1,2,4-Trimethylbenzene	18.82	105	263268	22.3986 ug/L	83
91)	sec-Butylbenzene	19.08	105	327661	22.8929 ug/L	99
92)	p-Isopropyltoluene	19.27	119	267924	22.6893 ug/L	99
93)	1,3-Dichlorobenzene	19.48	146	146035	22.1134 ug/L	98
94)	1,4-Dichlorobenzene	19.64	146	145979	21.7161 ug/L	97
95)	n-Butylbenzene	19.89	91	253278	21.3257 ug/L	98
96)	1,2-Dichlorobenzene	20.23	146	142712	22.4578 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	21.41	75	15967	19.9803 ug/L	98
98)	1,2,4-Trichlorobenzene	22.76	180	98796	21.5056 ug/L	99
99)	Hexachlorobutadiene	22.96	225	59057	22.4787 ug/L	99
100)	Naphthalene	23.20	128	217178	20.5640 ug/L	100
101)	1,2,3-Trichlorobenzene	23.59	180	96490	21.3303 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M137968.D 826_SL.M Wed Mar 23 14:51:27 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032316\6M137968.D Vial: 6
Acq On : 23 Mar 2016 14:26 Operator: TMB
Sample : WG562075-02 20ug/Kg LCS STD 8260 Inst : HPMS6
Misc : 7,1 STD75209 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 23 14:51 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

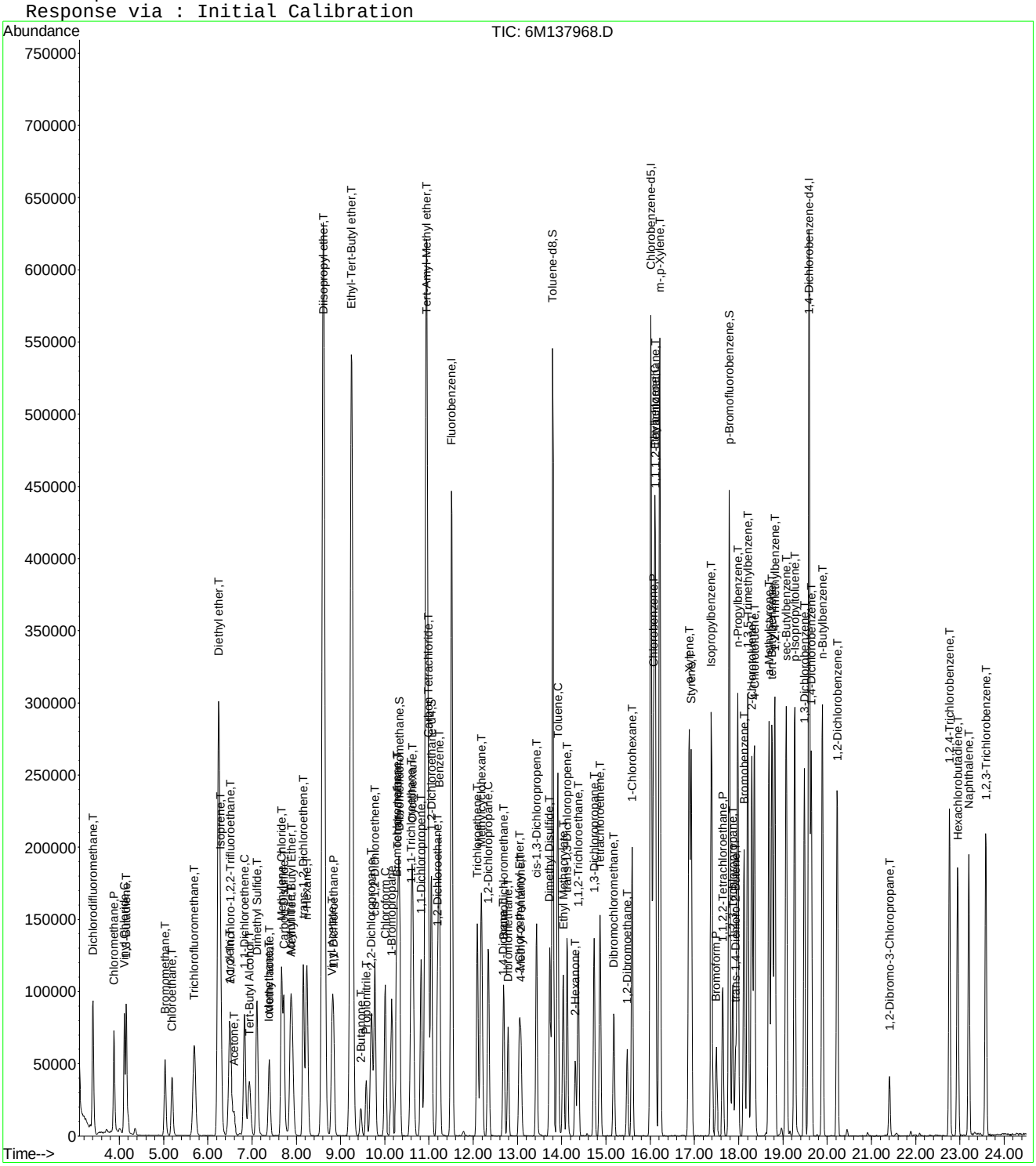

6M137968.D 826_SL.M Wed Mar 23 14:51:27 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032416\6M137994.D Vial: 7
Acq On : 24 Mar 2016 14:32 Operator: TMB
Sample : WG562236-02 20ug/Kg LCS STD 8260 Inst : HPMS6
Misc : 7,1 STD75209 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 14:56:29 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	574597	50.00 ug/L	0.01
57) Chlorobenzene-d5	16.01	117	434319	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	234089	50.00 ug/L	0.01

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	147486	47.8486 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.70%		
43) 1,2-Dichloroethane-d4	11.06	65	177687	44.3991 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 88.80%		
58) Toluene-d8	13.80	98	516894	50.0569 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 100.12%		
80) p-Bromofluorobenzene	17.79	95	221024	51.4042 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.80%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	115216	21.8332 ug/L	98
3) Chloromethane	3.89	50	107708	19.5864 ug/L	99
4) Vinyl Chloride	4.12	62	73795	16.6723 ug/L	97
5) 1,3-Butadiene	4.16	54	31981	8.6843 ug/L	94
6) Bromomethane	5.03	94	51064	21.6421 ug/L	99
7) Chloroethane	5.20	64	59626	23.7578 ug/L	98
8) Trichlorofluoromethane	5.69	101	122119	20.5329 ug/L	99
9) Diethyl ether	6.24	59	288904	105.5919 ug/L	95
10) Isoprene	6.28	67	96089	24.8002 ug/L	90
11) Acrolein	6.50	56	37541	72.2497 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	68594	24.1628 ug/L	94
13) Acetone	6.60	43	32376	22.5608 ug/L	99
14) 1,1-Dichloroethene	6.83	61	109854	21.8467 ug/L	93
15) Tert-Butyl Alcohol	6.94	59	108329	230.8833 ug/L	97
16) Dimethyl Sulfide	7.12	62	76540	31.3739 ug/L	97
17) Iodomethane	7.38	142	45451	23.6797 ug/L	94
18) Methyl acetate	7.39	43	71285	20.3997 ug/L	95
19) Methylene Chloride	7.67	84	68073	22.4788 ug/L	87
20) Carbon Disulfide	7.72	76	192354	19.9934 ug/L	99
21) Acrylonitrile	7.87	53	31745	22.1043 ug/L	99
22) Methyl Tert Butyl Ether	7.90	73	201298	23.2764 ug/L	93
23) trans-1,2-Dichloroethene	8.16	96	64607	23.2579 ug/L	88
24) n-Hexane	8.24	57	106871	21.1866 ug/L	97
25) Diisopropyl ether	8.61	45	1292602	98.8375 ug/L	95
26) Vinyl Acetate	8.80	43	150695	22.2910 ug/L	98
27) 1,1-Dichloroethane	8.84	63	129795	21.6723 ug/L	99
28) Ethyl-Tert-Butyl ether	9.24	59	1048017	99.9800 ug/L	97
29) 2-Butanone	9.46	43	43331	21.8165 ug/L	99
30) Propionitrile	9.58	54	56460	102.7113 ug/L	99
31) 2,2-Dichloropropane	9.70	77	110332	22.9512 ug/L	92
32) cis-1,2-Dichloroethene	9.77	96	71458	23.0419 ug/L	96
33) Chloroform	10.01	83	120355	21.5181 ug/L	97
34) 1-Bromopropane	10.16	122	15565	36.6079 ug/L	98
35) Bromochloromethane	10.27	130	41560	22.8079 ug/L	99
36) Tetrahydrofuran	10.29	42	131874	98.9196 ug/L	98
38) 1,1,1-Trichloroethane	10.60	97	110512	22.3689 ug/L	99
39) Cyclohexane	10.64	56	128739	22.9802 ug/L	87
40) 1,1-Dichloropropene	10.82	75	90263	22.6869 ug/L	97
41) Tert-Amyl-Methyl ether	10.95	73	906124	108.9673 ug/L	95
42) Carbon Tetrachloride	10.99	117	101820	22.0570 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M137994.D 826_SL.M Thu Mar 24 14:56:30 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032416\6M137994.D Vial: 7
Acq On : 24 Mar 2016 14:32 Operator: TMB
Sample : WG562236-02 20ug/Kg LCS STD 8260 Inst : HPMS6
Misc : 7,1 STD75209 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 14:56:29 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	102033	21.3732 ug/L	100
46)	Benzene	11.23	78	267794	22.3730 ug/L	94
47)	Trichloroethene	12.09	130	67998	24.0471 ug/L	98
48)	Methylcyclohexane	12.18	83	106476	23.2926 ug/L	89
49)	1,2-Dichloropropane	12.35	63	76058	23.6162 ug/L	98
50)	1,4-Dioxane	12.68	88	8524	218.5443 ug/L	86
51)	Bromodichloromethane	12.69	83	91217	21.5829 ug/L	97
52)	Dibromomethane	12.79	93	39508	20.9736 ug/L	99
53)	2-Chloroethyl Vinyl Ether	13.04	63	43746	24.6956 ug/L	99
54)	4-Methyl-2-Pentanone	13.07	58	31185	23.2496 ug/L	93
55)	cis-1,3-Dichloropropene	13.43	75	115946	24.8999 ug/L	97
56)	Dimethyl Disulfide	13.72	79	54397	23.1623 ug/L	97
59)	Toluene	13.91	91	274606	22.3516 ug/L	99
60)	Ethyl Methacrylate	14.04	69	89291	22.6826 ug/L	99
62)	trans-1,3-Dichloropropene	14.12	75	102264	21.6467 ug/L	100
63)	1,1,2-Trichloroethane	14.38	97	56589	22.0370 ug/L	98
64)	2-Hexanone	14.31	43	62653	21.3817 ug/L	97
65)	1,3-Dichloropropane	14.74	76	107578	23.1137 ug/L	98
66)	Tetrachloroethene	14.87	166	67049	22.1232 ug/L	99
67)	Dibromochloromethane	15.17	129	69679	20.8639 ug/L	99
68)	1,2-Dibromoethane	15.48	107	58482	22.2689 ug/L	98
69)	1-Chlorohexane	15.59	91	86879	22.7716 ug/L	90
70)	Chlorobenzene	16.07	112	176541	22.3585 ug/L #	68
71)	1,1,1,2-Tetrachloroethane	16.11	131	69153	21.8122 ug/L	97
72)	Ethylbenzene	16.10	106	95436	22.5865 ug/L	97
73)	m-,p-Xylene	16.22	106	237457	45.9293 ug/L	98
74)	o-Xylene	16.88	106	118239	24.2813 ug/L	94
75)	Styrene	16.92	104	189823	22.9030 ug/L	96
76)	Bromoform	17.50	173	46487	19.7141 ug/L	98
77)	Isopropylbenzene	17.38	105	312465	23.8703 ug/L	97
79)	1,1,2,2-Tetrachloroethane	17.65	83	83080	22.7194 ug/L	95
81)	1,2,3-Trichloropropane	17.87	110	25730	22.9808 ug/L	93
82)	trans-1,4-Dichloro-2-Buten	17.93	53	22504	16.6698 ug/L	88
83)	n-Propylbenzene	17.98	91	375556	23.6237 ug/L	98
84)	Bromobenzene	18.13	156	77717	22.4901 ug/L	98
85)	1,3,5-Trimethylbenzene	18.21	105	270551	23.9093 ug/L	96
86)	2-Chlorotoluene	18.30	91	240188	22.6359 ug/L	96
87)	4-Chlorotoluene	18.36	91	223807	23.0675 ug/L	96
88)	a-Methylstyrene	18.69	118	132580	24.1266 ug/L	98
89)	tert-Butylbenzene	18.76	134	56248	23.8520 ug/L	97
90)	1,2,4-Trimethylbenzene	18.82	105	270874	22.7618 ug/L	82
91)	sec-Butylbenzene	19.08	105	337781	23.3092 ug/L	99
92)	p-Isopropyltoluene	19.27	119	280505	23.4621 ug/L	99
93)	1,3-Dichlorobenzene	19.48	146	152247	22.7700 ug/L	97
94)	1,4-Dichlorobenzene	19.65	146	152007	22.3343 ug/L	96
95)	n-Butylbenzene	19.89	91	262378	21.8198 ug/L	99
96)	1,2-Dichlorobenzene	20.23	146	149257	23.1984 ug/L	96
97)	1,2-Dibromo-3-Chloropropan	21.41	75	18642	23.0402 ug/L	99
98)	1,2,4-Trichlorobenzene	22.77	180	105427	22.6662 ug/L	98
99)	Hexachlorobutadiene	22.96	225	61298	23.0443 ug/L	98
100)	Naphthalene	23.20	128	238815	22.3342 ug/L	100
101)	1,2,3-Trichlorobenzene	23.59	180	100207	21.8790 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\032416\6M137994.D Vial: 7
Acq On : 24 Mar 2016 14:32 Operator: TMB
Sample : WG562236-02 20ug/Kg LCS STD 8260 Inst : HPMS6
Misc : 7,1 STD75209 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Mar 24 14:56 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

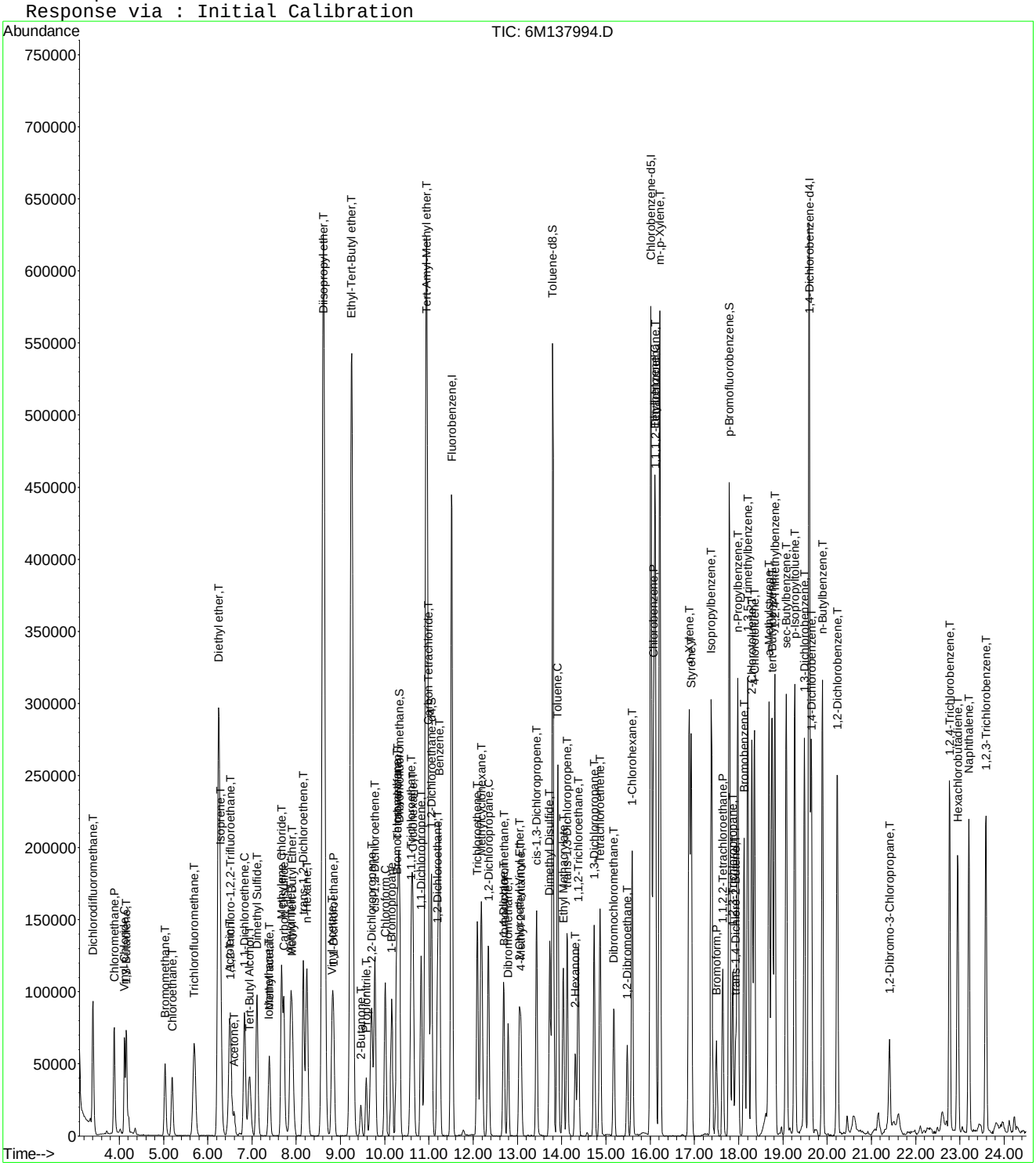

2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT16(5-5.5)150316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/17/2016 23:51
Collect Date:	03/15/2016 09:20	**Dilution:**	1	**File ID:**	1LM.LM33909
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	41.8		4.92	2.46	1.23

Certificate of Analysis

Sample #:	L16030863-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT16(5-5.5)150316MS	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 00:09
Collect Date:	03/15/2016 09:20	**Dilution:**	1	**File ID:**	1LM.LM33910
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	41.4		4.92	2.46	1.23

Certificate of Analysis

Sample #:	L16030863-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT16(5-5.5)150316MSD	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 00:28
Collect Date:	03/15/2016 09:20	**Dilution:**	1	**File ID:**	1LM.LM33911
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	51.0		4.91	2.46	1.23

Certificate of Analysis

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L16030863-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT16(15-15.5)150316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 00:47
Collect Date:	03/15/2016 09:25	**Dilution:**	1	**File ID:**	1LM.LM33912
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	86.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	11.3		4.60	2.30	1.15

Certificate of Analysis

Sample #:	L16030863-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT16(25-25.5)150316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 14:28
Collect Date:	03/15/2016 10:35	**Dilution:**	10	**File ID:**	1LM.LM33936
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	81.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	434		48.0	24.0	12.0

Certificate of Analysis

Sample #:	L16030863-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPT16(30-30.5)150316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 14:46
Collect Date:	03/15/2016 10:40	**Dilution:**	50	**File ID:**	1LM.LM33937
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	79.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1230		237	119	59.3

Certificate of Analysis

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L16030863-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT16(33-33.5)150316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 15:05
Collect Date:	03/15/2016 10:45	**Dilution:**	100	**File ID:**	1LM.LM33938
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	77.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3090		507	254	127

Certificate of Analysis

Sample #:	L16030863-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT17(2.5-3)150316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 03:00
Collect Date:	03/15/2016 11:50	**Dilution:**	1	**File ID:**	1LM.LM33919
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.36	U	4.72	2.36	1.18

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-09	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT17(2.5-3)150316FD	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 03:19
Collect Date:	03/15/2016 11:50	**Dilution:**	1	**File ID:**	1LM.LM33920
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.32	U	4.63	2.32	1.16

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-10	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT17(5-5.5)150316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 03:38
Collect Date:	03/15/2016 11:55	**Dilution:**	1	**File ID:**	1LM.LM33921
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	78.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.54	U	5.06	2.54	1.27

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-11	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT17(10-10.5)150316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 03:57
Collect Date:	03/15/2016 12:00	**Dilution:**	1	**File ID:**	1LM.LM33922
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.48	U	4.95	2.48	1.24

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16030863
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16030863-12	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT17(18-18.5)150316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 15:24
Collect Date:	03/15/2016 12:30	**Dilution:**	10	**File ID:**	1LM.LM33939
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	83.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	172		48.1	24.0	12.0

Certificate of Analysis

Sample #:	L16030863-13	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT17(27-27.5)150316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 15:43
Collect Date:	03/15/2016 12:45	**Dilution:**	100	**File ID:**	1LM.LM33940
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	78.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2170		498	248	124

Certificate of Analysis

Sample #:	L16030863-14	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18DPT17(21.5-22)150316	**Prep Method:**	6850	**Prep Date:**	03/17/2016 12:30
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	03/02/2016 10:46
Workgroup #:	WG561318	**Analyst:**	JWR	**Run Date:**	03/18/2016 16:02
Collect Date:	03/15/2016 13:00	**Dilution:**	50	**File ID:**	1LM.LM33941
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	82.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1500		240	120	60.1

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

MICROBAC

Semivolatile Sample Extract Log

Document Control No.: 1753 Page: 20 of 100

Parameter: Perchlorate
SOP #: HPLC 06
Analyst: JWR
Spike/Surrogate analyst: JWR
Surrogate #: NA
Spike # A: STD72686
Ext Solvent: DI-H2O
Ext Solvent: NA
Ext Disk: NA

Matrix: Soils
Rev #: 07
Date/Time Extracted: 03/17/16/1230
Witness: WD

Spike # B: NA
Lot #: NA
Lot #: NA
Lot #: NA

Extraction Work Group: WG561293
Analytical Work Group: WG561318
Run ID: R4502817

Pipetter(s): Eppendorf #403
Analytical Balance ID: BAL014
Reagent: Tubes Lot #: RGT34011
Reagent: Sand Lot #: COA16150
Other: IS Lot #: COA18071

Color Code
T = Transparent
C = Colored
O = Opaque

	Sample ID	Test Code	pH	Initial Wt / Vol	JWR ~~Surrogate~~ Amount IS	Amount Spike	Final Volume	Extract Color	Comments
1	WG561293-01	6850		5.015g	0.250 ml	1.0 ml	50ml		MCT (2ug/kg) (10,000 us)
2	WG561293-02			5.019g		NA			Blank
3	WG561293-03			5.006g		1.0ml			LCS (2ug/kg)
4	L16030863-01RS			5.126g		NA			WG561293-04 Ref
5	-02 MS			5.128g		1.0ml			WG561293-05 MS (@2ug/kg)
6	-03 MSD			5.138g		1.0ml			WG561293-06 MSD (@2ug/kg)
7	-04			5.044g		NA			
8	-05			5.128g		NA			
9	-06			5.298g		NA			
10	-07			5.083g		NA			
11	-08			5.036g		NA			
12	-09			5.174g		NA			
13	-10			5.011g		NA			
14	-11			5.024g		NA			
15	-12			5.008g		NA			
16	-13			5.098g		NA			
17	-14			5.055g		NA			
18									
19									
20									
21									
22									
23									
24									

JWR 03/17/16

Reviewed by: Walter. Dey 3-17-16

Analytical WG561318 (soils)

Perchlorate Conductivity Check

(perchlorate1)

Conductivity Probe Calibration Check: 1405 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG561293-01 MCT	9900.	
WG561293-02 Blank	1.82	
WG561293-03 LCS	2.01	
L16030863-01 RS	8.67	
-02 MS	8.88	
-03 MSD	9.85	
-04	5.07	
-05	7.75	
-06	6.30	
-07	9.21	
-08	2.27	
-09	3.02	
-10	4.16	
-11	5.27	
-12	11.39	
-13	18.05	
-14	8.70	

Analyst: John Richards

Date/Time: 03/18/16 / 1330

DCN#117301

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030216_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015, WG559292

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 MS/MSD STD: STD72685

Comments: L16021262s and L16021255s diluted based on historical data.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM33567	WG559340-01 CCB	1	1		03/02/16 08:34
2	1LM.LM33568	WG559340-02 STD (0.1 ug/L)	1	1	STD72683	03/02/16 08:53
3	1LM.LM33569	WG559340-03 STD (0.2 ug/L)	1	1	STD72683	03/02/16 09:12
4	1LM.LM33570	WG559340-04 STD (0.5 ug/L)	1	1	STD72683	03/02/16 09:31
5	1LM.LM33571	WG559340-05 STD (1.0 ug/L)	1	1	STD72683	03/02/16 09:50
6	1LM.LM33572	WG559340-06 STD (2.0 ug/L)	1	1	STD72683	03/02/16 10:09
7	1LM.LM33573	WG559340-07 STD (5.0 ug/L)	1	1	STD72683	03/02/16 10:28
8	1LM.LM33574	WG559340-08 STD (10 ug/L)	1	1	STD72683	03/02/16 10:46
9	1LM.LM33575	WG559340-09 SSCV (1.0 ug/L)	1	1	STD72685	03/02/16 11:05
10	1LM.LM33576	WG559291-01 CCB	1	1		03/02/16 11:25
11	1LM.LM33577	WG559291-02 CCV (1.0ug/L)	1	1	STD72683	03/02/16 11:44
12	1LM.LM33578	WG559015-05 MRL (0.2ug/L)	1	1	STD72683	03/02/16 12:03
13	1LM.LM33579	WG559015-01 MCT (0.2ug/L)	1	1	STD72685	03/02/16 12:22
14	1LM.LM33580	WG559015-02 BLANK	1	1		03/02/16 12:41
15	1LM.LM33581	WG559015-05 MRL (0.2ug/L)	1	1	STD72683	03/02/16 13:01
16	1LM.LM33582	WG559015-03 LCS (0.2ug/L)	1	1	STD72685	03/02/16 13:20
17	1LM.LM33583	WG559015-04 LCS2 (0.2ug/L)	1	1	STD72685	03/02/16 13:39
18	1LM.LM33584	L16021060-01 ADC	1	1	STD72685	03/02/16 13:58
19	1LM.LM33585	L16021060-02 ADC	1	1	STD72685	03/02/16 14:17
20	1LM.LM33586	L16021060-03 ADC	1	1	STD72685	03/02/16 14:36
21	1LM.LM33587	L16021060-04 ADC	1	1	STD72685	03/02/16 14:55
22	1LM.LM33588	L16021262-01 (20x)	1	20		03/02/16 15:13
23	1LM.LM33589	L16021262-02 (5000x)	1	5000		03/02/16 15:32
24	1LM.LM33590	WG559291-03 CCV (1.0ug/L)	1	1	STD72683	03/02/16 15:51
25	1LM.LM33591	WG559015-06 MRL (0.2ug/L)	1	1	STD72683	03/02/16 16:10
26	1LM.LM33592	WG559291-04 CCB	1	1		03/02/16 16:29
27	1LM.LM33593	L16021262-03 (100X)	1	100		03/02/16 16:48
28	1LM.LM33594	L16021262-04 (2000X)	1	2000		03/02/16 17:07
29	1LM.LM33595	L16021262-05 (1000X)	1	1000		03/02/16 17:26
30	1LM.LM33596	L16021262-06 (10,000X)	1	10000		03/02/16 17:45
31	1LM.LM33597	L16021262-07 (10,000X)	1	10000		03/02/16 18:04
32	1LM.LM33598	L16021262-08 (5000X)	1	5000		03/02/16 18:23
33	1LM.LM33599	L16021262-09 (5000X)	1	5000		03/02/16 18:42

Page: 1 Approved: 04-MAR-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030216_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015, WG559292

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM33600	L16021262-10 (100,000X)	1	100000		03/02/16 19:01
35	1LM.LM33601	L16021262-11 (10,000X)	1	10000		03/02/16 19:20
36	1LM.LM33602	L16021262-12 (10,000X)	1	10000		03/02/16 19:39
37	1LM.LM33603	WG559291-05 CCV (1.0ug/L)	1	1	STD72683	03/02/16 19:58
38	1LM.LM33604	WG559015-07 MRL (0.2ug/L)	1	1	STD72683	03/02/16 20:17
39	1LM.LM33605	WG559291-06 CCB	1	1		03/02/16 20:35
40	1LM.LM33606	L16021262-13 (10,000X)	1	10000		03/02/16 20:54
41	1LM.LM33607	L16021262-14 (10,000X)	1	10000		03/02/16 21:13
42	1LM.LM33608	WG559291-07 CCV (1.0ug/L)	1	1	STD72683	03/02/16 21:32
43	1LM.LM33609	WG559015-08 MRL (0.2ug/L)	1	1	STD72683	03/02/16 21:51
44	1LM.LM33610	WG559291-08 CCB	1	1		03/02/16 22:10
45	1LM.LM33611	WG559292-07 MRL (0.2ug/L)	1	1	STD72685	03/02/16 22:29
46	1LM.LM33612	WG559292-01 MCT (0.2ug/L)	1	1	STD72685	03/02/16 22:48
47	1LM.LM33613	WG559292-02 BLANK	1	1		03/02/16 23:07
48	1LM.LM33614	WG559292-03 LCS (0.2ug/L)	1	1	STD72685	03/02/16 23:26
93	1LM.LM33615	L16021255-01 REF 100X	1	100		03/02/16 23:45
50	1LM.LM33616	L16021255-02 MS 100X	1	100	STD72685	03/03/16 00:04
51	1LM.LM33617	L16021255-03 MSD 100X	1	100	STD72685	03/03/16 00:23
94	1LM.LM33618	L16021255-04 20X	1	20		03/03/16 00:42
53	1LM.LM33619	L16021255-05 20X	1	20		03/03/16 01:01
54	1LM.LM33620	L16021255-06 200X	1	200		03/03/16 01:20
55	1LM.LM33621	L16021255-07 100X	1	100		03/03/16 01:39
56	1LM.LM33622	WG559291-09 CCV (1.0ug/L)	1	1	STD72685	03/03/16 01:57
57	1LM.LM33623	WG559292-08 MRL (0.2ug/L)	1	1	STD72685	03/03/16 02:16
58	1LM.LM33624	WG559291-10 CCB	1	1		03/03/16 02:35
59	1LM.LM33625	L16021255-08	1	1		03/03/16 02:54
60	1LM.LM33626	L16021255-09 500X	1	500		03/03/16 03:13
61	1LM.LM33627	L16021255-10 5000X	1	5000		03/03/16 03:32
62	1LM.LM33628	L16021255-11 5000X	1	5000		03/03/16 03:51
63	1LM.LM33629	L16021255-12 100X	1	100		03/03/16 04:10
64	1LM.LM33630	L16021255-13 10,000X	1	10000		03/03/16 04:29
65	1LM.LM33631	L16021255-14 10,000X	1	10000		03/03/16 04:48
66	1LM.LM33632	L16030008-01	1	1		03/03/16 05:07
67	1LM.LM33633	L16030008-01 10X	1	10		03/03/16 05:26
68	1LM.LM33634	L16021328-01	1	1		03/03/16 05:45
69	1LM.LM33635	WG559291-11 CCV (1.0ug/L)	1	1	STD72685	03/03/16 06:04

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 030216_WTD.TXT
Analyst1: WTD Analyst2: ADC
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG559015, WG559292

Internal STD: COA18071 Surrogate STD: NA STD72683 (02/17/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
70	1LM.LM33636	WG559292-09 MRL (0.2ug/L)	1	1	STD72685	03/03/16 06:23
71	1LM.LM33637	WG559291-12 CCB	1	1		03/03/16 06:41
72	1LM.LM33638	L16021328-02	1	1		03/03/16 07:00
73	1LM.LM33639	L16021328-03	1	1		03/03/16 07:19
74	1LM.LM33640	L16021328-04	1	1		03/03/16 07:38
75	1LM.LM33641	L16021328-05	1	1		03/03/16 07:57
76	1LM.LM33642	WG559291-13 CCV (1.0ug/L)	1	1	STD72685	03/03/16 08:16
77	1LM.LM33643	WG559292-10 MRL (0.2ug/L)	1	1	STD72685	03/03/16 08:35
78	1LM.LM33644	WG559291-14 CCB	1	1		03/03/16 08:54
79	1LM.LM33645	L16021255-05 200X	1	200		03/03/16 09:13
80	1LM.LM33646	L16021255-06	1	1		03/03/16 09:32
81	1LM.LM33647	L16021255-12 1000X	1	1000		03/03/16 09:51
95	1LM.LM33648	L16021255-04	1	1		03/03/16 10:10
96	1LM.LM33649	L16021255-02 MS	1	1	STD72685	03/03/16 10:29
97	1LM.LM33650	L16021255-03 MSD	1	1	STD72685	03/03/16 10:48
85	1LM.LM33651	WG559291-15 CCV (1.0ug/L)	1	1	STD72685	03/03/16 11:07
86	1LM.LM33652	WG559292-11 MRL (0.2ug/L)	1	1	STD72685	03/03/16 11:25
87	1LM.LM33653	WG559291-16 CCB	1	1		03/03/16 11:44

Comments

Seq.	Rerun	Dil.	Reason	Analytes
12	X			
	WG559015-05 incorrect vial location.			
50				
	DNR. Incorrect information on the supplied Chain of Custody.			
51				
	DNR. Incorrect information on the supplied Chain of Custody.			
94	X	1	Analyzed too dilute	
	L16021255-04			
53	X	200	Over Calibration Range	Perchlorate
	L16021255-05			
54	X	1	Analyzed too dilute	
	L16021255-06			
63	X	1000	Over Calibration Range	
	L16021255-12 100X			

Page: 3 Approved: 04-MAR-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 031716_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG561316 (soils) Analytical WG561318 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD72683 (03/02/2016)

CCV STD: STD72683 LCS STD: STD72685 MS/MSD STD: STD72685

Comments: Samples tagged with (NR) had "On Column" results over the calibration range when analyzed neat. These samples were reanalyzed at dilutions on the end of the run.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM33881	WG561324-01 CCB	1	1		03/17/16 15:00
2	1LM.LM33882	WG561324-02 CCV (1.0ug/L)	1	1	STD72683	03/17/16 15:19
3	1LM.LM33883	WG561316-07 MRL (2.0ug/kg)	7	1	STD72683	03/17/16 15:38
4	1LM.LM33884	WG561316-01 MCT (2.0ug/kg)	7	1	STD72685	03/17/16 15:57
5	1LM.LM33885	WG561316-02 BLANK	7	1		03/17/16 16:16
6	1LM.LM33886	WG561316-03 LCS (2.0ug/kg)	7	1	STD72685	03/17/16 16:35
7	1LM.LM33887	L16030861-01 REF	7	1		03/17/16 16:54
8	1LM.LM33888	L16030861-01 MS	7	1	STD72685	03/17/16 17:13
9	1LM.LM33889	L16030861-01 MSD	7	1	STD72685	03/17/16 17:32
10	1LM.LM33890	L16030861-02	7	1		03/17/16 17:51
11	1LM.LM33891	L16030861-03	7	1		03/17/16 18:10
12	1LM.LM33892	L16030861-04	7	1		03/17/16 18:29
13	1LM.LM33893	L16030861-05	7	1		03/17/16 18:48
14	1LM.LM33894	WG561324-03 CCV (1.0ug/L)	1	1	STD72683	03/17/16 19:07
15	1LM.LM33895	WG561316-08 MRL (2.0ug/kg)	7	1	STD72683	03/17/16 19:25
16	1LM.LM33896	WG561324-04 CCB	1	1		03/17/16 19:44
17	1LM.LM33897	L16030861-06	7	1		03/17/16 20:03
18	1LM.LM33898	L16030861-07	7	1		03/17/16 20:22
19	1LM.LM33899	L16030861-08 (NR)	7	1		03/17/16 20:41
20	1LM.LM33900	L16030861-09 (NR)	7	1		03/17/16 21:00
21	1LM.LM33901	L16030861-10 (NR)	7	1		03/17/16 21:19
22	1LM.LM33902	WG561324-05 CCV (1.0ug/L)	1	1	STD72683	03/17/16 21:38
23	1LM.LM33903	WG561316-09 MRL (2.0ug/kg)	7	1	STD72683	03/17/16 21:57
24	1LM.LM33904	WG561318-07 MRL (2.0ug/kg)	7	1	STD72683	03/17/16 22:16
25	1LM.LM33905	WG561324-06 CCB	1	1		03/17/16 22:35
26	1LM.LM33906	WG561318-01 MCT (2.0ug/kg)	7	1	STD72685	03/17/16 22:54
27	1LM.LM33907	WG561318-02 BLANK	7	1		03/17/16 23:13
28	1LM.LM33908	WG561318-03 LCS (2.0ug/kg)	7	1	STD72685	03/17/16 23:32
29	1LM.LM33909	L16030863-01 RS	7	1		03/17/16 23:51
30	1LM.LM33910	L16030863-02 MS	7	1	STD72685	03/18/16 00:09
31	1LM.LM33911	L16030863-03 MSD	7	1	STD72685	03/18/16 00:28
32	1LM.LM33912	L16030863-04	7	1		03/18/16 00:47
33	1LM.LM33913	L16030863-05 (NR)	7	1		03/18/16 01:06

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 031716_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG561316 (soils) Analytical WG561318 (soils)

Internal STD: COA18071 Surrogate STD: NA STD72683 (03/02/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM33914	L16030863-06 (NR)	7	1		03/18/16 01:25
35	1LM.LM33915	L16030863-07 (NR)	7	1		03/18/16 01:44
36	1LM.LM33916	WG561324-07 CCV (1.0ug/L)	1	1	STD72683	03/18/16 02:03
37	1LM.LM33917	WG561318-08 MRL (2.0ug/kg)	7	1	STD72683	03/18/16 02:22
38	1LM.LM33918	WG561324-08 CCB	1	1		03/18/16 02:41
39	1LM.LM33919	L16030863-08	7	1		03/18/16 03:00
40	1LM.LM33920	L16030863-09	7	1		03/18/16 03:19
41	1LM.LM33921	L16030863-10	7	1		03/18/16 03:38
42	1LM.LM33922	L16030863-11	7	1		03/18/16 03:57
43	1LM.LM33923	L16030863-12 (NR)	7	1		03/18/16 04:16
44	1LM.LM33924	L16030863-13 (NR)	7	1		03/18/16 04:35
45	1LM.LM33925	L16030863-14 (NR)	7	1		03/18/16 04:54
46	1LM.LM33926	WG561324-09 CCV (1.0ug/L)	1	1	STD72683	03/18/16 05:12
47	1LM.LM33927	WG561318-09 MRL (2.0ug/kg)	7	1	STD72683	03/18/16 05:31
48	1LM.LM33928	WG561324-10 CCB	1	1		03/18/16 05:50
49	1LM.LM33929	WG561324-11 CCV (1.0ug/L)	1	1	STD72683	03/18/16 12:15
50	1LM.LM33930	WG561316-10 MRL (2.0ug/kg)	7	1	STD72683	03/18/16 12:34
51	1LM.LM33931	WG561318-10 MRL (2.0ug/kg)	7	1	STD72683	03/18/16 12:53
52	1LM.LM33932	WG561324-12 CCB	1	1		03/18/16 13:12
53	1LM.LM33933	L16030861-08 (RR 100x)	7	100		03/18/16 13:31
54	1LM.LM33934	L16030861-09 (RR 100x)	7	100		03/18/16 13:50
55	1LM.LM33935	L16030861-10 (RR 100x)	7	100		03/18/16 14:09
56	1LM.LM33936	L16030863-05 (RR 10x)	7	10		03/18/16 14:28
57	1LM.LM33937	L16030863-06 (RR 50x)	7	50		03/18/16 14:46
58	1LM.LM33938	L16030863-07 (RR 100x)	7	100		03/18/16 15:05
59	1LM.LM33939	L16030863-12 (RR 10x)	7	10		03/18/16 15:24
60	1LM.LM33940	L16030863-13 (RR 100x)	7	100		03/18/16 15:43
61	1LM.LM33941	L16030863-14 (RR 50x)	7	50		03/18/16 16:02
62	1LM.LM33942	WG561324-13 CCV (1.0ug/L)	1	1	STD72683	03/18/16 16:21
63	1LM.LM33943	WG561316-11 MRL (2.0ug/kg)	7	1	STD72683	03/18/16 16:40
64	1LM.LM33944	WG561318-11 MRL (2.0ug/kg)	7	1	STD72683	03/18/16 16:59
65	1LM.LM33945	WG561324-14 CCB	1	1		03/18/16 17:18

Comments

Seq.	Rerun	Dil.	Reason	Analytes
30				

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 031716_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 150506254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG561316 (soils) Analytical WG561318 (soils)

Internal STD: COA18071 Surrogate STD: NA STD72683 (03/02/2016)

CCV STD: STD72683 LCS STD: STD72685 STD72685

Comments

Seq.	Rerun	Dil.	Reason	Analytes
31	L16030863-02 MS : The MS %Rec is below the advisory limit. The parent sample to this MS had a result 17 times greater than that of the spiked amount. This sample's matrix is a non-homogeneous mixture of brown, red and white colored "clay-like" soils.			
	L16030863-03 MSD : The MSD %Rec is above the advisory limit. The parent sample to this MSD had a result 17 times greater than that of the spiked amount. This sample's matrix is a non-homogeneous mixture of brown, red and white colored "clay-like" soils.			

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Microbac Laboratories Inc.

Data Checklist

Date: 02-MAR-2016
Analyst: WTD
Analyst: ADC
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 73617
Analytical Workgroups: L16021255,L16021328,030008,021262,021060

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	WTD
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MES

Primary Reviewer: 03-MAR-2016

Secondary Reviewer: 04-MAR-2016

CHECKLIST1 - Modified 03/05/2008

Generated: MAR-04-2016 13:53:03

Microbac Laboratories Inc.

Data Checklist

Date: 17-MAR-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 73926
Analytical Workgroups: L16030861, 0863 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
18-MAR-2016
John Richards

Secondary Reviewer:
21-MAR-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-21-2016 10:23:48

Microbac Laboratories Inc.

00697992

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG561318

Login Number: L16030863

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18DPT16(5-5.5)150316	01	03/15/16					03/17/2016	2.1	28		03/17/16	.5	28	
18DPT16(5-5.5)150316MS	02	03/15/16					03/17/2016	2.1	28		03/18/16	.5	28	
18DPT16(5-5.5)150316MSD	03	03/15/16					03/17/2016	2.1	28		03/18/16	.5	28	
18DPT16(15-15.5)150316	04	03/15/16					03/17/2016	2.1	28		03/18/16	.5	28	
18DPT16(25-25.5)150316	05	03/15/16					03/17/2016	2.1	28		03/18/16	1.1	28	
18CPT16(30-30.5)150316	06	03/15/16					03/17/2016	2.1	28		03/18/16	1.1	28	
18DPT16(33-33.5)150316	07	03/15/16					03/17/2016	2.1	28		03/18/16	1.1	28	
18DPT17(2.5-3)150316	08	03/15/16					03/17/2016	2	28		03/18/16	.6	28	
18DPT17(2.5-3)150316FD	09	03/15/16					03/17/2016	2	28		03/18/16	.6	28	
18DPT17(5-5.5)150316	10	03/15/16					03/17/2016	2	28		03/18/16	.6	28	
18DPT17(10-10.5)150316	11	03/15/16					03/17/2016	2	28		03/18/16	.6	28	
18DPT17(18-18.5)150316	12	03/15/16					03/17/2016	2	28		03/18/16	1.1	28	
18DPT17(27-27.5)150316	13	03/15/16					03/17/2016	2	28		03/18/16	1.1	28	
18DPT17(21.5-22)150316	14	03/15/16					03/17/2016	2	28		03/18/16	1.1	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4679315
Report generated 03/22/2016 09:52

METHOD BLANK SUMMARY

Login Number: L16030863
Blank File ID: 1LM.LM33907
Prep Date: 03/17/16 12:30
Analyzed Date: 03/17/16 23:13
Analyst: JWR

Work Group: WG561318
Blank Sample ID: WG561318-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG561318-07	1LM.LM33904	03/17/16 22:16	01
MCT	WG561318-01	1LM.LM33906	03/17/16 22:54	01
LCS	WG561318-03	1LM.LM33908	03/17/16 23:32	01
18DPT16(5-5.5)150316	L16030863-01	1LM.LM33909	03/17/16 23:51	01
18DPT16(5-5.5)150316MS	L16030863-02	1LM.LM33910	03/18/16 00:09	01
18DPT16(5-5.5)150316MSD	L16030863-03	1LM.LM33911	03/18/16 00:28	01
18DPT16(15-15.5)150316	L16030863-04	1LM.LM33912	03/18/16 00:47	01
QCMRL	WG561318-08	1LM.LM33917	03/18/16 02:22	01
18DPT17(2.5-3)150316	L16030863-08	1LM.LM33919	03/18/16 03:00	01
18DPT17(2.5-3)150316FD	L16030863-09	1LM.LM33920	03/18/16 03:19	01
18DPT17(5-5.5)150316	L16030863-10	1LM.LM33921	03/18/16 03:38	01
18DPT17(10-10.5)150316	L16030863-11	1LM.LM33922	03/18/16 03:57	01
QCMRL	WG561318-09	1LM.LM33927	03/18/16 05:31	01
QCMRL	WG561318-10	1LM.LM33931	03/18/16 12:53	01
18DPT16(25-25.5)150316	L16030863-05	1LM.LM33936	03/18/16 14:28	DL01
18CPT16(30-30.5)150316	L16030863-06	1LM.LM33937	03/18/16 14:46	DL01
18DPT16(33-33.5)150316	L16030863-07	1LM.LM33938	03/18/16 15:05	DL01
18DPT17(18-18.5)150316	L16030863-12	1LM.LM33939	03/18/16 15:24	DL01
18DPT17(27-27.5)150316	L16030863-13	1LM.LM33940	03/18/16 15:43	DL01
18DPT17(21.5-22)150316	L16030863-14	1LM.LM33941	03/18/16 16:02	DL01
QCMRL	WG561318-11	1LM.LM33944	03/18/16 16:59	01

Report Name: BLANK_SUMMARY
PDF File ID: 4679316
Report generated 03/22/2016 09:52

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16030863 Prep Date: 03/17/16 12:30 Sample ID: WG561318-02
Instrument ID: LCMS1 Run Date: 03/17/16 23:13 Prep Method: 6850
File ID: 1LM.LM33907 Analyst: JWR Method: 6850
Workgroup (AAB#): WG561318 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.996	3.98	0.996	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4679317
22-MAR-2016 09:52

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16030863 Run Date: 03/17/2016 Sample ID: WG561318-03
Instrument ID: LCMS1 Run Time: 23:32 Prep Method: 6850
File ID: 1LM.LM33908 Analyst: JWR Method: 6850
Workgroup (AAB#): WG561318 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD72685 Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	2.00	1.98	99.0	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4679318
Report generated: 03/22/2016 09:52

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16030863 Cal ID: LCMS1- 02-MAR-16 Worknum: WG561318
Instrument ID: LCMS1 Contract #: Prep Method: 6850
Parent ID: L16030863-01 File ID: 1LM.LM33909 Dil: 1 Method: 6850
Sample ID: L16030863-02 MS File ID: 1LM.LM33910 Dil: 1 Matrix: Soil
Sample ID: L16030863-03 MSD File ID: 1LM.LM33911 Dil: 1 Units: ug/kg
Percent Solid: 79.3

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Perchlorate	41.8	2.46	41.4	-15.7	2.45	51.0	376	20.8	80 - 120	15	*#

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4679319
Report generated 03/22/2016 09:52

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16030863
Analytical Method: 6850
ICAL Workgroup: WG559340

Instrument ID: LCMS1
Initial Calibration Date: 02-MAR-16 10:46
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.808	3.97	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4680049
Report generated 03/22/2016 09:52

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16030863
Analytical Method: 6850

Instrument ID: LCMS1
Initial Calibration Date: 02-MAR-16 10:46
Column ID: F

Analyte	WG559340-02			WG559340-03			WG559340-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	18400.0000	1.879	0.200	37000.0000	1.850	0.500	89000.0000	1.810

INT_CAL - Modified 03/06/2008
PDF File ID: 4680049
Report generated 03/22/2016 09:52

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16030863

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 02-MAR-16 10:46

Column ID: F

Analyte	WG559340-05			WG559340-06			WG559340-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	183000.000	1.829	2.00	363000.000	1.777	5.00	871000.000	1.779

INT_CAL - Modified 03/06/2008
PDF File ID: 4680049
Report generated 03/22/2016 09:52

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16030863
Analytical Method: 6850

Instrument ID: LCMS1
Initial Calibration Date: 02-MAR-16 10:46
Column ID: F

Analyte	WG559340-08		
	CONC	RESP	RF
Perchlorate	10.0	1650000.00	1.729

INT_CAL - Modified 03/06/2008
PDF File ID: 4680049
Report generated 03/22/2016 09:52

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16030863 Run Date: 03/02/2016 Sample ID: WG559340-09
Instrument ID: LCMS1 Run Time: 11:05 Method: 6850
File ID: 1LM.LM33575 Analyst: WTD QC Key: DOD4
ICal Workgroup: WG559340 Cal ID: LCMS1 - 02-MAR-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.83	3.00	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4680050
Report generated 03/22/2016 09:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030863
Run Date: 03/17/2016
Sample ID: WG561324-04
Instrument ID: LCMS1
Run Time: 19:44
Method: 6850
File ID: 1LM.LM33896
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG561318
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4679322
Report generated 03/22/2016 09:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030863
Run Date: 03/17/2016
Sample ID: WG561324-06
Instrument ID: LCMS1
Run Time: 22:35
Method: 6850
File ID: 1LM.LM33905
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG561318
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4679322
Report generated 03/22/2016 09:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030863
Run Date: 03/18/2016
Sample ID: WG561324-08
Instrument ID: LCMS1
Run Time: 02:41
Method: 6850
File ID: 1LM.LM33918
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG561318
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4679322
Report generated 03/22/2016 09:53

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030863
Run Date: 03/18/2016
Sample ID: WG561324-10
Instrument ID: LCMS1
Run Time: 05:50
Method: 6850
File ID: 1LM.LM33928
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG561318
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4679322
Report generated 03/22/2016 09:53

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030863
Run Date: 03/18/2016
Sample ID: WG561324-12
Instrument ID: LCMS1
Run Time: 13:12
Method: 6850
File ID: 1LM.LM33932
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG561318
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4679322
Report generated 03/22/2016 09:53

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16030863
Run Date: 03/18/2016
Sample ID: WG561324-14
Instrument ID: LCMS1
Run Time: 17:18
Method: 6850
File ID: 1LM.LM33945
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG561318
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4679322
Report generated 03/22/2016 09:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030863
Run Date: 03/17/2016
Sample ID: WG561324-05
Instrument ID: LCMS1
Run Time: 21:38
Method: 6850
File ID: 1LM.LM33902
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG561318
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.993	ug/kg	1.76	0.700	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4679321
Report generated 03/22/2016 09:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030863 Run Date: 03/18/2016 Sample ID: WG561324-07
Instrument ID: LCMS1 Run Time: 02:03 Method: 6850
File ID: 1LM.LM33916 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG561318 Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.993	ug/kg	1.76	0.700	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4679321
Report generated 03/22/2016 09:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030863 Run Date: 03/18/2016 Sample ID: WG561324-09
Instrument ID: LCMS1 Run Time: 05:12 Method: 6850
File ID: 1LM.LM33926 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG561318 Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/kg	1.78	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4679321
Report generated 03/22/2016 09:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030863
Run Date: 03/18/2016
Sample ID: WG561324-11
Instrument ID: LCMS1
Run Time: 12:15
Method: 6850
File ID: 1LM.LM33929
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG561318
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.976	ug/kg	1.73	2.40	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4679321
Report generated 03/22/2016 09:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16030863
Run Date: 03/18/2016
Sample ID: WG561324-13
Instrument ID: LCMS1
Run Time: 16:21
Method: 6850
File ID: 1LM.LM33942
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG561318
Cal ID: LCMS1 - 02-MAR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.978	ug/kg	1.73	2.20	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4679321
Report generated 03/22/2016 09:53

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030863 Run Date: 03/17/2016 Sample ID: WG561318-07
Instrument ID: LCMS1 Run Time: 22:16 Prep Method: 6850
File ID: 1LM.LM33904 Analyst: JWR Method: 6850
Workgroup (AAB#): WG561318 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.88	94.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4679320
Report generated 03/22/2016 09:52

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030863 Run Date: 03/18/2016 Sample ID: WG561318-08
Instrument ID: LCMS1 Run Time: 02:22 Prep Method: 6850
File ID: 1LM.LM33917 Analyst: JWR Method: 6850
Workgroup (AAB#): WG561318 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.03	102	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4679320
Report generated 03/22/2016 09:52

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030863 Run Date: 03/18/2016 Sample ID: WG561318-09

Instrument ID: LCMS1 Run Time: 05:31 Prep Method: 6850

File ID: 1LM.LM33927 Analyst: JWR Method: 6850

Workgroup (AAB#): WG561318 Matrix: Soil Units: ug/kg

Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.91	95.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4679320
Report generated 03/22/2016 09:52

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030863 Run Date: 03/18/2016 Sample ID: WG561318-10
Instrument ID: LCMS1 Run Time: 12:53 Prep Method: 6850
File ID: 1LM.LM33931 Analyst: JWR Method: 6850
Workgroup (AAB#): WG561318 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.93	96.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4679320
Report generated 03/22/2016 09:52

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16030863 Run Date: 03/18/2016 Sample ID: WG561318-11
Instrument ID: LCMS1 Run Time: 16:59 Prep Method: 6850
File ID: 1LM.LM33944 Analyst: JWR Method: 6850
Workgroup (AAB#): WG561318 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-02-MAR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.00	100	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4679320
Report generated 03/22/2016 09:52

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16030863
Instrument ID: LCMS1
Workgroup (AAB#): WG561318

ICAL CCV Number: WG559340-05
CAL ID: LCMS1-02-MAR-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1
WG559340	NA	NA	494000
Upper Limit	NA	NA	741000
Lower Limit	NA	NA	247000
L16030863-01	1.00	01	500000
L16030863-02	1.00	01	500000
L16030863-03	1.00	01	500000
L16030863-04	1.00	01	513000
L16030863-05	10.0	DL01	458000
L16030863-06	50.0	DL01	459000
L16030863-07	100	DL01	459000
L16030863-08	1.00	01	535000
L16030863-09	1.00	01	525000
L16030863-10	1.00	01	527000
L16030863-11	1.00	01	553000
L16030863-12	10.0	DL01	473000
L16030863-13	100	DL01	459000
L16030863-14	50.0	DL01	459000
WG561318-02	1.00	01	548000
WG561318-03	1.00	01	508000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4679323
Report generated 03/22/2016 09:53

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**	6850	**Samplenum:**	L16030863-01
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:30	**File ID:**	1LM.LM33909
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561318	**Analysis Date:**	03/17/2016 23:51	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	597000	190000	3.14	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**	6850	**Samplenum:**	L16030863-02
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:30	**File ID:**	1LM.LM33910
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561318	**Analysis Date:**	03/18/2016 00:09	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	591000	192000	3.08	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**	6850	**Samplenum:**	L16030863-03
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:30	**File ID:**	1LM.LM33911
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561318	**Analysis Date:**	03/18/2016 00:28	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	729000	238000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**	6850	**Samplenum:**	L16030863-04
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:30	**File ID:**	1LM.LM33912
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561318	**Analysis Date:**	03/18/2016 00:47	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	177000	58300	3.04	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**	6850	**Samplenum:**	L16030863-05
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:30	**File ID:**	1LM.LM33936
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561318	**Analysis Date:**	03/18/2016 14:28	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	580000	186000	3.12	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**	6850	**Samplenum:**	L16030863-06
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:30	**File ID:**	1LM.LM33937
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561318	**Analysis Date:**	03/18/2016 14:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	336000	108000	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**	6850	**Samplenum:**	L16030863-07
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:30	**File ID:**	1LM.LM33938
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561318	**Analysis Date:**	03/18/2016 15:05	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	393000	126000	3.12	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**	6850	**Samplenum:**	L16030863-08
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:30	**File ID:**	1LM.LM33919
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561318	**Analysis Date:**	03/18/2016 03:00	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	8330	2480	3.36	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**	6850	**Samplenum:**	L16030863-09
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:30	**File ID:**	1LM.LM33920
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561318	**Analysis Date:**	03/18/2016 03:19	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	5170	2180	2.37	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**	6850	**Samplenum:**	L16030863-10
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:30	**File ID:**	1LM.LM33921
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561318	**Analysis Date:**	03/18/2016 03:38	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	2520	1440	1.75	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**	6850	**Samplenum:**	L16030863-11
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:30	**File ID:**	1LM.LM33922
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561318	**Analysis Date:**	03/18/2016 03:57	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1960	1280	1.53	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**	6850	**Samplenum:**	L16030863-12
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:30	**File ID:**	1LM.LM33939
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561318	**Analysis Date:**	03/18/2016 15:24	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	238000	77800	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**	6850	**Samplenum:**	L16030863-13
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:30	**File ID:**	1LM.LM33940
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561318	**Analysis Date:**	03/18/2016 15:43	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	282000	91200	3.09	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**	6850	**Samplenum:**	L16030863-14
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:30	**File ID:**	1LM.LM33941
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561318	**Analysis Date:**	03/18/2016 16:02	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	401000	130000	3.08	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**		**Samplenum:**	WG559340-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33568
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561318	**Analysis Date:**	03/02/2016 08:53	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	18400	5910	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**		**Samplenum:**	WG559340-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33569
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561318	**Analysis Date:**	03/02/2016 09:12	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37000	11900	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**		**Samplenum:**	WG559340-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33570
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561318	**Analysis Date:**	03/02/2016 09:31	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	89000	30400	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**		**Samplenum:**	WG559340-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33571
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561318	**Analysis Date:**	03/02/2016 09:50	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	183000	56800	3.22	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**		**Samplenum:**	WG559340-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33572
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561318	**Analysis Date:**	03/02/2016 10:09	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	363000	117000	3.10	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**		**Samplenum:**	WG559340-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33573
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561318	**Analysis Date:**	03/02/2016 10:28	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	871000	282000	3.09	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**		**Samplenum:**	WG559340-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33574
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561318	**Analysis Date:**	03/02/2016 10:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1650000	530000	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**		**Samplenum:**	WG559340-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33575
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561318	**Analysis Date:**	03/02/2016 11:05	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	190000	62200	3.05	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**	6850	**Samplenum:**	WG561318-01
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:30	**File ID:**	1LM.LM33906
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561318	**Analysis Date:**	03/17/2016 22:54	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37800	13200	2.86	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**	6850	**Samplenum:**	WG561318-02
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:30	**File ID:**	1LM.LM33907
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561318	**Analysis Date:**	03/17/2016 23:13	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	434	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**	6850	**Samplenum:**	WG561318-03
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:30	**File ID:**	1LM.LM33908
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561318	**Analysis Date:**	03/17/2016 23:32	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37500	12000	3.13	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**	6850	**Samplenum:**	WG561318-07
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:30	**File ID:**	1LM.LM33904
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561318	**Analysis Date:**	03/17/2016 22:16	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	39100	13700	2.85	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**	6850	**Samplenum:**	WG561318-08
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:30	**File ID:**	1LM.LM33917
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561318	**Analysis Date:**	03/18/2016 02:22	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	40800	12300	3.32	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**	6850	**Samplenum:**	WG561318-09
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:30	**File ID:**	1LM.LM33927
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561318	**Analysis Date:**	03/18/2016 05:31	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	40700	13900	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**	6850	**Samplenum:**	WG561318-10
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:30	**File ID:**	1LM.LM33931
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561318	**Analysis Date:**	03/18/2016 12:53	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35300	11500	3.07	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**	6850	**Samplenum:**	WG561318-11
Instrument:	LCMS1	**Prep Date:**	03/17/2016 12:30	**File ID:**	1LM.LM33944
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG561318	**Analysis Date:**	03/18/2016 16:59	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38800	12700	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**		**Samplenum:**	WG561324-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33896
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561318	**Analysis Date:**	03/17/2016 19:44	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	268	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**		**Samplenum:**	WG561324-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33902
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561318	**Analysis Date:**	03/17/2016 21:38	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	185000	61400	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**		**Samplenum:**	WG561324-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33905
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561318	**Analysis Date:**	03/17/2016 22:35	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**		**Samplenum:**	WG561324-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33916
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561318	**Analysis Date:**	03/18/2016 02:03	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	187000	61300	3.05	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**		**Samplenum:**	WG561324-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33918
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561318	**Analysis Date:**	03/18/2016 02:41	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	892	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**		**Samplenum:**	WG561324-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33926
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561318	**Analysis Date:**	03/18/2016 05:12	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	194000	63300	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**		**Samplenum:**	WG561324-10
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33928
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561318	**Analysis Date:**	03/18/2016 05:50	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**		**Samplenum:**	WG561324-11
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33929
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561318	**Analysis Date:**	03/18/2016 12:15	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	162000	54600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**		**Samplenum:**	WG561324-12
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33932
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561318	**Analysis Date:**	03/18/2016 13:12	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	389	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**		**Samplenum:**	WG561324-13
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33942
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561318	**Analysis Date:**	03/18/2016 16:21	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	174000	56500	3.08	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16030863	**Prep Method:**		**Samplenum:**	WG561324-14
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM33945
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG561318	**Analysis Date:**	03/18/2016 17:18	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	548	0.000	2.3	3.8	*

2.2.1.3 Sample Data

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Printed: 3/18/2016 6:21 PM

Data File	LM33909.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 11:51:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030863-01 RS	**Injection Vial**	22.00
Data File	LM33909.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 11:51:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561318-04	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.970e+05	9.92	N/A	3.40
Perchlorate conf	1.900e+05	9.91	N/A	3.36

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

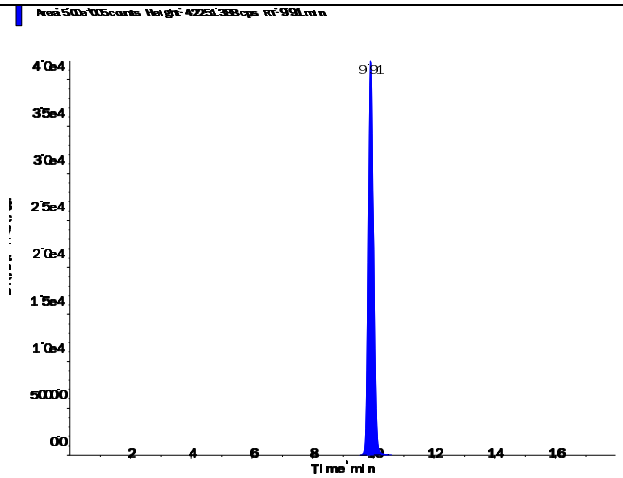

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.92 (9.94) min Calculated conc: 3.40 ng/ml Area Ratio: 1.194 Sample Type: (Unknown)	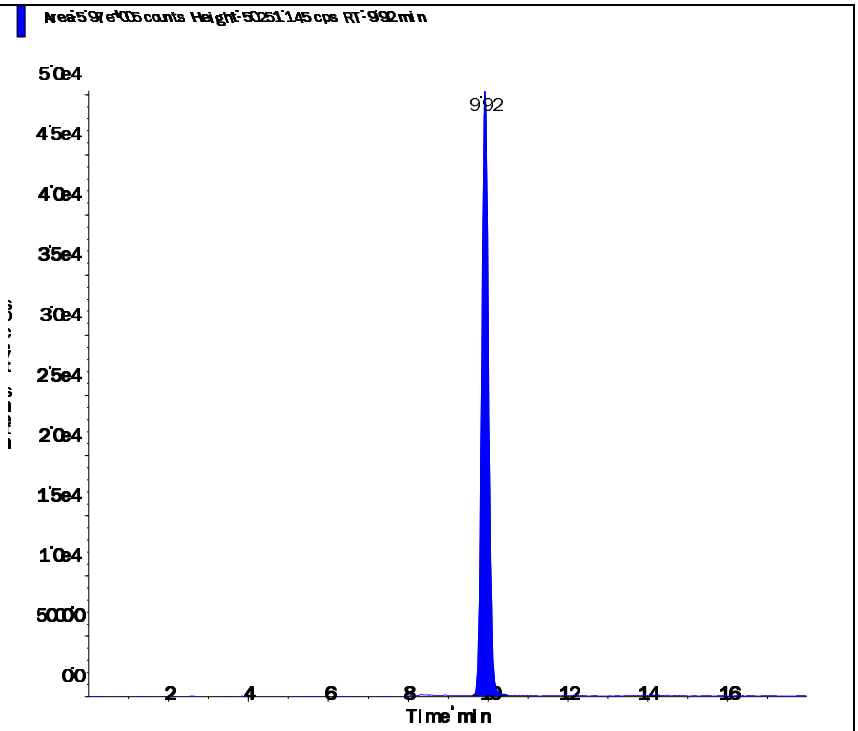
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.91 (9.92) min Calculated conc: 3.36 ng/ml Area Ratio: 0.38 Sample Type: (Unknown)	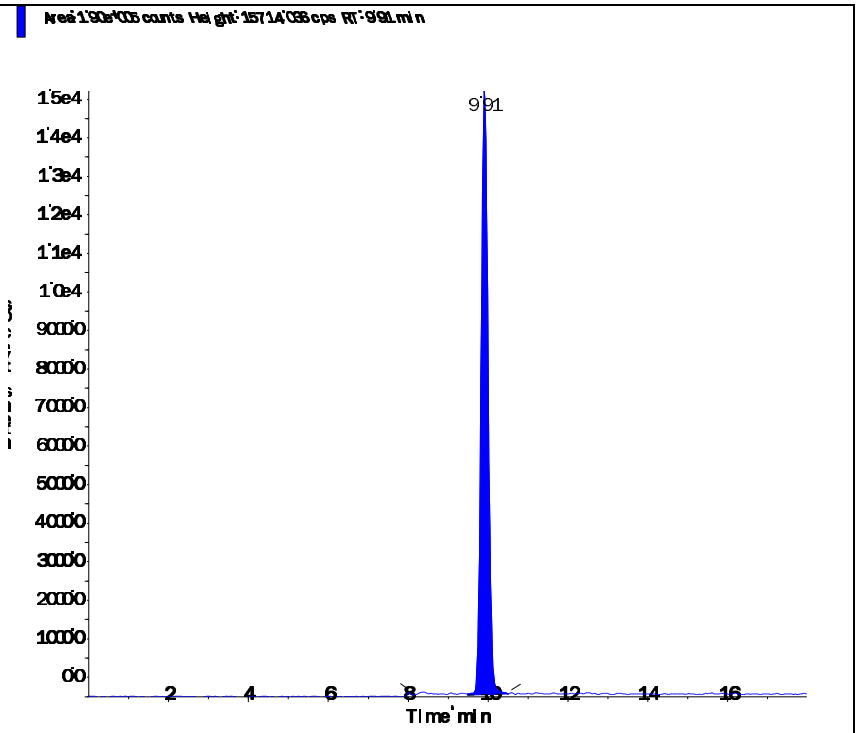

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Printed: 3/18/2016 6:21 PM

Data File	LM33910.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 12:09:59 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030863-02 MS	**Injection Vial**	23.00
Data File	LM33910.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 12:09:59 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561318-05	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.910e+05	9.93	N/A	3.37
Perchlorate conf	1.920e+05	9.92	N/A	3.41

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

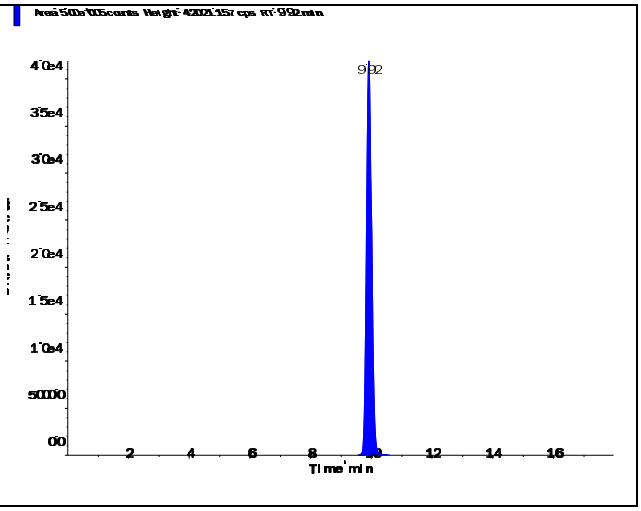

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Printed: 3/18/2016 6:21 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	3.37 ng/ml
Area Ratio:	1.182
Sample Type:	(Unknown)

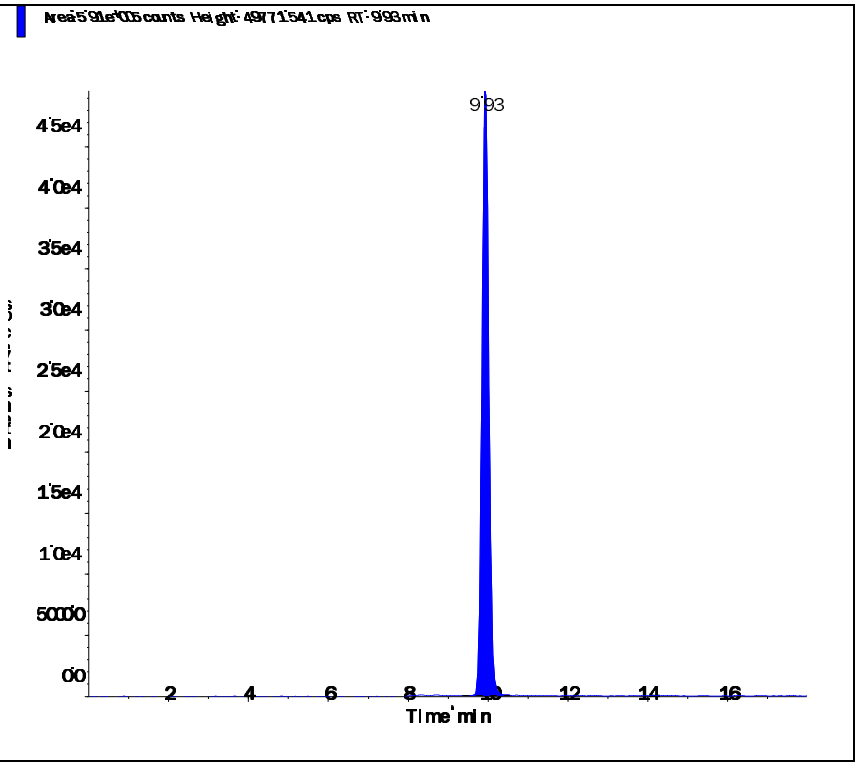

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	3.41 ng/ml
Area Ratio:	0.385
Sample Type:	(Unknown)

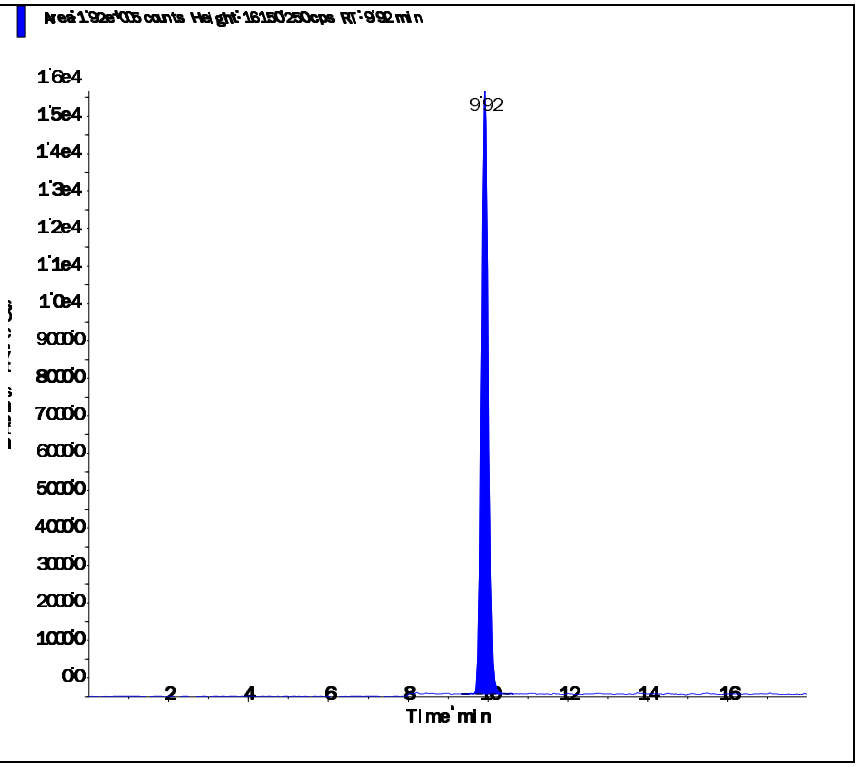

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Printed: 3/18/2016 6:21 PM

Data File	LM33911.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 12:28:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030863-03 MSD	**Injection Vial**	24.00
Data File	LM33911.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 12:28:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561318-06	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.290e+05	9.93	N/A	4.16
Perchlorate conf	2.380e+05	9.92	N/A	4.23

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

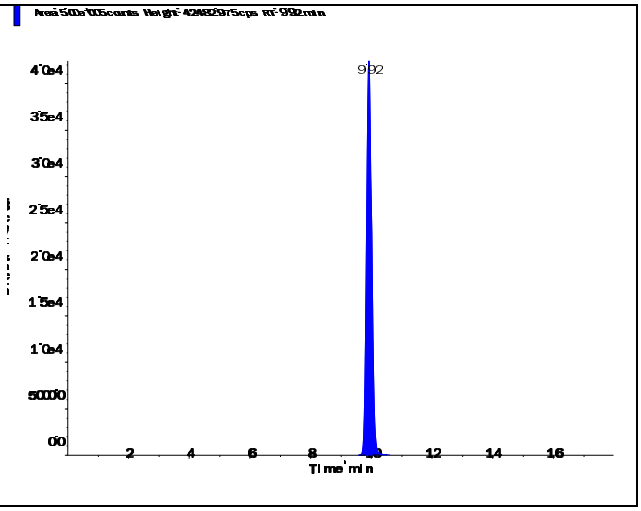

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	4.16 ng/ml
Area Ratio:	1.458
Sample Type:	(Unknown)

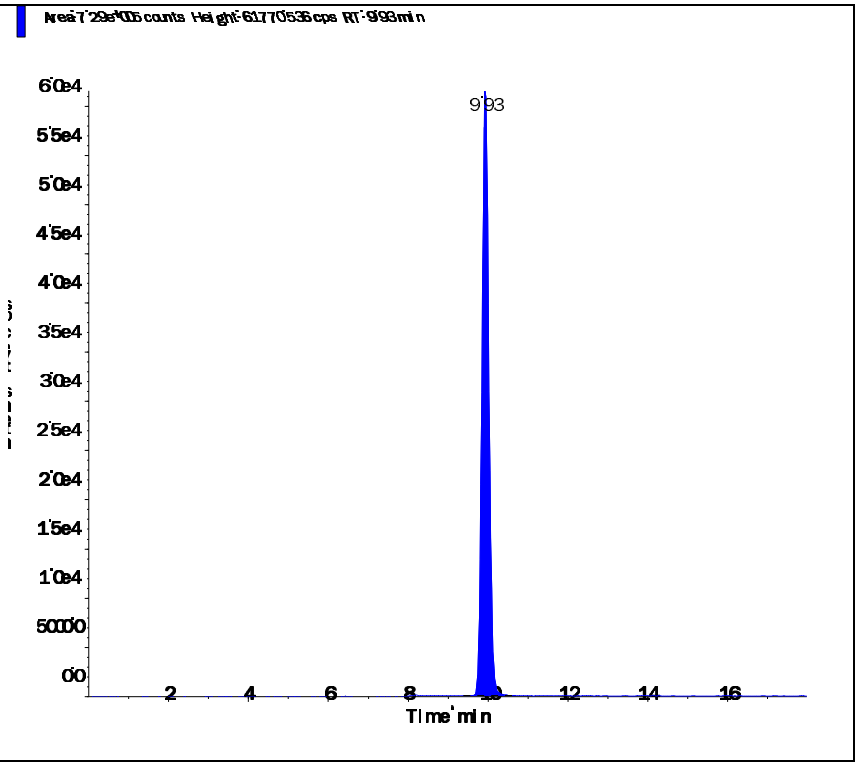

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	4.23 ng/ml
Area Ratio:	0.477
Sample Type:	(Unknown)

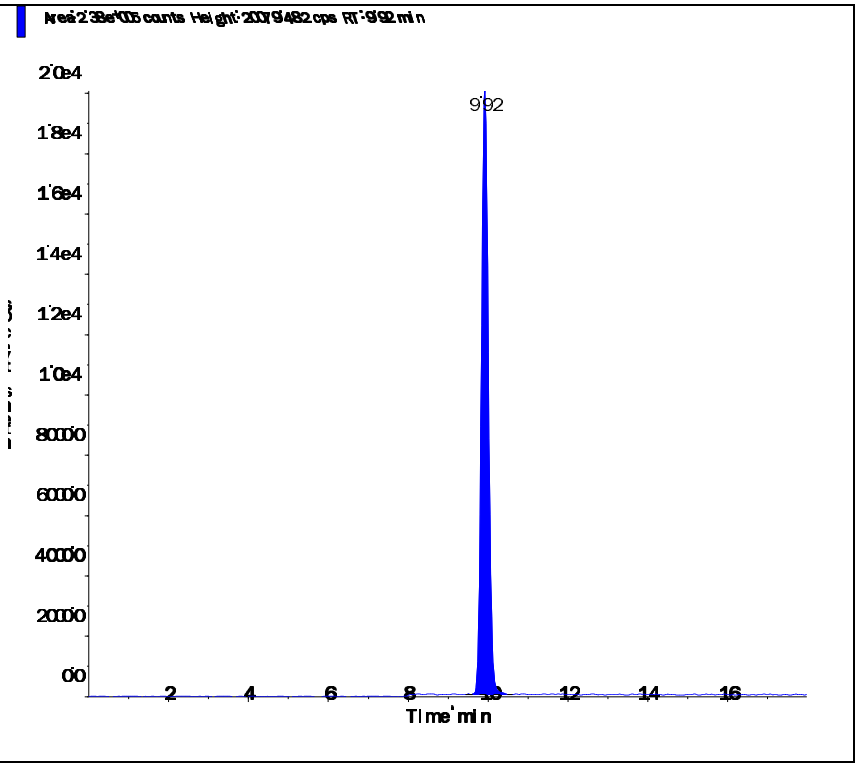

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Data File	LM33912.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 12:47:52 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030863-04	**Injection Vial**	25.00
Data File	LM33912.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 12:47:52 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	L16030863-04	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.130e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.770e+05	9.93	N/A	0.978
Perchlorate conf	5.830e+04	9.92	N/A	0.998

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

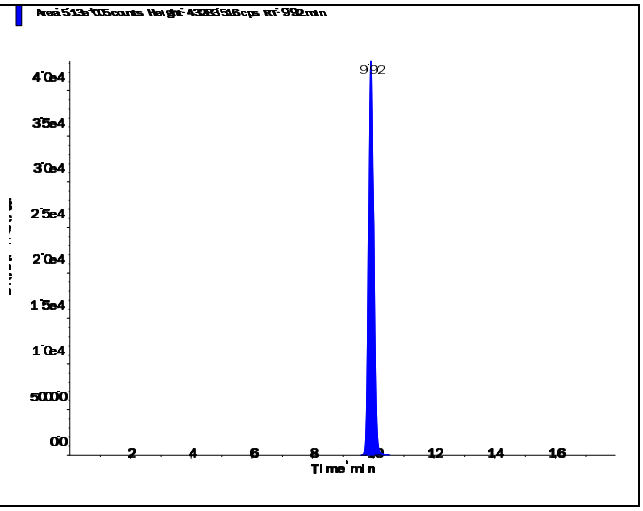

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	0.978 ng/ml
Area Ratio:	0.346
Sample Type:	(Unknown)

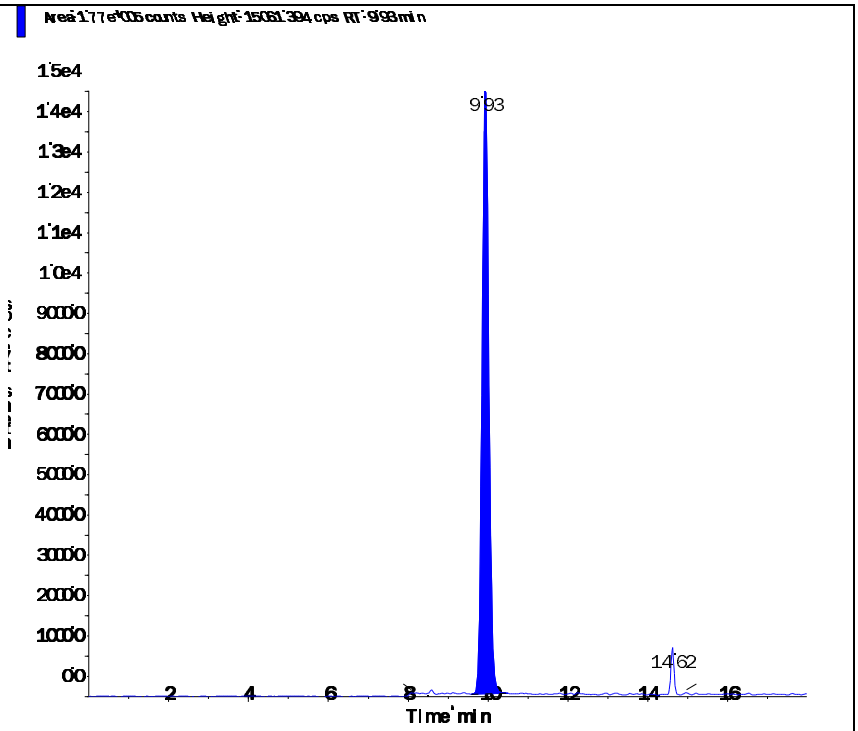

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	0.998 ng/ml
Area Ratio:	0.114
Sample Type:	(Unknown)

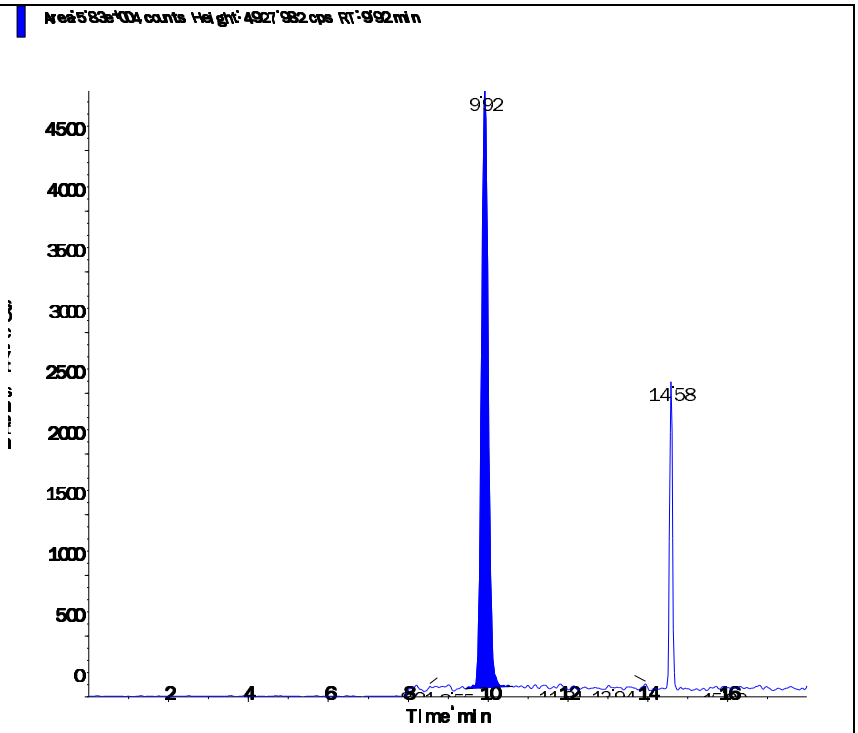

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Data File	LM33936.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 2:28:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030863-05 (RR 10x)	**Injection Vial**	39.00
Data File	LM33936.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 2:28:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	L16030863-05	**Dilution Factor**	1.00
Sample Comment	710.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.580e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.800e+05	9.97	N/A	3.61
Perchlorate conf	1.860e+05	9.96	N/A	3.59

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

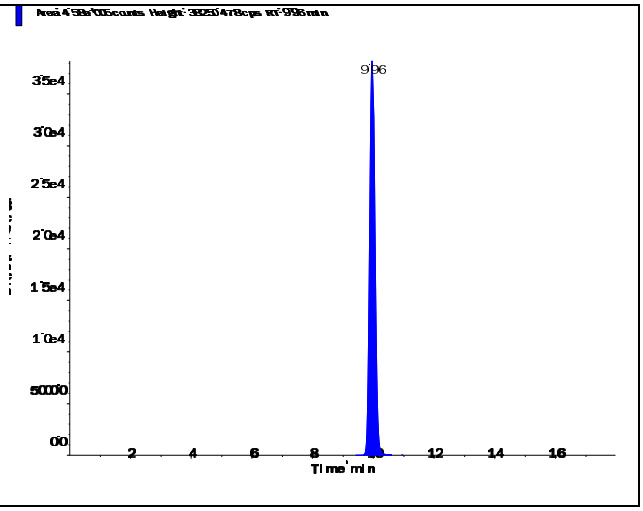

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.97 (9.94) min Calculated conc: 3.61 ng/ml Area Ratio: 1.266 Sample Type: (Unknown)	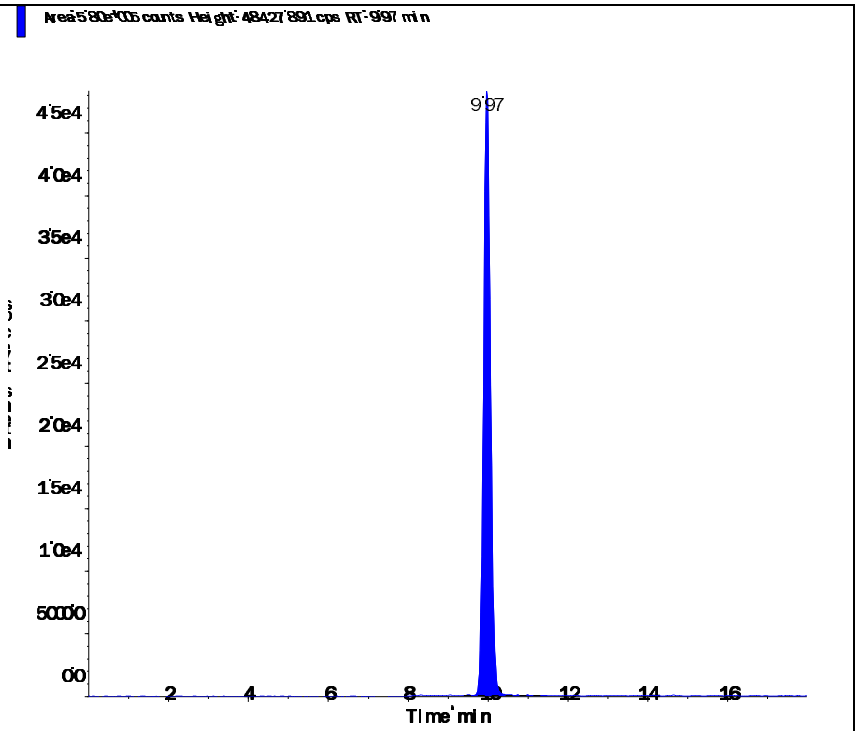
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.96 (9.92) min Calculated conc: 3.59 ng/ml Area Ratio: 0.405 Sample Type: (Unknown)	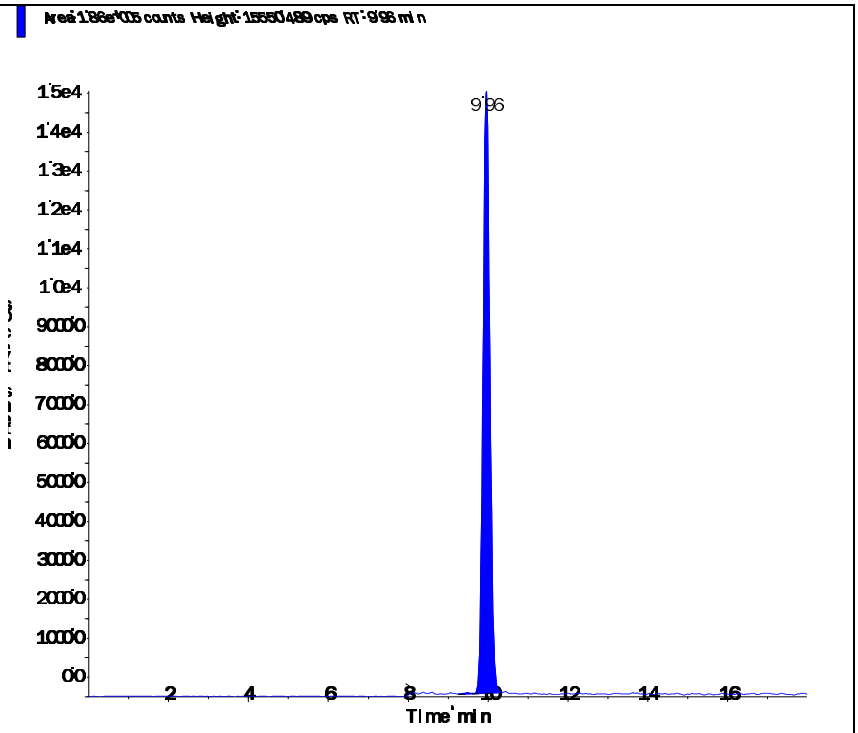

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Data File	LM33937.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 2:46:55 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030863-06 (RR 50x)	**Injection Vial**	40.00
Data File	LM33937.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 2:46:55 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	L16030863-06	**Dilution Factor**	1.00
Sample Comment	750.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.590e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.360e+05	9.98	N/A	2.08
Perchlorate conf	1.080e+05	9.96	N/A	2.08

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

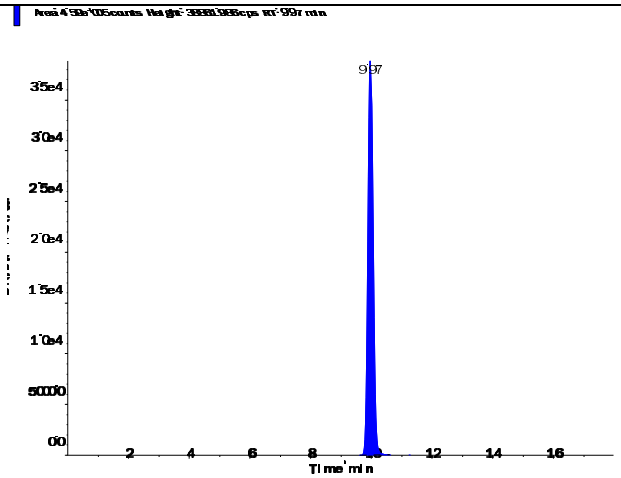

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.98 (9.94) min
Calculated conc:	2.08 ng/ml
Area Ratio:	0.732
Sample Type:	(Unknown)

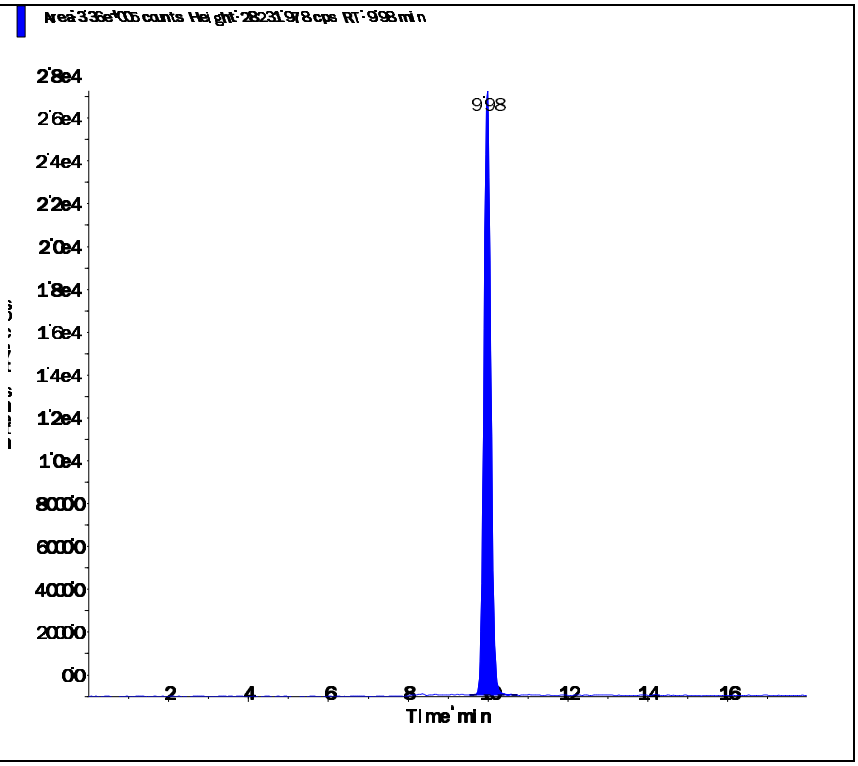

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.96 (9.92) min
Calculated conc:	2.08 ng/ml
Area Ratio:	0.235
Sample Type:	(Unknown)

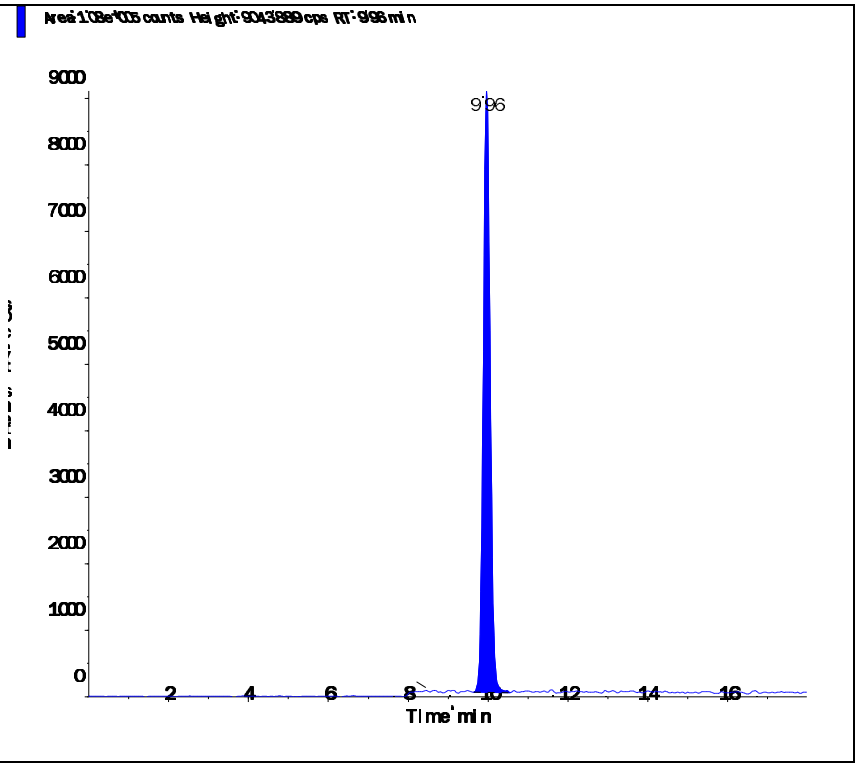

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Data File	LM33938.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 3:05:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030863-07 (RR 100x)	**Injection Vial**	41.00
Data File	LM33938.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 3:05:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	L16030863-07	**Dilution Factor**	1.00
Sample Comment	7,100.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.590e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.930e+05	9.96	N/A	2.44
Perchlorate conf	1.260e+05	9.95	N/A	2.43

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

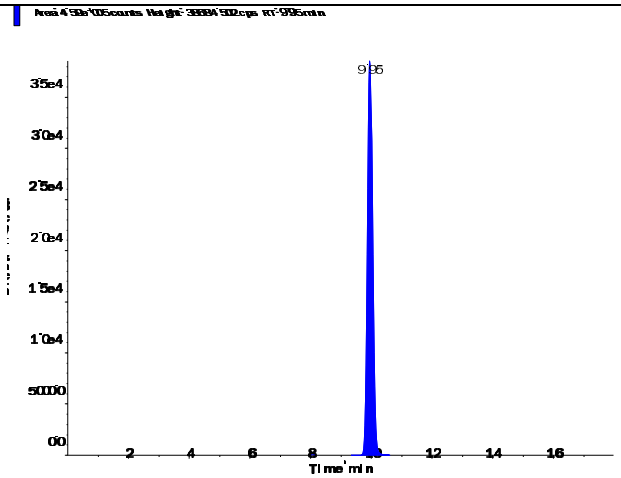

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.96 (9.94) min Calculated conc: 2.44 ng/ml Area Ratio: 0.857 Sample Type: (Unknown)	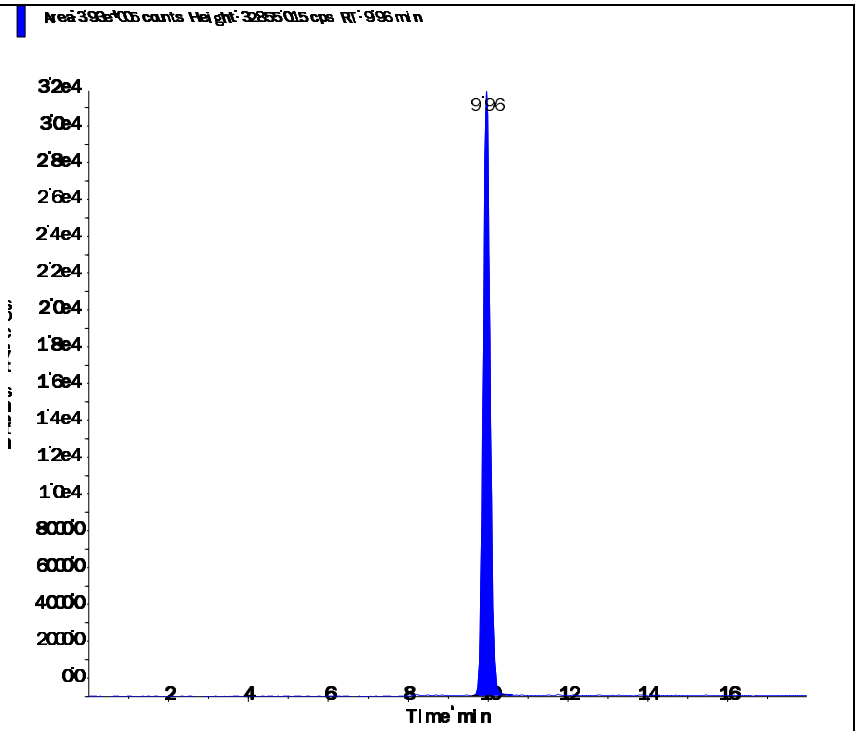
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.95 (9.92) min Calculated conc: 2.43 ng/ml Area Ratio: 0.274 Sample Type: (Unknown)	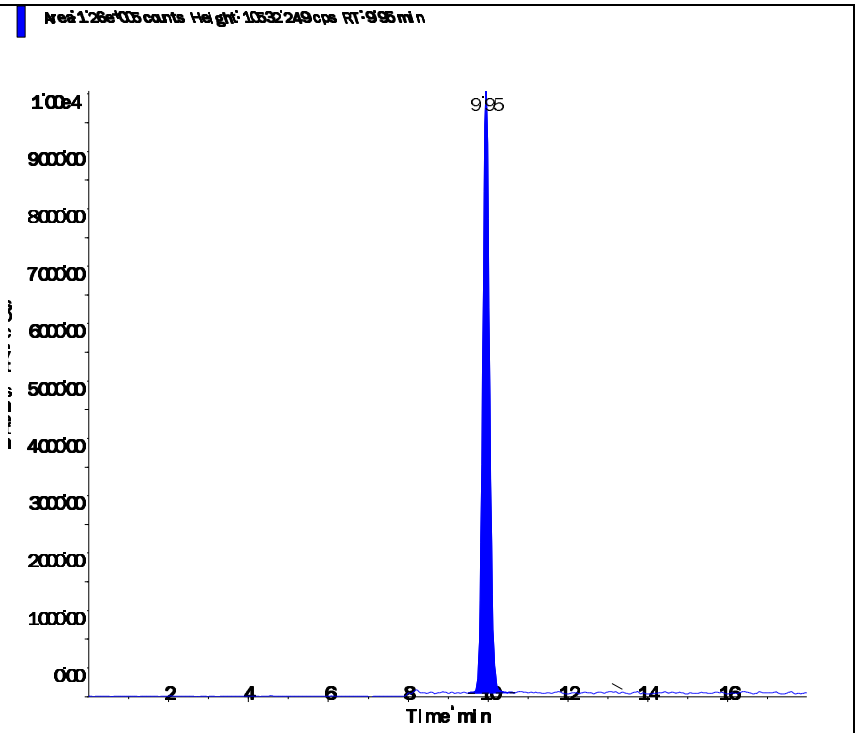

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Data File	LM33919.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 3:00:23 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030863-08	**Injection Vial**	29.00
Data File	LM33919.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 3:00:23 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	L16030863-08	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.350e+05	9.93	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.330e+03	9.94	N/A	0.032
Perchlorate conf	2.480e+03	9.94	N/A	0.0272

O18LP (Internal Standard)

RT (Exp. RT): 9.93(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

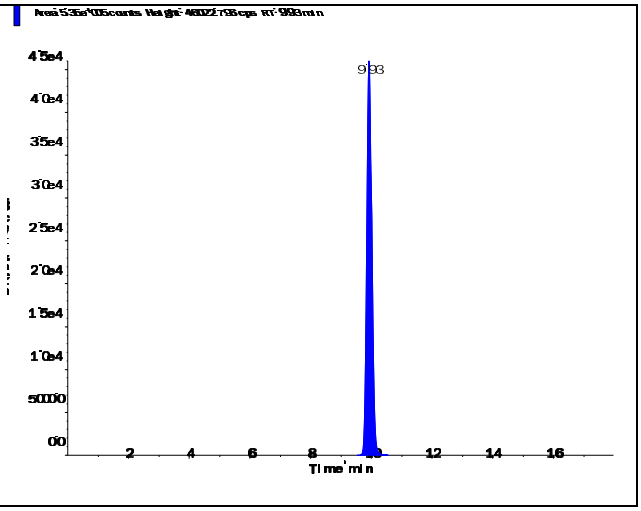

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.94 (9.94) min
Calculated conc:	0.032 ng/ml
Area Ratio:	0.016
Sample Type:	(Unknown)

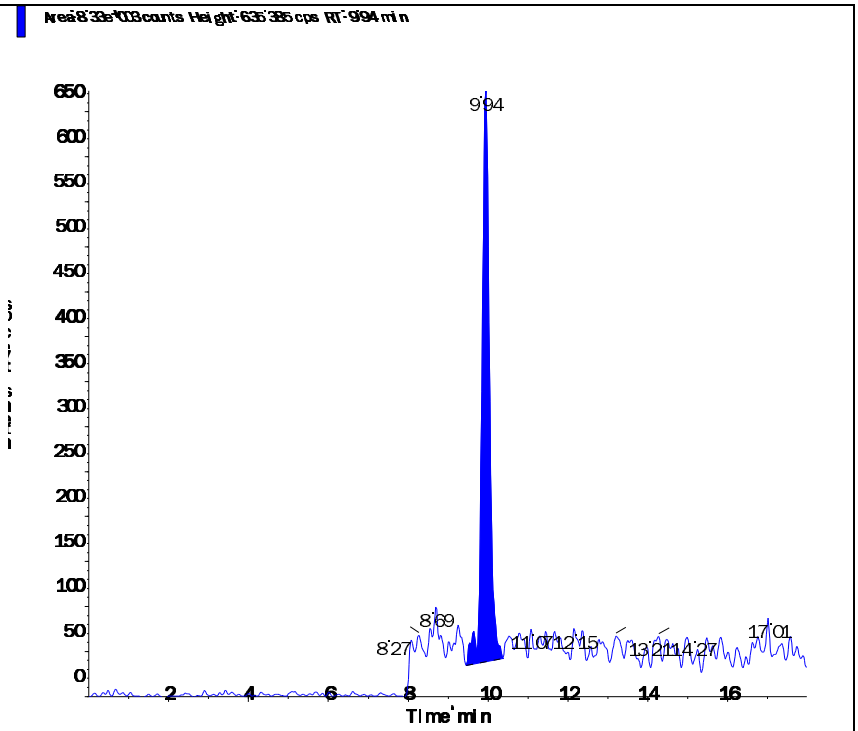

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.0272 ng/ml
Area Ratio:	0.005
Sample Type:	(Unknown)

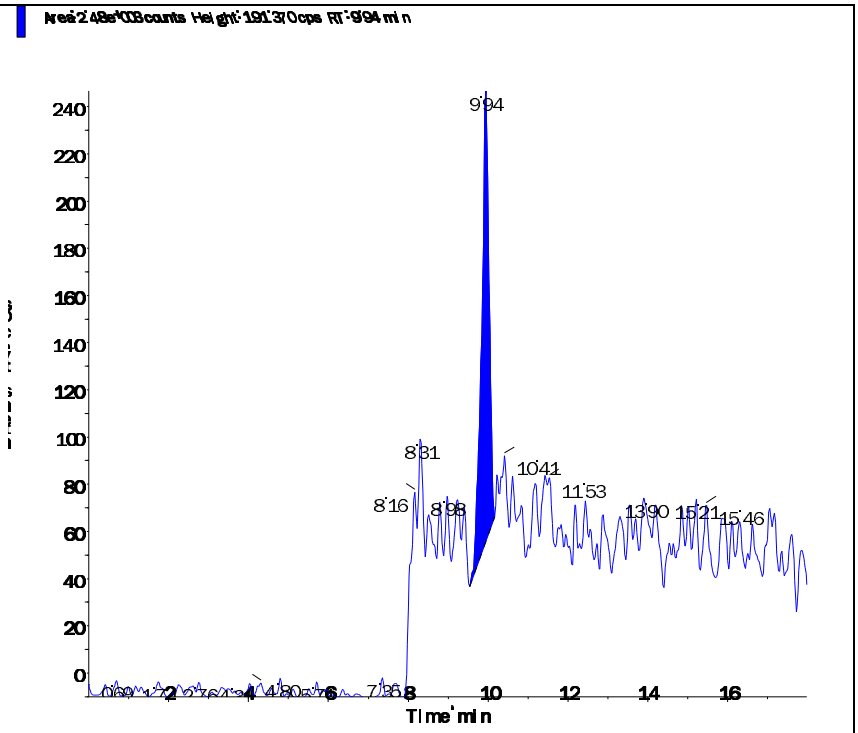

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Data File	LM33920.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 3:19:19 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030863-09	**Injection Vial**	30.00
Data File	LM33920.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 3:19:19 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	L16030863-09	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.250e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.170e+03	9.93	N/A	0.0157
Perchlorate conf	2.180e+03	9.92	N/A	0.023

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

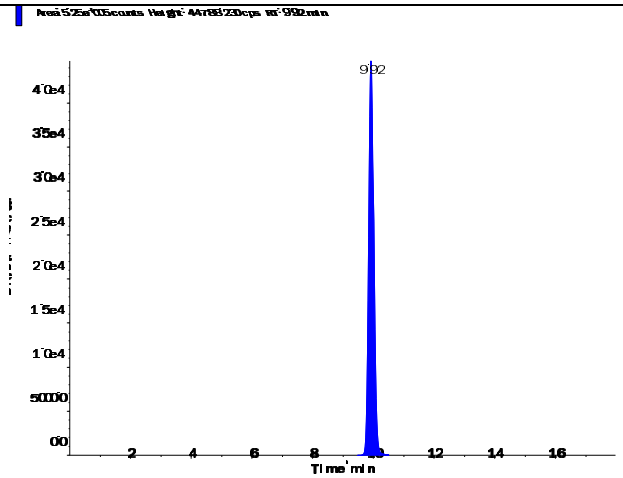

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	0.0157 ng/ml
Area Ratio:	0.01
Sample Type:	(Unknown)

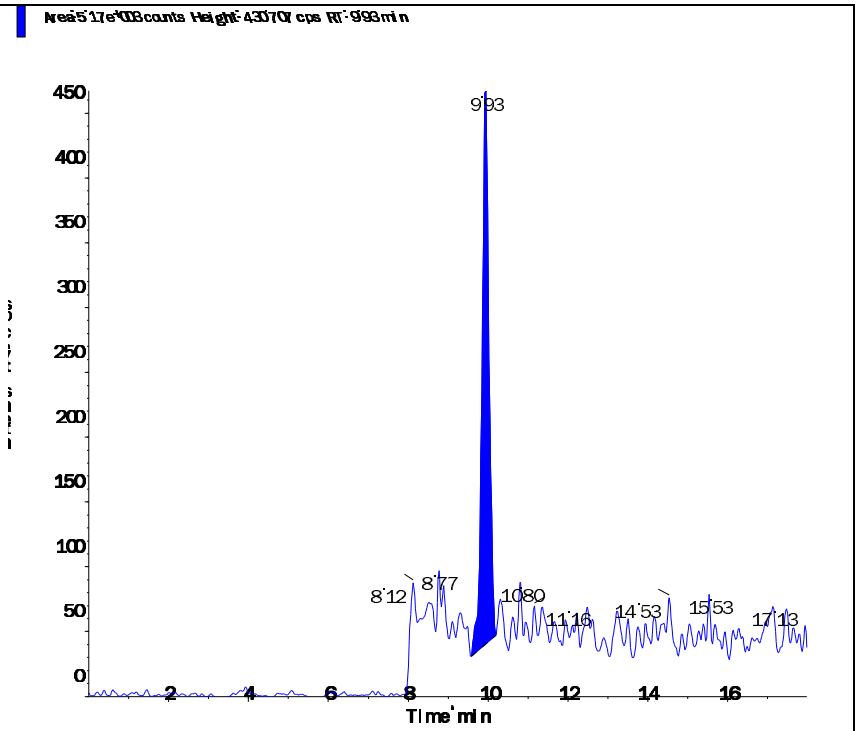

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	0.023 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)

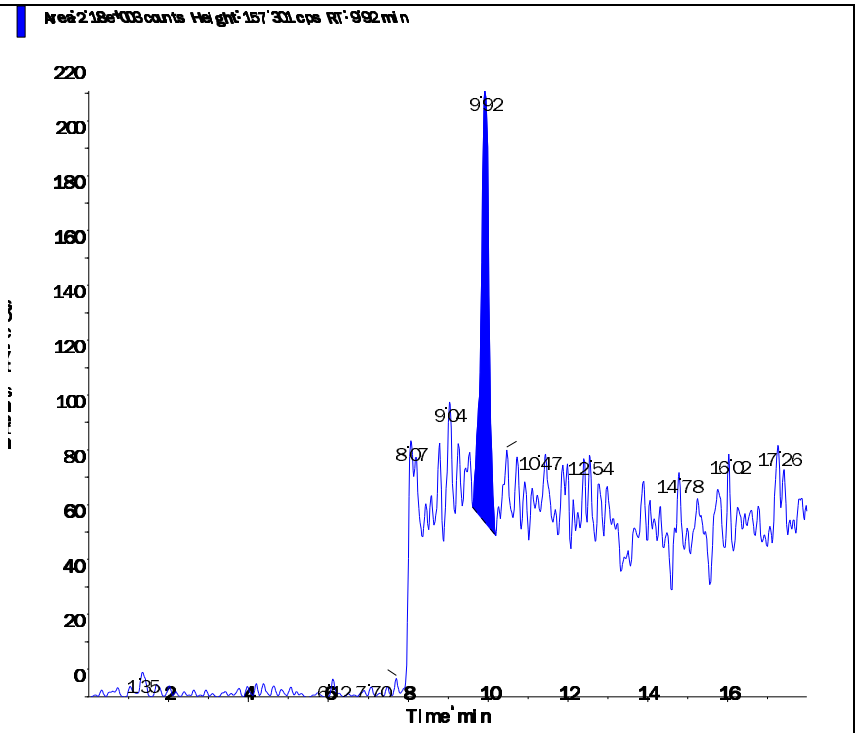

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Data File	LM33921.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 3:38:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030863-10	**Injection Vial**	31.00
Data File	LM33921.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 3:38:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	L16030863-10	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.270e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.520e+03	9.91	N/A	0.0012
Perchlorate conf	1.440e+03	9.91	N/A	0.0104

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

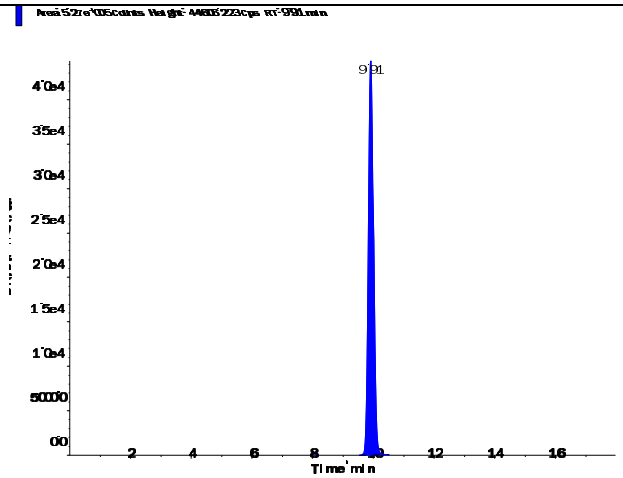

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.91 (9.94) min
Calculated conc:	0.0012 ng/ml
Area Ratio:	0.005
Sample Type:	(Unknown)

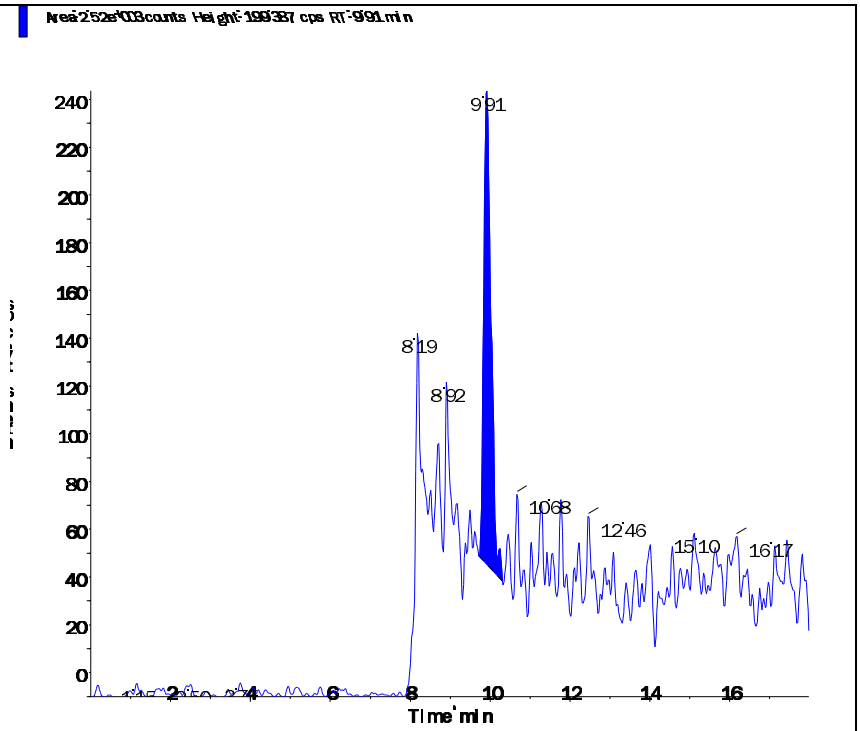

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.92) min
Calculated conc:	0.0104 ng/ml
Area Ratio:	0.003
Sample Type:	(Unknown)

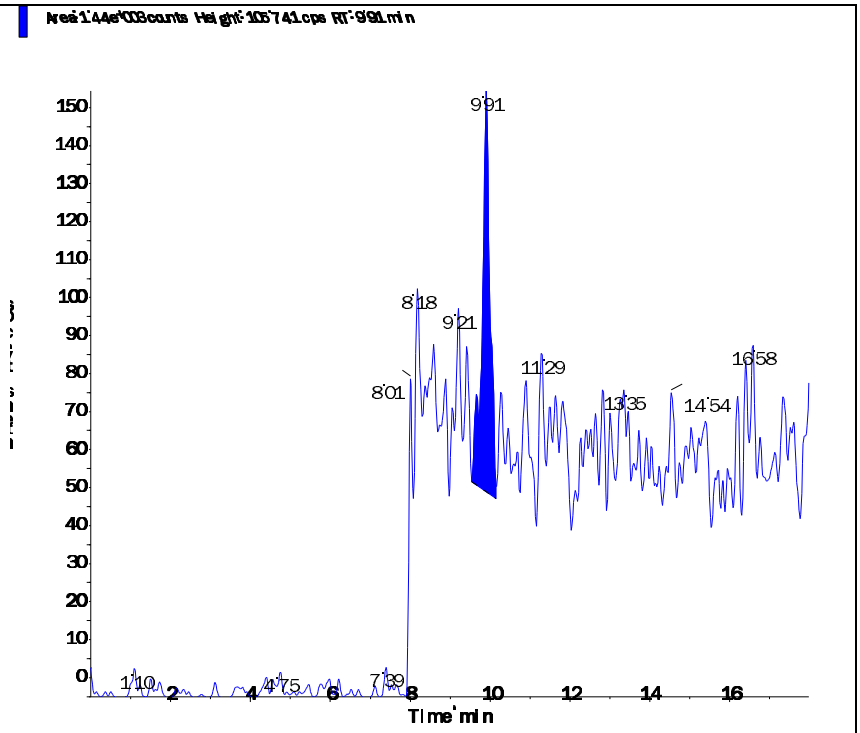

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Data File	LM33922.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 3:57:12 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030863-11	**Injection Vial**	32.00
Data File	LM33922.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 3:57:12 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	L16030863-11	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.530e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.960e+03	9.95	N/A	< 0
Perchlorate conf	1.280e+03	9.88	N/A	0.0065

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

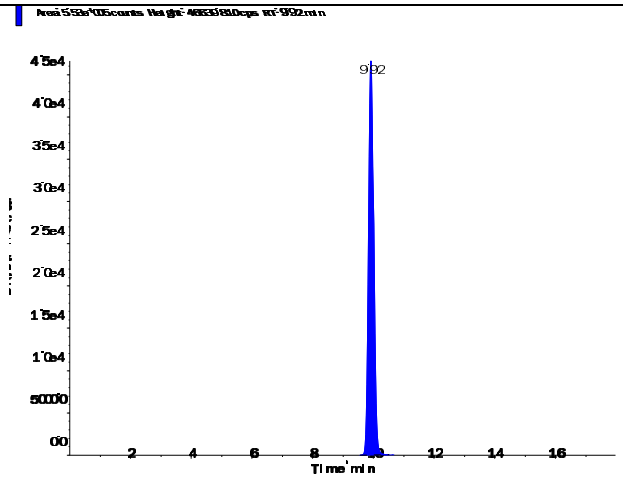

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)

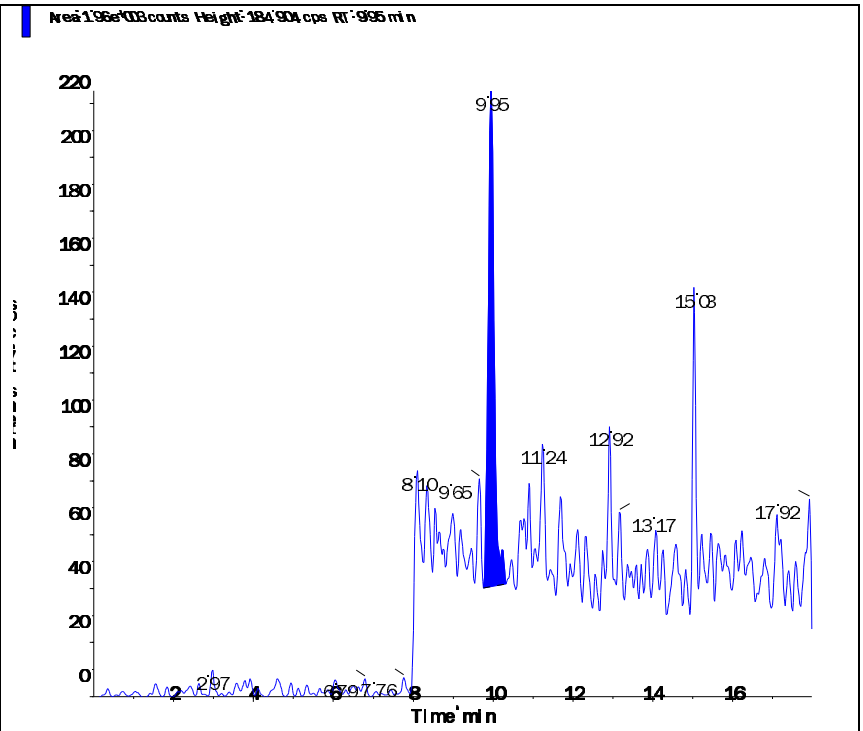

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.88 (9.92) min
Calculated conc:	0.0065 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

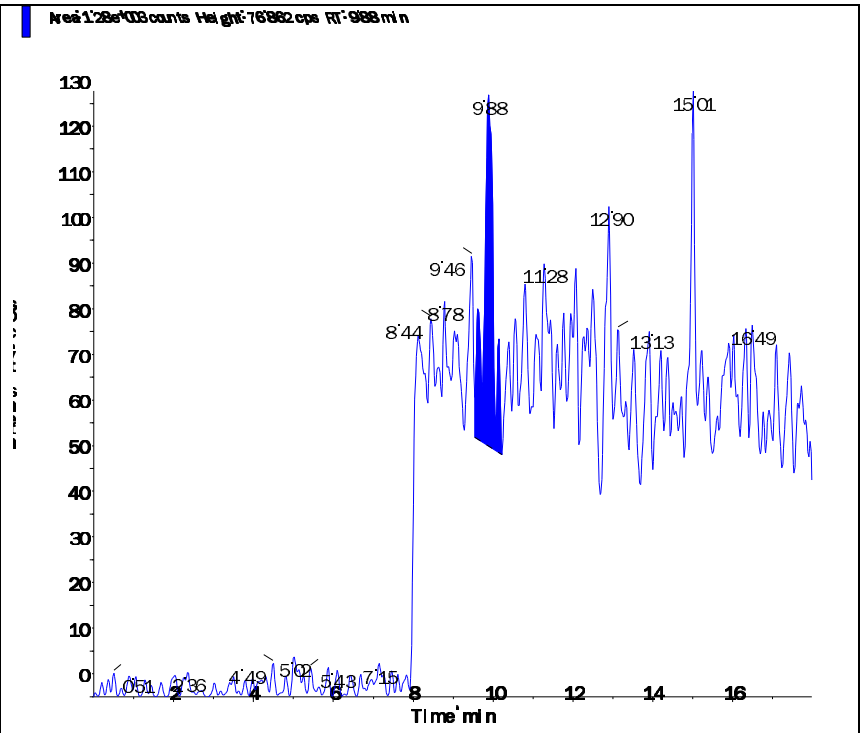

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Data File	LM33939.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 3:24:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030863-12 (RR 10x)	**Injection Vial**	42.00
Data File	LM33939.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 3:24:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	L16030863-12	**Dilution Factor**	1.00
Sample Comment	710.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.730e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.380e+05	9.96	N/A	1.43
Perchlorate conf	7.780e+04	9.95	N/A	1.45

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

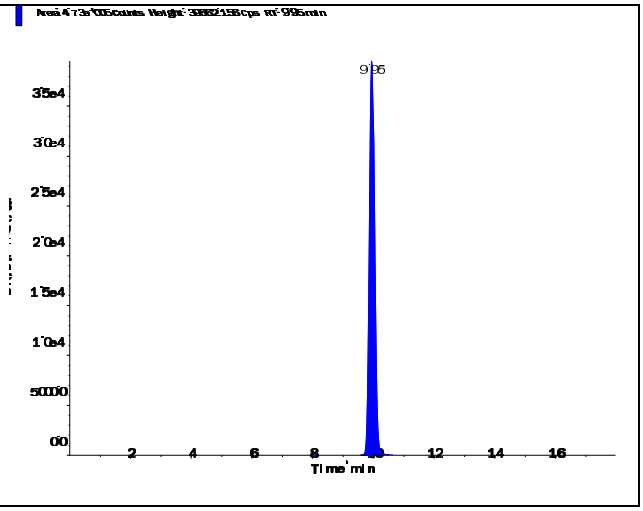

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.96 (9.94) min Calculated conc: 1.43 ng/ml Area Ratio: 0.503 Sample Type: (Unknown)	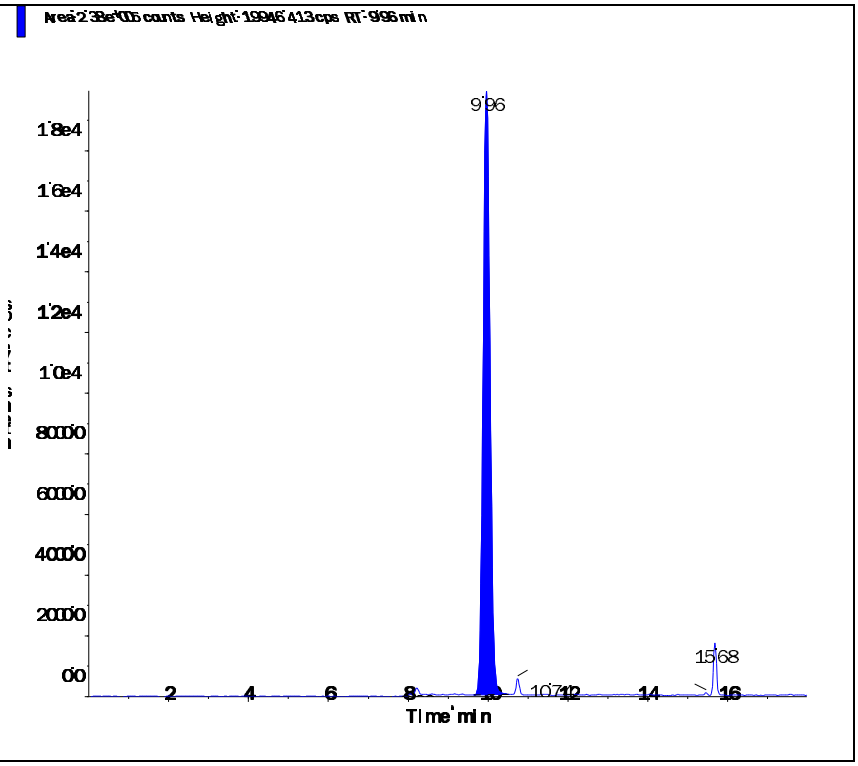
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.95 (9.92) min Calculated conc: 1.45 ng/ml Area Ratio: 0.164 Sample Type: (Unknown)	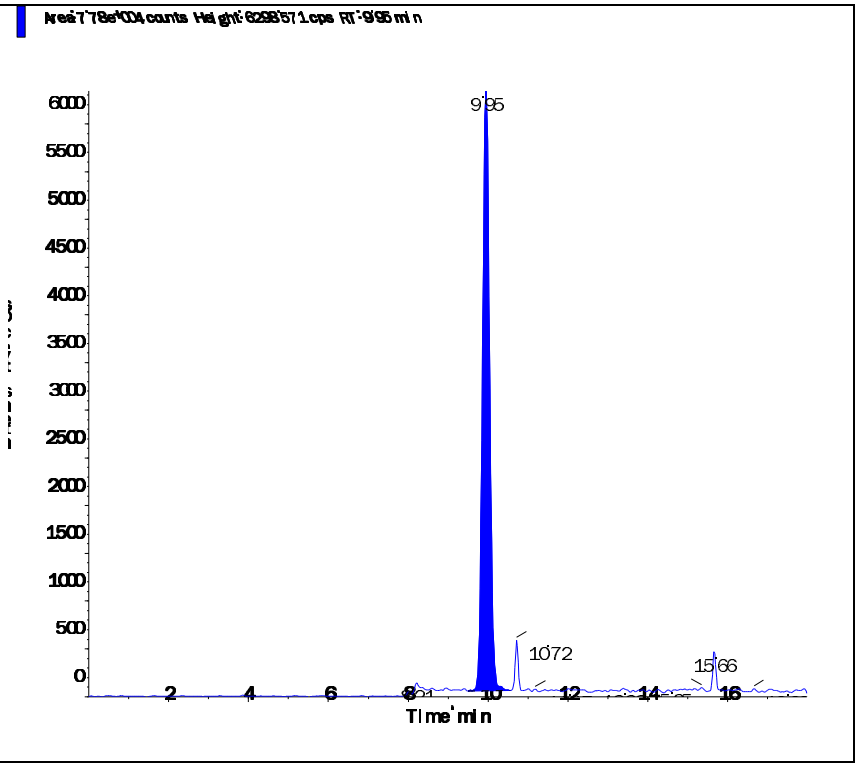

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Data File	LM33940.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 3:43:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030863-13 (RR 100x)	**Injection Vial**	43.00
Data File	LM33940.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 3:43:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	L16030863-13	**Dilution Factor**	1.00
Sample Comment	7,100.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.590e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.820e+05	9.97	N/A	1.74
Perchlorate conf	9.120e+04	9.95	N/A	1.75

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

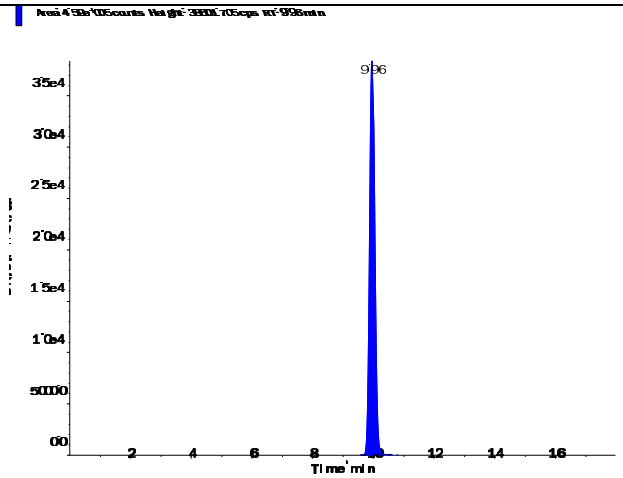

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.97 (9.94) min
Calculated conc:	1.74 ng/ml
Area Ratio:	0.614
Sample Type:	(Unknown)

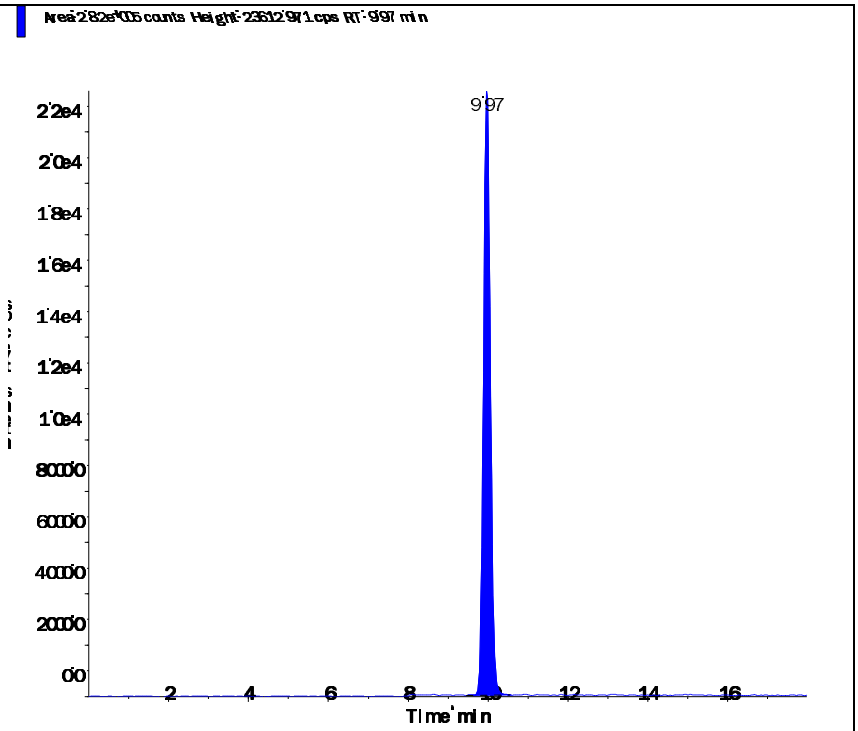

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.95 (9.92) min
Calculated conc:	1.75 ng/ml
Area Ratio:	0.199
Sample Type:	(Unknown)

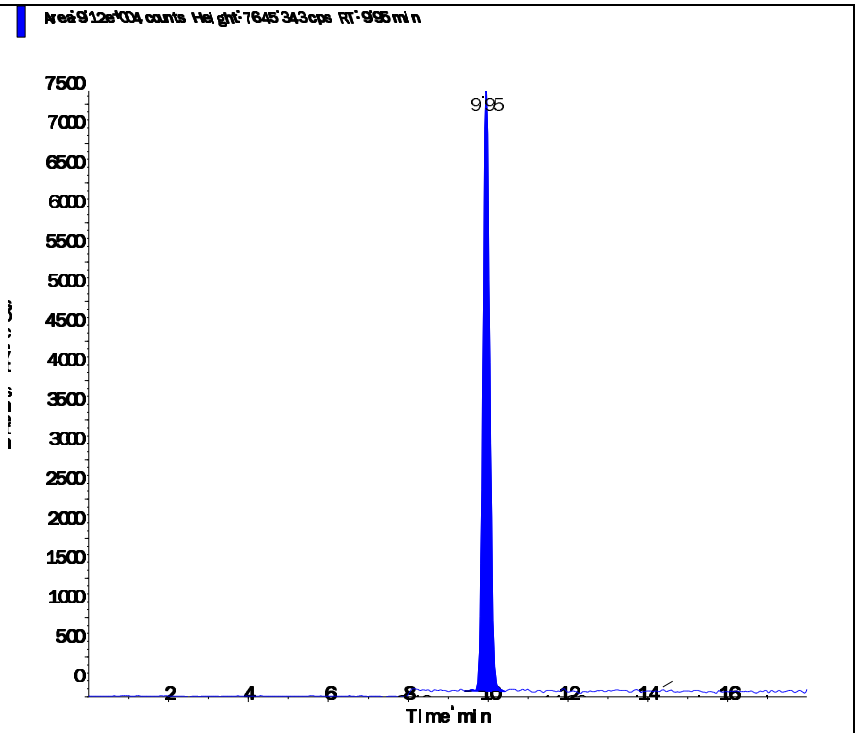

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Data File	LM33941.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 4:02:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16030863-14 (RR 50x)	**Injection Vial**	44.00
Data File	LM33941.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 4:02:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	L16030863-14	**Dilution Factor**	1.00
Sample Comment	750.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.590e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.010e+05	9.96	N/A	2.49
Perchlorate conf	1.300e+05	9.95	N/A	2.51

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

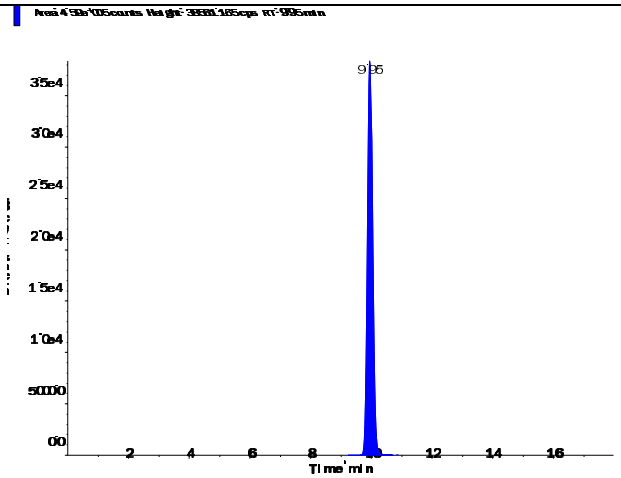

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.96 (9.94) min Calculated conc: 2.49 ng/ml Area Ratio: 0.874 Sample Type: (Unknown)	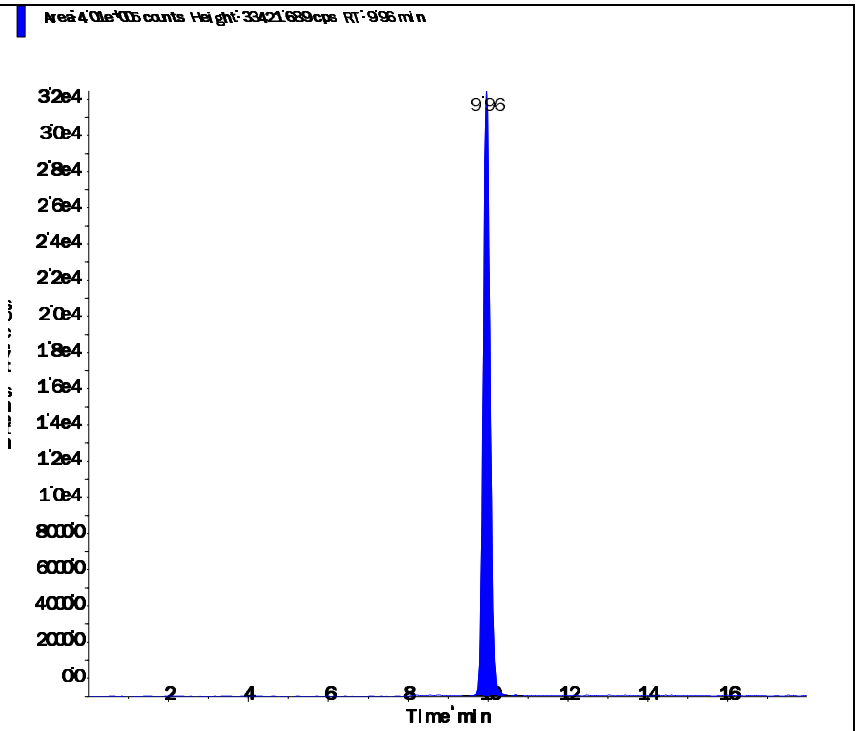
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.95 (9.92) min Calculated conc: 2.51 ng/ml Area Ratio: 0.284 Sample Type: (Unknown)	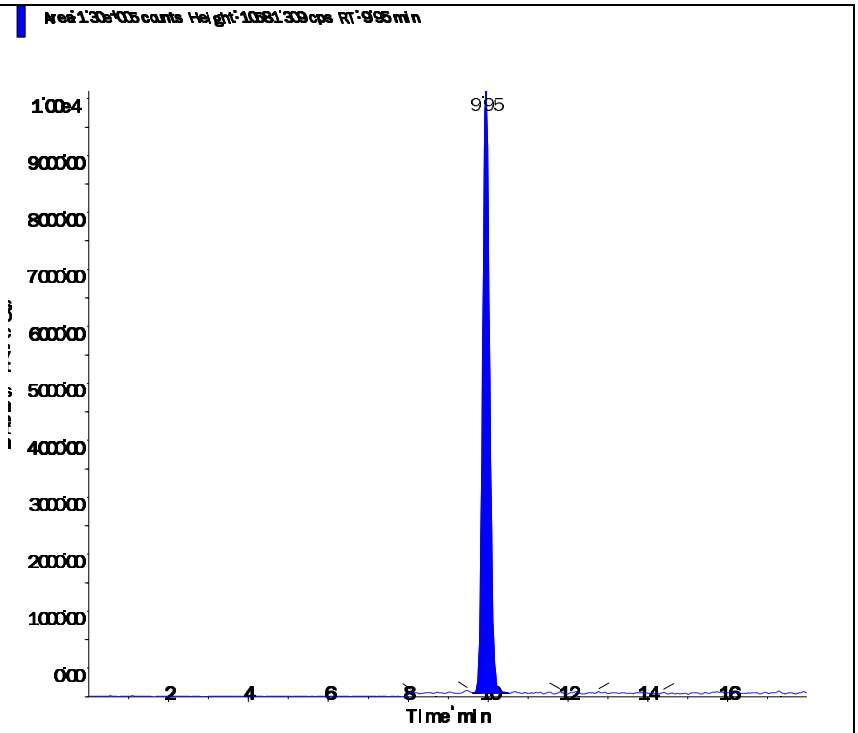

2.2.1.4 Standards Data

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Data File	LM33567.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-01 CCB	**Injection Vial**	51.00
Data File	LM33567.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG559340-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.710e+05	9.99	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.99(9.94) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

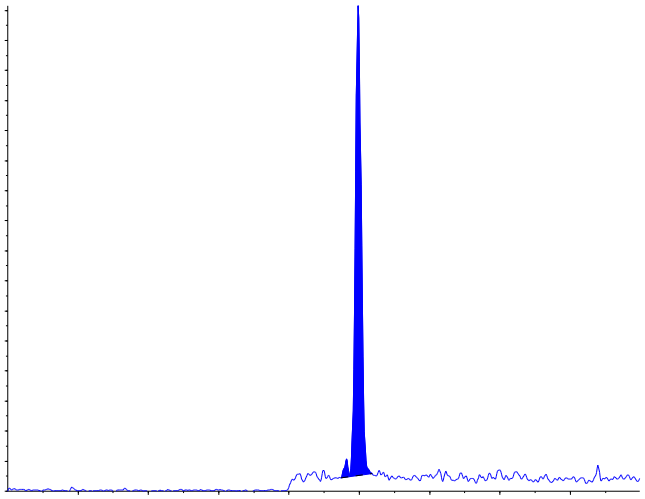

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.94) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	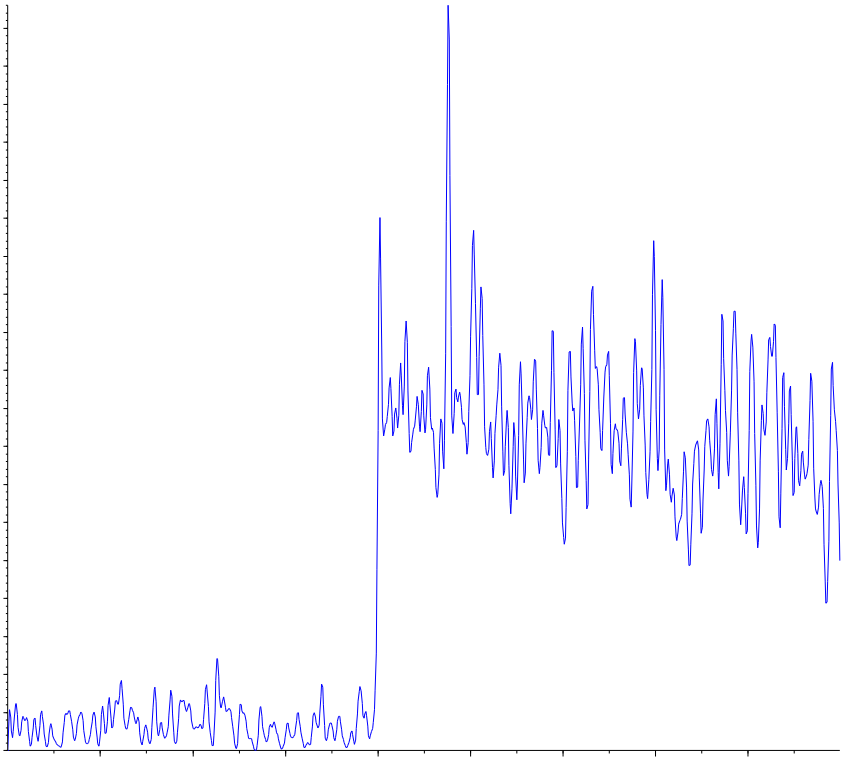
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.92) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	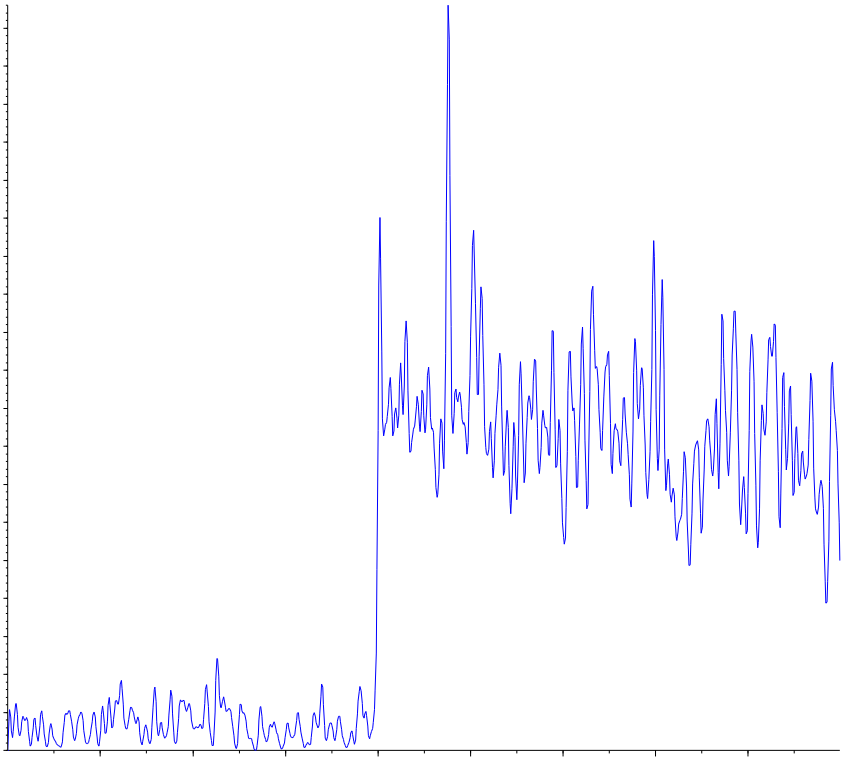

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Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM33567.wiff	**Result Table**	030216_WTD.rdb
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.75 x + 0.00437 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	95.0	N/A	N/A
0.20	1	0.20	99.5	N/A	N/A
0.50	1	0.50	101.0	N/A	N/A
1.00	1	1.03	103.4	N/A	N/A
2.00	1	2.02	101.0	N/A	N/A
5.00	1	5.07	101.5	N/A	N/A
10.00	1	9.87	98.7	N/A	N/A

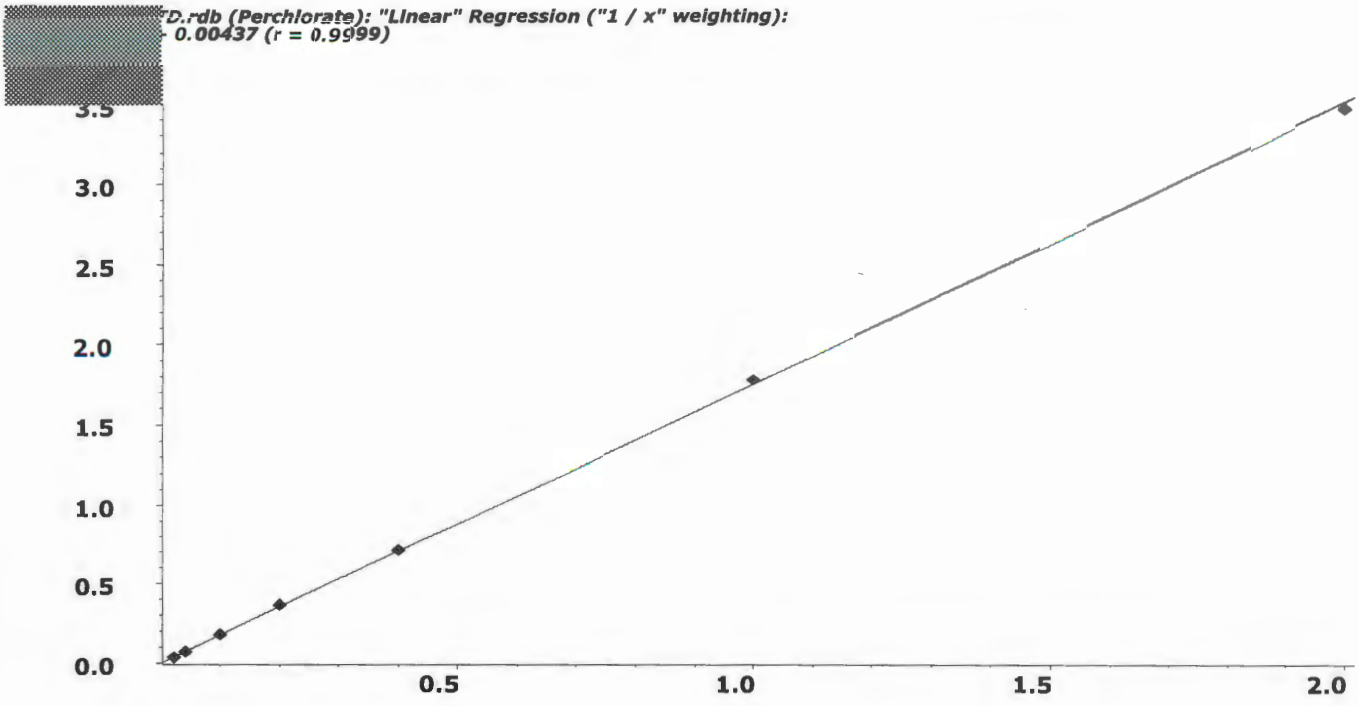

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Created with Analyst Reporter
Printed: 3/3/2016 1:59 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM33567.wiff	**Result Table**	030216_WTD.rdb
Acquisition Date	3/2/2016 8:34:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.562 x + 0.00157 (r = 0.9998)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.09	93.4	N/A	N/A
0.20	1	0.20	98.6	N/A	N/A
0.50	1	0.54	107.2	N/A	N/A
1.00	1	1.00	99.5	N/A	N/A
2.00	1	2.01	100.7	N/A	N/A
5.00	1	5.11	102.2	N/A	N/A
10.00	1	9.85	98.5	N/A	N/A

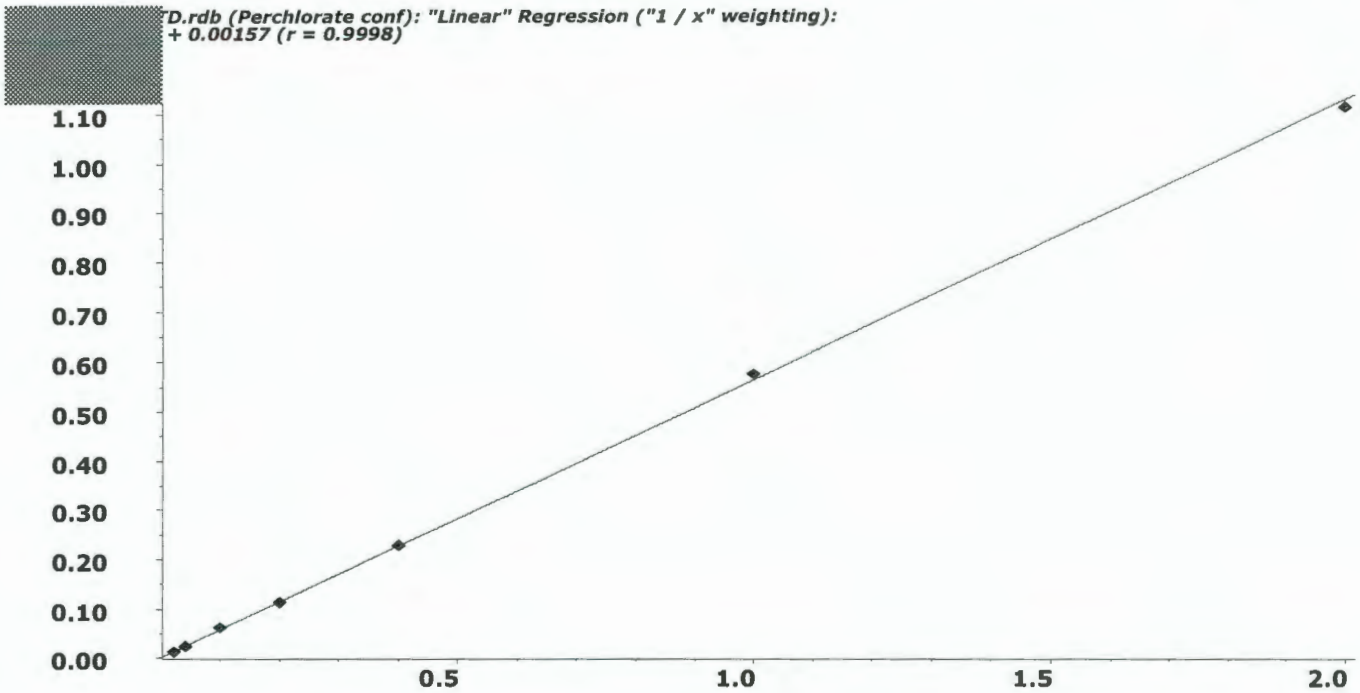

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Data File	LM33568.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/2/2016 8:53:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-02 STD (0.1 ug/L)	**Injection Vial**	52.00
Data File	LM33568.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 8:53:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG559340-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.900e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.840e+04	9.97	0.10	0.095
Perchlorate conf	5.910e+03	9.94	0.10	0.0934

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

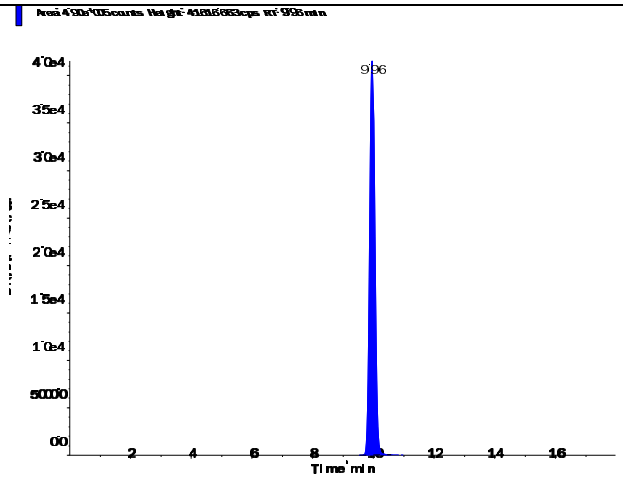

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.97 (9.94) min
Calculated conc:	0.095 ng/ml
Area Ratio:	0.038
Sample Type:	(Standard)

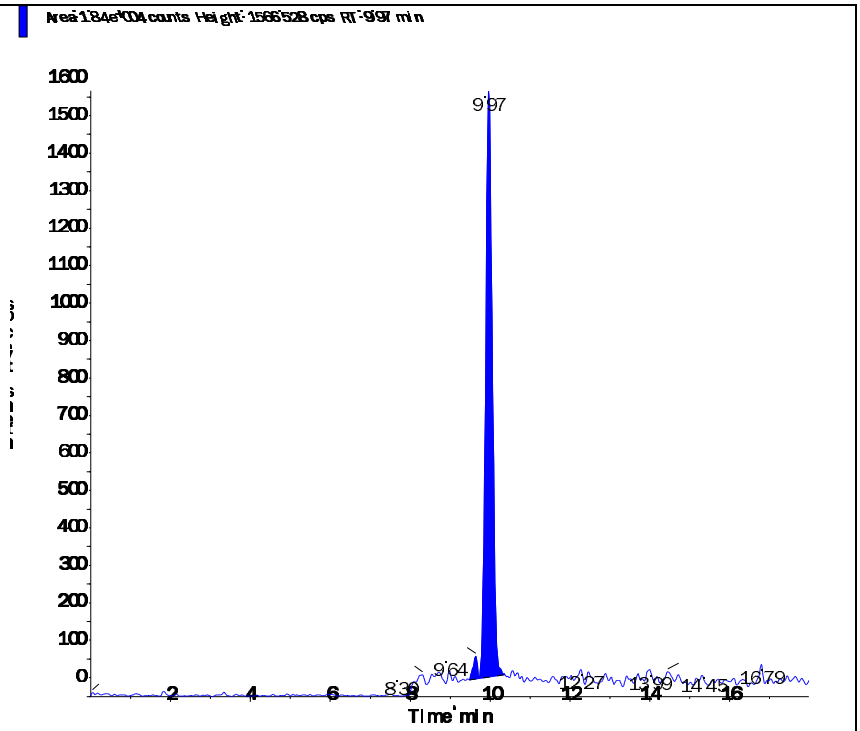

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.0934 ng/ml
Area Ratio:	0.012
Sample Type:	(Standard)

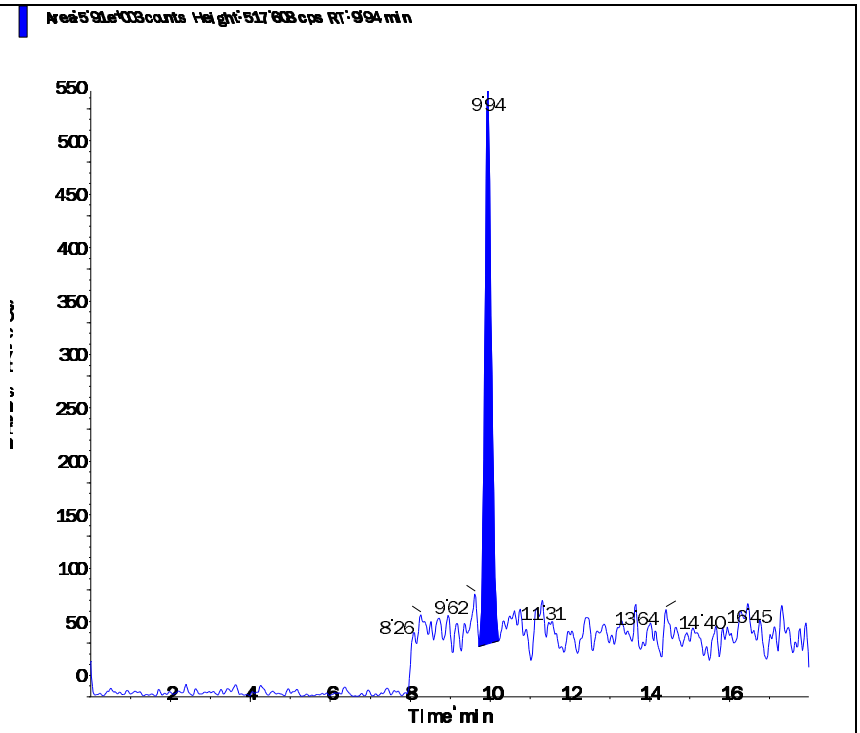

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Data File	LM33569.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/2/2016 9:12:17 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-03 STD (0.2 ug/L)	**Injection Vial**	53.00
Data File	LM33569.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 9:12:17 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG559340-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.990e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.700e+04	9.99	0.20	0.199
Perchlorate conf	1.190e+04	9.98	0.20	0.197

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

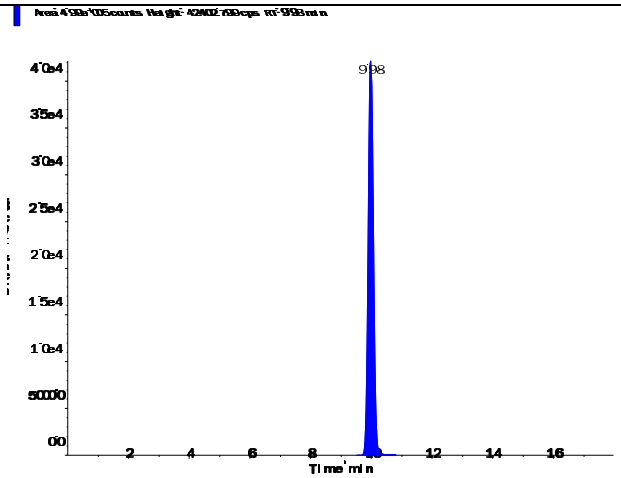

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.99 (9.94) min
Calculated conc:	0.199 ng/ml
Area Ratio:	0.074
Sample Type:	(Standard)

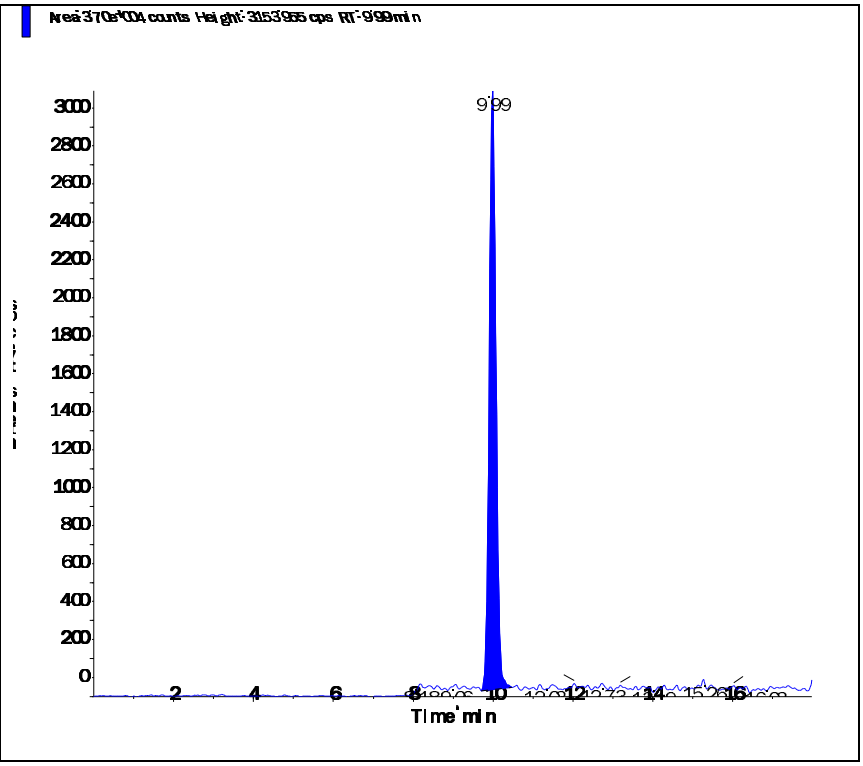

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.98 (9.92) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

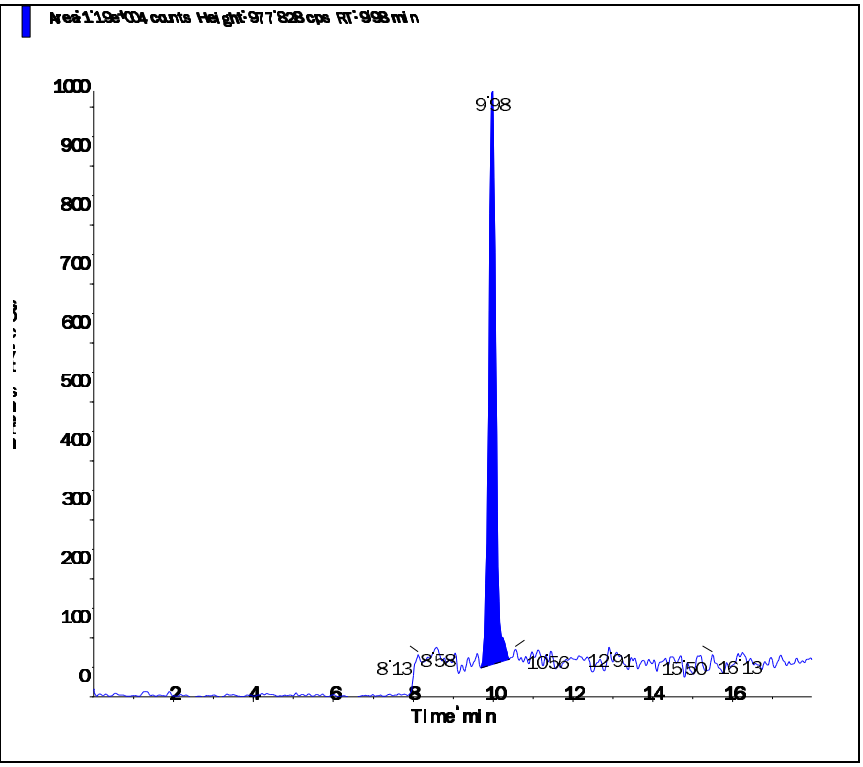

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Data File	LM33570.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/2/2016 9:31:14 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-04 STD (0.5 ug/L)	**Injection Vial**	54.00
Data File	LM33570.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 9:31:14 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG559340-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.920e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.900e+04	10.00	0.50	0.505
Perchlorate conf	3.040e+04	9.98	0.50	0.536

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

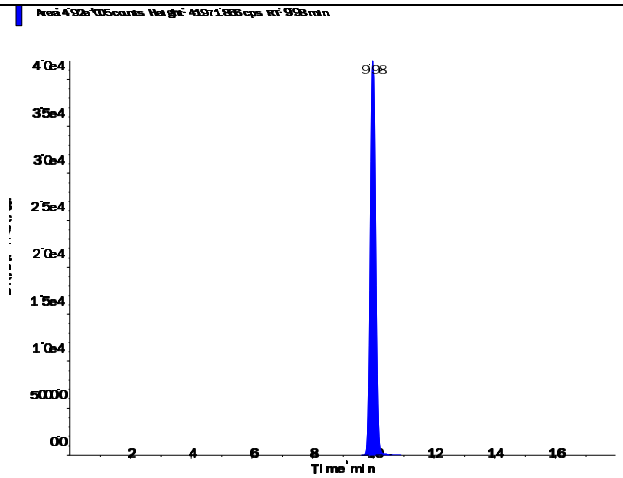

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.00 (9.94) min
Calculated conc:	0.505 ng/ml
Area Ratio:	0.181
Sample Type:	(Standard)

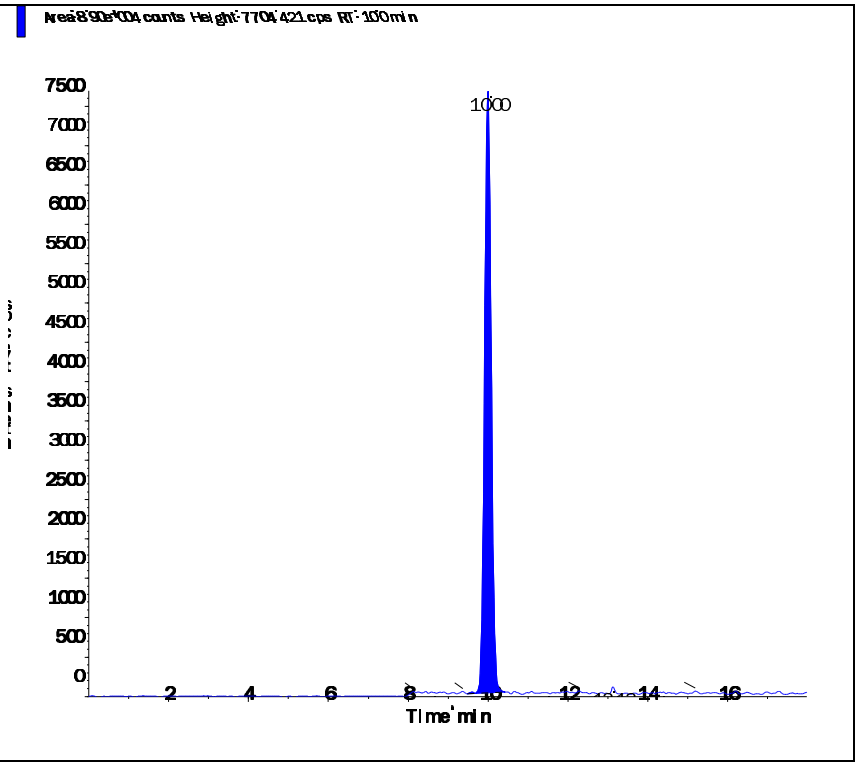

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.98 (9.92) min
Calculated conc:	0.536 ng/ml
Area Ratio:	0.062
Sample Type:	(Standard)

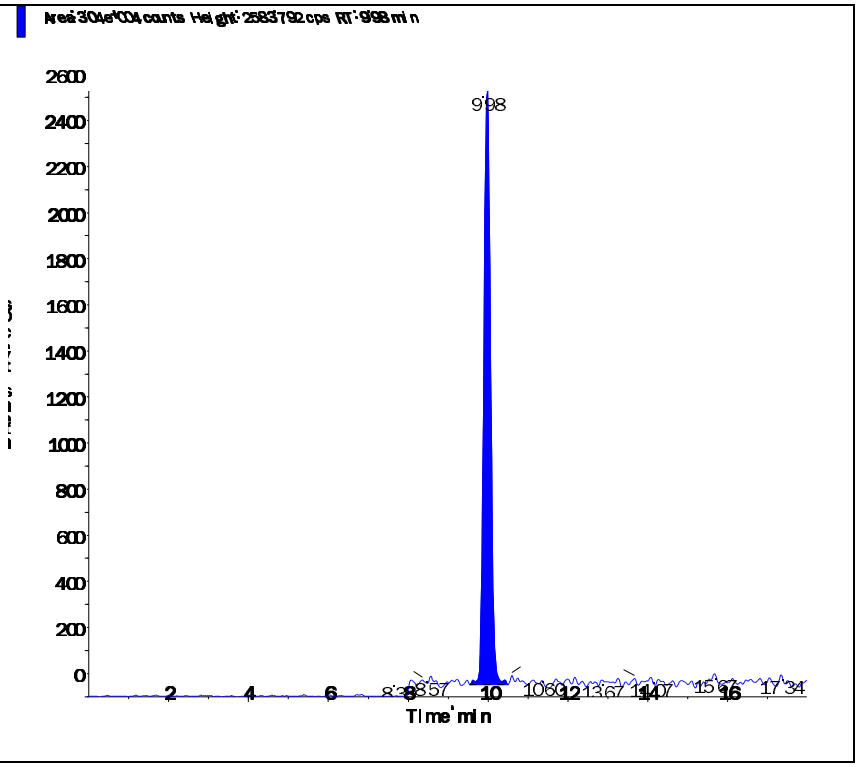

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Data File	LM33571.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/2/2016 9:50:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-05 STD (1.0 ug/L)	**Injection Vial**	55.00
Data File	LM33571.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 9:50:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG559340-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.010e+05	9.98	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.830e+05	9.99	1.00	1.03
Perchlorate conf	5.680e+04	9.98	1.00	0.995

O18LP (Internal Standard)

RT (Exp. RT): 9.98(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

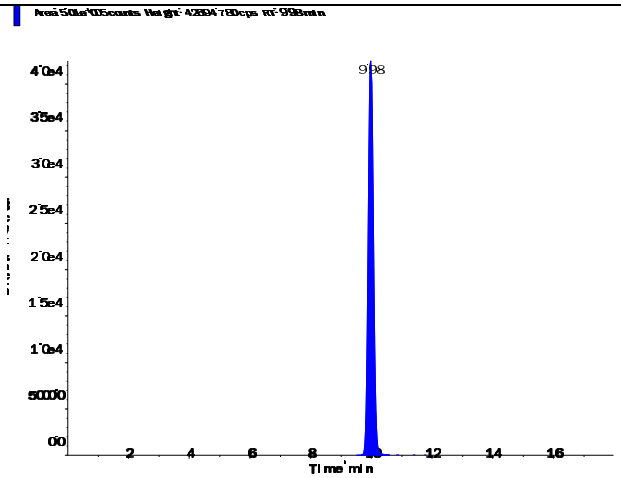

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.99 (9.94) min Calculated conc: 1.03 ng/ml Area Ratio: 0.366 Sample Type: (Standard)	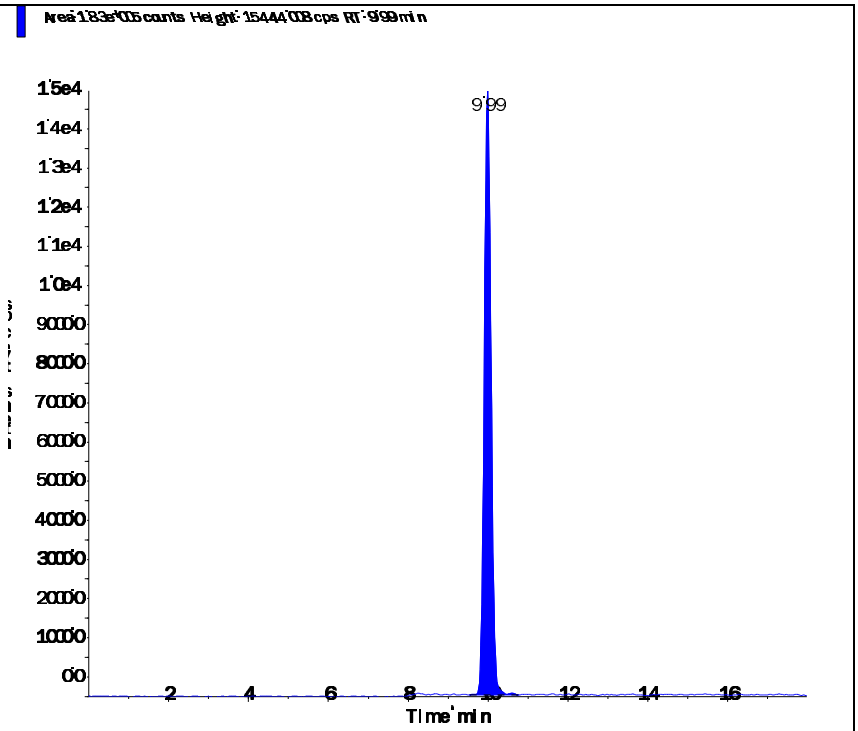
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.98 (9.92) min Calculated conc: 0.995 ng/ml Area Ratio: 0.113 Sample Type: (Standard)	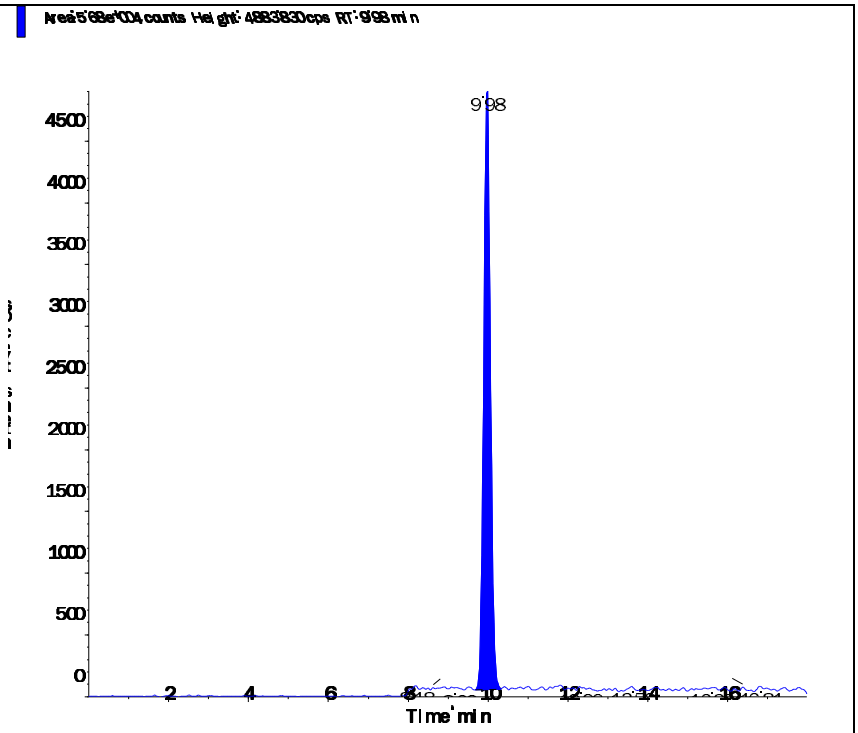

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Data File	LM33572.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/2/2016 10:09:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-06 STD (2.0 ug/L)	**Injection Vial**	56.00
Data File	LM33572.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 10:09:06 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG559340-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.99	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.630e+05	10.00	2.00	2.02
Perchlorate conf	1.170e+05	9.99	2.00	2.01

O18LP (Internal Standard)

RT (Exp. RT): 9.99(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

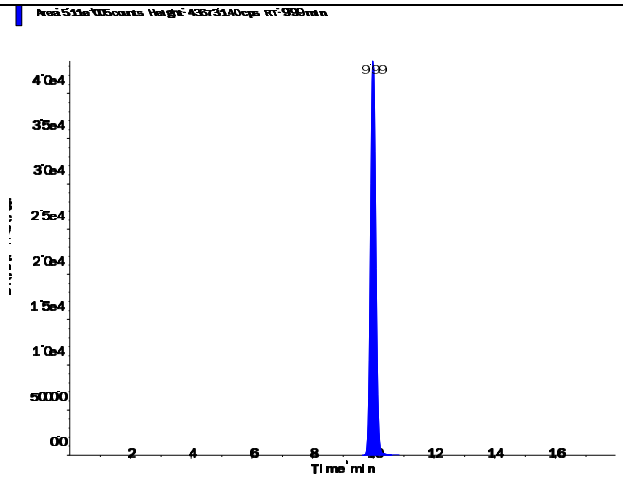

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.00 (9.94) min
Calculated conc:	2.02 ng/ml
Area Ratio:	0.711
Sample Type:	(Standard)

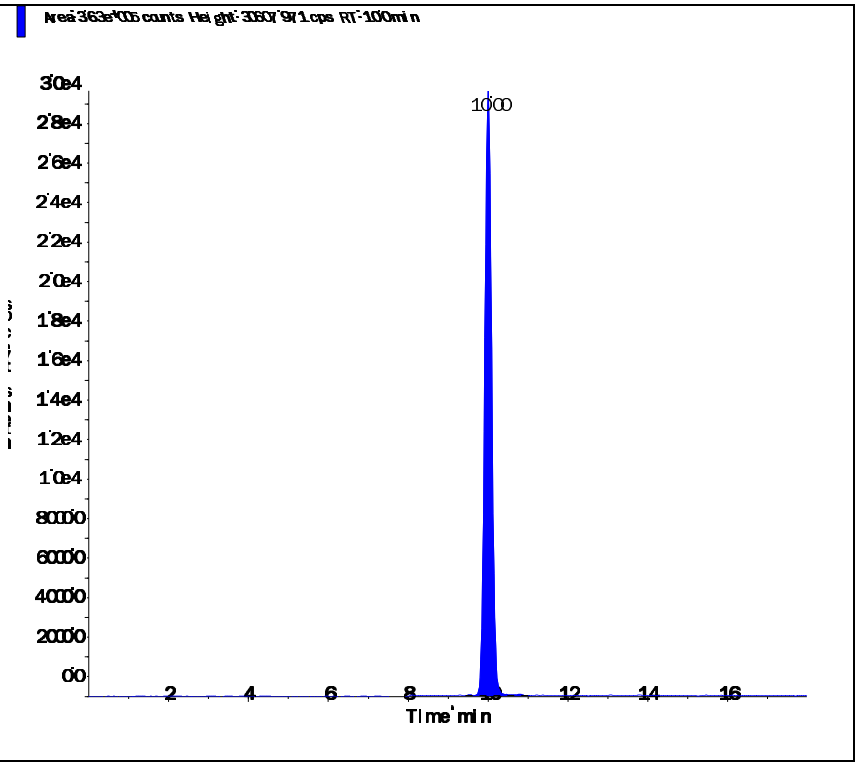

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.99 (9.92) min
Calculated conc:	2.01 ng/ml
Area Ratio:	0.228
Sample Type:	(Standard)

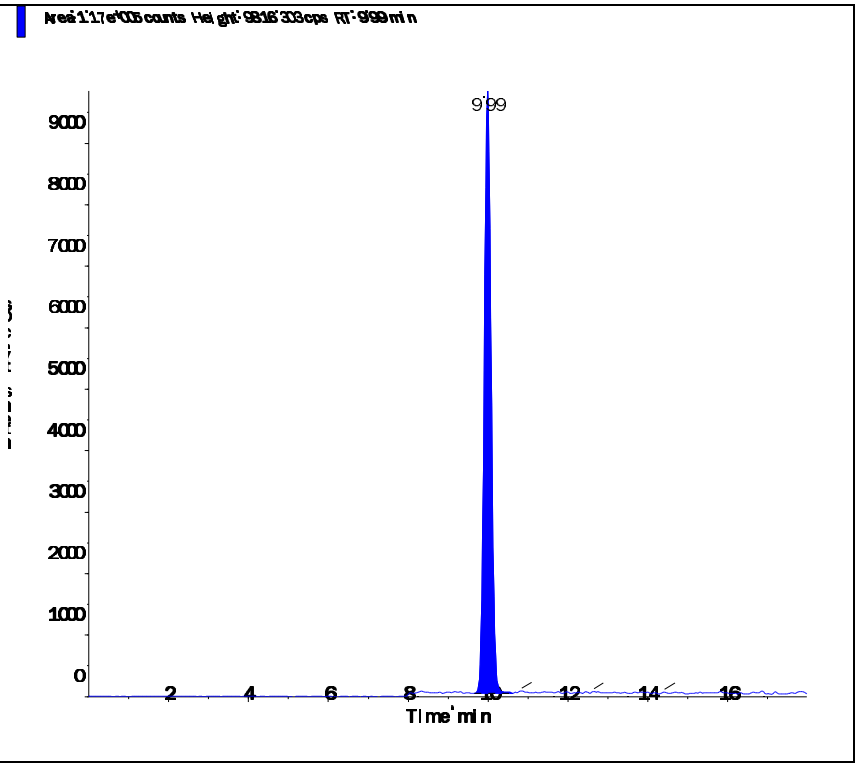

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Data File	LM33573.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/2/2016 10:28:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-07 STD (5.0 ug/L)	**Injection Vial**	57.00
Data File	LM33573.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 10:28:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG559340-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.900e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.710e+05	9.98	5.00	5.07
Perchlorate conf	2.820e+05	9.97	5.00	5.11

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

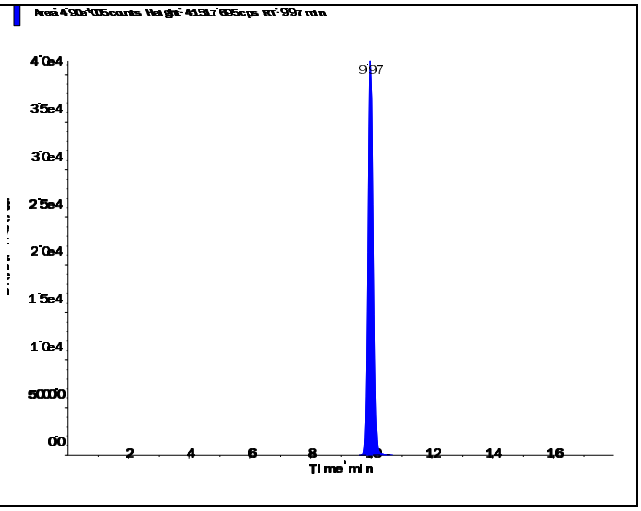

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.98 (9.94) min
Calculated conc:	5.07 ng/ml
Area Ratio:	1.779
Sample Type:	(Standard)

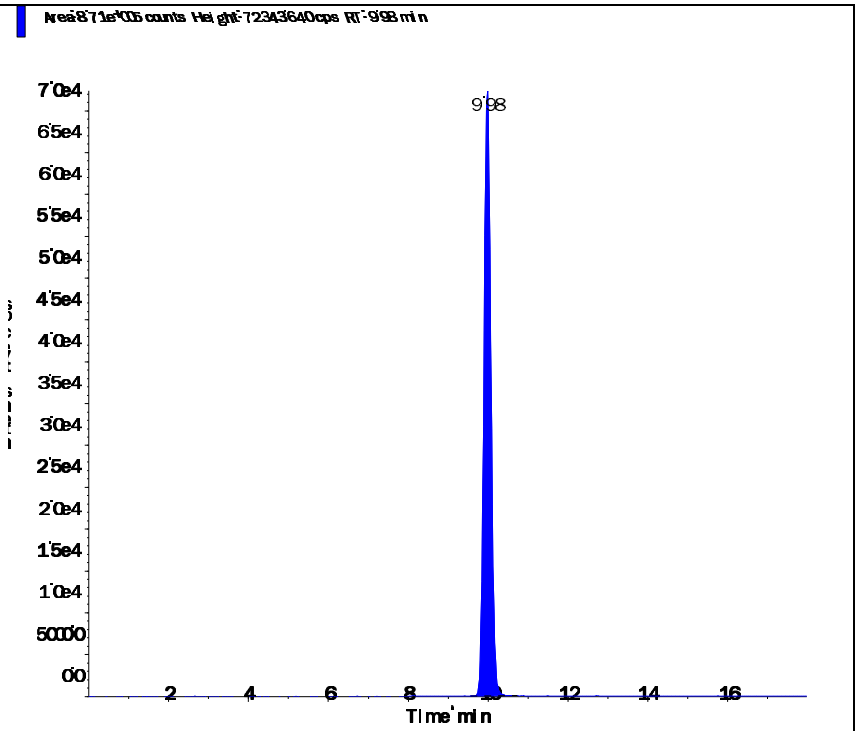

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.97 (9.92) min
Calculated conc:	5.11 ng/ml
Area Ratio:	0.576
Sample Type:	(Standard)

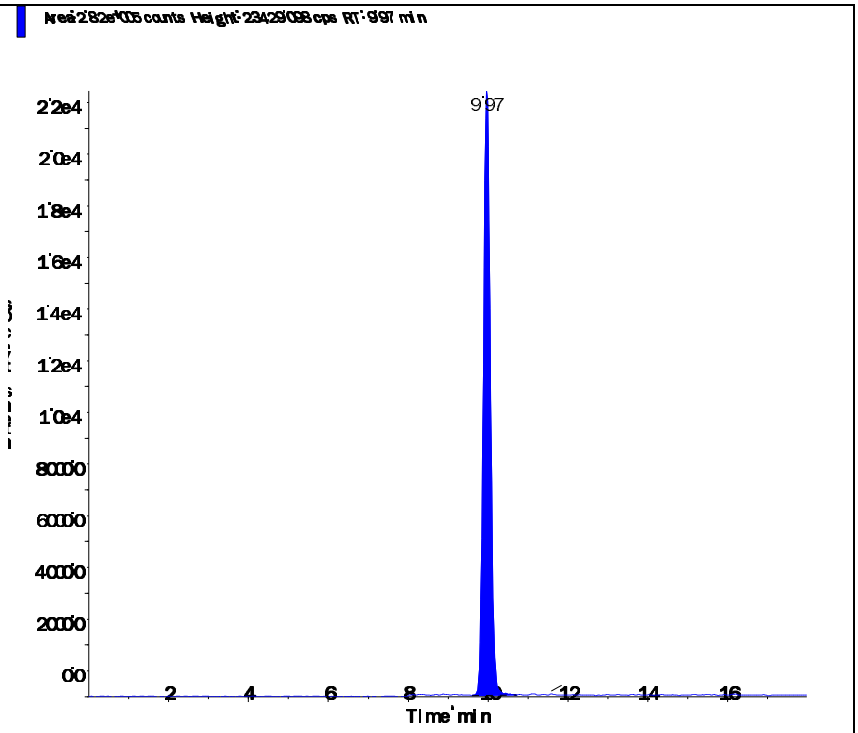

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Data File	LM33574.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/2/2016 10:46:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-08 STD (10 ug/L)	**Injection Vial**	58.00
Data File	LM33574.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 10:46:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG559340-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.96	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.650e+06	9.98	10.00	9.87
Perchlorate conf	5.300e+05	9.96	10.00	9.85

O18LP (Internal Standard)

RT (Exp. RT): 9.96(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

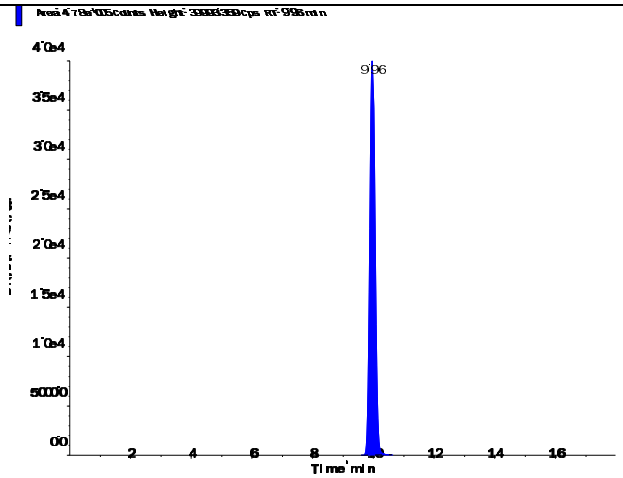

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.98 (9.94) min Calculated conc: 9.87 ng/ml Area Ratio: 3.458 Sample Type: (Standard)	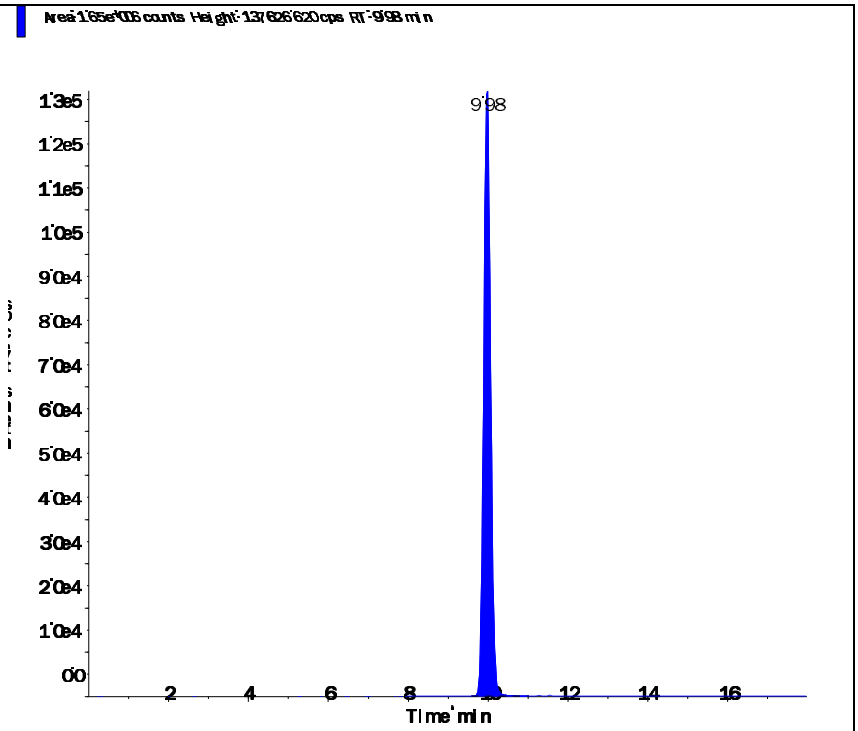
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.96 (9.92) min Calculated conc: 9.85 ng/ml Area Ratio: 1.11 Sample Type: (Standard)	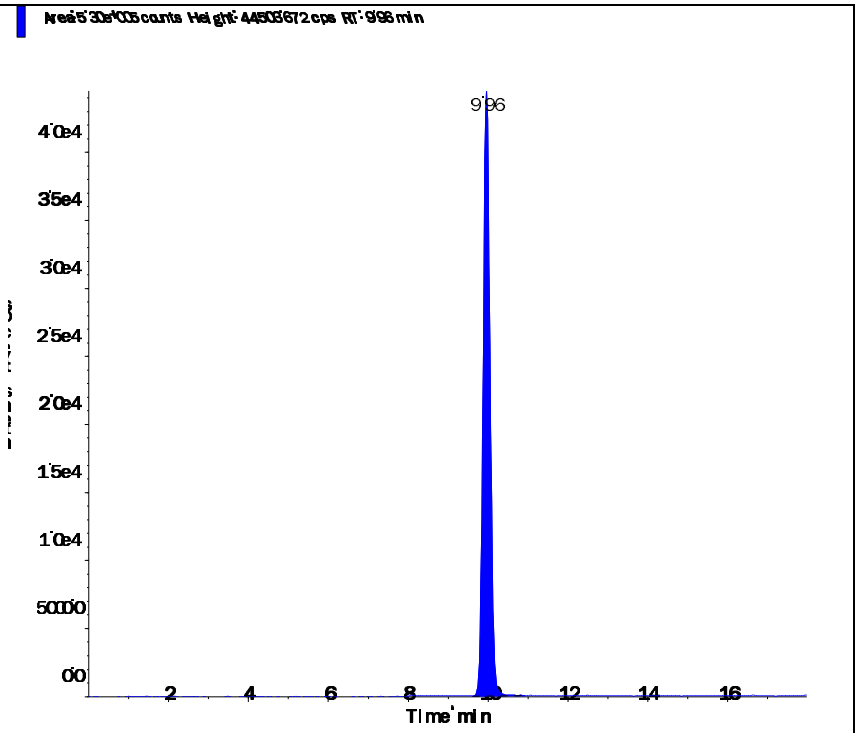

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Data File	LM33575.wiff	**Result Table**	030216_WTD.rdb
Acquisition Date	3/2/2016 11:05:52 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG559340-09 SSCV (1.0 ug/L)	**Injection Vial**	59.00
Data File	LM33575.wiff	**Injection Volume**	10.00
Acquisition Date	3/2/2016 11:05:52 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	030216_WTD.rdb
Sample ID	WG559340-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.200e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.900e+05	9.98	1.00	1.03
Perchlorate conf	6.220e+04	9.97	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

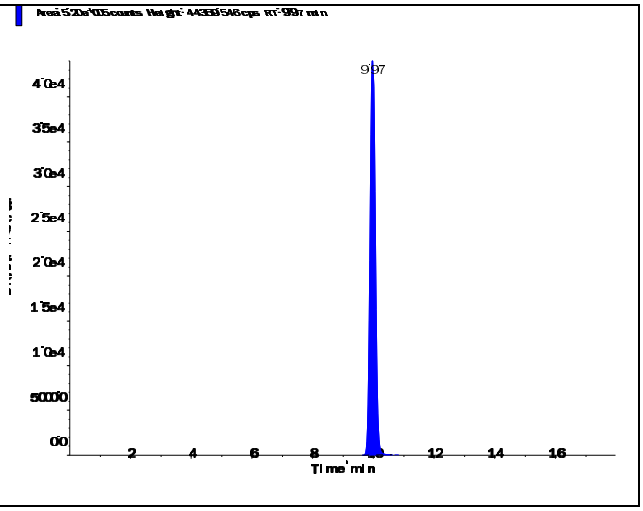

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.98 (9.94) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.366
Sample Type:	(Quality Control)

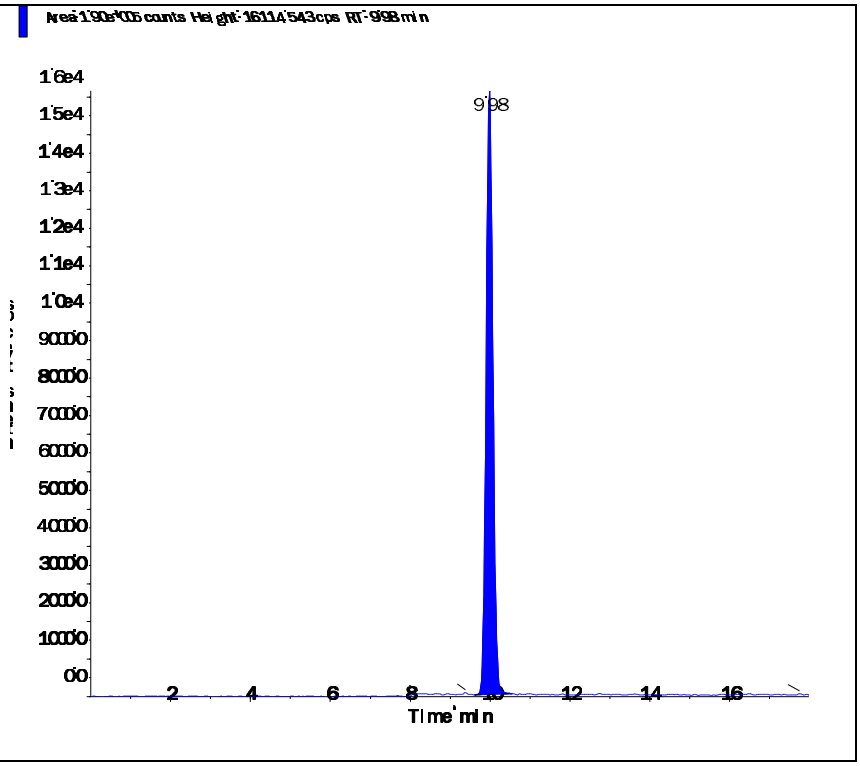

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.97 (9.92) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.12
Sample Type:	(Quality Control)

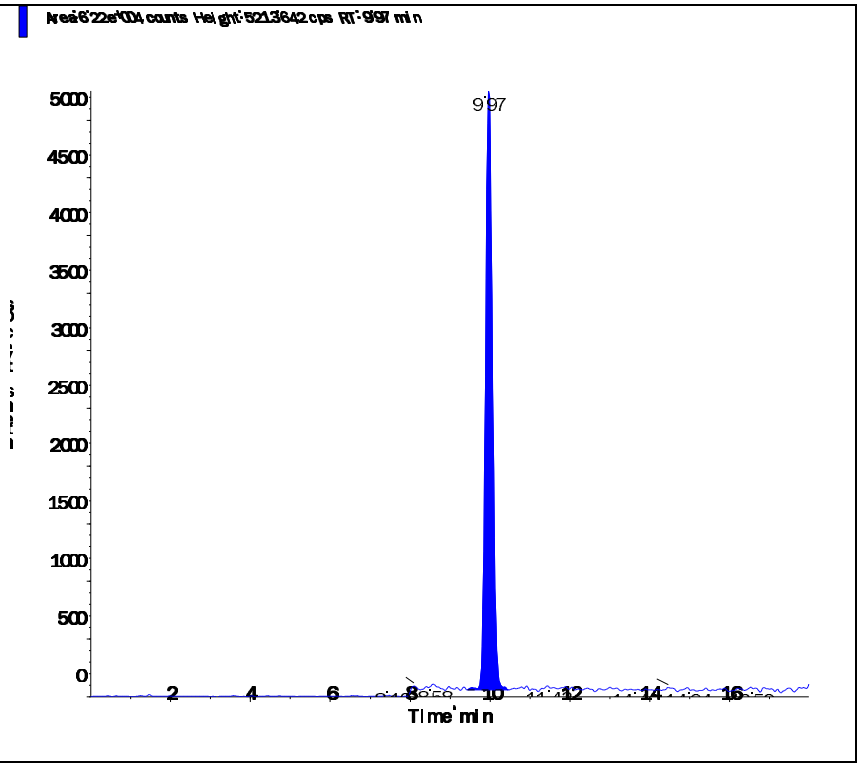

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Data File	LM33902.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 9:38:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561324-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33902.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 9:38:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561324-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.260e+05	9.92	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.850e+05	9.93	1.00	0.993
Perchlorate conf	6.140e+04	9.91	1.00	1.02

O18LP (Internal Standard)

RT (Exp. RT): 9.92(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

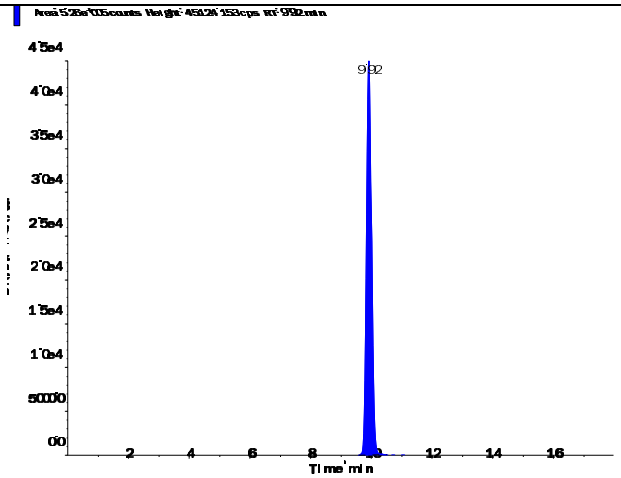

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	0.993 ng/ml
Area Ratio:	0.352
Sample Type:	(Quality Control)

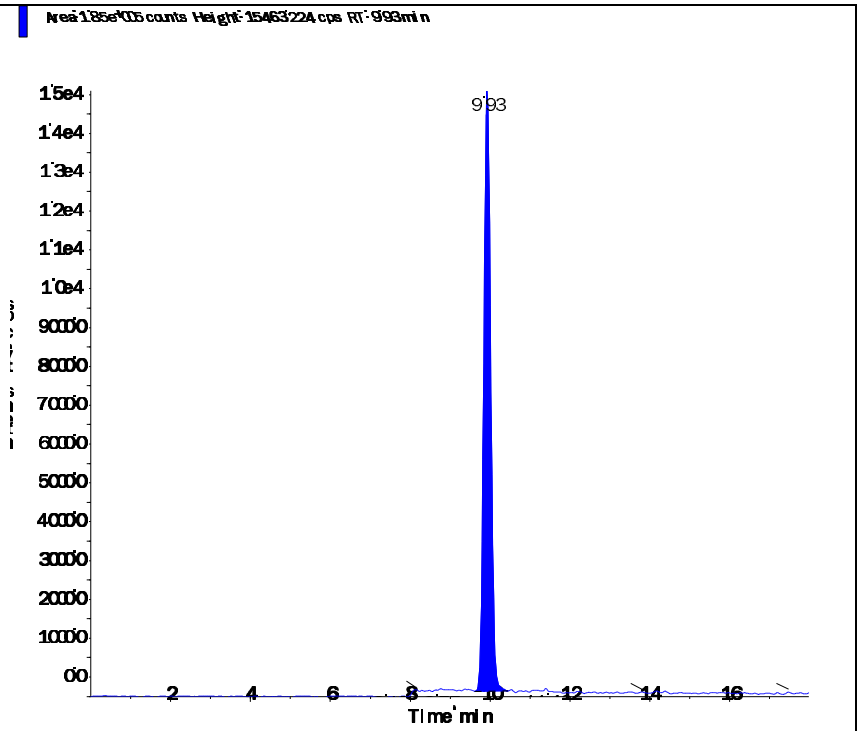

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.92) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.117
Sample Type:	(Quality Control)

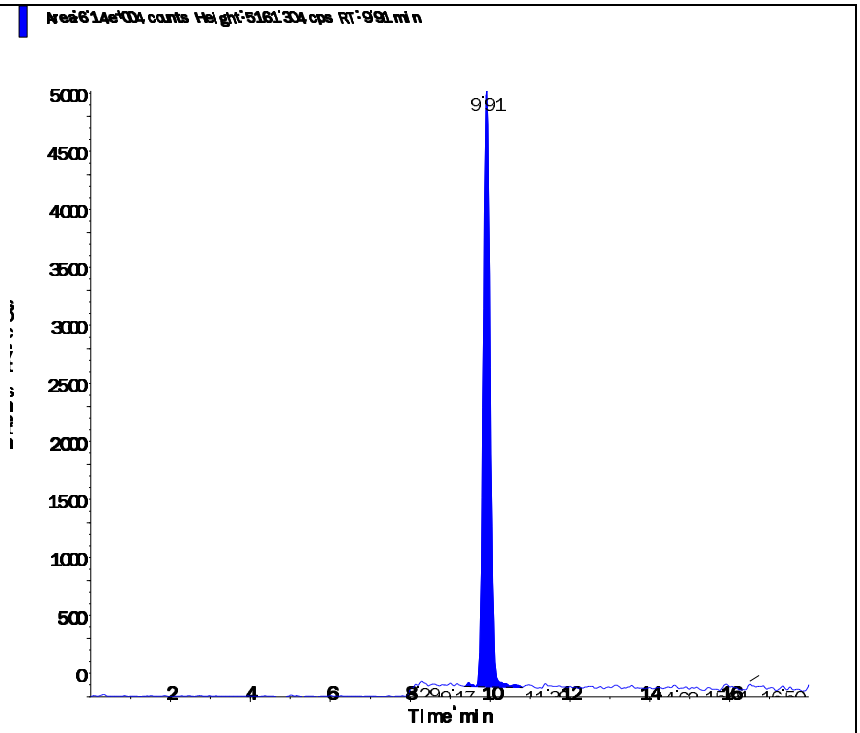

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Data File	LM33916.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 2:03:35 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561324-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33916.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 2:03:35 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561324-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.320e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.870e+05	9.93	1.00	0.993
Perchlorate conf	6.130e+04	9.91	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

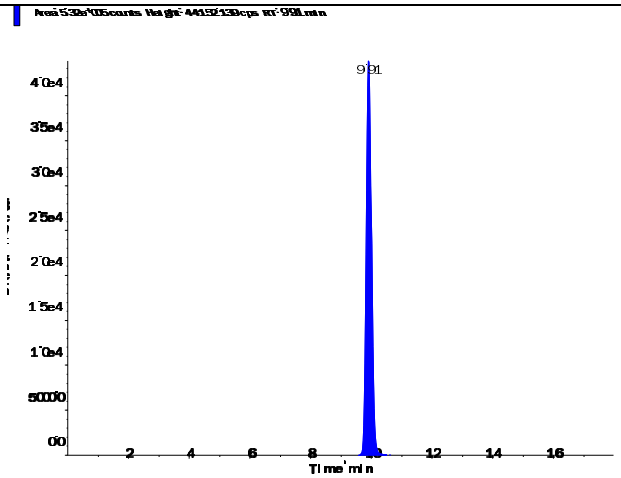

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.94) min
Calculated conc:	0.993 ng/ml
Area Ratio:	0.352
Sample Type:	(Quality Control)

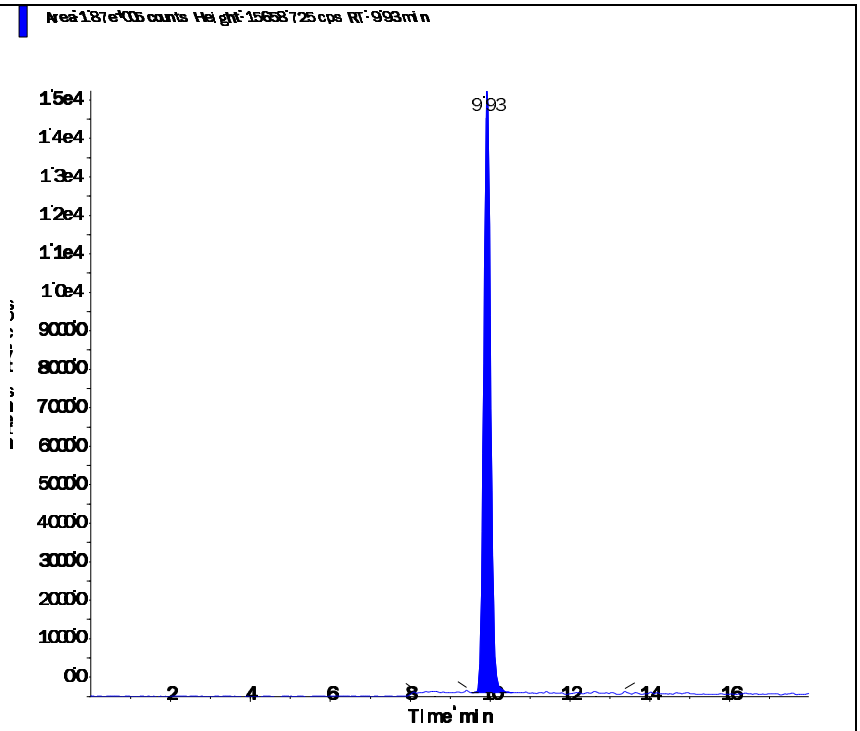

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.92) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.115
Sample Type:	(Quality Control)

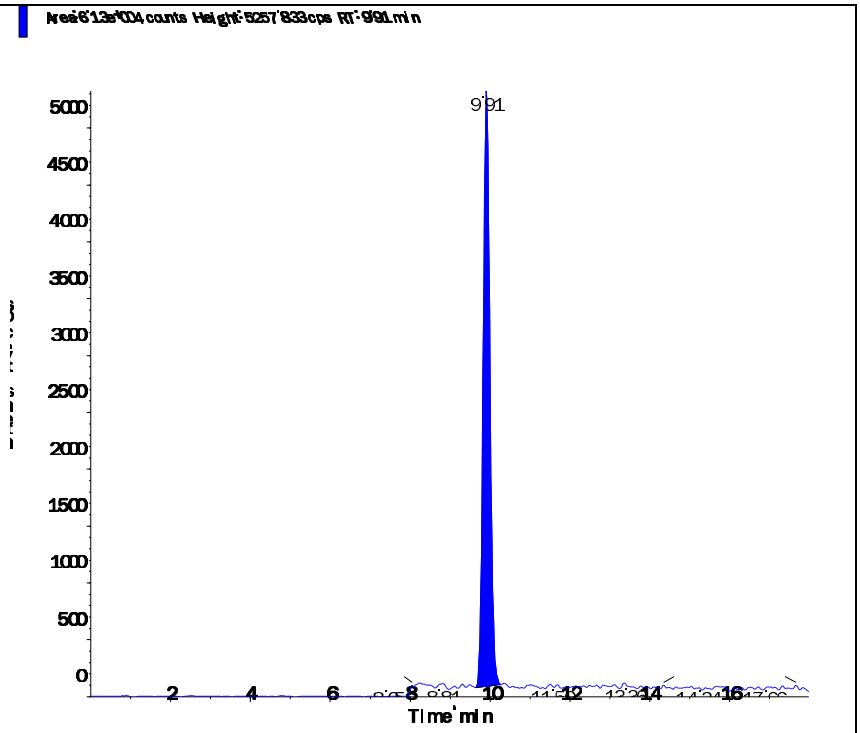

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Data File	LM33926.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 5:12:58 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561324-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33926.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 5:12:58 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561324-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.450e+05	9.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.940e+05	9.92	1.00	1.01
Perchlorate conf	6.330e+04	9.91	1.00	1.02

O18LP (Internal Standard)

RT (Exp. RT): 9.90(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

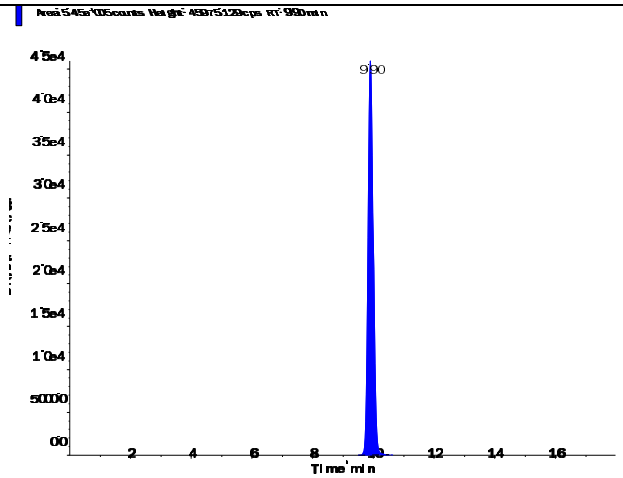

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.92 (9.94) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.356
Sample Type:	(Quality Control)

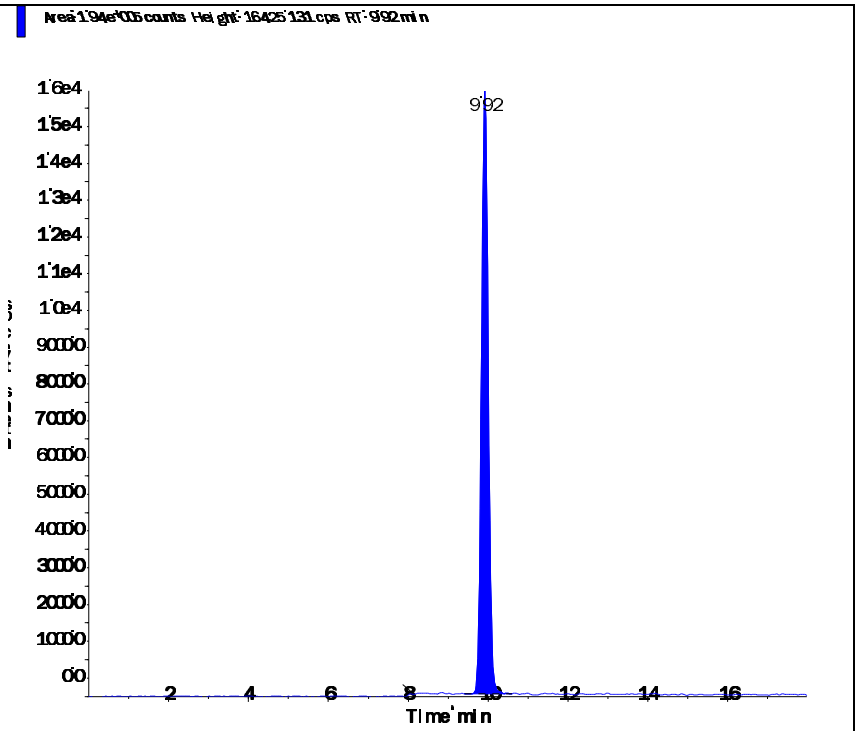

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.92) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.116
Sample Type:	(Quality Control)

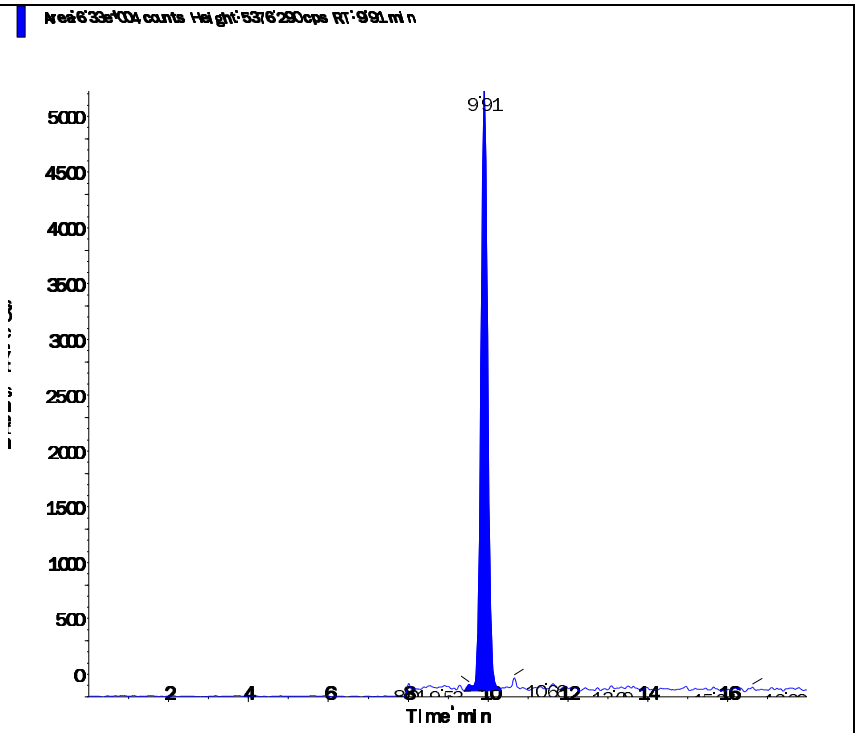

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Data File	LM33929.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 12:15:27 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561324-11 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33929.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 12:15:27 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561324-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.700e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.620e+05	9.95	1.00	0.976
Perchlorate conf	5.460e+04	9.93	1.00	1.02

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

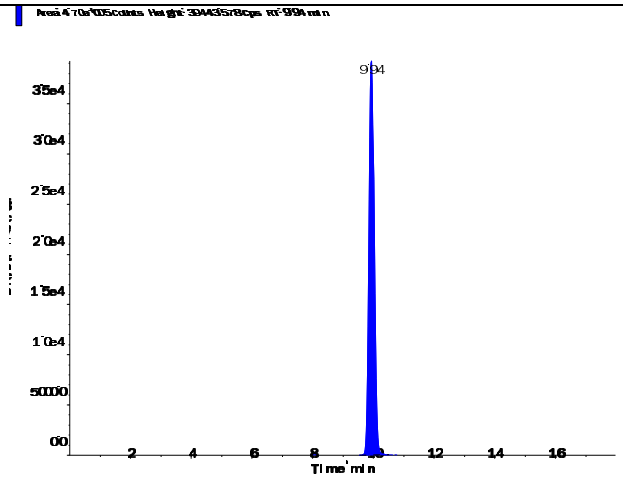

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.95 (9.94) min
Calculated conc:	0.976 ng/ml
Area Ratio:	0.346
Sample Type:	(Quality Control)

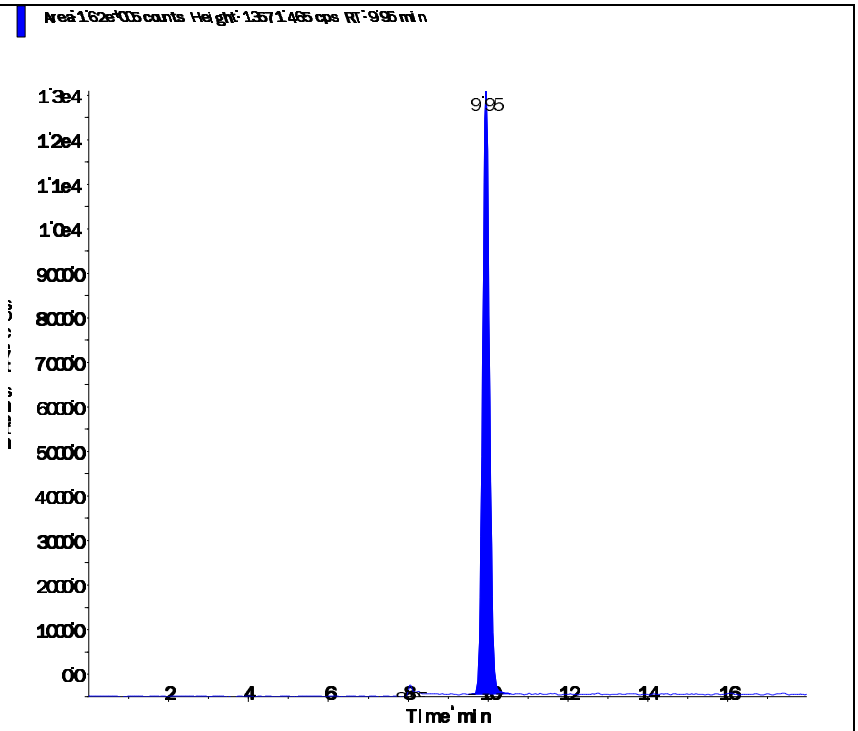

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.116
Sample Type:	(Quality Control)

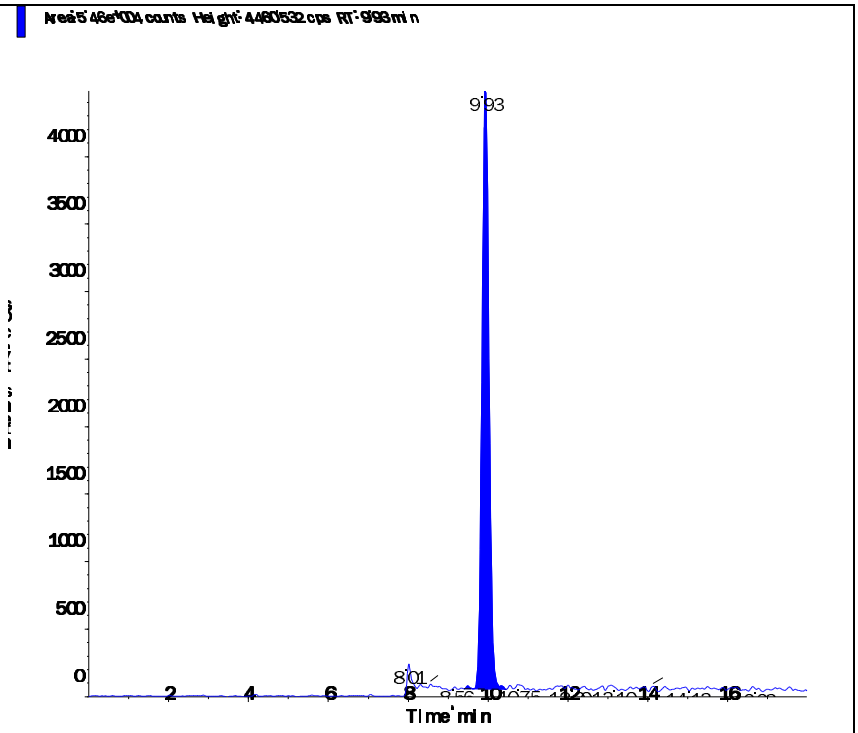

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Data File	LM33942.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 4:21:36 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561324-13 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM33942.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 4:21:36 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561324-13	**Dilution Factor**	1.00
Sample Comment	1,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.040e+05	9.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.740e+05	9.96	1.00	0.978
Perchlorate conf	5.650e+04	9.94	1.00	0.984

O18LP (Internal Standard)

RT (Exp. RT): 9.95(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

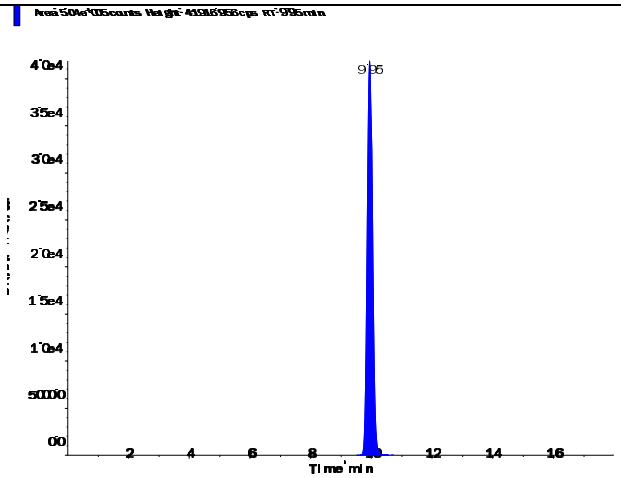

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	0.978 ng/ml
Area Ratio:	0.347
Sample Type:	(Quality Control)

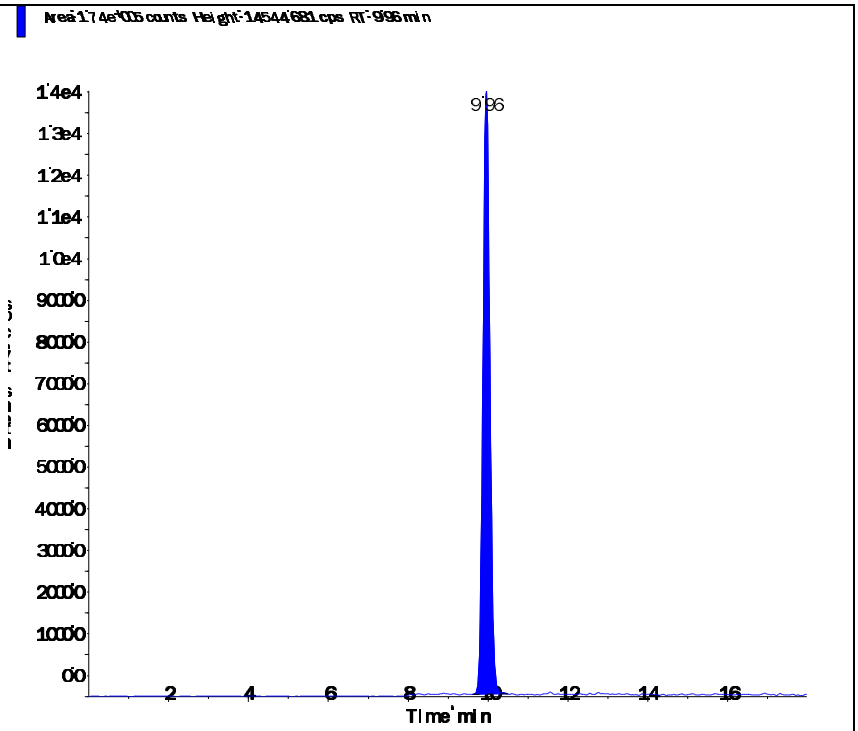

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.94 (9.92) min
Calculated conc:	0.984 ng/ml
Area Ratio:	0.112
Sample Type:	(Quality Control)

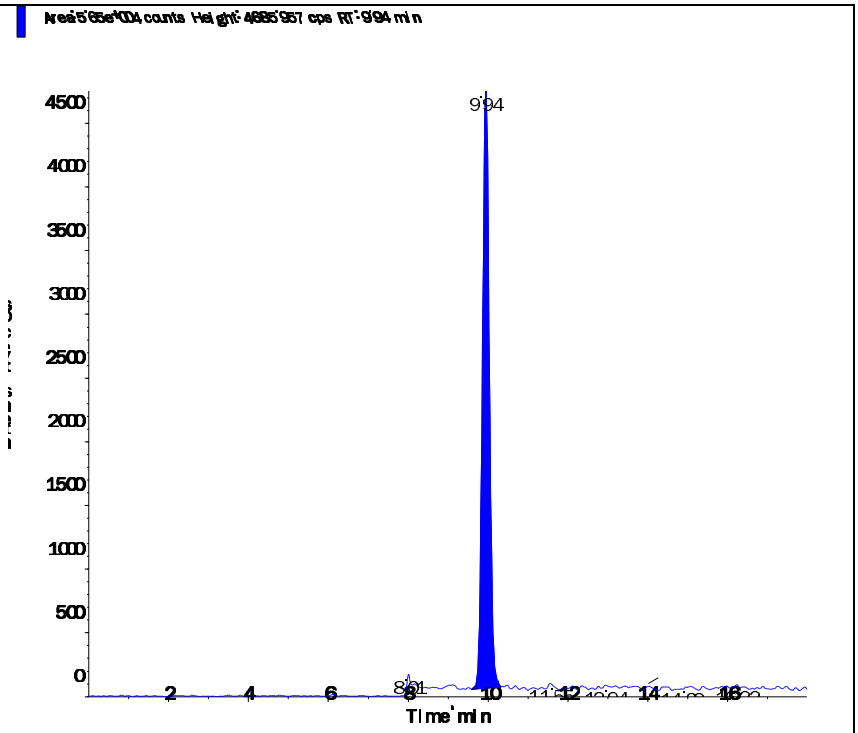

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Data File	LM33904.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 10:16:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561318-07 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33904.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 10:16:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561318-07	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.580e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.910e+04	9.93	N/A	0.188
Perchlorate conf	1.370e+04	9.91	N/A	0.205

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

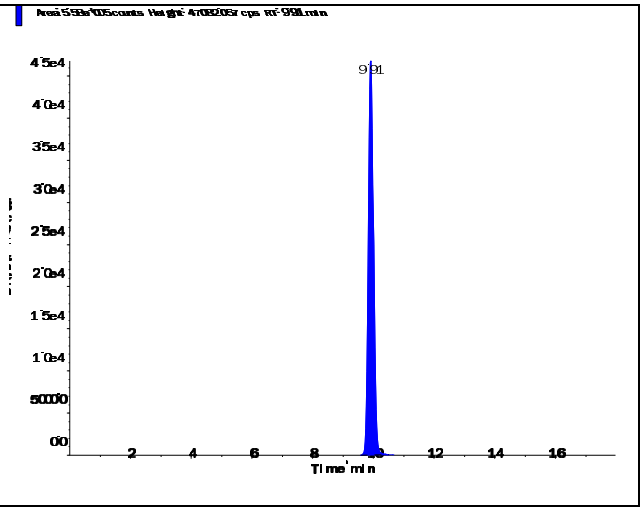

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.93 (9.94) min Calculated conc: 0.188 ng/ml Area Ratio: 0.07 Sample Type: (Unknown)	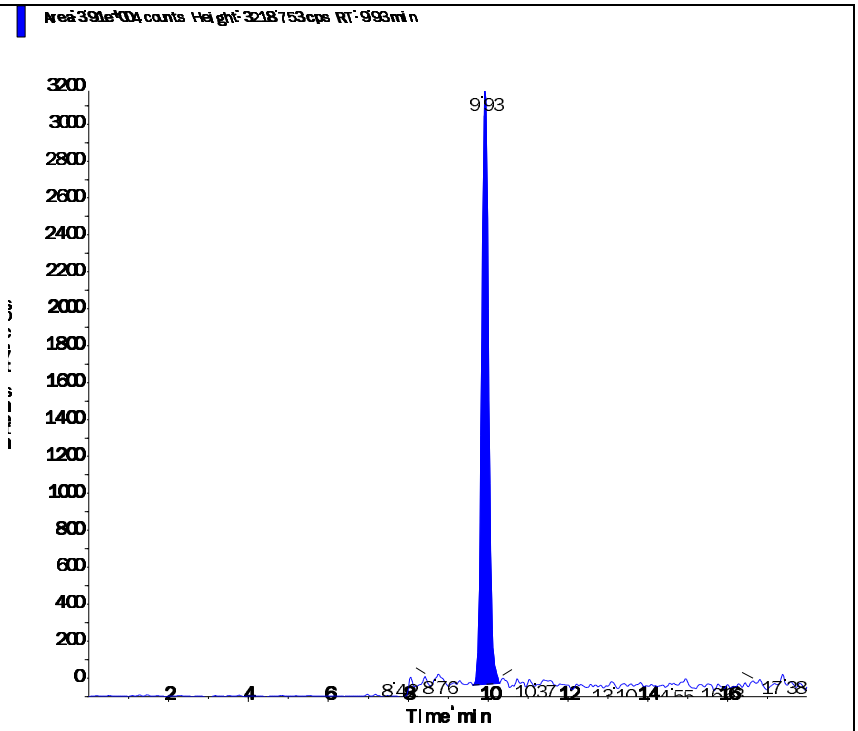
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.91 (9.92) min Calculated conc: 0.205 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	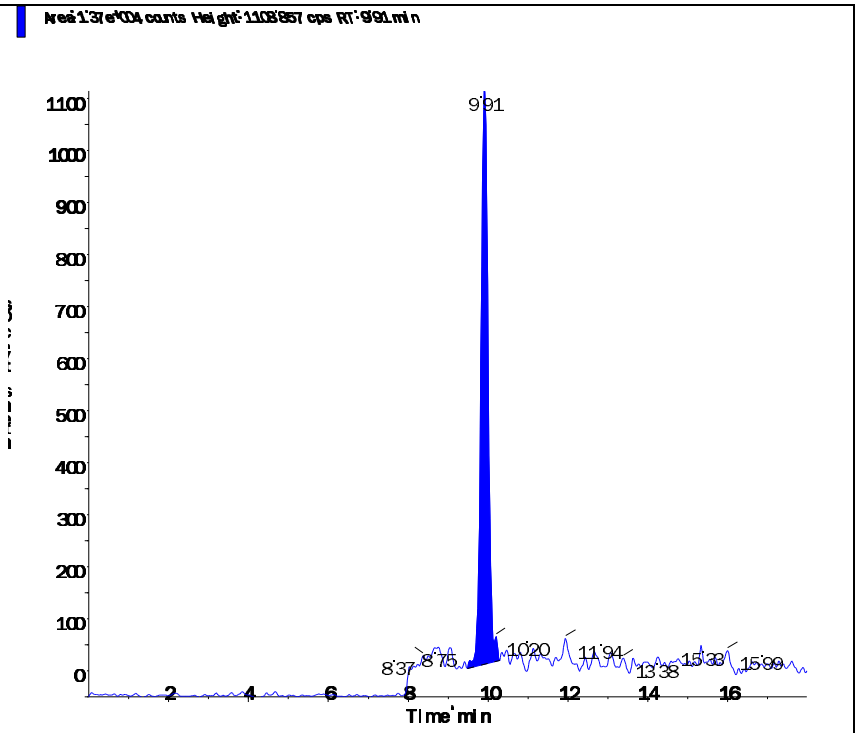

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Data File	LM33917.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 2:22:31 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561318-08 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33917.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 2:22:31 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561318-08	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.420e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.080e+04	9.92	N/A	0.203
Perchlorate conf	1.230e+04	9.91	N/A	0.189

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

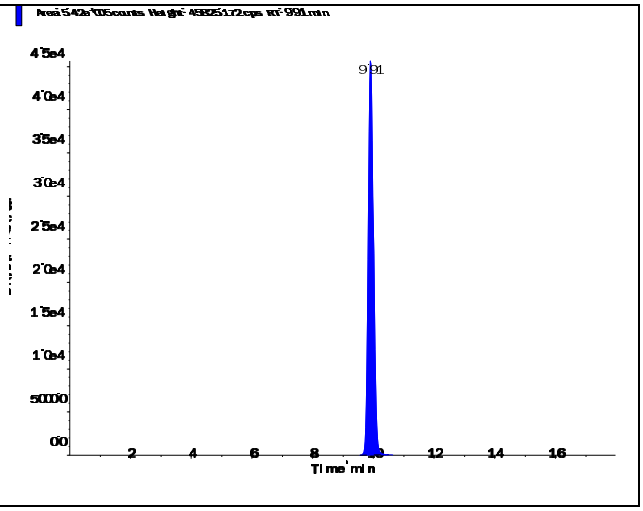

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.92 (9.94) min Calculated conc: 0.203 ng/ml Area Ratio: 0.075 Sample Type: (Unknown)	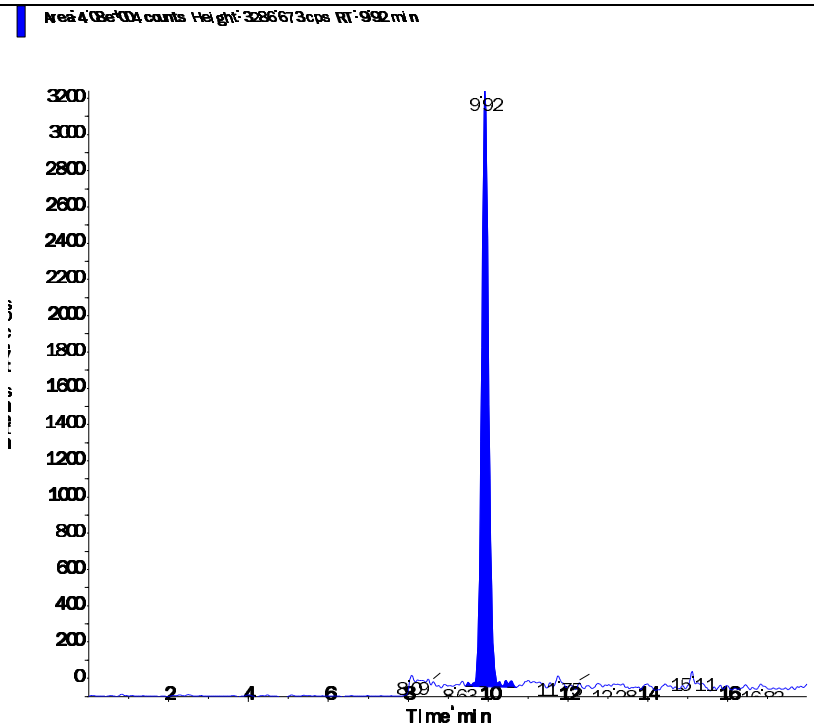
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.91 (9.92) min Calculated conc: 0.189 ng/ml Area Ratio: 0.023 Sample Type: (Unknown)	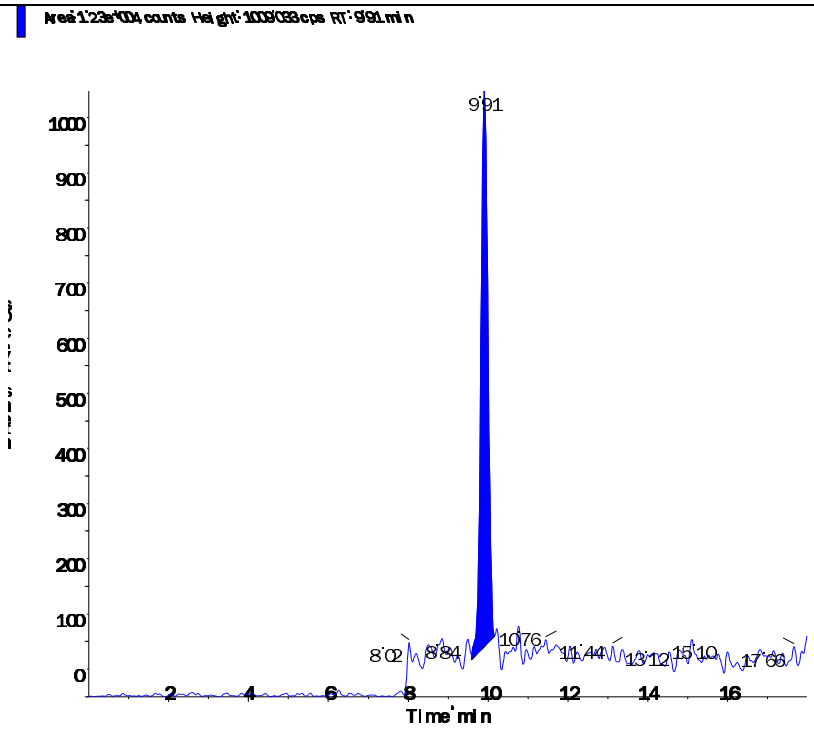

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Data File	LM33927.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 5:31:52 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561318-09 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33927.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 5:31:52 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561318-09	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.730e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.070e+04	9.92	N/A	0.191
Perchlorate conf	1.390e+04	9.90	N/A	0.202

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

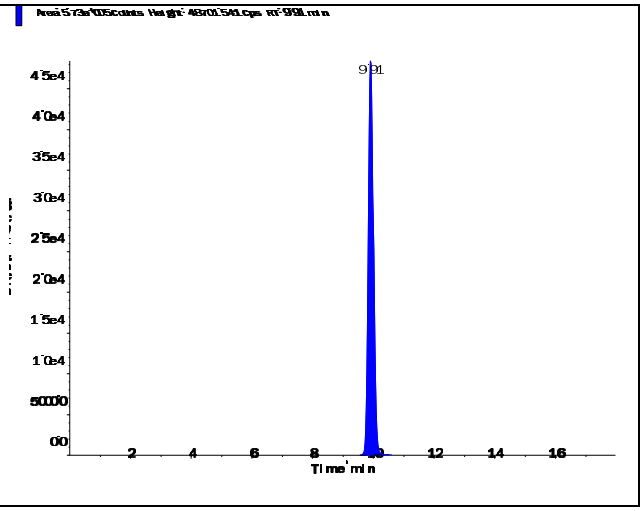

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.92 (9.94) min
Calculated conc:	0.191 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

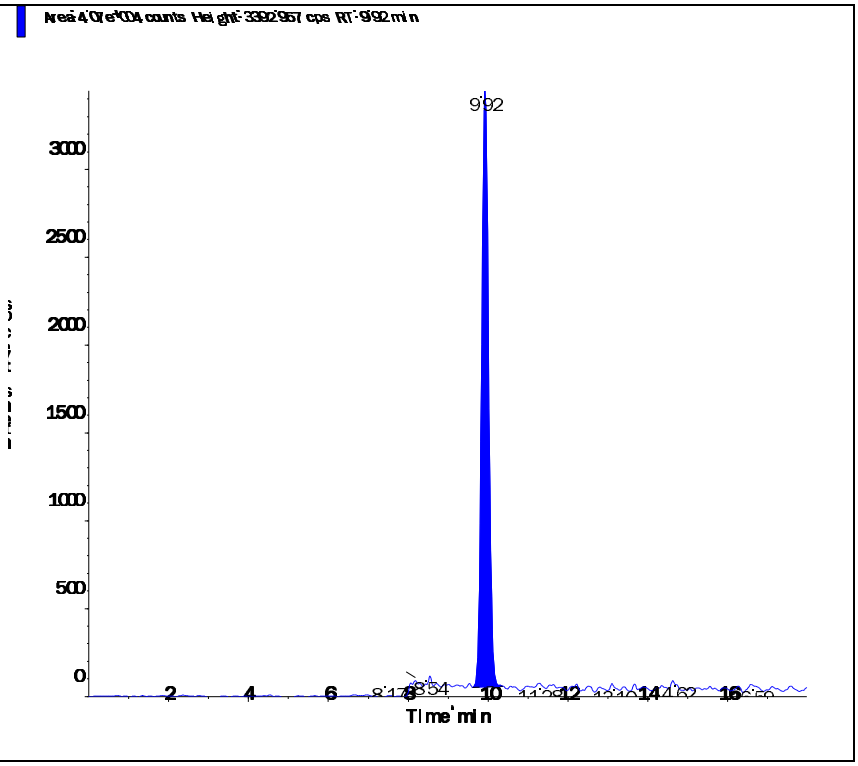

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.90 (9.92) min
Calculated conc:	0.202 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

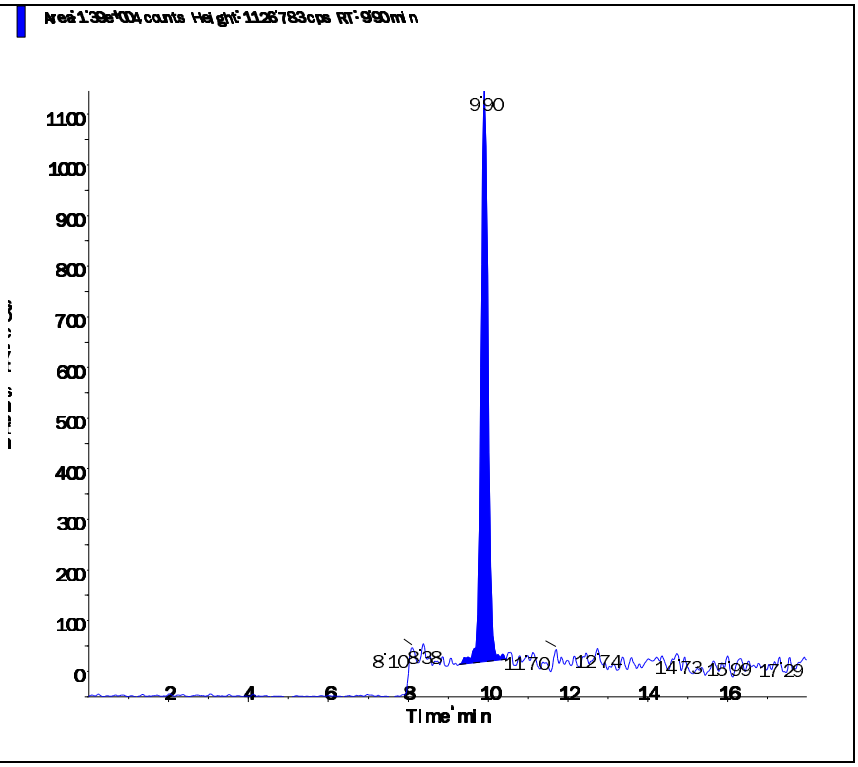

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Data File	LM33931.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 12:53:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561318-10 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33931.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 12:53:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561318-10	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.910e+05	9.97	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.530e+04	9.98	N/A	0.193
Perchlorate conf	1.150e+04	9.96	N/A	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.97(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

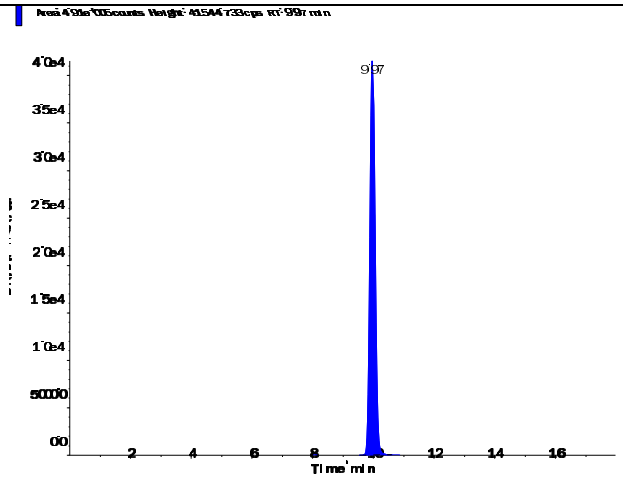

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.98 (9.94) min
Calculated conc:	0.193 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

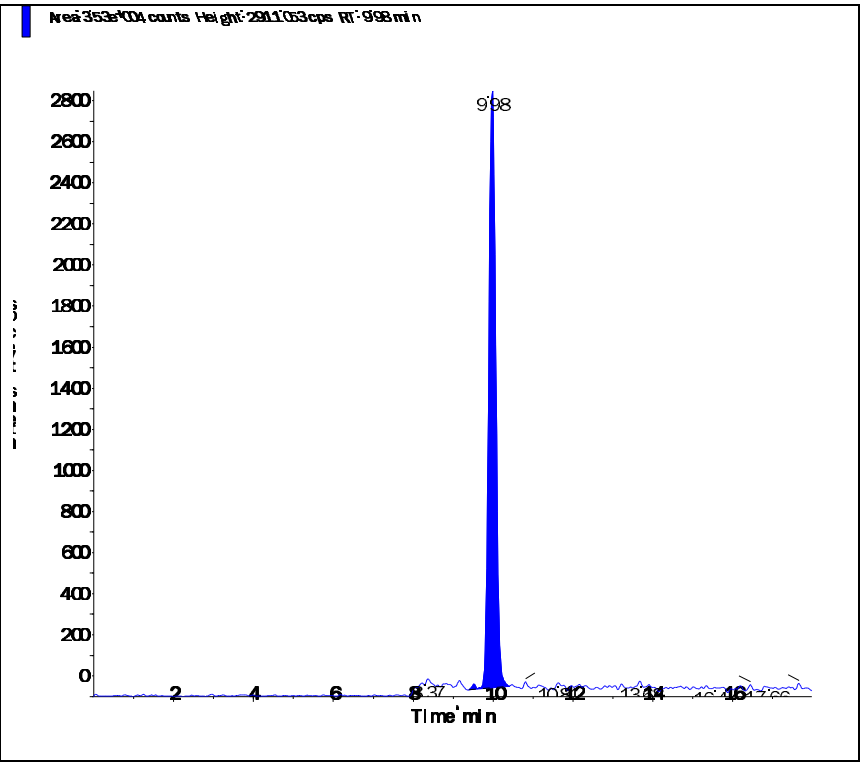

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.96 (9.92) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

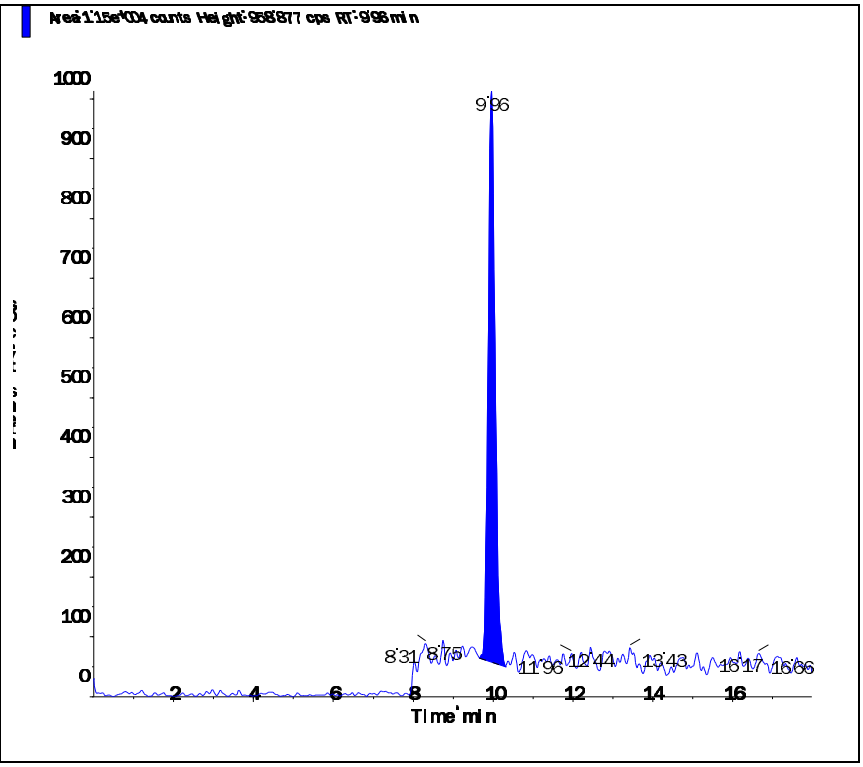

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Data File	LM33944.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 4:59:27 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561318-11 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM33944.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 4:59:27 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561318-11	**Dilution Factor**	1.00
Sample Comment	7,1 STD72683	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.220e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.880e+04	9.96	N/A	0.20
Perchlorate conf	1.270e+04	9.95	N/A	0.202

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

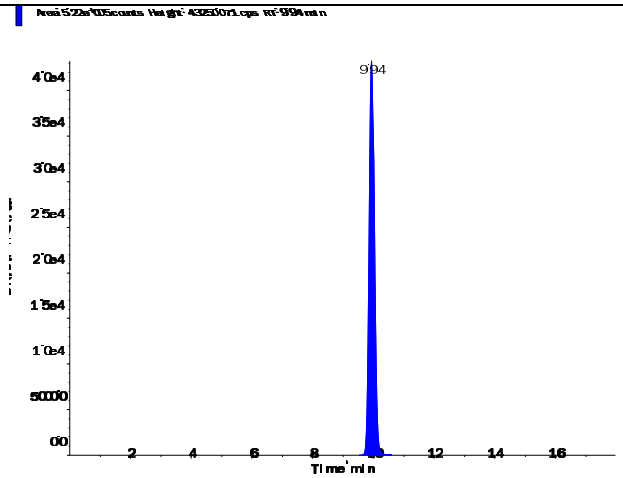

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.96 (9.94) min
Calculated conc:	0.20 ng/ml
Area Ratio:	0.074
Sample Type:	(Unknown)

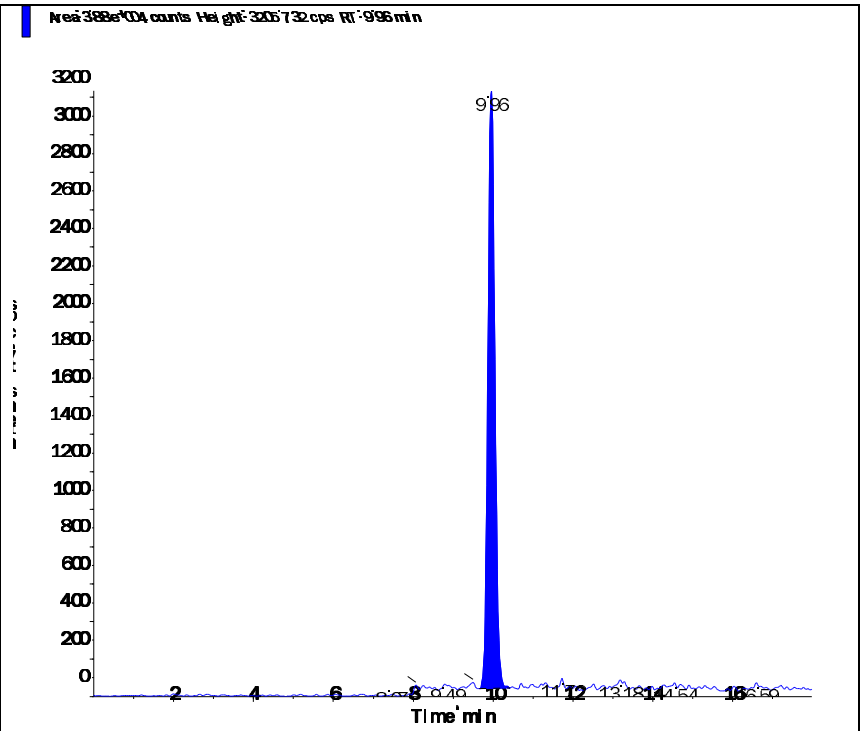

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.95 (9.92) min
Calculated conc:	0.202 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

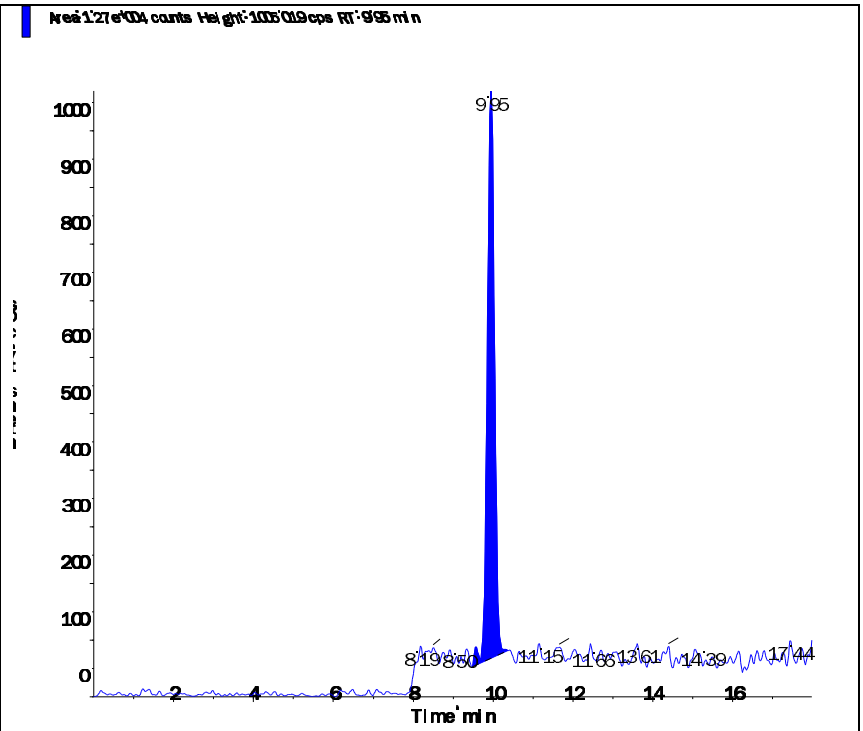

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Printed: 3/18/2016 6:16 PM

Data File	LM33896.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 7:44:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561324-04 CCB	**Injection Vial**	1.00
Data File	LM33896.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 7:44:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561324-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.360e+05	9.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	2.680e+02	9.76	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.90(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

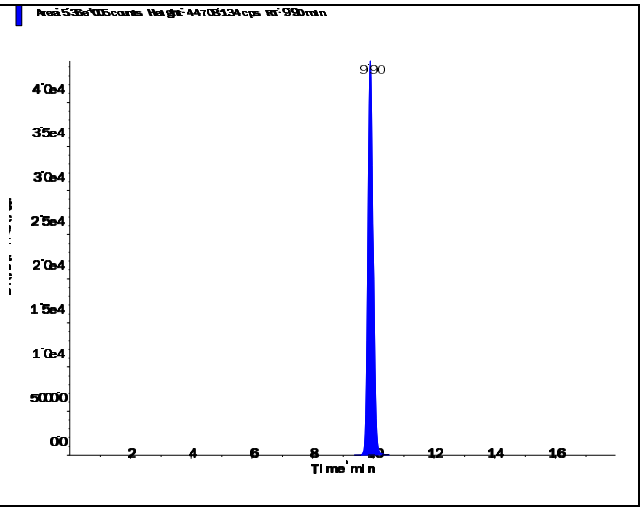

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Created with Analyst Reporter
Printed: 3/18/2016 6:16 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.94) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	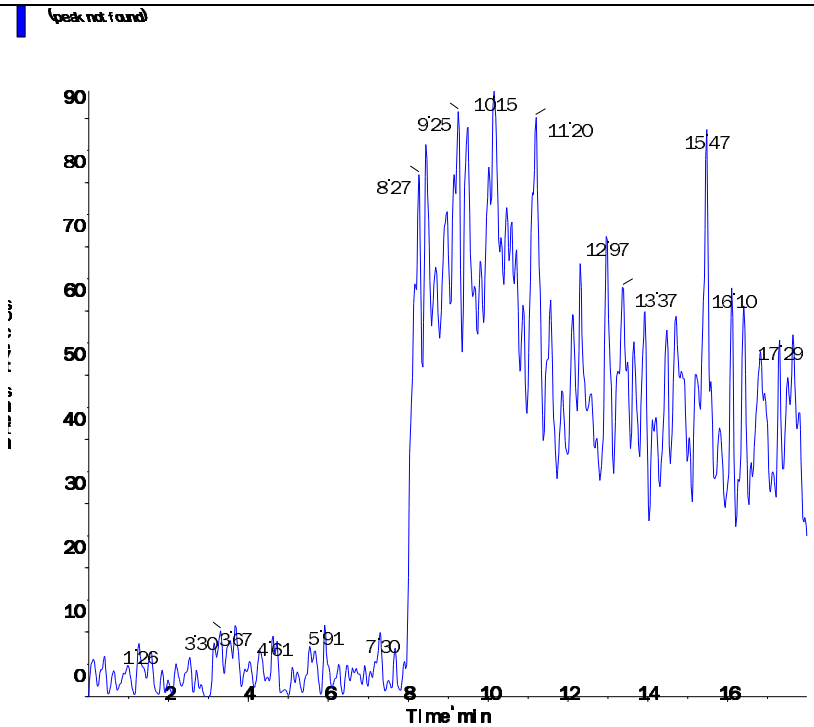
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.76 (9.92) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	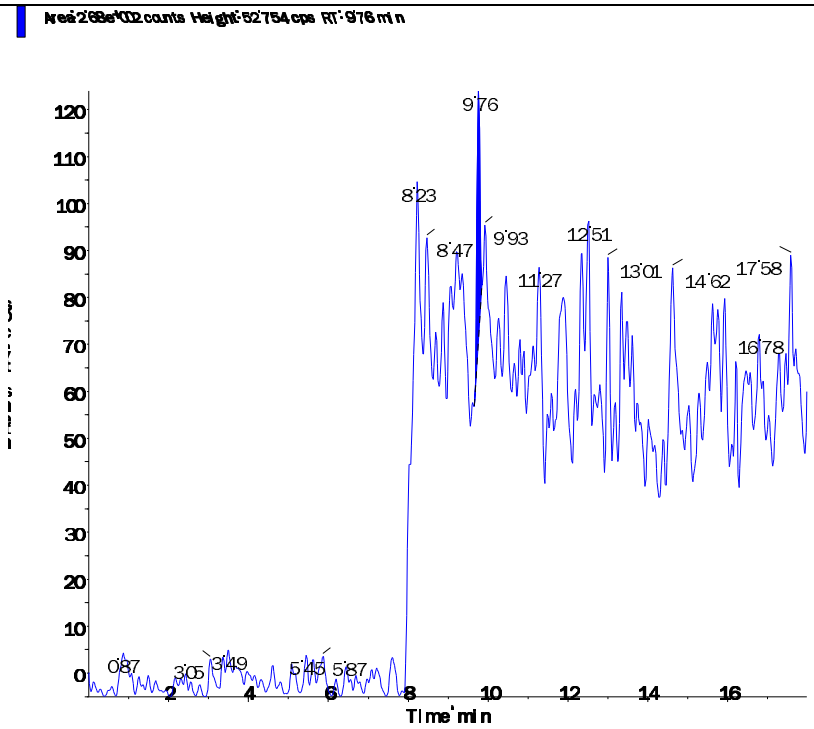

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Printed: 3/18/2016 6:19 PM

Data File	LM33905.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 10:35:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561324-06 CCB	**Injection Vial**	1.00
Data File	LM33905.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 10:35:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561324-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.450e+05	9.85	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.85(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

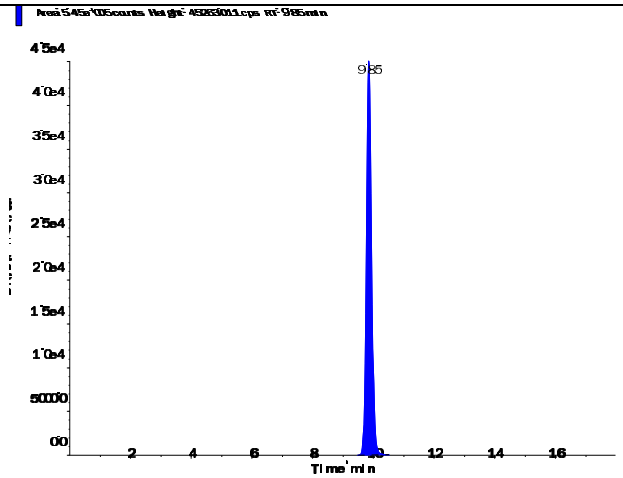

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

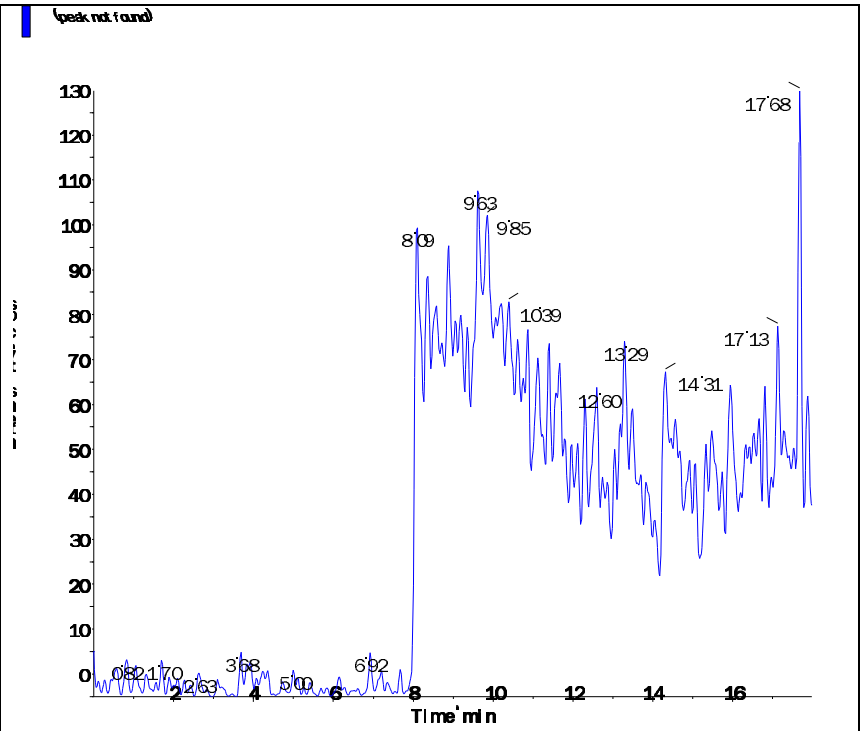

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

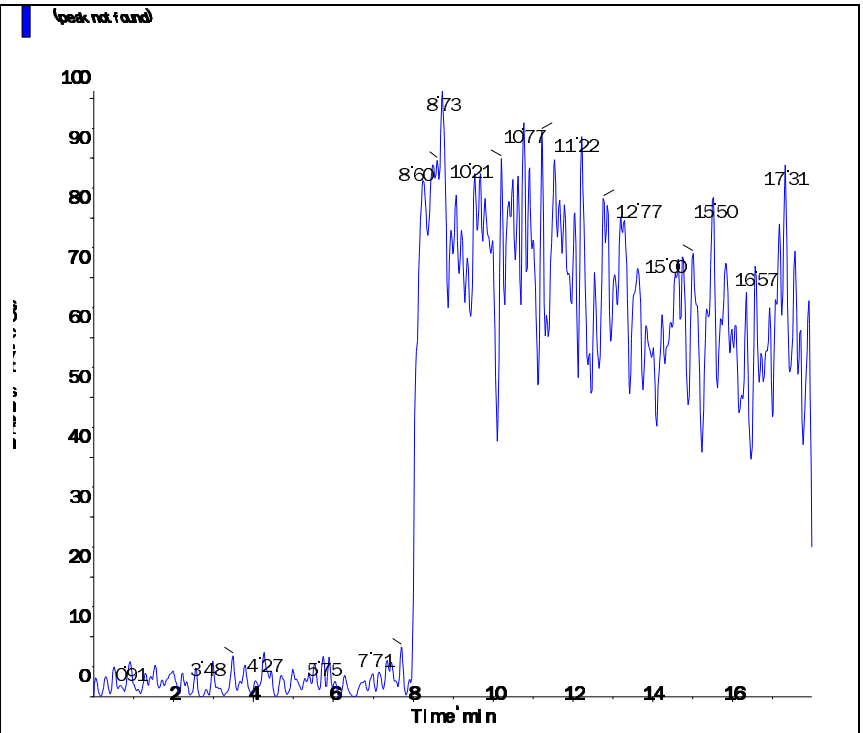

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Printed: 3/18/2016 6:24 PM

Data File	LM33918.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 2:41:28 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561324-08 CCB	**Injection Vial**	1.00
Data File	LM33918.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 2:41:28 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561324-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.230e+05	9.86	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	8.920e+02	9.87	N/A	0.0012

O18LP (Internal Standard)

RT (Exp. RT): 9.86(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

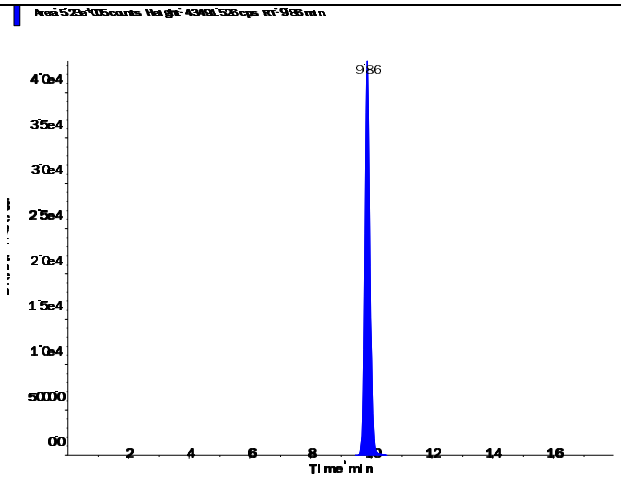

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Printed: 3/18/2016 6:24 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.94) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	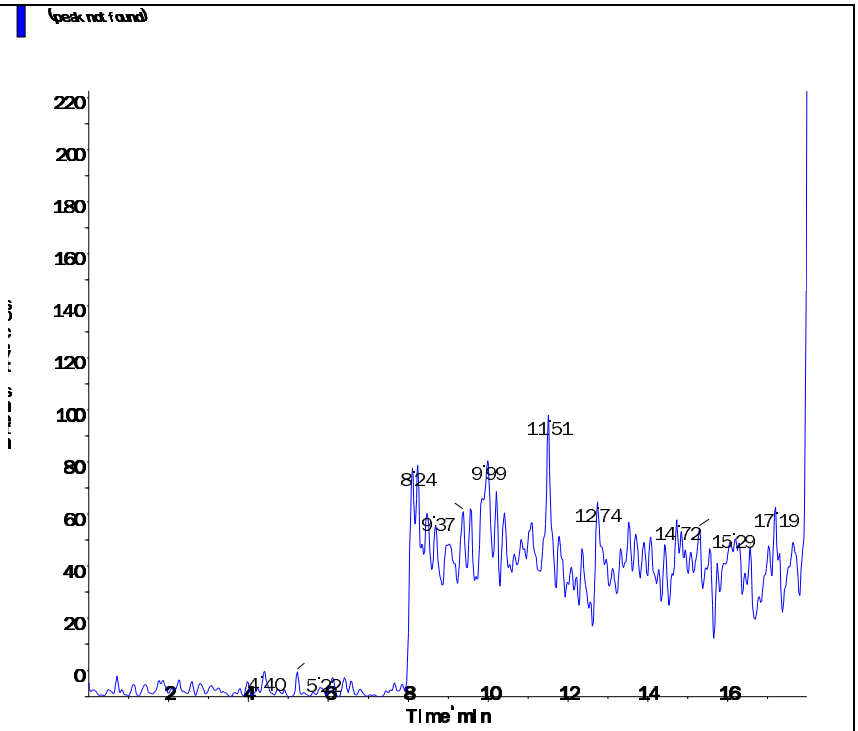
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.87 (9.92) min Calculated conc: 0.0012 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	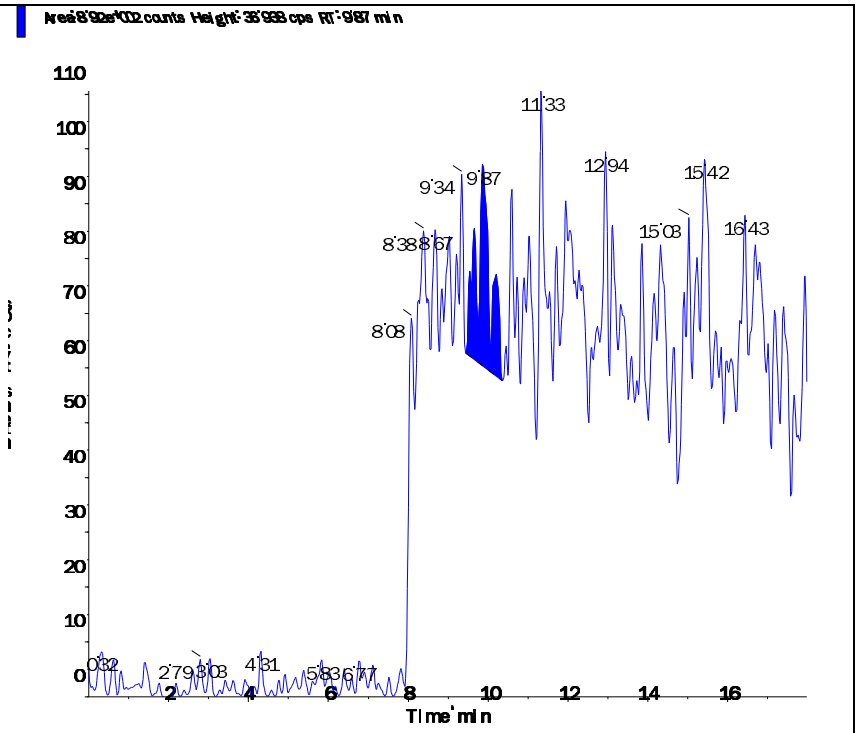

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Printed: 3/18/2016 6:27 PM

Data File	LM33928.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 5:50:47 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561324-10 CCB	**Injection Vial**	1.00
Data File	LM33928.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 5:50:47 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561324-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.450e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

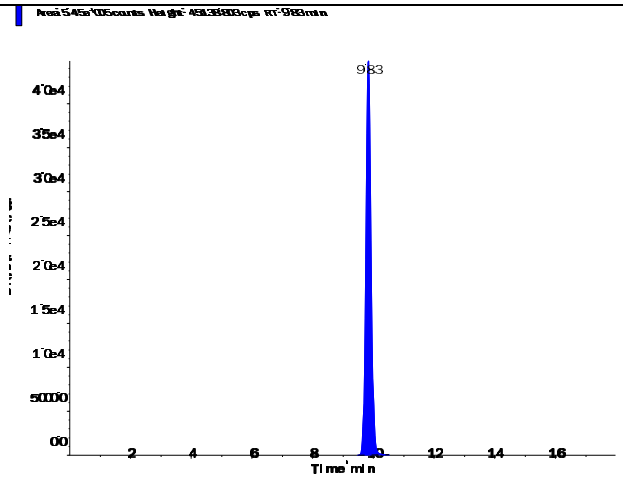

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

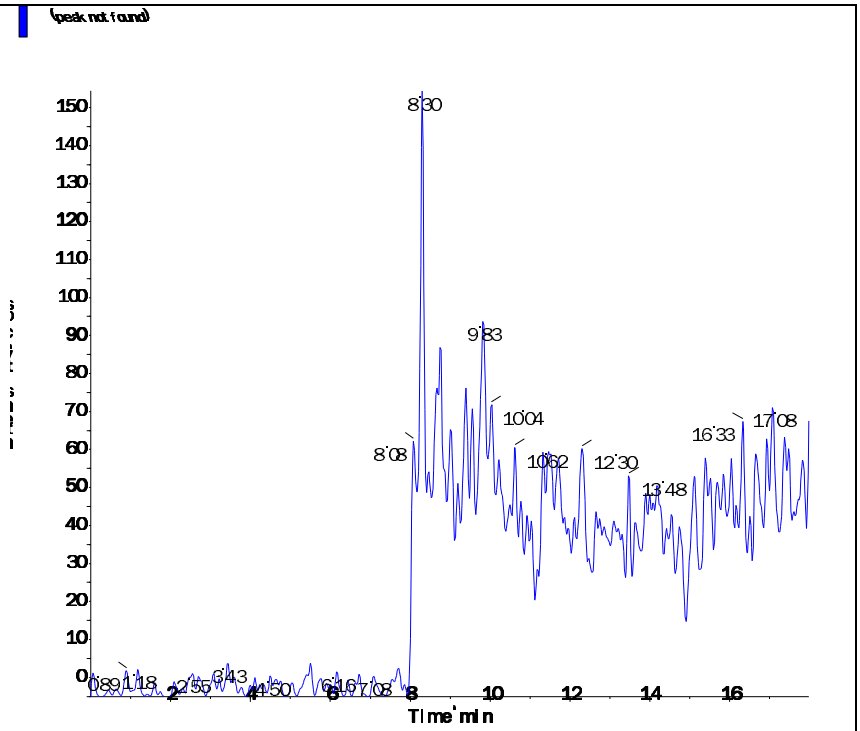

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

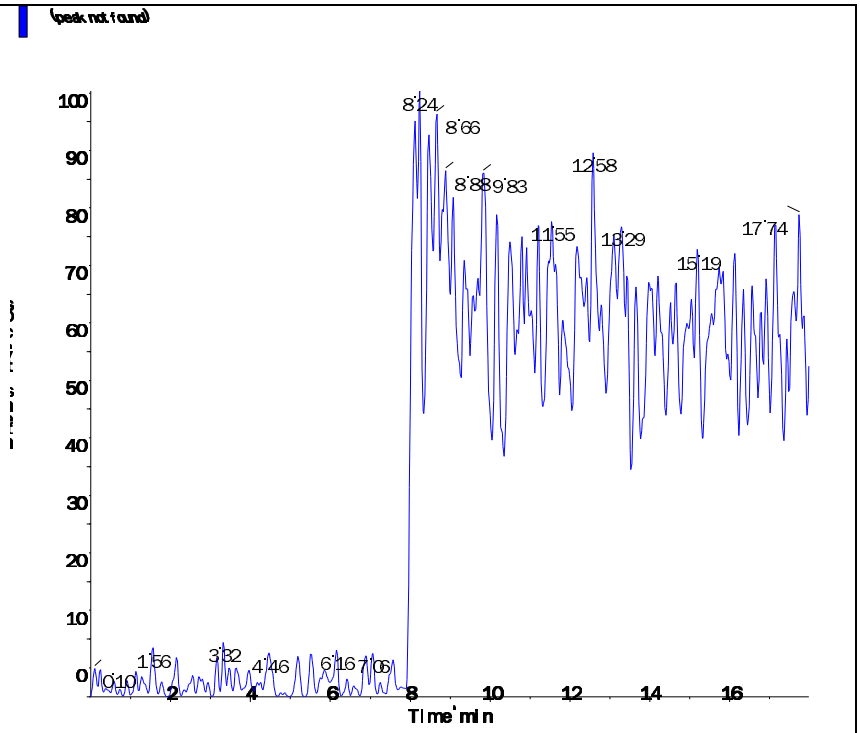

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Data File	LM33932.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 1:12:15 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561324-12 CCB	**Injection Vial**	1.00
Data File	LM33932.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 1:12:15 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561324-12	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.89	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	3.890e+02	9.97	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.89(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

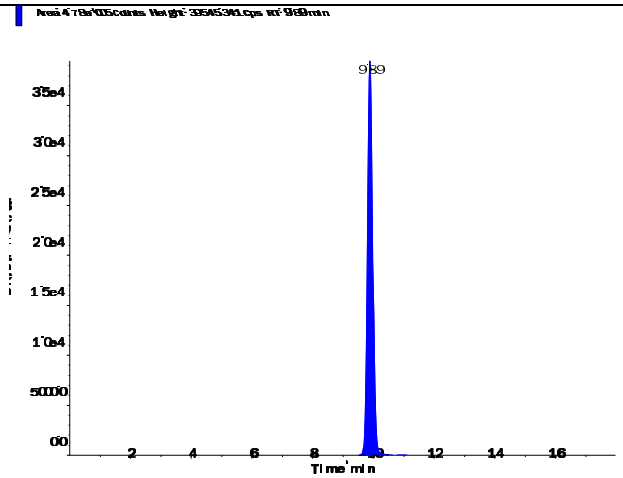

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

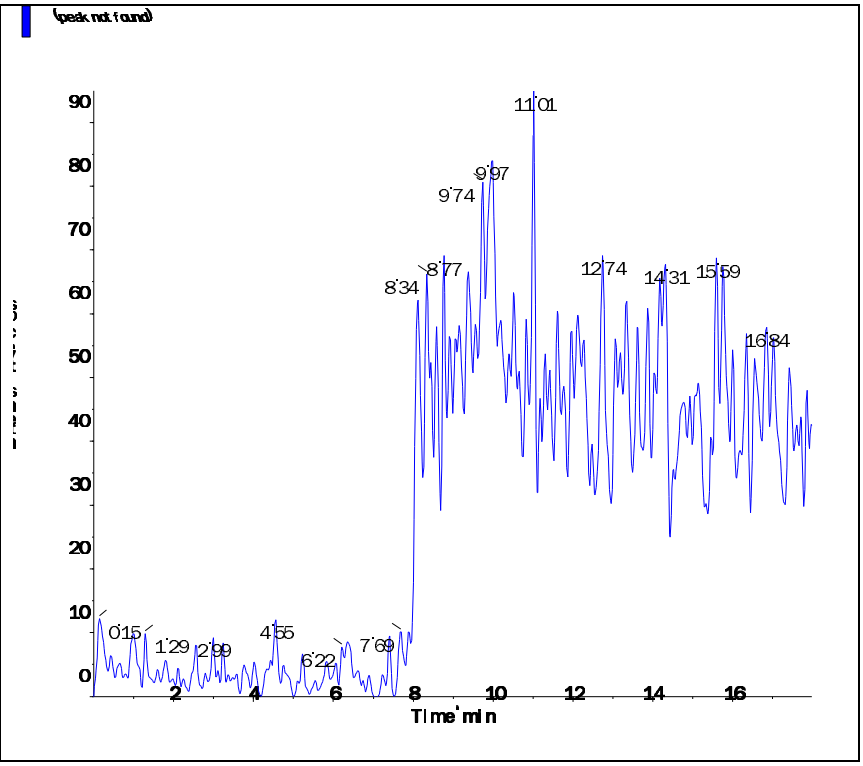

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.97 (9.92) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

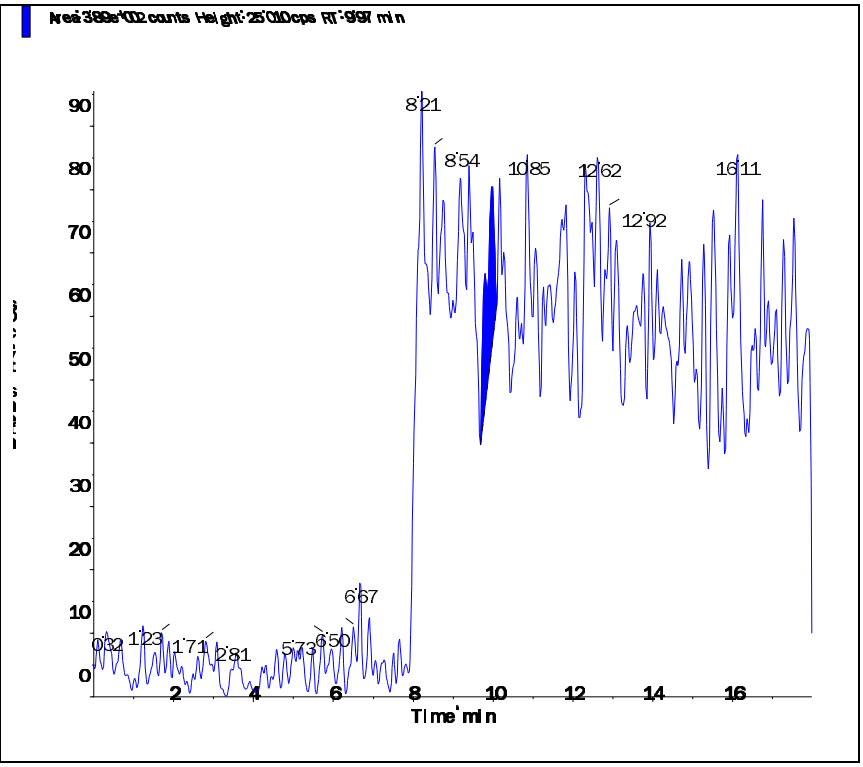

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Data File	LM33945.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/18/2016 5:18:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561324-14 CCB	**Injection Vial**	1.00
Data File	LM33945.wiff	**Injection Volume**	10.00
Acquisition Date	3/18/2016 5:18:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561324-14	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.86	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	5.480e+02	9.82	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.86(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

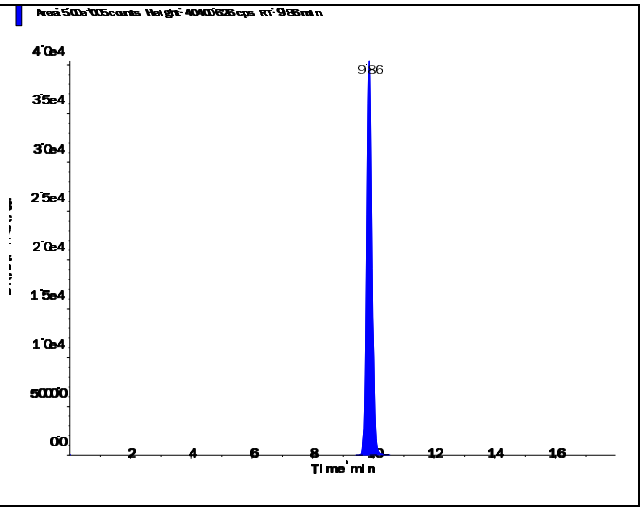

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.94) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	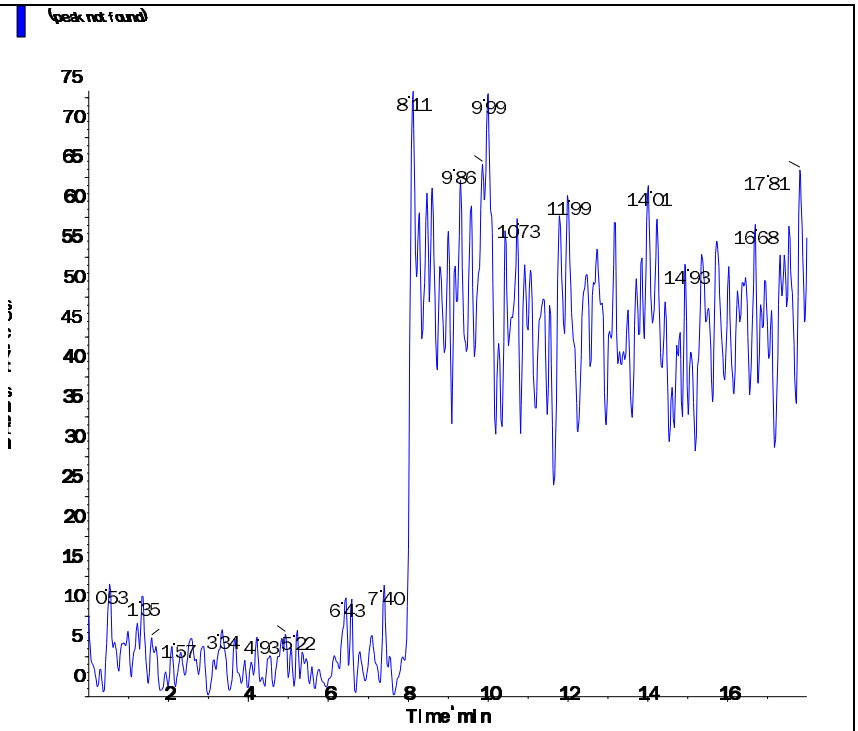
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.82 (9.92) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	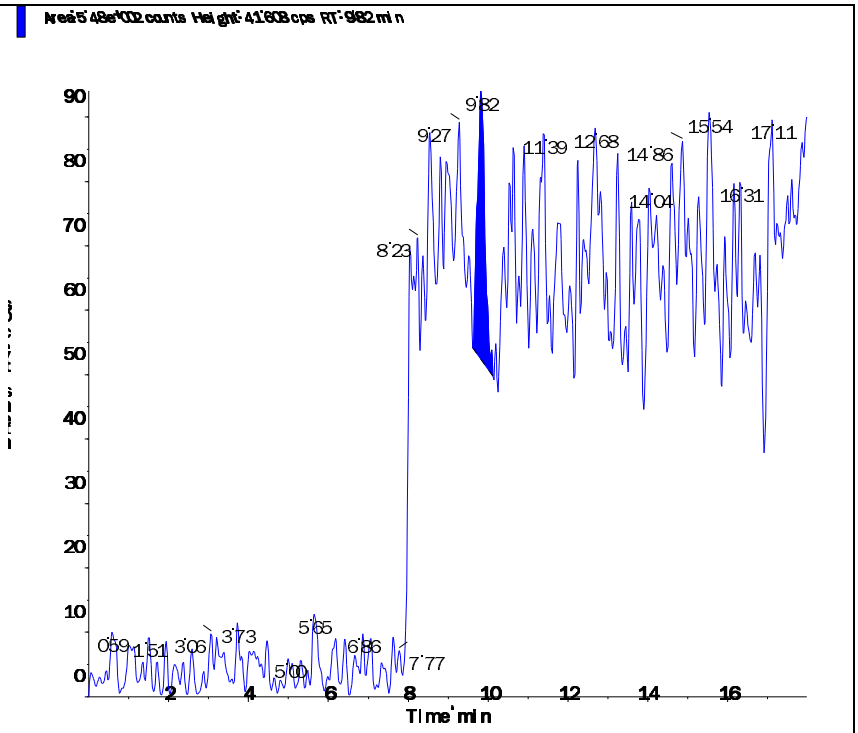

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Data File	LM33906.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 10:54:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561318-01 MCT (2.0ug/kg)	**Injection Vial**	19.00
Data File	LM33906.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 10:54:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561318-01	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.320e+05	9.45	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.780e+04	9.46	N/A	0.191
Perchlorate conf	1.320e+04	9.43	N/A	0.207

O18LP (Internal Standard)

RT (Exp. RT): 9.45(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

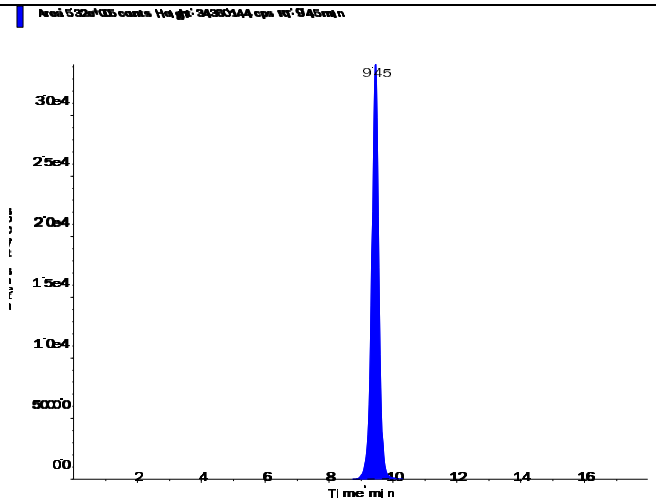

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.46 (9.94) min
Calculated conc:	0.191 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

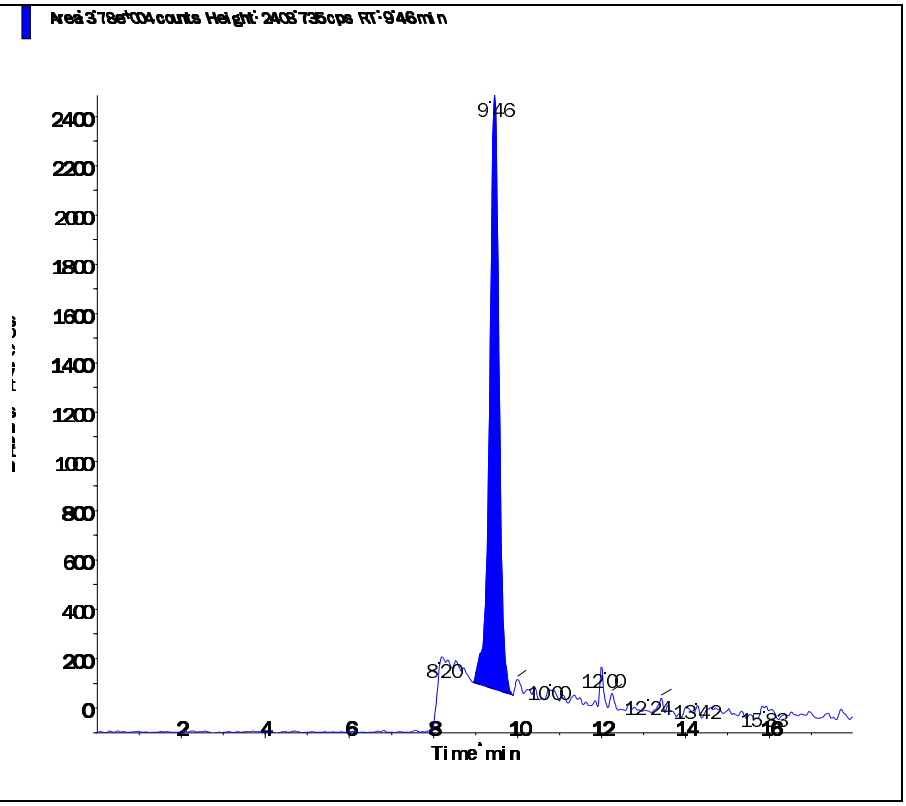

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.43 (9.92) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

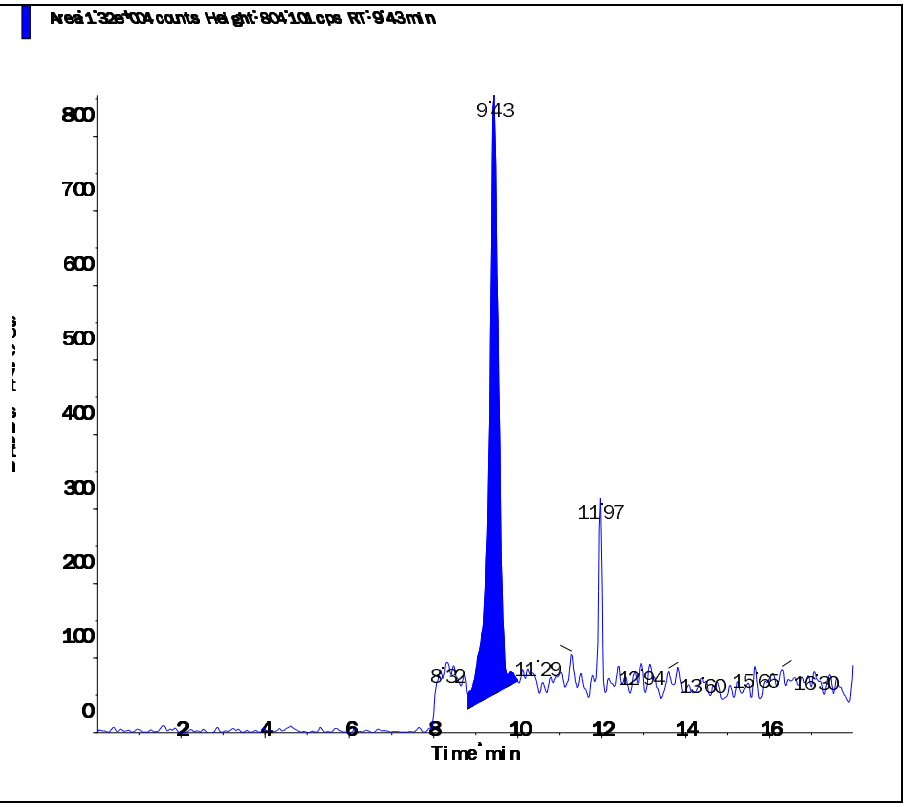

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2.2.1.5 Raw QC Data

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Data File	LM33907.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 11:13:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561318-02 BLANK	**Injection Vial**	20.00
Data File	LM33907.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 11:13:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561318-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.480e+05	9.94	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	4.340e+02	9.98	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.94(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

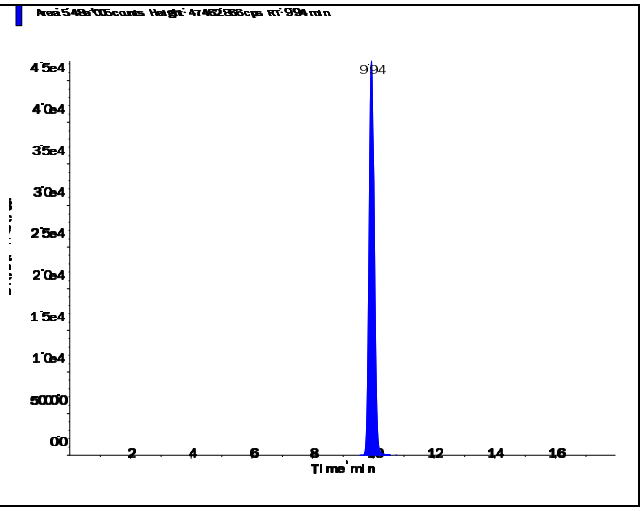

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.94) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

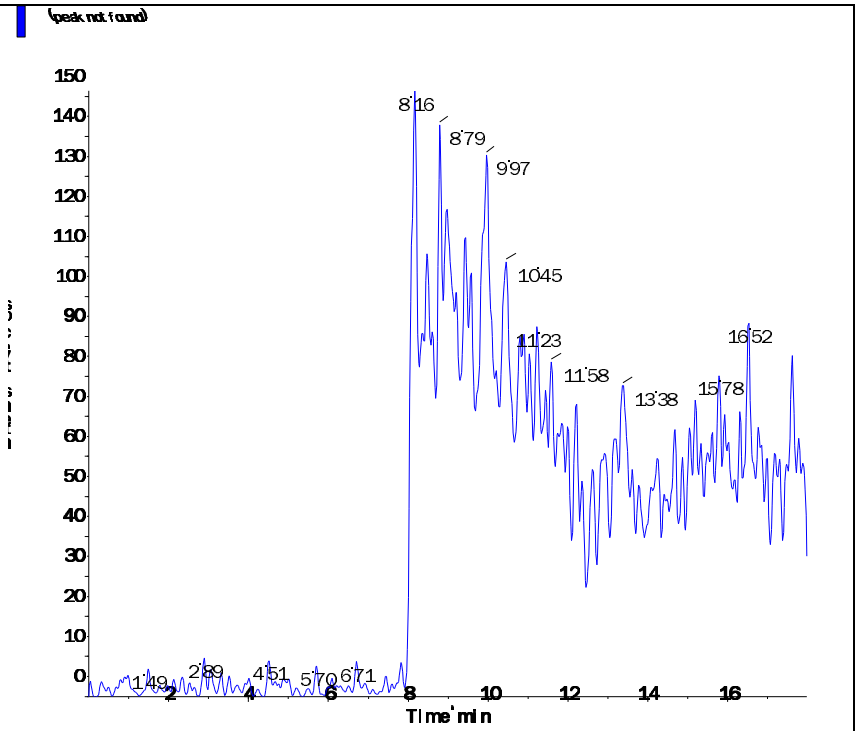

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.98 (9.92) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

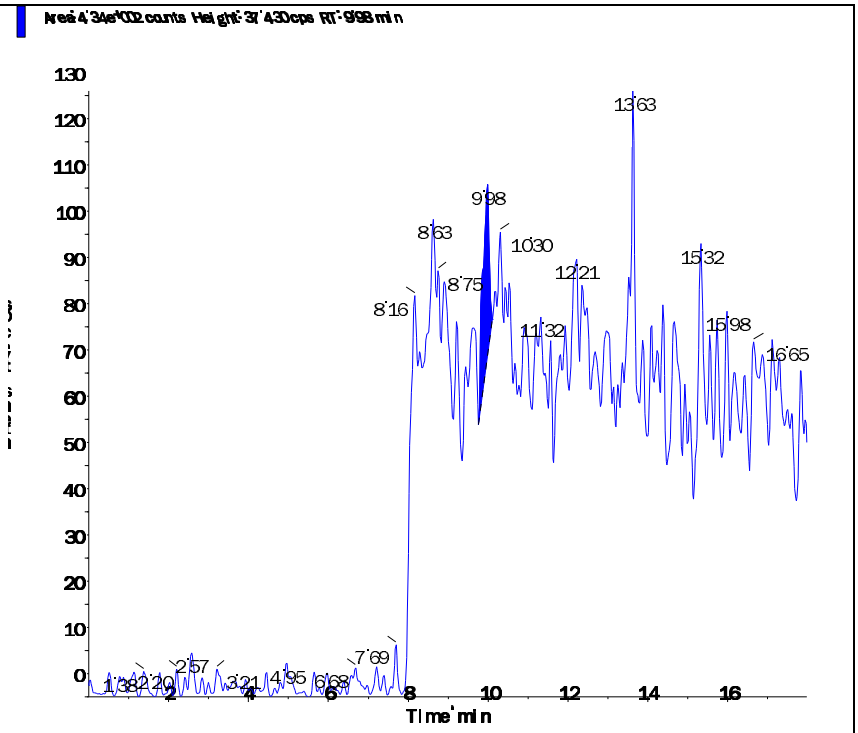

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 3/18/2016 6:20 PM

Data File	LM33908.wiff	**Result Table**	031716_JWR.rdb
Acquisition Date	3/17/2016 11:32:08 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG561318-03 LCS (2.0ug/kg)	**Injection Vial**	21.00
Data File	LM33908.wiff	**Injection Volume**	10.00
Acquisition Date	3/17/2016 11:32:08 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	031716_JWR.rdb
Sample ID	WG561318-03	**Dilution Factor**	1.00
Sample Comment	7,1 STD72685	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.750e+04	9.92	N/A	0.198
Perchlorate conf	1.200e+04	9.91	N/A	0.197

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.94) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

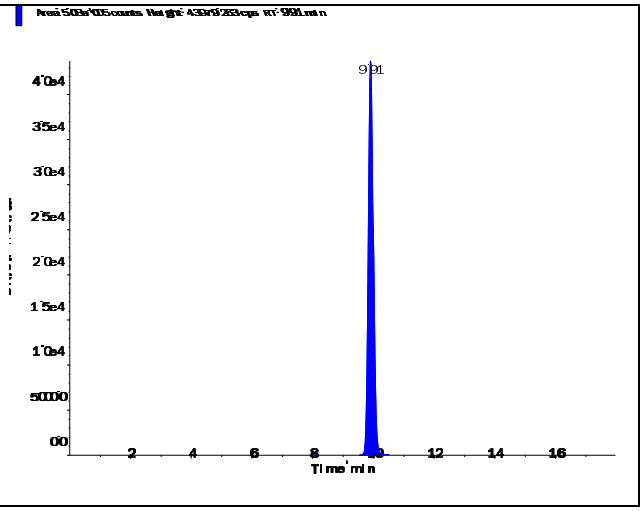

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.92 (9.94) min
Calculated conc:	0.198 ng/ml
Area Ratio:	0.074
Sample Type:	(Unknown)

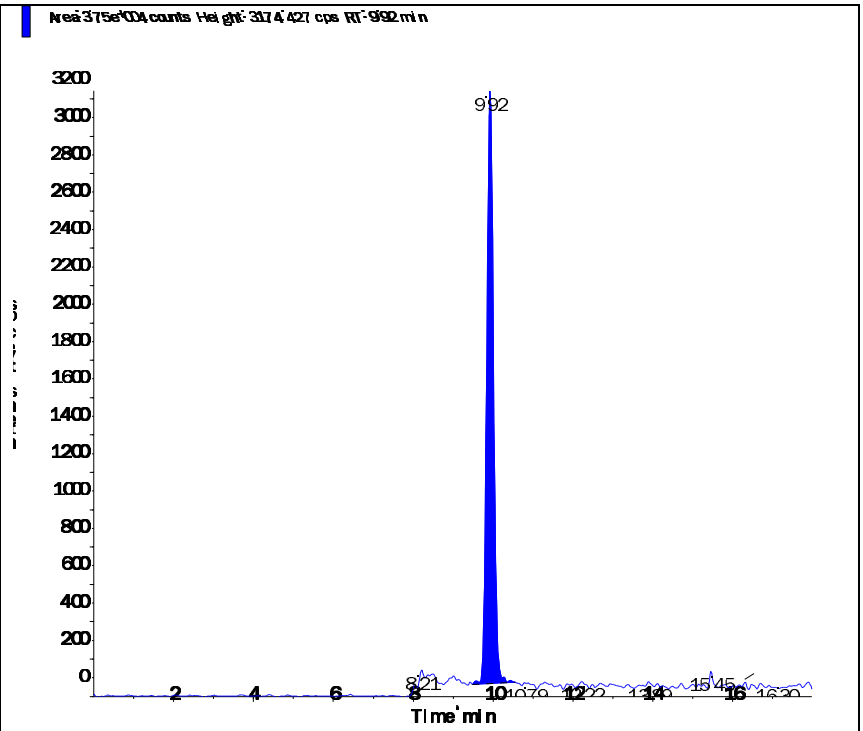

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.92) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

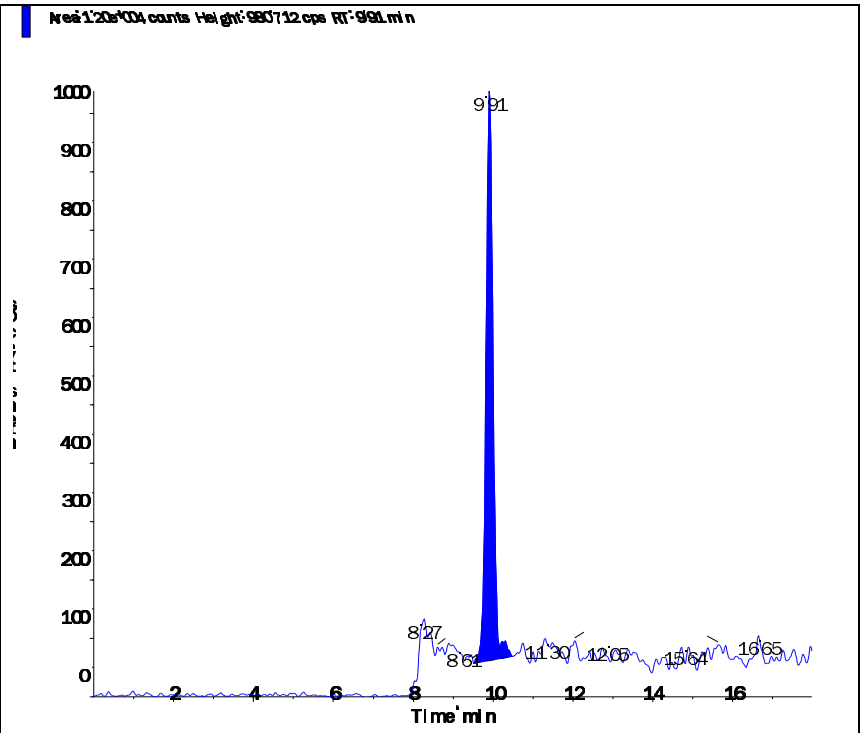

2.3 General Chemistry Data

2.3.1 Percent Solids Data

2.3.1.1 Raw Data

Example Percent Solids Calculations

1.0 Calculating the percent solids of a sample.

$$\%Solids = \frac{WT3 - WT1}{WT2 - WT1} \times F$$

Where:	
WT1 = Weight, in grams, of the empty container	1.30 g
WT2 = Weight, in grams, of the container and wet sample	21.274 g
WT3 = Weight, in grams, of the container and dried sample	5.21 g
F = Factor to get units as percent weight	100
%Solids = Percent solids present in sample.	19.58%

2.0 Calculating the percent moisture of a sample.

% Moisture = 100 - % Solids from 1.0 calculation

Microbac Laboratories Inc.

PERCENT SOLIDS

Workgroup (AAB#): WG561160 Analyst: AC ADT(on): 03/16/2016 16:34
Method: 160.3 Instrument: BAL021 ADT(off): 03/17/2016 07:24
SOP: K0003 Rev: 14

SAMPLE NUMBER	EMPTY PAN WT 1	WET WT 2	DRY WT 3A	DRY WT 3B	DRY WT 3C	PERCENT SOLID	PERCENT MOISTURE
L16030862-06	1.288	16.555	2.099			5.312	
L16030862-08	1.284	16.088	1.825			3.654	
WG561160-01	1.276	21.85	18.219			82.35	17.65
WG561160-02	1.282	25.85	21.637			82.85	17.15
L16030862-06	1.288	16.555	2.099			5.312	
L16030862-08	1.284	16.088	1.825			3.654	
L16030863-01	1.28	21.763	17.527			79.32	
L16030863-02	1.28	21.763	17.527			79.32	
L16030863-03	1.28	21.763	17.527			79.32	
L16030863-04	1.278	33.922	29.395			86.13	
L16030863-05	1.276	27.997	22.971			81.19	
L16030863-06	1.278	29.26	23.538			79.55	
L16030863-07	1.279	23.075	18.205			77.66	
L16030863-08	1.281	23.552	20.023			84.15	
L16030863-09	1.285	27.885	23.492			83.48	
L16030863-10	1.283	21.969	17.588			78.82	
L16030863-11	1.278	26.855	21.85			80.43	
L16030863-12	1.286	21.335	17.917			82.95	
L16030863-13	1.275	31.759	25.293			78.79	
L16030863-14	1.276	21.85	18.219			82.35	
WG561160-01	1.276	21.85	18.219			82.35	17.65
WG561160-02	1.282	25.85	21.637			82.85	17.15

Analyst: Andrea R Cochran

PERCENT_SOLIDS - Modified 04/24/2008
PDF ID: 4674324
Report generated: 03/17/2016 07:28

Microbac

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
March 25, 2016

001 - BIO-CHEM TESTING WVDEP 220	002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental	004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES	006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES	008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND	AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER	ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS	ALS - ADRIANE L. STEED
AWE - ANDREW W. ESSIG	AZH - AFTER HOURS
BJO - BRIAN J. OGDEN	BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT	BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN	CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES	CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD	CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS	CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL	DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE	DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON	DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE	DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR	ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK	ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN	JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON	JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE	JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG	JLL - JOHN L. LENT
JMW - JEANA M. WHITE	JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS	JWS - JACK W. SHEAVES
JYH - JI Y. HU	KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER	KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES	KHR - KIM H. RHODES
KKB - KERRI K. BUCK	KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER	KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER	LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS	LSB - LESLIE S. BUCINA
MAP - MARLA A. PORTER	MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON	MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING	MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY	MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON	PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE	PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB	QX - QIN XU
RAH - ROY A. HALSTEAD	REK - BOB E. KYER
RLB - BOB BUCHANAN	RM - RAYMOND MALEKE
RNP - RICK N. PETTY	RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG	SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY	SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF	TB - TODD BOYLE
TGF - TIM G. FELTON	TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS	VC - VICKI COLLIER
WJB - WILL J. BEASLEY	WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG	XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
March 25, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
March 25, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Debra Richmon
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:		pH:	
Project Name/Location:	Longhorn		
Project Number:			

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOCs 8260	Perchlorate 6850	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
	18DPT16(5-5.5)150316			3/15/16	0920		X	S	2	X	X					
	18DPT16(5-5.5)150316MS			3/15/16	0920		X	S	2	X	X					
	18DPT16(5-5.5)150316MSD			3/15/16	0920		X	S	2	X	X					
	18DPT16(15-15.5)150316			3/15/16	0935		X	S	2	X	X					
	18DPT16(25-25.5)150316			3/15/16	1035		X	S	2	X	X					
	18DPT16(30-30.5)150316			3/15/16	1040		X	S	2	X	X					
	18DPT16(33-33.5)150316			3/15/16	1045		X	S	2	X	X					
	18DPT17(2.5-3)150316			3/15/16	1150		X	S	2	X	X					
	18DPT17(2.5-3)150316FD			3/15/16	1150		X	S	2	X	X					
	18DPT17(5-5.5)150316			3/15/16	1155		X	S	2	X	X					
	18DPT17(10-10.5)150316			3/15/16	1200		X	S	2	X	X					
	18DPT17(18-18.5)150316			3/15/16	1230		X	S	2	X	X					
	18DPT17(27-27.5)150316			3/15/16	1245		X	S	2	X	X					
	18DPT17(21.5-22)150316			3/15/16	1300		X	S	2	X	X					

Comments: STANDARD TAT

	Date	Time	Received by: (Signature)
Relinquished by: (Signature)			
Relinquished by: (Signature)			Received for Laboratory by: (Signature)

Microbac OVD
Received: 03/16/2016 10:03
By: CARA STRICKLER 221000083275

Cara Strickler

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030863
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 25-MAR-2016

Samplenum	Container ID	Products
L16030863-01	715098	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-MAR-2016 12:58	CLS		
2	ANALYZ	V1	ORG4	16-MAR-2016 15:34	AWE	CLS	

Samplenum	Container ID	Products
L16030863-01	715099	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-MAR-2016 12:58	CLS		
2	PREP	W1	DIG	16-MAR-2016 15:44	AC	BRG	
3	STORE	DIG	W1	16-MAR-2016 16:53	BRG	AC	
4	ANALYZ	W1	SEM	17-MAR-2016 10:27	JWR	BRG	
5	ANALYZ*	DIG	SEMI	17-MAR-2016 14:16	JWR	AC	
6	STORE	SEM	A1	18-MAR-2016 18:19	AZH	JWR	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16030863-02	715100	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-MAR-2016 12:58	CLS		
2	ANALYZ	V1	ORG4	16-MAR-2016 15:34	AWE	CLS	

Samplenum	Container ID	Products
L16030863-02	715101	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-MAR-2016 12:58	CLS		
2	PREP	W1	DIG	16-MAR-2016 15:44	AC	BRG	
3	STORE	DIG	W1	16-MAR-2016 16:53	BRG	AC	
4	ANALYZ	W1	SEM	17-MAR-2016 10:27	JWR	BRG	
5	ANALYZ*	DIG	SEMI	17-MAR-2016 14:16	JWR	AC	
6	STORE	SEM	A1	18-MAR-2016 18:19	AZH	JWR	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030863
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 25-MAR-2016

Samplenum	Container ID	Products
L16030863-03	715102	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-MAR-2016 12:58	CLS		
2	ANALYZ	V1	ORG4	16-MAR-2016 15:34	AWE	CLS	

Samplenum	Container ID	Products
L16030863-03	715103	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-MAR-2016 12:58	CLS		
2	PREP	W1	DIG	16-MAR-2016 15:44	AC	BRG	
3	STORE	DIG	W1	16-MAR-2016 16:53	BRG	AC	
4	ANALYZ	W1	SEM	17-MAR-2016 10:27	JWR	BRG	
5	ANALYZ*	DIG	SEMI	17-MAR-2016 14:16	JWR	AC	
6	STORE	SEM	A1	18-MAR-2016 18:19	AZH	JWR	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16030863-04	715104	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-MAR-2016 12:58	CLS		
2	ANALYZ	V1	ORG4	16-MAR-2016 15:34	AWE	CLS	

Samplenum	Container ID	Products
L16030863-04	715105	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-MAR-2016 12:58	CLS		
2	PREP	W1	DIG	16-MAR-2016 15:44	AC	BRG	
3	STORE	DIG	W1	16-MAR-2016 16:53	BRG	AC	
4	ANALYZ	W1	SEM	17-MAR-2016 10:27	JWR	BRG	
5	ANALYZ*	DIG	SEMI	17-MAR-2016 14:16	JWR	AC	
6	STORE	SEM	A1	18-MAR-2016 18:19	AZH	JWR	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030863
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 25-MAR-2016

Samplenum	Container ID	Products
L16030863-05	715106	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-MAR-2016 12:58	CLS		
2	ANALYZ	V1	ORG4	16-MAR-2016 15:34	AWE	CLS	

Samplenum	Container ID	Products
L16030863-05	715107	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-MAR-2016 12:58	CLS		
2	PREP	W1	DIG	16-MAR-2016 15:44	AC	BRG	
3	STORE	DIG	W1	16-MAR-2016 16:53	BRG	AC	
4	ANALYZ	W1	SEM	17-MAR-2016 10:27	JWR	BRG	
5	ANALYZ*	DIG	SEMI	17-MAR-2016 14:16	JWR	AC	
6	STORE	SEM	A1	18-MAR-2016 18:19	AZH	JWR	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16030863-06	715108	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-MAR-2016 12:58	CLS		
2	ANALYZ	V1	ORG4	16-MAR-2016 15:34	AWE	CLS	

Samplenum	Container ID	Products
L16030863-06	715109	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-MAR-2016 12:58	CLS		
2	PREP	W1	DIG	16-MAR-2016 15:44	AC	BRG	
3	STORE	DIG	W1	16-MAR-2016 16:53	BRG	AC	
4	ANALYZ	W1	SEM	17-MAR-2016 10:27	JWR	BRG	
5	ANALYZ*	DIG	SEMI	17-MAR-2016 14:16	JWR	AC	
6	STORE	SEM	A1	18-MAR-2016 18:19	AZH	JWR	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030863
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 25-MAR-2016

Samplenum	Container ID	Products
L16030863-07	715110	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-MAR-2016 12:58	CLS		
2	ANALYZ	V1	ORG4	16-MAR-2016 15:34	AWE	CLS	

Samplenum	Container ID	Products
L16030863-07	715111	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-MAR-2016 12:58	CLS		
2	PREP	W1	DIG	16-MAR-2016 15:44	AC	BRG	
3	STORE	DIG	W1	16-MAR-2016 16:53	BRG	AC	
4	ANALYZ	W1	SEM	17-MAR-2016 10:27	JWR	BRG	
5	ANALYZ*	DIG	SEMI	17-MAR-2016 14:16	JWR	AC	
6	STORE	SEM	A1	18-MAR-2016 18:19	AZH	JWR	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16030863-08	715112	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-MAR-2016 12:58	CLS		
2	ANALYZ	V1	ORG4	16-MAR-2016 15:34	AWE	CLS	

Samplenum	Container ID	Products
L16030863-08	715113	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-MAR-2016 12:58	CLS		
2	PREP	W1	DIG	16-MAR-2016 15:44	AC	BRG	
3	STORE	DIG	W1	16-MAR-2016 16:53	BRG	AC	
4	ANALYZ	W1	SEM	17-MAR-2016 10:27	JWR	BRG	
5	ANALYZ*	DIG	SEMI	17-MAR-2016 14:16	JWR	AC	
6	STORE	SEM	A1	18-MAR-2016 18:19	AZH	JWR	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030863
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 25-MAR-2016

Samplenum	Container ID	Products
L16030863-09	715114	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-MAR-2016 12:58	CLS		
2	ANALYZ	V1	ORG4	16-MAR-2016 15:34	AWE	CLS	

Samplenum	Container ID	Products
L16030863-09	715115	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-MAR-2016 12:58	CLS		
2	PREP	W1	DIG	16-MAR-2016 15:44	AC	BRG	
3	STORE	DIG	W1	16-MAR-2016 16:52	BRG	AC	
4	ANALYZ	W1	SEM	17-MAR-2016 10:27	JWR	BRG	
5	ANALYZ*	DIG	SEMI	17-MAR-2016 14:16	JWR	AC	
6	STORE	SEM	A1	18-MAR-2016 18:19	AZH	JWR	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16030863-10	715116	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-MAR-2016 12:58	CLS		
2	ANALYZ	V1	ORG4	16-MAR-2016 15:34	AWE	CLS	

Samplenum	Container ID	Products
L16030863-10	715117	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-MAR-2016 12:58	CLS		
2	PREP	W1	DIG	16-MAR-2016 15:44	AC	BRG	
3	STORE	DIG	W1	16-MAR-2016 16:53	BRG	AC	
4	ANALYZ	W1	SEM	17-MAR-2016 10:27	JWR	BRG	
5	ANALYZ*	DIG	SEMI	17-MAR-2016 14:16	JWR	AC	
6	STORE	SEM	A1	18-MAR-2016 18:19	AZH	JWR	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030863
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 25-MAR-2016

Samplenum	Container ID	Products
L16030863-11	715118	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-MAR-2016 12:58	CLS		
2	ANALYZ	V1	ORG4	16-MAR-2016 15:34	AWE	CLS	

Samplenum	Container ID	Products
L16030863-11	715119	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-MAR-2016 12:58	CLS		
2	PREP	W1	DIG	16-MAR-2016 15:44	AC	BRG	
3	STORE	DIG	W1	16-MAR-2016 16:53	BRG	AC	
4	ANALYZ	W1	SEM	17-MAR-2016 10:27	JWR	BRG	
5	ANALYZ*	DIG	SEMI	17-MAR-2016 14:16	JWR	AC	
6	STORE	SEM	A1	18-MAR-2016 18:19	AZH	JWR	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16030863-12	715120	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-MAR-2016 12:58	CLS		
2	ANALYZ	V1	ORG4	16-MAR-2016 15:34	AWE	CLS	

Samplenum	Container ID	Products
L16030863-12	715121	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-MAR-2016 12:58	CLS		
2	PREP	W1	DIG	16-MAR-2016 15:44	AC	BRG	
3	STORE	DIG	W1	16-MAR-2016 16:53	BRG	AC	
4	ANALYZ	W1	SEM	17-MAR-2016 10:27	JWR	BRG	
5	ANALYZ*	DIG	SEMI	17-MAR-2016 14:16	JWR	AC	
6	STORE	SEM	A1	18-MAR-2016 18:19	AZH	JWR	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16030863
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 25-MAR-2016

Samplenum	Container ID	Products
L16030863-13	715122	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-MAR-2016 12:58	CLS		
2	ANALYZ	V1	ORG4	16-MAR-2016 15:35	AWE	CLS	

Samplenum	Container ID	Products
L16030863-13	715123	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-MAR-2016 12:58	CLS		
2	PREP	W1	DIG	16-MAR-2016 15:44	AC	BRG	
3	STORE	DIG	W1	16-MAR-2016 16:52	BRG	AC	
4	ANALYZ	W1	SEM	17-MAR-2016 10:27	JWR	BRG	
5	ANALYZ*	DIG	SEMI	17-MAR-2016 14:16	JWR	AC	
6	STORE	SEM	A1	18-MAR-2016 18:19	AZH	JWR	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16030863-14	715124	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-MAR-2016 12:58	CLS		
2	ANALYZ	V1	ORG4	16-MAR-2016 15:34	AWE	CLS	

Samplenum	Container ID	Products
L16030863-14	715125	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-MAR-2016 12:58	CLS		
2	PREP	W1	DIG	16-MAR-2016 15:44	AC	BRG	
3	STORE	DIG	W1	16-MAR-2016 16:52	BRG	AC	
4	ANALYZ	W1	SEM	17-MAR-2016 10:27	JWR	BRG	
5	ANALYZ*	DIG	SEMI	17-MAR-2016 14:16	JWR	AC	
6	STORE	SEM	A1	18-MAR-2016 18:19	AZH	JWR	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16041344

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on May 10 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00113753	I	1.0		J2317165296	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	NA
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	NA

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18CPTMW22R(5-5.5)230416	L16041344-01	04/23/2016 09:35	04/26/2016 10:51
18CPTMW22R(10-10.5)230416	L16041344-02	04/23/2016 10:05	04/26/2016 10:51
18CPTMW22R(15-15.5)230416	L16041344-03	04/23/2016 10:10	04/26/2016 10:51
18CPTMW26(5-5.5)230416	L16041344-04	04/23/2016 13:30	04/26/2016 10:51
18CPTMW26(5-5.5)230416DUP	L16041344-05	04/23/2016 13:30	04/26/2016 10:51
18CPTMW26(10-10.5)230416	L16041344-06	04/23/2016 14:00	04/26/2016 10:51
18CPTMW26(14.5-15)230416	L16041344-07	04/23/2016 14:05	04/26/2016 10:51
18CPTMW26SW(5-5.5)250416	L16041344-08	04/25/2016 09:35	04/26/2016 10:51
18CPTMW26SW(10-10.5)250416	L16041344-09	04/25/2016 09:50	04/26/2016 10:51
18CPTMW26SW(15-15.5)250416	L16041344-10	04/25/2016 10:45	04/26/2016 10:51
18CPTMW26SW(20-20.5)250416	L16041344-11	04/25/2016 11:45	04/26/2016 10:51
18CPTMW26SW(30-30.5)250416	L16041344-12	04/25/2016 12:05	04/26/2016 10:51
18CPTMW26SW(40-40.5)250416	L16041344-13	04/25/2016 12:10	04/26/2016 10:51
18CPTMW26SW(49.5-50)250416	L16041344-14	04/25/2016 12:30	04/26/2016 10:51

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16041344
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.1 Narratives

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041344
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG566765, WG567003	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-05-10 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden	Franci Bolden	Analyst I	2016-05-10 17:42:43

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041344
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG566765, WG567003	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-05-10 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?		X			1
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041344
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG566765, WG567003	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-05-10 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041344
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG566765, WG567003	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-05-10 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			3
Was the ICAL curve verified for each analyte?		X			2
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041344
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG566765, WG567003	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-05-10 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041344
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG566765, WG567003	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-05-10 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) Surrogate recoveries marginally exceeded the upper limit for 1,2-Dichloroethane-d4 and 4-Bromofluorobenzene in multiple samples, blank and LCSs. No detections above the reporting limit in affected samples. No reanalysis performed.

2) Dichlorodifluoromethane exceeded the upper limit in the ICV.

3) 2-Chlorotoluene, Naphthalene, 1,2,3-Trichloropropane, 1,2,4-Trimethylbenzene exceeded the upper control limit in the CCV analyzed 4/28/16. 2-Chlorotoluene exceeded the upper control limit in the CCV analyzed 4/30/16.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041344
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG567011	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-05-05 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-05-05 20:22:37

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041344
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG567011	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-05-05 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041344
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG567011	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-05-05 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041344
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG567011	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-05-05 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041344
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG567011	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-05-05 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041344
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG567011	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-05-05 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041344
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG566651	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-04-28 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2016-04-28 14:16:22

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041344
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG566651	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-04-28 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?			X		
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?			X		
Were sample detection limits reported for all analytes not detected?			X		
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?			X		
Were blanks analyzed at the appropriate frequency?			X		
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?			X		
Were blank concentrations < MQL?			X		
Laboratory control samples (LCS):			X		
Were all COCs included in the LCS?			X		

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041344
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG566651	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-04-28 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?			X		
Were LCSs analyzed at the required frequency?			X		
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?			X		
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?			X		
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?			X		
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?			X		
Are unadjusted MQLs and DCSs included in the laboratory data package?			X		
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?			X		
Were percent RSDs or correlation coefficient criteria met?			X		

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041344
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG566651	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-04-28 00:00:00		

Was the number of standards recommended in the method used for all analytes?			X		
Were all points generated between the lowest and highest standard used to calculate the curve?			X		
Are ICAL data available for all instruments used?			X		
Has the initial calibration curve been verified using an appropriate second source standard?			X		
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041344
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG566651	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-04-28 00:00:00		

Was a MDL study performed for each reported analyte?			X		
Is the MDL either adjusted or supported by the analysis of DCSs?			X		
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?			X		
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041344
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG566651	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-04-28 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22R(5-5.5)230416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/29/2016 10:11
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG567003	**Analyst:**	ADC	**Run Date:**	04/30/2016 18:18
Collect Date:	04/23/2016 09:35	**Dilution:**	1	**File ID:**	9M974076
Sample Tag:	02	**Units:**	ug/kg	**Percent Solid:**	84.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.2	U	24.3	12.2	6.08
Benzene	71-43-2	1.22	U	6.08	1.22	0.608
Bromobenzene	108-86-1	1.22	U	6.08	1.22	0.608
Bromochloromethane	74-97-5	2.44	U	6.08	2.44	1.22
Bromodichloromethane	75-27-4	1.22	U	6.08	1.22	0.608
Bromoform	75-25-2	1.22	U	6.08	1.22	0.608
Bromomethane	74-83-9	2.44	U	6.08	2.44	1.22
2-Butanone	78-93-3	6.08	U	12.2	6.08	3.04
n-Butylbenzene	104-51-8	1.22	U	6.08	1.22	0.608
sec-Butylbenzene	135-98-8	1.22	U	6.08	1.22	0.608
tert-Butylbenzene	98-06-6	1.22	U	6.08	1.22	0.608
Carbon disulfide	75-15-0	1.22	U	6.08	1.22	0.608
Carbon tetrachloride	56-23-5	1.22	U	6.08	1.22	0.608
Chlorobenzene	108-90-7	1.22	U	6.08	1.22	0.608
Chlorodibromomethane	124-48-1	1.22	U	6.08	1.22	0.608
Chloroethane	75-00-3	2.44	U	6.08	2.44	1.22
Chloroform	67-66-3	1.22	U	6.08	1.22	0.608
Chloromethane	74-87-3	4.86	U	12.2	4.86	2.43
2-Chlorotoluene	95-49-8	1.22	Q	6.08	1.22	0.608
4-Chlorotoluene	106-43-4	1.22	U	6.08	1.22	0.608
1,2-Dibromo-3-chloropropane	96-12-8	4.86	U	12.2	4.86	2.43
1,2-Dibromoethane	106-93-4	1.22	U	6.08	1.22	0.608
Dibromomethane	74-95-3	1.22	U	6.08	1.22	0.608
1,2-Dichlorobenzene	95-50-1	1.22	U	6.08	1.22	0.608
1,3-Dichlorobenzene	541-73-1	1.22	U	6.08	1.22	0.608
1,4-Dichlorobenzene	106-46-7	1.22	U	6.08	1.22	0.608
Dichlorodifluoromethane	75-71-8	2.44	U	6.08	2.44	1.22
1,1-Dichloroethane	75-34-3	2.44	U	6.08	2.44	1.22
1,2-Dichloroethane	107-06-2	1.22	U	6.08	1.22	0.608
1,1-Dichloroethene	75-35-4	1.22	U	6.08	1.22	0.608
cis-1,2-Dichloroethene	156-59-2	1.22	U	6.08	1.22	0.608
trans-1,2-Dichloroethene	156-60-5	1.22	U	6.08	1.22	0.608

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.22	U	6.08	1.22	0.608
1,3-Dichloropropane	142-28-9	1.22	U	6.08	1.22	0.608
2,2-Dichloropropane	594-20-7	1.22	U	6.08	1.22	0.608
cis-1,3-Dichloropropene	10061-01-5	1.22	U	6.08	1.22	0.608
trans-1,3-Dichloropropene	10061-02-6	1.22	U	6.08	1.22	0.608
1,1-Dichloropropene	563-58-6	1.22	U	6.08	1.22	0.608
Ethylbenzene	100-41-4	1.22	U	6.08	1.22	0.608
2-Hexanone	591-78-6	6.08	U	12.2	6.08	3.04
Hexachlorobutadiene	87-68-3	1.22	U	6.08	1.22	0.608
Isopropylbenzene	98-82-8	1.22	U	6.08	1.22	0.608
p-Isopropyltoluene	99-87-6	1.22	U	6.08	1.22	0.608
4-Methyl-2-pentanone	108-10-1	6.08	U	12.2	6.08	3.04
Methylene chloride	75-09-2	2.44	U	6.08	2.44	1.22
Naphthalene	91-20-3	1.22	U	6.08	1.22	0.608
n-Propylbenzene	103-65-1	1.22	U	6.08	1.22	0.608
Styrene	100-42-5	1.22	U	6.08	1.22	0.608
1,1,1,2-Tetrachloroethane	630-20-6	1.22	U	6.08	1.22	0.608
1,1,2,2-Tetrachloroethane	79-34-5	1.22	U	6.08	1.22	0.608
Tetrachloroethene	127-18-4	1.22	U	6.08	1.22	0.608
Toluene	108-88-3	1.22	U	6.08	1.22	0.608
1,2,3-Trichlorobenzene	87-61-6	1.22	U	6.08	1.22	0.608
1,2,4-Trichlorobenzene	120-82-1	1.22	U	6.08	1.22	0.608
1,1,1-Trichloroethane	71-55-6	1.22	U	6.08	1.22	0.608
1,1,2-Trichloroethane	79-00-5	1.22	U	6.08	1.22	0.608
Trichloroethene	79-01-6	1.22	U	6.08	1.22	0.608
Trichlorofluoromethane	75-69-4	2.44	U	6.08	2.44	1.22
1,2,3-Trichloropropane	96-18-4	2.44	U	6.08	2.44	1.22
1,2,4-Trimethylbenzene	95-63-6	1.22	U	6.08	1.22	0.608
1,3,5-Trimethylbenzene	108-67-8	1.22	U	6.08	1.22	0.608
Vinyl chloride	75-01-4	2.44	U	6.08	2.44	1.22
o-Xylene	95-47-6	1.22	U	6.08	1.22	0.608
m-,p-Xylene	179601-23-1	1.22	U	6.08	1.22	0.608

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	80	120	
1,2-Dichloroethane-d4	110	80	120	
Toluene-d8	112	85	115	
4-Bromofluorobenzene	123	85	120	*

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22R(5-5.5)230416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 14:07
Collect Date:	04/23/2016 09:35	**Dilution:**	1	**File ID:**	1LM.LM34635
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.28	U	4.56	2.28	1.14

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22R(10-10.5)230416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:20
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 15:46
Collect Date:	04/23/2016 10:05	**Dilution:**	1	**File ID:**	9M974034
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.1	U	26.2	13.1	6.55
Benzene	71-43-2	1.31	U	6.55	1.31	0.655
Bromobenzene	108-86-1	1.31	U	6.55	1.31	0.655
Bromochloromethane	74-97-5	2.62	U	6.55	2.62	1.31
Bromodichloromethane	75-27-4	1.31	U	6.55	1.31	0.655
Bromoform	75-25-2	1.31	U	6.55	1.31	0.655
Bromomethane	74-83-9	2.62	U	6.55	2.62	1.31
2-Butanone	78-93-3	6.56	U	13.1	6.56	3.28
n-Butylbenzene	104-51-8	1.31	U	6.55	1.31	0.655
sec-Butylbenzene	135-98-8	1.31	U	6.55	1.31	0.655
tert-Butylbenzene	98-06-6	1.31	U	6.55	1.31	0.655
Carbon disulfide	75-15-0	1.31	U	6.55	1.31	0.655
Carbon tetrachloride	56-23-5	1.31	U	6.55	1.31	0.655
Chlorobenzene	108-90-7	1.31	U	6.55	1.31	0.655
Chlorodibromomethane	124-48-1	1.31	U	6.55	1.31	0.655
Chloroethane	75-00-3	2.62	U	6.55	2.62	1.31
Chloroform	67-66-3	1.31	U	6.55	1.31	0.655
Chloromethane	74-87-3	5.24	U	13.1	5.24	2.62
2-Chlorotoluene	95-49-8	1.31	Q	6.55	1.31	0.655
4-Chlorotoluene	106-43-4	1.31	U	6.55	1.31	0.655
1,2-Dibromo-3-chloropropane	96-12-8	5.24	U	13.1	5.24	2.62
1,2-Dibromoethane	106-93-4	1.31	U	6.55	1.31	0.655
Dibromomethane	74-95-3	1.31	U	6.55	1.31	0.655
1,2-Dichlorobenzene	95-50-1	1.31	U	6.55	1.31	0.655
1,3-Dichlorobenzene	541-73-1	1.31	U	6.55	1.31	0.655
1,4-Dichlorobenzene	106-46-7	1.31	U	6.55	1.31	0.655
Dichlorodifluoromethane	75-71-8	2.62	U	6.55	2.62	1.31
1,1-Dichloroethane	75-34-3	2.62	U	6.55	2.62	1.31
1,2-Dichloroethane	107-06-2	1.31	U	6.55	1.31	0.655
1,1-Dichloroethene	75-35-4	1.31	U	6.55	1.31	0.655

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.31	U	6.55	1.31	0.655
trans-1,2-Dichloroethene	156-60-5	1.31	U	6.55	1.31	0.655
1,2-Dichloropropane	78-87-5	1.31	U	6.55	1.31	0.655
1,3-Dichloropropane	142-28-9	1.31	U	6.55	1.31	0.655
2,2-Dichloropropane	594-20-7	1.31	U	6.55	1.31	0.655
cis-1,3-Dichloropropene	10061-01-5	1.31	U	6.55	1.31	0.655
trans-1,3-Dichloropropene	10061-02-6	1.31	U	6.55	1.31	0.655
1,1-Dichloropropene	563-58-6	1.31	U	6.55	1.31	0.655
Ethylbenzene	100-41-4	1.31	U	6.55	1.31	0.655
2-Hexanone	591-78-6	6.56	U	13.1	6.56	3.28
Hexachlorobutadiene	87-68-3	1.31	U	6.55	1.31	0.655
Isopropylbenzene	98-82-8	1.31	U	6.55	1.31	0.655
p-Isopropyltoluene	99-87-6	1.31	U	6.55	1.31	0.655
4-Methyl-2-pentanone	108-10-1	6.56	U	13.1	6.56	3.28
Methylene chloride	75-09-2	2.62	U	6.55	2.62	1.31
Naphthalene	91-20-3	1.31	Q	6.55	1.31	0.655
n-Propylbenzene	103-65-1	1.31	U	6.55	1.31	0.655
Styrene	100-42-5	1.31	U	6.55	1.31	0.655
1,1,1,2-Tetrachloroethane	630-20-6	1.31	U	6.55	1.31	0.655
1,1,2,2-Tetrachloroethane	79-34-5	1.31	U	6.55	1.31	0.655
Tetrachloroethene	127-18-4	1.31	U	6.55	1.31	0.655
Toluene	108-88-3	1.31	U	6.55	1.31	0.655
1,2,3-Trichlorobenzene	87-61-6	1.31	U	6.55	1.31	0.655
1,2,4-Trichlorobenzene	120-82-1	1.31	U	6.55	1.31	0.655
1,1,1-Trichloroethane	71-55-6	1.31	U	6.55	1.31	0.655
1,1,2-Trichloroethane	79-00-5	1.31	U	6.55	1.31	0.655
Trichloroethene	79-01-6	1.31	U	6.55	1.31	0.655
Trichlorofluoromethane	75-69-4	2.62	U	6.55	2.62	1.31
1,2,3-Trichloropropane	96-18-4	2.62	Q	6.55	2.62	1.31
1,2,4-Trimethylbenzene	95-63-6	1.31	Q	6.55	1.31	0.655
1,3,5-Trimethylbenzene	108-67-8	1.31	U	6.55	1.31	0.655
Vinyl chloride	75-01-4	2.62	U	6.55	2.62	1.31
o-Xylene	95-47-6	1.31	U	6.55	1.31	0.655
m-,p-Xylene	179601-23-1	1.31	U	6.55	1.31	0.655

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	80	120	
1,2-Dichloroethane-d4	109	80	120	
Toluene-d8	111	85	115	
4-Bromofluorobenzene	119	85	120	

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22R(10-10.5)230416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 15:03
Collect Date:	04/23/2016 10:05	**Dilution:**	1	**File ID:**	1LM.LM34638
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.44	U	4.87	2.44	1.22

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22R(15-15.5)230416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:21
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 16:16
Collect Date:	04/23/2016 10:10	**Dilution:**	1	**File ID:**	9M974035
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	77.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.3	U	26.5	13.3	6.63
Benzene	71-43-2	1.33	U	6.63	1.33	0.663
Bromobenzene	108-86-1	1.33	U	6.63	1.33	0.663
Bromochloromethane	74-97-5	2.66	U	6.63	2.66	1.33
Bromodichloromethane	75-27-4	1.33	U	6.63	1.33	0.663
Bromoform	75-25-2	1.33	U	6.63	1.33	0.663
Bromomethane	74-83-9	2.66	U	6.63	2.66	1.33
2-Butanone	78-93-3	6.64	U	13.3	6.64	3.32
n-Butylbenzene	104-51-8	1.33	U	6.63	1.33	0.663
sec-Butylbenzene	135-98-8	1.33	U	6.63	1.33	0.663
tert-Butylbenzene	98-06-6	1.33	U	6.63	1.33	0.663
Carbon disulfide	75-15-0	1.33	U	6.63	1.33	0.663
Carbon tetrachloride	56-23-5	1.33	U	6.63	1.33	0.663
Chlorobenzene	108-90-7	1.33	U	6.63	1.33	0.663
Chlorodibromomethane	124-48-1	1.33	U	6.63	1.33	0.663
Chloroethane	75-00-3	2.66	U	6.63	2.66	1.33
Chloroform	67-66-3	1.33	U	6.63	1.33	0.663
Chloromethane	74-87-3	5.30	U	13.3	5.30	2.65
2-Chlorotoluene	95-49-8	1.33	Q	6.63	1.33	0.663
4-Chlorotoluene	106-43-4	1.33	U	6.63	1.33	0.663
1,2-Dibromo-3-chloropropane	96-12-8	5.30	U	13.3	5.30	2.65
1,2-Dibromoethane	106-93-4	1.33	U	6.63	1.33	0.663
Dibromomethane	74-95-3	1.33	U	6.63	1.33	0.663
1,2-Dichlorobenzene	95-50-1	1.33	U	6.63	1.33	0.663
1,3-Dichlorobenzene	541-73-1	1.33	U	6.63	1.33	0.663
1,4-Dichlorobenzene	106-46-7	1.33	U	6.63	1.33	0.663
Dichlorodifluoromethane	75-71-8	2.66	U	6.63	2.66	1.33
1,1-Dichloroethane	75-34-3	2.66	U	6.63	2.66	1.33
1,2-Dichloroethane	107-06-2	1.33	U	6.63	1.33	0.663
1,1-Dichloroethene	75-35-4	1.33	U	6.63	1.33	0.663

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.33	U	6.63	1.33	0.663
trans-1,2-Dichloroethene	156-60-5	1.33	U	6.63	1.33	0.663
1,2-Dichloropropane	78-87-5	1.33	U	6.63	1.33	0.663
1,3-Dichloropropane	142-28-9	1.33	U	6.63	1.33	0.663
2,2-Dichloropropane	594-20-7	1.33	U	6.63	1.33	0.663
cis-1,3-Dichloropropene	10061-01-5	1.33	U	6.63	1.33	0.663
trans-1,3-Dichloropropene	10061-02-6	1.33	U	6.63	1.33	0.663
1,1-Dichloropropene	563-58-6	1.33	U	6.63	1.33	0.663
Ethylbenzene	100-41-4	1.33	U	6.63	1.33	0.663
2-Hexanone	591-78-6	6.64	U	13.3	6.64	3.32
Hexachlorobutadiene	87-68-3	1.33	U	6.63	1.33	0.663
Isopropylbenzene	98-82-8	1.33	U	6.63	1.33	0.663
p-Isopropyltoluene	99-87-6	1.33	U	6.63	1.33	0.663
4-Methyl-2-pentanone	108-10-1	6.64	U	13.3	6.64	3.32
Methylene chloride	75-09-2	2.66	U	6.63	2.66	1.33
Naphthalene	91-20-3	1.33	Q	6.63	1.33	0.663
n-Propylbenzene	103-65-1	1.33	U	6.63	1.33	0.663
Styrene	100-42-5	1.33	U	6.63	1.33	0.663
1,1,1,2-Tetrachloroethane	630-20-6	1.33	U	6.63	1.33	0.663
1,1,2,2-Tetrachloroethane	79-34-5	1.33	U	6.63	1.33	0.663
Tetrachloroethene	127-18-4	1.33	U	6.63	1.33	0.663
Toluene	108-88-3	1.33	U	6.63	1.33	0.663
1,2,3-Trichlorobenzene	87-61-6	1.33	U	6.63	1.33	0.663
1,2,4-Trichlorobenzene	120-82-1	1.33	U	6.63	1.33	0.663
1,1,1-Trichloroethane	71-55-6	1.33	U	6.63	1.33	0.663
1,1,2-Trichloroethane	79-00-5	1.33	U	6.63	1.33	0.663
Trichloroethene	79-01-6	1.33	U	6.63	1.33	0.663
Trichlorofluoromethane	75-69-4	2.66	U	6.63	2.66	1.33
1,2,3-Trichloropropane	96-18-4	2.66	Q	6.63	2.66	1.33
1,2,4-Trimethylbenzene	95-63-6	1.33	Q	6.63	1.33	0.663
1,3,5-Trimethylbenzene	108-67-8	1.33	U	6.63	1.33	0.663
Vinyl chloride	75-01-4	2.66	U	6.63	2.66	1.33
o-Xylene	95-47-6	1.33	U	6.63	1.33	0.663
m-,p-Xylene	179601-23-1	1.33	U	6.63	1.33	0.663

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	80	120	
1,2-Dichloroethane-d4	108	80	120	
Toluene-d8	110	85	115	
4-Bromofluorobenzene	118	85	120	

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22R(15-15.5)230416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 15:22
Collect Date:	04/23/2016 10:10	**Dilution:**	1	**File ID:**	1LM.LM34639
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	77.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.48	U	4.96	2.48	1.24

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW26(5-5.5)230416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:21
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 16:47
Collect Date:	04/23/2016 13:30	**Dilution:**	1	**File ID:**	9M974036
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.1	U	26.2	13.1	6.55
Benzene	71-43-2	1.31	U	6.55	1.31	0.655
Bromobenzene	108-86-1	1.31	U	6.55	1.31	0.655
Bromochloromethane	74-97-5	2.62	U	6.55	2.62	1.31
Bromodichloromethane	75-27-4	1.31	U	6.55	1.31	0.655
Bromoform	75-25-2	1.31	U	6.55	1.31	0.655
Bromomethane	74-83-9	2.62	U	6.55	2.62	1.31
2-Butanone	78-93-3	6.56	U	13.1	6.56	3.28
n-Butylbenzene	104-51-8	1.31	U	6.55	1.31	0.655
sec-Butylbenzene	135-98-8	1.31	U	6.55	1.31	0.655
tert-Butylbenzene	98-06-6	1.31	U	6.55	1.31	0.655
Carbon disulfide	75-15-0	1.31	U	6.55	1.31	0.655
Carbon tetrachloride	56-23-5	1.31	U	6.55	1.31	0.655
Chlorobenzene	108-90-7	1.31	U	6.55	1.31	0.655
Chlorodibromomethane	124-48-1	1.31	U	6.55	1.31	0.655
Chloroethane	75-00-3	2.62	U	6.55	2.62	1.31
Chloroform	67-66-3	1.31	U	6.55	1.31	0.655
Chloromethane	74-87-3	5.24	U	13.1	5.24	2.62
2-Chlorotoluene	95-49-8	1.31	Q	6.55	1.31	0.655
4-Chlorotoluene	106-43-4	1.31	U	6.55	1.31	0.655
1,2-Dibromo-3-chloropropane	96-12-8	5.24	U	13.1	5.24	2.62
1,2-Dibromoethane	106-93-4	1.31	U	6.55	1.31	0.655
Dibromomethane	74-95-3	1.31	U	6.55	1.31	0.655
1,2-Dichlorobenzene	95-50-1	1.31	U	6.55	1.31	0.655
1,3-Dichlorobenzene	541-73-1	1.31	U	6.55	1.31	0.655
1,4-Dichlorobenzene	106-46-7	1.31	U	6.55	1.31	0.655
Dichlorodifluoromethane	75-71-8	2.62	U	6.55	2.62	1.31
1,1-Dichloroethane	75-34-3	2.62	U	6.55	2.62	1.31
1,2-Dichloroethane	107-06-2	1.31	U	6.55	1.31	0.655
1,1-Dichloroethene	75-35-4	1.31	U	6.55	1.31	0.655
cis-1,2-Dichloroethene	156-59-2	1.31	U	6.55	1.31	0.655

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.31	U	6.55	1.31	0.655
1,2-Dichloropropane	78-87-5	1.31	U	6.55	1.31	0.655
1,3-Dichloropropane	142-28-9	1.31	U	6.55	1.31	0.655
2,2-Dichloropropane	594-20-7	1.31	U	6.55	1.31	0.655
cis-1,3-Dichloropropene	10061-01-5	1.31	U	6.55	1.31	0.655
trans-1,3-Dichloropropene	10061-02-6	1.31	U	6.55	1.31	0.655
1,1-Dichloropropene	563-58-6	1.31	U	6.55	1.31	0.655
Ethylbenzene	100-41-4	1.31	U	6.55	1.31	0.655
2-Hexanone	591-78-6	6.56	U	13.1	6.56	3.28
Hexachlorobutadiene	87-68-3	1.31	U	6.55	1.31	0.655
Isopropylbenzene	98-82-8	1.31	U	6.55	1.31	0.655
p-Isopropyltoluene	99-87-6	1.31	U	6.55	1.31	0.655
4-Methyl-2-pentanone	108-10-1	6.56	U	13.1	6.56	3.28
Methylene chloride	75-09-2	2.62	U	6.55	2.62	1.31
Naphthalene	91-20-3	1.31	Q	6.55	1.31	0.655
n-Propylbenzene	103-65-1	1.31	U	6.55	1.31	0.655
Styrene	100-42-5	1.31	U	6.55	1.31	0.655
1,1,1,2-Tetrachloroethane	630-20-6	1.31	U	6.55	1.31	0.655
1,1,2,2-Tetrachloroethane	79-34-5	1.31	U	6.55	1.31	0.655
Tetrachloroethene	127-18-4	1.31	U	6.55	1.31	0.655
Toluene	108-88-3	1.31	U	6.55	1.31	0.655
1,2,3-Trichlorobenzene	87-61-6	1.31	U	6.55	1.31	0.655
1,2,4-Trichlorobenzene	120-82-1	1.31	U	6.55	1.31	0.655
1,1,1-Trichloroethane	71-55-6	1.31	U	6.55	1.31	0.655
1,1,2-Trichloroethane	79-00-5	1.31	U	6.55	1.31	0.655
Trichloroethene	79-01-6	1.31	U	6.55	1.31	0.655
Trichlorofluoromethane	75-69-4	2.62	U	6.55	2.62	1.31
1,2,3-Trichloropropane	96-18-4	2.62	Q	6.55	2.62	1.31
1,2,4-Trimethylbenzene	95-63-6	1.31	Q	6.55	1.31	0.655
1,3,5-Trimethylbenzene	108-67-8	1.31	U	6.55	1.31	0.655
Vinyl chloride	75-01-4	2.62	U	6.55	2.62	1.31
o-Xylene	95-47-6	1.31	U	6.55	1.31	0.655
m-,p-Xylene	179601-23-1	1.31	U	6.55	1.31	0.655

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	80	120	
1,2-Dichloroethane-d4	117	80	120	
Toluene-d8	110	85	115	
4-Bromofluorobenzene	121	85	120	*

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW26(5-5.5)230416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 15:41
Collect Date:	04/23/2016 13:30	**Dilution:**	1	**File ID:**	1LM.LM34640
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.30	U	4.60	2.30	1.15

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW26(5-5.5)230416DUP	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:22
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 17:17
Collect Date:	04/23/2016 13:30	**Dilution:**	1	**File ID:**	9M974037
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	24.9	12.5	6.23
Benzene	71-43-2	1.25	U	6.23	1.25	0.623
Bromobenzene	108-86-1	1.25	U	6.23	1.25	0.623
Bromochloromethane	74-97-5	2.50	U	6.23	2.50	1.25
Bromodichloromethane	75-27-4	1.25	U	6.23	1.25	0.623
Bromoform	75-25-2	1.25	U	6.23	1.25	0.623
Bromomethane	74-83-9	2.50	U	6.23	2.50	1.25
2-Butanone	78-93-3	6.24	U	12.5	6.24	3.12
n-Butylbenzene	104-51-8	1.25	U	6.23	1.25	0.623
sec-Butylbenzene	135-98-8	1.25	U	6.23	1.25	0.623
tert-Butylbenzene	98-06-6	1.25	U	6.23	1.25	0.623
Carbon disulfide	75-15-0	1.25	U	6.23	1.25	0.623
Carbon tetrachloride	56-23-5	1.25	U	6.23	1.25	0.623
Chlorobenzene	108-90-7	1.25	U	6.23	1.25	0.623
Chlorodibromomethane	124-48-1	1.25	U	6.23	1.25	0.623
Chloroethane	75-00-3	2.50	U	6.23	2.50	1.25
Chloroform	67-66-3	1.25	U	6.23	1.25	0.623
Chloromethane	74-87-3	4.98	U	12.5	4.98	2.49
2-Chlorotoluene	95-49-8	1.25	Q	6.23	1.25	0.623
4-Chlorotoluene	106-43-4	1.25	U	6.23	1.25	0.623
1,2-Dibromo-3-chloropropane	96-12-8	4.98	U	12.5	4.98	2.49
1,2-Dibromoethane	106-93-4	1.25	U	6.23	1.25	0.623
Dibromomethane	74-95-3	1.25	U	6.23	1.25	0.623
1,2-Dichlorobenzene	95-50-1	1.25	U	6.23	1.25	0.623
1,3-Dichlorobenzene	541-73-1	1.25	U	6.23	1.25	0.623
1,4-Dichlorobenzene	106-46-7	1.25	U	6.23	1.25	0.623
Dichlorodifluoromethane	75-71-8	2.50	U	6.23	2.50	1.25
1,1-Dichloroethane	75-34-3	2.50	U	6.23	2.50	1.25
1,2-Dichloroethane	107-06-2	1.25	U	6.23	1.25	0.623
1,1-Dichloroethene	75-35-4	1.25	U	6.23	1.25	0.623

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.25	U	6.23	1.25	0.623
trans-1,2-Dichloroethene	156-60-5	1.25	U	6.23	1.25	0.623
1,2-Dichloropropane	78-87-5	1.25	U	6.23	1.25	0.623
1,3-Dichloropropane	142-28-9	1.25	U	6.23	1.25	0.623
2,2-Dichloropropane	594-20-7	1.25	U	6.23	1.25	0.623
cis-1,3-Dichloropropene	10061-01-5	1.25	U	6.23	1.25	0.623
trans-1,3-Dichloropropene	10061-02-6	1.25	U	6.23	1.25	0.623
1,1-Dichloropropene	563-58-6	1.25	U	6.23	1.25	0.623
Ethylbenzene	100-41-4	1.25	U	6.23	1.25	0.623
2-Hexanone	591-78-6	6.24	U	12.5	6.24	3.12
Hexachlorobutadiene	87-68-3	1.25	U	6.23	1.25	0.623
Isopropylbenzene	98-82-8	1.25	U	6.23	1.25	0.623
p-Isopropyltoluene	99-87-6	1.25	U	6.23	1.25	0.623
4-Methyl-2-pentanone	108-10-1	6.24	U	12.5	6.24	3.12
Methylene chloride	75-09-2	2.50	U	6.23	2.50	1.25
Naphthalene	91-20-3	1.25	Q	6.23	1.25	0.623
n-Propylbenzene	103-65-1	1.25	U	6.23	1.25	0.623
Styrene	100-42-5	1.25	U	6.23	1.25	0.623
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	6.23	1.25	0.623
1,1,2,2-Tetrachloroethane	79-34-5	1.25	U	6.23	1.25	0.623
Tetrachloroethene	127-18-4	1.25	U	6.23	1.25	0.623
Toluene	108-88-3	1.25	U	6.23	1.25	0.623
1,2,3-Trichlorobenzene	87-61-6	1.25	U	6.23	1.25	0.623
1,2,4-Trichlorobenzene	120-82-1	1.25	U	6.23	1.25	0.623
1,1,1-Trichloroethane	71-55-6	1.25	U	6.23	1.25	0.623
1,1,2-Trichloroethane	79-00-5	1.25	U	6.23	1.25	0.623
Trichloroethene	79-01-6	1.25	U	6.23	1.25	0.623
Trichlorofluoromethane	75-69-4	2.50	U	6.23	2.50	1.25
1,2,3-Trichloropropane	96-18-4	2.50	Q	6.23	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	Q	6.23	1.25	0.623
1,3,5-Trimethylbenzene	108-67-8	1.25	U	6.23	1.25	0.623
Vinyl chloride	75-01-4	2.50	U	6.23	2.50	1.25
o-Xylene	95-47-6	1.25	U	6.23	1.25	0.623
m-,p-Xylene	179601-23-1	1.25	U	6.23	1.25	0.623

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	80	120	
1,2-Dichloroethane-d4	119	80	120	
Toluene-d8	111	85	115	
4-Bromofluorobenzene	121	85	120	*

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW26(5-5.5)230416DUP	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 16:00
Collect Date:	04/23/2016 13:30	**Dilution:**	1	**File ID:**	1LM.LM34641
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.30	U	4.58	2.30	1.15

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW26(10-10.5)230416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:23
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 17:47
Collect Date:	04/23/2016 14:00	**Dilution:**	1	**File ID:**	9M974038
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.8	U	25.5	12.8	6.38
Benzene	71-43-2	1.28	U	6.38	1.28	0.638
Bromobenzene	108-86-1	1.28	U	6.38	1.28	0.638
Bromochloromethane	74-97-5	2.56	U	6.38	2.56	1.28
Bromodichloromethane	75-27-4	1.28	U	6.38	1.28	0.638
Bromoform	75-25-2	1.28	U	6.38	1.28	0.638
Bromomethane	74-83-9	2.56	U	6.38	2.56	1.28
2-Butanone	78-93-3	6.38	U	12.8	6.38	3.19
n-Butylbenzene	104-51-8	1.28	U	6.38	1.28	0.638
sec-Butylbenzene	135-98-8	1.28	U	6.38	1.28	0.638
tert-Butylbenzene	98-06-6	1.28	U	6.38	1.28	0.638
Carbon disulfide	75-15-0	1.28	U	6.38	1.28	0.638
Carbon tetrachloride	56-23-5	1.28	U	6.38	1.28	0.638
Chlorobenzene	108-90-7	1.28	U	6.38	1.28	0.638
Chlorodibromomethane	124-48-1	1.28	U	6.38	1.28	0.638
Chloroethane	75-00-3	2.56	U	6.38	2.56	1.28
Chloroform	67-66-3	1.28	U	6.38	1.28	0.638
Chloromethane	74-87-3	5.10	U	12.8	5.10	2.55
2-Chlorotoluene	95-49-8	1.28	Q	6.38	1.28	0.638
4-Chlorotoluene	106-43-4	1.28	U	6.38	1.28	0.638
1,2-Dibromo-3-chloropropane	96-12-8	5.10	U	12.8	5.10	2.55
1,2-Dibromoethane	106-93-4	1.28	U	6.38	1.28	0.638
Dibromomethane	74-95-3	1.28	U	6.38	1.28	0.638
1,2-Dichlorobenzene	95-50-1	1.28	U	6.38	1.28	0.638
1,3-Dichlorobenzene	541-73-1	1.28	U	6.38	1.28	0.638
1,4-Dichlorobenzene	106-46-7	1.28	U	6.38	1.28	0.638
Dichlorodifluoromethane	75-71-8	2.56	U	6.38	2.56	1.28
1,1-Dichloroethane	75-34-3	2.56	U	6.38	2.56	1.28
1,2-Dichloroethane	107-06-2	1.28	U	6.38	1.28	0.638
1,1-Dichloroethene	75-35-4	1.28	U	6.38	1.28	0.638

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.28	U	6.38	1.28	0.638
trans-1,2-Dichloroethene	156-60-5	1.28	U	6.38	1.28	0.638
1,2-Dichloropropane	78-87-5	1.28	U	6.38	1.28	0.638
1,3-Dichloropropane	142-28-9	1.28	U	6.38	1.28	0.638
2,2-Dichloropropane	594-20-7	1.28	U	6.38	1.28	0.638
cis-1,3-Dichloropropene	10061-01-5	1.28	U	6.38	1.28	0.638
trans-1,3-Dichloropropene	10061-02-6	1.28	U	6.38	1.28	0.638
1,1-Dichloropropene	563-58-6	1.28	U	6.38	1.28	0.638
Ethylbenzene	100-41-4	1.28	U	6.38	1.28	0.638
2-Hexanone	591-78-6	6.38	U	12.8	6.38	3.19
Hexachlorobutadiene	87-68-3	1.28	U	6.38	1.28	0.638
Isopropylbenzene	98-82-8	1.28	U	6.38	1.28	0.638
p-Isopropyltoluene	99-87-6	1.28	U	6.38	1.28	0.638
4-Methyl-2-pentanone	108-10-1	6.38	U	12.8	6.38	3.19
Methylene chloride	75-09-2	2.56	U	6.38	2.56	1.28
Naphthalene	91-20-3	1.28	Q	6.38	1.28	0.638
n-Propylbenzene	103-65-1	1.28	U	6.38	1.28	0.638
Styrene	100-42-5	1.28	U	6.38	1.28	0.638
1,1,1,2-Tetrachloroethane	630-20-6	1.28	U	6.38	1.28	0.638
1,1,2,2-Tetrachloroethane	79-34-5	1.28	U	6.38	1.28	0.638
Tetrachloroethene	127-18-4	1.28	U	6.38	1.28	0.638
Toluene	108-88-3	1.28	U	6.38	1.28	0.638
1,2,3-Trichlorobenzene	87-61-6	1.28	U	6.38	1.28	0.638
1,2,4-Trichlorobenzene	120-82-1	1.28	U	6.38	1.28	0.638
1,1,1-Trichloroethane	71-55-6	1.28	U	6.38	1.28	0.638
1,1,2-Trichloroethane	79-00-5	1.28	U	6.38	1.28	0.638
Trichloroethene	79-01-6	1.28	U	6.38	1.28	0.638
Trichlorofluoromethane	75-69-4	2.56	U	6.38	2.56	1.28
1,2,3-Trichloropropane	96-18-4	2.56	Q	6.38	2.56	1.28
1,2,4-Trimethylbenzene	95-63-6	1.28	Q	6.38	1.28	0.638
1,3,5-Trimethylbenzene	108-67-8	1.28	U	6.38	1.28	0.638
Vinyl chloride	75-01-4	2.56	U	6.38	2.56	1.28
o-Xylene	95-47-6	1.28	U	6.38	1.28	0.638
m-,p-Xylene	179601-23-1	1.28	U	6.38	1.28	0.638

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	80	120	
1,2-Dichloroethane-d4	119	80	120	
Toluene-d8	110	85	115	
4-Bromofluorobenzene	120	85	120	

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW26(10-10.5)230416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 17:16
Collect Date:	04/23/2016 14:00	**Dilution:**	1	**File ID:**	1LM.LM34645
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.32	U	4.66	2.32	1.16

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW26(14.5-15)230416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:25
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 18:17
Collect Date:	04/23/2016 14:05	**Dilution:**	1	**File ID:**	9M974039
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	77.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.1	U	24.2	12.1	6.04
Benzene	71-43-2	1.21	U	6.04	1.21	0.604
Bromobenzene	108-86-1	1.21	U	6.04	1.21	0.604
Bromochloromethane	74-97-5	2.42	U	6.04	2.42	1.21
Bromodichloromethane	75-27-4	1.21	U	6.04	1.21	0.604
Bromoform	75-25-2	1.21	U	6.04	1.21	0.604
Bromomethane	74-83-9	2.42	U	6.04	2.42	1.21
2-Butanone	78-93-3	6.04	U	12.1	6.04	3.02
n-Butylbenzene	104-51-8	1.21	U	6.04	1.21	0.604
sec-Butylbenzene	135-98-8	1.21	U	6.04	1.21	0.604
tert-Butylbenzene	98-06-6	1.21	U	6.04	1.21	0.604
Carbon disulfide	75-15-0	1.21	U	6.04	1.21	0.604
Carbon tetrachloride	56-23-5	1.21	U	6.04	1.21	0.604
Chlorobenzene	108-90-7	1.21	U	6.04	1.21	0.604
Chlorodibromomethane	124-48-1	1.21	U	6.04	1.21	0.604
Chloroethane	75-00-3	2.42	U	6.04	2.42	1.21
Chloroform	67-66-3	1.21	U	6.04	1.21	0.604
Chloromethane	74-87-3	4.84	U	12.1	4.84	2.42
2-Chlorotoluene	95-49-8	1.21	Q	6.04	1.21	0.604
4-Chlorotoluene	106-43-4	1.21	U	6.04	1.21	0.604
1,2-Dibromo-3-chloropropane	96-12-8	4.84	U	12.1	4.84	2.42
1,2-Dibromoethane	106-93-4	1.21	U	6.04	1.21	0.604
Dibromomethane	74-95-3	1.21	U	6.04	1.21	0.604
1,2-Dichlorobenzene	95-50-1	1.21	U	6.04	1.21	0.604
1,3-Dichlorobenzene	541-73-1	1.21	U	6.04	1.21	0.604
1,4-Dichlorobenzene	106-46-7	1.21	U	6.04	1.21	0.604
Dichlorodifluoromethane	75-71-8	2.42	U	6.04	2.42	1.21
1,1-Dichloroethane	75-34-3	2.42	U	6.04	2.42	1.21
1,2-Dichloroethane	107-06-2	1.21	U	6.04	1.21	0.604
1,1-Dichloroethene	75-35-4	1.21	U	6.04	1.21	0.604

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.21	U	6.04	1.21	0.604
trans-1,2-Dichloroethene	156-60-5	1.21	U	6.04	1.21	0.604
1,2-Dichloropropane	78-87-5	1.21	U	6.04	1.21	0.604
1,3-Dichloropropane	142-28-9	1.21	U	6.04	1.21	0.604
2,2-Dichloropropane	594-20-7	1.21	U	6.04	1.21	0.604
cis-1,3-Dichloropropene	10061-01-5	1.21	U	6.04	1.21	0.604
trans-1,3-Dichloropropene	10061-02-6	1.21	U	6.04	1.21	0.604
1,1-Dichloropropene	563-58-6	1.21	U	6.04	1.21	0.604
Ethylbenzene	100-41-4	1.21	U	6.04	1.21	0.604
2-Hexanone	591-78-6	6.04	U	12.1	6.04	3.02
Hexachlorobutadiene	87-68-3	1.21	U	6.04	1.21	0.604
Isopropylbenzene	98-82-8	1.21	U	6.04	1.21	0.604
p-Isopropyltoluene	99-87-6	1.21	U	6.04	1.21	0.604
4-Methyl-2-pentanone	108-10-1	6.04	U	12.1	6.04	3.02
Methylene chloride	75-09-2	2.42	U	6.04	2.42	1.21
Naphthalene	91-20-3	1.21	Q	6.04	1.21	0.604
n-Propylbenzene	103-65-1	1.21	U	6.04	1.21	0.604
Styrene	100-42-5	1.21	U	6.04	1.21	0.604
1,1,1,2-Tetrachloroethane	630-20-6	1.21	U	6.04	1.21	0.604
1,1,2,2-Tetrachloroethane	79-34-5	1.21	U	6.04	1.21	0.604
Tetrachloroethene	127-18-4	1.21	U	6.04	1.21	0.604
Toluene	108-88-3	1.21	U	6.04	1.21	0.604
1,2,3-Trichlorobenzene	87-61-6	1.21	U	6.04	1.21	0.604
1,2,4-Trichlorobenzene	120-82-1	1.21	U	6.04	1.21	0.604
1,1,1-Trichloroethane	71-55-6	1.21	U	6.04	1.21	0.604
1,1,2-Trichloroethane	79-00-5	1.21	U	6.04	1.21	0.604
Trichloroethene	79-01-6	1.21	U	6.04	1.21	0.604
Trichlorofluoromethane	75-69-4	2.42	U	6.04	2.42	1.21
1,2,3-Trichloropropane	96-18-4	2.42	Q	6.04	2.42	1.21
1,2,4-Trimethylbenzene	95-63-6	1.21	Q	6.04	1.21	0.604
1,3,5-Trimethylbenzene	108-67-8	1.21	U	6.04	1.21	0.604
Vinyl chloride	75-01-4	2.42	U	6.04	2.42	1.21
o-Xylene	95-47-6	1.21	U	6.04	1.21	0.604
m-,p-Xylene	179601-23-1	1.21	U	6.04	1.21	0.604

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	80	120	
1,2-Dichloroethane-d4	117	80	120	
Toluene-d8	108	85	115	
4-Bromofluorobenzene	119	85	120	

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW26(14.5-15)230416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 17:35
Collect Date:	04/23/2016 14:05	**Dilution:**	1	**File ID:**	1LM.LM34646
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	77.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.46	U	4.94	2.46	1.23

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW26SW(5-5.5)250416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:26
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 18:47
Collect Date:	04/25/2016 09:35	**Dilution:**	1	**File ID:**	9M974040
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.0	U	24.0	12.0	6.01
Benzene	71-43-2	1.20	U	6.01	1.20	0.601
Bromobenzene	108-86-1	1.20	U	6.01	1.20	0.601
Bromochloromethane	74-97-5	2.40	U	6.01	2.40	1.20
Bromodichloromethane	75-27-4	1.20	U	6.01	1.20	0.601
Bromoform	75-25-2	1.20	U	6.01	1.20	0.601
Bromomethane	74-83-9	2.40	U	6.01	2.40	1.20
2-Butanone	78-93-3	6.00	U	12.0	6.00	3.00
n-Butylbenzene	104-51-8	1.20	U	6.01	1.20	0.601
sec-Butylbenzene	135-98-8	1.20	U	6.01	1.20	0.601
tert-Butylbenzene	98-06-6	1.20	U	6.01	1.20	0.601
Carbon disulfide	75-15-0	1.20	U	6.01	1.20	0.601
Carbon tetrachloride	56-23-5	1.20	U	6.01	1.20	0.601
Chlorobenzene	108-90-7	1.20	U	6.01	1.20	0.601
Chlorodibromomethane	124-48-1	1.20	U	6.01	1.20	0.601
Chloroethane	75-00-3	2.40	U	6.01	2.40	1.20
Chloroform	67-66-3	1.20	U	6.01	1.20	0.601
Chloromethane	74-87-3	4.80	U	12.0	4.80	2.40
2-Chlorotoluene	95-49-8	1.20	Q	6.01	1.20	0.601
4-Chlorotoluene	106-43-4	1.20	U	6.01	1.20	0.601
1,2-Dibromo-3-chloropropane	96-12-8	4.80	U	12.0	4.80	2.40
1,2-Dibromoethane	106-93-4	1.20	U	6.01	1.20	0.601
Dibromomethane	74-95-3	1.20	U	6.01	1.20	0.601
1,2-Dichlorobenzene	95-50-1	1.20	U	6.01	1.20	0.601
1,3-Dichlorobenzene	541-73-1	1.20	U	6.01	1.20	0.601
1,4-Dichlorobenzene	106-46-7	1.20	U	6.01	1.20	0.601
Dichlorodifluoromethane	75-71-8	2.40	U	6.01	2.40	1.20
1,1-Dichloroethane	75-34-3	2.40	U	6.01	2.40	1.20
1,2-Dichloroethane	107-06-2	1.20	U	6.01	1.20	0.601
1,1-Dichloroethene	75-35-4	1.20	U	6.01	1.20	0.601

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.20	U	6.01	1.20	0.601
trans-1,2-Dichloroethene	156-60-5	1.20	U	6.01	1.20	0.601
1,2-Dichloropropane	78-87-5	1.20	U	6.01	1.20	0.601
1,3-Dichloropropane	142-28-9	1.20	U	6.01	1.20	0.601
2,2-Dichloropropane	594-20-7	1.20	U	6.01	1.20	0.601
cis-1,3-Dichloropropene	10061-01-5	1.20	U	6.01	1.20	0.601
trans-1,3-Dichloropropene	10061-02-6	1.20	U	6.01	1.20	0.601
1,1-Dichloropropene	563-58-6	1.20	U	6.01	1.20	0.601
Ethylbenzene	100-41-4	1.20	U	6.01	1.20	0.601
2-Hexanone	591-78-6	6.00	U	12.0	6.00	3.00
Hexachlorobutadiene	87-68-3	1.20	U	6.01	1.20	0.601
Isopropylbenzene	98-82-8	1.20	U	6.01	1.20	0.601
p-Isopropyltoluene	99-87-6	1.20	U	6.01	1.20	0.601
4-Methyl-2-pentanone	108-10-1	6.00	U	12.0	6.00	3.00
Methylene chloride	75-09-2	2.40	U	6.01	2.40	1.20
Naphthalene	91-20-3	1.20	Q	6.01	1.20	0.601
n-Propylbenzene	103-65-1	1.20	U	6.01	1.20	0.601
Styrene	100-42-5	1.20	U	6.01	1.20	0.601
1,1,1,2-Tetrachloroethane	630-20-6	1.20	U	6.01	1.20	0.601
1,1,2,2-Tetrachloroethane	79-34-5	1.20	U	6.01	1.20	0.601
Tetrachloroethene	127-18-4	1.20	U	6.01	1.20	0.601
Toluene	108-88-3	1.20	U	6.01	1.20	0.601
1,2,3-Trichlorobenzene	87-61-6	1.20	U	6.01	1.20	0.601
1,2,4-Trichlorobenzene	120-82-1	1.20	U	6.01	1.20	0.601
1,1,1-Trichloroethane	71-55-6	1.20	U	6.01	1.20	0.601
1,1,2-Trichloroethane	79-00-5	1.20	U	6.01	1.20	0.601
Trichloroethene	79-01-6	1.20	U	6.01	1.20	0.601
Trichlorofluoromethane	75-69-4	2.40	U	6.01	2.40	1.20
1,2,3-Trichloropropane	96-18-4	2.40	Q	6.01	2.40	1.20
1,2,4-Trimethylbenzene	95-63-6	1.20	Q	6.01	1.20	0.601
1,3,5-Trimethylbenzene	108-67-8	1.20	U	6.01	1.20	0.601
Vinyl chloride	75-01-4	2.40	U	6.01	2.40	1.20
o-Xylene	95-47-6	1.20	U	6.01	1.20	0.601
m-,p-Xylene	179601-23-1	1.20	U	6.01	1.20	0.601

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	80	120	
1,2-Dichloroethane-d4	116	80	120	
Toluene-d8	109	85	115	
4-Bromofluorobenzene	119	85	120	

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW26SW(5-5.5)250416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 17:54
Collect Date:	04/25/2016 09:35	**Dilution:**	1	**File ID:**	1LM.LM34647
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.32	U	4.62	2.32	1.16

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW26SW(10-10.5)250416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:27
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 19:18
Collect Date:	04/25/2016 09:50	**Dilution:**	1	**File ID:**	9M974041
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	78.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.9	U	27.7	13.9	6.93
Benzene	71-43-2	1.39	U	6.93	1.39	0.693
Bromobenzene	108-86-1	1.39	U	6.93	1.39	0.693
Bromochloromethane	74-97-5	2.78	U	6.93	2.78	1.39
Bromodichloromethane	75-27-4	1.39	U	6.93	1.39	0.693
Bromoform	75-25-2	1.39	U	6.93	1.39	0.693
Bromomethane	74-83-9	2.78	U	6.93	2.78	1.39
2-Butanone	78-93-3	6.92	U	13.9	6.92	3.46
n-Butylbenzene	104-51-8	1.39	U	6.93	1.39	0.693
sec-Butylbenzene	135-98-8	1.39	U	6.93	1.39	0.693
tert-Butylbenzene	98-06-6	1.39	U	6.93	1.39	0.693
Carbon disulfide	75-15-0	1.39	U	6.93	1.39	0.693
Carbon tetrachloride	56-23-5	1.39	U	6.93	1.39	0.693
Chlorobenzene	108-90-7	1.39	U	6.93	1.39	0.693
Chlorodibromomethane	124-48-1	1.39	U	6.93	1.39	0.693
Chloroethane	75-00-3	2.78	U	6.93	2.78	1.39
Chloroform	67-66-3	1.39	U	6.93	1.39	0.693
Chloromethane	74-87-3	5.54	U	13.9	5.54	2.77
2-Chlorotoluene	95-49-8	1.39	Q	6.93	1.39	0.693
4-Chlorotoluene	106-43-4	1.39	U	6.93	1.39	0.693
1,2-Dibromo-3-chloropropane	96-12-8	5.54	U	13.9	5.54	2.77
1,2-Dibromoethane	106-93-4	1.39	U	6.93	1.39	0.693
Dibromomethane	74-95-3	1.39	U	6.93	1.39	0.693
1,2-Dichlorobenzene	95-50-1	1.39	U	6.93	1.39	0.693
1,3-Dichlorobenzene	541-73-1	1.39	U	6.93	1.39	0.693
1,4-Dichlorobenzene	106-46-7	1.39	U	6.93	1.39	0.693
Dichlorodifluoromethane	75-71-8	2.78	U	6.93	2.78	1.39
1,1-Dichloroethane	75-34-3	2.78	U	6.93	2.78	1.39
1,2-Dichloroethane	107-06-2	1.39	U	6.93	1.39	0.693
1,1-Dichloroethene	75-35-4	1.39	U	6.93	1.39	0.693

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.39	U	6.93	1.39	0.693
trans-1,2-Dichloroethene	156-60-5	1.39	U	6.93	1.39	0.693
1,2-Dichloropropane	78-87-5	1.39	U	6.93	1.39	0.693
1,3-Dichloropropane	142-28-9	1.39	U	6.93	1.39	0.693
2,2-Dichloropropane	594-20-7	1.39	U	6.93	1.39	0.693
cis-1,3-Dichloropropene	10061-01-5	1.39	U	6.93	1.39	0.693
trans-1,3-Dichloropropene	10061-02-6	1.39	U	6.93	1.39	0.693
1,1-Dichloropropene	563-58-6	1.39	U	6.93	1.39	0.693
Ethylbenzene	100-41-4	1.39	U	6.93	1.39	0.693
2-Hexanone	591-78-6	6.92	U	13.9	6.92	3.46
Hexachlorobutadiene	87-68-3	1.39	U	6.93	1.39	0.693
Isopropylbenzene	98-82-8	1.39	U	6.93	1.39	0.693
p-Isopropyltoluene	99-87-6	1.39	U	6.93	1.39	0.693
4-Methyl-2-pentanone	108-10-1	6.92	U	13.9	6.92	3.46
Methylene chloride	75-09-2	2.78	U	6.93	2.78	1.39
Naphthalene	91-20-3	1.39	Q	6.93	1.39	0.693
n-Propylbenzene	103-65-1	1.39	U	6.93	1.39	0.693
Styrene	100-42-5	1.39	U	6.93	1.39	0.693
1,1,1,2-Tetrachloroethane	630-20-6	1.39	U	6.93	1.39	0.693
1,1,2,2-Tetrachloroethane	79-34-5	1.39	U	6.93	1.39	0.693
Tetrachloroethene	127-18-4	1.39	U	6.93	1.39	0.693
Toluene	108-88-3	1.39	U	6.93	1.39	0.693
1,2,3-Trichlorobenzene	87-61-6	1.39	U	6.93	1.39	0.693
1,2,4-Trichlorobenzene	120-82-1	1.39	U	6.93	1.39	0.693
1,1,1-Trichloroethane	71-55-6	1.39	U	6.93	1.39	0.693
1,1,2-Trichloroethane	79-00-5	1.39	U	6.93	1.39	0.693
Trichloroethene	79-01-6	1.39	U	6.93	1.39	0.693
Trichlorofluoromethane	75-69-4	2.78	U	6.93	2.78	1.39
1,2,3-Trichloropropane	96-18-4	2.78	Q	6.93	2.78	1.39
1,2,4-Trimethylbenzene	95-63-6	1.39	Q	6.93	1.39	0.693
1,3,5-Trimethylbenzene	108-67-8	1.39	Q	6.93	1.39	0.693
Vinyl chloride	75-01-4	2.78	U	6.93	2.78	1.39
o-Xylene	95-47-6	1.39	U	6.93	1.39	0.693
m-,p-Xylene	179601-23-1	1.39	U	6.93	1.39	0.693

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	80	120	
1,2-Dichloroethane-d4	121	80	120	*
Toluene-d8	110	85	115	
4-Bromofluorobenzene	121	85	120	*

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-09	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW26SW(10-10.5)250416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 18:13
Collect Date:	04/25/2016 09:50	**Dilution:**	1	**File ID:**	1LM.LM34648
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	78.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.50	U	5.00	2.50	1.25

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW26SW(15-15.5)250416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:28
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 19:48
Collect Date:	04/25/2016 10:45	**Dilution:**	1	**File ID:**	9M974042
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	78.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.9	U	23.8	11.9	5.95
Benzene	71-43-2	1.19	U	5.95	1.19	0.595
Bromobenzene	108-86-1	1.19	U	5.95	1.19	0.595
Bromochloromethane	74-97-5	2.38	U	5.95	2.38	1.19
Bromodichloromethane	75-27-4	1.19	U	5.95	1.19	0.595
Bromoform	75-25-2	1.19	U	5.95	1.19	0.595
Bromomethane	74-83-9	2.38	U	5.95	2.38	1.19
2-Butanone	78-93-3	5.94	U	11.9	5.94	2.97
n-Butylbenzene	104-51-8	1.19	U	5.95	1.19	0.595
sec-Butylbenzene	135-98-8	1.19	U	5.95	1.19	0.595
tert-Butylbenzene	98-06-6	1.19	U	5.95	1.19	0.595
Carbon disulfide	75-15-0	1.19	U	5.95	1.19	0.595
Carbon tetrachloride	56-23-5	1.19	U	5.95	1.19	0.595
Chlorobenzene	108-90-7	1.19	U	5.95	1.19	0.595
Chlorodibromomethane	124-48-1	1.19	U	5.95	1.19	0.595
Chloroethane	75-00-3	2.38	U	5.95	2.38	1.19
Chloroform	67-66-3	1.19	U	5.95	1.19	0.595
Chloromethane	74-87-3	4.76	U	11.9	4.76	2.38
2-Chlorotoluene	95-49-8	1.19	Q	5.95	1.19	0.595
4-Chlorotoluene	106-43-4	1.19	U	5.95	1.19	0.595
1,2-Dibromo-3-chloropropane	96-12-8	4.76	U	11.9	4.76	2.38
1,2-Dibromoethane	106-93-4	1.19	U	5.95	1.19	0.595
Dibromomethane	74-95-3	1.19	U	5.95	1.19	0.595
1,2-Dichlorobenzene	95-50-1	1.19	U	5.95	1.19	0.595
1,3-Dichlorobenzene	541-73-1	1.19	U	5.95	1.19	0.595
1,4-Dichlorobenzene	106-46-7	1.19	U	5.95	1.19	0.595
Dichlorodifluoromethane	75-71-8	2.38	U	5.95	2.38	1.19
1,1-Dichloroethane	75-34-3	2.38	U	5.95	2.38	1.19
1,2-Dichloroethane	107-06-2	1.19	U	5.95	1.19	0.595
1,1-Dichloroethene	75-35-4	1.19	U	5.95	1.19	0.595

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.19	U	5.95	1.19	0.595
trans-1,2-Dichloroethene	156-60-5	1.19	U	5.95	1.19	0.595
1,2-Dichloropropane	78-87-5	1.19	U	5.95	1.19	0.595
1,3-Dichloropropane	142-28-9	1.19	U	5.95	1.19	0.595
2,2-Dichloropropane	594-20-7	1.19	U	5.95	1.19	0.595
cis-1,3-Dichloropropene	10061-01-5	1.19	U	5.95	1.19	0.595
trans-1,3-Dichloropropene	10061-02-6	1.19	U	5.95	1.19	0.595
1,1-Dichloropropene	563-58-6	1.19	U	5.95	1.19	0.595
Ethylbenzene	100-41-4	1.19	U	5.95	1.19	0.595
2-Hexanone	591-78-6	5.94	U	11.9	5.94	2.97
Hexachlorobutadiene	87-68-3	1.19	U	5.95	1.19	0.595
Isopropylbenzene	98-82-8	1.19	U	5.95	1.19	0.595
p-Isopropyltoluene	99-87-6	1.19	U	5.95	1.19	0.595
4-Methyl-2-pentanone	108-10-1	5.94	U	11.9	5.94	2.97
Methylene chloride	75-09-2	2.38	U	5.95	2.38	1.19
Naphthalene	91-20-3	1.19	Q	5.95	1.19	0.595
n-Propylbenzene	103-65-1	1.19	U	5.95	1.19	0.595
Styrene	100-42-5	1.19	U	5.95	1.19	0.595
1,1,1,2-Tetrachloroethane	630-20-6	1.19	U	5.95	1.19	0.595
1,1,2,2-Tetrachloroethane	79-34-5	1.19	U	5.95	1.19	0.595
Tetrachloroethene	127-18-4	1.19	U	5.95	1.19	0.595
Toluene	108-88-3	1.19	U	5.95	1.19	0.595
1,2,3-Trichlorobenzene	87-61-6	1.19	U	5.95	1.19	0.595
1,2,4-Trichlorobenzene	120-82-1	1.19	U	5.95	1.19	0.595
1,1,1-Trichloroethane	71-55-6	1.19	U	5.95	1.19	0.595
1,1,2-Trichloroethane	79-00-5	1.19	U	5.95	1.19	0.595
Trichloroethene	79-01-6	1.19	U	5.95	1.19	0.595
Trichlorofluoromethane	75-69-4	2.38	U	5.95	2.38	1.19
1,2,3-Trichloropropane	96-18-4	2.38	Q	5.95	2.38	1.19
1,2,4-Trimethylbenzene	95-63-6	1.19	Q	5.95	1.19	0.595
1,3,5-Trimethylbenzene	108-67-8	1.19	U	5.95	1.19	0.595
Vinyl chloride	75-01-4	2.38	U	5.95	2.38	1.19
o-Xylene	95-47-6	1.19	U	5.95	1.19	0.595
m-,p-Xylene	179601-23-1	1.19	U	5.95	1.19	0.595

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	80	120	
1,2-Dichloroethane-d4	106	80	120	
Toluene-d8	112	85	115	
4-Bromofluorobenzene	122	85	120	*

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-10	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW26SW(15-15.5)250416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 18:32
Collect Date:	04/25/2016 10:45	**Dilution:**	1	**File ID:**	1LM.LM34649
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	78.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1.58	J	4.99	2.50	1.25

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW26SW(20-20.5)250416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:28
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 20:18
Collect Date:	04/25/2016 11:45	**Dilution:**	1	**File ID:**	9M974043
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.9	U	25.9	12.9	6.47
Benzene	71-43-2	1.29	U	6.47	1.29	0.647
Bromobenzene	108-86-1	1.29	U	6.47	1.29	0.647
Bromochloromethane	74-97-5	2.58	U	6.47	2.58	1.29
Bromodichloromethane	75-27-4	1.29	U	6.47	1.29	0.647
Bromoform	75-25-2	1.29	U	6.47	1.29	0.647
Bromomethane	74-83-9	2.58	U	6.47	2.58	1.29
2-Butanone	78-93-3	6.46	U	12.9	6.46	3.23
n-Butylbenzene	104-51-8	1.29	U	6.47	1.29	0.647
sec-Butylbenzene	135-98-8	1.29	U	6.47	1.29	0.647
tert-Butylbenzene	98-06-6	1.29	U	6.47	1.29	0.647
Carbon disulfide	75-15-0	1.29	U	6.47	1.29	0.647
Carbon tetrachloride	56-23-5	1.29	U	6.47	1.29	0.647
Chlorobenzene	108-90-7	1.29	U	6.47	1.29	0.647
Chlorodibromomethane	124-48-1	1.29	U	6.47	1.29	0.647
Chloroethane	75-00-3	2.58	U	6.47	2.58	1.29
Chloroform	67-66-3	1.29	U	6.47	1.29	0.647
Chloromethane	74-87-3	5.18	U	12.9	5.18	2.59
2-Chlorotoluene	95-49-8	1.29	Q	6.47	1.29	0.647
4-Chlorotoluene	106-43-4	1.29	U	6.47	1.29	0.647
1,2-Dibromo-3-chloropropane	96-12-8	5.18	U	12.9	5.18	2.59
1,2-Dibromoethane	106-93-4	1.29	U	6.47	1.29	0.647
Dibromomethane	74-95-3	1.29	U	6.47	1.29	0.647
1,2-Dichlorobenzene	95-50-1	1.29	U	6.47	1.29	0.647
1,3-Dichlorobenzene	541-73-1	1.29	U	6.47	1.29	0.647
1,4-Dichlorobenzene	106-46-7	1.29	U	6.47	1.29	0.647
Dichlorodifluoromethane	75-71-8	2.58	U	6.47	2.58	1.29
1,1-Dichloroethane	75-34-3	2.58	U	6.47	2.58	1.29
1,2-Dichloroethane	107-06-2	1.29	U	6.47	1.29	0.647
1,1-Dichloroethene	75-35-4	1.29	U	6.47	1.29	0.647

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.29	U	6.47	1.29	0.647
trans-1,2-Dichloroethene	156-60-5	1.29	U	6.47	1.29	0.647
1,2-Dichloropropane	78-87-5	1.29	U	6.47	1.29	0.647
1,3-Dichloropropane	142-28-9	1.29	U	6.47	1.29	0.647
2,2-Dichloropropane	594-20-7	1.29	U	6.47	1.29	0.647
cis-1,3-Dichloropropene	10061-01-5	1.29	U	6.47	1.29	0.647
trans-1,3-Dichloropropene	10061-02-6	1.29	U	6.47	1.29	0.647
1,1-Dichloropropene	563-58-6	1.29	U	6.47	1.29	0.647
Ethylbenzene	100-41-4	1.29	U	6.47	1.29	0.647
2-Hexanone	591-78-6	6.46	U	12.9	6.46	3.23
Hexachlorobutadiene	87-68-3	1.29	U	6.47	1.29	0.647
Isopropylbenzene	98-82-8	1.29	U	6.47	1.29	0.647
p-Isopropyltoluene	99-87-6	1.29	U	6.47	1.29	0.647
4-Methyl-2-pentanone	108-10-1	6.46	U	12.9	6.46	3.23
Methylene chloride	75-09-2	2.58	U	6.47	2.58	1.29
Naphthalene	91-20-3	1.29	Q	6.47	1.29	0.647
n-Propylbenzene	103-65-1	1.29	U	6.47	1.29	0.647
Styrene	100-42-5	1.29	U	6.47	1.29	0.647
1,1,1,2-Tetrachloroethane	630-20-6	1.29	U	6.47	1.29	0.647
1,1,2,2-Tetrachloroethane	79-34-5	1.29	U	6.47	1.29	0.647
Tetrachloroethene	127-18-4	1.29	U	6.47	1.29	0.647
Toluene	108-88-3	1.29	U	6.47	1.29	0.647
1,2,3-Trichlorobenzene	87-61-6	1.29	U	6.47	1.29	0.647
1,2,4-Trichlorobenzene	120-82-1	1.29	U	6.47	1.29	0.647
1,1,1-Trichloroethane	71-55-6	1.29	U	6.47	1.29	0.647
1,1,2-Trichloroethane	79-00-5	1.29	U	6.47	1.29	0.647
Trichloroethene	79-01-6	1.29	U	6.47	1.29	0.647
Trichlorofluoromethane	75-69-4	2.58	U	6.47	2.58	1.29
1,2,3-Trichloropropane	96-18-4	2.58	Q	6.47	2.58	1.29
1,2,4-Trimethylbenzene	95-63-6	1.29	Q	6.47	1.29	0.647
1,3,5-Trimethylbenzene	108-67-8	1.29	U	6.47	1.29	0.647
Vinyl chloride	75-01-4	2.58	U	6.47	2.58	1.29
o-Xylene	95-47-6	1.29	U	6.47	1.29	0.647
m-,p-Xylene	179601-23-1	1.29	U	6.47	1.29	0.647

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	80	120	
1,2-Dichloroethane-d4	105	80	120	
Toluene-d8	113	85	115	
4-Bromofluorobenzene	125	85	120	*

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-11	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW26SW(20-20.5)250416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 18:51
Collect Date:	04/25/2016 11:45	**Dilution:**	1	**File ID:**	1LM.LM34650
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	4.60	J	4.86	2.42	1.21

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW26SW(30-30.5)250416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:29
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 20:48
Collect Date:	04/25/2016 12:05	**Dilution:**	1	**File ID:**	9M974044
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	77.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.2	U	24.4	12.2	6.11
Benzene	71-43-2	1.22	U	6.11	1.22	0.611
Bromobenzene	108-86-1	1.22	U	6.11	1.22	0.611
Bromochloromethane	74-97-5	2.44	U	6.11	2.44	1.22
Bromodichloromethane	75-27-4	1.22	U	6.11	1.22	0.611
Bromoform	75-25-2	1.22	U	6.11	1.22	0.611
Bromomethane	74-83-9	2.44	U	6.11	2.44	1.22
2-Butanone	78-93-3	6.12	U	12.2	6.12	3.06
n-Butylbenzene	104-51-8	1.22	U	6.11	1.22	0.611
sec-Butylbenzene	135-98-8	1.22	U	6.11	1.22	0.611
tert-Butylbenzene	98-06-6	1.22	U	6.11	1.22	0.611
Carbon disulfide	75-15-0	1.22	U	6.11	1.22	0.611
Carbon tetrachloride	56-23-5	1.22	U	6.11	1.22	0.611
Chlorobenzene	108-90-7	1.22	U	6.11	1.22	0.611
Chlorodibromomethane	124-48-1	1.22	U	6.11	1.22	0.611
Chloroethane	75-00-3	2.44	U	6.11	2.44	1.22
Chloroform	67-66-3	1.22	U	6.11	1.22	0.611
Chloromethane	74-87-3	4.88	U	12.2	4.88	2.44
2-Chlorotoluene	95-49-8	1.22	Q	6.11	1.22	0.611
4-Chlorotoluene	106-43-4	1.22	U	6.11	1.22	0.611
1,2-Dibromo-3-chloropropane	96-12-8	4.88	U	12.2	4.88	2.44
1,2-Dibromoethane	106-93-4	1.22	U	6.11	1.22	0.611
Dibromomethane	74-95-3	1.22	U	6.11	1.22	0.611
1,2-Dichlorobenzene	95-50-1	1.22	U	6.11	1.22	0.611
1,3-Dichlorobenzene	541-73-1	1.22	U	6.11	1.22	0.611
1,4-Dichlorobenzene	106-46-7	1.22	U	6.11	1.22	0.611
Dichlorodifluoromethane	75-71-8	2.44	U	6.11	2.44	1.22
1,1-Dichloroethane	75-34-3	2.44	U	6.11	2.44	1.22
1,2-Dichloroethane	107-06-2	1.22	U	6.11	1.22	0.611
1,1-Dichloroethene	75-35-4	1.22	U	6.11	1.22	0.611

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.22	U	6.11	1.22	0.611
trans-1,2-Dichloroethene	156-60-5	1.22	U	6.11	1.22	0.611
1,2-Dichloropropane	78-87-5	1.22	U	6.11	1.22	0.611
1,3-Dichloropropane	142-28-9	1.22	U	6.11	1.22	0.611
2,2-Dichloropropane	594-20-7	1.22	U	6.11	1.22	0.611
cis-1,3-Dichloropropene	10061-01-5	1.22	U	6.11	1.22	0.611
trans-1,3-Dichloropropene	10061-02-6	1.22	U	6.11	1.22	0.611
1,1-Dichloropropene	563-58-6	1.22	U	6.11	1.22	0.611
Ethylbenzene	100-41-4	1.22	U	6.11	1.22	0.611
2-Hexanone	591-78-6	6.12	U	12.2	6.12	3.06
Hexachlorobutadiene	87-68-3	1.22	U	6.11	1.22	0.611
Isopropylbenzene	98-82-8	1.22	U	6.11	1.22	0.611
p-Isopropyltoluene	99-87-6	1.22	U	6.11	1.22	0.611
4-Methyl-2-pentanone	108-10-1	6.12	U	12.2	6.12	3.06
Methylene chloride	75-09-2	2.44	U	6.11	2.44	1.22
Naphthalene	91-20-3	1.22	Q	6.11	1.22	0.611
n-Propylbenzene	103-65-1	1.22	U	6.11	1.22	0.611
Styrene	100-42-5	1.22	U	6.11	1.22	0.611
1,1,1,2-Tetrachloroethane	630-20-6	1.22	U	6.11	1.22	0.611
1,1,2,2-Tetrachloroethane	79-34-5	1.22	U	6.11	1.22	0.611
Tetrachloroethene	127-18-4	1.22	U	6.11	1.22	0.611
Toluene	108-88-3	1.22	U	6.11	1.22	0.611
1,2,3-Trichlorobenzene	87-61-6	1.22	U	6.11	1.22	0.611
1,2,4-Trichlorobenzene	120-82-1	1.22	U	6.11	1.22	0.611
1,1,1-Trichloroethane	71-55-6	1.22	U	6.11	1.22	0.611
1,1,2-Trichloroethane	79-00-5	1.22	U	6.11	1.22	0.611
Trichloroethene	79-01-6	1.22	U	6.11	1.22	0.611
Trichlorofluoromethane	75-69-4	2.44	U	6.11	2.44	1.22
1,2,3-Trichloropropane	96-18-4	2.44	Q	6.11	2.44	1.22
1,2,4-Trimethylbenzene	95-63-6	1.22	Q	6.11	1.22	0.611
1,3,5-Trimethylbenzene	108-67-8	1.22	U	6.11	1.22	0.611
Vinyl chloride	75-01-4	2.44	U	6.11	2.44	1.22
o-Xylene	95-47-6	1.22	U	6.11	1.22	0.611
m-,p-Xylene	179601-23-1	1.22	U	6.11	1.22	0.611

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	80	120	
1,2-Dichloroethane-d4	109	80	120	
Toluene-d8	112	85	115	
4-Bromofluorobenzene	120	85	120	

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-12	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW26SW(30-30.5)250416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 19:10
Collect Date:	04/25/2016 12:05	**Dilution:**	1	**File ID:**	1LM.LM34651
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	77.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.52	U	5.03	2.52	1.26

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-13	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW26SW(40-40.5)250416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:29
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 21:19
Collect Date:	04/25/2016 12:10	**Dilution:**	1	**File ID:**	9M974045
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	71.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	14.8	U	29.7	14.8	7.42
Benzene	71-43-2	1.48	U	7.42	1.48	0.742
Bromobenzene	108-86-1	1.48	U	7.42	1.48	0.742
Bromochloromethane	74-97-5	2.96	U	7.42	2.96	1.48
Bromodichloromethane	75-27-4	1.48	U	7.42	1.48	0.742
Bromoform	75-25-2	1.48	U	7.42	1.48	0.742
Bromomethane	74-83-9	2.96	U	7.42	2.96	1.48
2-Butanone	78-93-3	7.42	U	14.8	7.42	3.71
n-Butylbenzene	104-51-8	1.48	U	7.42	1.48	0.742
sec-Butylbenzene	135-98-8	1.48	U	7.42	1.48	0.742
tert-Butylbenzene	98-06-6	1.48	U	7.42	1.48	0.742
Carbon disulfide	75-15-0	1.48	U	7.42	1.48	0.742
Carbon tetrachloride	56-23-5	1.48	U	7.42	1.48	0.742
Chlorobenzene	108-90-7	1.48	U	7.42	1.48	0.742
Chlorodibromomethane	124-48-1	1.48	U	7.42	1.48	0.742
Chloroethane	75-00-3	2.96	U	7.42	2.96	1.48
Chloroform	67-66-3	1.48	U	7.42	1.48	0.742
Chloromethane	74-87-3	5.94	U	14.8	5.94	2.97
2-Chlorotoluene	95-49-8	1.48	Q	7.42	1.48	0.742
4-Chlorotoluene	106-43-4	1.48	U	7.42	1.48	0.742
1,2-Dibromo-3-chloropropane	96-12-8	5.94	U	14.8	5.94	2.97
1,2-Dibromoethane	106-93-4	1.48	U	7.42	1.48	0.742
Dibromomethane	74-95-3	1.48	U	7.42	1.48	0.742
1,2-Dichlorobenzene	95-50-1	1.48	U	7.42	1.48	0.742
1,3-Dichlorobenzene	541-73-1	1.48	U	7.42	1.48	0.742
1,4-Dichlorobenzene	106-46-7	1.48	U	7.42	1.48	0.742
Dichlorodifluoromethane	75-71-8	2.96	U	7.42	2.96	1.48
1,1-Dichloroethane	75-34-3	2.96	U	7.42	2.96	1.48
1,2-Dichloroethane	107-06-2	1.48	U	7.42	1.48	0.742
1,1-Dichloroethene	75-35-4	1.48	U	7.42	1.48	0.742

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.48	U	7.42	1.48	0.742
trans-1,2-Dichloroethene	156-60-5	1.48	U	7.42	1.48	0.742
1,2-Dichloropropane	78-87-5	1.48	U	7.42	1.48	0.742
1,3-Dichloropropane	142-28-9	1.48	U	7.42	1.48	0.742
2,2-Dichloropropane	594-20-7	1.48	U	7.42	1.48	0.742
cis-1,3-Dichloropropene	10061-01-5	1.48	U	7.42	1.48	0.742
trans-1,3-Dichloropropene	10061-02-6	1.48	U	7.42	1.48	0.742
1,1-Dichloropropene	563-58-6	1.48	U	7.42	1.48	0.742
Ethylbenzene	100-41-4	1.48	U	7.42	1.48	0.742
2-Hexanone	591-78-6	7.42	U	14.8	7.42	3.71
Hexachlorobutadiene	87-68-3	1.48	U	7.42	1.48	0.742
Isopropylbenzene	98-82-8	1.48	U	7.42	1.48	0.742
p-Isopropyltoluene	99-87-6	1.48	U	7.42	1.48	0.742
4-Methyl-2-pentanone	108-10-1	7.42	U	14.8	7.42	3.71
Methylene chloride	75-09-2	2.96	U	7.42	2.96	1.48
Naphthalene	91-20-3	1.48	Q	7.42	1.48	0.742
n-Propylbenzene	103-65-1	1.48	U	7.42	1.48	0.742
Styrene	100-42-5	1.48	U	7.42	1.48	0.742
1,1,1,2-Tetrachloroethane	630-20-6	1.48	U	7.42	1.48	0.742
1,1,2,2-Tetrachloroethane	79-34-5	1.48	U	7.42	1.48	0.742
Tetrachloroethene	127-18-4	1.48	U	7.42	1.48	0.742
Toluene	108-88-3	1.48	U	7.42	1.48	0.742
1,2,3-Trichlorobenzene	87-61-6	1.48	U	7.42	1.48	0.742
1,2,4-Trichlorobenzene	120-82-1	1.48	U	7.42	1.48	0.742
1,1,1-Trichloroethane	71-55-6	1.48	U	7.42	1.48	0.742
1,1,2-Trichloroethane	79-00-5	1.48	U	7.42	1.48	0.742
Trichloroethene	79-01-6	1.48	U	7.42	1.48	0.742
Trichlorofluoromethane	75-69-4	2.96	U	7.42	2.96	1.48
1,2,3-Trichloropropane	96-18-4	2.96	Q	7.42	2.96	1.48
1,2,4-Trimethylbenzene	95-63-6	1.48	Q	7.42	1.48	0.742
1,3,5-Trimethylbenzene	108-67-8	1.48	U	7.42	1.48	0.742
Vinyl chloride	75-01-4	2.96	U	7.42	2.96	1.48
o-Xylene	95-47-6	1.48	U	7.42	1.48	0.742
m-,p-Xylene	179601-23-1	1.48	U	7.42	1.48	0.742

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	80	120	
1,2-Dichloroethane-d4	106	80	120	
Toluene-d8	115	85	115	
4-Bromofluorobenzene	126	85	120	*

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-13	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW26SW(40-40.5)250416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 19:29
Collect Date:	04/25/2016 12:10	**Dilution:**	1	**File ID:**	1LM.LM34652
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	71.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.68	U	5.34	2.68	1.34

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-14	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW26SW(49.5-50)250416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:30
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 21:49
Collect Date:	04/25/2016 12:30	**Dilution:**	1	**File ID:**	9M974046
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	76.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.3	U	26.6	13.3	6.65
Benzene	71-43-2	1.33	U	6.65	1.33	0.665
Bromobenzene	108-86-1	1.33	U	6.65	1.33	0.665
Bromochloromethane	74-97-5	2.66	U	6.65	2.66	1.33
Bromodichloromethane	75-27-4	1.33	U	6.65	1.33	0.665
Bromoform	75-25-2	1.33	U	6.65	1.33	0.665
Bromomethane	74-83-9	2.66	U	6.65	2.66	1.33
2-Butanone	78-93-3	6.64	U	13.3	6.64	3.32
n-Butylbenzene	104-51-8	1.33	U	6.65	1.33	0.665
sec-Butylbenzene	135-98-8	1.33	U	6.65	1.33	0.665
tert-Butylbenzene	98-06-6	1.33	U	6.65	1.33	0.665
Carbon disulfide	75-15-0	1.33	U	6.65	1.33	0.665
Carbon tetrachloride	56-23-5	1.33	U	6.65	1.33	0.665
Chlorobenzene	108-90-7	1.33	U	6.65	1.33	0.665
Chlorodibromomethane	124-48-1	1.33	U	6.65	1.33	0.665
Chloroethane	75-00-3	2.66	U	6.65	2.66	1.33
Chloroform	67-66-3	1.33	U	6.65	1.33	0.665
Chloromethane	74-87-3	5.32	U	13.3	5.32	2.66
2-Chlorotoluene	95-49-8	1.33	Q	6.65	1.33	0.665
4-Chlorotoluene	106-43-4	1.33	U	6.65	1.33	0.665
1,2-Dibromo-3-chloropropane	96-12-8	5.32	U	13.3	5.32	2.66
1,2-Dibromoethane	106-93-4	1.33	U	6.65	1.33	0.665
Dibromomethane	74-95-3	1.33	U	6.65	1.33	0.665
1,2-Dichlorobenzene	95-50-1	1.33	U	6.65	1.33	0.665
1,3-Dichlorobenzene	541-73-1	1.33	U	6.65	1.33	0.665
1,4-Dichlorobenzene	106-46-7	1.33	U	6.65	1.33	0.665
Dichlorodifluoromethane	75-71-8	2.66	U	6.65	2.66	1.33
1,1-Dichloroethane	75-34-3	2.66	U	6.65	2.66	1.33
1,2-Dichloroethane	107-06-2	1.33	U	6.65	1.33	0.665
1,1-Dichloroethene	75-35-4	1.33	U	6.65	1.33	0.665

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.33	U	6.65	1.33	0.665
trans-1,2-Dichloroethene	156-60-5	1.33	U	6.65	1.33	0.665
1,2-Dichloropropane	78-87-5	1.33	U	6.65	1.33	0.665
1,3-Dichloropropane	142-28-9	1.33	U	6.65	1.33	0.665
2,2-Dichloropropane	594-20-7	1.33	U	6.65	1.33	0.665
cis-1,3-Dichloropropene	10061-01-5	1.33	U	6.65	1.33	0.665
trans-1,3-Dichloropropene	10061-02-6	1.33	U	6.65	1.33	0.665
1,1-Dichloropropene	563-58-6	1.33	U	6.65	1.33	0.665
Ethylbenzene	100-41-4	1.33	U	6.65	1.33	0.665
2-Hexanone	591-78-6	6.64	U	13.3	6.64	3.32
Hexachlorobutadiene	87-68-3	1.33	U	6.65	1.33	0.665
Isopropylbenzene	98-82-8	1.33	U	6.65	1.33	0.665
p-Isopropyltoluene	99-87-6	1.33	U	6.65	1.33	0.665
4-Methyl-2-pentanone	108-10-1	6.64	U	13.3	6.64	3.32
Methylene chloride	75-09-2	2.66	U	6.65	2.66	1.33
Naphthalene	91-20-3	1.33	Q	6.65	1.33	0.665
n-Propylbenzene	103-65-1	1.33	U	6.65	1.33	0.665
Styrene	100-42-5	1.33	U	6.65	1.33	0.665
1,1,1,2-Tetrachloroethane	630-20-6	1.33	U	6.65	1.33	0.665
1,1,2,2-Tetrachloroethane	79-34-5	1.33	U	6.65	1.33	0.665
Tetrachloroethene	127-18-4	1.33	U	6.65	1.33	0.665
Toluene	108-88-3	1.33	U	6.65	1.33	0.665
1,2,3-Trichlorobenzene	87-61-6	1.33	U	6.65	1.33	0.665
1,2,4-Trichlorobenzene	120-82-1	1.33	U	6.65	1.33	0.665
1,1,1-Trichloroethane	71-55-6	1.33	U	6.65	1.33	0.665
1,1,2-Trichloroethane	79-00-5	1.33	U	6.65	1.33	0.665
Trichloroethene	79-01-6	1.33	U	6.65	1.33	0.665
Trichlorofluoromethane	75-69-4	2.66	U	6.65	2.66	1.33
1,2,3-Trichloropropane	96-18-4	2.66	Q	6.65	2.66	1.33
1,2,4-Trimethylbenzene	95-63-6	1.33	Q	6.65	1.33	0.665
1,3,5-Trimethylbenzene	108-67-8	1.33	U	6.65	1.33	0.665
Vinyl chloride	75-01-4	2.66	U	6.65	2.66	1.33
o-Xylene	95-47-6	1.33	U	6.65	1.33	0.665
m-,p-Xylene	179601-23-1	1.33	U	6.65	1.33	0.665

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	80	120	
1,2-Dichloroethane-d4	106	80	120	
Toluene-d8	113	85	115	
4-Bromofluorobenzene	125	85	120	*

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-14	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW26SW(49.5-50)250416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 19:47
Collect Date:	04/25/2016 12:30	**Dilution:**	1	**File ID:**	1LM.LM34653
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	76.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.48	U	4.97	2.48	1.24

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #: L16041344-01 **Client ID:** 18CPTMW22R(5-5.5)230416 **Matrix:** Soil **Collect Date:** 04/23/2016 09:35

Analyte	Result	Units	Qualifier
Percent Solids	84.4	weight %	

Sample #: L16041344-02 **Client ID:** 18CPTMW22R(10-10.5)230416 **Matrix:** Soil **Collect Date:** 04/23/2016 10:05

Analyte	Result	Units	Qualifier
Percent Solids	81.9	weight %	

Sample #: L16041344-03 **Client ID:** 18CPTMW22R(15-15.5)230416 **Matrix:** Soil **Collect Date:** 04/23/2016 10:10

Analyte	Result	Units	Qualifier
Percent Solids	77.7	weight %	

Sample #: L16041344-04 **Client ID:** 18CPTMW26(5-5.5)230416 **Matrix:** Soil **Collect Date:** 04/23/2016 13:30

Analyte	Result	Units	Qualifier
Percent Solids	84.0	weight %	

Sample #: L16041344-05 **Client ID:** 18CPTMW26(5-5.5)230416DUP **Matrix:** Soil **Collect Date:** 04/23/2016 13:30

Analyte	Result	Units	Qualifier
Percent Solids	85.1	weight %	

Sample #: L16041344-06 **Client ID:** 18CPTMW26(10-10.5)230416 **Matrix:** Soil **Collect Date:** 04/23/2016 14:00

Analyte	Result	Units	Qualifier
Percent Solids	82.3	weight %	

Sample #: L16041344-07 **Client ID:** 18CPTMW26(14.5-15)230416 **Matrix:** Soil **Collect Date:** 04/23/2016 14:05

Analyte	Result	Units	Qualifier
Percent Solids	77.2	weight %	

Sample #: L16041344-08 **Client ID:** 18CPTMW26SW(5-5.5)250416 **Matrix:** Soil **Collect Date:** 04/25/2016 09:35

Analyte	Result	Units	Qualifier
Percent Solids	84.1	weight %	

Sample #: L16041344-09 **Client ID:** 18CPTMW26SW(10-10.5)250416 **Matrix:** Soil **Collect Date:** 04/25/2016 09:50

Analyte	Result	Units	Qualifier
Percent Solids	78.8	weight %	

Sample #: L16041344-10 **Client ID:** 18CPTMW26SW(15-15.5)250416 **Matrix:** Soil **Collect Date:** 04/25/2016 10:45

Analyte	Result	Units	Qualifier
Percent Solids	78.9	weight %	

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #: L16041344-11 **Client ID:** 18CPTMW26SW(20-20.5)250416 **Matrix:** Soil **Collect Date:** 04/25/2016 11:45

Analyte	Result	Units	Qualifier
Percent Solids	80.9	weight %	

Sample #: L16041344-12 **Client ID:** 18CPTMW26SW(30-30.5)250416 **Matrix:** Soil **Collect Date:** 04/25/2016 12:05

Analyte	Result	Units	Qualifier
Percent Solids	77.9	weight %	

Sample #: L16041344-13 **Client ID:** 18CPTMW26SW(40-40.5)250416 **Matrix:** Soil **Collect Date:** 04/25/2016 12:10

Analyte	Result	Units	Qualifier
Percent Solids	71.8	weight %	

Sample #: L16041344-14 **Client ID:** 18CPTMW26SW(49.5-50)250416 **Matrix:** Soil **Collect Date:** 04/25/2016 12:30

Analyte	Result	Units	Qualifier
Percent Solids	76.0	weight %	

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22R(5-5.5)230416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/29/2016 10:11
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG567003	**Analyst:**	ADC	**Run Date:**	04/30/2016 18:18
Collect Date:	04/23/2016 09:35	**Dilution:**	1	**File ID:**	9M974076
Sample Tag:	02	**Units:**	ug/kg	**Percent Solid:**	84.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.2	U	24.3	12.2	6.08
Benzene	71-43-2	1.22	U	6.08	1.22	0.608
Bromobenzene	108-86-1	1.22	U	6.08	1.22	0.608
Bromochloromethane	74-97-5	2.44	U	6.08	2.44	1.22
Bromodichloromethane	75-27-4	1.22	U	6.08	1.22	0.608
Bromoform	75-25-2	1.22	U	6.08	1.22	0.608
Bromomethane	74-83-9	2.44	U	6.08	2.44	1.22
2-Butanone	78-93-3	6.08	U	12.2	6.08	3.04
n-Butylbenzene	104-51-8	1.22	U	6.08	1.22	0.608
sec-Butylbenzene	135-98-8	1.22	U	6.08	1.22	0.608
tert-Butylbenzene	98-06-6	1.22	U	6.08	1.22	0.608
Carbon disulfide	75-15-0	1.22	U	6.08	1.22	0.608
Carbon tetrachloride	56-23-5	1.22	U	6.08	1.22	0.608
Chlorobenzene	108-90-7	1.22	U	6.08	1.22	0.608
Chlorodibromomethane	124-48-1	1.22	U	6.08	1.22	0.608
Chloroethane	75-00-3	2.44	U	6.08	2.44	1.22
Chloroform	67-66-3	1.22	U	6.08	1.22	0.608
Chloromethane	74-87-3	4.86	U	12.2	4.86	2.43
2-Chlorotoluene	95-49-8	1.22	Q	6.08	1.22	0.608
4-Chlorotoluene	106-43-4	1.22	U	6.08	1.22	0.608
1,2-Dibromo-3-chloropropane	96-12-8	4.86	U	12.2	4.86	2.43
1,2-Dibromoethane	106-93-4	1.22	U	6.08	1.22	0.608
Dibromomethane	74-95-3	1.22	U	6.08	1.22	0.608
1,2-Dichlorobenzene	95-50-1	1.22	U	6.08	1.22	0.608
1,3-Dichlorobenzene	541-73-1	1.22	U	6.08	1.22	0.608
1,4-Dichlorobenzene	106-46-7	1.22	U	6.08	1.22	0.608
Dichlorodifluoromethane	75-71-8	2.44	U	6.08	2.44	1.22
1,1-Dichloroethane	75-34-3	2.44	U	6.08	2.44	1.22
1,2-Dichloroethane	107-06-2	1.22	U	6.08	1.22	0.608
1,1-Dichloroethene	75-35-4	1.22	U	6.08	1.22	0.608
cis-1,2-Dichloroethene	156-59-2	1.22	U	6.08	1.22	0.608
trans-1,2-Dichloroethene	156-60-5	1.22	U	6.08	1.22	0.608

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.22	U	6.08	1.22	0.608
1,3-Dichloropropane	142-28-9	1.22	U	6.08	1.22	0.608
2,2-Dichloropropane	594-20-7	1.22	U	6.08	1.22	0.608
cis-1,3-Dichloropropene	10061-01-5	1.22	U	6.08	1.22	0.608
trans-1,3-Dichloropropene	10061-02-6	1.22	U	6.08	1.22	0.608
1,1-Dichloropropene	563-58-6	1.22	U	6.08	1.22	0.608
Ethylbenzene	100-41-4	1.22	U	6.08	1.22	0.608
2-Hexanone	591-78-6	6.08	U	12.2	6.08	3.04
Hexachlorobutadiene	87-68-3	1.22	U	6.08	1.22	0.608
Isopropylbenzene	98-82-8	1.22	U	6.08	1.22	0.608
p-Isopropyltoluene	99-87-6	1.22	U	6.08	1.22	0.608
4-Methyl-2-pentanone	108-10-1	6.08	U	12.2	6.08	3.04
Methylene chloride	75-09-2	2.44	U	6.08	2.44	1.22
Naphthalene	91-20-3	1.22	U	6.08	1.22	0.608
n-Propylbenzene	103-65-1	1.22	U	6.08	1.22	0.608
Styrene	100-42-5	1.22	U	6.08	1.22	0.608
1,1,1,2-Tetrachloroethane	630-20-6	1.22	U	6.08	1.22	0.608
1,1,2,2-Tetrachloroethane	79-34-5	1.22	U	6.08	1.22	0.608
Tetrachloroethene	127-18-4	1.22	U	6.08	1.22	0.608
Toluene	108-88-3	1.22	U	6.08	1.22	0.608
1,2,3-Trichlorobenzene	87-61-6	1.22	U	6.08	1.22	0.608
1,2,4-Trichlorobenzene	120-82-1	1.22	U	6.08	1.22	0.608
1,1,1-Trichloroethane	71-55-6	1.22	U	6.08	1.22	0.608
1,1,2-Trichloroethane	79-00-5	1.22	U	6.08	1.22	0.608
Trichloroethene	79-01-6	1.22	U	6.08	1.22	0.608
Trichlorofluoromethane	75-69-4	2.44	U	6.08	2.44	1.22
1,2,3-Trichloropropane	96-18-4	2.44	U	6.08	2.44	1.22
1,2,4-Trimethylbenzene	95-63-6	1.22	U	6.08	1.22	0.608
1,3,5-Trimethylbenzene	108-67-8	1.22	U	6.08	1.22	0.608
Vinyl chloride	75-01-4	2.44	U	6.08	2.44	1.22
o-Xylene	95-47-6	1.22	U	6.08	1.22	0.608
m-,p-Xylene	179601-23-1	1.22	U	6.08	1.22	0.608

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	80	120	
1,2-Dichloroethane-d4	110	80	120	
Toluene-d8	112	85	115	
4-Bromofluorobenzene	123	85	120	*

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22R(10-10.5)230416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:20
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 15:46
Collect Date:	04/23/2016 10:05	**Dilution:**	1	**File ID:**	9M974034
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.1	U	26.2	13.1	6.55
Benzene	71-43-2	1.31	U	6.55	1.31	0.655
Bromobenzene	108-86-1	1.31	U	6.55	1.31	0.655
Bromochloromethane	74-97-5	2.62	U	6.55	2.62	1.31
Bromodichloromethane	75-27-4	1.31	U	6.55	1.31	0.655
Bromoform	75-25-2	1.31	U	6.55	1.31	0.655
Bromomethane	74-83-9	2.62	U	6.55	2.62	1.31
2-Butanone	78-93-3	6.56	U	13.1	6.56	3.28
n-Butylbenzene	104-51-8	1.31	U	6.55	1.31	0.655
sec-Butylbenzene	135-98-8	1.31	U	6.55	1.31	0.655
tert-Butylbenzene	98-06-6	1.31	U	6.55	1.31	0.655
Carbon disulfide	75-15-0	1.31	U	6.55	1.31	0.655
Carbon tetrachloride	56-23-5	1.31	U	6.55	1.31	0.655
Chlorobenzene	108-90-7	1.31	U	6.55	1.31	0.655
Chlorodibromomethane	124-48-1	1.31	U	6.55	1.31	0.655
Chloroethane	75-00-3	2.62	U	6.55	2.62	1.31
Chloroform	67-66-3	1.31	U	6.55	1.31	0.655
Chloromethane	74-87-3	5.24	U	13.1	5.24	2.62
2-Chlorotoluene	95-49-8	1.31	Q	6.55	1.31	0.655
4-Chlorotoluene	106-43-4	1.31	U	6.55	1.31	0.655
1,2-Dibromo-3-chloropropane	96-12-8	5.24	U	13.1	5.24	2.62
1,2-Dibromoethane	106-93-4	1.31	U	6.55	1.31	0.655
Dibromomethane	74-95-3	1.31	U	6.55	1.31	0.655
1,2-Dichlorobenzene	95-50-1	1.31	U	6.55	1.31	0.655
1,3-Dichlorobenzene	541-73-1	1.31	U	6.55	1.31	0.655
1,4-Dichlorobenzene	106-46-7	1.31	U	6.55	1.31	0.655
Dichlorodifluoromethane	75-71-8	2.62	U	6.55	2.62	1.31
1,1-Dichloroethane	75-34-3	2.62	U	6.55	2.62	1.31
1,2-Dichloroethane	107-06-2	1.31	U	6.55	1.31	0.655
1,1-Dichloroethene	75-35-4	1.31	U	6.55	1.31	0.655

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.31	U	6.55	1.31	0.655
trans-1,2-Dichloroethene	156-60-5	1.31	U	6.55	1.31	0.655
1,2-Dichloropropane	78-87-5	1.31	U	6.55	1.31	0.655
1,3-Dichloropropane	142-28-9	1.31	U	6.55	1.31	0.655
2,2-Dichloropropane	594-20-7	1.31	U	6.55	1.31	0.655
cis-1,3-Dichloropropene	10061-01-5	1.31	U	6.55	1.31	0.655
trans-1,3-Dichloropropene	10061-02-6	1.31	U	6.55	1.31	0.655
1,1-Dichloropropene	563-58-6	1.31	U	6.55	1.31	0.655
Ethylbenzene	100-41-4	1.31	U	6.55	1.31	0.655
2-Hexanone	591-78-6	6.56	U	13.1	6.56	3.28
Hexachlorobutadiene	87-68-3	1.31	U	6.55	1.31	0.655
Isopropylbenzene	98-82-8	1.31	U	6.55	1.31	0.655
p-Isopropyltoluene	99-87-6	1.31	U	6.55	1.31	0.655
4-Methyl-2-pentanone	108-10-1	6.56	U	13.1	6.56	3.28
Methylene chloride	75-09-2	2.62	U	6.55	2.62	1.31
Naphthalene	91-20-3	1.31	Q	6.55	1.31	0.655
n-Propylbenzene	103-65-1	1.31	U	6.55	1.31	0.655
Styrene	100-42-5	1.31	U	6.55	1.31	0.655
1,1,1,2-Tetrachloroethane	630-20-6	1.31	U	6.55	1.31	0.655
1,1,2,2-Tetrachloroethane	79-34-5	1.31	U	6.55	1.31	0.655
Tetrachloroethene	127-18-4	1.31	U	6.55	1.31	0.655
Toluene	108-88-3	1.31	U	6.55	1.31	0.655
1,2,3-Trichlorobenzene	87-61-6	1.31	U	6.55	1.31	0.655
1,2,4-Trichlorobenzene	120-82-1	1.31	U	6.55	1.31	0.655
1,1,1-Trichloroethane	71-55-6	1.31	U	6.55	1.31	0.655
1,1,2-Trichloroethane	79-00-5	1.31	U	6.55	1.31	0.655
Trichloroethene	79-01-6	1.31	U	6.55	1.31	0.655
Trichlorofluoromethane	75-69-4	2.62	U	6.55	2.62	1.31
1,2,3-Trichloropropane	96-18-4	2.62	Q	6.55	2.62	1.31
1,2,4-Trimethylbenzene	95-63-6	1.31	Q	6.55	1.31	0.655
1,3,5-Trimethylbenzene	108-67-8	1.31	U	6.55	1.31	0.655
Vinyl chloride	75-01-4	2.62	U	6.55	2.62	1.31
o-Xylene	95-47-6	1.31	U	6.55	1.31	0.655
m-,p-Xylene	179601-23-1	1.31	U	6.55	1.31	0.655

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	80	120	
1,2-Dichloroethane-d4	109	80	120	
Toluene-d8	111	85	115	
4-Bromofluorobenzene	119	85	120	

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22R(15-15.5)230416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:21
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 16:16
Collect Date:	04/23/2016 10:10	**Dilution:**	1	**File ID:**	9M974035
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	77.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.3	U	26.5	13.3	6.63
Benzene	71-43-2	1.33	U	6.63	1.33	0.663
Bromobenzene	108-86-1	1.33	U	6.63	1.33	0.663
Bromochloromethane	74-97-5	2.66	U	6.63	2.66	1.33
Bromodichloromethane	75-27-4	1.33	U	6.63	1.33	0.663
Bromoform	75-25-2	1.33	U	6.63	1.33	0.663
Bromomethane	74-83-9	2.66	U	6.63	2.66	1.33
2-Butanone	78-93-3	6.64	U	13.3	6.64	3.32
n-Butylbenzene	104-51-8	1.33	U	6.63	1.33	0.663
sec-Butylbenzene	135-98-8	1.33	U	6.63	1.33	0.663
tert-Butylbenzene	98-06-6	1.33	U	6.63	1.33	0.663
Carbon disulfide	75-15-0	1.33	U	6.63	1.33	0.663
Carbon tetrachloride	56-23-5	1.33	U	6.63	1.33	0.663
Chlorobenzene	108-90-7	1.33	U	6.63	1.33	0.663
Chlorodibromomethane	124-48-1	1.33	U	6.63	1.33	0.663
Chloroethane	75-00-3	2.66	U	6.63	2.66	1.33
Chloroform	67-66-3	1.33	U	6.63	1.33	0.663
Chloromethane	74-87-3	5.30	U	13.3	5.30	2.65
2-Chlorotoluene	95-49-8	1.33	Q	6.63	1.33	0.663
4-Chlorotoluene	106-43-4	1.33	U	6.63	1.33	0.663
1,2-Dibromo-3-chloropropane	96-12-8	5.30	U	13.3	5.30	2.65
1,2-Dibromoethane	106-93-4	1.33	U	6.63	1.33	0.663
Dibromomethane	74-95-3	1.33	U	6.63	1.33	0.663
1,2-Dichlorobenzene	95-50-1	1.33	U	6.63	1.33	0.663
1,3-Dichlorobenzene	541-73-1	1.33	U	6.63	1.33	0.663
1,4-Dichlorobenzene	106-46-7	1.33	U	6.63	1.33	0.663
Dichlorodifluoromethane	75-71-8	2.66	U	6.63	2.66	1.33
1,1-Dichloroethane	75-34-3	2.66	U	6.63	2.66	1.33
1,2-Dichloroethane	107-06-2	1.33	U	6.63	1.33	0.663
1,1-Dichloroethene	75-35-4	1.33	U	6.63	1.33	0.663

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.33	U	6.63	1.33	0.663
trans-1,2-Dichloroethene	156-60-5	1.33	U	6.63	1.33	0.663
1,2-Dichloropropane	78-87-5	1.33	U	6.63	1.33	0.663
1,3-Dichloropropane	142-28-9	1.33	U	6.63	1.33	0.663
2,2-Dichloropropane	594-20-7	1.33	U	6.63	1.33	0.663
cis-1,3-Dichloropropene	10061-01-5	1.33	U	6.63	1.33	0.663
trans-1,3-Dichloropropene	10061-02-6	1.33	U	6.63	1.33	0.663
1,1-Dichloropropene	563-58-6	1.33	U	6.63	1.33	0.663
Ethylbenzene	100-41-4	1.33	U	6.63	1.33	0.663
2-Hexanone	591-78-6	6.64	U	13.3	6.64	3.32
Hexachlorobutadiene	87-68-3	1.33	U	6.63	1.33	0.663
Isopropylbenzene	98-82-8	1.33	U	6.63	1.33	0.663
p-Isopropyltoluene	99-87-6	1.33	U	6.63	1.33	0.663
4-Methyl-2-pentanone	108-10-1	6.64	U	13.3	6.64	3.32
Methylene chloride	75-09-2	2.66	U	6.63	2.66	1.33
Naphthalene	91-20-3	1.33	Q	6.63	1.33	0.663
n-Propylbenzene	103-65-1	1.33	U	6.63	1.33	0.663
Styrene	100-42-5	1.33	U	6.63	1.33	0.663
1,1,1,2-Tetrachloroethane	630-20-6	1.33	U	6.63	1.33	0.663
1,1,2,2-Tetrachloroethane	79-34-5	1.33	U	6.63	1.33	0.663
Tetrachloroethene	127-18-4	1.33	U	6.63	1.33	0.663
Toluene	108-88-3	1.33	U	6.63	1.33	0.663
1,2,3-Trichlorobenzene	87-61-6	1.33	U	6.63	1.33	0.663
1,2,4-Trichlorobenzene	120-82-1	1.33	U	6.63	1.33	0.663
1,1,1-Trichloroethane	71-55-6	1.33	U	6.63	1.33	0.663
1,1,2-Trichloroethane	79-00-5	1.33	U	6.63	1.33	0.663
Trichloroethene	79-01-6	1.33	U	6.63	1.33	0.663
Trichlorofluoromethane	75-69-4	2.66	U	6.63	2.66	1.33
1,2,3-Trichloropropane	96-18-4	2.66	Q	6.63	2.66	1.33
1,2,4-Trimethylbenzene	95-63-6	1.33	Q	6.63	1.33	0.663
1,3,5-Trimethylbenzene	108-67-8	1.33	U	6.63	1.33	0.663
Vinyl chloride	75-01-4	2.66	U	6.63	2.66	1.33
o-Xylene	95-47-6	1.33	U	6.63	1.33	0.663
m-,p-Xylene	179601-23-1	1.33	U	6.63	1.33	0.663

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	80	120	
1,2-Dichloroethane-d4	108	80	120	
Toluene-d8	110	85	115	
4-Bromofluorobenzene	118	85	120	

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW26(5-5.5)230416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:21
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 16:47
Collect Date:	04/23/2016 13:30	**Dilution:**	1	**File ID:**	9M974036
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.1	U	26.2	13.1	6.55
Benzene	71-43-2	1.31	U	6.55	1.31	0.655
Bromobenzene	108-86-1	1.31	U	6.55	1.31	0.655
Bromochloromethane	74-97-5	2.62	U	6.55	2.62	1.31
Bromodichloromethane	75-27-4	1.31	U	6.55	1.31	0.655
Bromoform	75-25-2	1.31	U	6.55	1.31	0.655
Bromomethane	74-83-9	2.62	U	6.55	2.62	1.31
2-Butanone	78-93-3	6.56	U	13.1	6.56	3.28
n-Butylbenzene	104-51-8	1.31	U	6.55	1.31	0.655
sec-Butylbenzene	135-98-8	1.31	U	6.55	1.31	0.655
tert-Butylbenzene	98-06-6	1.31	U	6.55	1.31	0.655
Carbon disulfide	75-15-0	1.31	U	6.55	1.31	0.655
Carbon tetrachloride	56-23-5	1.31	U	6.55	1.31	0.655
Chlorobenzene	108-90-7	1.31	U	6.55	1.31	0.655
Chlorodibromomethane	124-48-1	1.31	U	6.55	1.31	0.655
Chloroethane	75-00-3	2.62	U	6.55	2.62	1.31
Chloroform	67-66-3	1.31	U	6.55	1.31	0.655
Chloromethane	74-87-3	5.24	U	13.1	5.24	2.62
2-Chlorotoluene	95-49-8	1.31	Q	6.55	1.31	0.655
4-Chlorotoluene	106-43-4	1.31	U	6.55	1.31	0.655
1,2-Dibromo-3-chloropropane	96-12-8	5.24	U	13.1	5.24	2.62
1,2-Dibromoethane	106-93-4	1.31	U	6.55	1.31	0.655
Dibromomethane	74-95-3	1.31	U	6.55	1.31	0.655
1,2-Dichlorobenzene	95-50-1	1.31	U	6.55	1.31	0.655
1,3-Dichlorobenzene	541-73-1	1.31	U	6.55	1.31	0.655
1,4-Dichlorobenzene	106-46-7	1.31	U	6.55	1.31	0.655
Dichlorodifluoromethane	75-71-8	2.62	U	6.55	2.62	1.31
1,1-Dichloroethane	75-34-3	2.62	U	6.55	2.62	1.31
1,2-Dichloroethane	107-06-2	1.31	U	6.55	1.31	0.655
1,1-Dichloroethene	75-35-4	1.31	U	6.55	1.31	0.655
cis-1,2-Dichloroethene	156-59-2	1.31	U	6.55	1.31	0.655

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.31	U	6.55	1.31	0.655
1,2-Dichloropropane	78-87-5	1.31	U	6.55	1.31	0.655
1,3-Dichloropropane	142-28-9	1.31	U	6.55	1.31	0.655
2,2-Dichloropropane	594-20-7	1.31	U	6.55	1.31	0.655
cis-1,3-Dichloropropene	10061-01-5	1.31	U	6.55	1.31	0.655
trans-1,3-Dichloropropene	10061-02-6	1.31	U	6.55	1.31	0.655
1,1-Dichloropropene	563-58-6	1.31	U	6.55	1.31	0.655
Ethylbenzene	100-41-4	1.31	U	6.55	1.31	0.655
2-Hexanone	591-78-6	6.56	U	13.1	6.56	3.28
Hexachlorobutadiene	87-68-3	1.31	U	6.55	1.31	0.655
Isopropylbenzene	98-82-8	1.31	U	6.55	1.31	0.655
p-Isopropyltoluene	99-87-6	1.31	U	6.55	1.31	0.655
4-Methyl-2-pentanone	108-10-1	6.56	U	13.1	6.56	3.28
Methylene chloride	75-09-2	2.62	U	6.55	2.62	1.31
Naphthalene	91-20-3	1.31	Q	6.55	1.31	0.655
n-Propylbenzene	103-65-1	1.31	U	6.55	1.31	0.655
Styrene	100-42-5	1.31	U	6.55	1.31	0.655
1,1,1,2-Tetrachloroethane	630-20-6	1.31	U	6.55	1.31	0.655
1,1,2,2-Tetrachloroethane	79-34-5	1.31	U	6.55	1.31	0.655
Tetrachloroethene	127-18-4	1.31	U	6.55	1.31	0.655
Toluene	108-88-3	1.31	U	6.55	1.31	0.655
1,2,3-Trichlorobenzene	87-61-6	1.31	U	6.55	1.31	0.655
1,2,4-Trichlorobenzene	120-82-1	1.31	U	6.55	1.31	0.655
1,1,1-Trichloroethane	71-55-6	1.31	U	6.55	1.31	0.655
1,1,2-Trichloroethane	79-00-5	1.31	U	6.55	1.31	0.655
Trichloroethene	79-01-6	1.31	U	6.55	1.31	0.655
Trichlorofluoromethane	75-69-4	2.62	U	6.55	2.62	1.31
1,2,3-Trichloropropane	96-18-4	2.62	Q	6.55	2.62	1.31
1,2,4-Trimethylbenzene	95-63-6	1.31	Q	6.55	1.31	0.655
1,3,5-Trimethylbenzene	108-67-8	1.31	U	6.55	1.31	0.655
Vinyl chloride	75-01-4	2.62	U	6.55	2.62	1.31
o-Xylene	95-47-6	1.31	U	6.55	1.31	0.655
m-,p-Xylene	179601-23-1	1.31	U	6.55	1.31	0.655

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	80	120	
1,2-Dichloroethane-d4	117	80	120	
Toluene-d8	110	85	115	
4-Bromofluorobenzene	121	85	120	*

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW26(5-5.5)230416DUP	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:22
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 17:17
Collect Date:	04/23/2016 13:30	**Dilution:**	1	**File ID:**	9M974037
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	24.9	12.5	6.23
Benzene	71-43-2	1.25	U	6.23	1.25	0.623
Bromobenzene	108-86-1	1.25	U	6.23	1.25	0.623
Bromochloromethane	74-97-5	2.50	U	6.23	2.50	1.25
Bromodichloromethane	75-27-4	1.25	U	6.23	1.25	0.623
Bromoform	75-25-2	1.25	U	6.23	1.25	0.623
Bromomethane	74-83-9	2.50	U	6.23	2.50	1.25
2-Butanone	78-93-3	6.24	U	12.5	6.24	3.12
n-Butylbenzene	104-51-8	1.25	U	6.23	1.25	0.623
sec-Butylbenzene	135-98-8	1.25	U	6.23	1.25	0.623
tert-Butylbenzene	98-06-6	1.25	U	6.23	1.25	0.623
Carbon disulfide	75-15-0	1.25	U	6.23	1.25	0.623
Carbon tetrachloride	56-23-5	1.25	U	6.23	1.25	0.623
Chlorobenzene	108-90-7	1.25	U	6.23	1.25	0.623
Chlorodibromomethane	124-48-1	1.25	U	6.23	1.25	0.623
Chloroethane	75-00-3	2.50	U	6.23	2.50	1.25
Chloroform	67-66-3	1.25	U	6.23	1.25	0.623
Chloromethane	74-87-3	4.98	U	12.5	4.98	2.49
2-Chlorotoluene	95-49-8	1.25	Q	6.23	1.25	0.623
4-Chlorotoluene	106-43-4	1.25	U	6.23	1.25	0.623
1,2-Dibromo-3-chloropropane	96-12-8	4.98	U	12.5	4.98	2.49
1,2-Dibromoethane	106-93-4	1.25	U	6.23	1.25	0.623
Dibromomethane	74-95-3	1.25	U	6.23	1.25	0.623
1,2-Dichlorobenzene	95-50-1	1.25	U	6.23	1.25	0.623
1,3-Dichlorobenzene	541-73-1	1.25	U	6.23	1.25	0.623
1,4-Dichlorobenzene	106-46-7	1.25	U	6.23	1.25	0.623
Dichlorodifluoromethane	75-71-8	2.50	U	6.23	2.50	1.25
1,1-Dichloroethane	75-34-3	2.50	U	6.23	2.50	1.25
1,2-Dichloroethane	107-06-2	1.25	U	6.23	1.25	0.623
1,1-Dichloroethene	75-35-4	1.25	U	6.23	1.25	0.623

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.25	U	6.23	1.25	0.623
trans-1,2-Dichloroethene	156-60-5	1.25	U	6.23	1.25	0.623
1,2-Dichloropropane	78-87-5	1.25	U	6.23	1.25	0.623
1,3-Dichloropropane	142-28-9	1.25	U	6.23	1.25	0.623
2,2-Dichloropropane	594-20-7	1.25	U	6.23	1.25	0.623
cis-1,3-Dichloropropene	10061-01-5	1.25	U	6.23	1.25	0.623
trans-1,3-Dichloropropene	10061-02-6	1.25	U	6.23	1.25	0.623
1,1-Dichloropropene	563-58-6	1.25	U	6.23	1.25	0.623
Ethylbenzene	100-41-4	1.25	U	6.23	1.25	0.623
2-Hexanone	591-78-6	6.24	U	12.5	6.24	3.12
Hexachlorobutadiene	87-68-3	1.25	U	6.23	1.25	0.623
Isopropylbenzene	98-82-8	1.25	U	6.23	1.25	0.623
p-Isopropyltoluene	99-87-6	1.25	U	6.23	1.25	0.623
4-Methyl-2-pentanone	108-10-1	6.24	U	12.5	6.24	3.12
Methylene chloride	75-09-2	2.50	U	6.23	2.50	1.25
Naphthalene	91-20-3	1.25	Q	6.23	1.25	0.623
n-Propylbenzene	103-65-1	1.25	U	6.23	1.25	0.623
Styrene	100-42-5	1.25	U	6.23	1.25	0.623
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	6.23	1.25	0.623
1,1,2,2-Tetrachloroethane	79-34-5	1.25	U	6.23	1.25	0.623
Tetrachloroethene	127-18-4	1.25	U	6.23	1.25	0.623
Toluene	108-88-3	1.25	U	6.23	1.25	0.623
1,2,3-Trichlorobenzene	87-61-6	1.25	U	6.23	1.25	0.623
1,2,4-Trichlorobenzene	120-82-1	1.25	U	6.23	1.25	0.623
1,1,1-Trichloroethane	71-55-6	1.25	U	6.23	1.25	0.623
1,1,2-Trichloroethane	79-00-5	1.25	U	6.23	1.25	0.623
Trichloroethene	79-01-6	1.25	U	6.23	1.25	0.623
Trichlorofluoromethane	75-69-4	2.50	U	6.23	2.50	1.25
1,2,3-Trichloropropane	96-18-4	2.50	Q	6.23	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	Q	6.23	1.25	0.623
1,3,5-Trimethylbenzene	108-67-8	1.25	U	6.23	1.25	0.623
Vinyl chloride	75-01-4	2.50	U	6.23	2.50	1.25
o-Xylene	95-47-6	1.25	U	6.23	1.25	0.623
m-,p-Xylene	179601-23-1	1.25	U	6.23	1.25	0.623

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	80	120	
1,2-Dichloroethane-d4	119	80	120	
Toluene-d8	111	85	115	
4-Bromofluorobenzene	121	85	120	*

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW26(10-10.5)230416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:23
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 17:47
Collect Date:	04/23/2016 14:00	**Dilution:**	1	**File ID:**	9M974038
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.8	U	25.5	12.8	6.38
Benzene	71-43-2	1.28	U	6.38	1.28	0.638
Bromobenzene	108-86-1	1.28	U	6.38	1.28	0.638
Bromochloromethane	74-97-5	2.56	U	6.38	2.56	1.28
Bromodichloromethane	75-27-4	1.28	U	6.38	1.28	0.638
Bromoform	75-25-2	1.28	U	6.38	1.28	0.638
Bromomethane	74-83-9	2.56	U	6.38	2.56	1.28
2-Butanone	78-93-3	6.38	U	12.8	6.38	3.19
n-Butylbenzene	104-51-8	1.28	U	6.38	1.28	0.638
sec-Butylbenzene	135-98-8	1.28	U	6.38	1.28	0.638
tert-Butylbenzene	98-06-6	1.28	U	6.38	1.28	0.638
Carbon disulfide	75-15-0	1.28	U	6.38	1.28	0.638
Carbon tetrachloride	56-23-5	1.28	U	6.38	1.28	0.638
Chlorobenzene	108-90-7	1.28	U	6.38	1.28	0.638
Chlorodibromomethane	124-48-1	1.28	U	6.38	1.28	0.638
Chloroethane	75-00-3	2.56	U	6.38	2.56	1.28
Chloroform	67-66-3	1.28	U	6.38	1.28	0.638
Chloromethane	74-87-3	5.10	U	12.8	5.10	2.55
2-Chlorotoluene	95-49-8	1.28	Q	6.38	1.28	0.638
4-Chlorotoluene	106-43-4	1.28	U	6.38	1.28	0.638
1,2-Dibromo-3-chloropropane	96-12-8	5.10	U	12.8	5.10	2.55
1,2-Dibromoethane	106-93-4	1.28	U	6.38	1.28	0.638
Dibromomethane	74-95-3	1.28	U	6.38	1.28	0.638
1,2-Dichlorobenzene	95-50-1	1.28	U	6.38	1.28	0.638
1,3-Dichlorobenzene	541-73-1	1.28	U	6.38	1.28	0.638
1,4-Dichlorobenzene	106-46-7	1.28	U	6.38	1.28	0.638
Dichlorodifluoromethane	75-71-8	2.56	U	6.38	2.56	1.28
1,1-Dichloroethane	75-34-3	2.56	U	6.38	2.56	1.28
1,2-Dichloroethane	107-06-2	1.28	U	6.38	1.28	0.638
1,1-Dichloroethene	75-35-4	1.28	U	6.38	1.28	0.638

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.28	U	6.38	1.28	0.638
trans-1,2-Dichloroethene	156-60-5	1.28	U	6.38	1.28	0.638
1,2-Dichloropropane	78-87-5	1.28	U	6.38	1.28	0.638
1,3-Dichloropropane	142-28-9	1.28	U	6.38	1.28	0.638
2,2-Dichloropropane	594-20-7	1.28	U	6.38	1.28	0.638
cis-1,3-Dichloropropene	10061-01-5	1.28	U	6.38	1.28	0.638
trans-1,3-Dichloropropene	10061-02-6	1.28	U	6.38	1.28	0.638
1,1-Dichloropropene	563-58-6	1.28	U	6.38	1.28	0.638
Ethylbenzene	100-41-4	1.28	U	6.38	1.28	0.638
2-Hexanone	591-78-6	6.38	U	12.8	6.38	3.19
Hexachlorobutadiene	87-68-3	1.28	U	6.38	1.28	0.638
Isopropylbenzene	98-82-8	1.28	U	6.38	1.28	0.638
p-Isopropyltoluene	99-87-6	1.28	U	6.38	1.28	0.638
4-Methyl-2-pentanone	108-10-1	6.38	U	12.8	6.38	3.19
Methylene chloride	75-09-2	2.56	U	6.38	2.56	1.28
Naphthalene	91-20-3	1.28	Q	6.38	1.28	0.638
n-Propylbenzene	103-65-1	1.28	U	6.38	1.28	0.638
Styrene	100-42-5	1.28	U	6.38	1.28	0.638
1,1,1,2-Tetrachloroethane	630-20-6	1.28	U	6.38	1.28	0.638
1,1,2,2-Tetrachloroethane	79-34-5	1.28	U	6.38	1.28	0.638
Tetrachloroethene	127-18-4	1.28	U	6.38	1.28	0.638
Toluene	108-88-3	1.28	U	6.38	1.28	0.638
1,2,3-Trichlorobenzene	87-61-6	1.28	U	6.38	1.28	0.638
1,2,4-Trichlorobenzene	120-82-1	1.28	U	6.38	1.28	0.638
1,1,1-Trichloroethane	71-55-6	1.28	U	6.38	1.28	0.638
1,1,2-Trichloroethane	79-00-5	1.28	U	6.38	1.28	0.638
Trichloroethene	79-01-6	1.28	U	6.38	1.28	0.638
Trichlorofluoromethane	75-69-4	2.56	U	6.38	2.56	1.28
1,2,3-Trichloropropane	96-18-4	2.56	Q	6.38	2.56	1.28
1,2,4-Trimethylbenzene	95-63-6	1.28	Q	6.38	1.28	0.638
1,3,5-Trimethylbenzene	108-67-8	1.28	U	6.38	1.28	0.638
Vinyl chloride	75-01-4	2.56	U	6.38	2.56	1.28
o-Xylene	95-47-6	1.28	U	6.38	1.28	0.638
m-,p-Xylene	179601-23-1	1.28	U	6.38	1.28	0.638

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	80	120	
1,2-Dichloroethane-d4	119	80	120	
Toluene-d8	110	85	115	
4-Bromofluorobenzene	120	85	120	

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW26(14.5-15)230416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:25
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 18:17
Collect Date:	04/23/2016 14:05	**Dilution:**	1	**File ID:**	9M974039
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	77.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.1	U	24.2	12.1	6.04
Benzene	71-43-2	1.21	U	6.04	1.21	0.604
Bromobenzene	108-86-1	1.21	U	6.04	1.21	0.604
Bromochloromethane	74-97-5	2.42	U	6.04	2.42	1.21
Bromodichloromethane	75-27-4	1.21	U	6.04	1.21	0.604
Bromoform	75-25-2	1.21	U	6.04	1.21	0.604
Bromomethane	74-83-9	2.42	U	6.04	2.42	1.21
2-Butanone	78-93-3	6.04	U	12.1	6.04	3.02
n-Butylbenzene	104-51-8	1.21	U	6.04	1.21	0.604
sec-Butylbenzene	135-98-8	1.21	U	6.04	1.21	0.604
tert-Butylbenzene	98-06-6	1.21	U	6.04	1.21	0.604
Carbon disulfide	75-15-0	1.21	U	6.04	1.21	0.604
Carbon tetrachloride	56-23-5	1.21	U	6.04	1.21	0.604
Chlorobenzene	108-90-7	1.21	U	6.04	1.21	0.604
Chlorodibromomethane	124-48-1	1.21	U	6.04	1.21	0.604
Chloroethane	75-00-3	2.42	U	6.04	2.42	1.21
Chloroform	67-66-3	1.21	U	6.04	1.21	0.604
Chloromethane	74-87-3	4.84	U	12.1	4.84	2.42
2-Chlorotoluene	95-49-8	1.21	Q	6.04	1.21	0.604
4-Chlorotoluene	106-43-4	1.21	U	6.04	1.21	0.604
1,2-Dibromo-3-chloropropane	96-12-8	4.84	U	12.1	4.84	2.42
1,2-Dibromoethane	106-93-4	1.21	U	6.04	1.21	0.604
Dibromomethane	74-95-3	1.21	U	6.04	1.21	0.604
1,2-Dichlorobenzene	95-50-1	1.21	U	6.04	1.21	0.604
1,3-Dichlorobenzene	541-73-1	1.21	U	6.04	1.21	0.604
1,4-Dichlorobenzene	106-46-7	1.21	U	6.04	1.21	0.604
Dichlorodifluoromethane	75-71-8	2.42	U	6.04	2.42	1.21
1,1-Dichloroethane	75-34-3	2.42	U	6.04	2.42	1.21
1,2-Dichloroethane	107-06-2	1.21	U	6.04	1.21	0.604
1,1-Dichloroethene	75-35-4	1.21	U	6.04	1.21	0.604

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.21	U	6.04	1.21	0.604
trans-1,2-Dichloroethene	156-60-5	1.21	U	6.04	1.21	0.604
1,2-Dichloropropane	78-87-5	1.21	U	6.04	1.21	0.604
1,3-Dichloropropane	142-28-9	1.21	U	6.04	1.21	0.604
2,2-Dichloropropane	594-20-7	1.21	U	6.04	1.21	0.604
cis-1,3-Dichloropropene	10061-01-5	1.21	U	6.04	1.21	0.604
trans-1,3-Dichloropropene	10061-02-6	1.21	U	6.04	1.21	0.604
1,1-Dichloropropene	563-58-6	1.21	U	6.04	1.21	0.604
Ethylbenzene	100-41-4	1.21	U	6.04	1.21	0.604
2-Hexanone	591-78-6	6.04	U	12.1	6.04	3.02
Hexachlorobutadiene	87-68-3	1.21	U	6.04	1.21	0.604
Isopropylbenzene	98-82-8	1.21	U	6.04	1.21	0.604
p-Isopropyltoluene	99-87-6	1.21	U	6.04	1.21	0.604
4-Methyl-2-pentanone	108-10-1	6.04	U	12.1	6.04	3.02
Methylene chloride	75-09-2	2.42	U	6.04	2.42	1.21
Naphthalene	91-20-3	1.21	Q	6.04	1.21	0.604
n-Propylbenzene	103-65-1	1.21	U	6.04	1.21	0.604
Styrene	100-42-5	1.21	U	6.04	1.21	0.604
1,1,1,2-Tetrachloroethane	630-20-6	1.21	U	6.04	1.21	0.604
1,1,2,2-Tetrachloroethane	79-34-5	1.21	U	6.04	1.21	0.604
Tetrachloroethene	127-18-4	1.21	U	6.04	1.21	0.604
Toluene	108-88-3	1.21	U	6.04	1.21	0.604
1,2,3-Trichlorobenzene	87-61-6	1.21	U	6.04	1.21	0.604
1,2,4-Trichlorobenzene	120-82-1	1.21	U	6.04	1.21	0.604
1,1,1-Trichloroethane	71-55-6	1.21	U	6.04	1.21	0.604
1,1,2-Trichloroethane	79-00-5	1.21	U	6.04	1.21	0.604
Trichloroethene	79-01-6	1.21	U	6.04	1.21	0.604
Trichlorofluoromethane	75-69-4	2.42	U	6.04	2.42	1.21
1,2,3-Trichloropropane	96-18-4	2.42	Q	6.04	2.42	1.21
1,2,4-Trimethylbenzene	95-63-6	1.21	Q	6.04	1.21	0.604
1,3,5-Trimethylbenzene	108-67-8	1.21	U	6.04	1.21	0.604
Vinyl chloride	75-01-4	2.42	U	6.04	2.42	1.21
o-Xylene	95-47-6	1.21	U	6.04	1.21	0.604
m-,p-Xylene	179601-23-1	1.21	U	6.04	1.21	0.604

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	80	120	
1,2-Dichloroethane-d4	117	80	120	
Toluene-d8	108	85	115	
4-Bromofluorobenzene	119	85	120	

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW26SW(5-5.5)250416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:26
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 18:47
Collect Date:	04/25/2016 09:35	**Dilution:**	1	**File ID:**	9M974040
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.0	U	24.0	12.0	6.01
Benzene	71-43-2	1.20	U	6.01	1.20	0.601
Bromobenzene	108-86-1	1.20	U	6.01	1.20	0.601
Bromochloromethane	74-97-5	2.40	U	6.01	2.40	1.20
Bromodichloromethane	75-27-4	1.20	U	6.01	1.20	0.601
Bromoform	75-25-2	1.20	U	6.01	1.20	0.601
Bromomethane	74-83-9	2.40	U	6.01	2.40	1.20
2-Butanone	78-93-3	6.00	U	12.0	6.00	3.00
n-Butylbenzene	104-51-8	1.20	U	6.01	1.20	0.601
sec-Butylbenzene	135-98-8	1.20	U	6.01	1.20	0.601
tert-Butylbenzene	98-06-6	1.20	U	6.01	1.20	0.601
Carbon disulfide	75-15-0	1.20	U	6.01	1.20	0.601
Carbon tetrachloride	56-23-5	1.20	U	6.01	1.20	0.601
Chlorobenzene	108-90-7	1.20	U	6.01	1.20	0.601
Chlorodibromomethane	124-48-1	1.20	U	6.01	1.20	0.601
Chloroethane	75-00-3	2.40	U	6.01	2.40	1.20
Chloroform	67-66-3	1.20	U	6.01	1.20	0.601
Chloromethane	74-87-3	4.80	U	12.0	4.80	2.40
2-Chlorotoluene	95-49-8	1.20	Q	6.01	1.20	0.601
4-Chlorotoluene	106-43-4	1.20	U	6.01	1.20	0.601
1,2-Dibromo-3-chloropropane	96-12-8	4.80	U	12.0	4.80	2.40
1,2-Dibromoethane	106-93-4	1.20	U	6.01	1.20	0.601
Dibromomethane	74-95-3	1.20	U	6.01	1.20	0.601
1,2-Dichlorobenzene	95-50-1	1.20	U	6.01	1.20	0.601
1,3-Dichlorobenzene	541-73-1	1.20	U	6.01	1.20	0.601
1,4-Dichlorobenzene	106-46-7	1.20	U	6.01	1.20	0.601
Dichlorodifluoromethane	75-71-8	2.40	U	6.01	2.40	1.20
1,1-Dichloroethane	75-34-3	2.40	U	6.01	2.40	1.20
1,2-Dichloroethane	107-06-2	1.20	U	6.01	1.20	0.601
1,1-Dichloroethene	75-35-4	1.20	U	6.01	1.20	0.601

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.20	U	6.01	1.20	0.601
trans-1,2-Dichloroethene	156-60-5	1.20	U	6.01	1.20	0.601
1,2-Dichloropropane	78-87-5	1.20	U	6.01	1.20	0.601
1,3-Dichloropropane	142-28-9	1.20	U	6.01	1.20	0.601
2,2-Dichloropropane	594-20-7	1.20	U	6.01	1.20	0.601
cis-1,3-Dichloropropene	10061-01-5	1.20	U	6.01	1.20	0.601
trans-1,3-Dichloropropene	10061-02-6	1.20	U	6.01	1.20	0.601
1,1-Dichloropropene	563-58-6	1.20	U	6.01	1.20	0.601
Ethylbenzene	100-41-4	1.20	U	6.01	1.20	0.601
2-Hexanone	591-78-6	6.00	U	12.0	6.00	3.00
Hexachlorobutadiene	87-68-3	1.20	U	6.01	1.20	0.601
Isopropylbenzene	98-82-8	1.20	U	6.01	1.20	0.601
p-Isopropyltoluene	99-87-6	1.20	U	6.01	1.20	0.601
4-Methyl-2-pentanone	108-10-1	6.00	U	12.0	6.00	3.00
Methylene chloride	75-09-2	2.40	U	6.01	2.40	1.20
Naphthalene	91-20-3	1.20	Q	6.01	1.20	0.601
n-Propylbenzene	103-65-1	1.20	U	6.01	1.20	0.601
Styrene	100-42-5	1.20	U	6.01	1.20	0.601
1,1,1,2-Tetrachloroethane	630-20-6	1.20	U	6.01	1.20	0.601
1,1,2,2-Tetrachloroethane	79-34-5	1.20	U	6.01	1.20	0.601
Tetrachloroethene	127-18-4	1.20	U	6.01	1.20	0.601
Toluene	108-88-3	1.20	U	6.01	1.20	0.601
1,2,3-Trichlorobenzene	87-61-6	1.20	U	6.01	1.20	0.601
1,2,4-Trichlorobenzene	120-82-1	1.20	U	6.01	1.20	0.601
1,1,1-Trichloroethane	71-55-6	1.20	U	6.01	1.20	0.601
1,1,2-Trichloroethane	79-00-5	1.20	U	6.01	1.20	0.601
Trichloroethene	79-01-6	1.20	U	6.01	1.20	0.601
Trichlorofluoromethane	75-69-4	2.40	U	6.01	2.40	1.20
1,2,3-Trichloropropane	96-18-4	2.40	Q	6.01	2.40	1.20
1,2,4-Trimethylbenzene	95-63-6	1.20	Q	6.01	1.20	0.601
1,3,5-Trimethylbenzene	108-67-8	1.20	U	6.01	1.20	0.601
Vinyl chloride	75-01-4	2.40	U	6.01	2.40	1.20
o-Xylene	95-47-6	1.20	U	6.01	1.20	0.601
m-,p-Xylene	179601-23-1	1.20	U	6.01	1.20	0.601

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	80	120	
1,2-Dichloroethane-d4	116	80	120	
Toluene-d8	109	85	115	
4-Bromofluorobenzene	119	85	120	

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW26SW(10-10.5)250416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:27
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 19:18
Collect Date:	04/25/2016 09:50	**Dilution:**	1	**File ID:**	9M974041
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	78.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.9	U	27.7	13.9	6.93
Benzene	71-43-2	1.39	U	6.93	1.39	0.693
Bromobenzene	108-86-1	1.39	U	6.93	1.39	0.693
Bromochloromethane	74-97-5	2.78	U	6.93	2.78	1.39
Bromodichloromethane	75-27-4	1.39	U	6.93	1.39	0.693
Bromoform	75-25-2	1.39	U	6.93	1.39	0.693
Bromomethane	74-83-9	2.78	U	6.93	2.78	1.39
2-Butanone	78-93-3	6.92	U	13.9	6.92	3.46
n-Butylbenzene	104-51-8	1.39	U	6.93	1.39	0.693
sec-Butylbenzene	135-98-8	1.39	U	6.93	1.39	0.693
tert-Butylbenzene	98-06-6	1.39	U	6.93	1.39	0.693
Carbon disulfide	75-15-0	1.39	U	6.93	1.39	0.693
Carbon tetrachloride	56-23-5	1.39	U	6.93	1.39	0.693
Chlorobenzene	108-90-7	1.39	U	6.93	1.39	0.693
Chlorodibromomethane	124-48-1	1.39	U	6.93	1.39	0.693
Chloroethane	75-00-3	2.78	U	6.93	2.78	1.39
Chloroform	67-66-3	1.39	U	6.93	1.39	0.693
Chloromethane	74-87-3	5.54	U	13.9	5.54	2.77
2-Chlorotoluene	95-49-8	1.39	Q	6.93	1.39	0.693
4-Chlorotoluene	106-43-4	1.39	U	6.93	1.39	0.693
1,2-Dibromo-3-chloropropane	96-12-8	5.54	U	13.9	5.54	2.77
1,2-Dibromoethane	106-93-4	1.39	U	6.93	1.39	0.693
Dibromomethane	74-95-3	1.39	U	6.93	1.39	0.693
1,2-Dichlorobenzene	95-50-1	1.39	U	6.93	1.39	0.693
1,3-Dichlorobenzene	541-73-1	1.39	U	6.93	1.39	0.693
1,4-Dichlorobenzene	106-46-7	1.39	U	6.93	1.39	0.693
Dichlorodifluoromethane	75-71-8	2.78	U	6.93	2.78	1.39
1,1-Dichloroethane	75-34-3	2.78	U	6.93	2.78	1.39
1,2-Dichloroethane	107-06-2	1.39	U	6.93	1.39	0.693
1,1-Dichloroethene	75-35-4	1.39	U	6.93	1.39	0.693

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.39	U	6.93	1.39	0.693
trans-1,2-Dichloroethene	156-60-5	1.39	U	6.93	1.39	0.693
1,2-Dichloropropane	78-87-5	1.39	U	6.93	1.39	0.693
1,3-Dichloropropane	142-28-9	1.39	U	6.93	1.39	0.693
2,2-Dichloropropane	594-20-7	1.39	U	6.93	1.39	0.693
cis-1,3-Dichloropropene	10061-01-5	1.39	U	6.93	1.39	0.693
trans-1,3-Dichloropropene	10061-02-6	1.39	U	6.93	1.39	0.693
1,1-Dichloropropene	563-58-6	1.39	U	6.93	1.39	0.693
Ethylbenzene	100-41-4	1.39	U	6.93	1.39	0.693
2-Hexanone	591-78-6	6.92	U	13.9	6.92	3.46
Hexachlorobutadiene	87-68-3	1.39	U	6.93	1.39	0.693
Isopropylbenzene	98-82-8	1.39	U	6.93	1.39	0.693
p-Isopropyltoluene	99-87-6	1.39	U	6.93	1.39	0.693
4-Methyl-2-pentanone	108-10-1	6.92	U	13.9	6.92	3.46
Methylene chloride	75-09-2	2.78	U	6.93	2.78	1.39
Naphthalene	91-20-3	1.39	Q	6.93	1.39	0.693
n-Propylbenzene	103-65-1	1.39	U	6.93	1.39	0.693
Styrene	100-42-5	1.39	U	6.93	1.39	0.693
1,1,1,2-Tetrachloroethane	630-20-6	1.39	U	6.93	1.39	0.693
1,1,2,2-Tetrachloroethane	79-34-5	1.39	U	6.93	1.39	0.693
Tetrachloroethene	127-18-4	1.39	U	6.93	1.39	0.693
Toluene	108-88-3	1.39	U	6.93	1.39	0.693
1,2,3-Trichlorobenzene	87-61-6	1.39	U	6.93	1.39	0.693
1,2,4-Trichlorobenzene	120-82-1	1.39	U	6.93	1.39	0.693
1,1,1-Trichloroethane	71-55-6	1.39	U	6.93	1.39	0.693
1,1,2-Trichloroethane	79-00-5	1.39	U	6.93	1.39	0.693
Trichloroethene	79-01-6	1.39	U	6.93	1.39	0.693
Trichlorofluoromethane	75-69-4	2.78	U	6.93	2.78	1.39
1,2,3-Trichloropropane	96-18-4	2.78	Q	6.93	2.78	1.39
1,2,4-Trimethylbenzene	95-63-6	1.39	Q	6.93	1.39	0.693
1,3,5-Trimethylbenzene	108-67-8	1.39	Q	6.93	1.39	0.693
Vinyl chloride	75-01-4	2.78	U	6.93	2.78	1.39
o-Xylene	95-47-6	1.39	U	6.93	1.39	0.693
m-,p-Xylene	179601-23-1	1.39	U	6.93	1.39	0.693

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	80	120	
1,2-Dichloroethane-d4	121	80	120	*
Toluene-d8	110	85	115	
4-Bromofluorobenzene	121	85	120	*

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW26SW(15-15.5)250416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:28
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 19:48
Collect Date:	04/25/2016 10:45	**Dilution:**	1	**File ID:**	9M974042
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	78.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.9	U	23.8	11.9	5.95
Benzene	71-43-2	1.19	U	5.95	1.19	0.595
Bromobenzene	108-86-1	1.19	U	5.95	1.19	0.595
Bromochloromethane	74-97-5	2.38	U	5.95	2.38	1.19
Bromodichloromethane	75-27-4	1.19	U	5.95	1.19	0.595
Bromoform	75-25-2	1.19	U	5.95	1.19	0.595
Bromomethane	74-83-9	2.38	U	5.95	2.38	1.19
2-Butanone	78-93-3	5.94	U	11.9	5.94	2.97
n-Butylbenzene	104-51-8	1.19	U	5.95	1.19	0.595
sec-Butylbenzene	135-98-8	1.19	U	5.95	1.19	0.595
tert-Butylbenzene	98-06-6	1.19	U	5.95	1.19	0.595
Carbon disulfide	75-15-0	1.19	U	5.95	1.19	0.595
Carbon tetrachloride	56-23-5	1.19	U	5.95	1.19	0.595
Chlorobenzene	108-90-7	1.19	U	5.95	1.19	0.595
Chlorodibromomethane	124-48-1	1.19	U	5.95	1.19	0.595
Chloroethane	75-00-3	2.38	U	5.95	2.38	1.19
Chloroform	67-66-3	1.19	U	5.95	1.19	0.595
Chloromethane	74-87-3	4.76	U	11.9	4.76	2.38
2-Chlorotoluene	95-49-8	1.19	Q	5.95	1.19	0.595
4-Chlorotoluene	106-43-4	1.19	U	5.95	1.19	0.595
1,2-Dibromo-3-chloropropane	96-12-8	4.76	U	11.9	4.76	2.38
1,2-Dibromoethane	106-93-4	1.19	U	5.95	1.19	0.595
Dibromomethane	74-95-3	1.19	U	5.95	1.19	0.595
1,2-Dichlorobenzene	95-50-1	1.19	U	5.95	1.19	0.595
1,3-Dichlorobenzene	541-73-1	1.19	U	5.95	1.19	0.595
1,4-Dichlorobenzene	106-46-7	1.19	U	5.95	1.19	0.595
Dichlorodifluoromethane	75-71-8	2.38	U	5.95	2.38	1.19
1,1-Dichloroethane	75-34-3	2.38	U	5.95	2.38	1.19
1,2-Dichloroethane	107-06-2	1.19	U	5.95	1.19	0.595
1,1-Dichloroethene	75-35-4	1.19	U	5.95	1.19	0.595

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.19	U	5.95	1.19	0.595
trans-1,2-Dichloroethene	156-60-5	1.19	U	5.95	1.19	0.595
1,2-Dichloropropane	78-87-5	1.19	U	5.95	1.19	0.595
1,3-Dichloropropane	142-28-9	1.19	U	5.95	1.19	0.595
2,2-Dichloropropane	594-20-7	1.19	U	5.95	1.19	0.595
cis-1,3-Dichloropropene	10061-01-5	1.19	U	5.95	1.19	0.595
trans-1,3-Dichloropropene	10061-02-6	1.19	U	5.95	1.19	0.595
1,1-Dichloropropene	563-58-6	1.19	U	5.95	1.19	0.595
Ethylbenzene	100-41-4	1.19	U	5.95	1.19	0.595
2-Hexanone	591-78-6	5.94	U	11.9	5.94	2.97
Hexachlorobutadiene	87-68-3	1.19	U	5.95	1.19	0.595
Isopropylbenzene	98-82-8	1.19	U	5.95	1.19	0.595
p-Isopropyltoluene	99-87-6	1.19	U	5.95	1.19	0.595
4-Methyl-2-pentanone	108-10-1	5.94	U	11.9	5.94	2.97
Methylene chloride	75-09-2	2.38	U	5.95	2.38	1.19
Naphthalene	91-20-3	1.19	Q	5.95	1.19	0.595
n-Propylbenzene	103-65-1	1.19	U	5.95	1.19	0.595
Styrene	100-42-5	1.19	U	5.95	1.19	0.595
1,1,1,2-Tetrachloroethane	630-20-6	1.19	U	5.95	1.19	0.595
1,1,2,2-Tetrachloroethane	79-34-5	1.19	U	5.95	1.19	0.595
Tetrachloroethene	127-18-4	1.19	U	5.95	1.19	0.595
Toluene	108-88-3	1.19	U	5.95	1.19	0.595
1,2,3-Trichlorobenzene	87-61-6	1.19	U	5.95	1.19	0.595
1,2,4-Trichlorobenzene	120-82-1	1.19	U	5.95	1.19	0.595
1,1,1-Trichloroethane	71-55-6	1.19	U	5.95	1.19	0.595
1,1,2-Trichloroethane	79-00-5	1.19	U	5.95	1.19	0.595
Trichloroethene	79-01-6	1.19	U	5.95	1.19	0.595
Trichlorofluoromethane	75-69-4	2.38	U	5.95	2.38	1.19
1,2,3-Trichloropropane	96-18-4	2.38	Q	5.95	2.38	1.19
1,2,4-Trimethylbenzene	95-63-6	1.19	Q	5.95	1.19	0.595
1,3,5-Trimethylbenzene	108-67-8	1.19	U	5.95	1.19	0.595
Vinyl chloride	75-01-4	2.38	U	5.95	2.38	1.19
o-Xylene	95-47-6	1.19	U	5.95	1.19	0.595
m-,p-Xylene	179601-23-1	1.19	U	5.95	1.19	0.595

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	80	120	
1,2-Dichloroethane-d4	106	80	120	
Toluene-d8	112	85	115	
4-Bromofluorobenzene	122	85	120	*

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW26SW(20-20.5)250416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:28
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 20:18
Collect Date:	04/25/2016 11:45	**Dilution:**	1	**File ID:**	9M974043
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.9	U	25.9	12.9	6.47
Benzene	71-43-2	1.29	U	6.47	1.29	0.647
Bromobenzene	108-86-1	1.29	U	6.47	1.29	0.647
Bromochloromethane	74-97-5	2.58	U	6.47	2.58	1.29
Bromodichloromethane	75-27-4	1.29	U	6.47	1.29	0.647
Bromoform	75-25-2	1.29	U	6.47	1.29	0.647
Bromomethane	74-83-9	2.58	U	6.47	2.58	1.29
2-Butanone	78-93-3	6.46	U	12.9	6.46	3.23
n-Butylbenzene	104-51-8	1.29	U	6.47	1.29	0.647
sec-Butylbenzene	135-98-8	1.29	U	6.47	1.29	0.647
tert-Butylbenzene	98-06-6	1.29	U	6.47	1.29	0.647
Carbon disulfide	75-15-0	1.29	U	6.47	1.29	0.647
Carbon tetrachloride	56-23-5	1.29	U	6.47	1.29	0.647
Chlorobenzene	108-90-7	1.29	U	6.47	1.29	0.647
Chlorodibromomethane	124-48-1	1.29	U	6.47	1.29	0.647
Chloroethane	75-00-3	2.58	U	6.47	2.58	1.29
Chloroform	67-66-3	1.29	U	6.47	1.29	0.647
Chloromethane	74-87-3	5.18	U	12.9	5.18	2.59
2-Chlorotoluene	95-49-8	1.29	Q	6.47	1.29	0.647
4-Chlorotoluene	106-43-4	1.29	U	6.47	1.29	0.647
1,2-Dibromo-3-chloropropane	96-12-8	5.18	U	12.9	5.18	2.59
1,2-Dibromoethane	106-93-4	1.29	U	6.47	1.29	0.647
Dibromomethane	74-95-3	1.29	U	6.47	1.29	0.647
1,2-Dichlorobenzene	95-50-1	1.29	U	6.47	1.29	0.647
1,3-Dichlorobenzene	541-73-1	1.29	U	6.47	1.29	0.647
1,4-Dichlorobenzene	106-46-7	1.29	U	6.47	1.29	0.647
Dichlorodifluoromethane	75-71-8	2.58	U	6.47	2.58	1.29
1,1-Dichloroethane	75-34-3	2.58	U	6.47	2.58	1.29
1,2-Dichloroethane	107-06-2	1.29	U	6.47	1.29	0.647
1,1-Dichloroethene	75-35-4	1.29	U	6.47	1.29	0.647

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.29	U	6.47	1.29	0.647
trans-1,2-Dichloroethene	156-60-5	1.29	U	6.47	1.29	0.647
1,2-Dichloropropane	78-87-5	1.29	U	6.47	1.29	0.647
1,3-Dichloropropane	142-28-9	1.29	U	6.47	1.29	0.647
2,2-Dichloropropane	594-20-7	1.29	U	6.47	1.29	0.647
cis-1,3-Dichloropropene	10061-01-5	1.29	U	6.47	1.29	0.647
trans-1,3-Dichloropropene	10061-02-6	1.29	U	6.47	1.29	0.647
1,1-Dichloropropene	563-58-6	1.29	U	6.47	1.29	0.647
Ethylbenzene	100-41-4	1.29	U	6.47	1.29	0.647
2-Hexanone	591-78-6	6.46	U	12.9	6.46	3.23
Hexachlorobutadiene	87-68-3	1.29	U	6.47	1.29	0.647
Isopropylbenzene	98-82-8	1.29	U	6.47	1.29	0.647
p-Isopropyltoluene	99-87-6	1.29	U	6.47	1.29	0.647
4-Methyl-2-pentanone	108-10-1	6.46	U	12.9	6.46	3.23
Methylene chloride	75-09-2	2.58	U	6.47	2.58	1.29
Naphthalene	91-20-3	1.29	Q	6.47	1.29	0.647
n-Propylbenzene	103-65-1	1.29	U	6.47	1.29	0.647
Styrene	100-42-5	1.29	U	6.47	1.29	0.647
1,1,1,2-Tetrachloroethane	630-20-6	1.29	U	6.47	1.29	0.647
1,1,2,2-Tetrachloroethane	79-34-5	1.29	U	6.47	1.29	0.647
Tetrachloroethene	127-18-4	1.29	U	6.47	1.29	0.647
Toluene	108-88-3	1.29	U	6.47	1.29	0.647
1,2,3-Trichlorobenzene	87-61-6	1.29	U	6.47	1.29	0.647
1,2,4-Trichlorobenzene	120-82-1	1.29	U	6.47	1.29	0.647
1,1,1-Trichloroethane	71-55-6	1.29	U	6.47	1.29	0.647
1,1,2-Trichloroethane	79-00-5	1.29	U	6.47	1.29	0.647
Trichloroethene	79-01-6	1.29	U	6.47	1.29	0.647
Trichlorofluoromethane	75-69-4	2.58	U	6.47	2.58	1.29
1,2,3-Trichloropropane	96-18-4	2.58	Q	6.47	2.58	1.29
1,2,4-Trimethylbenzene	95-63-6	1.29	Q	6.47	1.29	0.647
1,3,5-Trimethylbenzene	108-67-8	1.29	U	6.47	1.29	0.647
Vinyl chloride	75-01-4	2.58	U	6.47	2.58	1.29
o-Xylene	95-47-6	1.29	U	6.47	1.29	0.647
m-,p-Xylene	179601-23-1	1.29	U	6.47	1.29	0.647

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	80	120	
1,2-Dichloroethane-d4	105	80	120	
Toluene-d8	113	85	115	
4-Bromofluorobenzene	125	85	120	*

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW26SW(30-30.5)250416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:29
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 20:48
Collect Date:	04/25/2016 12:05	**Dilution:**	1	**File ID:**	9M974044
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	77.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.2	U	24.4	12.2	6.11
Benzene	71-43-2	1.22	U	6.11	1.22	0.611
Bromobenzene	108-86-1	1.22	U	6.11	1.22	0.611
Bromochloromethane	74-97-5	2.44	U	6.11	2.44	1.22
Bromodichloromethane	75-27-4	1.22	U	6.11	1.22	0.611
Bromoform	75-25-2	1.22	U	6.11	1.22	0.611
Bromomethane	74-83-9	2.44	U	6.11	2.44	1.22
2-Butanone	78-93-3	6.12	U	12.2	6.12	3.06
n-Butylbenzene	104-51-8	1.22	U	6.11	1.22	0.611
sec-Butylbenzene	135-98-8	1.22	U	6.11	1.22	0.611
tert-Butylbenzene	98-06-6	1.22	U	6.11	1.22	0.611
Carbon disulfide	75-15-0	1.22	U	6.11	1.22	0.611
Carbon tetrachloride	56-23-5	1.22	U	6.11	1.22	0.611
Chlorobenzene	108-90-7	1.22	U	6.11	1.22	0.611
Chlorodibromomethane	124-48-1	1.22	U	6.11	1.22	0.611
Chloroethane	75-00-3	2.44	U	6.11	2.44	1.22
Chloroform	67-66-3	1.22	U	6.11	1.22	0.611
Chloromethane	74-87-3	4.88	U	12.2	4.88	2.44
2-Chlorotoluene	95-49-8	1.22	Q	6.11	1.22	0.611
4-Chlorotoluene	106-43-4	1.22	U	6.11	1.22	0.611
1,2-Dibromo-3-chloropropane	96-12-8	4.88	U	12.2	4.88	2.44
1,2-Dibromoethane	106-93-4	1.22	U	6.11	1.22	0.611
Dibromomethane	74-95-3	1.22	U	6.11	1.22	0.611
1,2-Dichlorobenzene	95-50-1	1.22	U	6.11	1.22	0.611
1,3-Dichlorobenzene	541-73-1	1.22	U	6.11	1.22	0.611
1,4-Dichlorobenzene	106-46-7	1.22	U	6.11	1.22	0.611
Dichlorodifluoromethane	75-71-8	2.44	U	6.11	2.44	1.22
1,1-Dichloroethane	75-34-3	2.44	U	6.11	2.44	1.22
1,2-Dichloroethane	107-06-2	1.22	U	6.11	1.22	0.611
1,1-Dichloroethene	75-35-4	1.22	U	6.11	1.22	0.611

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.22	U	6.11	1.22	0.611
trans-1,2-Dichloroethene	156-60-5	1.22	U	6.11	1.22	0.611
1,2-Dichloropropane	78-87-5	1.22	U	6.11	1.22	0.611
1,3-Dichloropropane	142-28-9	1.22	U	6.11	1.22	0.611
2,2-Dichloropropane	594-20-7	1.22	U	6.11	1.22	0.611
cis-1,3-Dichloropropene	10061-01-5	1.22	U	6.11	1.22	0.611
trans-1,3-Dichloropropene	10061-02-6	1.22	U	6.11	1.22	0.611
1,1-Dichloropropene	563-58-6	1.22	U	6.11	1.22	0.611
Ethylbenzene	100-41-4	1.22	U	6.11	1.22	0.611
2-Hexanone	591-78-6	6.12	U	12.2	6.12	3.06
Hexachlorobutadiene	87-68-3	1.22	U	6.11	1.22	0.611
Isopropylbenzene	98-82-8	1.22	U	6.11	1.22	0.611
p-Isopropyltoluene	99-87-6	1.22	U	6.11	1.22	0.611
4-Methyl-2-pentanone	108-10-1	6.12	U	12.2	6.12	3.06
Methylene chloride	75-09-2	2.44	U	6.11	2.44	1.22
Naphthalene	91-20-3	1.22	Q	6.11	1.22	0.611
n-Propylbenzene	103-65-1	1.22	U	6.11	1.22	0.611
Styrene	100-42-5	1.22	U	6.11	1.22	0.611
1,1,1,2-Tetrachloroethane	630-20-6	1.22	U	6.11	1.22	0.611
1,1,2,2-Tetrachloroethane	79-34-5	1.22	U	6.11	1.22	0.611
Tetrachloroethene	127-18-4	1.22	U	6.11	1.22	0.611
Toluene	108-88-3	1.22	U	6.11	1.22	0.611
1,2,3-Trichlorobenzene	87-61-6	1.22	U	6.11	1.22	0.611
1,2,4-Trichlorobenzene	120-82-1	1.22	U	6.11	1.22	0.611
1,1,1-Trichloroethane	71-55-6	1.22	U	6.11	1.22	0.611
1,1,2-Trichloroethane	79-00-5	1.22	U	6.11	1.22	0.611
Trichloroethene	79-01-6	1.22	U	6.11	1.22	0.611
Trichlorofluoromethane	75-69-4	2.44	U	6.11	2.44	1.22
1,2,3-Trichloropropane	96-18-4	2.44	Q	6.11	2.44	1.22
1,2,4-Trimethylbenzene	95-63-6	1.22	Q	6.11	1.22	0.611
1,3,5-Trimethylbenzene	108-67-8	1.22	U	6.11	1.22	0.611
Vinyl chloride	75-01-4	2.44	U	6.11	2.44	1.22
o-Xylene	95-47-6	1.22	U	6.11	1.22	0.611
m-,p-Xylene	179601-23-1	1.22	U	6.11	1.22	0.611

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	80	120	
1,2-Dichloroethane-d4	109	80	120	
Toluene-d8	112	85	115	
4-Bromofluorobenzene	120	85	120	

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-13	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW26SW(40-40.5)250416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:29
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 21:19
Collect Date:	04/25/2016 12:10	**Dilution:**	1	**File ID:**	9M974045
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	71.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	14.8	U	29.7	14.8	7.42
Benzene	71-43-2	1.48	U	7.42	1.48	0.742
Bromobenzene	108-86-1	1.48	U	7.42	1.48	0.742
Bromochloromethane	74-97-5	2.96	U	7.42	2.96	1.48
Bromodichloromethane	75-27-4	1.48	U	7.42	1.48	0.742
Bromoform	75-25-2	1.48	U	7.42	1.48	0.742
Bromomethane	74-83-9	2.96	U	7.42	2.96	1.48
2-Butanone	78-93-3	7.42	U	14.8	7.42	3.71
n-Butylbenzene	104-51-8	1.48	U	7.42	1.48	0.742
sec-Butylbenzene	135-98-8	1.48	U	7.42	1.48	0.742
tert-Butylbenzene	98-06-6	1.48	U	7.42	1.48	0.742
Carbon disulfide	75-15-0	1.48	U	7.42	1.48	0.742
Carbon tetrachloride	56-23-5	1.48	U	7.42	1.48	0.742
Chlorobenzene	108-90-7	1.48	U	7.42	1.48	0.742
Chlorodibromomethane	124-48-1	1.48	U	7.42	1.48	0.742
Chloroethane	75-00-3	2.96	U	7.42	2.96	1.48
Chloroform	67-66-3	1.48	U	7.42	1.48	0.742
Chloromethane	74-87-3	5.94	U	14.8	5.94	2.97
2-Chlorotoluene	95-49-8	1.48	Q	7.42	1.48	0.742
4-Chlorotoluene	106-43-4	1.48	U	7.42	1.48	0.742
1,2-Dibromo-3-chloropropane	96-12-8	5.94	U	14.8	5.94	2.97
1,2-Dibromoethane	106-93-4	1.48	U	7.42	1.48	0.742
Dibromomethane	74-95-3	1.48	U	7.42	1.48	0.742
1,2-Dichlorobenzene	95-50-1	1.48	U	7.42	1.48	0.742
1,3-Dichlorobenzene	541-73-1	1.48	U	7.42	1.48	0.742
1,4-Dichlorobenzene	106-46-7	1.48	U	7.42	1.48	0.742
Dichlorodifluoromethane	75-71-8	2.96	U	7.42	2.96	1.48
1,1-Dichloroethane	75-34-3	2.96	U	7.42	2.96	1.48
1,2-Dichloroethane	107-06-2	1.48	U	7.42	1.48	0.742
1,1-Dichloroethene	75-35-4	1.48	U	7.42	1.48	0.742

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.48	U	7.42	1.48	0.742
trans-1,2-Dichloroethene	156-60-5	1.48	U	7.42	1.48	0.742
1,2-Dichloropropane	78-87-5	1.48	U	7.42	1.48	0.742
1,3-Dichloropropane	142-28-9	1.48	U	7.42	1.48	0.742
2,2-Dichloropropane	594-20-7	1.48	U	7.42	1.48	0.742
cis-1,3-Dichloropropene	10061-01-5	1.48	U	7.42	1.48	0.742
trans-1,3-Dichloropropene	10061-02-6	1.48	U	7.42	1.48	0.742
1,1-Dichloropropene	563-58-6	1.48	U	7.42	1.48	0.742
Ethylbenzene	100-41-4	1.48	U	7.42	1.48	0.742
2-Hexanone	591-78-6	7.42	U	14.8	7.42	3.71
Hexachlorobutadiene	87-68-3	1.48	U	7.42	1.48	0.742
Isopropylbenzene	98-82-8	1.48	U	7.42	1.48	0.742
p-Isopropyltoluene	99-87-6	1.48	U	7.42	1.48	0.742
4-Methyl-2-pentanone	108-10-1	7.42	U	14.8	7.42	3.71
Methylene chloride	75-09-2	2.96	U	7.42	2.96	1.48
Naphthalene	91-20-3	1.48	Q	7.42	1.48	0.742
n-Propylbenzene	103-65-1	1.48	U	7.42	1.48	0.742
Styrene	100-42-5	1.48	U	7.42	1.48	0.742
1,1,1,2-Tetrachloroethane	630-20-6	1.48	U	7.42	1.48	0.742
1,1,2,2-Tetrachloroethane	79-34-5	1.48	U	7.42	1.48	0.742
Tetrachloroethene	127-18-4	1.48	U	7.42	1.48	0.742
Toluene	108-88-3	1.48	U	7.42	1.48	0.742
1,2,3-Trichlorobenzene	87-61-6	1.48	U	7.42	1.48	0.742
1,2,4-Trichlorobenzene	120-82-1	1.48	U	7.42	1.48	0.742
1,1,1-Trichloroethane	71-55-6	1.48	U	7.42	1.48	0.742
1,1,2-Trichloroethane	79-00-5	1.48	U	7.42	1.48	0.742
Trichloroethene	79-01-6	1.48	U	7.42	1.48	0.742
Trichlorofluoromethane	75-69-4	2.96	U	7.42	2.96	1.48
1,2,3-Trichloropropane	96-18-4	2.96	Q	7.42	2.96	1.48
1,2,4-Trimethylbenzene	95-63-6	1.48	Q	7.42	1.48	0.742
1,3,5-Trimethylbenzene	108-67-8	1.48	U	7.42	1.48	0.742
Vinyl chloride	75-01-4	2.96	U	7.42	2.96	1.48
o-Xylene	95-47-6	1.48	U	7.42	1.48	0.742
m-,p-Xylene	179601-23-1	1.48	U	7.42	1.48	0.742

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	80	120	
1,2-Dichloroethane-d4	106	80	120	
Toluene-d8	115	85	115	
4-Bromofluorobenzene	126	85	120	*

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-14	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW26SW(49.5-50)250416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:30
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG566765	**Analyst:**	ADC	**Run Date:**	04/28/2016 21:49
Collect Date:	04/25/2016 12:30	**Dilution:**	1	**File ID:**	9M974046
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	76.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.3	U	26.6	13.3	6.65
Benzene	71-43-2	1.33	U	6.65	1.33	0.665
Bromobenzene	108-86-1	1.33	U	6.65	1.33	0.665
Bromochloromethane	74-97-5	2.66	U	6.65	2.66	1.33
Bromodichloromethane	75-27-4	1.33	U	6.65	1.33	0.665
Bromoform	75-25-2	1.33	U	6.65	1.33	0.665
Bromomethane	74-83-9	2.66	U	6.65	2.66	1.33
2-Butanone	78-93-3	6.64	U	13.3	6.64	3.32
n-Butylbenzene	104-51-8	1.33	U	6.65	1.33	0.665
sec-Butylbenzene	135-98-8	1.33	U	6.65	1.33	0.665
tert-Butylbenzene	98-06-6	1.33	U	6.65	1.33	0.665
Carbon disulfide	75-15-0	1.33	U	6.65	1.33	0.665
Carbon tetrachloride	56-23-5	1.33	U	6.65	1.33	0.665
Chlorobenzene	108-90-7	1.33	U	6.65	1.33	0.665
Chlorodibromomethane	124-48-1	1.33	U	6.65	1.33	0.665
Chloroethane	75-00-3	2.66	U	6.65	2.66	1.33
Chloroform	67-66-3	1.33	U	6.65	1.33	0.665
Chloromethane	74-87-3	5.32	U	13.3	5.32	2.66
2-Chlorotoluene	95-49-8	1.33	Q	6.65	1.33	0.665
4-Chlorotoluene	106-43-4	1.33	U	6.65	1.33	0.665
1,2-Dibromo-3-chloropropane	96-12-8	5.32	U	13.3	5.32	2.66
1,2-Dibromoethane	106-93-4	1.33	U	6.65	1.33	0.665
Dibromomethane	74-95-3	1.33	U	6.65	1.33	0.665
1,2-Dichlorobenzene	95-50-1	1.33	U	6.65	1.33	0.665
1,3-Dichlorobenzene	541-73-1	1.33	U	6.65	1.33	0.665
1,4-Dichlorobenzene	106-46-7	1.33	U	6.65	1.33	0.665
Dichlorodifluoromethane	75-71-8	2.66	U	6.65	2.66	1.33
1,1-Dichloroethane	75-34-3	2.66	U	6.65	2.66	1.33
1,2-Dichloroethane	107-06-2	1.33	U	6.65	1.33	0.665
1,1-Dichloroethene	75-35-4	1.33	U	6.65	1.33	0.665

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Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.33	U	6.65	1.33	0.665
trans-1,2-Dichloroethene	156-60-5	1.33	U	6.65	1.33	0.665
1,2-Dichloropropane	78-87-5	1.33	U	6.65	1.33	0.665
1,3-Dichloropropane	142-28-9	1.33	U	6.65	1.33	0.665
2,2-Dichloropropane	594-20-7	1.33	U	6.65	1.33	0.665
cis-1,3-Dichloropropene	10061-01-5	1.33	U	6.65	1.33	0.665
trans-1,3-Dichloropropene	10061-02-6	1.33	U	6.65	1.33	0.665
1,1-Dichloropropene	563-58-6	1.33	U	6.65	1.33	0.665
Ethylbenzene	100-41-4	1.33	U	6.65	1.33	0.665
2-Hexanone	591-78-6	6.64	U	13.3	6.64	3.32
Hexachlorobutadiene	87-68-3	1.33	U	6.65	1.33	0.665
Isopropylbenzene	98-82-8	1.33	U	6.65	1.33	0.665
p-Isopropyltoluene	99-87-6	1.33	U	6.65	1.33	0.665
4-Methyl-2-pentanone	108-10-1	6.64	U	13.3	6.64	3.32
Methylene chloride	75-09-2	2.66	U	6.65	2.66	1.33
Naphthalene	91-20-3	1.33	Q	6.65	1.33	0.665
n-Propylbenzene	103-65-1	1.33	U	6.65	1.33	0.665
Styrene	100-42-5	1.33	U	6.65	1.33	0.665
1,1,1,2-Tetrachloroethane	630-20-6	1.33	U	6.65	1.33	0.665
1,1,2,2-Tetrachloroethane	79-34-5	1.33	U	6.65	1.33	0.665
Tetrachloroethene	127-18-4	1.33	U	6.65	1.33	0.665
Toluene	108-88-3	1.33	U	6.65	1.33	0.665
1,2,3-Trichlorobenzene	87-61-6	1.33	U	6.65	1.33	0.665
1,2,4-Trichlorobenzene	120-82-1	1.33	U	6.65	1.33	0.665
1,1,1-Trichloroethane	71-55-6	1.33	U	6.65	1.33	0.665
1,1,2-Trichloroethane	79-00-5	1.33	U	6.65	1.33	0.665
Trichloroethene	79-01-6	1.33	U	6.65	1.33	0.665
Trichlorofluoromethane	75-69-4	2.66	U	6.65	2.66	1.33
1,2,3-Trichloropropane	96-18-4	2.66	Q	6.65	2.66	1.33
1,2,4-Trimethylbenzene	95-63-6	1.33	Q	6.65	1.33	0.665
1,3,5-Trimethylbenzene	108-67-8	1.33	U	6.65	1.33	0.665
Vinyl chloride	75-01-4	2.66	U	6.65	2.66	1.33
o-Xylene	95-47-6	1.33	U	6.65	1.33	0.665
m-,p-Xylene	179601-23-1	1.33	U	6.65	1.33	0.665

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	80	120	
1,2-Dichloroethane-d4	106	80	120	
Toluene-d8	113	85	115	
4-Bromofluorobenzene	125	85	120	*

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.
VOA Preparation/Preservation/Extraction Log

Batch #: WG566882
Method: 5030B/5030C/5035
Product: 826-SPE

Analyst: AWE
Run Date: 04/29/2016 10:11
Purge and trap methanol COA18540
Purified Lab Sand Lot #COA18552

SAMPLE #	Fraction	Collected	Preserved	PCT-S	Tare Wt	Total Wt	Sample Wt	Water	MeOH	Vt	Comments
L16041344-01	A	04/23/16 09:35	04/29/16 10:11	84.4			4.87	5		5	
L16041368-01	A	04/22/16 10:30	04/29/16 09:52	100			4.69		10	10	
L16041579-01	A	04/27/16 14:20	04/29/16 18:37	666	36.95	50.37	13.42		10		
L16041579-02	A	04/27/16 14:20	04/29/16 18:37	666	37.03	48.62	11.60		10		
L16041579-03	A	04/27/16 14:20	04/29/16 18:37	666	36.80	43.04	6.24		10		
L16041580-01	A	04/26/16 09:05	04/29/16 18:37	666			4.75		10		
L16041580-02	A	04/26/16 10:00	04/29/16 18:37	666			5.18		10		
L16041580-03	A	04/26/16 10:35	04/29/16 18:37	666			4.57		10		
L16041580-04	A	04/26/16 11:15	04/29/16 18:37	666			5.05		10		
L16041580-05	A	04/26/16 11:55	04/29/16 18:37	666			5.01		10		
L16041580-06	A	04/26/16 14:15	04/29/16 18:37	666			5.09		10		
L16041580-07	A	04/26/16 14:15	04/29/16 18:16	666			5.00		10		
L16041580-08	A	04/26/16 14:15	04/29/16 18:37	666			4.72		10		
L16041580-09	A	04/26/16 15:00	04/29/16 18:37	666			4.88		10		
L16041580-10	A	04/26/16 15:00	04/29/16 18:37	666			4.58		10		
L16041580-11	A	04/26/16 15:45	04/29/16 18:37	666			4.81		10		
L16041580-12	A	04/26/16 16:45	04/29/16 18:37	666			5.08		10		
L16041580-13	A	04/26/16 17:00	04/29/16 18:37	666			4.60		10		
L16041582-01	A	04/27/16 14:15	04/29/16 18:37	666			5.48		10		
L16041582-02	A	04/27/16 14:40	04/29/16 18:37	666			5.23		10		
L16041582-03	A	04/27/16 14:45	04/29/16 18:37	666			4.96		10		
L16041582-04	A	04/27/16 14:50	04/29/16 18:37	666			4.76		10		
L16041582-05	A	04/27/16 16:15	04/29/16 18:37	666			4.93		10		
L16041582-06	A	04/27/16 17:35	04/29/16 18:37	666			5.05		10		
L16041582-07	A	04/27/16 17:45	04/29/16 18:37	666			4.89		10		
L16041606-01	A	04/28/16 08:30	04/29/16 18:37	666			5.25		10		
WG566882-01	A		04/29/16 09:52	100			4.69		10	10	
WG566882-02	A		04/29/16 09:53	100			4.84		10	10	

Comments:
1 = improperly sealed cap
2 = preserved out of hold
3 = effervesced
4 = preserved with NaHSO4
5 = preserved by freezing
6 = preserved in field

Analyst: Andrew Casey

VOA_EXT - Modified 05/22/2008
PDF ID: 4740792
Report generated: 04/29/2016 18:37

Microbac Laboratories Inc.
VOA Preparation/Preservation/Extraction Log

Batch #: WG566711
Method: 5030B/5030C/5035
Product: 8260

Analyst: AWE
Run Date: 04/28/2016 09:31
Purge and trap methanol COA18540
Purified Lab Sand Lot # COA18552

SAMPLE #	Fraction	Collected	Preserved	PCT-S	Tare Wt	Total Wt	Sample Wt	Water	MeOH	Vt	Comments
L16041344-01	A	04/23/16 09:35	04/28/16 09:31	84.4			0.96	5		5	
L16041344-02	A	04/23/16 10:05	04/28/16 09:20	81.9			4.66	5		5	
L16041344-03	A	04/23/16 10:10	04/28/16 09:21	77.7			4.85	5		5	
L16041344-04	A	04/23/16 13:30	04/28/16 09:21	84.0			4.54	5		5	
L16041344-05	A	04/23/16 13:30	04/28/16 09:22	85.1			4.71	5		5	
L16041344-06	A	04/23/16 14:00	04/28/16 09:23	82.3			4.76	5		5	
L16041344-07	A	04/23/16 14:05	04/28/16 09:25	77.2			5.36	5		5	
L16041344-08	A	04/25/16 09:35	04/28/16 09:26	84.1			4.95	5		5	
L16041344-09	A	04/25/16 09:50	04/28/16 09:27	78.8			4.58	5		5	
L16041344-10	A	04/25/16 10:45	04/28/16 09:28	78.9			5.33	5		5	
L16041344-11	A	04/25/16 11:45	04/28/16 09:28	80.9			4.78	5		5	
L16041344-12	A	04/25/16 12:05	04/28/16 09:29	77.9			5.25	5		5	
L16041344-13	A	04/25/16 12:10	04/28/16 09:29	71.8			4.69	5		5	
L16041344-14	A	04/25/16 12:30	04/28/16 09:30	76.0			4.95	5		5	
L16041363-01	A	04/21/16 17:00	04/28/16 09:33	83.9			4.90	5		5	
L16041363-02	A	04/21/16 17:30	04/28/16 09:33	79.9			5.36	5		5	
L16041363-03	A	04/22/16 09:00	04/28/16 09:34	80.0			4.93	5		5	
L16041363-04	A	04/22/16 09:00	04/28/16 09:35	79.4			4.92	5		5	
L16041363-05	A	04/22/16 09:05	04/28/16 09:36	80.8			5.35	5		5	
L16041363-06	A	04/21/16 18:00	04/28/16 09:36	79.1			4.64	5		5	
L16041363-07	A	04/22/16 11:15	04/28/16 09:37	75.9			5.06	5		5	
L16041363-08	A	04/22/16 11:15	04/28/16 09:38	75.9			4.95	5		5	
L16041363-09	A	04/22/16 11:15	04/28/16 09:39	75.9			4.85	5		5	
L16041363-10	A	04/22/16 11:11	04/28/16 09:39	80.5			4.89	5		5	
WG566711-01	A		04/28/16 12:59	81.9			4.66	5		5	
WG566711-02	A		04/28/16 13:01	81.9			4.93	5		5	
WG566711-03	A		04/28/16 13:02	81.9			4.76	5		5	
WG566711-04	A		04/28/16 12:59	83.9			4.90	5		5	
WG566711-05	A		04/28/16 13:03	83.9			4.82	5		5	
WG566711-06	A		04/28/16 13:04	83.9			4.81	5		5	

Comments:
1 = improperly sealed cap
2 = preserved out of hold
3 = effervesced
4 = preserved with NaHSO4
5 = preserved by freezing
6 = preserved in field

Analyst: Andrew Casey

VOA_EXT - Modified 05/22/2008
PDF ID: 4738635
Report generated: 04/28/2016 13:26

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 012516
Analyst1: ADC Analyst2: NA
Method: 8260B/8260C SOP: MSV01(-C) Rev: 23 (2)
Method: 5030B/5030C/5035 SOP: PAT01 Rev: 18
Method: 624 SOP: MSV10 Rev: 12
Maintenance Log ID:

Internal Standard: STD74414 Surrogate Standard: STD74126
CCV: STD74488 LCS: STD74459 MS/MSD: STD74459

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG555000 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M972470	WG555000-01 BFB 50ng A9	NA	7	1	STD74202	01/25/16 10:27
9M972471	RINSE	NA	7	1		01/25/16 10:52
9M972472	WG555000-02 5ug/Kg STD A9	NA	7	1	STD74406	01/25/16 11:22
9M972473	WG555000-03 20ug/Kg STD A9	NA	7	1	STD74406	01/25/16 11:52
9M972474	WG555000-04 50ug/Kg STD A9	NA	7	1	STD74406	01/25/16 12:23
9M972475	WG555000-05 100ug/Kg STD A9	NA	7	1	STD74406	01/25/16 12:53
9M972476	WG555000-06 200ug/Kg STD A9	NA	7	1	STD74406	01/25/16 13:23
9M972477	WG555000-07 300ug/Kg STD A9	NA	7	1	STD74406	01/25/16 13:54
9M972478	WG555000-08 400ug/Kg STD A9	NA	7	1	STD74406	01/25/16 14:25
9M972479	WG555000-09 500ug/Kg STD A9	NA	7	1	STD74406	01/25/16 14:56
9M972480	RINSE	NA	7	1		01/25/16 15:26
9M972481	WG555000-10 100ug/Kg ICV A9	NA	7	1	STD74461	01/25/16 15:56
9M972482	RINSE	NA	7	1		01/25/16 16:28

Approved: January 29, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 040616
Analyst1: ADC Analyst2: NA
Method: 8260 SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD75190 Surrogate Standard: STD75211
CCV: STD75238 LCS: STD75404 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG563259 (ICAL)

Comments: Reanalyzed 100, 200, and 300 ug/kg points.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M973592	WG563259-01 BFB 50ng 8260	NA	7	1	STD75485	04/06/16 09:33
9M973593	RINSE	NA	7	1	STD75238	04/06/16 09:58
9M973594	WG563259-02 50ug/L CCV STD 8260	NA	7	1	STD75238	04/06/16 10:29
9M973595	RINSE	NA	7	1		04/06/16 11:00
9M973596	WG563259-03 0.5ug/kg STD 8260	NA	7	1	STD75238	04/06/16 11:31
9M973597	WG563259-04 1.0ug/kg STD 8260	NA	7	1	STD75238	04/06/16 12:02
9M973598	WG563259-05 2.0ug/kg STD 8260	NA	7	1	STD75238	04/06/16 12:32
9M973599	WG563259-06 5.0ug/kg STD 8260	NA	7	1	STD75238	04/06/16 13:03
9M973600	WG563259-07 20.0ug/kg STD 8260	NA	7	1	STD75238	04/06/16 13:33
9M973601	WG563259-08 100.0ug/kg STD 8260	NA	7	1	STD75238	04/06/16 14:04
9M973602	WG563259-09 200.0ug/kg STD 8260	NA	7	1	STD75238	04/06/16 14:35
9M973603	WG563259-10 300.0ug/kg STD 8260	NA	7	1	STD75238	04/06/16 15:05
9M973604	RINSE	NA	7	1	STD75238	04/06/16 15:36
9M973605	WG563259-08 100.0ug/kg STD 8260	NA	7	1	STD75238	04/06/16 16:15
9M973606	WG563259-09 200.0ug/kg STD 8260	NA	7	1	STD75238	04/06/16 16:46
9M973607	WG563259-10 300.0ug/kg STD 8260	NA	7	1	STD75238	04/06/16 17:16
9M973608	RINSE	NA	7	1		04/06/16 17:47
9M973609	WG563259-11 50.0ug/kg ALTSRC 8260	NA	7	1	STD75404	04/06/16 18:18

Approved: April 08, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 042816
Analyst1: ADC Analyst2: NA
Method: 8260 SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD75711 Surrogate Standard: STD75710
CCV: STD75740 LCS: STD75739 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG566765

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M974027	WG566763-01 BFB 50ng 8260	NA	7	1	STD75485	04/28/16 12:17
9M974028	WG566763-02 50ug/kg CCV STD 8260	NA	7	1	STD75238	04/28/16 12:42
9M974029	WG566763-02 50ug/kg CCV STD 8260	NA	7	1	STD75238	04/28/16 13:13
9M974030	WGXXXXXX-01 A9FOO 100ug/kg	NA	7	1	STDXXXXX	04/28/16 13:43
9M974031	WG566765-01 BLK 8260	NA	7	1		04/28/16 14:14
9M974032	WG566765-02 20ug/kg LCS	NA	7	1	STD75744	04/28/16 14:45
9M974033	RINSE	NA	7	1		04/28/16 15:16
9M974034	WG566711-01 L16041344-02 A 8260 4.66g	NA	7	1		04/28/16 15:46
9M974035	L16041344-03 A 8260 4.85g	NA	7	1		04/28/16 16:16
9M974036	L16041344-04 A 8260 4.54g	NA	7	1		04/28/16 16:47
9M974037	L16041344-05 A 8260 4.71g	NA	7	1		04/28/16 17:17
9M974038	L16041344-06 A 8260 4.76g	NA	7	1		04/28/16 17:47
9M974039	L16041344-07 A 8260 5.36g	NA	7	1		04/28/16 18:17
9M974040	L16041344-08 A 8260 4.95g	NA	7	1		04/28/16 18:47
9M974041	L16041344-09 A 8260 4.58g	NA	7	1		04/28/16 19:18
9M974042	L16041344-10 A 8260 5.33g	NA	7	1		04/28/16 19:48
9M974043	L16041344-11 A 8260 4.78g	NA	7	1		04/28/16 20:18
9M974044	L16041344-12 A 8260 5.25g	NA	7	1		04/28/16 20:48
9M974045	L16041344-13 A 8260 4.69g	NA	7	1		04/28/16 21:19
9M974046	L16041344-14 A 8260 4.95g	NA	7	1		04/28/16 21:49
9M974047	L16041344-01 A 8260 0.96g	NA	7	1		04/28/16 22:20
9M974048	WG566711-02 A MS 8260 4.93g	NA	7	1		04/28/16 22:51
9M974049	WG566711-03 A MSD 8260 4.76g	NA	7	1		04/28/16 23:20
9M974050	RINSE	NA	7	1		04/28/16 23:51
9M974051	RINSE	NA	7	1		04/29/16 00:23

Comments

Seq.	Rerun	Dil.	Reason	Analytes
21	X		Analyzed too dilute	
File ID: 9M974047				
	L16041344-01			

Approved: May 06, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 043016
Analyst1: ADC Analyst2: NA
Method: 8260 SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD75711 Surrogate Standard: STD75710
CCV: STD75824 LCS: STD75739 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG567003

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M974065	WG567052-01 BFB 50ng 8260	NA	7	1	STD75485	04/30/16 12:43
9M974066	WG567052-02 50ug/kg CCV STD 8260	NA	7	1	STD75238	04/30/16 13:10
9M974067	WG567052-02 50ug/kg CCV STD 8260	NA	7	1	STD75238	04/30/16 13:43
9M974068	WGXXXXXX-01 A9FOO 100ug/kg	NA	7	1	STDXXXXX	04/30/16 14:15
9M974069	WG567003-01 BLK 8260	NA	7	1		04/30/16 14:45
9M974070	L16040796-06 A 826-REF-BLK	NA	7	1		04/30/16 15:16
9M974071	L16040796-07 A 826-REF-BLK	NA	7	1		04/30/16 15:46
9M974072	L16040796-08 A 826-REF-BLK	NA	7	1		04/30/16 16:16
9M974073	L16040796-09 A 826-REF-BLK	NA	7	1		04/30/16 16:47
9M974074	WG567003-02 20ug/kg LCS 8260	NA	7	1	STD75739	04/30/16 17:17
9M974075	RINSE	NA	7	1		04/30/16 17:48
9M974076	L16041344-01 B 8260 4.87g	NA	7	1		04/30/16 18:18
9M974077	L16041363-01 A 8260 4.90g	NA	7	1		04/30/16 18:48
9M974078	L16041363-02 A 8260 5.36g	NA	7	1		04/30/16 19:18
9M974079	L16041363-03 A 8260 4.93g	NA	7	1		04/30/16 19:48
9M974080	L16041363-04 A 8260 4.92g	NA	7	1		04/30/16 20:18
9M974081	L16041363-05 A 8260 5.35g	NA	7	1		04/30/16 20:48
9M974082	L16041363-06 A 8260 4.64g	NA	7	1		04/30/16 21:19
9M974083	L16041363-07 A RS 8260 5.06g	NA	7	1		04/30/16 21:49
9M974084	L16041363-10 A 8260 4.89g	NA	7	1		04/30/16 22:19
9M974085	L16041363-08 A MS 8260 4.95g	NA	7	1		04/30/16 22:50
9M974086	L16041363-09 A MSD 8260 4.85g	NA	7	1		04/30/16 23:20
9M974087	RINSE	NA	7	1		04/30/16 23:50
9M974088	H20	NA	7	1		05/02/16 10:06
9M974089	H20 W/ MeOH	NA	7	1		05/02/16 10:36
9M974090	H20	NA	7	1		05/02/16 11:06
9M974091	SAND	NA	7	1		05/02/16 11:37
9M974092	SAND W/MeOH	NA	7	1		05/02/16 12:08

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
File ID: 9M974066				

Approved: May 06, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 043016

Analyst1: ADC Analyst2: NA

Method: 8260 SOP: MSV01 Rev: 23

Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD75711 Surrogate Standard: STD75710

CCV: STD75824 LCS: STD75739 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG567003

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			WG567052-02 fails VC. RR.	

Approved: May 06, 2016

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 25-JAN-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 72995
Analytical Workgroups: WG555000

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
28-JAN-2016

Secondary Reviewer:
29-JAN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JAN-29-2016 16:00:23

Microbac Laboratories Inc.

Data Checklist

Date: 06-APR-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: WG563259
Runlog ID: 74305
Analytical Workgroups:

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
08-APR-2016

Secondary Reviewer:
08-APR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: APR-08-2016 15:40:41

Microbac Laboratories Inc.

Data Checklist

Date: 28-APR-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 74802
Analytical Workgroups: WG566765

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
29-APR-2016

Secondary Reviewer:
06-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-06-2016 10:33:44

Microbac Laboratories Inc.

Data Checklist

Date: 30-APR-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 74887
Analytical Workgroups: WG567003

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
04-MAY-2016

Secondary Reviewer:
06-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-06-2016 11:05:37

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG566765

Login Number: L16041344

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW22R(10-10.5)23041	02	04/23/16					04/28/2016	5	14		04/28/16	5.2	14	
18CPTMW22R(15-15.5)23041	03	04/23/16					04/28/2016	5	14		04/28/16	5.3	14	
18CPTMW26(5-5.5)230416	04	04/23/16					04/28/2016	4.8	14		04/28/16	5.1	14	
18CPTMW26(5-5.5)230416DU	05	04/23/16					04/28/2016	4.8	14		04/28/16	5.2	14	
18CPTMW26(10-10.5)230416	06	04/23/16					04/28/2016	4.8	14		04/28/16	5.2	14	
18CPTMW26(14.5-15)230416	07	04/23/16					04/28/2016	4.8	14		04/28/16	5.2	14	
18CPTMW26SW(5-5.5)250416	08	04/25/16					04/28/2016	3	14		04/28/16	3.4	14	
18CPTMW26SW(10-10.5)2504	09	04/25/16					04/28/2016	3	14		04/28/16	3.4	14	
18CPTMW26SW(15-15.5)2504	10	04/25/16					04/28/2016	2.9	14		04/28/16	3.4	14	
18CPTMW26SW(20-20.5)2504	11	04/25/16					04/28/2016	2.9	14		04/28/16	3.4	14	
18CPTMW26SW(30-30.5)2504	12	04/25/16					04/28/2016	2.9	14		04/28/16	3.4	14	
18CPTMW26SW(40-40.5)2504	13	04/25/16					04/28/2016	2.9	14		04/28/16	3.4	14	
18CPTMW26SW(49.5-50)2504	14	04/25/16					04/28/2016	2.9	14		04/28/16	3.4	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4741832
Report generated 05/10/2016 13:22

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG567003

Login Number: L16041344

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW22R(5-5.5)230416	01	04/23/16					04/29/2016	6	14		04/30/16	7.4	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4741832
Report generated 05/10/2016 13:22

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16041344
Instrument Id: HPMS9
Workgroup (AAB#): WG567003

Method: 8260
CAL ID: HPMS9 - 06-APR-16
Matrix: Soil

Sample Number	Dilution	Tag	1	2	3	4
L16041344-01	1.00	02	110	105	123	112
WG567003-01	1.00	01	108	104	124	112
WG567003-02	1.00	01	112	108	121	112

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	80	-	120
2 - Dibromofluoromethane	80	-	120
3 - 4-Bromofluorobenzene	85	-	120
4 - Toluene-d8	85	-	115

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4741840
Report generated: 05/10/2016 13:22

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16041344
Instrument Id: HPMS9
Workgroup (AAB#): WG566765

Method: 8260
CAL ID: HPMS9-06-APR-16
Matrix: Soil

Sample Number	Dilution	Tag	1	2	3	4
L16041344-02	1.00	01	109	102	119	111
L16041344-03	1.00	01	108	103	118	110
L16041344-04	1.00	01	117	104	121	110
L16041344-05	1.00	01	119	105	121	111
L16041344-06	1.00	01	119	104	120	110
L16041344-07	1.00	01	117	104	119	108
L16041344-08	1.00	01	116	103	119	109
L16041344-09	1.00	01	121	107	121	110
L16041344-10	1.00	01	106	103	122	112
L16041344-11	1.00	01	105	101	125	113
L16041344-12	1.00	01	109	104	120	112
L16041344-13	1.00	01	106	106	126	115
L16041344-14	1.00	01	106	103	125	113
WG566765-01	1.00	01	105	102	119	110
WG566765-02	1.00	01	109	107	122	111

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	80	-	120
2 - Dibromofluoromethane	80	-	120
3 - 4-Bromofluorobenzene	85	-	120
4 - Toluene-d8	85	-	115

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4741840
Report generated: 05/10/2016 13:22

METHOD BLANK SUMMARY

Login Number: L16041344
Blank File ID: 9M974031
Prep Date: 04/28/16 14:14
Analyzed Date: 04/28/16 14:14
Analyst: ADC

Work Group: WG566765
Blank Sample ID: WG566765-01
Instrument ID: HPMS9
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG566765-02	9M974032	04/28/16 14:45	01
18CPTMW22R(10-10.5)230416	L16041344-02	9M974034	04/28/16 15:46	01
18CPTMW22R(15-15.5)230416	L16041344-03	9M974035	04/28/16 16:16	01
18CPTMW26(5-5.5)230416	L16041344-04	9M974036	04/28/16 16:47	01
18CPTMW26(5-5.5)230416DUP	L16041344-05	9M974037	04/28/16 17:17	01
18CPTMW26(10-10.5)230416	L16041344-06	9M974038	04/28/16 17:47	01
18CPTMW26(14.5-15)230416	L16041344-07	9M974039	04/28/16 18:17	01
18CPTMW26SW(5-5.5)250416	L16041344-08	9M974040	04/28/16 18:47	01
18CPTMW26SW(10-10.5)250416	L16041344-09	9M974041	04/28/16 19:18	01
18CPTMW26SW(15-15.5)250416	L16041344-10	9M974042	04/28/16 19:48	01
18CPTMW26SW(20-20.5)250416	L16041344-11	9M974043	04/28/16 20:18	01
18CPTMW26SW(30-30.5)250416	L16041344-12	9M974044	04/28/16 20:48	01
18CPTMW26SW(40-40.5)250416	L16041344-13	9M974045	04/28/16 21:19	01
18CPTMW26SW(49.5-50)250416	L16041344-14	9M974046	04/28/16 21:49	01

Report Name: BLANK_SUMMARY
PDF File ID: 4741833
Report generated 05/10/2016 13:22

METHOD BLANK SUMMARY

Login Number: L16041344
Blank File ID: 9M974069
Prep Date: 04/30/16 14:45
Analyzed Date: 04/30/16 14:45
Analyst: ADC

Work Group: WG567003
Blank Sample ID: WG567003-01
Instrument ID: HPMS9
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG567003-02	9M974074	04/30/16 17:17	01
18CPTMW22R(5-5.5)230416	L16041344-01	9M974076	04/30/16 18:18	02

Report Name: BLANK_SUMMARY
PDF File ID: 4741833
Report generated 05/10/2016 13:22

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16041344 Prep Date: 04/28/16 14:14 Sample ID: WG566765-01
Instrument ID: HPMS9 Run Date: 04/28/16 14:14 Prep Method: 5030B/5030C/503
File ID: 9M974031 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG566765 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-06-APR-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	5.00	20.0	5.00	1	U
Benzene	0.500	5.00	0.500	1	U
Bromobenzene	0.500	5.00	0.500	1	U
Bromochloromethane	1.00	5.00	1.00	1	U
Bromodichloromethane	0.500	5.00	0.500	1	U
Bromoform	0.500	5.00	0.500	1	U
Bromomethane	1.00	5.00	1.00	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.500	5.00	0.500	1	U
sec-Butylbenzene	0.500	5.00	0.500	1	U
tert-Butylbenzene	0.500	5.00	0.500	1	U
Carbon disulfide	0.500	5.00	0.500	1	U
Carbon tetrachloride	0.500	5.00	0.500	1	U
Chlorobenzene	0.500	5.00	0.500	1	U
Chlorodibromomethane	0.500	5.00	0.500	1	U
Chloroethane	1.00	5.00	1.00	1	U
Chloroform	0.500	5.00	0.500	1	U
Chloromethane	2.00	10.0	2.00	1	U
2-Chlorotoluene	0.500	5.00	0.500	1	U
4-Chlorotoluene	0.500	5.00	0.500	1	U
1,2-Dibromo-3-chloropropane	2.00	10.0	2.00	1	U
1,2-Dibromoethane	0.500	5.00	0.500	1	U
Dibromomethane	0.500	5.00	0.500	1	U
1,2-Dichlorobenzene	0.500	5.00	0.500	1	U
1,3-Dichlorobenzene	0.500	5.00	0.500	1	U
1,4-Dichlorobenzene	0.500	5.00	0.500	1	U
Dichlorodifluoromethane	1.00	5.00	1.00	1	U
1,1-Dichloroethane	1.00	5.00	1.00	1	U
1,2-Dichloroethane	0.500	5.00	0.500	1	U
1,1-Dichloroethene	0.500	5.00	0.500	1	U
cis-1,2-Dichloroethene	0.500	5.00	0.500	1	U
trans-1,2-Dichloroethene	0.500	5.00	0.500	1	U
1,2-Dichloropropane	0.500	5.00	0.500	1	U
1,3-Dichloropropane	0.500	5.00	0.500	1	U
2,2-Dichloropropane	0.500	5.00	0.500	1	U
cis-1,3-Dichloropropene	0.500	5.00	0.500	1	U
trans-1,3-Dichloropropene	0.500	5.00	0.500	1	U
1,1-Dichloropropene	0.500	5.00	0.500	1	U
Ethylbenzene	0.500	5.00	0.500	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.500	5.00	0.500	1	U
Isopropylbenzene	0.500	5.00	0.500	1	U

Report Name:BLANK
PDF ID: 4741834
10-MAY-2016 13:22

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16041344 Prep Date: 04/28/16 14:14 Sample ID: WG566765-01
Instrument ID: HPMS9 Run Date: 04/28/16 14:14 Prep Method: 5030B/5030C/503
File ID: 9M974031 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG566765 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-06-APR-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.500	5.00	0.500	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	1.00	5.00	1.00	1	U
Naphthalene	0.500	5.00	0.581	1	J
n-Propylbenzene	0.500	5.00	0.500	1	U
Styrene	0.500	5.00	0.500	1	U
1,1,1,2-Tetrachloroethane	0.500	5.00	0.500	1	U
1,1,2,2-Tetrachloroethane	0.500	5.00	0.500	1	U
Tetrachloroethene	0.500	5.00	0.500	1	U
Toluene	0.500	5.00	0.500	1	U
1,2,3-Trichlorobenzene	0.500	5.00	0.500	1	U
1,2,4-Trichlorobenzene	0.500	5.00	0.500	1	U
1,1,1-Trichloroethane	0.500	5.00	0.500	1	U
1,1,2-Trichloroethane	0.500	5.00	0.500	1	U
Trichloroethene	0.500	5.00	0.500	1	U
Trichlorofluoromethane	1.00	5.00	1.00	1	U
1,2,3-Trichloropropane	1.00	5.00	1.00	1	U
1,2,4-Trimethylbenzene	0.500	5.00	0.500	1	U
1,3,5-Trimethylbenzene	0.500	5.00	0.500	1	U
Vinyl chloride	1.00	5.00	1.00	1	U
o-Xylene	0.500	5.00	0.500	1	U
m-,p-Xylene	0.500	5.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	102	80 - 120	PASS
1,2-Dichloroethane-d4	105	80 - 120	PASS
Toluene-d8	110	85 - 115	PASS
4-Bromofluorobenzene	119	85 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4741834
10-MAY-2016 13:22

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16041344 Prep Date: 04/30/16 14:45 Sample ID: WG567003-01
Instrument ID: HPMS9 Run Date: 04/30/16 14:45 Prep Method: 5030B/5030C/503
File ID: 9M974069 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG567003 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-06-APR-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	5.00	20.0	5.00	1	U
Benzene	0.500	5.00	0.500	1	U
Bromobenzene	0.500	5.00	0.500	1	U
Bromochloromethane	1.00	5.00	1.00	1	U
Bromodichloromethane	0.500	5.00	0.500	1	U
Bromoform	0.500	5.00	0.500	1	U
Bromomethane	1.00	5.00	1.00	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.500	5.00	0.500	1	U
sec-Butylbenzene	0.500	5.00	0.500	1	U
tert-Butylbenzene	0.500	5.00	0.500	1	U
Carbon disulfide	0.500	5.00	0.500	1	U
Carbon tetrachloride	0.500	5.00	0.500	1	U
Chlorobenzene	0.500	5.00	0.500	1	U
Chlorodibromomethane	0.500	5.00	0.500	1	U
Chloroethane	1.00	5.00	1.00	1	U
Chloroform	0.500	5.00	0.500	1	U
Chloromethane	2.00	10.0	2.00	1	U
2-Chlorotoluene	0.500	5.00	0.500	1	U
4-Chlorotoluene	0.500	5.00	0.500	1	U
1,2-Dibromo-3-chloropropane	2.00	10.0	2.00	1	U
1,2-Dibromoethane	0.500	5.00	0.500	1	U
Dibromomethane	0.500	5.00	0.500	1	U
1,2-Dichlorobenzene	0.500	5.00	0.500	1	U
1,3-Dichlorobenzene	0.500	5.00	0.500	1	U
1,4-Dichlorobenzene	0.500	5.00	0.500	1	U
Dichlorodifluoromethane	1.00	5.00	1.00	1	U
1,1-Dichloroethane	1.00	5.00	1.00	1	U
1,2-Dichloroethane	0.500	5.00	0.500	1	U
1,1-Dichloroethene	0.500	5.00	0.500	1	U
cis-1,2-Dichloroethene	0.500	5.00	0.500	1	U
trans-1,2-Dichloroethene	0.500	5.00	0.500	1	U
1,2-Dichloropropane	0.500	5.00	0.500	1	U
1,3-Dichloropropane	0.500	5.00	0.500	1	U
2,2-Dichloropropane	0.500	5.00	0.500	1	U
cis-1,3-Dichloropropene	0.500	5.00	0.500	1	U
trans-1,3-Dichloropropene	0.500	5.00	0.500	1	U
1,1-Dichloropropene	0.500	5.00	0.500	1	U
Ethylbenzene	0.500	5.00	0.500	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.500	5.00	0.500	1	U
Isopropylbenzene	0.500	5.00	0.500	1	U

Report Name:BLANK
PDF ID: 4741834
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Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16041344 Prep Date: 04/30/16 14:45 Sample ID: WG567003-01
Instrument ID: HPMS9 Run Date: 04/30/16 14:45 Prep Method: 5030B/5030C/503
File ID: 9M974069 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG567003 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-06-APR-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.500	5.00	0.500	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	1.00	5.00	1.00	1	U
Naphthalene	0.500	5.00	0.500	1	U
n-Propylbenzene	0.500	5.00	0.500	1	U
Styrene	0.500	5.00	0.500	1	U
1,1,1,2-Tetrachloroethane	0.500	5.00	0.500	1	U
1,1,2,2-Tetrachloroethane	0.500	5.00	0.500	1	U
Tetrachloroethene	0.500	5.00	0.500	1	U
Toluene	0.500	5.00	0.500	1	U
1,2,3-Trichlorobenzene	0.500	5.00	0.500	1	U
1,2,4-Trichlorobenzene	0.500	5.00	0.500	1	U
1,1,1-Trichloroethane	0.500	5.00	0.500	1	U
1,1,2-Trichloroethane	0.500	5.00	0.500	1	U
Trichloroethene	0.500	5.00	0.500	1	U
Trichlorofluoromethane	1.00	5.00	1.00	1	U
1,2,3-Trichloropropane	1.00	5.00	1.00	1	U
1,2,4-Trimethylbenzene	0.500	5.00	0.500	1	U
1,3,5-Trimethylbenzene	0.500	5.00	0.500	1	U
Vinyl chloride	1.00	5.00	1.00	1	U
o-Xylene	0.500	5.00	0.500	1	U
m-,p-Xylene	0.500	5.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	104	80 - 120	PASS
1,2-Dichloroethane-d4	108	80 - 120	PASS
Toluene-d8	112	85 - 115	PASS
4-Bromofluorobenzene	124	85 - 120	FAIL

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4741834
10-MAY-2016 13:22

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16041344 Run Date: 04/28/2016 Sample ID: WG566765-02
Instrument ID: HPMS9 Run Time: 14:45 Prep Method: 5030B/5030C/503
File ID: 9M974032 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG566765 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD75739 Cal ID: HPMS9-06-APR-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	17.5	87.4	20 - 160	
Benzene	20.0	19.0	94.8	75 - 125	
Bromobenzene	20.0	22.2	111	65 - 120	
Bromochloromethane	20.0	19.5	97.3	70 - 125	
Bromodichloromethane	20.0	18.7	93.6	70 - 130	
Bromoform	20.0	20.2	101	55 - 135	
Bromomethane	20.0	19.3	96.3	30 - 160	
2-Butanone	20.0	19.2	96.2	30 - 160	
n-Butylbenzene	20.0	20.7	104	65 - 140	
sec-Butylbenzene	20.0	22.9	115	65 - 130	
tert-Butylbenzene	20.0	23.6	118	65 - 130	
Carbon disulfide	20.0	17.0	85.2	45 - 160	
Carbon tetrachloride	20.0	20.2	101	65 - 135	
Chlorobenzene	20.0	20.5	103	75 - 125	
Chlorodibromomethane	20.0	19.1	95.5	65 - 130	
Chloroethane	20.0	20.2	101	40 - 155	
Chloroform	20.0	18.9	94.6	70 - 125	
Chloromethane	20.0	23.2	116	50 - 130	
2-Chlorotoluene	20.0	25.2	126	70 - 130	
4-Chlorotoluene	20.0	20.8	104	75 - 125	
1,2-Dibromo-3-chloropropane	20.0	25.5	128	40 - 135	
1,2-Dibromoethane	20.0	19.5	97.6	70 - 125	
Dibromomethane	20.0	18.2	91.1	75 - 130	
1,2-Dichlorobenzene	20.0	21.8	109	75 - 120	
1,3-Dichlorobenzene	20.0	21.9	110	70 - 125	
1,4-Dichlorobenzene	20.0	21.8	109	70 - 125	
Dichlorodifluoromethane	20.0	19.2	95.9	35 - 135	
1,1-Dichloroethane	20.0	18.5	92.7	75 - 125	
1,2-Dichloroethane	20.0	19.1	95.4	70 - 135	
1,1-Dichloroethene	20.0	18.1	90.7	65 - 135	
cis-1,2-Dichloroethene	20.0	20.1	100	65 - 125	
trans-1,2-Dichloroethene	20.0	19.5	97.6	65 - 135	
1,2-Dichloropropane	20.0	19.6	98.2	70 - 120	
1,3-Dichloropropane	20.0	21.6	108	75 - 125	
2,2-Dichloropropane	20.0	19.1	95.4	65 - 135	
cis-1,3-Dichloropropene	20.0	20.3	101	70 - 125	
trans-1,3-Dichloropropene	20.0	20.0	100	65 - 125	
1,1-Dichloropropene	20.0	18.7	93.6	70 - 135	
Ethylbenzene	20.0	20.3	102	75 - 125	
2-Hexanone	20.0	17.8	88.8	45 - 145	
Hexachlorobutadiene	20.0	21.3	107	55 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4741835
Report generated: 05/10/2016 13:22

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16041344 | Run Date: 04/28/2016 | Sample ID: WG566765-02
Instrument ID: HPMS9 | Run Time: 14:45 | Prep Method: 5030B/5030C/503
File ID: 9M974032 | Analyst: ADC | Method: 8260B
Workgroup (AAB#): WG566765 | Matrix: Soil | Units: ug/kg
QC Key: DOD4 | Lot#: STD75739 | Cal ID: HPMS9-06-APR-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	20.5	102	75 - 130	
p-Isopropyltoluene	20.0	22.1	111	75 - 135	
4-Methyl-2-pentanone	20.0	18.2	91.1	45 - 145	
Methylene chloride	20.0	18.7	93.7	55 - 140	
Naphthalene	20.0	21.6	108	40 - 125	
n-Propylbenzene	20.0	22.9	115	65 - 135	
Styrene	20.0	19.6	97.8	75 - 125	
1,1,1,2-Tetrachloroethane	20.0	21.3	106	75 - 125	
1,1,2,2-Tetrachloroethane	20.0	21.7	109	55 - 130	
Tetrachloroethene	20.0	19.1	95.3	65 - 140	
Toluene	20.0	19.8	98.9	70 - 125	
1,2,3-Trichlorobenzene	20.0	21.7	108	60 - 135	
1,2,4-Trichlorobenzene	20.0	20.7	104	65 - 130	
1,1,1-Trichloroethane	20.0	19.8	99.1	70 - 135	
1,1,2-Trichloroethane	20.0	20.9	105	60 - 125	
Trichloroethene	20.0	18.6	93.1	75 - 125	
Trichlorofluoromethane	20.0	19.3	96.3	25 - 185	
1,2,3-Trichloropropane	20.0	24.0	120	65 - 130	
1,2,4-Trimethylbenzene	20.0	23.2	116	65 - 135	
1,3,5-Trimethylbenzene	20.0	22.8	114	65 - 135	
Vinyl chloride	20.0	20.4	102	60 - 125	
o-Xylene	20.0	21.0	105	75 - 125	
m-,p-Xylene	40.0	40.5	101	80 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	107	80 - 120	PASS
1,2-Dichloroethane-d4	109	80 - 120	PASS
Toluene-d8	111	85 - 115	PASS
4-Bromofluorobenzene	122	85 - 120	FAIL

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4741835
Report generated: 05/10/2016 13:22

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16041344 | Run Date: 04/30/2016 | Sample ID: WG567003-02
Instrument ID: HPMS9 | Run Time: 17:17 | Prep Method: 5030B/5030C/503
File ID: 9M974074 | Analyst: ADC | Method: 8260B
Workgroup (AAB#): WG567003 | Matrix: Soil | Units: ug/kg
QC Key: DOD4 | Lot#: STD75739 | Cal ID: HPMS9-06-APR-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	15.5	77.6	20 - 160	
Benzene	20.0	16.5	82.6	75 - 125	
Bromobenzene	20.0	19.1	95.6	65 - 120	
Bromochloromethane	20.0	17.1	85.4	70 - 125	
Bromodichloromethane	20.0	16.7	83.4	70 - 130	
Bromoform	20.0	17.9	89.5	55 - 135	
Bromomethane	20.0	17.3	86.4	30 - 160	
2-Butanone	20.0	18.1	90.7	30 - 160	
n-Butylbenzene	20.0	17.1	85.5	65 - 140	
sec-Butylbenzene	20.0	18.7	93.5	65 - 130	
tert-Butylbenzene	20.0	19.6	98.0	65 - 130	
Carbon disulfide	20.0	15.3	76.6	45 - 160	
Carbon tetrachloride	20.0	16.9	84.3	65 - 135	
Chlorobenzene	20.0	17.8	89.2	75 - 125	
Chlorodibromomethane	20.0	18.1	90.7	65 - 130	
Chloroethane	20.0	17.7	88.6	40 - 155	
Chloroform	20.0	16.9	84.5	70 - 125	
Chloromethane	20.0	21.5	108	50 - 130	
2-Chlorotoluene	20.0	21.1	105	70 - 130	
4-Chlorotoluene	20.0	17.8	89.0	75 - 125	
1,2-Dibromo-3-chloropropane	20.0	22.9	114	40 - 135	
1,2-Dibromoethane	20.0	18.2	91.0	70 - 125	
Dibromomethane	20.0	16.3	81.6	75 - 130	
1,2-Dichlorobenzene	20.0	18.2	91.0	75 - 120	
1,3-Dichlorobenzene	20.0	18.0	89.9	70 - 125	
1,4-Dichlorobenzene	20.0	18.4	92.2	70 - 125	
Dichlorodifluoromethane	20.0	19.3	96.3	35 - 135	
1,1-Dichloroethane	20.0	16.4	82.2	75 - 125	
1,2-Dichloroethane	20.0	18.0	90.2	70 - 135	
1,1-Dichloroethene	20.0	15.9	79.5	65 - 135	
cis-1,2-Dichloroethene	20.0	17.4	86.9	65 - 125	
trans-1,2-Dichloroethene	20.0	17.2	85.8	65 - 135	
1,2-Dichloropropane	20.0	17.4	86.8	70 - 120	
1,3-Dichloropropane	20.0	19.6	97.9	75 - 125	
2,2-Dichloropropane	20.0	16.8	84.2	65 - 135	
cis-1,3-Dichloropropene	20.0	17.8	88.8	70 - 125	
trans-1,3-Dichloropropene	20.0	18.1	90.5	65 - 125	
1,1-Dichloropropene	20.0	16.2	81.1	70 - 135	
Ethylbenzene	20.0	17.5	87.4	75 - 125	
2-Hexanone	20.0	16.7	83.7	45 - 145	
Hexachlorobutadiene	20.0	17.0	85.1	55 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4741835
Report generated: 05/10/2016 13:22

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16041344 | Run Date: 04/30/2016 | Sample ID: WG567003-02
Instrument ID: HPMS9 | Run Time: 17:17 | Prep Method: 5030B/5030C/503
File ID: 9M974074 | Analyst: ADC | Method: 8260B
Workgroup (AAB#): WG567003 | Matrix: Soil | Units: ug/kg
QC Key: DOD4 | Lot#: STD75739 | Cal ID: HPMS9-06-APR-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	17.1	85.7	75 - 130	
p-Isopropyltoluene	20.0	18.0	90.1	75 - 135	
4-Methyl-2-pentanone	20.0	17.5	87.7	45 - 145	
Methylene chloride	20.0	16.9	84.5	55 - 140	
Naphthalene	20.0	18.6	92.9	40 - 125	
n-Propylbenzene	20.0	19.2	96.2	65 - 135	
Styrene	20.0	16.5	82.5	75 - 125	
1,1,1,2-Tetrachloroethane	20.0	18.8	93.8	75 - 125	
1,1,2,2-Tetrachloroethane	20.0	18.6	92.8	55 - 130	
Tetrachloroethene	20.0	16.4	81.8	65 - 140	
Toluene	20.0	17.4	86.8	70 - 125	
1,2,3-Trichlorobenzene	20.0	17.3	86.6	60 - 135	
1,2,4-Trichlorobenzene	20.0	15.8	79.1	65 - 130	
1,1,1-Trichloroethane	20.0	17.3	86.6	70 - 135	
1,1,2-Trichloroethane	20.0	18.3	91.6	60 - 125	
Trichloroethene	20.0	16.3	81.6	75 - 125	
Trichlorofluoromethane	20.0	17.0	85.2	25 - 185	
1,2,3-Trichloropropane	20.0	21.0	105	65 - 130	
1,2,4-Trimethylbenzene	20.0	18.9	94.7	65 - 135	
1,3,5-Trimethylbenzene	20.0	19.0	95.1	65 - 135	
Vinyl chloride	20.0	21.6	108	60 - 125	
o-Xylene	20.0	18.0	90.2	75 - 125	
m-,p-Xylene	40.0	34.0	84.9	80 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	108	80 - 120	PASS
1,2-Dichloroethane-d4	112	80 - 120	PASS
Toluene-d8	112	85 - 115	PASS
4-Bromofluorobenzene	121	85 - 120	FAIL

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4741835
Report generated: 05/10/2016 13:22

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16041344
Instrument: HPMS9
Analyst: FJB
Workgroup: WG555000

Tune ID: WG555000-01
Run Date: 01/25/2016
Run Time: 10:27
File ID: 9M972470
Cal ID: HPMS9 - 25-JAN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	23.0	10289	PASS
75.0	95.0	30.0	60.0	49.3	22030	PASS
95.0	95.0	100	100	100	44728	PASS
96.0	95.0	5.00	9.00	6.98	3122	PASS
173	174	0	2.00	0.381	160	PASS
174	95.0	50.0	100	93.9	41989	PASS
175	174	5.00	9.00	6.62	2778	PASS
176	174	95.0	101	95.6	40133	PASS
177	176	5.00	9.00	6.39	2564	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG555000-02	STD-S	01	01/25/2016 11:22	
WG555000-03	STD-S	01	01/25/2016 11:52	
WG555000-04	STD-S	01	01/25/2016 12:23	
WG555000-05	STD-CCV-S	01	01/25/2016 12:53	
WG555000-06	STD-S	01	01/25/2016 13:23	
WG555000-07	STD-S	01	01/25/2016 13:54	
WG555000-08	STD-S	01	01/25/2016 14:25	
WG555000-09	STD-S	01	01/25/2016 14:56	
WG555000-10	SSCV-S	01	01/25/2016 15:56	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4741837
Report generated 05/10/2016 13:22

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16041344
Instrument: HPMS9
Analyst: ADC
Workgroup: WG563259

Tune ID: WG563259-01
Run Date: 04/06/2016
Run Time: 09:33
File ID: 9M973592
Cal ID: HPMS9 - 06-APR-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.9	9512	PASS
75.0	95.0	30.0	60.0	46.0	20002	PASS
95.0	95.0	100	100	100	43469	PASS
96.0	95.0	5.00	9.00	6.46	2809	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	91.3	39688	PASS
175	174	5.00	9.00	7.37	2925	PASS
176	174	95.0	101	96.9	38458	PASS
177	176	5.00	9.00	6.59	2534	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG563259-02	STD-CCV-S	01	04/06/2016 10:29	
WG563259-03	STD-S	01	04/06/2016 11:31	
WG563259-04	STD-S	01	04/06/2016 12:02	
WG563259-05	STD-S	01	04/06/2016 12:32	
WG563259-06	STD-S	01	04/06/2016 13:03	
WG563259-07	STD-S	01	04/06/2016 13:33	
WG563259-08	STD-S	01	04/06/2016 16:15	
WG563259-09	STD-S	01	04/06/2016 16:46	
WG563259-10	STD-S	01	04/06/2016 17:16	
WG563259-11	SSCV-S	01	04/06/2016 18:18	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4741837
Report generated 05/10/2016 13:22

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16041344
Instrument: HPMS9
Analyst: ADC
Workgroup: WG566763

Tune ID: WG566763-01
Run Date: 04/28/2016
Run Time: 12:17
File ID: 9M974027
Cal ID: HPMS9 - 06-APR-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.0	9692	PASS
75.0	95.0	30.0	60.0	47.4	20847	PASS
95.0	95.0	100	100	100	43965	PASS
96.0	95.0	5.00	9.00	7.08	3114	PASS
173	174	0	2.00	0.387	135	PASS
174	95.0	50.0	100	79.4	34923	PASS
175	174	5.00	9.00	7.46	2607	PASS
176	174	95.0	101	98.0	34238	PASS
177	176	5.00	9.00	6.61	2264	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG566763-02	CCV-S	01	04/28/2016 13:13	
WG566765-01	BLANK	01	04/28/2016 14:14	
WG566765-02	LCS	01	04/28/2016 14:45	
L16041344-02	18CPTMW22R(10-10.5)230416	01	04/28/2016 15:46	
L16041344-03	18CPTMW22R(15-15.5)230416	01	04/28/2016 16:16	
L16041344-04	18CPTMW26(5-5.5)230416	01	04/28/2016 16:47	
L16041344-05	18CPTMW26(5-5.5)230416DUP	01	04/28/2016 17:17	
L16041344-06	18CPTMW26(10-10.5)230416	01	04/28/2016 17:47	
L16041344-07	18CPTMW26(14.5-15)230416	01	04/28/2016 18:17	
L16041344-08	18CPTMW26SW(5-5.5)250416	01	04/28/2016 18:47	
L16041344-09	18CPTMW26SW(10-10.5)250416	01	04/28/2016 19:18	
L16041344-10	18CPTMW26SW(15-15.5)250416	01	04/28/2016 19:48	
L16041344-11	18CPTMW26SW(20-20.5)250416	01	04/28/2016 20:18	
L16041344-12	18CPTMW26SW(30-30.5)250416	01	04/28/2016 20:48	
L16041344-13	18CPTMW26SW(40-40.5)250416	01	04/28/2016 21:19	
L16041344-14	18CPTMW26SW(49.5-50)250416	01	04/28/2016 21:49	
WG566711-02	MS	01	04/28/2016 22:51	
WG566711-03	MSD	01	04/28/2016 23:20	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4741837
Report generated 05/10/2016 13:22

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16041344
Instrument: HPMS9
Analyst: ADC
Workgroup: WG567052

Tune ID: WG567052-01
Run Date: 04/30/2016
Run Time: 12:43
File ID: 9M974065
Cal ID: HPMS9 - 06-APR-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.9	8872	PASS
75.0	95.0	30.0	60.0	46.1	19506	PASS
95.0	95.0	100	100	100	42357	PASS
96.0	95.0	5.00	9.00	6.35	2690	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	89.4	37858	PASS
175	174	5.00	9.00	6.85	2593	PASS
176	174	95.0	101	97.4	36877	PASS
177	176	5.00	9.00	6.48	2391	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG567052-02	CCV-S	01	04/30/2016 13:43	
WG567003-01	BLANK	01	04/30/2016 14:45	
WG567003-02	LCS	01	04/30/2016 17:17	
L16041344-01	18CPTMW22R(5-5.5)230416	02	04/30/2016 18:18	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4741837
Report generated 05/10/2016 13:22

Calibration Table Report
Method: A9FOO_SL.M
Title: FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Calibration: Wed Jan 27 09:49:02 2016
Curve: WG555000
Calibration Files

Compound	5 9M972472.D	20 9M972473.D	50 9M972474.D	100 9M972475.D	200 9M972476.D	300 9M972477.D	400 9M972478.D	500 9M972479.D	Avg	%RSD	R^2 Linear
Fluorobenzene	ISTD										
Acetonitrile		0.053	0.046	0.048	0.052	0.046	0.052	0.054	0.050	6.657	
3-Chloro-1-propene	0.498	0.524	0.450	0.519	0.514	0.434	0.507	0.503	0.494	6.719	
2-Chloro-1,3-butadiene	0.534	0.576	0.519	0.592	0.585	0.509	0.593	0.584	0.561	6.202	
Ethyl Acetate		0.333	0.313	0.339	0.338	0.300	0.341	0.344	0.330	5.124	
Methacrylonitrile	0.102	0.109	0.101	0.112	0.110	0.096	0.112	0.112	0.107	5.912	
Isobutyl Alcohol	0.014	0.018	0.018	0.021	0.024	0.021	0.025	0.025	0.021	18.016	0.993
1-Butanol		0.010	0.013	0.015	0.017	0.015	0.018	0.018	0.015	17.838	0.992
Methyl methacrylate	0.236	0.246	0.231	0.265	0.265	0.231	0.271	0.269	0.252	7.005	
2-Nitropropane	0.069	0.073	0.074	0.083	0.089	0.079	0.093	0.095	0.082	12.090	
Chlorobenzene-d5	ISTD										
Cyclohexanone		0.020	0.022	0.025	0.028	0.023	0.027	0.028	0.025	12.963	
1,4-Dichlorobenzene-d4	ISTD										

Wed Jan 27 10:01:56 2016

Calibration Table Report
Method: 8260-SL.M
Title: 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Calibration: Wed Apr 06 17:47:28 2016
Curve: WG563259
Calibration Files

Compound	0.5 9M973596.D	1 9M973597.D	2 9M973598.D	5 9M973599.D	20 9M973600.D	50 9M973594.D	100 9M973605.D	200 9M973606.D	300 9M973607.D	Avg	%RSD	R^2 Linear	Quadratic
Fluorobenzene	ISTD												
Dichlorodifluoromethane			0.321	0.344	0.364	0.439	0.352	0.427	0.437	0.384	12.892		
Chloromethane			0.411	0.346	0.327	0.352	0.289	0.365	0.378	0.353	10.934		
Vinyl Chloride		0.309	0.277	0.322	0.308	0.270	0.211	0.222	0.229	0.268	16.161	0.993	
1,3-Butadiene		0.146	0.201	0.181	0.179	0.160	0.154			0.170	11.979		
Bromomethane		0.205	0.219	0.231	0.210	0.230	0.191	0.219	0.225	0.216	6.345		
Chloroethane			0.195	0.212	0.214	0.223	0.183	0.219	0.227	0.211	7.590		
Trichlorofluoromethane		0.395	0.427	0.437	0.469	0.497	0.396	0.465	0.478	0.445	8.475		
Diethyl ether		0.265	0.262	0.267	0.267	0.274	0.230		0.269	0.262	5.615		
Isoprene			0.323	0.330	0.362	0.390	0.322	0.362	0.366	0.351	7.435		
Acrolein		0.023	0.024	0.023	0.026	0.027	0.033			0.026	13.903		
1,1,2-Trichloro-1,2,2-Trifluoroet			0.239	0.261	0.288	0.302	0.242	0.284	0.289	0.272	9.162		
Acetone				0.207	0.126	0.108	0.088	0.096	0.100	0.121	36.552	0.996	
1,1-Dichloroethene		0.393	0.440	0.451	0.487	0.508	0.403	0.475	0.489	0.456	9.106		
Tert-Butyl Alcohol			0.046	0.044	0.043	0.046	0.040			0.044	5.343		
Dimethyl Sulfide		0.163	0.203	0.215	0.246	0.257	0.212	0.239	0.251	0.223	14.040		
Iodomethane				0.140	0.151	0.228	0.180	0.225	0.230	0.192	21.187	0.992	
Methyl acetate			0.300	0.297	0.295	0.305	0.255	0.279	0.298	0.290	6.019		
Methylene Chloride			0.297	0.289	0.297	0.300	0.237	0.279	0.295	0.285	7.859		
Carbon Disulfide			0.879	0.837	0.889	0.940	0.768	0.859	0.880	0.865	6.109		
Acrylonitrile		0.130	0.133	0.134	0.135	0.147	0.127		0.158	0.138	8.026		
Methyl Tert Butyl Ether		0.710	0.738	0.776	0.820	0.840	0.665	0.765	0.816	0.766	7.804		
trans-1,2-Dichloroethene		0.386	0.431	0.419	0.467	0.493	0.389	0.455	0.470	0.439	8.924		
n-Hexane			0.693	0.590	0.595	0.575	0.493	0.518	0.524	0.570	11.751		
Diisopropyl ether		1.185	1.152	1.182	1.185	1.243	1.009		1.168	1.161	6.230		
Vinyl Acetate			0.435	0.513	0.546	0.690	0.532	0.621	0.664	0.572	15.821	0.994	
1,1-Dichloroethane		0.465	0.518	0.538	0.574	0.590	0.463	0.544	0.569	0.532	9.010		
Ethyl-Tert-Butyl ether		1.047	1.008	1.036	1.043	1.081	0.892		1.038	1.021	5.954		
2-Butanone				0.163	0.160	0.165	0.140	0.161	0.175	0.161	7.047		
Propionitrile		0.048	0.052	0.053	0.051	0.055	0.048		0.059	0.052	7.830		
2,2-Dichloropropane			0.360	0.367	0.386	0.437	0.344	0.408	0.420	0.389	8.790		
cis-1,2-Dichloroethene		0.241	0.287	0.289	0.317	0.322	0.257	0.302	0.316	0.291	10.075		
Chloroform		0.423	0.428	0.462	0.481	0.489	0.390	0.458	0.482	0.452	7.739		
1-Bromopropane			0.032	0.044	0.051	0.056	0.046	0.052	0.055	0.048	17.607	0.996	
Bromochloromethane		0.135	0.168	0.190	0.194	0.207	0.164	0.192	0.205	0.182	13.364		
Tetrahydrofuran			0.123	0.115	0.112	0.116	0.101		0.118	0.114	6.505		
Dibromofluoromethane				0.247	0.231	0.268	0.266	0.251		0.253	5.970		
1,1,1-Trichloroethane		0.343	0.351	0.372	0.416	0.433	0.343	0.408	0.426	0.386	9.993		
Cyclohexane		0.528	0.595	0.610	0.651	0.675	0.557	0.630	0.642	0.611	8.109		
1,1-Dichloropropene		0.302	0.349	0.362	0.378	0.396	0.314	0.366	0.380	0.356	9.221		
Tert-Amyl-Methyl ether		0.761	0.744	0.770	0.776	0.799	0.663		0.772	0.755	5.813		
Carbon Tetrachloride			0.31341	0.33551	0.37426	0.39892	0.31861	0.38498	0.39957	0.36075	10.3644		
1,2-Dichloroethane-d4				0.26412	0.24802	0.27423	0.2775	0.25788		0.26435	4.55185		
Heptane										0	0		
1,2-Dichloroethane		0.34418	0.40431	0.39865	0.4175	0.41985	0.33321	0.38495	0.40827	0.38886	8.47358		
Benzene	1.21945	1.07403	1.12524	1.10527	1.14242	1.16809	0.92092	1.0739	1.10779	1.10412	7.48919		
Trichloroethene		0.31254	0.31563	0.31565	0.31885	0.33106	0.26092	0.31002	0.31982	0.31056	6.7703		
Methylcyclohexane		0.44779	0.43846	0.47932	0.50651	0.52011	0.43207	0.48337	0.48884	0.47456	6.76996		
1,2-Dichloropropane		0.25742	0.28425	0.3095	0.31809	0.33243	0.26219	0.30921	0.32904	0.30027	9.65942		
1,4-Dioxane			0.00358	0.00385	0.00384	0.00433	0.00386			0.00389	6.99887		
Bromodichloromethane			0.30575	0.31422	0.35204	0.37916	0.30019	0.35975	0.384	0.34216	10.2601		
Dibromomethane		0.15183	0.16316	0.17868	0.18876	0.20056	0.16023	0.18831	0.20263	0.17927	10.6372		
2-Chloroethyl Vinyl Ether			0.13333	0.14657	0.15865	0.17532	0.14997	0.17363	0.18023	0.15967	10.9171		
4-Methyl-2-Pentanone				0.13027	0.13937	0.14048	0.12107	0.14207	0.15624	0.13825	8.57761		
cis-1,3-Dichloropropene			0.40667	0.40942	0.42702	0.47107	0.37094	0.43662	0.46459	0.42662	8.1829		
Dimethyl Disulfide			0.36901	0.41872	0.46393	0.5137	0.43386	0.49585	0.50079	0.45655	11.4623		
Chlorobenzene-d5	ISTD												
Toluene-d8				1.13196	1.13088	1.30099	1.22413	1.17028		1.19165	6.04016		
Toluene	1.61219	1.48974	1.56315	1.53008	1.59395	1.67032	1.25619	1.49851	1.47925	1.52149	7.74689		
Ethyl Methacrylate				0.41975	0.4711	0.51586	0.40825	0.47534	0.48896	0.46321	8.92932		
trans-1,3-Dichloropropene			0.42937	0.46085	0.51207	0.57552	0.43233	0.52283	0.53425	0.49532	11.2077		
1,1,2-Trichloroethane		0.2293	0.29955	0.30264	0.32292	0.34393	0.26026	0.31526	0.32236	0.29953	12.4735		
2-Hexanone				0.29578	0.31857	0.34977	0.27856	0.34895	0.37083	0.32708	10.8635		
1,3-Dichloropropane		0.46311	0.52068	0.51191	0.553	0.58052	0.43541	0.52074	0.53484	0.51503	9.05764		
Tetrachloroethene		0.29083	0.32282	0.31024	0.33607	0.36695	0.28326	0.33869	0.33259	0.32268	8.46057		
Dibromochloromethane			0.31668	0.33233	0.38385	0.42138	0.32331	0.39925	0.41508	0.37027	12.1586		
1,2-Dibromoethane				0.3097	0.33602	0.35904	0.27936	0.34233	0.35327	0.32995	9.14215		
1-Chlorohexane		0.47093	0.49056	0.47786	0.52976	0.56979	0.44743	0.51603	0.50488	0.50091	7.62739		
Chlorobenzene		1.01857	1.10077	1.06982	1.11065	1.1666	0.87778	1.05237	1.05008	1.05583	8.05461		
1,1,1,2-Tetrachloroethane			0.32188	0.32664	0.37788	0.40639	0.3073	0.38163	0.38922	0.35871	10.872		
Ethylbenzene	0.52143	0.53436	0.57903	0.55623	0.61424	0.64352	0.49066	0.58906	0.58341	0.56799	8.36618		
m-,p-Xylene	0.80077	0.66899	0.68611	0.6782	0.73094	0.77557	0.57886	0.69733	0.68594	0.7003	9.21732		
o-Xylene	0.60031	0.61925	0.68439	0.66416	0.69917	0.75296	0.57232	0.70275	0.71046	0.66731	8.80086		
Styrene		1.0373	1.07384	1.08894	1.19996	1.30098	0.99018	1.21772	1.23313	1.14276	9.5938		
Bromoform			0.18687	0.21759	0.23897	0.28565	0.22359	0.2955	0.32514	0.25333	19.5821		0.997
Isopropylbenzene		1.68774	1.6857	1.66547	1.80713	1.95194	1.47104	1.81646	1.80093	1.7358	8.21749		
1,4-Dichlorobenzene-d4	ISTD												
1,1,2,2-Tetrachloroethane		0.5444	0.72678	0.76491	0.83216	0.97949	0.68259	0.81781	0.89422	0.7803	17.1288	0.99	
p-Bromofluorobenzene				0.79123	0.79828	1.029	0.90393	0.80774		0.86604	11.7727		
1,2,3-Trichloropropane		0.22403	0.25537	0.25246	0.25094	0.2923	0.20359	0.24077	0.2657	0.24814	10.7248		

trans-1,4-Dichloro-2-Butene		0.27171	0.26914	0.29308	0.38778	0.26316	0.30387	0.32522	0.302	14.4884	
n-Propylbenzene	4.05685	3.75924	3.71896	3.86505	4.6452	3.07167	3.36046	3.42768	3.73814	12.8869	
Bromobenzene	0.86454	0.91854	0.88256	0.9322	1.09373	0.73348	0.8172	0.87121	0.88918	11.6372	
1,3,5-Trimethylbenzene			2.89935	2.99421	3.53144	2.3397	2.61687	2.69599	2.84626	14.2799	
2-Chlorotoluene		2.26857	2.2413	2.34896	2.80152	1.8716	2.03405	2.06176	2.23254	13.4065	
4-Chlorotoluene	2.47026	2.45111	2.30891	2.39901	2.8502	1.84221	2.12289	2.23652	2.33514	12.5325	
a-Methylstyrene			1.29056	1.42432	1.7914	1.219	1.37439	1.41967	1.41989	13.9866	
tert-Butylbenzene			0.61757	0.65029	0.78744	0.51681	0.59207	0.61945	0.63061	14.1324	
1,2,4-Trimethylbenzene	3.90048	3.3016	3.06186	3.00214	3.57843	2.37041	2.6865	2.76415	3.0832	16.148	0.99
sec-Butylbenzene	3.74125	3.67112	3.56079	3.78968	4.54565	3.04282	3.43902	3.481	3.65892	11.6849	
p-Isopropyltoluene			2.92258	3.1199	3.7687	2.53184	2.89081	2.93937	3.02887	13.5408	
1,3-Dichlorobenzene	1.83452	1.84233	1.66665	1.75292	2.12917	1.41986	1.67401	1.74427	1.75797	11.3908	
1,4-Dichlorobenzene	2.01312	1.89964	1.70378	1.75876	2.11676	1.4289	1.69182	1.74055	1.79417	11.9044	
n-Butylbenzene	2.84419	2.75013	2.68458	2.82669	3.43808	2.33612	2.69074	2.72167	2.78653	10.998	
1,2-Dichlorobenzene	1.82783	1.61719	1.58891	1.65012	1.99737	1.35931	1.64467	1.69357	1.67237	11.0609	
1,2-Dibromo-3-Chloropropane			0.15996	0.19339	0.24797	0.1736	0.21779	0.23454	0.20454	16.9791	0.991
1,2,4-Trichlorobenzene	1.39125	1.17251	1.16617	1.1473	1.48008	1.0466	1.2227	1.24536	1.23399	11.3188	
Hexachlorobutadiene	0.58074	0.56991	0.53761	0.57937	0.71616	0.49159	0.59053	0.5902	0.58201	10.9512	
Naphthalene		3.08125	2.7856	2.89627	3.68341	2.51558	2.90109	2.95451	2.97396	12.0625	
1,2,3-Trichlorobenzene	1.32311	1.13072	1.05256	1.10905	1.42827	0.99218	1.14378	1.17822	1.16974	12.1576	

Fri Apr 08 14:14:52 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16041344 Run Date: 04/06/2016 Sample ID: WG563259-11
Instrument ID: HPMS9 Run Time: 18:18 Method: 8260B
File ID: 9M973609 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG563259 Cal ID: HPMS9 - 06-APR-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.8	ug/kg	0.459	1.60	20	
1,1-Dichloroethene	CCC	50.0	51.0	ug/kg	0.466	2.10	20	
1,2-Dichloropropane	CCC	50.0	54.2	ug/kg	0.326	8.40	20	
Ethylbenzene	CCC	50.0	52.8	ug/kg	0.600	5.60	20	
Toluene	CCC	50.0	51.5	ug/kg	1.57	3.00	20	
Vinyl Chloride	CCC	50.0	53.2	ug/kg	0.246	6.40	20	
Bromoform	SPCC	50.0	50.1	ug/kg	0.241	0.200	20	
Chlorobenzene	SPCC	50.0	53.1	ug/kg	1.12	6.20	20	
Chloromethane	SPCC	50.0	57.0	ug/kg	0.402	14.0	20	
1,1-Dichloroethane	SPCC	50.0	50.1	ug/kg	0.533	0.200	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	48.2	ug/kg	0.810	3.60	20	
Acetone		50.0	52.0	ug/kg	0.109	4.00	20	
Benzene		50.0	50.7	ug/kg	1.12	1.40	20	
Bromobenzene		50.0	49.8	ug/kg	0.886	0.400	20	
Bromochloromethane		50.0	51.3	ug/kg	0.187	2.70	20	
Bromodichloromethane		50.0	50.6	ug/kg	0.346	1.20	20	
Bromomethane		50.0	52.4	ug/kg	0.226	4.70	20	
2-Butanone		50.0	52.5	ug/kg	0.169	5.00	20	
n-Butylbenzene		50.0	51.3	ug/kg	2.86	2.70	20	
sec-Butylbenzene		50.0	52.8	ug/kg	3.86	5.60	20	
tert-Butylbenzene		50.0	52.3	ug/kg	0.660	4.60	20	
Carbon Disulfide		50.0	48.7	ug/kg	0.841	2.70	20	
Carbon Tetrachloride		50.0	51.6	ug/kg	0.372	3.10	20	
Dibromochloromethane		50.0	50.6	ug/kg	0.375	1.30	20	
Chloroethane		50.0	54.8	ug/kg	0.231	9.50	20	
2-Chlorotoluene		50.0	51.3	ug/kg	2.29	2.50	20	
4-Chlorotoluene		50.0	52.0	ug/kg	2.43	4.00	20	
1,2-Dibromo-3-Chloropropane		50.0	55.5	ug/kg	0.230	11.0	20	
1,2-Dibromoethane		50.0	51.3	ug/kg	0.339	2.60	20	
Dibromomethane		50.0	50.2	ug/kg	0.180	0.300	20	
1,2-Dichlorobenzene		50.0	52.0	ug/kg	1.74	4.10	20	
1,3-Dichlorobenzene		50.0	50.5	ug/kg	1.78	1.10	20	
1,4-Dichlorobenzene		50.0	51.0	ug/kg	1.83	1.90	20	
Dichlorodifluoromethane		50.0	61.5	ug/kg	0.472	23.1	20	*
1,2-Dichloroethane		50.0	51.3	ug/kg	0.399	2.70	20	
cis-1,2-Dichloroethene		50.0	53.7	ug/kg	0.313	7.50	20	
trans-1,2-Dichloroethene		50.0	53.6	ug/kg	0.470	7.20	20	
1,3-Dichloropropane		50.0	54.7	ug/kg	0.564	9.40	20	
2,2-Dichloropropane		50.0	51.5	ug/kg	0.401	3.10	20	
cis-1,3-Dichloropropene		50.0	55.5	ug/kg	0.473	10.9	20	
trans-1,3-Dichloropropene		50.0	52.3	ug/kg	0.518	4.70	20	
1,1-Dichloropropene		50.0	51.4	ug/kg	0.366	2.70	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4741836
Report generated 05/10/2016 13:22

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16041344 Run Date: 04/06/2016 Sample ID: WG563259-11
Instrument ID: HPMS9 Run Time: 18:18 Method: 8260B
File ID: 9M973609 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG563259 Cal ID: HPMS9 - 06-APR-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	52.5	ug/kg	0.344	5.00	20	
Hexachlorobutadiene		50.0	58.8	ug/kg	0.684	17.5	20	
Isopropylbenzene		50.0	54.1	ug/kg	1.88	8.10	20	
p-Isopropyltoluene		50.0	51.5	ug/kg	3.12	2.90	20	
4-Methyl-2-Pentanone		50.0	52.0	ug/kg	0.144	4.10	20	
Methylene Chloride		50.0	51.4	ug/kg	0.293	2.90	20	
Naphthalene		50.0	53.9	ug/kg	3.20	7.70	20	
n-Propylbenzene		50.0	51.7	ug/kg	3.86	3.40	20	
Styrene		50.0	53.5	ug/kg	1.22	7.10	20	
1,1,1,2-Tetrachloroethane		50.0	53.0	ug/kg	0.381	6.10	20	
Tetrachloroethene		50.0	51.6	ug/kg	0.333	3.30	20	
1,2,3-Trichlorobenzene		50.0	58.3	ug/kg	1.36	16.7	20	
1,2,4-Trichlorobenzene		50.0	56.8	ug/kg	1.40	13.5	20	
1,1,1-Trichloroethane		50.0	52.8	ug/kg	0.408	5.50	20	
1,1,2-Trichloroethane		50.0	53.9	ug/kg	0.323	7.90	20	
Trichloroethene		50.0	52.5	ug/kg	0.326	5.10	20	
Trichlorofluoromethane		50.0	52.0	ug/kg	0.464	4.10	20	
1,2,3-Trichloropropane		50.0	51.1	ug/kg	0.254	2.20	20	
1,2,4-Trimethylbenzene		50.0	53.2	ug/kg	2.94	6.40	20	
1,3,5-Trimethylbenzene		50.0	51.8	ug/kg	2.95	3.60	20	
o-Xylene		50.0	54.6	ug/kg	0.729	9.30	20	
m-,p-Xylene		100	105	ug/kg	0.735	4.90	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4741836
Report generated 05/10/2016 13:22

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041344 Run Date: 04/28/2016 Sample ID: WG566763-02
Instrument ID: HPMS9 Run Time: 13:13 Method: 8260B
File ID: 9M974029 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG566765 Cal ID: HPMS9 - 06-APR-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	49.0	ug/kg	0.443	1.94	20	
1,1-Dichloroethene	CCC	50.0	49.3	ug/kg	0.450	1.30	20	
1,2-Dichloropropane	CCC	50.0	48.2	ug/kg	0.290	3.53	20	
Ethylbenzene	CCC	50.0	52.4	ug/kg	0.596	4.87	20	
Toluene	CCC	50.0	50.5	ug/kg	1.54	1.05	20	
Vinyl Chloride	CCC	50.0	51.1	ug/kg	0.237	2.21	20	
Bromoform	SPCC	50.0	56.0	ug/kg	0.272	11.9	20	
Chlorobenzene	SPCC	50.0	51.0	ug/kg	1.08	1.92	20	
Chloromethane	SPCC	50.0	56.0	ug/kg	0.395	12.0	20	
1,1-Dichloroethane	SPCC	50.0	49.6	ug/kg	0.528	0.825	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	56.2	ug/kg	0.945	12.3	20	
Xylenes		150	154	ug/kg	0.702	2.50	20	
Acetone		50.0	48.2	ug/kg	0.102	3.59	20	
Benzene		50.0	47.5	ug/kg	1.05	4.91	20	
Bromobenzene		50.0	57.9	ug/kg	1.03	15.9	20	
Bromochloromethane		50.0	50.4	ug/kg	0.183	0.733	20	
Bromodichloromethane		50.0	48.7	ug/kg	0.333	2.59	20	
Bromomethane		50.0	49.2	ug/kg	0.213	1.53	20	
2-Butanone		50.0	49.4	ug/kg	0.159	1.19	20	
n-Butylbenzene		50.0	58.6	ug/kg	3.27	17.2	20	
sec-Butylbenzene		50.0	59.0	ug/kg	4.32	17.9	20	
tert-Butylbenzene		50.0	59.4	ug/kg	0.749	18.8	20	
Carbon Disulfide		50.0	47.5	ug/kg	0.822	4.90	20	
Carbon Tetrachloride		50.0	52.4	ug/kg	0.378	4.89	20	
Dibromochloromethane		50.0	52.2	ug/kg	0.387	4.39	20	
Chloroethane		50.0	50.3	ug/kg	0.212	0.574	20	
2-Chlorotoluene		50.0	61.6	ug/kg	2.75	23.1	20	*
4-Chlorotoluene		50.0	55.1	ug/kg	2.57	10.2	20	
1,2-Dibromo-3-Chloropropane		50.0	58.0	ug/kg	0.241	16.1	20	
1,2-Dibromoethane		50.0	50.2	ug/kg	0.331	0.363	20	
Dibromomethane		50.0	48.1	ug/kg	0.172	3.89	20	
1,2-Dichlorobenzene		50.0	55.5	ug/kg	1.86	11.0	20	
1,3-Dichlorobenzene		50.0	56.4	ug/kg	1.98	12.8	20	
1,4-Dichlorobenzene		50.0	54.9	ug/kg	1.97	9.75	20	
Dichlorodifluoromethane		50.0	48.3	ug/kg	0.371	3.31	20	
1,2-Dichloroethane		50.0	48.5	ug/kg	0.378	2.91	20	
cis-1,2-Dichloroethene		50.0	49.7	ug/kg	0.290	0.547	20	
trans-1,2-Dichloroethene		50.0	49.1	ug/kg	0.431	1.79	20	
1,3-Dichloropropane		50.0	51.3	ug/kg	0.528	2.60	20	
2,2-Dichloropropane		50.0	50.8	ug/kg	0.395	1.53	20	
cis-1,3-Dichloropropene		50.0	48.2	ug/kg	0.411	3.59	20	
trans-1,3-Dichloropropene		50.0	52.8	ug/kg	0.523	5.58	20	

CCV - Modified 03/05/2008
PDF File ID: 4741838
Report generated 05/10/2016 13:22

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041344 Run Date: 04/28/2016 Sample ID: WG566763-02
Instrument ID: HPMS9 Run Time: 13:13 Method: 8260B
File ID: 9M974029 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG566765 Cal ID: HPMS9 - 06-APR-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	50.4	ug/kg	0.358	0.702	20	
2-Hexanone		50.0	49.9	ug/kg	0.326	0.200	20	
Hexachlorobutadiene		50.0	57.6	ug/kg	0.671	15.3	20	
Isopropylbenzene		50.0	51.5	ug/kg	1.79	3.07	20	
p-Isopropyltoluene		50.0	59.0	ug/kg	3.57	17.9	20	
4-Methyl-2-Pentanone		50.0	52.4	ug/kg	0.145	4.72	20	
Methylene Chloride		50.0	46.6	ug/kg	0.265	6.82	20	
Naphthalene		50.0	60.2	ug/kg	3.58	20.4	20	*
n-Propylbenzene		50.0	58.1	ug/kg	4.34	16.2	20	
Styrene		50.0	51.2	ug/kg	1.17	2.47	20	
1,1,1,2-Tetrachloroethane		50.0	53.8	ug/kg	0.386	7.50	20	
Tetrachloroethene		50.0	51.9	ug/kg	0.335	3.89	20	
1,2,3-Trichlorobenzene		50.0	57.9	ug/kg	1.36	15.9	20	
1,2,4-Trichlorobenzene		50.0	56.1	ug/kg	1.38	12.2	20	
1,1,1-Trichloroethane		50.0	51.4	ug/kg	0.397	2.78	20	
1,1,2-Trichloroethane		50.0	52.6	ug/kg	0.315	5.15	20	
Trichloroethene		50.0	47.1	ug/kg	0.293	5.74	20	
Trichlorofluoromethane		50.0	51.6	ug/kg	0.460	3.14	20	
1,2,3-Trichloropropane		50.0	60.1	ug/kg	0.298	20.3	20	*
1,2,4-Trimethylbenzene		50.0	61.1	ug/kg	3.37	22.1	20	*
1,3,5-Trimethylbenzene		50.0	58.8	ug/kg	3.35	17.6	20	
o-Xylene		50.0	51.5	ug/kg	0.688	3.09	20	
m-,p-Xylene		100	102	ug/kg	0.716	2.20	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4741838
Report generated 05/10/2016 13:22

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041344 Run Date: 04/30/2016 Sample ID: WG567052-02
Instrument ID: HPMS9 Run Time: 13:43 Method: 8260B
File ID: 9M974067 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG567003 Cal ID: HPMS9 - 06-APR-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	46.3	ug/kg	0.419	7.31	20	
1,1-Dichloroethene	CCC	50.0	45.9	ug/kg	0.419	8.21	20	
1,2-Dichloropropane	CCC	50.0	45.7	ug/kg	0.274	8.65	20	
Ethylbenzene	CCC	50.0	48.4	ug/kg	0.550	3.13	20	
Toluene	CCC	50.0	47.1	ug/kg	1.43	5.76	20	
Vinyl Chloride	CCC	50.0	46.3	ug/kg	0.215	7.50	20	
Bromoform	SPCC	50.0	53.2	ug/kg	0.257	6.45	20	
Chlorobenzene	SPCC	50.0	47.9	ug/kg	1.01	4.21	20	
Chloromethane	SPCC	50.0	54.9	ug/kg	0.387	9.82	20	
1,1-Dichloroethane	SPCC	50.0	45.9	ug/kg	0.489	8.23	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	52.2	ug/kg	0.877	4.31	20	
Xylenes		150	144	ug/kg	0.658	3.95	20	
Acetone		50.0	41.2	ug/kg	0.0888	17.5	20	
Benzene		50.0	44.0	ug/kg	0.971	12.0	20	
Bromobenzene		50.0	53.2	ug/kg	0.946	6.38	20	
Bromochloromethane		50.0	47.0	ug/kg	0.171	5.93	20	
Bromodichloromethane		50.0	45.8	ug/kg	0.313	8.41	20	
Bromomethane		50.0	45.9	ug/kg	0.199	8.18	20	
2-Butanone		50.0	42.4	ug/kg	0.136	15.2	20	
n-Butylbenzene		50.0	52.9	ug/kg	2.95	5.74	20	
sec-Butylbenzene		50.0	53.2	ug/kg	3.89	6.43	20	
tert-Butylbenzene		50.0	53.6	ug/kg	0.677	7.29	20	
Carbon Disulfide		50.0	41.1	ug/kg	0.711	17.7	20	
Carbon Tetrachloride		50.0	48.3	ug/kg	0.349	3.40	20	
Dibromochloromethane		50.0	49.8	ug/kg	0.369	0.451	20	
Chloroethane		50.0	46.8	ug/kg	0.197	6.31	20	
2-Chlorotoluene		50.0	60.0	ug/kg	2.68	20.1	20	*
4-Chlorotoluene		50.0	47.6	ug/kg	2.23	4.71	20	
1,2-Dibromo-3-Chloropropane		50.0	52.3	ug/kg	0.215	4.65	20	
1,2-Dibromoethane		50.0	47.4	ug/kg	0.313	5.16	20	
Dibromomethane		50.0	44.8	ug/kg	0.161	10.4	20	
1,2-Dichlorobenzene		50.0	51.2	ug/kg	1.71	2.42	20	
1,3-Dichlorobenzene		50.0	52.0	ug/kg	1.83	3.94	20	
1,4-Dichlorobenzene		50.0	50.8	ug/kg	1.82	1.55	20	
Dichlorodifluoromethane		50.0	48.3	ug/kg	0.370	3.46	20	
1,2-Dichloroethane		50.0	46.6	ug/kg	0.362	6.81	20	
cis-1,2-Dichloroethene		50.0	46.1	ug/kg	0.269	7.70	20	
trans-1,2-Dichloroethene		50.0	46.1	ug/kg	0.404	7.80	20	
1,3-Dichloropropane		50.0	48.4	ug/kg	0.499	3.11	20	
2,2-Dichloropropane		50.0	48.0	ug/kg	0.373	3.99	20	
cis-1,3-Dichloropropene		50.0	45.7	ug/kg	0.390	8.59	20	
trans-1,3-Dichloropropene		50.0	51.0	ug/kg	0.505	2.01	20	

CCV - Modified 03/05/2008
PDF File ID: 4741838
Report generated 05/10/2016 13:22

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041344 Run Date: 04/30/2016 Sample ID: WG567052-02
Instrument ID: HPMS9 Run Time: 13:43 Method: 8260B
File ID: 9M974067 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG567003 Cal ID: HPMS9 - 06-APR-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	46.2	ug/kg	0.329	7.60	20	
2-Hexanone		50.0	44.4	ug/kg	0.291	11.1	20	
Hexachlorobutadiene		50.0	50.9	ug/kg	0.592	1.72	20	
Isopropylbenzene		50.0	48.1	ug/kg	1.67	3.82	20	
p-Isopropyltoluene		50.0	53.8	ug/kg	3.26	7.63	20	
4-Methyl-2-Pentanone		50.0	45.4	ug/kg	0.125	9.28	20	
Methylene Chloride		50.0	44.7	ug/kg	0.255	10.5	20	
Naphthalene		50.0	54.7	ug/kg	3.25	9.37	20	
n-Propylbenzene		50.0	53.2	ug/kg	3.97	6.33	20	
Styrene		50.0	48.1	ug/kg	1.10	3.74	20	
1,1,1,2-Tetrachloroethane		50.0	51.3	ug/kg	0.368	2.57	20	
Tetrachloroethene		50.0	47.7	ug/kg	0.308	4.53	20	
1,2,3-Trichlorobenzene		50.0	53.6	ug/kg	1.25	7.24	20	
1,2,4-Trichlorobenzene		50.0	52.0	ug/kg	1.28	3.92	20	
1,1,1-Trichloroethane		50.0	48.1	ug/kg	0.372	3.78	20	
1,1,2-Trichloroethane		50.0	49.7	ug/kg	0.298	0.650	20	
Trichloroethene		50.0	43.4	ug/kg	0.270	13.2	20	
Trichlorofluoromethane		50.0	48.2	ug/kg	0.430	3.56	20	
1,2,3-Trichloropropane		50.0	54.1	ug/kg	0.269	8.29	20	
1,2,4-Trimethylbenzene		50.0	56.3	ug/kg	3.11	12.5	20	
1,3,5-Trimethylbenzene		50.0	53.6	ug/kg	3.05	7.19	20	
o-Xylene		50.0	48.4	ug/kg	0.647	3.12	20	
m-,p-Xylene		100	95.6	ug/kg	0.670	4.36	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4741838
Report generated 05/10/2016 13:22

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16041344
Instrument ID: HPMS9
Workgroup (AAB#): WG566765

ICAL CCV Number: WG563259-02
CAL ID: HPMS9-06-APR-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG563259-02	NA	NA	189947	405052	551415
Upper Limit	NA	NA	379894	810104	1102830
Lower Limit	NA	NA	94974	202526	275708
L16041344-02	1.00	01	157669	343703	475974
L16041344-03	1.00	01	188853	407609	564213
L16041344-04	1.00	01	193889	413315	568613
L16041344-05	1.00	01	203172	432394	593151
L16041344-06	1.00	01	190833	407386	557814
L16041344-07	1.00	01	195541	419986	578707
L16041344-08	1.00	01	197545	421673	577592
L16041344-09	1.00	01	194016	416442	565807
L16041344-10	1.00	01	189710	417633	582517
L16041344-11	1.00	01	189429	423056	593163
L16041344-12	1.00	01	158830	347606	482589
L16041344-13	1.00	01	190929	423143	604838
L16041344-14	1.00	01	188174	416444	584962
WG566765-01	1.00	01	207761	452113	626030
WG566765-02	1.00	01	195987	427662	586130

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4741839
Report generated 05/10/2016 13:22

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16041344
Instrument ID: HPMS9
Workgroup (AAB#): WG567003

ICAL CCV Number: WG563259-02
CAL ID: HPMS9 - 06-APR-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG563259-02	NA	NA	189947	405052	551415
Upper Limit	NA	NA	379894	810104	1102830
Lower Limit	NA	NA	94974	202526	275708
L16041344-01	1.00	02	172405	385313	539551
WG567003-01	1.00	01	207986	455753	641587
WG567003-02	1.00	01	198992	430069	593466

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4741839
Report generated 05/10/2016 13:22

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16041344
Instrument ID: HPMS9
Workgroup (AAB#): WG566765

ICAL CCV Number: WG563259-02
CAL ID: HPMS9-06-APR-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG563259-02	NA	NA	17.75	14.72	10.84
Upper Limit	NA	NA	18.25	15.22	11.34
Lower Limit	NA	NA	17.25	14.22	10.34
L16041344-02	1.00	01	17.74	14.71	10.84
L16041344-03	1.00	01	17.74	14.72	10.84
L16041344-04	1.00	01	17.74	14.71	10.84
L16041344-05	1.00	01	17.74	14.71	10.84
L16041344-06	1.00	01	17.74	14.71	10.84
L16041344-07	1.00	01	17.74	14.71	10.84
L16041344-08	1.00	01	17.74	14.72	10.84
L16041344-09	1.00	01	17.74	14.71	10.84
L16041344-10	1.00	01	17.74	14.71	10.84
L16041344-11	1.00	01	17.74	14.71	10.84
L16041344-12	1.00	01	17.74	14.71	10.84
L16041344-13	1.00	01	17.74	14.72	10.84
L16041344-14	1.00	01	17.74	14.71	10.84
WG566765-01	1.00	01	17.74	14.71	10.84
WG566765-02	1.00	01	17.74	14.71	10.84

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4741841
Report generated: 05/10/2016 13:22

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16041344
Instrument ID: HPMS9
Workgroup (AAB#): WG567003

ICAL CCV Number: WG563259-02
CAL ID: HPMS9 - 06-APR-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG563259-02	NA	NA	17.75	14.72	10.84
Upper Limit	NA	NA	18.25	15.22	11.34
Lower Limit	NA	NA	17.25	14.22	10.34
L16041344-01	1.00	02	17.74	14.71	10.84
WG567003-01	1.00	01	17.74	14.71	10.84
WG567003-02	1.00	01	17.74	14.71	10.84

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4741841
Report generated: 05/10/2016 13:22

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\043016\9M974076.D Vial: 10
Acq On : 30 Apr 2016 18:18 Operator: ADC
Sample : L16041344-01 B 8260 4.87g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 04 14:28:02 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	539551	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	385313	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	172405	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	143328	52.5984 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.20%		
43) 1,2-Dichloroethane-d4	10.44	65	157294	55.1407 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 110.28%		
58) Toluene-d8	12.81	98	515126	56.0948 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 112.18%		
79) p-Bromofluorobenzene	16.21	95	184302	61.7183 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 123.44%#		

Target Compounds					Qvalue
36) Tetrahydrofuran	9.77	42	3453	2.8022 ug/kg	82
56) Dimethyl Disulfide	12.81	94	13575	2.7554 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.08	105	1940	Below Cal	86

(#) = qualifier out of range (m) = manual integration
9M974076.D 8260-SL.M Wed May 04 14:28:02 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\043016\9M974076.D Vial: 10
Acq On : 30 Apr 2016 18:18 Operator: ADC
Sample : L16041344-01 B 8260 4.87g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 4 14:28 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

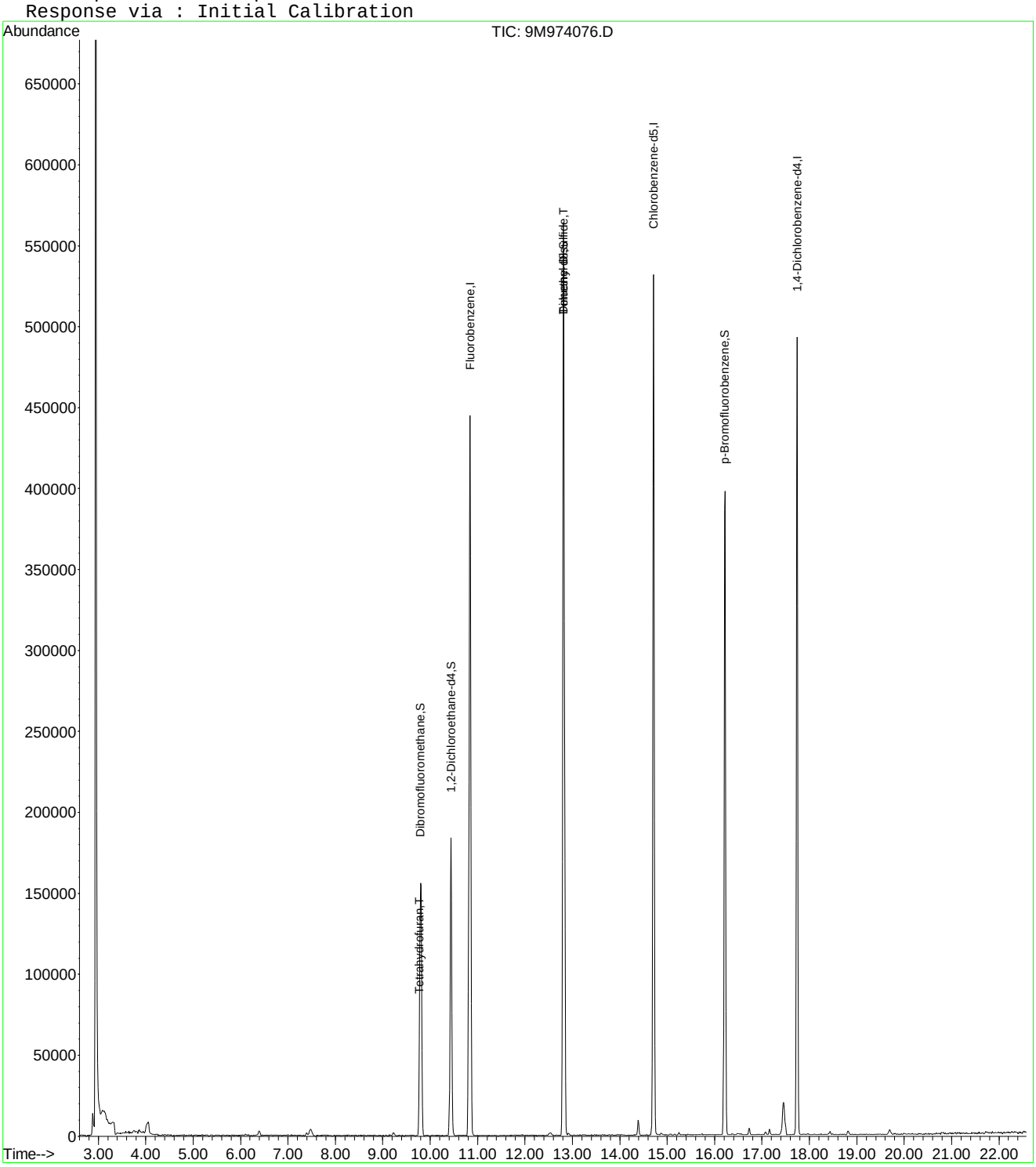

9M974076.D 8260-SL.M Wed May 04 14:28:02 2016 Page 2

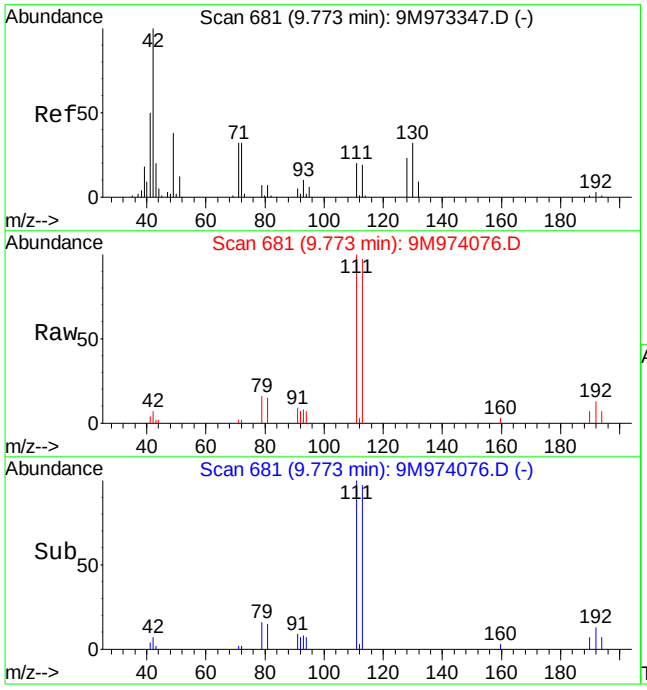

#36
Tetrahydrofuran
Concen: 2.80 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. 0.00 min
Lab File: 9M974076.D
Acq: 30 Apr 2016 18:18

Tgt Ion: 42 Resp: 3453

Ion	Ratio	Lower	Upper
42	100		
72	21.2	19.8	46.2
71	22.8	18.3	42.7

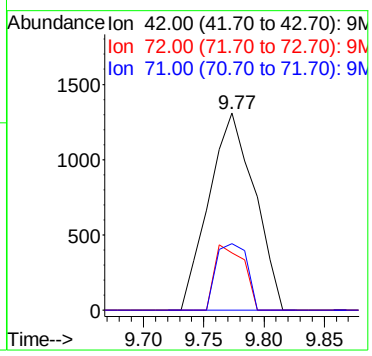

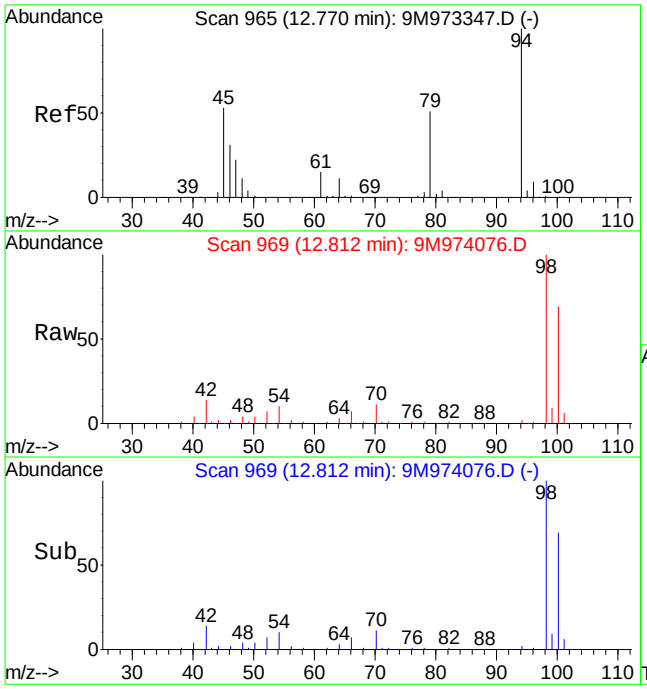

#56
Dimethyl Disulfide
Concen: 2.76 ug/kg
RT: 12.81 min Scan# 969
Delta R.T. 0.04 min
Lab File: 9M974076.D
Acq: 30 Apr 2016 18:18

Tgt Ion: 94 Resp: 13575

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

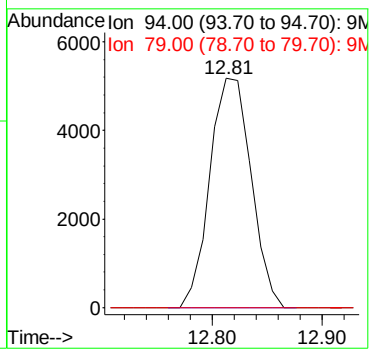

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974034.D Vial: 6
Acq On : 28 Apr 2016 15:46 Operator: ADC
Sample : WG566711-01 L16041344-02 A 8260 4.66g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:39:50 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	475974	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	343703	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.74	152	157669	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	123110	51.2134 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 102.42%		
43) 1,2-Dichloroethane-d4	10.44	65	137565	54.6660 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 109.34%		
58) Toluene-d8	12.82	98	456036	55.6722 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 111.34%		
79) p-Bromofluorobenzene	16.22	95	161955	59.3037 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 118.60%		

Target Compounds

					Qvalue
13) Acetone	6.38	43	8825	3.9938 ug/kg	90
36) Tetrahydrofuran	9.77	42	2525	2.3228 ug/kg#	75
56) Dimethyl Disulfide	12.81	94	12323	2.8354 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.08	105	3266	Below Cal	89

(#) = qualifier out of range (m) = manual integration
9M974034.D 8260-SL.M Fri Apr 29 12:39:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974034.D Vial: 6
Acq On : 28 Apr 2016 15:46 Operator: ADC
Sample : WG566711-01 L16041344-02 A 8260 4.66g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:39 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

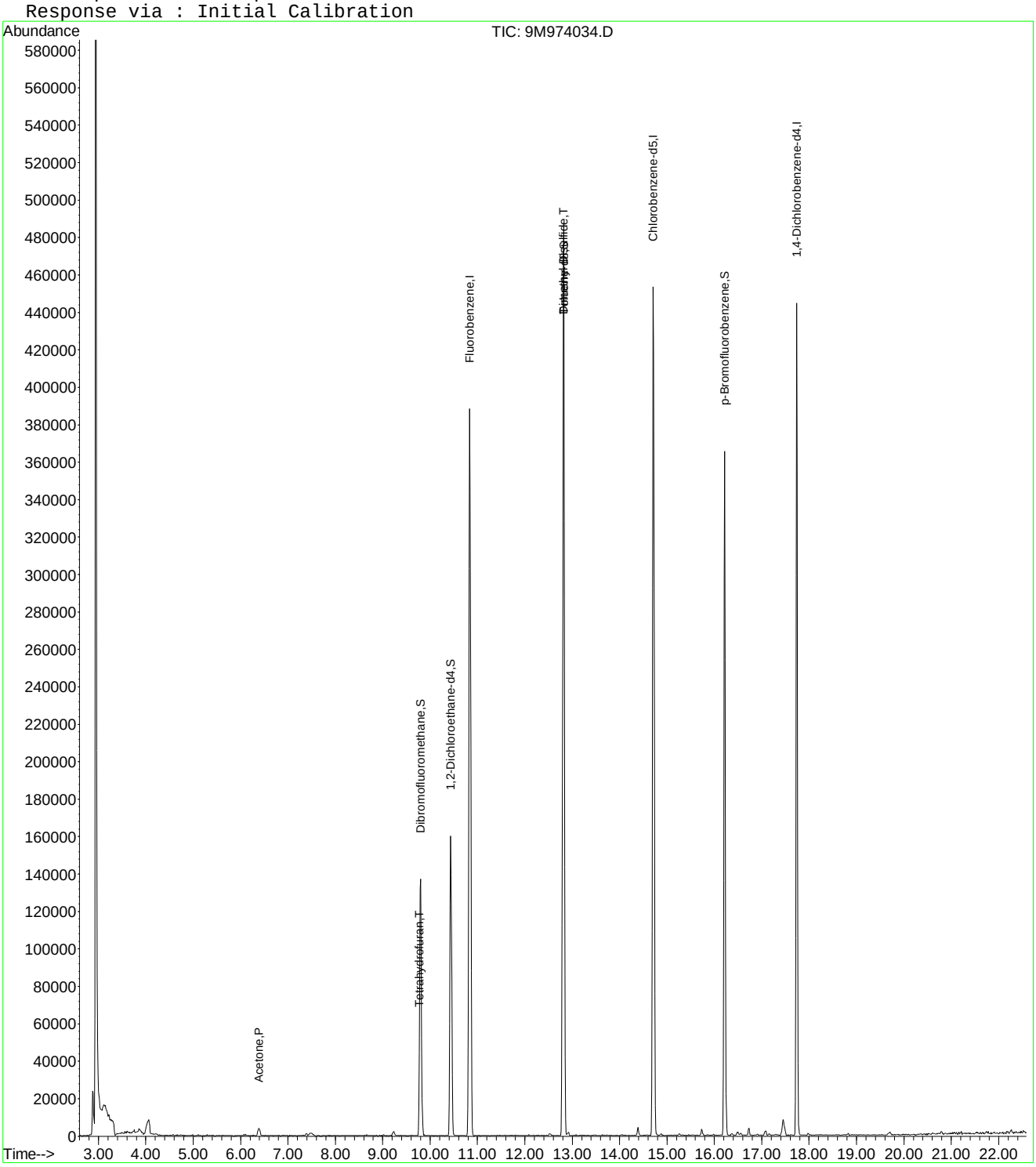

9M974034.D 8260-SL.M Fri Apr 29 12:39:51 2016 Page 2

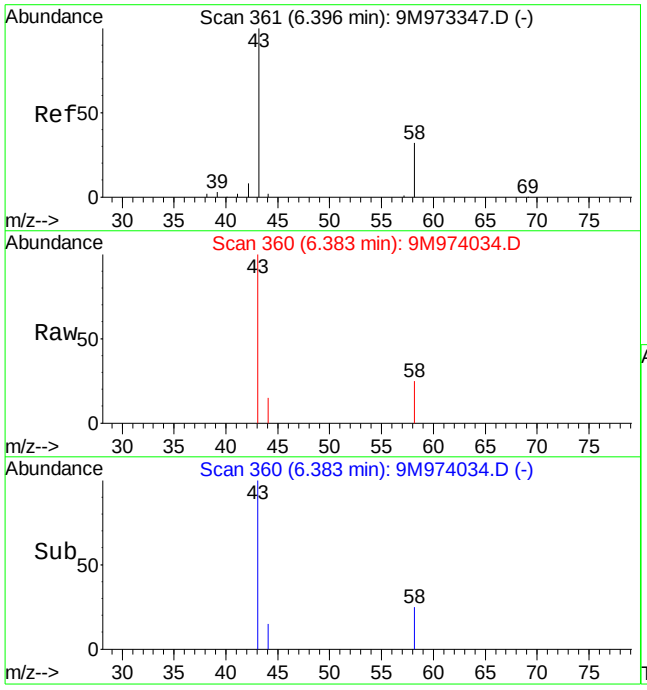

#13
Acetone
Concen: 3.99 ug/kg
RT: 6.38 min Scan# 360
Delta R.T. 0.00 min
Lab File: 9M974034.D
Acq: 28 Apr 2016 15:46

Tgt Ion: 43 Resp: 8825

Ion	Ratio	Lower	Upper
43	100		
58	28.1	20.2	47.2

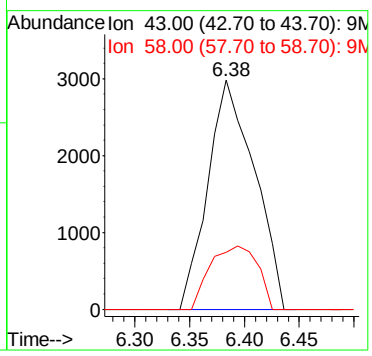

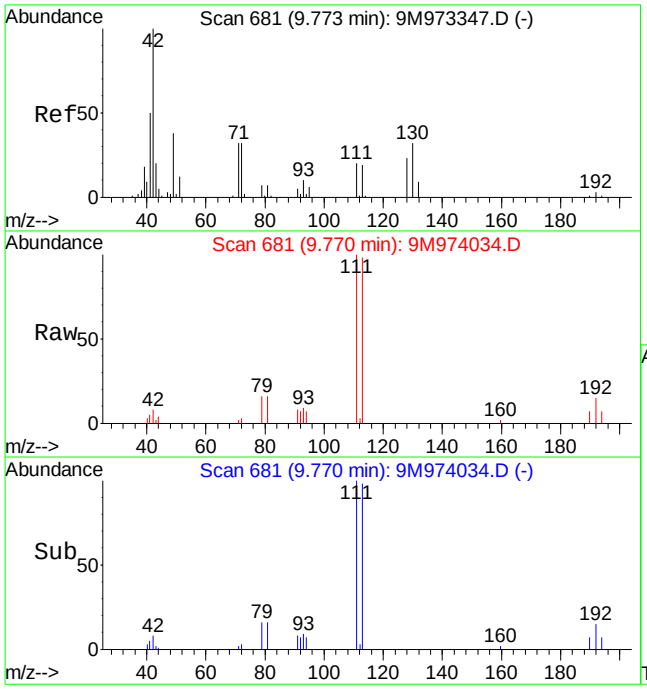

#36
Tetrahydrofuran
Concen: 2.32 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. -0.00 min
Lab File: 9M974034.D
Acq: 28 Apr 2016 15:46

Tgt Ion: 42 Resp: 2525

Ion	Ratio	Lower	Upper
42	100		
72	18.9	19.8	46.2#
71	16.5	18.3	42.7#

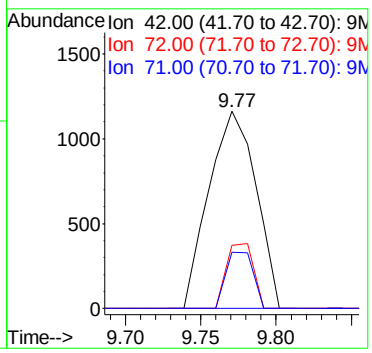

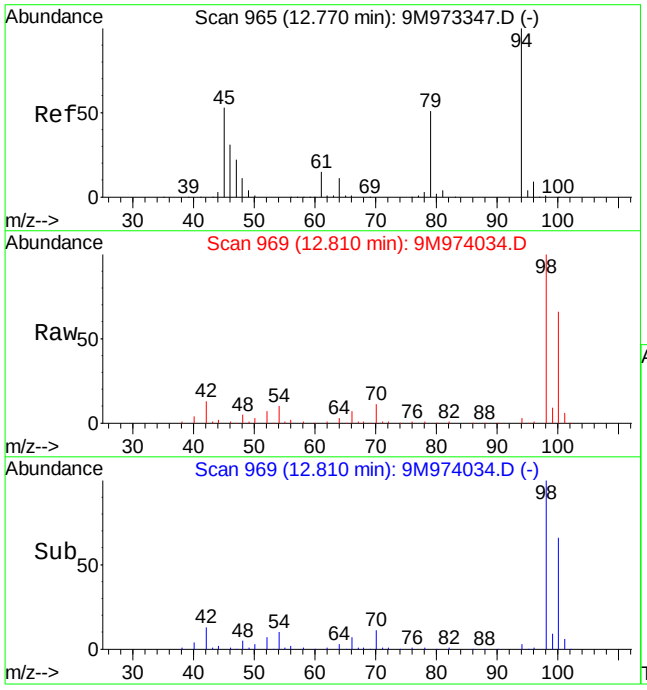

#56
Dimethyl Disulfide
Concen: 2.84 ug/kg
RT: 12.81 min Scan# 969
Delta R.T. 0.04 min
Lab File: 9M974034.D
Acq: 28 Apr 2016 15:46

Tgt Ion: 94 Resp: 12323

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

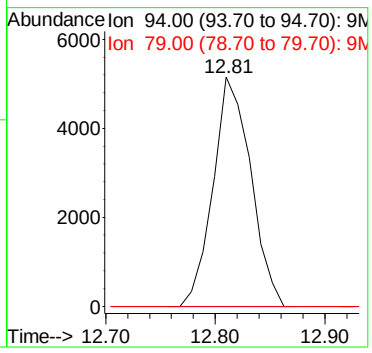

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974035.D Vial: 7
Acq On : 28 Apr 2016 16:16 Operator: ADC
Sample : L16041344-03 A 8260 4.85g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:39:51 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	564213	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	407609	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	188853	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	146227	51.3166 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 102.64%		
43) 1,2-Dichloroethane-d4	10.43	65	161263	54.0611 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 108.12%		
58) Toluene-d8	12.82	98	532777	54.8434 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 109.68%		
79) p-Bromofluorobenzene	16.22	95	193071	59.0237 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 118.04%		

Target Compounds

					Qvalue
3) Chloromethane	3.75	50	2203	0.5537 ug/kg	91
13) Acetone	6.38	43	3681	Below Cal	98
36) Tetrahydrofuran	9.77	42	2551	1.9797 ug/kg#	61
56) Dimethyl Disulfide	12.82	94	14510	2.8165 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.08	105	2698	Below Cal	76

(#) = qualifier out of range (m) = manual integration
9M974035.D 8260-SL.M Fri Apr 29 12:39:52 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974035.D Vial: 7
Acq On : 28 Apr 2016 16:16 Operator: ADC
Sample : L16041344-03 A 8260 4.85g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:39 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

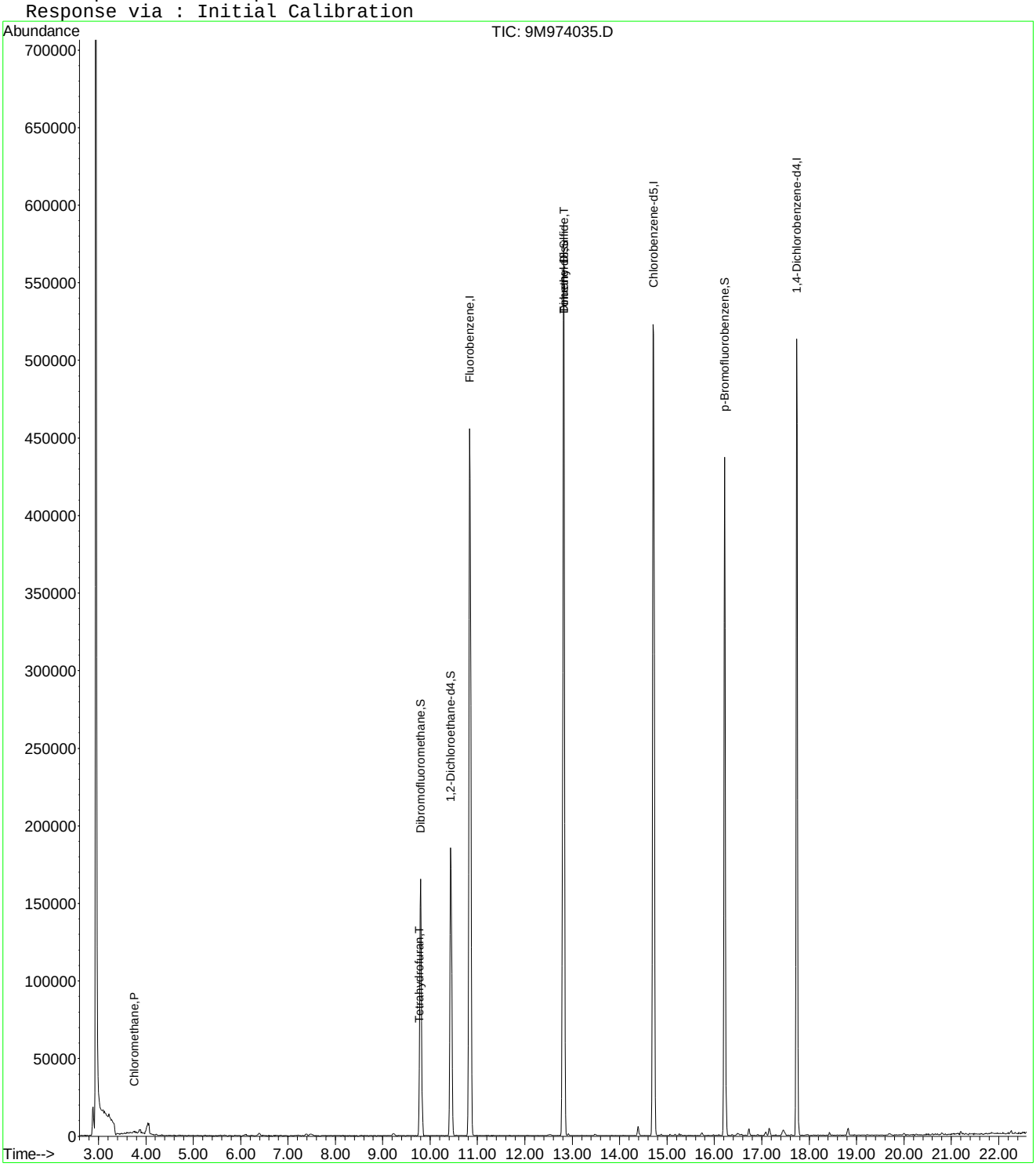

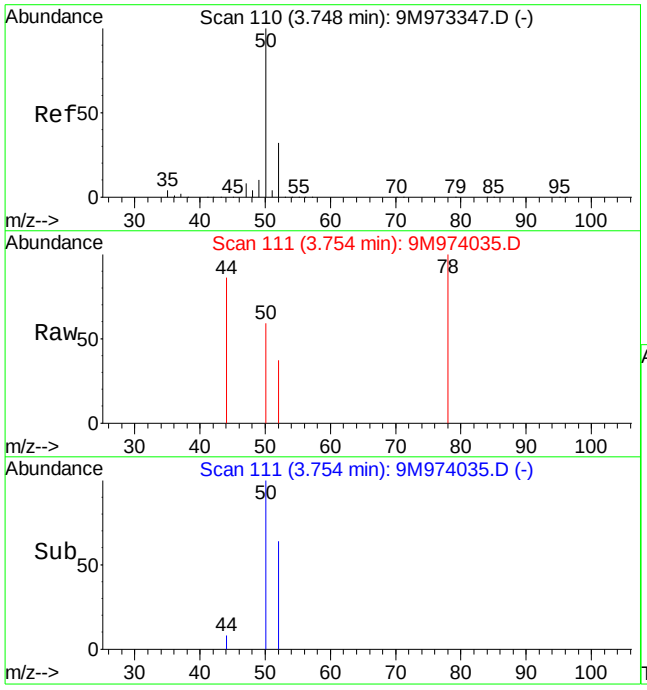

#3
Chloromethane
Concen: 0.55 ug/kg
RT: 3.75 min Scan# 111
Delta R.T. 0.01 min
Lab File: 9M974035.D
Acq: 28 Apr 2016 16:16

Tgt Ion: 50 Resp: 2203

Ion	Ratio	Lower	Upper
50	100		
52	28.2	19.9	46.3

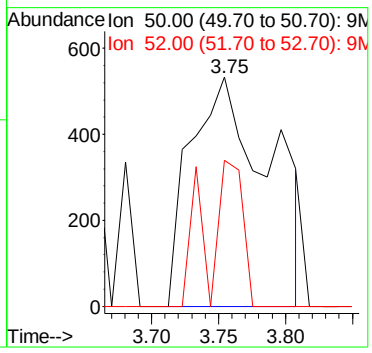

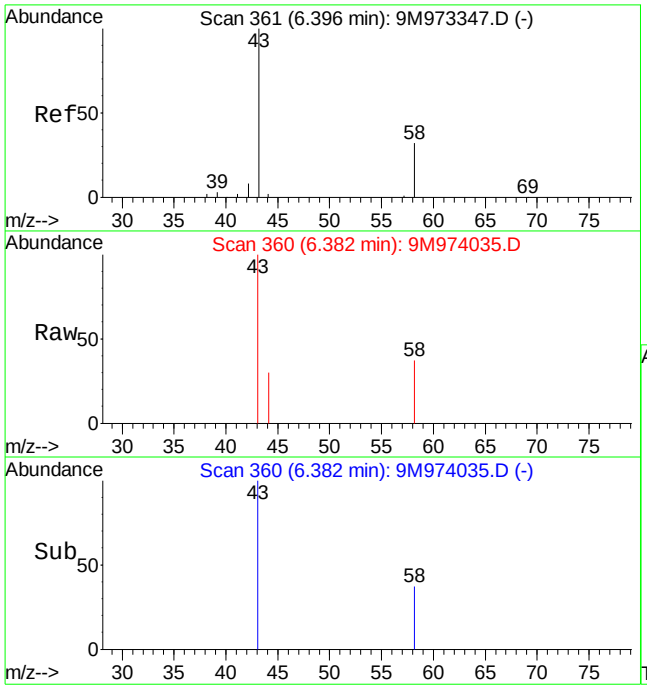

#13
Acetone
Concen: Below Cal
RT: 6.38 min Scan# 360
Delta R.T. -0.00 min
Lab File: 9M974035.D
Acq: 28 Apr 2016 16:16

Tgt Ion: 43 Resp: 3681

Ion	Ratio	Lower	Upper
43	100		
58	34.7	20.2	47.2

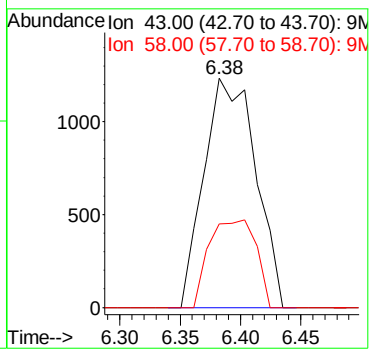

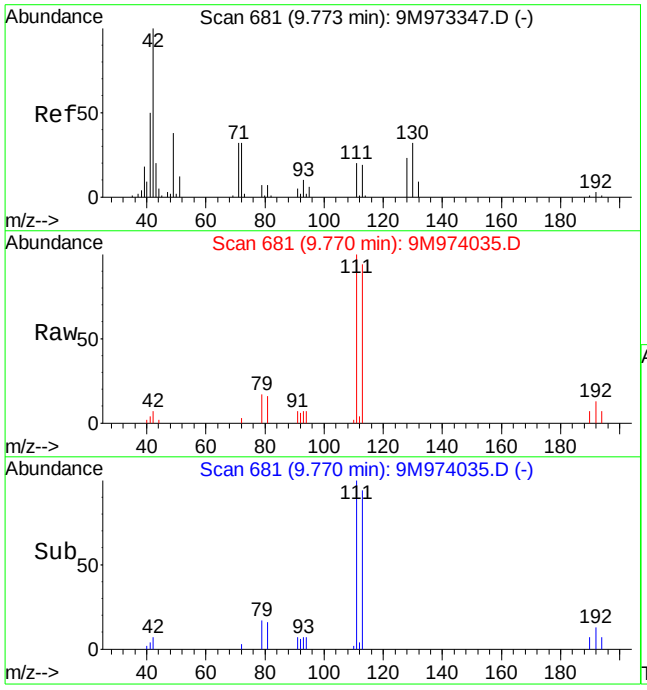

#36
Tetrahydrofuran
Concen: 1.98 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. -0.00 min
Lab File: 9M974035.D
Acq: 28 Apr 2016 16:16

Tgt Ion: 42 Resp: 2551

Ion	Ratio	Lower	Upper
42	100		
72	19.5	19.8	46.2#
71	0.0	18.3	42.7#

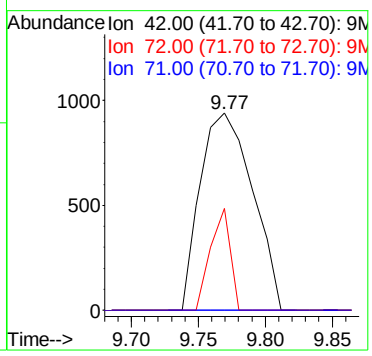

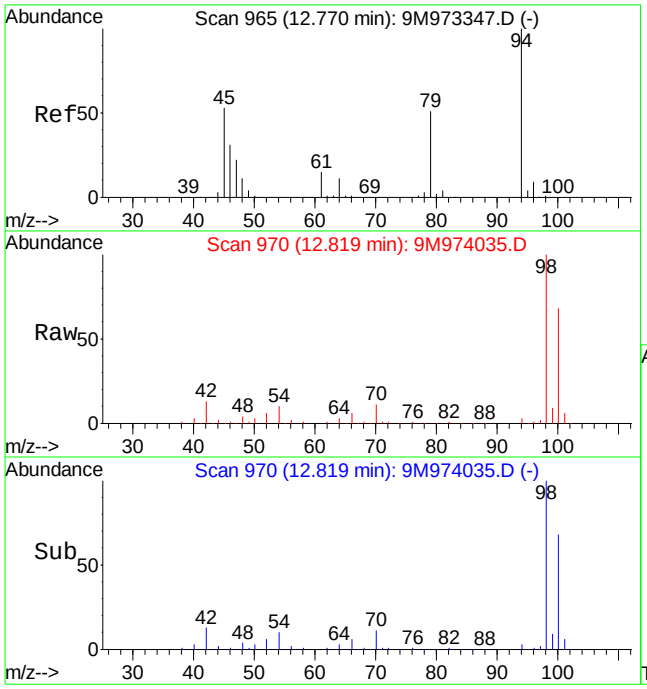

#56
Dimethyl Disulfide
Concen: 2.82 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M974035.D
Acq: 28 Apr 2016 16:16

Tgt Ion: 94 Resp: 14510

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

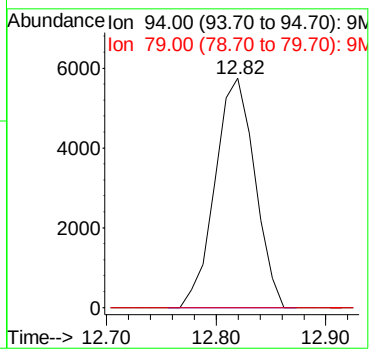

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974036.D Vial: 8
Acq On : 28 Apr 2016 16:47 Operator: ADC
Sample : L16041344-04 A 8260 4.54g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:39:52 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	568613	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	413315	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.74	152	193889	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	149879	52.1912 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.38%		
43) 1,2-Dichloroethane-d4	10.44	65	175566	58.4005 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 116.80%		
58) Toluene-d8	12.82	98	542928	55.1168 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 110.24%		
79) p-Bromofluorobenzene	16.22	95	202523	60.3052 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 120.62%		

Target Compounds

					Qvalue
13) Acetone	6.38	43	5807	Below Cal	83
36) Tetrahydrofuran	9.77	42	2625	2.0214 ug/kg#	65
56) Dimethyl Disulfide	12.82	94	14503	2.7933 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.07	105	2367	Below Cal	99

(#) = qualifier out of range (m) = manual integration
9M974036.D 8260-SL.M Fri Apr 29 12:39:53 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974036.D Vial: 8
Acq On : 28 Apr 2016 16:47 Operator: ADC
Sample : L16041344-04 A 8260 4.54g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:39 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

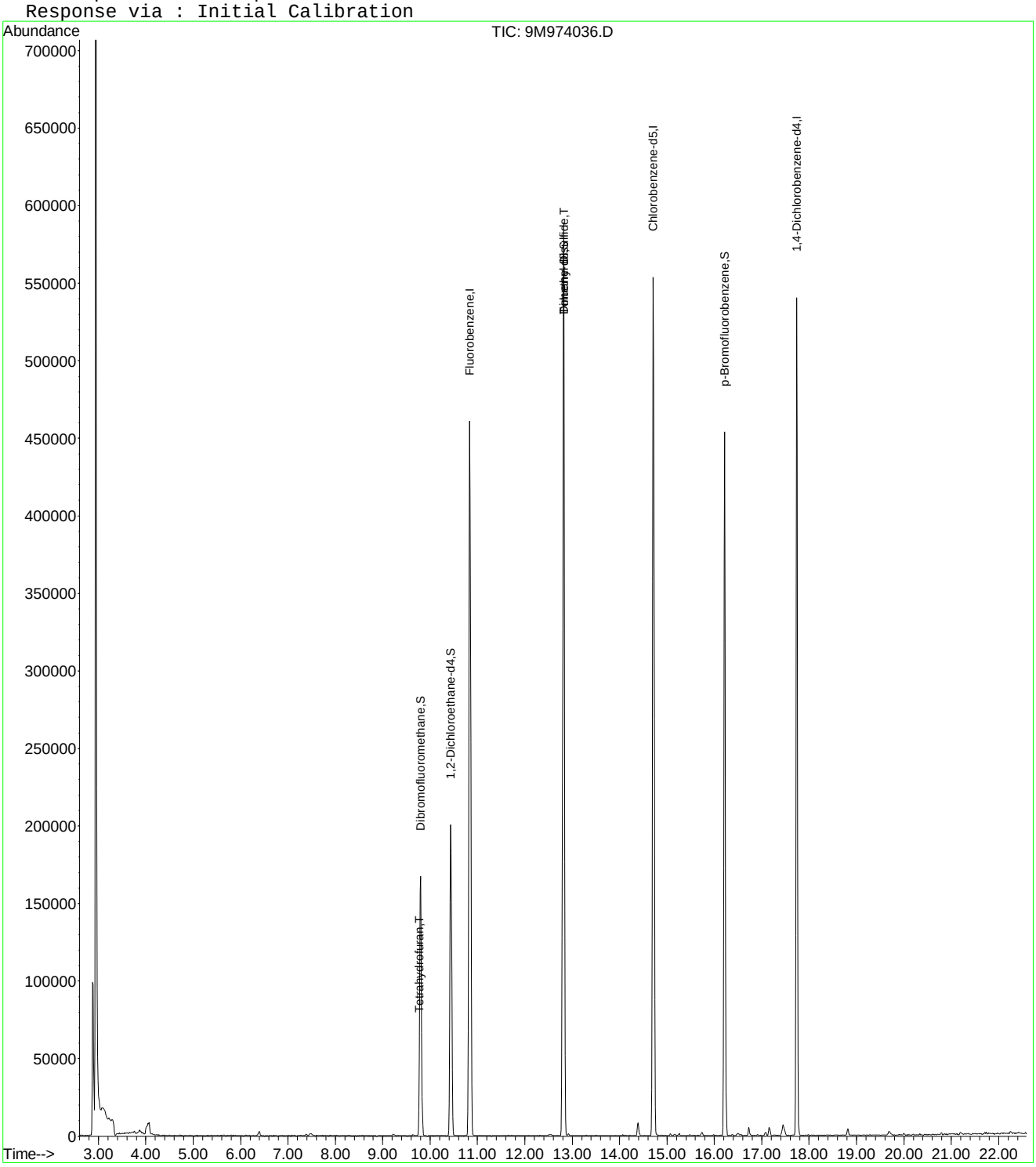

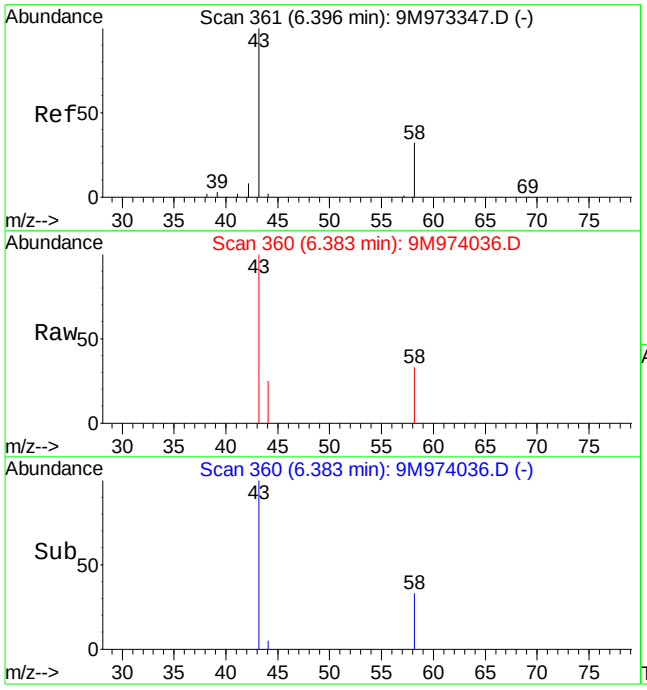

#13
Acetone
Concen: Below Cal
RT: 6.38 min Scan# 360
Delta R.T. -0.00 min
Lab File: 9M974036.D
Acq: 28 Apr 2016 16:47

Tgt Ion: 43 Resp: 5807

Ion	Ratio	Lower	Upper
43	100		
58	23.8	20.2	47.2

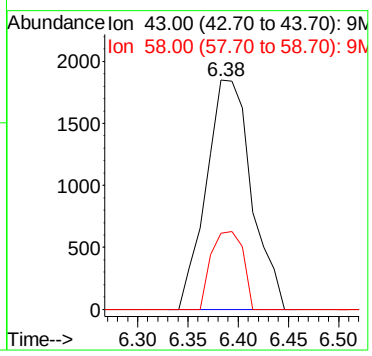

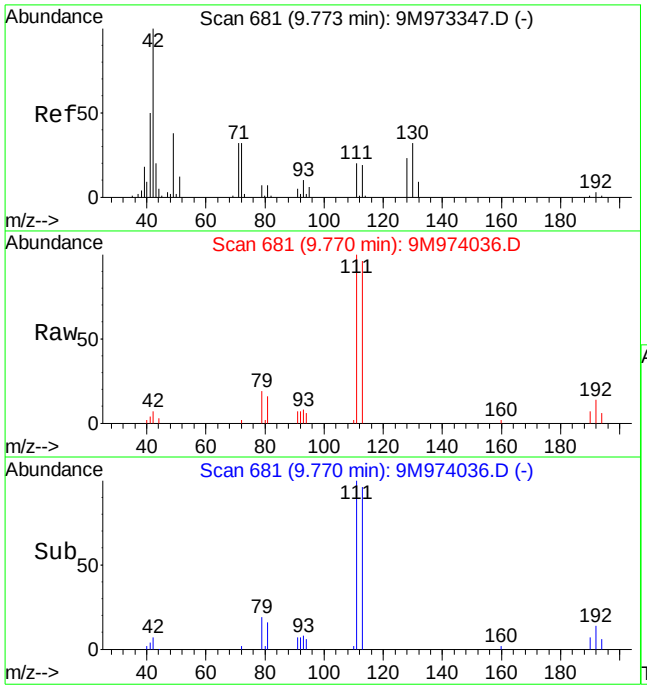

#36
Tetrahydrofuran
Concen: 2.02 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. -0.00 min
Lab File: 9M974036.D
Acq: 28 Apr 2016 16:47

Tgt Ion: 42 Resp: 2625

Ion	Ratio	Lower	Upper
42	100		
72	17.1	19.8	46.2#
71	7.3	18.3	42.7#

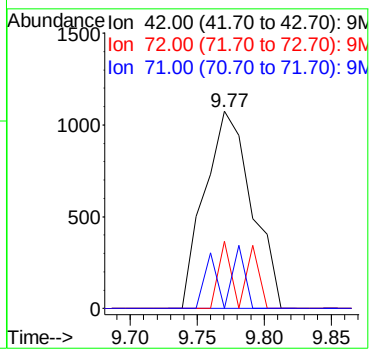

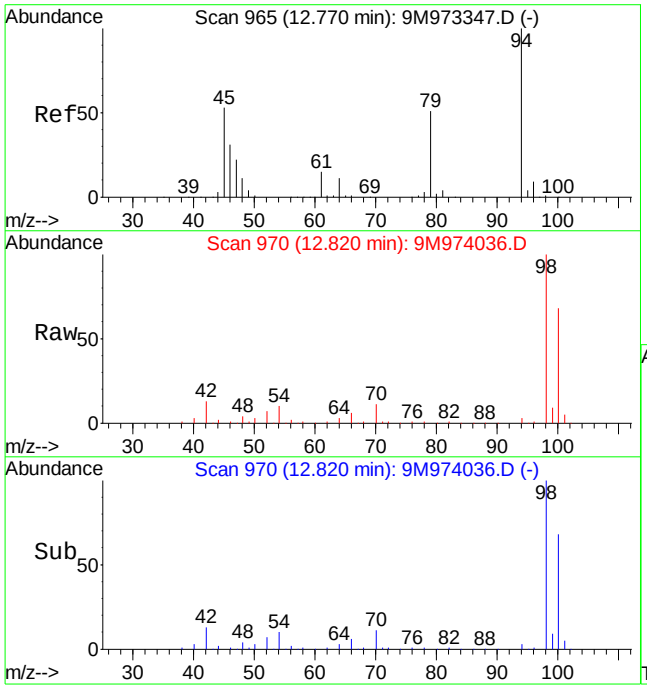

#56
Dimethyl Disulfide
Concen: 2.79 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M974036.D
Acq: 28 Apr 2016 16:47

Tgt Ion: 94 Resp: 14503

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

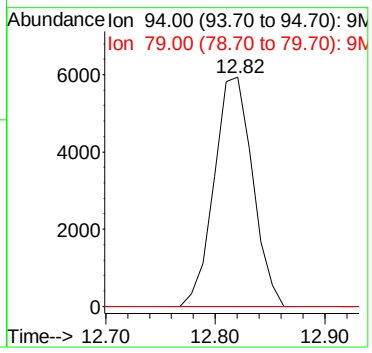

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974037.D Vial: 9
Acq On : 28 Apr 2016 17:17 Operator: ADC
Sample : L16041344-05 A 8260 4.71g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:39:53 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	593151	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	432394	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.74	152	203172	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	157924	52.7177 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.44%		
43) 1,2-Dichloroethane-d4	10.44	65	185831	59.2578 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 118.52%		
58) Toluene-d8	12.82	98	569595	55.2725 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 110.54%		
79) p-Bromofluorobenzene	16.22	95	213203	60.5847 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 121.16%#		

Target Compounds

					Qvalue
13) Acetone	6.39	43	5851	Below Cal	89
36) Tetrahydrofuran	9.77	42	2685	1.9820 ug/kg#	75
56) Dimethyl Disulfide	12.82	94	15383	2.8402 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.07	105	2538	Below Cal	90

(#) = qualifier out of range (m) = manual integration
9M974037.D 8260-SL.M Fri Apr 29 12:39:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974037.D Vial: 9
Acq On : 28 Apr 2016 17:17 Operator: ADC
Sample : L16041344-05 A 8260 4.71g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:39 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

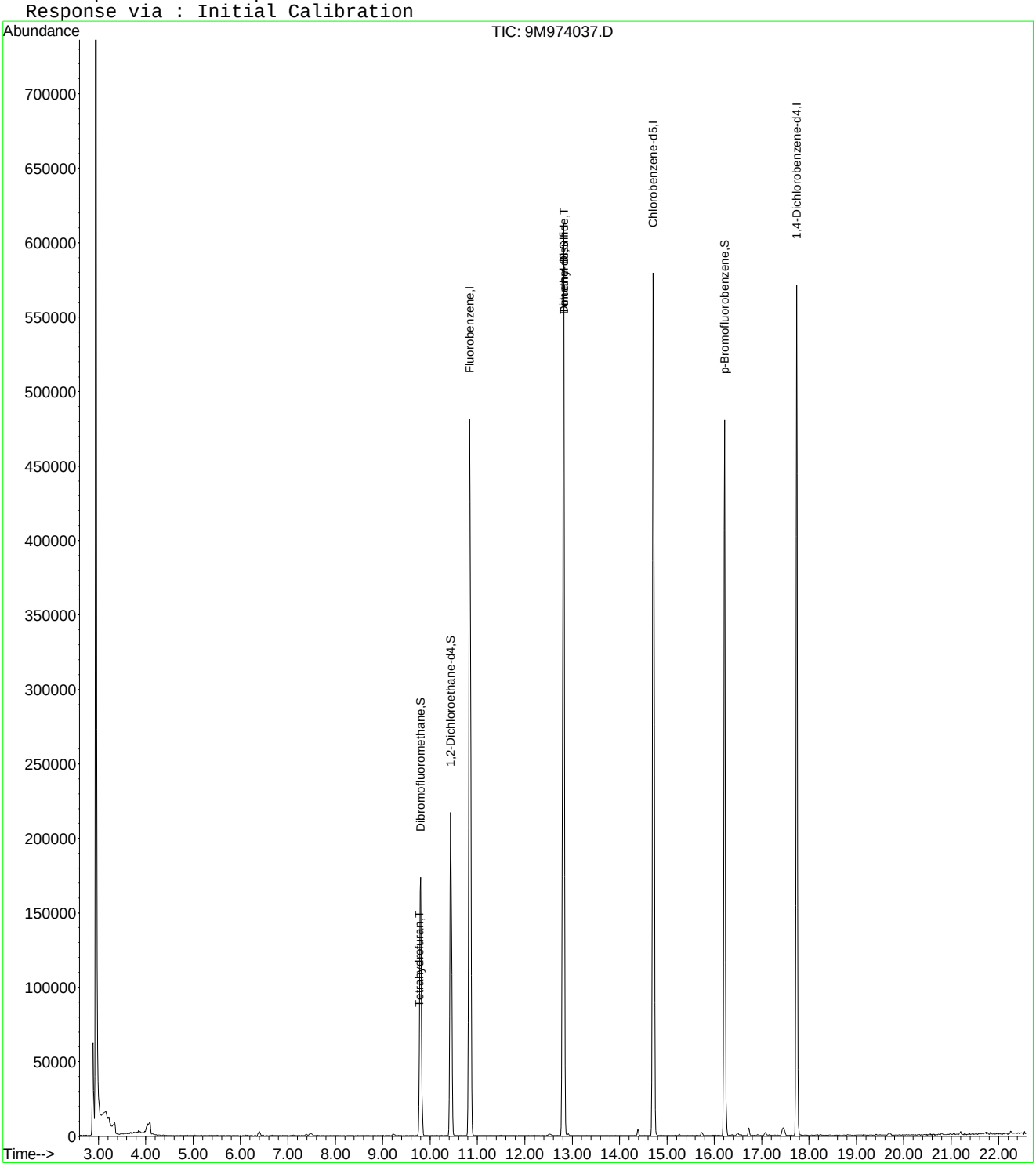

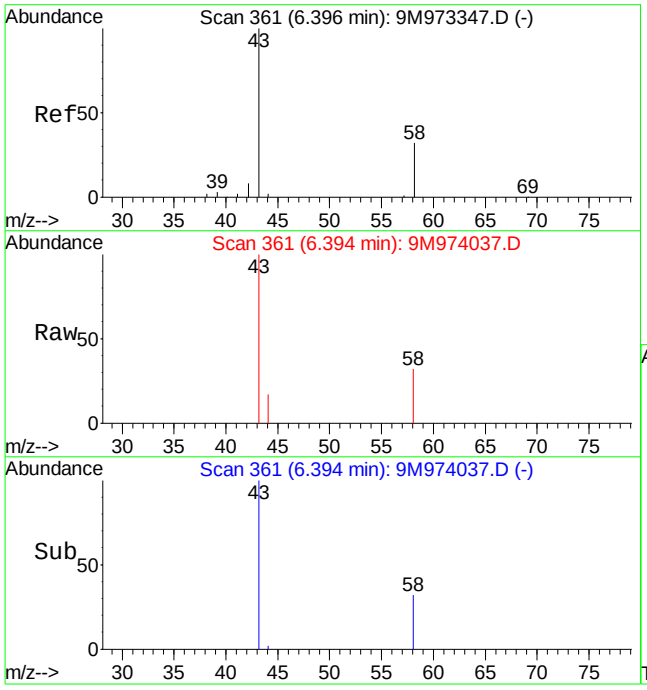

#13
Acetone
Concen: Below Cal
RT: 6.39 min Scan# 361
Delta R.T. 0.01 min
Lab File: 9M974037.D
Acq: 28 Apr 2016 17:17

Tgt Ion: 43 Resp: 5851

Ion	Ratio	Lower	Upper
43	100		
58	27.4	20.2	47.2

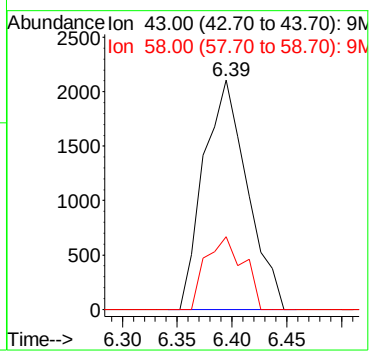

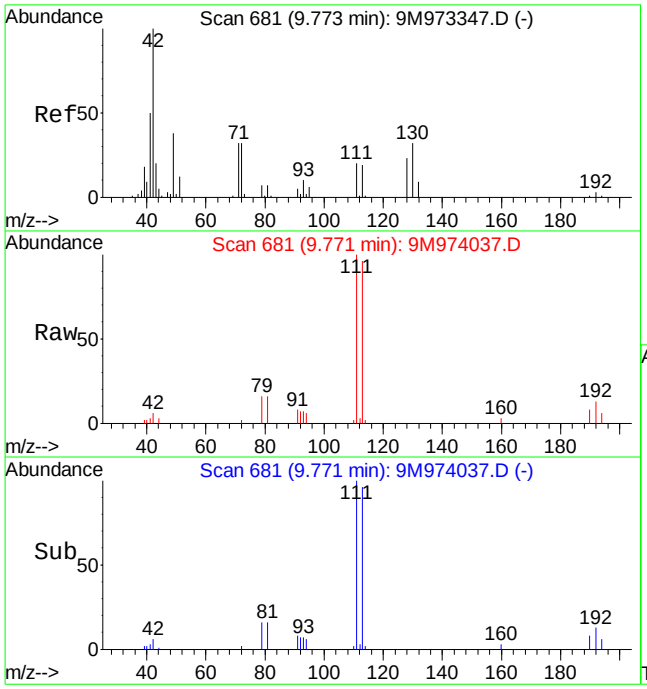

#36
Tetrahydrofuran
Concen: 1.98 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. 0.00 min
Lab File: 9M974037.D
Acq: 28 Apr 2016 17:17

Tgt Ion: 42 Resp: 2685

Ion	Ratio	Lower	Upper
42	100		
72	26.7	19.8	46.2
71	8.9	18.3	42.7#

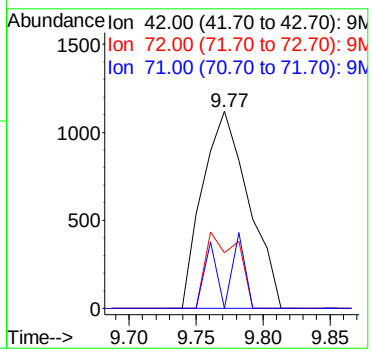

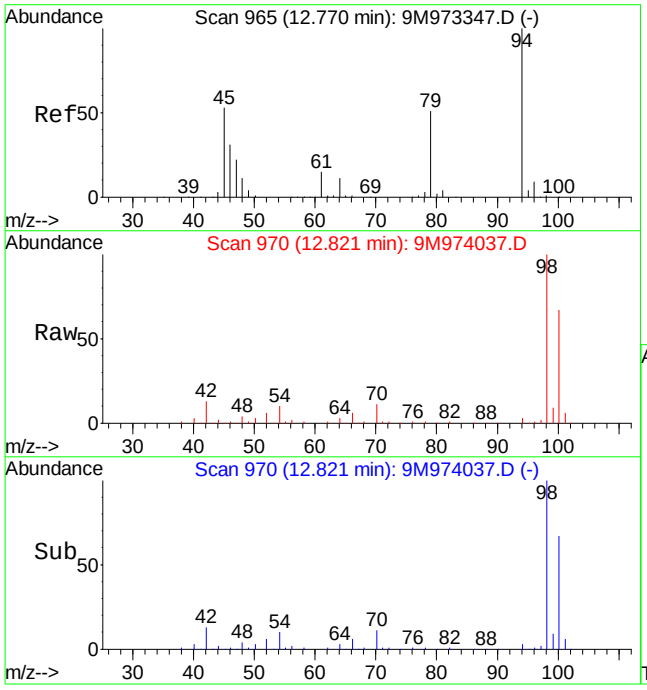

#56
Dimethyl Disulfide
Concen: 2.84 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M974037.D
Acq: 28 Apr 2016 17:17

Tgt Ion: 94 Resp: 15383

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

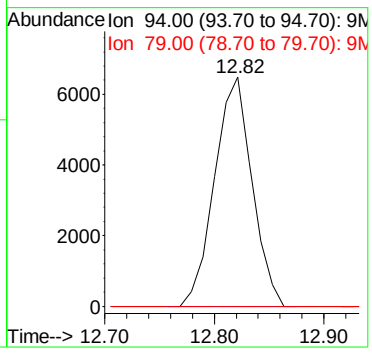

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974038.D Vial: 10
Acq On : 28 Apr 2016 17:47 Operator: ADC
Sample : L16041344-06 A 8260 4.76g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:39:54 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	557814	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	407386	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	190833	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	147016	52.1854 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.38%		
43) 1,2-Dichloroethane-d4	10.44	65	175304	59.4423 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 118.88%		
58) Toluene-d8	12.81	98	533444	54.9422 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 109.88%		
79) p-Bromofluorobenzene	16.22	95	197911	59.8756 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 119.76%		

Target Compounds

					Qvalue
13) Acetone	6.40	43	3732	Below Cal	91
36) Tetrahydrofuran	9.77	42	2669	2.0950 ug/kg#	66
56) Dimethyl Disulfide	12.82	94	14604	2.8672 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.08	105	2045	Below Cal #	64

(#) = qualifier out of range (m) = manual integration
9M974038.D 8260-SL.M Fri Apr 29 12:39:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974038.D Vial: 10
Acq On : 28 Apr 2016 17:47 Operator: ADC
Sample : L16041344-06 A 8260 4.76g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:39 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

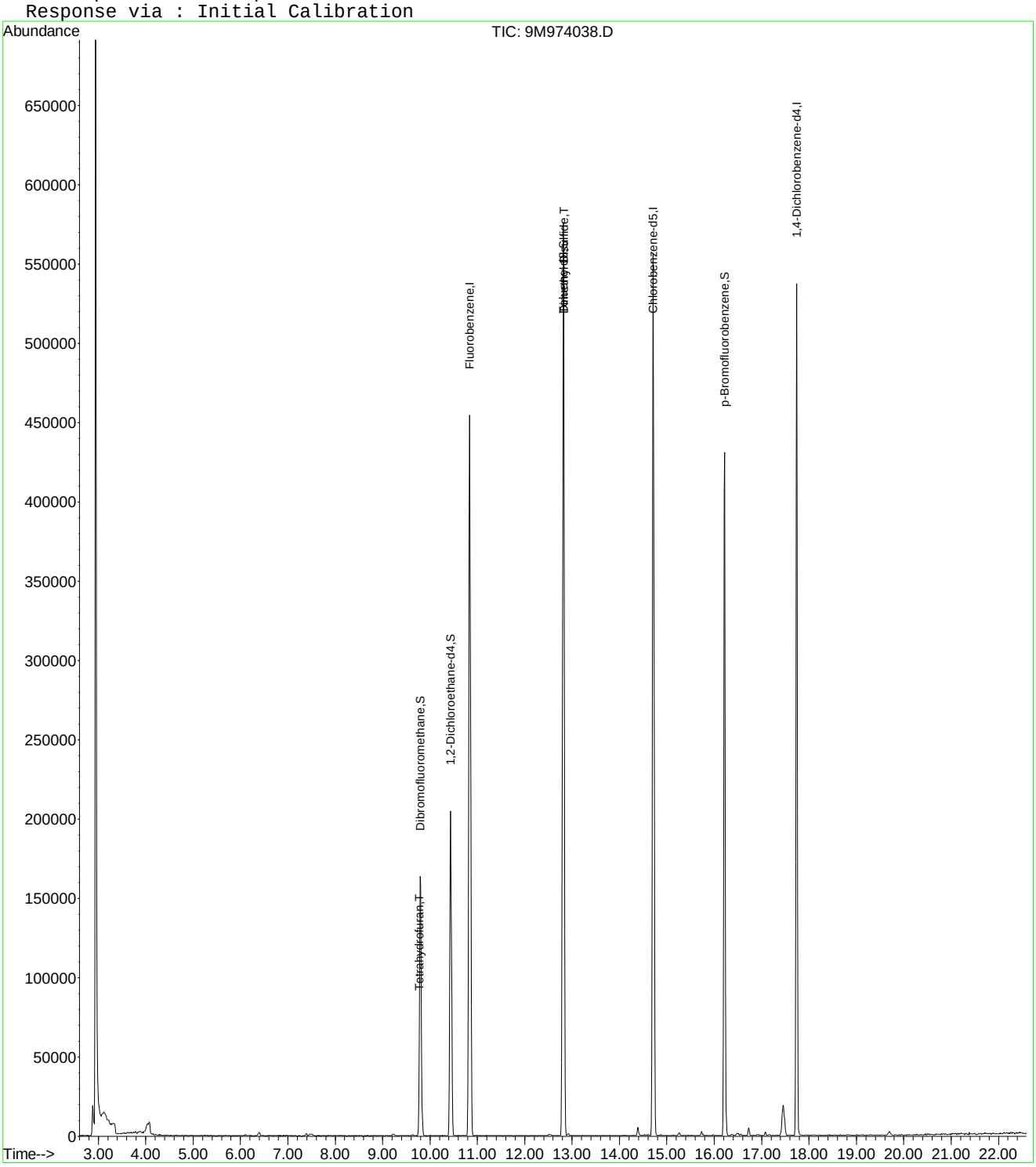

9M974038.D 8260-SL.M Fri Apr 29 12:39:55 2016 Page 2

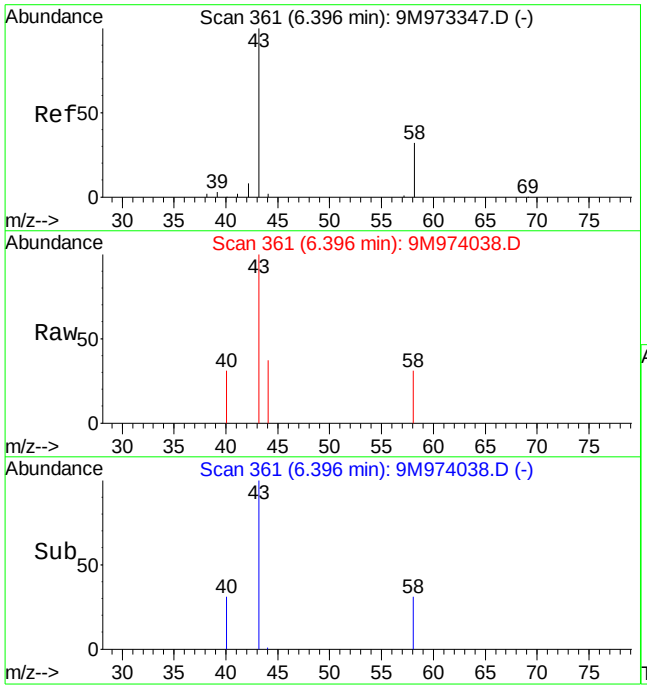

#13
Acetone
Concen: Below Cal
RT: 6.40 min Scan# 361
Delta R.T. 0.01 min
Lab File: 9M974038.D
Acq: 28 Apr 2016 17:47

Tgt Ion: 43 Resp: 3732

Ion	Ratio	Lower	Upper
43	100		
58	28.4	20.2	47.2

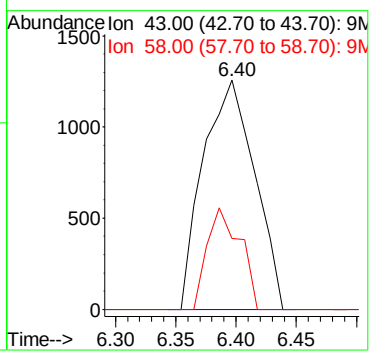

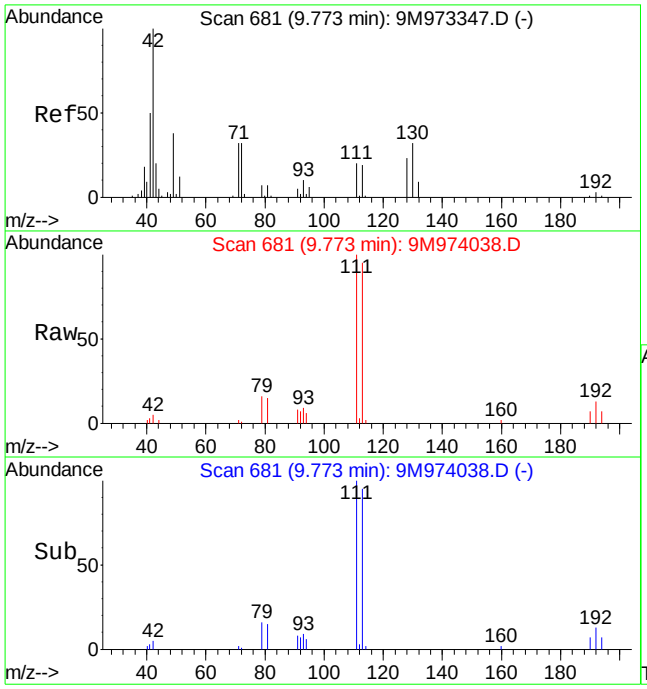

#36
Tetrahydrofuran
Concen: 2.10 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. 0.00 min
Lab File: 9M974038.D
Acq: 28 Apr 2016 17:47

Tgt Ion: 42 Resp: 2669

Ion	Ratio	Lower	Upper
42	100		
72	7.2	19.8	46.2#
71	18.8	18.3	42.7

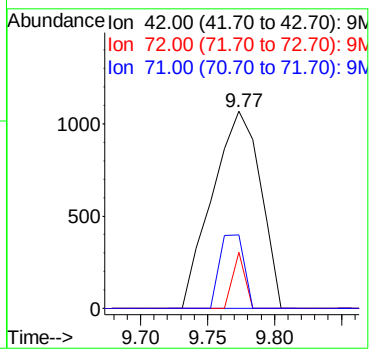

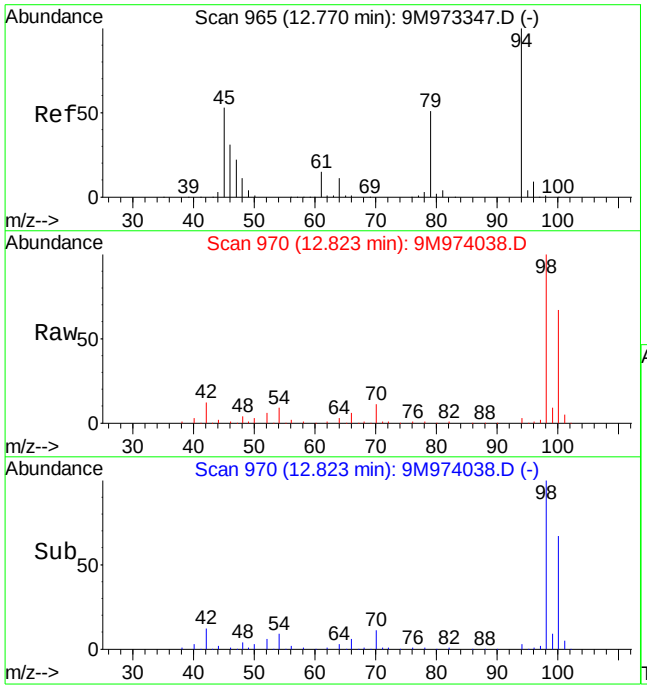

#56
Dimethyl Disulfide
Concen: 2.87 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M974038.D
Acq: 28 Apr 2016 17:47

Tgt Ion: 94 Resp: 14604

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

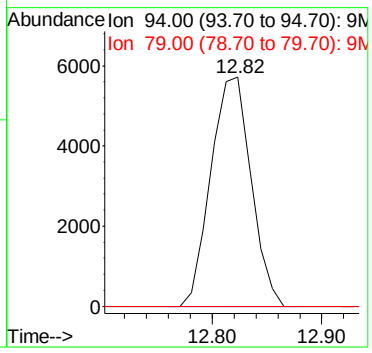

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974039.D Vial: 11
Acq On : 28 Apr 2016 18:17 Operator: ADC
Sample : L16041344-07 A 8260 5.36g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:39:55 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	578707	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	419986	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	195541	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	151581	51.8632 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 103.72%		
43) 1,2-Dichloroethane-d4	10.44	65	179315	58.6072 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 117.22%		
58) Toluene-d8	12.81	98	542122	54.1608 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 108.32%		
79) p-Bromofluorobenzene	16.22	95	201830	59.5911 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 119.18%		

Target Compounds

					Qvalue
13) Acetone	6.40	43	3283	Below Cal #	55
15) Tert-Butyl Alcohol	6.72	59	231	0.4551 ug/kg#	61
36) Tetrahydrofuran	9.77	42	2645	2.0012 ug/kg#	66
56) Dimethyl Disulfide	12.81	94	14535	2.7507 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.08	105	2331	Below Cal	77

(#) = qualifier out of range (m) = manual integration
9M974039.D 8260-SL.M Fri Apr 29 12:39:55 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974039.D Vial: 11
Acq On : 28 Apr 2016 18:17 Operator: ADC
Sample : L16041344-07 A 8260 5.36g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:39 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

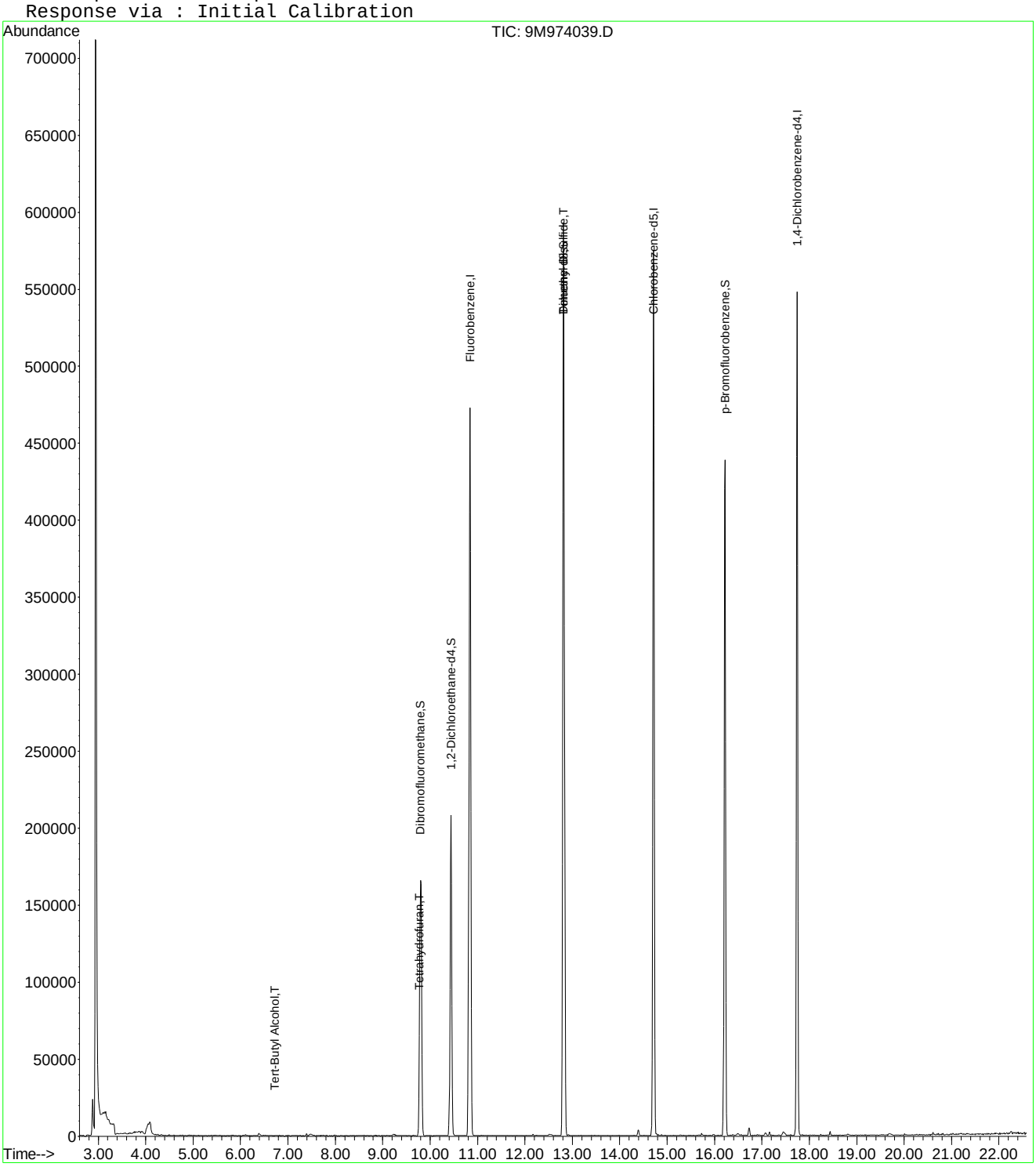

9M974039.D 8260-SL.M Fri Apr 29 12:39:56 2016 Page 2

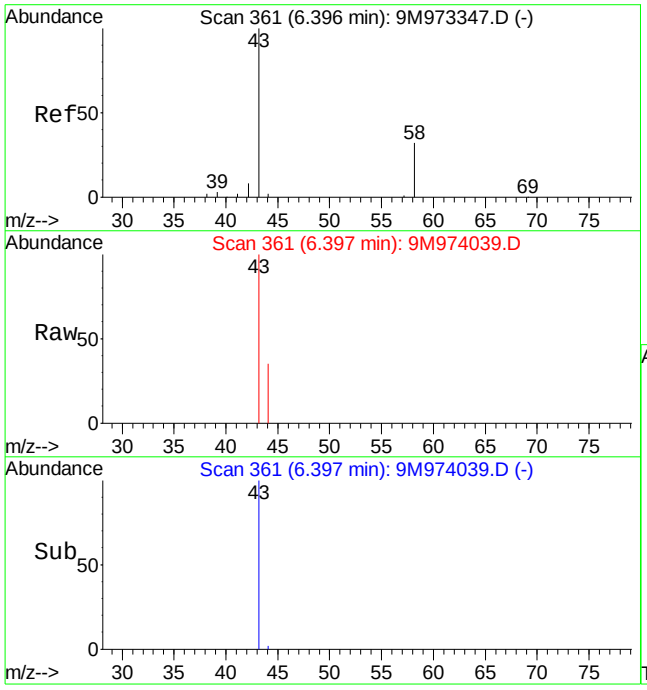

#13
Acetone
Concen: Below Cal
RT: 6.40 min Scan# 361
Delta R.T. 0.01 min
Lab File: 9M974039.D
Acq: 28 Apr 2016 18:17

Tgt Ion: 43 Resp: 3283

Ion	Ratio	Lower	Upper
43	100		
58	8.1	20.2	47.2#

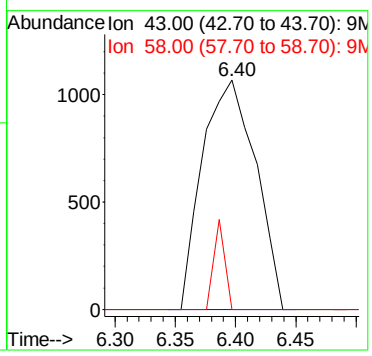

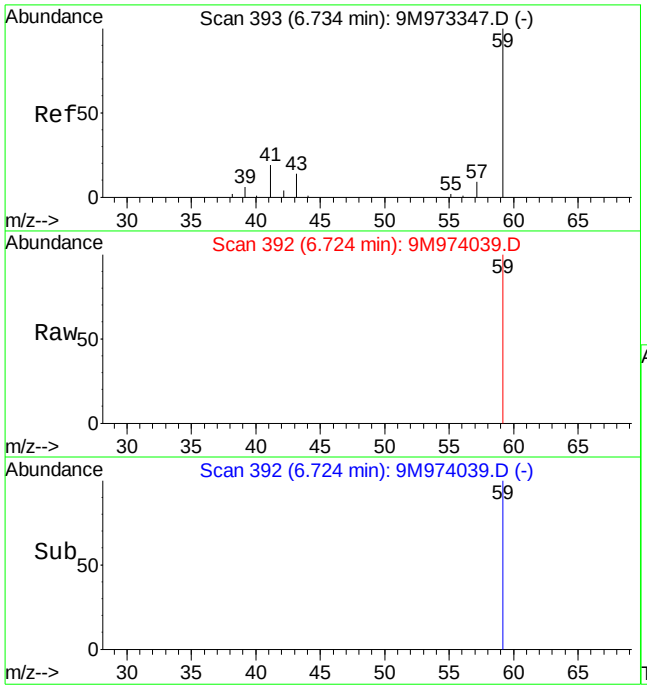

#15
Tert-Butyl Alcohol
Concen: 0.46 ug/kg
RT: 6.72 min Scan# 392
Delta R.T. 0.00 min
Lab File: 9M974039.D
Acq: 28 Apr 2016 18:17

Tgt Ion: 59 Resp: 231

Ion	Ratio	Lower	Upper
59	100		
41	0.0	12.4	29.0#
57	0.0	6.1	14.1#

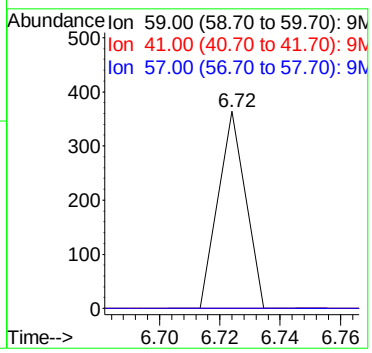

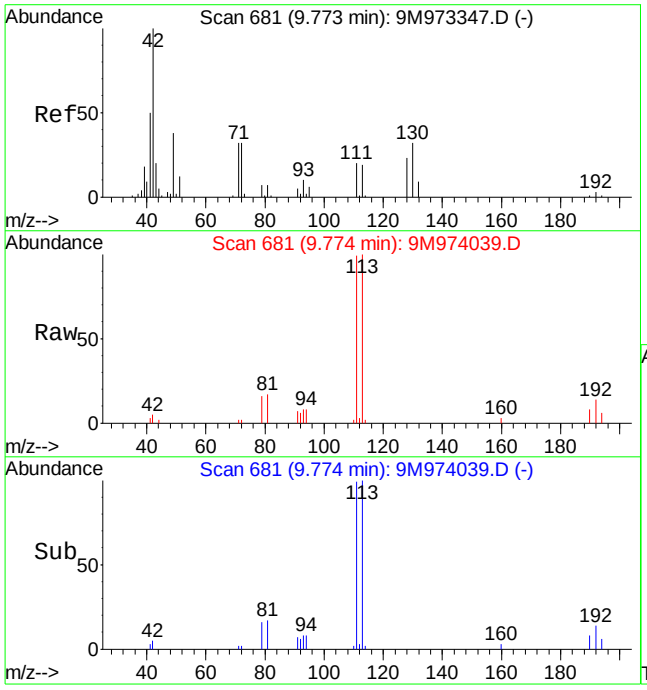

#36
Tetrahydrofuran
Concen: 2.00 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. 0.00 min
Lab File: 9M974039.D
Acq: 28 Apr 2016 18:17

Tgt Ion: 42 Resp: 2645

Ion	Ratio	Lower	Upper
42	100		
72	7.8	19.8	46.2#
71	17.7	18.3	42.7#

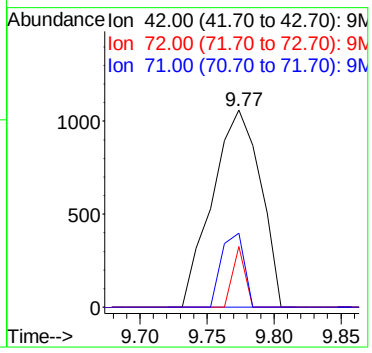

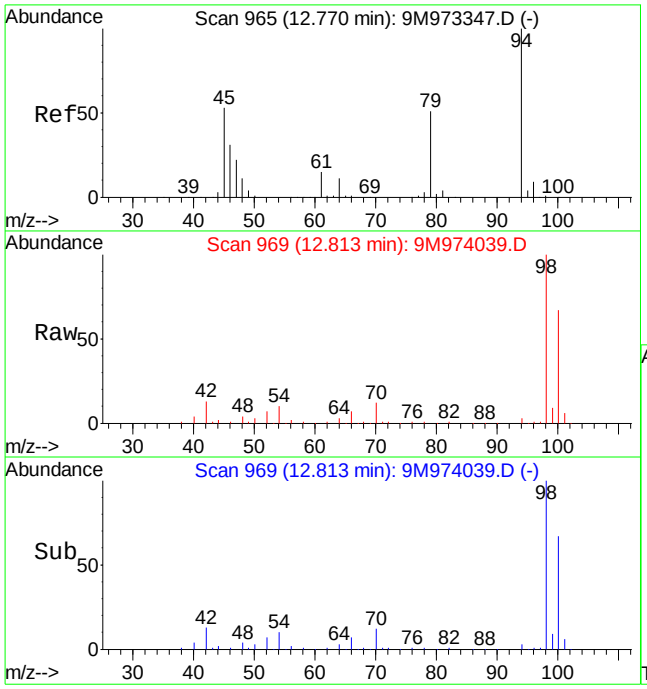

#56
Dimethyl Disulfide
Concen: 2.75 ug/kg
RT: 12.81 min Scan# 969
Delta R.T. 0.05 min
Lab File: 9M974039.D
Acq: 28 Apr 2016 18:17

Tgt Ion: 94 Resp: 14535

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

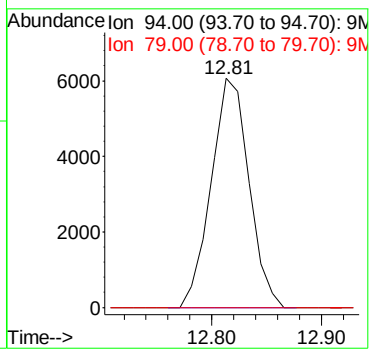

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974040.D Vial: 12
Acq On : 28 Apr 2016 18:47 Operator: ADC
Sample : L16041344-08 A 8260 4.95g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:39:56 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	577592	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	421673	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	197545	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	150353	51.5424 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 103.08%		
43) 1,2-Dichloroethane-d4	10.43	65	177069	57.9848 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 115.96%		
58) Toluene-d8	12.82	98	545345	54.2648 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 108.52%		
79) p-Bromofluorobenzene	16.22	95	204369	59.7286 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 119.46%		

Target Compounds

					Qvalue
13) Acetone	6.39	43	3495	Below Cal	82
36) Tetrahydrofuran	9.77	42	2589	1.9627 ug/kg#	80
56) Dimethyl Disulfide	12.82	94	14532	2.7554 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.08	105	2239	Below Cal	82

(#) = qualifier out of range (m) = manual integration
9M974040.D 8260-SL.M Fri Apr 29 12:39:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974040.D Vial: 12
Acq On : 28 Apr 2016 18:47 Operator: ADC
Sample : L16041344-08 A 8260 4.95g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:39 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

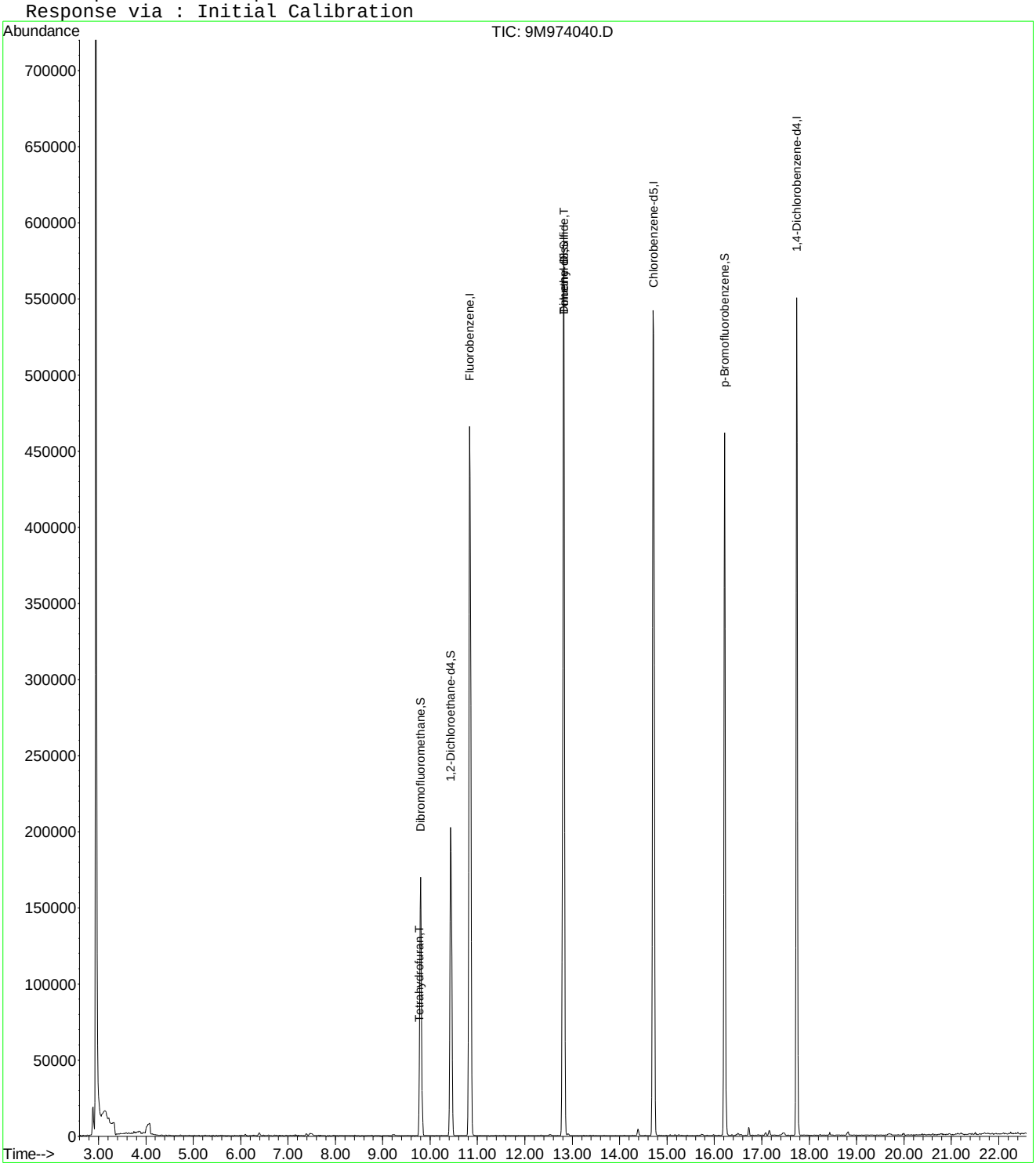

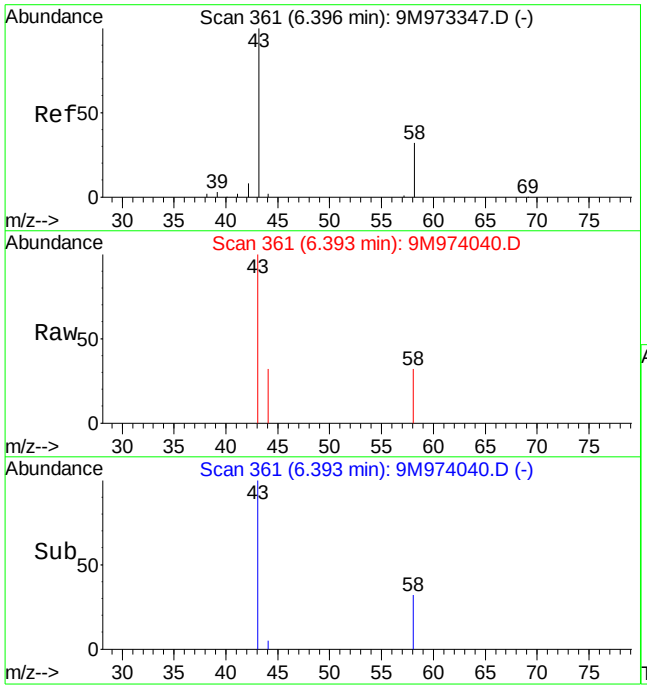

#13
Acetone
Concen: Below Cal
RT: 6.39 min Scan# 361
Delta R.T. 0.01 min
Lab File: 9M974040.D
Acq: 28 Apr 2016 18:47

Tgt Ion: 43 Resp: 3495

Ion	Ratio	Lower	Upper
43	100		
58	23.4	20.2	47.2

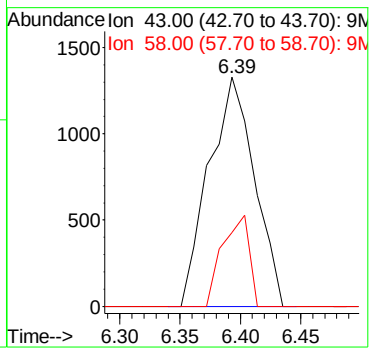

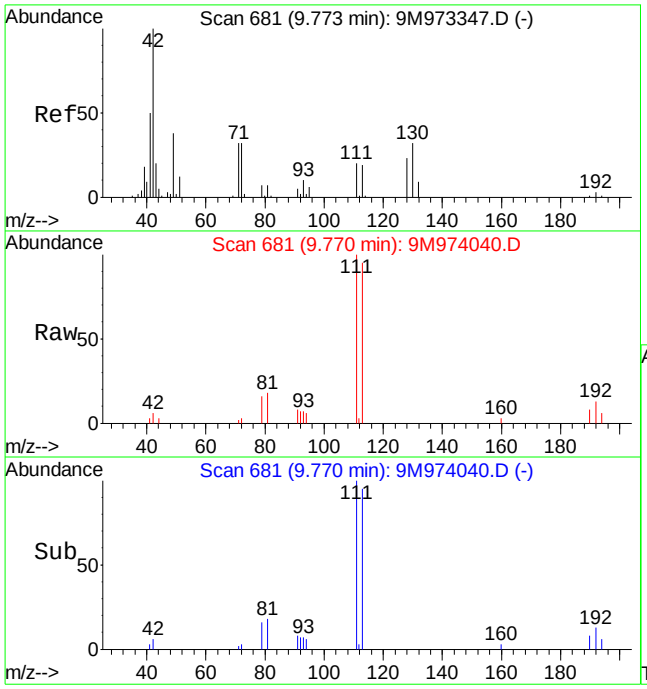

#36
Tetrahydrofuran
Concen: 1.96 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. -0.00 min
Lab File: 9M974040.D
Acq: 28 Apr 2016 18:47

Tgt Ion: 42 Resp: 2589

Ion	Ratio	Lower	Upper
42	100		
72	16.8	19.8	46.2#
71	25.2	18.3	42.7

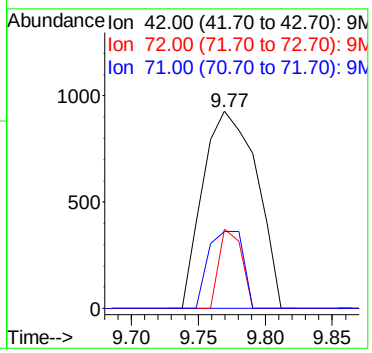

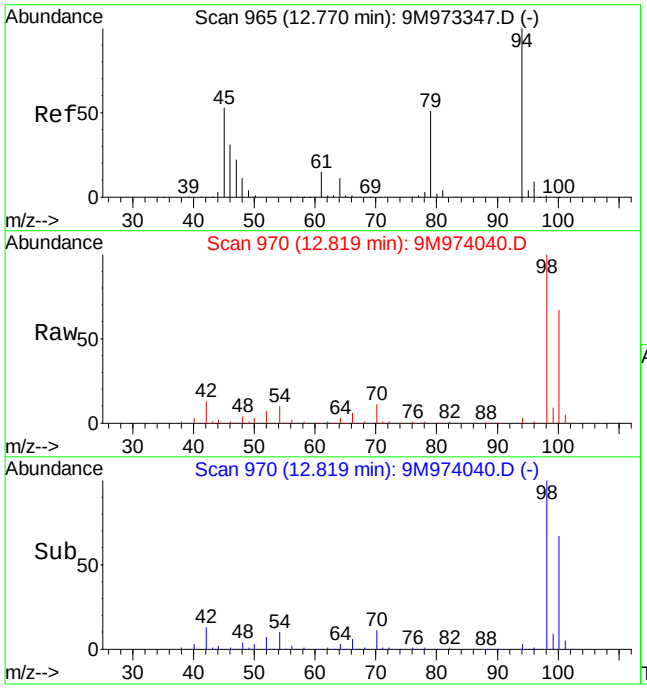

#56
Dimethyl Disulfide
Concen: 2.76 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M974040.D
Acq: 28 Apr 2016 18:47

Tgt Ion: 94 Resp: 14532

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

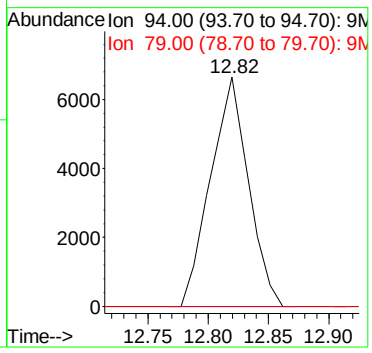

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974041.D Vial: 13
Acq On : 28 Apr 2016 19:18 Operator: ADC
Sample : L16041344-09 A 8260 4.58g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:39:57 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	565807	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	416442	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	194016	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	153233	53.6238 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 107.24%		
43) 1,2-Dichloroethane-d4	10.44	65	181133	60.5511 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 121.10%#		
58) Toluene-d8	12.81	98	545601	54.9723 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 109.94%		
79) p-Bromofluorobenzene	16.21	95	203202	60.4678 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 120.94%		

Target Compounds

					Qvalue
13) Acetone	6.40	43	3411	Below Cal	80
36) Tetrahydrofuran	9.77	42	2287	1.7698 ug/kg#	71
56) Dimethyl Disulfide	12.81	94	14559	2.8180 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.09	105	2528	Below Cal	70

(#) = qualifier out of range (m) = manual integration
9M974041.D 8260-SL.M Fri Apr 29 12:39:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974041.D Vial: 13
Acq On : 28 Apr 2016 19:18 Operator: ADC
Sample : L16041344-09 A 8260 4.58g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:39 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

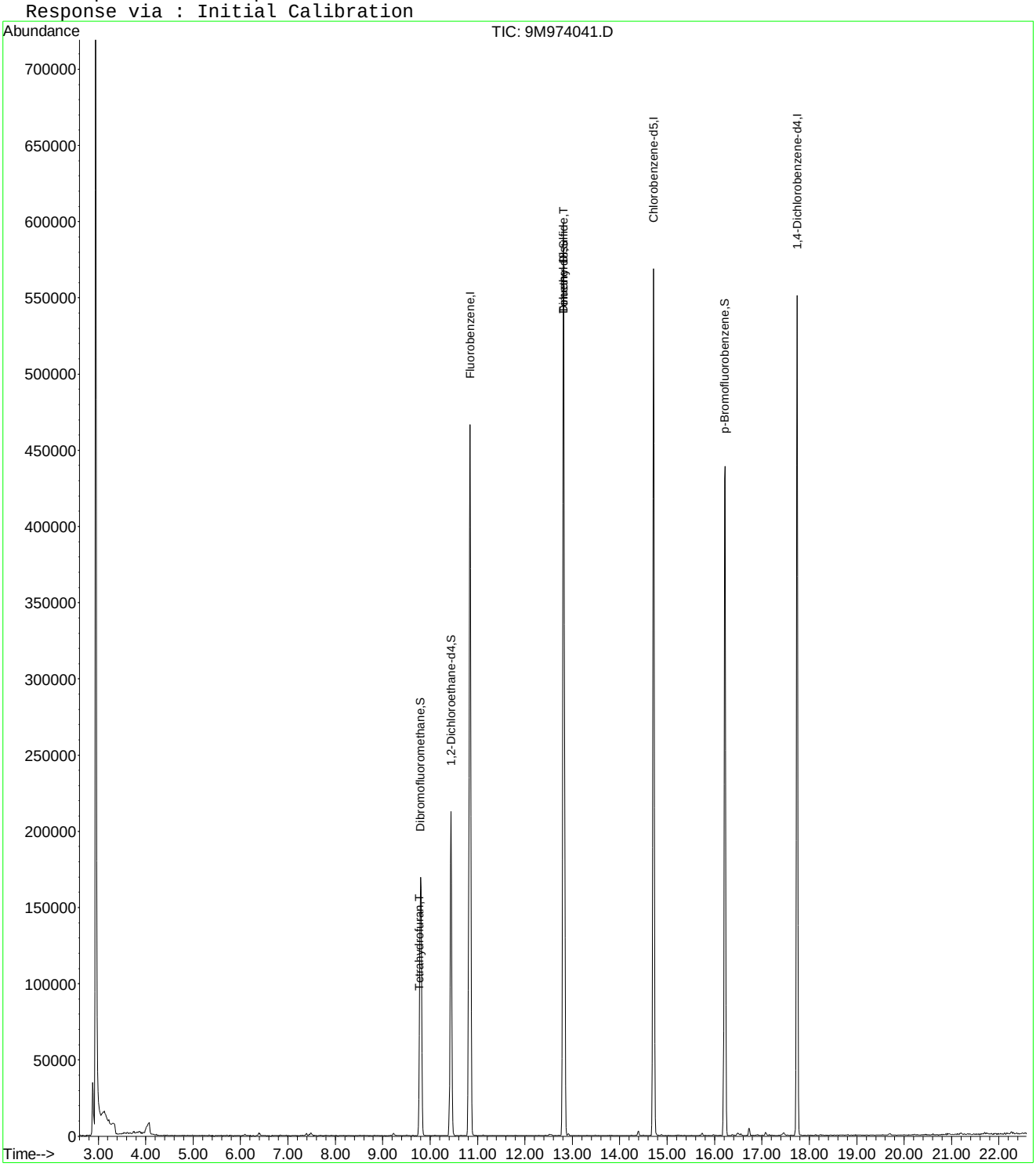

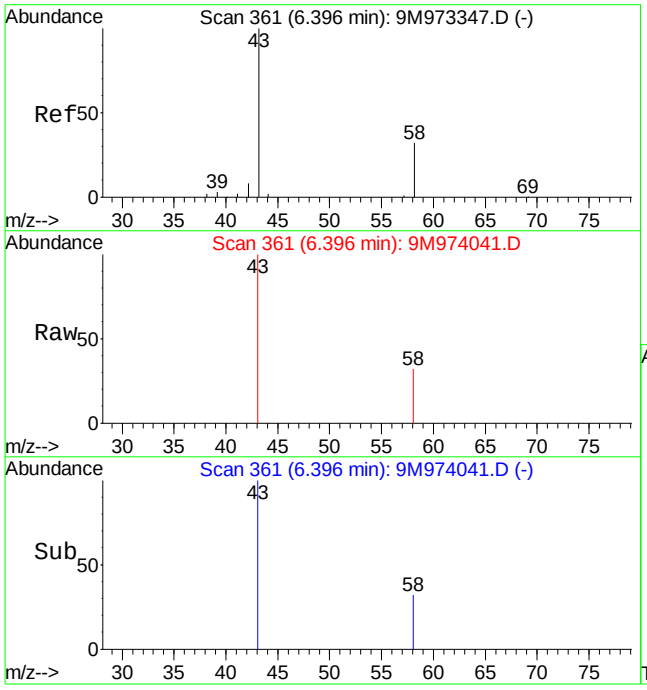

#13
Acetone
Concen: Below Cal
RT: 6.40 min Scan# 361
Delta R.T. 0.01 min
Lab File: 9M974041.D
Acq: 28 Apr 2016 19:18

Tgt Ion: 43 Resp: 3411

Ion	Ratio	Lower	Upper
43	100		
58	22.5	20.2	47.2

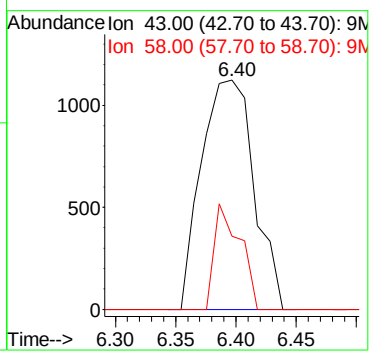

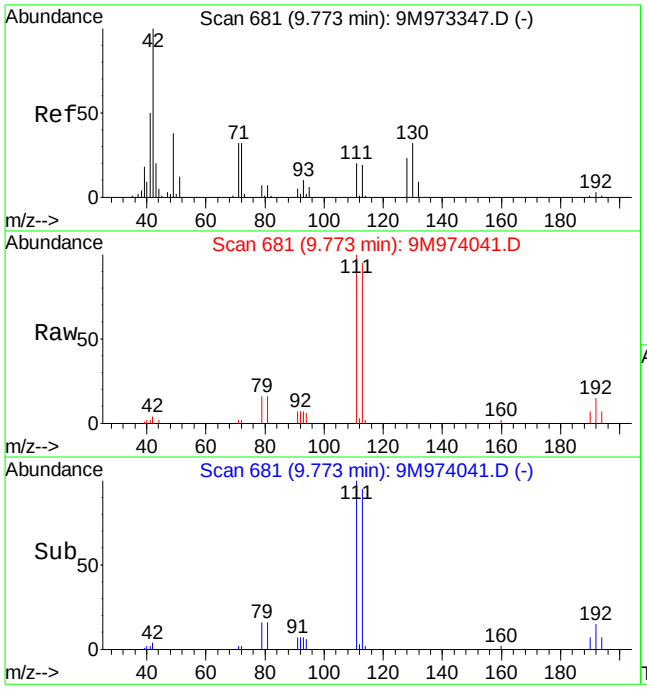

#36
Tetrahydrofuran
Concen: 1.77 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. 0.00 min
Lab File: 9M974041.D
Acq: 28 Apr 2016 19:18

Tgt Ion: 42 Resp: 2287

Ion	Ratio	Lower	Upper
42	100		
72	21.6	19.8	46.2
71	9.2	18.3	42.7#

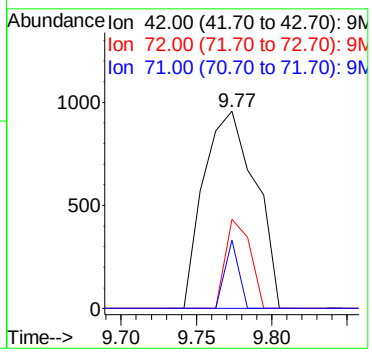

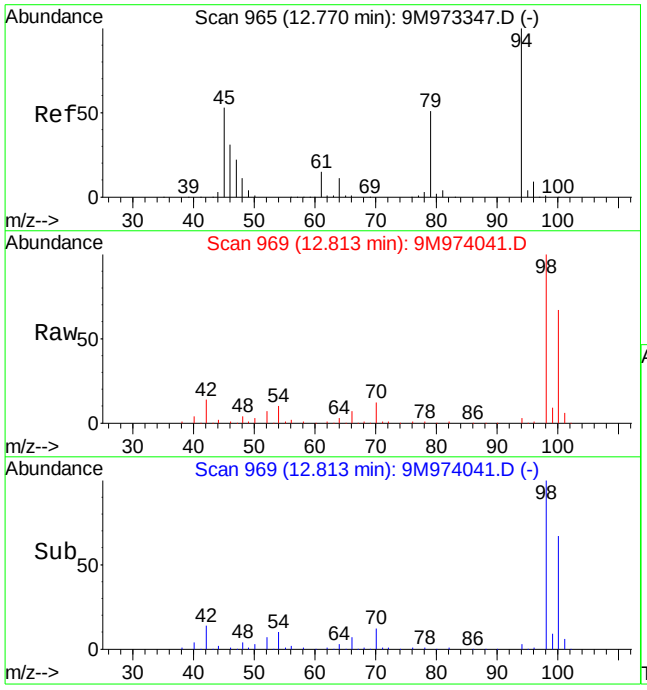

#56
Dimethyl Disulfide
Concen: 2.82 ug/kg
RT: 12.81 min Scan# 969
Delta R.T. 0.04 min
Lab File: 9M974041.D
Acq: 28 Apr 2016 19:18

Tgt Ion: 94 Resp: 14559

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

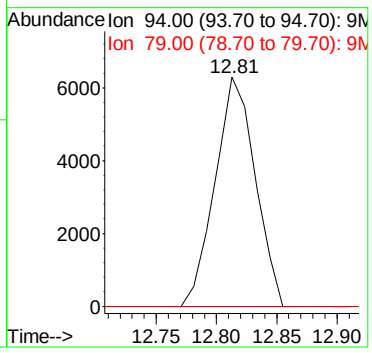

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974042.D Vial: 14
Acq On : 28 Apr 2016 19:48 Operator: ADC
Sample : L16041344-10 A 8260 5.33g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:39:58 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	582517	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	417633	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.74	152	189710	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	150802	51.2592 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 102.52%		
43) 1,2-Dichloroethane-d4	10.44	65	163714	53.1582 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 106.32%		
58) Toluene-d8	12.82	98	557914	56.0526 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 112.10%		
79) p-Bromofluorobenzene	16.22	95	199745	60.7882 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 121.58%#		

Target Compounds

					Qvalue
13) Acetone	6.38	43	4677	Below Cal	99
36) Tetrahydrofuran	9.77	42	2850	2.1422 ug/kg#	79
56) Dimethyl Disulfide	12.82	94	14754	2.7738 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.08	105	2393	Below Cal	93

(#) = qualifier out of range (m) = manual integration
9M974042.D 8260-SL.M Fri Apr 29 12:39:58 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974042.D Vial: 14
Acq On : 28 Apr 2016 19:48 Operator: ADC
Sample : L16041344-10 A 8260 5.33g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:39 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

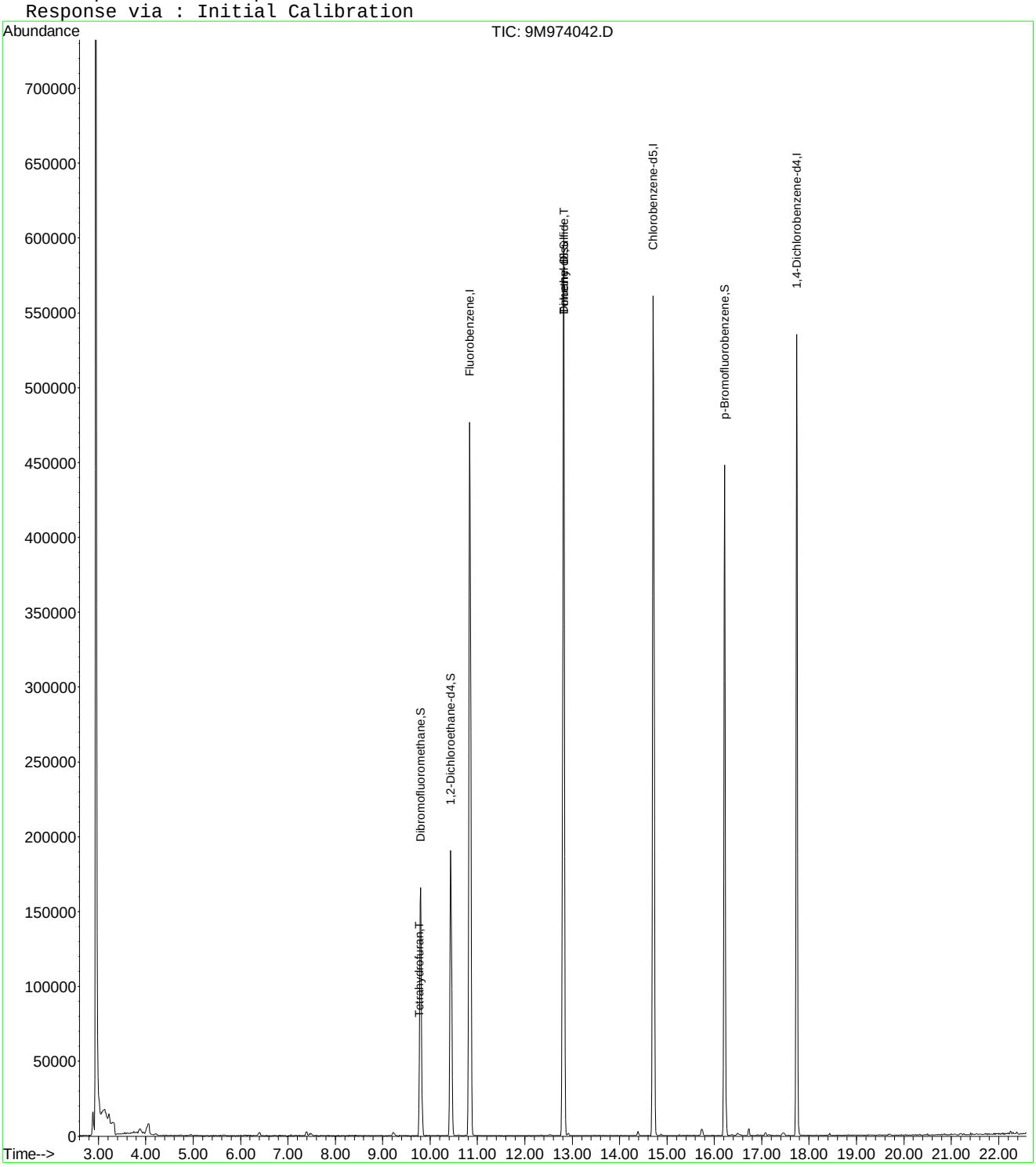

9M974042.D 8260-SL.M Fri Apr 29 12:39:59 2016 Page 2

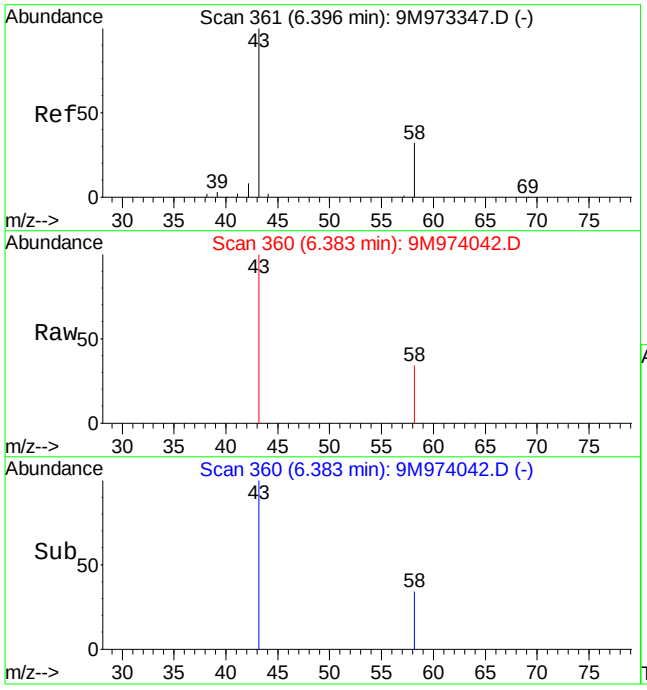

#13
Acetone
Concen: Below Cal
RT: 6.38 min Scan# 360
Delta R.T. 0.00 min
Lab File: 9M974042.D
Acq: 28 Apr 2016 19:48

Tgt Ion: 43 Resp: 4677

Ion	Ratio	Lower	Upper
43	100		
58	32.9	20.2	47.2

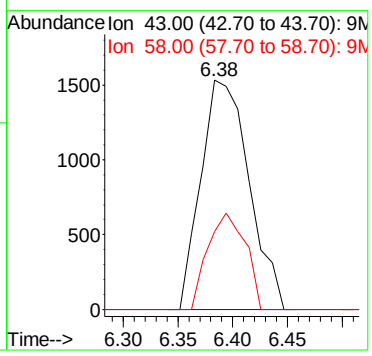

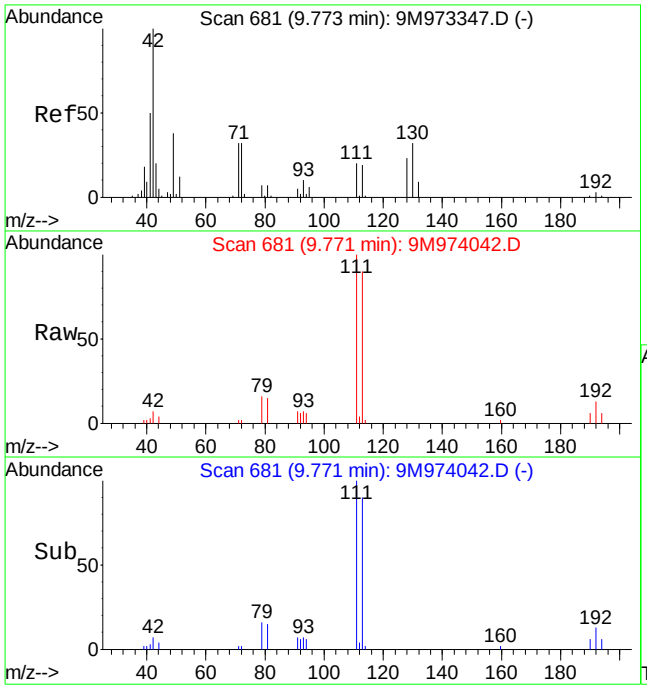

#36
Tetrahydrofuran
Concen: 2.14 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. -0.00 min
Lab File: 9M974042.D
Acq: 28 Apr 2016 19:48

Tgt Ion: 42 Resp: 2850

Ion	Ratio	Lower	Upper
42	100		
72	24.0	19.8	46.2
71	15.7	18.3	42.7#

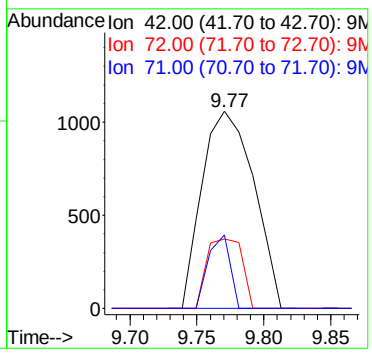

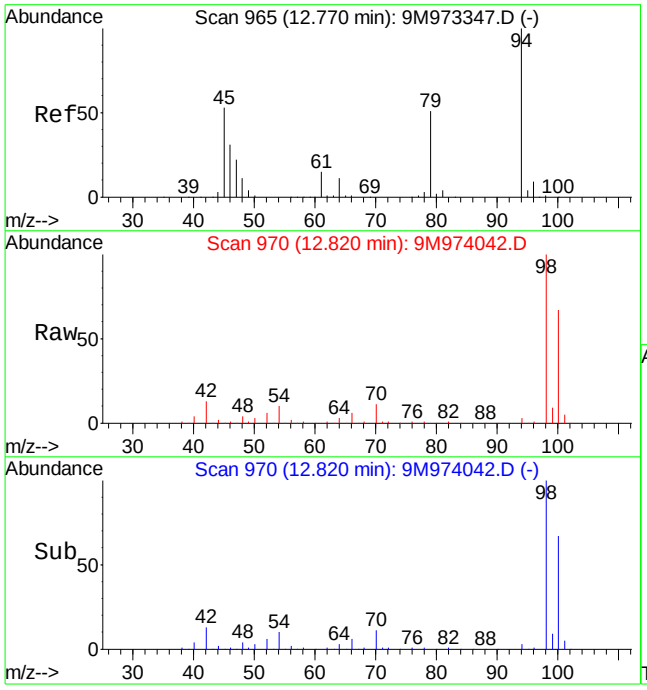

#56
Dimethyl Disulfide
Concen: 2.77 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M974042.D
Acq: 28 Apr 2016 19:48

Tgt Ion: 94 Resp: 14754

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

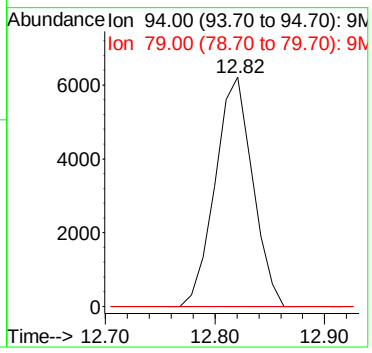

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974043.D Vial: 15
Acq On : 28 Apr 2016 20:18 Operator: ADC
Sample : L16041344-11 A 8260 4.78g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:39:59 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	593163	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	423056	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	189429	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	151850	50.6891 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 101.38%		
43) 1,2-Dichloroethane-d4	10.44	65	165280	52.7035 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.40%		
58) Toluene-d8	12.81	98	567263	56.2613 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 112.52%		
79) p-Bromofluorobenzene	16.21	95	204885	62.4449 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 124.88%#		

Target Compounds

					Qvalue
13) Acetone	6.39	43	3593	Below Cal #	68
19) Methylene Chloride	7.39	84	1387	0.4105 ug/kg	66
36) Tetrahydrofuran	9.77	42	3276	2.4183 ug/kg#	76
56) Dimethyl Disulfide	12.81	94	15003	2.7700 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.08	105	4021	Below Cal	85

(#) = qualifier out of range (m) = manual integration
9M974043.D 8260-SL.M Fri Apr 29 12:39:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974043.D Vial: 15
Acq On : 28 Apr 2016 20:18 Operator: ADC
Sample : L16041344-11 A 8260 4.78g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:39 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

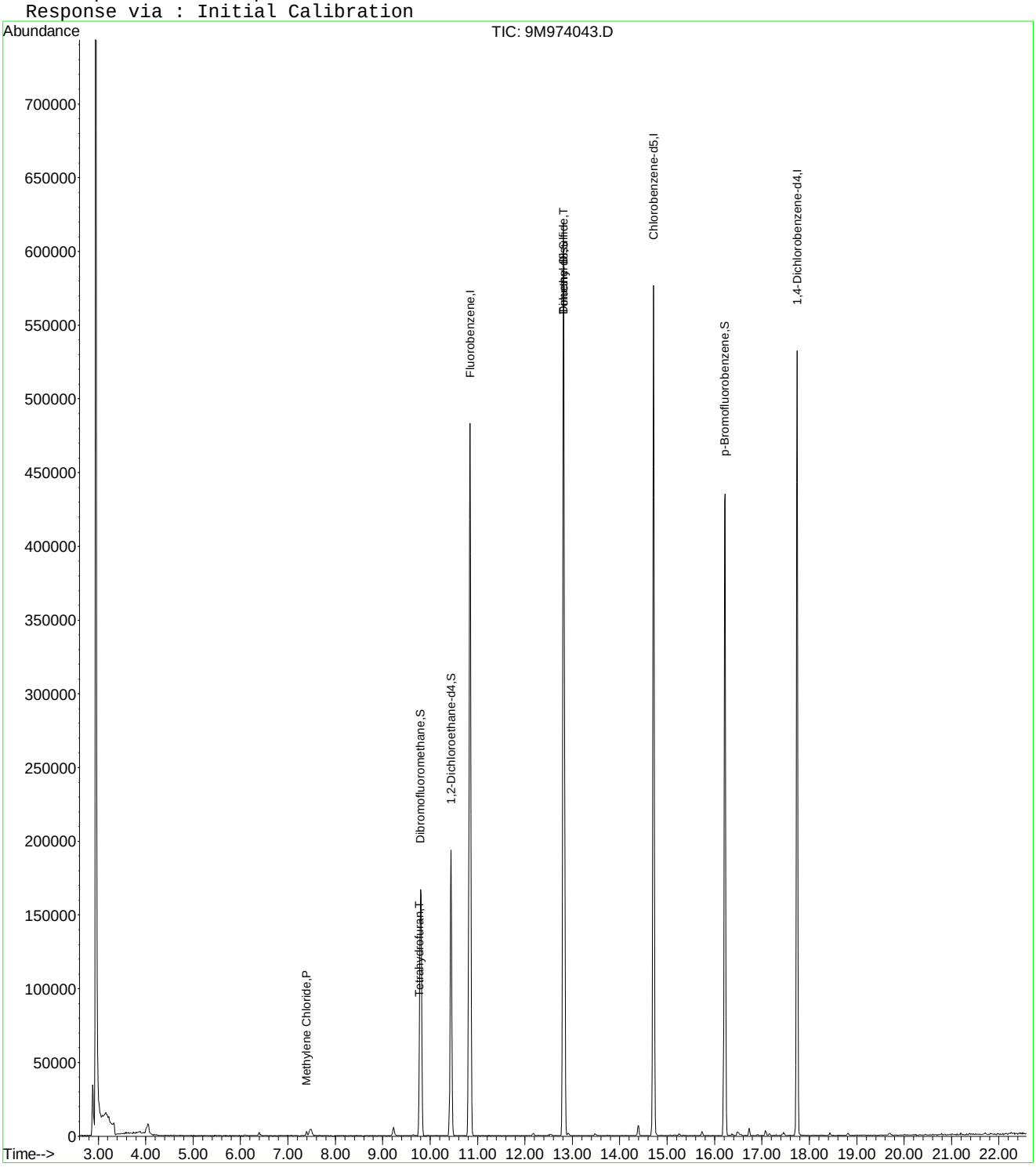

9M974043.D 8260-SL.M Fri Apr 29 12:40:00 2016 Page 2

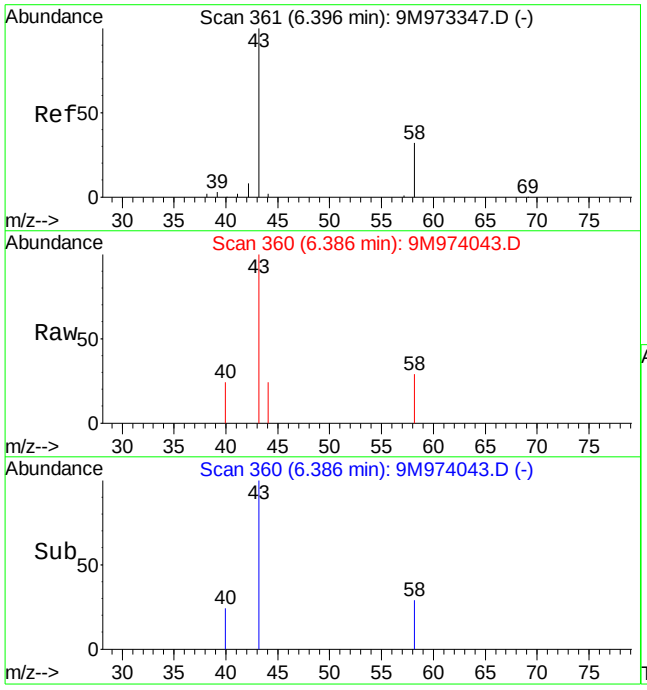

#13
Acetone
Concen: Below Cal
RT: 6.39 min Scan# 360
Delta R.T. 0.00 min
Lab File: 9M974043.D
Acq: 28 Apr 2016 20:18

Tgt Ion: 43 Resp: 3593

Ion	Ratio	Lower	Upper
43	100		
58	15.3	20.2	47.2#

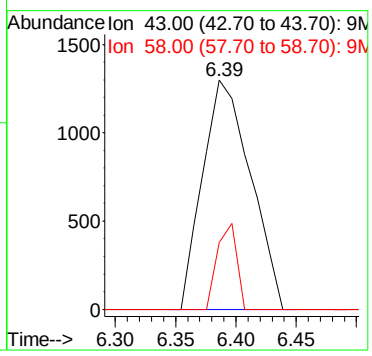

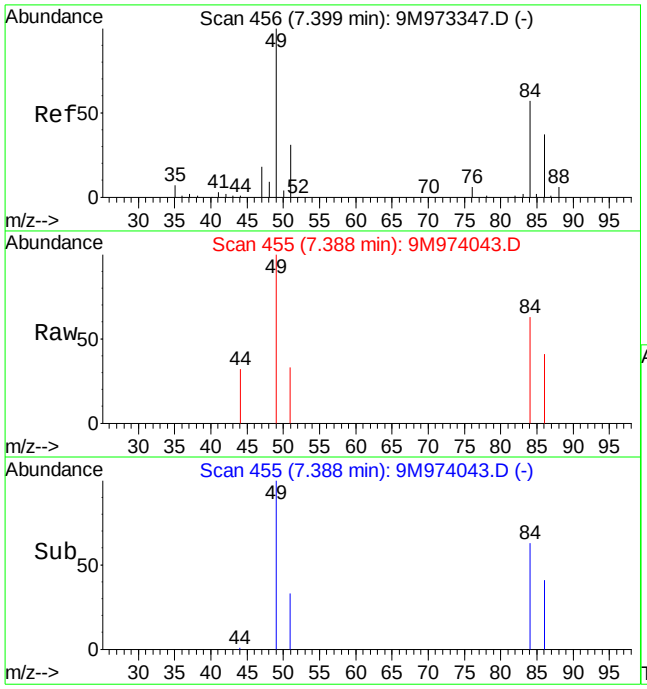

#19
Methylene Chloride
Concen: 0.41 ug/kg
RT: 7.39 min Scan# 455
Delta R.T. -0.01 min
Lab File: 9M974043.D
Acq: 28 Apr 2016 20:18

Tgt Ion: 84 Resp: 1387

Ion	Ratio	Lower	Upper
84	100		
49	220.2	103.9	242.5

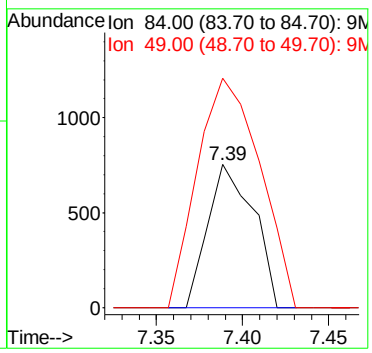

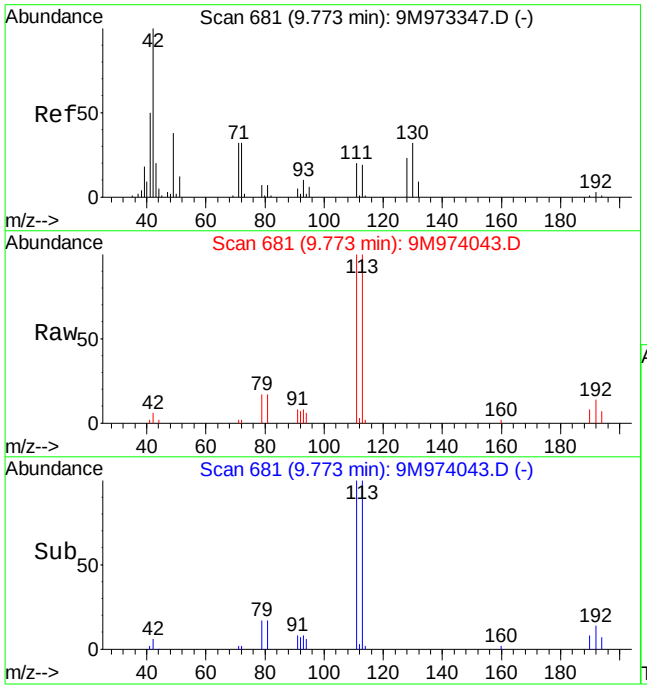

#36
Tetrahydrofuran
Concen: 2.42 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. 0.00 min
Lab File: 9M974043.D
Acq: 28 Apr 2016 20:18

Tgt Ion: 42 Resp: 3276

Ion	Ratio	Lower	Upper
42	100		
72	21.3	19.8	46.2
71	14.9	18.3	42.7#

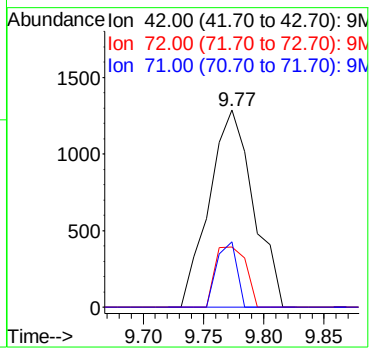

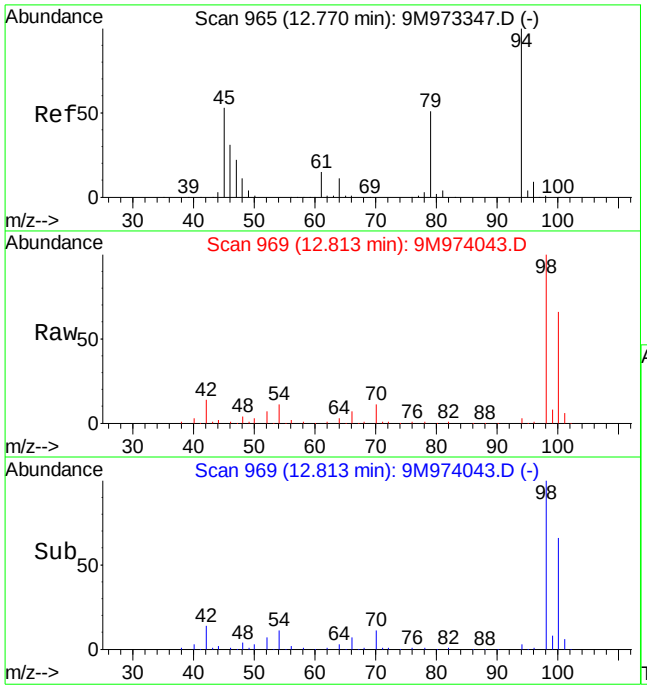

#56
Dimethyl Disulfide
Concen: 2.77 ug/kg
RT: 12.81 min Scan# 969
Delta R.T. 0.04 min
Lab File: 9M974043.D
Acq: 28 Apr 2016 20:18

Tgt Ion: 94 Resp: 15003

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

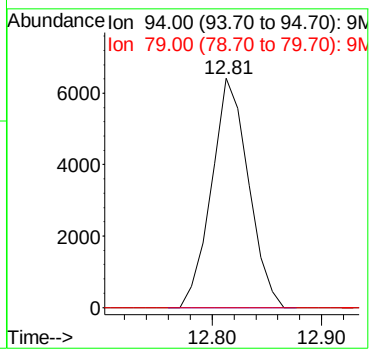

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974044.D Vial: 16
Acq On : 28 Apr 2016 20:48 Operator: ADC
Sample : L16041344-12 A 8260 5.25g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:40:00 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	482589	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	347606	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	158830	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	126218	51.7866 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 103.58%		
43) 1,2-Dichloroethane-d4	10.44	65	139502	54.6759 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 109.36%		
58) Toluene-d8	12.81	98	464958	56.1241 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 112.24%		
79) p-Bromofluorobenzene	16.22	95	165278	60.0781 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 120.16%		

Target Compounds

					Qvalue
13) Acetone	6.39	43	8255	3.2333 ug/kg#	66
19) Methylene Chloride	7.39	84	1171	0.4260 ug/kg	94
36) Tetrahydrofuran	9.77	42	2467	2.2383 ug/kg#	82
56) Dimethyl Disulfide	12.82	94	12500	2.8367 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.09	105	2106	Below Cal	75

(#) = qualifier out of range (m) = manual integration
9M974044.D 8260-SL.M Fri Apr 29 12:40:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974044.D Vial: 16
Acq On : 28 Apr 2016 20:48 Operator: ADC
Sample : L16041344-12 A 8260 5.25g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:40 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

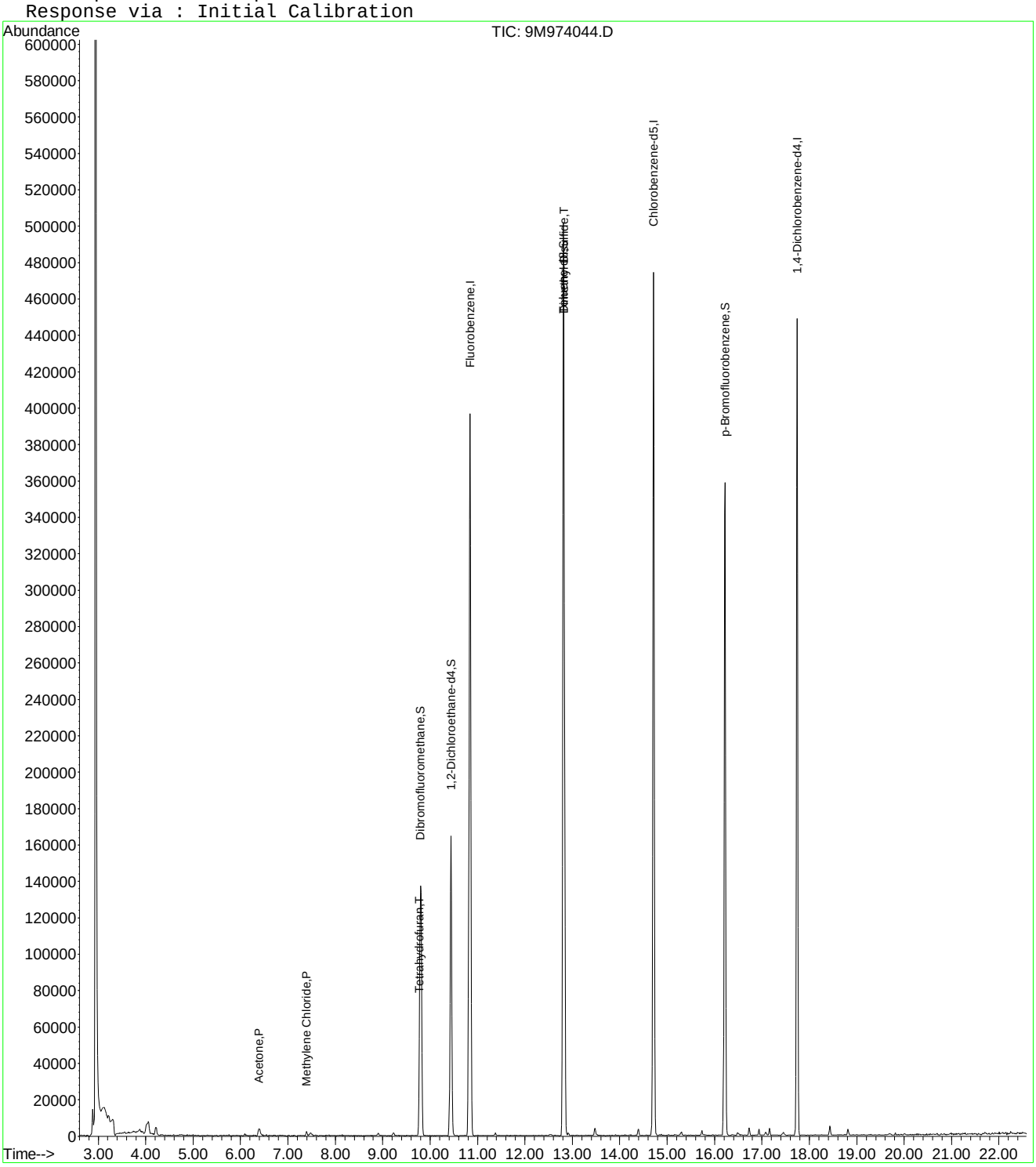

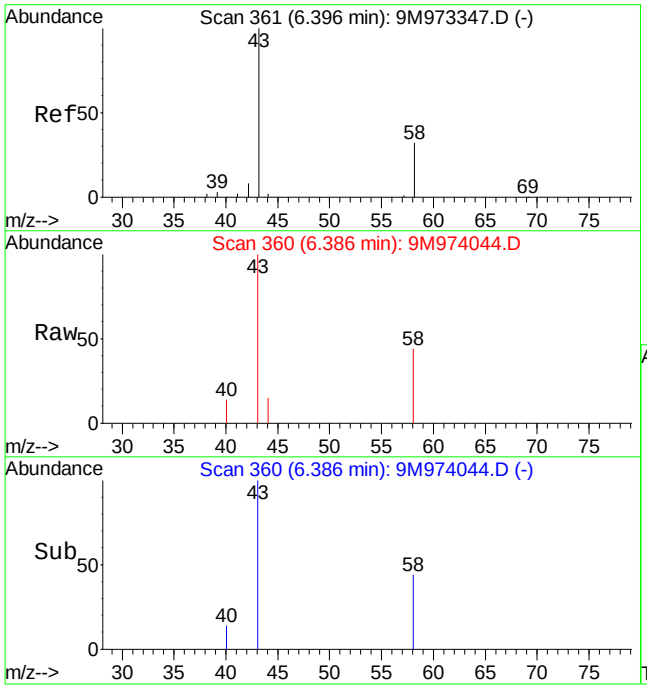

#13
Acetone
Concen: 3.23 ug/kg
RT: 6.39 min Scan# 360
Delta R.T. 0.00 min
Lab File: 9M974044.D
Acq: 28 Apr 2016 20:48

Tgt Ion: 43 Resp: 8255

Ion	Ratio	Lower	Upper
43	100		
58	52.9	20.2	47.2#

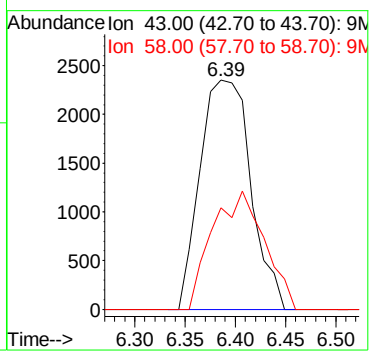

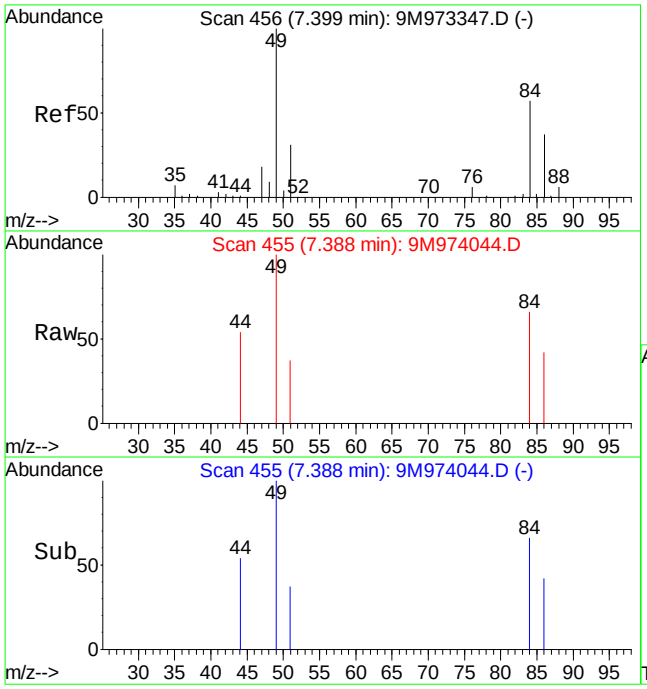

#19
Methylene Chloride
Concen: 0.43 ug/kg
RT: 7.39 min Scan# 455
Delta R.T. -0.01 min
Lab File: 9M974044.D
Acq: 28 Apr 2016 20:48

Tgt Ion: 84 Resp: 1171

Ion	Ratio	Lower	Upper
84	100		
49	181.6	103.9	242.5

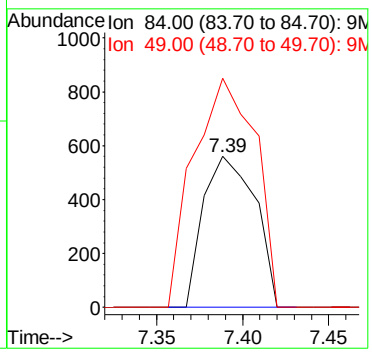

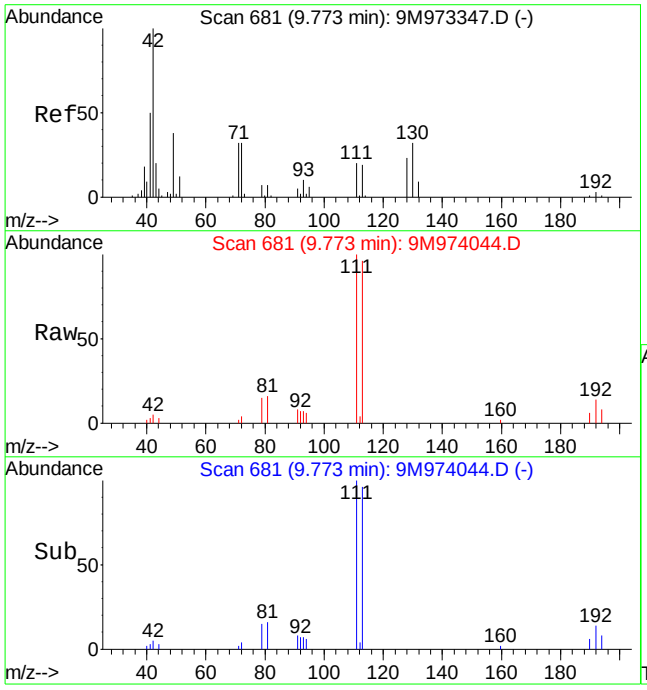

#36
Tetrahydrofuran
Concen: 2.24 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. 0.00 min
Lab File: 9M974044.D
Acq: 28 Apr 2016 20:48

Tgt Ion: 42 Resp: 2467

Ion	Ratio	Lower	Upper
42	100		
72	15.6	19.8	46.2#
71	32.6	18.3	42.7

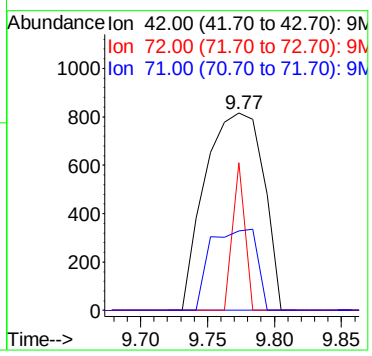

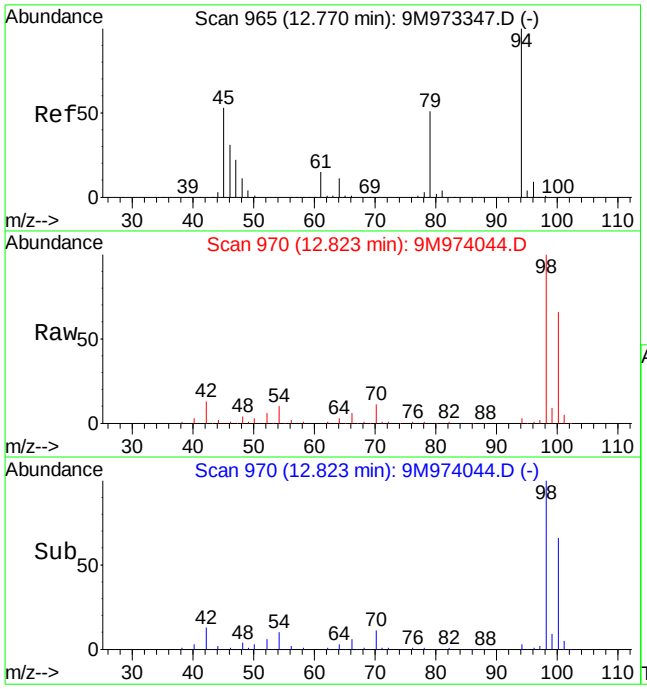

#56
Dimethyl Disulfide
Concen: 2.84 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M974044.D
Acq: 28 Apr 2016 20:48

Tgt Ion: 94 Resp: 12500

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

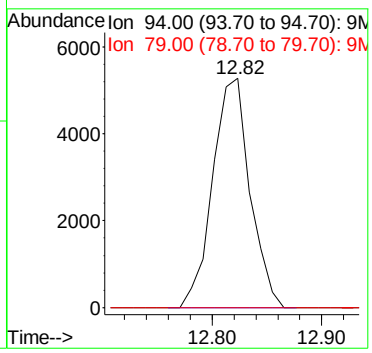

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974045.D Vial: 17
Acq On : 28 Apr 2016 21:19 Operator: ADC
Sample : L16041344-13 A 8260 4.69g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:40:01 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	604838	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	423143	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	190929	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	161415	52.8419 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.68%		
43) 1,2-Dichloroethane-d4	10.43	65	168988	52.8457 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.70%		
58) Toluene-d8	12.82	98	578845	57.3982 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 114.80%		
79) p-Bromofluorobenzene	16.22	95	207709	62.8083 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 125.62%#		

Target Compounds

					Qvalue
13) Acetone	6.39	43	9833	2.7837 ug/kg#	56
19) Methylene Chloride	7.38	84	1694	0.4917 ug/kg	87
26) Vinyl Acetate	8.44	43	202	0.9009 ug/kg#	79
29) 2-Butanone	9.01	43	1786	0.9185 ug/kg#	58
36) Tetrahydrofuran	9.78	42	3256	2.3571 ug/kg#	77
56) Dimethyl Disulfide	12.82	94	15401	2.7886 ug/kg#	29
84) 1,3,5-Trimethylbenzene	16.48	105	4457	0.4101 ug/kg#	52
89) 1,2,4-Trimethylbenzene	17.07	105	3148	Below Cal	88

(#) = qualifier out of range (m) = manual integration
9M974045.D 8260-SL.M Fri Apr 29 12:40:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974045.D Vial: 17
Acq On : 28 Apr 2016 21:19 Operator: ADC
Sample : L16041344-13 A 8260 4.69g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:40 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

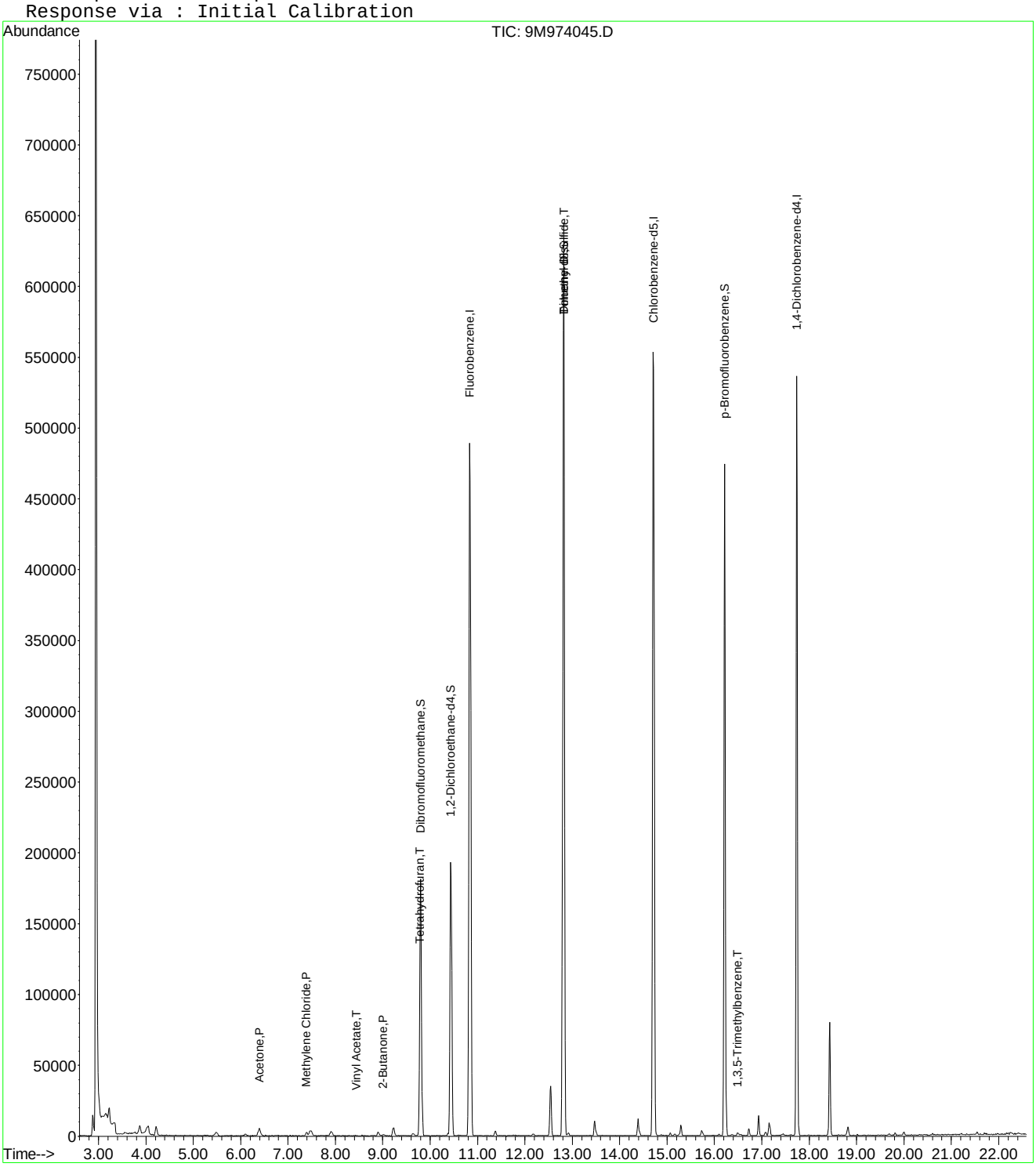

9M974045.D 8260-SL.M Fri Apr 29 12:40:02 2016 Page 2

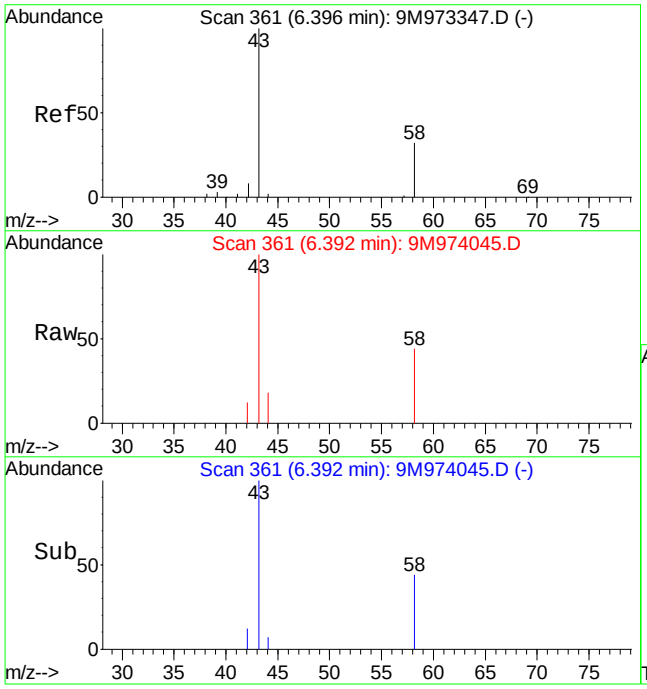

#13
Acetone
Concen: 2.78 ug/kg
RT: 6.39 min Scan# 361
Delta R.T. 0.01 min
Lab File: 9M974045.D
Acq: 28 Apr 2016 21:19

Tgt Ion: 43 Resp: 9833

Ion	Ratio	Lower	Upper
43	100		
58	58.8	20.2	47.2#

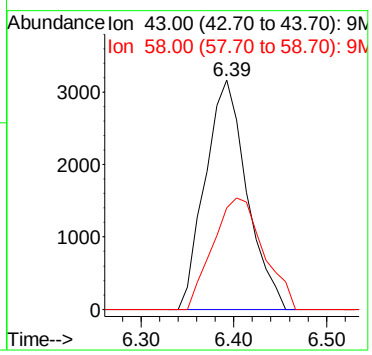

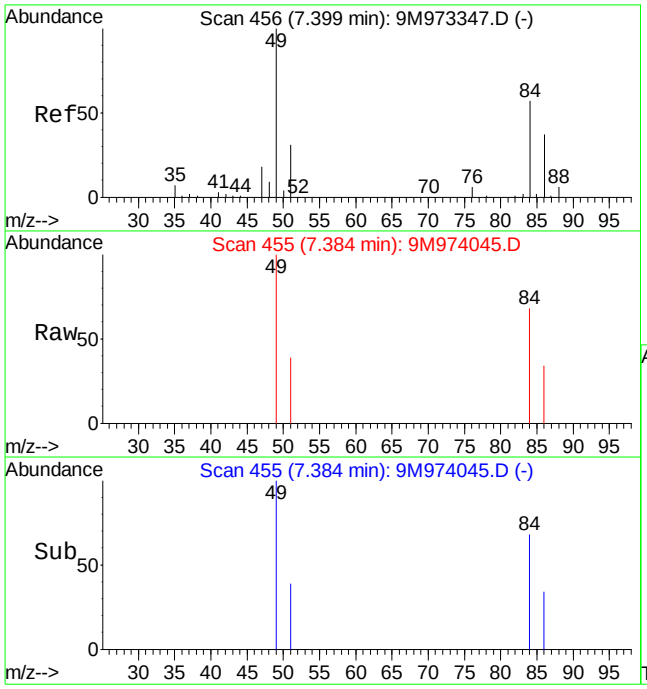

#19
Methylene Chloride
Concen: 0.49 ug/kg
RT: 7.38 min Scan# 455
Delta R.T. -0.01 min
Lab File: 9M974045.D
Acq: 28 Apr 2016 21:19

Tgt Ion: 84 Resp: 1694

Ion	Ratio	Lower	Upper
84	100		
49	155.4	103.9	242.5

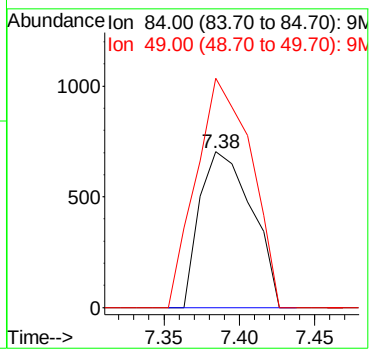

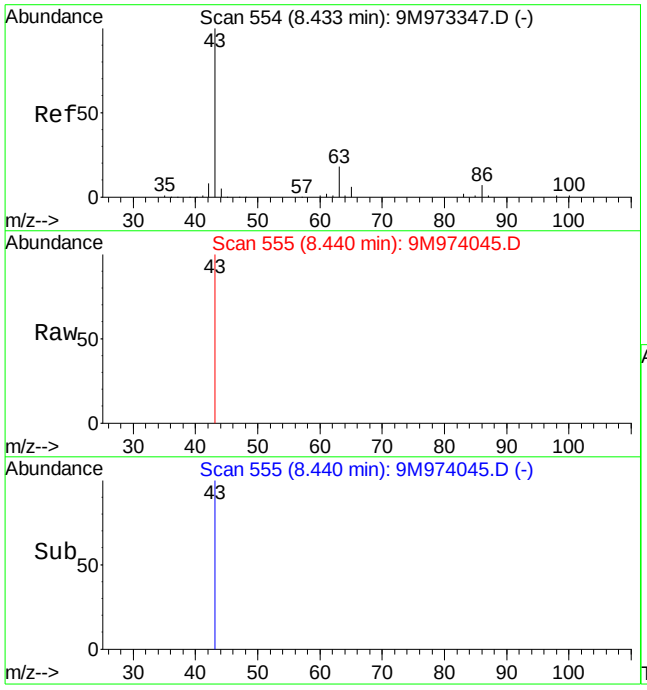

#26
Vinyl Acetate
Concen: 0.90 ug/kg
RT: 8.44 min Scan# 555
Delta R.T. 0.01 min
Lab File: 9M974045.D
Acq: 28 Apr 2016 21:19

Tgt Ion: 43 Resp: 202

Ion	Ratio	Lower	Upper
43	100		
86	0.0	4.4	10.4#

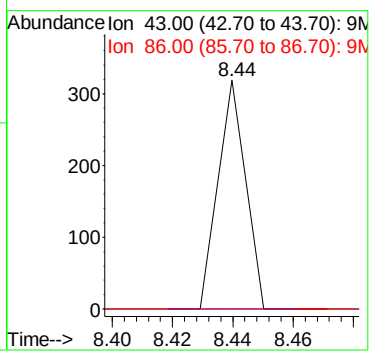

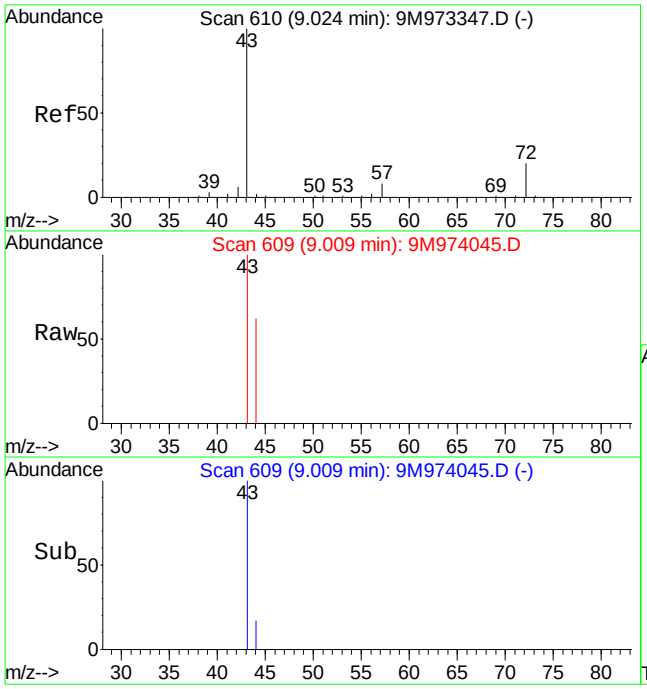

#29
2-Butanone
Concen: 0.92 ug/kg
RT: 9.01 min Scan# 609
Delta R.T. -0.00 min
Lab File: 9M974045.D
Acq: 28 Apr 2016 21:19

Tgt Ion: 43 Resp: 1786

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.5	26.7#

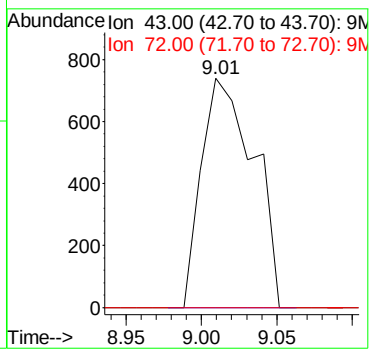

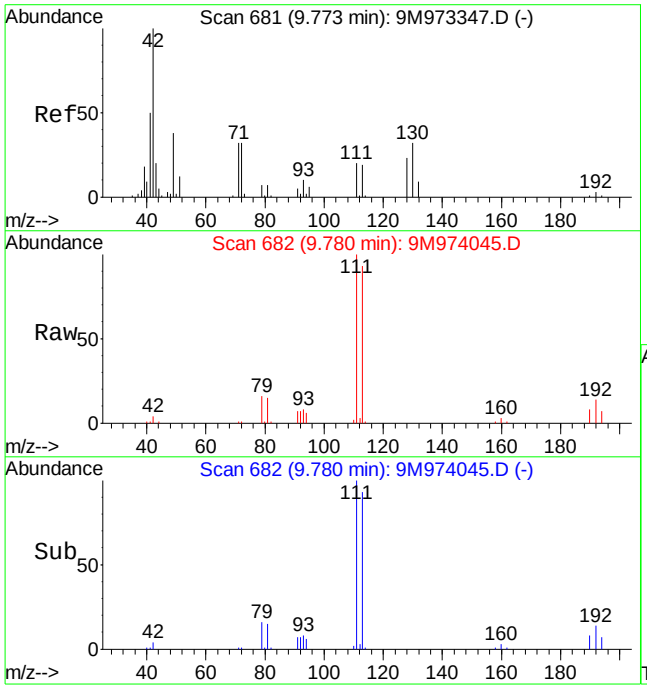

#36
Tetrahydrofuran
Concen: 2.36 ug/kg
RT: 9.78 min Scan# 682
Delta R.T. 0.01 min
Lab File: 9M974045.D
Acq: 28 Apr 2016 21:19

Tgt Ion: 42 Resp: 3256

Ion	Ratio	Lower	Upper
42	100		
72	22.6	19.8	46.2
71	14.7	18.3	42.7#

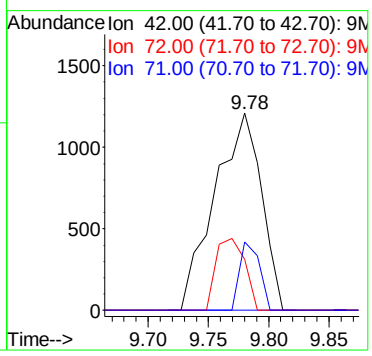

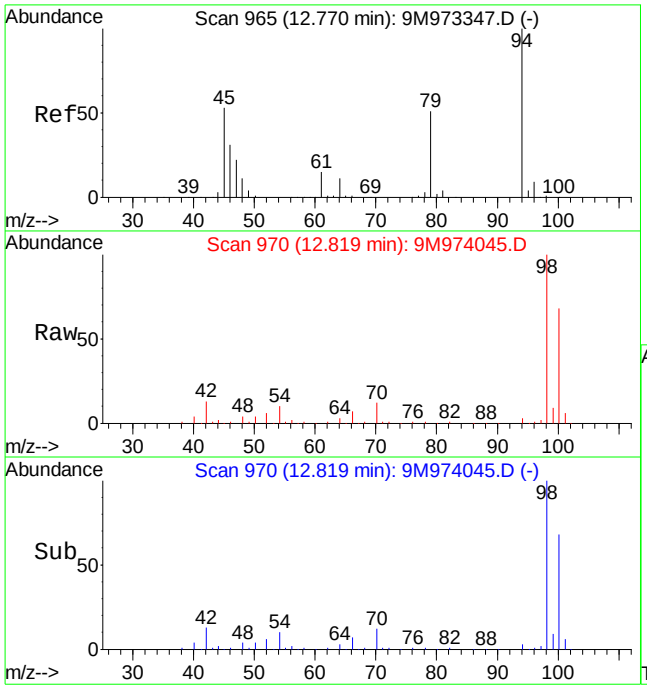

#56
Dimethyl Disulfide
Concen: 2.79 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M974045.D
Acq: 28 Apr 2016 21:19

Tgt Ion: 94 Resp: 15401

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

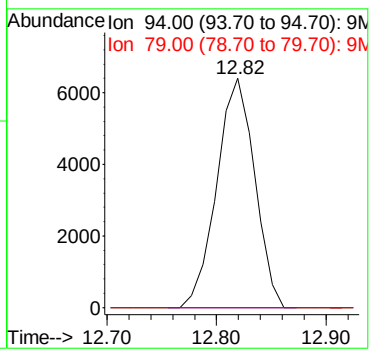

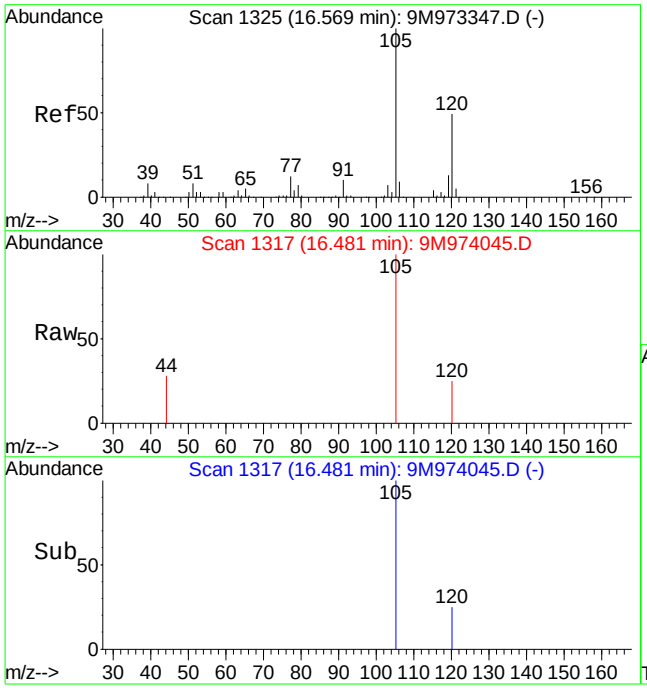

#84
1,3,5-Trimethylbenzene
Concen: 0.41 ug/kg
RT: 16.48 min Scan# 1317
Delta R.T. -0.09 min
Lab File: 9M974045.D
Acq: 28 Apr 2016 21:19

Tgt Ion:105 Resp: 4457

Ion	Ratio	Lower	Upper
105	100		
120	16.9	29.7	69.3#

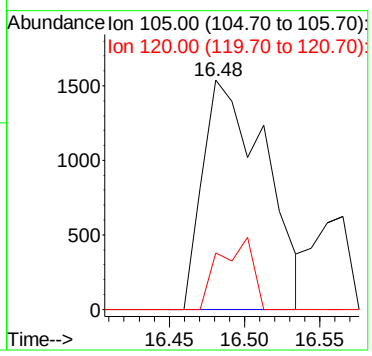

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974046.D Vial: 18
Acq On : 28 Apr 2016 21:49 Operator: ADC
Sample : L16041344-14 A 8260 4.95g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:40:02 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	584962	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	416444	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	188174	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	152463	51.6072 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 103.22%		
43) 1,2-Dichloroethane-d4	10.44	65	164059	53.0476 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 106.10%		
58) Toluene-d8	12.81	98	563075	56.7326 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 113.46%		
79) p-Bromofluorobenzene	16.22	95	203568	62.4573 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 124.92%#		

Target Compounds

					Qvalue
13) Acetone	6.39	43	9310	2.6026 ug/kg	80
19) Methylene Chloride	7.39	84	1610	0.4832 ug/kg	85
29) 2-Butanone	9.02	43	1587	0.8439 ug/kg#	58
36) Tetrahydrofuran	9.77	42	2980	2.2306 ug/kg#	80
56) Dimethyl Disulfide	12.82	94	15291	2.8628 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.09	105	2264	Below Cal	70

(#) = qualifier out of range (m) = manual integration
9M974046.D 8260-SL.M Fri Apr 29 12:40:03 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974046.D Vial: 18
Acq On : 28 Apr 2016 21:49 Operator: ADC
Sample : L16041344-14 A 8260 4.95g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:40 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

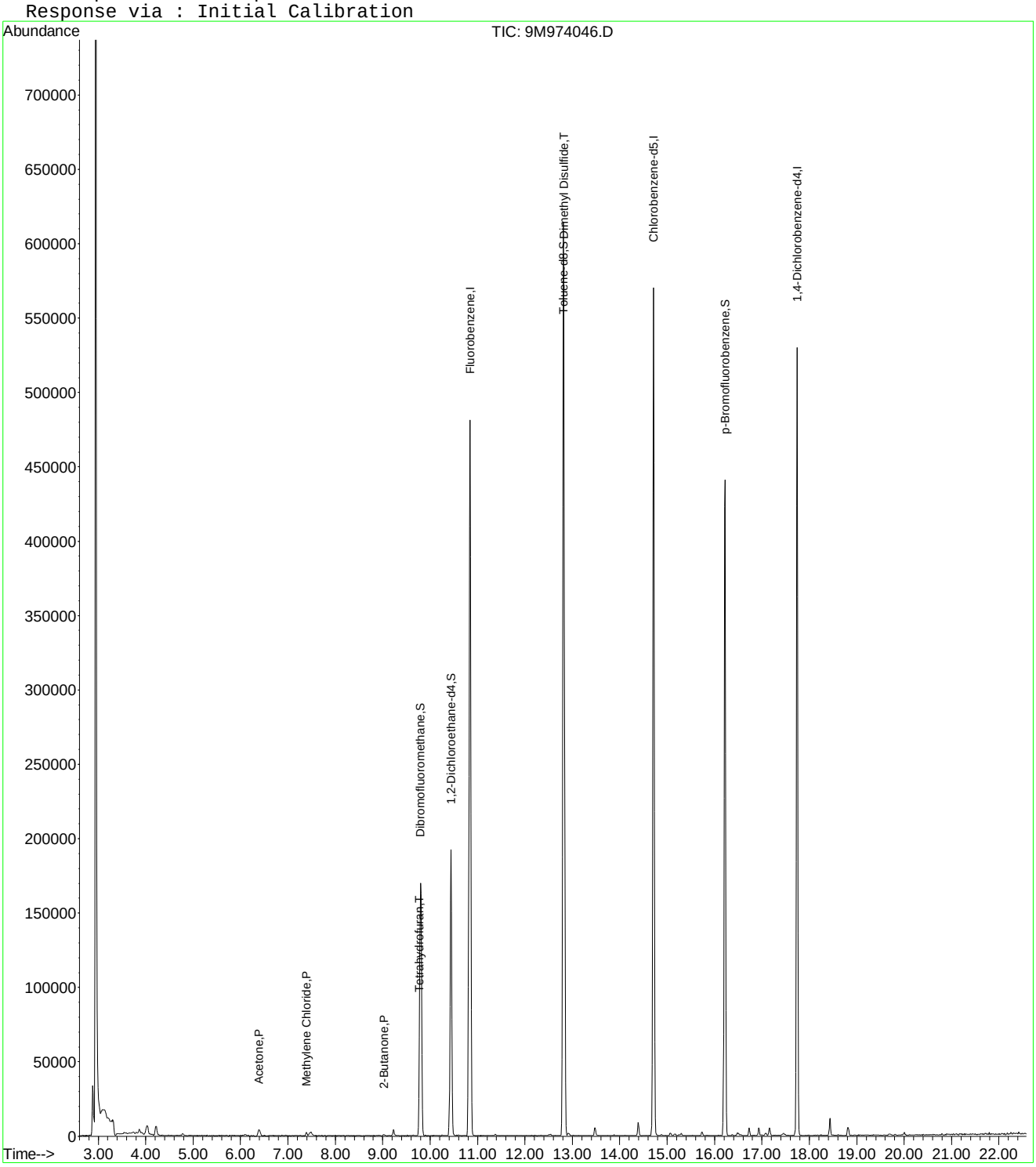

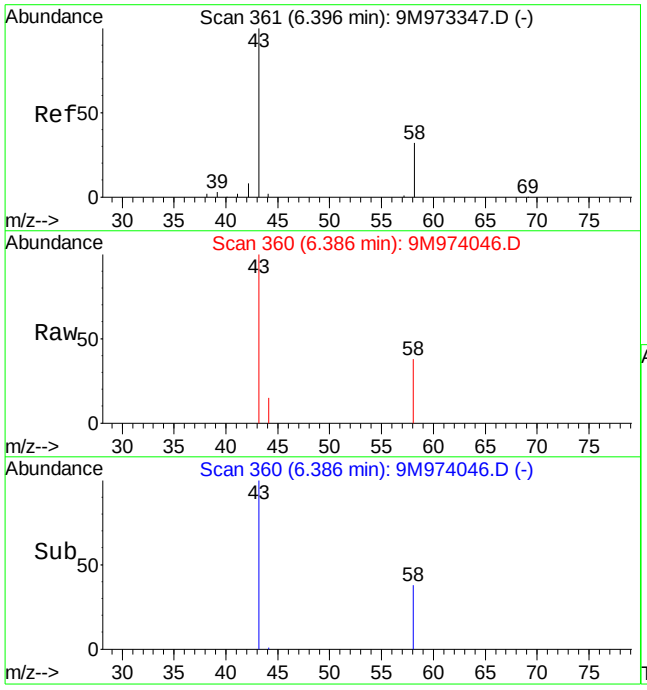

#13
Acetone
Concen: 2.60 ug/kg
RT: 6.39 min Scan# 360
Delta R.T. 0.00 min
Lab File: 9M974046.D
Acq: 28 Apr 2016 21:49

Tgt Ion: 43 Resp: 9310

Ion	Ratio	Lower	Upper
43	100		
58	45.3	20.2	47.2

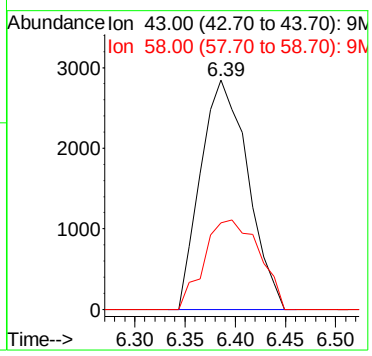

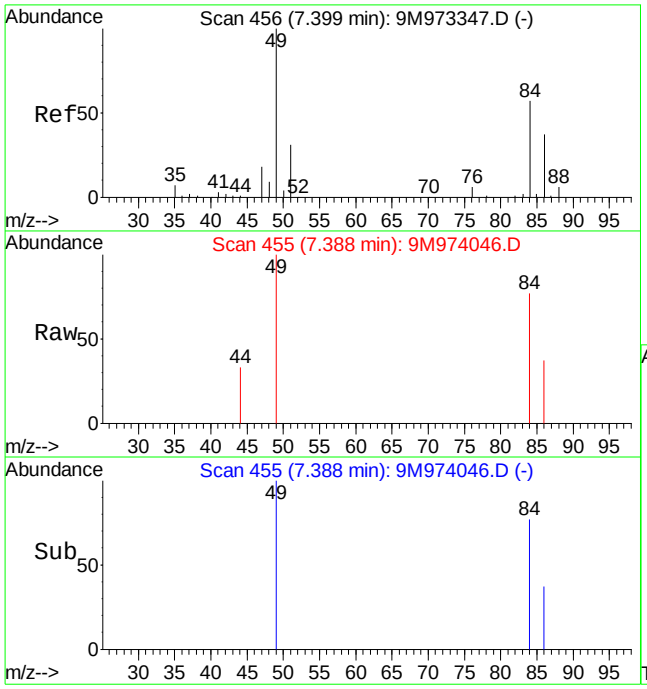

#19
Methylene Chloride
Concen: 0.48 ug/kg
RT: 7.39 min Scan# 455
Delta R.T. -0.01 min
Lab File: 9M974046.D
Acq: 28 Apr 2016 21:49

Tgt Ion: 84 Resp: 1610

Ion	Ratio	Lower	Upper
84	100		
49	152.8	103.9	242.5

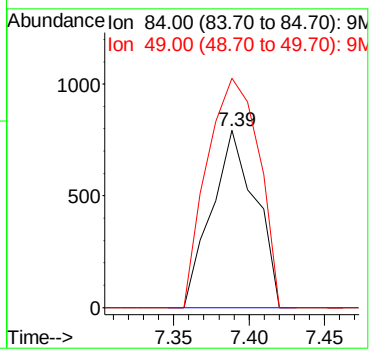

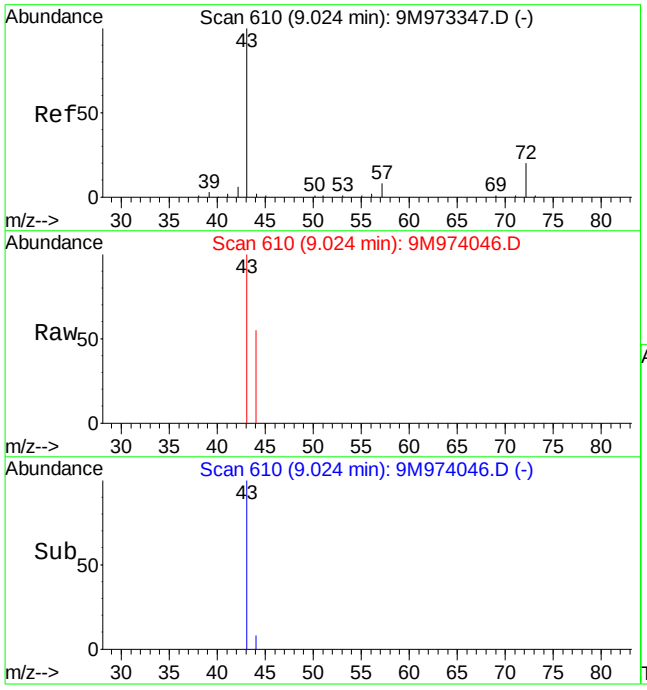

#29
2-Butanone
Concen: 0.84 ug/kg
RT: 9.02 min Scan# 610
Delta R.T. 0.01 min
Lab File: 9M974046.D
Acq: 28 Apr 2016 21:49

Tgt Ion: 43 Resp: 1587

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.5	26.7#

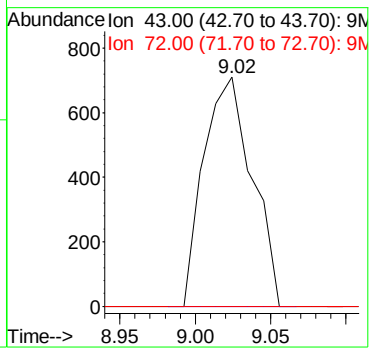

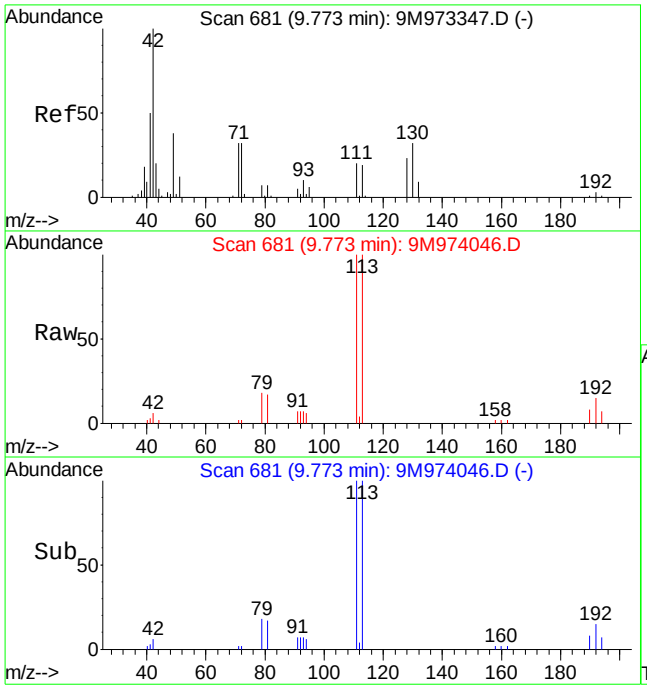

#36
Tetrahydrofuran
Concen: 2.23 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. 0.00 min
Lab File: 9M974046.D
Acq: 28 Apr 2016 21:49

Tgt Ion: 42 Resp: 2980

Ion	Ratio	Lower	Upper
42	100		
72	23.3	19.8	46.2
71	18.0	18.3	42.7#

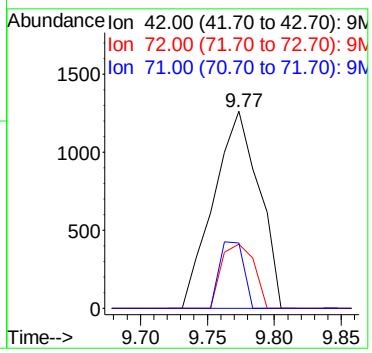

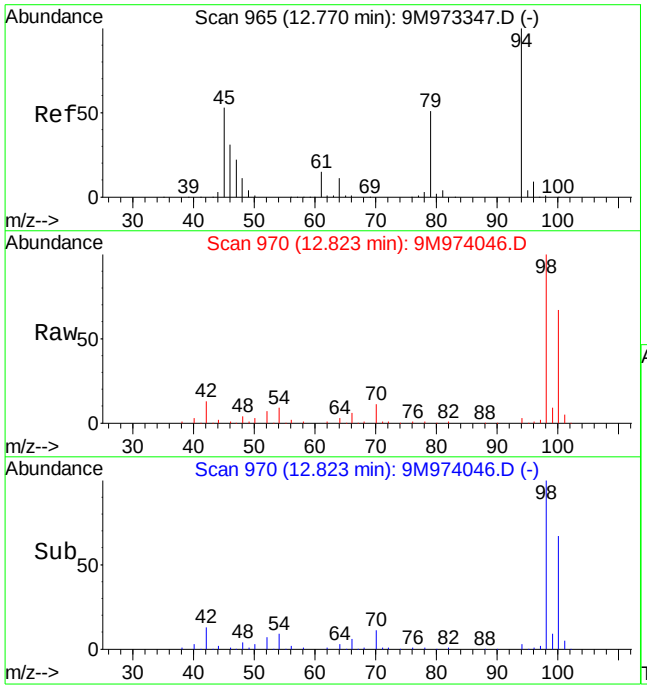

#56
Dimethyl Disulfide
Concen: 2.86 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M974046.D
Acq: 28 Apr 2016 21:49

Tgt Ion: 94 Resp: 15291

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

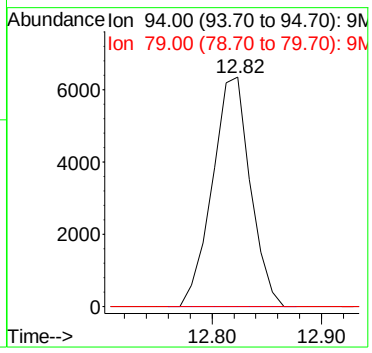

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972472.D Vial: 3
Acq On : 25 Jan 2016 11:22 Operator: FJB
Sample : WG555000-02 5ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:05 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	367739	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	266763	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.77	152	148882	50.00 ug/kg	0.01

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	1974	5.3580 ug/kg#	1
3) 3-Chloro-1-propene	7.23	41	18322	5.0468 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	19639	4.7564 ug/kg	98
5) Ethyl Acetate	9.24	43	12755	5.2595 ug/kg	91
6) Methacrylonitrile	9.40	67	3744	4.7691 ug/kg	95
7) Isobutyl Alcohol	9.42	43	1055	12.9700 ug/kg#	62
8) 1-Butanol	10.36	56	203	11.8711 ug/kg#	26
9) Methyl methacrylate	11.56	41	8689	4.6908 ug/kg	95
10) 2-Nitropropane	11.90	43	2531	4.2058 ug/kg	96

(#) = qualifier out of range (m) = manual integration
9M972472.D A9FOO_SL.M Wed Jan 27 11:22:42 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972472.D Vial: 3
Acq On : 25 Jan 2016 11:22 Operator: FJB
Sample : WG555000-02 5ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

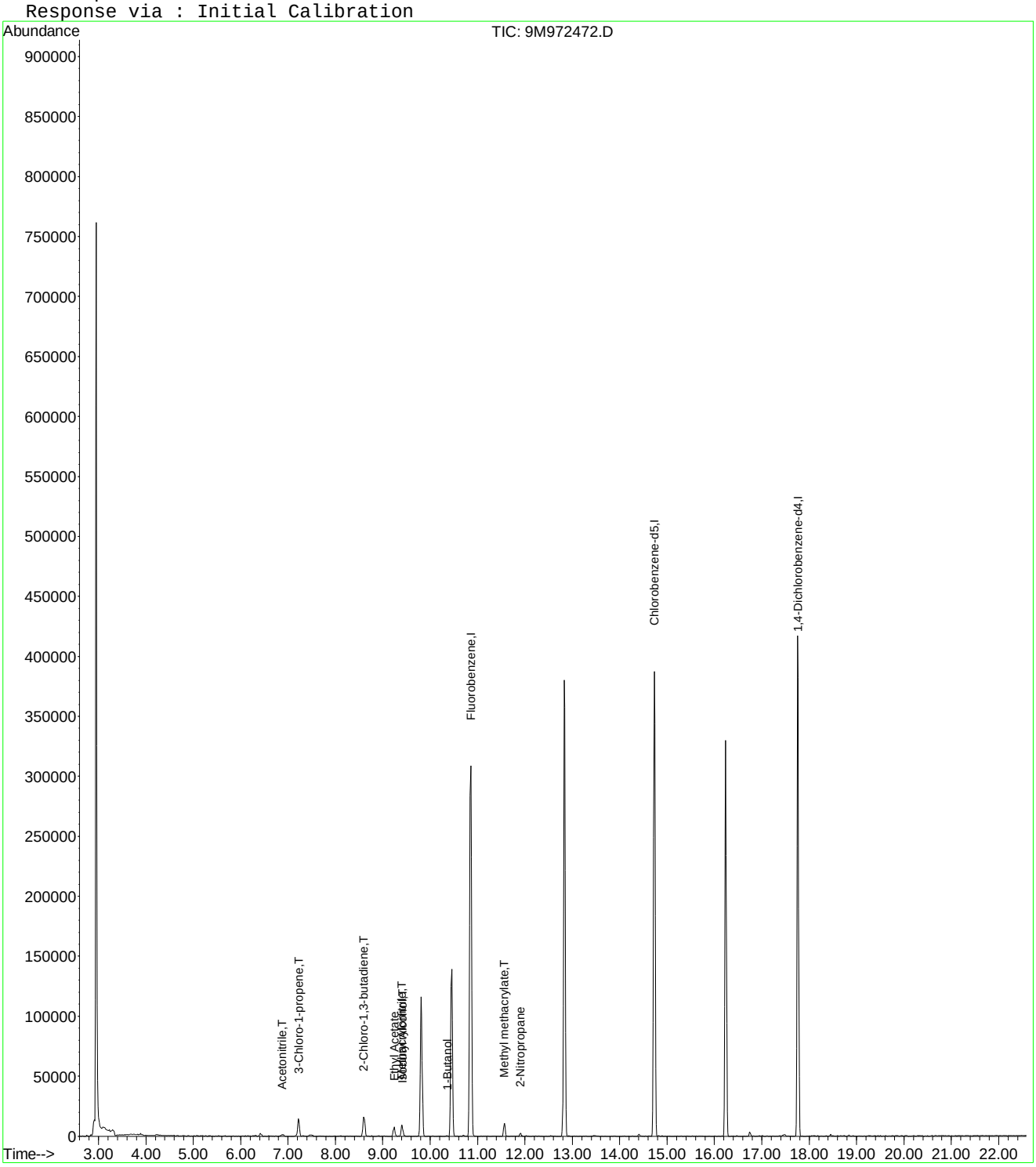

9M972472.D A9FOO_SL.M Wed Jan 27 11:22:42 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972473.D Vial: 4
Acq On : 25 Jan 2016 11:52 Operator: FJB
Sample : WG555000-03 20ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:05 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	359691	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	265773	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	149223	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	7669	21.2815 ug/kg#	77
3) 3-Chloro-1-propene	7.23	41	75360	21.2224 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	82865	20.5181 ug/kg	100
5) Ethyl Acetate	9.23	43	47912	20.1986 ug/kg	97
6) Methacrylonitrile	9.40	67	15740	20.4980 ug/kg	98
7) Isobutyl Alcohol	9.42	43	5287	37.9280 ug/kg	95
8) 1-Butanol	10.35	56	1509	22.3153 ug/kg#	81
9) Methyl methacrylate	11.56	41	35437	19.5588 ug/kg	98
10) 2-Nitropropane	11.90	43	10433	17.7247 ug/kg	98
12) Cyclohexanone	16.01	55	2157	16.3929 ug/kg#	86

(#) = qualifier out of range (m) = manual integration
9M972473.D A9FOO_SL.M Wed Jan 27 11:22:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972473.D Vial: 4
Acq On : 25 Jan 2016 11:52 Operator: FJB
Sample : WG555000-03 20ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

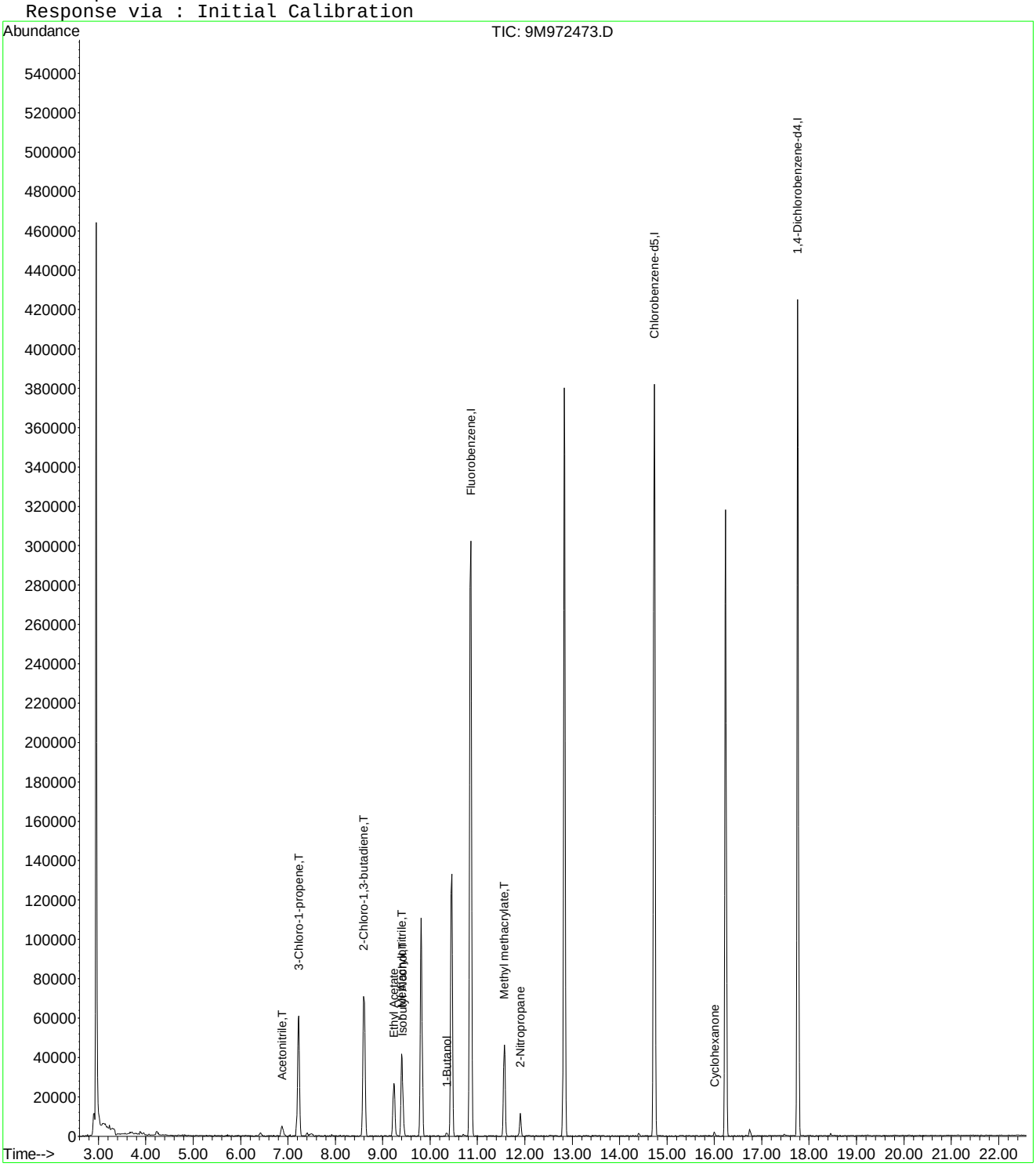

9M972473.D A9FOO_SL.M Wed Jan 27 11:22:46 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972474.D Vial: 5
Acq On : 25 Jan 2016 12:23 Operator: FJB
Sample : WG555000-04 50ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:06 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	356886	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	259679	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	147334	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	16583	46.3795 ug/kg#	94
3) 3-Chloro-1-propene	7.23	41	160601	45.5828 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.61	53	185316	46.2464 ug/kg	99
5) Ethyl Acetate	9.23	43	111538	47.3915 ug/kg	99
6) Methacrylonitrile	9.40	67	36081	47.3572 ug/kg	99
7) Isobutyl Alcohol	9.42	43	12624	81.5447 ug/kg	95
8) 1-Butanol	10.35	56	4707	48.0983 ug/kg#	50
9) Methyl methacrylate	11.56	41	82406	45.8400 ug/kg	99
10) 2-Nitropropane	11.90	43	26302	45.0359 ug/kg	97
12) Cyclohexanone	16.01	55	5625	43.7525 ug/kg	93

(#) = qualifier out of range (m) = manual integration
9M972474.D A9FOO_SL.M Wed Jan 27 11:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972474.D Vial: 5
Acq On : 25 Jan 2016 12:23 Operator: FJB
Sample : WG555000-04 50ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

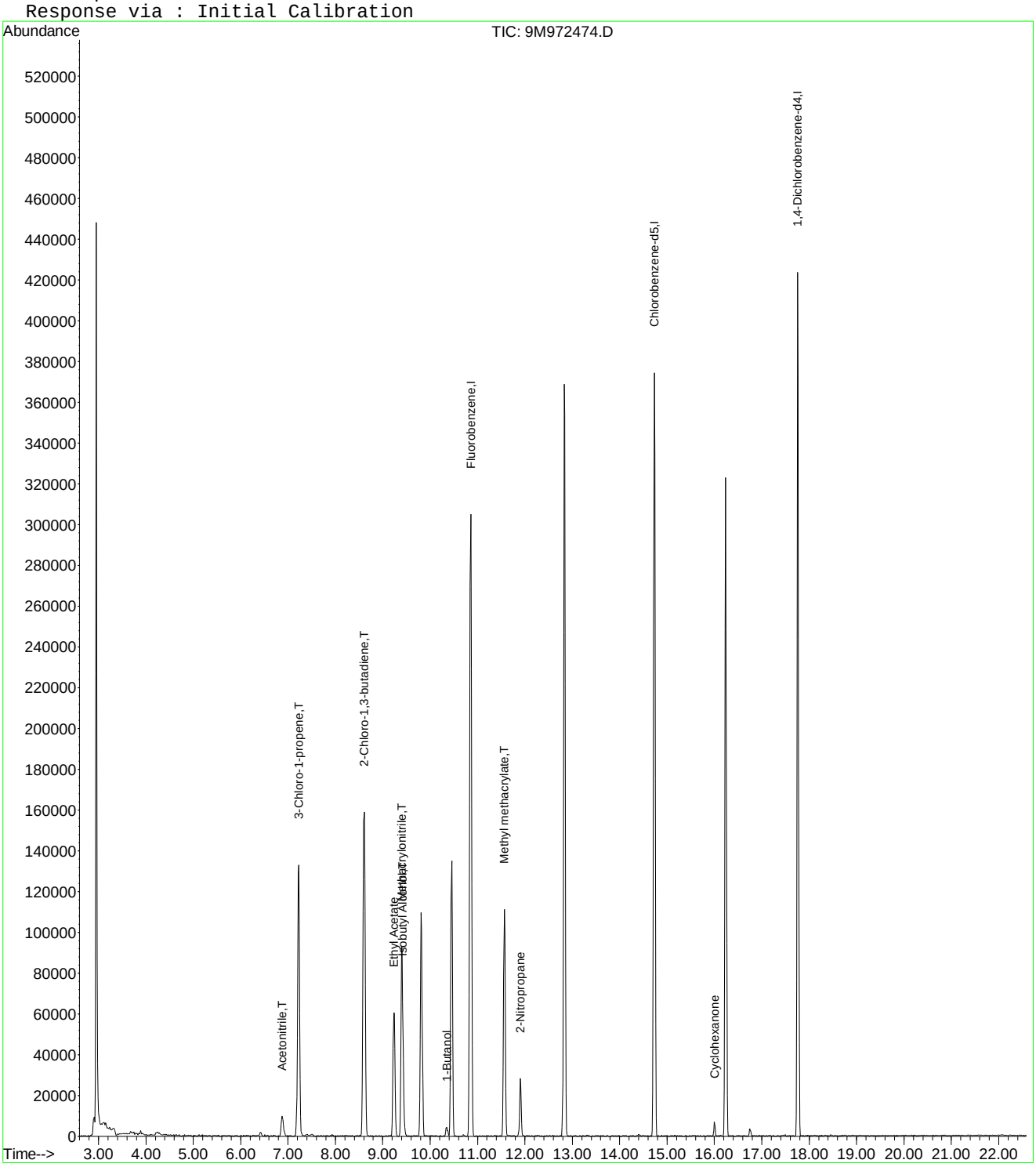

9M972474.D A9FOO_SL.M Wed Jan 27 11:22:51 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972475.D Vial: 6
Acq On : 25 Jan 2016 12:53 Operator: FJB
Sample : WG555000-05 100ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:06 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	394669	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	285851	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	161505	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	37767	95.5151	ug/kg#	100
3) 3-Chloro-1-propene	7.23	41	409870	105.1952	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.61	53	467514	105.5010	ug/kg	100
5) Ethyl Acetate	9.23	43	267513	102.7824	ug/kg	100
6) Methacrylonitrile	9.40	67	88054	104.5088	ug/kg	100
7) Isobutyl Alcohol	9.42	43	33721	187.1766	ug/kg	100
8) 1-Butanol	10.36	56	11671	95.0627	ug/kg	100
9) Methyl methacrylate	11.56	41	209503	105.3834	ug/kg	100
10) 2-Nitropropane	11.90	43	65435	101.3157	ug/kg	100
12) Cyclohexanone	16.01	55	14062	99.3630	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972475.D A9FOO_SL.M Wed Jan 27 11:22:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972475.D Vial: 6
Acq On : 25 Jan 2016 12:53 Operator: FJB
Sample : WG555000-05 100ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

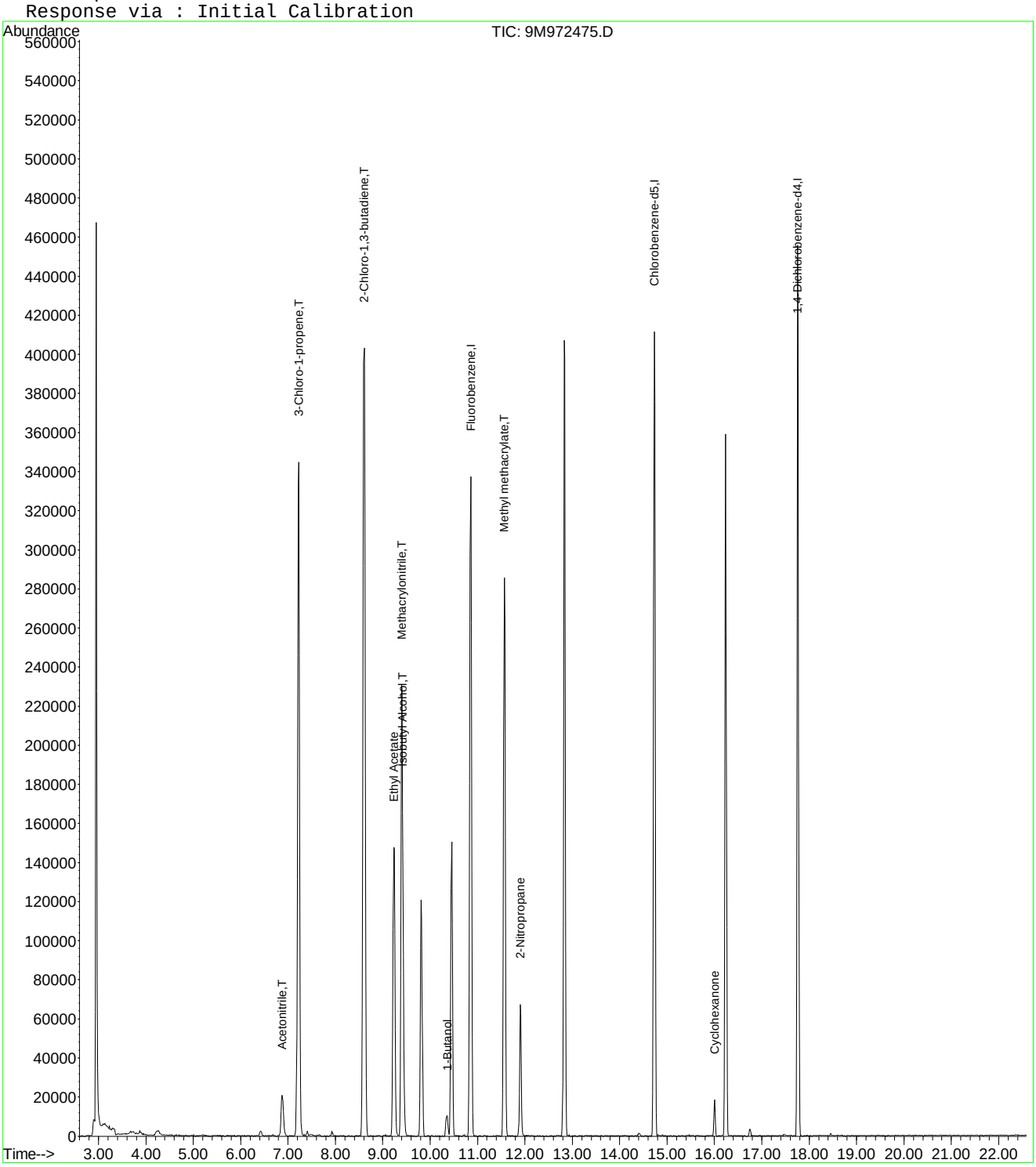

9M972475.D A9FOO_SL.M Wed Jan 27 11:22:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972476.D Vial: 7
Acq On : 25 Jan 2016 13:23 Operator: FJB
Sample : WG555000-06 200ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 09:51:10 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	361792	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	264283	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	150478	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.87	41	75099	207.1896	ug/kg#	94
3) 3-Chloro-1-propene	7.22	41	743262	208.0969	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	846271	208.3269	ug/kg	100
5) Ethyl Acetate	9.23	43	489855	205.3125	ug/kg	100
6) Methacrylonitrile	9.40	67	159879	206.9995	ug/kg	100
7) Isobutyl Alcohol	9.42	43	68551	406.6640	ug/kg	99
8) 1-Butanol	10.35	56	24111	201.3375	ug/kg	97
9) Methyl methacrylate	11.57	41	382820	210.0636	ug/kg	99
10) 2-Nitropropane	11.90	43	129000	217.8866	ug/kg	95
12) Cyclohexanone	16.00	55	30065	229.7785	ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972476.D A9FOO_SL.M Wed Jan 27 09:51:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972476.D Vial: 7
Acq On : 25 Jan 2016 13:23 Operator: FJB
Sample : WG555000-06 200ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 9:51 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

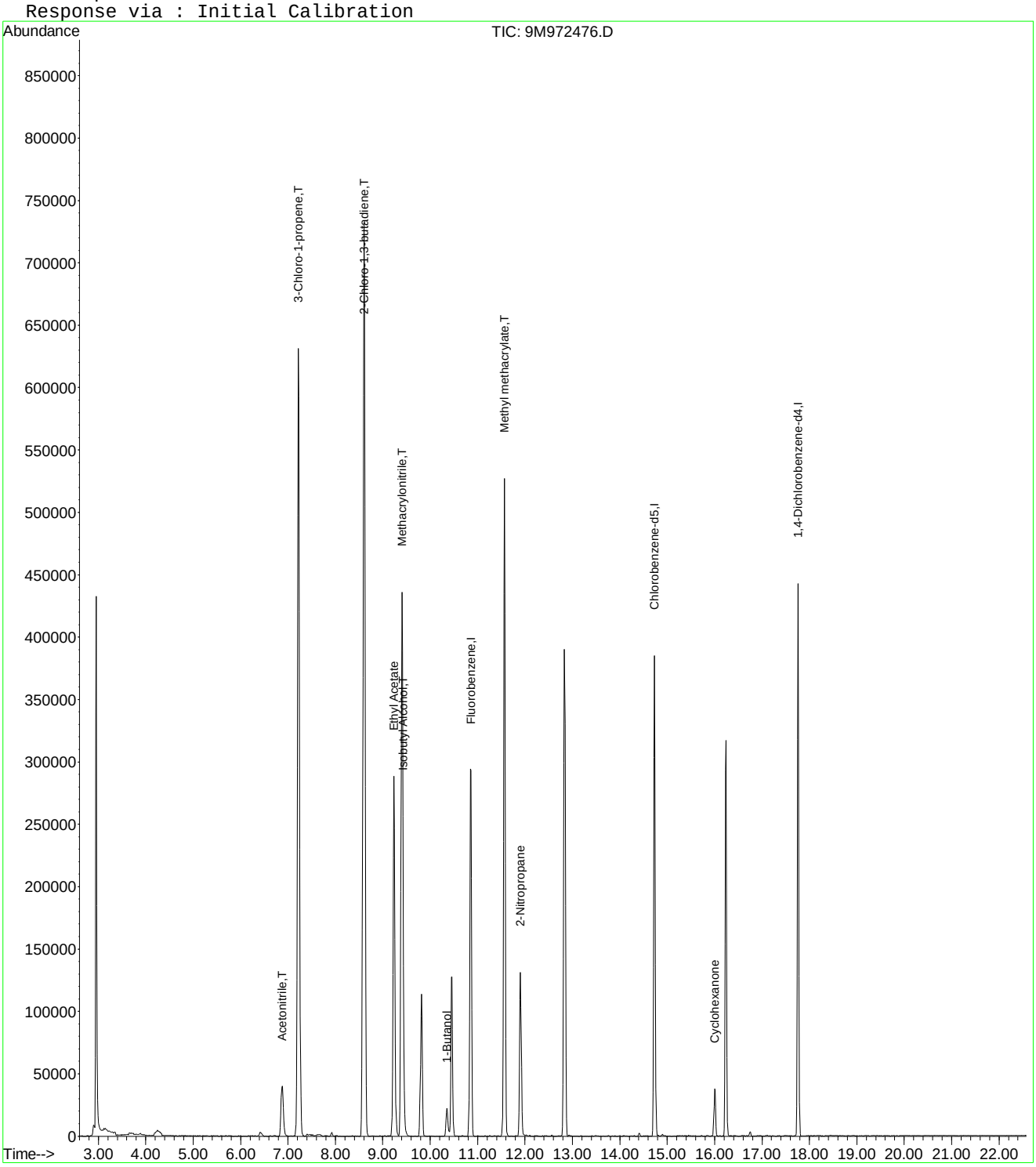

9M972476.D A9FOO_SL.M Wed Jan 27 09:51:10 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972477.D Vial: 8
Acq On : 25 Jan 2016 13:54 Operator: FJB
Sample : WG555000-07 300ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:07 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.85	96	362779	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	265659	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	153468	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	99618	274.0870	ug/kg#	97
3) 3-Chloro-1-propene	7.22	41	944879	263.8255	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	1107217	271.8226	ug/kg	99
5) Ethyl Acetate	9.24	43	652386	272.6900	ug/kg	99
6) Methacrylonitrile	9.40	67	208153	268.7679	ug/kg	98
7) Isobutyl Alcohol	9.43	43	89707	528.6093	ug/kg#	99
8) 1-Butanol	10.35	56	31640	260.3131	ug/kg	98
9) Methyl methacrylate	11.57	41	502506	274.9883	ug/kg	98
10) 2-Nitropropane	11.90	43	172692	290.8907	ug/kg	95
12) Cyclohexanone	16.00	55	36951	280.9436	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972477.D A9FOO_SL.M Wed Jan 27 11:23:05 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972477.D Vial: 8
Acq On : 25 Jan 2016 13:54 Operator: FJB
Sample : WG555000-07 300ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

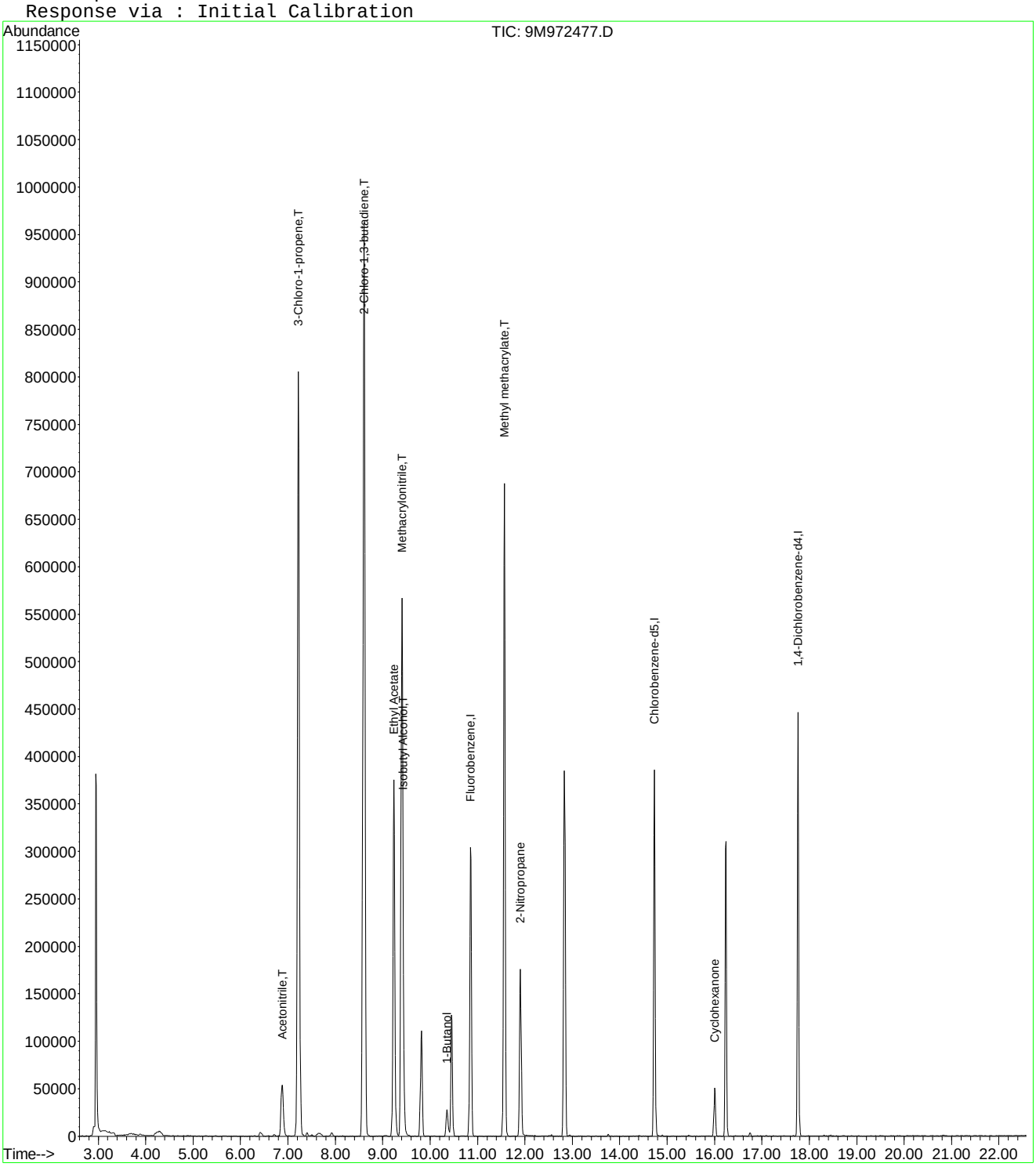

9M972477.D A9FOO_SL.M Wed Jan 27 11:23:05 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972478.D Vial: 9
Acq On : 25 Jan 2016 14:25 Operator: FJB
Sample : WG555000-08 400ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 09:51:10 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	359343	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	261674	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	149058	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.89	41	148074	411.3034	ug/kg#	96
3) 3-Chloro-1-propene	7.22	41	1457717	410.9100	ug/kg	99
4) 2-Chloro-1,3-butadiene	8.61	53	1703971	422.3261	ug/kg	100
5) Ethyl Acetate	9.23	43	980479	413.7480	ug/kg	100
6) Methacrylonitrile	9.40	67	321602	419.2243	ug/kg	99
7) Isobutyl Alcohol	9.43	43	142361	842.7355	ug/kg#	98
8) 1-Butanol	10.36	56	51732	422.9922	ug/kg	99
9) Methyl methacrylate	11.56	41	779879	430.8570	ug/kg	98
10) 2-Nitropropane	11.90	43	267565	455.0088	ug/kg	96
12) Cyclohexanone	16.01	55	56623	437.0688	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972478.D A9FOO_SL.M Wed Jan 27 09:51:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972478.D Vial: 9
Acq On : 25 Jan 2016 14:25 Operator: FJB
Sample : WG555000-08 400ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 9:51 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

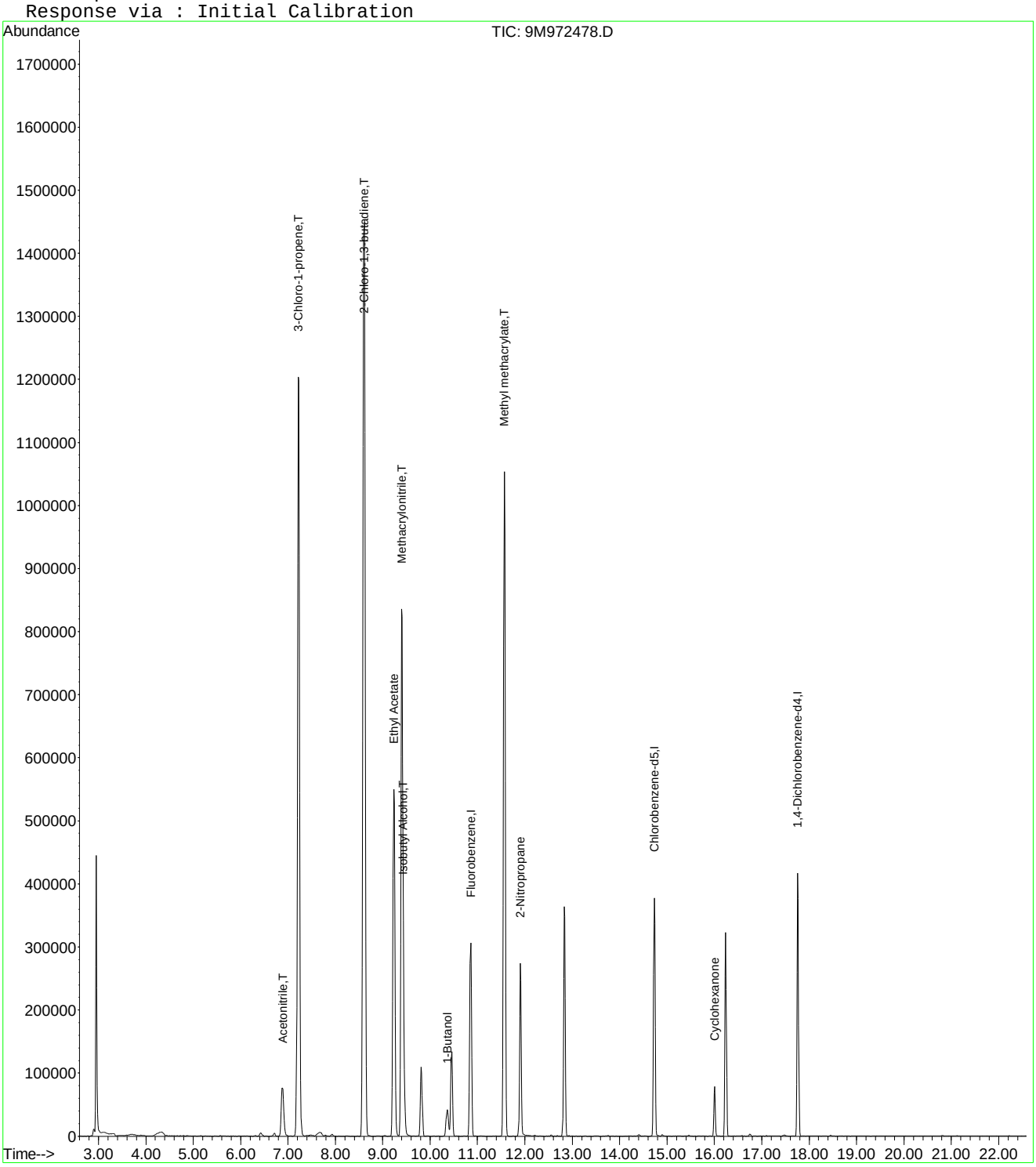

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972479.D Vial: 10
Acq On : 25 Jan 2016 14:56 Operator: FJB
Sample : WG555000-09 500ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:08 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	364474	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	266311	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	151707	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	196334	537.6773	ug/kg#	94
3) 3-Chloro-1-propene	7.22	41	1832802	509.3680	ug/kg	99
4) 2-Chloro-1,3-butadiene	8.60	53	2126710	519.6807	ug/kg	100
5) Ethyl Acetate	9.23	43	1255294	522.2587	ug/kg	100
6) Methacrylonitrile	9.40	67	408537	525.0513	ug/kg	100
7) Isobutyl Alcohol	9.43	43	180610	1052.3719	ug/kg	98
8) 1-Butanol	10.36	56	64789	519.8809	ug/kg	97
9) Methyl methacrylate	11.56	41	981460	534.5904	ug/kg	100
10) 2-Nitropropane	11.90	43	346571	581.0659	ug/kg	97
12) Cyclohexanone	16.01	55	74733	566.8143	ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972479.D A9FOO_SL.M Wed Jan 27 11:30:29 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972479.D Vial: 10
Acq On : 25 Jan 2016 14:56 Operator: FJB
Sample : WG555000-09 500ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

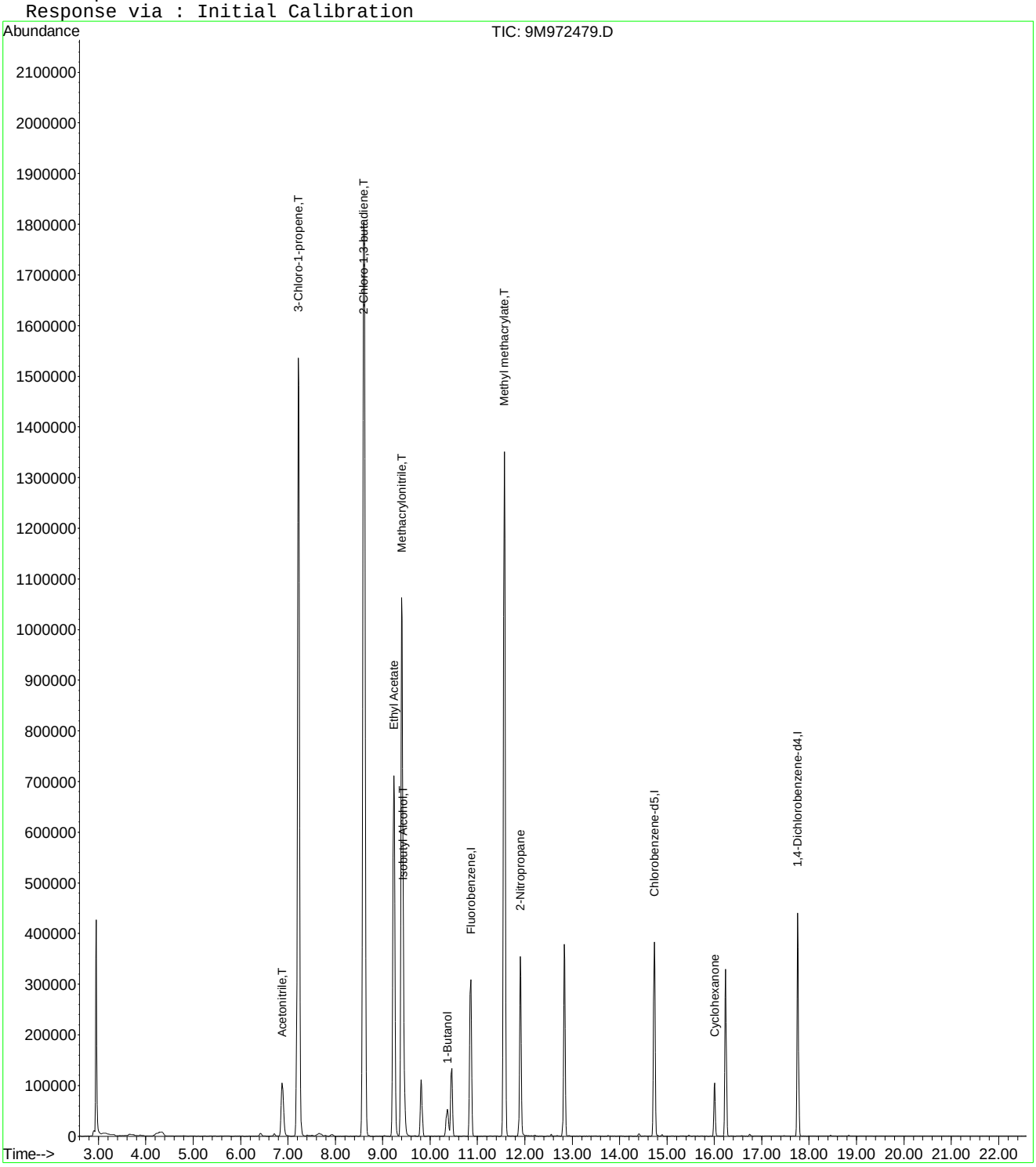

9M972479.D A9FOO_SL.M Wed Jan 27 11:30:29 2016 Page 2

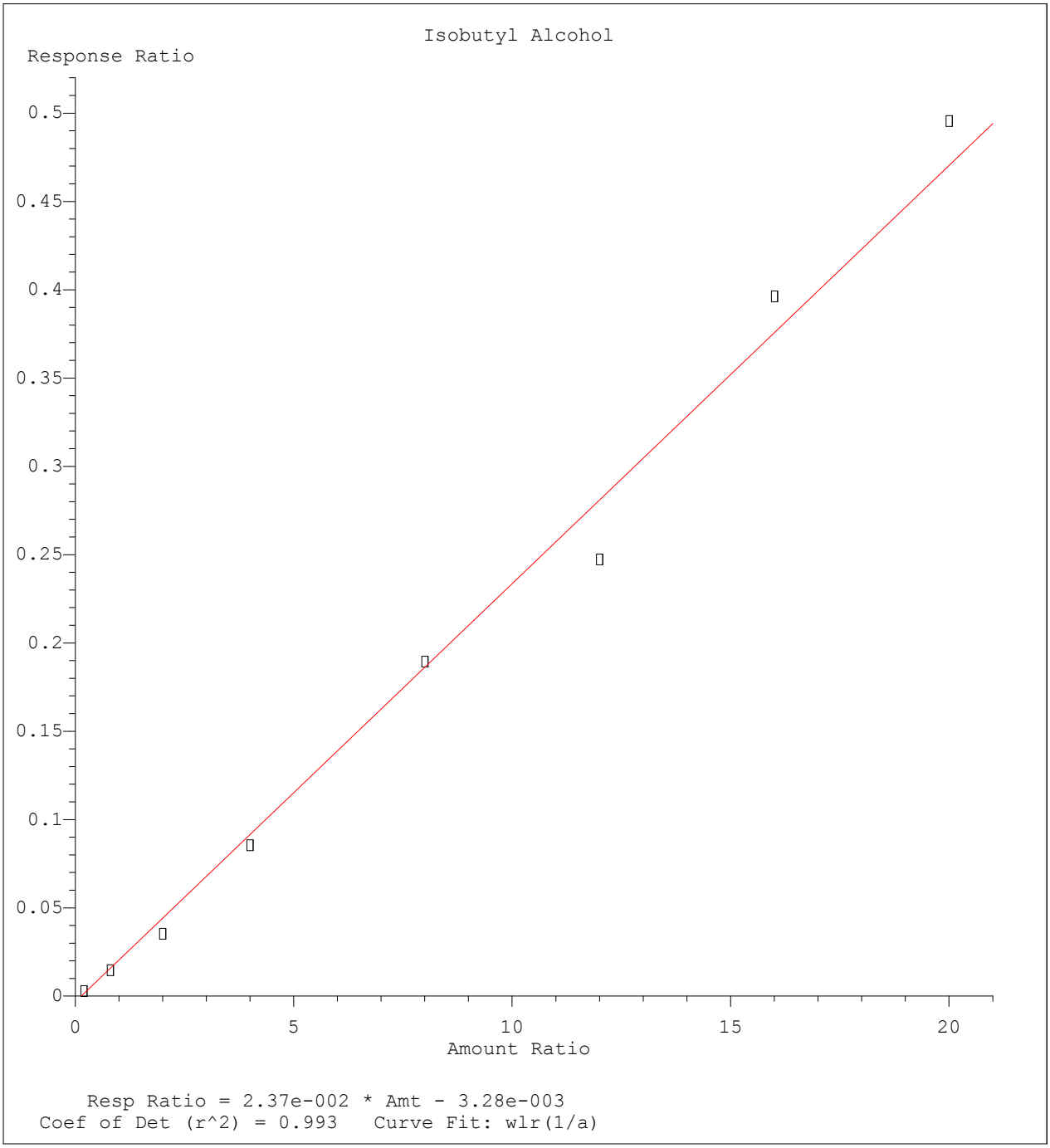

Method Name: C:\MSDCHEM\1\METHODS\A9FOO_SL.M
Calibration Table Last Updated: Wed Jan 27 09:49:02 2016

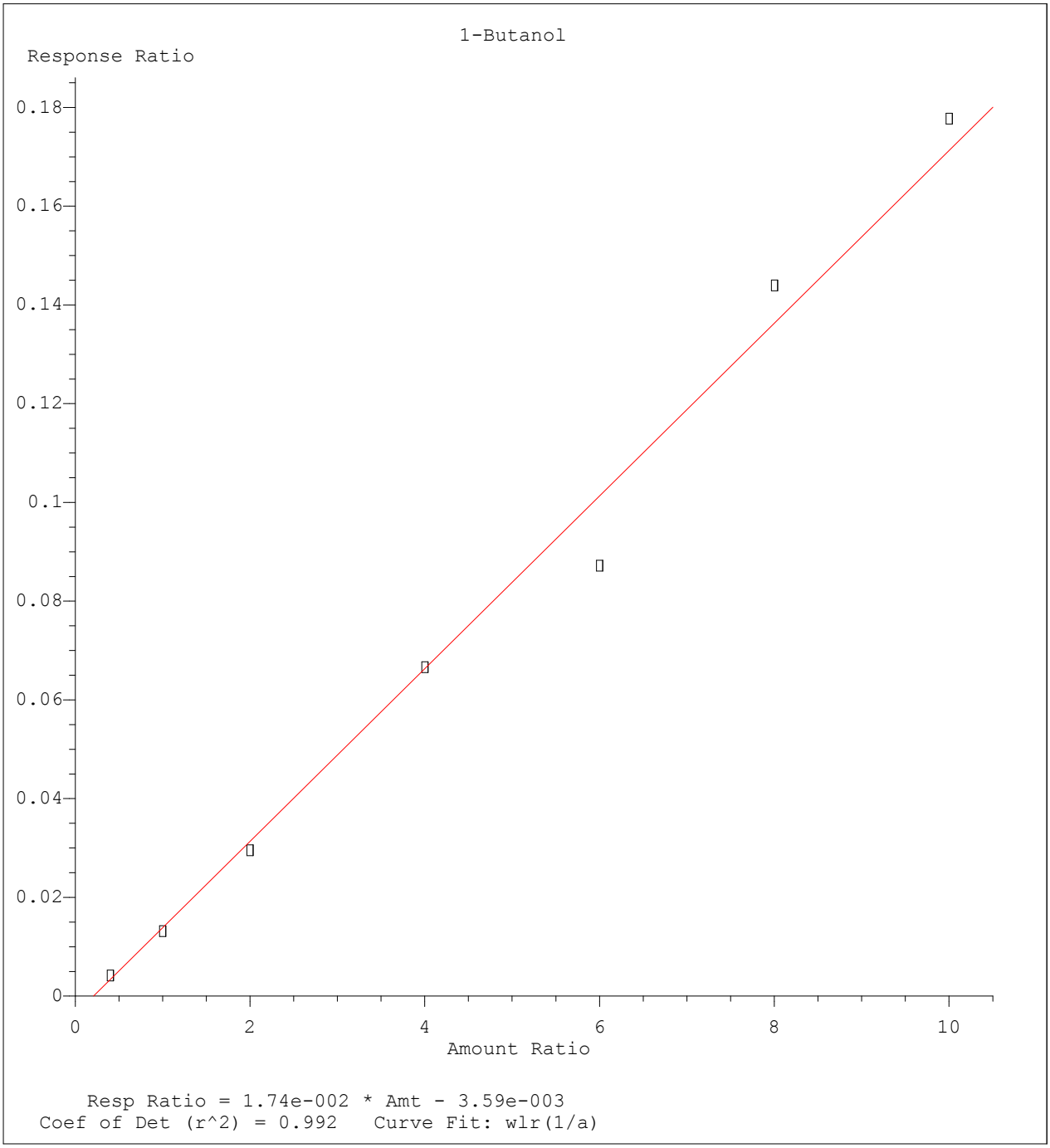

Method Name: C:\MSDCHEM\1\METHODS\A9FOO_SL.M
Calibration Table Last Updated: Wed Jan 27 09:49:02 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:09 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	394765	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	285754	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	159586	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	40054	101.2745 ug/kg#	100
3) 3-Chloro-1-propene	7.22	41	402890	103.3786 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	572568	129.1764 ug/kg	99
5) Ethyl Acetate	9.23	43	275962	106.0028 ug/kg	99
6) Methacrylonitrile	9.40	67	90289	107.1354 ug/kg	96
7) Isobutyl Alcohol	9.42	43	34031	188.7895 ug/kg	99
8) 1-Butanol	10.35	56	12038	97.7072 ug/kg	97
9) Methyl methacrylate	11.56	41	219363	110.3163 ug/kg	100
10) 2-Nitropropane	11.90	43	69288	107.2554 ug/kg	93
12) Cyclohexanone	16.01	55	14203	100.3934 ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972481.D A9FOO_SL.M Wed Jan 27 11:15:09 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

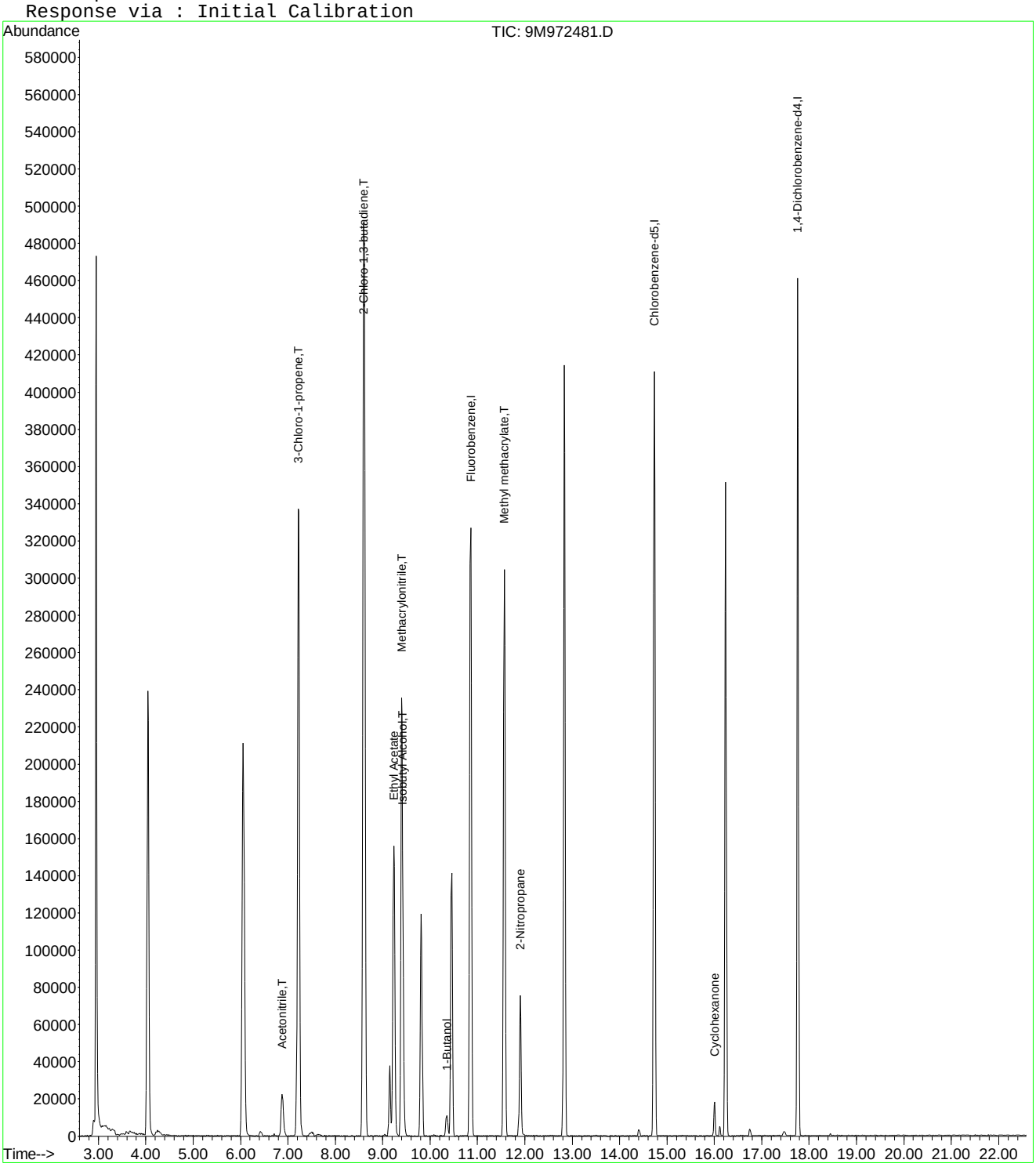

9M972481.D A9FOO_SL.M Wed Jan 27 11:15:09 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	101.2745	-1.3	106	0.00
3	T	3-Chloro-1-propene	100.0000	103.3786	-3.4	98	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	129.1764	-29.2	122	0.00
5		Ethyl Acetate	100.0000	106.0028	-6.0	103	0.00
6	T	Methacrylonitrile	100.0000	107.1354	-7.1	103	0.00
7	T	Isobutyl Alcohol	200.0000	188.7895	5.6	101	0.00
8		1-Butanol	100.0000	97.7072	2.3	103	0.00
9	T	Methyl methacrylate	100.0000	110.3163	-10.3	105	0.00
10		2-Nitropropane	100.0000	107.2554	-7.3	106	0.00
11	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
12		Cyclohexanone	100.0000	100.3934	-0.4	101	0.00
13	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	99	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972481.D A9FOO_SL.M Wed Jan 27 11:32:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973594.D Vial: 2
Acq On : 6 Apr 2016 10:29 Operator: ADC
Sample : WG563259-02 50ug/L CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:10 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	551415	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	405052	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	189947	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	147788	53.0682 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 106.14%		
43) 1,2-Dichloroethane-d4	10.44	65	151213	51.8685 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 103.74%		
58) Toluene-d8	12.82	98	526968	54.5879 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 109.18%		
79) p-Bromofluorobenzene	16.22	95	195456	59.4087 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 118.82%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.28	85	242107	57.2388 ug/kg	100
3) Chloromethane	3.75	50	193873	49.8597 ug/kg	100
4) Vinyl Chloride	3.98	62	149013	58.4247 ug/kg	100
5) 1,3-Butadiene	4.02	54	88480	47.1558 ug/kg	100
6) Bromomethane	4.87	94	126955	53.2516 ug/kg	100
7) Chloroethane	5.03	64	122932	52.9379 ug/kg	100
8) Trichlorofluoromethane	5.52	101	273893	55.7491 ug/kg	100
9) Diethyl ether	6.05	59	302106	104.5639 ug/kg	100
10) Isoprene	6.09	67	215171	55.6416 ug/kg	100
11) Acrolein	6.29	56	15006	52.2353 ug/kg	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	166684	55.5646 ug/kg	100
13) Acetone	6.38	43	59710	51.5489 ug/kg	100
14) 1,1-Dichloroethene	6.62	61	279907	55.6672 ug/kg	100
15) Tert-Butyl Alcohol	6.72	59	100512	207.8196 ug/kg	100
16) Dimethyl Sulfide	6.88	62	141859	57.5847 ug/kg	100
17) Iodomethane	7.13	142	125531	53.7732 ug/kg	100
18) Methyl acetate	7.13	43	167926	52.5703 ug/kg	100
19) Methylene Chloride	7.40	84	165284	52.6229 ug/kg	100
20) Carbon Disulfide	7.44	76	518079	54.3386 ug/kg	100
21) Acrylonitrile	7.58	53	81072	53.3984 ug/kg	100
22) Methyl Tert Butyl Ether	7.60	73	463149	54.8002 ug/kg	100
23) trans-1,2-Dichloroethene	7.84	61	272019	56.2368 ug/kg	100
24) n-Hexane	7.91	57	316831	50.4404 ug/kg	100
25) Diisopropyl ether	8.25	45	1370277	107.0598 ug/kg	100
26) Vinyl Acetate	8.43	43	380358	55.2771 ug/kg	100
27) 1,1-Dichloroethane	8.46	63	325085	55.3706 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	1192196	105.9292 ug/kg	100
29) 2-Butanone	9.01	43	90995	51.3285 ug/kg	100
30) Propionitrile	9.13	54	60922	105.8772 ug/kg	100
31) 2,2-Dichloropropane	9.23	77	240952	56.2039 ug/kg	100
32) cis-1,2-Dichloroethene	9.31	96	177687	55.2767 ug/kg	100
33) Chloroform	9.51	83	269909	54.2007 ug/kg	100
34) 1-Bromopropane	9.64	122	30864	53.5851 ug/kg	100
35) Bromochloromethane	9.75	130	113971	56.8295 ug/kg	100
36) Tetrahydrofuran	9.77	42	128338	101.9085 ug/kg	100
38) 1,1,1-Trichloroethane	10.05	97	238906	56.0533 ug/kg	100
39) Cyclohexane	10.07	56	372130	55.2296 ug/kg	100
40) 1,1-Dichloropropene	10.24	75	218180	55.6101 ug/kg	100
41) Tert-Amyl-Methyl ether	10.34	73	880669	105.7809 ug/kg	100
42) Carbon Tetrachloride	10.38	117	219971	55.2902 ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M973594.D 8260-SL.M Thu Apr 07 13:30:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973594.D Vial: 2
Acq On : 6 Apr 2016 10:29 Operator: ADC
Sample : WG563259-02 50ug/L CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:10 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	231509	53.9837 ug/kg	100
46)	Benzene	10.59	78	644102	52.8967 ug/kg	100
47)	Trichloroethene	11.34	130	182550	53.2999 ug/kg	100
48)	Methylcyclohexane	11.43	83	286794	54.7990 ug/kg	100
49)	1,2-Dichloropropane	11.56	63	183307	55.3560 ug/kg	100
50)	1,4-Dioxane	11.85	88	9560	222.5800 ug/kg	100
51)	Bromodichloromethane	11.86	83	209073	55.4066 ug/kg	100
52)	Dibromomethane	11.96	174	110590	55.9371 ug/kg	100
53)	2-Chloroethyl Vinyl Ether	12.16	63	96674	54.9007 ug/kg	100
54)	4-Methyl-2-Pentanone	12.19	58	77462	50.8064 ug/kg	100
55)	cis-1,3-Dichloropropene	12.49	75	259757	55.2103 ug/kg	100
56)	Dimethyl Disulfide	12.77	94	283262	56.2588 ug/kg	100
59)	Toluene	12.92	91	676568	54.8912 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	208952	55.6836 ug/kg	100
61)	trans-1,3-Dichloropropene	13.09	75	233116	58.0962 ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	139311	57.4128 ug/kg	100
63)	2-Hexanone	13.24	43	141674	53.4685 ug/kg	100
64)	1,3-Dichloropropane	13.62	76	235142	56.3585 ug/kg	100
65)	Tetrachloroethene	13.74	164	148635	56.8598 ug/kg	100
66)	Dibromochloromethane	14.01	129	170681	56.9021 ug/kg	100
67)	1,2-Dibromoethane	14.27	107	145428	54.4071 ug/kg	100
68)	1-Chlorohexane	14.34	91	230794	56.8760 ug/kg	100
69)	Chlorobenzene	14.76	112	472532	55.2455 ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.79	131	164608	56.6465 ug/kg	100
71)	Ethylbenzene	14.79	106	260658	56.6484 ug/kg	100
72)	m-,p-Xylene	14.88	106	628296	110.7487 ug/kg	100
73)	o-Xylene	15.45	106	304989	56.4179 ug/kg	100
74)	Styrene	15.48	104	526964	56.9228 ug/kg	100
75)	Bromoform	15.99	173	115703	58.6080 ug/kg	100
76)	Isopropylbenzene	15.87	105	790639	56.2260 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	186051	58.2080 ug/kg	100
80)	1,2,3-Trichloropropane	16.28	110	55521	58.8971 ug/kg	100
81)	trans-1,4-Dichloro-2-Buten	16.32	53	73658	64.2034 ug/kg	100
82)	n-Propylbenzene	16.38	91	882341	62.1325 ug/kg	100
83)	Bromobenzene	16.51	156	207751	61.5020 ug/kg	100
84)	1,3,5-Trimethylbenzene	16.57	105	670786	62.0365 ug/kg	100
85)	2-Chlorotoluene	16.65	91	532140	62.7429 ug/kg	100
86)	4-Chlorotoluene	16.69	91	541387	61.0285 ug/kg	100
87)	a-Methylstyrene	16.97	118	340272	63.0826 ug/kg	100
88)	tert-Butylbenzene	17.03	134	149571	62.4349 ug/kg	100
89)	1,2,4-Trimethylbenzene	17.08	105	679712	64.7956 ug/kg	100
90)	sec-Butylbenzene	17.29	105	863432	62.1174 ug/kg	100
91)	p-Isopropyltoluene	17.45	119	715853	62.2130 ug/kg	100
92)	1,3-Dichlorobenzene	17.65	146	404430	60.5578 ug/kg	100
93)	1,4-Dichlorobenzene	17.79	146	402073	58.9902 ug/kg	100
94)	n-Butylbenzene	17.98	91	653053	61.6912 ug/kg	100
95)	1,2-Dichlorobenzene	18.29	146	379394	59.7167 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.28	157	47102	59.4653 ug/kg	100
97)	1,2,4-Trichlorobenzene	20.43	180	281137	59.9711 ug/kg	100
98)	Hexachlorobutadiene	20.58	225	136032	61.5241 ug/kg	100
99)	Naphthalene	20.80	128	699652	61.9276 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.10	180	271295	61.0508 ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M973594.D 8260-SL.M Thu Apr 07 13:30:11 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973594.D Vial: 2
Acq On : 6 Apr 2016 10:29 Operator: ADC
Sample : WG563259-02 50ug/L CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 7 13:30 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

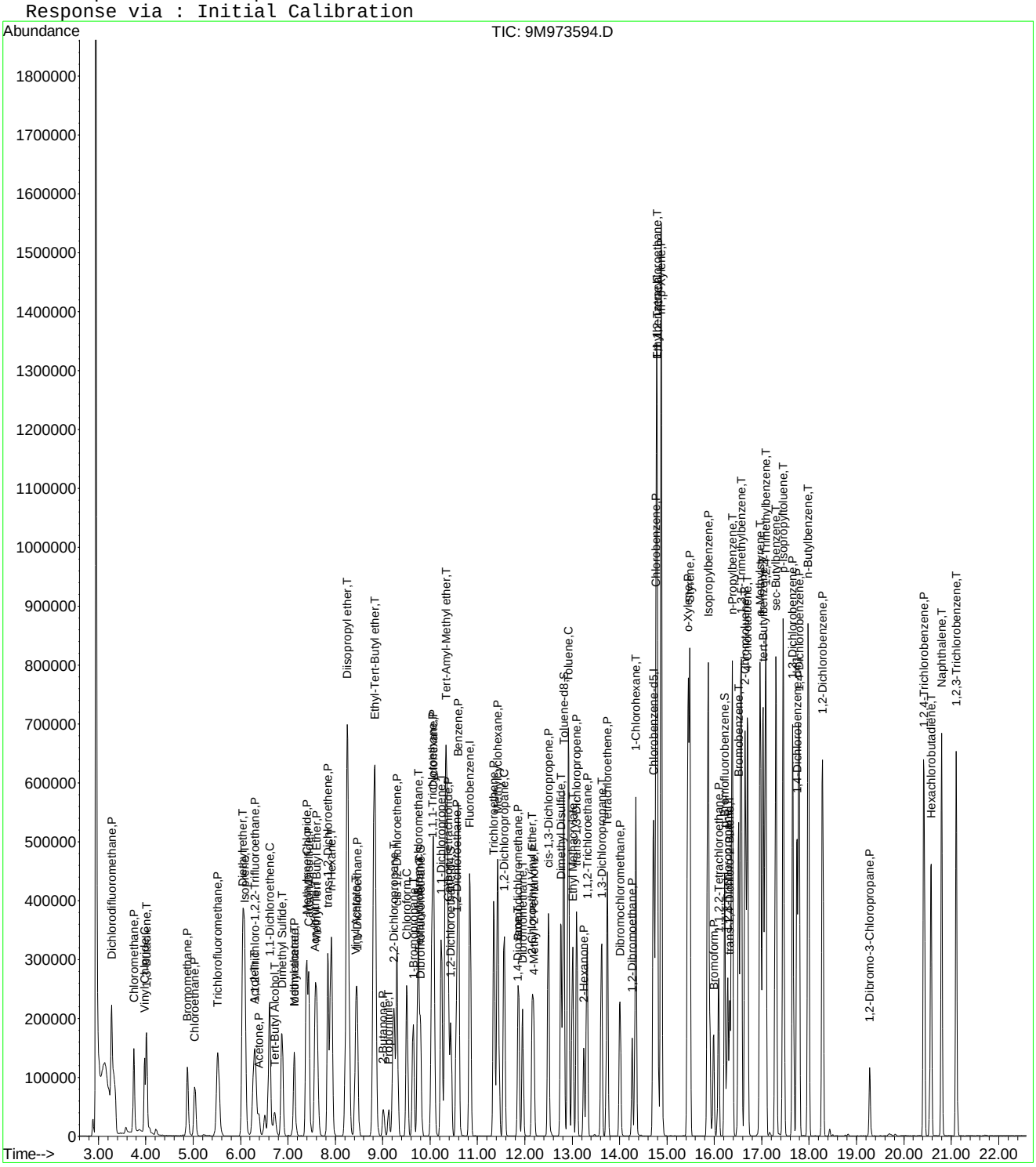

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973596.D Vial: 4
Acq On : 6 Apr 2016 11:31 Operator: ADC
Sample : WG563259-03 0.5ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 11:54:23 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/03/16 HPMS9
Last Update : Mon Apr 04 11:23:13 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	553119	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	413289	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	207310	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.82	98	1650	0.1613 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.32%#	
79) p-Bromofluorobenzene	16.22	95	1730	0.4358 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.88%#	

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.28	85	1589	0.9369 ug/kg#	65
3) Chloromethane	3.75	50	4538	1.1611 ug/kg	82
4) Vinyl Chloride	3.98	62	1323	Below Cal #	44
6) Bromomethane	4.88	94	1100	0.4462 ug/kg	95
10) Isoprene	6.09	67	1671	0.4729 ug/kg	77
13) Acetone	6.40	43	8104	2.6130 ug/kg	96
14) 1,1-Dichloroethene	6.61	61	2218	0.4395 ug/kg	93
17) Iodomethane	7.13	142	282	3.4654 ug/kg#	39
18) Methyl acetate	7.14	43	1743	0.4983 ug/kg#	64
19) Methylene Chloride	7.40	84	1679	0.5589 ug/kg	51
20) Carbon Disulfide	7.44	76	5728	0.6270 ug/kg#	74
22) Methyl Tert Butyl Ether	7.61	73	3658	0.4520 ug/kg#	67
23) trans-1,2-Dichloroethene	7.84	61	2293	0.4817 ug/kg	81
24) n-Hexane	7.93	57	9408	1.7150 ug/kg	97
26) Vinyl Acetate	8.43	43	1835	0.4539 ug/kg#	78
27) 1,1-Dichloroethane	8.46	63	2623	0.4668 ug/kg#	71
29) 2-Butanone	9.01	43	1327	0.7345 ug/kg#	56
32) cis-1,2-Dichloroethene	9.31	96	1606	0.5071 ug/kg	83
33) Chloroform	9.52	83	2239	0.4550 ug/kg	94
36) Tetrahydrofuran	9.78	42	3081	2.4866 ug/kg#	60
38) 1,1,1-Trichloroethane	10.05	97	1606	0.4115 ug/kg#	53
39) Cyclohexane	10.09	56	2777	0.4317 ug/kg#	87
40) 1,1-Dichloropropene	10.24	75	1521	0.4015 ug/kg#	65
42) Carbon Tetrachloride	10.39	117	1589	0.4437 ug/kg#	82
45) 1,2-Dichloroethane	10.56	62	1752	0.4168 ug/kg#	69
46) Benzene	10.61	78	6745	0.5761 ug/kg	93
47) Trichloroethene	11.36	130	1871	0.5440 ug/kg	96
48) Methylcyclohexane	11.43	83	2531	0.5027 ug/kg	84
53) 2-Chloroethyl Vinyl Ether	12.16	63	195	1.2486 ug/kg#	47
55) cis-1,3-Dichloropropene	12.49	75	1795	0.4064 ug/kg#	74
59) Toluene	12.92	91	6663	0.5122 ug/kg	98
62) 1,1,2-Trichloroethane	13.32	97	1141	0.4465 ug/kg	67
63) 2-Hexanone	13.25	43	1262	0.4800 ug/kg#	51
64) 1,3-Dichloropropane	13.62	76	1840	0.4299 ug/kg	90
65) Tetrachloroethene	13.75	164	1340	0.5079 ug/kg	86
68) 1-Chlorohexane	14.34	91	2260	0.5662 ug/kg	86
69) Chlorobenzene	14.76	112	5299	0.6131 ug/kg	88
71) Ethylbenzene	14.80	106	2155	0.4724 ug/kg	69
72) m-,p-Xylene	14.88	106	6619	1.1750 ug/kg	91
73) o-Xylene	15.44	106	2481	0.4468 ug/kg	69

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973596.D Vial: 4
Acq On : 6 Apr 2016 11:31 Operator: ADC
Sample : WG563259-03 0.5ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 11:54:23 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/03/16 HPMS9
Last Update : Mon Apr 04 11:23:13 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
74)	Styrene	15.48	104	5249	0.5704	ug/kg	93
76)	Isopropylbenzene	15.87	105	7442	0.5270	ug/kg	93
82)	n-Propylbenzene	16.38	91	10184	0.6237	ug/kg	98
83)	Bromobenzene	16.52	156	2243	0.5578	ug/kg	73
84)	1,3,5-Trimethylbenzene	16.56	105	8032	0.6524	ug/kg	99
85)	2-Chlorotoluene	16.65	91	5669	0.5575	ug/kg	93
86)	4-Chlorotoluene	16.69	91	5860	0.5871	ug/kg	83
87)	a-Methylstyrene	16.97	118	2629	0.4270	ug/kg	92
88)	tert-Butylbenzene	17.02	134	1136	0.4050	ug/kg	51
89)	1,2,4-Trimethylbenzene	17.09	105	12212	0.5440	ug/kg	86
90)	sec-Butylbenzene	17.30	105	9170	0.5637	ug/kg	88
91)	p-Isopropyltoluene	17.45	119	8260	0.6326	ug/kg	87
92)	1,3-Dichlorobenzene	17.66	146	4559	0.5946	ug/kg	95
93)	1,4-Dichlorobenzene	17.78	146	5206	0.6722	ug/kg	84
94)	n-Butylbenzene	17.98	91	7369	0.6266	ug/kg#	95
95)	1,2-Dichlorobenzene	18.29	146	4519	0.6176	ug/kg	94
97)	1,2,4-Trichlorobenzene	20.43	180	4488	0.8517	ug/kg	95
98)	Hexachlorobutadiene	20.58	225	1813	0.7398	ug/kg#	57
99)	Naphthalene	20.80	128	11728	0.9044	ug/kg	93
100)	1,2,3-Trichlorobenzene	21.11	180	4306	0.8341	ug/kg	90

(#) = qualifier out of range (m) = manual integration
9M973596.D 8260-SL.M Thu Apr 07 13:28:14 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973596.D Vial: 4
Acq On : 6 Apr 2016 11:31 Operator: ADC
Sample : WG563259-03 0.5ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 6 11:54 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

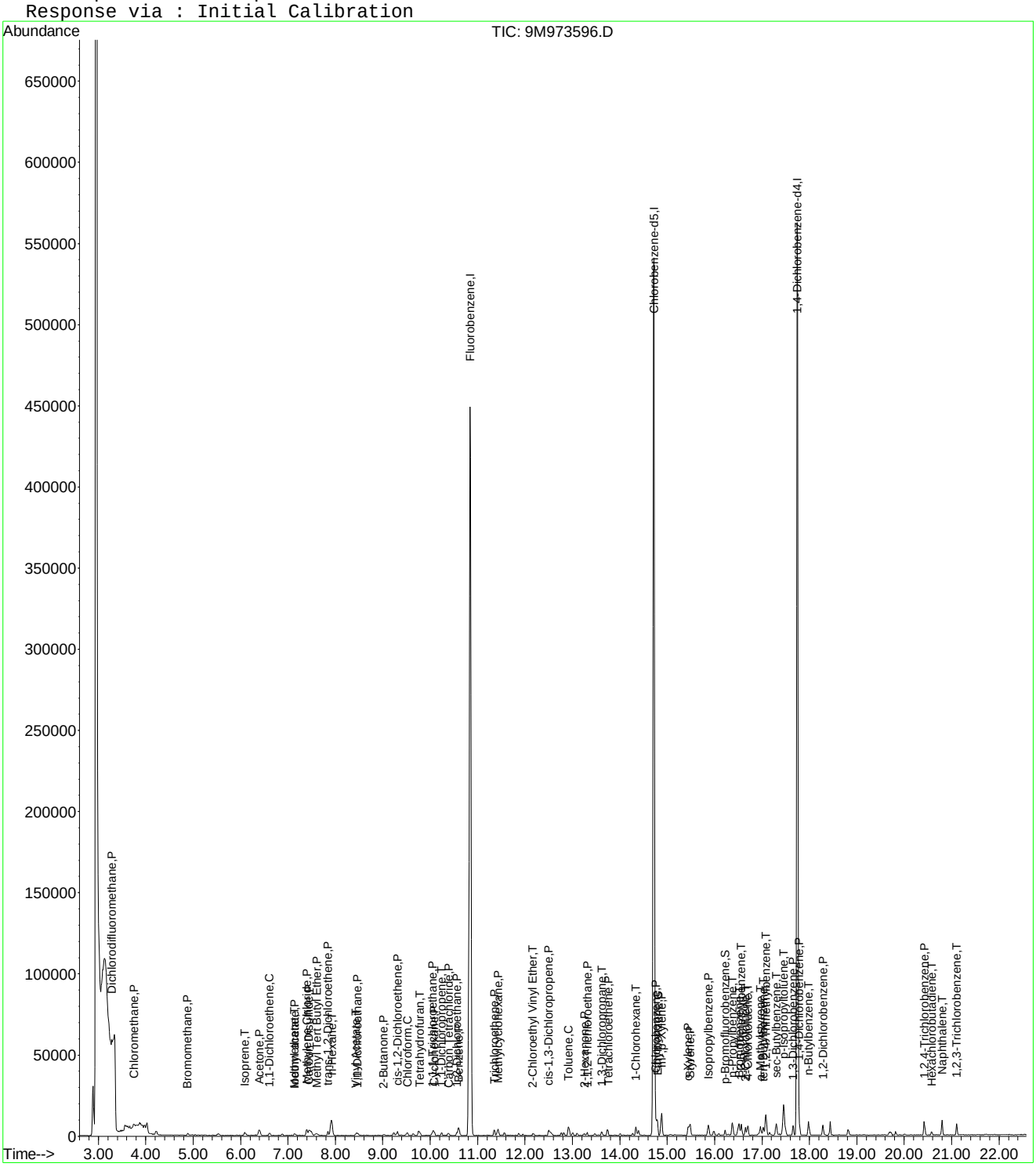

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\040616\9M973596.D Vial: 4
Acq On : 6 Apr 2016 11:31 Operator: ADC
Sample : WG563259-03 0.5ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	0.9369	0.0	100	0.00
3	P	Chloromethane	-1.0000	1.1611	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	-1.0000	0.0	0	0.00
5	T	1,3-Butadiene	-1.0000	0.1052	0.0	0	0.00
6	P	Bromomethane	-1.0000	0.4462	0.0	100	0.00
7	P	Chloroethane	-1.0000	0.2665	0.0	100	0.00
8	P	Trichlorofluoromethane	-1.0000	0.3662	0.0	100	0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.05#
10	T	Isoprene	-1.0000	0.4729	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.29#
12	P	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.0759	0.0	100	0.02
13	P	Acetone	-1.0000	2.6130	0.0	0	0.01
14	C	1,1-Dichloroethene	-1.0000	0.4395	0.0	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.72#
16	T	Dimethyl Sulfide	-1.0000	0.1631	0.0	100	0.01
17	T	Iodomethane	-1.0000	3.4654	0.0	100	0.00
18	P	Methyl acetate	-1.0000	0.4983	0.0	100	0.01
19	P	Methylene Chloride	-1.0000	0.5589	0.0	100	0.00
20	P	Carbon Disulfide	-1.0000	0.6270	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.58#
22	P	Methyl Tert Butyl Ether	-1.0000	0.4520	0.0	100	0.01
23	P	trans-1,2-Dichloroethene	-1.0000	0.4817	0.0	100	0.00
24	T	n-Hexane	-1.0000	1.7150	0.0	100	0.01
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.25#
26	T	Vinyl Acetate	-1.0000	0.4539	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.4668	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.83#
29	P	2-Butanone	-1.0000	0.7345	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.13#
31	T	2,2-Dichloropropane	-1.0000	0.3943	0.0	100	0.00
32	P	cis-1,2-Dichloroethene	-1.0000	0.5071	0.0	100	0.00
33	C	Chloroform	-1.0000	0.4550	0.0	100	0.01
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.64#
35	T	Bromochloromethane	-1.0000	0.2492	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	2.4866	0.0	100	0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	-1.0000	0.4115	0.0	100	0.00
39	P	Cyclohexane	-1.0000	0.4317	0.0	100	0.02
40	T	1,1-Dichloropropene	-1.0000	0.4015	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.34#
42	P	Carbon Tetrachloride	-1.0000	0.4437	0.0	100	0.01
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	-1.0000	0.4168	0.0	100	0.00
46	P	Benzene	0.5000	0.5762	-15.2	100	0.01
47	P	Trichloroethene	-1.0000	0.5440	0.0	100	0.01
48	P	Methylcyclohexane	-1.0000	0.5027	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.3907	0.0	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.85#
51	P	Bromodichloromethane	-1.0000	0.3953	0.0	100	0.00
52	T	Dibromomethane	-1.0000	0.3531	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	1.2486	0.0	100	0.00
54	P	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.19#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\040616\9M973596.D Vial: 4
Acq On : 6 Apr 2016 11:31 Operator: ADC
Sample : WG563259-03 0.5ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	-1.0000	0.4064	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.3326	0.0	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.1613	0.0	100	0.00
59	C	Toluene	0.5000	0.5122	-2.4	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3892	0.0	100	0.00
61	P	trans-1,3-Dichloropropene	-1.0000	0.3760	0.0	100	0.00
62	P	1,1,2-Trichloroethane	-1.0000	0.4465	0.0	100	0.00
63	P	2-Hexanone	-1.0000	0.4800	0.0	100	0.01
64	T	1,3-Dichloropropane	-1.0000	0.4299	0.0	100	0.00
65	P	Tetrachloroethene	-1.0000	0.5079	0.0	100	0.01
66	P	Dibromochloromethane	-1.0000	0.3577	0.0	100	0.00
67	P	1,2-Dibromoethane	-1.0000	0.2258	0.0	100	0.00
68	T	1-Chlorohexane	-1.0000	0.5662	0.0	100	0.00
69	P	Chlorobenzene	-1.0000	0.6131	0.0	100	0.00
70	T	1,1,1,2-Tetrachloroethane	-1.0000	0.3018	0.0	100	0.00
71	C	Ethylbenzene	0.5000	0.4724	5.5	100	0.00
72	P	m-,p-Xylene	1.0000	1.1750	-17.5	100	0.00
73	P	o-Xylene	0.5000	0.4468	10.6	100	0.00
74	P	Styrene	-1.0000	0.5704	0.0	100	0.00
75	P	Bromoform	-1.0000	0.2339	0.0	100	0.00
76	P	Isopropylbenzene	-1.0000	0.5270	0.0	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	-1.0000	0.3405	0.0	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.4358	0.0	100	0.00
80	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.28#
81	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.1888	0.0	100	0.00
82	T	n-Propylbenzene	-1.0000	0.6237	0.0	100	0.00
83	T	Bromobenzene	-1.0000	0.5578	0.0	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	0.6524	0.0	100	0.00
85	T	2-Chlorotoluene	-1.0000	0.5575	0.0	100	0.00
86	T	4-Chlorotoluene	-1.0000	0.5871	0.0	100	0.00
87	T	a-Methylstyrene	-1.0000	0.4270	0.0	100	0.00
88	T	tert-Butylbenzene	-1.0000	0.4050	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	-1.0000	0.5440	0.0	100	0.00
90	T	sec-Butylbenzene	-1.0000	0.5637	0.0	100	0.00
91	T	p-Isopropyltoluene	-1.0000	0.6326	0.0	100	0.00
92	P	1,3-Dichlorobenzene	-1.0000	0.5946	0.0	100	0.00
93	P	1,4-Dichlorobenzene	-1.0000	0.6722	0.0	100	0.00
94	T	n-Butylbenzene	-1.0000	0.6266	0.0	100	0.00
95	P	1,2-Dichlorobenzene	-1.0000	0.6176	0.0	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.28#
97	P	1,2,4-Trichlorobenzene	-1.0000	0.8517	0.0	100	0.00
98	T	Hexachlorobutadiene	-1.0000	0.7398	0.0	100	0.00
99	T	Naphthalene	-1.0000	0.9044	0.0	100	0.00
100	T	1,2,3-Trichlorobenzene	-1.0000	0.8341	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M973596.D 8260-SL.M Thu Apr 07 13:28:08 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973597.D Vial: 5
Acq On : 6 Apr 2016 12:02 Operator: ADC
Sample : WG563259-04 1.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 12:24:39 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/03/16 HPMS9
Last Update : Mon Apr 04 11:23:13 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	557853	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	421718	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	209128	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.82	98	1380	0.1322 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.26%#	
79) p-Bromofluorobenzene	16.22	95	1023	0.2555 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.52%#	

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.28	85	3438	1.3902 ug/kg#	65
3) Chloromethane	3.75	50	5181	1.3144 ug/kg#	63
4) Vinyl Chloride	3.98	62	3443	0.7225 ug/kg#	44
6) Bromomethane	4.88	94	2284	0.9187 ug/kg	99
7) Chloroethane	5.04	64	1773	0.9224 ug/kg#	45
8) Trichlorofluoromethane	5.52	101	4412	0.9378 ug/kg#	81
9) Diethyl ether	6.05	59	14756	5.2770 ug/kg	93
10) Isoprene	6.09	67	3715	1.0425 ug/kg	96
11) Acrolein	6.29	56	637	1.7221 ug/kg#	16
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	2305	0.7889 ug/kg	63
13) Acetone	6.39	43	7601	2.0940 ug/kg	96
14) 1,1-Dichloroethene	6.62	61	4390	0.8626 ug/kg	95
15) Tert-Butyl Alcohol	6.72	59	5249	10.8958 ug/kg#	78
16) Dimethyl Sulfide	6.87	62	1824	0.7358 ug/kg	84
17) Iodomethane	7.13	142	1121	3.9269 ug/kg#	39
18) Methyl acetate	7.14	43	3352	0.9502 ug/kg#	64
19) Methylene Chloride	7.40	84	3418	1.1282 ug/kg	86
20) Carbon Disulfide	7.44	76	10560	1.1462 ug/kg	96
21) Acrylonitrile	7.58	53	3633	2.4445 ug/kg	94
22) Methyl Tert Butyl Ether	7.61	73	7926	0.9710 ug/kg	85
23) trans-1,2-Dichloroethene	7.84	61	4306	0.8970 ug/kg	98
24) n-Hexane	7.91	57	10751	1.9432 ug/kg	100
25) Diisopropyl ether	8.25	45	66111	5.4586 ug/kg	98
26) Vinyl Acetate	8.42	43	4318	1.0591 ug/kg#	78
27) 1,1-Dichloroethane	8.46	63	5187	0.9153 ug/kg#	84
28) Ethyl-Tert-Butyl ether	8.83	59	58385	5.6314 ug/kg	97
29) 2-Butanone	9.01	43	2198	1.2063 ug/kg#	56
30) Propionitrile	9.13	54	2656	4.5857 ug/kg#	78
31) 2,2-Dichloropropane	9.23	77	3742	1.0146 ug/kg#	65
32) cis-1,2-Dichloroethene	9.31	96	2691	0.8425 ug/kg	94
33) Chloroform	9.51	83	4714	0.9497 ug/kg	94
35) Bromochloromethane	9.75	130	1511	0.7365 ug/kg	88
36) Tetrahydrofuran	9.77	42	9416	7.5349 ug/kg	88
38) 1,1,1-Trichloroethane	10.05	97	3823	0.9714 ug/kg	98
39) Cyclohexane	10.08	56	5889	0.9076 ug/kg	97
40) 1,1-Dichloropropene	10.24	75	3371	0.8822 ug/kg	92
41) Tert-Amyl-Methyl ether	10.34	73	42435	5.4666 ug/kg	98
42) Carbon Tetrachloride	10.39	117	3273	0.9063 ug/kg#	84
45) 1,2-Dichloroethane	10.56	62	3840	0.9057 ug/kg	91
46) Benzene	10.60	78	11983	1.0149 ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M973597.D 8260-SL.M Thu Apr 07 13:28:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973597.D Vial: 5
Acq On : 6 Apr 2016 12:02 Operator: ADC
Sample : WG563259-04 1.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 12:24:39 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/03/16 HPMS9
Last Update : Mon Apr 04 11:23:13 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
47)	Trichloroethene	11.35	130	3487	1.0053	ug/kg	88
48)	Methylcyclohexane	11.44	83	4996	0.9839	ug/kg	95
49)	1,2-Dichloropropane	11.56	63	2872	0.8788	ug/kg	95
51)	Bromodichloromethane	11.86	83	3283	0.8724	ug/kg#	85
52)	Dibromomethane	11.96	174	1694	0.8620	ug/kg	90
53)	2-Chloroethyl Vinyl Ether	12.17	63	1008	2.4200	ug/kg#	47
54)	4-Methyl-2-Pentanone	12.20	58	973	0.6567	ug/kg#	43
55)	cis-1,3-Dichloropropene	12.49	75	3951	0.8869	ug/kg#	77
56)	Dimethyl Disulfide	12.77	94	3623	0.7258	ug/kg	97
59)	Toluene	12.92	91	12565	0.9465	ug/kg	98
60)	Ethyl Methacrylate	13.00	69	3038	0.7867	ug/kg#	71
61)	trans-1,3-Dichloropropene	13.09	75	3292	0.8033	ug/kg	96
62)	1,1,2-Trichloroethane	13.32	97	1934	0.7417	ug/kg	91
63)	2-Hexanone	13.24	43	2621	0.9770	ug/kg#	71
64)	1,3-Dichloropropane	13.62	76	3906	0.8945	ug/kg	96
65)	Tetrachloroethene	13.75	164	2453	0.9111	ug/kg	99
66)	Dibromochloromethane	14.01	129	2167	0.6862	ug/kg	98
67)	1,2-Dibromoethane	14.27	107	2061	0.7227	ug/kg	87
68)	1-Chlorohexane	14.34	91	3972	0.9753	ug/kg	98
69)	Chlorobenzene	14.76	112	8591	0.9741	ug/kg	95
70)	1,1,1,2-Tetrachloroethane	14.79	131	2410	0.8202	ug/kg	100
71)	Ethylbenzene	14.79	106	4507	0.9682	ug/kg	89
72)	m-,p-Xylene	14.88	106	11285	1.9633	ug/kg	99
73)	o-Xylene	15.45	106	5223	0.9219	ug/kg	92
74)	Styrene	15.48	104	8749	0.9317	ug/kg	92
75)	Bromoform	15.98	173	1483	0.6965	ug/kg	75
76)	Isopropylbenzene	15.87	105	14235	0.9879	ug/kg	93
78)	1,1,2,2-Tetrachloroethane	16.09	83	2277	0.7039	ug/kg#	92
80)	1,2,3-Trichloropropane	16.28	110	937	0.8413	ug/kg#	1
81)	trans-1,4-Dichloro-2-Buten	16.32	53	931	0.7743	ug/kg#	1
82)	n-Propylbenzene	16.38	91	16968	1.0301	ug/kg	95
83)	Bromobenzene	16.51	156	3616	0.8914	ug/kg#	49
84)	1,3,5-Trimethylbenzene	16.56	105	12696	1.0222	ug/kg	97
85)	2-Chlorotoluene	16.65	91	10075	0.9822	ug/kg	94
86)	4-Chlorotoluene	16.69	91	10332	1.0261	ug/kg	93
87)	a-Methylstyrene	16.97	118	5122	0.8247	ug/kg	97
88)	tert-Butylbenzene	17.03	134	2268	0.8015	ug/kg	70
89)	1,2,4-Trimethylbenzene	17.08	105	16314	0.8707	ug/kg	94
90)	sec-Butylbenzene	17.29	105	15648	0.9536	ug/kg	100
91)	p-Isopropyltoluene	17.45	119	12800	0.9718	ug/kg	98
92)	1,3-Dichlorobenzene	17.65	146	7673	0.9920	ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	8420	1.0777	ug/kg	94
94)	n-Butylbenzene	17.98	91	11896	1.0028	ug/kg	96
95)	1,2-Dichlorobenzene	18.29	146	7645	1.0358	ug/kg	89
96)	1,2-Dibromo-3-Chloropropan	19.29	157	415	0.4519	ug/kg	67
97)	1,2,4-Trichlorobenzene	20.43	180	5819	1.0947	ug/kg	94
98)	Hexachlorobutadiene	20.58	225	2429	0.9825	ug/kg	98
99)	Naphthalene	20.80	128	14841	1.1345	ug/kg	93
100)	1,2,3-Trichlorobenzene	21.10	180	5534	1.0627	ug/kg	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973597.D Vial: 5
Acq On : 6 Apr 2016 12:02 Operator: ADC
Sample : WG563259-04 1.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 6 12:24 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

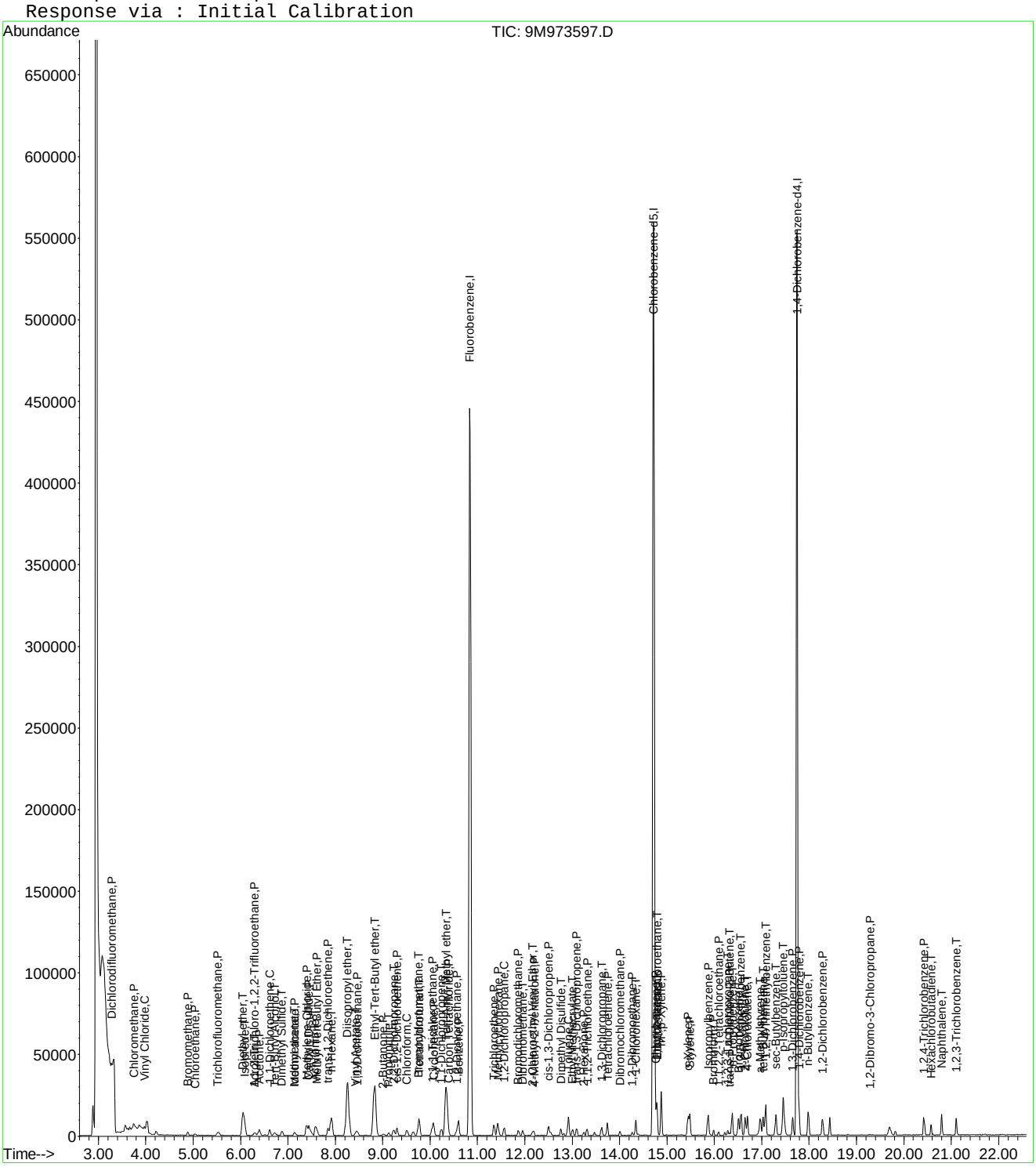

9M973597.D 8260-SL.M Thu Apr 07 13:28:36 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\040616\9M973597.D Vial: 5
Acq On : 6 Apr 2016 12:02 Operator: ADC
Sample : WG563259-04 1.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	1.3902	0.0	100	0.00
3	P	Chloromethane	-1.0000	1.3144	0.0	100	0.00
4	C	Vinyl Chloride	1.0000	0.7226	27.7#	100	0.00
5	T	1,3-Butadiene	1.0000	0.2910	70.9#	100	0.00
6	P	Bromomethane	1.0000	0.9187	8.1	100	0.01
7	P	Chloroethane	-1.0000	0.9224	0.0	100	0.01
8	P	Trichlorofluoromethane	1.0000	0.9378	6.2	100	0.00
9	T	Diethyl ether	5.0000	5.2770	-5.5	100	0.00
10	T	Isoprene	-1.0000	1.0425	0.0	100	0.00
11	T	Acrolein	2.5000	1.7221	31.1#	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.7889	0.0	100	-0.01
13	P	Acetone	-1.0000	2.0940	0.0	0	0.01
14	C	1,1-Dichloroethene	1.0000	0.8626	13.7	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	10.8958	0.0	100	0.00
16	T	Dimethyl Sulfide	1.0000	0.7358	26.4#	100	-0.01
17	T	Iodomethane	-1.0000	3.9269	0.0	100	0.00
18	P	Methyl acetate	-1.0000	0.9502	0.0	100	0.01
19	P	Methylene Chloride	-1.0000	1.1282	0.0	100	0.00
20	P	Carbon Disulfide	-1.0000	1.1462	0.0	100	0.00
21	T	Acrylonitrile	2.5000	2.4445	2.2	100	0.00
22	P	Methyl Tert Butyl Ether	1.0000	0.9710	2.9	100	0.01
23	P	trans-1,2-Dichloroethene	1.0000	0.8970	10.3	100	0.00
24	T	n-Hexane	-1.0000	1.9432	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	5.4586	-9.2	100	0.00
26	T	Vinyl Acetate	-1.0000	1.0591	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	0.9153	8.5	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	5.6315	-12.6	100	0.00
29	P	2-Butanone	-1.0000	1.2063	0.0	100	0.00
30	T	Propionitrile	5.0000	4.5857	8.3	100	0.00
31	T	2,2-Dichloropropane	-1.0000	1.0146	0.0	100	0.00
32	P	cis-1,2-Dichloroethene	1.0000	0.8425	15.7	100	0.00
33	C	Chloroform	1.0000	0.9497	5.0	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.64#
35	T	Bromochloromethane	1.0000	0.7365	26.3#	100	0.00
36	T	Tetrahydrofuran	-1.0000	7.5349	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	1.0000	0.9714	2.9	100	0.00
39	P	Cyclohexane	1.0000	0.9076	9.2	100	0.01
40	T	1,1-Dichloropropene	1.0000	0.8822	11.8	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	5.4666	-9.3	100	0.00
42	P	Carbon Tetrachloride	-1.0000	0.9063	0.0	100	0.01
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	1.0000	0.9057	9.4	100	0.00
46	P	Benzene	1.0000	1.0149	-1.5	100	0.01
47	P	Trichloroethene	1.0000	1.0053	-0.5	100	0.01
48	P	Methylcyclohexane	1.0000	0.9839	1.6	100	0.01
49	C	1,2-Dichloropropane	1.0000	0.8788	12.1	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.85#
51	P	Bromodichloromethane	-1.0000	0.8724	0.0	100	0.00
52	T	Dibromomethane	1.0000	0.8620	13.8	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	2.4200	0.0	100	0.01
54	P	4-Methyl-2-Pentanone	-1.0000	0.6567	0.0	100	0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\040616\9M973597.D Vial: 5
Acq On : 6 Apr 2016 12:02 Operator: ADC
Sample : WG563259-04 1.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	-1.0000	0.8869	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.7258	0.0	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.1322	0.0	100	0.00
59	C	Toluene	1.0000	0.9465	5.3	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.7867	0.0	100	-0.01
61	P	trans-1,3-Dichloropropene	-1.0000	0.8033	0.0	100	0.00
62	P	1,1,2-Trichloroethane	1.0000	0.7417	25.8#	100	0.00
63	P	2-Hexanone	-1.0000	0.9770	0.0	100	0.00
64	T	1,3-Dichloropropane	1.0000	0.8945	10.6	100	0.00
65	P	Tetrachloroethene	1.0000	0.9111	8.9	100	0.01
66	P	Dibromochloromethane	-1.0000	0.6862	0.0	100	0.00
67	P	1,2-Dibromoethane	-1.0000	0.7227	0.0	100	0.00
68	T	1-Chlorohexane	1.0000	0.9753	2.5	100	0.00
69	P	Chlorobenzene	1.0000	0.9741	2.6	100	0.00
70	T	1,1,1,2-Tetrachloroethane	-1.0000	0.8202	0.0	100	0.00
71	C	Ethylbenzene	1.0000	0.9682	3.2	100	0.00
72	P	m-,p-Xylene	2.0000	1.9633	1.8	100	0.00
73	P	o-Xylene	1.0000	0.9219	7.8	100	0.00
74	P	Styrene	1.0000	0.9317	6.8	100	0.00
75	P	Bromoform	-1.0000	0.6965	0.0	100	-0.01
76	P	Isopropylbenzene	1.0000	0.9879	1.2	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	1.0000	0.7039	29.6#	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.2555	0.0	100	0.00
80	T	1,2,3-Trichloropropane	1.0000	0.8413	15.9	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.7743	0.0	100	0.00
82	T	n-Propylbenzene	1.0000	1.0301	-3.0	100	0.00
83	T	Bromobenzene	1.0000	0.8914	10.9	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	1.0222	0.0	100	-0.01
85	T	2-Chlorotoluene	-1.0000	0.9822	0.0	100	0.00
86	T	4-Chlorotoluene	1.0000	1.0261	-2.6	100	0.00
87	T	a-Methylstyrene	-1.0000	0.8247	0.0	100	0.00
88	T	tert-Butylbenzene	-1.0000	0.8015	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	1.0000	0.8708	12.9	100	0.00
90	T	sec-Butylbenzene	1.0000	0.9536	4.6	100	0.00
91	T	p-Isopropyltoluene	-1.0000	0.9718	0.0	100	0.00
92	P	1,3-Dichlorobenzene	1.0000	0.9920	0.8	100	0.00
93	P	1,4-Dichlorobenzene	1.0000	1.0777	-7.8	100	0.00
94	T	n-Butylbenzene	1.0000	1.0028	-0.3	100	0.00
95	P	1,2-Dichlorobenzene	1.0000	1.0358	-3.6	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	0.4519	0.0	100	0.01
97	P	1,2,4-Trichlorobenzene	1.0000	1.0947	-9.5	100	0.00
98	T	Hexachlorobutadiene	1.0000	0.9825	1.7	100	0.00
99	T	Naphthalene	-1.0000	1.1345	0.0	100	0.00
100	T	1,2,3-Trichlorobenzene	1.0000	1.0627	-6.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1
9M973597.D 8260-SL.M Thu Apr 07 13:28:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973598.D Vial: 6
Acq On : 6 Apr 2016 12:32 Operator: ADC
Sample : WG563259-05 2.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 12:54:49 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/03/16 HPMS9
Last Update : Mon Apr 04 11:23:13 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	561568	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	423295	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	214199	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.83	98	883	0.0843 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.16%#	
79) p-Bromofluorobenzene	16.23	95	557	0.1358 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	7213	2.3112 ug/kg	87
3) Chloromethane	3.74	50	9237	2.3278 ug/kg	100
4) Vinyl Chloride	3.98	62	6229	1.6747 ug/kg#	19
5) 1,3-Butadiene	4.02	54	4504	1.3063 ug/kg	77
6) Bromomethane	4.88	94	4915	1.9639 ug/kg	96
7) Chloroethane	5.04	64	4386	2.2666 ug/kg	88
8) Trichlorofluoromethane	5.54	101	9590	2.0249 ug/kg#	94
9) Diethyl ether	6.05	59	73580	26.1395 ug/kg	99
10) Isoprene	6.09	67	7256	2.0227 ug/kg	98
11) Acrolein	6.30	56	3423	9.1925 ug/kg	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	5358	1.8216 ug/kg	95
13) Acetone	6.39	43	7635	2.0790 ug/kg	99
14) 1,1-Dichloroethene	6.61	61	9887	1.9298 ug/kg	100
15) Tert-Butyl Alcohol	6.73	59	25828	53.2585 ug/kg	94
16) Dimethyl Sulfide	6.88	62	4558	1.8265 ug/kg	98
17) Iodomethane	7.13	142	2123	4.4719 ug/kg#	55
18) Methyl acetate	7.14	43	6733	1.8961 ug/kg#	78
19) Methylene Chloride	7.40	84	6667	2.1861 ug/kg	89
20) Carbon Disulfide	7.44	76	19750	2.1295 ug/kg	99
21) Acrylonitrile	7.57	53	18608	12.4377 ug/kg	96
22) Methyl Tert Butyl Ether	7.62	73	16575	2.0171 ug/kg	98
23) trans-1,2-Dichloroethene	7.85	61	9684	2.0039 ug/kg	98
24) n-Hexane	7.92	57	15558	2.7934 ug/kg	93
25) Diisopropyl ether	8.25	45	323385	26.5242 ug/kg	99
26) Vinyl Acetate	8.44	43	9782	2.3835 ug/kg#	78
27) 1,1-Dichloroethane	8.46	63	11630	2.0385 ug/kg	96
28) Ethyl-Tert-Butyl ether	8.83	59	283112	27.1265 ug/kg	99
29) 2-Butanone	9.02	43	4137	2.2555 ug/kg#	56
30) Propionitrile	9.13	54	14459	24.7990 ug/kg	98
31) 2,2-Dichloropropane	9.23	77	8083	2.1772 ug/kg	86
32) cis-1,2-Dichloroethene	9.31	96	6442	2.0036 ug/kg	86
33) Chloroform	9.52	83	9615	1.9244 ug/kg	100
34) 1-Bromopropane	9.65	122	713	1.3267 ug/kg	39
35) Bromochloromethane	9.75	130	3780	1.8303 ug/kg	98
36) Tetrahydrofuran	9.77	42	34463	27.3955 ug/kg	97
38) 1,1,1-Trichloroethane	10.04	97	7884	1.9899 ug/kg	99
39) Cyclohexane	10.08	56	13354	2.0445 ug/kg	97
40) 1,1-Dichloropropene	10.23	75	7832	2.0362 ug/kg	98
41) Tert-Amyl-Methyl ether	10.34	73	209020	26.7483 ug/kg	99
42) Carbon Tetrachloride	10.38	117	7040	1.9364 ug/kg	94

(#) = qualifier out of range (m) = manual integration
9M973598.D 8260-SL.M Thu Apr 07 13:29:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973598.D Vial: 6
Acq On : 6 Apr 2016 12:32 Operator: ADC
Sample : WG563259-05 2.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 12:54:49 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/03/16 HPMS9
Last Update : Mon Apr 04 11:23:13 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	9082	2.1280 ug/kg	90
46)	Benzene	10.60	78	25276	2.1266 ug/kg	96
47)	Trichloroethene	11.35	130	7090	2.0306 ug/kg	94
48)	Methylcyclohexane	11.43	83	9849	1.9269 ug/kg	93
49)	1,2-Dichloropropane	11.56	63	6385	1.9409 ug/kg	98
50)	1,4-Dioxane	11.85	88	2011	38.0886 ug/kg	94
51)	Bromodichloromethane	11.86	83	6868	1.8130 ug/kg#	96
52)	Dibromomethane	11.95	174	3665	1.8525 ug/kg	96
53)	2-Chloroethyl Vinyl Ether	12.15	63	2995	5.2459 ug/kg#	62
54)	4-Methyl-2-Pentanone	12.19	58	2405	1.6125 ug/kg#	60
55)	cis-1,3-Dichloropropene	12.50	75	9135	2.0369 ug/kg	89
56)	Dimethyl Disulfide	12.76	94	8289	1.6496 ug/kg	96
59)	Toluene	12.92	91	26467	1.9863 ug/kg	98
60)	Ethyl Methacrylate	13.01	69	7058	1.8209 ug/kg	87
61)	trans-1,3-Dichloropropene	13.09	75	7270	1.7674 ug/kg	97
62)	1,1,2-Trichloroethane	13.32	97	5072	1.9379 ug/kg	98
63)	2-Hexanone	13.24	43	5448	2.0233 ug/kg#	73
64)	1,3-Dichloropropane	13.62	76	8816	2.0113 ug/kg	97
65)	Tetrachloroethene	13.75	164	5466	2.0227 ug/kg	96
66)	Dibromochloromethane	14.01	129	5362	1.6916 ug/kg	97
67)	1,2-Dibromoethane	14.26	107	4602	1.6077 ug/kg	96
68)	1-Chlorohexane	14.34	91	8306	2.0318 ug/kg	94
69)	Chlorobenzene	14.77	112	18638	2.1054 ug/kg	78
70)	1,1,1,2-Tetrachloroethane	14.79	131	5450	1.8478 ug/kg	96
71)	Ethylbenzene	14.79	106	9804	2.0982 ug/kg	99
72)	m-,p-Xylene	14.88	106	23234	4.0271 ug/kg	97
73)	o-Xylene	15.45	106	11588	2.0377 ug/kg	95
74)	Styrene	15.48	104	18182	1.9290 ug/kg	97
75)	Bromoform	15.98	173	3164	1.4804 ug/kg	95
76)	Isopropylbenzene	15.87	105	28542	1.9733 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	6227	1.8795 ug/kg#	91
80)	1,2,3-Trichloropropane	16.28	110	2188	1.9181 ug/kg#	13
81)	trans-1,4-Dichloro-2-Buten	16.33	53	2328	1.8903 ug/kg#	1
82)	n-Propylbenzene	16.38	91	32209	1.9091 ug/kg	99
83)	Bromobenzene	16.51	156	7870	1.8942 ug/kg	66
84)	1,3,5-Trimethylbenzene	16.57	105	24501	1.9260 ug/kg	97
85)	2-Chlorotoluene	16.65	91	19437	1.8500 ug/kg	89
86)	4-Chlorotoluene	16.70	91	21001	2.0362 ug/kg	88
87)	a-Methylstyrene	16.97	118	10908	1.7148 ug/kg	90
88)	tert-Butylbenzene	17.03	134	5100	1.7596 ug/kg	78
89)	1,2,4-Trimethylbenzene	17.08	105	28288	1.7954 ug/kg	98
90)	sec-Butylbenzene	17.29	105	31454	1.8715 ug/kg	98
91)	p-Isopropyltoluene	17.45	119	26393	1.9564 ug/kg	93
92)	1,3-Dichlorobenzene	17.65	146	15785	1.9925 ug/kg	97
93)	1,4-Dichlorobenzene	17.79	146	16276	2.0339 ug/kg	77
94)	n-Butylbenzene	17.98	91	23563	1.9393 ug/kg	97
95)	1,2-Dichlorobenzene	18.29	146	13856	1.8328 ug/kg	98
96)	1,2-Dibromo-3-Chloropropan	19.29	157	1504	1.5990 ug/kg	71
97)	1,2,4-Trichlorobenzene	20.43	180	10046	1.8451 ug/kg	94
98)	Hexachlorobutadiene	20.58	225	4883	1.9284 ug/kg	97
99)	Naphthalene	20.80	128	26400	1.9704 ug/kg	99
100)	1,2,3-Trichlorobenzene	21.10	180	9688	1.8163 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973598.D Vial: 6
Acq On : 6 Apr 2016 12:32 Operator: ADC
Sample : WG563259-05 2.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 6 12:54 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

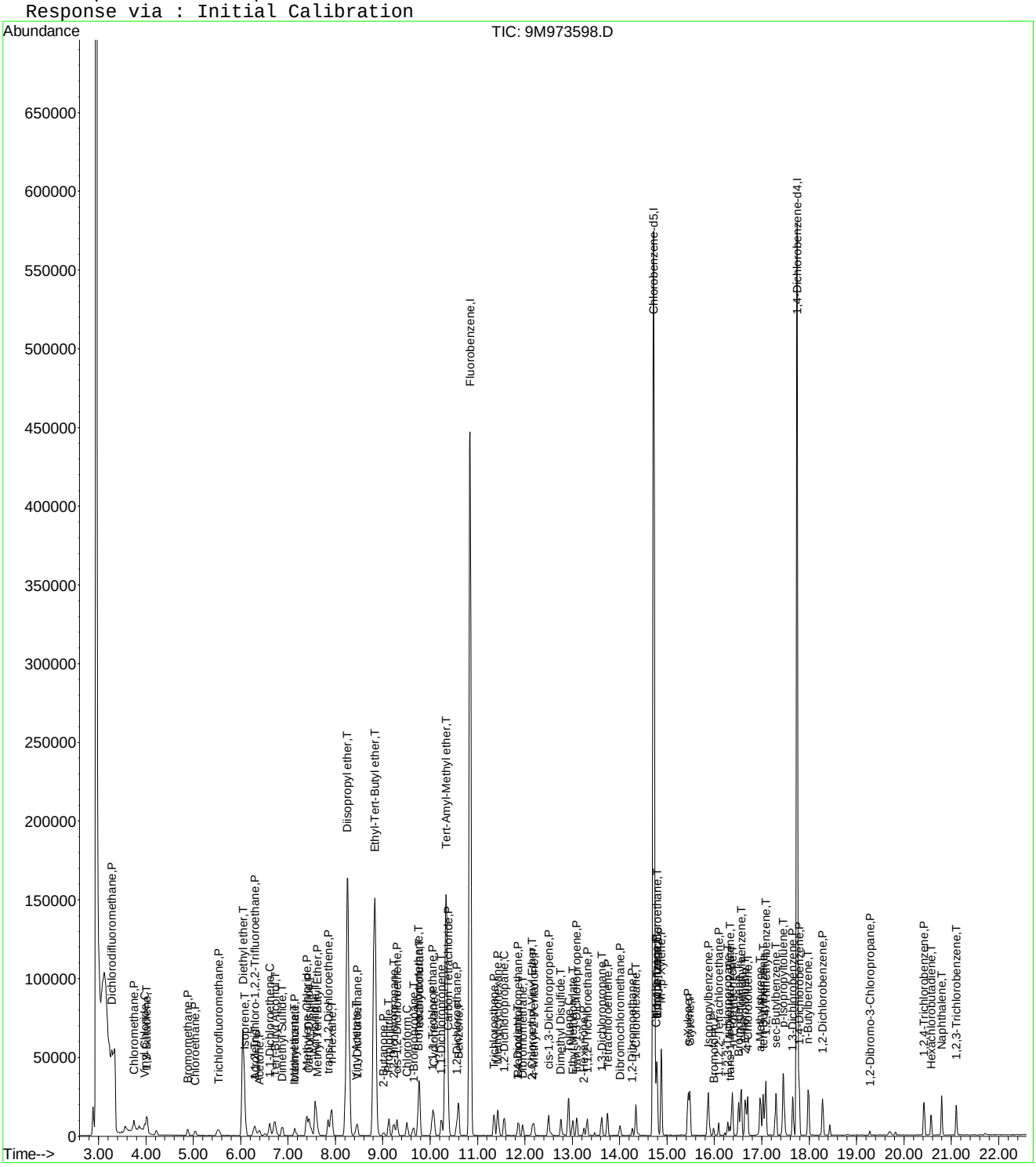

9M973598.D 8260-SL.M Thu Apr 07 13:29:00 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\040616\9M973598.D Vial: 6
Acq On : 6 Apr 2016 12:32 Operator: ADC
Sample : WG563259-05 2.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	2.0000	2.3112	-15.6	100	0.00
3	P	Chloromethane	2.0000	2.3278	-16.4	100	0.00
4	C	Vinyl Chloride	2.0000	1.6747	16.3	100	0.00
5	T	1,3-Butadiene	2.0000	1.3063	34.7#	100	0.00
6	P	Bromomethane	2.0000	1.9639	1.8	100	0.00
7	P	Chloroethane	2.0000	2.2666	-13.3	100	0.00
8	P	Trichlorofluoromethane	2.0000	2.0249	-1.2	100	0.02
9	T	Diethyl ether	25.0000	26.1395	-4.6	100	0.00
10	T	Isoprene	2.0000	2.0227	-1.1	100	0.00
11	T	Acrolein	12.5000	9.1925	26.5#	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.8216	8.9	100	0.00
13	P	Acetone	-1.0000	2.0790	0.0	0	0.00
14	C	1,1-Dichloroethene	2.0000	1.9299	3.5	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	53.2585	-6.5	100	0.00
16	T	Dimethyl Sulfide	2.0000	1.8265	8.7	100	0.00
17	T	Iodomethane	-1.0000	4.4719	0.0	100	0.00
18	P	Methyl acetate	2.0000	1.8961	5.2	100	0.00
19	P	Methylene Chloride	2.0000	2.1861	-9.3	100	0.00
20	P	Carbon Disulfide	2.0000	2.1295	-6.5	100	0.00
21	T	Acrylonitrile	12.5000	12.4377	0.5	100	0.00
22	P	Methyl Tert Butyl Ether	2.0000	2.0171	-0.9	100	0.02
23	P	trans-1,2-Dichloroethene	2.0000	2.0039	-0.2	100	0.00
24	T	n-Hexane	2.0000	2.7934	-39.7#	100	0.00
25	T	Diisopropyl ether	25.0000	26.5242	-6.1	100	0.00
26	T	Vinyl Acetate	2.0000	2.3835	-19.2	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.0385	-1.9	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	27.1265	-8.5	100	0.00
29	P	2-Butanone	-1.0000	2.2555	0.0	100	0.00
30	T	Propionitrile	25.0000	24.7990	0.8	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1772	-8.9	100	0.00
32	P	cis-1,2-Dichloroethene	2.0000	2.0036	-0.2	100	0.00
33	C	Chloroform	2.0000	1.9244	3.8	100	0.00
34	T	1-Bromopropane	2.0000	1.3267	33.7#	100	0.00
35	T	Bromochloromethane	2.0000	1.8303	8.5	100	0.00
36	T	Tetrahydrofuran	25.0000	27.3955	-9.6	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	2.0000	1.9899	0.5	100	0.00
39	P	Cyclohexane	2.0000	2.0445	-2.2	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0362	-1.8	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	26.7483	-7.0	100	0.00
42	P	Carbon Tetrachloride	2.0000	1.9364	3.2	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	2.0000	2.1280	-6.4	100	0.00
46	P	Benzene	2.0000	2.1266	-6.3	100	0.00
47	P	Trichloroethene	2.0000	2.0305	-1.5	100	0.00
48	P	Methylcyclohexane	2.0000	1.9269	3.7	100	0.00
49	C	1,2-Dichloropropane	2.0000	1.9409	3.0	100	0.00
50	T	1,4-Dioxane	50.0000	38.0886	23.8	100	0.00
51	P	Bromodichloromethane	2.0000	1.8130	9.4	100	0.00
52	T	Dibromomethane	2.0000	1.8525	7.4	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	5.2459	-162.3#	100	0.00
54	P	4-Methyl-2-Pentanone	-1.0000	1.6125	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\040616\9M973598.D Vial: 6
Acq On : 6 Apr 2016 12:32 Operator: ADC
Sample : WG563259-05 2.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	2.0000	2.0369	-1.8	100	0.00
56	T	Dimethyl Disulfide	2.0000	1.6496	17.5	100	-0.01
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0843	0.0	100	0.00
59	C	Toluene	2.0000	1.9863	0.7	100	0.00
60	T	Ethyl Methacrylate	-1.0000	1.8209	0.0	100	0.00
61	P	trans-1,3-Dichloropropene	2.0000	1.7674	11.6	100	0.00
62	P	1,1,2-Trichloroethane	2.0000	1.9379	3.1	100	0.00
63	P	2-Hexanone	-1.0000	2.0233	0.0	100	0.00
64	T	1,3-Dichloropropane	2.0000	2.0113	-0.6	100	0.00
65	P	Tetrachloroethene	2.0000	2.0227	-1.1	100	0.00
66	P	Dibromochloromethane	2.0000	1.6916	15.4	100	0.00
67	P	1,2-Dibromoethane	-1.0000	1.6077	0.0	100	0.00
68	T	1-Chlorohexane	2.0000	2.0318	-1.6	100	0.00
69	P	Chlorobenzene	2.0000	2.1054	-5.3	100	0.00
70	T	1,1,1,2-Tetrachloroethane	2.0000	1.8478	7.6	100	0.00
71	C	Ethylbenzene	2.0000	2.0982	-4.9	100	0.00
72	P	m-,p-Xylene	4.0000	4.0271	-0.7	100	0.00
73	P	o-Xylene	2.0000	2.0377	-1.9	100	0.00
74	P	Styrene	2.0000	1.9290	3.5	100	0.00
75	P	Bromoform	2.0000	1.4804	26.0#	100	0.00
76	P	Isopropylbenzene	2.0000	1.9733	1.3	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	2.0000	1.8795	6.0	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.1358	0.0	100	0.00
80	T	1,2,3-Trichloropropane	2.0000	1.9181	4.1	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	2.0000	1.8903	5.5	100	0.00
82	T	n-Propylbenzene	2.0000	1.9091	4.5	100	0.00
83	T	Bromobenzene	2.0000	1.8942	5.3	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	1.9260	0.0	100	0.00
85	T	2-Chlorotoluene	2.0000	1.8500	7.5	100	0.00
86	T	4-Chlorotoluene	2.0000	2.0362	-1.8	100	0.00
87	T	a-Methylstyrene	-1.0000	1.7148	0.0	100	0.00
88	T	tert-Butylbenzene	-1.0000	1.7596	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	2.0000	1.7954	10.2	100	0.00
90	T	sec-Butylbenzene	2.0000	1.8715	6.4	100	0.00
91	T	p-Isopropyltoluene	-1.0000	1.9564	0.0	100	0.00
92	P	1,3-Dichlorobenzene	2.0000	1.9925	0.4	100	0.00
93	P	1,4-Dichlorobenzene	2.0000	2.0339	-1.7	100	0.00
94	T	n-Butylbenzene	2.0000	1.9393	3.0	100	0.00
95	P	1,2-Dichlorobenzene	2.0000	1.8328	8.4	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	1.5990	0.0	100	0.01
97	P	1,2,4-Trichlorobenzene	2.0000	1.8451	7.7	100	0.00
98	T	Hexachlorobutadiene	2.0000	1.9284	3.6	100	0.00
99	T	Naphthalene	2.0000	1.9704	1.5	100	0.00
100	T	1,2,3-Trichlorobenzene	2.0000	1.8163	9.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M973598.D 8260-SL.M Thu Apr 07 13:28:57 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973599.D Vial: 7
Acq On : 6 Apr 2016 13:03 Operator: ADC
Sample : WG563259-06 5.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:12 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	540575	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	410912	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	212234	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	26727	9.7897 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 19.58%#		
43) 1,2-Dichloroethane-d4	10.43	65	28555	9.9912 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 19.98%#		
58) Toluene-d8	12.82	98	93027	9.4991 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 19.00%#		
79) p-Bromofluorobenzene	16.22	95	33585	9.1362 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 18.28%#		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.28	85	18618	4.4899 ug/kg	93
3) Chloromethane	3.74	50	18697	4.9049 ug/kg	96
4) Vinyl Chloride	3.98	62	17383	6.2597 ug/kg#	75
5) 1,3-Butadiene	4.02	54	9801	5.3282 ug/kg	95
6) Bromomethane	4.88	94	12479	5.3393 ug/kg	99
7) Chloroethane	5.03	64	11469	5.0379 ug/kg	93
8) Trichlorofluoromethane	5.53	101	23619	4.9039 ug/kg	98
9) Diethyl ether	6.04	59	144321	50.9536 ug/kg	99
10) Isoprene	6.09	67	17822	4.7011 ug/kg	98
11) Acrolein	6.29	56	6309	22.4018 ug/kg	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	14091	4.7915 ug/kg	96
13) Acetone	6.39	43	11189	5.1370 ug/kg	92
14) 1,1-Dichloroethene	6.61	61	24384	4.9467 ug/kg	97
15) Tert-Butyl Alcohol	6.71	59	47814	100.8431 ug/kg	97
16) Dimethyl Sulfide	6.88	62	11613	4.8086 ug/kg	99
17) Iodomethane	7.13	142	7579	6.0534 ug/kg	95
18) Methyl acetate	7.14	43	16058	5.1279 ug/kg#	92
19) Methylene Chloride	7.40	84	15627	5.0751 ug/kg	98
20) Carbon Disulfide	7.44	76	45259	4.8422 ug/kg	99
21) Acrylonitrile	7.58	53	36084	24.2435 ug/kg	100
22) Methyl Tert Butyl Ether	7.61	73	41971	5.0656 ug/kg	97
23) trans-1,2-Dichloroethene	7.84	61	22643	4.7751 ug/kg	94
24) n-Hexane	7.91	57	31915	5.1828 ug/kg	98
25) Diisopropyl ether	8.25	45	638829	50.9126 ug/kg	100
26) Vinyl Acetate	8.43	43	27708	4.9171 ug/kg	99
27) 1,1-Dichloroethane	8.46	63	29076	5.0517 ug/kg	98
28) Ethyl-Tert-Butyl ether	8.83	59	559829	50.7395 ug/kg	99
29) 2-Butanone	9.02	43	8792	5.0588 ug/kg	93
30) Propionitrile	9.13	54	28464	50.4599 ug/kg	100
31) 2,2-Dichloropropane	9.23	77	19836	4.7197 ug/kg	97
32) cis-1,2-Dichloroethene	9.31	96	15631	4.9602 ug/kg	98
33) Chloroform	9.52	83	24960	5.1128 ug/kg	98
34) 1-Bromopropane	9.64	122	2375	4.9990 ug/kg	92
35) Bromochloromethane	9.74	130	10252	5.2145 ug/kg	97
36) Tetrahydrofuran	9.77	42	62022	50.2370 ug/kg	100
38) 1,1,1-Trichloroethane	10.04	97	20109	4.8127 ug/kg	96
39) Cyclohexane	10.07	56	32971	4.9915 ug/kg	98
40) 1,1-Dichloropropene	10.23	75	19558	5.0849 ug/kg	98
41) Tert-Amyl-Methyl ether	10.34	73	416272	51.0028 ug/kg	99
42) Carbon Tetrachloride	10.38	117	18137	4.6502 ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M973599.D 8260-SL.M Thu Apr 07 13:30:12 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973599.D Vial: 7
Acq On : 6 Apr 2016 13:03 Operator: ADC
Sample : WG563259-06 5.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:12 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	21550	5.1258	ug/kg	98
46)	Benzene	10.59	78	59748	5.0052	ug/kg	100
47)	Trichloroethene	11.35	130	17063	5.0819	ug/kg	98
48)	Methylcyclohexane	11.43	83	25911	5.0502	ug/kg	95
49)	1,2-Dichloropropane	11.56	63	16731	5.1538	ug/kg	98
50)	1,4-Dioxane	11.85	88	4165	98.9158	ug/kg	91
51)	Bromodichloromethane	11.87	83	16986	4.5917	ug/kg	97
52)	Dibromomethane	11.95	174	9659	4.9836	ug/kg	98
53)	2-Chloroethyl Vinyl Ether	12.15	63	7923	4.5897	ug/kg	91
54)	4-Methyl-2-Pentanone	12.19	58	7042	4.7114	ug/kg	93
55)	cis-1,3-Dichloropropene	12.49	75	22132	4.7984	ug/kg	100
56)	Dimethyl Disulfide	12.77	94	22635	4.5857	ug/kg	95
59)	Toluene	12.91	91	62873	5.0283	ug/kg	98
60)	Ethyl Methacrylate	13.01	69	17248	4.5309	ug/kg	97
61)	trans-1,3-Dichloropropene	13.09	75	18937	4.6521	ug/kg	97
62)	1,1,2-Trichloroethane	13.32	97	12436	5.0520	ug/kg	96
63)	2-Hexanone	13.24	43	12154	4.5216	ug/kg#	99
64)	1,3-Dichloropropane	13.62	76	21035	4.9697	ug/kg	100
65)	Tetrachloroethene	13.74	164	12748	4.8072	ug/kg	96
66)	Dibromochloromethane	14.01	129	13656	4.4877	ug/kg	99
67)	1,2-Dibromoethane	14.27	107	12726	4.6931	ug/kg	96
68)	1-Chlorohexane	14.34	91	19636	4.7700	ug/kg	100
69)	Chlorobenzene	14.76	112	43960	5.0662	ug/kg	94
70)	1,1,1,2-Tetrachloroethane	14.79	131	13422	4.5530	ug/kg	96
71)	Ethylbenzene	14.79	106	22856	4.8964	ug/kg	97
72)	m-,p-Xylene	14.88	106	55736	9.6844	ug/kg	97
73)	o-Xylene	15.45	106	27291	4.9764	ug/kg	97
74)	Styrene	15.48	104	44746	4.7645	ug/kg	97
75)	Bromoform	15.99	173	8941	4.9476	ug/kg	96
76)	Isopropylbenzene	15.87	105	68436	4.7974	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	16234	4.8680	ug/kg	96
80)	1,2,3-Trichloropropane	16.28	110	5358	5.0869	ug/kg	75
81)	trans-1,4-Dichloro-2-Buten	16.32	53	5712	4.4560	ug/kg	95
82)	n-Propylbenzene	16.38	91	78929	4.9743	ug/kg	99
83)	Bromobenzene	16.51	156	18731	4.9628	ug/kg	95
84)	1,3,5-Trimethylbenzene	16.57	105	61534	5.0933	ug/kg	97
85)	2-Chlorotoluene	16.65	91	47568	5.0196	ug/kg	100
86)	4-Chlorotoluene	16.69	91	49003	4.9438	ug/kg	98
87)	a-Methylstyrene	16.97	118	27390	4.5446	ug/kg	100
88)	tert-Butylbenzene	17.03	134	13107	4.8967	ug/kg	98
89)	1,2,4-Trimethylbenzene	17.08	105	64983	5.0275	ug/kg	97
90)	sec-Butylbenzene	17.29	105	75572	4.8659	ug/kg	99
91)	p-Isopropyltoluene	17.46	119	62027	4.8245	ug/kg	99
92)	1,3-Dichlorobenzene	17.65	146	35372	4.7403	ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	36160	4.7481	ug/kg	88
94)	n-Butylbenzene	17.98	91	56976	4.8171	ug/kg	97
95)	1,2-Dichlorobenzene	18.29	146	33722	4.7505	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	3395	9.5585	ug/kg	90
97)	1,2,4-Trichlorobenzene	20.43	180	24750	4.7252	ug/kg	98
98)	Hexachlorobutadiene	20.58	225	11410	4.6186	ug/kg	98
99)	Naphthalene	20.80	128	59120	4.6833	ug/kg	99
100)	1,2,3-Trichlorobenzene	21.10	180	22339	4.4992	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M973599.D 8260-SL.M Thu Apr 07 13:30:12 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973599.D Vial: 7
Acq On : 6 Apr 2016 13:03 Operator: ADC
Sample : WG563259-06 5.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 7 13:30 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

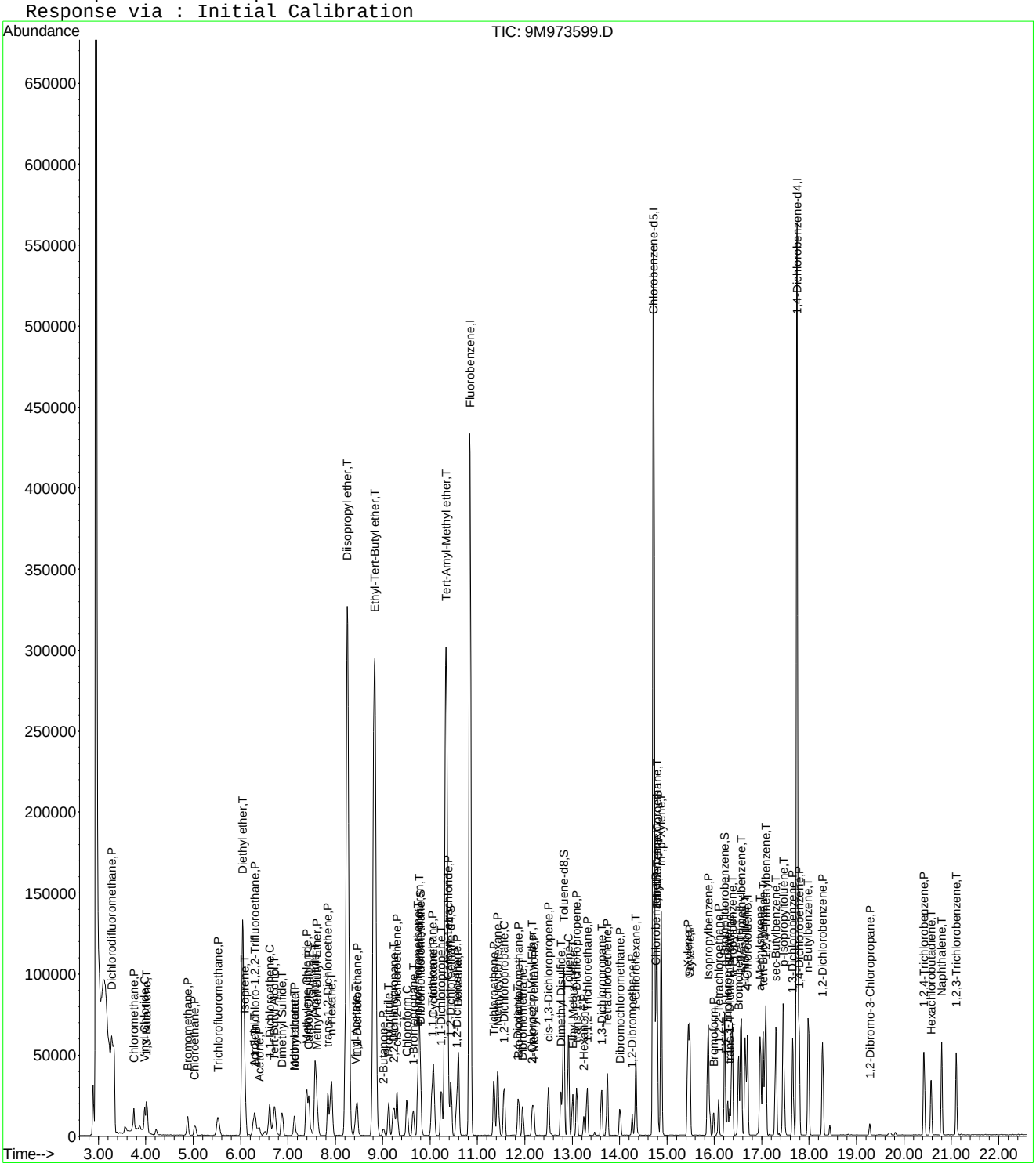

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\040616\9M973599.D Vial: 7
Acq On : 6 Apr 2016 13:03 Operator: ADC
Sample : WG563259-06 5.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	5.0000	5.2946	-5.9	100	0.00
3	P	Chloromethane	5.0000	4.8949	2.1	100	0.00
4	C	Vinyl Chloride	5.0000	5.7498	-15.0	100	0.00
5	T	1,3-Butadiene	5.0000	3.3519	33.0#	100	0.00
6	P	Bromomethane	5.0000	5.1799	-3.6	100	0.00
7	P	Chloroethane	5.0000	6.1572	-23.1	100	0.00
8	P	Trichlorofluoromethane	5.0000	5.1808	-3.6	100	0.00
9	T	Diethyl ether	50.0000	53.2615	-6.5	100	0.00
10	T	Isoprene	5.0000	5.1610	-3.2	100	0.00
11	T	Acrolein	25.0000	17.6008	29.6#	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.9766	0.5	100	0.00
13	P	Acetone	5.0000	5.6720	-13.4	100	0.01
14	C	1,1-Dichloroethene	5.0000	4.9444	1.1	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	102.4236	-2.4	100	-0.01
16	T	Dimethyl Sulfide	5.0000	4.8343	3.3	100	0.00
17	T	Iodomethane	5.0000	7.6230	-52.5#	100	0.00
18	P	Methyl acetate	5.0000	4.6977	6.0	100	0.00
19	P	Methylene Chloride	5.0000	5.3230	-6.5	100	0.00
20	P	Carbon Disulfide	5.0000	5.0694	-1.4	100	0.00
21	T	Acrylonitrile	25.0000	25.0554	-0.2	100	0.00
22	P	Methyl Tert Butyl Ether	5.0000	5.3060	-6.1	100	0.00
23	P	trans-1,2-Dichloroethene	5.0000	4.8674	2.7	100	0.00
24	T	n-Hexane	5.0000	5.9527	-19.1	100	0.00
25	T	Diisopropyl ether	50.0000	54.4320	-8.9	100	0.00
26	T	Vinyl Acetate	5.0000	7.0135	-40.3#	100	0.00
27	P	1,1-Dichloroethane	5.0000	5.2945	-5.9	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	55.7234	-11.4	100	0.00
29	P	2-Butanone	5.0000	4.9796	0.4	100	0.00
30	T	Propionitrile	50.0000	50.7152	-1.4	100	0.00
31	T	2,2-Dichloropropane	5.0000	5.5504	-11.0	100	0.00
32	P	cis-1,2-Dichloroethene	5.0000	5.0504	-1.0	100	0.00
33	C	Chloroform	5.0000	5.1895	-3.8	100	0.00
34	T	1-Bromopropane	5.0000	4.5908	8.2	100	0.00
35	T	Bromochloromethane	5.0000	5.1570	-3.1	100	-0.01
36	T	Tetrahydrofuran	50.0000	51.2175	-2.4	100	0.00
37	S	Dibromofluoromethane	10.0000	9.5422	4.6	100	0.00
38	P	1,1,1-Trichloroethane	5.0000	5.2726	-5.5	100	0.00
39	P	Cyclohexane	5.0000	5.2439	-4.9	100	0.00
40	T	1,1-Dichloropropene	5.0000	5.2821	-5.6	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	55.3390	-10.7	100	0.00
42	P	Carbon Tetrachloride	5.0000	5.1825	-3.7	100	0.00
43	S	1,2-Dichloroethane-d4	10.0000	9.6547	3.5	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	5.0000	5.2454	-4.9	100	0.00
46	P	Benzene	5.0000	5.2220	-4.4	100	0.00
47	P	Trichloroethene	5.0000	5.0766	-1.5	100	0.00
48	P	Methylcyclohexane	5.0000	5.2662	-5.3	100	0.00
49	C	1,2-Dichloropropane	5.0000	5.2833	-5.7	100	0.00
50	T	1,4-Dioxane	100.0000	81.9492	18.1	100	0.00
51	P	Bromodichloromethane	5.0000	4.6580	6.8	100	0.00
52	T	Dibromomethane	5.0000	5.0719	-1.4	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	12.6229	-152.5#	100	0.00
54	P	4-Methyl-2-Pentanone	5.0000	4.9049	1.9	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\040616\9M973599.D Vial: 7
Acq On : 6 Apr 2016 13:03 Operator: ADC
Sample : WG563259-06 5.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	5.0000	5.1266	-2.5	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.6795	6.4	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	10.0000	9.1485	8.5	100	0.00
59	C	Toluene	5.0000	4.8608	2.8	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.5840	8.3	100	0.00
61	P	trans-1,3-Dichloropropene	5.0000	4.7424	5.2	100	0.00
62	P	1,1,2-Trichloroethane	5.0000	4.8948	2.1	100	0.00
63	P	2-Hexanone	5.0000	4.6499	7.0	100	0.00
64	T	1,3-Dichloropropane	5.0000	4.9436	1.1	100	0.00
65	P	Tetrachloroethene	5.0000	4.8596	2.8	100	0.00
66	P	Dibromochloromethane	5.0000	4.4379	11.2	100	0.00
67	P	1,2-Dibromoethane	5.0000	4.5797	8.4	100	0.00
68	T	1-Chlorohexane	5.0000	4.9481	1.0	100	0.00
69	P	Chlorobenzene	5.0000	5.1154	-2.3	100	0.00
70	T	1,1,1,2-Tetrachloroethane	5.0000	4.6879	6.2	100	0.00
71	C	Ethylbenzene	5.0000	5.0389	-0.8	100	0.00
72	P	m-,p-Xylene	10.0000	9.9516	0.5	100	0.00
73	P	o-Xylene	5.0000	4.9435	1.1	100	0.00
74	P	Styrene	5.0000	4.8905	2.2	100	0.00
75	P	Bromoform	5.0000	4.3095	13.8	100	0.00
76	P	Isopropylbenzene	5.0000	4.8741	2.5	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	5.0000	4.9452	1.1	100	0.00
79	S	p-Bromofluorobenzene	10.0000	8.2647	17.4	100	0.00
80	T	1,2,3-Trichloropropane	5.0000	4.7405	5.2	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	5.0000	4.6811	6.4	100	0.00
82	T	n-Propylbenzene	5.0000	4.7217	5.6	100	0.00
83	T	Bromobenzene	5.0000	4.5500	9.0	100	0.00
84	T	1,3,5-Trimethylbenzene	5.0000	4.8818	2.4	100	0.00
85	T	2-Chlorotoluene	5.0000	4.5695	8.6	100	0.00
86	T	4-Chlorotoluene	5.0000	4.7953	4.1	100	0.00
87	T	a-Methylstyrene	5.0000	4.3457	13.1	100	0.00
88	T	tert-Butylbenzene	5.0000	4.5639	8.7	100	0.00
89	T	1,2,4-Trimethylbenzene	5.0000	4.7740	4.5	100	0.00
90	T	sec-Butylbenzene	5.0000	4.5380	9.2	100	0.00
91	T	p-Isopropyltoluene	5.0000	4.6404	7.2	100	0.00
92	P	1,3-Dichlorobenzene	5.0000	4.5063	9.9	100	0.00
93	P	1,4-Dichlorobenzene	5.0000	4.5605	8.8	100	0.00
94	T	n-Butylbenzene	5.0000	4.7327	5.3	100	0.00
95	P	1,2-Dichlorobenzene	5.0000	4.5019	10.0	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	5.0000	3.6428	27.1#	100	0.01
97	P	1,2,4-Trichlorobenzene	5.0000	4.5878	8.2	100	0.00
98	T	Hexachlorobutadiene	5.0000	4.5478	9.0	100	0.00
99	T	Naphthalene	5.0000	4.4533	10.9	100	0.00
100	T	1,2,3-Trichlorobenzene	5.0000	4.2269	15.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M973599.D 8260-SL.M Thu Apr 07 13:29:54 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973600.D Vial: 8
Acq On : 6 Apr 2016 13:33 Operator: ADC
Sample : WG563259-07 20.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:12 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	548817	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	412236	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	214138	50.00 ug/kg	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.80	111	50685	18.2863 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 36.58%#		
43) 1,2-Dichloroethane-d4	10.45	65	54446	18.7643 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 37.52%#		
58) Toluene-d8	12.82	98	186475	18.9801 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 37.96%#		
79) p-Bromofluorobenzene	16.22	95	68377	18.4353 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 36.88%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	79821	18.9606 ug/kg	97
3) Chloromethane	3.74	50	71839	18.5628 ug/kg	99
4) Vinyl Chloride	3.98	62	67533	26.1754 ug/kg	98
5) 1,3-Butadiene	4.02	54	39283	21.0351 ug/kg	97
6) Bromomethane	4.88	94	46162	19.4544 ug/kg	99
7) Chloroethane	5.04	64	47069	20.3651 ug/kg	99
8) Trichlorofluoromethane	5.53	101	102900	21.0438 ug/kg	99
9) Diethyl ether	6.05	59	234864	81.6752 ug/kg	98
10) Isoprene	6.09	67	79445	20.6411 ug/kg	98
11) Acrolein	6.29	56	11352	39.7029 ug/kg	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	63152	21.1516 ug/kg	98
13) Acetone	6.38	43	27589	20.8069 ug/kg	99
14) 1,1-Dichloroethene	6.61	61	106975	21.3756 ug/kg	99
15) Tert-Butyl Alcohol	6.72	59	76199	158.2956 ug/kg	99
16) Dimethyl Sulfide	6.88	62	54097	22.0635 ug/kg	100
17) Iodomethane	7.13	142	33219	16.4421 ug/kg	99
18) Methyl acetate	7.14	43	64808	20.3846 ug/kg	97
19) Methylene Chloride	7.40	84	65272	20.8796 ug/kg	100
20) Carbon Disulfide	7.44	76	195126	20.5626 ug/kg	100
21) Acrylonitrile	7.58	53	59361	39.2834 ug/kg	99
22) Methyl Tert Butyl Ether	7.60	73	179991	21.3975 ug/kg	100
23) trans-1,2-Dichloroethene	7.84	61	102409	21.2721 ug/kg	98
24) n-Hexane	7.91	57	130558	20.8836 ug/kg	99
25) Diisopropyl ether	8.25	45	1040879	81.7089 ug/kg	100
26) Vinyl Acetate	8.43	43	119893	18.1040 ug/kg	99
27) 1,1-Dichloroethane	8.46	63	125920	21.5491 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	915892	81.7642 ug/kg	100
29) 2-Butanone	9.01	43	35146	19.9190 ug/kg	97
30) Propionitrile	9.13	54	44398	77.5252 ug/kg	97
31) 2,2-Dichloropropane	9.24	77	84630	19.8340 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	69568	21.7444 ug/kg	98
33) Chloroform	9.52	83	105558	21.2976 ug/kg	100
34) 1-Bromopropane	9.64	122	11208	20.0976 ug/kg	99
35) Bromochloromethane	9.75	130	42691	21.3878 ug/kg	99
36) Tetrahydrofuran	9.77	42	98564	78.6366 ug/kg	99
38) 1,1,1-Trichloroethane	10.04	97	91294	21.5213 ug/kg	100
39) Cyclohexane	10.08	56	143014	21.3259 ug/kg	98
40) 1,1-Dichloropropene	10.23	75	82887	21.2264 ug/kg	100
41) Tert-Amyl-Methyl ether	10.34	73	681787	82.2800 ug/kg	99
42) Carbon Tetrachloride	10.38	117	82160	20.7489 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973600.D Vial: 8
Acq On : 6 Apr 2016 13:33 Operator: ADC
Sample : WG563259-07 20.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:12 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	91652	21.4727 ug/kg	98
46)	Benzene	10.60	78	250792	20.6937 ug/kg	100
47)	Trichloroethene	11.35	130	69997	20.5341 ug/kg	98
48)	Methylcyclohexane	11.43	83	111193	21.3467 ug/kg	99
49)	1,2-Dichloropropane	11.56	63	69830	21.1874 ug/kg	99
50)	1,4-Dioxane	11.85	88	6747	157.8301 ug/kg	93
51)	Bromodichloromethane	11.87	83	77283	20.5778 ug/kg	99
52)	Dibromomethane	11.95	174	41437	21.0583 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	34827	19.8717 ug/kg	98
54)	4-Methyl-2-Pentanone	12.19	58	30595	20.1619 ug/kg	98
55)	cis-1,3-Dichloropropene	12.50	75	93742	20.0188 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	101844	20.3230 ug/kg	99
59)	Toluene	12.91	91	262833	20.9525 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	77681	20.3404 ug/kg	100
61)	trans-1,3-Dichloropropene	13.09	75	84438	20.6766 ug/kg	98
62)	1,1,2-Trichloroethane	13.32	97	53247	21.5617 ug/kg	98
63)	2-Hexanone	13.24	43	52531	19.4800 ug/kg	100
64)	1,3-Dichloropropane	13.62	76	91187	21.4747 ug/kg	100
65)	Tetrachloroethene	13.74	164	55416	20.8298 ug/kg	98
66)	Dibromochloromethane	14.01	129	63295	20.7337 ug/kg	98
67)	1,2-Dibromoethane	14.27	107	55408	20.3678 ug/kg	98
68)	1-Chlorohexane	14.34	91	87355	21.1523 ug/kg	98
69)	Chlorobenzene	14.76	112	183140	21.0385 ug/kg	97
70)	1,1,1,2-Tetrachloroethane	14.79	131	62310	21.0690 ug/kg	99
71)	Ethylbenzene	14.79	106	101285	21.6285 ug/kg	99
72)	m-,p-Xylene	14.88	106	241056	41.7501 ug/kg	99
73)	o-Xylene	15.45	106	115290	20.9551 ug/kg	98
74)	Styrene	15.48	104	197867	21.0012 ug/kg	99
75)	Bromoform	15.99	173	39405	20.7716 ug/kg	98
76)	Isopropylbenzene	15.87	105	297986	20.8219 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	71279	20.0119 ug/kg	99
80)	1,2,3-Trichloropropane	16.28	110	21494	20.2252 ug/kg	98
81)	trans-1,4-Dichloro-2-Buten	16.32	53	25104	19.4097 ug/kg	88
82)	n-Propylbenzene	16.38	91	331062	20.6790 ug/kg	99
83)	Bromobenzene	16.51	156	79848	20.9676 ug/kg	78
84)	1,3,5-Trimethylbenzene	16.57	105	256470	21.0396 ug/kg	100
85)	2-Chlorotoluene	16.65	91	201201	21.0430 ug/kg	99
86)	4-Chlorotoluene	16.70	91	205488	20.5471 ug/kg	100
87)	a-Methylstyrene	16.97	118	122000	20.0624 ug/kg	100
88)	tert-Butylbenzene	17.03	134	55701	20.6244 ug/kg	98
89)	1,2,4-Trimethylbenzene	17.08	105	257149	21.3688 ug/kg	100
90)	sec-Butylbenzene	17.29	105	324606	20.7148 ug/kg	100
91)	p-Isopropyltoluene	17.45	119	267236	20.6011 ug/kg	100
92)	1,3-Dichlorobenzene	17.65	146	150147	19.9426 ug/kg	100
93)	1,4-Dichlorobenzene	17.79	146	150647	19.6053 ug/kg	100
94)	n-Butylbenzene	17.98	91	242121	20.2883 ug/kg	98
95)	1,2-Dichlorobenzene	18.29	146	141341	19.7339 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	16565	22.7593 ug/kg	100
97)	1,2,4-Trichlorobenzene	20.43	180	98272	18.5949 ug/kg	99
98)	Hexachlorobutadiene	20.58	225	49626	19.9091 ug/kg	97
99)	Naphthalene	20.80	128	248081	19.4776 ug/kg	99
100)	1,2,3-Trichlorobenzene	21.10	180	94996	18.9624 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M973600.D 8260-SL.M Thu Apr 07 13:30:13 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973600.D Vial: 8
Acq On : 6 Apr 2016 13:33 Operator: ADC
Sample : WG563259-07 20.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 7 13:30 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

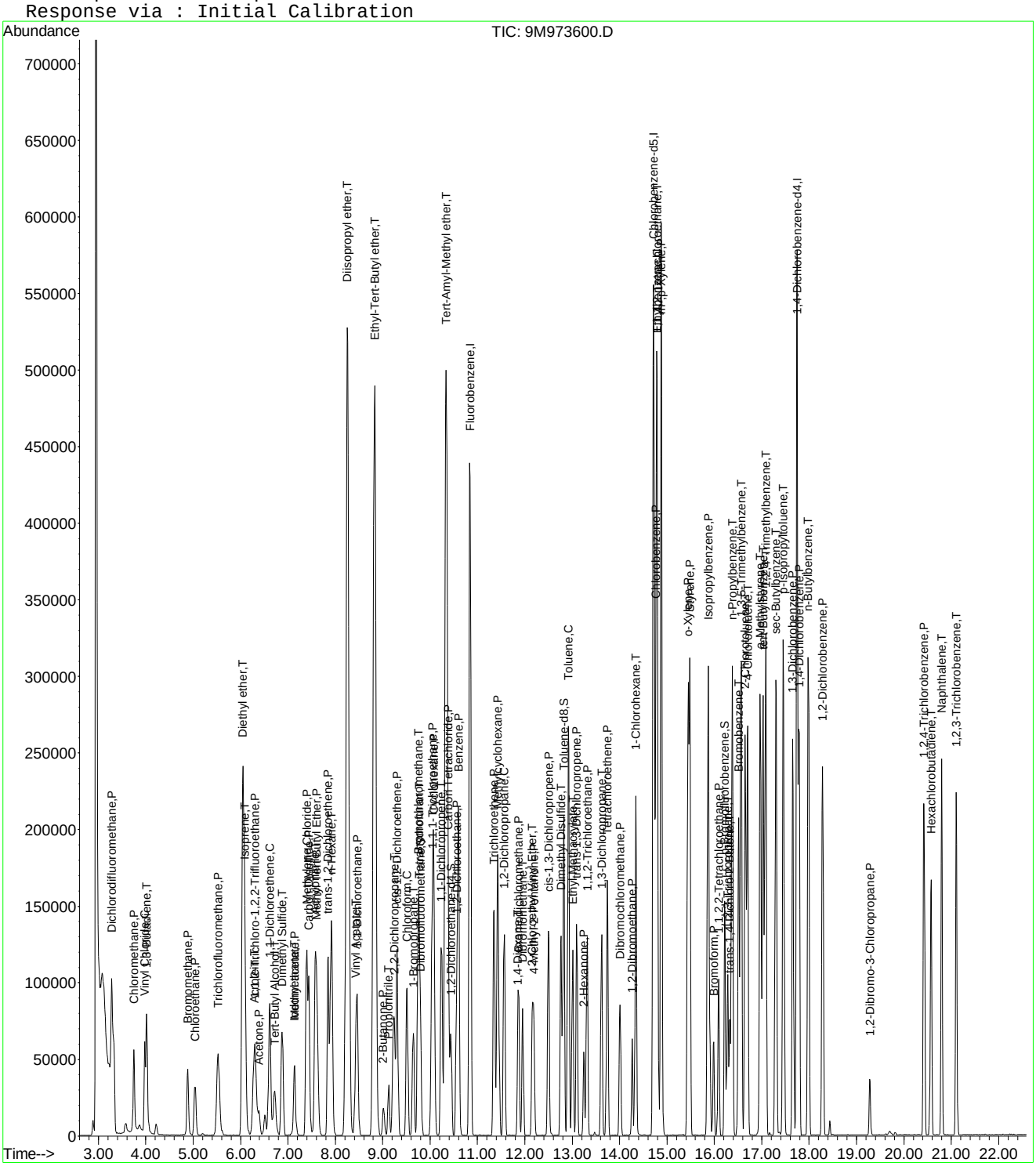

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973605.D Vial: 13
Acq On : 6 Apr 2016 16:15 Operator: ADC
Sample : WG563259-08 100.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:17 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	629513	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	486007	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	262405	50.00 ug/kg	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.79	111	334345	105.1632 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 210.32%#		
43) 1,2-Dichloroethane-d4	10.44	65	349379	104.9748 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 209.94%#		
58) Toluene-d8	12.82	98	1189867	102.7256 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 205.46%#		
79) p-Bromofluorobenzene	16.22	95	474393	104.3758 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 208.76%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	443445	91.8326 ug/kg	98
3) Chloromethane	3.74	50	364265	82.0585 ug/kg	99
4) Vinyl Chloride	3.97	62	265202	91.5192 ug/kg	95
5) 1,3-Butadiene	4.01	54	193614	90.3859 ug/kg	95
6) Bromomethane	4.87	94	240074	88.2068 ug/kg	99
7) Chloroethane	5.02	64	230056	86.7779 ug/kg	99
8) Trichlorofluoromethane	5.51	101	498633	88.9021 ug/kg	100
9) Diethyl ether	6.04	59	578414	175.3619 ug/kg	99
10) Isoprene	6.08	67	405345	91.8152 ug/kg	99
11) Acrolein	6.28	56	41125	125.3946 ug/kg	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	304962	89.0479 ug/kg	98
13) Acetone	6.39	43	110181	86.9145 ug/kg	99
14) 1,1-Dichloroethene	6.61	61	507904	88.4792 ug/kg	100
15) Tert-Butyl Alcohol	6.71	59	201952	365.7553 ug/kg	99
16) Dimethyl Sulfide	6.87	62	267127	94.9822 ug/kg	100
17) Iodomethane	7.12	142	226546	83.3082 ug/kg	99
18) Methyl acetate	7.13	43	320518	87.8919 ug/kg	99
19) Methylene Chloride	7.39	84	297945	83.0910 ug/kg	99
20) Carbon Disulfide	7.43	76	967157	88.8552 ug/kg	100
21) Acrylonitrile	7.57	53	159761	92.1726 ug/kg	99
22) Methyl Tert Butyl Ether	7.60	73	837531	86.8033 ug/kg	99
23) trans-1,2-Dichloroethene	7.83	61	489265	88.6012 ug/kg	99
24) n-Hexane	7.90	57	620303	86.5024 ug/kg	100
25) Diisopropyl ether	8.25	45	2541732	173.9489 ug/kg	99
26) Vinyl Acetate	8.42	43	670170	84.8371 ug/kg	99
27) 1,1-Dichloroethane	8.45	63	582394	86.8907 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.82	59	2244961	174.7232 ug/kg	99
29) 2-Butanone	9.01	43	176737	87.3258 ug/kg	99
30) Propionitrile	9.12	54	121628	185.1551 ug/kg	100
31) 2,2-Dichloropropane	9.23	77	432972	88.4646 ug/kg	99
32) cis-1,2-Dichloroethene	9.30	96	323942	88.2729 ug/kg	97
33) Chloroform	9.51	83	491054	86.3755 ug/kg	100
34) 1-Bromopropane	9.65	122	57300	86.6017 ug/kg	97
35) Bromochloromethane	9.74	130	206023	89.9847 ug/kg	99
36) Tetrahydrofuran	9.76	42	253958	176.6408 ug/kg	99
38) 1,1,1-Trichloroethane	10.04	97	431230	88.6252 ug/kg	100
39) Cyclohexane	10.07	56	701022	91.1345 ug/kg	99
40) 1,1-Dichloropropene	10.24	75	394734	88.1287 ug/kg	98
41) Tert-Amyl-Methyl ether	10.33	73	1668304	175.5268 ug/kg	100
42) Carbon Tetrachloride	10.38	117	401136	88.3178 ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M973605.D 8260-SL.M Thu Apr 07 13:30:17 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973605.D Vial: 13
Acq On : 6 Apr 2016 16:15 Operator: ADC
Sample : WG563259-08 100.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:17 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.55	62	419521	85.6884 ug/kg	99
46)	Benzene	10.60	78	1159464	83.4075 ug/kg	100
47)	Trichloroethene	11.35	130	328505	84.0157 ug/kg	99
48)	Methylcyclohexane	11.43	83	543983	91.0461 ug/kg	99
49)	1,2-Dichloropropane	11.56	63	330099	87.3179 ug/kg	100
50)	1,4-Dioxane	11.85	88	19457	396.8058 ug/kg	99
51)	Bromodichloromethane	11.86	83	377943	87.7332 ug/kg	100
52)	Dibromomethane	11.96	174	201740	89.3820 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	188811	93.9225 ug/kg	99
54)	4-Methyl-2-Pentanone	12.19	58	152432	87.5749 ug/kg	98
55)	cis-1,3-Dichloropropene	12.50	75	467019	86.9483 ug/kg	99
56)	Dimethyl Disulfide	12.76	94	546237	95.0292 ug/kg	98
59)	Toluene	12.92	91	1221033	82.5632 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	396829	88.1357 ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	420228	87.2828 ug/kg	99
62)	1,1,2-Trichloroethane	13.32	97	252973	86.8892 ug/kg	99
63)	2-Hexanone	13.24	43	270769	85.1678 ug/kg	98
64)	1,3-Dichloropropane	13.61	76	423227	84.5417 ug/kg	100
65)	Tetrachloroethene	13.74	164	275328	87.7815 ug/kg	99
66)	Dibromochloromethane	14.00	129	314257	87.3165 ug/kg	100
67)	1,2-Dibromoethane	14.27	107	271540	84.6661 ug/kg	100
68)	1-Chlorohexane	14.34	91	434911	89.3250 ug/kg	100
69)	Chlorobenzene	14.76	112	853210	83.1362 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	298697	85.6685 ug/kg	98
71)	Ethylbenzene	14.80	106	476927	86.3847 ug/kg	98
72)	m-,p-Xylene	14.88	106	1125320	165.3174 ug/kg	100
73)	o-Xylene	15.44	106	556307	85.7660 ug/kg	100
74)	Styrene	15.48	104	962473	86.6487 ug/kg	100
75)	Bromoform	15.99	173	217337	88.1288 ug/kg	100
76)	Isopropylbenzene	15.87	105	1429867	84.7467 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	358231	80.9909 ug/kg	100
80)	1,2,3-Trichloropropane	16.28	110	106845	82.0448 ug/kg	94
81)	trans-1,4-Dichloro-2-Buten	16.33	53	138111	87.1418 ug/kg	98
82)	n-Propylbenzene	16.38	91	1612041	82.1710 ug/kg	99
83)	Bromobenzene	16.52	156	384939	82.4894 ug/kg	99
84)	1,3,5-Trimethylbenzene	16.57	105	1227900	82.2028 ug/kg	100
85)	2-Chlorotoluene	16.65	91	982237	83.8330 ug/kg	100
86)	4-Chlorotoluene	16.70	91	966811	78.8909 ug/kg	99
87)	a-Methylstyrene	16.97	118	639741	85.8515 ug/kg	100
88)	tert-Butylbenzene	17.03	134	271228	81.9549 ug/kg	100
89)	1,2,4-Trimethylbenzene	17.09	105	1244015	86.0269 ug/kg	100
90)	sec-Butylbenzene	17.30	105	1596904	83.1619 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	1328733	83.5902 ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	745156	80.7671 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	749901	79.6415 ug/kg	100
94)	n-Butylbenzene	17.98	91	1226018	83.8362 ug/kg	100
95)	1,2-Dichlorobenzene	18.29	146	713379	81.2804 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.28	157	91107	80.8122 ug/kg	97
97)	1,2,4-Trichlorobenzene	20.43	180	549265	84.8138 ug/kg	99
98)	Hexachlorobutadiene	20.58	225	257990	84.4632 ug/kg	99
99)	Naphthalene	20.80	128	1320203	84.5870 ug/kg	99
100)	1,2,3-Trichlorobenzene	21.11	180	520705	84.8206 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M973605.D 8260-SL.M Thu Apr 07 13:30:17 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973605.D Vial: 13
Acq On : 6 Apr 2016 16:15 Operator: ADC
Sample : WG563259-08 100.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 7 13:30 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

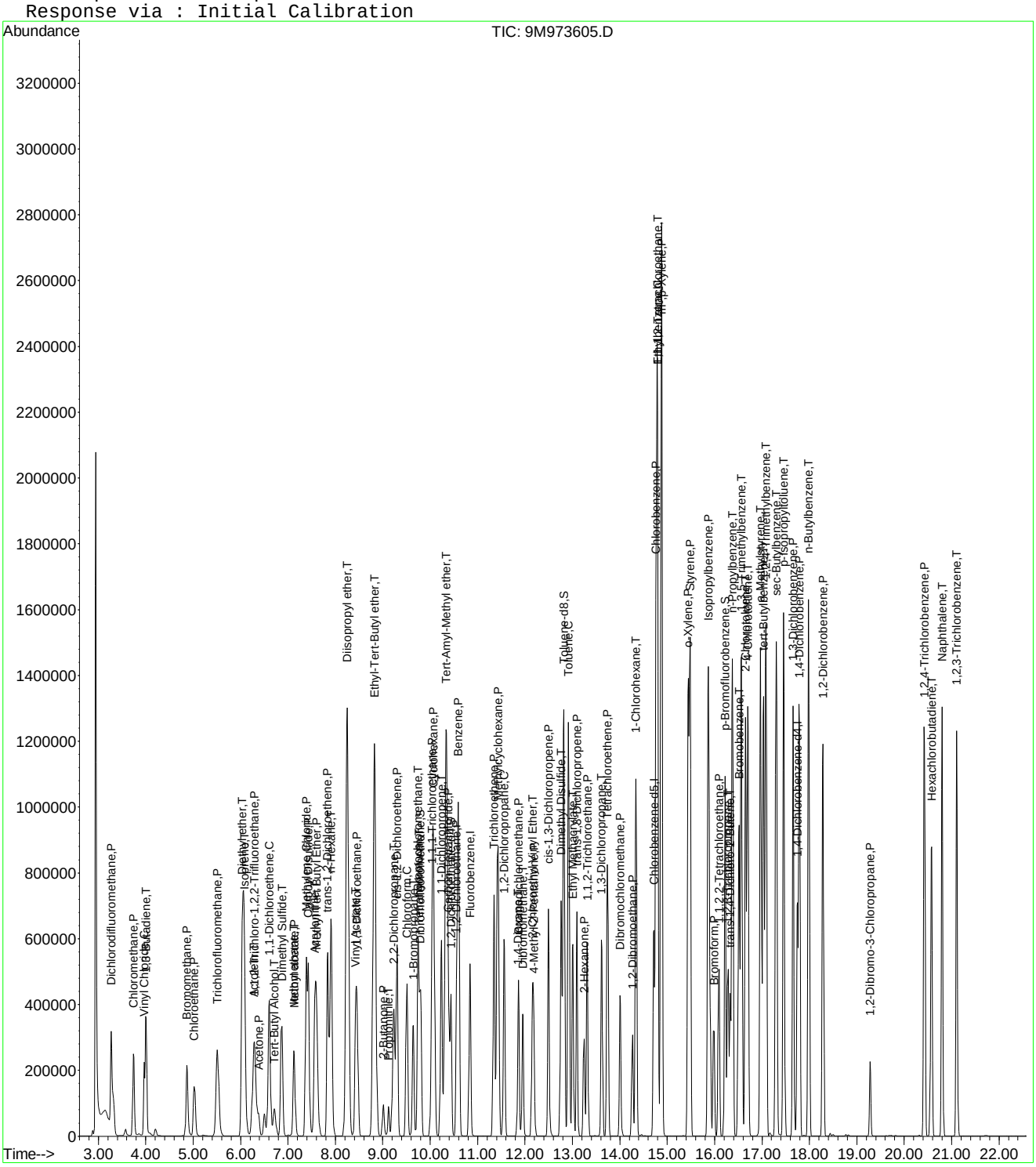

9M973605.D 8260-SL.M Thu Apr 07 13:30:17 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973606.D Vial: 14
Acq On : 6 Apr 2016 16:46 Operator: ADC
Sample : WG563259-09 200.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:17 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	546241	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	412879	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	251426	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	548285	198.7448 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 397.48%#		
43) 1,2-Dichloroethane-d4	10.44	65	563468	195.1093 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 390.22%#		
58) Toluene-d8	12.82	98	1932737	196.4142 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 392.82%#		
79) p-Bromofluorobenzene	16.22	95	812349	186.5374 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 373.08%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	933785	222.8561 ug/kg	98
3) Chloromethane	3.74	50	797646	207.0792 ug/kg	100
4) Vinyl Chloride	3.97	62	484159	193.4178 ug/kg	95
5) 1,3-Butadiene	4.01	54	255123	137.2568 ug/kg	96
6) Bromomethane	4.86	94	478951	202.8002 ug/kg	99
7) Chloroethane	5.02	64	479099	208.2673 ug/kg	100
8) Trichlorofluoromethane	5.51	101	1015843	208.7267 ug/kg	100
10) Isoprene	6.08	67	790457	206.3424 ug/kg	100
11) Acrolein	6.29	56	657	2.3087 ug/kg#	58
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	619484	208.4628 ug/kg	98
13) Acetone	6.38	43	210216	198.0949 ug/kg	100
14) 1,1-Dichloroethene	6.60	61	1038593	208.5093 ug/kg	99
16) Dimethyl Sulfide	6.87	62	522470	214.0948 ug/kg	100
17) Iodomethane	7.12	142	492600	204.3599 ug/kg	99
18) Methyl acetate	7.13	43	608994	192.4553 ug/kg	99
19) Methylene Chloride	7.39	84	609179	195.7867 ug/kg	98
20) Carbon Disulfide	7.44	76	1876122	198.6404 ug/kg	100
21) Acrylonitrile	7.59	53	17884	11.8909 ug/kg#	28
22) Methyl Tert Butyl Ether	7.60	73	1671293	199.6219 ug/kg	99
23) trans-1,2-Dichloroethene	7.84	61	993252	207.2884 ug/kg	98
24) n-Hexane	7.91	57	1132766	182.0476 ug/kg	99
26) Vinyl Acetate	8.43	43	1356495	196.7315 ug/kg	99
27) 1,1-Dichloroethane	8.46	63	1187835	204.2364 ug/kg	99
29) 2-Butanone	9.01	43	352502	200.7230 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	891488	209.9159 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	660199	207.3269 ug/kg	97
33) Chloroform	9.51	83	1000133	202.7401 ug/kg	100
34) 1-Bromopropane	9.64	122	114495	198.3036 ug/kg	99
35) Bromochloromethane	9.74	130	419175	210.9934 ug/kg	98
36) Tetrahydrofuran	9.78	42	3664	2.9370 ug/kg	89
38) 1,1,1-Trichloroethane	10.04	97	891503	211.1502 ug/kg	100
39) Cyclohexane	10.07	56	1376878	206.2846 ug/kg	100
40) 1,1-Dichloropropene	10.23	75	800231	205.8962 ug/kg	99
42) Carbon Tetrachloride	10.38	117	841170	213.4326 ug/kg	99
45) 1,2-Dichloroethane	10.56	62	841093	197.9853 ug/kg	99
46) Benzene	10.59	78	2346439	194.5259 ug/kg	100
47) Trichloroethene	11.34	130	677382	199.6515 ug/kg	99
48) Methylcyclohexane	11.43	83	1056136	203.7119 ug/kg	99
49) 1,2-Dichloropropane	11.56	63	675603	205.9545 ug/kg	100
50) 1,4-Dioxane	11.86	88	487	11.4459 ug/kg#	8

(#) = qualifier out of range (m) = manual integration
9M973606.D 8260-SL.M Thu Apr 07 13:30:18 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973606.D Vial: 14
Acq On : 6 Apr 2016 16:46 Operator: ADC
Sample : WG563259-09 200.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:17 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
51)	Bromodichloromethane	11.86	83	786040	210.2823 ug/kg	99
52)	Dibromomethane	11.96	174	411458	210.0894 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	379377	217.4871 ug/kg	99
54)	4-Methyl-2-Pentanone	12.19	58	310421	205.5298 ug/kg	99
55)	cis-1,3-Dichloropropene	12.49	75	953997	204.6887 ug/kg	99
56)	Dimethyl Disulfide	12.76	94	1083410	217.2147 ug/kg	100
59)	Toluene	12.92	91	2474811	196.9795 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	785034	205.2376 ug/kg	99
61)	trans-1,3-Dichloropropene	13.09	75	863464	211.1094 ug/kg	99
62)	1,1,2-Trichloroethane	13.32	97	520649	210.5021 ug/kg	100
63)	2-Hexanone	13.24	43	576300	213.3756 ug/kg	98
64)	1,3-Dichloropropane	13.62	76	860012	202.2190 ug/kg	99
65)	Tetrachloroethene	13.74	164	559353	209.9221 ug/kg	99
66)	Dibromochloromethane	14.01	129	659361	215.6524 ug/kg	100
67)	1,2-Dibromoethane	14.27	107	565360	207.5011 ug/kg	100
68)	1-Chlorohexane	14.34	91	852225	206.0376 ug/kg	99
69)	Chlorobenzene	14.76	112	1738005	199.3447 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.79	131	630263	212.7806 ug/kg	97
71)	Ethylbenzene	14.79	106	972846	207.4192 ug/kg	97
72)	m-,p-Xylene	14.88	106	2303311	398.3042 ug/kg	98
73)	o-Xylene	15.45	106	1160595	210.6207 ug/kg	99
74)	Styrene	15.48	104	2011077	213.1189 ug/kg	100
75)	Bromoform	15.99	173	488031	202.4064 ug/kg	100
76)	Isopropylbenzene	15.87	105	2999919	209.2939 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	822476	193.5819 ug/kg	100
80)	1,2,3-Trichloropropane	16.28	110	242139	194.0544 ug/kg	98
81)	trans-1,4-Dichloro-2-Buten	16.32	53	305601	201.2403 ug/kg	96
82)	n-Propylbenzene	16.38	91	3379633	179.7935 ug/kg	100
83)	Bromobenzene	16.51	156	821863	183.8094 ug/kg	98
84)	1,3,5-Trimethylbenzene	16.57	105	2631796	183.8813 ug/kg	99
85)	2-Chlorotoluene	16.65	91	2045653	182.2186 ug/kg	100
86)	4-Chlorotoluene	16.70	91	2134994	181.8209 ug/kg	98
87)	a-Methylstyrene	16.97	118	1382227	193.5909 ug/kg	100
88)	tert-Butylbenzene	17.03	134	595447	187.7784 ug/kg	100
89)	1,2,4-Trimethylbenzene	17.08	105	2701823	195.7125 ug/kg	100
90)	sec-Butylbenzene	17.29	105	3458638	187.9804 ug/kg	99
91)	p-Isopropyltoluene	17.45	119	2907302	190.8841 ug/kg	99
92)	1,3-Dichlorobenzene	17.65	146	1683562	190.4487 ug/kg	100
93)	1,4-Dichlorobenzene	17.79	146	1701470	188.5912 ug/kg	100
94)	n-Butylbenzene	17.98	91	2706085	193.1249 ug/kg	100
95)	1,2-Dichlorobenzene	18.29	146	1654050	196.6873 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	219037	193.5387 ug/kg	99
97)	1,2,4-Trichlorobenzene	20.43	180	1229670	198.1687 ug/kg	99
98)	Hexachlorobutadiene	20.58	225	593894	202.9249 ug/kg	99
99)	Naphthalene	20.80	128	2917641	195.0997 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.10	180	1150303	195.5617 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973606.D Vial: 14
Acq On : 6 Apr 2016 16:46 Operator: ADC
Sample : WG563259-09 200.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 7 13:30 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

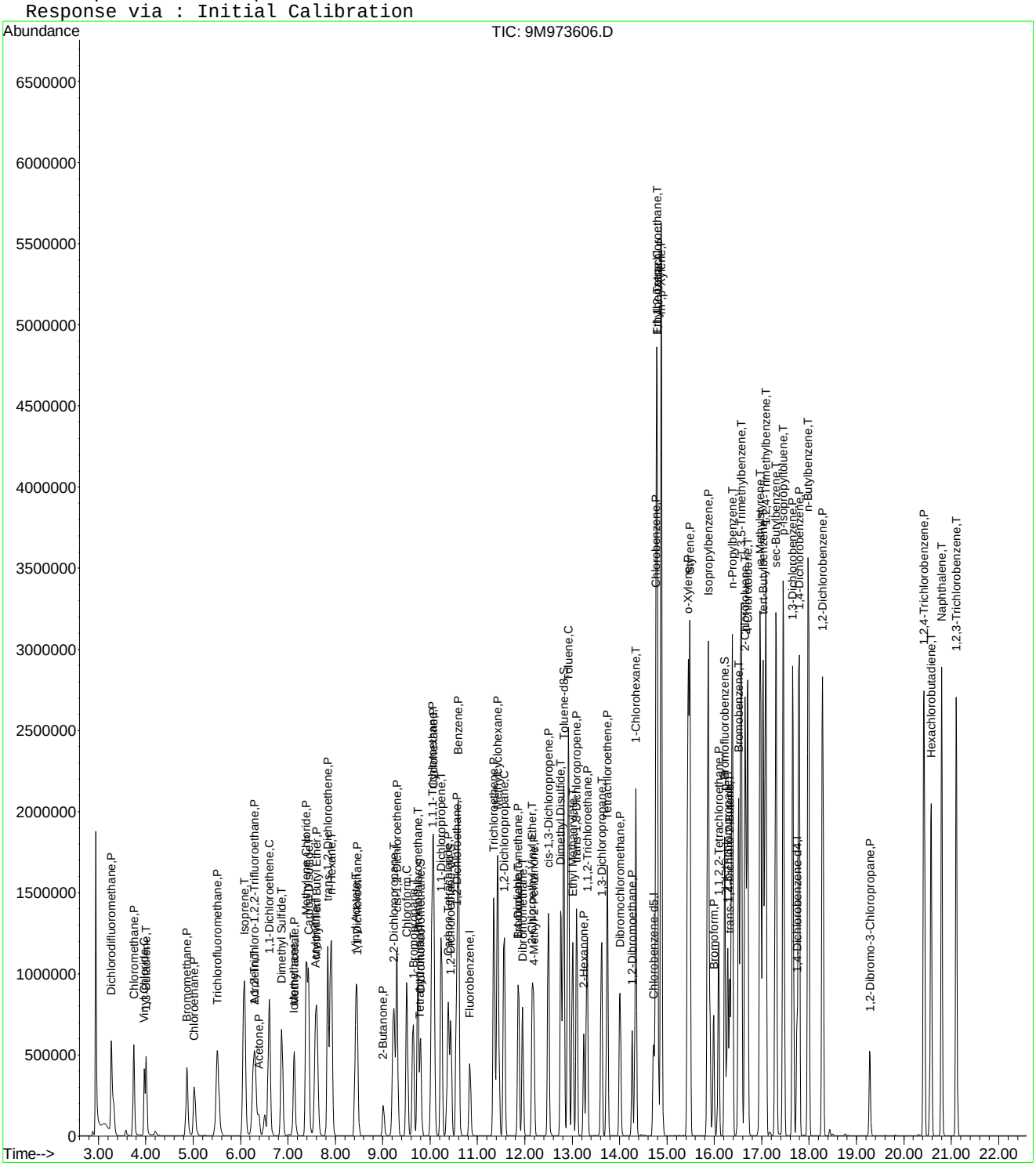

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973607.D Vial: 15
Acq On : 6 Apr 2016 17:16 Operator: ADC
Sample : WG563259-10 300.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:18 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.84	96	530747	50.00	ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	422786	50.00	ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	250890	50.00	ug/kg	0.00

System Monitoring Compounds						
37) Dibromofluoromethane	9.79	111	1014	0.3783	ug/kg	-0.01
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.76%#		
43) 1,2-Dichloroethane-d4	10.44	65	1256	0.4476	ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.90%#		
58) Toluene-d8	12.82	98	7239	0.7184	ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	1.44%#		
79) p-Bromofluorobenzene	16.22	95	8850	2.0365	ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	4.08%#		

Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.28	85	1391592	341.8113	ug/kg	99
3) Chloromethane	3.75	50	1202976	321.4253	ug/kg	100
4) Vinyl Chloride	3.97	62	728585	299.9924	ug/kg	95
5) 1,3-Butadiene	4.01	54	369321	204.4960	ug/kg	96
6) Bromomethane	4.87	94	715376	311.7514	ug/kg	99
7) Chloroethane	5.02	64	723518	323.6994	ug/kg	99
8) Trichlorofluoromethane	5.52	101	1522742	322.0138	ug/kg	100
9) Diethyl ether	6.05	59	857295	308.2789	ug/kg	98
10) Isoprene	6.08	67	1165578	313.1471	ug/kg	99
11) Acrolein	6.29	56	60531	218.9112	ug/kg	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	920907	318.9414	ug/kg	98
13) Acetone	6.39	43	318840	312.4979	ug/kg	99
14) 1,1-Dichloroethene	6.60	61	1557664	321.8479	ug/kg	100
15) Tert-Butyl Alcohol	6.73	59	335746	721.2245	ug/kg	98
16) Dimethyl Sulfide	6.87	62	798739	336.8576	ug/kg	99
17) Iodomethane	7.13	142	732160	311.0633	ug/kg	99
18) Methyl acetate	7.13	43	947968	308.3239	ug/kg	99
19) Methylene Chloride	7.40	84	940131	310.9735	ug/kg	97
20) Carbon Disulfide	7.44	76	2802355	305.3700	ug/kg	100
21) Acrylonitrile	7.58	53	251994	172.4402	ug/kg	96
22) Methyl Tert Butyl Ether	7.60	73	2599096	319.5028	ug/kg	99
23) trans-1,2-Dichloroethene	7.84	61	1496337	321.3970	ug/kg	97
24) n-Hexane	7.91	57	1667090	275.7405	ug/kg	99
25) Diisopropyl ether	8.25	45	3720020	301.9634	ug/kg	99
26) Vinyl Acetate	8.43	43	2113131	314.8849	ug/kg	99
27) 1,1-Dichloroethane	8.46	63	1812056	320.6604	ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	3304066	305.0055	ug/kg	99
29) 2-Butanone	9.01	43	557380	326.6507	ug/kg	99
30) Propionitrile	9.13	54	189029	341.3090	ug/kg	99
31) 2,2-Dichloropropane	9.23	77	1337448	324.1183	ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	1006604	325.3390	ug/kg	97
33) Chloroform	9.51	83	1534946	320.2372	ug/kg	100
34) 1-Bromopropane	9.64	122	174946	311.3566	ug/kg	99
35) Bromochloromethane	9.75	130	652180	337.8607	ug/kg	98
36) Tetrahydrofuran	9.77	42	376433	310.5517	ug/kg	99
38) 1,1,1-Trichloroethane	10.05	97	1358139	331.0622	ug/kg	100
39) Cyclohexane	10.08	56	2044955	315.3203	ug/kg	100
40) 1,1-Dichloropropene	10.24	75	1211478	320.8081	ug/kg	99
41) Tert-Amyl-Methyl ether	10.34	73	2457523	306.6783	ug/kg	100
42) Carbon Tetrachloride	10.38	117	1272434	332.2836	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973607.D Vial: 15
Acq On : 6 Apr 2016 17:16 Operator: ADC
Sample : WG563259-10 300.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:18 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	1300113	314.9682 ug/kg	99
46)	Benzene	10.60	78	3527729	300.9956 ug/kg	99
47)	Trichloroethene	11.34	130	1018460	308.9439 ug/kg	99
48)	Methylcyclohexane	11.43	83	1556707	309.0297 ug/kg	99
49)	1,2-Dichloropropane	11.56	63	1047836	328.7530 ug/kg	100
50)	1,4-Dioxane	11.85	88	34973	845.9645 ug/kg	98
51)	Bromodichloromethane	11.86	83	1222847	336.6875 ug/kg	100
52)	Dibromomethane	11.96	174	645257	339.0847 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	573936	338.6279 ug/kg	99
54)	4-Methyl-2-Pentanone	12.19	58	497530	339.0313 ug/kg	99
55)	cis-1,3-Dichloropropene	12.49	75	1479465	326.6994 ug/kg	98
56)	Dimethyl Disulfide	12.77	94	1594771	329.0724 ug/kg	95
59)	Toluene	12.92	91	3752438	291.6719 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	1240354	316.6768 ug/kg	99
61)	trans-1,3-Dichloropropene	13.09	75	1355239	323.5798 ug/kg	99
62)	1,1,2-Trichloroethane	13.32	97	817725	322.8649 ug/kg	100
63)	2-Hexanone	13.24	43	940684	340.1278 ug/kg	98
64)	1,3-Dichloropropane	13.62	76	1356741	311.5420 ug/kg	100
65)	Tetrachloroethene	13.74	164	843696	309.2149 ug/kg	99
66)	Dibromochloromethane	14.01	129	1052932	336.3052 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	896155	321.2037 ug/kg	100
68)	1-Chlorohexane	14.34	91	1280726	302.3783 ug/kg	100
69)	Chlorobenzene	14.76	112	2663761	298.3673 ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.79	131	987352	325.5250 ug/kg	98
71)	Ethylbenzene	14.79	106	1479934	308.1410 ug/kg	95
72)	m-,p-Xylene	14.88	106	3480066	587.6949 ug/kg	95
73)	o-Xylene	15.45	106	1802243	319.4008 ug/kg	98
74)	Styrene	15.48	104	3128101	323.7250 ug/kg	99
75)	Bromoform	15.99	173	824796	300.4134 ug/kg	99
76)	Isopropylbenzene	15.87	105	4568446	311.2560 ug/kg	98
78)	1,1,2,2-Tetrachloroethane	16.09	83	1346109	317.2796 ug/kg	100
80)	1,2,3-Trichloropropane	16.28	110	399968	321.2261 ug/kg	64
81)	trans-1,4-Dichloro-2-Buten	16.32	53	489570	323.0738 ug/kg#	59
82)	n-Propylbenzene	16.38	91	5159824	275.0845 ug/kg	99
83)	Bromobenzene	16.51	156	1311462	293.9347 ug/kg	96
84)	1,3,5-Trimethylbenzene	16.57	105	4058376	284.1610 ug/kg	99
85)	2-Chlorotoluene	16.65	91	3103656	277.0520 ug/kg	88
86)	4-Chlorotoluene	16.70	91	3366727	287.3305 ug/kg	93
87)	a-Methylstyrene	16.97	118	2137089	299.9542 ug/kg	100
88)	tert-Butylbenzene	17.03	134	932476	294.6911 ug/kg	98
89)	1,2,4-Trimethylbenzene	17.08	105	4160991	302.3615 ug/kg	99
90)	sec-Butylbenzene	17.31	105	5240087	285.4123 ug/kg	98
91)	p-Isopropyltoluene	17.46	119	4424751	291.1357 ug/kg	98
92)	1,3-Dichlorobenzene	17.66	146	2625717	297.6623 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	2620113	291.0342 ug/kg	99
94)	n-Butylbenzene	17.98	91	4097037	293.0175 ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	2549400	303.8033 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	353064	308.8660 ug/kg	99
97)	1,2,4-Trichlorobenzene	20.43	180	1874690	302.7630 ug/kg	100
98)	Hexachlorobutadiene	20.58	225	888450	304.2189 ug/kg	100
99)	Naphthalene	20.80	128	4447539	298.0378 ug/kg	97
100)	1,2,3-Trichlorobenzene	21.10	180	1773622	302.1756 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M973607.D 8260-SL.M Thu Apr 07 13:30:19 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973607.D Vial: 15
Acq On : 6 Apr 2016 17:16 Operator: ADC
Sample : WG563259-10 300.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 7 13:30 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

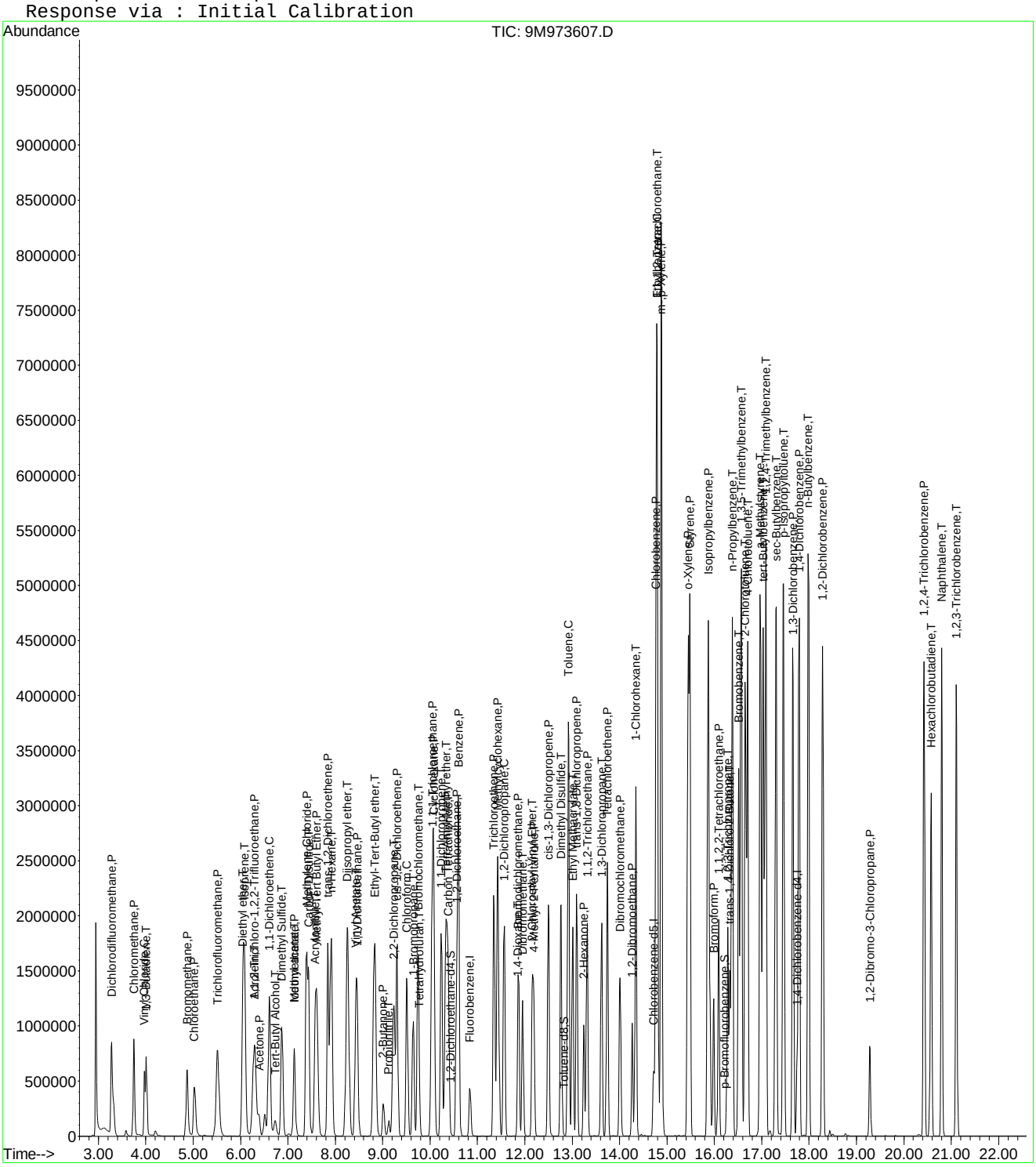

9M973607.D 8260-SL.M Thu Apr 07 13:30:19 2016 Page 3

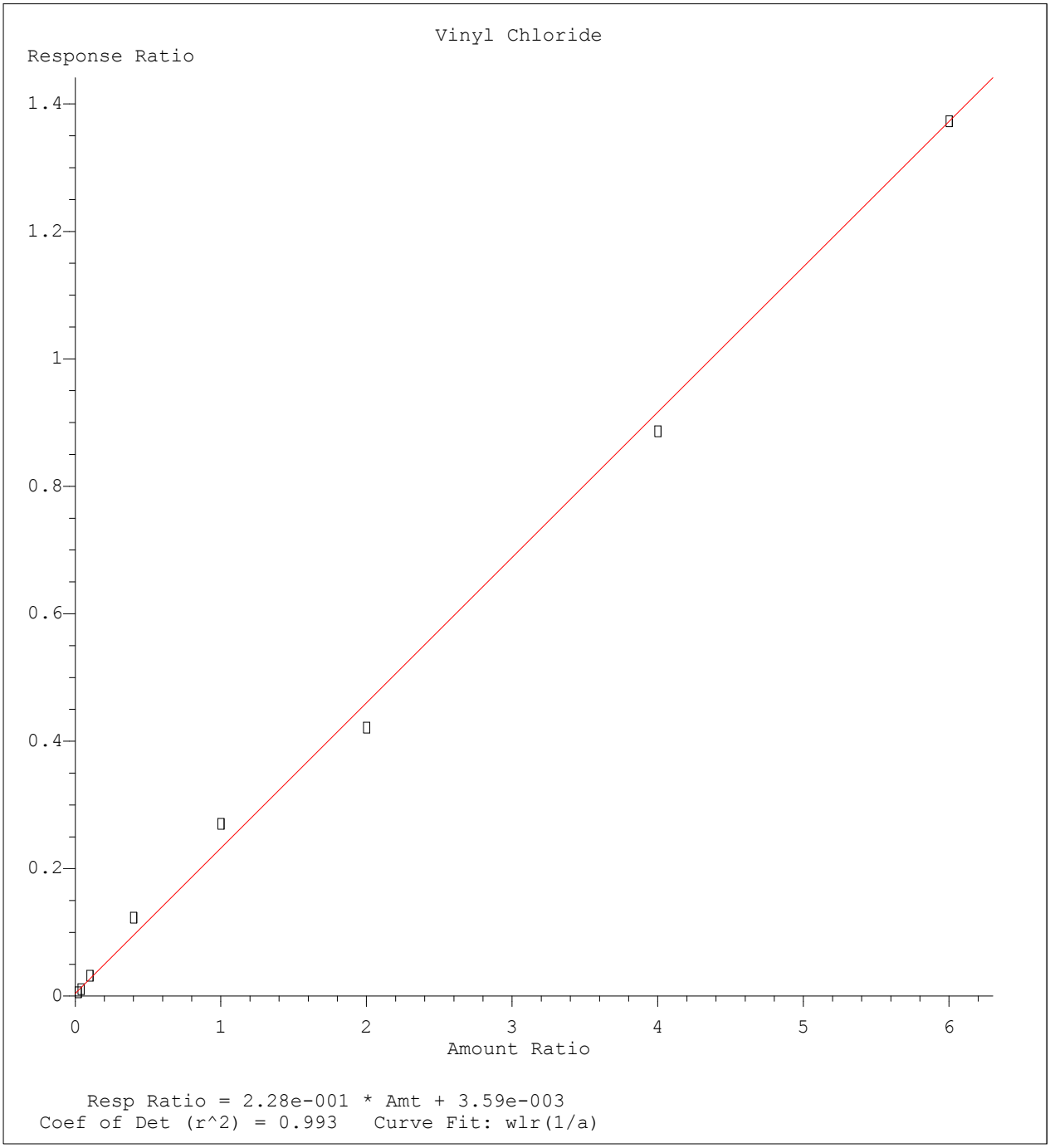

Method Name: C:\MSDCHEM\1\METHODS\8260-SL.M
Calibration Table Last Updated: Wed Apr 06 17:47:28 2016

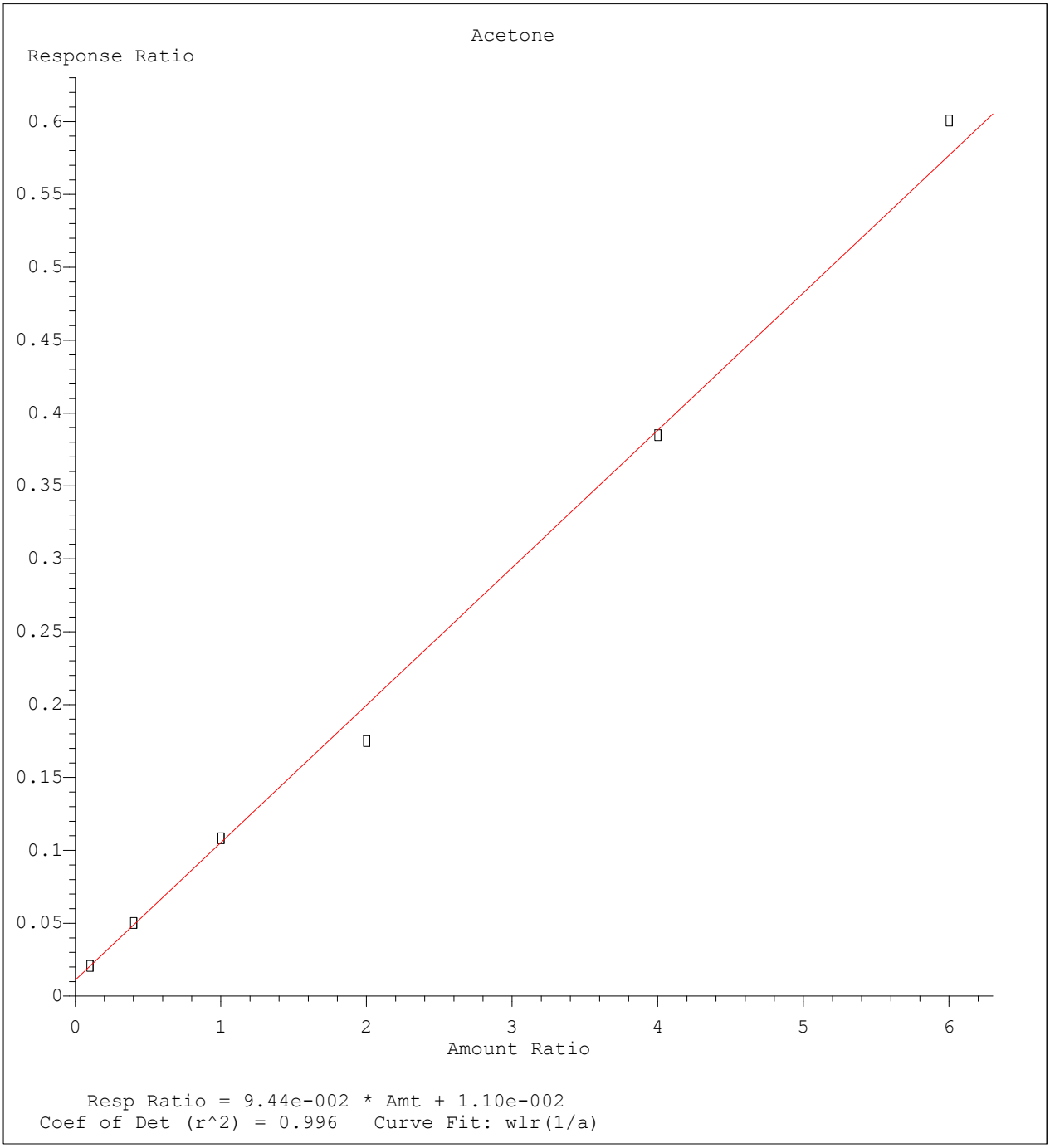

Method Name: C:\MSDCHEM\1\METHODS\8260-SL.M
Calibration Table Last Updated: Wed Apr 06 17:47:28 2016

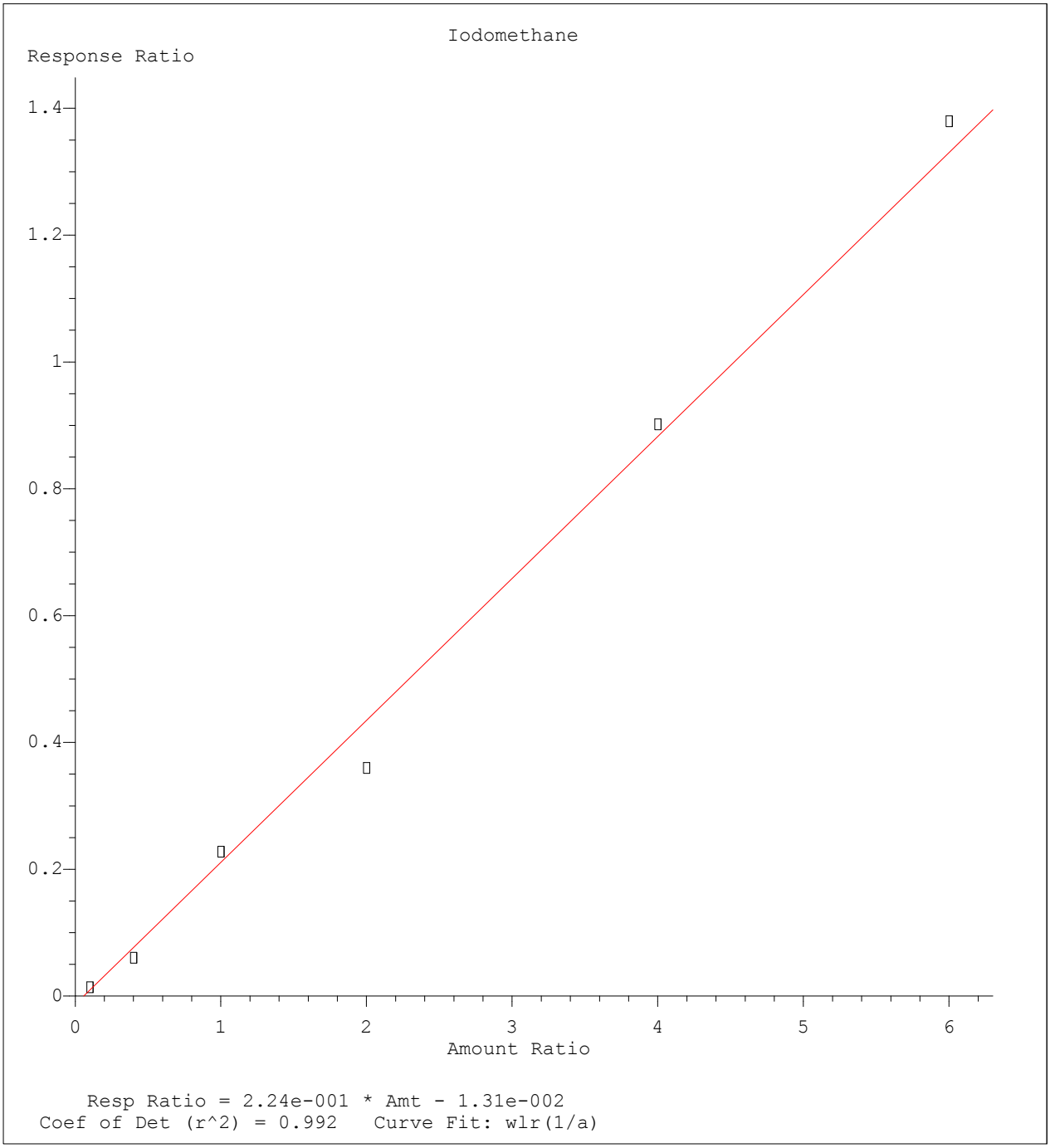

Method Name: C:\MSDCHEM\1\METHODS\8260-SL.M
Calibration Table Last Updated: Wed Apr 06 17:47:28 2016

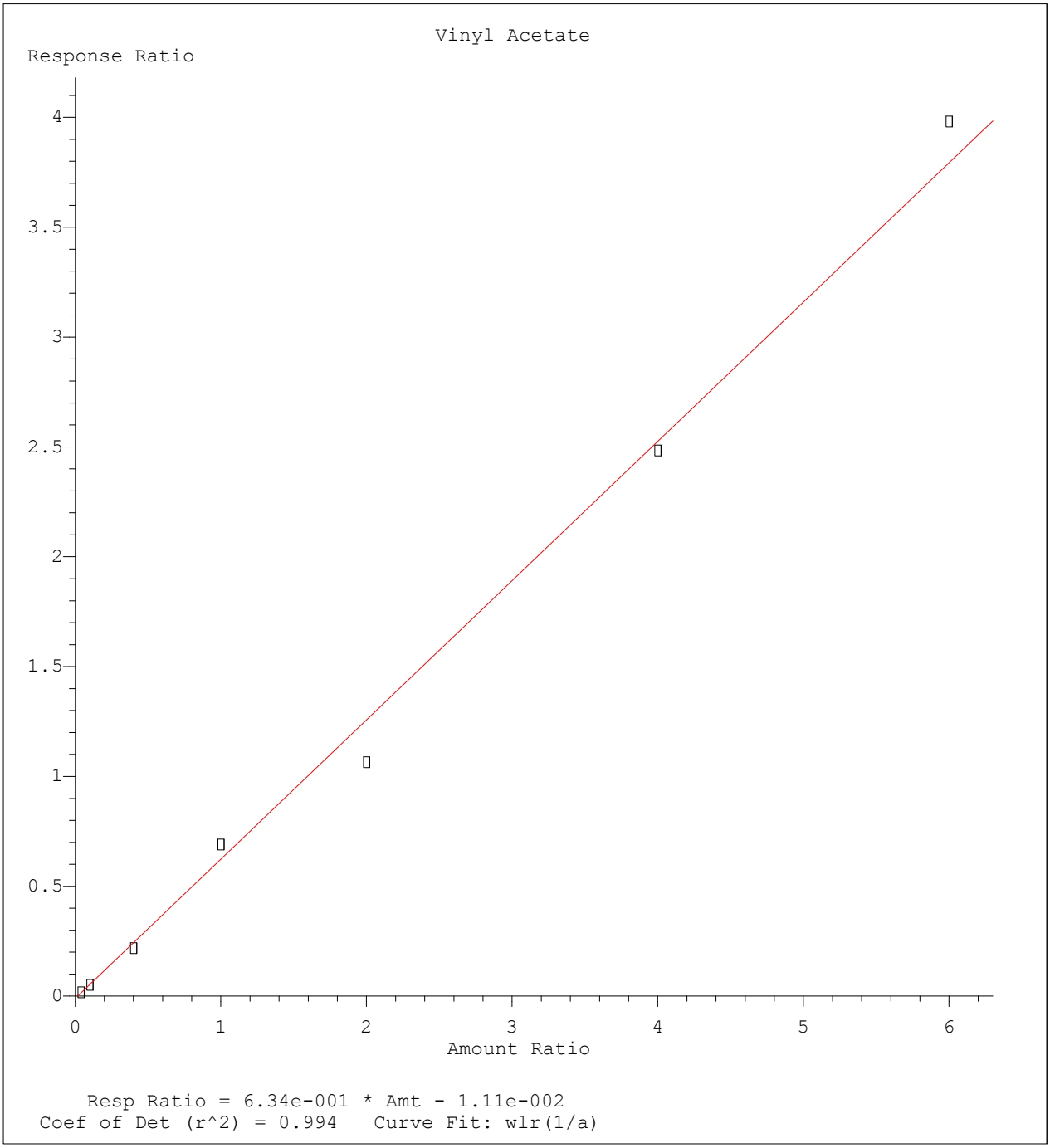

Method Name: C:\MSDCHEM\1\METHODS\8260-SL.M
Calibration Table Last Updated: Wed Apr 06 17:47:28 2016

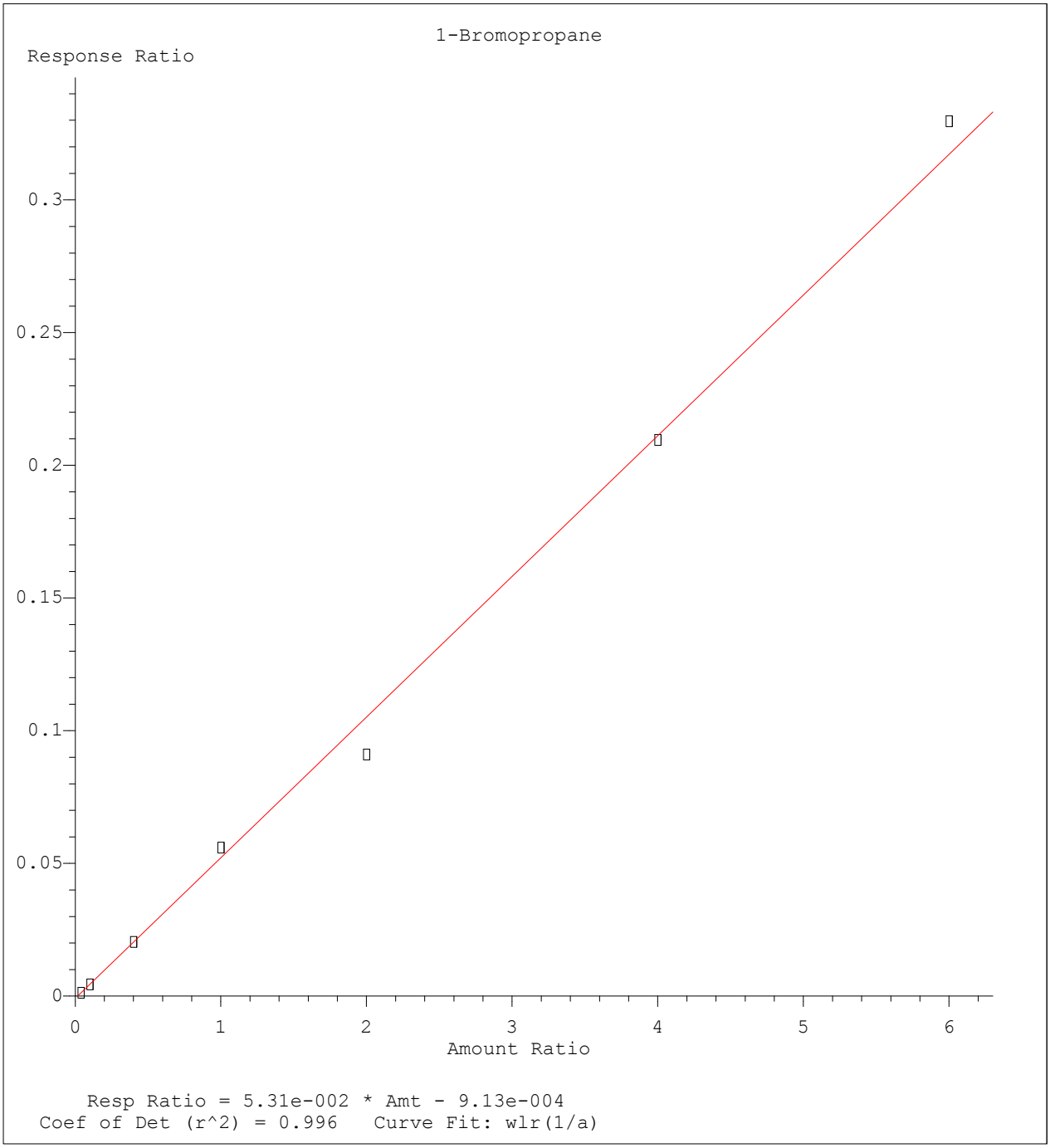

Method Name: C:\MSDCHEM\1\METHODS\8260-SL.M
Calibration Table Last Updated: Wed Apr 06 17:47:28 2016

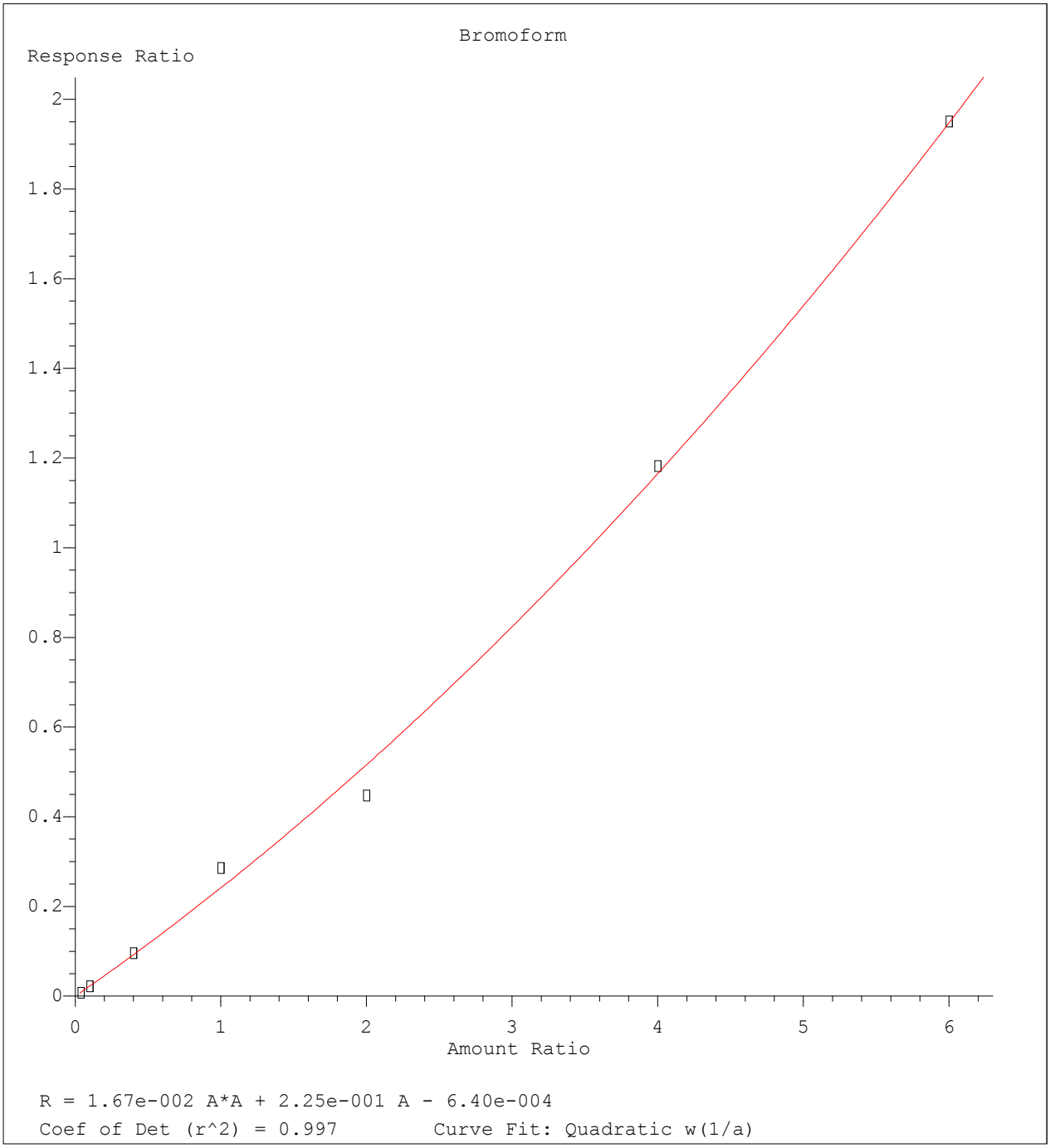

Method Name: C:\MSDCHEM\1\METHODS\8260-SL.M
Calibration Table Last Updated: Wed Apr 06 17:47:28 2016

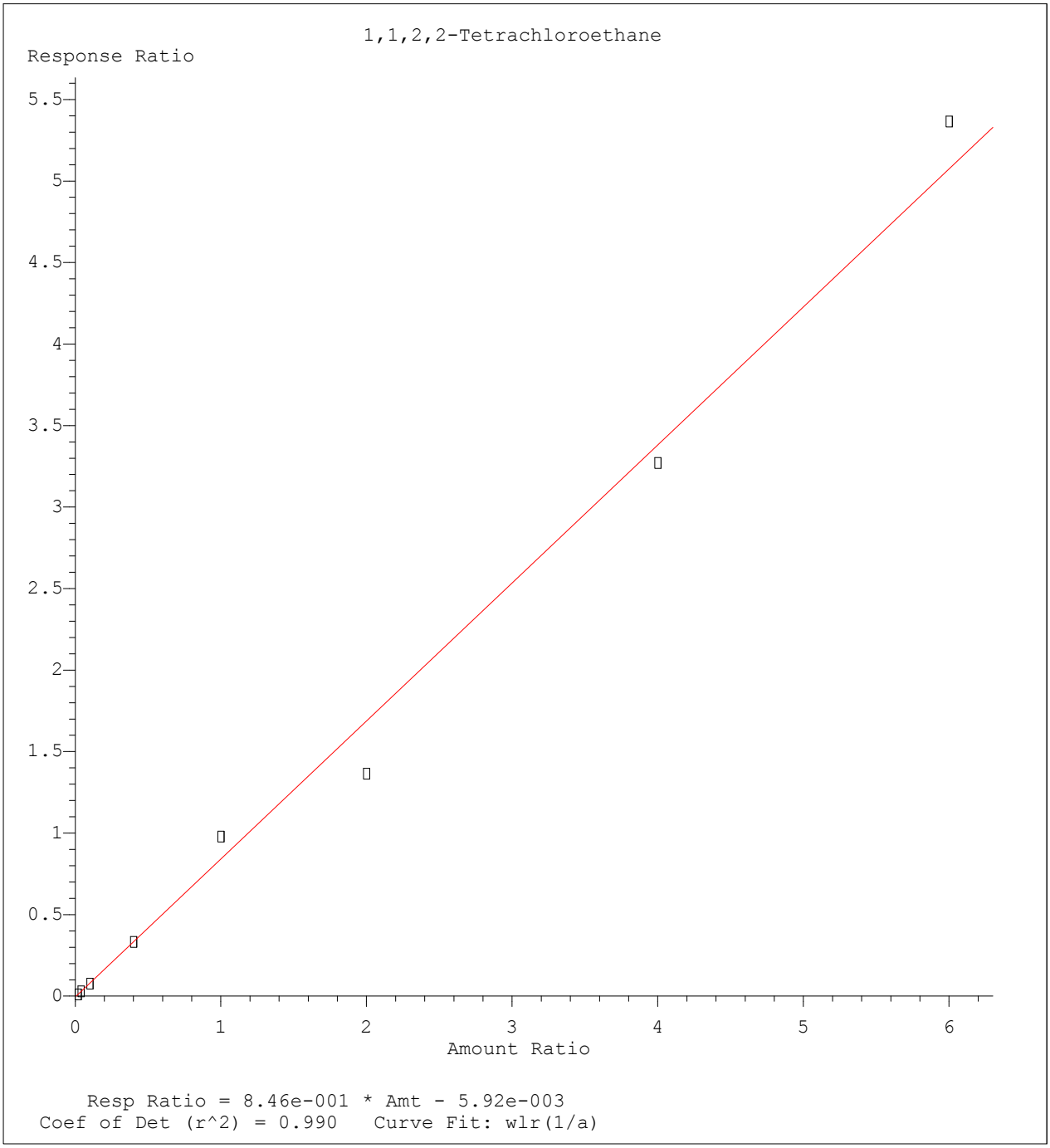

Method Name: C:\MSDCHEM\1\METHODS\8260-SL.M
Calibration Table Last Updated: Wed Apr 06 17:47:28 2016

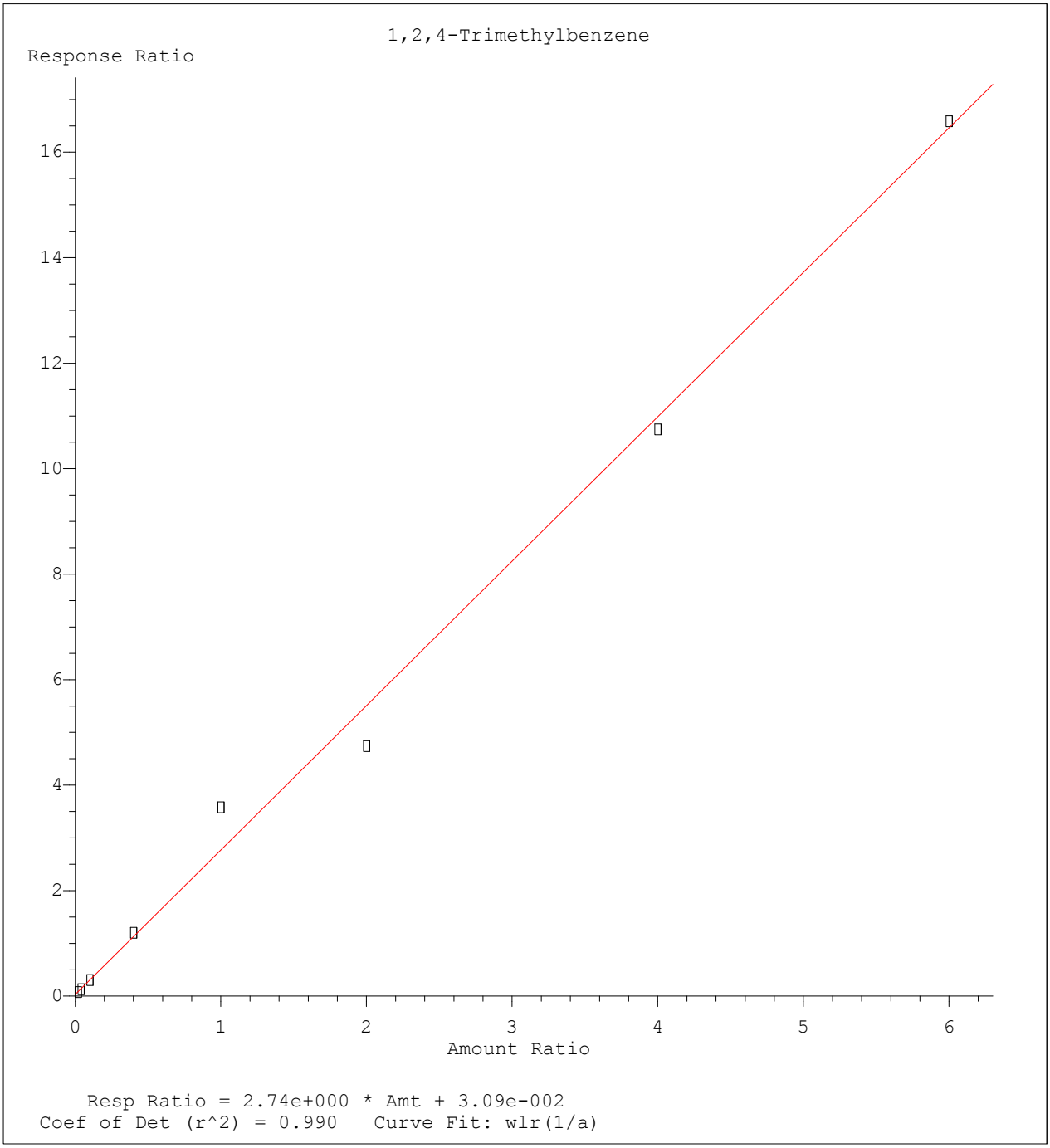

Method Name: C:\MSDCHEM\1\METHODS\8260-SL.M
Calibration Table Last Updated: Wed Apr 06 17:47:28 2016

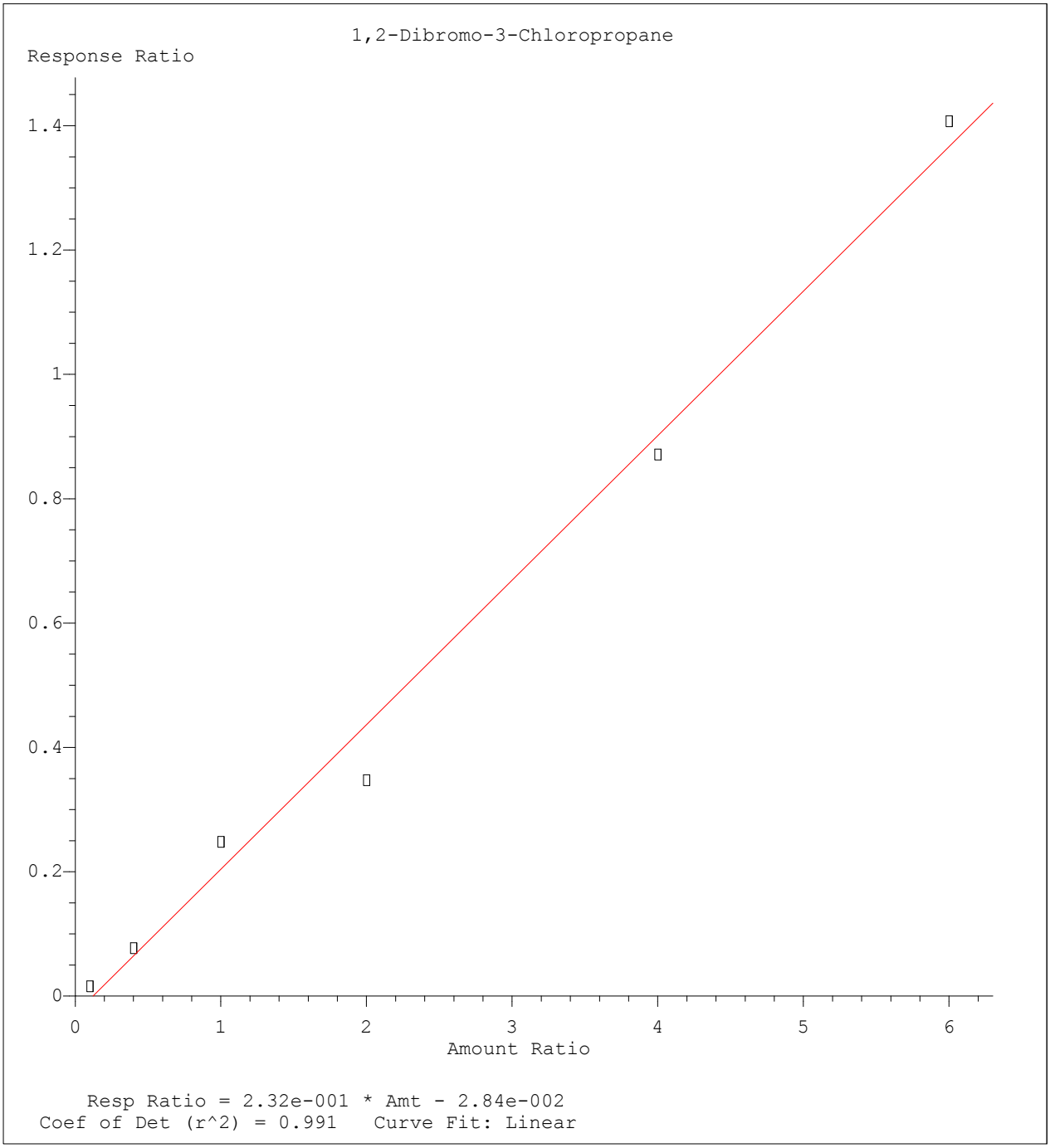

Method Name: C:\MSDCHEM\1\METHODS\8260-SL.M
Calibration Table Last Updated: Wed Apr 06 17:47:28 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973609.D Vial: 17
Acq On : 6 Apr 2016 18:18 Operator: ADC
Sample : WG563259-11 50.0ug/kg ALTSRC 8260 Inst : hpms9
Misc : 7,1 STD75404 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:20 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	530506	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	401118	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	219097	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	141434	52.7882 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.58%		
43) 1,2-Dichloroethane-d4	10.43	65	145958	52.0392 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.08%		
58) Toluene-d8	12.82	98	509727	53.3198 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.64%		
79) p-Bromofluorobenzene	16.22	95	199848	52.6619 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 105.32%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	250423	61.5384 ug/kg	98
3) Chloromethane	3.74	50	213325	57.0246 ug/kg	99
4) Vinyl Chloride	3.97	62	130729	53.2068 ug/kg	94
5) 1,3-Butadiene	4.01	54	50651	28.0586 ug/kg	96
6) Bromomethane	4.86	94	120126	52.3731 ug/kg	99
7) Chloroethane	5.02	64	122333	54.7562 ug/kg	99
8) Trichlorofluoromethane	5.51	101	245915	52.0272 ug/kg	100
9) Diethyl ether	6.04	59	298370	107.3411 ug/kg	99
10) Isoprene	6.08	67	240535	64.6521 ug/kg	100
11) Acrolein	6.29	56	42769	154.7449 ug/kg	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	156650	54.2779 ug/kg	97
13) Acetone	6.39	43	57891	51.9935 ug/kg	99
14) 1,1-Dichloroethene	6.60	61	246948	51.0481 ug/kg	99
15) Tert-Butyl Alcohol	6.73	59	102252	219.7499 ug/kg	99
16) Dimethyl Sulfide	6.87	62	185143	78.1171 ug/kg	99
17) Iodomethane	7.13	142	93186	42.1583 ug/kg	99
18) Methyl acetate	7.14	43	140101	45.5882 ug/kg	98
19) Methylene Chloride	7.38	84	155415	51.4310 ug/kg	97
20) Carbon Disulfide	7.44	76	446333	48.6586 ug/kg	99
21) Acrylonitrile	7.57	53	75240	51.5103 ug/kg	100
22) Methyl Tert Butyl Ether	7.60	73	421938	51.8917 ug/kg	99
23) trans-1,2-Dichloroethene	7.84	61	249458	53.6052 ug/kg	98
24) n-Hexane	7.91	57	291976	48.3154 ug/kg	100
25) Diisopropyl ether	8.25	45	1252311	101.6994 ug/kg	99
26) Vinyl Acetate	8.43	43	309863	46.9410 ug/kg	100
27) 1,1-Dichloroethane	8.46	63	282909	50.0862 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	1046728	96.6696 ug/kg	100
29) 2-Butanone	9.02	43	89553	52.5061 ug/kg	99
30) Propionitrile	9.13	54	55055	99.4519 ug/kg	97
31) 2,2-Dichloropropane	9.23	77	212618	51.5494 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	166197	53.7400 ug/kg	97
33) Chloroform	9.51	83	243436	50.8113 ug/kg	99
34) 1-Bromopropane	9.64	122	38824	69.7970 ug/kg	96
35) Bromochloromethane	9.75	130	99051	51.3365 ug/kg	99
36) Tetrahydrofuran	9.77	42	116541	96.1883 ug/kg	99
38) 1,1,1-Trichloroethane	10.04	97	216396	52.7730 ug/kg	100
39) Cyclohexane	10.08	56	352153	54.3246 ug/kg	99
40) 1,1-Dichloropropene	10.23	75	193887	51.3660 ug/kg	98
41) Tert-Amyl-Methyl ether	10.34	73	820188	102.3991 ug/kg	100
42) Carbon Tetrachloride	10.38	117	197392	51.5704 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973609.D Vial: 17
Acq On : 6 Apr 2016 18:18 Operator: ADC
Sample : WG563259-11 50.0ug/kg ALTSRC 8260 Inst : hpms9
Misc : 7,1 STD75404 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:20 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	211843	51.3449	ug/kg	99
46)	Benzene	10.59	78	593872	50.6938	ug/kg	100
47)	Trichloroethene	11.34	130	173100	52.5327	ug/kg	99
48)	Methylcyclohexane	11.43	83	274526	54.5223	ug/kg	98
49)	1,2-Dichloropropane	11.56	63	172660	54.1958	ug/kg	99
50)	1,4-Dioxane	11.85	88	10566	255.6979	ug/kg	94
51)	Bromodichloromethane	11.86	83	183631	50.5822	ug/kg	100
52)	Dibromomethane	11.95	174	95424	50.1684	ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.15	63	93818	55.3787	ug/kg	99
54)	4-Methyl-2-Pentanone	12.19	58	76339	52.0432	ug/kg	99
55)	cis-1,3-Dichloropropene	12.49	75	251031	55.4585	ug/kg	99
56)	Dimethyl Disulfide	12.77	94	267703	55.2642	ug/kg	99
59)	Toluene	12.91	91	628564	51.4967	ug/kg	100
60)	Ethyl Methacrylate	13.01	69	195518	52.6145	ug/kg	100
61)	trans-1,3-Dichloropropene	13.09	75	207936	52.3291	ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	129591	53.9308	ug/kg	100
63)	2-Hexanone	13.24	43	137776	52.5074	ug/kg	99
64)	1,3-Dichloropropane	13.62	76	226056	54.7122	ug/kg	99
65)	Tetrachloroethene	13.74	164	133666	51.6350	ug/kg	98
66)	Dibromochloromethane	14.01	129	150404	50.6339	ug/kg	99
67)	1,2-Dibromoethane	14.27	107	135771	51.2924	ug/kg	100
68)	1-Chlorohexane	14.34	91	217314	54.0792	ug/kg	100
69)	Chlorobenzene	14.76	112	449730	53.0953	ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.79	131	152648	53.0459	ug/kg	96
71)	Ethylbenzene	14.79	106	240566	52.7946	ug/kg	99
72)	m-,p-Xylene	14.88	106	589545	104.9373	ug/kg	99
73)	o-Xylene	15.45	106	292444	54.6278	ug/kg	100
74)	Styrene	15.48	104	490845	53.5412	ug/kg	100
75)	Bromoform	15.99	173	96808	50.1186	ug/kg	99
76)	Isopropylbenzene	15.87	105	752993	54.0740	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	177488	48.2015	ug/kg	100
80)	1,2,3-Trichloropropane	16.28	110	55590	51.1245	ug/kg#	27
81)	trans-1,4-Dichloro-2-Buten	16.32	53	54162	40.9288	ug/kg#	1
82)	n-Propylbenzene	16.38	91	846693	51.6897	ug/kg	100
83)	Bromobenzene	16.51	156	194075	49.8094	ug/kg	98
84)	1,3,5-Trimethylbenzene	16.57	105	645968	51.7929	ug/kg	100
85)	2-Chlorotoluene	16.65	91	501409	51.2539	ug/kg	99
86)	4-Chlorotoluene	16.70	91	531861	51.9779	ug/kg	99
87)	a-Methylstyrene	16.97	118	350698	56.3654	ug/kg	100
88)	tert-Butylbenzene	17.03	134	144582	52.3227	ug/kg	98
89)	1,2,4-Trimethylbenzene	17.08	105	645060	53.2109	ug/kg	99
90)	sec-Butylbenzene	17.30	105	846506	52.7972	ug/kg	100
91)	p-Isopropyltoluene	17.45	119	683120	51.4696	ug/kg	100
92)	1,3-Dichlorobenzene	17.65	146	389382	50.5474	ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	400589	50.9530	ug/kg	100
94)	n-Butylbenzene	17.98	91	626791	51.3326	ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	381311	52.0332	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	50296	55.5038	ug/kg	99
97)	1,2,4-Trichlorobenzene	20.43	180	306886	56.7541	ug/kg	99
98)	Hexachlorobutadiene	20.58	225	149856	58.7590	ug/kg	99
99)	Naphthalene	20.80	128	701866	53.8583	ug/kg	99
100)	1,2,3-Trichlorobenzene	21.10	180	299028	58.3388	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M973609.D 8260-SL.M Thu Apr 07 13:30:20 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973609.D Vial: 17
Acq On : 6 Apr 2016 18:18 Operator: ADC
Sample : WG563259-11 50.0ug/kg ALTSRC 8260 Inst : hpms9
Misc : 7,1 STD75404 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 7 13:30 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

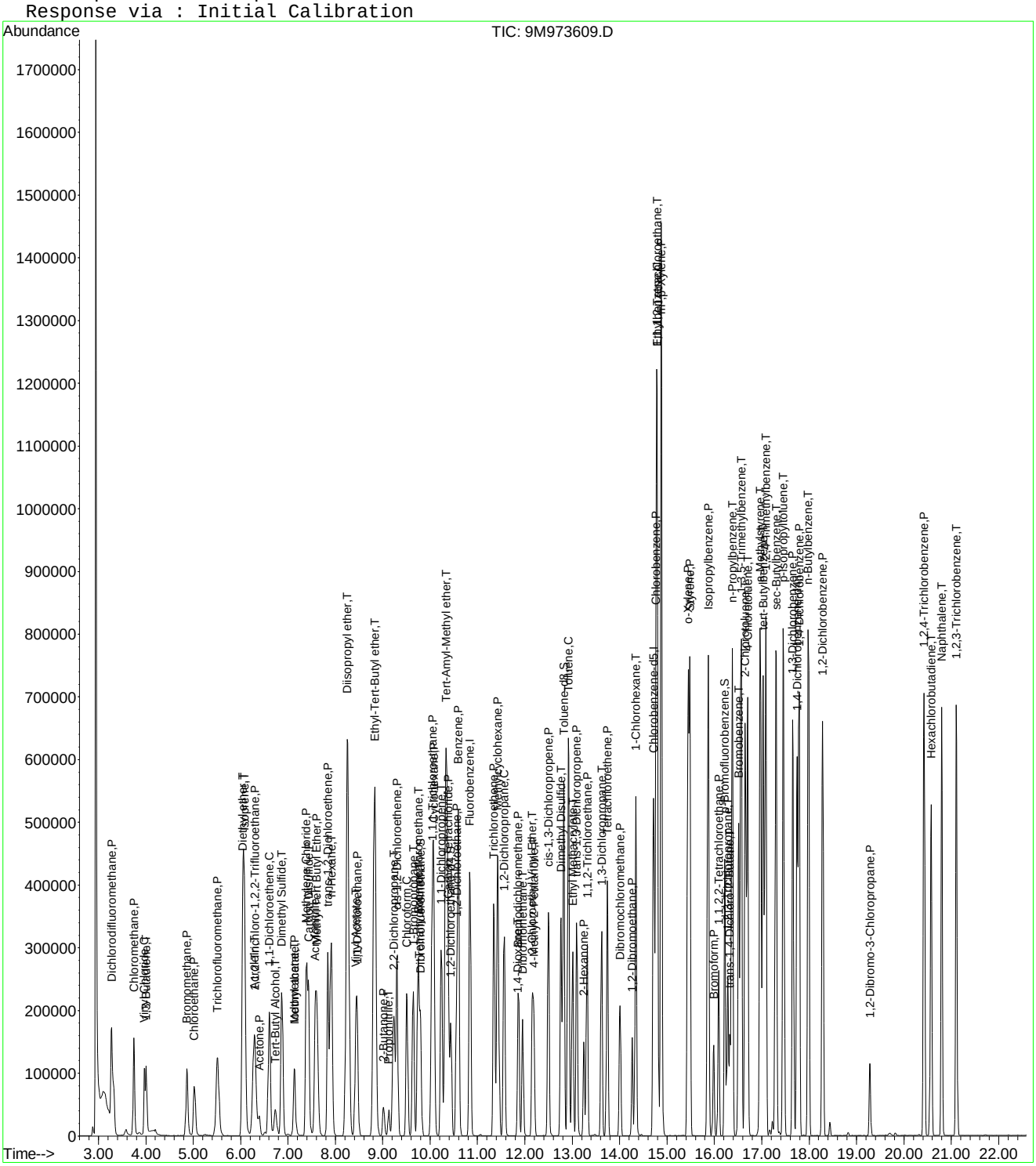

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\040616\9M973609.D Vial: 17
Acq On : 6 Apr 2016 18:18 Operator: ADC
Sample : WG563259-11 50.0ug/kg ALTSRC 8260 Inst : hpms9
Misc : 7,1 STD75404 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	96	0.00
2	P	Dichlorodifluoromethane	50.0000	61.5384	-23.1	103	0.00
3	P	Chloromethane	50.0000	57.0246	-14.0	110	0.00
4	C	Vinyl Chloride	50.0000	53.2068	-6.4	88	-0.01
5	T	1,3-Butadiene	50.0000	28.0586	43.9#	57	-0.01
6	P	Bromomethane	50.0000	52.3731	-4.7	95	-0.01
7	P	Chloroethane	50.0000	54.7562	-9.5	100	-0.01
8	P	Trichlorofluoromethane	50.0000	52.0272	-4.1	90	-0.01
9	T	Diethyl ether	100.0000	107.3411	-7.3	99	0.00
10	T	Isoprene	50.0000	64.6521	-29.3#	112	-0.01
11	T	Acrolein	50.0000	154.7449	-209.5#	285	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	54.2779	-8.6	94	0.00
13	P	Acetone	50.0000	51.9935	-4.0	97	0.00
14	C	1,1-Dichloroethene	50.0000	51.0481	-2.1	88	-0.01
15	T	Tert-Butyl Alcohol	200.0000	219.7499	-9.9	102	0.00
16	T	Dimethyl Sulfide	50.0000	78.1171	-56.2#	131	-0.01
17	T	Iodomethane	50.0000	42.1583	15.7	74	0.00
18	P	Methyl acetate	50.0000	45.5881	8.8	83	0.00
19	P	Methylene Chloride	50.0000	51.4310	-2.9	94	-0.01
20	P	Carbon Disulfide	50.0000	48.6586	2.7	86	0.00
21	T	Acrylonitrile	50.0000	51.5103	-3.0	93	0.00
22	P	Methyl Tert Butyl Ether	50.0000	51.8917	-3.8	91	0.00
23	P	trans-1,2-Dichloroethene	50.0000	53.6052	-7.2	92	0.00
24	T	n-Hexane	50.0000	48.3154	3.4	92	0.00
25	T	Diisopropyl ether	100.0000	101.6994	-1.7	91	0.00
26	T	Vinyl Acetate	50.0000	46.9410	6.1	81	0.00
27	P	1,1-Dichloroethane	50.0000	50.0862	-0.2	87	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	96.6696	3.3	88	0.00
29	P	2-Butanone	50.0000	52.5061	-5.0	98	0.00
30	T	Propionitrile	100.0000	99.4519	0.5	90	0.00
31	T	2,2-Dichloropropane	50.0000	51.5494	-3.1	88	0.00
32	P	cis-1,2-Dichloroethene	50.0000	53.7400	-7.5	94	0.00
33	C	Chloroform	50.0000	50.8113	-1.6	90	0.00
34	T	1-Bromopropane	50.0000	69.7970	-39.6#	126	0.00
35	T	Bromochloromethane	50.0000	51.3365	-2.7	87	0.00
36	T	Tetrahydrofuran	100.0000	96.1883	3.8	91	0.00
37	S	Dibromofluoromethane	50.0000	52.7882	-5.6	96	0.00
38	P	1,1,1-Trichloroethane	50.0000	52.7730	-5.5	91	0.00
39	P	Cyclohexane	50.0000	54.3246	-8.6	95	0.00
40	T	1,1-Dichloropropene	50.0000	51.3660	-2.7	89	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	102.3991	-2.4	93	0.00
42	P	Carbon Tetrachloride	50.0000	51.5704	-3.1	90	0.00
43	S	1,2-Dichloroethane-d4	50.0000	52.0392	-4.1	97	0.00
44		Heptane	-1.0000	0.0000	0.0	90	0.00
45	P	1,2-Dichloroethane	50.0000	51.3449	-2.7	92	0.00
46	P	Benzene	50.0000	50.6938	-1.4	92	0.00
47	P	Trichloroethene	50.0000	52.5327	-5.1	95	0.00
48	P	Methylcyclohexane	50.0000	54.5223	-9.0	96	0.00
49	C	1,2-Dichloropropane	50.0000	54.1958	-8.4	94	0.00
50	T	1,4-Dioxane	200.0000	255.6979	-27.8#	111	0.00
51	P	Bromodichloromethane	50.0000	50.5822	-1.2	88	0.00
52	T	Dibromomethane	50.0000	50.1684	-0.3	86	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	55.3787	-10.8	97	0.00
54	P	4-Methyl-2-Pentanone	50.0000	52.0432	-4.1	99	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\040616\9M973609.D Vial: 17
Acq On : 6 Apr 2016 18:18 Operator: ADC
Sample : WG563259-11 50.0ug/kg ALTSRC 8260 Inst : hpms9
Misc : 7,1 STD75404 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	55.4585	-10.9	97	0.00
56	T	Dimethyl Disulfide	50.0000	55.2642	-10.5	95	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	99	0.00
58	S	Toluene-d8	50.0000	53.3198	-6.6	97	0.00
59	C	Toluene	50.0000	51.4967	-3.0	93	0.00
60	T	Ethyl Methacrylate	50.0000	52.6145	-5.2	94	0.00
61	P	trans-1,3-Dichloropropene	50.0000	52.3291	-4.7	89	0.00
62	P	1,1,2-Trichloroethane	50.0000	53.9308	-7.9	93	0.00
63	P	2-Hexanone	50.0000	52.5074	-5.0	97	0.00
64	T	1,3-Dichloropropane	50.0000	54.7122	-9.4	96	0.00
65	P	Tetrachloroethene	50.0000	51.6350	-3.3	90	0.00
66	P	Dibromochloromethane	50.0000	50.6339	-1.3	88	0.00
67	P	1,2-Dibromoethane	50.0000	51.2924	-2.6	93	0.00
68	T	1-Chlorohexane	50.0000	54.0792	-8.2	94	0.00
69	P	Chlorobenzene	50.0000	53.0953	-6.2	95	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	53.0459	-6.1	93	0.00
71	C	Ethylbenzene	50.0000	52.7946	-5.6	92	0.00
72	P	m-,p-Xylene	100.0000	104.9373	-4.9	94	0.00
73	P	o-Xylene	50.0000	54.6278	-9.3	96	0.00
74	P	Styrene	50.0000	53.5412	-7.1	93	0.00
75	P	Bromoform	50.0000	50.1186	-0.2	84	0.00
76	P	Isopropylbenzene	50.0000	54.0740	-8.1	95	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	115	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	48.2015	3.6	95	0.00
79	S	p-Bromofluorobenzene	50.0000	52.6619	-5.3	102	0.00
80	T	1,2,3-Trichloropropane	50.0000	51.1245	-2.2	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	40.9288	18.1	74	0.00
82	T	n-Propylbenzene	50.0000	51.6897	-3.4	96	0.00
83	T	Bromobenzene	50.0000	49.8094	0.4	93	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	51.7929	-3.6	96	0.00
85	T	2-Chlorotoluene	50.0000	51.2539	-2.5	94	0.00
86	T	4-Chlorotoluene	50.0000	51.9779	-4.0	98	0.00
87	T	a-Methylstyrene	50.0000	56.3654	-12.7	103	0.00
88	T	tert-Butylbenzene	50.0000	52.3227	-4.6	97	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	53.2109	-6.4	95	0.00
90	T	sec-Butylbenzene	50.0000	52.7972	-5.6	98	0.00
91	T	p-Isopropyltoluene	50.0000	51.4696	-2.9	95	0.00
92	P	1,3-Dichlorobenzene	50.0000	50.5474	-1.1	96	0.00
93	P	1,4-Dichlorobenzene	50.0000	50.9530	-1.9	100	0.00
94	T	n-Butylbenzene	50.0000	51.3326	-2.7	96	0.00
95	P	1,2-Dichlorobenzene	50.0000	52.0332	-4.1	101	0.00
96	P	1,2-Dibromo-3-Chloropropane	50.0000	55.5037	-11.0	107	0.01
97	P	1,2,4-Trichlorobenzene	50.0000	56.7541	-13.5	109	0.00
98	T	Hexachlorobutadiene	50.0000	58.7590	-17.5	110	0.00
99	T	Naphthalene	50.0000	53.8583	-7.7	100	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	58.3387	-16.7	110	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M973609.D 8260-SL.M Thu Apr 07 13:32:18 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\042816\9M974029.D Vial: 2
Acq On : 28 Apr 2016 13:13 Operator: ADC
Sample : WG566763-02 50ug/kg CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 13:35:58 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	685029	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	494816	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.74	152	226636	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	185393	53.5868 ug/kg	-0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 107.18%		
43) 1,2-Dichloroethane-d4	10.43	65	194780	53.7809 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 107.56%		
58) Toluene-d8	12.82	98	659940	55.9608 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 111.92%		
79) p-Bromofluorobenzene	16.22	95	242743	61.8374 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 123.68%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	254042	48.3458 ug/kg	97
3) Chloromethane	3.75	50	270552	56.0083 ug/kg	100
4) Vinyl Chloride	3.97	62	162237	51.1054 ug/kg	95
5) 1,3-Butadiene	4.01	54	106148	45.5377 ug/kg	94
6) Bromomethane	4.86	94	145824	49.2359 ug/kg	100
7) Chloroethane	5.02	64	145072	50.2869 ug/kg	99
8) Trichlorofluoromethane	5.51	101	314756	51.5704 ug/kg	100
9) Diethyl ether	6.04	59	343628	95.7372 ug/kg	95
10) Isoprene	6.08	67	238975	49.7437 ug/kg	98
11) Acrolein	6.29	56	24347	68.2204 ug/kg	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	189995	50.9819 ug/kg	98
13) Acetone	6.38	43	69856	48.2053 ug/kg	97
14) 1,1-Dichloroethene	6.60	61	308257	49.3479 ug/kg	99
15) Tert-Butyl Alcohol	6.73	59	126806	211.0464 ug/kg	98
16) Dimethyl Sulfide	6.87	62	152038	49.6789 ug/kg	97
17) Iodomethane	7.12	142	118615	41.5995 ug/kg	100
18) Methyl acetate	7.13	43	181149	45.6487 ug/kg	98
19) Methylene Chloride	7.38	84	181786	46.5880 ug/kg	94
20) Carbon Disulfide	7.43	76	563183	47.5479 ug/kg	99
21) Acrylonitrile	7.57	53	92234	48.9010 ug/kg	99
22) Methyl Tert Butyl Ether	7.60	73	524888	49.9917 ug/kg	99
23) trans-1,2-Dichloroethene	7.84	61	295075	49.1047 ug/kg	98
24) n-Hexane	7.90	57	347584	44.5430 ug/kg	97
25) Diisopropyl ether	8.25	45	1456484	91.5996 ug/kg	99
26) Vinyl Acetate	8.42	43	388209	45.5698 ug/kg	98
27) 1,1-Dichloroethane	8.46	63	361676	49.5875 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.82	59	1346944	96.3357 ug/kg	99
29) 2-Butanone	9.01	43	108804	49.4033 ug/kg	98
30) Propionitrile	9.13	54	67683	94.6842 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	270358	50.7627 ug/kg	99
32) cis-1,2-Dichloroethene	9.29	96	198579	49.7267 ug/kg	97
33) Chloroform	9.51	83	303334	49.0319 ug/kg	100
34) 1-Bromopropane	9.64	122	33315	46.6716 ug/kg	99
35) Bromochloromethane	9.74	130	125485	50.3664 ug/kg	93
36) Tetrahydrofuran	9.76	42	147966	94.5773 ug/kg	96
38) 1,1,1-Trichloroethane	10.03	97	272116	51.3923 ug/kg	98
39) Cyclohexane	10.07	56	403993	48.2637 ug/kg	97
40) 1,1-Dichloropropene	10.23	75	245415	50.3512 ug/kg	99
41) Tert-Amyl-Methyl ether	10.33	73	1025078	99.1108 ug/kg	99
42) Carbon Tetrachloride	10.38	117	259201	52.4432 ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M974029.D 8260-SL.M Thu Apr 28 13:35:58 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\042816\9M974029.D Vial: 2
Acq On : 28 Apr 2016 13:13 Operator: ADC
Sample : WG566763-02 50ug/kg CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 13:35:58 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.55	62	258639	48.5465 ug/kg	97
46)	Benzene	10.59	78	719189	47.5430 ug/kg	98
47)	Trichloroethene	11.34	130	200541	47.1322 ug/kg	98
48)	Methylcyclohexane	11.43	83	329813	50.7271 ug/kg	98
49)	1,2-Dichloropropane	11.56	63	198432	48.2355 ug/kg	99
50)	1,4-Dioxane	11.85	88	11212	210.1265 ug/kg	98
51)	Bromodichloromethane	11.86	83	228325	48.7065 ug/kg	99
52)	Dibromomethane	11.95	174	118025	48.0538 ug/kg	96
53)	2-Chloroethyl Vinyl Ether	12.15	63	124889	57.0903 ug/kg	99
54)	4-Methyl-2-Pentanone	12.18	58	99175	52.3602 ug/kg	98
55)	cis-1,3-Dichloropropene	12.49	75	281766	48.2071 ug/kg	99
56)	Dimethyl Disulfide	12.76	94	323853	51.7750 ug/kg	100
59)	Toluene	12.91	91	760725	50.5226 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	234652	51.1884 ug/kg	99
61)	trans-1,3-Dichloropropene	13.09	75	258763	52.7891 ug/kg	100
62)	1,1,2-Trichloroethane	13.30	97	155843	52.5748 ug/kg	100
63)	2-Hexanone	13.24	43	161520	49.9001 ug/kg	95
64)	1,3-Dichloropropane	13.61	76	261466	51.2993 ug/kg	96
65)	Tetrachloroethene	13.74	164	165882	51.9458 ug/kg	98
66)	Dibromochloromethane	14.00	129	191251	52.1932 ug/kg	100
67)	1,2-Dibromoethane	14.27	107	163858	50.1813 ug/kg	100
68)	1-Chlorohexane	14.34	91	263945	53.2457 ug/kg	96
69)	Chlorobenzene	14.76	112	532475	50.9603 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.79	131	190810	53.7515 ug/kg	98
71)	Ethylbenzene	14.78	106	294747	52.4365 ug/kg	100
72)	m-,p-Xylene	14.88	106	708313	102.2037 ug/kg	99
73)	o-Xylene	15.44	106	340393	51.5442 ug/kg	100
74)	Styrene	15.48	104	579436	51.2363 ug/kg	99
75)	Bromoform	15.97	173	134461	55.9623 ug/kg	99
76)	Isopropylbenzene	15.87	105	885238	51.5331 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.08	83	214173	56.1712 ug/kg	100
80)	1,2,3-Trichloropropane	16.28	110	67632	60.1302 ug/kg#	11
81)	trans-1,4-Dichloro-2-Buten	16.32	53	78317	57.2134 ug/kg#	1
82)	n-Propylbenzene	16.38	91	984381	58.0964 ug/kg	100
83)	Bromobenzene	16.51	156	233532	57.9423 ug/kg	100
84)	1,3,5-Trimethylbenzene	16.56	105	758815	58.8169 ug/kg	100
85)	2-Chlorotoluene	16.65	91	622947	61.5592 ug/kg	100
86)	4-Chlorotoluene	16.69	91	583181	55.0975 ug/kg	99
87)	a-Methylstyrene	16.97	118	368700	57.2875 ug/kg	98
88)	tert-Butylbenzene	17.03	134	169825	59.4135 ug/kg	90
89)	1,2,4-Trimethylbenzene	17.08	105	764649	61.0600 ug/kg	100
90)	sec-Butylbenzene	17.29	105	978015	58.9704 ug/kg	100
91)	p-Isopropyltoluene	17.45	119	809547	58.9662 ug/kg	100
92)	1,3-Dichlorobenzene	17.65	146	449527	56.4139 ug/kg	99
93)	1,4-Dichlorobenzene	17.78	146	446277	54.8761 ug/kg	98
94)	n-Butylbenzene	17.98	91	740000	58.5882 ug/kg	99
95)	1,2-Dichlorobenzene	18.28	146	420540	55.4774 ug/kg	98
96)	1,2-Dibromo-3-Chloropropan	19.28	157	54708	58.0490 ug/kg	100
97)	1,2,4-Trichlorobenzene	20.42	180	313877	56.1161 ug/kg	100
98)	Hexachlorobutadiene	20.57	225	152072	57.6444 ug/kg	99
99)	Naphthalene	20.80	128	811583	60.2059 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.10	180	307202	57.9398 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\042816\9M974029.D Vial: 2
Acq On : 28 Apr 2016 13:13 Operator: ADC
Sample : WG566763-02 50ug/kg CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 13:35 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

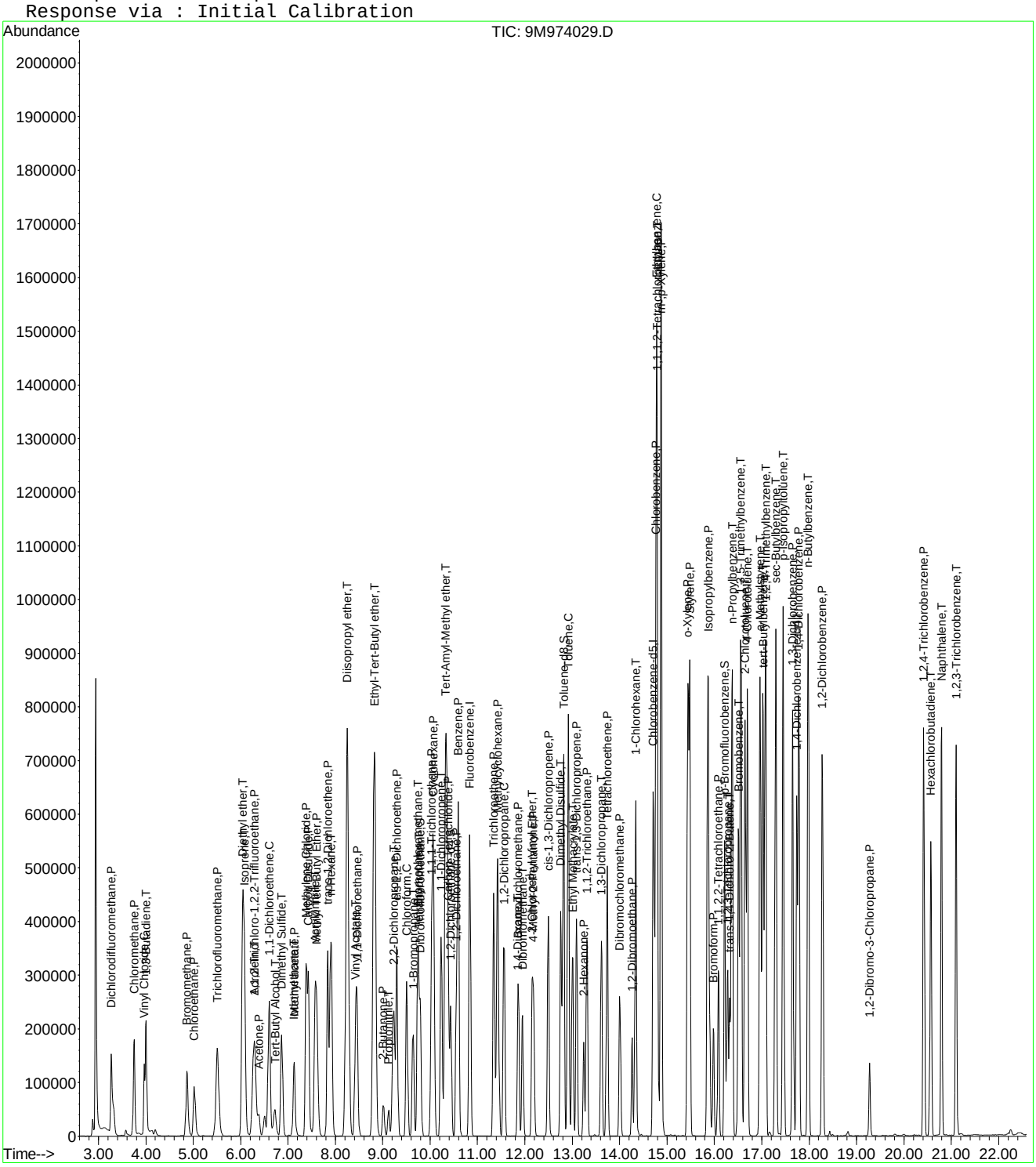

9M974029.D 8260-SL.M Thu Apr 28 13:35:58 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042816\9M974029.D Vial: 2
Acq On : 28 Apr 2016 13:13 Operator: ADC
Sample : WG566763-02 50ug/kg CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	124	0.00
2	P	Dichlorodifluoromethane	0.3835	0.3709	3.3	105	-0.01
3	P	Chloromethane	0.3526	0.3950	-12.0	140	0.00
4	C	Vinyl Chloride	0.2683	0.2368	11.7	109	-0.01
5	T	1,3-Butadiene	0.1701	0.1550	8.9	120	-0.01
6	P	Bromomethane	0.2162	0.2129	1.5	115	-0.01
7	P	Chloroethane	0.2106	0.2118	-0.6	118	-0.01
8	P	Trichlorofluoromethane	0.4455	0.4595	-3.1	115	-0.01
9	T	Diethyl ether	0.2620	0.2508	4.3	114	0.00
10	T	Isoprene	0.3507	0.3488	0.5	111	-0.01
11	T	Acrolein	0.0261	0.0355	-36.4#	162	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	0.2720	0.2773	-2.0	114	-0.01
13	P	Acetone	0.1208	0.1020	15.6	117	0.00
14	C	1,1-Dichloroethene	0.4559	0.4500	1.3	110	-0.01
15	T	Tert-Butyl Alcohol	0.0439	0.0463	-5.5	126	0.00
16	T	Dimethyl Sulfide	0.2234	0.2219	0.6	107	-0.01
17	T	Iodomethane	0.1924	0.1732	10.0	94	-0.01
18	P	Methyl acetate	0.2897	0.2644	8.7	108	0.00
19	P	Methylene Chloride	0.2848	0.2654	6.8	110	-0.01
20	P	Carbon Disulfide	0.8645	0.8221	4.9	109	-0.01
21	T	Acrylonitrile	0.1377	0.1346	2.2	114	0.00
22	P	Methyl Tert Butyl Ether	0.7664	0.7662	0.0	113	0.00
23	P	trans-1,2-Dichloroethene	0.4386	0.4308	1.8	108	0.00
24	T	n-Hexane	0.5696	0.5074	10.9	110	-0.01
25	T	Diisopropyl ether	1.1606	1.0631	8.4	106	0.00
26	T	Vinyl Acetate	0.5715	0.5667	0.8	102	-0.01
27	P	1,1-Dichloroethane	0.5324	0.5280	0.8	111	0.00
28	T	Ethyl-Tert-Butyl ether	1.0205	0.9831	3.7	113	-0.01
29	P	2-Butanone	0.1608	0.1588	1.2	120	0.00
30	T	Propionitrile	0.0522	0.0494	5.3	111	0.00
31	T	2,2-Dichloropropane	0.3887	0.3947	-1.5	112	0.00
32	P	cis-1,2-Dichloroethene	0.2915	0.2899	0.5	112	-0.01
33	C	Chloroform	0.4516	0.4428	1.9	112	0.00
34	T	1-Bromopropane	0.0479	0.0486	-1.4	108	0.00
35	T	Bromochloromethane	0.1819	0.1832	-0.7	110	-0.01
36	T	Tetrahydrofuran	0.1142	0.1080	5.4	115	-0.01
37	S	Dibromofluoromethane	0.2525	0.2706	-7.2	125	-0.01
38	P	1,1,1-Trichloroethane	0.3865	0.3972	-2.8	114	-0.01
39	P	Cyclohexane	0.6110	0.5898	3.5	109	0.00
40	T	1,1-Dichloropropene	0.3558	0.3583	-0.7	112	0.00
41	T	Tert-Amyl-Methyl ether	0.7549	0.7482	0.9	116	-0.01
42	P	Carbon Tetrachloride	0.3608	0.3784	-4.9	118	0.00
43	S	1,2-Dichloroethane-d4	0.2643	0.2843	-7.6	129	0.00
44		Heptane	0.0000	0.0000	0.0	121	0.00
45	P	1,2-Dichloroethane	0.3889	0.3776	2.9	112	-0.01
46	P	Benzene	1.1041	1.0499	4.9	112	0.00
47	P	Trichloroethene	0.3106	0.2928	5.7	110	0.00
48	P	Methylcyclohexane	0.4746	0.4815	-1.5	115	0.00
49	C	1,2-Dichloropropane	0.3003	0.2897	3.5	108	0.00
50	T	1,4-Dioxane	0.0039	0.0041	-5.1	117	0.00
51	P	Bromodichloromethane	0.3422	0.3333	2.6	109	0.00
52	T	Dibromomethane	0.1793	0.1723	3.9	107	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1597	0.1823	-14.2	129	0.00
54	P	4-Methyl-2-Pentanone	0.1383	0.1448	-4.7	128	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042816\9M974029.D Vial: 2
Acq On : 28 Apr 2016 13:13 Operator: ADC
Sample : WG566763-02 50ug/kg CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	0.4266	0.4113	3.6	108	0.00
56	T	Dimethyl Disulfide	0.4566	0.4728	-3.6	114	-0.01
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	122	-0.01
58	S	Toluene-d8	1.1917	1.3337	-11.9	125	0.00
59	C	Toluene	1.5215	1.5374	-1.0	112	0.00
60	T	Ethyl Methacrylate	0.4632	0.4742	-2.4	112	0.00
61	P	trans-1,3-Dichloropropene	0.4953	0.5230	-5.6	111	0.00
62	P	1,1,2-Trichloroethane	0.2995	0.3150	-5.1	112	-0.01
63	P	2-Hexanone	0.3271	0.3264	0.2	114	0.00
64	T	1,3-Dichloropropane	0.5150	0.5284	-2.6	111	-0.01
65	P	Tetrachloroethene	0.3227	0.3352	-3.9	112	0.00
66	P	Dibromochloromethane	0.3703	0.3865	-4.4	112	-0.01
67	P	1,2-Dibromoethane	0.3300	0.3312	-0.4	113	0.00
68	T	1-Chlorohexane	0.5009	0.5334	-6.5	114	0.00
69	P	Chlorobenzene	1.0558	1.0761	-1.9	113	0.00
70	T	1,1,1,2-Tetrachloroethane	0.3587	0.3856	-7.5	116	0.00
71	C	Ethylbenzene	0.5680	0.5957	-4.9	113	-0.01
72	P	m-,p-Xylene	0.7003	0.7157	-2.2	113	0.00
73	P	o-Xylene	0.6673	0.6879	-3.1	112	-0.01
74	P	Styrene	1.1428	1.1710	-2.5	110	0.00
75	P	Bromoform	0.2533	0.2717	-7.3	116	-0.01
76	P	Isopropylbenzene	1.7358	1.7890	-3.1	112	0.00
77	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	119	-0.01
78	P	1,1,2,2-Tetrachloroethane	0.7803	0.9450	-21.1	115	-0.01
79	S	p-Bromofluorobenzene	0.8660	1.0711	-23.7	124	0.00
80	T	1,2,3-Trichloropropane	0.2481	0.2984	-20.3	122	0.00
81	T	trans-1,4-Dichloro-2-Butene	0.3020	0.3456	-14.4	106	0.00
82	T	n-Propylbenzene	3.7381	4.3434	-16.2	112	0.00
83	T	Bromobenzene	0.8892	1.0304	-15.9	112	0.00
84	T	1,3,5-Trimethylbenzene	2.8463	3.3482	-17.6	113	-0.01
85	T	2-Chlorotoluene	2.2325	2.7487	-23.1	117	0.00
86	T	4-Chlorotoluene	2.3351	2.5732	-10.2	108	0.00
87	T	a-Methylstyrene	1.4199	1.6268	-14.6	108	0.00
88	T	tert-Butylbenzene	0.6306	0.7493	-18.8	114	0.00
89	T	1,2,4-Trimethylbenzene	3.0832	3.3739	-9.4	112	0.00
90	T	sec-Butylbenzene	3.6589	4.3154	-17.9	113	0.00
91	T	p-Isopropyltoluene	3.0289	3.5720	-17.9	113	0.00
92	P	1,3-Dichlorobenzene	1.7580	1.9835	-12.8	111	0.00
93	P	1,4-Dichlorobenzene	1.7942	1.9691	-9.8	111	-0.01
94	T	n-Butylbenzene	2.7865	3.2652	-17.2	113	0.00
95	P	1,2-Dichlorobenzene	1.6724	1.8556	-11.0	111	-0.01
96	P	1,2-Dibromo-3-Chloropropane	0.2045	0.2414	-18.0	116	0.00
97	P	1,2,4-Trichlorobenzene	1.2340	1.3849	-12.2	112	-0.01
98	T	Hexachlorobutadiene	0.5820	0.6710	-15.3	112	-0.01
99	T	Naphthalene	2.9740	3.5810	-20.4	116	0.00
100	T	1,2,3-Trichlorobenzene	1.1697	1.3555	-15.9	113	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M974029.D 8260-SL.M Fri Apr 29 14:56:15 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042816\9M974029.D Vial: 2
Acq On : 28 Apr 2016 13:13 Operator: ADC
Sample : WG566763-02 50ug/kg CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	124	0.00
2	P	Dichlorodifluoromethane	50.0000	48.3458	3.3	105	-0.01
3	P	Chloromethane	50.0000	56.0083	-12.0	140	0.00
4	C	Vinyl Chloride	50.0000	51.1054	-2.2	109	-0.01
5	T	1,3-Butadiene	50.0000	45.5377	8.9	120	-0.01
6	P	Bromomethane	50.0000	49.2359	1.5	115	-0.01
7	P	Chloroethane	50.0000	50.2869	-0.6	118	-0.01
8	P	Trichlorofluoromethane	50.0000	51.5704	-3.1	115	-0.01
9	T	Diethyl ether	100.0000	95.7372	4.3	114	0.00
10	T	Isoprene	50.0000	49.7437	0.5	111	-0.01
11	T	Acrolein	50.0000	68.2204	-36.4#	162	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	50.9819	-2.0	114	-0.01
13	P	Acetone	50.0000	48.2053	3.6	117	0.00
14	C	1,1-Dichloroethene	50.0000	49.3479	1.3	110	-0.01
15	T	Tert-Butyl Alcohol	200.0000	211.0464	-5.5	126	0.00
16	T	Dimethyl Sulfide	50.0000	49.6789	0.6	107	-0.01
17	T	Iodomethane	50.0000	41.5995	16.8	94	-0.01
18	P	Methyl acetate	50.0000	45.6487	8.7	108	0.00
19	P	Methylene Chloride	50.0000	46.5880	6.8	110	-0.01
20	P	Carbon Disulfide	50.0000	47.5479	4.9	109	-0.01
21	T	Acrylonitrile	50.0000	48.9010	2.2	114	0.00
22	P	Methyl Tert Butyl Ether	50.0000	49.9917	0.0	113	0.00
23	P	trans-1,2-Dichloroethene	50.0000	49.1047	1.8	108	0.00
24	T	n-Hexane	50.0000	44.5431	10.9	110	-0.01
25	T	Diisopropyl ether	100.0000	91.5995	8.4	106	0.00
26	T	Vinyl Acetate	50.0000	45.5699	8.9	102	-0.01
27	P	1,1-Dichloroethane	50.0000	49.5875	0.8	111	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	96.3357	3.7	113	-0.01
29	P	2-Butanone	50.0000	49.4033	1.2	120	0.00
30	T	Propionitrile	100.0000	94.6842	5.3	111	0.00
31	T	2,2-Dichloropropane	50.0000	50.7627	-1.5	112	0.00
32	P	cis-1,2-Dichloroethene	50.0000	49.7267	0.5	112	-0.01
33	C	Chloroform	50.0000	49.0319	1.9	112	0.00
34	T	1-Bromopropane	50.0000	46.6716	6.7	108	0.00
35	T	Bromochloromethane	50.0000	50.3664	-0.7	110	-0.01
36	T	Tetrahydrofuran	100.0000	94.5773	5.4	115	-0.01
37	S	Dibromofluoromethane	50.0000	53.5868	-7.2	125	-0.01
38	P	1,1,1-Trichloroethane	50.0000	51.3923	-2.8	114	-0.01
39	P	Cyclohexane	50.0000	48.2637	3.5	109	0.00
40	T	1,1-Dichloropropene	50.0000	50.3512	-0.7	112	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	99.1108	0.9	116	-0.01
42	P	Carbon Tetrachloride	50.0000	52.4432	-4.9	118	0.00
43	S	1,2-Dichloroethane-d4	50.0000	53.7809	-7.6	129	0.00
44		Heptane	-1.0000	0.0000	0.0	121	0.00
45	P	1,2-Dichloroethane	50.0000	48.5465	2.9	112	-0.01
46	P	Benzene	50.0000	47.5430	4.9	112	0.00
47	P	Trichloroethene	50.0000	47.1322	5.7	110	0.00
48	P	Methylcyclohexane	50.0000	50.7271	-1.5	115	0.00
49	C	1,2-Dichloropropane	50.0000	48.2355	3.5	108	0.00
50	T	1,4-Dioxane	200.0000	210.1266	-5.1	117	0.00
51	P	Bromodichloromethane	50.0000	48.7065	2.6	109	0.00
52	T	Dibromomethane	50.0000	48.0538	3.9	107	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	57.0903	-14.2	129	0.00
54	P	4-Methyl-2-Pentanone	50.0000	52.3602	-4.7	128	-0.01

(#) = Out of Range
9M974029.D 8260-SL.M Fri Apr 29 14:56:14 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042816\9M974029.D Vial: 2
Acq On : 28 Apr 2016 13:13 Operator: ADC
Sample : WG566763-02 50ug/kg CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	48.2071	3.6	108	0.00
56	T	Dimethyl Disulfide	50.0000	51.7749	-3.5	114	-0.01
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	122	-0.01
58	S	Toluene-d8	50.0000	55.9608	-11.9	125	0.00
59	C	Toluene	50.0000	50.5226	-1.0	112	0.00
60	T	Ethyl Methacrylate	50.0000	51.1884	-2.4	112	0.00
61	P	trans-1,3-Dichloropropene	50.0000	52.7891	-5.6	111	0.00
62	P	1,1,2-Trichloroethane	50.0000	52.5748	-5.1	112	-0.01
63	P	2-Hexanone	50.0000	49.9001	0.2	114	0.00
64	T	1,3-Dichloropropane	50.0000	51.2993	-2.6	111	-0.01
65	P	Tetrachloroethene	50.0000	51.9458	-3.9	112	0.00
66	P	Dibromochloromethane	50.0000	52.1932	-4.4	112	-0.01
67	P	1,2-Dibromoethane	50.0000	50.1813	-0.4	113	0.00
68	T	1-Chlorohexane	50.0000	53.2457	-6.5	114	0.00
69	P	Chlorobenzene	50.0000	50.9603	-1.9	113	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	53.7515	-7.5	116	0.00
71	C	Ethylbenzene	50.0000	52.4365	-4.9	113	-0.01
72	P	m-,p-Xylene	100.0000	102.2037	-2.2	113	0.00
73	P	o-Xylene	50.0000	51.5442	-3.1	112	-0.01
74	P	Styrene	50.0000	51.2363	-2.5	110	0.00
75	P	Bromoform	50.0000	55.9623	-11.9	116	-0.01
76	P	Isopropylbenzene	50.0000	51.5331	-3.1	112	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	119	-0.01
78	P	1,1,2,2-Tetrachloroethane	50.0000	56.1712	-12.3	115	-0.01
79	S	p-Bromofluorobenzene	50.0000	61.8374	-23.7	124	0.00
80	T	1,2,3-Trichloropropane	50.0000	60.1302	-20.3	122	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	57.2134	-14.4	106	0.00
82	T	n-Propylbenzene	50.0000	58.0964	-16.2	112	0.00
83	T	Bromobenzene	50.0000	57.9423	-15.9	112	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	58.8169	-17.6	113	-0.01
85	T	2-Chlorotoluene	50.0000	61.5592	-23.1	117	0.00
86	T	4-Chlorotoluene	50.0000	55.0975	-10.2	108	0.00
87	T	a-Methylstyrene	50.0000	57.2875	-14.6	108	0.00
88	T	tert-Butylbenzene	50.0000	59.4135	-18.8	114	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	61.0600	-22.1	112	0.00
90	T	sec-Butylbenzene	50.0000	58.9704	-17.9	113	0.00
91	T	p-Isopropyltoluene	50.0000	58.9662	-17.9	113	0.00
92	P	1,3-Dichlorobenzene	50.0000	56.4139	-12.8	111	0.00
93	P	1,4-Dichlorobenzene	50.0000	54.8761	-9.8	111	-0.01
94	T	n-Butylbenzene	50.0000	58.5882	-17.2	113	0.00
95	P	1,2-Dichlorobenzene	50.0000	55.4774	-11.0	111	-0.01
96	P	1,2-Dibromo-3-Chloropropane	50.0000	58.0490	-16.1	116	0.00
97	P	1,2,4-Trichlorobenzene	50.0000	56.1161	-12.2	112	-0.01
98	T	Hexachlorobutadiene	50.0000	57.6444	-15.3	112	-0.01
99	T	Naphthalene	50.0000	60.2059	-20.4	116	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	57.9398	-15.9	113	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M974029.D 8260-SL.M Fri Apr 29 14:56:14 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\043016\9M974067.D Vial: 2
Acq On : 30 Apr 2016 13:43 Operator: ADC
Sample : WG567052-02 50ug/kg CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 30 14:05:40 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	721498	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	515311	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	239486	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	191737	52.6192 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.24%		
43) 1,2-Dichloroethane-d4	10.44	65	202287	53.0305 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 106.06%		
58) Toluene-d8	12.81	98	677225	55.1425 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 110.28%		
79) p-Bromofluorobenzene	16.21	95	250470	60.3822 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 120.76%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	267146	48.2698 ug/kg	98
3) Chloromethane	3.75	50	279372	54.9109 ug/kg	100
4) Vinyl Chloride	3.97	62	154892	46.2519 ug/kg	95
5) 1,3-Butadiene	4.00	54	90745	36.9620 ug/kg	94
6) Bromomethane	4.87	94	143220	45.9124 ug/kg	100
7) Chloroethane	5.02	64	142331	46.8430 ug/kg	99
8) Trichlorofluoromethane	5.51	101	309961	48.2178 ug/kg	100
9) Diethyl ether	6.04	59	338254	89.4765 ug/kg	96
10) Isoprene	6.07	67	214323	42.3573 ug/kg	100
11) Acrolein	6.28	56	22930	61.0023 ug/kg	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	186304	47.4646 ug/kg	100
13) Acetone	6.39	43	64103	41.2488 ug/kg	100
14) 1,1-Dichloroethene	6.60	61	301955	45.8956 ug/kg	97
15) Tert-Butyl Alcohol	6.72	59	114483	180.9060 ug/kg	99
16) Dimethyl Sulfide	6.87	62	143065	44.3841 ug/kg	97
17) Iodomethane	7.12	142	111793	37.5324 ug/kg	99
18) Methyl acetate	7.13	43	173317	41.4674 ug/kg	97
19) Methylene Chloride	7.39	84	183855	44.7366 ug/kg	93
20) Carbon Disulfide	7.43	76	513142	41.1333 ug/kg	100
21) Acrylonitrile	7.57	53	87651	44.1222 ug/kg	100
22) Methyl Tert Butyl Ether	7.60	73	524602	47.4389 ug/kg	99
23) trans-1,2-Dichloroethene	7.83	61	291770	46.1005 ug/kg	100
24) n-Hexane	7.91	57	313068	38.0919 ug/kg	98
25) Diisopropyl ether	8.24	45	1457067	87.0044 ug/kg	99
26) Vinyl Acetate	8.42	43	370347	41.3581 ug/kg	99
27) 1,1-Dichloroethane	8.45	63	352481	45.8841 ug/kg	98
28) Ethyl-Tert-Butyl ether	8.82	59	1336759	90.7746 ug/kg	99
29) 2-Butanone	9.01	43	98352	42.4002 ug/kg	97
30) Propionitrile	9.12	54	63958	84.9506 ug/kg	97
31) 2,2-Dichloropropane	9.23	77	269278	48.0043 ug/kg	100
32) cis-1,2-Dichloroethene	9.30	96	194107	46.1499 ug/kg	98
33) Chloroform	9.51	83	301985	46.3464 ug/kg	99
34) 1-Bromopropane	9.65	122	30323	40.4497 ug/kg	98
35) Bromochloromethane	9.74	130	123421	47.0340 ug/kg	95
36) Tetrahydrofuran	9.76	42	138155	83.8427 ug/kg	97
38) 1,1,1-Trichloroethane	10.04	97	268302	48.1107 ug/kg	99
39) Cyclohexane	10.07	56	375361	42.5765 ug/kg	97
40) 1,1-Dichloropropene	10.24	75	237174	46.2008 ug/kg	98
41) Tert-Amyl-Methyl ether	10.33	73	1009502	92.6713 ug/kg	99
42) Carbon Tetrachloride	10.39	117	251432	48.2999 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\043016\9M974067.D Vial: 2
Acq On : 30 Apr 2016 13:43 Operator: ADC
Sample : WG567052-02 50ug/kg CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 30 14:05:40 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.55	62	261444	46.5926	ug/kg	97
46)	Benzene	10.60	78	700687	43.9786	ug/kg	99
47)	Trichloroethene	11.35	130	194526	43.4076	ug/kg	99
48)	Methylcyclohexane	11.43	83	293473	42.8562	ug/kg	97
49)	1,2-Dichloropropane	11.56	63	197901	45.6748	ug/kg	98
50)	1,4-Dioxane	11.85	88	10306	183.3841	ug/kg	99
51)	Bromodichloromethane	11.86	83	226098	45.7935	ug/kg	99
52)	Dibromomethane	11.95	174	115911	44.8077	ug/kg	97
53)	2-Chloroethyl Vinyl Ether	12.15	63	116302	50.4776	ug/kg	98
54)	4-Methyl-2-Pentanone	12.18	58	90489	45.3596	ug/kg	99
55)	cis-1,3-Dichloropropene	12.50	75	281374	45.7067	ug/kg	100
56)	Dimethyl Disulfide	12.76	94	308820	46.8761	ug/kg	99
59)	Toluene	12.92	91	738892	47.1209	ug/kg	99
60)	Ethyl Methacrylate	13.00	69	221257	46.3467	ug/kg	100
61)	trans-1,3-Dichloropropene	13.09	75	260381	51.0066	ug/kg	100
62)	1,1,2-Trichloroethane	13.31	97	153347	49.6752	ug/kg	99
63)	2-Hexanone	13.24	43	149815	44.4432	ug/kg	97
64)	1,3-Dichloropropane	13.61	76	257152	48.4463	ug/kg	97
65)	Tetrachloroethene	13.74	164	158751	47.7356	ug/kg	98
66)	Dibromochloromethane	14.00	129	189943	49.7746	ug/kg	100
67)	1,2-Dibromoethane	14.26	107	161251	47.4189	ug/kg	100
68)	1-Chlorohexane	14.34	91	241155	46.7134	ug/kg	98
69)	Chlorobenzene	14.76	112	521170	47.8946	ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	189589	51.2834	ug/kg	98
71)	Ethylbenzene	14.79	106	283523	48.4336	ug/kg	100
72)	m-,p-Xylene	14.88	106	690257	95.6371	ug/kg	100
73)	o-Xylene	15.44	106	333133	48.4386	ug/kg	100
74)	Styrene	15.48	104	566862	48.1309	ug/kg	100
75)	Bromoform	15.98	173	132662	53.2241	ug/kg	100
76)	Isopropylbenzene	15.86	105	860313	48.0902	ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.08	83	210037	52.1559	ug/kg	100
80)	1,2,3-Trichloropropane	16.27	110	64353	54.1449	ug/kg	91
81)	trans-1,4-Dichloro-2-Buten	16.33	53	75281	52.0446	ug/kg	96
82)	n-Propylbenzene	16.37	91	951855	53.1625	ug/kg	100
83)	Bromobenzene	16.51	156	226542	53.1921	ug/kg	75
84)	1,3,5-Trimethylbenzene	16.56	105	730662	53.5959	ug/kg	100
85)	2-Chlorotoluene	16.64	91	641892	60.0279	ug/kg	99
86)	4-Chlorotoluene	16.70	91	532897	47.6453	ug/kg	99
87)	a-Methylstyrene	16.97	118	348737	51.2783	ug/kg	99
88)	tert-Butylbenzene	17.02	134	162029	53.6445	ug/kg	90
89)	1,2,4-Trimethylbenzene	17.08	105	745247	56.2737	ug/kg	99
90)	sec-Butylbenzene	17.30	105	932564	53.2128	ug/kg	100
91)	p-Isopropyltoluene	17.46	119	780693	53.8134	ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	437597	51.9701	ug/kg	99
93)	1,4-Dichlorobenzene	17.78	146	436354	50.7769	ug/kg	98
94)	n-Butylbenzene	17.98	91	705629	52.8693	ug/kg	100
95)	1,2-Dichlorobenzene	18.28	146	410190	51.2086	ug/kg	98
96)	1,2-Dibromo-3-Chloropropan	19.28	157	51440	52.3268	ug/kg	98
97)	1,2,4-Trichlorobenzene	20.42	180	307117	51.9613	ug/kg	99
98)	Hexachlorobutadiene	20.57	225	141777	50.8583	ug/kg	99
99)	Naphthalene	20.79	128	778940	54.6838	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	300419	53.6203	ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\043016\9M974067.D Vial: 2
Acq On : 30 Apr 2016 13:43 Operator: ADC
Sample : WG567052-02 50ug/kg CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 30 14:05 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

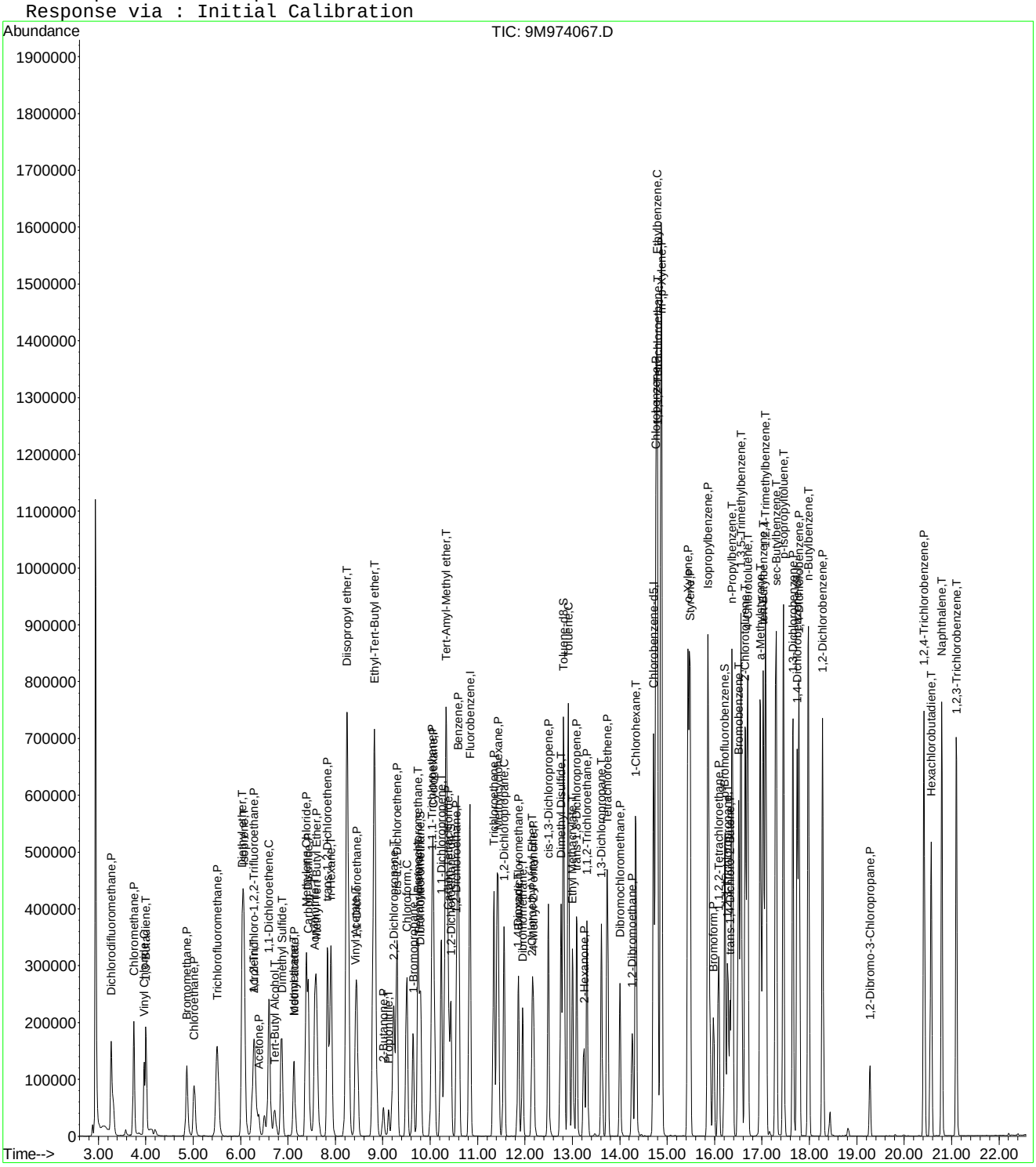

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\043016\9M974067.D Vial: 2
Acq On : 30 Apr 2016 13:43 Operator: ADC
Sample : WG567052-02 50ug/kg CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	131	0.00
2	P	Dichlorodifluoromethane	0.3835	0.3703	3.5	110	0.00
3	P	Chloromethane	0.3526	0.3872	-9.8	144	0.00
4	C	Vinyl Chloride	0.2683	0.2147	20.0	104	0.00
5	T	1,3-Butadiene	0.1701	0.1258	26.1#	103	-0.02
6	P	Bromomethane	0.2162	0.1985	8.2	113	0.00
7	P	Chloroethane	0.2106	0.1973	6.3	116	0.00
8	P	Trichlorofluoromethane	0.4455	0.4296	3.6	113	0.00
9	T	Diethyl ether	0.2620	0.2344	10.5	112	0.00
10	T	Isoprene	0.3507	0.2970	15.3	100	-0.02
11	T	Acrolein	0.0261	0.0318	-22.0	153	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	0.2720	0.2582	5.1	112	-0.02
13	P	Acetone	0.1208	0.0888#	26.4#	107	0.00
14	C	1,1-Dichloroethene	0.4559	0.4185	8.2	108	-0.02
15	T	Tert-Butyl Alcohol	0.0439	0.0397	9.6	114	0.00
16	T	Dimethyl Sulfide	0.2234	0.1983	11.2	101	0.00
17	T	Iodomethane	0.1924	0.1550	19.5	89	0.00
18	P	Methyl acetate	0.2897	0.2402	17.1	103	0.00
19	P	Methylene Chloride	0.2848	0.2548	10.5	111	0.00
20	P	Carbon Disulfide	0.8645	0.7112	17.7	99	0.00
21	T	Acrylonitrile	0.1377	0.1215	11.8	108	0.00
22	P	Methyl Tert Butyl Ether	0.7664	0.7271	5.1	113	0.00
23	P	trans-1,2-Dichloroethene	0.4386	0.4044	7.8	107	0.00
24	T	n-Hexane	0.5696	0.4339	23.8	99	0.00
25	T	Diisopropyl ether	1.1606	1.0097	13.0	106	0.00
26	T	Vinyl Acetate	0.5715	0.5133	10.2	97	0.00
27	P	1,1-Dichloroethane	0.5324	0.4885	8.2	108	0.00
28	T	Ethyl-Tert-Butyl ether	1.0205	0.9264	9.2	112	0.00
29	P	2-Butanone	0.1608	0.1363	15.2	108	0.00
30	T	Propionitrile	0.0522	0.0443	15.1	105	0.00
31	T	2,2-Dichloropropane	0.3887	0.3732	4.0	112	0.00
32	P	cis-1,2-Dichloroethene	0.2915	0.2690	7.7	109	0.00
33	C	Chloroform	0.4516	0.4185	7.3	112	0.00
34	T	1-Bromopropane	0.0479	0.0420	12.3	98	0.00
35	T	Bromochloromethane	0.1819	0.1711	5.9	108	0.00
36	T	Tetrahydrofuran	0.1142	0.0957	16.2	108	0.00
37	S	Dibromofluoromethane	0.2525	0.2657	-5.2	130	0.00
38	P	1,1,1-Trichloroethane	0.3865	0.3719	3.8	112	0.00
39	P	Cyclohexane	0.6110	0.5202	14.8	101	0.00
40	T	1,1-Dichloropropene	0.3558	0.3287	7.6	109	0.00
41	T	Tert-Amyl-Methyl ether	0.7549	0.6996	7.3	115	0.00
42	P	Carbon Tetrachloride	0.3608	0.3485	3.4	114	0.00
43	S	1,2-Dichloroethane-d4	0.2643	0.2804	-6.1	134	0.00
44		Heptane	0.0000	0.0000	0.0	129	0.00
45	P	1,2-Dichloroethane	0.3889	0.3624	6.8	113	0.00
46	P	Benzene	1.1041	0.9712	12.0	109	0.00
47	P	Trichloroethene	0.3106	0.2696	13.2	107	0.00
48	P	Methylcyclohexane	0.4746	0.4068	14.3	102	0.00
49	C	1,2-Dichloropropane	0.3003	0.2743	8.7	108	0.00
50	T	1,4-Dioxane	0.0039	0.0036	8.2	108	0.00
51	P	Bromodichloromethane	0.3422	0.3134	8.4	108	0.00
52	T	Dibromomethane	0.1793	0.1606	10.4	105	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1597	0.1612	-1.0	120	0.00
54	P	4-Methyl-2-Pentanone	0.1383	0.1254	9.3	117	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\043016\9M974067.D Vial: 2
Acq On : 30 Apr 2016 13:43 Operator: ADC
Sample : WG567052-02 50ug/kg CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	0.4266	0.3900	8.6	108	0.00
56	T	Dimethyl Disulfide	0.4566	0.4280	6.2	109	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	127	0.00
58	S	Toluene-d8	1.1917	1.3142	-10.3	129	0.00
59	C	Toluene	1.5215	1.4339	5.8	109	0.00
60	T	Ethyl Methacrylate	0.4632	0.4294	7.3	106	0.00
61	P	trans-1,3-Dichloropropene	0.4953	0.5053	-2.0	112	0.00
62	P	1,1,2-Trichloroethane	0.2995	0.2976	0.7	110	0.00
63	P	2-Hexanone	0.3271	0.2907	11.1	106	0.00
64	T	1,3-Dichloropropane	0.5150	0.4990	3.1	109	0.00
65	P	Tetrachloroethene	0.3227	0.3081	4.5	107	0.00
66	P	Dibromochloromethane	0.3703	0.3686	0.5	111	0.00
67	P	1,2-Dibromoethane	0.3300	0.3129	5.2	111	0.00
68	T	1-Chlorohexane	0.5009	0.4680	6.6	104	0.00
69	P	Chlorobenzene	1.0558	1.0114	4.2	110	0.00
70	T	1,1,1,2-Tetrachloroethane	0.3587	0.3679	-2.6	115	0.00
71	C	Ethylbenzene	0.5680	0.5502	3.1	109	0.00
72	P	m-,p-Xylene	0.7003	0.6697	4.4	110	0.00
73	P	o-Xylene	0.6673	0.6465	3.1	109	0.00
74	P	Styrene	1.1428	1.1000	3.7	108	0.00
75	P	Bromoform	0.2533	0.2574	-1.6	115	0.00
76	P	Isopropylbenzene	1.7358	1.6695	3.8	109	0.00
77	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	126	0.00
78	P	1,1,2,2-Tetrachloroethane	0.7803	0.8770	-12.4	113	0.00
79	S	p-Bromofluorobenzene	0.8660	1.0459	-20.8	128	0.00
80	T	1,2,3-Trichloropropane	0.2481	0.2687	-8.3	116	0.00
81	T	trans-1,4-Dichloro-2-Butene	0.3020	0.3143	-4.1	102	0.00
82	T	n-Propylbenzene	3.7381	3.9746	-6.3	108	0.00
83	T	Bromobenzene	0.8892	0.9459	-6.4	109	0.00
84	T	1,3,5-Trimethylbenzene	2.8463	3.0510	-7.2	109	0.00
85	T	2-Chlorotoluene	2.2325	2.6803	-20.1	121	0.00
86	T	4-Chlorotoluene	2.3351	2.2252	4.7	98	0.00
87	T	a-Methylstyrene	1.4199	1.4562	-2.6	102	0.00
88	T	tert-Butylbenzene	0.6306	0.6766	-7.3	108	0.00
89	T	1,2,4-Trimethylbenzene	3.0832	3.1119	-0.9	110	0.00
90	T	sec-Butylbenzene	3.6589	3.8940	-6.4	108	0.00
91	T	p-Isopropyltoluene	3.0289	3.2599	-7.6	109	0.00
92	P	1,3-Dichlorobenzene	1.7580	1.8272	-3.9	108	0.00
93	P	1,4-Dichlorobenzene	1.7942	1.8220	-1.6	109	0.00
94	T	n-Butylbenzene	2.7865	2.9464	-5.7	108	0.00
95	P	1,2-Dichlorobenzene	1.6724	1.7128	-2.4	108	0.00
96	P	1,2-Dibromo-3-Chloropropane	0.2045	0.2148	-5.0	109	0.00
97	P	1,2,4-Trichlorobenzene	1.2340	1.2824	-3.9	109	0.00
98	T	Hexachlorobutadiene	0.5820	0.5920	-1.7	104	0.00
99	T	Naphthalene	2.9740	3.2525	-9.4	111	0.00
100	T	1,2,3-Trichlorobenzene	1.1697	1.2544	-7.2	111	0.00

(#) = Out of Range SPCC's out = 1 CCC's out = 0
9M974067.D 8260-SL.M Sat Apr 30 14:50:56 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\043016\9M974067.D Vial: 2
Acq On : 30 Apr 2016 13:43 Operator: ADC
Sample : WG567052-02 50ug/kg CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	131	0.00
2	P	Dichlorodifluoromethane	50.0000	48.2698	3.5	110	0.00
3	P	Chloromethane	50.0000	54.9109	-9.8	144	0.00
4	C	Vinyl Chloride	50.0000	46.2519	7.5	104	0.00
5	T	1,3-Butadiene	50.0000	36.9620	26.1#	103	-0.02
6	P	Bromomethane	50.0000	45.9124	8.2	113	0.00
7	P	Chloroethane	50.0000	46.8430	6.3	116	0.00
8	P	Trichlorofluoromethane	50.0000	48.2178	3.6	113	0.00
9	T	Diethyl ether	100.0000	89.4765	10.5	112	0.00
10	T	Isoprene	50.0000	42.3573	15.3	100	-0.02
11	T	Acrolein	50.0000	61.0024	-22.0	153	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	47.4646	5.1	112	-0.02
13	P	Acetone	50.0000	41.2488	17.5	107	0.00
14	C	1,1-Dichloroethene	50.0000	45.8957	8.2	108	-0.02
15	T	Tert-Butyl Alcohol	200.0000	180.9060	9.5	114	0.00
16	T	Dimethyl Sulfide	50.0000	44.3841	11.2	101	0.00
17	T	Iodomethane	50.0000	37.5324	24.9	89	0.00
18	P	Methyl acetate	50.0000	41.4674	17.1	103	0.00
19	P	Methylene Chloride	50.0000	44.7366	10.5	111	0.00
20	P	Carbon Disulfide	50.0000	41.1333	17.7	99	0.00
21	T	Acrylonitrile	50.0000	44.1222	11.8	108	0.00
22	P	Methyl Tert Butyl Ether	50.0000	47.4389	5.1	113	0.00
23	P	trans-1,2-Dichloroethene	50.0000	46.1005	7.8	107	0.00
24	T	n-Hexane	50.0000	38.0919	23.8	99	0.00
25	T	Diisopropyl ether	100.0000	87.0044	13.0	106	0.00
26	T	Vinyl Acetate	50.0000	41.3581	17.3	97	0.00
27	P	1,1-Dichloroethane	50.0000	45.8841	8.2	108	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	90.7746	9.2	112	0.00
29	P	2-Butanone	50.0000	42.4002	15.2	108	0.00
30	T	Propionitrile	100.0000	84.9506	15.0	105	0.00
31	T	2,2-Dichloropropane	50.0000	48.0043	4.0	112	0.00
32	P	cis-1,2-Dichloroethene	50.0000	46.1499	7.7	109	0.00
33	C	Chloroform	50.0000	46.3464	7.3	112	0.00
34	T	1-Bromopropane	50.0000	40.4497	19.1	98	0.00
35	T	Bromochloromethane	50.0000	47.0340	5.9	108	0.00
36	T	Tetrahydrofuran	100.0000	83.8427	16.2	108	0.00
37	S	Dibromofluoromethane	50.0000	52.6192	-5.2	130	0.00
38	P	1,1,1-Trichloroethane	50.0000	48.1107	3.8	112	0.00
39	P	Cyclohexane	50.0000	42.5765	14.8	101	0.00
40	T	1,1-Dichloropropene	50.0000	46.2008	7.6	109	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	92.6713	7.3	115	0.00
42	P	Carbon Tetrachloride	50.0000	48.2999	3.4	114	0.00
43	S	1,2-Dichloroethane-d4	50.0000	53.0305	-6.1	134	0.00
44		Heptane	-1.0000	0.0000	0.0	129	0.00
45	P	1,2-Dichloroethane	50.0000	46.5926	6.8	113	0.00
46	P	Benzene	50.0000	43.9786	12.0	109	0.00
47	P	Trichloroethene	50.0000	43.4076	13.2	107	0.00
48	P	Methylcyclohexane	50.0000	42.8562	14.3	102	0.00
49	C	1,2-Dichloropropane	50.0000	45.6748	8.7	108	0.00
50	T	1,4-Dioxane	200.0000	183.3842	8.3	108	0.00
51	P	Bromodichloromethane	50.0000	45.7935	8.4	108	0.00
52	T	Dibromomethane	50.0000	44.8077	10.4	105	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	50.4776	-1.0	120	0.00
54	P	4-Methyl-2-Pentanone	50.0000	45.3595	9.3	117	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\043016\9M974067.D Vial: 2
Acq On : 30 Apr 2016 13:43 Operator: ADC
Sample : WG567052-02 50ug/kg CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	45.7067	8.6	108	0.00
56	T	Dimethyl Disulfide	50.0000	46.8760	6.2	109	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	127	0.00
58	S	Toluene-d8	50.0000	55.1425	-10.3	129	0.00
59	C	Toluene	50.0000	47.1209	5.8	109	0.00
60	T	Ethyl Methacrylate	50.0000	46.3467	7.3	106	0.00
61	P	trans-1,3-Dichloropropene	50.0000	51.0065	-2.0	112	0.00
62	P	1,1,2-Trichloroethane	50.0000	49.6752	0.6	110	0.00
63	P	2-Hexanone	50.0000	44.4432	11.1	106	0.00
64	T	1,3-Dichloropropane	50.0000	48.4463	3.1	109	0.00
65	P	Tetrachloroethene	50.0000	47.7356	4.5	107	0.00
66	P	Dibromochloromethane	50.0000	49.7746	0.5	111	0.00
67	P	1,2-Dibromoethane	50.0000	47.4188	5.2	111	0.00
68	T	1-Chlorohexane	50.0000	46.7134	6.6	104	0.00
69	P	Chlorobenzene	50.0000	47.8946	4.2	110	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	51.2834	-2.6	115	0.00
71	C	Ethylbenzene	50.0000	48.4336	3.1	109	0.00
72	P	m-,p-Xylene	100.0000	95.6371	4.4	110	0.00
73	P	o-Xylene	50.0000	48.4386	3.1	109	0.00
74	P	Styrene	50.0000	48.1309	3.7	108	0.00
75	P	Bromoform	50.0000	53.2241	-6.4	115	0.00
76	P	Isopropylbenzene	50.0000	48.0902	3.8	109	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	126	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	52.1559	-4.3	113	0.00
79	S	p-Bromofluorobenzene	50.0000	60.3822	-20.8	128	0.00
80	T	1,2,3-Trichloropropane	50.0000	54.1449	-8.3	116	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	52.0446	-4.1	102	0.00
82	T	n-Propylbenzene	50.0000	53.1625	-6.3	108	0.00
83	T	Bromobenzene	50.0000	53.1921	-6.4	109	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	53.5959	-7.2	109	0.00
85	T	2-Chlorotoluene	50.0000	60.0279	-20.1	121	0.00
86	T	4-Chlorotoluene	50.0000	47.6453	4.7	98	0.00
87	T	a-Methylstyrene	50.0000	51.2783	-2.6	102	0.00
88	T	tert-Butylbenzene	50.0000	53.6445	-7.3	108	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	56.2737	-12.5	110	0.00
90	T	sec-Butylbenzene	50.0000	53.2128	-6.4	108	0.00
91	T	p-Isopropyltoluene	50.0000	53.8134	-7.6	109	0.00
92	P	1,3-Dichlorobenzene	50.0000	51.9701	-3.9	108	0.00
93	P	1,4-Dichlorobenzene	50.0000	50.7769	-1.6	109	0.00
94	T	n-Butylbenzene	50.0000	52.8693	-5.7	108	0.00
95	P	1,2-Dichlorobenzene	50.0000	51.2086	-2.4	108	0.00
96	P	1,2-Dibromo-3-Chloropropane	50.0000	52.3268	-4.7	109	0.00
97	P	1,2,4-Trichlorobenzene	50.0000	51.9613	-3.9	109	0.00
98	T	Hexachlorobutadiene	50.0000	50.8584	-1.7	104	0.00
99	T	Naphthalene	50.0000	54.6838	-9.4	111	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	53.6203	-7.2	111	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M974067.D 8260-SL.M Sat Apr 30 14:50:46 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\1\DATA\040616\9M973592.D          Vial: 1
Acq On    :  6 Apr 2016   9:33                        Operator: ADC
Sample    : WG563259-01 BFB 50ng 8260                 Inst    : hpms9
Misc      : 7,1 STD75485                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 04/06/16  HPMS9
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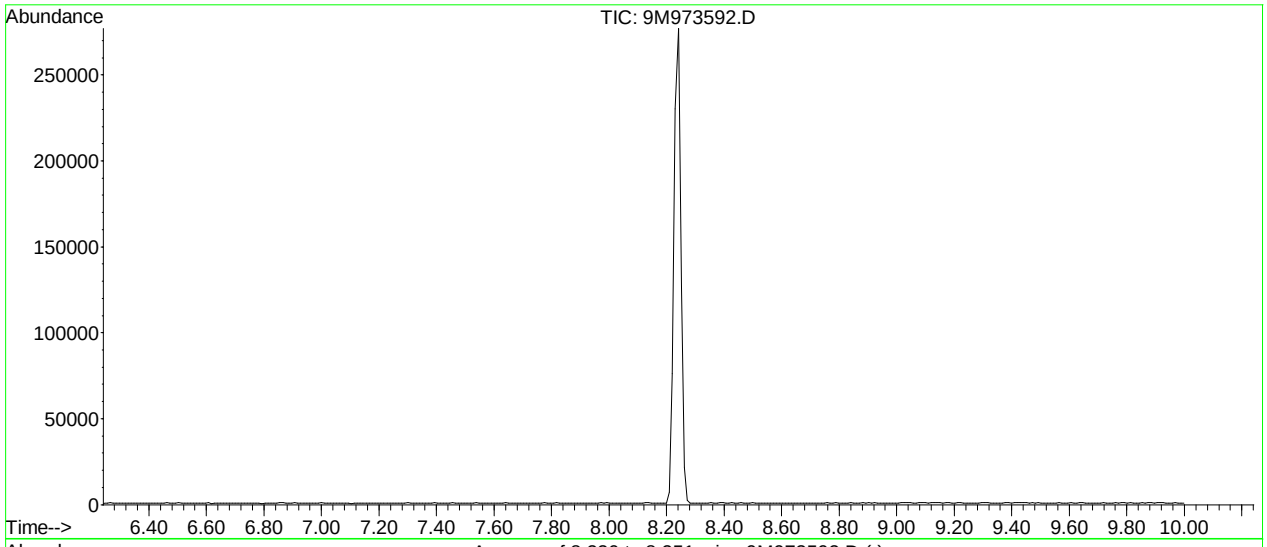

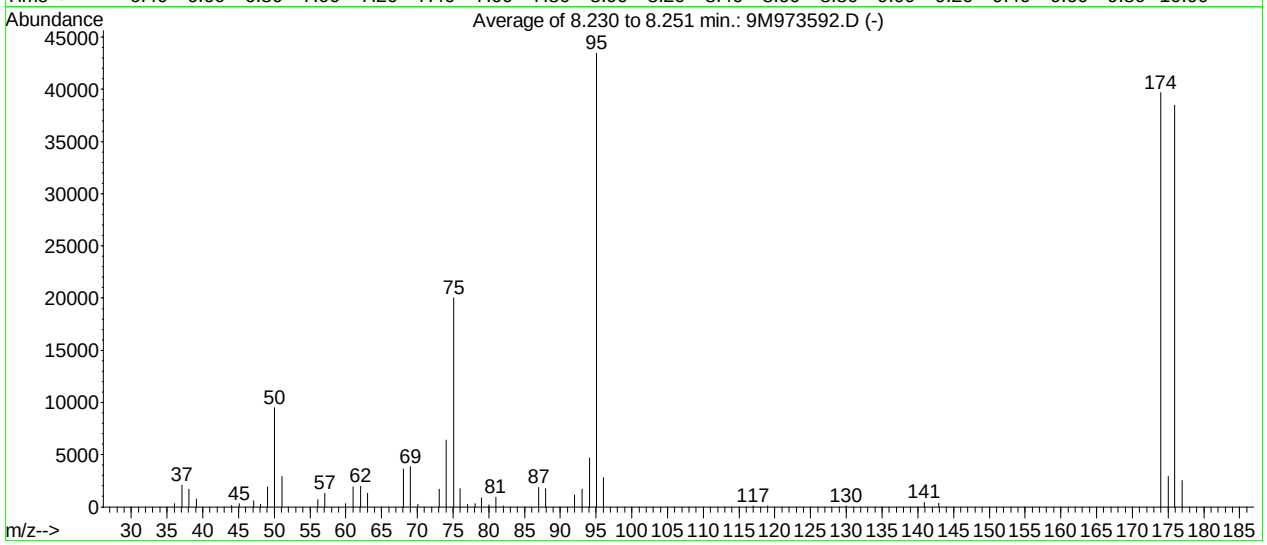

AutoFind: Scans 304, 305, 306; Background Corrected with Scan 299

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.9	9512	PASS
75	95	30	60	46.0	20002	PASS
95	95	100	100	100.0	43469	PASS
96	95	5	9	6.5	2809	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	91.3	39688	PASS
175	174	5	9	7.4	2925	PASS
176	174	95	101	96.9	38458	PASS
177	176	5	9	6.6	2534	PASS

9M973592.D 8260-SL.M Thu Apr 07 13:32:25 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\042816\9M974027.D          Vial: 1
Acq On    : 28 Apr 2016  12:17                        Operator: ADC
Sample    : WG566763-01 BFB 50ng 8260                 Inst    : hpms9
Misc      : 7,1 STD75485                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 04/06/16  HPMS9
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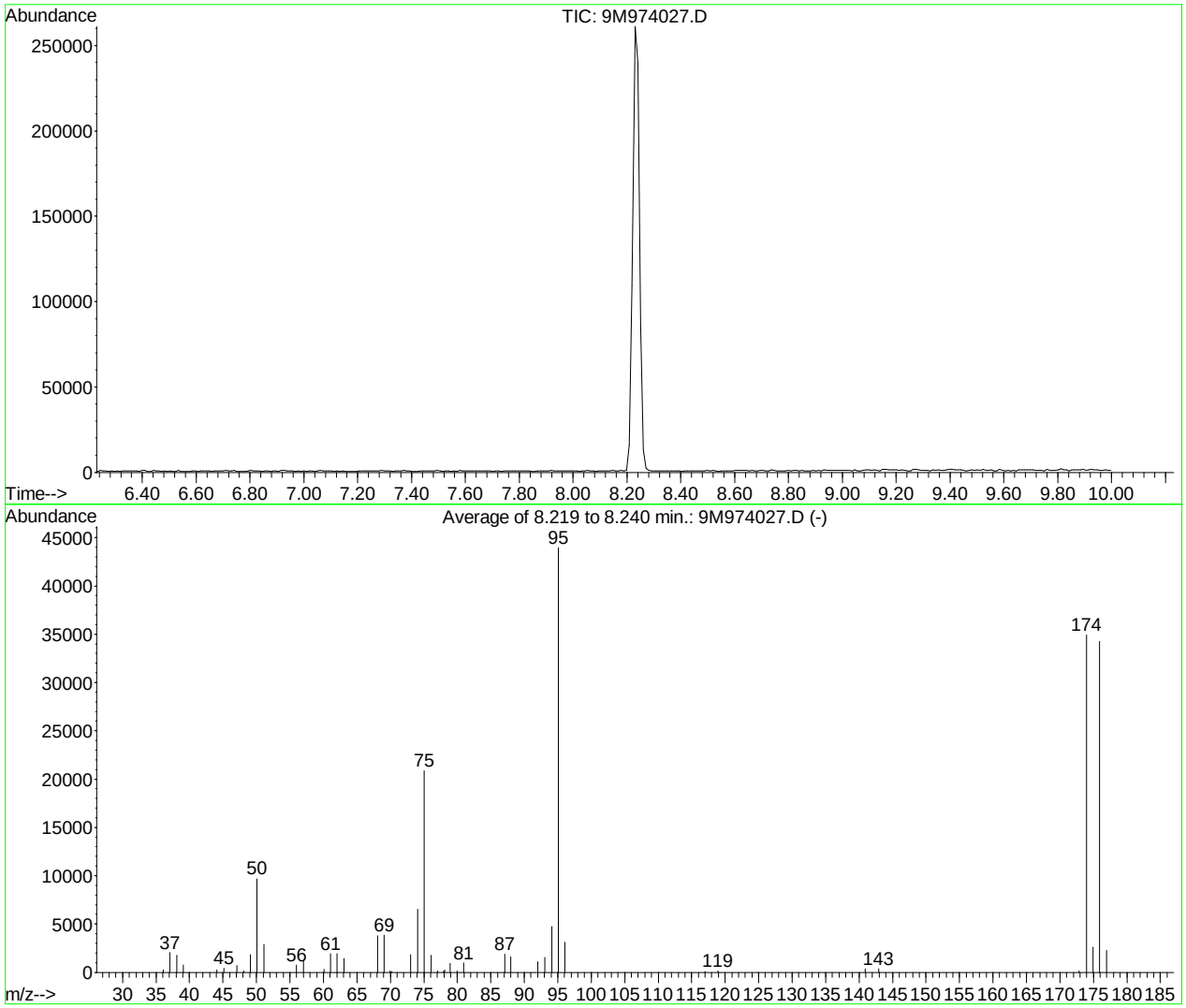

AutoFind: Scans 303, 304, 305; Background Corrected with Scan 299

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.0	9692	PASS
75	95	30	60	47.4	20847	PASS
95	95	100	100	100.0	43965	PASS
96	95	5	9	7.1	3114	PASS
173	174	0.00	2	0.4	135	PASS
174	95	50	100	79.4	34923	PASS
175	174	5	9	7.5	2607	PASS
176	174	95	101	98.0	34238	PASS
177	176	5	9	6.6	2264	PASS

9M974027.D 8260-SL.M Fri Apr 29 14:56:05 2016

BFB

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Data File : C:\MSDCHEM\1\DATA\043016\9M974065.D          Vial: 1
Acq On    : 30 Apr 2016  12:43                        Operator: ADC
Sample    : WG567052-01 BFB 50ng 8260                 Inst    : hpms9
Misc      : 7,1 STD75485                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 04/06/16  HPMS9
```

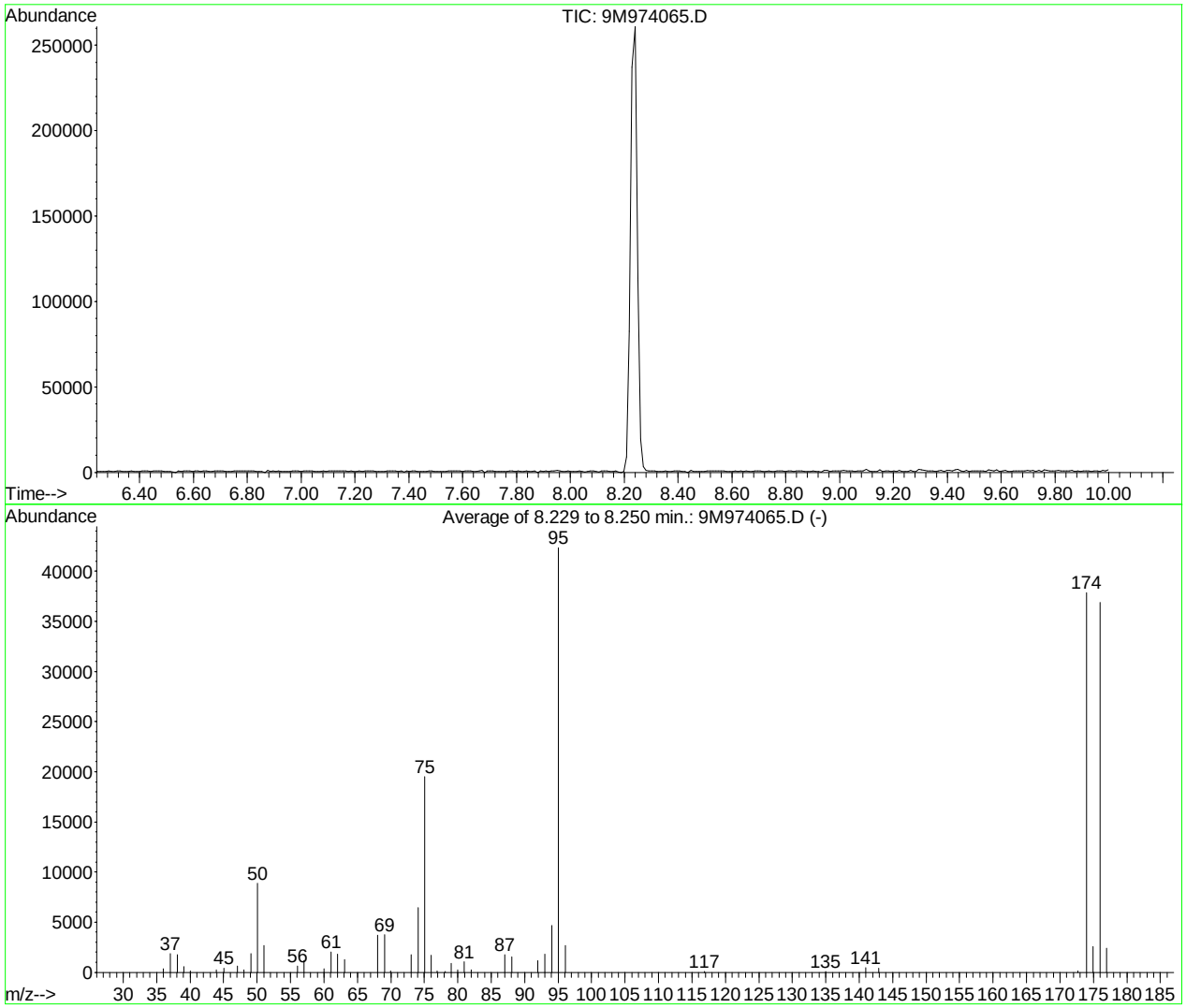

AutoFind: Scans 304, 305, 306; Background Corrected with Scan 299

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.9	8872	PASS
75	95	30	60	46.1	19506	PASS
95	95	100	100	100.0	42357	PASS
96	95	5	9	6.4	2690	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	89.4	37858	PASS
175	174	5	9	6.8	2593	PASS
176	174	95	101	97.4	36877	PASS
177	176	5	9	6.5	2391	PASS

9M974065.D 8260-SL.M Sat Apr 30 14:51:10 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974031.D Vial: 3
Acq On : 28 Apr 2016 14:14 Operator: ADC
Sample : WG566765-01 BLK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:39:49 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	626030	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	452113	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.74	152	207761	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	160845	50.8728 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 101.74%		
43) 1,2-Dichloroethane-d4	10.44	65	173175	52.3218 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.64%		
58) Toluene-d8	12.82	98	593927	55.1200 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 110.24%		
79) p-Bromofluorobenzene	16.22	95	214930	59.7264 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 119.46%		

Target Compounds

					Qvalue
13) Acetone	6.39	43	3395	Below Cal	94
36) Tetrahydrofuran	9.77	42	3540	2.4760 ug/kg	87
56) Dimethyl Disulfide	12.82	94	16037	2.8055 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.07	105	4709	Below Cal	78
99) Naphthalene	20.79	128	7181	0.5811 ug/kg	98

(#) = qualifier out of range (m) = manual integration
9M974031.D 8260-SL.M Fri Apr 29 12:39:50 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042816\9M974031.D Vial: 3
Acq On : 28 Apr 2016 14:14 Operator: ADC
Sample : WG566765-01 BLK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 29 12:39 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

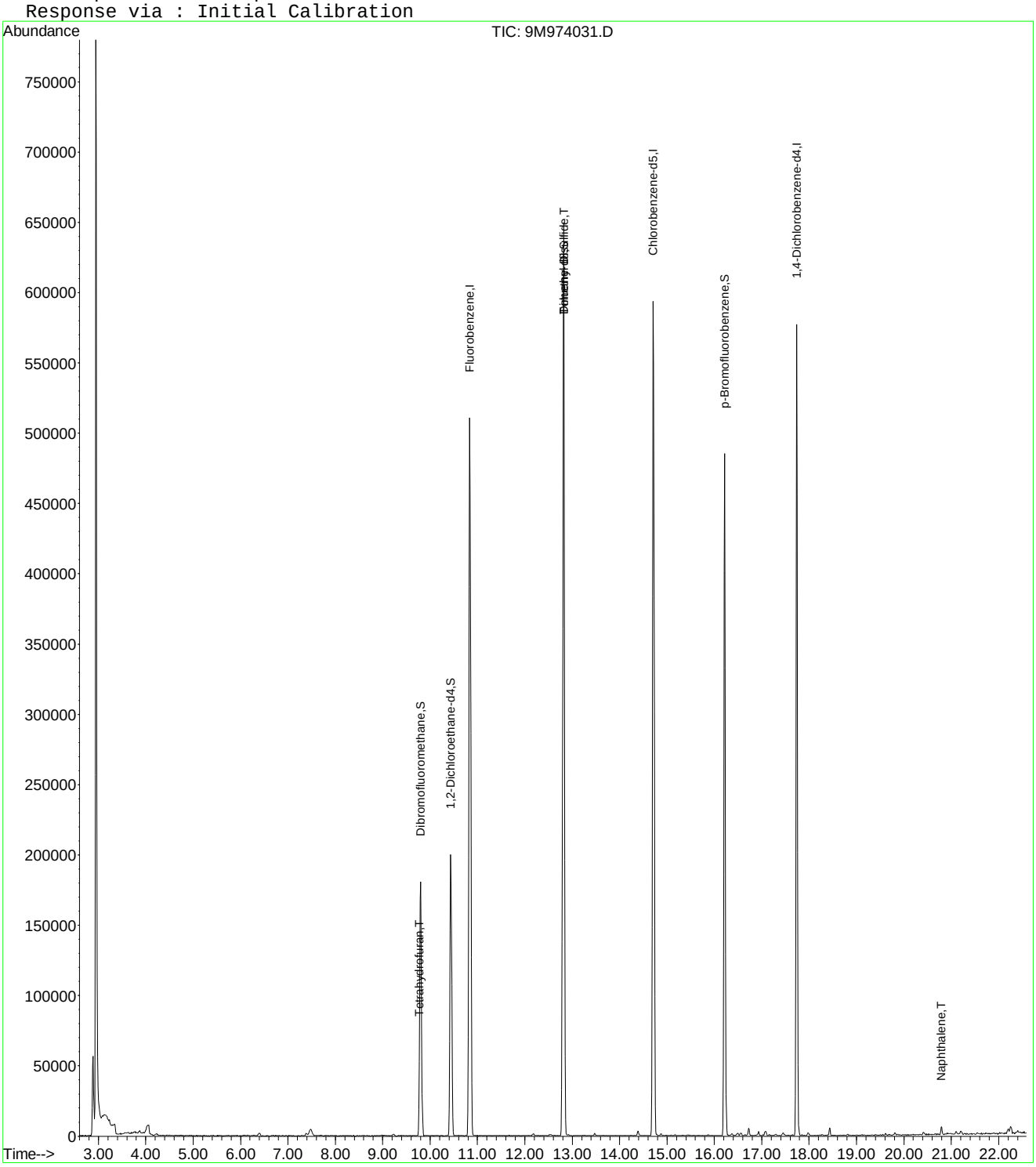

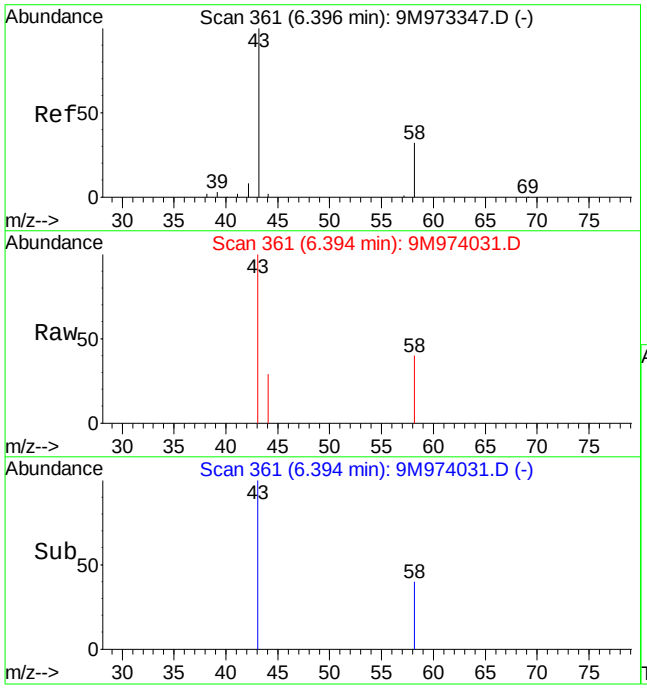

#13
Acetone
Concen: Below Cal
RT: 6.39 min Scan# 361
Delta R.T. 0.01 min
Lab File: 9M974031.D
Acq: 28 Apr 2016 14:14

Tgt Ion: 43 Resp: 3395

Ion	Ratio	Lower	Upper
43	100		
58	30.5	20.2	47.2

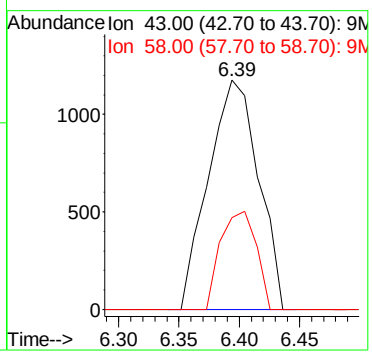

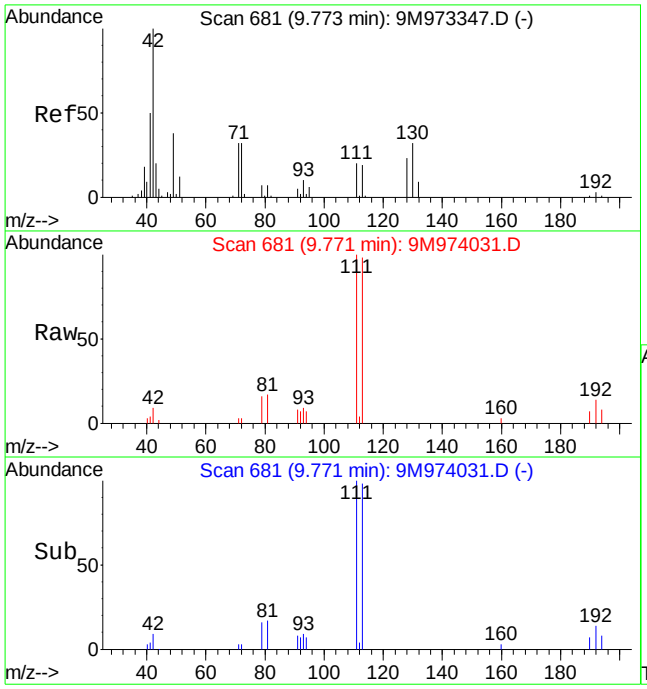

#36
Tetrahydrofuran
Concen: 2.48 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. -0.00 min
Lab File: 9M974031.D
Acq: 28 Apr 2016 14:14

Tgt Ion: 42 Resp: 3540

Ion	Ratio	Lower	Upper
42	100		
72	22.7	19.8	46.2
71	26.6	18.3	42.7

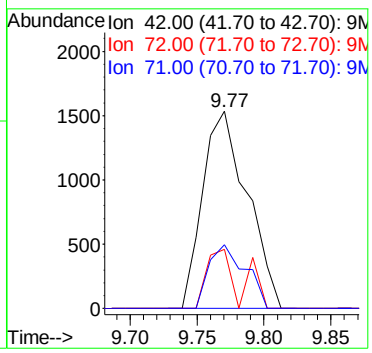

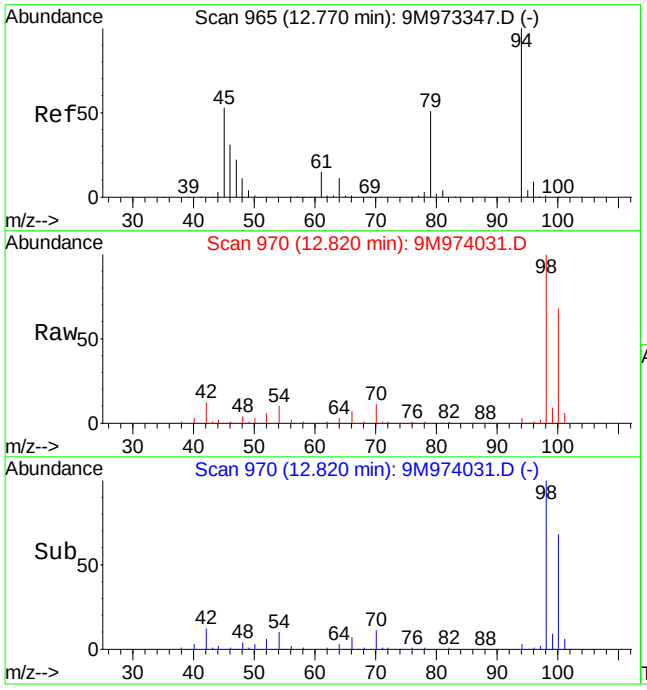

#56
Dimethyl Disulfide
Concen: 2.81 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M974031.D
Acq: 28 Apr 2016 14:14

Tgt Ion: 94 Resp: 16037

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

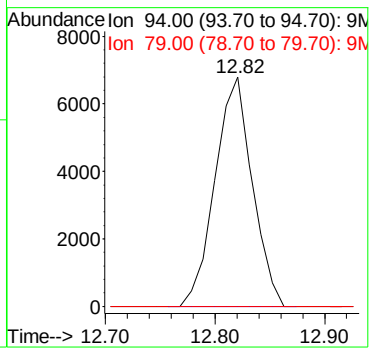

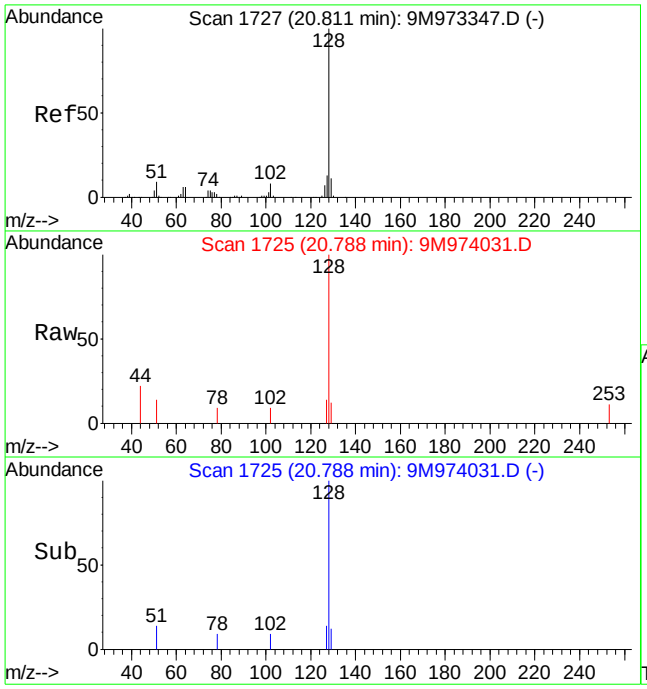

#99
Naphthalene
Concen: 0.58 ug/kg
RT: 20.79 min Scan# 1725
Delta R.T. -0.01 min
Lab File: 9M974031.D
Acq: 28 Apr 2016 14:14

Tgt Ion:128 Resp: 7181

Ion	Ratio	Lower	Upper
128	100		
127	11.9	7.6	17.8

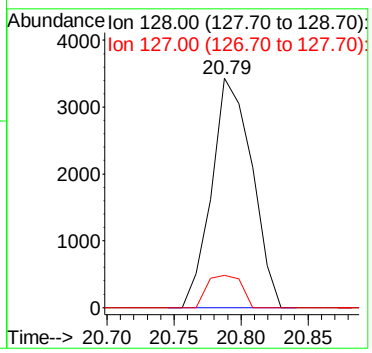

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\043016\9M974069.D Vial: 3
Acq On : 30 Apr 2016 14:45 Operator: ADC
Sample : WG567003-01 BLK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 04 12:27:40 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	641587	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	455753	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.74	152	207986	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	168075	51.8706 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 103.74%		
43) 1,2-Dichloroethane-d4	10.44	65	182497	53.8013 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 107.60%		
58) Toluene-d8	12.82	98	608757	56.0451 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 112.10%		
79) p-Bromofluorobenzene	16.22	95	223820	62.1296 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 124.26%#		

Target Compounds

					Qvalue
13) Acetone	6.39	43	3338	Below Cal	98
36) Tetrahydrofuran	9.77	42	3716	2.5360 ug/kg	81
56) Dimethyl Disulfide	12.82	94	15883	2.7112 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.08	105	4084	Below Cal	90

(#) = qualifier out of range (m) = manual integration
9M974069.D 8260-SL.M Wed May 04 12:27:41 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\043016\9M974069.D Vial: 3
Acq On : 30 Apr 2016 14:45 Operator: ADC
Sample : WG567003-01 BLK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 4 12:27 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

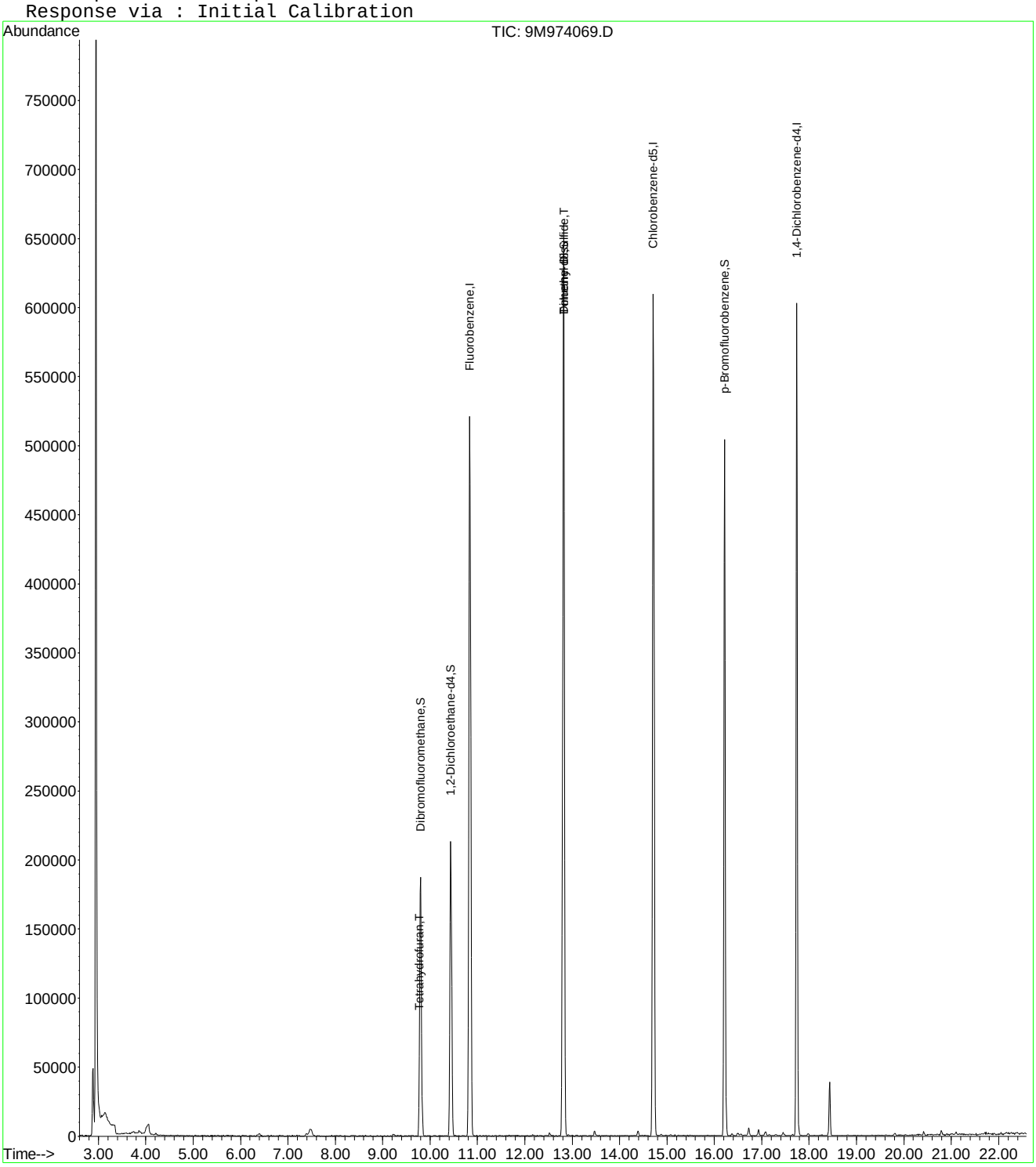

9M974069.D 8260-SL.M Wed May 04 12:27:41 2016 Page 2

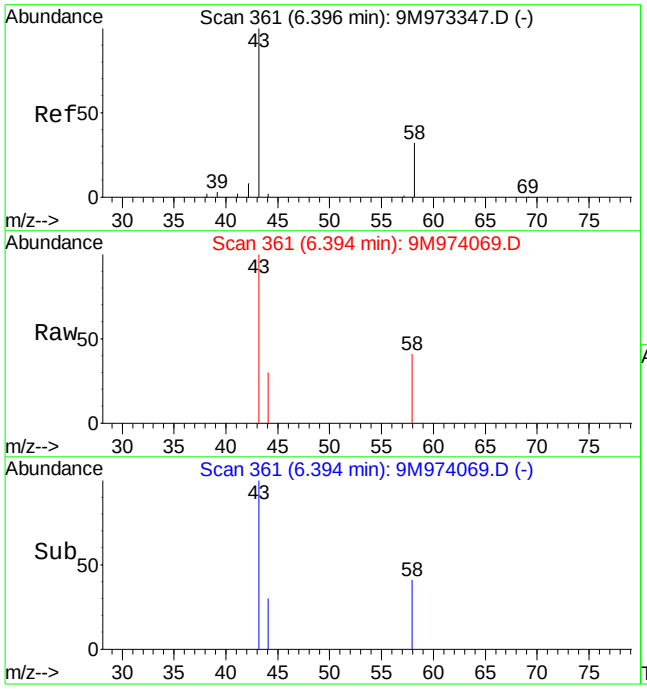

#13
Acetone
Concen: Below Cal
RT: 6.39 min Scan# 361
Delta R.T. 0.01 min
Lab File: 9M974069.D
Acq: 30 Apr 2016 14:45

Tgt Ion: 43 Resp: 3338

Ion	Ratio	Lower	Upper
43	100		
58	32.4	20.2	47.2

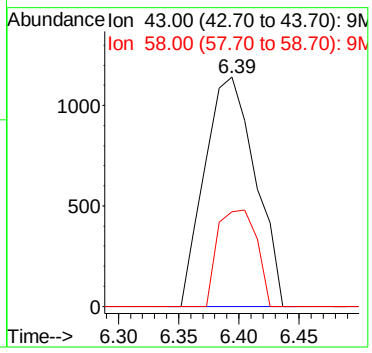

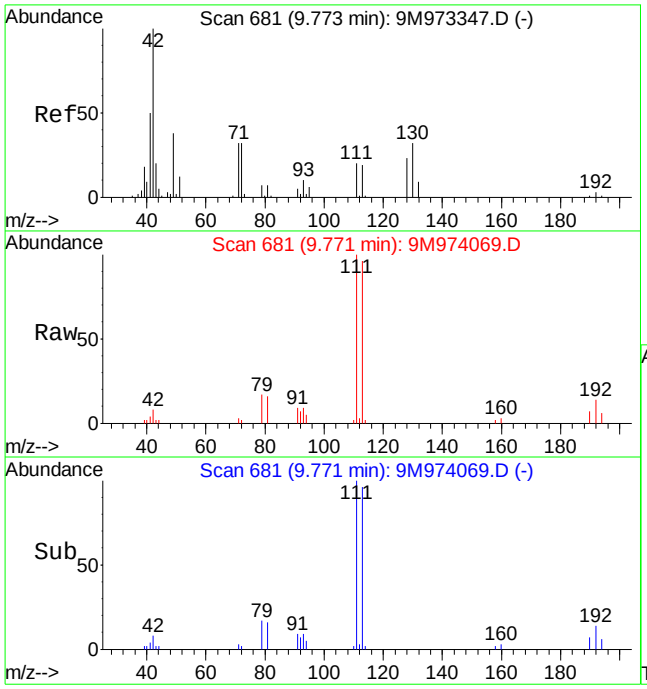

#36
Tetrahydrofuran
Concen: 2.54 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. 0.00 min
Lab File: 9M974069.D
Acq: 30 Apr 2016 14:45

Tgt Ion: 42 Resp: 3716

Ion	Ratio	Lower	Upper
42	100		
72	22.4	19.8	46.2
71	19.8	18.3	42.7

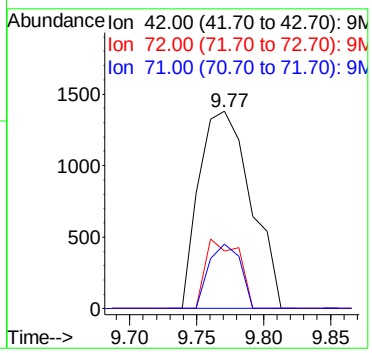

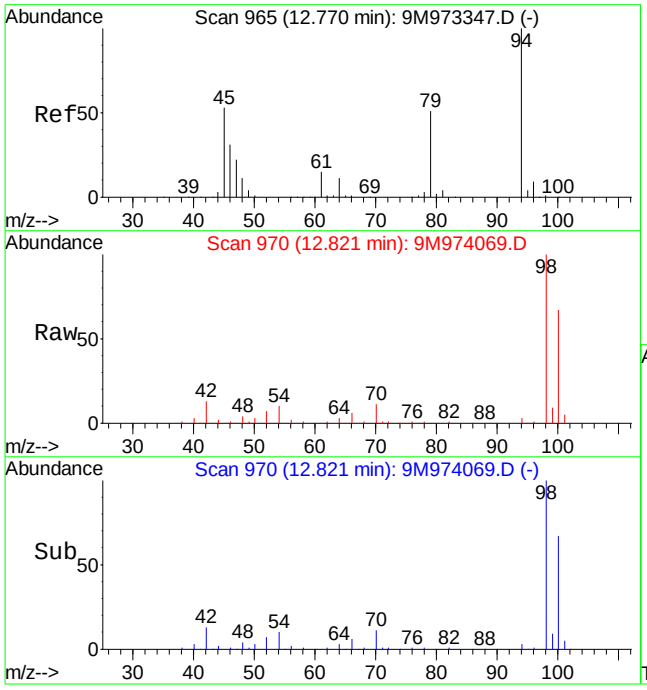

#56
Dimethyl Disulfide
Concen: 2.71 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M974069.D
Acq: 30 Apr 2016 14:45

Tgt Ion: 94 Resp: 15883

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

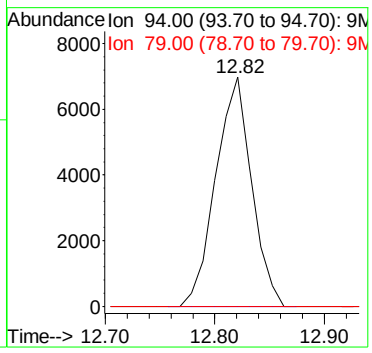

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\042816\9M974032.D Vial: 4
Acq On : 28 Apr 2016 14:45 Operator: ADC
Sample : WG566765-02 20ug/kg LCS Inst : hpms9
Misc : 7,1 STD75744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:08:10 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	586130	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	427662	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	195987	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	158017	53.3806 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 106.76%		
43) 1,2-Dichloroethane-d4	10.44	65	168734	54.4505 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 108.90%		
58) Toluene-d8	12.81	98	564072	55.3423 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 110.68%		
79) p-Bromofluorobenzene	16.22	95	207096	61.0068 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 122.02%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	86270	19.1879 ug/kg	97
3) Chloromethane	3.75	50	95893	23.2008 ug/kg	99
4) Vinyl Chloride	3.97	62	56612	20.3766 ug/kg	94
5) 1,3-Butadiene	4.01	54	29748	14.9153 ug/kg	98
6) Bromomethane	4.87	94	48797	19.2558 ug/kg	99
7) Chloroethane	5.02	64	49948	20.2350 ug/kg	98
8) Trichlorofluoromethane	5.51	101	100612	19.2660 ug/kg	99
9) Diethyl ether	6.05	59	306501	99.8020 ug/kg	96
10) Isoprene	6.08	67	90623	22.0465 ug/kg	99
11) Acrolein	6.28	56	46844	153.4043 ug/kg	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	61550	19.3026 ug/kg	99
13) Acetone	6.40	43	25786	17.4811 ug/kg	97
14) 1,1-Dichloroethene	6.61	61	96924	18.1343 ug/kg	100
15) Tert-Butyl Alcohol	6.72	59	113320	220.4245 ug/kg	98
16) Dimethyl Sulfide	6.87	62	74067	28.2852 ug/kg	95
17) Iodomethane	7.12	142	32694	15.3813 ug/kg	96
18) Methyl acetate	7.13	43	58610	17.2615 ug/kg	95
19) Methylene Chloride	7.39	84	62533	18.7300 ug/kg	94
20) Carbon Disulfide	7.43	76	172786	17.0493 ug/kg	100
21) Acrylonitrile	7.57	53	30388	18.8297 ug/kg	98
22) Methyl Tert Butyl Ether	7.60	73	177984	19.8119 ug/kg	98
23) trans-1,2-Dichloroethene	7.84	61	100346	19.5167 ug/kg	98
24) n-Hexane	7.90	57	103365	15.4813 ug/kg	99
25) Diisopropyl ether	8.25	45	1267326	93.1517 ug/kg	98
26) Vinyl Acetate	8.42	43	132317	18.6789 ug/kg	98
27) 1,1-Dichloroethane	8.45	63	115682	18.5367 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.82	59	1103492	92.2405 ug/kg	99
29) 2-Butanone	9.01	43	36239	19.2310 ug/kg	99
30) Propionitrile	9.13	54	57376	93.8087 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	86986	19.0884 ug/kg	100
32) cis-1,2-Dichloroethene	9.30	96	68611	20.0801 ug/kg	96
33) Chloroform	9.51	83	100146	18.9193 ug/kg	98
34) 1-Bromopropane	9.65	122	14088	23.5014 ug/kg	96
35) Bromochloromethane	9.74	130	41491	19.4634 ug/kg	93
36) Tetrahydrofuran	9.76	42	121239	90.5695 ug/kg	95
38) 1,1,1-Trichloroethane	10.04	97	89838	19.8298 ug/kg	99
39) Cyclohexane	10.07	56	131675	18.3851 ug/kg	99
40) 1,1-Dichloropropene	10.24	75	78086	18.7239 ug/kg	98
41) Tert-Amyl-Methyl ether	10.33	73	914318	103.3181 ug/kg	98
42) Carbon Tetrachloride	10.38	117	85403	20.1948 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\042816\9M974032.D Vial: 4
Acq On : 28 Apr 2016 14:45 Operator: ADC
Sample : WG566765-02 20ug/kg LCS Inst : hpms9
Misc : 7,1 STD75744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:08:10 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.55	62	86941	19.0723	ug/kg	96
46)	Benzene	10.60	78	245352	18.9561	ug/kg	99
47)	Trichloroethene	11.34	130	67801	18.6237	ug/kg	97
48)	Methylcyclohexane	11.43	83	102312	18.3913	ug/kg	98
49)	1,2-Dichloropropane	11.56	63	69163	19.6492	ug/kg	98
50)	1,4-Dioxane	11.85	88	10099	221.2031	ug/kg	95
51)	Bromodichloromethane	11.86	83	75122	18.7290	ug/kg	98
52)	Dibromomethane	11.96	174	38296	18.2231	ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	38176	20.3959	ug/kg	98
54)	4-Methyl-2-Pentanone	12.18	58	29512	18.2101	ug/kg	98
55)	cis-1,3-Dichloropropene	12.50	75	101343	20.2643	ug/kg	99
56)	Dimethyl Disulfide	12.76	94	119069	22.2477	ug/kg	94
59)	Toluene	12.92	91	257287	19.7706	ug/kg	99
60)	Ethyl Methacrylate	13.00	69	76419	19.2882	ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	84889	20.0372	ug/kg	99
62)	1,1,2-Trichloroethane	13.31	97	53627	20.9323	ug/kg	99
63)	2-Hexanone	13.24	43	49684	17.7597	ug/kg	95
64)	1,3-Dichloropropane	13.61	76	95331	21.6408	ug/kg	95
65)	Tetrachloroethene	13.74	164	52619	19.0650	ug/kg	98
66)	Dibromochloromethane	14.00	129	60477	19.0960	ug/kg	99
67)	1,2-Dibromoethane	14.26	107	55077	19.5159	ug/kg	100
68)	1-Chlorohexane	14.34	91	81508	19.0246	ug/kg	99
69)	Chlorobenzene	14.76	112	185188	20.5064	ug/kg	98
70)	1,1,1,2-Tetrachloroethane	14.80	131	65309	21.2866	ug/kg	96
71)	Ethylbenzene	14.79	106	98782	20.3332	ug/kg	99
72)	m-,p-Xylene	14.88	106	242510	40.4869	ug/kg	99
73)	o-Xylene	15.44	106	119916	21.0097	ug/kg	100
74)	Styrene	15.48	104	191216	19.5632	ug/kg	99
75)	Bromoform	15.98	173	39779	20.2318	ug/kg	99
76)	Isopropylbenzene	15.86	105	303886	20.4682	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.08	83	70998	21.7482	ug/kg	99
80)	1,2,3-Trichloropropane	16.27	110	23385	24.0425	ug/kg#	41
81)	trans-1,4-Dichloro-2-Buten	16.33	53	20398	17.2318	ug/kg#	1
82)	n-Propylbenzene	16.37	91	336252	22.9484	ug/kg	99
83)	Bromobenzene	16.51	156	77262	22.1675	ug/kg	76
84)	1,3,5-Trimethylbenzene	16.56	105	254006	22.7673	ug/kg	100
85)	2-Chlorotoluene	16.65	91	220911	25.2442	ug/kg	100
86)	4-Chlorotoluene	16.70	91	190519	20.8146	ug/kg	99
87)	a-Methylstyrene	16.97	118	125413	22.5336	ug/kg	97
88)	tert-Butylbenzene	17.02	134	58391	23.6228	ug/kg	90
89)	1,2,4-Trimethylbenzene	17.07	105	255048	23.2044	ug/kg	100
90)	sec-Butylbenzene	17.30	105	329119	22.9479	ug/kg	100
91)	p-Isopropyltoluene	17.45	119	262630	22.1211	ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	150970	21.9090	ug/kg	99
93)	1,4-Dichlorobenzene	17.78	146	153103	21.7703	ug/kg	96
94)	n-Butylbenzene	17.98	91	226625	20.7485	ug/kg	100
95)	1,2-Dichlorobenzene	18.28	146	143098	21.8295	ug/kg	98
96)	1,2-Dibromo-3-Chloropropan	19.28	157	17687	25.5322	ug/kg	95
97)	1,2,4-Trichlorobenzene	20.42	180	100275	20.7311	ug/kg	99
98)	Hexachlorobutadiene	20.57	225	48690	21.3427	ug/kg	99
99)	Naphthalene	20.79	128	251767	21.5976	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	99448	21.6895	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\042816\9M974032.D Vial: 4
Acq On : 28 Apr 2016 14:45 Operator: ADC
Sample : WG566765-02 20ug/kg LCS Inst : hpms9
Misc : 7,1 STD75744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:08 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

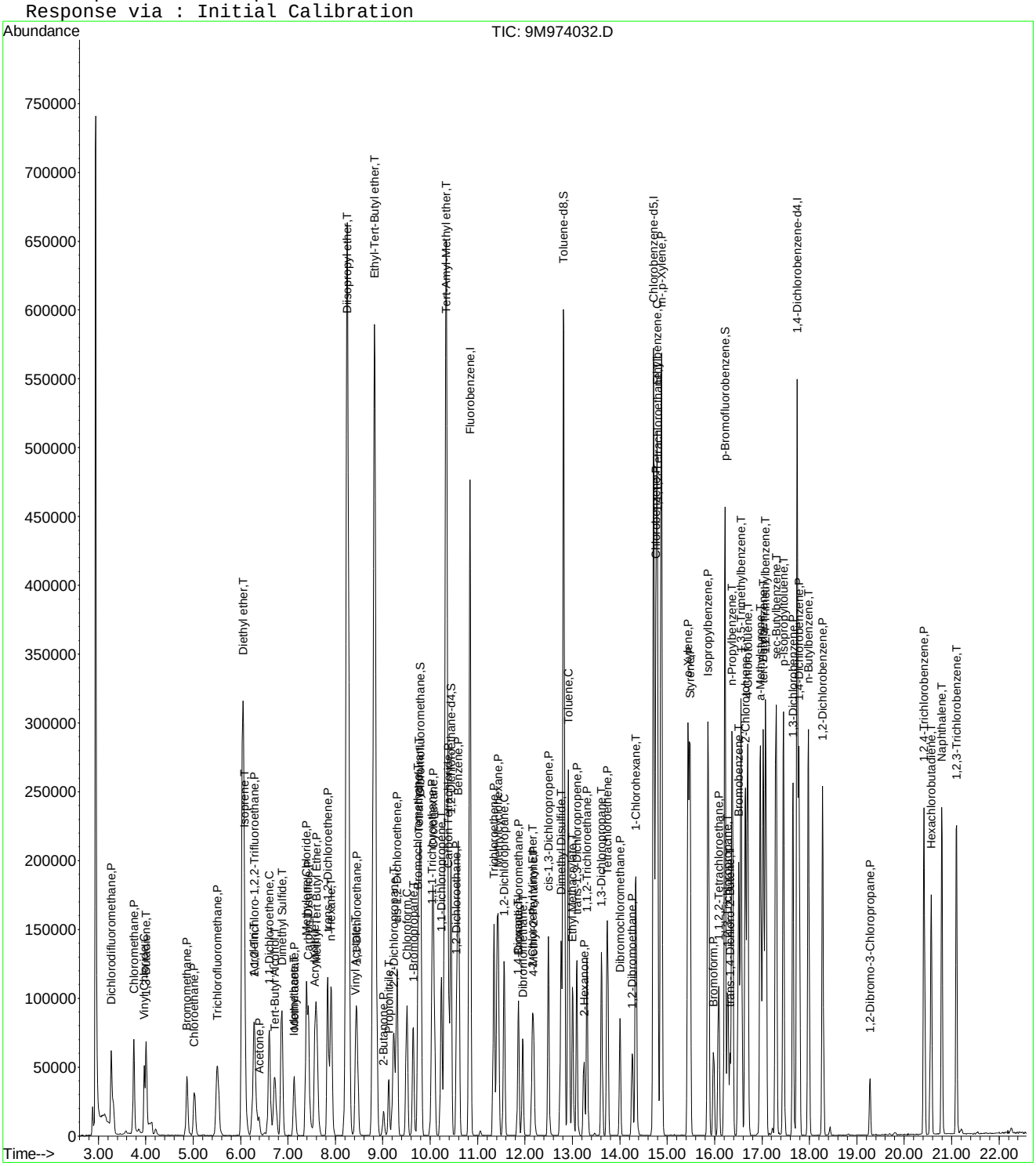

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\043016\9M974074.D Vial: 8
Acq On : 30 Apr 2016 17:17 Operator: ADC
Sample : WG567003-02 20ug/kg LCS 8260 Inst : hpms9
Misc : 7,1 STD75739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 30 17:40:36 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	593466	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	430069	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.74	152	198992	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	161844	53.9976 ug/kg	-0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 108.00%		
43) 1,2-Dichloroethane-d4	10.44	65	175277	55.8627 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 111.72%		
58) Toluene-d8	12.82	98	572092	55.8150 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 111.62%		
79) p-Bromofluorobenzene	16.22	95	208945	60.6220 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 121.24%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	87670	19.2583 ug/kg	98
3) Chloromethane	3.74	50	90126	21.5360 ug/kg	99
4) Vinyl Chloride	3.98	62	60563	21.5737 ug/kg	94
5) 1,3-Butadiene	4.02	54	455018	225.3207 ug/kg	93
6) Bromomethane	4.87	94	44363	17.2897 ug/kg	100
7) Chloroethane	5.03	64	44276	17.7155 ug/kg	98
8) Trichlorofluoromethane	5.52	101	90063	17.0328 ug/kg	98
9) Diethyl ether	6.05	59	281035	90.3786 ug/kg	97
10) Isoprene	6.08	67	83474	20.0563 ug/kg	99
11) Acrolein	6.29	56	39362	127.3090 ug/kg	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	55904	17.3153 ug/kg	98
13) Acetone	6.39	43	23909	15.5170 ug/kg	97
14) 1,1-Dichloroethene	6.60	61	86022	15.8956 ug/kg	98
15) Tert-Butyl Alcohol	6.73	59	112833	216.7642 ug/kg	99
16) Dimethyl Sulfide	6.87	62	69873	26.3538 ug/kg	96
17) Iodomethane	7.12	142	23701	11.8424 ug/kg	97
18) Methyl acetate	7.13	43	52793	15.3561 ug/kg	98
19) Methylene Chloride	7.39	84	57118	16.8966 ug/kg	94
20) Carbon Disulfide	7.44	76	157288	15.3282 ug/kg	100
21) Acrylonitrile	7.58	53	29313	17.9391 ug/kg	99
22) Methyl Tert Butyl Ether	7.61	73	170586	18.7537 ug/kg	98
23) trans-1,2-Dichloroethene	7.84	61	89316	17.1567 ug/kg	99
24) n-Hexane	7.91	57	97245	14.3847 ug/kg	99
25) Diisopropyl ether	8.25	45	1198823	87.0274 ug/kg	99
26) Vinyl Acetate	8.43	43	150868	20.9242 ug/kg	97
27) 1,1-Dichloroethane	8.46	63	103852	16.4354 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.82	59	1039280	85.7992 ug/kg	99
29) 2-Butanone	9.02	43	34599	18.1337 ug/kg	100
30) Propionitrile	9.13	54	55286	89.2742 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	77689	16.8375 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	60152	17.3868 ug/kg	100
33) Chloroform	9.51	83	90595	16.9034 ug/kg	100
34) 1-Bromopropane	9.64	122	13735	22.6613 ug/kg	95
35) Bromochloromethane	9.74	130	36860	17.0772 ug/kg	97
36) Tetrahydrofuran	9.77	42	120018	88.5491 ug/kg	97
38) 1,1,1-Trichloroethane	10.03	97	79467	17.3238 ug/kg	99
39) Cyclohexane	10.07	56	118734	16.3733 ug/kg	98
40) 1,1-Dichloropropene	10.23	75	68468	16.2147 ug/kg	99
41) Tert-Amyl-Methyl ether	10.33	73	868904	96.9726 ug/kg	98
42) Carbon Tetrachloride	10.38	117	72200	16.8617 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\043016\9M974074.D Vial: 8
Acq On : 30 Apr 2016 17:17 Operator: ADC
Sample : WG567003-02 20ug/kg LCS 8260 Inst : hpms9
Misc : 7,1 STD75739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 30 17:40:36 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.55	62	83267	18.0406 ug/kg	97
46)	Benzene	10.59	78	216489	16.5193 ug/kg	99
47)	Trichloroethene	11.34	130	60161	16.3208 ug/kg	98
48)	Methylcyclohexane	11.43	83	94588	16.7927 ug/kg	96
49)	1,2-Dichloropropane	11.55	63	61893	17.3664 ug/kg	97
50)	1,4-Dioxane	11.85	88	12093	261.6044 ug/kg	94
51)	Bromodichloromethane	11.86	83	67709	16.6722 ug/kg	99
52)	Dibromomethane	11.95	174	34730	16.3219 ug/kg	98
53)	2-Chloroethyl Vinyl Ether	12.16	63	38158	20.1343 ug/kg	97
54)	4-Methyl-2-Pentanone	12.19	58	28793	17.5469 ug/kg	98
55)	cis-1,3-Dichloropropene	12.49	75	89927	17.7593 ug/kg	98
56)	Dimethyl Disulfide	12.76	94	110843	20.4547 ug/kg	95
59)	Toluene	12.92	91	227159	17.3578 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	72267	18.1382 ug/kg	99
61)	trans-1,3-Dichloropropene	13.09	75	77105	18.0980 ug/kg	99
62)	1,1,2-Trichloroethane	13.31	97	47219	18.3279 ug/kg	96
63)	2-Hexanone	13.24	43	47076	16.7333 ug/kg	94
64)	1,3-Dichloropropane	13.61	76	86752	19.5831 ug/kg	98
65)	Tetrachloroethene	13.74	164	45403	16.3584 ug/kg	97
66)	Dibromochloromethane	14.00	129	57796	18.1474 ug/kg	97
67)	1,2-Dibromoethane	14.27	107	51651	18.1995 ug/kg	98
68)	1-Chlorohexane	14.34	91	75889	17.6139 ug/kg	99
69)	Chlorobenzene	14.76	112	161956	17.8335 ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.79	131	57882	18.7602 ug/kg	96
71)	Ethylbenzene	14.78	106	85435	17.4874 ug/kg	100
72)	m-,p-Xylene	14.88	106	204501	33.9502 ug/kg	98
73)	o-Xylene	15.44	106	103504	18.0328 ug/kg	100
74)	Styrene	15.48	104	162253	16.5071 ug/kg	97
75)	Bromoform	15.98	173	35238	17.8985 ug/kg	99
76)	Isopropylbenzene	15.86	105	255925	17.1413 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.08	83	61332	18.5558 ug/kg	99
80)	1,2,3-Trichloropropane	16.27	110	20699	20.9596 ug/kg#	34
81)	trans-1,4-Dichloro-2-Buten	16.32	53	18412	15.3192 ug/kg#	1
82)	n-Propylbenzene	16.37	91	286285	19.2432 ug/kg	99
83)	Bromobenzene	16.50	156	67688	19.1273 ug/kg	94
84)	1,3,5-Trimethylbenzene	16.56	105	215400	19.0154 ug/kg	100
85)	2-Chlorotoluene	16.65	91	187057	21.0528 ug/kg	99
86)	4-Chlorotoluene	16.69	91	165429	17.8005 ug/kg	99
87)	a-Methylstyrene	16.97	118	114974	20.3460 ug/kg	100
88)	tert-Butylbenzene	17.02	134	49208	19.6071 ug/kg	88
89)	1,2,4-Trimethylbenzene	17.07	105	212589	18.9482 ug/kg	99
90)	sec-Butylbenzene	17.29	105	272283	18.6983 ug/kg	100
91)	p-Isopropyltoluene	17.45	119	217200	18.0183 ug/kg	99
92)	1,3-Dichlorobenzene	17.65	146	125817	17.9830 ug/kg	99
93)	1,4-Dichlorobenzene	17.78	146	131637	18.4353 ug/kg	97
94)	n-Butylbenzene	17.98	91	189547	17.0918 ug/kg	99
95)	1,2-Dichlorobenzene	18.28	146	121120	18.1978 ug/kg	97
96)	1,2-Dibromo-3-Chloropropan	19.28	157	15478	22.8508 ug/kg	96
97)	1,2,4-Trichlorobenzene	20.42	180	77737	15.8288 ug/kg	99
98)	Hexachlorobutadiene	20.57	225	39408	17.0132 ug/kg	98
99)	Naphthalene	20.80	128	219817	18.5721 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.10	180	80649	17.3239 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M974074.D 8260-SL.M Sat Apr 30 17:40:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\043016\9M974074.D Vial: 8
Acq On : 30 Apr 2016 17:17 Operator: ADC
Sample : WG567003-02 20ug/kg LCS 8260 Inst : hpms9
Misc : 7,1 STD75739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 30 17:40 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

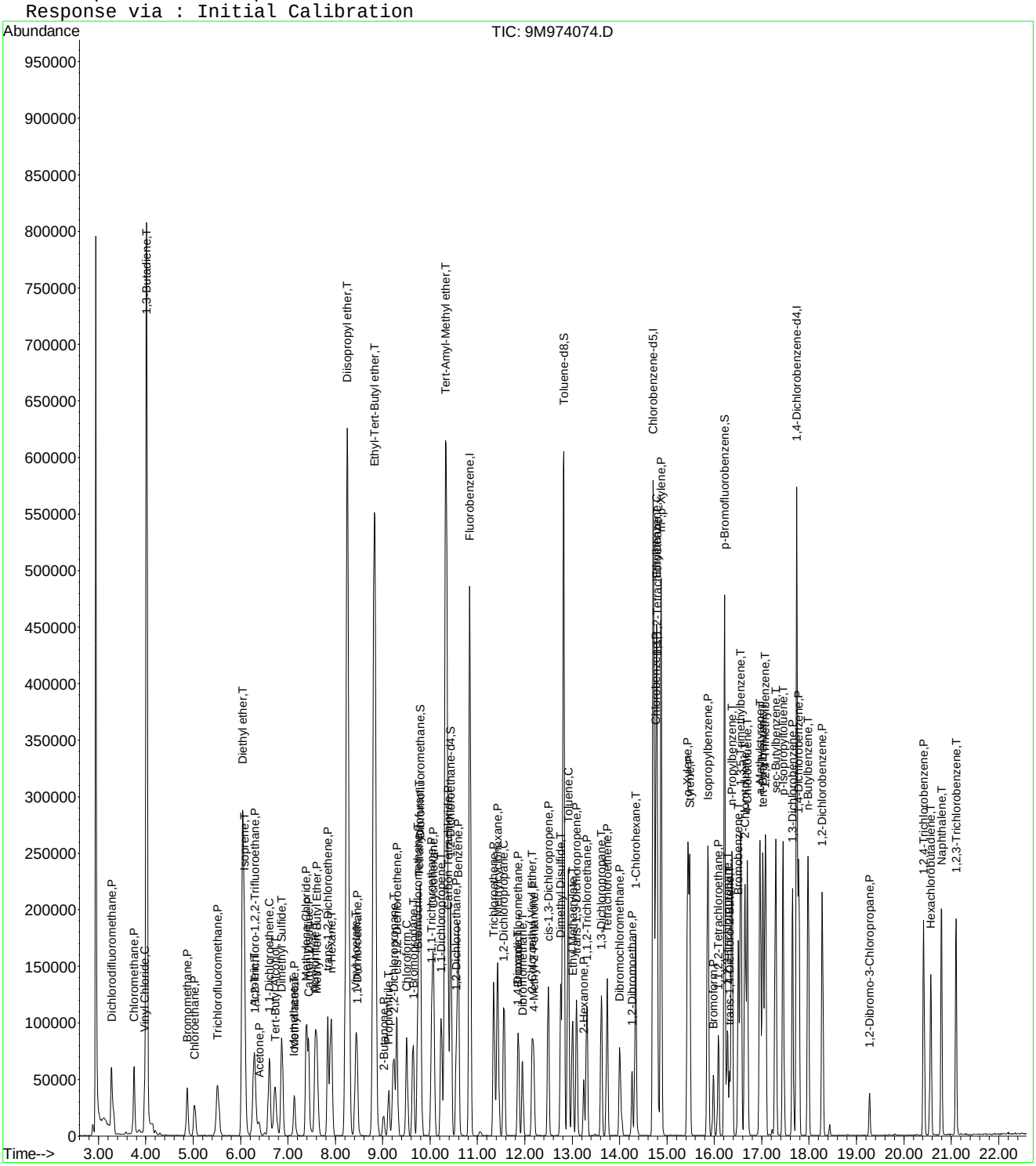

9M974074.D 8260-SL.M Sat Apr 30 17:40:37 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\042816\9M974048.D Vial: 20
Acq On : 28 Apr 2016 22:51 Operator: ADC
Sample : WG566711-02 A MS 8260 4.93g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 23:13:41 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	543098	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	389118	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.74	152	182092	50.00 ug/kg	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.80	111	144738	52.7689 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.54%		
43) 1,2-Dichloroethane-d4	10.44	65	156445	54.4849 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 108.96%		
58) Toluene-d8	12.82	98	515464	55.5827 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 111.16%		
79) p-Bromofluorobenzene	16.22	95	187957	59.5938 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 119.18%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	85226	20.4577 ug/kg	98
3) Chloromethane	3.74	50	78310	20.4479 ug/kg	99
4) Vinyl Chloride	3.98	62	80757	31.7944 ug/kg	92
6) Bromomethane	4.87	94	40928	17.4303 ug/kg	98
7) Chloroethane	5.03	64	41157	17.9947 ug/kg	99
8) Trichlorofluoromethane	5.52	101	84810	17.5269 ug/kg	99
10) Isoprene	6.08	67	75436	19.8059 ug/kg	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	52397	17.7342 ug/kg	100
13) Acetone	6.38	43	23442	17.0412 ug/kg	95
14) 1,1-Dichloroethene	6.60	61	80956	16.3469 ug/kg	96
16) Dimethyl Sulfide	6.87	62	52699	21.7197 ug/kg	96
17) Iodomethane	7.13	142	17006	9.9161 ug/kg	100
18) Methyl acetate	7.13	43	35081	11.1505 ug/kg	99
19) Methylene Chloride	7.39	84	46305	14.9683 ug/kg	97
20) Carbon Disulfide	7.44	76	138070	14.7032 ug/kg	99
21) Acrylonitrile	7.58	53	19962	13.3494 ug/kg	100
22) Methyl Tert Butyl Ether	7.60	73	126764	15.2285 ug/kg	98
23) trans-1,2-Dichloroethene	7.84	61	76831	16.1272 ug/kg	99
24) n-Hexane	7.91	57	91996	14.8703 ug/kg	99
27) 1,1-Dichloroethane	8.46	63	88610	15.3238 ug/kg	100
29) 2-Butanone	9.02	43	22993	13.1685 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	66621	15.7778 ug/kg	98
32) cis-1,2-Dichloroethene	9.30	96	49726	15.7062 ug/kg	100
33) Chloroform	9.51	83	75785	15.4515 ug/kg	98
34) 1-Bromopropane	9.64	122	11249	20.3713 ug/kg	97
35) Bromochloromethane	9.74	130	27541	13.9431 ug/kg	98
36) Tetrahydrofuran	9.77	42	2581	2.0809 ug/kg#	83
38) 1,1,1-Trichloroethane	10.03	97	69562	16.5709 ug/kg	100
39) Cyclohexane	10.07	56	108878	16.4066 ug/kg	97
40) 1,1-Dichloropropene	10.23	75	58839	15.2267 ug/kg	99
42) Carbon Tetrachloride	10.38	117	63652	16.2441 ug/kg	99
45) 1,2-Dichloroethane	10.55	62	63568	15.0499 ug/kg	97
46) Benzene	10.59	78	179281	14.9489 ug/kg	98
47) Trichloroethene	11.34	130	49634	14.7138 ug/kg	99
48) Methylcyclohexane	11.43	83	82116	15.9305 ug/kg	97
49) 1,2-Dichloropropane	11.55	63	48336	14.8203 ug/kg	98
51) Bromodichloromethane	11.86	83	52764	14.1972 ug/kg	99
52) Dibromomethane	11.95	174	25132	12.9066 ug/kg	95
53) 2-Chloroethyl Vinyl Ether	12.16	63	16644	9.5968 ug/kg	99
54) 4-Methyl-2-Pentanone	12.18	58	19673	13.1009 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\042816\9M974048.D Vial: 20
Acq On : 28 Apr 2016 22:51 Operator: ADC
Sample : WG566711-02 A MS 8260 4.93g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 23:13:41 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
55)	cis-1,3-Dichloropropene	12.49	75	64122	13.8376	ug/kg	99
56)	Dimethyl Disulfide	12.76	94	80335	16.1997	ug/kg	92
59)	Toluene	12.92	91	176447	14.9017	ug/kg	99
60)	Ethyl Methacrylate	13.01	69	39670	11.0045	ug/kg	98
61)	trans-1,3-Dichloropropene	13.09	75	53435	13.8621	ug/kg	98
62)	1,1,2-Trichloroethane	13.31	97	34596	14.8415	ug/kg	99
63)	2-Hexanone	13.24	43	31976	12.5621	ug/kg#	77
64)	1,3-Dichloropropane	13.61	76	62959	15.7079	ug/kg	99
65)	Tetrachloroethene	13.74	164	34931	13.9099	ug/kg	97
66)	Dibromochloromethane	14.00	129	39691	13.7741	ug/kg	100
67)	1,2-Dibromoethane	14.27	107	35868	13.9683	ug/kg	99
68)	1-Chlorohexane	14.34	91	52110	13.3676	ug/kg	97
69)	Chlorobenzene	14.76	112	114178	13.8956	ug/kg	97
70)	1,1,1,2-Tetrachloroethane	14.79	131	41795	14.9719	ug/kg	98
71)	Ethylbenzene	14.78	106	59687	13.5029	ug/kg	96
72)	m-,p-Xylene	14.88	106	144046	26.4305	ug/kg	97
73)	o-Xylene	15.44	106	70774	13.6281	ug/kg	97
74)	Styrene	15.48	104	107495	12.0871	ug/kg	97
75)	Bromoform	15.98	173	23697	13.4256	ug/kg	99
76)	Isopropylbenzene	15.86	105	177002	13.1029	ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.08	83	42744	14.2156	ug/kg	98
80)	1,2,3-Trichloropropane	16.28	110	13991	15.4820	ug/kg#	29
81)	trans-1,4-Dichloro-2-Buten	16.32	53	11635	10.5790	ug/kg#	1
82)	n-Propylbenzene	16.37	91	183739	13.4966	ug/kg	98
83)	Bromobenzene	16.50	156	43703	13.4958	ug/kg	95
84)	1,3,5-Trimethylbenzene	16.56	105	141038	13.6063	ug/kg	98
85)	2-Chlorotoluene	16.65	91	121066	14.8903	ug/kg	99
86)	4-Chlorotoluene	16.69	91	105431	12.3975	ug/kg	99
87)	a-Methylstyrene	16.97	118	64184	12.4123	ug/kg	100
88)	tert-Butylbenzene	17.02	134	31451	13.6948	ug/kg	89
89)	1,2,4-Trimethylbenzene	17.07	105	133314	12.8074	ug/kg	99
90)	sec-Butylbenzene	17.29	105	170898	12.8252	ug/kg	100
91)	p-Isopropyltoluene	17.45	119	131024	11.8782	ug/kg	99
92)	1,3-Dichlorobenzene	17.65	146	75947	11.8626	ug/kg	99
93)	1,4-Dichlorobenzene	17.78	146	77946	11.9292	ug/kg	94
94)	n-Butylbenzene	17.98	91	106343	10.4791	ug/kg	100
95)	1,2-Dichlorobenzene	18.28	146	75315	12.3660	ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.28	157	9959	17.8833	ug/kg	98
97)	1,2,4-Trichlorobenzene	20.42	180	41682	9.2750	ug/kg	99
98)	Hexachlorobutadiene	20.57	225	19754	9.3197	ug/kg	98
99)	Naphthalene	20.80	128	119798	11.0610	ug/kg	98
100)	1,2,3-Trichlorobenzene	21.10	180	41082	9.6437	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\042816\9M974048.D Vial: 20
Acq On : 28 Apr 2016 22:51 Operator: ADC
Sample : WG566711-02 A MS 8260 4.93g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 23:13 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

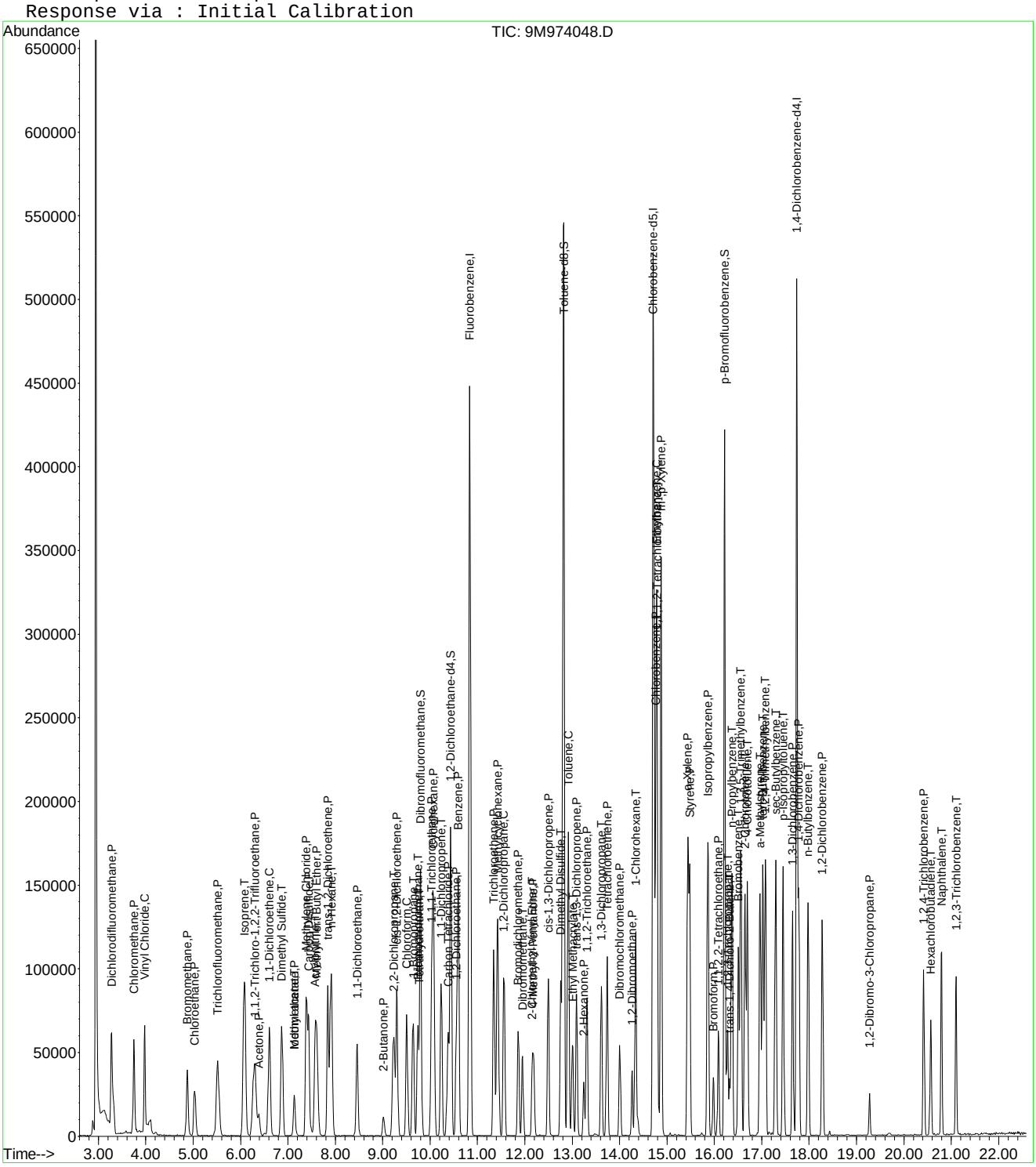

9M974048.D 8260-SL.M Thu Apr 28 23:13:42 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\042816\9M974049.D Vial: 21
Acq On : 28 Apr 2016 23:20 Operator: ADC
Sample : WG566711-03 A MSD 8260 4.76g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 23:43:33 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	584236	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	421450	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	194598	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	157502	53.3791 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 106.76%		
43) 1,2-Dichloroethane-d4	10.44	65	174559	56.5128 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 113.02%		
58) Toluene-d8	12.81	98	566455	56.3952 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 112.80%		
79) p-Bromofluorobenzene	16.21	95	205168	60.8702 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 121.74%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	92822	20.7121 ug/kg	96
3) Chloromethane	3.75	50	77078	18.7091 ug/kg	100
4) Vinyl Chloride	3.97	62	62564	22.6774 ug/kg	90
6) Bromomethane	4.88	94	42291	16.7425 ug/kg	98
7) Chloroethane	5.03	64	44183	17.9575 ug/kg	98
8) Trichlorofluoromethane	5.52	101	95341	18.3159 ug/kg	98
10) Isoprene	6.08	67	83387	20.3519 ug/kg	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	59968	18.8675 ug/kg	100
13) Acetone	6.39	43	21957	14.0838 ug/kg	99
14) 1,1-Dichloroethene	6.61	61	86510	16.2384 ug/kg	98
16) Dimethyl Sulfide	6.87	62	49165	18.8364 ug/kg	99
17) Iodomethane	7.12	142	22073	11.3609 ug/kg	98
18) Methyl acetate	7.13	43	33696	9.9561 ug/kg	98
19) Methylene Chloride	7.39	84	45565	13.6920 ug/kg	95
20) Carbon Disulfide	7.44	76	148301	14.6807 ug/kg	99
21) Acrylonitrile	7.57	53	19677	12.2323 ug/kg	98
22) Methyl Tert Butyl Ether	7.60	73	120753	13.4850 ug/kg	98
23) trans-1,2-Dichloroethene	7.84	61	82498	16.0974 ug/kg	99
24) n-Hexane	7.92	57	102155	15.3497 ug/kg	99
27) 1,1-Dichloroethane	8.46	63	92693	14.9012 ug/kg	99
29) 2-Butanone	9.01	43	21709	11.5577 ug/kg	97
31) 2,2-Dichloropropane	9.23	77	72119	15.8773 ug/kg	99
32) cis-1,2-Dichloroethene	9.30	96	50672	14.8780 ug/kg	100
33) Chloroform	9.51	83	75983	14.4011 ug/kg	99
34) 1-Bromopropane	9.65	122	11833	19.9391 ug/kg	99
35) Bromochloromethane	9.74	130	27088	12.7481 ug/kg	94
36) Tetrahydrofuran	9.77	42	3053	2.2881 ug/kg	83
38) 1,1,1-Trichloroethane	10.04	97	77282	17.1137 ug/kg	98
39) Cyclohexane	10.07	56	121468	17.0149 ug/kg	97
40) 1,1-Dichloropropene	10.24	75	64888	15.6097 ug/kg	99
42) Carbon Tetrachloride	10.38	117	69059	16.3830 ug/kg	99
45) 1,2-Dichloroethane	10.55	62	59596	13.1160 ug/kg	98
46) Benzene	10.60	78	185787	14.4006 ug/kg	98
47) Trichloroethene	11.35	130	52684	14.5182 ug/kg	98
48) Methylcyclohexane	11.42	83	91357	16.4753 ug/kg	98
49) 1,2-Dichloropropane	11.56	63	49433	14.0894 ug/kg	99
51) Bromodichloromethane	11.86	83	50829	12.7135 ug/kg	99
52) Dibromomethane	11.96	174	23925	11.4216 ug/kg	99
53) 2-Chloroethyl Vinyl Ether	12.16	63	16170	8.6670 ug/kg	96
54) 4-Methyl-2-Pentanone	12.18	58	18925	11.7154 ug/kg	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\042816\9M974049.D Vial: 21
Acq On : 28 Apr 2016 23:20 Operator: ADC
Sample : WG566711-03 A MSD 8260 4.76g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 23:43:33 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
55)	cis-1,3-Dichloropropene	12.50	75	63044	12.6470	ug/kg	98
56)	Dimethyl Disulfide	12.76	94	67623	12.6761	ug/kg	98
59)	Toluene	12.92	91	181582	14.1589	ug/kg	100
60)	Ethyl Methacrylate	13.00	69	39053	10.0023	ug/kg	100
61)	trans-1,3-Dichloropropene	13.10	75	50960	12.2059	ug/kg	98
62)	1,1,2-Trichloroethane	13.31	97	31981	12.6672	ug/kg	95
63)	2-Hexanone	13.24	43	30413	11.0314	ug/kg	99
64)	1,3-Dichloropropane	13.61	76	59901	13.7984	ug/kg	95
65)	Tetrachloroethene	13.74	164	36629	13.4671	ug/kg	94
66)	Dibromochloromethane	14.00	129	37757	12.0978	ug/kg	98
67)	1,2-Dibromoethane	14.26	107	31993	11.5034	ug/kg	99
68)	1-Chlorohexane	14.34	91	56091	13.2850	ug/kg	99
69)	Chlorobenzene	14.76	112	114414	12.8561	ug/kg	97
70)	1,1,1,2-Tetrachloroethane	14.80	131	41610	13.7621	ug/kg	98
71)	Ethylbenzene	14.79	106	61073	12.7565	ug/kg	96
72)	m-,p-Xylene	14.88	106	149359	25.3029	ug/kg	100
73)	o-Xylene	15.44	106	71641	12.7368	ug/kg	98
74)	Styrene	15.48	104	103850	10.7814	ug/kg	97
75)	Bromoform	15.98	173	22569	11.8496	ug/kg	99
76)	Isopropylbenzene	15.86	105	185316	12.6659	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.08	83	41433	12.9266	ug/kg	99
80)	1,2,3-Trichloropropane	16.27	110	13211	13.6794	ug/kg#	38
81)	trans-1,4-Dichloro-2-Buten	16.32	53	10871	9.2491	ug/kg#	1
82)	n-Propylbenzene	16.37	91	189771	13.0439	ug/kg	98
83)	Bromobenzene	16.51	156	41735	12.0598	ug/kg	73
84)	1,3,5-Trimethylbenzene	16.56	105	138203	12.4760	ug/kg	100
85)	2-Chlorotoluene	16.64	91	123767	14.2442	ug/kg	100
86)	4-Chlorotoluene	16.70	91	97569	10.7357	ug/kg	98
87)	a-Methylstyrene	16.96	118	61491	11.1273	ug/kg	98
88)	tert-Butylbenzene	17.02	134	33330	13.5803	ug/kg	89
89)	1,2,4-Trimethylbenzene	17.08	105	133136	11.9313	ug/kg	100
90)	sec-Butylbenzene	17.30	105	177020	12.4309	ug/kg	100
91)	p-Isopropyltoluene	17.46	119	131505	11.1556	ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	73380	10.7250	ug/kg	99
93)	1,4-Dichlorobenzene	17.78	146	71108	10.1833	ug/kg	95
94)	n-Butylbenzene	17.98	91	105338	9.7130	ug/kg	99
95)	1,2-Dichlorobenzene	18.28	146	69782	10.7212	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.28	157	9792	16.9426	ug/kg	97
97)	1,2,4-Trichlorobenzene	20.42	180	37422	7.7919	ug/kg	100
98)	Hexachlorobutadiene	20.57	225	19232	8.4903	ug/kg	98
99)	Naphthalene	20.79	128	107229	9.2642	ug/kg	99
100)	1,2,3-Trichlorobenzene	21.11	180	37497	8.2364	ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M974049.D 8260-SL.M Thu Apr 28 23:43:33 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\042816\9M974049.D Vial: 21
Acq On : 28 Apr 2016 23:20 Operator: ADC
Sample : WG566711-03 A MSD 8260 4.76g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 23:43 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

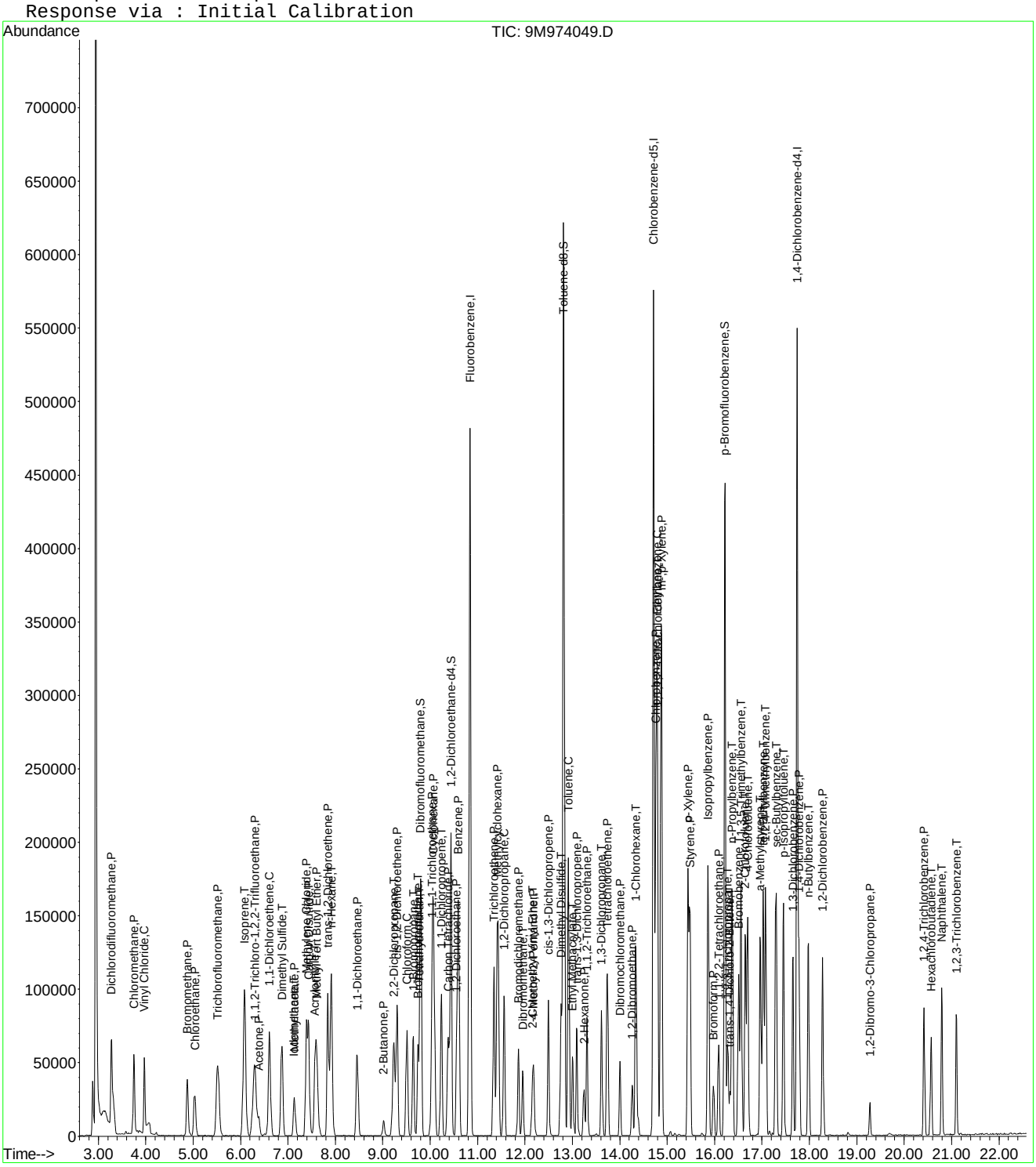

2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22R(5-5.5)230416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 14:07
Collect Date:	04/23/2016 09:35	**Dilution:**	1	**File ID:**	1LM.LM34635
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.28	U	4.56	2.28	1.14

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22R(10-10.5)230416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 15:03
Collect Date:	04/23/2016 10:05	**Dilution:**	1	**File ID:**	1LM.LM34638
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.44	U	4.87	2.44	1.22

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22R(15-15.5)230416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 15:22
Collect Date:	04/23/2016 10:10	**Dilution:**	1	**File ID:**	1LM.LM34639
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	77.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.48	U	4.96	2.48	1.24

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW26(5-5.5)230416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 15:41
Collect Date:	04/23/2016 13:30	**Dilution:**	1	**File ID:**	1LM.LM34640
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.30	U	4.60	2.30	1.15

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW26(5-5.5)230416DUP	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 16:00
Collect Date:	04/23/2016 13:30	**Dilution:**	1	**File ID:**	1LM.LM34641
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	85.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.30	U	4.58	2.30	1.15

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW26(10-10.5)230416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 17:16
Collect Date:	04/23/2016 14:00	**Dilution:**	1	**File ID:**	1LM.LM34645
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.32	U	4.66	2.32	1.16

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW26(14.5-15)230416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 17:35
Collect Date:	04/23/2016 14:05	**Dilution:**	1	**File ID:**	1LM.LM34646
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	77.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.46	U	4.94	2.46	1.23

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW26SW(5-5.5)250416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 17:54
Collect Date:	04/25/2016 09:35	**Dilution:**	1	**File ID:**	1LM.LM34647
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.32	U	4.62	2.32	1.16

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-09	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW26SW(10-10.5)250416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 18:13
Collect Date:	04/25/2016 09:50	**Dilution:**	1	**File ID:**	1LM.LM34648
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	78.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.50	U	5.00	2.50	1.25

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-10	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW26SW(15-15.5)250416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 18:32
Collect Date:	04/25/2016 10:45	**Dilution:**	1	**File ID:**	1LM.LM34649
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	78.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1.58	J	4.99	2.50	1.25

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-11	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW26SW(20-20.5)250416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 18:51
Collect Date:	04/25/2016 11:45	**Dilution:**	1	**File ID:**	1LM.LM34650
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	4.60	J	4.86	2.42	1.21

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-12	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW26SW(30-30.5)250416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 19:10
Collect Date:	04/25/2016 12:05	**Dilution:**	1	**File ID:**	1LM.LM34651
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	77.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.52	U	5.03	2.52	1.26

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-13	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW26SW(40-40.5)250416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 19:29
Collect Date:	04/25/2016 12:10	**Dilution:**	1	**File ID:**	1LM.LM34652
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	71.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.68	U	5.34	2.68	1.34

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041344-14	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW26SW(49.5-50)250416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:15
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	04/22/2016 17:20
Workgroup #:	WG567011	**Analyst:**	JWR	**Run Date:**	05/02/2016 19:47
Collect Date:	04/25/2016 12:30	**Dilution:**	1	**File ID:**	1LM.LM34653
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	76.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.48	U	4.97	2.48	1.24

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041344
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

MICROBAC

Semivolatile Sample Extract Log

Parameter: Perchlorate
SOP #: HPLC 06
Analyst: JWR
Spike/Surrogate analyst: JWR
Surrogate #: NA
Spike # A: STD75513
Ext Solvent: DI-H2O
Ext Solvent: NA
Ext Disk: NA

Matrix: Soils
Rev #: 08
Date/Time Extracted: 04/29/16/1315
Witness: 4-29-16
Spike # B: NA
Lot #: NA
Lot #: NA
Lot #: NA

Extraction Work Group: WG567008
Analytical Work Group: WG567011
Run ID: R4562964
Pipetter(s): Eppendorf #403
Analytical Balance ID: BAL021
Reagent: Tubes Lot #: RGT34011
Reagent: Sand Lot #: COA18813
Other: IS Lot #: COA18071

Color Code
T = Transparent
C = Colored
O = Opaque

	Sample ID	Test Code	pH	Initial Wt / Vol	JWR ~~Surrogate~~ Amount IS	Amount Spike	Final Volume	Extract Color	Comments
1	WG567008-01	6850		5.001g	0.250ml	1.0ml	50ml		MCT (10,000 us)(2ug/kg)
2	WG567008-02	↓		5.004g	↓	NA	↓		Blank
3	WG567008-03			5.007g		1.0ml			LCS (2ug/kg)
4	L16041344-01 Ref			5.196g		NA			WG567008-04 Ref
5	-01 MS			5.210g		1.0ml			WG567008-05 MS (@2ug/kg)
6	-01 MSD			5.198g		1.0ml			WG567008-06 MSD (@2ug/kg)
7	-02			5.021g		NA			
8	-03			5.189g		NA			
9	-04			5.179g		NA			
10	-05			5.128g		NA			
11	-06			5.215g		NA			
12	-07			5.248g		NA			
13	-08			5.145g		NA			
14	-09			5.075g		NA			
15	-10			5.083g		NA			
16	-11			5.090g		NA			
17	-12			5.100g		NA			
18	-13			5.214g		NA			
19	-14	↓		5.293g	↓	NA	↓		
20									
21									
22				JWR 04/29/16					
23									
24									

Reviewed by: [signature] 4-29-16

Analytical WG567011 (soils)

Perchlorate Conductivity Check

(perchlorate1)

Conductivity Probe Calibration Check: 1423 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG567008-01 MCT	10,090.	
WG567008-02 Blank	4.55	
WG567008-03 LCS	4.42	
L16041344-01 Ref	12.37	
-01 MS	12.44	
-01 MSD	12.32	
-02	11.79	
-03	19.25	
-04	80.80	
-05	76.50	
-06	227.	
-07	154.2	
-08	178.1	
-09	186.8	
-10	80.70	
-11	59.40	
-12	50.80	
-13	51.80	
-14	69.30	

Analyst: John Richards

Date/Time: 05/02/16 / 1500

DCN#118148

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 042216_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 7

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG566116 (waters)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (04/22/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments: ICAL WG566101 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

All samples were initially filtered and screened on 04/20/16. All samples were analyzed at dilutions based on their pre-run screen results from 04/20/16.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34522	WG566101-01 CCB	1	1		04/22/16 15:08
2	1LM.LM34523	WG566101-02 STD (0.1 ug/L)	1	1	STD75510	04/22/16 15:27
3	1LM.LM34524	WG566101-03 STD (0.2 ug/L)	1	1	STD75510	04/22/16 15:46
4	1LM.LM34525	WG566101-04 STD (0.5 ug/L)	1	1	STD75510	04/22/16 16:05
5	1LM.LM34526	WG566101-05 STD (1.0 ug/L)	1	1	STD75510	04/22/16 16:24
6	1LM.LM34527	WG566101-06 STD (2.0 ug/L)	1	1	STD75510	04/22/16 16:42
7	1LM.LM34528	WG566101-07 STD (5.0 ug/L)	1	1	STD75510	04/22/16 17:01
8	1LM.LM34529	WG566101-08 STD (10 ug/L)	1	1	STD75510	04/22/16 17:20
9	1LM.LM34530	WG566101-09 SSCV (1.0 ug/L)	1	1	STD75512	04/22/16 17:39
10	1LM.LM34531	WG566119-01 CCB	1	1		04/22/16 17:58
11	1LM.LM34532	WG566119-02 CCV (1.0ug/L)	1	1	STD75510	04/22/16 18:17
12	1LM.LM34533	WG566116-05 MRL (0.2ug/L)	1	1	STD75510	04/22/16 18:36
13	1LM.LM34534	WG566116-01 MCT (0.2ug/L)	1	1	STD75512	04/22/16 18:55
14	1LM.LM34535	WG566116-02 BLANK	1	1		04/22/16 19:14
15	1LM.LM34536	WG566116-03 LCS (0.2ug/L)	1	1	STD75512	04/22/16 19:33
16	1LM.LM34537	WG566116-04 LCS2 (0.2ug/L)	1	1	STD75512	04/22/16 19:52
17	1LM.LM34538	L16040973-01 (100x)	1	100		04/22/16 20:11
18	1LM.LM34539	L16040978-01 (100x)	1	100		04/22/16 20:30
19	1LM.LM34540	L16040978-02 (100x)	1	100		04/22/16 20:49
20	1LM.LM34541	WG566119-03 CCV (1.0ug/L)	1	1	STD75510	04/22/16 21:08
21	1LM.LM34542	WG566116-06 MRL (0.2ug/L)	1	1	STD75510	04/22/16 21:27
22	1LM.LM34543	WG566119-04 CCB	1	1		04/22/16 21:45

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 25-APR-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050216_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567011 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (04/22/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: Samples tagged with (NR) will be reanalyzed on 05/03/2016.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34629	WG567042-01 CCB	1	1		05/02/16 12:11
2	1LM.LM34630	WG567042-02 CCV (1.0ug/L)	1	1	STD75510	05/02/16 12:30
3	1LM.LM34631	WG567011-07 MRL (2.0ug/kg)	7	1	STD75510	05/02/16 12:49
4	1LM.LM34632	WG567011-01 MCT (2.0ug/kg)	7	1	STD75512	05/02/16 13:08
5	1LM.LM34633	WG567011-02 BLANK	7	1		05/02/16 13:27
6	1LM.LM34634	WG567011-03 LCS (2.0ug/kg)	7	1	STD75512	05/02/16 13:46
7	1LM.LM34635	L16041344-01 REF	7	1		05/02/16 14:07
8	1LM.LM34636	L16041344-01 MS	7	1	STD75512	05/02/16 14:25
9	1LM.LM34637	L16041344-01 MSD	7	1	STD75512	05/02/16 14:44
10	1LM.LM34638	L16041344-02	7	1		05/02/16 15:03
11	1LM.LM34639	L16041344-03	7	1		05/02/16 15:22
12	1LM.LM34640	L16041344-04	7	1		05/02/16 15:41
13	1LM.LM34641	L16041344-05	7	1		05/02/16 16:00
14	1LM.LM34642	WG567042-03 CCV (1.0ug/L)	1	1	STD75510	05/02/16 16:19
15	1LM.LM34643	WG567011-08 MRL (2.0ug/kg)	7	1	STD75510	05/02/16 16:38
16	1LM.LM34644	WG567042-04 CCB	1	1		05/02/16 16:57
17	1LM.LM34645	L16041344-06	7	1		05/02/16 17:16
18	1LM.LM34646	L16041344-07	7	1		05/02/16 17:35
19	1LM.LM34647	L16041344-08	7	1		05/02/16 17:54
20	1LM.LM34648	L16041344-09	7	1		05/02/16 18:13
21	1LM.LM34649	L16041344-10	7	1		05/02/16 18:32
22	1LM.LM34650	L16041344-11	7	1		05/02/16 18:51
23	1LM.LM34651	L16041344-12	7	1		05/02/16 19:10
24	1LM.LM34652	L16041344-13	7	1		05/02/16 19:29
25	1LM.LM34653	L16041344-14	7	1		05/02/16 19:47
26	1LM.LM34654	WG567042-05 CCV (1.0ug/L)	1	1	STD75510	05/02/16 20:06
27	1LM.LM34655	WG567011-09 MRL (2.0ug/kg)	7	1	STD75510	05/02/16 20:25
28	1LM.LM34656	WG567013-07 MRL (2.0ug/kg) (NR)	7	1	STD75510	05/02/16 20:44
29	1LM.LM34657	WG567042-06 CCB	1	1		05/02/16 21:03
30	1LM.LM34658	WG567013-01 MCT (2.0ug/kg) (NR)	7	1	STD75512	05/02/16 21:22
31	1LM.LM34659	WG567013-02 BLANK (NR)	7	1		05/02/16 21:41
32	1LM.LM34660	WG567013-03 LCS (2.0ug/kg) (NR)	7	1	STD75512	05/02/16 22:00
33	1LM.LM34661	L16041363-07 RS (NR)	7	1		05/02/16 22:19

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050216_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567011 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (04/22/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM34662	L16041363-08 MS (NR)	7	1	STD75512	05/02/16 22:38
35	1LM.LM34663	L16041363-09 MSD (NR)	7	1	STD75512	05/02/16 22:57
36	1LM.LM34664	L16041363-01 (NR)	7	1		05/02/16 23:16
37	1LM.LM34665	L16041363-02 (NR)	7	1		05/02/16 23:35
38	1LM.LM34666	L16041363-03 (NR)	7	1		05/02/16 23:54
39	1LM.LM34667	L16041363-04 (NR)	7	1		05/03/16 00:13
40	1LM.LM34668	WG567042-07 CCV (1.0ug/L) (NR)	1	1	STD75510	05/03/16 00:31
41	1LM.LM34669	WG567013-08 MRL (2.0ug/kg) (NR)	7	1	STD75510	05/03/16 00:50
42	1LM.LM34670	WG567042-08 CCB (NR)	1	1		05/03/16 01:09
43	1LM.LM34671	L16041363-05 (NR)	7	1		05/03/16 01:28
44	1LM.LM34672	L16041363-06 (NR)	7	1		05/03/16 01:47
45	1LM.LM34673	L16041363-10 (NR)	7	1		05/03/16 02:06
46	1LM.LM34674	WG567042-09 CCV (1.0ug/L) (NR)	1	1	STD75510	05/03/16 02:25
47	1LM.LM34675	WG567013-09 MRL (2.0ug/kg) (NR)	7	1	STD75510	05/03/16 02:44
48	1LM.LM34676	WG567042-10 CCB (NR)	1	1		05/03/16 03:03

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 2 Approved: 05-MAY-16

Microbac Laboratories Inc.

Data Checklist

Date: 22-APR-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG566101
Runlog ID: 74691
Analytical Workgroups: L16040973, 0978

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MES

Primary Reviewer: 25-APR-2016 John Richards

Secondary Reviewer: 25-APR-2016 Mary Schilling

CHECKLIST1 - Modified 03/05/2008
Generated: APR-25-2016 16:40:39

Microbac Laboratories Inc.

Data Checklist

Date: 02-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 74889
Analytical Workgroups: L16041344 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
04-MAY-2016
John Richards

Secondary Reviewer:
05-MAY-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:16:50

Microbac

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG567011

Login Number: L16041344

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW22R(5-5.5)230416	01	04/23/16					04/29/2016	6.2	28		05/02/16	3	28	
18CPTMW22R(10-10.5)23041	02	04/23/16					04/29/2016	6.1	28		05/02/16	3.1	28	
18CPTMW22R(15-15.5)23041	03	04/23/16					04/29/2016	6.1	28		05/02/16	3.1	28	
18CPTMW26(5-5.5)230416	04	04/23/16					04/29/2016	6	28		05/02/16	3.1	28	
18CPTMW26(5-5.5)230416DU	05	04/23/16					04/29/2016	6	28		05/02/16	3.1	28	
18CPTMW26(10-10.5)230416	06	04/23/16					04/29/2016	6	28		05/02/16	3.2	28	
18CPTMW26(14.5-15)230416	07	04/23/16					04/29/2016	6	28		05/02/16	3.2	28	
18CPTMW26SW(5-5.5)250416	08	04/25/16					04/29/2016	4.2	28		05/02/16	3.2	28	
18CPTMW26SW(10-10.5)2504	09	04/25/16					04/29/2016	4.1	28		05/02/16	3.2	28	
18CPTMW26SW(15-15.5)2504	10	04/25/16					04/29/2016	4.1	28		05/02/16	3.2	28	
18CPTMW26SW(20-20.5)2504	11	04/25/16					04/29/2016	4.1	28		05/02/16	3.2	28	
18CPTMW26SW(30-30.5)2504	12	04/25/16					04/29/2016	4	28		05/02/16	3.2	28	
18CPTMW26SW(40-40.5)2504	13	04/25/16					04/29/2016	4	28		05/02/16	3.3	28	
18CPTMW26SW(49.5-50)2504	14	04/25/16					04/29/2016	4	28		05/02/16	3.3	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4747277
Report generated 05/10/2016 09:44

METHOD BLANK SUMMARY

Login Number: L16041344
Blank File ID: 1LM.LM34633
Prep Date: 04/29/16 13:15
Analyzed Date: 05/02/16 13:27
Analyst: JWR

Work Group: WG567011
Blank Sample ID: WG567011-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG567011-07	1LM.LM34631	05/02/16 12:49	01
MCT	WG567011-01	1LM.LM34632	05/02/16 13:08	01
LCS	WG567011-03	1LM.LM34634	05/02/16 13:46	01
18CPTMW22R(5-5.5)230416	L16041344-01	1LM.LM34635	05/02/16 14:07	01
18CPTMW22R(10-10.5)230416	L16041344-02	1LM.LM34638	05/02/16 15:03	01
18CPTMW22R(15-15.5)230416	L16041344-03	1LM.LM34639	05/02/16 15:22	01
18CPTMW26(5-5.5)230416	L16041344-04	1LM.LM34640	05/02/16 15:41	01
18CPTMW26(5-5.5)230416DUP	L16041344-05	1LM.LM34641	05/02/16 16:00	01
QCMRL	WG567011-08	1LM.LM34643	05/02/16 16:38	01
18CPTMW26(10-10.5)230416	L16041344-06	1LM.LM34645	05/02/16 17:16	01
18CPTMW26(14.5-15)230416	L16041344-07	1LM.LM34646	05/02/16 17:35	01
18CPTMW26SW(5-5.5)250416	L16041344-08	1LM.LM34647	05/02/16 17:54	01
18CPTMW26SW(10-10.5)250416	L16041344-09	1LM.LM34648	05/02/16 18:13	01
18CPTMW26SW(15-15.5)250416	L16041344-10	1LM.LM34649	05/02/16 18:32	01
18CPTMW26SW(20-20.5)250416	L16041344-11	1LM.LM34650	05/02/16 18:51	01
18CPTMW26SW(30-30.5)250416	L16041344-12	1LM.LM34651	05/02/16 19:10	01
18CPTMW26SW(40-40.5)250416	L16041344-13	1LM.LM34652	05/02/16 19:29	01
18CPTMW26SW(49.5-50)250416	L16041344-14	1LM.LM34653	05/02/16 19:47	01
QCMRL	WG567011-09	1LM.LM34655	05/02/16 20:25	01

Report Name: BLANK_SUMMARY
PDF File ID: 4747278
Report generated 05/10/2016 09:44

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16041344 Prep Date: 04/29/16 13:15 Sample ID: WG567011-02
Instrument ID: LCMS1 Run Date: 05/02/16 13:27 Prep Method: 6850
File ID: 1LM.LM34633 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567011 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-22-APR-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.999	4.00	0.999	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4747279
10-MAY-2016 09:44

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16041344 Run Date: 05/02/2016 Sample ID: WG567011-03
Instrument ID: LCMS1 Run Time: 13:46 Prep Method: 6850
File ID: 1LM.LM34634 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567011 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD75512 Cal ID: LCMS1-22-APR-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	2.00	2.13	107	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4747280
Report generated: 05/10/2016 09:44

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16041344 Cal ID: LCMS1 - Worknum: WG567011
Instrument ID: LCMS1 Contract #: Method: 6850
Parent ID: WG567011-04 File ID: 1LM.LM34635 Dil: 1 Matrix: SOLID
Sample ID: WG567011-05 MS File ID: 1LM.LM34636 Dil: 1 Units: ug/kg
Sample ID: WG567011-06 MSD File ID: 1LM.LM34637 Dil: 1 Percent Solid: 84.4

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Perchlorate	ND	2.27	2.44	108	2.28	2.56	113	4.78	80 - 120	15	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4747281
Report generated 05/10/2016 09:44

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16041344
Analytical Method: 6850
ICAL Workgroup: WG566101

Instrument ID: LCMS1
Initial Calibration Date: 22-APR-16 17:20
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.650	2.23	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4749625
Report generated 05/10/2016 09:44

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16041344
Analytical Method: 6850

Instrument ID: LCMS1
Initial Calibration Date: 22-APR-16 17:20
Column ID: F

Analyte	WG566101-02			WG566101-03			WG566101-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	12200.0000	1.661	0.200	24400.0000	1.641	0.500	61500.0000	1.632

INT_CAL - Modified 03/06/2008
PDF File ID: 4749625
Report generated 05/10/2016 09:44

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16041344

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 22-APR-16 17:20

Column ID: F

Analyte	WG566101-05			WG566101-06			WG566101-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	127000.000	1.674	2.00	249000.000	1.637	5.00	614000.000	1.645

INT_CAL - Modified 03/06/2008
PDF File ID: 4749625
Report generated 05/10/2016 09:44

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16041344
Analytical Method: 6850

Instrument ID: LCMS1
Initial Calibration Date: 22-APR-16 17:20
Column ID: F

Analyte	WG566101-08		
	CONC	RESP	RF
Perchlorate	10.0	1180000.00	1.661

INT_CAL - Modified 03/06/2008
PDF File ID: 4749625
Report generated 05/10/2016 09:44

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16041344 Run Date: 04/22/2016 Sample ID: WG566101-09
Instrument ID: LCMS1 Run Time: 17:39 Method: 6850
File ID: 1LM.LM34530 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG566101 Cal ID: LCMS1 - 22-APR-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.988	ug/L	1.63	1.20	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4749626
Report generated 05/10/2016 09:45

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16041344
Run Date: 05/02/2016
Sample ID: WG567042-01
Instrument ID: LCMS1
Run Time: 12:11
Method: 6850
File ID: 1LM.LM34629
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG567011
Cal ID: LCMS1 - 22-APR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4747284
Report generated 05/10/2016 09:45

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16041344
Run Date: 05/02/2016
Sample ID: WG567042-04
Instrument ID: LCMS1
Run Time: 16:57
Method: 6850
File ID: 1LM.LM34644
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG567011
Cal ID: LCMS1 - 22-APR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4747284
Report generated 05/10/2016 09:45

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16041344
Run Date: 05/02/2016
Sample ID: WG567042-06
Instrument ID: LCMS1
Run Time: 21:03
Method: 6850
File ID: 1LM.LM34657
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG567011
Cal ID: LCMS1 - 22-APR-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4747284
Report generated 05/10/2016 09:45

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041344
Run Date: 05/02/2016
Sample ID: WG567042-02
Instrument ID: LCMS1
Run Time: 12:30
Method: 6850
File ID: 1LM.LM34630
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG567011
Cal ID: LCMS1 - 22-APR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/kg	1.70	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4747283
Report generated 05/10/2016 09:45

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041344
Run Date: 05/02/2016
Sample ID: WG567042-03
Instrument ID: LCMS1
Run Time: 16:19
Method: 6850
File ID: 1LM.LM34642
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG567011
Cal ID: LCMS1 - 22-APR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.00	ug/kg	1.66	0	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4747283
Report generated 05/10/2016 09:45

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041344
Run Date: 05/02/2016
Sample ID: WG567042-05
Instrument ID: LCMS1
Run Time: 20:06
Method: 6850
File ID: 1LM.LM34654
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG567011
Cal ID: LCMS1 - 22-APR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.997	ug/kg	1.65	0.300	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4747283
Report generated 05/10/2016 09:45

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16041344 Run Date: 05/02/2016 Sample ID: WG567011-07

Instrument ID: LCMS1 Run Time: 12:49 Prep Method: 6850

File ID: 1LM.LM34631 Analyst: JWR Method: 6850

Workgroup (AAB#): WG567011 Matrix: Soil Units: ug/kg

Contract #: Cal ID: LCMS1-22-APR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.00	100	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4747282
Report generated 05/10/2016 09:44

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16041344 Run Date: 05/02/2016 Sample ID: WG567011-08
Instrument ID: LCMS1 Run Time: 16:38 Prep Method: 6850
File ID: 1LM.LM34643 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567011 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-22-APR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	1.99	99.5	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4747282
Report generated 05/10/2016 09:44

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16041344 Run Date: 05/02/2016 Sample ID: WG567011-09

Instrument ID: LCMS1 Run Time: 20:25 Prep Method: 6850

File ID: 1LM.LM34655 Analyst: JWR Method: 6850

Workgroup (AAB#): WG567011 Matrix: Soil Units: ug/kg

Contract #: Cal ID: LCMS1-22-APR-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.12	106	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4747282
Report generated 05/10/2016 09:44

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16041344
Instrument ID: LCMS1
Workgroup (AAB#): WG567011

ICAL CCV Number: WG566101-05
CAL ID: LCMS1-22-APR-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1
WG566101	NA	NA	372000
Upper Limit	NA	NA	558000
Lower Limit	NA	NA	186000
L16041344-01	1.00	01	440000
L16041344-02	1.00	01	446000
L16041344-03	1.00	01	466000
L16041344-04	1.00	01	479000
L16041344-05	1.00	01	493000
L16041344-06	1.00	01	512000
L16041344-07	1.00	01	554000
L16041344-08	1.00	01	517000
L16041344-09	1.00	01	531000
L16041344-10	1.00	01	512000
L16041344-11	1.00	01	511000
L16041344-12	1.00	01	515000
L16041344-13	1.00	01	513000
L16041344-14	1.00	01	512000
WG567011-02	1.00	01	428000
WG567011-03	1.00	01	431000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4747285
Report generated 05/10/2016 09:45

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**	6850	**Samplenum:**	L16041344-01
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:15	**File ID:**	1LM.LM34635
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567011	**Analysis Date:**	05/02/2016 14:07	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**	6850	**Samplenum:**	L16041344-02
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:15	**File ID:**	1LM.LM34638
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567011	**Analysis Date:**	05/02/2016 15:03	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**	6850	**Samplenum:**	L16041344-03
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:15	**File ID:**	1LM.LM34639
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567011	**Analysis Date:**	05/02/2016 15:22	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	432	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**	6850	**Samplenum:**	L16041344-04
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:15	**File ID:**	1LM.LM34640
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567011	**Analysis Date:**	05/02/2016 15:41	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**	6850	**Samplenum:**	L16041344-05
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:15	**File ID:**	1LM.LM34641
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567011	**Analysis Date:**	05/02/2016 16:00	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**	6850	**Samplenum:**	L16041344-06
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:15	**File ID:**	1LM.LM34645
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567011	**Analysis Date:**	05/02/2016 17:16	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**	6850	**Samplenum:**	L16041344-07
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:15	**File ID:**	1LM.LM34646
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567011	**Analysis Date:**	05/02/2016 17:35	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**	6850	**Samplenum:**	L16041344-08
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:15	**File ID:**	1LM.LM34647
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567011	**Analysis Date:**	05/02/2016 17:54	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	432	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**	6850	**Samplenum:**	L16041344-09
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:15	**File ID:**	1LM.LM34648
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567011	**Analysis Date:**	05/02/2016 18:13	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	361	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**	6850	**Samplenum:**	L16041344-10
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:15	**File ID:**	1LM.LM34649
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567011	**Analysis Date:**	05/02/2016 18:32	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	21300	7300	2.92	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**	6850	**Samplenum:**	L16041344-11
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:15	**File ID:**	1LM.LM34650
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567011	**Analysis Date:**	05/02/2016 18:51	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	63900	21600	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**	6850	**Samplenum:**	L16041344-12
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:15	**File ID:**	1LM.LM34651
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567011	**Analysis Date:**	05/02/2016 19:10	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**	6850	**Samplenum:**	L16041344-13
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:15	**File ID:**	1LM.LM34652
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567011	**Analysis Date:**	05/02/2016 19:29	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**	6850	**Samplenum:**	L16041344-14
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:15	**File ID:**	1LM.LM34653
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567011	**Analysis Date:**	05/02/2016 19:47	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**		**Samplenum:**	WG566101-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34523
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567011	**Analysis Date:**	04/22/2016 15:27	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	12200	4690	2.60	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**		**Samplenum:**	WG566101-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34524
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567011	**Analysis Date:**	04/22/2016 15:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	24400	8930	2.73	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**		**Samplenum:**	WG566101-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34525
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567011	**Analysis Date:**	04/22/2016 16:05	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	61500	21100	2.91	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**		**Samplenum:**	WG566101-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34526
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567011	**Analysis Date:**	04/22/2016 16:24	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	127000	43000	2.95	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**		**Samplenum:**	WG566101-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34527
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567011	**Analysis Date:**	04/22/2016 16:42	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	249000	86800	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**		**Samplenum:**	WG566101-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34528
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567011	**Analysis Date:**	04/22/2016 17:01	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	614000	206000	2.98	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**		**Samplenum:**	WG566101-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34529
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567011	**Analysis Date:**	04/22/2016 17:20	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1180000	398000	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**		**Samplenum:**	WG566101-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34530
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567011	**Analysis Date:**	04/22/2016 17:39	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	130000	45700	2.84	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**	6850	**Samplenum:**	WG567011-01
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:15	**File ID:**	1LM.LM34632
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567011	**Analysis Date:**	05/02/2016 13:08	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	27900	9950	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**	6850	**Samplenum:**	WG567011-02
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:15	**File ID:**	1LM.LM34633
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567011	**Analysis Date:**	05/02/2016 13:27	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**	6850	**Samplenum:**	WG567011-03
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:15	**File ID:**	1LM.LM34634
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567011	**Analysis Date:**	05/02/2016 13:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	30200	10500	2.88	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**	6850	**Samplenum:**	WG567011-05
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:15	**File ID:**	1LM.LM34636
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567011	**Analysis Date:**	05/02/2016 14:25	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	31400	10800	2.91	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**	6850	**Samplenum:**	WG567011-06
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:15	**File ID:**	1LM.LM34637
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567011	**Analysis Date:**	05/02/2016 14:44	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32900	11500	2.86	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**	6850	**Samplenum:**	WG567011-07
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:15	**File ID:**	1LM.LM34631
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567011	**Analysis Date:**	05/02/2016 12:49	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	28200	11100	2.54	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**	6850	**Samplenum:**	WG567011-08
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:15	**File ID:**	1LM.LM34643
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567011	**Analysis Date:**	05/02/2016 16:38	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	33500	12800	2.62	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**	6850	**Samplenum:**	WG567011-09
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:15	**File ID:**	1LM.LM34655
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567011	**Analysis Date:**	05/02/2016 20:25	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37500	12900	2.91	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**		**Samplenum:**	WG567042-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34629
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567011	**Analysis Date:**	05/02/2016 12:11	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	322	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**		**Samplenum:**	WG567042-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34630
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567011	**Analysis Date:**	05/02/2016 12:30	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	140000	47600	2.94	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**		**Samplenum:**	WG567042-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34642
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567011	**Analysis Date:**	05/02/2016 16:19	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	166000	58700	2.83	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**		**Samplenum:**	WG567042-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34644
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567011	**Analysis Date:**	05/02/2016 16:57	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**		**Samplenum:**	WG567042-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34654
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567011	**Analysis Date:**	05/02/2016 20:06	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	174000	58200	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041344	**Prep Method:**		**Samplenum:**	WG567042-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34657
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567011	**Analysis Date:**	05/02/2016 21:03	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

2.2.1.3 Sample Data

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Data File	LM34635.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 2:07:08 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041344-01 REF	**Injection Vial**	7.00
Data File	LM34635.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 2:07:08 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	WG567011-04	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.400e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

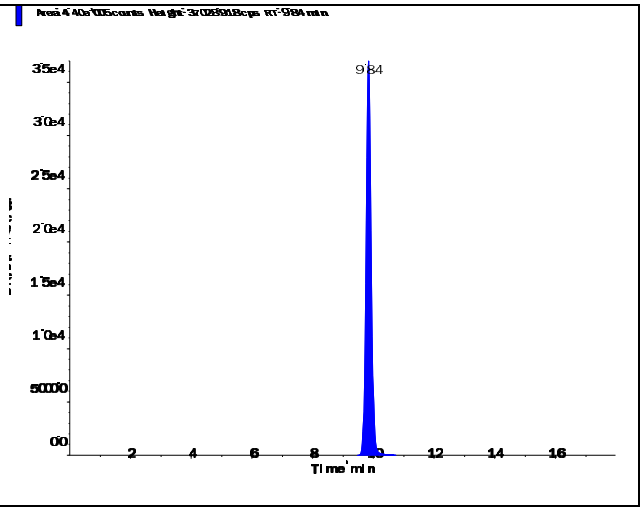

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

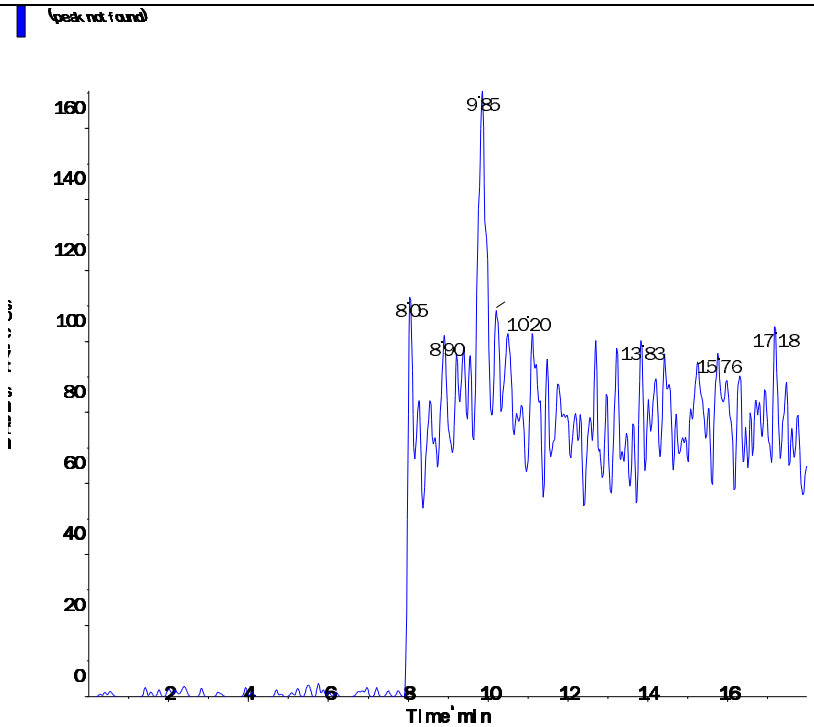

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.90) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

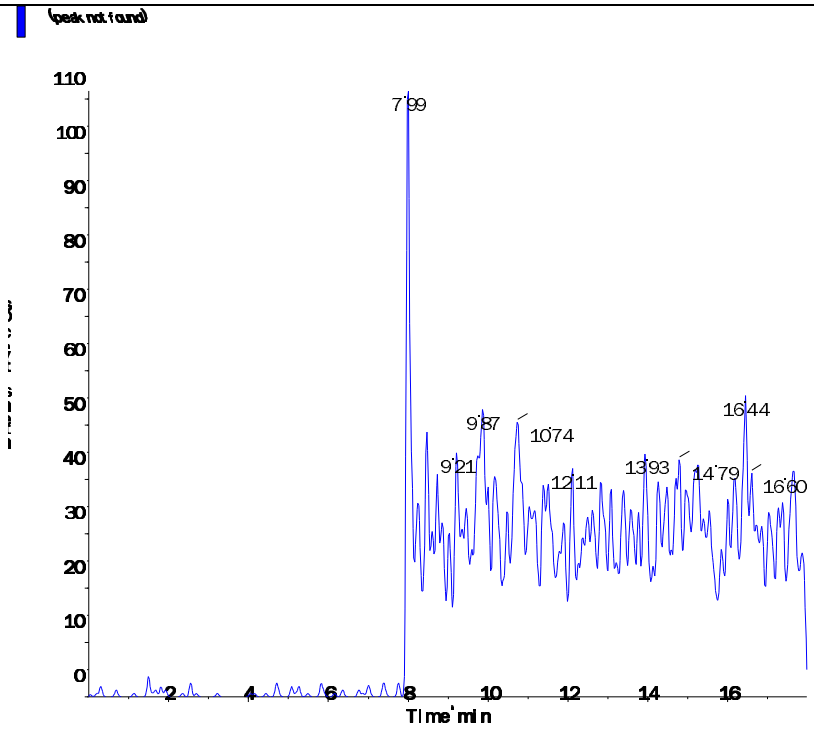

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Data File	LM34638.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 3:03:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041344-02	**Injection Vial**	10.00
Data File	LM34638.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 3:03:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	L16041344-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.460e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

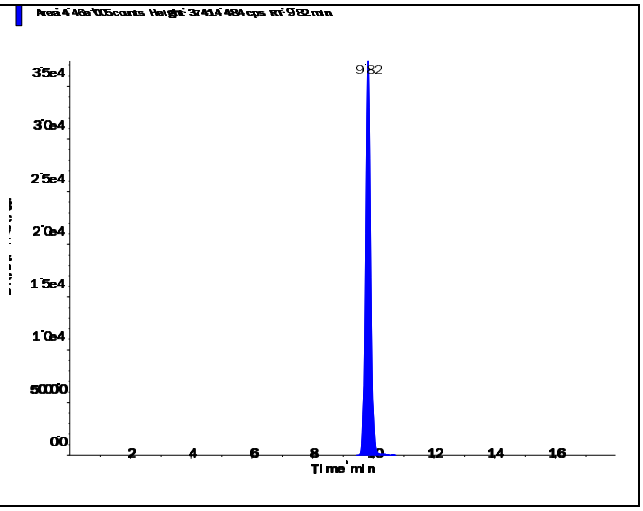

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

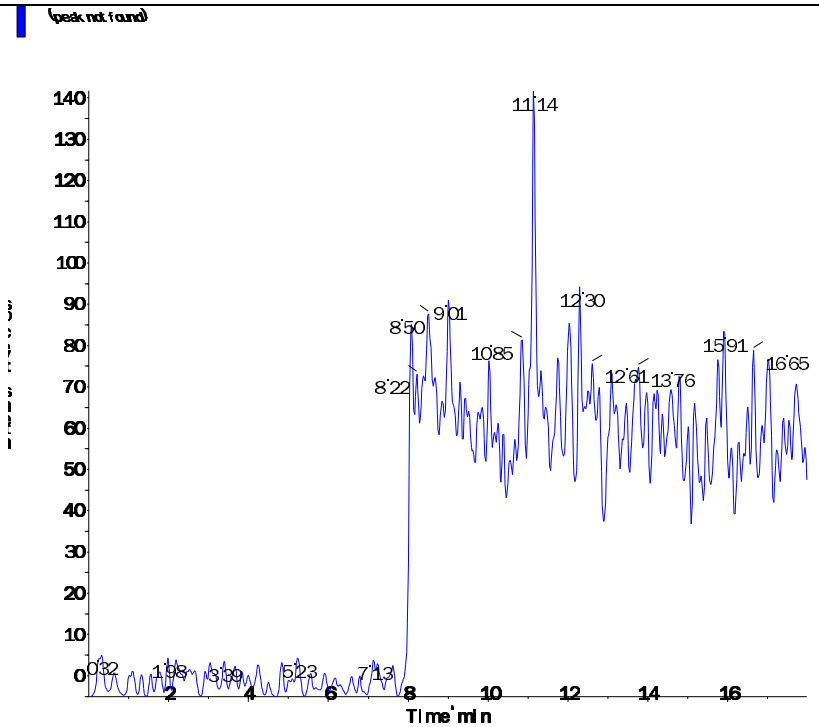

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.90) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

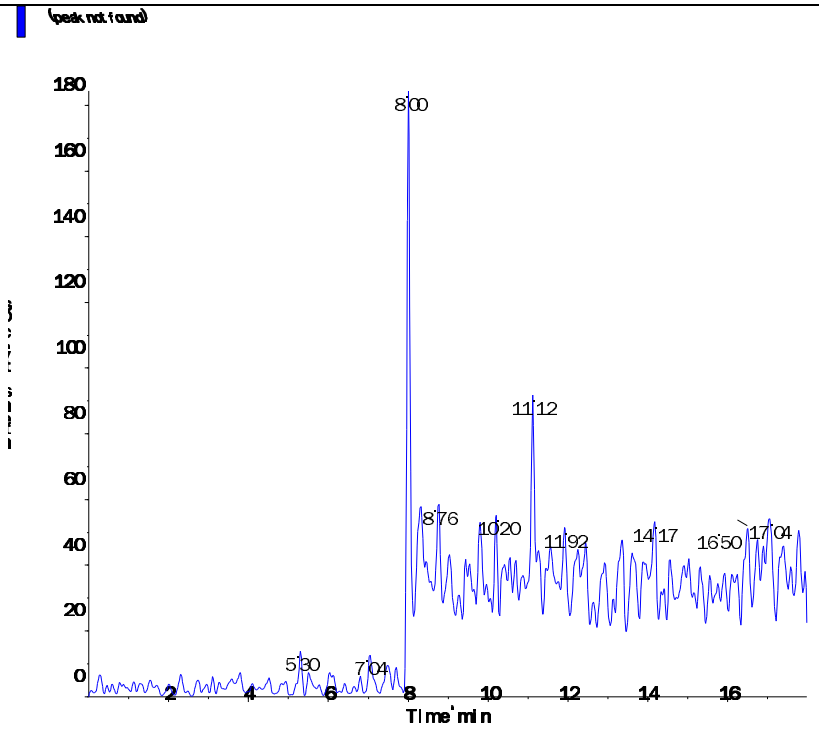

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Data File	LM34639.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 3:22:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041344-03	**Injection Vial**	11.00
Data File	LM34639.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 3:22:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	L16041344-03	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.660e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	4.320e+02	9.80	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

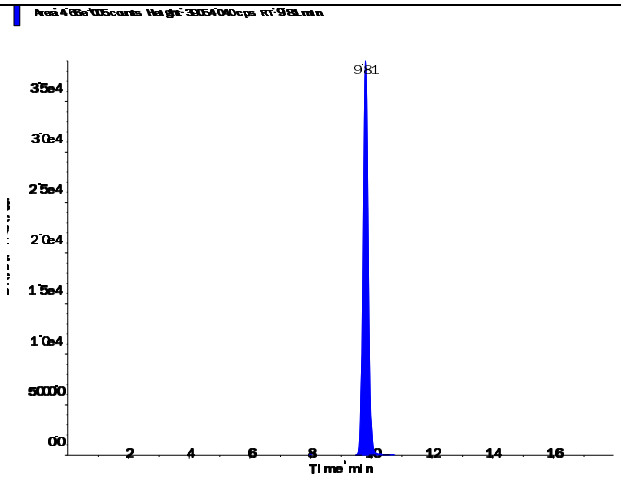

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.92) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	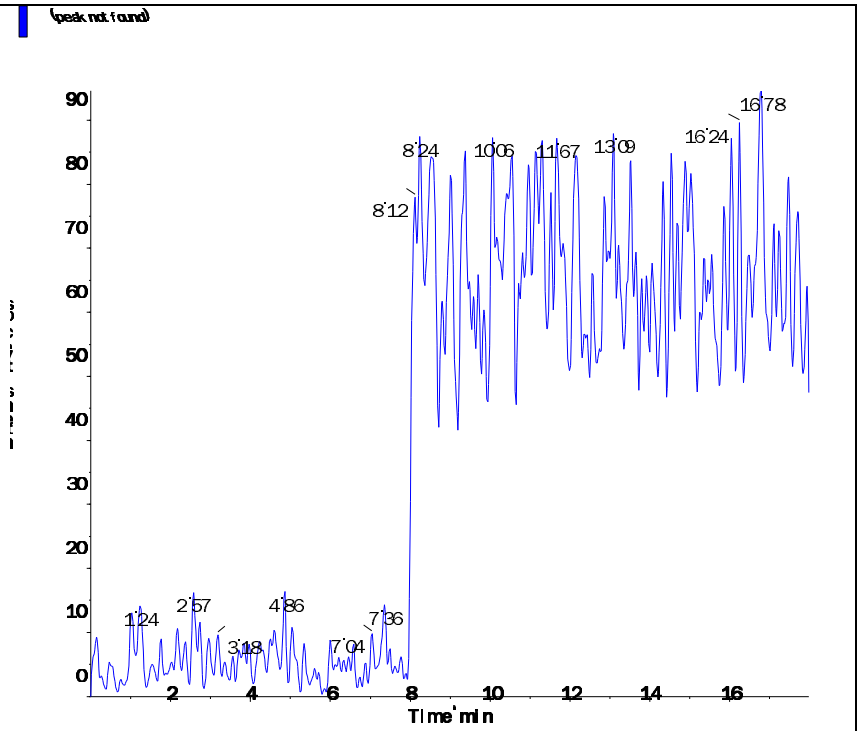
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.80 (9.90) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	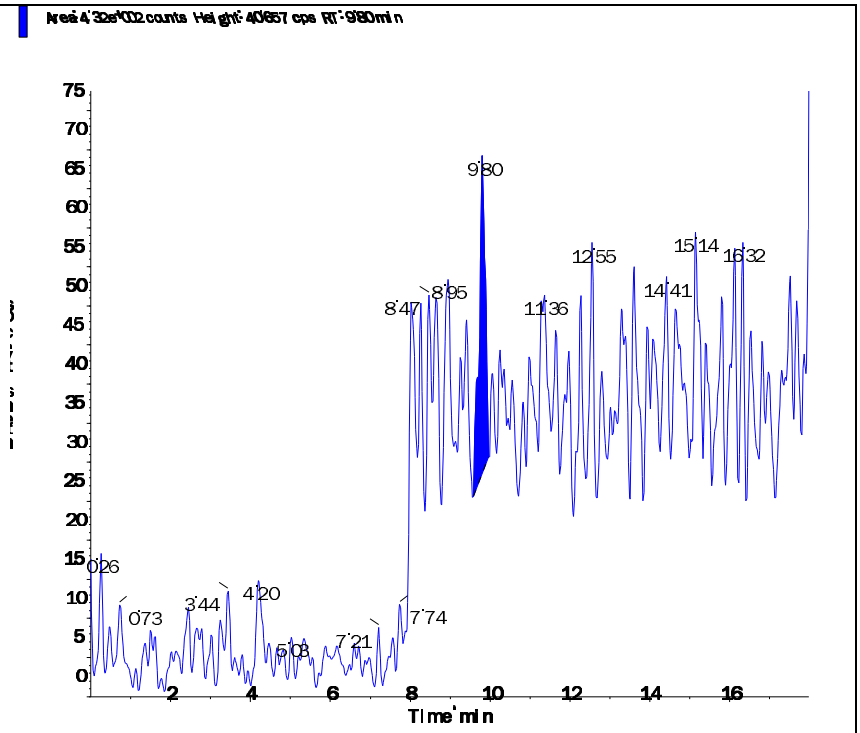

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Data File	LM34640.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 3:41:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041344-04	**Injection Vial**	12.00
Data File	LM34640.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 3:41:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	L16041344-04	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.790e+05	9.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.70(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

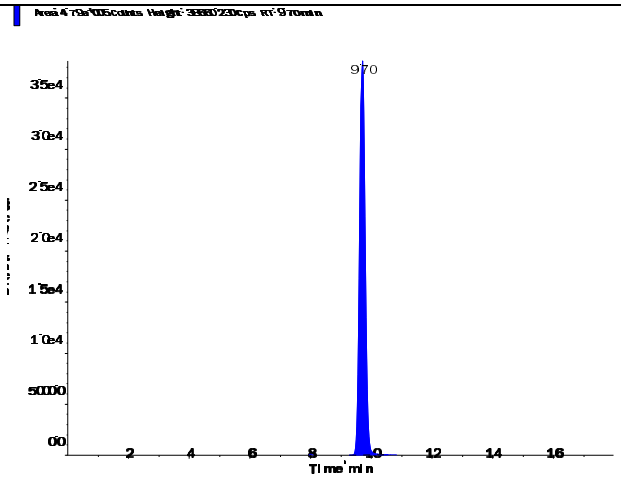

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

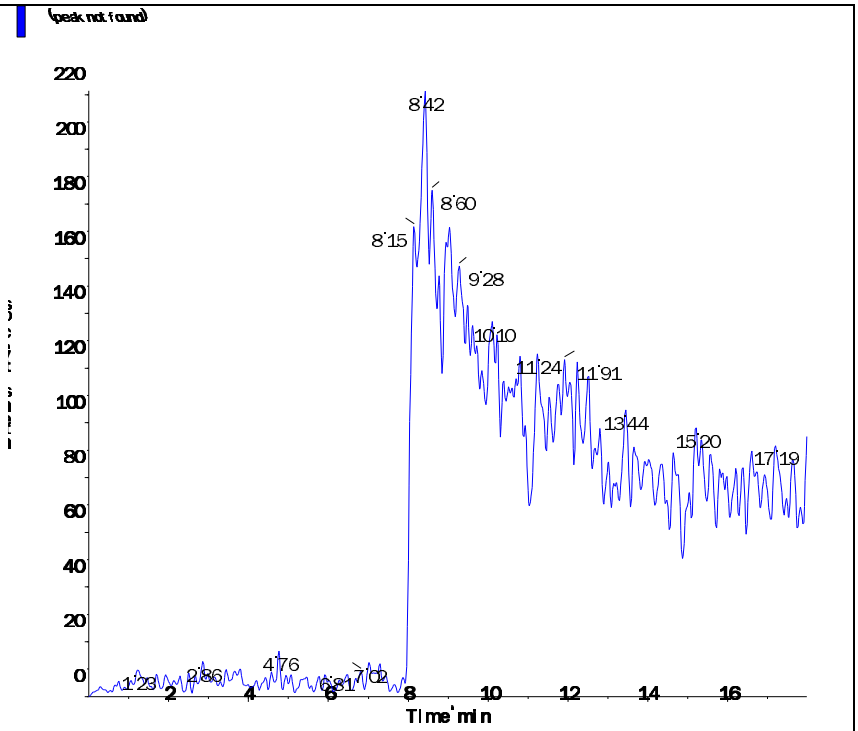

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.90) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

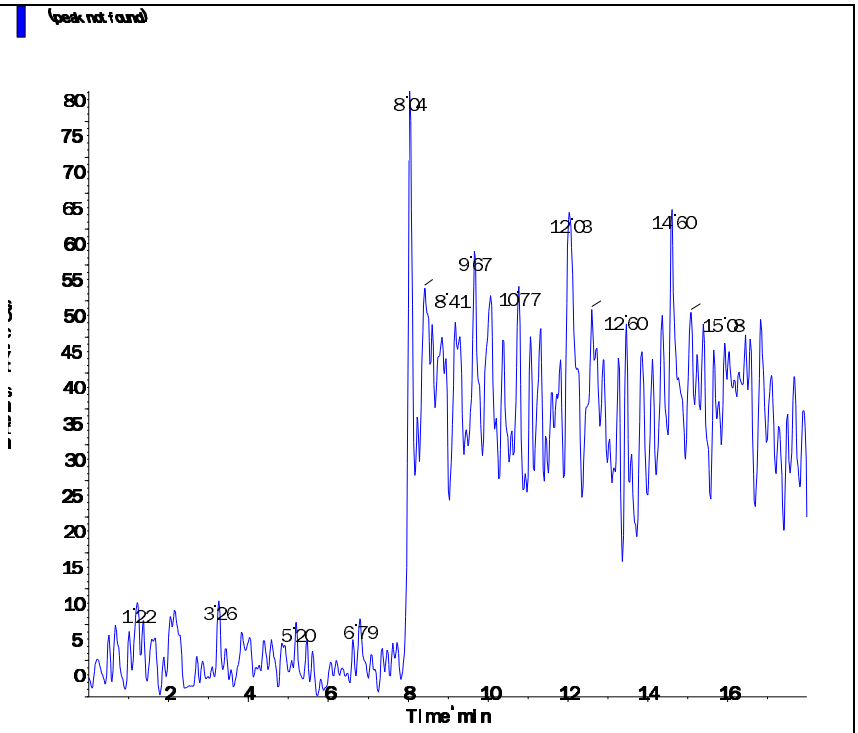

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Data File	LM34641.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 4:00:41 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041344-05	**Injection Vial**	13.00
Data File	LM34641.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 4:00:41 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	L16041344-05	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.70(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

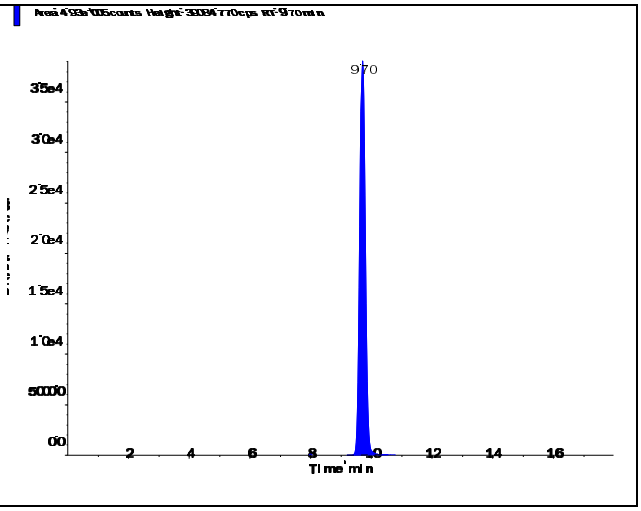

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

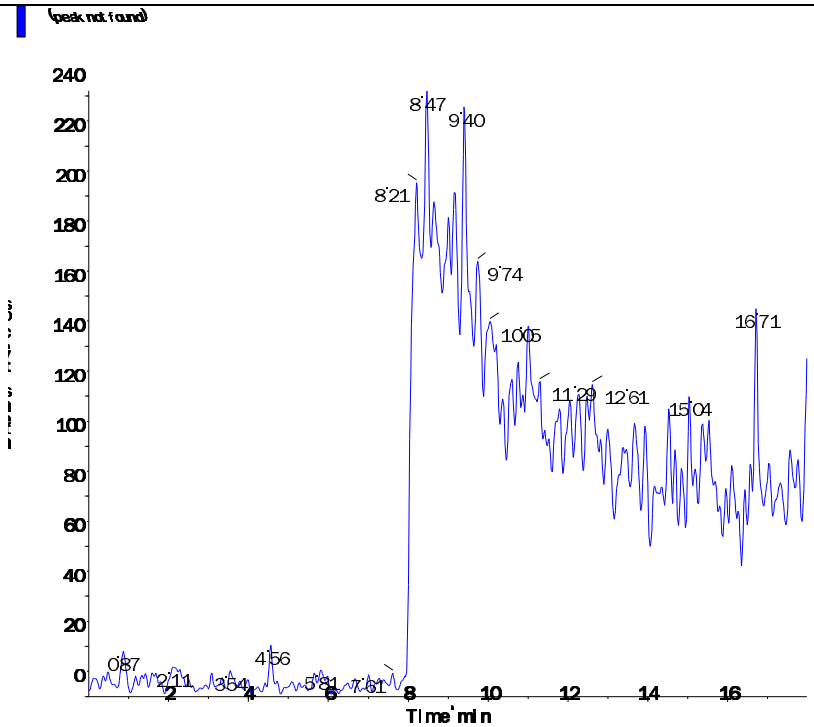

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.90) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

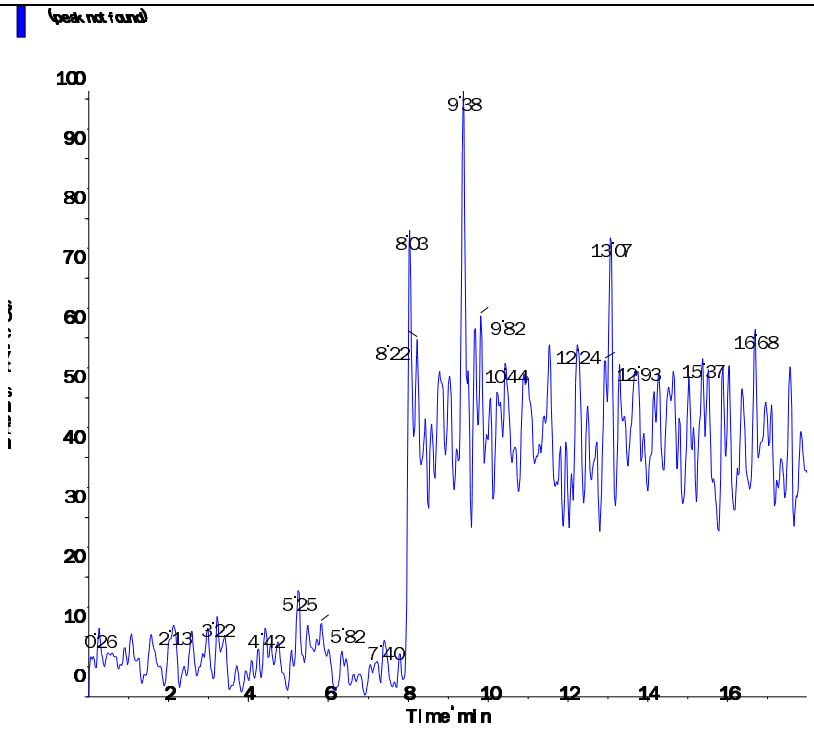

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Data File	LM34645.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 5:16:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041344-06	**Injection Vial**	14.00
Data File	LM34645.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 5:16:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	L16041344-06	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.120e+05	9.65	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.65(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

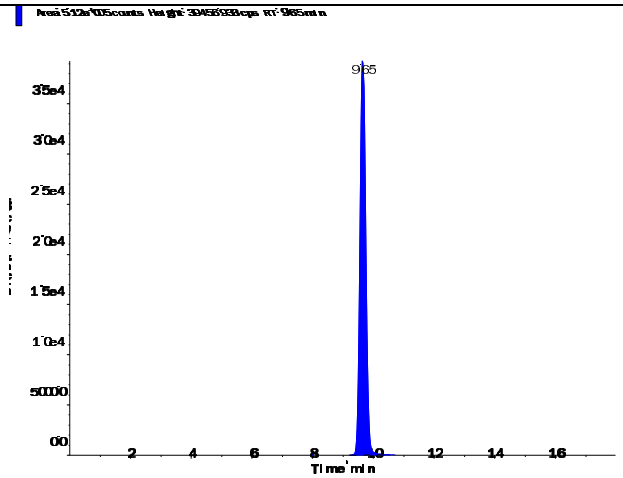

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

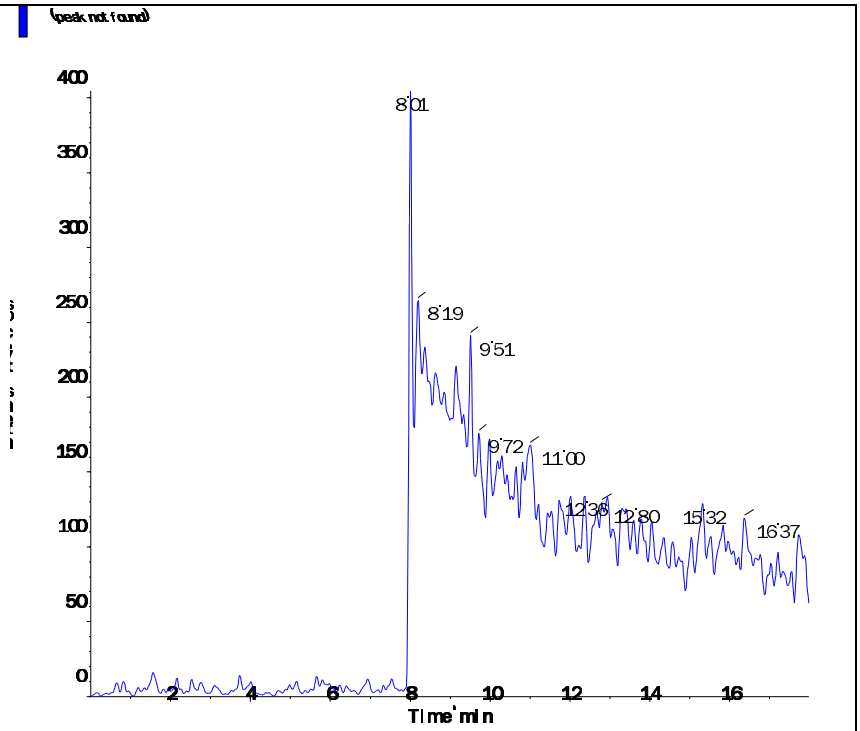

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.90) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

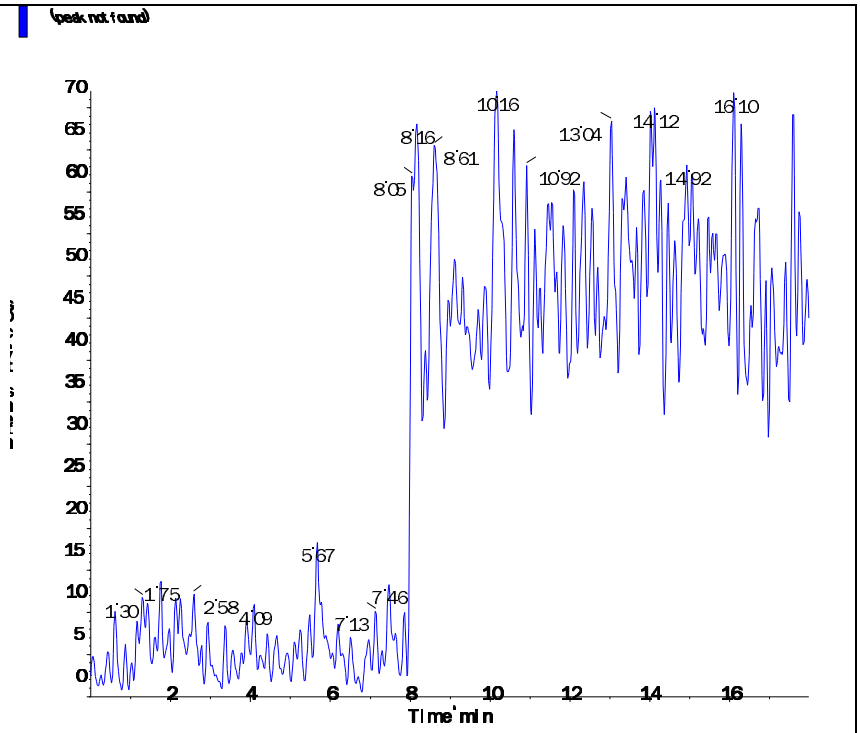

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Data File	LM34646.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 5:35:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041344-07	**Injection Vial**	15.00
Data File	LM34646.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 5:35:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	L16041344-07	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.540e+05	9.65	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.65(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

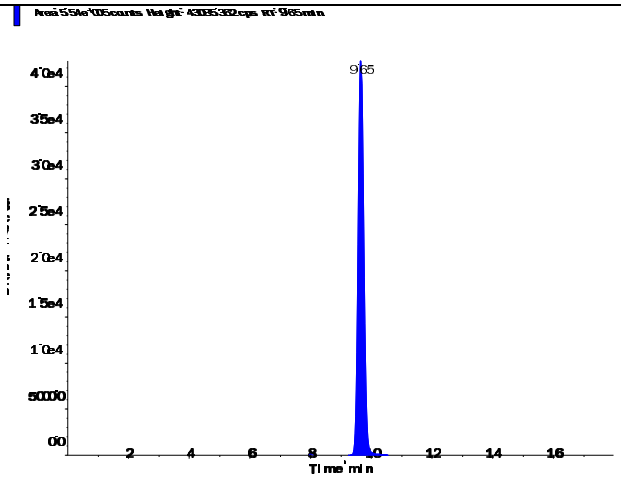

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

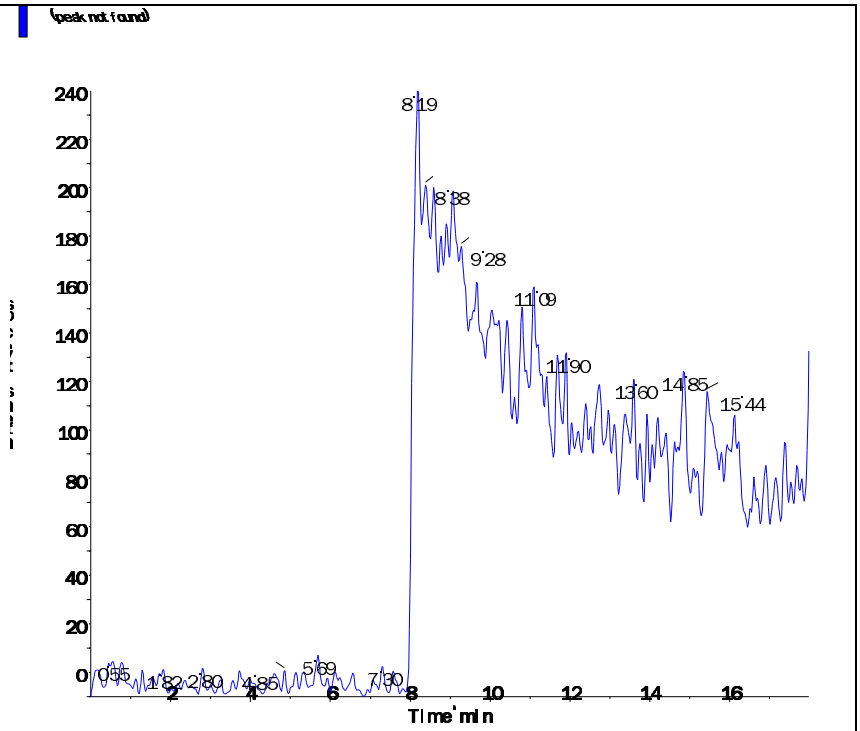

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.90) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

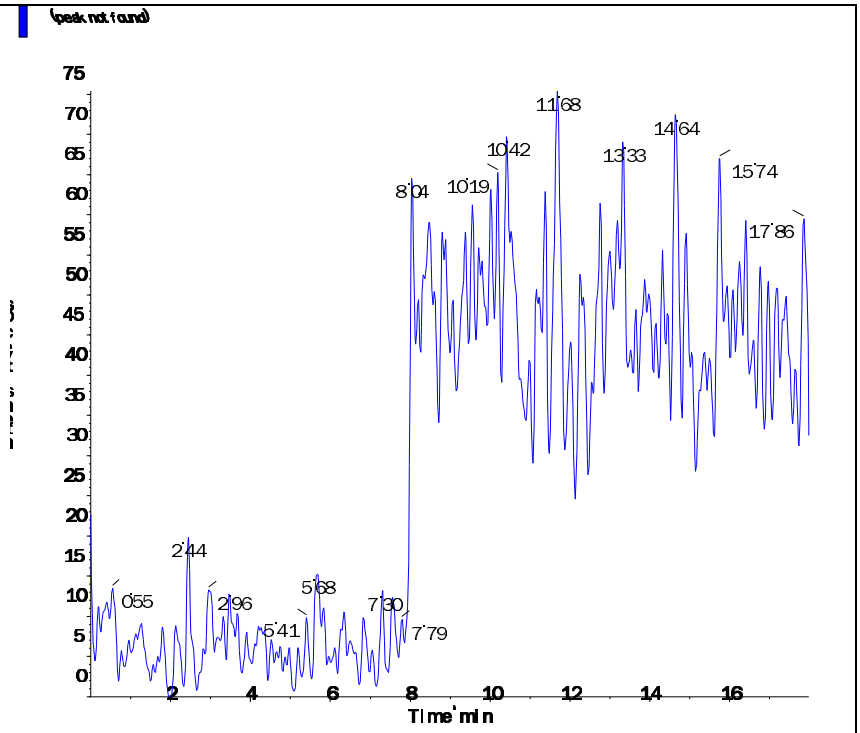

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Data File	LM34647.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 5:54:19 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041344-08	**Injection Vial**	16.00
Data File	LM34647.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 5:54:19 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	L16041344-08	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.170e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	4.320e+02	9.53	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

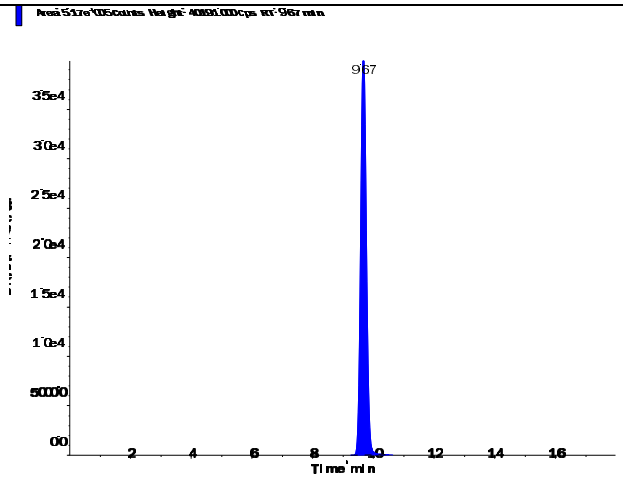

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

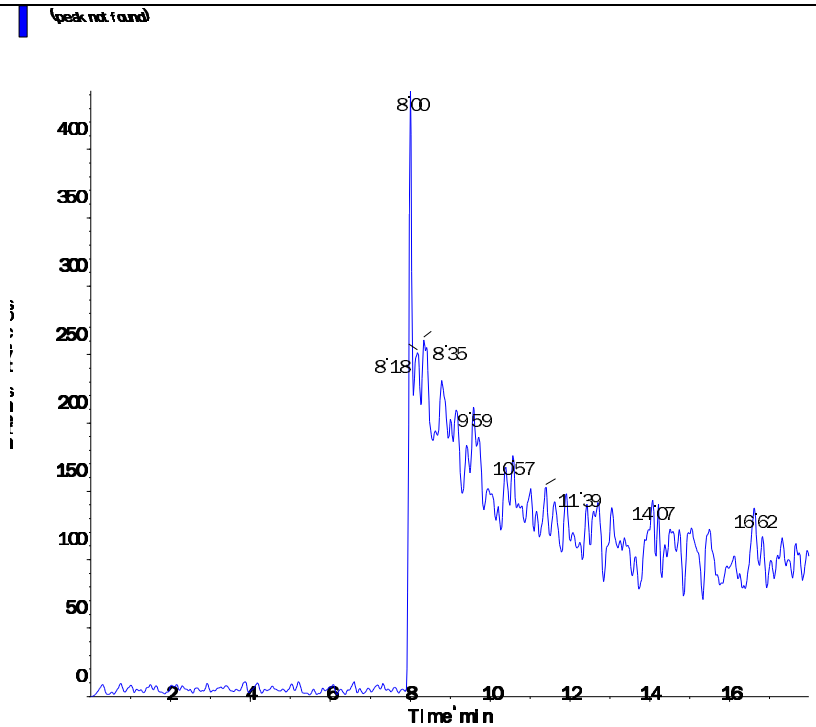

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.53 (9.90) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

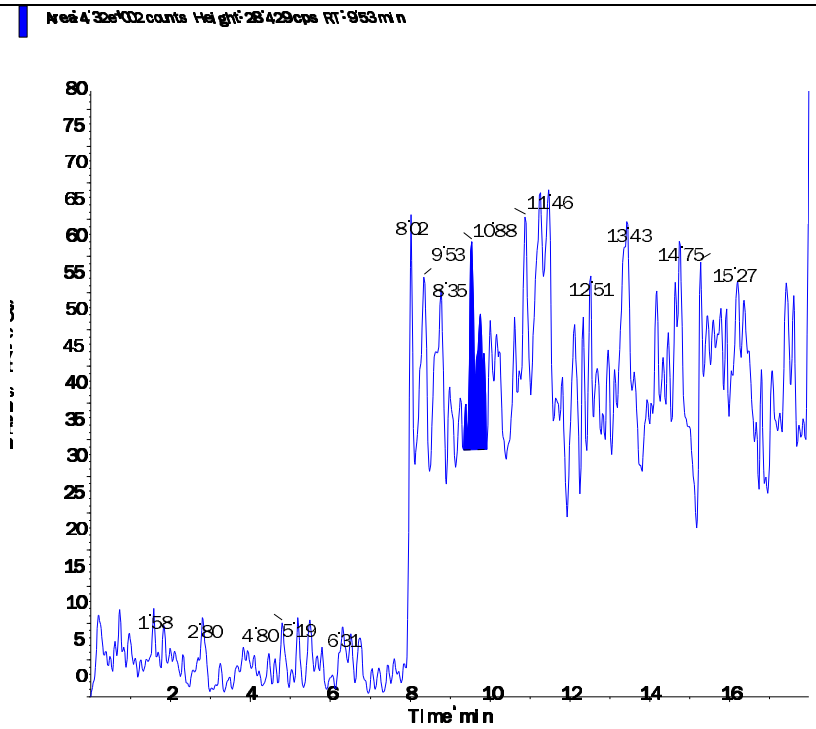

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Data File	LM34648.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 6:13:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041344-09	**Injection Vial**	17.00
Data File	LM34648.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 6:13:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	L16041344-09	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.310e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	3.610e+02	9.51	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

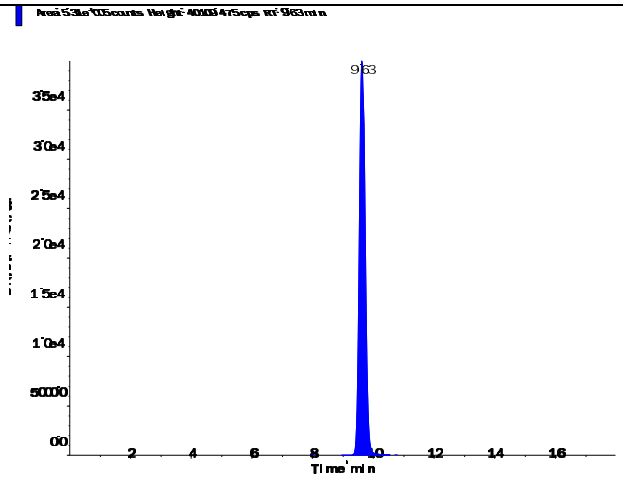

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.92) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	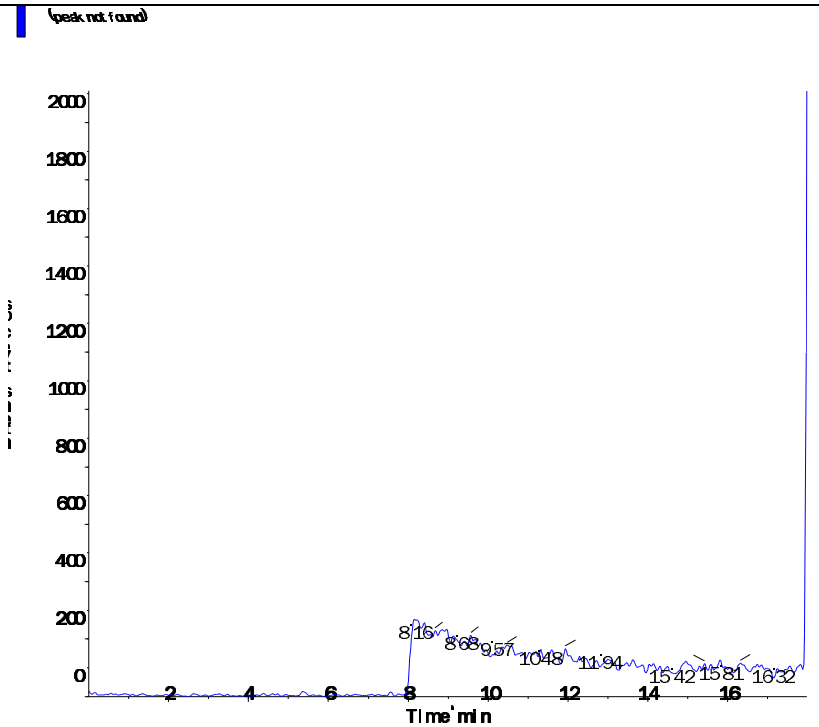
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.51 (9.90) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	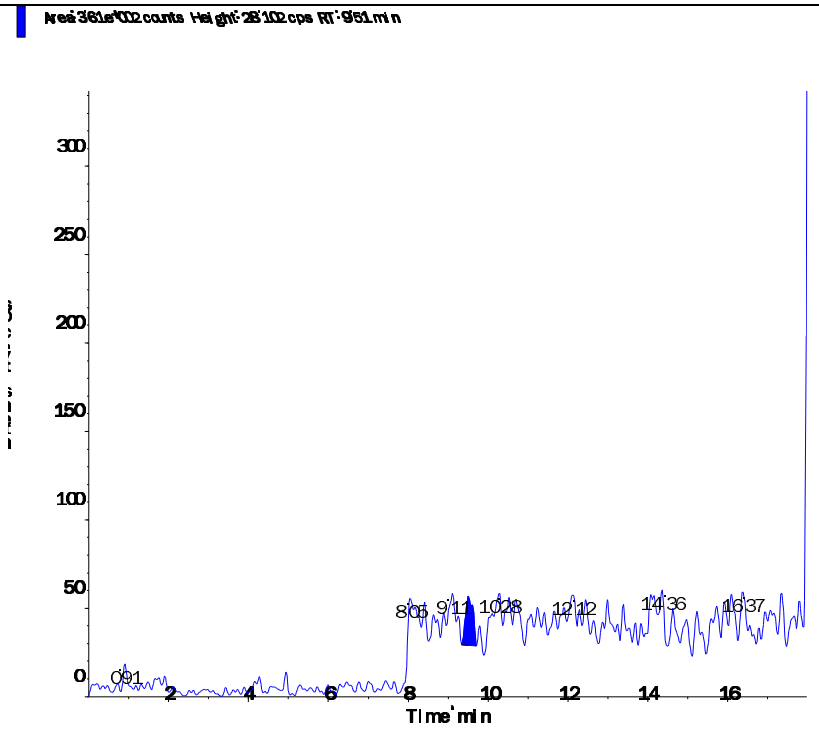

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Data File	LM34649.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 6:32:11 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041344-10	**Injection Vial**	18.00
Data File	LM34649.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 6:32:11 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	L16041344-10	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.120e+05	9.73	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.130e+04	9.75	N/A	0.127
Perchlorate conf	7.300e+03	9.73	N/A	0.114

O18LP (Internal Standard)

RT (Exp. RT): 9.73(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

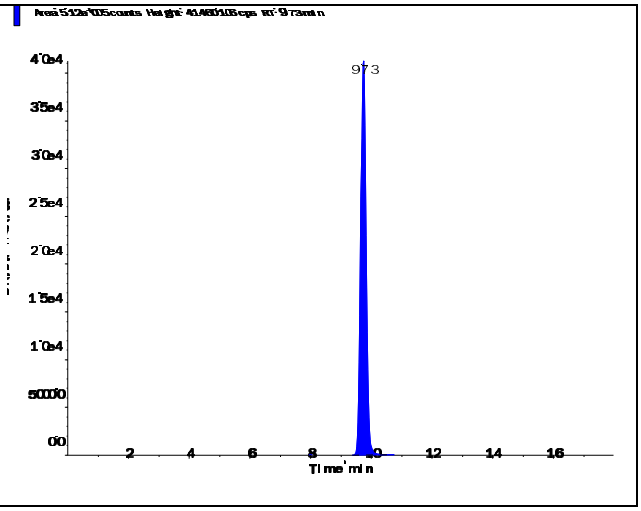

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.75 (9.92) min
Calculated conc:	0.127 ng/ml
Area Ratio:	0.042
Sample Type:	(Unknown)

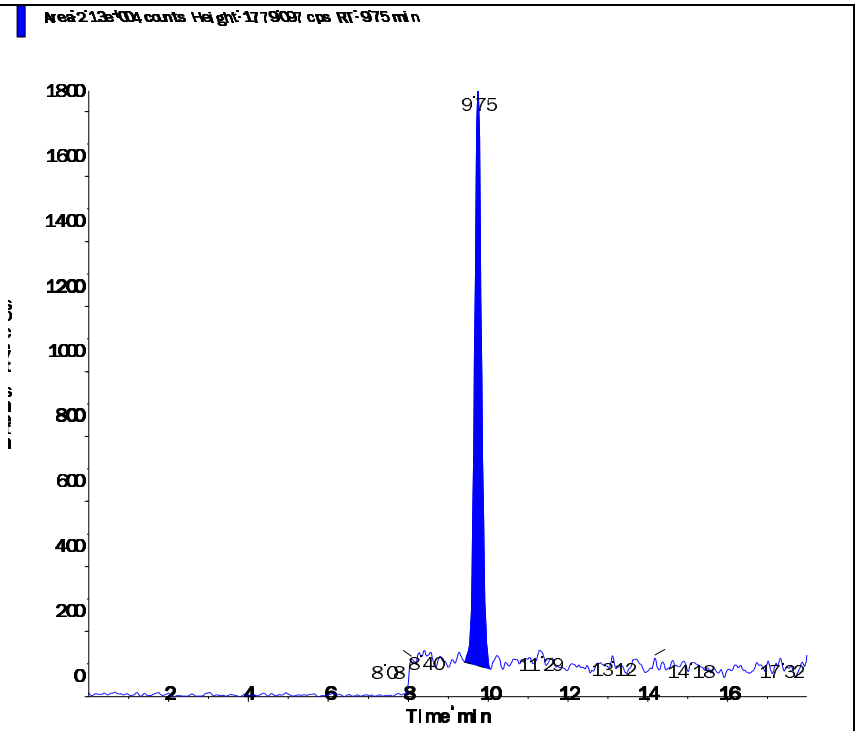

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.73 (9.90) min
Calculated conc:	0.114 ng/ml
Area Ratio:	0.014
Sample Type:	(Unknown)

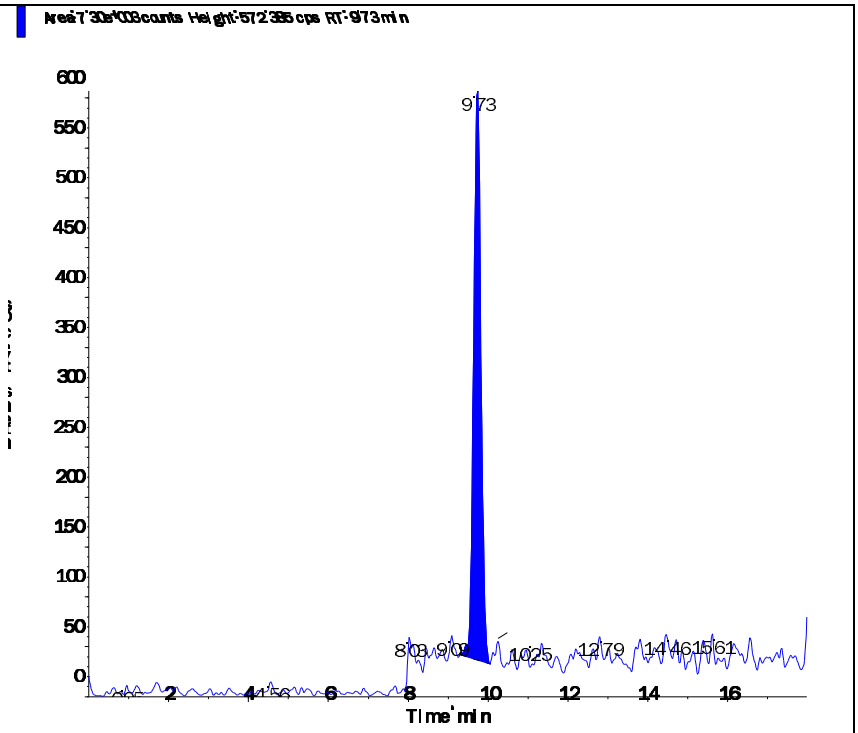

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Data File	LM34650.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 6:51:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041344-11	**Injection Vial**	19.00
Data File	LM34650.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 6:51:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	L16041344-11	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.76	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	6.390e+04	9.77	N/A	0.379
Perchlorate conf	2.160e+04	9.75	N/A	0.366

O18LP (Internal Standard)

RT (Exp. RT): 9.76(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

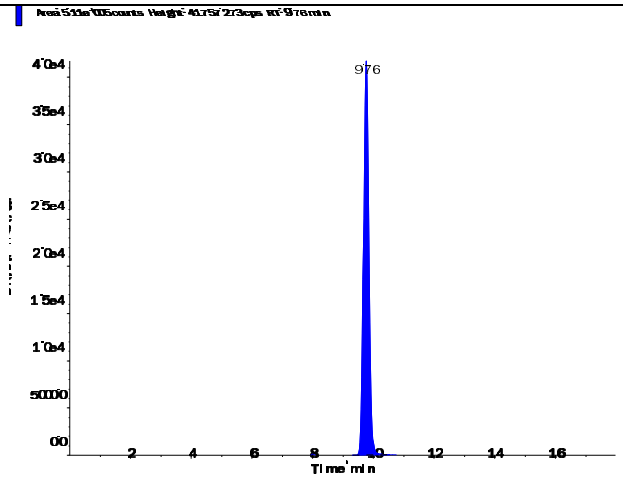

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.77 (9.92) min Calculated conc: 0.379 ng/ml Area Ratio: 0.125 Sample Type: (Unknown)	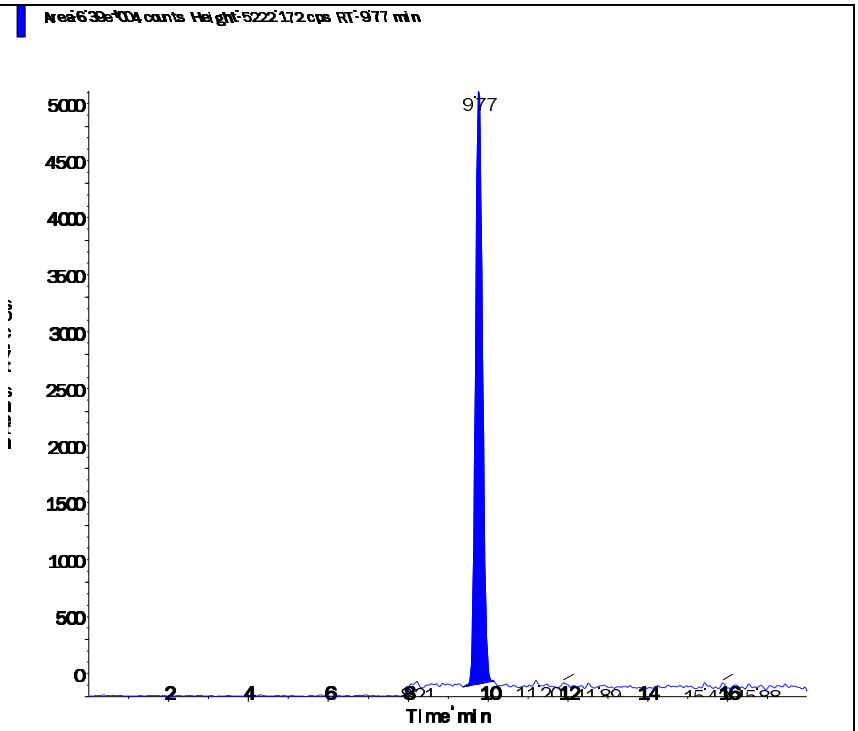
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.75 (9.90) min Calculated conc: 0.366 ng/ml Area Ratio: 0.042 Sample Type: (Unknown)	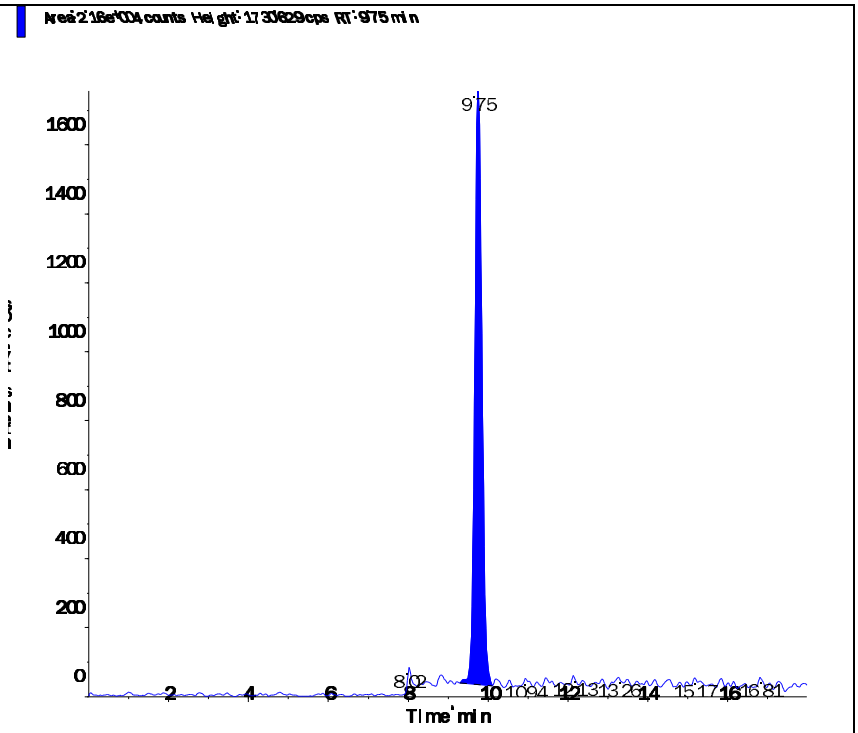

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Data File	LM34651.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 7:10:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041344-12	**Injection Vial**	20.00
Data File	LM34651.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 7:10:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	L16041344-12	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.150e+05	9.77	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.77(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

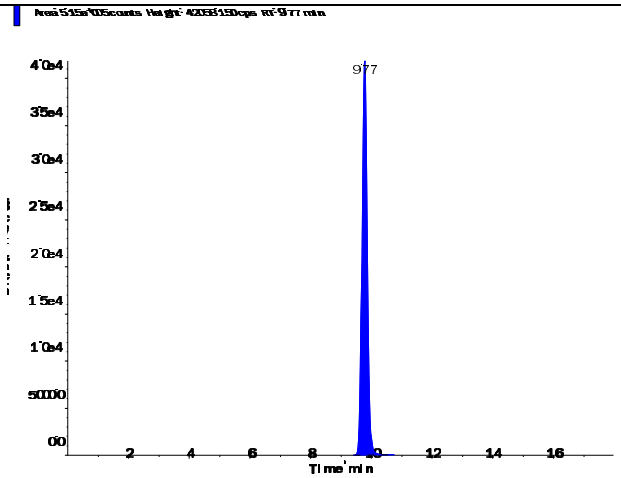

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

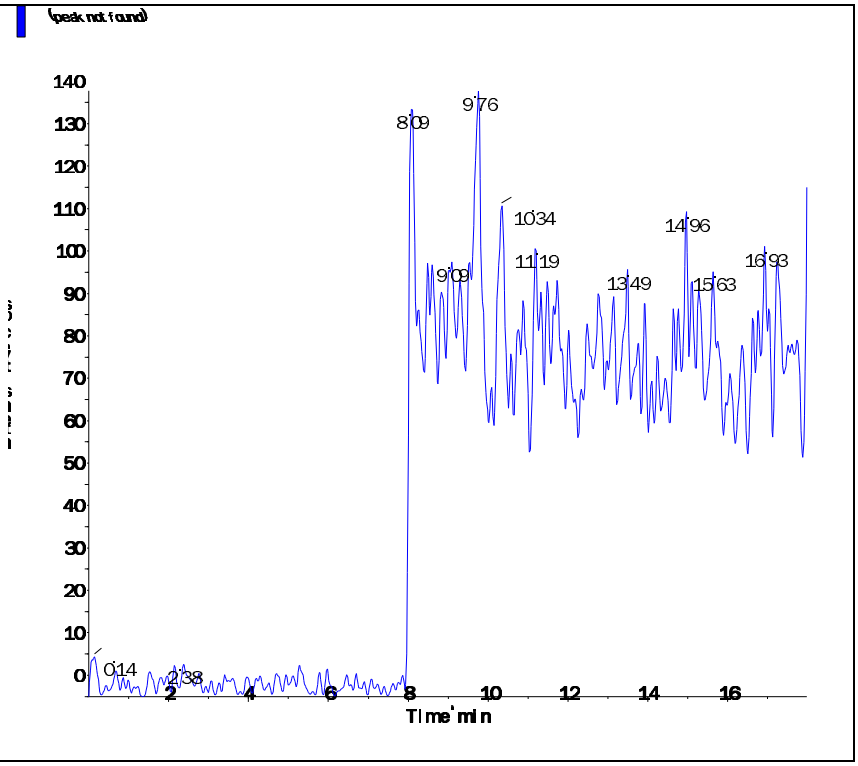

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.90) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

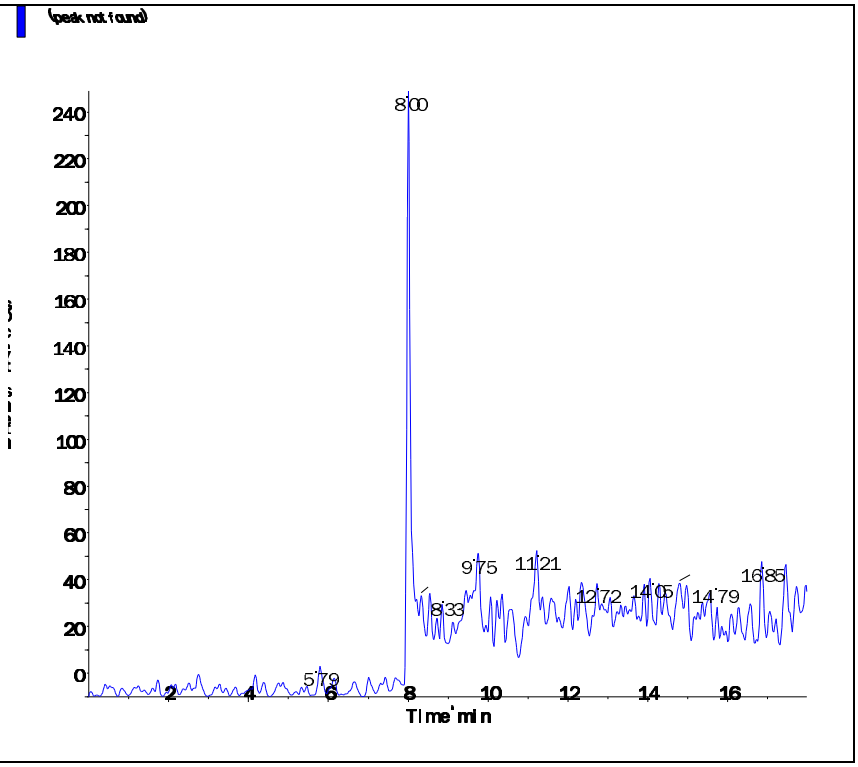

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Data File	LM34652.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 7:29:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041344-13	**Injection Vial**	21.00
Data File	LM34652.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 7:29:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	L16041344-13	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.130e+05	9.77	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.77(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

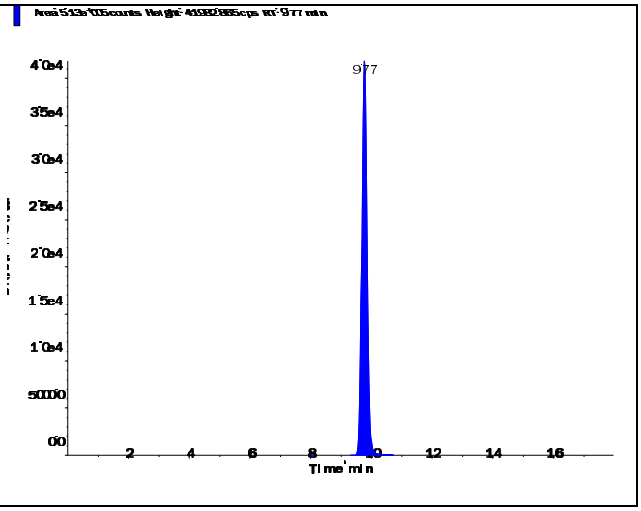

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

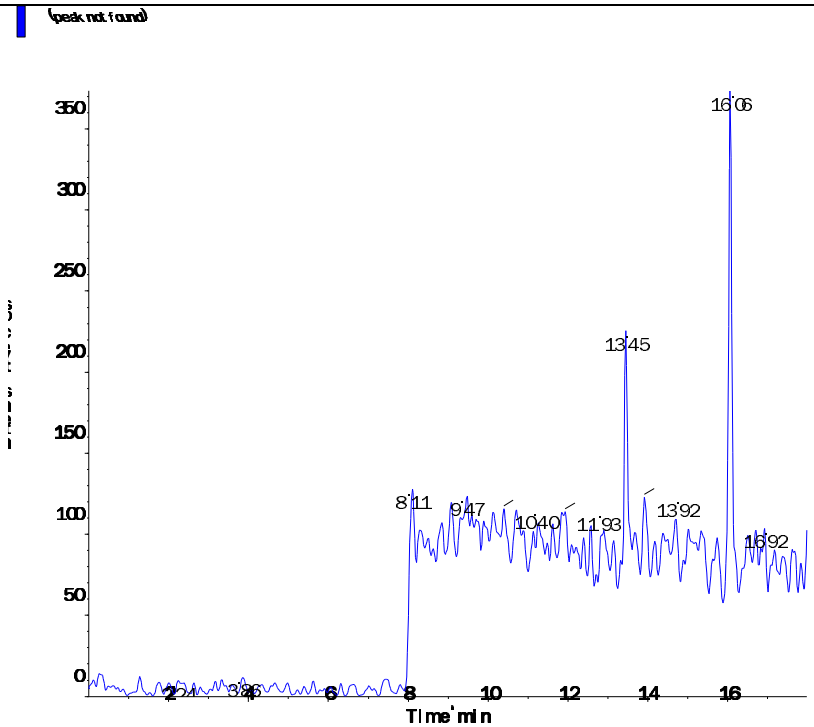

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.90) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

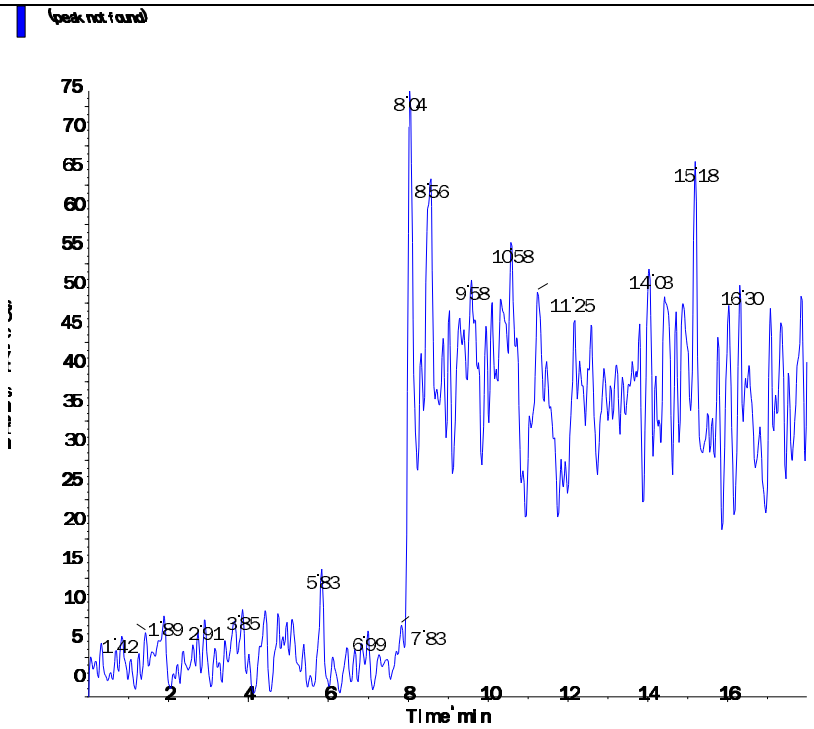

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Created with Analyst Reporter
Printed: 5/3/2016 11:25 AM

Data File	LM34653.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 7:47:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041344-14	**Injection Vial**	22.00
Data File	LM34653.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 7:47:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	L16041344-14	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.120e+05	9.78	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.78(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

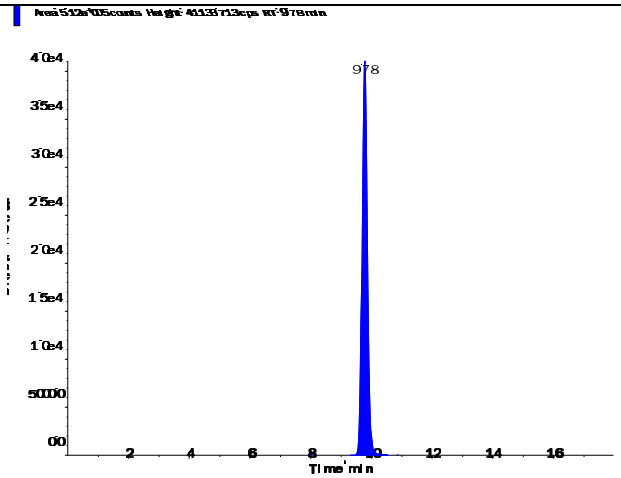

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

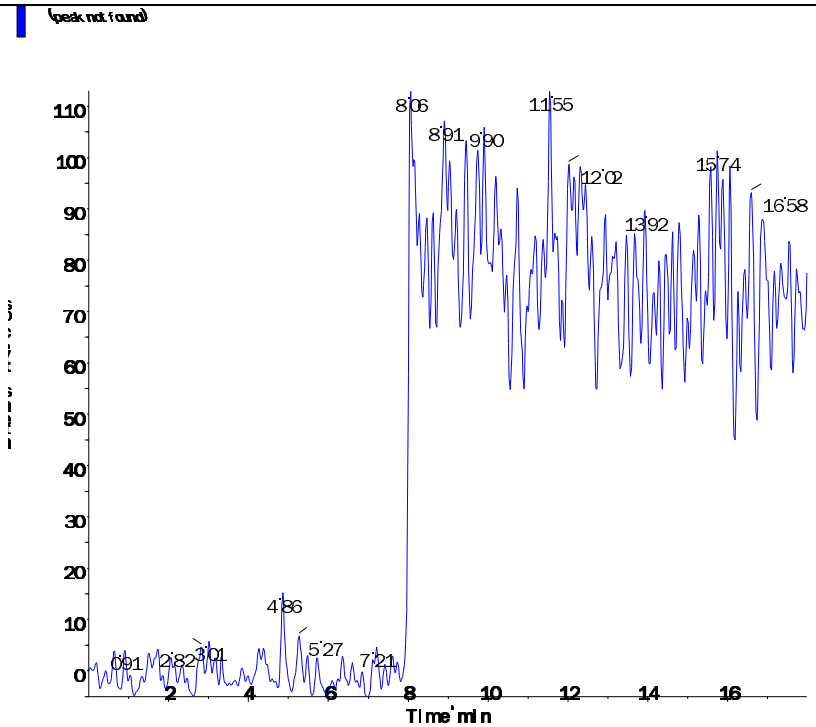

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.90) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

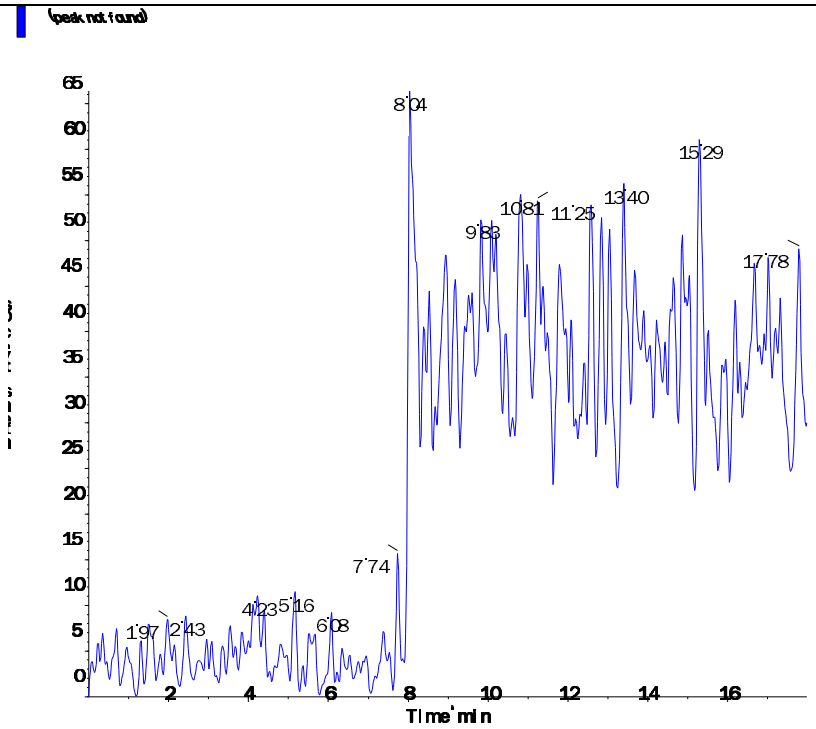

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2.2.1.4 Standards Data

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Data File	LM34522.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	4/22/2016 3:08:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG566101-01 CCB	**Injection Vial**	1.00
Data File	LM34522.wiff	**Injection Volume**	10.00
Acquisition Date	4/22/2016 3:08:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	WG566101-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.690e+05	9.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.90(9.89) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

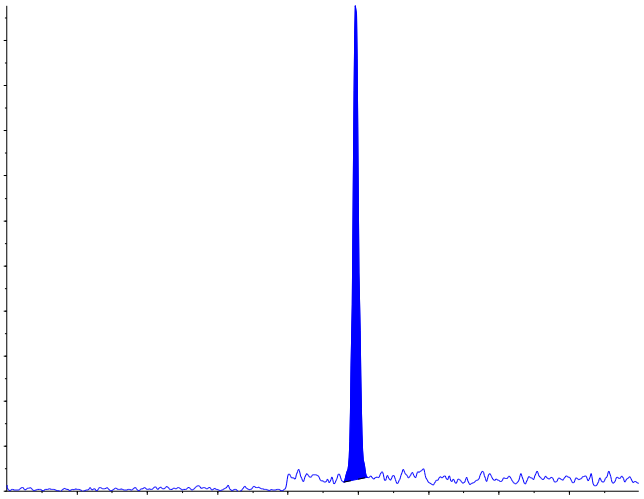

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.92) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	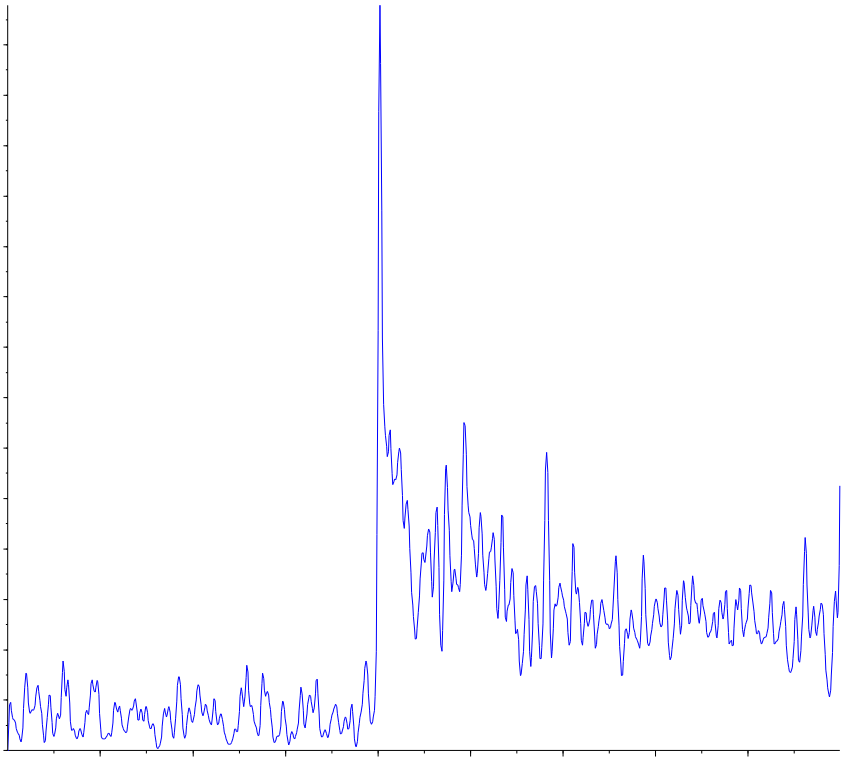
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.90) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	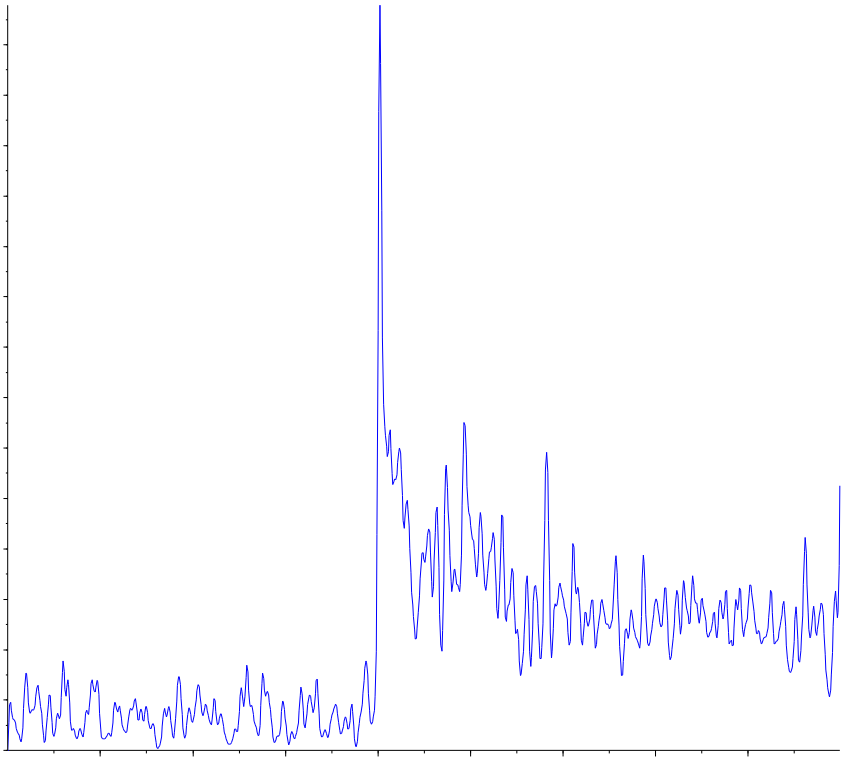

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Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34522.wiff	**Result Table**	042216_JWR.rdb
Acquisition Date	4/22/2016 3:08:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.65 x + -0.000344 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	101.4	N/A	N/A
0.20	1	0.20	99.7	N/A	N/A
0.50	1	0.49	98.8	N/A	N/A
1.00	1	1.01	101.3	N/A	N/A
2.00	1	1.98	99.0	N/A	N/A
5.00	1	4.97	99.4	N/A	N/A
10.00	1	10.04	100.4	N/A	N/A

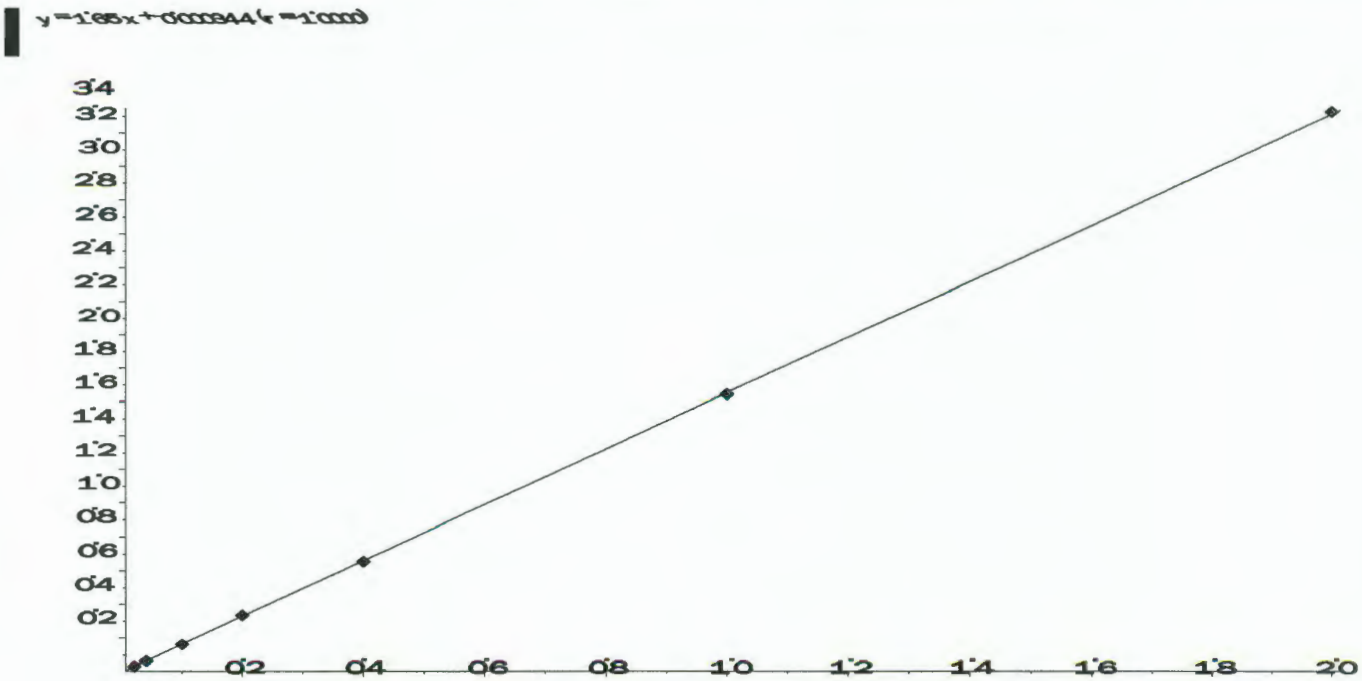

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Created with Analyst Reporter
Printed: 4/25/2016 12:43 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34522.wiff	**Result Table**	042216_JWR.rdb
Acquisition Date	4/22/2016 3:08:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.557 x + 0.00157 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	100.7	N/A	N/A
0.20	1	0.20	100.8	N/A	N/A
0.50	1	0.49	97.6	N/A	N/A
1.00	1	1.00	100.2	N/A	N/A
2.00	1	2.03	101.5	N/A	N/A
5.00	1	4.93	98.6	N/A	N/A
10.00	1	10.05	100.5	N/A	N/A

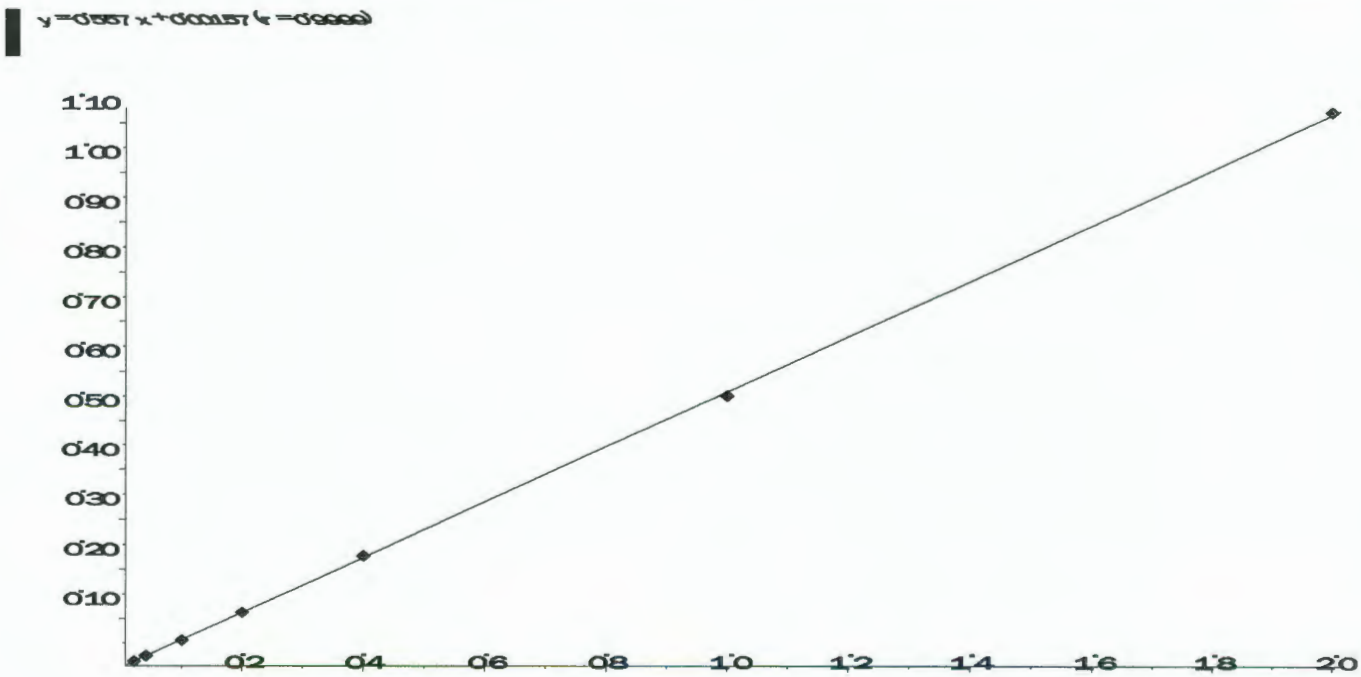

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Data File	LM34523.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	4/22/2016 3:27:15 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG566101-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34523.wiff	**Injection Volume**	10.00
Acquisition Date	4/22/2016 3:27:15 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	WG566101-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.670e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.220e+04	9.93	0.10	0.101
Perchlorate conf	4.690e+03	9.92	0.10	0.101

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

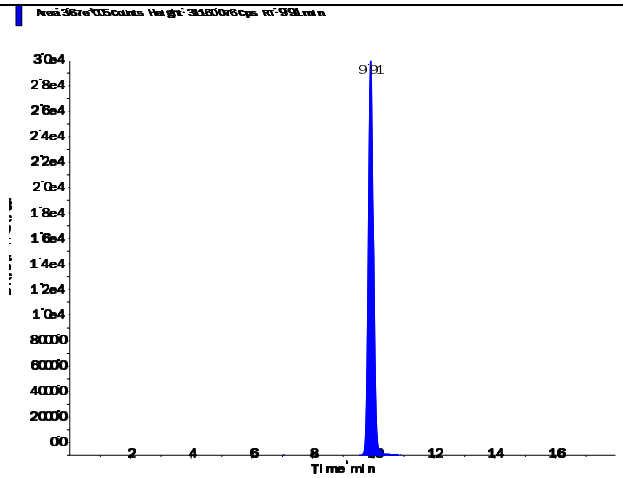

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.93 (9.92) min Calculated conc: 0.101 ng/ml Area Ratio: 0.033 Sample Type: (Standard)	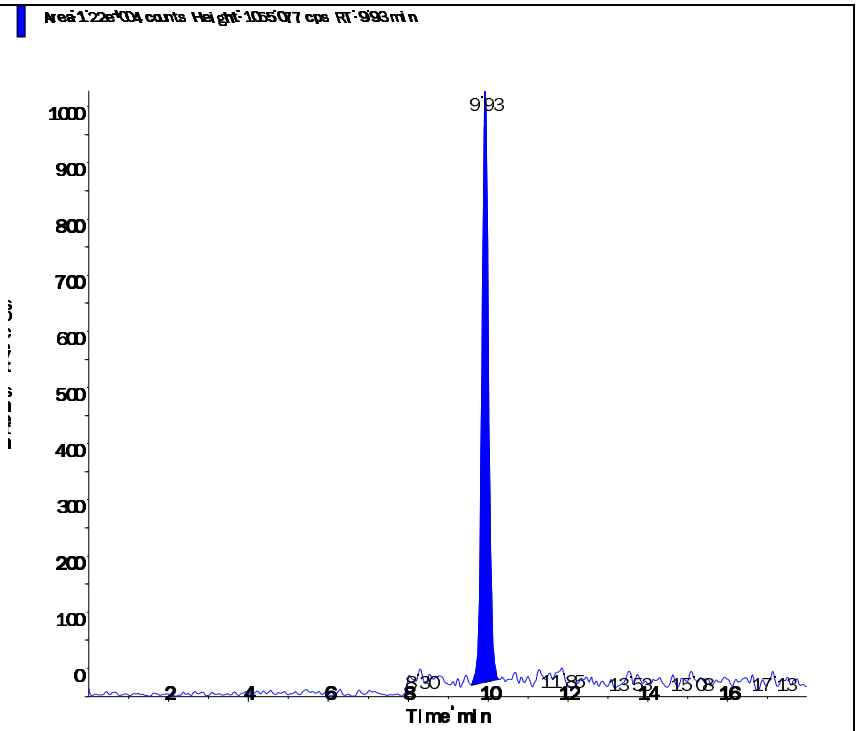
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.92 (9.90) min Calculated conc: 0.101 ng/ml Area Ratio: 0.013 Sample Type: (Standard)	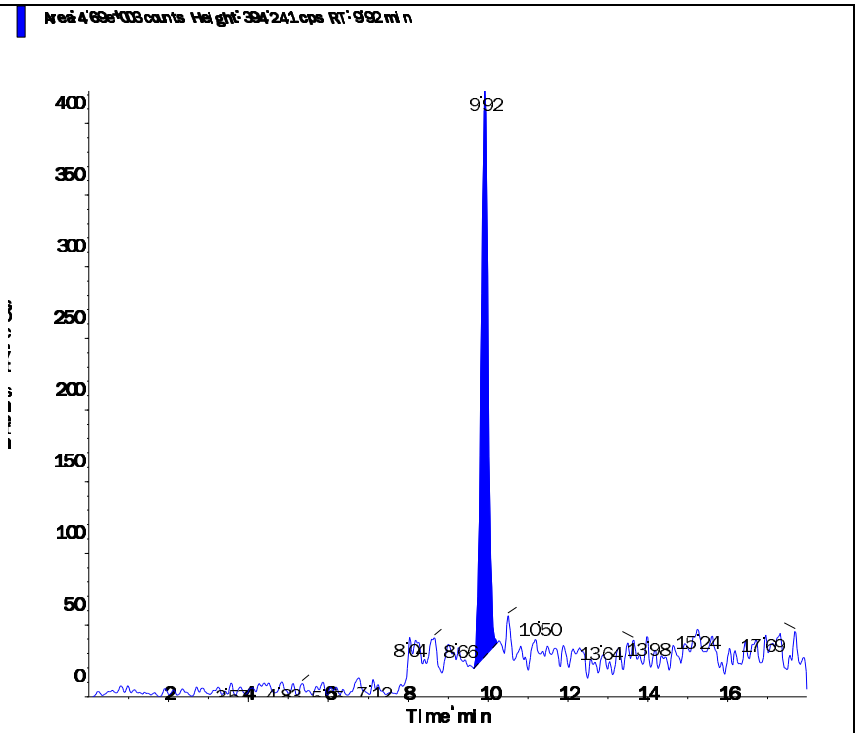

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Data File	LM34524.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	4/22/2016 3:46:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG566101-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34524.wiff	**Injection Volume**	10.00
Acquisition Date	4/22/2016 3:46:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	WG566101-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.710e+05	9.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.440e+04	9.92	0.20	0.199
Perchlorate conf	8.930e+03	9.90	0.20	0.202

O18LP (Internal Standard)

RT (Exp. RT): 9.90(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

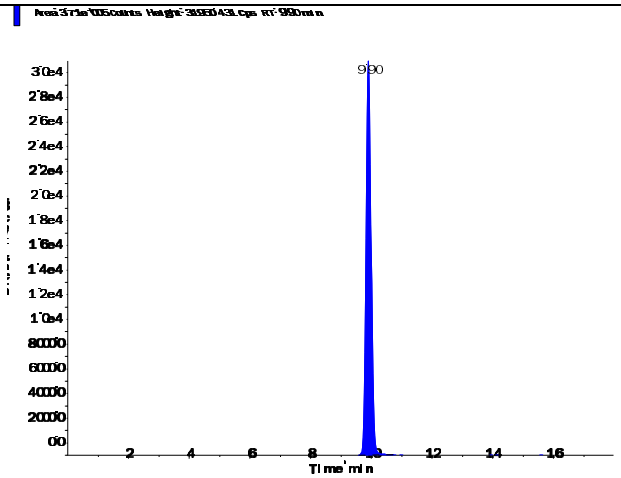

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.92 (9.92) min Calculated conc: 0.199 ng/ml Area Ratio: 0.066 Sample Type: (Standard)	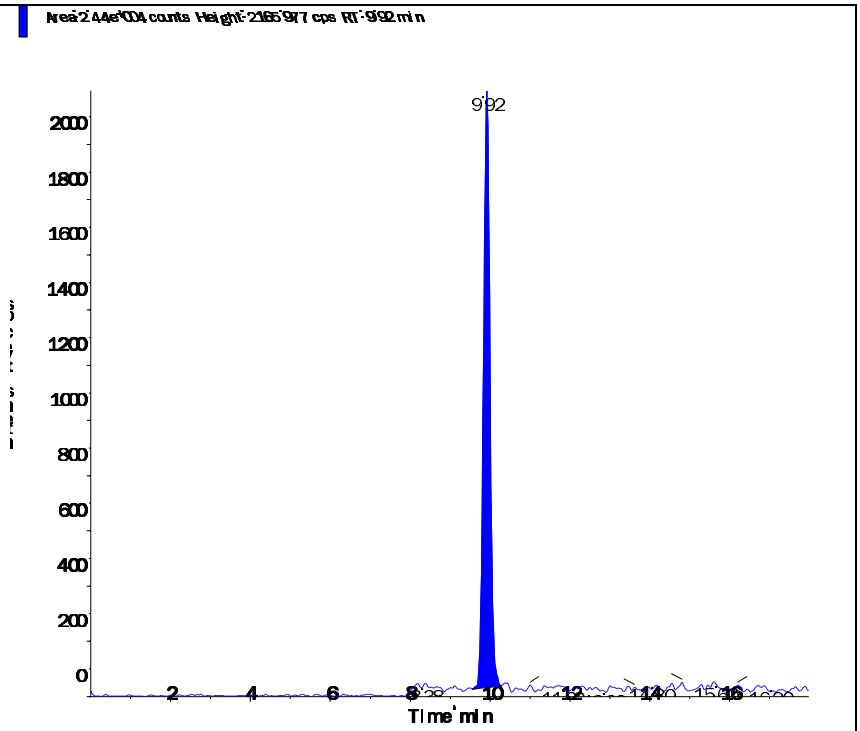
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.90 (9.90) min Calculated conc: 0.202 ng/ml Area Ratio: 0.024 Sample Type: (Standard)	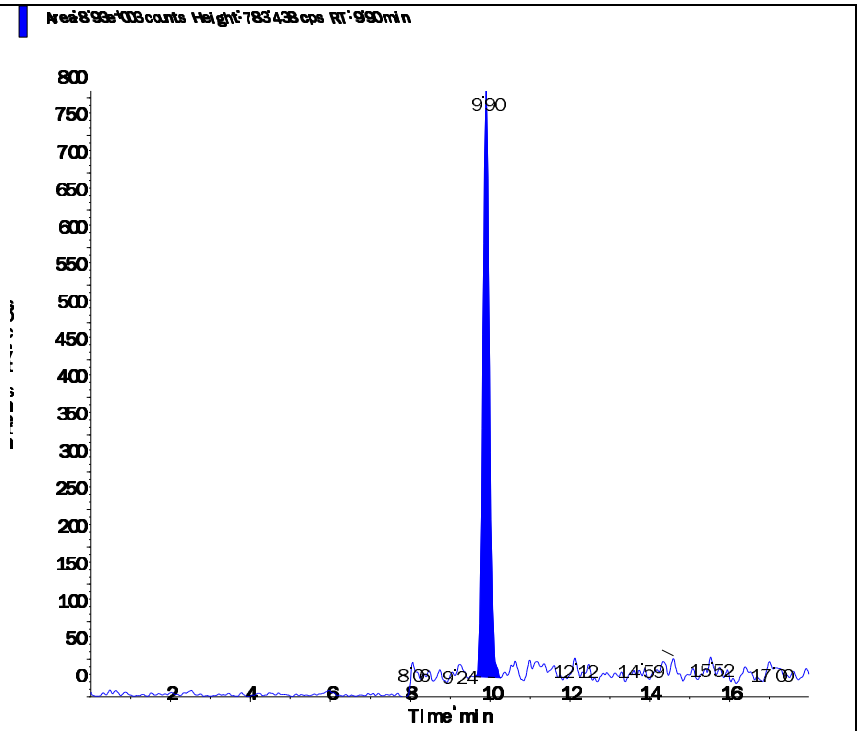

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Data File	LM34525.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	4/22/2016 4:05:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG566101-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34525.wiff	**Injection Volume**	10.00
Acquisition Date	4/22/2016 4:05:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	WG566101-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.770e+05	9.90	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	6.150e+04	9.92	0.50	0.494
Perchlorate conf	2.110e+04	9.90	0.50	0.488

O18LP (Internal Standard)

RT (Exp. RT): 9.90(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

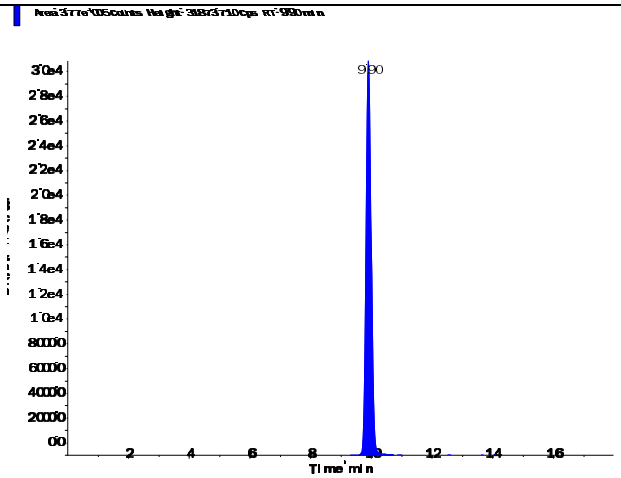

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	0.494 ng/ml
Area Ratio:	0.163
Sample Type:	(Standard)

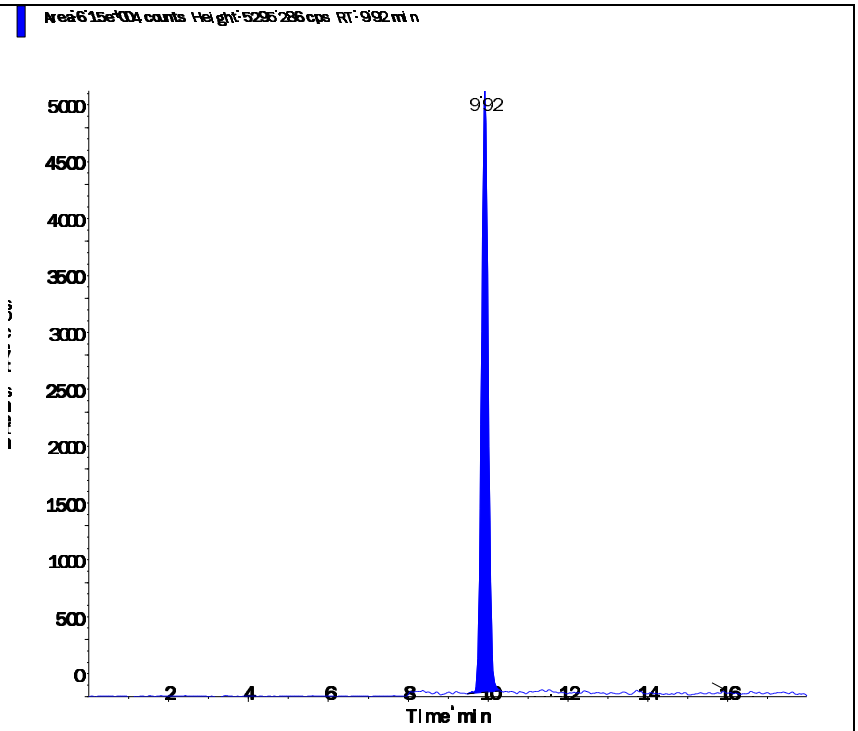

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.90 (9.90) min
Calculated conc:	0.488 ng/ml
Area Ratio:	0.056
Sample Type:	(Standard)

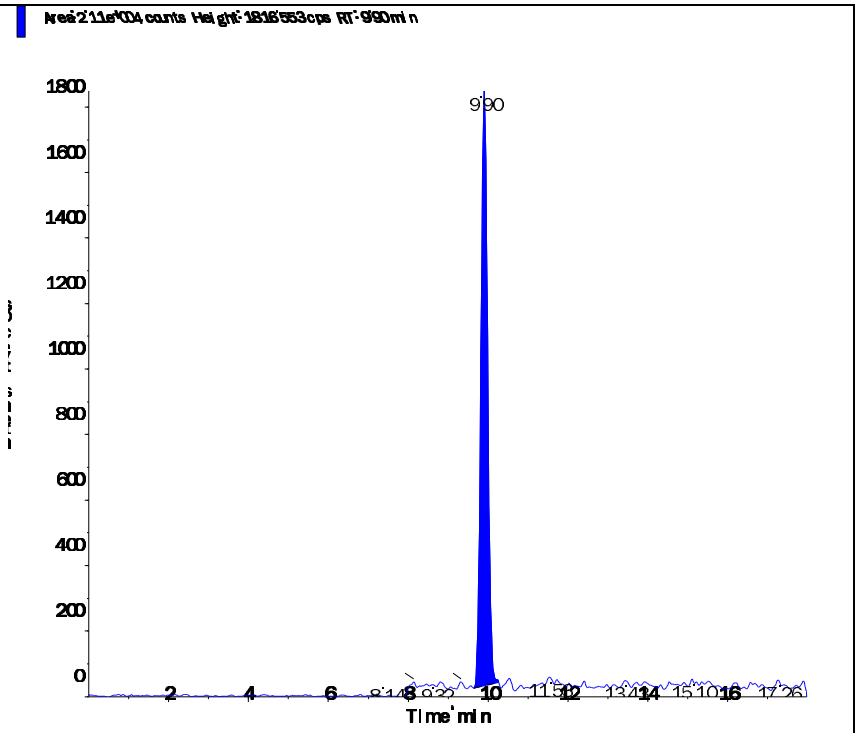

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Data File	LM34526.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	4/22/2016 4:24:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG566101-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34526.wiff	**Injection Volume**	10.00
Acquisition Date	4/22/2016 4:24:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	WG566101-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.800e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.270e+05	9.92	1.00	1.01
Perchlorate conf	4.300e+04	9.91	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

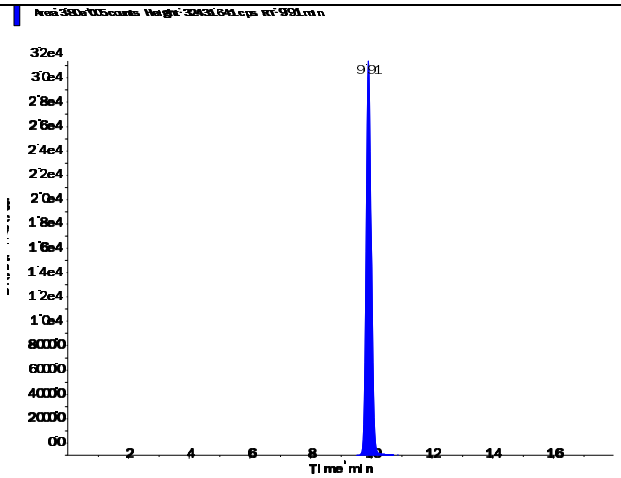

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.335
Sample Type:	(Standard)

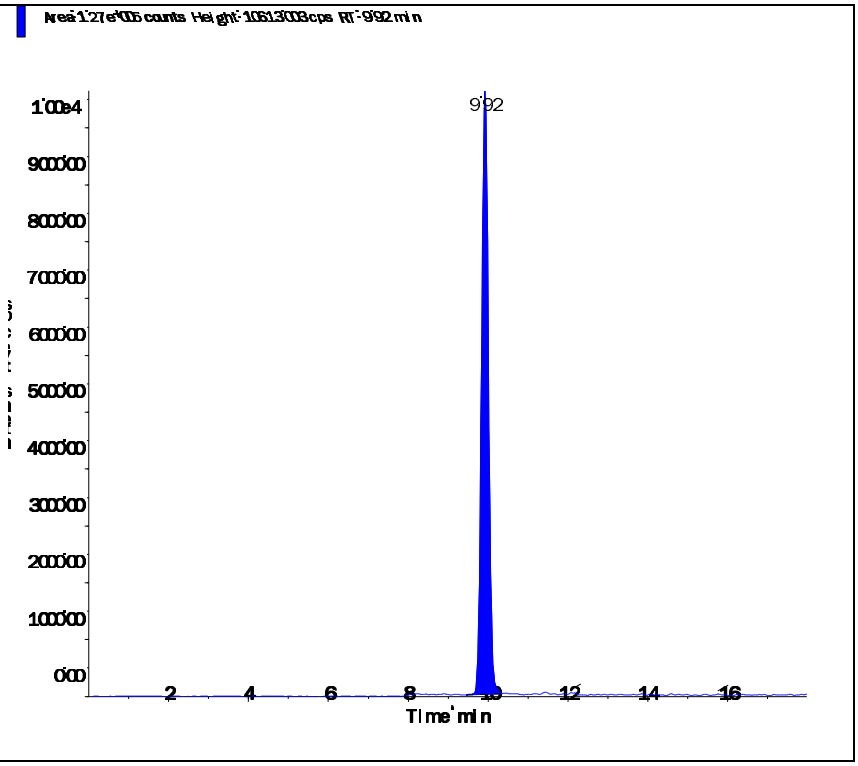

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.90) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.113
Sample Type:	(Standard)

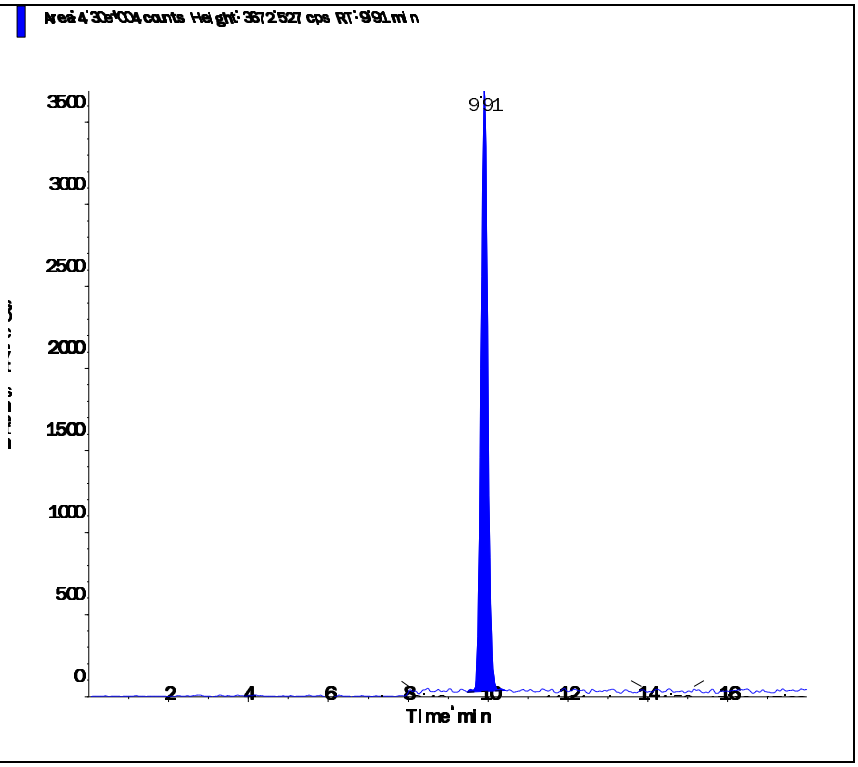

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Data File	LM34527.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	4/22/2016 4:42:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG566101-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34527.wiff	**Injection Volume**	10.00
Acquisition Date	4/22/2016 4:42:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	WG566101-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.810e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.490e+05	9.92	2.00	1.98
Perchlorate conf	8.680e+04	9.91	2.00	2.03

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

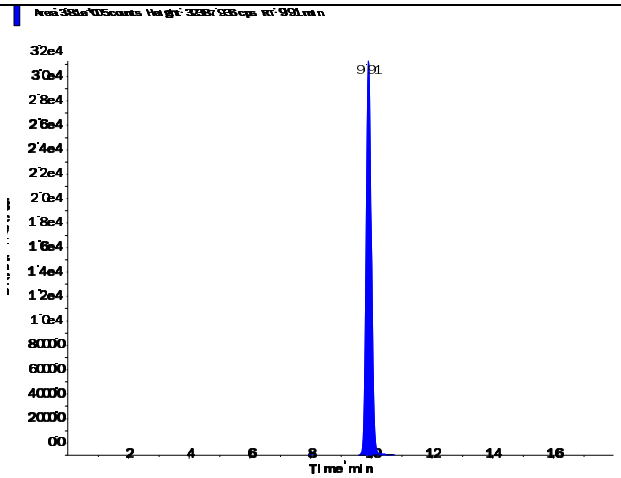

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	1.98 ng/ml
Area Ratio:	0.655
Sample Type:	(Standard)

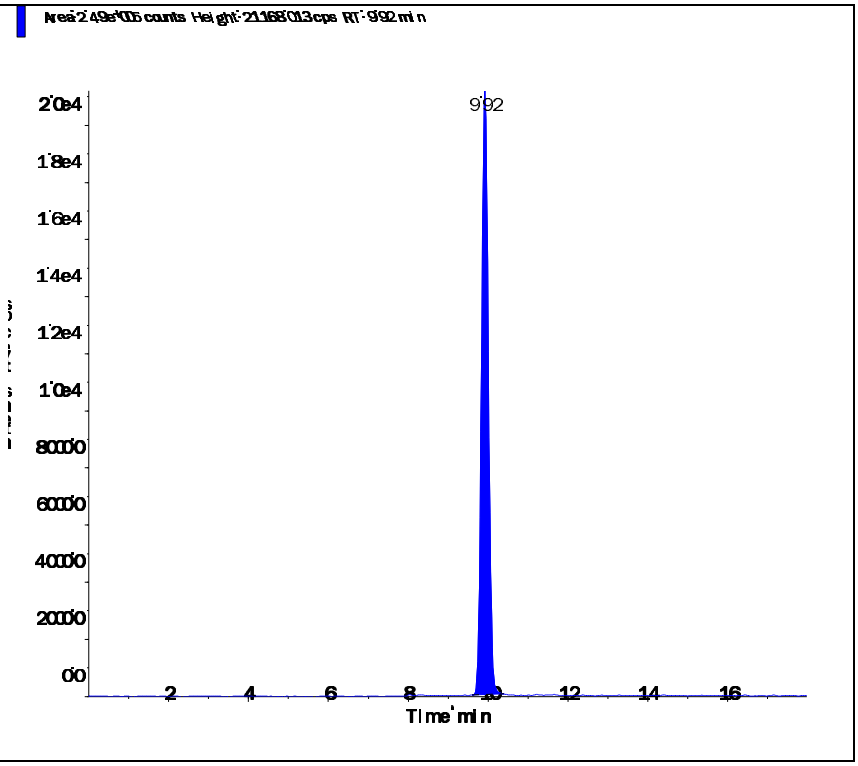

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.90) min
Calculated conc:	2.03 ng/ml
Area Ratio:	0.228
Sample Type:	(Standard)

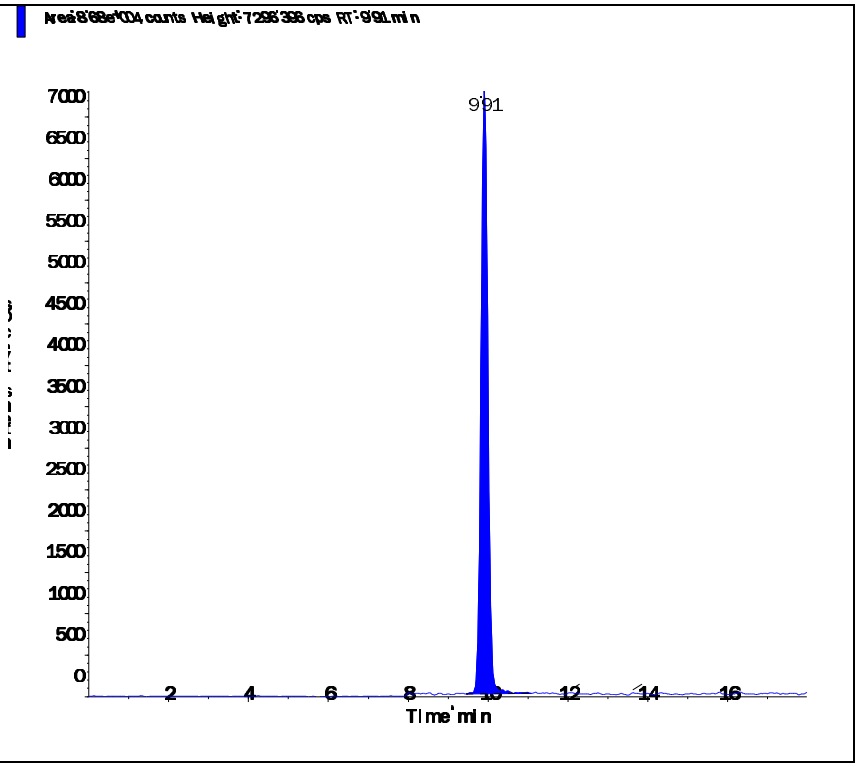

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Data File	LM34528.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	4/22/2016 5:01:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG566101-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34528.wiff	**Injection Volume**	10.00
Acquisition Date	4/22/2016 5:01:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	WG566101-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.730e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	6.140e+05	9.92	5.00	4.97
Perchlorate conf	2.060e+05	9.91	5.00	4.93

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

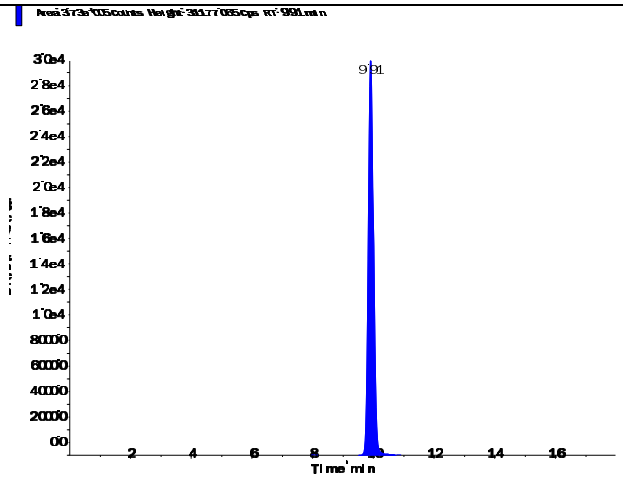

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.92 (9.92) min Calculated conc: 4.97 ng/ml Area Ratio: 1.645 Sample Type: (Standard)	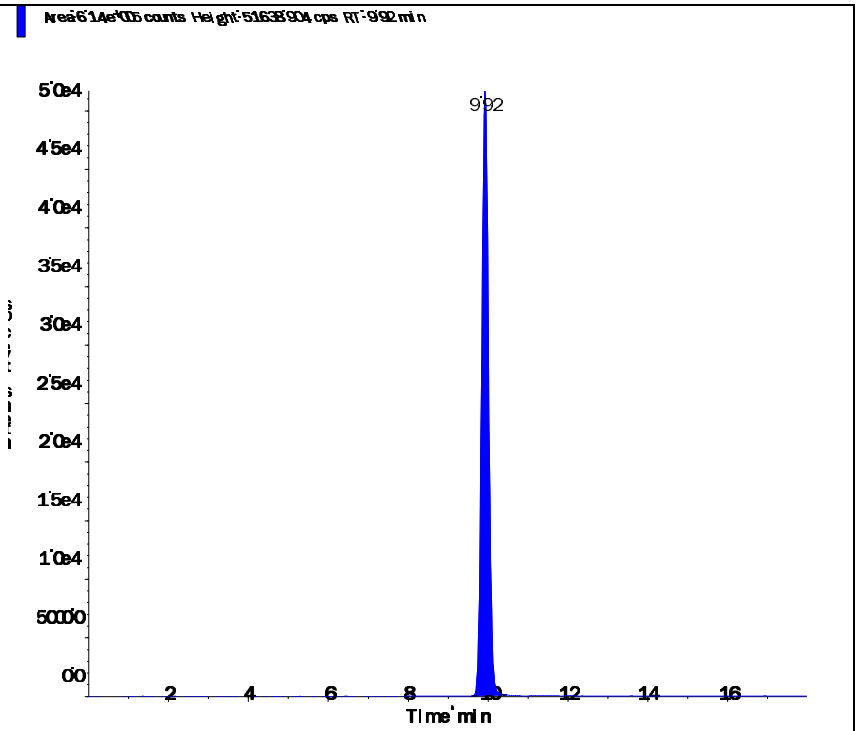
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.91 (9.90) min Calculated conc: 4.93 ng/ml Area Ratio: 0.551 Sample Type: (Standard)	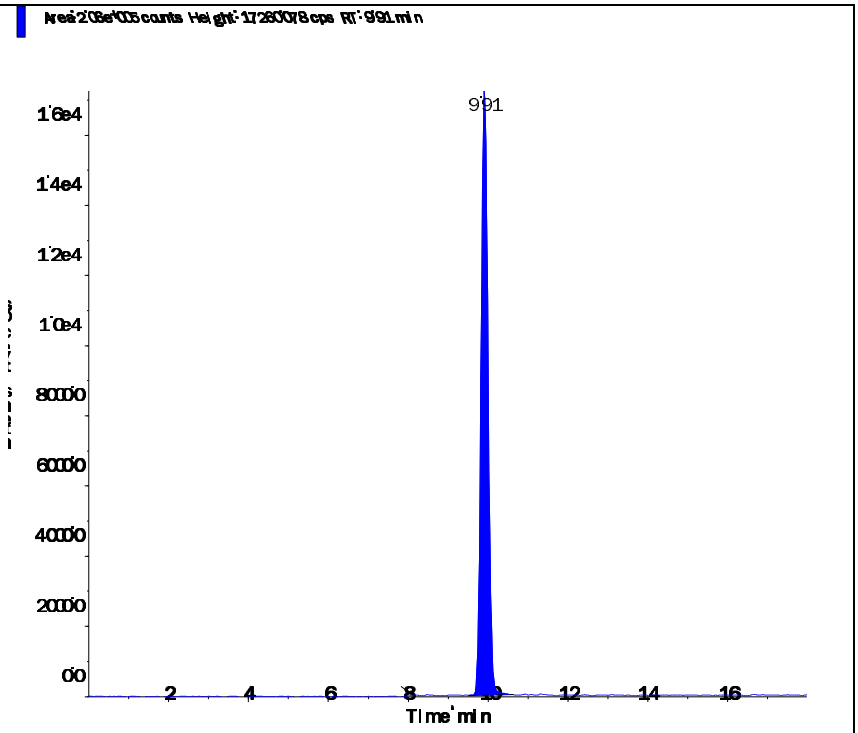

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Data File	LM34529.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	4/22/2016 5:20:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG566101-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34529.wiff	**Injection Volume**	10.00
Acquisition Date	4/22/2016 5:20:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	WG566101-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.550e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.180e+06	9.93	10.00	10.00
Perchlorate conf	3.980e+05	9.91	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

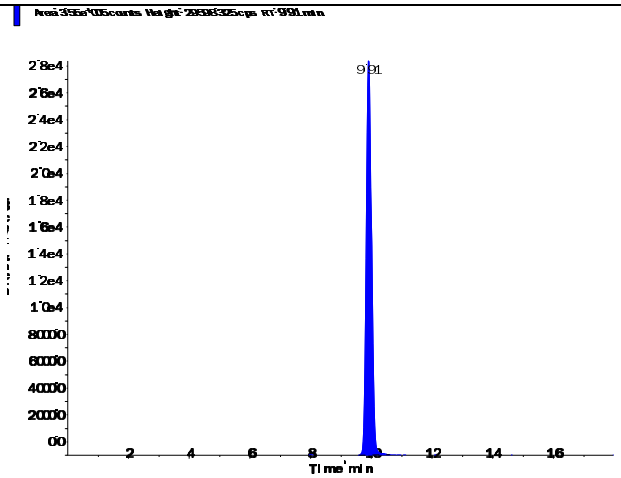

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.93 (9.92) min
Calculated conc:	10.00 ng/ml
Area Ratio:	3.322
Sample Type:	(Standard)

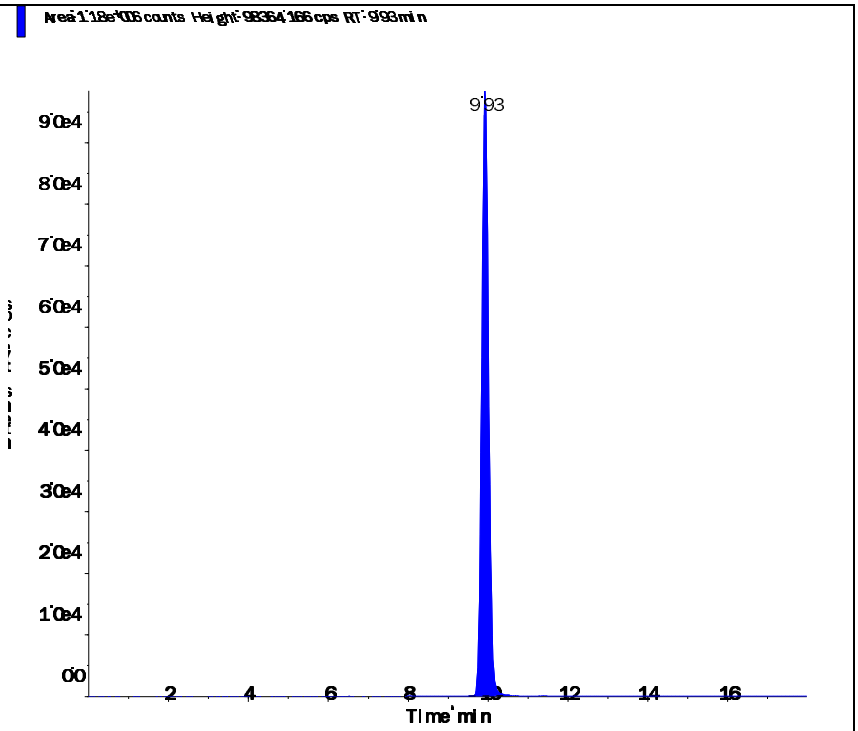

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.90) min
Calculated conc:	10.00 ng/ml
Area Ratio:	1.121
Sample Type:	(Standard)

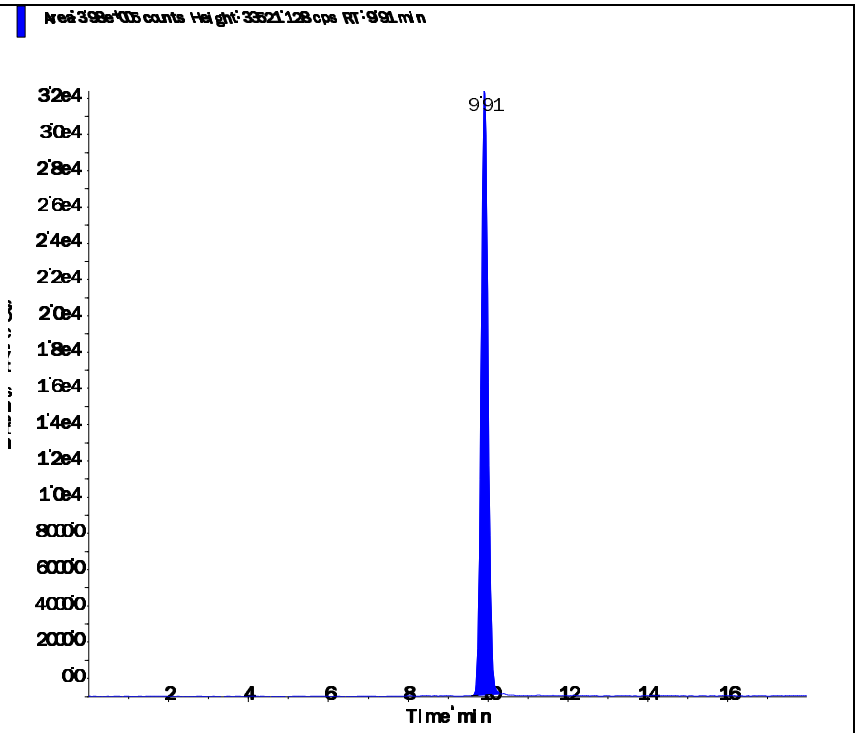

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Data File	LM34530.wiff	**Result Table**	042216_JWR.rdb
Acquisition Date	4/22/2016 5:39:47 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG566101-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34530.wiff	**Injection Volume**	10.00
Acquisition Date	4/22/2016 5:39:47 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	042216_JWR.rdb
Sample ID	WG566101-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.980e+05	9.91	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.300e+05	9.92	1.00	0.988
Perchlorate conf	4.570e+04	9.91	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.91(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

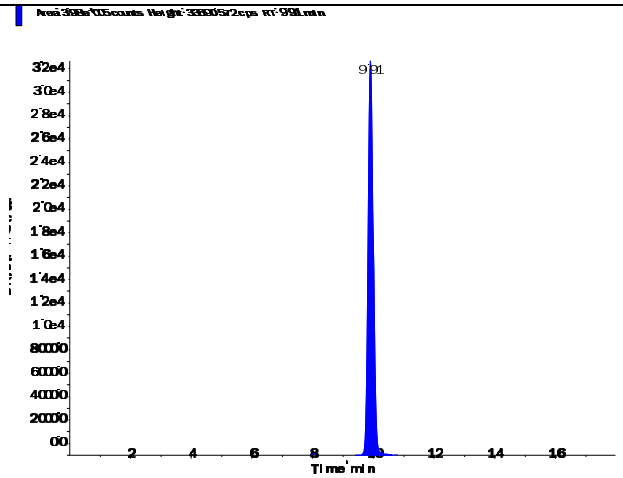

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.92 (9.92) min
Calculated conc:	0.988 ng/ml
Area Ratio:	0.327
Sample Type:	(Quality Control)

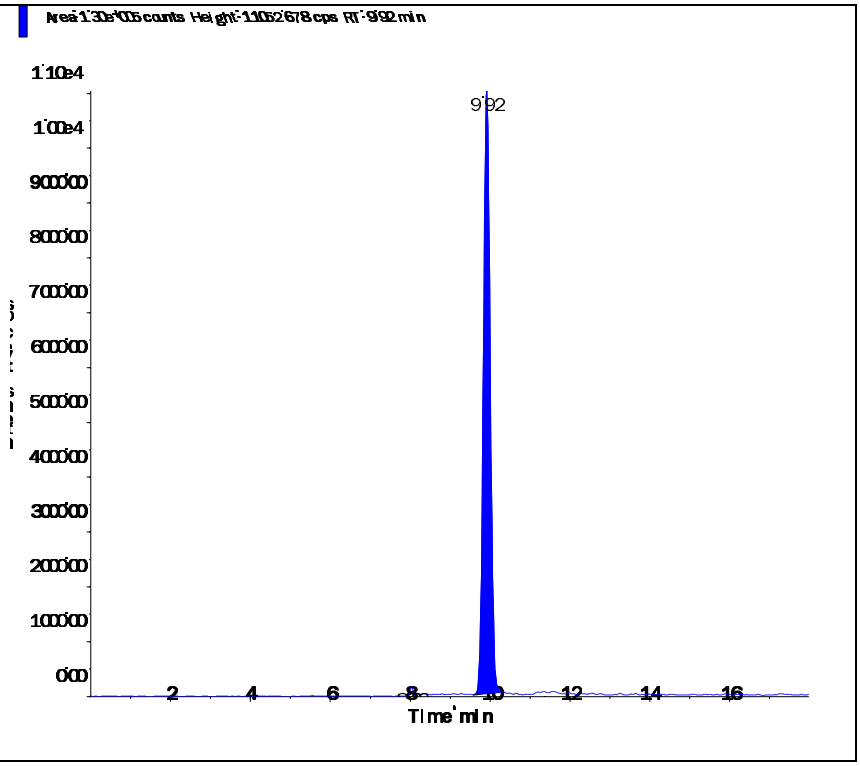

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.91 (9.90) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.115
Sample Type:	(Quality Control)

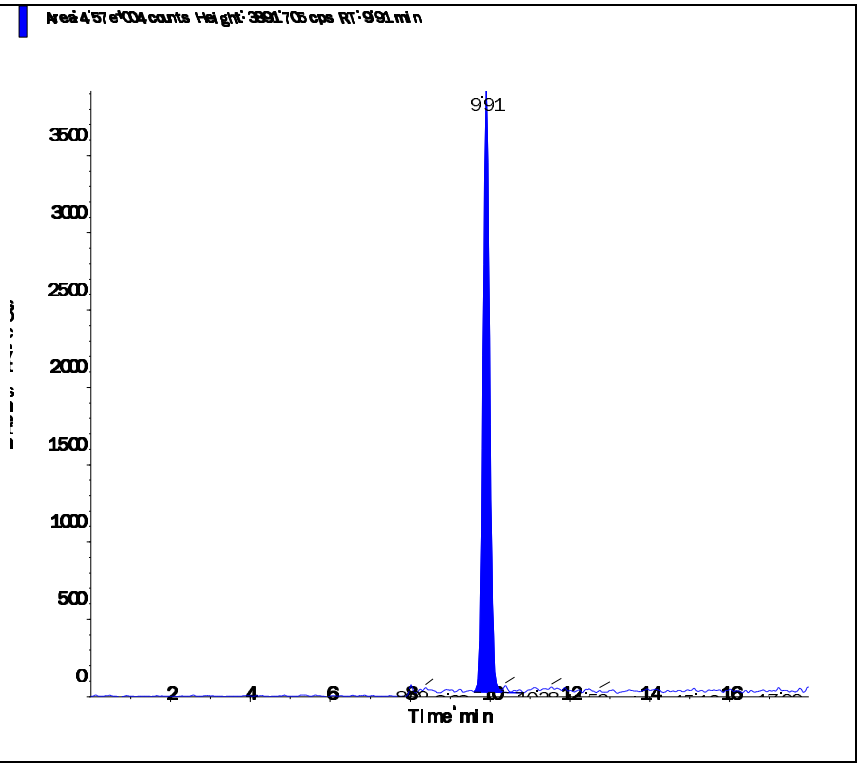

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Data File	LM34630.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 12:30:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567042-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM34630.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 12:30:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	WG567042-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.110e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.400e+05	9.85	1.00	1.03
Perchlorate conf	4.760e+04	9.84	1.00	1.02

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

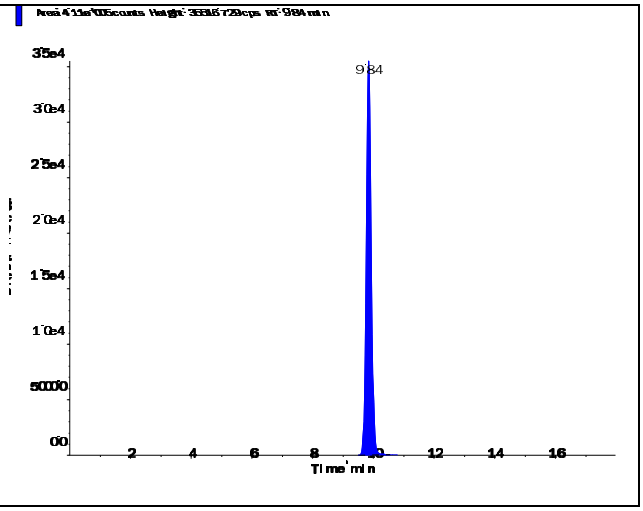

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.92) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.34
Sample Type:	(Quality Control)

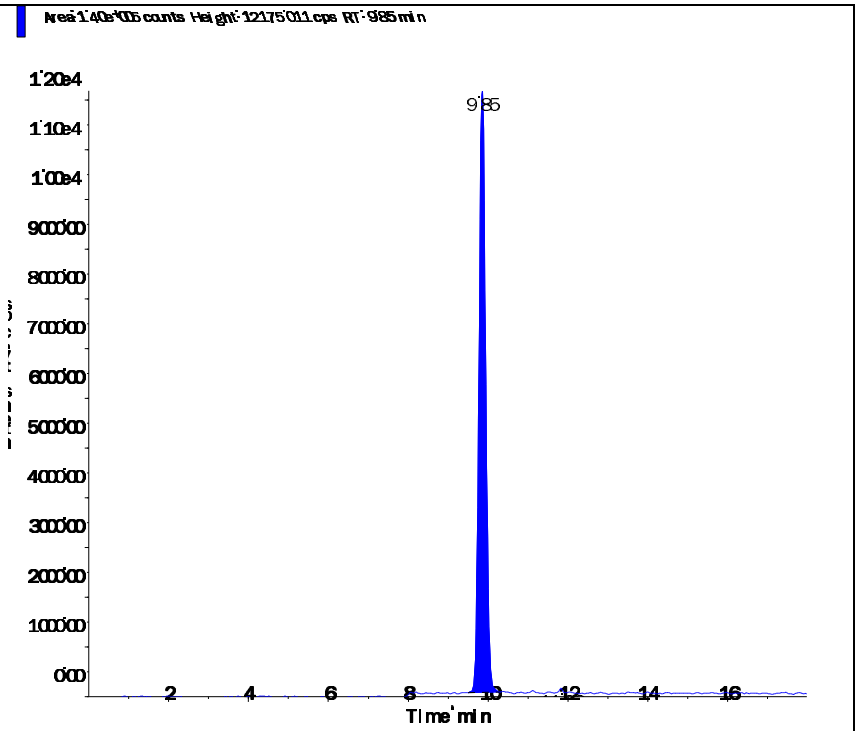

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.90) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.116
Sample Type:	(Quality Control)

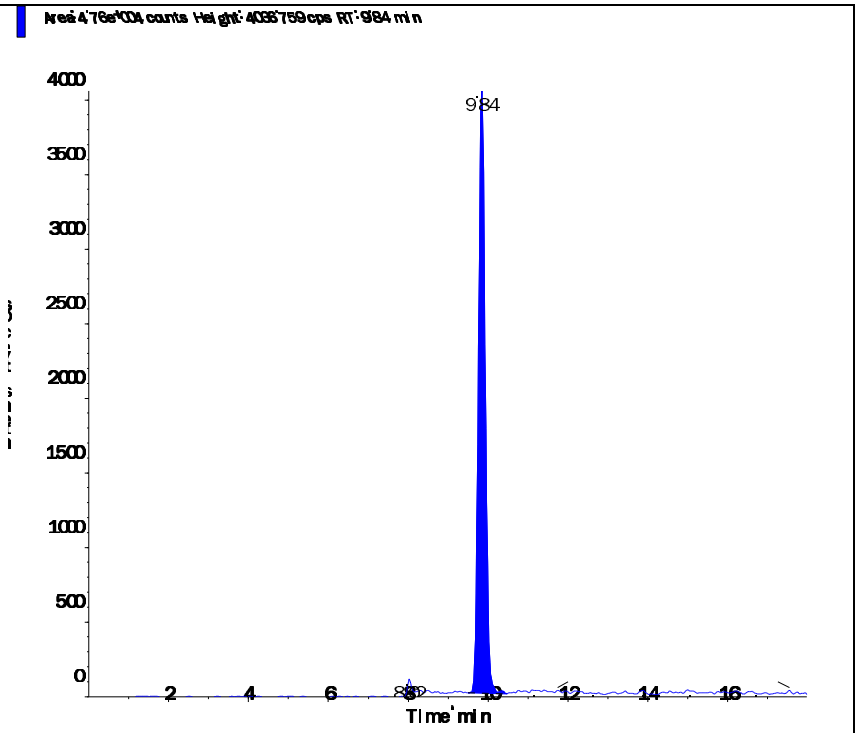

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Data File	LM34642.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 4:19:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567042-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM34642.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 4:19:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	WG567042-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.010e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.660e+05	9.83	1.00	1.00
Perchlorate conf	5.870e+04	9.81	1.00	1.04

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

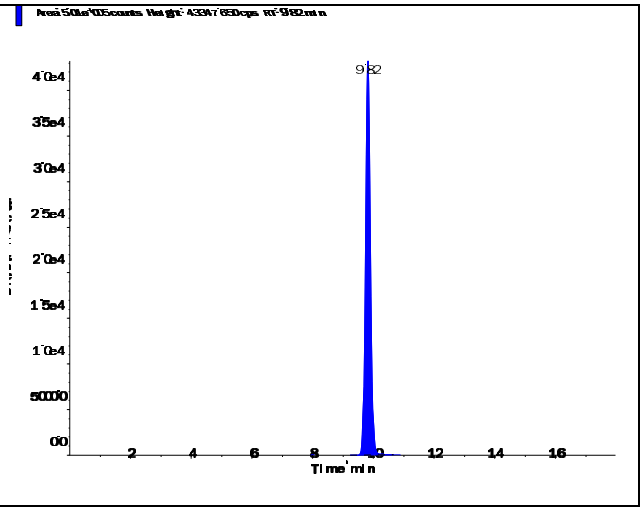

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.83 (9.92) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.332
Sample Type:	(Quality Control)

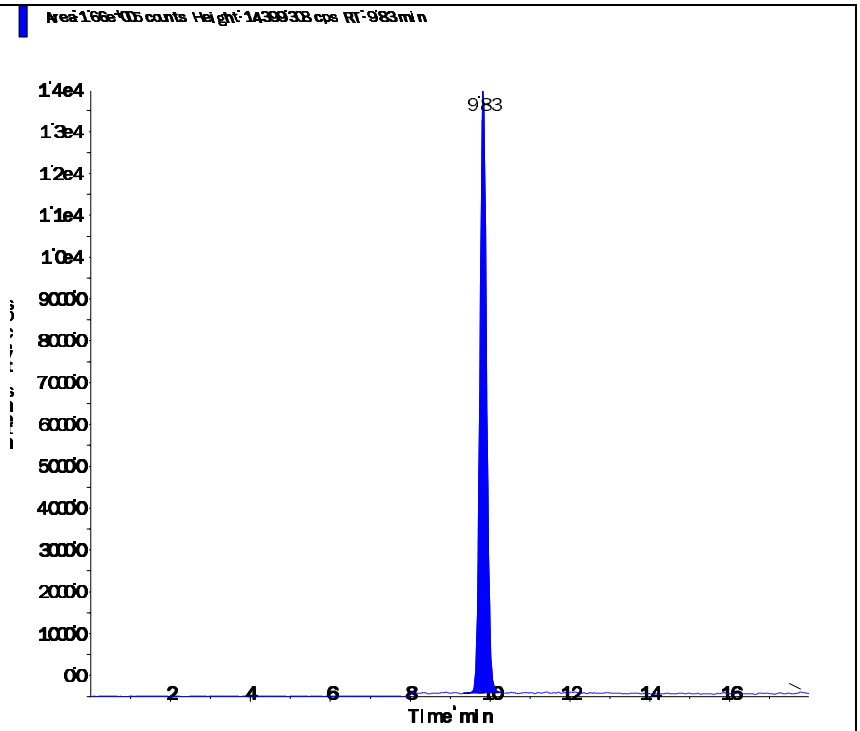

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.81 (9.90) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.117
Sample Type:	(Quality Control)

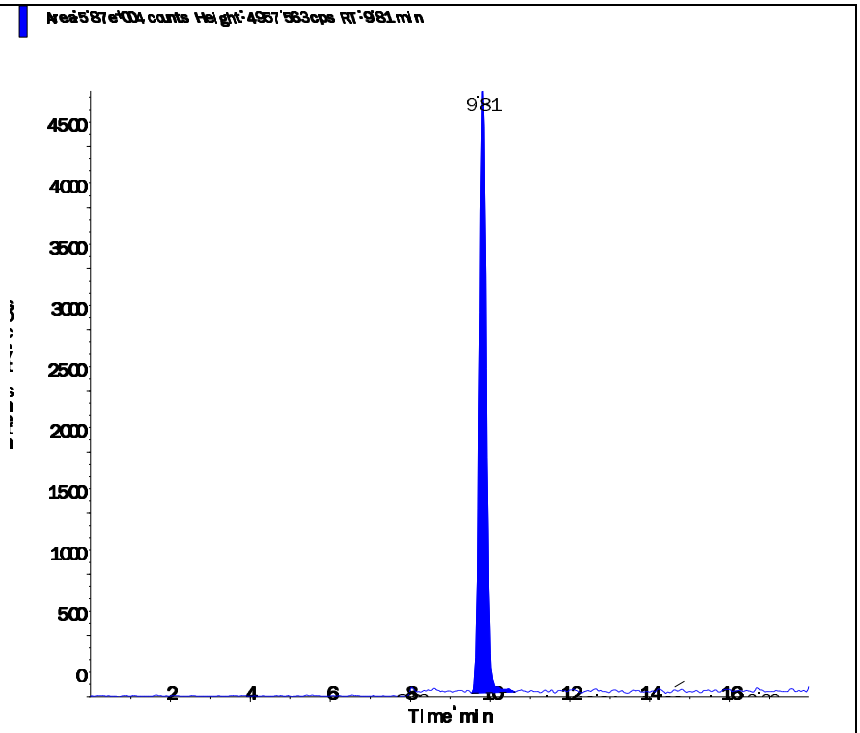

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Data File	LM34654.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 8:06:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567042-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM34654.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 8:06:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	WG567042-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.270e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.740e+05	9.82	1.00	0.997
Perchlorate conf	5.820e+04	9.80	1.00	0.976

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

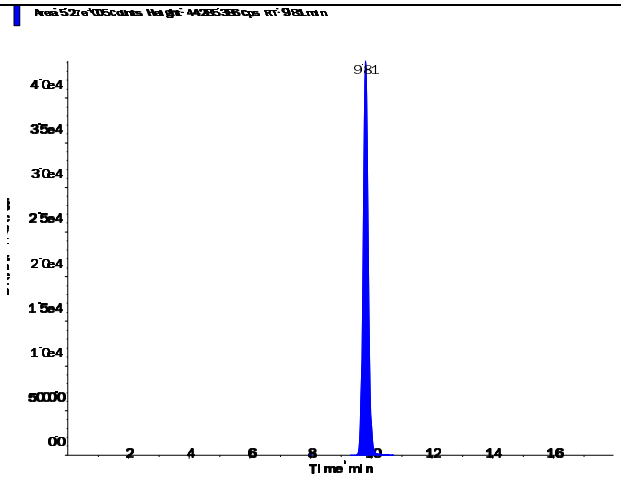

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.82 (9.92) min
Calculated conc:	0.997 ng/ml
Area Ratio:	0.33
Sample Type:	(Quality Control)

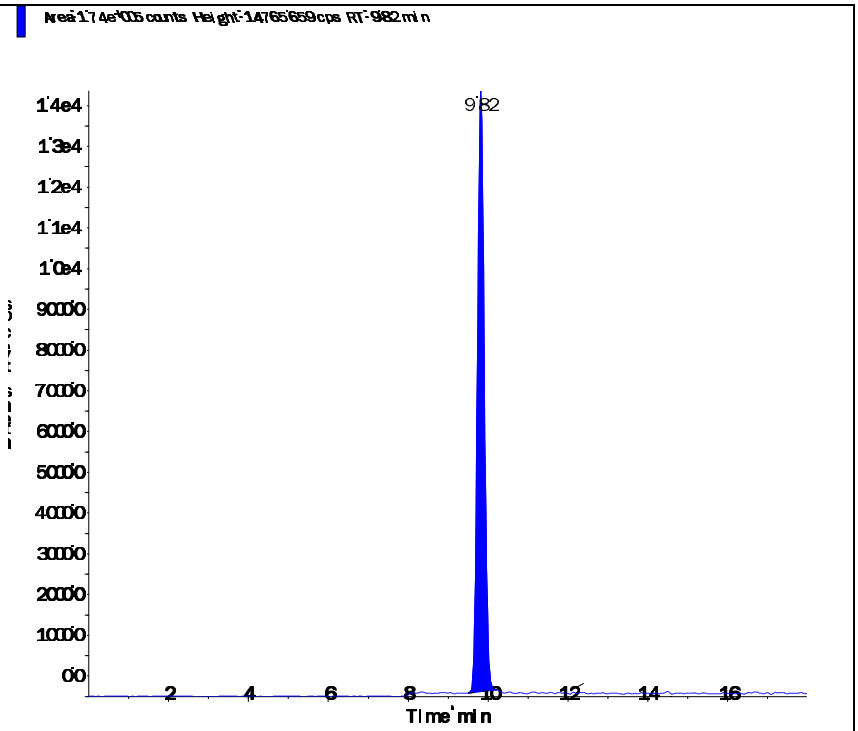

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.80 (9.90) min
Calculated conc:	0.976 ng/ml
Area Ratio:	0.11
Sample Type:	(Quality Control)

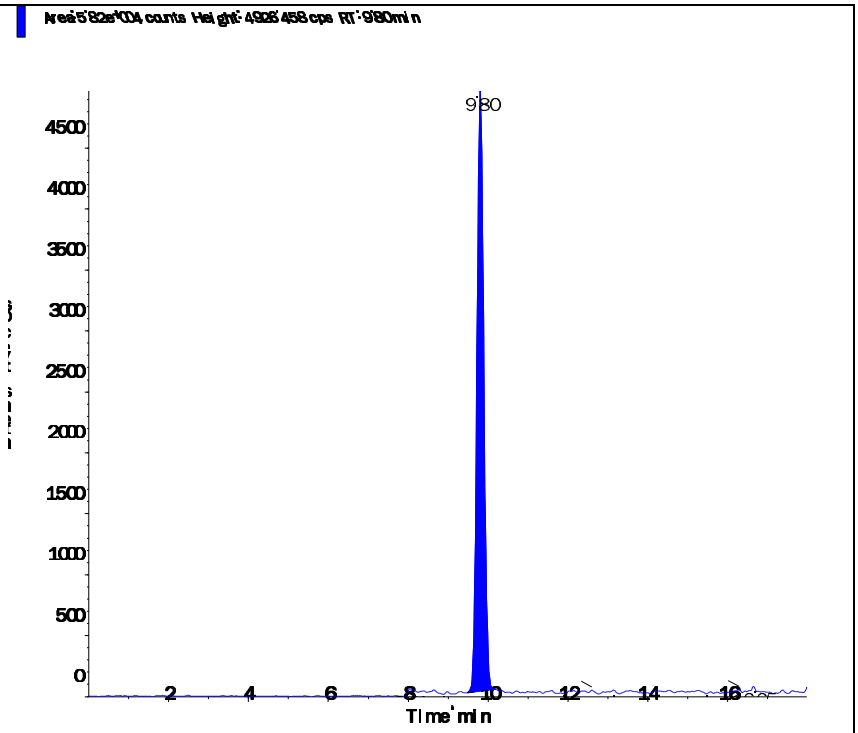

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Data File	LM34631.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 12:49:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567011-07 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM34631.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 12:49:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	WG567011-07	**Dilution Factor**	1.00
Sample Comment	7,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.270e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.820e+04	9.85	N/A	0.20
Perchlorate conf	1.110e+04	9.84	N/A	0.219

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

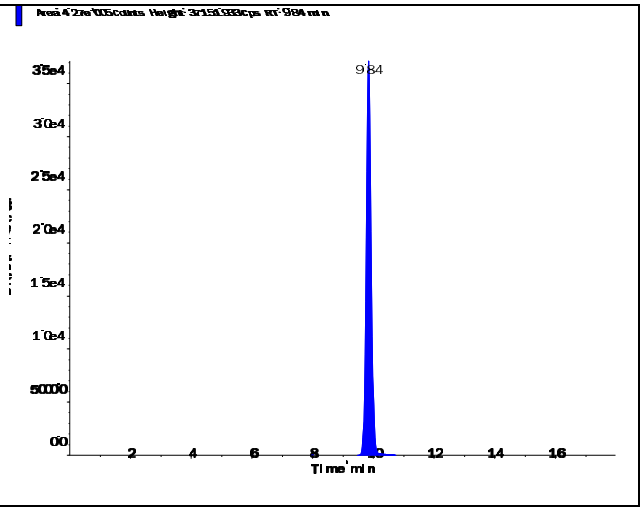

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.92) min Calculated conc: 0.20 ng/ml Area Ratio: 0.066 Sample Type: (Unknown)	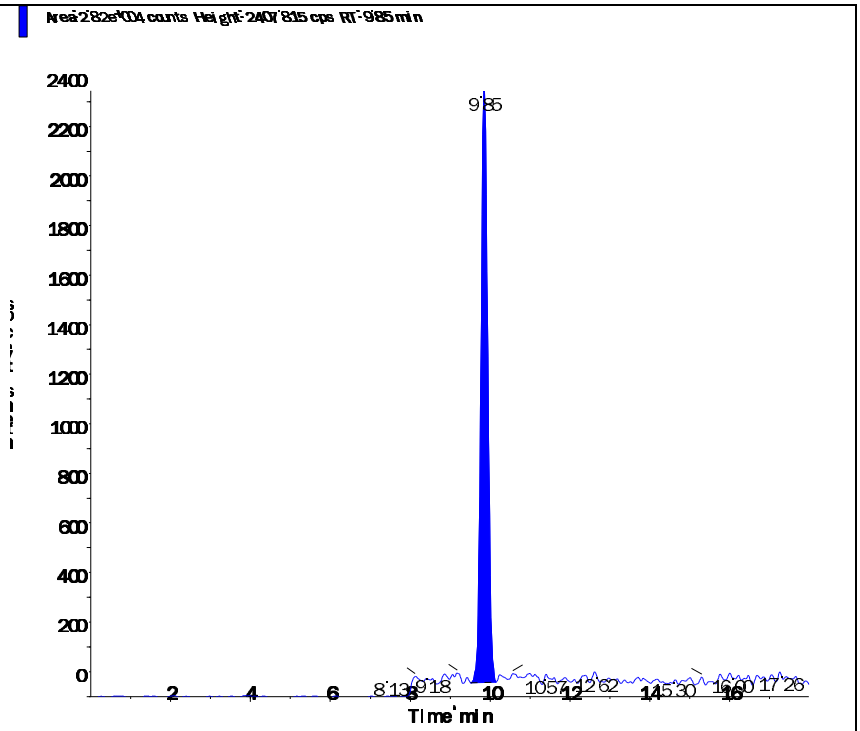
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.84 (9.90) min Calculated conc: 0.219 ng/ml Area Ratio: 0.026 Sample Type: (Unknown)	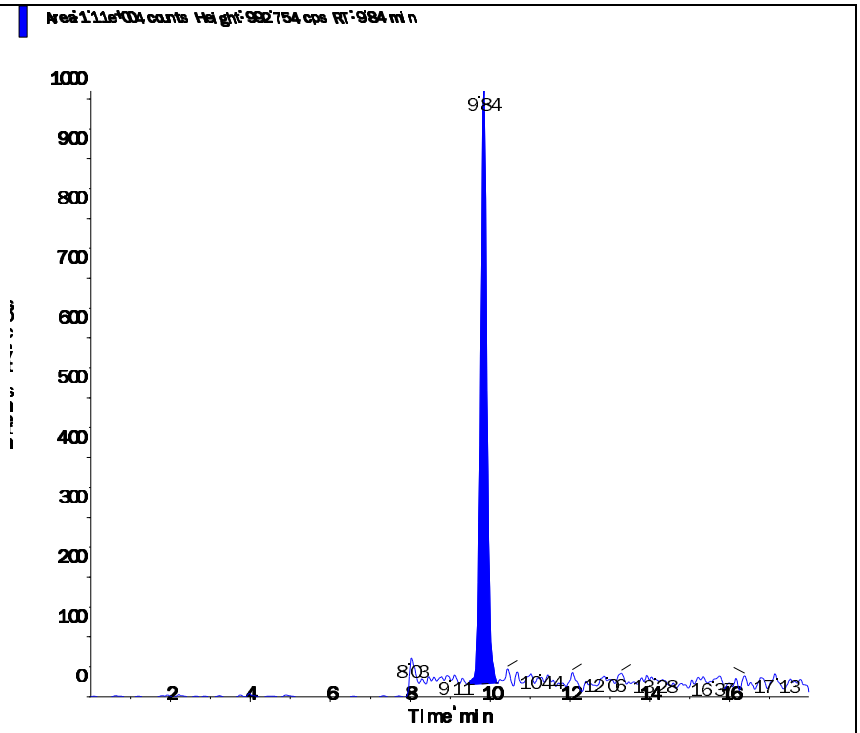

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Data File	LM34643.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 4:38:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567011-08 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM34643.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 4:38:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	WG567011-08	**Dilution Factor**	1.00
Sample Comment	7,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.350e+04	9.82	N/A	0.199
Perchlorate conf	1.280e+04	9.82	N/A	0.21

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

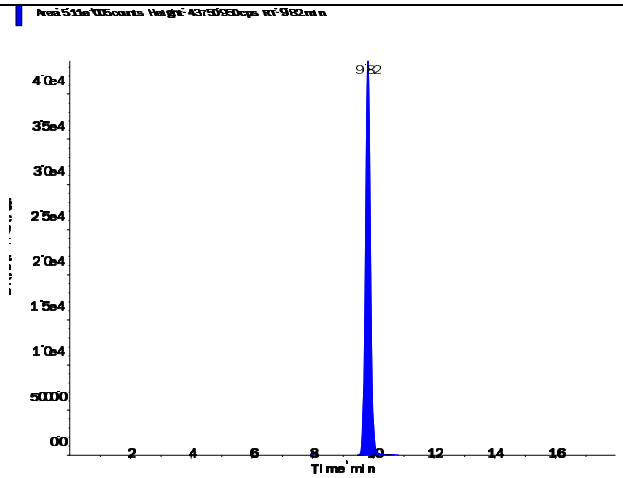

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.82 (9.92) min Calculated conc: 0.199 ng/ml Area Ratio: 0.066 Sample Type: (Unknown)	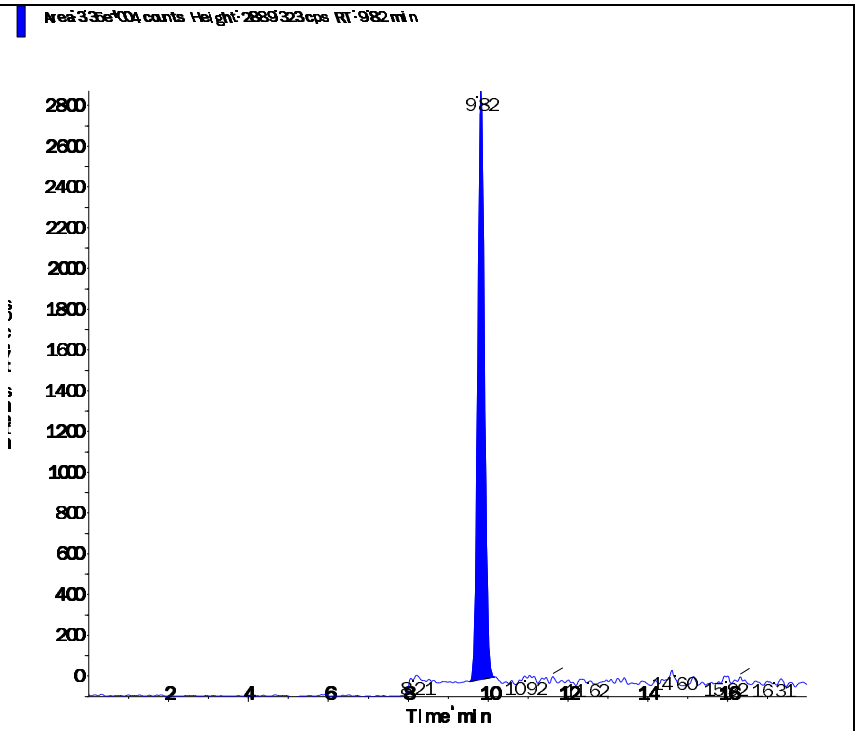
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.82 (9.90) min Calculated conc: 0.21 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	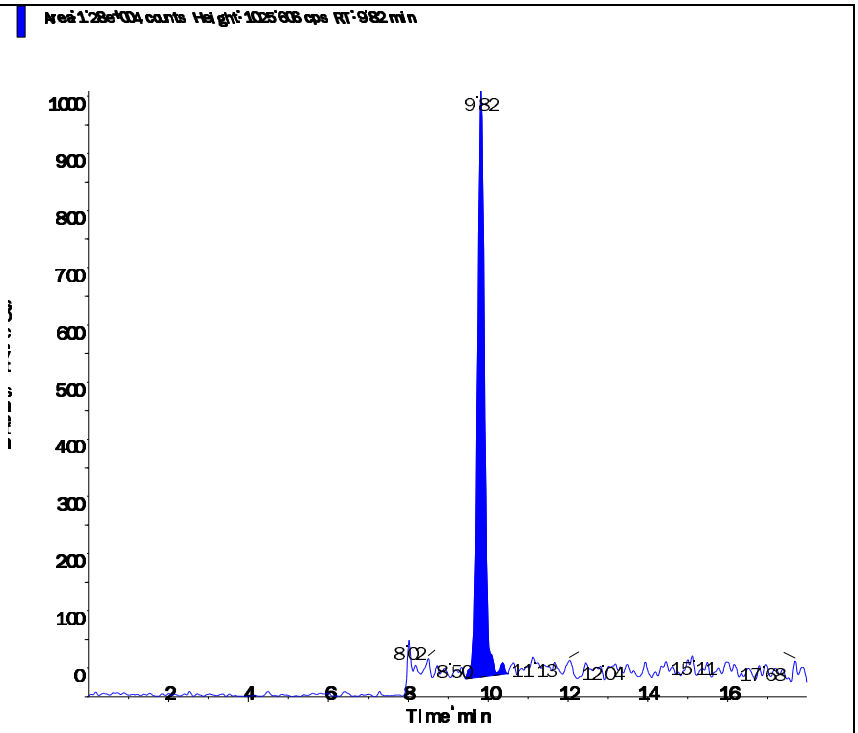

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Data File	LM34655.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 8:25:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567011-09 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM34655.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 8:25:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	WG567011-09	**Dilution Factor**	1.00
Sample Comment	7,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.370e+05	9.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.750e+04	9.81	N/A	0.212
Perchlorate conf	1.290e+04	9.80	N/A	0.202

O18LP (Internal Standard)

RT (Exp. RT): 9.80(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

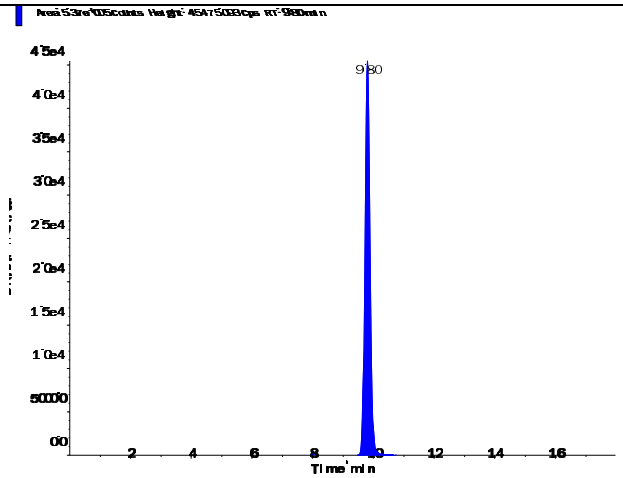

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.81 (9.92) min
Calculated conc:	0.212 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

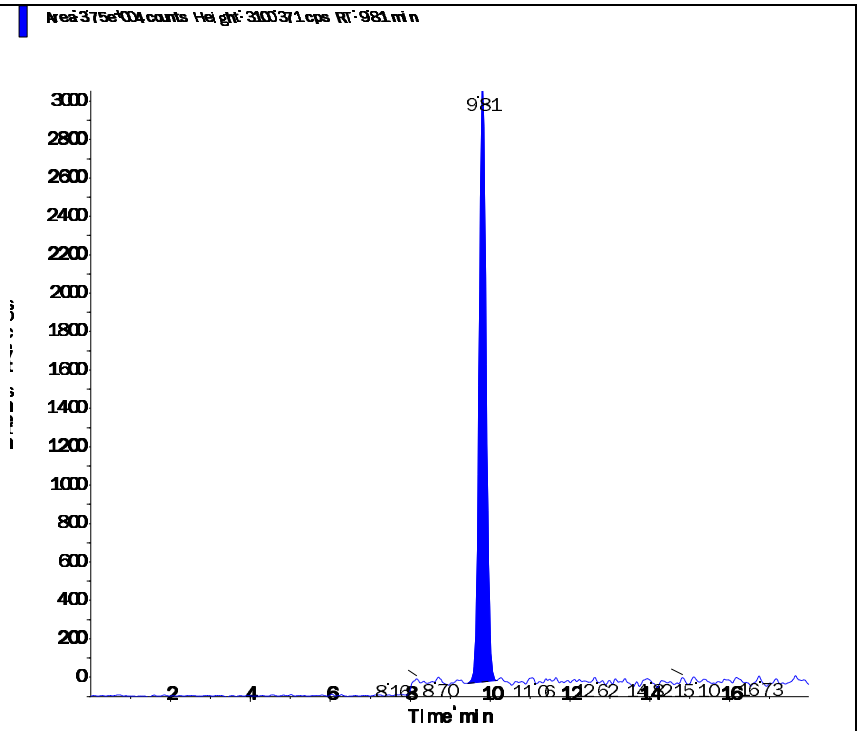

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.80 (9.90) min
Calculated conc:	0.202 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

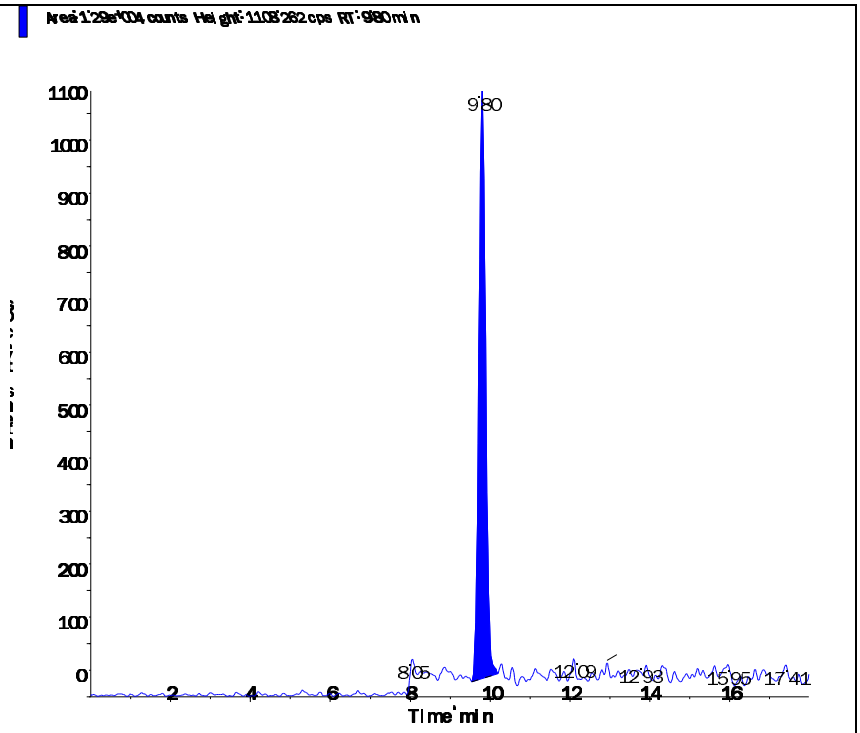

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Data File	LM34629.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 12:11:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567042-01 CCB	**Injection Vial**	1.00
Data File	LM34629.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 12:11:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	WG567042-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.370e+05	9.85	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	3.220e+02	9.69	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.85(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

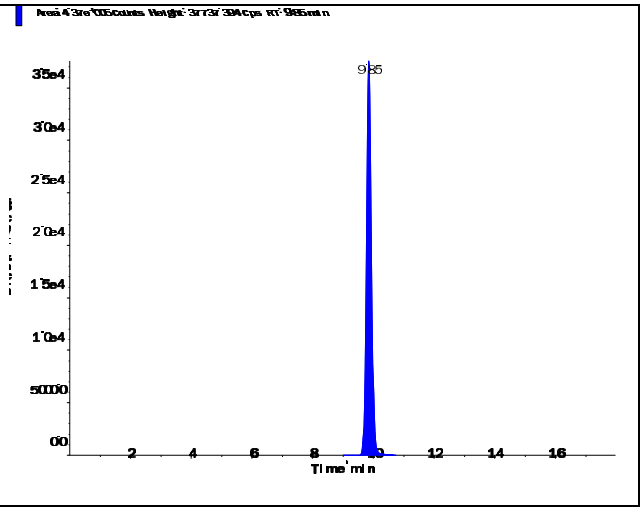

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.92) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	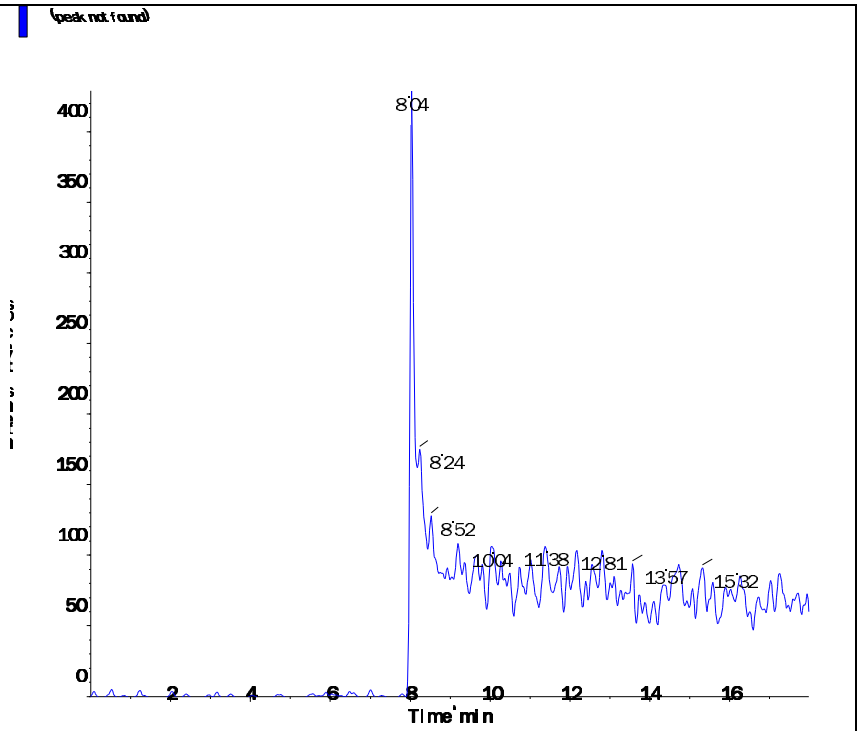
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.69 (9.90) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	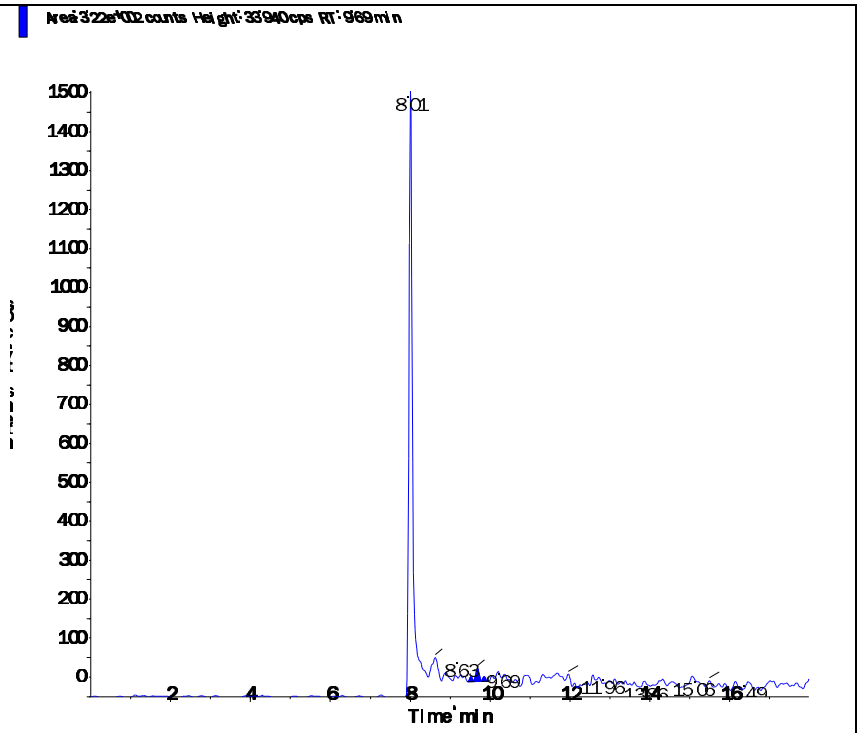

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Data File	LM34644.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 4:57:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567042-04 CCB	**Injection Vial**	1.00
Data File	LM34644.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 4:57:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	WG567042-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.340e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

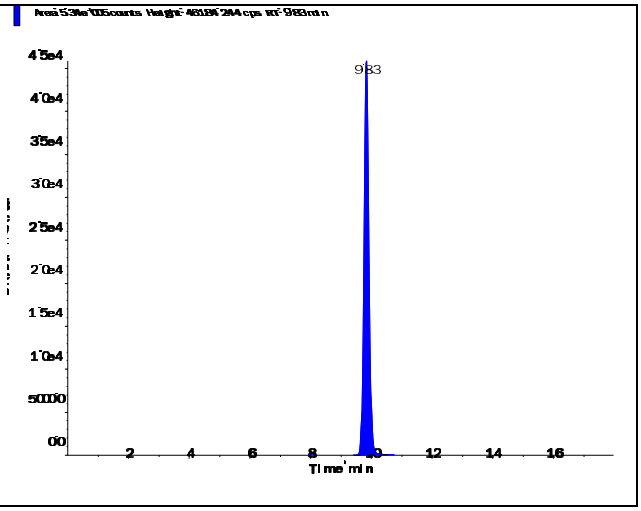

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

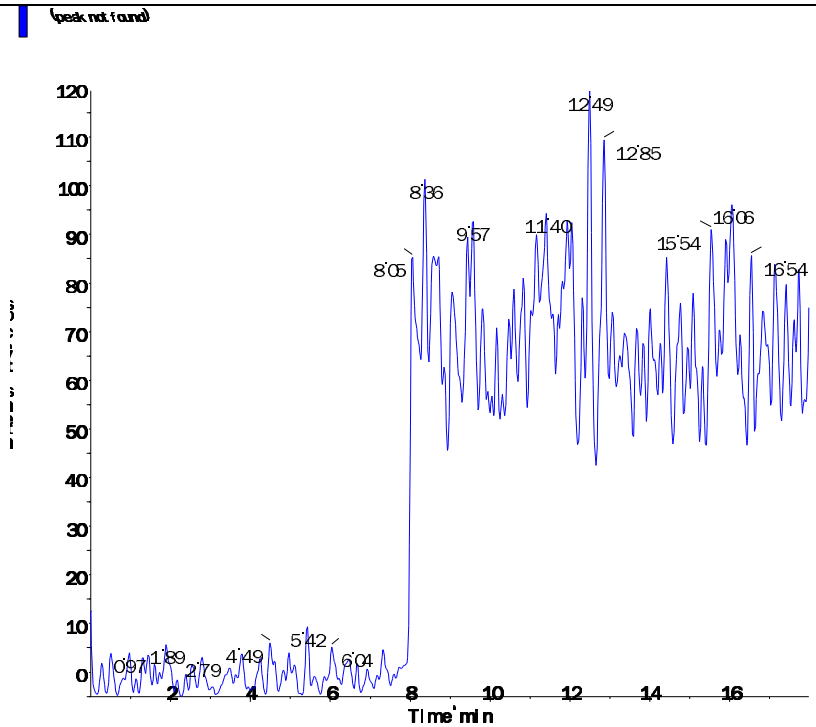

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.90) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

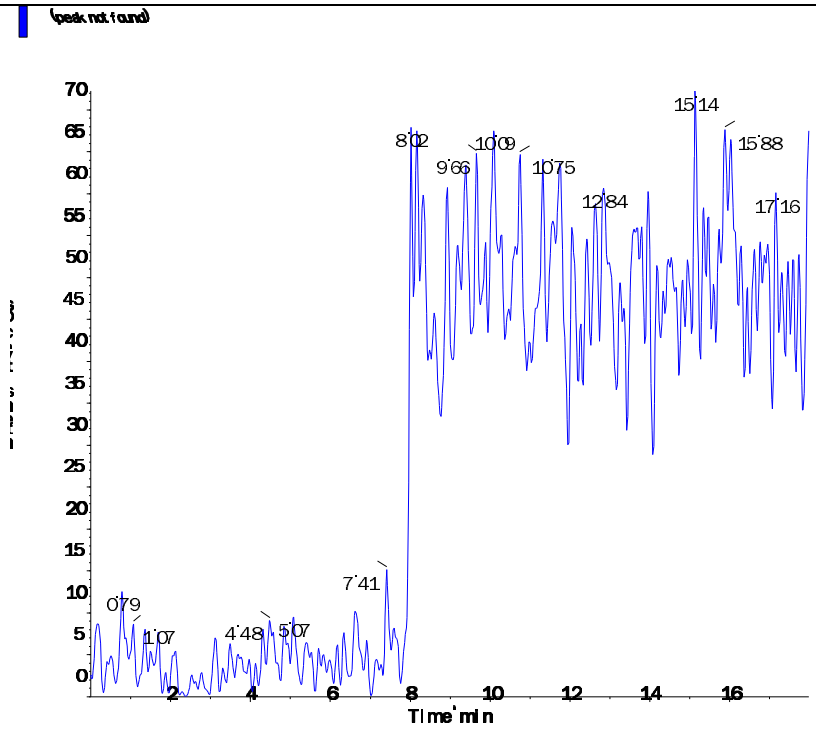

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Printed: 5/3/2016 11:26 AM

Data File	LM34657.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 9:03:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567042-06 CCB	**Injection Vial**	1.00
Data File	LM34657.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 9:03:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	WG567042-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.490e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

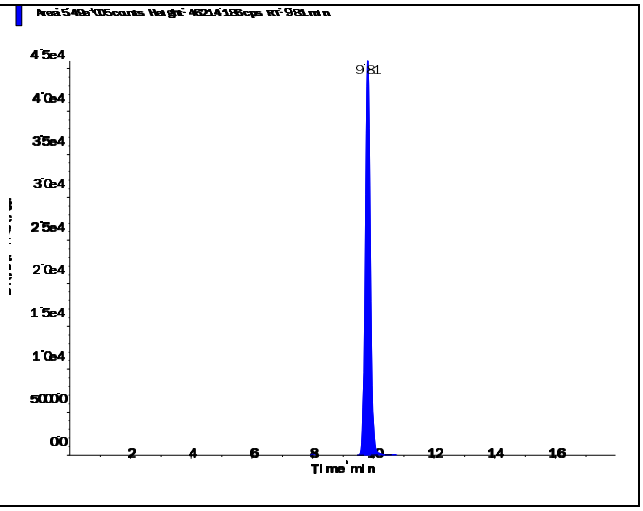

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

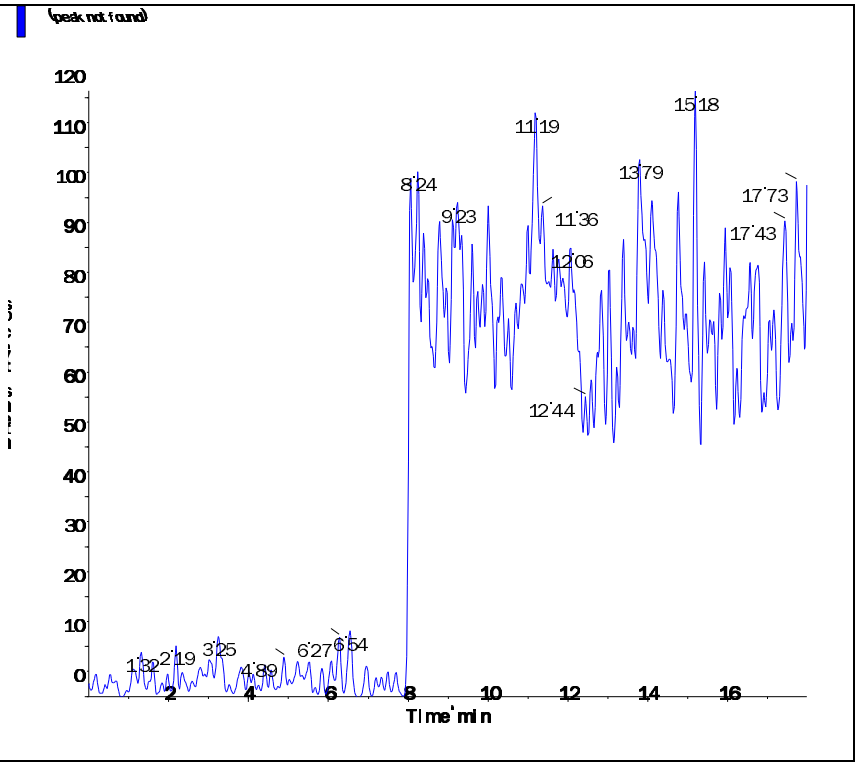

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.90) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

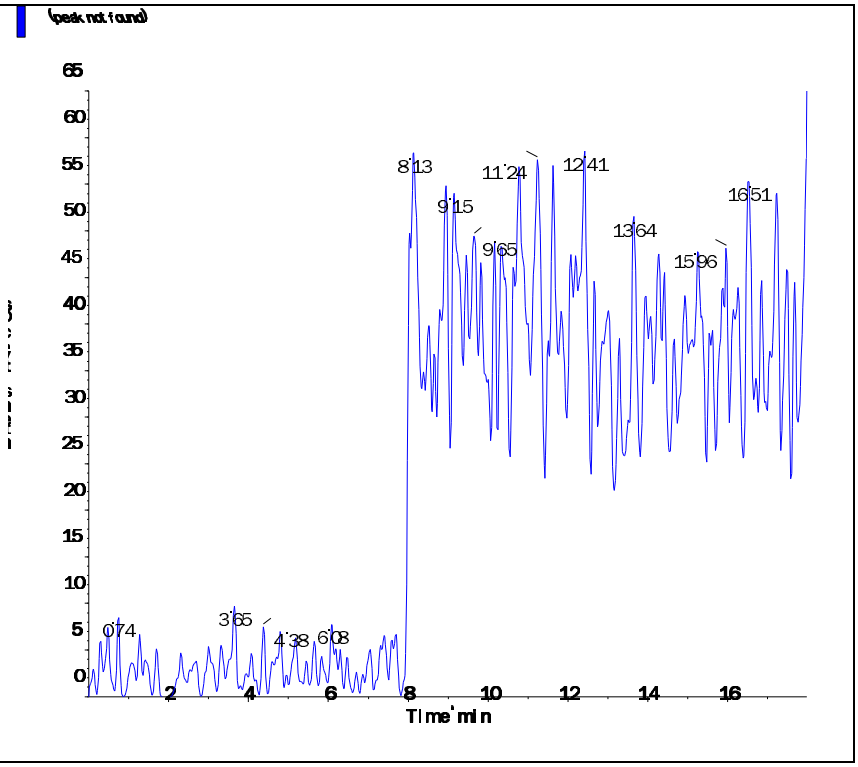

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Data File	LM34632.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 1:08:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567011-01 MCT (2.0ug/kg)	**Injection Vial**	4.00
Data File	LM34632.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 1:08:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	WG567011-01	**Dilution Factor**	1.00
Sample Comment	7,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.160e+05	9.34	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.790e+04	9.35	N/A	0.204
Perchlorate conf	9.950e+03	9.35	N/A	0.20

O18LP (Internal Standard)

RT (Exp. RT): 9.34(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

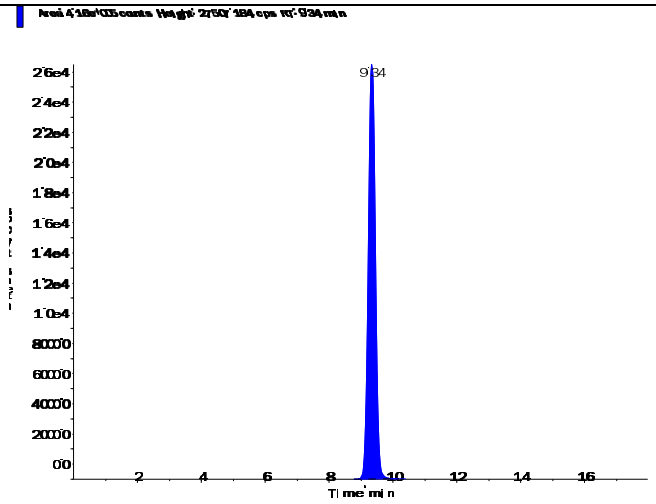

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.35 (9.92) min
Calculated conc:	0.204 ng/ml
Area Ratio:	0.067
Sample Type:	(Unknown)

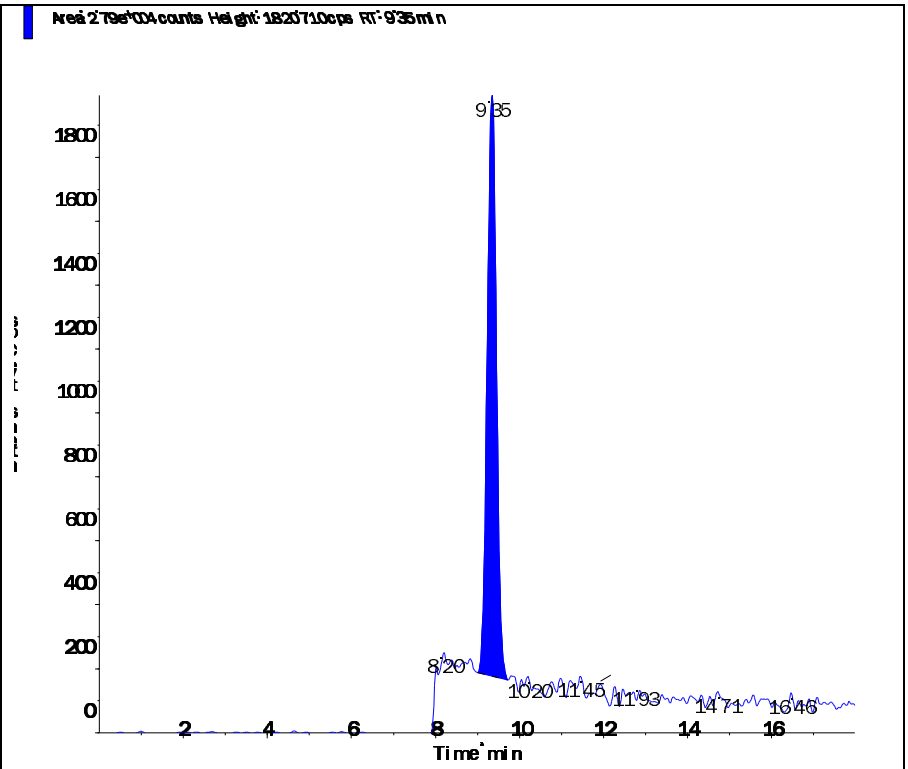

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.35 (9.90) min
Calculated conc:	0.20 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

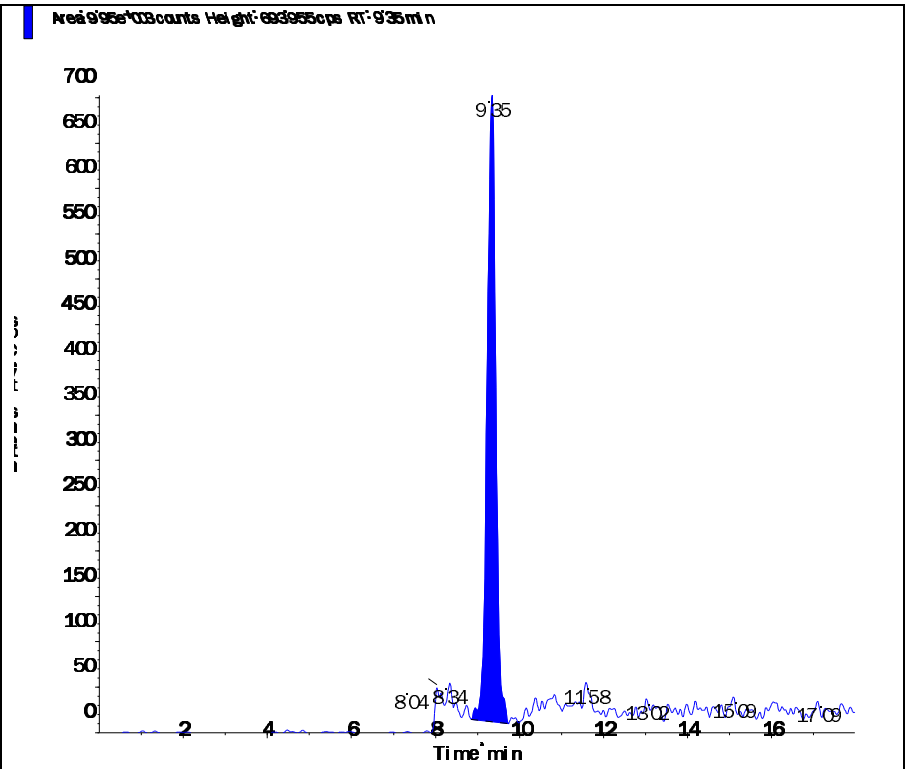

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2.2.1.5 Raw QC Data

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Data File	LM34633.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 1:27:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567011-02 BLANK	**Injection Vial**	5.00
Data File	LM34633.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 1:27:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	WG567011-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.280e+05	9.86	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.86(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

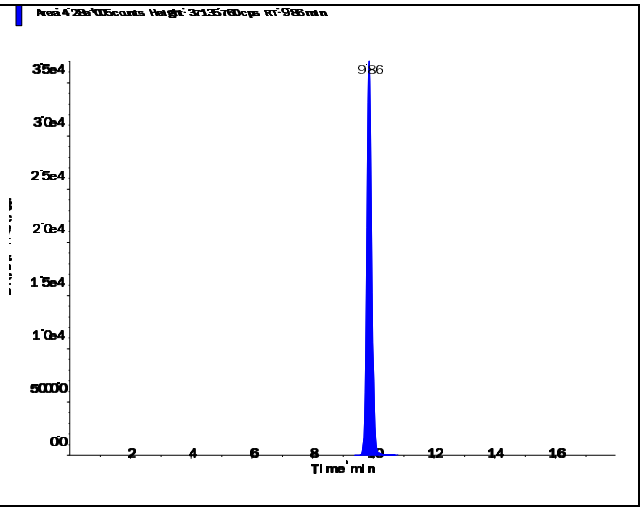

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.92) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

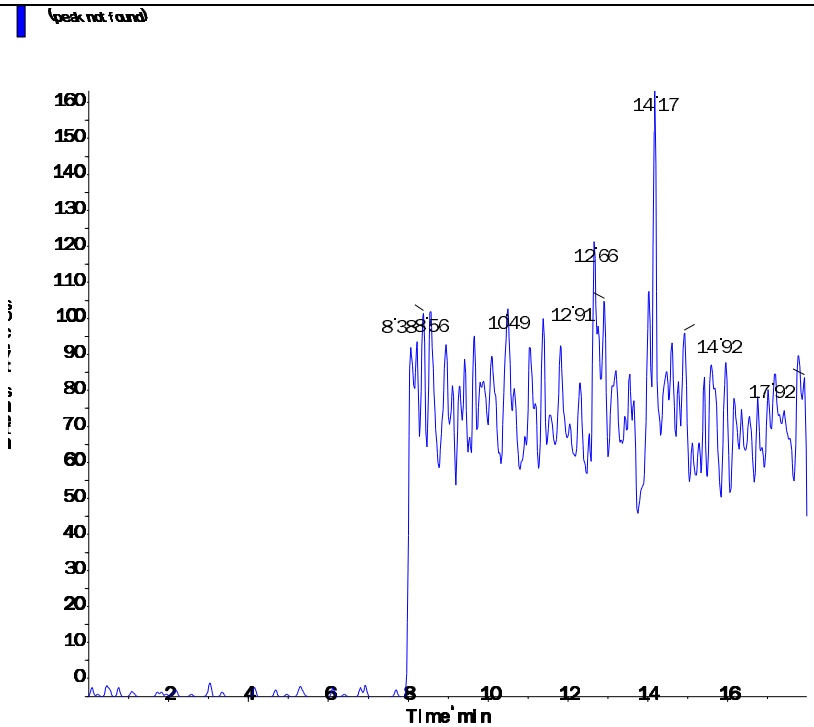

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.90) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

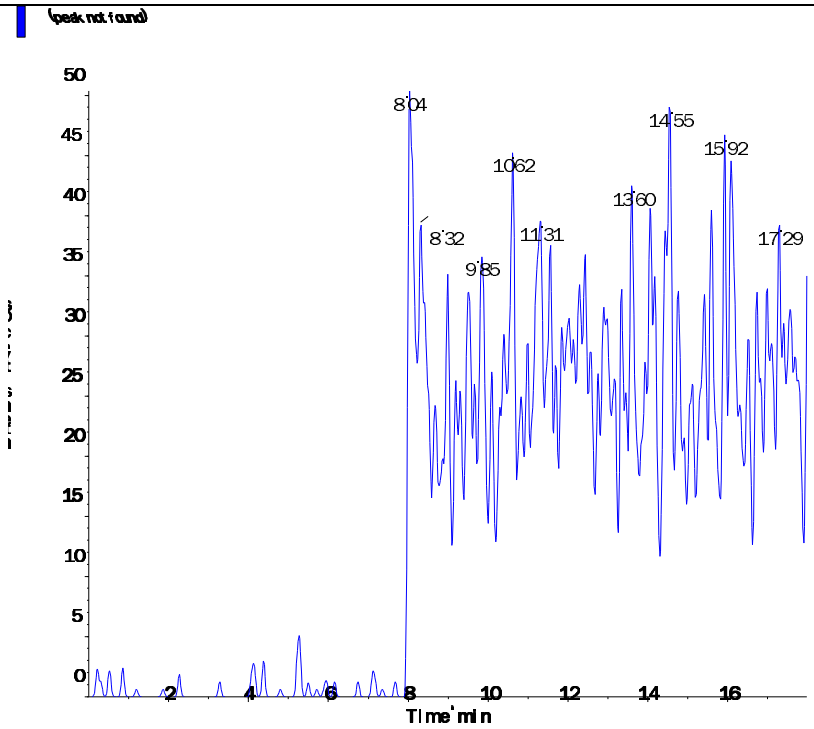

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Created with Analyst Reporter
Printed: 5/3/2016 11:19 AM

Data File	LM34634.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 1:46:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567011-03 LCS (2.0ug/kg)	**Injection Vial**	6.00
Data File	LM34634.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 1:46:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	WG567011-03	**Dilution Factor**	1.00
Sample Comment	7,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.310e+05	9.87	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.020e+04	9.87	N/A	0.213
Perchlorate conf	1.050e+04	9.87	N/A	0.204

O18LP (Internal Standard)

RT (Exp. RT): 9.87(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

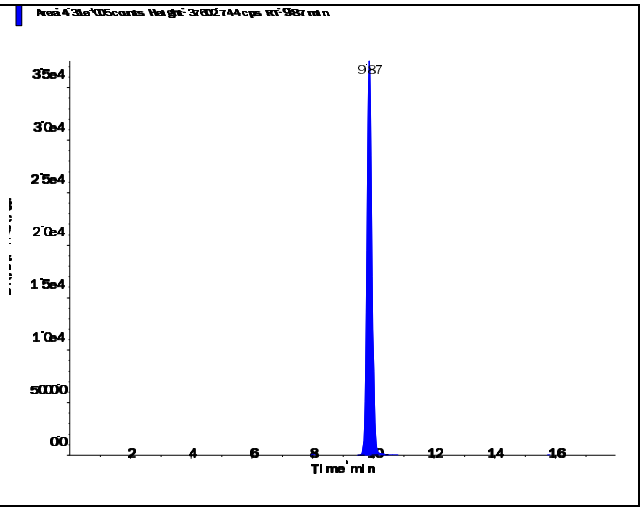

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/3/2016 11:19 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.87 (9.92) min
Calculated conc:	0.213 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

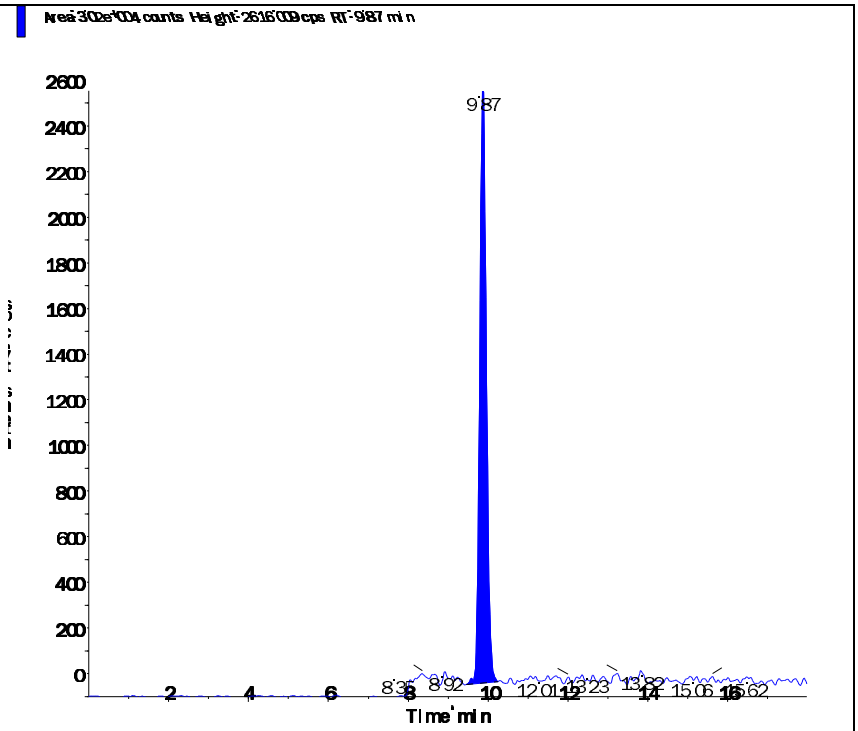

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.87 (9.90) min
Calculated conc:	0.204 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

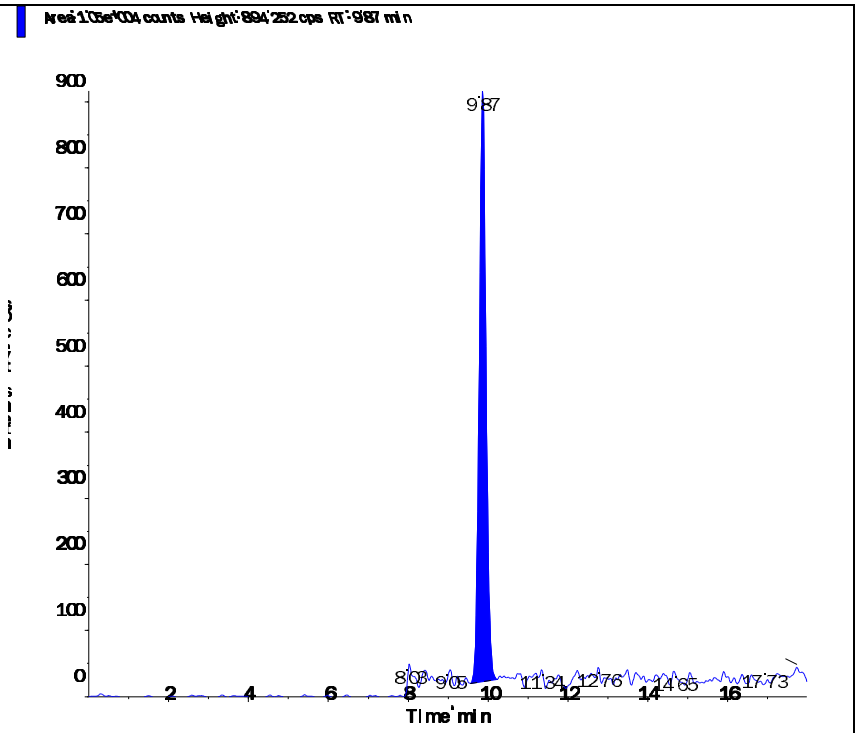

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/3/2016 11:20 AM

Data File	LM34636.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 2:25:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041344-01 MS	**Injection Vial**	8.00
Data File	LM34636.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 2:25:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	WG567011-05	**Dilution Factor**	1.00
Sample Comment	7,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.420e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.140e+04	9.84	N/A	0.215
Perchlorate conf	1.080e+04	9.84	N/A	0.206

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

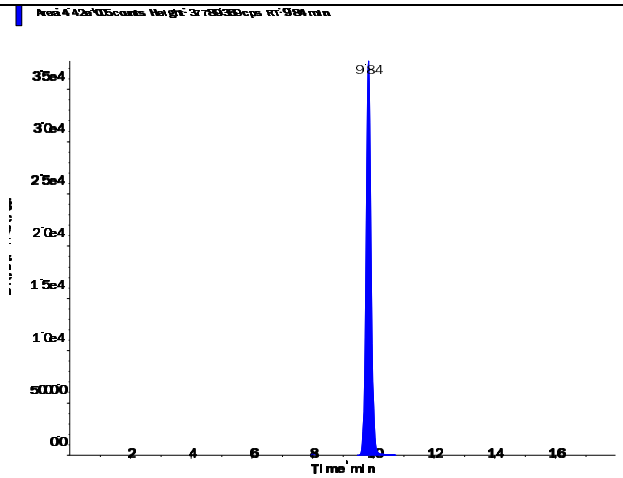

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/3/2016 11:20 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.92) min
Calculated conc:	0.215 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

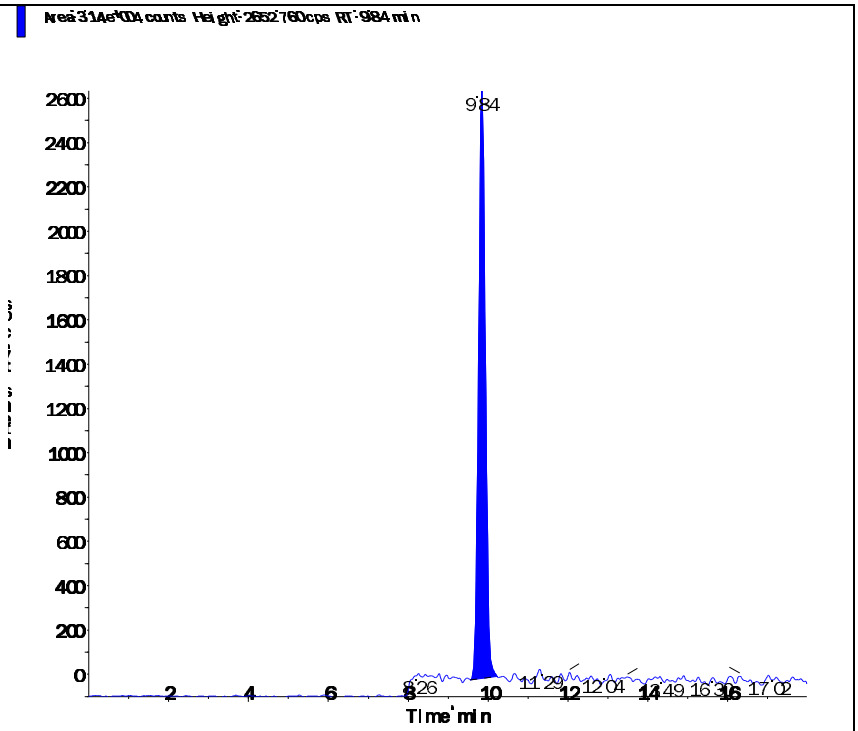

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.90) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

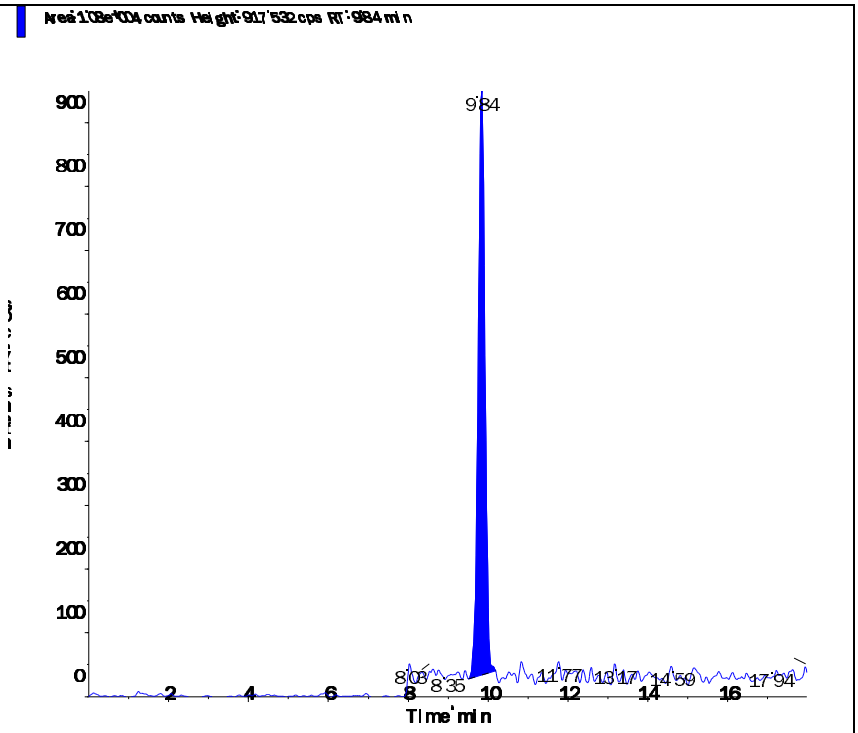

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/3/2016 11:20 AM

Data File	LM34637.wiff	**Result Table**	050216_JWR.rdb
Acquisition Date	5/2/2016 2:44:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041344-01 MSD	**Injection Vial**	9.00
Data File	LM34637.wiff	**Injection Volume**	10.00
Acquisition Date	5/2/2016 2:44:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050216_JWR.rdb
Sample ID	WG567011-06	**Dilution Factor**	1.00
Sample Comment	7,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.440e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.290e+04	9.85	N/A	0.225
Perchlorate conf	1.150e+04	9.83	N/A	0.218

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.89) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

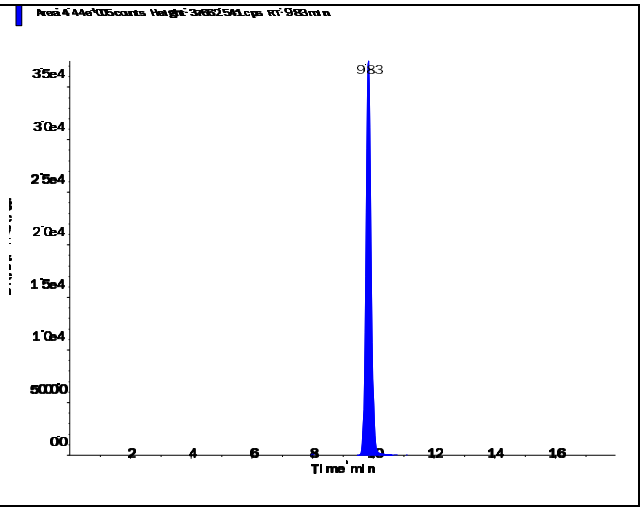

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/3/2016 11:20 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.92) min
Calculated conc:	0.225 ng/ml
Area Ratio:	0.074
Sample Type:	(Unknown)

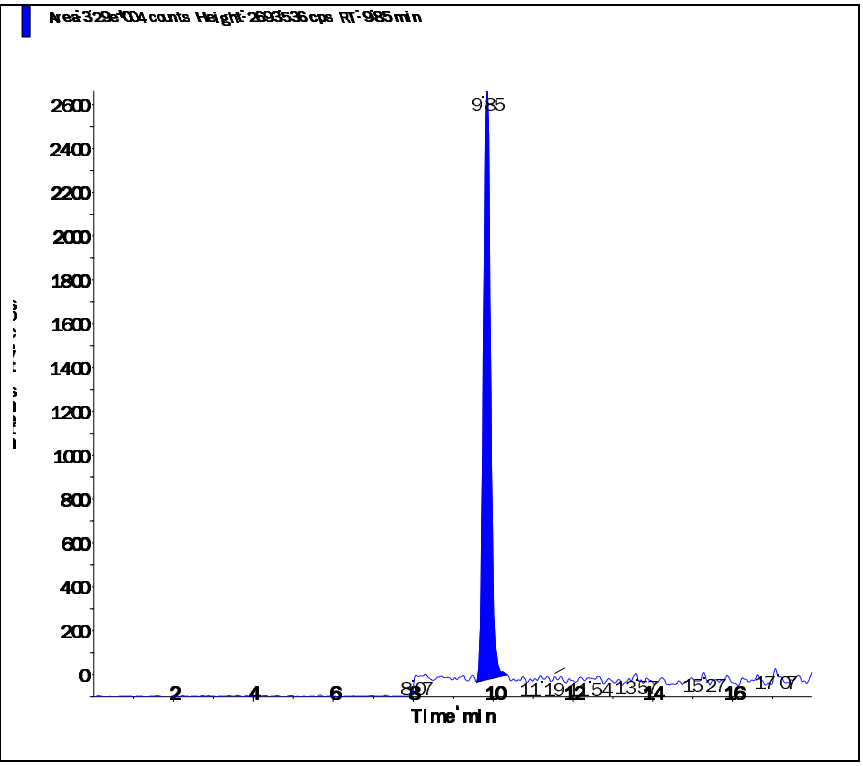

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.90) min
Calculated conc:	0.218 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

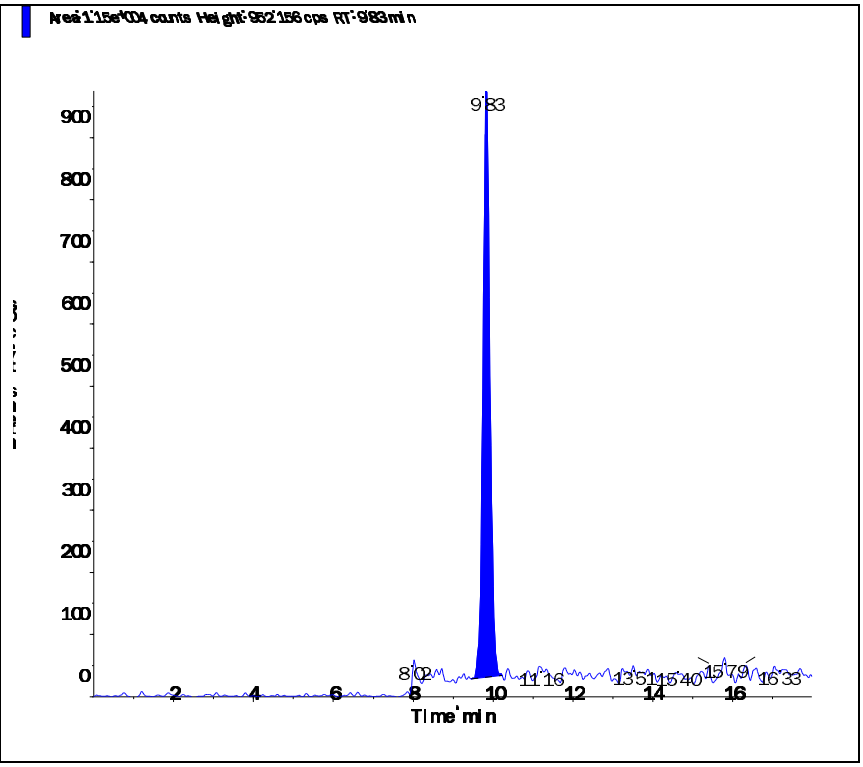

s.dataFile Page 2 of 2

2.3 General Chemistry Data

2.3.1 Percent Solids Data

2.3.1.1 Raw Data

Example Percent Solids Calculations

1.0 Calculating the percent solids of a sample.

$$\%Solids = \frac{WT3 - WT1}{WT2 - WT1} \times F$$

Where:	
WT1 = Weight, in grams, of the empty container	1.30 g
WT2 = Weight, in grams, of the container and wet sample	21.274 g
WT3 = Weight, in grams, of the container and dried sample	5.21 g
F = Factor to get units as percent weight	100
%Solids = Percent solids present in sample.	19.58%

2.0 Calculating the percent moisture of a sample.

% Moisture = 100 - % Solids from 1.0 calculation

Microbac Laboratories Inc.

PERCENT SOLIDS

Workgroup (AAB#): WG566651 Analyst: AC ADT(on): 04/27/2016 15:04
Method: D2216-90 Instrument: BAL021 ADT(off): 04/28/2016 08:17
SOP: K0003 Rev: 14

SAMPLE NUMBER	EMPTY PAN WT 1	WET WT 2	DRY WT 3A	DRY WT 3B	DRY WT 3C	PERCENT SOLID	PERCENT MOISTURE
L16041344-01	1.295	23.775	20.276			84.44	
L16041344-02	1.292	22.086	18.313			81.86	
L16041344-03	1.29	24.318	19.182			77.70	
L16041344-04	1.292	22.954	19.491			84.01	
L16041344-05	1.295	20.82	17.918			85.14	
L16041344-06	1.294	21.331	17.786			82.31	
L16041344-07	1.294	22.626	17.763			77.20	
L16041344-08	1.284	23.732	20.152			84.05	
L16041344-09	1.297	21.209	16.991			78.82	
L16041344-10	1.297	24.632	19.7			78.86	
L16041344-11	1.285	25.923	21.207			80.86	
L16041344-12	1.293	26.18	20.686			77.92	
L16041344-13	1.287	23.913	17.539			71.83	
L16041344-14	1.293	25.22	19.47			75.97	
L16041363-01	1.298	24.299	20.595			83.90	
L16041363-02	1.292	25.694	20.781			79.87	
L16041363-03	1.298	24.555	19.905			80.01	
L16041363-04	1.295	25.813	20.756			79.37	
L16041363-05	1.282	23.061	18.872			80.77	
L16041363-06	1.295	23.191	18.612			79.09	
L16041363-07	1.299	24.331	18.783			75.91	
L16041363-08	1.299	24.331	18.783			75.91	
L16041363-09	1.299	24.331	18.783			75.91	
L16041363-10	1.287	22.26	18.173			80.51	
WG566651-01	1.293	26.18	20.686			77.92	22.08
WG566651-02	1.295	23.191	18.612			79.09	20.91
WG566651-03	1.29	33.542	26.24			77.36	22.64
WG566651-04	1.289	23.165	18.672			79.46	20.54

Analyst: [signature]

PERCENT_SOLIDS - Modified 04/24/2008
PDF ID: 4738194
Report generated: 04/28/2016 08:22

Microbac

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
May 10, 2016

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001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
May 10, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
May 10, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Stephanie Mossburg	Project Manager: Debra Richmon	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): KAYLIA PALLANES	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Kayla Pallanes	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205			
Turn Around Time: STANDARD	pH:	Program:	
Project Name/Location: Longhorn			
Project Number: 60274185			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOCs 8260	Perchlorate 6850	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
	18CPTMW22R(5-5.5)230416			4/23/16	0935		X	S	2	X	X					
	18CPTMW22R(10-10.5)230416			4/23/16	1005		X	S	2	X	X					
	18CPTMW22R(15-15.5)230416			4/23/16	1010		X	S	2	X	X					
	18CPTMW26(5-5.5)230416			4/23/16	1330		X	S	2	X	X					
	18CPTMW26(5-5.5)230416 DUP			4/23/16	1330		X	S	2	X	X					
	18CPTMW26(10-10.5)230416			4/23/16	1400		X	S	2	X	X					
	18CPTMW26(14.5-15.5)230416			4/23/16	1405		X	S	2	X	X					
	18CPTMW26SW(5-5.5)250416			4/25/16	0935		X	S	2	X	X					
	18CPTMW26SW(10-10.5)250416			4/25/16	0950		X	S	2	X	X					
	18CPTMW26SW(15-15.5)250416			4/25/16	1045		X	S	2	X	X					
	18CPTMW26SW(20-20.5)250416			4/25/16	1145		X	S	2	X	X					
Hold *	18CPTMW26SW(25-25.5)250416			4/25/16	1150		X	S	2	X	X					
	18CPTMW26SW(30-30.5)250416			4/25/16	1205		X	S	2	X	X					
	18CPTMW26SW(40-40.5)250416			4/25/16	1210		X	S	2	X	X					
	18CPTMW26SW(49.5-50)250416			4/25/16	1230		X	S	2	X	X					

Comments:

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Kayla Pallanes	4/25/16	1300					
Relinquished by: (Signature)	Date	Time	Re (Si			Time	Remarks:

*Homogenize all composite samples prior to analysis

Microbac OVD
Received: 04/26/2016 10:51
By: BRENDA GREGORY 221000085037
Brenda Gregory

anager, Pink QA/QC Manager

00698682

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041344
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 06-MAY-2016

Samplenum	Container ID	Products
L16041344-01	734367	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-APR-2016 14:01	CLS		
2	ANALYZ	V1	ORG4	26-APR-2016 16:44	AWE	CLS	
3	STORE	ORG1	A1	09-MAY-2016 07:35	CLS	AWE	

Samplenum	Container ID	Products
L16041344-01	734368	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-APR-2016 14:01	CLS		
2	PREP	W1	DIG	27-APR-2016 15:00	AC	BRG	
3	STORE	DIG	W1	27-APR-2016 15:32	BRG	AC	
4	ANALYZ	W1	SEM	29-APR-2016 11:09	JWR	CLS	
5	STORE	SEM	A1	02-MAY-2016 16:35	BRG	JWR	
6	ANALYZ*	DIG	SEMI	04-MAY-2016 17:32	JWR	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041344-02	734369	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-APR-2016 14:01	CLS		
2	ANALYZ	V1	ORG4	26-APR-2016 16:44	AWE	CLS	
3	STORE	ORG1	A1	09-MAY-2016 07:35	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041344
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 06-MAY-2016

Samplenum	Container ID	Products
L16041344-02	734370	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-APR-2016 14:01	CLS		
2	PREP	W1	DIG	27-APR-2016 15:00	AC	BRG	
3	STORE	DIG	W1	27-APR-2016 15:32	BRG	AC	
4	ANALYZ	W1	SEM	29-APR-2016 11:09	JWR	CLS	
5	STORE	SEM	A1	02-MAY-2016 16:35	BRG	JWR	
6	ANALYZ*	DIG	SEMI	04-MAY-2016 17:32	JWR	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041344-03	734371	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-APR-2016 14:01	CLS		
2	ANALYZ	V1	ORG4	26-APR-2016 16:44	AWE	CLS	
3	STORE	ORG1	A1	09-MAY-2016 07:35	CLS	AWE	

Samplenum	Container ID	Products
L16041344-03	734372	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-APR-2016 14:01	CLS		
2	PREP	W1	DIG	27-APR-2016 15:00	AC	BRG	
3	STORE	DIG	W1	27-APR-2016 15:32	BRG	AC	
4	ANALYZ	W1	SEM	29-APR-2016 11:09	JWR	CLS	
5	STORE	SEM	A1	02-MAY-2016 16:35	BRG	JWR	
6	ANALYZ*	DIG	SEMI	04-MAY-2016 17:32	JWR	AC	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041344
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 06-MAY-2016

Samplenum	Container ID	Products
L16041344-04	734373	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-APR-2016 14:01	CLS		
2	ANALYZ	V1	ORG4	26-APR-2016 16:44	AWE	CLS	
3	STORE	ORG1	A1	09-MAY-2016 07:35	CLS	AWE	

Samplenum	Container ID	Products
L16041344-04	734374	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-APR-2016 14:01	CLS		
2	PREP	W1	DIG	27-APR-2016 15:00	AC	BRG	
3	STORE	DIG	W1	27-APR-2016 15:32	BRG	AC	
4	ANALYZ	W1	SEM	29-APR-2016 11:09	JWR	CLS	
5	STORE	SEM	A1	02-MAY-2016 16:35	BRG	JWR	
6	ANALYZ*	DIG	SEMI	04-MAY-2016 17:32	JWR	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041344-05	734375	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-APR-2016 14:01	CLS		
2	ANALYZ	V1	ORG4	26-APR-2016 16:44	AWE	CLS	
3	STORE	ORG1	A1	09-MAY-2016 07:35	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041344
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 06-MAY-2016

Samplenum	Container ID	Products
L16041344-05	734376	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-APR-2016 14:01	CLS		
2	PREP	W1	DIG	27-APR-2016 15:00	AC	BRG	
3	STORE	DIG	W1	27-APR-2016 15:32	BRG	AC	
4	ANALYZ	W1	SEM	29-APR-2016 11:09	JWR	CLS	
5	STORE	SEM	A1	02-MAY-2016 16:35	BRG	JWR	
6	ANALYZ*	DIG	SEMI	04-MAY-2016 17:32	JWR	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041344-06	734377	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-APR-2016 14:01	CLS		
2	ANALYZ	V1	ORG4	26-APR-2016 16:44	AWE	CLS	
3	STORE	ORG1	A1	09-MAY-2016 07:35	CLS	AWE	

Samplenum	Container ID	Products
L16041344-06	734378	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-APR-2016 14:01	CLS		
2	PREP	W1	DIG	27-APR-2016 15:00	AC	BRG	
3	STORE	DIG	W1	27-APR-2016 15:32	BRG	AC	
4	ANALYZ	W1	SEM	29-APR-2016 11:09	JWR	CLS	
5	STORE	SEM	A1	02-MAY-2016 16:35	BRG	JWR	
6	ANALYZ*	DIG	SEMI	04-MAY-2016 17:32	JWR	AC	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041344
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 06-MAY-2016

Samplenum	Container ID	Products
L16041344-07	734379	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-APR-2016 14:01	CLS		
2	ANALYZ	V1	ORG4	26-APR-2016 16:44	AWE	CLS	
3	STORE	ORG1	A1	09-MAY-2016 07:35	CLS	AWE	

Samplenum	Container ID	Products
L16041344-07	734380	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-APR-2016 14:01	CLS		
2	PREP	W1	DIG	27-APR-2016 15:00	AC	BRG	
3	STORE	DIG	W1	27-APR-2016 15:32	BRG	AC	
4	ANALYZ	W1	SEM	29-APR-2016 11:09	JWR	CLS	
5	STORE	SEM	A1	02-MAY-2016 16:35	BRG	JWR	
6	ANALYZ*	DIG	SEMI	04-MAY-2016 17:32	JWR	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041344-08	734381	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-APR-2016 14:01	CLS		
2	ANALYZ	V1	ORG4	26-APR-2016 16:44	AWE	CLS	
3	STORE	ORG1	A1	09-MAY-2016 07:35	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041344
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 06-MAY-2016

Samplenum	Container ID	Products
L16041344-08	734382	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-APR-2016 14:01	CLS		
2	PREP	W1	DIG	27-APR-2016 15:00	AC	BRG	
3	STORE	DIG	W1	27-APR-2016 15:32	BRG	AC	
4	ANALYZ	W1	SEM	29-APR-2016 11:09	JWR	CLS	
5	STORE	SEM	A1	02-MAY-2016 16:35	BRG	JWR	
6	ANALYZ*	DIG	SEMI	04-MAY-2016 17:32	JWR	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041344-09	734383	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-APR-2016 14:01	CLS		
2	ANALYZ	V1	ORG4	26-APR-2016 16:44	AWE	CLS	
3	STORE	ORG1	A1	09-MAY-2016 07:35	CLS	AWE	

Samplenum	Container ID	Products
L16041344-09	734384	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-APR-2016 14:01	CLS		
2	PREP	W1	DIG	27-APR-2016 15:00	AC	BRG	
3	STORE	DIG	W1	27-APR-2016 15:32	BRG	AC	
4	ANALYZ	W1	SEM	29-APR-2016 11:09	JWR	CLS	
5	STORE	SEM	A1	02-MAY-2016 16:36	BRG	JWR	
6	ANALYZ*	DIG	SEMI	04-MAY-2016 17:32	JWR	AC	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041344
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 06-MAY-2016

Samplenum	Container ID	Products
L16041344-10	734385	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-APR-2016 14:01	CLS		
2	ANALYZ	V1	ORG4	26-APR-2016 16:44	AWE	CLS	
3	STORE	ORG1	A1	09-MAY-2016 07:35	CLS	AWE	

Samplenum	Container ID	Products
L16041344-10	734386	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-APR-2016 14:01	CLS		
2	PREP	W1	DIG	27-APR-2016 15:00	AC	BRG	
3	STORE	DIG	W1	27-APR-2016 15:33	BRG	AC	
4	ANALYZ	W1	SEM	29-APR-2016 11:09	JWR	CLS	
5	STORE	SEM	A1	02-MAY-2016 16:36	BRG	JWR	
6	ANALYZ*	DIG	SEMI	04-MAY-2016 17:32	JWR	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041344-11	734387	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-APR-2016 14:01	CLS		
2	ANALYZ	V1	ORG4	26-APR-2016 16:44	AWE	CLS	
3	STORE	ORG1	A1	09-MAY-2016 07:35	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041344
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 06-MAY-2016

Samplenum	Container ID	Products
L16041344-11	734388	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-APR-2016 14:01	CLS		
2	PREP	W1	DIG	27-APR-2016 15:00	AC	BRG	
3	STORE	DIG	W1	27-APR-2016 15:33	BRG	AC	
4	ANALYZ	W1	SEM	29-APR-2016 11:09	JWR	CLS	
5	STORE	SEM	A1	02-MAY-2016 16:36	BRG	JWR	
6	ANALYZ*	DIG	SEMI	04-MAY-2016 17:32	JWR	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041344-12	734389	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-APR-2016 14:01	CLS		
2	ANALYZ	V1	ORG4	26-APR-2016 16:44	AWE	CLS	
3	STORE	ORG1	A1	09-MAY-2016 07:35	CLS	AWE	

Samplenum	Container ID	Products
L16041344-12	734390	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-APR-2016 14:01	CLS		
2	PREP	W1	DIG	27-APR-2016 15:00	AC	BRG	
3	STORE	DIG	W1	27-APR-2016 15:32	BRG	AC	
4	ANALYZ	W1	SEM	29-APR-2016 11:09	JWR	CLS	
5	STORE	SEM	A1	02-MAY-2016 16:36	BRG	JWR	
6	ANALYZ*	DIG	SEMI	04-MAY-2016 17:32	JWR	AC	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041344
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 06-MAY-2016

Samplenum	Container ID	Products
L16041344-13	734391	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-APR-2016 14:01	CLS		
2	ANALYZ	V1	ORG4	26-APR-2016 16:44	AWE	CLS	
3	STORE	ORG1	A1	09-MAY-2016 07:35	CLS	AWE	

Samplenum	Container ID	Products
L16041344-13	734392	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-APR-2016 14:01	CLS		
2	PREP	W1	DIG	27-APR-2016 15:00	AC	BRG	
3	STORE	DIG	W1	27-APR-2016 15:33	BRG	AC	
4	ANALYZ	W1	SEM	29-APR-2016 11:10	JWR	CLS	
5	STORE	SEM	A1	02-MAY-2016 16:37	BRG	JWR	
6	ANALYZ*	DIG	SEMI	04-MAY-2016 17:32	JWR	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041344-14	734393	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-APR-2016 14:01	CLS		
2	ANALYZ	V1	ORG4	26-APR-2016 16:44	AWE	CLS	
3	STORE	ORG1	A1	09-MAY-2016 07:35	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041344
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 06-MAY-2016

Samplenum	Container ID	Products
L16041344-14	734394	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-APR-2016 14:01	CLS		
2	PREP	W1	DIG	27-APR-2016 15:00	AC	BRG	
3	STORE	DIG	W1	27-APR-2016 15:33	BRG	AC	
4	ANALYZ	W1	SEM	29-APR-2016 11:10	JWR	CLS	
5	STORE	SEM	A1	02-MAY-2016 16:37	BRG	JWR	
6	ANALYZ*	DIG	SEMI	04-MAY-2016 17:32	JWR	AC	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16041363

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on May 10 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00113753	I	1.0		J2317165296	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	NA
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	NA

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18CPTMW19SW(5-5.5)210416	L16041363-01	04/21/2016 17:00	04/26/2016 10:51
18CPTMW19SW(10-10.5)210416	L16041363-02	04/21/2016 17:30	04/26/2016 10:51
18CPTMW19SW(30-30.5)220416	L16041363-03	04/22/2016 09:00	04/26/2016 10:51
18CPTMW19SW(30-30.5)220416DUP	L16041363-04	04/22/2016 09:00	04/26/2016 10:51
18CPTMW19SW(40-40.5)220416	L16041363-05	04/22/2016 09:05	04/26/2016 10:51
18CPTMW19SW(20-20.5)220416	L16041363-06	04/21/2016 18:00	04/26/2016 10:51
18CPTMW19SW(60-61)220416	L16041363-07	04/22/2016 11:15	04/26/2016 10:51
18CPTMW19SW(60-61)220416MS	L16041363-08	04/22/2016 11:15	04/26/2016 10:51
18CPTMW19SW(60-61)220416MSD	L16041363-09	04/22/2016 11:15	04/26/2016 10:51
18CPTMW19SW(50-50.5)220416	L16041363-10	04/22/2016 11:11	04/26/2016 10:51

Microbac Laboratories ● Ohio Valley Division
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Microbac REPORT L16041363
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041363
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG567003	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-05-10 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden	Franci Bolden	Analyst I	2016-05-10 18:04:56

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041363
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG567003	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-05-10 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?		X			1
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041363
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG567003	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-05-10 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			4
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041363
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG567003	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-05-10 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			3
Was the ICAL curve verified for each analyte?		X			2
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041363
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG567003	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-05-10 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041363
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG567003	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-05-10 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) Surrogate recoveries marginally exceeded the upper limit for 1,2-Dichloroethane-d4 and 4-Bromofluorobenzene in multiple samples, blank and LCSs. No detections above the reporting limit in affected samples. No reanalysis performed.

2) Dichlorodifluoromethane exceeded the upper limit in the ICV.

3) 2-Chlorotoluene exceeded the upper control limit in the CCV analyzed 4/30/16.

4) Vinyl chloride exceeded the upper control limit in the MS/MSD.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041363
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG567013	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-05-05 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-05-05 20:25:47

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041363
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG567013	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-05-05 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041363
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG567013	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-05-05 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			1
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041363
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG567013	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-05-05 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041363
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG567013	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-05-05 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041363
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG567013	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-05-05 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. The MS and MSD yielded recoveries for perchlorate that were above the acceptance limit.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041363
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG566651	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-04-28 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2016-04-28 14:17:00

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041363
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG566651	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-04-28 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?			X		
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?			X		
Were sample detection limits reported for all analytes not detected?			X		
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?			X		
Were blanks analyzed at the appropriate frequency?			X		
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?			X		
Were blank concentrations < MQL?			X		
Laboratory control samples (LCS):			X		
Were all COCs included in the LCS?			X		

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041363
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG566651	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-04-28 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?			X		
Were LCSs analyzed at the required frequency?			X		
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?			X		
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?			X		
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?			X		
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?			X		
Are unadjusted MQLs and DCSs included in the laboratory data package?			X		
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?			X		
Were percent RSDs or correlation coefficient criteria met?			X		

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041363
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG566651	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-04-28 00:00:00		

Was the number of standards recommended in the method used for all analytes?			X		
Were all points generated between the lowest and highest standard used to calculate the curve?			X		
Are ICAL data available for all instruments used?			X		
Has the initial calibration curve been verified using an appropriate second source standard?			X		
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041363
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG566651	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-04-28 00:00:00		

Was a MDL study performed for each reported analyte?			X		
Is the MDL either adjusted or supported by the analysis of DCSs?			X		
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?			X		
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041363
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG566651	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-04-28 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW19SW(5-5.5)210416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:33
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG567003	**Analyst:**	ADC	**Run Date:**	04/30/2016 18:48
Collect Date:	04/21/2016 17:00	**Dilution:**	1	**File ID:**	9M974077
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.2	U	24.3	12.2	6.08
Benzene	71-43-2	1.22	U	6.08	1.22	0.608
Bromobenzene	108-86-1	1.22	U	6.08	1.22	0.608
Bromochloromethane	74-97-5	2.44	U	6.08	2.44	1.22
Bromodichloromethane	75-27-4	1.22	U	6.08	1.22	0.608
Bromoform	75-25-2	1.22	U	6.08	1.22	0.608
Bromomethane	74-83-9	2.44	U	6.08	2.44	1.22
2-Butanone	78-93-3	6.08	U	12.2	6.08	3.04
n-Butylbenzene	104-51-8	1.22	U	6.08	1.22	0.608
sec-Butylbenzene	135-98-8	1.22	U	6.08	1.22	0.608
tert-Butylbenzene	98-06-6	1.22	U	6.08	1.22	0.608
Carbon disulfide	75-15-0	1.22	U	6.08	1.22	0.608
Carbon tetrachloride	56-23-5	1.22	U	6.08	1.22	0.608
Chlorobenzene	108-90-7	1.22	U	6.08	1.22	0.608
Chlorodibromomethane	124-48-1	1.22	U	6.08	1.22	0.608
Chloroethane	75-00-3	2.44	U	6.08	2.44	1.22
Chloroform	67-66-3	1.22	U	6.08	1.22	0.608
Chloromethane	74-87-3	4.86	U	12.2	4.86	2.43
2-Chlorotoluene	95-49-8	1.22	Q	6.08	1.22	0.608
4-Chlorotoluene	106-43-4	1.22	U	6.08	1.22	0.608
1,2-Dibromo-3-chloropropane	96-12-8	4.86	U	12.2	4.86	2.43
1,2-Dibromoethane	106-93-4	1.22	U	6.08	1.22	0.608
Dibromomethane	74-95-3	1.22	U	6.08	1.22	0.608
1,2-Dichlorobenzene	95-50-1	1.22	U	6.08	1.22	0.608
1,3-Dichlorobenzene	541-73-1	1.22	U	6.08	1.22	0.608
1,4-Dichlorobenzene	106-46-7	1.22	U	6.08	1.22	0.608
Dichlorodifluoromethane	75-71-8	2.44	U	6.08	2.44	1.22
1,1-Dichloroethane	75-34-3	2.44	U	6.08	2.44	1.22
1,2-Dichloroethane	107-06-2	1.22	U	6.08	1.22	0.608
1,1-Dichloroethene	75-35-4	1.22	U	6.08	1.22	0.608
cis-1,2-Dichloroethene	156-59-2	1.22	U	6.08	1.22	0.608

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.22	U	6.08	1.22	0.608
1,2-Dichloropropane	78-87-5	1.22	U	6.08	1.22	0.608
1,3-Dichloropropane	142-28-9	1.22	U	6.08	1.22	0.608
2,2-Dichloropropane	594-20-7	1.22	U	6.08	1.22	0.608
cis-1,3-Dichloropropene	10061-01-5	1.22	U	6.08	1.22	0.608
trans-1,3-Dichloropropene	10061-02-6	1.22	U	6.08	1.22	0.608
1,1-Dichloropropene	563-58-6	1.22	U	6.08	1.22	0.608
Ethylbenzene	100-41-4	1.22	U	6.08	1.22	0.608
2-Hexanone	591-78-6	6.08	U	12.2	6.08	3.04
Hexachlorobutadiene	87-68-3	1.22	U	6.08	1.22	0.608
Isopropylbenzene	98-82-8	1.22	U	6.08	1.22	0.608
p-Isopropyltoluene	99-87-6	1.22	U	6.08	1.22	0.608
4-Methyl-2-pentanone	108-10-1	6.08	U	12.2	6.08	3.04
Methylene chloride	75-09-2	2.44	U	6.08	2.44	1.22
Naphthalene	91-20-3	1.22	U	6.08	1.22	0.608
n-Propylbenzene	103-65-1	1.22	U	6.08	1.22	0.608
Styrene	100-42-5	1.22	U	6.08	1.22	0.608
1,1,1,2-Tetrachloroethane	630-20-6	1.22	U	6.08	1.22	0.608
1,1,2,2-Tetrachloroethane	79-34-5	1.22	U	6.08	1.22	0.608
Tetrachloroethene	127-18-4	1.22	U	6.08	1.22	0.608
Toluene	108-88-3	1.22	U	6.08	1.22	0.608
1,2,3-Trichlorobenzene	87-61-6	1.22	U	6.08	1.22	0.608
1,2,4-Trichlorobenzene	120-82-1	1.22	U	6.08	1.22	0.608
1,1,1-Trichloroethane	71-55-6	1.22	U	6.08	1.22	0.608
1,1,2-Trichloroethane	79-00-5	1.22	U	6.08	1.22	0.608
Trichloroethene	79-01-6	1.22	U	6.08	1.22	0.608
Trichlorofluoromethane	75-69-4	2.44	U	6.08	2.44	1.22
1,2,3-Trichloropropane	96-18-4	2.44	U	6.08	2.44	1.22
1,2,4-Trimethylbenzene	95-63-6	1.22	U	6.08	1.22	0.608
1,3,5-Trimethylbenzene	108-67-8	1.22	U	6.08	1.22	0.608
Vinyl chloride	75-01-4	2.44	U	6.08	2.44	1.22
o-Xylene	95-47-6	1.22	U	6.08	1.22	0.608
m-,p-Xylene	179601-23-1	1.22	U	6.08	1.22	0.608

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	80	120	
1,2-Dichloroethane-d4	109	80	120	
Toluene-d8	113	85	115	
4-Bromofluorobenzene	126	85	120	*

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW19SW(5-5.5)210416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:50
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567013	**Analyst:**	JWR	**Run Date:**	05/03/2016 20:46
Collect Date:	04/21/2016 17:00	**Dilution:**	1	**File ID:**	1LM.LM34704
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.32	U	4.63	2.32	1.16

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW19SW(10-10.5)210416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:33
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG567003	**Analyst:**	ADC	**Run Date:**	04/30/2016 19:18
Collect Date:	04/21/2016 17:30	**Dilution:**	1	**File ID:**	9M974078
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	24.3		23.4	11.7	5.84
Benzene	71-43-2	1.17	U	5.84	1.17	0.584
Bromobenzene	108-86-1	1.17	U	5.84	1.17	0.584
Bromochloromethane	74-97-5	2.34	U	5.84	2.34	1.17
Bromodichloromethane	75-27-4	1.17	U	5.84	1.17	0.584
Bromoform	75-25-2	1.17	U	5.84	1.17	0.584
Bromomethane	74-83-9	2.34	U	5.84	2.34	1.17
2-Butanone	78-93-3	4.20	J	11.7	5.84	2.92
n-Butylbenzene	104-51-8	1.17	U	5.84	1.17	0.584
sec-Butylbenzene	135-98-8	1.17	U	5.84	1.17	0.584
tert-Butylbenzene	98-06-6	1.17	U	5.84	1.17	0.584
Carbon disulfide	75-15-0	1.17	U	5.84	1.17	0.584
Carbon tetrachloride	56-23-5	1.17	U	5.84	1.17	0.584
Chlorobenzene	108-90-7	1.17	U	5.84	1.17	0.584
Chlorodibromomethane	124-48-1	1.17	U	5.84	1.17	0.584
Chloroethane	75-00-3	2.34	U	5.84	2.34	1.17
Chloroform	67-66-3	1.17	U	5.84	1.17	0.584
Chloromethane	74-87-3	4.68	U	11.7	4.68	2.34
2-Chlorotoluene	95-49-8	1.17	Q	5.84	1.17	0.584
4-Chlorotoluene	106-43-4	1.17	U	5.84	1.17	0.584
1,2-Dibromo-3-chloropropane	96-12-8	4.68	U	11.7	4.68	2.34
1,2-Dibromoethane	106-93-4	1.17	U	5.84	1.17	0.584
Dibromomethane	74-95-3	1.17	U	5.84	1.17	0.584
1,2-Dichlorobenzene	95-50-1	1.17	U	5.84	1.17	0.584
1,3-Dichlorobenzene	541-73-1	1.17	U	5.84	1.17	0.584
1,4-Dichlorobenzene	106-46-7	1.17	U	5.84	1.17	0.584
Dichlorodifluoromethane	75-71-8	2.34	U	5.84	2.34	1.17
1,1-Dichloroethane	75-34-3	2.34	U	5.84	2.34	1.17
1,2-Dichloroethane	107-06-2	1.17	U	5.84	1.17	0.584
1,1-Dichloroethene	75-35-4	1.17	U	5.84	1.17	0.584

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.17	U	5.84	1.17	0.584
trans-1,2-Dichloroethene	156-60-5	1.17	U	5.84	1.17	0.584
1,2-Dichloropropane	78-87-5	1.17	U	5.84	1.17	0.584
1,3-Dichloropropane	142-28-9	1.17	U	5.84	1.17	0.584
2,2-Dichloropropane	594-20-7	1.17	U	5.84	1.17	0.584
cis-1,3-Dichloropropene	10061-01-5	1.17	U	5.84	1.17	0.584
trans-1,3-Dichloropropene	10061-02-6	1.17	U	5.84	1.17	0.584
1,1-Dichloropropene	563-58-6	1.17	U	5.84	1.17	0.584
Ethylbenzene	100-41-4	1.17	U	5.84	1.17	0.584
2-Hexanone	591-78-6	5.84	U	11.7	5.84	2.92
Hexachlorobutadiene	87-68-3	1.17	U	5.84	1.17	0.584
Isopropylbenzene	98-82-8	1.17	U	5.84	1.17	0.584
p-Isopropyltoluene	99-87-6	1.17	U	5.84	1.17	0.584
4-Methyl-2-pentanone	108-10-1	5.84	U	11.7	5.84	2.92
Methylene chloride	75-09-2	2.34	U	5.84	2.34	1.17
Naphthalene	91-20-3	1.17	U	5.84	1.17	0.584
n-Propylbenzene	103-65-1	1.17	U	5.84	1.17	0.584
Styrene	100-42-5	1.17	U	5.84	1.17	0.584
1,1,1,2-Tetrachloroethane	630-20-6	1.17	U	5.84	1.17	0.584
1,1,2,2-Tetrachloroethane	79-34-5	1.17	U	5.84	1.17	0.584
Tetrachloroethene	127-18-4	1.17	U	5.84	1.17	0.584
Toluene	108-88-3	1.17	U	5.84	1.17	0.584
1,2,3-Trichlorobenzene	87-61-6	1.17	U	5.84	1.17	0.584
1,2,4-Trichlorobenzene	120-82-1	1.17	U	5.84	1.17	0.584
1,1,1-Trichloroethane	71-55-6	1.17	U	5.84	1.17	0.584
1,1,2-Trichloroethane	79-00-5	1.17	U	5.84	1.17	0.584
Trichloroethene	79-01-6	1.17	U	5.84	1.17	0.584
Trichlorofluoromethane	75-69-4	2.34	U	5.84	2.34	1.17
1,2,3-Trichloropropane	96-18-4	2.34	U	5.84	2.34	1.17
1,2,4-Trimethylbenzene	95-63-6	1.17	U	5.84	1.17	0.584
1,3,5-Trimethylbenzene	108-67-8	1.17	U	5.84	1.17	0.584
Vinyl chloride	75-01-4	2.34	U	5.84	2.34	1.17
o-Xylene	95-47-6	1.17	U	5.84	1.17	0.584
m-,p-Xylene	179601-23-1	1.17	U	5.84	1.17	0.584

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	80	120	
1,2-Dichloroethane-d4	107	80	120	
Toluene-d8	111	85	115	
4-Bromofluorobenzene	120	85	120	

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW19SW(10-10.5)210416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:50
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567013	**Analyst:**	JWR	**Run Date:**	05/03/2016 21:05
Collect Date:	04/21/2016 17:30	**Dilution:**	1	**File ID:**	1LM.LM34705
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.44	U	4.90	2.44	1.22

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW19SW(30-30.5)220416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:34
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG567003	**Analyst:**	ADC	**Run Date:**	04/30/2016 19:48
Collect Date:	04/22/2016 09:00	**Dilution:**	1	**File ID:**	9M974079
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.7	U	25.4	12.7	6.34
Benzene	71-43-2	1.27	U	6.34	1.27	0.634
Bromobenzene	108-86-1	1.27	U	6.34	1.27	0.634
Bromochloromethane	74-97-5	2.54	U	6.34	2.54	1.27
Bromodichloromethane	75-27-4	1.27	U	6.34	1.27	0.634
Bromoform	75-25-2	1.27	U	6.34	1.27	0.634
Bromomethane	74-83-9	2.54	U	6.34	2.54	1.27
2-Butanone	78-93-3	6.34	U	12.7	6.34	3.17
n-Butylbenzene	104-51-8	1.27	U	6.34	1.27	0.634
sec-Butylbenzene	135-98-8	1.27	U	6.34	1.27	0.634
tert-Butylbenzene	98-06-6	1.27	U	6.34	1.27	0.634
Carbon disulfide	75-15-0	1.27	U	6.34	1.27	0.634
Carbon tetrachloride	56-23-5	1.27	U	6.34	1.27	0.634
Chlorobenzene	108-90-7	1.27	U	6.34	1.27	0.634
Chlorodibromomethane	124-48-1	1.27	U	6.34	1.27	0.634
Chloroethane	75-00-3	2.54	U	6.34	2.54	1.27
Chloroform	67-66-3	1.27	U	6.34	1.27	0.634
Chloromethane	74-87-3	5.08	U	12.7	5.08	2.54
2-Chlorotoluene	95-49-8	1.27	Q	6.34	1.27	0.634
4-Chlorotoluene	106-43-4	1.27	U	6.34	1.27	0.634
1,2-Dibromo-3-chloropropane	96-12-8	5.08	U	12.7	5.08	2.54
1,2-Dibromoethane	106-93-4	1.27	U	6.34	1.27	0.634
Dibromomethane	74-95-3	1.27	U	6.34	1.27	0.634
1,2-Dichlorobenzene	95-50-1	1.27	U	6.34	1.27	0.634
1,3-Dichlorobenzene	541-73-1	1.27	U	6.34	1.27	0.634
1,4-Dichlorobenzene	106-46-7	1.27	U	6.34	1.27	0.634
Dichlorodifluoromethane	75-71-8	2.54	U	6.34	2.54	1.27
1,1-Dichloroethane	75-34-3	2.54	U	6.34	2.54	1.27
1,2-Dichloroethane	107-06-2	1.27	U	6.34	1.27	0.634
1,1-Dichloroethene	75-35-4	1.27	U	6.34	1.27	0.634

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.27	U	6.34	1.27	0.634
trans-1,2-Dichloroethene	156-60-5	1.27	U	6.34	1.27	0.634
1,2-Dichloropropane	78-87-5	1.27	U	6.34	1.27	0.634
1,3-Dichloropropane	142-28-9	1.27	U	6.34	1.27	0.634
2,2-Dichloropropane	594-20-7	1.27	U	6.34	1.27	0.634
cis-1,3-Dichloropropene	10061-01-5	1.27	U	6.34	1.27	0.634
trans-1,3-Dichloropropene	10061-02-6	1.27	U	6.34	1.27	0.634
1,1-Dichloropropene	563-58-6	1.27	U	6.34	1.27	0.634
Ethylbenzene	100-41-4	1.27	U	6.34	1.27	0.634
2-Hexanone	591-78-6	6.34	U	12.7	6.34	3.17
Hexachlorobutadiene	87-68-3	1.27	U	6.34	1.27	0.634
Isopropylbenzene	98-82-8	1.27	U	6.34	1.27	0.634
p-Isopropyltoluene	99-87-6	1.27	U	6.34	1.27	0.634
4-Methyl-2-pentanone	108-10-1	6.34	U	12.7	6.34	3.17
Methylene chloride	75-09-2	2.54	U	6.34	2.54	1.27
Naphthalene	91-20-3	1.27	U	6.34	1.27	0.634
n-Propylbenzene	103-65-1	1.27	U	6.34	1.27	0.634
Styrene	100-42-5	1.27	U	6.34	1.27	0.634
1,1,1,2-Tetrachloroethane	630-20-6	1.27	U	6.34	1.27	0.634
1,1,2,2-Tetrachloroethane	79-34-5	1.27	U	6.34	1.27	0.634
Tetrachloroethene	127-18-4	1.27	U	6.34	1.27	0.634
Toluene	108-88-3	1.27	U	6.34	1.27	0.634
1,2,3-Trichlorobenzene	87-61-6	1.27	U	6.34	1.27	0.634
1,2,4-Trichlorobenzene	120-82-1	1.27	U	6.34	1.27	0.634
1,1,1-Trichloroethane	71-55-6	1.27	U	6.34	1.27	0.634
1,1,2-Trichloroethane	79-00-5	1.27	U	6.34	1.27	0.634
Trichloroethene	79-01-6	1.27	U	6.34	1.27	0.634
Trichlorofluoromethane	75-69-4	2.54	U	6.34	2.54	1.27
1,2,3-Trichloropropane	96-18-4	2.54	U	6.34	2.54	1.27
1,2,4-Trimethylbenzene	95-63-6	1.27	U	6.34	1.27	0.634
1,3,5-Trimethylbenzene	108-67-8	1.27	U	6.34	1.27	0.634
Vinyl chloride	75-01-4	2.54	U	6.34	2.54	1.27
o-Xylene	95-47-6	1.27	U	6.34	1.27	0.634
m-,p-Xylene	179601-23-1	1.27	U	6.34	1.27	0.634

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	80	120	
1,2-Dichloroethane-d4	121	80	120	*
Toluene-d8	111	85	115	
4-Bromofluorobenzene	123	85	120	*

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW19SW(30-30.5)220416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:50
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567013	**Analyst:**	JWR	**Run Date:**	05/03/2016 21:24
Collect Date:	04/22/2016 09:00	**Dilution:**	1	**File ID:**	1LM.LM34706
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.42	U	4.85	2.42	1.21

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW19SW(30-30.5)220416DUP	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:35
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG567003	**Analyst:**	ADC	**Run Date:**	04/30/2016 20:18
Collect Date:	04/22/2016 09:00	**Dilution:**	1	**File ID:**	9M974080
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.8	U	25.6	12.8	6.40
Benzene	71-43-2	1.28	U	6.40	1.28	0.640
Bromobenzene	108-86-1	1.28	U	6.40	1.28	0.640
Bromochloromethane	74-97-5	2.56	U	6.40	2.56	1.28
Bromodichloromethane	75-27-4	1.28	U	6.40	1.28	0.640
Bromoform	75-25-2	1.28	U	6.40	1.28	0.640
Bromomethane	74-83-9	2.56	U	6.40	2.56	1.28
2-Butanone	78-93-3	6.40	U	12.8	6.40	3.20
n-Butylbenzene	104-51-8	1.28	U	6.40	1.28	0.640
sec-Butylbenzene	135-98-8	1.28	U	6.40	1.28	0.640
tert-Butylbenzene	98-06-6	1.28	U	6.40	1.28	0.640
Carbon disulfide	75-15-0	1.28	U	6.40	1.28	0.640
Carbon tetrachloride	56-23-5	1.28	U	6.40	1.28	0.640
Chlorobenzene	108-90-7	1.28	U	6.40	1.28	0.640
Chlorodibromomethane	124-48-1	1.28	U	6.40	1.28	0.640
Chloroethane	75-00-3	2.56	U	6.40	2.56	1.28
Chloroform	67-66-3	1.28	U	6.40	1.28	0.640
Chloromethane	74-87-3	5.12	U	12.8	5.12	2.56
2-Chlorotoluene	95-49-8	1.28	Q	6.40	1.28	0.640
4-Chlorotoluene	106-43-4	1.28	U	6.40	1.28	0.640
1,2-Dibromo-3-chloropropane	96-12-8	5.12	U	12.8	5.12	2.56
1,2-Dibromoethane	106-93-4	1.28	U	6.40	1.28	0.640
Dibromomethane	74-95-3	1.28	U	6.40	1.28	0.640
1,2-Dichlorobenzene	95-50-1	1.28	U	6.40	1.28	0.640
1,3-Dichlorobenzene	541-73-1	1.28	U	6.40	1.28	0.640
1,4-Dichlorobenzene	106-46-7	1.28	U	6.40	1.28	0.640
Dichlorodifluoromethane	75-71-8	2.56	U	6.40	2.56	1.28
1,1-Dichloroethane	75-34-3	2.56	U	6.40	2.56	1.28
1,2-Dichloroethane	107-06-2	1.28	U	6.40	1.28	0.640
1,1-Dichloroethene	75-35-4	1.28	U	6.40	1.28	0.640

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.28	U	6.40	1.28	0.640
trans-1,2-Dichloroethene	156-60-5	1.28	U	6.40	1.28	0.640
1,2-Dichloropropane	78-87-5	1.28	U	6.40	1.28	0.640
1,3-Dichloropropane	142-28-9	1.28	U	6.40	1.28	0.640
2,2-Dichloropropane	594-20-7	1.28	U	6.40	1.28	0.640
cis-1,3-Dichloropropene	10061-01-5	1.28	U	6.40	1.28	0.640
trans-1,3-Dichloropropene	10061-02-6	1.28	U	6.40	1.28	0.640
1,1-Dichloropropene	563-58-6	1.28	U	6.40	1.28	0.640
Ethylbenzene	100-41-4	1.28	U	6.40	1.28	0.640
2-Hexanone	591-78-6	6.40	U	12.8	6.40	3.20
Hexachlorobutadiene	87-68-3	1.28	U	6.40	1.28	0.640
Isopropylbenzene	98-82-8	1.28	U	6.40	1.28	0.640
p-Isopropyltoluene	99-87-6	1.28	U	6.40	1.28	0.640
4-Methyl-2-pentanone	108-10-1	6.40	U	12.8	6.40	3.20
Methylene chloride	75-09-2	2.56	U	6.40	2.56	1.28
Naphthalene	91-20-3	1.28	U	6.40	1.28	0.640
n-Propylbenzene	103-65-1	1.28	U	6.40	1.28	0.640
Styrene	100-42-5	1.28	U	6.40	1.28	0.640
1,1,1,2-Tetrachloroethane	630-20-6	1.28	U	6.40	1.28	0.640
1,1,2,2-Tetrachloroethane	79-34-5	1.28	U	6.40	1.28	0.640
Tetrachloroethene	127-18-4	1.28	U	6.40	1.28	0.640
Toluene	108-88-3	1.28	U	6.40	1.28	0.640
1,2,3-Trichlorobenzene	87-61-6	1.28	U	6.40	1.28	0.640
1,2,4-Trichlorobenzene	120-82-1	1.28	U	6.40	1.28	0.640
1,1,1-Trichloroethane	71-55-6	1.28	U	6.40	1.28	0.640
1,1,2-Trichloroethane	79-00-5	1.28	U	6.40	1.28	0.640
Trichloroethene	79-01-6	1.28	U	6.40	1.28	0.640
Trichlorofluoromethane	75-69-4	2.56	U	6.40	2.56	1.28
1,2,3-Trichloropropane	96-18-4	2.56	U	6.40	2.56	1.28
1,2,4-Trimethylbenzene	95-63-6	1.28	U	6.40	1.28	0.640
1,3,5-Trimethylbenzene	108-67-8	1.28	U	6.40	1.28	0.640
Vinyl chloride	75-01-4	2.56	U	6.40	2.56	1.28
o-Xylene	95-47-6	1.28	U	6.40	1.28	0.640
m-,p-Xylene	179601-23-1	1.28	U	6.40	1.28	0.640

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	108	80	120	
1,2-Dichloroethane-d4	122	80	120	*
Toluene-d8	110	85	115	
4-Bromofluorobenzene	125	85	120	*

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW19SW(30-30.5)220416DUP	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:50
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567013	**Analyst:**	JWR	**Run Date:**	05/03/2016 21:43
Collect Date:	04/22/2016 09:00	**Dilution:**	1	**File ID:**	1LM.LM34707
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.46	U	4.93	2.46	1.23

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW19SW(40-40.5)220416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:36
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG567003	**Analyst:**	ADC	**Run Date:**	04/30/2016 20:48
Collect Date:	04/22/2016 09:05	**Dilution:**	1	**File ID:**	9M974081
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.6	U	23.1	11.6	5.79
Benzene	71-43-2	1.16	U	5.79	1.16	0.579
Bromobenzene	108-86-1	1.16	U	5.79	1.16	0.579
Bromochloromethane	74-97-5	2.32	U	5.79	2.32	1.16
Bromodichloromethane	75-27-4	1.16	U	5.79	1.16	0.579
Bromoform	75-25-2	1.16	U	5.79	1.16	0.579
Bromomethane	74-83-9	2.32	U	5.79	2.32	1.16
2-Butanone	78-93-3	5.78	U	11.6	5.78	2.89
n-Butylbenzene	104-51-8	1.16	U	5.79	1.16	0.579
sec-Butylbenzene	135-98-8	1.16	U	5.79	1.16	0.579
tert-Butylbenzene	98-06-6	1.16	U	5.79	1.16	0.579
Carbon disulfide	75-15-0	1.16	U	5.79	1.16	0.579
Carbon tetrachloride	56-23-5	1.16	U	5.79	1.16	0.579
Chlorobenzene	108-90-7	1.16	U	5.79	1.16	0.579
Chlorodibromomethane	124-48-1	1.16	U	5.79	1.16	0.579
Chloroethane	75-00-3	2.32	U	5.79	2.32	1.16
Chloroform	67-66-3	1.16	U	5.79	1.16	0.579
Chloromethane	74-87-3	4.62	U	11.6	4.62	2.31
2-Chlorotoluene	95-49-8	1.16	Q	5.79	1.16	0.579
4-Chlorotoluene	106-43-4	1.16	U	5.79	1.16	0.579
1,2-Dibromo-3-chloropropane	96-12-8	4.62	U	11.6	4.62	2.31
1,2-Dibromoethane	106-93-4	1.16	U	5.79	1.16	0.579
Dibromomethane	74-95-3	1.16	U	5.79	1.16	0.579
1,2-Dichlorobenzene	95-50-1	1.16	U	5.79	1.16	0.579
1,3-Dichlorobenzene	541-73-1	1.16	U	5.79	1.16	0.579
1,4-Dichlorobenzene	106-46-7	1.16	U	5.79	1.16	0.579
Dichlorodifluoromethane	75-71-8	2.32	U	5.79	2.32	1.16
1,1-Dichloroethane	75-34-3	2.32	U	5.79	2.32	1.16
1,2-Dichloroethane	107-06-2	1.16	U	5.79	1.16	0.579
1,1-Dichloroethene	75-35-4	1.16	U	5.79	1.16	0.579

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.16	U	5.79	1.16	0.579
trans-1,2-Dichloroethene	156-60-5	1.16	U	5.79	1.16	0.579
1,2-Dichloropropane	78-87-5	1.16	U	5.79	1.16	0.579
1,3-Dichloropropane	142-28-9	1.16	U	5.79	1.16	0.579
2,2-Dichloropropane	594-20-7	1.16	U	5.79	1.16	0.579
cis-1,3-Dichloropropene	10061-01-5	1.16	U	5.79	1.16	0.579
trans-1,3-Dichloropropene	10061-02-6	1.16	U	5.79	1.16	0.579
1,1-Dichloropropene	563-58-6	1.16	U	5.79	1.16	0.579
Ethylbenzene	100-41-4	1.16	U	5.79	1.16	0.579
2-Hexanone	591-78-6	5.78	U	11.6	5.78	2.89
Hexachlorobutadiene	87-68-3	1.16	U	5.79	1.16	0.579
Isopropylbenzene	98-82-8	1.16	U	5.79	1.16	0.579
p-Isopropyltoluene	99-87-6	1.16	U	5.79	1.16	0.579
4-Methyl-2-pentanone	108-10-1	5.78	U	11.6	5.78	2.89
Methylene chloride	75-09-2	2.32	U	5.79	2.32	1.16
Naphthalene	91-20-3	1.16	U	5.79	1.16	0.579
n-Propylbenzene	103-65-1	1.16	U	5.79	1.16	0.579
Styrene	100-42-5	1.16	U	5.79	1.16	0.579
1,1,1,2-Tetrachloroethane	630-20-6	1.16	U	5.79	1.16	0.579
1,1,2,2-Tetrachloroethane	79-34-5	1.16	U	5.79	1.16	0.579
Tetrachloroethene	127-18-4	1.16	U	5.79	1.16	0.579
Toluene	108-88-3	1.16	U	5.79	1.16	0.579
1,2,3-Trichlorobenzene	87-61-6	1.16	U	5.79	1.16	0.579
1,2,4-Trichlorobenzene	120-82-1	1.16	U	5.79	1.16	0.579
1,1,1-Trichloroethane	71-55-6	1.16	U	5.79	1.16	0.579
1,1,2-Trichloroethane	79-00-5	1.16	U	5.79	1.16	0.579
Trichloroethene	79-01-6	1.16	U	5.79	1.16	0.579
Trichlorofluoromethane	75-69-4	2.32	U	5.79	2.32	1.16
1,2,3-Trichloropropane	96-18-4	2.32	U	5.79	2.32	1.16
1,2,4-Trimethylbenzene	95-63-6	1.16	U	5.79	1.16	0.579
1,3,5-Trimethylbenzene	108-67-8	1.16	U	5.79	1.16	0.579
Vinyl chloride	75-01-4	2.32	U	5.79	2.32	1.16
o-Xylene	95-47-6	1.16	U	5.79	1.16	0.579
m-,p-Xylene	179601-23-1	1.16	U	5.79	1.16	0.579

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	80	120	
1,2-Dichloroethane-d4	119	80	120	
Toluene-d8	111	85	115	
4-Bromofluorobenzene	125	85	120	*

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW19SW(40-40.5)220416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:50
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567013	**Analyst:**	JWR	**Run Date:**	05/03/2016 22:59
Collect Date:	04/22/2016 09:05	**Dilution:**	5	**File ID:**	1LM.LM34711
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	80.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	124		24.1	12.1	6.04

Certificate of Analysis

Sample #:	L16041363-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW19SW(20-20.5)220416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:36
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG567003	**Analyst:**	ADC	**Run Date:**	04/30/2016 21:19
Collect Date:	04/21/2016 18:00	**Dilution:**	1	**File ID:**	9M974082
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.6	U	27.3	13.6	6.81
Benzene	71-43-2	1.36	U	6.81	1.36	0.681
Bromobenzene	108-86-1	1.36	U	6.81	1.36	0.681
Bromochloromethane	74-97-5	2.72	U	6.81	2.72	1.36
Bromodichloromethane	75-27-4	1.36	U	6.81	1.36	0.681
Bromoform	75-25-2	1.36	U	6.81	1.36	0.681
Bromomethane	74-83-9	2.72	U	6.81	2.72	1.36
2-Butanone	78-93-3	6.82	U	13.6	6.82	3.41
n-Butylbenzene	104-51-8	1.36	U	6.81	1.36	0.681
sec-Butylbenzene	135-98-8	1.36	U	6.81	1.36	0.681
tert-Butylbenzene	98-06-6	1.36	U	6.81	1.36	0.681
Carbon disulfide	75-15-0	1.36	U	6.81	1.36	0.681
Carbon tetrachloride	56-23-5	1.36	U	6.81	1.36	0.681
Chlorobenzene	108-90-7	1.36	U	6.81	1.36	0.681
Chlorodibromomethane	124-48-1	1.36	U	6.81	1.36	0.681
Chloroethane	75-00-3	2.72	U	6.81	2.72	1.36
Chloroform	67-66-3	1.36	U	6.81	1.36	0.681
Chloromethane	74-87-3	5.46	U	13.6	5.46	2.73
2-Chlorotoluene	95-49-8	1.36	Q	6.81	1.36	0.681

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Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
4-Chlorotoluene	106-43-4	1.36	U	6.81	1.36	0.681
1,2-Dibromo-3-chloropropane	96-12-8	5.46	U	13.6	5.46	2.73
1,2-Dibromoethane	106-93-4	1.36	U	6.81	1.36	0.681
Dibromomethane	74-95-3	1.36	U	6.81	1.36	0.681
1,2-Dichlorobenzene	95-50-1	1.36	U	6.81	1.36	0.681
1,3-Dichlorobenzene	541-73-1	1.36	U	6.81	1.36	0.681
1,4-Dichlorobenzene	106-46-7	1.36	U	6.81	1.36	0.681
Dichlorodifluoromethane	75-71-8	2.72	U	6.81	2.72	1.36
1,1-Dichloroethane	75-34-3	2.72	U	6.81	2.72	1.36
1,2-Dichloroethane	107-06-2	1.36	U	6.81	1.36	0.681
1,1-Dichloroethene	75-35-4	1.36	U	6.81	1.36	0.681
cis-1,2-Dichloroethene	156-59-2	1.36	U	6.81	1.36	0.681
trans-1,2-Dichloroethene	156-60-5	1.36	U	6.81	1.36	0.681
1,2-Dichloropropane	78-87-5	1.36	U	6.81	1.36	0.681
1,3-Dichloropropane	142-28-9	1.36	U	6.81	1.36	0.681
2,2-Dichloropropane	594-20-7	1.36	U	6.81	1.36	0.681
cis-1,3-Dichloropropene	10061-01-5	1.36	U	6.81	1.36	0.681
trans-1,3-Dichloropropene	10061-02-6	1.36	U	6.81	1.36	0.681
1,1-Dichloropropene	563-58-6	1.36	U	6.81	1.36	0.681
Ethylbenzene	100-41-4	1.36	U	6.81	1.36	0.681
2-Hexanone	591-78-6	6.82	U	13.6	6.82	3.41
Hexachlorobutadiene	87-68-3	1.36	U	6.81	1.36	0.681
Isopropylbenzene	98-82-8	1.36	U	6.81	1.36	0.681
p-Isopropyltoluene	99-87-6	1.36	U	6.81	1.36	0.681
4-Methyl-2-pentanone	108-10-1	6.82	U	13.6	6.82	3.41
Methylene chloride	75-09-2	2.72	U	6.81	2.72	1.36
Naphthalene	91-20-3	1.36	U	6.81	1.36	0.681
n-Propylbenzene	103-65-1	1.36	U	6.81	1.36	0.681
Styrene	100-42-5	1.36	U	6.81	1.36	0.681
1,1,1,2-Tetrachloroethane	630-20-6	1.36	U	6.81	1.36	0.681
1,1,2,2-Tetrachloroethane	79-34-5	1.36	U	6.81	1.36	0.681
Tetrachloroethene	127-18-4	1.36	U	6.81	1.36	0.681
Toluene	108-88-3	1.36	U	6.81	1.36	0.681
1,2,3-Trichlorobenzene	87-61-6	1.36	U	6.81	1.36	0.681
1,2,4-Trichlorobenzene	120-82-1	1.36	U	6.81	1.36	0.681
1,1,1-Trichloroethane	71-55-6	1.36	U	6.81	1.36	0.681
1,1,2-Trichloroethane	79-00-5	1.36	U	6.81	1.36	0.681
Trichloroethene	79-01-6	1.36	U	6.81	1.36	0.681
Trichlorofluoromethane	75-69-4	2.72	U	6.81	2.72	1.36

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Lab Report #: L16041363
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Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,3-Trichloropropane	96-18-4	2.72	U	6.81	2.72	1.36
1,2,4-Trimethylbenzene	95-63-6	1.36	U	6.81	1.36	0.681
1,3,5-Trimethylbenzene	108-67-8	1.36	U	6.81	1.36	0.681
Vinyl chloride	75-01-4	2.72	U	6.81	2.72	1.36
o-Xylene	95-47-6	1.36	U	6.81	1.36	0.681
m-,p-Xylene	179601-23-1	1.36	U	6.81	1.36	0.681

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	80	120	
1,2-Dichloroethane-d4	109	80	120	
Toluene-d8	112	85	115	
4-Bromofluorobenzene	121	85	120	*

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW19SW(20-20.5)220416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:50
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567013	**Analyst:**	JWR	**Run Date:**	05/03/2016 23:18
Collect Date:	04/21/2016 18:00	**Dilution:**	1	**File ID:**	1LM.LM34712
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	8.74		4.90	2.44	1.22

Certificate of Analysis

Sample #:	L16041363-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW19SW(60-61)220416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:37
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG567003	**Analyst:**	ADC	**Run Date:**	04/30/2016 21:49
Collect Date:	04/22/2016 11:15	**Dilution:**	1	**File ID:**	9M974083
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	75.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	8.63	J	26.0	13.0	6.51
Benzene	71-43-2	1.30	U	6.51	1.30	0.651
Bromobenzene	108-86-1	1.30	U	6.51	1.30	0.651
Bromochloromethane	74-97-5	2.60	U	6.51	2.60	1.30
Bromodichloromethane	75-27-4	1.30	U	6.51	1.30	0.651
Bromoform	75-25-2	1.30	U	6.51	1.30	0.651
Bromomethane	74-83-9	2.60	U	6.51	2.60	1.30
2-Butanone	78-93-3	6.50	U	13.0	6.50	3.25
n-Butylbenzene	104-51-8	1.30	U	6.51	1.30	0.651
sec-Butylbenzene	135-98-8	1.30	U	6.51	1.30	0.651
tert-Butylbenzene	98-06-6	1.30	U	6.51	1.30	0.651
Carbon disulfide	75-15-0	1.30	U	6.51	1.30	0.651
Carbon tetrachloride	56-23-5	1.30	U	6.51	1.30	0.651
Chlorobenzene	108-90-7	1.30	U	6.51	1.30	0.651
Chlorodibromomethane	124-48-1	1.30	U	6.51	1.30	0.651
Chloroethane	75-00-3	2.60	U	6.51	2.60	1.30
Chloroform	67-66-3	1.30	U	6.51	1.30	0.651
Chloromethane	74-87-3	5.20	U	13.0	5.20	2.60
2-Chlorotoluene	95-49-8	1.30	Q	6.51	1.30	0.651

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Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
4-Chlorotoluene	106-43-4	1.30	U	6.51	1.30	0.651
1,2-Dibromo-3-chloropropane	96-12-8	5.20	U	13.0	5.20	2.60
1,2-Dibromoethane	106-93-4	1.30	U	6.51	1.30	0.651
Dibromomethane	74-95-3	1.30	U	6.51	1.30	0.651
1,2-Dichlorobenzene	95-50-1	1.30	U	6.51	1.30	0.651
1,3-Dichlorobenzene	541-73-1	1.30	U	6.51	1.30	0.651
1,4-Dichlorobenzene	106-46-7	1.30	U	6.51	1.30	0.651
Dichlorodifluoromethane	75-71-8	2.60	U	6.51	2.60	1.30
1,1-Dichloroethane	75-34-3	2.60	U	6.51	2.60	1.30
1,2-Dichloroethane	107-06-2	1.30	U	6.51	1.30	0.651
1,1-Dichloroethene	75-35-4	1.30	U	6.51	1.30	0.651
cis-1,2-Dichloroethene	156-59-2	1.30	U	6.51	1.30	0.651
trans-1,2-Dichloroethene	156-60-5	1.30	U	6.51	1.30	0.651
1,2-Dichloropropane	78-87-5	1.30	U	6.51	1.30	0.651
1,3-Dichloropropane	142-28-9	1.30	U	6.51	1.30	0.651
2,2-Dichloropropane	594-20-7	1.30	U	6.51	1.30	0.651
cis-1,3-Dichloropropene	10061-01-5	1.30	U	6.51	1.30	0.651
trans-1,3-Dichloropropene	10061-02-6	1.30	U	6.51	1.30	0.651
1,1-Dichloropropene	563-58-6	1.30	U	6.51	1.30	0.651
Ethylbenzene	100-41-4	1.30	U	6.51	1.30	0.651
2-Hexanone	591-78-6	6.50	U	13.0	6.50	3.25
Hexachlorobutadiene	87-68-3	1.30	U	6.51	1.30	0.651
Isopropylbenzene	98-82-8	1.30	U	6.51	1.30	0.651
p-Isopropyltoluene	99-87-6	1.30	U	6.51	1.30	0.651
4-Methyl-2-pentanone	108-10-1	6.50	U	13.0	6.50	3.25
Methylene chloride	75-09-2	2.60	U	6.51	2.60	1.30
Naphthalene	91-20-3	1.30	U	6.51	1.30	0.651
n-Propylbenzene	103-65-1	1.30	U	6.51	1.30	0.651
Styrene	100-42-5	1.30	U	6.51	1.30	0.651
1,1,1,2-Tetrachloroethane	630-20-6	1.30	U	6.51	1.30	0.651
1,1,2,2-Tetrachloroethane	79-34-5	1.30	U	6.51	1.30	0.651
Tetrachloroethene	127-18-4	1.30	U	6.51	1.30	0.651
Toluene	108-88-3	1.30	U	6.51	1.30	0.651
1,2,3-Trichlorobenzene	87-61-6	1.30	U	6.51	1.30	0.651
1,2,4-Trichlorobenzene	120-82-1	1.30	U	6.51	1.30	0.651
1,1,1-Trichloroethane	71-55-6	1.30	U	6.51	1.30	0.651
1,1,2-Trichloroethane	79-00-5	1.30	U	6.51	1.30	0.651
Trichloroethene	79-01-6	1.30	U	6.51	1.30	0.651
Trichlorofluoromethane	75-69-4	2.60	U	6.51	2.60	1.30

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,3-Trichloropropane	96-18-4	2.60	U	6.51	2.60	1.30
1,2,4-Trimethylbenzene	95-63-6	1.30	U	6.51	1.30	0.651
1,3,5-Trimethylbenzene	108-67-8	1.30	U	6.51	1.30	0.651
Vinyl chloride	75-01-4	2.60	U	6.51	2.60	1.30
o-Xylene	95-47-6	1.30	U	6.51	1.30	0.651
m-,p-Xylene	179601-23-1	1.30	U	6.51	1.30	0.651

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	80	120	
1,2-Dichloroethane-d4	108	80	120	
Toluene-d8	113	85	115	
4-Bromofluorobenzene	126	85	120	*

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW19SW(60-61)220416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:50
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567013	**Analyst:**	JWR	**Run Date:**	05/03/2016 19:50
Collect Date:	04/22/2016 11:15	**Dilution:**	1	**File ID:**	1LM.LM34701
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	75.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.54	U	5.07	2.54	1.27

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW19SW(60-61)220416MS	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:38
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG567003	**Analyst:**	ADC	**Run Date:**	04/30/2016 22:50
Collect Date:	04/22/2016 11:15	**Dilution:**	1	**File ID:**	9M974085
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	75.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	31.5		26.6	13.3	6.65
Benzene	71-43-2	22.7		6.65	1.33	0.665
Bromobenzene	108-86-1	26.1		6.65	1.33	0.665
Bromochloromethane	74-97-5	22.9		6.65	2.66	1.33
Bromodichloromethane	75-27-4	23.6		6.65	1.33	0.665
Bromoform	75-25-2	23.9		6.65	1.33	0.665
Bromomethane	74-83-9	25.5		6.65	2.66	1.33
2-Butanone	78-93-3	22.2		13.3	6.66	3.33
n-Butylbenzene	104-51-8	23.6		6.65	1.33	0.665
sec-Butylbenzene	135-98-8	26.8		6.65	1.33	0.665
tert-Butylbenzene	98-06-6	26.9		6.65	1.33	0.665
Carbon disulfide	75-15-0	22.5		6.65	1.33	0.665
Carbon tetrachloride	56-23-5	24.0		6.65	1.33	0.665
Chlorobenzene	108-90-7	24.4		6.65	1.33	0.665
Chlorodibromomethane	124-48-1	23.9		6.65	1.33	0.665
Chloroethane	75-00-3	24.9		6.65	2.66	1.33
Chloroform	67-66-3	24.5		6.65	1.33	0.665
Chloromethane	74-87-3	28.8		13.3	5.32	2.66
2-Chlorotoluene	95-49-8	29.1	Q	6.65	1.33	0.665
4-Chlorotoluene	106-43-4	25.3		6.65	1.33	0.665
1,2-Dibromo-3-chloropropane	96-12-8	27.6		13.3	5.32	2.66
1,2-Dibromoethane	106-93-4	23.6		6.65	1.33	0.665
Dibromomethane	74-95-3	21.6		6.65	1.33	0.665
1,2-Dichlorobenzene	95-50-1	24.3		6.65	1.33	0.665
1,3-Dichlorobenzene	541-73-1	24.2		6.65	1.33	0.665
1,4-Dichlorobenzene	106-46-7	24.2		6.65	1.33	0.665
Dichlorodifluoromethane	75-71-8	27.2		6.65	2.66	1.33
1,1-Dichloroethane	75-34-3	23.1		6.65	2.66	1.33
1,2-Dichloroethane	107-06-2	24.9		6.65	1.33	0.665
1,1-Dichloroethene	75-35-4	22.1		6.65	1.33	0.665

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	24.4		6.65	1.33	0.665
trans-1,2-Dichloroethene	156-60-5	24.0		6.65	1.33	0.665
1,2-Dichloropropane	78-87-5	24.7		6.65	1.33	0.665
1,3-Dichloropropane	142-28-9	25.8		6.65	1.33	0.665
2,2-Dichloropropane	594-20-7	22.4		6.65	1.33	0.665
cis-1,3-Dichloropropene	10061-01-5	23.8		6.65	1.33	0.665
trans-1,3-Dichloropropene	10061-02-6	23.9		6.65	1.33	0.665
1,1-Dichloropropene	563-58-6	22.4		6.65	1.33	0.665
Ethylbenzene	100-41-4	24.1		6.65	1.33	0.665
2-Hexanone	591-78-6	20.3		13.3	6.66	3.33
Hexachlorobutadiene	87-68-3	22.3		6.65	1.33	0.665
Isopropylbenzene	98-82-8	23.8		6.65	1.33	0.665
p-Isopropyltoluene	99-87-6	25.5		6.65	1.33	0.665
4-Methyl-2-pentanone	108-10-1	21.9		13.3	6.66	3.33
Methylene chloride	75-09-2	23.5		6.65	2.66	1.33
Naphthalene	91-20-3	17.7		6.65	1.33	0.665
n-Propylbenzene	103-65-1	26.9		6.65	1.33	0.665
Styrene	100-42-5	21.0		6.65	1.33	0.665
1,1,1,2-Tetrachloroethane	630-20-6	25.5		6.65	1.33	0.665
1,1,2,2-Tetrachloroethane	79-34-5	24.9		6.65	1.33	0.665
Tetrachloroethene	127-18-4	22.6		6.65	1.33	0.665
Toluene	108-88-3	23.8		6.65	1.33	0.665
1,2,3-Trichlorobenzene	87-61-6	17.7		6.65	1.33	0.665
1,2,4-Trichlorobenzene	120-82-1	18.2		6.65	1.33	0.665
1,1,1-Trichloroethane	71-55-6	24.7		6.65	1.33	0.665
1,1,2-Trichloroethane	79-00-5	24.6		6.65	1.33	0.665
Trichloroethene	79-01-6	22.2		6.65	1.33	0.665
Trichlorofluoromethane	75-69-4	24.5		6.65	2.66	1.33
1,2,3-Trichloropropane	96-18-4	27.6		6.65	2.66	1.33
1,2,4-Trimethylbenzene	95-63-6	27.0		6.65	1.33	0.665
1,3,5-Trimethylbenzene	108-67-8	27.2		6.65	1.33	0.665
Vinyl chloride	75-01-4	37.5		6.65	2.66	1.33
o-Xylene	95-47-6	24.9		6.65	1.33	0.665
m-,p-Xylene	179601-23-1	47.8		6.65	1.33	0.665

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	80	120	
1,2-Dichloroethane-d4	110	80	120	
Toluene-d8	111	85	115	
4-Bromofluorobenzene	123	85	120	*

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW19SW(60-61)220416MS	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:50
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567013	**Analyst:**	JWR	**Run Date:**	05/03/2016 20:09
Collect Date:	04/22/2016 11:15	**Dilution:**	1	**File ID:**	1LM.LM34702
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	75.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3.26	J	5.05	2.52	1.26

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW19SW(60-61)220416MSD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:39
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG567003	**Analyst:**	ADC	**Run Date:**	04/30/2016 23:20
Collect Date:	04/22/2016 11:15	**Dilution:**	1	**File ID:**	9M974086
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	75.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	35.3		27.2	13.6	6.79
Benzene	71-43-2	25.6		6.79	1.36	0.679
Bromobenzene	108-86-1	28.8		6.79	1.36	0.679
Bromochloromethane	74-97-5	25.0		6.79	2.72	1.36
Bromodichloromethane	75-27-4	26.3		6.79	1.36	0.679
Bromoform	75-25-2	25.6		6.79	1.36	0.679
Bromomethane	74-83-9	26.0		6.79	2.72	1.36
2-Butanone	78-93-3	22.7		13.6	6.80	3.40
n-Butylbenzene	104-51-8	26.1		6.79	1.36	0.679
sec-Butylbenzene	135-98-8	29.7		6.79	1.36	0.679
tert-Butylbenzene	98-06-6	31.4		6.79	1.36	0.679
Carbon disulfide	75-15-0	23.8		6.79	1.36	0.679
Carbon tetrachloride	56-23-5	26.8		6.79	1.36	0.679
Chlorobenzene	108-90-7	27.0		6.79	1.36	0.679
Chlorodibromomethane	124-48-1	27.0		6.79	1.36	0.679
Chloroethane	75-00-3	28.3		6.79	2.72	1.36
Chloroform	67-66-3	27.0		6.79	1.36	0.679
Chloromethane	74-87-3	31.7		13.6	5.44	2.72
2-Chlorotoluene	95-49-8	33.0	Q	6.79	1.36	0.679
4-Chlorotoluene	106-43-4	26.6		6.79	1.36	0.679
1,2-Dibromo-3-chloropropane	96-12-8	29.1		13.6	5.44	2.72
1,2-Dibromoethane	106-93-4	24.8		6.79	1.36	0.679
Dibromomethane	74-95-3	22.3		6.79	1.36	0.679
1,2-Dichlorobenzene	95-50-1	26.3		6.79	1.36	0.679
1,3-Dichlorobenzene	541-73-1	26.7		6.79	1.36	0.679
1,4-Dichlorobenzene	106-46-7	26.6		6.79	1.36	0.679
Dichlorodifluoromethane	75-71-8	29.7		6.79	2.72	1.36
1,1-Dichloroethane	75-34-3	25.4		6.79	2.72	1.36
1,2-Dichloroethane	107-06-2	27.3		6.79	1.36	0.679
1,1-Dichloroethene	75-35-4	25.1		6.79	1.36	0.679

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	26.8		6.79	1.36	0.679
trans-1,2-Dichloroethene	156-60-5	26.4		6.79	1.36	0.679
1,2-Dichloropropane	78-87-5	27.6		6.79	1.36	0.679
1,3-Dichloropropane	142-28-9	29.3		6.79	1.36	0.679
2,2-Dichloropropane	594-20-7	24.5		6.79	1.36	0.679
cis-1,3-Dichloropropene	10061-01-5	26.0		6.79	1.36	0.679
trans-1,3-Dichloropropene	10061-02-6	25.5		6.79	1.36	0.679
1,1-Dichloropropene	563-58-6	25.7		6.79	1.36	0.679
Ethylbenzene	100-41-4	27.0		6.79	1.36	0.679
2-Hexanone	591-78-6	22.1		13.6	6.80	3.40
Hexachlorobutadiene	87-68-3	25.0		6.79	1.36	0.679
Isopropylbenzene	98-82-8	27.0		6.79	1.36	0.679
p-Isopropyltoluene	99-87-6	28.0		6.79	1.36	0.679
4-Methyl-2-pentanone	108-10-1	23.5		13.6	6.80	3.40
Methylene chloride	75-09-2	25.8		6.79	2.72	1.36
Naphthalene	91-20-3	19.0		6.79	1.36	0.679
n-Propylbenzene	103-65-1	30.0		6.79	1.36	0.679
Styrene	100-42-5	22.1		6.79	1.36	0.679
1,1,1,2-Tetrachloroethane	630-20-6	28.9		6.79	1.36	0.679
1,1,2,2-Tetrachloroethane	79-34-5	27.2		6.79	1.36	0.679
Tetrachloroethene	127-18-4	25.3		6.79	1.36	0.679
Toluene	108-88-3	27.4		6.79	1.36	0.679
1,2,3-Trichlorobenzene	87-61-6	18.8		6.79	1.36	0.679
1,2,4-Trichlorobenzene	120-82-1	19.3		6.79	1.36	0.679
1,1,1-Trichloroethane	71-55-6	27.9		6.79	1.36	0.679
1,1,2-Trichloroethane	79-00-5	27.5		6.79	1.36	0.679
Trichloroethene	79-01-6	25.1		6.79	1.36	0.679
Trichlorofluoromethane	75-69-4	26.5		6.79	2.72	1.36
1,2,3-Trichloropropane	96-18-4	28.6		6.79	2.72	1.36
1,2,4-Trimethylbenzene	95-63-6	29.5		6.79	1.36	0.679
1,3,5-Trimethylbenzene	108-67-8	30.2		6.79	1.36	0.679
Vinyl chloride	75-01-4	48.6		6.79	2.72	1.36
o-Xylene	95-47-6	28.3		6.79	1.36	0.679
m-,p-Xylene	179601-23-1	53.9		6.79	1.36	0.679

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	80	120	
1,2-Dichloroethane-d4	108	80	120	
Toluene-d8	112	85	115	
4-Bromofluorobenzene	122	85	120	*

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-09	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW19SW(60-61)220416MSD	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:50
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567013	**Analyst:**	JWR	**Run Date:**	05/03/2016 20:28
Collect Date:	04/22/2016 11:15	**Dilution:**	1	**File ID:**	1LM.LM34703
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	75.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3.30	J	5.05	2.52	1.26

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW19SW(50-50.5)220416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:39
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG567003	**Analyst:**	ADC	**Run Date:**	04/30/2016 22:19
Collect Date:	04/22/2016 11:11	**Dilution:**	1	**File ID:**	9M974084
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	8.75	J	25.4	12.7	6.35
Benzene	71-43-2	1.27	U	6.35	1.27	0.635
Bromobenzene	108-86-1	1.27	U	6.35	1.27	0.635
Bromochloromethane	74-97-5	2.54	U	6.35	2.54	1.27
Bromodichloromethane	75-27-4	1.27	U	6.35	1.27	0.635
Bromoform	75-25-2	1.27	U	6.35	1.27	0.635
Bromomethane	74-83-9	2.54	U	6.35	2.54	1.27
2-Butanone	78-93-3	6.34	U	12.7	6.34	3.17
n-Butylbenzene	104-51-8	1.27	U	6.35	1.27	0.635
sec-Butylbenzene	135-98-8	1.27	U	6.35	1.27	0.635
tert-Butylbenzene	98-06-6	1.27	U	6.35	1.27	0.635
Carbon disulfide	75-15-0	1.27	U	6.35	1.27	0.635
Carbon tetrachloride	56-23-5	1.27	U	6.35	1.27	0.635
Chlorobenzene	108-90-7	1.27	U	6.35	1.27	0.635
Chlorodibromomethane	124-48-1	1.27	U	6.35	1.27	0.635
Chloroethane	75-00-3	2.54	U	6.35	2.54	1.27
Chloroform	67-66-3	1.27	U	6.35	1.27	0.635
Chloromethane	74-87-3	5.08	U	12.7	5.08	2.54
2-Chlorotoluene	95-49-8	1.27	Q	6.35	1.27	0.635
4-Chlorotoluene	106-43-4	1.27	U	6.35	1.27	0.635
1,2-Dibromo-3-chloropropane	96-12-8	5.08	U	12.7	5.08	2.54
1,2-Dibromoethane	106-93-4	1.27	U	6.35	1.27	0.635
Dibromomethane	74-95-3	1.27	U	6.35	1.27	0.635
1,2-Dichlorobenzene	95-50-1	1.27	U	6.35	1.27	0.635
1,3-Dichlorobenzene	541-73-1	1.27	U	6.35	1.27	0.635
1,4-Dichlorobenzene	106-46-7	1.27	U	6.35	1.27	0.635
Dichlorodifluoromethane	75-71-8	2.54	U	6.35	2.54	1.27
1,1-Dichloroethane	75-34-3	2.54	U	6.35	2.54	1.27
1,2-Dichloroethane	107-06-2	1.27	U	6.35	1.27	0.635
1,1-Dichloroethene	75-35-4	1.27	U	6.35	1.27	0.635

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.27	U	6.35	1.27	0.635
trans-1,2-Dichloroethene	156-60-5	1.27	U	6.35	1.27	0.635
1,2-Dichloropropane	78-87-5	1.27	U	6.35	1.27	0.635
1,3-Dichloropropane	142-28-9	1.27	U	6.35	1.27	0.635
2,2-Dichloropropane	594-20-7	1.27	U	6.35	1.27	0.635
cis-1,3-Dichloropropene	10061-01-5	1.27	U	6.35	1.27	0.635
trans-1,3-Dichloropropene	10061-02-6	1.27	U	6.35	1.27	0.635
1,1-Dichloropropene	563-58-6	1.27	U	6.35	1.27	0.635
Ethylbenzene	100-41-4	1.27	U	6.35	1.27	0.635
2-Hexanone	591-78-6	6.34	U	12.7	6.34	3.17
Hexachlorobutadiene	87-68-3	1.27	U	6.35	1.27	0.635
Isopropylbenzene	98-82-8	1.27	U	6.35	1.27	0.635
p-Isopropyltoluene	99-87-6	1.27	U	6.35	1.27	0.635
4-Methyl-2-pentanone	108-10-1	6.34	U	12.7	6.34	3.17
Methylene chloride	75-09-2	2.54	U	6.35	2.54	1.27
Naphthalene	91-20-3	1.27	U	6.35	1.27	0.635
n-Propylbenzene	103-65-1	1.27	U	6.35	1.27	0.635
Styrene	100-42-5	1.27	U	6.35	1.27	0.635
1,1,1,2-Tetrachloroethane	630-20-6	1.27	U	6.35	1.27	0.635
1,1,2,2-Tetrachloroethane	79-34-5	1.27	U	6.35	1.27	0.635
Tetrachloroethene	127-18-4	1.27	U	6.35	1.27	0.635
Toluene	108-88-3	1.27	U	6.35	1.27	0.635
1,2,3-Trichlorobenzene	87-61-6	1.27	U	6.35	1.27	0.635
1,2,4-Trichlorobenzene	120-82-1	1.27	U	6.35	1.27	0.635
1,1,1-Trichloroethane	71-55-6	1.27	U	6.35	1.27	0.635
1,1,2-Trichloroethane	79-00-5	1.27	U	6.35	1.27	0.635
Trichloroethene	79-01-6	1.27	U	6.35	1.27	0.635
Trichlorofluoromethane	75-69-4	2.54	U	6.35	2.54	1.27
1,2,3-Trichloropropane	96-18-4	2.54	U	6.35	2.54	1.27
1,2,4-Trimethylbenzene	95-63-6	1.27	U	6.35	1.27	0.635
1,3,5-Trimethylbenzene	108-67-8	1.27	U	6.35	1.27	0.635
Vinyl chloride	75-01-4	2.54	U	6.35	2.54	1.27
o-Xylene	95-47-6	1.27	U	6.35	1.27	0.635
m-,p-Xylene	179601-23-1	1.27	U	6.35	1.27	0.635

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	80	120	
1,2-Dichloroethane-d4	109	80	120	
Toluene-d8	113	85	115	
4-Bromofluorobenzene	125	85	120	*

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-10	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW19SW(50-50.5)220416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:50
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567013	**Analyst:**	JWR	**Run Date:**	05/03/2016 23:37
Collect Date:	04/22/2016 11:11	**Dilution:**	5	**File ID:**	1LM.LM34713
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	80.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	170		24.3	12.2	6.08

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #: L16041363-01 **Client ID:** 18CPTMW19SW(5-5.5)210416 **Matrix:** Soil **Collect Date:** 04/21/2016 17:00

Analyte	Result	Units	Qualifier
Percent Solids	83.9	weight %	

Sample #: L16041363-02 **Client ID:** 18CPTMW19SW(10-10.5)210416 **Matrix:** Soil **Collect Date:** 04/21/2016 17:30

Analyte	Result	Units	Qualifier
Percent Solids	79.9	weight %	

Sample #: L16041363-03 **Client ID:** 18CPTMW19SW(30-30.5)220416 **Matrix:** Soil **Collect Date:** 04/22/2016 09:00

Analyte	Result	Units	Qualifier
Percent Solids	80.0	weight %	

Sample #: L16041363-04 **Client ID:** 18CPTMW19SW(30-30.5)220416DUP **Matrix:** Soil **Collect Date:** 04/22/2016 09:00

Analyte	Result	Units	Qualifier
Percent Solids	79.4	weight %	

Sample #: L16041363-05 **Client ID:** 18CPTMW19SW(40-40.5)220416 **Matrix:** Soil **Collect Date:** 04/22/2016 09:05

Analyte	Result	Units	Qualifier
Percent Solids	80.8	weight %	

Sample #: L16041363-06 **Client ID:** 18CPTMW19SW(20-20.5)220416 **Matrix:** Soil **Collect Date:** 04/21/2016 18:00

Analyte	Result	Units	Qualifier
Percent Solids	79.1	weight %	

Sample #: L16041363-07 **Client ID:** 18CPTMW19SW(60-61)220416 **Matrix:** Soil **Collect Date:** 04/22/2016 11:15

Analyte	Result	Units	Qualifier
Percent Solids	75.9	weight %	

Sample #: L16041363-08 **Client ID:** 18CPTMW19SW(60-61)220416MS **Matrix:** Soil **Collect Date:** 04/22/2016 11:15

Analyte	Result	Units	Qualifier
Percent Solids	75.9	weight %	

Sample #: L16041363-09 **Client ID:** 18CPTMW19SW(60-61)220416MSD **Matrix:** Soil **Collect Date:** 04/22/2016 11:15

Analyte	Result	Units	Qualifier
Percent Solids	75.9	weight %	

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #: L16041363-10 **Client ID:** 18CPTMW19SW(50-50.5)220416 **Matrix:** Soil **Collect Date:** 04/22/2016 11:11

Analyte	Result	Units	Qualifier
Percent Solids	80.5	weight %	

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW19SW(5-5.5)210416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:33
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG567003	**Analyst:**	ADC	**Run Date:**	04/30/2016 18:48
Collect Date:	04/21/2016 17:00	**Dilution:**	1	**File ID:**	9M974077
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.2	U	24.3	12.2	6.08
Benzene	71-43-2	1.22	U	6.08	1.22	0.608
Bromobenzene	108-86-1	1.22	U	6.08	1.22	0.608
Bromochloromethane	74-97-5	2.44	U	6.08	2.44	1.22
Bromodichloromethane	75-27-4	1.22	U	6.08	1.22	0.608
Bromoform	75-25-2	1.22	U	6.08	1.22	0.608
Bromomethane	74-83-9	2.44	U	6.08	2.44	1.22
2-Butanone	78-93-3	6.08	U	12.2	6.08	3.04
n-Butylbenzene	104-51-8	1.22	U	6.08	1.22	0.608
sec-Butylbenzene	135-98-8	1.22	U	6.08	1.22	0.608
tert-Butylbenzene	98-06-6	1.22	U	6.08	1.22	0.608
Carbon disulfide	75-15-0	1.22	U	6.08	1.22	0.608
Carbon tetrachloride	56-23-5	1.22	U	6.08	1.22	0.608
Chlorobenzene	108-90-7	1.22	U	6.08	1.22	0.608
Chlorodibromomethane	124-48-1	1.22	U	6.08	1.22	0.608
Chloroethane	75-00-3	2.44	U	6.08	2.44	1.22
Chloroform	67-66-3	1.22	U	6.08	1.22	0.608
Chloromethane	74-87-3	4.86	U	12.2	4.86	2.43
2-Chlorotoluene	95-49-8	1.22	Q	6.08	1.22	0.608
4-Chlorotoluene	106-43-4	1.22	U	6.08	1.22	0.608
1,2-Dibromo-3-chloropropane	96-12-8	4.86	U	12.2	4.86	2.43
1,2-Dibromoethane	106-93-4	1.22	U	6.08	1.22	0.608
Dibromomethane	74-95-3	1.22	U	6.08	1.22	0.608
1,2-Dichlorobenzene	95-50-1	1.22	U	6.08	1.22	0.608
1,3-Dichlorobenzene	541-73-1	1.22	U	6.08	1.22	0.608
1,4-Dichlorobenzene	106-46-7	1.22	U	6.08	1.22	0.608
Dichlorodifluoromethane	75-71-8	2.44	U	6.08	2.44	1.22
1,1-Dichloroethane	75-34-3	2.44	U	6.08	2.44	1.22
1,2-Dichloroethane	107-06-2	1.22	U	6.08	1.22	0.608
1,1-Dichloroethene	75-35-4	1.22	U	6.08	1.22	0.608
cis-1,2-Dichloroethene	156-59-2	1.22	U	6.08	1.22	0.608

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.22	U	6.08	1.22	0.608
1,2-Dichloropropane	78-87-5	1.22	U	6.08	1.22	0.608
1,3-Dichloropropane	142-28-9	1.22	U	6.08	1.22	0.608
2,2-Dichloropropane	594-20-7	1.22	U	6.08	1.22	0.608
cis-1,3-Dichloropropene	10061-01-5	1.22	U	6.08	1.22	0.608
trans-1,3-Dichloropropene	10061-02-6	1.22	U	6.08	1.22	0.608
1,1-Dichloropropene	563-58-6	1.22	U	6.08	1.22	0.608
Ethylbenzene	100-41-4	1.22	U	6.08	1.22	0.608
2-Hexanone	591-78-6	6.08	U	12.2	6.08	3.04
Hexachlorobutadiene	87-68-3	1.22	U	6.08	1.22	0.608
Isopropylbenzene	98-82-8	1.22	U	6.08	1.22	0.608
p-Isopropyltoluene	99-87-6	1.22	U	6.08	1.22	0.608
4-Methyl-2-pentanone	108-10-1	6.08	U	12.2	6.08	3.04
Methylene chloride	75-09-2	2.44	U	6.08	2.44	1.22
Naphthalene	91-20-3	1.22	U	6.08	1.22	0.608
n-Propylbenzene	103-65-1	1.22	U	6.08	1.22	0.608
Styrene	100-42-5	1.22	U	6.08	1.22	0.608
1,1,1,2-Tetrachloroethane	630-20-6	1.22	U	6.08	1.22	0.608
1,1,2,2-Tetrachloroethane	79-34-5	1.22	U	6.08	1.22	0.608
Tetrachloroethene	127-18-4	1.22	U	6.08	1.22	0.608
Toluene	108-88-3	1.22	U	6.08	1.22	0.608
1,2,3-Trichlorobenzene	87-61-6	1.22	U	6.08	1.22	0.608
1,2,4-Trichlorobenzene	120-82-1	1.22	U	6.08	1.22	0.608
1,1,1-Trichloroethane	71-55-6	1.22	U	6.08	1.22	0.608
1,1,2-Trichloroethane	79-00-5	1.22	U	6.08	1.22	0.608
Trichloroethene	79-01-6	1.22	U	6.08	1.22	0.608
Trichlorofluoromethane	75-69-4	2.44	U	6.08	2.44	1.22
1,2,3-Trichloropropane	96-18-4	2.44	U	6.08	2.44	1.22
1,2,4-Trimethylbenzene	95-63-6	1.22	U	6.08	1.22	0.608
1,3,5-Trimethylbenzene	108-67-8	1.22	U	6.08	1.22	0.608
Vinyl chloride	75-01-4	2.44	U	6.08	2.44	1.22
o-Xylene	95-47-6	1.22	U	6.08	1.22	0.608
m-,p-Xylene	179601-23-1	1.22	U	6.08	1.22	0.608

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	80	120	
1,2-Dichloroethane-d4	109	80	120	
Toluene-d8	113	85	115	
4-Bromofluorobenzene	126	85	120	*

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW19SW(10-10.5)210416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:33
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG567003	**Analyst:**	ADC	**Run Date:**	04/30/2016 19:18
Collect Date:	04/21/2016 17:30	**Dilution:**	1	**File ID:**	9M974078
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	24.3		23.4	11.7	5.84
Benzene	71-43-2	1.17	U	5.84	1.17	0.584
Bromobenzene	108-86-1	1.17	U	5.84	1.17	0.584
Bromochloromethane	74-97-5	2.34	U	5.84	2.34	1.17
Bromodichloromethane	75-27-4	1.17	U	5.84	1.17	0.584
Bromoform	75-25-2	1.17	U	5.84	1.17	0.584
Bromomethane	74-83-9	2.34	U	5.84	2.34	1.17
2-Butanone	78-93-3	4.20	J	11.7	5.84	2.92
n-Butylbenzene	104-51-8	1.17	U	5.84	1.17	0.584
sec-Butylbenzene	135-98-8	1.17	U	5.84	1.17	0.584
tert-Butylbenzene	98-06-6	1.17	U	5.84	1.17	0.584
Carbon disulfide	75-15-0	1.17	U	5.84	1.17	0.584
Carbon tetrachloride	56-23-5	1.17	U	5.84	1.17	0.584
Chlorobenzene	108-90-7	1.17	U	5.84	1.17	0.584
Chlorodibromomethane	124-48-1	1.17	U	5.84	1.17	0.584
Chloroethane	75-00-3	2.34	U	5.84	2.34	1.17
Chloroform	67-66-3	1.17	U	5.84	1.17	0.584
Chloromethane	74-87-3	4.68	U	11.7	4.68	2.34
2-Chlorotoluene	95-49-8	1.17	Q	5.84	1.17	0.584
4-Chlorotoluene	106-43-4	1.17	U	5.84	1.17	0.584
1,2-Dibromo-3-chloropropane	96-12-8	4.68	U	11.7	4.68	2.34
1,2-Dibromoethane	106-93-4	1.17	U	5.84	1.17	0.584
Dibromomethane	74-95-3	1.17	U	5.84	1.17	0.584
1,2-Dichlorobenzene	95-50-1	1.17	U	5.84	1.17	0.584
1,3-Dichlorobenzene	541-73-1	1.17	U	5.84	1.17	0.584
1,4-Dichlorobenzene	106-46-7	1.17	U	5.84	1.17	0.584
Dichlorodifluoromethane	75-71-8	2.34	U	5.84	2.34	1.17
1,1-Dichloroethane	75-34-3	2.34	U	5.84	2.34	1.17
1,2-Dichloroethane	107-06-2	1.17	U	5.84	1.17	0.584
1,1-Dichloroethene	75-35-4	1.17	U	5.84	1.17	0.584

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.17	U	5.84	1.17	0.584
trans-1,2-Dichloroethene	156-60-5	1.17	U	5.84	1.17	0.584
1,2-Dichloropropane	78-87-5	1.17	U	5.84	1.17	0.584
1,3-Dichloropropane	142-28-9	1.17	U	5.84	1.17	0.584
2,2-Dichloropropane	594-20-7	1.17	U	5.84	1.17	0.584
cis-1,3-Dichloropropene	10061-01-5	1.17	U	5.84	1.17	0.584
trans-1,3-Dichloropropene	10061-02-6	1.17	U	5.84	1.17	0.584
1,1-Dichloropropene	563-58-6	1.17	U	5.84	1.17	0.584
Ethylbenzene	100-41-4	1.17	U	5.84	1.17	0.584
2-Hexanone	591-78-6	5.84	U	11.7	5.84	2.92
Hexachlorobutadiene	87-68-3	1.17	U	5.84	1.17	0.584
Isopropylbenzene	98-82-8	1.17	U	5.84	1.17	0.584
p-Isopropyltoluene	99-87-6	1.17	U	5.84	1.17	0.584
4-Methyl-2-pentanone	108-10-1	5.84	U	11.7	5.84	2.92
Methylene chloride	75-09-2	2.34	U	5.84	2.34	1.17
Naphthalene	91-20-3	1.17	U	5.84	1.17	0.584
n-Propylbenzene	103-65-1	1.17	U	5.84	1.17	0.584
Styrene	100-42-5	1.17	U	5.84	1.17	0.584
1,1,1,2-Tetrachloroethane	630-20-6	1.17	U	5.84	1.17	0.584
1,1,2,2-Tetrachloroethane	79-34-5	1.17	U	5.84	1.17	0.584
Tetrachloroethene	127-18-4	1.17	U	5.84	1.17	0.584
Toluene	108-88-3	1.17	U	5.84	1.17	0.584
1,2,3-Trichlorobenzene	87-61-6	1.17	U	5.84	1.17	0.584
1,2,4-Trichlorobenzene	120-82-1	1.17	U	5.84	1.17	0.584
1,1,1-Trichloroethane	71-55-6	1.17	U	5.84	1.17	0.584
1,1,2-Trichloroethane	79-00-5	1.17	U	5.84	1.17	0.584
Trichloroethene	79-01-6	1.17	U	5.84	1.17	0.584
Trichlorofluoromethane	75-69-4	2.34	U	5.84	2.34	1.17
1,2,3-Trichloropropane	96-18-4	2.34	U	5.84	2.34	1.17
1,2,4-Trimethylbenzene	95-63-6	1.17	U	5.84	1.17	0.584
1,3,5-Trimethylbenzene	108-67-8	1.17	U	5.84	1.17	0.584
Vinyl chloride	75-01-4	2.34	U	5.84	2.34	1.17
o-Xylene	95-47-6	1.17	U	5.84	1.17	0.584
m-,p-Xylene	179601-23-1	1.17	U	5.84	1.17	0.584

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	80	120	
1,2-Dichloroethane-d4	107	80	120	
Toluene-d8	111	85	115	
4-Bromofluorobenzene	120	85	120	

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW19SW(30-30.5)220416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:34
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG567003	**Analyst:**	ADC	**Run Date:**	04/30/2016 19:48
Collect Date:	04/22/2016 09:00	**Dilution:**	1	**File ID:**	9M974079
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.7	U	25.4	12.7	6.34
Benzene	71-43-2	1.27	U	6.34	1.27	0.634
Bromobenzene	108-86-1	1.27	U	6.34	1.27	0.634
Bromochloromethane	74-97-5	2.54	U	6.34	2.54	1.27
Bromodichloromethane	75-27-4	1.27	U	6.34	1.27	0.634
Bromoform	75-25-2	1.27	U	6.34	1.27	0.634
Bromomethane	74-83-9	2.54	U	6.34	2.54	1.27
2-Butanone	78-93-3	6.34	U	12.7	6.34	3.17
n-Butylbenzene	104-51-8	1.27	U	6.34	1.27	0.634
sec-Butylbenzene	135-98-8	1.27	U	6.34	1.27	0.634
tert-Butylbenzene	98-06-6	1.27	U	6.34	1.27	0.634
Carbon disulfide	75-15-0	1.27	U	6.34	1.27	0.634
Carbon tetrachloride	56-23-5	1.27	U	6.34	1.27	0.634
Chlorobenzene	108-90-7	1.27	U	6.34	1.27	0.634
Chlorodibromomethane	124-48-1	1.27	U	6.34	1.27	0.634
Chloroethane	75-00-3	2.54	U	6.34	2.54	1.27
Chloroform	67-66-3	1.27	U	6.34	1.27	0.634
Chloromethane	74-87-3	5.08	U	12.7	5.08	2.54
2-Chlorotoluene	95-49-8	1.27	Q	6.34	1.27	0.634
4-Chlorotoluene	106-43-4	1.27	U	6.34	1.27	0.634
1,2-Dibromo-3-chloropropane	96-12-8	5.08	U	12.7	5.08	2.54
1,2-Dibromoethane	106-93-4	1.27	U	6.34	1.27	0.634
Dibromomethane	74-95-3	1.27	U	6.34	1.27	0.634
1,2-Dichlorobenzene	95-50-1	1.27	U	6.34	1.27	0.634
1,3-Dichlorobenzene	541-73-1	1.27	U	6.34	1.27	0.634
1,4-Dichlorobenzene	106-46-7	1.27	U	6.34	1.27	0.634
Dichlorodifluoromethane	75-71-8	2.54	U	6.34	2.54	1.27
1,1-Dichloroethane	75-34-3	2.54	U	6.34	2.54	1.27
1,2-Dichloroethane	107-06-2	1.27	U	6.34	1.27	0.634
1,1-Dichloroethene	75-35-4	1.27	U	6.34	1.27	0.634

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.27	U	6.34	1.27	0.634
trans-1,2-Dichloroethene	156-60-5	1.27	U	6.34	1.27	0.634
1,2-Dichloropropane	78-87-5	1.27	U	6.34	1.27	0.634
1,3-Dichloropropane	142-28-9	1.27	U	6.34	1.27	0.634
2,2-Dichloropropane	594-20-7	1.27	U	6.34	1.27	0.634
cis-1,3-Dichloropropene	10061-01-5	1.27	U	6.34	1.27	0.634
trans-1,3-Dichloropropene	10061-02-6	1.27	U	6.34	1.27	0.634
1,1-Dichloropropene	563-58-6	1.27	U	6.34	1.27	0.634
Ethylbenzene	100-41-4	1.27	U	6.34	1.27	0.634
2-Hexanone	591-78-6	6.34	U	12.7	6.34	3.17
Hexachlorobutadiene	87-68-3	1.27	U	6.34	1.27	0.634
Isopropylbenzene	98-82-8	1.27	U	6.34	1.27	0.634
p-Isopropyltoluene	99-87-6	1.27	U	6.34	1.27	0.634
4-Methyl-2-pentanone	108-10-1	6.34	U	12.7	6.34	3.17
Methylene chloride	75-09-2	2.54	U	6.34	2.54	1.27
Naphthalene	91-20-3	1.27	U	6.34	1.27	0.634
n-Propylbenzene	103-65-1	1.27	U	6.34	1.27	0.634
Styrene	100-42-5	1.27	U	6.34	1.27	0.634
1,1,1,2-Tetrachloroethane	630-20-6	1.27	U	6.34	1.27	0.634
1,1,2,2-Tetrachloroethane	79-34-5	1.27	U	6.34	1.27	0.634
Tetrachloroethene	127-18-4	1.27	U	6.34	1.27	0.634
Toluene	108-88-3	1.27	U	6.34	1.27	0.634
1,2,3-Trichlorobenzene	87-61-6	1.27	U	6.34	1.27	0.634
1,2,4-Trichlorobenzene	120-82-1	1.27	U	6.34	1.27	0.634
1,1,1-Trichloroethane	71-55-6	1.27	U	6.34	1.27	0.634
1,1,2-Trichloroethane	79-00-5	1.27	U	6.34	1.27	0.634
Trichloroethene	79-01-6	1.27	U	6.34	1.27	0.634
Trichlorofluoromethane	75-69-4	2.54	U	6.34	2.54	1.27
1,2,3-Trichloropropane	96-18-4	2.54	U	6.34	2.54	1.27
1,2,4-Trimethylbenzene	95-63-6	1.27	U	6.34	1.27	0.634
1,3,5-Trimethylbenzene	108-67-8	1.27	U	6.34	1.27	0.634
Vinyl chloride	75-01-4	2.54	U	6.34	2.54	1.27
o-Xylene	95-47-6	1.27	U	6.34	1.27	0.634
m-,p-Xylene	179601-23-1	1.27	U	6.34	1.27	0.634

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	80	120	
1,2-Dichloroethane-d4	121	80	120	*
Toluene-d8	111	85	115	
4-Bromofluorobenzene	123	85	120	*

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW19SW(30-30.5)220416DUP	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:35
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG567003	**Analyst:**	ADC	**Run Date:**	04/30/2016 20:18
Collect Date:	04/22/2016 09:00	**Dilution:**	1	**File ID:**	9M974080
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.8	U	25.6	12.8	6.40
Benzene	71-43-2	1.28	U	6.40	1.28	0.640
Bromobenzene	108-86-1	1.28	U	6.40	1.28	0.640
Bromochloromethane	74-97-5	2.56	U	6.40	2.56	1.28
Bromodichloromethane	75-27-4	1.28	U	6.40	1.28	0.640
Bromoform	75-25-2	1.28	U	6.40	1.28	0.640
Bromomethane	74-83-9	2.56	U	6.40	2.56	1.28
2-Butanone	78-93-3	6.40	U	12.8	6.40	3.20
n-Butylbenzene	104-51-8	1.28	U	6.40	1.28	0.640
sec-Butylbenzene	135-98-8	1.28	U	6.40	1.28	0.640
tert-Butylbenzene	98-06-6	1.28	U	6.40	1.28	0.640
Carbon disulfide	75-15-0	1.28	U	6.40	1.28	0.640
Carbon tetrachloride	56-23-5	1.28	U	6.40	1.28	0.640
Chlorobenzene	108-90-7	1.28	U	6.40	1.28	0.640
Chlorodibromomethane	124-48-1	1.28	U	6.40	1.28	0.640
Chloroethane	75-00-3	2.56	U	6.40	2.56	1.28
Chloroform	67-66-3	1.28	U	6.40	1.28	0.640
Chloromethane	74-87-3	5.12	U	12.8	5.12	2.56
2-Chlorotoluene	95-49-8	1.28	Q	6.40	1.28	0.640
4-Chlorotoluene	106-43-4	1.28	U	6.40	1.28	0.640
1,2-Dibromo-3-chloropropane	96-12-8	5.12	U	12.8	5.12	2.56
1,2-Dibromoethane	106-93-4	1.28	U	6.40	1.28	0.640
Dibromomethane	74-95-3	1.28	U	6.40	1.28	0.640
1,2-Dichlorobenzene	95-50-1	1.28	U	6.40	1.28	0.640
1,3-Dichlorobenzene	541-73-1	1.28	U	6.40	1.28	0.640
1,4-Dichlorobenzene	106-46-7	1.28	U	6.40	1.28	0.640
Dichlorodifluoromethane	75-71-8	2.56	U	6.40	2.56	1.28
1,1-Dichloroethane	75-34-3	2.56	U	6.40	2.56	1.28
1,2-Dichloroethane	107-06-2	1.28	U	6.40	1.28	0.640
1,1-Dichloroethene	75-35-4	1.28	U	6.40	1.28	0.640

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.28	U	6.40	1.28	0.640
trans-1,2-Dichloroethene	156-60-5	1.28	U	6.40	1.28	0.640
1,2-Dichloropropane	78-87-5	1.28	U	6.40	1.28	0.640
1,3-Dichloropropane	142-28-9	1.28	U	6.40	1.28	0.640
2,2-Dichloropropane	594-20-7	1.28	U	6.40	1.28	0.640
cis-1,3-Dichloropropene	10061-01-5	1.28	U	6.40	1.28	0.640
trans-1,3-Dichloropropene	10061-02-6	1.28	U	6.40	1.28	0.640
1,1-Dichloropropene	563-58-6	1.28	U	6.40	1.28	0.640
Ethylbenzene	100-41-4	1.28	U	6.40	1.28	0.640
2-Hexanone	591-78-6	6.40	U	12.8	6.40	3.20
Hexachlorobutadiene	87-68-3	1.28	U	6.40	1.28	0.640
Isopropylbenzene	98-82-8	1.28	U	6.40	1.28	0.640
p-Isopropyltoluene	99-87-6	1.28	U	6.40	1.28	0.640
4-Methyl-2-pentanone	108-10-1	6.40	U	12.8	6.40	3.20
Methylene chloride	75-09-2	2.56	U	6.40	2.56	1.28
Naphthalene	91-20-3	1.28	U	6.40	1.28	0.640
n-Propylbenzene	103-65-1	1.28	U	6.40	1.28	0.640
Styrene	100-42-5	1.28	U	6.40	1.28	0.640
1,1,1,2-Tetrachloroethane	630-20-6	1.28	U	6.40	1.28	0.640
1,1,2,2-Tetrachloroethane	79-34-5	1.28	U	6.40	1.28	0.640
Tetrachloroethene	127-18-4	1.28	U	6.40	1.28	0.640
Toluene	108-88-3	1.28	U	6.40	1.28	0.640
1,2,3-Trichlorobenzene	87-61-6	1.28	U	6.40	1.28	0.640
1,2,4-Trichlorobenzene	120-82-1	1.28	U	6.40	1.28	0.640
1,1,1-Trichloroethane	71-55-6	1.28	U	6.40	1.28	0.640
1,1,2-Trichloroethane	79-00-5	1.28	U	6.40	1.28	0.640
Trichloroethene	79-01-6	1.28	U	6.40	1.28	0.640
Trichlorofluoromethane	75-69-4	2.56	U	6.40	2.56	1.28
1,2,3-Trichloropropane	96-18-4	2.56	U	6.40	2.56	1.28
1,2,4-Trimethylbenzene	95-63-6	1.28	U	6.40	1.28	0.640
1,3,5-Trimethylbenzene	108-67-8	1.28	U	6.40	1.28	0.640
Vinyl chloride	75-01-4	2.56	U	6.40	2.56	1.28
o-Xylene	95-47-6	1.28	U	6.40	1.28	0.640
m-,p-Xylene	179601-23-1	1.28	U	6.40	1.28	0.640

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	108	80	120	
1,2-Dichloroethane-d4	122	80	120	*
Toluene-d8	110	85	115	
4-Bromofluorobenzene	125	85	120	*

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW19SW(40-40.5)220416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:36
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG567003	**Analyst:**	ADC	**Run Date:**	04/30/2016 20:48
Collect Date:	04/22/2016 09:05	**Dilution:**	1	**File ID:**	9M974081
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	11.6	U	23.1	11.6	5.79
Benzene	71-43-2	1.16	U	5.79	1.16	0.579
Bromobenzene	108-86-1	1.16	U	5.79	1.16	0.579
Bromochloromethane	74-97-5	2.32	U	5.79	2.32	1.16
Bromodichloromethane	75-27-4	1.16	U	5.79	1.16	0.579
Bromoform	75-25-2	1.16	U	5.79	1.16	0.579
Bromomethane	74-83-9	2.32	U	5.79	2.32	1.16
2-Butanone	78-93-3	5.78	U	11.6	5.78	2.89
n-Butylbenzene	104-51-8	1.16	U	5.79	1.16	0.579
sec-Butylbenzene	135-98-8	1.16	U	5.79	1.16	0.579
tert-Butylbenzene	98-06-6	1.16	U	5.79	1.16	0.579
Carbon disulfide	75-15-0	1.16	U	5.79	1.16	0.579
Carbon tetrachloride	56-23-5	1.16	U	5.79	1.16	0.579
Chlorobenzene	108-90-7	1.16	U	5.79	1.16	0.579
Chlorodibromomethane	124-48-1	1.16	U	5.79	1.16	0.579
Chloroethane	75-00-3	2.32	U	5.79	2.32	1.16
Chloroform	67-66-3	1.16	U	5.79	1.16	0.579
Chloromethane	74-87-3	4.62	U	11.6	4.62	2.31
2-Chlorotoluene	95-49-8	1.16	Q	5.79	1.16	0.579
4-Chlorotoluene	106-43-4	1.16	U	5.79	1.16	0.579
1,2-Dibromo-3-chloropropane	96-12-8	4.62	U	11.6	4.62	2.31
1,2-Dibromoethane	106-93-4	1.16	U	5.79	1.16	0.579
Dibromomethane	74-95-3	1.16	U	5.79	1.16	0.579
1,2-Dichlorobenzene	95-50-1	1.16	U	5.79	1.16	0.579
1,3-Dichlorobenzene	541-73-1	1.16	U	5.79	1.16	0.579
1,4-Dichlorobenzene	106-46-7	1.16	U	5.79	1.16	0.579
Dichlorodifluoromethane	75-71-8	2.32	U	5.79	2.32	1.16
1,1-Dichloroethane	75-34-3	2.32	U	5.79	2.32	1.16
1,2-Dichloroethane	107-06-2	1.16	U	5.79	1.16	0.579
1,1-Dichloroethene	75-35-4	1.16	U	5.79	1.16	0.579

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.16	U	5.79	1.16	0.579
trans-1,2-Dichloroethene	156-60-5	1.16	U	5.79	1.16	0.579
1,2-Dichloropropane	78-87-5	1.16	U	5.79	1.16	0.579
1,3-Dichloropropane	142-28-9	1.16	U	5.79	1.16	0.579
2,2-Dichloropropane	594-20-7	1.16	U	5.79	1.16	0.579
cis-1,3-Dichloropropene	10061-01-5	1.16	U	5.79	1.16	0.579
trans-1,3-Dichloropropene	10061-02-6	1.16	U	5.79	1.16	0.579
1,1-Dichloropropene	563-58-6	1.16	U	5.79	1.16	0.579
Ethylbenzene	100-41-4	1.16	U	5.79	1.16	0.579
2-Hexanone	591-78-6	5.78	U	11.6	5.78	2.89
Hexachlorobutadiene	87-68-3	1.16	U	5.79	1.16	0.579
Isopropylbenzene	98-82-8	1.16	U	5.79	1.16	0.579
p-Isopropyltoluene	99-87-6	1.16	U	5.79	1.16	0.579
4-Methyl-2-pentanone	108-10-1	5.78	U	11.6	5.78	2.89
Methylene chloride	75-09-2	2.32	U	5.79	2.32	1.16
Naphthalene	91-20-3	1.16	U	5.79	1.16	0.579
n-Propylbenzene	103-65-1	1.16	U	5.79	1.16	0.579
Styrene	100-42-5	1.16	U	5.79	1.16	0.579
1,1,1,2-Tetrachloroethane	630-20-6	1.16	U	5.79	1.16	0.579
1,1,2,2-Tetrachloroethane	79-34-5	1.16	U	5.79	1.16	0.579
Tetrachloroethene	127-18-4	1.16	U	5.79	1.16	0.579
Toluene	108-88-3	1.16	U	5.79	1.16	0.579
1,2,3-Trichlorobenzene	87-61-6	1.16	U	5.79	1.16	0.579
1,2,4-Trichlorobenzene	120-82-1	1.16	U	5.79	1.16	0.579
1,1,1-Trichloroethane	71-55-6	1.16	U	5.79	1.16	0.579
1,1,2-Trichloroethane	79-00-5	1.16	U	5.79	1.16	0.579
Trichloroethene	79-01-6	1.16	U	5.79	1.16	0.579
Trichlorofluoromethane	75-69-4	2.32	U	5.79	2.32	1.16
1,2,3-Trichloropropane	96-18-4	2.32	U	5.79	2.32	1.16
1,2,4-Trimethylbenzene	95-63-6	1.16	U	5.79	1.16	0.579
1,3,5-Trimethylbenzene	108-67-8	1.16	U	5.79	1.16	0.579
Vinyl chloride	75-01-4	2.32	U	5.79	2.32	1.16
o-Xylene	95-47-6	1.16	U	5.79	1.16	0.579
m-,p-Xylene	179601-23-1	1.16	U	5.79	1.16	0.579

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	80	120	
1,2-Dichloroethane-d4	119	80	120	
Toluene-d8	111	85	115	
4-Bromofluorobenzene	125	85	120	*

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW19SW(20-20.5)220416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:36
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG567003	**Analyst:**	ADC	**Run Date:**	04/30/2016 21:19
Collect Date:	04/21/2016 18:00	**Dilution:**	1	**File ID:**	9M974082
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.6	U	27.3	13.6	6.81
Benzene	71-43-2	1.36	U	6.81	1.36	0.681
Bromobenzene	108-86-1	1.36	U	6.81	1.36	0.681
Bromochloromethane	74-97-5	2.72	U	6.81	2.72	1.36
Bromodichloromethane	75-27-4	1.36	U	6.81	1.36	0.681
Bromoform	75-25-2	1.36	U	6.81	1.36	0.681
Bromomethane	74-83-9	2.72	U	6.81	2.72	1.36
2-Butanone	78-93-3	6.82	U	13.6	6.82	3.41
n-Butylbenzene	104-51-8	1.36	U	6.81	1.36	0.681
sec-Butylbenzene	135-98-8	1.36	U	6.81	1.36	0.681
tert-Butylbenzene	98-06-6	1.36	U	6.81	1.36	0.681
Carbon disulfide	75-15-0	1.36	U	6.81	1.36	0.681
Carbon tetrachloride	56-23-5	1.36	U	6.81	1.36	0.681
Chlorobenzene	108-90-7	1.36	U	6.81	1.36	0.681
Chlorodibromomethane	124-48-1	1.36	U	6.81	1.36	0.681
Chloroethane	75-00-3	2.72	U	6.81	2.72	1.36
Chloroform	67-66-3	1.36	U	6.81	1.36	0.681
Chloromethane	74-87-3	5.46	U	13.6	5.46	2.73
2-Chlorotoluene	95-49-8	1.36	Q	6.81	1.36	0.681
4-Chlorotoluene	106-43-4	1.36	U	6.81	1.36	0.681
1,2-Dibromo-3-chloropropane	96-12-8	5.46	U	13.6	5.46	2.73
1,2-Dibromoethane	106-93-4	1.36	U	6.81	1.36	0.681
Dibromomethane	74-95-3	1.36	U	6.81	1.36	0.681
1,2-Dichlorobenzene	95-50-1	1.36	U	6.81	1.36	0.681
1,3-Dichlorobenzene	541-73-1	1.36	U	6.81	1.36	0.681
1,4-Dichlorobenzene	106-46-7	1.36	U	6.81	1.36	0.681
Dichlorodifluoromethane	75-71-8	2.72	U	6.81	2.72	1.36
1,1-Dichloroethane	75-34-3	2.72	U	6.81	2.72	1.36
1,2-Dichloroethane	107-06-2	1.36	U	6.81	1.36	0.681
1,1-Dichloroethene	75-35-4	1.36	U	6.81	1.36	0.681

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.36	U	6.81	1.36	0.681
trans-1,2-Dichloroethene	156-60-5	1.36	U	6.81	1.36	0.681
1,2-Dichloropropane	78-87-5	1.36	U	6.81	1.36	0.681
1,3-Dichloropropane	142-28-9	1.36	U	6.81	1.36	0.681
2,2-Dichloropropane	594-20-7	1.36	U	6.81	1.36	0.681
cis-1,3-Dichloropropene	10061-01-5	1.36	U	6.81	1.36	0.681
trans-1,3-Dichloropropene	10061-02-6	1.36	U	6.81	1.36	0.681
1,1-Dichloropropene	563-58-6	1.36	U	6.81	1.36	0.681
Ethylbenzene	100-41-4	1.36	U	6.81	1.36	0.681
2-Hexanone	591-78-6	6.82	U	13.6	6.82	3.41
Hexachlorobutadiene	87-68-3	1.36	U	6.81	1.36	0.681
Isopropylbenzene	98-82-8	1.36	U	6.81	1.36	0.681
p-Isopropyltoluene	99-87-6	1.36	U	6.81	1.36	0.681
4-Methyl-2-pentanone	108-10-1	6.82	U	13.6	6.82	3.41
Methylene chloride	75-09-2	2.72	U	6.81	2.72	1.36
Naphthalene	91-20-3	1.36	U	6.81	1.36	0.681
n-Propylbenzene	103-65-1	1.36	U	6.81	1.36	0.681
Styrene	100-42-5	1.36	U	6.81	1.36	0.681
1,1,1,2-Tetrachloroethane	630-20-6	1.36	U	6.81	1.36	0.681
1,1,2,2-Tetrachloroethane	79-34-5	1.36	U	6.81	1.36	0.681
Tetrachloroethene	127-18-4	1.36	U	6.81	1.36	0.681
Toluene	108-88-3	1.36	U	6.81	1.36	0.681
1,2,3-Trichlorobenzene	87-61-6	1.36	U	6.81	1.36	0.681
1,2,4-Trichlorobenzene	120-82-1	1.36	U	6.81	1.36	0.681
1,1,1-Trichloroethane	71-55-6	1.36	U	6.81	1.36	0.681
1,1,2-Trichloroethane	79-00-5	1.36	U	6.81	1.36	0.681
Trichloroethene	79-01-6	1.36	U	6.81	1.36	0.681
Trichlorofluoromethane	75-69-4	2.72	U	6.81	2.72	1.36
1,2,3-Trichloropropane	96-18-4	2.72	U	6.81	2.72	1.36
1,2,4-Trimethylbenzene	95-63-6	1.36	U	6.81	1.36	0.681
1,3,5-Trimethylbenzene	108-67-8	1.36	U	6.81	1.36	0.681
Vinyl chloride	75-01-4	2.72	U	6.81	2.72	1.36
o-Xylene	95-47-6	1.36	U	6.81	1.36	0.681
m-,p-Xylene	179601-23-1	1.36	U	6.81	1.36	0.681

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	80	120	
1,2-Dichloroethane-d4	109	80	120	
Toluene-d8	112	85	115	
4-Bromofluorobenzene	121	85	120	*

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW19SW(60-61)220416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:37
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG567003	**Analyst:**	ADC	**Run Date:**	04/30/2016 21:49
Collect Date:	04/22/2016 11:15	**Dilution:**	1	**File ID:**	9M974083
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	75.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	8.63	J	26.0	13.0	6.51
Benzene	71-43-2	1.30	U	6.51	1.30	0.651
Bromobenzene	108-86-1	1.30	U	6.51	1.30	0.651
Bromochloromethane	74-97-5	2.60	U	6.51	2.60	1.30
Bromodichloromethane	75-27-4	1.30	U	6.51	1.30	0.651
Bromoform	75-25-2	1.30	U	6.51	1.30	0.651
Bromomethane	74-83-9	2.60	U	6.51	2.60	1.30
2-Butanone	78-93-3	6.50	U	13.0	6.50	3.25
n-Butylbenzene	104-51-8	1.30	U	6.51	1.30	0.651
sec-Butylbenzene	135-98-8	1.30	U	6.51	1.30	0.651
tert-Butylbenzene	98-06-6	1.30	U	6.51	1.30	0.651
Carbon disulfide	75-15-0	1.30	U	6.51	1.30	0.651
Carbon tetrachloride	56-23-5	1.30	U	6.51	1.30	0.651
Chlorobenzene	108-90-7	1.30	U	6.51	1.30	0.651
Chlorodibromomethane	124-48-1	1.30	U	6.51	1.30	0.651
Chloroethane	75-00-3	2.60	U	6.51	2.60	1.30
Chloroform	67-66-3	1.30	U	6.51	1.30	0.651
Chloromethane	74-87-3	5.20	U	13.0	5.20	2.60
2-Chlorotoluene	95-49-8	1.30	Q	6.51	1.30	0.651
4-Chlorotoluene	106-43-4	1.30	U	6.51	1.30	0.651
1,2-Dibromo-3-chloropropane	96-12-8	5.20	U	13.0	5.20	2.60
1,2-Dibromoethane	106-93-4	1.30	U	6.51	1.30	0.651
Dibromomethane	74-95-3	1.30	U	6.51	1.30	0.651
1,2-Dichlorobenzene	95-50-1	1.30	U	6.51	1.30	0.651
1,3-Dichlorobenzene	541-73-1	1.30	U	6.51	1.30	0.651
1,4-Dichlorobenzene	106-46-7	1.30	U	6.51	1.30	0.651
Dichlorodifluoromethane	75-71-8	2.60	U	6.51	2.60	1.30
1,1-Dichloroethane	75-34-3	2.60	U	6.51	2.60	1.30
1,2-Dichloroethane	107-06-2	1.30	U	6.51	1.30	0.651
1,1-Dichloroethene	75-35-4	1.30	U	6.51	1.30	0.651

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.30	U	6.51	1.30	0.651
trans-1,2-Dichloroethene	156-60-5	1.30	U	6.51	1.30	0.651
1,2-Dichloropropane	78-87-5	1.30	U	6.51	1.30	0.651
1,3-Dichloropropane	142-28-9	1.30	U	6.51	1.30	0.651
2,2-Dichloropropane	594-20-7	1.30	U	6.51	1.30	0.651
cis-1,3-Dichloropropene	10061-01-5	1.30	U	6.51	1.30	0.651
trans-1,3-Dichloropropene	10061-02-6	1.30	U	6.51	1.30	0.651
1,1-Dichloropropene	563-58-6	1.30	U	6.51	1.30	0.651
Ethylbenzene	100-41-4	1.30	U	6.51	1.30	0.651
2-Hexanone	591-78-6	6.50	U	13.0	6.50	3.25
Hexachlorobutadiene	87-68-3	1.30	U	6.51	1.30	0.651
Isopropylbenzene	98-82-8	1.30	U	6.51	1.30	0.651
p-Isopropyltoluene	99-87-6	1.30	U	6.51	1.30	0.651
4-Methyl-2-pentanone	108-10-1	6.50	U	13.0	6.50	3.25
Methylene chloride	75-09-2	2.60	U	6.51	2.60	1.30
Naphthalene	91-20-3	1.30	U	6.51	1.30	0.651
n-Propylbenzene	103-65-1	1.30	U	6.51	1.30	0.651
Styrene	100-42-5	1.30	U	6.51	1.30	0.651
1,1,1,2-Tetrachloroethane	630-20-6	1.30	U	6.51	1.30	0.651
1,1,2,2-Tetrachloroethane	79-34-5	1.30	U	6.51	1.30	0.651
Tetrachloroethene	127-18-4	1.30	U	6.51	1.30	0.651
Toluene	108-88-3	1.30	U	6.51	1.30	0.651
1,2,3-Trichlorobenzene	87-61-6	1.30	U	6.51	1.30	0.651
1,2,4-Trichlorobenzene	120-82-1	1.30	U	6.51	1.30	0.651
1,1,1-Trichloroethane	71-55-6	1.30	U	6.51	1.30	0.651
1,1,2-Trichloroethane	79-00-5	1.30	U	6.51	1.30	0.651
Trichloroethene	79-01-6	1.30	U	6.51	1.30	0.651
Trichlorofluoromethane	75-69-4	2.60	U	6.51	2.60	1.30
1,2,3-Trichloropropane	96-18-4	2.60	U	6.51	2.60	1.30
1,2,4-Trimethylbenzene	95-63-6	1.30	U	6.51	1.30	0.651
1,3,5-Trimethylbenzene	108-67-8	1.30	U	6.51	1.30	0.651
Vinyl chloride	75-01-4	2.60	U	6.51	2.60	1.30
o-Xylene	95-47-6	1.30	U	6.51	1.30	0.651
m-,p-Xylene	179601-23-1	1.30	U	6.51	1.30	0.651

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	80	120	
1,2-Dichloroethane-d4	108	80	120	
Toluene-d8	113	85	115	
4-Bromofluorobenzene	126	85	120	*

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW19SW(60-61)220416MS	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:38
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG567003	**Analyst:**	ADC	**Run Date:**	04/30/2016 22:50
Collect Date:	04/22/2016 11:15	**Dilution:**	1	**File ID:**	9M974085
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	75.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	31.5		26.6	13.3	6.65
Benzene	71-43-2	22.7		6.65	1.33	0.665
Bromobenzene	108-86-1	26.1		6.65	1.33	0.665
Bromochloromethane	74-97-5	22.9		6.65	2.66	1.33
Bromodichloromethane	75-27-4	23.6		6.65	1.33	0.665
Bromoform	75-25-2	23.9		6.65	1.33	0.665
Bromomethane	74-83-9	25.5		6.65	2.66	1.33
2-Butanone	78-93-3	22.2		13.3	6.66	3.33
n-Butylbenzene	104-51-8	23.6		6.65	1.33	0.665
sec-Butylbenzene	135-98-8	26.8		6.65	1.33	0.665
tert-Butylbenzene	98-06-6	26.9		6.65	1.33	0.665
Carbon disulfide	75-15-0	22.5		6.65	1.33	0.665
Carbon tetrachloride	56-23-5	24.0		6.65	1.33	0.665
Chlorobenzene	108-90-7	24.4		6.65	1.33	0.665
Chlorodibromomethane	124-48-1	23.9		6.65	1.33	0.665
Chloroethane	75-00-3	24.9		6.65	2.66	1.33
Chloroform	67-66-3	24.5		6.65	1.33	0.665
Chloromethane	74-87-3	28.8		13.3	5.32	2.66
2-Chlorotoluene	95-49-8	29.1	Q	6.65	1.33	0.665
4-Chlorotoluene	106-43-4	25.3		6.65	1.33	0.665
1,2-Dibromo-3-chloropropane	96-12-8	27.6		13.3	5.32	2.66
1,2-Dibromoethane	106-93-4	23.6		6.65	1.33	0.665
Dibromomethane	74-95-3	21.6		6.65	1.33	0.665
1,2-Dichlorobenzene	95-50-1	24.3		6.65	1.33	0.665
1,3-Dichlorobenzene	541-73-1	24.2		6.65	1.33	0.665
1,4-Dichlorobenzene	106-46-7	24.2		6.65	1.33	0.665
Dichlorodifluoromethane	75-71-8	27.2		6.65	2.66	1.33
1,1-Dichloroethane	75-34-3	23.1		6.65	2.66	1.33
1,2-Dichloroethane	107-06-2	24.9		6.65	1.33	0.665
1,1-Dichloroethene	75-35-4	22.1		6.65	1.33	0.665

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	24.4		6.65	1.33	0.665
trans-1,2-Dichloroethene	156-60-5	24.0		6.65	1.33	0.665
1,2-Dichloropropane	78-87-5	24.7		6.65	1.33	0.665
1,3-Dichloropropane	142-28-9	25.8		6.65	1.33	0.665
2,2-Dichloropropane	594-20-7	22.4		6.65	1.33	0.665
cis-1,3-Dichloropropene	10061-01-5	23.8		6.65	1.33	0.665
trans-1,3-Dichloropropene	10061-02-6	23.9		6.65	1.33	0.665
1,1-Dichloropropene	563-58-6	22.4		6.65	1.33	0.665
Ethylbenzene	100-41-4	24.1		6.65	1.33	0.665
2-Hexanone	591-78-6	20.3		13.3	6.66	3.33
Hexachlorobutadiene	87-68-3	22.3		6.65	1.33	0.665
Isopropylbenzene	98-82-8	23.8		6.65	1.33	0.665
p-Isopropyltoluene	99-87-6	25.5		6.65	1.33	0.665
4-Methyl-2-pentanone	108-10-1	21.9		13.3	6.66	3.33
Methylene chloride	75-09-2	23.5		6.65	2.66	1.33
Naphthalene	91-20-3	17.7		6.65	1.33	0.665
n-Propylbenzene	103-65-1	26.9		6.65	1.33	0.665
Styrene	100-42-5	21.0		6.65	1.33	0.665
1,1,1,2-Tetrachloroethane	630-20-6	25.5		6.65	1.33	0.665
1,1,2,2-Tetrachloroethane	79-34-5	24.9		6.65	1.33	0.665
Tetrachloroethene	127-18-4	22.6		6.65	1.33	0.665
Toluene	108-88-3	23.8		6.65	1.33	0.665
1,2,3-Trichlorobenzene	87-61-6	17.7		6.65	1.33	0.665
1,2,4-Trichlorobenzene	120-82-1	18.2		6.65	1.33	0.665
1,1,1-Trichloroethane	71-55-6	24.7		6.65	1.33	0.665
1,1,2-Trichloroethane	79-00-5	24.6		6.65	1.33	0.665
Trichloroethene	79-01-6	22.2		6.65	1.33	0.665
Trichlorofluoromethane	75-69-4	24.5		6.65	2.66	1.33
1,2,3-Trichloropropane	96-18-4	27.6		6.65	2.66	1.33
1,2,4-Trimethylbenzene	95-63-6	27.0		6.65	1.33	0.665
1,3,5-Trimethylbenzene	108-67-8	27.2		6.65	1.33	0.665
Vinyl chloride	75-01-4	37.5		6.65	2.66	1.33
o-Xylene	95-47-6	24.9		6.65	1.33	0.665
m-,p-Xylene	179601-23-1	47.8		6.65	1.33	0.665

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	80	120	
1,2-Dichloroethane-d4	110	80	120	
Toluene-d8	111	85	115	
4-Bromofluorobenzene	123	85	120	*

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW19SW(60-61)220416MSD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:39
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG567003	**Analyst:**	ADC	**Run Date:**	04/30/2016 23:20
Collect Date:	04/22/2016 11:15	**Dilution:**	1	**File ID:**	9M974086
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	75.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	35.3		27.2	13.6	6.79
Benzene	71-43-2	25.6		6.79	1.36	0.679
Bromobenzene	108-86-1	28.8		6.79	1.36	0.679
Bromochloromethane	74-97-5	25.0		6.79	2.72	1.36
Bromodichloromethane	75-27-4	26.3		6.79	1.36	0.679
Bromoform	75-25-2	25.6		6.79	1.36	0.679
Bromomethane	74-83-9	26.0		6.79	2.72	1.36
2-Butanone	78-93-3	22.7		13.6	6.80	3.40
n-Butylbenzene	104-51-8	26.1		6.79	1.36	0.679
sec-Butylbenzene	135-98-8	29.7		6.79	1.36	0.679
tert-Butylbenzene	98-06-6	31.4		6.79	1.36	0.679
Carbon disulfide	75-15-0	23.8		6.79	1.36	0.679
Carbon tetrachloride	56-23-5	26.8		6.79	1.36	0.679
Chlorobenzene	108-90-7	27.0		6.79	1.36	0.679
Chlorodibromomethane	124-48-1	27.0		6.79	1.36	0.679
Chloroethane	75-00-3	28.3		6.79	2.72	1.36
Chloroform	67-66-3	27.0		6.79	1.36	0.679
Chloromethane	74-87-3	31.7		13.6	5.44	2.72
2-Chlorotoluene	95-49-8	33.0	Q	6.79	1.36	0.679
4-Chlorotoluene	106-43-4	26.6		6.79	1.36	0.679
1,2-Dibromo-3-chloropropane	96-12-8	29.1		13.6	5.44	2.72
1,2-Dibromoethane	106-93-4	24.8		6.79	1.36	0.679
Dibromomethane	74-95-3	22.3		6.79	1.36	0.679
1,2-Dichlorobenzene	95-50-1	26.3		6.79	1.36	0.679
1,3-Dichlorobenzene	541-73-1	26.7		6.79	1.36	0.679
1,4-Dichlorobenzene	106-46-7	26.6		6.79	1.36	0.679
Dichlorodifluoromethane	75-71-8	29.7		6.79	2.72	1.36
1,1-Dichloroethane	75-34-3	25.4		6.79	2.72	1.36
1,2-Dichloroethane	107-06-2	27.3		6.79	1.36	0.679
1,1-Dichloroethene	75-35-4	25.1		6.79	1.36	0.679

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	26.8		6.79	1.36	0.679
trans-1,2-Dichloroethene	156-60-5	26.4		6.79	1.36	0.679
1,2-Dichloropropane	78-87-5	27.6		6.79	1.36	0.679
1,3-Dichloropropane	142-28-9	29.3		6.79	1.36	0.679
2,2-Dichloropropane	594-20-7	24.5		6.79	1.36	0.679
cis-1,3-Dichloropropene	10061-01-5	26.0		6.79	1.36	0.679
trans-1,3-Dichloropropene	10061-02-6	25.5		6.79	1.36	0.679
1,1-Dichloropropene	563-58-6	25.7		6.79	1.36	0.679
Ethylbenzene	100-41-4	27.0		6.79	1.36	0.679
2-Hexanone	591-78-6	22.1		13.6	6.80	3.40
Hexachlorobutadiene	87-68-3	25.0		6.79	1.36	0.679
Isopropylbenzene	98-82-8	27.0		6.79	1.36	0.679
p-Isopropyltoluene	99-87-6	28.0		6.79	1.36	0.679
4-Methyl-2-pentanone	108-10-1	23.5		13.6	6.80	3.40
Methylene chloride	75-09-2	25.8		6.79	2.72	1.36
Naphthalene	91-20-3	19.0		6.79	1.36	0.679
n-Propylbenzene	103-65-1	30.0		6.79	1.36	0.679
Styrene	100-42-5	22.1		6.79	1.36	0.679
1,1,1,2-Tetrachloroethane	630-20-6	28.9		6.79	1.36	0.679
1,1,2,2-Tetrachloroethane	79-34-5	27.2		6.79	1.36	0.679
Tetrachloroethene	127-18-4	25.3		6.79	1.36	0.679
Toluene	108-88-3	27.4		6.79	1.36	0.679
1,2,3-Trichlorobenzene	87-61-6	18.8		6.79	1.36	0.679
1,2,4-Trichlorobenzene	120-82-1	19.3		6.79	1.36	0.679
1,1,1-Trichloroethane	71-55-6	27.9		6.79	1.36	0.679
1,1,2-Trichloroethane	79-00-5	27.5		6.79	1.36	0.679
Trichloroethene	79-01-6	25.1		6.79	1.36	0.679
Trichlorofluoromethane	75-69-4	26.5		6.79	2.72	1.36
1,2,3-Trichloropropane	96-18-4	28.6		6.79	2.72	1.36
1,2,4-Trimethylbenzene	95-63-6	29.5		6.79	1.36	0.679
1,3,5-Trimethylbenzene	108-67-8	30.2		6.79	1.36	0.679
Vinyl chloride	75-01-4	48.6		6.79	2.72	1.36
o-Xylene	95-47-6	28.3		6.79	1.36	0.679
m-,p-Xylene	179601-23-1	53.9		6.79	1.36	0.679

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	80	120	
1,2-Dichloroethane-d4	108	80	120	
Toluene-d8	112	85	115	
4-Bromofluorobenzene	122	85	120	*

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW19SW(50-50.5)220416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	04/28/2016 09:39
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	04/06/2016 17:16
Workgroup #:	WG567003	**Analyst:**	ADC	**Run Date:**	04/30/2016 22:19
Collect Date:	04/22/2016 11:11	**Dilution:**	1	**File ID:**	9M974084
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	8.75	J	25.4	12.7	6.35
Benzene	71-43-2	1.27	U	6.35	1.27	0.635
Bromobenzene	108-86-1	1.27	U	6.35	1.27	0.635
Bromochloromethane	74-97-5	2.54	U	6.35	2.54	1.27
Bromodichloromethane	75-27-4	1.27	U	6.35	1.27	0.635
Bromoform	75-25-2	1.27	U	6.35	1.27	0.635
Bromomethane	74-83-9	2.54	U	6.35	2.54	1.27
2-Butanone	78-93-3	6.34	U	12.7	6.34	3.17
n-Butylbenzene	104-51-8	1.27	U	6.35	1.27	0.635
sec-Butylbenzene	135-98-8	1.27	U	6.35	1.27	0.635
tert-Butylbenzene	98-06-6	1.27	U	6.35	1.27	0.635
Carbon disulfide	75-15-0	1.27	U	6.35	1.27	0.635
Carbon tetrachloride	56-23-5	1.27	U	6.35	1.27	0.635
Chlorobenzene	108-90-7	1.27	U	6.35	1.27	0.635
Chlorodibromomethane	124-48-1	1.27	U	6.35	1.27	0.635
Chloroethane	75-00-3	2.54	U	6.35	2.54	1.27
Chloroform	67-66-3	1.27	U	6.35	1.27	0.635
Chloromethane	74-87-3	5.08	U	12.7	5.08	2.54
2-Chlorotoluene	95-49-8	1.27	Q	6.35	1.27	0.635
4-Chlorotoluene	106-43-4	1.27	U	6.35	1.27	0.635
1,2-Dibromo-3-chloropropane	96-12-8	5.08	U	12.7	5.08	2.54
1,2-Dibromoethane	106-93-4	1.27	U	6.35	1.27	0.635
Dibromomethane	74-95-3	1.27	U	6.35	1.27	0.635
1,2-Dichlorobenzene	95-50-1	1.27	U	6.35	1.27	0.635
1,3-Dichlorobenzene	541-73-1	1.27	U	6.35	1.27	0.635
1,4-Dichlorobenzene	106-46-7	1.27	U	6.35	1.27	0.635
Dichlorodifluoromethane	75-71-8	2.54	U	6.35	2.54	1.27
1,1-Dichloroethane	75-34-3	2.54	U	6.35	2.54	1.27
1,2-Dichloroethane	107-06-2	1.27	U	6.35	1.27	0.635
1,1-Dichloroethene	75-35-4	1.27	U	6.35	1.27	0.635

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Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.27	U	6.35	1.27	0.635
trans-1,2-Dichloroethene	156-60-5	1.27	U	6.35	1.27	0.635
1,2-Dichloropropane	78-87-5	1.27	U	6.35	1.27	0.635
1,3-Dichloropropane	142-28-9	1.27	U	6.35	1.27	0.635
2,2-Dichloropropane	594-20-7	1.27	U	6.35	1.27	0.635
cis-1,3-Dichloropropene	10061-01-5	1.27	U	6.35	1.27	0.635
trans-1,3-Dichloropropene	10061-02-6	1.27	U	6.35	1.27	0.635
1,1-Dichloropropene	563-58-6	1.27	U	6.35	1.27	0.635
Ethylbenzene	100-41-4	1.27	U	6.35	1.27	0.635
2-Hexanone	591-78-6	6.34	U	12.7	6.34	3.17
Hexachlorobutadiene	87-68-3	1.27	U	6.35	1.27	0.635
Isopropylbenzene	98-82-8	1.27	U	6.35	1.27	0.635
p-Isopropyltoluene	99-87-6	1.27	U	6.35	1.27	0.635
4-Methyl-2-pentanone	108-10-1	6.34	U	12.7	6.34	3.17
Methylene chloride	75-09-2	2.54	U	6.35	2.54	1.27
Naphthalene	91-20-3	1.27	U	6.35	1.27	0.635
n-Propylbenzene	103-65-1	1.27	U	6.35	1.27	0.635
Styrene	100-42-5	1.27	U	6.35	1.27	0.635
1,1,1,2-Tetrachloroethane	630-20-6	1.27	U	6.35	1.27	0.635
1,1,2,2-Tetrachloroethane	79-34-5	1.27	U	6.35	1.27	0.635
Tetrachloroethene	127-18-4	1.27	U	6.35	1.27	0.635
Toluene	108-88-3	1.27	U	6.35	1.27	0.635
1,2,3-Trichlorobenzene	87-61-6	1.27	U	6.35	1.27	0.635
1,2,4-Trichlorobenzene	120-82-1	1.27	U	6.35	1.27	0.635
1,1,1-Trichloroethane	71-55-6	1.27	U	6.35	1.27	0.635
1,1,2-Trichloroethane	79-00-5	1.27	U	6.35	1.27	0.635
Trichloroethene	79-01-6	1.27	U	6.35	1.27	0.635
Trichlorofluoromethane	75-69-4	2.54	U	6.35	2.54	1.27
1,2,3-Trichloropropane	96-18-4	2.54	U	6.35	2.54	1.27
1,2,4-Trimethylbenzene	95-63-6	1.27	U	6.35	1.27	0.635
1,3,5-Trimethylbenzene	108-67-8	1.27	U	6.35	1.27	0.635
Vinyl chloride	75-01-4	2.54	U	6.35	2.54	1.27
o-Xylene	95-47-6	1.27	U	6.35	1.27	0.635
m-,p-Xylene	179601-23-1	1.27	U	6.35	1.27	0.635

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	80	120	
1,2-Dichloroethane-d4	109	80	120	
Toluene-d8	113	85	115	
4-Bromofluorobenzene	125	85	120	*

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.
VOA Preparation/Preservation/Extraction Log

Batch #: WG566711
Method: 5030B/5030C/5035
Product: 8260

Analyst: AWE
Run Date: 04/28/2016 09:31
Purge and trap methanol COA18540
Purified Lab Sand Lot # COA18552

SAMPLE #	Fraction	Collected	Preserved	PCT-S	Tare Wt	Total Wt	Sample Wt	Water	MeOH	Vt	Comments
L16041344-01	A	04/23/16 09:35	04/28/16 09:31	84.4			0.96	5		5	
L16041344-02	A	04/23/16 10:05	04/28/16 09:20	81.9			4.66	5		5	
L16041344-03	A	04/23/16 10:10	04/28/16 09:21	77.7			4.85	5		5	
L16041344-04	A	04/23/16 13:30	04/28/16 09:21	84.0			4.54	5		5	
L16041344-05	A	04/23/16 13:30	04/28/16 09:22	85.1			4.71	5		5	
L16041344-06	A	04/23/16 14:00	04/28/16 09:23	82.3			4.76	5		5	
L16041344-07	A	04/23/16 14:05	04/28/16 09:25	77.2			5.36	5		5	
L16041344-08	A	04/25/16 09:35	04/28/16 09:26	84.1			4.95	5		5	
L16041344-09	A	04/25/16 09:50	04/28/16 09:27	78.8			4.58	5		5	
L16041344-10	A	04/25/16 10:45	04/28/16 09:28	78.9			5.33	5		5	
L16041344-11	A	04/25/16 11:45	04/28/16 09:28	80.9			4.78	5		5	
L16041344-12	A	04/25/16 12:05	04/28/16 09:29	77.9			5.25	5		5	
L16041344-13	A	04/25/16 12:10	04/28/16 09:29	71.8			4.69	5		5	
L16041344-14	A	04/25/16 12:30	04/28/16 09:30	76.0			4.95	5		5	
L16041363-01	A	04/21/16 17:00	04/28/16 09:33	83.9			4.90	5		5	
L16041363-02	A	04/21/16 17:30	04/28/16 09:33	79.9			5.36	5		5	
L16041363-03	A	04/22/16 09:00	04/28/16 09:34	80.0			4.93	5		5	
L16041363-04	A	04/22/16 09:00	04/28/16 09:35	79.4			4.92	5		5	
L16041363-05	A	04/22/16 09:05	04/28/16 09:36	80.8			5.35	5		5	
L16041363-06	A	04/21/16 18:00	04/28/16 09:36	79.1			4.64	5		5	
L16041363-07	A	04/22/16 11:15	04/28/16 09:37	75.9			5.06	5		5	
L16041363-08	A	04/22/16 11:15	04/28/16 09:38	75.9			4.95	5		5	
L16041363-09	A	04/22/16 11:15	04/28/16 09:39	75.9			4.85	5		5	
L16041363-10	A	04/22/16 11:11	04/28/16 09:39	80.5			4.89	5		5	
WG566711-01	A		04/28/16 12:59	81.9			4.66	5		5	
WG566711-02	A		04/28/16 13:01	81.9			4.93	5		5	
WG566711-03	A		04/28/16 13:02	81.9			4.76	5		5	
WG566711-04	A		04/28/16 12:59	83.9			4.90	5		5	
WG566711-05	A		04/28/16 13:03	83.9			4.82	5		5	
WG566711-06	A		04/28/16 13:04	83.9			4.81	5		5	

Comments:
1 = improperly sealed cap
2 = preserved out of hold
3 = effervesced
4 = preserved with NaHSO4
5 = preserved by freezing
6 = preserved in field

Analyst: Andrew Casey

VOA_EXT - Modified 05/22/2008
PDF ID: 4738634
Report generated: 04/28/2016 13:26

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 012516
Analyst1: ADC Analyst2: NA
Method: 8260B/8260C SOP: MSV01(-C) Rev: 23 (2)
Method: 5030B/5030C/5035 SOP: PAT01 Rev: 18
Method: 624 SOP: MSV10 Rev: 12
Maintenance Log ID:

Internal Standard: STD74414 Surrogate Standard: STD74126
CCV: STD74488 LCS: STD74459 MS/MSD: STD74459

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG555000 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M972470	WG555000-01 BFB 50ng A9	NA	7	1	STD74202	01/25/16 10:27
9M972471	RINSE	NA	7	1		01/25/16 10:52
9M972472	WG555000-02 5ug/Kg STD A9	NA	7	1	STD74406	01/25/16 11:22
9M972473	WG555000-03 20ug/Kg STD A9	NA	7	1	STD74406	01/25/16 11:52
9M972474	WG555000-04 50ug/Kg STD A9	NA	7	1	STD74406	01/25/16 12:23
9M972475	WG555000-05 100ug/Kg STD A9	NA	7	1	STD74406	01/25/16 12:53
9M972476	WG555000-06 200ug/Kg STD A9	NA	7	1	STD74406	01/25/16 13:23
9M972477	WG555000-07 300ug/Kg STD A9	NA	7	1	STD74406	01/25/16 13:54
9M972478	WG555000-08 400ug/Kg STD A9	NA	7	1	STD74406	01/25/16 14:25
9M972479	WG555000-09 500ug/Kg STD A9	NA	7	1	STD74406	01/25/16 14:56
9M972480	RINSE	NA	7	1		01/25/16 15:26
9M972481	WG555000-10 100ug/Kg ICV A9	NA	7	1	STD74461	01/25/16 15:56
9M972482	RINSE	NA	7	1		01/25/16 16:28

Approved: January 29, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 040616

Analyst1: ADC Analyst2: NA

Method: 8260 SOP: MSV01 Rev: 23

Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD75190 Surrogate Standard: STD75211

CCV: STD75238 LCS: STD75404 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG563259 (ICAL)

Comments: Reanalyzed 100, 200, and 300 ug/kg points.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M973592	WG563259-01 BFB 50ng 8260	NA	7	1	STD75485	04/06/16 09:33
9M973593	RINSE	NA	7	1	STD75238	04/06/16 09:58
9M973594	WG563259-02 50ug/L CCV STD 8260	NA	7	1	STD75238	04/06/16 10:29
9M973595	RINSE	NA	7	1		04/06/16 11:00
9M973596	WG563259-03 0.5ug/kg STD 8260	NA	7	1	STD75238	04/06/16 11:31
9M973597	WG563259-04 1.0ug/kg STD 8260	NA	7	1	STD75238	04/06/16 12:02
9M973598	WG563259-05 2.0ug/kg STD 8260	NA	7	1	STD75238	04/06/16 12:32
9M973599	WG563259-06 5.0ug/kg STD 8260	NA	7	1	STD75238	04/06/16 13:03
9M973600	WG563259-07 20.0ug/kg STD 8260	NA	7	1	STD75238	04/06/16 13:33
9M973601	WG563259-08 100.0ug/kg STD 8260	NA	7	1	STD75238	04/06/16 14:04
9M973602	WG563259-09 200.0ug/kg STD 8260	NA	7	1	STD75238	04/06/16 14:35
9M973603	WG563259-10 300.0ug/kg STD 8260	NA	7	1	STD75238	04/06/16 15:05
9M973604	RINSE	NA	7	1	STD75238	04/06/16 15:36
9M973605	WG563259-08 100.0ug/kg STD 8260	NA	7	1	STD75238	04/06/16 16:15
9M973606	WG563259-09 200.0ug/kg STD 8260	NA	7	1	STD75238	04/06/16 16:46
9M973607	WG563259-10 300.0ug/kg STD 8260	NA	7	1	STD75238	04/06/16 17:16
9M973608	RINSE	NA	7	1		04/06/16 17:47
9M973609	WG563259-11 50.0ug/kg ALTSRC 8260	NA	7	1	STD75404	04/06/16 18:18

Approved: April 08, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 043016
Analyst1: ADC Analyst2: NA
Method: 8260 SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD75711 Surrogate Standard: STD75710
CCV: STD75824 LCS: STD75739 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG567003

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M974065	WG567052-01 BFB 50ng 8260	NA	7	1	STD75485	04/30/16 12:43
9M974066	WG567052-02 50ug/kg CCV STD 8260	NA	7	1	STD75238	04/30/16 13:10
9M974067	WG567052-02 50ug/kg CCV STD 8260	NA	7	1	STD75238	04/30/16 13:43
9M974068	WGXXXXXX-01 A9FOO 100ug/kg	NA	7	1	STDXXXXX	04/30/16 14:15
9M974069	WG567003-01 BLK 8260	NA	7	1		04/30/16 14:45
9M974070	L16040796-06 A 826-REF-BLK	NA	7	1		04/30/16 15:16
9M974071	L16040796-07 A 826-REF-BLK	NA	7	1		04/30/16 15:46
9M974072	L16040796-08 A 826-REF-BLK	NA	7	1		04/30/16 16:16
9M974073	L16040796-09 A 826-REF-BLK	NA	7	1		04/30/16 16:47
9M974074	WG567003-02 20ug/kg LCS 8260	NA	7	1	STD75739	04/30/16 17:17
9M974075	RINSE	NA	7	1		04/30/16 17:48
9M974076	L16041344-01 B 8260 4.87g	NA	7	1		04/30/16 18:18
9M974077	L16041363-01 A 8260 4.90g	NA	7	1		04/30/16 18:48
9M974078	L16041363-02 A 8260 5.36g	NA	7	1		04/30/16 19:18
9M974079	L16041363-03 A 8260 4.93g	NA	7	1		04/30/16 19:48
9M974080	L16041363-04 A 8260 4.92g	NA	7	1		04/30/16 20:18
9M974081	L16041363-05 A 8260 5.35g	NA	7	1		04/30/16 20:48
9M974082	L16041363-06 A 8260 4.64g	NA	7	1		04/30/16 21:19
9M974083	L16041363-07 A RS 8260 5.06g	NA	7	1		04/30/16 21:49
9M974084	L16041363-10 A 8260 4.89g	NA	7	1		04/30/16 22:19
9M974085	L16041363-08 A MS 8260 4.95g	NA	7	1		04/30/16 22:50
9M974086	L16041363-09 A MSD 8260 4.85g	NA	7	1		04/30/16 23:20
9M974087	RINSE	NA	7	1		04/30/16 23:50
9M974088	H20	NA	7	1		05/02/16 10:06
9M974089	H20 W/ MeOH	NA	7	1		05/02/16 10:36
9M974090	H20	NA	7	1		05/02/16 11:06
9M974091	SAND	NA	7	1		05/02/16 11:37
9M974092	SAND W/MeOH	NA	7	1		05/02/16 12:08

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
File ID: 9M974066				

Approved: May 06, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 043016

Analyst1: ADC Analyst2: NA

Method: 8260 SOP: MSV01 Rev: 23

Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD75711 Surrogate Standard: STD75710

CCV: STD75824 LCS: STD75739 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG567003

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			WG567052-02 fails VC. RR.	

Approved: May 06, 2016

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 25-JAN-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 72995
Analytical Workgroups: WG555000

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
28-JAN-2016

Secondary Reviewer:
29-JAN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JAN-29-2016 16:00:23

Microbac Laboratories Inc.

Data Checklist

Date: 06-APR-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: WG563259
Runlog ID: 74305
Analytical Workgroups:

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
08-APR-2016

Secondary Reviewer:
08-APR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: APR-08-2016 15:40:41

Microbac Laboratories Inc.

Data Checklist

Date: 30-APR-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 74887
Analytical Workgroups: WG567003

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
04-MAY-2016

Secondary Reviewer:
06-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-06-2016 11:05:37

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG567003

Login Number: L16041363

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW19SW(5-5.5)210416	01	04/21/16					04/28/2016	6.7	14		04/30/16	9.1	14	
18CPTMW19SW(10-10.5)2104	02	04/21/16					04/28/2016	6.7	14		04/30/16	9.1	14	
18CPTMW19SW(30-30.5)2204	03	04/22/16					04/28/2016	6	14		04/30/16	8.5	14	
18CPTMW19SW(30-30.5)2204	04	04/22/16					04/28/2016	6	14		04/30/16	8.5	14	
18CPTMW19SW(40-40.5)2204	05	04/22/16					04/28/2016	6	14		04/30/16	8.5	14	
18CPTMW19SW(20-20.5)2204	06	04/21/16					04/28/2016	6.7	14		04/30/16	9.1	14	
18CPTMW19SW(60-61)220416	07	04/22/16					04/28/2016	5.9	14		04/30/16	8.4	14	
18CPTMW19SW(60-61)220416	08	04/22/16					04/28/2016	5.9	14		04/30/16	8.5	14	
18CPTMW19SW(60-61)220416	09	04/22/16					04/28/2016	5.9	14		04/30/16	8.5	14	
18CPTMW19SW(50-50.5)2204	10	04/22/16					04/28/2016	5.9	14		04/30/16	8.5	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4747129
Report generated 05/10/2016 13:22

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16041363
Instrument Id: HPMS9
Workgroup (AAB#): WG567003

Method: 8260
CAL ID: HPMS9 - 06-APR-16
Matrix: Soil

Sample Number	Dilution	Tag	1	2	3	4
L16041363-01	1.00	01	109	105	126	113
L16041363-02	1.00	01	107	101	120	111
L16041363-03	1.00	01	121	107	123	111
L16041363-04	1.00	01	122	108	125	110
L16041363-05	1.00	01	119	106	125	111
L16041363-06	1.00	01	109	105	121	112
L16041363-07	1.00	01	108	104	126	113
L16041363-08	1.00	01	110	105	123	111
L16041363-09	1.00	01	108	105	122	112
L16041363-10	1.00	01	109	104	125	113
WG567003-01	1.00	01	108	104	124	112
WG567003-02	1.00	01	112	108	121	112

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	80	-	120
2 - Dibromofluoromethane	80	-	120
3 - 4-Bromofluorobenzene	85	-	120
4 - Toluene-d8	85	-	115

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4747140
Report generated: 05/10/2016 13:22

METHOD BLANK SUMMARY

Login Number: L16041363
Blank File ID: 9M974069
Prep Date: 04/30/16 14:45
Analyzed Date: 04/30/16 14:45
Analyst: ADC

Work Group: WG567003
Blank Sample ID: WG567003-01
Instrument ID: HPMS9
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG567003-02	9M974074	04/30/16 17:17	01
18CPTMW19SW(5-5.5)210416	L16041363-01	9M974077	04/30/16 18:48	01
18CPTMW19SW(10-10.5)210416	L16041363-02	9M974078	04/30/16 19:18	01
18CPTMW19SW(30-30.5)220416	L16041363-03	9M974079	04/30/16 19:48	01
18CPTMW19SW(30-30.5)220416DUP	L16041363-04	9M974080	04/30/16 20:18	01
18CPTMW19SW(40-40.5)220416	L16041363-05	9M974081	04/30/16 20:48	01
18CPTMW19SW(20-20.5)220416	L16041363-06	9M974082	04/30/16 21:19	01
18CPTMW19SW(60-61)220416	L16041363-07	9M974083	04/30/16 21:49	01
18CPTMW19SW(50-50.5)220416	L16041363-10	9M974084	04/30/16 22:19	01
18CPTMW19SW(60-61)220416MS	L16041363-08	9M974085	04/30/16 22:50	01
18CPTMW19SW(60-61)220416MSD	L16041363-09	9M974086	04/30/16 23:20	01

Report Name: BLANK_SUMMARY
PDF File ID: 4747130
Report generated 05/10/2016 13:22

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16041363 Prep Date: 04/30/16 14:45 Sample ID: WG567003-01
Instrument ID: HPMS9 Run Date: 04/30/16 14:45 Prep Method: 5030B/5030C/503
File ID: 9M974069 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG567003 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-06-APR-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	5.00	20.0	5.00	1	U
Benzene	0.500	5.00	0.500	1	U
Bromobenzene	0.500	5.00	0.500	1	U
Bromochloromethane	1.00	5.00	1.00	1	U
Bromodichloromethane	0.500	5.00	0.500	1	U
Bromoform	0.500	5.00	0.500	1	U
Bromomethane	1.00	5.00	1.00	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.500	5.00	0.500	1	U
sec-Butylbenzene	0.500	5.00	0.500	1	U
tert-Butylbenzene	0.500	5.00	0.500	1	U
Carbon disulfide	0.500	5.00	0.500	1	U
Carbon tetrachloride	0.500	5.00	0.500	1	U
Chlorobenzene	0.500	5.00	0.500	1	U
Chlorodibromomethane	0.500	5.00	0.500	1	U
Chloroethane	1.00	5.00	1.00	1	U
Chloroform	0.500	5.00	0.500	1	U
Chloromethane	2.00	10.0	2.00	1	U
2-Chlorotoluene	0.500	5.00	0.500	1	U
4-Chlorotoluene	0.500	5.00	0.500	1	U
1,2-Dibromo-3-chloropropane	2.00	10.0	2.00	1	U
1,2-Dibromoethane	0.500	5.00	0.500	1	U
Dibromomethane	0.500	5.00	0.500	1	U
1,2-Dichlorobenzene	0.500	5.00	0.500	1	U
1,3-Dichlorobenzene	0.500	5.00	0.500	1	U
1,4-Dichlorobenzene	0.500	5.00	0.500	1	U
Dichlorodifluoromethane	1.00	5.00	1.00	1	U
1,1-Dichloroethane	1.00	5.00	1.00	1	U
1,2-Dichloroethane	0.500	5.00	0.500	1	U
1,1-Dichloroethene	0.500	5.00	0.500	1	U
cis-1,2-Dichloroethene	0.500	5.00	0.500	1	U
trans-1,2-Dichloroethene	0.500	5.00	0.500	1	U
1,2-Dichloropropane	0.500	5.00	0.500	1	U
1,3-Dichloropropane	0.500	5.00	0.500	1	U
2,2-Dichloropropane	0.500	5.00	0.500	1	U
cis-1,3-Dichloropropene	0.500	5.00	0.500	1	U
trans-1,3-Dichloropropene	0.500	5.00	0.500	1	U
1,1-Dichloropropene	0.500	5.00	0.500	1	U
Ethylbenzene	0.500	5.00	0.500	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.500	5.00	0.500	1	U
Isopropylbenzene	0.500	5.00	0.500	1	U

Report Name:BLANK
PDF ID: 4747131
10-MAY-2016 13:22

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16041363 Prep Date: 04/30/16 14:45 Sample ID: WG567003-01
Instrument ID: HPMS9 Run Date: 04/30/16 14:45 Prep Method: 5030B/5030C/503
File ID: 9M974069 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG567003 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-06-APR-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.500	5.00	0.500	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	1.00	5.00	1.00	1	U
Naphthalene	0.500	5.00	0.500	1	U
n-Propylbenzene	0.500	5.00	0.500	1	U
Styrene	0.500	5.00	0.500	1	U
1,1,1,2-Tetrachloroethane	0.500	5.00	0.500	1	U
1,1,2,2-Tetrachloroethane	0.500	5.00	0.500	1	U
Tetrachloroethene	0.500	5.00	0.500	1	U
Toluene	0.500	5.00	0.500	1	U
1,2,3-Trichlorobenzene	0.500	5.00	0.500	1	U
1,2,4-Trichlorobenzene	0.500	5.00	0.500	1	U
1,1,1-Trichloroethane	0.500	5.00	0.500	1	U
1,1,2-Trichloroethane	0.500	5.00	0.500	1	U
Trichloroethene	0.500	5.00	0.500	1	U
Trichlorofluoromethane	1.00	5.00	1.00	1	U
1,2,3-Trichloropropane	1.00	5.00	1.00	1	U
1,2,4-Trimethylbenzene	0.500	5.00	0.500	1	U
1,3,5-Trimethylbenzene	0.500	5.00	0.500	1	U
Vinyl chloride	1.00	5.00	1.00	1	U
o-Xylene	0.500	5.00	0.500	1	U
m-,p-Xylene	0.500	5.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	104	80 - 120	PASS
1,2-Dichloroethane-d4	108	80 - 120	PASS
Toluene-d8	112	85 - 115	PASS
4-Bromofluorobenzene	124	85 - 120	FAIL

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4747131
10-MAY-2016 13:22

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16041363 | Run Date: 04/30/2016 | Sample ID: WG567003-02
Instrument ID: HPMS9 | Run Time: 17:17 | Prep Method: 5030B/5030C/503
File ID: 9M974074 | Analyst: ADC | Method: 8260B
Workgroup (AAB#): WG567003 | Matrix: Soil | Units: ug/kg
QC Key: DOD4 | Lot#: STD75739 | Cal ID: HPMS9-06-APR-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	15.5	77.6	20 - 160	
Benzene	20.0	16.5	82.6	75 - 125	
Bromobenzene	20.0	19.1	95.6	65 - 120	
Bromochloromethane	20.0	17.1	85.4	70 - 125	
Bromodichloromethane	20.0	16.7	83.4	70 - 130	
Bromoform	20.0	17.9	89.5	55 - 135	
Bromomethane	20.0	17.3	86.4	30 - 160	
2-Butanone	20.0	18.1	90.7	30 - 160	
n-Butylbenzene	20.0	17.1	85.5	65 - 140	
sec-Butylbenzene	20.0	18.7	93.5	65 - 130	
tert-Butylbenzene	20.0	19.6	98.0	65 - 130	
Carbon disulfide	20.0	15.3	76.6	45 - 160	
Carbon tetrachloride	20.0	16.9	84.3	65 - 135	
Chlorobenzene	20.0	17.8	89.2	75 - 125	
Chlorodibromomethane	20.0	18.1	90.7	65 - 130	
Chloroethane	20.0	17.7	88.6	40 - 155	
Chloroform	20.0	16.9	84.5	70 - 125	
Chloromethane	20.0	21.5	108	50 - 130	
2-Chlorotoluene	20.0	21.1	105	70 - 130	
4-Chlorotoluene	20.0	17.8	89.0	75 - 125	
1,2-Dibromo-3-chloropropane	20.0	22.9	114	40 - 135	
1,2-Dibromoethane	20.0	18.2	91.0	70 - 125	
Dibromomethane	20.0	16.3	81.6	75 - 130	
1,2-Dichlorobenzene	20.0	18.2	91.0	75 - 120	
1,3-Dichlorobenzene	20.0	18.0	89.9	70 - 125	
1,4-Dichlorobenzene	20.0	18.4	92.2	70 - 125	
Dichlorodifluoromethane	20.0	19.3	96.3	35 - 135	
1,1-Dichloroethane	20.0	16.4	82.2	75 - 125	
1,2-Dichloroethane	20.0	18.0	90.2	70 - 135	
1,1-Dichloroethene	20.0	15.9	79.5	65 - 135	
cis-1,2-Dichloroethene	20.0	17.4	86.9	65 - 125	
trans-1,2-Dichloroethene	20.0	17.2	85.8	65 - 135	
1,2-Dichloropropane	20.0	17.4	86.8	70 - 120	
1,3-Dichloropropane	20.0	19.6	97.9	75 - 125	
2,2-Dichloropropane	20.0	16.8	84.2	65 - 135	
cis-1,3-Dichloropropene	20.0	17.8	88.8	70 - 125	
trans-1,3-Dichloropropene	20.0	18.1	90.5	65 - 125	
1,1-Dichloropropene	20.0	16.2	81.1	70 - 135	
Ethylbenzene	20.0	17.5	87.4	75 - 125	
2-Hexanone	20.0	16.7	83.7	45 - 145	
Hexachlorobutadiene	20.0	17.0	85.1	55 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4747132
Report generated: 05/10/2016 13:22

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16041363 | Run Date: 04/30/2016 | Sample ID: WG567003-02
Instrument ID: HPMS9 | Run Time: 17:17 | Prep Method: 5030B/5030C/503
File ID: 9M974074 | Analyst: ADC | Method: 8260B
Workgroup (AAB#): WG567003 | Matrix: Soil | Units: ug/kg
QC Key: DOD4 | Lot#: STD75739 | Cal ID: HPMS9-06-APR-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	17.1	85.7	75 - 130	
p-Isopropyltoluene	20.0	18.0	90.1	75 - 135	
4-Methyl-2-pentanone	20.0	17.5	87.7	45 - 145	
Methylene chloride	20.0	16.9	84.5	55 - 140	
Naphthalene	20.0	18.6	92.9	40 - 125	
n-Propylbenzene	20.0	19.2	96.2	65 - 135	
Styrene	20.0	16.5	82.5	75 - 125	
1,1,1,2-Tetrachloroethane	20.0	18.8	93.8	75 - 125	
1,1,2,2-Tetrachloroethane	20.0	18.6	92.8	55 - 130	
Tetrachloroethene	20.0	16.4	81.8	65 - 140	
Toluene	20.0	17.4	86.8	70 - 125	
1,2,3-Trichlorobenzene	20.0	17.3	86.6	60 - 135	
1,2,4-Trichlorobenzene	20.0	15.8	79.1	65 - 130	
1,1,1-Trichloroethane	20.0	17.3	86.6	70 - 135	
1,1,2-Trichloroethane	20.0	18.3	91.6	60 - 125	
Trichloroethene	20.0	16.3	81.6	75 - 125	
Trichlorofluoromethane	20.0	17.0	85.2	25 - 185	
1,2,3-Trichloropropane	20.0	21.0	105	65 - 130	
1,2,4-Trimethylbenzene	20.0	18.9	94.7	65 - 135	
1,3,5-Trimethylbenzene	20.0	19.0	95.1	65 - 135	
Vinyl chloride	20.0	21.6	108	60 - 125	
o-Xylene	20.0	18.0	90.2	75 - 125	
m-,p-Xylene	40.0	34.0	84.9	80 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	108	80 - 120	PASS
1,2-Dichloroethane-d4	112	80 - 120	PASS
Toluene-d8	112	85 - 115	PASS
4-Bromofluorobenzene	121	85 - 120	FAIL

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4747132
Report generated: 05/10/2016 13:22

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16041363 Cal ID: HPMS9- 06-APR-16 Worknum: WG567003

Instrument ID: HPMS9 Contract #: Prep Method: 5030B/5030C/

Parent ID: L16041363-07 File ID: 9M974083 Dil: 1 Method: 5035A

Sample ID: L16041363-08 MS File ID: 9M974085 Dil: 1 Matrix: 8260B

Sample ID: L16041363-09 MSD File ID: 9M974086 Dil: 1 Units: Soil

Percent Solid: ug/kg 75.9

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,1,1,2-Tetrachloroethane	U	26.6	25.5	95.9	27.2	28.9	106	12.3	75 - 125	30	
1,1,1-Trichloroethane	U	26.6	24.7	93	27.2	27.9	103	12.1	70 - 135	30	
1,1,2,2-Tetrachloroethane	U	26.6	24.9	93.5	27.2	27.2	100	8.79	55 - 130	30	
1,1,2-Trichloroethane	U	26.6	24.6	92.4	27.2	27.5	101	11.3	60 - 125	30	
1,1-Dichloroethane	U	26.6	23.1	86.7	27.2	25.4	93.5	9.59	75 - 125	30	
1,1-Dichloroethene	U	26.6	22.1	83.2	27.2	25.1	92.2	12.3	65 - 135	30	
1,1-Dichloropropene	U	26.6	22.4	84.2	27.2	25.7	94.7	13.7	70 - 135	30	
1,2,3-Trichlorobenzene	U	26.6	17.7	66.6	27.2	18.8	69.3	6.07	60 - 135	30	
1,2,3-Trichloropropane	U	26.6	27.6	104	27.2	28.6	105	3.62	65 - 130	30	
1,2,4-Trichlorobenzene	U	26.6	18.2	68.2	27.2	19.3	71	6.02	65 - 130	30	
1,2,4-Trimethylbenzene	U	26.6	27.0	101	27.2	29.5	109	9.01	65 - 135	30	
1,2-Dibromo-3-chloropropane	U	26.6	27.6	104	27.2	29.1	107	5.45	40 - 135	30	
1,2-Dibromoethane	U	26.6	23.6	88.8	27.2	24.8	91.2	4.70	70 - 125	30	
1,2-Dichlorobenzene	U	26.6	24.3	91.5	27.2	26.3	97	7.90	75 - 120	30	
1,2-Dichloroethane	U	26.6	24.9	93.7	27.2	27.3	100	9.05	70 - 135	30	
1,2-Dichloropropane	U	26.6	24.7	92.7	27.2	27.6	102	11.4	70 - 120	30	
1,3,5-Trimethylbenzene	U	26.6	27.2	102	27.2	30.2	111	10.6	65 - 135	30	
1,3-Dichlorobenzene	U	26.6	24.2	90.9	27.2	26.7	98.3	9.86	70 - 125	30	
1,3-Dichloropropane	U	26.6	25.8	97	27.2	29.3	108	12.7	75 - 125	30	
1,4-Dichlorobenzene	U	26.6	24.2	91	27.2	26.6	98.1	9.55	70 - 125	30	
2,2-Dichloropropane	U	26.6	22.4	84.3	27.2	24.5	90.1	8.73	65 - 135	30	
2-Butanone	U	26.6	22.2	83.5	27.2	22.7	83.7	2.22	30 - 160	30	
2-Chlorotoluene	U	26.6	29.1	109	27.2	33.0	121	12.7	70 - 130	30	
2-Hexanone	U	26.6	20.3	76.5	27.2	22.1	81.2	8.11	45 - 145	30	
4-Chlorotoluene	U	26.6	25.3	95	27.2	26.6	97.8	4.92	75 - 125	30	
4-Methyl-2-pentanone	U	26.6	21.9	82.2	27.2	23.5	86.6	7.15	45 - 145	30	
Acetone	8.63	26.6	31.5	85.9	27.2	35.3	98.4	11.6	20 - 160	30	
Benzene	U	26.6	22.7	85.3	27.2	25.6	94.2	12.0	75 - 125	30	
Bromobenzene	U	26.6	26.1	98	27.2	28.8	106	9.99	65 - 120	30	
Bromochloromethane	U	26.6	22.9	86	27.2	25.0	92.2	8.95	70 - 125	30	
Bromodichloromethane	U	26.6	23.6	88.6	27.2	26.3	97	11.1	70 - 130	30	
Bromoform	U	26.6	23.9	89.6	27.2	25.6	94.2	7.01	55 - 135	30	
Bromomethane	U	26.6	25.5	95.9	27.2	26.0	95.8	1.92	30 - 160	30	
Carbon disulfide	U	26.6	22.5	84.7	27.2	23.8	87.7	5.60	45 - 160	30	
Carbon tetrachloride	U	26.6	24.0	90.2	27.2	26.8	98.8	11.2	65 - 135	30	
Chlorobenzene	U	26.6	24.4	91.8	27.2	27.0	99.3	9.88	75 - 125	30	
Chloroethane	U	26.6	24.9	93.6	27.2	28.3	104	12.7	40 - 155	30	
Chloroform	U	26.6	24.5	92.2	27.2	27.0	99.2	9.41	70 - 125	30	
Chloromethane	U	26.6	28.8	108	27.2	31.7	117	9.83	50 - 130	30	
cis-1,2-Dichloroethene	U	26.6	24.4	91.8	27.2	26.8	98.7	9.30	65 - 125	30	
cis-1,3-Dichloropropene	U	26.6	23.8	89.6	27.2	26.0	95.7	8.61	70 - 125	30	

MS_MSD - Modified 03/06/2008
PDF File ID: 4747133
Report generated 05/04/2016 15:36

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16041363 Cal ID: HPMS9 06-APR-16 Worknum: WG567003

Instrument ID: HPMS9 Contract #: Prep Method: 5030B/5030C/

Parent ID: L16041363-07 File ID: 9M974083 Dil: 1 Method: 5035A

Sample ID: L16041363-08 MS File ID: 9M974085 Dil: 1 Matrix: 8260B

Sample ID: L16041363-09 MSD File ID: 9M974086 Dil: 1 Units: Soil

Percent Solid: ug/kg 75.9

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chlorodibromomethane	U	26.6	23.9	89.9	27.2	27.0	99.5	12.1	65 - 130	30	
Dibromomethane	U	26.6	21.6	81.2	27.2	22.3	82	3.05	75 - 130	30	
Dichlorodifluoromethane	U	26.6	27.2	102	27.2	29.7	109	8.59	35 - 135	30	
Ethylbenzene	U	26.6	24.1	90.4	27.2	27.0	99.4	11.6	75 - 125	30	
Hexachlorobutadiene	U	26.6	22.3	83.9	27.2	25.0	91.9	11.2	55 - 140	30	
Isopropylbenzene	U	26.6	23.8	89.4	27.2	27.0	99.4	12.6	75 - 130	30	
m-,p-Xylene	U	53.2	47.8	89.8	54.3	53.9	99.2	12.0	80 - 125	30	
Methylene chloride	U	26.6	23.5	88.5	27.2	25.8	95	9.20	55 - 140	30	
n-Butylbenzene	U	26.6	23.6	88.5	27.2	26.1	96.2	10.4	65 - 140	30	
n-Propylbenzene	U	26.6	26.9	101	27.2	30.0	110	10.8	65 - 135	30	
Naphthalene	U	26.6	17.7	66.4	27.2	19.0	70.1	7.51	40 - 125	30	
o-Xylene	U	26.6	24.9	93.4	27.2	28.3	104	12.9	75 - 125	30	
p-Isopropyltoluene	U	26.6	25.5	95.7	27.2	28.0	103	9.39	75 - 135	30	
sec-Butylbenzene	U	26.6	26.8	101	27.2	29.7	109	10.2	65 - 130	30	
Styrene	U	26.6	21.0	79.1	27.2	22.1	81.2	4.75	75 - 125	30	
tert-Butylbenzene	U	26.6	26.9	101	27.2	31.4	115	15.2	65 - 130	30	
Tetrachloroethene	U	26.6	22.6	84.8	27.2	25.3	93.1	11.4	65 - 140	30	
Toluene	U	26.6	23.8	89.3	27.2	27.4	101	14.0	70 - 125	30	
trans-1,2-Dichloroethene	U	26.6	24.0	90	27.2	26.4	97.3	9.87	65 - 135	30	
trans-1,3-Dichloropropene	U	26.6	23.9	89.9	27.2	25.5	94.1	6.51	65 - 125	30	
Trichloroethene	U	26.6	22.2	83.4	27.2	25.1	92.5	12.4	75 - 125	30	
Trichlorofluoromethane	U	26.6	24.5	91.9	27.2	26.5	97.5	7.92	25 - 185	30	
Vinyl chloride	U	26.6	37.5	141	27.2	48.6	179	25.6	60 - 125	30	*

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4747133
Report generated 05/04/2016 15:36

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16041363
Instrument: HPMS9
Analyst: FJB
Workgroup: WG555000

Tune ID: WG555000-01
Run Date: 01/25/2016
Run Time: 10:27
File ID: 9M972470
Cal ID: HPMS9 - 25-JAN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	23.0	10289	PASS
75.0	95.0	30.0	60.0	49.3	22030	PASS
95.0	95.0	100	100	100	44728	PASS
96.0	95.0	5.00	9.00	6.98	3122	PASS
173	174	0	2.00	0.381	160	PASS
174	95.0	50.0	100	93.9	41989	PASS
175	174	5.00	9.00	6.62	2778	PASS
176	174	95.0	101	95.6	40133	PASS
177	176	5.00	9.00	6.39	2564	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG555000-02	STD-S	01	01/25/2016 11:22	
WG555000-03	STD-S	01	01/25/2016 11:52	
WG555000-04	STD-S	01	01/25/2016 12:23	
WG555000-05	STD-CCV-S	01	01/25/2016 12:53	
WG555000-06	STD-S	01	01/25/2016 13:23	
WG555000-07	STD-S	01	01/25/2016 13:54	
WG555000-08	STD-S	01	01/25/2016 14:25	
WG555000-09	STD-S	01	01/25/2016 14:56	
WG555000-10	SSCV-S	01	01/25/2016 15:56	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4747137
Report generated 05/10/2016 13:22

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16041363
Instrument: HPMS9
Analyst: ADC
Workgroup: WG563259

Tune ID: WG563259-01
Run Date: 04/06/2016
Run Time: 09:33
File ID: 9M973592
Cal ID: HPMS9 - 06-APR-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.9	9512	PASS
75.0	95.0	30.0	60.0	46.0	20002	PASS
95.0	95.0	100	100	100	43469	PASS
96.0	95.0	5.00	9.00	6.46	2809	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	91.3	39688	PASS
175	174	5.00	9.00	7.37	2925	PASS
176	174	95.0	101	96.9	38458	PASS
177	176	5.00	9.00	6.59	2534	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG563259-02	STD-CCV-S	01	04/06/2016 10:29	
WG563259-03	STD-S	01	04/06/2016 11:31	
WG563259-04	STD-S	01	04/06/2016 12:02	
WG563259-05	STD-S	01	04/06/2016 12:32	
WG563259-06	STD-S	01	04/06/2016 13:03	
WG563259-07	STD-S	01	04/06/2016 13:33	
WG563259-08	STD-S	01	04/06/2016 16:15	
WG563259-09	STD-S	01	04/06/2016 16:46	
WG563259-10	STD-S	01	04/06/2016 17:16	
WG563259-11	SSCV-S	01	04/06/2016 18:18	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4747137
Report generated 05/10/2016 13:22

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16041363
Instrument: HPMS9
Analyst: ADC
Workgroup: WG567052

Tune ID: WG567052-01
Run Date: 04/30/2016
Run Time: 12:43
File ID: 9M974065
Cal ID: HPMS9 - 06-APR-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.9	8872	PASS
75.0	95.0	30.0	60.0	46.1	19506	PASS
95.0	95.0	100	100	100	42357	PASS
96.0	95.0	5.00	9.00	6.35	2690	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	89.4	37858	PASS
175	174	5.00	9.00	6.85	2593	PASS
176	174	95.0	101	97.4	36877	PASS
177	176	5.00	9.00	6.48	2391	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG567052-02	CCV-S	01	04/30/2016 13:43	
WG567003-01	BLANK	01	04/30/2016 14:45	
WG567003-02	LCS	01	04/30/2016 17:17	
L16041363-01	18CPTMW19SW(5-5.5)210416	01	04/30/2016 18:48	
L16041363-02	18CPTMW19SW(10-10.5)210416	01	04/30/2016 19:18	
L16041363-03	18CPTMW19SW(30-30.5)220416	01	04/30/2016 19:48	
L16041363-04	18CPTMW19SW(30-30.5)220416DUP	01	04/30/2016 20:18	
L16041363-05	18CPTMW19SW(40-40.5)220416	01	04/30/2016 20:48	
L16041363-06	18CPTMW19SW(20-20.5)220416	01	04/30/2016 21:19	
L16041363-07	18CPTMW19SW(60-61)220416	01	04/30/2016 21:49	
L16041363-10	18CPTMW19SW(50-50.5)220416	01	04/30/2016 22:19	
L16041363-08	18CPTMW19SW(60-61)220416MS	01	04/30/2016 22:50	
L16041363-09	18CPTMW19SW(60-61)220416MSD	01	04/30/2016 23:20	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4747137
Report generated 05/10/2016 13:22

Calibration Table Report
Method: A9FOO_SL.M
Title: FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Calibration: Wed Jan 27 09:49:02 2016
Curve: WG555000
Calibration Files

Compound	5 9M972472.D	20 9M972473.D	50 9M972474.D	100 9M972475.D	200 9M972476.D	300 9M972477.D	400 9M972478.D	500 9M972479.D	Avg	%RSD	R^2 Linear
Fluorobenzene	ISTD										
Acetonitrile		0.053	0.046	0.048	0.052	0.046	0.052	0.054	0.050	6.657	
3-Chloro-1-propene	0.498	0.524	0.450	0.519	0.514	0.434	0.507	0.503	0.494	6.719	
2-Chloro-1,3-butadiene	0.534	0.576	0.519	0.592	0.585	0.509	0.593	0.584	0.561	6.202	
Ethyl Acetate		0.333	0.313	0.339	0.338	0.300	0.341	0.344	0.330	5.124	
Methacrylonitrile	0.102	0.109	0.101	0.112	0.110	0.096	0.112	0.112	0.107	5.912	
Isobutyl Alcohol	0.014	0.018	0.018	0.021	0.024	0.021	0.025	0.025	0.021	18.016	0.993
1-Butanol		0.010	0.013	0.015	0.017	0.015	0.018	0.018	0.015	17.838	0.992
Methyl methacrylate	0.236	0.246	0.231	0.265	0.265	0.231	0.271	0.269	0.252	7.005	
2-Nitropropane	0.069	0.073	0.074	0.083	0.089	0.079	0.093	0.095	0.082	12.090	
Chlorobenzene-d5	ISTD										
Cyclohexanone		0.020	0.022	0.025	0.028	0.023	0.027	0.028	0.025	12.963	
1,4-Dichlorobenzene-d4	ISTD										

Wed Jan 27 10:01:56 2016

Calibration Table Report
Method: 8260-SL.M
Title: 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Calibration: Wed Apr 06 17:47:28 2016
Curve: WG563259
Calibration Files

Compound	0.5 9M973596.D	1 9M973597.D	2 9M973598.D	5 9M973599.D	20 9M973600.D	50 9M973594.D	100 9M973605.D	200 9M973606.D	300 9M973607.D	Avg	%RSD	R^2 Linear	Quadratic
Fluorobenzene	ISTD												
Dichlorodifluoromethane			0.321	0.344	0.364	0.439	0.352	0.427	0.437	0.384	12.892		
Chloromethane			0.411	0.346	0.327	0.352	0.289	0.365	0.378	0.353	10.934		
Vinyl Chloride		0.309	0.277	0.322	0.308	0.270	0.211	0.222	0.229	0.268	16.161	0.993	
1,3-Butadiene		0.146	0.201	0.181	0.179	0.160	0.154			0.170	11.979		
Bromomethane		0.205	0.219	0.231	0.210	0.230	0.191	0.219	0.225	0.216	6.345		
Chloroethane			0.195	0.212	0.214	0.223	0.183	0.219	0.227	0.211	7.590		
Trichlorofluoromethane		0.395	0.427	0.437	0.469	0.497	0.396	0.465	0.478	0.445	8.475		
Diethyl ether		0.265	0.262	0.267	0.267	0.274	0.230		0.269	0.262	5.615		
Isoprene			0.323	0.330	0.362	0.390	0.322	0.362	0.366	0.351	7.435		
Acrolein		0.023	0.024	0.023	0.026	0.027	0.033			0.026	13.903		
1,1,2-Trichloro-1,2,2-Trifluoroet			0.239	0.261	0.288	0.302	0.242	0.284	0.289	0.272	9.162		
Acetone				0.207	0.126	0.108	0.088	0.096	0.100	0.121	36.552	0.996	
1,1-Dichloroethene		0.393	0.440	0.451	0.487	0.508	0.403	0.475	0.489	0.456	9.106		
Tert-Butyl Alcohol			0.046	0.044	0.043	0.046	0.040			0.044	5.343		
Dimethyl Sulfide		0.163	0.203	0.215	0.246	0.257	0.212	0.239	0.251	0.223	14.040		
Iodomethane				0.140	0.151	0.228	0.180	0.225	0.230	0.192	21.187	0.992	
Methyl acetate			0.300	0.297	0.295	0.305	0.255	0.279	0.298	0.290	6.019		
Methylene Chloride			0.297	0.289	0.297	0.300	0.237	0.279	0.295	0.285	7.859		
Carbon Disulfide			0.879	0.837	0.889	0.940	0.768	0.859	0.880	0.865	6.109		
Acrylonitrile		0.130	0.133	0.134	0.135	0.147	0.127		0.158	0.138	8.026		
Methyl Tert Butyl Ether		0.710	0.738	0.776	0.820	0.840	0.665	0.765	0.816	0.766	7.804		
trans-1,2-Dichloroethene		0.386	0.431	0.419	0.467	0.493	0.389	0.455	0.470	0.439	8.924		
n-Hexane			0.693	0.590	0.595	0.575	0.493	0.518	0.524	0.570	11.751		
Diisopropyl ether		1.185	1.152	1.182	1.185	1.243	1.009		1.168	1.161	6.230		
Vinyl Acetate			0.435	0.513	0.546	0.690	0.532	0.621	0.664	0.572	15.821	0.994	
1,1-Dichloroethane		0.465	0.518	0.538	0.574	0.590	0.463	0.544	0.569	0.532	9.010		
Ethyl-Tert-Butyl ether		1.047	1.008	1.036	1.043	1.081	0.892		1.038	1.021	5.954		
2-Butanone				0.163	0.160	0.165	0.140	0.161	0.175	0.161	7.047		
Propionitrile		0.048	0.052	0.053	0.051	0.055	0.048		0.059	0.052	7.830		
2,2-Dichloropropane			0.360	0.367	0.386	0.437	0.344	0.408	0.420	0.389	8.790		
cis-1,2-Dichloroethene		0.241	0.287	0.289	0.317	0.322	0.257	0.302	0.316	0.291	10.075		
Chloroform		0.423	0.428	0.462	0.481	0.489	0.390	0.458	0.482	0.452	7.739		
1-Bromopropane			0.032	0.044	0.051	0.056	0.046	0.052	0.055	0.048	17.607	0.996	
Bromochloromethane		0.135	0.168	0.190	0.194	0.207	0.164	0.192	0.205	0.182	13.364		
Tetrahydrofuran			0.123	0.115	0.112	0.116	0.101		0.118	0.114	6.505		
Dibromofluoromethane				0.247	0.231	0.268	0.266	0.251		0.253	5.970		
1,1,1-Trichloroethane		0.343	0.351	0.372	0.416	0.433	0.343	0.408	0.426	0.386	9.993		
Cyclohexane		0.528	0.595	0.610	0.651	0.675	0.557	0.630	0.642	0.611	8.109		
1,1-Dichloropropene		0.302	0.349	0.362	0.378	0.396	0.314	0.366	0.380	0.356	9.221		
Tert-Amyl-Methyl ether		0.761	0.744	0.770	0.776	0.799	0.663		0.772	0.755	5.813		
Carbon Tetrachloride			0.31341	0.33551	0.37426	0.39892	0.31861	0.38498	0.39957	0.36075	10.3644		
1,2-Dichloroethane-d4				0.26412	0.24802	0.27423	0.2775	0.25788		0.26435	4.55185		
Heptane										0	0		
1,2-Dichloroethane		0.34418	0.40431	0.39865	0.4175	0.41985	0.33321	0.38495	0.40827	0.38886	8.47358		
Benzene	1.21945	1.07403	1.12524	1.10527	1.14242	1.16809	0.92092	1.0739	1.10779	1.10412	7.48919		
Trichloroethene		0.31254	0.31563	0.31565	0.31885	0.33106	0.26092	0.31002	0.31982	0.31056	6.7703		
Methylcyclohexane		0.44779	0.43846	0.47932	0.50651	0.52011	0.43207	0.48337	0.48884	0.47456	6.76996		
1,2-Dichloropropane		0.25742	0.28425	0.3095	0.31809	0.33243	0.26219	0.30921	0.32904	0.30027	9.65942		
1,4-Dioxane			0.00358	0.00385	0.00384	0.00433	0.00386			0.00389	6.99887		
Bromodichloromethane			0.30575	0.31422	0.35204	0.37916	0.30019	0.35975	0.384	0.34216	10.2601		
Dibromomethane		0.15183	0.16316	0.17868	0.18876	0.20056	0.16023	0.18831	0.20263	0.17927	10.6372		
2-Chloroethyl Vinyl Ether			0.13333	0.14657	0.15865	0.17532	0.14997	0.17363	0.18023	0.15967	10.9171		
4-Methyl-2-Pentanone				0.13027	0.13937	0.14048	0.12107	0.14207	0.15624	0.13825	8.57761		
cis-1,3-Dichloropropene			0.40667	0.40942	0.42702	0.47107	0.37094	0.43662	0.46459	0.42662	8.1829		
Dimethyl Disulfide			0.36901	0.41872	0.46393	0.5137	0.43386	0.49585	0.50079	0.45655	11.4623		
Chlorobenzene-d5	ISTD												
Toluene-d8				1.13196	1.13088	1.30099	1.22413	1.17028		1.19165	6.04016		
Toluene	1.61219	1.48974	1.56315	1.53008	1.59395	1.67032	1.25619	1.49851	1.47925	1.52149	7.74689		
Ethyl Methacrylate				0.41975	0.4711	0.51586	0.40825	0.47534	0.48896	0.46321	8.92932		
trans-1,3-Dichloropropene			0.42937	0.46085	0.51207	0.57552	0.43233	0.52283	0.53425	0.49532	11.2077		
1,1,2-Trichloroethane		0.2293	0.29955	0.30264	0.32292	0.34393	0.26026	0.31526	0.32236	0.29953	12.4735		
2-Hexanone				0.29578	0.31857	0.34977	0.27856	0.34895	0.37083	0.32708	10.8635		
1,3-Dichloropropane		0.46311	0.52068	0.51191	0.553	0.58052	0.43541	0.52074	0.53484	0.51503	9.05764		
Tetrachloroethene		0.29083	0.32282	0.31024	0.33607	0.36695	0.28326	0.33869	0.33259	0.32268	8.46057		
Dibromochloromethane			0.31668	0.33233	0.38385	0.42138	0.32331	0.39925	0.41508	0.37027	12.1586		
1,2-Dibromoethane				0.3097	0.33602	0.35904	0.27936	0.34233	0.35327	0.32995	9.14215		
1-Chlorohexane		0.47093	0.49056	0.47786	0.52976	0.56979	0.44743	0.51603	0.50488	0.50091	7.62739		
Chlorobenzene		1.01857	1.10077	1.06982	1.11065	1.1666	0.87778	1.05237	1.05008	1.05583	8.05461		
1,1,1,2-Tetrachloroethane			0.32188	0.32664	0.37788	0.40639	0.3073	0.38163	0.38922	0.35871	10.872		
Ethylbenzene	0.52143	0.53436	0.57903	0.55623	0.61424	0.64352	0.49066	0.58906	0.58341	0.56799	8.36618		
m-,p-Xylene	0.80077	0.66899	0.68611	0.6782	0.73094	0.77557	0.57886	0.69733	0.68594	0.7003	9.21732		
o-Xylene	0.60031	0.61925	0.68439	0.66416	0.69917	0.75296	0.57232	0.70275	0.71046	0.66731	8.80086		
Styrene		1.0373	1.07384	1.08894	1.19996	1.30098	0.99018	1.21772	1.23313	1.14276	9.5938		
Bromoform			0.18687	0.21759	0.23897	0.28565	0.22359	0.2955	0.32514	0.25333	19.5821		0.997
Isopropylbenzene		1.68774	1.6857	1.66547	1.80713	1.95194	1.47104	1.81646	1.80093	1.7358	8.21749		
1,4-Dichlorobenzene-d4	ISTD												
1,1,2,2-Tetrachloroethane		0.5444	0.72678	0.76491	0.83216	0.97949	0.68259	0.81781	0.89422	0.7803	17.1288	0.99	
p-Bromofluorobenzene				0.79123	0.79828	1.029	0.90393	0.80774		0.86604	11.7727		
1,2,3-Trichloropropane		0.22403	0.25537	0.25246	0.25094	0.2923	0.20359	0.24077	0.2657	0.24814	10.7248		

trans-1,4-Dichloro-2-Butene		0.27171	0.26914	0.29308	0.38778	0.26316	0.30387	0.32522	0.302	14.4884	
n-Propylbenzene	4.05685	3.75924	3.71896	3.86505	4.6452	3.07167	3.36046	3.42768	3.73814	12.8869	
Bromobenzene	0.86454	0.91854	0.88256	0.9322	1.09373	0.73348	0.8172	0.87121	0.88918	11.6372	
1,3,5-Trimethylbenzene			2.89935	2.99421	3.53144	2.3397	2.61687	2.69599	2.84626	14.2799	
2-Chlorotoluene		2.26857	2.2413	2.34896	2.80152	1.8716	2.03405	2.06176	2.23254	13.4065	
4-Chlorotoluene	2.47026	2.45111	2.30891	2.39901	2.8502	1.84221	2.12289	2.23652	2.33514	12.5325	
a-Methylstyrene			1.29056	1.42432	1.7914	1.219	1.37439	1.41967	1.41989	13.9866	
tert-Butylbenzene			0.61757	0.65029	0.78744	0.51681	0.59207	0.61945	0.63061	14.1324	
1,2,4-Trimethylbenzene	3.90048	3.3016	3.06186	3.00214	3.57843	2.37041	2.6865	2.76415	3.0832	16.148	0.99
sec-Butylbenzene	3.74125	3.67112	3.56079	3.78968	4.54565	3.04282	3.43902	3.481	3.65892	11.6849	
p-Isopropyltoluene			2.92258	3.1199	3.7687	2.53184	2.89081	2.93937	3.02887	13.5408	
1,3-Dichlorobenzene	1.83452	1.84233	1.66665	1.75292	2.12917	1.41986	1.67401	1.74427	1.75797	11.3908	
1,4-Dichlorobenzene	2.01312	1.89964	1.70378	1.75876	2.11676	1.4289	1.69182	1.74055	1.79417	11.9044	
n-Butylbenzene	2.84419	2.75013	2.68458	2.82669	3.43808	2.33612	2.69074	2.72167	2.78653	10.998	
1,2-Dichlorobenzene	1.82783	1.61719	1.58891	1.65012	1.99737	1.35931	1.64467	1.69357	1.67237	11.0609	
1,2-Dibromo-3-Chloropropane			0.15996	0.19339	0.24797	0.1736	0.21779	0.23454	0.20454	16.9791	0.991
1,2,4-Trichlorobenzene	1.39125	1.17251	1.16617	1.1473	1.48008	1.0466	1.2227	1.24536	1.23399	11.3188	
Hexachlorobutadiene	0.58074	0.56991	0.53761	0.57937	0.71616	0.49159	0.59053	0.5902	0.58201	10.9512	
Naphthalene		3.08125	2.7856	2.89627	3.68341	2.51558	2.90109	2.95451	2.97396	12.0625	
1,2,3-Trichlorobenzene	1.32311	1.13072	1.05256	1.10905	1.42827	0.99218	1.14378	1.17822	1.16974	12.1576	

Fri Apr 08 14:14:52 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16041363 Run Date: 04/06/2016 Sample ID: WG563259-11
Instrument ID: HPMS9 Run Time: 18:18 Method: 8260B
File ID: 9M973609 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG563259 Cal ID: HPMS9 - 06-APR-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.8	ug/kg	0.459	1.60	20	
1,1-Dichloroethene	CCC	50.0	51.0	ug/kg	0.466	2.10	20	
1,2-Dichloropropane	CCC	50.0	54.2	ug/kg	0.326	8.40	20	
Ethylbenzene	CCC	50.0	52.8	ug/kg	0.600	5.60	20	
Toluene	CCC	50.0	51.5	ug/kg	1.57	3.00	20	
Vinyl Chloride	CCC	50.0	53.2	ug/kg	0.246	6.40	20	
Bromoform	SPCC	50.0	50.1	ug/kg	0.241	0.200	20	
Chlorobenzene	SPCC	50.0	53.1	ug/kg	1.12	6.20	20	
Chloromethane	SPCC	50.0	57.0	ug/kg	0.402	14.0	20	
1,1-Dichloroethane	SPCC	50.0	50.1	ug/kg	0.533	0.200	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	48.2	ug/kg	0.810	3.60	20	
Acetone		50.0	52.0	ug/kg	0.109	4.00	20	
Benzene		50.0	50.7	ug/kg	1.12	1.40	20	
Bromobenzene		50.0	49.8	ug/kg	0.886	0.400	20	
Bromochloromethane		50.0	51.3	ug/kg	0.187	2.70	20	
Bromodichloromethane		50.0	50.6	ug/kg	0.346	1.20	20	
Bromomethane		50.0	52.4	ug/kg	0.226	4.70	20	
2-Butanone		50.0	52.5	ug/kg	0.169	5.00	20	
n-Butylbenzene		50.0	51.3	ug/kg	2.86	2.70	20	
sec-Butylbenzene		50.0	52.8	ug/kg	3.86	5.60	20	
tert-Butylbenzene		50.0	52.3	ug/kg	0.660	4.60	20	
Carbon Disulfide		50.0	48.7	ug/kg	0.841	2.70	20	
Carbon Tetrachloride		50.0	51.6	ug/kg	0.372	3.10	20	
Dibromochloromethane		50.0	50.6	ug/kg	0.375	1.30	20	
Chloroethane		50.0	54.8	ug/kg	0.231	9.50	20	
2-Chlorotoluene		50.0	51.3	ug/kg	2.29	2.50	20	
4-Chlorotoluene		50.0	52.0	ug/kg	2.43	4.00	20	
1,2-Dibromo-3-Chloropropane		50.0	55.5	ug/kg	0.230	11.0	20	
1,2-Dibromoethane		50.0	51.3	ug/kg	0.339	2.60	20	
Dibromomethane		50.0	50.2	ug/kg	0.180	0.300	20	
1,2-Dichlorobenzene		50.0	52.0	ug/kg	1.74	4.10	20	
1,3-Dichlorobenzene		50.0	50.5	ug/kg	1.78	1.10	20	
1,4-Dichlorobenzene		50.0	51.0	ug/kg	1.83	1.90	20	
Dichlorodifluoromethane		50.0	61.5	ug/kg	0.472	23.1	20	*
1,2-Dichloroethane		50.0	51.3	ug/kg	0.399	2.70	20	
cis-1,2-Dichloroethene		50.0	53.7	ug/kg	0.313	7.50	20	
trans-1,2-Dichloroethene		50.0	53.6	ug/kg	0.470	7.20	20	
1,3-Dichloropropane		50.0	54.7	ug/kg	0.564	9.40	20	
2,2-Dichloropropane		50.0	51.5	ug/kg	0.401	3.10	20	
cis-1,3-Dichloropropene		50.0	55.5	ug/kg	0.473	10.9	20	
trans-1,3-Dichloropropene		50.0	52.3	ug/kg	0.518	4.70	20	
1,1-Dichloropropene		50.0	51.4	ug/kg	0.366	2.70	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4747135
Report generated 05/10/2016 13:22

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16041363 Run Date: 04/06/2016 Sample ID: WG563259-11
Instrument ID: HPMS9 Run Time: 18:18 Method: 8260B
File ID: 9M973609 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG563259 Cal ID: HPMS9 - 06-APR-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	52.5	ug/kg	0.344	5.00	20	
Hexachlorobutadiene		50.0	58.8	ug/kg	0.684	17.5	20	
Isopropylbenzene		50.0	54.1	ug/kg	1.88	8.10	20	
p-Isopropyltoluene		50.0	51.5	ug/kg	3.12	2.90	20	
4-Methyl-2-Pentanone		50.0	52.0	ug/kg	0.144	4.10	20	
Methylene Chloride		50.0	51.4	ug/kg	0.293	2.90	20	
Naphthalene		50.0	53.9	ug/kg	3.20	7.70	20	
n-Propylbenzene		50.0	51.7	ug/kg	3.86	3.40	20	
Styrene		50.0	53.5	ug/kg	1.22	7.10	20	
1,1,1,2-Tetrachloroethane		50.0	53.0	ug/kg	0.381	6.10	20	
Tetrachloroethene		50.0	51.6	ug/kg	0.333	3.30	20	
1,2,3-Trichlorobenzene		50.0	58.3	ug/kg	1.36	16.7	20	
1,2,4-Trichlorobenzene		50.0	56.8	ug/kg	1.40	13.5	20	
1,1,1-Trichloroethane		50.0	52.8	ug/kg	0.408	5.50	20	
1,1,2-Trichloroethane		50.0	53.9	ug/kg	0.323	7.90	20	
Trichloroethene		50.0	52.5	ug/kg	0.326	5.10	20	
Trichlorofluoromethane		50.0	52.0	ug/kg	0.464	4.10	20	
1,2,3-Trichloropropane		50.0	51.1	ug/kg	0.254	2.20	20	
1,2,4-Trimethylbenzene		50.0	53.2	ug/kg	2.94	6.40	20	
1,3,5-Trimethylbenzene		50.0	51.8	ug/kg	2.95	3.60	20	
o-Xylene		50.0	54.6	ug/kg	0.729	9.30	20	
m-,p-Xylene		100	105	ug/kg	0.735	4.90	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4747135
Report generated 05/10/2016 13:22

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041363 Run Date: 04/30/2016 Sample ID: WG567052-02
Instrument ID: HPMS9 Run Time: 13:43 Method: 8260B
File ID: 9M974067 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG567003 Cal ID: HPMS9 - 06-APR-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	46.3	ug/kg	0.419	7.31	20	
1,1-Dichloroethene	CCC	50.0	45.9	ug/kg	0.419	8.21	20	
1,2-Dichloropropane	CCC	50.0	45.7	ug/kg	0.274	8.65	20	
Ethylbenzene	CCC	50.0	48.4	ug/kg	0.550	3.13	20	
Toluene	CCC	50.0	47.1	ug/kg	1.43	5.76	20	
Vinyl Chloride	CCC	50.0	46.3	ug/kg	0.215	7.50	20	
Bromoform	SPCC	50.0	53.2	ug/kg	0.257	6.45	20	
Chlorobenzene	SPCC	50.0	47.9	ug/kg	1.01	4.21	20	
Chloromethane	SPCC	50.0	54.9	ug/kg	0.387	9.82	20	
1,1-Dichloroethane	SPCC	50.0	45.9	ug/kg	0.489	8.23	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	52.2	ug/kg	0.877	4.31	20	
Xylenes		150	144	ug/kg	0.658	3.95	20	
Acetone		50.0	41.2	ug/kg	0.0888	17.5	20	
Benzene		50.0	44.0	ug/kg	0.971	12.0	20	
Bromobenzene		50.0	53.2	ug/kg	0.946	6.38	20	
Bromochloromethane		50.0	47.0	ug/kg	0.171	5.93	20	
Bromodichloromethane		50.0	45.8	ug/kg	0.313	8.41	20	
Bromomethane		50.0	45.9	ug/kg	0.199	8.18	20	
2-Butanone		50.0	42.4	ug/kg	0.136	15.2	20	
n-Butylbenzene		50.0	52.9	ug/kg	2.95	5.74	20	
sec-Butylbenzene		50.0	53.2	ug/kg	3.89	6.43	20	
tert-Butylbenzene		50.0	53.6	ug/kg	0.677	7.29	20	
Carbon Disulfide		50.0	41.1	ug/kg	0.711	17.7	20	
Carbon Tetrachloride		50.0	48.3	ug/kg	0.349	3.40	20	
Dibromochloromethane		50.0	49.8	ug/kg	0.369	0.451	20	
Chloroethane		50.0	46.8	ug/kg	0.197	6.31	20	
2-Chlorotoluene		50.0	60.0	ug/kg	2.68	20.1	20	*
4-Chlorotoluene		50.0	47.6	ug/kg	2.23	4.71	20	
1,2-Dibromo-3-Chloropropane		50.0	52.3	ug/kg	0.215	4.65	20	
1,2-Dibromoethane		50.0	47.4	ug/kg	0.313	5.16	20	
Dibromomethane		50.0	44.8	ug/kg	0.161	10.4	20	
1,2-Dichlorobenzene		50.0	51.2	ug/kg	1.71	2.42	20	
1,3-Dichlorobenzene		50.0	52.0	ug/kg	1.83	3.94	20	
1,4-Dichlorobenzene		50.0	50.8	ug/kg	1.82	1.55	20	
Dichlorodifluoromethane		50.0	48.3	ug/kg	0.370	3.46	20	
1,2-Dichloroethane		50.0	46.6	ug/kg	0.362	6.81	20	
cis-1,2-Dichloroethene		50.0	46.1	ug/kg	0.269	7.70	20	
trans-1,2-Dichloroethene		50.0	46.1	ug/kg	0.404	7.80	20	
1,3-Dichloropropane		50.0	48.4	ug/kg	0.499	3.11	20	
2,2-Dichloropropane		50.0	48.0	ug/kg	0.373	3.99	20	
cis-1,3-Dichloropropene		50.0	45.7	ug/kg	0.390	8.59	20	
trans-1,3-Dichloropropene		50.0	51.0	ug/kg	0.505	2.01	20	

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041363 Run Date: 04/30/2016 Sample ID: WG567052-02
Instrument ID: HPMS9 Run Time: 13:43 Method: 8260B
File ID: 9M974067 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG567003 Cal ID: HPMS9 - 06-APR-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	46.2	ug/kg	0.329	7.60	20	
2-Hexanone		50.0	44.4	ug/kg	0.291	11.1	20	
Hexachlorobutadiene		50.0	50.9	ug/kg	0.592	1.72	20	
Isopropylbenzene		50.0	48.1	ug/kg	1.67	3.82	20	
p-Isopropyltoluene		50.0	53.8	ug/kg	3.26	7.63	20	
4-Methyl-2-Pentanone		50.0	45.4	ug/kg	0.125	9.28	20	
Methylene Chloride		50.0	44.7	ug/kg	0.255	10.5	20	
Naphthalene		50.0	54.7	ug/kg	3.25	9.37	20	
n-Propylbenzene		50.0	53.2	ug/kg	3.97	6.33	20	
Styrene		50.0	48.1	ug/kg	1.10	3.74	20	
1,1,1,2-Tetrachloroethane		50.0	51.3	ug/kg	0.368	2.57	20	
Tetrachloroethene		50.0	47.7	ug/kg	0.308	4.53	20	
1,2,3-Trichlorobenzene		50.0	53.6	ug/kg	1.25	7.24	20	
1,2,4-Trichlorobenzene		50.0	52.0	ug/kg	1.28	3.92	20	
1,1,1-Trichloroethane		50.0	48.1	ug/kg	0.372	3.78	20	
1,1,2-Trichloroethane		50.0	49.7	ug/kg	0.298	0.650	20	
Trichloroethene		50.0	43.4	ug/kg	0.270	13.2	20	
Trichlorofluoromethane		50.0	48.2	ug/kg	0.430	3.56	20	
1,2,3-Trichloropropane		50.0	54.1	ug/kg	0.269	8.29	20	
1,2,4-Trimethylbenzene		50.0	56.3	ug/kg	3.11	12.5	20	
1,3,5-Trimethylbenzene		50.0	53.6	ug/kg	3.05	7.19	20	
o-Xylene		50.0	48.4	ug/kg	0.647	3.12	20	
m-,p-Xylene		100	95.6	ug/kg	0.670	4.36	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4747138
Report generated 05/10/2016 13:22

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16041363
Instrument ID: HPMS9
Workgroup (AAB#): WG567003

ICAL CCV Number: WG563259-02
CAL ID: HPMS9-06-APR-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG563259-02	NA	NA	189947	405052	551415
Upper Limit	NA	NA	379894	810104	1102830
Lower Limit	NA	NA	94974	202526	275708
L16041363-01	1.00	01	211853	466892	648715
L16041363-02	1.00	01	197425	428718	604849
L16041363-03	1.00	01	196361	421446	575339
L16041363-04	1.00	01	175209	379392	527759
L16041363-05	1.00	01	183185	404510	567426
L16041363-06	1.00	01	177988	394106	552950
L16041363-07	1.00	01	189873	429799	606330
L16041363-08	1.00	01	204071	455159	629804
L16041363-09	1.00	01	195199	427647	599152
L16041363-10	1.00	01	190398	418410	587937
WG567003-01	1.00	01	207986	455753	641587
WG567003-02	1.00	01	198992	430069	593466

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4747139
Report generated 05/10/2016 13:22

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16041363
Instrument ID: HPMS9
Workgroup (AAB#): WG567003

ICAL CCV Number: WG563259-02
CAL ID: HPMS9-06-APR-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG563259-02	NA	NA	17.75	14.72	10.84
Upper Limit	NA	NA	18.25	15.22	11.34
Lower Limit	NA	NA	17.25	14.22	10.34
L16041363-01	1.00	01	17.74	14.72	10.84
L16041363-02	1.00	01	17.74	14.71	10.84
L16041363-03	1.00	01	17.74	14.71	10.84
L16041363-04	1.00	01	17.74	14.71	10.84
L16041363-05	1.00	01	17.74	14.71	10.84
L16041363-06	1.00	01	17.74	14.71	10.84
L16041363-07	1.00	01	17.74	14.71	10.84
L16041363-08	1.00	01	17.74	14.71	10.84
L16041363-09	1.00	01	17.74	14.71	10.84
L16041363-10	1.00	01	17.74	14.71	10.84
WG567003-01	1.00	01	17.74	14.71	10.84
WG567003-02	1.00	01	17.74	14.71	10.84

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4747141
Report generated: 05/10/2016 13:22

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\043016\9M974077.D Vial: 11
Acq On : 30 Apr 2016 18:48 Operator: ADC
Sample : L16041363-01 A 8260 4.90g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 04 12:27:47 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	648715	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	466892	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	211853	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	172797	52.7419 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.48%		
43) 1,2-Dichloroethane-d4	10.43	65	186723	54.4423 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 108.88%		
58) Toluene-d8	12.82	98	628051	56.4419 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 112.88%		
79) p-Bromofluorobenzene	16.22	95	232053	63.2392 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 126.48%#		

Target Compounds

					Qvalue
13) Acetone	6.39	43	6097	Below Cal	88
36) Tetrahydrofuran	9.77	42	3122	2.1072 ug/kg#	78
56) Dimethyl Disulfide	12.82	94	16487	2.7834 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.08	105	2369	Below Cal #	68

(#) = qualifier out of range (m) = manual integration
9M974077.D 8260-SL.M Wed May 04 12:27:47 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\043016\9M974077.D Vial: 11
Acq On : 30 Apr 2016 18:48 Operator: ADC
Sample : L16041363-01 A 8260 4.90g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 4 12:27 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

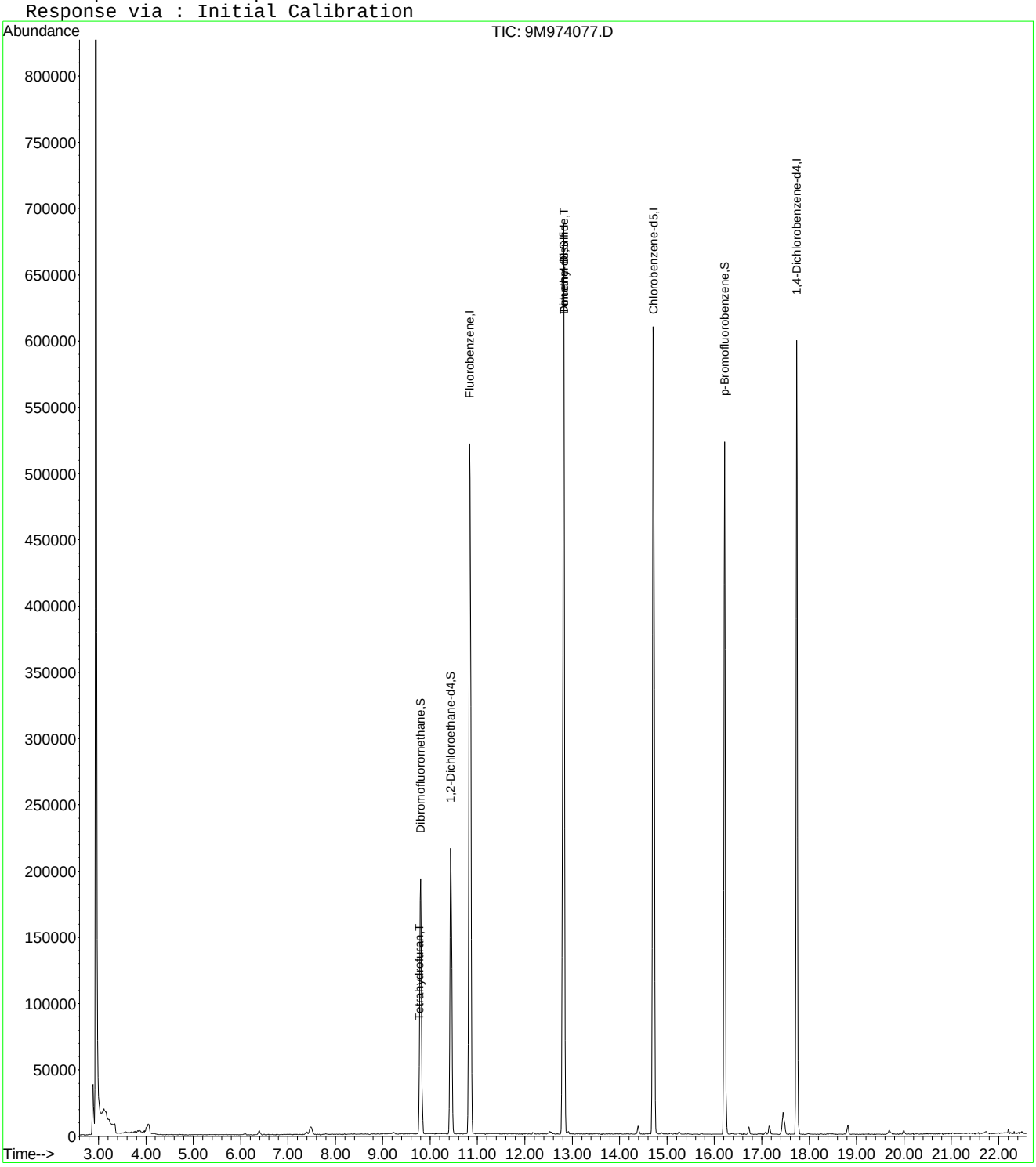

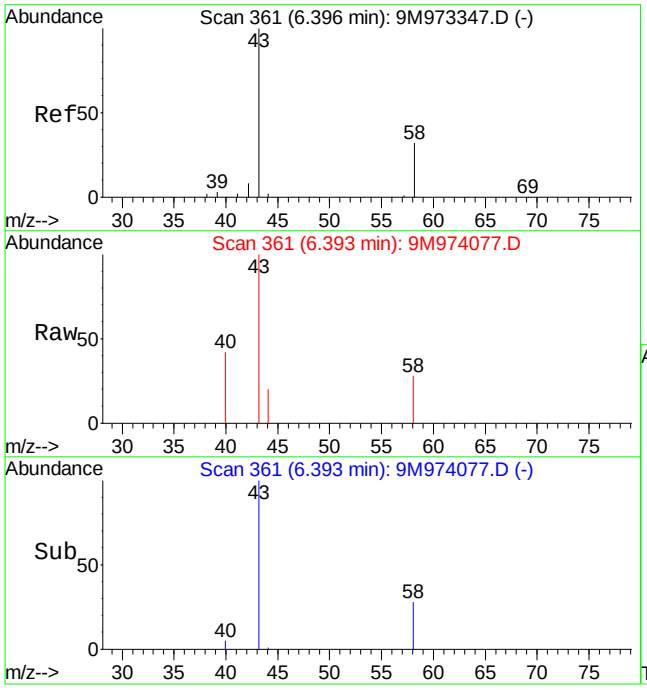

#13
Acetone
Concen: Below Cal
RT: 6.39 min Scan# 361
Delta R.T. 0.01 min
Lab File: 9M974077.D
Acq: 30 Apr 2016 18:48

Tgt Ion: 43 Resp: 6097

Ion	Ratio	Lower	Upper
43	100		
58	26.9	20.2	47.2

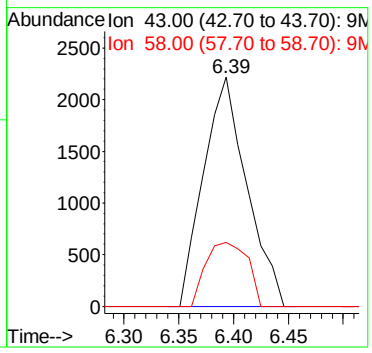

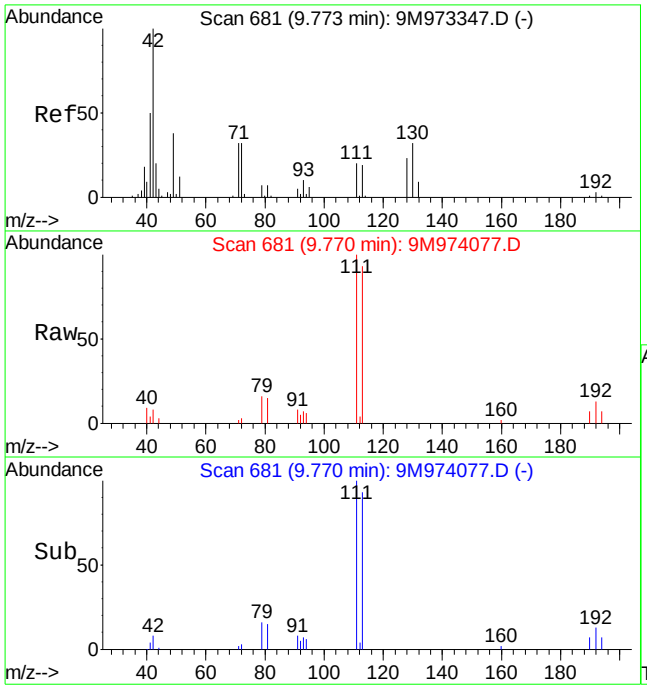

#36
Tetrahydrofuran
Concen: 2.11 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. -0.00 min
Lab File: 9M974077.D
Acq: 30 Apr 2016 18:48

Tgt Ion: 42 Resp: 3122

Ion	Ratio	Lower	Upper
42	100		
72	23.9	19.8	46.2
71	15.4	18.3	42.7#

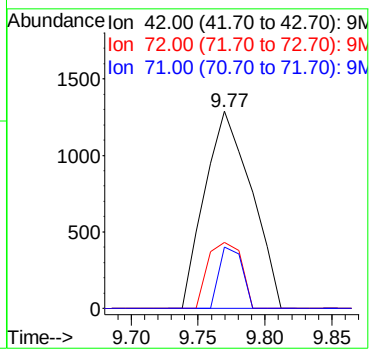

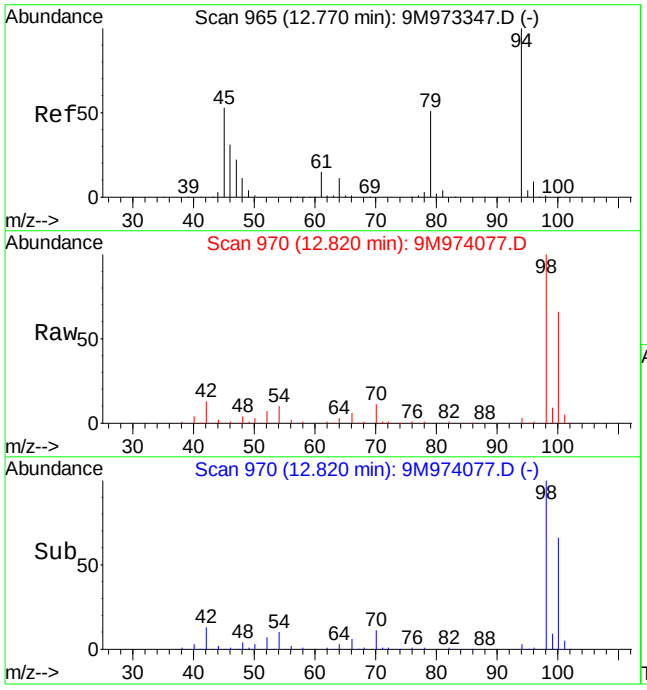

#56
Dimethyl Disulfide
Concen: 2.78 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M974077.D
Acq: 30 Apr 2016 18:48

Tgt Ion: 94 Resp: 16487

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

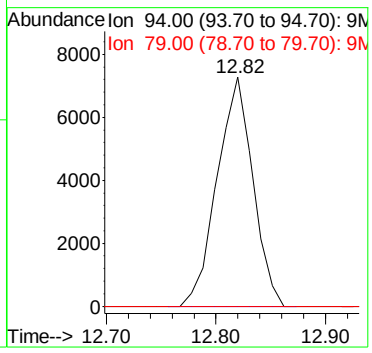

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\043016\9M974078.D Vial: 12
Acq On : 30 Apr 2016 19:18 Operator: ADC
Sample : L16041363-02 A 8260 5.36g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 04 12:27:48 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	604849	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	428718	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.74	152	197425	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	154180	50.4725 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.94%		
43) 1,2-Dichloroethane-d4	10.44	65	171166	53.5258 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 107.06%		
58) Toluene-d8	12.82	98	565722	55.3674 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 110.74%		
79) p-Bromofluorobenzene	16.22	95	204445	59.7872 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 119.58%		

Target Compounds					Qvalue
13) Acetone	6.38	43	30370	20.7756 ug/kg	99
29) 2-Butanone	9.02	43	6990	3.5946 ug/kg	87
36) Tetrahydrofuran	9.77	42	3388	2.4526 ug/kg#	71
56) Dimethyl Disulfide	12.82	94	15208	2.7536 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.08	105	1651	Below Cal #	62

(#) = qualifier out of range (m) = manual integration
9M974078.D 8260-SL.M Wed May 04 12:27:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\043016\9M974078.D Vial: 12
Acq On : 30 Apr 2016 19:18 Operator: ADC
Sample : L16041363-02 A 8260 5.36g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 4 12:27 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

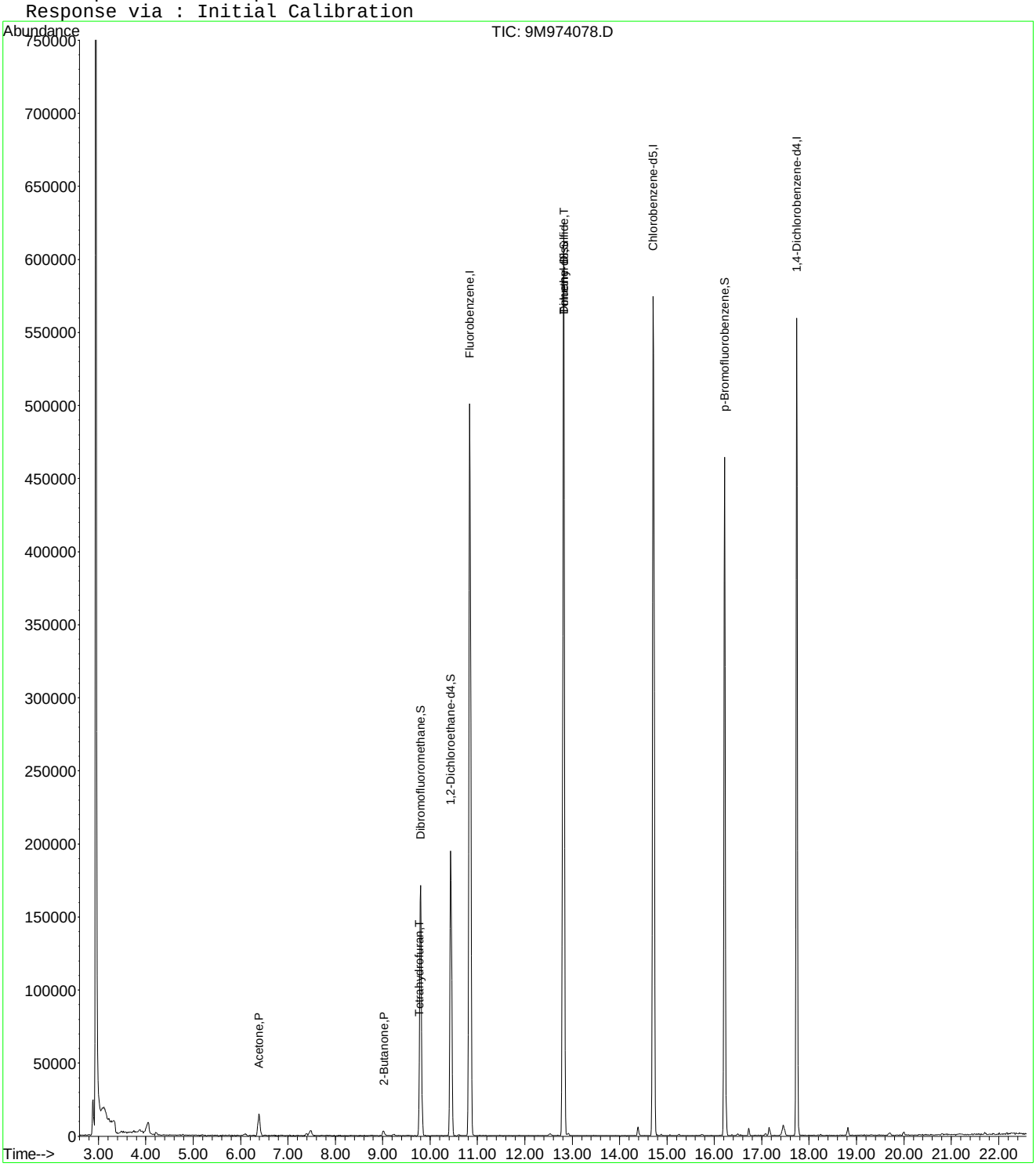

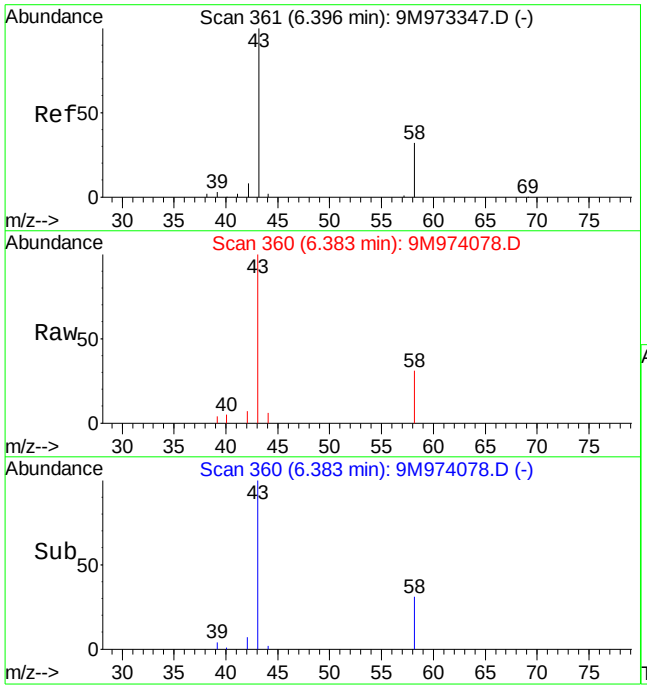

#13
Acetone
Concen: 20.78 ug/kg
RT: 6.38 min Scan# 360
Delta R.T. 0.00 min
Lab File: 9M974078.D
Acq: 30 Apr 2016 19:18

Tgt Ion: 43 Resp: 30370

Ion	Ratio	Lower	Upper
43	100		
58	33.0	20.2	47.2

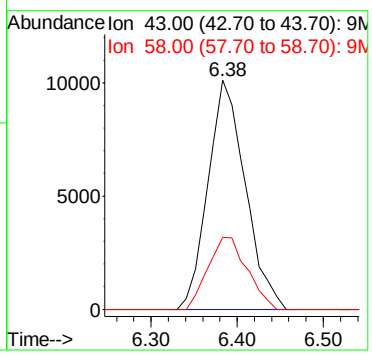

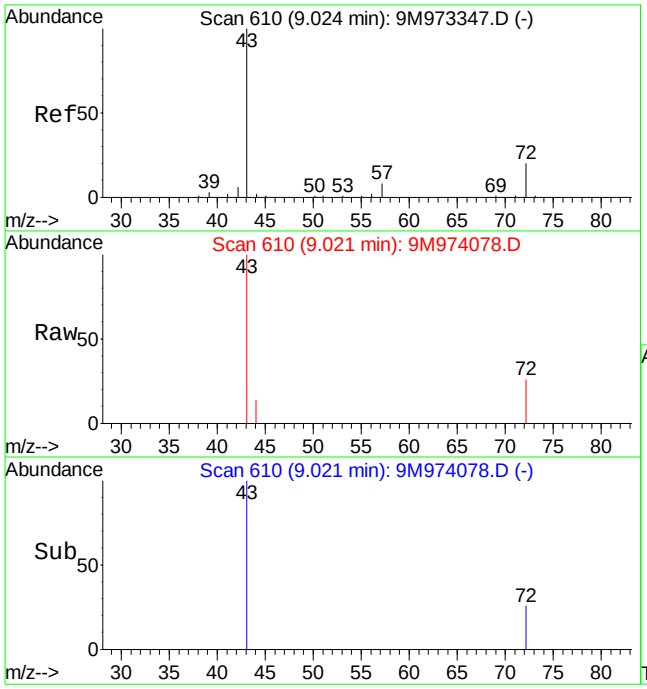

#29
2-Butanone
Concen: 3.59 ug/kg
RT: 9.02 min Scan# 610
Delta R.T. 0.01 min
Lab File: 9M974078.D
Acq: 30 Apr 2016 19:18

Tgt Ion: 43 Resp: 6990

Ion	Ratio	Lower	Upper
43	100		
72	13.3	11.5	26.7

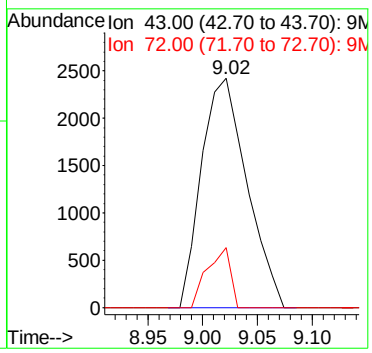

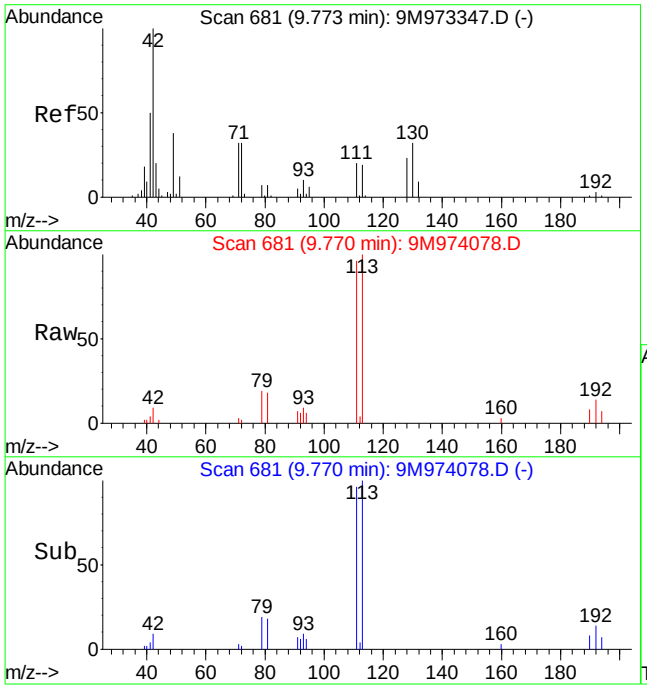

#36
Tetrahydrofuran
Concen: 2.45 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. -0.00 min
Lab File: 9M974078.D
Acq: 30 Apr 2016 19:18

Tgt Ion: 42 Resp: 3388

Ion	Ratio	Lower	Upper
42	100		
72	22.2	19.8	46.2
71	8.7	18.3	42.7#

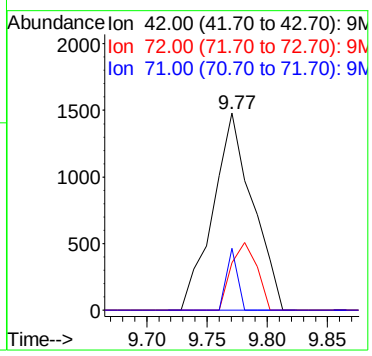

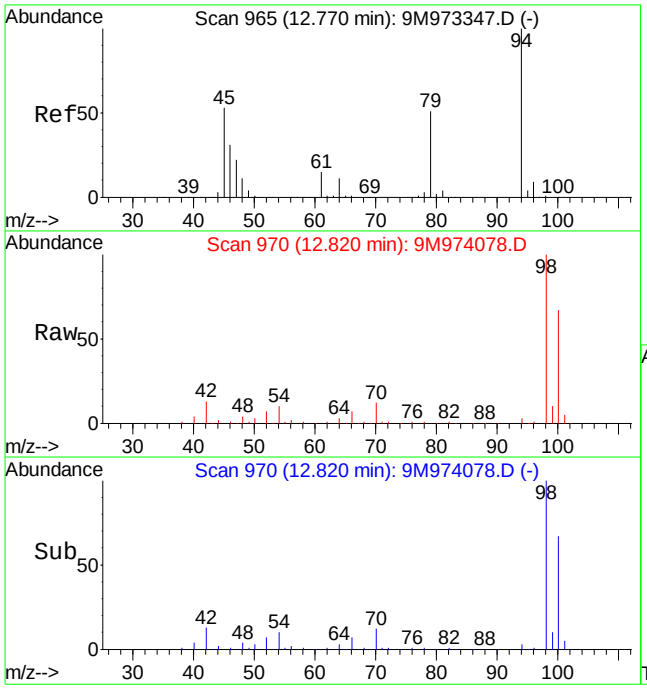

#56
Dimethyl Disulfide
Concen: 2.75 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M974078.D
Acq: 30 Apr 2016 19:18

Tgt Ion: 94 Resp: 15208

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

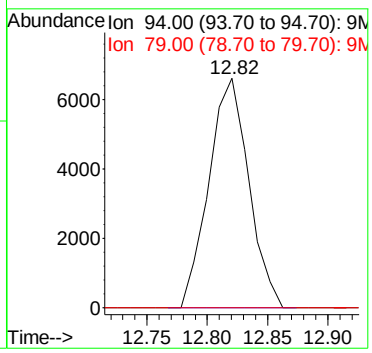

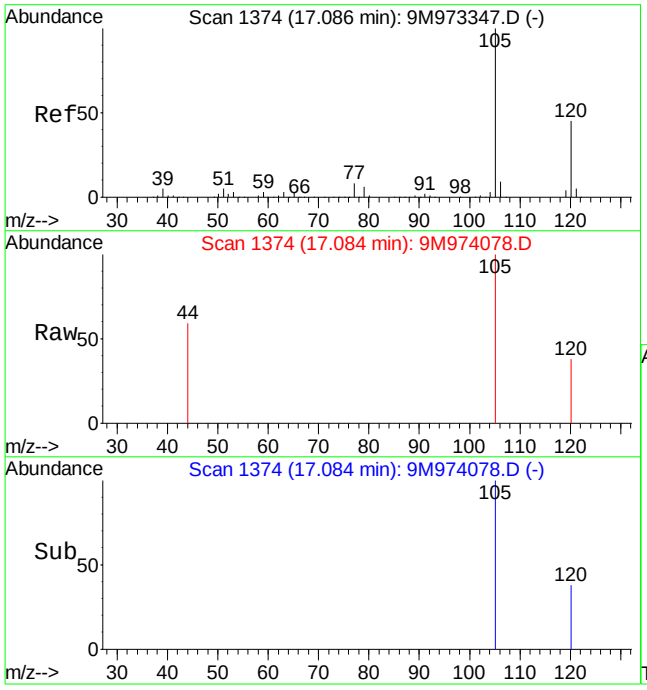

#89
1,2,4-Trimethylbenzene
Concen: Below Cal
RT: 17.08 min Scan# 1374
Delta R.T. 0.00 min
Lab File: 9M974078.D
Acq: 30 Apr 2016 19:18

Tgt Ion:105 Resp: 1651

Ion	Ratio	Lower	Upper
105	100		
120	27.3	33.0	77.0#

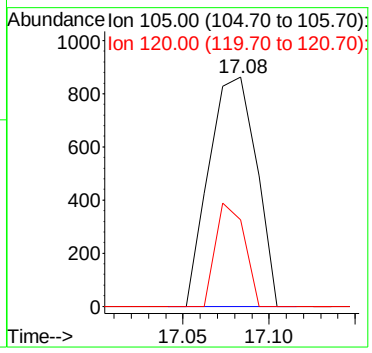

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\043016\9M974079.D Vial: 13
Acq On : 30 Apr 2016 19:48 Operator: ADC
Sample : L16041363-03 A 8260 4.93g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 04 12:27:49 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	575339	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	421446	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.74	152	196361	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	155073	53.3686 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 106.74%		
43) 1,2-Dichloroethane-d4	10.43	65	183717	60.3974 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 120.80%#		
58) Toluene-d8	12.82	98	559733	55.7265 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 111.46%		
79) p-Bromofluorobenzene	16.22	95	208691	61.3595 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 122.72%#		

Target Compounds					Qvalue
3) Chloromethane	3.73	50	1625	0.4005 ug/kg	89
13) Acetone	6.39	43	3746	Below Cal #	63
15) Tert-Butyl Alcohol	6.73	59	211	0.4181 ug/kg#	61
36) Tetrahydrofuran	9.78	42	2994	2.2786 ug/kg#	66
56) Dimethyl Disulfide	12.82	94	14746	2.8069 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.07	105	1323	Below Cal #	48

(#) = qualifier out of range (m) = manual integration
9M974079.D 8260-SL.M Wed May 04 12:27:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\043016\9M974079.D Vial: 13
Acq On : 30 Apr 2016 19:48 Operator: ADC
Sample : L16041363-03 A 8260 4.93g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 4 12:27 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

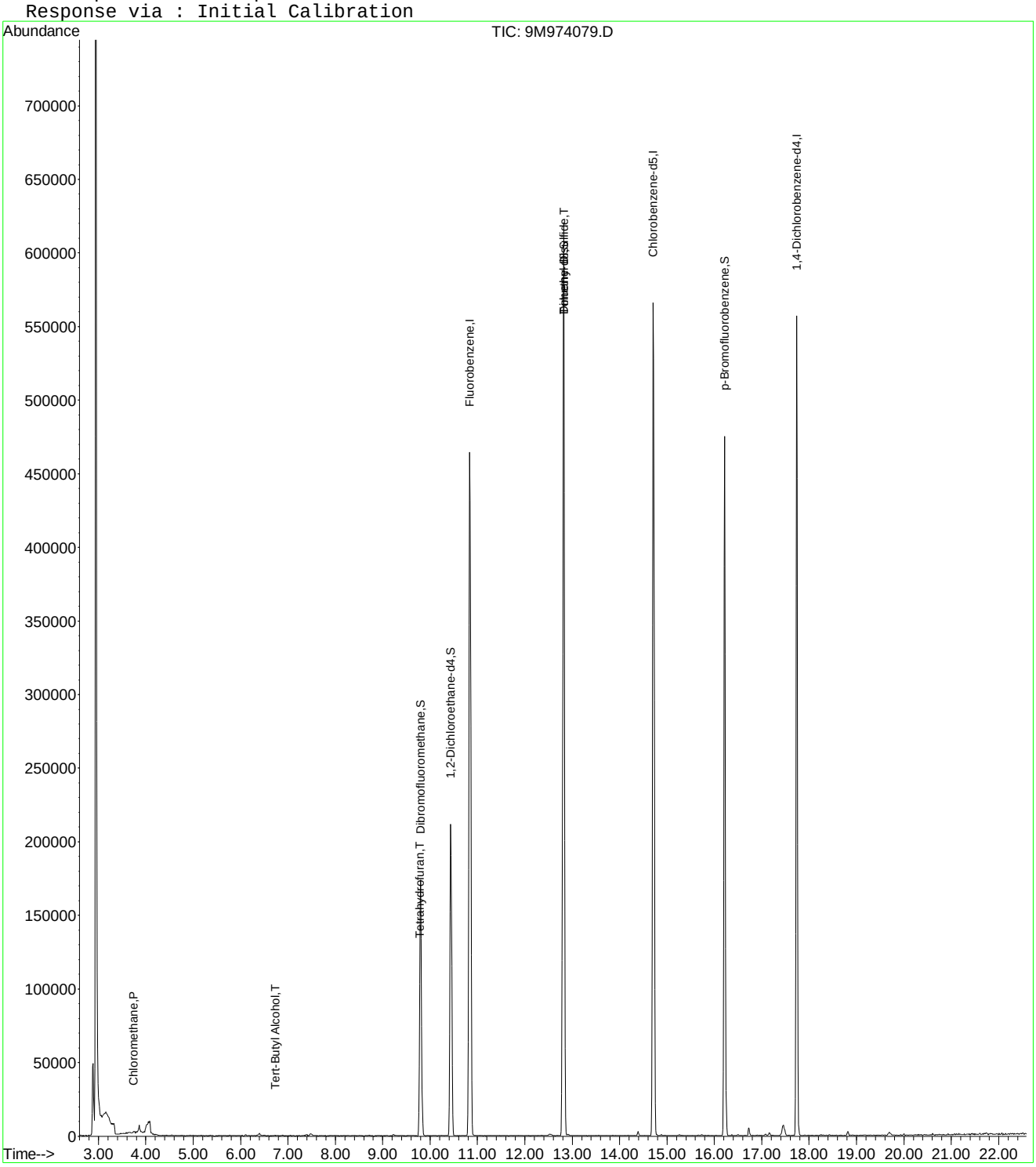

9M974079.D 8260-SL.M Wed May 04 12:27:49 2016 Page 2

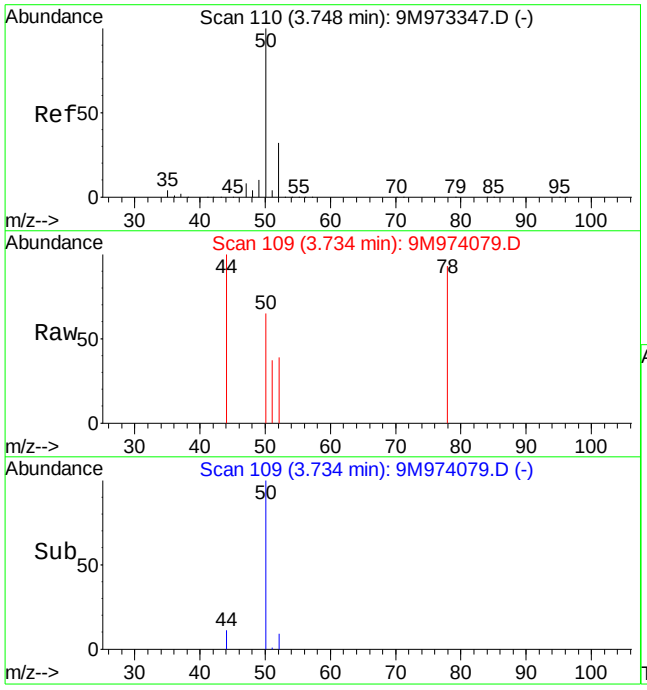

#3
Chloromethane
Concen: 0.40 ug/kg
RT: 3.73 min Scan# 109
Delta R.T. -0.01 min
Lab File: 9M974079.D
Acq: 30 Apr 2016 19:48

Tgt Ion: 50 Resp: 1625

Ion	Ratio	Lower	Upper
50	100		
52	39.2	19.9	46.3

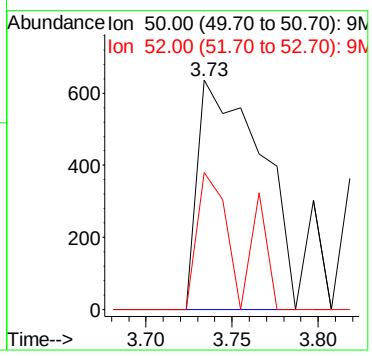

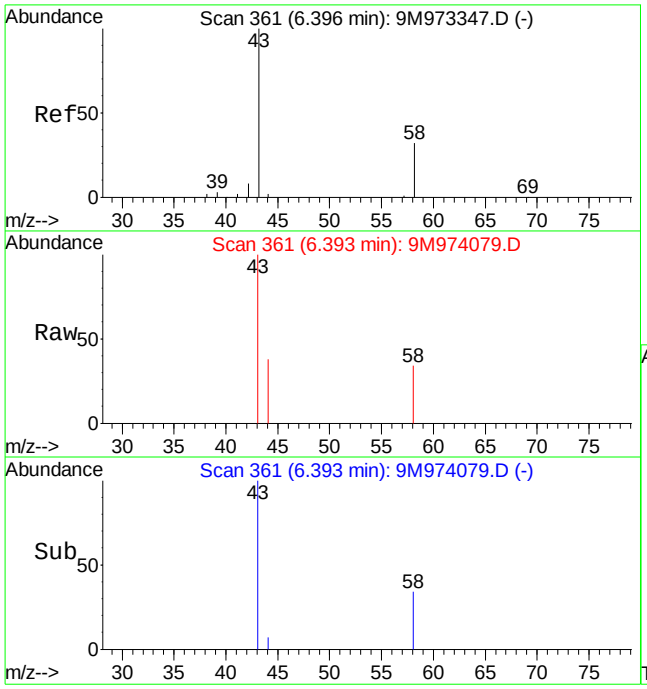

#13
Acetone
Concen: Below Cal
RT: 6.39 min Scan# 361
Delta R.T. 0.01 min
Lab File: 9M974079.D
Acq: 30 Apr 2016 19:48

Tgt Ion: 43 Resp: 3746

Ion	Ratio	Lower	Upper
43	100		
58	12.5	20.2	47.2#

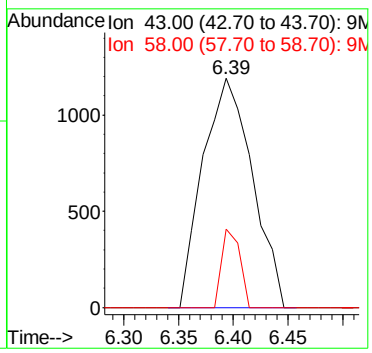

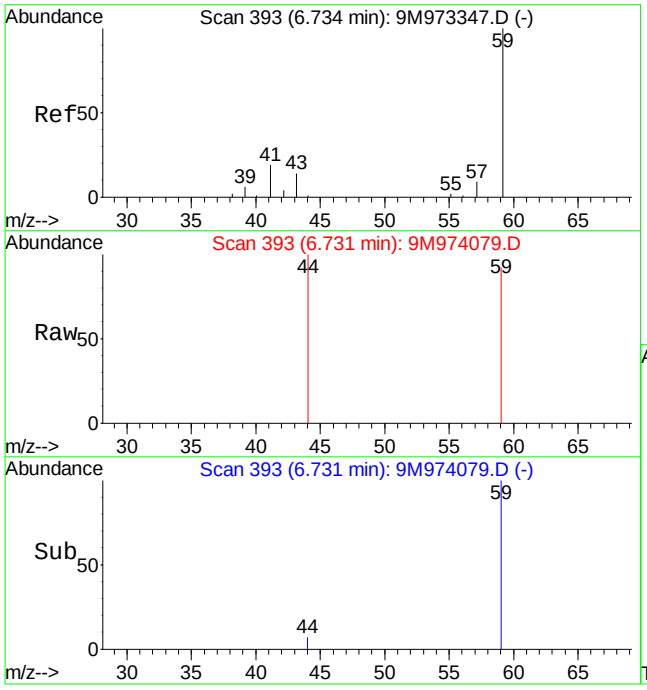

#15
Tert-Butyl Alcohol
Concen: 0.42 ug/kg
RT: 6.73 min Scan# 393
Delta R.T. 0.01 min
Lab File: 9M974079.D
Acq: 30 Apr 2016 19:48

Tgt Ion: 59 Resp: 211

Ion	Ratio	Lower	Upper
59	100		
41	0.0	12.4	29.0#
57	0.0	6.1	14.1#

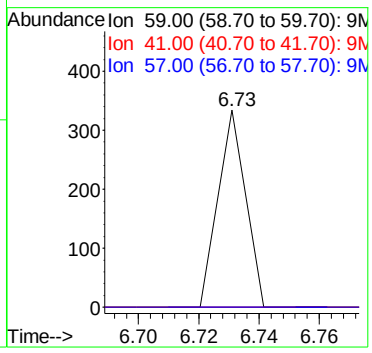

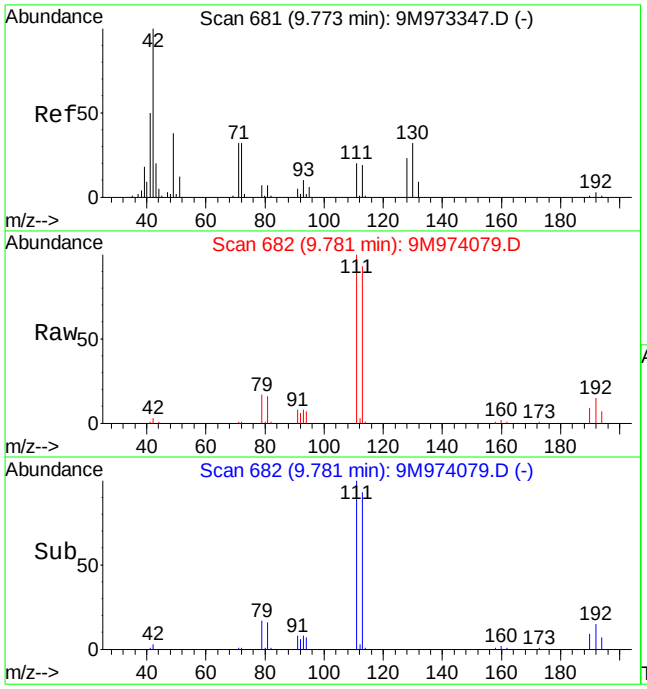

#36
Tetrahydrofuran
Concen: 2.28 ug/kg
RT: 9.78 min Scan# 682
Delta R.T. 0.01 min
Lab File: 9M974079.D
Acq: 30 Apr 2016 19:48

Tgt Ion: 42 Resp: 2994

Ion	Ratio	Lower	Upper
42	100		
72	13.1	19.8	46.2#
71	13.0	18.3	42.7#

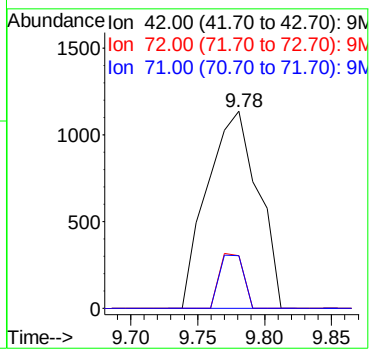

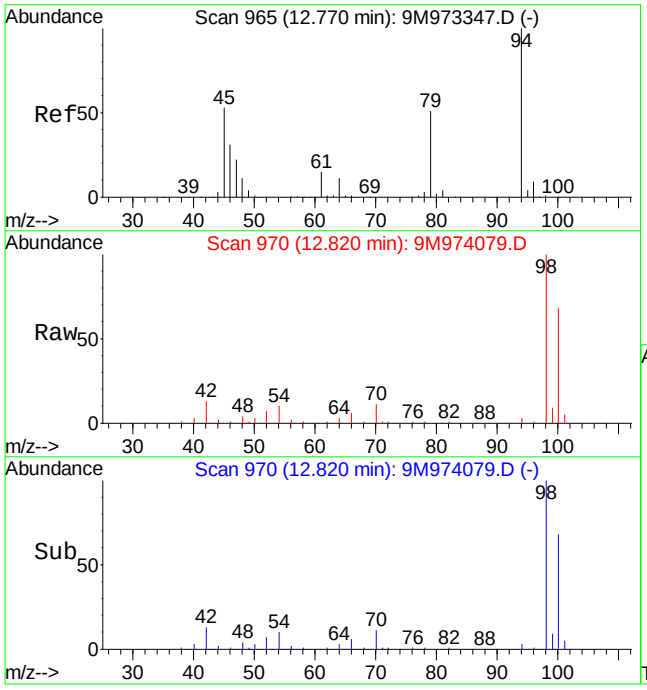

#56
Dimethyl Disulfide
Concen: 2.81 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M974079.D
Acq: 30 Apr 2016 19:48

Tgt Ion: 94 Resp: 14746

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

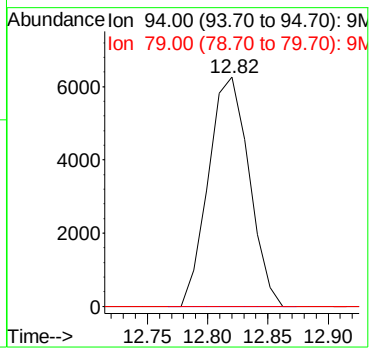

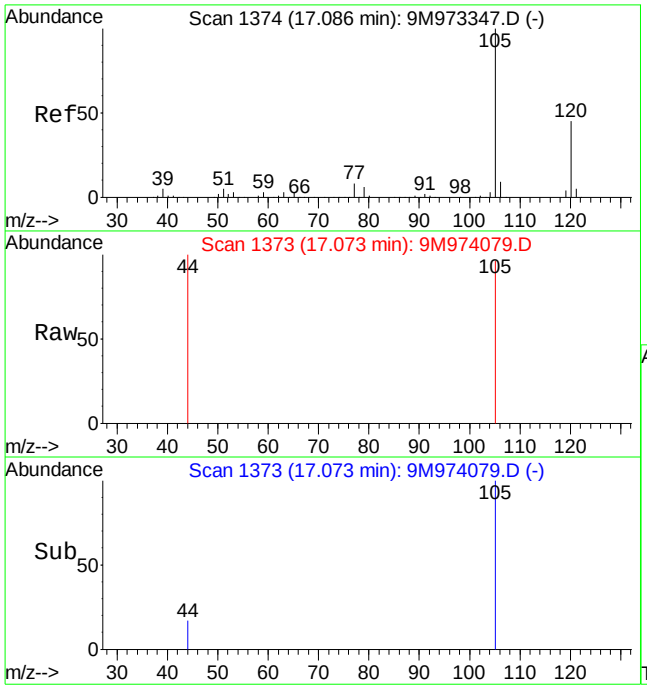

#89
1,2,4-Trimethylbenzene
Concen: Below Cal
RT: 17.07 min Scan# 1373
Delta R.T. -0.01 min
Lab File: 9M974079.D
Acq: 30 Apr 2016 19:48

Tgt Ion:105 Resp: 1323

Ion	Ratio	Lower	Upper
105	100		
120	17.3	33.0	77.0#

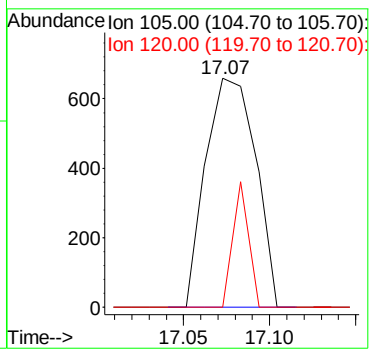

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\043016\9M974080.D Vial: 14
Acq On : 30 Apr 2016 20:18 Operator: ADC
Sample : L16041363-04 A 8260 4.92g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 04 12:27:50 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	527759	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	379392	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.74	152	175209	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	144423	54.1844 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 108.36%		
43) 1,2-Dichloroethane-d4	10.43	65	170049	60.9441 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 121.88%#		
58) Toluene-d8	12.82	98	497202	54.9880 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 109.98%		
79) p-Bromofluorobenzene	16.22	95	189269	62.3673 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 124.74%#		

Target Compounds

					Qvalue
3) Chloromethane	3.74	50	1661	0.4463 ug/kg	89
13) Acetone	6.40	43	2743	Below Cal #	53
36) Tetrahydrofuran	9.77	42	2328	1.9314 ug/kg#	54
56) Dimethyl Disulfide	12.82	94	12845	2.6655 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.07	105	938	Below Cal	89

(#) = qualifier out of range (m) = manual integration
9M974080.D 8260-SL.M Wed May 04 12:27:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\043016\9M974080.D Vial: 14
Acq On : 30 Apr 2016 20:18 Operator: ADC
Sample : L16041363-04 A 8260 4.92g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 4 12:27 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

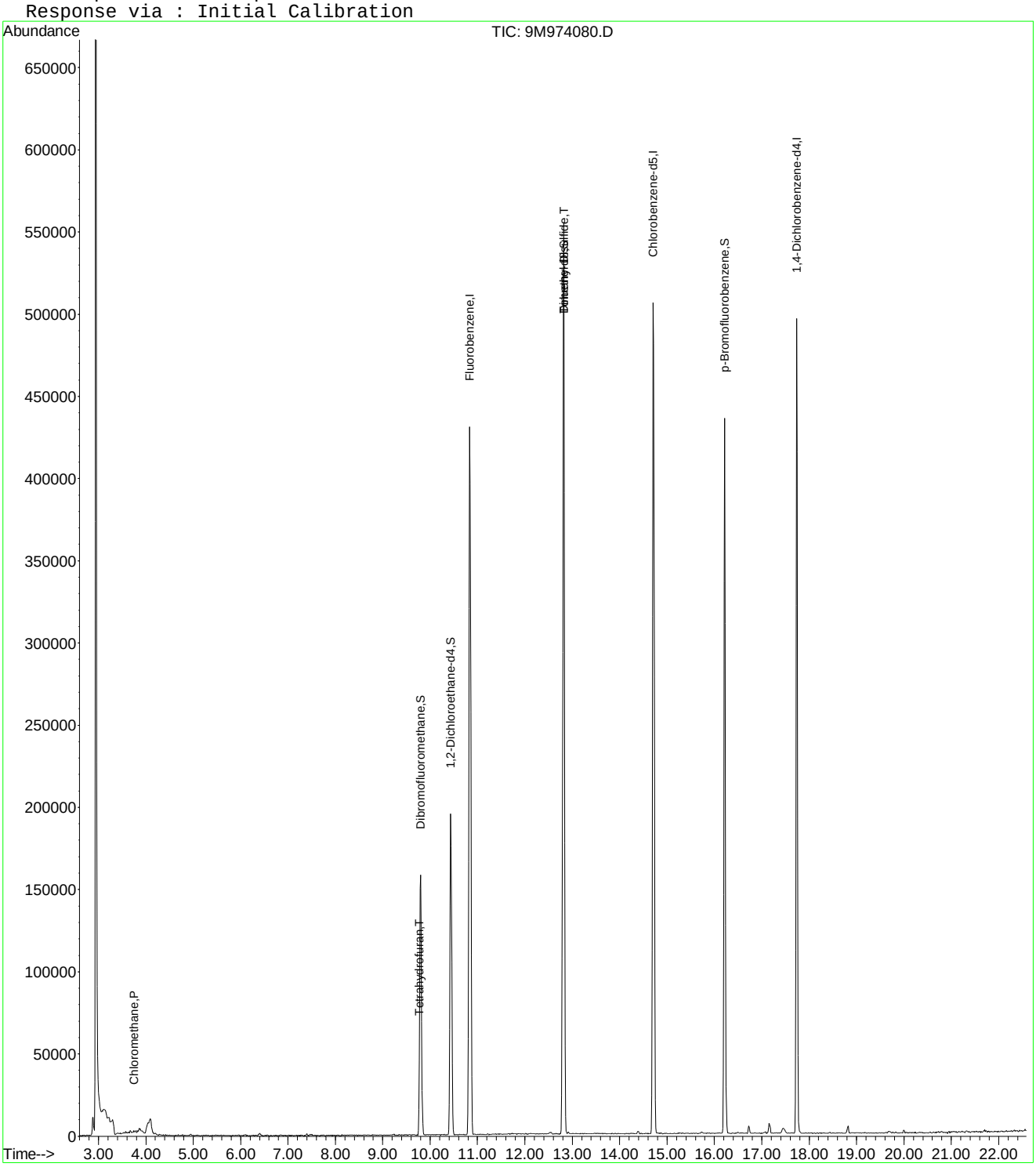

9M974080.D 8260-SL.M Wed May 04 12:27:51 2016 Page 2

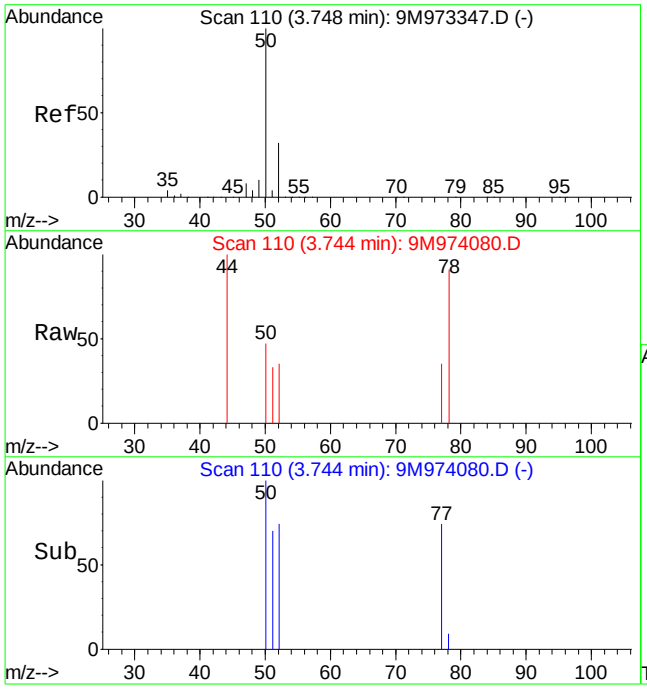

#3
Chloromethane
Concen: 0.45 ug/kg
RT: 3.74 min Scan# 110
Delta R.T. -0.00 min
Lab File: 9M974080.D
Acq: 30 Apr 2016 20:18

Tgt Ion: 50 Resp: 1661

Ion	Ratio	Lower	Upper
50	100		
52	26.6	19.9	46.3

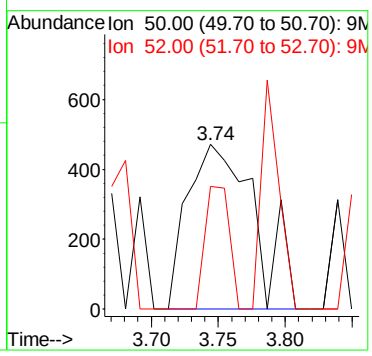

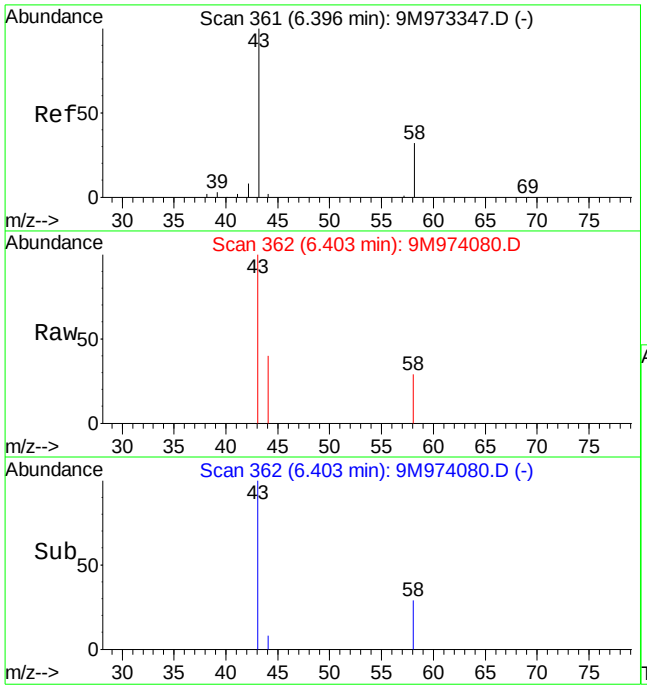

#13
Acetone
Concen: Below Cal
RT: 6.40 min Scan# 362
Delta R.T. 0.02 min
Lab File: 9M974080.D
Acq: 30 Apr 2016 20:18

Tgt Ion: 43 Resp: 2743

Ion	Ratio	Lower	Upper
43	100		
58	7.1	20.2	47.2#

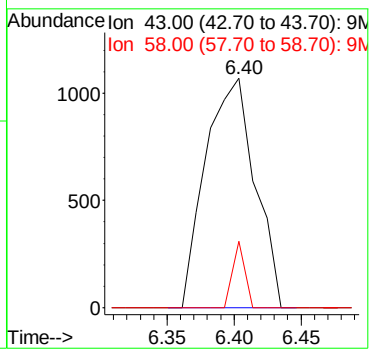

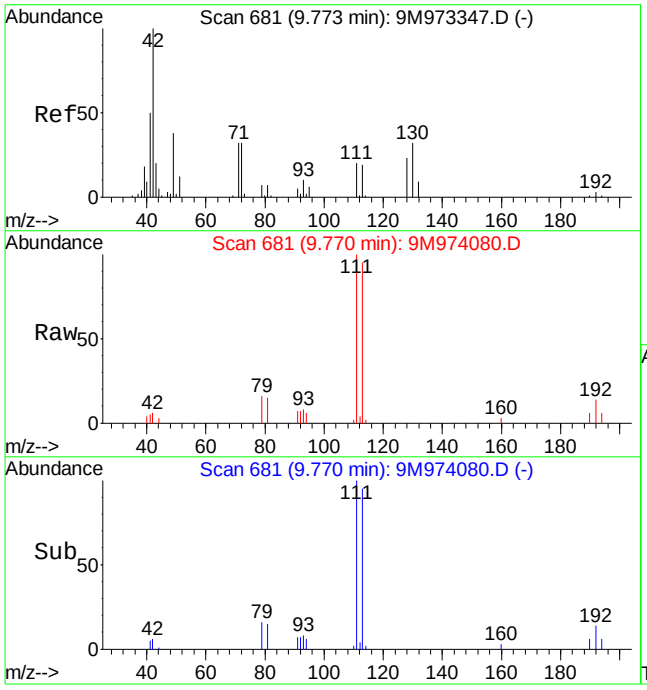

#36
Tetrahydrofuran
Concen: 1.93 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. -0.00 min
Lab File: 9M974080.D
Acq: 30 Apr 2016 20:18

Tgt Ion: 42 Resp: 2328

Ion	Ratio	Lower	Upper
42	100		
72	12.4	19.8	46.2#
71	0.0	18.3	42.7#

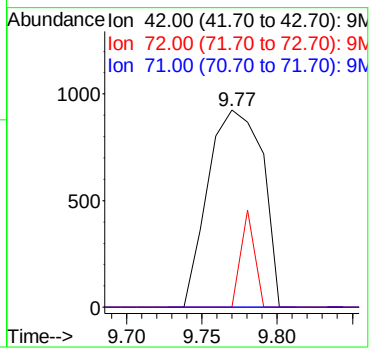

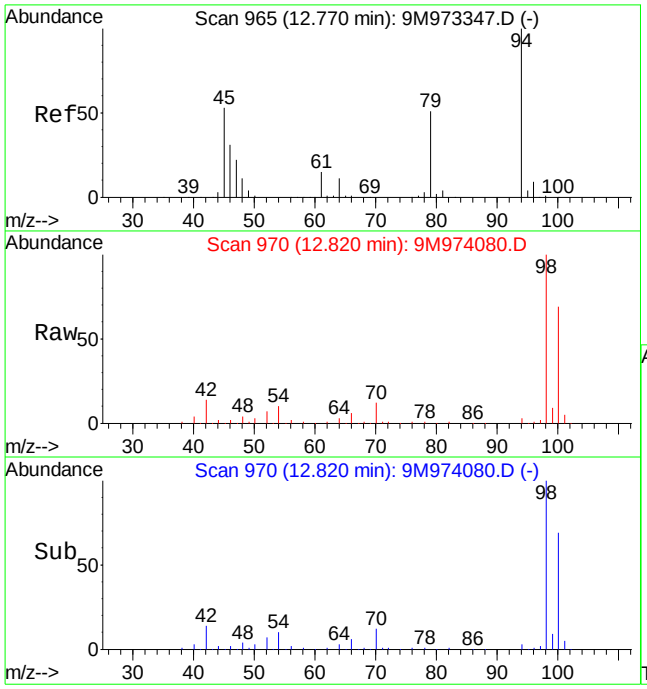

#56
Dimethyl Disulfide
Concen: 2.67 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M974080.D
Acq: 30 Apr 2016 20:18

Tgt Ion: 94 Resp: 12845

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

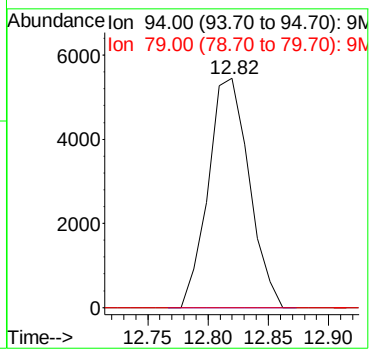

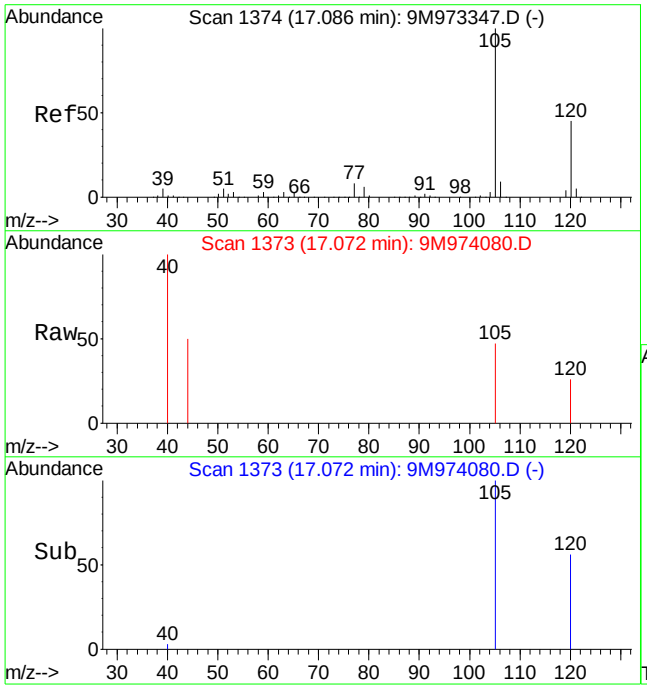

#89
1,2,4-Trimethylbenzene
Concen: Below Cal
RT: 17.07 min Scan# 1373
Delta R.T. -0.01 min
Lab File: 9M974080.D
Acq: 30 Apr 2016 20:18

Tgt Ion:105 Resp: 938

Ion	Ratio	Lower	Upper
105	100		
120	46.8	33.0	77.0

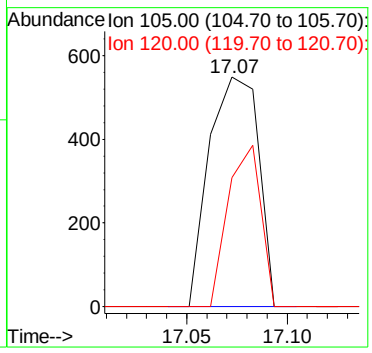

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\043016\9M974081.D Vial: 15
Acq On : 30 Apr 2016 20:48 Operator: ADC
Sample : L16041363-05 A 8260 5.35g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 04 12:27:51 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	567426	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	404510	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.74	152	183185	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	152506	53.2171 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 106.44%		
43) 1,2-Dichloroethane-d4	10.44	65	178523	59.5083 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 119.02%		
58) Toluene-d8	12.82	98	536494	55.6492 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 111.30%		
79) p-Bromofluorobenzene	16.22	95	198328	62.5069 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 125.02%#		

Target Compounds

					Qvalue
3) Chloromethane	3.74	50	1741	0.4351 ug/kg	86
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	1918	0.6213 ug/kg	83
13) Acetone	6.39	43	3572	Below Cal	100
36) Tetrahydrofuran	9.78	42	2912	2.2471 ug/kg	84
56) Dimethyl Disulfide	12.82	94	14319	2.7637 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.07	105	1472	Below Cal	72

(#) = qualifier out of range (m) = manual integration
9M974081.D 8260-SL.M Wed May 04 12:27:52 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\043016\9M974081.D Vial: 15
Acq On : 30 Apr 2016 20:48 Operator: ADC
Sample : L16041363-05 A 8260 5.35g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 4 12:27 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

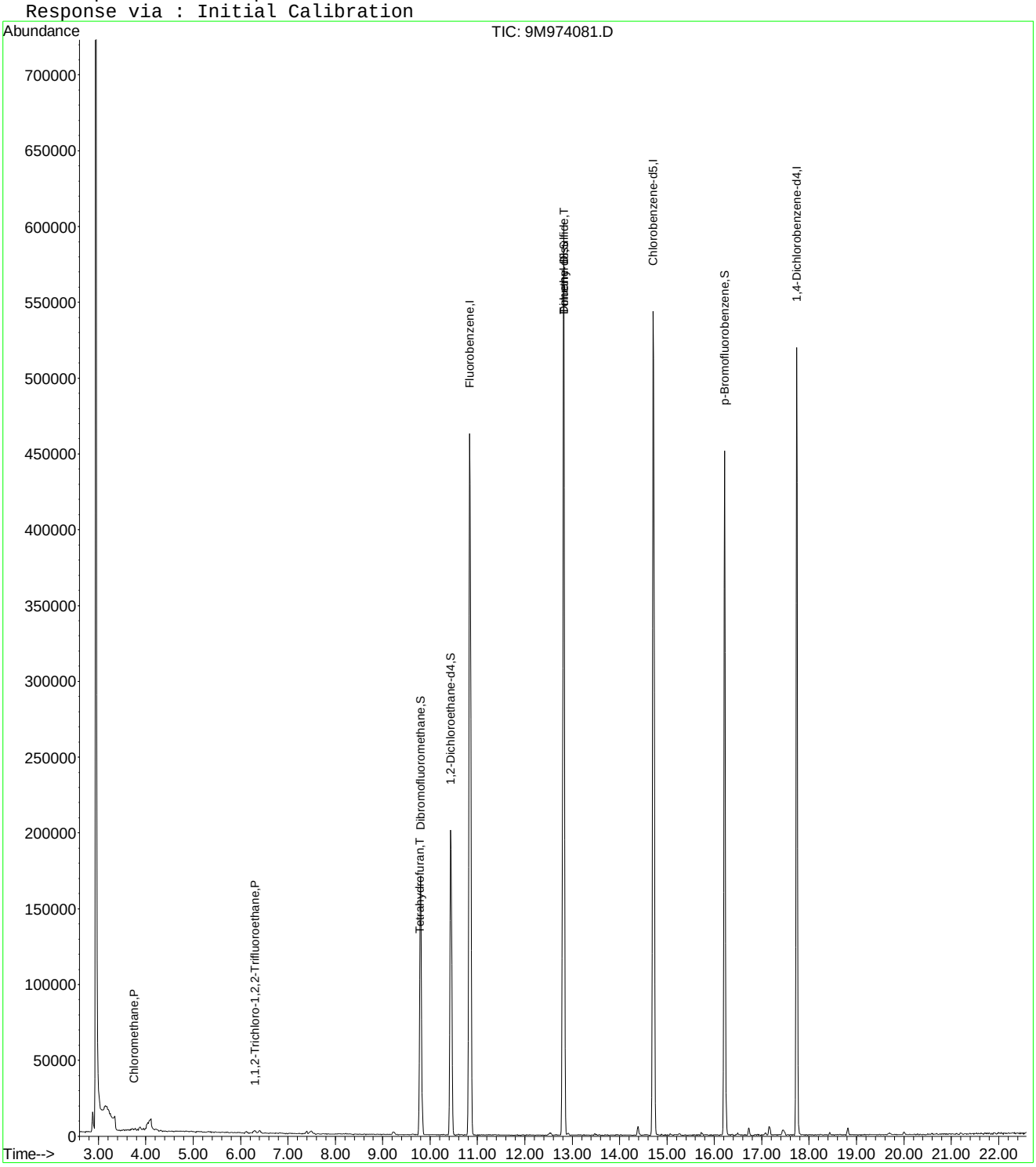

9M974081.D 8260-SL.M Wed May 04 12:27:52 2016 Page 2

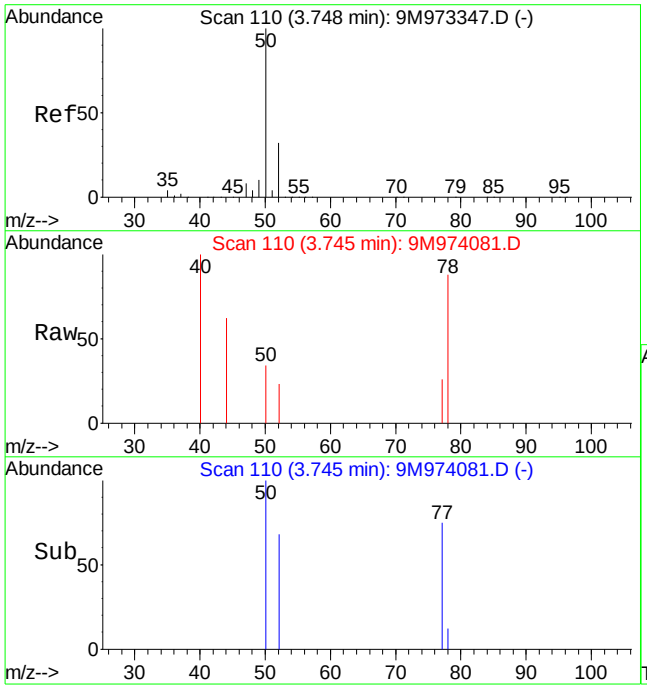

#3
Chloromethane
Concen: 0.44 ug/kg
RT: 3.74 min Scan# 110
Delta R.T. -0.00 min
Lab File: 9M974081.D
Acq: 30 Apr 2016 20:48

Tgt Ion: 50 Resp: 1741

Ion	Ratio	Lower	Upper
50	100		
52	25.3	19.9	46.3

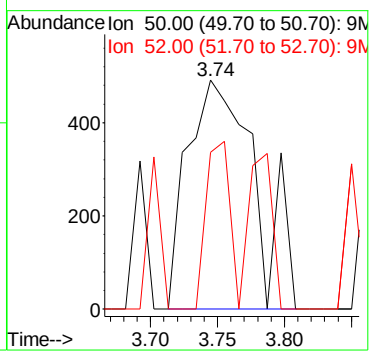

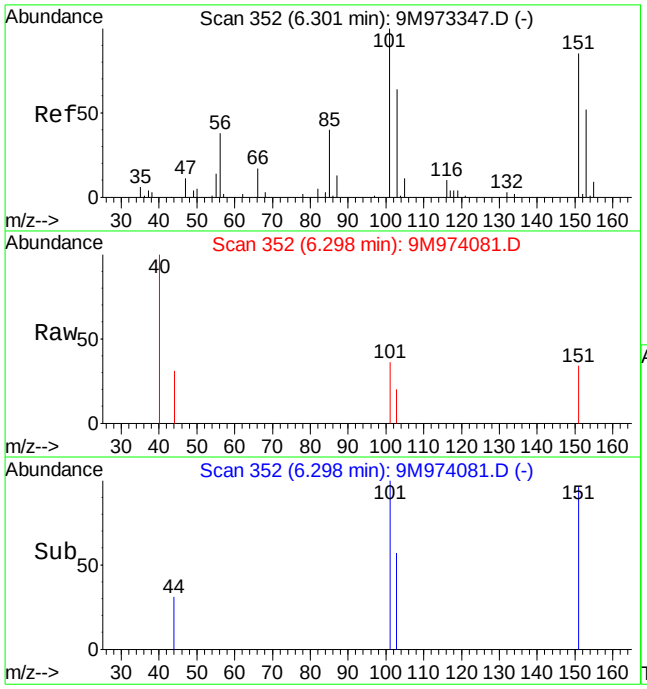

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 0.62 ug/kg
RT: 6.30 min Scan# 352
Delta R.T. -0.00 min
Lab File: 9M974081.D
Acq: 30 Apr 2016 20:48

Tgt Ion:101 Resp: 1918

Ion	Ratio	Lower	Upper
101	100		
151	97.7	42.4	122.4

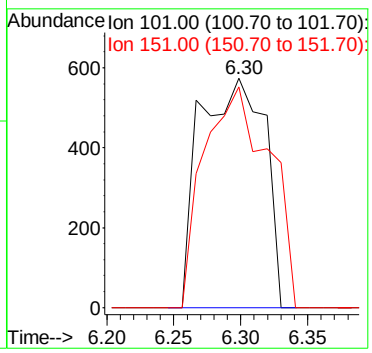

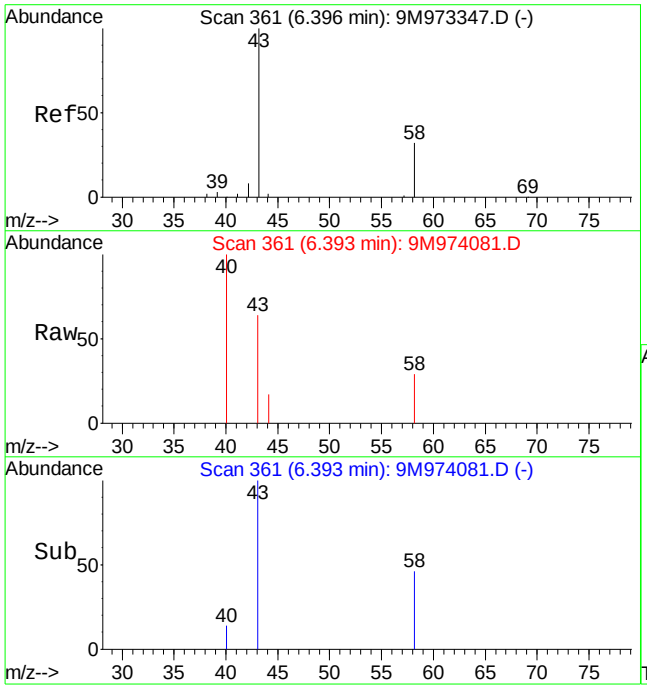

#13
Acetone
Concen: Below Cal
RT: 6.39 min Scan# 361
Delta R.T. 0.01 min
Lab File: 9M974081.D
Acq: 30 Apr 2016 20:48

Tgt Ion: 43 Resp: 3572

Ion	Ratio	Lower	Upper
43	100		
58	33.5	20.2	47.2

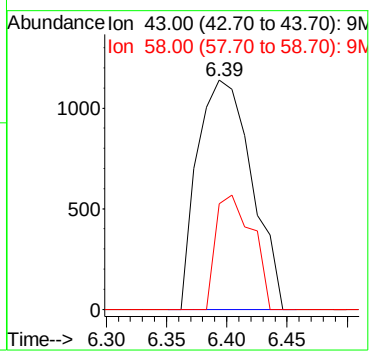

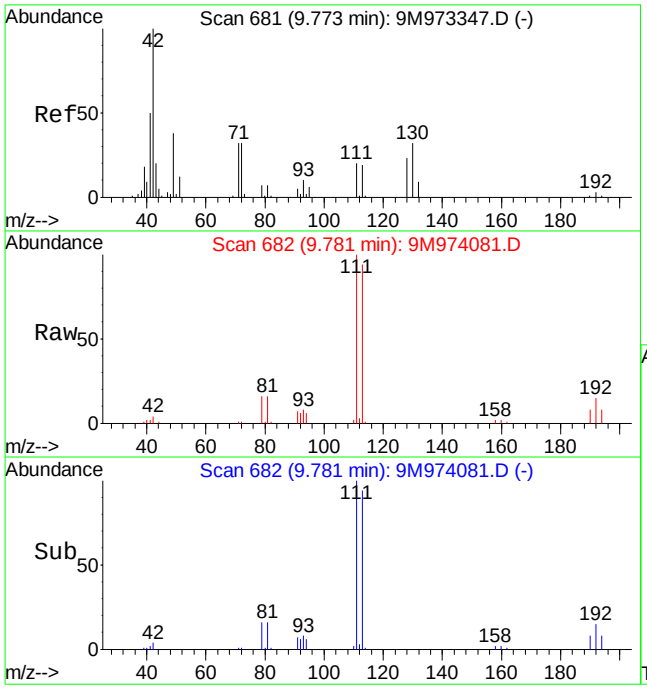

#36
Tetrahydrofuran
Concen: 2.25 ug/kg
RT: 9.78 min Scan# 682
Delta R.T. 0.01 min
Lab File: 9M974081.D
Acq: 30 Apr 2016 20:48

Tgt Ion: 42 Resp: 2912

Ion	Ratio	Lower	Upper
42	100		
72	22.6	19.8	46.2
71	23.1	18.3	42.7

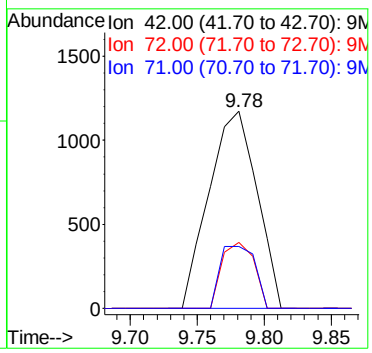

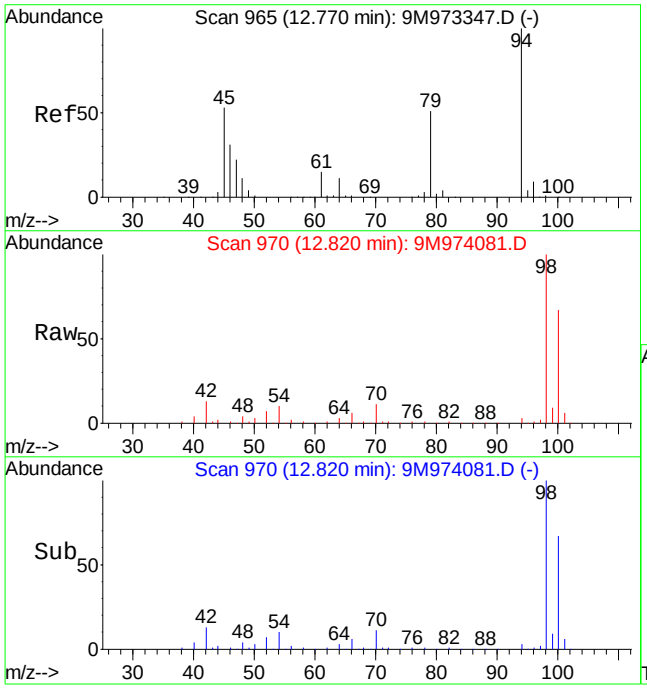

#56
Dimethyl Disulfide
Concen: 2.76 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M974081.D
Acq: 30 Apr 2016 20:48

Tgt Ion: 94 Resp: 14319

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

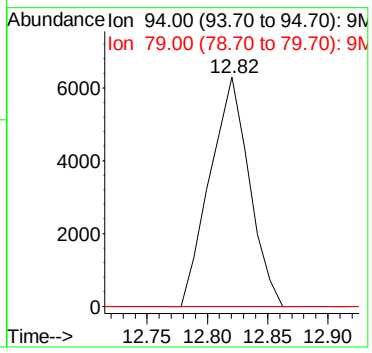

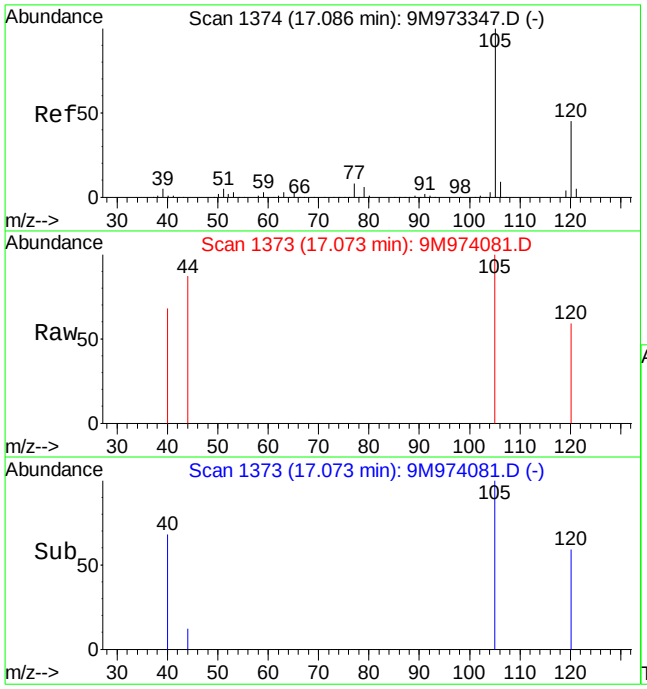

#89
1,2,4-Trimethylbenzene
Concen: Below Cal
RT: 17.07 min Scan# 1373
Delta R.T. -0.01 min
Lab File: 9M974081.D
Acq: 30 Apr 2016 20:48

Tgt Ion:105 Resp: 1472

Ion	Ratio	Lower	Upper
105	100		
120	35.0	33.0	77.0

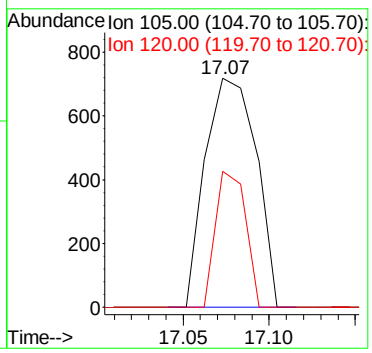

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\043016\9M974082.D Vial: 16
Acq On : 30 Apr 2016 21:19 Operator: ADC
Sample : L16041363-06 A 8260 4.64g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 04 12:27:53 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	552950	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	394106	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	177988	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	145996	52.2792 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.56%		
43) 1,2-Dichloroethane-d4	10.44	65	160040	54.7439 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 109.48%		
58) Toluene-d8	12.81	98	524296	55.8196 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 111.64%		
79) p-Bromofluorobenzene	16.22	95	186335	60.4418 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 120.88%		

Target Compounds					Qvalue
13) Acetone	6.39	43	10338	4.0760 ug/kg	92
15) Tert-Butyl Alcohol	6.71	59	607	1.2516 ug/kg#	61
29) 2-Butanone	9.02	43	1688	0.9495 ug/kg#	58
36) Tetrahydrofuran	9.77	42	3855	3.0526 ug/kg#	71
56) Dimethyl Disulfide	12.81	94	14440	2.8600 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.08	105	2426	Below Cal #	62

(#) = qualifier out of range (m) = manual integration
9M974082.D 8260-SL.M Wed May 04 12:27:53 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\043016\9M974082.D Vial: 16
Acq On : 30 Apr 2016 21:19 Operator: ADC
Sample : L16041363-06 A 8260 4.64g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 4 12:27 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

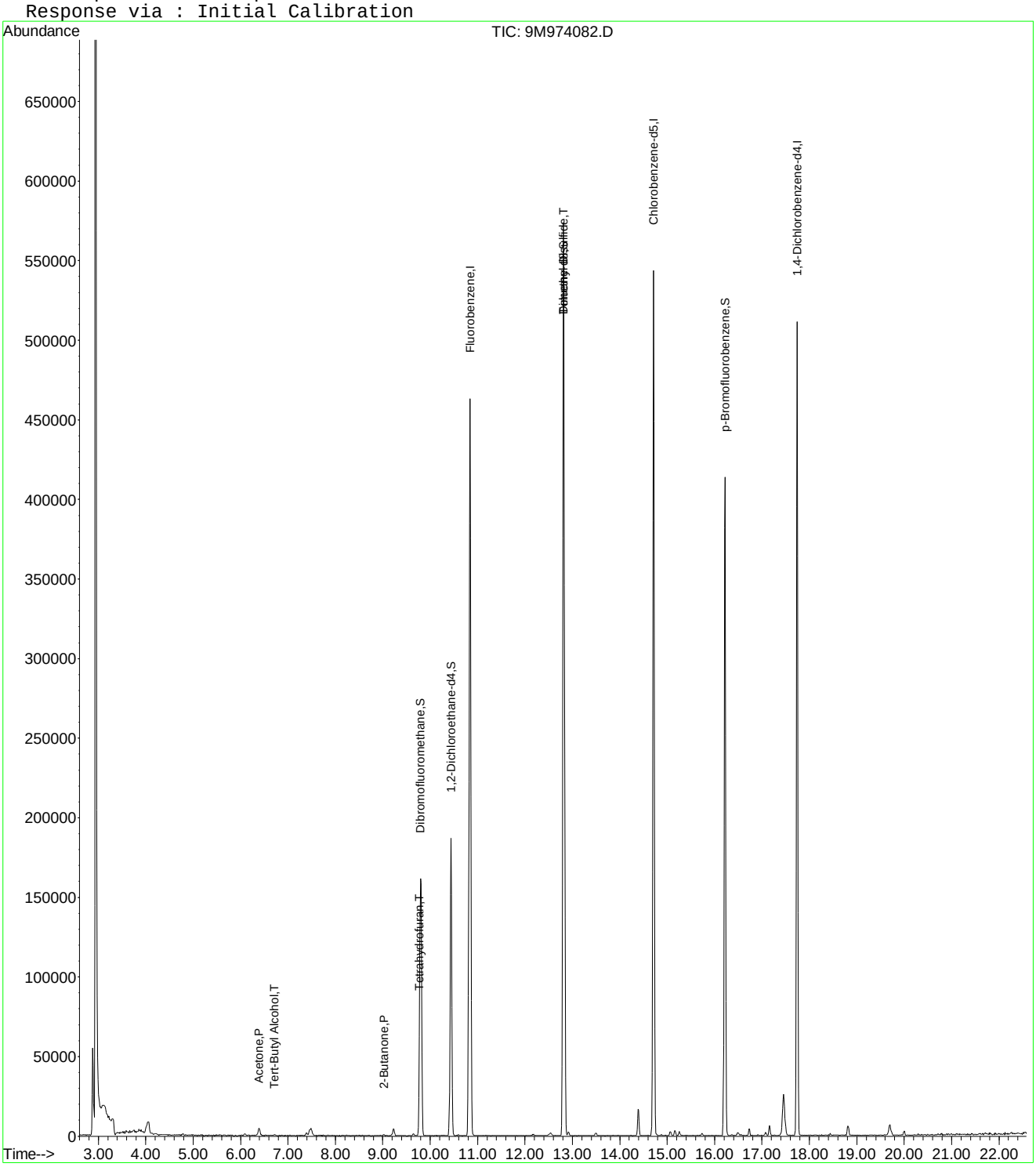

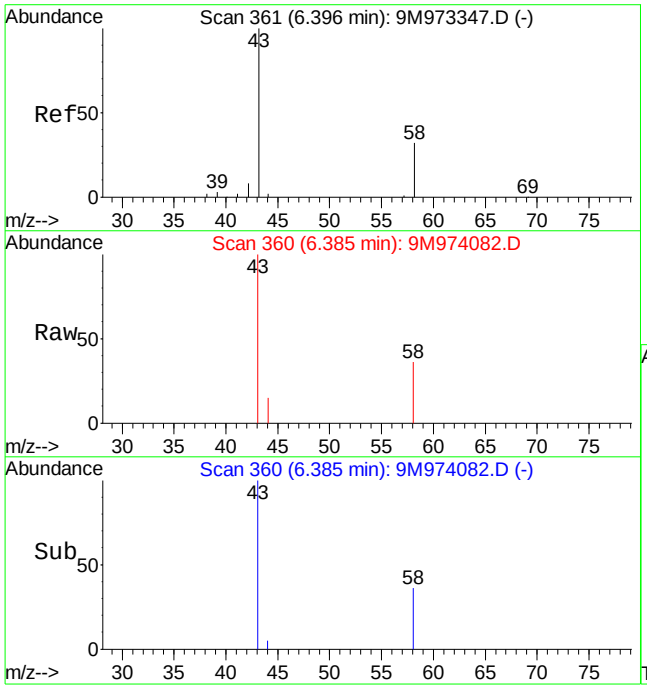

#13
Acetone
Concen: 4.08 ug/kg
RT: 6.39 min Scan# 360
Delta R.T. 0.00 min
Lab File: 9M974082.D
Acq: 30 Apr 2016 21:19

Tgt Ion: 43 Resp: 10338

Ion	Ratio	Lower	Upper
43	100		
58	29.2	20.2	47.2

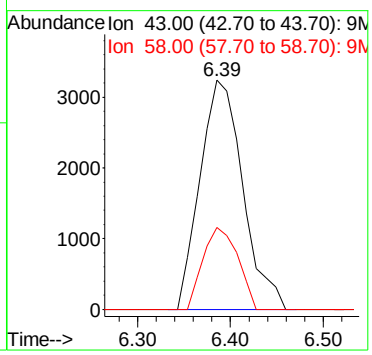

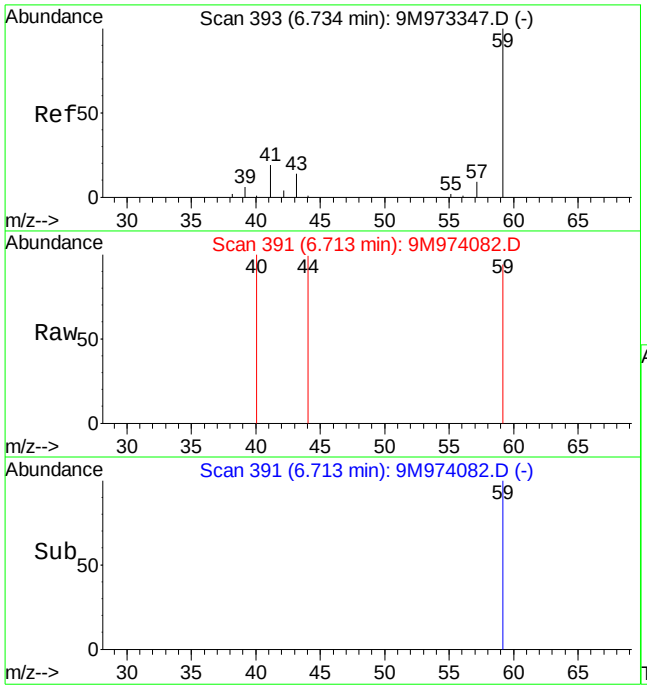

#15
Tert-Butyl Alcohol
Concen: 1.25 ug/kg
RT: 6.71 min Scan# 391
Delta R.T. -0.01 min
Lab File: 9M974082.D
Acq: 30 Apr 2016 21:19

Tgt Ion: 59 Resp: 607

Ion	Ratio	Lower	Upper
59	100		
41	0.0	12.4	29.0#
57	0.0	6.1	14.1#

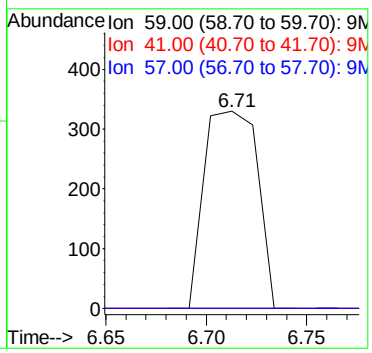

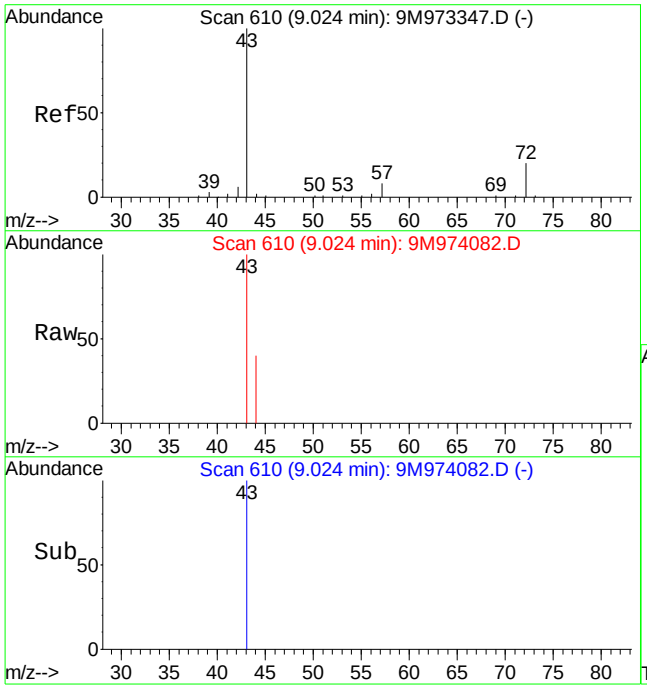

#29
2-Butanone
Concen: 0.95 ug/kg
RT: 9.02 min Scan# 610
Delta R.T. 0.01 min
Lab File: 9M974082.D
Acq: 30 Apr 2016 21:19

Tgt Ion: 43 Resp: 1688

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.5	26.7#

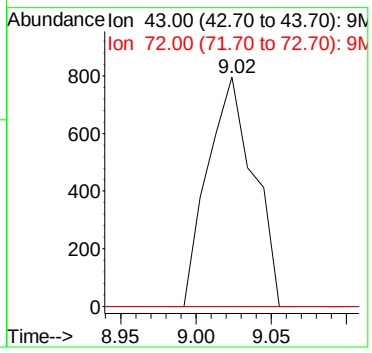

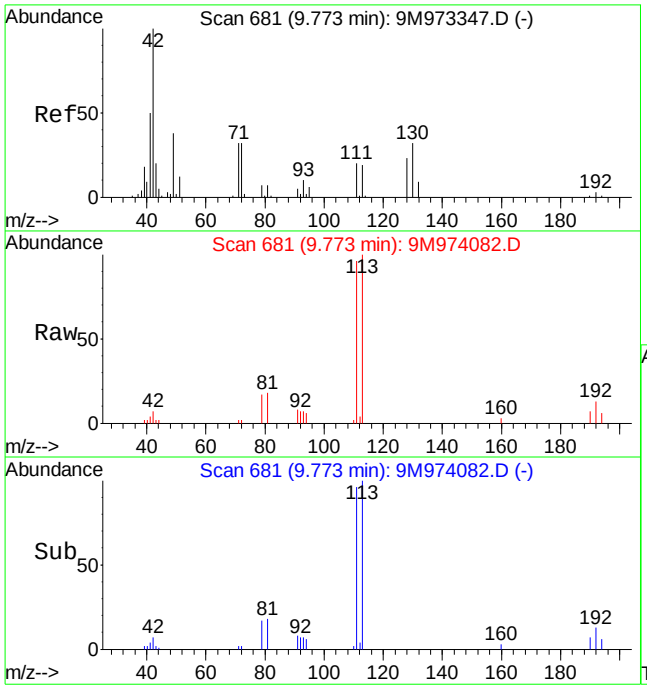

#36
Tetrahydrofuran
Concen: 3.05 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. 0.00 min
Lab File: 9M974082.D
Acq: 30 Apr 2016 21:19

Tgt Ion: 42 Resp: 3855

Ion	Ratio	Lower	Upper
42	100		
72	19.0	19.8	46.2#
71	12.7	18.3	42.7#

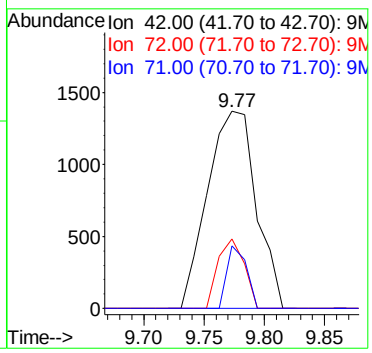

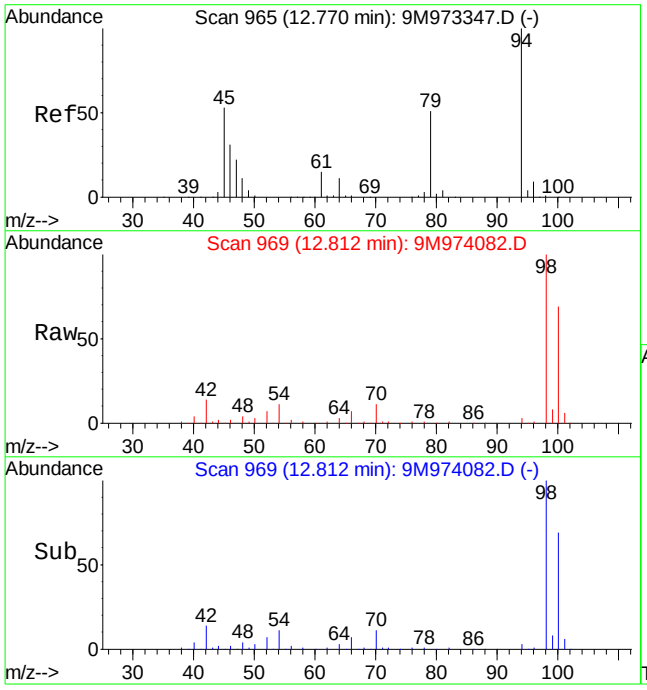

#56
Dimethyl Disulfide
Concen: 2.86 ug/kg
RT: 12.81 min Scan# 969
Delta R.T. 0.04 min
Lab File: 9M974082.D
Acq: 30 Apr 2016 21:19

Tgt Ion: 94 Resp: 14440

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

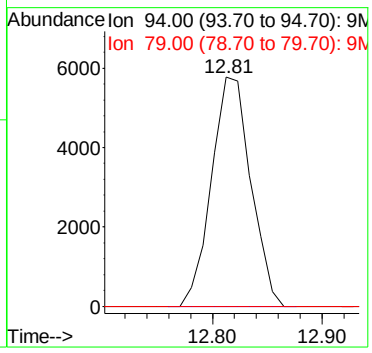

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\043016\9M974083.D Vial: 17
Acq On : 30 Apr 2016 21:49 Operator: ADC
Sample : L16041363-07 A RS 8260 5.06g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 04 12:27:54 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	606330	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	429799	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.74	152	189873	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	159313	52.0254 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.06%		
43) 1,2-Dichloroethane-d4	10.44	65	172557	53.8290 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 107.66%		
58) Toluene-d8	12.82	98	577439	56.3720 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 112.74%		
79) p-Bromofluorobenzene	16.22	95	206832	62.8909 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 125.78%#		

Target Compounds					Qvalue
13) Acetone	6.38	43	14258	6.6297 ug/kg	95
29) 2-Butanone	9.02	43	1357	0.6961 ug/kg#	58
36) Tetrahydrofuran	9.77	42	2952	2.1318 ug/kg	85
56) Dimethyl Disulfide	12.82	94	15857	2.8641 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.08	105	2120	Below Cal #	62

(#) = qualifier out of range (m) = manual integration
9M974083.D 8260-SL.M Wed May 04 12:27:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\043016\9M974083.D Vial: 17
Acq On : 30 Apr 2016 21:49 Operator: ADC
Sample : L16041363-07 A RS 8260 5.06g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 4 12:27 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

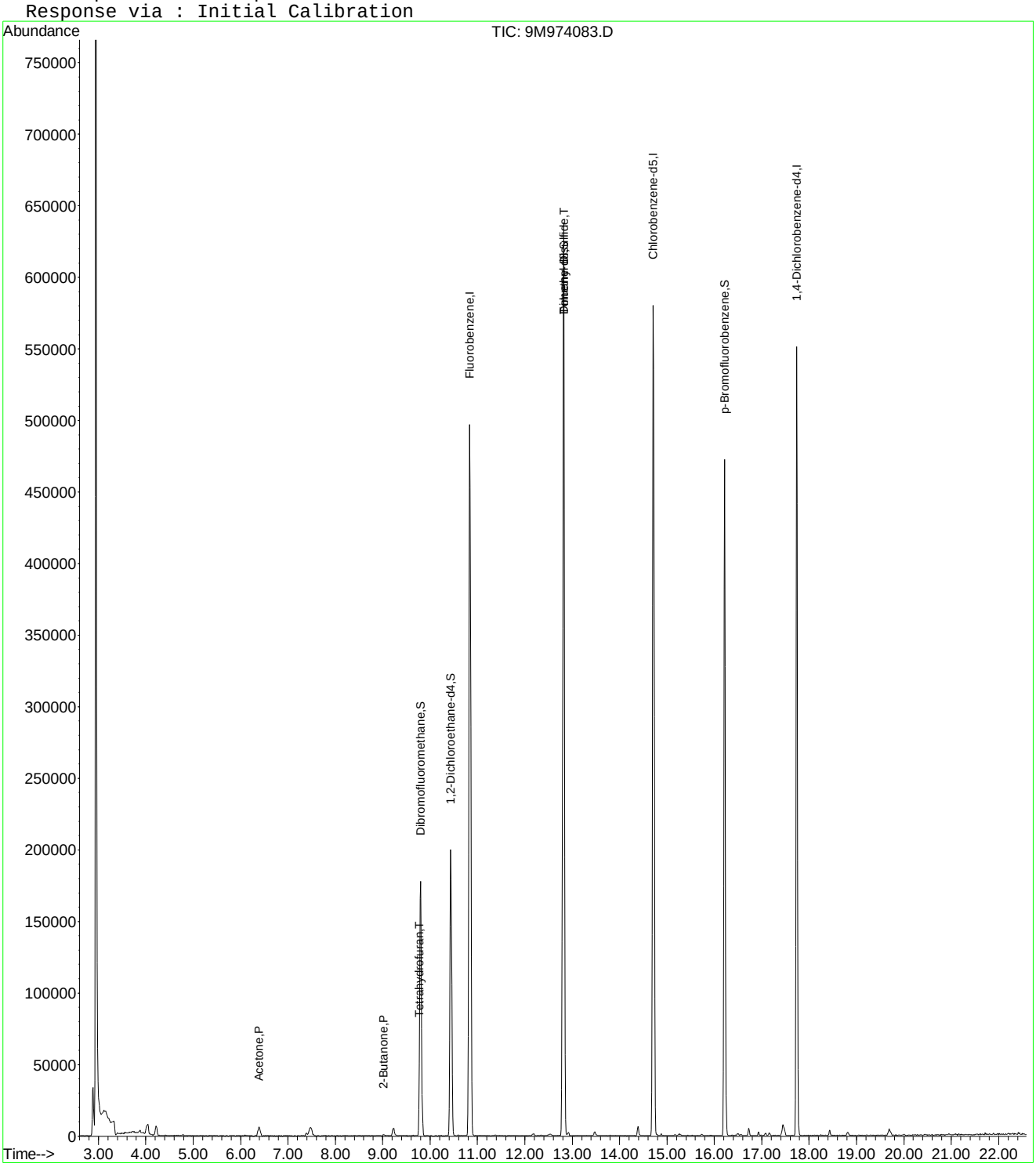

9M974083.D 8260-SL.M Wed May 04 12:27:54 2016 Page 2

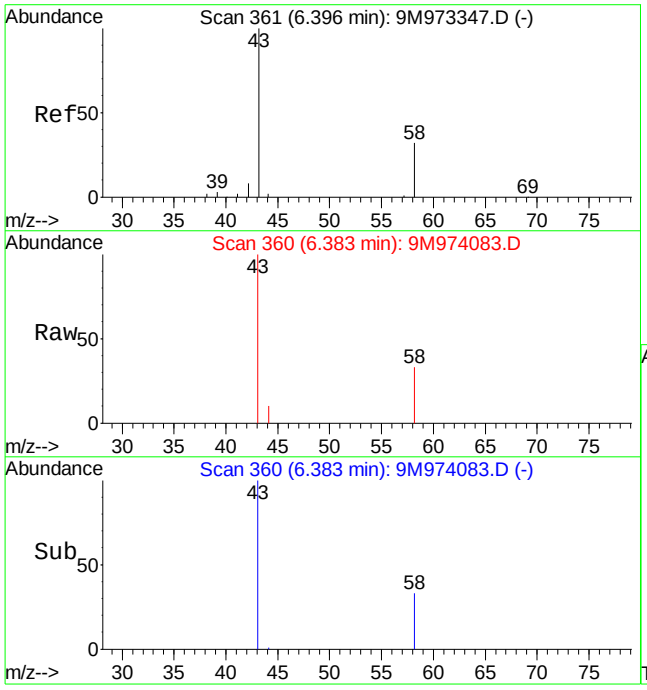

#13
Acetone
Concen: 6.63 ug/kg
RT: 6.38 min Scan# 360
Delta R.T. 0.00 min
Lab File: 9M974083.D
Acq: 30 Apr 2016 21:49

Tgt Ion: 43 Resp: 14258

Ion	Ratio	Lower	Upper
43	100		
58	36.4	20.2	47.2

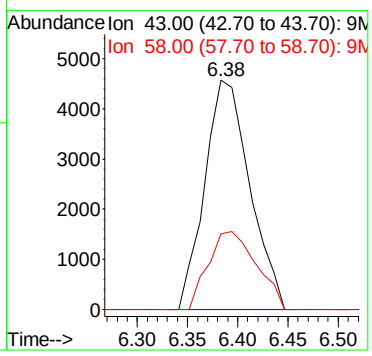

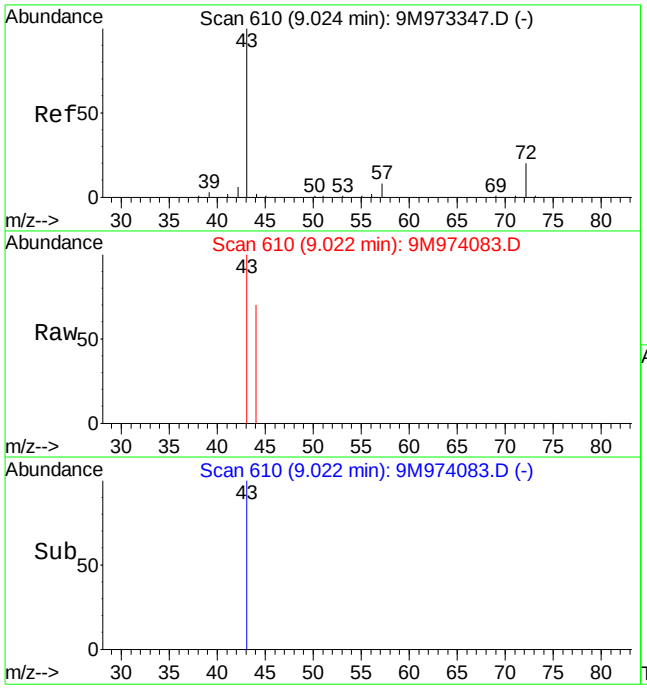

#29
2-Butanone
Concen: 0.70 ug/kg
RT: 9.02 min Scan# 610
Delta R.T. 0.01 min
Lab File: 9M974083.D
Acq: 30 Apr 2016 21:49

Tgt Ion: 43 Resp: 1357

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.5	26.7#

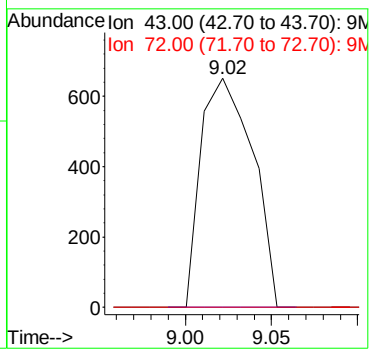

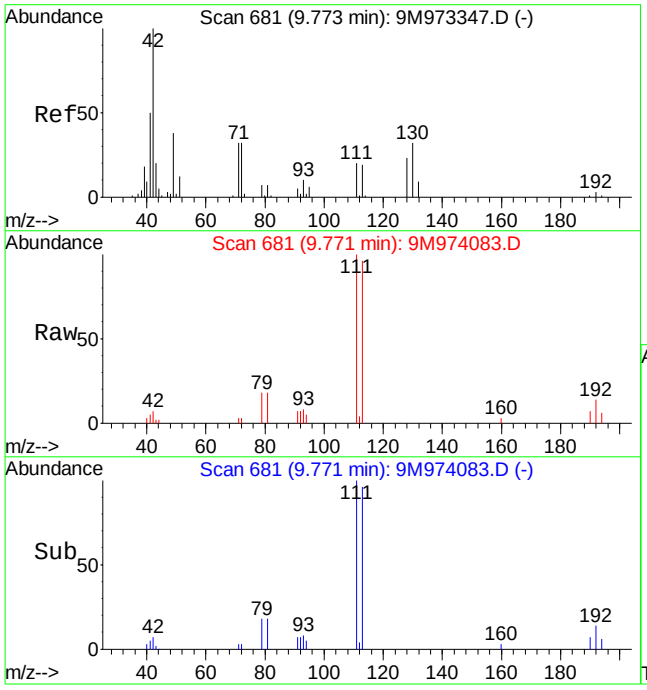

#36
Tetrahydrofuran
Concen: 2.13 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. 0.00 min
Lab File: 9M974083.D
Acq: 30 Apr 2016 21:49

Tgt Ion: 42 Resp: 2952

Ion	Ratio	Lower	Upper
42	100		
72	23.2	19.8	46.2
71	23.5	18.3	42.7

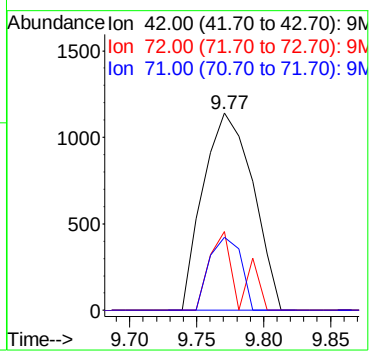

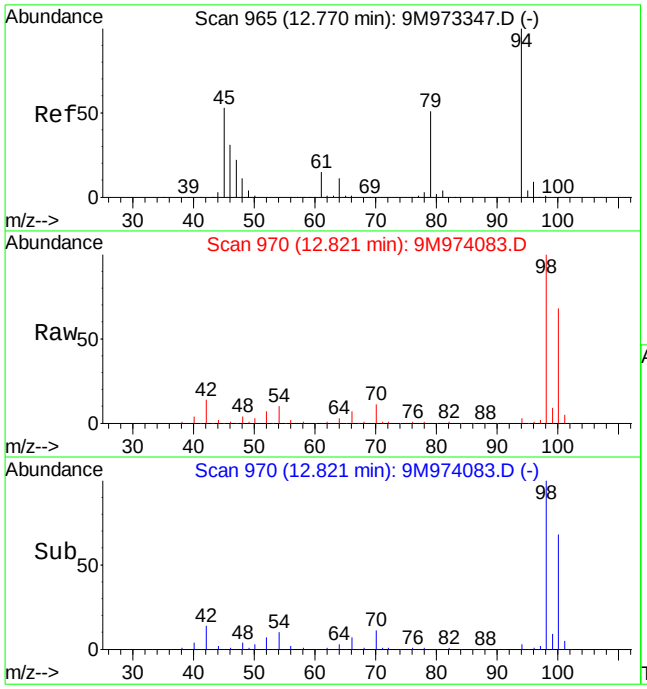

#56
Dimethyl Disulfide
Concen: 2.86 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M974083.D
Acq: 30 Apr 2016 21:49

Tgt Ion: 94 Resp: 15857

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

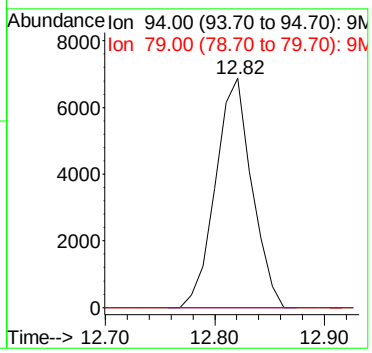

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\043016\9M974085.D Vial: 19
Acq On : 30 Apr 2016 22:50 Operator: ADC
Sample : L16041363-08 A MS 8260 4.95g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 30 23:12:46 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	629804	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	455159	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.74	152	204071	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	167582	52.6860 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.38%		
43) 1,2-Dichloroethane-d4	10.44	65	183107	54.9911 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 109.98%		
58) Toluene-d8	12.82	98	601749	55.4722 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 110.94%		
79) p-Bromofluorobenzene	16.22	95	217938	61.6574 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 123.32%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	98865	20.4644 ug/kg	99
3) Chloromethane	3.76	50	95985	21.6127 ug/kg	99
4) Vinyl Chloride	3.98	62	83365	28.2163 ug/kg	91
6) Bromomethane	4.87	94	52231	19.1816 ug/kg	99
7) Chloroethane	5.03	64	49635	18.7138 ug/kg	99
8) Trichlorofluoromethane	5.52	101	103181	18.3878 ug/kg	100
10) Isoprene	6.08	67	82252	18.6224 ug/kg	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	63620	18.5682 ug/kg	98
13) Acetone	6.39	43	35051	23.6598 ug/kg	99
14) 1,1-Dichloroethene	6.60	61	95543	16.6363 ug/kg	97
16) Dimethyl Sulfide	6.87	62	70906	25.2004 ug/kg	98
17) Iodomethane	7.12	142	23624	11.3004 ug/kg	98
18) Methyl acetate	7.13	43	52731	14.4531 ug/kg	98
19) Methylene Chloride	7.39	84	63476	17.6940 ug/kg	97
20) Carbon Disulfide	7.44	76	184396	16.9331 ug/kg	100
21) Acrylonitrile	7.58	53	28956	16.6982 ug/kg	97
22) Methyl Tert Butyl Ether	7.60	73	187223	19.3952 ug/kg	98
23) trans-1,2-Dichloroethene	7.84	61	99446	18.0004 ug/kg	99
24) n-Hexane	7.91	57	114637	15.9790 ug/kg	98
27) 1,1-Dichloroethane	8.46	63	116325	17.3472 ug/kg	98
29) 2-Butanone	9.01	43	33819	16.7023 ug/kg	98
31) 2,2-Dichloropropane	9.23	77	82515	16.8516 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	67407	18.3597 ug/kg	99
33) Chloroform	9.51	83	104854	18.4351 ug/kg	99
34) 1-Bromopropane	9.64	122	16100	24.9407 ug/kg	98
35) Bromochloromethane	9.75	130	39419	17.2091 ug/kg	97
36) Tetrahydrofuran	9.77	42	2965	2.0614 ug/kg	83
38) 1,1,1-Trichloroethane	10.04	97	90522	18.5952 ug/kg	99
39) Cyclohexane	10.07	56	142655	18.5369 ug/kg	99
40) 1,1-Dichloropropene	10.23	75	75480	16.8439 ug/kg	99
42) Carbon Tetrachloride	10.38	117	81968	18.0385 ug/kg	100
45) 1,2-Dichloroethane	10.56	62	91768	18.7352 ug/kg	96
46) Benzene	10.59	78	237127	17.0501 ug/kg	99
47) Trichloroethene	11.34	130	65218	16.6719 ug/kg	98
48) Methylcyclohexane	11.43	83	109493	18.3173 ug/kg	97
49) 1,2-Dichloropropane	11.56	63	70108	18.5364 ug/kg	99
51) Bromodichloromethane	11.86	83	76403	17.7275 ug/kg	100
52) Dibromomethane	11.95	174	36658	16.2340 ug/kg	96
53) 2-Chloroethyl Vinyl Ether	12.16	63	23431	11.6502 ug/kg	99
54) 4-Methyl-2-Pentanone	12.19	58	28643	16.4483 ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M974085.D 8260-SL.M Sat Apr 30 23:12:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\043016\9M974085.D Vial: 19
Acq On : 30 Apr 2016 22:50 Operator: ADC
Sample : L16041363-08 A MS 8260 4.95g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 30 23:12:46 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
55)	cis-1,3-Dichloropropene	12.49	75	96305	17.9215	ug/kg	99
56)	Dimethyl Disulfide	12.76	94	121161	21.0687	ug/kg	93
59)	Toluene	12.92	91	247490	17.8688	ug/kg	99
60)	Ethyl Methacrylate	13.01	69	76904	18.2380	ug/kg	99
61)	trans-1,3-Dichloropropene	13.09	75	81106	17.9877	ug/kg	98
62)	1,1,2-Trichloroethane	13.32	97	50372	18.4740	ug/kg	97
63)	2-Hexanone	13.24	43	45531	15.2920	ug/kg	97
64)	1,3-Dichloropropane	13.61	76	90984	19.4063	ug/kg	100
65)	Tetrachloroethene	13.74	164	49798	16.9529	ug/kg	96
66)	Dibromochloromethane	14.00	129	60625	17.9863	ug/kg	99
67)	1,2-Dibromoethane	14.27	107	53371	17.7689	ug/kg	100
68)	1-Chlorohexane	14.34	91	84308	18.4893	ug/kg	99
69)	Chlorobenzene	14.76	112	176553	18.3691	ug/kg	98
70)	1,1,1,2-Tetrachloroethane	14.79	131	62604	19.1722	ug/kg	100
71)	Ethylbenzene	14.78	106	93483	18.0799	ug/kg	98
72)	m-,p-Xylene	14.88	106	228936	35.9117	ug/kg	100
73)	o-Xylene	15.44	106	113485	18.6818	ug/kg	99
74)	Styrene	15.48	104	164518	15.8149	ug/kg	96
75)	Bromoform	15.98	173	37354	17.9265	ug/kg	98
76)	Isopropylbenzene	15.87	105	282519	17.8795	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.08	83	63393	18.6992	ug/kg	99
80)	1,2,3-Trichloropropane	16.28	110	21021	20.7559	ug/kg#	35
81)	trans-1,4-Dichloro-2-Buten	16.32	53	18028	14.6264	ug/kg#	1
82)	n-Propylbenzene	16.38	91	308645	20.2298	ug/kg	100
83)	Bromobenzene	16.51	156	71105	19.5928	ug/kg	94
84)	1,3,5-Trimethylbenzene	16.56	105	237455	20.4407	ug/kg	99
85)	2-Chlorotoluene	16.65	91	198945	21.8335	ug/kg	99
86)	4-Chlorotoluene	16.69	91	181096	19.0014	ug/kg	100
87)	a-Methylstyrene	16.97	118	93225	16.0867	ug/kg	100
88)	tert-Butylbenzene	17.02	134	52101	20.2431	ug/kg	88
89)	1,2,4-Trimethylbenzene	17.08	105	233017	20.2910	ug/kg	99
90)	sec-Butylbenzene	17.29	105	300923	20.1508	ug/kg	99
91)	p-Isopropyltoluene	17.45	119	236554	19.1355	ug/kg	99
92)	1,3-Dichlorobenzene	17.65	146	130411	18.1757	ug/kg	97
93)	1,4-Dichlorobenzene	17.78	146	133230	18.1940	ug/kg	97
94)	n-Butylbenzene	17.98	91	201285	17.6985	ug/kg	98
95)	1,2-Dichlorobenzene	18.29	146	124862	18.2931	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.28	157	13864	20.7328	ug/kg	93
97)	1,2,4-Trichlorobenzene	20.42	180	68723	13.6451	ug/kg	99
98)	Hexachlorobutadiene	20.57	225	39840	16.7716	ug/kg	99
99)	Naphthalene	20.80	128	161144	13.2760	ug/kg	99
100)	1,2,3-Trichlorobenzene	21.10	180	63594	13.3204	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M974085.D 8260-SL.M Sat Apr 30 23:12:46 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\043016\9M974085.D Vial: 19
Acq On : 30 Apr 2016 22:50 Operator: ADC
Sample : L16041363-08 A MS 8260 4.95g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 30 23:12 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

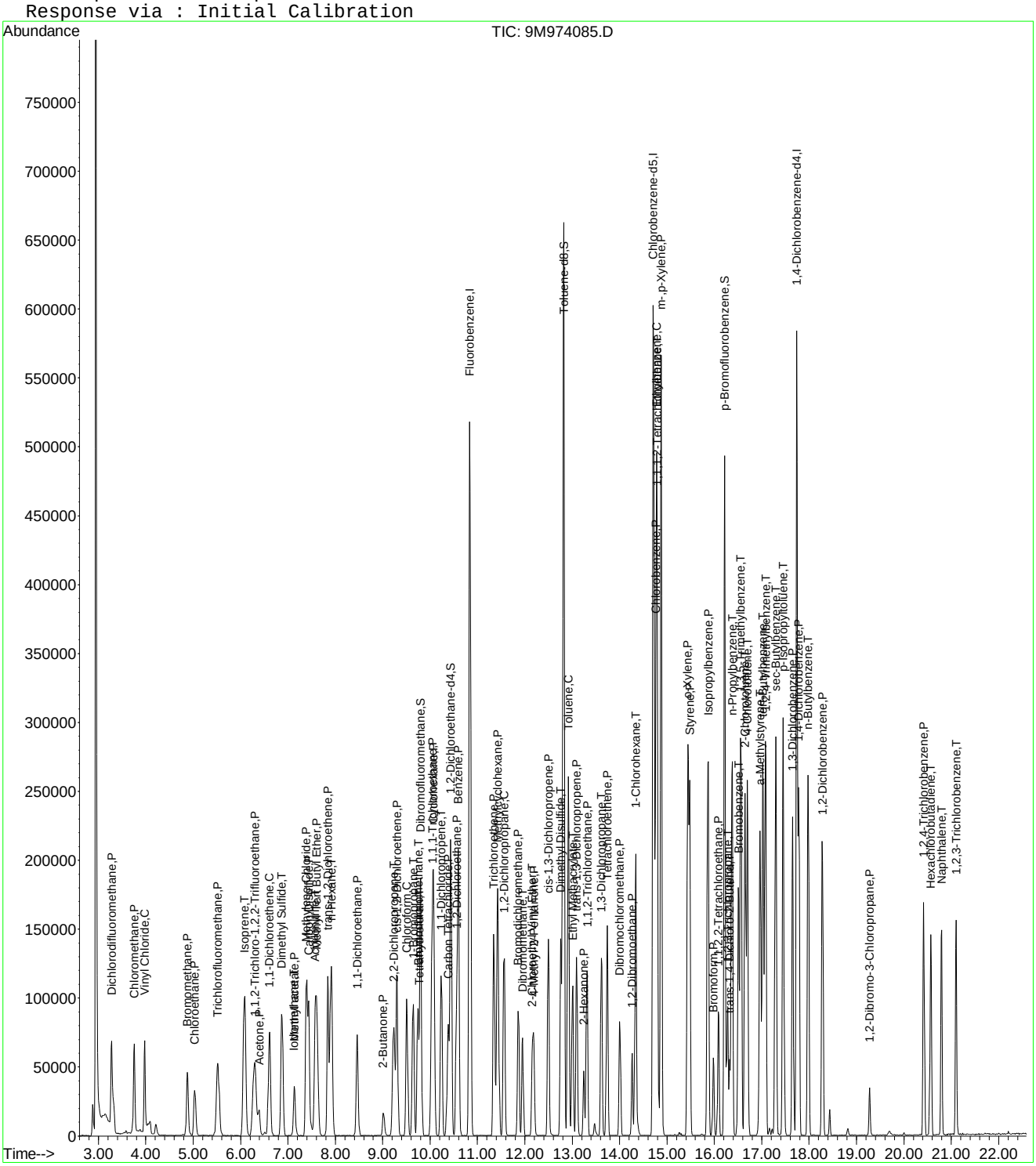

9M974085.D 8260-SL.M Sat Apr 30 23:12:47 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\043016\9M974086.D Vial: 20
Acq On : 30 Apr 2016 23:20 Operator: ADC
Sample : L16041363-09 A MSD 8260 4.85g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 30 23:43:18 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	599152	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	427647	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	195199	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	159399	52.6771 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.36%		
43) 1,2-Dichloroethane-d4	10.44	65	171453	54.1254 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 108.26%		
58) Toluene-d8	12.82	98	568637	55.7921 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 111.58%		
79) p-Bromofluorobenzene	16.22	95	205456	60.7680 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 121.54%#		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.28	85	100424	21.8506 ug/kg	100
3) Chloromethane	3.75	50	98715	23.3645 ug/kg	100
4) Vinyl Chloride	3.97	62	99909	35.7501 ug/kg	94
6) Bromomethane	4.88	94	49629	19.1584 ug/kg	98
7) Chloroethane	5.03	64	52519	20.8142 ug/kg	99
8) Trichlorofluoromethane	5.52	101	104110	19.5025 ug/kg	100
10) Isoprene	6.08	67	77627	18.4744 ug/kg	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	67456	20.6950 ug/kg	97
13) Acetone	6.38	43	36021	26.0264 ug/kg	98
14) 1,1-Dichloroethene	6.61	61	100777	18.4454 ug/kg	97
15) Tert-Butyl Alcohol	6.72	59	419	0.7973 ug/kg#	61
16) Dimethyl Sulfide	6.87	62	63603	23.7613 ug/kg	98
17) Iodomethane	7.12	142	28875	13.6867 ug/kg	100
18) Methyl acetate	7.13	43	51643	14.8791 ug/kg	98
19) Methylene Chloride	7.39	84	64874	19.0089 ug/kg	98
20) Carbon Disulfide	7.44	76	181782	17.5471 ug/kg	99
21) Acrylonitrile	7.58	53	29020	17.5912 ug/kg	97
22) Methyl Tert Butyl Ether	7.60	73	185495	20.1992 ug/kg	99
23) trans-1,2-Dichloroethene	7.84	61	102323	19.4687 ug/kg	100
24) n-Hexane	7.90	57	115250	16.8862 ug/kg	98
27) 1,1-Dichloroethane	8.46	63	119355	18.7096 ug/kg	99
29) 2-Butanone	9.01	43	32232	16.7329 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	83933	18.0181 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	68956	19.7424 ug/kg	98
33) Chloroform	9.51	83	107384	19.8458 ug/kg	100
34) 1-Bromopropane	9.65	122	14864	24.2294 ug/kg	97
35) Bromochloromethane	9.74	130	40187	18.4419 ug/kg	96
36) Tetrahydrofuran	9.77	42	3311	2.4197 ug/kg#	61
38) 1,1,1-Trichloroethane	10.04	97	95270	20.5718 ug/kg	99
39) Cyclohexane	10.07	56	138160	18.8713 ug/kg	97
40) 1,1-Dichloropropene	10.24	75	80732	18.9376 ug/kg	98
42) Carbon Tetrachloride	10.38	117	85443	19.7652 ug/kg	99
45) 1,2-Dichloroethane	10.55	62	93649	20.0974 ug/kg	97
46) Benzene	10.60	78	249247	18.8385 ug/kg	99
47) Trichloroethene	11.34	130	68839	18.4978 ug/kg	99
48) Methylcyclohexane	11.43	83	108418	19.0654 ug/kg	99
49) 1,2-Dichloropropane	11.56	63	73249	20.3577 ug/kg	99
51) Bromodichloromethane	11.86	83	79552	19.4024 ug/kg	99
52) Dibromomethane	11.96	174	35226	16.3979 ug/kg	92
53) 2-Chloroethyl Vinyl Ether	12.16	63	15955	8.3389 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M974086.D 8260-SL.M Sat Apr 30 23:43:18 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\043016\9M974086.D Vial: 20
Acq On : 30 Apr 2016 23:20 Operator: ADC
Sample : L16041363-09 A MSD 8260 4.85g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 30 23:43:18 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
54)	4-Methyl-2-Pentanone	12.18	58	28677	17.3103	ug/kg	99
55)	cis-1,3-Dichloropropene	12.49	75	97845	19.1396	ug/kg	99
56)	Dimethyl Disulfide	12.76	94	116425	21.2809	ug/kg	93
59)	Toluene	12.92	91	262246	20.1523	ug/kg	98
60)	Ethyl Methacrylate	13.00	69	73458	18.5415	ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	79688	18.8102	ug/kg	98
62)	1,1,2-Trichloroethane	13.31	97	51930	20.2706	ug/kg	99
63)	2-Hexanone	13.24	43	45457	16.2493	ug/kg	96
64)	1,3-Dichloropropane	13.61	76	95086	21.5860	ug/kg	98
65)	Tetrachloroethene	13.74	164	51404	18.6254	ug/kg	96
66)	Dibromochloromethane	14.00	129	63011	19.8969	ug/kg	97
67)	1,2-Dibromoethane	14.26	107	51495	18.2473	ug/kg	98
68)	1-Chlorohexane	14.34	91	83608	19.5154	ug/kg	100
69)	Chlorobenzene	14.76	112	179431	19.8696	ug/kg	98
70)	1,1,1,2-Tetrachloroethane	14.80	131	65190	21.2485	ug/kg	98
71)	Ethylbenzene	14.78	106	96608	19.8864	ug/kg	99
72)	m-,p-Xylene	14.88	106	237773	39.6974	ug/kg	99
73)	o-Xylene	15.44	106	118913	20.8347	ug/kg	100
74)	Styrene	15.48	104	158817	16.2490	ug/kg	95
75)	Bromoform	15.98	173	36949	18.8407	ug/kg	99
76)	Isopropylbenzene	15.86	105	295073	19.8753	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.08	83	64955	20.0059	ug/kg	99
80)	1,2,3-Trichloropropane	16.28	110	20428	21.0871	ug/kg#	38
81)	trans-1,4-Dichloro-2-Buten	16.33	53	17078	14.4854	ug/kg#	1
82)	n-Propylbenzene	16.37	91	322346	22.0882	ug/kg	100
83)	Bromobenzene	16.50	156	73645	21.2151	ug/kg	73
84)	1,3,5-Trimethylbenzene	16.56	105	247424	22.2669	ug/kg	98
85)	2-Chlorotoluene	16.65	91	211726	24.2922	ug/kg	98
86)	4-Chlorotoluene	16.69	91	178288	19.5570	ug/kg	99
87)	a-Methylstyrene	16.97	118	79466	14.3357	ug/kg	100
88)	tert-Butylbenzene	17.02	134	56864	23.0979	ug/kg	90
89)	1,2,4-Trimethylbenzene	17.07	105	238557	21.7573	ug/kg	100
90)	sec-Butylbenzene	17.30	105	312192	21.8556	ug/kg	100
91)	p-Isopropyltoluene	17.45	119	243535	20.5956	ug/kg	99
92)	1,3-Dichlorobenzene	17.65	146	134894	19.6551	ug/kg	100
93)	1,4-Dichlorobenzene	17.78	146	137392	19.6151	ug/kg	97
94)	n-Butylbenzene	17.98	91	209384	19.2474	ug/kg	98
95)	1,2-Dichlorobenzene	18.28	146	126647	19.3979	ug/kg	98
96)	1,2-Dibromo-3-Chloropropan	19.28	157	13913	21.4511	ug/kg	93
97)	1,2,4-Trichlorobenzene	20.42	180	68406	14.1995	ug/kg	100
98)	Hexachlorobutadiene	20.57	225	41764	18.3807	ug/kg	98
99)	Naphthalene	20.79	128	162816	14.0234	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	63333	13.8687	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\043016\9M974086.D Vial: 20
Acq On : 30 Apr 2016 23:20 Operator: ADC
Sample : L16041363-09 A MSD 8260 4.85g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 30 23:43 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

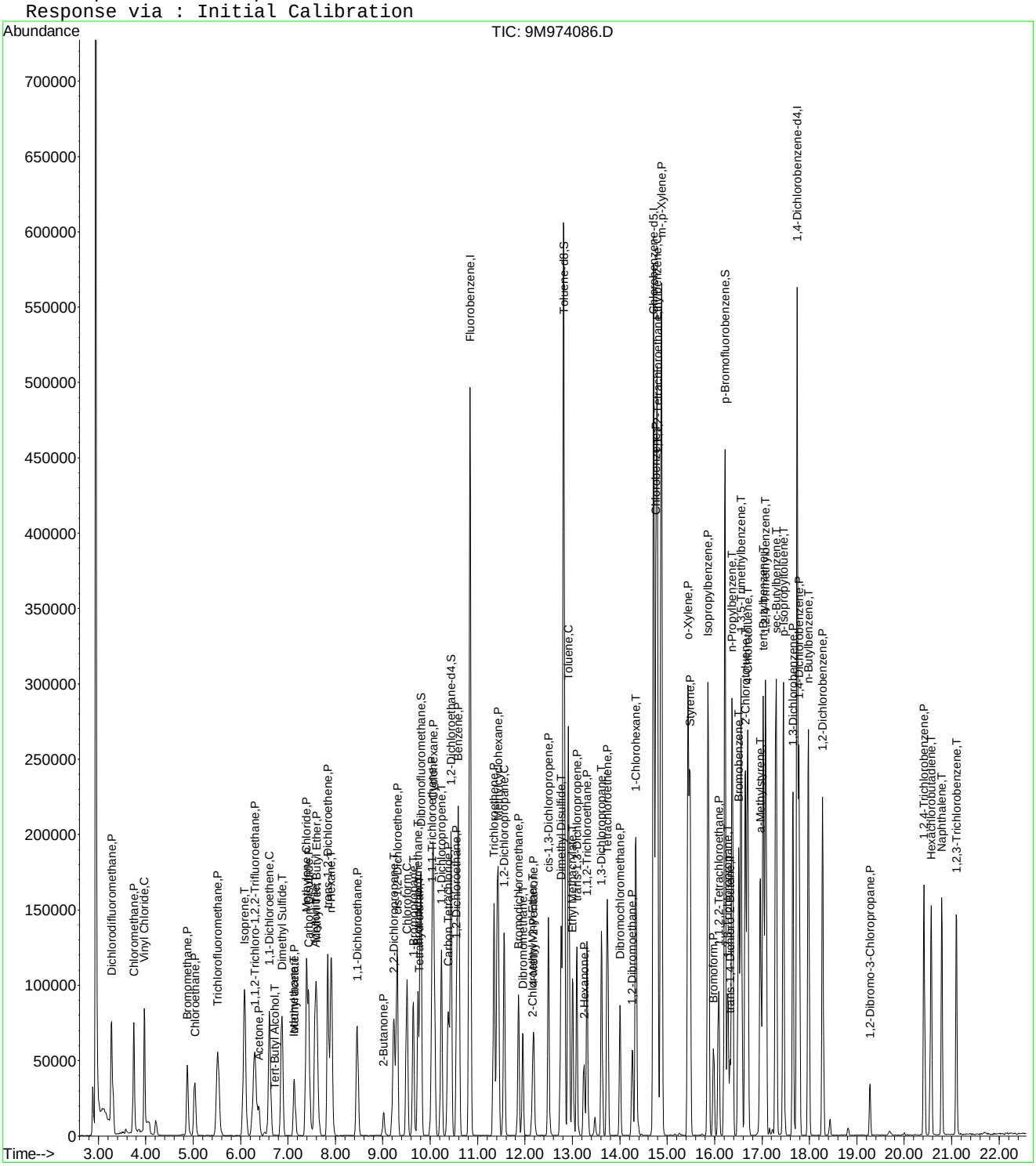

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\043016\9M974084.D Vial: 18
Acq On : 30 Apr 2016 22:19 Operator: ADC
Sample : L16041363-10 A 8260 4.89g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 04 12:27:55 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	587937	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	418410	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.74	152	190398	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	154901	52.1671 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.34%		
43) 1,2-Dichloroethane-d4	10.44	65	170098	54.7219 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 109.44%		
58) Toluene-d8	12.82	98	561863	56.3445 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 112.68%		
79) p-Bromofluorobenzene	16.22	95	206539	62.6287 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 125.26%#		

Target Compounds

					Qvalue
13) Acetone	6.38	43	14116	6.8915 ug/kg#	59
29) 2-Butanone	9.02	43	1708	0.9036 ug/kg#	58
36) Tetrahydrofuran	9.77	42	2793	2.0801 ug/kg#	74
56) Dimethyl Disulfide	12.82	94	15525	2.8919 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.07	105	1554	Below Cal #	44

(#) = qualifier out of range (m) = manual integration
9M974084.D 8260-SL.M Wed May 04 12:27:55 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\043016\9M974084.D Vial: 18
Acq On : 30 Apr 2016 22:19 Operator: ADC
Sample : L16041363-10 A 8260 4.89g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 4 12:27 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

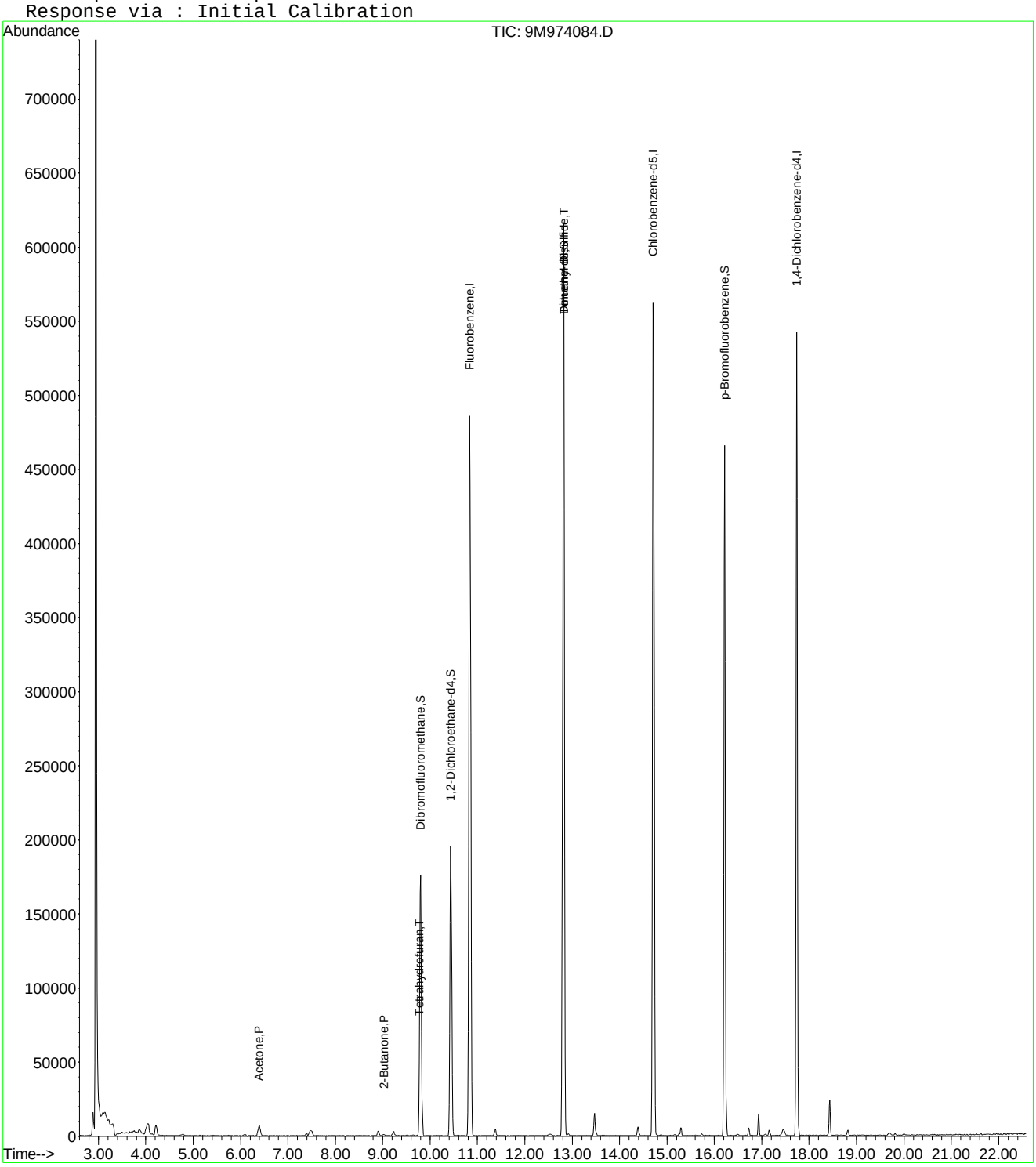

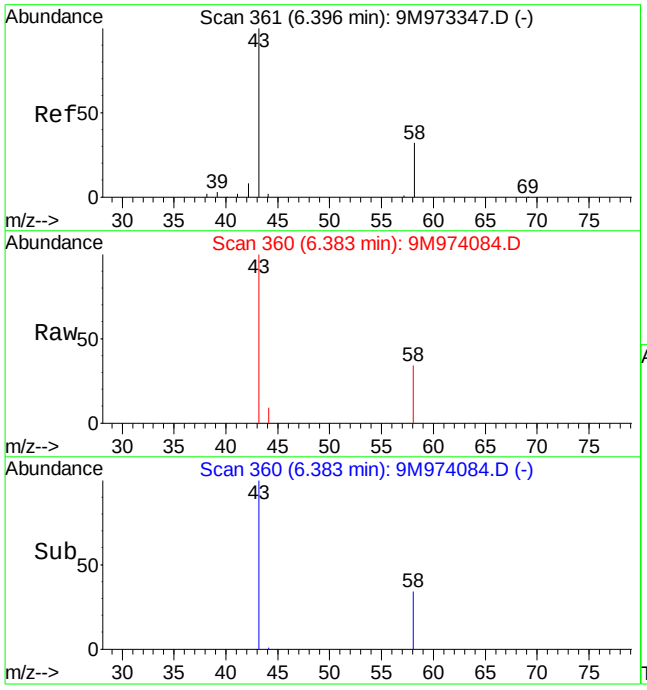

#13
Acetone
Concen: 6.89 ug/kg
RT: 6.38 min Scan# 360
Delta R.T. -0.00 min
Lab File: 9M974084.D
Acq: 30 Apr 2016 22:19

Tgt Ion: 43 Resp: 14116

Ion	Ratio	Lower	Upper
43	100		
58	56.9	20.2	47.2#

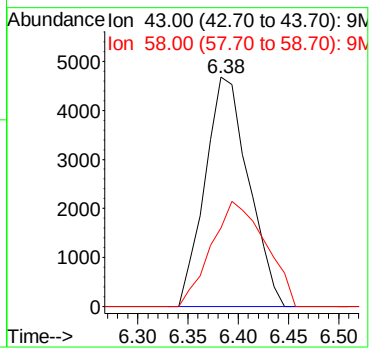

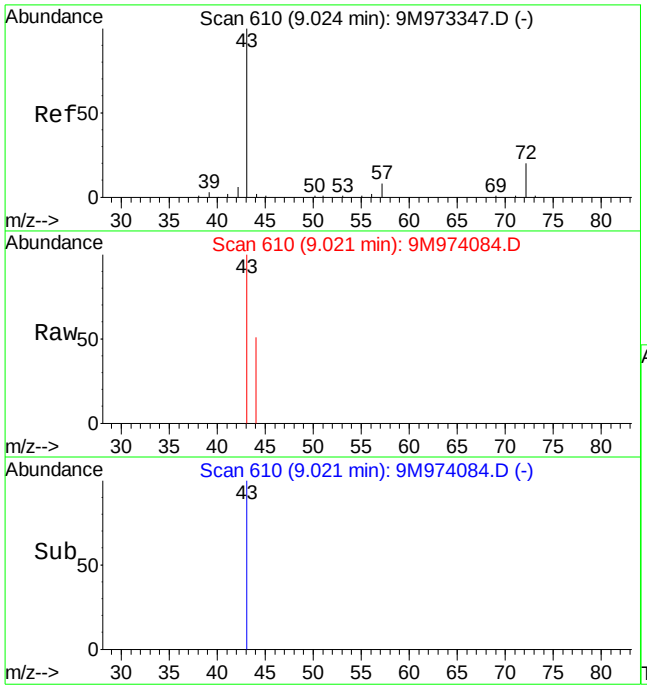

#29
2-Butanone
Concen: 0.90 ug/kg
RT: 9.02 min Scan# 610
Delta R.T. 0.01 min
Lab File: 9M974084.D
Acq: 30 Apr 2016 22:19

Tgt Ion: 43 Resp: 1708

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.5	26.7#

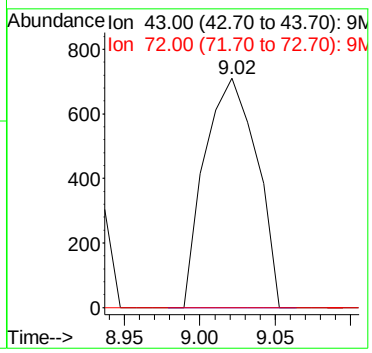

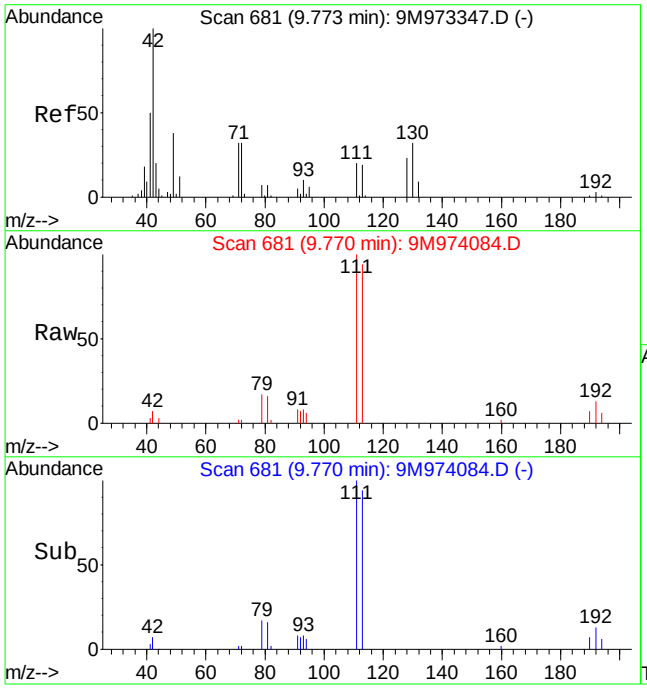

#36
Tetrahydrofuran
Concen: 2.08 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. -0.00 min
Lab File: 9M974084.D
Acq: 30 Apr 2016 22:19

Tgt Ion: 42 Resp: 2793

Ion	Ratio	Lower	Upper
42	100		
72	16.6	19.8	46.2#
71	17.9	18.3	42.7#

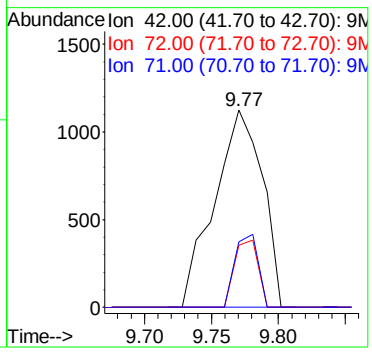

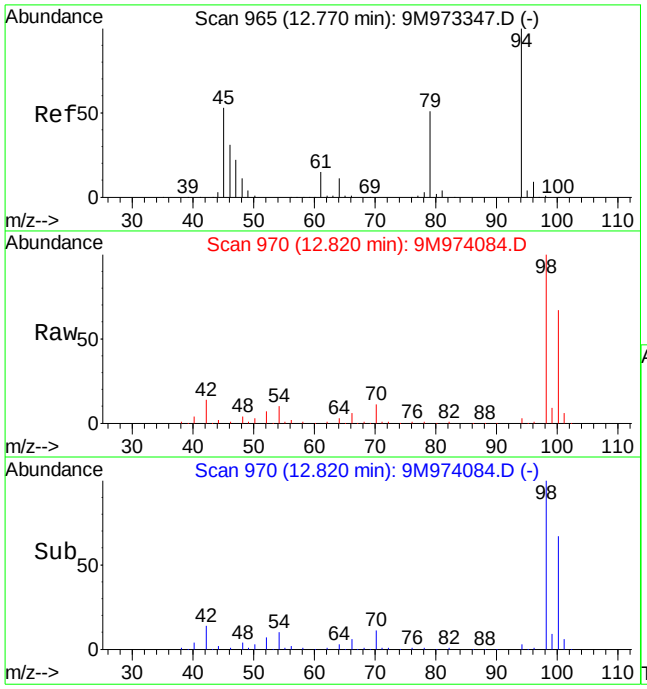

#56
Dimethyl Disulfide
Concen: 2.89 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M974084.D
Acq: 30 Apr 2016 22:19

Tgt Ion: 94 Resp: 15525

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

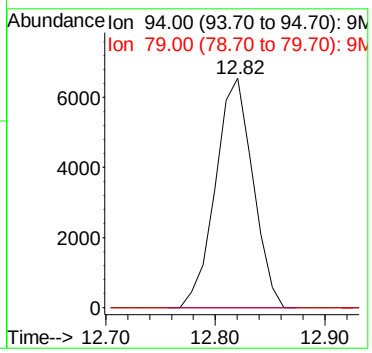

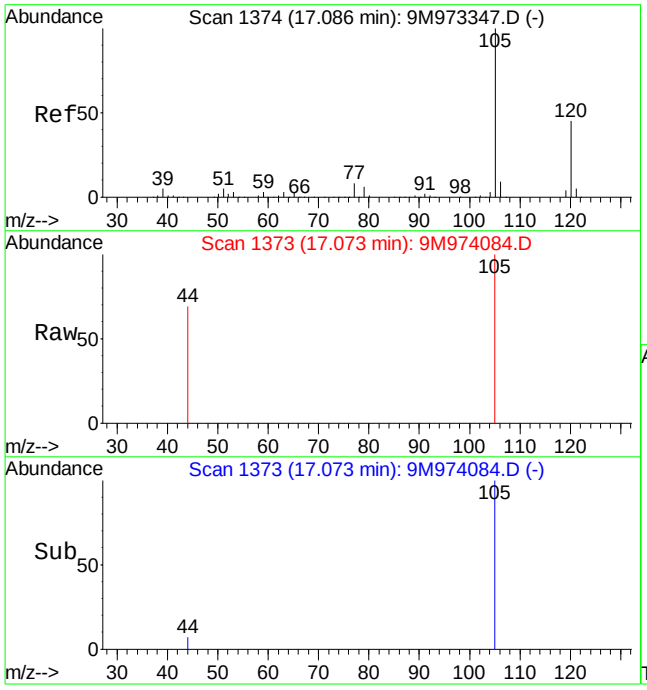

#89
1,2,4-Trimethylbenzene
Concen: Below Cal
RT: 17.07 min Scan# 1373
Delta R.T. -0.01 min
Lab File: 9M974084.D
Acq: 30 Apr 2016 22:19

Tgt Ion:105 Resp: 1554

Ion	Ratio	Lower	Upper
105	100		
120	14.8	33.0	77.0#

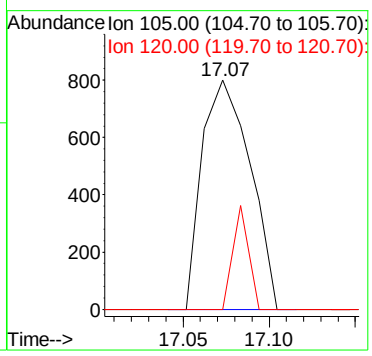

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972472.D Vial: 3
Acq On : 25 Jan 2016 11:22 Operator: FJB
Sample : WG555000-02 5ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:05 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	367739	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	266763	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.77	152	148882	50.00 ug/kg	0.01

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	1974	5.3580 ug/kg#	1
3) 3-Chloro-1-propene	7.23	41	18322	5.0468 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	19639	4.7564 ug/kg	98
5) Ethyl Acetate	9.24	43	12755	5.2595 ug/kg	91
6) Methacrylonitrile	9.40	67	3744	4.7691 ug/kg	95
7) Isobutyl Alcohol	9.42	43	1055	12.9700 ug/kg#	62
8) 1-Butanol	10.36	56	203	11.8711 ug/kg#	26
9) Methyl methacrylate	11.56	41	8689	4.6908 ug/kg	95
10) 2-Nitropropane	11.90	43	2531	4.2058 ug/kg	96

(#) = qualifier out of range (m) = manual integration
9M972472.D A9FOO_SL.M Wed Jan 27 11:22:42 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972472.D Vial: 3
Acq On : 25 Jan 2016 11:22 Operator: FJB
Sample : WG555000-02 5ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

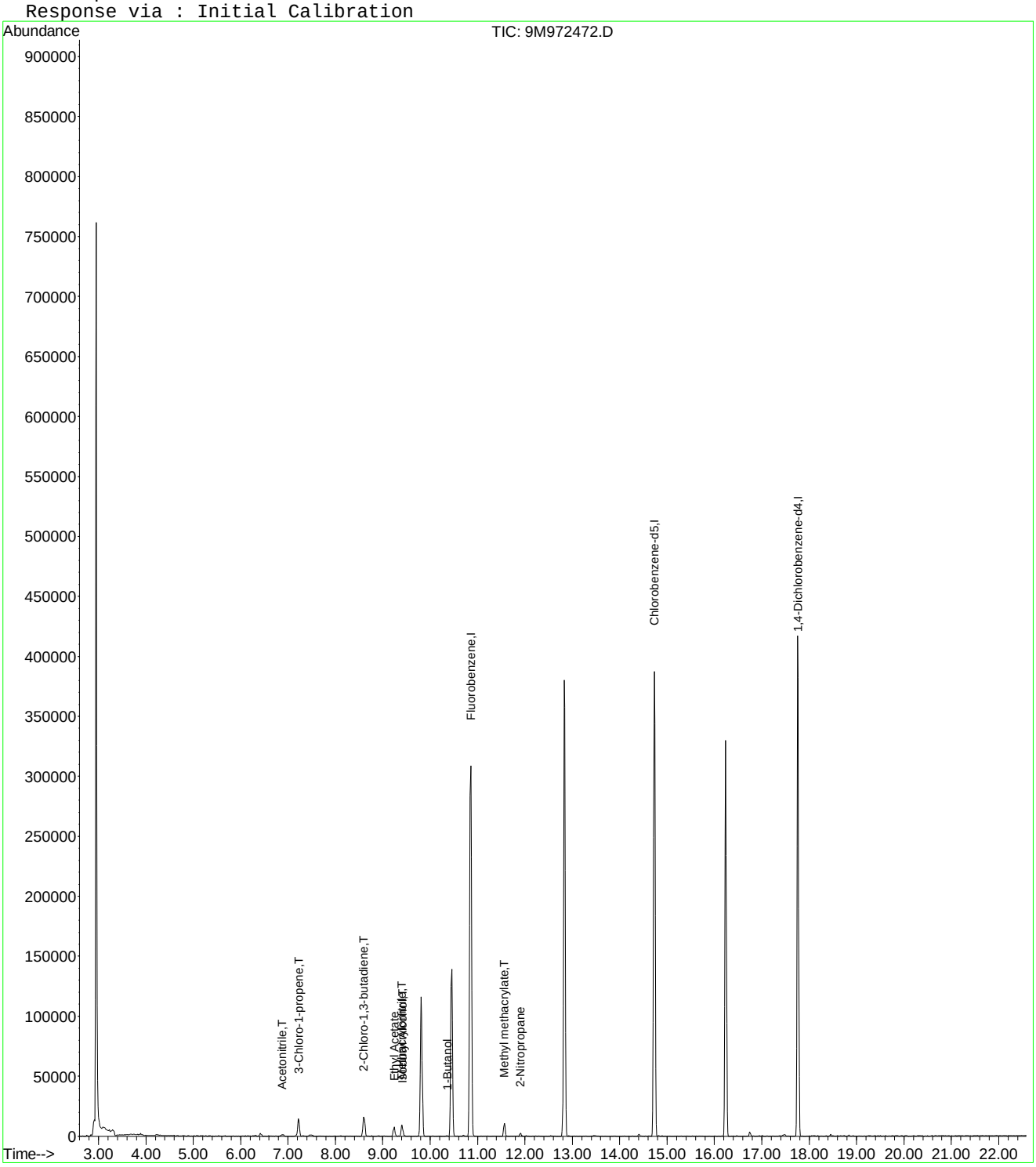

9M972472.D A9FOO_SL.M Wed Jan 27 11:22:42 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972473.D Vial: 4
Acq On : 25 Jan 2016 11:52 Operator: FJB
Sample : WG555000-03 20ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:05 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	359691	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	265773	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	149223	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	7669	21.2815 ug/kg#	77
3) 3-Chloro-1-propene	7.23	41	75360	21.2224 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	82865	20.5181 ug/kg	100
5) Ethyl Acetate	9.23	43	47912	20.1986 ug/kg	97
6) Methacrylonitrile	9.40	67	15740	20.4980 ug/kg	98
7) Isobutyl Alcohol	9.42	43	5287	37.9280 ug/kg	95
8) 1-Butanol	10.35	56	1509	22.3153 ug/kg#	81
9) Methyl methacrylate	11.56	41	35437	19.5588 ug/kg	98
10) 2-Nitropropane	11.90	43	10433	17.7247 ug/kg	98
12) Cyclohexanone	16.01	55	2157	16.3929 ug/kg#	86

(#) = qualifier out of range (m) = manual integration
9M972473.D A9FOO_SL.M Wed Jan 27 11:22:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972473.D Vial: 4
Acq On : 25 Jan 2016 11:52 Operator: FJB
Sample : WG555000-03 20ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

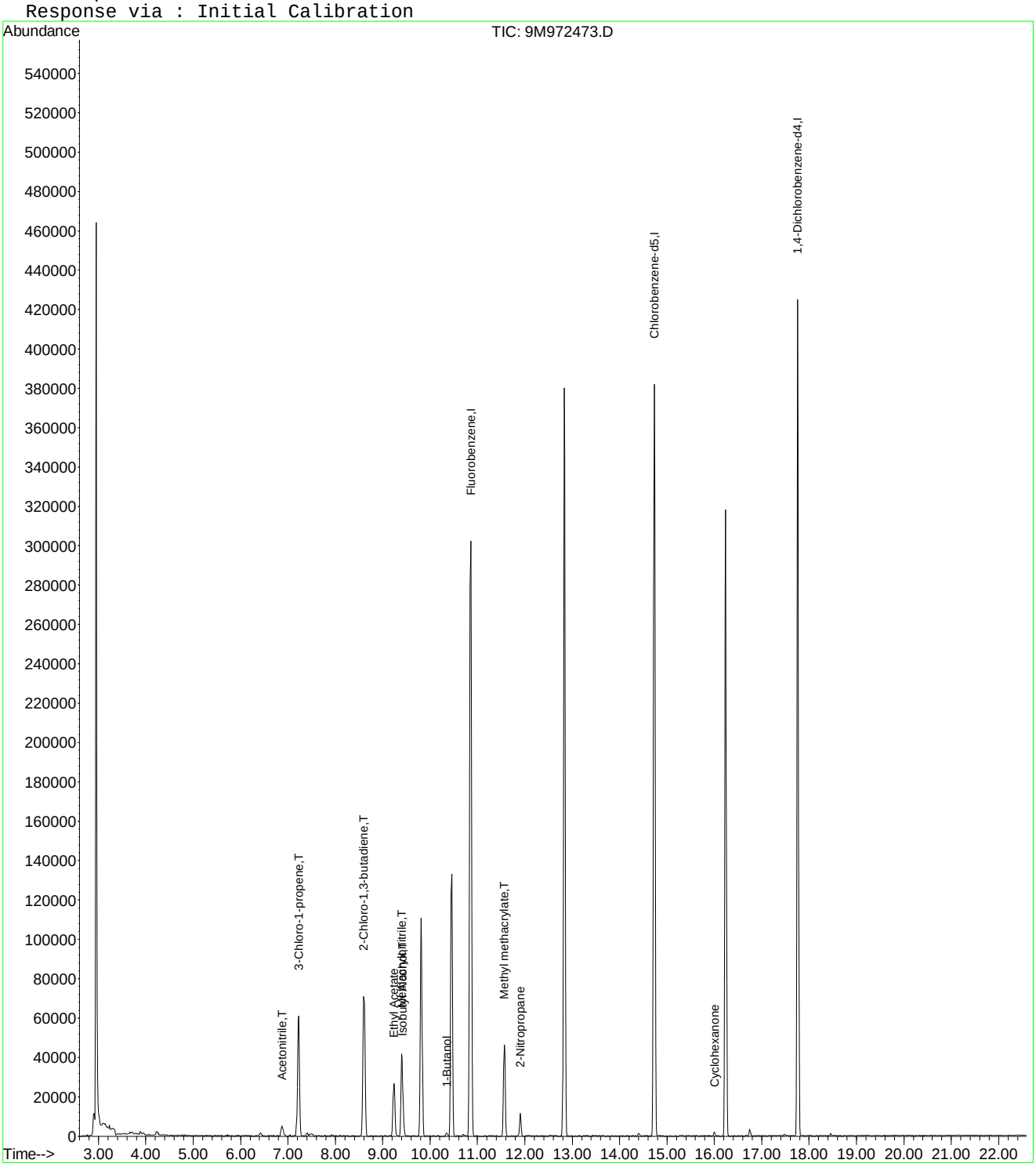

9M972473.D A9FOO_SL.M Wed Jan 27 11:22:46 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972474.D Vial: 5
Acq On : 25 Jan 2016 12:23 Operator: FJB
Sample : WG555000-04 50ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:06 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	356886	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	259679	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	147334	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	16583	46.3795 ug/kg#	94
3) 3-Chloro-1-propene	7.23	41	160601	45.5828 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.61	53	185316	46.2464 ug/kg	99
5) Ethyl Acetate	9.23	43	111538	47.3915 ug/kg	99
6) Methacrylonitrile	9.40	67	36081	47.3572 ug/kg	99
7) Isobutyl Alcohol	9.42	43	12624	81.5447 ug/kg	95
8) 1-Butanol	10.35	56	4707	48.0983 ug/kg#	50
9) Methyl methacrylate	11.56	41	82406	45.8400 ug/kg	99
10) 2-Nitropropane	11.90	43	26302	45.0359 ug/kg	97
12) Cyclohexanone	16.01	55	5625	43.7525 ug/kg	93

(#) = qualifier out of range (m) = manual integration
9M972474.D A9FOO_SL.M Wed Jan 27 11:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972474.D Vial: 5
Acq On : 25 Jan 2016 12:23 Operator: FJB
Sample : WG555000-04 50ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

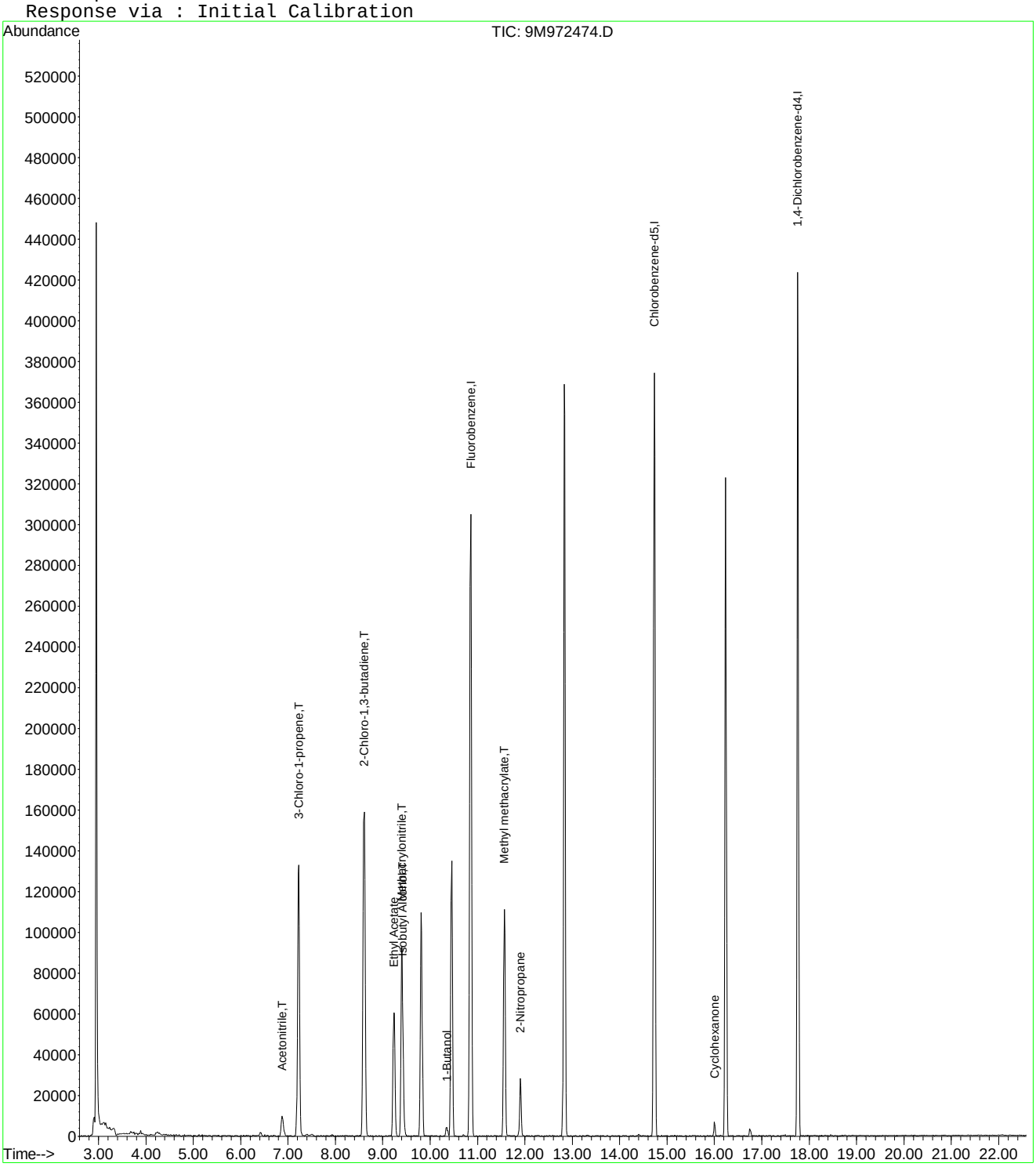

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972475.D Vial: 6
Acq On : 25 Jan 2016 12:53 Operator: FJB
Sample : WG555000-05 100ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:06 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	394669	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	285851	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	161505	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	37767	95.5151	ug/kg#	100
3) 3-Chloro-1-propene	7.23	41	409870	105.1952	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.61	53	467514	105.5010	ug/kg	100
5) Ethyl Acetate	9.23	43	267513	102.7824	ug/kg	100
6) Methacrylonitrile	9.40	67	88054	104.5088	ug/kg	100
7) Isobutyl Alcohol	9.42	43	33721	187.1766	ug/kg	100
8) 1-Butanol	10.36	56	11671	95.0627	ug/kg	100
9) Methyl methacrylate	11.56	41	209503	105.3834	ug/kg	100
10) 2-Nitropropane	11.90	43	65435	101.3157	ug/kg	100
12) Cyclohexanone	16.01	55	14062	99.3630	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972475.D A9FOO_SL.M Wed Jan 27 11:22:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972475.D Vial: 6
Acq On : 25 Jan 2016 12:53 Operator: FJB
Sample : WG555000-05 100ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

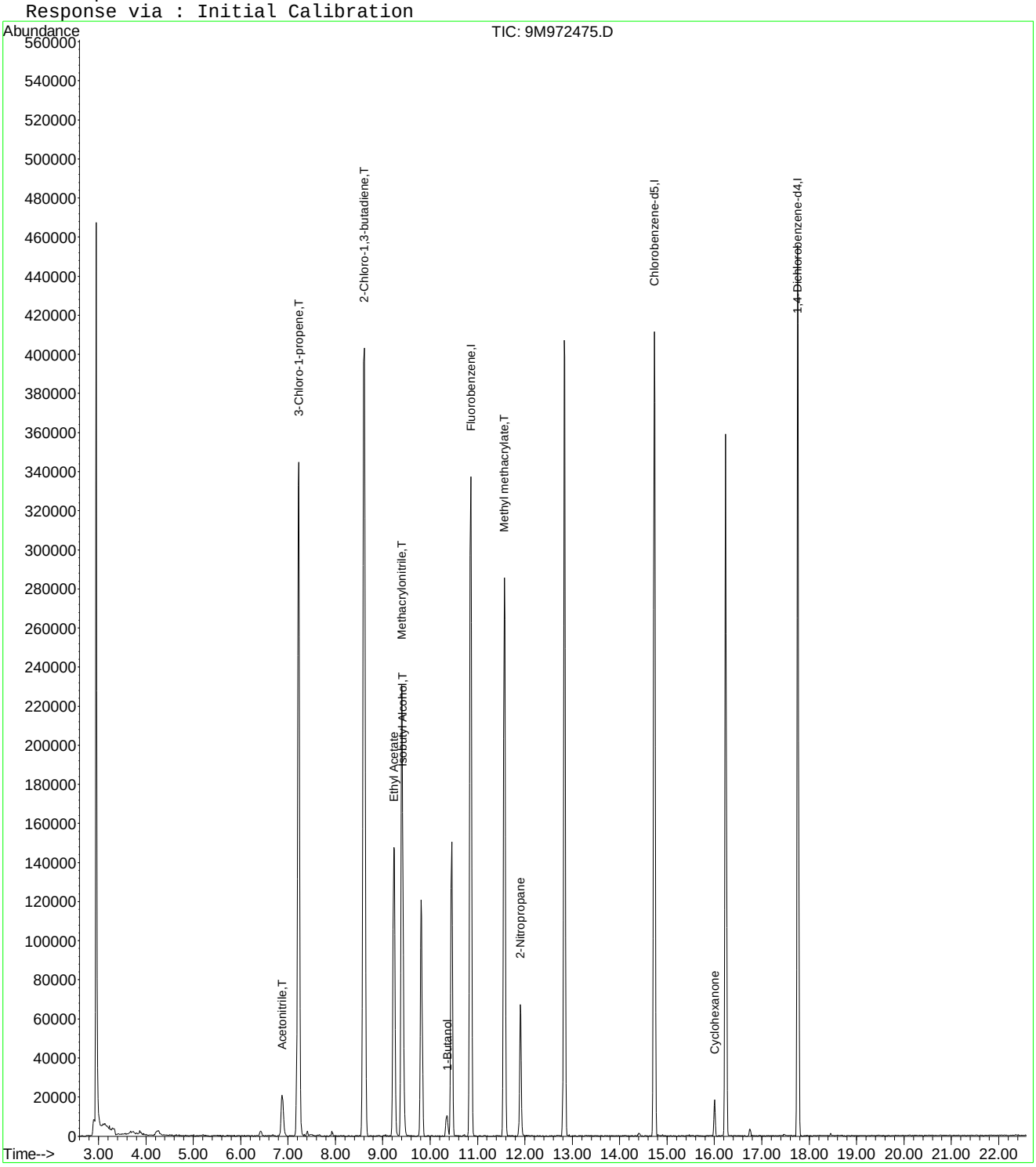

9M972475.D A9FOO_SL.M Wed Jan 27 11:22:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972476.D Vial: 7
Acq On : 25 Jan 2016 13:23 Operator: FJB
Sample : WG555000-06 200ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 09:51:10 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	361792	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	264283	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	150478	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.87	41	75099	207.1896	ug/kg#	94
3) 3-Chloro-1-propene	7.22	41	743262	208.0969	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	846271	208.3269	ug/kg	100
5) Ethyl Acetate	9.23	43	489855	205.3125	ug/kg	100
6) Methacrylonitrile	9.40	67	159879	206.9995	ug/kg	100
7) Isobutyl Alcohol	9.42	43	68551	406.6640	ug/kg	99
8) 1-Butanol	10.35	56	24111	201.3375	ug/kg	97
9) Methyl methacrylate	11.57	41	382820	210.0636	ug/kg	99
10) 2-Nitropropane	11.90	43	129000	217.8866	ug/kg	95
12) Cyclohexanone	16.00	55	30065	229.7785	ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972476.D A9FOO_SL.M Wed Jan 27 09:51:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972476.D Vial: 7
Acq On : 25 Jan 2016 13:23 Operator: FJB
Sample : WG555000-06 200ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 9:51 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

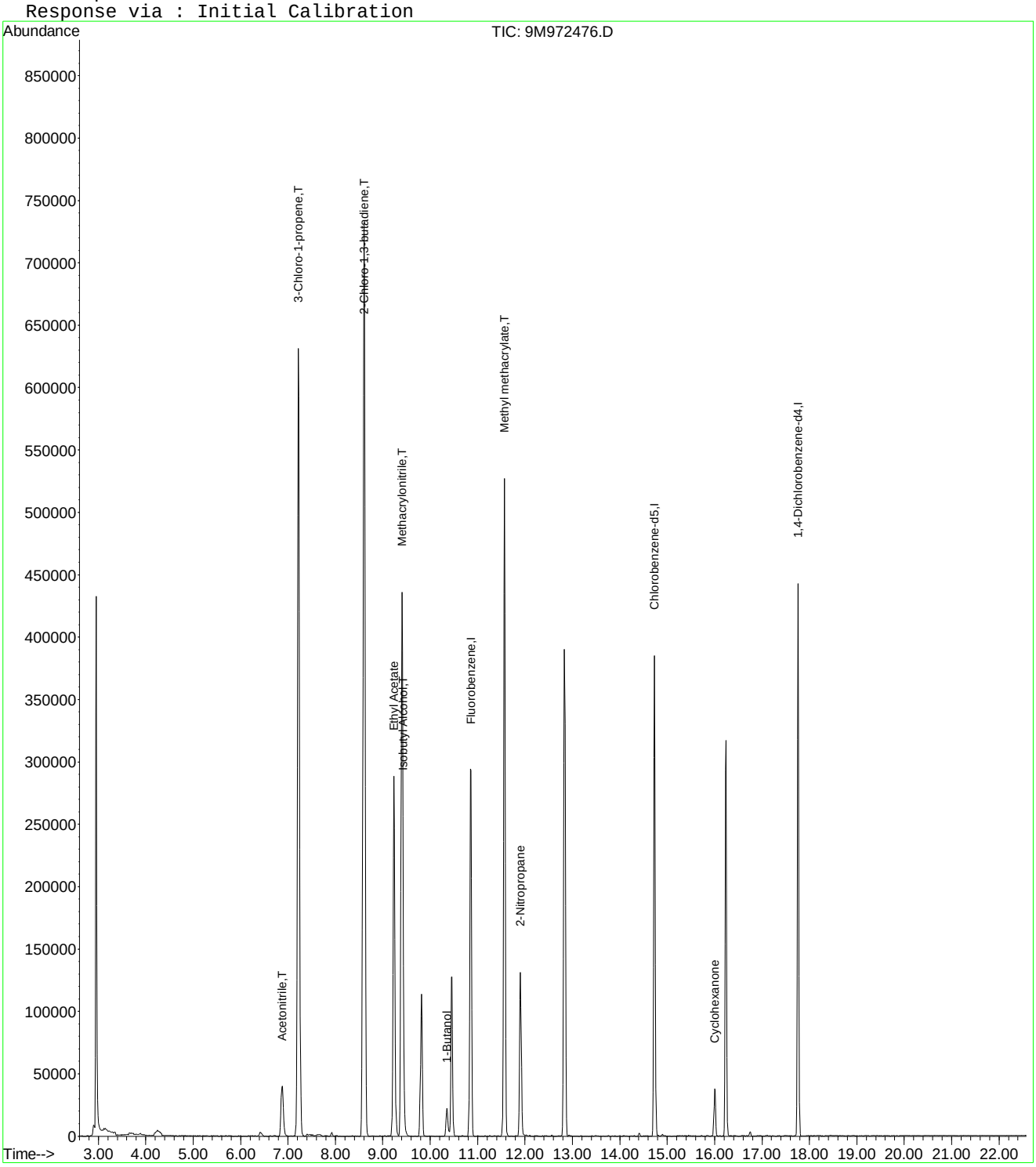

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972477.D Vial: 8
Acq On : 25 Jan 2016 13:54 Operator: FJB
Sample : WG555000-07 300ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:07 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.85	96	362779	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	265659	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	153468	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	99618	274.0870	ug/kg#	97
3) 3-Chloro-1-propene	7.22	41	944879	263.8255	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	1107217	271.8226	ug/kg	99
5) Ethyl Acetate	9.24	43	652386	272.6900	ug/kg	99
6) Methacrylonitrile	9.40	67	208153	268.7679	ug/kg	98
7) Isobutyl Alcohol	9.43	43	89707	528.6093	ug/kg#	99
8) 1-Butanol	10.35	56	31640	260.3131	ug/kg	98
9) Methyl methacrylate	11.57	41	502506	274.9883	ug/kg	98
10) 2-Nitropropane	11.90	43	172692	290.8907	ug/kg	95
12) Cyclohexanone	16.00	55	36951	280.9436	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972477.D A9FOO_SL.M Wed Jan 27 11:23:05 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972477.D Vial: 8
Acq On : 25 Jan 2016 13:54 Operator: FJB
Sample : WG555000-07 300ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

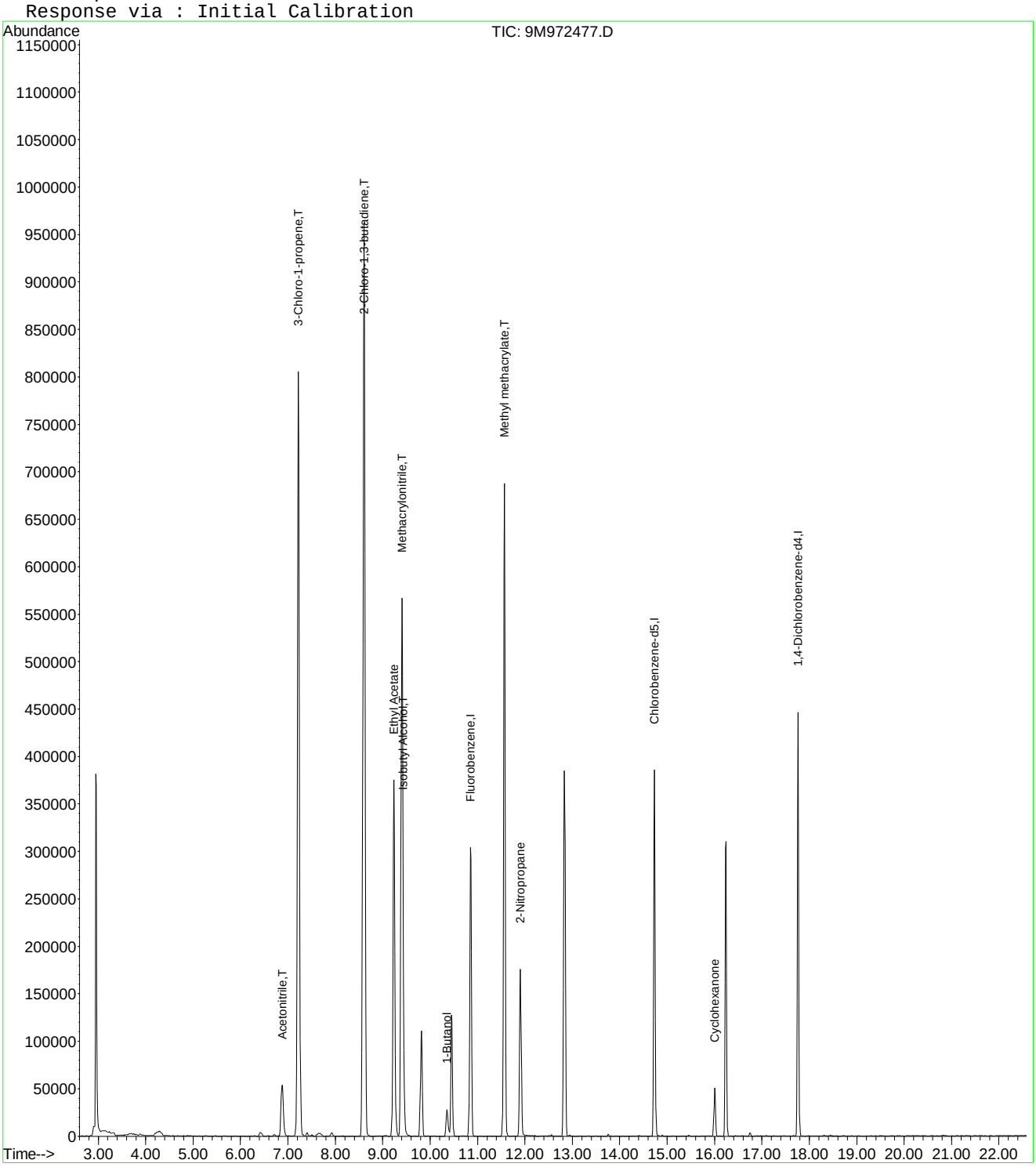

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972478.D Vial: 9
Acq On : 25 Jan 2016 14:25 Operator: FJB
Sample : WG555000-08 400ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 09:51:10 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	359343	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	261674	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	149058	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.89	41	148074	411.3034	ug/kg#	96
3) 3-Chloro-1-propene	7.22	41	1457717	410.9100	ug/kg	99
4) 2-Chloro-1,3-butadiene	8.61	53	1703971	422.3261	ug/kg	100
5) Ethyl Acetate	9.23	43	980479	413.7480	ug/kg	100
6) Methacrylonitrile	9.40	67	321602	419.2243	ug/kg	99
7) Isobutyl Alcohol	9.43	43	142361	842.7355	ug/kg#	98
8) 1-Butanol	10.36	56	51732	422.9922	ug/kg	99
9) Methyl methacrylate	11.56	41	779879	430.8570	ug/kg	98
10) 2-Nitropropane	11.90	43	267565	455.0088	ug/kg	96
12) Cyclohexanone	16.01	55	56623	437.0688	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972478.D A9FOO_SL.M Wed Jan 27 09:51:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972478.D Vial: 9
Acq On : 25 Jan 2016 14:25 Operator: FJB
Sample : WG555000-08 400ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 9:51 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

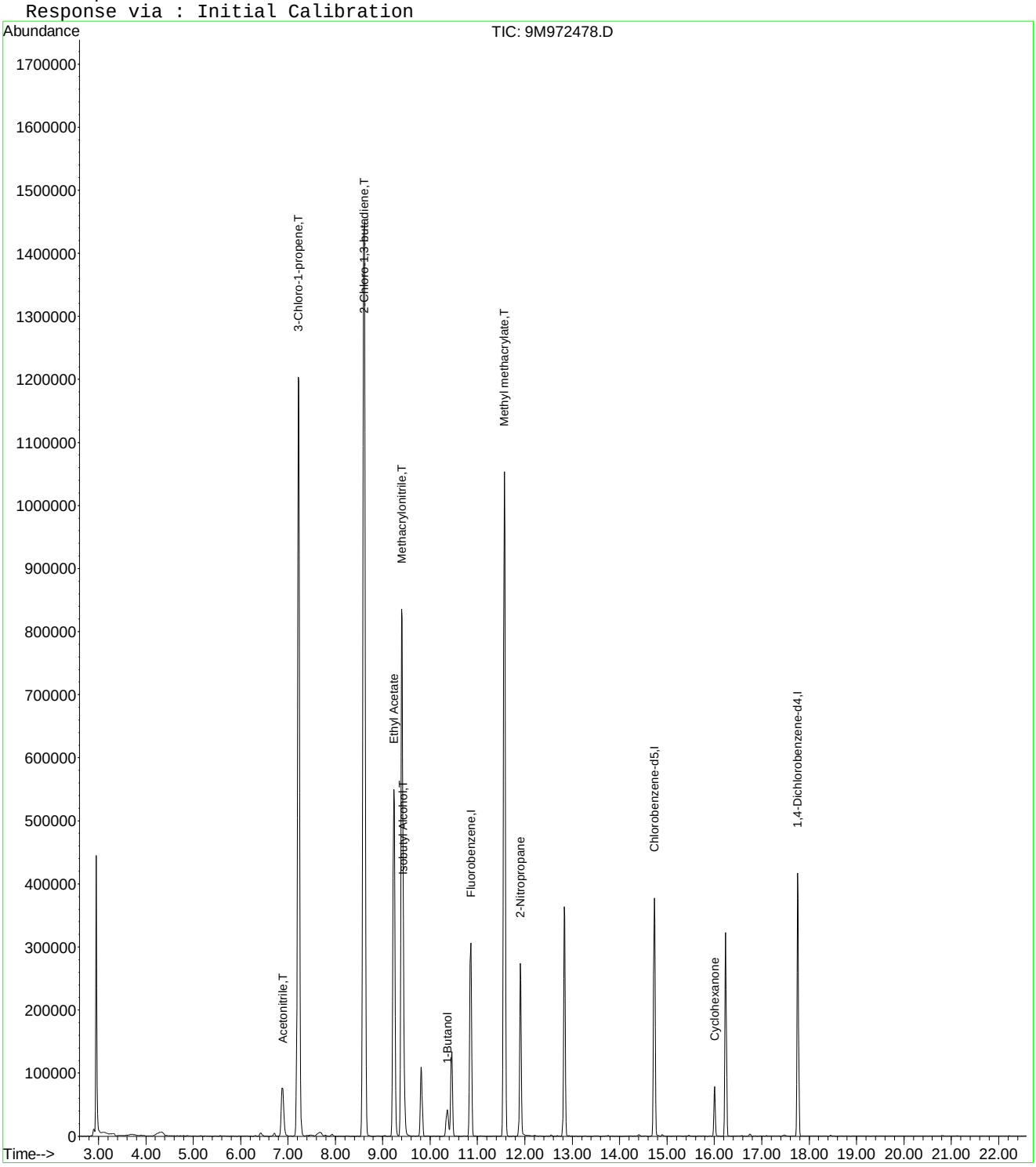

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972479.D Vial: 10
Acq On : 25 Jan 2016 14:56 Operator: FJB
Sample : WG555000-09 500ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:08 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	364474	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	266311	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	151707	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	196334	537.6773	ug/kg#	94
3) 3-Chloro-1-propene	7.22	41	1832802	509.3680	ug/kg	99
4) 2-Chloro-1,3-butadiene	8.60	53	2126710	519.6807	ug/kg	100
5) Ethyl Acetate	9.23	43	1255294	522.2587	ug/kg	100
6) Methacrylonitrile	9.40	67	408537	525.0513	ug/kg	100
7) Isobutyl Alcohol	9.43	43	180610	1052.3719	ug/kg	98
8) 1-Butanol	10.36	56	64789	519.8809	ug/kg	97
9) Methyl methacrylate	11.56	41	981460	534.5904	ug/kg	100
10) 2-Nitropropane	11.90	43	346571	581.0659	ug/kg	97
12) Cyclohexanone	16.01	55	74733	566.8143	ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972479.D A9FOO_SL.M Wed Jan 27 11:30:29 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972479.D Vial: 10
Acq On : 25 Jan 2016 14:56 Operator: FJB
Sample : WG555000-09 500ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

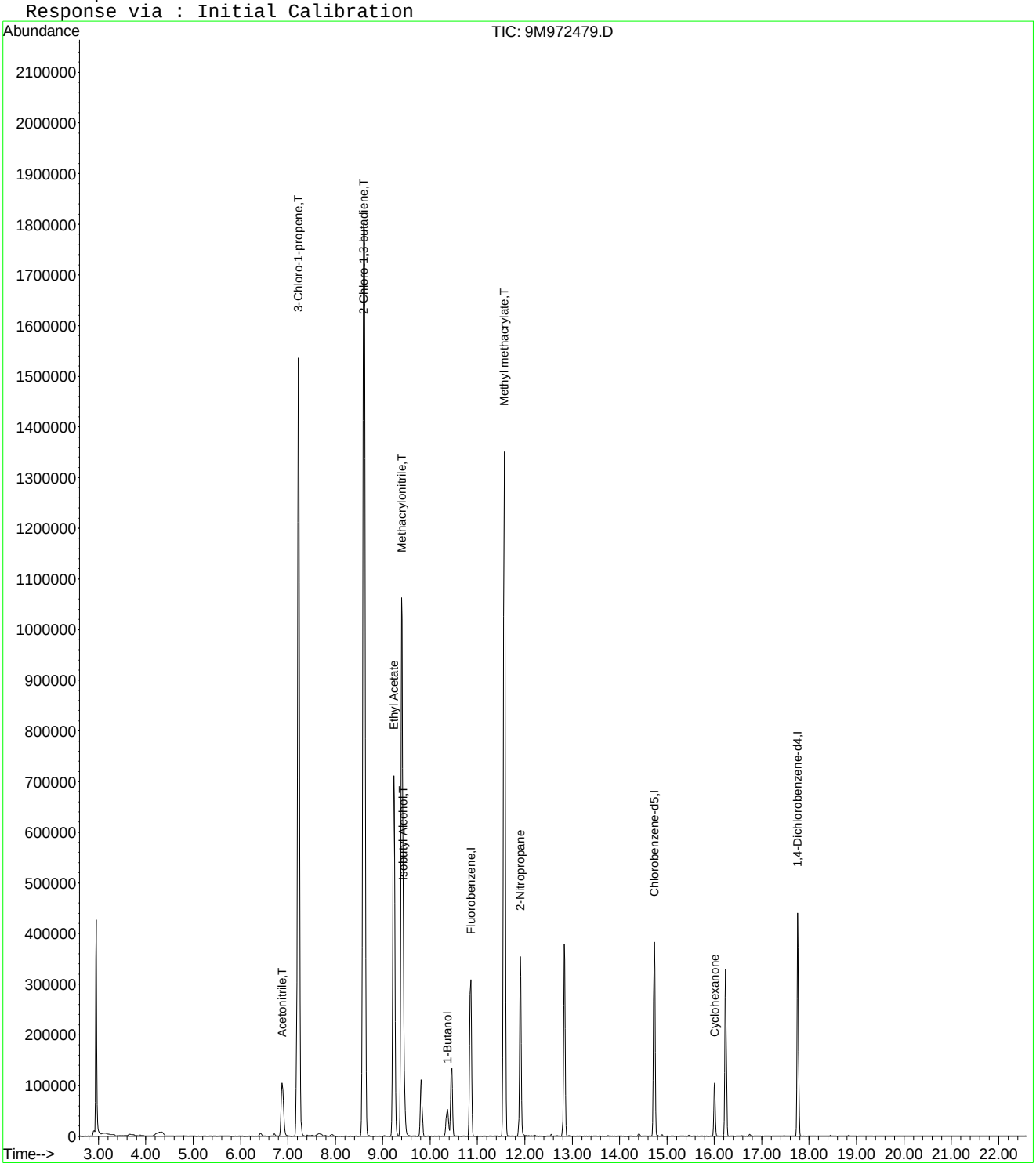

9M972479.D A9FOO_SL.M Wed Jan 27 11:30:29 2016 Page 2

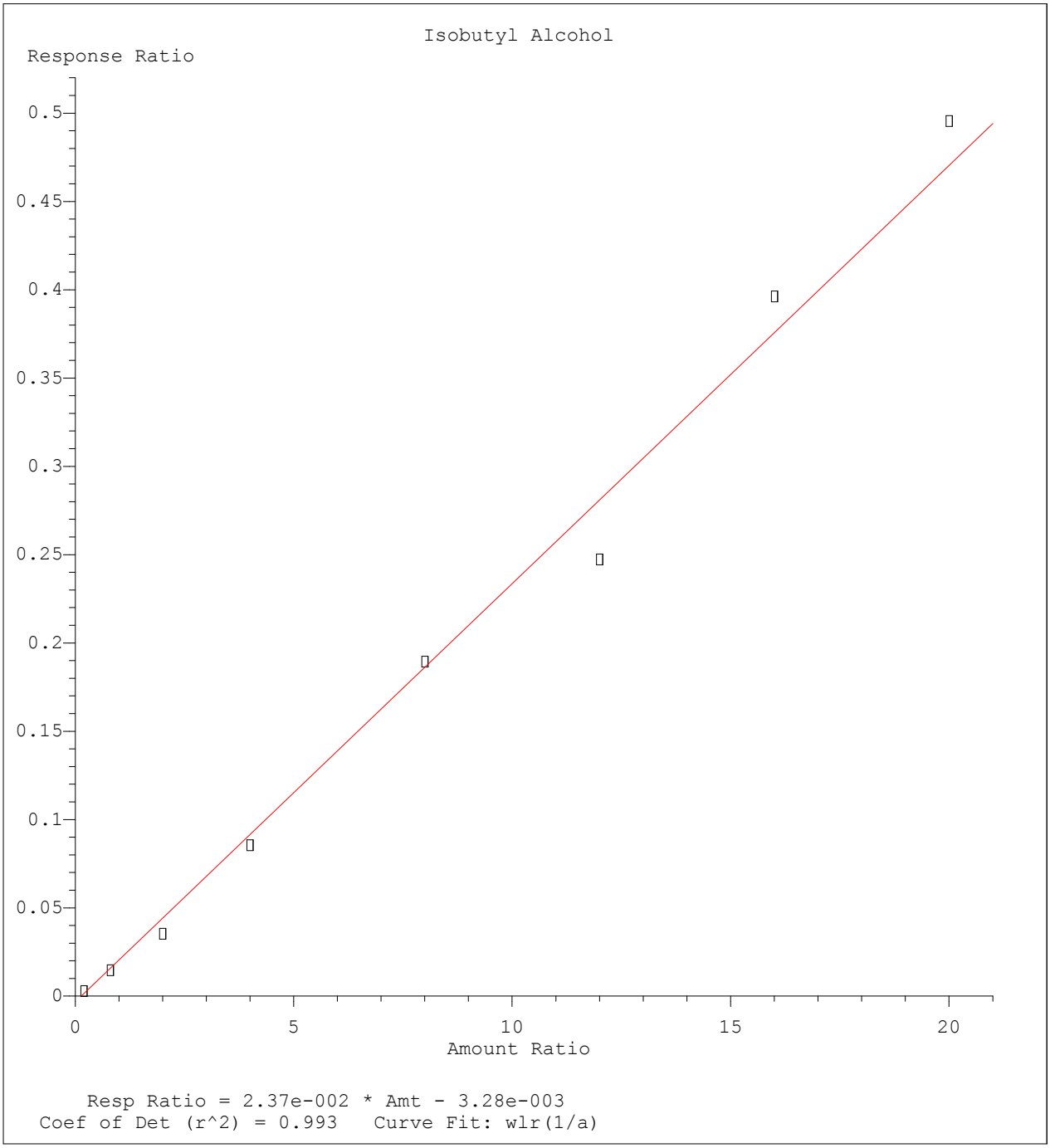

Method Name: C:\MSDCHEM\1\METHODS\A9FOO_SL.M
Calibration Table Last Updated: Wed Jan 27 09:49:02 2016

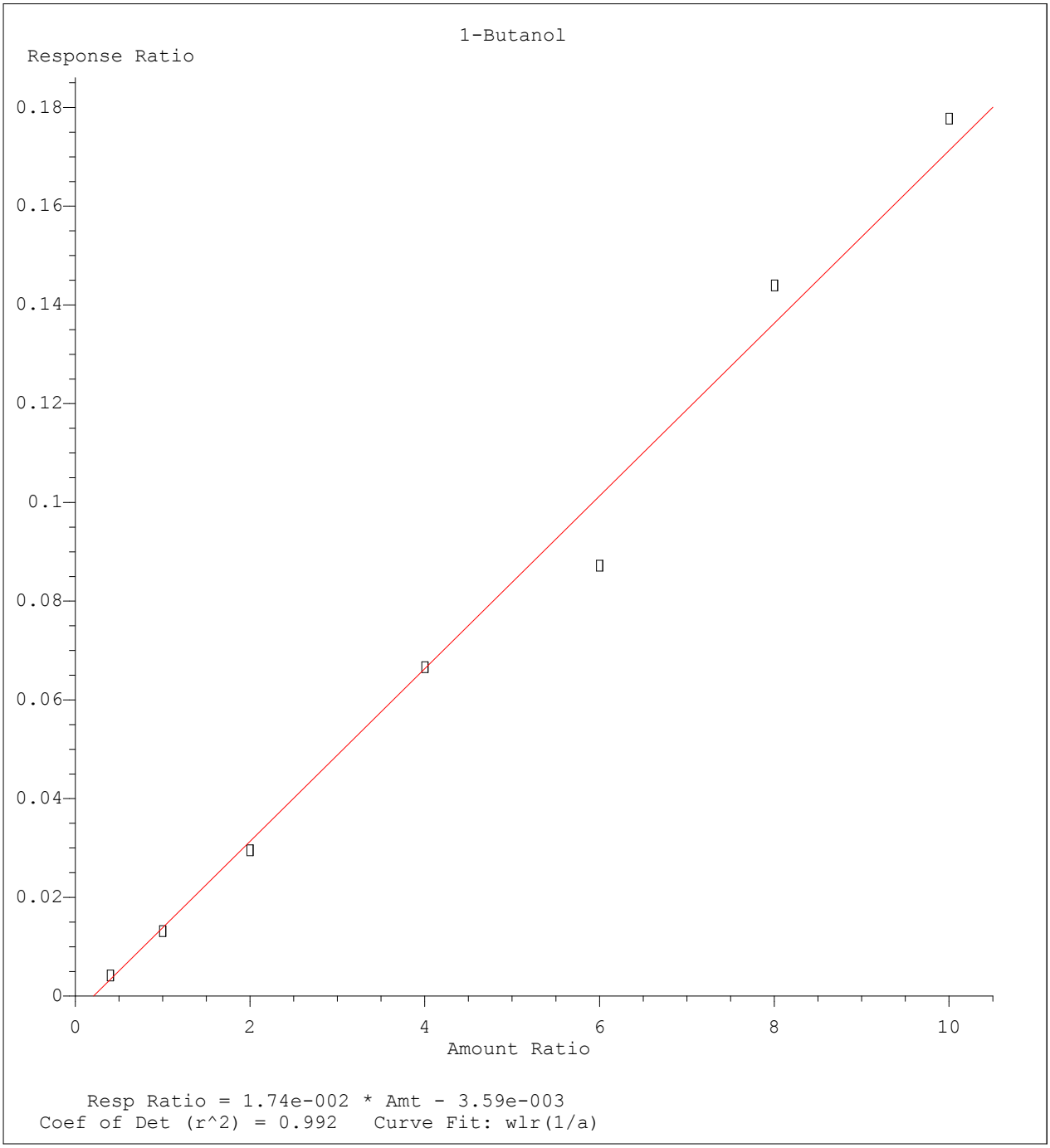

Method Name: C:\MSDCHEM\1\METHODS\A9FOO_SL.M
Calibration Table Last Updated: Wed Jan 27 09:49:02 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:09 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	394765	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	285754	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	159586	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	40054	101.2745 ug/kg#	100
3) 3-Chloro-1-propene	7.22	41	402890	103.3786 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	572568	129.1764 ug/kg	99
5) Ethyl Acetate	9.23	43	275962	106.0028 ug/kg	99
6) Methacrylonitrile	9.40	67	90289	107.1354 ug/kg	96
7) Isobutyl Alcohol	9.42	43	34031	188.7895 ug/kg	99
8) 1-Butanol	10.35	56	12038	97.7072 ug/kg	97
9) Methyl methacrylate	11.56	41	219363	110.3163 ug/kg	100
10) 2-Nitropropane	11.90	43	69288	107.2554 ug/kg	93
12) Cyclohexanone	16.01	55	14203	100.3934 ug/kg	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

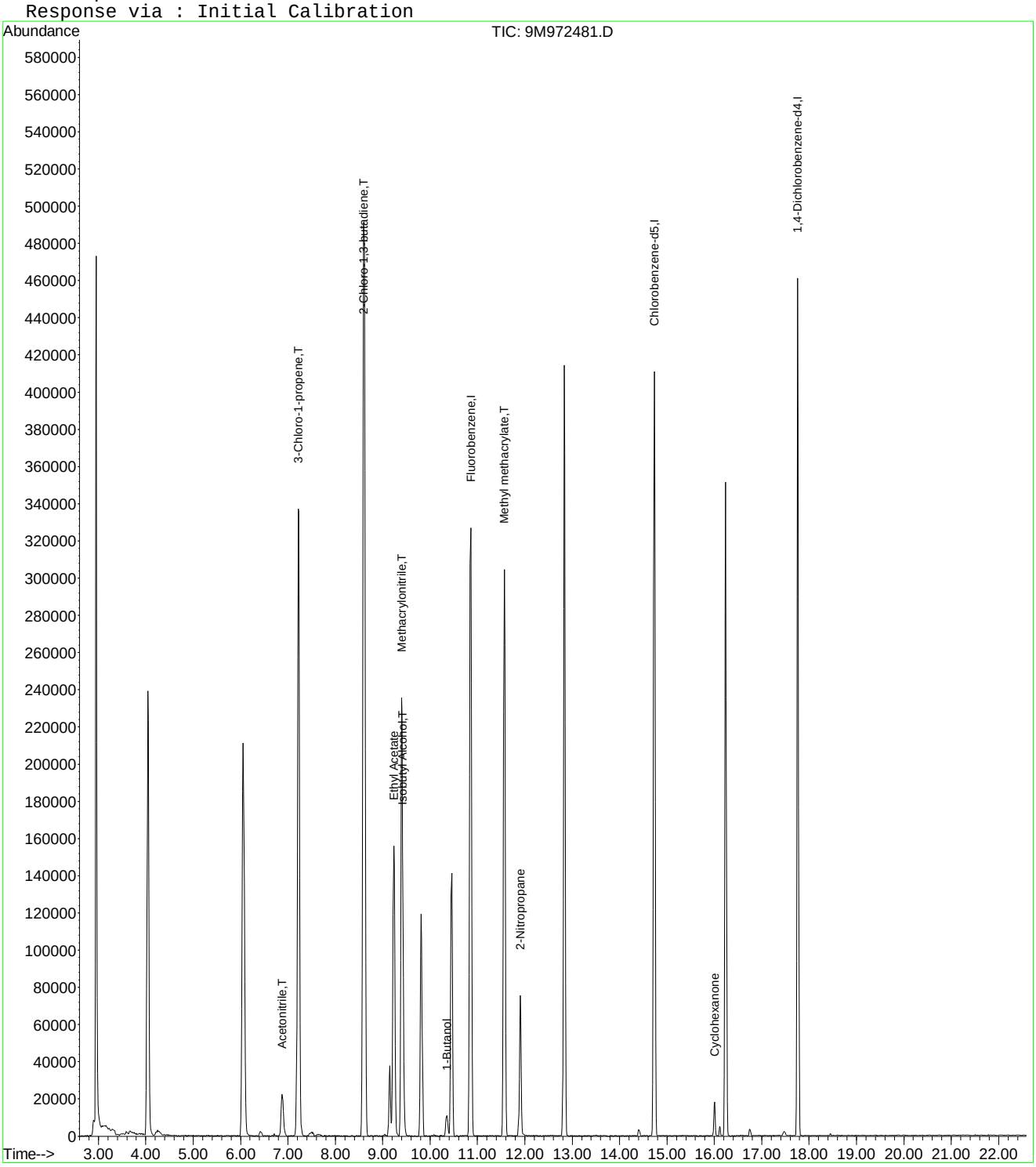

9M972481.D A9FOO_SL.M Wed Jan 27 11:15:09 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	101.2745	-1.3	106	0.00
3	T	3-Chloro-1-propene	100.0000	103.3786	-3.4	98	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	129.1764	-29.2	122	0.00
5		Ethyl Acetate	100.0000	106.0028	-6.0	103	0.00
6	T	Methacrylonitrile	100.0000	107.1354	-7.1	103	0.00
7	T	Isobutyl Alcohol	200.0000	188.7895	5.6	101	0.00
8		1-Butanol	100.0000	97.7072	2.3	103	0.00
9	T	Methyl methacrylate	100.0000	110.3163	-10.3	105	0.00
10		2-Nitropropane	100.0000	107.2554	-7.3	106	0.00
11	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
12		Cyclohexanone	100.0000	100.3934	-0.4	101	0.00
13	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	99	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972481.D A9FOO_SL.M Wed Jan 27 11:32:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973594.D Vial: 2
Acq On : 6 Apr 2016 10:29 Operator: ADC
Sample : WG563259-02 50ug/L CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:10 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	551415	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	405052	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	189947	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	147788	53.0682 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 106.14%		
43) 1,2-Dichloroethane-d4	10.44	65	151213	51.8685 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 103.74%		
58) Toluene-d8	12.82	98	526968	54.5879 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 109.18%		
79) p-Bromofluorobenzene	16.22	95	195456	59.4087 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 118.82%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.28	85	242107	57.2388 ug/kg	100
3) Chloromethane	3.75	50	193873	49.8597 ug/kg	100
4) Vinyl Chloride	3.98	62	149013	58.4247 ug/kg	100
5) 1,3-Butadiene	4.02	54	88480	47.1558 ug/kg	100
6) Bromomethane	4.87	94	126955	53.2516 ug/kg	100
7) Chloroethane	5.03	64	122932	52.9379 ug/kg	100
8) Trichlorofluoromethane	5.52	101	273893	55.7491 ug/kg	100
9) Diethyl ether	6.05	59	302106	104.5639 ug/kg	100
10) Isoprene	6.09	67	215171	55.6416 ug/kg	100
11) Acrolein	6.29	56	15006	52.2353 ug/kg	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	166684	55.5646 ug/kg	100
13) Acetone	6.38	43	59710	51.5489 ug/kg	100
14) 1,1-Dichloroethene	6.62	61	279907	55.6672 ug/kg	100
15) Tert-Butyl Alcohol	6.72	59	100512	207.8196 ug/kg	100
16) Dimethyl Sulfide	6.88	62	141859	57.5847 ug/kg	100
17) Iodomethane	7.13	142	125531	53.7732 ug/kg	100
18) Methyl acetate	7.13	43	167926	52.5703 ug/kg	100
19) Methylene Chloride	7.40	84	165284	52.6229 ug/kg	100
20) Carbon Disulfide	7.44	76	518079	54.3386 ug/kg	100
21) Acrylonitrile	7.58	53	81072	53.3984 ug/kg	100
22) Methyl Tert Butyl Ether	7.60	73	463149	54.8002 ug/kg	100
23) trans-1,2-Dichloroethene	7.84	61	272019	56.2368 ug/kg	100
24) n-Hexane	7.91	57	316831	50.4404 ug/kg	100
25) Diisopropyl ether	8.25	45	1370277	107.0598 ug/kg	100
26) Vinyl Acetate	8.43	43	380358	55.2771 ug/kg	100
27) 1,1-Dichloroethane	8.46	63	325085	55.3706 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	1192196	105.9292 ug/kg	100
29) 2-Butanone	9.01	43	90995	51.3285 ug/kg	100
30) Propionitrile	9.13	54	60922	105.8772 ug/kg	100
31) 2,2-Dichloropropane	9.23	77	240952	56.2039 ug/kg	100
32) cis-1,2-Dichloroethene	9.31	96	177687	55.2767 ug/kg	100
33) Chloroform	9.51	83	269909	54.2007 ug/kg	100
34) 1-Bromopropane	9.64	122	30864	53.5851 ug/kg	100
35) Bromochloromethane	9.75	130	113971	56.8295 ug/kg	100
36) Tetrahydrofuran	9.77	42	128338	101.9085 ug/kg	100
38) 1,1,1-Trichloroethane	10.05	97	238906	56.0533 ug/kg	100
39) Cyclohexane	10.07	56	372130	55.2296 ug/kg	100
40) 1,1-Dichloropropene	10.24	75	218180	55.6101 ug/kg	100
41) Tert-Amyl-Methyl ether	10.34	73	880669	105.7809 ug/kg	100
42) Carbon Tetrachloride	10.38	117	219971	55.2902 ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M973594.D 8260-SL.M Thu Apr 07 13:30:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973594.D Vial: 2
Acq On : 6 Apr 2016 10:29 Operator: ADC
Sample : WG563259-02 50ug/L CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:10 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	231509	53.9837 ug/kg	100
46)	Benzene	10.59	78	644102	52.8967 ug/kg	100
47)	Trichloroethene	11.34	130	182550	53.2999 ug/kg	100
48)	Methylcyclohexane	11.43	83	286794	54.7990 ug/kg	100
49)	1,2-Dichloropropane	11.56	63	183307	55.3560 ug/kg	100
50)	1,4-Dioxane	11.85	88	9560	222.5800 ug/kg	100
51)	Bromodichloromethane	11.86	83	209073	55.4066 ug/kg	100
52)	Dibromomethane	11.96	174	110590	55.9371 ug/kg	100
53)	2-Chloroethyl Vinyl Ether	12.16	63	96674	54.9007 ug/kg	100
54)	4-Methyl-2-Pentanone	12.19	58	77462	50.8064 ug/kg	100
55)	cis-1,3-Dichloropropene	12.49	75	259757	55.2103 ug/kg	100
56)	Dimethyl Disulfide	12.77	94	283262	56.2588 ug/kg	100
59)	Toluene	12.92	91	676568	54.8912 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	208952	55.6836 ug/kg	100
61)	trans-1,3-Dichloropropene	13.09	75	233116	58.0962 ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	139311	57.4128 ug/kg	100
63)	2-Hexanone	13.24	43	141674	53.4685 ug/kg	100
64)	1,3-Dichloropropane	13.62	76	235142	56.3585 ug/kg	100
65)	Tetrachloroethene	13.74	164	148635	56.8598 ug/kg	100
66)	Dibromochloromethane	14.01	129	170681	56.9021 ug/kg	100
67)	1,2-Dibromoethane	14.27	107	145428	54.4071 ug/kg	100
68)	1-Chlorohexane	14.34	91	230794	56.8760 ug/kg	100
69)	Chlorobenzene	14.76	112	472532	55.2455 ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.79	131	164608	56.6465 ug/kg	100
71)	Ethylbenzene	14.79	106	260658	56.6484 ug/kg	100
72)	m-,p-Xylene	14.88	106	628296	110.7487 ug/kg	100
73)	o-Xylene	15.45	106	304989	56.4179 ug/kg	100
74)	Styrene	15.48	104	526964	56.9228 ug/kg	100
75)	Bromoform	15.99	173	115703	58.6080 ug/kg	100
76)	Isopropylbenzene	15.87	105	790639	56.2260 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	186051	58.2080 ug/kg	100
80)	1,2,3-Trichloropropane	16.28	110	55521	58.8971 ug/kg	100
81)	trans-1,4-Dichloro-2-Buten	16.32	53	73658	64.2034 ug/kg	100
82)	n-Propylbenzene	16.38	91	882341	62.1325 ug/kg	100
83)	Bromobenzene	16.51	156	207751	61.5020 ug/kg	100
84)	1,3,5-Trimethylbenzene	16.57	105	670786	62.0365 ug/kg	100
85)	2-Chlorotoluene	16.65	91	532140	62.7429 ug/kg	100
86)	4-Chlorotoluene	16.69	91	541387	61.0285 ug/kg	100
87)	a-Methylstyrene	16.97	118	340272	63.0826 ug/kg	100
88)	tert-Butylbenzene	17.03	134	149571	62.4349 ug/kg	100
89)	1,2,4-Trimethylbenzene	17.08	105	679712	64.7956 ug/kg	100
90)	sec-Butylbenzene	17.29	105	863432	62.1174 ug/kg	100
91)	p-Isopropyltoluene	17.45	119	715853	62.2130 ug/kg	100
92)	1,3-Dichlorobenzene	17.65	146	404430	60.5578 ug/kg	100
93)	1,4-Dichlorobenzene	17.79	146	402073	58.9902 ug/kg	100
94)	n-Butylbenzene	17.98	91	653053	61.6912 ug/kg	100
95)	1,2-Dichlorobenzene	18.29	146	379394	59.7167 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.28	157	47102	59.4653 ug/kg	100
97)	1,2,4-Trichlorobenzene	20.43	180	281137	59.9711 ug/kg	100
98)	Hexachlorobutadiene	20.58	225	136032	61.5241 ug/kg	100
99)	Naphthalene	20.80	128	699652	61.9276 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.10	180	271295	61.0508 ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M973594.D 8260-SL.M Thu Apr 07 13:30:11 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973594.D Vial: 2
Acq On : 6 Apr 2016 10:29 Operator: ADC
Sample : WG563259-02 50ug/L CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 7 13:30 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

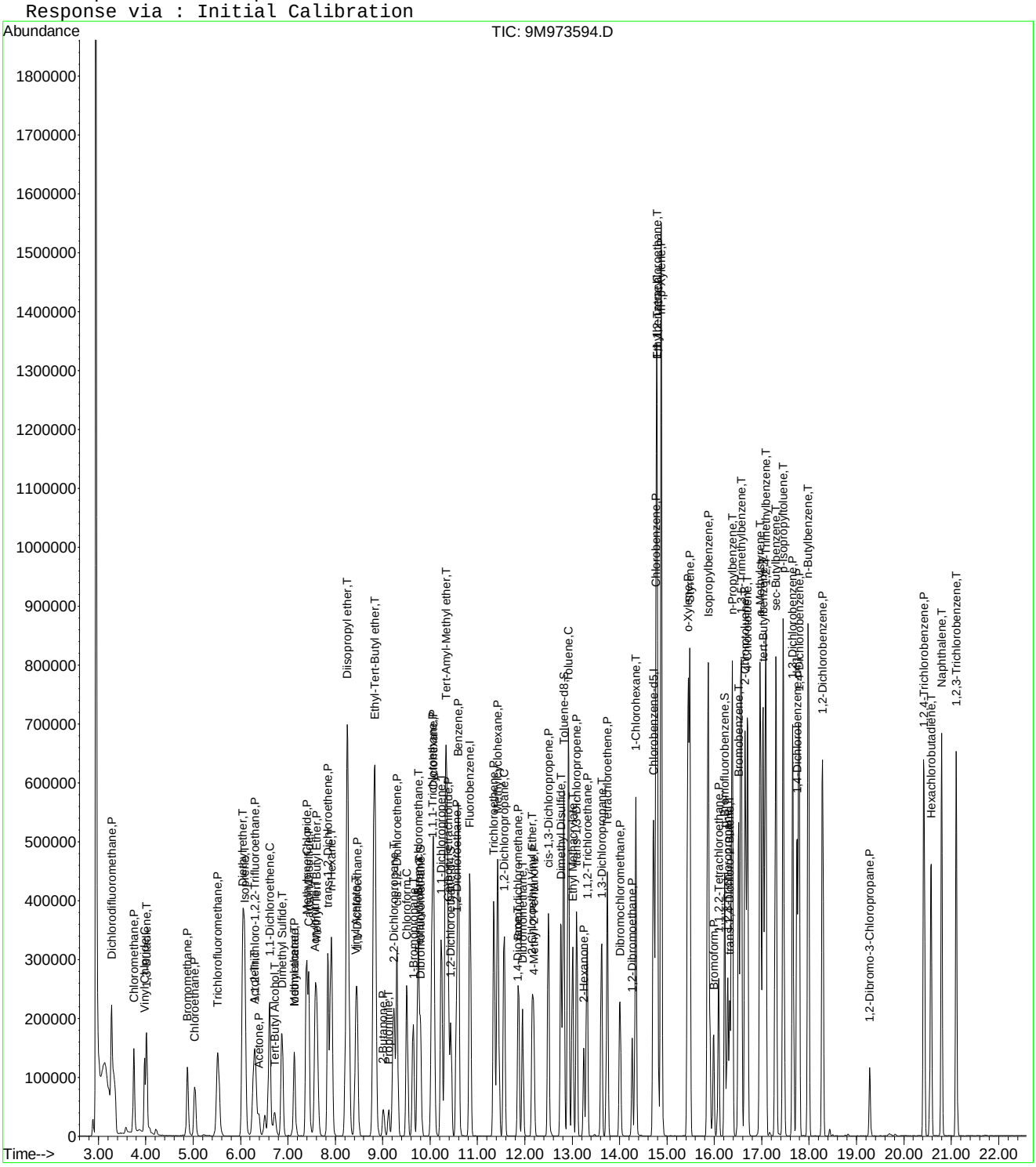

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973596.D Vial: 4
Acq On : 6 Apr 2016 11:31 Operator: ADC
Sample : WG563259-03 0.5ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 11:54:23 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/03/16 HPMS9
Last Update : Mon Apr 04 11:23:13 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	553119	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	413289	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	207310	50.00 ug/kg	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.82	98	1650	0.1613 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.32%#	
79) p-Bromofluorobenzene	16.22	95	1730	0.4358 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.88%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	1589	0.9369 ug/kg#	65
3) Chloromethane	3.75	50	4538	1.1611 ug/kg	82
4) Vinyl Chloride	3.98	62	1323	Below Cal #	44
6) Bromomethane	4.88	94	1100	0.4462 ug/kg	95
10) Isoprene	6.09	67	1671	0.4729 ug/kg	77
13) Acetone	6.40	43	8104	2.6130 ug/kg	96
14) 1,1-Dichloroethene	6.61	61	2218	0.4395 ug/kg	93
17) Iodomethane	7.13	142	282	3.4654 ug/kg#	39
18) Methyl acetate	7.14	43	1743	0.4983 ug/kg#	64
19) Methylene Chloride	7.40	84	1679	0.5589 ug/kg	51
20) Carbon Disulfide	7.44	76	5728	0.6270 ug/kg#	74
22) Methyl Tert Butyl Ether	7.61	73	3658	0.4520 ug/kg#	67
23) trans-1,2-Dichloroethene	7.84	61	2293	0.4817 ug/kg	81
24) n-Hexane	7.93	57	9408	1.7150 ug/kg	97
26) Vinyl Acetate	8.43	43	1835	0.4539 ug/kg#	78
27) 1,1-Dichloroethane	8.46	63	2623	0.4668 ug/kg#	71
29) 2-Butanone	9.01	43	1327	0.7345 ug/kg#	56
32) cis-1,2-Dichloroethene	9.31	96	1606	0.5071 ug/kg	83
33) Chloroform	9.52	83	2239	0.4550 ug/kg	94
36) Tetrahydrofuran	9.78	42	3081	2.4866 ug/kg#	60
38) 1,1,1-Trichloroethane	10.05	97	1606	0.4115 ug/kg#	53
39) Cyclohexane	10.09	56	2777	0.4317 ug/kg#	87
40) 1,1-Dichloropropene	10.24	75	1521	0.4015 ug/kg#	65
42) Carbon Tetrachloride	10.39	117	1589	0.4437 ug/kg#	82
45) 1,2-Dichloroethane	10.56	62	1752	0.4168 ug/kg#	69
46) Benzene	10.61	78	6745	0.5761 ug/kg	93
47) Trichloroethene	11.36	130	1871	0.5440 ug/kg	96
48) Methylcyclohexane	11.43	83	2531	0.5027 ug/kg	84
53) 2-Chloroethyl Vinyl Ether	12.16	63	195	1.2486 ug/kg#	47
55) cis-1,3-Dichloropropene	12.49	75	1795	0.4064 ug/kg#	74
59) Toluene	12.92	91	6663	0.5122 ug/kg	98
62) 1,1,2-Trichloroethane	13.32	97	1141	0.4465 ug/kg	67
63) 2-Hexanone	13.25	43	1262	0.4800 ug/kg#	51
64) 1,3-Dichloropropane	13.62	76	1840	0.4299 ug/kg	90
65) Tetrachloroethene	13.75	164	1340	0.5079 ug/kg	86
68) 1-Chlorohexane	14.34	91	2260	0.5662 ug/kg	86
69) Chlorobenzene	14.76	112	5299	0.6131 ug/kg	88
71) Ethylbenzene	14.80	106	2155	0.4724 ug/kg	69
72) m-,p-Xylene	14.88	106	6619	1.1750 ug/kg	91
73) o-Xylene	15.44	106	2481	0.4468 ug/kg	69

(#) = qualifier out of range (m) = manual integration
9M973596.D 8260-SL.M Thu Apr 07 13:28:14 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973596.D Vial: 4
Acq On : 6 Apr 2016 11:31 Operator: ADC
Sample : WG563259-03 0.5ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 11:54:23 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/03/16 HPMS9
Last Update : Mon Apr 04 11:23:13 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
74)	Styrene	15.48	104	5249	0.5704 ug/kg	93
76)	Isopropylbenzene	15.87	105	7442	0.5270 ug/kg	93
82)	n-Propylbenzene	16.38	91	10184	0.6237 ug/kg	98
83)	Bromobenzene	16.52	156	2243	0.5578 ug/kg	73
84)	1,3,5-Trimethylbenzene	16.56	105	8032	0.6524 ug/kg	99
85)	2-Chlorotoluene	16.65	91	5669	0.5575 ug/kg	93
86)	4-Chlorotoluene	16.69	91	5860	0.5871 ug/kg	83
87)	a-Methylstyrene	16.97	118	2629	0.4270 ug/kg	92
88)	tert-Butylbenzene	17.02	134	1136	0.4050 ug/kg	51
89)	1,2,4-Trimethylbenzene	17.09	105	12212	0.5440 ug/kg	86
90)	sec-Butylbenzene	17.30	105	9170	0.5637 ug/kg	88
91)	p-Isopropyltoluene	17.45	119	8260	0.6326 ug/kg	87
92)	1,3-Dichlorobenzene	17.66	146	4559	0.5946 ug/kg	95
93)	1,4-Dichlorobenzene	17.78	146	5206	0.6722 ug/kg	84
94)	n-Butylbenzene	17.98	91	7369	0.6266 ug/kg#	95
95)	1,2-Dichlorobenzene	18.29	146	4519	0.6176 ug/kg	94
97)	1,2,4-Trichlorobenzene	20.43	180	4488	0.8517 ug/kg	95
98)	Hexachlorobutadiene	20.58	225	1813	0.7398 ug/kg#	57
99)	Naphthalene	20.80	128	11728	0.9044 ug/kg	93
100)	1,2,3-Trichlorobenzene	21.11	180	4306	0.8341 ug/kg	90

(#) = qualifier out of range (m) = manual integration
9M973596.D 8260-SL.M Thu Apr 07 13:28:14 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973596.D Vial: 4
Acq On : 6 Apr 2016 11:31 Operator: ADC
Sample : WG563259-03 0.5ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 6 11:54 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

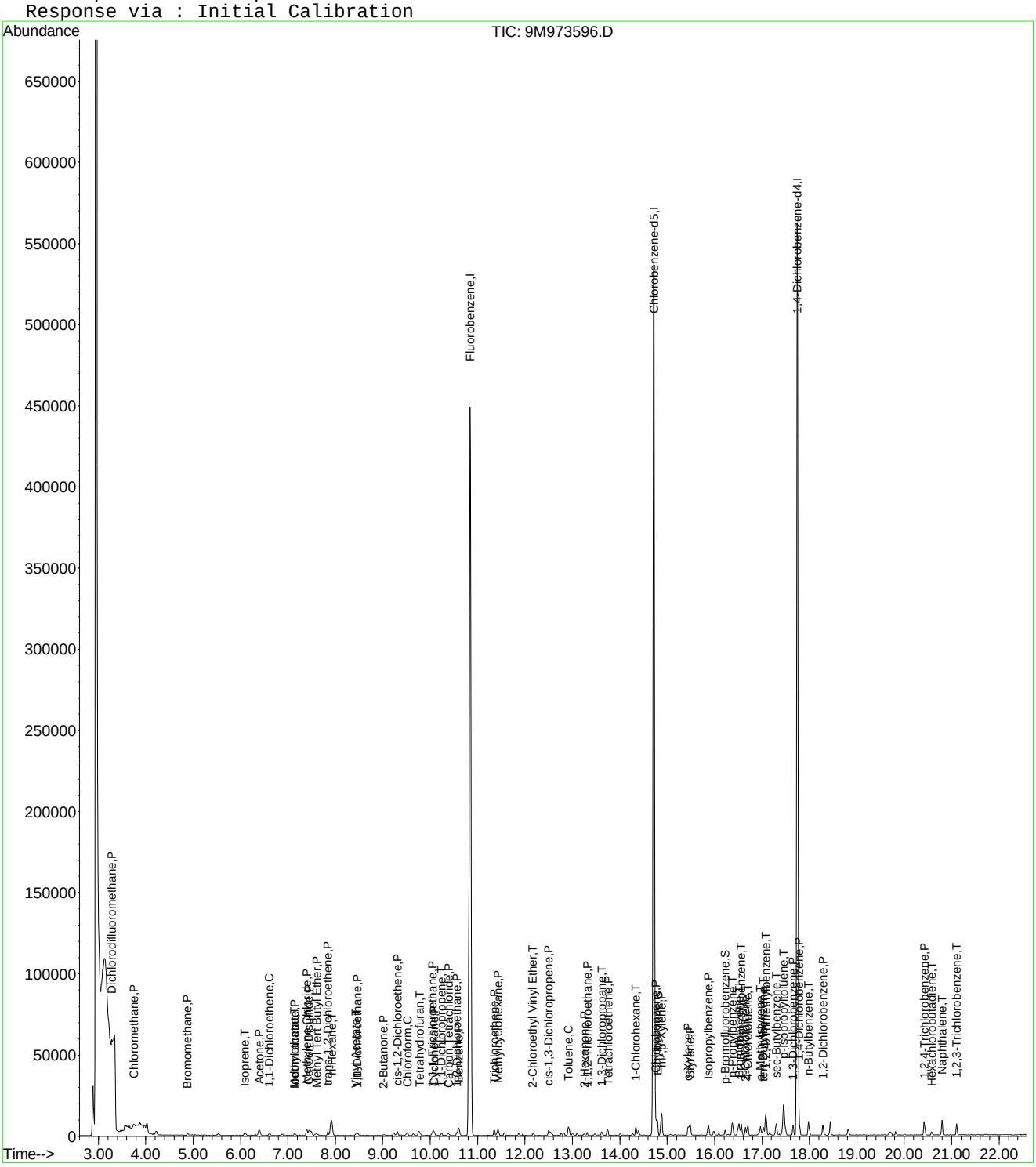

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\040616\9M973596.D Vial: 4
Acq On : 6 Apr 2016 11:31 Operator: ADC
Sample : WG563259-03 0.5ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	0.9369	0.0	100	0.00
3	P	Chloromethane	-1.0000	1.1611	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	-1.0000	0.0	0	0.00
5	T	1,3-Butadiene	-1.0000	0.1052	0.0	0	0.00
6	P	Bromomethane	-1.0000	0.4462	0.0	100	0.00
7	P	Chloroethane	-1.0000	0.2665	0.0	100	0.00
8	P	Trichlorofluoromethane	-1.0000	0.3662	0.0	100	0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.05#
10	T	Isoprene	-1.0000	0.4729	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.29#
12	P	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.0759	0.0	100	0.02
13	P	Acetone	-1.0000	2.6130	0.0	0	0.01
14	C	1,1-Dichloroethene	-1.0000	0.4395	0.0	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.72#
16	T	Dimethyl Sulfide	-1.0000	0.1631	0.0	100	0.01
17	T	Iodomethane	-1.0000	3.4654	0.0	100	0.00
18	P	Methyl acetate	-1.0000	0.4983	0.0	100	0.01
19	P	Methylene Chloride	-1.0000	0.5589	0.0	100	0.00
20	P	Carbon Disulfide	-1.0000	0.6270	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.58#
22	P	Methyl Tert Butyl Ether	-1.0000	0.4520	0.0	100	0.01
23	P	trans-1,2-Dichloroethene	-1.0000	0.4817	0.0	100	0.00
24	T	n-Hexane	-1.0000	1.7150	0.0	100	0.01
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.25#
26	T	Vinyl Acetate	-1.0000	0.4539	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.4668	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.83#
29	P	2-Butanone	-1.0000	0.7345	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.13#
31	T	2,2-Dichloropropane	-1.0000	0.3943	0.0	100	0.00
32	P	cis-1,2-Dichloroethene	-1.0000	0.5071	0.0	100	0.00
33	C	Chloroform	-1.0000	0.4550	0.0	100	0.01
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.64#
35	T	Bromochloromethane	-1.0000	0.2492	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	2.4866	0.0	100	0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	-1.0000	0.4115	0.0	100	0.00
39	P	Cyclohexane	-1.0000	0.4317	0.0	100	0.02
40	T	1,1-Dichloropropene	-1.0000	0.4015	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.34#
42	P	Carbon Tetrachloride	-1.0000	0.4437	0.0	100	0.01
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	-1.0000	0.4168	0.0	100	0.00
46	P	Benzene	0.5000	0.5762	-15.2	100	0.01
47	P	Trichloroethene	-1.0000	0.5440	0.0	100	0.01
48	P	Methylcyclohexane	-1.0000	0.5027	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.3907	0.0	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.85#
51	P	Bromodichloromethane	-1.0000	0.3953	0.0	100	0.00
52	T	Dibromomethane	-1.0000	0.3531	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	1.2486	0.0	100	0.00
54	P	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.19#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\040616\9M973596.D Vial: 4
Acq On : 6 Apr 2016 11:31 Operator: ADC
Sample : WG563259-03 0.5ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	-1.0000	0.4064	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.3326	0.0	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.1613	0.0	100	0.00
59	C	Toluene	0.5000	0.5122	-2.4	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3892	0.0	100	0.00
61	P	trans-1,3-Dichloropropene	-1.0000	0.3760	0.0	100	0.00
62	P	1,1,2-Trichloroethane	-1.0000	0.4465	0.0	100	0.00
63	P	2-Hexanone	-1.0000	0.4800	0.0	100	0.01
64	T	1,3-Dichloropropane	-1.0000	0.4299	0.0	100	0.00
65	P	Tetrachloroethene	-1.0000	0.5079	0.0	100	0.01
66	P	Dibromochloromethane	-1.0000	0.3577	0.0	100	0.00
67	P	1,2-Dibromoethane	-1.0000	0.2258	0.0	100	0.00
68	T	1-Chlorohexane	-1.0000	0.5662	0.0	100	0.00
69	P	Chlorobenzene	-1.0000	0.6131	0.0	100	0.00
70	T	1,1,1,2-Tetrachloroethane	-1.0000	0.3018	0.0	100	0.00
71	C	Ethylbenzene	0.5000	0.4724	5.5	100	0.00
72	P	m-,p-Xylene	1.0000	1.1750	-17.5	100	0.00
73	P	o-Xylene	0.5000	0.4468	10.6	100	0.00
74	P	Styrene	-1.0000	0.5704	0.0	100	0.00
75	P	Bromoform	-1.0000	0.2339	0.0	100	0.00
76	P	Isopropylbenzene	-1.0000	0.5270	0.0	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	-1.0000	0.3405	0.0	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.4358	0.0	100	0.00
80	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.28#
81	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.1888	0.0	100	0.00
82	T	n-Propylbenzene	-1.0000	0.6237	0.0	100	0.00
83	T	Bromobenzene	-1.0000	0.5578	0.0	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	0.6524	0.0	100	0.00
85	T	2-Chlorotoluene	-1.0000	0.5575	0.0	100	0.00
86	T	4-Chlorotoluene	-1.0000	0.5871	0.0	100	0.00
87	T	a-Methylstyrene	-1.0000	0.4270	0.0	100	0.00
88	T	tert-Butylbenzene	-1.0000	0.4050	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	-1.0000	0.5440	0.0	100	0.00
90	T	sec-Butylbenzene	-1.0000	0.5637	0.0	100	0.00
91	T	p-Isopropyltoluene	-1.0000	0.6326	0.0	100	0.00
92	P	1,3-Dichlorobenzene	-1.0000	0.5946	0.0	100	0.00
93	P	1,4-Dichlorobenzene	-1.0000	0.6722	0.0	100	0.00
94	T	n-Butylbenzene	-1.0000	0.6266	0.0	100	0.00
95	P	1,2-Dichlorobenzene	-1.0000	0.6176	0.0	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.28#
97	P	1,2,4-Trichlorobenzene	-1.0000	0.8517	0.0	100	0.00
98	T	Hexachlorobutadiene	-1.0000	0.7398	0.0	100	0.00
99	T	Naphthalene	-1.0000	0.9044	0.0	100	0.00
100	T	1,2,3-Trichlorobenzene	-1.0000	0.8341	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M973596.D 8260-SL.M Thu Apr 07 13:28:08 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973597.D Vial: 5
Acq On : 6 Apr 2016 12:02 Operator: ADC
Sample : WG563259-04 1.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 12:24:39 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/03/16 HPMS9
Last Update : Mon Apr 04 11:23:13 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	557853	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	421718	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	209128	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.82	98	1380	0.1322 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.26%#	
79) p-Bromofluorobenzene	16.22	95	1023	0.2555 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.52%#	

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.28	85	3438	1.3902 ug/kg#	65
3) Chloromethane	3.75	50	5181	1.3144 ug/kg#	63
4) Vinyl Chloride	3.98	62	3443	0.7225 ug/kg#	44
6) Bromomethane	4.88	94	2284	0.9187 ug/kg	99
7) Chloroethane	5.04	64	1773	0.9224 ug/kg#	45
8) Trichlorofluoromethane	5.52	101	4412	0.9378 ug/kg#	81
9) Diethyl ether	6.05	59	14756	5.2770 ug/kg	93
10) Isoprene	6.09	67	3715	1.0425 ug/kg	96
11) Acrolein	6.29	56	637	1.7221 ug/kg#	16
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	2305	0.7889 ug/kg	63
13) Acetone	6.39	43	7601	2.0940 ug/kg	96
14) 1,1-Dichloroethene	6.62	61	4390	0.8626 ug/kg	95
15) Tert-Butyl Alcohol	6.72	59	5249	10.8958 ug/kg#	78
16) Dimethyl Sulfide	6.87	62	1824	0.7358 ug/kg	84
17) Iodomethane	7.13	142	1121	3.9269 ug/kg#	39
18) Methyl acetate	7.14	43	3352	0.9502 ug/kg#	64
19) Methylene Chloride	7.40	84	3418	1.1282 ug/kg	86
20) Carbon Disulfide	7.44	76	10560	1.1462 ug/kg	96
21) Acrylonitrile	7.58	53	3633	2.4445 ug/kg	94
22) Methyl Tert Butyl Ether	7.61	73	7926	0.9710 ug/kg	85
23) trans-1,2-Dichloroethene	7.84	61	4306	0.8970 ug/kg	98
24) n-Hexane	7.91	57	10751	1.9432 ug/kg	100
25) Diisopropyl ether	8.25	45	66111	5.4586 ug/kg	98
26) Vinyl Acetate	8.42	43	4318	1.0591 ug/kg#	78
27) 1,1-Dichloroethane	8.46	63	5187	0.9153 ug/kg#	84
28) Ethyl-Tert-Butyl ether	8.83	59	58385	5.6314 ug/kg	97
29) 2-Butanone	9.01	43	2198	1.2063 ug/kg#	56
30) Propionitrile	9.13	54	2656	4.5857 ug/kg#	78
31) 2,2-Dichloropropane	9.23	77	3742	1.0146 ug/kg#	65
32) cis-1,2-Dichloroethene	9.31	96	2691	0.8425 ug/kg	94
33) Chloroform	9.51	83	4714	0.9497 ug/kg	94
35) Bromochloromethane	9.75	130	1511	0.7365 ug/kg	88
36) Tetrahydrofuran	9.77	42	9416	7.5349 ug/kg	88
38) 1,1,1-Trichloroethane	10.05	97	3823	0.9714 ug/kg	98
39) Cyclohexane	10.08	56	5889	0.9076 ug/kg	97
40) 1,1-Dichloropropene	10.24	75	3371	0.8822 ug/kg	92
41) Tert-Amyl-Methyl ether	10.34	73	42435	5.4666 ug/kg	98
42) Carbon Tetrachloride	10.39	117	3273	0.9063 ug/kg#	84
45) 1,2-Dichloroethane	10.56	62	3840	0.9057 ug/kg	91
46) Benzene	10.60	78	11983	1.0149 ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M973597.D 8260-SL.M Thu Apr 07 13:28:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973597.D Vial: 5
Acq On : 6 Apr 2016 12:02 Operator: ADC
Sample : WG563259-04 1.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 12:24:39 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/03/16 HPMS9
Last Update : Mon Apr 04 11:23:13 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
47)	Trichloroethene	11.35	130	3487	1.0053	ug/kg	88
48)	Methylcyclohexane	11.44	83	4996	0.9839	ug/kg	95
49)	1,2-Dichloropropane	11.56	63	2872	0.8788	ug/kg	95
51)	Bromodichloromethane	11.86	83	3283	0.8724	ug/kg#	85
52)	Dibromomethane	11.96	174	1694	0.8620	ug/kg	90
53)	2-Chloroethyl Vinyl Ether	12.17	63	1008	2.4200	ug/kg#	47
54)	4-Methyl-2-Pentanone	12.20	58	973	0.6567	ug/kg#	43
55)	cis-1,3-Dichloropropene	12.49	75	3951	0.8869	ug/kg#	77
56)	Dimethyl Disulfide	12.77	94	3623	0.7258	ug/kg	97
59)	Toluene	12.92	91	12565	0.9465	ug/kg	98
60)	Ethyl Methacrylate	13.00	69	3038	0.7867	ug/kg#	71
61)	trans-1,3-Dichloropropene	13.09	75	3292	0.8033	ug/kg	96
62)	1,1,2-Trichloroethane	13.32	97	1934	0.7417	ug/kg	91
63)	2-Hexanone	13.24	43	2621	0.9770	ug/kg#	71
64)	1,3-Dichloropropane	13.62	76	3906	0.8945	ug/kg	96
65)	Tetrachloroethene	13.75	164	2453	0.9111	ug/kg	99
66)	Dibromochloromethane	14.01	129	2167	0.6862	ug/kg	98
67)	1,2-Dibromoethane	14.27	107	2061	0.7227	ug/kg	87
68)	1-Chlorohexane	14.34	91	3972	0.9753	ug/kg	98
69)	Chlorobenzene	14.76	112	8591	0.9741	ug/kg	95
70)	1,1,1,2-Tetrachloroethane	14.79	131	2410	0.8202	ug/kg	100
71)	Ethylbenzene	14.79	106	4507	0.9682	ug/kg	89
72)	m-,p-Xylene	14.88	106	11285	1.9633	ug/kg	99
73)	o-Xylene	15.45	106	5223	0.9219	ug/kg	92
74)	Styrene	15.48	104	8749	0.9317	ug/kg	92
75)	Bromoform	15.98	173	1483	0.6965	ug/kg	75
76)	Isopropylbenzene	15.87	105	14235	0.9879	ug/kg	93
78)	1,1,2,2-Tetrachloroethane	16.09	83	2277	0.7039	ug/kg#	92
80)	1,2,3-Trichloropropane	16.28	110	937	0.8413	ug/kg#	1
81)	trans-1,4-Dichloro-2-Buten	16.32	53	931	0.7743	ug/kg#	1
82)	n-Propylbenzene	16.38	91	16968	1.0301	ug/kg	95
83)	Bromobenzene	16.51	156	3616	0.8914	ug/kg#	49
84)	1,3,5-Trimethylbenzene	16.56	105	12696	1.0222	ug/kg	97
85)	2-Chlorotoluene	16.65	91	10075	0.9822	ug/kg	94
86)	4-Chlorotoluene	16.69	91	10332	1.0261	ug/kg	93
87)	a-Methylstyrene	16.97	118	5122	0.8247	ug/kg	97
88)	tert-Butylbenzene	17.03	134	2268	0.8015	ug/kg	70
89)	1,2,4-Trimethylbenzene	17.08	105	16314	0.8707	ug/kg	94
90)	sec-Butylbenzene	17.29	105	15648	0.9536	ug/kg	100
91)	p-Isopropyltoluene	17.45	119	12800	0.9718	ug/kg	98
92)	1,3-Dichlorobenzene	17.65	146	7673	0.9920	ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	8420	1.0777	ug/kg	94
94)	n-Butylbenzene	17.98	91	11896	1.0028	ug/kg	96
95)	1,2-Dichlorobenzene	18.29	146	7645	1.0358	ug/kg	89
96)	1,2-Dibromo-3-Chloropropan	19.29	157	415	0.4519	ug/kg	67
97)	1,2,4-Trichlorobenzene	20.43	180	5819	1.0947	ug/kg	94
98)	Hexachlorobutadiene	20.58	225	2429	0.9825	ug/kg	98
99)	Naphthalene	20.80	128	14841	1.1345	ug/kg	93
100)	1,2,3-Trichlorobenzene	21.10	180	5534	1.0627	ug/kg	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973597.D Vial: 5
Acq On : 6 Apr 2016 12:02 Operator: ADC
Sample : WG563259-04 1.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 6 12:24 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

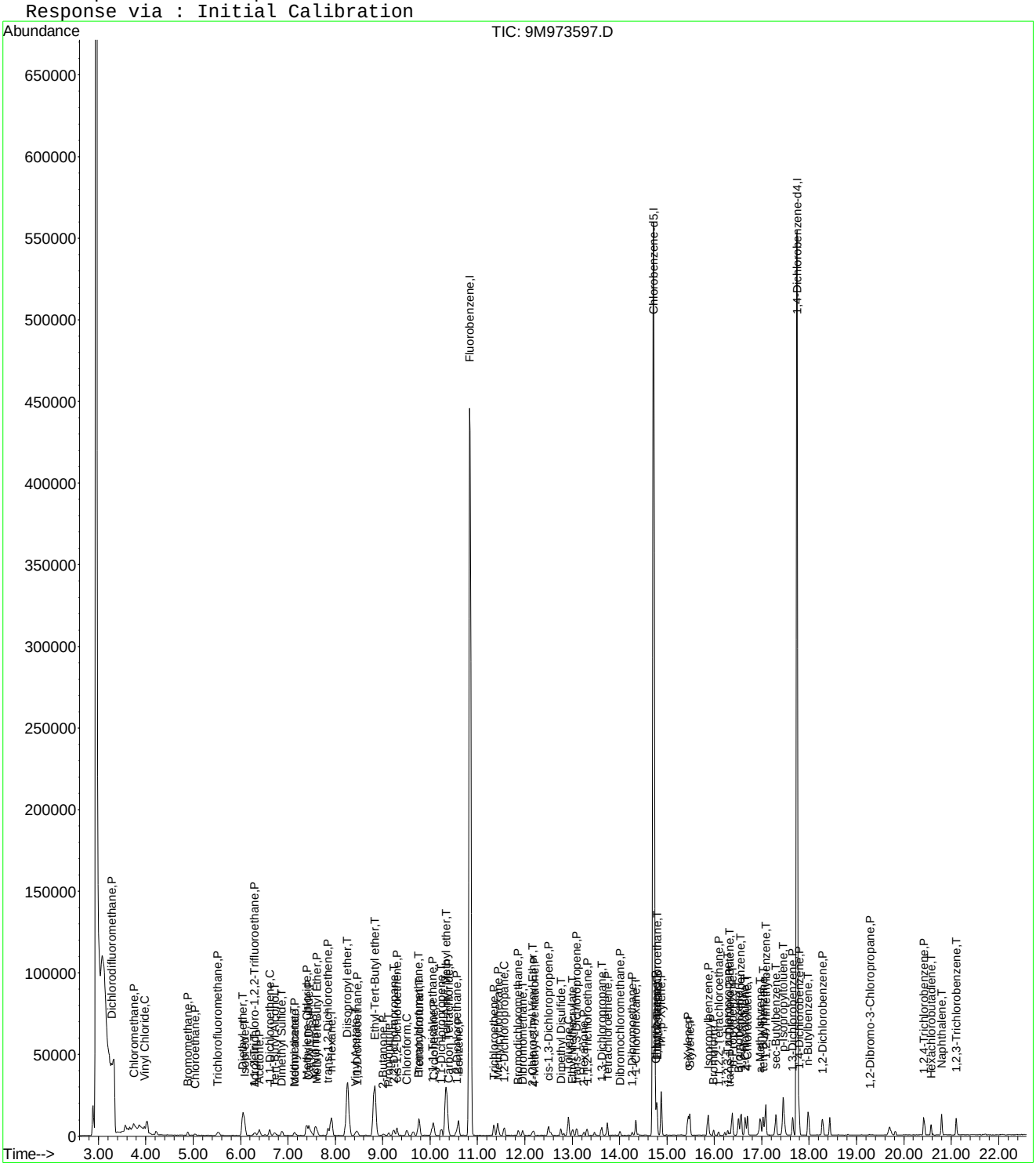

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\040616\9M973597.D Vial: 5
Acq On : 6 Apr 2016 12:02 Operator: ADC
Sample : WG563259-04 1.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	1.3902	0.0	100	0.00
3	P	Chloromethane	-1.0000	1.3144	0.0	100	0.00
4	C	Vinyl Chloride	1.0000	0.7226	27.7#	100	0.00
5	T	1,3-Butadiene	1.0000	0.2910	70.9#	100	0.00
6	P	Bromomethane	1.0000	0.9187	8.1	100	0.01
7	P	Chloroethane	-1.0000	0.9224	0.0	100	0.01
8	P	Trichlorofluoromethane	1.0000	0.9378	6.2	100	0.00
9	T	Diethyl ether	5.0000	5.2770	-5.5	100	0.00
10	T	Isoprene	-1.0000	1.0425	0.0	100	0.00
11	T	Acrolein	2.5000	1.7221	31.1#	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.7889	0.0	100	-0.01
13	P	Acetone	-1.0000	2.0940	0.0	0	0.01
14	C	1,1-Dichloroethene	1.0000	0.8626	13.7	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	10.8958	0.0	100	0.00
16	T	Dimethyl Sulfide	1.0000	0.7358	26.4#	100	-0.01
17	T	Iodomethane	-1.0000	3.9269	0.0	100	0.00
18	P	Methyl acetate	-1.0000	0.9502	0.0	100	0.01
19	P	Methylene Chloride	-1.0000	1.1282	0.0	100	0.00
20	P	Carbon Disulfide	-1.0000	1.1462	0.0	100	0.00
21	T	Acrylonitrile	2.5000	2.4445	2.2	100	0.00
22	P	Methyl Tert Butyl Ether	1.0000	0.9710	2.9	100	0.01
23	P	trans-1,2-Dichloroethene	1.0000	0.8970	10.3	100	0.00
24	T	n-Hexane	-1.0000	1.9432	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	5.4586	-9.2	100	0.00
26	T	Vinyl Acetate	-1.0000	1.0591	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	0.9153	8.5	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	5.6315	-12.6	100	0.00
29	P	2-Butanone	-1.0000	1.2063	0.0	100	0.00
30	T	Propionitrile	5.0000	4.5857	8.3	100	0.00
31	T	2,2-Dichloropropane	-1.0000	1.0146	0.0	100	0.00
32	P	cis-1,2-Dichloroethene	1.0000	0.8425	15.7	100	0.00
33	C	Chloroform	1.0000	0.9497	5.0	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.64#
35	T	Bromochloromethane	1.0000	0.7365	26.3#	100	0.00
36	T	Tetrahydrofuran	-1.0000	7.5349	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	1.0000	0.9714	2.9	100	0.00
39	P	Cyclohexane	1.0000	0.9076	9.2	100	0.01
40	T	1,1-Dichloropropene	1.0000	0.8822	11.8	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	5.4666	-9.3	100	0.00
42	P	Carbon Tetrachloride	-1.0000	0.9063	0.0	100	0.01
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	1.0000	0.9057	9.4	100	0.00
46	P	Benzene	1.0000	1.0149	-1.5	100	0.01
47	P	Trichloroethene	1.0000	1.0053	-0.5	100	0.01
48	P	Methylcyclohexane	1.0000	0.9839	1.6	100	0.01
49	C	1,2-Dichloropropane	1.0000	0.8788	12.1	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.85#
51	P	Bromodichloromethane	-1.0000	0.8724	0.0	100	0.00
52	T	Dibromomethane	1.0000	0.8620	13.8	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	2.4200	0.0	100	0.01
54	P	4-Methyl-2-Pentanone	-1.0000	0.6567	0.0	100	0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\040616\9M973597.D Vial: 5
Acq On : 6 Apr 2016 12:02 Operator: ADC
Sample : WG563259-04 1.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	-1.0000	0.8869	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.7258	0.0	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.1322	0.0	100	0.00
59	C	Toluene	1.0000	0.9465	5.3	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.7867	0.0	100	-0.01
61	P	trans-1,3-Dichloropropene	-1.0000	0.8033	0.0	100	0.00
62	P	1,1,2-Trichloroethane	1.0000	0.7417	25.8#	100	0.00
63	P	2-Hexanone	-1.0000	0.9770	0.0	100	0.00
64	T	1,3-Dichloropropane	1.0000	0.8945	10.6	100	0.00
65	P	Tetrachloroethene	1.0000	0.9111	8.9	100	0.01
66	P	Dibromochloromethane	-1.0000	0.6862	0.0	100	0.00
67	P	1,2-Dibromoethane	-1.0000	0.7227	0.0	100	0.00
68	T	1-Chlorohexane	1.0000	0.9753	2.5	100	0.00
69	P	Chlorobenzene	1.0000	0.9741	2.6	100	0.00
70	T	1,1,1,2-Tetrachloroethane	-1.0000	0.8202	0.0	100	0.00
71	C	Ethylbenzene	1.0000	0.9682	3.2	100	0.00
72	P	m-,p-Xylene	2.0000	1.9633	1.8	100	0.00
73	P	o-Xylene	1.0000	0.9219	7.8	100	0.00
74	P	Styrene	1.0000	0.9317	6.8	100	0.00
75	P	Bromoform	-1.0000	0.6965	0.0	100	-0.01
76	P	Isopropylbenzene	1.0000	0.9879	1.2	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	1.0000	0.7039	29.6#	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.2555	0.0	100	0.00
80	T	1,2,3-Trichloropropane	1.0000	0.8413	15.9	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.7743	0.0	100	0.00
82	T	n-Propylbenzene	1.0000	1.0301	-3.0	100	0.00
83	T	Bromobenzene	1.0000	0.8914	10.9	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	1.0222	0.0	100	-0.01
85	T	2-Chlorotoluene	-1.0000	0.9822	0.0	100	0.00
86	T	4-Chlorotoluene	1.0000	1.0261	-2.6	100	0.00
87	T	a-Methylstyrene	-1.0000	0.8247	0.0	100	0.00
88	T	tert-Butylbenzene	-1.0000	0.8015	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	1.0000	0.8708	12.9	100	0.00
90	T	sec-Butylbenzene	1.0000	0.9536	4.6	100	0.00
91	T	p-Isopropyltoluene	-1.0000	0.9718	0.0	100	0.00
92	P	1,3-Dichlorobenzene	1.0000	0.9920	0.8	100	0.00
93	P	1,4-Dichlorobenzene	1.0000	1.0777	-7.8	100	0.00
94	T	n-Butylbenzene	1.0000	1.0028	-0.3	100	0.00
95	P	1,2-Dichlorobenzene	1.0000	1.0358	-3.6	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	0.4519	0.0	100	0.01
97	P	1,2,4-Trichlorobenzene	1.0000	1.0947	-9.5	100	0.00
98	T	Hexachlorobutadiene	1.0000	0.9825	1.7	100	0.00
99	T	Naphthalene	-1.0000	1.1345	0.0	100	0.00
100	T	1,2,3-Trichlorobenzene	1.0000	1.0627	-6.3	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1
9M973597.D 8260-SL.M Thu Apr 07 13:28:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973598.D Vial: 6
Acq On : 6 Apr 2016 12:32 Operator: ADC
Sample : WG563259-05 2.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 12:54:49 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/03/16 HPMS9
Last Update : Mon Apr 04 11:23:13 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	561568	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	423295	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	214199	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.83	98	883	0.0843 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.16%#	
79) p-Bromofluorobenzene	16.23	95	557	0.1358 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	0.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	7213	2.3112 ug/kg	87
3) Chloromethane	3.74	50	9237	2.3278 ug/kg	100
4) Vinyl Chloride	3.98	62	6229	1.6747 ug/kg#	19
5) 1,3-Butadiene	4.02	54	4504	1.3063 ug/kg	77
6) Bromomethane	4.88	94	4915	1.9639 ug/kg	96
7) Chloroethane	5.04	64	4386	2.2666 ug/kg	88
8) Trichlorofluoromethane	5.54	101	9590	2.0249 ug/kg#	94
9) Diethyl ether	6.05	59	73580	26.1395 ug/kg	99
10) Isoprene	6.09	67	7256	2.0227 ug/kg	98
11) Acrolein	6.30	56	3423	9.1925 ug/kg	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	5358	1.8216 ug/kg	95
13) Acetone	6.39	43	7635	2.0790 ug/kg	99
14) 1,1-Dichloroethene	6.61	61	9887	1.9298 ug/kg	100
15) Tert-Butyl Alcohol	6.73	59	25828	53.2585 ug/kg	94
16) Dimethyl Sulfide	6.88	62	4558	1.8265 ug/kg	98
17) Iodomethane	7.13	142	2123	4.4719 ug/kg#	55
18) Methyl acetate	7.14	43	6733	1.8961 ug/kg#	78
19) Methylene Chloride	7.40	84	6667	2.1861 ug/kg	89
20) Carbon Disulfide	7.44	76	19750	2.1295 ug/kg	99
21) Acrylonitrile	7.57	53	18608	12.4377 ug/kg	96
22) Methyl Tert Butyl Ether	7.62	73	16575	2.0171 ug/kg	98
23) trans-1,2-Dichloroethene	7.85	61	9684	2.0039 ug/kg	98
24) n-Hexane	7.92	57	15558	2.7934 ug/kg	93
25) Diisopropyl ether	8.25	45	323385	26.5242 ug/kg	99
26) Vinyl Acetate	8.44	43	9782	2.3835 ug/kg#	78
27) 1,1-Dichloroethane	8.46	63	11630	2.0385 ug/kg	96
28) Ethyl-Tert-Butyl ether	8.83	59	283112	27.1265 ug/kg	99
29) 2-Butanone	9.02	43	4137	2.2555 ug/kg#	56
30) Propionitrile	9.13	54	14459	24.7990 ug/kg	98
31) 2,2-Dichloropropane	9.23	77	8083	2.1772 ug/kg	86
32) cis-1,2-Dichloroethene	9.31	96	6442	2.0036 ug/kg	86
33) Chloroform	9.52	83	9615	1.9244 ug/kg	100
34) 1-Bromopropane	9.65	122	713	1.3267 ug/kg	39
35) Bromochloromethane	9.75	130	3780	1.8303 ug/kg	98
36) Tetrahydrofuran	9.77	42	34463	27.3955 ug/kg	97
38) 1,1,1-Trichloroethane	10.04	97	7884	1.9899 ug/kg	99
39) Cyclohexane	10.08	56	13354	2.0445 ug/kg	97
40) 1,1-Dichloropropene	10.23	75	7832	2.0362 ug/kg	98
41) Tert-Amyl-Methyl ether	10.34	73	209020	26.7483 ug/kg	99
42) Carbon Tetrachloride	10.38	117	7040	1.9364 ug/kg	94

(#) = qualifier out of range (m) = manual integration
9M973598.D 8260-SL.M Thu Apr 07 13:29:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973598.D Vial: 6
Acq On : 6 Apr 2016 12:32 Operator: ADC
Sample : WG563259-05 2.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 06 12:54:49 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/03/16 HPMS9
Last Update : Mon Apr 04 11:23:13 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	9082	2.1280 ug/kg	90
46)	Benzene	10.60	78	25276	2.1266 ug/kg	96
47)	Trichloroethene	11.35	130	7090	2.0306 ug/kg	94
48)	Methylcyclohexane	11.43	83	9849	1.9269 ug/kg	93
49)	1,2-Dichloropropane	11.56	63	6385	1.9409 ug/kg	98
50)	1,4-Dioxane	11.85	88	2011	38.0886 ug/kg	94
51)	Bromodichloromethane	11.86	83	6868	1.8130 ug/kg#	96
52)	Dibromomethane	11.95	174	3665	1.8525 ug/kg	96
53)	2-Chloroethyl Vinyl Ether	12.15	63	2995	5.2459 ug/kg#	62
54)	4-Methyl-2-Pentanone	12.19	58	2405	1.6125 ug/kg#	60
55)	cis-1,3-Dichloropropene	12.50	75	9135	2.0369 ug/kg	89
56)	Dimethyl Disulfide	12.76	94	8289	1.6496 ug/kg	96
59)	Toluene	12.92	91	26467	1.9863 ug/kg	98
60)	Ethyl Methacrylate	13.01	69	7058	1.8209 ug/kg	87
61)	trans-1,3-Dichloropropene	13.09	75	7270	1.7674 ug/kg	97
62)	1,1,2-Trichloroethane	13.32	97	5072	1.9379 ug/kg	98
63)	2-Hexanone	13.24	43	5448	2.0233 ug/kg#	73
64)	1,3-Dichloropropane	13.62	76	8816	2.0113 ug/kg	97
65)	Tetrachloroethene	13.75	164	5466	2.0227 ug/kg	96
66)	Dibromochloromethane	14.01	129	5362	1.6916 ug/kg	97
67)	1,2-Dibromoethane	14.26	107	4602	1.6077 ug/kg	96
68)	1-Chlorohexane	14.34	91	8306	2.0318 ug/kg	94
69)	Chlorobenzene	14.77	112	18638	2.1054 ug/kg	78
70)	1,1,1,2-Tetrachloroethane	14.79	131	5450	1.8478 ug/kg	96
71)	Ethylbenzene	14.79	106	9804	2.0982 ug/kg	99
72)	m-,p-Xylene	14.88	106	23234	4.0271 ug/kg	97
73)	o-Xylene	15.45	106	11588	2.0377 ug/kg	95
74)	Styrene	15.48	104	18182	1.9290 ug/kg	97
75)	Bromoform	15.98	173	3164	1.4804 ug/kg	95
76)	Isopropylbenzene	15.87	105	28542	1.9733 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	6227	1.8795 ug/kg#	91
80)	1,2,3-Trichloropropane	16.28	110	2188	1.9181 ug/kg#	13
81)	trans-1,4-Dichloro-2-Buten	16.33	53	2328	1.8903 ug/kg#	1
82)	n-Propylbenzene	16.38	91	32209	1.9091 ug/kg	99
83)	Bromobenzene	16.51	156	7870	1.8942 ug/kg	66
84)	1,3,5-Trimethylbenzene	16.57	105	24501	1.9260 ug/kg	97
85)	2-Chlorotoluene	16.65	91	19437	1.8500 ug/kg	89
86)	4-Chlorotoluene	16.70	91	21001	2.0362 ug/kg	88
87)	a-Methylstyrene	16.97	118	10908	1.7148 ug/kg	90
88)	tert-Butylbenzene	17.03	134	5100	1.7596 ug/kg	78
89)	1,2,4-Trimethylbenzene	17.08	105	28288	1.7954 ug/kg	98
90)	sec-Butylbenzene	17.29	105	31454	1.8715 ug/kg	98
91)	p-Isopropyltoluene	17.45	119	26393	1.9564 ug/kg	93
92)	1,3-Dichlorobenzene	17.65	146	15785	1.9925 ug/kg	97
93)	1,4-Dichlorobenzene	17.79	146	16276	2.0339 ug/kg	77
94)	n-Butylbenzene	17.98	91	23563	1.9393 ug/kg	97
95)	1,2-Dichlorobenzene	18.29	146	13856	1.8328 ug/kg	98
96)	1,2-Dibromo-3-Chloropropan	19.29	157	1504	1.5990 ug/kg	71
97)	1,2,4-Trichlorobenzene	20.43	180	10046	1.8451 ug/kg	94
98)	Hexachlorobutadiene	20.58	225	4883	1.9284 ug/kg	97
99)	Naphthalene	20.80	128	26400	1.9704 ug/kg	99
100)	1,2,3-Trichlorobenzene	21.10	180	9688	1.8163 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973598.D Vial: 6
Acq On : 6 Apr 2016 12:32 Operator: ADC
Sample : WG563259-05 2.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 6 12:54 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

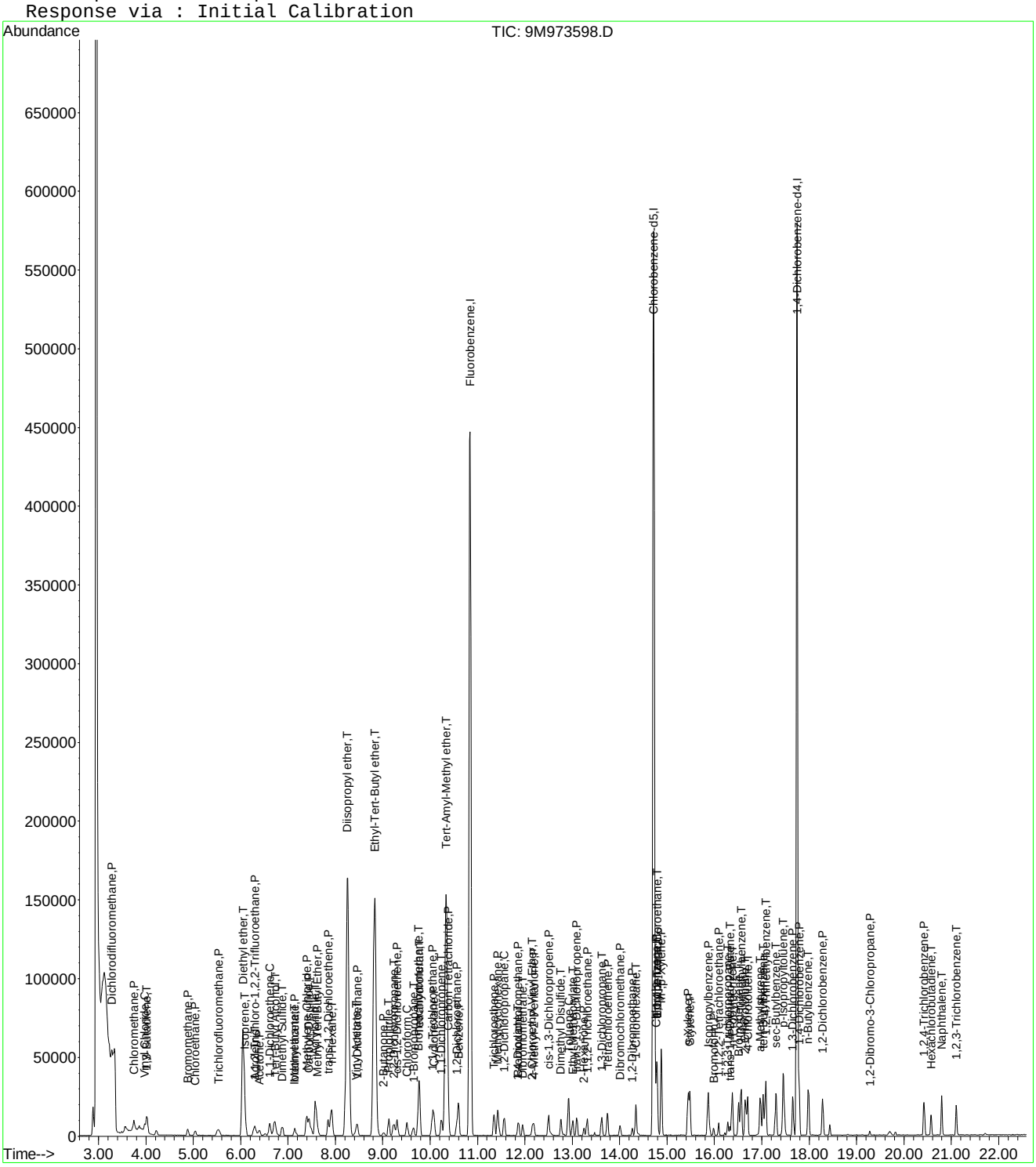

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\040616\9M973598.D Vial: 6
Acq On : 6 Apr 2016 12:32 Operator: ADC
Sample : WG563259-05 2.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	2.0000	2.3112	-15.6	100	0.00
3	P	Chloromethane	2.0000	2.3278	-16.4	100	0.00
4	C	Vinyl Chloride	2.0000	1.6747	16.3	100	0.00
5	T	1,3-Butadiene	2.0000	1.3063	34.7#	100	0.00
6	P	Bromomethane	2.0000	1.9639	1.8	100	0.00
7	P	Chloroethane	2.0000	2.2666	-13.3	100	0.00
8	P	Trichlorofluoromethane	2.0000	2.0249	-1.2	100	0.02
9	T	Diethyl ether	25.0000	26.1395	-4.6	100	0.00
10	T	Isoprene	2.0000	2.0227	-1.1	100	0.00
11	T	Acrolein	12.5000	9.1925	26.5#	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.8216	8.9	100	0.00
13	P	Acetone	-1.0000	2.0790	0.0	0	0.00
14	C	1,1-Dichloroethene	2.0000	1.9299	3.5	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	53.2585	-6.5	100	0.00
16	T	Dimethyl Sulfide	2.0000	1.8265	8.7	100	0.00
17	T	Iodomethane	-1.0000	4.4719	0.0	100	0.00
18	P	Methyl acetate	2.0000	1.8961	5.2	100	0.00
19	P	Methylene Chloride	2.0000	2.1861	-9.3	100	0.00
20	P	Carbon Disulfide	2.0000	2.1295	-6.5	100	0.00
21	T	Acrylonitrile	12.5000	12.4377	0.5	100	0.00
22	P	Methyl Tert Butyl Ether	2.0000	2.0171	-0.9	100	0.02
23	P	trans-1,2-Dichloroethene	2.0000	2.0039	-0.2	100	0.00
24	T	n-Hexane	2.0000	2.7934	-39.7#	100	0.00
25	T	Diisopropyl ether	25.0000	26.5242	-6.1	100	0.00
26	T	Vinyl Acetate	2.0000	2.3835	-19.2	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.0385	-1.9	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	27.1265	-8.5	100	0.00
29	P	2-Butanone	-1.0000	2.2555	0.0	100	0.00
30	T	Propionitrile	25.0000	24.7990	0.8	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1772	-8.9	100	0.00
32	P	cis-1,2-Dichloroethene	2.0000	2.0036	-0.2	100	0.00
33	C	Chloroform	2.0000	1.9244	3.8	100	0.00
34	T	1-Bromopropane	2.0000	1.3267	33.7#	100	0.00
35	T	Bromochloromethane	2.0000	1.8303	8.5	100	0.00
36	T	Tetrahydrofuran	25.0000	27.3955	-9.6	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	2.0000	1.9899	0.5	100	0.00
39	P	Cyclohexane	2.0000	2.0445	-2.2	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0362	-1.8	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	26.7483	-7.0	100	0.00
42	P	Carbon Tetrachloride	2.0000	1.9364	3.2	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	2.0000	2.1280	-6.4	100	0.00
46	P	Benzene	2.0000	2.1266	-6.3	100	0.00
47	P	Trichloroethene	2.0000	2.0305	-1.5	100	0.00
48	P	Methylcyclohexane	2.0000	1.9269	3.7	100	0.00
49	C	1,2-Dichloropropane	2.0000	1.9409	3.0	100	0.00
50	T	1,4-Dioxane	50.0000	38.0886	23.8	100	0.00
51	P	Bromodichloromethane	2.0000	1.8130	9.4	100	0.00
52	T	Dibromomethane	2.0000	1.8525	7.4	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	5.2459	-162.3#	100	0.00
54	P	4-Methyl-2-Pentanone	-1.0000	1.6125	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\040616\9M973598.D Vial: 6
Acq On : 6 Apr 2016 12:32 Operator: ADC
Sample : WG563259-05 2.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	2.0000	2.0369	-1.8	100	0.00
56	T	Dimethyl Disulfide	2.0000	1.6496	17.5	100	-0.01
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0843	0.0	100	0.00
59	C	Toluene	2.0000	1.9863	0.7	100	0.00
60	T	Ethyl Methacrylate	-1.0000	1.8209	0.0	100	0.00
61	P	trans-1,3-Dichloropropene	2.0000	1.7674	11.6	100	0.00
62	P	1,1,2-Trichloroethane	2.0000	1.9379	3.1	100	0.00
63	P	2-Hexanone	-1.0000	2.0233	0.0	100	0.00
64	T	1,3-Dichloropropane	2.0000	2.0113	-0.6	100	0.00
65	P	Tetrachloroethene	2.0000	2.0227	-1.1	100	0.00
66	P	Dibromochloromethane	2.0000	1.6916	15.4	100	0.00
67	P	1,2-Dibromoethane	-1.0000	1.6077	0.0	100	0.00
68	T	1-Chlorohexane	2.0000	2.0318	-1.6	100	0.00
69	P	Chlorobenzene	2.0000	2.1054	-5.3	100	0.00
70	T	1,1,1,2-Tetrachloroethane	2.0000	1.8478	7.6	100	0.00
71	C	Ethylbenzene	2.0000	2.0982	-4.9	100	0.00
72	P	m-,p-Xylene	4.0000	4.0271	-0.7	100	0.00
73	P	o-Xylene	2.0000	2.0377	-1.9	100	0.00
74	P	Styrene	2.0000	1.9290	3.5	100	0.00
75	P	Bromoform	2.0000	1.4804	26.0#	100	0.00
76	P	Isopropylbenzene	2.0000	1.9733	1.3	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	2.0000	1.8795	6.0	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.1358	0.0	100	0.00
80	T	1,2,3-Trichloropropane	2.0000	1.9181	4.1	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	2.0000	1.8903	5.5	100	0.00
82	T	n-Propylbenzene	2.0000	1.9091	4.5	100	0.00
83	T	Bromobenzene	2.0000	1.8942	5.3	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	1.9260	0.0	100	0.00
85	T	2-Chlorotoluene	2.0000	1.8500	7.5	100	0.00
86	T	4-Chlorotoluene	2.0000	2.0362	-1.8	100	0.00
87	T	a-Methylstyrene	-1.0000	1.7148	0.0	100	0.00
88	T	tert-Butylbenzene	-1.0000	1.7596	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	2.0000	1.7954	10.2	100	0.00
90	T	sec-Butylbenzene	2.0000	1.8715	6.4	100	0.00
91	T	p-Isopropyltoluene	-1.0000	1.9564	0.0	100	0.00
92	P	1,3-Dichlorobenzene	2.0000	1.9925	0.4	100	0.00
93	P	1,4-Dichlorobenzene	2.0000	2.0339	-1.7	100	0.00
94	T	n-Butylbenzene	2.0000	1.9393	3.0	100	0.00
95	P	1,2-Dichlorobenzene	2.0000	1.8328	8.4	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	1.5990	0.0	100	0.01
97	P	1,2,4-Trichlorobenzene	2.0000	1.8451	7.7	100	0.00
98	T	Hexachlorobutadiene	2.0000	1.9284	3.6	100	0.00
99	T	Naphthalene	2.0000	1.9704	1.5	100	0.00
100	T	1,2,3-Trichlorobenzene	2.0000	1.8163	9.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M973598.D 8260-SL.M Thu Apr 07 13:28:57 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973599.D Vial: 7
Acq On : 6 Apr 2016 13:03 Operator: ADC
Sample : WG563259-06 5.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:12 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	540575	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	410912	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	212234	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	26727	9.7897 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 19.58%#		
43) 1,2-Dichloroethane-d4	10.43	65	28555	9.9912 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 19.98%#		
58) Toluene-d8	12.82	98	93027	9.4991 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 19.00%#		
79) p-Bromofluorobenzene	16.22	95	33585	9.1362 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 18.28%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	18618	4.4899 ug/kg	93
3) Chloromethane	3.74	50	18697	4.9049 ug/kg	96
4) Vinyl Chloride	3.98	62	17383	6.2597 ug/kg#	75
5) 1,3-Butadiene	4.02	54	9801	5.3282 ug/kg	95
6) Bromomethane	4.88	94	12479	5.3393 ug/kg	99
7) Chloroethane	5.03	64	11469	5.0379 ug/kg	93
8) Trichlorofluoromethane	5.53	101	23619	4.9039 ug/kg	98
9) Diethyl ether	6.04	59	144321	50.9536 ug/kg	99
10) Isoprene	6.09	67	17822	4.7011 ug/kg	98
11) Acrolein	6.29	56	6309	22.4018 ug/kg	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	14091	4.7915 ug/kg	96
13) Acetone	6.39	43	11189	5.1370 ug/kg	92
14) 1,1-Dichloroethene	6.61	61	24384	4.9467 ug/kg	97
15) Tert-Butyl Alcohol	6.71	59	47814	100.8431 ug/kg	97
16) Dimethyl Sulfide	6.88	62	11613	4.8086 ug/kg	99
17) Iodomethane	7.13	142	7579	6.0534 ug/kg	95
18) Methyl acetate	7.14	43	16058	5.1279 ug/kg#	92
19) Methylene Chloride	7.40	84	15627	5.0751 ug/kg	98
20) Carbon Disulfide	7.44	76	45259	4.8422 ug/kg	99
21) Acrylonitrile	7.58	53	36084	24.2435 ug/kg	100
22) Methyl Tert Butyl Ether	7.61	73	41971	5.0656 ug/kg	97
23) trans-1,2-Dichloroethene	7.84	61	22643	4.7751 ug/kg	94
24) n-Hexane	7.91	57	31915	5.1828 ug/kg	98
25) Diisopropyl ether	8.25	45	638829	50.9126 ug/kg	100
26) Vinyl Acetate	8.43	43	27708	4.9171 ug/kg	99
27) 1,1-Dichloroethane	8.46	63	29076	5.0517 ug/kg	98
28) Ethyl-Tert-Butyl ether	8.83	59	559829	50.7395 ug/kg	99
29) 2-Butanone	9.02	43	8792	5.0588 ug/kg	93
30) Propionitrile	9.13	54	28464	50.4599 ug/kg	100
31) 2,2-Dichloropropane	9.23	77	19836	4.7197 ug/kg	97
32) cis-1,2-Dichloroethene	9.31	96	15631	4.9602 ug/kg	98
33) Chloroform	9.52	83	24960	5.1128 ug/kg	98
34) 1-Bromopropane	9.64	122	2375	4.9990 ug/kg	92
35) Bromochloromethane	9.74	130	10252	5.2145 ug/kg	97
36) Tetrahydrofuran	9.77	42	62022	50.2370 ug/kg	100
38) 1,1,1-Trichloroethane	10.04	97	20109	4.8127 ug/kg	96
39) Cyclohexane	10.07	56	32971	4.9915 ug/kg	98
40) 1,1-Dichloropropene	10.23	75	19558	5.0849 ug/kg	98
41) Tert-Amyl-Methyl ether	10.34	73	416272	51.0028 ug/kg	99
42) Carbon Tetrachloride	10.38	117	18137	4.6502 ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M973599.D 8260-SL.M Thu Apr 07 13:30:12 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973599.D Vial: 7
Acq On : 6 Apr 2016 13:03 Operator: ADC
Sample : WG563259-06 5.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:12 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	21550	5.1258	ug/kg	98
46)	Benzene	10.59	78	59748	5.0052	ug/kg	100
47)	Trichloroethene	11.35	130	17063	5.0819	ug/kg	98
48)	Methylcyclohexane	11.43	83	25911	5.0502	ug/kg	95
49)	1,2-Dichloropropane	11.56	63	16731	5.1538	ug/kg	98
50)	1,4-Dioxane	11.85	88	4165	98.9158	ug/kg	91
51)	Bromodichloromethane	11.87	83	16986	4.5917	ug/kg	97
52)	Dibromomethane	11.95	174	9659	4.9836	ug/kg	98
53)	2-Chloroethyl Vinyl Ether	12.15	63	7923	4.5897	ug/kg	91
54)	4-Methyl-2-Pentanone	12.19	58	7042	4.7114	ug/kg	93
55)	cis-1,3-Dichloropropene	12.49	75	22132	4.7984	ug/kg	100
56)	Dimethyl Disulfide	12.77	94	22635	4.5857	ug/kg	95
59)	Toluene	12.91	91	62873	5.0283	ug/kg	98
60)	Ethyl Methacrylate	13.01	69	17248	4.5309	ug/kg	97
61)	trans-1,3-Dichloropropene	13.09	75	18937	4.6521	ug/kg	97
62)	1,1,2-Trichloroethane	13.32	97	12436	5.0520	ug/kg	96
63)	2-Hexanone	13.24	43	12154	4.5216	ug/kg#	99
64)	1,3-Dichloropropane	13.62	76	21035	4.9697	ug/kg	100
65)	Tetrachloroethene	13.74	164	12748	4.8072	ug/kg	96
66)	Dibromochloromethane	14.01	129	13656	4.4877	ug/kg	99
67)	1,2-Dibromoethane	14.27	107	12726	4.6931	ug/kg	96
68)	1-Chlorohexane	14.34	91	19636	4.7700	ug/kg	100
69)	Chlorobenzene	14.76	112	43960	5.0662	ug/kg	94
70)	1,1,1,2-Tetrachloroethane	14.79	131	13422	4.5530	ug/kg	96
71)	Ethylbenzene	14.79	106	22856	4.8964	ug/kg	97
72)	m-,p-Xylene	14.88	106	55736	9.6844	ug/kg	97
73)	o-Xylene	15.45	106	27291	4.9764	ug/kg	97
74)	Styrene	15.48	104	44746	4.7645	ug/kg	97
75)	Bromoform	15.99	173	8941	4.9476	ug/kg	96
76)	Isopropylbenzene	15.87	105	68436	4.7974	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	16234	4.8680	ug/kg	96
80)	1,2,3-Trichloropropane	16.28	110	5358	5.0869	ug/kg	75
81)	trans-1,4-Dichloro-2-Buten	16.32	53	5712	4.4560	ug/kg	95
82)	n-Propylbenzene	16.38	91	78929	4.9743	ug/kg	99
83)	Bromobenzene	16.51	156	18731	4.9628	ug/kg	95
84)	1,3,5-Trimethylbenzene	16.57	105	61534	5.0933	ug/kg	97
85)	2-Chlorotoluene	16.65	91	47568	5.0196	ug/kg	100
86)	4-Chlorotoluene	16.69	91	49003	4.9438	ug/kg	98
87)	a-Methylstyrene	16.97	118	27390	4.5446	ug/kg	100
88)	tert-Butylbenzene	17.03	134	13107	4.8967	ug/kg	98
89)	1,2,4-Trimethylbenzene	17.08	105	64983	5.0275	ug/kg	97
90)	sec-Butylbenzene	17.29	105	75572	4.8659	ug/kg	99
91)	p-Isopropyltoluene	17.46	119	62027	4.8245	ug/kg	99
92)	1,3-Dichlorobenzene	17.65	146	35372	4.7403	ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	36160	4.7481	ug/kg	88
94)	n-Butylbenzene	17.98	91	56976	4.8171	ug/kg	97
95)	1,2-Dichlorobenzene	18.29	146	33722	4.7505	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	3395	9.5585	ug/kg	90
97)	1,2,4-Trichlorobenzene	20.43	180	24750	4.7252	ug/kg	98
98)	Hexachlorobutadiene	20.58	225	11410	4.6186	ug/kg	98
99)	Naphthalene	20.80	128	59120	4.6833	ug/kg	99
100)	1,2,3-Trichlorobenzene	21.10	180	22339	4.4992	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M973599.D 8260-SL.M Thu Apr 07 13:30:12 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973599.D Vial: 7
Acq On : 6 Apr 2016 13:03 Operator: ADC
Sample : WG563259-06 5.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 7 13:30 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

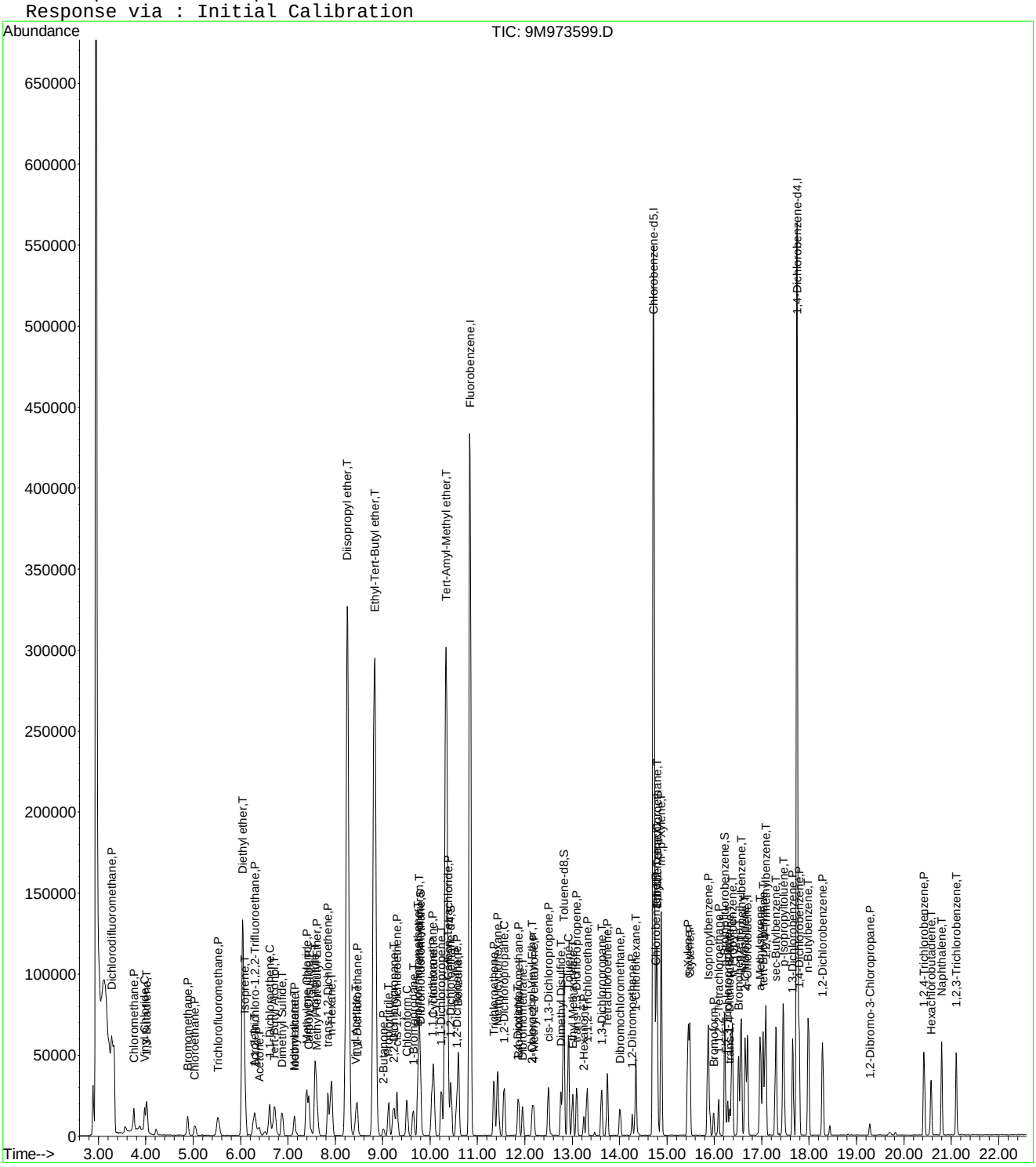

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\040616\9M973599.D Vial: 7
Acq On : 6 Apr 2016 13:03 Operator: ADC
Sample : WG563259-06 5.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	5.0000	5.2946	-5.9	100	0.00
3	P	Chloromethane	5.0000	4.8949	2.1	100	0.00
4	C	Vinyl Chloride	5.0000	5.7498	-15.0	100	0.00
5	T	1,3-Butadiene	5.0000	3.3519	33.0#	100	0.00
6	P	Bromomethane	5.0000	5.1799	-3.6	100	0.00
7	P	Chloroethane	5.0000	6.1572	-23.1	100	0.00
8	P	Trichlorofluoromethane	5.0000	5.1808	-3.6	100	0.00
9	T	Diethyl ether	50.0000	53.2615	-6.5	100	0.00
10	T	Isoprene	5.0000	5.1610	-3.2	100	0.00
11	T	Acrolein	25.0000	17.6008	29.6#	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.9766	0.5	100	0.00
13	P	Acetone	5.0000	5.6720	-13.4	100	0.01
14	C	1,1-Dichloroethene	5.0000	4.9444	1.1	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	102.4236	-2.4	100	-0.01
16	T	Dimethyl Sulfide	5.0000	4.8343	3.3	100	0.00
17	T	Iodomethane	5.0000	7.6230	-52.5#	100	0.00
18	P	Methyl acetate	5.0000	4.6977	6.0	100	0.00
19	P	Methylene Chloride	5.0000	5.3230	-6.5	100	0.00
20	P	Carbon Disulfide	5.0000	5.0694	-1.4	100	0.00
21	T	Acrylonitrile	25.0000	25.0554	-0.2	100	0.00
22	P	Methyl Tert Butyl Ether	5.0000	5.3060	-6.1	100	0.00
23	P	trans-1,2-Dichloroethene	5.0000	4.8674	2.7	100	0.00
24	T	n-Hexane	5.0000	5.9527	-19.1	100	0.00
25	T	Diisopropyl ether	50.0000	54.4320	-8.9	100	0.00
26	T	Vinyl Acetate	5.0000	7.0135	-40.3#	100	0.00
27	P	1,1-Dichloroethane	5.0000	5.2945	-5.9	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	55.7234	-11.4	100	0.00
29	P	2-Butanone	5.0000	4.9796	0.4	100	0.00
30	T	Propionitrile	50.0000	50.7152	-1.4	100	0.00
31	T	2,2-Dichloropropane	5.0000	5.5504	-11.0	100	0.00
32	P	cis-1,2-Dichloroethene	5.0000	5.0504	-1.0	100	0.00
33	C	Chloroform	5.0000	5.1895	-3.8	100	0.00
34	T	1-Bromopropane	5.0000	4.5908	8.2	100	0.00
35	T	Bromochloromethane	5.0000	5.1570	-3.1	100	-0.01
36	T	Tetrahydrofuran	50.0000	51.2175	-2.4	100	0.00
37	S	Dibromofluoromethane	10.0000	9.5422	4.6	100	0.00
38	P	1,1,1-Trichloroethane	5.0000	5.2726	-5.5	100	0.00
39	P	Cyclohexane	5.0000	5.2439	-4.9	100	0.00
40	T	1,1-Dichloropropene	5.0000	5.2821	-5.6	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	55.3390	-10.7	100	0.00
42	P	Carbon Tetrachloride	5.0000	5.1825	-3.7	100	0.00
43	S	1,2-Dichloroethane-d4	10.0000	9.6547	3.5	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	5.0000	5.2454	-4.9	100	0.00
46	P	Benzene	5.0000	5.2220	-4.4	100	0.00
47	P	Trichloroethene	5.0000	5.0766	-1.5	100	0.00
48	P	Methylcyclohexane	5.0000	5.2662	-5.3	100	0.00
49	C	1,2-Dichloropropane	5.0000	5.2833	-5.7	100	0.00
50	T	1,4-Dioxane	100.0000	81.9492	18.1	100	0.00
51	P	Bromodichloromethane	5.0000	4.6580	6.8	100	0.00
52	T	Dibromomethane	5.0000	5.0719	-1.4	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	12.6229	-152.5#	100	0.00
54	P	4-Methyl-2-Pentanone	5.0000	4.9049	1.9	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\040616\9M973599.D Vial: 7
Acq On : 6 Apr 2016 13:03 Operator: ADC
Sample : WG563259-06 5.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	5.0000	5.1266	-2.5	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.6795	6.4	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	10.0000	9.1485	8.5	100	0.00
59	C	Toluene	5.0000	4.8608	2.8	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.5840	8.3	100	0.00
61	P	trans-1,3-Dichloropropene	5.0000	4.7424	5.2	100	0.00
62	P	1,1,2-Trichloroethane	5.0000	4.8948	2.1	100	0.00
63	P	2-Hexanone	5.0000	4.6499	7.0	100	0.00
64	T	1,3-Dichloropropane	5.0000	4.9436	1.1	100	0.00
65	P	Tetrachloroethene	5.0000	4.8596	2.8	100	0.00
66	P	Dibromochloromethane	5.0000	4.4379	11.2	100	0.00
67	P	1,2-Dibromoethane	5.0000	4.5797	8.4	100	0.00
68	T	1-Chlorohexane	5.0000	4.9481	1.0	100	0.00
69	P	Chlorobenzene	5.0000	5.1154	-2.3	100	0.00
70	T	1,1,1,2-Tetrachloroethane	5.0000	4.6879	6.2	100	0.00
71	C	Ethylbenzene	5.0000	5.0389	-0.8	100	0.00
72	P	m-,p-Xylene	10.0000	9.9516	0.5	100	0.00
73	P	o-Xylene	5.0000	4.9435	1.1	100	0.00
74	P	Styrene	5.0000	4.8905	2.2	100	0.00
75	P	Bromoform	5.0000	4.3095	13.8	100	0.00
76	P	Isopropylbenzene	5.0000	4.8741	2.5	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	5.0000	4.9452	1.1	100	0.00
79	S	p-Bromofluorobenzene	10.0000	8.2647	17.4	100	0.00
80	T	1,2,3-Trichloropropane	5.0000	4.7405	5.2	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	5.0000	4.6811	6.4	100	0.00
82	T	n-Propylbenzene	5.0000	4.7217	5.6	100	0.00
83	T	Bromobenzene	5.0000	4.5500	9.0	100	0.00
84	T	1,3,5-Trimethylbenzene	5.0000	4.8818	2.4	100	0.00
85	T	2-Chlorotoluene	5.0000	4.5695	8.6	100	0.00
86	T	4-Chlorotoluene	5.0000	4.7953	4.1	100	0.00
87	T	a-Methylstyrene	5.0000	4.3457	13.1	100	0.00
88	T	tert-Butylbenzene	5.0000	4.5639	8.7	100	0.00
89	T	1,2,4-Trimethylbenzene	5.0000	4.7740	4.5	100	0.00
90	T	sec-Butylbenzene	5.0000	4.5380	9.2	100	0.00
91	T	p-Isopropyltoluene	5.0000	4.6404	7.2	100	0.00
92	P	1,3-Dichlorobenzene	5.0000	4.5063	9.9	100	0.00
93	P	1,4-Dichlorobenzene	5.0000	4.5605	8.8	100	0.00
94	T	n-Butylbenzene	5.0000	4.7327	5.3	100	0.00
95	P	1,2-Dichlorobenzene	5.0000	4.5019	10.0	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	5.0000	3.6428	27.1#	100	0.01
97	P	1,2,4-Trichlorobenzene	5.0000	4.5878	8.2	100	0.00
98	T	Hexachlorobutadiene	5.0000	4.5478	9.0	100	0.00
99	T	Naphthalene	5.0000	4.4533	10.9	100	0.00
100	T	1,2,3-Trichlorobenzene	5.0000	4.2269	15.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M973599.D 8260-SL.M Thu Apr 07 13:29:54 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973600.D Vial: 8
Acq On : 6 Apr 2016 13:33 Operator: ADC
Sample : WG563259-07 20.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:12 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	548817	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	412236	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	214138	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	50685	18.2863 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 36.58%#		
43) 1,2-Dichloroethane-d4	10.45	65	54446	18.7643 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 37.52%#		
58) Toluene-d8	12.82	98	186475	18.9801 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 37.96%#		
79) p-Bromofluorobenzene	16.22	95	68377	18.4353 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 36.88%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	79821	18.9606 ug/kg	97
3) Chloromethane	3.74	50	71839	18.5628 ug/kg	99
4) Vinyl Chloride	3.98	62	67533	26.1754 ug/kg	98
5) 1,3-Butadiene	4.02	54	39283	21.0351 ug/kg	97
6) Bromomethane	4.88	94	46162	19.4544 ug/kg	99
7) Chloroethane	5.04	64	47069	20.3651 ug/kg	99
8) Trichlorofluoromethane	5.53	101	102900	21.0438 ug/kg	99
9) Diethyl ether	6.05	59	234864	81.6752 ug/kg	98
10) Isoprene	6.09	67	79445	20.6411 ug/kg	98
11) Acrolein	6.29	56	11352	39.7029 ug/kg	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	63152	21.1516 ug/kg	98
13) Acetone	6.38	43	27589	20.8069 ug/kg	99
14) 1,1-Dichloroethene	6.61	61	106975	21.3756 ug/kg	99
15) Tert-Butyl Alcohol	6.72	59	76199	158.2956 ug/kg	99
16) Dimethyl Sulfide	6.88	62	54097	22.0635 ug/kg	100
17) Iodomethane	7.13	142	33219	16.4421 ug/kg	99
18) Methyl acetate	7.14	43	64808	20.3846 ug/kg	97
19) Methylene Chloride	7.40	84	65272	20.8796 ug/kg	100
20) Carbon Disulfide	7.44	76	195126	20.5626 ug/kg	100
21) Acrylonitrile	7.58	53	59361	39.2834 ug/kg	99
22) Methyl Tert Butyl Ether	7.60	73	179991	21.3975 ug/kg	100
23) trans-1,2-Dichloroethene	7.84	61	102409	21.2721 ug/kg	98
24) n-Hexane	7.91	57	130558	20.8836 ug/kg	99
25) Diisopropyl ether	8.25	45	1040879	81.7089 ug/kg	100
26) Vinyl Acetate	8.43	43	119893	18.1040 ug/kg	99
27) 1,1-Dichloroethane	8.46	63	125920	21.5491 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	915892	81.7642 ug/kg	100
29) 2-Butanone	9.01	43	35146	19.9190 ug/kg	97
30) Propionitrile	9.13	54	44398	77.5252 ug/kg	97
31) 2,2-Dichloropropane	9.24	77	84630	19.8340 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	69568	21.7444 ug/kg	98
33) Chloroform	9.52	83	105558	21.2976 ug/kg	100
34) 1-Bromopropane	9.64	122	11208	20.0976 ug/kg	99
35) Bromochloromethane	9.75	130	42691	21.3878 ug/kg	99
36) Tetrahydrofuran	9.77	42	98564	78.6366 ug/kg	99
38) 1,1,1-Trichloroethane	10.04	97	91294	21.5213 ug/kg	100
39) Cyclohexane	10.08	56	143014	21.3259 ug/kg	98
40) 1,1-Dichloropropene	10.23	75	82887	21.2264 ug/kg	100
41) Tert-Amyl-Methyl ether	10.34	73	681787	82.2800 ug/kg	99
42) Carbon Tetrachloride	10.38	117	82160	20.7489 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973600.D Vial: 8
Acq On : 6 Apr 2016 13:33 Operator: ADC
Sample : WG563259-07 20.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:12 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	91652	21.4727 ug/kg	98
46)	Benzene	10.60	78	250792	20.6937 ug/kg	100
47)	Trichloroethene	11.35	130	69997	20.5341 ug/kg	98
48)	Methylcyclohexane	11.43	83	111193	21.3467 ug/kg	99
49)	1,2-Dichloropropane	11.56	63	69830	21.1874 ug/kg	99
50)	1,4-Dioxane	11.85	88	6747	157.8301 ug/kg	93
51)	Bromodichloromethane	11.87	83	77283	20.5778 ug/kg	99
52)	Dibromomethane	11.95	174	41437	21.0583 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	34827	19.8717 ug/kg	98
54)	4-Methyl-2-Pentanone	12.19	58	30595	20.1619 ug/kg	98
55)	cis-1,3-Dichloropropene	12.50	75	93742	20.0188 ug/kg	99
56)	Dimethyl Disulfide	12.77	94	101844	20.3230 ug/kg	99
59)	Toluene	12.91	91	262833	20.9525 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	77681	20.3404 ug/kg	100
61)	trans-1,3-Dichloropropene	13.09	75	84438	20.6766 ug/kg	98
62)	1,1,2-Trichloroethane	13.32	97	53247	21.5617 ug/kg	98
63)	2-Hexanone	13.24	43	52531	19.4800 ug/kg	100
64)	1,3-Dichloropropane	13.62	76	91187	21.4747 ug/kg	100
65)	Tetrachloroethene	13.74	164	55416	20.8298 ug/kg	98
66)	Dibromochloromethane	14.01	129	63295	20.7337 ug/kg	98
67)	1,2-Dibromoethane	14.27	107	55408	20.3678 ug/kg	98
68)	1-Chlorohexane	14.34	91	87355	21.1523 ug/kg	98
69)	Chlorobenzene	14.76	112	183140	21.0385 ug/kg	97
70)	1,1,1,2-Tetrachloroethane	14.79	131	62310	21.0690 ug/kg	99
71)	Ethylbenzene	14.79	106	101285	21.6285 ug/kg	99
72)	m-,p-Xylene	14.88	106	241056	41.7501 ug/kg	99
73)	o-Xylene	15.45	106	115290	20.9551 ug/kg	98
74)	Styrene	15.48	104	197867	21.0012 ug/kg	99
75)	Bromoform	15.99	173	39405	20.7716 ug/kg	98
76)	Isopropylbenzene	15.87	105	297986	20.8219 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	71279	20.0119 ug/kg	99
80)	1,2,3-Trichloropropane	16.28	110	21494	20.2252 ug/kg	98
81)	trans-1,4-Dichloro-2-Buten	16.32	53	25104	19.4097 ug/kg	88
82)	n-Propylbenzene	16.38	91	331062	20.6790 ug/kg	99
83)	Bromobenzene	16.51	156	79848	20.9676 ug/kg	78
84)	1,3,5-Trimethylbenzene	16.57	105	256470	21.0396 ug/kg	100
85)	2-Chlorotoluene	16.65	91	201201	21.0430 ug/kg	99
86)	4-Chlorotoluene	16.70	91	205488	20.5471 ug/kg	100
87)	a-Methylstyrene	16.97	118	122000	20.0624 ug/kg	100
88)	tert-Butylbenzene	17.03	134	55701	20.6244 ug/kg	98
89)	1,2,4-Trimethylbenzene	17.08	105	257149	21.3688 ug/kg	100
90)	sec-Butylbenzene	17.29	105	324606	20.7148 ug/kg	100
91)	p-Isopropyltoluene	17.45	119	267236	20.6011 ug/kg	100
92)	1,3-Dichlorobenzene	17.65	146	150147	19.9426 ug/kg	100
93)	1,4-Dichlorobenzene	17.79	146	150647	19.6053 ug/kg	100
94)	n-Butylbenzene	17.98	91	242121	20.2883 ug/kg	98
95)	1,2-Dichlorobenzene	18.29	146	141341	19.7339 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	16565	22.7593 ug/kg	100
97)	1,2,4-Trichlorobenzene	20.43	180	98272	18.5949 ug/kg	99
98)	Hexachlorobutadiene	20.58	225	49626	19.9091 ug/kg	97
99)	Naphthalene	20.80	128	248081	19.4776 ug/kg	99
100)	1,2,3-Trichlorobenzene	21.10	180	94996	18.9624 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M973600.D 8260-SL.M Thu Apr 07 13:30:13 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973600.D Vial: 8
Acq On : 6 Apr 2016 13:33 Operator: ADC
Sample : WG563259-07 20.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 7 13:30 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

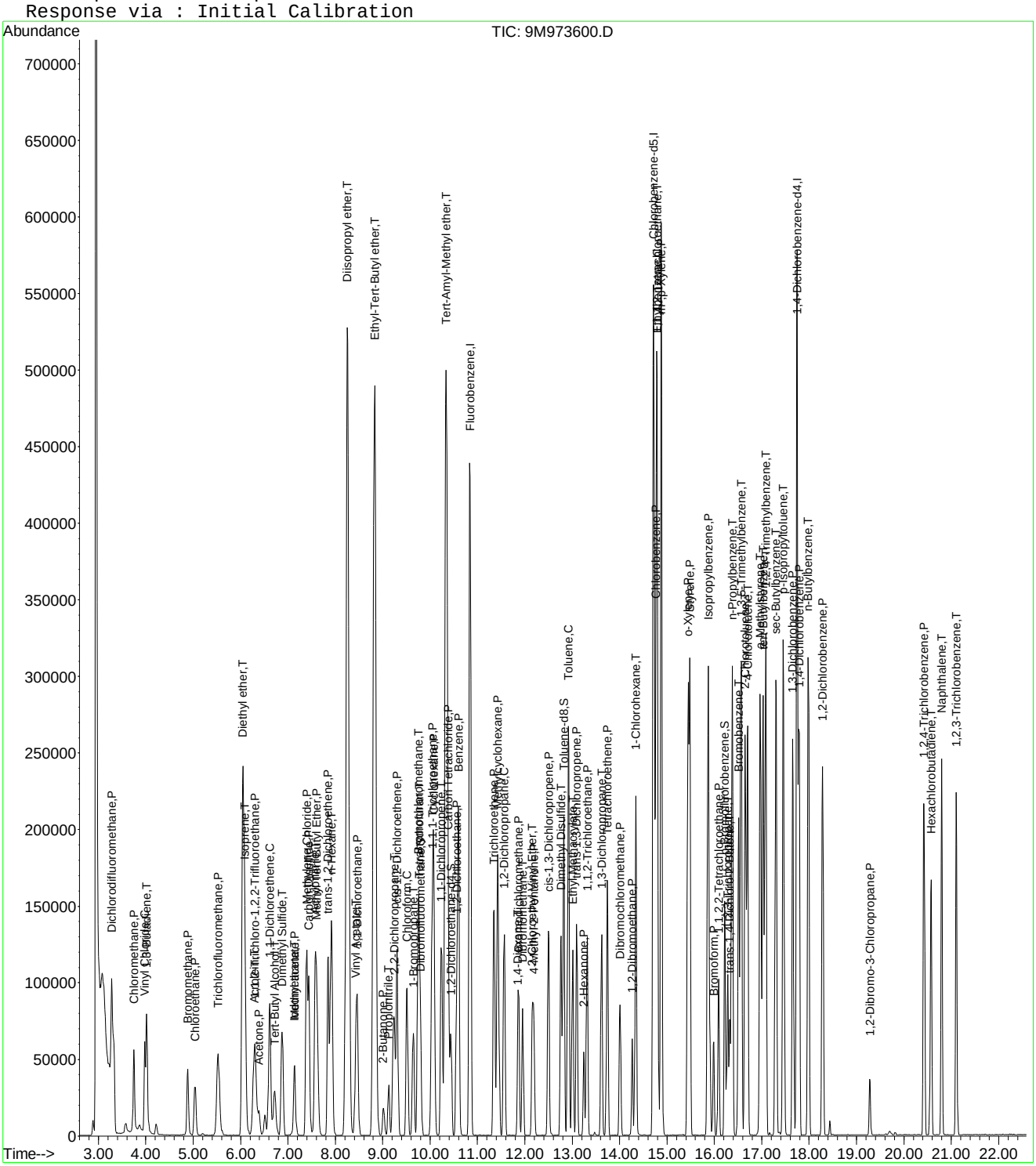

9M973600.D 8260-SL.M Thu Apr 07 13:30:13 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973605.D Vial: 13
Acq On : 6 Apr 2016 16:15 Operator: ADC
Sample : WG563259-08 100.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:17 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	629513	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	486007	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	262405	50.00 ug/kg	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.79	111	334345	105.1632 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 210.32%#		
43) 1,2-Dichloroethane-d4	10.44	65	349379	104.9748 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 209.94%#		
58) Toluene-d8	12.82	98	1189867	102.7256 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 205.46%#		
79) p-Bromofluorobenzene	16.22	95	474393	104.3758 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 208.76%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	443445	91.8326 ug/kg	98
3) Chloromethane	3.74	50	364265	82.0585 ug/kg	99
4) Vinyl Chloride	3.97	62	265202	91.5192 ug/kg	95
5) 1,3-Butadiene	4.01	54	193614	90.3859 ug/kg	95
6) Bromomethane	4.87	94	240074	88.2068 ug/kg	99
7) Chloroethane	5.02	64	230056	86.7779 ug/kg	99
8) Trichlorofluoromethane	5.51	101	498633	88.9021 ug/kg	100
9) Diethyl ether	6.04	59	578414	175.3619 ug/kg	99
10) Isoprene	6.08	67	405345	91.8152 ug/kg	99
11) Acrolein	6.28	56	41125	125.3946 ug/kg	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	304962	89.0479 ug/kg	98
13) Acetone	6.39	43	110181	86.9145 ug/kg	99
14) 1,1-Dichloroethene	6.61	61	507904	88.4792 ug/kg	100
15) Tert-Butyl Alcohol	6.71	59	201952	365.7553 ug/kg	99
16) Dimethyl Sulfide	6.87	62	267127	94.9822 ug/kg	100
17) Iodomethane	7.12	142	226546	83.3082 ug/kg	99
18) Methyl acetate	7.13	43	320518	87.8919 ug/kg	99
19) Methylene Chloride	7.39	84	297945	83.0910 ug/kg	99
20) Carbon Disulfide	7.43	76	967157	88.8552 ug/kg	100
21) Acrylonitrile	7.57	53	159761	92.1726 ug/kg	99
22) Methyl Tert Butyl Ether	7.60	73	837531	86.8033 ug/kg	99
23) trans-1,2-Dichloroethene	7.83	61	489265	88.6012 ug/kg	99
24) n-Hexane	7.90	57	620303	86.5024 ug/kg	100
25) Diisopropyl ether	8.25	45	2541732	173.9489 ug/kg	99
26) Vinyl Acetate	8.42	43	670170	84.8371 ug/kg	99
27) 1,1-Dichloroethane	8.45	63	582394	86.8907 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.82	59	2244961	174.7232 ug/kg	99
29) 2-Butanone	9.01	43	176737	87.3258 ug/kg	99
30) Propionitrile	9.12	54	121628	185.1551 ug/kg	100
31) 2,2-Dichloropropane	9.23	77	432972	88.4646 ug/kg	99
32) cis-1,2-Dichloroethene	9.30	96	323942	88.2729 ug/kg	97
33) Chloroform	9.51	83	491054	86.3755 ug/kg	100
34) 1-Bromopropane	9.65	122	57300	86.6017 ug/kg	97
35) Bromochloromethane	9.74	130	206023	89.9847 ug/kg	99
36) Tetrahydrofuran	9.76	42	253958	176.6408 ug/kg	99
38) 1,1,1-Trichloroethane	10.04	97	431230	88.6252 ug/kg	100
39) Cyclohexane	10.07	56	701022	91.1345 ug/kg	99
40) 1,1-Dichloropropene	10.24	75	394734	88.1287 ug/kg	98
41) Tert-Amyl-Methyl ether	10.33	73	1668304	175.5268 ug/kg	100
42) Carbon Tetrachloride	10.38	117	401136	88.3178 ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M973605.D 8260-SL.M Thu Apr 07 13:30:17 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973605.D Vial: 13
Acq On : 6 Apr 2016 16:15 Operator: ADC
Sample : WG563259-08 100.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:17 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.55	62	419521	85.6884 ug/kg	99
46)	Benzene	10.60	78	1159464	83.4075 ug/kg	100
47)	Trichloroethene	11.35	130	328505	84.0157 ug/kg	99
48)	Methylcyclohexane	11.43	83	543983	91.0461 ug/kg	99
49)	1,2-Dichloropropane	11.56	63	330099	87.3179 ug/kg	100
50)	1,4-Dioxane	11.85	88	19457	396.8058 ug/kg	99
51)	Bromodichloromethane	11.86	83	377943	87.7332 ug/kg	100
52)	Dibromomethane	11.96	174	201740	89.3820 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	188811	93.9225 ug/kg	99
54)	4-Methyl-2-Pentanone	12.19	58	152432	87.5749 ug/kg	98
55)	cis-1,3-Dichloropropene	12.50	75	467019	86.9483 ug/kg	99
56)	Dimethyl Disulfide	12.76	94	546237	95.0292 ug/kg	98
59)	Toluene	12.92	91	1221033	82.5632 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	396829	88.1357 ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	420228	87.2828 ug/kg	99
62)	1,1,2-Trichloroethane	13.32	97	252973	86.8892 ug/kg	99
63)	2-Hexanone	13.24	43	270769	85.1678 ug/kg	98
64)	1,3-Dichloropropane	13.61	76	423227	84.5417 ug/kg	100
65)	Tetrachloroethene	13.74	164	275328	87.7815 ug/kg	99
66)	Dibromochloromethane	14.00	129	314257	87.3165 ug/kg	100
67)	1,2-Dibromoethane	14.27	107	271540	84.6661 ug/kg	100
68)	1-Chlorohexane	14.34	91	434911	89.3250 ug/kg	100
69)	Chlorobenzene	14.76	112	853210	83.1362 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	298697	85.6685 ug/kg	98
71)	Ethylbenzene	14.80	106	476927	86.3847 ug/kg	98
72)	m-,p-Xylene	14.88	106	1125320	165.3174 ug/kg	100
73)	o-Xylene	15.44	106	556307	85.7660 ug/kg	100
74)	Styrene	15.48	104	962473	86.6487 ug/kg	100
75)	Bromoform	15.99	173	217337	88.1288 ug/kg	100
76)	Isopropylbenzene	15.87	105	1429867	84.7467 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	358231	80.9909 ug/kg	100
80)	1,2,3-Trichloropropane	16.28	110	106845	82.0448 ug/kg	94
81)	trans-1,4-Dichloro-2-Buten	16.33	53	138111	87.1418 ug/kg	98
82)	n-Propylbenzene	16.38	91	1612041	82.1710 ug/kg	99
83)	Bromobenzene	16.52	156	384939	82.4894 ug/kg	99
84)	1,3,5-Trimethylbenzene	16.57	105	1227900	82.2028 ug/kg	100
85)	2-Chlorotoluene	16.65	91	982237	83.8330 ug/kg	100
86)	4-Chlorotoluene	16.70	91	966811	78.8909 ug/kg	99
87)	a-Methylstyrene	16.97	118	639741	85.8515 ug/kg	100
88)	tert-Butylbenzene	17.03	134	271228	81.9549 ug/kg	100
89)	1,2,4-Trimethylbenzene	17.09	105	1244015	86.0269 ug/kg	100
90)	sec-Butylbenzene	17.30	105	1596904	83.1619 ug/kg	100
91)	p-Isopropyltoluene	17.46	119	1328733	83.5902 ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	745156	80.7671 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	749901	79.6415 ug/kg	100
94)	n-Butylbenzene	17.98	91	1226018	83.8362 ug/kg	100
95)	1,2-Dichlorobenzene	18.29	146	713379	81.2804 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.28	157	91107	80.8122 ug/kg	97
97)	1,2,4-Trichlorobenzene	20.43	180	549265	84.8138 ug/kg	99
98)	Hexachlorobutadiene	20.58	225	257990	84.4632 ug/kg	99
99)	Naphthalene	20.80	128	1320203	84.5870 ug/kg	99
100)	1,2,3-Trichlorobenzene	21.11	180	520705	84.8206 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M973605.D 8260-SL.M Thu Apr 07 13:30:17 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973605.D Vial: 13
Acq On : 6 Apr 2016 16:15 Operator: ADC
Sample : WG563259-08 100.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 7 13:30 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

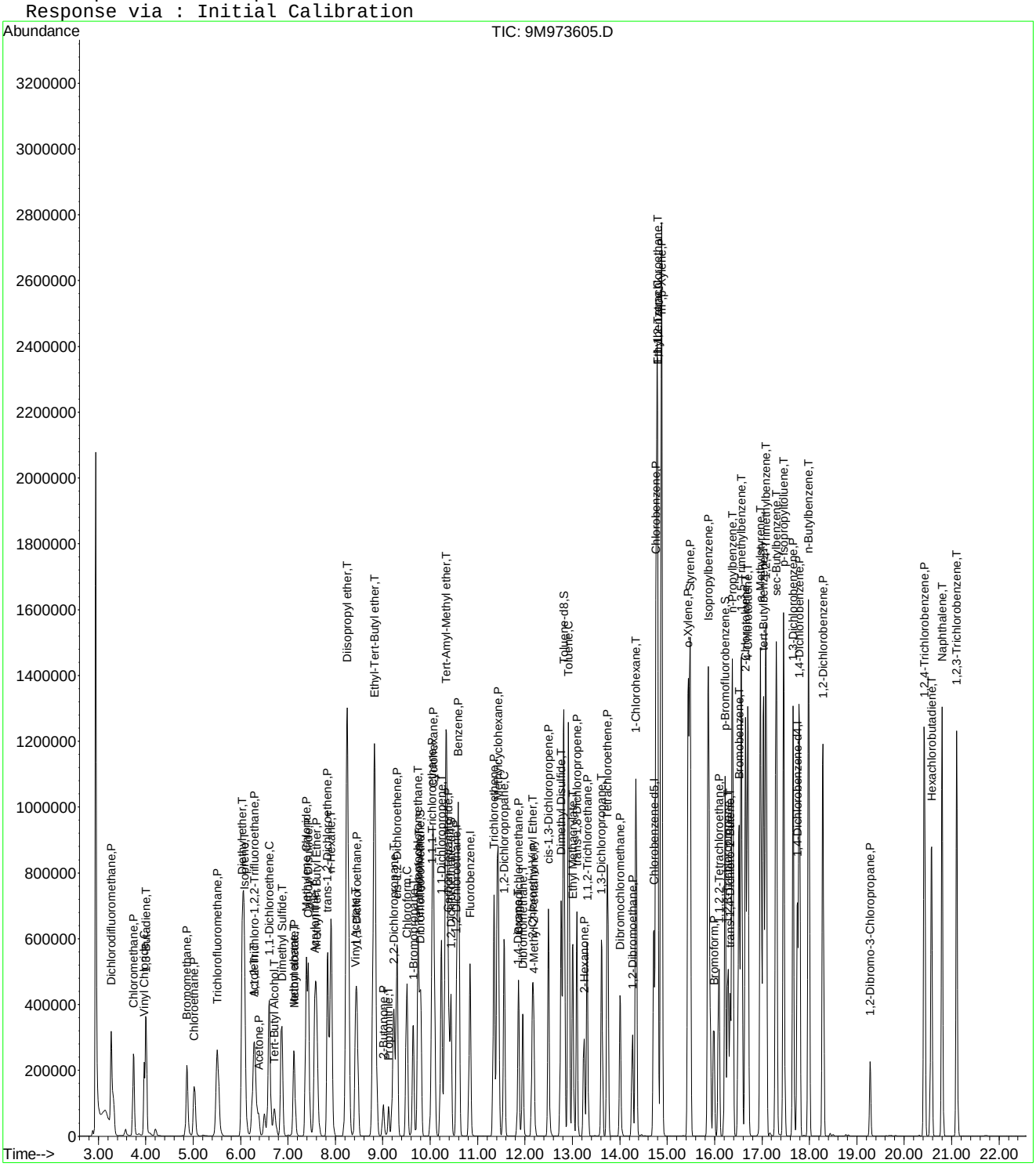

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973606.D Vial: 14
Acq On : 6 Apr 2016 16:46 Operator: ADC
Sample : WG563259-09 200.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:17 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	546241	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	412879	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	251426	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	548285	198.7448 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 397.48%#		
43) 1,2-Dichloroethane-d4	10.44	65	563468	195.1093 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 390.22%#		
58) Toluene-d8	12.82	98	1932737	196.4142 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 392.82%#		
79) p-Bromofluorobenzene	16.22	95	812349	186.5374 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 373.08%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	933785	222.8561 ug/kg	98
3) Chloromethane	3.74	50	797646	207.0792 ug/kg	100
4) Vinyl Chloride	3.97	62	484159	193.4178 ug/kg	95
5) 1,3-Butadiene	4.01	54	255123	137.2568 ug/kg	96
6) Bromomethane	4.86	94	478951	202.8002 ug/kg	99
7) Chloroethane	5.02	64	479099	208.2673 ug/kg	100
8) Trichlorofluoromethane	5.51	101	1015843	208.7267 ug/kg	100
10) Isoprene	6.08	67	790457	206.3424 ug/kg	100
11) Acrolein	6.29	56	657	2.3087 ug/kg#	58
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	619484	208.4628 ug/kg	98
13) Acetone	6.38	43	210216	198.0949 ug/kg	100
14) 1,1-Dichloroethene	6.60	61	1038593	208.5093 ug/kg	99
16) Dimethyl Sulfide	6.87	62	522470	214.0948 ug/kg	100
17) Iodomethane	7.12	142	492600	204.3599 ug/kg	99
18) Methyl acetate	7.13	43	608994	192.4553 ug/kg	99
19) Methylene Chloride	7.39	84	609179	195.7867 ug/kg	98
20) Carbon Disulfide	7.44	76	1876122	198.6404 ug/kg	100
21) Acrylonitrile	7.59	53	17884	11.8909 ug/kg#	28
22) Methyl Tert Butyl Ether	7.60	73	1671293	199.6219 ug/kg	99
23) trans-1,2-Dichloroethene	7.84	61	993252	207.2884 ug/kg	98
24) n-Hexane	7.91	57	1132766	182.0476 ug/kg	99
26) Vinyl Acetate	8.43	43	1356495	196.7315 ug/kg	99
27) 1,1-Dichloroethane	8.46	63	1187835	204.2364 ug/kg	99
29) 2-Butanone	9.01	43	352502	200.7230 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	891488	209.9159 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	660199	207.3269 ug/kg	97
33) Chloroform	9.51	83	1000133	202.7401 ug/kg	100
34) 1-Bromopropane	9.64	122	114495	198.3036 ug/kg	99
35) Bromochloromethane	9.74	130	419175	210.9934 ug/kg	98
36) Tetrahydrofuran	9.78	42	3664	2.9370 ug/kg	89
38) 1,1,1-Trichloroethane	10.04	97	891503	211.1502 ug/kg	100
39) Cyclohexane	10.07	56	1376878	206.2846 ug/kg	100
40) 1,1-Dichloropropene	10.23	75	800231	205.8962 ug/kg	99
42) Carbon Tetrachloride	10.38	117	841170	213.4326 ug/kg	99
45) 1,2-Dichloroethane	10.56	62	841093	197.9853 ug/kg	99
46) Benzene	10.59	78	2346439	194.5259 ug/kg	100
47) Trichloroethene	11.34	130	677382	199.6515 ug/kg	99
48) Methylcyclohexane	11.43	83	1056136	203.7119 ug/kg	99
49) 1,2-Dichloropropane	11.56	63	675603	205.9545 ug/kg	100
50) 1,4-Dioxane	11.86	88	487	11.4459 ug/kg#	8

(#) = qualifier out of range (m) = manual integration
9M973606.D 8260-SL.M Thu Apr 07 13:30:18 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973606.D Vial: 14
Acq On : 6 Apr 2016 16:46 Operator: ADC
Sample : WG563259-09 200.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:17 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
51)	Bromodichloromethane	11.86	83	786040	210.2823 ug/kg	99
52)	Dibromomethane	11.96	174	411458	210.0894 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	379377	217.4871 ug/kg	99
54)	4-Methyl-2-Pentanone	12.19	58	310421	205.5298 ug/kg	99
55)	cis-1,3-Dichloropropene	12.49	75	953997	204.6887 ug/kg	99
56)	Dimethyl Disulfide	12.76	94	1083410	217.2147 ug/kg	100
59)	Toluene	12.92	91	2474811	196.9795 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	785034	205.2376 ug/kg	99
61)	trans-1,3-Dichloropropene	13.09	75	863464	211.1094 ug/kg	99
62)	1,1,2-Trichloroethane	13.32	97	520649	210.5021 ug/kg	100
63)	2-Hexanone	13.24	43	576300	213.3756 ug/kg	98
64)	1,3-Dichloropropane	13.62	76	860012	202.2190 ug/kg	99
65)	Tetrachloroethene	13.74	164	559353	209.9221 ug/kg	99
66)	Dibromochloromethane	14.01	129	659361	215.6524 ug/kg	100
67)	1,2-Dibromoethane	14.27	107	565360	207.5011 ug/kg	100
68)	1-Chlorohexane	14.34	91	852225	206.0376 ug/kg	99
69)	Chlorobenzene	14.76	112	1738005	199.3447 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.79	131	630263	212.7806 ug/kg	97
71)	Ethylbenzene	14.79	106	972846	207.4192 ug/kg	97
72)	m-,p-Xylene	14.88	106	2303311	398.3042 ug/kg	98
73)	o-Xylene	15.45	106	1160595	210.6207 ug/kg	99
74)	Styrene	15.48	104	2011077	213.1189 ug/kg	100
75)	Bromoform	15.99	173	488031	202.4064 ug/kg	100
76)	Isopropylbenzene	15.87	105	2999919	209.2939 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	822476	193.5819 ug/kg	100
80)	1,2,3-Trichloropropane	16.28	110	242139	194.0544 ug/kg	98
81)	trans-1,4-Dichloro-2-Buten	16.32	53	305601	201.2403 ug/kg	96
82)	n-Propylbenzene	16.38	91	3379633	179.7935 ug/kg	100
83)	Bromobenzene	16.51	156	821863	183.8094 ug/kg	98
84)	1,3,5-Trimethylbenzene	16.57	105	2631796	183.8813 ug/kg	99
85)	2-Chlorotoluene	16.65	91	2045653	182.2186 ug/kg	100
86)	4-Chlorotoluene	16.70	91	2134994	181.8209 ug/kg	98
87)	a-Methylstyrene	16.97	118	1382227	193.5909 ug/kg	100
88)	tert-Butylbenzene	17.03	134	595447	187.7784 ug/kg	100
89)	1,2,4-Trimethylbenzene	17.08	105	2701823	195.7125 ug/kg	100
90)	sec-Butylbenzene	17.29	105	3458638	187.9804 ug/kg	99
91)	p-Isopropyltoluene	17.45	119	2907302	190.8841 ug/kg	99
92)	1,3-Dichlorobenzene	17.65	146	1683562	190.4487 ug/kg	100
93)	1,4-Dichlorobenzene	17.79	146	1701470	188.5912 ug/kg	100
94)	n-Butylbenzene	17.98	91	2706085	193.1249 ug/kg	100
95)	1,2-Dichlorobenzene	18.29	146	1654050	196.6873 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.29	157	219037	193.5387 ug/kg	99
97)	1,2,4-Trichlorobenzene	20.43	180	1229670	198.1687 ug/kg	99
98)	Hexachlorobutadiene	20.58	225	593894	202.9249 ug/kg	99
99)	Naphthalene	20.80	128	2917641	195.0997 ug/kg	98
100)	1,2,3-Trichlorobenzene	21.10	180	1150303	195.5617 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973606.D Vial: 14
Acq On : 6 Apr 2016 16:46 Operator: ADC
Sample : WG563259-09 200.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 7 13:30 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

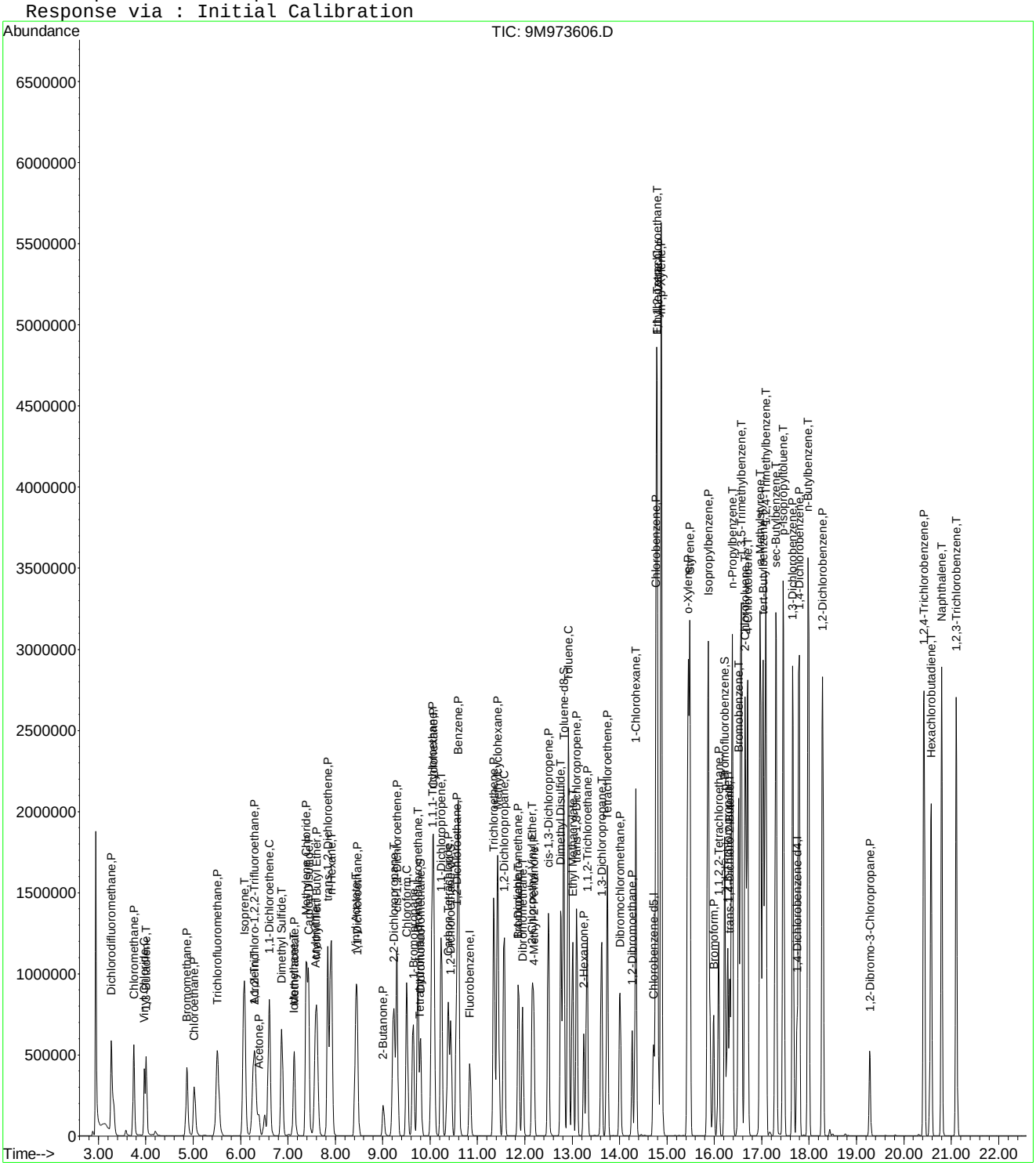

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973607.D Vial: 15
Acq On : 6 Apr 2016 17:16 Operator: ADC
Sample : WG563259-10 300.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:18 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	530747	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	422786	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	250890	50.00 ug/kg	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.79	111	1014	0.3783 ug/kg	-0.01
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.76%#	
43) 1,2-Dichloroethane-d4	10.44	65	1256	0.4476 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.90%#	
58) Toluene-d8	12.82	98	7239	0.7184 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	1.44%#	
79) p-Bromofluorobenzene	16.22	95	8850	2.0365 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	4.08%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	1391592	341.8113 ug/kg	99
3) Chloromethane	3.75	50	1202976	321.4253 ug/kg	100
4) Vinyl Chloride	3.97	62	728585	299.9924 ug/kg	95
5) 1,3-Butadiene	4.01	54	369321	204.4960 ug/kg	96
6) Bromomethane	4.87	94	715376	311.7514 ug/kg	99
7) Chloroethane	5.02	64	723518	323.6994 ug/kg	99
8) Trichlorofluoromethane	5.52	101	1522742	322.0138 ug/kg	100
9) Diethyl ether	6.05	59	857295	308.2789 ug/kg	98
10) Isoprene	6.08	67	1165578	313.1471 ug/kg	99
11) Acrolein	6.29	56	60531	218.9112 ug/kg	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	920907	318.9414 ug/kg	98
13) Acetone	6.39	43	318840	312.4979 ug/kg	99
14) 1,1-Dichloroethene	6.60	61	1557664	321.8479 ug/kg	100
15) Tert-Butyl Alcohol	6.73	59	335746	721.2245 ug/kg	98
16) Dimethyl Sulfide	6.87	62	798739	336.8576 ug/kg	99
17) Iodomethane	7.13	142	732160	311.0633 ug/kg	99
18) Methyl acetate	7.13	43	947968	308.3239 ug/kg	99
19) Methylene Chloride	7.40	84	940131	310.9735 ug/kg	97
20) Carbon Disulfide	7.44	76	2802355	305.3700 ug/kg	100
21) Acrylonitrile	7.58	53	251994	172.4402 ug/kg	96
22) Methyl Tert Butyl Ether	7.60	73	2599096	319.5028 ug/kg	99
23) trans-1,2-Dichloroethene	7.84	61	1496337	321.3970 ug/kg	97
24) n-Hexane	7.91	57	1667090	275.7405 ug/kg	99
25) Diisopropyl ether	8.25	45	3720020	301.9634 ug/kg	99
26) Vinyl Acetate	8.43	43	2113131	314.8849 ug/kg	99
27) 1,1-Dichloroethane	8.46	63	1812056	320.6604 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	3304066	305.0055 ug/kg	99
29) 2-Butanone	9.01	43	557380	326.6507 ug/kg	99
30) Propionitrile	9.13	54	189029	341.3090 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	1337448	324.1183 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	1006604	325.3390 ug/kg	97
33) Chloroform	9.51	83	1534946	320.2372 ug/kg	100
34) 1-Bromopropane	9.64	122	174946	311.3566 ug/kg	99
35) Bromochloromethane	9.75	130	652180	337.8607 ug/kg	98
36) Tetrahydrofuran	9.77	42	376433	310.5517 ug/kg	99
38) 1,1,1-Trichloroethane	10.05	97	1358139	331.0622 ug/kg	100
39) Cyclohexane	10.08	56	2044955	315.3203 ug/kg	100
40) 1,1-Dichloropropene	10.24	75	1211478	320.8081 ug/kg	99
41) Tert-Amyl-Methyl ether	10.34	73	2457523	306.6783 ug/kg	100
42) Carbon Tetrachloride	10.38	117	1272434	332.2836 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973607.D Vial: 15
Acq On : 6 Apr 2016 17:16 Operator: ADC
Sample : WG563259-10 300.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:18 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	1300113	314.9682 ug/kg	99
46)	Benzene	10.60	78	3527729	300.9956 ug/kg	99
47)	Trichloroethene	11.34	130	1018460	308.9439 ug/kg	99
48)	Methylcyclohexane	11.43	83	1556707	309.0297 ug/kg	99
49)	1,2-Dichloropropane	11.56	63	1047836	328.7530 ug/kg	100
50)	1,4-Dioxane	11.85	88	34973	845.9645 ug/kg	98
51)	Bromodichloromethane	11.86	83	1222847	336.6875 ug/kg	100
52)	Dibromomethane	11.96	174	645257	339.0847 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	573936	338.6279 ug/kg	99
54)	4-Methyl-2-Pentanone	12.19	58	497530	339.0313 ug/kg	99
55)	cis-1,3-Dichloropropene	12.49	75	1479465	326.6994 ug/kg	98
56)	Dimethyl Disulfide	12.77	94	1594771	329.0724 ug/kg	95
59)	Toluene	12.92	91	3752438	291.6719 ug/kg	100
60)	Ethyl Methacrylate	13.01	69	1240354	316.6768 ug/kg	99
61)	trans-1,3-Dichloropropene	13.09	75	1355239	323.5798 ug/kg	99
62)	1,1,2-Trichloroethane	13.32	97	817725	322.8649 ug/kg	100
63)	2-Hexanone	13.24	43	940684	340.1278 ug/kg	98
64)	1,3-Dichloropropane	13.62	76	1356741	311.5420 ug/kg	100
65)	Tetrachloroethene	13.74	164	843696	309.2149 ug/kg	99
66)	Dibromochloromethane	14.01	129	1052932	336.3052 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	896155	321.2037 ug/kg	100
68)	1-Chlorohexane	14.34	91	1280726	302.3783 ug/kg	100
69)	Chlorobenzene	14.76	112	2663761	298.3673 ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.79	131	987352	325.5250 ug/kg	98
71)	Ethylbenzene	14.79	106	1479934	308.1410 ug/kg	95
72)	m-,p-Xylene	14.88	106	3480066	587.6949 ug/kg	95
73)	o-Xylene	15.45	106	1802243	319.4008 ug/kg	98
74)	Styrene	15.48	104	3128101	323.7250 ug/kg	99
75)	Bromoform	15.99	173	824796	300.4134 ug/kg	99
76)	Isopropylbenzene	15.87	105	4568446	311.2560 ug/kg	98
78)	1,1,2,2-Tetrachloroethane	16.09	83	1346109	317.2796 ug/kg	100
80)	1,2,3-Trichloropropane	16.28	110	399968	321.2261 ug/kg	64
81)	trans-1,4-Dichloro-2-Buten	16.32	53	489570	323.0738 ug/kg#	59
82)	n-Propylbenzene	16.38	91	5159824	275.0845 ug/kg	99
83)	Bromobenzene	16.51	156	1311462	293.9347 ug/kg	96
84)	1,3,5-Trimethylbenzene	16.57	105	4058376	284.1610 ug/kg	99
85)	2-Chlorotoluene	16.65	91	3103656	277.0520 ug/kg	88
86)	4-Chlorotoluene	16.70	91	3366727	287.3305 ug/kg	93
87)	a-Methylstyrene	16.97	118	2137089	299.9542 ug/kg	100
88)	tert-Butylbenzene	17.03	134	932476	294.6911 ug/kg	98
89)	1,2,4-Trimethylbenzene	17.08	105	4160991	302.3615 ug/kg	99
90)	sec-Butylbenzene	17.31	105	5240087	285.4123 ug/kg	98
91)	p-Isopropyltoluene	17.46	119	4424751	291.1357 ug/kg	98
92)	1,3-Dichlorobenzene	17.66	146	2625717	297.6623 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	2620113	291.0342 ug/kg	99
94)	n-Butylbenzene	17.98	91	4097037	293.0175 ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	2549400	303.8033 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	353064	308.8660 ug/kg	99
97)	1,2,4-Trichlorobenzene	20.43	180	1874690	302.7630 ug/kg	100
98)	Hexachlorobutadiene	20.58	225	888450	304.2189 ug/kg	100
99)	Naphthalene	20.80	128	4447539	298.0378 ug/kg	97
100)	1,2,3-Trichlorobenzene	21.10	180	1773622	302.1756 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M973607.D 8260-SL.M Thu Apr 07 13:30:19 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973607.D Vial: 15
Acq On : 6 Apr 2016 17:16 Operator: ADC
Sample : WG563259-10 300.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 7 13:30 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

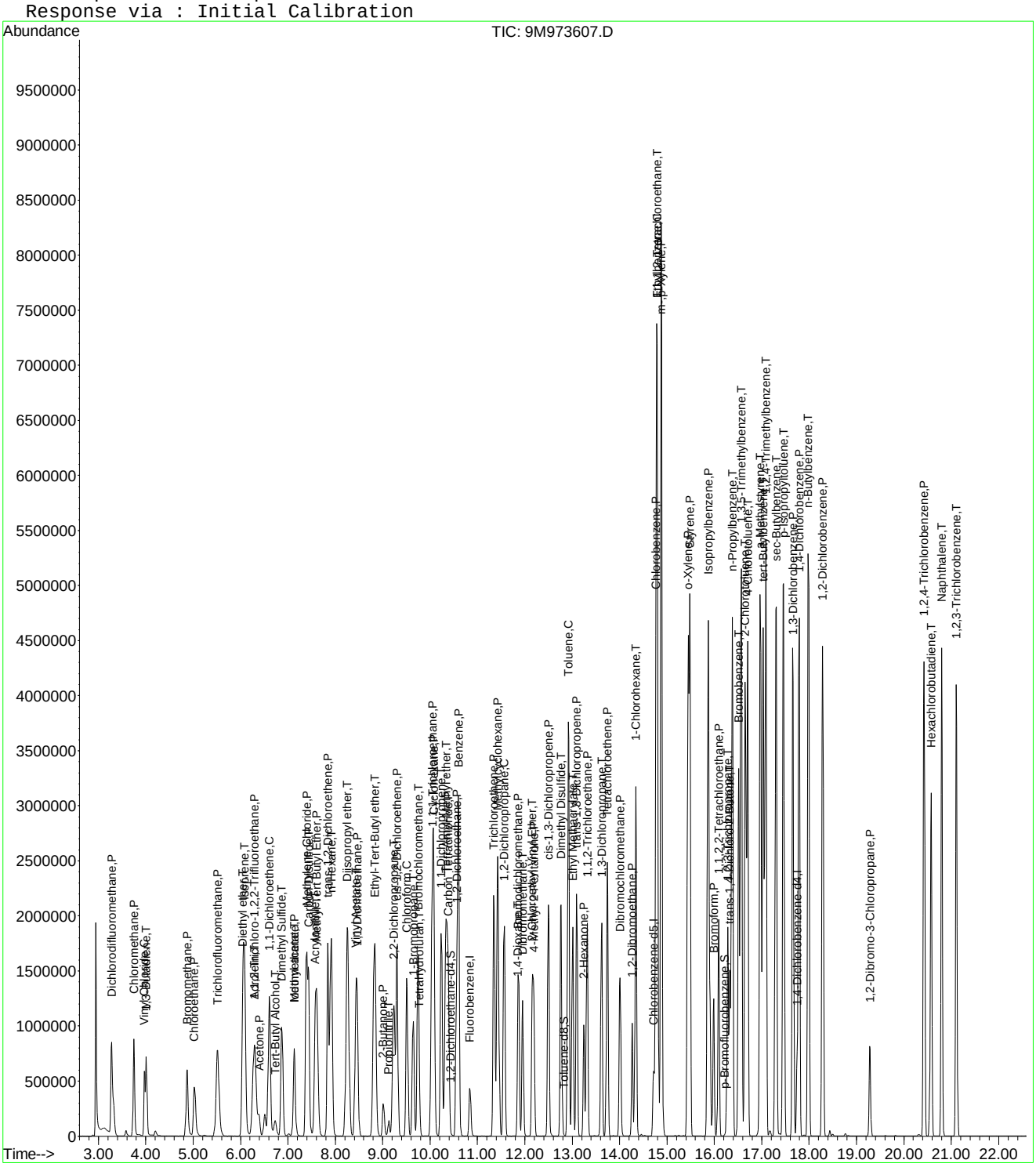

9M973607.D 8260-SL.M Thu Apr 07 13:30:19 2016 Page 3

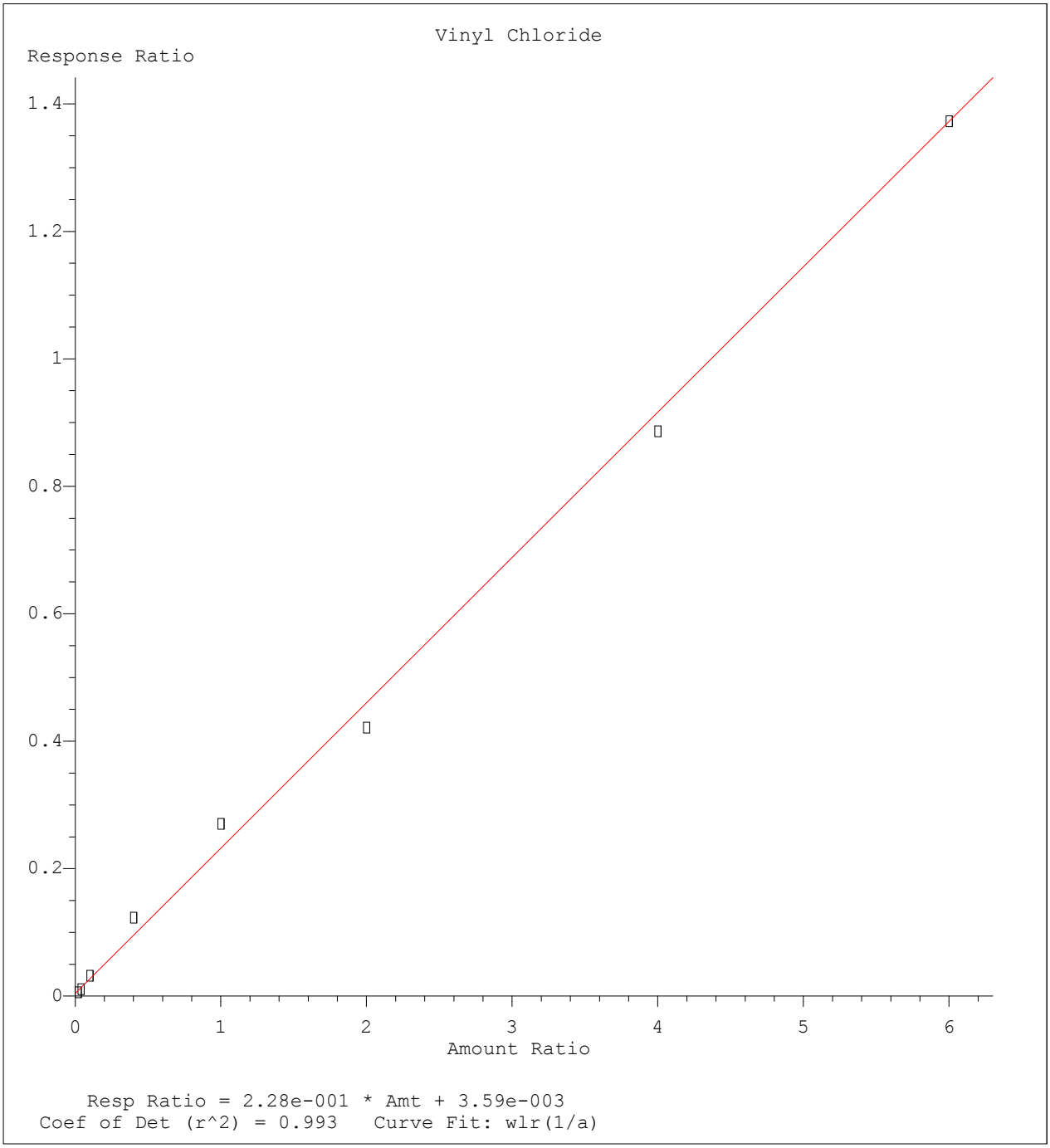

Method Name: C:\MSDCHEM\1\METHODS\8260-SL.M
Calibration Table Last Updated: Wed Apr 06 17:47:28 2016

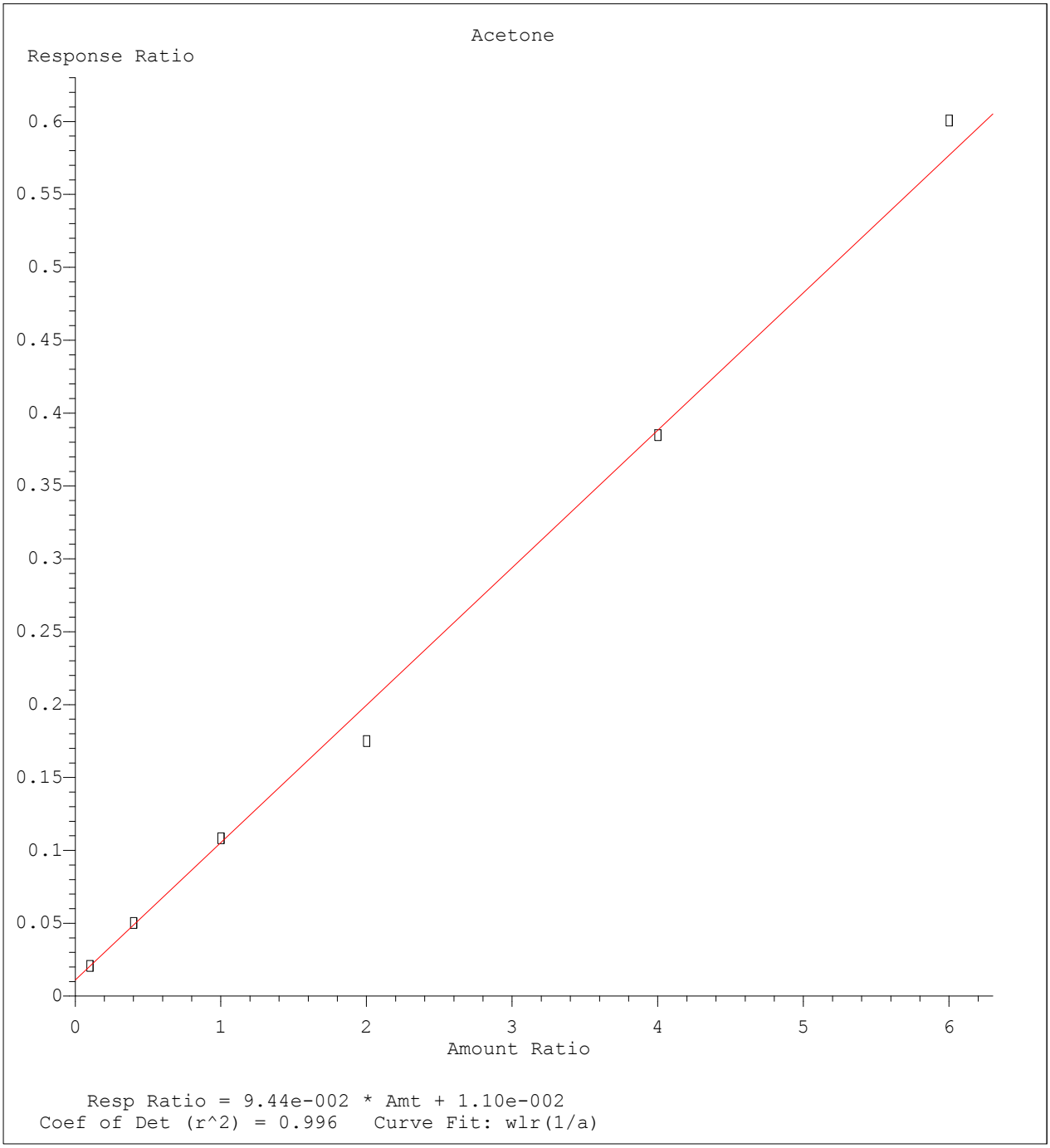

Method Name: C:\MSDCHEM\1\METHODS\8260-SL.M
Calibration Table Last Updated: Wed Apr 06 17:47:28 2016

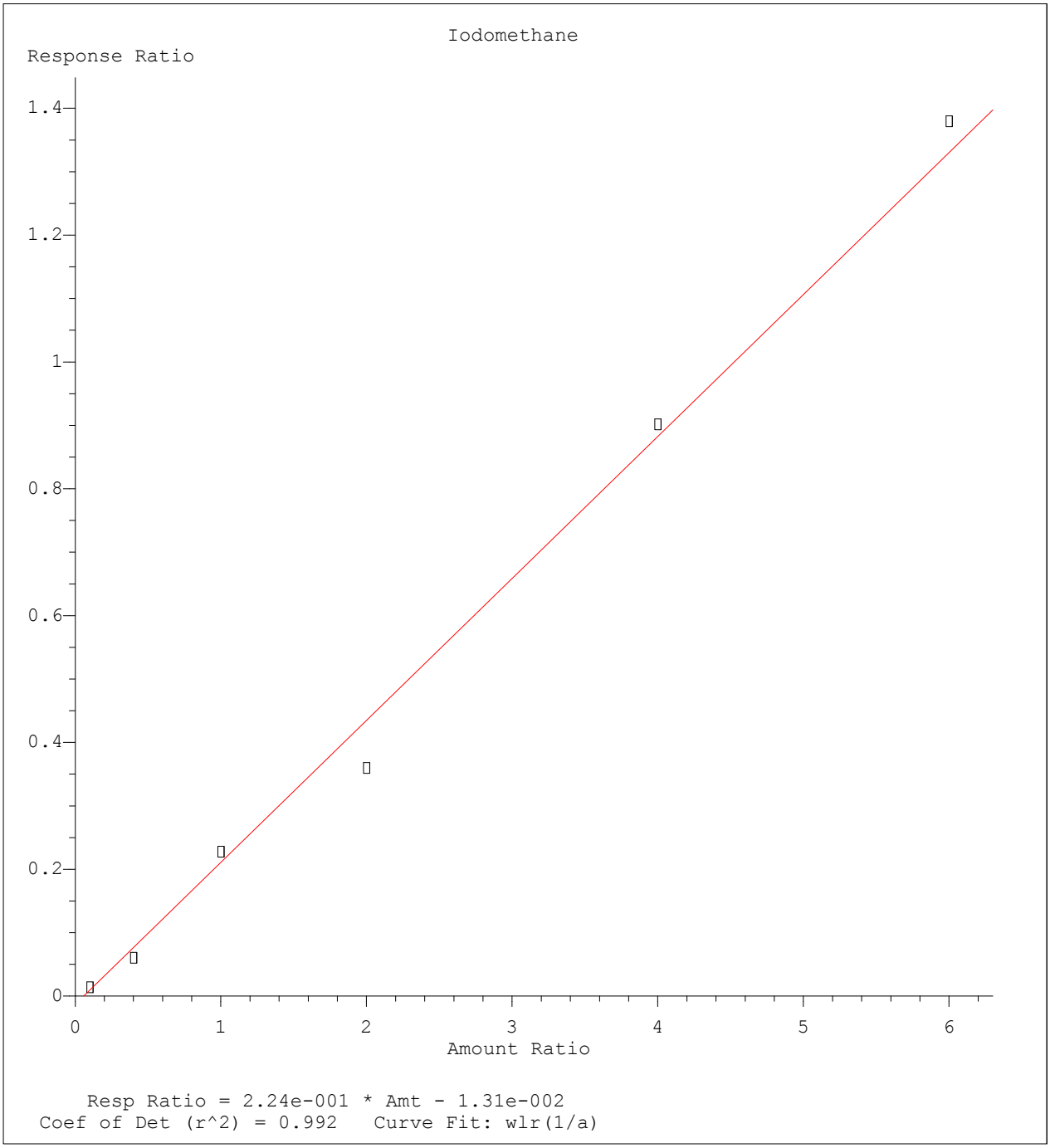

Method Name: C:\MSDCHEM\1\METHODS\8260-SL.M
Calibration Table Last Updated: Wed Apr 06 17:47:28 2016

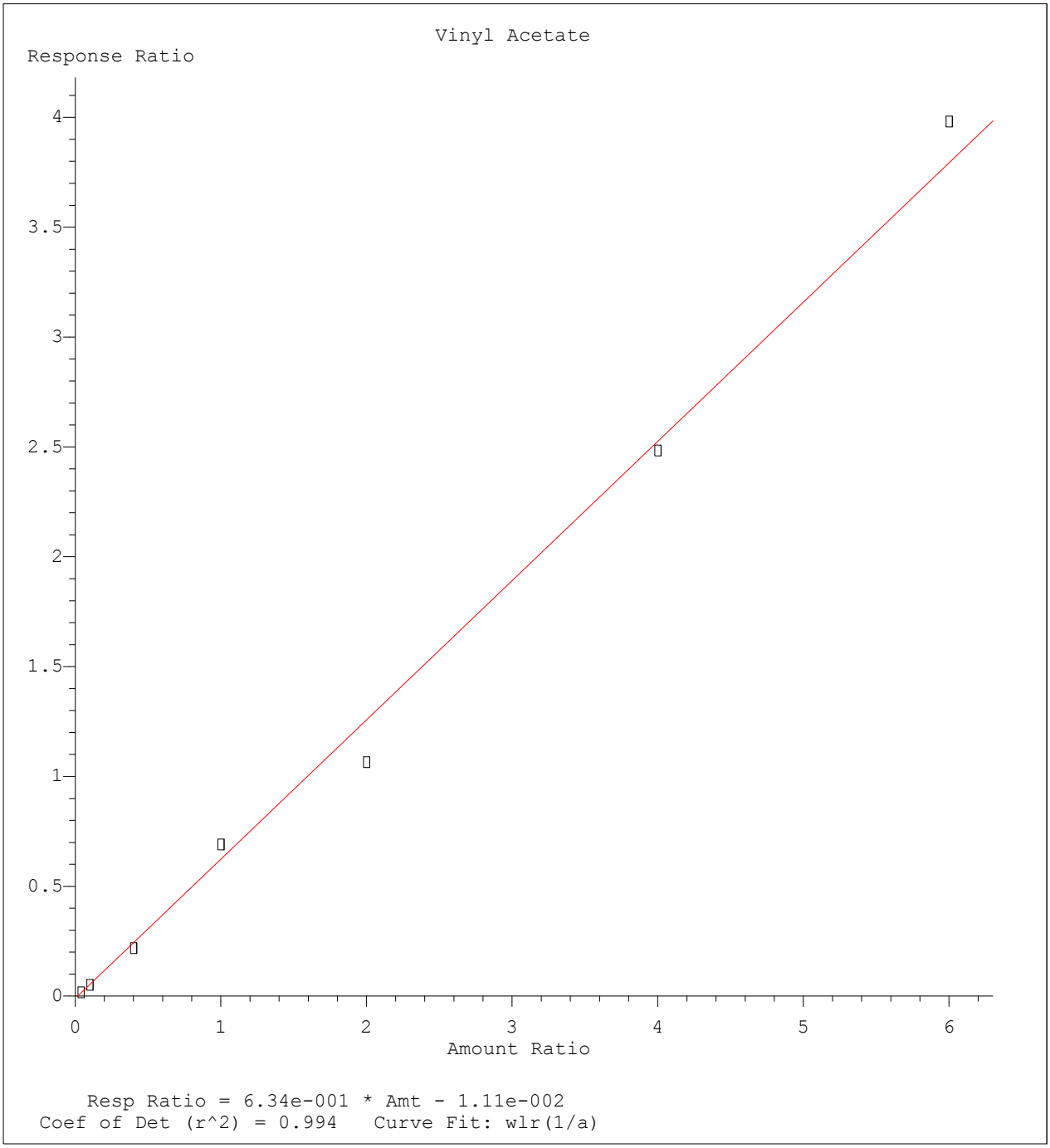

Method Name: C:\MSDCHEM\1\METHODS\8260-SL.M
Calibration Table Last Updated: Wed Apr 06 17:47:28 2016

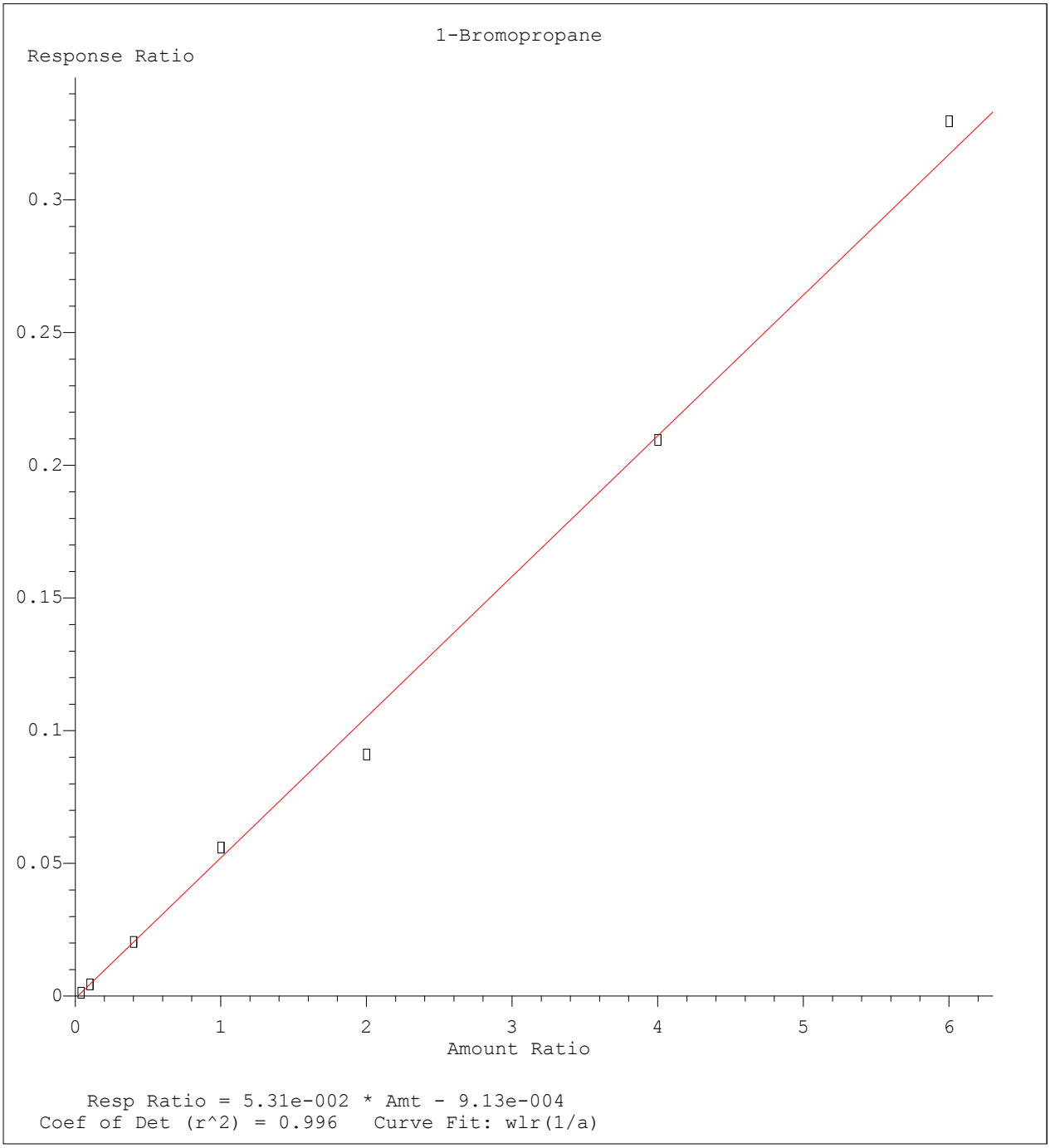

Method Name: C:\MSDCHEM\1\METHODS\8260-SL.M
Calibration Table Last Updated: Wed Apr 06 17:47:28 2016

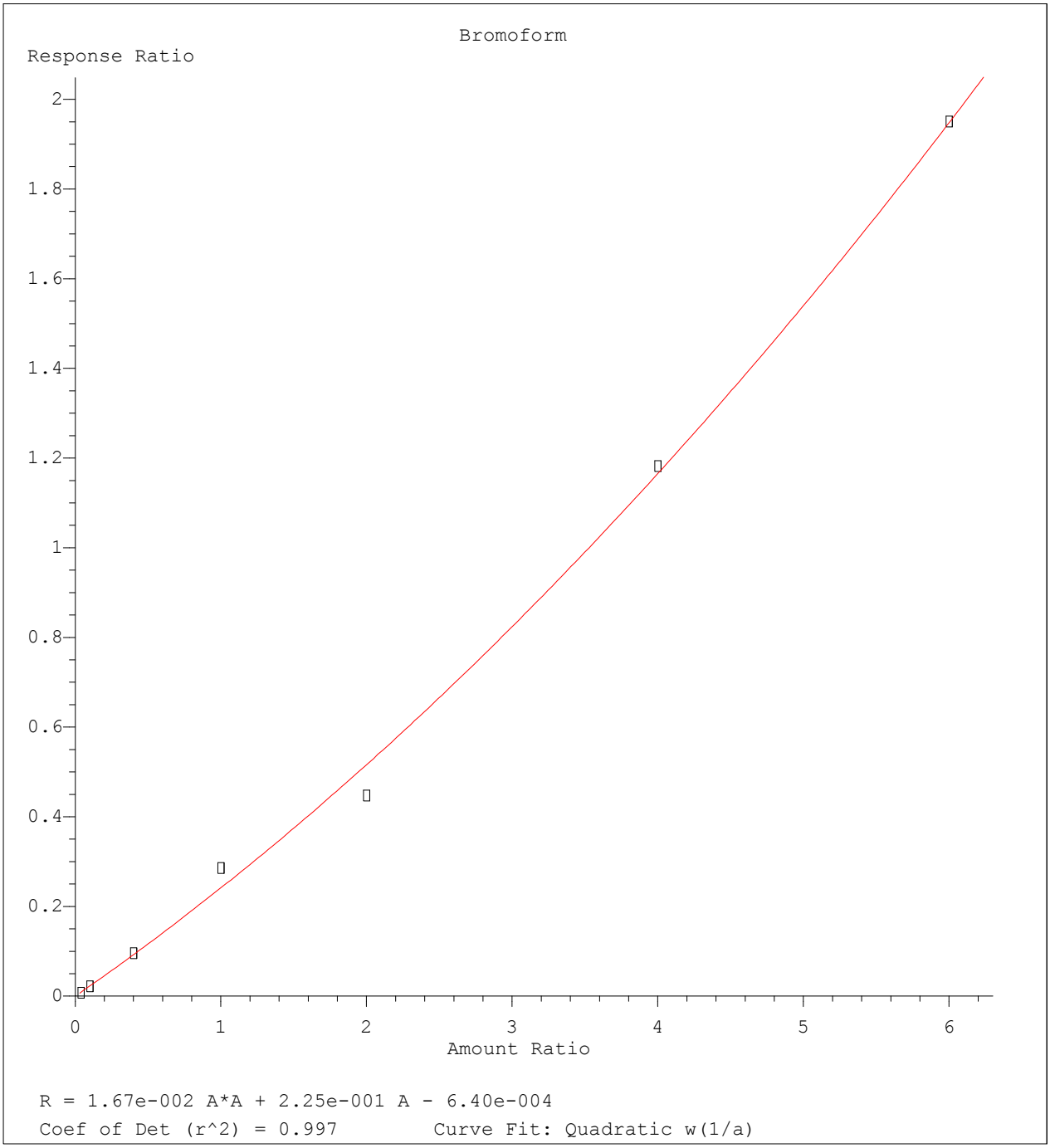

Method Name: C:\MSDCHEM\1\METHODS\8260-SL.M
Calibration Table Last Updated: Wed Apr 06 17:47:28 2016

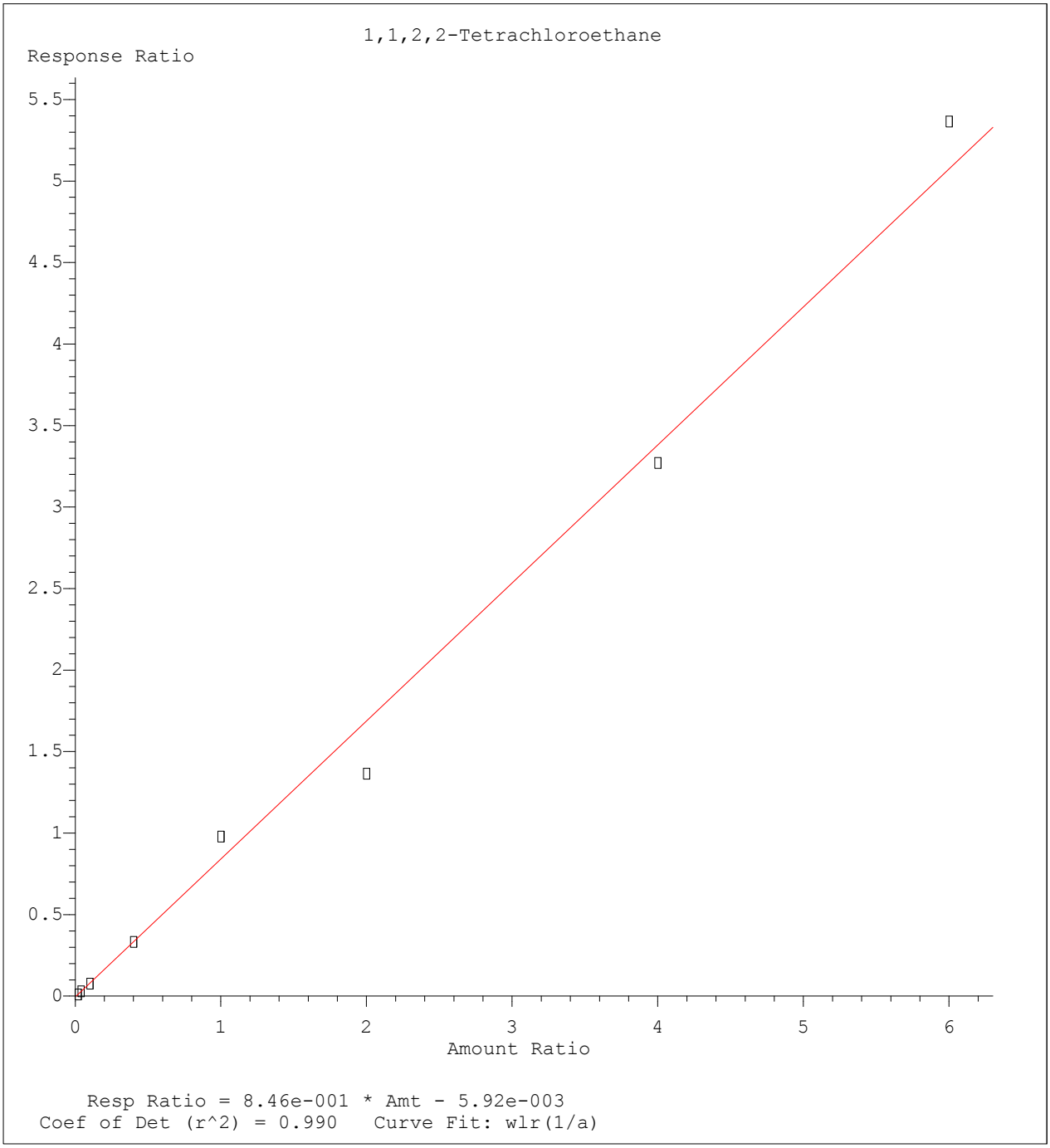

Method Name: C:\MSDCHEM\1\METHODS\8260-SL.M
Calibration Table Last Updated: Wed Apr 06 17:47:28 2016

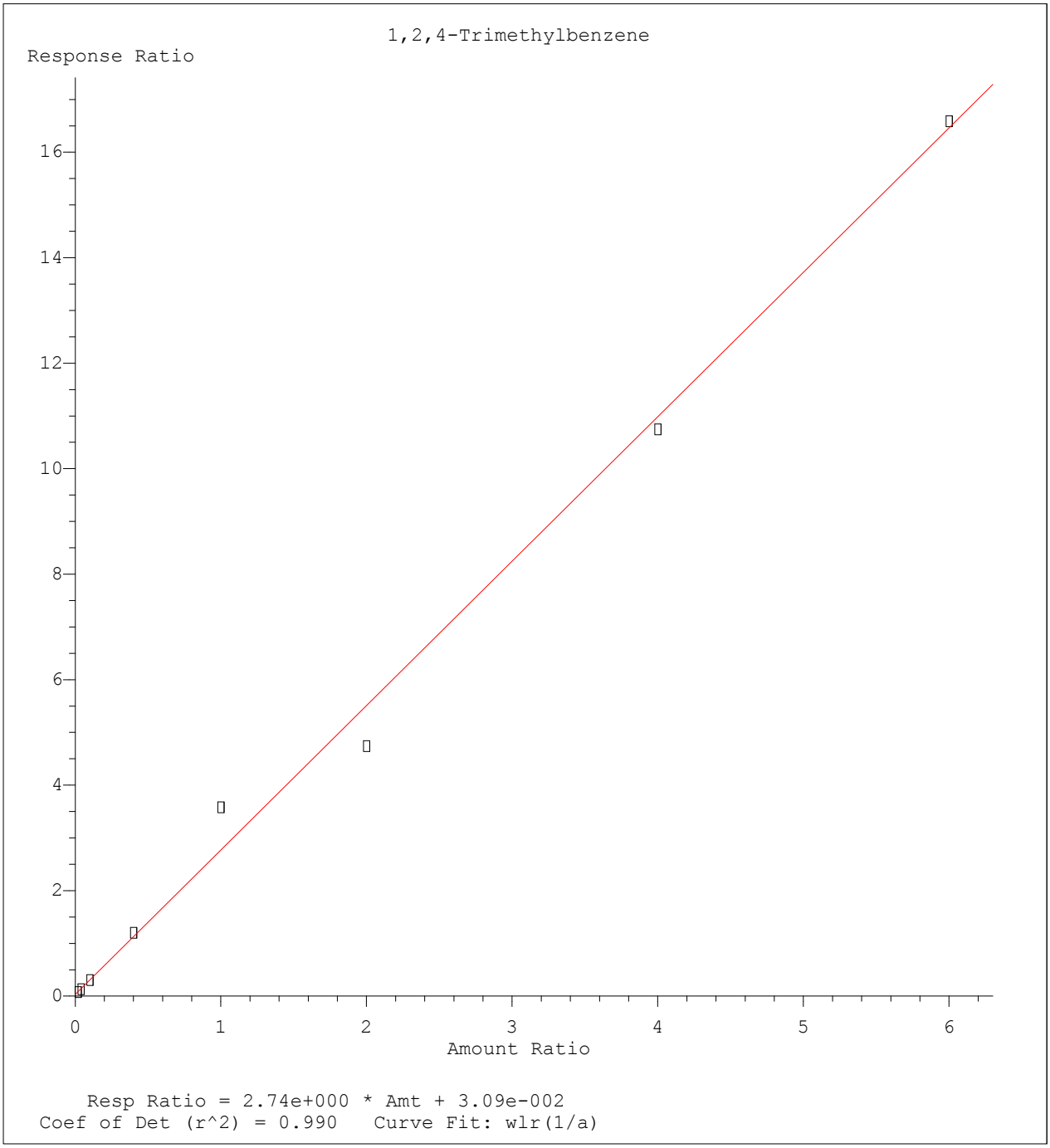

Method Name: C:\MSDCHEM\1\METHODS\8260-SL.M
Calibration Table Last Updated: Wed Apr 06 17:47:28 2016

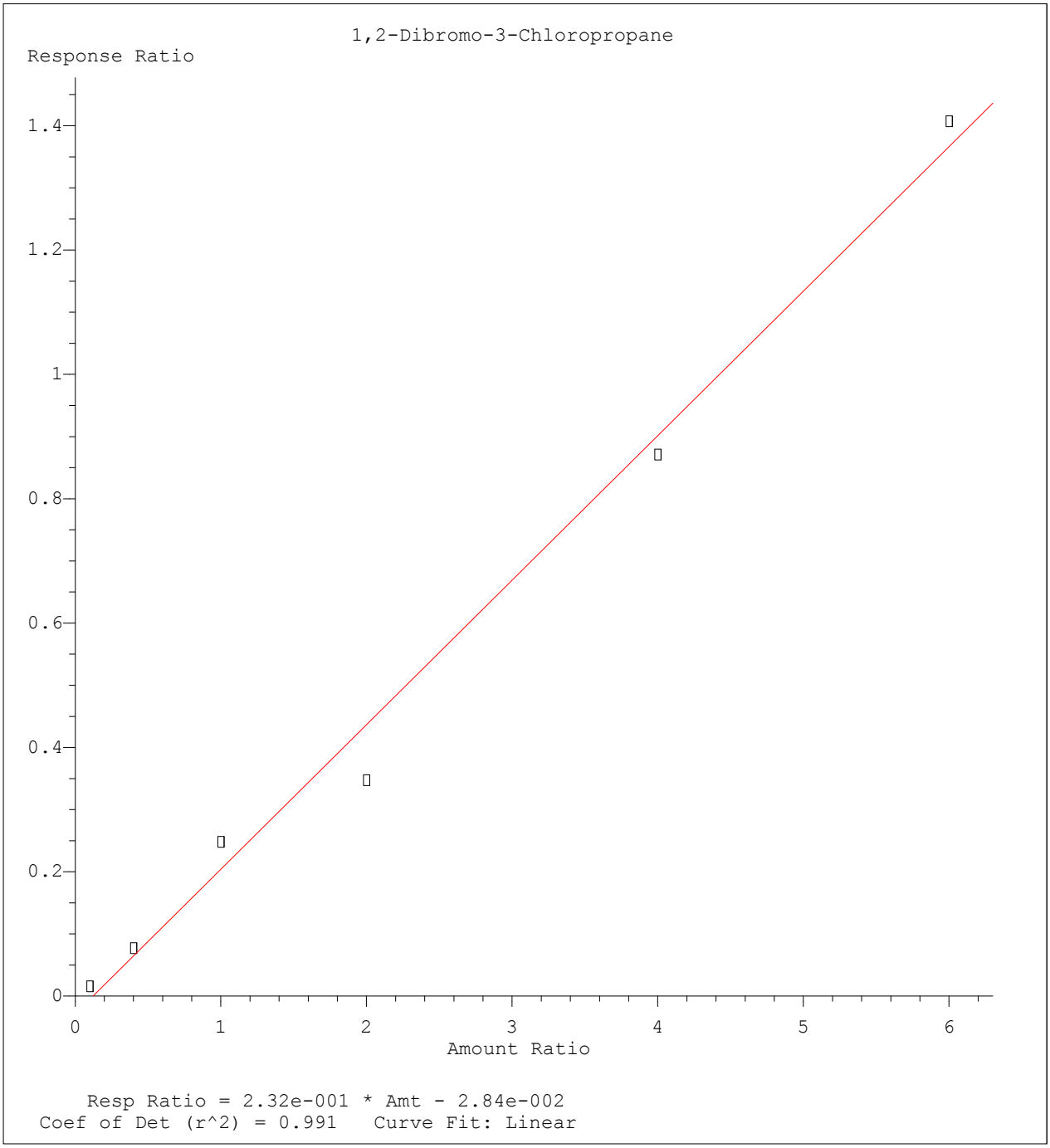

Method Name: C:\MSDCHEM\1\METHODS\8260-SL.M
Calibration Table Last Updated: Wed Apr 06 17:47:28 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973609.D Vial: 17
Acq On : 6 Apr 2016 18:18 Operator: ADC
Sample : WG563259-11 50.0ug/kg ALTSRC 8260 Inst : hpms9
Misc : 7,1 STD75404 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:20 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	530506	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	401118	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	219097	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	141434	52.7882 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.58%		
43) 1,2-Dichloroethane-d4	10.43	65	145958	52.0392 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.08%		
58) Toluene-d8	12.82	98	509727	53.3198 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.64%		
79) p-Bromofluorobenzene	16.22	95	199848	52.6619 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 105.32%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	250423	61.5384 ug/kg	98
3) Chloromethane	3.74	50	213325	57.0246 ug/kg	99
4) Vinyl Chloride	3.97	62	130729	53.2068 ug/kg	94
5) 1,3-Butadiene	4.01	54	50651	28.0586 ug/kg	96
6) Bromomethane	4.86	94	120126	52.3731 ug/kg	99
7) Chloroethane	5.02	64	122333	54.7562 ug/kg	99
8) Trichlorofluoromethane	5.51	101	245915	52.0272 ug/kg	100
9) Diethyl ether	6.04	59	298370	107.3411 ug/kg	99
10) Isoprene	6.08	67	240535	64.6521 ug/kg	100
11) Acrolein	6.29	56	42769	154.7449 ug/kg	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	156650	54.2779 ug/kg	97
13) Acetone	6.39	43	57891	51.9935 ug/kg	99
14) 1,1-Dichloroethene	6.60	61	246948	51.0481 ug/kg	99
15) Tert-Butyl Alcohol	6.73	59	102252	219.7499 ug/kg	99
16) Dimethyl Sulfide	6.87	62	185143	78.1171 ug/kg	99
17) Iodomethane	7.13	142	93186	42.1583 ug/kg	99
18) Methyl acetate	7.14	43	140101	45.5882 ug/kg	98
19) Methylene Chloride	7.38	84	155415	51.4310 ug/kg	97
20) Carbon Disulfide	7.44	76	446333	48.6586 ug/kg	99
21) Acrylonitrile	7.57	53	75240	51.5103 ug/kg	100
22) Methyl Tert Butyl Ether	7.60	73	421938	51.8917 ug/kg	99
23) trans-1,2-Dichloroethene	7.84	61	249458	53.6052 ug/kg	98
24) n-Hexane	7.91	57	291976	48.3154 ug/kg	100
25) Diisopropyl ether	8.25	45	1252311	101.6994 ug/kg	99
26) Vinyl Acetate	8.43	43	309863	46.9410 ug/kg	100
27) 1,1-Dichloroethane	8.46	63	282909	50.0862 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	1046728	96.6696 ug/kg	100
29) 2-Butanone	9.02	43	89553	52.5061 ug/kg	99
30) Propionitrile	9.13	54	55055	99.4519 ug/kg	97
31) 2,2-Dichloropropane	9.23	77	212618	51.5494 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	166197	53.7400 ug/kg	97
33) Chloroform	9.51	83	243436	50.8113 ug/kg	99
34) 1-Bromopropane	9.64	122	38824	69.7970 ug/kg	96
35) Bromochloromethane	9.75	130	99051	51.3365 ug/kg	99
36) Tetrahydrofuran	9.77	42	116541	96.1883 ug/kg	99
38) 1,1,1-Trichloroethane	10.04	97	216396	52.7730 ug/kg	100
39) Cyclohexane	10.08	56	352153	54.3246 ug/kg	99
40) 1,1-Dichloropropene	10.23	75	193887	51.3660 ug/kg	98
41) Tert-Amyl-Methyl ether	10.34	73	820188	102.3991 ug/kg	100
42) Carbon Tetrachloride	10.38	117	197392	51.5704 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973609.D Vial: 17
Acq On : 6 Apr 2016 18:18 Operator: ADC
Sample : WG563259-11 50.0ug/kg ALTSRC 8260 Inst : hpms9
Misc : 7,1 STD75404 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 07 13:30:20 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	211843	51.3449	ug/kg	99
46)	Benzene	10.59	78	593872	50.6938	ug/kg	100
47)	Trichloroethene	11.34	130	173100	52.5327	ug/kg	99
48)	Methylcyclohexane	11.43	83	274526	54.5223	ug/kg	98
49)	1,2-Dichloropropane	11.56	63	172660	54.1958	ug/kg	99
50)	1,4-Dioxane	11.85	88	10566	255.6979	ug/kg	94
51)	Bromodichloromethane	11.86	83	183631	50.5822	ug/kg	100
52)	Dibromomethane	11.95	174	95424	50.1684	ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.15	63	93818	55.3787	ug/kg	99
54)	4-Methyl-2-Pentanone	12.19	58	76339	52.0432	ug/kg	99
55)	cis-1,3-Dichloropropene	12.49	75	251031	55.4585	ug/kg	99
56)	Dimethyl Disulfide	12.77	94	267703	55.2642	ug/kg	99
59)	Toluene	12.91	91	628564	51.4967	ug/kg	100
60)	Ethyl Methacrylate	13.01	69	195518	52.6145	ug/kg	100
61)	trans-1,3-Dichloropropene	13.09	75	207936	52.3291	ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	129591	53.9308	ug/kg	100
63)	2-Hexanone	13.24	43	137776	52.5074	ug/kg	99
64)	1,3-Dichloropropane	13.62	76	226056	54.7122	ug/kg	99
65)	Tetrachloroethene	13.74	164	133666	51.6350	ug/kg	98
66)	Dibromochloromethane	14.01	129	150404	50.6339	ug/kg	99
67)	1,2-Dibromoethane	14.27	107	135771	51.2924	ug/kg	100
68)	1-Chlorohexane	14.34	91	217314	54.0792	ug/kg	100
69)	Chlorobenzene	14.76	112	449730	53.0953	ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.79	131	152648	53.0459	ug/kg	96
71)	Ethylbenzene	14.79	106	240566	52.7946	ug/kg	99
72)	m-,p-Xylene	14.88	106	589545	104.9373	ug/kg	99
73)	o-Xylene	15.45	106	292444	54.6278	ug/kg	100
74)	Styrene	15.48	104	490845	53.5412	ug/kg	100
75)	Bromoform	15.99	173	96808	50.1186	ug/kg	99
76)	Isopropylbenzene	15.87	105	752993	54.0740	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	177488	48.2015	ug/kg	100
80)	1,2,3-Trichloropropane	16.28	110	55590	51.1245	ug/kg#	27
81)	trans-1,4-Dichloro-2-Buten	16.32	53	54162	40.9288	ug/kg#	1
82)	n-Propylbenzene	16.38	91	846693	51.6897	ug/kg	100
83)	Bromobenzene	16.51	156	194075	49.8094	ug/kg	98
84)	1,3,5-Trimethylbenzene	16.57	105	645968	51.7929	ug/kg	100
85)	2-Chlorotoluene	16.65	91	501409	51.2539	ug/kg	99
86)	4-Chlorotoluene	16.70	91	531861	51.9779	ug/kg	99
87)	a-Methylstyrene	16.97	118	350698	56.3654	ug/kg	100
88)	tert-Butylbenzene	17.03	134	144582	52.3227	ug/kg	98
89)	1,2,4-Trimethylbenzene	17.08	105	645060	53.2109	ug/kg	99
90)	sec-Butylbenzene	17.30	105	846506	52.7972	ug/kg	100
91)	p-Isopropyltoluene	17.45	119	683120	51.4696	ug/kg	100
92)	1,3-Dichlorobenzene	17.65	146	389382	50.5474	ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	400589	50.9530	ug/kg	100
94)	n-Butylbenzene	17.98	91	626791	51.3326	ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	381311	52.0332	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	50296	55.5038	ug/kg	99
97)	1,2,4-Trichlorobenzene	20.43	180	306886	56.7541	ug/kg	99
98)	Hexachlorobutadiene	20.58	225	149856	58.7590	ug/kg	99
99)	Naphthalene	20.80	128	701866	53.8583	ug/kg	99
100)	1,2,3-Trichlorobenzene	21.10	180	299028	58.3388	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M973609.D 8260-SL.M Thu Apr 07 13:30:20 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\040616\9M973609.D Vial: 17
Acq On : 6 Apr 2016 18:18 Operator: ADC
Sample : WG563259-11 50.0ug/kg ALTSRC 8260 Inst : hpms9
Misc : 7,1 STD75404 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 7 13:30 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

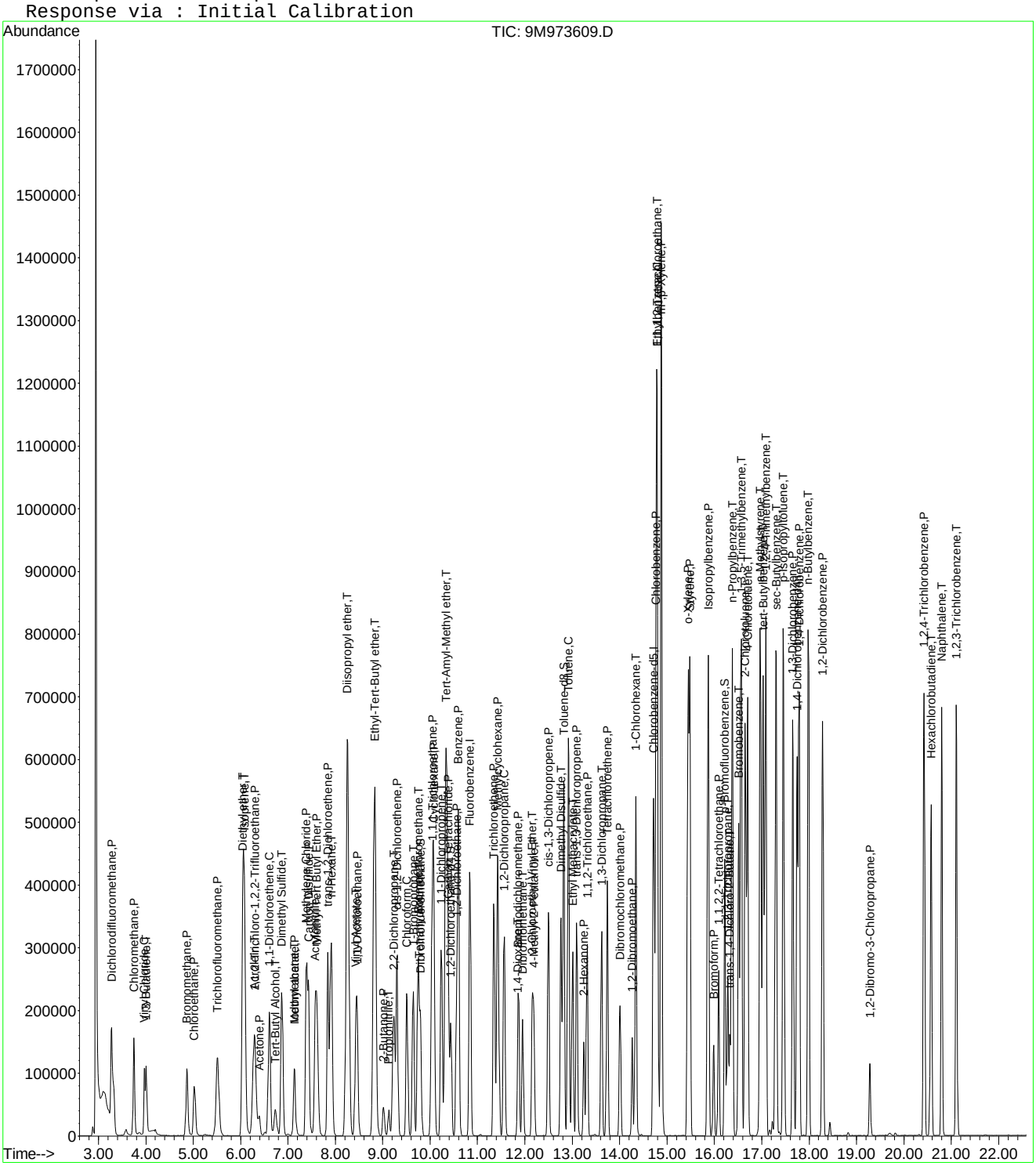

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\040616\9M973609.D Vial: 17
Acq On : 6 Apr 2016 18:18 Operator: ADC
Sample : WG563259-11 50.0ug/kg ALTSRC 8260 Inst : hpms9
Misc : 7,1 STD75404 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	96	0.00
2	P	Dichlorodifluoromethane	50.0000	61.5384	-23.1	103	0.00
3	P	Chloromethane	50.0000	57.0246	-14.0	110	0.00
4	C	Vinyl Chloride	50.0000	53.2068	-6.4	88	-0.01
5	T	1,3-Butadiene	50.0000	28.0586	43.9#	57	-0.01
6	P	Bromomethane	50.0000	52.3731	-4.7	95	-0.01
7	P	Chloroethane	50.0000	54.7562	-9.5	100	-0.01
8	P	Trichlorofluoromethane	50.0000	52.0272	-4.1	90	-0.01
9	T	Diethyl ether	100.0000	107.3411	-7.3	99	0.00
10	T	Isoprene	50.0000	64.6521	-29.3#	112	-0.01
11	T	Acrolein	50.0000	154.7449	-209.5#	285	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	54.2779	-8.6	94	0.00
13	P	Acetone	50.0000	51.9935	-4.0	97	0.00
14	C	1,1-Dichloroethene	50.0000	51.0481	-2.1	88	-0.01
15	T	Tert-Butyl Alcohol	200.0000	219.7499	-9.9	102	0.00
16	T	Dimethyl Sulfide	50.0000	78.1171	-56.2#	131	-0.01
17	T	Iodomethane	50.0000	42.1583	15.7	74	0.00
18	P	Methyl acetate	50.0000	45.5881	8.8	83	0.00
19	P	Methylene Chloride	50.0000	51.4310	-2.9	94	-0.01
20	P	Carbon Disulfide	50.0000	48.6586	2.7	86	0.00
21	T	Acrylonitrile	50.0000	51.5103	-3.0	93	0.00
22	P	Methyl Tert Butyl Ether	50.0000	51.8917	-3.8	91	0.00
23	P	trans-1,2-Dichloroethene	50.0000	53.6052	-7.2	92	0.00
24	T	n-Hexane	50.0000	48.3154	3.4	92	0.00
25	T	Diisopropyl ether	100.0000	101.6994	-1.7	91	0.00
26	T	Vinyl Acetate	50.0000	46.9410	6.1	81	0.00
27	P	1,1-Dichloroethane	50.0000	50.0862	-0.2	87	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	96.6696	3.3	88	0.00
29	P	2-Butanone	50.0000	52.5061	-5.0	98	0.00
30	T	Propionitrile	100.0000	99.4519	0.5	90	0.00
31	T	2,2-Dichloropropane	50.0000	51.5494	-3.1	88	0.00
32	P	cis-1,2-Dichloroethene	50.0000	53.7400	-7.5	94	0.00
33	C	Chloroform	50.0000	50.8113	-1.6	90	0.00
34	T	1-Bromopropane	50.0000	69.7970	-39.6#	126	0.00
35	T	Bromochloromethane	50.0000	51.3365	-2.7	87	0.00
36	T	Tetrahydrofuran	100.0000	96.1883	3.8	91	0.00
37	S	Dibromofluoromethane	50.0000	52.7882	-5.6	96	0.00
38	P	1,1,1-Trichloroethane	50.0000	52.7730	-5.5	91	0.00
39	P	Cyclohexane	50.0000	54.3246	-8.6	95	0.00
40	T	1,1-Dichloropropene	50.0000	51.3660	-2.7	89	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	102.3991	-2.4	93	0.00
42	P	Carbon Tetrachloride	50.0000	51.5704	-3.1	90	0.00
43	S	1,2-Dichloroethane-d4	50.0000	52.0392	-4.1	97	0.00
44		Heptane	-1.0000	0.0000	0.0	90	0.00
45	P	1,2-Dichloroethane	50.0000	51.3449	-2.7	92	0.00
46	P	Benzene	50.0000	50.6938	-1.4	92	0.00
47	P	Trichloroethene	50.0000	52.5327	-5.1	95	0.00
48	P	Methylcyclohexane	50.0000	54.5223	-9.0	96	0.00
49	C	1,2-Dichloropropane	50.0000	54.1958	-8.4	94	0.00
50	T	1,4-Dioxane	200.0000	255.6979	-27.8#	111	0.00
51	P	Bromodichloromethane	50.0000	50.5822	-1.2	88	0.00
52	T	Dibromomethane	50.0000	50.1684	-0.3	86	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	55.3787	-10.8	97	0.00
54	P	4-Methyl-2-Pentanone	50.0000	52.0432	-4.1	99	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\040616\9M973609.D Vial: 17
Acq On : 6 Apr 2016 18:18 Operator: ADC
Sample : WG563259-11 50.0ug/kg ALTSRC 8260 Inst : hpms9
Misc : 7,1 STD75404 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	55.4585	-10.9	97	0.00
56	T	Dimethyl Disulfide	50.0000	55.2642	-10.5	95	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	99	0.00
58	S	Toluene-d8	50.0000	53.3198	-6.6	97	0.00
59	C	Toluene	50.0000	51.4967	-3.0	93	0.00
60	T	Ethyl Methacrylate	50.0000	52.6145	-5.2	94	0.00
61	P	trans-1,3-Dichloropropene	50.0000	52.3291	-4.7	89	0.00
62	P	1,1,2-Trichloroethane	50.0000	53.9308	-7.9	93	0.00
63	P	2-Hexanone	50.0000	52.5074	-5.0	97	0.00
64	T	1,3-Dichloropropane	50.0000	54.7122	-9.4	96	0.00
65	P	Tetrachloroethene	50.0000	51.6350	-3.3	90	0.00
66	P	Dibromochloromethane	50.0000	50.6339	-1.3	88	0.00
67	P	1,2-Dibromoethane	50.0000	51.2924	-2.6	93	0.00
68	T	1-Chlorohexane	50.0000	54.0792	-8.2	94	0.00
69	P	Chlorobenzene	50.0000	53.0953	-6.2	95	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	53.0459	-6.1	93	0.00
71	C	Ethylbenzene	50.0000	52.7946	-5.6	92	0.00
72	P	m-,p-Xylene	100.0000	104.9373	-4.9	94	0.00
73	P	o-Xylene	50.0000	54.6278	-9.3	96	0.00
74	P	Styrene	50.0000	53.5412	-7.1	93	0.00
75	P	Bromoform	50.0000	50.1186	-0.2	84	0.00
76	P	Isopropylbenzene	50.0000	54.0740	-8.1	95	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	115	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	48.2015	3.6	95	0.00
79	S	p-Bromofluorobenzene	50.0000	52.6619	-5.3	102	0.00
80	T	1,2,3-Trichloropropane	50.0000	51.1245	-2.2	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	40.9288	18.1	74	0.00
82	T	n-Propylbenzene	50.0000	51.6897	-3.4	96	0.00
83	T	Bromobenzene	50.0000	49.8094	0.4	93	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	51.7929	-3.6	96	0.00
85	T	2-Chlorotoluene	50.0000	51.2539	-2.5	94	0.00
86	T	4-Chlorotoluene	50.0000	51.9779	-4.0	98	0.00
87	T	a-Methylstyrene	50.0000	56.3654	-12.7	103	0.00
88	T	tert-Butylbenzene	50.0000	52.3227	-4.6	97	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	53.2109	-6.4	95	0.00
90	T	sec-Butylbenzene	50.0000	52.7972	-5.6	98	0.00
91	T	p-Isopropyltoluene	50.0000	51.4696	-2.9	95	0.00
92	P	1,3-Dichlorobenzene	50.0000	50.5474	-1.1	96	0.00
93	P	1,4-Dichlorobenzene	50.0000	50.9530	-1.9	100	0.00
94	T	n-Butylbenzene	50.0000	51.3326	-2.7	96	0.00
95	P	1,2-Dichlorobenzene	50.0000	52.0332	-4.1	101	0.00
96	P	1,2-Dibromo-3-Chloropropane	50.0000	55.5037	-11.0	107	0.01
97	P	1,2,4-Trichlorobenzene	50.0000	56.7541	-13.5	109	0.00
98	T	Hexachlorobutadiene	50.0000	58.7590	-17.5	110	0.00
99	T	Naphthalene	50.0000	53.8583	-7.7	100	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	58.3387	-16.7	110	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M973609.D 8260-SL.M Thu Apr 07 13:32:18 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\043016\9M974067.D Vial: 2
Acq On : 30 Apr 2016 13:43 Operator: ADC
Sample : WG567052-02 50ug/kg CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 30 14:05:40 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	721498	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	515311	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	239486	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	191737	52.6192 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.24%		
43) 1,2-Dichloroethane-d4	10.44	65	202287	53.0305 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 106.06%		
58) Toluene-d8	12.81	98	677225	55.1425 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 110.28%		
79) p-Bromofluorobenzene	16.21	95	250470	60.3822 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 120.76%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	267146	48.2698 ug/kg	98
3) Chloromethane	3.75	50	279372	54.9109 ug/kg	100
4) Vinyl Chloride	3.97	62	154892	46.2519 ug/kg	95
5) 1,3-Butadiene	4.00	54	90745	36.9620 ug/kg	94
6) Bromomethane	4.87	94	143220	45.9124 ug/kg	100
7) Chloroethane	5.02	64	142331	46.8430 ug/kg	99
8) Trichlorofluoromethane	5.51	101	309961	48.2178 ug/kg	100
9) Diethyl ether	6.04	59	338254	89.4765 ug/kg	96
10) Isoprene	6.07	67	214323	42.3573 ug/kg	100
11) Acrolein	6.28	56	22930	61.0023 ug/kg	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	186304	47.4646 ug/kg	100
13) Acetone	6.39	43	64103	41.2488 ug/kg	100
14) 1,1-Dichloroethene	6.60	61	301955	45.8956 ug/kg	97
15) Tert-Butyl Alcohol	6.72	59	114483	180.9060 ug/kg	99
16) Dimethyl Sulfide	6.87	62	143065	44.3841 ug/kg	97
17) Iodomethane	7.12	142	111793	37.5324 ug/kg	99
18) Methyl acetate	7.13	43	173317	41.4674 ug/kg	97
19) Methylene Chloride	7.39	84	183855	44.7366 ug/kg	93
20) Carbon Disulfide	7.43	76	513142	41.1333 ug/kg	100
21) Acrylonitrile	7.57	53	87651	44.1222 ug/kg	100
22) Methyl Tert Butyl Ether	7.60	73	524602	47.4389 ug/kg	99
23) trans-1,2-Dichloroethene	7.83	61	291770	46.1005 ug/kg	100
24) n-Hexane	7.91	57	313068	38.0919 ug/kg	98
25) Diisopropyl ether	8.24	45	1457067	87.0044 ug/kg	99
26) Vinyl Acetate	8.42	43	370347	41.3581 ug/kg	99
27) 1,1-Dichloroethane	8.45	63	352481	45.8841 ug/kg	98
28) Ethyl-Tert-Butyl ether	8.82	59	1336759	90.7746 ug/kg	99
29) 2-Butanone	9.01	43	98352	42.4002 ug/kg	97
30) Propionitrile	9.12	54	63958	84.9506 ug/kg	97
31) 2,2-Dichloropropane	9.23	77	269278	48.0043 ug/kg	100
32) cis-1,2-Dichloroethene	9.30	96	194107	46.1499 ug/kg	98
33) Chloroform	9.51	83	301985	46.3464 ug/kg	99
34) 1-Bromopropane	9.65	122	30323	40.4497 ug/kg	98
35) Bromochloromethane	9.74	130	123421	47.0340 ug/kg	95
36) Tetrahydrofuran	9.76	42	138155	83.8427 ug/kg	97
38) 1,1,1-Trichloroethane	10.04	97	268302	48.1107 ug/kg	99
39) Cyclohexane	10.07	56	375361	42.5765 ug/kg	97
40) 1,1-Dichloropropene	10.24	75	237174	46.2008 ug/kg	98
41) Tert-Amyl-Methyl ether	10.33	73	1009502	92.6713 ug/kg	99
42) Carbon Tetrachloride	10.39	117	251432	48.2999 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\043016\9M974067.D Vial: 2
Acq On : 30 Apr 2016 13:43 Operator: ADC
Sample : WG567052-02 50ug/kg CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 30 14:05:40 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.55	62	261444	46.5926	ug/kg	97
46)	Benzene	10.60	78	700687	43.9786	ug/kg	99
47)	Trichloroethene	11.35	130	194526	43.4076	ug/kg	99
48)	Methylcyclohexane	11.43	83	293473	42.8562	ug/kg	97
49)	1,2-Dichloropropane	11.56	63	197901	45.6748	ug/kg	98
50)	1,4-Dioxane	11.85	88	10306	183.3841	ug/kg	99
51)	Bromodichloromethane	11.86	83	226098	45.7935	ug/kg	99
52)	Dibromomethane	11.95	174	115911	44.8077	ug/kg	97
53)	2-Chloroethyl Vinyl Ether	12.15	63	116302	50.4776	ug/kg	98
54)	4-Methyl-2-Pentanone	12.18	58	90489	45.3596	ug/kg	99
55)	cis-1,3-Dichloropropene	12.50	75	281374	45.7067	ug/kg	100
56)	Dimethyl Disulfide	12.76	94	308820	46.8761	ug/kg	99
59)	Toluene	12.92	91	738892	47.1209	ug/kg	99
60)	Ethyl Methacrylate	13.00	69	221257	46.3467	ug/kg	100
61)	trans-1,3-Dichloropropene	13.09	75	260381	51.0066	ug/kg	100
62)	1,1,2-Trichloroethane	13.31	97	153347	49.6752	ug/kg	99
63)	2-Hexanone	13.24	43	149815	44.4432	ug/kg	97
64)	1,3-Dichloropropane	13.61	76	257152	48.4463	ug/kg	97
65)	Tetrachloroethene	13.74	164	158751	47.7356	ug/kg	98
66)	Dibromochloromethane	14.00	129	189943	49.7746	ug/kg	100
67)	1,2-Dibromoethane	14.26	107	161251	47.4189	ug/kg	100
68)	1-Chlorohexane	14.34	91	241155	46.7134	ug/kg	98
69)	Chlorobenzene	14.76	112	521170	47.8946	ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	189589	51.2834	ug/kg	98
71)	Ethylbenzene	14.79	106	283523	48.4336	ug/kg	100
72)	m-,p-Xylene	14.88	106	690257	95.6371	ug/kg	100
73)	o-Xylene	15.44	106	333133	48.4386	ug/kg	100
74)	Styrene	15.48	104	566862	48.1309	ug/kg	100
75)	Bromoform	15.98	173	132662	53.2241	ug/kg	100
76)	Isopropylbenzene	15.86	105	860313	48.0902	ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.08	83	210037	52.1559	ug/kg	100
80)	1,2,3-Trichloropropane	16.27	110	64353	54.1449	ug/kg	91
81)	trans-1,4-Dichloro-2-Buten	16.33	53	75281	52.0446	ug/kg	96
82)	n-Propylbenzene	16.37	91	951855	53.1625	ug/kg	100
83)	Bromobenzene	16.51	156	226542	53.1921	ug/kg	75
84)	1,3,5-Trimethylbenzene	16.56	105	730662	53.5959	ug/kg	100
85)	2-Chlorotoluene	16.64	91	641892	60.0279	ug/kg	99
86)	4-Chlorotoluene	16.70	91	532897	47.6453	ug/kg	99
87)	a-Methylstyrene	16.97	118	348737	51.2783	ug/kg	99
88)	tert-Butylbenzene	17.02	134	162029	53.6445	ug/kg	90
89)	1,2,4-Trimethylbenzene	17.08	105	745247	56.2737	ug/kg	99
90)	sec-Butylbenzene	17.30	105	932564	53.2128	ug/kg	100
91)	p-Isopropyltoluene	17.46	119	780693	53.8134	ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	437597	51.9701	ug/kg	99
93)	1,4-Dichlorobenzene	17.78	146	436354	50.7769	ug/kg	98
94)	n-Butylbenzene	17.98	91	705629	52.8693	ug/kg	100
95)	1,2-Dichlorobenzene	18.28	146	410190	51.2086	ug/kg	98
96)	1,2-Dibromo-3-Chloropropan	19.28	157	51440	52.3268	ug/kg	98
97)	1,2,4-Trichlorobenzene	20.42	180	307117	51.9613	ug/kg	99
98)	Hexachlorobutadiene	20.57	225	141777	50.8583	ug/kg	99
99)	Naphthalene	20.79	128	778940	54.6838	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	300419	53.6203	ug/kg	98

(#) = qualifier out of range (m) = manual integration
9M974067.D 8260-SL.M Sat Apr 30 14:05:40 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\043016\9M974067.D Vial: 2
Acq On : 30 Apr 2016 13:43 Operator: ADC
Sample : WG567052-02 50ug/kg CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 30 14:05 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

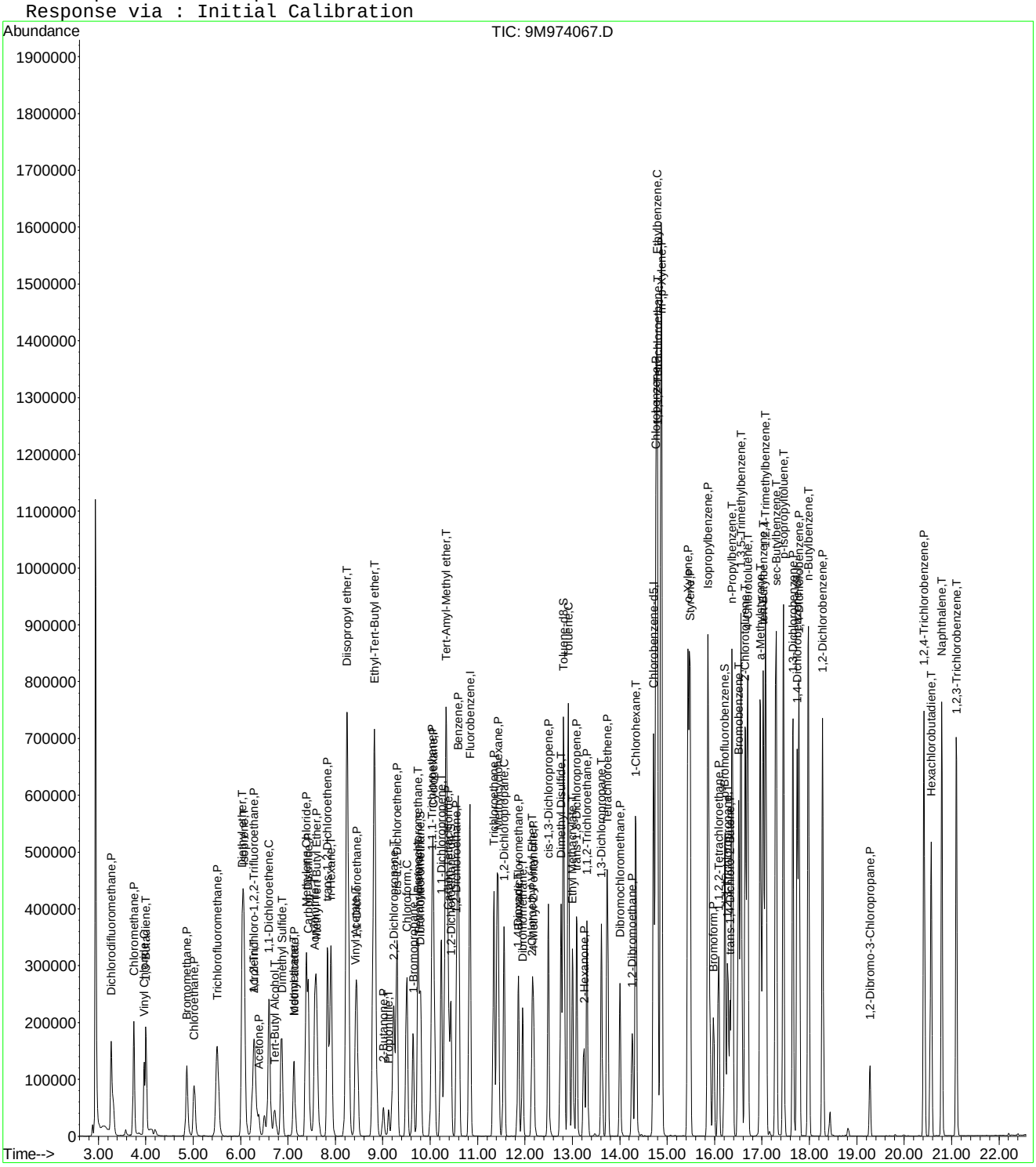

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\043016\9M974067.D Vial: 2
Acq On : 30 Apr 2016 13:43 Operator: ADC
Sample : WG567052-02 50ug/kg CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	131	0.00
2	P	Dichlorodifluoromethane	0.3835	0.3703	3.5	110	0.00
3	P	Chloromethane	0.3526	0.3872	-9.8	144	0.00
4	C	Vinyl Chloride	0.2683	0.2147	20.0	104	0.00
5	T	1,3-Butadiene	0.1701	0.1258	26.1#	103	-0.02
6	P	Bromomethane	0.2162	0.1985	8.2	113	0.00
7	P	Chloroethane	0.2106	0.1973	6.3	116	0.00
8	P	Trichlorofluoromethane	0.4455	0.4296	3.6	113	0.00
9	T	Diethyl ether	0.2620	0.2344	10.5	112	0.00
10	T	Isoprene	0.3507	0.2970	15.3	100	-0.02
11	T	Acrolein	0.0261	0.0318	-22.0	153	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	0.2720	0.2582	5.1	112	-0.02
13	P	Acetone	0.1208	0.0888#	26.4#	107	0.00
14	C	1,1-Dichloroethene	0.4559	0.4185	8.2	108	-0.02
15	T	Tert-Butyl Alcohol	0.0439	0.0397	9.6	114	0.00
16	T	Dimethyl Sulfide	0.2234	0.1983	11.2	101	0.00
17	T	Iodomethane	0.1924	0.1550	19.5	89	0.00
18	P	Methyl acetate	0.2897	0.2402	17.1	103	0.00
19	P	Methylene Chloride	0.2848	0.2548	10.5	111	0.00
20	P	Carbon Disulfide	0.8645	0.7112	17.7	99	0.00
21	T	Acrylonitrile	0.1377	0.1215	11.8	108	0.00
22	P	Methyl Tert Butyl Ether	0.7664	0.7271	5.1	113	0.00
23	P	trans-1,2-Dichloroethene	0.4386	0.4044	7.8	107	0.00
24	T	n-Hexane	0.5696	0.4339	23.8	99	0.00
25	T	Diisopropyl ether	1.1606	1.0097	13.0	106	0.00
26	T	Vinyl Acetate	0.5715	0.5133	10.2	97	0.00
27	P	1,1-Dichloroethane	0.5324	0.4885	8.2	108	0.00
28	T	Ethyl-Tert-Butyl ether	1.0205	0.9264	9.2	112	0.00
29	P	2-Butanone	0.1608	0.1363	15.2	108	0.00
30	T	Propionitrile	0.0522	0.0443	15.1	105	0.00
31	T	2,2-Dichloropropane	0.3887	0.3732	4.0	112	0.00
32	P	cis-1,2-Dichloroethene	0.2915	0.2690	7.7	109	0.00
33	C	Chloroform	0.4516	0.4185	7.3	112	0.00
34	T	1-Bromopropane	0.0479	0.0420	12.3	98	0.00
35	T	Bromochloromethane	0.1819	0.1711	5.9	108	0.00
36	T	Tetrahydrofuran	0.1142	0.0957	16.2	108	0.00
37	S	Dibromofluoromethane	0.2525	0.2657	-5.2	130	0.00
38	P	1,1,1-Trichloroethane	0.3865	0.3719	3.8	112	0.00
39	P	Cyclohexane	0.6110	0.5202	14.8	101	0.00
40	T	1,1-Dichloropropene	0.3558	0.3287	7.6	109	0.00
41	T	Tert-Amyl-Methyl ether	0.7549	0.6996	7.3	115	0.00
42	P	Carbon Tetrachloride	0.3608	0.3485	3.4	114	0.00
43	S	1,2-Dichloroethane-d4	0.2643	0.2804	-6.1	134	0.00
44		Heptane	0.0000	0.0000	0.0	129	0.00
45	P	1,2-Dichloroethane	0.3889	0.3624	6.8	113	0.00
46	P	Benzene	1.1041	0.9712	12.0	109	0.00
47	P	Trichloroethene	0.3106	0.2696	13.2	107	0.00
48	P	Methylcyclohexane	0.4746	0.4068	14.3	102	0.00
49	C	1,2-Dichloropropane	0.3003	0.2743	8.7	108	0.00
50	T	1,4-Dioxane	0.0039	0.0036	8.2	108	0.00
51	P	Bromodichloromethane	0.3422	0.3134	8.4	108	0.00
52	T	Dibromomethane	0.1793	0.1606	10.4	105	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1597	0.1612	-1.0	120	0.00
54	P	4-Methyl-2-Pentanone	0.1383	0.1254	9.3	117	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\043016\9M974067.D Vial: 2
Acq On : 30 Apr 2016 13:43 Operator: ADC
Sample : WG567052-02 50ug/kg CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	0.4266	0.3900	8.6	108	0.00
56	T	Dimethyl Disulfide	0.4566	0.4280	6.2	109	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	127	0.00
58	S	Toluene-d8	1.1917	1.3142	-10.3	129	0.00
59	C	Toluene	1.5215	1.4339	5.8	109	0.00
60	T	Ethyl Methacrylate	0.4632	0.4294	7.3	106	0.00
61	P	trans-1,3-Dichloropropene	0.4953	0.5053	-2.0	112	0.00
62	P	1,1,2-Trichloroethane	0.2995	0.2976	0.7	110	0.00
63	P	2-Hexanone	0.3271	0.2907	11.1	106	0.00
64	T	1,3-Dichloropropane	0.5150	0.4990	3.1	109	0.00
65	P	Tetrachloroethene	0.3227	0.3081	4.5	107	0.00
66	P	Dibromochloromethane	0.3703	0.3686	0.5	111	0.00
67	P	1,2-Dibromoethane	0.3300	0.3129	5.2	111	0.00
68	T	1-Chlorohexane	0.5009	0.4680	6.6	104	0.00
69	P	Chlorobenzene	1.0558	1.0114	4.2	110	0.00
70	T	1,1,1,2-Tetrachloroethane	0.3587	0.3679	-2.6	115	0.00
71	C	Ethylbenzene	0.5680	0.5502	3.1	109	0.00
72	P	m-,p-Xylene	0.7003	0.6697	4.4	110	0.00
73	P	o-Xylene	0.6673	0.6465	3.1	109	0.00
74	P	Styrene	1.1428	1.1000	3.7	108	0.00
75	P	Bromoform	0.2533	0.2574	-1.6	115	0.00
76	P	Isopropylbenzene	1.7358	1.6695	3.8	109	0.00
77	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	126	0.00
78	P	1,1,2,2-Tetrachloroethane	0.7803	0.8770	-12.4	113	0.00
79	S	p-Bromofluorobenzene	0.8660	1.0459	-20.8	128	0.00
80	T	1,2,3-Trichloropropane	0.2481	0.2687	-8.3	116	0.00
81	T	trans-1,4-Dichloro-2-Butene	0.3020	0.3143	-4.1	102	0.00
82	T	n-Propylbenzene	3.7381	3.9746	-6.3	108	0.00
83	T	Bromobenzene	0.8892	0.9459	-6.4	109	0.00
84	T	1,3,5-Trimethylbenzene	2.8463	3.0510	-7.2	109	0.00
85	T	2-Chlorotoluene	2.2325	2.6803	-20.1	121	0.00
86	T	4-Chlorotoluene	2.3351	2.2252	4.7	98	0.00
87	T	a-Methylstyrene	1.4199	1.4562	-2.6	102	0.00
88	T	tert-Butylbenzene	0.6306	0.6766	-7.3	108	0.00
89	T	1,2,4-Trimethylbenzene	3.0832	3.1119	-0.9	110	0.00
90	T	sec-Butylbenzene	3.6589	3.8940	-6.4	108	0.00
91	T	p-Isopropyltoluene	3.0289	3.2599	-7.6	109	0.00
92	P	1,3-Dichlorobenzene	1.7580	1.8272	-3.9	108	0.00
93	P	1,4-Dichlorobenzene	1.7942	1.8220	-1.6	109	0.00
94	T	n-Butylbenzene	2.7865	2.9464	-5.7	108	0.00
95	P	1,2-Dichlorobenzene	1.6724	1.7128	-2.4	108	0.00
96	P	1,2-Dibromo-3-Chloropropane	0.2045	0.2148	-5.0	109	0.00
97	P	1,2,4-Trichlorobenzene	1.2340	1.2824	-3.9	109	0.00
98	T	Hexachlorobutadiene	0.5820	0.5920	-1.7	104	0.00
99	T	Naphthalene	2.9740	3.2525	-9.4	111	0.00
100	T	1,2,3-Trichlorobenzene	1.1697	1.2544	-7.2	111	0.00

(#) = Out of Range SPCC's out = 1 CCC's out = 0
9M974067.D 8260-SL.M Sat Apr 30 14:50:56 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\043016\9M974067.D Vial: 2
Acq On : 30 Apr 2016 13:43 Operator: ADC
Sample : WG567052-02 50ug/kg CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	131	0.00
2	P	Dichlorodifluoromethane	50.0000	48.2698	3.5	110	0.00
3	P	Chloromethane	50.0000	54.9109	-9.8	144	0.00
4	C	Vinyl Chloride	50.0000	46.2519	7.5	104	0.00
5	T	1,3-Butadiene	50.0000	36.9620	26.1#	103	-0.02
6	P	Bromomethane	50.0000	45.9124	8.2	113	0.00
7	P	Chloroethane	50.0000	46.8430	6.3	116	0.00
8	P	Trichlorofluoromethane	50.0000	48.2178	3.6	113	0.00
9	T	Diethyl ether	100.0000	89.4765	10.5	112	0.00
10	T	Isoprene	50.0000	42.3573	15.3	100	-0.02
11	T	Acrolein	50.0000	61.0024	-22.0	153	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	47.4646	5.1	112	-0.02
13	P	Acetone	50.0000	41.2488	17.5	107	0.00
14	C	1,1-Dichloroethene	50.0000	45.8957	8.2	108	-0.02
15	T	Tert-Butyl Alcohol	200.0000	180.9060	9.5	114	0.00
16	T	Dimethyl Sulfide	50.0000	44.3841	11.2	101	0.00
17	T	Iodomethane	50.0000	37.5324	24.9	89	0.00
18	P	Methyl acetate	50.0000	41.4674	17.1	103	0.00
19	P	Methylene Chloride	50.0000	44.7366	10.5	111	0.00
20	P	Carbon Disulfide	50.0000	41.1333	17.7	99	0.00
21	T	Acrylonitrile	50.0000	44.1222	11.8	108	0.00
22	P	Methyl Tert Butyl Ether	50.0000	47.4389	5.1	113	0.00
23	P	trans-1,2-Dichloroethene	50.0000	46.1005	7.8	107	0.00
24	T	n-Hexane	50.0000	38.0919	23.8	99	0.00
25	T	Diisopropyl ether	100.0000	87.0044	13.0	106	0.00
26	T	Vinyl Acetate	50.0000	41.3581	17.3	97	0.00
27	P	1,1-Dichloroethane	50.0000	45.8841	8.2	108	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	90.7746	9.2	112	0.00
29	P	2-Butanone	50.0000	42.4002	15.2	108	0.00
30	T	Propionitrile	100.0000	84.9506	15.0	105	0.00
31	T	2,2-Dichloropropane	50.0000	48.0043	4.0	112	0.00
32	P	cis-1,2-Dichloroethene	50.0000	46.1499	7.7	109	0.00
33	C	Chloroform	50.0000	46.3464	7.3	112	0.00
34	T	1-Bromopropane	50.0000	40.4497	19.1	98	0.00
35	T	Bromochloromethane	50.0000	47.0340	5.9	108	0.00
36	T	Tetrahydrofuran	100.0000	83.8427	16.2	108	0.00
37	S	Dibromofluoromethane	50.0000	52.6192	-5.2	130	0.00
38	P	1,1,1-Trichloroethane	50.0000	48.1107	3.8	112	0.00
39	P	Cyclohexane	50.0000	42.5765	14.8	101	0.00
40	T	1,1-Dichloropropene	50.0000	46.2008	7.6	109	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	92.6713	7.3	115	0.00
42	P	Carbon Tetrachloride	50.0000	48.2999	3.4	114	0.00
43	S	1,2-Dichloroethane-d4	50.0000	53.0305	-6.1	134	0.00
44		Heptane	-1.0000	0.0000	0.0	129	0.00
45	P	1,2-Dichloroethane	50.0000	46.5926	6.8	113	0.00
46	P	Benzene	50.0000	43.9786	12.0	109	0.00
47	P	Trichloroethene	50.0000	43.4076	13.2	107	0.00
48	P	Methylcyclohexane	50.0000	42.8562	14.3	102	0.00
49	C	1,2-Dichloropropane	50.0000	45.6748	8.7	108	0.00
50	T	1,4-Dioxane	200.0000	183.3842	8.3	108	0.00
51	P	Bromodichloromethane	50.0000	45.7935	8.4	108	0.00
52	T	Dibromomethane	50.0000	44.8077	10.4	105	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	50.4776	-1.0	120	0.00
54	P	4-Methyl-2-Pentanone	50.0000	45.3595	9.3	117	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\043016\9M974067.D Vial: 2
Acq On : 30 Apr 2016 13:43 Operator: ADC
Sample : WG567052-02 50ug/kg CCV STD 8260 Inst : hpms9
Misc : 7,1 STD75238 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	45.7067	8.6	108	0.00
56	T	Dimethyl Disulfide	50.0000	46.8760	6.2	109	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	127	0.00
58	S	Toluene-d8	50.0000	55.1425	-10.3	129	0.00
59	C	Toluene	50.0000	47.1209	5.8	109	0.00
60	T	Ethyl Methacrylate	50.0000	46.3467	7.3	106	0.00
61	P	trans-1,3-Dichloropropene	50.0000	51.0065	-2.0	112	0.00
62	P	1,1,2-Trichloroethane	50.0000	49.6752	0.6	110	0.00
63	P	2-Hexanone	50.0000	44.4432	11.1	106	0.00
64	T	1,3-Dichloropropane	50.0000	48.4463	3.1	109	0.00
65	P	Tetrachloroethene	50.0000	47.7356	4.5	107	0.00
66	P	Dibromochloromethane	50.0000	49.7746	0.5	111	0.00
67	P	1,2-Dibromoethane	50.0000	47.4188	5.2	111	0.00
68	T	1-Chlorohexane	50.0000	46.7134	6.6	104	0.00
69	P	Chlorobenzene	50.0000	47.8946	4.2	110	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	51.2834	-2.6	115	0.00
71	C	Ethylbenzene	50.0000	48.4336	3.1	109	0.00
72	P	m-,p-Xylene	100.0000	95.6371	4.4	110	0.00
73	P	o-Xylene	50.0000	48.4386	3.1	109	0.00
74	P	Styrene	50.0000	48.1309	3.7	108	0.00
75	P	Bromoform	50.0000	53.2241	-6.4	115	0.00
76	P	Isopropylbenzene	50.0000	48.0902	3.8	109	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	126	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	52.1559	-4.3	113	0.00
79	S	p-Bromofluorobenzene	50.0000	60.3822	-20.8	128	0.00
80	T	1,2,3-Trichloropropane	50.0000	54.1449	-8.3	116	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	52.0446	-4.1	102	0.00
82	T	n-Propylbenzene	50.0000	53.1625	-6.3	108	0.00
83	T	Bromobenzene	50.0000	53.1921	-6.4	109	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	53.5959	-7.2	109	0.00
85	T	2-Chlorotoluene	50.0000	60.0279	-20.1	121	0.00
86	T	4-Chlorotoluene	50.0000	47.6453	4.7	98	0.00
87	T	a-Methylstyrene	50.0000	51.2783	-2.6	102	0.00
88	T	tert-Butylbenzene	50.0000	53.6445	-7.3	108	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	56.2737	-12.5	110	0.00
90	T	sec-Butylbenzene	50.0000	53.2128	-6.4	108	0.00
91	T	p-Isopropyltoluene	50.0000	53.8134	-7.6	109	0.00
92	P	1,3-Dichlorobenzene	50.0000	51.9701	-3.9	108	0.00
93	P	1,4-Dichlorobenzene	50.0000	50.7769	-1.6	109	0.00
94	T	n-Butylbenzene	50.0000	52.8693	-5.7	108	0.00
95	P	1,2-Dichlorobenzene	50.0000	51.2086	-2.4	108	0.00
96	P	1,2-Dibromo-3-Chloropropane	50.0000	52.3268	-4.7	109	0.00
97	P	1,2,4-Trichlorobenzene	50.0000	51.9613	-3.9	109	0.00
98	T	Hexachlorobutadiene	50.0000	50.8584	-1.7	104	0.00
99	T	Naphthalene	50.0000	54.6838	-9.4	111	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	53.6203	-7.2	111	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M974067.D 8260-SL.M Sat Apr 30 14:50:46 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\1\DATA\040616\9M973592.D          Vial: 1
Acq On    :  6 Apr 2016   9:33                        Operator: ADC
Sample    : WG563259-01 BFB 50ng 8260                 Inst    : hpms9
Misc      : 7,1 STD75485                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 04/06/16  HPMS9
```

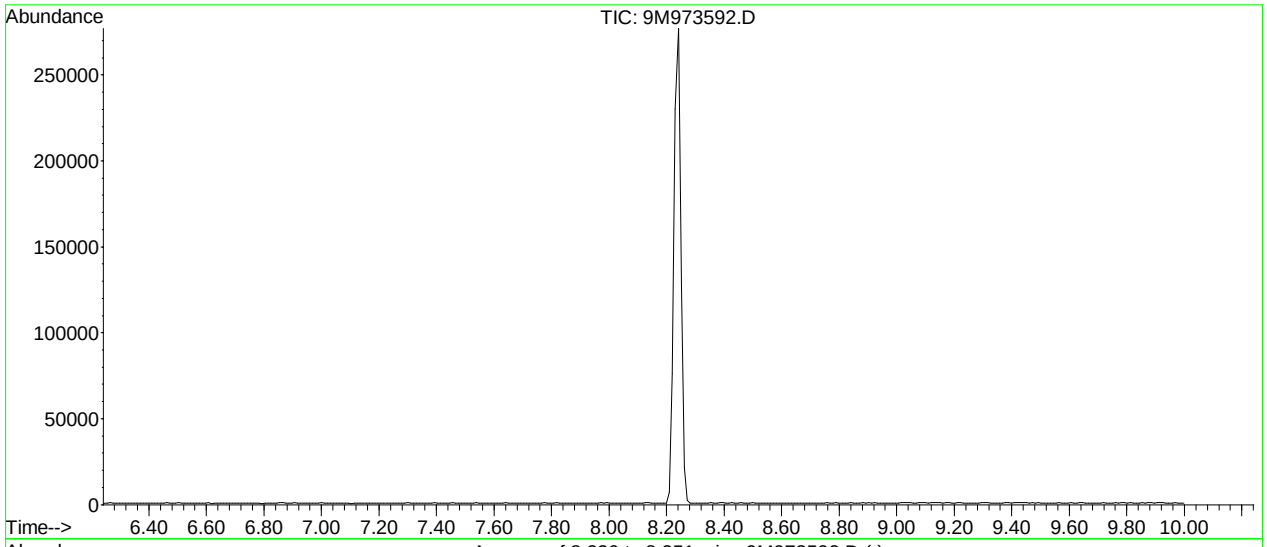

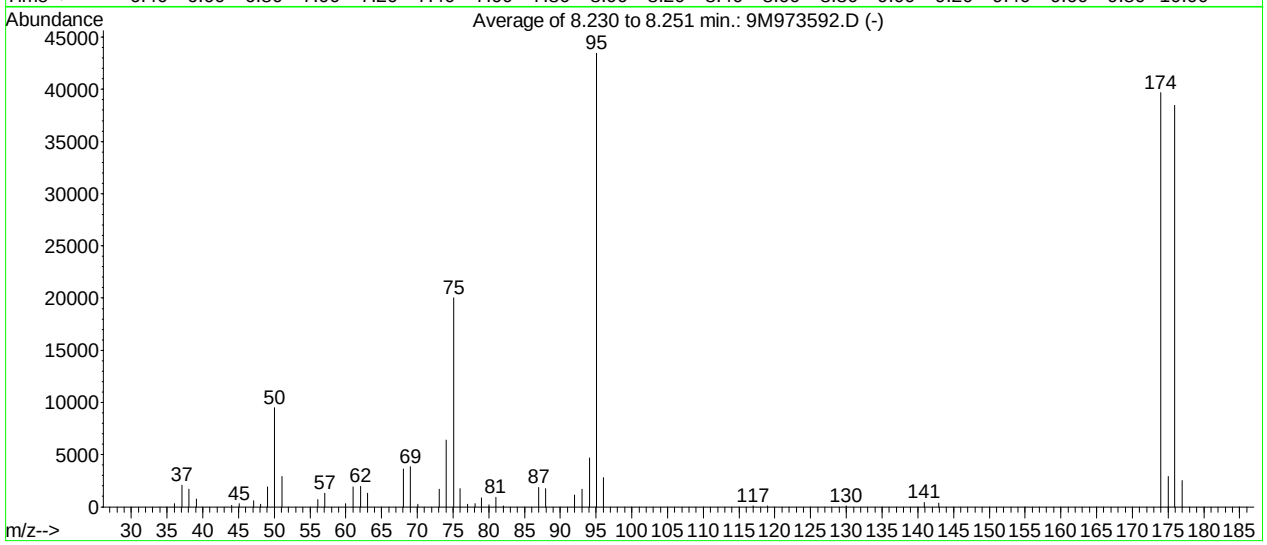

AutoFind: Scans 304, 305, 306; Background Corrected with Scan 299

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.9	9512	PASS
75	95	30	60	46.0	20002	PASS
95	95	100	100	100.0	43469	PASS
96	95	5	9	6.5	2809	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	91.3	39688	PASS
175	174	5	9	7.4	2925	PASS
176	174	95	101	96.9	38458	PASS
177	176	5	9	6.6	2534	PASS

9M973592.D 8260-SL.M Thu Apr 07 13:32:25 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\043016\9M974065.D          Vial: 1
Acq On    : 30 Apr 2016  12:43                        Operator: ADC
Sample    : WG567052-01 BFB 50ng 8260                 Inst    : hpms9
Misc      : 7,1 STD75485                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 04/06/16  HPMS9
```

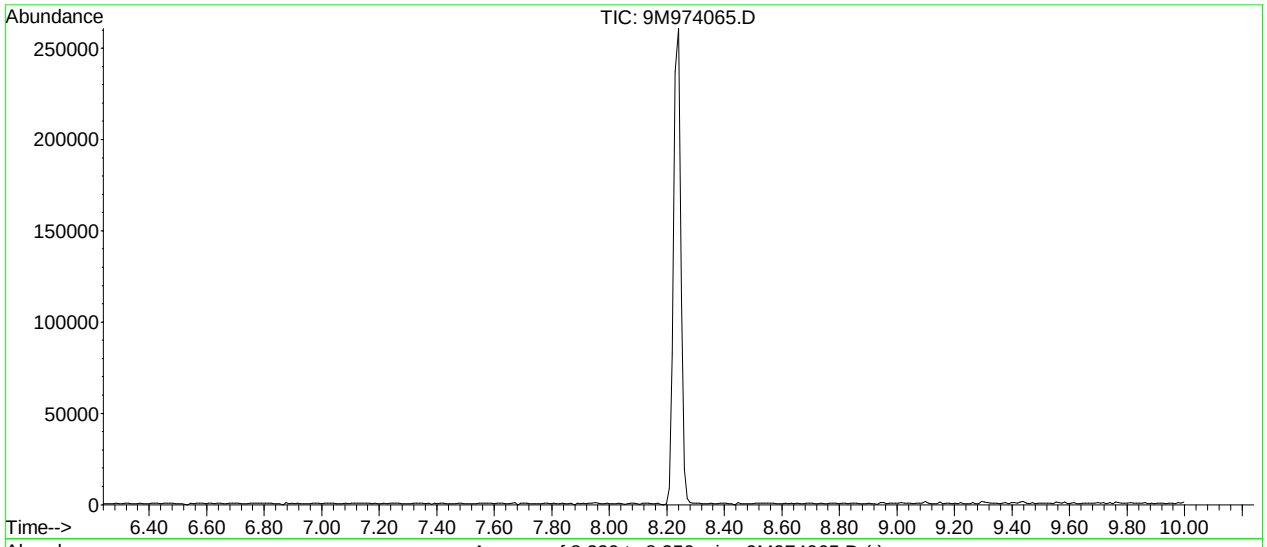

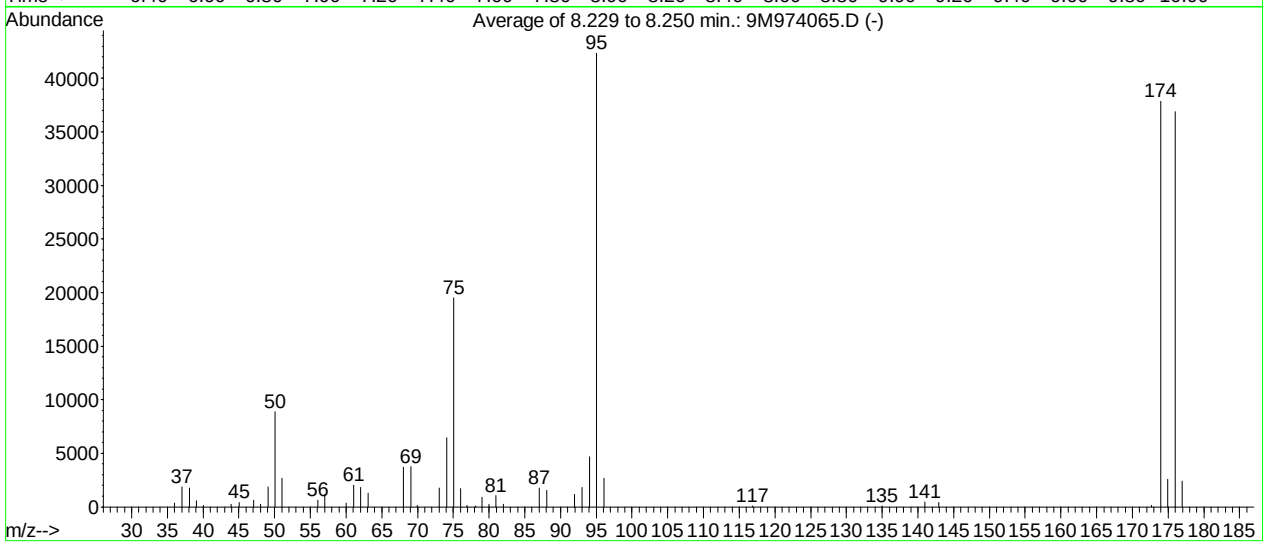

AutoFind: Scans 304, 305, 306; Background Corrected with Scan 299

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.9	8872	PASS
75	95	30	60	46.1	19506	PASS
95	95	100	100	100.0	42357	PASS
96	95	5	9	6.4	2690	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	89.4	37858	PASS
175	174	5	9	6.8	2593	PASS
176	174	95	101	97.4	36877	PASS
177	176	5	9	6.5	2391	PASS

9M974065.D 8260-SL.M Sat Apr 30 14:51:10 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\043016\9M974069.D Vial: 3
Acq On : 30 Apr 2016 14:45 Operator: ADC
Sample : WG567003-01 BLK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 04 12:27:40 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	641587	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	455753	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.74	152	207986	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	168075	51.8706 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 103.74%		
43) 1,2-Dichloroethane-d4	10.44	65	182497	53.8013 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 107.60%		
58) Toluene-d8	12.82	98	608757	56.0451 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 112.10%		
79) p-Bromofluorobenzene	16.22	95	223820	62.1296 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 124.26%#		

Target Compounds

					Qvalue
13) Acetone	6.39	43	3338	Below Cal	98
36) Tetrahydrofuran	9.77	42	3716	2.5360 ug/kg	81
56) Dimethyl Disulfide	12.82	94	15883	2.7112 ug/kg#	29
89) 1,2,4-Trimethylbenzene	17.08	105	4084	Below Cal	90

(#) = qualifier out of range (m) = manual integration
9M974069.D 8260-SL.M Wed May 04 12:27:41 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\043016\9M974069.D Vial: 3
Acq On : 30 Apr 2016 14:45 Operator: ADC
Sample : WG567003-01 BLK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 4 12:27 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

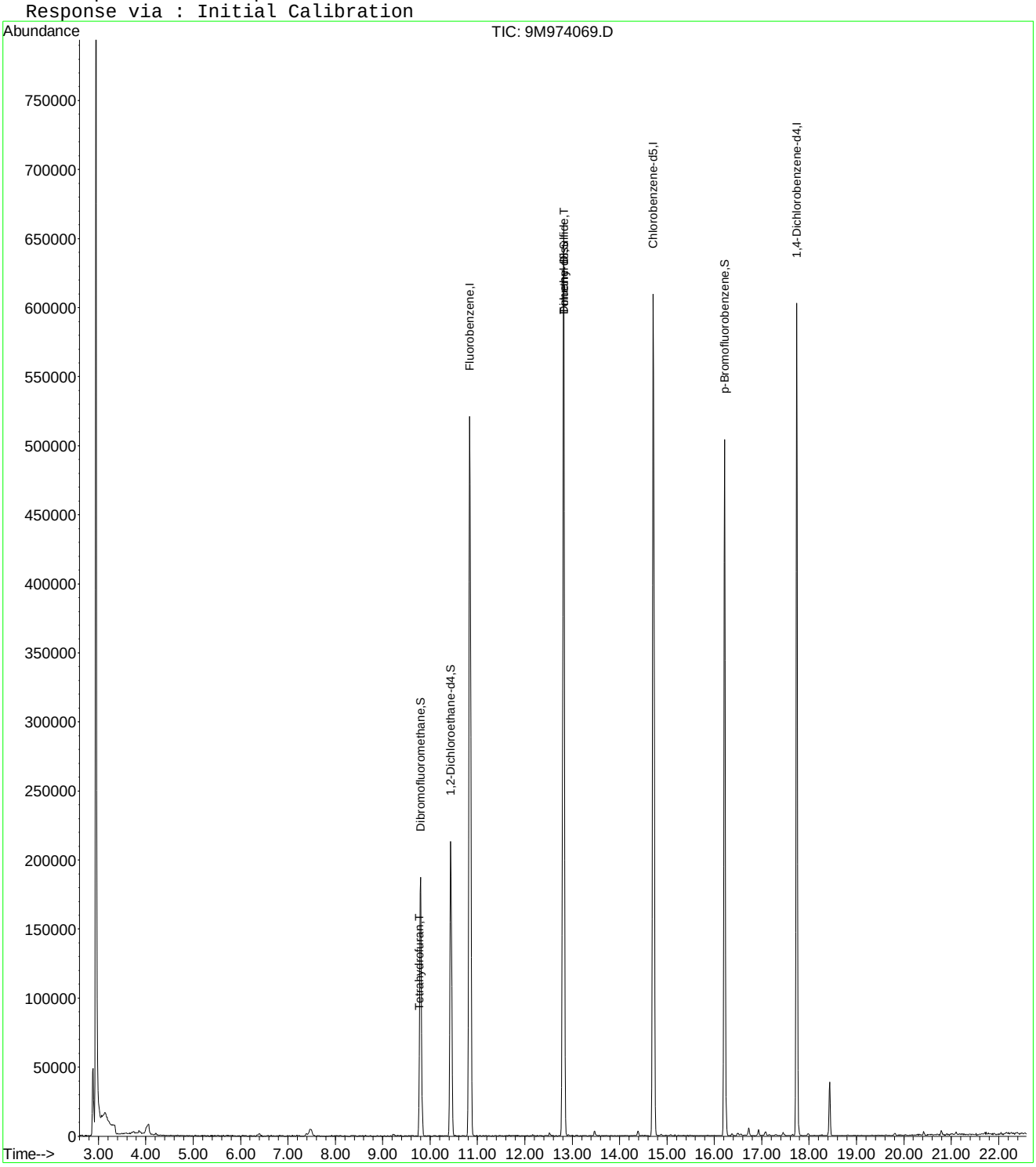

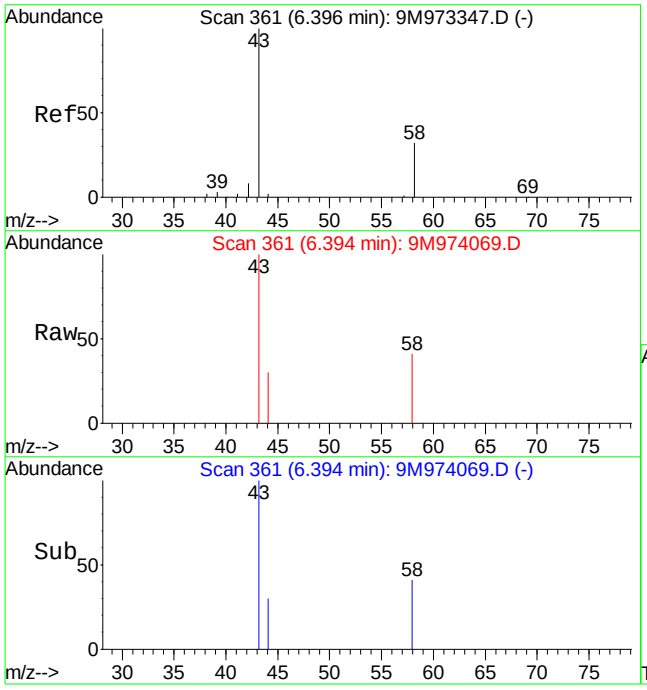

#13
Acetone
Concen: Below Cal
RT: 6.39 min Scan# 361
Delta R.T. 0.01 min
Lab File: 9M974069.D
Acq: 30 Apr 2016 14:45

Tgt Ion: 43 Resp: 3338

Ion	Ratio	Lower	Upper
43	100		
58	32.4	20.2	47.2

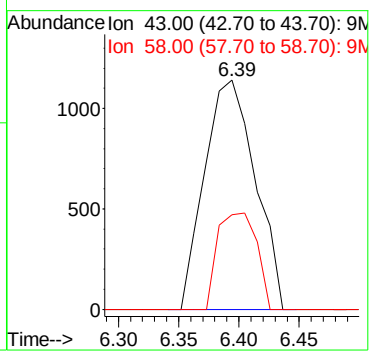

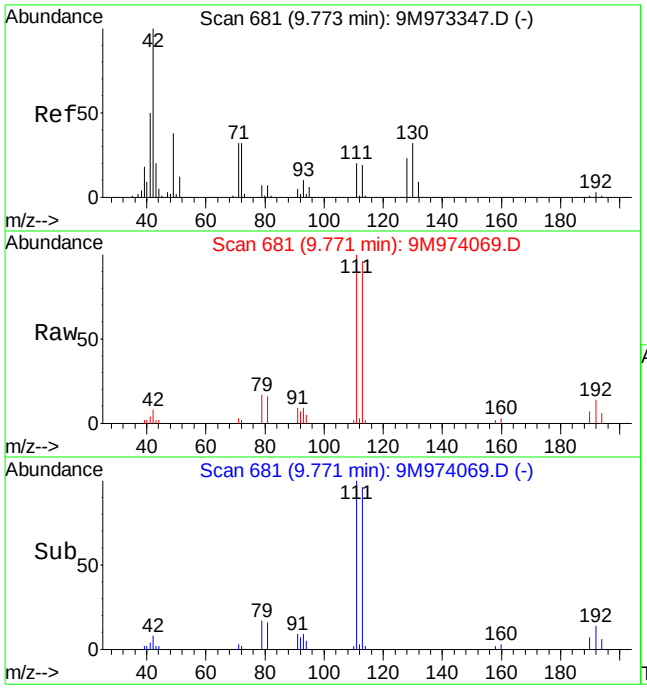

#36
Tetrahydrofuran
Concen: 2.54 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. 0.00 min
Lab File: 9M974069.D
Acq: 30 Apr 2016 14:45

Tgt Ion: 42 Resp: 3716

Ion	Ratio	Lower	Upper
42	100		
72	22.4	19.8	46.2
71	19.8	18.3	42.7

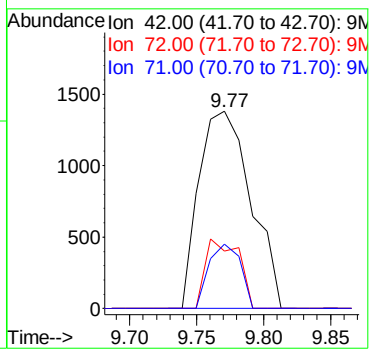

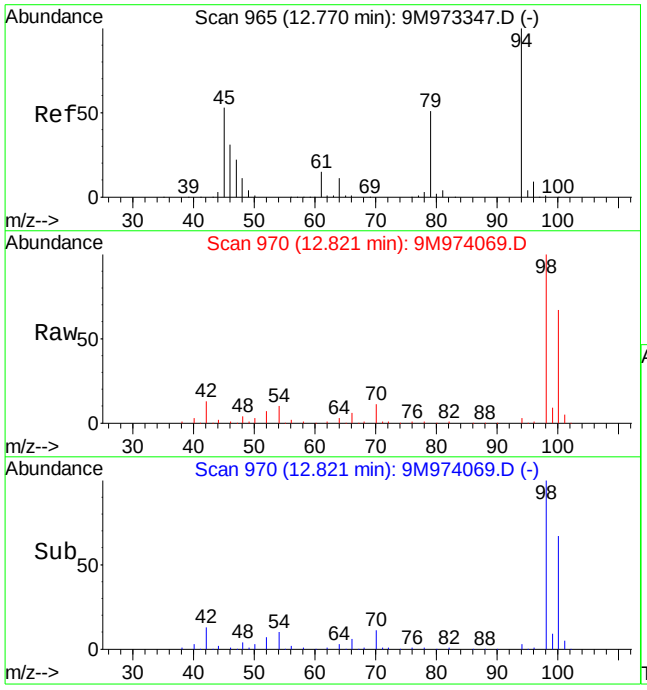

#56
Dimethyl Disulfide
Concen: 2.71 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.05 min
Lab File: 9M974069.D
Acq: 30 Apr 2016 14:45

Tgt Ion: 94 Resp: 15883

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.1	67.9#

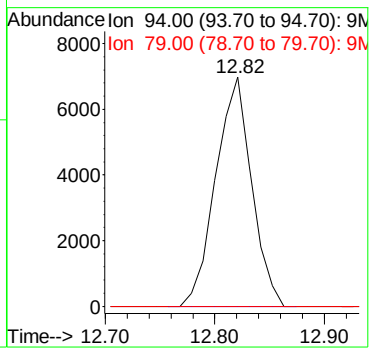

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\043016\9M974074.D Vial: 8
Acq On : 30 Apr 2016 17:17 Operator: ADC
Sample : WG567003-02 20ug/kg LCS 8260 Inst : hpms9
Misc : 7,1 STD75739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 30 17:40:36 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	593466	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	430069	50.00 ug/kg	-0.01
77) 1,4-Dichlorobenzene-d4	17.74	152	198992	50.00 ug/kg	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	161844	53.9976 ug/kg	-0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 108.00%		
43) 1,2-Dichloroethane-d4	10.44	65	175277	55.8627 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 111.72%		
58) Toluene-d8	12.82	98	572092	55.8150 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 111.62%		
79) p-Bromofluorobenzene	16.22	95	208945	60.6220 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 121.24%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	87670	19.2583 ug/kg	98
3) Chloromethane	3.74	50	90126	21.5360 ug/kg	99
4) Vinyl Chloride	3.98	62	60563	21.5737 ug/kg	94
5) 1,3-Butadiene	4.02	54	455018	225.3207 ug/kg	93
6) Bromomethane	4.87	94	44363	17.2897 ug/kg	100
7) Chloroethane	5.03	64	44276	17.7155 ug/kg	98
8) Trichlorofluoromethane	5.52	101	90063	17.0328 ug/kg	98
9) Diethyl ether	6.05	59	281035	90.3786 ug/kg	97
10) Isoprene	6.08	67	83474	20.0563 ug/kg	99
11) Acrolein	6.29	56	39362	127.3090 ug/kg	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	55904	17.3153 ug/kg	98
13) Acetone	6.39	43	23909	15.5170 ug/kg	97
14) 1,1-Dichloroethene	6.60	61	86022	15.8956 ug/kg	98
15) Tert-Butyl Alcohol	6.73	59	112833	216.7642 ug/kg	99
16) Dimethyl Sulfide	6.87	62	69873	26.3538 ug/kg	96
17) Iodomethane	7.12	142	23701	11.8424 ug/kg	97
18) Methyl acetate	7.13	43	52793	15.3561 ug/kg	98
19) Methylene Chloride	7.39	84	57118	16.8966 ug/kg	94
20) Carbon Disulfide	7.44	76	157288	15.3282 ug/kg	100
21) Acrylonitrile	7.58	53	29313	17.9391 ug/kg	99
22) Methyl Tert Butyl Ether	7.61	73	170586	18.7537 ug/kg	98
23) trans-1,2-Dichloroethene	7.84	61	89316	17.1567 ug/kg	99
24) n-Hexane	7.91	57	97245	14.3847 ug/kg	99
25) Diisopropyl ether	8.25	45	1198823	87.0274 ug/kg	99
26) Vinyl Acetate	8.43	43	150868	20.9242 ug/kg	97
27) 1,1-Dichloroethane	8.46	63	103852	16.4354 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.82	59	1039280	85.7992 ug/kg	99
29) 2-Butanone	9.02	43	34599	18.1337 ug/kg	100
30) Propionitrile	9.13	54	55286	89.2742 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	77689	16.8375 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	60152	17.3868 ug/kg	100
33) Chloroform	9.51	83	90595	16.9034 ug/kg	100
34) 1-Bromopropane	9.64	122	13735	22.6613 ug/kg	95
35) Bromochloromethane	9.74	130	36860	17.0772 ug/kg	97
36) Tetrahydrofuran	9.77	42	120018	88.5491 ug/kg	97
38) 1,1,1-Trichloroethane	10.03	97	79467	17.3238 ug/kg	99
39) Cyclohexane	10.07	56	118734	16.3733 ug/kg	98
40) 1,1-Dichloropropene	10.23	75	68468	16.2147 ug/kg	99
41) Tert-Amyl-Methyl ether	10.33	73	868904	96.9726 ug/kg	98
42) Carbon Tetrachloride	10.38	117	72200	16.8617 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\043016\9M974074.D Vial: 8
Acq On : 30 Apr 2016 17:17 Operator: ADC
Sample : WG567003-02 20ug/kg LCS 8260 Inst : hpms9
Misc : 7,1 STD75739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 30 17:40:36 2016 Quant Results File: 8260-SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration
DataAcq Meth : 8260-SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.55	62	83267	18.0406 ug/kg	97
46)	Benzene	10.59	78	216489	16.5193 ug/kg	99
47)	Trichloroethene	11.34	130	60161	16.3208 ug/kg	98
48)	Methylcyclohexane	11.43	83	94588	16.7927 ug/kg	96
49)	1,2-Dichloropropane	11.55	63	61893	17.3664 ug/kg	97
50)	1,4-Dioxane	11.85	88	12093	261.6044 ug/kg	94
51)	Bromodichloromethane	11.86	83	67709	16.6722 ug/kg	99
52)	Dibromomethane	11.95	174	34730	16.3219 ug/kg	98
53)	2-Chloroethyl Vinyl Ether	12.16	63	38158	20.1343 ug/kg	97
54)	4-Methyl-2-Pentanone	12.19	58	28793	17.5469 ug/kg	98
55)	cis-1,3-Dichloropropene	12.49	75	89927	17.7593 ug/kg	98
56)	Dimethyl Disulfide	12.76	94	110843	20.4547 ug/kg	95
59)	Toluene	12.92	91	227159	17.3578 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	72267	18.1382 ug/kg	99
61)	trans-1,3-Dichloropropene	13.09	75	77105	18.0980 ug/kg	99
62)	1,1,2-Trichloroethane	13.31	97	47219	18.3279 ug/kg	96
63)	2-Hexanone	13.24	43	47076	16.7333 ug/kg	94
64)	1,3-Dichloropropane	13.61	76	86752	19.5831 ug/kg	98
65)	Tetrachloroethene	13.74	164	45403	16.3584 ug/kg	97
66)	Dibromochloromethane	14.00	129	57796	18.1474 ug/kg	97
67)	1,2-Dibromoethane	14.27	107	51651	18.1995 ug/kg	98
68)	1-Chlorohexane	14.34	91	75889	17.6139 ug/kg	99
69)	Chlorobenzene	14.76	112	161956	17.8335 ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.79	131	57882	18.7602 ug/kg	96
71)	Ethylbenzene	14.78	106	85435	17.4874 ug/kg	100
72)	m-,p-Xylene	14.88	106	204501	33.9502 ug/kg	98
73)	o-Xylene	15.44	106	103504	18.0328 ug/kg	100
74)	Styrene	15.48	104	162253	16.5071 ug/kg	97
75)	Bromoform	15.98	173	35238	17.8985 ug/kg	99
76)	Isopropylbenzene	15.86	105	255925	17.1413 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.08	83	61332	18.5558 ug/kg	99
80)	1,2,3-Trichloropropane	16.27	110	20699	20.9596 ug/kg#	34
81)	trans-1,4-Dichloro-2-Buten	16.32	53	18412	15.3192 ug/kg#	1
82)	n-Propylbenzene	16.37	91	286285	19.2432 ug/kg	99
83)	Bromobenzene	16.50	156	67688	19.1273 ug/kg	94
84)	1,3,5-Trimethylbenzene	16.56	105	215400	19.0154 ug/kg	100
85)	2-Chlorotoluene	16.65	91	187057	21.0528 ug/kg	99
86)	4-Chlorotoluene	16.69	91	165429	17.8005 ug/kg	99
87)	a-Methylstyrene	16.97	118	114974	20.3460 ug/kg	100
88)	tert-Butylbenzene	17.02	134	49208	19.6071 ug/kg	88
89)	1,2,4-Trimethylbenzene	17.07	105	212589	18.9482 ug/kg	99
90)	sec-Butylbenzene	17.29	105	272283	18.6983 ug/kg	100
91)	p-Isopropyltoluene	17.45	119	217200	18.0183 ug/kg	99
92)	1,3-Dichlorobenzene	17.65	146	125817	17.9830 ug/kg	99
93)	1,4-Dichlorobenzene	17.78	146	131637	18.4353 ug/kg	97
94)	n-Butylbenzene	17.98	91	189547	17.0918 ug/kg	99
95)	1,2-Dichlorobenzene	18.28	146	121120	18.1978 ug/kg	97
96)	1,2-Dibromo-3-Chloropropan	19.28	157	15478	22.8508 ug/kg	96
97)	1,2,4-Trichlorobenzene	20.42	180	77737	15.8288 ug/kg	99
98)	Hexachlorobutadiene	20.57	225	39408	17.0132 ug/kg	98
99)	Naphthalene	20.80	128	219817	18.5721 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.10	180	80649	17.3239 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\043016\9M974074.D Vial: 8
Acq On : 30 Apr 2016 17:17 Operator: ADC
Sample : WG567003-02 20ug/kg LCS 8260 Inst : hpms9
Misc : 7,1 STD75739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 30 17:40 2016 Quant Results File: 8260-SL.RES

Method : C:\MSDCHEM\1\METHODS\8260-SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 04/06/16 HPMS9
Last Update : Wed Apr 06 17:47:28 2016
Response via : Initial Calibration

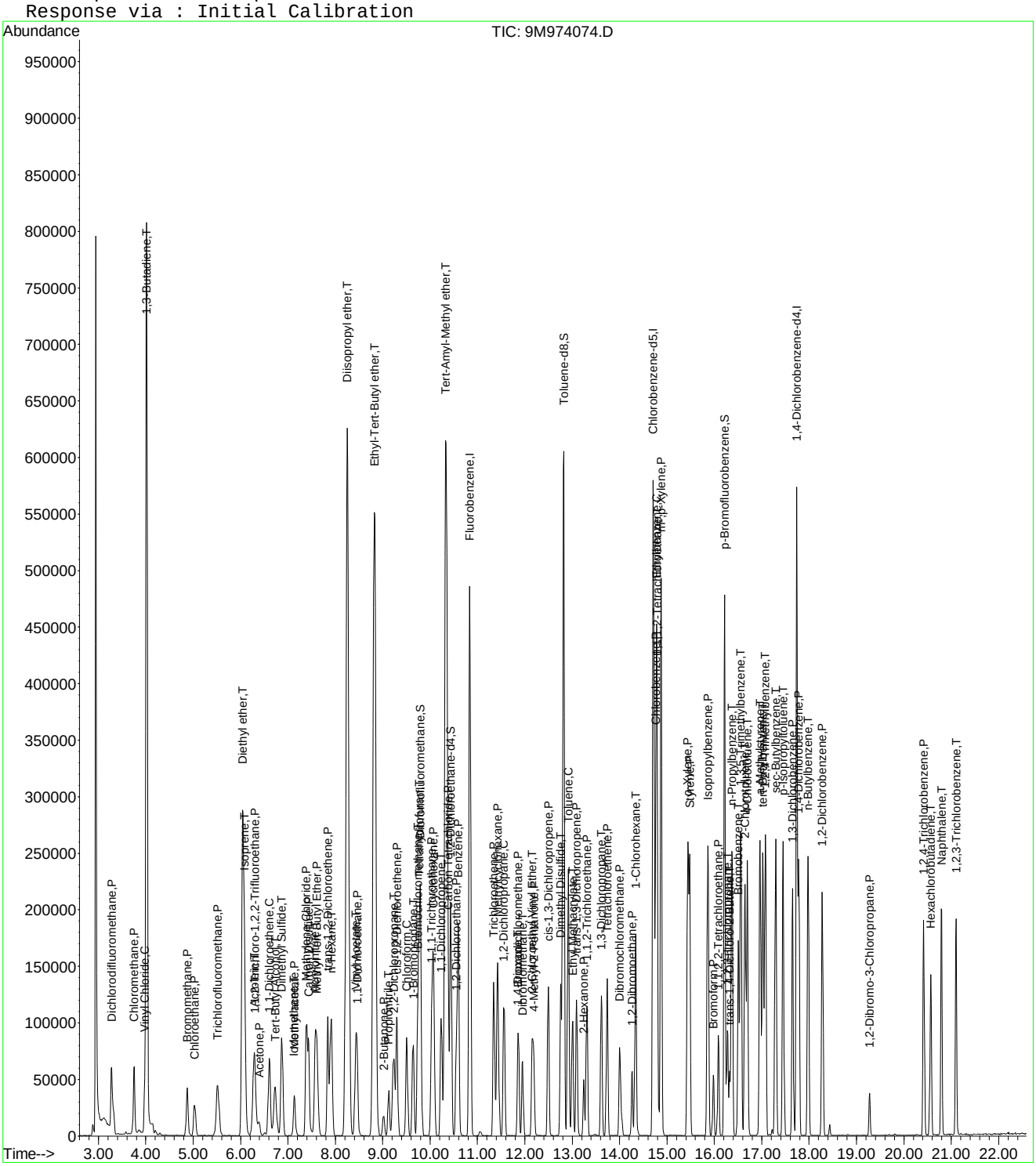

9M974074.D 8260-SL.M Sat Apr 30 17:40:37 2016 Page 3

2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW19SW(5-5.5)210416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:50
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567013	**Analyst:**	JWR	**Run Date:**	05/03/2016 20:46
Collect Date:	04/21/2016 17:00	**Dilution:**	1	**File ID:**	1LM.LM34704
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.32	U	4.63	2.32	1.16

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW19SW(10-10.5)210416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:50
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567013	**Analyst:**	JWR	**Run Date:**	05/03/2016 21:05
Collect Date:	04/21/2016 17:30	**Dilution:**	1	**File ID:**	1LM.LM34705
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.44	U	4.90	2.44	1.22

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW19SW(30-30.5)220416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:50
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567013	**Analyst:**	JWR	**Run Date:**	05/03/2016 21:24
Collect Date:	04/22/2016 09:00	**Dilution:**	1	**File ID:**	1LM.LM34706
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.42	U	4.85	2.42	1.21

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW19SW(30-30.5)220416DUP	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:50
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567013	**Analyst:**	JWR	**Run Date:**	05/03/2016 21:43
Collect Date:	04/22/2016 09:00	**Dilution:**	1	**File ID:**	1LM.LM34707
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.46	U	4.93	2.46	1.23

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW19SW(40-40.5)220416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:50
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567013	**Analyst:**	JWR	**Run Date:**	05/03/2016 22:59
Collect Date:	04/22/2016 09:05	**Dilution:**	5	**File ID:**	1LM.LM34711
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	80.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	124		24.1	12.1	6.04

Certificate of Analysis

Sample #:	L16041363-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW19SW(20-20.5)220416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:50
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567013	**Analyst:**	JWR	**Run Date:**	05/03/2016 23:18
Collect Date:	04/21/2016 18:00	**Dilution:**	1	**File ID:**	1LM.LM34712
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	8.74		4.90	2.44	1.22

Certificate of Analysis

Sample #:	L16041363-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW19SW(60-61)220416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:50
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567013	**Analyst:**	JWR	**Run Date:**	05/03/2016 19:50
Collect Date:	04/22/2016 11:15	**Dilution:**	1	**File ID:**	1LM.LM34701
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	75.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.54	U	5.07	2.54	1.27

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW19SW(60-61)220416MS	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:50
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567013	**Analyst:**	JWR	**Run Date:**	05/03/2016 20:09
Collect Date:	04/22/2016 11:15	**Dilution:**	1	**File ID:**	1LM.LM34702
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	75.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3.26	J	5.05	2.52	1.26

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-09	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW19SW(60-61)220416MSD	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:50
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567013	**Analyst:**	JWR	**Run Date:**	05/03/2016 20:28
Collect Date:	04/22/2016 11:15	**Dilution:**	1	**File ID:**	1LM.LM34703
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	75.9

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3.30	J	5.05	2.52	1.26

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16041363
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041363-10	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW19SW(50-50.5)220416	**Prep Method:**	6850	**Prep Date:**	04/29/2016 13:50
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567013	**Analyst:**	JWR	**Run Date:**	05/03/2016 23:37
Collect Date:	04/22/2016 11:11	**Dilution:**	5	**File ID:**	1LM.LM34713
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	80.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	170		24.3	12.2	6.08

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

MICROBAC

Semivolatile Sample Extract Log

Parameter: Perchlorate
SOP #: HPLC06
Analyst: JWR
Spike/Surrogate analyst: JWR
Surrogate #: NA
Spike # A: STD75513
Ext Solvent: DI-H2O
Ext Solvent: NA
Ext Disk: NA

Matrix: Soils
Rev #: 08
Date/Time Extracted: 04/29/16/1350
Witness: EC 4-29-16

Spike # B: NA
Lot #: NA
Lot #: NA
Lot #: NA

Extraction Work Group: WG567010
Analytical Work Group: WG567013
Run ID: R4562978

Pipetter(s): Eppendorf #403
Analytical Balance ID: BAL021
Reagent: Tubes Lot #: RGT34011
Reagent: Sand Lot #: COA18813
Other: IS Lot #: COA18071

Color Code
T = Transparent
C = Colored
O = Opaque

	Sample ID	Test Code	pH	Initial Wt / Vol	JWR ~~Surrogate~~ IS Amount	Amount Spike	Final Volume	Extract Color	Comments
1	WG567010-01	6850		5.006g	0.250ml	1.0ml	50ml		MCT (10,000 us)(2ug/kg)
2	WG567010-02			5.002g		NA			Blank
3	WG567010-03			5.005g		1.0ml			LCS (2ug/kg)
4	L16041363-01			5.154g		NA			
5	-02			5.112g		NA			
6	-03			5.153g		NA			
7	-04			5.115g		NA			
8	-05			5.128g		NA			
9	-06			5.164g		NA			
10	-07 RS			5.196g		NA			WG567010-04 Ref
11	-08 MS			5.217g		1.0ml			WG567010-05 MS (@2ug/kg)
12	-09 MSD			5.212g		1.0ml			WG567010-06 MSD (@2ug/kg)
13	-10			5.108g		NA			
14									
15									
16									
17									
18									
19									
20					JWR 04/29/16				
21									
22									
23									
24									

Reviewed by: EC 4-29-16

Analytical WG567013 (soils)

Perchlorate Conductivity Check

(perchlorate1)

Conductivity Probe Calibration Check: 1409 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG567010-01 MCT	9,930.	
WG567010-02 Blank	4.10	
WG567010-03 LCS	3.81	
L16041363-01	5.35	
-02	6.08	
-03	5.45	
-04	5.71	
-05	6.31	
-06	16.03	
-07 RS	2.95	
-08 MS	2.89	
-09 MSD	3.26	
-10	2.78	

Analyst: John Richards

Date/Time: 05/02/16 / 1548

DCN#118149

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

Page: 1 Approved: 05-MAY-16

Wadei D

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

Page: 2 Approved: 05-MAY-16

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
04-MAY-2016
John Richards

Secondary Reviewer:
05-MAY-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG567013

Login Number: L16041363

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW19SW(5-5.5)210416	01	04/21/16					04/29/2016	7.9	28		05/03/16	4.3	28	
18CPTMW19SW(10-10.5)2104	02	04/21/16					04/29/2016	7.8	28		05/03/16	4.3	28	
18CPTMW19SW(30-30.5)2204	03	04/22/16					04/29/2016	7.2	28		05/03/16	4.3	28	
18CPTMW19SW(30-30.5)2204	04	04/22/16					04/29/2016	7.2	28		05/03/16	4.3	28	
18CPTMW19SW(40-40.5)2204	05	04/22/16					04/29/2016	7.2	28		05/03/16	4.4	28	
18CPTMW19SW(20-20.5)2204	06	04/21/16					04/29/2016	7.8	28		05/03/16	4.4	28	
18CPTMW19SW(60-61)220416	07	04/22/16					04/29/2016	7.1	28		05/03/16	4.3	28	
18CPTMW19SW(60-61)220416	08	04/22/16					04/29/2016	7.1	28		05/03/16	4.3	28	
18CPTMW19SW(60-61)220416	09	04/22/16					04/29/2016	7.1	28		05/03/16	4.3	28	
18CPTMW19SW(50-50.5)2204	10	04/22/16					04/29/2016	7.1	28		05/03/16	4.4	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4747291
Report generated 05/10/2016 10:40

METHOD BLANK SUMMARY

Login Number: L16041363
Blank File ID: 1LM.LM34699
Prep Date: 04/29/16 13:50
Analyzed Date: 05/03/16 19:12
Analyst: JWR

Work Group: WG567013
Blank Sample ID: WG567013-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG567013-07	1LM.LM34697	05/03/16 18:34	01
MCT	WG567013-01	1LM.LM34698	05/03/16 18:53	01
LCS	WG567013-03	1LM.LM34700	05/03/16 19:31	01
18CPTMW19SW(60-61)220416	L16041363-07	1LM.LM34701	05/03/16 19:50	01
18CPTMW19SW(60-61)220416MS	L16041363-08	1LM.LM34702	05/03/16 20:09	01
18CPTMW19SW(60-61)220416MSD	L16041363-09	1LM.LM34703	05/03/16 20:28	01
18CPTMW19SW(5-5.5)210416	L16041363-01	1LM.LM34704	05/03/16 20:46	01
18CPTMW19SW(10-10.5)210416	L16041363-02	1LM.LM34705	05/03/16 21:05	01
18CPTMW19SW(30-30.5)220416	L16041363-03	1LM.LM34706	05/03/16 21:24	01
18CPTMW19SW(30-30.5)220416DUP	L16041363-04	1LM.LM34707	05/03/16 21:43	01
QCMRL	WG567013-08	1LM.LM34709	05/03/16 22:21	01
18CPTMW19SW(40-40.5)220416	L16041363-05	1LM.LM34711	05/03/16 22:59	DL01
18CPTMW19SW(20-20.5)220416	L16041363-06	1LM.LM34712	05/03/16 23:18	01
18CPTMW19SW(50-50.5)220416	L16041363-10	1LM.LM34713	05/03/16 23:37	DL01
QCMRL	WG567013-09	1LM.LM34715	05/04/16 00:15	01

Report Name: BLANK_SUMMARY
PDF File ID: 4747292
Report generated 05/10/2016 10:40

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16041363 Prep Date: 04/29/16 13:50 Sample ID: WG567013-02
Instrument ID: LCMS1 Run Date: 05/03/16 19:12 Prep Method: 6850
File ID: 1LM.LM34699 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567013 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	1.00	4.00	1.00	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4747293
10-MAY-2016 10:40

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16041363 Run Date: 05/03/2016 Sample ID: WG567013-03
Instrument ID: LCMS1 Run Time: 19:31 Prep Method: 6850
File ID: 1LM.LM34700 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567013 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD75512 Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	2.00	2.04	102	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4747294
Report generated: 05/10/2016 10:40

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16041363 Cal ID: LCMS1- 03-MAY-16 Worknum: WG567013
Instrument ID: LCMS1 Contract #: Prep Method: 6850
Parent ID: L16041363-07 File ID: 1LM.LM34701 Dil: 1 Method: 6850
Sample ID: L16041363-08 MS File ID: 1LM.LM34702 Dil: 1 Matrix: Soil
Sample ID: L16041363-09 MSD File ID: 1LM.LM34703 Dil: 1 Units: ug/kg
Percent Solid: 75.9

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Perchlorate	U	2.53	3.26	129	2.53	3.30	131	1.25	80 - 120	15	*

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4747295
Report generated 05/10/2016 10:40

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16041363
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4747297
Report generated 05/10/2016 10:40

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16041363

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4747297
Report generated 05/10/2016 10:40

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16041363

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4747297
Report generated 05/10/2016 10:40

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16041363

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008
PDF File ID: 4747297
Report generated 05/10/2016 10:40

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16041363 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4747298
Report generated 05/10/2016 10:40

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16041363
Run Date: 05/03/2016
Sample ID: WG567321-01
Instrument ID: LCMS1
Run Time: 17:56
Method: 6850
File ID: 1LM.LM34695
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG567013
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4747300
Report generated 05/10/2016 10:40

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16041363
Run Date: 05/03/2016
Sample ID: WG567321-04
Instrument ID: LCMS1
Run Time: 22:40
Method: 6850
File ID: 1LM.LM34710
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG567013
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4747300
Report generated 05/10/2016 10:40

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16041363
Run Date: 05/04/2016
Sample ID: WG567321-06
Instrument ID: LCMS1
Run Time: 00:34
Method: 6850
File ID: 1LM.LM34716
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG567013
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4747300
Report generated 05/10/2016 10:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041363
Run Date: 05/03/2016
Sample ID: WG567321-02
Instrument ID: LCMS1
Run Time: 18:15
Method: 6850
File ID: 1LM.LM34696
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG567013
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/kg	1.70	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4747299
Report generated 05/10/2016 10:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041363
Run Date: 05/03/2016
Sample ID: WG567321-03
Instrument ID: LCMS1
Run Time: 22:02
Method: 6850
File ID: 1LM.LM34708
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG567013
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.00	ug/kg	1.69	0	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4747299
Report generated 05/10/2016 10:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041363
Run Date: 05/03/2016
Sample ID: WG567321-05
Instrument ID: LCMS1
Run Time: 23:56
Method: 6850
File ID: 1LM.LM34714
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG567013
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.00	ug/kg	1.69	0	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4747299
Report generated 05/10/2016 10:40

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16041363 Run Date: 05/03/2016 Sample ID: WG567013-07
Instrument ID: LCMS1 Run Time: 18:34 Prep Method: 6850
File ID: 1LM.LM34697 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567013 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.07	104	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4747296
Report generated 05/10/2016 10:40

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16041363 Run Date: 05/03/2016 Sample ID: WG567013-08
Instrument ID: LCMS1 Run Time: 22:21 Prep Method: 6850
File ID: 1LM.LM34709 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567013 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.08	104	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4747296
Report generated 05/10/2016 10:40

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16041363 Run Date: 05/04/2016 Sample ID: WG567013-09
Instrument ID: LCMS1 Run Time: 00:15 Prep Method: 6850
File ID: 1LM.LM34715 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567013 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.04	102	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4747296
Report generated 05/10/2016 10:40

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16041363
Instrument ID: LCMS1
Workgroup (AAB#): WG567013

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16041363-04	1.00	01	560000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4747301
Report generated 05/10/2016 10:40

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16041363
Instrument ID: LCMS1
Workgroup (AAB#): WG567013

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16041363-07	1.00	01	511000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4747301
Report generated 05/10/2016 10:40

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16041363
Instrument ID: LCMS1
Workgroup (AAB#): WG567013

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
WG567013-02	1.00	01	509000
WG567013-03	1.00	01	500000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4747301
Report generated 05/10/2016 10:40

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16041363
Instrument ID: LCMS1
Workgroup (AAB#): WG567013

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16041363-06	1.00	01	554000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4747301
Report generated 05/10/2016 10:40

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16041363
Instrument ID: LCMS1
Workgroup (AAB#): WG567013

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16041363-01	1.00	01	518000
L16041363-02	1.00	01	515000
L16041363-03	1.00	01	553000
L16041363-05	5.00	DL01	497000
L16041363-08	1.00	01	506000
L16041363-09	1.00	01	515000
L16041363-10	5.00	DL01	508000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4747301
Report generated 05/10/2016 10:40

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**	6850	**Samplenum:**	L16041363-01
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:50	**File ID:**	1LM.LM34704
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567013	**Analysis Date:**	05/03/2016 20:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	753	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**	6850	**Samplenum:**	L16041363-02
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:50	**File ID:**	1LM.LM34705
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567013	**Analysis Date:**	05/03/2016 21:05	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	2230	533	4.18	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**	6850	**Samplenum:**	L16041363-03
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:50	**File ID:**	1LM.LM34706
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567013	**Analysis Date:**	05/03/2016 21:24	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	13100	4370	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**	6850	**Samplenum:**	L16041363-04
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:50	**File ID:**	1LM.LM34707
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567013	**Analysis Date:**	05/03/2016 21:43	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	7250	2270	3.19	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**	6850	**Samplenum:**	L16041363-05
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:50	**File ID:**	1LM.LM34711
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567013	**Analysis Date:**	05/03/2016 22:59	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	344000	112000	3.07	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**	6850	**Samplenum:**	L16041363-06
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:50	**File ID:**	1LM.LM34712
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567013	**Analysis Date:**	05/03/2016 23:18	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	134000	44900	2.98	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**	6850	**Samplenum:**	L16041363-07
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:50	**File ID:**	1LM.LM34701
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567013	**Analysis Date:**	05/03/2016 19:50	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	12700	5340	2.38	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**	6850	**Samplenum:**	L16041363-08
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:50	**File ID:**	1LM.LM34702
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567013	**Analysis Date:**	05/03/2016 20:09	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	44500	15800	2.82	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**	6850	**Samplenum:**	L16041363-09
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:50	**File ID:**	1LM.LM34703
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567013	**Analysis Date:**	05/03/2016 20:28	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	45800	16400	2.79	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**	6850	**Samplenum:**	L16041363-10
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:50	**File ID:**	1LM.LM34713
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567013	**Analysis Date:**	05/03/2016 23:37	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	478000	162000	2.95	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**	6850	**Samplenum:**	WG567013-01
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:50	**File ID:**	1LM.LM34698
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567013	**Analysis Date:**	05/03/2016 18:53	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32600	10600	3.08	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**	6850	**Samplenum:**	WG567013-02
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:50	**File ID:**	1LM.LM34699
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567013	**Analysis Date:**	05/03/2016 19:12	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**	6850	**Samplenum:**	WG567013-03
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:50	**File ID:**	1LM.LM34700
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567013	**Analysis Date:**	05/03/2016 19:31	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35000	11500	3.04	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**	6850	**Samplenum:**	WG567013-07
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:50	**File ID:**	1LM.LM34697
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567013	**Analysis Date:**	05/03/2016 18:34	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36700	11300	3.25	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**	6850	**Samplenum:**	WG567013-08
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:50	**File ID:**	1LM.LM34709
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567013	**Analysis Date:**	05/03/2016 22:21	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35100	11400	3.08	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**	6850	**Samplenum:**	WG567013-09
Instrument:	LCMS1	**Prep Date:**	04/29/2016 13:50	**File ID:**	1LM.LM34715
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567013	**Analysis Date:**	05/04/2016 00:15	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	40000	12900	3.10	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567013	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567013	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567013	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567013	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567013	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567013	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567013	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567013	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**		**Samplenum:**	WG567321-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34695
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567013	**Analysis Date:**	05/03/2016 17:56	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**		**Samplenum:**	WG567321-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34696
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567013	**Analysis Date:**	05/03/2016 18:15	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	172000	57100	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**		**Samplenum:**	WG567321-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34708
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567013	**Analysis Date:**	05/03/2016 22:02	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	180000	59700	3.02	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**		**Samplenum:**	WG567321-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34710
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567013	**Analysis Date:**	05/03/2016 22:40	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**		**Samplenum:**	WG567321-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34714
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567013	**Analysis Date:**	05/03/2016 23:56	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	191000	62100	3.08	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041363	**Prep Method:**		**Samplenum:**	WG567321-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34716
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567013	**Analysis Date:**	05/04/2016 00:34	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

2.2.1.3 Sample Data

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Data File	LM34704.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 8:46:55 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041363-01	**Injection Vial**	16.00
Data File	LM34704.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 8:46:55 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	L16041363-01	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.180e+05	9.85	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	7.530e+02	9.89	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.85(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

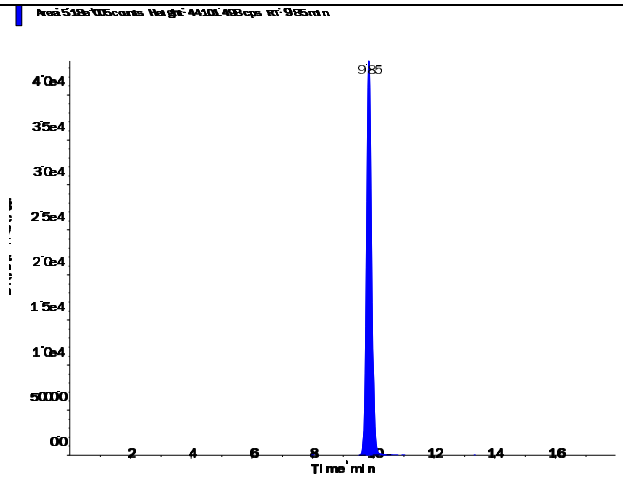

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	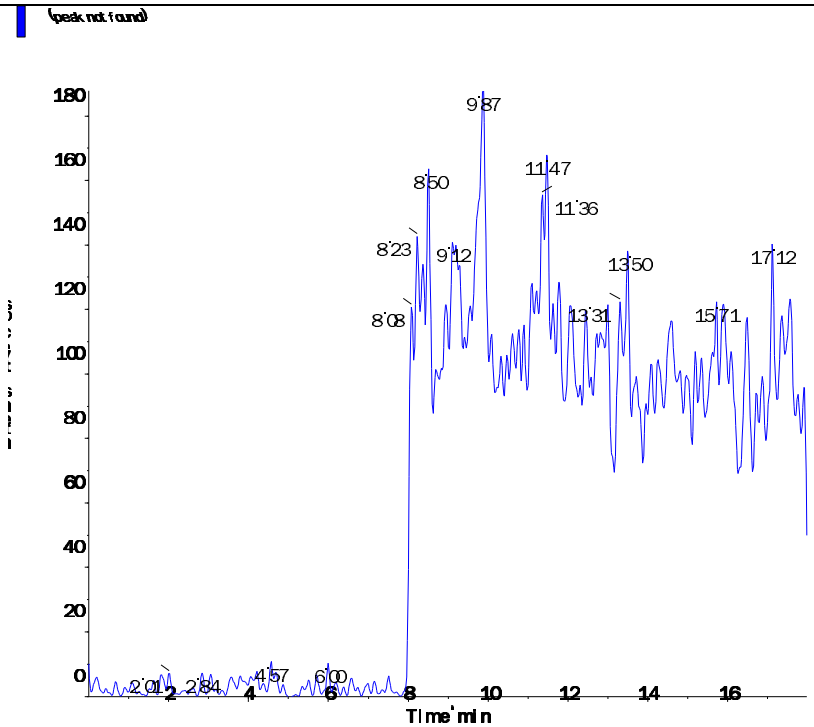
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.89 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	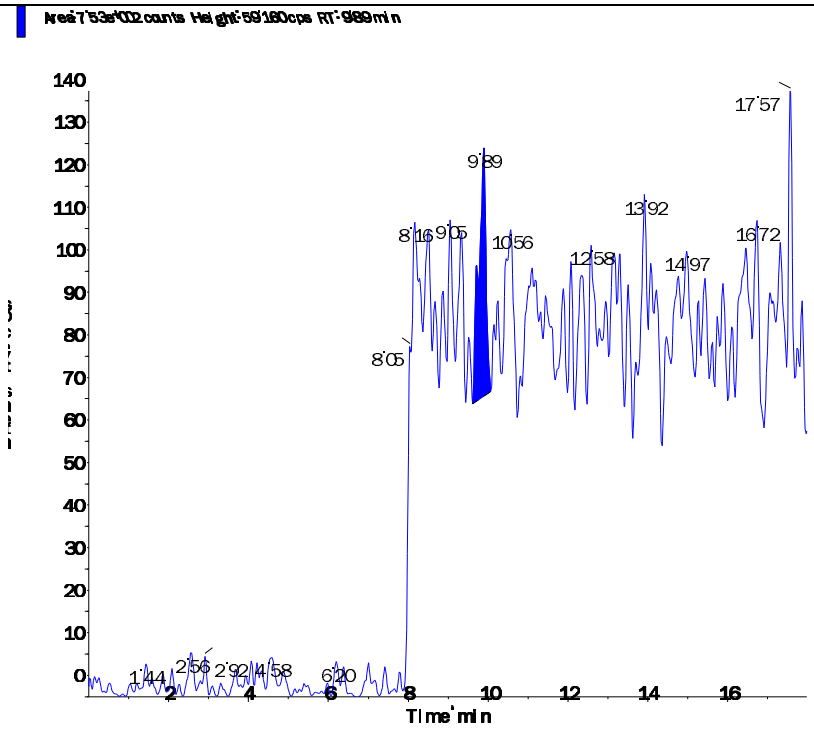

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Data File	LM34705.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 9:05:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041363-02	**Injection Vial**	17.00
Data File	LM34705.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 9:05:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	L16041363-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.150e+05	9.85	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.230e+03	9.86	N/A	0.0091
Perchlorate conf	5.330e+02	9.84	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.85(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

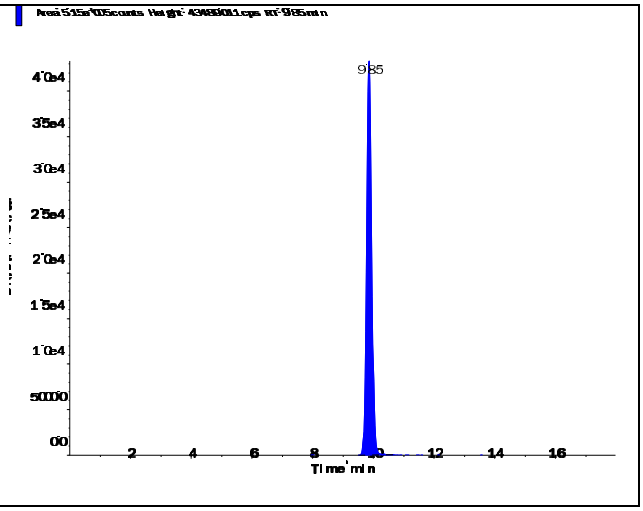

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.86 (9.84) min
Calculated conc:	0.0091 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)

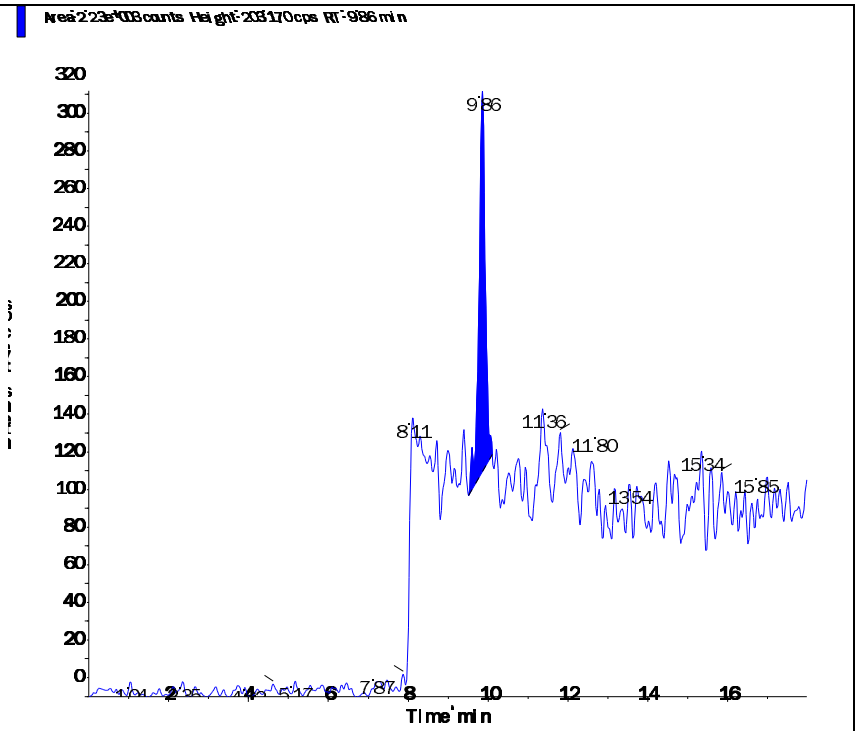

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

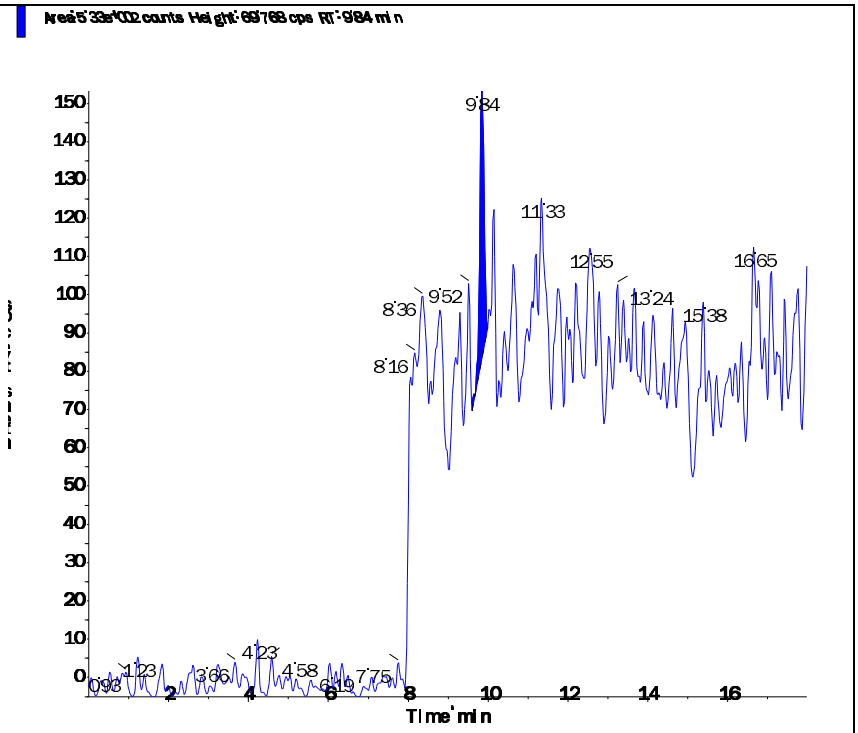

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Data File	LM34706.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 9:24:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041363-03	**Injection Vial**	18.00
Data File	LM34706.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 9:24:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	L16041363-03	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.530e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.310e+04	9.86	N/A	0.0667
Perchlorate conf	4.370e+03	9.83	N/A	0.0504

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

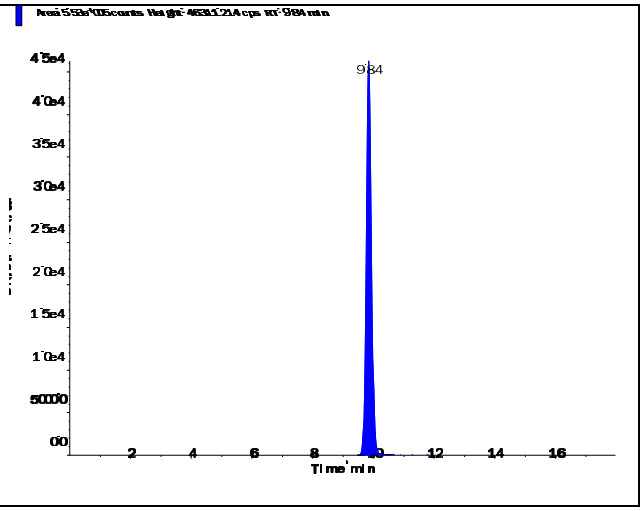

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.86 (9.84) min
Calculated conc:	0.0667 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

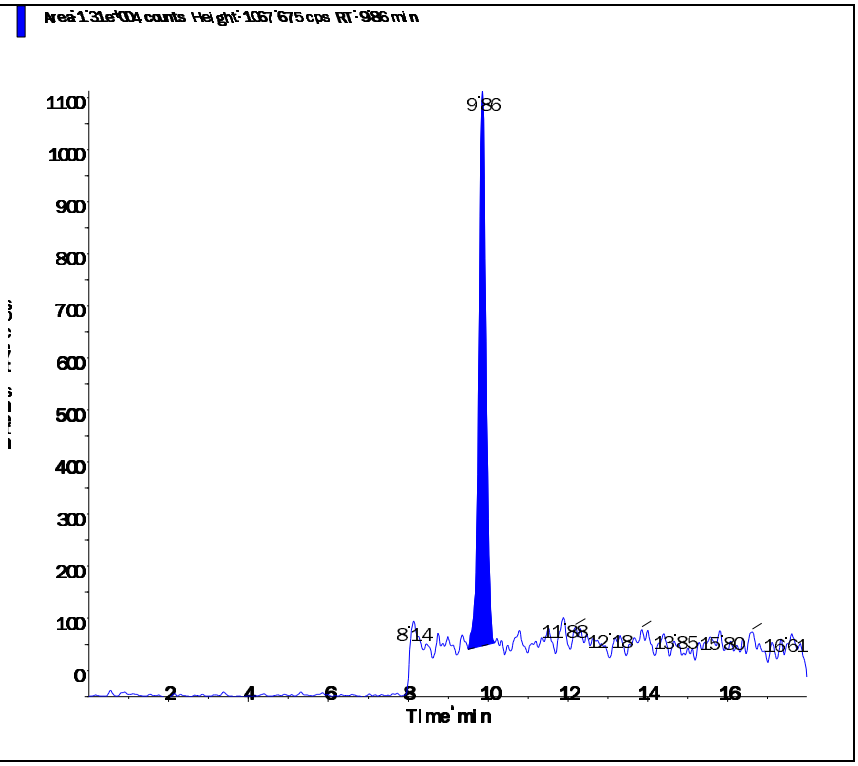

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.0504 ng/ml
Area Ratio:	0.008
Sample Type:	(Unknown)

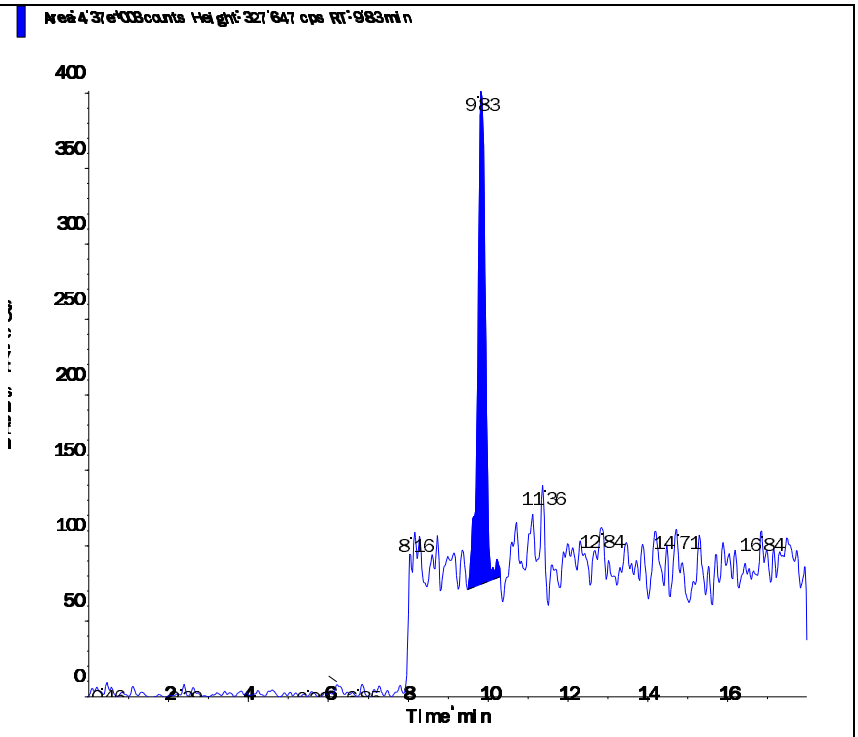

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Data File	LM34707.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 9:43:44 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041363-04	**Injection Vial**	19.00
Data File	LM34707.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 9:43:44 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	L16041363-04	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.600e+05	9.85	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.250e+03	9.86	N/A	0.0347
Perchlorate conf	2.270e+03	9.82	N/A	0.0159

O18LP (Internal Standard)

RT (Exp. RT): 9.85(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

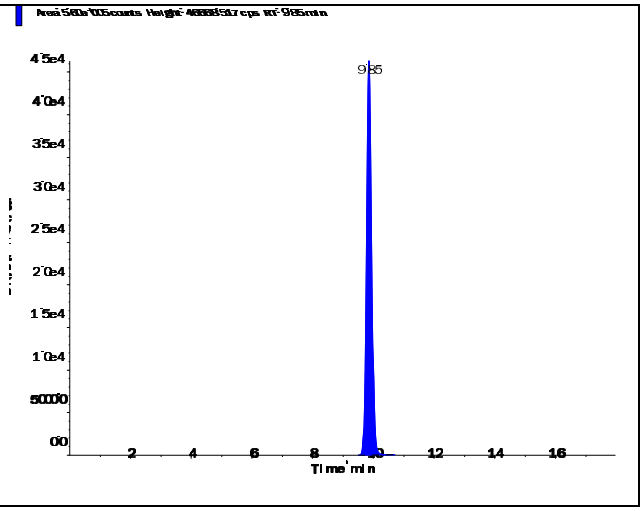

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Printed: 5/4/2016 1:28 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.86 (9.84) min
Calculated conc:	0.0347 ng/ml
Area Ratio:	0.013
Sample Type:	(Unknown)

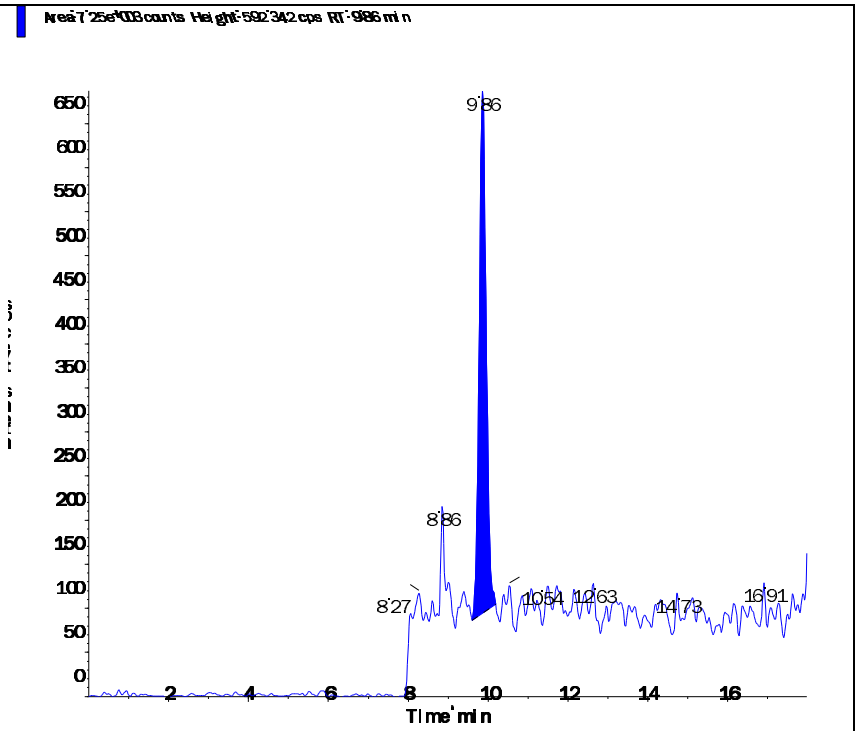

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	0.0159 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)

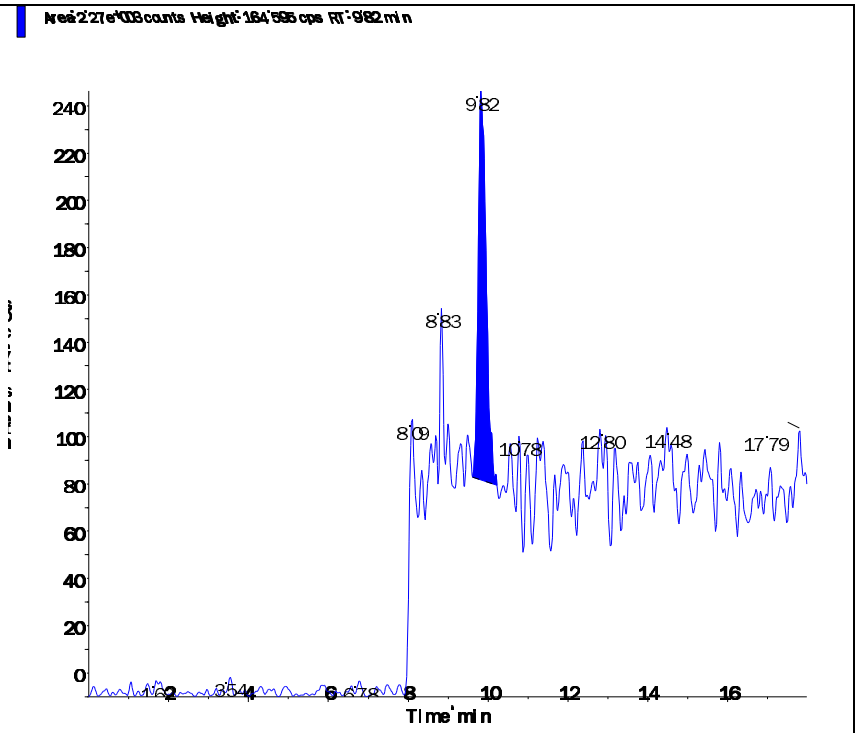

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Printed: 5/4/2016 1:29 PM

Data File	LM34711.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 10:59:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041363-05 (5x)	**Injection Vial**	20.00
Data File	LM34711.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 10:59:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	L16041363-05	**Dilution Factor**	1.00
Sample Comment	7,5 (screened)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.85	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.440e+05	9.86	N/A	2.05
Perchlorate conf	1.120e+05	9.85	N/A	1.99

O18LP (Internal Standard)

RT (Exp. RT): 9.85(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

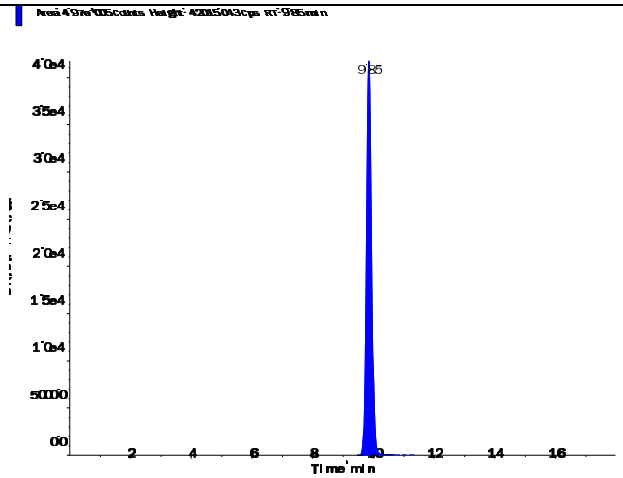

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.86 (9.84) min
Calculated conc:	2.05 ng/ml
Area Ratio:	0.692
Sample Type:	(Unknown)

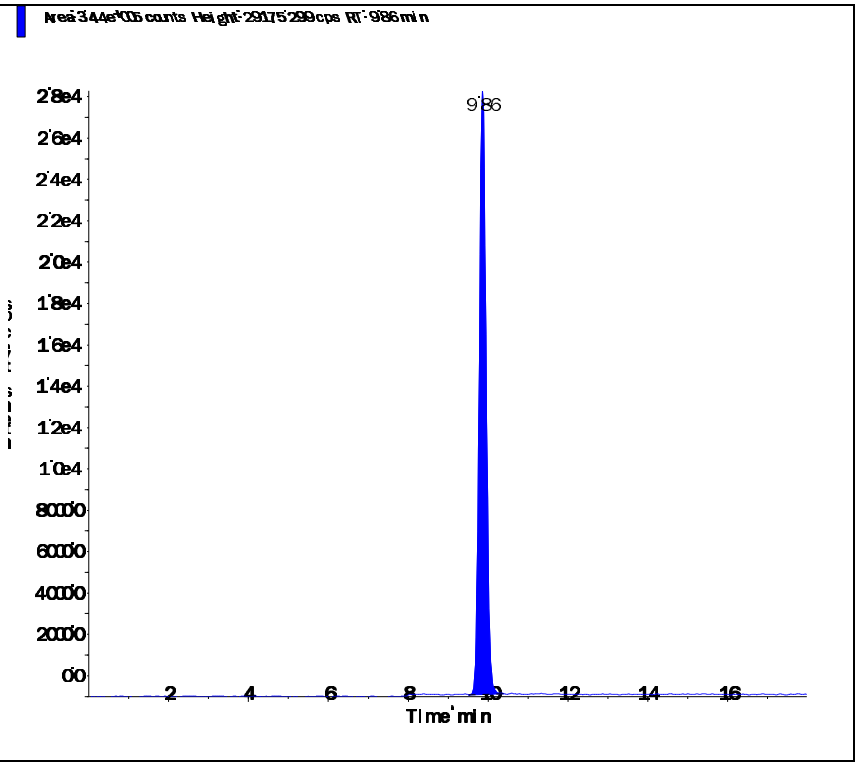

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	1.99 ng/ml
Area Ratio:	0.225
Sample Type:	(Unknown)

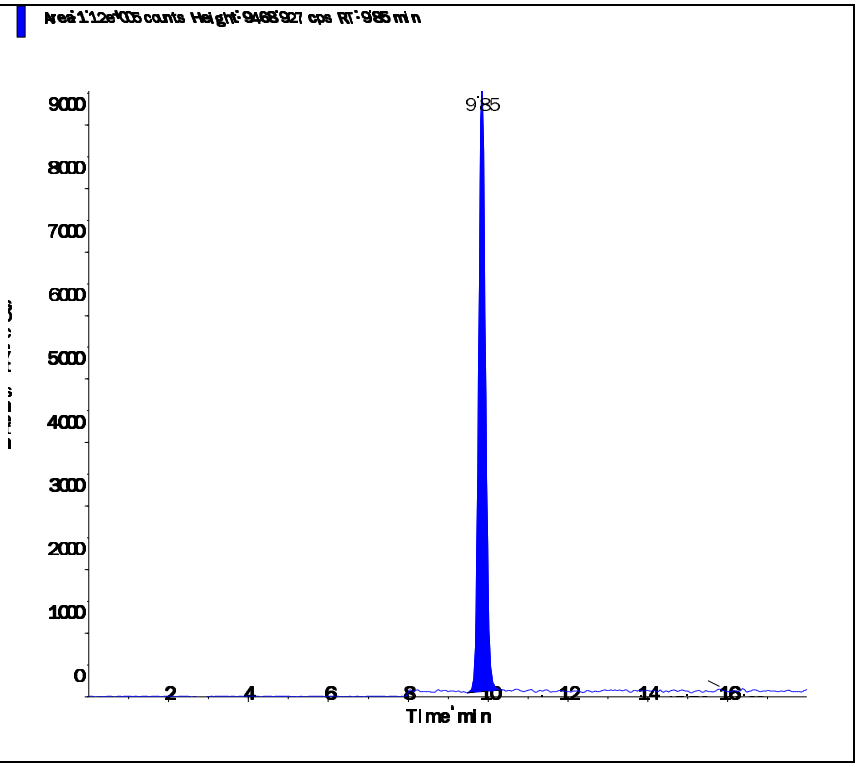

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Data File	LM34712.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 11:18:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041363-06	**Injection Vial**	21.00
Data File	LM34712.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 11:18:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	L16041363-06	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.540e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.340e+05	9.83	N/A	0.714
Perchlorate conf	4.490e+04	9.82	N/A	0.706

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

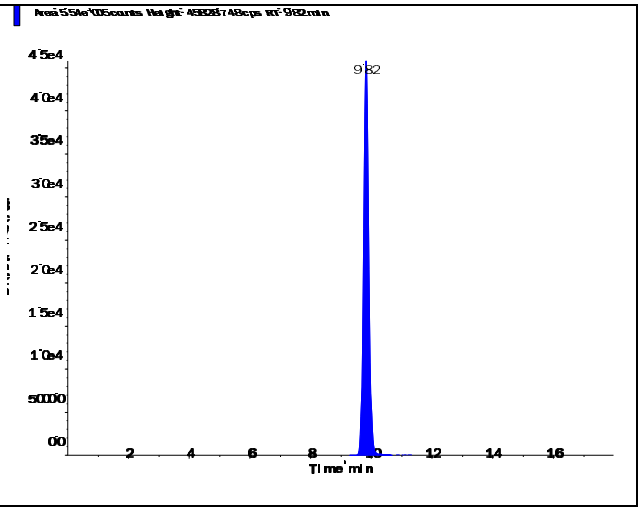

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.714 ng/ml
Area Ratio:	0.241
Sample Type:	(Unknown)

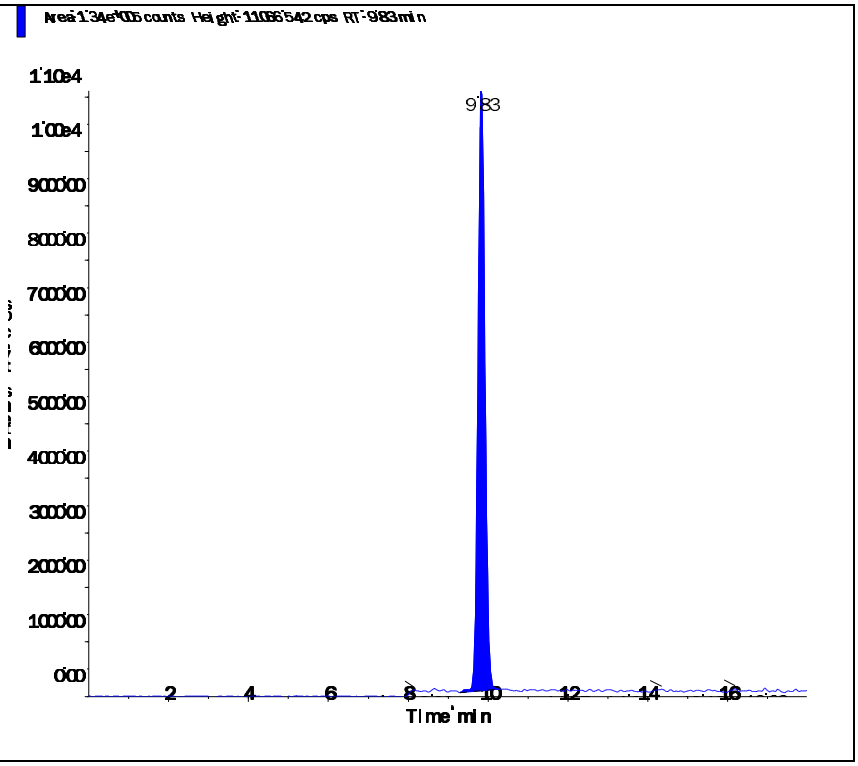

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	0.706 ng/ml
Area Ratio:	0.081
Sample Type:	(Unknown)

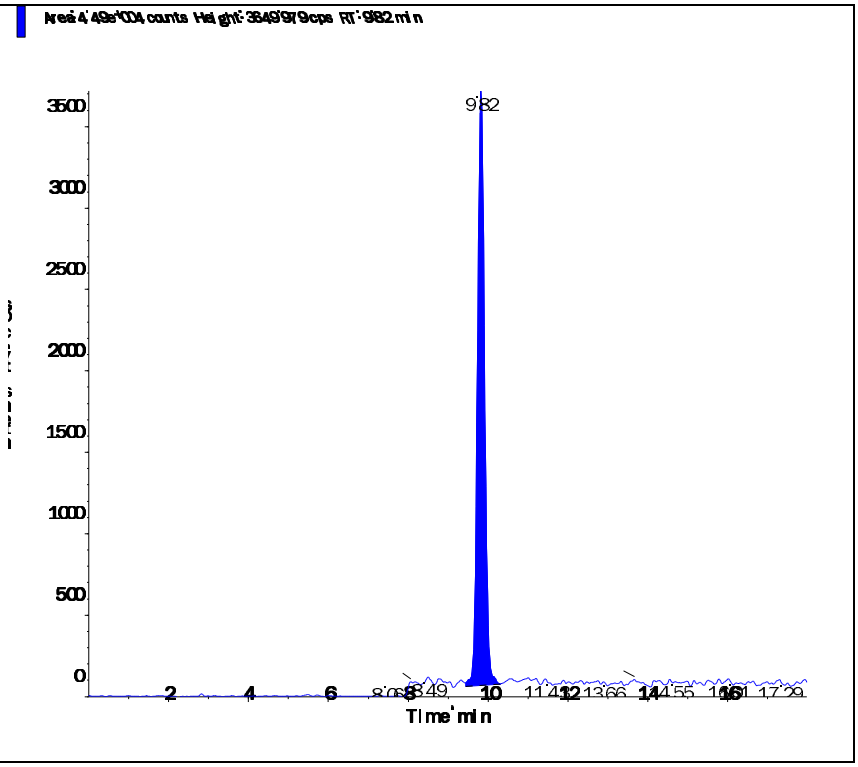

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Data File	LM34701.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 7:50:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041363-07 RS	**Injection Vial**	13.00
Data File	LM34701.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 7:50:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567013-04	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.86	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.270e+04	9.88	N/A	0.0702
Perchlorate conf	5.340e+03	9.87	N/A	0.0732

O18LP (Internal Standard)

RT (Exp. RT): 9.86(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

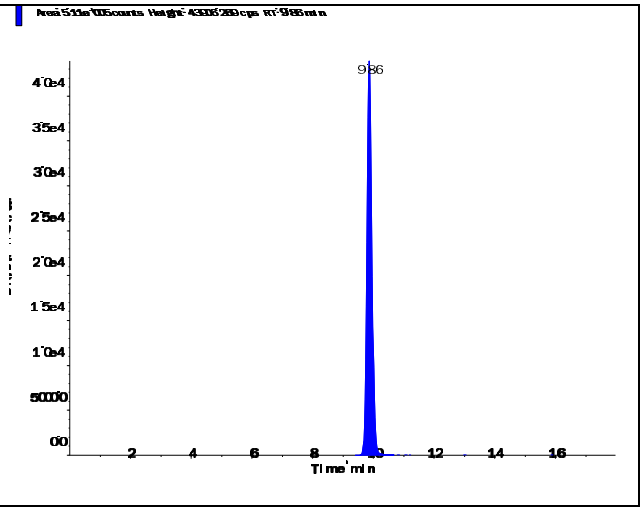

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.88 (9.84) min
Calculated conc:	0.0702 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

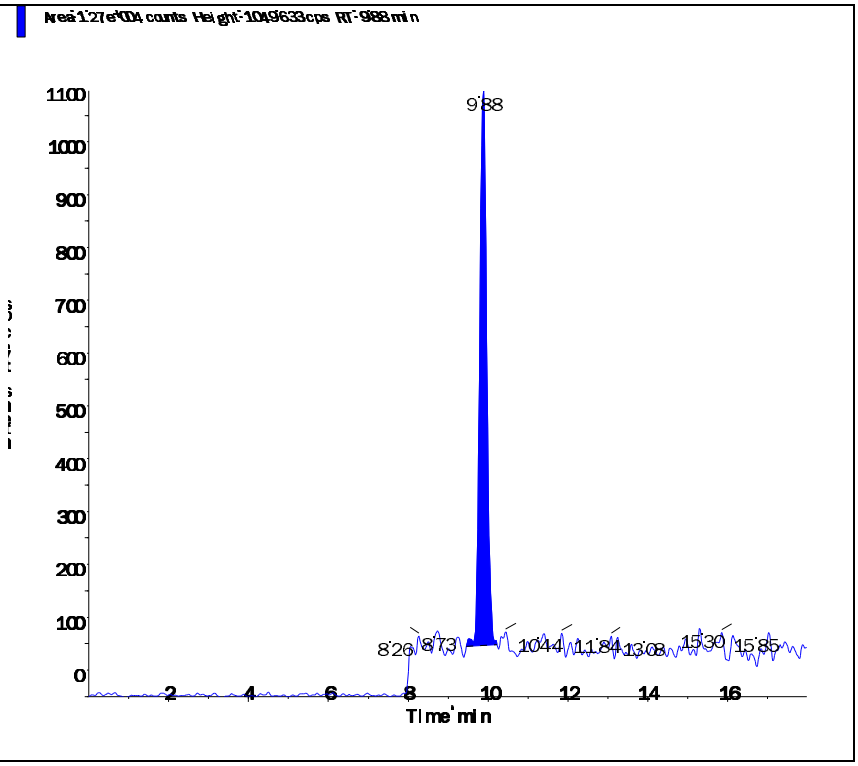

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.87 (9.84) min
Calculated conc:	0.0732 ng/ml
Area Ratio:	0.01
Sample Type:	(Unknown)

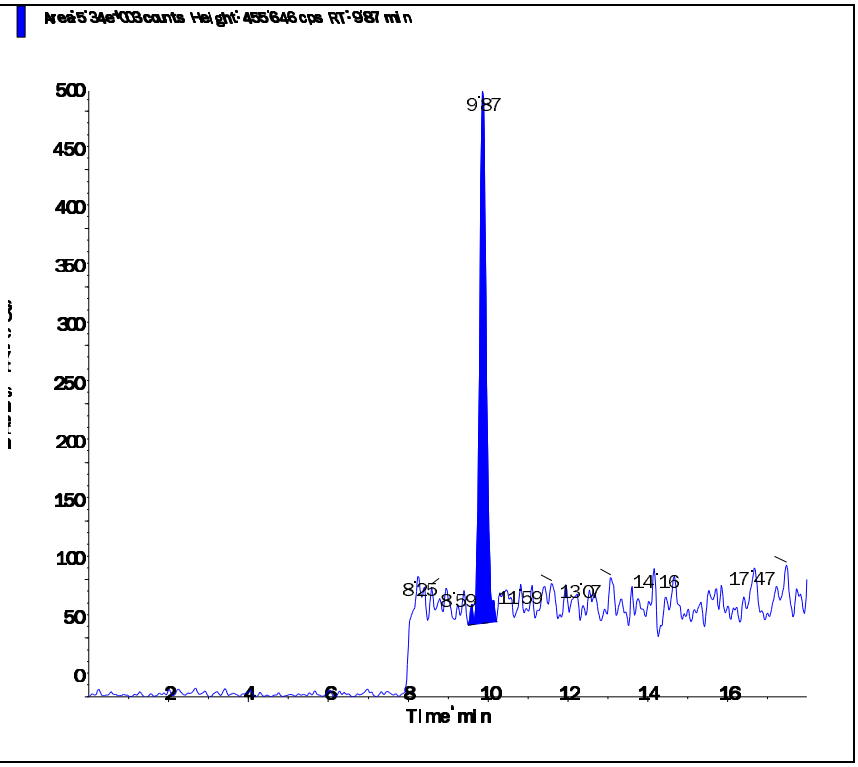

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Data File	LM34702.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 8:09:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041363-08 MS	**Injection Vial**	14.00
Data File	LM34702.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 8:09:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567013-05	**Dilution Factor**	1.00
Sample Comment	7,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.060e+05	9.86	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.450e+04	9.88	N/A	0.258
Perchlorate conf	1.580e+04	9.86	N/A	0.259

O18LP (Internal Standard)

RT (Exp. RT): 9.86(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

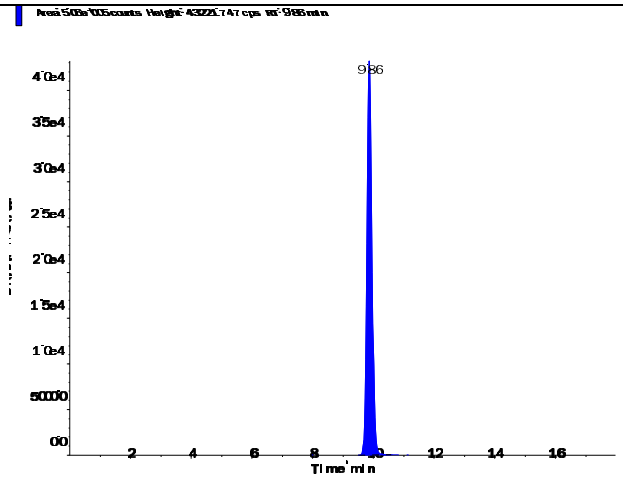

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.88 (9.84) min
Calculated conc:	0.258 ng/ml
Area Ratio:	0.088
Sample Type:	(Unknown)

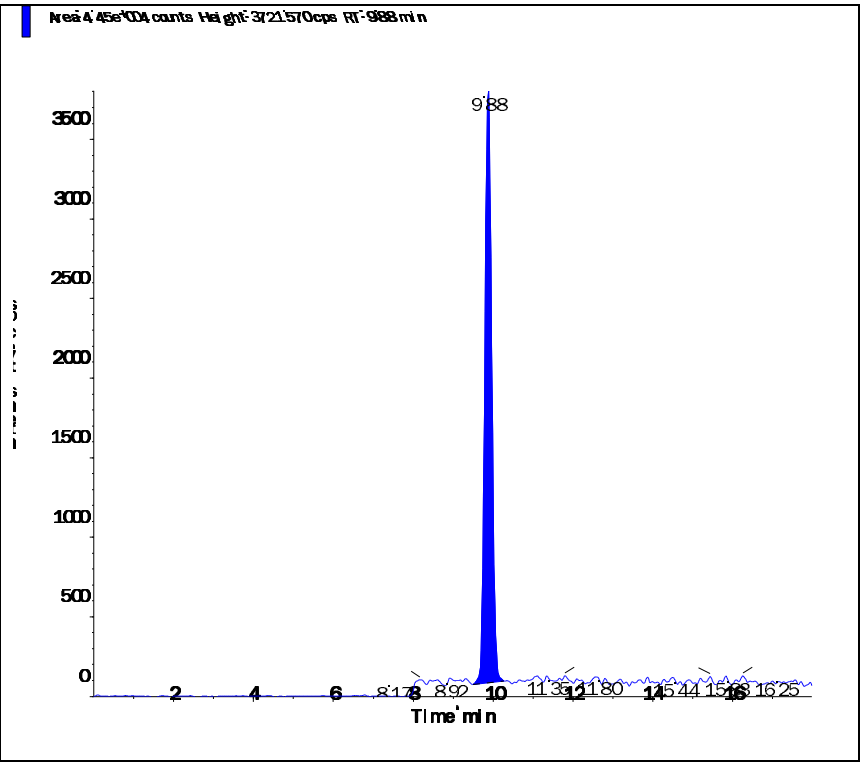

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.86 (9.84) min
Calculated conc:	0.259 ng/ml
Area Ratio:	0.031
Sample Type:	(Unknown)

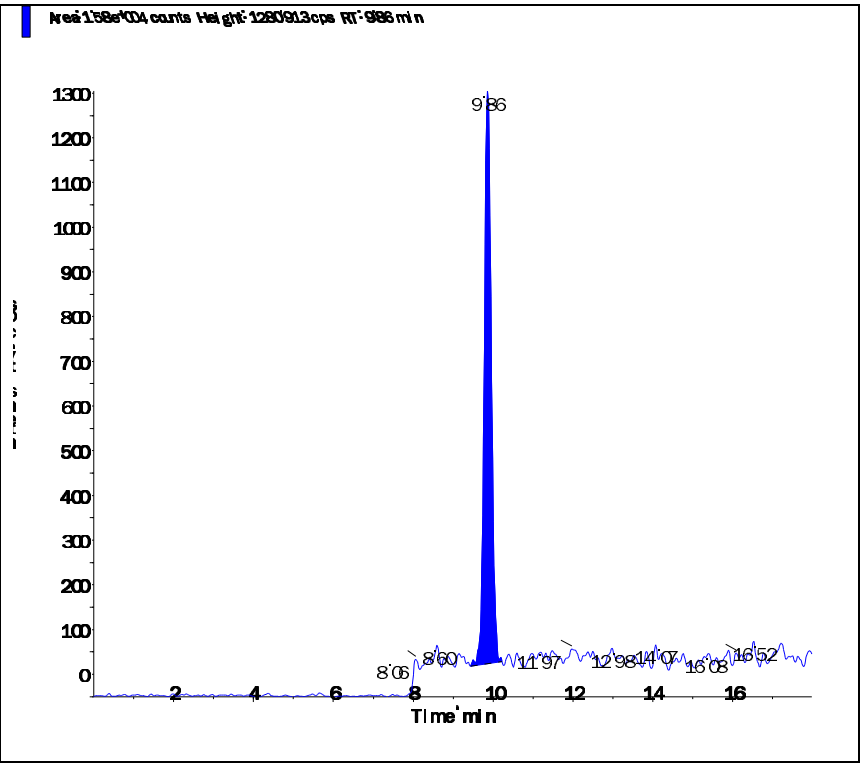

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Data File	LM34703.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 8:28:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041363-09 MSD	**Injection Vial**	15.00
Data File	LM34703.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 8:28:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567013-06	**Dilution Factor**	1.00
Sample Comment	7,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.150e+05	9.88	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.580e+04	9.89	N/A	0.261
Perchlorate conf	1.640e+04	9.88	N/A	0.265

O18LP (Internal Standard)

RT (Exp. RT): 9.88(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

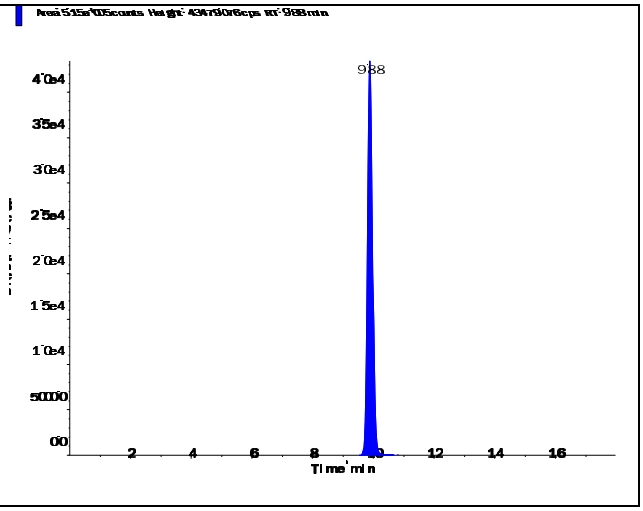

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.89 (9.84) min
Calculated conc:	0.261 ng/ml
Area Ratio:	0.089
Sample Type:	(Unknown)

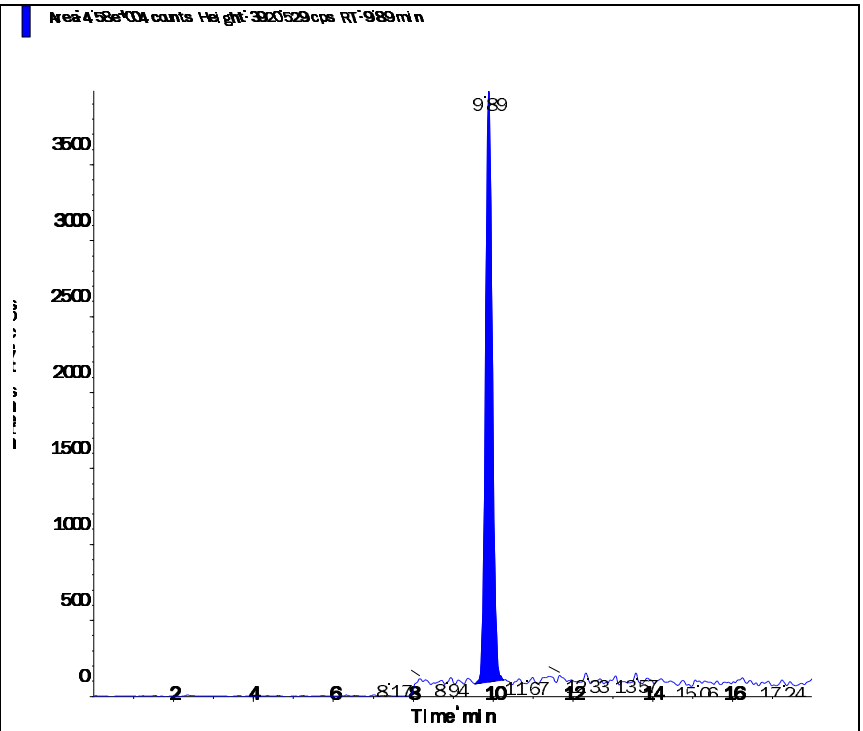

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.88 (9.84) min
Calculated conc:	0.265 ng/ml
Area Ratio:	0.032
Sample Type:	(Unknown)

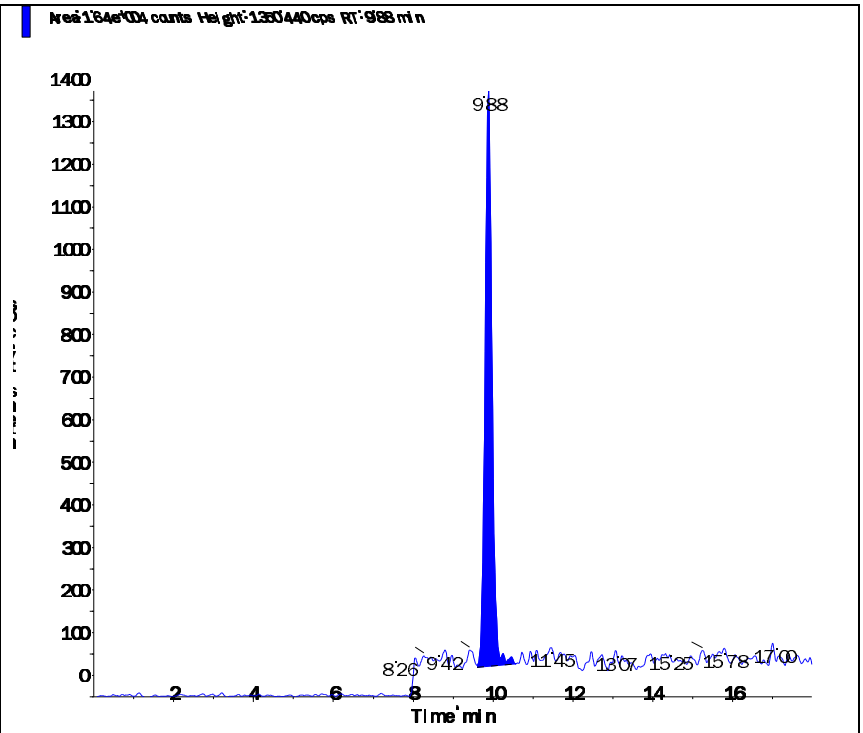

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Data File	LM34713.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 11:37:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041363-10 (5x)	**Injection Vial**	22.00
Data File	LM34713.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 11:37:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	L16041363-10	**Dilution Factor**	1.00
Sample Comment	7,5 (screened)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.85	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.780e+05	9.86	N/A	2.79
Perchlorate conf	1.620e+05	9.84	N/A	2.83

O18LP (Internal Standard)

RT (Exp. RT): 9.85(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

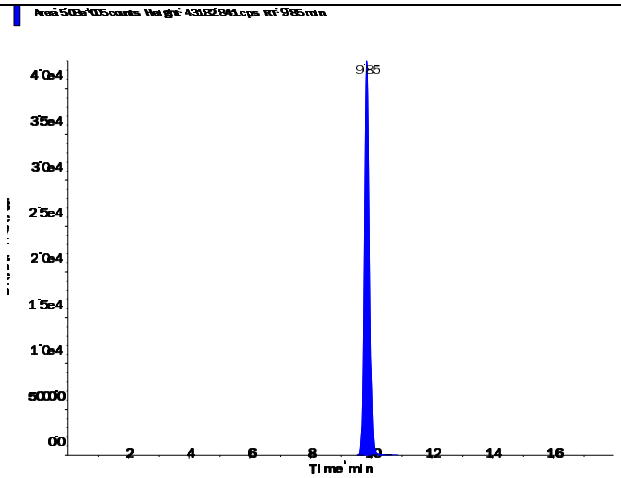

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.86 (9.84) min
Calculated conc:	2.79 ng/ml
Area Ratio:	0.941
Sample Type:	(Unknown)

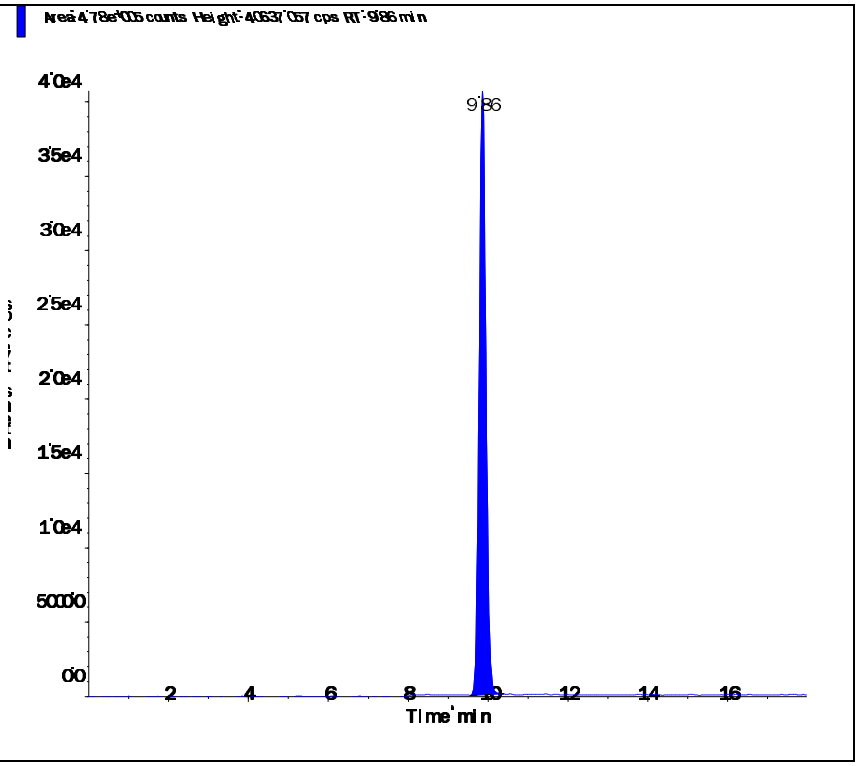

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	2.83 ng/ml
Area Ratio:	0.318
Sample Type:	(Unknown)

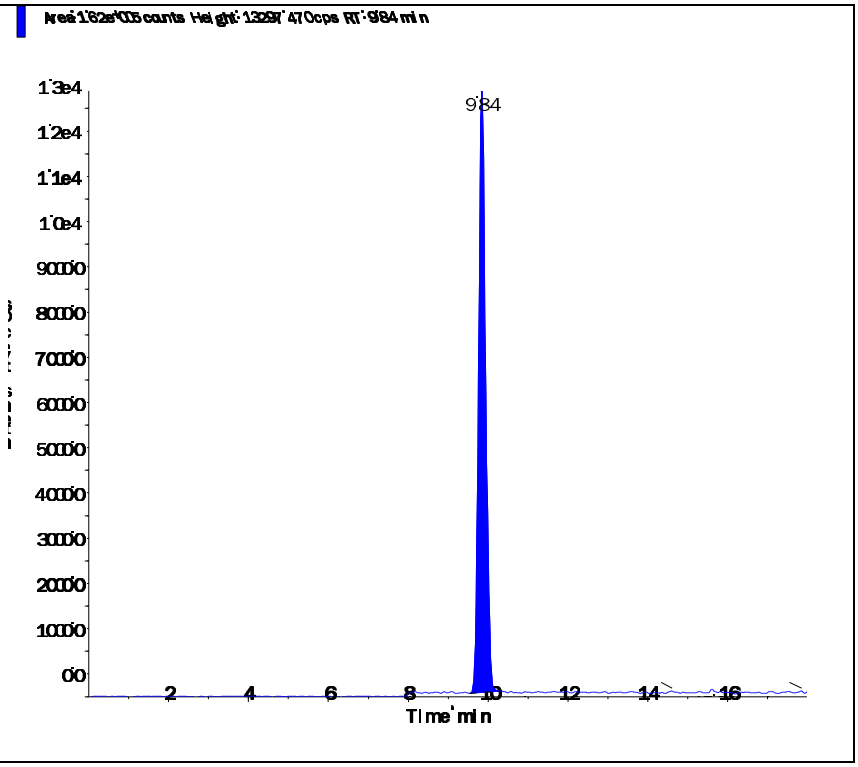

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2.2.1.4 Standards Data

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Data File	LM34686.wiff	**Result Table**	050616_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050616_JWR.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

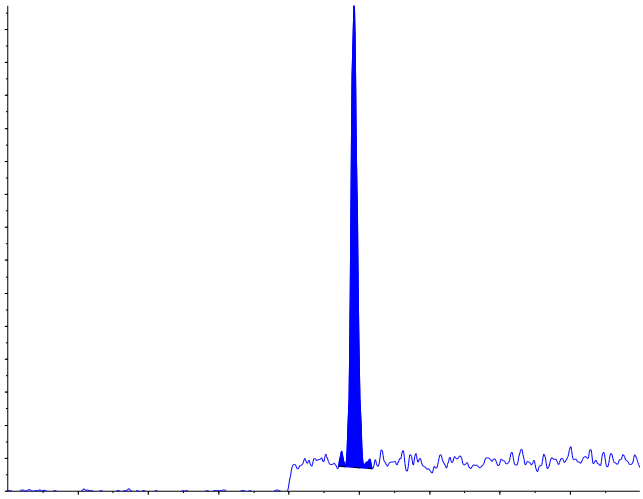

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

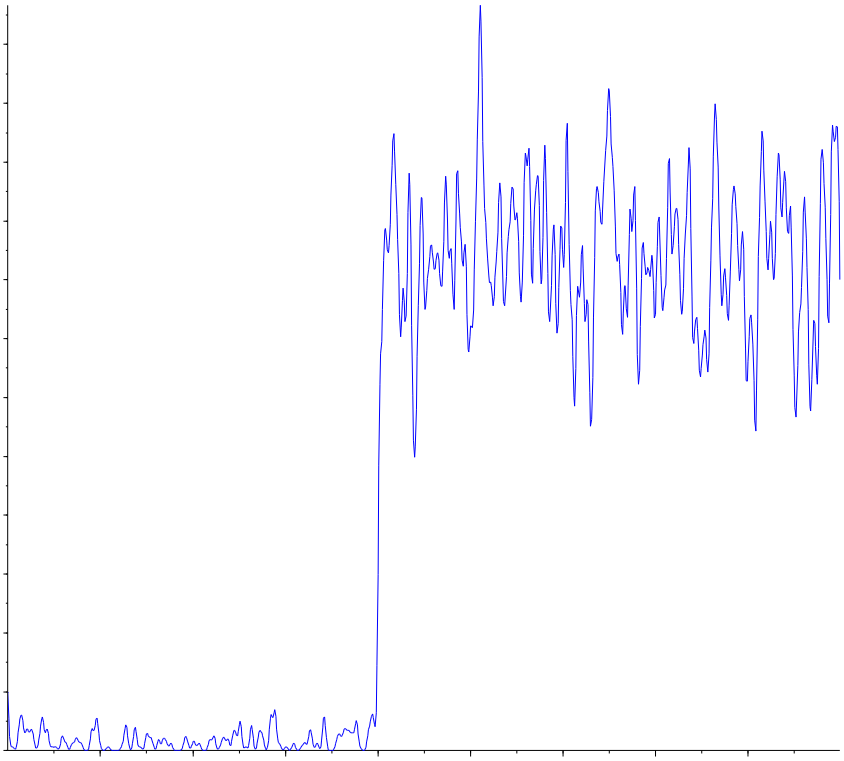

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

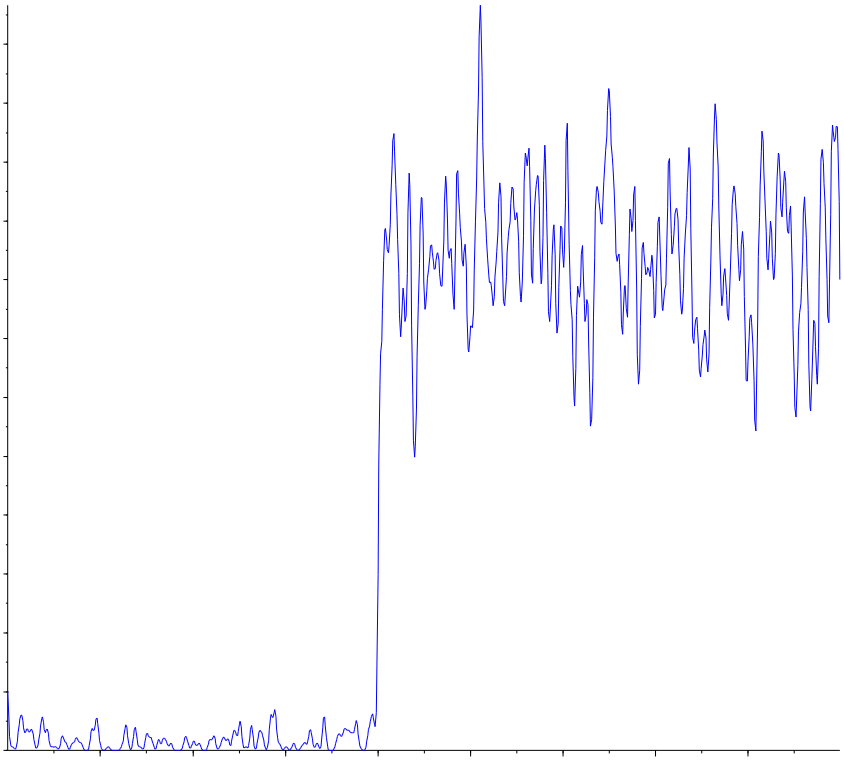

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Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

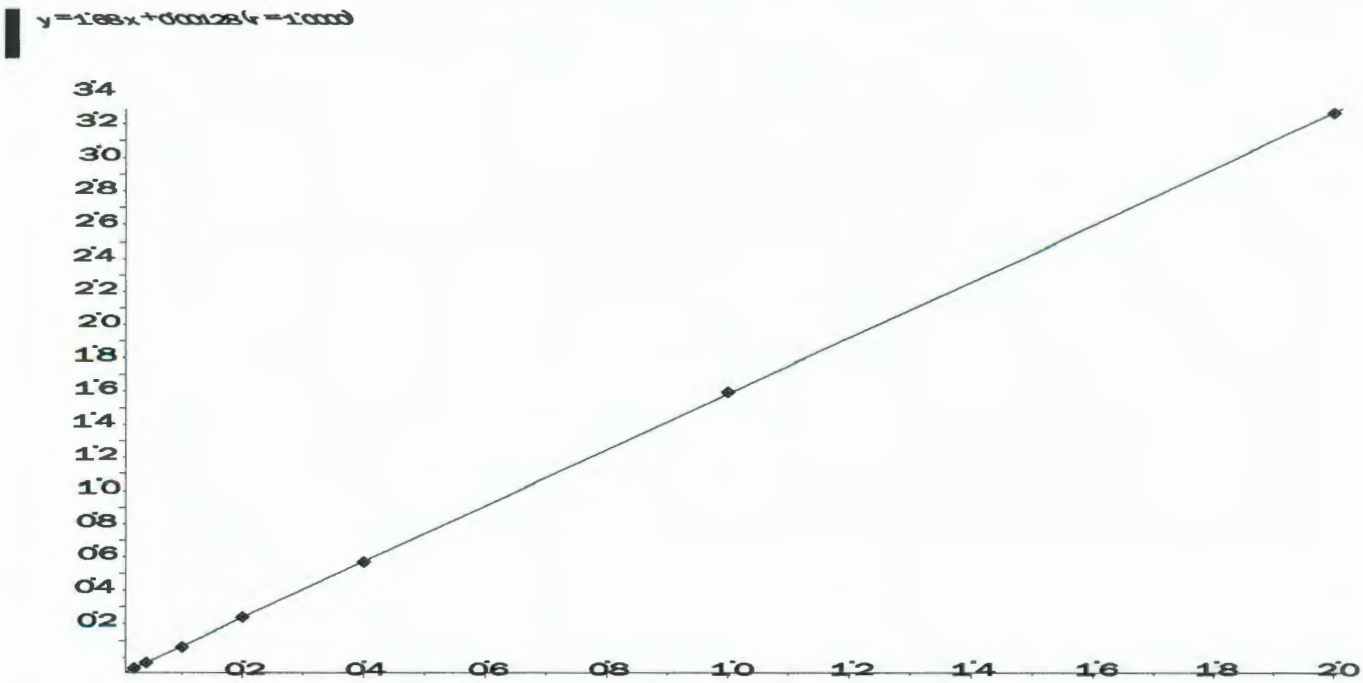

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Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

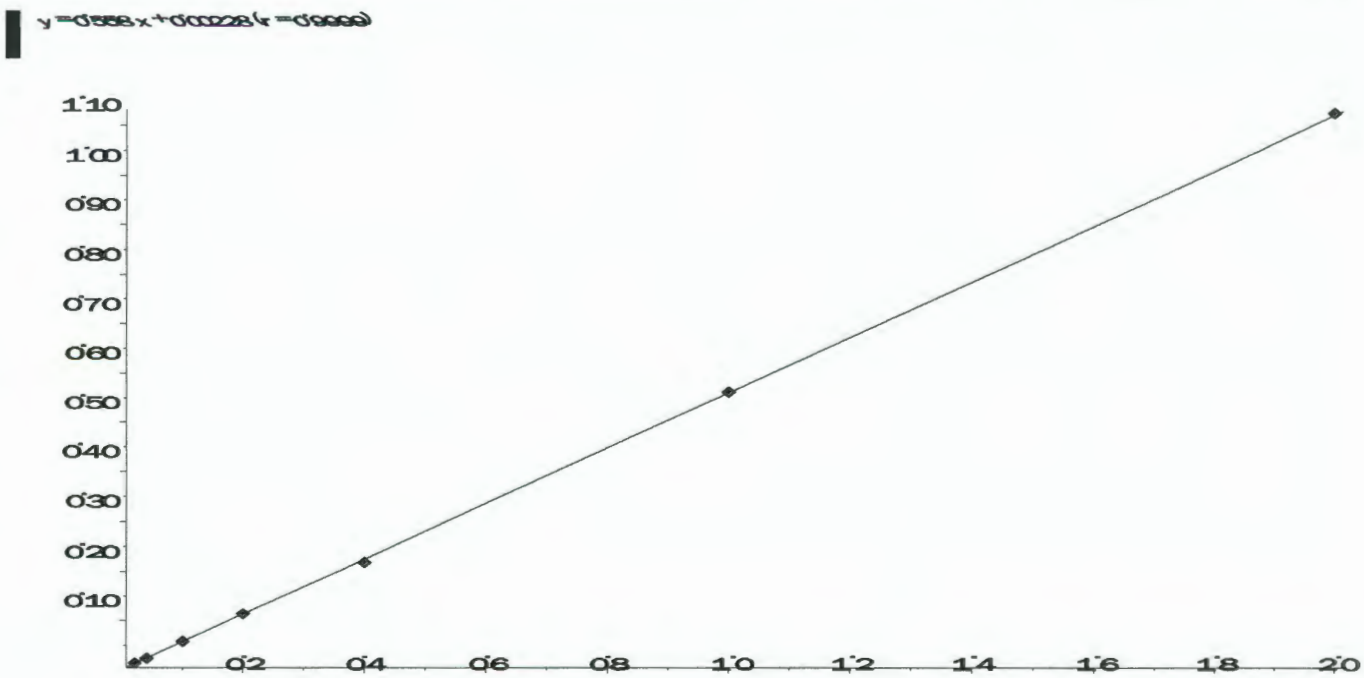

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Data File	LM34687.wiff	**Result Table**	050616_JWR.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050616_JWR.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

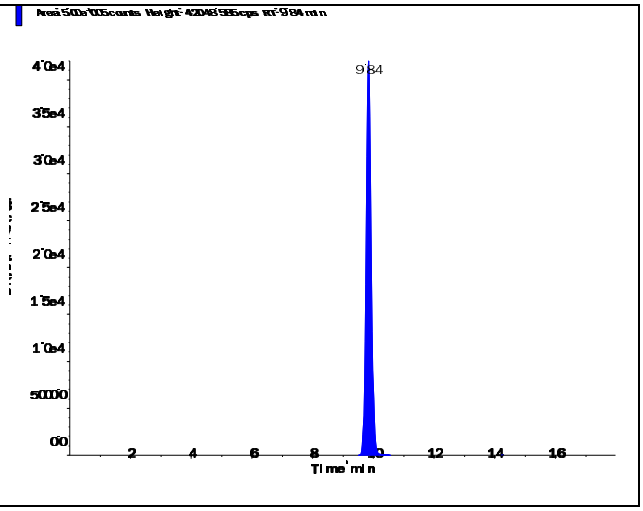

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.103 ng/ml
Area Ratio:	0.036
Sample Type:	(Standard)

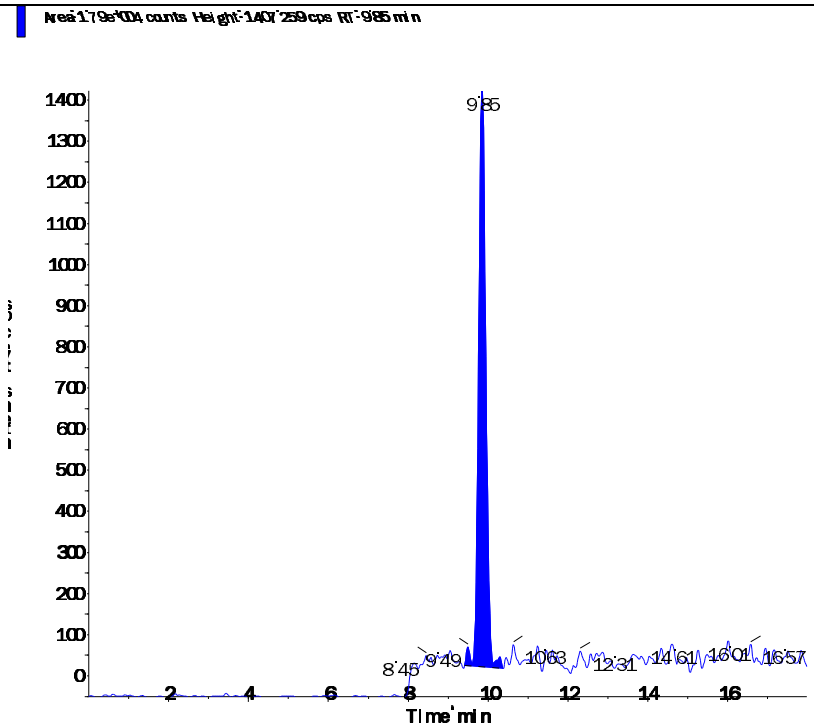

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.104 ng/ml
Area Ratio:	0.014
Sample Type:	(Standard)

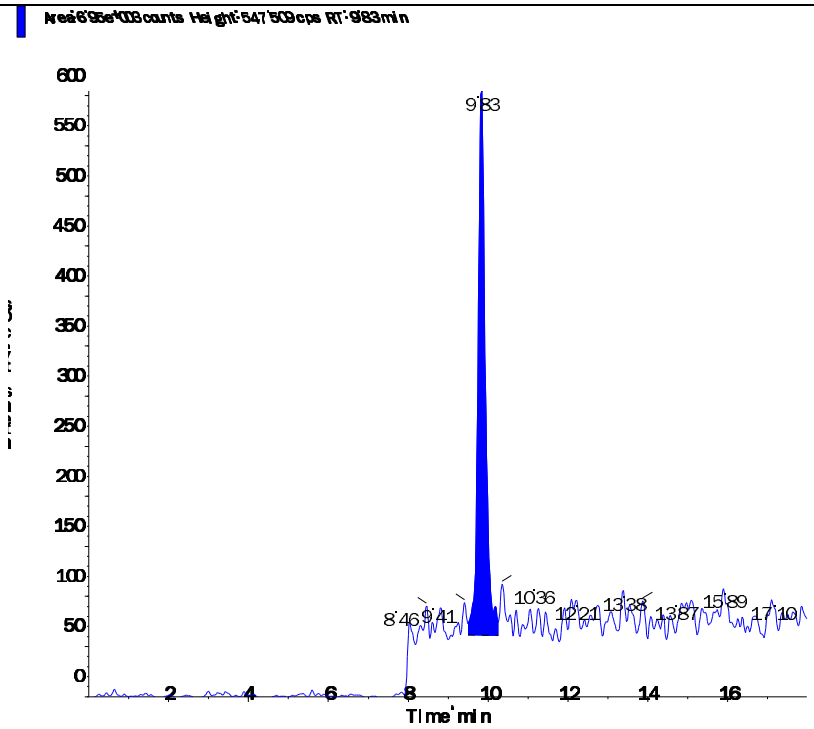

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Data File	LM34688.wiff	**Result Table**	050616_JWR.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050616_JWR.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

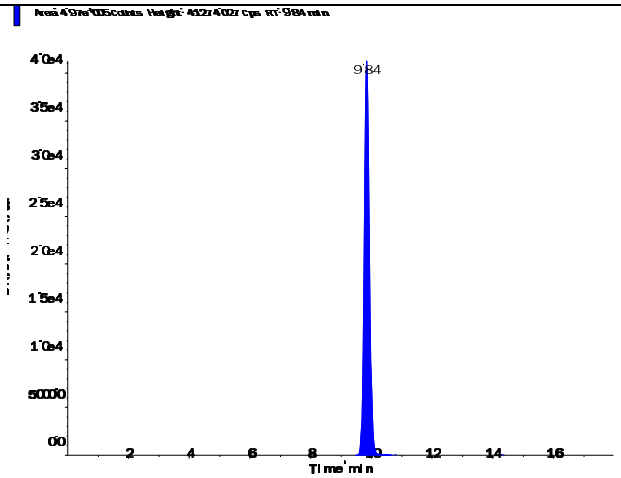

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

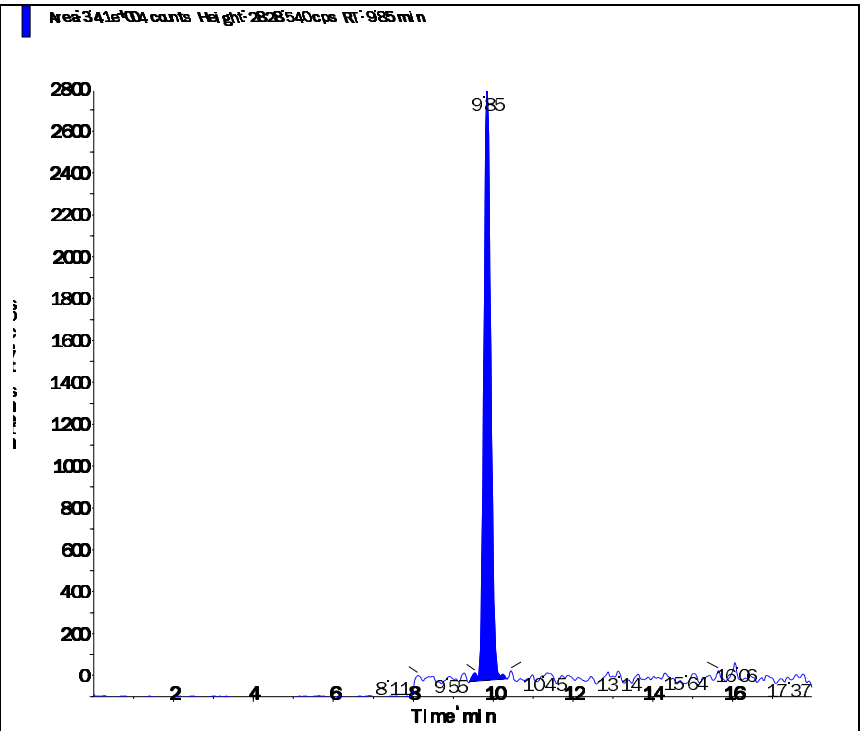

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

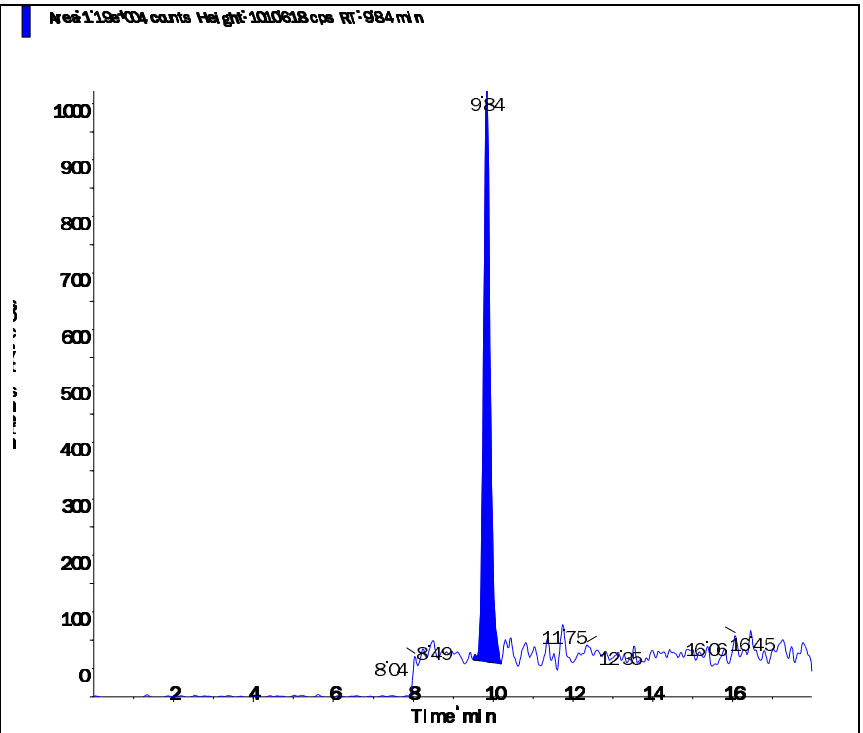

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Data File	LM34689.wiff	**Result Table**	050616_JWR.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050616_JWR.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

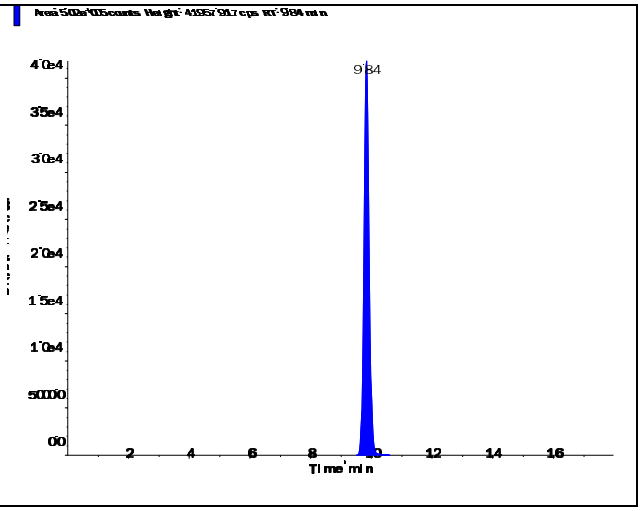

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.483 ng/ml
Area Ratio:	0.164
Sample Type:	(Standard)

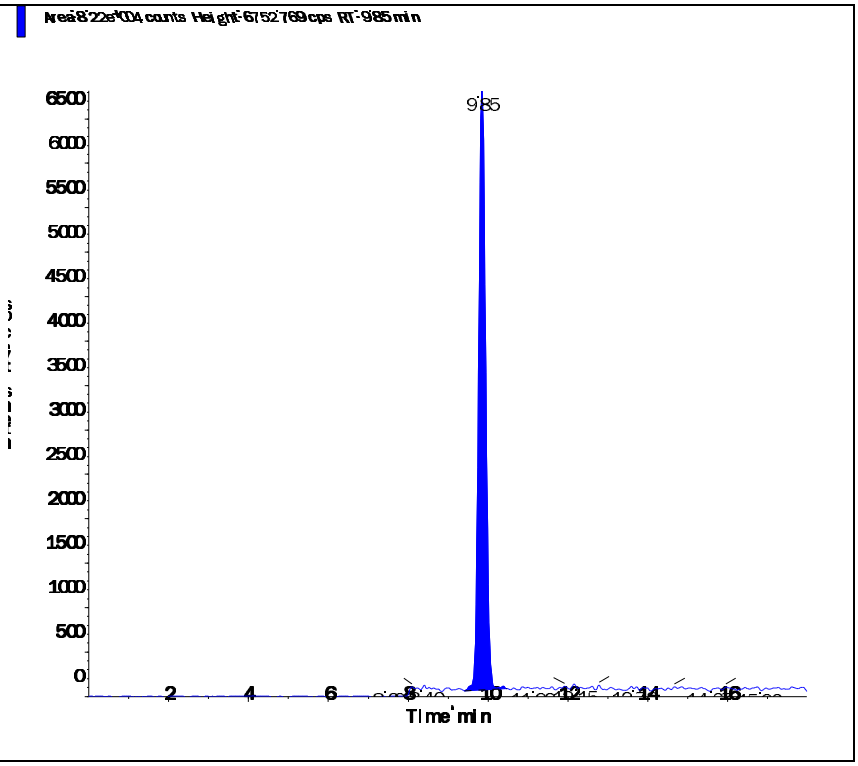

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.503 ng/ml
Area Ratio:	0.058
Sample Type:	(Standard)

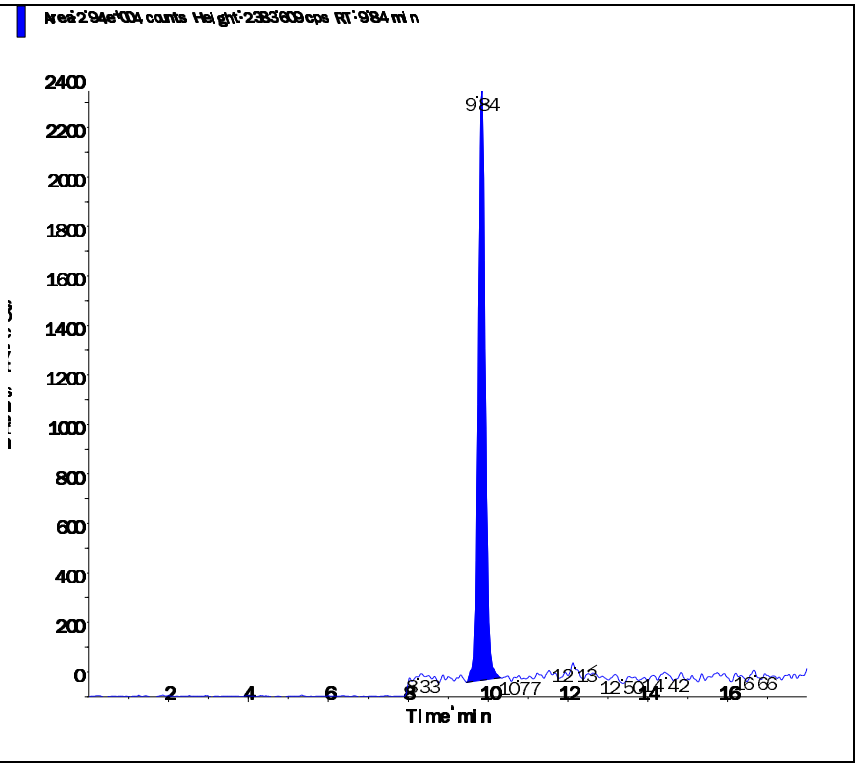

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Data File	LM34690.wiff	**Result Table**	050616_JWR.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050616_JWR.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

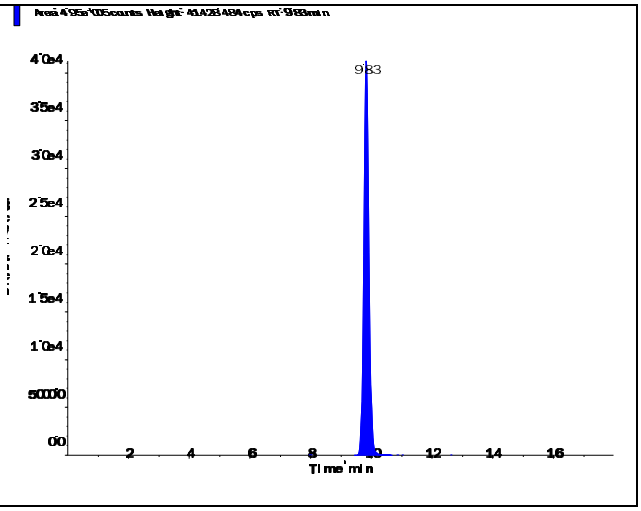

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

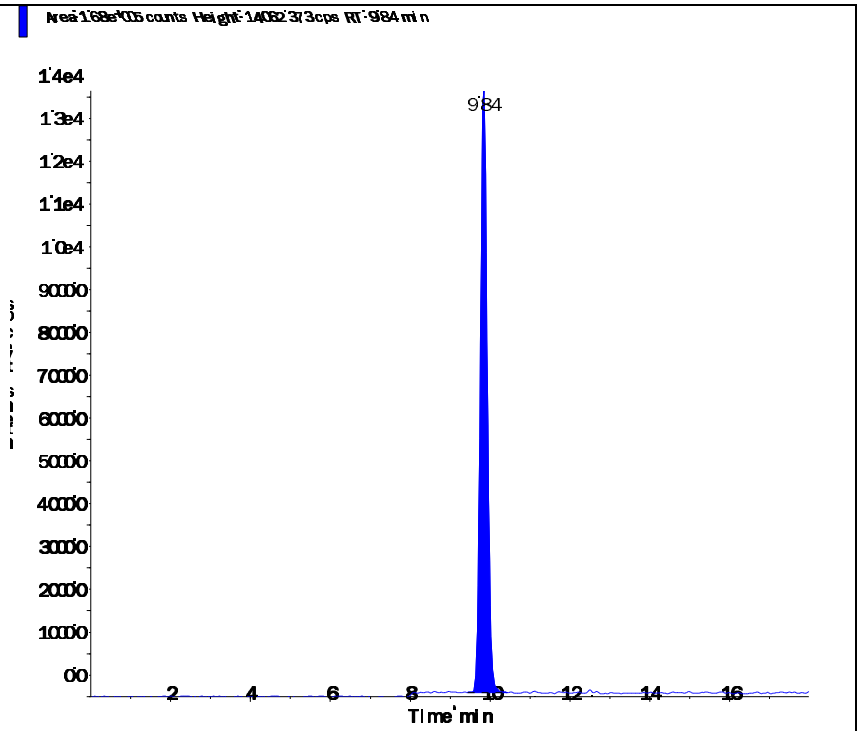

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

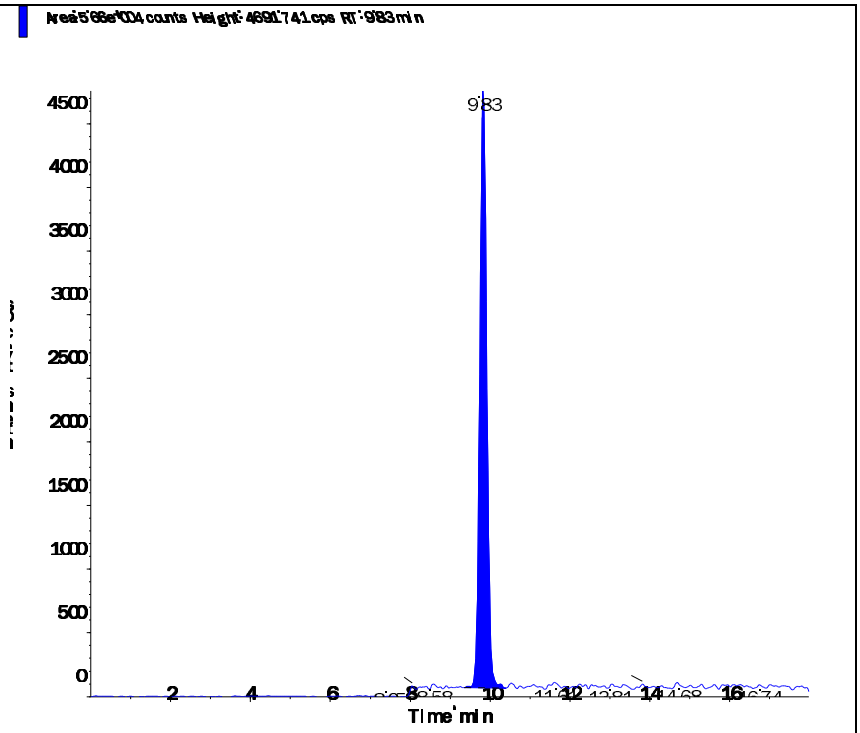

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Data File	LM34691.wiff	**Result Table**	050616_JWR.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050616_JWR.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

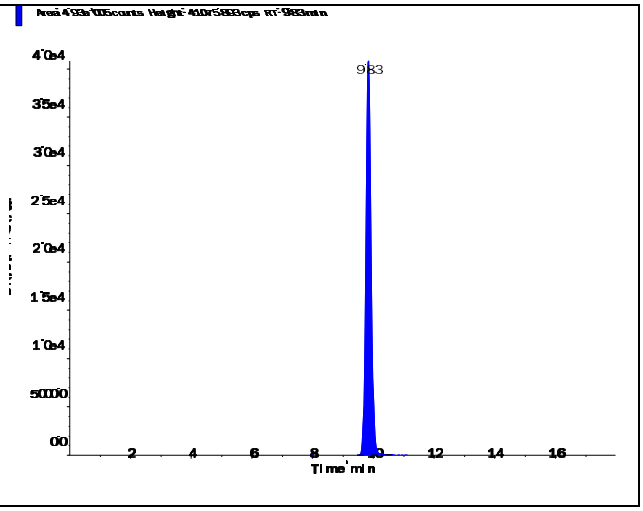

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.99 ng/ml
Area Ratio:	0.669
Sample Type:	(Standard)

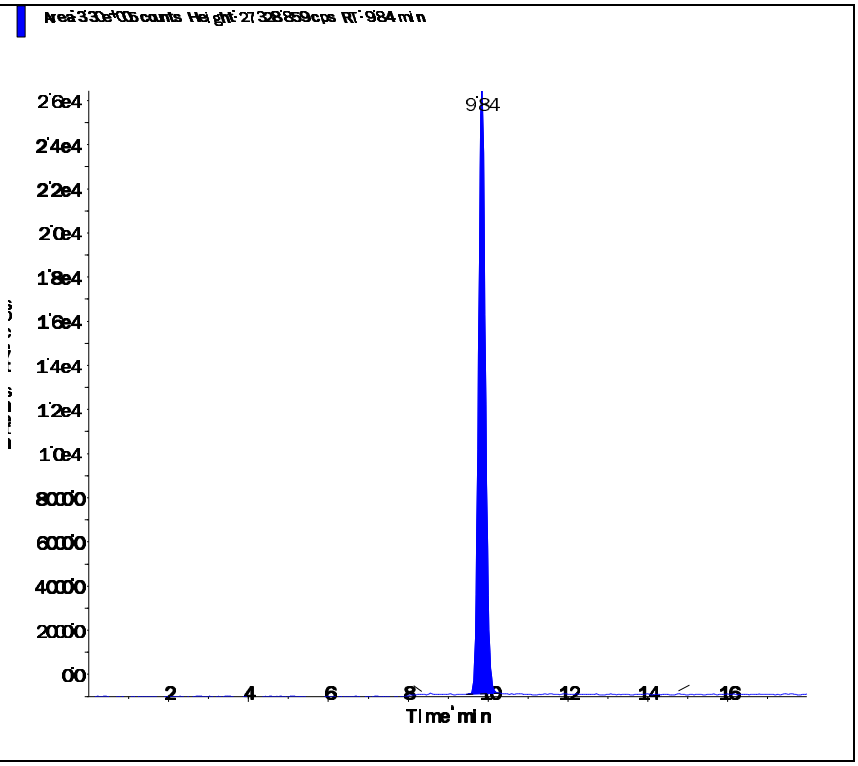

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.94 ng/ml
Area Ratio:	0.219
Sample Type:	(Standard)

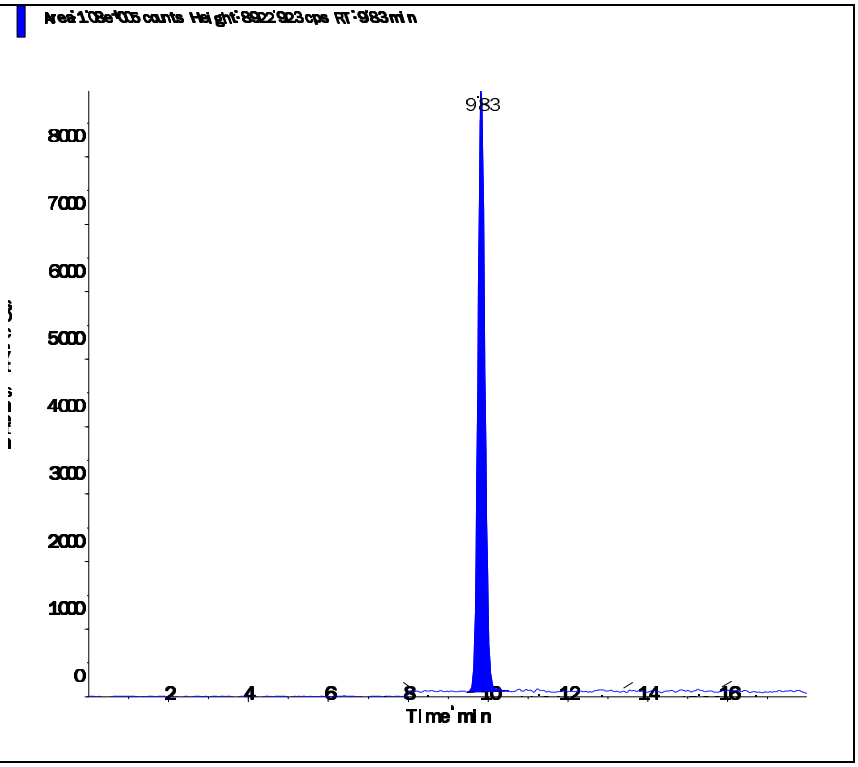

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Data File	LM34692.wiff	**Result Table**	050616_JWR.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050616_JWR.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

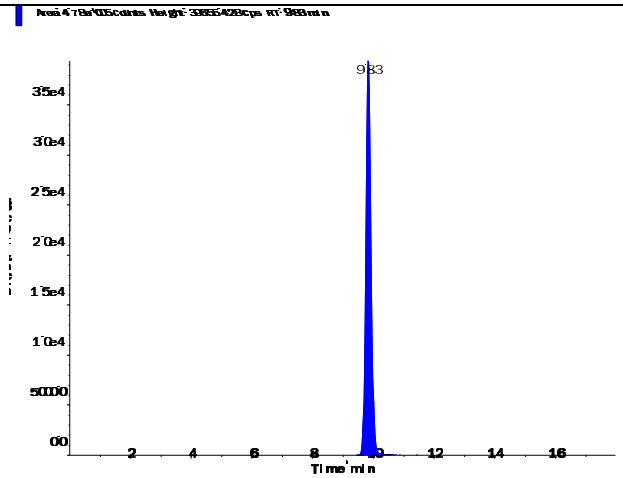

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

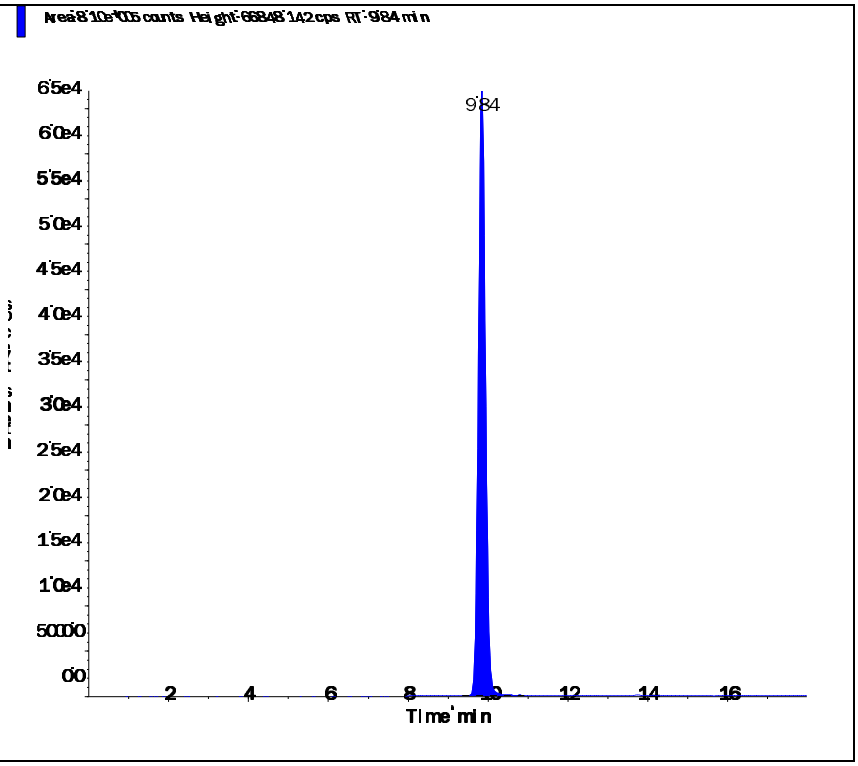

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

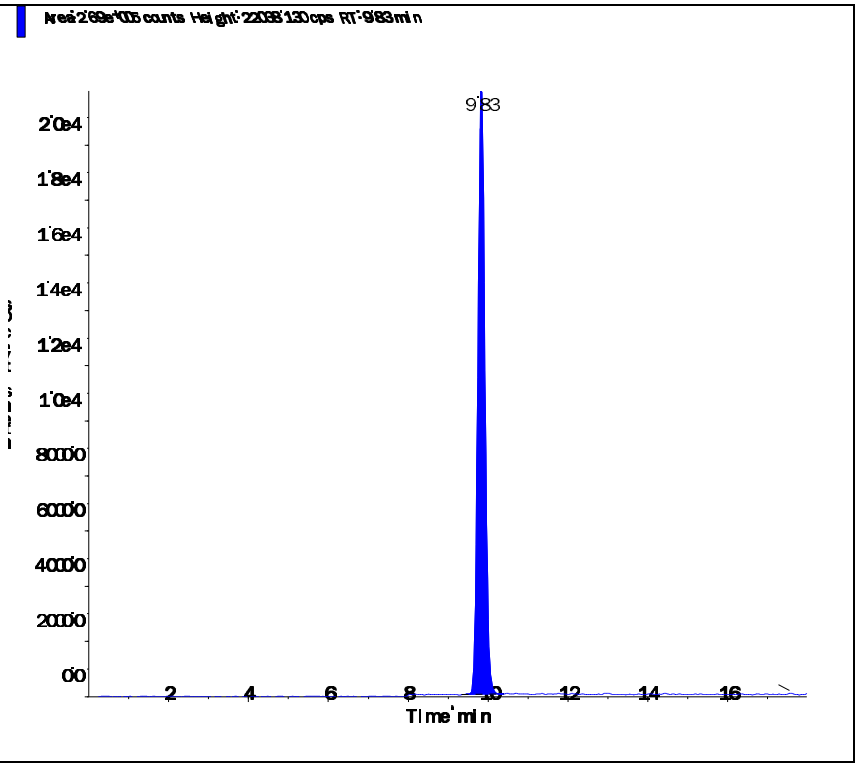

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Data File	LM34693.wiff	**Result Table**	050616_JWR.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050616_JWR.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

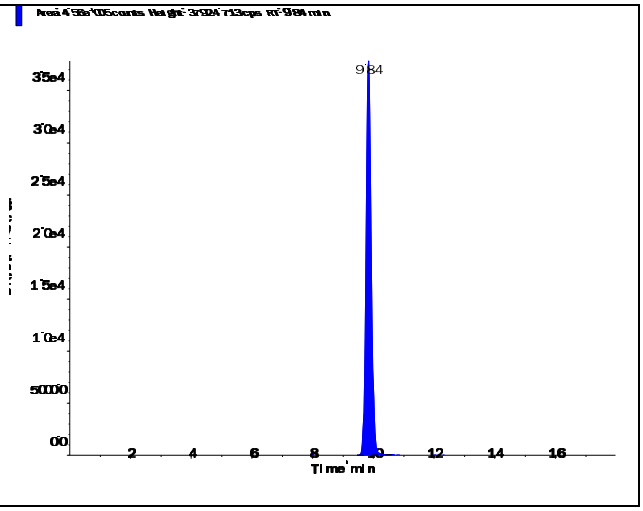

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	9.99 ng/ml
Area Ratio:	3.36
Sample Type:	(Standard)

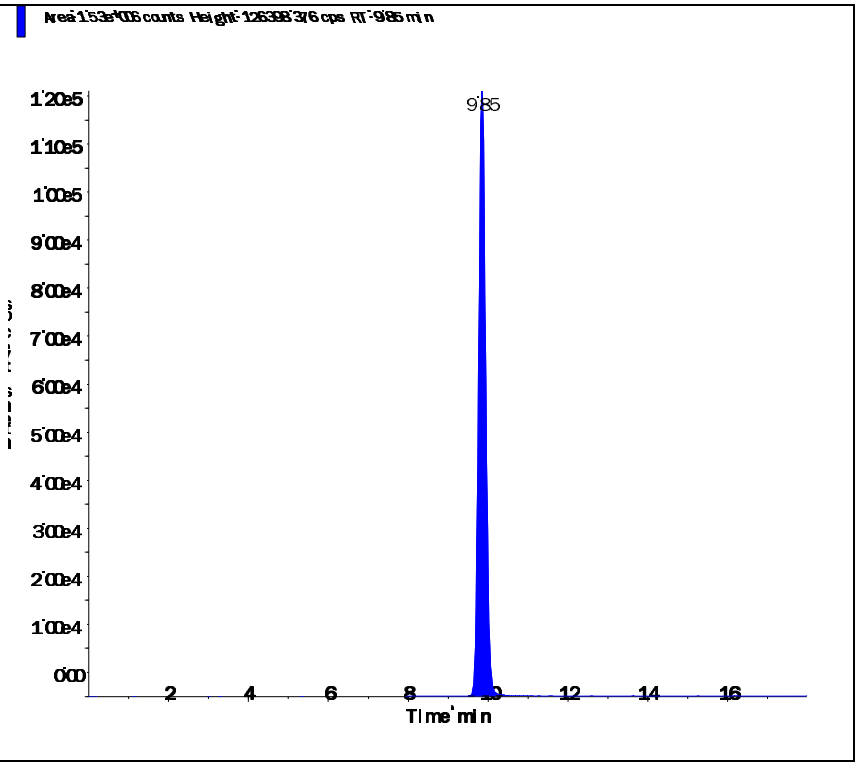

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	10.00 ng/ml
Area Ratio:	1.122
Sample Type:	(Standard)

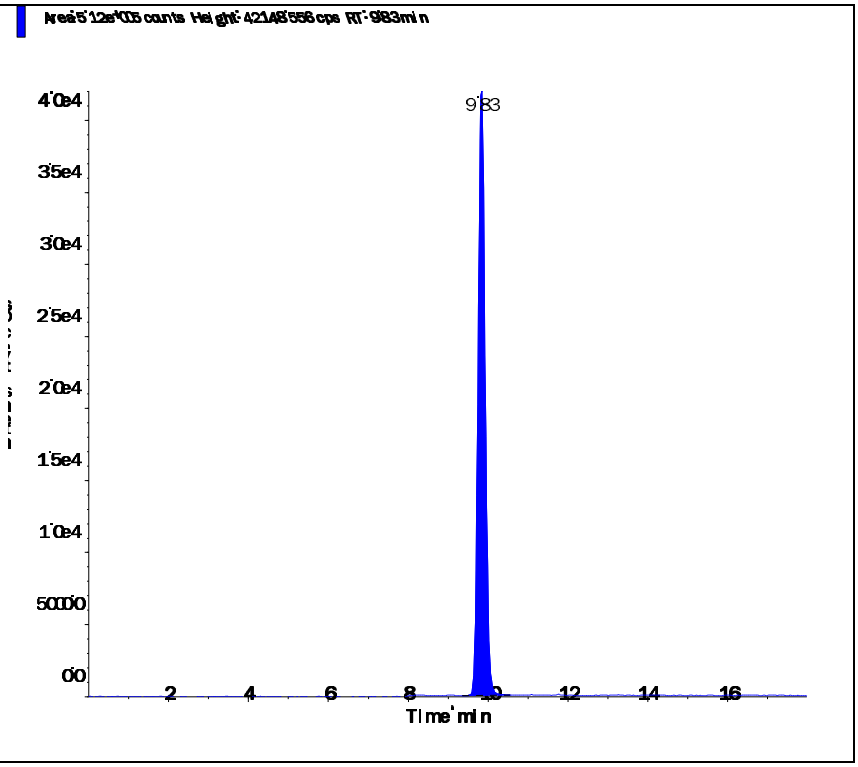

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Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

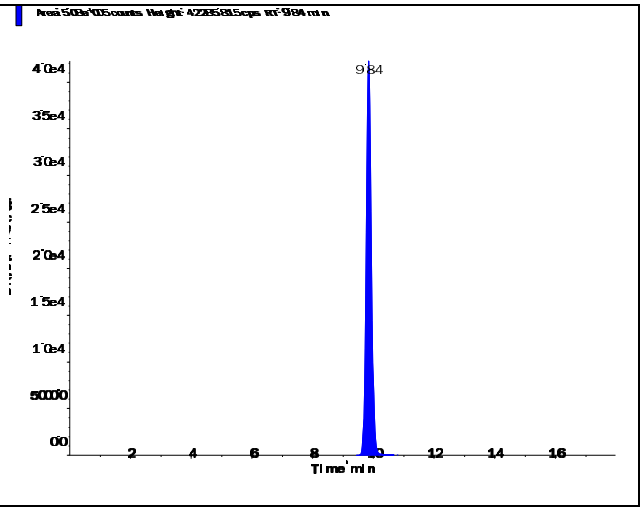

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.332
Sample Type:	(Quality Control)

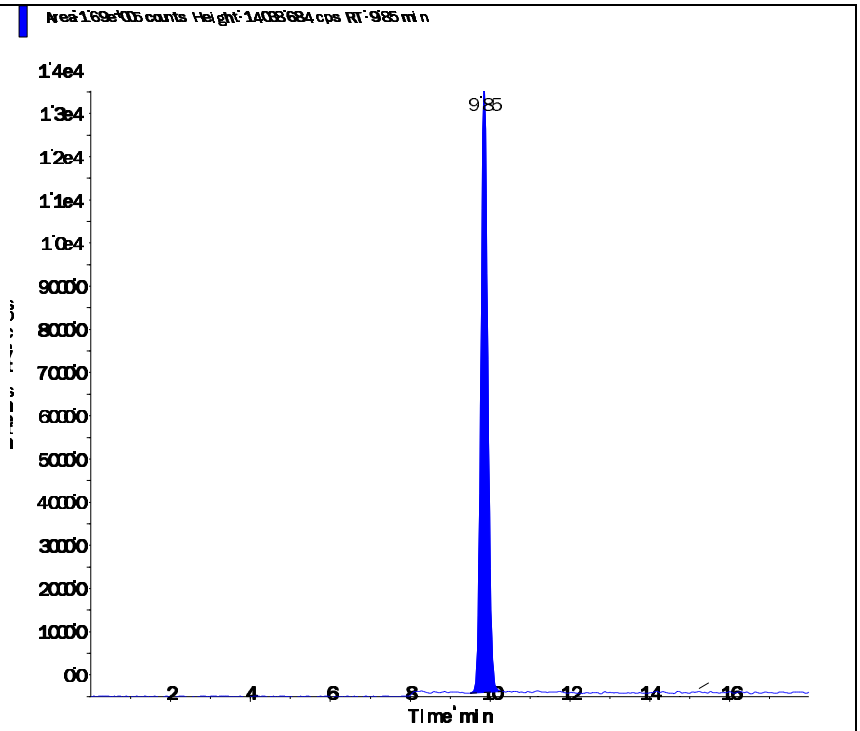

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

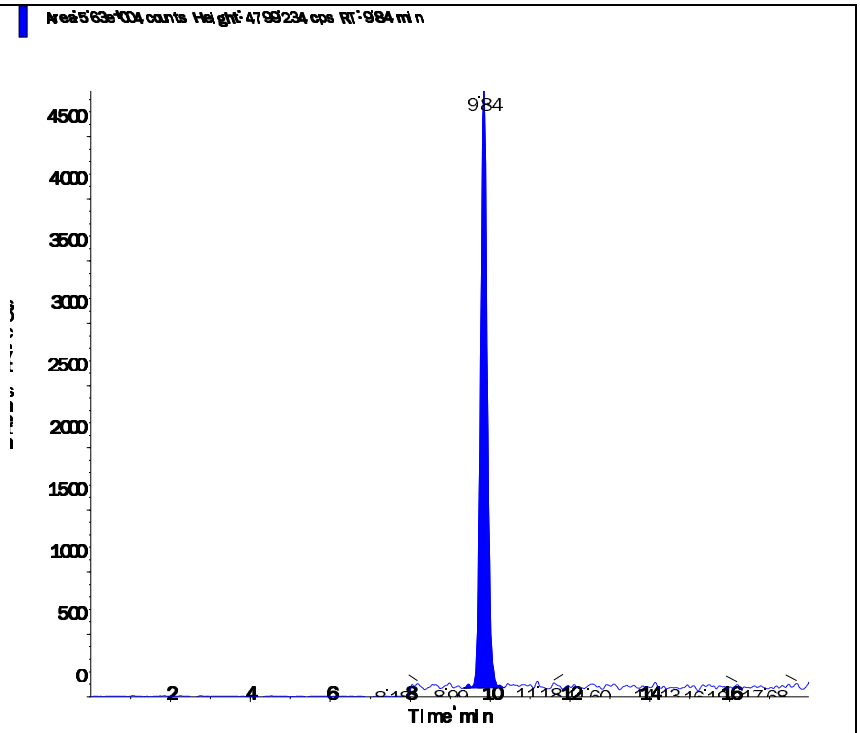

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Data File	LM34696.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 6:15:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567321-02 CCV (1.0ug/L)	**Injection Vial**	5.00
Data File	LM34696.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 6:15:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567321-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.050e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.720e+05	9.85	1.00	1.01
Perchlorate conf	5.710e+04	9.84	1.00	0.994

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

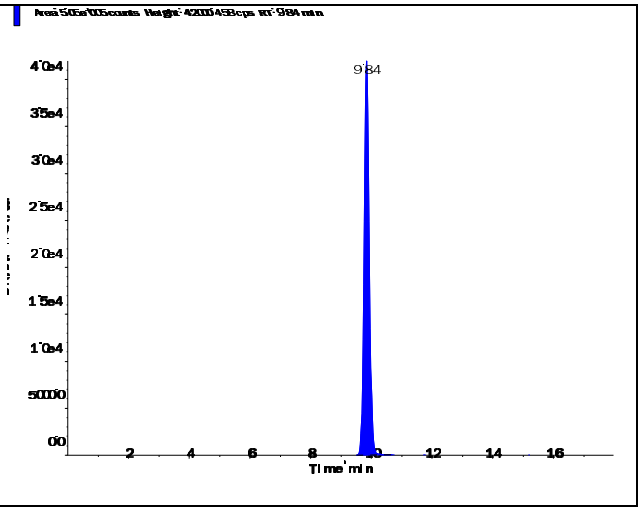

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.341
Sample Type:	(Quality Control)

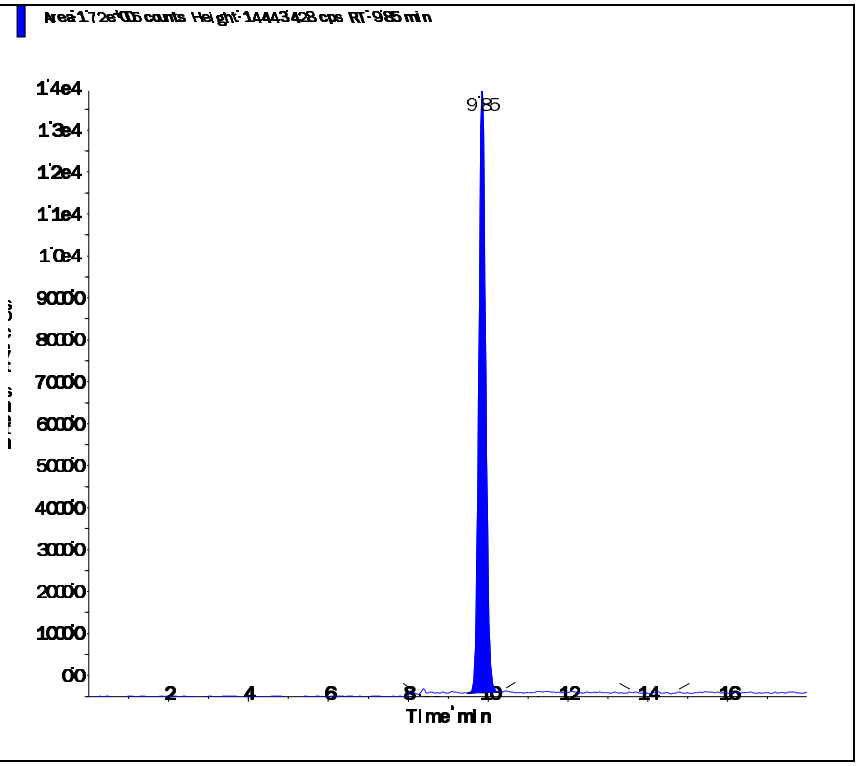

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.994 ng/ml
Area Ratio:	0.113
Sample Type:	(Quality Control)

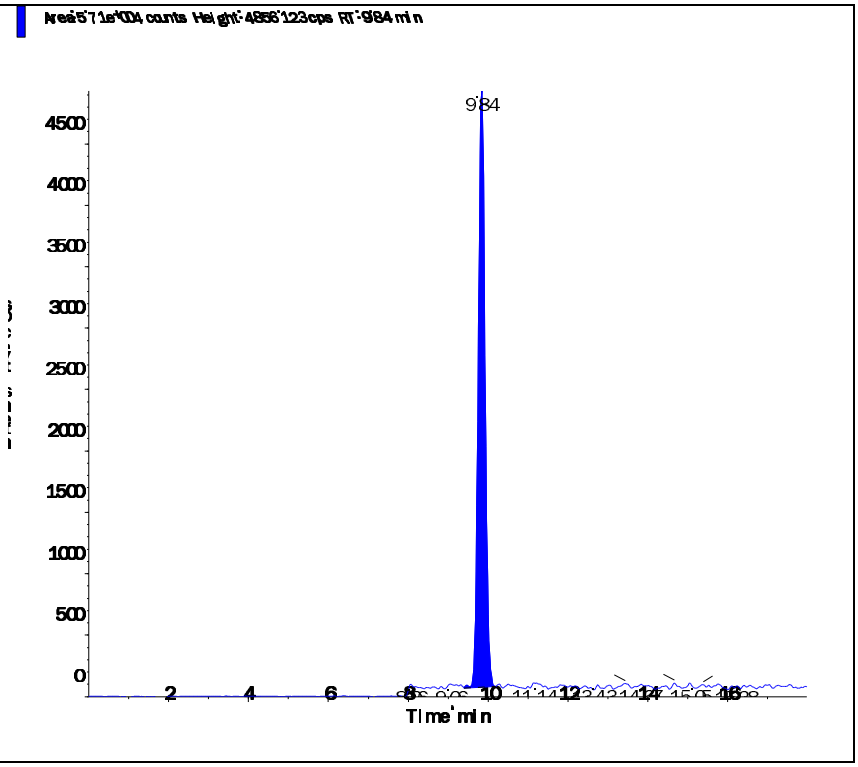

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Data File	LM34708.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 10:02:41 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567321-03 CCV (1.0ug/L)	**Injection Vial**	5.00
Data File	LM34708.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 10:02:41 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567321-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.340e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.800e+05	9.84	1.00	1.00
Perchlorate conf	5.970e+04	9.83	1.00	0.982

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

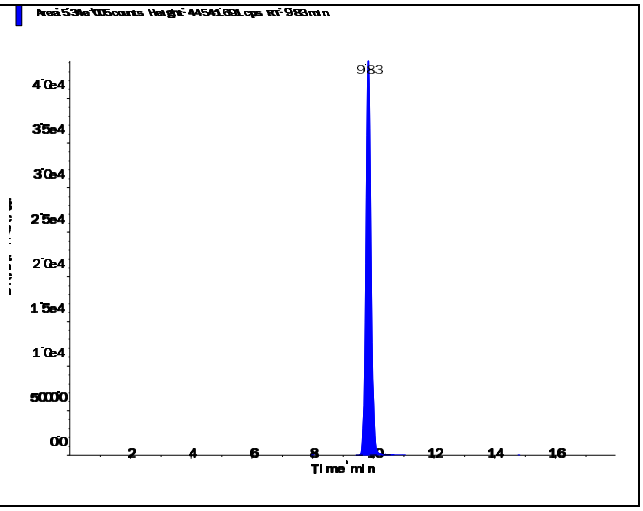

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.338
Sample Type:	(Quality Control)

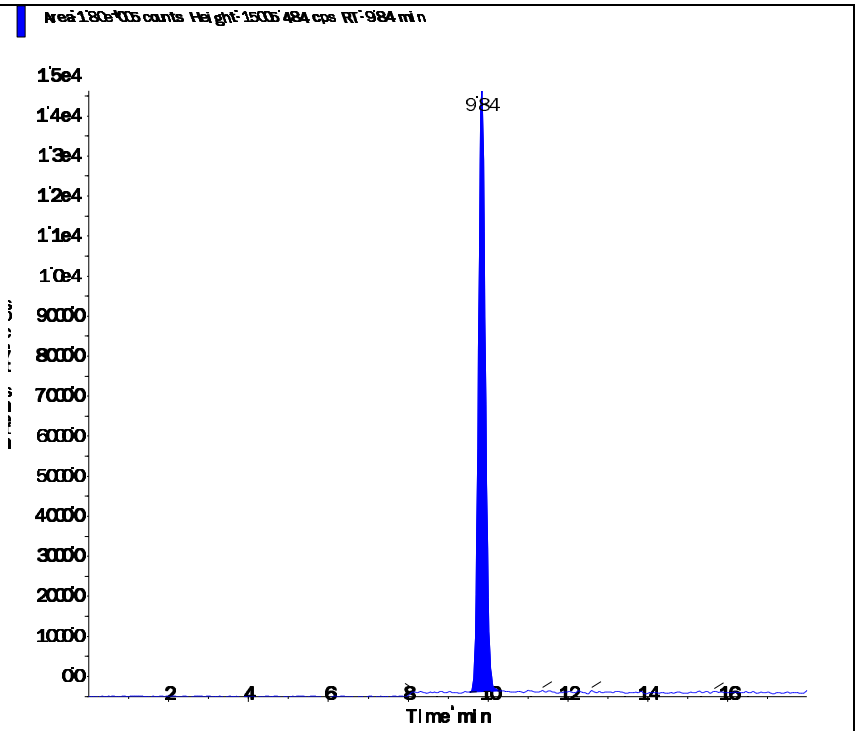

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.982 ng/ml
Area Ratio:	0.112
Sample Type:	(Quality Control)

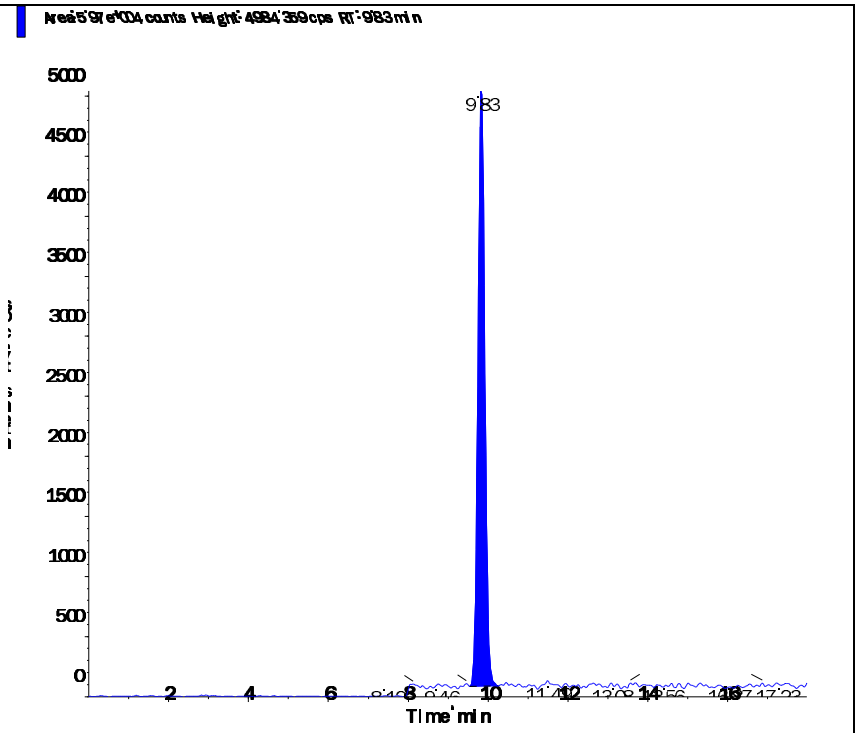

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Data File	LM34714.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 11:56:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567321-05 CCV (1.0ug/L)	**Injection Vial**	5.00
Data File	LM34714.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 11:56:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567321-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.630e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.910e+05	9.83	1.00	1.00
Perchlorate conf	6.210e+04	9.82	1.00	0.967

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

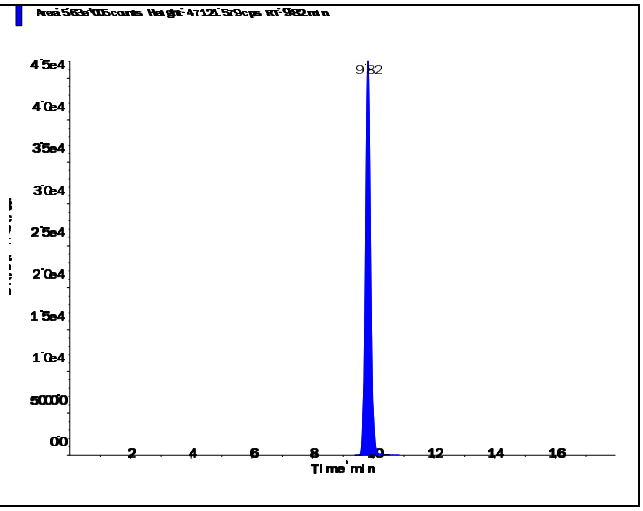

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.339
Sample Type:	(Quality Control)

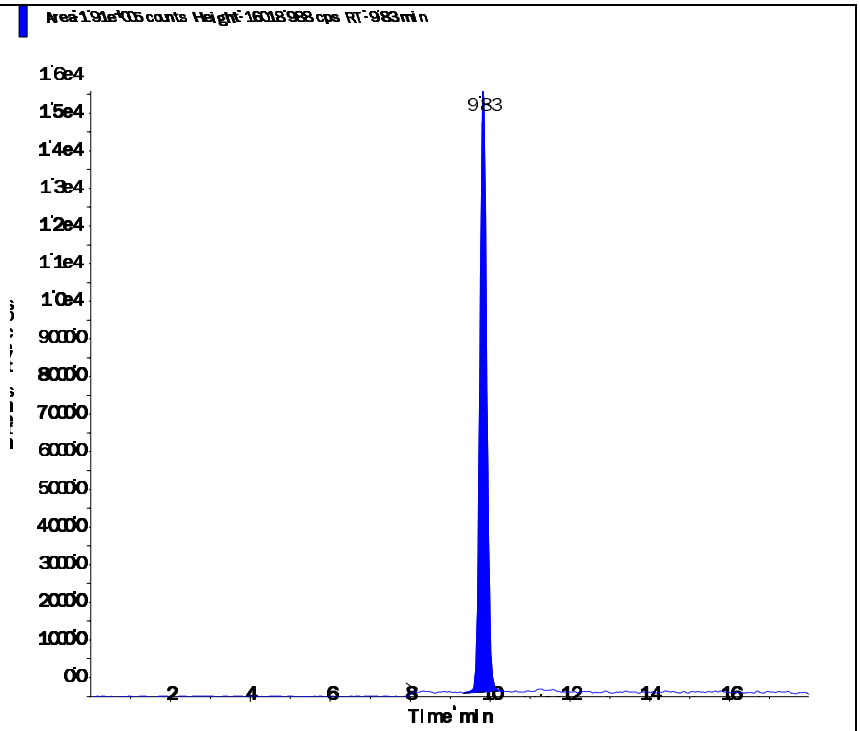

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	0.967 ng/ml
Area Ratio:	0.11
Sample Type:	(Quality Control)

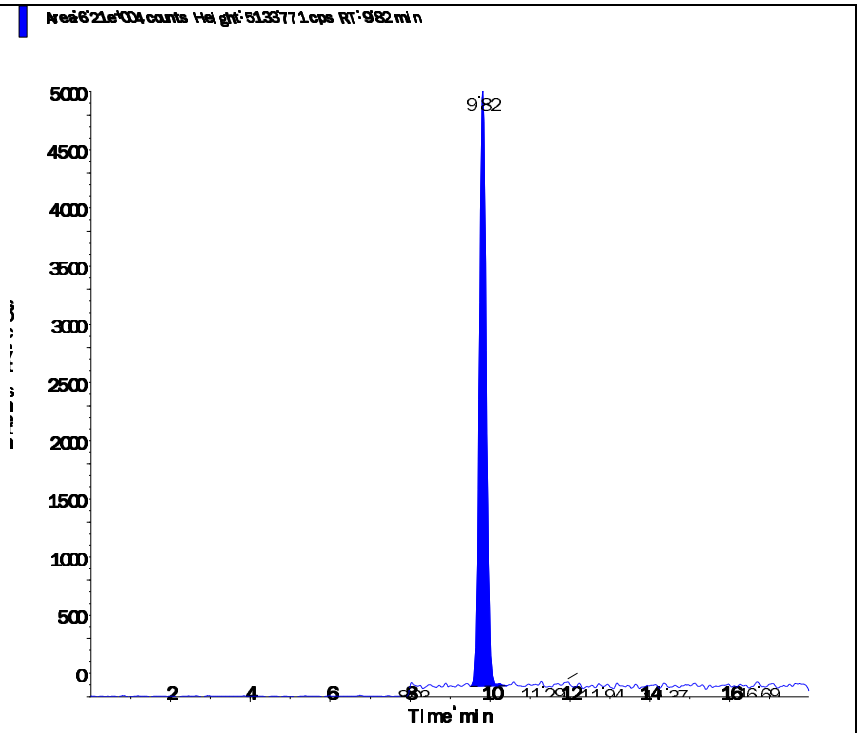

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Data File	LM34697.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 6:34:26 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567013-07 MRL (2.0ug/kg)	**Injection Vial**	3.00
Data File	LM34697.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 6:34:26 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567013-07	**Dilution Factor**	1.00
Sample Comment	7,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.170e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.670e+04	9.85	N/A	0.207
Perchlorate conf	1.130e+04	9.84	N/A	0.176

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

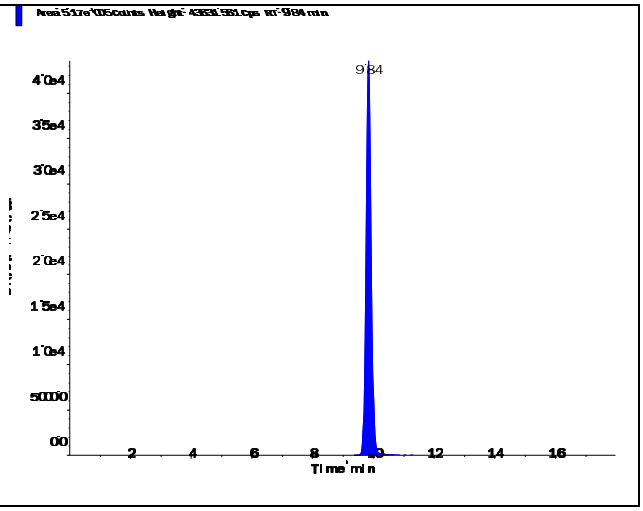

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 0.207 ng/ml Area Ratio: 0.071 Sample Type: (Unknown)	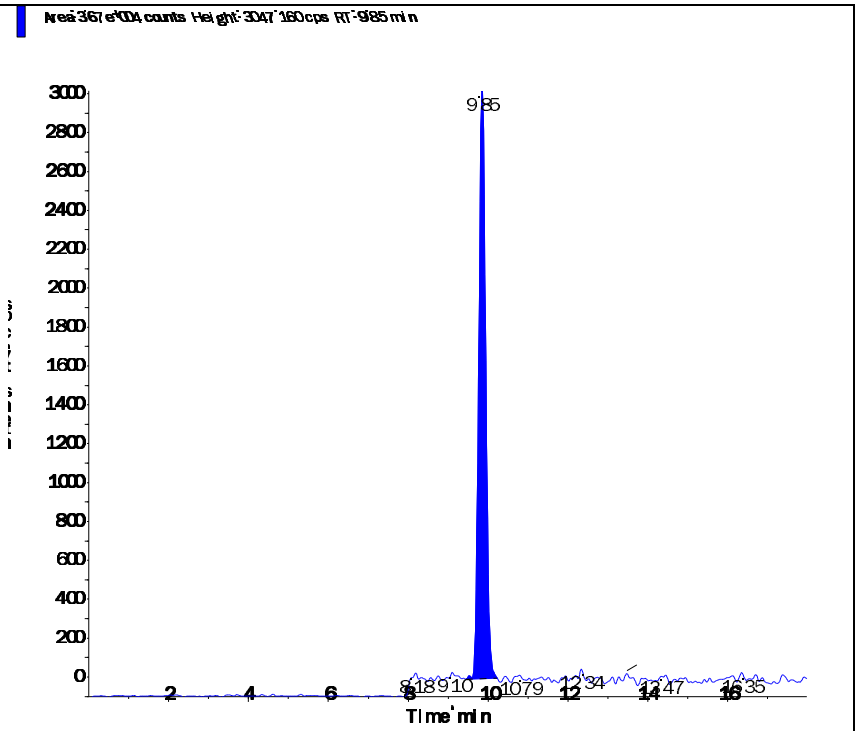
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 0.176 ng/ml Area Ratio: 0.022 Sample Type: (Unknown)	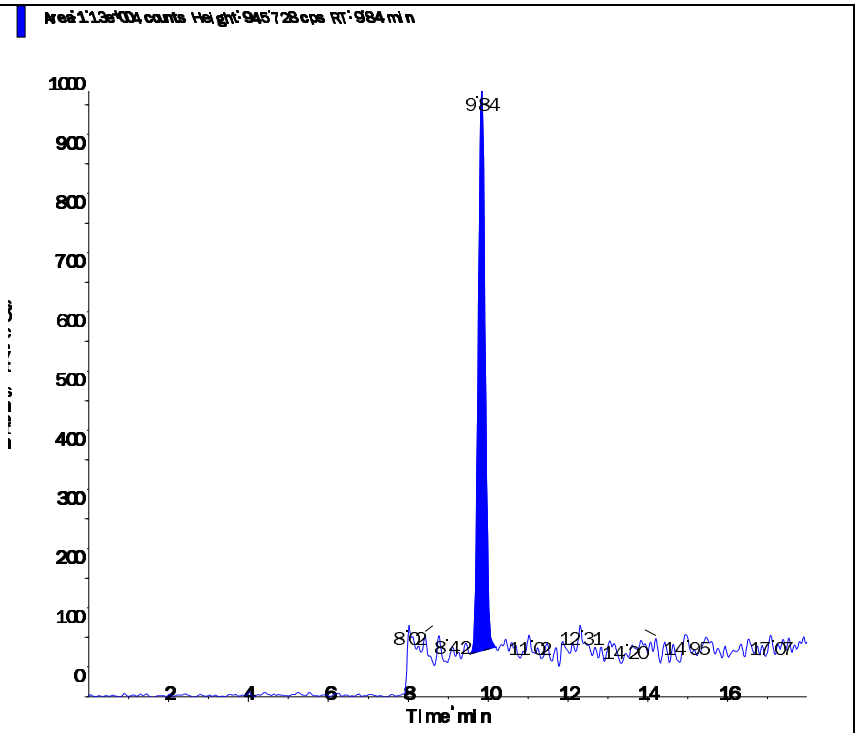

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Data File	LM34709.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 10:21:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567013-08 MRL (2.0ug/kg)	**Injection Vial**	3.00
Data File	LM34709.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 10:21:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567013-08	**Dilution Factor**	1.00
Sample Comment	7,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.940e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.510e+04	9.83	N/A	0.208
Perchlorate conf	1.140e+04	9.82	N/A	0.186

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

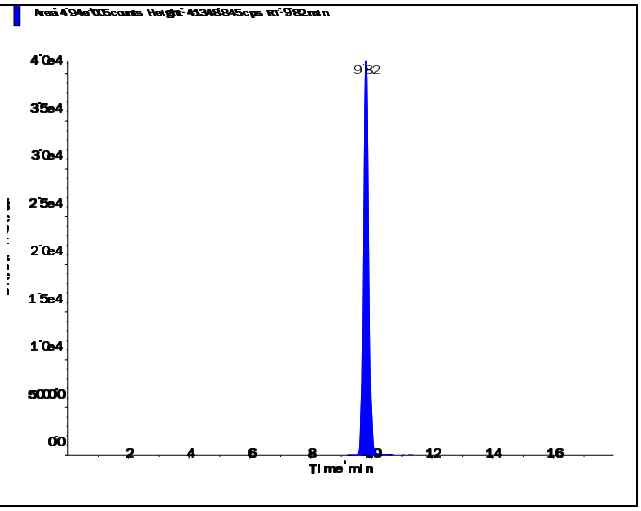

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.208 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

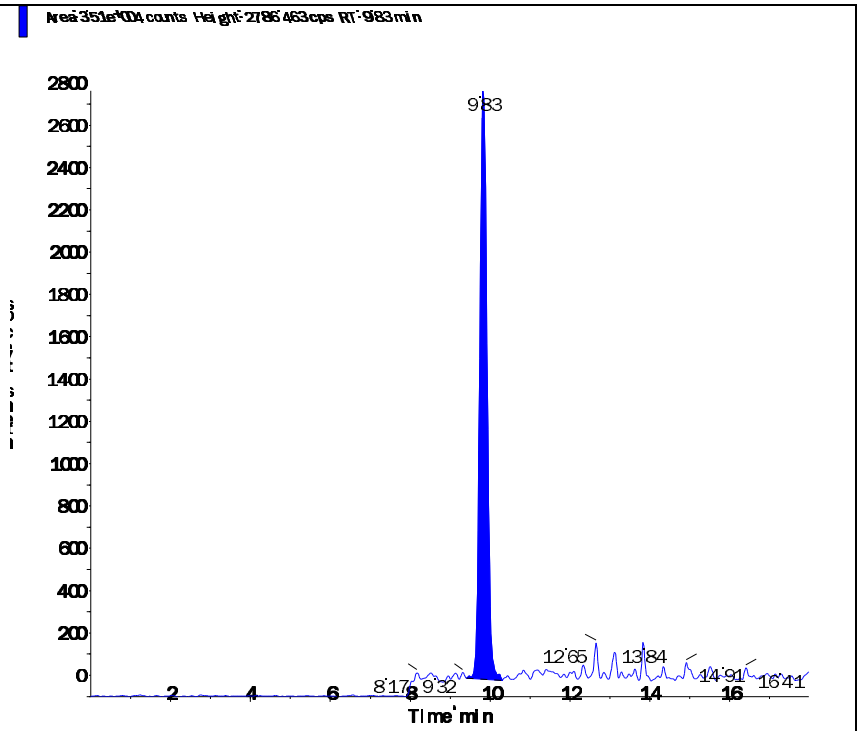

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	0.186 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

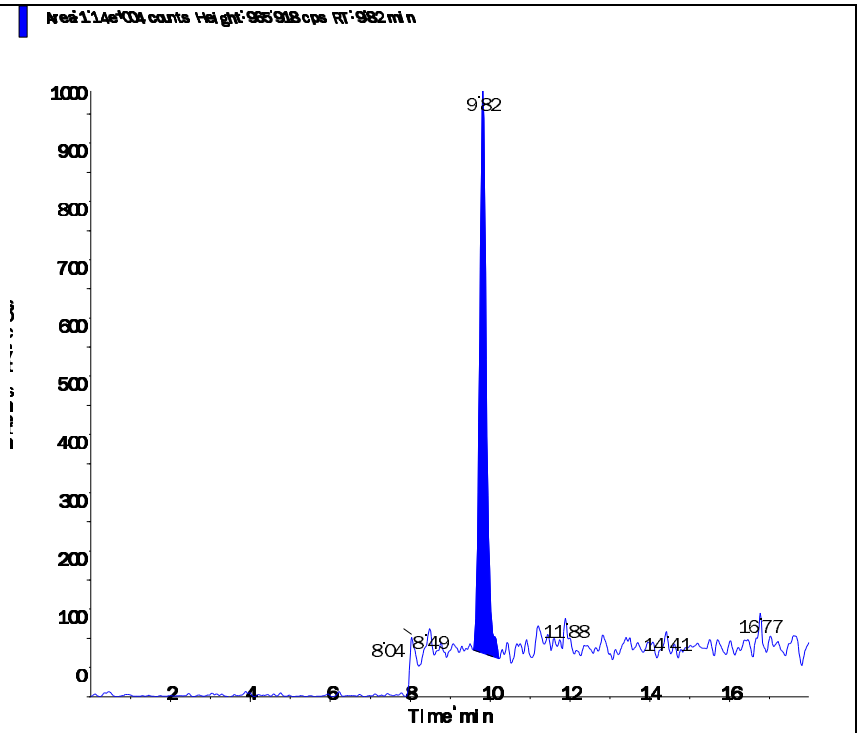

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Data File	LM34715.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/4/2016 12:15:14 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567013-09 MRL (2.0ug/kg)	**Injection Vial**	3.00
Data File	LM34715.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 12:15:14 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567013-09	**Dilution Factor**	1.00
Sample Comment	7,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.730e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.000e+04	9.82	N/A	0.204
Perchlorate conf	1.290e+04	9.82	N/A	0.18

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

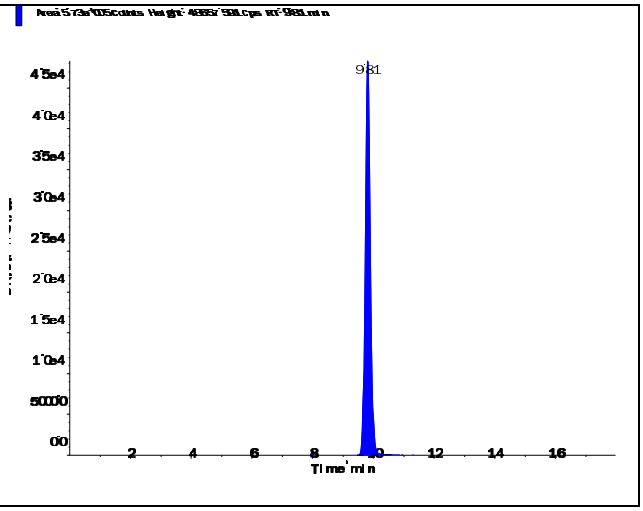

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	0.204 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

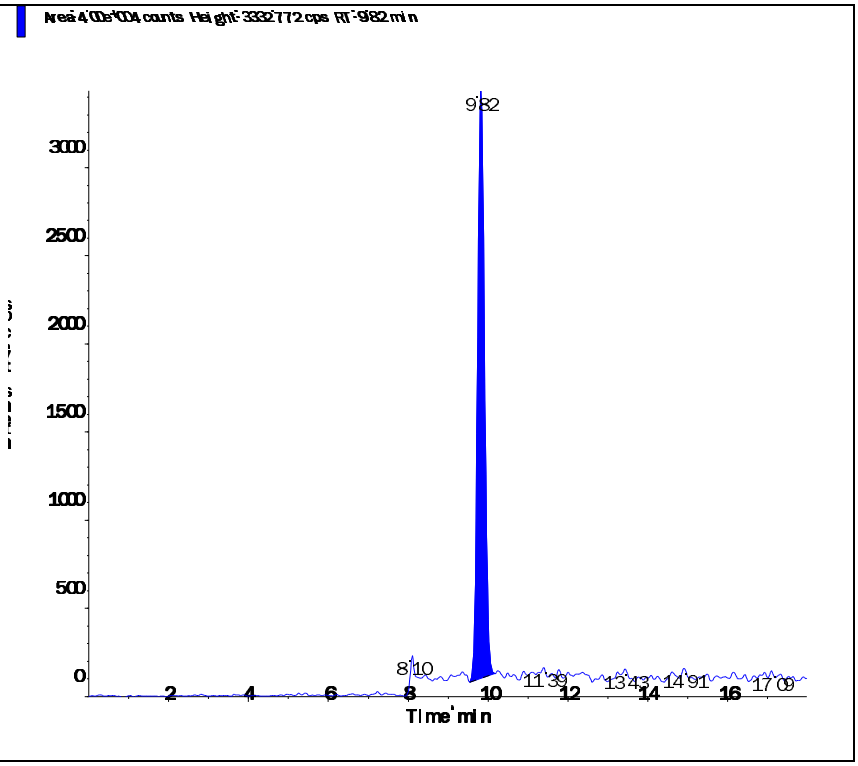

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	0.18 ng/ml
Area Ratio:	0.022
Sample Type:	(Unknown)

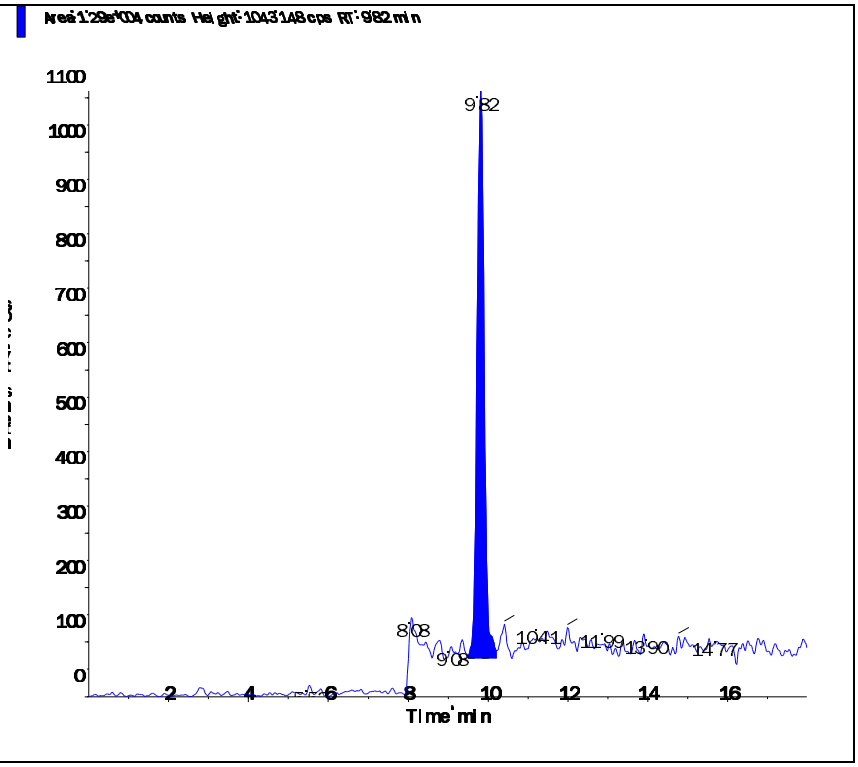

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Data File	LM34695.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:56:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567321-01 CCB	**Injection Vial**	1.00
Data File	LM34695.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:56:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567321-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.260e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

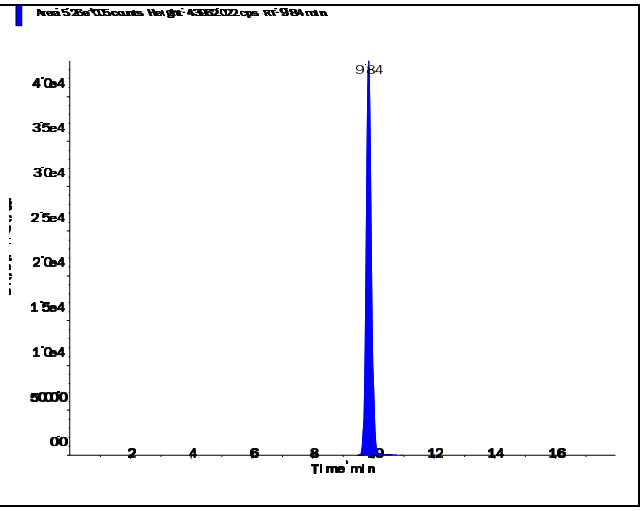

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

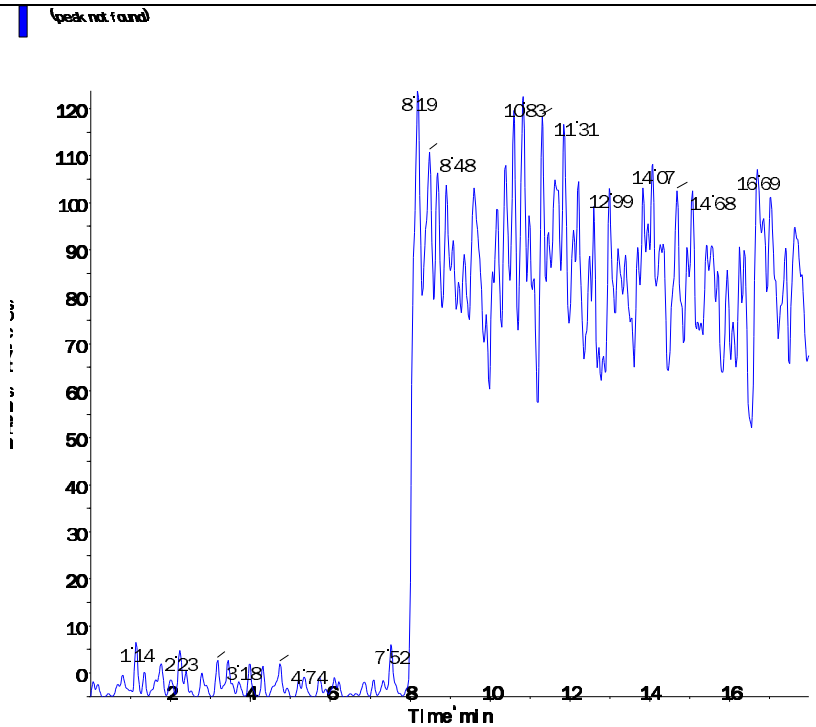

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

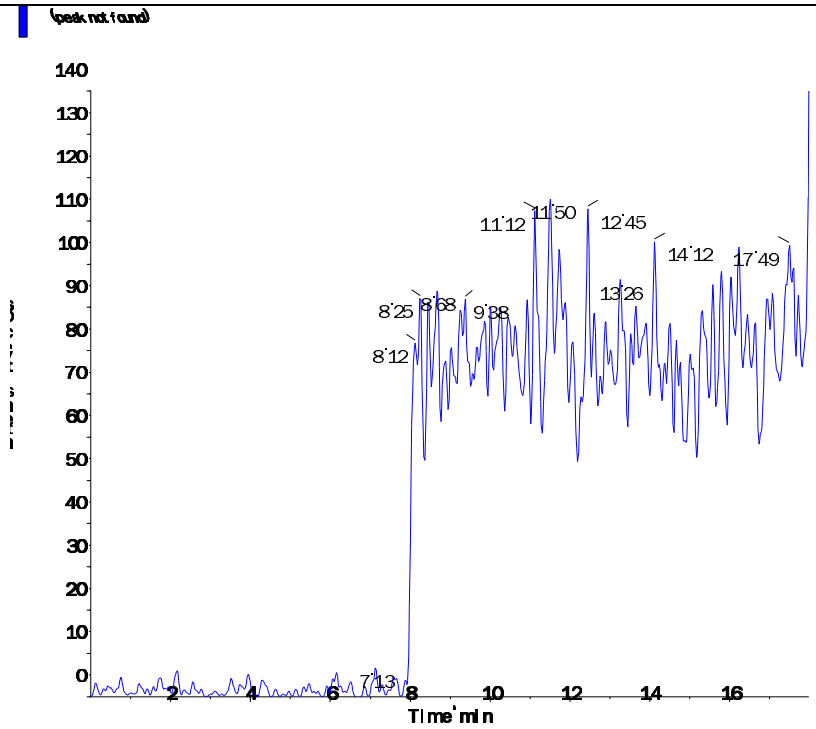

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Data File	LM34710.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 10:40:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567321-04 CCB	**Injection Vial**	1.00
Data File	LM34710.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 10:40:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567321-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.280e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

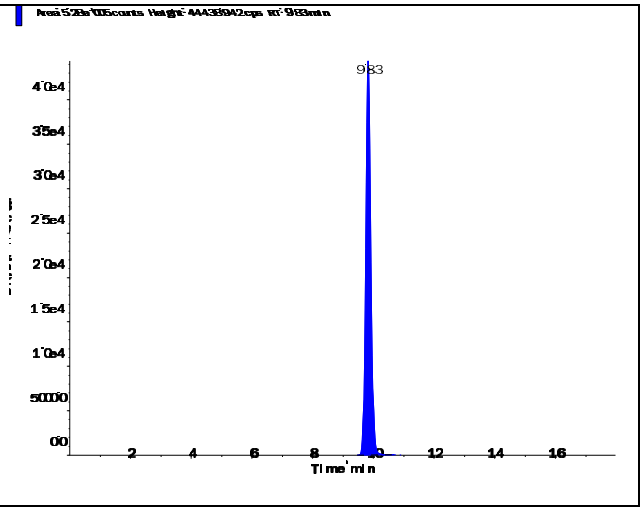

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Created with Analyst Reporter
Printed: 5/4/2016 1:29 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

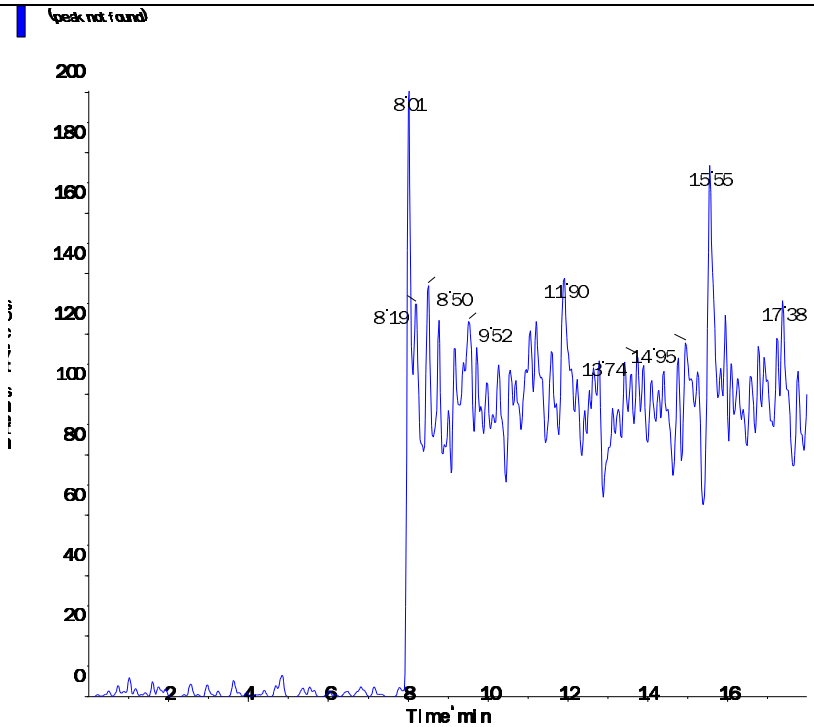

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

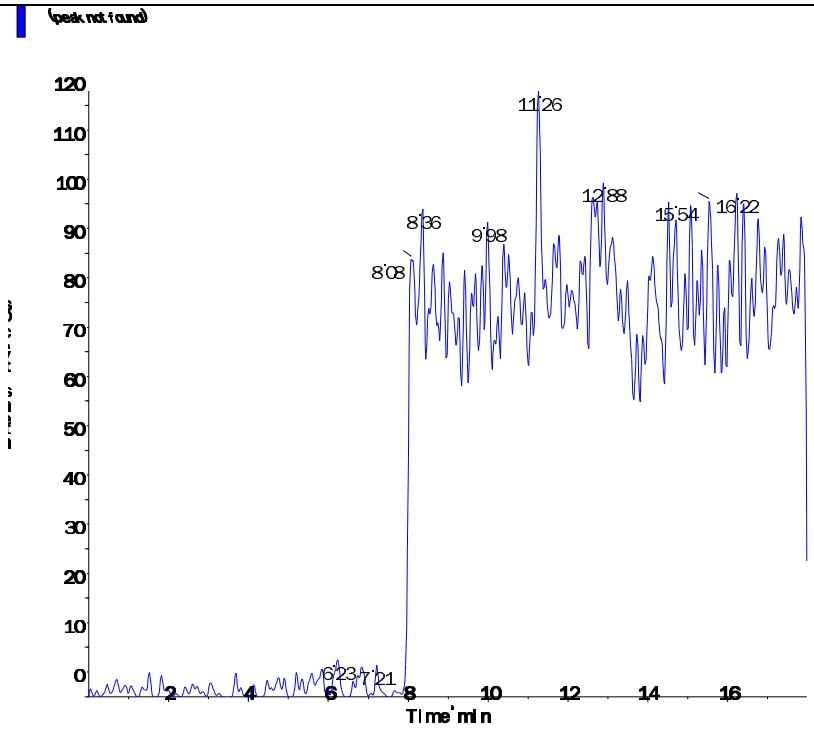

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/4/2016 1:31 PM

Data File	LM34716.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/4/2016 12:34:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567321-06 CCB	**Injection Vial**	1.00
Data File	LM34716.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 12:34:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567321-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.820e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

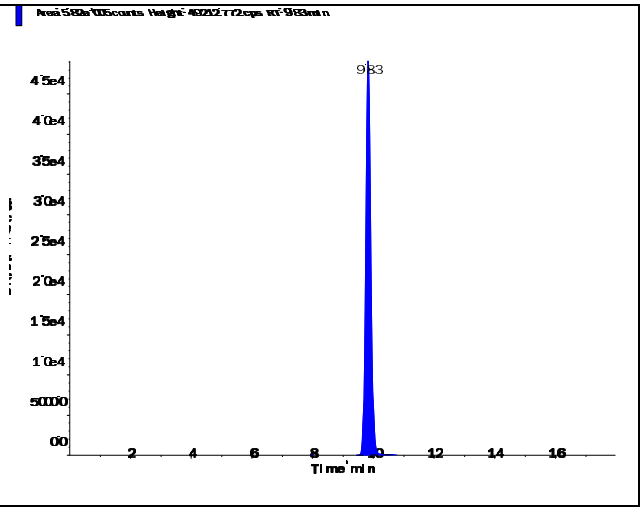

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/4/2016 1:31 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

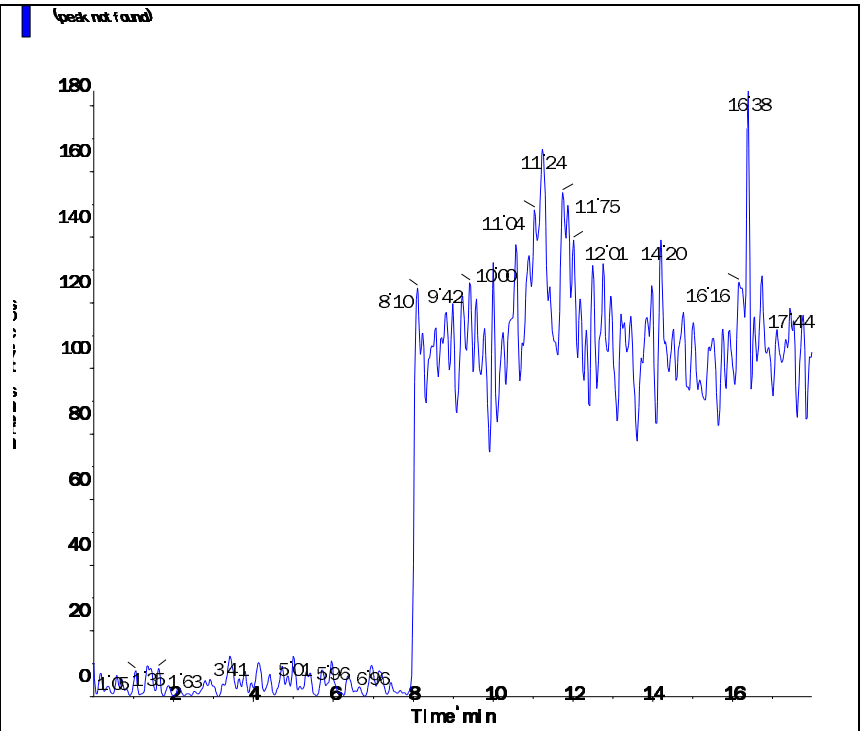

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

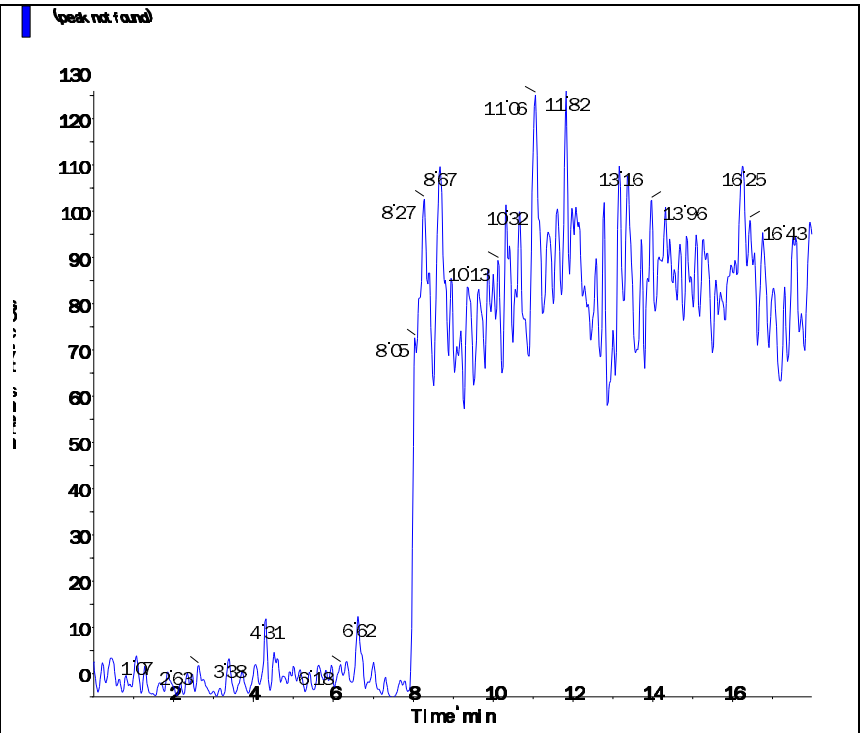

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/4/2016 1:25 PM

Data File	LM34698.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 6:53:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567013-01 MCT (2.0ug/kg)	**Injection Vial**	10.00
Data File	LM34698.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 6:53:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567013-01	**Dilution Factor**	1.00
Sample Comment	7,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.870e+05	9.11	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.260e+04	9.11	N/A	0.196
Perchlorate conf	1.060e+04	9.10	N/A	0.175

O18LP (Internal Standard)

RT (Exp. RT): 9.11(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

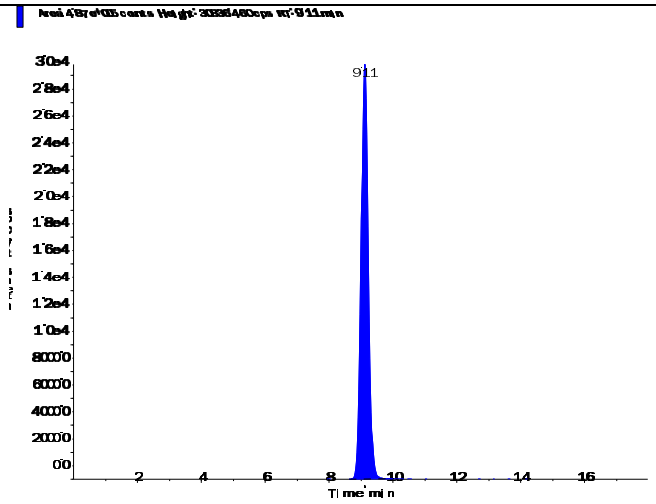

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/4/2016 1:25 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.11 (9.84) min
Calculated conc:	0.196 ng/ml
Area Ratio:	0.067
Sample Type:	(Unknown)

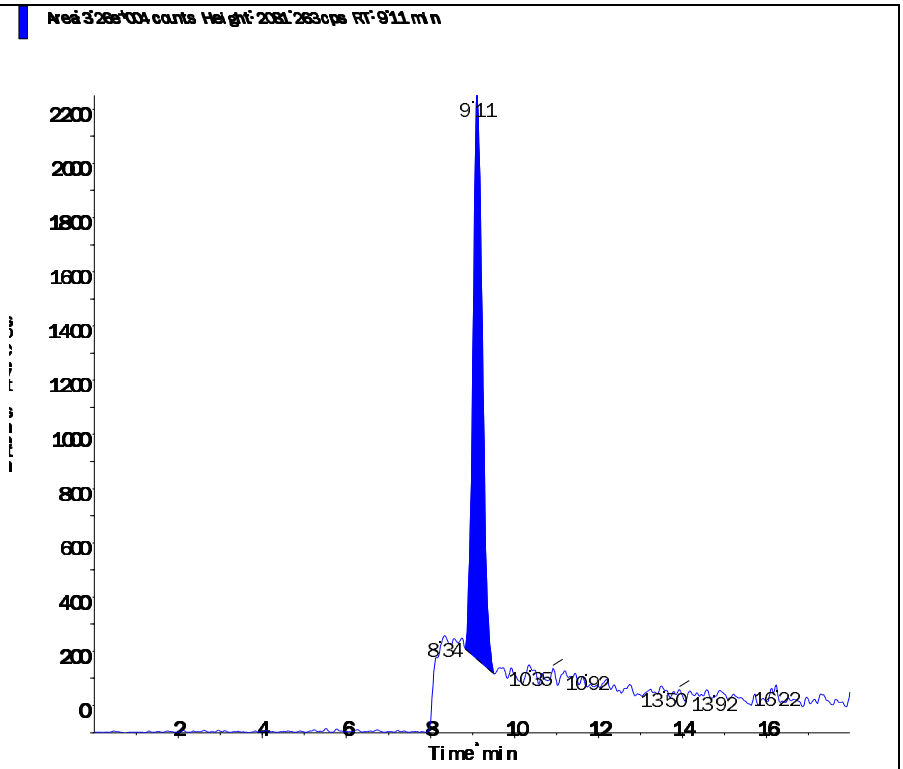

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.10 (9.84) min
Calculated conc:	0.175 ng/ml
Area Ratio:	0.022
Sample Type:	(Unknown)

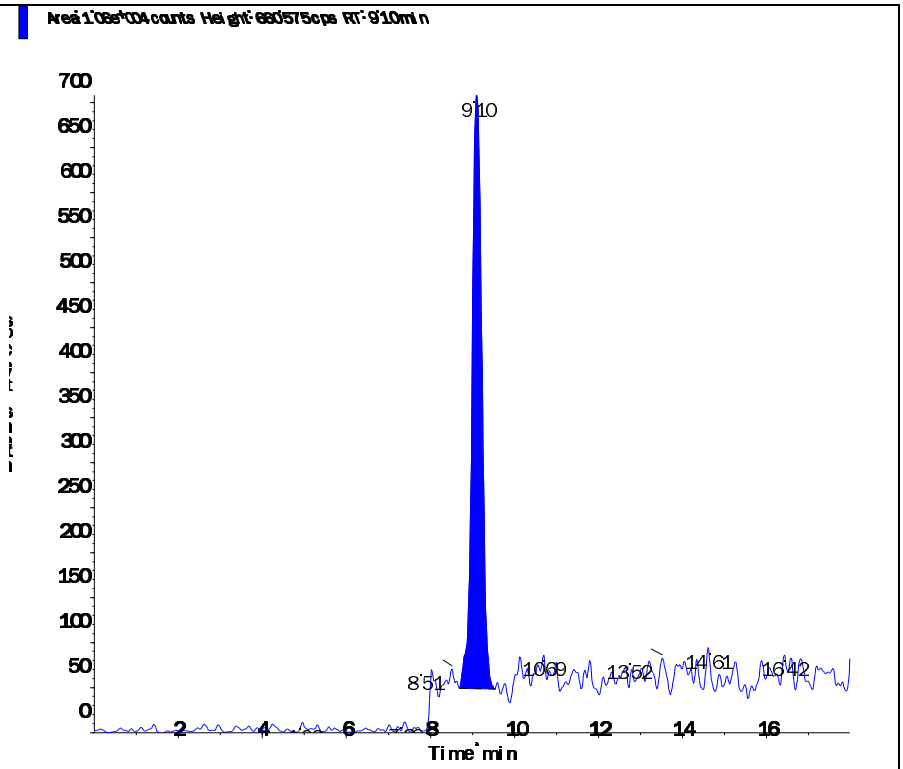

2.2.1.5 Raw QC Data

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Created with Analyst Reporter
Printed: 5/4/2016 1:25 PM

Data File	LM34699.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 7:12:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567013-02 BLANK	**Injection Vial**	11.00
Data File	LM34699.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 7:12:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567013-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.090e+05	9.86	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.86(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

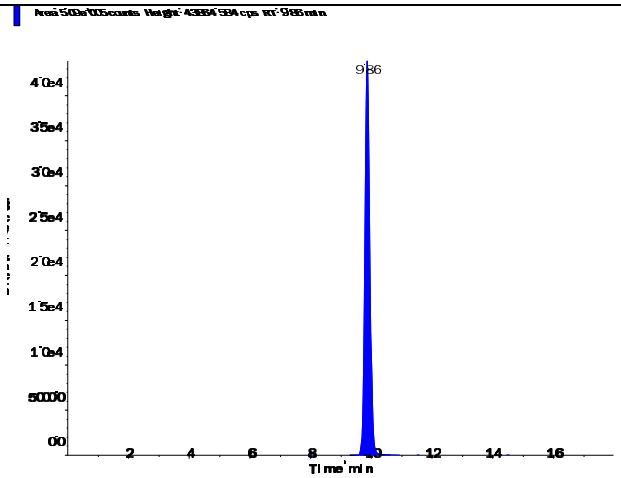

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/4/2016 1:25 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

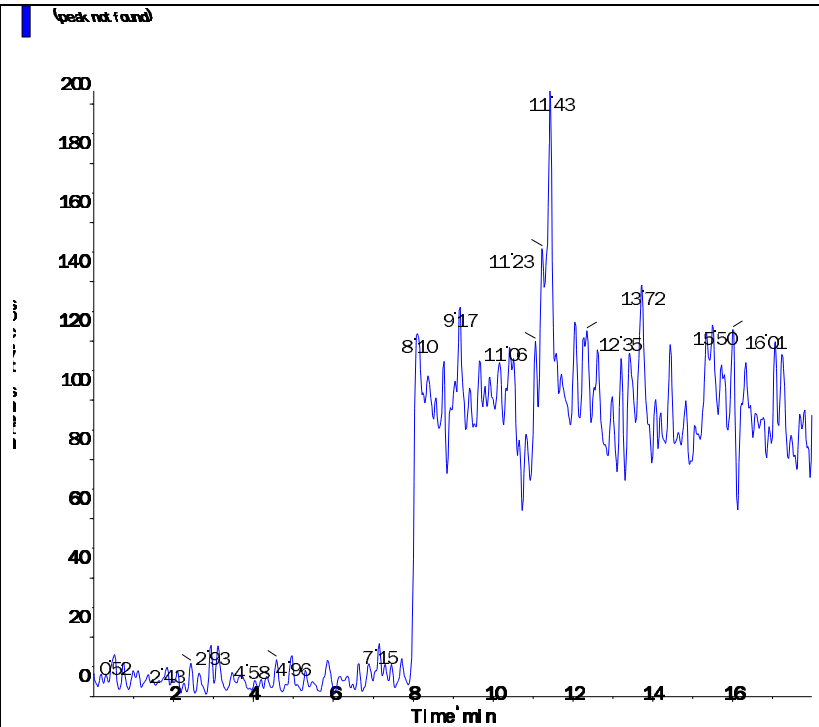

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

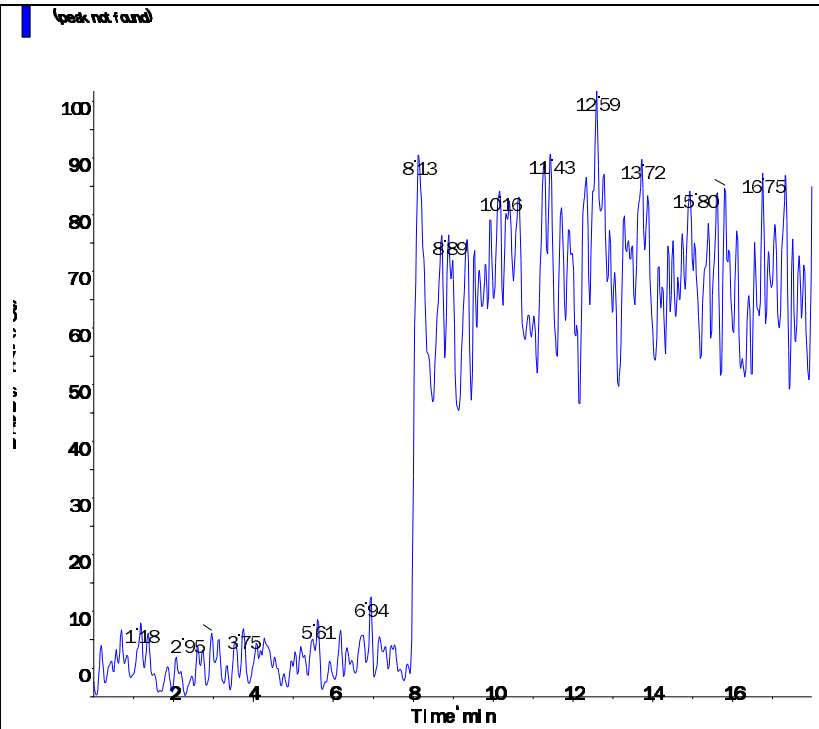

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/4/2016 1:26 PM

Data File	LM34700.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 7:31:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567013-03 LCS (2.0ug/kg)	**Injection Vial**	12.00
Data File	LM34700.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 7:31:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567013-03	**Dilution Factor**	1.00
Sample Comment	7,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.86	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.500e+04	9.88	N/A	0.204
Perchlorate conf	1.150e+04	9.87	N/A	0.186

O18LP (Internal Standard)

RT (Exp. RT): 9.86(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

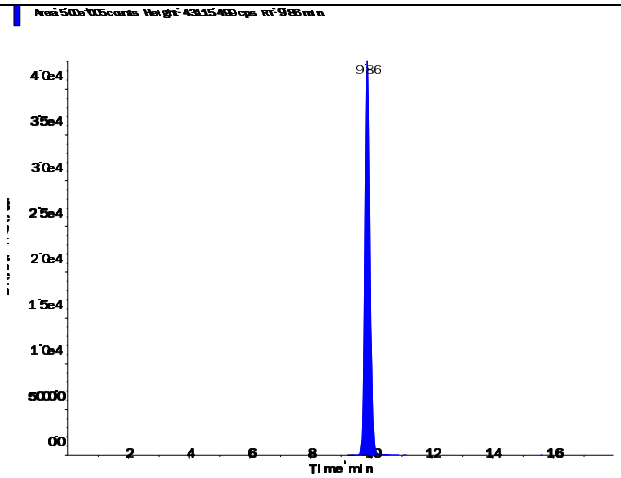

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.88 (9.84) min Calculated conc: 0.204 ng/ml Area Ratio: 0.07 Sample Type: (Unknown)	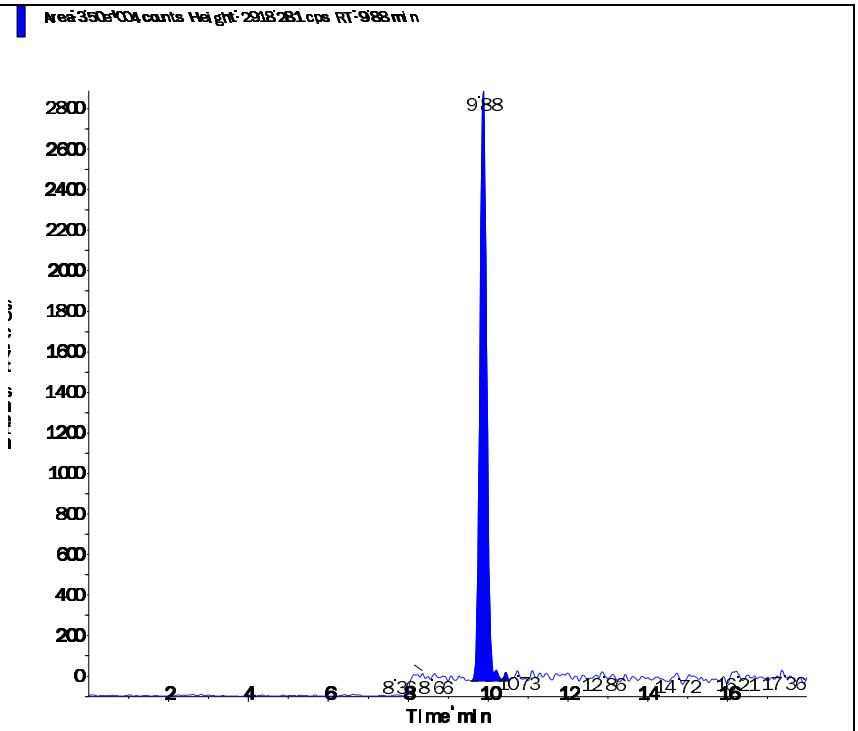
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.87 (9.84) min Calculated conc: 0.186 ng/ml Area Ratio: 0.023 Sample Type: (Unknown)	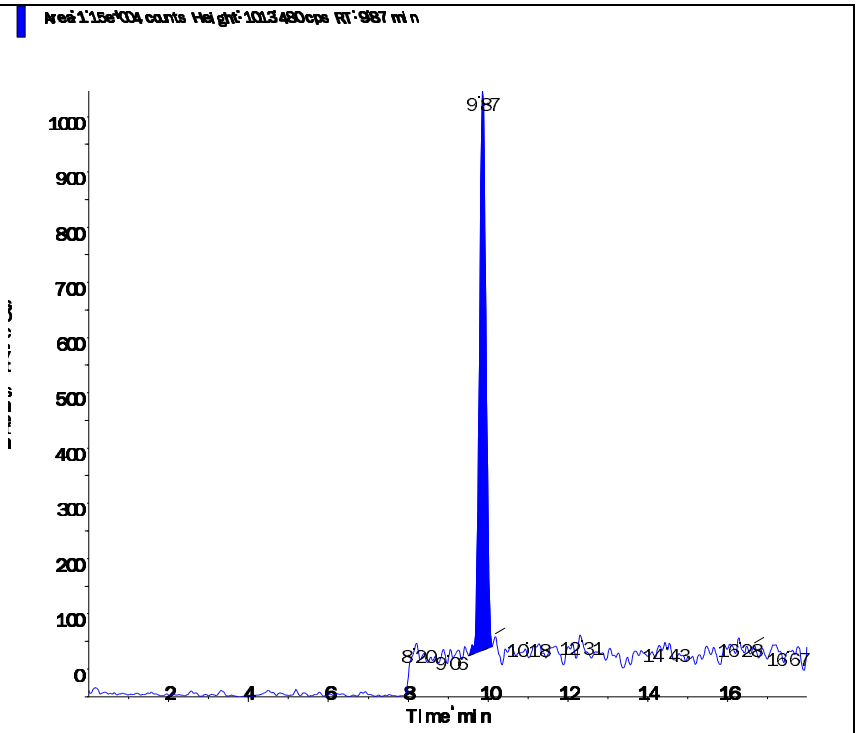

2.3 General Chemistry Data

2.3.1 Percent Solids Data

2.3.1.1 Raw Data

Example Percent Solids Calculations

1.0 Calculating the percent solids of a sample.

$$\%Solids = \frac{WT3 - WT1}{WT2 - WT1} \times F$$

Where:	
WT1 = Weight, in grams, of the empty container	1.30 g
WT2 = Weight, in grams, of the container and wet sample	21.274 g
WT3 = Weight, in grams, of the container and dried sample	5.21 g
F = Factor to get units as percent weight	100
%Solids = Percent solids present in sample.	19.58%

2.0 Calculating the percent moisture of a sample.

% Moisture = 100 - % Solids from 1.0 calculation

Microbac Laboratories Inc.

PERCENT SOLIDS

Workgroup (AAB#): WG566651 Analyst: AC ADT(on): 04/27/2016 15:04
Method: D2216-90 Instrument: BAL021 ADT(off): 04/28/2016 08:17
SOP: K0003 Rev: 14

SAMPLE NUMBER	EMPTY PAN WT 1	WET WT 2	DRY WT 3A	DRY WT 3B	DRY WT 3C	PERCENT SOLID	PERCENT MOISTURE
L16041344-01	1.295	23.775	20.276			84.44	
L16041344-02	1.292	22.086	18.313			81.86	
L16041344-03	1.29	24.318	19.182			77.70	
L16041344-04	1.292	22.954	19.491			84.01	
L16041344-05	1.295	20.82	17.918			85.14	
L16041344-06	1.294	21.331	17.786			82.31	
L16041344-07	1.294	22.626	17.763			77.20	
L16041344-08	1.284	23.732	20.152			84.05	
L16041344-09	1.297	21.209	16.991			78.82	
L16041344-10	1.297	24.632	19.7			78.86	
L16041344-11	1.285	25.923	21.207			80.86	
L16041344-12	1.293	26.18	20.686			77.92	
L16041344-13	1.287	23.913	17.539			71.83	
L16041344-14	1.293	25.22	19.47			75.97	
L16041363-01	1.298	24.299	20.595			83.90	
L16041363-02	1.292	25.694	20.781			79.87	
L16041363-03	1.298	24.555	19.905			80.01	
L16041363-04	1.295	25.813	20.756			79.37	
L16041363-05	1.282	23.061	18.872			80.77	
L16041363-06	1.295	23.191	18.612			79.09	
L16041363-07	1.299	24.331	18.783			75.91	
L16041363-08	1.299	24.331	18.783			75.91	
L16041363-09	1.299	24.331	18.783			75.91	
L16041363-10	1.287	22.26	18.173			80.51	
WG566651-01	1.293	26.18	20.686			77.92	22.08
WG566651-02	1.295	23.191	18.612			79.09	20.91
WG566651-03	1.29	33.542	26.24			77.36	22.64
WG566651-04	1.289	23.165	18.672			79.46	20.54

Analyst: [illegible]

PERCENT_SOLIDS - Modified 04/24/2008
PDF ID: 4738193
Report generated: 04/28/2016 08:22

Microbac

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
May 10, 2016

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001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
May 10, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
May 10, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Stephanie Mossburg	Project Manager: Debra Richmon	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): Kuylia Pallanes	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Kuylia Pallanes	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205	pH:	Program:	
Turn Around Time: STANDARD			
Project Name/Location: Longhorn			
Project Number: 60274185			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOCs 8260	Perchlorate 6850	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
18/24 Investigation	18CPTMW19SW(5-5.5)210416			4/21/16	1700		X	S	2	X	X					
	18CPTMW19SW(10-10.5)210416			4/21/16	1730		X	S	2	X	X					
	18CPTMW19SW(30-30.5)220416			4/22/16	0900		X	S	2	X	X					
	18CPTMW19SW(30-30.5)220416 DUP			4/22/16	0900		X	S	2	X	X					
	18CPTMW19SW(40-40.5)220416			4/22/16	0905		X	S	2	X	X					
	18CPTMW19SW(20-20.5)220416			4/21/16	1800		X	S	2	X	X					
	18CPTMW19SW(60-61)220416			4/22/16	1115		X	S	2	X	X					
	18CPTMW19SW(60-61)220416 MS			4/22/16	1115		X	S	2	X	X					
	18CPTMW19SW(60-61)220416 MSD			4/22/16	1115		X	S	2	X	X					
	18CPTMW19SW(50-50.5)220416			4/22	1111		X	S	2	X	X					

ERPIMS REQUIRED FIELDS

Comments:

Relinquished by: (Signature) Kuylia Pallanes	Date 4/25/16	Time 1300	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time			Time	Remarks:

Microbac OVD
Received: 04/26/2016 10:51
By: BRENDA GREGORY
221000085036
Brenda Gregory

*Homogenize all composite samples prior to analysis

Manager, Pink QA/QC Manager

00699109

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041363
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 06-MAY-2016

Samplenum	Container ID	Products
L16041363-01	734737	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-APR-2016 14:57	CLS		
2	ANALYZ	V1	ORG4	26-APR-2016 16:44	AWE	CLS	
3	STORE	ORG1	A1	09-MAY-2016 07:34	CLS	AWE	

Samplenum	Container ID	Products
L16041363-01	734738	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-APR-2016 14:57	CLS		
2	PREP	W1	DIG	27-APR-2016 15:00	AC	BRG	
3	STORE	DIG	W1	27-APR-2016 15:32	BRG	AC	
4	ANALYZ	W1	SEM	29-APR-2016 11:10	JWR	CLS	
5	STORE	SEM	A1	02-MAY-2016 16:37	BRG	JWR	
6	ANALYZ*	DIG	SEMI	04-MAY-2016 18:52	JWR	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041363-02	734739	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-APR-2016 14:57	CLS		
2	ANALYZ	V1	ORG4	26-APR-2016 16:44	AWE	CLS	

Samplenum	Container ID	Products
L16041363-02	734740	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-APR-2016 14:57	CLS		
2	PREP	W1	DIG	27-APR-2016 15:00	AC	BRG	
3	STORE	DIG	W1	27-APR-2016 15:32	BRG	AC	
4	ANALYZ	W1	SEM	29-APR-2016 11:10	JWR	CLS	
5	STORE	SEM	A1	02-MAY-2016 16:37	BRG	JWR	
6	ANALYZ*	DIG	SEMI	04-MAY-2016 18:52	JWR	AC	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041363
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 06-MAY-2016

Samplenum	Container ID	Products
L16041363-03	734741	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-APR-2016 14:57	CLS		
2	ANALYZ	V1	ORG4	26-APR-2016 16:44	AWE	CLS	
3	STORE	ORG1	A1	09-MAY-2016 07:35	CLS	AWE	

Samplenum	Container ID	Products
L16041363-03	734742	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-APR-2016 14:57	CLS		
2	PREP	W1	DIG	27-APR-2016 15:00	AC	BRG	
3	STORE	DIG	W1	27-APR-2016 15:32	BRG	AC	
4	ANALYZ	W1	SEM	29-APR-2016 11:10	JWR	CLS	
5	STORE	SEM	A1	02-MAY-2016 16:37	BRG	JWR	
6	ANALYZ*	DIG	SEMI	04-MAY-2016 18:52	JWR	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041363-04	734743	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-APR-2016 14:57	CLS		
2	ANALYZ	V1	ORG4	26-APR-2016 16:44	AWE	CLS	
3	STORE	ORG1	A1	09-MAY-2016 07:34	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041363
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 06-MAY-2016

Samplenum	Container ID	Products
L16041363-04	734744	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-APR-2016 14:57	CLS		
2	PREP	W1	DIG	27-APR-2016 15:00	AC	BRG	
3	STORE	DIG	W1	27-APR-2016 15:32	BRG	AC	
4	ANALYZ	W1	SEM	29-APR-2016 11:10	JWR	CLS	
5	STORE	SEM	A1	02-MAY-2016 16:37	BRG	JWR	
6	ANALYZ*	DIG	SEMI	04-MAY-2016 18:52	JWR	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041363-05	734745	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-APR-2016 14:57	CLS		
2	ANALYZ	V1	ORG4	26-APR-2016 16:44	AWE	CLS	
3	STORE	ORG1	A1	09-MAY-2016 07:35	CLS	AWE	

Samplenum	Container ID	Products
L16041363-05	734746	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-APR-2016 14:57	CLS		
2	PREP	W1	DIG	27-APR-2016 15:00	AC	BRG	
3	STORE	DIG	W1	27-APR-2016 15:32	BRG	AC	
4	ANALYZ	W1	SEM	29-APR-2016 11:10	JWR	CLS	
5	STORE	SEM	A1	02-MAY-2016 16:37	BRG	JWR	
6	ANALYZ*	DIG	SEMI	04-MAY-2016 18:52	JWR	AC	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041363
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 06-MAY-2016

Samplenum	Container ID	Products
L16041363-06	734747	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-APR-2016 14:57	CLS		
2	ANALYZ	V1	ORG4	26-APR-2016 16:44	AWE	CLS	
3	STORE	ORG1	A1	09-MAY-2016 07:35	CLS	AWE	

Samplenum	Container ID	Products
L16041363-06	734748	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-APR-2016 14:57	CLS		
2	PREP	W1	DIG	27-APR-2016 15:00	AC	BRG	
3	STORE	DIG	W1	27-APR-2016 15:32	BRG	AC	
4	ANALYZ	W1	SEM	29-APR-2016 11:10	JWR	CLS	
5	STORE	SEM	A1	02-MAY-2016 16:38	BRG	JWR	
6	ANALYZ*	DIG	SEMI	04-MAY-2016 18:52	JWR	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041363-07	734749	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-APR-2016 14:57	CLS		
2	ANALYZ	V1	ORG4	26-APR-2016 16:44	AWE	CLS	
3	STORE	ORG1	A1	09-MAY-2016 07:35	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041363
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 06-MAY-2016

Samplenum	Container ID	Products
L16041363-07	734750	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-APR-2016 14:57	CLS		
2	PREP	W1	DIG	27-APR-2016 15:00	AC	BRG	
3	STORE	DIG	W1	27-APR-2016 15:32	BRG	AC	
4	ANALYZ	W1	SEM	29-APR-2016 11:10	JWR	CLS	
5	STORE	SEM	A1	02-MAY-2016 16:38	BRG	JWR	
6	ANALYZ*	DIG	SEMI	04-MAY-2016 18:52	JWR	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041363-08	734751	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-APR-2016 14:57	CLS		
2	ANALYZ	V1	ORG4	26-APR-2016 16:44	AWE	CLS	
3	STORE	ORG1	A1	09-MAY-2016 07:35	CLS	AWE	

Samplenum	Container ID	Products
L16041363-08	734752	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-APR-2016 14:57	CLS		
2	PREP	W1	DIG	27-APR-2016 15:00	AC	BRG	
3	STORE	DIG	W1	27-APR-2016 15:32	BRG	AC	
4	ANALYZ	W1	SEM	29-APR-2016 11:10	JWR	CLS	
5	STORE	SEM	A1	02-MAY-2016 16:38	BRG	JWR	
6	ANALYZ*	DIG	SEMI	04-MAY-2016 18:52	JWR	AC	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041363
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 06-MAY-2016

Samplenum	Container ID	Products
L16041363-09	734753	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-APR-2016 14:57	CLS		
2	ANALYZ	V1	ORG4	26-APR-2016 16:44	AWE	CLS	
3	STORE	ORG1	A1	09-MAY-2016 07:35	CLS	AWE	

Samplenum	Container ID	Products
L16041363-09	734754	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-APR-2016 14:57	CLS		
2	PREP	W1	DIG	27-APR-2016 15:00	AC	BRG	
3	STORE	DIG	W1	27-APR-2016 15:32	BRG	AC	
4	ANALYZ	W1	SEM	29-APR-2016 11:10	JWR	CLS	
5	STORE	SEM	A1	02-MAY-2016 16:38	BRG	JWR	
6	ANALYZ*	DIG	SEMI	04-MAY-2016 18:52	JWR	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041363-10	734755	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	26-APR-2016 14:57	CLS		
2	ANALYZ	V1	ORG4	26-APR-2016 16:44	AWE	CLS	
3	STORE	ORG1	A1	09-MAY-2016 07:35	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041363
Account: 2551
Project: 2551.096
Samples: 10
Due Date: 06-MAY-2016

Samplenum	Container ID	Products
L16041363-10	734756	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	26-APR-2016 14:57	CLS		
2	PREP	W1	DIG	27-APR-2016 15:01	AC	BRG	
3	STORE	DIG	W1	27-APR-2016 15:32	BRG	AC	
4	ANALYZ	W1	SEM	29-APR-2016 11:10	JWR	CLS	
5	STORE	SEM	A1	02-MAY-2016 16:38	BRG	JWR	
6	ANALYZ*	DIG	SEMI	04-MAY-2016 18:52	JWR	AC	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16041580

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on May 16 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

The following discrepancies were noted:

Discrepancy	Resolution
Sample ID: Equipment Blank (4/25 @ 17:00). COC states "2" bottles received. Received "4". 3 voas and 1 250p. BRG	Please proceed with the volume received. SLM

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00113829	H	0.0		J2317165689	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	No
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18CPTMW22DW(5-5.5)260416	L16041580-01	04/26/2016 09:05	04/29/2016 09:52
18CPTMW22DW(10-10.5)260416	L16041580-02	04/26/2016 10:00	04/29/2016 09:52
18CPTMW22DW(20-20.5)260416	L16041580-03	04/26/2016 10:35	04/29/2016 09:52
18CPTMW22DW(29.5-30)260416	L16041580-04	04/26/2016 11:15	04/29/2016 09:52
18CPTMW22DW(40-40.5)260416	L16041580-05	04/26/2016 11:55	04/29/2016 09:52
18CPTMW22DW(50-51)260416	L16041580-06	04/26/2016 14:15	04/29/2016 09:52
18CPTMW22DW(50-51)260416MS	L16041580-07	04/26/2016 14:15	04/29/2016 09:52
18CPTMW22DW(50-51)260416MSD	L16041580-08	04/26/2016 14:15	04/29/2016 09:52
18CPTMW22DW(60-60.5)260416	L16041580-09	04/26/2016 15:00	04/29/2016 09:52
18CPTMW22DW(60-60.5)260416DUP	L16041580-10	04/26/2016 15:00	04/29/2016 09:52
18CPTMW22DW(70-70.5)260416	L16041580-11	04/26/2016 15:45	04/29/2016 09:52
18CPTMW22DW(80-80.5)260416	L16041580-12	04/26/2016 16:45	04/29/2016 09:52
18CPTMW22DW(89.5-90)260416	L16041580-13	04/26/2016 17:00	04/29/2016 09:52
EQUIPMENT BLANK	L16041580-14	04/25/2016 17:00	04/29/2016 09:52

Microbac Laboratories ● Ohio Valley Division
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Microbac REPORT L16041580
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.0 Summary Data

1.1 Narratives

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041580
Project Name:		**Method:**	8260
Prep Batch Number(s):	567935,567680	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-05-12 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2016-05-12 19:03:07

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041580
Project Name:		**Method:**	8260
Prep Batch Number(s):	567935,567680	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-05-12 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041580
Project Name:		**Method:**	8260
Prep Batch Number(s):	567935,567680	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-05-12 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041580
Project Name:		**Method:**	8260
Prep Batch Number(s):	567935,567680	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-05-12 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041580
Project Name:		**Method:**	8260
Prep Batch Number(s):	567935,567680	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-05-12 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041580
Project Name:		**Method:**	8260
Prep Batch Number(s):	567935,567680	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-05-12 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1)Chloromethane and n-Propylbenzene exceeded the UCL in the CCV analyzed 05/05/2016 on HPMS9.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041580
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG567224	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-05-09 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Wade DeLong	Wade DeLong	Chemist I	2016-05-09 13:31:44

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041580
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG567224	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-05-09 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?	X				
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041580
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG567224	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-05-09 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041580
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG567224	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-05-09 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041580
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG567224	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-05-09 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041580
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG567224	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-05-09 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER1 The recoveries for the MS and MSD were below the advisory limit.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041580
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG567166	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-05-09 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2016-05-09 16:03:11

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041580
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG567166	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-05-09 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?			X		
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?			X		
Were sample detection limits reported for all analytes not detected?			X		
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?			X		
Were blanks analyzed at the appropriate frequency?			X		
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?			X		
Were blank concentrations < MQL?			X		
Laboratory control samples (LCS):			X		
Were all COCs included in the LCS?			X		

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041580
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG567166	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-05-09 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?			X		
Were LCSs analyzed at the required frequency?			X		
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?			X		
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?			X		
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?			X		
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?			X		
Are unadjusted MQLs and DCSs included in the laboratory data package?			X		
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?			X		
Were percent RSDs or correlation coefficient criteria met?			X		

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041580
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG567166	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-05-09 00:00:00		

Was the number of standards recommended in the method used for all analytes?			X		
Were all points generated between the lowest and highest standard used to calculate the curve?			X		
Are ICAL data available for all instruments used?			X		
Has the initial calibration curve been verified using an appropriate second source standard?			X		
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041580
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG567166	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-05-09 00:00:00		

Was a MDL study performed for each reported analyte?			X		
Is the MDL either adjusted or supported by the analysis of DCSs?			X		
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?			X		
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041580
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG567166	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-05-09 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(5-5.5)260416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:42
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 15:35
Collect Date:	04/26/2016 09:05	**Dilution:**	1	**File ID:**	9M974171
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.2	Q	24.5	12.2	6.12
Benzene	71-43-2	1.22	U	6.12	1.22	0.612
Bromobenzene	108-86-1	1.22	U	6.12	1.22	0.612
Bromochloromethane	74-97-5	2.44	U	6.12	2.44	1.22
Bromodichloromethane	75-27-4	1.22	U	6.12	1.22	0.612
Bromoform	75-25-2	1.22	U	6.12	1.22	0.612
Bromomethane	74-83-9	2.44	U	6.12	2.44	1.22
2-Butanone	78-93-3	6.12	Q	12.2	6.12	3.06
n-Butylbenzene	104-51-8	1.22	U	6.12	1.22	0.612
sec-Butylbenzene	135-98-8	1.22	U	6.12	1.22	0.612
tert-Butylbenzene	98-06-6	1.22	U	6.12	1.22	0.612
Carbon disulfide	75-15-0	1.22	Q	6.12	1.22	0.612
Carbon tetrachloride	56-23-5	1.22	U	6.12	1.22	0.612
Chlorobenzene	108-90-7	1.22	U	6.12	1.22	0.612
Chlorodibromomethane	124-48-1	1.22	U	6.12	1.22	0.612
Chloroethane	75-00-3	2.44	U	6.12	2.44	1.22
Chloroform	67-66-3	1.22	U	6.12	1.22	0.612
Chloromethane	74-87-3	4.90	Q	12.2	4.90	2.45
2-Chlorotoluene	95-49-8	1.22	U	6.12	1.22	0.612
4-Chlorotoluene	106-43-4	1.22	U	6.12	1.22	0.612
1,2-Dibromo-3-chloropropane	96-12-8	4.90	U	12.2	4.90	2.45
1,2-Dibromoethane	106-93-4	1.22	U	6.12	1.22	0.612
Dibromomethane	74-95-3	1.22	U	6.12	1.22	0.612
1,2-Dichlorobenzene	95-50-1	1.22	U	6.12	1.22	0.612
1,3-Dichlorobenzene	541-73-1	1.22	U	6.12	1.22	0.612
1,4-Dichlorobenzene	106-46-7	1.22	U	6.12	1.22	0.612
Dichlorodifluoromethane	75-71-8	2.44	U	6.12	2.44	1.22
1,1-Dichloroethane	75-34-3	2.44	U	6.12	2.44	1.22
1,2-Dichloroethane	107-06-2	1.22	U	6.12	1.22	0.612
1,1-Dichloroethene	75-35-4	1.22	U	6.12	1.22	0.612
cis-1,2-Dichloroethene	156-59-2	1.22	U	6.12	1.22	0.612

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.22	U	6.12	1.22	0.612
1,2-Dichloropropane	78-87-5	1.22	U	6.12	1.22	0.612
1,3-Dichloropropane	142-28-9	1.22	U	6.12	1.22	0.612
2,2-Dichloropropane	594-20-7	1.22	U	6.12	1.22	0.612
cis-1,3-Dichloropropene	10061-01-5	1.22	U	6.12	1.22	0.612
trans-1,3-Dichloropropene	10061-02-6	1.22	U	6.12	1.22	0.612
1,1-Dichloropropene	563-58-6	1.22	U	6.12	1.22	0.612
Ethylbenzene	100-41-4	1.22	U	6.12	1.22	0.612
2-Hexanone	591-78-6	6.12	Q	12.2	6.12	3.06
Hexachlorobutadiene	87-68-3	1.22	U	6.12	1.22	0.612
Isopropylbenzene	98-82-8	1.22	U	6.12	1.22	0.612
p-Isopropyltoluene	99-87-6	1.22	U	6.12	1.22	0.612
4-Methyl-2-pentanone	108-10-1	6.12	Q	12.2	6.12	3.06
Methylene chloride	75-09-2	2.44	U	6.12	2.44	1.22
Naphthalene	91-20-3	1.22	U	6.12	1.22	0.612
n-Propylbenzene	103-65-1	1.22	Q	6.12	1.22	0.612
Styrene	100-42-5	1.22	U	6.12	1.22	0.612
1,1,1,2-Tetrachloroethane	630-20-6	1.22	U	6.12	1.22	0.612
1,1,2,2-Tetrachloroethane	79-34-5	1.22	U	6.12	1.22	0.612
Tetrachloroethene	127-18-4	1.22	U	6.12	1.22	0.612
Toluene	108-88-3	1.22	U	6.12	1.22	0.612
1,2,3-Trichlorobenzene	87-61-6	1.22	U	6.12	1.22	0.612
1,2,4-Trichlorobenzene	120-82-1	1.22	U	6.12	1.22	0.612
1,1,1-Trichloroethane	71-55-6	1.22	U	6.12	1.22	0.612
1,1,2-Trichloroethane	79-00-5	1.22	U	6.12	1.22	0.612
Trichloroethene	79-01-6	1.22	U	6.12	1.22	0.612
Trichlorofluoromethane	75-69-4	2.44	U	6.12	2.44	1.22
1,2,3-Trichloropropane	96-18-4	2.44	U	6.12	2.44	1.22
1,2,4-Trimethylbenzene	95-63-6	1.22	U	6.12	1.22	0.612
1,3,5-Trimethylbenzene	108-67-8	1.22	U	6.12	1.22	0.612
Vinyl chloride	75-01-4	2.44	U	6.12	2.44	1.22
o-Xylene	95-47-6	1.22	U	6.12	1.22	0.612
m-,p-Xylene	179601-23-1	1.22	U	6.12	1.22	0.612

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	80	120	
1,2-Dichloroethane-d4	102	80	120	
Toluene-d8	108	85	115	
4-Bromofluorobenzene	112	85	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(5-5.5)260416	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 17:53
Collect Date:	04/26/2016 09:05	**Dilution:**	1	**File ID:**	1LM.LM34726
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.34	U	4.69	2.34	1.17

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(10-10.5)260416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:42
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 16:06
Collect Date:	04/26/2016 10:00	**Dilution:**	1	**File ID:**	9M974172
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.4	Q	24.9	12.4	6.21
Benzene	71-43-2	1.24	U	6.21	1.24	0.621
Bromobenzene	108-86-1	1.24	U	6.21	1.24	0.621
Bromochloromethane	74-97-5	2.48	U	6.21	2.48	1.24
Bromodichloromethane	75-27-4	1.24	U	6.21	1.24	0.621
Bromoform	75-25-2	1.24	U	6.21	1.24	0.621
Bromomethane	74-83-9	2.48	U	6.21	2.48	1.24
2-Butanone	78-93-3	6.22	Q	12.4	6.22	3.11
n-Butylbenzene	104-51-8	1.24	U	6.21	1.24	0.621
sec-Butylbenzene	135-98-8	1.24	U	6.21	1.24	0.621
tert-Butylbenzene	98-06-6	1.24	U	6.21	1.24	0.621
Carbon disulfide	75-15-0	1.24	Q	6.21	1.24	0.621
Carbon tetrachloride	56-23-5	1.24	U	6.21	1.24	0.621
Chlorobenzene	108-90-7	1.24	U	6.21	1.24	0.621
Chlorodibromomethane	124-48-1	1.24	U	6.21	1.24	0.621
Chloroethane	75-00-3	2.48	U	6.21	2.48	1.24
Chloroform	67-66-3	1.24	U	6.21	1.24	0.621
Chloromethane	74-87-3	4.98	Q	12.4	4.98	2.49
2-Chlorotoluene	95-49-8	1.24	U	6.21	1.24	0.621
4-Chlorotoluene	106-43-4	1.24	U	6.21	1.24	0.621
1,2-Dibromo-3-chloropropane	96-12-8	4.98	U	12.4	4.98	2.49
1,2-Dibromoethane	106-93-4	1.24	U	6.21	1.24	0.621
Dibromomethane	74-95-3	1.24	U	6.21	1.24	0.621
1,2-Dichlorobenzene	95-50-1	1.24	U	6.21	1.24	0.621
1,3-Dichlorobenzene	541-73-1	1.24	U	6.21	1.24	0.621
1,4-Dichlorobenzene	106-46-7	1.24	U	6.21	1.24	0.621
Dichlorodifluoromethane	75-71-8	2.48	U	6.21	2.48	1.24
1,1-Dichloroethane	75-34-3	2.48	U	6.21	2.48	1.24
1,2-Dichloroethane	107-06-2	1.24	U	6.21	1.24	0.621
1,1-Dichloroethene	75-35-4	1.24	U	6.21	1.24	0.621

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.24	U	6.21	1.24	0.621
trans-1,2-Dichloroethene	156-60-5	1.24	U	6.21	1.24	0.621
1,2-Dichloropropane	78-87-5	1.24	U	6.21	1.24	0.621
1,3-Dichloropropane	142-28-9	1.24	U	6.21	1.24	0.621
2,2-Dichloropropane	594-20-7	1.24	U	6.21	1.24	0.621
cis-1,3-Dichloropropene	10061-01-5	1.24	U	6.21	1.24	0.621
trans-1,3-Dichloropropene	10061-02-6	1.24	U	6.21	1.24	0.621
1,1-Dichloropropene	563-58-6	1.24	U	6.21	1.24	0.621
Ethylbenzene	100-41-4	1.24	U	6.21	1.24	0.621
2-Hexanone	591-78-6	6.22	Q	12.4	6.22	3.11
Hexachlorobutadiene	87-68-3	1.24	U	6.21	1.24	0.621
Isopropylbenzene	98-82-8	1.24	U	6.21	1.24	0.621
p-Isopropyltoluene	99-87-6	1.24	U	6.21	1.24	0.621
4-Methyl-2-pentanone	108-10-1	6.22	Q	12.4	6.22	3.11
Methylene chloride	75-09-2	2.48	U	6.21	2.48	1.24
Naphthalene	91-20-3	1.24	U	6.21	1.24	0.621
n-Propylbenzene	103-65-1	1.24	Q	6.21	1.24	0.621
Styrene	100-42-5	1.24	U	6.21	1.24	0.621
1,1,1,2-Tetrachloroethane	630-20-6	1.24	U	6.21	1.24	0.621
1,1,2,2-Tetrachloroethane	79-34-5	1.24	U	6.21	1.24	0.621
Tetrachloroethene	127-18-4	1.24	U	6.21	1.24	0.621
Toluene	108-88-3	1.24	U	6.21	1.24	0.621
1,2,3-Trichlorobenzene	87-61-6	1.24	U	6.21	1.24	0.621
1,2,4-Trichlorobenzene	120-82-1	1.24	U	6.21	1.24	0.621
1,1,1-Trichloroethane	71-55-6	1.24	U	6.21	1.24	0.621
1,1,2-Trichloroethane	79-00-5	1.24	U	6.21	1.24	0.621
Trichloroethene	79-01-6	1.24	U	6.21	1.24	0.621
Trichlorofluoromethane	75-69-4	2.48	U	6.21	2.48	1.24
1,2,3-Trichloropropane	96-18-4	2.48	U	6.21	2.48	1.24
1,2,4-Trimethylbenzene	95-63-6	1.24	U	6.21	1.24	0.621
1,3,5-Trimethylbenzene	108-67-8	1.24	U	6.21	1.24	0.621
Vinyl chloride	75-01-4	2.48	U	6.21	2.48	1.24
o-Xylene	95-47-6	1.24	U	6.21	1.24	0.621
m-,p-Xylene	179601-23-1	1.24	U	6.21	1.24	0.621

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	80	120	
1,2-Dichloroethane-d4	104	80	120	
Toluene-d8	106	85	115	
4-Bromofluorobenzene	109	85	120	

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(10-10.5)260416	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 18:12
Collect Date:	04/26/2016 10:00	**Dilution:**	1	**File ID:**	1LM.LM34727
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.38	U	4.78	2.38	1.19

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(20-20.5)260416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:44
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 16:37
Collect Date:	04/26/2016 10:35	**Dilution:**	1	**File ID:**	9M974173
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.5	Q	27.0	13.5	6.74
Benzene	71-43-2	1.35	U	6.74	1.35	0.674
Bromobenzene	108-86-1	1.35	U	6.74	1.35	0.674
Bromochloromethane	74-97-5	2.70	U	6.74	2.70	1.35
Bromodichloromethane	75-27-4	1.35	U	6.74	1.35	0.674
Bromoform	75-25-2	1.35	U	6.74	1.35	0.674
Bromomethane	74-83-9	2.70	U	6.74	2.70	1.35
2-Butanone	78-93-3	6.74	Q	13.5	6.74	3.37
n-Butylbenzene	104-51-8	1.35	U	6.74	1.35	0.674
sec-Butylbenzene	135-98-8	1.35	U	6.74	1.35	0.674
tert-Butylbenzene	98-06-6	1.35	U	6.74	1.35	0.674
Carbon disulfide	75-15-0	1.35	Q	6.74	1.35	0.674
Carbon tetrachloride	56-23-5	1.35	U	6.74	1.35	0.674
Chlorobenzene	108-90-7	1.35	U	6.74	1.35	0.674
Chlorodibromomethane	124-48-1	1.35	U	6.74	1.35	0.674
Chloroethane	75-00-3	2.70	U	6.74	2.70	1.35
Chloroform	67-66-3	1.35	U	6.74	1.35	0.674
Chloromethane	74-87-3	5.40	Q	13.5	5.40	2.70
2-Chlorotoluene	95-49-8	1.35	U	6.74	1.35	0.674
4-Chlorotoluene	106-43-4	1.35	U	6.74	1.35	0.674
1,2-Dibromo-3-chloropropane	96-12-8	5.40	U	13.5	5.40	2.70
1,2-Dibromoethane	106-93-4	1.35	U	6.74	1.35	0.674
Dibromomethane	74-95-3	1.35	U	6.74	1.35	0.674
1,2-Dichlorobenzene	95-50-1	1.35	U	6.74	1.35	0.674
1,3-Dichlorobenzene	541-73-1	1.35	U	6.74	1.35	0.674
1,4-Dichlorobenzene	106-46-7	1.35	U	6.74	1.35	0.674
Dichlorodifluoromethane	75-71-8	2.70	U	6.74	2.70	1.35
1,1-Dichloroethane	75-34-3	2.70	U	6.74	2.70	1.35
1,2-Dichloroethane	107-06-2	1.35	U	6.74	1.35	0.674
1,1-Dichloroethene	75-35-4	1.35	U	6.74	1.35	0.674

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.35	U	6.74	1.35	0.674
trans-1,2-Dichloroethene	156-60-5	1.35	U	6.74	1.35	0.674
1,2-Dichloropropane	78-87-5	1.35	U	6.74	1.35	0.674
1,3-Dichloropropane	142-28-9	1.35	U	6.74	1.35	0.674
2,2-Dichloropropane	594-20-7	1.35	U	6.74	1.35	0.674
cis-1,3-Dichloropropene	10061-01-5	1.35	U	6.74	1.35	0.674
trans-1,3-Dichloropropene	10061-02-6	1.35	U	6.74	1.35	0.674
1,1-Dichloropropene	563-58-6	1.35	U	6.74	1.35	0.674
Ethylbenzene	100-41-4	1.35	U	6.74	1.35	0.674
2-Hexanone	591-78-6	6.74	Q	13.5	6.74	3.37
Hexachlorobutadiene	87-68-3	1.35	U	6.74	1.35	0.674
Isopropylbenzene	98-82-8	1.35	U	6.74	1.35	0.674
p-Isopropyltoluene	99-87-6	1.35	U	6.74	1.35	0.674
4-Methyl-2-pentanone	108-10-1	6.74	Q	13.5	6.74	3.37
Methylene chloride	75-09-2	2.70	U	6.74	2.70	1.35
Naphthalene	91-20-3	1.35	U	6.74	1.35	0.674
n-Propylbenzene	103-65-1	1.35	Q	6.74	1.35	0.674
Styrene	100-42-5	1.35	U	6.74	1.35	0.674
1,1,1,2-Tetrachloroethane	630-20-6	1.35	U	6.74	1.35	0.674
1,1,2,2-Tetrachloroethane	79-34-5	1.35	U	6.74	1.35	0.674
Tetrachloroethene	127-18-4	1.35	U	6.74	1.35	0.674
Toluene	108-88-3	1.35	U	6.74	1.35	0.674
1,2,3-Trichlorobenzene	87-61-6	1.35	U	6.74	1.35	0.674
1,2,4-Trichlorobenzene	120-82-1	1.35	U	6.74	1.35	0.674
1,1,1-Trichloroethane	71-55-6	1.35	U	6.74	1.35	0.674
1,1,2-Trichloroethane	79-00-5	1.35	U	6.74	1.35	0.674
Trichloroethene	79-01-6	1.35	U	6.74	1.35	0.674
Trichlorofluoromethane	75-69-4	2.70	U	6.74	2.70	1.35
1,2,3-Trichloropropane	96-18-4	2.70	U	6.74	2.70	1.35
1,2,4-Trimethylbenzene	95-63-6	1.35	U	6.74	1.35	0.674
1,3,5-Trimethylbenzene	108-67-8	1.35	U	6.74	1.35	0.674
Vinyl chloride	75-01-4	2.70	U	6.74	2.70	1.35
o-Xylene	95-47-6	1.35	U	6.74	1.35	0.674
m-,p-Xylene	179601-23-1	1.35	U	6.74	1.35	0.674

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	80	120	
1,2-Dichloroethane-d4	102	80	120	
Toluene-d8	107	85	115	
4-Bromofluorobenzene	110	85	120	

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(20-20.5)260416	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/05/2016 13:50
Collect Date:	04/26/2016 10:35	**Dilution:**	200	**File ID:**	1LM.LM34755
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	79.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	5400		982	492	246

Certificate of Analysis

Sample #:	L16041580-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(29.5-30)260416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:44
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 17:08
Collect Date:	04/26/2016 11:15	**Dilution:**	1	**File ID:**	9M974174
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	78.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.5	Q	26.9	13.5	6.73
Benzene	71-43-2	1.35	U	6.73	1.35	0.673
Bromobenzene	108-86-1	1.35	U	6.73	1.35	0.673
Bromochloromethane	74-97-5	2.70	U	6.73	2.70	1.35
Bromodichloromethane	75-27-4	1.35	U	6.73	1.35	0.673
Bromoform	75-25-2	1.35	U	6.73	1.35	0.673
Bromomethane	74-83-9	2.70	U	6.73	2.70	1.35
2-Butanone	78-93-3	6.74	Q	13.5	6.74	3.37
n-Butylbenzene	104-51-8	1.35	U	6.73	1.35	0.673
sec-Butylbenzene	135-98-8	1.35	U	6.73	1.35	0.673
tert-Butylbenzene	98-06-6	1.35	U	6.73	1.35	0.673
Carbon disulfide	75-15-0	1.35	Q	6.73	1.35	0.673
Carbon tetrachloride	56-23-5	1.35	U	6.73	1.35	0.673
Chlorobenzene	108-90-7	1.35	U	6.73	1.35	0.673
Chlorodibromomethane	124-48-1	1.35	U	6.73	1.35	0.673
Chloroethane	75-00-3	2.70	U	6.73	2.70	1.35
Chloroform	67-66-3	1.35	U	6.73	1.35	0.673
Chloromethane	74-87-3	5.38	Q	13.5	5.38	2.69
2-Chlorotoluene	95-49-8	1.35	U	6.73	1.35	0.673

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
4-Chlorotoluene	106-43-4	1.35	U	6.73	1.35	0.673
1,2-Dibromo-3-chloropropane	96-12-8	5.38	U	13.5	5.38	2.69
1,2-Dibromoethane	106-93-4	1.35	U	6.73	1.35	0.673
Dibromomethane	74-95-3	1.35	U	6.73	1.35	0.673
1,2-Dichlorobenzene	95-50-1	1.35	U	6.73	1.35	0.673
1,3-Dichlorobenzene	541-73-1	1.35	U	6.73	1.35	0.673
1,4-Dichlorobenzene	106-46-7	1.35	U	6.73	1.35	0.673
Dichlorodifluoromethane	75-71-8	2.70	U	6.73	2.70	1.35
1,1-Dichloroethane	75-34-3	2.70	U	6.73	2.70	1.35
1,2-Dichloroethane	107-06-2	1.35	U	6.73	1.35	0.673
1,1-Dichloroethene	75-35-4	1.35	U	6.73	1.35	0.673
cis-1,2-Dichloroethene	156-59-2	1.35	U	6.73	1.35	0.673
trans-1,2-Dichloroethene	156-60-5	1.35	U	6.73	1.35	0.673
1,2-Dichloropropane	78-87-5	1.35	U	6.73	1.35	0.673
1,3-Dichloropropane	142-28-9	1.35	U	6.73	1.35	0.673
2,2-Dichloropropane	594-20-7	1.35	U	6.73	1.35	0.673
cis-1,3-Dichloropropene	10061-01-5	1.35	U	6.73	1.35	0.673
trans-1,3-Dichloropropene	10061-02-6	1.35	U	6.73	1.35	0.673
1,1-Dichloropropene	563-58-6	1.35	U	6.73	1.35	0.673
Ethylbenzene	100-41-4	1.35	U	6.73	1.35	0.673
2-Hexanone	591-78-6	6.74	Q	13.5	6.74	3.37
Hexachlorobutadiene	87-68-3	1.35	U	6.73	1.35	0.673
Isopropylbenzene	98-82-8	1.35	U	6.73	1.35	0.673
p-Isopropyltoluene	99-87-6	1.35	U	6.73	1.35	0.673
4-Methyl-2-pentanone	108-10-1	6.74	Q	13.5	6.74	3.37
Methylene chloride	75-09-2	2.70	U	6.73	2.70	1.35
Naphthalene	91-20-3	1.35	U	6.73	1.35	0.673
n-Propylbenzene	103-65-1	1.35	Q	6.73	1.35	0.673
Styrene	100-42-5	1.35	U	6.73	1.35	0.673
1,1,1,2-Tetrachloroethane	630-20-6	1.35	U	6.73	1.35	0.673
1,1,2,2-Tetrachloroethane	79-34-5	1.35	U	6.73	1.35	0.673
Tetrachloroethene	127-18-4	1.35	U	6.73	1.35	0.673
Toluene	108-88-3	1.35	U	6.73	1.35	0.673
1,2,3-Trichlorobenzene	87-61-6	1.35	U	6.73	1.35	0.673
1,2,4-Trichlorobenzene	120-82-1	1.35	U	6.73	1.35	0.673
1,1,1-Trichloroethane	71-55-6	1.35	U	6.73	1.35	0.673
1,1,2-Trichloroethane	79-00-5	1.35	U	6.73	1.35	0.673
Trichloroethene	79-01-6	1.35	U	6.73	1.35	0.673
Trichlorofluoromethane	75-69-4	2.70	U	6.73	2.70	1.35

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,3-Trichloropropane	96-18-4	2.70	U	6.73	2.70	1.35
1,2,4-Trimethylbenzene	95-63-6	1.35	U	6.73	1.35	0.673
1,3,5-Trimethylbenzene	108-67-8	1.35	U	6.73	1.35	0.673
Vinyl chloride	75-01-4	2.70	U	6.73	2.70	1.35
o-Xylene	95-47-6	1.35	U	6.73	1.35	0.673
m-,p-Xylene	179601-23-1	1.35	U	6.73	1.35	0.673

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	80	120	
1,2-Dichloroethane-d4	110	80	120	
Toluene-d8	106	85	115	
4-Bromofluorobenzene	112	85	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(29.5-30)260416	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/05/2016 14:09
Collect Date:	04/26/2016 11:15	**Dilution:**	400	**File ID:**	1LM.LM34756
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	78.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	9440		2010	1000	502

Certificate of Analysis

Sample #:	L16041580-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(40-40.5)260416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:45
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 17:40
Collect Date:	04/26/2016 11:55	**Dilution:**	1	**File ID:**	9M974175
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.0	Q	24.0	12.0	5.99
Benzene	71-43-2	1.20	U	5.99	1.20	0.599
Bromobenzene	108-86-1	1.20	U	5.99	1.20	0.599
Bromochloromethane	74-97-5	2.40	U	5.99	2.40	1.20
Bromodichloromethane	75-27-4	1.20	U	5.99	1.20	0.599
Bromoform	75-25-2	1.20	U	5.99	1.20	0.599
Bromomethane	74-83-9	2.40	U	5.99	2.40	1.20
2-Butanone	78-93-3	6.00	Q	12.0	6.00	3.00
n-Butylbenzene	104-51-8	1.20	U	5.99	1.20	0.599
sec-Butylbenzene	135-98-8	1.20	U	5.99	1.20	0.599
tert-Butylbenzene	98-06-6	1.20	U	5.99	1.20	0.599
Carbon disulfide	75-15-0	1.20	Q	5.99	1.20	0.599
Carbon tetrachloride	56-23-5	1.20	U	5.99	1.20	0.599
Chlorobenzene	108-90-7	1.20	U	5.99	1.20	0.599
Chlorodibromomethane	124-48-1	1.20	U	5.99	1.20	0.599
Chloroethane	75-00-3	2.40	U	5.99	2.40	1.20
Chloroform	67-66-3	1.20	U	5.99	1.20	0.599
Chloromethane	74-87-3	4.80	Q	12.0	4.80	2.40
2-Chlorotoluene	95-49-8	1.20	U	5.99	1.20	0.599

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
4-Chlorotoluene	106-43-4	1.20	U	5.99	1.20	0.599
1,2-Dibromo-3-chloropropane	96-12-8	4.80	U	12.0	4.80	2.40
1,2-Dibromoethane	106-93-4	1.20	U	5.99	1.20	0.599
Dibromomethane	74-95-3	1.20	U	5.99	1.20	0.599
1,2-Dichlorobenzene	95-50-1	1.20	U	5.99	1.20	0.599
1,3-Dichlorobenzene	541-73-1	1.20	U	5.99	1.20	0.599
1,4-Dichlorobenzene	106-46-7	1.20	U	5.99	1.20	0.599
Dichlorodifluoromethane	75-71-8	2.40	U	5.99	2.40	1.20
1,1-Dichloroethane	75-34-3	2.40	U	5.99	2.40	1.20
1,2-Dichloroethane	107-06-2	1.20	U	5.99	1.20	0.599
1,1-Dichloroethene	75-35-4	1.20	U	5.99	1.20	0.599
cis-1,2-Dichloroethene	156-59-2	1.20	U	5.99	1.20	0.599
trans-1,2-Dichloroethene	156-60-5	1.20	U	5.99	1.20	0.599
1,2-Dichloropropane	78-87-5	1.20	U	5.99	1.20	0.599
1,3-Dichloropropane	142-28-9	1.20	U	5.99	1.20	0.599
2,2-Dichloropropane	594-20-7	1.20	U	5.99	1.20	0.599
cis-1,3-Dichloropropene	10061-01-5	1.20	U	5.99	1.20	0.599
trans-1,3-Dichloropropene	10061-02-6	1.20	U	5.99	1.20	0.599
1,1-Dichloropropene	563-58-6	1.20	U	5.99	1.20	0.599
Ethylbenzene	100-41-4	1.20	U	5.99	1.20	0.599
2-Hexanone	591-78-6	6.00	Q	12.0	6.00	3.00
Hexachlorobutadiene	87-68-3	1.20	U	5.99	1.20	0.599
Isopropylbenzene	98-82-8	1.20	U	5.99	1.20	0.599
p-Isopropyltoluene	99-87-6	1.20	U	5.99	1.20	0.599
4-Methyl-2-pentanone	108-10-1	6.00	Q	12.0	6.00	3.00
Methylene chloride	75-09-2	2.40	U	5.99	2.40	1.20
Naphthalene	91-20-3	1.20	U	5.99	1.20	0.599
n-Propylbenzene	103-65-1	1.20	Q	5.99	1.20	0.599
Styrene	100-42-5	1.20	U	5.99	1.20	0.599
1,1,1,2-Tetrachloroethane	630-20-6	1.20	U	5.99	1.20	0.599
1,1,2,2-Tetrachloroethane	79-34-5	1.20	U	5.99	1.20	0.599
Tetrachloroethene	127-18-4	1.20	U	5.99	1.20	0.599
Toluene	108-88-3	1.20	U	5.99	1.20	0.599
1,2,3-Trichlorobenzene	87-61-6	1.20	U	5.99	1.20	0.599
1,2,4-Trichlorobenzene	120-82-1	1.20	U	5.99	1.20	0.599
1,1,1-Trichloroethane	71-55-6	1.20	U	5.99	1.20	0.599
1,1,2-Trichloroethane	79-00-5	1.20	U	5.99	1.20	0.599
Trichloroethene	79-01-6	1.20	U	5.99	1.20	0.599
Trichlorofluoromethane	75-69-4	2.40	U	5.99	2.40	1.20

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,3-Trichloropropane	96-18-4	2.40	U	5.99	2.40	1.20
1,2,4-Trimethylbenzene	95-63-6	1.20	U	5.99	1.20	0.599
1,3,5-Trimethylbenzene	108-67-8	1.20	U	5.99	1.20	0.599
Vinyl chloride	75-01-4	2.40	U	5.99	2.40	1.20
o-Xylene	95-47-6	1.20	U	5.99	1.20	0.599
m-,p-Xylene	179601-23-1	1.20	U	5.99	1.20	0.599

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	80	120	
1,2-Dichloroethane-d4	111	80	120	
Toluene-d8	108	85	115	
4-Bromofluorobenzene	114	85	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(40-40.5)260416	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/05/2016 14:28
Collect Date:	04/26/2016 11:55	**Dilution:**	200	**File ID:**	1LM.LM34757
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	79.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	4040		1010	504	252

Certificate of Analysis

Sample #:	L16041580-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(50-51)260416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:45
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 15:04
Collect Date:	04/26/2016 14:15	**Dilution:**	1	**File ID:**	9M974170
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	6.11	Q	23.3	11.7	5.83
Benzene	71-43-2	1.17	U	5.83	1.17	0.583
Bromobenzene	108-86-1	1.17	U	5.83	1.17	0.583
Bromochloromethane	74-97-5	2.34	U	5.83	2.34	1.17
Bromodichloromethane	75-27-4	1.17	U	5.83	1.17	0.583
Bromoform	75-25-2	1.17	U	5.83	1.17	0.583
Bromomethane	74-83-9	2.34	U	5.83	2.34	1.17
2-Butanone	78-93-3	5.82	Q	11.7	5.82	2.91
n-Butylbenzene	104-51-8	1.17	U	5.83	1.17	0.583
sec-Butylbenzene	135-98-8	1.17	U	5.83	1.17	0.583
tert-Butylbenzene	98-06-6	1.17	U	5.83	1.17	0.583
Carbon disulfide	75-15-0	1.17	Q	5.83	1.17	0.583
Carbon tetrachloride	56-23-5	1.17	U	5.83	1.17	0.583
Chlorobenzene	108-90-7	1.17	U	5.83	1.17	0.583
Chlorodibromomethane	124-48-1	1.17	U	5.83	1.17	0.583
Chloroethane	75-00-3	2.34	U	5.83	2.34	1.17
Chloroform	67-66-3	1.17	U	5.83	1.17	0.583
Chloromethane	74-87-3	4.66	Q	11.7	4.66	2.33
2-Chlorotoluene	95-49-8	1.17	U	5.83	1.17	0.583

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
4-Chlorotoluene	106-43-4	1.17	U	5.83	1.17	0.583
1,2-Dibromo-3-chloropropane	96-12-8	4.66	U	11.7	4.66	2.33
1,2-Dibromoethane	106-93-4	1.17	U	5.83	1.17	0.583
Dibromomethane	74-95-3	1.17	U	5.83	1.17	0.583
1,2-Dichlorobenzene	95-50-1	1.17	U	5.83	1.17	0.583
1,3-Dichlorobenzene	541-73-1	1.17	U	5.83	1.17	0.583
1,4-Dichlorobenzene	106-46-7	1.17	U	5.83	1.17	0.583
Dichlorodifluoromethane	75-71-8	2.34	U	5.83	2.34	1.17
1,1-Dichloroethane	75-34-3	2.34	U	5.83	2.34	1.17
1,2-Dichloroethane	107-06-2	1.17	U	5.83	1.17	0.583
1,1-Dichloroethene	75-35-4	1.17	U	5.83	1.17	0.583
cis-1,2-Dichloroethene	156-59-2	1.17	U	5.83	1.17	0.583
trans-1,2-Dichloroethene	156-60-5	1.17	U	5.83	1.17	0.583
1,2-Dichloropropane	78-87-5	1.17	U	5.83	1.17	0.583
1,3-Dichloropropane	142-28-9	1.17	U	5.83	1.17	0.583
2,2-Dichloropropane	594-20-7	1.17	U	5.83	1.17	0.583
cis-1,3-Dichloropropene	10061-01-5	1.17	U	5.83	1.17	0.583
trans-1,3-Dichloropropene	10061-02-6	1.17	U	5.83	1.17	0.583
1,1-Dichloropropene	563-58-6	1.17	U	5.83	1.17	0.583
Ethylbenzene	100-41-4	1.17	U	5.83	1.17	0.583
2-Hexanone	591-78-6	5.82	Q	11.7	5.82	2.91
Hexachlorobutadiene	87-68-3	1.17	U	5.83	1.17	0.583
Isopropylbenzene	98-82-8	1.17	U	5.83	1.17	0.583
p-Isopropyltoluene	99-87-6	1.17	U	5.83	1.17	0.583
4-Methyl-2-pentanone	108-10-1	5.82	Q	11.7	5.82	2.91
Methylene chloride	75-09-2	2.34	U	5.83	2.34	1.17
Naphthalene	91-20-3	1.17	U	5.83	1.17	0.583
n-Propylbenzene	103-65-1	1.17	Q	5.83	1.17	0.583
Styrene	100-42-5	1.17	U	5.83	1.17	0.583
1,1,1,2-Tetrachloroethane	630-20-6	1.17	U	5.83	1.17	0.583
1,1,2,2-Tetrachloroethane	79-34-5	1.17	U	5.83	1.17	0.583
Tetrachloroethene	127-18-4	1.17	U	5.83	1.17	0.583
Toluene	108-88-3	1.17	U	5.83	1.17	0.583
1,2,3-Trichlorobenzene	87-61-6	1.17	U	5.83	1.17	0.583
1,2,4-Trichlorobenzene	120-82-1	1.17	U	5.83	1.17	0.583
1,1,1-Trichloroethane	71-55-6	1.17	U	5.83	1.17	0.583
1,1,2-Trichloroethane	79-00-5	1.17	U	5.83	1.17	0.583
Trichloroethene	79-01-6	1.17	U	5.83	1.17	0.583
Trichlorofluoromethane	75-69-4	2.34	U	5.83	2.34	1.17

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,3-Trichloropropane	96-18-4	2.34	U	5.83	2.34	1.17
1,2,4-Trimethylbenzene	95-63-6	1.17	U	5.83	1.17	0.583
1,3,5-Trimethylbenzene	108-67-8	1.17	U	5.83	1.17	0.583
Vinyl chloride	75-01-4	2.34	U	5.83	2.34	1.17
o-Xylene	95-47-6	1.17	U	5.83	1.17	0.583
m-,p-Xylene	179601-23-1	1.17	U	5.83	1.17	0.583

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	80	120	
1,2-Dichloroethane-d4	102	80	120	
Toluene-d8	106	85	115	
4-Bromofluorobenzene	110	85	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(50-51)260416	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 16:56
Collect Date:	04/26/2016 14:15	**Dilution:**	1	**File ID:**	1LM.LM34723
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3.36	J	4.70	2.34	1.17

J	Estimated value ; the analyte concentration was less than the LOQ.

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(50-51)260416MS	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:46
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 13:34
Collect Date:	04/26/2016 14:15	**Dilution:**	1	**File ID:**	9M974167
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	28.9	Q	22.3	11.1	5.57
Benzene	71-43-2	23.4		5.57	1.11	0.557
Bromobenzene	108-86-1	24.6		5.57	1.11	0.557
Bromochloromethane	74-97-5	22.5		5.57	2.22	1.11
Bromodichloromethane	75-27-4	22.5		5.57	1.11	0.557
Bromoform	75-25-2	19.0		5.57	1.11	0.557
Bromomethane	74-83-9	22.8		5.57	2.22	1.11
2-Butanone	78-93-3	23.4	Q	11.1	5.56	2.78
n-Butylbenzene	104-51-8	24.5		5.57	1.11	0.557
sec-Butylbenzene	135-98-8	26.3		5.57	1.11	0.557
tert-Butylbenzene	98-06-6	27.3		5.57	1.11	0.557
Carbon disulfide	75-15-0	21.3	Q	5.57	1.11	0.557
Carbon tetrachloride	56-23-5	23.2		5.57	1.11	0.557
Chlorobenzene	108-90-7	24.3		5.57	1.11	0.557
Chlorodibromomethane	124-48-1	22.0		5.57	1.11	0.557
Chloroethane	75-00-3	25.6		5.57	2.22	1.11
Chloroform	67-66-3	23.8		5.57	1.11	0.557
Chloromethane	74-87-3	22.3	Q	11.1	4.46	2.23
2-Chlorotoluene	95-49-8	25.9		5.57	1.11	0.557
4-Chlorotoluene	106-43-4	26.1		5.57	1.11	0.557
1,2-Dibromo-3-chloropropane	96-12-8	20.3		11.1	4.46	2.23
1,2-Dibromoethane	106-93-4	22.8		5.57	1.11	0.557
Dibromomethane	74-95-3	20.6		5.57	1.11	0.557
1,2-Dichlorobenzene	95-50-1	23.9		5.57	1.11	0.557
1,3-Dichlorobenzene	541-73-1	24.2		5.57	1.11	0.557
1,4-Dichlorobenzene	106-46-7	24.5		5.57	1.11	0.557
Dichlorodifluoromethane	75-71-8	26.3		5.57	2.22	1.11
1,1-Dichloroethane	75-34-3	22.7		5.57	2.22	1.11
1,2-Dichloroethane	107-06-2	23.2		5.57	1.11	0.557
1,1-Dichloroethene	75-35-4	23.4		5.57	1.11	0.557

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	24.3		5.57	1.11	0.557
trans-1,2-Dichloroethene	156-60-5	24.4		5.57	1.11	0.557
1,2-Dichloropropane	78-87-5	24.0		5.57	1.11	0.557
1,3-Dichloropropane	142-28-9	23.6		5.57	1.11	0.557
2,2-Dichloropropane	594-20-7	24.2		5.57	1.11	0.557
cis-1,3-Dichloropropene	10061-01-5	24.9		5.57	1.11	0.557
trans-1,3-Dichloropropene	10061-02-6	23.0		5.57	1.11	0.557
1,1-Dichloropropene	563-58-6	24.0		5.57	1.11	0.557
Ethylbenzene	100-41-4	24.9		5.57	1.11	0.557
2-Hexanone	591-78-6	20.9	Q	11.1	5.56	2.78
Hexachlorobutadiene	87-68-3	23.3		5.57	1.11	0.557
Isopropylbenzene	98-82-8	25.2		5.57	1.11	0.557
p-Isopropyltoluene	99-87-6	26.6		5.57	1.11	0.557
4-Methyl-2-pentanone	108-10-1	21.6	Q	11.1	5.56	2.78
Methylene chloride	75-09-2	22.3		5.57	2.22	1.11
Naphthalene	91-20-3	18.8		5.57	1.11	0.557
n-Propylbenzene	103-65-1	29.3	Q	5.57	1.11	0.557
Styrene	100-42-5	23.7		5.57	1.11	0.557
1,1,1,2-Tetrachloroethane	630-20-6	23.2		5.57	1.11	0.557
1,1,2,2-Tetrachloroethane	79-34-5	22.0		5.57	1.11	0.557
Tetrachloroethene	127-18-4	23.8		5.57	1.11	0.557
Toluene	108-88-3	23.8		5.57	1.11	0.557
1,2,3-Trichlorobenzene	87-61-6	20.1		5.57	1.11	0.557
1,2,4-Trichlorobenzene	120-82-1	21.0		5.57	1.11	0.557
1,1,1-Trichloroethane	71-55-6	24.9		5.57	1.11	0.557
1,1,2-Trichloroethane	79-00-5	22.6		5.57	1.11	0.557
Trichloroethene	79-01-6	24.6		5.57	1.11	0.557
Trichlorofluoromethane	75-69-4	24.6		5.57	2.22	1.11
1,2,3-Trichloropropane	96-18-4	22.6		5.57	2.22	1.11
1,2,4-Trimethylbenzene	95-63-6	26.7		5.57	1.11	0.557
1,3,5-Trimethylbenzene	108-67-8	27.6		5.57	1.11	0.557
Vinyl chloride	75-01-4	27.1		5.57	2.22	1.11
o-Xylene	95-47-6	24.6		5.57	1.11	0.557
m-,p-Xylene	179601-23-1	48.9		5.57	1.11	0.557

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	80	120	
1,2-Dichloroethane-d4	102	80	120	
Toluene-d8	107	85	115	
4-Bromofluorobenzene	110	85	120	

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(50-51)260416MS	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 17:15
Collect Date:	04/26/2016 14:15	**Dilution:**	1	**File ID:**	1LM.LM34724
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	4.38	J	4.69	2.34	1.17

J	Estimated value ; the analyte concentration was less than the LOQ.

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(50-51)260416MSD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:47
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 14:04
Collect Date:	04/26/2016 14:15	**Dilution:**	1	**File ID:**	9M974168
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	29.6	Q	23.9	11.9	5.96
Benzene	71-43-2	23.4		5.96	1.19	0.596
Bromobenzene	108-86-1	24.3		5.96	1.19	0.596
Bromochloromethane	74-97-5	22.8		5.96	2.38	1.19
Bromodichloromethane	75-27-4	23.0		5.96	1.19	0.596
Bromoform	75-25-2	19.5		5.96	1.19	0.596
Bromomethane	74-83-9	23.3		5.96	2.38	1.19
2-Butanone	78-93-3	24.5	Q	11.9	5.96	2.98
n-Butylbenzene	104-51-8	23.2		5.96	1.19	0.596
sec-Butylbenzene	135-98-8	24.7		5.96	1.19	0.596
tert-Butylbenzene	98-06-6	26.9		5.96	1.19	0.596
Carbon disulfide	75-15-0	22.4	Q	5.96	1.19	0.596
Carbon tetrachloride	56-23-5	23.2		5.96	1.19	0.596
Chlorobenzene	108-90-7	24.7		5.96	1.19	0.596
Chlorodibromomethane	124-48-1	21.6		5.96	1.19	0.596
Chloroethane	75-00-3	25.4		5.96	2.38	1.19
Chloroform	67-66-3	23.9		5.96	1.19	0.596
Chloromethane	74-87-3	22.1	Q	11.9	4.78	2.39
2-Chlorotoluene	95-49-8	24.5		5.96	1.19	0.596
4-Chlorotoluene	106-43-4	25.9		5.96	1.19	0.596
1,2-Dibromo-3-chloropropane	96-12-8	20.9		11.9	4.78	2.39
1,2-Dibromoethane	106-93-4	23.2		5.96	1.19	0.596
Dibromomethane	74-95-3	20.8		5.96	1.19	0.596
1,2-Dichlorobenzene	95-50-1	23.0		5.96	1.19	0.596
1,3-Dichlorobenzene	541-73-1	23.6		5.96	1.19	0.596
1,4-Dichlorobenzene	106-46-7	23.3		5.96	1.19	0.596
Dichlorodifluoromethane	75-71-8	25.8		5.96	2.38	1.19
1,1-Dichloroethane	75-34-3	22.8		5.96	2.38	1.19
1,2-Dichloroethane	107-06-2	23.4		5.96	1.19	0.596
1,1-Dichloroethene	75-35-4	23.6		5.96	1.19	0.596

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	24.6		5.96	1.19	0.596
trans-1,2-Dichloroethene	156-60-5	25.0		5.96	1.19	0.596
1,2-Dichloropropane	78-87-5	24.1		5.96	1.19	0.596
1,3-Dichloropropane	142-28-9	24.1		5.96	1.19	0.596
2,2-Dichloropropane	594-20-7	23.8		5.96	1.19	0.596
cis-1,3-Dichloropropene	10061-01-5	24.8		5.96	1.19	0.596
trans-1,3-Dichloropropene	10061-02-6	23.0		5.96	1.19	0.596
1,1-Dichloropropene	563-58-6	24.1		5.96	1.19	0.596
Ethylbenzene	100-41-4	24.6		5.96	1.19	0.596
2-Hexanone	591-78-6	21.3	Q	11.9	5.96	2.98
Hexachlorobutadiene	87-68-3	20.9		5.96	1.19	0.596
Isopropylbenzene	98-82-8	24.9		5.96	1.19	0.596
p-Isopropyltoluene	99-87-6	25.3		5.96	1.19	0.596
4-Methyl-2-pentanone	108-10-1	22.0	Q	11.9	5.96	2.98
Methylene chloride	75-09-2	23.0		5.96	2.38	1.19
Naphthalene	91-20-3	18.0		5.96	1.19	0.596
n-Propylbenzene	103-65-1	28.1	Q	5.96	1.19	0.596
Styrene	100-42-5	23.9		5.96	1.19	0.596
1,1,1,2-Tetrachloroethane	630-20-6	23.0		5.96	1.19	0.596
1,1,2,2-Tetrachloroethane	79-34-5	21.4		5.96	1.19	0.596
Tetrachloroethene	127-18-4	23.9		5.96	1.19	0.596
Toluene	108-88-3	23.6		5.96	1.19	0.596
1,2,3-Trichlorobenzene	87-61-6	18.8		5.96	1.19	0.596
1,2,4-Trichlorobenzene	120-82-1	19.3		5.96	1.19	0.596
1,1,1-Trichloroethane	71-55-6	24.6		5.96	1.19	0.596
1,1,2-Trichloroethane	79-00-5	23.3		5.96	1.19	0.596
Trichloroethene	79-01-6	24.5		5.96	1.19	0.596
Trichlorofluoromethane	75-69-4	24.3		5.96	2.38	1.19
1,2,3-Trichloropropane	96-18-4	24.0		5.96	2.38	1.19
1,2,4-Trimethylbenzene	95-63-6	25.2		5.96	1.19	0.596
1,3,5-Trimethylbenzene	108-67-8	26.3		5.96	1.19	0.596
Vinyl chloride	75-01-4	26.8		5.96	2.38	1.19
o-Xylene	95-47-6	24.1		5.96	1.19	0.596
m-,p-Xylene	179601-23-1	48.0		5.96	1.19	0.596

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	80	120	
1,2-Dichloroethane-d4	103	80	120	
Toluene-d8	106	85	115	
4-Bromofluorobenzene	109	85	120	

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(50-51)260416MSD	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 17:34
Collect Date:	04/26/2016 14:15	**Dilution:**	1	**File ID:**	1LM.LM34725
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3.81	J	4.69	2.34	1.17

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(60-60.5)260416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:48
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 18:10
Collect Date:	04/26/2016 15:00	**Dilution:**	1	**File ID:**	9M974176
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	86.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	18.4	Q	24.2	12.1	6.06
Benzene	71-43-2	1.21	U	6.06	1.21	0.606
Bromobenzene	108-86-1	1.21	U	6.06	1.21	0.606
Bromochloromethane	74-97-5	2.42	U	6.06	2.42	1.21
Bromodichloromethane	75-27-4	1.21	U	6.06	1.21	0.606
Bromoform	75-25-2	1.21	U	6.06	1.21	0.606
Bromomethane	74-83-9	2.42	U	6.06	2.42	1.21
2-Butanone	78-93-3	6.06	Q	12.1	6.06	3.03
n-Butylbenzene	104-51-8	1.21	U	6.06	1.21	0.606
sec-Butylbenzene	135-98-8	1.21	U	6.06	1.21	0.606
tert-Butylbenzene	98-06-6	1.21	U	6.06	1.21	0.606
Carbon disulfide	75-15-0	1.21	Q	6.06	1.21	0.606
Carbon tetrachloride	56-23-5	1.21	U	6.06	1.21	0.606
Chlorobenzene	108-90-7	1.21	U	6.06	1.21	0.606
Chlorodibromomethane	124-48-1	1.21	U	6.06	1.21	0.606
Chloroethane	75-00-3	2.42	U	6.06	2.42	1.21
Chloroform	67-66-3	1.21	U	6.06	1.21	0.606
Chloromethane	74-87-3	4.84	Q	12.1	4.84	2.42
2-Chlorotoluene	95-49-8	1.21	U	6.06	1.21	0.606
4-Chlorotoluene	106-43-4	1.21	U	6.06	1.21	0.606
1,2-Dibromo-3-chloropropane	96-12-8	4.84	U	12.1	4.84	2.42
1,2-Dibromoethane	106-93-4	1.21	U	6.06	1.21	0.606
Dibromomethane	74-95-3	1.21	U	6.06	1.21	0.606
1,2-Dichlorobenzene	95-50-1	1.21	U	6.06	1.21	0.606
1,3-Dichlorobenzene	541-73-1	1.21	U	6.06	1.21	0.606
1,4-Dichlorobenzene	106-46-7	1.21	U	6.06	1.21	0.606
Dichlorodifluoromethane	75-71-8	2.42	U	6.06	2.42	1.21
1,1-Dichloroethane	75-34-3	2.42	U	6.06	2.42	1.21
1,2-Dichloroethane	107-06-2	1.21	U	6.06	1.21	0.606
1,1-Dichloroethene	75-35-4	1.21	U	6.06	1.21	0.606

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.21	U	6.06	1.21	0.606
trans-1,2-Dichloroethene	156-60-5	1.21	U	6.06	1.21	0.606
1,2-Dichloropropane	78-87-5	1.21	U	6.06	1.21	0.606
1,3-Dichloropropane	142-28-9	1.21	U	6.06	1.21	0.606
2,2-Dichloropropane	594-20-7	1.21	U	6.06	1.21	0.606
cis-1,3-Dichloropropene	10061-01-5	1.21	U	6.06	1.21	0.606
trans-1,3-Dichloropropene	10061-02-6	1.21	U	6.06	1.21	0.606
1,1-Dichloropropene	563-58-6	1.21	U	6.06	1.21	0.606
Ethylbenzene	100-41-4	1.21	U	6.06	1.21	0.606
2-Hexanone	591-78-6	6.06	Q	12.1	6.06	3.03
Hexachlorobutadiene	87-68-3	1.21	U	6.06	1.21	0.606
Isopropylbenzene	98-82-8	1.21	U	6.06	1.21	0.606
p-Isopropyltoluene	99-87-6	1.21	U	6.06	1.21	0.606
4-Methyl-2-pentanone	108-10-1	6.06	Q	12.1	6.06	3.03
Methylene chloride	75-09-2	2.42	U	6.06	2.42	1.21
Naphthalene	91-20-3	1.21	U	6.06	1.21	0.606
n-Propylbenzene	103-65-1	1.21	Q	6.06	1.21	0.606
Styrene	100-42-5	1.21	U	6.06	1.21	0.606
1,1,1,2-Tetrachloroethane	630-20-6	1.21	U	6.06	1.21	0.606
1,1,2,2-Tetrachloroethane	79-34-5	1.21	U	6.06	1.21	0.606
Tetrachloroethene	127-18-4	1.21	U	6.06	1.21	0.606
Toluene	108-88-3	1.21	U	6.06	1.21	0.606
1,2,3-Trichlorobenzene	87-61-6	1.21	U	6.06	1.21	0.606
1,2,4-Trichlorobenzene	120-82-1	1.21	U	6.06	1.21	0.606
1,1,1-Trichloroethane	71-55-6	1.21	U	6.06	1.21	0.606
1,1,2-Trichloroethane	79-00-5	1.21	U	6.06	1.21	0.606
Trichloroethene	79-01-6	1.21	U	6.06	1.21	0.606
Trichlorofluoromethane	75-69-4	2.42	U	6.06	2.42	1.21
1,2,3-Trichloropropane	96-18-4	2.42	U	6.06	2.42	1.21
1,2,4-Trimethylbenzene	95-63-6	1.21	U	6.06	1.21	0.606
1,3,5-Trimethylbenzene	108-67-8	1.21	U	6.06	1.21	0.606
Vinyl chloride	75-01-4	2.42	U	6.06	2.42	1.21
o-Xylene	95-47-6	1.21	U	6.06	1.21	0.606
m-,p-Xylene	179601-23-1	1.21	U	6.06	1.21	0.606

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.0	80	120	
1,2-Dichloroethane-d4	104	80	120	
Toluene-d8	107	85	115	
4-Bromofluorobenzene	115	85	120	

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-09	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(60-60.5)260416	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 20:24
Collect Date:	04/26/2016 15:00	**Dilution:**	1	**File ID:**	1LM.LM34734
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	86.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.26	U	4.52	2.26	1.13

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(60-60.5)260416DUP	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:48
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 18:40
Collect Date:	04/26/2016 15:00	**Dilution:**	1	**File ID:**	9M974177
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	87.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	20.8	Q	24.7	12.3	6.17
Benzene	71-43-2	1.23	U	6.17	1.23	0.617
Bromobenzene	108-86-1	1.23	U	6.17	1.23	0.617
Bromochloromethane	74-97-5	2.46	U	6.17	2.46	1.23
Bromodichloromethane	75-27-4	1.23	U	6.17	1.23	0.617
Bromoform	75-25-2	1.23	U	6.17	1.23	0.617
Bromomethane	74-83-9	2.46	U	6.17	2.46	1.23
2-Butanone	78-93-3	6.18	Q	12.3	6.18	3.09
n-Butylbenzene	104-51-8	1.23	U	6.17	1.23	0.617
sec-Butylbenzene	135-98-8	1.23	U	6.17	1.23	0.617
tert-Butylbenzene	98-06-6	1.23	U	6.17	1.23	0.617
Carbon disulfide	75-15-0	0.638	Q	6.17	1.23	0.617
Carbon tetrachloride	56-23-5	1.23	U	6.17	1.23	0.617
Chlorobenzene	108-90-7	1.23	U	6.17	1.23	0.617
Chlorodibromomethane	124-48-1	1.23	U	6.17	1.23	0.617
Chloroethane	75-00-3	2.46	U	6.17	2.46	1.23
Chloroform	67-66-3	1.23	U	6.17	1.23	0.617
Chloromethane	74-87-3	4.94	Q	12.3	4.94	2.47
2-Chlorotoluene	95-49-8	1.23	U	6.17	1.23	0.617
4-Chlorotoluene	106-43-4	1.23	U	6.17	1.23	0.617
1,2-Dibromo-3-chloropropane	96-12-8	4.94	U	12.3	4.94	2.47
1,2-Dibromoethane	106-93-4	1.23	U	6.17	1.23	0.617
Dibromomethane	74-95-3	1.23	U	6.17	1.23	0.617
1,2-Dichlorobenzene	95-50-1	1.23	U	6.17	1.23	0.617
1,3-Dichlorobenzene	541-73-1	1.23	U	6.17	1.23	0.617
1,4-Dichlorobenzene	106-46-7	1.23	U	6.17	1.23	0.617
Dichlorodifluoromethane	75-71-8	2.46	U	6.17	2.46	1.23
1,1-Dichloroethane	75-34-3	2.46	U	6.17	2.46	1.23
1,2-Dichloroethane	107-06-2	1.23	U	6.17	1.23	0.617
1,1-Dichloroethene	75-35-4	1.23	U	6.17	1.23	0.617

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.23	U	6.17	1.23	0.617
trans-1,2-Dichloroethene	156-60-5	1.23	U	6.17	1.23	0.617
1,2-Dichloropropane	78-87-5	1.23	U	6.17	1.23	0.617
1,3-Dichloropropane	142-28-9	1.23	U	6.17	1.23	0.617
2,2-Dichloropropane	594-20-7	1.23	U	6.17	1.23	0.617
cis-1,3-Dichloropropene	10061-01-5	1.23	U	6.17	1.23	0.617
trans-1,3-Dichloropropene	10061-02-6	1.23	U	6.17	1.23	0.617
1,1-Dichloropropene	563-58-6	1.23	U	6.17	1.23	0.617
Ethylbenzene	100-41-4	1.23	U	6.17	1.23	0.617
2-Hexanone	591-78-6	6.18	Q	12.3	6.18	3.09
Hexachlorobutadiene	87-68-3	1.23	U	6.17	1.23	0.617
Isopropylbenzene	98-82-8	1.23	U	6.17	1.23	0.617
p-Isopropyltoluene	99-87-6	1.23	U	6.17	1.23	0.617
4-Methyl-2-pentanone	108-10-1	6.18	Q	12.3	6.18	3.09
Methylene chloride	75-09-2	2.46	U	6.17	2.46	1.23
Naphthalene	91-20-3	1.23	U	6.17	1.23	0.617
n-Propylbenzene	103-65-1	1.23	Q	6.17	1.23	0.617
Styrene	100-42-5	1.23	U	6.17	1.23	0.617
1,1,1,2-Tetrachloroethane	630-20-6	1.23	U	6.17	1.23	0.617
1,1,2,2-Tetrachloroethane	79-34-5	1.23	U	6.17	1.23	0.617
Tetrachloroethene	127-18-4	1.23	U	6.17	1.23	0.617
Toluene	108-88-3	1.23	U	6.17	1.23	0.617
1,2,3-Trichlorobenzene	87-61-6	1.23	U	6.17	1.23	0.617
1,2,4-Trichlorobenzene	120-82-1	1.23	U	6.17	1.23	0.617
1,1,1-Trichloroethane	71-55-6	1.23	U	6.17	1.23	0.617
1,1,2-Trichloroethane	79-00-5	1.23	U	6.17	1.23	0.617
Trichloroethene	79-01-6	1.23	U	6.17	1.23	0.617
Trichlorofluoromethane	75-69-4	2.46	U	6.17	2.46	1.23
1,2,3-Trichloropropane	96-18-4	2.46	U	6.17	2.46	1.23
1,2,4-Trimethylbenzene	95-63-6	1.23	U	6.17	1.23	0.617
1,3,5-Trimethylbenzene	108-67-8	1.23	U	6.17	1.23	0.617
Vinyl chloride	75-01-4	2.46	U	6.17	2.46	1.23
o-Xylene	95-47-6	1.23	U	6.17	1.23	0.617
m-,p-Xylene	179601-23-1	1.23	U	6.17	1.23	0.617

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	80	120	
1,2-Dichloroethane-d4	105	80	120	
Toluene-d8	108	85	115	
4-Bromofluorobenzene	118	85	120	

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-10	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(60-60.5)260416DUP	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 20:43
Collect Date:	04/26/2016 15:00	**Dilution:**	1	**File ID:**	1LM.LM34735
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	87.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.24	U	4.47	2.24	1.12

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(70-70.5)260416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:49
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 19:10
Collect Date:	04/26/2016 15:45	**Dilution:**	1	**File ID:**	9M974178
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	7.02	Q	24.3	12.1	6.07
Benzene	71-43-2	1.21	U	6.07	1.21	0.607
Bromobenzene	108-86-1	1.21	U	6.07	1.21	0.607
Bromochloromethane	74-97-5	2.42	U	6.07	2.42	1.21
Bromodichloromethane	75-27-4	1.21	U	6.07	1.21	0.607
Bromoform	75-25-2	1.21	U	6.07	1.21	0.607
Bromomethane	74-83-9	2.42	U	6.07	2.42	1.21
2-Butanone	78-93-3	6.08	Q	12.1	6.08	3.04
n-Butylbenzene	104-51-8	1.21	U	6.07	1.21	0.607
sec-Butylbenzene	135-98-8	1.21	U	6.07	1.21	0.607
tert-Butylbenzene	98-06-6	1.21	U	6.07	1.21	0.607
Carbon disulfide	75-15-0	1.21	Q	6.07	1.21	0.607
Carbon tetrachloride	56-23-5	1.21	U	6.07	1.21	0.607
Chlorobenzene	108-90-7	1.21	U	6.07	1.21	0.607
Chlorodibromomethane	124-48-1	1.21	U	6.07	1.21	0.607
Chloroethane	75-00-3	2.42	U	6.07	2.42	1.21
Chloroform	67-66-3	1.21	U	6.07	1.21	0.607
Chloromethane	74-87-3	4.86	Q	12.1	4.86	2.43
2-Chlorotoluene	95-49-8	1.21	U	6.07	1.21	0.607
4-Chlorotoluene	106-43-4	1.21	U	6.07	1.21	0.607
1,2-Dibromo-3-chloropropane	96-12-8	4.86	U	12.1	4.86	2.43
1,2-Dibromoethane	106-93-4	1.21	U	6.07	1.21	0.607
Dibromomethane	74-95-3	1.21	U	6.07	1.21	0.607
1,2-Dichlorobenzene	95-50-1	1.21	U	6.07	1.21	0.607
1,3-Dichlorobenzene	541-73-1	1.21	U	6.07	1.21	0.607
1,4-Dichlorobenzene	106-46-7	1.21	U	6.07	1.21	0.607
Dichlorodifluoromethane	75-71-8	2.42	U	6.07	2.42	1.21
1,1-Dichloroethane	75-34-3	2.42	U	6.07	2.42	1.21
1,2-Dichloroethane	107-06-2	1.21	U	6.07	1.21	0.607
1,1-Dichloroethene	75-35-4	1.21	U	6.07	1.21	0.607

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.21	U	6.07	1.21	0.607
trans-1,2-Dichloroethene	156-60-5	1.21	U	6.07	1.21	0.607
1,2-Dichloropropane	78-87-5	1.21	U	6.07	1.21	0.607
1,3-Dichloropropane	142-28-9	1.21	U	6.07	1.21	0.607
2,2-Dichloropropane	594-20-7	1.21	U	6.07	1.21	0.607
cis-1,3-Dichloropropene	10061-01-5	1.21	U	6.07	1.21	0.607
trans-1,3-Dichloropropene	10061-02-6	1.21	U	6.07	1.21	0.607
1,1-Dichloropropene	563-58-6	1.21	U	6.07	1.21	0.607
Ethylbenzene	100-41-4	1.21	U	6.07	1.21	0.607
2-Hexanone	591-78-6	6.08	Q	12.1	6.08	3.04
Hexachlorobutadiene	87-68-3	1.21	U	6.07	1.21	0.607
Isopropylbenzene	98-82-8	1.21	U	6.07	1.21	0.607
p-Isopropyltoluene	99-87-6	1.21	U	6.07	1.21	0.607
4-Methyl-2-pentanone	108-10-1	6.08	Q	12.1	6.08	3.04
Methylene chloride	75-09-2	2.42	U	6.07	2.42	1.21
Naphthalene	91-20-3	1.21	U	6.07	1.21	0.607
n-Propylbenzene	103-65-1	1.21	Q	6.07	1.21	0.607
Styrene	100-42-5	1.21	U	6.07	1.21	0.607
1,1,1,2-Tetrachloroethane	630-20-6	1.21	U	6.07	1.21	0.607
1,1,2,2-Tetrachloroethane	79-34-5	1.21	U	6.07	1.21	0.607
Tetrachloroethene	127-18-4	1.21	U	6.07	1.21	0.607
Toluene	108-88-3	1.21	U	6.07	1.21	0.607
1,2,3-Trichlorobenzene	87-61-6	1.21	U	6.07	1.21	0.607
1,2,4-Trichlorobenzene	120-82-1	1.21	U	6.07	1.21	0.607
1,1,1-Trichloroethane	71-55-6	1.21	U	6.07	1.21	0.607
1,1,2-Trichloroethane	79-00-5	1.21	U	6.07	1.21	0.607
Trichloroethene	79-01-6	1.21	U	6.07	1.21	0.607
Trichlorofluoromethane	75-69-4	2.42	U	6.07	2.42	1.21
1,2,3-Trichloropropane	96-18-4	2.42	U	6.07	2.42	1.21
1,2,4-Trimethylbenzene	95-63-6	1.21	U	6.07	1.21	0.607
1,3,5-Trimethylbenzene	108-67-8	1.21	U	6.07	1.21	0.607
Vinyl chloride	75-01-4	2.42	U	6.07	2.42	1.21
o-Xylene	95-47-6	1.21	U	6.07	1.21	0.607
m-,p-Xylene	179601-23-1	1.21	U	6.07	1.21	0.607

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	80	120	
1,2-Dichloroethane-d4	107	80	120	
Toluene-d8	109	85	115	
4-Bromofluorobenzene	114	85	120	

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-11	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(70-70.5)260416	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 21:02
Collect Date:	04/26/2016 15:45	**Dilution:**	1	**File ID:**	1LM.LM34736
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.36	U	4.73	2.36	1.18

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(80-80.5)260416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:50
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 19:41
Collect Date:	04/26/2016 16:45	**Dilution:**	1	**File ID:**	9M974179
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	9.31	Q	25.2	12.6	6.31
Benzene	71-43-2	1.26	U	6.31	1.26	0.631
Bromobenzene	108-86-1	1.26	U	6.31	1.26	0.631
Bromochloromethane	74-97-5	2.52	U	6.31	2.52	1.26
Bromodichloromethane	75-27-4	1.26	U	6.31	1.26	0.631
Bromoform	75-25-2	1.26	U	6.31	1.26	0.631
Bromomethane	74-83-9	2.52	U	6.31	2.52	1.26
2-Butanone	78-93-3	6.30	Q	12.6	6.30	3.15
n-Butylbenzene	104-51-8	1.26	U	6.31	1.26	0.631
sec-Butylbenzene	135-98-8	1.26	U	6.31	1.26	0.631
tert-Butylbenzene	98-06-6	1.26	U	6.31	1.26	0.631
Carbon disulfide	75-15-0	0.825	Q	6.31	1.26	0.631
Carbon tetrachloride	56-23-5	1.26	U	6.31	1.26	0.631
Chlorobenzene	108-90-7	1.26	U	6.31	1.26	0.631
Chlorodibromomethane	124-48-1	1.26	U	6.31	1.26	0.631
Chloroethane	75-00-3	2.52	U	6.31	2.52	1.26
Chloroform	67-66-3	1.26	U	6.31	1.26	0.631
Chloromethane	74-87-3	5.04	Q	12.6	5.04	2.52
2-Chlorotoluene	95-49-8	1.26	U	6.31	1.26	0.631
4-Chlorotoluene	106-43-4	1.26	U	6.31	1.26	0.631
1,2-Dibromo-3-chloropropane	96-12-8	5.04	U	12.6	5.04	2.52
1,2-Dibromoethane	106-93-4	1.26	U	6.31	1.26	0.631
Dibromomethane	74-95-3	1.26	U	6.31	1.26	0.631
1,2-Dichlorobenzene	95-50-1	1.26	U	6.31	1.26	0.631
1,3-Dichlorobenzene	541-73-1	1.26	U	6.31	1.26	0.631
1,4-Dichlorobenzene	106-46-7	1.26	U	6.31	1.26	0.631
Dichlorodifluoromethane	75-71-8	2.52	U	6.31	2.52	1.26
1,1-Dichloroethane	75-34-3	2.52	U	6.31	2.52	1.26
1,2-Dichloroethane	107-06-2	1.26	U	6.31	1.26	0.631
1,1-Dichloroethene	75-35-4	1.26	U	6.31	1.26	0.631

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.26	U	6.31	1.26	0.631
trans-1,2-Dichloroethene	156-60-5	1.26	U	6.31	1.26	0.631
1,2-Dichloropropane	78-87-5	1.26	U	6.31	1.26	0.631
1,3-Dichloropropane	142-28-9	1.26	U	6.31	1.26	0.631
2,2-Dichloropropane	594-20-7	1.26	U	6.31	1.26	0.631
cis-1,3-Dichloropropene	10061-01-5	1.26	U	6.31	1.26	0.631
trans-1,3-Dichloropropene	10061-02-6	1.26	U	6.31	1.26	0.631
1,1-Dichloropropene	563-58-6	1.26	U	6.31	1.26	0.631
Ethylbenzene	100-41-4	1.26	U	6.31	1.26	0.631
2-Hexanone	591-78-6	6.30	Q	12.6	6.30	3.15
Hexachlorobutadiene	87-68-3	1.26	U	6.31	1.26	0.631
Isopropylbenzene	98-82-8	1.26	U	6.31	1.26	0.631
p-Isopropyltoluene	99-87-6	1.26	U	6.31	1.26	0.631
4-Methyl-2-pentanone	108-10-1	6.30	Q	12.6	6.30	3.15
Methylene chloride	75-09-2	2.52	U	6.31	2.52	1.26
Naphthalene	91-20-3	1.26	U	6.31	1.26	0.631
n-Propylbenzene	103-65-1	1.26	Q	6.31	1.26	0.631
Styrene	100-42-5	1.26	U	6.31	1.26	0.631
1,1,1,2-Tetrachloroethane	630-20-6	1.26	U	6.31	1.26	0.631
1,1,2,2-Tetrachloroethane	79-34-5	1.26	U	6.31	1.26	0.631
Tetrachloroethene	127-18-4	1.26	U	6.31	1.26	0.631
Toluene	108-88-3	1.26	U	6.31	1.26	0.631
1,2,3-Trichlorobenzene	87-61-6	1.26	U	6.31	1.26	0.631
1,2,4-Trichlorobenzene	120-82-1	1.26	U	6.31	1.26	0.631
1,1,1-Trichloroethane	71-55-6	1.26	U	6.31	1.26	0.631
1,1,2-Trichloroethane	79-00-5	1.26	U	6.31	1.26	0.631
Trichloroethene	79-01-6	1.26	U	6.31	1.26	0.631
Trichlorofluoromethane	75-69-4	2.52	U	6.31	2.52	1.26
1,2,3-Trichloropropane	96-18-4	2.52	U	6.31	2.52	1.26
1,2,4-Trimethylbenzene	95-63-6	1.26	U	6.31	1.26	0.631
1,3,5-Trimethylbenzene	108-67-8	1.26	U	6.31	1.26	0.631
Vinyl chloride	75-01-4	2.52	U	6.31	2.52	1.26
o-Xylene	95-47-6	1.26	U	6.31	1.26	0.631
m-,p-Xylene	179601-23-1	1.26	U	6.31	1.26	0.631

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	80	120	
1,2-Dichloroethane-d4	109	80	120	
Toluene-d8	108	85	115	
4-Bromofluorobenzene	110	85	120	

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-12	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(80-80.5)260416	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 21:21
Collect Date:	04/26/2016 16:45	**Dilution:**	1	**File ID:**	1LM.LM34737
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.38	U	4.76	2.38	1.19

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-13	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(89.5-90)260416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:51
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 20:12
Collect Date:	04/26/2016 17:00	**Dilution:**	1	**File ID:**	9M974180
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	9.42	Q	25.4	12.7	6.35
Benzene	71-43-2	1.27	U	6.35	1.27	0.635
Bromobenzene	108-86-1	1.27	U	6.35	1.27	0.635
Bromochloromethane	74-97-5	2.54	U	6.35	2.54	1.27
Bromodichloromethane	75-27-4	1.27	U	6.35	1.27	0.635
Bromoform	75-25-2	1.27	U	6.35	1.27	0.635
Bromomethane	74-83-9	2.54	U	6.35	2.54	1.27
2-Butanone	78-93-3	6.34	Q	12.7	6.34	3.17
n-Butylbenzene	104-51-8	1.27	U	6.35	1.27	0.635
sec-Butylbenzene	135-98-8	1.27	U	6.35	1.27	0.635
tert-Butylbenzene	98-06-6	1.27	U	6.35	1.27	0.635
Carbon disulfide	75-15-0	1.47	Q	6.35	1.27	0.635
Carbon tetrachloride	56-23-5	1.27	U	6.35	1.27	0.635
Chlorobenzene	108-90-7	1.27	U	6.35	1.27	0.635
Chlorodibromomethane	124-48-1	1.27	U	6.35	1.27	0.635
Chloroethane	75-00-3	2.54	U	6.35	2.54	1.27
Chloroform	67-66-3	1.27	U	6.35	1.27	0.635
Chloromethane	74-87-3	5.08	Q	12.7	5.08	2.54
2-Chlorotoluene	95-49-8	1.27	U	6.35	1.27	0.635
4-Chlorotoluene	106-43-4	1.27	U	6.35	1.27	0.635
1,2-Dibromo-3-chloropropane	96-12-8	5.08	U	12.7	5.08	2.54
1,2-Dibromoethane	106-93-4	1.27	U	6.35	1.27	0.635
Dibromomethane	74-95-3	1.27	U	6.35	1.27	0.635
1,2-Dichlorobenzene	95-50-1	1.27	U	6.35	1.27	0.635
1,3-Dichlorobenzene	541-73-1	1.27	U	6.35	1.27	0.635
1,4-Dichlorobenzene	106-46-7	1.27	U	6.35	1.27	0.635
Dichlorodifluoromethane	75-71-8	2.54	U	6.35	2.54	1.27
1,1-Dichloroethane	75-34-3	2.54	U	6.35	2.54	1.27
1,2-Dichloroethane	107-06-2	1.27	U	6.35	1.27	0.635
1,1-Dichloroethene	75-35-4	1.27	U	6.35	1.27	0.635

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.27	U	6.35	1.27	0.635
trans-1,2-Dichloroethene	156-60-5	1.27	U	6.35	1.27	0.635
1,2-Dichloropropane	78-87-5	1.27	U	6.35	1.27	0.635
1,3-Dichloropropane	142-28-9	1.27	U	6.35	1.27	0.635
2,2-Dichloropropane	594-20-7	1.27	U	6.35	1.27	0.635
cis-1,3-Dichloropropene	10061-01-5	1.27	U	6.35	1.27	0.635
trans-1,3-Dichloropropene	10061-02-6	1.27	U	6.35	1.27	0.635
1,1-Dichloropropene	563-58-6	1.27	U	6.35	1.27	0.635
Ethylbenzene	100-41-4	1.27	U	6.35	1.27	0.635
2-Hexanone	591-78-6	6.34	Q	12.7	6.34	3.17
Hexachlorobutadiene	87-68-3	1.27	U	6.35	1.27	0.635
Isopropylbenzene	98-82-8	1.27	U	6.35	1.27	0.635
p-Isopropyltoluene	99-87-6	1.27	U	6.35	1.27	0.635
4-Methyl-2-pentanone	108-10-1	6.34	Q	12.7	6.34	3.17
Methylene chloride	75-09-2	2.54	U	6.35	2.54	1.27
Naphthalene	91-20-3	1.27	U	6.35	1.27	0.635
n-Propylbenzene	103-65-1	1.27	Q	6.35	1.27	0.635
Styrene	100-42-5	1.27	U	6.35	1.27	0.635
1,1,1,2-Tetrachloroethane	630-20-6	1.27	U	6.35	1.27	0.635
1,1,2,2-Tetrachloroethane	79-34-5	1.27	U	6.35	1.27	0.635
Tetrachloroethene	127-18-4	1.27	U	6.35	1.27	0.635
Toluene	108-88-3	1.27	U	6.35	1.27	0.635
1,2,3-Trichlorobenzene	87-61-6	1.27	U	6.35	1.27	0.635
1,2,4-Trichlorobenzene	120-82-1	1.27	U	6.35	1.27	0.635
1,1,1-Trichloroethane	71-55-6	1.27	U	6.35	1.27	0.635
1,1,2-Trichloroethane	79-00-5	1.27	U	6.35	1.27	0.635
Trichloroethene	79-01-6	1.27	U	6.35	1.27	0.635
Trichlorofluoromethane	75-69-4	2.54	U	6.35	2.54	1.27
1,2,3-Trichloropropane	96-18-4	2.54	U	6.35	2.54	1.27
1,2,4-Trimethylbenzene	95-63-6	1.27	U	6.35	1.27	0.635
1,3,5-Trimethylbenzene	108-67-8	1.27	U	6.35	1.27	0.635
Vinyl chloride	75-01-4	2.54	U	6.35	2.54	1.27
o-Xylene	95-47-6	1.27	U	6.35	1.27	0.635
m-,p-Xylene	179601-23-1	1.27	U	6.35	1.27	0.635

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	80	120	
1,2-Dichloroethane-d4	110	80	120	
Toluene-d8	108	85	115	
4-Bromofluorobenzene	117	85	120	

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-13	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(89.5-90)260416	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 21:40
Collect Date:	04/26/2016 17:00	**Dilution:**	1	**File ID:**	1LM.LM34738
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.44	U	4.86	2.44	1.22

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-14	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	EQUIPMENT BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/28/2016 12:21
Workgroup #:	WG567935	**Analyst:**	TMB	**Run Date:**	05/07/2016 13:31
Collect Date:	04/25/2016 17:00	**Dilution:**	1	**File ID:**	8M412050
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	9.05	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.322	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	114	70	120	
Toluene-d8	98.4	85	120	
4-Bromofluorobenzene	99.0	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-14	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	EQUIPMENT BLANK	**Prep Method:**	6850	**Prep Date:**	05/05/2016 17:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567744	**Analyst:**	JWR	**Run Date:**	05/05/2016 20:55
Collect Date:	04/25/2016 17:00	**Dilution:**	1	**File ID:**	1LM.LM34776
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #: L16041580-01 **Client ID:** 18CPTMW22DW(5-5.5)260416 **Matrix:** Soil **Collect Date:** 04/26/2016 09:05

Analyte	Result	Units	Qualifier
Percent Solids	84.8	weight %	

Sample #: L16041580-02 **Client ID:** 18CPTMW22DW(10-10.5)260416 **Matrix:** Soil **Collect Date:** 04/26/2016 10:00

Analyte	Result	Units	Qualifier
Percent Solids	82.0	weight %	

Sample #: L16041580-03 **Client ID:** 18CPTMW22DW(20-20.5)260416 **Matrix:** Soil **Collect Date:** 04/26/2016 10:35

Analyte	Result	Units	Qualifier
Percent Solids	79.2	weight %	

Sample #: L16041580-04 **Client ID:** 18CPTMW22DW(29.5-30)260416 **Matrix:** Soil **Collect Date:** 04/26/2016 11:15

Analyte	Result	Units	Qualifier
Percent Solids	78.2	weight %	

Sample #: L16041580-05 **Client ID:** 18CPTMW22DW(40-40.5)260416 **Matrix:** Soil **Collect Date:** 04/26/2016 11:55

Analyte	Result	Units	Qualifier
Percent Solids	79.0	weight %	

Sample #: L16041580-06 **Client ID:** 18CPTMW22DW(50-51)260416 **Matrix:** Soil **Collect Date:** 04/26/2016 14:15

Analyte	Result	Units	Qualifier
Percent Solids	83.5	weight %	

Sample #: L16041580-07 **Client ID:** 18CPTMW22DW(50-51)260416MS **Matrix:** Soil **Collect Date:** 04/26/2016 14:15

Analyte	Result	Units	Qualifier
Percent Solids	83.5	weight %	

Sample #: L16041580-08 **Client ID:** 18CPTMW22DW(50-51)260416MSD **Matrix:** Soil **Collect Date:** 04/26/2016 14:15

Analyte	Result	Units	Qualifier
Percent Solids	83.5	weight %	

Sample #: L16041580-09 **Client ID:** 18CPTMW22DW(60-60.5)260416 **Matrix:** Soil **Collect Date:** 04/26/2016 15:00

Analyte	Result	Units	Qualifier
Percent Solids	86.5	weight %	

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #: L16041580-10 **Client ID:** 18CPTMW22DW(60-60.5)260416DUP **Matrix:** Soil **Collect Date:** 04/26/2016 15:00

Analyte	Result	Units	Qualifier
Percent Solids	87.1	weight %	

Sample #: L16041580-11 **Client ID:** 18CPTMW22DW(70-70.5)260416 **Matrix:** Soil **Collect Date:** 04/26/2016 15:45

Analyte	Result	Units	Qualifier
Percent Solids	83.7	weight %	

Sample #: L16041580-12 **Client ID:** 18CPTMW22DW(80-80.5)260416 **Matrix:** Soil **Collect Date:** 04/26/2016 16:45

Analyte	Result	Units	Qualifier
Percent Solids	82.3	weight %	

Sample #: L16041580-13 **Client ID:** 18CPTMW22DW(89.5-90)260416 **Matrix:** Soil **Collect Date:** 04/26/2016 17:00

Analyte	Result	Units	Qualifier
Percent Solids	80.0	weight %	

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(5-5.5)260416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:42
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 15:35
Collect Date:	04/26/2016 09:05	**Dilution:**	1	**File ID:**	9M974171
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.2	Q	24.5	12.2	6.12
Benzene	71-43-2	1.22	U	6.12	1.22	0.612
Bromobenzene	108-86-1	1.22	U	6.12	1.22	0.612
Bromochloromethane	74-97-5	2.44	U	6.12	2.44	1.22
Bromodichloromethane	75-27-4	1.22	U	6.12	1.22	0.612
Bromoform	75-25-2	1.22	U	6.12	1.22	0.612
Bromomethane	74-83-9	2.44	U	6.12	2.44	1.22
2-Butanone	78-93-3	6.12	Q	12.2	6.12	3.06
n-Butylbenzene	104-51-8	1.22	U	6.12	1.22	0.612
sec-Butylbenzene	135-98-8	1.22	U	6.12	1.22	0.612
tert-Butylbenzene	98-06-6	1.22	U	6.12	1.22	0.612
Carbon disulfide	75-15-0	1.22	Q	6.12	1.22	0.612
Carbon tetrachloride	56-23-5	1.22	U	6.12	1.22	0.612
Chlorobenzene	108-90-7	1.22	U	6.12	1.22	0.612
Chlorodibromomethane	124-48-1	1.22	U	6.12	1.22	0.612
Chloroethane	75-00-3	2.44	U	6.12	2.44	1.22
Chloroform	67-66-3	1.22	U	6.12	1.22	0.612
Chloromethane	74-87-3	4.90	Q	12.2	4.90	2.45
2-Chlorotoluene	95-49-8	1.22	U	6.12	1.22	0.612
4-Chlorotoluene	106-43-4	1.22	U	6.12	1.22	0.612
1,2-Dibromo-3-chloropropane	96-12-8	4.90	U	12.2	4.90	2.45
1,2-Dibromoethane	106-93-4	1.22	U	6.12	1.22	0.612
Dibromomethane	74-95-3	1.22	U	6.12	1.22	0.612
1,2-Dichlorobenzene	95-50-1	1.22	U	6.12	1.22	0.612
1,3-Dichlorobenzene	541-73-1	1.22	U	6.12	1.22	0.612
1,4-Dichlorobenzene	106-46-7	1.22	U	6.12	1.22	0.612
Dichlorodifluoromethane	75-71-8	2.44	U	6.12	2.44	1.22
1,1-Dichloroethane	75-34-3	2.44	U	6.12	2.44	1.22
1,2-Dichloroethane	107-06-2	1.22	U	6.12	1.22	0.612
1,1-Dichloroethene	75-35-4	1.22	U	6.12	1.22	0.612
cis-1,2-Dichloroethene	156-59-2	1.22	U	6.12	1.22	0.612

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.22	U	6.12	1.22	0.612
1,2-Dichloropropane	78-87-5	1.22	U	6.12	1.22	0.612
1,3-Dichloropropane	142-28-9	1.22	U	6.12	1.22	0.612
2,2-Dichloropropane	594-20-7	1.22	U	6.12	1.22	0.612
cis-1,3-Dichloropropene	10061-01-5	1.22	U	6.12	1.22	0.612
trans-1,3-Dichloropropene	10061-02-6	1.22	U	6.12	1.22	0.612
1,1-Dichloropropene	563-58-6	1.22	U	6.12	1.22	0.612
Ethylbenzene	100-41-4	1.22	U	6.12	1.22	0.612
2-Hexanone	591-78-6	6.12	Q	12.2	6.12	3.06
Hexachlorobutadiene	87-68-3	1.22	U	6.12	1.22	0.612
Isopropylbenzene	98-82-8	1.22	U	6.12	1.22	0.612
p-Isopropyltoluene	99-87-6	1.22	U	6.12	1.22	0.612
4-Methyl-2-pentanone	108-10-1	6.12	Q	12.2	6.12	3.06
Methylene chloride	75-09-2	2.44	U	6.12	2.44	1.22
Naphthalene	91-20-3	1.22	U	6.12	1.22	0.612
n-Propylbenzene	103-65-1	1.22	Q	6.12	1.22	0.612
Styrene	100-42-5	1.22	U	6.12	1.22	0.612
1,1,1,2-Tetrachloroethane	630-20-6	1.22	U	6.12	1.22	0.612
1,1,2,2-Tetrachloroethane	79-34-5	1.22	U	6.12	1.22	0.612
Tetrachloroethene	127-18-4	1.22	U	6.12	1.22	0.612
Toluene	108-88-3	1.22	U	6.12	1.22	0.612
1,2,3-Trichlorobenzene	87-61-6	1.22	U	6.12	1.22	0.612
1,2,4-Trichlorobenzene	120-82-1	1.22	U	6.12	1.22	0.612
1,1,1-Trichloroethane	71-55-6	1.22	U	6.12	1.22	0.612
1,1,2-Trichloroethane	79-00-5	1.22	U	6.12	1.22	0.612
Trichloroethene	79-01-6	1.22	U	6.12	1.22	0.612
Trichlorofluoromethane	75-69-4	2.44	U	6.12	2.44	1.22
1,2,3-Trichloropropane	96-18-4	2.44	U	6.12	2.44	1.22
1,2,4-Trimethylbenzene	95-63-6	1.22	U	6.12	1.22	0.612
1,3,5-Trimethylbenzene	108-67-8	1.22	U	6.12	1.22	0.612
Vinyl chloride	75-01-4	2.44	U	6.12	2.44	1.22
o-Xylene	95-47-6	1.22	U	6.12	1.22	0.612
m-,p-Xylene	179601-23-1	1.22	U	6.12	1.22	0.612

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	80	120	
1,2-Dichloroethane-d4	102	80	120	
Toluene-d8	108	85	115	
4-Bromofluorobenzene	112	85	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(10-10.5)260416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:42
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 16:06
Collect Date:	04/26/2016 10:00	**Dilution:**	1	**File ID:**	9M974172
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.4	Q	24.9	12.4	6.21
Benzene	71-43-2	1.24	U	6.21	1.24	0.621
Bromobenzene	108-86-1	1.24	U	6.21	1.24	0.621
Bromochloromethane	74-97-5	2.48	U	6.21	2.48	1.24
Bromodichloromethane	75-27-4	1.24	U	6.21	1.24	0.621
Bromoform	75-25-2	1.24	U	6.21	1.24	0.621
Bromomethane	74-83-9	2.48	U	6.21	2.48	1.24
2-Butanone	78-93-3	6.22	Q	12.4	6.22	3.11
n-Butylbenzene	104-51-8	1.24	U	6.21	1.24	0.621
sec-Butylbenzene	135-98-8	1.24	U	6.21	1.24	0.621
tert-Butylbenzene	98-06-6	1.24	U	6.21	1.24	0.621
Carbon disulfide	75-15-0	1.24	Q	6.21	1.24	0.621
Carbon tetrachloride	56-23-5	1.24	U	6.21	1.24	0.621
Chlorobenzene	108-90-7	1.24	U	6.21	1.24	0.621
Chlorodibromomethane	124-48-1	1.24	U	6.21	1.24	0.621
Chloroethane	75-00-3	2.48	U	6.21	2.48	1.24
Chloroform	67-66-3	1.24	U	6.21	1.24	0.621
Chloromethane	74-87-3	4.98	Q	12.4	4.98	2.49
2-Chlorotoluene	95-49-8	1.24	U	6.21	1.24	0.621
4-Chlorotoluene	106-43-4	1.24	U	6.21	1.24	0.621
1,2-Dibromo-3-chloropropane	96-12-8	4.98	U	12.4	4.98	2.49
1,2-Dibromoethane	106-93-4	1.24	U	6.21	1.24	0.621
Dibromomethane	74-95-3	1.24	U	6.21	1.24	0.621
1,2-Dichlorobenzene	95-50-1	1.24	U	6.21	1.24	0.621
1,3-Dichlorobenzene	541-73-1	1.24	U	6.21	1.24	0.621
1,4-Dichlorobenzene	106-46-7	1.24	U	6.21	1.24	0.621
Dichlorodifluoromethane	75-71-8	2.48	U	6.21	2.48	1.24
1,1-Dichloroethane	75-34-3	2.48	U	6.21	2.48	1.24
1,2-Dichloroethane	107-06-2	1.24	U	6.21	1.24	0.621
1,1-Dichloroethene	75-35-4	1.24	U	6.21	1.24	0.621

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.24	U	6.21	1.24	0.621
trans-1,2-Dichloroethene	156-60-5	1.24	U	6.21	1.24	0.621
1,2-Dichloropropane	78-87-5	1.24	U	6.21	1.24	0.621
1,3-Dichloropropane	142-28-9	1.24	U	6.21	1.24	0.621
2,2-Dichloropropane	594-20-7	1.24	U	6.21	1.24	0.621
cis-1,3-Dichloropropene	10061-01-5	1.24	U	6.21	1.24	0.621
trans-1,3-Dichloropropene	10061-02-6	1.24	U	6.21	1.24	0.621
1,1-Dichloropropene	563-58-6	1.24	U	6.21	1.24	0.621
Ethylbenzene	100-41-4	1.24	U	6.21	1.24	0.621
2-Hexanone	591-78-6	6.22	Q	12.4	6.22	3.11
Hexachlorobutadiene	87-68-3	1.24	U	6.21	1.24	0.621
Isopropylbenzene	98-82-8	1.24	U	6.21	1.24	0.621
p-Isopropyltoluene	99-87-6	1.24	U	6.21	1.24	0.621
4-Methyl-2-pentanone	108-10-1	6.22	Q	12.4	6.22	3.11
Methylene chloride	75-09-2	2.48	U	6.21	2.48	1.24
Naphthalene	91-20-3	1.24	U	6.21	1.24	0.621
n-Propylbenzene	103-65-1	1.24	Q	6.21	1.24	0.621
Styrene	100-42-5	1.24	U	6.21	1.24	0.621
1,1,1,2-Tetrachloroethane	630-20-6	1.24	U	6.21	1.24	0.621
1,1,2,2-Tetrachloroethane	79-34-5	1.24	U	6.21	1.24	0.621
Tetrachloroethene	127-18-4	1.24	U	6.21	1.24	0.621
Toluene	108-88-3	1.24	U	6.21	1.24	0.621
1,2,3-Trichlorobenzene	87-61-6	1.24	U	6.21	1.24	0.621
1,2,4-Trichlorobenzene	120-82-1	1.24	U	6.21	1.24	0.621
1,1,1-Trichloroethane	71-55-6	1.24	U	6.21	1.24	0.621
1,1,2-Trichloroethane	79-00-5	1.24	U	6.21	1.24	0.621
Trichloroethene	79-01-6	1.24	U	6.21	1.24	0.621
Trichlorofluoromethane	75-69-4	2.48	U	6.21	2.48	1.24
1,2,3-Trichloropropane	96-18-4	2.48	U	6.21	2.48	1.24
1,2,4-Trimethylbenzene	95-63-6	1.24	U	6.21	1.24	0.621
1,3,5-Trimethylbenzene	108-67-8	1.24	U	6.21	1.24	0.621
Vinyl chloride	75-01-4	2.48	U	6.21	2.48	1.24
o-Xylene	95-47-6	1.24	U	6.21	1.24	0.621
m-,p-Xylene	179601-23-1	1.24	U	6.21	1.24	0.621

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	80	120	
1,2-Dichloroethane-d4	104	80	120	
Toluene-d8	106	85	115	
4-Bromofluorobenzene	109	85	120	

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(20-20.5)260416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:44
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 16:37
Collect Date:	04/26/2016 10:35	**Dilution:**	1	**File ID:**	9M974173
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.5	Q	27.0	13.5	6.74
Benzene	71-43-2	1.35	U	6.74	1.35	0.674
Bromobenzene	108-86-1	1.35	U	6.74	1.35	0.674
Bromochloromethane	74-97-5	2.70	U	6.74	2.70	1.35
Bromodichloromethane	75-27-4	1.35	U	6.74	1.35	0.674
Bromoform	75-25-2	1.35	U	6.74	1.35	0.674
Bromomethane	74-83-9	2.70	U	6.74	2.70	1.35
2-Butanone	78-93-3	6.74	Q	13.5	6.74	3.37
n-Butylbenzene	104-51-8	1.35	U	6.74	1.35	0.674
sec-Butylbenzene	135-98-8	1.35	U	6.74	1.35	0.674
tert-Butylbenzene	98-06-6	1.35	U	6.74	1.35	0.674
Carbon disulfide	75-15-0	1.35	Q	6.74	1.35	0.674
Carbon tetrachloride	56-23-5	1.35	U	6.74	1.35	0.674
Chlorobenzene	108-90-7	1.35	U	6.74	1.35	0.674
Chlorodibromomethane	124-48-1	1.35	U	6.74	1.35	0.674
Chloroethane	75-00-3	2.70	U	6.74	2.70	1.35
Chloroform	67-66-3	1.35	U	6.74	1.35	0.674
Chloromethane	74-87-3	5.40	Q	13.5	5.40	2.70
2-Chlorotoluene	95-49-8	1.35	U	6.74	1.35	0.674
4-Chlorotoluene	106-43-4	1.35	U	6.74	1.35	0.674
1,2-Dibromo-3-chloropropane	96-12-8	5.40	U	13.5	5.40	2.70
1,2-Dibromoethane	106-93-4	1.35	U	6.74	1.35	0.674
Dibromomethane	74-95-3	1.35	U	6.74	1.35	0.674
1,2-Dichlorobenzene	95-50-1	1.35	U	6.74	1.35	0.674
1,3-Dichlorobenzene	541-73-1	1.35	U	6.74	1.35	0.674
1,4-Dichlorobenzene	106-46-7	1.35	U	6.74	1.35	0.674
Dichlorodifluoromethane	75-71-8	2.70	U	6.74	2.70	1.35
1,1-Dichloroethane	75-34-3	2.70	U	6.74	2.70	1.35
1,2-Dichloroethane	107-06-2	1.35	U	6.74	1.35	0.674
1,1-Dichloroethene	75-35-4	1.35	U	6.74	1.35	0.674

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.35	U	6.74	1.35	0.674
trans-1,2-Dichloroethene	156-60-5	1.35	U	6.74	1.35	0.674
1,2-Dichloropropane	78-87-5	1.35	U	6.74	1.35	0.674
1,3-Dichloropropane	142-28-9	1.35	U	6.74	1.35	0.674
2,2-Dichloropropane	594-20-7	1.35	U	6.74	1.35	0.674
cis-1,3-Dichloropropene	10061-01-5	1.35	U	6.74	1.35	0.674
trans-1,3-Dichloropropene	10061-02-6	1.35	U	6.74	1.35	0.674
1,1-Dichloropropene	563-58-6	1.35	U	6.74	1.35	0.674
Ethylbenzene	100-41-4	1.35	U	6.74	1.35	0.674
2-Hexanone	591-78-6	6.74	Q	13.5	6.74	3.37
Hexachlorobutadiene	87-68-3	1.35	U	6.74	1.35	0.674
Isopropylbenzene	98-82-8	1.35	U	6.74	1.35	0.674
p-Isopropyltoluene	99-87-6	1.35	U	6.74	1.35	0.674
4-Methyl-2-pentanone	108-10-1	6.74	Q	13.5	6.74	3.37
Methylene chloride	75-09-2	2.70	U	6.74	2.70	1.35
Naphthalene	91-20-3	1.35	U	6.74	1.35	0.674
n-Propylbenzene	103-65-1	1.35	Q	6.74	1.35	0.674
Styrene	100-42-5	1.35	U	6.74	1.35	0.674
1,1,1,2-Tetrachloroethane	630-20-6	1.35	U	6.74	1.35	0.674
1,1,2,2-Tetrachloroethane	79-34-5	1.35	U	6.74	1.35	0.674
Tetrachloroethene	127-18-4	1.35	U	6.74	1.35	0.674
Toluene	108-88-3	1.35	U	6.74	1.35	0.674
1,2,3-Trichlorobenzene	87-61-6	1.35	U	6.74	1.35	0.674
1,2,4-Trichlorobenzene	120-82-1	1.35	U	6.74	1.35	0.674
1,1,1-Trichloroethane	71-55-6	1.35	U	6.74	1.35	0.674
1,1,2-Trichloroethane	79-00-5	1.35	U	6.74	1.35	0.674
Trichloroethene	79-01-6	1.35	U	6.74	1.35	0.674
Trichlorofluoromethane	75-69-4	2.70	U	6.74	2.70	1.35
1,2,3-Trichloropropane	96-18-4	2.70	U	6.74	2.70	1.35
1,2,4-Trimethylbenzene	95-63-6	1.35	U	6.74	1.35	0.674
1,3,5-Trimethylbenzene	108-67-8	1.35	U	6.74	1.35	0.674
Vinyl chloride	75-01-4	2.70	U	6.74	2.70	1.35
o-Xylene	95-47-6	1.35	U	6.74	1.35	0.674
m-,p-Xylene	179601-23-1	1.35	U	6.74	1.35	0.674

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	80	120	
1,2-Dichloroethane-d4	102	80	120	
Toluene-d8	107	85	115	
4-Bromofluorobenzene	110	85	120	

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(29.5-30)260416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:44
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 17:08
Collect Date:	04/26/2016 11:15	**Dilution:**	1	**File ID:**	9M974174
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	78.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.5	Q	26.9	13.5	6.73
Benzene	71-43-2	1.35	U	6.73	1.35	0.673
Bromobenzene	108-86-1	1.35	U	6.73	1.35	0.673
Bromochloromethane	74-97-5	2.70	U	6.73	2.70	1.35
Bromodichloromethane	75-27-4	1.35	U	6.73	1.35	0.673
Bromoform	75-25-2	1.35	U	6.73	1.35	0.673
Bromomethane	74-83-9	2.70	U	6.73	2.70	1.35
2-Butanone	78-93-3	6.74	Q	13.5	6.74	3.37
n-Butylbenzene	104-51-8	1.35	U	6.73	1.35	0.673
sec-Butylbenzene	135-98-8	1.35	U	6.73	1.35	0.673
tert-Butylbenzene	98-06-6	1.35	U	6.73	1.35	0.673
Carbon disulfide	75-15-0	1.35	Q	6.73	1.35	0.673
Carbon tetrachloride	56-23-5	1.35	U	6.73	1.35	0.673
Chlorobenzene	108-90-7	1.35	U	6.73	1.35	0.673
Chlorodibromomethane	124-48-1	1.35	U	6.73	1.35	0.673
Chloroethane	75-00-3	2.70	U	6.73	2.70	1.35
Chloroform	67-66-3	1.35	U	6.73	1.35	0.673
Chloromethane	74-87-3	5.38	Q	13.5	5.38	2.69
2-Chlorotoluene	95-49-8	1.35	U	6.73	1.35	0.673
4-Chlorotoluene	106-43-4	1.35	U	6.73	1.35	0.673
1,2-Dibromo-3-chloropropane	96-12-8	5.38	U	13.5	5.38	2.69
1,2-Dibromoethane	106-93-4	1.35	U	6.73	1.35	0.673
Dibromomethane	74-95-3	1.35	U	6.73	1.35	0.673
1,2-Dichlorobenzene	95-50-1	1.35	U	6.73	1.35	0.673
1,3-Dichlorobenzene	541-73-1	1.35	U	6.73	1.35	0.673
1,4-Dichlorobenzene	106-46-7	1.35	U	6.73	1.35	0.673
Dichlorodifluoromethane	75-71-8	2.70	U	6.73	2.70	1.35
1,1-Dichloroethane	75-34-3	2.70	U	6.73	2.70	1.35
1,2-Dichloroethane	107-06-2	1.35	U	6.73	1.35	0.673
1,1-Dichloroethene	75-35-4	1.35	U	6.73	1.35	0.673

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.35	U	6.73	1.35	0.673
trans-1,2-Dichloroethene	156-60-5	1.35	U	6.73	1.35	0.673
1,2-Dichloropropane	78-87-5	1.35	U	6.73	1.35	0.673
1,3-Dichloropropane	142-28-9	1.35	U	6.73	1.35	0.673
2,2-Dichloropropane	594-20-7	1.35	U	6.73	1.35	0.673
cis-1,3-Dichloropropene	10061-01-5	1.35	U	6.73	1.35	0.673
trans-1,3-Dichloropropene	10061-02-6	1.35	U	6.73	1.35	0.673
1,1-Dichloropropene	563-58-6	1.35	U	6.73	1.35	0.673
Ethylbenzene	100-41-4	1.35	U	6.73	1.35	0.673
2-Hexanone	591-78-6	6.74	Q	13.5	6.74	3.37
Hexachlorobutadiene	87-68-3	1.35	U	6.73	1.35	0.673
Isopropylbenzene	98-82-8	1.35	U	6.73	1.35	0.673
p-Isopropyltoluene	99-87-6	1.35	U	6.73	1.35	0.673
4-Methyl-2-pentanone	108-10-1	6.74	Q	13.5	6.74	3.37
Methylene chloride	75-09-2	2.70	U	6.73	2.70	1.35
Naphthalene	91-20-3	1.35	U	6.73	1.35	0.673
n-Propylbenzene	103-65-1	1.35	Q	6.73	1.35	0.673
Styrene	100-42-5	1.35	U	6.73	1.35	0.673
1,1,1,2-Tetrachloroethane	630-20-6	1.35	U	6.73	1.35	0.673
1,1,2,2-Tetrachloroethane	79-34-5	1.35	U	6.73	1.35	0.673
Tetrachloroethene	127-18-4	1.35	U	6.73	1.35	0.673
Toluene	108-88-3	1.35	U	6.73	1.35	0.673
1,2,3-Trichlorobenzene	87-61-6	1.35	U	6.73	1.35	0.673
1,2,4-Trichlorobenzene	120-82-1	1.35	U	6.73	1.35	0.673
1,1,1-Trichloroethane	71-55-6	1.35	U	6.73	1.35	0.673
1,1,2-Trichloroethane	79-00-5	1.35	U	6.73	1.35	0.673
Trichloroethene	79-01-6	1.35	U	6.73	1.35	0.673
Trichlorofluoromethane	75-69-4	2.70	U	6.73	2.70	1.35
1,2,3-Trichloropropane	96-18-4	2.70	U	6.73	2.70	1.35
1,2,4-Trimethylbenzene	95-63-6	1.35	U	6.73	1.35	0.673
1,3,5-Trimethylbenzene	108-67-8	1.35	U	6.73	1.35	0.673
Vinyl chloride	75-01-4	2.70	U	6.73	2.70	1.35
o-Xylene	95-47-6	1.35	U	6.73	1.35	0.673
m-,p-Xylene	179601-23-1	1.35	U	6.73	1.35	0.673

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	80	120	
1,2-Dichloroethane-d4	110	80	120	
Toluene-d8	106	85	115	
4-Bromofluorobenzene	112	85	120	

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(40-40.5)260416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:45
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 17:40
Collect Date:	04/26/2016 11:55	**Dilution:**	1	**File ID:**	9M974175
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	79.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.0	Q	24.0	12.0	5.99
Benzene	71-43-2	1.20	U	5.99	1.20	0.599
Bromobenzene	108-86-1	1.20	U	5.99	1.20	0.599
Bromochloromethane	74-97-5	2.40	U	5.99	2.40	1.20
Bromodichloromethane	75-27-4	1.20	U	5.99	1.20	0.599
Bromoform	75-25-2	1.20	U	5.99	1.20	0.599
Bromomethane	74-83-9	2.40	U	5.99	2.40	1.20
2-Butanone	78-93-3	6.00	Q	12.0	6.00	3.00
n-Butylbenzene	104-51-8	1.20	U	5.99	1.20	0.599
sec-Butylbenzene	135-98-8	1.20	U	5.99	1.20	0.599
tert-Butylbenzene	98-06-6	1.20	U	5.99	1.20	0.599
Carbon disulfide	75-15-0	1.20	Q	5.99	1.20	0.599
Carbon tetrachloride	56-23-5	1.20	U	5.99	1.20	0.599
Chlorobenzene	108-90-7	1.20	U	5.99	1.20	0.599
Chlorodibromomethane	124-48-1	1.20	U	5.99	1.20	0.599
Chloroethane	75-00-3	2.40	U	5.99	2.40	1.20
Chloroform	67-66-3	1.20	U	5.99	1.20	0.599
Chloromethane	74-87-3	4.80	Q	12.0	4.80	2.40
2-Chlorotoluene	95-49-8	1.20	U	5.99	1.20	0.599
4-Chlorotoluene	106-43-4	1.20	U	5.99	1.20	0.599
1,2-Dibromo-3-chloropropane	96-12-8	4.80	U	12.0	4.80	2.40
1,2-Dibromoethane	106-93-4	1.20	U	5.99	1.20	0.599
Dibromomethane	74-95-3	1.20	U	5.99	1.20	0.599
1,2-Dichlorobenzene	95-50-1	1.20	U	5.99	1.20	0.599
1,3-Dichlorobenzene	541-73-1	1.20	U	5.99	1.20	0.599
1,4-Dichlorobenzene	106-46-7	1.20	U	5.99	1.20	0.599
Dichlorodifluoromethane	75-71-8	2.40	U	5.99	2.40	1.20
1,1-Dichloroethane	75-34-3	2.40	U	5.99	2.40	1.20
1,2-Dichloroethane	107-06-2	1.20	U	5.99	1.20	0.599
1,1-Dichloroethene	75-35-4	1.20	U	5.99	1.20	0.599

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.20	U	5.99	1.20	0.599
trans-1,2-Dichloroethene	156-60-5	1.20	U	5.99	1.20	0.599
1,2-Dichloropropane	78-87-5	1.20	U	5.99	1.20	0.599
1,3-Dichloropropane	142-28-9	1.20	U	5.99	1.20	0.599
2,2-Dichloropropane	594-20-7	1.20	U	5.99	1.20	0.599
cis-1,3-Dichloropropene	10061-01-5	1.20	U	5.99	1.20	0.599
trans-1,3-Dichloropropene	10061-02-6	1.20	U	5.99	1.20	0.599
1,1-Dichloropropene	563-58-6	1.20	U	5.99	1.20	0.599
Ethylbenzene	100-41-4	1.20	U	5.99	1.20	0.599
2-Hexanone	591-78-6	6.00	Q	12.0	6.00	3.00
Hexachlorobutadiene	87-68-3	1.20	U	5.99	1.20	0.599
Isopropylbenzene	98-82-8	1.20	U	5.99	1.20	0.599
p-Isopropyltoluene	99-87-6	1.20	U	5.99	1.20	0.599
4-Methyl-2-pentanone	108-10-1	6.00	Q	12.0	6.00	3.00
Methylene chloride	75-09-2	2.40	U	5.99	2.40	1.20
Naphthalene	91-20-3	1.20	U	5.99	1.20	0.599
n-Propylbenzene	103-65-1	1.20	Q	5.99	1.20	0.599
Styrene	100-42-5	1.20	U	5.99	1.20	0.599
1,1,1,2-Tetrachloroethane	630-20-6	1.20	U	5.99	1.20	0.599
1,1,2,2-Tetrachloroethane	79-34-5	1.20	U	5.99	1.20	0.599
Tetrachloroethene	127-18-4	1.20	U	5.99	1.20	0.599
Toluene	108-88-3	1.20	U	5.99	1.20	0.599
1,2,3-Trichlorobenzene	87-61-6	1.20	U	5.99	1.20	0.599
1,2,4-Trichlorobenzene	120-82-1	1.20	U	5.99	1.20	0.599
1,1,1-Trichloroethane	71-55-6	1.20	U	5.99	1.20	0.599
1,1,2-Trichloroethane	79-00-5	1.20	U	5.99	1.20	0.599
Trichloroethene	79-01-6	1.20	U	5.99	1.20	0.599
Trichlorofluoromethane	75-69-4	2.40	U	5.99	2.40	1.20
1,2,3-Trichloropropane	96-18-4	2.40	U	5.99	2.40	1.20
1,2,4-Trimethylbenzene	95-63-6	1.20	U	5.99	1.20	0.599
1,3,5-Trimethylbenzene	108-67-8	1.20	U	5.99	1.20	0.599
Vinyl chloride	75-01-4	2.40	U	5.99	2.40	1.20
o-Xylene	95-47-6	1.20	U	5.99	1.20	0.599
m-,p-Xylene	179601-23-1	1.20	U	5.99	1.20	0.599

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	80	120	
1,2-Dichloroethane-d4	111	80	120	
Toluene-d8	108	85	115	
4-Bromofluorobenzene	114	85	120	

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(50-51)260416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:45
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 15:04
Collect Date:	04/26/2016 14:15	**Dilution:**	1	**File ID:**	9M974170
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	6.11	Q	23.3	11.7	5.83
Benzene	71-43-2	1.17	U	5.83	1.17	0.583
Bromobenzene	108-86-1	1.17	U	5.83	1.17	0.583
Bromochloromethane	74-97-5	2.34	U	5.83	2.34	1.17
Bromodichloromethane	75-27-4	1.17	U	5.83	1.17	0.583
Bromoform	75-25-2	1.17	U	5.83	1.17	0.583
Bromomethane	74-83-9	2.34	U	5.83	2.34	1.17
2-Butanone	78-93-3	5.82	Q	11.7	5.82	2.91
n-Butylbenzene	104-51-8	1.17	U	5.83	1.17	0.583
sec-Butylbenzene	135-98-8	1.17	U	5.83	1.17	0.583
tert-Butylbenzene	98-06-6	1.17	U	5.83	1.17	0.583
Carbon disulfide	75-15-0	1.17	Q	5.83	1.17	0.583
Carbon tetrachloride	56-23-5	1.17	U	5.83	1.17	0.583
Chlorobenzene	108-90-7	1.17	U	5.83	1.17	0.583
Chlorodibromomethane	124-48-1	1.17	U	5.83	1.17	0.583
Chloroethane	75-00-3	2.34	U	5.83	2.34	1.17
Chloroform	67-66-3	1.17	U	5.83	1.17	0.583
Chloromethane	74-87-3	4.66	Q	11.7	4.66	2.33
2-Chlorotoluene	95-49-8	1.17	U	5.83	1.17	0.583
4-Chlorotoluene	106-43-4	1.17	U	5.83	1.17	0.583
1,2-Dibromo-3-chloropropane	96-12-8	4.66	U	11.7	4.66	2.33
1,2-Dibromoethane	106-93-4	1.17	U	5.83	1.17	0.583
Dibromomethane	74-95-3	1.17	U	5.83	1.17	0.583
1,2-Dichlorobenzene	95-50-1	1.17	U	5.83	1.17	0.583
1,3-Dichlorobenzene	541-73-1	1.17	U	5.83	1.17	0.583
1,4-Dichlorobenzene	106-46-7	1.17	U	5.83	1.17	0.583
Dichlorodifluoromethane	75-71-8	2.34	U	5.83	2.34	1.17
1,1-Dichloroethane	75-34-3	2.34	U	5.83	2.34	1.17
1,2-Dichloroethane	107-06-2	1.17	U	5.83	1.17	0.583
1,1-Dichloroethene	75-35-4	1.17	U	5.83	1.17	0.583

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.17	U	5.83	1.17	0.583
trans-1,2-Dichloroethene	156-60-5	1.17	U	5.83	1.17	0.583
1,2-Dichloropropane	78-87-5	1.17	U	5.83	1.17	0.583
1,3-Dichloropropane	142-28-9	1.17	U	5.83	1.17	0.583
2,2-Dichloropropane	594-20-7	1.17	U	5.83	1.17	0.583
cis-1,3-Dichloropropene	10061-01-5	1.17	U	5.83	1.17	0.583
trans-1,3-Dichloropropene	10061-02-6	1.17	U	5.83	1.17	0.583
1,1-Dichloropropene	563-58-6	1.17	U	5.83	1.17	0.583
Ethylbenzene	100-41-4	1.17	U	5.83	1.17	0.583
2-Hexanone	591-78-6	5.82	Q	11.7	5.82	2.91
Hexachlorobutadiene	87-68-3	1.17	U	5.83	1.17	0.583
Isopropylbenzene	98-82-8	1.17	U	5.83	1.17	0.583
p-Isopropyltoluene	99-87-6	1.17	U	5.83	1.17	0.583
4-Methyl-2-pentanone	108-10-1	5.82	Q	11.7	5.82	2.91
Methylene chloride	75-09-2	2.34	U	5.83	2.34	1.17
Naphthalene	91-20-3	1.17	U	5.83	1.17	0.583
n-Propylbenzene	103-65-1	1.17	Q	5.83	1.17	0.583
Styrene	100-42-5	1.17	U	5.83	1.17	0.583
1,1,1,2-Tetrachloroethane	630-20-6	1.17	U	5.83	1.17	0.583
1,1,2,2-Tetrachloroethane	79-34-5	1.17	U	5.83	1.17	0.583
Tetrachloroethene	127-18-4	1.17	U	5.83	1.17	0.583
Toluene	108-88-3	1.17	U	5.83	1.17	0.583
1,2,3-Trichlorobenzene	87-61-6	1.17	U	5.83	1.17	0.583
1,2,4-Trichlorobenzene	120-82-1	1.17	U	5.83	1.17	0.583
1,1,1-Trichloroethane	71-55-6	1.17	U	5.83	1.17	0.583
1,1,2-Trichloroethane	79-00-5	1.17	U	5.83	1.17	0.583
Trichloroethene	79-01-6	1.17	U	5.83	1.17	0.583
Trichlorofluoromethane	75-69-4	2.34	U	5.83	2.34	1.17
1,2,3-Trichloropropane	96-18-4	2.34	U	5.83	2.34	1.17
1,2,4-Trimethylbenzene	95-63-6	1.17	U	5.83	1.17	0.583
1,3,5-Trimethylbenzene	108-67-8	1.17	U	5.83	1.17	0.583
Vinyl chloride	75-01-4	2.34	U	5.83	2.34	1.17
o-Xylene	95-47-6	1.17	U	5.83	1.17	0.583
m-,p-Xylene	179601-23-1	1.17	U	5.83	1.17	0.583

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	80	120	
1,2-Dichloroethane-d4	102	80	120	
Toluene-d8	106	85	115	
4-Bromofluorobenzene	110	85	120	

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(50-51)260416MS	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:46
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 13:34
Collect Date:	04/26/2016 14:15	**Dilution:**	1	**File ID:**	9M974167
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	28.9	Q	22.3	11.1	5.57
Benzene	71-43-2	23.4		5.57	1.11	0.557
Bromobenzene	108-86-1	24.6		5.57	1.11	0.557
Bromochloromethane	74-97-5	22.5		5.57	2.22	1.11
Bromodichloromethane	75-27-4	22.5		5.57	1.11	0.557
Bromoform	75-25-2	19.0		5.57	1.11	0.557
Bromomethane	74-83-9	22.8		5.57	2.22	1.11
2-Butanone	78-93-3	23.4	Q	11.1	5.56	2.78
n-Butylbenzene	104-51-8	24.5		5.57	1.11	0.557
sec-Butylbenzene	135-98-8	26.3		5.57	1.11	0.557
tert-Butylbenzene	98-06-6	27.3		5.57	1.11	0.557
Carbon disulfide	75-15-0	21.3	Q	5.57	1.11	0.557
Carbon tetrachloride	56-23-5	23.2		5.57	1.11	0.557
Chlorobenzene	108-90-7	24.3		5.57	1.11	0.557
Chlorodibromomethane	124-48-1	22.0		5.57	1.11	0.557
Chloroethane	75-00-3	25.6		5.57	2.22	1.11
Chloroform	67-66-3	23.8		5.57	1.11	0.557
Chloromethane	74-87-3	22.3	Q	11.1	4.46	2.23
2-Chlorotoluene	95-49-8	25.9		5.57	1.11	0.557
4-Chlorotoluene	106-43-4	26.1		5.57	1.11	0.557
1,2-Dibromo-3-chloropropane	96-12-8	20.3		11.1	4.46	2.23
1,2-Dibromoethane	106-93-4	22.8		5.57	1.11	0.557
Dibromomethane	74-95-3	20.6		5.57	1.11	0.557
1,2-Dichlorobenzene	95-50-1	23.9		5.57	1.11	0.557
1,3-Dichlorobenzene	541-73-1	24.2		5.57	1.11	0.557
1,4-Dichlorobenzene	106-46-7	24.5		5.57	1.11	0.557
Dichlorodifluoromethane	75-71-8	26.3		5.57	2.22	1.11
1,1-Dichloroethane	75-34-3	22.7		5.57	2.22	1.11
1,2-Dichloroethane	107-06-2	23.2		5.57	1.11	0.557
1,1-Dichloroethene	75-35-4	23.4		5.57	1.11	0.557

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	24.3		5.57	1.11	0.557
trans-1,2-Dichloroethene	156-60-5	24.4		5.57	1.11	0.557
1,2-Dichloropropane	78-87-5	24.0		5.57	1.11	0.557
1,3-Dichloropropane	142-28-9	23.6		5.57	1.11	0.557
2,2-Dichloropropane	594-20-7	24.2		5.57	1.11	0.557
cis-1,3-Dichloropropene	10061-01-5	24.9		5.57	1.11	0.557
trans-1,3-Dichloropropene	10061-02-6	23.0		5.57	1.11	0.557
1,1-Dichloropropene	563-58-6	24.0		5.57	1.11	0.557
Ethylbenzene	100-41-4	24.9		5.57	1.11	0.557
2-Hexanone	591-78-6	20.9	Q	11.1	5.56	2.78
Hexachlorobutadiene	87-68-3	23.3		5.57	1.11	0.557
Isopropylbenzene	98-82-8	25.2		5.57	1.11	0.557
p-Isopropyltoluene	99-87-6	26.6		5.57	1.11	0.557
4-Methyl-2-pentanone	108-10-1	21.6	Q	11.1	5.56	2.78
Methylene chloride	75-09-2	22.3		5.57	2.22	1.11
Naphthalene	91-20-3	18.8		5.57	1.11	0.557
n-Propylbenzene	103-65-1	29.3	Q	5.57	1.11	0.557
Styrene	100-42-5	23.7		5.57	1.11	0.557
1,1,1,2-Tetrachloroethane	630-20-6	23.2		5.57	1.11	0.557
1,1,2,2-Tetrachloroethane	79-34-5	22.0		5.57	1.11	0.557
Tetrachloroethene	127-18-4	23.8		5.57	1.11	0.557
Toluene	108-88-3	23.8		5.57	1.11	0.557
1,2,3-Trichlorobenzene	87-61-6	20.1		5.57	1.11	0.557
1,2,4-Trichlorobenzene	120-82-1	21.0		5.57	1.11	0.557
1,1,1-Trichloroethane	71-55-6	24.9		5.57	1.11	0.557
1,1,2-Trichloroethane	79-00-5	22.6		5.57	1.11	0.557
Trichloroethene	79-01-6	24.6		5.57	1.11	0.557
Trichlorofluoromethane	75-69-4	24.6		5.57	2.22	1.11
1,2,3-Trichloropropane	96-18-4	22.6		5.57	2.22	1.11
1,2,4-Trimethylbenzene	95-63-6	26.7		5.57	1.11	0.557
1,3,5-Trimethylbenzene	108-67-8	27.6		5.57	1.11	0.557
Vinyl chloride	75-01-4	27.1		5.57	2.22	1.11
o-Xylene	95-47-6	24.6		5.57	1.11	0.557
m-,p-Xylene	179601-23-1	48.9		5.57	1.11	0.557

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	80	120	
1,2-Dichloroethane-d4	102	80	120	
Toluene-d8	107	85	115	
4-Bromofluorobenzene	110	85	120	

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(50-51)260416MSD	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:47
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 14:04
Collect Date:	04/26/2016 14:15	**Dilution:**	1	**File ID:**	9M974168
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	29.6	Q	23.9	11.9	5.96
Benzene	71-43-2	23.4		5.96	1.19	0.596
Bromobenzene	108-86-1	24.3		5.96	1.19	0.596
Bromochloromethane	74-97-5	22.8		5.96	2.38	1.19
Bromodichloromethane	75-27-4	23.0		5.96	1.19	0.596
Bromoform	75-25-2	19.5		5.96	1.19	0.596
Bromomethane	74-83-9	23.3		5.96	2.38	1.19
2-Butanone	78-93-3	24.5	Q	11.9	5.96	2.98
n-Butylbenzene	104-51-8	23.2		5.96	1.19	0.596
sec-Butylbenzene	135-98-8	24.7		5.96	1.19	0.596
tert-Butylbenzene	98-06-6	26.9		5.96	1.19	0.596
Carbon disulfide	75-15-0	22.4	Q	5.96	1.19	0.596
Carbon tetrachloride	56-23-5	23.2		5.96	1.19	0.596
Chlorobenzene	108-90-7	24.7		5.96	1.19	0.596
Chlorodibromomethane	124-48-1	21.6		5.96	1.19	0.596
Chloroethane	75-00-3	25.4		5.96	2.38	1.19
Chloroform	67-66-3	23.9		5.96	1.19	0.596
Chloromethane	74-87-3	22.1	Q	11.9	4.78	2.39
2-Chlorotoluene	95-49-8	24.5		5.96	1.19	0.596
4-Chlorotoluene	106-43-4	25.9		5.96	1.19	0.596
1,2-Dibromo-3-chloropropane	96-12-8	20.9		11.9	4.78	2.39
1,2-Dibromoethane	106-93-4	23.2		5.96	1.19	0.596
Dibromomethane	74-95-3	20.8		5.96	1.19	0.596
1,2-Dichlorobenzene	95-50-1	23.0		5.96	1.19	0.596
1,3-Dichlorobenzene	541-73-1	23.6		5.96	1.19	0.596
1,4-Dichlorobenzene	106-46-7	23.3		5.96	1.19	0.596
Dichlorodifluoromethane	75-71-8	25.8		5.96	2.38	1.19
1,1-Dichloroethane	75-34-3	22.8		5.96	2.38	1.19
1,2-Dichloroethane	107-06-2	23.4		5.96	1.19	0.596
1,1-Dichloroethene	75-35-4	23.6		5.96	1.19	0.596

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	24.6		5.96	1.19	0.596
trans-1,2-Dichloroethene	156-60-5	25.0		5.96	1.19	0.596
1,2-Dichloropropane	78-87-5	24.1		5.96	1.19	0.596
1,3-Dichloropropane	142-28-9	24.1		5.96	1.19	0.596
2,2-Dichloropropane	594-20-7	23.8		5.96	1.19	0.596
cis-1,3-Dichloropropene	10061-01-5	24.8		5.96	1.19	0.596
trans-1,3-Dichloropropene	10061-02-6	23.0		5.96	1.19	0.596
1,1-Dichloropropene	563-58-6	24.1		5.96	1.19	0.596
Ethylbenzene	100-41-4	24.6		5.96	1.19	0.596
2-Hexanone	591-78-6	21.3	Q	11.9	5.96	2.98
Hexachlorobutadiene	87-68-3	20.9		5.96	1.19	0.596
Isopropylbenzene	98-82-8	24.9		5.96	1.19	0.596
p-Isopropyltoluene	99-87-6	25.3		5.96	1.19	0.596
4-Methyl-2-pentanone	108-10-1	22.0	Q	11.9	5.96	2.98
Methylene chloride	75-09-2	23.0		5.96	2.38	1.19
Naphthalene	91-20-3	18.0		5.96	1.19	0.596
n-Propylbenzene	103-65-1	28.1	Q	5.96	1.19	0.596
Styrene	100-42-5	23.9		5.96	1.19	0.596
1,1,1,2-Tetrachloroethane	630-20-6	23.0		5.96	1.19	0.596
1,1,2,2-Tetrachloroethane	79-34-5	21.4		5.96	1.19	0.596
Tetrachloroethene	127-18-4	23.9		5.96	1.19	0.596
Toluene	108-88-3	23.6		5.96	1.19	0.596
1,2,3-Trichlorobenzene	87-61-6	18.8		5.96	1.19	0.596
1,2,4-Trichlorobenzene	120-82-1	19.3		5.96	1.19	0.596
1,1,1-Trichloroethane	71-55-6	24.6		5.96	1.19	0.596
1,1,2-Trichloroethane	79-00-5	23.3		5.96	1.19	0.596
Trichloroethene	79-01-6	24.5		5.96	1.19	0.596
Trichlorofluoromethane	75-69-4	24.3		5.96	2.38	1.19
1,2,3-Trichloropropane	96-18-4	24.0		5.96	2.38	1.19
1,2,4-Trimethylbenzene	95-63-6	25.2		5.96	1.19	0.596
1,3,5-Trimethylbenzene	108-67-8	26.3		5.96	1.19	0.596
Vinyl chloride	75-01-4	26.8		5.96	2.38	1.19
o-Xylene	95-47-6	24.1		5.96	1.19	0.596
m-,p-Xylene	179601-23-1	48.0		5.96	1.19	0.596

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	80	120	
1,2-Dichloroethane-d4	103	80	120	
Toluene-d8	106	85	115	
4-Bromofluorobenzene	109	85	120	

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(60-60.5)260416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:48
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 18:10
Collect Date:	04/26/2016 15:00	**Dilution:**	1	**File ID:**	9M974176
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	86.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	18.4	Q	24.2	12.1	6.06
Benzene	71-43-2	1.21	U	6.06	1.21	0.606
Bromobenzene	108-86-1	1.21	U	6.06	1.21	0.606
Bromochloromethane	74-97-5	2.42	U	6.06	2.42	1.21
Bromodichloromethane	75-27-4	1.21	U	6.06	1.21	0.606
Bromoform	75-25-2	1.21	U	6.06	1.21	0.606
Bromomethane	74-83-9	2.42	U	6.06	2.42	1.21
2-Butanone	78-93-3	6.06	Q	12.1	6.06	3.03
n-Butylbenzene	104-51-8	1.21	U	6.06	1.21	0.606
sec-Butylbenzene	135-98-8	1.21	U	6.06	1.21	0.606
tert-Butylbenzene	98-06-6	1.21	U	6.06	1.21	0.606
Carbon disulfide	75-15-0	1.21	Q	6.06	1.21	0.606
Carbon tetrachloride	56-23-5	1.21	U	6.06	1.21	0.606
Chlorobenzene	108-90-7	1.21	U	6.06	1.21	0.606
Chlorodibromomethane	124-48-1	1.21	U	6.06	1.21	0.606
Chloroethane	75-00-3	2.42	U	6.06	2.42	1.21
Chloroform	67-66-3	1.21	U	6.06	1.21	0.606
Chloromethane	74-87-3	4.84	Q	12.1	4.84	2.42
2-Chlorotoluene	95-49-8	1.21	U	6.06	1.21	0.606
4-Chlorotoluene	106-43-4	1.21	U	6.06	1.21	0.606
1,2-Dibromo-3-chloropropane	96-12-8	4.84	U	12.1	4.84	2.42
1,2-Dibromoethane	106-93-4	1.21	U	6.06	1.21	0.606
Dibromomethane	74-95-3	1.21	U	6.06	1.21	0.606
1,2-Dichlorobenzene	95-50-1	1.21	U	6.06	1.21	0.606
1,3-Dichlorobenzene	541-73-1	1.21	U	6.06	1.21	0.606
1,4-Dichlorobenzene	106-46-7	1.21	U	6.06	1.21	0.606
Dichlorodifluoromethane	75-71-8	2.42	U	6.06	2.42	1.21
1,1-Dichloroethane	75-34-3	2.42	U	6.06	2.42	1.21
1,2-Dichloroethane	107-06-2	1.21	U	6.06	1.21	0.606
1,1-Dichloroethene	75-35-4	1.21	U	6.06	1.21	0.606

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.21	U	6.06	1.21	0.606
trans-1,2-Dichloroethene	156-60-5	1.21	U	6.06	1.21	0.606
1,2-Dichloropropane	78-87-5	1.21	U	6.06	1.21	0.606
1,3-Dichloropropane	142-28-9	1.21	U	6.06	1.21	0.606
2,2-Dichloropropane	594-20-7	1.21	U	6.06	1.21	0.606
cis-1,3-Dichloropropene	10061-01-5	1.21	U	6.06	1.21	0.606
trans-1,3-Dichloropropene	10061-02-6	1.21	U	6.06	1.21	0.606
1,1-Dichloropropene	563-58-6	1.21	U	6.06	1.21	0.606
Ethylbenzene	100-41-4	1.21	U	6.06	1.21	0.606
2-Hexanone	591-78-6	6.06	Q	12.1	6.06	3.03
Hexachlorobutadiene	87-68-3	1.21	U	6.06	1.21	0.606
Isopropylbenzene	98-82-8	1.21	U	6.06	1.21	0.606
p-Isopropyltoluene	99-87-6	1.21	U	6.06	1.21	0.606
4-Methyl-2-pentanone	108-10-1	6.06	Q	12.1	6.06	3.03
Methylene chloride	75-09-2	2.42	U	6.06	2.42	1.21
Naphthalene	91-20-3	1.21	U	6.06	1.21	0.606
n-Propylbenzene	103-65-1	1.21	Q	6.06	1.21	0.606
Styrene	100-42-5	1.21	U	6.06	1.21	0.606
1,1,1,2-Tetrachloroethane	630-20-6	1.21	U	6.06	1.21	0.606
1,1,2,2-Tetrachloroethane	79-34-5	1.21	U	6.06	1.21	0.606
Tetrachloroethene	127-18-4	1.21	U	6.06	1.21	0.606
Toluene	108-88-3	1.21	U	6.06	1.21	0.606
1,2,3-Trichlorobenzene	87-61-6	1.21	U	6.06	1.21	0.606
1,2,4-Trichlorobenzene	120-82-1	1.21	U	6.06	1.21	0.606
1,1,1-Trichloroethane	71-55-6	1.21	U	6.06	1.21	0.606
1,1,2-Trichloroethane	79-00-5	1.21	U	6.06	1.21	0.606
Trichloroethene	79-01-6	1.21	U	6.06	1.21	0.606
Trichlorofluoromethane	75-69-4	2.42	U	6.06	2.42	1.21
1,2,3-Trichloropropane	96-18-4	2.42	U	6.06	2.42	1.21
1,2,4-Trimethylbenzene	95-63-6	1.21	U	6.06	1.21	0.606
1,3,5-Trimethylbenzene	108-67-8	1.21	U	6.06	1.21	0.606
Vinyl chloride	75-01-4	2.42	U	6.06	2.42	1.21
o-Xylene	95-47-6	1.21	U	6.06	1.21	0.606
m-,p-Xylene	179601-23-1	1.21	U	6.06	1.21	0.606

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	99.0	80	120	
1,2-Dichloroethane-d4	104	80	120	
Toluene-d8	107	85	115	
4-Bromofluorobenzene	115	85	120	

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-10	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(60-60.5)260416DUP	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:48
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 18:40
Collect Date:	04/26/2016 15:00	**Dilution:**	1	**File ID:**	9M974177
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	87.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	20.8	Q	24.7	12.3	6.17
Benzene	71-43-2	1.23	U	6.17	1.23	0.617
Bromobenzene	108-86-1	1.23	U	6.17	1.23	0.617
Bromochloromethane	74-97-5	2.46	U	6.17	2.46	1.23
Bromodichloromethane	75-27-4	1.23	U	6.17	1.23	0.617
Bromoform	75-25-2	1.23	U	6.17	1.23	0.617
Bromomethane	74-83-9	2.46	U	6.17	2.46	1.23
2-Butanone	78-93-3	6.18	Q	12.3	6.18	3.09
n-Butylbenzene	104-51-8	1.23	U	6.17	1.23	0.617
sec-Butylbenzene	135-98-8	1.23	U	6.17	1.23	0.617
tert-Butylbenzene	98-06-6	1.23	U	6.17	1.23	0.617
Carbon disulfide	75-15-0	0.638	Q	6.17	1.23	0.617
Carbon tetrachloride	56-23-5	1.23	U	6.17	1.23	0.617
Chlorobenzene	108-90-7	1.23	U	6.17	1.23	0.617
Chlorodibromomethane	124-48-1	1.23	U	6.17	1.23	0.617
Chloroethane	75-00-3	2.46	U	6.17	2.46	1.23
Chloroform	67-66-3	1.23	U	6.17	1.23	0.617
Chloromethane	74-87-3	4.94	Q	12.3	4.94	2.47
2-Chlorotoluene	95-49-8	1.23	U	6.17	1.23	0.617
4-Chlorotoluene	106-43-4	1.23	U	6.17	1.23	0.617
1,2-Dibromo-3-chloropropane	96-12-8	4.94	U	12.3	4.94	2.47
1,2-Dibromoethane	106-93-4	1.23	U	6.17	1.23	0.617
Dibromomethane	74-95-3	1.23	U	6.17	1.23	0.617
1,2-Dichlorobenzene	95-50-1	1.23	U	6.17	1.23	0.617
1,3-Dichlorobenzene	541-73-1	1.23	U	6.17	1.23	0.617
1,4-Dichlorobenzene	106-46-7	1.23	U	6.17	1.23	0.617
Dichlorodifluoromethane	75-71-8	2.46	U	6.17	2.46	1.23
1,1-Dichloroethane	75-34-3	2.46	U	6.17	2.46	1.23
1,2-Dichloroethane	107-06-2	1.23	U	6.17	1.23	0.617
1,1-Dichloroethene	75-35-4	1.23	U	6.17	1.23	0.617

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.23	U	6.17	1.23	0.617
trans-1,2-Dichloroethene	156-60-5	1.23	U	6.17	1.23	0.617
1,2-Dichloropropane	78-87-5	1.23	U	6.17	1.23	0.617
1,3-Dichloropropane	142-28-9	1.23	U	6.17	1.23	0.617
2,2-Dichloropropane	594-20-7	1.23	U	6.17	1.23	0.617
cis-1,3-Dichloropropene	10061-01-5	1.23	U	6.17	1.23	0.617
trans-1,3-Dichloropropene	10061-02-6	1.23	U	6.17	1.23	0.617
1,1-Dichloropropene	563-58-6	1.23	U	6.17	1.23	0.617
Ethylbenzene	100-41-4	1.23	U	6.17	1.23	0.617
2-Hexanone	591-78-6	6.18	Q	12.3	6.18	3.09
Hexachlorobutadiene	87-68-3	1.23	U	6.17	1.23	0.617
Isopropylbenzene	98-82-8	1.23	U	6.17	1.23	0.617
p-Isopropyltoluene	99-87-6	1.23	U	6.17	1.23	0.617
4-Methyl-2-pentanone	108-10-1	6.18	Q	12.3	6.18	3.09
Methylene chloride	75-09-2	2.46	U	6.17	2.46	1.23
Naphthalene	91-20-3	1.23	U	6.17	1.23	0.617
n-Propylbenzene	103-65-1	1.23	Q	6.17	1.23	0.617
Styrene	100-42-5	1.23	U	6.17	1.23	0.617
1,1,1,2-Tetrachloroethane	630-20-6	1.23	U	6.17	1.23	0.617
1,1,2,2-Tetrachloroethane	79-34-5	1.23	U	6.17	1.23	0.617
Tetrachloroethene	127-18-4	1.23	U	6.17	1.23	0.617
Toluene	108-88-3	1.23	U	6.17	1.23	0.617
1,2,3-Trichlorobenzene	87-61-6	1.23	U	6.17	1.23	0.617
1,2,4-Trichlorobenzene	120-82-1	1.23	U	6.17	1.23	0.617
1,1,1-Trichloroethane	71-55-6	1.23	U	6.17	1.23	0.617
1,1,2-Trichloroethane	79-00-5	1.23	U	6.17	1.23	0.617
Trichloroethene	79-01-6	1.23	U	6.17	1.23	0.617
Trichlorofluoromethane	75-69-4	2.46	U	6.17	2.46	1.23
1,2,3-Trichloropropane	96-18-4	2.46	U	6.17	2.46	1.23
1,2,4-Trimethylbenzene	95-63-6	1.23	U	6.17	1.23	0.617
1,3,5-Trimethylbenzene	108-67-8	1.23	U	6.17	1.23	0.617
Vinyl chloride	75-01-4	2.46	U	6.17	2.46	1.23
o-Xylene	95-47-6	1.23	U	6.17	1.23	0.617
m-,p-Xylene	179601-23-1	1.23	U	6.17	1.23	0.617

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	80	120	
1,2-Dichloroethane-d4	105	80	120	
Toluene-d8	108	85	115	
4-Bromofluorobenzene	118	85	120	

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-11	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(70-70.5)260416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:49
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 19:10
Collect Date:	04/26/2016 15:45	**Dilution:**	1	**File ID:**	9M974178
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	7.02	Q	24.3	12.1	6.07
Benzene	71-43-2	1.21	U	6.07	1.21	0.607
Bromobenzene	108-86-1	1.21	U	6.07	1.21	0.607
Bromochloromethane	74-97-5	2.42	U	6.07	2.42	1.21
Bromodichloromethane	75-27-4	1.21	U	6.07	1.21	0.607
Bromoform	75-25-2	1.21	U	6.07	1.21	0.607
Bromomethane	74-83-9	2.42	U	6.07	2.42	1.21
2-Butanone	78-93-3	6.08	Q	12.1	6.08	3.04
n-Butylbenzene	104-51-8	1.21	U	6.07	1.21	0.607
sec-Butylbenzene	135-98-8	1.21	U	6.07	1.21	0.607
tert-Butylbenzene	98-06-6	1.21	U	6.07	1.21	0.607
Carbon disulfide	75-15-0	1.21	Q	6.07	1.21	0.607
Carbon tetrachloride	56-23-5	1.21	U	6.07	1.21	0.607
Chlorobenzene	108-90-7	1.21	U	6.07	1.21	0.607
Chlorodibromomethane	124-48-1	1.21	U	6.07	1.21	0.607
Chloroethane	75-00-3	2.42	U	6.07	2.42	1.21
Chloroform	67-66-3	1.21	U	6.07	1.21	0.607
Chloromethane	74-87-3	4.86	Q	12.1	4.86	2.43
2-Chlorotoluene	95-49-8	1.21	U	6.07	1.21	0.607
4-Chlorotoluene	106-43-4	1.21	U	6.07	1.21	0.607
1,2-Dibromo-3-chloropropane	96-12-8	4.86	U	12.1	4.86	2.43
1,2-Dibromoethane	106-93-4	1.21	U	6.07	1.21	0.607
Dibromomethane	74-95-3	1.21	U	6.07	1.21	0.607
1,2-Dichlorobenzene	95-50-1	1.21	U	6.07	1.21	0.607
1,3-Dichlorobenzene	541-73-1	1.21	U	6.07	1.21	0.607
1,4-Dichlorobenzene	106-46-7	1.21	U	6.07	1.21	0.607
Dichlorodifluoromethane	75-71-8	2.42	U	6.07	2.42	1.21
1,1-Dichloroethane	75-34-3	2.42	U	6.07	2.42	1.21
1,2-Dichloroethane	107-06-2	1.21	U	6.07	1.21	0.607
1,1-Dichloroethene	75-35-4	1.21	U	6.07	1.21	0.607

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.21	U	6.07	1.21	0.607
trans-1,2-Dichloroethene	156-60-5	1.21	U	6.07	1.21	0.607
1,2-Dichloropropane	78-87-5	1.21	U	6.07	1.21	0.607
1,3-Dichloropropane	142-28-9	1.21	U	6.07	1.21	0.607
2,2-Dichloropropane	594-20-7	1.21	U	6.07	1.21	0.607
cis-1,3-Dichloropropene	10061-01-5	1.21	U	6.07	1.21	0.607
trans-1,3-Dichloropropene	10061-02-6	1.21	U	6.07	1.21	0.607
1,1-Dichloropropene	563-58-6	1.21	U	6.07	1.21	0.607
Ethylbenzene	100-41-4	1.21	U	6.07	1.21	0.607
2-Hexanone	591-78-6	6.08	Q	12.1	6.08	3.04
Hexachlorobutadiene	87-68-3	1.21	U	6.07	1.21	0.607
Isopropylbenzene	98-82-8	1.21	U	6.07	1.21	0.607
p-Isopropyltoluene	99-87-6	1.21	U	6.07	1.21	0.607
4-Methyl-2-pentanone	108-10-1	6.08	Q	12.1	6.08	3.04
Methylene chloride	75-09-2	2.42	U	6.07	2.42	1.21
Naphthalene	91-20-3	1.21	U	6.07	1.21	0.607
n-Propylbenzene	103-65-1	1.21	Q	6.07	1.21	0.607
Styrene	100-42-5	1.21	U	6.07	1.21	0.607
1,1,1,2-Tetrachloroethane	630-20-6	1.21	U	6.07	1.21	0.607
1,1,2,2-Tetrachloroethane	79-34-5	1.21	U	6.07	1.21	0.607
Tetrachloroethene	127-18-4	1.21	U	6.07	1.21	0.607
Toluene	108-88-3	1.21	U	6.07	1.21	0.607
1,2,3-Trichlorobenzene	87-61-6	1.21	U	6.07	1.21	0.607
1,2,4-Trichlorobenzene	120-82-1	1.21	U	6.07	1.21	0.607
1,1,1-Trichloroethane	71-55-6	1.21	U	6.07	1.21	0.607
1,1,2-Trichloroethane	79-00-5	1.21	U	6.07	1.21	0.607
Trichloroethene	79-01-6	1.21	U	6.07	1.21	0.607
Trichlorofluoromethane	75-69-4	2.42	U	6.07	2.42	1.21
1,2,3-Trichloropropane	96-18-4	2.42	U	6.07	2.42	1.21
1,2,4-Trimethylbenzene	95-63-6	1.21	U	6.07	1.21	0.607
1,3,5-Trimethylbenzene	108-67-8	1.21	U	6.07	1.21	0.607
Vinyl chloride	75-01-4	2.42	U	6.07	2.42	1.21
o-Xylene	95-47-6	1.21	U	6.07	1.21	0.607
m-,p-Xylene	179601-23-1	1.21	U	6.07	1.21	0.607

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	80	120	
1,2-Dichloroethane-d4	107	80	120	
Toluene-d8	109	85	115	
4-Bromofluorobenzene	114	85	120	

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-12	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(80-80.5)260416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:50
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 19:41
Collect Date:	04/26/2016 16:45	**Dilution:**	1	**File ID:**	9M974179
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	9.31	Q	25.2	12.6	6.31
Benzene	71-43-2	1.26	U	6.31	1.26	0.631
Bromobenzene	108-86-1	1.26	U	6.31	1.26	0.631
Bromochloromethane	74-97-5	2.52	U	6.31	2.52	1.26
Bromodichloromethane	75-27-4	1.26	U	6.31	1.26	0.631
Bromoform	75-25-2	1.26	U	6.31	1.26	0.631
Bromomethane	74-83-9	2.52	U	6.31	2.52	1.26
2-Butanone	78-93-3	6.30	Q	12.6	6.30	3.15
n-Butylbenzene	104-51-8	1.26	U	6.31	1.26	0.631
sec-Butylbenzene	135-98-8	1.26	U	6.31	1.26	0.631
tert-Butylbenzene	98-06-6	1.26	U	6.31	1.26	0.631
Carbon disulfide	75-15-0	0.825	Q	6.31	1.26	0.631
Carbon tetrachloride	56-23-5	1.26	U	6.31	1.26	0.631
Chlorobenzene	108-90-7	1.26	U	6.31	1.26	0.631
Chlorodibromomethane	124-48-1	1.26	U	6.31	1.26	0.631
Chloroethane	75-00-3	2.52	U	6.31	2.52	1.26
Chloroform	67-66-3	1.26	U	6.31	1.26	0.631
Chloromethane	74-87-3	5.04	Q	12.6	5.04	2.52
2-Chlorotoluene	95-49-8	1.26	U	6.31	1.26	0.631
4-Chlorotoluene	106-43-4	1.26	U	6.31	1.26	0.631
1,2-Dibromo-3-chloropropane	96-12-8	5.04	U	12.6	5.04	2.52
1,2-Dibromoethane	106-93-4	1.26	U	6.31	1.26	0.631
Dibromomethane	74-95-3	1.26	U	6.31	1.26	0.631
1,2-Dichlorobenzene	95-50-1	1.26	U	6.31	1.26	0.631
1,3-Dichlorobenzene	541-73-1	1.26	U	6.31	1.26	0.631
1,4-Dichlorobenzene	106-46-7	1.26	U	6.31	1.26	0.631
Dichlorodifluoromethane	75-71-8	2.52	U	6.31	2.52	1.26
1,1-Dichloroethane	75-34-3	2.52	U	6.31	2.52	1.26
1,2-Dichloroethane	107-06-2	1.26	U	6.31	1.26	0.631
1,1-Dichloroethene	75-35-4	1.26	U	6.31	1.26	0.631

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.26	U	6.31	1.26	0.631
trans-1,2-Dichloroethene	156-60-5	1.26	U	6.31	1.26	0.631
1,2-Dichloropropane	78-87-5	1.26	U	6.31	1.26	0.631
1,3-Dichloropropane	142-28-9	1.26	U	6.31	1.26	0.631
2,2-Dichloropropane	594-20-7	1.26	U	6.31	1.26	0.631
cis-1,3-Dichloropropene	10061-01-5	1.26	U	6.31	1.26	0.631
trans-1,3-Dichloropropene	10061-02-6	1.26	U	6.31	1.26	0.631
1,1-Dichloropropene	563-58-6	1.26	U	6.31	1.26	0.631
Ethylbenzene	100-41-4	1.26	U	6.31	1.26	0.631
2-Hexanone	591-78-6	6.30	Q	12.6	6.30	3.15
Hexachlorobutadiene	87-68-3	1.26	U	6.31	1.26	0.631
Isopropylbenzene	98-82-8	1.26	U	6.31	1.26	0.631
p-Isopropyltoluene	99-87-6	1.26	U	6.31	1.26	0.631
4-Methyl-2-pentanone	108-10-1	6.30	Q	12.6	6.30	3.15
Methylene chloride	75-09-2	2.52	U	6.31	2.52	1.26
Naphthalene	91-20-3	1.26	U	6.31	1.26	0.631
n-Propylbenzene	103-65-1	1.26	Q	6.31	1.26	0.631
Styrene	100-42-5	1.26	U	6.31	1.26	0.631
1,1,1,2-Tetrachloroethane	630-20-6	1.26	U	6.31	1.26	0.631
1,1,2,2-Tetrachloroethane	79-34-5	1.26	U	6.31	1.26	0.631
Tetrachloroethene	127-18-4	1.26	U	6.31	1.26	0.631
Toluene	108-88-3	1.26	U	6.31	1.26	0.631
1,2,3-Trichlorobenzene	87-61-6	1.26	U	6.31	1.26	0.631
1,2,4-Trichlorobenzene	120-82-1	1.26	U	6.31	1.26	0.631
1,1,1-Trichloroethane	71-55-6	1.26	U	6.31	1.26	0.631
1,1,2-Trichloroethane	79-00-5	1.26	U	6.31	1.26	0.631
Trichloroethene	79-01-6	1.26	U	6.31	1.26	0.631
Trichlorofluoromethane	75-69-4	2.52	U	6.31	2.52	1.26
1,2,3-Trichloropropane	96-18-4	2.52	U	6.31	2.52	1.26
1,2,4-Trimethylbenzene	95-63-6	1.26	U	6.31	1.26	0.631
1,3,5-Trimethylbenzene	108-67-8	1.26	U	6.31	1.26	0.631
Vinyl chloride	75-01-4	2.52	U	6.31	2.52	1.26
o-Xylene	95-47-6	1.26	U	6.31	1.26	0.631
m-,p-Xylene	179601-23-1	1.26	U	6.31	1.26	0.631

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	80	120	
1,2-Dichloroethane-d4	109	80	120	
Toluene-d8	108	85	115	
4-Bromofluorobenzene	110	85	120	

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-13	**PrePrep Method:**	N/A	**Instrument:**	HPMS9
Client ID:	18CPTMW22DW(89.5-90)260416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:51
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	05/04/2016 17:56
Workgroup #:	WG567680	**Analyst:**	ADC	**Run Date:**	05/05/2016 20:12
Collect Date:	04/26/2016 17:00	**Dilution:**	1	**File ID:**	9M974180
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	9.42	Q	25.4	12.7	6.35
Benzene	71-43-2	1.27	U	6.35	1.27	0.635
Bromobenzene	108-86-1	1.27	U	6.35	1.27	0.635
Bromochloromethane	74-97-5	2.54	U	6.35	2.54	1.27
Bromodichloromethane	75-27-4	1.27	U	6.35	1.27	0.635
Bromoform	75-25-2	1.27	U	6.35	1.27	0.635
Bromomethane	74-83-9	2.54	U	6.35	2.54	1.27
2-Butanone	78-93-3	6.34	Q	12.7	6.34	3.17
n-Butylbenzene	104-51-8	1.27	U	6.35	1.27	0.635
sec-Butylbenzene	135-98-8	1.27	U	6.35	1.27	0.635
tert-Butylbenzene	98-06-6	1.27	U	6.35	1.27	0.635
Carbon disulfide	75-15-0	1.47	Q	6.35	1.27	0.635
Carbon tetrachloride	56-23-5	1.27	U	6.35	1.27	0.635
Chlorobenzene	108-90-7	1.27	U	6.35	1.27	0.635
Chlorodibromomethane	124-48-1	1.27	U	6.35	1.27	0.635
Chloroethane	75-00-3	2.54	U	6.35	2.54	1.27
Chloroform	67-66-3	1.27	U	6.35	1.27	0.635
Chloromethane	74-87-3	5.08	Q	12.7	5.08	2.54
2-Chlorotoluene	95-49-8	1.27	U	6.35	1.27	0.635
4-Chlorotoluene	106-43-4	1.27	U	6.35	1.27	0.635
1,2-Dibromo-3-chloropropane	96-12-8	5.08	U	12.7	5.08	2.54
1,2-Dibromoethane	106-93-4	1.27	U	6.35	1.27	0.635
Dibromomethane	74-95-3	1.27	U	6.35	1.27	0.635
1,2-Dichlorobenzene	95-50-1	1.27	U	6.35	1.27	0.635
1,3-Dichlorobenzene	541-73-1	1.27	U	6.35	1.27	0.635
1,4-Dichlorobenzene	106-46-7	1.27	U	6.35	1.27	0.635
Dichlorodifluoromethane	75-71-8	2.54	U	6.35	2.54	1.27
1,1-Dichloroethane	75-34-3	2.54	U	6.35	2.54	1.27
1,2-Dichloroethane	107-06-2	1.27	U	6.35	1.27	0.635
1,1-Dichloroethene	75-35-4	1.27	U	6.35	1.27	0.635

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
cis-1,2-Dichloroethene	156-59-2	1.27	U	6.35	1.27	0.635
trans-1,2-Dichloroethene	156-60-5	1.27	U	6.35	1.27	0.635
1,2-Dichloropropane	78-87-5	1.27	U	6.35	1.27	0.635
1,3-Dichloropropane	142-28-9	1.27	U	6.35	1.27	0.635
2,2-Dichloropropane	594-20-7	1.27	U	6.35	1.27	0.635
cis-1,3-Dichloropropene	10061-01-5	1.27	U	6.35	1.27	0.635
trans-1,3-Dichloropropene	10061-02-6	1.27	U	6.35	1.27	0.635
1,1-Dichloropropene	563-58-6	1.27	U	6.35	1.27	0.635
Ethylbenzene	100-41-4	1.27	U	6.35	1.27	0.635
2-Hexanone	591-78-6	6.34	Q	12.7	6.34	3.17
Hexachlorobutadiene	87-68-3	1.27	U	6.35	1.27	0.635
Isopropylbenzene	98-82-8	1.27	U	6.35	1.27	0.635
p-Isopropyltoluene	99-87-6	1.27	U	6.35	1.27	0.635
4-Methyl-2-pentanone	108-10-1	6.34	Q	12.7	6.34	3.17
Methylene chloride	75-09-2	2.54	U	6.35	2.54	1.27
Naphthalene	91-20-3	1.27	U	6.35	1.27	0.635
n-Propylbenzene	103-65-1	1.27	Q	6.35	1.27	0.635
Styrene	100-42-5	1.27	U	6.35	1.27	0.635
1,1,1,2-Tetrachloroethane	630-20-6	1.27	U	6.35	1.27	0.635
1,1,2,2-Tetrachloroethane	79-34-5	1.27	U	6.35	1.27	0.635
Tetrachloroethene	127-18-4	1.27	U	6.35	1.27	0.635
Toluene	108-88-3	1.27	U	6.35	1.27	0.635
1,2,3-Trichlorobenzene	87-61-6	1.27	U	6.35	1.27	0.635
1,2,4-Trichlorobenzene	120-82-1	1.27	U	6.35	1.27	0.635
1,1,1-Trichloroethane	71-55-6	1.27	U	6.35	1.27	0.635
1,1,2-Trichloroethane	79-00-5	1.27	U	6.35	1.27	0.635
Trichloroethene	79-01-6	1.27	U	6.35	1.27	0.635
Trichlorofluoromethane	75-69-4	2.54	U	6.35	2.54	1.27
1,2,3-Trichloropropane	96-18-4	2.54	U	6.35	2.54	1.27
1,2,4-Trimethylbenzene	95-63-6	1.27	U	6.35	1.27	0.635
1,3,5-Trimethylbenzene	108-67-8	1.27	U	6.35	1.27	0.635
Vinyl chloride	75-01-4	2.54	U	6.35	2.54	1.27
o-Xylene	95-47-6	1.27	U	6.35	1.27	0.635
m-,p-Xylene	179601-23-1	1.27	U	6.35	1.27	0.635

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	80	120	
1,2-Dichloroethane-d4	110	80	120	
Toluene-d8	108	85	115	
4-Bromofluorobenzene	117	85	120	

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-14	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	EQUIPMENT BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	04/28/2016 12:21
Workgroup #:	WG567935	**Analyst:**	TMB	**Run Date:**	05/07/2016 13:31
Collect Date:	04/25/2016 17:00	**Dilution:**	1	**File ID:**	8M412050
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	9.05	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.322	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	114	70	120	
Toluene-d8	98.4	85	120	
4-Bromofluorobenzene	99.0	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

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Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.
VOA Preparation/Preservation/Extraction Log

Batch #: WG567289
Method: 5030B/5030C/5035
Product: 826-SPE

Analyst: AWE
Run Date: 05/03/2016 09:42
Purge and trap methanol COA18540
Purified Lab Sand Lot # COA18552

SAMPLE #	Fraction	Collected	Preserved	PCT-S	Tare Wt	Total Wt	Sample Wt	Water	MeOH	Vt	Comments
L16041580-01	A	04/26/16 09:05	05/03/16 09:42	84.8			4.82	5		5	
L16041580-02	A	04/26/16 10:00	05/03/16 09:42	82.0			4.91	5		5	
L16041580-03	A	04/26/16 10:35	05/03/16 09:44	79.2			4.68	5		5	
L16041580-04	A	04/26/16 11:15	05/03/16 09:44	78.2			4.75	5		5	
L16041580-05	A	04/26/16 11:55	05/03/16 09:45	79.0			5.28	5		5	
L16041580-06	A	04/26/16 14:15	05/03/16 09:45	83.5			5.14	5		5	
L16041580-07	A	04/26/16 14:15	05/03/16 09:46	83.5			5.38	5		5	
L16041580-08	A	04/26/16 14:15	05/03/16 09:47	83.5			5.02	5		5	
L16041580-09	A	04/26/16 15:00	05/03/16 09:48	86.5			4.77	5		5	
L16041580-10	A	04/26/16 15:00	05/03/16 09:48	87.1			4.65	5		5	
L16041580-11	A	04/26/16 15:45	05/03/16 09:49	83.7			4.92	5		5	
L16041580-12	A	04/26/16 16:45	05/03/16 09:50	82.3			4.82	5		5	
L16041580-13	A	04/26/16 17:00	05/03/16 09:51	80.0			4.92	5		5	
L16041582-01	A	04/27/16 14:15	05/03/16 09:52	74.6			4.57	5		5	
L16041582-02	A	04/27/16 14:40	05/03/16 09:54	81.8			4.93	5		5	
L16041582-03	A	04/27/16 14:45	05/03/16 09:54	81.8			5.16	5		5	
L16041582-04	A	04/27/16 14:50	05/03/16 09:55	81.0			4.77	5		5	
L16041582-05	A	04/27/16 16:15	05/03/16 09:56	84.8			4.89	5		5	
L16041582-06	A	04/27/16 17:35	05/03/16 09:56	82.2			5.00	5		5	
L16041582-07	A	04/27/16 17:45	05/03/16 09:57	80.4			5.01	5		5	
L16041606-01	A	04/28/16 08:30	05/03/16 09:57	93.0			5.09	5		5	
WG567289-01	A		05/03/16 09:52	74.6			4.57	5		5	
WG567289-02	A		05/03/16 09:52	74.6			4.80	5		5	
WG567289-03	A		05/03/16 09:53	74.6			4.86	5		5	

Comments:
1 = improperly sealed cap
2 = preserved out of hold
3 = effervesced
4 = preserved with NaHSO4
5 = preserved by freezing
6 = preserved in field

Analyst: Andrew Casey

VOA_EXT - Modified 05/22/2008
PDF ID: 4744442
Report generated: 05/07/2016 13:20

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 012516
Analyst1: ADC Analyst2: NA
Method: 8260B/8260C SOP: MSV01(-C) Rev: 23 (2)
Method: 5030B/5030C/5035 SOP: PAT01 Rev: 18
Method: 624 SOP: MSV10 Rev: 12
Maintenance Log ID:

Internal Standard: STD74414 Surrogate Standard: STD74126
CCV: STD74488 LCS: STD74459 MS/MSD: STD74459

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG555000 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M972470	WG555000-01 BFB 50ng A9	NA	7	1	STD74202	01/25/16 10:27
9M972471	RINSE	NA	7	1		01/25/16 10:52
9M972472	WG555000-02 5ug/Kg STD A9	NA	7	1	STD74406	01/25/16 11:22
9M972473	WG555000-03 20ug/Kg STD A9	NA	7	1	STD74406	01/25/16 11:52
9M972474	WG555000-04 50ug/Kg STD A9	NA	7	1	STD74406	01/25/16 12:23
9M972475	WG555000-05 100ug/Kg STD A9	NA	7	1	STD74406	01/25/16 12:53
9M972476	WG555000-06 200ug/Kg STD A9	NA	7	1	STD74406	01/25/16 13:23
9M972477	WG555000-07 300ug/Kg STD A9	NA	7	1	STD74406	01/25/16 13:54
9M972478	WG555000-08 400ug/Kg STD A9	NA	7	1	STD74406	01/25/16 14:25
9M972479	WG555000-09 500ug/Kg STD A9	NA	7	1	STD74406	01/25/16 14:56
9M972480	RINSE	NA	7	1		01/25/16 15:26
9M972481	WG555000-10 100ug/Kg ICV A9	NA	7	1	STD74461	01/25/16 15:56
9M972482	RINSE	NA	7	1		01/25/16 16:28

Approved: January 29, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 042416
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75545 Surrogate Standard: STD75545
CCV: STD75791 LCS: STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG566154

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M411680	WG566154-01 50ng BFB STD 826-A9	NA	1	1	STD75485	04/24/16 16:31
8M411681	WG566154-01 50ng BFB STD 826-A9	NA	1	1	STD75485	04/24/16 16:45
8M411682	WG566154-02 5ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 17:10
8M411683	WG566154-03 20ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 17:39
8M411684	WG566154-04 50ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 18:08
8M411685	WG566154-05 100ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 18:37
8M411686	WG566154-06 200ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 19:06
8M411687	WG566154-07 300ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 19:36
8M411688	WG566154-08 400ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 20:05
8M411689	WG566154-09 500ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 20:34
8M411690	RINSE	NA	1	1	STD75791	04/24/16 21:04
8M411691	RINSE	NA	1	1	STD75791	04/24/16 21:33
8M411692	WG566154-10 100ug/L ALT SRC STD 826-A	NA	1	1	STD75801	04/24/16 22:02
8M411693	RISNE	NA	1	1		04/24/16 22:31
8M411694	RISNE	NA	1	1		04/24/16 23:00

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1	X			
File ID: 8M411680				
	Tune failed, DNR.			

Approved: April 29, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 042816
Analyst1: ADC Analyst2: TMB
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD75878 LCS: STD75898 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG566682; WG566800

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M411789	WG566682-01 50ng BFB STD 8260	NA	1	1	STD75485	04/28/16 07:05
8M411790	RINSE	NA	1	1	STD75855	04/28/16 07:29
8M411791	WG566682-02 0.3ug/L STD 8260	NA	1	1	STD75878	04/28/16 07:58
8M411792	WG566682-03 0.4ug/L STD 8260	NA	1	1	STD75878	04/28/16 08:27
8M411793	WG566682-04 1.0ug/L STD 8260	NA	1	1	STD75878	04/28/16 08:56
8M411794	WG566682-05 2.0ug/L STD 8260	NA	1	1	STD75878	04/28/16 09:26
8M411795	WG566682-06 5.0ug/L STD 8260	NA	1	1	STD75878	04/28/16 09:55
8M411796	WG566682-07 20.0ug/L STD 8260	NA	1	1	STD75878	04/28/16 10:24
8M411797	WG566682-08 50.0ug/L STD 8260	NA	1	1	STD75878	04/28/16 10:54
8M411798	WG566682-09 100.0ug/L STD 8260	NA	1	1	STD75878	04/28/16 11:23
8M411799	WG566682-10 200.0ug/L STD 8260	NA	1	1	STD75878	04/28/16 11:52
8M411800	WG566682-11 300.0ug/L STD 8260	NA	1	1	STD75878	04/28/16 12:21
8M411801	RINSE	NA	1	1	STD75878	04/28/16 13:09
8M411802	RINSE	NA	1	1	STD75878	04/28/16 13:38
8M411803	WG566682-12 50.0ug/L ALTSRC 8260	NA	1	1	STD75898	04/28/16 14:08
8M411804	WG566799-01 50ng BFB STD 8260	NA	1	1	STD75485	04/28/16 14:50
8M411805	WG566799-01 50ng BFB STD 8260	NA	1	1	STD75485	04/28/16 15:06
8M411806	WG566799-02 50ug/L CCV STD 8260	NA	1	1	STD75878	04/28/16 15:29
8M411807	WG566799-02 50ug/L CCV STD 8260	NA	1	1	STD75878	04/28/16 15:59
8M411808	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD75791	04/28/16 16:28
8M411809	WG566800-01 VBLK0428 BLANK STD 826	NA	1	1		04/28/16 16:57
8M411810	L16041205-11 A TB 826-SPE	<2	1	1		04/28/16 17:26
8M411811	L16041221-03 A TB 826-SPE	<2	1	1		04/28/16 17:55
8M411812	L16041205-01 A 826-SPE	<2	1	1		04/28/16 18:24
8M411813	L16041205-02 A 826-SPE	<2	1	1		04/28/16 18:54
8M411814	L16041205-03 A 826-SPE	<2	1	1		04/28/16 19:23
8M411815	L16041205-04 A 826-SPE	<2	1	1		04/28/16 19:52
8M411816	L16041205-05 A 826-SPE	<2	1	1		04/28/16 20:20
8M411817	L16041205-06 A 826-SPE	<2	1	1		04/28/16 20:50
8M411818	L16041205-07 A 826-SPE	<2	1	1		04/28/16 21:19
8M411819	L16041205-08 A 826-SPE	<2	1	1		04/28/16 21:47
8M411820	L16041205-09 A 826-SPE	<2	1	1		04/28/16 22:16
8M411821	L16041205-10 A 826-SPE	<2	1	1		04/28/16 22:46
8M411822	L16040984-06 B 826-SPE	<2	1	1		04/28/16 23:15

Approved: April 29, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 042816
Analyst1: ADC Analyst2: TMB
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD75878 LCS: STD75898 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG566682; WG566800

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M411823	L16041221-01 A 826-SPE	<2	1	1		04/28/16 23:43
8M411824	L16041221-05 A 826-SPE	<2	1	1		04/29/16 00:12
8M411825	L16041221-08 A 826-SPE	<2	1	1		04/29/16 00:41
8M411826	L16041221-04 A 826-SPE	<2	1	1		04/29/16 01:10
8M411827	L16041221-02 A 826-SPE	<2	1	1		04/29/16 01:38
8M411828	WG566800-02 20ug/L LCS STD 8260	NA	1	1	STD75898	04/29/16 02:07
8M411829	WG566800-03 20ug/L LCS2 STD 8260	NA	1	1	STD75898	04/29/16 02:36
8M411830	CCV	NA	1	1		04/29/16 03:05
8M411831	RINSE	NA	1	1		04/29/16 03:34

Comments

Seq.	Rerun	Dil.	Reason	Analytes
16	X			
File ID: 8M411804				
	Tune failed, DNR.			
18	X			
File ID: 8M411806				
	Ketones were low, DNR.			
20				
File ID: 8M411808				
	Not needed. DNR.			

Approved: April 29, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 050416
Analyst1: ADC Analyst2: NA
Method: 8260 SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD75711 Surrogate Standard: STD75710
CCV: STD75824 LCS: STD75739 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG567358 (ICAL)

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M974137	WG567358-01 BFB 50ng 8260	NA	7	1	STD75485	05/04/16 11:25
9M974138	WG567358-02 50ug/kg STD 8260	NA	7	1	STD75740	05/04/16 11:50
9M974139	RINSE	NA	7	1	STD75740	05/04/16 12:20
9M974140	WG567358-03 0.5ug/kg STD 8260	NA	7	1	STD75740	05/04/16 12:51
9M974141	WG567358-04 1.0ug/kg STD 8260	NA	7	1	STD75740	05/04/16 13:21
9M974142	WG567358-05 2.0ug/kg STD 8260	NA	7	1	STD75740	05/04/16 13:52
9M974143	WG567358-06 5.0ug/kg STD 8260	NA	7	1	STD75740	05/04/16 14:23
9M974144	WG567358-07 20.0ug/kg STD 8260	NA	7	1	STD75740	05/04/16 14:53
9M974145	WG567358-08 100.0ug/kg STD 8260	NA	7	1	STD75740	05/04/16 15:24
9M974146	WG567358-09 200.0ug/kg STD 8260	NA	7	1	STD75740	05/04/16 15:54
9M974147	WG567358-10 300.0ug/kg STD 8260	NA	7	1	STD75740	05/04/16 16:24
9M974148	RINSE	NA	7	1		05/04/16 16:55
9M974149	WG567358-08 100.0ug/kg STD 8260	NA	7	1	STD75740	05/04/16 17:25
9M974150	WG567358-02 50ug/kg STD 8260	NA	7	1	STD75740	05/04/16 17:56
9M974151	RINSE	NA	7	1		05/04/16 18:28
9M974152	WG567358-11 20.0ug/kg ALTSRC 8260	NA	7	1	STD75739	05/04/16 18:59
9M974153	RINSE	NA	7	1		05/04/16 19:30
9M974154	63-01	NA	7	1		05/04/16 20:01
9M974155	63-02	NA	7	1		05/04/16 20:32
9M974156	63-03	NA	7	1		05/04/16 21:03
9M974157	63-04	NA	7	1		05/04/16 21:33
9M974158	63-05	NA	7	1		05/04/16 22:04
9M974159	63-06	NA	7	1		05/04/16 22:35
9M974160	RINSE	NA	7	1		05/04/16 23:06

Approved: May 10, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 050516
Analyst1: ADC Analyst2: NA
Method: 8260 SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD75711 Surrogate Standard: STD75710
CCV: STD76050 LCS: STD75977 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG567680

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
9M974161	WG567630-01 BFB 50ng 8260	NA	7	1	STD75485	05/05/16 09:51
9M974162	WG567630-02 50ug/kg STD 8260	NA	7	1	STD75740	05/05/16 10:17
9M974163	WG567630-02 50ug/kg STD 8260	NA	7	1	STD75740	05/05/16 11:29
9M974164	WGXXXXXX-01 100ug/kg A9FOO CCV	NA	7	1	STDXXXXX	05/05/16 12:00
9M974165	WG567680-01 BLANK 8260	NA	7	1		05/05/16 12:32
9M974166	WG567680-02 LCS 20ug/kg 8260	NA	7	1	STD75739	05/05/16 13:02
9M974167	L16041580-07 A MS 8260 5.38g	NA	7	1	STD75739	05/05/16 13:34
9M974168	L16041580-08 A MSD 8260 5.02g	NA	7	1	STD75739	05/05/16 14:04
9M974169	RINSE	NA	7	1		05/05/16 14:34
9M974170	L16041580-06 A RS 8260 5.14g	NA	7	1		05/05/16 15:04
9M974171	L16041580-01 A 8260 4.82g	NA	7	1		05/05/16 15:35
9M974172	L16041580-02 A 8260 4.91g	NA	7	1		05/05/16 16:06
9M974173	L16041580-03 A 8260 4.68g	NA	7	1		05/05/16 16:37
9M974174	L16041580-04 A 8260 4.75g	NA	7	1		05/05/16 17:08
9M974175	L16041580-05 A 8260 5.28g	NA	7	1		05/05/16 17:40
9M974176	L16041580-09 A 8260 5.02g	NA	7	1		05/05/16 18:10
9M974177	L16041580-10 A 8260 4.65g	NA	7	1		05/05/16 18:40
9M974178	L16041580-11 A 8260 4.92g	NA	7	1		05/05/16 19:10
9M974179	L16041580-12 A 8260 4.82g	NA	7	1		05/05/16 19:41
9M974180	L16041580-13 A 8260 4.92g	NA	7	1		05/05/16 20:12
9M974181	L16041606-01 A 8260 5.09g	NA	7	1		05/05/16 20:43
9M974182	RINSE	NA	7	1		05/05/16 21:14
9M974183	SCREEN 100X 0156-01	NA	7	1		05/05/16 21:44
9M974184	SCREEN 100X 0156-02	NA	7	1		05/05/16 22:15
9M974185	SCREEN 100X 0156-03	NA	7	1		05/05/16 22:45
9M974186	SCREEN 100X 0156-04	NA	7	1		05/05/16 23:16
9M974187	SCREEN 100X 0156-05	NA	7	1		05/05/16 23:47
9M974188	SCREEN 100X 0156-06	NA	7	1		05/06/16 00:18
9M974189	SCREEN 100X 0156-07	NA	7	1		05/06/16 00:48
9M974190	SCREEN 100X 0156-08	NA	7	1		05/06/16 01:19
9M974191	SCREEN 100X 0156-09	NA	7	1		05/06/16 01:50
9M974192	RINSE	NA	7	1		05/06/16 02:21

Approved: May 10, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS9 Dataset: 050516
Analyst1: ADC Analyst2: NA
Method: 8260 SOP: MSV01 Rev: 23
Method: 5035/5030B/5030C SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD75711 Surrogate Standard: STD75710
CCV: STD76050 LCS: STD75977 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG567680

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
File ID: 9M974162				
WG567630-02 RR VC HIGH.				

Approved: May 10, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 050716
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53741

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD75976 LCS: STD75977 MS/MSD: STD75977

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG567935

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412045	WG567934-01 50ng BFB STD 8260	NA	1	1	STD76034	05/07/16 11:26
8M412046	WG567934-01 50ng BFB STD 8260	NA	1	1	STD76034	05/07/16 11:41
8M412047	WG567934-02 50ug/L CCV STD 8260	NA	1	1	STD75976	05/07/16 12:05
8M412048	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD75791	05/07/16 12:33
8M412049	WG567935-01 VBLK0507 BLANK STD 826	NA	1	1		05/07/16 13:02
8M412050	L16041580-14 B EB 826-LOW	<2	1	1		05/07/16 13:31
8M412051	L16041551-01 A 826-SPE1	<2	1	1		05/07/16 14:00
8M412052	L16041551-03 A 826-SPE1	<2	1	1		05/07/16 14:29
8M412053	L16041551-05 A 826-SPE1	<2	1	1		05/07/16 14:58
8M412054	L16041551-07 A 826-SPE1	<2	1	1		05/07/16 15:27
8M412055	L16041551-09 A 826-SPE1	<2	1	1		05/07/16 15:56
8M412056	L16041551-11 A 826-SPE1	<2	1	1		05/07/16 16:25
8M412057	L16041551-13 A 826-SPE1	6	1	1		05/07/16 16:54
8M412058	L16041551-15 A 826-SPE1	<2	1	1		05/07/16 17:24
8M412059	L16041551-17 A 826-SPE1	<2	1	1		05/07/16 17:53
8M412060	L16041551-19 A REF 826-SPE1	<2	1	1		05/07/16 18:21
8M412061	L16041551-25 A 826-SPE1	<2	1	1		05/07/16 18:51
8M412062	L16041551-27 A 826-SPE1	<2	1	1		05/07/16 19:20
8M412063	L16041551-29 A 826-SPE1	<2	1	1		05/07/16 19:48
8M412064	L16041551-31 A 826-SPE1	3	1	1		05/07/16 20:18
8M412065	L16041551-33 A 826-SPE1	<2	1	1		05/07/16 20:47
8M412066	L16041551-35 A 826-SPE1	<2	1	1		05/07/16 21:16
8M412067	L16041551-37 A 826-SPE1	<2	1	1		05/07/16 21:45
8M412068	WG567935-02 20ug/L LCS STD 8260	NA	1	1	STD75977	05/07/16 22:15
8M412069	L16041551-21 A MS 826-SPE1	NA	1	1	STD75977	05/07/16 22:44
8M412070	L16041551-23 A MSD 826-SPE1	NA	1	1	STD75977	05/07/16 23:13
8M412071	CCV	NA	1	1		05/07/16 23:43
8M412072	RINSE	NA	1	1		05/08/16 00:12
8M412073	L16050011-01 B 8260 A1	5	1	1		05/08/16 00:41
8M412074	RINSE	NA	1	1		05/08/16 01:11

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Approved: May 11, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS8	Dataset:	050716		
Analyst1:	TMB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	23
Method:	624	SOP:	MSV10	Rev:	14
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:	53741				

Internal Standard: STD75899 Surrogate Standard: STD75899

CCV: STD75976 LCS: STD75977 MS/MSD: STD75977

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG567935

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
1	X			
File ID: 8M412045				
	Tune failed, DNR.			
4				
File ID: 8M412048				
	Not needed, DNR.			

Approved: May 11, 2016

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 25-JAN-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 72995
Analytical Workgroups: WG555000

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
28-JAN-2016

Secondary Reviewer:
29-JAN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JAN-29-2016 16:00:23

Microbac Laboratories Inc.

Data Checklist

Date: 24-APR-2016
Analyst: JDS
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 74755
Analytical Workgroups: WG566154

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
27-APR-2016
Tiffany Bailey

Secondary Reviewer:
29-APR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: APR-29-2016 12:26:26

Microbac Laboratories Inc.

Data Checklist

Date: 28-APR-2016
Analyst: ADC
Analyst: TMB
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 74783
Analytical Workgroups: WG566682; WG566800

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	X
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
28-APR-2016
Tiffany Bailey

Secondary Reviewer:
29-APR-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: APR-29-2016 12:21:03

Microbac Laboratories Inc.

Data Checklist

Date: 04-MAY-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: WG567358
Runlog ID: 74928
Analytical Workgroups:

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
05-MAY-2016

Secondary Reviewer:
10-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-10-2016 15:39:42

Microbac Laboratories Inc.

Data Checklist

Date: 05-MAY-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS9
Curve Workgroup: NA
Runlog ID: 75000
Analytical Workgroups: WG567680

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
10-MAY-2016

Secondary Reviewer:
10-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-10-2016 15:47:35

Microbac Laboratories Inc.

Data Checklist

Date: 07-MAY-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 74968
Analytical Workgroups: WG567935

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
09-MAY-2016
Tiffany Bailey

Secondary Reviewer:
11-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-11-2016 14:29:22

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG567935

Login Number: L16041580

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
EQUIPMENT BLANK	14	04/25/16					05/07/2016	11.9	14		05/07/16	11.9	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4752346
Report generated 05/12/2016 14:55

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG567680

Login Number: L16041580

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW22DW(5-5.5)260416	01	04/26/16					05/03/2016	7	14		05/05/16	9.3	14	
18CPTMW22DW(10-10.5)2604	02	04/26/16					05/03/2016	7	14		05/05/16	9.3	14	
18CPTMW22DW(20-20.5)2604	03	04/26/16					05/03/2016	7	14		05/05/16	9.3	14	
18CPTMW22DW(29.5-30)2604	04	04/26/16					05/03/2016	6.9	14		05/05/16	9.2	14	
18CPTMW22DW(40-40.5)2604	05	04/26/16					05/03/2016	6.9	14		05/05/16	9.2	14	
18CPTMW22DW(50-51)260416	06	04/26/16					05/03/2016	6.8	14		05/05/16	9	14	
18CPTMW22DW(50-51)260416	07	04/26/16					05/03/2016	6.8	14		05/05/16	9	14	
18CPTMW22DW(50-51)260416	08	04/26/16					05/03/2016	6.8	14		05/05/16	9	14	
18CPTMW22DW(60-60.5)2604	09	04/26/16					05/03/2016	6.8	14		05/05/16	9.1	14	
18CPTMW22DW(60-60.5)2604	10	04/26/16					05/03/2016	6.8	14		05/05/16	9.2	14	
18CPTMW22DW(70-70.5)2604	11	04/26/16					05/03/2016	6.8	14		05/05/16	9.1	14	
18CPTMW22DW(80-80.5)2604	12	04/26/16					05/03/2016	6.7	14		05/05/16	9.1	14	
18CPTMW22DW(89.5-90)2604	13	04/26/16					05/03/2016	6.7	14		05/05/16	9.1	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4755294
Report generated 05/12/2016 14:55

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16041580
Instrument Id: HPMS8
Workgroup (AAB#): WG567935

Method: 8260
CAL ID: HPMS8-28-APR-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16041580-14	1.00	01	114	101	99.0	98.4
WG567935-01	1.00	01	116	102	99.2	98.1
WG567935-02	1.00	01	117	102	94.2	98.5

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4752351
Report generated: 05/12/2016 14:55

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16041580
Instrument Id: HPMS9
Workgroup (AAB#): WG567680

Method: 8260
CAL ID: HPMS9-04-MAY-16
Matrix: Soil

Sample Number	Dilution	Tag	1	2	3	4
L16041580-01	1.00	01	102	101	112	108
L16041580-02	1.00	01	104	101	109	106
L16041580-03	1.00	01	102	100	110	107
L16041580-04	1.00	01	110	103	112	106
L16041580-05	1.00	01	111	102	114	108
L16041580-06	1.00	01	102	102	110	106
L16041580-07	1.00	01	102	104	110	107
L16041580-08	1.00	01	103	104	109	106
L16041580-09	1.00	01	104	99.0	115	107
L16041580-10	1.00	01	105	100	118	108
L16041580-11	1.00	01	107	103	114	109
L16041580-12	1.00	01	109	101	110	108
L16041580-13	1.00	01	110	101	117	108
WG567680-01	1.00	01	104	101	110	106
WG567680-02	1.00	01	105	104	108	106

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	80	-	120
2 - Dibromofluoromethane	80	-	120
3 - 4-Bromofluorobenzene	85	-	120
4 - Toluene-d8	85	-	115

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4755303
Report generated: 05/12/2016 14:56

METHOD BLANK SUMMARY

Login Number: L16041580
Blank File ID: 8M412049
Prep Date: 05/07/16 13:02
Analyzed Date: 05/07/16 13:02
Analyst: TMB

Work Group: WG567935
Blank Sample ID: WG567935-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
EQUIPMENT BLANK	L16041580-14	8M412050	05/07/16 13:31	01
LCS	WG567935-02	8M412068	05/07/16 22:15	01

Report Name: BLANK_SUMMARY
PDF File ID: 4759214
Report generated 05/12/2016 14:55

METHOD BLANK SUMMARY

Login Number: L16041580
Blank File ID: 9M974165
Prep Date: 05/05/16 12:32
Analyzed Date: 05/05/16 12:32
Analyst: ADC

Work Group: WG567680
Blank Sample ID: WG567680-01
Instrument ID: HPMS9
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG567680-02	9M974166	05/05/16 13:02	01
18CPTMW22DW(50-51)260416MS	L16041580-07	9M974167	05/05/16 13:34	01
18CPTMW22DW(50-51)260416MSD	L16041580-08	9M974168	05/05/16 14:04	01
18CPTMW22DW(50-51)260416	L16041580-06	9M974170	05/05/16 15:04	01
18CPTMW22DW(5-5.5)260416	L16041580-01	9M974171	05/05/16 15:35	01
18CPTMW22DW(10-10.5)260416	L16041580-02	9M974172	05/05/16 16:06	01
18CPTMW22DW(20-20.5)260416	L16041580-03	9M974173	05/05/16 16:37	01
18CPTMW22DW(29.5-30)260416	L16041580-04	9M974174	05/05/16 17:08	01
18CPTMW22DW(40-40.5)260416	L16041580-05	9M974175	05/05/16 17:40	01
18CPTMW22DW(60-60.5)260416	L16041580-09	9M974176	05/05/16 18:10	01
18CPTMW22DW(60-60.5)260416DUP	L16041580-10	9M974177	05/05/16 18:40	01
18CPTMW22DW(70-70.5)260416	L16041580-11	9M974178	05/05/16 19:10	01
18CPTMW22DW(80-80.5)260416	L16041580-12	9M974179	05/05/16 19:41	01
18CPTMW22DW(89.5-90)260416	L16041580-13	9M974180	05/05/16 20:12	01

Report Name: BLANK_SUMMARY
PDF File ID: 4755295
Report generated 05/12/2016 14:55

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16041580 Prep Date: 05/07/16 13:02 Sample ID: WG567935-01
Instrument ID: HPMS8 Run Date: 05/07/16 13:02 Prep Method: 5030B/5030C/503
File ID: 8M412049 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG567935 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-28-APR-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
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Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16041580 Prep Date: 05/07/16 13:02 Sample ID: WG567935-01
Instrument ID: HPMS8 Run Date: 05/07/16 13:02 Prep Method: 5030B/5030C/503
File ID: 8M412049 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG567935 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-28-APR-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	102	85 - 115	PASS
1,2-Dichloroethane-d4	116	70 - 120	PASS
Toluene-d8	98.1	85 - 120	PASS
4-Bromofluorobenzene	99.2	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4759215
12-MAY-2016 14:55

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16041580 Prep Date: 05/05/16 12:32 Sample ID: WG567680-01
Instrument ID: HPMS9 Run Date: 05/05/16 12:32 Prep Method: 5030B/5030C/503
File ID: 9M974165 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG567680 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-04-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	5.00	20.0	5.00	1	U
Benzene	0.500	5.00	0.500	1	U
Bromobenzene	0.500	5.00	0.500	1	U
Bromochloromethane	1.00	5.00	1.00	1	U
Bromodichloromethane	0.500	5.00	0.500	1	U
Bromoform	0.500	5.00	0.500	1	U
Bromomethane	1.00	5.00	1.00	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.500	5.00	0.500	1	U
sec-Butylbenzene	0.500	5.00	0.500	1	U
tert-Butylbenzene	0.500	5.00	0.500	1	U
Carbon disulfide	0.500	5.00	0.500	1	U
Carbon tetrachloride	0.500	5.00	0.500	1	U
Chlorobenzene	0.500	5.00	0.500	1	U
Chlorodibromomethane	0.500	5.00	0.500	1	U
Chloroethane	1.00	5.00	1.00	1	U
Chloroform	0.500	5.00	0.500	1	U
Chloromethane	2.00	10.0	2.00	1	U
2-Chlorotoluene	0.500	5.00	0.500	1	U
4-Chlorotoluene	0.500	5.00	0.500	1	U
1,2-Dibromo-3-chloropropane	2.00	10.0	2.00	1	U
1,2-Dibromoethane	0.500	5.00	0.500	1	U
Dibromomethane	0.500	5.00	0.500	1	U
1,2-Dichlorobenzene	0.500	5.00	0.500	1	U
1,3-Dichlorobenzene	0.500	5.00	0.500	1	U
1,4-Dichlorobenzene	0.500	5.00	0.500	1	U
Dichlorodifluoromethane	1.00	5.00	1.00	1	U
1,1-Dichloroethane	1.00	5.00	1.00	1	U
1,2-Dichloroethane	0.500	5.00	0.500	1	U
1,1-Dichloroethene	0.500	5.00	0.500	1	U
cis-1,2-Dichloroethene	0.500	5.00	0.500	1	U
trans-1,2-Dichloroethene	0.500	5.00	0.500	1	U
1,2-Dichloropropane	0.500	5.00	0.500	1	U
1,3-Dichloropropane	0.500	5.00	0.500	1	U
2,2-Dichloropropane	0.500	5.00	0.500	1	U
cis-1,3-Dichloropropene	0.500	5.00	0.500	1	U
trans-1,3-Dichloropropene	0.500	5.00	0.500	1	U
1,1-Dichloropropene	0.500	5.00	0.500	1	U
Ethylbenzene	0.500	5.00	0.500	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.500	5.00	0.500	1	U
Isopropylbenzene	0.500	5.00	0.500	1	U

Report Name:BLANK
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Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16041580 Prep Date: 05/05/16 12:32 Sample ID: WG567680-01
Instrument ID: HPMS9 Run Date: 05/05/16 12:32 Prep Method: 5030B/5030C/503
File ID: 9M974165 Analyst: ADC Method: 8260B
Workgroup (AAB#): WG567680 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS9-04-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.500	5.00	0.500	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	1.00	5.00	1.00	1	U
Naphthalene	0.500	5.00	0.500	1	U
n-Propylbenzene	0.500	5.00	0.500	1	U
Styrene	0.500	5.00	0.500	1	U
1,1,1,2-Tetrachloroethane	0.500	5.00	0.500	1	U
1,1,2,2-Tetrachloroethane	0.500	5.00	0.500	1	U
Tetrachloroethene	0.500	5.00	0.500	1	U
Toluene	0.500	5.00	0.500	1	U
1,2,3-Trichlorobenzene	0.500	5.00	0.500	1	U
1,2,4-Trichlorobenzene	0.500	5.00	0.500	1	U
1,1,1-Trichloroethane	0.500	5.00	0.500	1	U
1,1,2-Trichloroethane	0.500	5.00	0.500	1	U
Trichloroethene	0.500	5.00	0.500	1	U
Trichlorofluoromethane	1.00	5.00	1.00	1	U
1,2,3-Trichloropropane	1.00	5.00	1.00	1	U
1,2,4-Trimethylbenzene	0.500	5.00	0.500	1	U
1,3,5-Trimethylbenzene	0.500	5.00	0.500	1	U
Vinyl chloride	1.00	5.00	1.00	1	U
o-Xylene	0.500	5.00	0.500	1	U
m-,p-Xylene	0.500	5.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	101	80 - 120	PASS
1,2-Dichloroethane-d4	104	80 - 120	PASS
Toluene-d8	106	85 - 115	PASS
4-Bromofluorobenzene	110	85 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4755296
12-MAY-2016 14:55

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16041580 | Run Date: 05/07/2016 | Sample ID: WG567935-02
Instrument ID: HPMS8 | Run Time: 22:15 | Prep Method: 5030B/5030C/503
File ID: 8M412068 | Analyst: TMB | Method: 8260B
Workgroup (AAB#): WG567935 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD75977 | Cal ID: HPMS8-28-APR-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	22.1	111	40 - 140	
Benzene	20.0	17.9	89.5	80 - 120	
Bromobenzene	20.0	18.6	93.2	75 - 125	
Bromochloromethane	20.0	18.9	94.3	65 - 130	
Bromodichloromethane	20.0	20.9	105	75 - 120	
Bromoform	20.0	19.1	95.6	70 - 130	
Bromomethane	20.0	11.0	54.8	30 - 145	
2-Butanone	20.0	20.0	99.8	30 - 150	
n-Butylbenzene	20.0	18.4	92.0	70 - 135	
sec-Butylbenzene	20.0	19.6	97.8	70 - 125	
tert-Butylbenzene	20.0	20.1	100	70 - 130	
Carbon disulfide	20.0	16.5	82.7	35 - 160	
Carbon tetrachloride	20.0	22.4	112	65 - 140	
Chlorobenzene	20.0	19.2	95.8	80 - 120	
Chlorodibromomethane	20.0	20.8	104	60 - 135	
Chloroethane	20.0	17.2	86.0	60 - 135	
Chloroform	20.0	20.1	100	65 - 135	
Chloromethane	20.0	18.3	91.5	40 - 125	
2-Chlorotoluene	20.0	19.7	98.6	75 - 125	
4-Chlorotoluene	20.0	19.2	96.2	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	19.9	99.4	50 - 130	
1,2-Dibromoethane	20.0	18.9	94.3	80 - 120	
Dibromomethane	20.0	19.4	96.8	75 - 125	
1,2-Dichlorobenzene	20.0	19.6	97.8	70 - 120	
1,3-Dichlorobenzene	20.0	19.3	96.4	75 - 125	
1,4-Dichlorobenzene	20.0	19.8	99.1	75 - 125	
Dichlorodifluoromethane	20.0	19.1	95.5	30 - 155	
1,1-Dichloroethane	20.0	17.8	89.1	70 - 135	
1,2-Dichloroethane	20.0	22.9	115	70 - 130	
1,1-Dichloroethene	20.0	18.2	91.1	70 - 130	
cis-1,2-Dichloroethene	20.0	18.0	89.8	70 - 125	
trans-1,2-Dichloroethene	20.0	18.9	94.7	60 - 140	
1,2-Dichloropropane	20.0	18.5	92.4	75 - 125	
1,3-Dichloropropane	20.0	18.4	92.1	75 - 125	
2,2-Dichloropropane	20.0	17.5	87.7	70 - 135	
cis-1,3-Dichloropropene	20.0	19.9	99.3	70 - 130	
trans-1,3-Dichloropropene	20.0	19.3	96.4	55 - 140	
1,1-Dichloropropene	20.0	18.1	90.6	75 - 130	
Ethylbenzene	20.0	18.5	92.5	75 - 125	
2-Hexanone	20.0	16.1	80.7	55 - 130	
Hexachlorobutadiene	20.0	19.9	99.3	50 - 140	

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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16041580 | Run Date: 05/07/2016 | Sample ID: WG567935-02
Instrument ID: HPMS8 | Run Time: 22:15 | Prep Method: 5030B/5030C/503
File ID: 8M412068 | Analyst: TMB | Method: 8260B
Workgroup (AAB#): WG567935 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD75977 | Cal ID: HPMS8-28-APR-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	20.8	104	75 - 125	
p-Isopropyltoluene	20.0	19.7	98.5	75 - 130	
4-Methyl-2-pentanone	20.0	18.3	91.6	60 - 135	
Methylene chloride	20.0	17.0	84.8	55 - 140	
Naphthalene	20.0	16.9	84.3	55 - 140	
n-Propylbenzene	20.0	19.3	96.4	70 - 130	
Styrene	20.0	19.8	99.1	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	21.5	107	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	14.3	71.7	65 - 130	
Tetrachloroethene	20.0	19.1	95.6	45 - 150	
Toluene	20.0	18.4	92.1	75 - 120	
1,2,3-Trichlorobenzene	20.0	18.3	91.3	55 - 140	
1,2,4-Trichlorobenzene	20.0	18.5	92.3	65 - 135	
1,1,1-Trichloroethane	20.0	21.6	108	65 - 130	
1,1,2-Trichloroethane	20.0	18.6	93.0	75 - 125	
Trichloroethene	20.0	20.9	104	70 - 125	
Trichlorofluoromethane	20.0	21.1	105	60 - 145	
1,2,3-Trichloropropane	20.0	18.8	93.8	75 - 125	
1,2,4-Trimethylbenzene	20.0	20.0	99.9	75 - 130	
1,3,5-Trimethylbenzene	20.0	19.5	97.3	75 - 130	
Vinyl chloride	20.0	21.2	106	50 - 145	
o-Xylene	20.0	19.7	98.3	80 - 120	
m-,p-Xylene	40.0	40.3	101	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	102	85 - 115	PASS
1,2-Dichloroethane-d4	117	70 - 120	PASS
Toluene-d8	98.5	85 - 120	PASS
4-Bromofluorobenzene	94.2	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4752347
Report generated: 05/12/2016 14:55

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16041580 | Run Date: 05/05/2016 | Sample ID: WG567680-02
Instrument ID: HPMS9 | Run Time: 13:02 | Prep Method: 5030B/5030C/503
File ID: 9M974166 | Analyst: ADC | Method: 8260B
Workgroup (AAB#): WG567680 | Matrix: Soil | Units: ug/kg
QC Key: DOD4 | Lot#: STD75739 | Cal ID: HPMS9-04-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	21.7	109	20 - 160	
Benzene	20.0	19.8	99.1	75 - 125	
Bromobenzene	20.0	20.3	101	65 - 120	
Bromochloromethane	20.0	19.2	96.1	70 - 125	
Bromodichloromethane	20.0	19.1	95.5	70 - 130	
Bromoform	20.0	16.7	83.4	55 - 135	
Bromomethane	20.0	18.9	94.5	30 - 160	
2-Butanone	20.0	21.8	109	30 - 160	
n-Butylbenzene	20.0	20.9	105	65 - 140	
sec-Butylbenzene	20.0	22.2	111	65 - 130	
tert-Butylbenzene	20.0	23.0	115	65 - 130	
Carbon disulfide	20.0	18.8	93.8	45 - 160	
Carbon tetrachloride	20.0	19.6	97.8	65 - 135	
Chlorobenzene	20.0	20.8	104	75 - 125	
Chlorodibromomethane	20.0	18.7	93.5	65 - 130	
Chloroethane	20.0	20.7	104	40 - 155	
Chloroform	20.0	19.9	99.5	70 - 125	
Chloromethane	20.0	20.1	100	50 - 130	
2-Chlorotoluene	20.0	21.3	106	70 - 130	
4-Chlorotoluene	20.0	22.3	112	75 - 125	
1,2-Dibromo-3-chloropropane	20.0	19.7	98.6	40 - 135	
1,2-Dibromoethane	20.0	19.9	99.3	70 - 125	
Dibromomethane	20.0	17.8	89.2	75 - 130	
1,2-Dichlorobenzene	20.0	20.1	100	75 - 120	
1,3-Dichlorobenzene	20.0	20.5	103	70 - 125	
1,4-Dichlorobenzene	20.0	20.5	103	70 - 125	
Dichlorodifluoromethane	20.0	21.7	109	35 - 135	
1,1-Dichloroethane	20.0	19.1	95.3	75 - 125	
1,2-Dichloroethane	20.0	20.0	100	70 - 135	
1,1-Dichloroethene	20.0	20.2	101	65 - 135	
cis-1,2-Dichloroethene	20.0	20.3	101	65 - 125	
trans-1,2-Dichloroethene	20.0	21.1	106	65 - 135	
1,2-Dichloropropane	20.0	20.4	102	70 - 120	
1,3-Dichloropropane	20.0	20.7	103	75 - 125	
2,2-Dichloropropane	20.0	20.6	103	65 - 135	
cis-1,3-Dichloropropene	20.0	21.0	105	70 - 125	
trans-1,3-Dichloropropene	20.0	19.9	99.4	65 - 125	
1,1-Dichloropropene	20.0	20.6	103	70 - 135	
Ethylbenzene	20.0	20.9	105	75 - 125	
2-Hexanone	20.0	20.1	101	45 - 145	
Hexachlorobutadiene	20.0	21.2	106	55 - 140	

LCS - Modified 03/06/2008
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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16041580 | Run Date: 05/05/2016 | Sample ID: WG567680-02
Instrument ID: HPMS9 | Run Time: 13:02 | Prep Method: 5030B/5030C/503
File ID: 9M974166 | Analyst: ADC | Method: 8260B
Workgroup (AAB#): WG567680 | Matrix: Soil | Units: ug/kg
QC Key: DOD4 | Lot#: STD75739 | Cal ID: HPMS9-04-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	21.5	108	75 - 130	
p-Isopropyltoluene	20.0	22.3	112	75 - 135	
4-Methyl-2-pentanone	20.0	20.2	101	45 - 145	
Methylene chloride	20.0	18.9	94.6	55 - 140	
Naphthalene	20.0	18.2	91.0	40 - 125	
n-Propylbenzene	20.0	24.5	122	65 - 135	
Styrene	20.0	20.2	101	75 - 125	
1,1,1,2-Tetrachloroethane	20.0	19.4	96.8	75 - 125	
1,1,2,2-Tetrachloroethane	20.0	19.1	95.6	55 - 130	
Tetrachloroethene	20.0	20.5	103	65 - 140	
Toluene	20.0	20.1	100	70 - 125	
1,2,3-Trichlorobenzene	20.0	19.1	95.3	60 - 135	
1,2,4-Trichlorobenzene	20.0	19.3	96.7	65 - 130	
1,1,1-Trichloroethane	20.0	21.1	106	70 - 135	
1,1,2-Trichloroethane	20.0	19.9	99.4	60 - 125	
Trichloroethene	20.0	20.9	105	75 - 125	
Trichlorofluoromethane	20.0	20.5	103	25 - 185	
1,2,3-Trichloropropane	20.0	21.2	106	65 - 130	
1,2,4-Trimethylbenzene	20.0	22.2	111	65 - 135	
1,3,5-Trimethylbenzene	20.0	22.8	114	65 - 135	
Vinyl chloride	20.0	16.0	79.8	60 - 125	
o-Xylene	20.0	20.2	101	75 - 125	
m-,p-Xylene	40.0	41.4	104	80 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	104	80 - 120	PASS
1,2-Dichloroethane-d4	105	80 - 120	PASS
Toluene-d8	106	85 - 115	PASS
4-Bromofluorobenzene	108	85 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4755297
Report generated: 05/12/2016 14:55

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16041580 Cal ID: HPMS9- 04-MAY-16 Worknum: WG567680

Instrument ID: HPMS9 Contract #: Prep Method: 5030B/5030C/

Parent ID: L16041580-06 File ID: 9M974170 Dil: 1 Method: 5035A

Sample ID: L16041580-07 MS File ID: 9M974167 Dil: 1 Matrix: 8260B

Sample ID: L16041580-08 MSD File ID: 9M974168 Dil: 1 Units: Soil

Percent Solid: ug/kg

83.5

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,1,1,2-Tetrachloroethane	U	22.3	23.2	104	23.9	23.0	96.4	0.877	75 - 125	30	
1,1,1-Trichloroethane	U	22.3	24.9	112	23.9	24.6	103	1.11	70 - 135	30	
1,1,2,2-Tetrachloroethane	U	22.3	22.0	98.6	23.9	21.4	89.6	2.65	55 - 130	30	
1,1,2-Trichloroethane	U	22.3	22.6	102	23.9	23.3	97.7	2.94	60 - 125	30	
1,1-Dichloroethane	U	22.3	22.7	102	23.9	22.8	95.4	0.205	75 - 125	30	
1,1-Dichloroethene	U	22.3	23.4	105	23.9	23.6	98.9	0.823	65 - 135	30	
1,1-Dichloropropene	U	22.3	24.0	108	23.9	24.1	101	0.422	70 - 135	30	
1,2,3-Trichlorobenzene	U	22.3	20.1	90.1	23.9	18.8	78.6	6.70	60 - 135	30	
1,2,3-Trichloropropane	U	22.3	22.6	101	23.9	24.0	101	6.08	65 - 130	30	
1,2,4-Trichlorobenzene	U	22.3	21.0	94.4	23.9	19.3	80.9	8.49	65 - 130	30	
1,2,4-Trimethylbenzene	U	22.3	26.7	120	23.9	25.2	106	5.96	65 - 135	30	
1,2-Dibromo-3-chloropropane	U	22.3	20.3	91	23.9	20.9	87.6	3.12	40 - 135	30	
1,2-Dibromoethane	U	22.3	22.8	103	23.9	23.2	97.4	1.65	70 - 125	30	
1,2-Dichlorobenzene	U	22.3	23.9	107	23.9	23.0	96.2	4.14	75 - 120	30	
1,2-Dichloroethane	U	22.3	23.2	104	23.9	23.4	97.9	0.604	70 - 135	30	
1,2-Dichloropropane	U	22.3	24.0	108	23.9	24.1	101	0.555	70 - 120	30	
1,3,5-Trimethylbenzene	U	22.3	27.6	124	23.9	26.3	110	5.14	65 - 135	30	
1,3-Dichlorobenzene	U	22.3	24.2	109	23.9	23.6	99	2.56	70 - 125	30	
1,3-Dichloropropane	U	22.3	23.6	106	23.9	24.1	101	1.99	75 - 125	30	
1,4-Dichlorobenzene	U	22.3	24.5	110	23.9	23.3	97.6	5.21	70 - 125	30	
2,2-Dichloropropane	U	22.3	24.2	109	23.9	23.8	99.9	1.67	65 - 135	30	
2-Butanone	U	22.3	23.4	105	23.9	24.5	103	4.63	30 - 160	30	
2-Chlorotoluene	U	22.3	25.9	117	23.9	24.5	102	5.95	70 - 130	30	
2-Hexanone	U	22.3	20.9	93.9	23.9	21.3	89.1	1.64	45 - 145	30	
4-Chlorotoluene	U	22.3	26.1	117	23.9	25.9	108	0.809	75 - 125	30	
4-Methyl-2-pentanone	U	22.3	21.6	97.1	23.9	22.0	92.3	1.86	45 - 145	30	
Acetone	6.11	22.3	28.9	102	23.9	29.6	98.4	2.29	20 - 160	30	
Benzene	U	22.3	23.4	105	23.9	23.4	98.1	0.131	75 - 125	30	
Bromobenzene	U	22.3	24.6	110	23.9	24.3	102	1.04	65 - 120	30	
Bromochloromethane	U	22.3	22.5	101	23.9	22.8	95.6	1.27	70 - 125	30	
Bromodichloromethane	U	22.3	22.5	101	23.9	23.0	96.3	1.86	70 - 130	30	
Bromoform	U	22.3	19.0	85.3	23.9	19.5	81.8	2.71	55 - 135	30	
Bromomethane	U	22.3	22.8	103	23.9	23.3	97.8	2.19	30 - 160	30	
Carbon disulfide	U	22.3	21.3	95.9	23.9	22.4	93.9	4.90	45 - 160	30	
Carbon tetrachloride	U	22.3	23.2	104	23.9	23.2	97.1	0.0097	65 - 135	30	
Chlorobenzene	U	22.3	24.3	109	23.9	24.7	103	1.73	75 - 125	30	
Chloroethane	U	22.3	25.6	115	23.9	25.4	106	0.970	40 - 155	30	
Chloroform	U	22.3	23.8	107	23.9	23.9	100	0.620	70 - 125	30	
Chloromethane	U	22.3	22.3	100	23.9	22.1	92.4	1.03	50 - 130	30	
cis-1,2-Dichloroethene	U	22.3	24.3	109	23.9	24.6	103	1.27	65 - 125	30	
cis-1,3-Dichloropropene	U	22.3	24.9	112	23.9	24.8	104	0.590	70 - 125	30	

MS_MSD - Modified 03/06/2008
PDF File ID: 4755298
Report generated 05/12/2016 14:55

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16041580 Cal ID: HPMS9 04-MAY-16 Worknum: WG567680

Instrument ID: HPMS9 Contract #: Prep Method: 5030B/5030C/

Parent ID: L16041580-06 File ID: 9M974170 Dil: 1 Method: 5035A

Sample ID: L16041580-07 MS File ID: 9M974167 Dil: 1 Matrix: 8260B

Sample ID: L16041580-08 MSD File ID: 9M974168 Dil: 1 Units: Soil

ug/kg

Percent Solid: 83.5

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chlorodibromomethane	U	22.3	22.0	98.8	23.9	21.6	90.3	2.02	65 - 130	30	
Dibromomethane	U	22.3	20.6	92.3	23.9	20.8	87	0.973	75 - 130	30	
Dichlorodifluoromethane	U	22.3	26.3	118	23.9	25.8	108	2.07	35 - 135	30	
Ethylbenzene	U	22.3	24.9	112	23.9	24.6	103	1.25	75 - 125	30	
Hexachlorobutadiene	U	22.3	23.3	105	23.9	20.9	87.7	10.7	55 - 140	30	
Isopropylbenzene	U	22.3	25.2	113	23.9	24.9	104	1.26	75 - 130	30	
m-,p-Xylene	U	44.5	48.9	110	47.7	48.0	100	1.97	80 - 125	30	
Methylene chloride	U	22.3	22.3	100	23.9	23.0	96.5	3.35	55 - 140	30	
n-Butylbenzene	U	22.3	24.5	110	23.9	23.2	97.2	5.30	65 - 140	30	
n-Propylbenzene	U	22.3	29.3	132	23.9	28.1	118	4.22	65 - 135	30	
Naphthalene	U	22.3	18.8	84.3	23.9	18.0	75.3	4.36	40 - 125	30	
o-Xylene	U	22.3	24.6	110	23.9	24.1	101	2.11	75 - 125	30	
p-Isopropyltoluene	U	22.3	26.6	120	23.9	25.3	106	5.13	75 - 135	30	
sec-Butylbenzene	U	22.3	26.3	118	23.9	24.7	104	6.20	65 - 130	30	
Styrene	U	22.3	23.7	106	23.9	23.9	100	0.961	75 - 125	30	
tert-Butylbenzene	U	22.3	27.3	123	23.9	26.9	113	1.67	65 - 130	30	
Tetrachloroethene	U	22.3	23.8	107	23.9	23.9	100	0.470	65 - 140	30	
Toluene	U	22.3	23.8	107	23.9	23.6	98.9	0.718	70 - 125	30	
trans-1,2-Dichloroethene	U	22.3	24.4	109	23.9	25.0	105	2.52	65 - 135	30	
trans-1,3-Dichloropropene	U	22.3	23.0	103	23.9	23.0	96.4	0.174	65 - 125	30	
Trichloroethene	U	22.3	24.6	111	23.9	24.5	103	0.590	75 - 125	30	
Trichlorofluoromethane	U	22.3	24.6	110	23.9	24.3	102	1.24	25 - 185	30	
Vinyl chloride	U	22.3	27.1	122	23.9	26.8	112	1.09	60 - 125	30	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4755298
Report generated 05/12/2016 14:55

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16041580
Instrument: HPMS8
Analyst: JDS
Workgroup: WG566154

Tune ID: WG566154-01
Run Date: 04/24/2016
Run Time: 16:45
File ID: 8M411681
Cal ID: HPMS8 - 24-APR-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	29.7	11578	PASS
75.0	95.0	30.0	60.0	54.6	21298	PASS
95.0	95.0	100	100	100	39034	PASS
96.0	95.0	5.00	9.00	6.34	2474	PASS
173	174	0	2.00	1.15	333	PASS
174	95.0	50.0	100	74.1	28941	PASS
175	174	5.00	9.00	6.71	1943	PASS
176	174	95.0	101	99.4	28765	PASS
177	176	5.00	9.00	5.88	1691	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG566154-02	STD	01	04/24/2016 17:10	
WG566154-03	STD	01	04/24/2016 17:39	
WG566154-04	STD-CCV	01	04/24/2016 18:08	
WG566154-05	STD	01	04/24/2016 18:37	
WG566154-06	STD	01	04/24/2016 19:06	
WG566154-07	STD	01	04/24/2016 19:36	
WG566154-08	STD	01	04/24/2016 20:05	
WG566154-09	STD	01	04/24/2016 20:34	
WG566154-10	SSCV	01	04/24/2016 22:02	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4752349
Report generated 05/12/2016 14:55

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16041580
Instrument: HPMS8
Analyst: ADC
Workgroup: WG566682

Tune ID: WG566682-01
Run Date: 04/28/2016
Run Time: 07:05
File ID: 8M411789
Cal ID: HPMS8 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	25.9	11810	PASS
75.0	95.0	30.0	60.0	52.9	24061	PASS
95.0	95.0	100	100	100	45522	PASS
96.0	95.0	5.00	9.00	5.64	2567	PASS
173	174	0	2.00	0.332	118	PASS
174	95.0	50.0	100	78.1	35560	PASS
175	174	5.00	9.00	7.55	2684	PASS
176	174	95.0	101	95.4	33930	PASS
177	176	5.00	9.00	6.95	2358	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG566682-02	STD	01	04/28/2016 07:58	
WG566682-03	STD	01	04/28/2016 08:27	
WG566682-04	STD	01	04/28/2016 08:56	
WG566682-05	STD	01	04/28/2016 09:26	
WG566682-06	STD	01	04/28/2016 09:55	
WG566682-07	STD	01	04/28/2016 10:24	
WG566682-08	STD-CCV	01	04/28/2016 10:54	
WG566682-09	STD	01	04/28/2016 11:23	
WG566682-10	STD	01	04/28/2016 11:52	
WG566682-11	STD	01	04/28/2016 12:21	
WG566682-12	SSCV	01	04/28/2016 14:08	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4752349
Report generated 05/12/2016 14:55

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16041580
Instrument: HPMS8
Analyst: TMB
Workgroup: WG567934

Tune ID: WG567934-01
Run Date: 05/07/2016
Run Time: 11:41
File ID: 8M412046
Cal ID: HPMS8 - 28-APR-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	34.8	9756	PASS
75.0	95.0	30.0	60.0	59.8	16761	PASS
95.0	95.0	100	100	100	28050	PASS
96.0	95.0	5.00	9.00	6.21	1742	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	83.2	23343	PASS
175	174	5.00	9.00	7.08	1652	PASS
176	174	95.0	101	97.4	22736	PASS
177	176	5.00	9.00	7.16	1627	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG567934-02	CCV	01	05/07/2016 12:05	
WG567935-01	BLANK	01	05/07/2016 13:02	
L16041580-14	EQUIPMENT BLANK	01	05/07/2016 13:31	
WG567935-02	LCS	01	05/07/2016 22:15	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4752349
Report generated 05/12/2016 14:55

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16041580
Instrument: HPMS9
Analyst: FJB
Workgroup: WG555000

Tune ID: WG555000-01
Run Date: 01/25/2016
Run Time: 10:27
File ID: 9M972470
Cal ID: HPMS9 - 25-JAN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	23.0	10289	PASS
75.0	95.0	30.0	60.0	49.3	22030	PASS
95.0	95.0	100	100	100	44728	PASS
96.0	95.0	5.00	9.00	6.98	3122	PASS
173	174	0	2.00	0.381	160	PASS
174	95.0	50.0	100	93.9	41989	PASS
175	174	5.00	9.00	6.62	2778	PASS
176	174	95.0	101	95.6	40133	PASS
177	176	5.00	9.00	6.39	2564	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG555000-02	STD-S	01	01/25/2016 11:22	
WG555000-03	STD-S	01	01/25/2016 11:52	
WG555000-04	STD-S	01	01/25/2016 12:23	
WG555000-05	STD-CCV-S	01	01/25/2016 12:53	
WG555000-06	STD-S	01	01/25/2016 13:23	
WG555000-07	STD-S	01	01/25/2016 13:54	
WG555000-08	STD-S	01	01/25/2016 14:25	
WG555000-09	STD-S	01	01/25/2016 14:56	
WG555000-10	SSCV-S	01	01/25/2016 15:56	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4755300
Report generated 05/12/2016 14:56

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16041580
Instrument: HPMS9
Analyst: ADC
Workgroup: WG567358

Tune ID: WG567358-01
Run Date: 05/04/2016
Run Time: 11:25
File ID: 9M974137
Cal ID: HPMS9 - 04-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.9	8610	PASS
75.0	95.0	30.0	60.0	47.6	17874	PASS
95.0	95.0	100	100	100	37554	PASS
96.0	95.0	5.00	9.00	7.31	2747	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	86.0	32312	PASS
175	174	5.00	9.00	7.32	2364	PASS
176	174	95.0	101	97.4	31461	PASS
177	176	5.00	9.00	5.94	1870	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG567358-03	STD-S	01	05/04/2016 12:51	
WG567358-04	STD-S	01	05/04/2016 13:21	
WG567358-05	STD-S	01	05/04/2016 13:52	
WG567358-06	STD-S	01	05/04/2016 14:23	
WG567358-07	STD-S	01	05/04/2016 14:53	
WG567358-09	STD-S	01	05/04/2016 15:54	
WG567358-10	STD-S	01	05/04/2016 16:24	
WG567358-08	STD-S	01	05/04/2016 17:25	
WG567358-02	STD-CCV-S	01	05/04/2016 17:56	
WG567358-11	SSCV-S	01	05/04/2016 18:59	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4755300
Report generated 05/12/2016 14:56

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16041580
Instrument: HPMS9
Analyst: ADC
Workgroup: WG567630

Tune ID: WG567630-01
Run Date: 05/05/2016
Run Time: 09:51
File ID: 9M974161
Cal ID: HPMS9 - 04-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.4	10328	PASS
75.0	95.0	30.0	60.0	46.1	22204	PASS
95.0	95.0	100	100	100	48200	PASS
96.0	95.0	5.00	9.00	6.93	3341	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	87.1	41965	PASS
175	174	5.00	9.00	7.28	3055	PASS
176	174	95.0	101	98.0	41133	PASS
177	176	5.00	9.00	6.53	2685	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG567630-02	CCV-S	01	05/05/2016 11:29	
WG567680-01	BLANK	01	05/05/2016 12:32	
WG567680-02	LCS	01	05/05/2016 13:02	
L16041580-07	18CPTMW22DW(50-51)260416MS	01	05/05/2016 13:34	
L16041580-08	18CPTMW22DW(50-51)260416MSD	01	05/05/2016 14:04	
L16041580-06	18CPTMW22DW(50-51)260416	01	05/05/2016 15:04	
L16041580-01	18CPTMW22DW(5-5.5)260416	01	05/05/2016 15:35	
L16041580-02	18CPTMW22DW(10-10.5)260416	01	05/05/2016 16:06	
L16041580-03	18CPTMW22DW(20-20.5)260416	01	05/05/2016 16:37	
L16041580-04	18CPTMW22DW(29.5-30)260416	01	05/05/2016 17:08	
L16041580-05	18CPTMW22DW(40-40.5)260416	01	05/05/2016 17:40	
L16041580-09	18CPTMW22DW(60-60.5)260416	01	05/05/2016 18:10	
L16041580-10	18CPTMW22DW(60-60.5)260416DUP	01	05/05/2016 18:40	
L16041580-11	18CPTMW22DW(70-70.5)260416	01	05/05/2016 19:10	
L16041580-12	18CPTMW22DW(80-80.5)260416	01	05/05/2016 19:41	
L16041580-13	18CPTMW22DW(89.5-90)260416	01	05/05/2016 20:12	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4755300
Report generated 05/12/2016 14:56

Calibration Table Report
Method: A9FOOWTR.M
Title: A9-FOO Water SOP:MSV01 04-24-16 HPMS8
Last Calibration: Wed Apr 27 16:38:22 2016
Curve: WG566154
Calibration Files

Compound	5 8M411682.D	20 8M411683.D	50 8M411684.D	100 8M411685.D	200 8M411686.D	300 8M411687.D	400 8M411688.D	500 8M411689.D	Avg	%RSD	Linear	Quad
Fluorobenzene	ISTD											
Acetonitrile	0.015	0.021	0.025	0.021	0.023	0.021	0.022	0.020	0.021	14.242		
3-Chloro-1-propene	0.700	0.851	0.809	0.812	0.854	0.828	0.748	0.723	0.791	7.496		
2-Chloro-1,3-butadiene	0.628	0.756	0.714	0.729	0.800	0.779	0.702	0.702	0.726	7.386		
Ethyl Acetate	0.150	0.220	0.239	0.217	0.234	0.228	0.227	0.209	0.215	12.995		
Methacrylonitrile	0.037	0.060	0.065	0.062	0.064	0.063	0.062	0.057	0.059	15.761	0.997	
Isobutyl Alcohol			0.006	0.005	0.005	0.005	0.005	0.005	0.005	10.922		
1-Butanol									0.000	0.000		
Methyl methacrylate	0.132	0.215	0.225	0.217	0.232	0.226	0.224	0.207	0.210	15.492	0.998	
2-Nitropropane			0.072	0.067	0.074	0.074	0.075	0.069	0.072	4.567		
Chlorobenzene-d5	ISTD											
1,4-Dichlorobenzene-d4	ISTD											
Cyclohexanone			0.017	0.015	0.017	0.017	0.016	0.017	0.017	5.604		

Wed Apr 27 16:46:49 2016

Calibration Table Report
Method: 8260WTR.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Calibration: Thu Apr 28 15:05:04 2016
Curve: WG566682
Calibration Files

	Compound	0.3 8M411791.D	0.4 8M411792.D	1 8M411793.D	2 8M411794.D	5 8M411795.D	20 8M411796.D	50 8M411797.D	100 8M411798.D	200 8M411799.D	300 8M411800.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane		0.522	0.507	0.479	0.475	0.551	0.563	0.559	0.547	0.511	0.524	6.325		
P	Chloromethane			0.591	0.533	0.461	0.461	0.480	0.485	0.484	0.454	0.494	9.377		
C	Vinyl Chloride		0.331	0.314	0.311	0.311	0.313	0.336	0.361	0.367	0.356	0.333	6.924		
T	1,3-Butadiene				0.317	0.284	0.315	0.337	0.356	0.341	0.331	0.326	7.154		
T	Bromomethane			0.146	0.151	0.170	0.189	0.215	0.232	0.246	0.245	0.199	20.645	0.997	
T	Chloroethane		0.211	0.209	0.220	0.241	0.215	0.220	0.219	0.221	0.208	0.218	4.527		
T	Trichlorofluoromethane		0.645	0.649	0.672	0.660	0.644	0.665	0.681	0.679	0.659	0.662	2.129		
T	Diethyl ether			0.207	0.198	0.204	0.205	0.203	0.204		0.196	0.202	2.010		
T	Isoprene		0.343	0.319	0.337	0.345	0.344	0.347	0.342	0.341	0.329	0.339	2.677		
T	Acrolein				0.014	0.017	0.017	0.018	0.020		0.021	0.018	13.483		
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.280	0.315	0.312	0.293	0.305	0.310	0.311	0.297	0.303	3.951		
T	Acetone					0.068	0.066	0.060	0.054	0.064	0.056	0.061	9.101		
C	1,1-Dichloroethene		0.608	0.591	0.593	0.608	0.571	0.583	0.599	0.588	0.551	0.588	3.077		
T	Tert-Butyl Alcohol				0.013	0.015	0.014	0.014	0.015		0.013	0.014	5.268		
T	Dimethyl Sulfide		0.174	0.203	0.229	0.230	0.225	0.227	0.225	0.224	0.217	0.217	8.334		
T	Iodomethane			0.061	0.058	0.078	0.107	0.145	0.155	0.167	0.161	0.116	39.605		0.999
T	Methyl acetate					0.205	0.187	0.181	0.182	0.179	0.167	0.183	6.888		
T	Methylene Chloride			0.336	0.276	0.289	0.267	0.270	0.268	0.267	0.256	0.279	8.940		
T	Carbon Disulfide			0.877	0.880	0.883	0.863	0.863	0.844	0.815	0.776	0.850	4.396		
T	Acrylonitrile			0.066	0.071	0.077	0.078	0.084	0.086		0.090	0.079	10.857		
T	Methyl Tert Butyl Ether			0.549	0.579	0.623	0.612	0.633	0.652	0.666	0.610	0.616	6.156		
T	trans-1,2-Dichloroethene		0.508	0.584	0.557	0.539	0.510	0.530	0.534	0.529	0.494	0.532	5.096		
T	n-Hexane					0.506	0.492	0.494	0.482	0.472	0.449	0.483	4.137		
T	Diisopropyl ether			1.478	1.378	1.427	1.399	1.388	1.317		1.178	1.366	7.057		
T	Vinyl Acetate				0.542	0.556	0.552	0.575	0.570	0.535	0.509	0.549	4.067		
P	1,1-Dichloroethane		0.638	0.655	0.676	0.666	0.617	0.635	0.635	0.623	0.581	0.636	4.428		
T	Ethyl-Tert-Butyl ether			0.967	0.949	0.978	0.975	0.965	0.962		0.916	0.959	2.230		
T	2-Butanone					0.100	0.095	0.099	0.098	0.102	0.095	0.098	2.822		
T	Propionitrile			0.018	0.025	0.026	0.026	0.027	0.027		0.026	0.025	12.077		
T	2,2-Dichloropropane		0.575	0.592	0.554	0.572	0.541	0.549	0.565	0.564	0.530	0.560	3.384		
T	cis-1,2-Dichloroethene		0.324	0.346	0.310	0.347	0.309	0.307	0.314	0.313	0.294	0.318	5.603		
C	Chloroform	0.631	0.560	0.618	0.603	0.604	0.569	0.586	0.595	0.590	0.547	0.590	4.374		
T	1-Bromopropane			0.044	0.045	0.052	0.051	0.052	0.052	0.053	0.052	0.050	6.886		
T	Bromochloromethane		0.130	0.169	0.178	0.167	0.170	0.170	0.174	0.175	0.165	0.167	8.487		
T	Tetrahydrofuran			0.078	0.063	0.064	0.065	0.062	0.063		0.059	0.065	9.373		
S	Dibromofluoromethane			0.325	0.330	0.313	0.295	0.319	0.310	0.318	0.301	0.314	3.775		
T	1,1,1-Trichloroethane		0.572	0.576	0.611	0.620	0.570	0.597	0.610	0.616	0.584	0.595	3.367		
T	Cyclohexane			0.638	0.706	0.660	0.657	0.658	0.644	0.632	0.600	0.650	4.631		
T	1,1-Dichloropropene			0.373	0.463	0.444	0.417	0.439	0.439	0.438	0.413	0.428	6.334		
T	Tert-Amyl-Methyl ether			0.610	0.599	0.615	0.624	0.617	0.626		0.609	0.614	1.522		
T	Carbon Tetrachloride		0.54	0.531	0.529	0.575	0.544	0.575	0.59	0.593	0.562	0.5599	4.45795		
S	1,2-Dichloroethane-d4			0.339	0.321	0.376	0.356	0.377	0.373	0.377	0.352	0.3591	5.81799		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.531	0.48	0.501	0.49	0.481	0.493	0.507	0.509	0.47	0.4958	3.74245		
T	Benzene		1.235	1.134	1.169	1.125	1.087	1.096	1.069	1.003	0.9	1.091	8.84885		
T	Trichloroethene		0.309	0.316	0.322	0.321	0.306	0.315	0.321	0.32	0.304	0.3149	2.22363		
T	Methylcyclohexane					0.44	0.437	0.454	0.444	0.441	0.425	0.4402	2.15111		
C	1,2-Dichloropropane		0.335	0.307	0.337	0.329	0.307	0.315	0.319	0.314	0.296	0.3176	4.35963		
T	Bromodichloromethane		0.442	0.406	0.426	0.458	0.436	0.448	0.463	0.463	0.435	0.4419	4.23502		
T	1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.0013	13.943		
T	Dibromomethane		0.109	0.151	0.157	0.155	0.152	0.152	0.158	0.16	0.151	0.1495	10.424		
T	2-Chloroethyl Vinyl Ether				0.116	0.132	0.137	0.138	0.136	0.14	0.133	0.133	5.9858		
T	4-Methyl-2-Pentanone					0.068	0.068	0.072	0.074	0.079	0.075	0.0726	5.72689		
T	cis-1,3-Dichloropropene		0.374	0.454	0.447	0.462	0.45	0.46	0.466	0.461	0.43	0.4447	6.47719		

T	Dimethyl Disulfide					0.208	0.228	0.233	0.243	0.247	0.24	0.233	6.06187
I	Chlorobenzene-d5	ISTD											
S	Toluene-d8			1.317	1.293	1.364	1.281	1.39	1.292	1.24	1.164	1.2927	5.45457
C	Toluene		1.553	1.601	1.635	1.63	1.501	1.55	1.48	1.338	1.185	1.4971	9.91225
T	Ethyl Methacrylate			0.253	0.252	0.273	0.294	0.301	0.301	0.294	0.279	0.2809	7.1387
T	Paraldehyde											0	0
T	trans-1,3-Dichloropropene			0.487	0.522	0.532	0.524	0.541	0.545	0.529	0.498	0.5223	3.85828
T	1,1,2-Trichloroethane		0.228	0.196	0.253	0.253	0.242	0.248	0.245	0.244	0.23	0.2376	7.61886
T	2-Hexanone					0.075	0.085	0.09	0.088	0.089	0.085	0.0853	6.33709
T	1,3-Dichloropropane		0.447	0.444	0.477	0.448	0.433	0.449	0.439	0.429	0.4	0.4406	4.66138
T	Tetrachloroethene		0.327	0.351	0.318	0.362	0.334	0.343	0.348	0.34	0.329	0.339	3.98079
T	Dibromochloromethane		0.289	0.352	0.394	0.389	0.369	0.392	0.404	0.4	0.383	0.3745	9.58661
T	1,2-Dibromoethane		0.226	0.215	0.249	0.253	0.253	0.264	0.263	0.259	0.246	0.2476	6.77276
T	1-Chlorohexane		0.513	0.469	0.542	0.543	0.517	0.528	0.509	0.49	0.478	0.5099	5.16886
P	Chlorobenzene		1.055	1.066	1.107	1.158	1.041	1.068	1.024	0.955	0.881	1.0395	7.82938
T	1,1,1,2-Tetrachloroethane		0.339	0.373	0.429	0.426	0.396	0.424	0.425	0.422	0.412	0.4051	7.58799
C	Ethylbenzene		0.64	0.603	0.607	0.617	0.568	0.588	0.581	0.561	0.543	0.5898	5.12115
T	m-,p-Xylene		0.665	0.707	0.738	0.741	0.693	0.713	0.68	0.62	0.56	0.6795	8.57611
T	o-Xylene			0.717	0.729	0.711	0.657	0.71	0.685	0.649	0.618	0.6846	5.74055
T	Styrene		1.045	1.16	1.15	1.158	1.089	1.156	1.103	1.027	0.938	1.0916	6.97584
P	Bromoform			0.177	0.203	0.205	0.214	0.226	0.232	0.238	0.224	0.2149	9.11243
T	Isopropylbenzene		1.662	1.848	1.912	1.922	1.763	1.844	1.758	1.563	1.349	1.7356	10.6999
I	1,4-Dichlorobenzene-d4	ISTD											
P	1,1,2,2-Tetrachloroethane		0.56	0.456	0.537	0.491	0.473	0.491	0.515	0.501	0.464	0.4987	6.82842
S	p-Bromofluorobenzene				1.013	1.057	0.984	1.036	1.042	1.036	0.995	1.0233	2.59873
T	1,2,3-Trichloropropane			0.158	0.136	0.17	0.158	0.159	0.169	0.171	0.161	0.1602	7.11331
T	trans-1,4-Dichloro-2-Butene			0.218	0.227	0.234	0.244	0.247	0.264	0.26	0.25	0.2429	6.58905
T	n-Propylbenzene		4.376	4.118	4.164	4.188	3.974	3.927	3.863	3.285	2.779	3.8527	13.1356
T	Bromobenzene	0.842	0.783	0.673	0.87	0.887	0.779	0.808	0.83	0.797	0.763	0.8032	7.56985
T	1,3,5-Trimethylbenzene		2.765	2.982	3.05	3.034	2.909	2.931	2.966	2.665	2.358	2.851	7.81959
T	2-Chlorotoluene		2.342	2.583	2.754	2.629	2.464	2.437	2.518	2.237	2.241	2.4672	7.10091
T	4-Chlorotoluene		2.895	2.755	2.762	2.731	2.55	2.562	2.532	2.303	1.785	2.5416	13.0833
T	a-Methylstyrene					1.44	1.427	1.423	1.47	1.36	1.31	1.4048	4.17798
T	tert-Butylbenzene			0.503	0.57	0.594	0.573	0.578	0.586	0.565	0.55	0.5649	4.97872
T	1,2,4-Trimethylbenzene		3.127	2.846	3.184	3.156	2.922	3.01	2.995	2.669	2.354	2.9182	9.15355
T	sec-Butylbenzene			3.616	3.904	3.762	3.504	3.509	3.477	3.028	2.624	3.4281	12.0497
T	p-Isopropyltoluene			3.093	3.082	3.209	2.957	3.021	3.03	2.661	2.36	2.9268	9.52197
T	1,3-Dichlorobenzene		1.725	1.605	1.684	1.649	1.568	1.606	1.606	1.494	1.411	1.5943	5.98394
T	1,4-Dichlorobenzene	1.564	1.798	1.602	1.672	1.702	1.557	1.556	1.599	1.485	1.377	1.5913	7.31329
T	n-Butylbenzene			2.901	3.094	3.088	2.815	2.859	2.834	2.488	2.194	2.784	10.921
T	1,2-Dichlorobenzene	1.362	1.401	1.435	1.488	1.478	1.385	1.39	1.428	1.35	1.255	1.3972	4.83699
T	1,2-Dibromo-3-Chloropropane				0.112	0.096	0.109	0.104	0.117	0.117	0.11	0.1092	6.68132
T	1,2,4-Trichlorobenzene		1.188	1.053	1.146	1.1	1.064	1.068	1.111	1.038	0.971	1.0821	5.8761
T	Hexachlorobutadiene		0.512	0.455	0.502	0.511	0.483	0.502	0.527	0.512	0.504	0.5008	4.16025
T	Naphthalene		1.688	1.482	1.736	1.713	1.683	1.668	1.76	1.624	1.454	1.6454	6.55749
T	1,2,3-Trichlorobenzene	0.92	1.026	0.944	0.942	0.946	0.884	0.897	0.937	0.884	0.825	0.9206	5.77363

Thu Apr 28 15:14:32 2016

Calibration Table Report
Method: A9FOO_SL.M
Title: FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Calibration: Wed Jan 27 09:49:02 2016
Curve: WG555000
Calibration Files

Compound	5 9M972472.D	20 9M972473.D	50 9M972474.D	100 9M972475.D	200 9M972476.D	300 9M972477.D	400 9M972478.D	500 9M972479.D	Avg	%RSD	R^2 Linear
Fluorobenzene	ISTD										
Acetonitrile		0.053	0.046	0.048	0.052	0.046	0.052	0.054	0.050	6.657	
3-Chloro-1-propene	0.498	0.524	0.450	0.519	0.514	0.434	0.507	0.503	0.494	6.719	
2-Chloro-1,3-butadiene	0.534	0.576	0.519	0.592	0.585	0.509	0.593	0.584	0.561	6.202	
Ethyl Acetate		0.333	0.313	0.339	0.338	0.300	0.341	0.344	0.330	5.124	
Methacrylonitrile	0.102	0.109	0.101	0.112	0.110	0.096	0.112	0.112	0.107	5.912	
Isobutyl Alcohol	0.014	0.018	0.018	0.021	0.024	0.021	0.025	0.025	0.021	18.016	0.993
1-Butanol		0.010	0.013	0.015	0.017	0.015	0.018	0.018	0.015	17.838	0.992
Methyl methacrylate	0.236	0.246	0.231	0.265	0.265	0.231	0.271	0.269	0.252	7.005	
2-Nitropropane	0.069	0.073	0.074	0.083	0.089	0.079	0.093	0.095	0.082	12.090	
Chlorobenzene-d5	ISTD										
Cyclohexanone		0.020	0.022	0.025	0.028	0.023	0.027	0.028	0.025	12.963	
1,4-Dichlorobenzene-d4	ISTD										

Wed Jan 27 10:01:56 2016

Calibration Table Report
Method: 8260SL.M
Title: 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Calibration: Thu May 05 08:58:14 2016
Curve: WG567358
Calibration Files

Compound	0.5 9M974140.D	1 9M974141.D	2 9M974142.D	5 9M974143.D	20 9M974144.D	50 9M974150.D	100 9M974149.D	200 9M974146.D	300 9M974147.D	Avg	%RSD	R^2 Linear	Quadratic
Fluorobenzene	ISTD												
Dichlorodifluoromethane			0.390	0.271	0.365	0.363	0.341	0.324	0.335	0.341	11.126		
Chloromethane			0.511	0.374	0.408	0.375	0.369	0.447	0.459	0.421	12.810		
Vinyl Chloride		0.256	0.447	0.326	0.389	0.277	0.310	0.225	0.237	0.308	25.037		0.993
1,3-Butadiene		0.268	0.316	0.200	0.212	0.168	0.161			0.221	27.245	0.990	
Bromomethane		0.187	0.275	0.189	0.220	0.217	0.192	0.197	0.207	0.211	13.661		
Chloroethane			0.227	0.165	0.200	0.206	0.188	0.204	0.215	0.201	9.879		
Trichlorofluoromethane		0.385	0.503	0.389	0.442	0.444	0.407	0.422	0.433	0.428	8.802		
Diethyl ether		0.211	0.203	0.242	0.261	0.264	0.234		0.271	0.241	11.065		
Isoprene			0.381	0.302	0.327	0.348	0.318	0.345	0.362	0.340	7.909		
Acrolein		0.033	0.035	0.041	0.041	0.047	0.044			0.040	13.389		
1,1,2-Trichloro-1,2,2-Trifluoroet			0.274	0.217	0.251	0.263	0.242	0.249	0.260	0.251	7.285		
Acetone				0.141	0.105	0.099	0.085	0.089	0.093	0.102	20.132	0.998	
1,1-Dichloroethene		0.351	0.499	0.364	0.439	0.437	0.398	0.423	0.433	0.418	11.215		
Tert-Butyl Alcohol			0.036	0.043	0.048	0.048	0.042			0.043	11.593		
Dimethyl Sulfide		0.119	0.202	0.176	0.192	0.196	0.181	0.205	0.213	0.185	15.830	0.997	
Iodomethane				0.076	0.119	0.141	0.144	0.192	0.204	0.146	32.323		1.000
Methyl acetate			0.308	0.248	0.267	0.283	0.248	0.260	0.274	0.270	7.864		
Methylene Chloride			0.318	0.241	0.263	0.262	0.236	0.262	0.273	0.265	10.185		
Carbon Disulfide			1.050	0.706	0.799	0.806	0.731	0.805	0.834	0.819	13.633		
Acrylonitrile		0.104	0.092	0.114	0.125	0.136	0.121			0.115	13.591		
Methyl Tert Butyl Ether		0.639	0.879	0.671	0.784	0.768	0.683	0.732	0.765	0.740	10.337		
trans-1,2-Dichloroethene		0.352	0.489	0.348	0.422	0.418	0.382	0.411	0.424	0.406	11.209		
n-Hexane			0.605	0.419	0.434	0.473	0.462	0.465	0.501	0.480	12.728		
Diisopropyl ether		0.851	0.810	0.945	1.039	1.030	0.915		1.050	0.949	10.103		
Vinyl Acetate			0.593	0.435	0.509	0.552	0.487	0.502	0.526	0.515	9.675		
1,1-Dichloroethane		0.435	0.615	0.443	0.525	0.510	0.463	0.500	0.520	0.501	11.447		
Ethyl-Tert-Butyl ether		0.806	0.767	0.901	0.986	0.982	0.873		1.005	0.903	10.347		
2-Butanone				0.125	0.145	0.153	0.136	0.140	0.150	0.141	7.359		
Propionitrile		0.027	0.035	0.043	0.046	0.049	0.044		0.052	0.042	20.124	0.993	
2,2-Dichloropropane			0.460	0.327	0.369	0.383	0.355	0.363	0.378	0.376	10.912		
cis-1,2-Dichloroethene		0.233	0.299	0.238	0.282	0.282	0.255	0.279	0.289	0.269	9.090		
Chloroform		0.355	0.491	0.375	0.450	0.441	0.398	0.432	0.450	0.424	10.600		
1-Bromopropane			0.052	0.036	0.044	0.047	0.044	0.047	0.050	0.046	11.302		
Bromochloromethane		0.142	0.193	0.150	0.182	0.183	0.163	0.177	0.187	0.172	10.702		
Tetrahydrofuran			0.086	0.098	0.105	0.110	0.095		0.105	0.100	8.776		
Dibromofluoromethane				0.245	0.236	0.272	0.271	0.255		0.256	6.204		
1,1,1-Trichloroethane		0.306	0.463	0.323	0.391	0.391	0.356	0.386	0.398	0.377	12.952		
Cyclohexane		0.537	0.665	0.477	0.539	0.573	0.522	0.565	0.587	0.558	9.900		
1,1-Dichloropropene		0.268	0.379	0.286	0.342	0.345	0.315	0.335	0.344	0.327	10.964		
Tert-Amyl-Methyl ether		0.618	0.581	0.684	0.740	0.754	0.670		0.766	0.688	10.250		
Carbon Tetrachloride			0.42915	0.30485	0.37148	0.37912	0.34546	0.36843	0.38127	0.36854	10.2405		
1,2-Dichloroethane-d4				0.28316	0.2557	0.28553	0.29145	0.26749		0.27667	5.30977		
Heptane										0	0		
1,2-Dichloroethane		0.33194	0.44394	0.35005	0.40263	0.38524	0.34734	0.37417	0.3864	0.37772	9.45842		
Benzene	1.1427	0.90401	1.21702	0.87247	1.03155	1.01185	0.91502	0.98294	1.01671	1.01047	11.113		
Trichloroethene		0.24963	0.32595	0.2361	0.28591	0.28707	0.26189	0.27526	0.2878	0.2762	10.0017		
Methylcyclohexane		0.40922	0.50697	0.36895	0.41758	0.46125	0.42334	0.4467	0.46736	0.43767	9.6407		
1,2-Dichloropropane		0.23785	0.33589	0.23992	0.28853	0.28543	0.25699	0.28259	0.29598	0.2779	11.6722		
1,4-Dioxane			0.00245	0.00314	0.00389	0.00409	0.00406			0.00353	20.3177	0.997	
Bromodichloromethane			0.37381	0.27295	0.33673	0.33659	0.3072	0.33929	0.3572	0.33197	9.9766		
Dibromomethane		0.11206	0.18681	0.14117	0.17637	0.17649	0.15615	0.17153	0.18069	0.16266	15.4673	0.997	
2-Chloroethyl Vinyl Ether			0.16045	0.13319	0.16432	0.18158	0.16402	0.17292	0.18374	0.16575	10.2107		
4-Methyl-2-Pentanone				0.10441	0.12536	0.13694	0.1193	0.13	0.14154	0.12626	10.5573		
cis-1,3-Dichloropropene			0.45547	0.32512	0.40553	0.41223	0.37415	0.40266	0.42341	0.3998	10.2558		
Dimethyl Disulfide			0.42947	0.37726	0.44739	0.48272	0.4486	0.49534	0.498	0.45411	9.4436		
Chlorobenzene-d5	ISTD												
Toluene-d8				1.1459	1.10711	1.28526	1.26755	1.1667		1.1945	6.53112		
Toluene	1.62265	1.33007	1.6695	1.19104	1.42249	1.43605	1.27607	1.3549	1.33212	1.40388	11.1045		
Ethyl Methacrylate				0.31881	0.42265	0.46027	0.4124	0.45245	0.46274	0.42155	12.902		
trans-1,3-Dichloropropene			0.53162	0.41382	0.49439	0.5095	0.46218	0.48605	0.48818	0.48368	7.75778		
1,1,2-Trichloroethane		0.2236	0.3387	0.25902	0.30238	0.30493	0.26832	0.28795	0.28934	0.28428	12.1341		
2-Hexanone				0.22607	0.27898	0.30911	0.27189	0.31012	0.33177	0.28799	13.017		
1,3-Dichloropropane		0.45841	0.58904	0.43327	0.52461	0.50992	0.44955	0.48271	0.48543	0.49162	10.1148		
Tetrachloroethene		0.2649	0.33114	0.25683	0.29646	0.306	0.27712	0.28975	0.28738	0.2887	8.15468		
Dibromochloromethane			0.39396	0.28876	0.3625	0.38108	0.33849	0.37603	0.37942	0.36003	9.99951		
1,2-Dibromoethane				0.25011	0.32015	0.32839	0.29079	0.31114	0.31503	0.3026	9.45681		
1-Chlorohexane		0.40184	0.55784	0.38716	0.43645	0.48935	0.45684	0.4722	0.47661	0.45979	11.6575		
Chlorobenzene		0.88042	1.16949	0.84345	0.99558	1.00707	0.90066	0.97183	0.97089	0.96742	10.3827		
1,1,1,2-Tetrachloroethane			0.40671	0.29103	0.35969	0.3704	0.3297	0.36266	0.3699	0.35573	10.2277		
Ethylbenzene	0.48178	0.46801	0.61304	0.44946	0.54816	0.55385	0.4958	0.53887	0.53993	0.52099	9.84962		
m-,p-Xylene	0.74892	0.54214	0.76438	0.53818	0.64399	0.66673	0.60452	0.63943	0.63836	0.64296	12.1957		
o-Xylene	0.6721	0.55617	0.74017	0.52547	0.63524	0.64679	0.57872	0.6294	0.64142	0.62505	10.2964		
Styrene		0.83057	1.10919	0.81182	1.04338	1.0964	0.99325	1.10188	1.1281	1.01432	12.493		
Bromoform			0.25394	0.18595	0.24652	0.2638	0.23753	0.28383	0.30193	0.25336	14.6257		
Isopropylbenzene		1.40318	1.84489	1.31225	1.60433	1.67459	1.50706	1.60498	1.6099	1.57015	10.4574		
1,4-Dichlorobenzene-d4	ISTD												
1,1,2,2-Tetrachloroethane		0.66463	0.8203	0.65242	0.75567	0.78885	0.6551	0.71608	0.79259	0.73071	9.29403		
p-Bromofluorobenzene				0.8783	0.82066	0.95031	0.9232	0.76162		0.86682	8.83863		
1,2,3-Trichloropropane		0.18728	0.27724	0.2005	0.2436	0.24474	0.21042	0.21779	0.23696	0.22732	12.7205		

trans-1,4-Dichloro-2-Butene		0.27895	0.21568	0.27291	0.29828	0.26783	0.27452	0.29892	0.27244	10.2284	
n-Propylbenzene	3.17716	4.29176	2.86236	3.45146	3.51329	3.11636	2.78016	2.84442	3.25462	15.3789	0.994
Bromobenzene	0.72871	0.93635	0.68838	0.83389	0.83642	0.73243	0.69807	0.73457	0.7736	11.1701	
1,3,5-Trimethylbenzene			2.1575	2.66635	2.6779	2.38683	2.19218	2.25982	2.3901	9.71178	
2-Chlorotoluene		2.58366	1.77913	2.1784	2.28742	1.95581	1.86069	1.88279	2.07541	13.8977	
4-Chlorotoluene	2.08356	2.40943	1.76617	2.10803	2.0263	1.87206	1.66972	1.77221	1.96343	12.3006	
a-Methylstyrene			0.97363	1.24581	1.37986	1.25204	1.2569	1.32777	1.23934	11.3354	
tert-Butylbenzene			0.46121	0.5851	0.59753	0.52831	0.50935	0.52689	0.53473	9.40042	
1,2,4-Trimethylbenzene	3.06212	3.46886	2.3299	2.6656	2.72902	2.42267	2.28879	2.353	2.66499	15.6516	0.997
sec-Butylbenzene	3.12426	4.01602	2.73261	3.351	3.49357	3.10554	2.88632	2.95534	3.20808	12.7205	
p-Isopropyltoluene			2.22625	2.69956	2.86542	2.58255	2.43678	2.50088	2.55191	8.63785	
1,3-Dichlorobenzene	1.4572	1.8729	1.32604	1.55426	1.6115	1.43087	1.423	1.50392	1.52246	10.9124	
1,4-Dichlorobenzene	1.65007	1.89928	1.34063	1.56341	1.59843	1.44563	1.45899	1.54228	1.56234	10.721	
n-Butylbenzene	2.42157	2.93112	2.04912	2.42475	2.589	2.37657	2.26935	2.35947	2.42762	10.504	
1,2-Dichlorobenzene	1.37635	1.72946	1.2312	1.47683	1.51069	1.35836	1.45899	1.5714	1.46416	10.2419	
1,2-Dibromo-3-Chloropropane		0.17152	0.13489	0.17231	0.19045	0.18352	0.19138	0.21706	0.18016	13.9512	
1,2,4-Trichlorobenzene	1.08822	1.24018	0.82022	0.95563	1.05757	1.01737	1.02522	1.15516	1.04495	12.1009	
Hexachlorobutadiene	0.45843	0.59983	0.37929	0.4821	0.52055	0.48935	0.50582	0.55724	0.49908	13.2095	
Naphthalene		2.89441	2.15031	2.59635	2.81496	2.62902	2.58944	2.86129	2.64797	9.60635	
1,2,3-Trichlorobenzene	1.05941	1.1158	0.80337	0.93997	1.03172	1.00605	1.01039	1.13474	1.01268	10.372	

Thu May 05 14:59:29 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16041580 Run Date: 04/28/2016 Sample ID: WG566682-12
Instrument ID: HPMS8 Run Time: 14:08 Method: 8260B
File ID: 8M411803 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG566682 Cal ID: HPMS8 - 28-APR-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.7	ug/L	0.563	4.60	20	
1,1-Dichloroethene	CCC	50.0	45.1	ug/L	0.531	9.80	20	
1,2-Dichloropropane	CCC	50.0	47.8	ug/L	0.304	4.40	20	
Ethylbenzene	CCC	50.0	48.9	ug/L	0.577	2.10	20	
Toluene	CCC	50.0	49.0	ug/L	1.47	1.90	20	
Vinyl Chloride	CCC	50.0	57.2	ug/L	0.381	14.4	20	
Bromoform	SPCC	50.0	49.6	ug/L	0.213	0.900	20	
Chlorobenzene	SPCC	50.0	50.1	ug/L	1.04	0.100	20	
Chloromethane	SPCC	50.0	49.3	ug/L	0.487	1.30	20	
1,1-Dichloroethane	SPCC	50.0	44.8	ug/L	0.571	10.3	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	45.3	ug/L	0.452	9.30	20	
Acetone		50.0	46.5	ug/L	0.0571	6.90	20	
Benzene		50.0	47.1	ug/L	1.03	5.90	20	
Bromobenzene		50.0	48.3	ug/L	0.776	3.40	20	
Bromochloromethane		50.0	49.4	ug/L	0.165	1.10	20	
Bromodichloromethane		50.0	49.4	ug/L	0.436	1.30	20	
Bromomethane		50.0	45.8	ug/L	0.217	8.40	20	
2-Butanone		50.0	44.4	ug/L	0.0872	11.3	20	
n-Butylbenzene		50.0	49.0	ug/L	2.73	2.00	20	
sec-Butylbenzene		50.0	50.9	ug/L	3.49	1.80	20	
tert-Butylbenzene		50.0	50.9	ug/L	0.575	1.70	20	
Carbon Disulfide		50.0	44.6	ug/L	0.758	10.8	20	
Carbon Tetrachloride		50.0	48.7	ug/L	0.545	2.70	20	
Dibromochloromethane		50.0	50.7	ug/L	0.380	1.50	20	
Chloroethane		50.0	48.8	ug/L	0.213	2.40	20	
2-Chlorotoluene		50.0	52.1	ug/L	2.57	4.10	20	
4-Chlorotoluene		50.0	49.3	ug/L	2.51	1.40	20	
1,2-Dibromo-3-Chloropropane		50.0	48.3	ug/L	0.106	3.30	20	
1,2-Dibromoethane		50.0	50.7	ug/L	0.251	1.30	20	
Dibromomethane		50.0	46.9	ug/L	0.140	6.10	20	
1,2-Dichlorobenzene		50.0	49.3	ug/L	1.38	1.40	20	
1,3-Dichlorobenzene		50.0	49.4	ug/L	1.57	1.30	20	
1,4-Dichlorobenzene		50.0	49.3	ug/L	1.57	1.40	20	
Dichlorodifluoromethane		50.0	55.7	ug/L	0.584	11.5	20	
1,2-Dichloroethane		50.0	48.1	ug/L	0.477	3.80	20	
cis-1,2-Dichloroethene		50.0	48.7	ug/L	0.310	2.60	20	
trans-1,2-Dichloroethene		50.0	47.7	ug/L	0.508	4.60	20	
1,3-Dichloropropane		50.0	50.3	ug/L	0.443	0.600	20	
2,2-Dichloropropane		50.0	50.3	ug/L	0.564	0.600	20	
cis-1,3-Dichloropropene		50.0	53.8	ug/L	0.479	7.60	20	
trans-1,3-Dichloropropene		50.0	50.1	ug/L	0.523	0.200	20	
1,1-Dichloropropene		50.0	47.5	ug/L	0.407	4.90	20	

ALT - Modified 09/06/2007
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Report generated 05/12/2016 14:55

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16041580 Run Date: 04/28/2016 Sample ID: WG566682-12
Instrument ID: HPMS8 Run Time: 14:08 Method: 8260B
File ID: 8M411803 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG566682 Cal ID: HPMS8 - 28-APR-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	46.8	ug/L	0.0798	6.50	20	
Hexachlorobutadiene		50.0	51.4	ug/L	0.515	2.80	20	
Isopropylbenzene		50.0	52.6	ug/L	1.83	5.20	20	
p-Isopropyltoluene		50.0	51.2	ug/L	3.00	2.30	20	
4-Methyl-2-Pentanone		50.0	46.5	ug/L	0.0675	7.00	20	
Methylene Chloride		50.0	46.3	ug/L	0.258	7.40	20	
Naphthalene		50.0	43.2	ug/L	1.42	13.5	20	
n-Propylbenzene		50.0	51.1	ug/L	3.94	2.10	20	
Styrene		50.0	50.8	ug/L	1.11	1.50	20	
1,1,1,2-Tetrachloroethane		50.0	51.1	ug/L	0.414	2.10	20	
Tetrachloroethene		50.0	49.6	ug/L	0.337	0.700	20	
1,2,3-Trichlorobenzene		50.0	45.6	ug/L	0.840	8.80	20	
1,2,4-Trichlorobenzene		50.0	47.7	ug/L	1.03	4.60	20	
1,1,1-Trichloroethane		50.0	49.2	ug/L	0.586	1.60	20	
1,1,2-Trichloroethane		50.0	49.7	ug/L	0.236	0.500	20	
Trichloroethene		50.0	49.6	ug/L	0.312	0.900	20	
Trichlorofluoromethane		50.0	47.8	ug/L	0.633	4.40	20	
1,2,3-Trichloropropane		50.0	49.3	ug/L	0.158	1.50	20	
1,2,4-Trimethylbenzene		50.0	50.3	ug/L	2.94	0.700	20	
1,3,5-Trimethylbenzene		50.0	52.0	ug/L	2.96	3.90	20	
o-Xylene		50.0	50.7	ug/L	0.695	1.50	20	
m-,p-Xylene		100	102	ug/L	0.693	1.90	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4752348
Report generated 05/12/2016 14:55

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16041580 Run Date: 05/04/2016 Sample ID: WG567358-11
Instrument ID: HPMS9 Run Time: 18:59 Method: 8260B
File ID: 9M974152 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG567358 Cal ID: HPMS9 - 04-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	20.0	20.1	ug/kg	0.426	0.500	20	
1,1-Dichloroethene	CCC	20.0	19.4	ug/kg	0.406	2.90	20	
1,2-Dichloropropane	CCC	20.0	20.8	ug/kg	0.288	3.80	20	
Ethylbenzene	CCC	20.0	20.2	ug/kg	0.526	1.00	20	
Toluene	CCC	20.0	19.6	ug/kg	1.38	1.80	20	
Vinyl Chloride	CCC	20.0	16.4	ug/kg	0.259	17.8	20	
Bromoform	SPCC	20.0	17.7	ug/kg	0.224	11.6	20	
Chlorobenzene	SPCC	20.0	20.5	ug/kg	0.993	2.70	20	
Chloromethane	SPCC	20.0	20.6	ug/kg	0.433	3.00	20	
1,1-Dichloroethane	SPCC	20.0	19.2	ug/kg	0.481	4.00	20	
1,1,2,2-Tetrachloroethane	SPCC	20.0	19.8	ug/kg	0.724	1.00	20	
Acetone		20.0	22.7	ug/kg	0.115	13.3	20	
Benzene		20.0	19.9	ug/kg	1.01	0.400	20	
Bromobenzene		20.0	20.9	ug/kg	0.810	4.70	20	
Bromochloromethane		20.0	20.0	ug/kg	0.172	0.100	20	
Bromodichloromethane		20.0	19.7	ug/kg	0.327	1.50	20	
Bromomethane		20.0	20.6	ug/kg	0.217	3.00	20	
2-Butanone		20.0	21.8	ug/kg	0.154	9.00	20	
n-Butylbenzene		20.0	19.4	ug/kg	2.35	3.00	20	
sec-Butylbenzene		20.0	20.8	ug/kg	3.33	3.80	20	
tert-Butylbenzene		20.0	22.6	ug/kg	0.604	12.9	20	
Carbon Disulfide		20.0	18.5	ug/kg	0.756	7.70	20	
Carbon Tetrachloride		20.0	19.1	ug/kg	0.353	4.30	20	
Dibromochloromethane		20.0	19.5	ug/kg	0.350	2.70	20	
Chloroethane		20.0	21.2	ug/kg	0.213	6.00	20	
2-Chlorotoluene		20.0	20.5	ug/kg	2.13	2.70	20	
4-Chlorotoluene		20.0	21.2	ug/kg	2.08	5.90	20	
1,2-Dibromo-3-Chloropropane		20.0	20.3	ug/kg	0.183	1.50	20	
1,2-Dibromoethane		20.0	21.0	ug/kg	0.318	5.00	20	
Dibromomethane		20.0	18.9	ug/kg	0.162	5.70	20	
1,2-Dichlorobenzene		20.0	20.1	ug/kg	1.47	0.300	20	
1,3-Dichlorobenzene		20.0	19.8	ug/kg	1.50	1.20	20	
1,4-Dichlorobenzene		20.0	20.0	ug/kg	1.56	0.200	20	
Dichlorodifluoromethane		20.0	23.5	ug/kg	0.400	17.3	20	
1,2-Dichloroethane		20.0	20.2	ug/kg	0.382	1.00	20	
cis-1,2-Dichloroethene		20.0	20.6	ug/kg	0.278	3.00	20	
trans-1,2-Dichloroethene		20.0	20.5	ug/kg	0.416	2.50	20	
1,3-Dichloropropane		20.0	21.4	ug/kg	0.527	7.20	20	
2,2-Dichloropropane		20.0	18.7	ug/kg	0.352	6.50	20	
cis-1,3-Dichloropropene		20.0	21.1	ug/kg	0.421	5.30	20	
trans-1,3-Dichloropropene		20.0	20.0	ug/kg	0.485	0.200	20	
1,1-Dichloropropene		20.0	19.9	ug/kg	0.325	0.500	20	

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Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16041580 Run Date: 05/04/2016 Sample ID: WG567358-11
Instrument ID: HPMS9 Run Time: 18:59 Method: 8260B
File ID: 9M974152 Analyst: ADC QC Key: DOD4
ICal Workgroup: WG567358 Cal ID: HPMS9 - 04-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		20.0	19.8	ug/kg	0.285	1.00	20	
Hexachlorobutadiene		20.0	20.0	ug/kg	0.500	0.100	20	
Isopropylbenzene		20.0	20.6	ug/kg	1.62	3.00	20	
p-Isopropyltoluene		20.0	20.6	ug/kg	2.63	3.00	20	
4-Methyl-2-Pentanone		20.0	21.0	ug/kg	0.132	4.90	20	
Methylene Chloride		20.0	19.9	ug/kg	0.264	0.300	20	
Naphthalene		20.0	19.1	ug/kg	2.53	4.40	20	
n-Propylbenzene		20.0	22.7	ug/kg	3.39	13.6	20	
Styrene		20.0	20.4	ug/kg	1.03	1.80	20	
1,1,1,2-Tetrachloroethane		20.0	20.0	ug/kg	0.356	0.200	20	
Tetrachloroethene		20.0	19.2	ug/kg	0.277	4.00	20	
1,2,3-Trichlorobenzene		20.0	19.5	ug/kg	0.986	2.70	20	
1,2,4-Trichlorobenzene		20.0	18.3	ug/kg	0.954	8.70	20	
1,1,1-Trichloroethane		20.0	20.3	ug/kg	0.383	1.60	20	
1,1,2-Trichloroethane		20.0	20.1	ug/kg	0.286	0.600	20	
Trichloroethene		20.0	20.4	ug/kg	0.282	2.00	20	
Trichlorofluoromethane		20.0	19.7	ug/kg	0.422	1.50	20	
1,2,3-Trichloropropane		20.0	21.5	ug/kg	0.244	7.40	20	
1,2,4-Trimethylbenzene		20.0	21.3	ug/kg	2.58	6.30	20	
1,3,5-Trimethylbenzene		20.0	22.0	ug/kg	2.62	9.80	20	
o-Xylene		20.0	20.5	ug/kg	0.640	2.40	20	
m-,p-Xylene		40.0	40.3	ug/kg	0.647	0.700	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4755299
Report generated 05/12/2016 14:55

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041580 Run Date: 05/07/2016 Sample ID: WG567934-02
Instrument ID: HPMS8 Run Time: 12:05 Method: 8260B
File ID: 8M412047 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG567935 Cal ID: HPMS8 - 28-APR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	52.6	ug/L	0.622	5.28	20	
1,1-Dichloroethene	CCC	50.0	51.3	ug/L	0.603	2.62	20	
1,2-Dichloropropane	CCC	50.0	46.4	ug/L	0.295	7.15	20	
Ethylbenzene	CCC	50.0	49.6	ug/L	0.585	0.771	20	
Toluene	CCC	50.0	48.4	ug/L	1.45	3.29	20	
Vinyl Chloride	CCC	50.0	54.8	ug/L	0.365	9.51	20	
Bromoform	SPCC	50.0	55.3	ug/L	0.238	10.6	20	
Chlorobenzene	SPCC	50.0	50.2	ug/L	1.04	0.323	20	
Chloromethane	SPCC	50.0	49.7	ug/L	0.491	0.508	20	
1,1-Dichloroethane	SPCC	50.0	48.8	ug/L	0.620	2.48	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	43.1	ug/L	0.430	13.8	20	
Xylenes		150	156	ug/L	0.706	3.74	20	
Acetone		50.0	47.3	ug/L	0.0581	5.41	20	
Benzene		50.0	46.8	ug/L	1.02	6.43	20	
Bromobenzene		50.0	49.6	ug/L	0.797	0.795	20	
Bromochloromethane		50.0	48.3	ug/L	0.161	3.38	20	
Bromodichloromethane		50.0	55.4	ug/L	0.489	10.8	20	
Bromomethane		50.0	44.7	ug/L	0.211	10.7	20	
2-Butanone		50.0	43.6	ug/L	0.0857	12.8	20	
n-Butylbenzene		50.0	51.7	ug/L	2.88	3.43	20	
sec-Butylbenzene		50.0	50.9	ug/L	3.49	1.79	20	
tert-Butylbenzene		50.0	50.7	ug/L	0.573	1.39	20	
Carbon Disulfide		50.0	43.4	ug/L	0.738	13.2	20	
Carbon Tetrachloride		50.0	59.6	ug/L	0.667	19.1	20	
Dibromochloromethane		50.0	53.3	ug/L	0.399	6.55	20	
Chloroethane		50.0	45.0	ug/L	0.196	9.95	20	
2-Chlorotoluene		50.0	51.6	ug/L	2.54	3.10	20	
4-Chlorotoluene		50.0	51.7	ug/L	2.63	3.42	20	
1,2-Dibromo-3-Chloropropane		50.0	51.2	ug/L	0.112	2.50	20	
1,2-Dibromoethane		50.0	48.7	ug/L	0.241	2.65	20	
Dibromomethane		50.0	51.7	ug/L	0.155	3.39	20	
1,2-Dichlorobenzene		50.0	50.9	ug/L	1.42	1.75	20	
1,3-Dichlorobenzene		50.0	51.4	ug/L	1.64	2.79	20	
1,4-Dichlorobenzene		50.0	50.7	ug/L	1.61	1.35	20	
Dichlorodifluoromethane		50.0	52.6	ug/L	0.551	5.18	20	
1,2-Dichloroethane		50.0	56.4	ug/L	0.559	12.8	20	
cis-1,2-Dichloroethene		50.0	46.7	ug/L	0.297	6.67	20	
trans-1,2-Dichloroethene		50.0	49.4	ug/L	0.525	1.28	20	
1,3-Dichloropropane		50.0	46.2	ug/L	0.407	7.64	20	
2,2-Dichloropropane		50.0	56.9	ug/L	0.638	13.8	20	
cis-1,3-Dichloropropene		50.0	50.3	ug/L	0.448	0.652	20	
trans-1,3-Dichloropropene		50.0	52.1	ug/L	0.544	4.11	20	

CCV - Modified 03/05/2008
PDF File ID: 4752350
Report generated 05/12/2016 14:55

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041580 Run Date: 05/07/2016 Sample ID: WG567934-02
Instrument ID: HPMS8 Run Time: 12:05 Method: 8260B
File ID: 8M412047 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG567935 Cal ID: HPMS8 - 28-APR-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	50.1	ug/L	0.429	0.102	20	
2-Hexanone		50.0	40.1	ug/L	0.0684	19.8	20	
Hexachlorobutadiene		50.0	53.5	ug/L	0.536	7.04	20	
Isopropylbenzene		50.0	54.0	ug/L	1.87	7.99	20	
p-Isopropyltoluene		50.0	52.3	ug/L	3.06	4.58	20	
4-Methyl-2-Pentanone		50.0	42.3	ug/L	0.0614	15.4	20	
Methylene Chloride		50.0	44.1	ug/L	0.246	11.9	20	
Naphthalene		50.0	48.1	ug/L	1.58	3.89	20	
n-Propylbenzene		50.0	50.0	ug/L	3.85	0.0660	20	
Styrene		50.0	52.4	ug/L	1.14	4.80	20	
1,1,1,2-Tetrachloroethane		50.0	55.8	ug/L	0.452	11.5	20	
Tetrachloroethene		50.0	52.1	ug/L	0.354	4.27	20	
1,2,3-Trichlorobenzene		50.0	47.0	ug/L	0.865	6.01	20	
1,2,4-Trichlorobenzene		50.0	48.9	ug/L	1.06	2.28	20	
1,1,1-Trichloroethane		50.0	56.9	ug/L	0.677	13.7	20	
1,1,2-Trichloroethane		50.0	48.1	ug/L	0.229	3.83	20	
Trichloroethene		50.0	49.7	ug/L	0.313	0.635	20	
Trichlorofluoromethane		50.0	57.0	ug/L	0.754	14.0	20	
1,2,3-Trichloropropane		50.0	49.3	ug/L	0.158	1.50	20	
1,2,4-Trimethylbenzene		50.0	53.2	ug/L	3.10	6.35	20	
1,3,5-Trimethylbenzene		50.0	52.5	ug/L	2.99	5.01	20	
o-Xylene		50.0	51.5	ug/L	0.705	3.03	20	
m-,p-Xylene		100	104	ug/L	0.707	4.09	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4752350
Report generated 05/12/2016 14:55

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041580 Run Date: 05/05/2016 Sample ID: WG567630-02
Instrument ID: HPMS9 Run Time: 11:29 Method: 8260B
File ID: 9M974163 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG567680 Cal ID: HPMS9 - 04-MAY-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	55.3	ug/kg	0.469	10.6	20	
1,1-Dichloroethene	CCC	50.0	57.2	ug/kg	0.478	14.3	20	
1,2-Dichloropropane	CCC	50.0	54.3	ug/kg	0.302	8.54	20	
Ethylbenzene	CCC	50.0	55.6	ug/kg	0.580	11.3	20	
Toluene	CCC	50.0	53.6	ug/kg	1.50	7.12	20	
Vinyl Chloride	CCC	50.0	51.3	ug/kg	0.309	2.53	20	
Bromoform	SPCC	50.0	52.7	ug/kg	0.267	5.31	20	
Chlorobenzene	SPCC	50.0	54.5	ug/kg	1.05	8.95	20	
Chloromethane	SPCC	50.0	60.8	ug/kg	0.512	21.6	20	*
1,1-Dichloroethane	SPCC	50.0	55.0	ug/kg	0.551	9.94	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	52.9	ug/kg	0.772	5.71	20	
Xylenes		150	162	ug/kg	0.681	7.67	20	
Acetone		100	103	ug/kg	0.191	3.49	20	
Benzene		50.0	53.1	ug/kg	1.07	6.25	20	
Bromobenzene		50.0	55.7	ug/kg	0.862	11.4	20	
Bromochloromethane		50.0	55.1	ug/kg	0.190	10.1	20	
Bromodichloromethane		50.0	53.6	ug/kg	0.356	7.18	20	
Bromomethane		50.0	59.4	ug/kg	0.250	18.7	20	
2-Butanone		100	105	ug/kg	0.298	5.27	20	
n-Butylbenzene		50.0	55.8	ug/kg	2.71	11.6	20	
sec-Butylbenzene		50.0	56.4	ug/kg	3.62	12.7	20	
tert-Butylbenzene		50.0	58.7	ug/kg	0.628	17.5	20	
Carbon Disulfide		100	100	ug/kg	1.64	0.0119	20	
Carbon Tetrachloride		50.0	54.5	ug/kg	0.402	8.95	20	
Dibromochloromethane		50.0	54.6	ug/kg	0.393	9.26	20	
Chloroethane		50.0	56.1	ug/kg	0.225	12.3	20	
2-Chlorotoluene		50.0	53.4	ug/kg	2.21	6.71	20	
4-Chlorotoluene		50.0	57.6	ug/kg	2.26	15.2	20	
1,2-Dibromo-3-Chloropropane		50.0	53.8	ug/kg	0.194	7.63	20	
1,2-Dibromoethane		50.0	55.5	ug/kg	0.336	10.9	20	
Dibromomethane		50.0	52.3	ug/kg	0.181	4.67	20	
1,2-Dichlorobenzene		50.0	53.3	ug/kg	1.56	6.67	20	
1,3-Dichlorobenzene		50.0	54.0	ug/kg	1.64	7.96	20	
1,4-Dichlorobenzene		50.0	53.0	ug/kg	1.66	5.95	20	
Dichlorodifluoromethane		50.0	59.7	ug/kg	0.408	19.5	20	
1,2-Dichloroethane		50.0	53.9	ug/kg	0.407	7.76	20	
cis-1,2-Dichloroethene		50.0	55.5	ug/kg	0.299	11.0	20	
trans-1,2-Dichloroethene		50.0	55.9	ug/kg	0.453	11.7	20	
1,3-Dichloropropane		50.0	53.3	ug/kg	0.524	6.62	20	
2,2-Dichloropropane		50.0	54.2	ug/kg	0.408	8.41	20	
cis-1,3-Dichloropropene		50.0	53.9	ug/kg	0.431	7.83	20	
trans-1,3-Dichloropropene		50.0	55.5	ug/kg	0.537	11.0	20	

CCV - Modified 03/05/2008
PDF File ID: 4755301
Report generated 05/12/2016 14:56

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041580 Run Date: 05/05/2016 Sample ID: WG567630-02
Instrument ID: HPMS9 Run Time: 11:29 Method: 8260B
File ID: 9M974163 Analyst: ADC QC Key: DOD4
Workgroup (AAB#): WG567680 Cal ID: HPMS9 - 04-MAY-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	56.0	ug/kg	0.366	12.1	20	
2-Hexanone		100	104	ug/kg	0.599	3.98	20	
Hexachlorobutadiene		50.0	54.0	ug/kg	0.539	7.97	20	
Isopropylbenzene		50.0	55.1	ug/kg	1.73	10.3	20	
p-Isopropyltoluene		50.0	58.5	ug/kg	2.98	17.0	20	
4-Methyl-2-Pentanone		100	104	ug/kg	0.263	4.14	20	
Methylene Chloride		50.0	53.1	ug/kg	0.281	6.10	20	
Naphthalene		50.0	55.3	ug/kg	2.93	10.5	20	
n-Propylbenzene		50.0	63.2	ug/kg	3.72	26.3	20	*
Styrene		50.0	56.0	ug/kg	1.14	12.1	20	
1,1,1,2-Tetrachloroethane		50.0	54.3	ug/kg	0.387	8.66	20	
Tetrachloroethene		50.0	55.4	ug/kg	0.320	10.8	20	
1,2,3-Trichlorobenzene		50.0	54.6	ug/kg	1.11	9.15	20	
1,2,4-Trichlorobenzene		50.0	53.0	ug/kg	1.11	6.08	20	
1,1,1-Trichloroethane		50.0	55.2	ug/kg	0.416	10.4	20	
1,1,2-Trichloroethane		50.0	54.4	ug/kg	0.309	8.76	20	
Trichloroethene		50.0	54.1	ug/kg	0.299	8.27	20	
Trichlorofluoromethane		50.0	56.4	ug/kg	0.483	12.8	20	
1,2,3-Trichloropropane		50.0	54.9	ug/kg	0.250	9.88	20	
1,2,4-Trimethylbenzene		50.0	59.4	ug/kg	2.84	18.8	20	
1,3,5-Trimethylbenzene		50.0	58.3	ug/kg	2.79	16.6	20	
o-Xylene		50.0	53.4	ug/kg	0.667	6.74	20	
m-,p-Xylene		100	108	ug/kg	0.695	8.13	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4755301
Report generated 05/12/2016 14:56

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16041580
Instrument ID: HPMS8
Workgroup (AAB#): WG567935

ICAL CCV Number: WG566682-08
CAL ID: HPMS8-28-APR-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG566682-08	NA	NA	287363	522516	692530
Upper Limit	NA	NA	574726	1045032	1385060
Lower Limit	NA	NA	143682	261258	346265
L16041580-14	1.00	01	179259	337529	421419
WG567935-01	1.00	01	190127	351990	444939
WG567935-02	1.00	01	179323	313955	392246

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4759216
Report generated 05/12/2016 14:55

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16041580
Instrument ID: HPMS9
Workgroup (AAB#): WG567680

ICAL CCV Number: WG567358-02
CAL ID: HPMS9 - 04-MAY-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG567358-02	NA	NA	266170	505652	675036
Upper Limit	NA	NA	532340	1011304	1350072
Lower Limit	NA	NA	133085	252826	337518
L16041580-01	1.00	01	217692	434921	595413
L16041580-02	1.00	01	231218	456356	605188
L16041580-03	1.00	01	211184	419082	566593
L16041580-04	1.00	01	203881	400888	533640
L16041580-05	1.00	01	181849	360619	484278
L16041580-06	1.00	01	248894	485674	648463
L16041580-07	1.00	01	233270	454664	604518
L16041580-08	1.00	01	249394	475998	630423
L16041580-09	1.00	01	193157	408424	563947
L16041580-10	1.00	01	210644	437142	603642
L16041580-11	1.00	01	197478	395423	536936
L16041580-12	1.00	01	173606	343661	465195
L16041580-13	1.00	01	180181	393461	543599
WG567680-01	1.00	01	240057	471370	623086
WG567680-02	1.00	01	249978	476283	634794

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4755302
Report generated 05/12/2016 14:56

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16041580
Instrument ID: HPMS8
Workgroup (AAB#): WG567935

ICAL CCV Number: WG566682-08
CAL ID: HPMS8 - 28-APR-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG566682-08	NA	NA	17.59	14.57	10.72
Upper Limit	NA	NA	18.09	15.07	11.22
Lower Limit	NA	NA	17.09	14.07	10.22
L16041580-14	1.00	01	17.59	14.57	10.71
WG567935-01	1.00	01	17.59	14.57	10.71
WG567935-02	1.00	01	17.59	14.57	10.71

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4759217
Report generated: 05/12/2016 14:55

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16041580
Instrument ID: HPMS9
Workgroup (AAB#): WG567680

ICAL CCV Number: WG567358-02
CAL ID: HPMS9 - 04-MAY-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG567358-02	NA	NA	17.74	14.71	10.84
Upper Limit	NA	NA	18.24	15.21	11.34
Lower Limit	NA	NA	17.24	14.21	10.34
L16041580-01	1.00	01	17.74	14.71	10.84
L16041580-02	1.00	01	17.74	14.72	10.84
L16041580-03	1.00	01	17.74	14.71	10.84
L16041580-04	1.00	01	17.74	14.71	10.84
L16041580-05	1.00	01	17.74	14.72	10.84
L16041580-06	1.00	01	17.75	14.72	10.85
L16041580-07	1.00	01	17.74	14.72	10.84
L16041580-08	1.00	01	17.74	14.72	10.84
L16041580-09	1.00	01	17.74	14.72	10.84
L16041580-10	1.00	01	17.74	14.71	10.84
L16041580-11	1.00	01	17.74	14.72	10.85
L16041580-12	1.00	01	17.74	14.71	10.84
L16041580-13	1.00	01	17.74	14.71	10.84
WG567680-01	1.00	01	17.74	14.72	10.84
WG567680-02	1.00	01	17.75	14.72	10.84

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4755304
Report generated: 05/12/2016 14:56

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050516\9M974171.D Vial: 9
Acq On : 5 May 2016 15:35 Operator: ADC
Sample : L16041580-01 A 8260 4.82g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 11:40:48 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	595413	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	434921	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	217692	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	153682	50.5054 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 101.02%		
43) 1,2-Dichloroethane-d4	10.44	65	168667	51.1949 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 102.38%		
58) Toluene-d8	12.82	98	561409	54.0321 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 108.06%		
79) p-Bromofluorobenzene	16.22	95	211484	56.0372 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 112.08%		

Target Compounds

					Qvalue
13) Acetone	6.39	43	2352	Below Cal #	72
36) Tetrahydrofuran	9.77	42	3361	2.8306 ug/kg	79
56) Dimethyl Disulfide	12.82	94	15580	2.8811 ug/kg#	28
82) n-Propylbenzene	16.37	91	967	Below Cal #	51
89) 1,2,4-Trimethylbenzene	17.08	105	2472	Below Cal	78

(#) = qualifier out of range (m) = manual integration
9M974171.D 8260SL.M Tue May 10 11:40:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050516\9M974171.D Vial: 9
Acq On : 5 May 2016 15:35 Operator: ADC
Sample : L16041580-01 A 8260 4.82g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 11:40 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

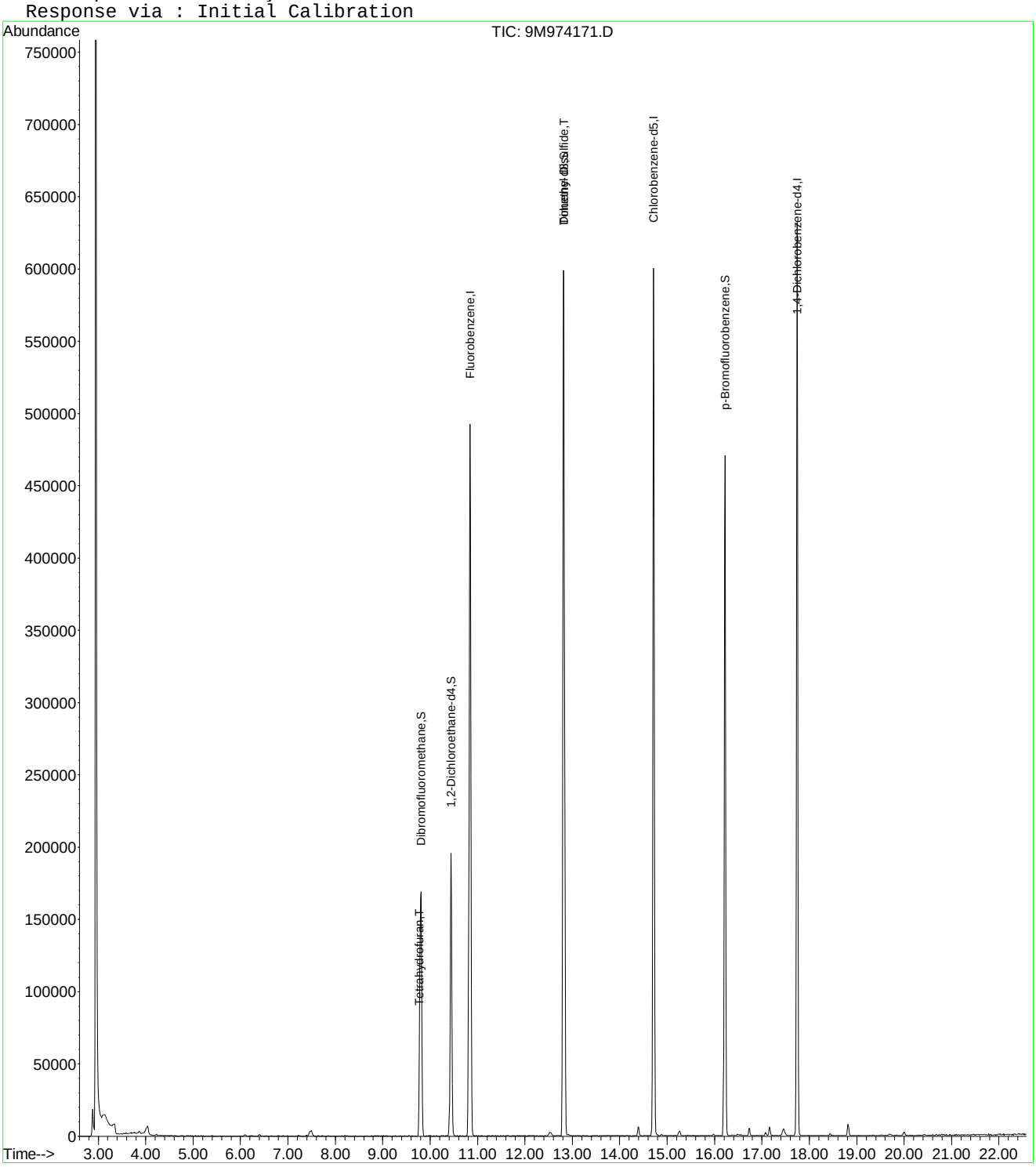

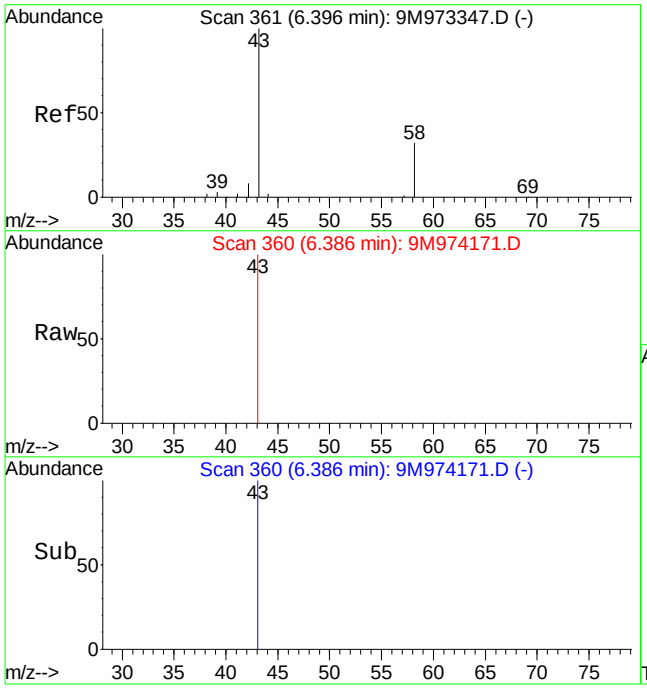

#13
Acetone
Concen: Below Cal
RT: 6.39 min Scan# 360
Delta R.T. 0.00 min
Lab File: 9M974171.D
Acq: 5 May 2016 15:35

Tgt Ion: 43 Resp: 2352

Ion	Ratio	Lower	Upper
43	100		
58	17.7	20.2	47.2#

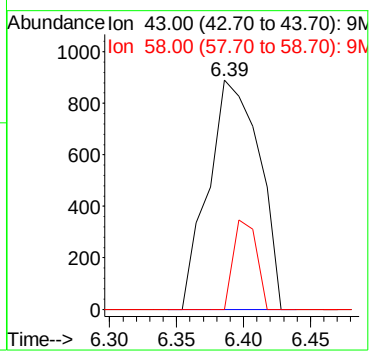

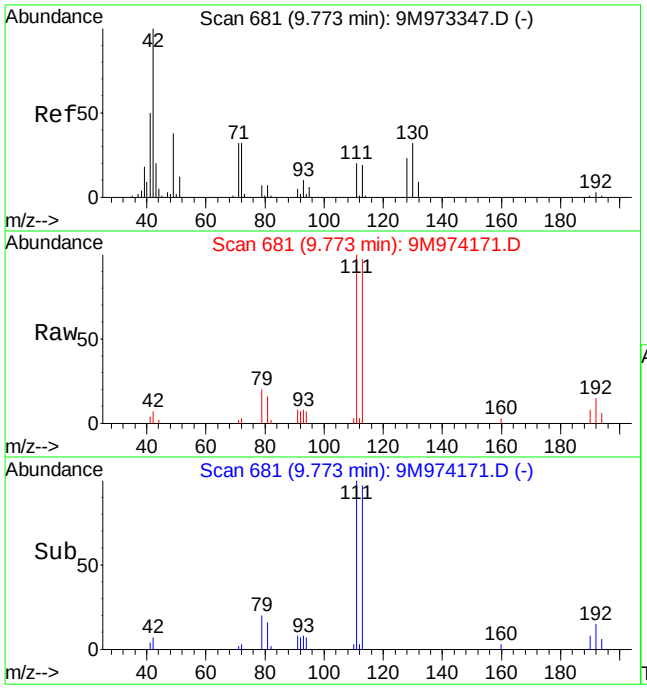

#36
Tetrahydrofuran
Concen: 2.83 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. 0.01 min
Lab File: 9M974171.D
Acq: 5 May 2016 15:35

Tgt Ion: 42 Resp: 3361

Ion	Ratio	Lower	Upper
42	100		
72	23.4	20.8	48.6
71	20.1	20.0	46.8

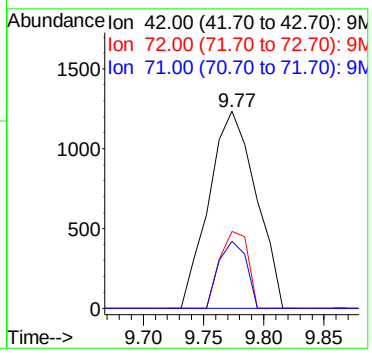

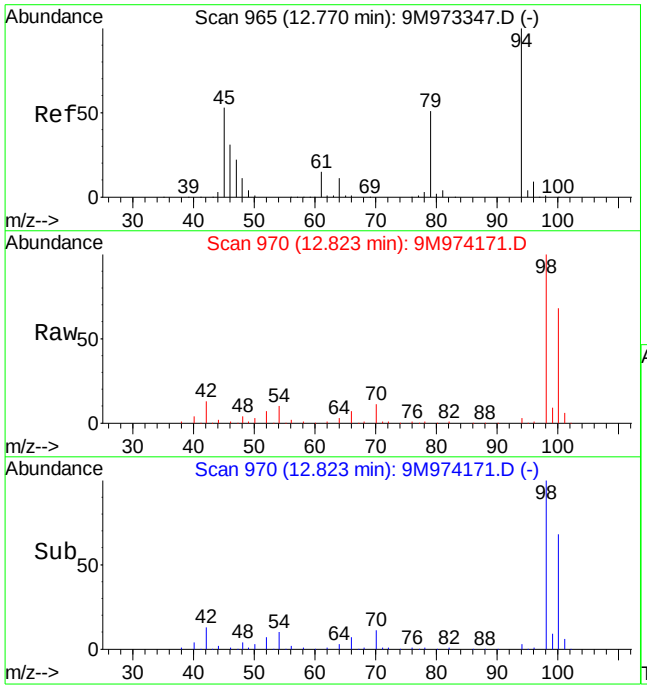

#56
Dimethyl Disulfide
Concen: 2.88 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M974171.D
Acq: 5 May 2016 15:35

Tgt Ion: 94 Resp: 15580

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.3	68.5#

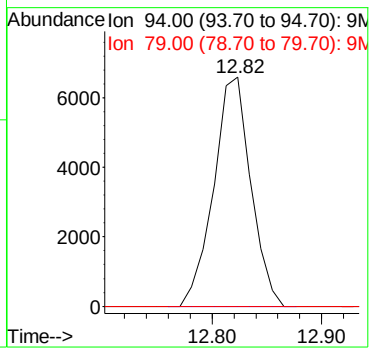

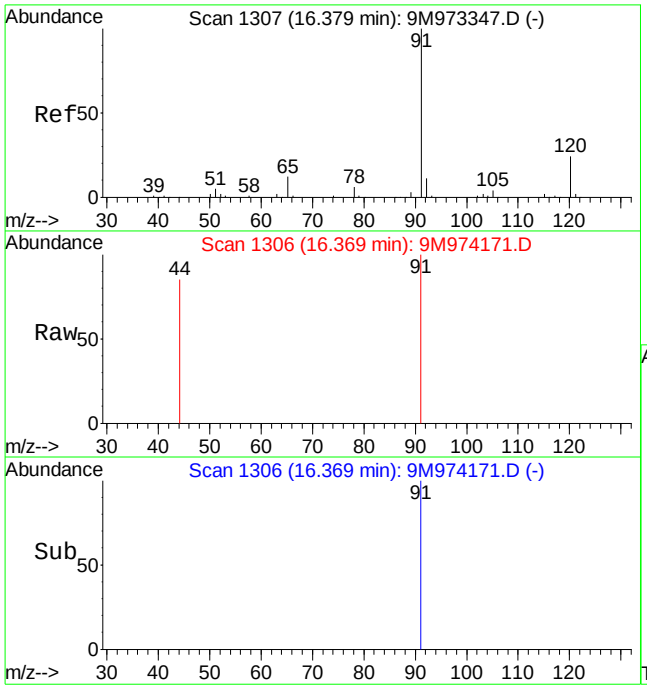

#82
n-Propylbenzene
Concen: Below Cal
RT: 16.37 min Scan# 1306
Delta R.T. 0.00 min
Lab File: 9M974171.D
Acq: 5 May 2016 15:35

Tgt Ion: 91 Resp: 967

Ion	Ratio	Lower	Upper
91	100		
120	0.0	14.7	34.3#

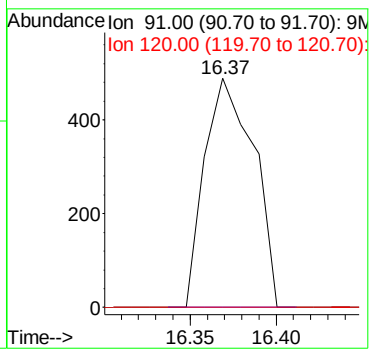

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050516\9M974172.D Vial: 10
Acq On : 5 May 2016 16:06 Operator: ADC
Sample : L16041580-02 A 8260 4.91g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 11:40:48 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	605188	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	456356	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	231218	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	155620	50.3162 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.64%		
43) 1,2-Dichloroethane-d4	10.44	65	174779	52.1932 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.38%		
58) Toluene-d8	12.82	98	578212	53.0354 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.08%		
79) p-Bromofluorobenzene	16.22	95	219339	54.7187 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 109.44%		

Target Compounds

					Qvalue
13) Acetone	6.39	43	4199	0.9628 ug/kg	85
36) Tetrahydrofuran	9.77	42	2785	2.3076 ug/kg#	71
56) Dimethyl Disulfide	12.82	94	15647	2.8467 ug/kg#	28
82) n-Propylbenzene	16.38	91	793	Below Cal #	51
89) 1,2,4-Trimethylbenzene	17.08	105	2558	Below Cal #	69

(#) = qualifier out of range (m) = manual integration
9M974172.D 8260SL.M Tue May 10 11:40:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050516\9M974172.D Vial: 10
Acq On : 5 May 2016 16:06 Operator: ADC
Sample : L16041580-02 A 8260 4.91g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 11:40 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

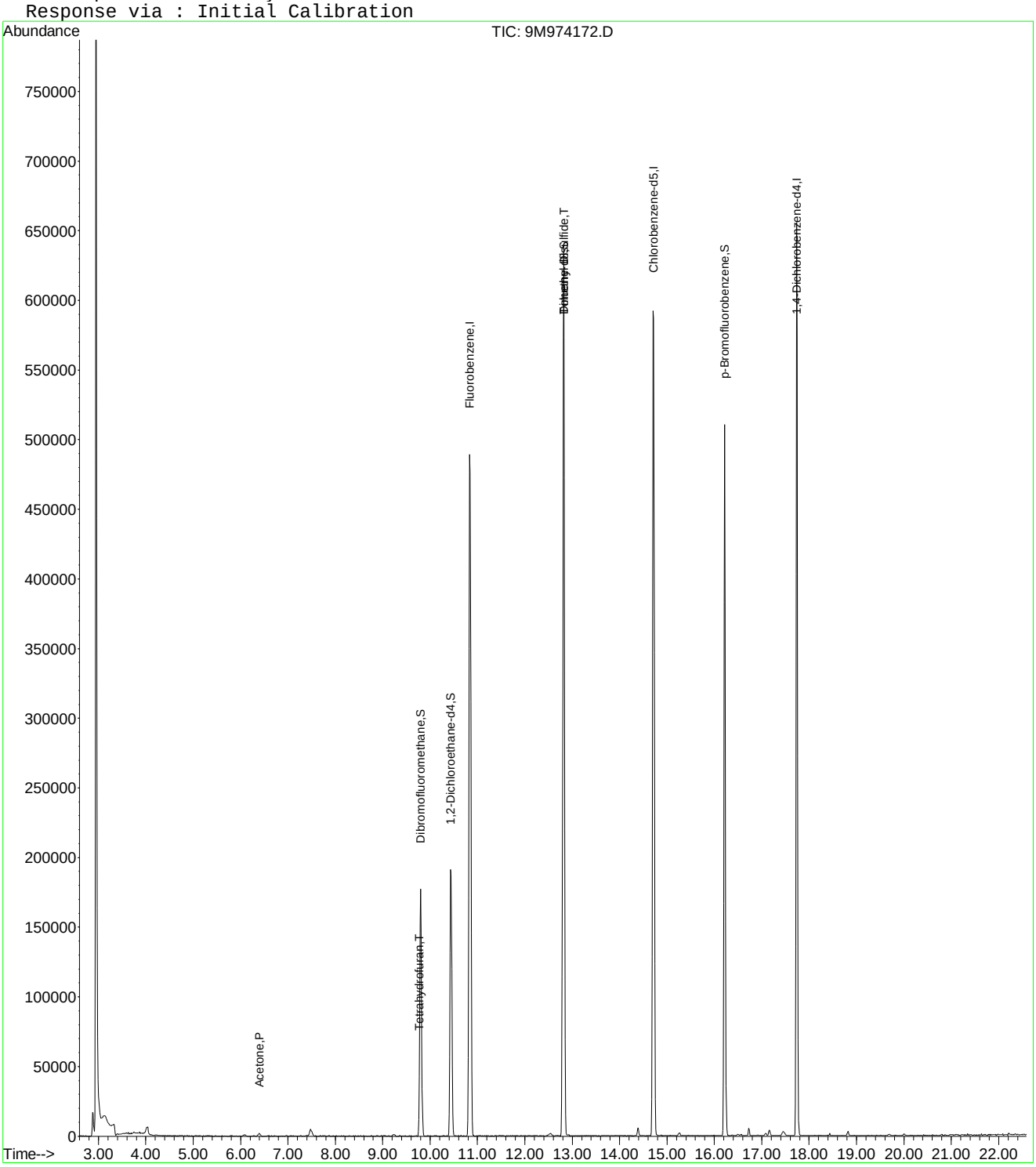

9M974172.D 8260SL.M Tue May 10 11:40:49 2016 Page 2

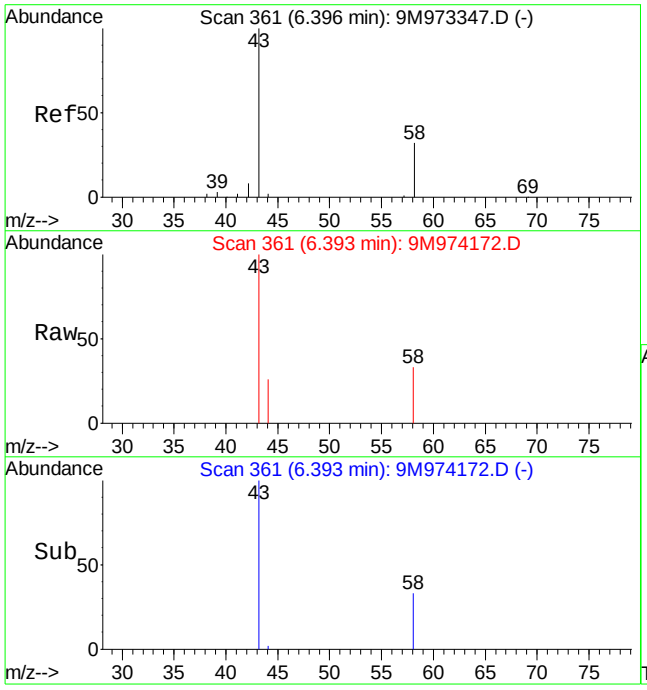

#13
Acetone
Concen: 0.96 ug/kg
RT: 6.39 min Scan# 361
Delta R.T. 0.01 min
Lab File: 9M974172.D
Acq: 5 May 2016 16:06

Tgt Ion: 43 Resp: 4199

Ion	Ratio	Lower	Upper
43	100		
58	25.4	20.2	47.2

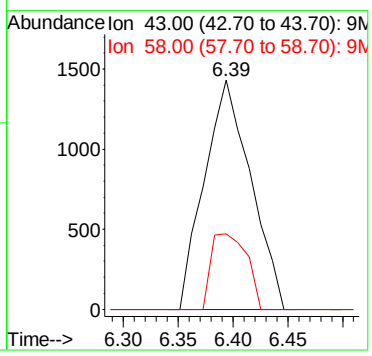

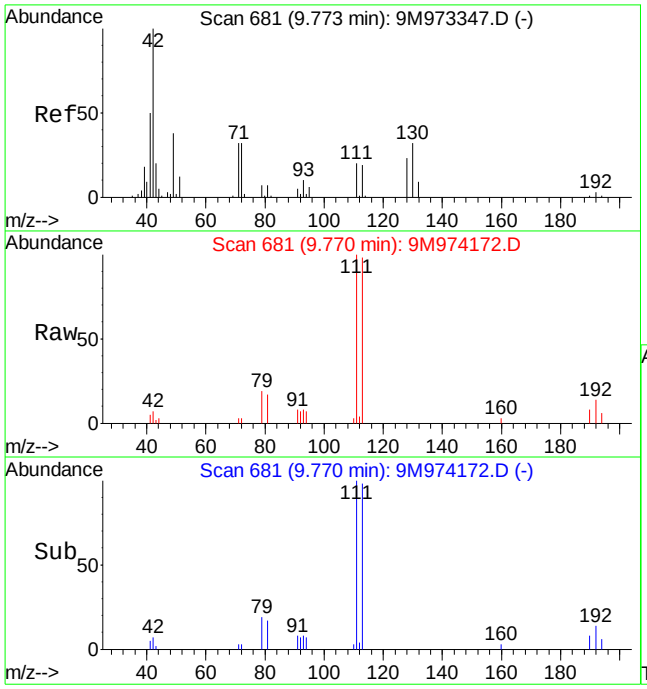

#36
Tetrahydrofuran
Concen: 2.31 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. 0.01 min
Lab File: 9M974172.D
Acq: 5 May 2016 16:06

Tgt Ion: 42 Resp: 2785

Ion	Ratio	Lower	Upper
42	100		
72	17.1	20.8	48.6#
71	17.3	20.0	46.8#

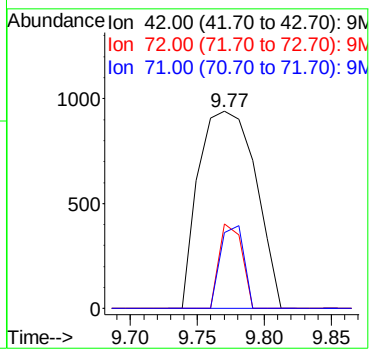

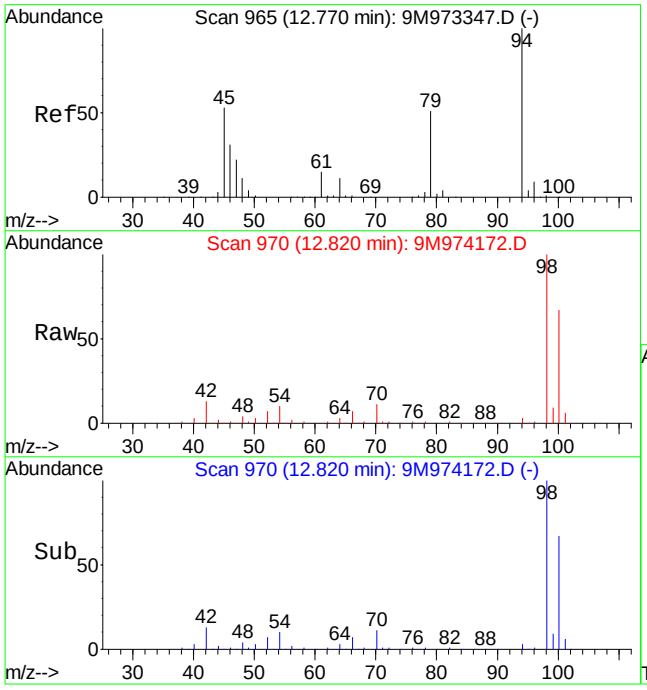

#56
Dimethyl Disulfide
Concen: 2.85 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M974172.D
Acq: 5 May 2016 16:06

Tgt Ion: 94 Resp: 15647

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.3	68.5#

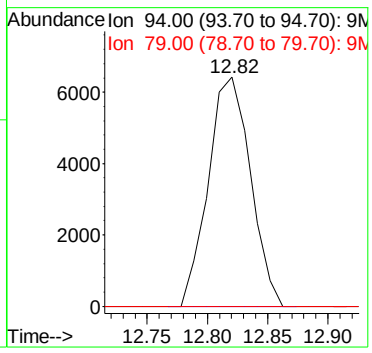

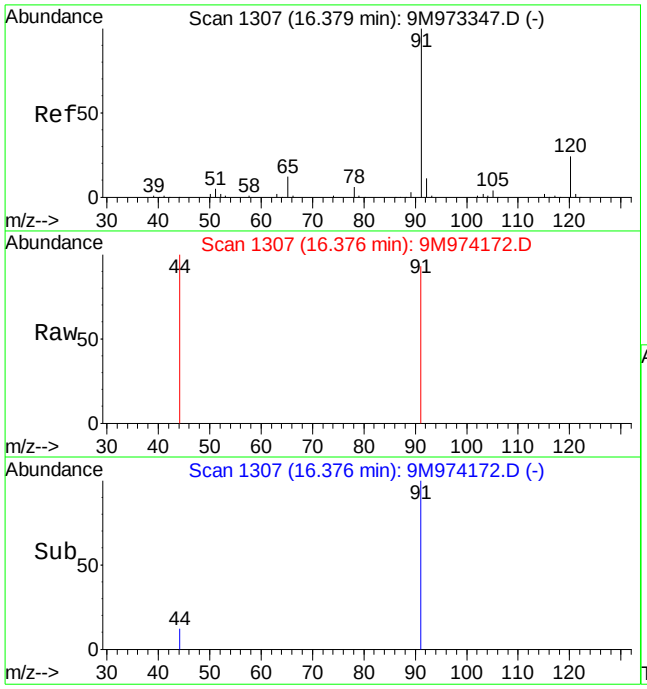

#82
n-Propylbenzene
Concen: Below Cal
RT: 16.38 min Scan# 1307
Delta R.T. 0.01 min
Lab File: 9M974172.D
Acq: 5 May 2016 16:06

Tgt Ion: 91 Resp: 793

Ion	Ratio	Lower	Upper
91	100		
120	0.0	14.7	34.3#

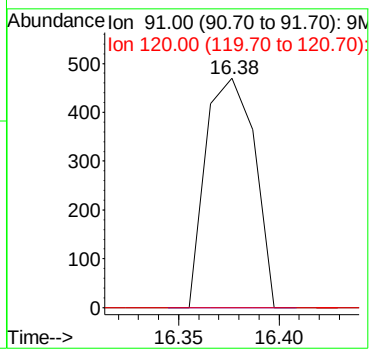

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050516\9M974173.D Vial: 11
Acq On : 5 May 2016 16:37 Operator: ADC
Sample : L16041580-03 A 8260 4.68g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 11:40:49 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	566593	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	419082	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	211184	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	145247	50.1613 ug/kg	-0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.32%		
43) 1,2-Dichloroethane-d4	10.44	65	160464	51.1825 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 102.36%		
58) Toluene-d8	12.82	98	536040	53.5403 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 107.08%		
79) p-Bromofluorobenzene	16.22	95	201023	54.9068 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 109.82%		

Target Compounds

					Qvalue
36) Tetrahydrofuran	9.76	42	3022	2.6746 ug/kg#	62
56) Dimethyl Disulfide	12.82	94	14140	2.7478 ug/kg#	28
82) n-Propylbenzene	16.38	91	734	Below Cal #	51
89) 1,2,4-Trimethylbenzene	17.09	105	2154	Below Cal #	67

(#) = qualifier out of range (m) = manual integration
9M974173.D 8260SL.M Tue May 10 11:40:50 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050516\9M974173.D Vial: 11
Acq On : 5 May 2016 16:37 Operator: ADC
Sample : L16041580-03 A 8260 4.68g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 11:40 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

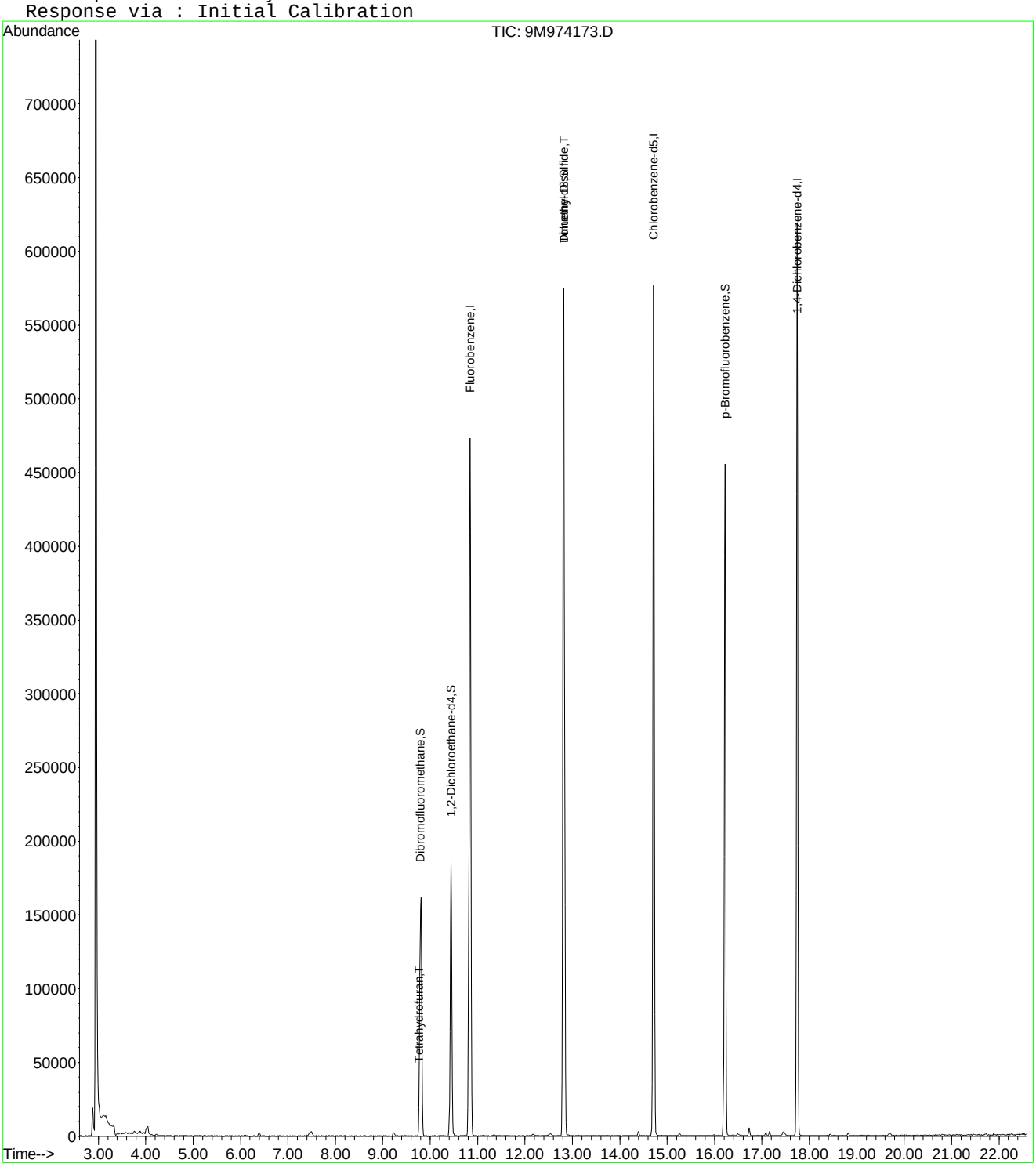

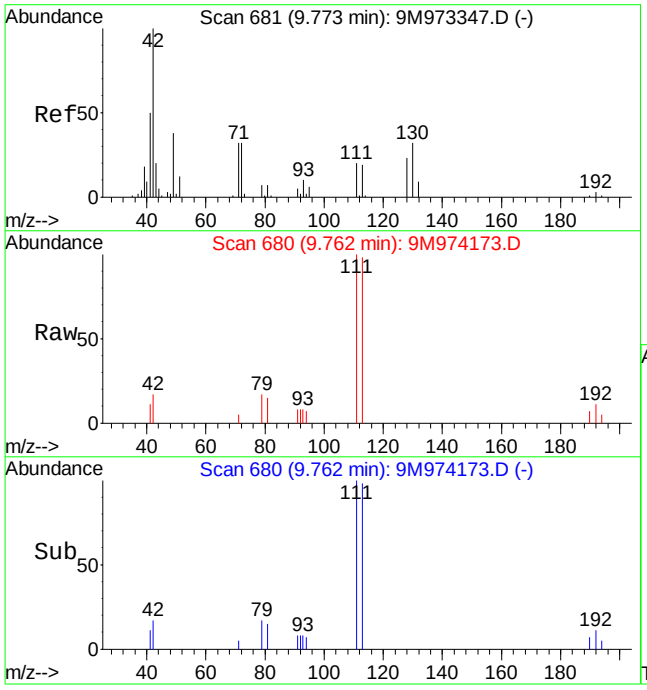

#36
Tetrahydrofuran
Concen: 2.67 ug/kg
RT: 9.76 min Scan# 680
Delta R.T. 0.00 min
Lab File: 9M974173.D
Acq: 5 May 2016 16:37

Tgt Ion: 42 Resp: 3022

Ion	Ratio	Lower	Upper
42	100		
72	9.0	20.8	48.6#
71	15.6	20.0	46.8#

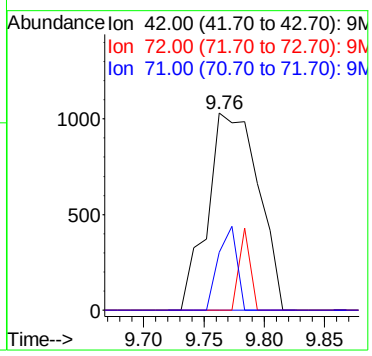

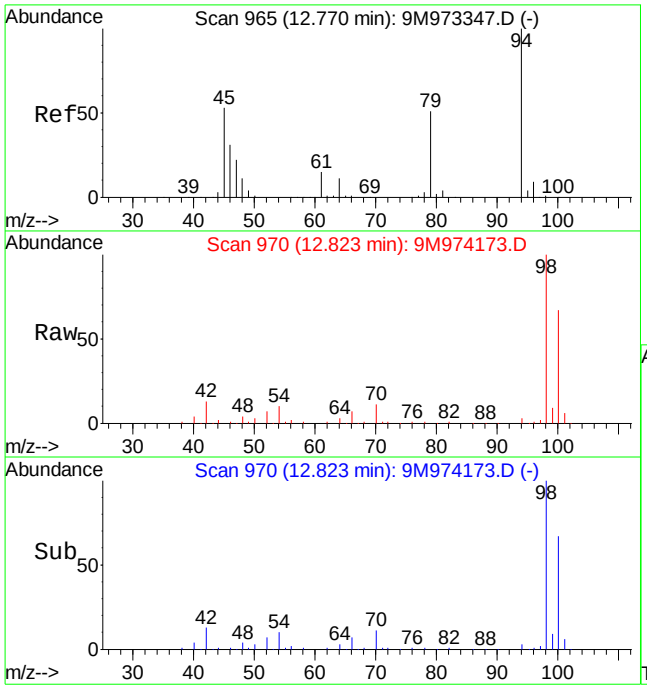

#56
Dimethyl Disulfide
Concen: 2.75 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M974173.D
Acq: 5 May 2016 16:37

Tgt Ion: 94 Resp: 14140

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.3	68.5#

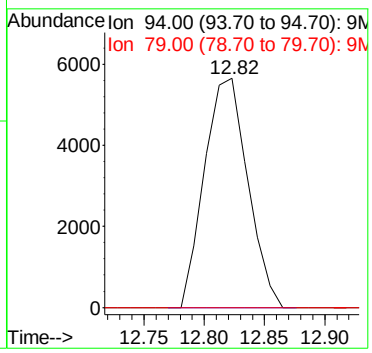

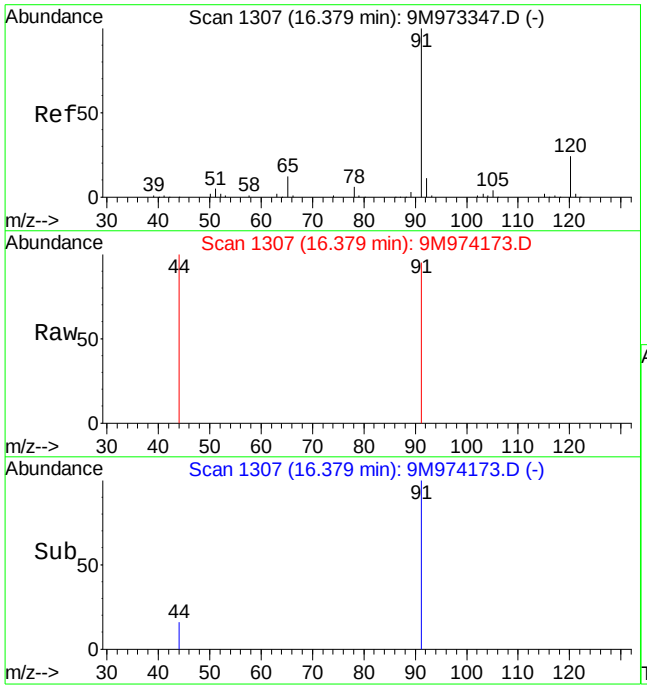

#82
n-Propylbenzene
Concen: Below Cal
RT: 16.38 min Scan# 1307
Delta R.T. 0.01 min
Lab File: 9M974173.D
Acq: 5 May 2016 16:37

Tgt Ion: 91 Resp: 734

Ion	Ratio	Lower	Upper
91	100		
120	0.0	14.7	34.3#

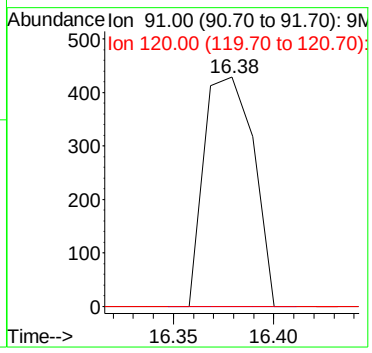

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050516\9M974174.D Vial: 12
Acq On : 5 May 2016 17:08 Operator: ADC
Sample : L16041580-04 A 8260 4.75g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 11:40:50 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	533640	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	400888	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	203881	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	141053	51.7210 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 103.44%		
43) 1,2-Dichloroethane-d4	10.44	65	161834	54.8070 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 109.62%		
58) Toluene-d8	12.82	98	506045	52.8383 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 105.68%		
79) p-Bromofluorobenzene	16.22	95	198698	56.2158 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 112.44%		

Target Compounds

					Qvalue
13) Acetone	6.38	43	3631	0.8879 ug/kg	89
36) Tetrahydrofuran	9.78	42	2241	2.1058 ug/kg#	66
56) Dimethyl Disulfide	12.82	94	14352	2.9612 ug/kg#	28
82) n-Propylbenzene	16.37	91	440	Below Cal #	51
89) 1,2,4-Trimethylbenzene	17.07	105	1776	Below Cal #	57

(#) = qualifier out of range (m) = manual integration
9M974174.D 8260SL.M Tue May 10 11:40:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050516\9M974174.D Vial: 12
Acq On : 5 May 2016 17:08 Operator: ADC
Sample : L16041580-04 A 8260 4.75g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 11:40 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

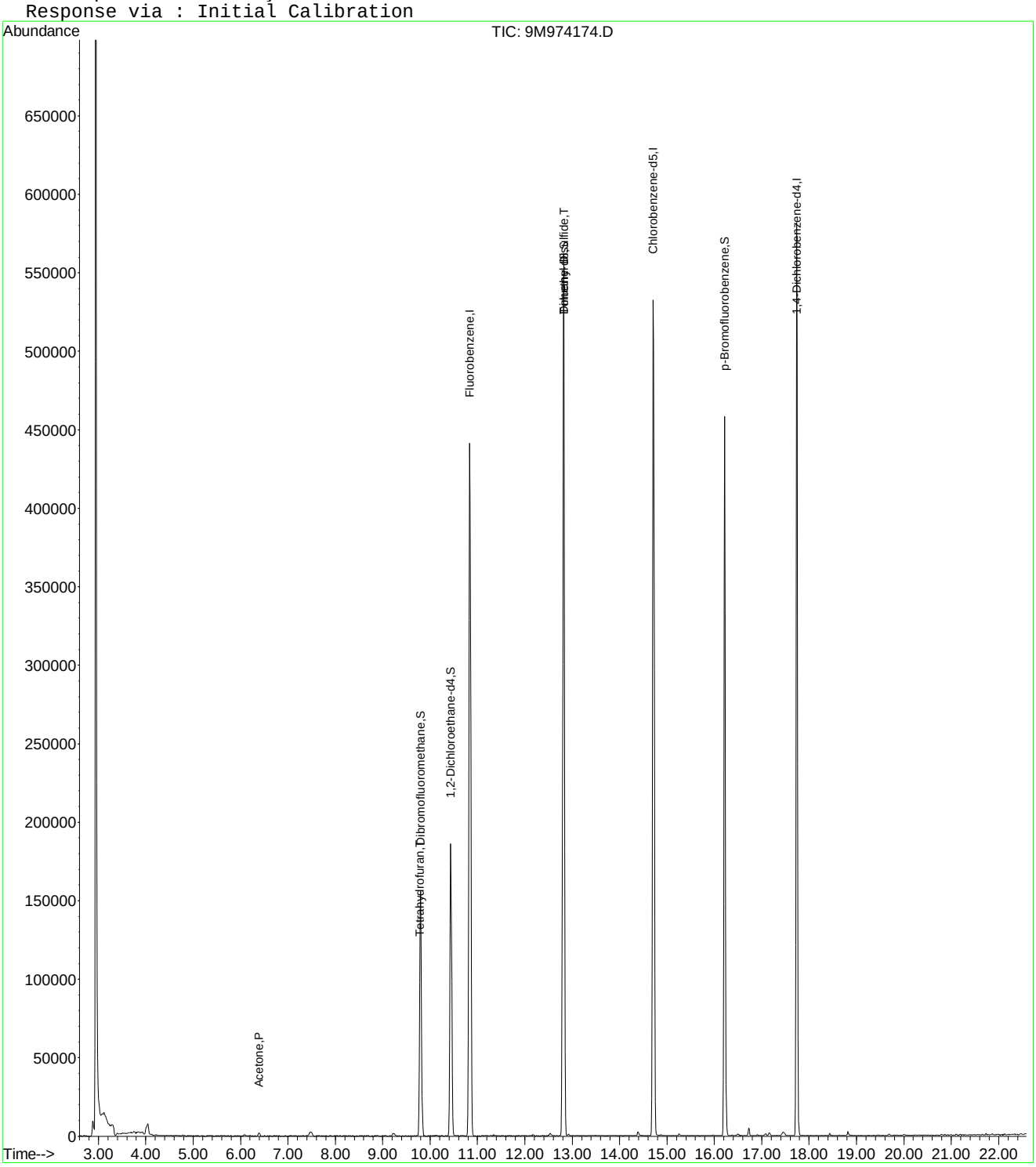

9M974174.D 8260SL.M Tue May 10 11:40:51 2016 Page 2

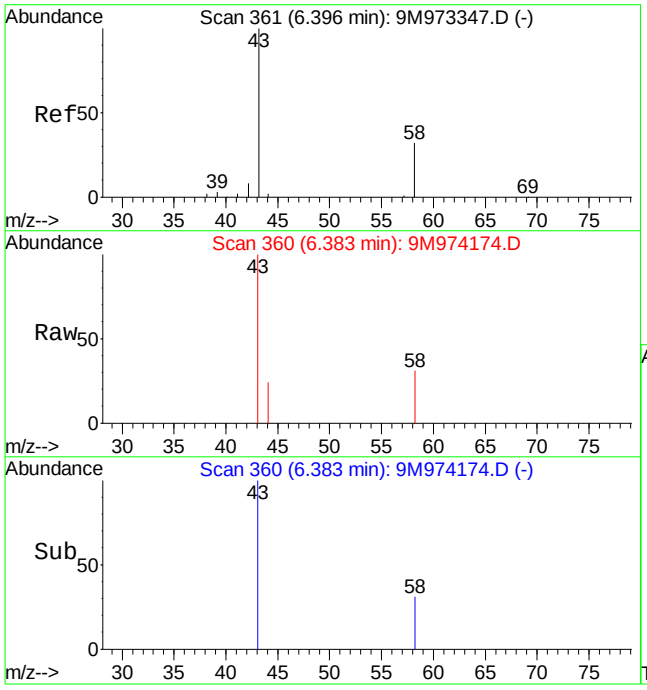

#13
Acetone
Concen: 0.89 ug/kg
RT: 6.38 min Scan# 360
Delta R.T. -0.00 min
Lab File: 9M974174.D
Acq: 5 May 2016 17:08

Tgt Ion: 43 Resp: 3631

Ion	Ratio	Lower	Upper
43	100		
58	27.2	20.2	47.2

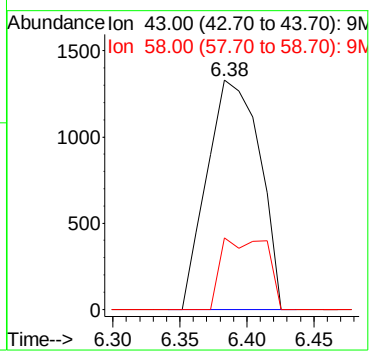

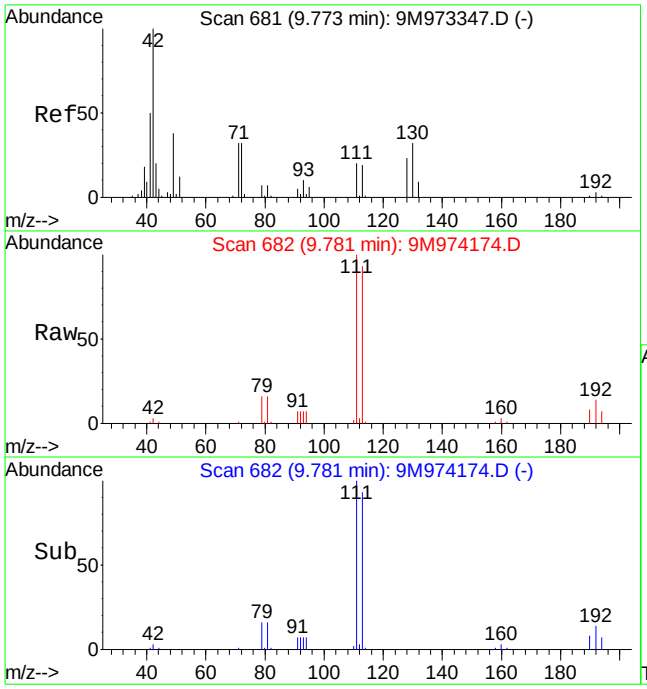

#36
Tetrahydrofuran
Concen: 2.11 ug/kg
RT: 9.78 min Scan# 682
Delta R.T. 0.02 min
Lab File: 9M974174.D
Acq: 5 May 2016 17:08

Tgt Ion: 42 Resp: 2241

Ion	Ratio	Lower	Upper
42	100		
72	0.0	20.8	48.6#
71	29.4	20.0	46.8

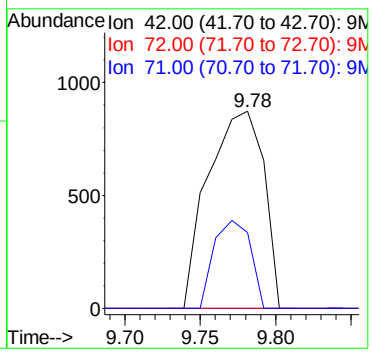

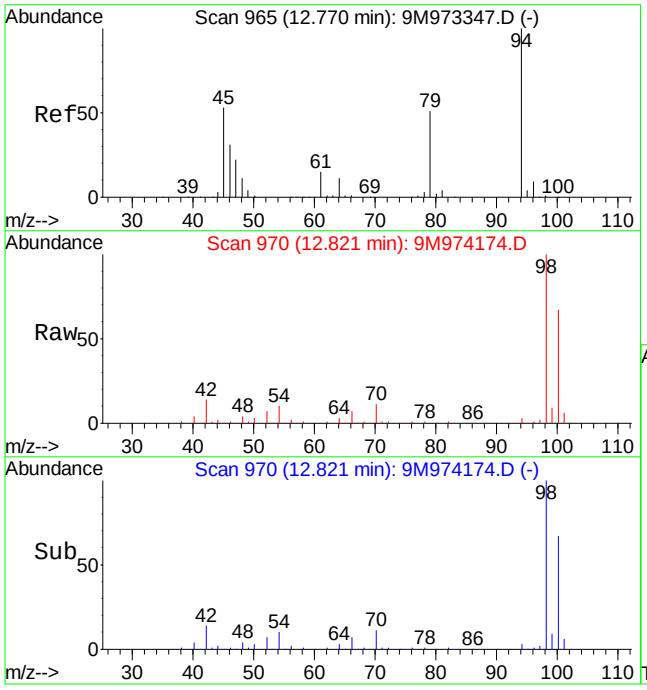

#56
Dimethyl Disulfide
Concen: 2.96 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M974174.D
Acq: 5 May 2016 17:08

Tgt Ion: 94 Resp: 14352

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.3	68.5#

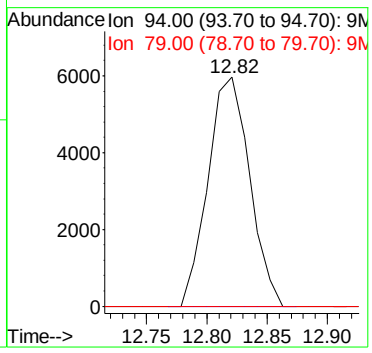

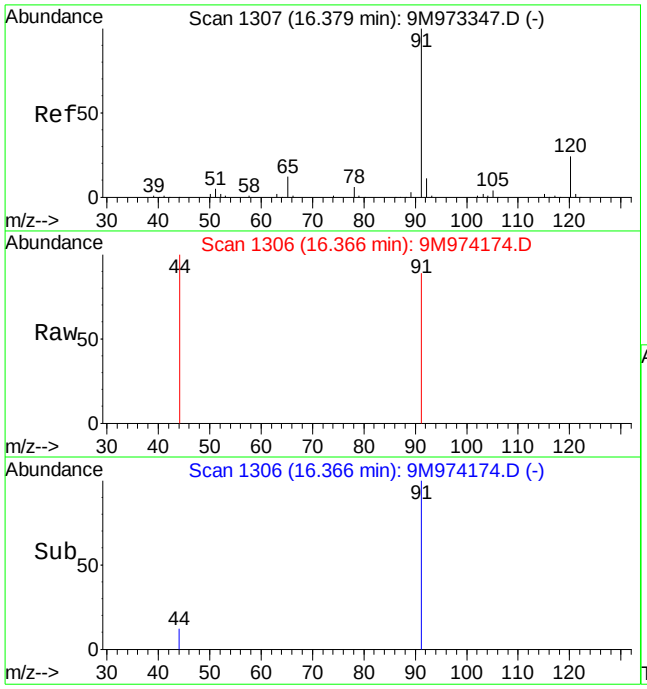

#82
n-Propylbenzene
Concen: Below Cal
RT: 16.37 min Scan# 1306
Delta R.T. -0.00 min
Lab File: 9M974174.D
Acq: 5 May 2016 17:08

Tgt Ion: 91 Resp: 440

Ion	Ratio	Lower	Upper
91	100		
120	0.0	14.7	34.3#

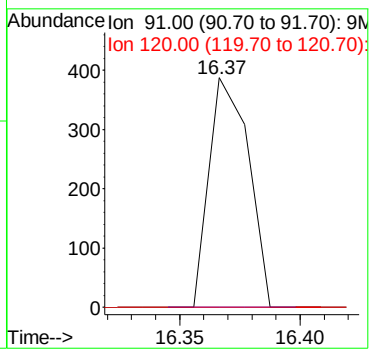

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050516\9M974175.D Vial: 13
Acq On : 5 May 2016 17:40 Operator: ADC
Sample : L16041580-05 A 8260 5.28g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 11:40:51 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	484278	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	360619	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	181849	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	126346	51.0505 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 102.10%		
43) 1,2-Dichloroethane-d4	10.43	65	148779	55.5216 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 111.04%		
58) Toluene-d8	12.82	98	464241	53.8862 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 107.78%		
79) p-Bromofluorobenzene	16.22	95	179101	56.8105 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 113.62%		

Target Compounds

					Qvalue
13) Acetone	6.39	43	5131	3.0059 ug/kg	88
36) Tetrahydrofuran	9.77	42	2864	2.9656 ug/kg#	67
56) Dimethyl Disulfide	12.82	94	12820	2.9148 ug/kg#	28
82) n-Propylbenzene	16.38	91	659	Below Cal #	51
84) 1,3,5-Trimethylbenzene	16.49	105	3573	0.4110 ug/kg#	49
89) 1,2,4-Trimethylbenzene	17.08	105	3243	Below Cal	79

(#) = qualifier out of range (m) = manual integration
9M974175.D 8260SL.M Tue May 10 11:40:52 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050516\9M974175.D Vial: 13
Acq On : 5 May 2016 17:40 Operator: ADC
Sample : L16041580-05 A 8260 5.28g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 11:40 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

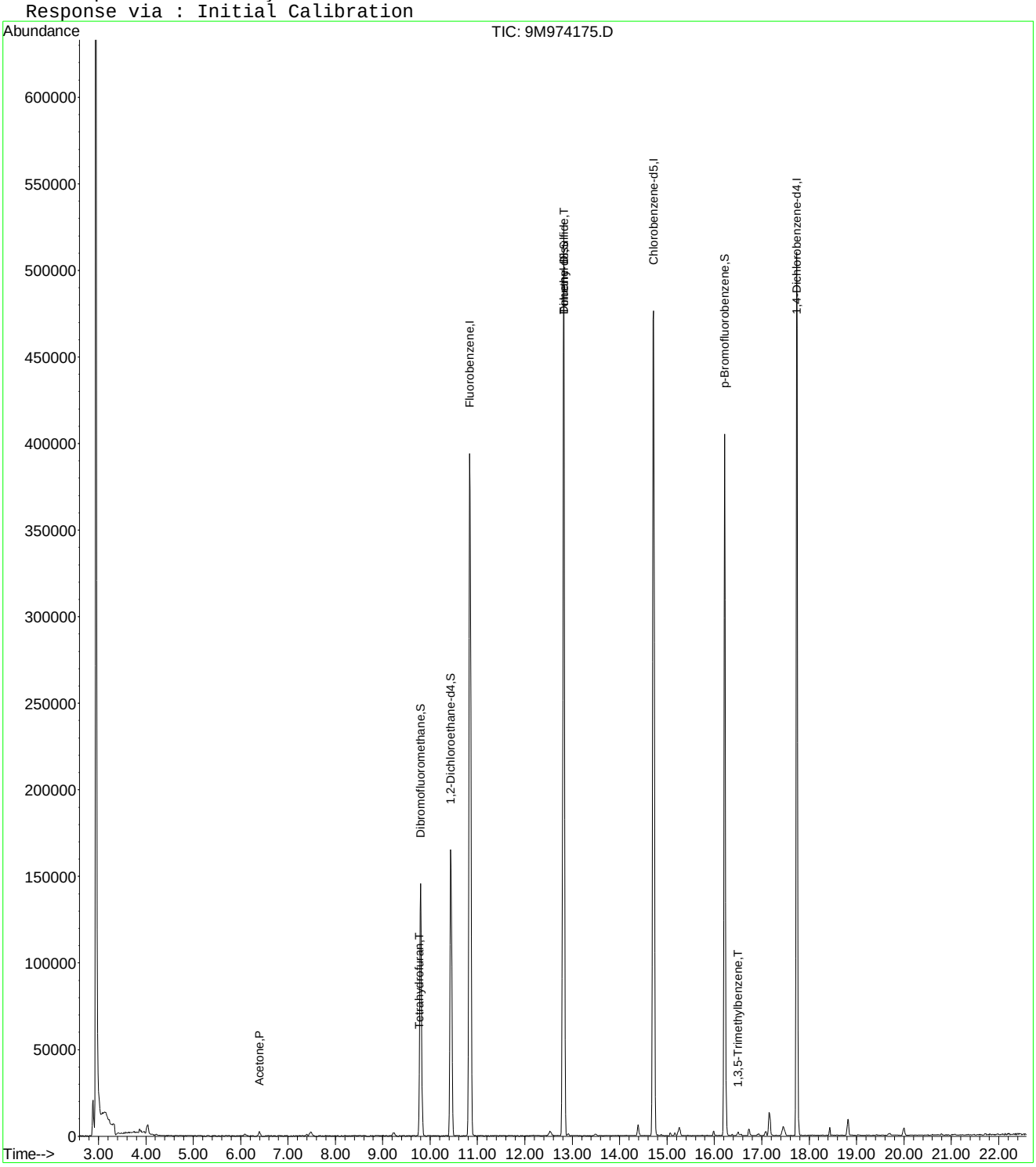

9M974175.D 8260SL.M Tue May 10 11:40:52 2016 Page 2

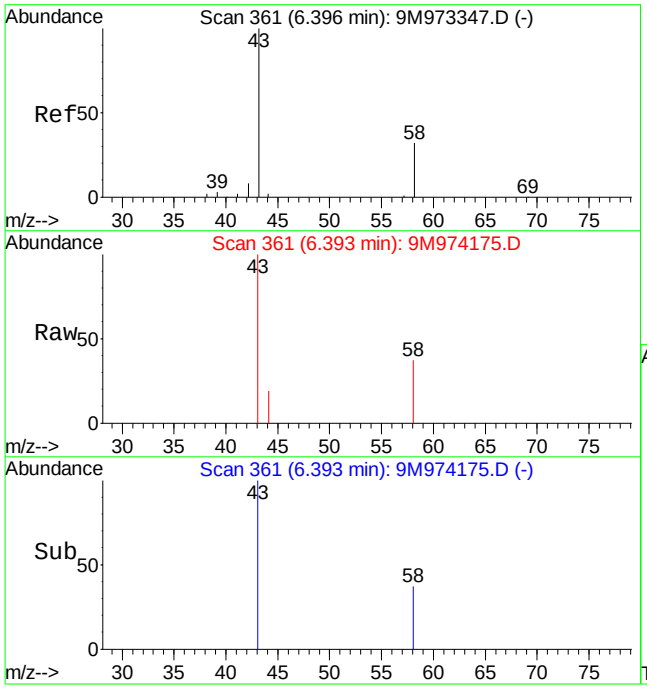

#13
Acetone
Concen: 3.01 ug/kg
RT: 6.39 min Scan# 361
Delta R.T. 0.01 min
Lab File: 9M974175.D
Acq: 5 May 2016 17:40

Tgt Ion: 43 Resp: 5131

Ion	Ratio	Lower	Upper
43	100		
58	26.7	20.2	47.2

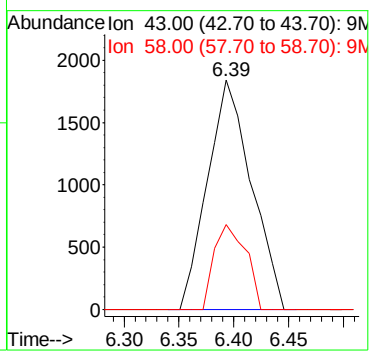

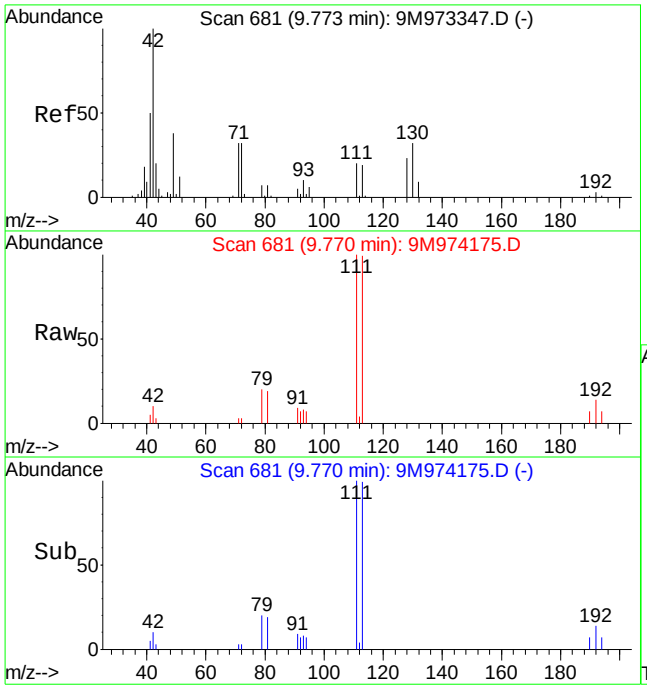

#36
Tetrahydrofuran
Concen: 2.97 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. 0.01 min
Lab File: 9M974175.D
Acq: 5 May 2016 17:40

Tgt Ion: 42 Resp: 2864

Ion	Ratio	Lower	Upper
42	100		
72	8.4	20.8	48.6#
71	22.0	20.0	46.8

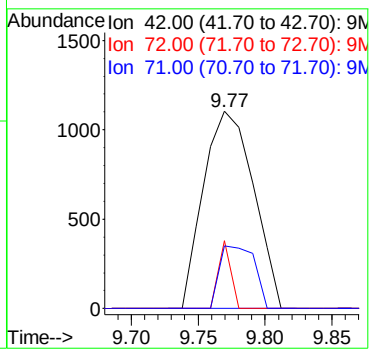

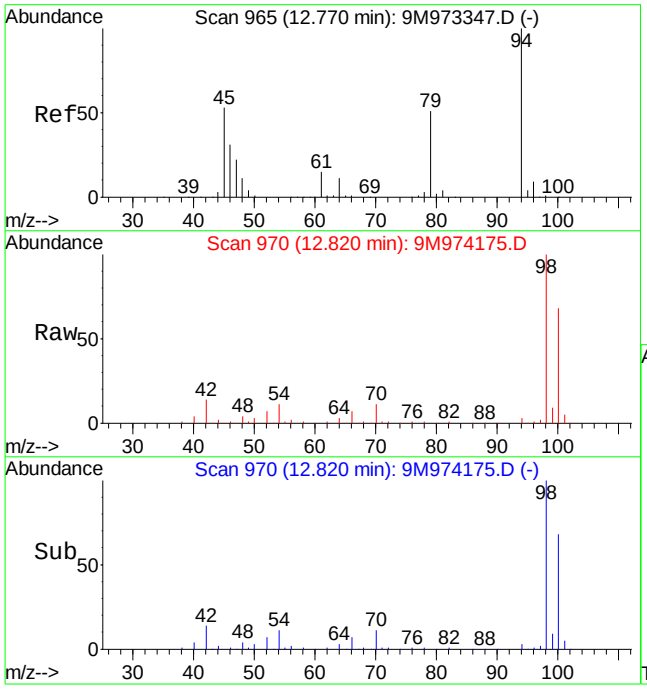

#56
Dimethyl Disulfide
Concen: 2.91 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M974175.D
Acq: 5 May 2016 17:40

Tgt Ion: 94 Resp: 12820

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.3	68.5#

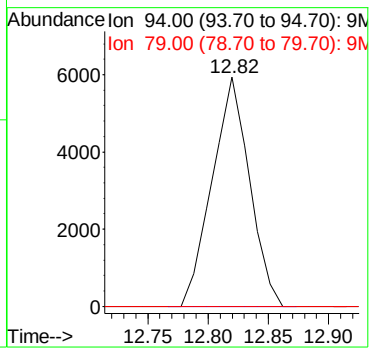

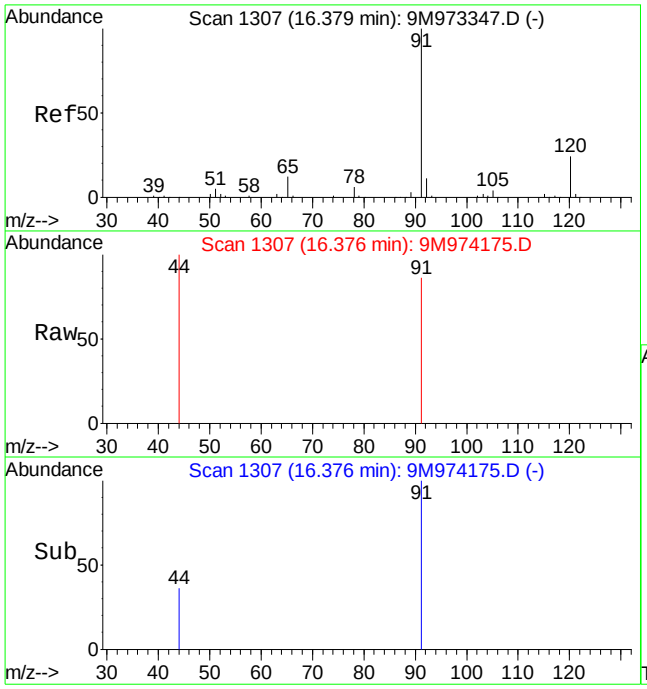

#82
n-Propylbenzene
Concen: Below Cal
RT: 16.38 min Scan# 1307
Delta R.T. 0.01 min
Lab File: 9M974175.D
Acq: 5 May 2016 17:40

Tgt Ion: 91 Resp: 659

Ion	Ratio	Lower	Upper
91	100		
120	0.0	14.7	34.3#

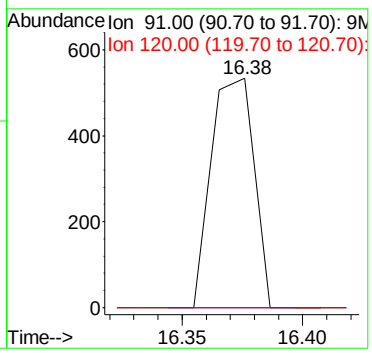

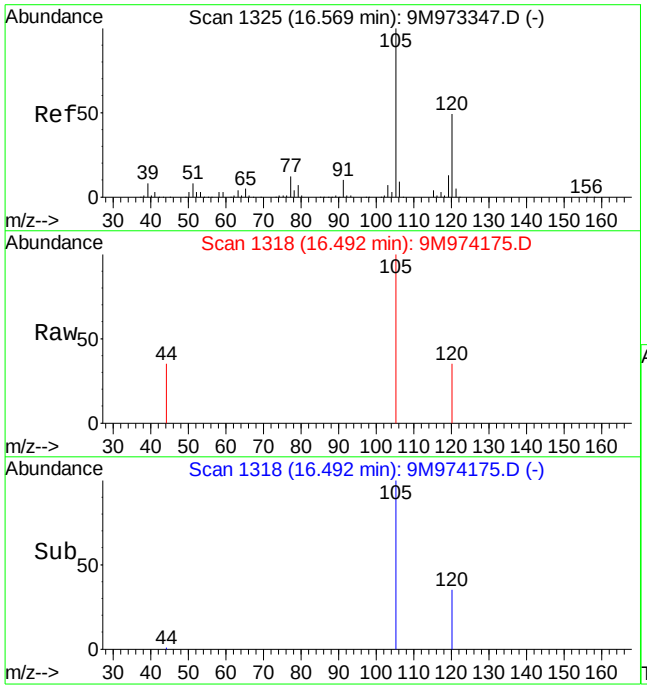

#84
1,3,5-Trimethylbenzene
Concen: 0.41 ug/kg
RT: 16.49 min Scan# 1318
Delta R.T. -0.07 min
Lab File: 9M974175.D
Acq: 5 May 2016 17:40

Tgt Ion:105 Resp: 3573

Ion	Ratio	Lower	Upper
105	100		
120	14.4	29.6	69.0#

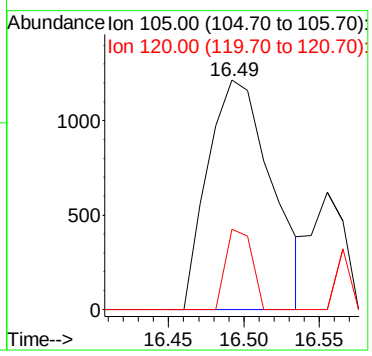

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050516\9M974170.D Vial: 8
Acq On : 5 May 2016 15:04 Operator: ADC
Sample : L16041580-06 A RS 8260 5.14g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 11:40:46 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	648463	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	485674	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	248894	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	169746	51.2209 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 102.44%		
43) 1,2-Dichloroethane-d4	10.43	65	182269	50.7975 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 101.60%		
58) Toluene-d8	12.82	98	617655	53.2333 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.46%		
79) p-Bromofluorobenzene	16.22	95	237293	54.9936 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 109.98%		

Target Compounds

					Qvalue
13) Acetone	6.39	43	9473	5.2480 ug/kg	91
29) 2-Butanone	9.02	43	2083	1.1357 ug/kg#	56
36) Tetrahydrofuran	9.78	42	3472	2.6849 ug/kg	91
56) Dimethyl Disulfide	12.82	94	16467	2.7960 ug/kg#	28
82) n-Propylbenzene	16.37	91	1451	Below Cal #	51
89) 1,2,4-Trimethylbenzene	17.08	105	3746	Below Cal	83

(#) = qualifier out of range (m) = manual integration
9M974170.D 8260SL.M Tue May 10 11:40:47 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050516\9M974170.D Vial: 8
Acq On : 5 May 2016 15:04 Operator: ADC
Sample : L16041580-06 A RS 8260 5.14g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 11:40 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

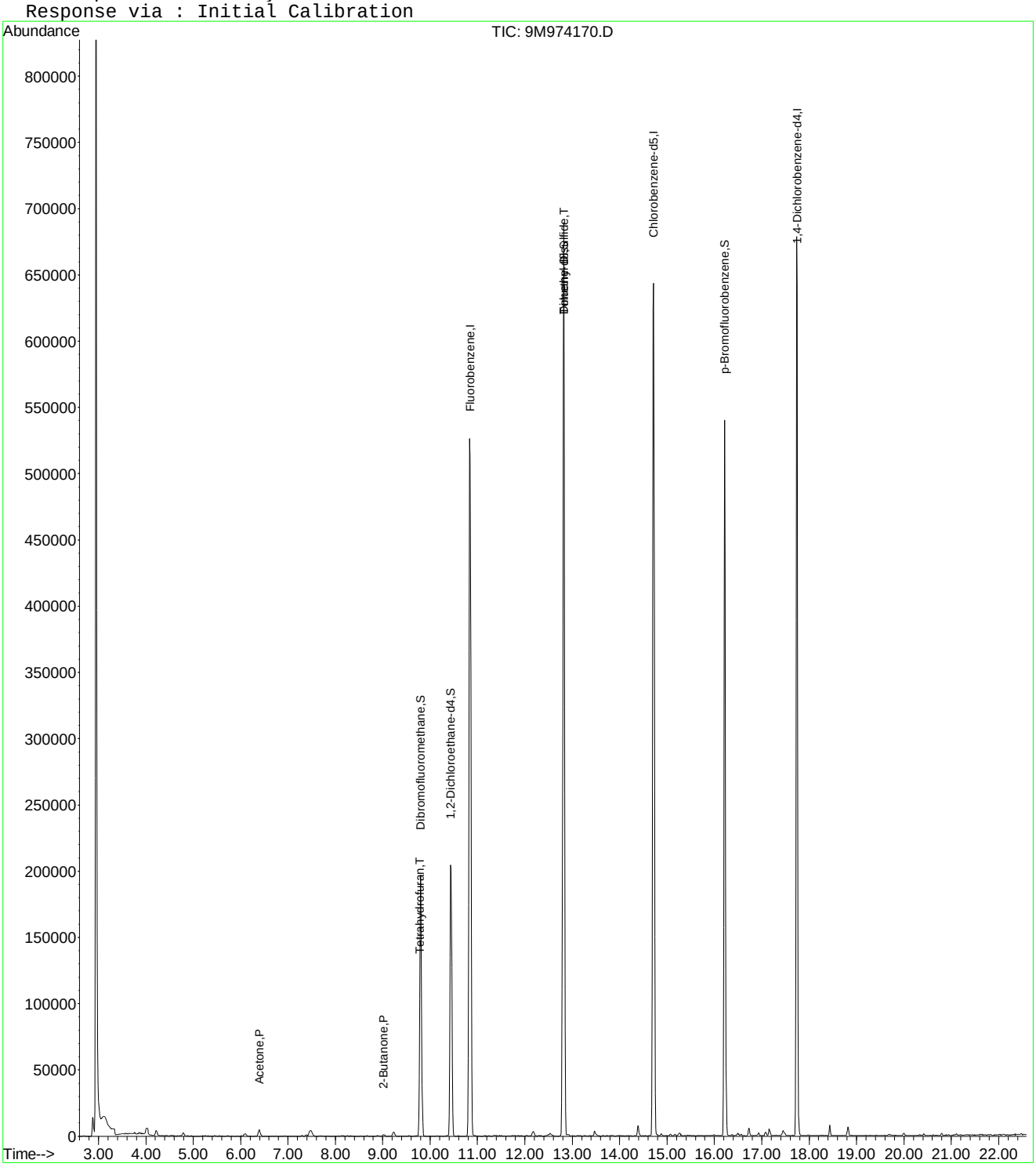

9M974170.D 8260SL.M Tue May 10 11:40:47 2016 Page 2

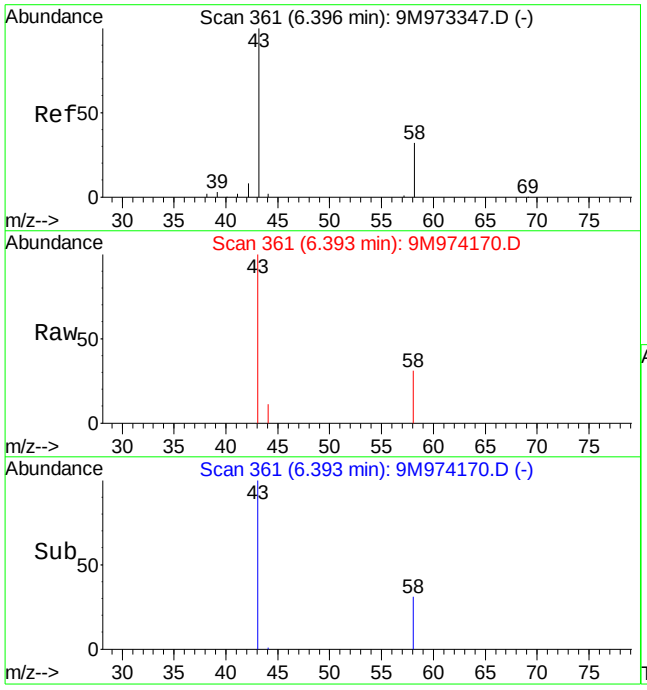

#13
Acetone
Concen: 5.25 ug/kg
RT: 6.39 min Scan# 361
Delta R.T. 0.01 min
Lab File: 9M974170.D
Acq: 5 May 2016 15:04

Tgt Ion: 43 Resp: 9473

Ion	Ratio	Lower	Upper
43	100		
58	38.6	20.2	47.2

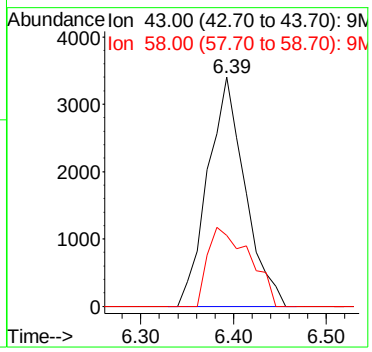

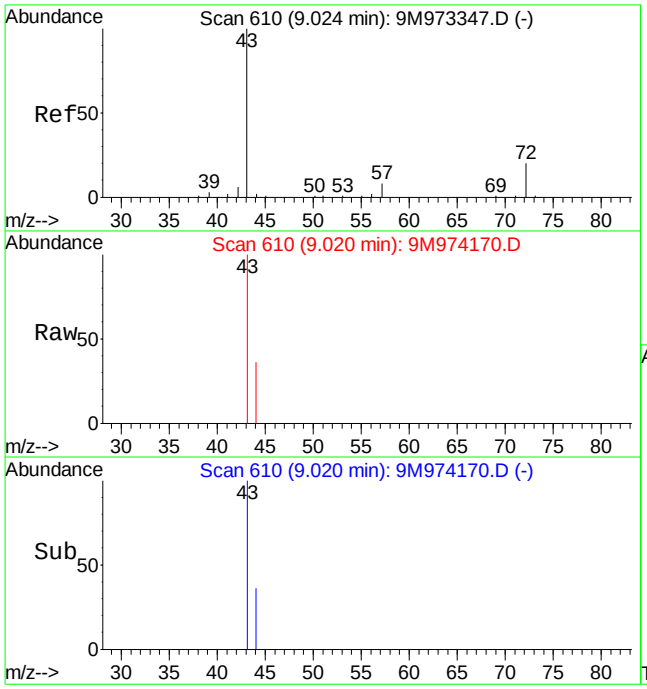

#29
2-Butanone
Concen: 1.14 ug/kg
RT: 9.02 min Scan# 610
Delta R.T. 0.01 min
Lab File: 9M974170.D
Acq: 5 May 2016 15:04

Tgt Ion: 43 Resp: 2083

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.1	28.1#

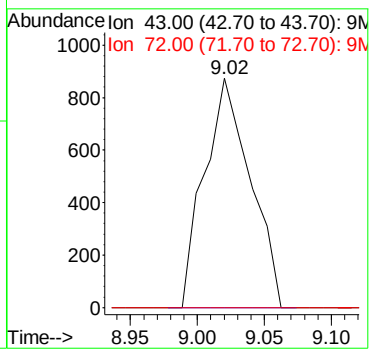

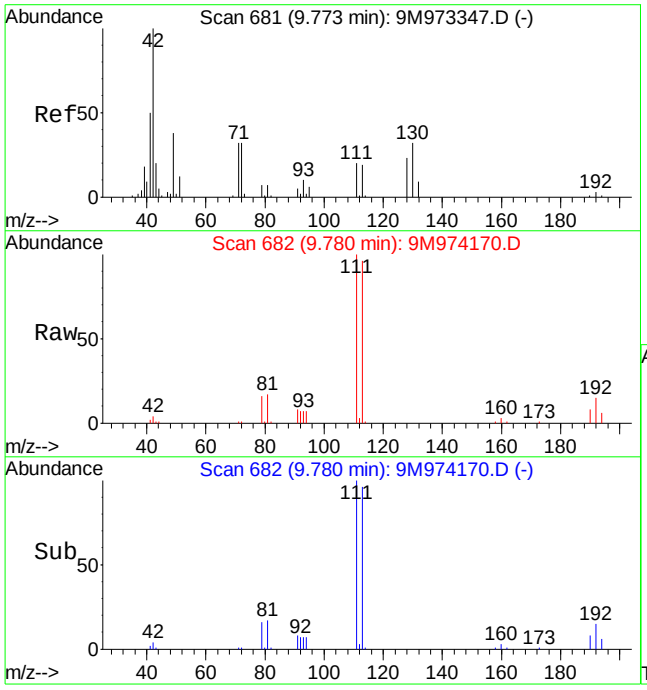

#36
Tetrahydrofuran
Concen: 2.68 ug/kg
RT: 9.78 min Scan# 682
Delta R.T. 0.02 min
Lab File: 9M974170.D
Acq: 5 May 2016 15:04

Tgt Ion: 42 Resp: 3472

Ion	Ratio	Lower	Upper
42	100		
72	35.2	20.8	48.6
71	23.2	20.0	46.8

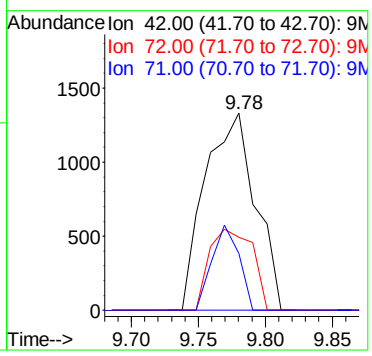

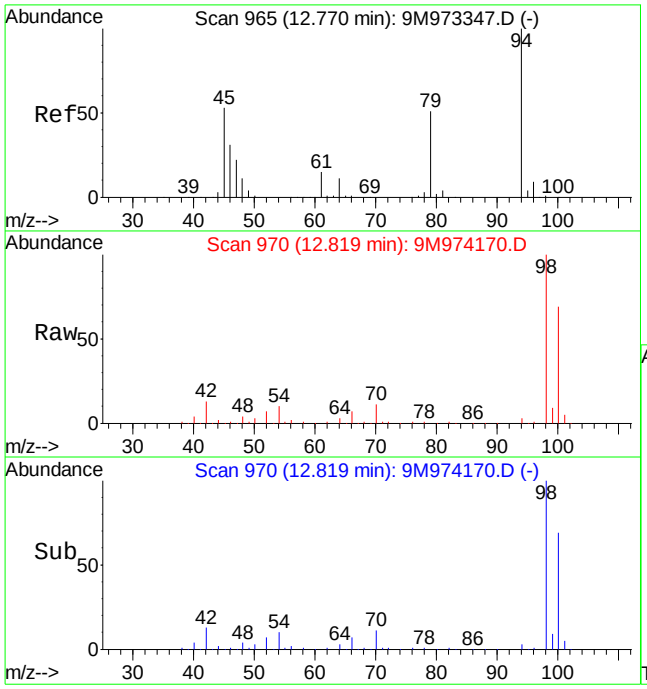

#56
Dimethyl Disulfide
Concen: 2.80 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M974170.D
Acq: 5 May 2016 15:04

Tgt Ion: 94 Resp: 16467

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.3	68.5#

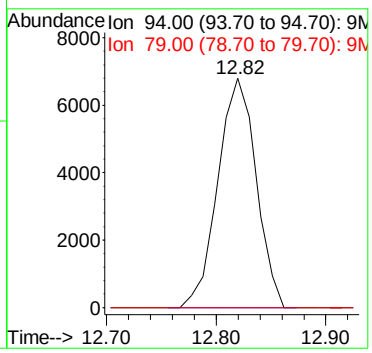

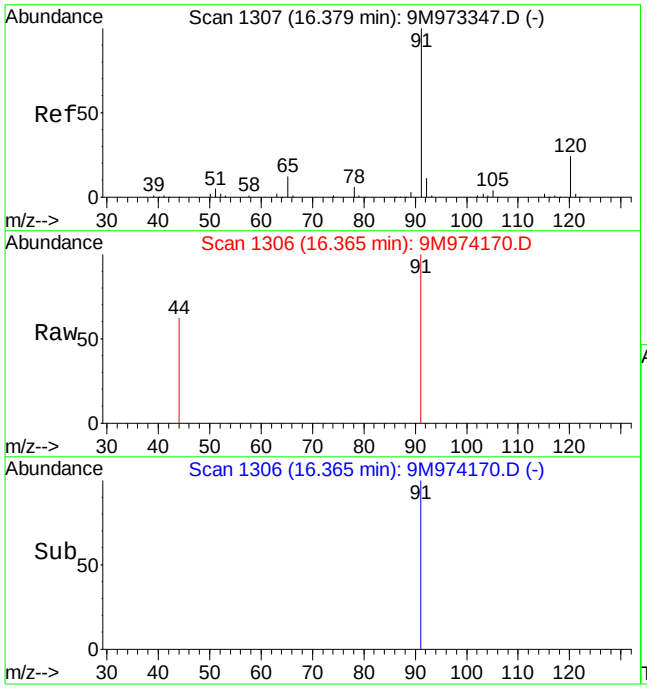

#82
n-Propylbenzene
Concen: Below Cal
RT: 16.37 min Scan# 1306
Delta R.T. -0.00 min
Lab File: 9M974170.D
Acq: 5 May 2016 15:04

Tgt Ion: 91 Resp: 1451

Ion	Ratio	Lower	Upper
91	100		
120	0.0	14.7	34.3#

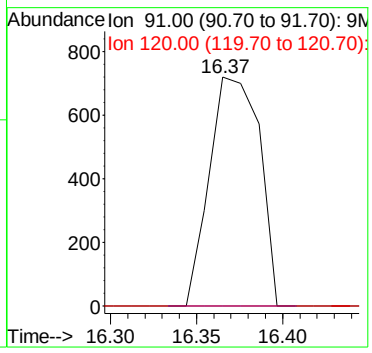

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\050516\9M974167.D Vial: 5
Acq On : 5 May 2016 13:34 Operator: ADC
Sample : L16041580-07 A MS 8260 5.38g Inst : hpms9
Misc : 7,1 STD75739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 13:56:38 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	604518	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	454664	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	233270	50.00 ug/kg	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.80	111	161343	52.2245 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.44%		
43) 1,2-Dichloroethane-d4	10.44	65	170880	51.0854 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 102.18%		
58) Toluene-d8	12.82	98	579870	53.3854 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.78%		
79) p-Bromofluorobenzene	16.22	95	222491	55.0168 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 110.04%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	97601	23.6623 ug/kg	100
3) Chloromethane	3.76	50	101783	20.0197 ug/kg	99
4) Vinyl Chloride	3.98	62	91434	24.3037 ug/kg	100
6) Bromomethane	4.88	94	52213	20.5061 ug/kg	99
7) Chloroethane	5.03	64	55836	23.0128 ug/kg	100
8) Trichlorofluoromethane	5.52	101	114411	22.0906 ug/kg	100
9) Diethyl ether	6.06	59	1456	0.5001 ug/kg#	1
10) Isoprene	6.09	67	99292	24.1287 ug/kg	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	70396	23.2248 ug/kg	99
13) Acetone	6.38	43	31277	25.9927 ug/kg	95
14) 1,1-Dichloroethene	6.61	61	106239	21.0188 ug/kg	99
15) Tert-Butyl Alcohol	6.73	59	413	0.7908 ug/kg#	62
16) Dimethyl Sulfide	6.88	62	75343	30.8711 ug/kg	100
17) Iodomethane	7.13	142	37440	24.5180 ug/kg	100
18) Methyl acetate	7.14	43	53699	16.4665 ug/kg	100
19) Methylene Chloride	7.40	84	64064	20.0026 ug/kg	95
20) Carbon Disulfide	7.44	76	189800	19.1729 ug/kg	99
21) Acrylonitrile	7.58	53	29889	21.4520 ug/kg	100
22) Methyl Tert Butyl Ether	7.60	73	192056	21.4613 ug/kg	99
23) trans-1,2-Dichloroethene	7.84	61	107448	21.8996 ug/kg	100
24) n-Hexane	7.91	57	122979	21.1997 ug/kg	99
27) 1,1-Dichloroethane	8.46	63	123669	20.3990 ug/kg	98
29) 2-Butanone	9.02	43	35979	21.0422 ug/kg	97
31) 2,2-Dichloropropane	9.23	77	99049	21.7679 ug/kg	98
32) cis-1,2-Dichloroethene	9.31	96	71199	21.8607 ug/kg	87
33) Chloroform	9.51	83	109589	21.3762 ug/kg	99
34) 1-Bromopropane	9.64	122	16642	30.1008 ug/kg	98
35) Bromochloromethane	9.75	130	42106	20.2287 ug/kg	98
36) Tetrahydrofuran	9.77	42	3309	2.7449 ug/kg#	78
38) 1,1,1-Trichloroethane	10.04	97	101687	22.3285 ug/kg	98
39) Cyclohexane	10.08	56	149275	22.1211 ug/kg	99
40) 1,1-Dichloropropene	10.23	75	85236	21.5863 ug/kg	100
41) Tert-Amyl-Methyl ether	10.23	73	11697	1.4066 ug/kg#	50
42) Carbon Tetrachloride	10.38	117	92754	20.8166 ug/kg	99
45) 1,2-Dichloroethane	10.56	62	95273	20.8625 ug/kg	99
46) Benzene	10.59	78	256670	21.0093 ug/kg	99
47) Trichloroethene	11.34	130	73887	22.1260 ug/kg	99
48) Methylcyclohexane	11.43	83	118724	22.4362 ug/kg	99
49) 1,2-Dichloropropane	11.56	63	72421	21.5547 ug/kg	97
51) Bromodichloromethane	11.86	83	81302	20.2567 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\050516\9M974167.D Vial: 5
Acq On : 5 May 2016 13:34 Operator: ADC
Sample : L16041580-07 A MS 8260 5.38g Inst : hpms9
Misc : 7,1 STD75739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 13:56:38 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
52)	Dibromomethane	11.95	174	38260	18.4652	ug/kg	98
53)	2-Chloroethyl Vinyl Ether	12.16	63	41211	20.5652	ug/kg	99
54)	4-Methyl-2-Pentanone	12.19	58	29637	19.4149	ug/kg	97
55)	cis-1,3-Dichloropropene	12.49	75	108204	22.3855	ug/kg	99
56)	Dimethyl Disulfide	12.77	94	126563	23.0519	ug/kg	96
59)	Toluene	12.91	91	272531	21.3484	ug/kg	98
60)	Ethyl Methacrylate	13.01	69	78256	20.4149	ug/kg	99
61)	trans-1,3-Dichloropropene	13.09	75	90994	20.6889	ug/kg	99
62)	1,1,2-Trichloroethane	13.32	97	52578	20.3394	ug/kg	99
63)	2-Hexanone	13.24	43	49188	18.7830	ug/kg	98
64)	1,3-Dichloropropane	13.62	76	94960	21.2419	ug/kg	97
65)	Tetrachloroethene	13.74	164	56221	21.4157	ug/kg	96
66)	Dibromochloromethane	14.00	129	64685	19.7579	ug/kg	99
67)	1,2-Dibromoethane	14.27	107	56478	20.5252	ug/kg	100
68)	1-Chlorohexane	14.34	91	96693	23.1270	ug/kg	99
69)	Chlorobenzene	14.76	112	191667	21.7877	ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.79	131	67394	20.8346	ug/kg	98
71)	Ethylbenzene	14.79	106	106114	22.3987	ug/kg	100
72)	m-,p-Xylene	14.88	106	256869	43.9346	ug/kg	100
73)	o-Xylene	15.44	106	125589	22.0960	ug/kg	99
74)	Styrene	15.48	104	196154	21.2667	ug/kg	99
75)	Bromoform	15.99	173	39308	17.0619	ug/kg	99
76)	Isopropylbenzene	15.87	105	323703	22.6718	ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	67240	19.7241	ug/kg	99
80)	1,2,3-Trichloropropane	16.28	110	21517	20.2891	ug/kg#	8
81)	trans-1,4-Dichloro-2-Buten	16.32	53	20529	16.1513	ug/kg#	1
82)	n-Propylbenzene	16.38	91	365777	26.3371	ug/kg	99
83)	Bromobenzene	16.51	156	79680	22.0771	ug/kg	100
84)	1,3,5-Trimethylbenzene	16.56	105	276922	24.8344	ug/kg	99
85)	2-Chlorotoluene	16.65	91	225734	23.3133	ug/kg	99
86)	4-Chlorotoluene	16.69	91	214608	23.4283	ug/kg	100
87)	a-Methylstyrene	16.97	118	136907	23.6781	ug/kg	100
88)	tert-Butylbenzene	17.03	134	61218	24.5389	ug/kg	98
89)	1,2,4-Trimethylbenzene	17.08	105	271586	24.0066	ug/kg	99
90)	sec-Butylbenzene	17.29	105	353849	23.6420	ug/kg	100
91)	p-Isopropyltoluene	17.45	119	284786	23.9202	ug/kg	100
92)	1,3-Dichlorobenzene	17.65	146	154619	21.7685	ug/kg	99
93)	1,4-Dichlorobenzene	17.78	146	160707	22.0481	ug/kg	99
94)	n-Butylbenzene	17.98	91	248923	21.9784	ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	146830	21.4950	ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.28	157	15296	18.1980	ug/kg	99
97)	1,2,4-Trichlorobenzene	20.42	180	92029	18.8774	ug/kg	99
98)	Hexachlorobutadiene	20.58	225	48730	20.9286	ug/kg	100
99)	Naphthalene	20.80	128	208165	16.8502	ug/kg	99
100)	1,2,3-Trichlorobenzene	21.10	180	85154	18.0237	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\050516\9M974167.D Vial: 5
Acq On : 5 May 2016 13:34 Operator: ADC
Sample : L16041580-07 A MS 8260 5.38g Inst : hpms9
Misc : 7,1 STD75739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 5 13:56 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

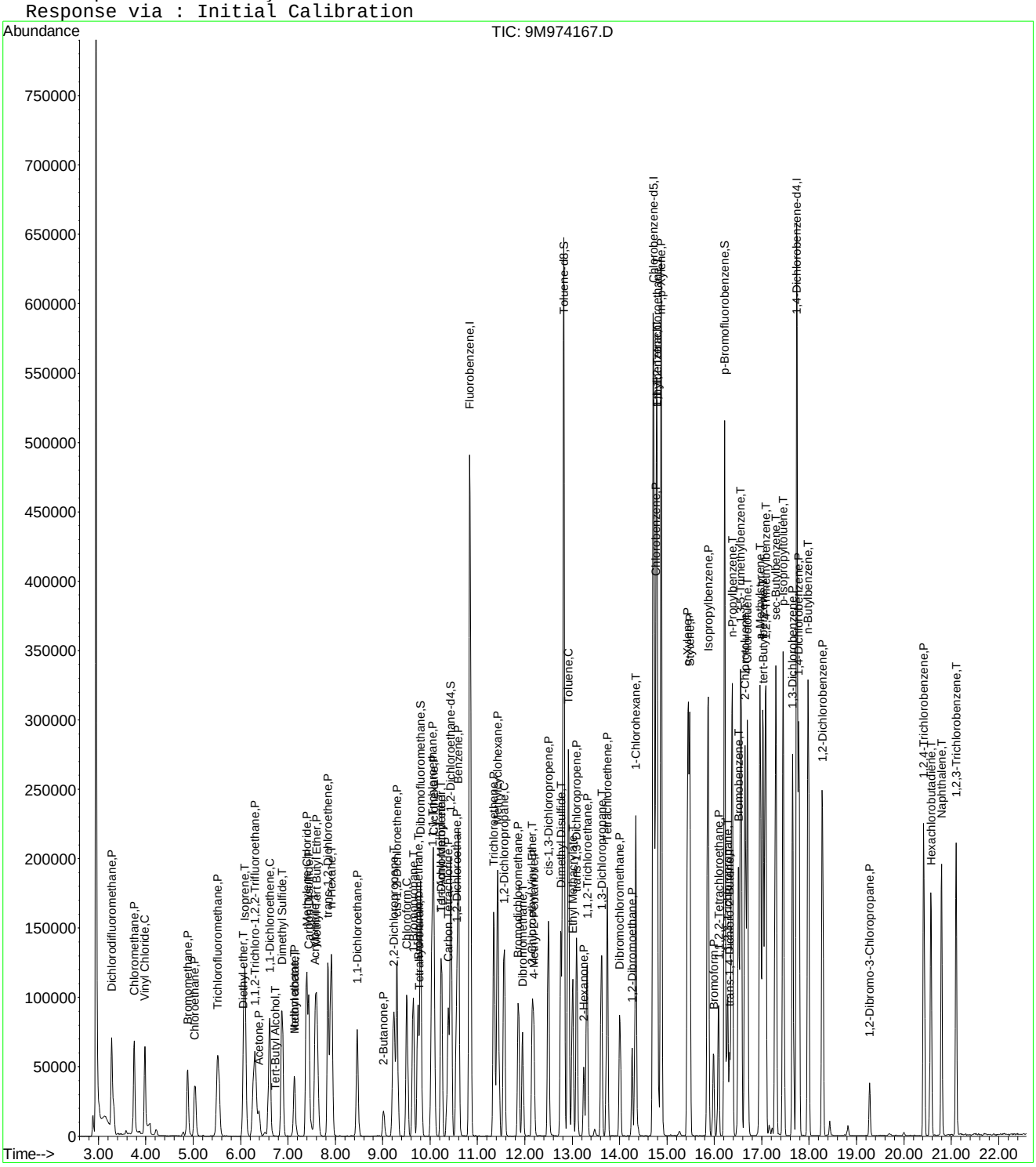

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\050516\9M974168.D Vial: 6
Acq On : 5 May 2016 14:04 Operator: ADC
Sample : L16041580-08 A MSD 8260 5.02g Inst : hpms9
Misc : 7,1 STD75739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 14:27:21 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	630423	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	475998	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	249394	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	167699	52.0513 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.10%		
43) 1,2-Dichloroethane-d4	10.43	65	180304	51.6878 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 103.38%		
58) Toluene-d8	12.82	98	603995	53.1142 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.22%		
79) p-Bromofluorobenzene	16.22	95	235644	54.5019 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 109.00%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.28	85	93027	21.6266 ug/kg	100
3) Chloromethane	3.75	50	98030	18.4892 ug/kg	98
4) Vinyl Chloride	3.98	62	88244	22.4310 ug/kg	100
6) Bromomethane	4.88	94	51932	19.5576 ug/kg	100
7) Chloroethane	5.03	64	53808	21.2656 ug/kg	99
8) Trichlorofluoromethane	5.52	101	109953	20.3575 ug/kg	99
10) Isoprene	6.09	67	100113	23.3285 ug/kg	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	68406	21.6409 ug/kg	99
13) Acetone	6.38	43	31288	24.8146 ug/kg	98
14) 1,1-Dichloroethene	6.61	61	104232	19.7743 ug/kg	99
15) Tert-Butyl Alcohol	6.72	59	291	0.5343 ug/kg#	62
16) Dimethyl Sulfide	6.88	62	76512	30.0728 ug/kg	96
17) Iodomethane	7.13	142	35232	22.4316 ug/kg	98
18) Methyl acetate	7.14	43	54016	15.8831 ug/kg	99
19) Methylene Chloride	7.40	84	64465	19.3007 ug/kg	99
20) Carbon Disulfide	7.44	76	193974	18.7894 ug/kg	99
21) Acrylonitrile	7.57	53	29964	20.6221 ug/kg	98
22) Methyl Tert Butyl Ether	7.60	73	189518	20.3075 ug/kg	99
23) trans-1,2-Dichloroethene	7.84	61	107223	20.9558 ug/kg	97
24) n-Hexane	7.91	57	125978	20.8243 ug/kg	98
27) 1,1-Dichloroethane	8.46	63	120585	19.0729 ug/kg	98
29) 2-Butanone	9.02	43	36668	20.5639 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	94788	19.9754 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	70165	20.6580 ug/kg	98
33) Chloroform	9.51	83	107301	20.0698 ug/kg	99
34) 1-Bromopropane	9.64	122	16346	28.3505 ug/kg	98
35) Bromochloromethane	9.75	130	41494	19.1155 ug/kg	98
36) Tetrahydrofuran	9.77	42	3278	2.6074 ug/kg	84
38) 1,1,1-Trichloroethane	10.04	97	97856	20.6044 ug/kg	99
39) Cyclohexane	10.08	56	148761	21.1390 ug/kg	99
40) 1,1-Dichloropropene	10.23	75	83291	20.2269 ug/kg	100
41) Tert-Amyl-Methyl ether	10.23	73	12420	1.4322 ug/kg#	48
42) Carbon Tetrachloride	10.38	117	90265	19.4256 ug/kg	99
45) 1,2-Dichloroethane	10.56	62	93269	19.5844 ug/kg	99
46) Benzene	10.60	78	250086	19.6292 ug/kg	100
47) Trichloroethene	11.34	130	71474	20.5239 ug/kg	98
48) Methylcyclohexane	11.43	83	119079	21.5786 ug/kg	98
49) 1,2-Dichloropropane	11.56	63	70863	20.2243 ug/kg	99
51) Bromodichloromethane	11.86	83	80596	19.2557 ug/kg	97
52) Dibromomethane	11.95	174	37556	17.3980 ug/kg	96

(#) = qualifier out of range (m) = manual integration
9M974168.D 8260SL.M Thu May 05 14:27:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\050516\9M974168.D Vial: 6
Acq On : 5 May 2016 14:04 Operator: ADC
Sample : L16041580-08 A MSD 8260 5.02g Inst : hpms9
Misc : 7,1 STD75739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 14:27:21 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
53)	2-Chloroethyl Vinyl Ether	12.15	63	41047	19.6416	ug/kg	99
54)	4-Methyl-2-Pentanone	12.19	58	29380	18.4557	ug/kg	96
55)	cis-1,3-Dichloropropene	12.49	75	104671	20.7647	ug/kg	100
56)	Dimethyl Disulfide	12.77	94	127703	22.3037	ug/kg	93
59)	Toluene	12.91	91	264321	19.7773	ug/kg	98
60)	Ethyl Methacrylate	13.01	69	79755	19.8734	ug/kg	97
61)	trans-1,3-Dichloropropene	13.09	75	88735	19.2710	ug/kg	99
62)	1,1,2-Trichloroethane	13.32	97	52893	19.5442	ug/kg	98
63)	2-Hexanone	13.24	43	48846	17.8164	ug/kg	95
64)	1,3-Dichloropropane	13.61	76	94630	20.2194	ug/kg	98
65)	Tetrachloroethene	13.74	164	55179	20.0767	ug/kg	98
66)	Dibromochloromethane	14.00	129	61923	18.0665	ug/kg	100
67)	1,2-Dibromoethane	14.27	107	56091	19.4710	ug/kg	97
68)	1-Chlorohexane	14.34	91	94422	21.5716	ug/kg	99
69)	Chlorobenzene	14.76	112	190508	20.6853	ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.79	131	65260	19.2706	ug/kg	99
71)	Ethylbenzene	14.79	106	102370	20.6399	ug/kg	100
72)	m-,p-Xylene	14.88	106	246043	40.1968	ug/kg	100
73)	o-Xylene	15.45	106	120122	20.1869	ug/kg	98
74)	Styrene	15.48	104	193467	20.0352	ug/kg	100
75)	Bromoform	15.99	173	39454	16.3577	ug/kg	99
76)	Isopropylbenzene	15.87	105	312242	20.8889	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	65326	17.9237	ug/kg	100
80)	1,2,3-Trichloropropane	16.28	110	22810	20.1177	ug/kg#	17
81)	trans-1,4-Dichloro-2-Buten	16.32	53	20062	14.7634	ug/kg#	1
82)	n-Propylbenzene	16.38	91	350596	23.5589	ug/kg	100
83)	Bromobenzene	16.51	156	78661	20.3857	ug/kg	100
84)	1,3,5-Trimethylbenzene	16.56	105	262399	22.0106	ug/kg	99
85)	2-Chlorotoluene	16.65	91	212178	20.4965	ug/kg	99
86)	4-Chlorotoluene	16.69	91	212365	21.6846	ug/kg	99
87)	a-Methylstyrene	16.97	118	137897	22.3074	ug/kg	97
88)	tert-Butylbenzene	17.03	134	60060	22.5182	ug/kg	95
89)	1,2,4-Trimethylbenzene	17.08	105	256052	21.1043	ug/kg	100
90)	sec-Butylbenzene	17.29	105	331772	20.7338	ug/kg	100
91)	p-Isopropyltoluene	17.45	119	269888	21.2033	ug/kg	99
92)	1,3-Dichlorobenzene	17.65	146	150347	19.7985	ug/kg	100
93)	1,4-Dichlorobenzene	17.78	146	152180	19.5284	ug/kg	98
94)	n-Butylbenzene	17.98	91	235507	19.4494	ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	140539	19.2438	ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.28	157	15743	17.5188	ug/kg	98
97)	1,2,4-Trichlorobenzene	20.42	180	84327	16.1792	ug/kg	99
98)	Hexachlorobutadiene	20.58	225	43686	17.5493	ug/kg	99
99)	Naphthalene	20.80	128	198795	15.0514	ug/kg	99
100)	1,2,3-Trichlorobenzene	21.10	180	79438	15.7268	ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\050516\9M974168.D Vial: 6
Acq On : 5 May 2016 14:04 Operator: ADC
Sample : L16041580-08 A MSD 8260 5.02g Inst : hpms9
Misc : 7,1 STD75739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 5 14:27 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

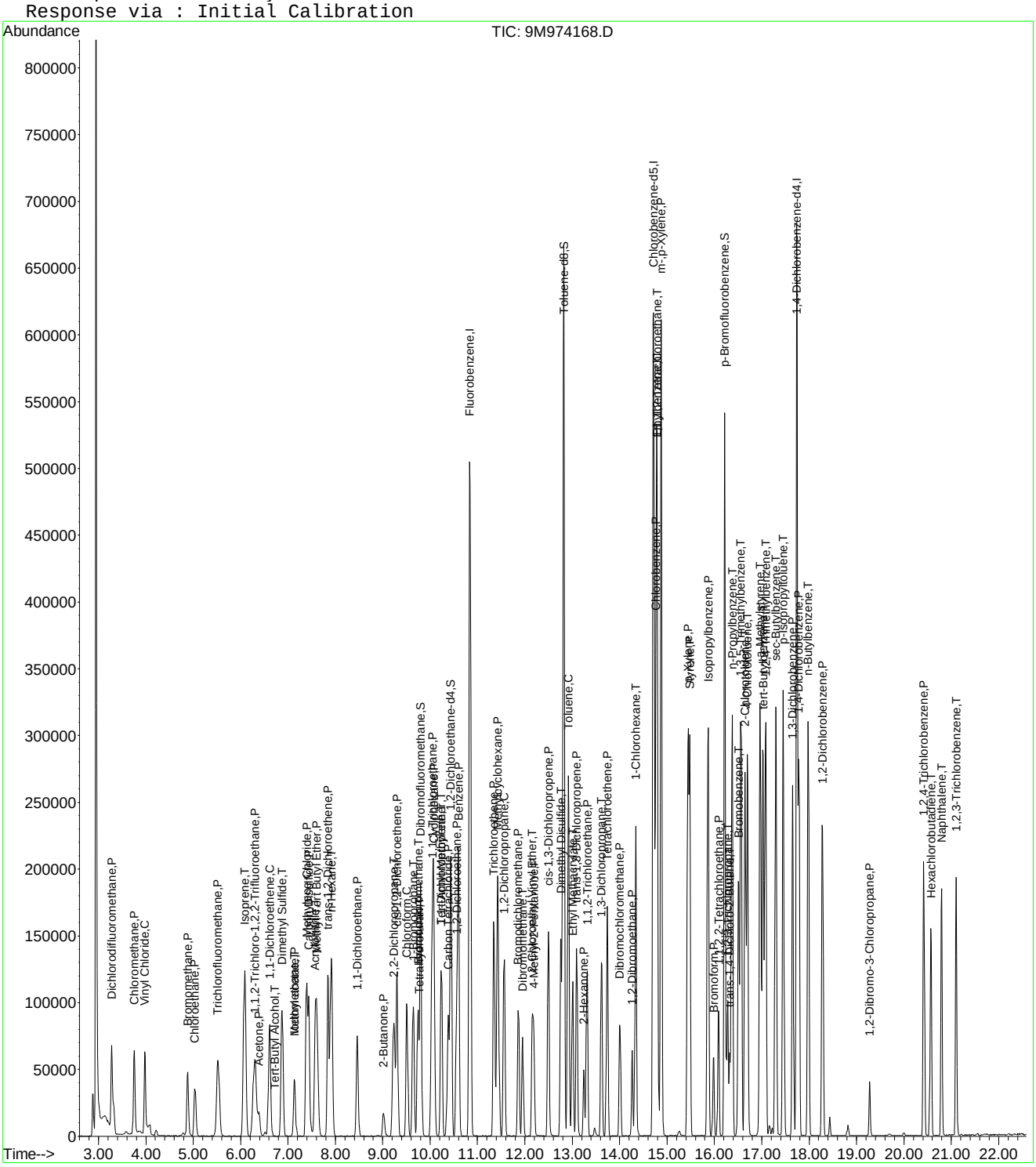

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050516\9M974176.D Vial: 14
Acq On : 5 May 2016 18:10 Operator: ADC
Sample : L16041580-09 A 8260 5.02g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 11:40:52 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	563947	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	408424	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	193157	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	142616	49.4838 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.96%		
43) 1,2-Dichloroethane-d4	10.43	65	162908	52.2058 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.42%		
58) Toluene-d8	12.82	98	520478	53.3426 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.68%		
79) p-Bromofluorobenzene	16.22	95	192605	57.5173 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 115.04%		

Target Compounds

					Qvalue
13) Acetone	6.38	43	18248	15.1645 ug/kg	85
20) Carbon Disulfide	7.44	76	4574	0.4953 ug/kg#	74
29) 2-Butanone	9.02	43	2649	1.6607 ug/kg#	56
36) Tetrahydrofuran	9.77	42	2451	2.1794 ug/kg#	66
56) Dimethyl Disulfide	12.82	94	13967	2.7269 ug/kg#	28
82) n-Propylbenzene	16.37	91	405	Below Cal #	51
89) 1,2,4-Trimethylbenzene	17.08	105	2013	Below Cal #	55

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050516\9M974176.D Vial: 14
Acq On : 5 May 2016 18:10 Operator: ADC
Sample : L16041580-09 A 8260 5.02g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 11:40 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

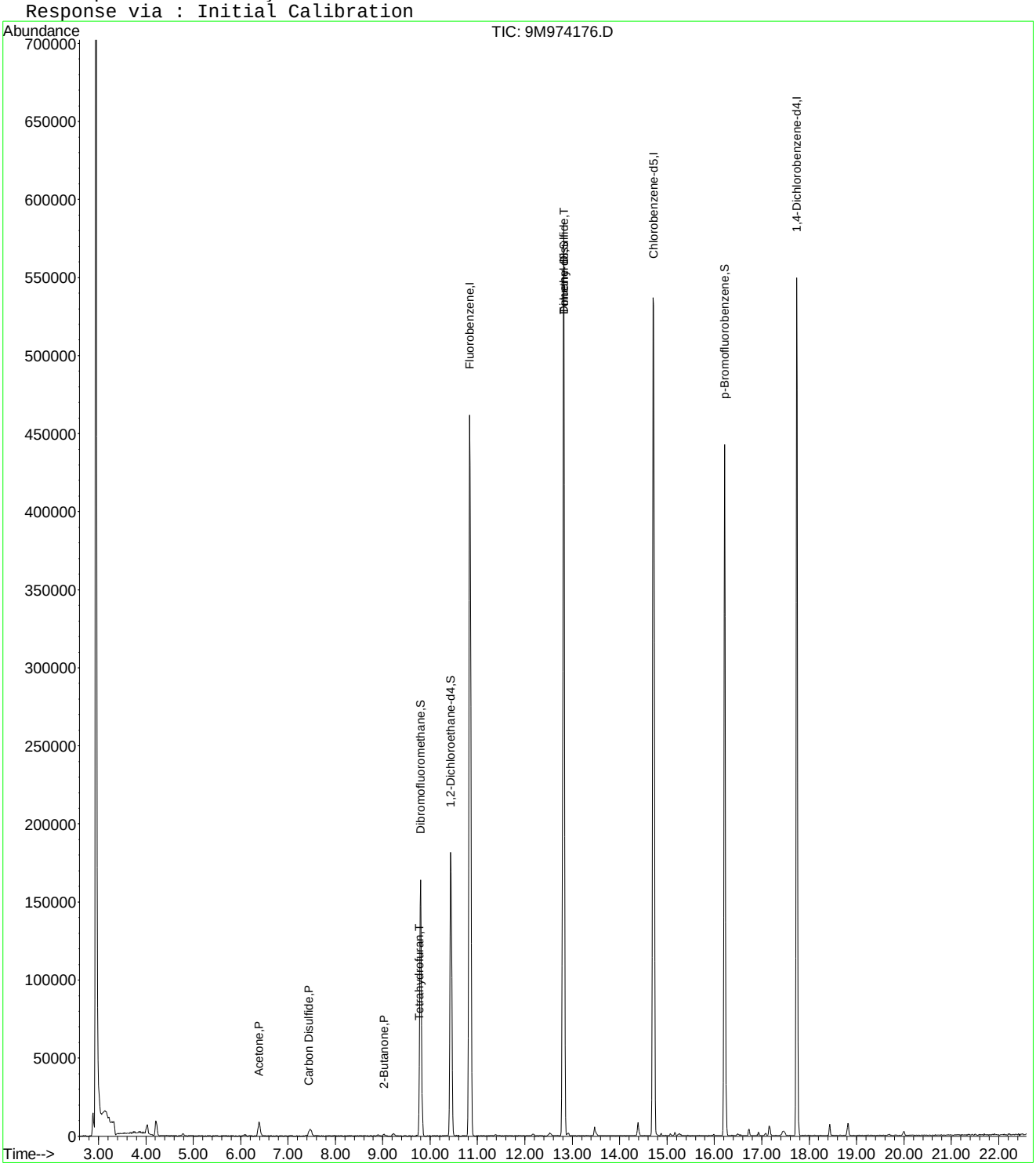

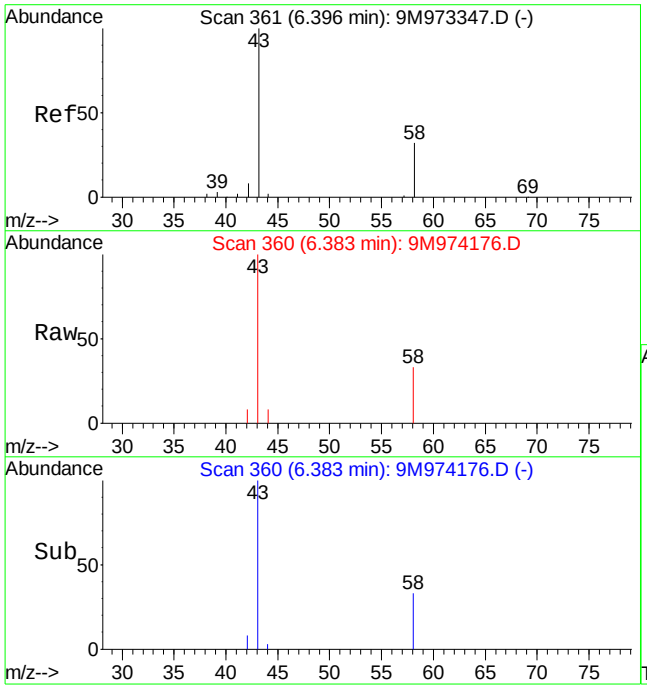

#13
Acetone
Concen: 15.16 ug/kg
RT: 6.38 min Scan# 360
Delta R.T. -0.00 min
Lab File: 9M974176.D
Acq: 5 May 2016 18:10

Tgt Ion: 43 Resp: 18248

Ion	Ratio	Lower	Upper
43	100		
58	42.4	20.2	47.2

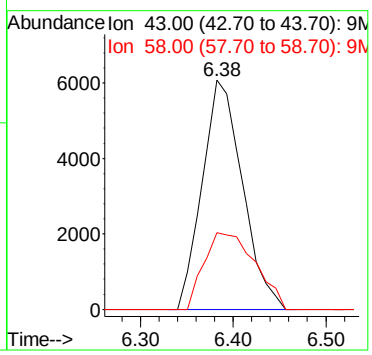

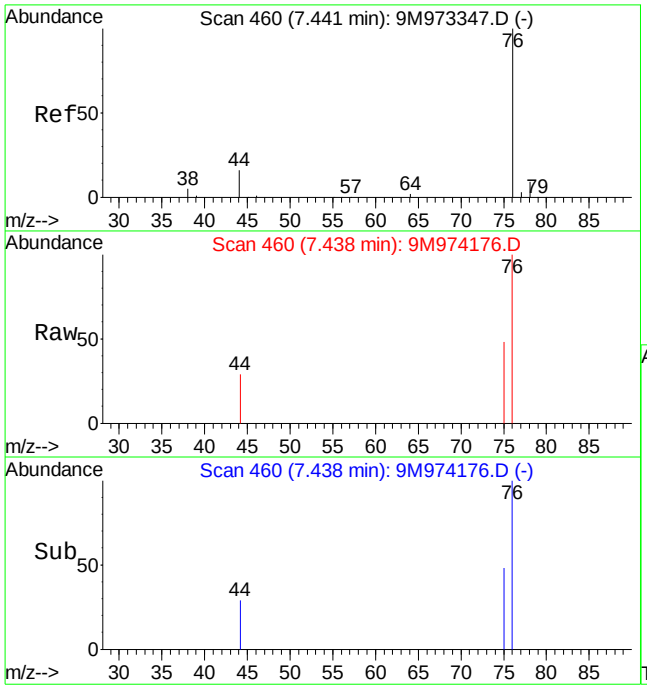

#20
Carbon Disulfide
Concen: 0.50 ug/kg
RT: 7.44 min Scan# 460
Delta R.T. -0.00 min
Lab File: 9M974176.D
Acq: 5 May 2016 18:10

Tgt Ion: 76 Resp: 4574

Ion	Ratio	Lower	Upper
76	100		
78	0.0	5.6	13.0#

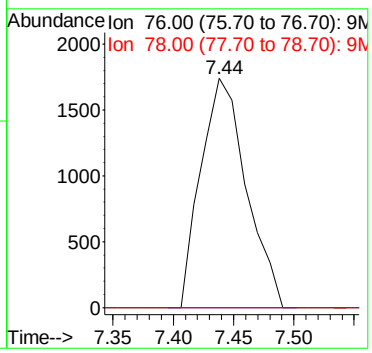

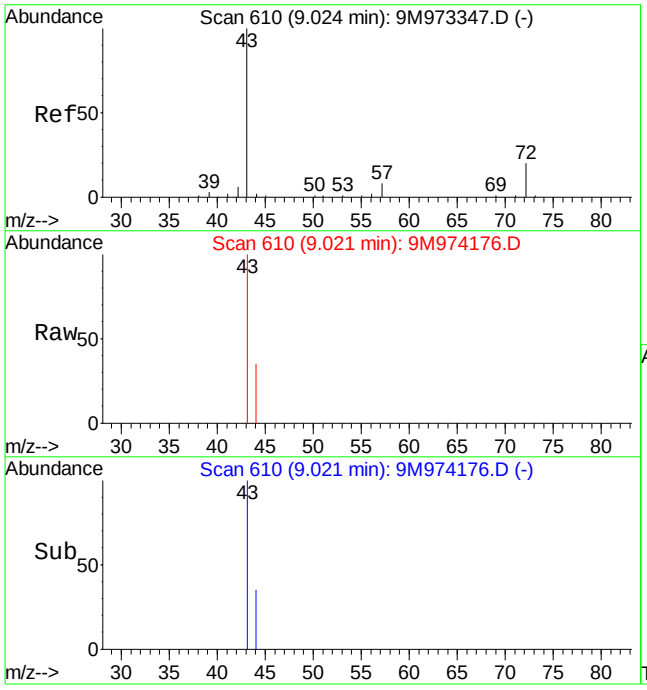

#29
2-Butanone
Concen: 1.66 ug/kg
RT: 9.02 min Scan# 610
Delta R.T. 0.01 min
Lab File: 9M974176.D
Acq: 5 May 2016 18:10

Tgt Ion: 43 Resp: 2649

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.1	28.1#

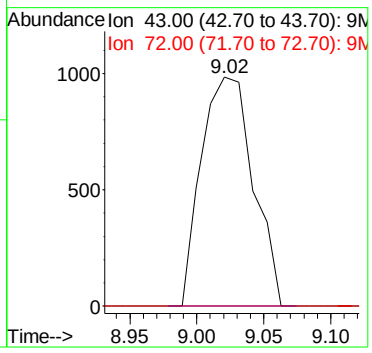

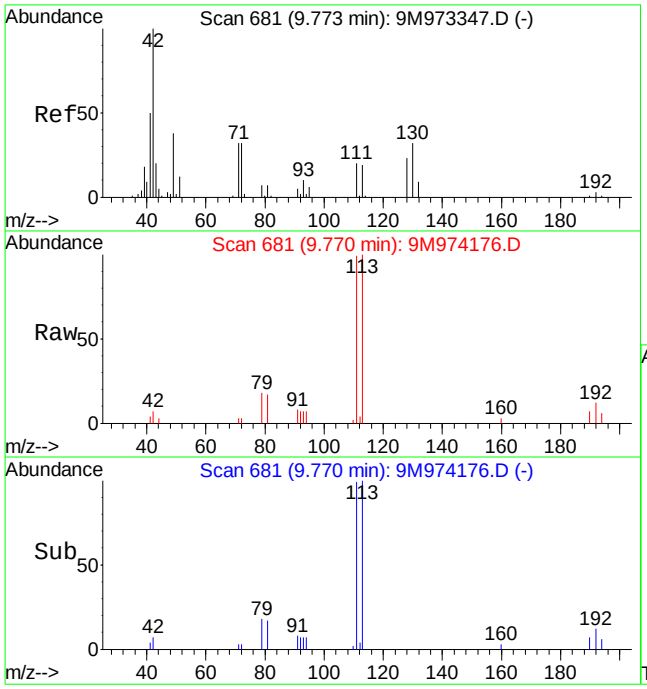

#36
Tetrahydrofuran
Concen: 2.18 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. 0.01 min
Lab File: 9M974176.D
Acq: 5 May 2016 18:10

Tgt Ion: 42 Resp: 2451

Ion	Ratio	Lower	Upper
42	100		
72	9.9	20.8	48.6#
71	19.1	20.0	46.8#

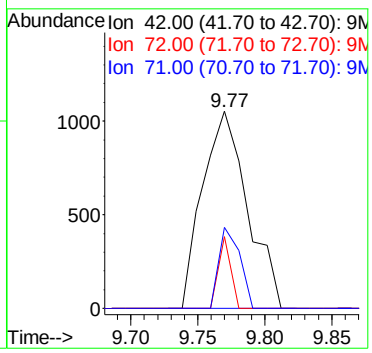

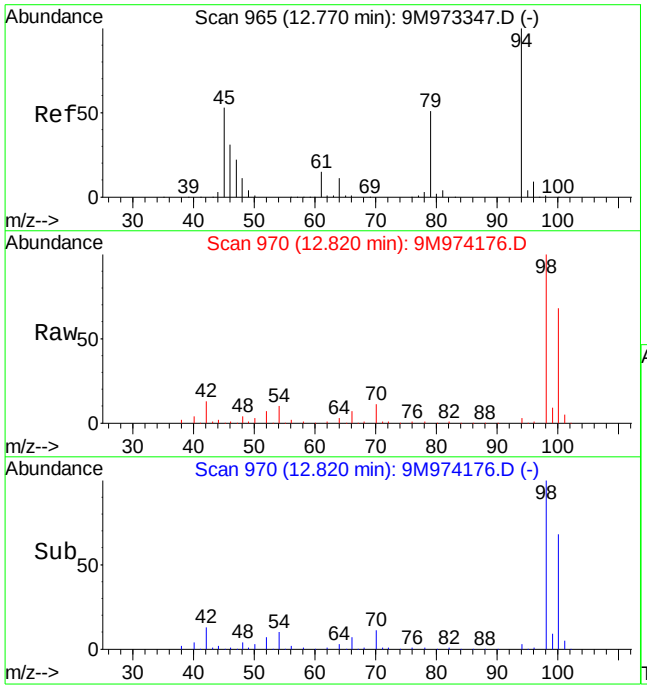

#56
Dimethyl Disulfide
Concen: 2.73 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M974176.D
Acq: 5 May 2016 18:10

Tgt Ion: 94 Resp: 13967

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.3	68.5#

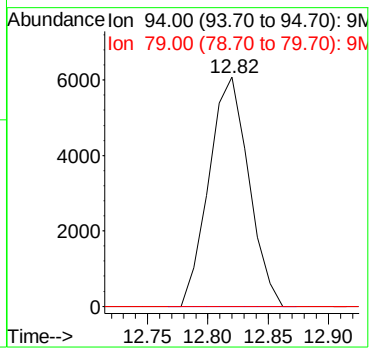

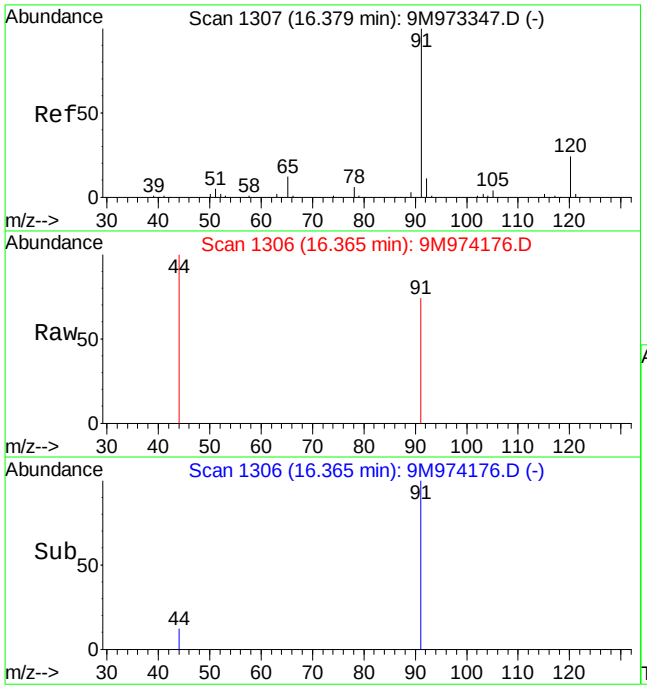

#82
n-Propylbenzene
Concen: Below Cal
RT: 16.37 min Scan# 1306
Delta R.T. -0.00 min
Lab File: 9M974176.D
Acq: 5 May 2016 18:10

Tgt Ion: 91 Resp: 405

Ion	Ratio	Lower	Upper
91	100		
120	0.0	14.7	34.3#

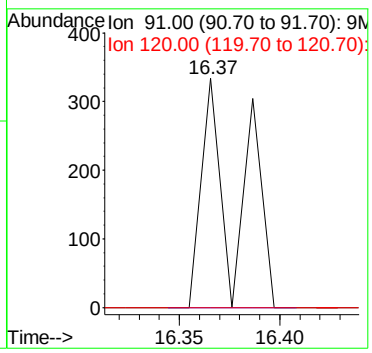

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050516\9M974177.D Vial: 15
Acq On : 5 May 2016 18:40 Operator: ADC
Sample : L16041580-10 A 8260 4.65g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 11:40:53 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	603642	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	437142	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	210644	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	154823	50.1867 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.38%		
43) 1,2-Dichloroethane-d4	10.44	65	175676	52.5954 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.20%		
58) Toluene-d8	12.82	98	565498	54.1491 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 108.30%		
79) p-Bromofluorobenzene	16.22	95	214745	58.8052 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 117.62%		

Target Compounds					Qvalue
13) Acetone	6.39	43	21376	16.8708 ug/kg	88
15) Tert-Butyl Alcohol	6.72	59	433	0.8303 ug/kg#	62
20) Carbon Disulfide	7.44	76	5110	0.5169 ug/kg#	74
29) 2-Butanone	9.01	43	3412	1.9984 ug/kg#	70
36) Tetrahydrofuran	9.77	42	2831	2.3518 ug/kg	83
56) Dimethyl Disulfide	12.82	94	16098	2.9363 ug/kg#	28
82) n-Propylbenzene	16.37	91	647	Below Cal #	51
89) 1,2,4-Trimethylbenzene	17.08	105	2408	Below Cal	87

(#) = qualifier out of range (m) = manual integration
9M974177.D 8260SL.M Tue May 10 11:40:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050516\9M974177.D Vial: 15
Acq On : 5 May 2016 18:40 Operator: ADC
Sample : L16041580-10 A 8260 4.65g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 11:40 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

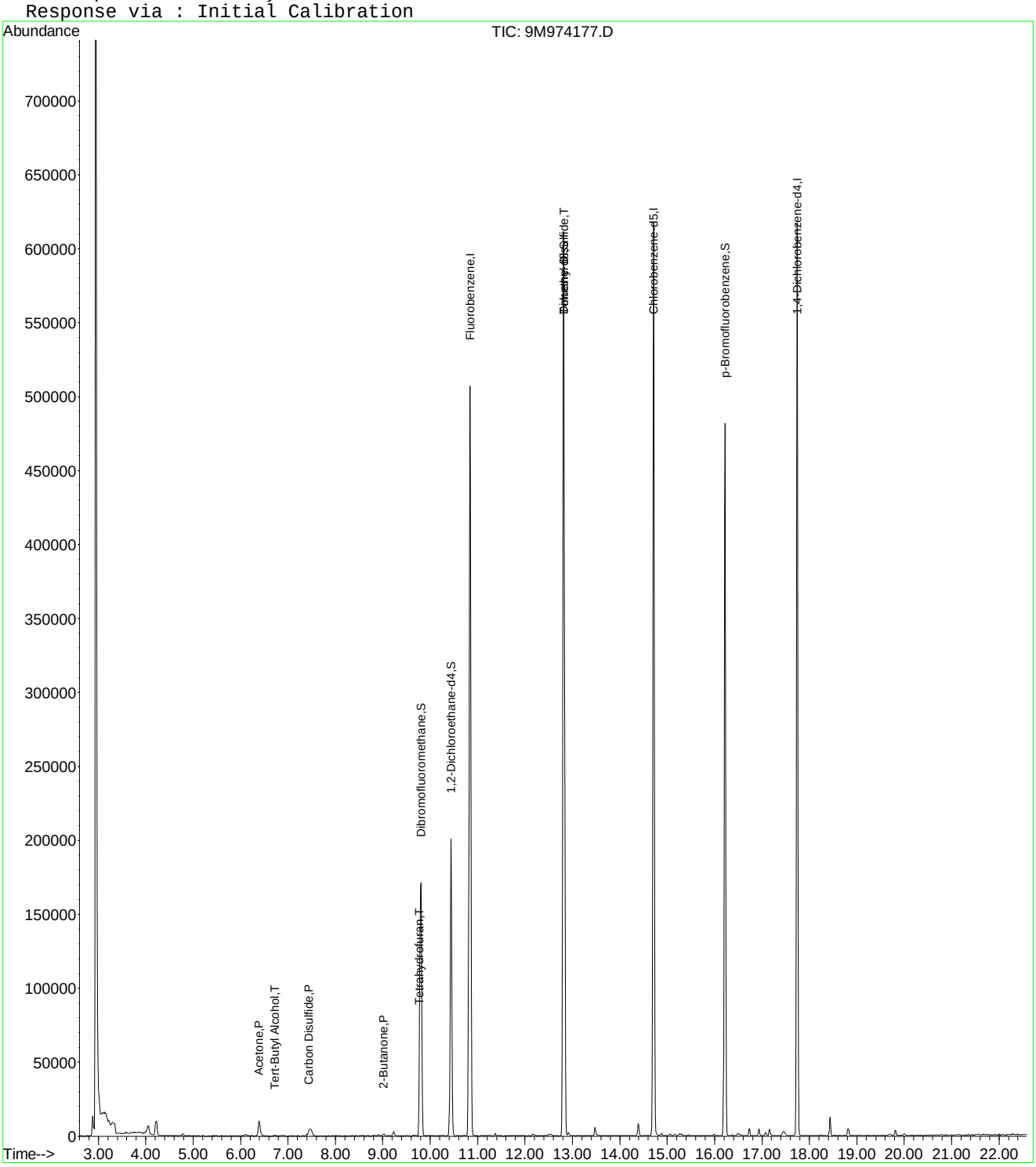

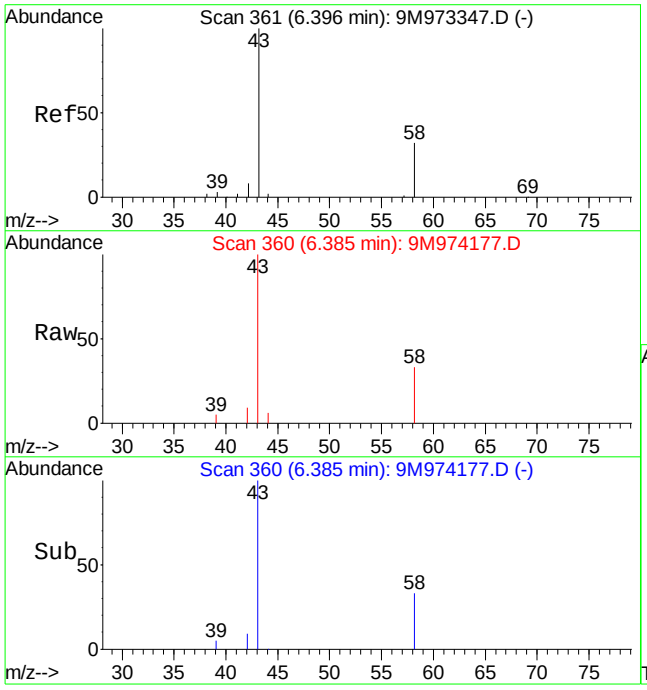

#13
Acetone
Concen: 16.87 ug/kg
RT: 6.39 min Scan# 360
Delta R.T. 0.00 min
Lab File: 9M974177.D
Acq: 5 May 2016 18:40

Tgt Ion: 43 Resp: 21376

Ion	Ratio	Lower	Upper
43	100		
58	40.3	20.2	47.2

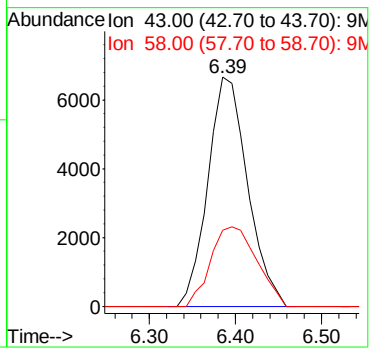

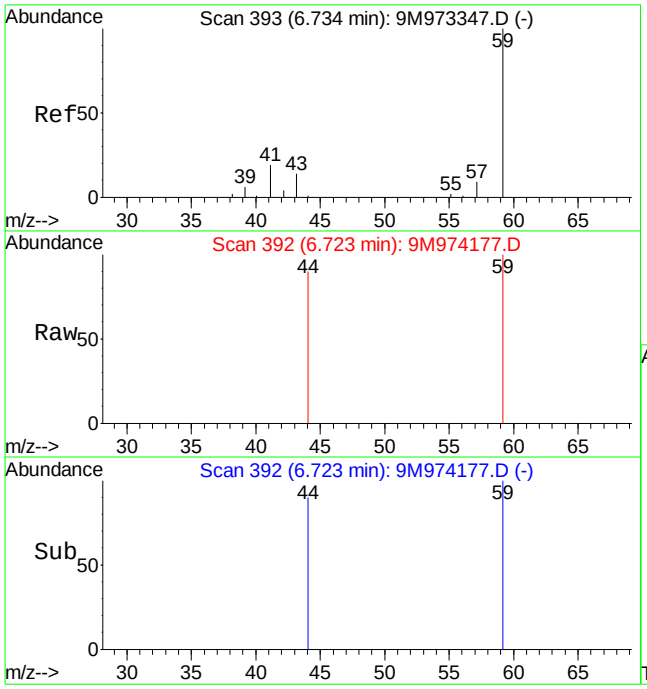

#15
Tert-Butyl Alcohol
Concen: 0.83 ug/kg
RT: 6.72 min Scan# 392
Delta R.T. -0.00 min
Lab File: 9M974177.D
Acq: 5 May 2016 18:40

Tgt Ion: 59 Resp: 433

Ion	Ratio	Lower	Upper
59	100		
41	0.0	12.0	28.0#
57	0.0	6.0	14.0#

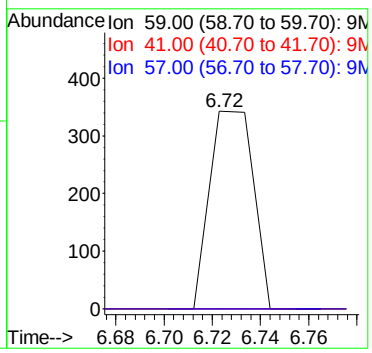

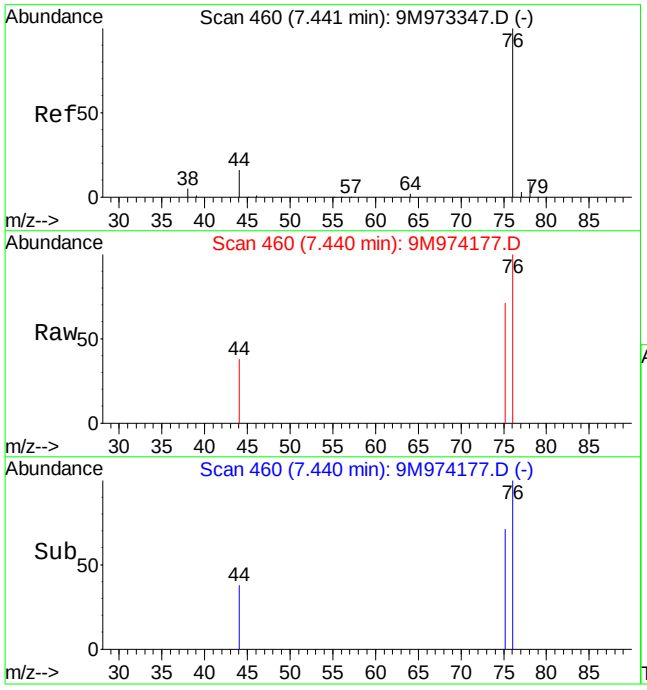

#20
Carbon Disulfide
Concen: 0.52 ug/kg
RT: 7.44 min Scan# 460
Delta R.T. -0.00 min
Lab File: 9M974177.D
Acq: 5 May 2016 18:40

Tgt Ion: 76 Resp: 5110

Ion	Ratio	Lower	Upper
76	100		
78	0.0	5.6	13.0#

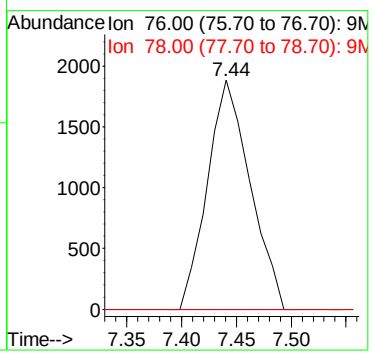

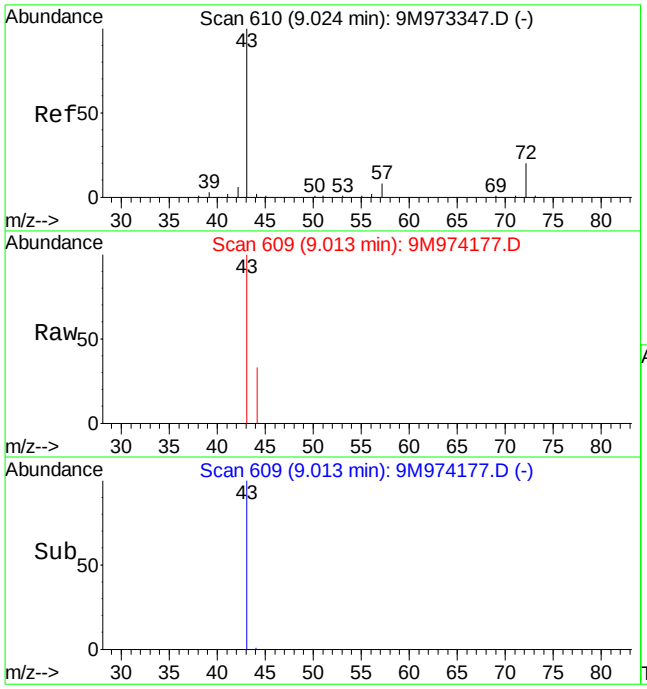

#29
2-Butanone
Concen: 2.00 ug/kg
RT: 9.01 min Scan# 609
Delta R.T. -0.00 min
Lab File: 9M974177.D
Acq: 5 May 2016 18:40

Tgt Ion: 43 Resp: 3412

Ion	Ratio	Lower	Upper
43	100		
72	6.4	12.1	28.1#

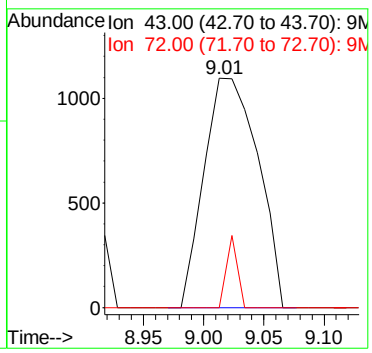

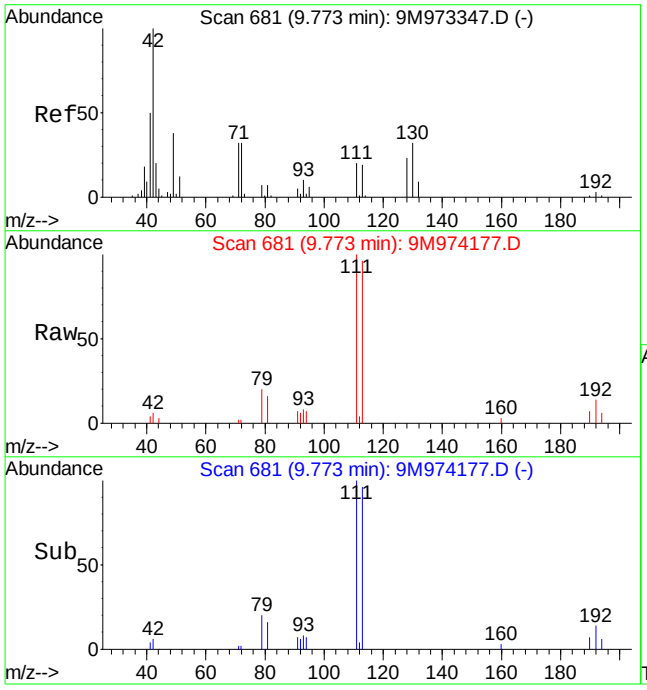

#36
Tetrahydrofuran
Concen: 2.35 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. 0.01 min
Lab File: 9M974177.D
Acq: 5 May 2016 18:40

Tgt Ion: 42 Resp: 2831

Ion	Ratio	Lower	Upper
42	100		
72	27.0	20.8	48.6
71	21.4	20.0	46.8

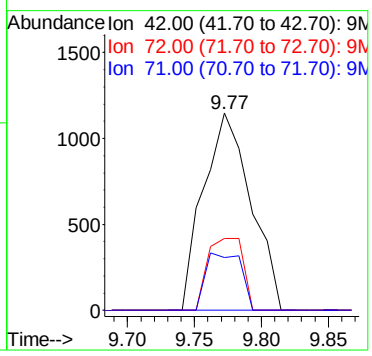

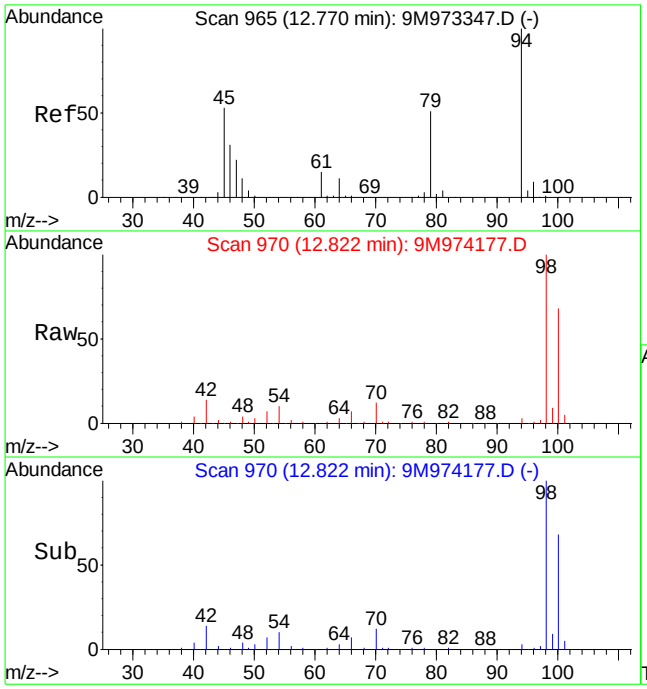

#56
Dimethyl Disulfide
Concen: 2.94 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M974177.D
Acq: 5 May 2016 18:40

Tgt Ion: 94 Resp: 16098

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.3	68.5#

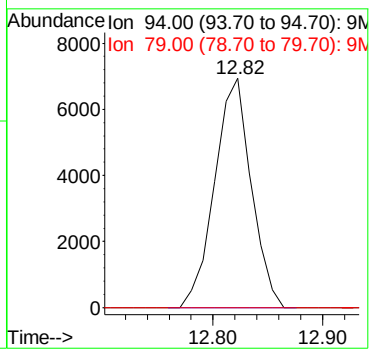

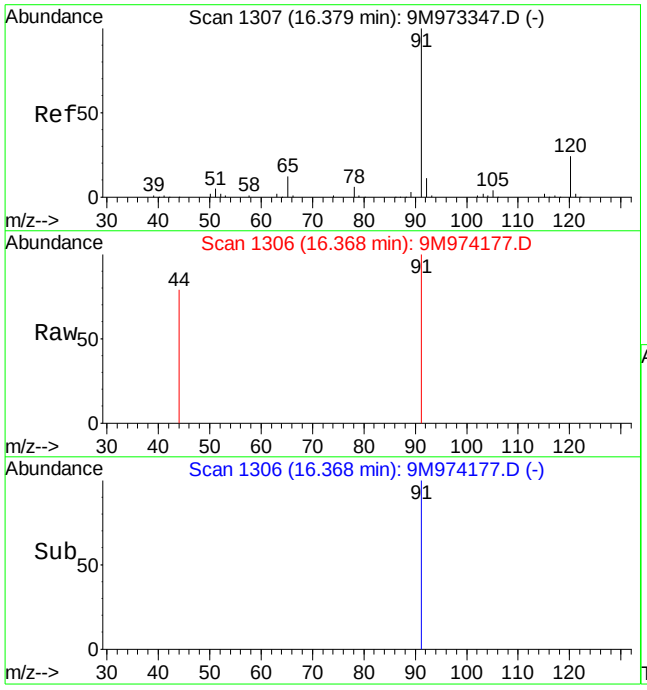

#82
n-Propylbenzene
Concen: Below Cal
RT: 16.37 min Scan# 1306
Delta R.T. 0.00 min
Lab File: 9M974177.D
Acq: 5 May 2016 18:40

Tgt Ion: 91 Resp: 647

Ion	Ratio	Lower	Upper
91	100		
120	0.0	14.7	34.3#

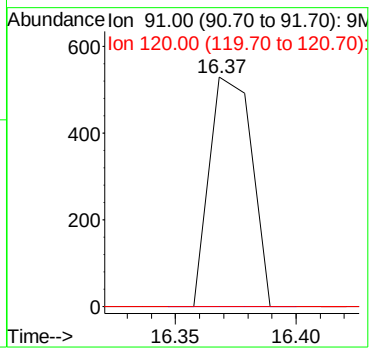

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050516\9M974178.D Vial: 16
Acq On : 5 May 2016 19:10 Operator: ADC
Sample : L16041580-11 A 8260 4.92g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 11:40:55 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.85	96	536936	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	395423	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	197478	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	141207	51.4596 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 102.92%		
43) 1,2-Dichloroethane-d4	10.43	65	159501	53.6853 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 107.38%		
58) Toluene-d8	12.82	98	513101	54.3155 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 108.64%		
79) p-Bromofluorobenzene	16.22	95	194429	56.7916 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 113.58%		

Target Compounds

					Qvalue
13) Acetone	6.39	43	8356	5.7810 ug/kg	84
29) 2-Butanone	9.02	43	1537	1.0120 ug/kg#	56
36) Tetrahydrofuran	9.77	42	2617	2.4441 ug/kg#	65
56) Dimethyl Disulfide	12.82	94	13514	2.7712 ug/kg#	28
82) n-Propylbenzene	16.39	91	403	Below Cal #	51
89) 1,2,4-Trimethylbenzene	17.08	105	1882	Below Cal	77

(#) = qualifier out of range (m) = manual integration
9M974178.D 8260SL.M Tue May 10 11:40:55 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050516\9M974178.D Vial: 16
Acq On : 5 May 2016 19:10 Operator: ADC
Sample : L16041580-11 A 8260 4.92g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 11:40 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

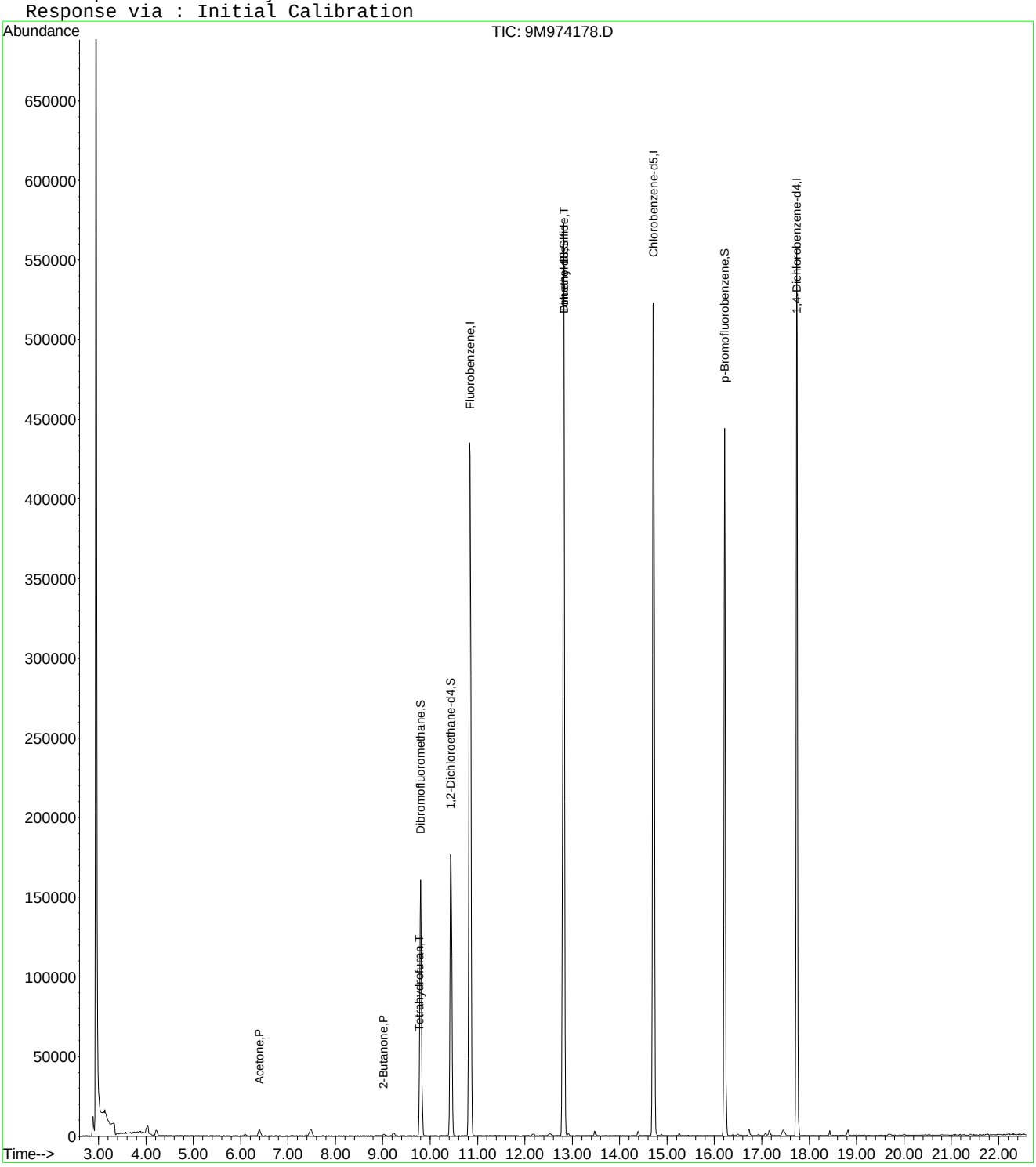

9M974178.D 8260SL.M Tue May 10 11:40:55 2016 Page 2

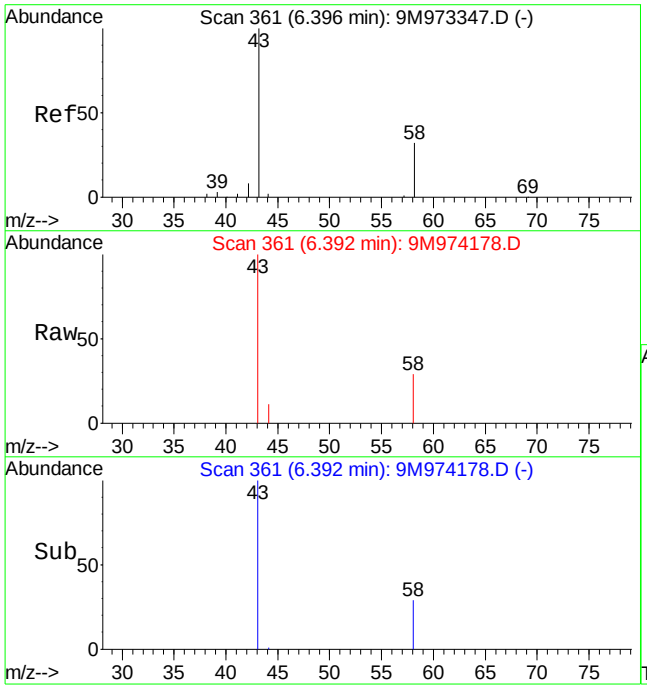

#13
Acetone
Concen: 5.78 ug/kg
RT: 6.39 min Scan# 361
Delta R.T. 0.01 min
Lab File: 9M974178.D
Acq: 5 May 2016 19:10

Tgt Ion: 43 Resp: 8356

Ion	Ratio	Lower	Upper
43	100		
58	42.6	20.2	47.2

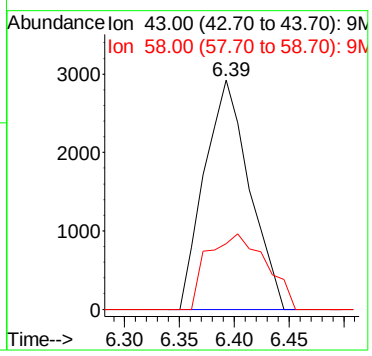

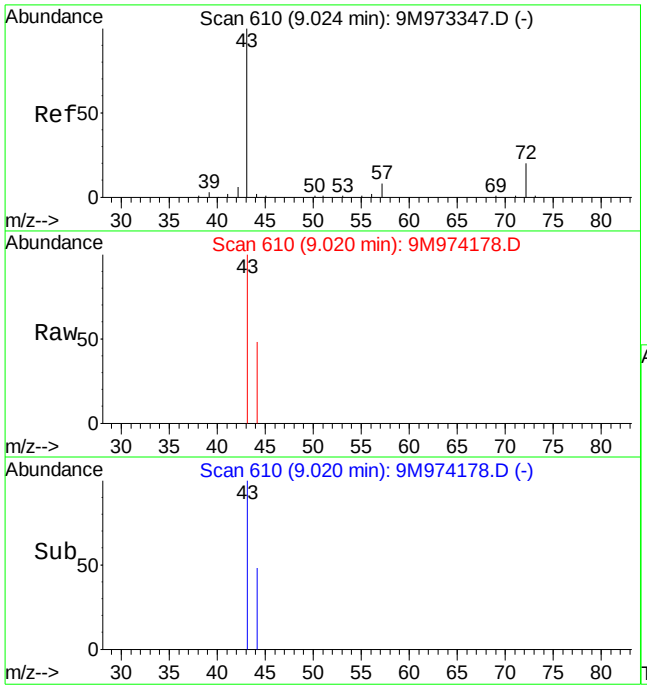

#29
2-Butanone
Concen: 1.01 ug/kg
RT: 9.02 min Scan# 610
Delta R.T. 0.01 min
Lab File: 9M974178.D
Acq: 5 May 2016 19:10

Tgt Ion: 43 Resp: 1537

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.1	28.1#

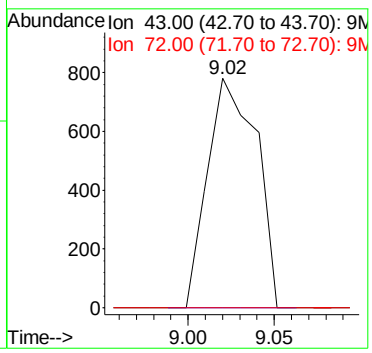

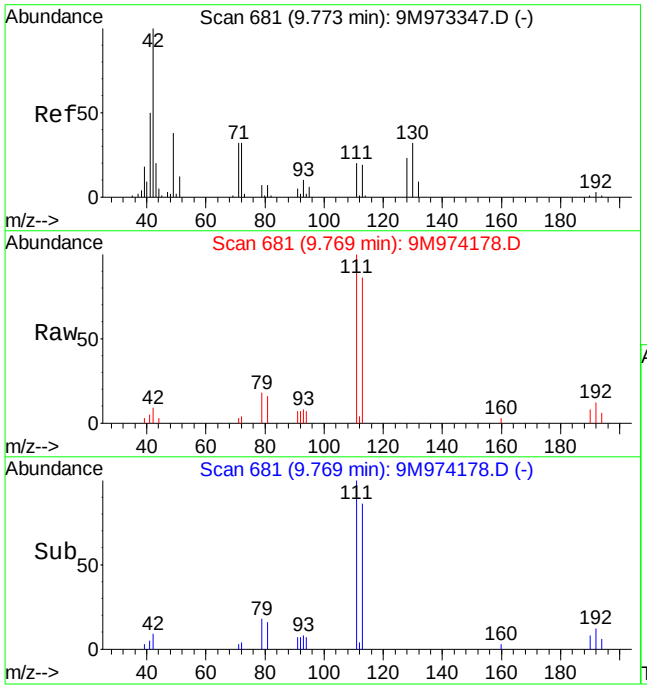

#36
Tetrahydrofuran
Concen: 2.44 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. 0.01 min
Lab File: 9M974178.D
Acq: 5 May 2016 19:10

Tgt Ion: 42 Resp: 2617

Ion	Ratio	Lower	Upper
42	100		
72	18.9	20.8	48.6#
71	9.0	20.0	46.8#

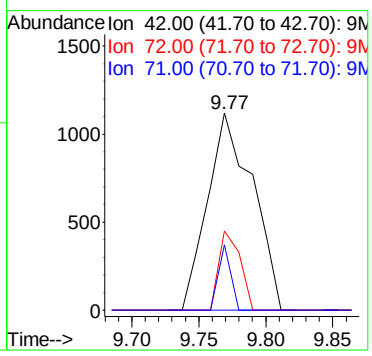

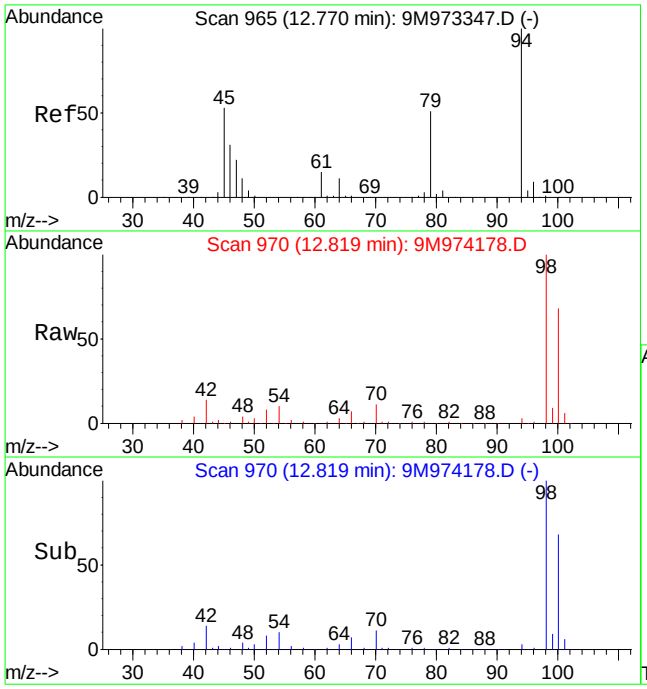

#56
Dimethyl Disulfide
Concen: 2.77 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M974178.D
Acq: 5 May 2016 19:10

Tgt Ion: 94 Resp: 13514

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.3	68.5#

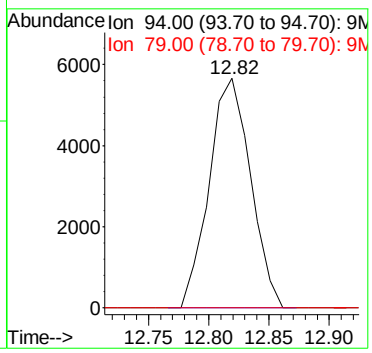

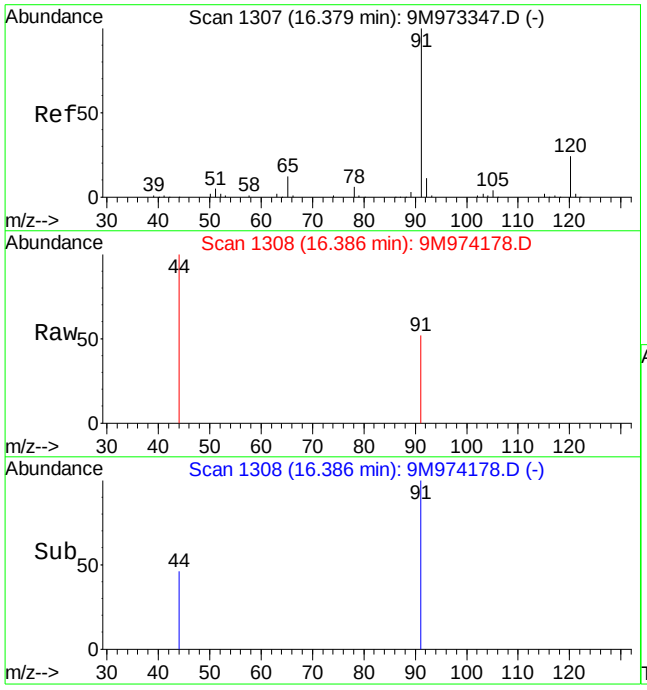

#82
n-Propylbenzene
Concen: Below Cal
RT: 16.39 min Scan# 1308
Delta R.T. 0.02 min
Lab File: 9M974178.D
Acq: 5 May 2016 19:10

Tgt Ion: 91 Resp: 403

Ion	Ratio	Lower	Upper
91	100		
120	0.0	14.7	34.3#

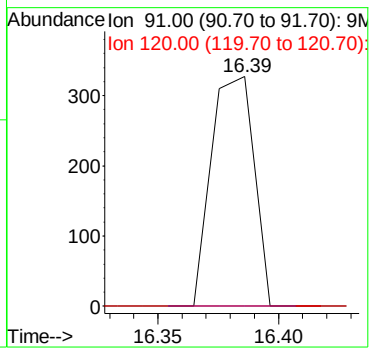

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050516\9M974179.D Vial: 17
Acq On : 5 May 2016 19:41 Operator: ADC
Sample : L16041580-12 A 8260 4.82g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 11:40:56 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	465195	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	343661	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	173606	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	120226	50.5704 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 101.14%		
43) 1,2-Dichloroethane-d4	10.44	65	140530	54.5945 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 109.18%		
58) Toluene-d8	12.81	98	442328	53.8762 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 107.76%		
79) p-Bromofluorobenzene	16.22	95	165710	55.0586 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 110.12%		

Target Compounds

					Qvalue
13) Acetone	6.40	43	8575	7.3849 ug/kg	95
20) Carbon Disulfide	7.44	76	4985	0.6544 ug/kg#	74
29) 2-Butanone	9.03	43	1370	1.0412 ug/kg#	56
36) Tetrahydrofuran	9.78	42	2738	2.9514 ug/kg#	69
56) Dimethyl Disulfide	12.81	94	11867	2.8088 ug/kg#	28
82) n-Propylbenzene	16.38	91	230	Below Cal #	51
89) 1,2,4-Trimethylbenzene	17.08	105	1678	Below Cal #	44

(#) = qualifier out of range (m) = manual integration
9M974179.D 8260SL.M Tue May 10 11:40:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050516\9M974179.D Vial: 17
Acq On : 5 May 2016 19:41 Operator: ADC
Sample : L16041580-12 A 8260 4.82g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 11:40 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

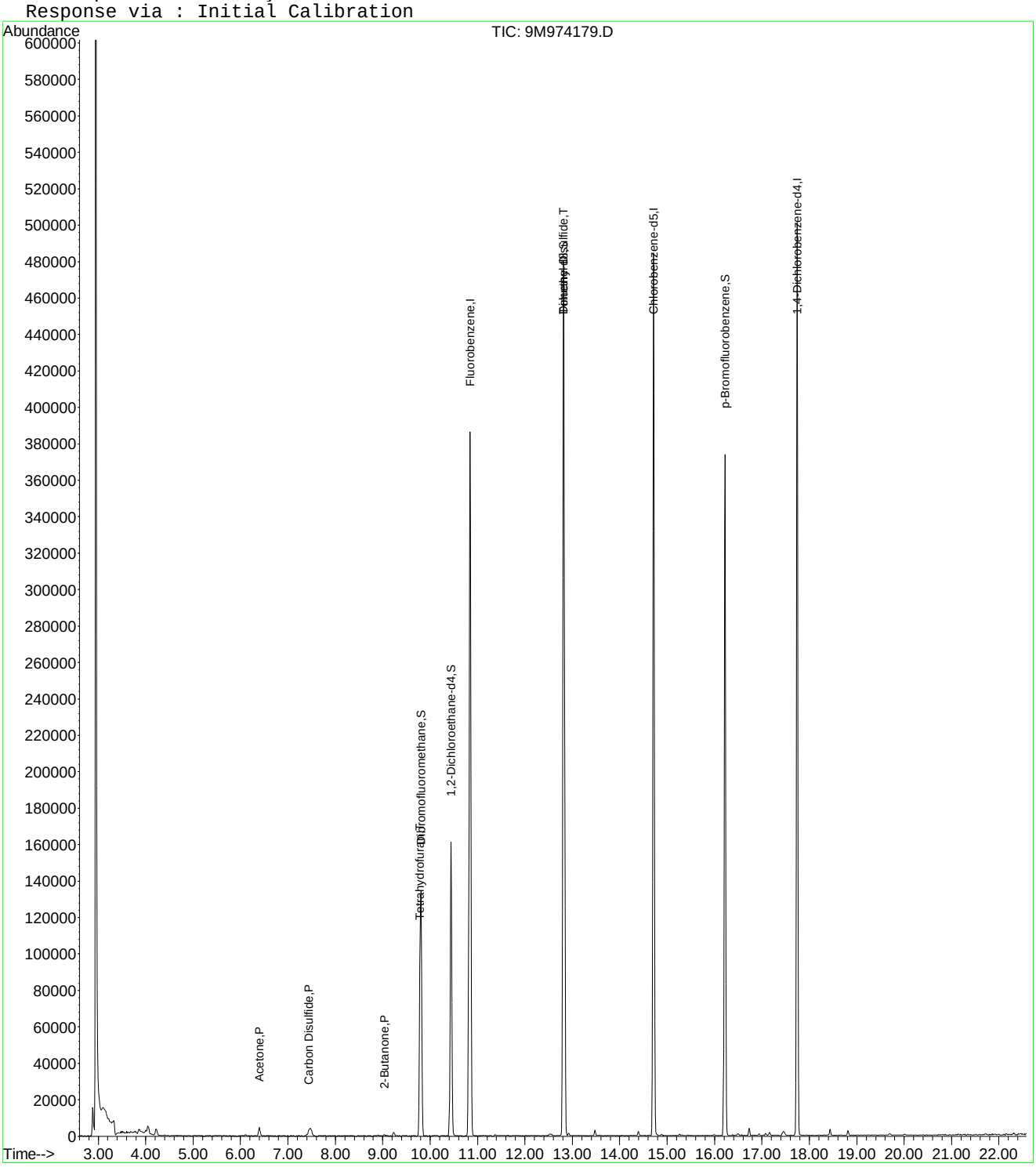

9M974179.D 8260SL.M Tue May 10 11:40:57 2016 Page 2

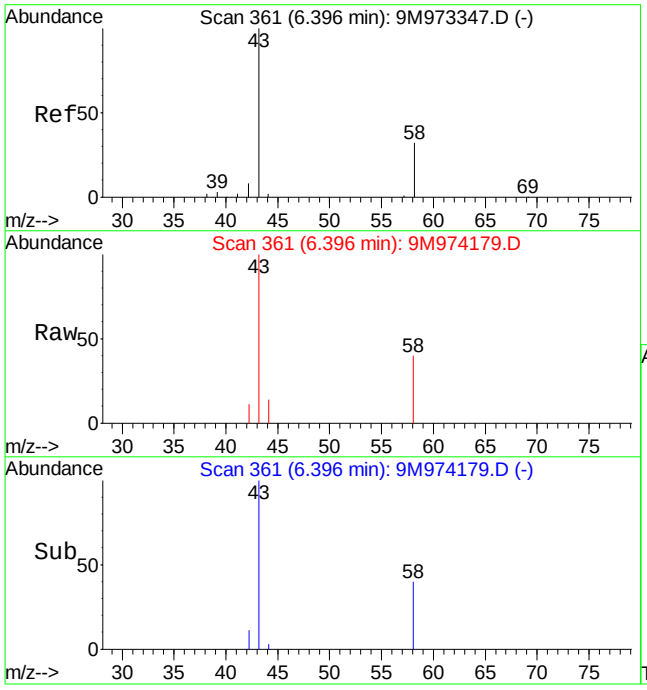

#13
Acetone
Concen: 7.38 ug/kg
RT: 6.40 min Scan# 361
Delta R.T. 0.01 min
Lab File: 9M974179.D
Acq: 5 May 2016 19:41

Tgt Ion: 43 Resp: 8575

Ion	Ratio	Lower	Upper
43	100		
58	36.7	20.2	47.2

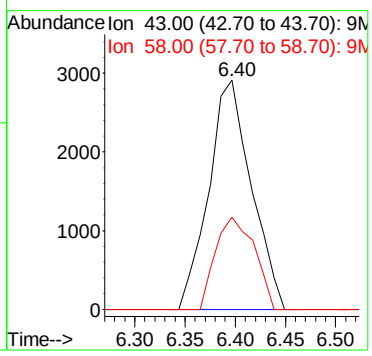

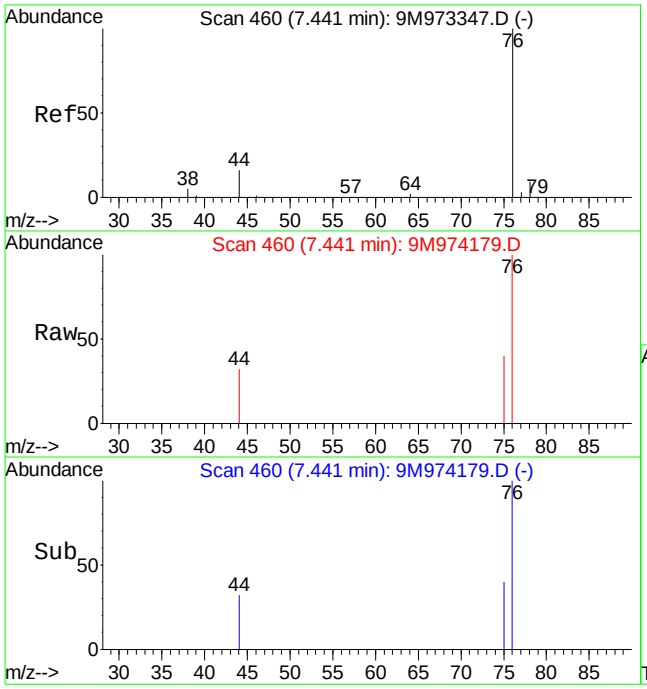

#20
Carbon Disulfide
Concen: 0.65 ug/kg
RT: 7.44 min Scan# 460
Delta R.T. 0.00 min
Lab File: 9M974179.D
Acq: 5 May 2016 19:41

Tgt Ion: 76 Resp: 4985

Ion	Ratio	Lower	Upper
76	100		
78	0.0	5.6	13.0#

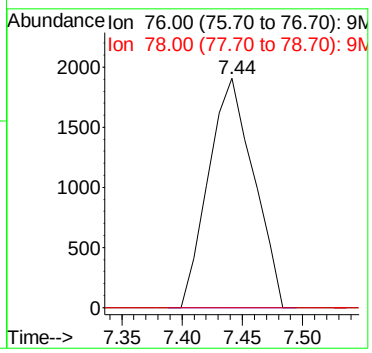

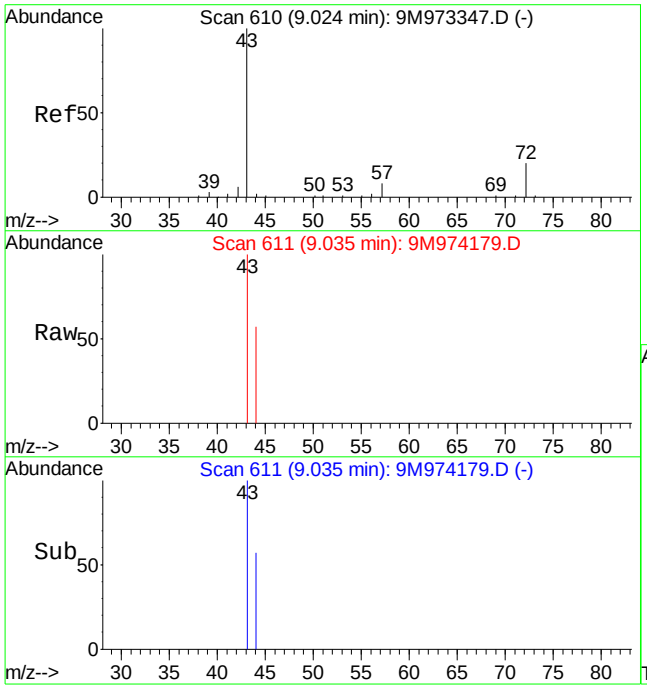

#29
2-Butanone
Concen: 1.04 ug/kg
RT: 9.03 min Scan# 611
Delta R.T. 0.02 min
Lab File: 9M974179.D
Acq: 5 May 2016 19:41

Tgt Ion: 43 Resp: 1370

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.1	28.1#

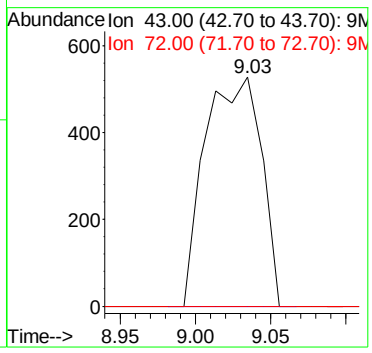

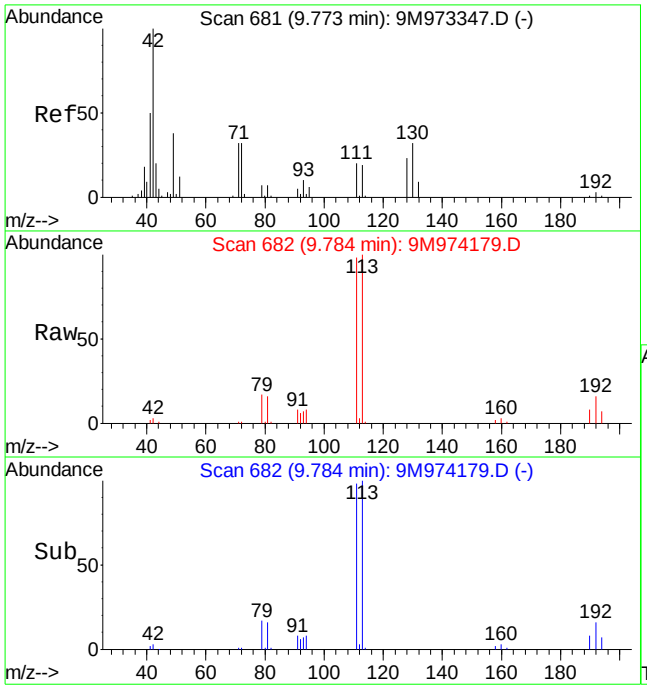

#36
Tetrahydrofuran
Concen: 2.95 ug/kg
RT: 9.78 min Scan# 682
Delta R.T. 0.02 min
Lab File: 9M974179.D
Acq: 5 May 2016 19:41

Tgt Ion: 42 Resp: 2738

Ion	Ratio	Lower	Upper
42	100		
72	17.8	20.8	48.6#
71	14.6	20.0	46.8#

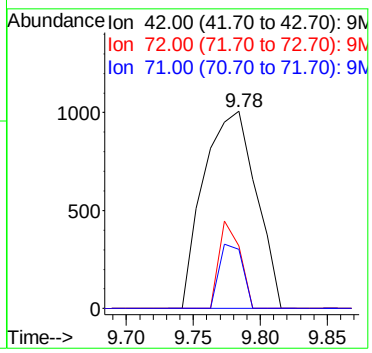

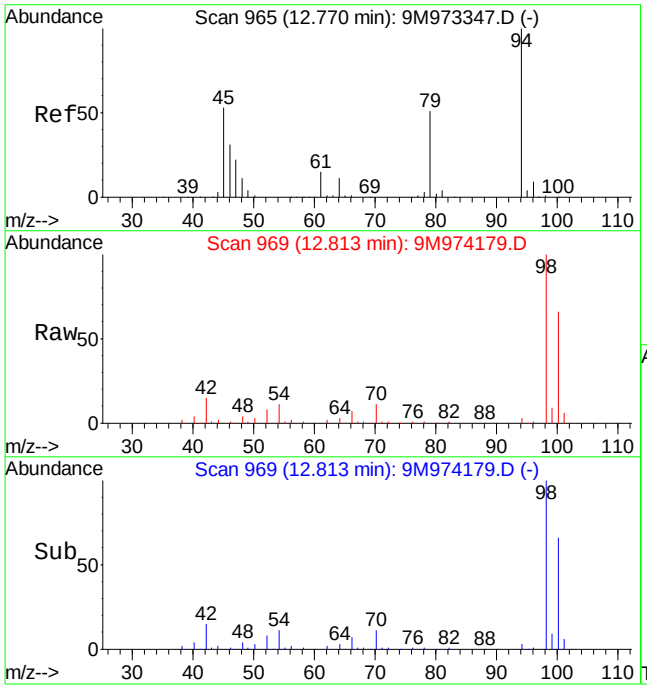

#56
Dimethyl Disulfide
Concen: 2.81 ug/kg
RT: 12.81 min Scan# 969
Delta R.T. 0.05 min
Lab File: 9M974179.D
Acq: 5 May 2016 19:41

Tgt Ion: 94 Resp: 11867

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.3	68.5#

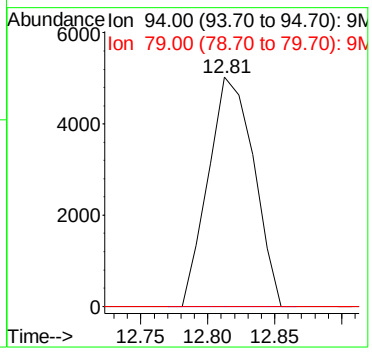

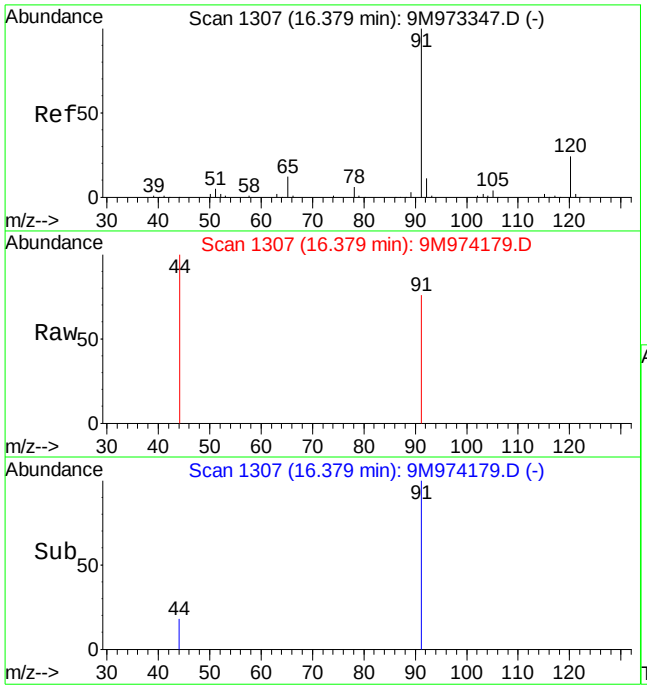

#82
n-Propylbenzene
Concen: Below Cal
RT: 16.38 min Scan# 1307
Delta R.T. 0.01 min
Lab File: 9M974179.D
Acq: 5 May 2016 19:41

Tgt Ion: 91 Resp: 230

Ion	Ratio	Lower	Upper
91	100		
120	0.0	14.7	34.3#

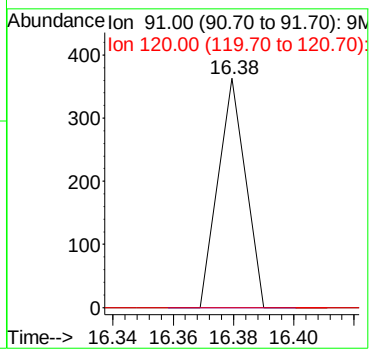

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050516\9M974180.D Vial: 18
Acq On : 5 May 2016 20:12 Operator: ADC
Sample : L16041580-13 A 8260 4.92g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 11:40:58 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	543599	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	393461	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	180181	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.81	111	140829	50.6928 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 101.38%		
43) 1,2-Dichloroethane-d4	10.44	65	165201	54.9223 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 109.84%		
58) Toluene-d8	12.82	98	506586	53.8932 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 107.78%		
79) p-Bromofluorobenzene	16.22	95	182862	58.5404 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 117.08%		

Target Compounds

					Qvalue
13) Acetone	6.39	43	10053	7.4186 ug/kg#	54
20) Carbon Disulfide	7.44	76	10294	1.1564 ug/kg	99
29) 2-Butanone	9.02	43	1588	1.0328 ug/kg#	56
36) Tetrahydrofuran	9.77	42	2660	2.4538 ug/kg#	68
56) Dimethyl Disulfide	12.81	94	13949	2.8254 ug/kg#	28
82) n-Propylbenzene	16.36	91	427	Below Cal #	51
89) 1,2,4-Trimethylbenzene	17.08	105	1285	Below Cal #	24

(#) = qualifier out of range (m) = manual integration
9M974180.D 8260SL.M Tue May 10 11:40:58 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050516\9M974180.D Vial: 18
Acq On : 5 May 2016 20:12 Operator: ADC
Sample : L16041580-13 A 8260 4.92g Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 11:40 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

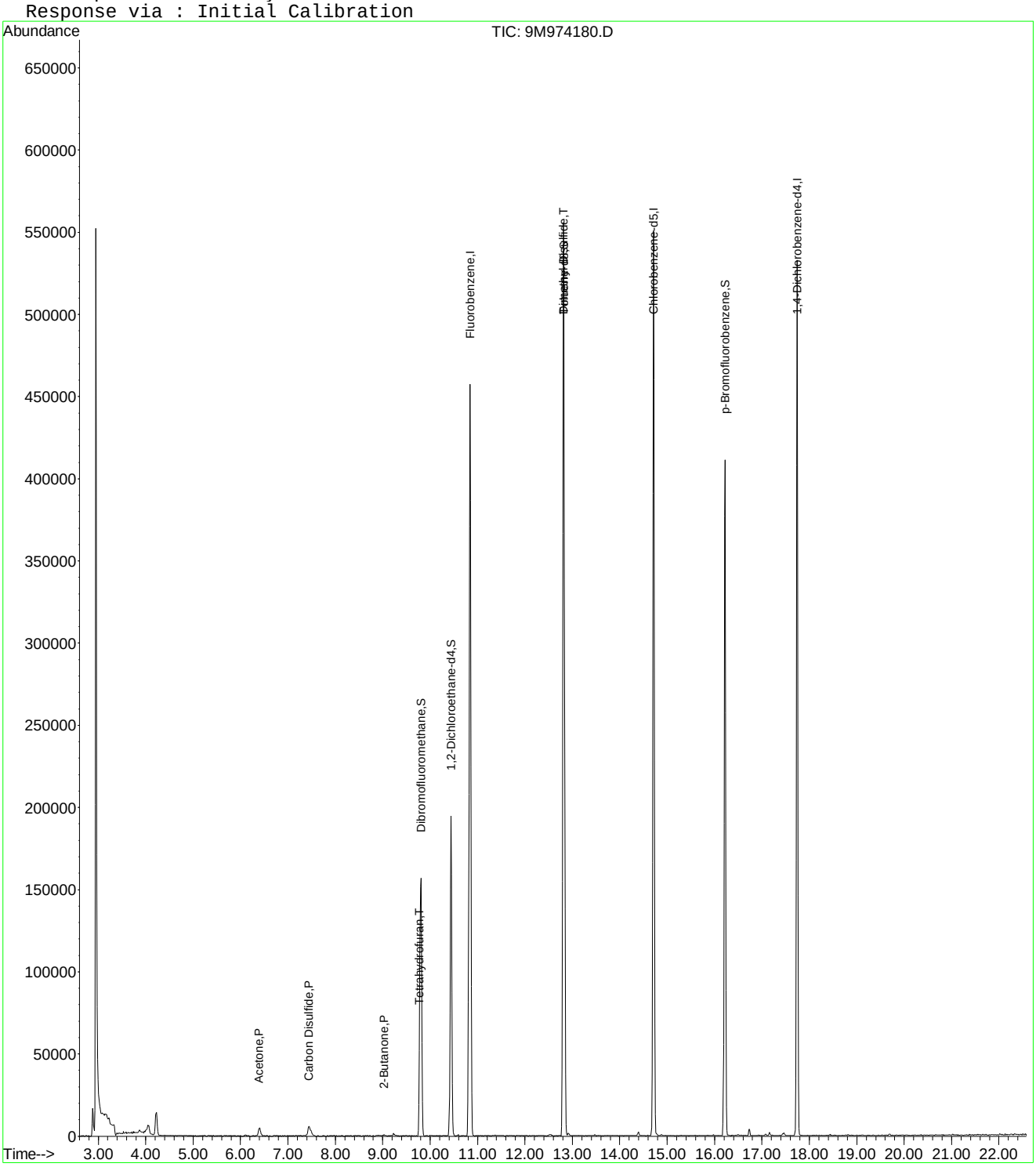

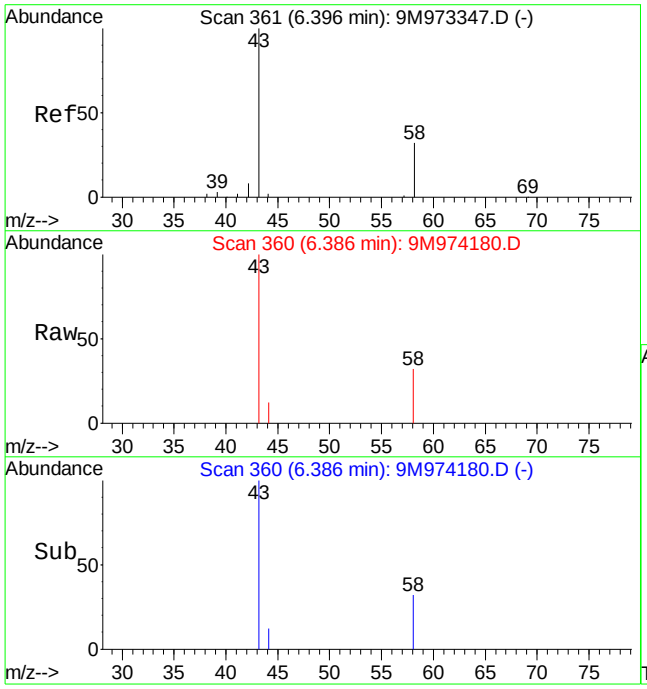

#13
Acetone
Concen: 7.42 ug/kg
RT: 6.39 min Scan# 360
Delta R.T. 0.00 min
Lab File: 9M974180.D
Acq: 5 May 2016 20:12

Tgt Ion: 43 Resp: 10053

Ion	Ratio	Lower	Upper
43	100		
58	59.9	20.2	47.2#

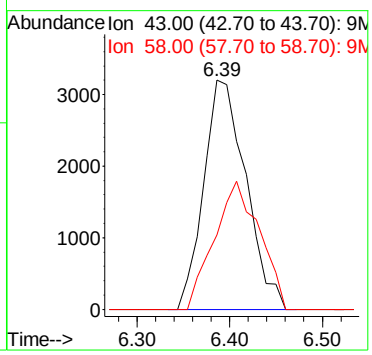

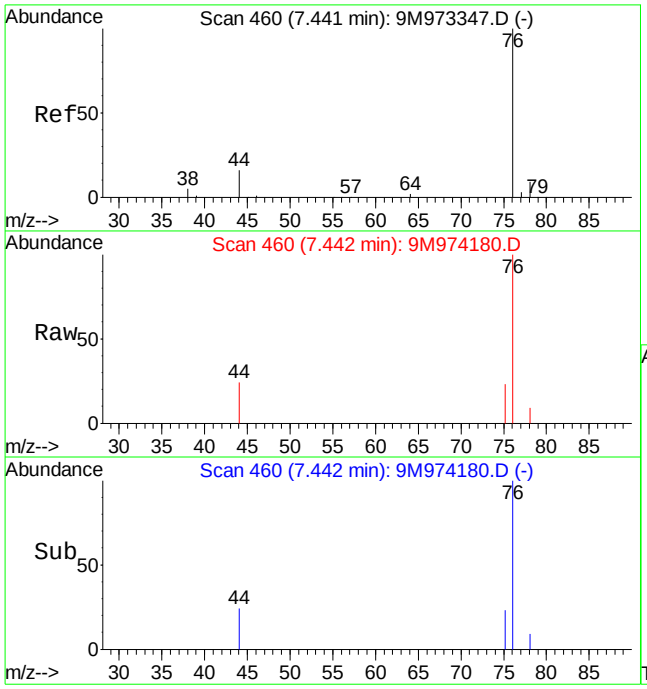

#20
Carbon Disulfide
Concen: 1.16 ug/kg
RT: 7.44 min Scan# 460
Delta R.T. 0.00 min
Lab File: 9M974180.D
Acq: 5 May 2016 20:12

Tgt Ion: 76 Resp: 10294

Ion	Ratio	Lower	Upper
76	100		
78	8.8	5.6	13.0

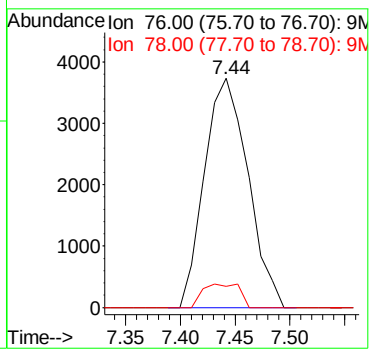

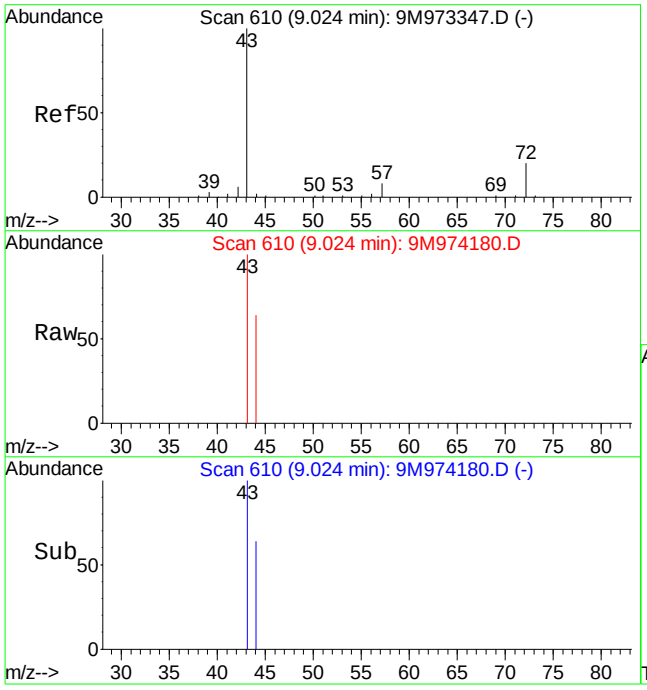

#29
2-Butanone
Concen: 1.03 ug/kg
RT: 9.02 min Scan# 610
Delta R.T. 0.01 min
Lab File: 9M974180.D
Acq: 5 May 2016 20:12

Tgt Ion: 43 Resp: 1588

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.1	28.1#

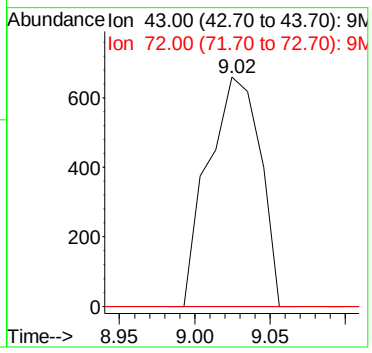

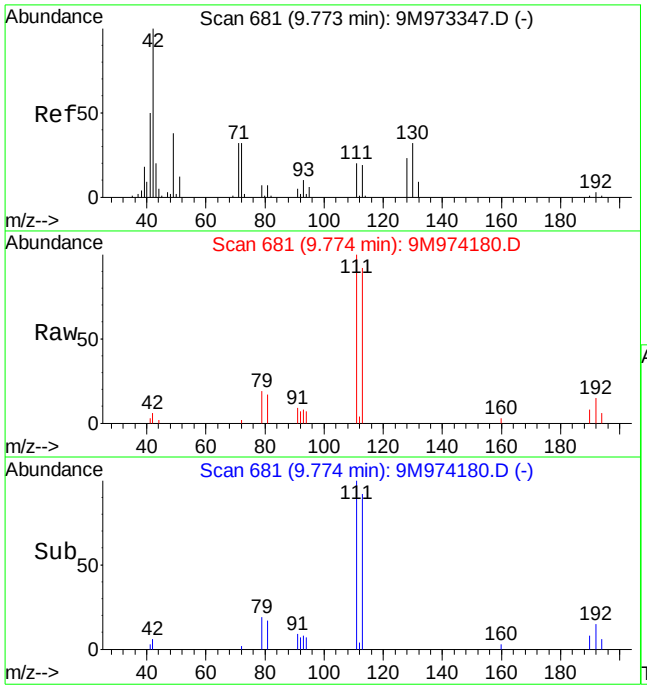

#36
Tetrahydrofuran
Concen: 2.45 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. 0.01 min
Lab File: 9M974180.D
Acq: 5 May 2016 20:12

Tgt Ion: 42 Resp: 2660

Ion	Ratio	Lower	Upper
42	100		
72	23.2	20.8	48.6
71	7.7	20.0	46.8#

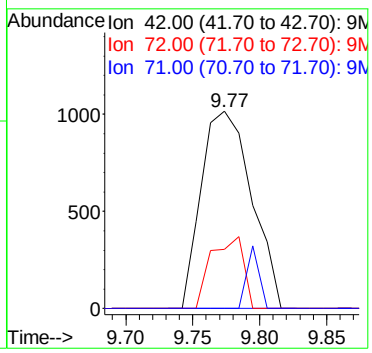

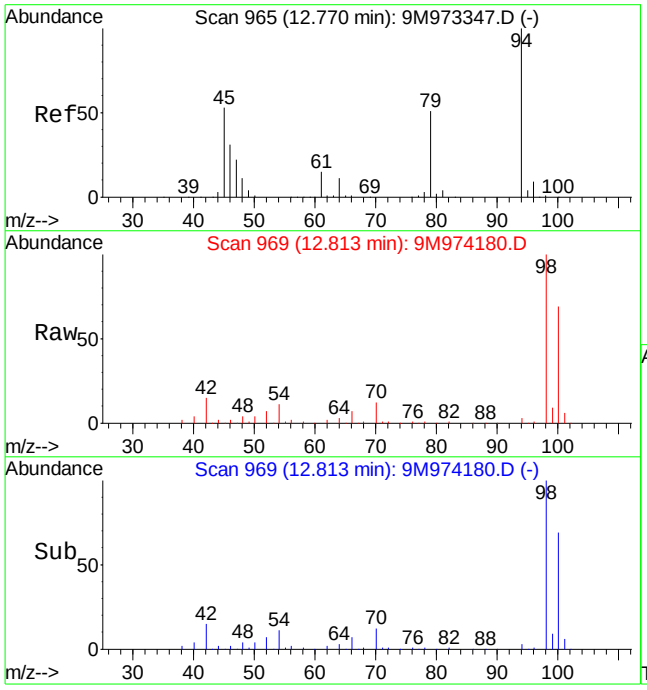

#56
Dimethyl Disulfide
Concen: 2.83 ug/kg
RT: 12.81 min Scan# 969
Delta R.T. 0.05 min
Lab File: 9M974180.D
Acq: 5 May 2016 20:12

Tgt Ion: 94 Resp: 13949

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.3	68.5#

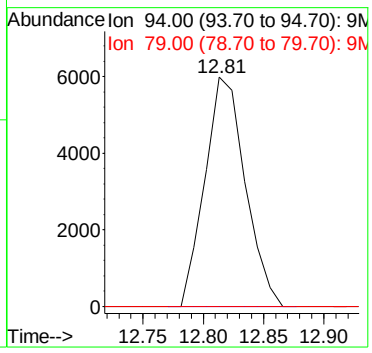

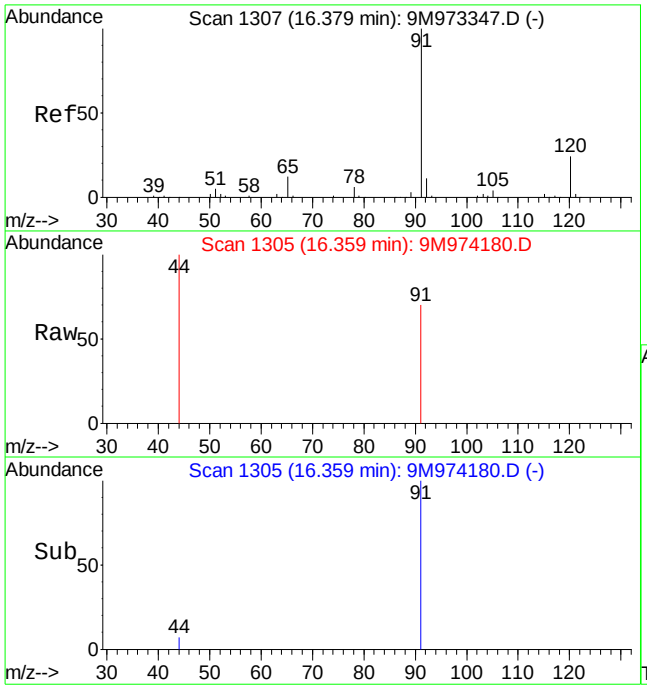

#82
n-Propylbenzene
Concen: Below Cal
RT: 16.36 min Scan# 1305
Delta R.T. -0.01 min
Lab File: 9M974180.D
Acq: 5 May 2016 20:12

Tgt Ion: 91 Resp: 427

Ion	Ratio	Lower	Upper
91	100		
120	0.0	14.7	34.3#

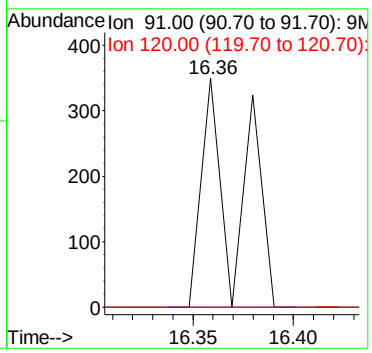

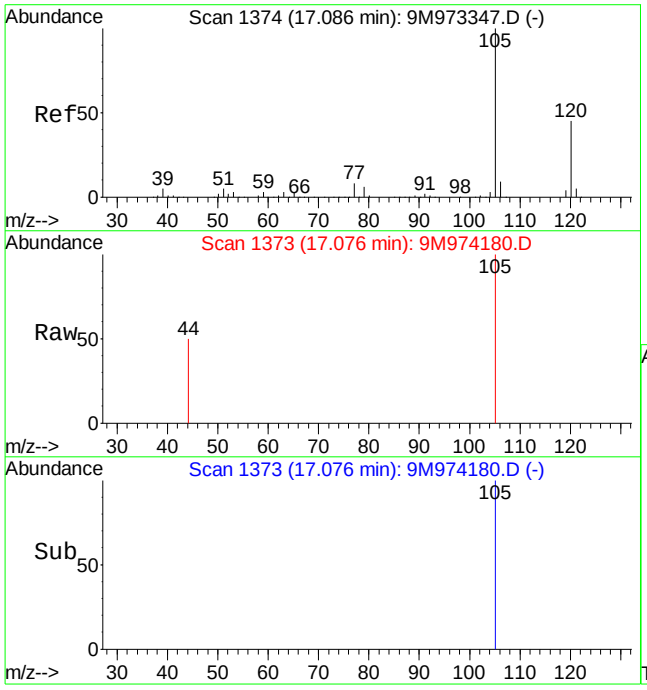

#89
1,2,4-Trimethylbenzene
Concen: Below Cal
RT: 17.08 min Scan# 1373
Delta R.T. 0.00 min
Lab File: 9M974180.D
Acq: 5 May 2016 20:12

Tgt Ion:105 Resp: 1285

Ion	Ratio	Lower	Upper
105	100		
120	0.0	32.9	76.7#

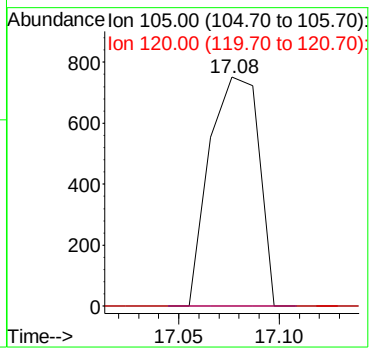

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\050716\8M412050.D Vial: 5
Acq On : 7 May 2016 13:31 Operator: TMB
Sample : L16041580-14 B EB 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 09 08:24:00 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	421419	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	337529	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	179259	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	133565	25.2421 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.96%		
43) 1,2-Dichloroethane-d4	10.30	65	173100	28.5946 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 114.36%		
58) Toluene-d8	12.68	98	429424	24.6046 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.40%		
80) p-Bromofluorobenzene	16.07	95	181626	24.7525 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.00%		

Target Compounds

					Qvalue
13) Acetone	6.25	43	9361	9.0482 ug/L #	64
33) Chloroform	9.38	83	3205	0.3221 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412050.D 8260WTR.M Mon May 09 08:24:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\050716\8M412050.D Vial: 5
Acq On : 7 May 2016 13:31 Operator: TMB
Sample : L16041580-14 B EB 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 9 8:24 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

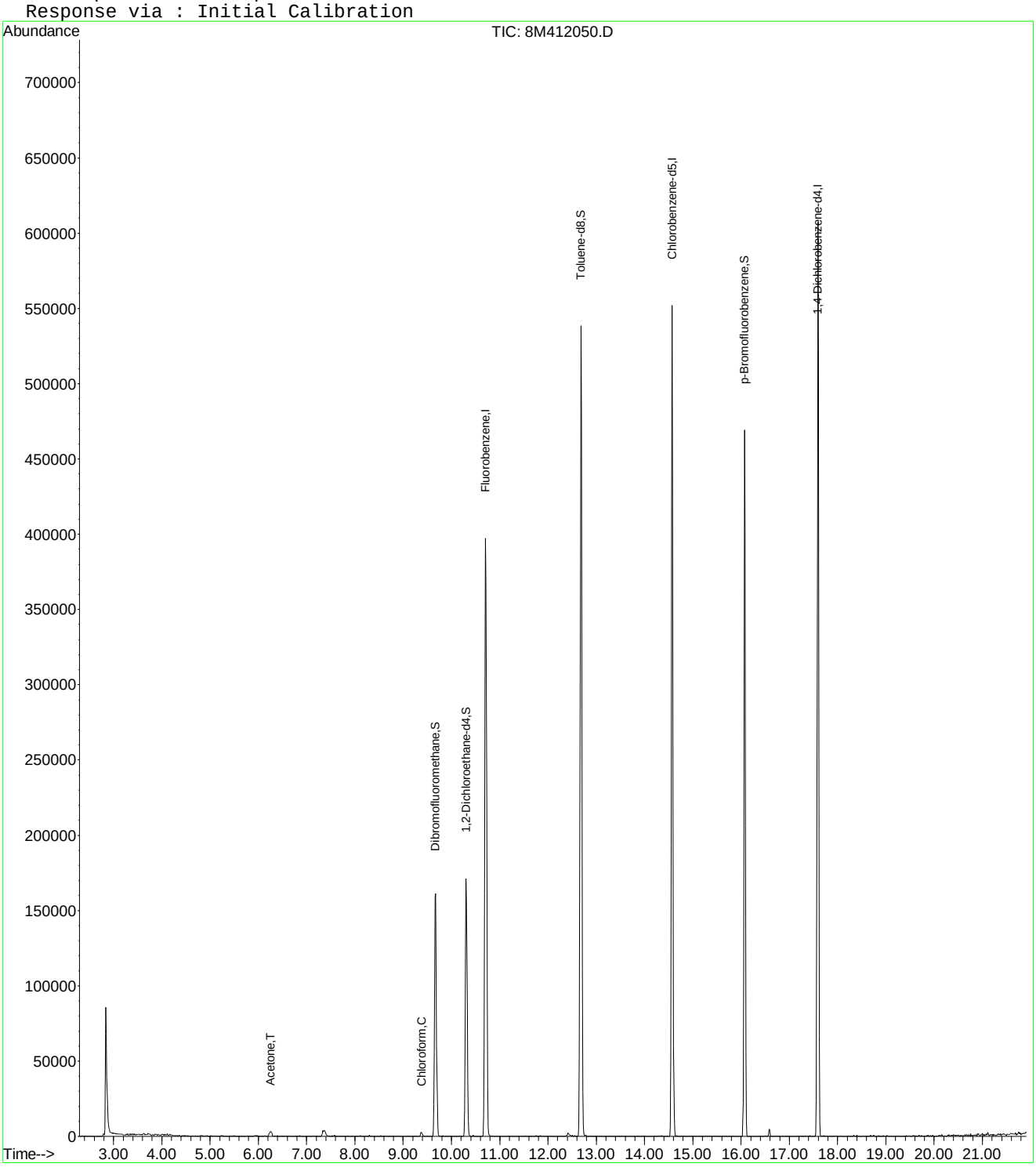

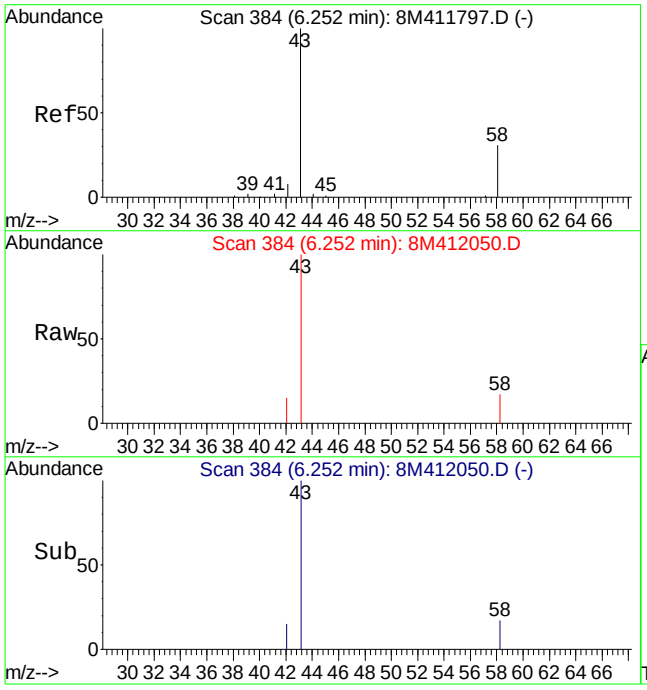

#13
Acetone
Concen: 9.05 ug/L
RT: 6.25 min Scan# 384
Delta R.T. 0.00 min
Lab File: 8M412050.D
Acq: 7 May 2016 13:31

Tgt Ion: 43 Resp: 9361

Ion	Ratio	Lower	Upper
43	100		
58	8.3	16.2	37.8#

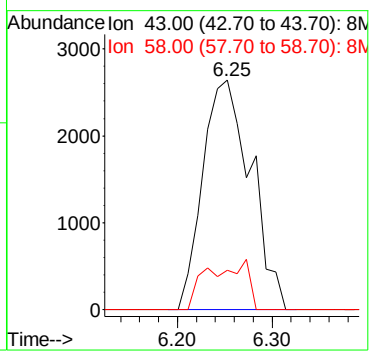

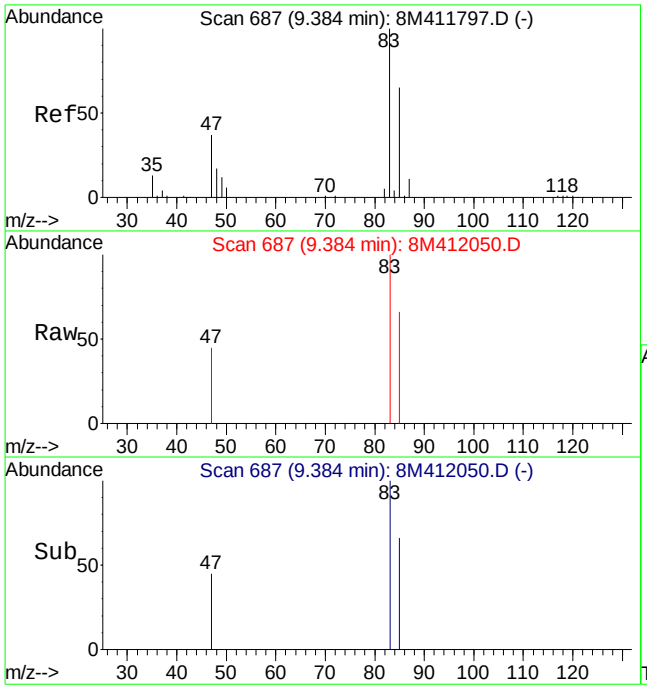

#33
Chloroform
Concen: 0.32 ug/L
RT: 9.38 min Scan# 687
Delta R.T. 0.00 min
Lab File: 8M412050.D
Acq: 7 May 2016 13:31

Tgt Ion: 83 Resp: 3205

Ion	Ratio	Lower	Upper
83	100		
85	65.5	38.8	90.6

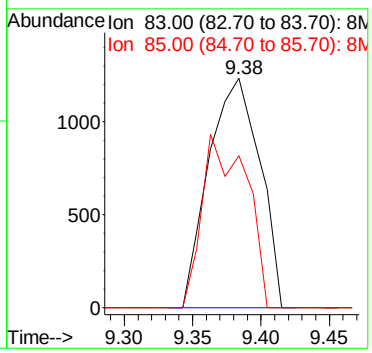

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\042416\8M411682.D Vial: 2
Acq On : 24 Apr 2016 17:10 Operator: JDS
Sample : WG566154-02 5ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 24 17:32:47 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-13-16 HPMS 8
Last Update : Thu Apr 14 09:40:40 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	646930	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	464810	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	245771	25.00 ug/L	-0.01
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	159052	24.0456 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.20%		
43) 1,2-Dichloroethane-d4	10.30	65	172894	24.8956 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.60%		
58) Toluene-d8	12.68	98	551733	23.7203 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 94.88%		
80) p-Bromofluorobenzene	16.07	95	218440	22.7488 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 91.00%		
Target Compounds					Qvalue
36) Tetrahydrofuran	9.63	42	5896	3.9174 ug/L #	68

(#) = qualifier out of range (m) = manual integration
8M411682.D 8260WT.M Sun Apr 24 17:32:47 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\042416\8M411682.D Vial: 2
Acq On : 24 Apr 2016 17:10 Operator: JDS
Sample : WG566154-02 5ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 24 17:32 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-13-16 HPMS 8
Last Update : Thu Apr 14 09:40:40 2016
Response via : Initial Calibration

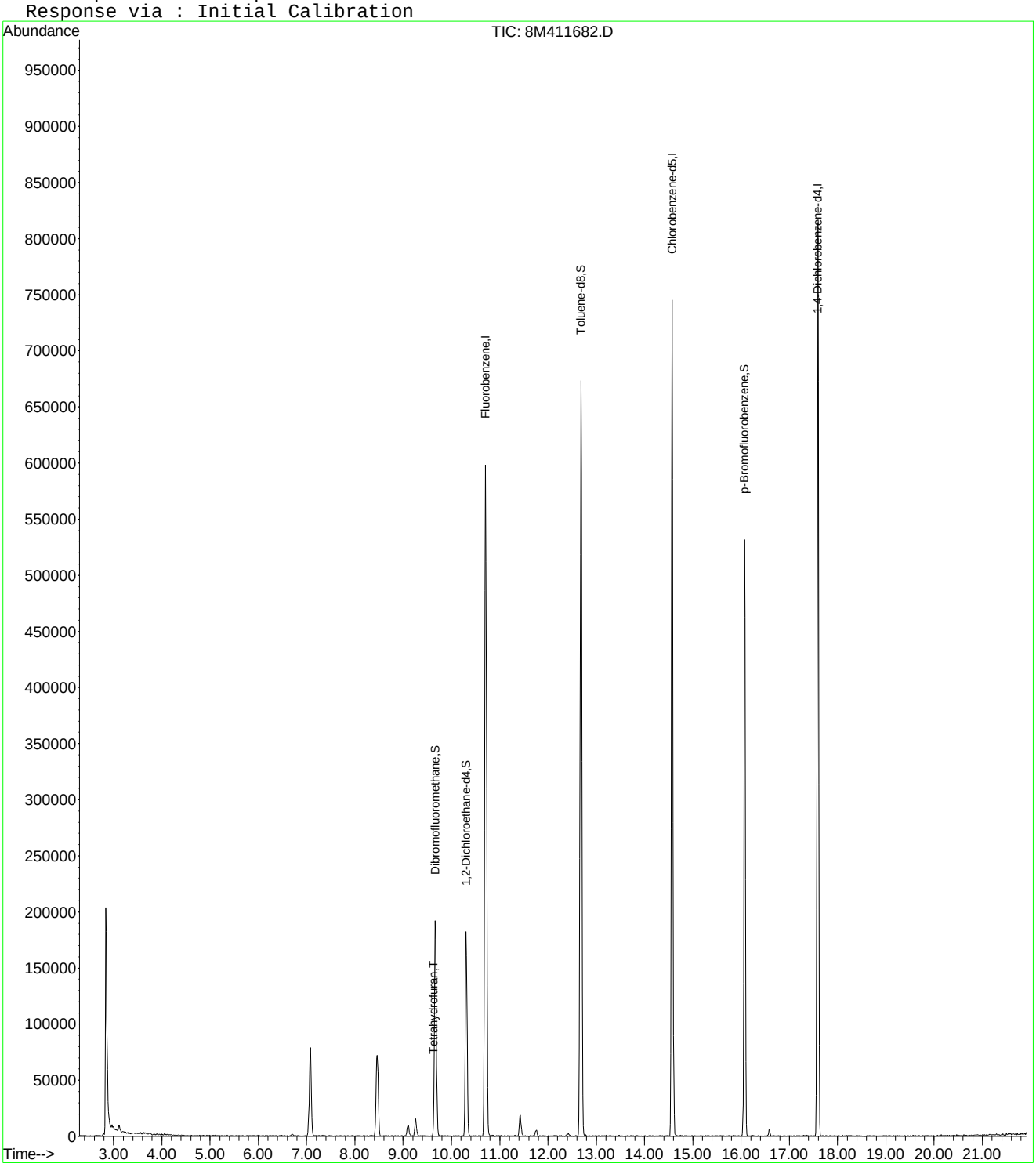

8M411682.D 8260WT.M Sun Apr 24 17:32:47 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411682.D Vial: 2
Acq On : 24 Apr 2016 17:10 Operator: JDS
Sample : WG566154-02 5ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:24:17 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Tue Oct 06 11:55:21 2015
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	646930	25.00 ug/L	-0.01
11) Chlorobenzene-d5	14.57	117	464810	25.00 ug/L	-0.01
12) 1,4-Dichlorobenzene-d4	17.59	152	245771	25.00 ug/L	-0.01

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
8M411682.D A9FOOWTR.M Wed Apr 27 16:24:17 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411682.D Vial: 2
Acq On : 24 Apr 2016 17:10 Operator: JDS
Sample : WG566154-02 5ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:24 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:23:52 2016
Response via : Initial Calibration

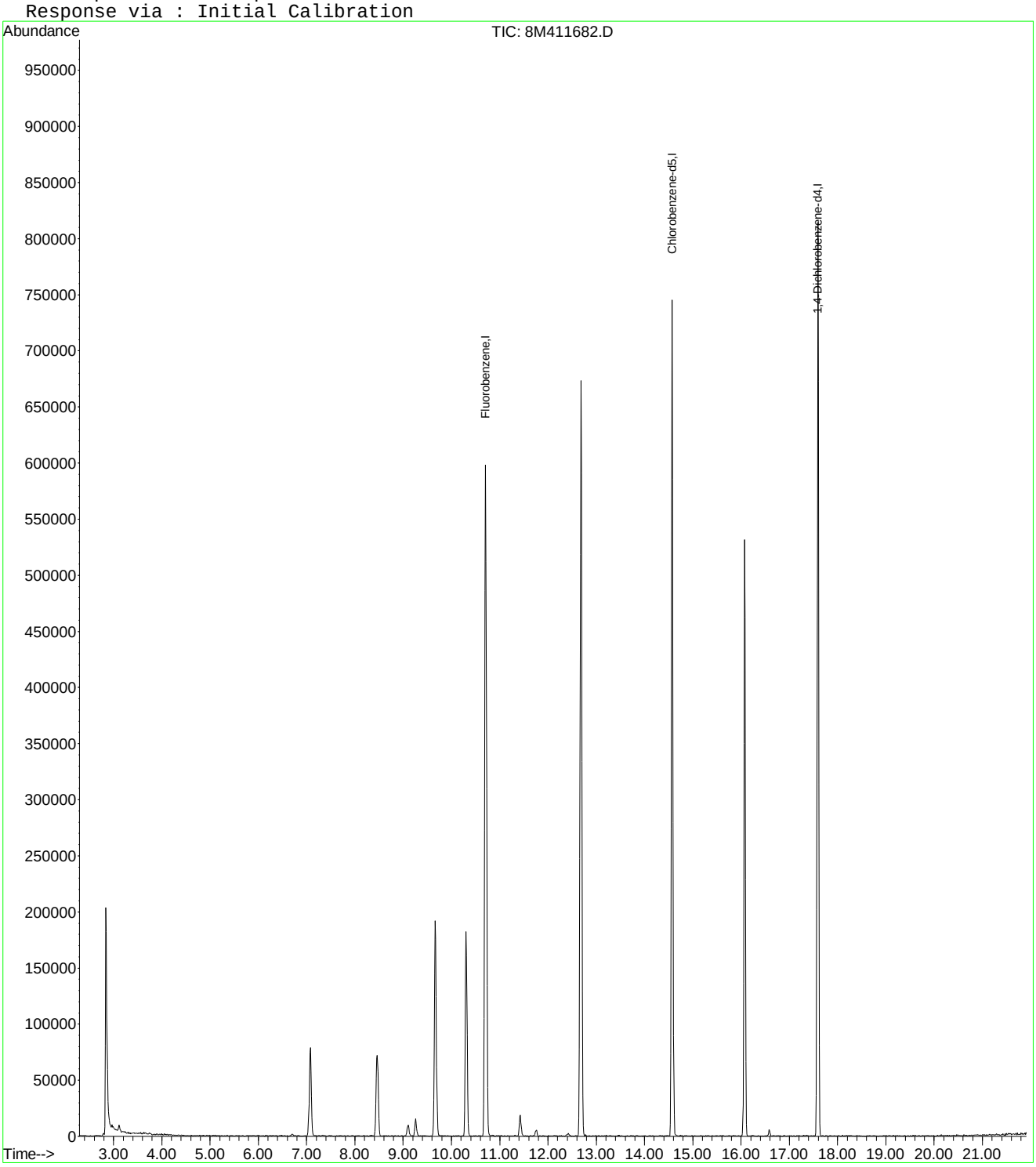

8M411682.D A9FOOWTR.M Wed Apr 27 16:24:17 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411682.D Vial: 2
Acq On : 24 Apr 2016 17:10 Operator: JDS
Sample : WG566154-02 5ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:35:43 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:34:16 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	646930	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	464810	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	245771	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	1890	3.4902 ug/L #	1
3) 3-Chloro-1-propene	7.08	41	90551	4.4265 ug/L	94
4) 2-Chloro-1,3-butadiene	8.45	53	81221	4.3223 ug/L	79
5) Ethyl Acetate	9.11	43	19443	3.4878 ug/L	89
6) Methacrylonitrile	9.26	67	4737	Below Cal #	44
7) Isobutyl Alcohol	9.11	43	19443	147.9172 ug/L #	12
9) Methyl methacrylate	11.43	41	17036	Below Cal	79
10) 2-Nitropropane	11.74	43	5104	2.7455 ug/L	90
13) Cyclohexanone	16.08	55	458	2.8191 ug/L #	43

(#) = qualifier out of range (m) = manual integration
8M411682.D A9FOOWTR.M Wed Apr 27 16:35:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411682.D Vial: 2
Acq On : 24 Apr 2016 17:10 Operator: JDS
Sample : WG566154-02 5ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:35 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:34:16 2016
Response via : Initial Calibration

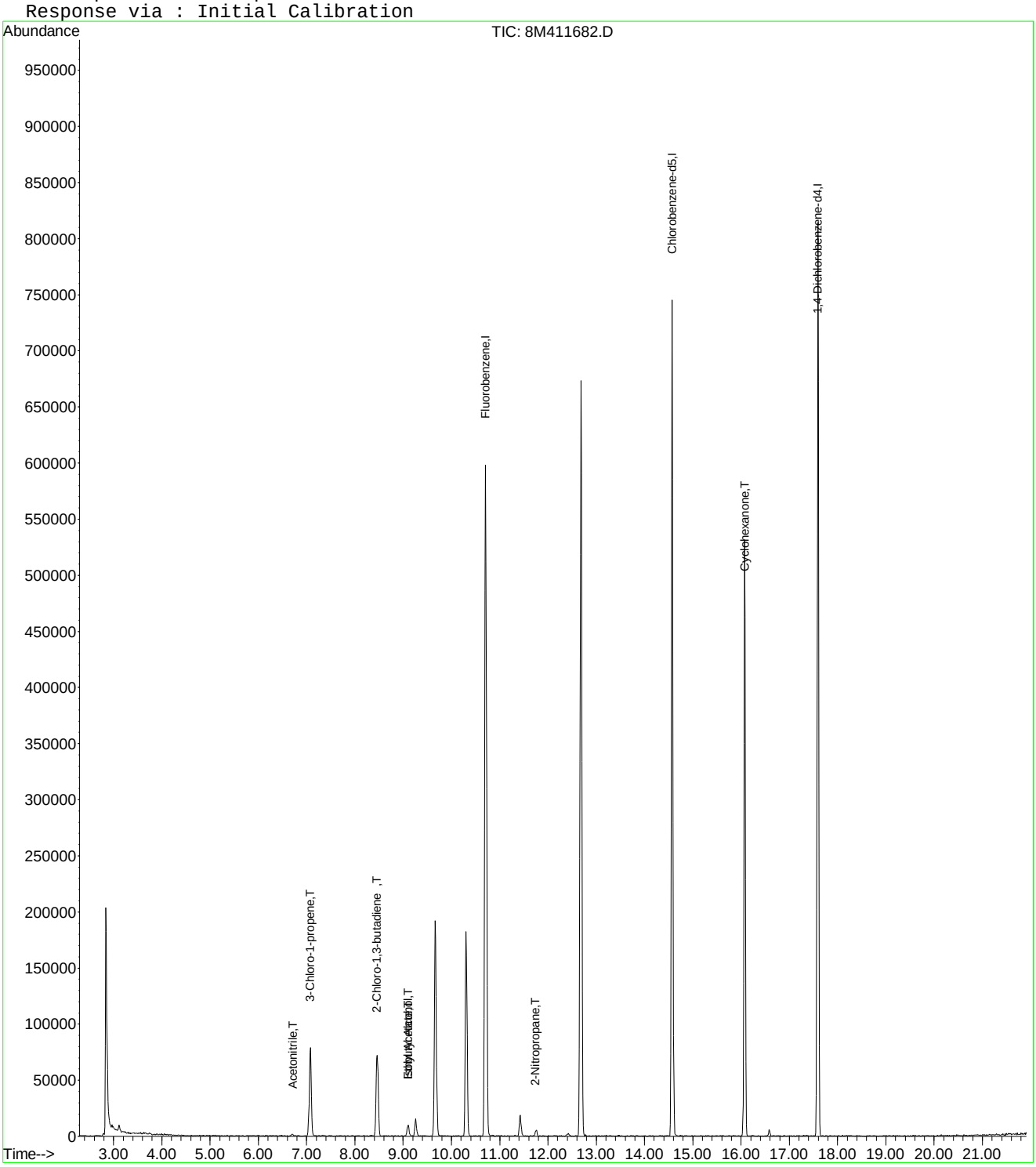

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411682.D Vial: 2
Acq On : 24 Apr 2016 17:10 Operator: JDS
Sample : WG566154-02 5ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:37:31 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:36:22 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	646930	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	464810	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	245771	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	1890	3.4902 ug/L #	1
3) 3-Chloro-1-propene	7.08	41	90551	4.4265 ug/L	94
4) 2-Chloro-1,3-butadiene	8.45	53	81221	4.3223 ug/L	79
5) Ethyl Acetate	9.11	43	19443	3.4878 ug/L	89
6) Methacrylonitrile	9.26	67	4737	4.1475 ug/L #	44
7) Isobutyl Alcohol	9.11	43	19443	147.9172 ug/L #	12
9) Methyl methacrylate	11.43	41	17036	4.3620 ug/L	79
10) 2-Nitropropane	11.74	43	5104	2.7455 ug/L	90
13) Cyclohexanone	16.08	55	458	2.8191 ug/L #	43

(#) = qualifier out of range (m) = manual integration
8M411682.D A9FOOWTR.M Wed Apr 27 16:37:31 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411682.D Vial: 2
Acq On : 24 Apr 2016 17:10 Operator: JDS
Sample : WG566154-02 5ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:37 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:36:22 2016
Response via : Initial Calibration

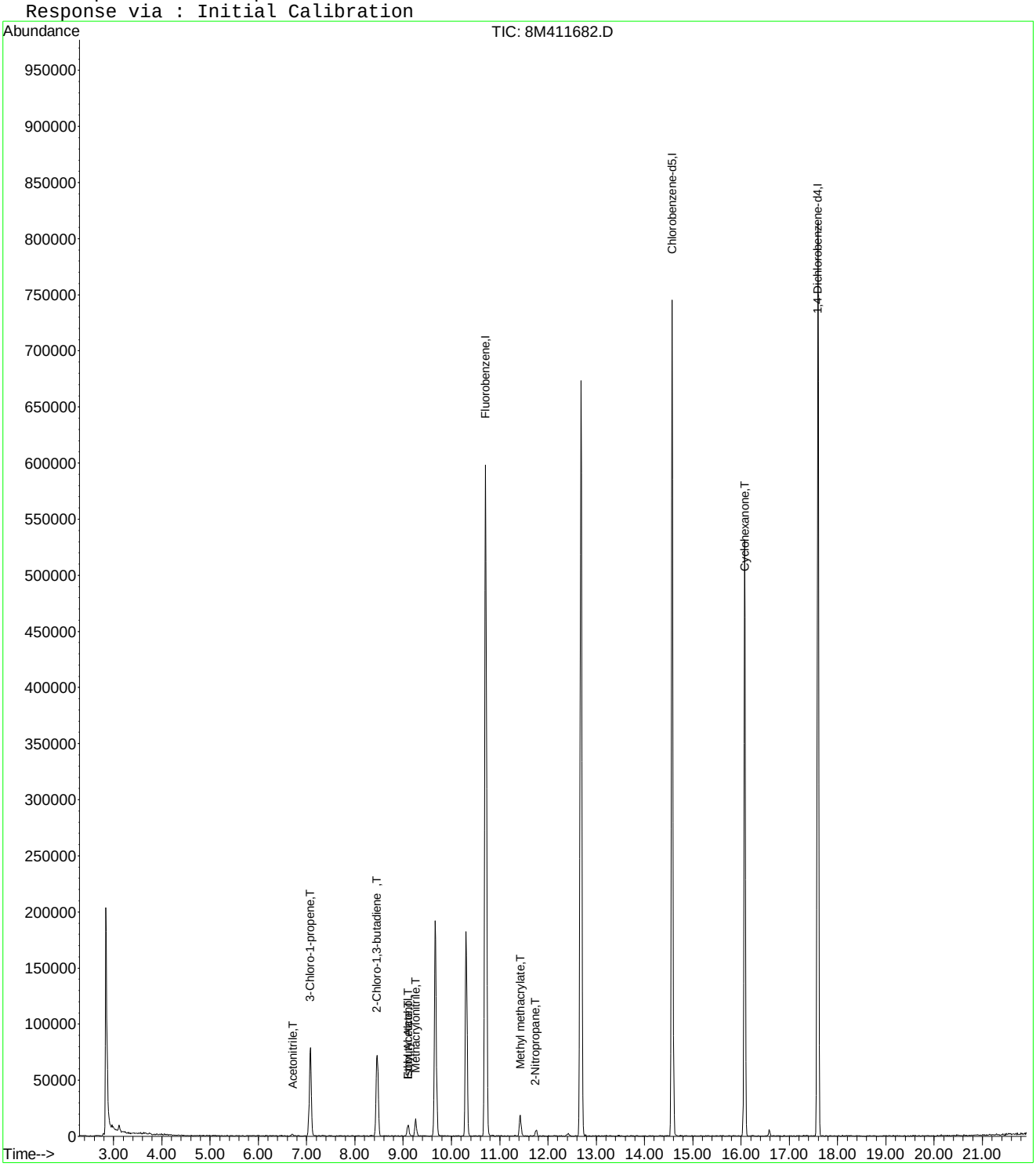

8M411682.D A9FOOWTR.M Wed Apr 27 16:37:31 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411682.D Vial: 2
Acq On : 24 Apr 2016 17:10 Operator: JDS
Sample : WG566154-02 5ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:39:38 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 04-24-16 HPMS8
Last Update : Wed Apr 27 16:38:22 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	646930	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	464810	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	245771	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	1890	3.4902 ug/L #	1
3) 3-Chloro-1-propene	7.08	41	90551	4.4265 ug/L	94
4) 2-Chloro-1,3-butadiene	8.45	53	81221	4.3223 ug/L	79
5) Ethyl Acetate	9.11	43	19443	3.4878 ug/L	89
6) Methacrylonitrile	9.26	67	4737	4.1475 ug/L #	44
7) Isobutyl Alcohol	9.11	43	19443	147.9172 ug/L #	12
9) Methyl methacrylate	11.43	41	17036	4.3620 ug/L	79
10) 2-Nitropropane	11.74	43	5104	2.7455 ug/L	90
13) Cyclohexanone	16.08	55	458	2.8191 ug/L #	43

(#) = qualifier out of range (m) = manual integration
8M411682.D A9FOOWTR.M Wed Apr 27 16:39:38 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411682.D Vial: 2
Acq On : 24 Apr 2016 17:10 Operator: JDS
Sample : WG566154-02 5ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:39 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 04-24-16 HPMS8
Last Update : Wed Apr 27 16:38:22 2016
Response via : Initial Calibration

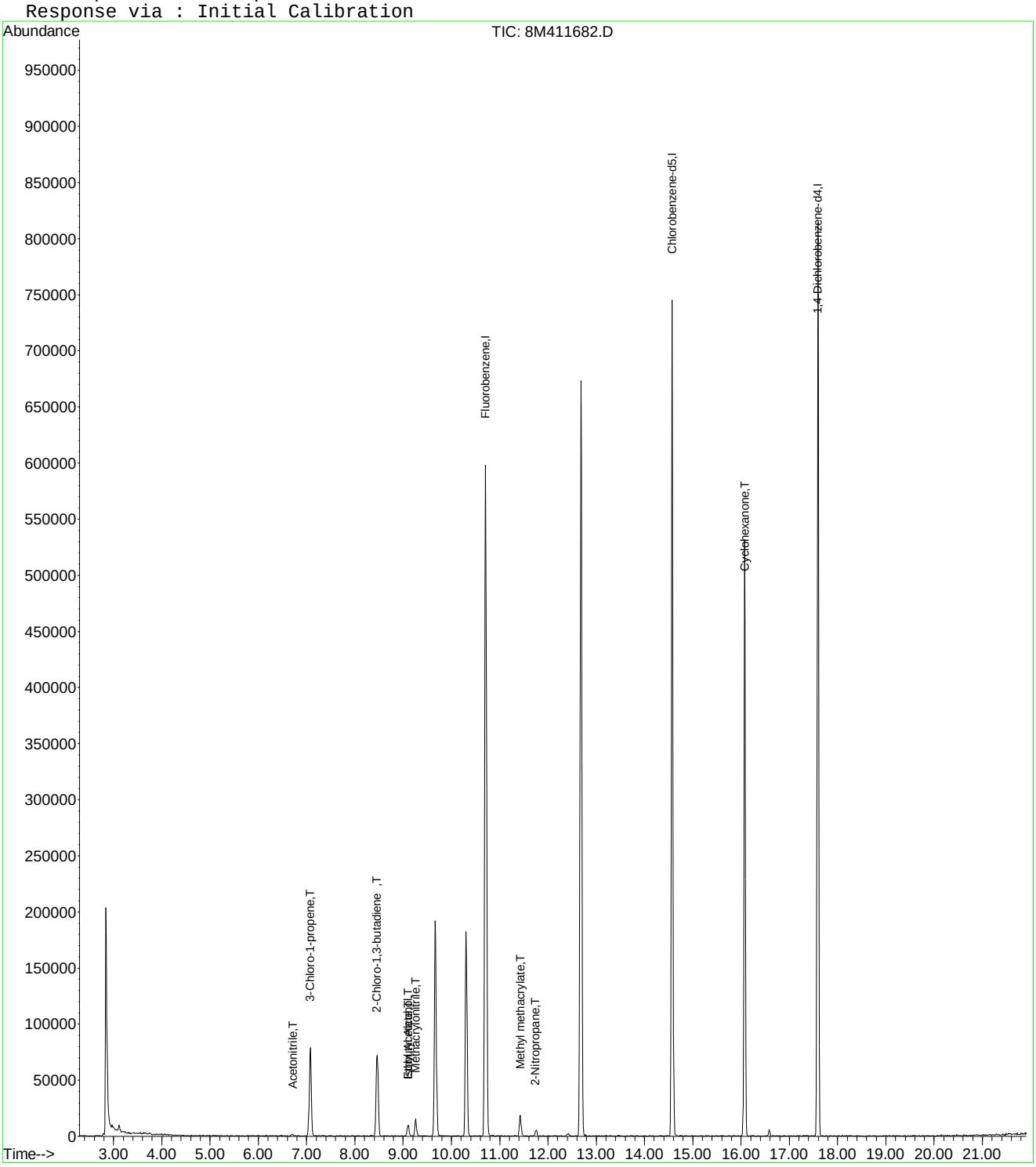

8M411682.D A9FOOWTR.M Wed Apr 27 16:39:38 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\042416\8M411682.D Vial: 2
Acq On : 24 Apr 2016 17:10 Operator: JDS
Sample : WG566154-02 5ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 04-24-16 HPMS8
Last Update : Wed Apr 27 16:38:22 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	5.0000	3.4902	30.2	100	0.02
3	T	3-Chloro-1-propene	5.0000	4.4265	11.5	100	0.00
4	T	2-Chloro-1,3-butadiene	5.0000	4.3223	13.6	100	0.00
5	T	Ethyl Acetate	5.0000	3.4878	30.2	100	0.01
6	T	Methacrylonitrile	5.0000	4.1475	17.0	100	0.00
7	T	Isobutyl Alcohol	-1.0000	147.9172	0.0	100	-0.16
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.21#
9	T	Methyl methacrylate	5.0000	4.3620	12.8	100	0.01
10	T	2-Nitropropane	-1.0000	2.7455	0.0	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	2.8191	0.0	100	0.25

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M411682.D A9FOOWTR.M Wed Apr 27 16:39:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\042416\8M411683.D Vial: 3
Acq On : 24 Apr 2016 17:39 Operator: JDS
Sample : WG566154-03 20ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 24 18:01:53 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-13-16 HPMS 8
Last Update : Thu Apr 14 09:40:40 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	513778	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	386200	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	211054	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	136680	26.0186 ug/L	0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.08%		
43) 1,2-Dichloroethane-d4	10.30	65	157620	28.5783 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 114.32%		
58) Toluene-d8	12.68	98	444418	22.9956 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 92.00%		
80) p-Bromofluorobenzene	16.07	95	188016	22.8012 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 91.20%		

Target Compounds					Qvalue
36) Tetrahydrofuran	9.63	42	2184	1.8271 ug/L #	41

(#) = qualifier out of range (m) = manual integration
8M411683.D 8260WT.M Sun Apr 24 18:01:53 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\042416\8M411683.D Vial: 3
Acq On : 24 Apr 2016 17:39 Operator: JDS
Sample : WG566154-03 20ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 24 18:01 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-13-16 HPMS 8
Last Update : Thu Apr 14 09:40:40 2016
Response via : Initial Calibration

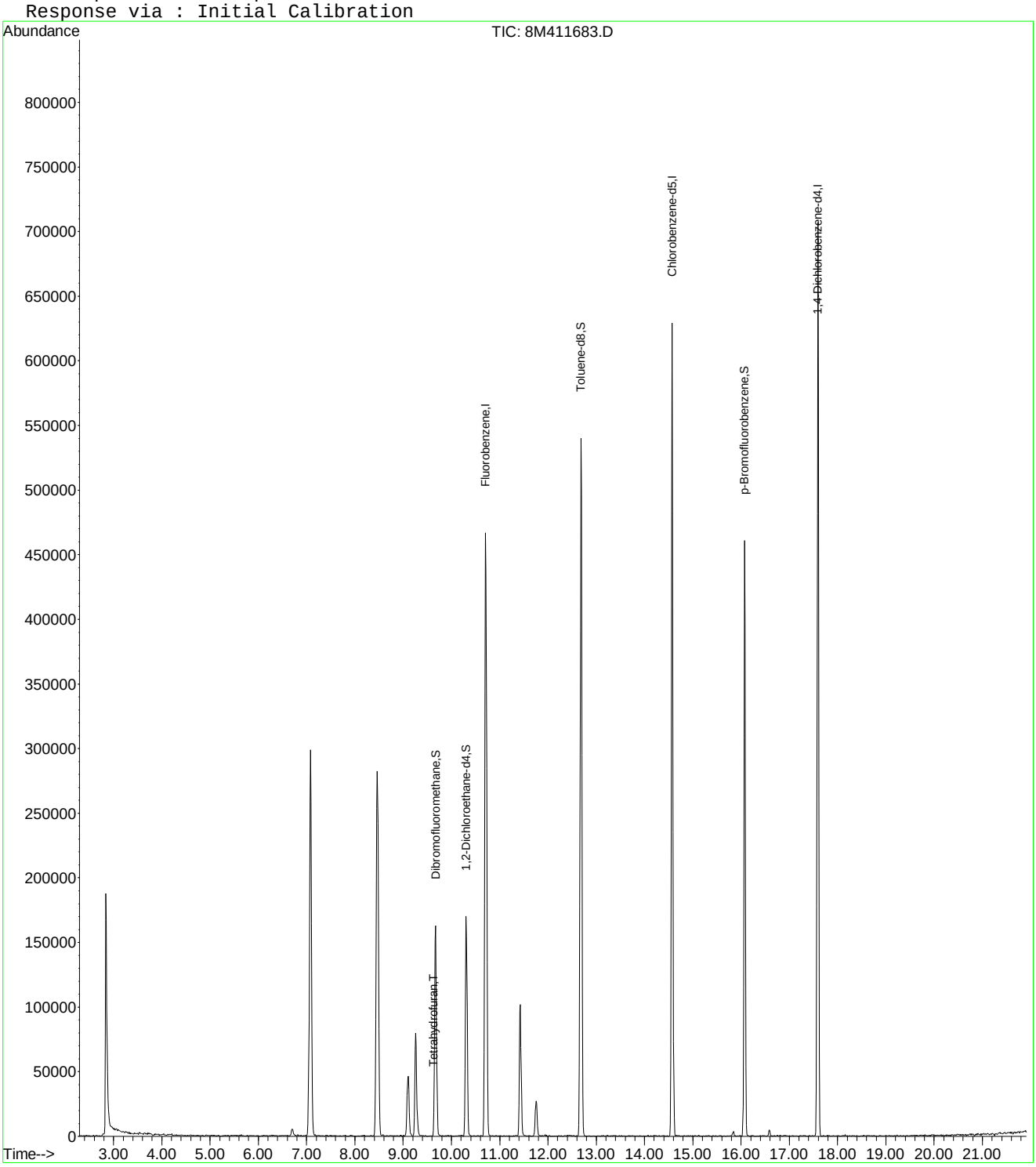

8M411683.D 8260WT.M Sun Apr 24 18:01:53 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411683.D Vial: 3
Acq On : 24 Apr 2016 17:39 Operator: JDS
Sample : WG566154-03 20ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:24:18 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:23:52 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	513778	25.00 ug/L	-0.01
11) Chlorobenzene-d5	14.57	117	386200	25.00 ug/L	-0.01
12) 1,4-Dichlorobenzene-d4	17.59	152	211054	25.00 ug/L	-0.01

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
8M411683.D A9FOOWTR.M Wed Apr 27 16:24:18 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411683.D Vial: 3
Acq On : 24 Apr 2016 17:39 Operator: JDS
Sample : WG566154-03 20ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:24 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:23:52 2016
Response via : Initial Calibration

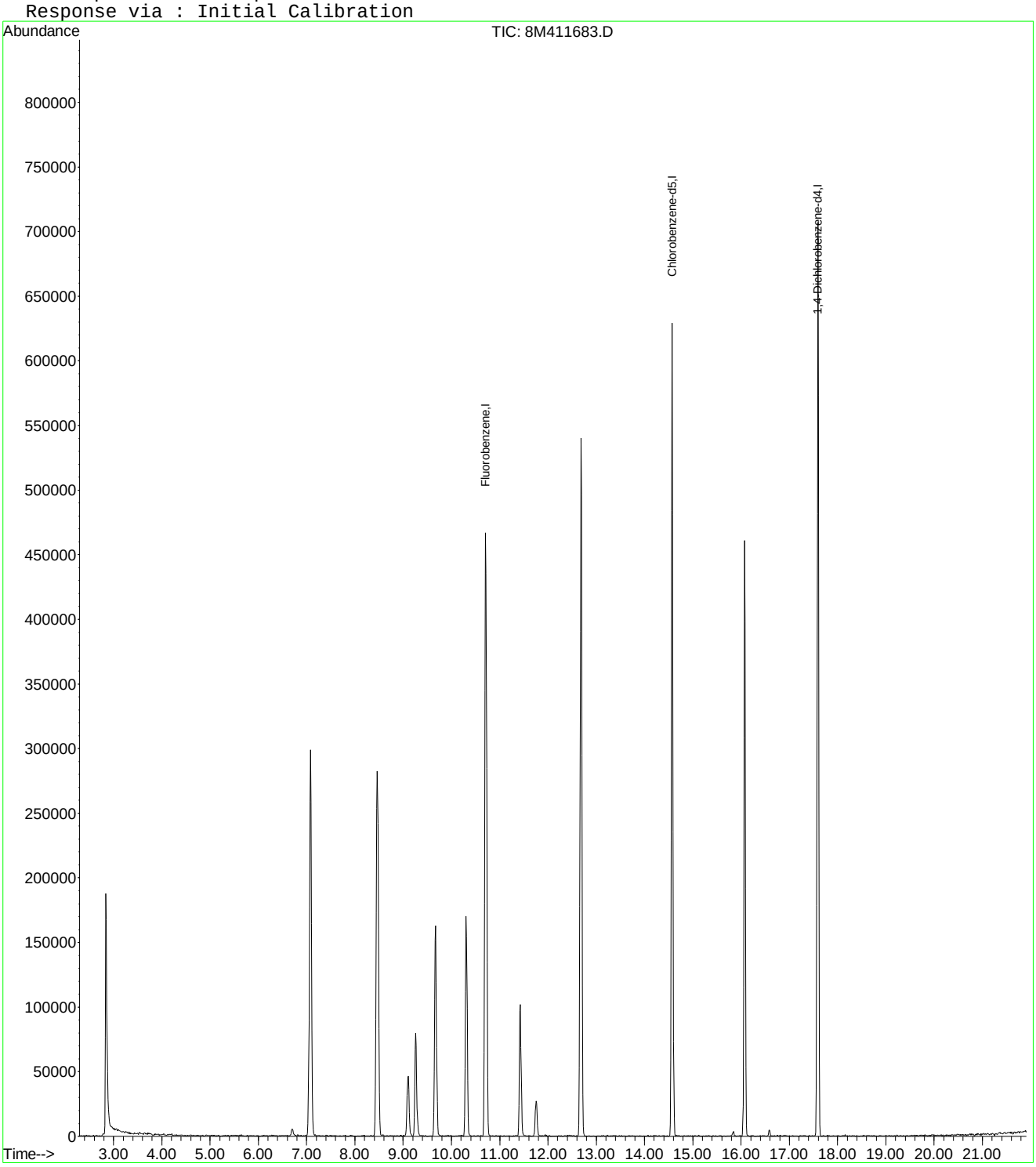

8M411683.D A9FOOWTR.M Wed Apr 27 16:24:18 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411683.D Vial: 3
Acq On : 24 Apr 2016 17:39 Operator: JDS
Sample : WG566154-03 20ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:35:44 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:34:16 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	513778	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	386200	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	211054	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.71	41	8646	20.1042 ug/L	79
3) 3-Chloro-1-propene	7.08	41	349770	21.5293 ug/L	91
4) 2-Chloro-1,3-butadiene	8.46	53	310625	20.8142 ug/L	81
5) Ethyl Acetate	9.11	43	90359	20.4098 ug/L	90
6) Methacrylonitrile	9.26	67	24496	14.4553 ug/L #	42
7) Isobutyl Alcohol	9.27	43	4573	43.8065 ug/L #	97
9) Methyl methacrylate	11.43	41	88173	15.7422 ug/L	77
10) 2-Nitropropane	11.76	43	26563	17.9917 ug/L	99
13) Cyclohexanone	15.83	55	2546	18.2487 ug/L #	43

(#) = qualifier out of range (m) = manual integration
8M411683.D A9FOOWTR.M Wed Apr 27 16:35:44 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411683.D Vial: 3
Acq On : 24 Apr 2016 17:39 Operator: JDS
Sample : WG566154-03 20ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:35 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:34:16 2016
Response via : Initial Calibration

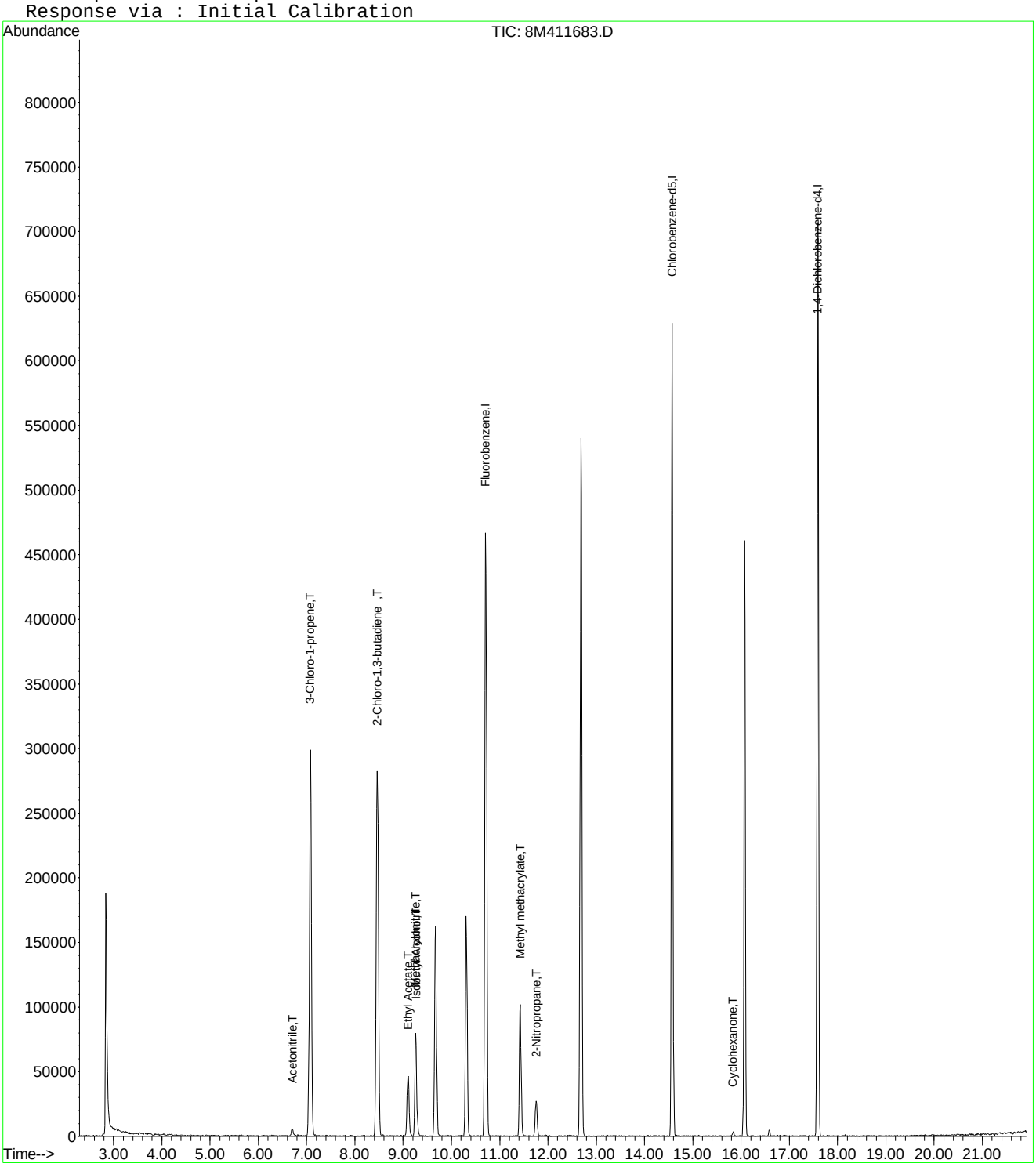

8M411683.D A9FOOWTR.M Wed Apr 27 16:35:44 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411683.D Vial: 3
Acq On : 24 Apr 2016 17:39 Operator: JDS
Sample : WG566154-03 20ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:37:32 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:36:22 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	513778	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	386200	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	211054	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.71	41	8646	20.1042 ug/L	79
3) 3-Chloro-1-propene	7.08	41	349770	21.5293 ug/L	91
4) 2-Chloro-1,3-butadiene	8.46	53	310625	20.8142 ug/L	81
5) Ethyl Acetate	9.11	43	90359	20.4098 ug/L	90
6) Methacrylonitrile	9.26	67	24496	20.6309 ug/L #	42
7) Isobutyl Alcohol	9.27	43	4573	43.8065 ug/L #	97
9) Methyl methacrylate	11.43	41	88173	20.7999 ug/L	77
10) 2-Nitropropane	11.76	43	26563	17.9917 ug/L	99
13) Cyclohexanone	15.83	55	2546	18.2487 ug/L #	43

(#) = qualifier out of range (m) = manual integration
8M411683.D A9FOOWTR.M Wed Apr 27 16:37:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411683.D Vial: 3
Acq On : 24 Apr 2016 17:39 Operator: JDS
Sample : WG566154-03 20ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:37 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:36:22 2016
Response via : Initial Calibration

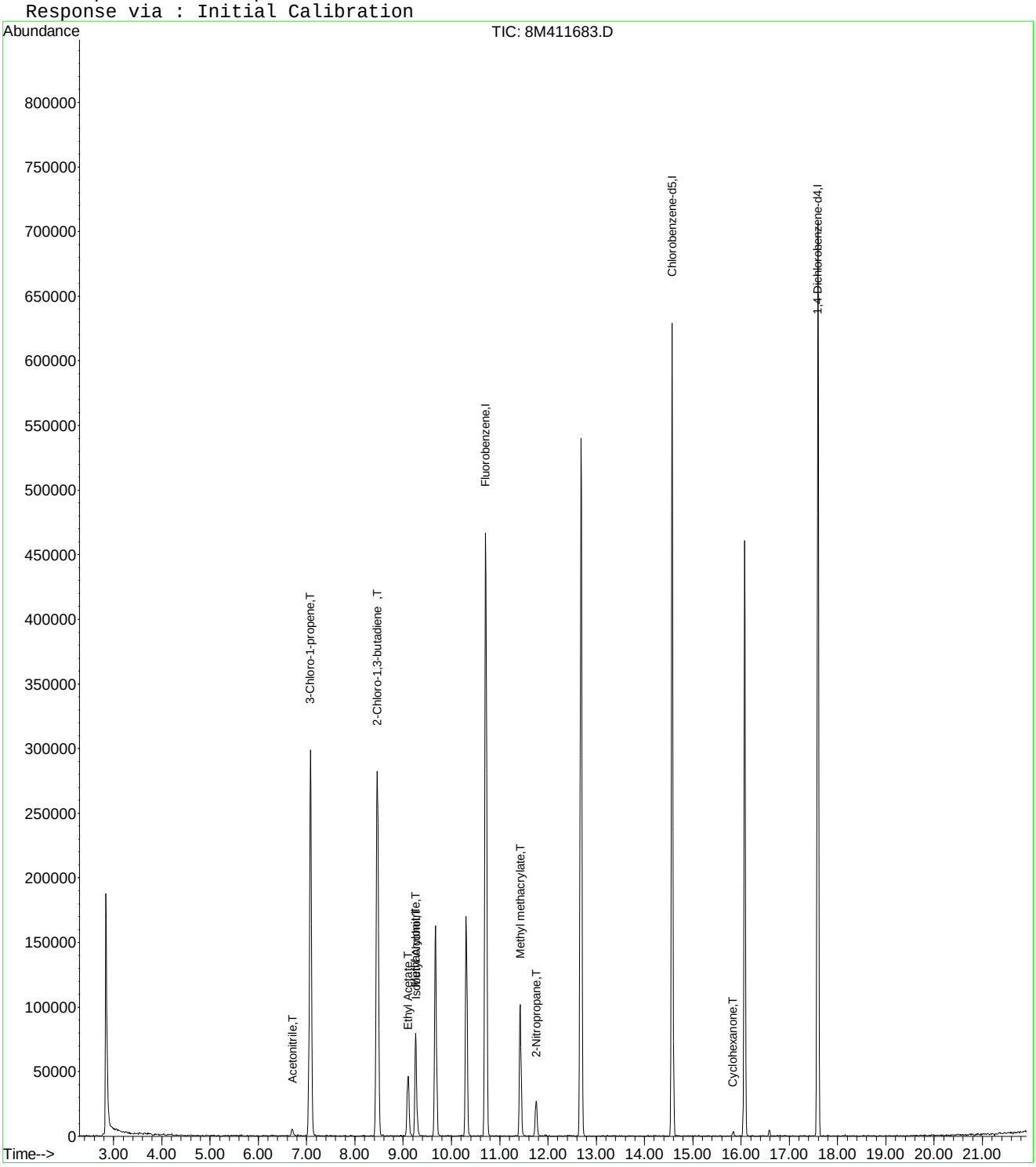

8M411683.D A9FOOWTR.M Wed Apr 27 16:37:32 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411683.D Vial: 3
Acq On : 24 Apr 2016 17:39 Operator: JDS
Sample : WG566154-03 20ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:39:38 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 04-24-16 HPMS8
Last Update : Wed Apr 27 16:38:22 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	513778	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	386200	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	211054	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.71	41	8646	20.1042 ug/L	79
3) 3-Chloro-1-propene	7.08	41	349770	21.5293 ug/L	91
4) 2-Chloro-1,3-butadiene	8.46	53	310625	20.8142 ug/L	81
5) Ethyl Acetate	9.11	43	90359	20.4098 ug/L	90
6) Methacrylonitrile	9.26	67	24496	20.6309 ug/L #	42
7) Isobutyl Alcohol	9.27	43	4573	43.8065 ug/L #	97
9) Methyl methacrylate	11.43	41	88173	20.7999 ug/L	77
10) 2-Nitropropane	11.76	43	26563	17.9917 ug/L	99
13) Cyclohexanone	15.83	55	2546	18.2487 ug/L #	43

(#) = qualifier out of range (m) = manual integration
8M411683.D A9FOOWTR.M Wed Apr 27 16:39:38 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411683.D Vial: 3
Acq On : 24 Apr 2016 17:39 Operator: JDS
Sample : WG566154-03 20ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:39 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 04-24-16 HPMS8
Last Update : Wed Apr 27 16:38:22 2016
Response via : Initial Calibration

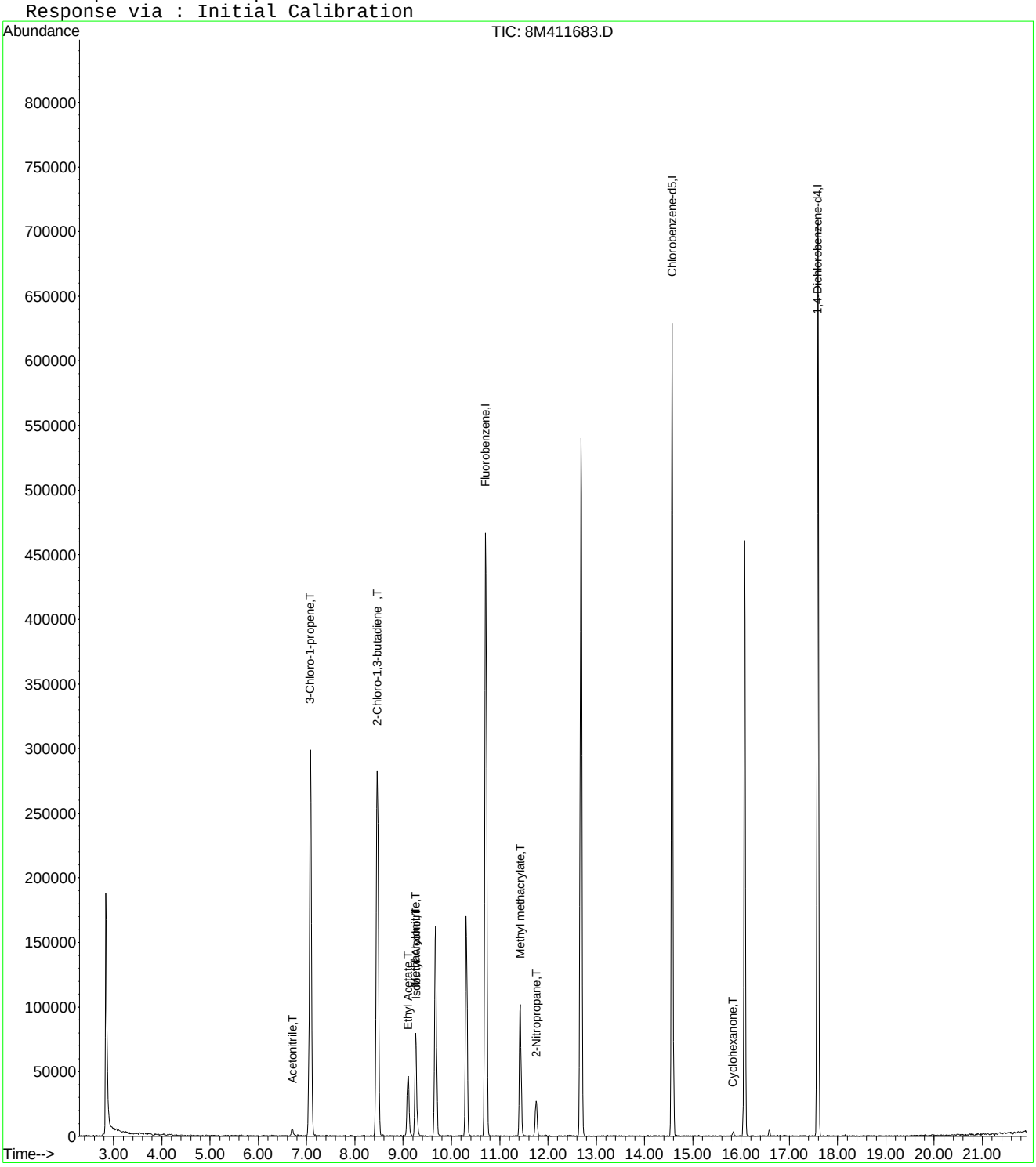

8M411683.D A9FOOWTR.M Wed Apr 27 16:39:39 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\042416\8M411683.D Vial: 3
Acq On : 24 Apr 2016 17:39 Operator: JDS
Sample : WG566154-03 20ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 04-24-16 HPMS8
Last Update : Wed Apr 27 16:38:22 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	20.1042	-0.5	100	0.01
3	T	3-Chloro-1-propene	20.0000	21.5293	-7.6	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	20.8142	-4.1	100	0.00
5	T	Ethyl Acetate	20.0000	20.4098	-2.0	100	0.01
6	T	Methacrylonitrile	20.0000	20.6309	-3.2	100	0.00
7	T	Isobutyl Alcohol	-1.0000	43.8065	0.0	5	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.21#
9	T	Methyl methacrylate	20.0000	20.7999	-4.0	100	0.01
10	T	2-Nitropropane	-1.0000	17.9917	0.0	100	0.01
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	18.2487	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M411683.D A9FOOWTR.M Wed Apr 27 16:40:07 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\042416\8M411684.D Vial: 4
Acq On : 24 Apr 2016 18:08 Operator: JDS
Sample : WG566154-04 50ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 24 18:30:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-13-16 HPMS 8
Last Update : Thu Apr 14 09:40:40 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	515597	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	383322	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	211367	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	137461	26.0749 ug/L	0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.28%		
43) 1,2-Dichloroethane-d4	10.30	65	161055	29.0980 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 116.40%		
58) Toluene-d8	12.68	98	448828	23.3982 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 93.60%		
80) p-Bromofluorobenzene	16.07	95	187810	22.7425 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 90.96%		

Target Compounds

					Qvalue
13) Acetone	6.26	43	212	0.2163 ug/L #	48
36) Tetrahydrofuran	9.62	42	2800	2.3342 ug/L #	48

(#) = qualifier out of range (m) = manual integration
8M411684.D 8260WT.M Sun Apr 24 18:30:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\042416\8M411684.D Vial: 4
Acq On : 24 Apr 2016 18:08 Operator: JDS
Sample : WG566154-04 50ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 24 18:30 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-13-16 HPMS 8
Last Update : Thu Apr 14 09:40:40 2016
Response via : Initial Calibration

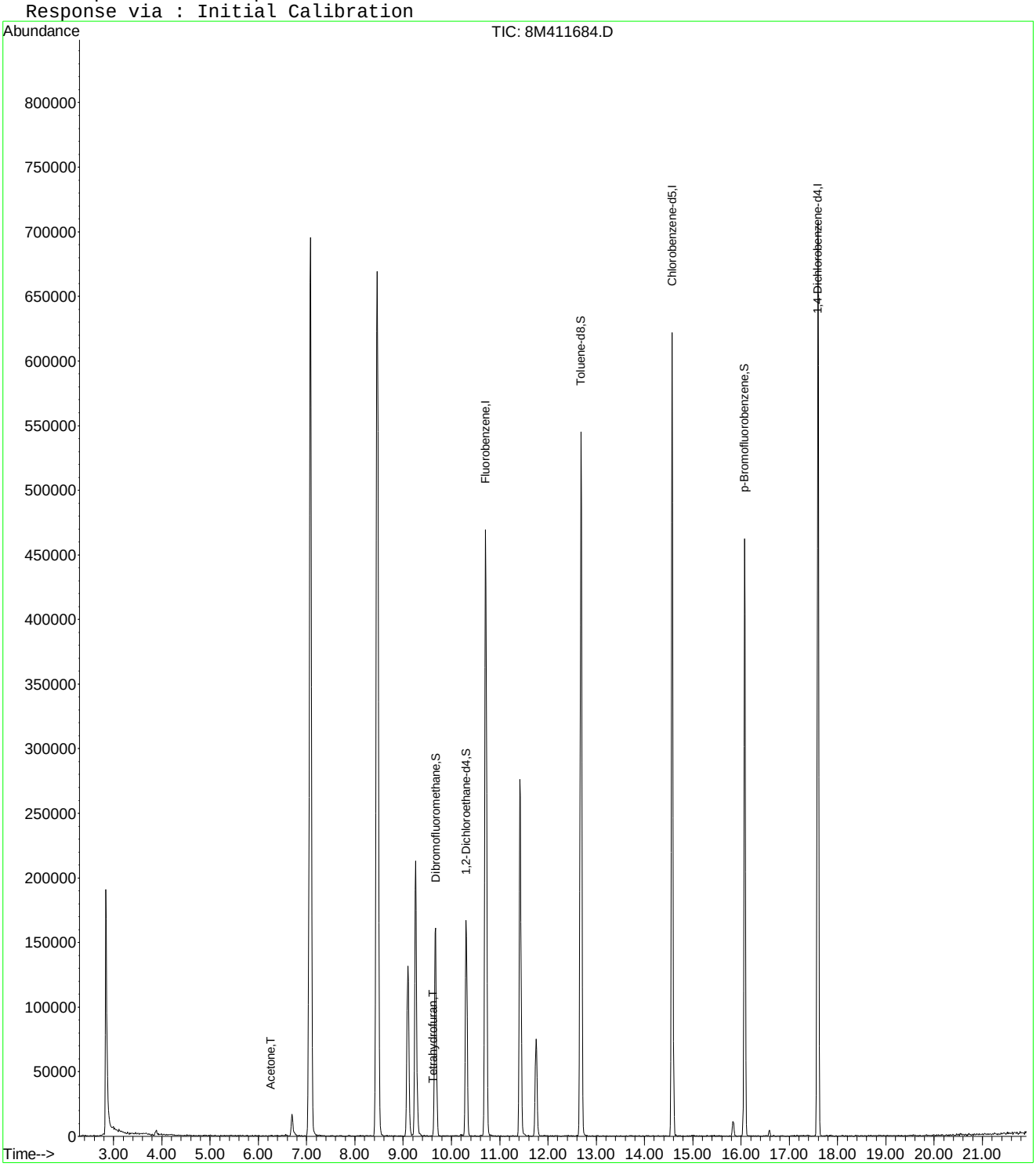

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411684.D Vial: 4
Acq On : 24 Apr 2016 18:08 Operator: JDS
Sample : WG566154-04 50ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:24:18 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:23:52 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	515597	25.00 ug/L	-0.01
11) Chlorobenzene-d5	14.57	117	383322	25.00 ug/L	-0.01
12) 1,4-Dichlorobenzene-d4	17.59	152	211367	25.00 ug/L	-0.01

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
8M411684.D A9FOOWTR.M Wed Apr 27 16:24:18 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411684.D Vial: 4
Acq On : 24 Apr 2016 18:08 Operator: JDS
Sample : WG566154-04 50ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:24 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:23:52 2016
Response via : Initial Calibration

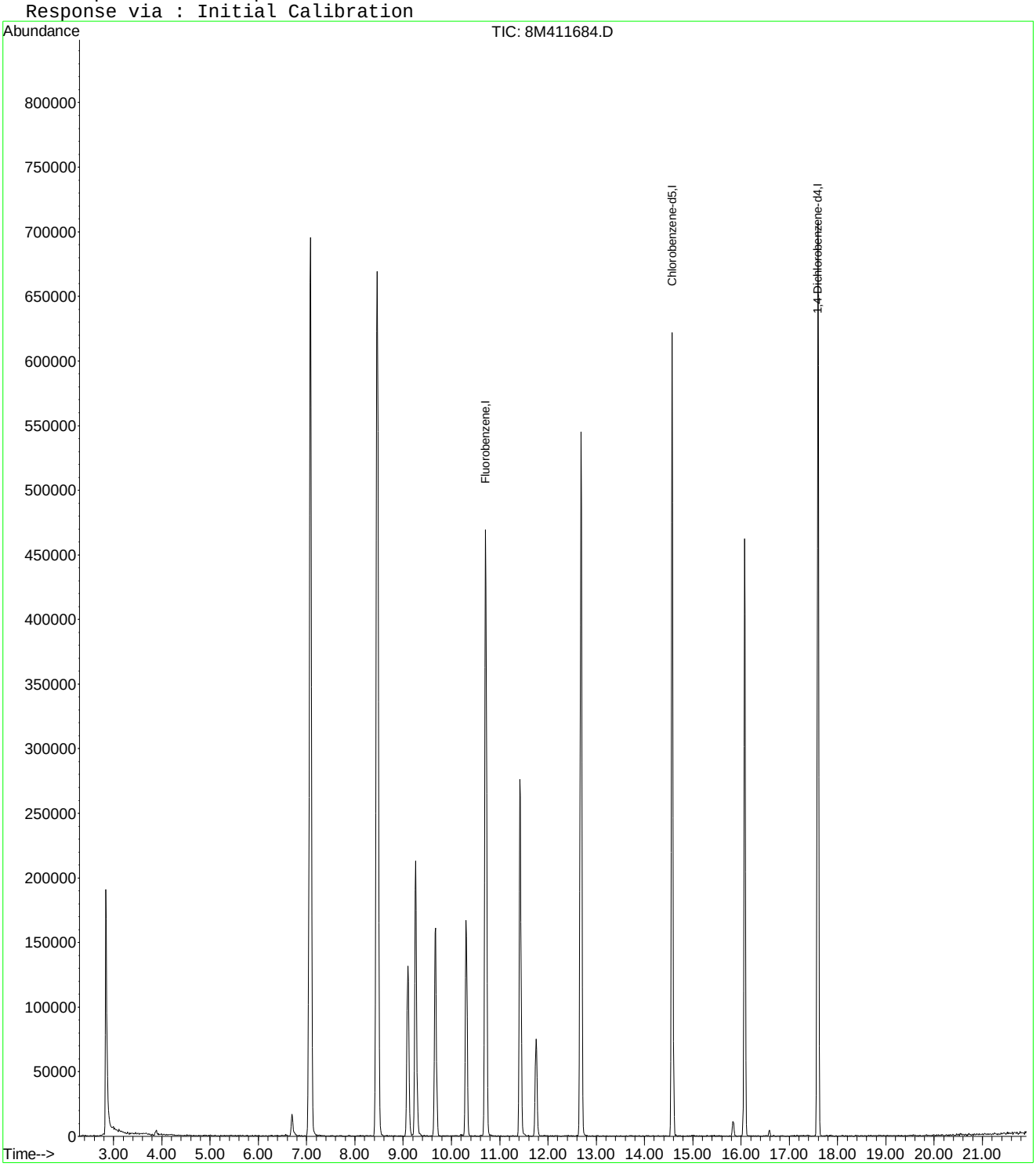

8M411684.D A9FOOWTR.M Wed Apr 27 16:24:19 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411684.D Vial: 4
Acq On : 24 Apr 2016 18:08 Operator: JDS
Sample : WG566154-04 50ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:35:44 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:34:16 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	515597	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	383322	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	211367	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	25791	59.7591 ug/L	97
3) 3-Chloro-1-propene	7.08	41	834497	51.1843 ug/L	92
4) 2-Chloro-1,3-butadiene	8.46	53	736179	49.1555 ug/L	82
5) Ethyl Acetate	9.09	43	246068	55.3845 ug/L	90
6) Methacrylonitrile	9.26	67	67048	49.2745 ug/L #	49
7) Isobutyl Alcohol	9.27	43	12675	120.9902 ug/L #	96
9) Methyl methacrylate	11.42	41	232409	48.2324 ug/L	78
10) 2-Nitropropane	11.75	43	74242	50.1083 ug/L	96
13) Cyclohexanone	15.83	55	7183	51.4087 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M411684.D A9FOOWTR.M Wed Apr 27 16:35:44 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411684.D Vial: 4
Acq On : 24 Apr 2016 18:08 Operator: JDS
Sample : WG566154-04 50ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:35 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:34:16 2016
Response via : Initial Calibration

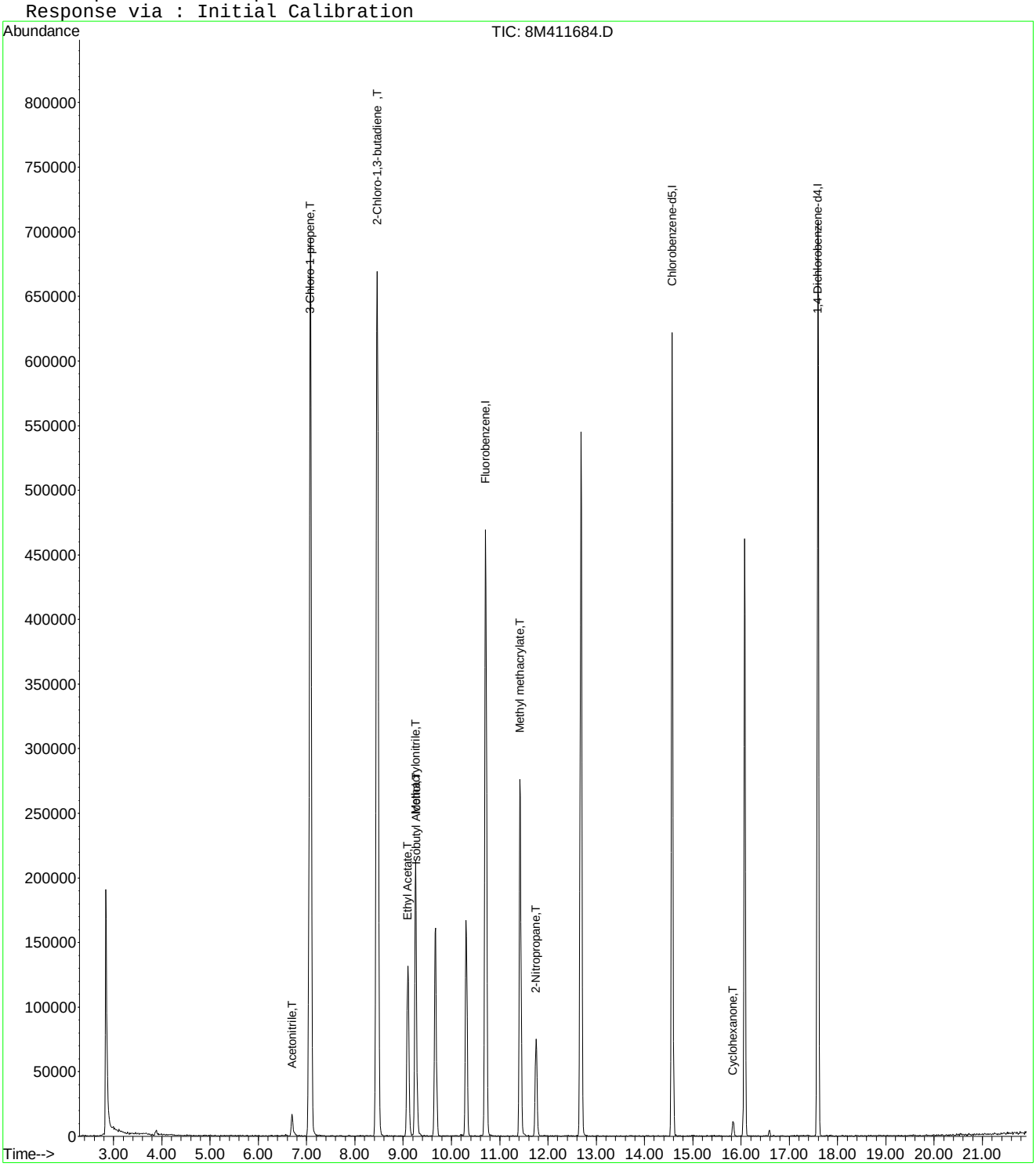

8M411684.D A9FOOWTR.M Wed Apr 27 16:35:45 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411684.D Vial: 4
Acq On : 24 Apr 2016 18:08 Operator: JDS
Sample : WG566154-04 50ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:37:32 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:36:22 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	515597	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	383322	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	211367	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	25791	59.7591 ug/L	97
3) 3-Chloro-1-propene	7.08	41	834497	51.1843 ug/L	92
4) 2-Chloro-1,3-butadiene	8.46	53	736179	49.1555 ug/L	82
5) Ethyl Acetate	9.09	43	246068	55.3845 ug/L	90
6) Methacrylonitrile	9.26	67	67048	54.2713 ug/L #	49
7) Isobutyl Alcohol	9.27	43	12675	120.9902 ug/L #	96
9) Methyl methacrylate	11.42	41	232409	52.3829 ug/L	78
10) 2-Nitropropane	11.75	43	74242	50.1083 ug/L	96
13) Cyclohexanone	15.83	55	7183	51.4087 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M411684.D A9FOOWTR.M Wed Apr 27 16:37:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411684.D Vial: 4
Acq On : 24 Apr 2016 18:08 Operator: JDS
Sample : WG566154-04 50ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:37 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:36:22 2016
Response via : Initial Calibration

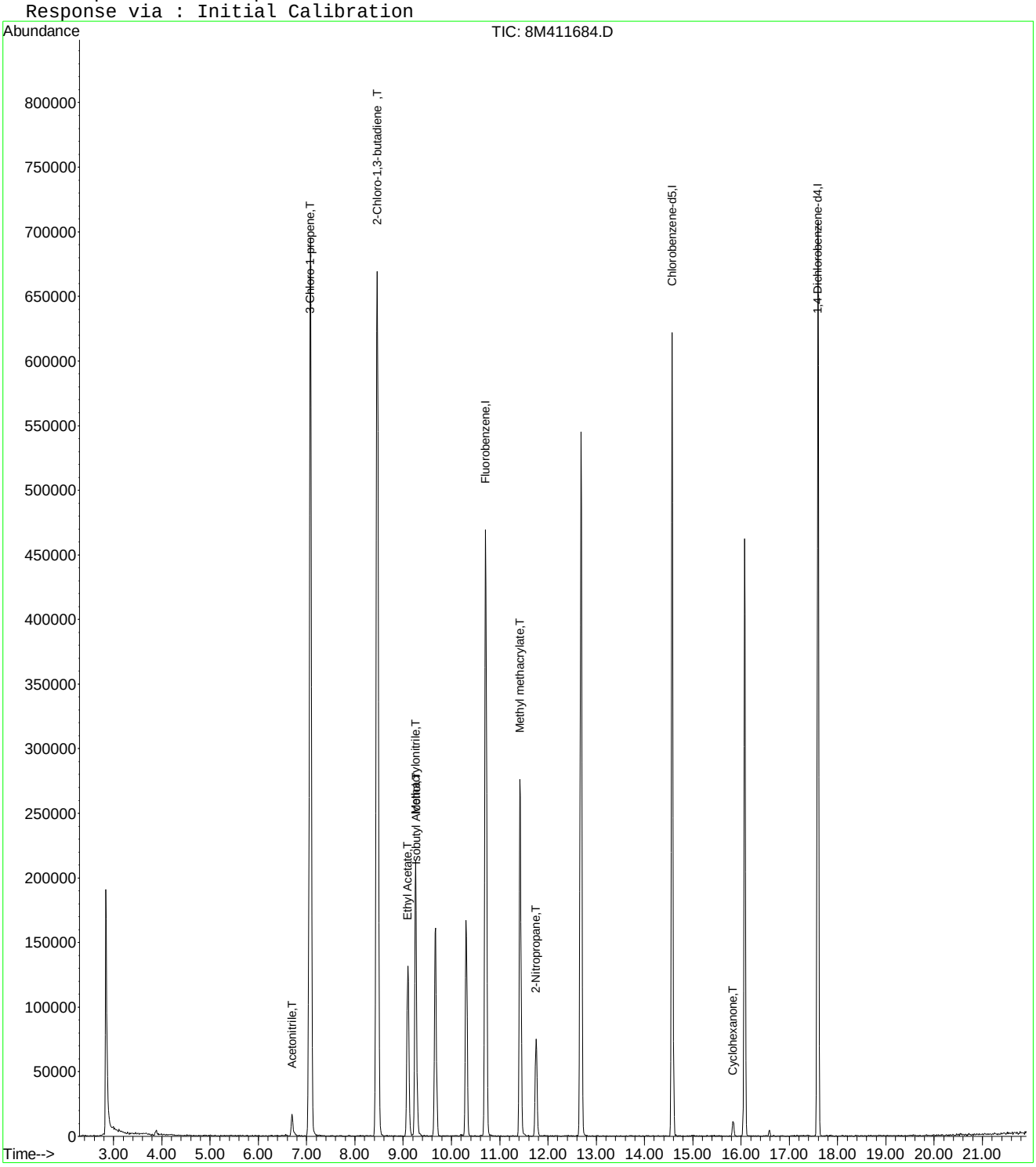

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411684.D Vial: 4
Acq On : 24 Apr 2016 18:08 Operator: JDS
Sample : WG566154-04 50ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:39:39 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 04-24-16 HPMS8
Last Update : Wed Apr 27 16:38:22 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	515597	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	383322	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	211367	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	25791	59.7591 ug/L	97
3) 3-Chloro-1-propene	7.08	41	834497	51.1843 ug/L	92
4) 2-Chloro-1,3-butadiene	8.46	53	736179	49.1555 ug/L	82
5) Ethyl Acetate	9.09	43	246068	55.3845 ug/L	90
6) Methacrylonitrile	9.26	67	67048	54.2713 ug/L #	49
7) Isobutyl Alcohol	9.27	43	12675	120.9902 ug/L #	96
9) Methyl methacrylate	11.42	41	232409	52.3829 ug/L	78
10) 2-Nitropropane	11.75	43	74242	50.1083 ug/L	96
13) Cyclohexanone	15.83	55	7183	51.4087 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M411684.D A9FOOWTR.M Wed Apr 27 16:39:39 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411684.D Vial: 4
Acq On : 24 Apr 2016 18:08 Operator: JDS
Sample : WG566154-04 50ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:39 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 04-24-16 HPMS8
Last Update : Wed Apr 27 16:38:22 2016
Response via : Initial Calibration

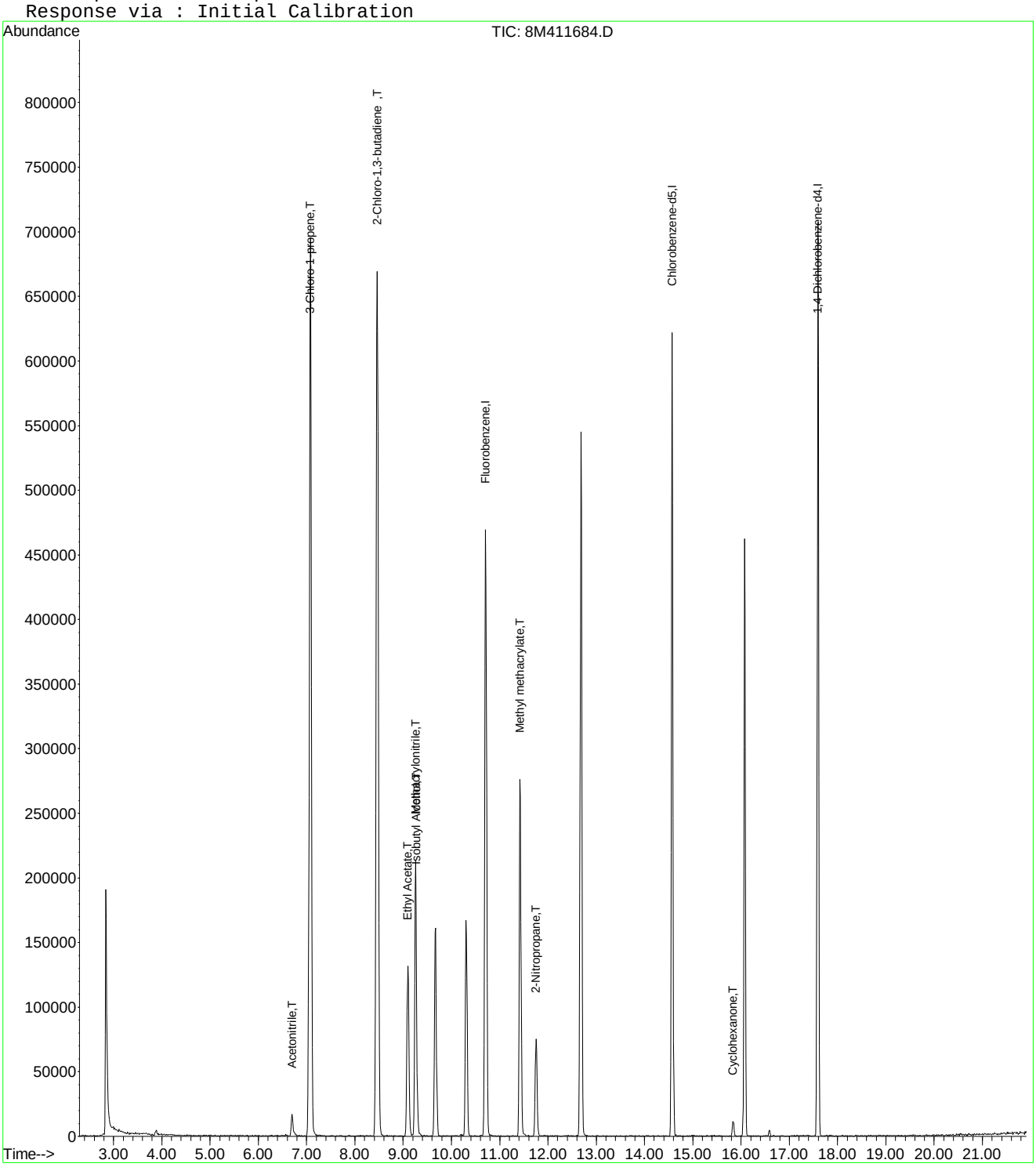

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\042416\8M411684.D Vial: 4
Acq On : 24 Apr 2016 18:08 Operator: JDS
Sample : WG566154-04 50ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 04-24-16 HPMS8
Last Update : Wed Apr 27 16:38:22 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	59.7591	-19.5	100	0.00
3	T	3-Chloro-1-propene	50.0000	51.1843	-2.4	100	0.00
4	T	2-Chloro-1,3-butadiene	50.0000	49.1555	1.7	100	0.00
5	T	Ethyl Acetate	50.0000	55.3845	-10.8	100	0.00
6	T	Methacrylonitrile	50.0000	54.2713	-8.5	100	0.00
7	T	Isobutyl Alcohol	100.0000	120.9902	-21.0	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	100	-0.02
9	T	Methyl methacrylate	50.0000	52.3829	-4.8	100	0.00
10	T	2-Nitropropane	50.0000	50.1083	-0.2	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	50.0000	51.4087	-2.8	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M411684.D A9FOOWTR.M Wed Apr 27 16:40:17 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\042416\8M411685.D Vial: 5
Acq On : 24 Apr 2016 18:37 Operator: JDS
Sample : WG566154-05 100ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 24 18:59:42 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-13-16 HPMS 8
Last Update : Thu Apr 14 09:40:40 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	517888	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	397825	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	213163	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	139574	26.3586 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 105.44%		
43) 1,2-Dichloroethane-d4	10.31	65	162185	29.1726 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 116.68%		
58) Toluene-d8	12.68	98	459616	23.0871 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 92.36%		
80) p-Bromofluorobenzene	16.07	95	188673	22.6545 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 90.60%		

Target Compounds					Qvalue
36) Tetrahydrofuran	9.65	42	2366	1.9637 ug/L #	49

(#) = qualifier out of range (m) = manual integration
8M411685.D 8260WT.M Sun Apr 24 18:59:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\042416\8M411685.D Vial: 5
Acq On : 24 Apr 2016 18:37 Operator: JDS
Sample : WG566154-05 100ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 24 18:59 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-13-16 HPMS 8
Last Update : Thu Apr 14 09:40:40 2016
Response via : Initial Calibration

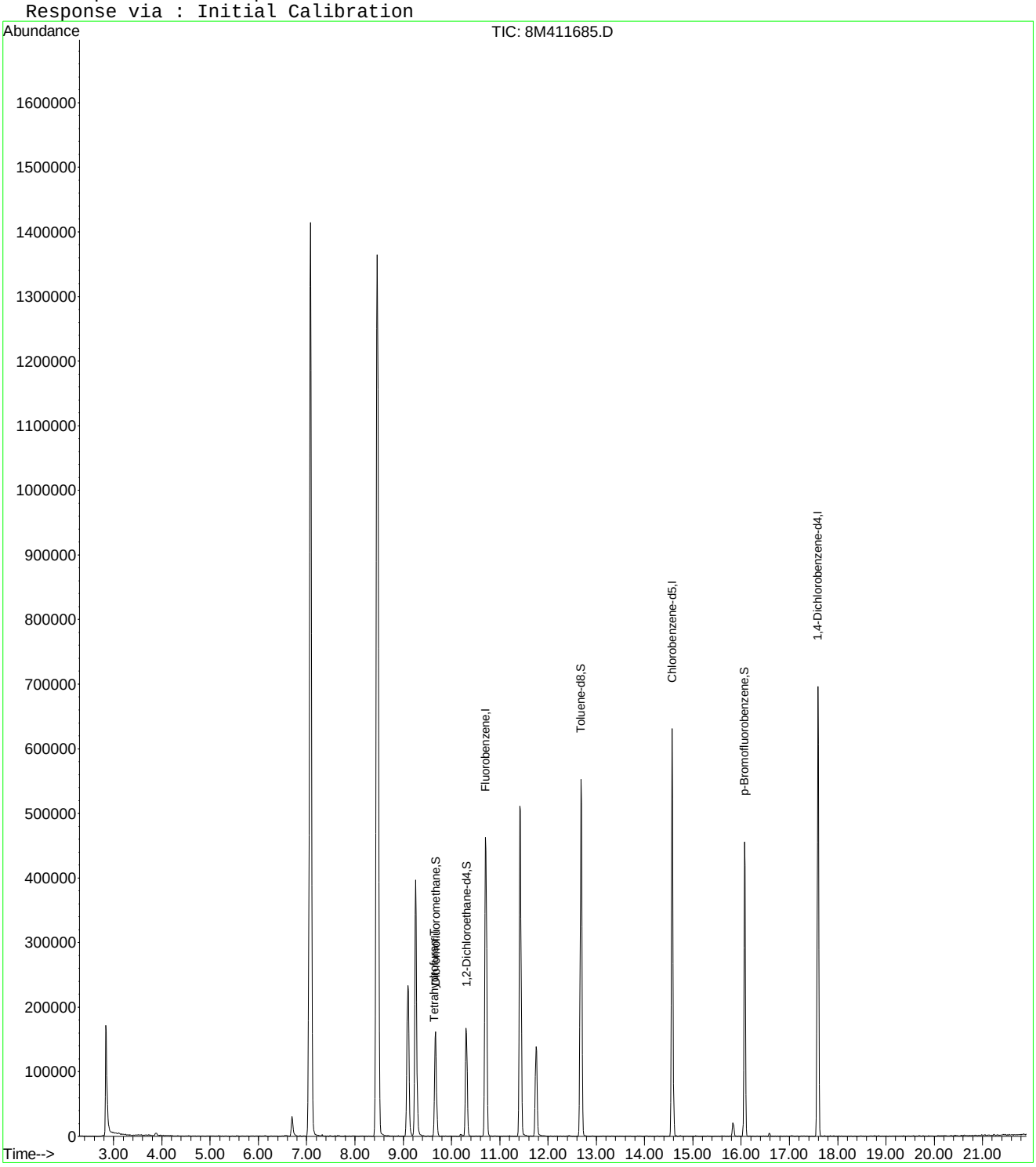

8M411685.D 8260WT.M Sun Apr 24 18:59:43 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411685.D Vial: 5
Acq On : 24 Apr 2016 18:37 Operator: JDS
Sample : WG566154-05 100ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:24:19 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:23:52 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	517888	25.00 ug/L	-0.01
11) Chlorobenzene-d5	14.57	117	397825	25.00 ug/L	-0.01
12) 1,4-Dichlorobenzene-d4	17.59	152	213163	25.00 ug/L	-0.01

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
8M411685.D A9FOOWTR.M Wed Apr 27 16:24:19 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411685.D Vial: 5
Acq On : 24 Apr 2016 18:37 Operator: JDS
Sample : WG566154-05 100ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:24 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:23:52 2016
Response via : Initial Calibration

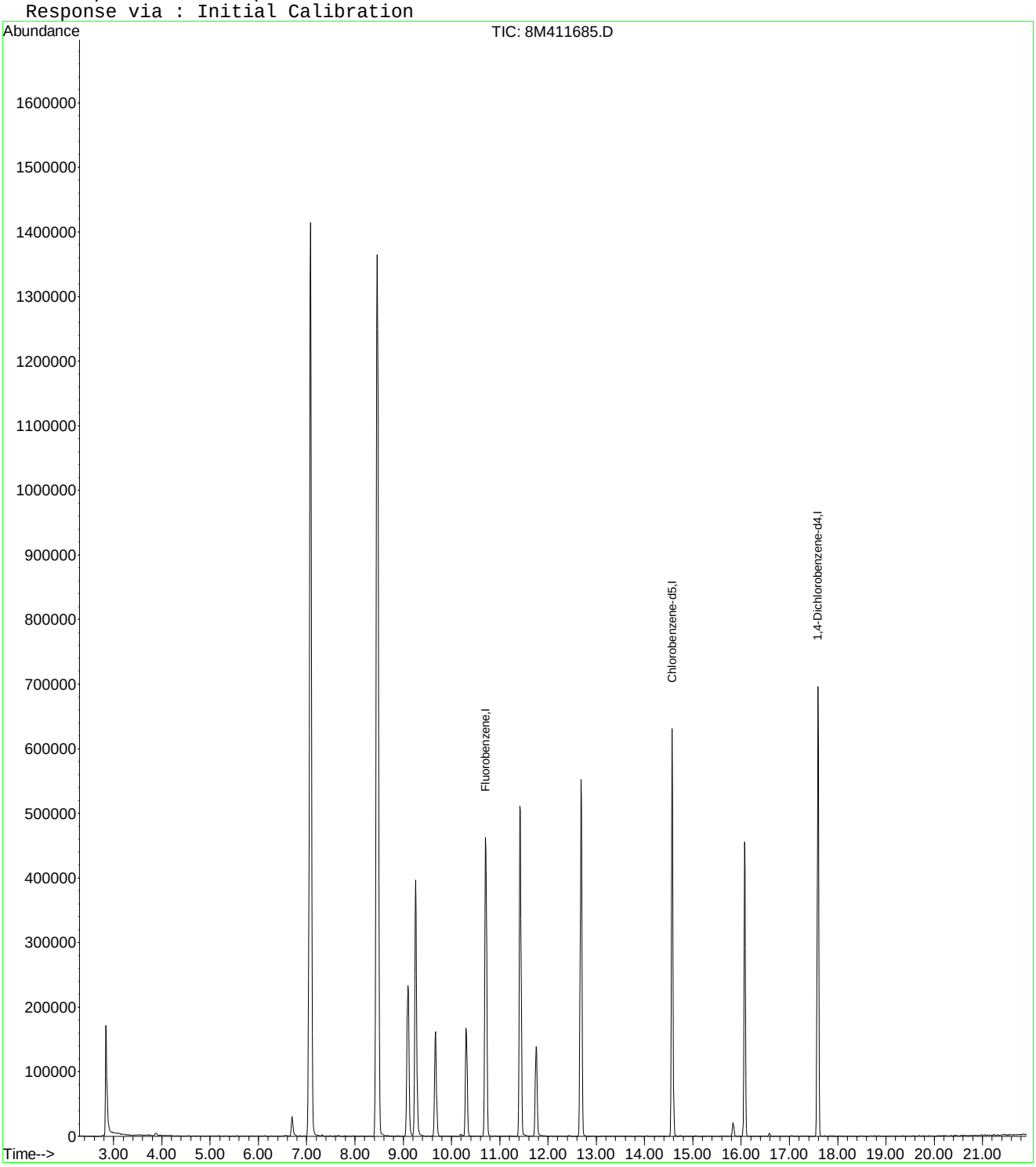

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411685.D Vial: 5
Acq On : 24 Apr 2016 18:37 Operator: JDS
Sample : WG566154-05 100ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:35:45 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:34:16 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	517888	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	397825	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	213163	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	44530	102.7219 ug/L	99
3) 3-Chloro-1-propene	7.08	41	1681799	102.6977 ug/L	92
4) 2-Chloro-1,3-butadiene	8.46	53	1509422	100.3399 ug/L	81
5) Ethyl Acetate	9.09	43	448879	100.5859 ug/L	91
6) Methacrylonitrile	9.26	67	127796	98.6210 ug/L #	56
7) Isobutyl Alcohol	9.27	43	19901	189.1262 ug/L #	85
9) Methyl methacrylate	11.42	41	449038	96.6870 ug/L	77
10) 2-Nitropropane	11.75	43	138709	93.2050 ug/L	96
13) Cyclohexanone	15.83	55	12941	91.8384 ug/L	96

(#) = qualifier out of range (m) = manual integration
8M411685.D A9FOOWTR.M Wed Apr 27 16:35:45 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411685.D Vial: 5
Acq On : 24 Apr 2016 18:37 Operator: JDS
Sample : WG566154-05 100ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:35 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:34:16 2016
Response via : Initial Calibration

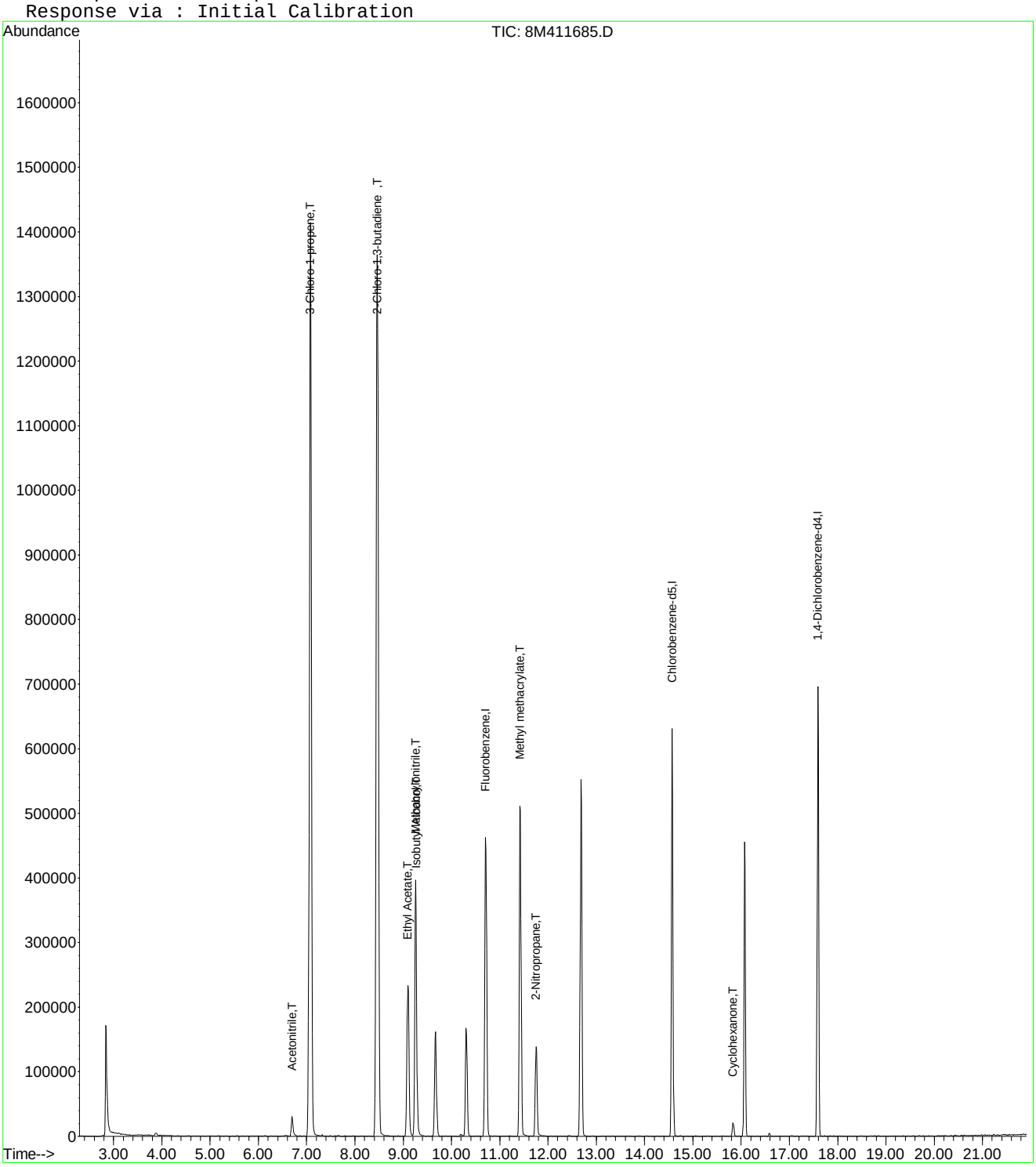

8M411685.D A9FOOWTR.M Wed Apr 27 16:35:45 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411685.D Vial: 5
Acq On : 24 Apr 2016 18:37 Operator: JDS
Sample : WG566154-05 100ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:37:33 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:36:22 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	517888	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	397825	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	213163	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	44530	102.7219 ug/L	99
3) 3-Chloro-1-propene	7.08	41	1681799	102.6977 ug/L	92
4) 2-Chloro-1,3-butadiene	8.46	53	1509422	100.3399 ug/L	81
5) Ethyl Acetate	9.09	43	448879	100.5859 ug/L	91
6) Methacrylonitrile	9.26	67	127796	101.9472 ug/L #	56
7) Isobutyl Alcohol	9.27	43	19901	189.1262 ug/L #	85
9) Methyl methacrylate	11.42	41	449038	99.4846 ug/L	77
10) 2-Nitropropane	11.75	43	138709	93.2050 ug/L	96
13) Cyclohexanone	15.83	55	12941	91.8384 ug/L	96

(#) = qualifier out of range (m) = manual integration
8M411685.D A9FOOWTR.M Wed Apr 27 16:37:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411685.D Vial: 5
Acq On : 24 Apr 2016 18:37 Operator: JDS
Sample : WG566154-05 100ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:37 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:36:22 2016
Response via : Initial Calibration

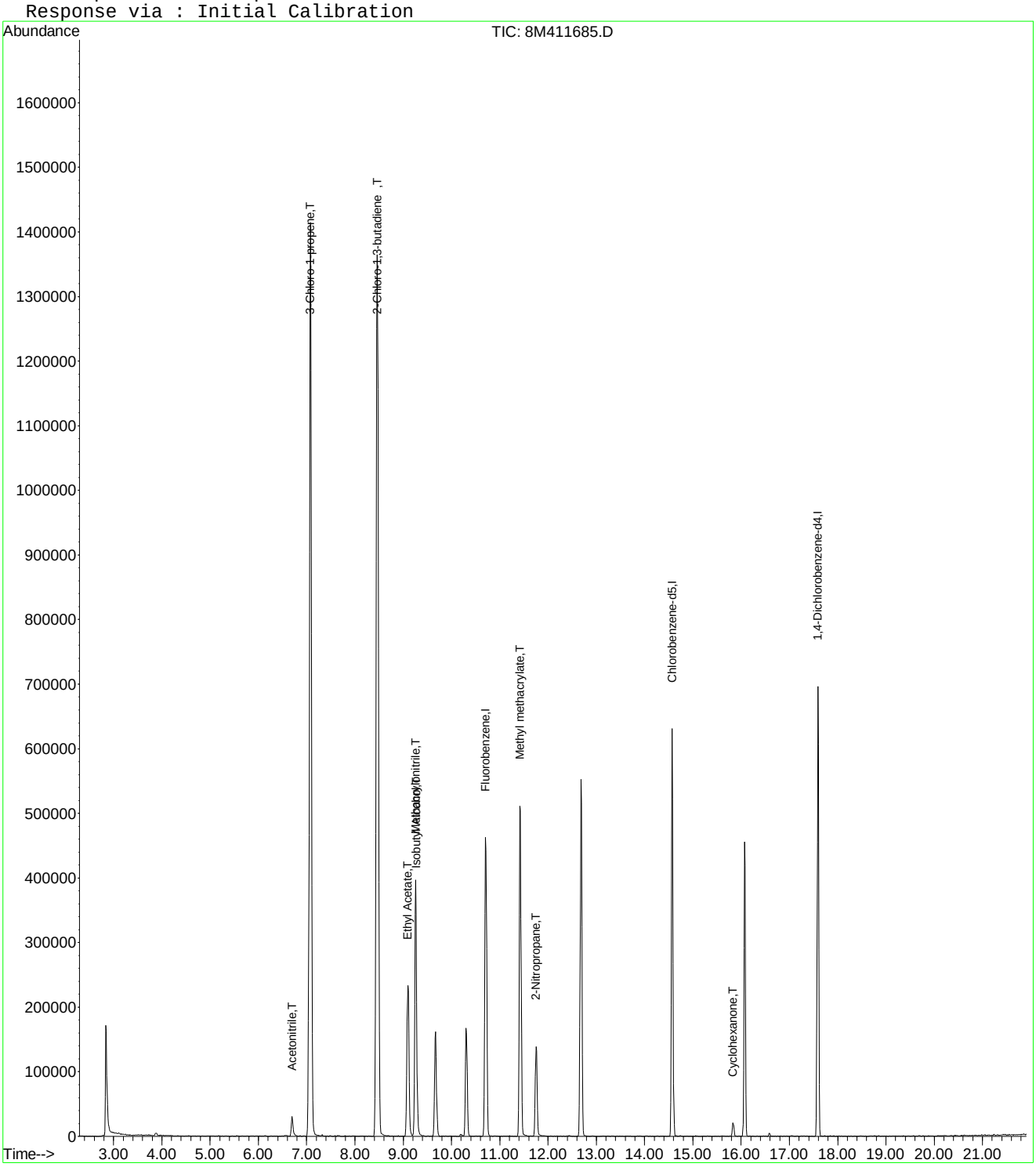

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411685.D Vial: 5
Acq On : 24 Apr 2016 18:37 Operator: JDS
Sample : WG566154-05 100ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:39:39 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 04-24-16 HPMS8
Last Update : Wed Apr 27 16:38:22 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	517888	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	397825	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	213163	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	44530	102.7219 ug/L	99
3) 3-Chloro-1-propene	7.08	41	1681799	102.6977 ug/L	92
4) 2-Chloro-1,3-butadiene	8.46	53	1509422	100.3399 ug/L	81
5) Ethyl Acetate	9.09	43	448879	100.5859 ug/L	91
6) Methacrylonitrile	9.26	67	127796	101.9472 ug/L #	56
7) Isobutyl Alcohol	9.27	43	19901	189.1262 ug/L #	85
9) Methyl methacrylate	11.42	41	449038	99.4846 ug/L	77
10) 2-Nitropropane	11.75	43	138709	93.2050 ug/L	96
13) Cyclohexanone	15.83	55	12941	91.8384 ug/L	96

(#) = qualifier out of range (m) = manual integration
8M411685.D A9FOOWTR.M Wed Apr 27 16:39:40 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411685.D Vial: 5
Acq On : 24 Apr 2016 18:37 Operator: JDS
Sample : WG566154-05 100ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:39 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 04-24-16 HPMS8
Last Update : Wed Apr 27 16:38:22 2016
Response via : Initial Calibration

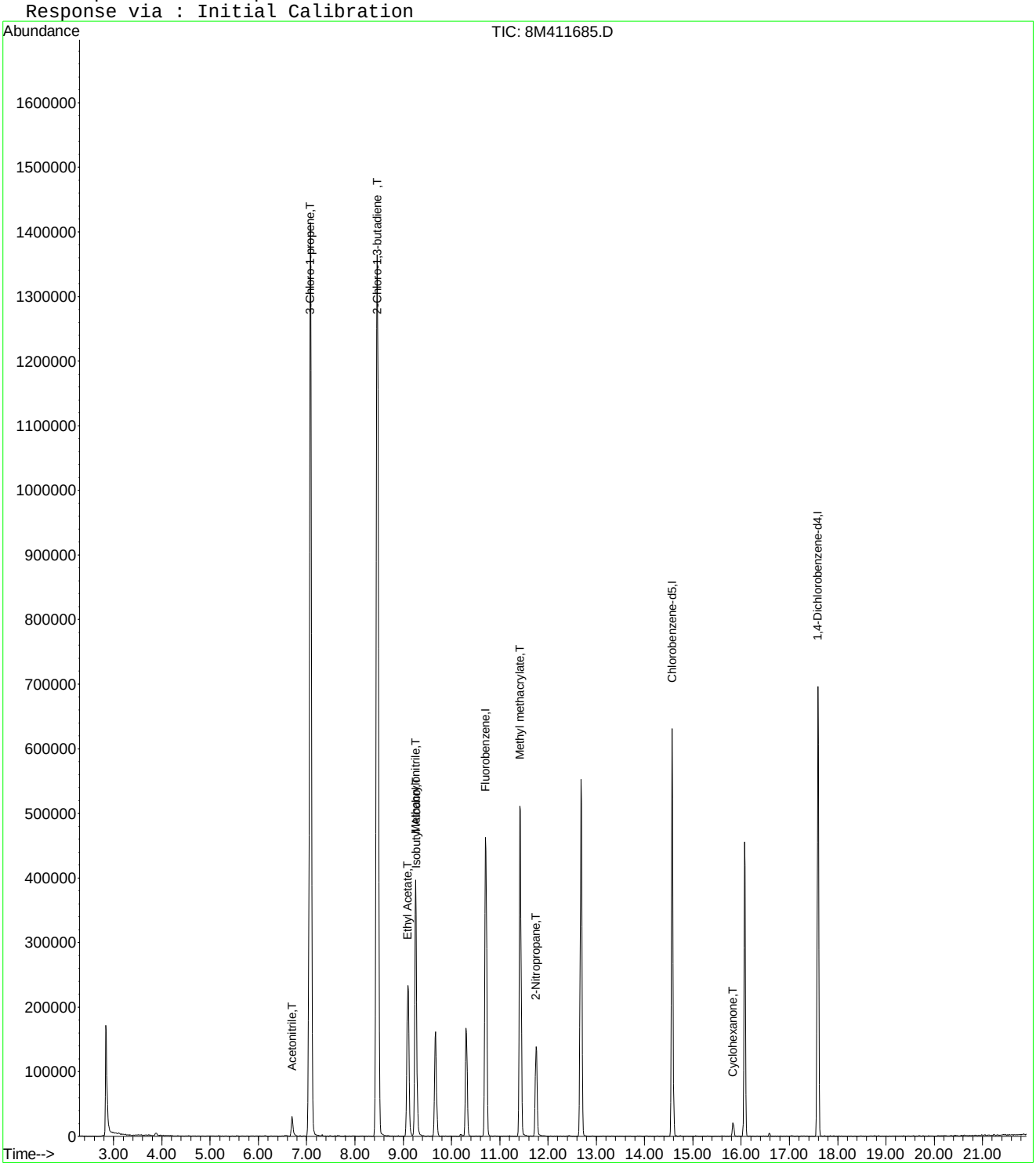

8M411685.D A9FOOWTR.M Wed Apr 27 16:39:40 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\042416\8M411686.D Vial: 6
Acq On : 24 Apr 2016 19:06 Operator: JDS
Sample : WG566154-06 200ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 24 19:28:57 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-13-16 HPMS 8
Last Update : Thu Apr 14 09:40:40 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	498952	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	386433	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	208057	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	136304	26.7180 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.88%		
43) 1,2-Dichloroethane-d4	10.31	65	159113	29.7062 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 118.84%		
58) Toluene-d8	12.68	98	438319	22.6664 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 90.68%		
80) p-Bromofluorobenzene	16.07	95	186702	22.9680 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 91.88%		

Target Compounds

					Qvalue
13) Acetone	6.27	43	868	0.9151 ug/L #	48
18) Methyl acetate	7.07	43	1238	0.3705 ug/L #	1
22) Methyl Tert Butyl Ether	7.50	73	2308	0.2195 ug/L #	51
29) 2-Butanone	8.89	43	277	0.1761 ug/L #	57
30) Propionitrile	9.07	54	289	0.6323 ug/L #	1
36) Tetrahydrofuran	9.64	42	2905	2.5026 ug/L #	56

(#) = qualifier out of range (m) = manual integration
8M411686.D 8260WT.M Sun Apr 24 19:28:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\042416\8M411686.D Vial: 6
Acq On : 24 Apr 2016 19:06 Operator: JDS
Sample : WG566154-06 200ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 24 19:28 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-13-16 HPMS 8
Last Update : Thu Apr 14 09:40:40 2016
Response via : Initial Calibration

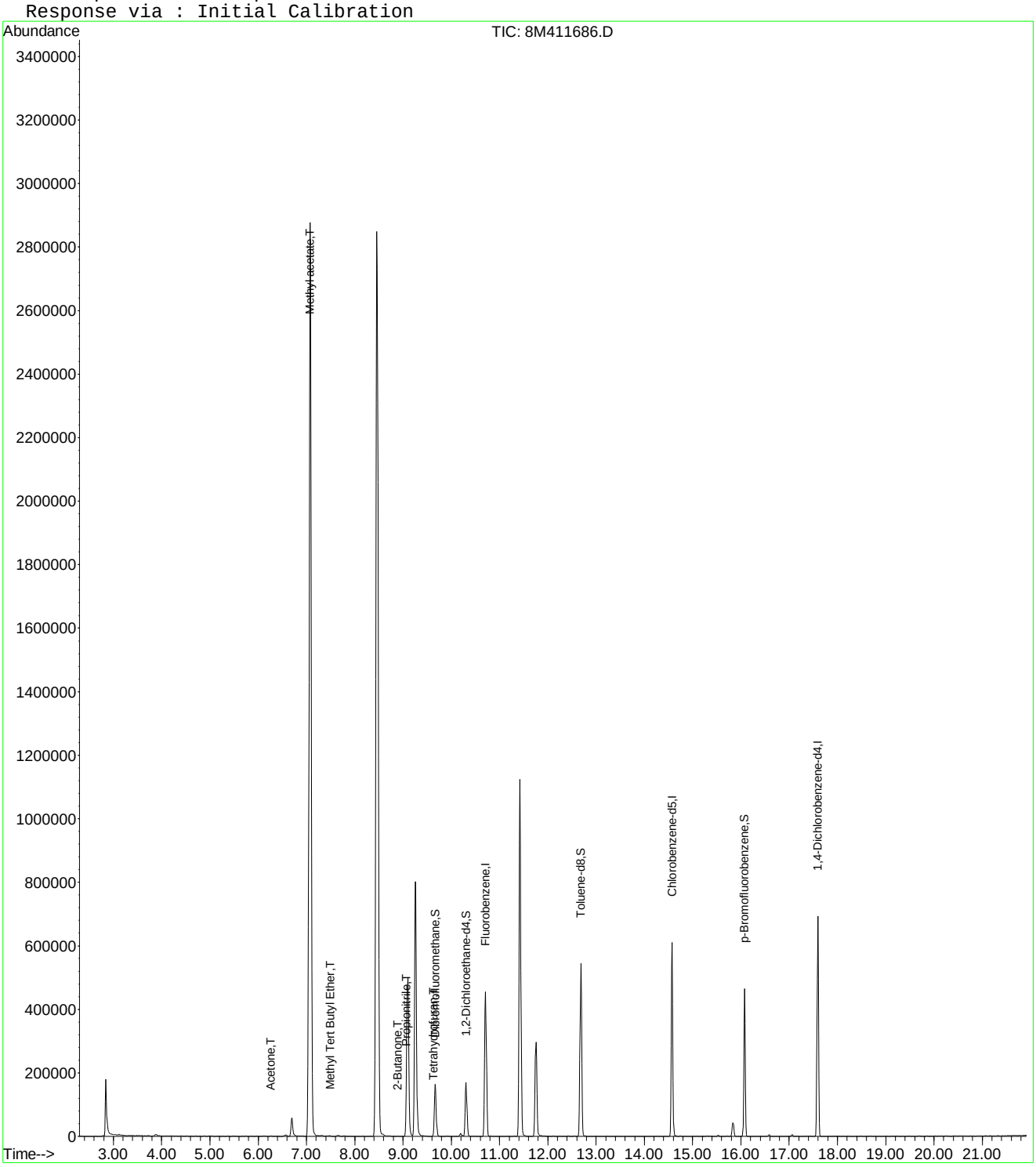

8M411686.D 8260WT.M Sun Apr 24 19:28:58 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411686.D Vial: 6
Acq On : 24 Apr 2016 19:06 Operator: JDS
Sample : WG566154-06 200ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:24:19 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:23:52 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	498952	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	386433	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	208057	25.00 ug/L	0.00

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
8M411686.D A9FOOWTR.M Wed Apr 27 16:24:20 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411686.D Vial: 6
Acq On : 24 Apr 2016 19:06 Operator: JDS
Sample : WG566154-06 200ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:24 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:23:52 2016
Response via : Initial Calibration

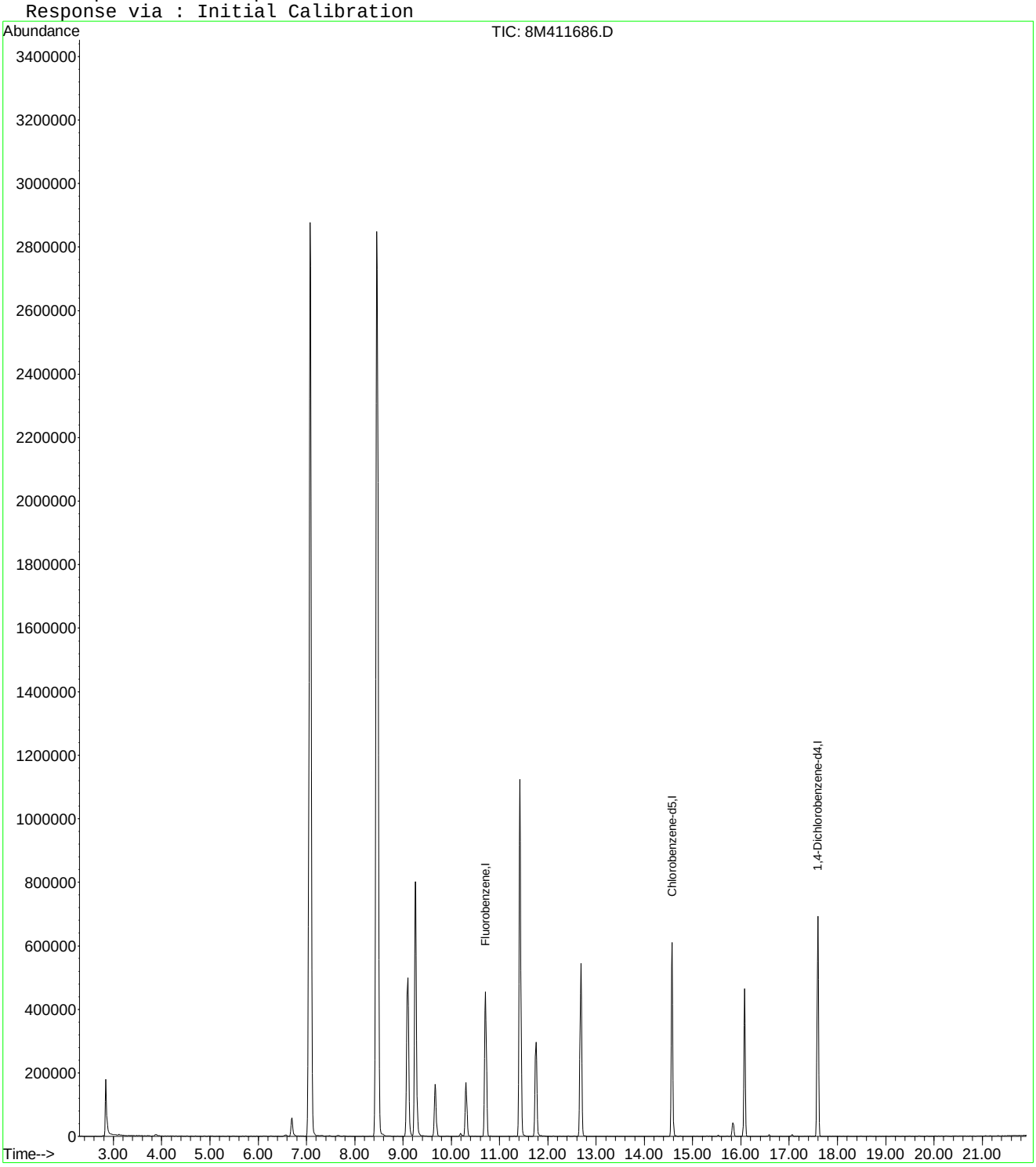

8M411686.D A9FOOWTR.M Wed Apr 27 16:24:20 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411686.D Vial: 6
Acq On : 24 Apr 2016 19:06 Operator: JDS
Sample : WG566154-06 200ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:35:45 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:34:16 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	498952	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	386433	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	208057	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	90138	215.8219 ug/L	99
3) 3-Chloro-1-propene	7.07	41	3410620	216.1708 ug/L	92
4) 2-Chloro-1,3-butadiene	8.46	53	3193354	220.3369 ug/L	81
5) Ethyl Acetate	9.10	43	935454	217.5743 ug/L	92
6) Methacrylonitrile	9.26	67	254897	210.2727 ug/L #	48
7) Isobutyl Alcohol	9.26	43	42509	419.3096 ug/L	81
9) Methyl methacrylate	11.42	41	925980	211.7766 ug/L	77
10) 2-Nitropropane	11.75	43	297081	207.1985 ug/L	94
13) Cyclohexanone	15.84	55	27645	201.0030 ug/L	92

(#) = qualifier out of range (m) = manual integration
8M411686.D A9FOOWTR.M Wed Apr 27 16:35:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411686.D Vial: 6
Acq On : 24 Apr 2016 19:06 Operator: JDS
Sample : WG566154-06 200ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:35 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:34:16 2016
Response via : Initial Calibration

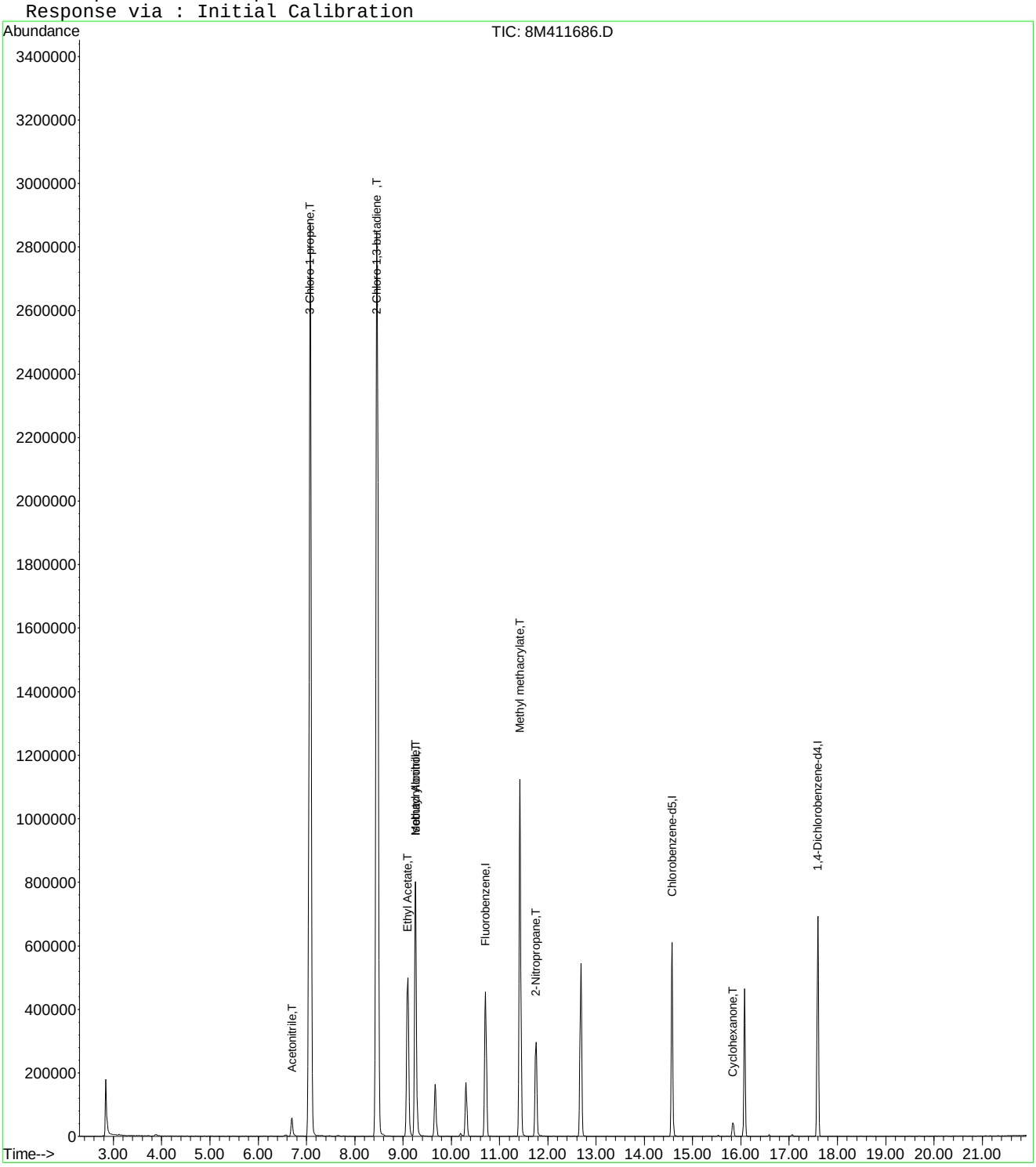

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411686.D Vial: 6
Acq On : 24 Apr 2016 19:06 Operator: JDS
Sample : WG566154-06 200ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:37:34 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:36:22 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	498952	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	386433	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	208057	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	90138	215.8219 ug/L	99
3) 3-Chloro-1-propene	7.07	41	3410620	216.1708 ug/L	92
4) 2-Chloro-1,3-butadiene	8.46	53	3193354	220.3369 ug/L	81
5) Ethyl Acetate	9.10	43	935454	217.5743 ug/L	92
6) Methacrylonitrile	9.26	67	254897	209.8191 ug/L #	48
7) Isobutyl Alcohol	9.26	43	42509	419.3096 ug/L	81
9) Methyl methacrylate	11.42	41	925980	211.3605 ug/L	77
10) 2-Nitropropane	11.75	43	297081	207.1985 ug/L	94
13) Cyclohexanone	15.84	55	27645	201.0030 ug/L	92

(#) = qualifier out of range (m) = manual integration
8M411686.D A9FOOWTR.M Wed Apr 27 16:37:34 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411686.D Vial: 6
Acq On : 24 Apr 2016 19:06 Operator: JDS
Sample : WG566154-06 200ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:37 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:36:22 2016
Response via : Initial Calibration

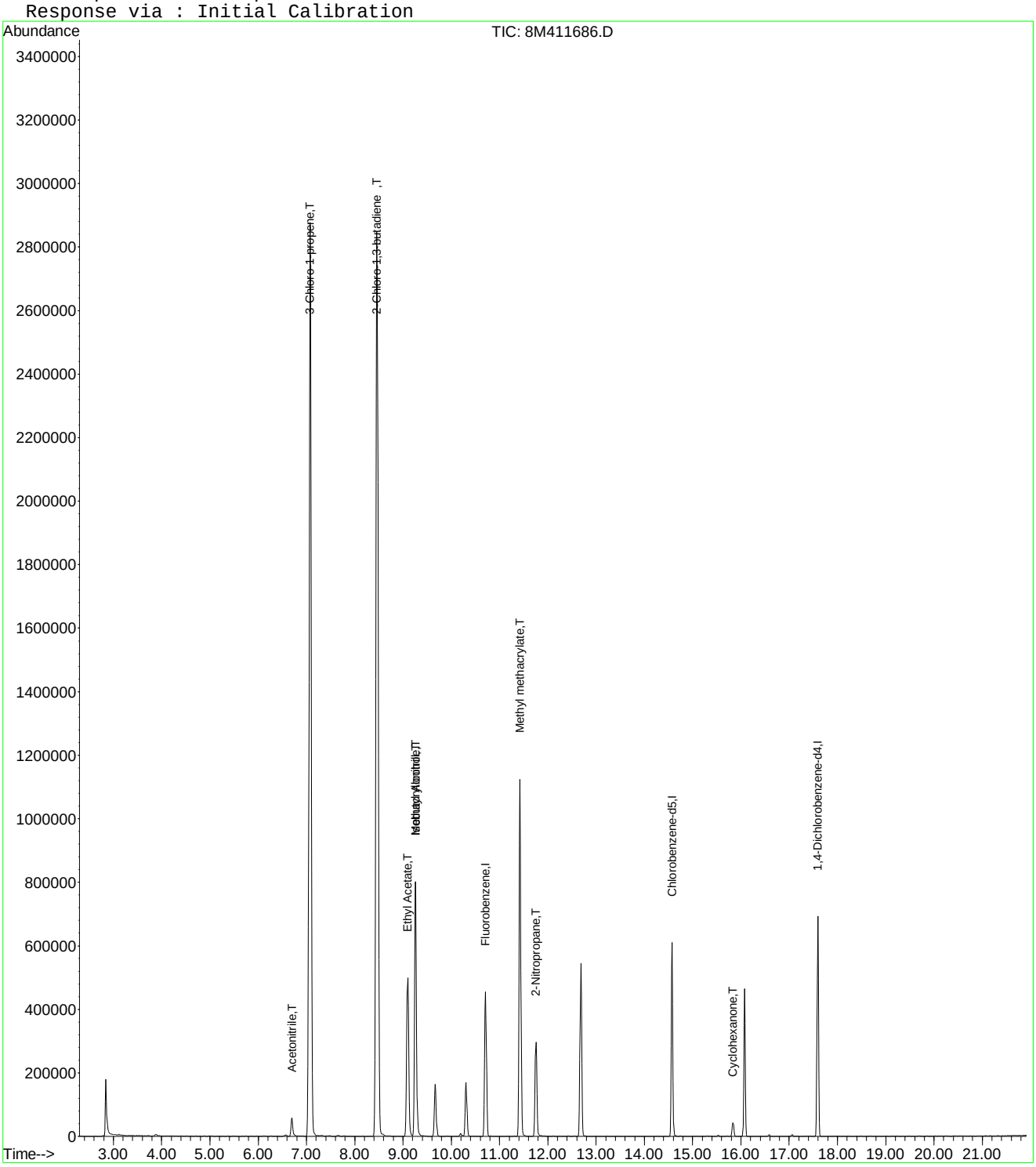

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411686.D Vial: 6
Acq On : 24 Apr 2016 19:06 Operator: JDS
Sample : WG566154-06 200ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:39:40 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 04-24-16 HPMS8
Last Update : Wed Apr 27 16:38:22 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	498952	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	386433	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	208057	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	90138	215.8219 ug/L	99
3) 3-Chloro-1-propene	7.07	41	3410620	216.1708 ug/L	92
4) 2-Chloro-1,3-butadiene	8.46	53	3193354	220.3369 ug/L	81
5) Ethyl Acetate	9.10	43	935454	217.5743 ug/L	92
6) Methacrylonitrile	9.26	67	254897	209.8191 ug/L #	48
7) Isobutyl Alcohol	9.26	43	42509	419.3096 ug/L	81
9) Methyl methacrylate	11.42	41	925980	211.3605 ug/L	77
10) 2-Nitropropane	11.75	43	297081	207.1985 ug/L	94
13) Cyclohexanone	15.84	55	27645	201.0030 ug/L	92

(#) = qualifier out of range (m) = manual integration
8M411686.D A9FOOWTR.M Wed Apr 27 16:39:40 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411686.D Vial: 6
Acq On : 24 Apr 2016 19:06 Operator: JDS
Sample : WG566154-06 200ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:39 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 04-24-16 HPMS8
Last Update : Wed Apr 27 16:38:22 2016
Response via : Initial Calibration

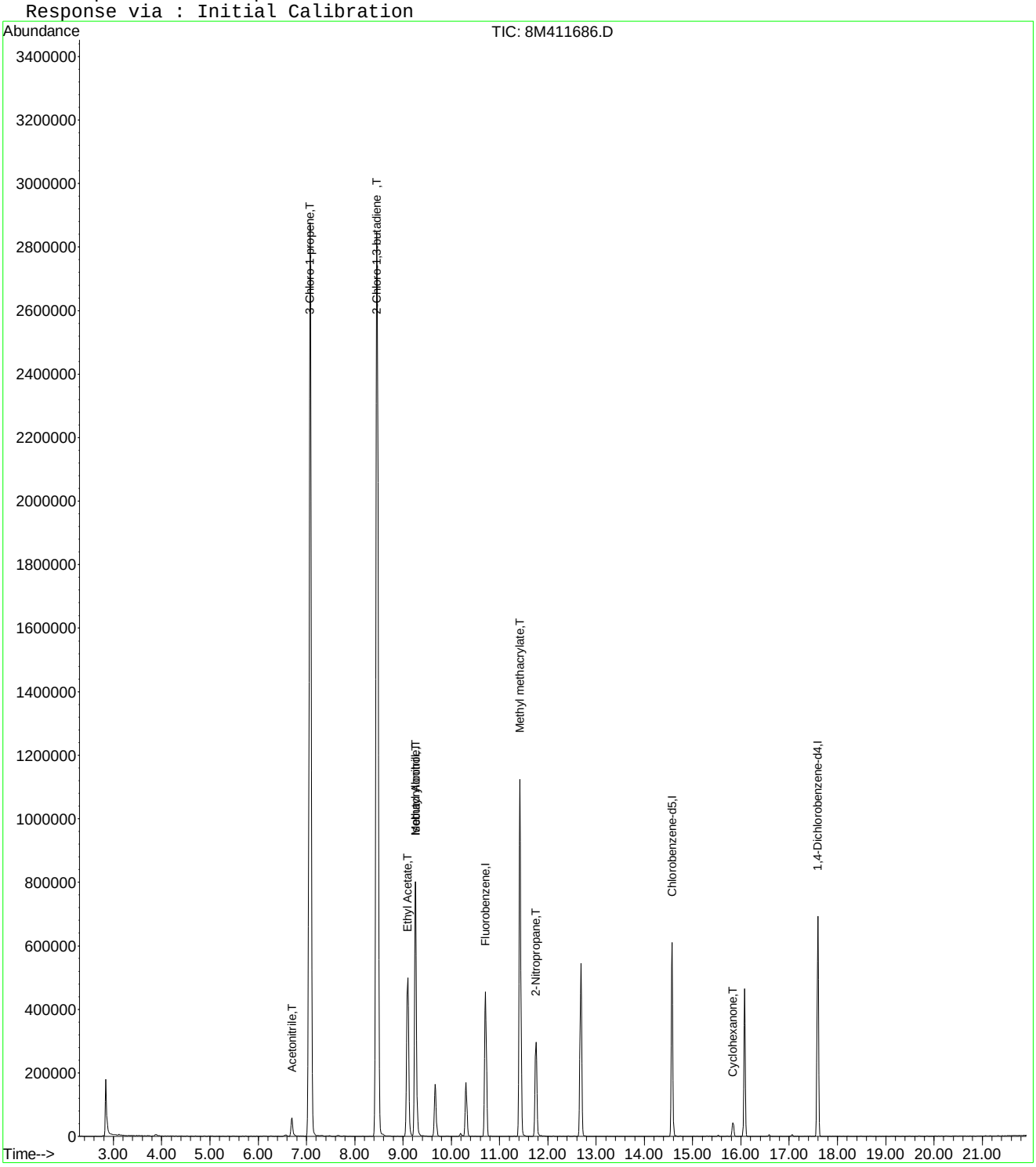

8M411686.D A9FOOWTR.M Wed Apr 27 16:39:41 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\042416\8M411687.D Vial: 7
Acq On : 24 Apr 2016 19:36 Operator: JDS
Sample : WG566154-07 300ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 24 19:58:11 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-13-16 HPMS 8
Last Update : Thu Apr 14 09:40:40 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	504106	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	384116	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	207668	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	138398	26.8511 ug/L	0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.40%		
43) 1,2-Dichloroethane-d4	10.30	65	161645	29.8704 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 119.48%		
58) Toluene-d8	12.68	98	445623	23.1831 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 92.72%		
80) p-Bromofluorobenzene	16.07	95	186670	23.0071 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.04%		

Target Compounds

					Qvalue
13) Acetone	6.26	43	1164	1.2146 ug/L #	48
18) Methyl acetate	7.08	43	2246	0.6652 ug/L #	1
22) Methyl Tert Butyl Ether	7.49	73	3842	0.3617 ug/L #	62
24) n-Hexane	7.78	57	1544	0.1743 ug/L	66
29) 2-Butanone	8.88	43	1543	0.9709 ug/L #	57
30) Propionitrile	9.06	54	494	1.0698 ug/L #	1
36) Tetrahydrofuran	9.64	42	2875	2.4514 ug/L #	58
73) m-,p-Xylene	14.75	106	1741	0.1765 ug/L	73

(#) = qualifier out of range (m) = manual integration
8M411687.D 8260WT.M Sun Apr 24 19:58:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\042416\8M411687.D Vial: 7
Acq On : 24 Apr 2016 19:36 Operator: JDS
Sample : WG566154-07 300ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 24 19:58 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-13-16 HPMS 8
Last Update : Thu Apr 14 09:40:40 2016
Response via : Initial Calibration

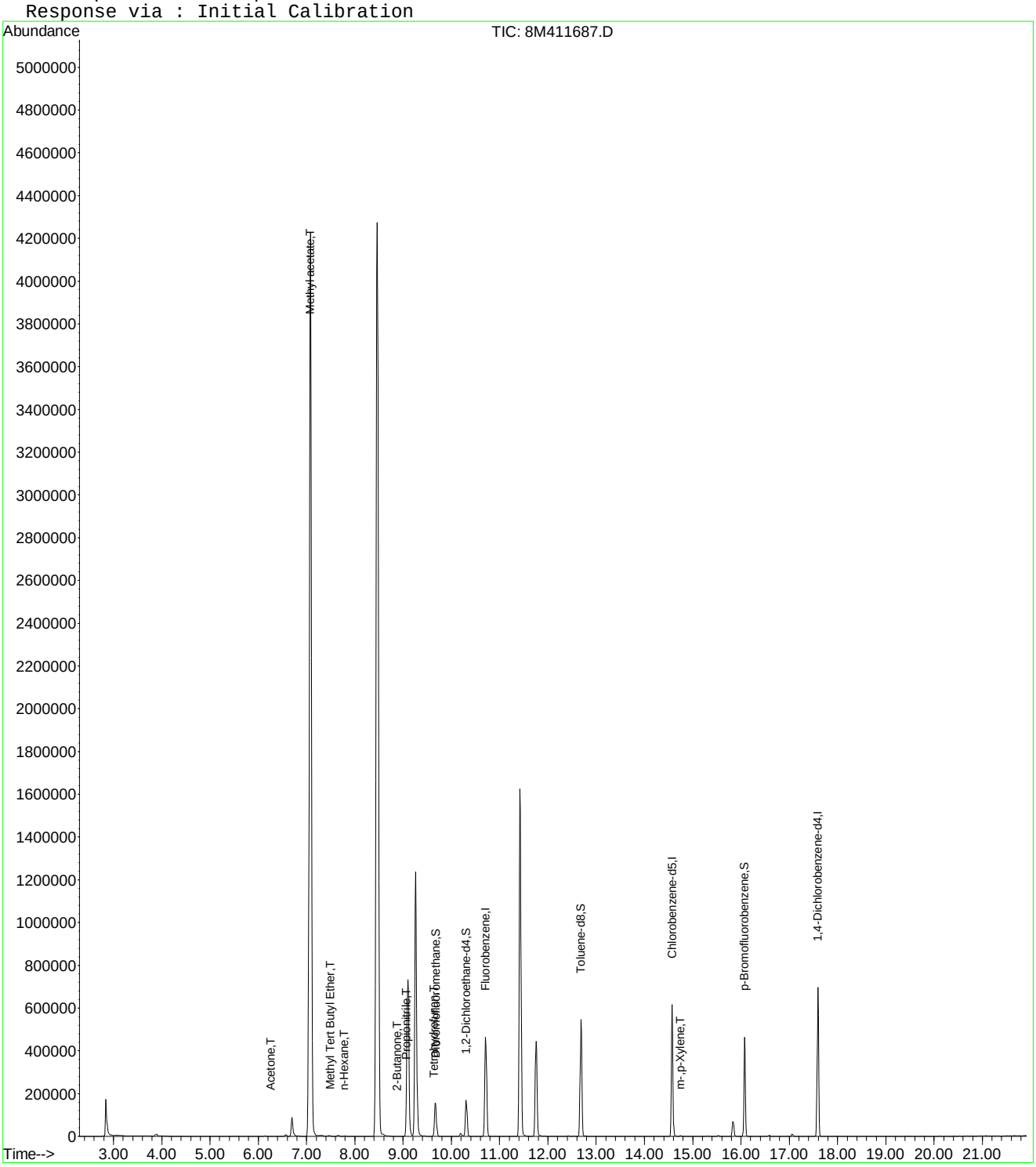

8M411687.D 8260WT.M Sun Apr 24 19:58:11 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411687.D Vial: 7
Acq On : 24 Apr 2016 19:36 Operator: JDS
Sample : WG566154-07 300ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:24:20 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:23:52 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	504106	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	384116	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	207668	25.00 ug/L	0.00

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
8M411687.D A9FOOWTR.M Wed Apr 27 16:24:20 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411687.D Vial: 7
Acq On : 24 Apr 2016 19:36 Operator: JDS
Sample : WG566154-07 300ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:24 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:23:52 2016
Response via : Initial Calibration

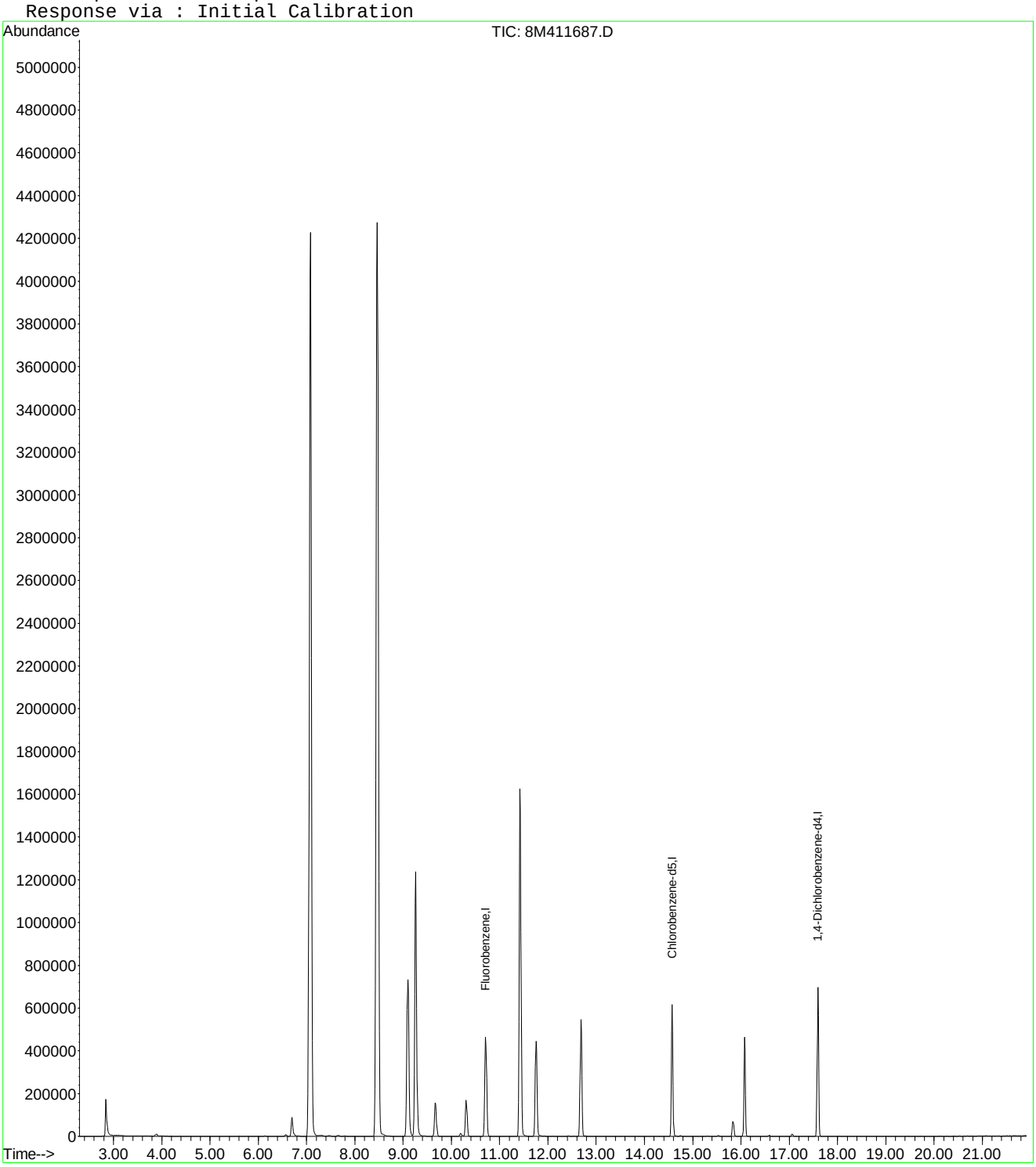

8M411687.D A9FOOWTR.M Wed Apr 27 16:24:20 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411687.D Vial: 7
Acq On : 24 Apr 2016 19:36 Operator: JDS
Sample : WG566154-07 300ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:35:46 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:34:16 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	504106	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	384116	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	207668	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	130023	308.1375 ug/L	100
3) 3-Chloro-1-propene	7.08	41	5005910	314.0391 ug/L	93
4) 2-Chloro-1,3-butadiene	8.47	53	4713359	321.8901 ug/L	81
5) Ethyl Acetate	9.10	43	1379082	317.4769 ug/L	93
6) Methacrylonitrile	9.26	67	380399	313.3150 ug/L #	50
7) Isobutyl Alcohol	9.27	43	57826	564.5650 ug/L #	75
9) Methyl methacrylate	11.42	41	1368958	311.8480 ug/L	77
10) 2-Nitropropane	11.75	43	448281	309.4560 ug/L	94
13) Cyclohexanone	15.83	55	43488	316.7876 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M411687.D A9FOOWTR.M Wed Apr 27 16:35:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411687.D Vial: 7
Acq On : 24 Apr 2016 19:36 Operator: JDS
Sample : WG566154-07 300ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:35 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:34:16 2016
Response via : Initial Calibration

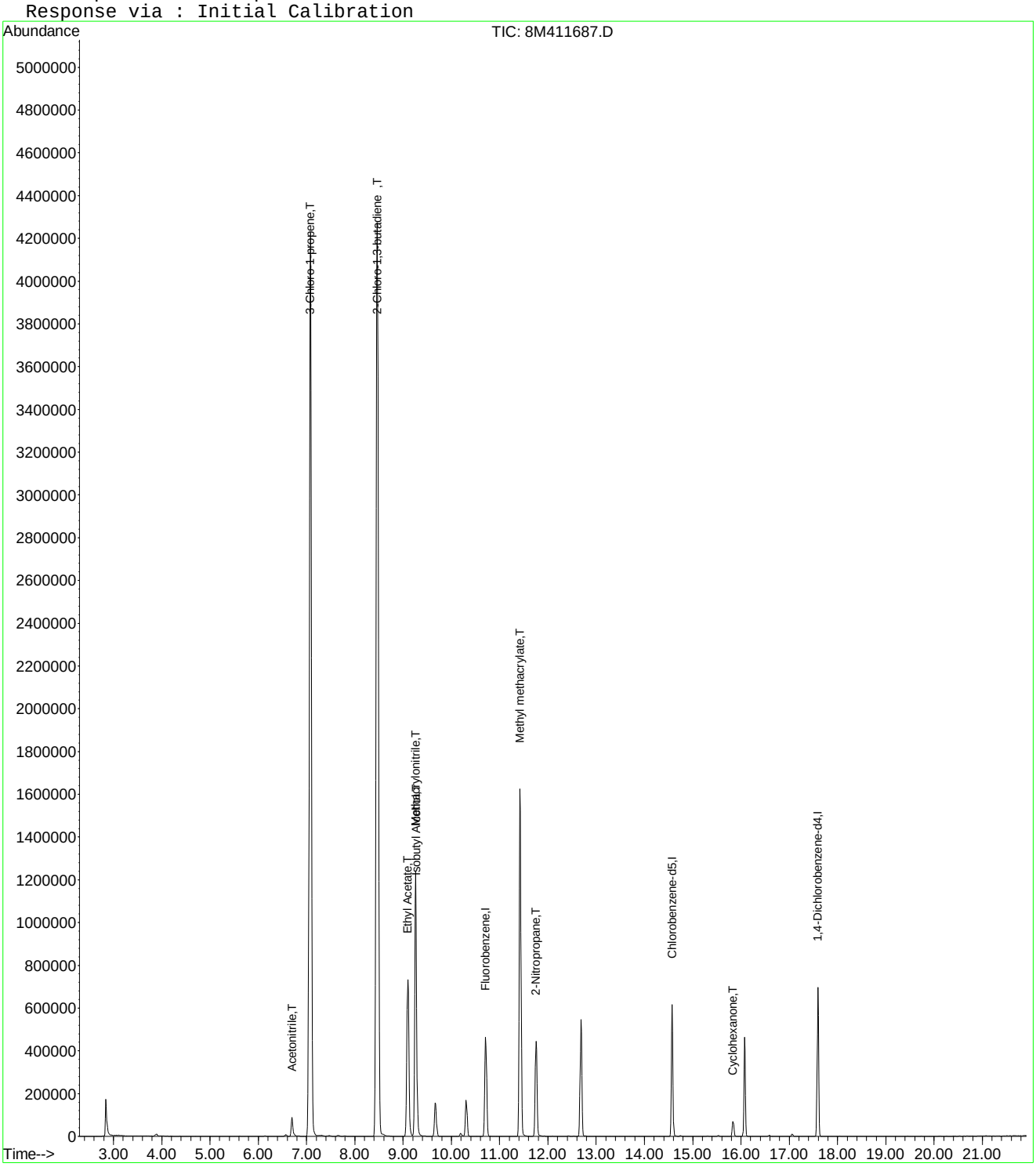

8M411687.D A9FOOWTR.M Wed Apr 27 16:35:47 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411687.D Vial: 7
Acq On : 24 Apr 2016 19:36 Operator: JDS
Sample : WG566154-07 300ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:37:34 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:36:22 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	504106	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	384116	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	207668	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	130023	308.1375 ug/L	100
3) 3-Chloro-1-propene	7.08	41	5005910	314.0391 ug/L	93
4) 2-Chloro-1,3-butadiene	8.47	53	4713359	321.8901 ug/L	81
5) Ethyl Acetate	9.10	43	1379082	317.4769 ug/L	93
6) Methacrylonitrile	9.26	67	380399	309.3731 ug/L #	50
7) Isobutyl Alcohol	9.27	43	57826	564.5650 ug/L #	75
9) Methyl methacrylate	11.42	41	1368958	308.6376 ug/L	77
10) 2-Nitropropane	11.75	43	448281	309.4560 ug/L	94
13) Cyclohexanone	15.83	55	43488	316.7876 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M411687.D A9FOOWTR.M Wed Apr 27 16:37:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411687.D Vial: 7
Acq On : 24 Apr 2016 19:36 Operator: JDS
Sample : WG566154-07 300ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:37 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:36:22 2016
Response via : Initial Calibration

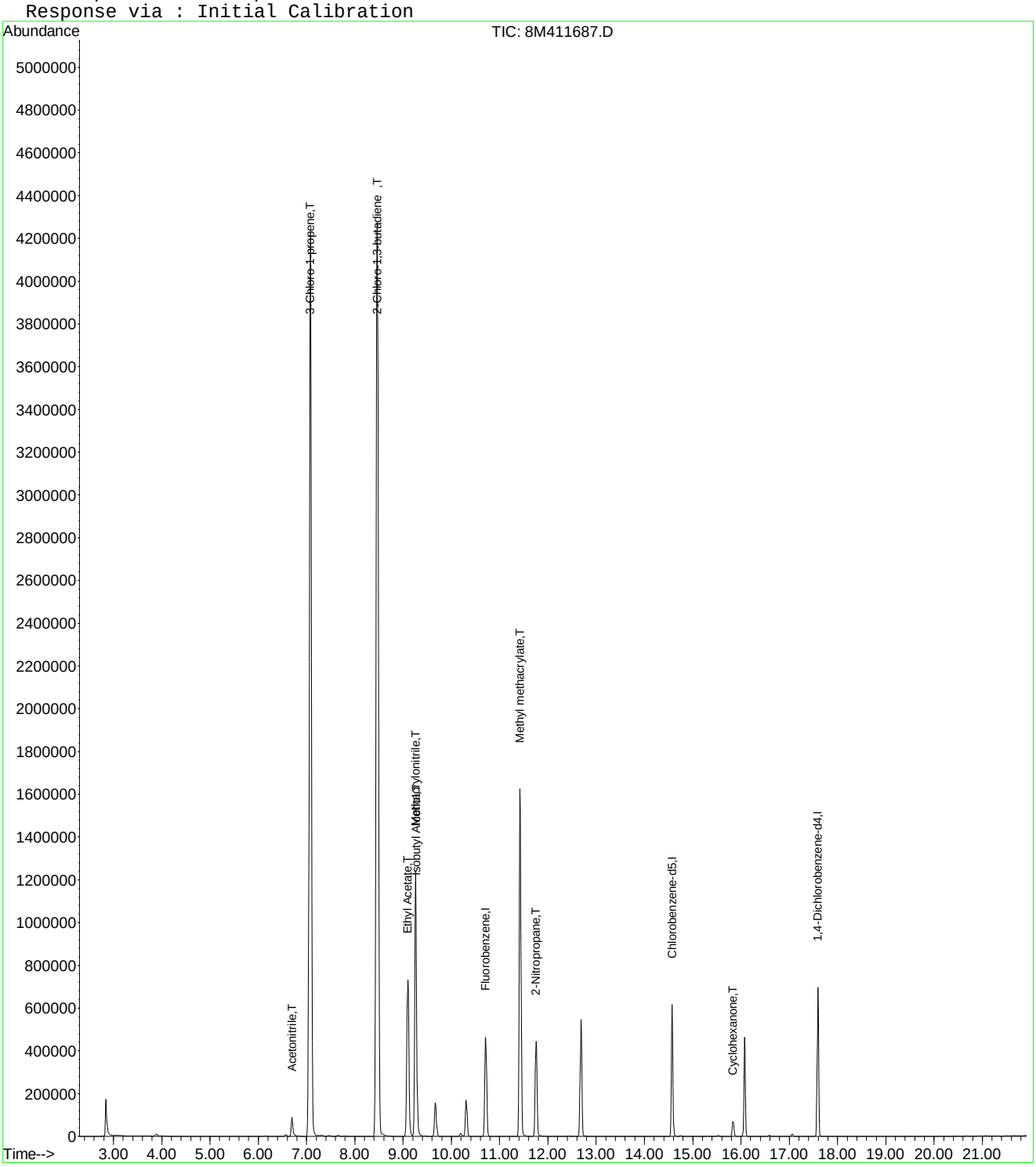

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411687.D Vial: 7
Acq On : 24 Apr 2016 19:36 Operator: JDS
Sample : WG566154-07 300ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:39:41 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 04-24-16 HPMS8
Last Update : Wed Apr 27 16:38:22 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	504106	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	384116	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	207668	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	130023	308.1375 ug/L	100
3) 3-Chloro-1-propene	7.08	41	5005910	314.0391 ug/L	93
4) 2-Chloro-1,3-butadiene	8.47	53	4713359	321.8901 ug/L	81
5) Ethyl Acetate	9.10	43	1379082	317.4769 ug/L	93
6) Methacrylonitrile	9.26	67	380399	309.3731 ug/L #	50
7) Isobutyl Alcohol	9.27	43	57826	564.5650 ug/L #	75
9) Methyl methacrylate	11.42	41	1368958	308.6376 ug/L	77
10) 2-Nitropropane	11.75	43	448281	309.4560 ug/L	94
13) Cyclohexanone	15.83	55	43488	316.7876 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M411687.D A9FOOWTR.M Wed Apr 27 16:39:41 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411687.D Vial: 7
Acq On : 24 Apr 2016 19:36 Operator: JDS
Sample : WG566154-07 300ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:39 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 04-24-16 HPMS8
Last Update : Wed Apr 27 16:38:22 2016
Response via : Initial Calibration

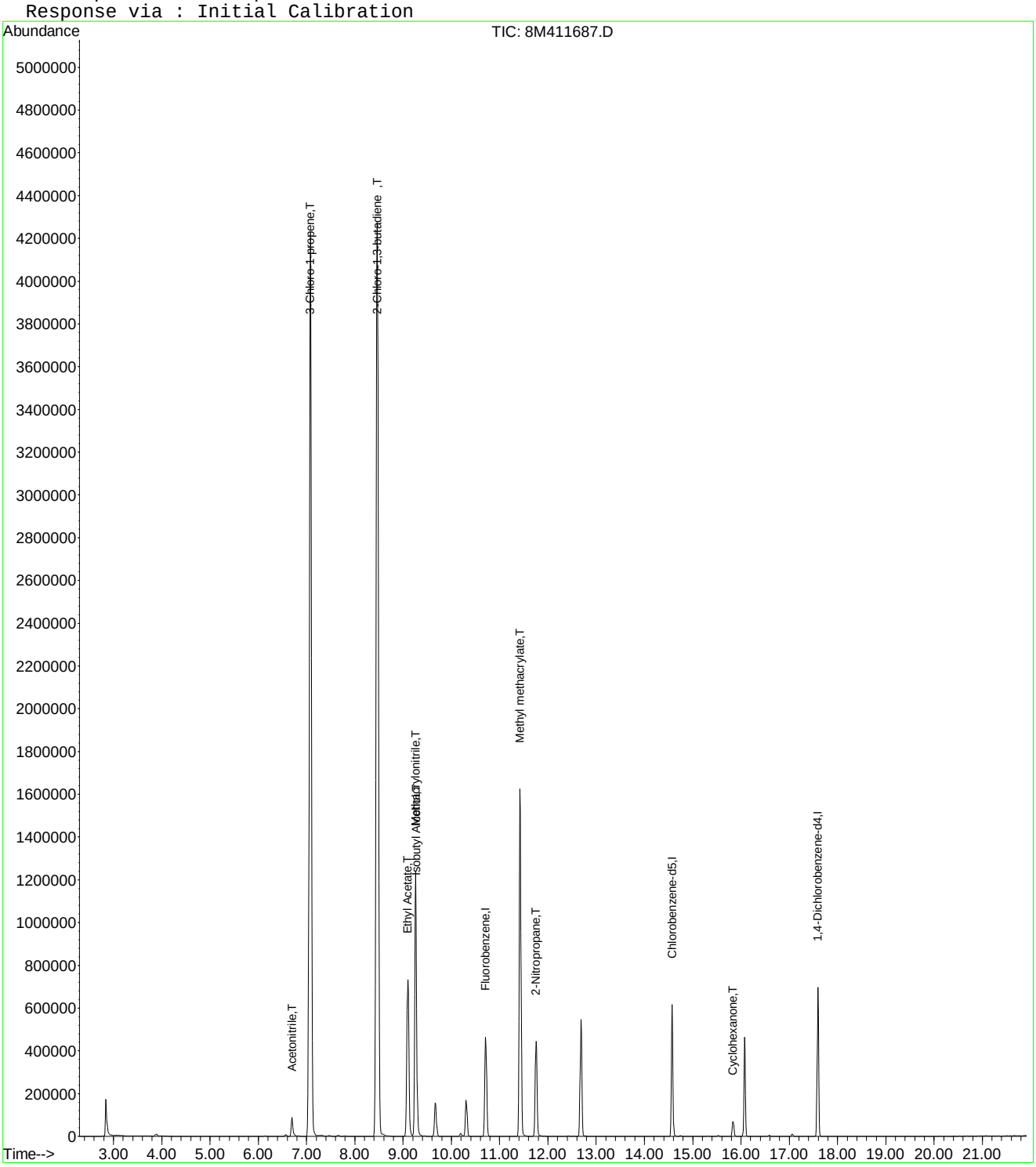

8M411687.D A9FOOWTR.M Wed Apr 27 16:39:41 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\042416\8M411688.D Vial: 8
Acq On : 24 Apr 2016 20:05 Operator: JDS
Sample : WG566154-08 400ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 24 20:27:54 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-13-16 HPMS 8
Last Update : Thu Apr 14 09:40:40 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	500330	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	381094	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	205053	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	134694	26.3297 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 105.32%		
43) 1,2-Dichloroethane-d4	10.31	65	158137	29.4426 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 117.76%		
58) Toluene-d8	12.68	98	446263	23.4005 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 93.60%		
80) p-Bromofluorobenzene	16.07	95	190063	23.7240 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.88%		

Target Compounds

					Qvalue
5) 1,3-Butadiene	3.89	54	236	Below Cal #	1
13) Acetone	6.26	43	1721	1.8094 ug/L #	48
18) Methyl acetate	7.07	43	2761	0.8239 ug/L #	1
22) Methyl Tert Butyl Ether	7.47	73	5145	0.4880 ug/L	91
24) n-Hexane	7.80	57	2882	0.3277 ug/L	93
29) 2-Butanone	8.90	43	868	0.5503 ug/L #	57
30) Propionitrile	9.05	54	634	1.3833 ug/L #	1
36) Tetrahydrofuran	9.63	42	3416	2.9347 ug/L #	41
73) m-,p-Xylene	14.74	106	2657	0.2715 ug/L	90

(#) = qualifier out of range (m) = manual integration
8M411688.D 8260WT.M Sun Apr 24 20:27:55 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\042416\8M411688.D Vial: 8
Acq On : 24 Apr 2016 20:05 Operator: JDS
Sample : WG566154-08 400ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 24 20:27 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-13-16 HPMS 8
Last Update : Thu Apr 14 09:40:40 2016
Response via : Initial Calibration

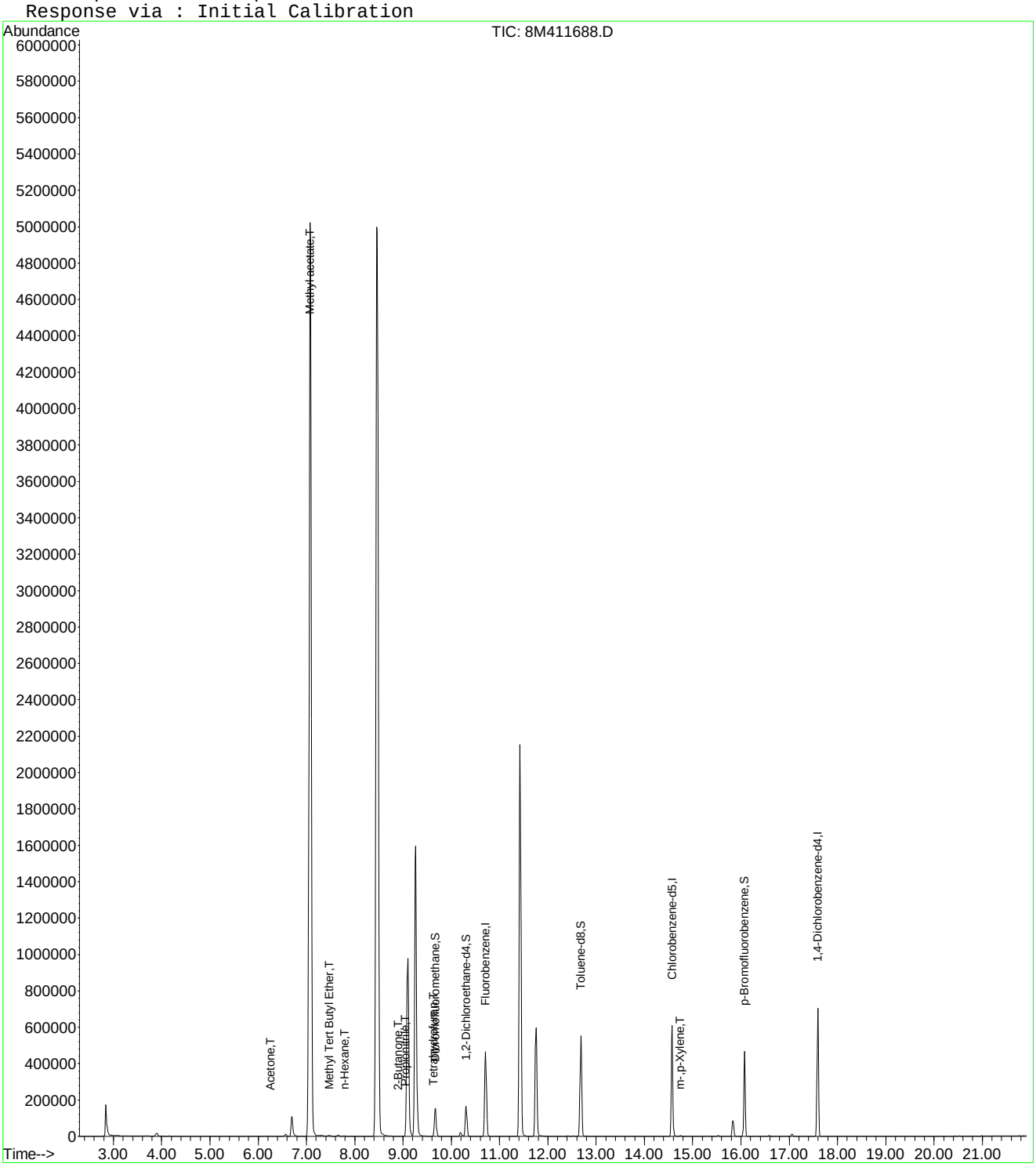

8M411688.D 8260WT.M Sun Apr 24 20:27:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411688.D Vial: 8
Acq On : 24 Apr 2016 20:05 Operator: JDS
Sample : WG566154-08 400ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:24:21 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:23:52 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	500330	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	381094	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	205053	25.00 ug/L	0.00

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
8M411688.D A9FOOWTR.M Wed Apr 27 16:24:21 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411688.D Vial: 8
Acq On : 24 Apr 2016 20:05 Operator: JDS
Sample : WG566154-08 400ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:24 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:23:52 2016
Response via : Initial Calibration

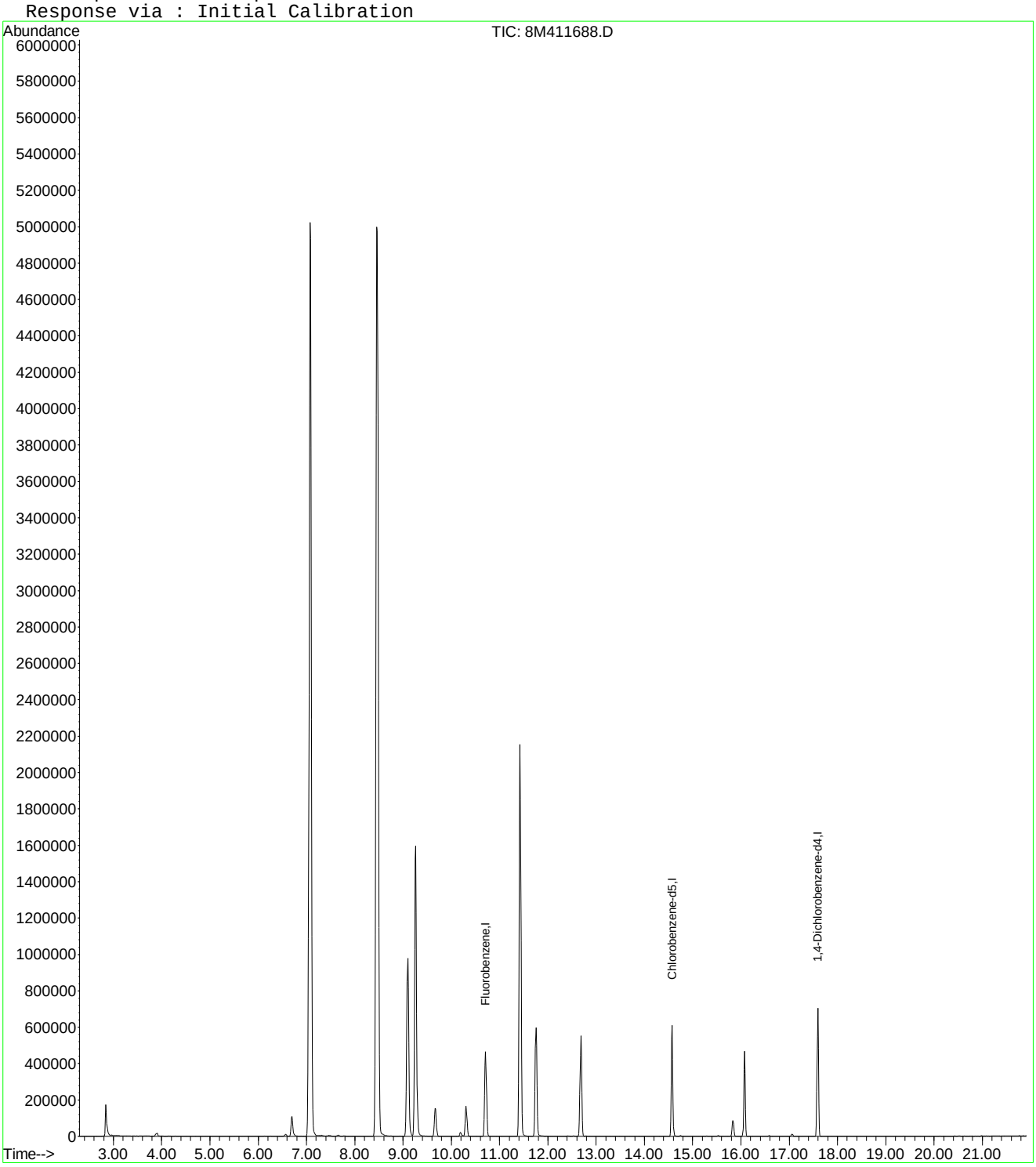

8M411688.D A9FOOWTR.M Wed Apr 27 16:24:21 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411688.D Vial: 8
Acq On : 24 Apr 2016 20:05 Operator: JDS
Sample : WG566154-08 400ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:35:47 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:34:16 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	500330	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	381094	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	205053	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	172742	412.4656 ug/L	93
3) 3-Chloro-1-propene	7.07	41	5986006	378.3582 ug/L	93
4) 2-Chloro-1,3-butadiene	8.46	53	5617601	386.5390 ug/L	81
5) Ethyl Acetate	9.10	43	1813965	420.7424 ug/L	92
6) Methacrylonitrile	9.26	67	498596	415.5950 ug/L #	49
7) Isobutyl Alcohol	9.27	43	83074	817.1866 ug/L	86
9) Methyl methacrylate	11.42	41	1794157	413.1493 ug/L	77
10) 2-Nitropropane	11.75	43	598724	416.4286 ug/L	94
13) Cyclohexanone	15.84	55	51287	378.3637 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M411688.D A9FOOWTR.M Wed Apr 27 16:35:47 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411688.D Vial: 8
Acq On : 24 Apr 2016 20:05 Operator: JDS
Sample : WG566154-08 400ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:35 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:34:16 2016
Response via : Initial Calibration

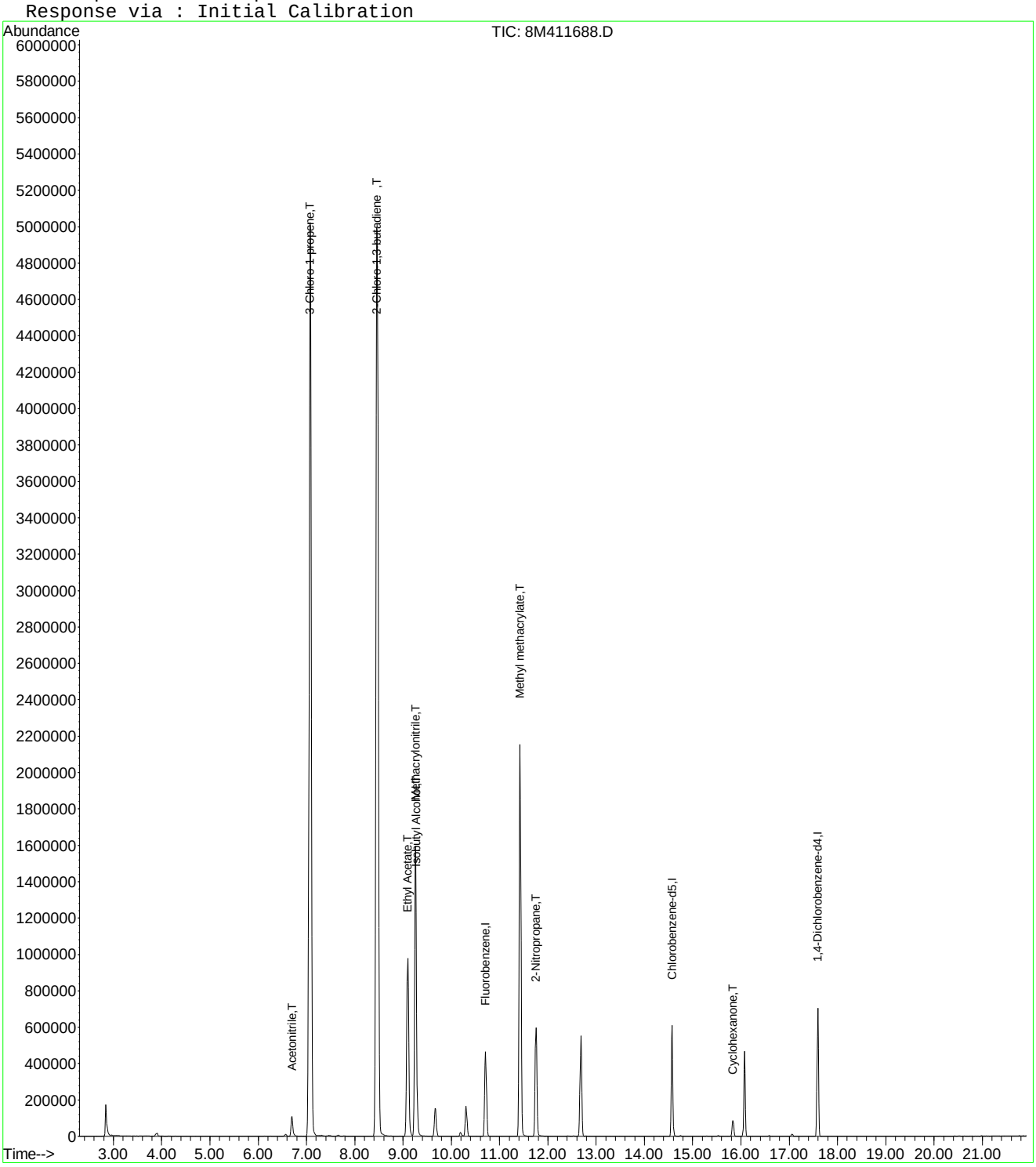

8M411688.D A9FOOWTR.M Wed Apr 27 16:35:47 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411688.D Vial: 8
Acq On : 24 Apr 2016 20:05 Operator: JDS
Sample : WG566154-08 400ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:37:35 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:36:22 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	500330	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	381094	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	205053	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	172742	412.4656 ug/L	93
3) 3-Chloro-1-propene	7.07	41	5986006	378.3582 ug/L	93
4) 2-Chloro-1,3-butadiene	8.46	53	5617601	386.5390 ug/L	81
5) Ethyl Acetate	9.10	43	1813965	420.7424 ug/L	92
6) Methacrylonitrile	9.26	67	498596	408.1905 ug/L #	49
7) Isobutyl Alcohol	9.27	43	83074	817.1866 ug/L	86
9) Methyl methacrylate	11.42	41	1794157	407.1103 ug/L	77
10) 2-Nitropropane	11.75	43	598724	416.4286 ug/L	94
13) Cyclohexanone	15.84	55	51287	378.3637 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M411688.D A9FOOWTR.M Wed Apr 27 16:37:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411688.D Vial: 8
Acq On : 24 Apr 2016 20:05 Operator: JDS
Sample : WG566154-08 400ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:37 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:36:22 2016
Response via : Initial Calibration

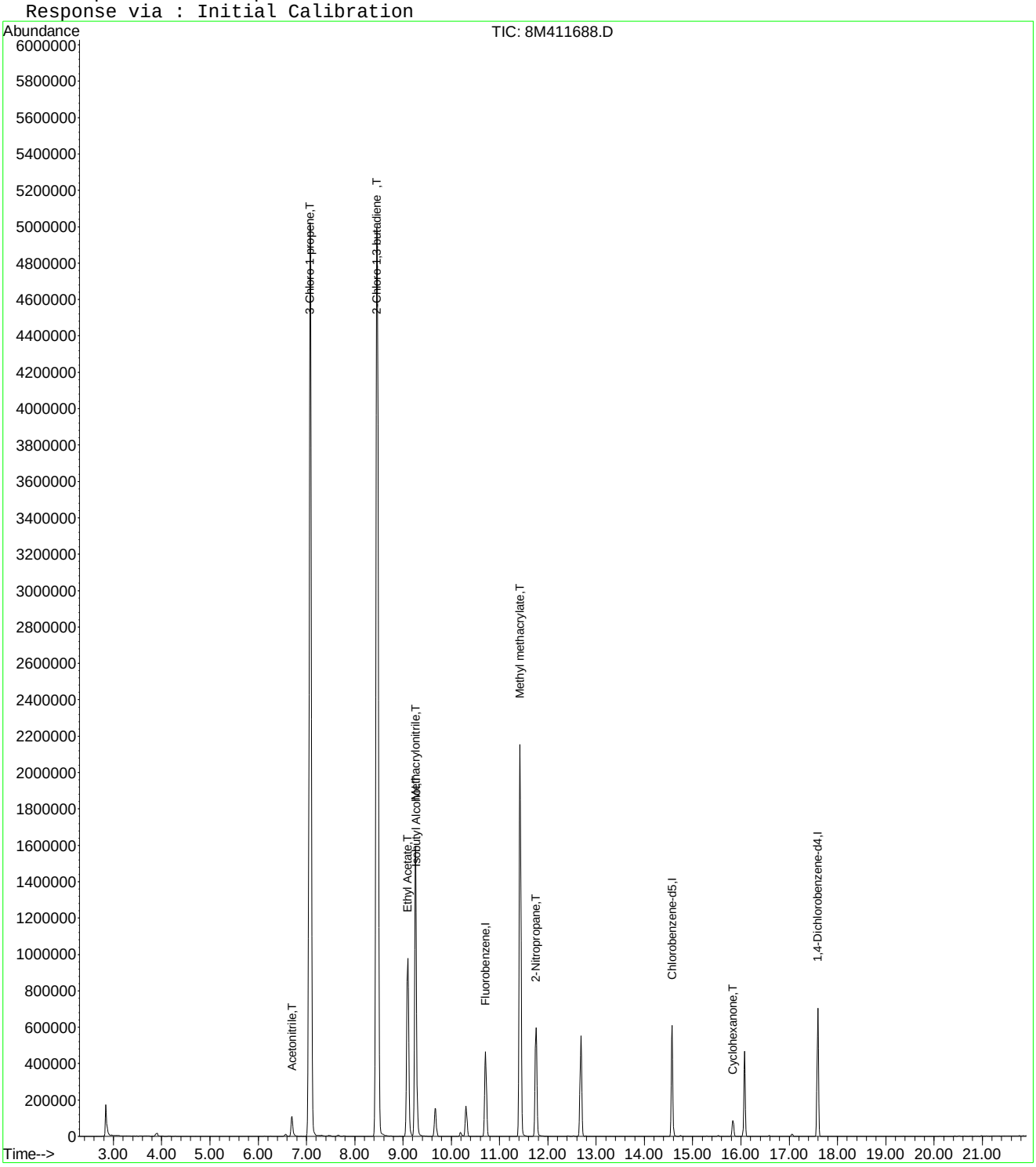

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411688.D Vial: 8
Acq On : 24 Apr 2016 20:05 Operator: JDS
Sample : WG566154-08 400ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:39:41 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 04-24-16 HPMS8
Last Update : Wed Apr 27 16:38:22 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	500330	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	381094	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	205053	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	172742	412.4656 ug/L	93
3) 3-Chloro-1-propene	7.07	41	5986006	378.3582 ug/L	93
4) 2-Chloro-1,3-butadiene	8.46	53	5617601	386.5390 ug/L	81
5) Ethyl Acetate	9.10	43	1813965	420.7424 ug/L	92
6) Methacrylonitrile	9.26	67	498596	408.1905 ug/L #	49
7) Isobutyl Alcohol	9.27	43	83074	817.1866 ug/L	86
9) Methyl methacrylate	11.42	41	1794157	407.1103 ug/L	77
10) 2-Nitropropane	11.75	43	598724	416.4286 ug/L	94
13) Cyclohexanone	15.84	55	51287	378.3637 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M411688.D A9FOOWTR.M Wed Apr 27 16:39:42 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411688.D Vial: 8
Acq On : 24 Apr 2016 20:05 Operator: JDS
Sample : WG566154-08 400ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:39 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 04-24-16 HPMS8
Last Update : Wed Apr 27 16:38:22 2016
Response via : Initial Calibration

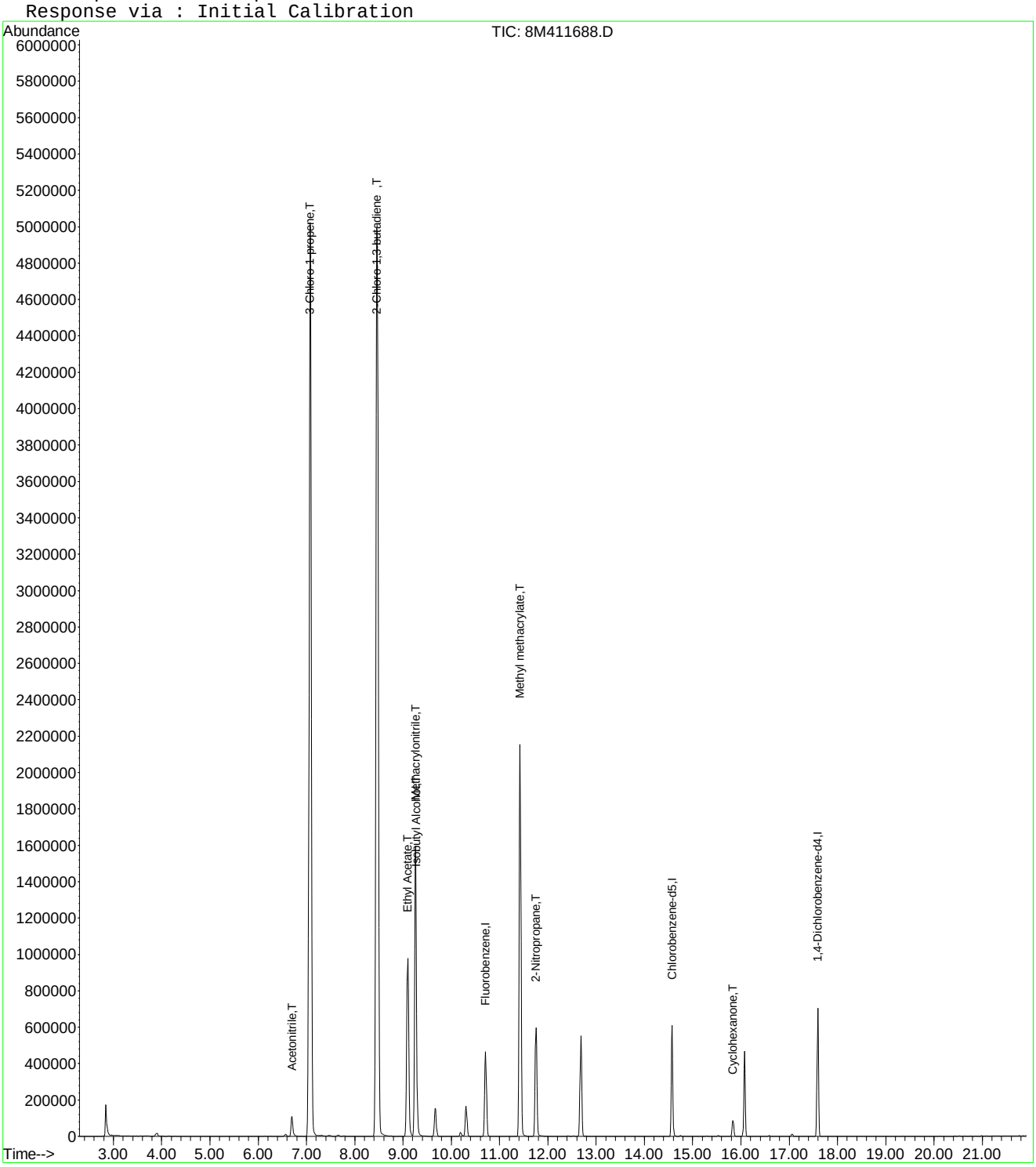

8M411688.D A9FOOWTR.M Wed Apr 27 16:39:42 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\042416\8M411689.D Vial: 9
Acq On : 24 Apr 2016 20:34 Operator: JDS
Sample : WG566154-09 500ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 24 20:56:47 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-13-16 HPMS 8
Last Update : Thu Apr 14 09:40:40 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	525063	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	395482	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	214549	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	136843	25.4897 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.96%		
43) 1,2-Dichloroethane-d4	10.30	65	163370	28.9842 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 115.92%		
58) Toluene-d8	12.68	98	458754	23.1803 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 92.72%		
80) p-Bromofluorobenzene	16.07	95	190698	22.7497 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 91.00%		

Target Compounds

					Qvalue
13) Acetone	6.26	43	2191	2.1950 ug/L #	48
18) Methyl acetate	7.00	43	661	0.1880 ug/L #	66
20) Carbon Disulfide	7.31	76	3224	0.1769 ug/L #	74
22) Methyl Tert Butyl Ether	7.48	73	6362	0.5750 ug/L #	57
24) n-Hexane	7.79	57	3582	0.3881 ug/L	90
29) 2-Butanone	8.90	43	1895	1.1448 ug/L #	57
30) Propionitrile	9.05	54	892	1.8545 ug/L #	1
36) Tetrahydrofuran	9.64	42	2279	1.8656 ug/L #	65
73) m-,p-Xylene	14.75	106	2740	0.2698 ug/L	62

(#) = qualifier out of range (m) = manual integration
8M411689.D 8260WT.M Sun Apr 24 20:56:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\042416\8M411689.D Vial: 9
Acq On : 24 Apr 2016 20:34 Operator: JDS
Sample : WG566154-09 500ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 24 20:56 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-13-16 HPMS 8
Last Update : Thu Apr 14 09:40:40 2016
Response via : Initial Calibration

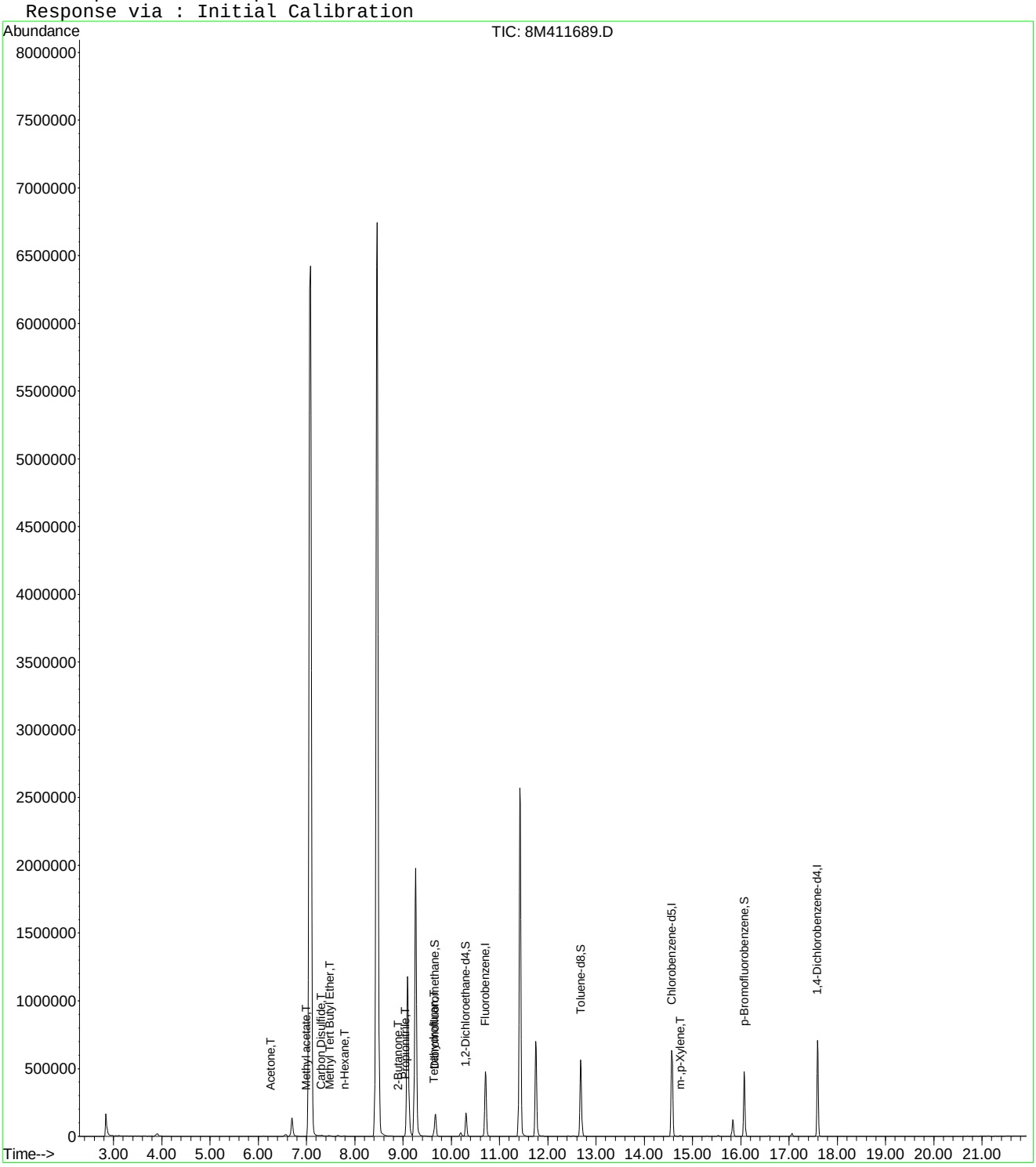

8M411689.D 8260WT.M Sun Apr 24 20:56:48 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411689.D Vial: 9
Acq On : 24 Apr 2016 20:34 Operator: JDS
Sample : WG566154-09 500ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:24:21 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:23:52 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	525063	25.00 ug/L	-0.01
11) Chlorobenzene-d5	14.57	117	395482	25.00 ug/L	-0.01
12) 1,4-Dichlorobenzene-d4	17.59	152	214549	25.00 ug/L	-0.01

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
8M411689.D A9FOOWTR.M Wed Apr 27 16:24:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411689.D Vial: 9
Acq On : 24 Apr 2016 20:34 Operator: JDS
Sample : WG566154-09 500ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:24 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:23:52 2016
Response via : Initial Calibration

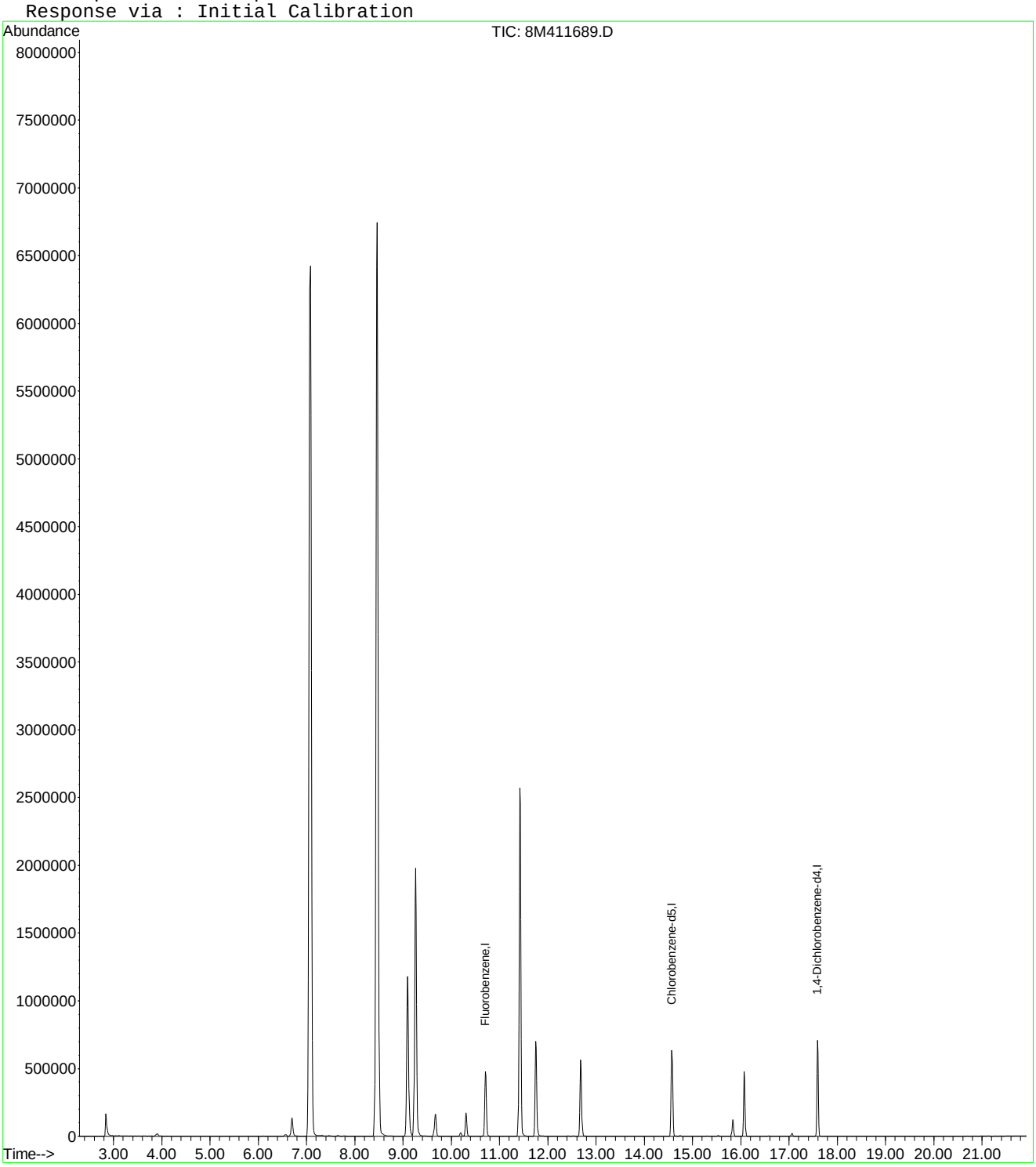

8M411689.D A9FOOWTR.M Wed Apr 27 16:24:22 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411689.D Vial: 9
Acq On : 24 Apr 2016 20:34 Operator: JDS
Sample : WG566154-09 500ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:35:47 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:34:16 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	525063	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	395482	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	214549	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	205898	468.4756 ug/L	97
3) 3-Chloro-1-propene	7.08	41	7587863	457.0151 ug/L	94
4) 2-Chloro-1,3-butadiene	8.46	53	7376630	483.6659 ug/L	82
5) Ethyl Acetate	9.09	43	2195309	485.2082 ug/L	92
6) Methacrylonitrile	9.26	67	598355	476.0721 ug/L #	48
7) Isobutyl Alcohol	9.27	43	103527	970.4092 ug/L	84
9) Methyl methacrylate	11.42	41	2178700	478.7325 ug/L	77
10) 2-Nitropropane	11.75	43	722127	478.5999 ug/L	93
13) Cyclohexanone	15.83	55	74215	523.2792 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M411689.D A9FOOWTR.M Wed Apr 27 16:35:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411689.D Vial: 9
Acq On : 24 Apr 2016 20:34 Operator: JDS
Sample : WG566154-09 500ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:35 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:34:16 2016
Response via : Initial Calibration

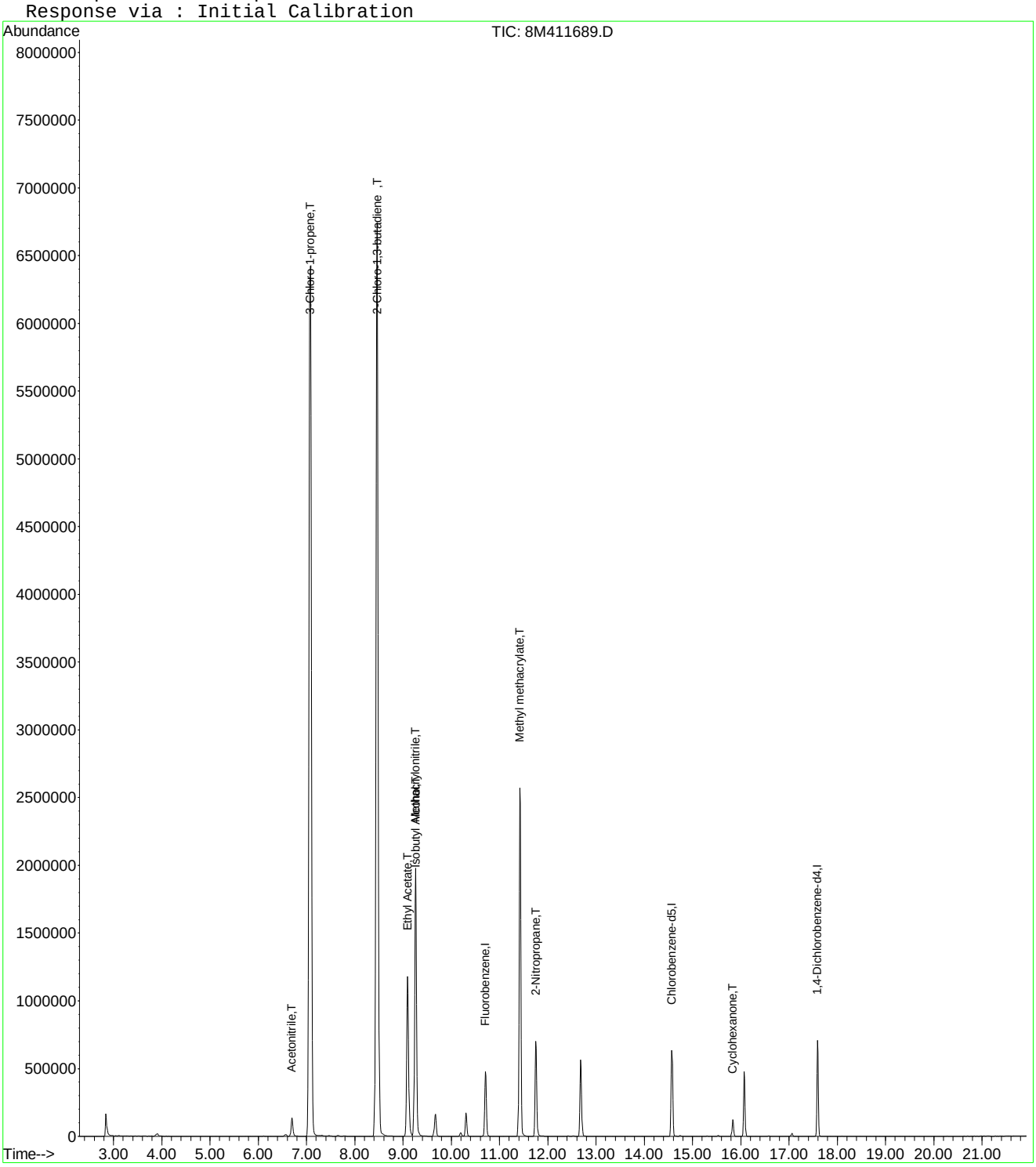

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411689.D Vial: 9
Acq On : 24 Apr 2016 20:34 Operator: JDS
Sample : WG566154-09 500ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:37:36 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:36:22 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	525063	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	395482	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	214549	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	205898	468.4756 ug/L	97
3) 3-Chloro-1-propene	7.08	41	7587863	457.0151 ug/L	94
4) 2-Chloro-1,3-butadiene	8.46	53	7376630	483.6659 ug/L	82
5) Ethyl Acetate	9.09	43	2195309	485.2082 ug/L	92
6) Methacrylonitrile	9.26	67	598355	466.6203 ug/L #	48
7) Isobutyl Alcohol	9.27	43	103527	970.4092 ug/L	84
9) Methyl methacrylate	11.42	41	2178700	470.8622 ug/L	77
10) 2-Nitropropane	11.75	43	722127	478.5999 ug/L	93
13) Cyclohexanone	15.83	55	74215	523.2792 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M411689.D A9FOOWTR.M Wed Apr 27 16:37:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411689.D Vial: 9
Acq On : 24 Apr 2016 20:34 Operator: JDS
Sample : WG566154-09 500ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:37 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:36:22 2016
Response via : Initial Calibration

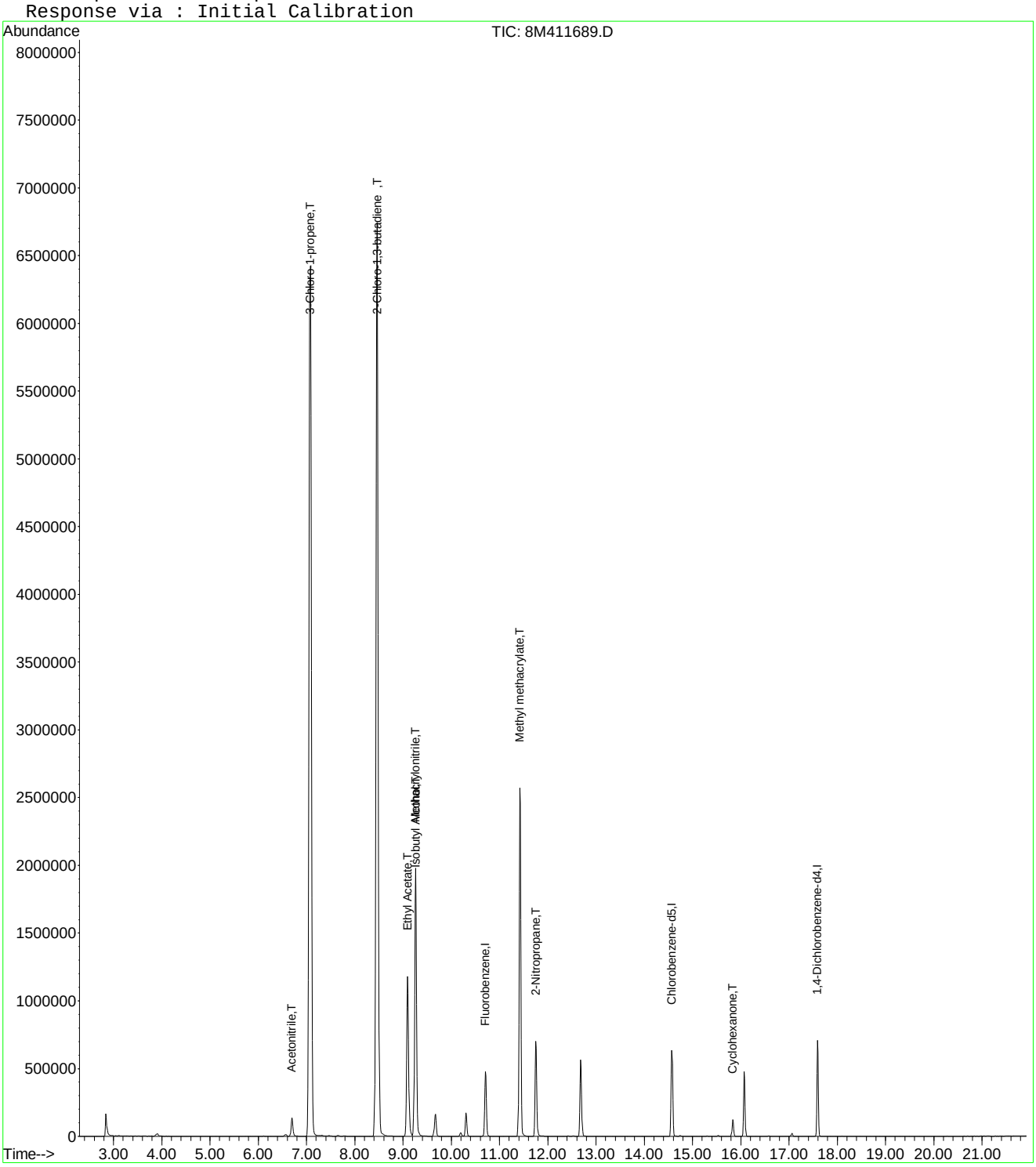

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411689.D Vial: 9
Acq On : 24 Apr 2016 20:34 Operator: JDS
Sample : WG566154-09 500ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:39:42 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 04-24-16 HPMS8
Last Update : Wed Apr 27 16:38:22 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	525063	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	395482	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	214549	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	205898	468.4756 ug/L	97
3) 3-Chloro-1-propene	7.08	41	7587863	457.0151 ug/L	94
4) 2-Chloro-1,3-butadiene	8.46	53	7376630	483.6659 ug/L	82
5) Ethyl Acetate	9.09	43	2195309	485.2082 ug/L	92
6) Methacrylonitrile	9.26	67	598355	466.6203 ug/L #	48
7) Isobutyl Alcohol	9.27	43	103527	970.4092 ug/L	84
9) Methyl methacrylate	11.42	41	2178700	470.8622 ug/L	77
10) 2-Nitropropane	11.75	43	722127	478.5999 ug/L	93
13) Cyclohexanone	15.83	55	74215	523.2792 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M411689.D A9FOOWTR.M Wed Apr 27 16:39:42 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411689.D Vial: 9
Acq On : 24 Apr 2016 20:34 Operator: JDS
Sample : WG566154-09 500ug/L STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:39 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 04-24-16 HPMS8
Last Update : Wed Apr 27 16:38:22 2016
Response via : Initial Calibration

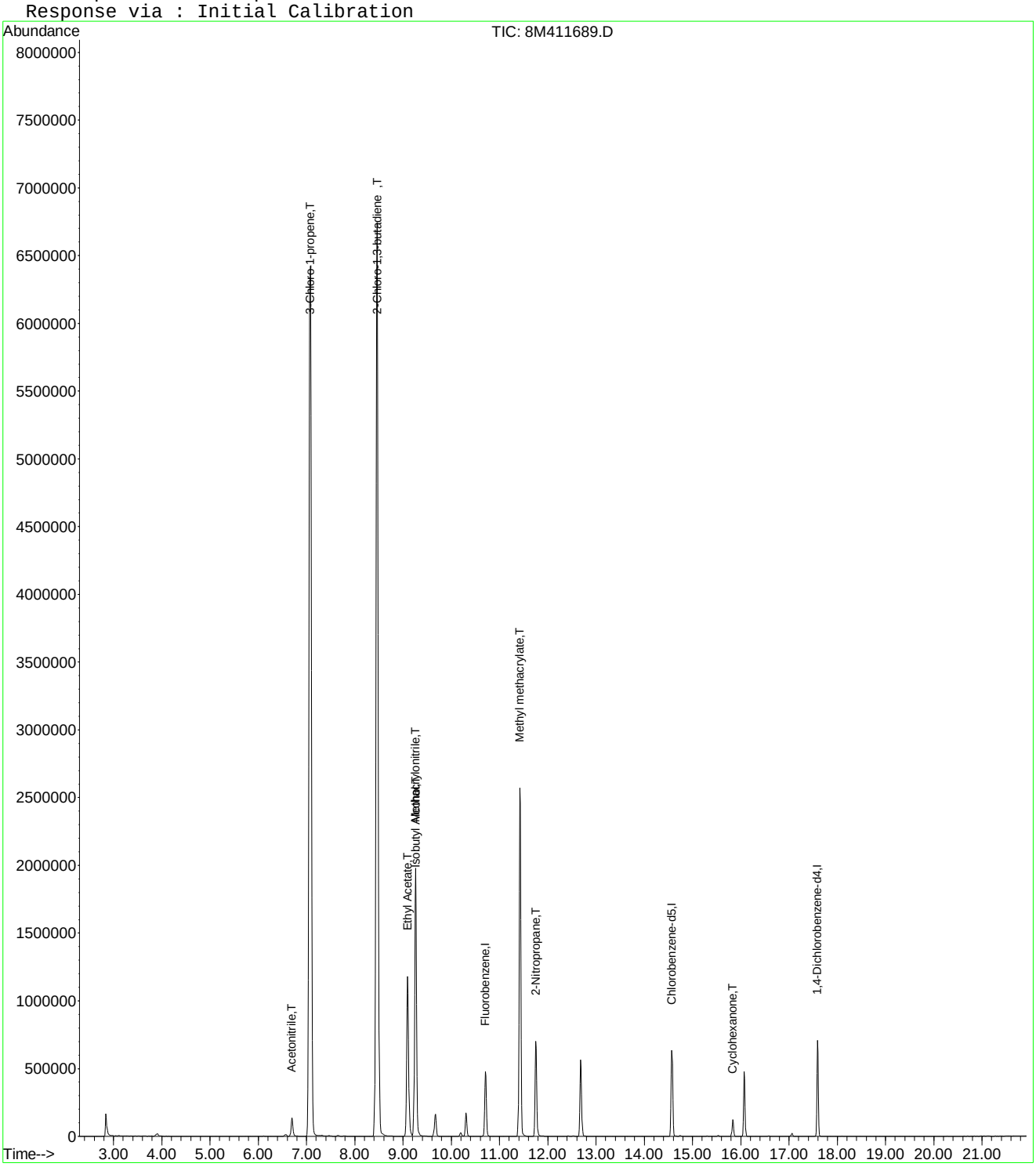

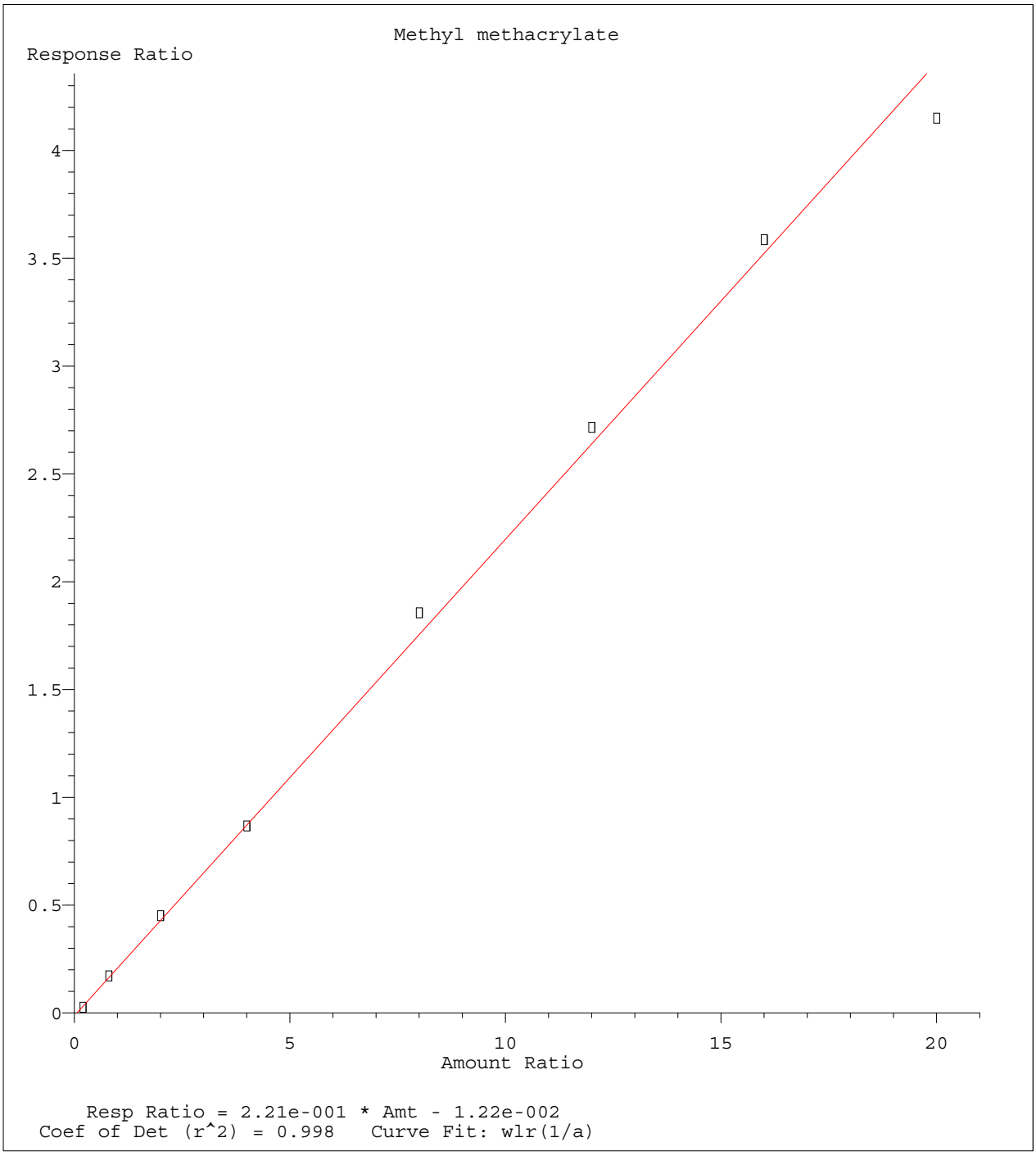

Method Name: C:\MSDCHEM\2\METHODS\A9FOOWTR.M
Calibration Table Last Updated: Wed Apr 27 16:38:22 2016

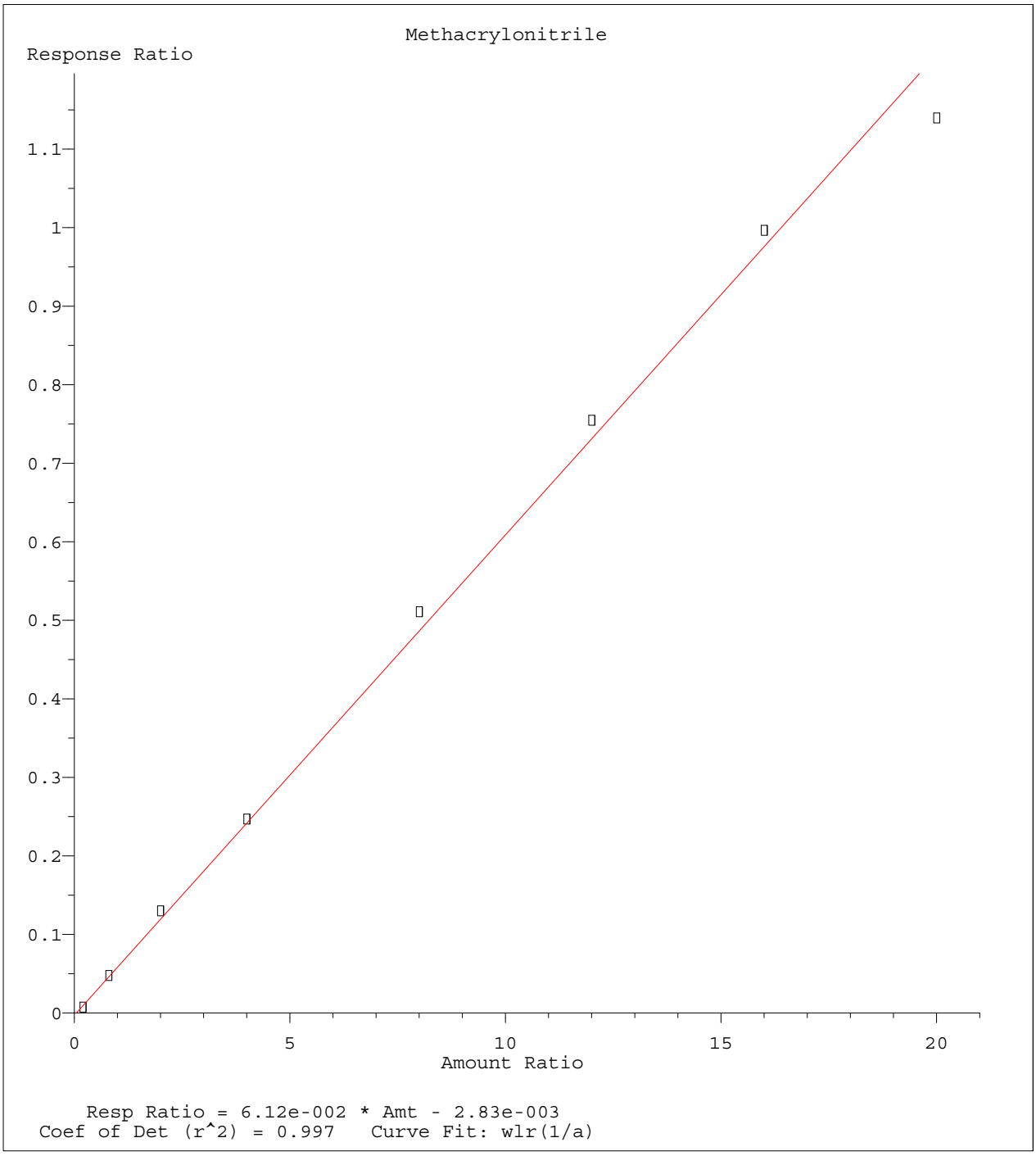

Method Name: C:\MSDCHEM\2\METHODS\A9FOOWTR.M
Calibration Table Last Updated: Wed Apr 27 16:38:22 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\042416\8M411692.D Vial: 12
Acq On : 24 Apr 2016 22:02 Operator: JDS
Sample : WG566154-10 100ug/L ALT SRC STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 24 22:24:19 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-13-16 HPMS 8
Last Update : Thu Apr 14 09:40:40 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	492773	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	377229	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	208753	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.68	111	132035	26.2057 ug/L	0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.84%		
43) 1,2-Dichloroethane-d4	10.31	65	155866	29.4649 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 117.84%		
58) Toluene-d8	12.68	98	434696	23.0275 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 92.12%		
80) p-Bromofluorobenzene	16.07	95	180494	22.1303 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 88.52%		

Target Compounds					Qvalue
5) 1,3-Butadiene	3.91	54	299316	42.4793 ug/L	88
6) Bromomethane	4.75	94	201	0.7151 ug/L #	1
9) Diethyl ether	5.91	59	491725	135.2095 ug/L	83
13) Acetone	6.25	43	265	0.2829 ug/L #	48
29) 2-Butanone	8.90	43	3035	1.9536 ug/L #	57
30) Propionitrile	8.99	54	45548	100.9028 ug/L	93
36) Tetrahydrofuran	9.64	42	2805	2.4467 ug/L #	54
39) Cyclohexane	9.95	56	3058	0.2666 ug/L #	69

(#) = qualifier out of range (m) = manual integration
8M411692.D 8260WT.M Sun Apr 24 22:24:20 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\042416\8M411692.D Vial: 12
Acq On : 24 Apr 2016 22:02 Operator: JDS
Sample : WG566154-10 100ug/L ALT SRC STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 24 22:24 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-13-16 HPMS 8
Last Update : Thu Apr 14 09:40:40 2016
Response via : Initial Calibration

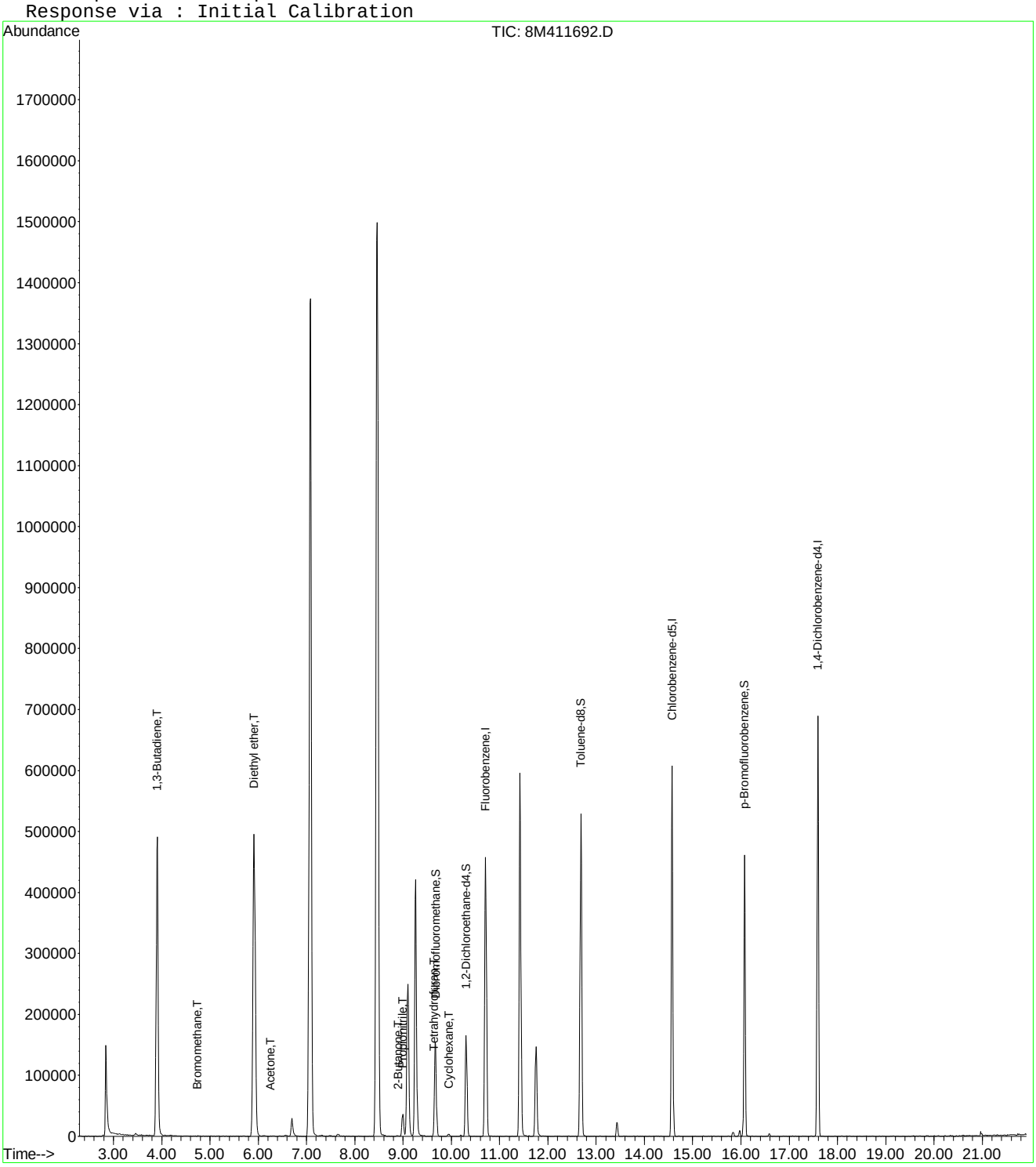

8M411692.D 8260WT.M Sun Apr 24 22:24:20 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411692.D Vial: 12
Acq On : 24 Apr 2016 22:02 Operator: JDS
Sample : WG566154-10 100ug/L ALT SRC STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:24:24 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:23:52 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	492773	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	377229	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	208753	25.00 ug/L	0.00

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration
8M411692.D A9FOOWTR.M Wed Apr 27 16:24:24 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411692.D Vial: 12
Acq On : 24 Apr 2016 22:02 Operator: JDS
Sample : WG566154-10 100ug/L ALT SRC STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:24 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:23:52 2016
Response via : Initial Calibration

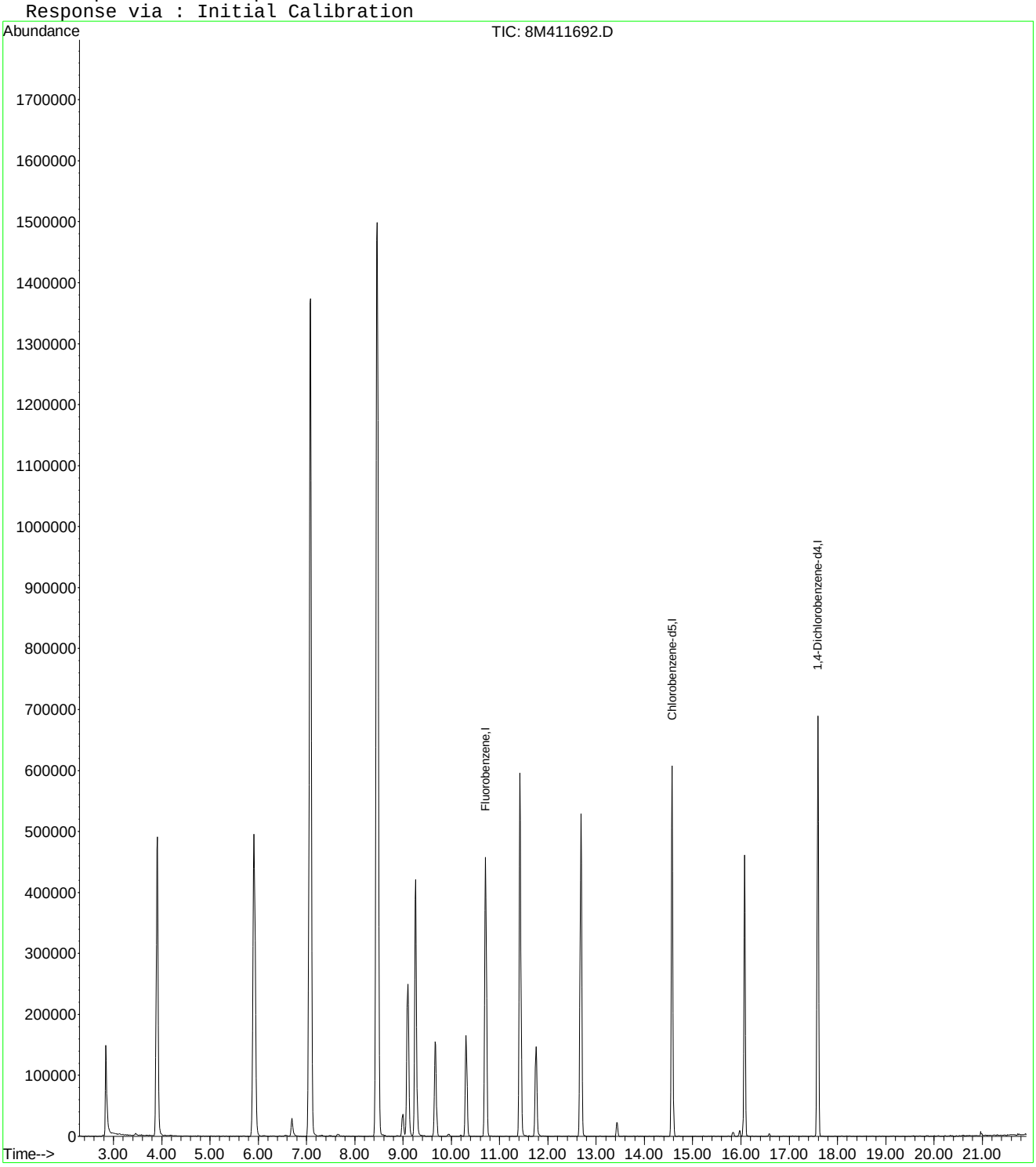

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411692.D Vial: 12
Acq On : 24 Apr 2016 22:02 Operator: JDS
Sample : WG566154-10 100ug/L ALT SRC STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:35:48 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:34:16 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	492773	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	377229	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	208753	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	44894	108.8398 ug/L	98
3) 3-Chloro-1-propene	7.07	41	1669509	107.1431 ug/L	92
4) 2-Chloro-1,3-butadiene	8.47	53	1673770	116.9359 ug/L	81
5) Ethyl Acetate	9.10	43	466332	109.8227 ug/L	92
6) Methacrylonitrile	9.26	67	132401	107.8887 ug/L #	54
7) Isobutyl Alcohol	9.27	43	12420	124.0473 ug/L #	39
9) Methyl methacrylate	11.42	41	494305	112.5227 ug/L	77
10) 2-Nitropropane	11.75	43	142984	100.9743 ug/L	94
13) Cyclohexanone	15.84	55	4200	30.4358 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M411692.D A9FOOWTR.M Wed Apr 27 16:35:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411692.D Vial: 12
Acq On : 24 Apr 2016 22:02 Operator: JDS
Sample : WG566154-10 100ug/L ALT SRC STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:35 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:34:16 2016
Response via : Initial Calibration

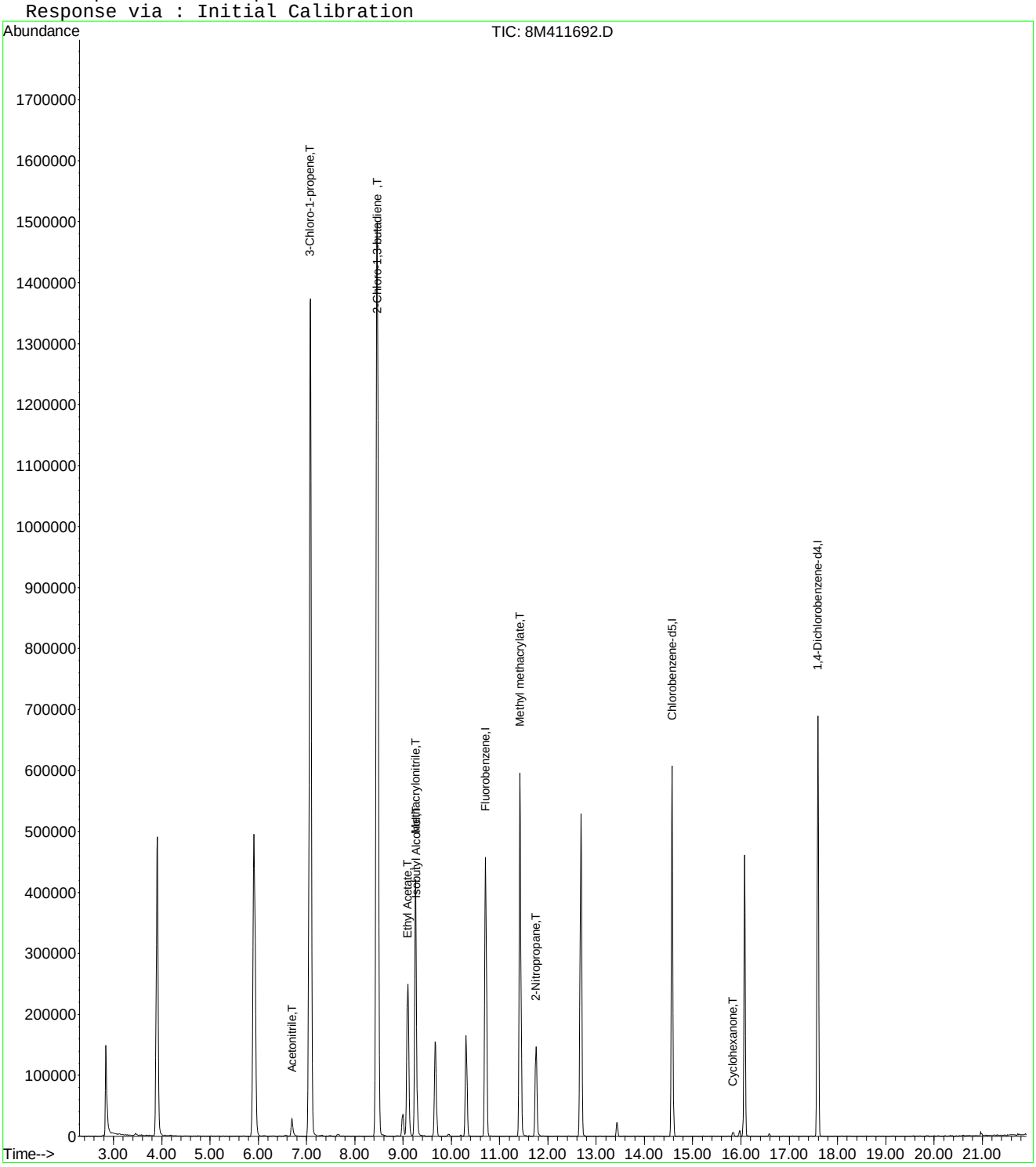

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411692.D Vial: 12
Acq On : 24 Apr 2016 22:02 Operator: JDS
Sample : WG566154-10 100ug/L ALT SRC STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:37:36 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:36:22 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	492773	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	377229	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	208753	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.70	41	44894	108.8398	ug/L	98
3) 3-Chloro-1-propene	7.07	41	1669509	107.1431	ug/L	92
4) 2-Chloro-1,3-butadiene	8.47	53	1673770	116.9359	ug/L	81
5) Ethyl Acetate	9.10	43	466332	109.8227	ug/L	92
6) Methacrylonitrile	9.26	67	132401	110.9012	ug/L #	54
7) Isobutyl Alcohol	9.27	43	12420	124.0473	ug/L #	39
9) Methyl methacrylate	11.42	41	494305	114.8781	ug/L	77
10) 2-Nitropropane	11.75	43	142984	100.9743	ug/L	94
13) Cyclohexanone	15.84	55	4200	30.4358	ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411692.D Vial: 12
Acq On : 24 Apr 2016 22:02 Operator: JDS
Sample : WG566154-10 100ug/L ALT SRC STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:37 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 10-05-15 HPMS8
Last Update : Wed Apr 27 16:36:22 2016
Response via : Initial Calibration

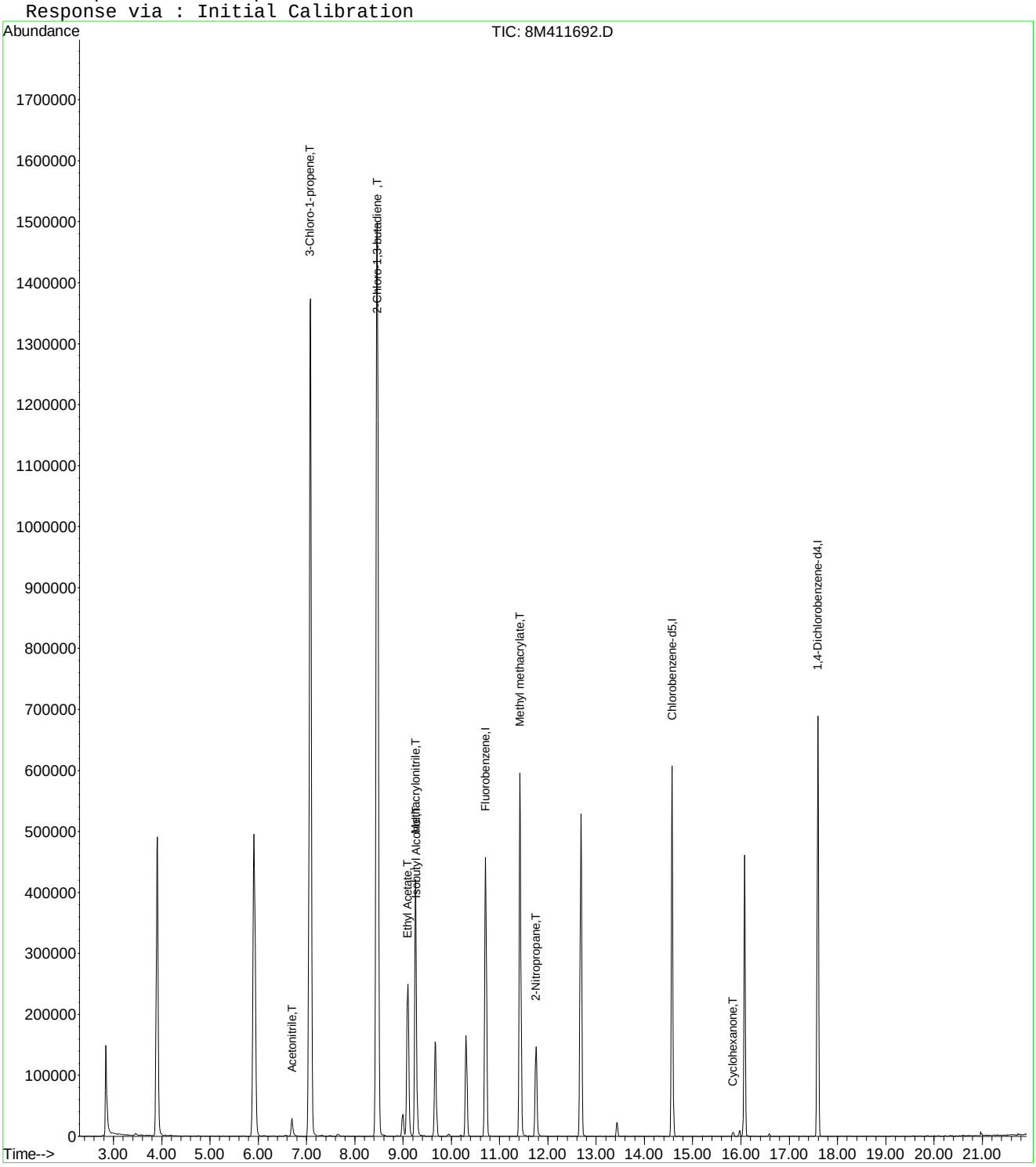

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411692.D Vial: 12
Acq On : 24 Apr 2016 22:02 Operator: JDS
Sample : WG566154-10 100ug/L ALT SRC STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:39:43 2016 Quant Results File: A9FOOWTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 04-24-16 HPMS8
Last Update : Wed Apr 27 16:38:22 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	492773	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	377229	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.59	152	208753	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	44894	108.8398 ug/L	98
3) 3-Chloro-1-propene	7.07	41	1669509	107.1431 ug/L	92
4) 2-Chloro-1,3-butadiene	8.47	53	1673770	116.9359 ug/L	81
5) Ethyl Acetate	9.10	43	466332	109.8227 ug/L	92
6) Methacrylonitrile	9.26	67	132401	110.9012 ug/L #	54
7) Isobutyl Alcohol	9.27	43	12420	124.0473 ug/L #	39
9) Methyl methacrylate	11.42	41	494305	114.8781 ug/L	77
10) 2-Nitropropane	11.75	43	142984	100.9743 ug/L	94
13) Cyclohexanone	15.84	55	4200	30.4358 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M411692.D A9FOOWTR.M Wed Apr 27 16:39:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042416\8M411692.D Vial: 12
Acq On : 24 Apr 2016 22:02 Operator: JDS
Sample : WG566154-10 100ug/L ALT SRC STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:39 2016 Quant Results File: A9FOOWTR.RES

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 04-24-16 HPMS8
Last Update : Wed Apr 27 16:38:22 2016
Response via : Initial Calibration

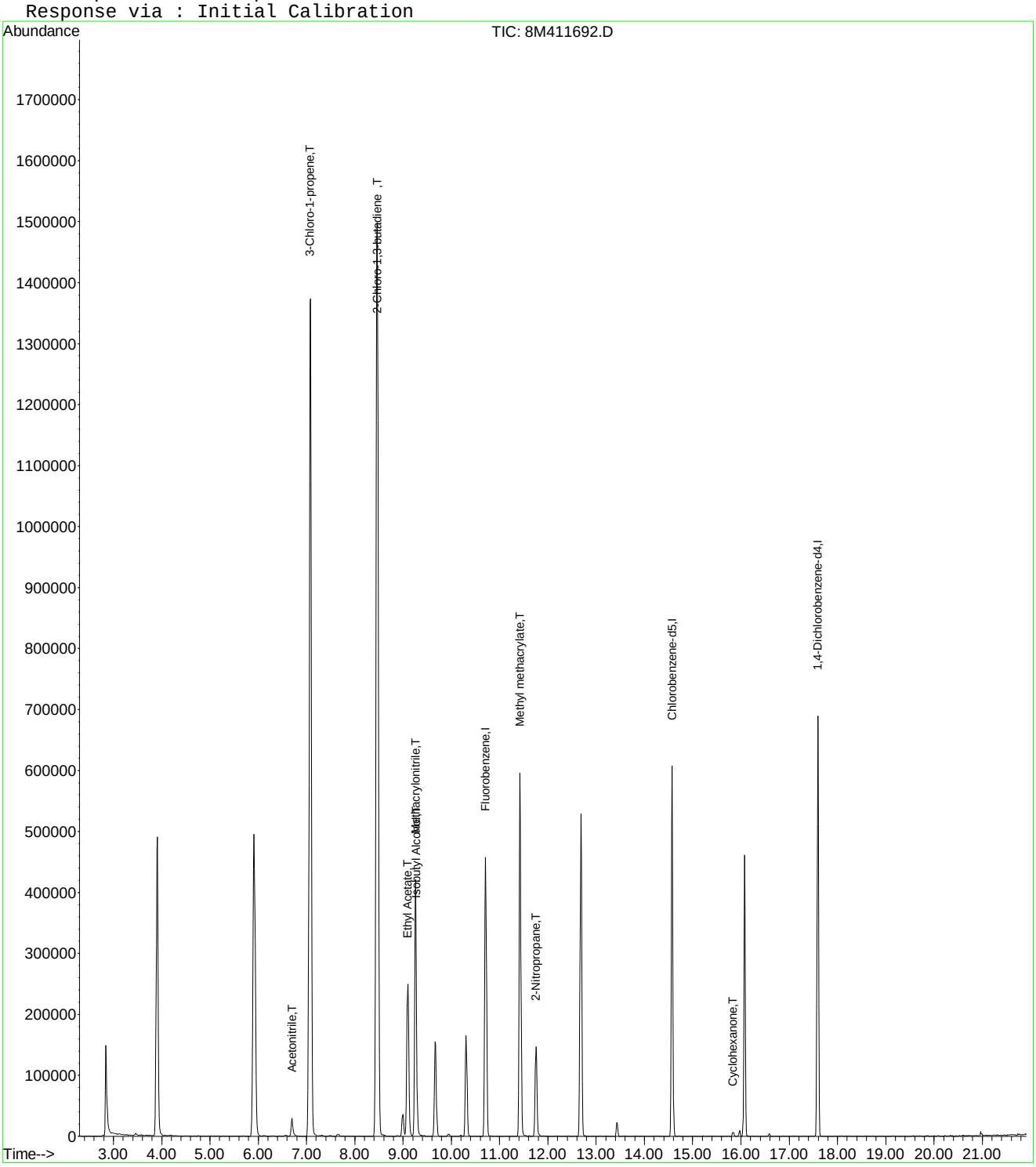

8M411692.D A9FOOWTR.M Wed Apr 27 16:39:43 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\042416\8M411692.D Vial: 12
Acq On : 24 Apr 2016 22:02 Operator: JDS
Sample : WG566154-10 100ug/L ALT SRC STD 826-A9 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\2\METHODS\A9FOOWTR.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 04-24-16 HPMS8
Last Update : Wed Apr 27 16:38:22 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	95	0.00
2	T	Acetonitrile	100.0000	108.8398	-8.8	101	0.00
3	T	3-Chloro-1-propene	100.0000	107.1431	-7.1	99	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	116.9359	-16.9	111	0.00
5	T	Ethyl Acetate	100.0000	109.8227	-9.8	104	0.00
6	T	Methacrylonitrile	100.0000	110.9012	-10.9	104	0.00
7	T	Isobutyl Alcohol	200.0000	124.0473	38.0	62	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	51	-0.02
9	T	Methyl methacrylate	100.0000	114.8781	-14.9	110	0.00
10	T	2-Nitropropane	100.0000	100.9743	-1.0	103	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	95	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	98	0.00
13	T	Cyclohexanone	100.0000	30.4358	69.6	32	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M411692.D A9FOOWTR.M Wed Apr 27 16:40:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411791.D Vial: 3
Acq On : 28 Apr 2016 7:58 Operator: ADC
Sample : WG566682-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07:09 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:04:09 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	679680	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	519007	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	275871	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	12.67	98	984	0.0367 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.16%#	
80) p-Bromofluorobenzene	16.07	95	208	0.0184 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.08%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	3819	0.2681 ug/L #	74
3) Chloromethane	3.62	50	7083	0.5278 ug/L #	71
4) Vinyl Chloride	3.86	62	2540	0.2803 ug/L #	64
5) 1,3-Butadiene	3.91	54	2628	0.2968 ug/L #	70
6) Bromomethane	4.74	94	1025	0.9322 ug/L	74
7) Chloroethane	4.89	64	1280	0.2158 ug/L #	57
8) Trichlorofluoromethane	5.37	101	5232	0.2908 ug/L #	89
10) Isoprene	5.97	67	2461	0.2674 ug/L	75
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	2192	0.2661 ug/L #	10
14) 1,1-Dichloroethene	6.46	61	4728	0.2958 ug/L	74
16) Dimethyl Sulfide	6.73	62	1235	0.2091 ug/L #	38
18) Methyl acetate	6.99	43	735	0.1474 ug/L #	66
19) Methylene Chloride	7.28	84	2343	0.3093 ug/L #	37
20) Carbon Disulfide	7.30	76	7764	0.3359 ug/L #	83
22) Methyl Tert Butyl Ether	7.47	73	4295	0.2567 ug/L #	74
23) trans-1,2-Dichloroethene	7.72	61	3959	0.2738 ug/L	80
24) n-Hexane	7.78	57	4601	0.3507 ug/L	81
26) Vinyl Acetate	8.31	43	3435	0.2303 ug/L #	79
27) 1,1-Dichloroethane	8.33	63	5013	0.2898 ug/L #	56
31) 2,2-Dichloropropane	9.12	77	4871	0.3197 ug/L	88
32) cis-1,2-Dichloroethene	9.17	96	2796	0.3231 ug/L	87
33) Chloroform	9.38	83	5145	0.3206 ug/L	100
35) Bromochloromethane	9.61	130	958	0.2116 ug/L #	13
36) Tetrahydrofuran	9.63	42	3038	1.7195 ug/L #	41
38) 1,1,1-Trichloroethane	9.91	97	5124	0.3167 ug/L	99
39) Cyclohexane	9.95	56	5213	0.2952 ug/L #	74
40) 1,1-Dichloropropene	10.11	75	3057	0.2625 ug/L	77
42) Carbon Tetrachloride	10.25	117	5282	0.3470 ug/L #	78
45) 1,2-Dichloroethane	10.43	62	3349	0.2485 ug/L	84
46) Benzene	10.46	78	8860	0.2987 ug/L	94
47) Trichloroethene	11.21	130	2298	0.2685 ug/L	87
48) Methylcyclohexane	11.31	83	2897	0.2421 ug/L	78
49) 1,2-Dichloropropane	11.43	63	2400	0.2780 ug/L	84
50) Bromodichloromethane	11.72	83	3372	0.2807 ug/L #	93
52) Dibromomethane	11.82	93	609	0.1498 ug/L #	38
55) cis-1,3-Dichloropropene	12.35	75	2572	0.2127 ug/L	95
56) Dimethyl Disulfide	12.62	79	1079	0.1703 ug/L	77
59) Toluene	12.79	91	9738	0.3133 ug/L	97
60) Ethyl Methacrylate	12.88	69	1176	0.2017 ug/L	90
62) trans-1,3-Dichloropropene	12.96	75	2155	0.1987 ug/L	93

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411791.D Vial: 3
Acq On : 28 Apr 2016 7:58 Operator: ADC
Sample : WG566682-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07:09 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:04:09 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
63)	1,1,2-Trichloroethane	13.17	97	1455	0.2950 ug/L #	49
65)	1,3-Dichloropropane	13.48	76	2412	0.2637 ug/L	67
66)	Tetrachloroethene	13.60	164	1907	0.2709 ug/L	91
67)	Dibromochloromethane	13.87	129	1909	0.2455 ug/L	91
68)	1,2-Dibromoethane	14.12	107	1451	0.2823 ug/L	97
69)	1-Chlorohexane	14.21	91	2991	0.2825 ug/L	70
70)	Chlorobenzene	14.63	112	6537	0.3029 ug/L	82
71)	1,1,1,2-Tetrachloroethane	14.66	131	2161	0.2570 ug/L	96
72)	Ethylbenzene	14.65	106	3516	0.2871 ug/L	98
73)	m-,p-Xylene	14.74	106	8868	0.6286 ug/L	97
74)	o-Xylene	15.30	106	4239	0.2983 ug/L	94
75)	Styrene	15.34	104	5915	0.2610 ug/L	81
76)	Bromoform	15.85	173	750	0.1681 ug/L #	76
77)	Isopropylbenzene	15.73	105	11447	0.3177 ug/L	93
79)	1,1,2,2-Tetrachloroethane	15.94	83	1527	0.2775 ug/L #	79
83)	n-Propylbenzene	16.23	91	14461	0.3401 ug/L	94
84)	Bromobenzene	16.36	156	2787	0.3144 ug/L	93
85)	1,3,5-Trimethylbenzene	16.41	105	9008	0.2863 ug/L	99
86)	2-Chlorotoluene	16.50	91	8469	0.3111 ug/L	86
87)	4-Chlorotoluene	16.55	91	8024	0.2861 ug/L	94
88)	a-Methylstyrene	16.83	118	4250	0.2742 ug/L	86
89)	tert-Butylbenzene	16.89	134	1694	0.2718 ug/L	76
90)	1,2,4-Trimethylbenzene	16.93	105	10121	0.3143 ug/L	89
91)	sec-Butylbenzene	17.16	105	12896	0.3409 ug/L	98
92)	p-Isopropyltoluene	17.31	119	10196	0.3157 ug/L	81
93)	1,3-Dichlorobenzene	17.50	146	5507	0.3130 ug/L	94
94)	1,4-Dichlorobenzene	17.63	146	5177	0.2948 ug/L #	1
95)	n-Butylbenzene	17.84	91	10075	0.3280 ug/L	89
96)	1,2-Dichlorobenzene	18.13	146	4510	0.2925 ug/L	92
98)	1,2,4-Trichlorobenzene	20.27	180	3489	0.2922 ug/L	87
99)	Hexachlorobutadiene	20.42	225	1544	0.2794 ug/L #	81
100)	Naphthalene	20.63	128	5314	0.2927 ug/L #	80
101)	1,2,3-Trichlorobenzene	20.94	180	3047	0.2999 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M411791.D 8260WTR.M Thu Apr 28 15:07:10 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411791.D Vial: 3
Acq On : 28 Apr 2016 7:58 Operator: ADC
Sample : WG566682-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

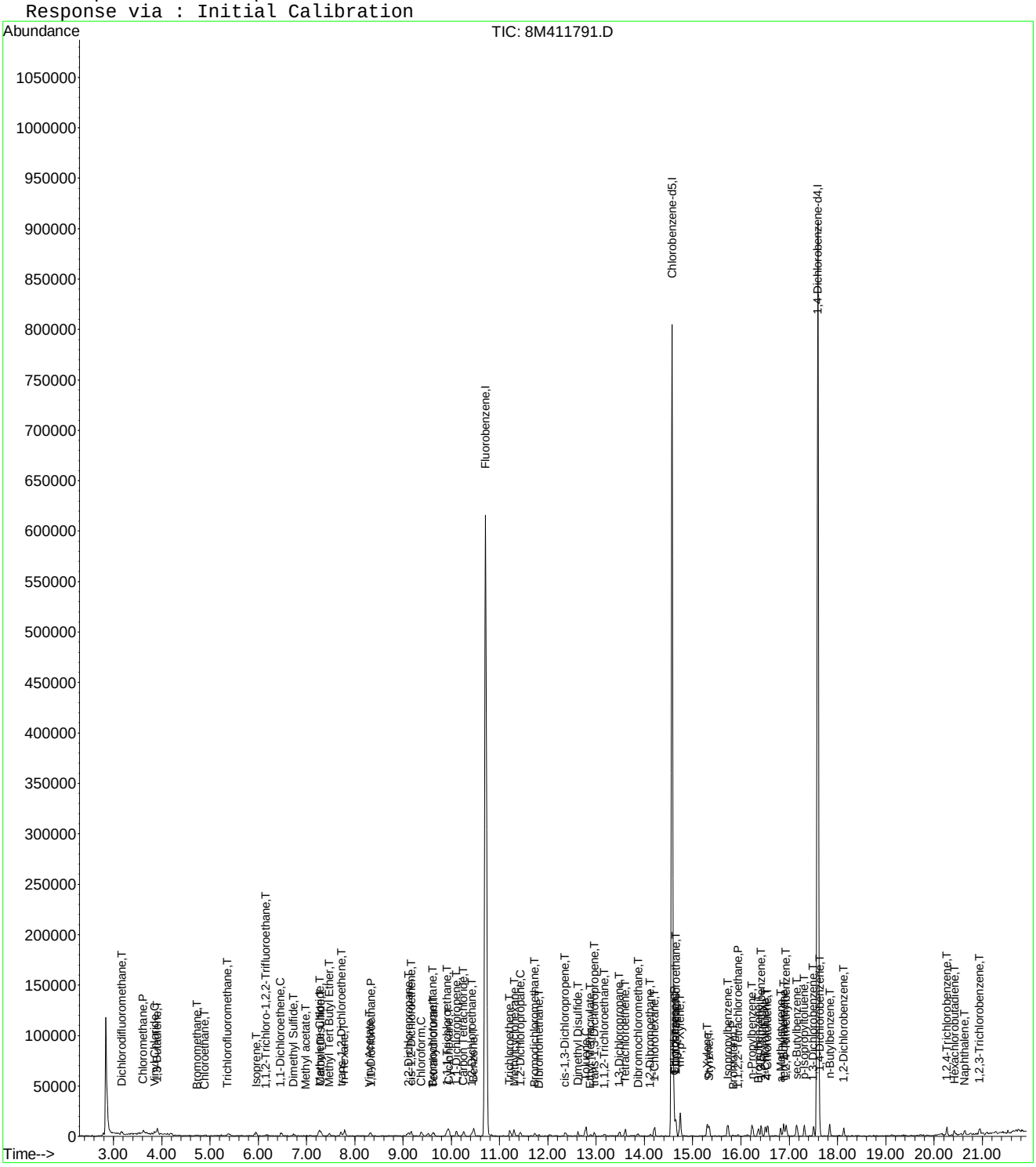

8M411791.D 8260WTR.M Thu Apr 28 15:07:10 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\042816\8M411791.D Vial: 3
Acq On : 28 Apr 2016 7:58 Operator: ADC
Sample : WG566682-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2681	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.5278	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.2803	0.0	100	0.01
5	T	1,3-Butadiene	-1.0000	0.2968	0.0	100	0.02
6	T	Bromomethane	-1.0000	0.9322	0.0	0	0.00
7	T	Chloroethane	-1.0000	0.2158	0.0	100	0.00
8	T	Trichlorofluoromethane	-1.0000	0.2908	0.0	100	-0.02
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.91#
10	T	Isoprene	-1.0000	0.2674	0.0	100	0.02
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.15#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2661	0.0	100	0.00
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	-1.0000	0.2958	0.0	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.59#
16	T	Dimethyl Sulfide	-1.0000	0.2091	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.00#
18	T	Methyl acetate	-1.0000	0.1474	0.0	100	-0.02
19	T	Methylene Chloride	-1.0000	0.3093	0.0	100	0.02
20	T	Carbon Disulfide	-1.0000	0.3359	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.44#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2567	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	-1.0000	0.2738	0.0	100	0.01
24	T	n-Hexane	-1.0000	0.3507	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.2303	0.0	100	0.01
27	P	1,1-Dichloroethane	-1.0000	0.2898	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0879	0.0	100	0.01
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.99#
31	T	2,2-Dichloropropane	-1.0000	0.3197	0.0	100	0.01
32	T	cis-1,2-Dichloroethene	-1.0000	0.3231	0.0	100	0.00
33	C	Chloroform	0.3000	0.3206	-6.9	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.52#
35	T	Bromochloromethane	-1.0000	0.2116	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	1.7195	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	-1.0000	0.3167	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.2952	0.0	100	0.01
40	T	1,1-Dichloropropene	-1.0000	0.2625	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	-1.0000	0.3470	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.30#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	-1.0000	0.2485	0.0	100	0.00
46	T	Benzene	-1.0000	0.2987	0.0	100	0.00
47	T	Trichloroethene	-1.0000	0.2685	0.0	100	0.00
48	T	Methylcyclohexane	-1.0000	0.2421	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2780	0.0	100	0.00
50	T	Bromodichloromethane	-1.0000	0.2807	0.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.72#
52	T	Dibromomethane	-1.0000	0.1498	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.0686	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.06#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\042816\8M411791.D Vial: 3
Acq On : 28 Apr 2016 7:58 Operator: ADC
Sample : WG566682-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.2127	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.1703	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0367	0.0	100	0.00
59	C	Toluene	-1.0000	0.3133	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2017	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.1987	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.2950	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.11#
65	T	1,3-Dichloropropane	-1.0000	0.2637	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.2709	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.2455	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.2823	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.2825	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.3029	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.2570	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.2871	0.0	100	0.00
73	T	m-,p-Xylene	-1.0000	0.6286	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.2983	0.0	100	0.00
75	T	Styrene	-1.0000	0.2610	0.0	100	0.00
76	P	Bromoform	-1.0000	0.1681	0.0	100	0.01
77	T	Isopropylbenzene	-1.0000	0.3177	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2775	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0184	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.13#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.18#
83	T	n-Propylbenzene	-1.0000	0.3401	0.0	100	0.00
84	T	Bromobenzene	0.3000	0.3144	-4.8	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.2863	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.3111	0.0	100	0.00
87	T	4-Chlorotoluene	-1.0000	0.2861	0.0	0	0.00
88	T	a-Methylstyrene	-1.0000	0.2742	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.2718	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.3143	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3409	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.3157	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.3130	0.0	100	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.2948	1.7	100	0.00
95	T	n-Butylbenzene	-1.0000	0.3280	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.2925	2.5	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.12#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.2922	0.0	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.2794	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.2927	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.2999	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M411791.D 8260WTR.M Thu Apr 28 15:07:32 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411792.D Vial: 4
Acq On : 28 Apr 2016 8:27 Operator: ADC
Sample : WG566682-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07:10 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	674715	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	525611	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	275085	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	12.69	98	273	0.0100 ug/L	0.01
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.04%#	
80) p-Bromofluorobenzene	0.00	95	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	5633	0.3984 ug/L	89
3) Chloromethane	3.63	50	6706	0.5034 ug/L	84
4) Vinyl Chloride	3.85	62	3571	0.3969 ug/L #	69
5) 1,3-Butadiene	3.91	54	3010	0.3425 ug/L #	56
6) Bromomethane	4.73	94	1041	0.9358 ug/L	99
7) Chloroethane	4.90	64	2279	0.3871 ug/L #	71
8) Trichlorofluoromethane	5.40	101	6967	0.3901 ug/L #	90
10) Isoprene	5.95	67	3698	0.4047 ug/L	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	2780	0.3400 ug/L	85
14) 1,1-Dichloroethene	6.47	61	6568	0.4139 ug/L	83
16) Dimethyl Sulfide	6.74	62	1881	0.3208 ug/L #	58
18) Methyl acetate	7.01	43	1244	0.2513 ug/L #	66
19) Methylene Chloride	7.26	84	3620	0.4814 ug/L	68
20) Carbon Disulfide	7.30	76	9966	0.4344 ug/L	96
22) Methyl Tert Butyl Ether	7.48	73	5868	0.3532 ug/L #	75
23) trans-1,2-Dichloroethene	7.70	61	5489	0.3824 ug/L	95
24) n-Hexane	7.79	57	4986	0.3828 ug/L	98
26) Vinyl Acetate	8.31	43	5242	0.3541 ug/L #	79
27) 1,1-Dichloroethane	8.33	63	6889	0.4012 ug/L #	82
29) 2-Butanone	8.88	43	419	0.1579 ug/L #	57
31) 2,2-Dichloropropane	9.10	77	6211	0.4106 ug/L	87
32) cis-1,2-Dichloroethene	9.17	96	3502	0.4077 ug/L	89
33) Chloroform	9.39	83	6047	0.3796 ug/L	93
35) Bromochloromethane	9.61	130	1407	0.3131 ug/L #	33
36) Tetrahydrofuran	9.64	42	2614	1.4904 ug/L #	41
38) 1,1,1-Trichloroethane	9.90	97	6174	0.3844 ug/L	90
39) Cyclohexane	9.94	56	7807	0.4454 ug/L #	74
40) 1,1-Dichloropropene	10.11	75	4748	0.4107 ug/L	87
42) Carbon Tetrachloride	10.24	117	5830	0.3858 ug/L	94
45) 1,2-Dichloroethane	10.42	62	5733	0.4285 ug/L	80
46) Benzene	10.46	78	13335	0.4529 ug/L	89
47) Trichloroethene	11.22	130	3331	0.3920 ug/L	91
48) Methylcyclohexane	11.30	83	4563	0.3841 ug/L	83
49) 1,2-Dichloropropane	11.42	63	3612	0.4214 ug/L	94
50) Bromodichloromethane	11.73	83	4774	0.4003 ug/L #	89
52) Dibromomethane	11.81	93	1176	0.2914 ug/L	92
53) 2-Chloroethyl Vinyl Ether	12.03	63	711	0.1981 ug/L #	51
55) cis-1,3-Dichloropropene	12.36	75	4033	0.3360 ug/L	98
56) Dimethyl Disulfide	12.61	79	1401	0.2228 ug/L	78
59) Toluene	12.78	91	13061	0.4150 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411792.D Vial: 4
Acq On : 28 Apr 2016 8:27 Operator: ADC
Sample : WG566682-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07:10 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
60)	Ethyl Methacrylate	12.88	69	1864	0.3156 ug/L		92
62)	trans-1,3-Dichloropropene	12.96	75	3516	0.3202 ug/L		90
63)	1,1,2-Trichloroethane	13.18	97	1914	0.3832 ug/L		98
65)	1,3-Dichloropropane	13.48	76	3756	0.4055 ug/L		97
66)	Tetrachloroethene	13.60	164	2748	0.3855 ug/L		82
67)	Dibromochloromethane	13.86	129	2430	0.3086 ug/L		67
68)	1,2-Dibromoethane	14.12	107	1900	0.3650 ug/L		78
69)	1-Chlorohexane	14.21	91	4316	0.4026 ug/L		70
70)	Chlorobenzene	14.63	112	8876	0.4061 ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.66	131	2852	0.3349 ug/L		97
72)	Ethylbenzene	14.66	106	5385	0.4343 ug/L		88
73)	m-,p-Xylene	14.74	106	11192	0.7834 ug/L		85
74)	o-Xylene	15.30	106	6229	0.4328 ug/L		97
75)	Styrene	15.34	104	8785	0.3828 ug/L		87
76)	Bromoform	15.83	173	1238	0.2740 ug/L	#	60
77)	Isopropylbenzene	15.73	105	13974	0.3830 ug/L		93
79)	1,1,2,2-Tetrachloroethane	15.94	83	2466	0.4494 ug/L	#	91
81)	1,2,3-Trichloropropane	16.13	110	523	0.2966 ug/L		59
82)	trans-1,4-Dichloro-2-Buten	16.19	53	586	0.2193 ug/L	#	51
83)	n-Propylbenzene	16.24	91	19262	0.4544 ug/L		97
84)	Bromobenzene	16.36	156	3446	0.3899 ug/L		90
85)	1,3,5-Trimethylbenzene	16.42	105	12171	0.3880 ug/L		100
86)	2-Chlorotoluene	16.51	91	10306	0.3796 ug/L		100
87)	4-Chlorotoluene	16.56	91	12740	0.4556 ug/L		92
88)	a-Methylstyrene	16.83	118	5408	0.3499 ug/L		83
89)	tert-Butylbenzene	16.89	134	2473	0.3979 ug/L		80
90)	1,2,4-Trimethylbenzene	16.93	105	13762	0.4286 ug/L		93
91)	sec-Butylbenzene	17.16	105	15974	0.4235 ug/L		96
92)	p-Isopropyltoluene	17.31	119	13803	0.4286 ug/L		95
93)	1,3-Dichlorobenzene	17.51	146	7592	0.4328 ug/L		87
94)	1,4-Dichlorobenzene	17.63	146	7914	0.4520 ug/L	#	16
95)	n-Butylbenzene	17.84	91	12573	0.4104 ug/L		95
96)	1,2-Dichlorobenzene	18.13	146	6165	0.4010 ug/L		97
98)	1,2,4-Trichlorobenzene	20.27	180	5231	0.4393 ug/L		97
99)	Hexachlorobutadiene	20.41	225	2252	0.4087 ug/L		91
100)	Naphthalene	20.64	128	7428	0.4103 ug/L		98
101)	1,2,3-Trichlorobenzene	20.95	180	4517	0.4459 ug/L	#	74

(#) = qualifier out of range (m) = manual integration
8M411792.D 8260WTR.M Thu Apr 28 15:07:11 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411792.D Vial: 4
Acq On : 28 Apr 2016 8:27 Operator: ADC
Sample : WG566682-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

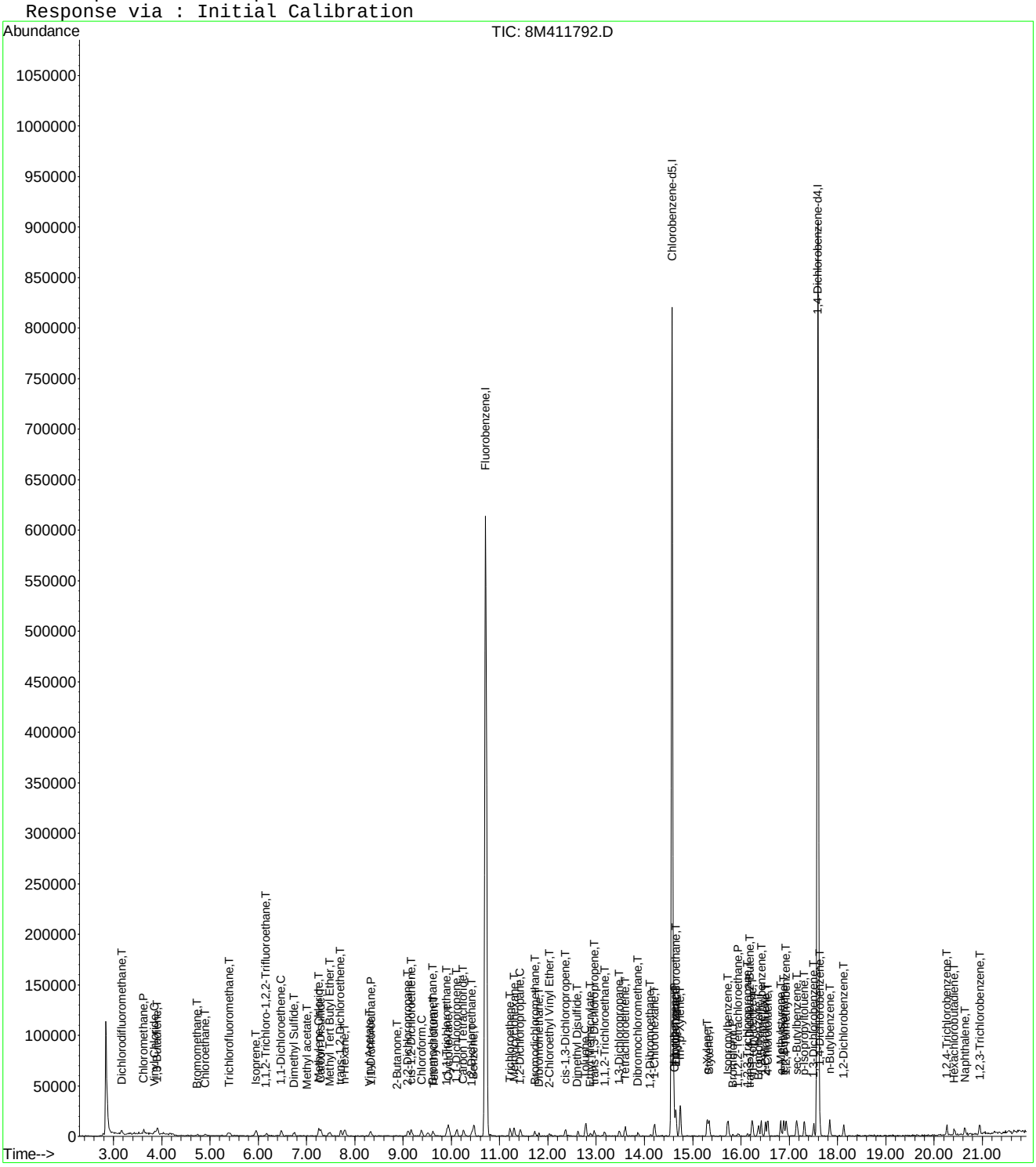

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\042816\8M411792.D Vial: 4
Acq On : 28 Apr 2016 8:27 Operator: ADC
Sample : WG566682-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	0.4000	0.3983	0.4	100	0.00
3	P	Chloromethane	-1.0000	0.5034	0.0	100	0.01
4	C	Vinyl Chloride	0.4000	0.3970	0.8	100	0.00
5	T	1,3-Butadiene	-1.0000	0.3425	0.0	100	0.02
6	T	Bromomethane	-1.0000	0.9358	0.0	0	0.00
7	T	Chloroethane	0.4000	0.3871	3.2	100	0.00
8	T	Trichlorofluoromethane	0.4000	0.3901	2.5	100	0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.91#
10	T	Isoprene	0.4000	0.4047	-1.2	100	0.01
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.15#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3400	0.0	100	0.00
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	0.4000	0.4139	-3.5	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.59#
16	T	Dimethyl Sulfide	0.4000	0.3207	19.8	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.00#
18	T	Methyl acetate	-1.0000	0.2513	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4814	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4344	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.44#
22	T	Methyl Tert Butyl Ether	-1.0000	0.3532	0.0	100	0.01
23	T	trans-1,2-Dichloroethene	0.4000	0.3824	4.4	100	0.00
24	T	n-Hexane	-1.0000	0.3828	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.3541	0.0	100	0.01
27	P	1,1-Dichloroethane	0.4000	0.4012	-0.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.1579	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.99#
31	T	2,2-Dichloropropane	0.4000	0.4106	-2.6	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.4077	-1.9	100	0.00
33	C	Chloroform	0.4000	0.3796	5.1	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-9.52#
35	T	Bromochloromethane	0.4000	0.3131	21.7	100	0.00
36	T	Tetrahydrofuran	-1.0000	1.4904	0.0	100	0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	0.4000	0.3844	3.9	100	0.00
39	T	Cyclohexane	-1.0000	0.4454	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4107	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0412	0.0	100	-0.09
42	T	Carbon Tetrachloride	0.4000	0.3858	3.5	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.30#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	0.4000	0.4285	-7.1	100	0.00
46	T	Benzene	0.4000	0.4529	-13.2	100	0.00
47	T	Trichloroethene	0.4000	0.3920	2.0	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3841	0.0	100	0.00
49	C	1,2-Dichloropropane	0.4000	0.4214	-5.3	100	0.00
50	T	Bromodichloromethane	0.4000	0.4003	-0.1	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.72#
52	T	Dibromomethane	0.4000	0.2914	27.1#	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1981	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.1031	0.0	100	-0.02

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\042816\8M411792.D Vial: 4
Acq On : 28 Apr 2016 8:27 Operator: ADC
Sample : WG566682-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3360	16.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2228	0.0	100	-0.02
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0100	0.0	100	0.01
59	C	Toluene	0.4000	0.4150	-3.7	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3156	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3202	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.3832	4.2	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.11#
65	T	1,3-Dichloropropane	0.4000	0.4055	-1.4	100	0.00
66	T	Tetrachloroethene	0.4000	0.3855	3.6	100	0.00
67	T	Dibromochloromethane	0.4000	0.3086	22.8	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.3650	8.8	100	0.00
69	T	1-Chlorohexane	0.4000	0.4026	-0.6	100	0.00
70	P	Chlorobenzene	0.4000	0.4062	-1.5	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3349	16.3	100	0.00
72	C	Ethylbenzene	0.4000	0.4343	-8.6	100	0.00
73	T	m-,p-Xylene	0.8000	0.7834	2.1	100	0.00
74	T	o-Xylene	-1.0000	0.4328	0.0	100	0.00
75	T	Styrene	0.4000	0.3828	4.3	100	0.00
76	P	Bromoform	-1.0000	0.2740	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.3830	4.3	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.4494	-12.4	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0000	0.0	0	-16.07#
81	T	1,2,3-Trichloropropane	-1.0000	0.2966	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.2193	0.0	100	0.00
83	T	n-Propylbenzene	0.4000	0.4544	-13.6	100	0.00
84	T	Bromobenzene	0.4000	0.3899	2.5	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.3880	3.0	100	0.00
86	T	2-Chlorotoluene	0.4000	0.3796	5.1	100	0.00
87	T	4-Chlorotoluene	0.4000	0.4556	-13.9	100	0.00
88	T	a-Methylstyrene	-1.0000	0.3499	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3979	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	0.4000	0.4286	-7.1	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.4235	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4286	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.4328	-8.2	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.4520	-13.0	100	0.00
95	T	n-Butylbenzene	-1.0000	0.4104	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.4010	-0.3	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.12#
98	T	1,2,4-Trichlorobenzene	0.4000	0.4393	-9.8	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.4087	-2.2	100	0.00
100	T	Naphthalene	0.4000	0.4103	-2.6	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.4459	-11.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M411792.D 8260WTR.M Thu Apr 28 15:07:42 2016 Page 2

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411793.D Vial: 5
Acq On : 28 Apr 2016 8:56 Operator: ADC
Sample : WG566682-04 1.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07:11 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	667746	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	507968	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	274777	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	4345	0.5182 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery	= 2.08%#	
43) 1,2-Dichloroethane-d4	10.30	65	4523	0.4715 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery	= 1.88%#	
58) Toluene-d8	12.68	98	13382	0.5095 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 2.04%#	
80) p-Bromofluorobenzene	16.07	95	6086	0.5411 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery	= 2.16%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	13554	0.9685 ug/L	96
3) Chloromethane	3.63	50	15776	1.1965 ug/L	98
4) Vinyl Chloride	3.85	62	8374	0.9406 ug/L	95
5) 1,3-Butadiene	3.91	54	8315	0.9559 ug/L	86
6) Bromomethane	4.74	94	3894	1.3809 ug/L	98
7) Chloroethane	4.90	64	5574	0.9567 ug/L	98
8) Trichlorofluoromethane	5.39	101	17332	0.9807 ug/L	98
9) Diethyl ether	5.92	59	27660	5.1151 ug/L	78
10) Isoprene	5.95	67	8519	0.9420 ug/L	71
11) Acrolein	6.14	56	404	0.8413 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	7480m	0.9243 ug/L	
13) Acetone	6.26	43	1468	0.8955 ug/L #	48
14) 1,1-Dichloroethene	6.47	61	15793	1.0056 ug/L	89
15) Tert-Butyl Alcohol	6.59	59	3550	9.4066 ug/L #	64
16) Dimethyl Sulfide	6.74	62	5434	0.9363 ug/L	82
17) Iodomethane	7.00	142	1630	1.4994 ug/L #	66
18) Methyl acetate	7.01	43	4495	0.9175 ug/L #	66
19) Methylene Chloride	7.25	84	8970	1.2052 ug/L	76
20) Carbon Disulfide	7.30	76	23423	1.0316 ug/L	95
21) Acrylonitrile	7.44	53	4410	2.0930 ug/L	90
22) Methyl Tert Butyl Ether	7.47	73	14659	0.8916 ug/L	91
23) trans-1,2-Dichloroethene	7.71	61	15605	1.0984 ug/L	79
24) n-Hexane	7.80	57	12743	0.9887 ug/L	88
25) Diisopropyl ether	8.13	45	197391	5.4083 ug/L	94
26) Vinyl Acetate	8.31	43	13510	0.9221 ug/L #	87
27) 1,1-Dichloroethane	8.33	63	17493	1.0294 ug/L	97
28) Ethyl-Tert-Butyl ether	8.71	59	129200	5.0439 ug/L	96
29) 2-Butanone	8.91	43	2157	0.8216 ug/L #	57
30) Propionitrile	8.99	54	2440	3.6751 ug/L #	56
31) 2,2-Dichloropropane	9.12	77	15824	1.0570 ug/L	91
32) cis-1,2-Dichloroethene	9.18	96	9229	1.0857 ug/L	94
33) Chloroform	9.38	83	16506	1.0469 ug/L	98
34) 1-Bromopropane	9.51	122	1173	0.8759 ug/L	73
35) Bromochloromethane	9.60	130	4524	1.0172 ug/L	80
36) Tetrahydrofuran	9.64	42	10437	6.0130 ug/L #	79
38) 1,1,1-Trichloroethane	9.92	97	15394	0.9685 ug/L	95
39) Cyclohexane	9.94	56	17039	0.9822 ug/L	90
40) 1,1-Dichloropropene	10.11	75	9971	0.8715 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	81460	4.9651 ug/L	82
42) Carbon Tetrachloride	10.25	117	14177	0.9480 ug/L	95

(#) = qualifier out of range (m) = manual integration
8M411793.D 8260WTR.M Thu Apr 28 15:09:47 2016 Page 1

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411793.D Vial: 5
Acq On : 28 Apr 2016 8:56 Operator: ADC
Sample : WG566682-04 1.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07:11 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	12811	0.9675 ug/L		95
46)	Benzene	10.47	78	30293	1.0395 ug/L		85
47)	Trichloroethene	11.21	130	8436	1.0031 ug/L		94
48)	Methylcyclohexane	11.31	83	10669	0.9074 ug/L		80
49)	1,2-Dichloropropane	11.43	63	8199	0.9665 ug/L		97
50)	Bromodichloromethane	11.73	83	10846	0.9190 ug/L	#	95
52)	Dibromomethane	11.81	93	4029	1.0089 ug/L		94
53)	2-Chloroethyl Vinyl Ether	12.03	63	2843	0.8005 ug/L	#	51
54)	4-Methyl-2-Pentanone	12.06	58	1626	0.8387 ug/L	#	41
55)	cis-1,3-Dichloropropene	12.36	75	12116	1.0200 ug/L		97
56)	Dimethyl Disulfide	12.63	79	4721	0.7586 ug/L		96
59)	Toluene	12.78	91	32525	1.0693 ug/L		97
60)	Ethyl Methacrylate	12.88	69	5137	0.9000 ug/L	#	58
62)	trans-1,3-Dichloropropene	12.96	75	9904	0.9332 ug/L		96
63)	1,1,2-Trichloroethane	13.18	97	3978	0.8241 ug/L		90
64)	2-Hexanone	13.11	58	1371	0.7913 ug/L	#	92
65)	1,3-Dichloropropane	13.48	76	9024	1.0081 ug/L		82
66)	Tetrachloroethene	13.61	164	7128	1.0347 ug/L		91
67)	Dibromochloromethane	13.87	129	7148	0.9393 ug/L		87
68)	1,2-Dibromoethane	14.13	107	4372	0.8690 ug/L		91
69)	1-Chlorohexane	14.21	91	9529	0.9197 ug/L	#	62
70)	Chlorobenzene	14.62	112	21659	1.0255 ug/L		89
71)	1,1,1,2-Tetrachloroethane	14.65	131	7571	0.9198 ug/L		91
72)	Ethylbenzene	14.65	106	12247	1.0219 ug/L		97
73)	m-,p-Xylene	14.74	106	28711	2.0795 ug/L		87
74)	o-Xylene	15.31	106	14578	1.0481 ug/L		97
75)	Styrene	15.34	104	23561	1.0623 ug/L		99
76)	Bromoform	15.83	173	3597	0.8239 ug/L		94
77)	Isopropylbenzene	15.73	105	37553	1.0649 ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	5014	0.9148 ug/L	#	97
81)	1,2,3-Trichloropropane	16.13	110	1742	0.9890 ug/L	#	81
82)	trans-1,4-Dichloro-2-Buten	16.18	53	2391	0.8957 ug/L	#	78
83)	n-Propylbenzene	16.23	91	45264	1.0689 ug/L		99
84)	Bromobenzene	16.37	156	7397	0.8379 ug/L		71
85)	1,3,5-Trimethylbenzene	16.42	105	32777	1.0460 ug/L		92
86)	2-Chlorotoluene	16.50	91	28395	1.0471 ug/L		97
87)	4-Chlorotoluene	16.56	91	30282	1.0840 ug/L		99
88)	a-Methylstyrene	16.83	118	14207	0.9202 ug/L		98
89)	tert-Butylbenzene	16.90	134	5534	0.8914 ug/L	#	46
90)	1,2,4-Trimethylbenzene	16.94	105	31278	0.9752 ug/L		88
91)	sec-Butylbenzene	17.16	105	39744	1.0548 ug/L		100
92)	p-Isopropyltoluene	17.31	119	33999	1.0569 ug/L		92
93)	1,3-Dichlorobenzene	17.51	146	17639	1.0066 ug/L		99
94)	1,4-Dichlorobenzene	17.64	146	17608	1.0068 ug/L	#	56
95)	n-Butylbenzene	17.84	91	31880	1.0419 ug/L		98
96)	1,2-Dichlorobenzene	18.13	146	15777	1.0274 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.12	75	805	0.6707 ug/L		82
98)	1,2,4-Trichlorobenzene	20.27	180	11576	0.9733 ug/L		98
99)	Hexachlorobutadiene	20.42	225	4999	0.9082 ug/L		91
100)	Naphthalene	20.64	128	16291	0.9008 ug/L		97
101)	1,2,3-Trichlorobenzene	20.95	180	10373	1.0252 ug/L		94

(#) = qualifier out of range (m) = manual integration

Quantitation Report (QT Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411793.D Vial: 5
Acq On : 28 Apr 2016 8:56 Operator: ADC
Sample : WG566682-04 1.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:09 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

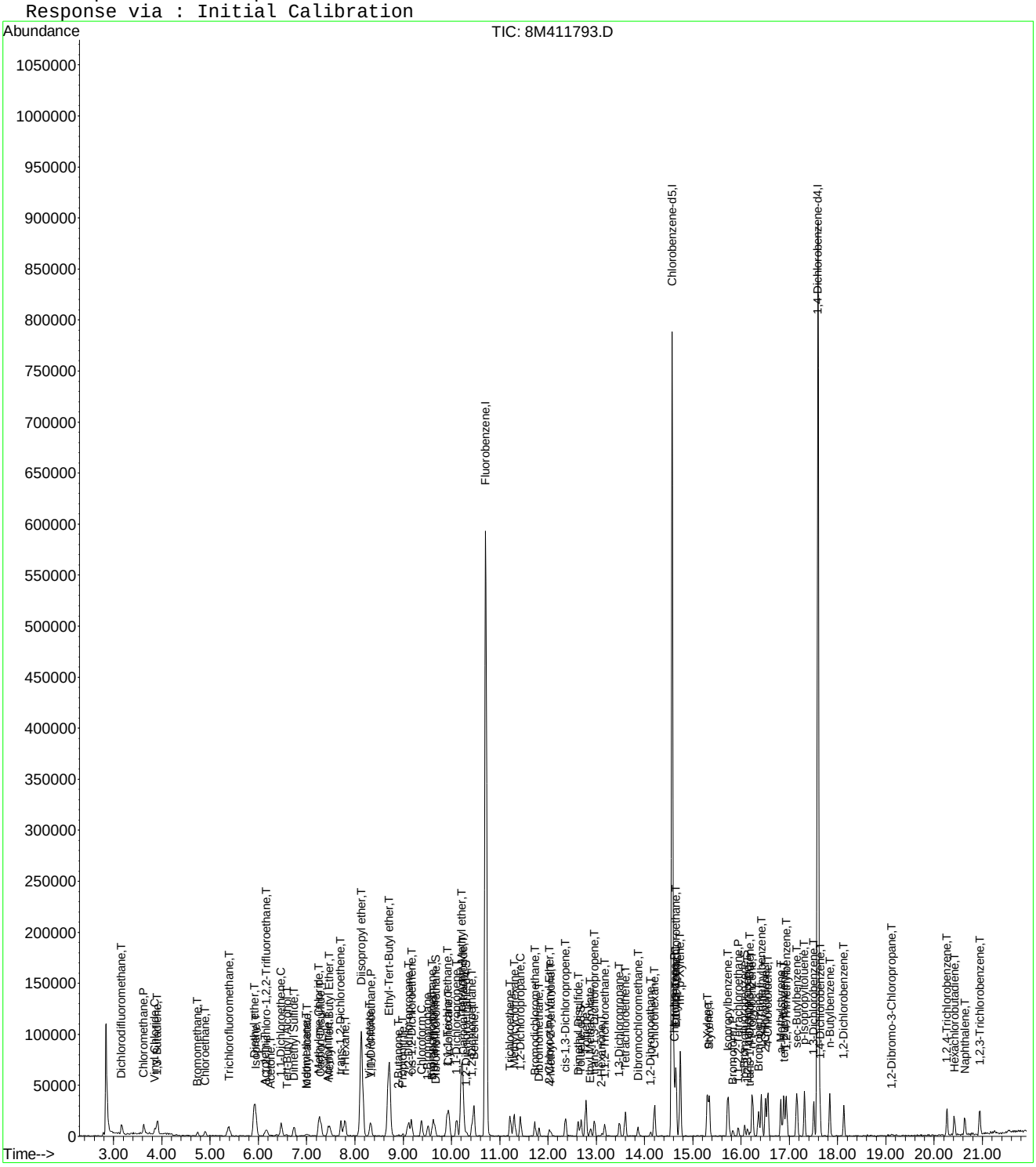

8M411793.D 8260WTR.M Thu Apr 28 15:09:48 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\042816\8M411793.D Vial: 5
Acq On : 28 Apr 2016 8:56 Operator: ADC
Sample : WG566682-04 1.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9685	3.1	100	0.00
3	P	Chloromethane	1.0000	1.1965	-19.7	100	0.01
4	C	Vinyl Chloride	1.0000	0.9406	5.9	100	0.01
5	T	1,3-Butadiene	-1.0000	0.9559	0.0	100	0.02
6	T	Bromomethane	1.0000	1.3809	-38.1#	100	0.01
7	T	Chloroethane	1.0000	0.9567	4.3	100	0.00
8	T	Trichlorofluoromethane	1.0000	0.9807	1.9	100	0.01
9	T	Diethyl ether	5.0000	5.1151	-2.3	100	0.01
10	T	Isoprene	1.0000	0.9420	5.8	100	0.01
11	T	Acrolein	-1.0000	0.8413	0.0	0	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	0.9244	7.6	100	0.01
13	T	Acetone	-1.0000	0.8955	0.0	100	0.01
14	C	1,1-Dichloroethene	1.0000	1.0056	-0.6	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	9.4066	0.0	100	0.00
16	T	Dimethyl Sulfide	1.0000	0.9363	6.4	100	0.00
17	T	Iodomethane	1.0000	1.4994	-49.9#	100	0.00
18	T	Methyl acetate	-1.0000	0.9175	0.0	100	0.00
19	T	Methylene Chloride	1.0000	1.2052	-20.5	100	0.00
20	T	Carbon Disulfide	1.0000	1.0316	-3.2	100	0.00
21	T	Acrylonitrile	2.5000	2.0930	16.3	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.8916	10.8	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	1.0984	-9.8	100	0.00
24	T	n-Hexane	-1.0000	0.9887	0.0	100	0.01
25	T	Diisopropyl ether	5.0000	5.4083	-8.2	100	0.00
26	T	Vinyl Acetate	-1.0000	0.9221	0.0	100	0.01
27	P	1,1-Dichloroethane	1.0000	1.0294	-2.9	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	5.0439	-0.9	100	0.00
29	T	2-Butanone	-1.0000	0.8216	0.0	100	0.02
30	T	Propionitrile	5.0000	3.6751	26.5#	100	0.00
31	T	2,2-Dichloropropane	1.0000	1.0570	-5.7	100	0.01
32	T	cis-1,2-Dichloroethene	1.0000	1.0857	-8.6	100	0.00
33	C	Chloroform	1.0000	1.0469	-4.7	100	0.00
34		1-Bromopropane	1.0000	0.8759	12.4	100	0.00
35	T	Bromochloromethane	1.0000	1.0172	-1.7	100	0.00
36	T	Tetrahydrofuran	5.0000	6.0130	-20.3	100	0.01
37	S	Dibromofluoromethane	0.5000	0.5182	-3.6	100	0.00
38	T	1,1,1-Trichloroethane	1.0000	0.9685	3.2	100	0.01
39	T	Cyclohexane	1.0000	0.9822	1.8	100	0.00
40	T	1,1-Dichloropropene	1.0000	0.8715	12.8	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	4.9651	0.7	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.9480	5.2	100	0.00
43	S	1,2-Dichloroethane-d4	0.5000	0.4715	5.7	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	1.0000	0.9675	3.3	100	0.00
46	T	Benzene	1.0000	1.0395	-4.0	100	0.00
47	T	Trichloroethene	1.0000	1.0031	-0.3	100	0.00
48	T	Methylcyclohexane	-1.0000	0.9074	0.0	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.9665	3.3	100	0.00
50	T	Bromodichloromethane	1.0000	0.9190	8.1	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.72#
52	T	Dibromomethane	1.0000	1.0089	-0.9	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.8005	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.8387	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\042816\8M411793.D Vial: 5
Acq On : 28 Apr 2016 8:56 Operator: ADC
Sample : WG566682-04 1.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	1.0200	-2.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.7586	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	0.5000	0.5095	-1.9	100	0.00
59	C	Toluene	1.0000	1.0693	-6.9	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.9000	10.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	1.0000	0.9332	6.7	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.8241	17.6	100	0.00
64	T	2-Hexanone	-1.0000	0.7913	0.0	100	0.00
65	T	1,3-Dichloropropane	1.0000	1.0081	-0.8	100	0.00
66	T	Tetrachloroethene	1.0000	1.0347	-3.5	100	0.01
67	T	Dibromochloromethane	1.0000	0.9394	6.1	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.8690	13.1	100	0.01
69	T	1-Chlorohexane	1.0000	0.9197	8.0	100	0.00
70	P	Chlorobenzene	1.0000	1.0255	-2.6	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.9198	8.0	100	0.00
72	C	Ethylbenzene	1.0000	1.0219	-2.2	100	0.00
73	T	m-,p-Xylene	2.0000	2.0795	-4.0	100	0.00
74	T	o-Xylene	1.0000	1.0481	-4.8	100	0.00
75	T	Styrene	1.0000	1.0623	-6.2	100	0.00
76	P	Bromoform	1.0000	0.8239	17.6	100	0.00
77	T	Isopropylbenzene	1.0000	1.0649	-6.5	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	0.9148	8.5	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5411	0.0	100	0.00
81	T	1,2,3-Trichloropropane	1.0000	0.9890	1.1	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	1.0000	0.8956	10.4	100	0.00
83	T	n-Propylbenzene	1.0000	1.0689	-6.9	100	-0.01
84	T	Bromobenzene	1.0000	0.8379	16.2	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	1.0460	-4.6	100	0.00
86	T	2-Chlorotoluene	1.0000	1.0471	-4.7	100	0.00
87	T	4-Chlorotoluene	1.0000	1.0840	-8.4	100	0.00
88	T	a-Methylstyrene	-1.0000	0.9202	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	0.8914	10.9	100	0.01
90	T	1,2,4-Trimethylbenzene	1.0000	0.9752	2.5	100	0.00
91	T	sec-Butylbenzene	1.0000	1.0548	-5.5	100	0.00
92	T	p-Isopropyltoluene	1.0000	1.0569	-5.7	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0066	-0.7	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	1.0068	-0.7	100	0.00
95	T	n-Butylbenzene	1.0000	1.0419	-4.2	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0274	-2.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.6707	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	1.0000	0.9733	2.7	100	0.00
99	T	Hexachlorobutadiene	1.0000	0.9082	9.2	100	0.00
100	T	Naphthalene	1.0000	0.9008	9.9	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	1.0252	-2.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M411793.D 8260WTR.M Thu Apr 28 15:09:55 2016 Page 2

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\2\DATA\042816\8M411793.D Vial: 5
Acq On : 28 Apr 2016 8:56 Operator: ADC
Sample : WG566682-04 1.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 9:18 2016 Quant Results File: temp.res

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 12:10:21 2016
Response via : Single Level Calibration

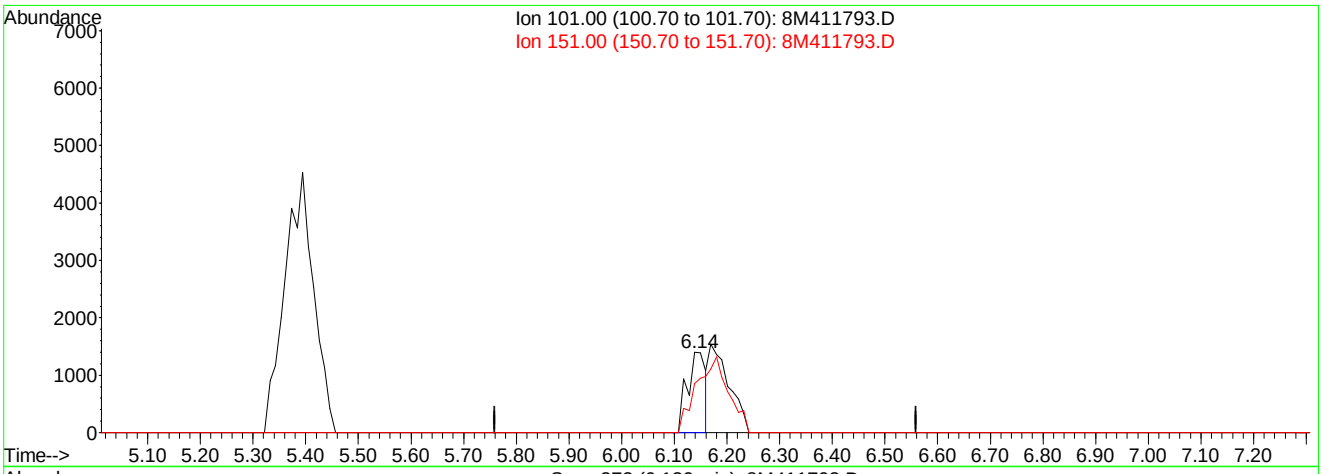

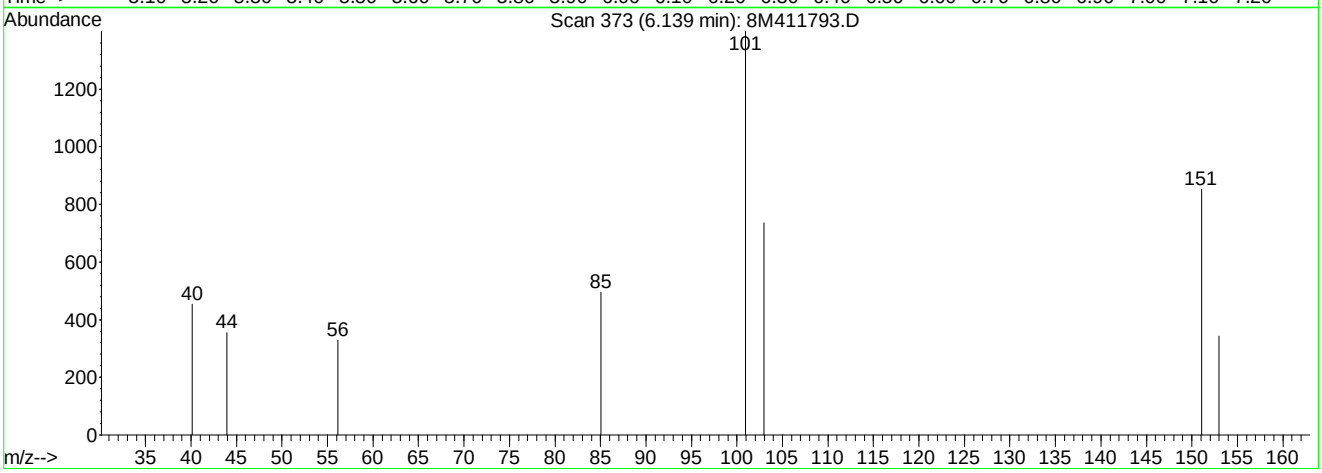

TIC: 8M411793.D

(12) 1,1,2-Trichloro-1,2,2-Trifluoroethane (T)

6.14min 0.51ug/L

response 3382

Ion	Exp%	Act%
101.00	100	100
151.00	77.80	164.81#
0.00	0.00	0.00
0.00	0.00	0.00

8M411793.D 8260WTR.M Thu Apr 28 12:12:58 2016

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\2\DATA\042816\8M411793.D Vial: 5
Acq On : 28 Apr 2016 8:56 Operator: ADC
Sample : WG566682-04 1.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 12:13 2016 Quant Results File: temp.res

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 12:10:21 2016
Response via : Single Level Calibration

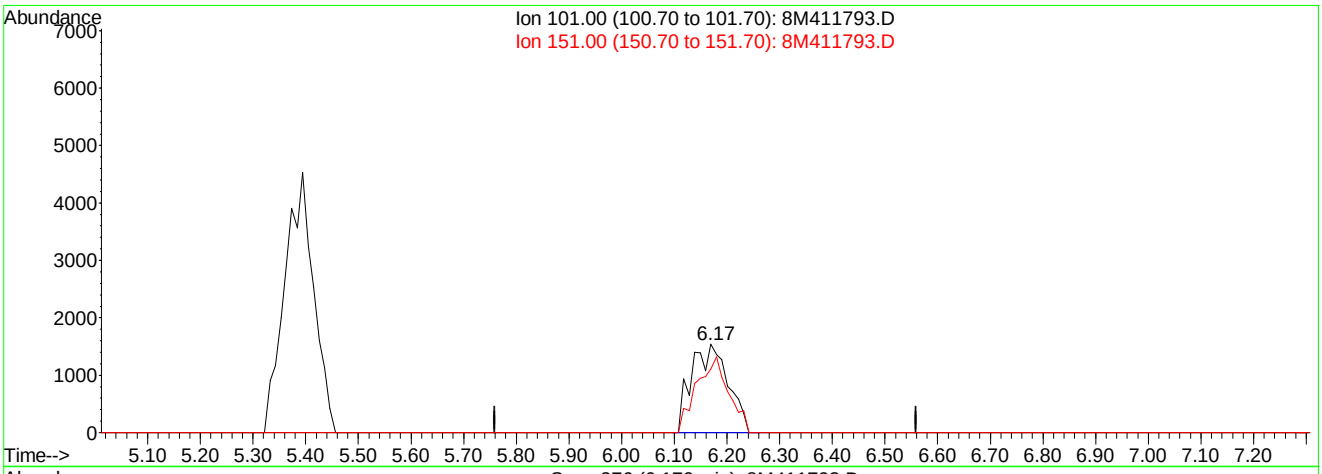

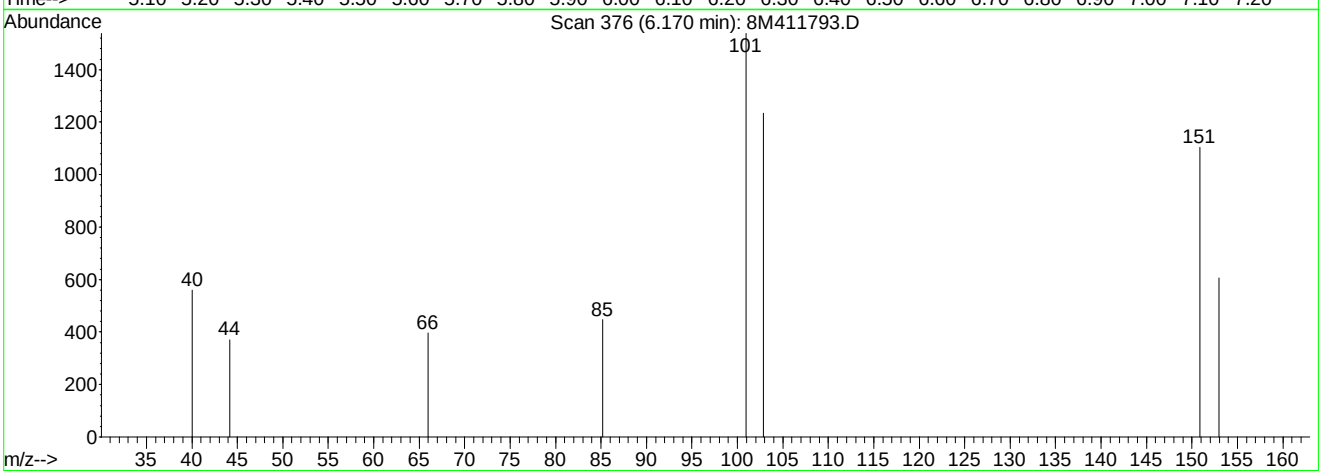

TIC: 8M411793.D

(12) 1,1,2-Trichloro-1,2,2-Trifluoroethane (T)

6.17min 1.13ug/L mint

response 7481

Ion	Exp%	Act%
101.00	100	100
151.00	77.80	74.51
0.00	0.00	0.00
0.00	0.00	0.00

8M411793.D 8260WTR.M Thu Apr 28 2016

Analyst: 04/28/2016 16:03 Supervisor: 04/29/2016 14:59

#2 - Data system splits the peak incorrectly or integrates a false peak as a rider peak

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411794.D Vial: 6
Acq On : 28 Apr 2016 9:26 Operator: ADC
Sample : WG566682-05 2.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07:13 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	671510	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	517924	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	272593	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	8867	1.0517 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	4.20%#	
43) 1,2-Dichloroethane-d4	10.30	65	8633	0.8950 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.56%#	
58) Toluene-d8	12.68	98	26785	1.0002 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.00%#	
80) p-Bromofluorobenzene	16.07	95	11042	0.9896 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	3.96%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	25758	1.8303 ug/L	98
3) Chloromethane	3.63	50	28626	2.1590 ug/L	94
4) Vinyl Chloride	3.86	62	16730	1.8686 ug/L	94
5) 1,3-Butadiene	3.90	54	17017	1.9454 ug/L	79
6) Bromomethane	4.73	94	8087	2.0255 ug/L	90
7) Chloroethane	4.90	64	11840	2.0208 ug/L	89
8) Trichlorofluoromethane	5.39	101	36125	2.0325 ug/L	95
9) Diethyl ether	5.91	59	132911	24.4413 ug/L	85
10) Isoprene	5.95	67	18121	1.9926 ug/L	74
11) Acrolein	6.15	56	4786	9.9112 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	16944	2.0821 ug/L	99
13) Acetone	6.25	43	3853	2.3372 ug/L #	48
14) 1,1-Dichloroethene	6.47	61	31831	2.0154 ug/L	86
15) Tert-Butyl Alcohol	6.58	59	17928	47.2382 ug/L	97
16) Dimethyl Sulfide	6.74	62	12326	2.1119 ug/L	78
17) Iodomethane	7.00	142	3110	1.8724 ug/L	96
18) Methyl acetate	7.01	43	10418	2.1145 ug/L #	73
19) Methylene Chloride	7.27	84	14810	1.9787 ug/L #	47
20) Carbon Disulfide	7.30	76	47285	2.0708 ug/L	98
21) Acrylonitrile	7.44	53	23715	11.1923 ug/L	92
22) Methyl Tert Butyl Ether	7.48	73	31122	1.8824 ug/L	86
23) trans-1,2-Dichloroethene	7.71	61	29932	2.0951 ug/L	82
24) n-Hexane	7.79	57	27350	2.1100 ug/L	89
25) Diisopropyl ether	8.13	45	925347	25.2114 ug/L	94
26) Vinyl Acetate	8.31	43	29118	1.9762 ug/L #	87
27) 1,1-Dichloroethane	8.33	63	36306	2.1246 ug/L	94
28) Ethyl-Tert-Butyl ether	8.70	59	637185	24.7361 ug/L	97
29) 2-Butanone	8.90	43	4765	1.8047 ug/L #	78
30) Propionitrile	9.00	54	16573	24.8223 ug/L	91
31) 2,2-Dichloropropane	9.11	77	29785	1.9784 ug/L	98
32) cis-1,2-Dichloroethene	9.18	96	16671	1.9501 ug/L	81
33) Chloroform	9.39	83	32394	2.0431 ug/L	95
34) 1-Bromopropane	9.51	122	2441	1.8125 ug/L	90
35) Bromochloromethane	9.61	130	9546	2.1343 ug/L	83
36) Tetrahydrofuran	9.64	42	42094	24.1155 ug/L	83
38) 1,1,1-Trichloroethane	9.91	97	32811	2.0526 ug/L	96
39) Cyclohexane	9.94	56	37925	2.1739 ug/L	82
40) 1,1-Dichloropropene	10.11	75	24899	2.1642 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	401979	24.3638 ug/L	87
42) Carbon Tetrachloride	10.25	117	28394	1.8880 ug/L	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411794.D Vial: 6
Acq On : 28 Apr 2016 9:26 Operator: ADC
Sample : WG566682-05 2.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07:13 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	26899	2.0200 ug/L		97
46)	Benzene	10.47	78	62808	2.1432 ug/L		86
47)	Trichloroethene	11.21	130	17279	2.0432 ug/L		99
48)	Methylcyclohexane	11.30	83	24880	2.1041 ug/L		86
49)	1,2-Dichloropropane	11.43	63	18117	2.1238 ug/L		93
50)	Bromodichloromethane	11.73	83	22892	1.9287 ug/L		97
51)	1,4-Dioxane	11.72	88	1236	36.3441 ug/L	#	44
52)	Dibromomethane	11.81	93	8437	2.1009 ug/L		95
53)	2-Chloroethyl Vinyl Ether	12.02	63	6234	1.7454 ug/L	#	73
54)	4-Methyl-2-Pentanone	12.06	58	3092	1.5860 ug/L	#	69
55)	cis-1,3-Dichloropropene	12.36	75	24020	2.0109 ug/L		96
56)	Dimethyl Disulfide	12.62	79	10426	1.6660 ug/L		96
59)	Toluene	12.79	91	67754	2.1846 ug/L		98
60)	Ethyl Methacrylate	12.88	69	10460	1.7974 ug/L	#	61
62)	trans-1,3-Dichloropropene	12.96	75	21630	1.9990 ug/L		97
63)	1,1,2-Trichloroethane	13.18	97	10497	2.1329 ug/L		81
64)	2-Hexanone	13.12	58	2950	1.6700 ug/L	#	89
65)	1,3-Dichloropropane	13.48	76	19775	2.1666 ug/L		81
66)	Tetrachloroethene	13.61	164	13191	1.8781 ug/L		86
67)	Dibromochloromethane	13.87	129	16308	2.1019 ug/L		89
68)	1,2-Dibromoethane	14.12	107	10299	2.0078 ug/L		92
69)	1-Chlorohexane	14.21	91	22440	2.1242 ug/L		77
70)	Chlorobenzene	14.63	112	45869	2.1300 ug/L		91
71)	1,1,1,2-Tetrachloroethane	14.66	131	17780	2.1186 ug/L		94
72)	Ethylbenzene	14.66	106	25144	2.0578 ug/L		95
73)	m-,p-Xylene	14.74	106	61126	4.3421 ug/L		96
74)	o-Xylene	15.31	106	30203	2.1297 ug/L		99
75)	Styrene	15.34	104	47634	2.1063 ug/L		96
76)	Bromoform	15.83	173	8425	1.8926 ug/L		92
77)	Isopropylbenzene	15.72	105	79207	2.2029 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	11700	2.1518 ug/L		99
81)	1,2,3-Trichloropropane	16.13	110	2957	1.6923 ug/L		68
82)	trans-1,4-Dichloro-2-Buten	16.19	53	4951	1.8695 ug/L		93
83)	n-Propylbenzene	16.24	91	90812	2.1617 ug/L		95
84)	Bromobenzene	16.36	156	18963	2.1652 ug/L		98
85)	1,3,5-Trimethylbenzene	16.42	105	66505	2.1393 ug/L		100
86)	2-Chlorotoluene	16.51	91	60054	2.2323 ug/L		100
87)	4-Chlorotoluene	16.56	91	60225	2.1732 ug/L		98
88)	a-Methylstyrene	16.83	118	28311	1.8483 ug/L		99
89)	tert-Butylbenzene	16.89	134	12424	2.0172 ug/L		71
90)	1,2,4-Trimethylbenzene	16.94	105	69438	2.1823 ug/L		99
91)	sec-Butylbenzene	17.16	105	85133	2.2776 ug/L		99
92)	p-Isopropyltoluene	17.31	119	67212	2.1061 ug/L		98
93)	1,3-Dichlorobenzene	17.51	146	36729	2.1128 ug/L		95
94)	1,4-Dichlorobenzene	17.63	146	36472	2.1021 ug/L		80
95)	n-Butylbenzene	17.84	91	67471	2.2227 ug/L		96
96)	1,2-Dichlorobenzene	18.13	146	32441	2.1295 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.12	75	2436	2.0458 ug/L		94
98)	1,2,4-Trichlorobenzene	20.27	180	24999	2.1187 ug/L		95
99)	Hexachlorobutadiene	20.42	225	10941	2.0037 ug/L		94
100)	Naphthalene	20.64	128	37860	2.1103 ug/L		100
101)	1,2,3-Trichlorobenzene	20.95	180	20549	2.0471 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M411794.D 8260WTR.M Thu Apr 28 15:07:13 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411794.D Vial: 6
Acq On : 28 Apr 2016 9:26 Operator: ADC
Sample : WG566682-05 2.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

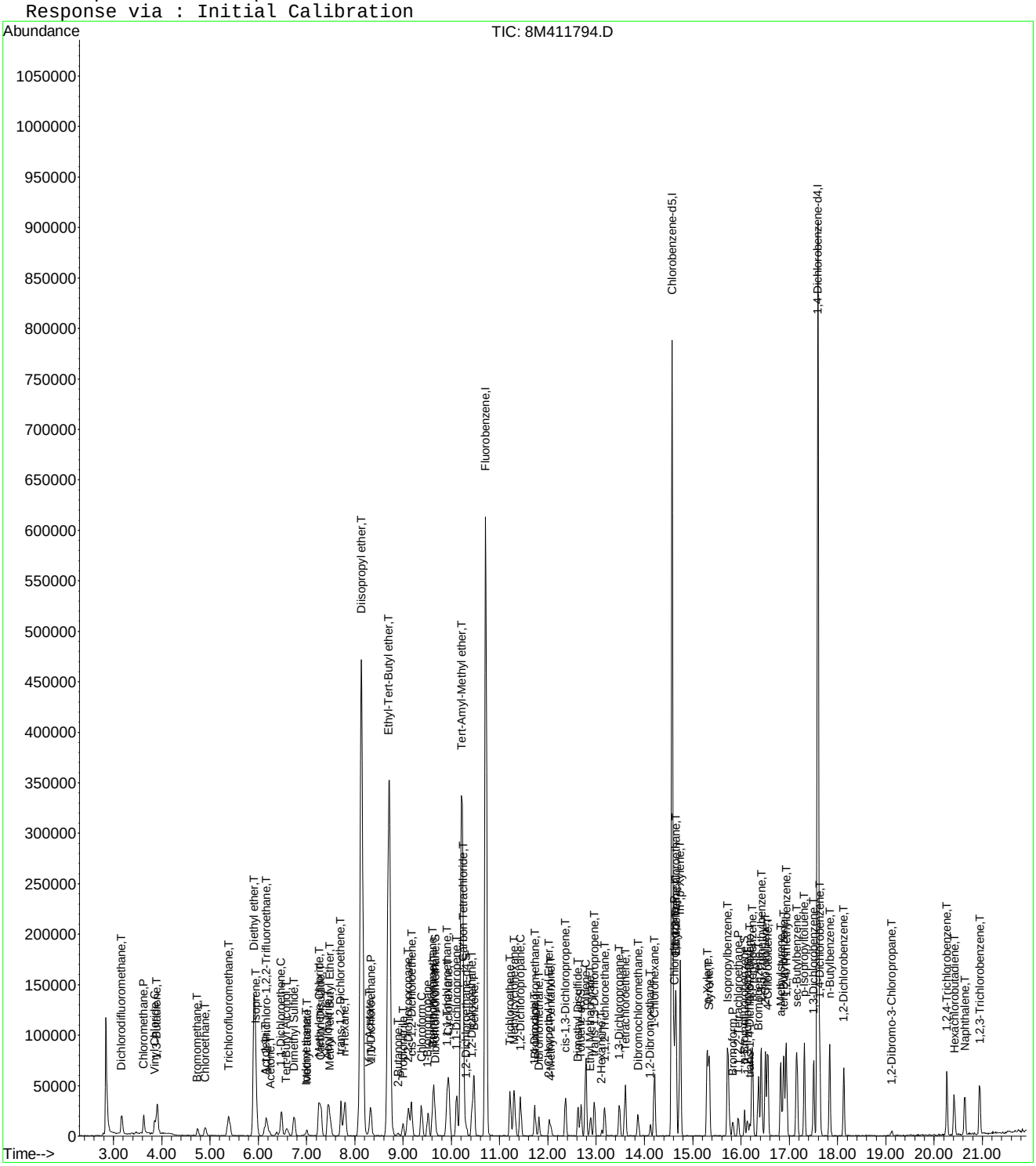

8M411794.D 8260WTR.M Thu Apr 28 15:07:14 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\042816\8M411794.D Vial: 6
Acq On : 28 Apr 2016 9:26 Operator: ADC
Sample : WG566682-05 2.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.8302	8.5	100	0.00
3	P	Chloromethane	2.0000	2.1590	-7.9	100	0.01
4	C	Vinyl Chloride	2.0000	1.8686	6.6	100	0.01
5	T	1,3-Butadiene	2.0000	1.9454	2.7	100	0.01
6	T	Bromomethane	2.0000	2.0255	-1.3	100	0.00
7	T	Chloroethane	2.0000	2.0208	-1.0	100	0.00
8	T	Trichlorofluoromethane	2.0000	2.0325	-1.6	100	0.00
9	T	Diethyl ether	25.0000	24.4413	2.2	100	0.00
10	T	Isoprene	2.0000	1.9926	0.4	100	0.01
11	T	Acrolein	12.5000	9.9112	20.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	2.0821	-4.1	100	0.01
13	T	Acetone	-1.0000	2.3372	0.0	100	0.00
14	C	1,1-Dichloroethene	2.0000	2.0154	-0.8	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	47.2382	5.5	100	0.00
16	T	Dimethyl Sulfide	2.0000	2.1119	-5.6	100	0.00
17	T	Iodomethane	2.0000	1.8724	6.4	100	0.00
18	T	Methyl acetate	-1.0000	2.1145	0.0	100	0.00
19	T	Methylene Chloride	2.0000	1.9787	1.1	100	0.01
20	T	Carbon Disulfide	2.0000	2.0708	-3.5	100	0.00
21	T	Acrylonitrile	12.5000	11.1923	10.5	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.8824	5.9	100	0.01
23	T	trans-1,2-Dichloroethene	2.0000	2.0951	-4.8	100	0.00
24	T	n-Hexane	-1.0000	2.1100	0.0	100	0.00
25	T	Diisopropyl ether	25.0000	25.2114	-0.8	100	0.00
26	T	Vinyl Acetate	2.0000	1.9762	1.2	100	0.01
27	P	1,1-Dichloroethane	2.0000	2.1246	-6.2	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	24.7361	1.1	100	0.00
29	T	2-Butanone	-1.0000	1.8047	0.0	100	0.01
30	T	Propionitrile	25.0000	24.8223	0.7	100	0.01
31	T	2,2-Dichloropropane	2.0000	1.9784	1.1	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	1.9501	2.5	100	0.00
33	C	Chloroform	2.0000	2.0431	-2.2	100	0.00
34		1-Bromopropane	2.0000	1.8125	9.4	100	0.00
35	T	Bromochloromethane	2.0000	2.1343	-6.7	100	0.00
36	T	Tetrahydrofuran	25.0000	24.1155	3.5	100	0.01
37	S	Dibromofluoromethane	1.0000	1.0517	-5.2	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	2.0526	-2.6	100	0.00
39	T	Cyclohexane	2.0000	2.1739	-8.7	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.1642	-8.2	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	24.3638	2.5	100	0.00
42	T	Carbon Tetrachloride	2.0000	1.8880	5.6	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	0.8950	10.5	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	2.0000	2.0200	-1.0	100	0.00
46	T	Benzene	2.0000	2.1432	-7.2	100	0.00
47	T	Trichloroethene	2.0000	2.0432	-2.2	100	0.00
48	T	Methylcyclohexane	-1.0000	2.1041	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.1238	-6.2	100	0.00
50	T	Bromodichloromethane	2.0000	1.9287	3.6	100	0.00
51	T	1,4-Dioxane	-1.0000	36.3441	0.0	100	0.00
52	T	Dibromomethane	2.0000	2.1009	-5.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	1.7454	12.7	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.5860	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\042816\8M411794.D Vial: 6
Acq On : 28 Apr 2016 9:26 Operator: ADC
Sample : WG566682-05 2.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	2.0109	-0.5	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.6660	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	1.0002	-0.0	100	0.00
59	C	Toluene	2.0000	2.1846	-9.2	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.7974	10.1	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	2.0000	1.9990	0.1	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	2.1329	-6.6	100	0.00
64	T	2-Hexanone	-1.0000	1.6700	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.1666	-8.3	100	0.00
66	T	Tetrachloroethene	2.0000	1.8781	6.1	100	0.01
67	T	Dibromochloromethane	2.0000	2.1019	-5.1	100	0.00
68	T	1,2-Dibromoethane	2.0000	2.0078	-0.4	100	0.00
69	T	1-Chlorohexane	2.0000	2.1242	-6.2	100	0.00
70	P	Chlorobenzene	2.0000	2.1300	-6.5	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	2.1186	-5.9	100	0.00
72	C	Ethylbenzene	2.0000	2.0578	-2.9	100	0.00
73	T	m-,p-Xylene	4.0000	4.3421	-8.6	100	0.00
74	T	o-Xylene	2.0000	2.1297	-6.5	100	0.00
75	T	Styrene	2.0000	2.1063	-5.3	100	0.00
76	P	Bromoform	2.0000	1.8926	5.4	100	0.00
77	T	Isopropylbenzene	2.0000	2.2029	-10.1	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	2.1518	-7.6	100	0.00
80	S	p-Bromofluorobenzene	1.0000	0.9896	1.0	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	1.6923	15.4	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	1.8695	6.5	100	0.00
83	T	n-Propylbenzene	2.0000	2.1617	-8.1	100	0.00
84	T	Bromobenzene	2.0000	2.1652	-8.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.1393	-7.0	100	0.00
86	T	2-Chlorotoluene	2.0000	2.2323	-11.6	100	0.00
87	T	4-Chlorotoluene	2.0000	2.1732	-8.7	100	0.00
88	T	a-Methylstyrene	-1.0000	1.8483	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	2.0172	-0.9	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.1823	-9.1	100	0.00
91	T	sec-Butylbenzene	2.0000	2.2776	-13.9	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.1061	-5.3	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.1128	-5.6	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.1021	-5.1	100	0.00
95	T	n-Butylbenzene	2.0000	2.2227	-11.1	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.1295	-6.5	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	2.0458	-2.3	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	2.1187	-5.9	100	0.00
99	T	Hexachlorobutadiene	2.0000	2.0037	-0.2	100	0.00
100	T	Naphthalene	2.0000	2.1103	-5.5	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	2.0471	-2.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M411794.D 8260WTR.M Thu Apr 28 15:08:02 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411795.D Vial: 7
Acq On : 28 Apr 2016 9:55 Operator: ADC
Sample : WG566682-06 5.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07:14 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	680098	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	511929	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	273776	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	21254	2.4890 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 9.96%#		
43) 1,2-Dichloroethane-d4	10.30	65	25602	2.6206 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 10.48%#		
58) Toluene-d8	12.69	98	69824	2.6378 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 10.56%#		
80) p-Bromofluorobenzene	16.07	95	28937	2.5821 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 10.32%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	64668	4.5370 ug/L	99
3) Chloromethane	3.63	50	62654	4.6657 ug/L	99
4) Vinyl Chloride	3.85	62	42288	4.6635 ug/L	95
5) 1,3-Butadiene	3.91	54	38585	4.3553 ug/L	78
6) Bromomethane	4.74	94	23131	4.3053 ug/L	99
7) Chloroethane	4.90	64	32752	5.5193 ug/L	92
8) Trichlorofluoromethane	5.39	101	89754	4.9861 ug/L	98
9) Diethyl ether	5.92	59	277811	50.4422 ug/L	84
10) Isoprene	5.95	67	46931	5.0953 ug/L	67
11) Acrolein	6.15	56	11696	23.9151 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.18	101	42434	5.1486 ug/L	98
13) Acetone	6.26	43	9285	5.5611 ug/L	87
14) 1,1-Dichloroethene	6.47	61	82655	5.1672 ug/L	88
15) Tert-Butyl Alcohol	6.58	59	39941	103.9109 ug/L	100
16) Dimethyl Sulfide	6.74	62	31312	5.2971 ug/L	79
17) Iodomethane	7.00	142	10593	3.7346 ug/L	93
18) Methyl acetate	7.01	43	27892	5.5895 ug/L #	84
19) Methylene Chloride	7.26	84	39343	5.1901 ug/L	57
20) Carbon Disulfide	7.30	76	120053	5.1912 ug/L	100
21) Acrylonitrile	7.44	53	52382	24.4096 ug/L	100
22) Methyl Tert Butyl Ether	7.48	73	84721	5.0595 ug/L	91
23) trans-1,2-Dichloroethene	7.71	61	73344	5.0690 ug/L	88
24) n-Hexane	7.79	57	68811	5.2417 ug/L	91
25) Diisopropyl ether	8.13	45	1940469	52.2011 ug/L	94
26) Vinyl Acetate	8.30	43	75660	5.0701 ug/L	95
27) 1,1-Dichloroethane	8.34	63	90547	5.2318 ug/L	95
28) Ethyl-Tert-Butyl ether	8.71	59	1330623	51.0036 ug/L	98
29) 2-Butanone	8.89	43	13634	5.0986 ug/L #	80
30) Propionitrile	8.99	54	34767	51.4149 ug/L	99
31) 2,2-Dichloropropane	9.10	77	77861	5.1064 ug/L	96
32) cis-1,2-Dichloroethene	9.18	96	47235	5.4556 ug/L	92
33) Chloroform	9.38	83	82144	5.1154 ug/L	98
34) 1-Bromopropane	9.52	122	7080	5.1907 ug/L	92
35) Bromochloromethane	9.62	130	22754	5.0232 ug/L	68
36) Tetrahydrofuran	9.64	42	86893	49.1521 ug/L	83
38) 1,1,1-Trichloroethane	9.91	97	84297	5.2070 ug/L	96
39) Cyclohexane	9.94	56	89790	5.0818 ug/L	88
40) 1,1-Dichloropropene	10.11	75	60327	5.1773 ug/L	96
41) Tert-Amyl-Methyl ether	10.22	73	836962	50.0875 ug/L	87
42) Carbon Tetrachloride	10.25	117	78184	5.1331 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M411795.D 8260WTR.M Thu Apr 28 15:07:14 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411795.D Vial: 7
Acq On : 28 Apr 2016 9:55 Operator: ADC
Sample : WG566682-06 5.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07:14 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.43	62	66582	4.9368 ug/L	100
46)	Benzene	10.47	78	153055	5.1568 ug/L	84
47)	Trichloroethene	11.21	130	43718	5.1042 ug/L	96
48)	Methylcyclohexane	11.31	83	59809	4.9943 ug/L	80
49)	1,2-Dichloropropane	11.43	63	44737	5.1780 ug/L	93
50)	Bromodichloromethane	11.73	83	62324	5.1847 ug/L	96
51)	1,4-Dioxane	11.71	88	2768	80.3642 ug/L	73
52)	Dibromomethane	11.81	93	21031	5.1709 ug/L	96
53)	2-Chloroethyl Vinyl Ether	12.03	63	17908	4.9506 ug/L	97
54)	4-Methyl-2-Pentanone	12.06	58	9300	4.7101 ug/L	90
55)	cis-1,3-Dichloropropene	12.36	75	62833	5.1937 ug/L	95
56)	Dimethyl Disulfide	12.63	79	28262	4.4591 ug/L	95
59)	Toluene	12.78	91	166902	5.4445 ug/L	97
60)	Ethyl Methacrylate	12.88	69	27966	4.8619 ug/L	73
62)	trans-1,3-Dichloropropene	12.96	75	54476	5.0934 ug/L	98
63)	1,1,2-Trichloroethane	13.18	97	25929	5.3303 ug/L	97
64)	2-Hexanone	13.11	58	7677	4.3968 ug/L #	78
65)	1,3-Dichloropropane	13.48	76	45863	5.0837 ug/L	69
66)	Tetrachloroethene	13.60	164	37044	5.3359 ug/L	94
67)	Dibromochloromethane	13.87	129	39814	5.1916 ug/L	97
68)	1,2-Dibromoethane	14.12	107	25945	5.1173 ug/L	100
69)	1-Chlorohexane	14.21	91	55571	5.3220 ug/L	74
70)	Chlorobenzene	14.62	112	118558	5.5700 ug/L	96
71)	1,1,1,2-Tetrachloroethane	14.65	131	43592	5.2552 ug/L	99
72)	Ethylbenzene	14.65	106	63130	5.2271 ug/L	99
73)	m-,p-Xylene	14.74	106	151689	10.9015 ug/L	93
74)	o-Xylene	15.31	106	72785	5.1923 ug/L	97
75)	Styrene	15.34	104	118521	5.3023 ug/L	94
76)	Bromoform	15.83	173	20984	4.7690 ug/L	99
77)	Isopropylbenzene	15.73	105	196751	5.5361 ug/L	100
79)	1,1,2,2-Tetrachloroethane	15.95	83	26893	4.9247 ug/L	99
81)	1,2,3-Trichloropropane	16.13	110	9288	5.2926 ug/L	100
82)	trans-1,4-Dichloro-2-Buten	16.17	53	12793	4.8097 ug/L	93
83)	n-Propylbenzene	16.24	91	229297	5.4347 ug/L	97
84)	Bromobenzene	16.37	156	48580	5.5229 ug/L	97
85)	1,3,5-Trimethylbenzene	16.42	105	166104	5.3202 ug/L	99
86)	2-Chlorotoluene	16.50	91	143955	5.3280 ug/L	99
87)	4-Chlorotoluene	16.56	91	149542	5.3728 ug/L	99
88)	a-Methylstyrene	16.82	118	78840	5.1250 ug/L	99
89)	tert-Butylbenzene	16.89	134	32532	5.2591 ug/L	79
90)	1,2,4-Trimethylbenzene	16.94	105	172807	5.4075 ug/L	97
91)	sec-Butylbenzene	17.16	105	205992	5.4871 ug/L	98
92)	p-Isopropyltoluene	17.31	119	175707	5.4820 ug/L	96
93)	1,3-Dichlorobenzene	17.51	146	90302	5.1721 ug/L	95
94)	1,4-Dichlorobenzene	17.64	146	93169	5.3466 ug/L	89
95)	n-Butylbenzene	17.84	91	169071	5.5456 ug/L	98
96)	1,2-Dichlorobenzene	18.13	146	80918	5.2886 ug/L	91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	5260	4.3983 ug/L	96
98)	1,2,4-Trichlorobenzene	20.27	180	60205	5.0804 ug/L	98
99)	Hexachlorobutadiene	20.42	225	28006	5.1068 ug/L	100
100)	Naphthalene	20.64	128	93783	5.2048 ug/L	98
101)	1,2,3-Trichlorobenzene	20.95	180	51772	5.1353 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M411795.D 8260WTR.M Thu Apr 28 15:07:14 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411795.D Vial: 7
Acq On : 28 Apr 2016 9:55 Operator: ADC
Sample : WG566682-06 5.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

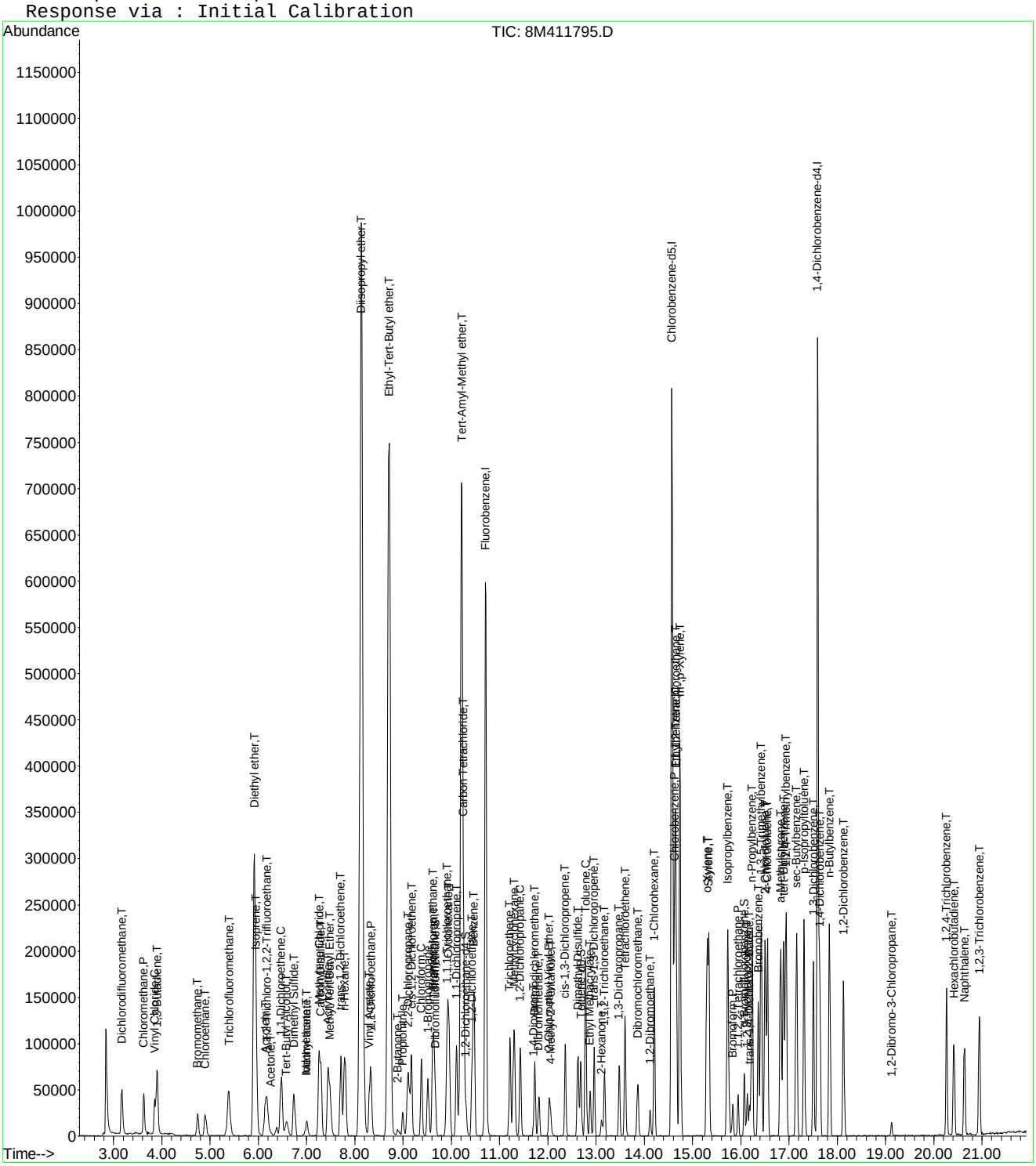

8M411795.D 8260WTR.M Thu Apr 28 15:07:15 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\042816\8M411795.D Vial: 7
Acq On : 28 Apr 2016 9:55 Operator: ADC
Sample : WG566682-06 5.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.5370	9.3	100	0.00
3	P	Chloromethane	5.0000	4.6657	6.7	100	0.00
4	C	Vinyl Chloride	5.0000	4.6635	6.7	100	0.00
5	T	1,3-Butadiene	5.0000	4.3553	12.9	100	0.02
6	T	Bromomethane	5.0000	4.3053	13.9	100	0.01
7	T	Chloroethane	5.0000	5.5193	-10.4	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.9861	0.3	100	0.00
9	T	Diethyl ether	50.0000	50.4422	-0.9	100	0.00
10	T	Isoprene	5.0000	5.0953	-1.9	100	0.00
11	T	Acrolein	25.0000	23.9151	4.3	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	5.1486	-3.0	100	0.02
13	T	Acetone	5.0000	5.5611	-11.2	100	0.00
14	C	1,1-Dichloroethene	5.0000	5.1672	-3.3	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	103.9109	-3.9	100	-0.01
16	T	Dimethyl Sulfide	5.0000	5.2971	-5.9	100	0.00
17	T	Iodomethane	5.0000	3.7346	25.3#	100	0.00
18	T	Methyl acetate	5.0000	5.5896	-11.8	100	0.00
19	T	Methylene Chloride	5.0000	5.1901	-3.8	100	0.00
20	T	Carbon Disulfide	5.0000	5.1912	-3.8	100	0.00
21	T	Acrylonitrile	25.0000	24.4096	2.4	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	5.0595	-1.2	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	5.0690	-1.4	100	0.00
24	T	n-Hexane	5.0000	5.2417	-4.8	100	0.00
25	T	Diisopropyl ether	50.0000	52.2011	-4.4	100	0.00
26	T	Vinyl Acetate	5.0000	5.0701	-1.4	100	0.00
27	P	1,1-Dichloroethane	5.0000	5.2318	-4.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	51.0037	-2.0	100	0.00
29	T	2-Butanone	5.0000	5.0986	-2.0	100	0.00
30	T	Propionitrile	50.0000	51.4149	-2.8	100	0.00
31	T	2,2-Dichloropropane	5.0000	5.1064	-2.1	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	5.4557	-9.1	100	0.00
33	C	Chloroform	5.0000	5.1154	-2.3	100	0.00
34		1-Bromopropane	5.0000	5.1907	-3.8	100	0.00
35	T	Bromochloromethane	5.0000	5.0232	-0.5	100	0.00
36	T	Tetrahydrofuran	50.0000	49.1521	1.7	100	0.00
37	S	Dibromofluoromethane	2.5000	2.4890	0.4	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	5.2070	-4.1	100	0.00
39	T	Cyclohexane	5.0000	5.0818	-1.6	100	0.00
40	T	1,1-Dichloropropene	5.0000	5.1773	-3.5	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	50.0875	-0.2	100	0.00
42	T	Carbon Tetrachloride	5.0000	5.1331	-2.7	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.6206	-4.8	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	5.0000	4.9368	1.3	100	0.00
46	T	Benzene	5.0000	5.1568	-3.1	100	0.00
47	T	Trichloroethene	5.0000	5.1042	-2.1	100	0.00
48	T	Methylcyclohexane	5.0000	4.9943	0.1	100	0.00
49	C	1,2-Dichloropropane	5.0000	5.1780	-3.6	100	0.00
50	T	Bromodichloromethane	5.0000	5.1847	-3.7	100	0.00
51	T	1,4-Dioxane	100.0000	80.3642	19.6	100	-0.01
52	T	Dibromomethane	5.0000	5.1709	-3.4	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.9506	1.0	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.7101	5.8	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\042816\8M411795.D Vial: 7
Acq On : 28 Apr 2016 9:55 Operator: ADC
Sample : WG566682-06 5.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	5.1937	-3.9	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.4591	10.8	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.6378	-5.5	100	0.00
59	C	Toluene	5.0000	5.4445	-8.9	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.8619	2.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	5.0000	5.0934	-1.9	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	5.3303	-6.6	100	0.00
64	T	2-Hexanone	5.0000	4.3968	12.1	100	0.00
65	T	1,3-Dichloropropane	5.0000	5.0837	-1.7	100	0.00
66	T	Tetrachloroethene	5.0000	5.3359	-6.7	100	0.00
67	T	Dibromochloromethane	5.0000	5.1917	-3.8	100	0.00
68	T	1,2-Dibromoethane	5.0000	5.1173	-2.3	100	0.00
69	T	1-Chlorohexane	5.0000	5.3220	-6.4	100	0.00
70	P	Chlorobenzene	5.0000	5.5700	-11.4	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	5.2552	-5.1	100	0.00
72	C	Ethylbenzene	5.0000	5.2271	-4.5	100	0.00
73	T	m-,p-Xylene	10.0000	10.9015	-9.0	100	-0.01
74	T	o-Xylene	5.0000	5.1923	-3.8	100	0.00
75	T	Styrene	5.0000	5.3023	-6.0	100	0.00
76	P	Bromoform	5.0000	4.7690	4.6	100	0.00
77	T	Isopropylbenzene	5.0000	5.5361	-10.7	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	4.9247	1.5	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.5821	-3.3	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.2926	-5.9	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.8097	3.8	100	-0.01
83	T	n-Propylbenzene	5.0000	5.4347	-8.7	100	0.00
84	T	Bromobenzene	5.0000	5.5229	-10.5	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	5.3201	-6.4	100	0.00
86	T	2-Chlorotoluene	5.0000	5.3280	-6.6	100	0.00
87	T	4-Chlorotoluene	5.0000	5.3728	-7.5	100	0.00
88	T	a-Methylstyrene	5.0000	5.1250	-2.5	100	0.00
89	T	tert-Butylbenzene	5.0000	5.2591	-5.2	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.4075	-8.2	100	0.00
91	T	sec-Butylbenzene	5.0000	5.4871	-9.7	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.4820	-9.6	100	-0.01
93	T	1,3-Dichlorobenzene	5.0000	5.1721	-3.4	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	5.3466	-6.9	100	0.00
95	T	n-Butylbenzene	5.0000	5.5456	-10.9	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	5.2886	-5.8	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	4.3983	12.0	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	5.0804	-1.6	100	0.00
99	T	Hexachlorobutadiene	5.0000	5.1068	-2.1	100	0.00
100	T	Naphthalene	5.0000	5.2048	-4.1	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	5.1353	-2.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M411795.D 8260WTR.M Thu Apr 28 15:08:12 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411796.D Vial: 8
Acq On : 28 Apr 2016 10:24 Operator: ADC
Sample : WG566682-07 20.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07:15 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	679501	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	520396	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	277805	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	80112	9.3898 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 37.56%#		
43) 1,2-Dichloroethane-d4	10.30	65	96806	9.9177 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 39.68%#		
58) Toluene-d8	12.68	98	266719	9.9120 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 39.64%#		
80) p-Bromofluorobenzene	16.07	95	109352	9.6163 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 38.48%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	299446	21.0271 ug/L	99
3) Chloromethane	3.63	50	250555	18.6748 ug/L	96
4) Vinyl Chloride	3.85	62	170007	18.7646 ug/L	97
5) 1,3-Butadiene	3.90	54	171006	19.3195 ug/L	91
6) Bromomethane	4.74	94	102505	16.4311 ug/L	100
7) Chloroethane	4.90	64	116890	19.7153 ug/L	91
8) Trichlorofluoromethane	5.38	101	349821	19.4506 ug/L	100
9) Diethyl ether	5.91	59	445764	81.0086 ug/L	85
10) Isoprene	5.95	67	187232	20.3457 ug/L	72
11) Acrolein	6.15	56	18798	38.4704 ug/L	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	159464	19.3650 ug/L	98
13) Acetone	6.25	43	35640	21.3649 ug/L	93
14) 1,1-Dichloroethene	6.48	61	310132	19.4052 ug/L	88
15) Tert-Butyl Alcohol	6.59	59	61370	159.8010 ug/L	99
16) Dimethyl Sulfide	6.74	62	122523	20.7458 ug/L	73
17) Iodomethane	7.00	142	58066	15.5555 ug/L	85
18) Methyl acetate	7.01	43	101836	20.4258 ug/L	89
19) Methylene Chloride	7.25	84	145372	19.1940 ug/L	57
20) Carbon Disulfide	7.30	76	469224	20.3075 ug/L	99
21) Acrylonitrile	7.44	53	85261	39.7658 ug/L	98
22) Methyl Tert Butyl Ether	7.47	73	332662	19.8840 ug/L	94
23) trans-1,2-Dichloroethene	7.71	61	277252	19.1783 ug/L	87
24) n-Hexane	7.79	57	267253	20.3760 ug/L	88
25) Diisopropyl ether	8.13	45	3042632	81.9227 ug/L	94
26) Vinyl Acetate	8.30	43	300193	20.1340 ug/L	95
27) 1,1-Dichloroethane	8.33	63	335629	19.4095 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	2121056	81.3729 ug/L	98
29) 2-Butanone	8.89	43	51676	19.3420 ug/L	86
30) Propionitrile	8.99	54	56287	83.3127 ug/L	97
31) 2,2-Dichloropropane	9.10	77	294029	19.3006 ug/L	99
32) cis-1,2-Dichloroethene	9.18	96	167950	19.4153 ug/L	79
33) Chloroform	9.38	83	309449	19.2873 ug/L	100
34) 1-Bromopropane	9.52	122	27778	20.3835 ug/L	94
35) Bromochloromethane	9.61	130	92542	20.4474 ug/L	78
36) Tetrahydrofuran	9.63	42	142166	80.4886 ug/L	82
38) 1,1,1-Trichloroethane	9.91	97	309619	19.1418 ug/L	100
39) Cyclohexane	9.94	56	357392	20.2448 ug/L	86
40) 1,1-Dichloropropene	10.11	75	226779	19.4793 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1355880	81.2131 ug/L	88
42) Carbon Tetrachloride	10.25	117	295652	19.4278 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411796.D Vial: 8
Acq On : 28 Apr 2016 10:24 Operator: ADC
Sample : WG566682-07 20.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07:15 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	261723	19.4230 ug/L		96
46)	Benzene	10.47	78	590944	19.9277 ug/L		85
47)	Trichloroethene	11.21	130	166422	19.4472 ug/L		98
48)	Methylcyclohexane	11.30	83	237665	19.8633 ug/L		79
49)	1,2-Dichloropropane	11.43	63	166884	19.3328 ug/L		89
50)	Bromodichloromethane	11.73	83	236842	19.7201 ug/L		99
51)	1,4-Dioxane	11.72	88	5036	146.3403 ug/L		86
52)	Dibromomethane	11.81	93	82718	20.3557 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.02	63	74534	20.6229 ug/L		100
54)	4-Methyl-2-Pentanone	12.06	58	36714	18.6106 ug/L		97
55)	cis-1,3-Dichloropropene	12.36	75	244515	20.2292 ug/L		99
56)	Dimethyl Disulfide	12.62	79	123792	19.5486 ug/L		99
59)	Toluene	12.78	91	624843	20.0513 ug/L		98
60)	Ethyl Methacrylate	12.88	69	122270	20.9107 ug/L		68
62)	trans-1,3-Dichloropropene	12.96	75	218225	20.0717 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	100643	20.3527 ug/L		95
64)	2-Hexanone	13.11	58	35383	19.9350 ug/L	#	85
65)	1,3-Dichloropropane	13.48	76	180170	19.6462 ug/L		74
66)	Tetrachloroethene	13.60	164	139093	19.7092 ug/L		94
67)	Dibromochloromethane	13.87	129	153622	19.7060 ug/L		99
68)	1,2-Dibromoethane	14.12	107	105284	20.4279 ug/L		100
69)	1-Chlorohexane	14.21	91	215375	20.2909 ug/L		69
70)	Chlorobenzene	14.62	112	433442	20.0323 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.65	131	165028	19.5710 ug/L		99
72)	Ethylbenzene	14.65	106	236599	19.2713 ug/L		99
73)	m-,p-Xylene	14.74	106	576789	40.7779 ug/L		98
74)	o-Xylene	15.31	106	273665	19.2050 ug/L		96
75)	Styrene	15.34	104	453240	19.9467 ug/L		92
76)	Bromoform	15.83	173	89140	19.9290 ug/L		99
77)	Isopropylbenzene	15.73	105	734098	20.3196 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	105230	18.9904 ug/L		98
81)	1,2,3-Trichloropropane	16.13	110	35056	19.6865 ug/L		93
82)	trans-1,4-Dichloro-2-Buten	16.18	53	54204	20.0831 ug/L		84
83)	n-Propylbenzene	16.24	91	883090	20.6270 ug/L		99
84)	Bromobenzene	16.36	156	173229	19.4081 ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	646463	20.4053 ug/L		100
86)	2-Chlorotoluene	16.50	91	547682	19.9765 ug/L		99
87)	4-Chlorotoluene	16.56	91	566818	20.0696 ug/L		98
88)	a-Methylstyrene	16.82	118	317062	20.3117 ug/L		97
89)	tert-Butylbenzene	16.89	134	127248	20.2725 ug/L		87
90)	1,2,4-Trimethylbenzene	16.94	105	649463	20.0284 ug/L		100
91)	sec-Butylbenzene	17.16	105	778835	20.4455 ug/L		98
92)	p-Isopropyltoluene	17.31	119	657236	20.2081 ug/L		97
93)	1,3-Dichlorobenzene	17.51	146	348548	19.6738 ug/L		93
94)	1,4-Dichlorobenzene	17.63	146	346055	19.5706 ug/L		92
95)	n-Butylbenzene	17.84	91	625633	20.2235 ug/L		100
96)	1,2-Dichlorobenzene	18.13	146	307785	19.8244 ug/L		94
97)	1,2-Dibromo-3-Chloropropan	19.12	75	24203	19.9445 ug/L		80
98)	1,2,4-Trichlorobenzene	20.27	180	236399	19.6591 ug/L		99
99)	Hexachlorobutadiene	20.42	225	107262	19.2753 ug/L		97
100)	Naphthalene	20.64	128	374113	20.4616 ug/L		98
101)	1,2,3-Trichlorobenzene	20.95	180	196521	19.2104 ug/L		100

(#) = qualifier out of range (m) = manual integration
8M411796.D 8260WTR.M Thu Apr 28 15:07:16 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411796.D Vial: 8
Acq On : 28 Apr 2016 10:24 Operator: ADC
Sample : WG566682-07 20.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

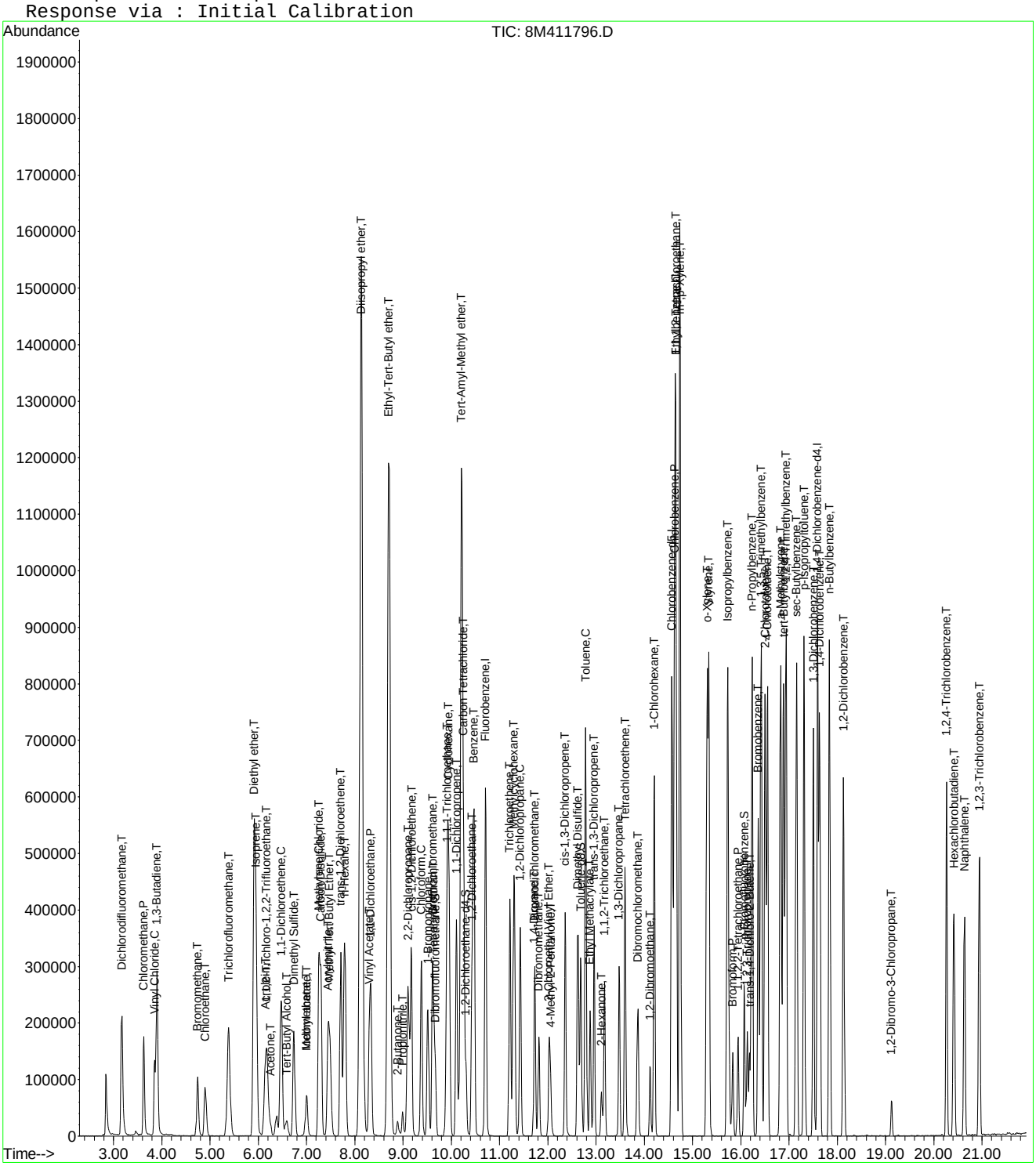

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411797.D Vial: 9
Acq On : 28 Apr 2016 10:54 Operator: ADC
Sample : WG566682-08 50.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07:16 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.72	96	692530	25.00 ug/L	0.01
57) Chlorobenzene-d5	14.57	117	522516	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	287363	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	220940	25.4087 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.64%		
43) 1,2-Dichloroethane-d4	10.30	65	261165	26.2529 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 105.00%		
58) Toluene-d8	12.68	98	726479	26.8884 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 107.56%		
80) p-Bromofluorobenzene	16.07	95	297805	25.3177 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.28%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	779563	53.7110 ug/L	100
3) Chloromethane	3.63	50	664808	48.6184 ug/L	96
4) Vinyl Chloride	3.85	62	465615	50.4256 ug/L	97
5) 1,3-Butadiene	3.90	54	466308	51.6902 ug/L	99
6) Bromomethane	4.74	94	297256	45.3209 ug/L	97
7) Chloroethane	4.90	64	304152	50.3348 ug/L	91
8) Trichlorofluoromethane	5.38	101	921664	50.2818 ug/L	99
9) Diethyl ether	5.92	59	562949	100.3798 ug/L	86
10) Isoprene	5.95	67	480894	51.2734 ug/L	72
11) Acrolein	6.16	56	24848	49.8952 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	421971	50.2793 ug/L	99
13) Acetone	6.25	43	83399	49.0540 ug/L	96
14) 1,1-Dichloroethene	6.48	61	808165	49.6161 ug/L	88
15) Tert-Butyl Alcohol	6.59	59	77628	198.3323 ug/L	95
16) Dimethyl Sulfide	6.74	62	314388	52.2312 ug/L	76
17) Iodomethane	7.00	142	200307	49.3772 ug/L	88
18) Methyl acetate	7.01	43	250038	49.2080 ug/L	92
19) Methylene Chloride	7.27	84	373750	48.4193 ug/L	55
20) Carbon Disulfide	7.30	76	1194872	50.7397 ug/L	100
21) Acrylonitrile	7.44	53	116078	53.1203 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	876409	51.3996 ug/L	94
23) trans-1,2-Dichloroethene	7.71	61	734652	49.8619 ug/L	87
24) n-Hexane	7.79	57	684631	51.2159 ug/L	91
25) Diisopropyl ether	8.13	45	3845273	101.5859 ug/L	94
26) Vinyl Acetate	8.30	43	795848	52.3735 ug/L	95
27) 1,1-Dichloroethane	8.33	63	879267	49.8916 ug/L	97
28) Ethyl-Tert-Butyl ether	8.71	59	2674089	100.6595 ug/L	98
29) 2-Butanone	8.89	43	137042	50.3289 ug/L	87
30) Propionitrile	9.00	54	73792	107.1678 ug/L	96
31) 2,2-Dichloropropane	9.10	77	760860	49.0046 ug/L	99
32) cis-1,2-Dichloroethene	9.18	96	424670	48.1689 ug/L	72
33) Chloroform	9.38	83	811397	49.6212 ug/L	100
34) 1-Bromopropane	9.52	122	71573	51.5322 ug/L	98
35) Bromochloromethane	9.61	130	235703	51.0995 ug/L	75
36) Tetrahydrofuran	9.63	42	172188	95.6518 ug/L	84
38) 1,1,1-Trichloroethane	9.91	97	827132	50.1743 ug/L	99
39) Cyclohexane	9.94	56	911679	50.6712 ug/L	86
40) 1,1-Dichloropropene	10.11	75	607987	51.2409 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	1709995	100.4966 ug/L	87
42) Carbon Tetrachloride	10.25	117	796774	51.3725 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M411797.D 8260WTR.M Thu Apr 28 15:07:17 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411797.D Vial: 9
Acq On : 28 Apr 2016 10:54 Operator: ADC
Sample : WG566682-08 50.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07:16 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	682493	49.6963	ug/L		97
46)	Benzene	10.47	78	1518318	50.2371	ug/L		84
47)	Trichloroethene	11.21	130	436689	50.0692	ug/L		98
48)	Methylcyclohexane	11.31	83	629369	51.6111	ug/L		82
49)	1,2-Dichloropropane	11.43	63	436819	49.6517	ug/L		88
50)	Bromodichloromethane	11.73	83	620355	50.6806	ug/L		99
51)	1,4-Dioxane	11.72	88	7961	226.9851	ug/L		92
52)	Dibromomethane	11.81	93	210250	50.7662	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.03	63	190621	51.7508	ug/L		99
54)	4-Methyl-2-Pentanone	12.06	58	99917	49.6958	ug/L		96
55)	cis-1,3-Dichloropropene	12.36	75	636564	51.6733	ug/L		99
56)	Dimethyl Disulfide	12.62	79	322466	49.9640	ug/L		98
59)	Toluene	12.78	91	1619619	51.7628	ug/L		98
60)	Ethyl Methacrylate	12.88	69	314653	53.5938	ug/L		68
62)	trans-1,3-Dichloropropene	12.96	75	565338	51.7872	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	259013	52.1669	ug/L		97
64)	2-Hexanone	13.11	58	93585	52.5125	ug/L	#	92
65)	1,3-Dichloropropane	13.48	76	468876	50.9200	ug/L		73
66)	Tetrachloroethene	13.60	164	358138	50.5416	ug/L		92
67)	Dibromochloromethane	13.87	129	409868	52.3629	ug/L		100
68)	1,2-Dibromoethane	14.12	107	276241	53.3806	ug/L		99
69)	1-Chlorohexane	14.21	91	551856	51.7804	ug/L		71
70)	Chlorobenzene	14.62	112	1115909	51.3644	ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.65	131	442743	52.2928	ug/L		100
72)	Ethylbenzene	14.65	106	614875	49.8792	ug/L		99
73)	m-,p-Xylene	14.74	106	1489959	104.9100	ug/L		100
74)	o-Xylene	15.31	106	742056	51.8640	ug/L		100
75)	Styrene	15.34	104	1207669	52.9328	ug/L		93
76)	Bromoform	15.83	173	236338	52.6236	ug/L		99
77)	Isopropylbenzene	15.73	105	1926670	53.1132	ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.94	83	282186	49.2311	ug/L		99
81)	1,2,3-Trichloropropane	16.13	110	91241	49.5341	ug/L		97
82)	trans-1,4-Dichloro-2-Buten	16.18	53	141742	50.7701	ug/L		86
83)	n-Propylbenzene	16.24	91	2257116	50.9676	ug/L		97
84)	Bromobenzene	16.36	156	464156	50.2730	ug/L		99
85)	1,3,5-Trimethylbenzene	16.42	105	1684361	51.3977	ug/L		100
86)	2-Chlorotoluene	16.50	91	1400500	49.3838	ug/L		97
87)	4-Chlorotoluene	16.56	91	1472321	50.3973	ug/L		99
88)	a-Methylstyrene	16.83	118	817623	50.6365	ug/L		96
89)	tert-Butylbenzene	16.89	134	332041	51.1396	ug/L		86
90)	1,2,4-Trimethylbenzene	16.94	105	1729952	51.5746	ug/L		100
91)	sec-Butylbenzene	17.16	105	2016558	51.1766	ug/L		99
92)	p-Isopropyltoluene	17.31	119	1736525	51.6172	ug/L		97
93)	1,3-Dichlorobenzene	17.51	146	922868	50.3586	ug/L		94
94)	1,4-Dichlorobenzene	17.63	146	894385	48.8982	ug/L		92
95)	n-Butylbenzene	17.84	91	1643133	51.3473	ug/L		99
96)	1,2-Dichlorobenzene	18.13	146	798761	49.7369	ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.12	75	59973	47.7769	ug/L		86
98)	1,2,4-Trichlorobenzene	20.27	180	613974	49.3602	ug/L		99
99)	Hexachlorobutadiene	20.42	225	288799	50.1718	ug/L		97
100)	Naphthalene	20.64	128	958886	50.7005	ug/L		100
101)	1,2,3-Trichlorobenzene	20.95	180	515801	48.7437	ug/L		99

(#) = qualifier out of range (m) = manual integration
8M411797.D 8260WTR.M Thu Apr 28 15:07:17 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411797.D Vial: 9
Acq On : 28 Apr 2016 10:54 Operator: ADC
Sample : WG566682-08 50.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

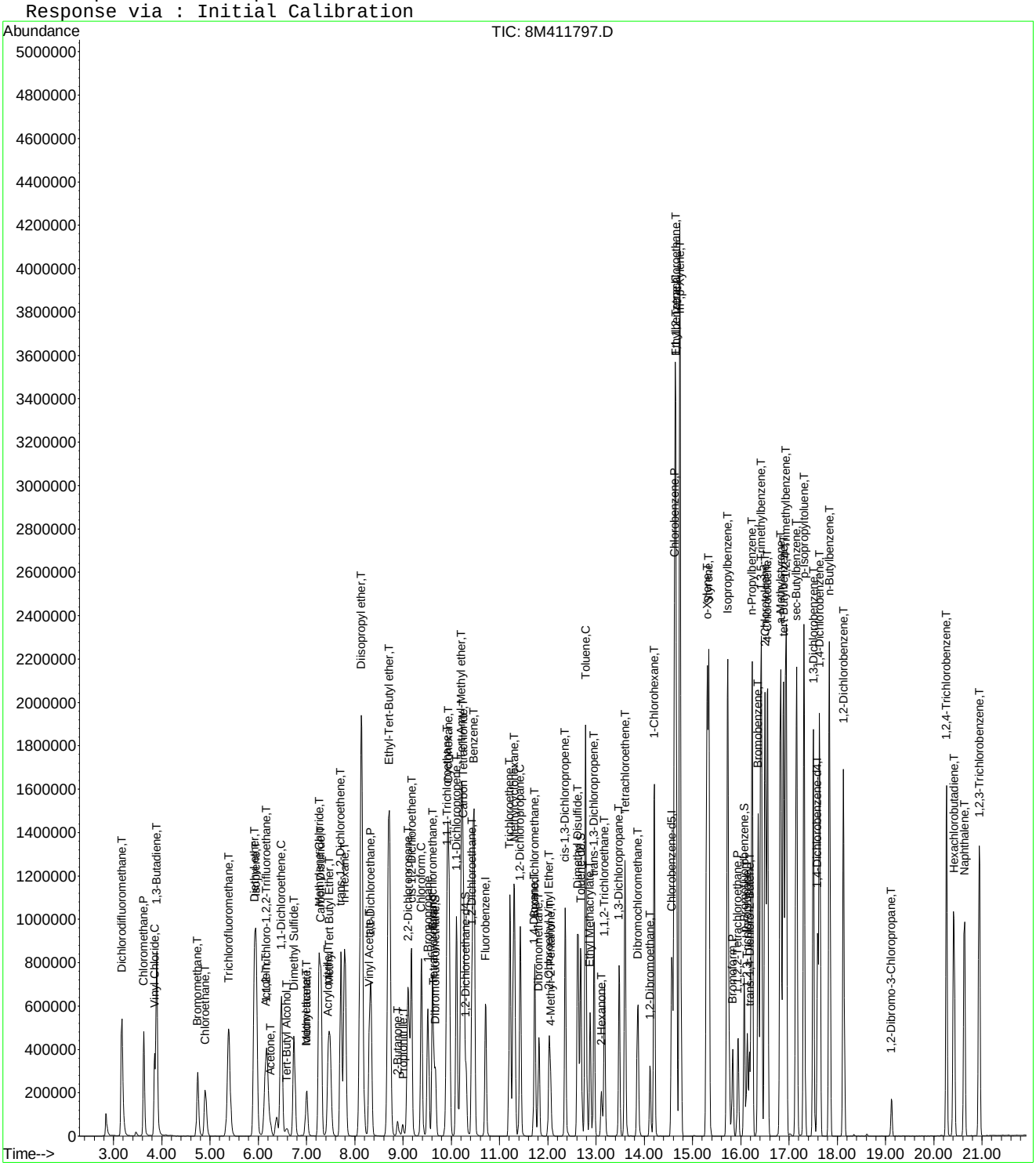

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411798.D Vial: 10
Acq On : 28 Apr 2016 11:23 Operator: ADC
Sample : WG566682-09 100.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07:17 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	718845	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	556665	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	290305	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	445894	49.4019 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 197.60%#		
43) 1,2-Dichloroethane-d4	10.31	65	536691	51.9744 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 207.88%#		
58) Toluene-d8	12.68	98	1438950	49.9912 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 199.96%#		
80) p-Bromofluorobenzene	16.07	95	605005	50.9128 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 203.64%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	1608301	106.7537 ug/L	99
3) Chloromethane	3.63	50	1395981	98.3529 ug/L	97
4) Vinyl Chloride	3.85	62	1039267	108.4314 ug/L	98
5) 1,3-Butadiene	3.89	54	1022900	109.2375 ug/L	92
6) Bromomethane	4.74	94	666618	97.0147 ug/L	99
7) Chloroethane	4.90	64	630111	100.4611 ug/L	90
8) Trichlorofluoromethane	5.39	101	1959147	102.9695 ug/L	99
9) Diethyl ether	5.91	59	1172554	201.4251 ug/L	87
10) Isoprene	5.95	67	983476	101.0207 ug/L	72
11) Acrolein	6.15	56	57435	111.1084 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	891137	102.2949 ug/L	100
13) Acetone	6.25	43	156350	88.5962 ug/L	95
14) 1,1-Dichloroethene	6.47	61	1721368	101.8122 ug/L	88
15) Tert-Butyl Alcohol	6.59	59	175437	431.8168 ug/L	98
16) Dimethyl Sulfide	6.74	62	645754	103.3557 ug/L	74
17) Iodomethane	7.00	142	445230	102.2685 ug/L	87
18) Methyl acetate	7.01	43	523328	99.2218 ug/L	91
19) Methylene Chloride	7.26	84	770178	96.1239 ug/L	57
20) Carbon Disulfide	7.30	76	2427013	99.2892 ug/L	100
21) Acrylonitrile	7.44	53	247608	109.1638 ug/L	98
22) Methyl Tert Butyl Ether	7.47	73	1875981	105.9948 ug/L	93
23) trans-1,2-Dichloroethene	7.71	61	1535010	100.3696 ug/L	86
24) n-Hexane	7.79	57	1387110	99.9684 ug/L	90
25) Diisopropyl ether	8.13	45	7576265	192.8256 ug/L	97
26) Vinyl Acetate	8.30	43	1639551	103.9464 ug/L	96
27) 1,1-Dichloroethane	8.33	63	1825778	99.8064 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	5532370	200.6290 ug/L	98
29) 2-Butanone	8.89	43	281904	99.7398 ug/L	89
30) Propionitrile	8.99	54	155581	217.6781 ug/L	97
31) 2,2-Dichloropropane	9.11	77	1625250	100.8452 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	904162	98.8018 ug/L	77
33) Chloroform	9.38	83	1711122	100.8133 ug/L	99
34) 1-Bromopropane	9.52	122	148550	103.0398 ug/L	99
35) Bromochloromethane	9.61	130	500617	104.5587 ug/L	80
36) Tetrahydrofuran	9.63	42	363887	194.7422 ug/L	84
38) 1,1,1-Trichloroethane	9.91	97	1754959	102.5597 ug/L	100
39) Cyclohexane	9.94	56	1851316	99.1296 ug/L	87
40) 1,1-Dichloropropene	10.11	75	1261234	102.4051 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	3599696	203.8100 ug/L	87
42) Carbon Tetrachloride	10.25	117	1696838	105.3996 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M411798.D 8260WTR.M Thu Apr 28 15:07:18 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411798.D Vial: 10
Acq On : 28 Apr 2016 11:23 Operator: ADC
Sample : WG566682-09 100.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07:17 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	1459051	102.3528 ug/L		97
46)	Benzene	10.47	78	3073448	97.9696 ug/L	#	82
47)	Trichloroethene	11.21	130	921869	101.8289 ug/L		98
48)	Methylcyclohexane	11.30	83	1276476	100.8448 ug/L		82
49)	1,2-Dichloropropane	11.43	63	916376	100.3481 ug/L		88
50)	Bromodichloromethane	11.73	83	1331148	104.7685 ug/L		99
51)	1,4-Dioxane	11.71	88	15073	414.0309 ug/L		79
52)	Dibromomethane	11.81	93	455028	105.8473 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.02	63	390527	102.1411 ug/L		100
54)	4-Methyl-2-Pentanone	12.05	58	213402	102.2544 ug/L		95
55)	cis-1,3-Dichloropropene	12.36	75	1338935	104.7097 ug/L		100
56)	Dimethyl Disulfide	12.62	79	698553	104.2741 ug/L		100
59)	Toluene	12.79	91	3295214	98.8541 ug/L		96
60)	Ethyl Methacrylate	12.88	69	669998	107.1179 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	1214242	104.4060 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	545757	103.1759 ug/L		97
64)	2-Hexanone	13.12	58	196609	103.5536 ug/L	#	89
65)	1,3-Dichloropropane	13.48	76	977023	99.5957 ug/L		74
66)	Tetrachloroethene	13.60	164	774474	102.5915 ug/L		92
67)	Dibromochloromethane	13.86	129	899060	107.8137 ug/L		100
68)	1,2-Dibromoethane	14.12	107	586283	106.3429 ug/L		99
69)	1-Chlorohexane	14.21	91	1133882	99.8650 ug/L		70
70)	Chlorobenzene	14.63	112	2280940	98.5491 ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.66	131	945659	104.8409 ug/L		100
72)	Ethylbenzene	14.66	106	1294084	98.5374 ug/L		94
73)	m-,p-Xylene	14.74	106	3026458	200.0244 ug/L		95
74)	o-Xylene	15.30	106	1524725	100.0292 ug/L		98
75)	Styrene	15.34	104	2455809	101.0362 ug/L		90
76)	Bromoform	15.83	173	516240	107.8958 ug/L		99
77)	Isopropylbenzene	15.73	105	3914971	101.3046 ug/L		98
79)	1,1,2,2-Tetrachloroethane	15.94	83	597794	103.2361 ug/L		99
81)	1,2,3-Trichloropropane	16.13	110	196632	105.6684 ug/L		91
82)	trans-1,4-Dichloro-2-Buten	16.19	53	306359	108.6217 ug/L		82
83)	n-Propylbenzene	16.24	91	4485525	100.2605 ug/L		95
84)	Bromobenzene	16.36	156	964072	103.3610 ug/L		99
85)	1,3,5-Trimethylbenzene	16.42	105	3443691	104.0182 ug/L		99
86)	2-Chlorotoluene	16.51	91	2924351	102.0721 ug/L		98
87)	4-Chlorotoluene	16.55	91	2939774	99.6082 ug/L		100
88)	a-Methylstyrene	16.83	118	1706519	104.6160 ug/L		96
89)	tert-Butylbenzene	16.89	134	680513	103.7477 ug/L		86
90)	1,2,4-Trimethylbenzene	16.94	105	3478158	102.6426 ug/L		98
91)	sec-Butylbenzene	17.16	105	4037887	101.4358 ug/L		100
92)	p-Isopropyltoluene	17.31	119	3518580	103.5279 ug/L		97
93)	1,3-Dichlorobenzene	17.51	146	1865360	100.7565 ug/L		91
94)	1,4-Dichlorobenzene	17.63	146	1856572	100.4746 ug/L		92
95)	n-Butylbenzene	17.84	91	3290631	101.7890 ug/L		98
96)	1,2-Dichlorobenzene	18.13	146	1658612	102.2310 ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.12	75	135362	106.7421 ug/L		84
98)	1,2,4-Trichlorobenzene	20.27	180	1290328	102.6842 ug/L		99
99)	Hexachlorobutadiene	20.42	225	611409	105.1409 ug/L		96
100)	Naphthalene	20.64	128	2043360	106.9465 ug/L		99
101)	1,2,3-Trichlorobenzene	20.95	180	1088029	101.7779 ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411798.D Vial: 10
Acq On : 28 Apr 2016 11:23 Operator: ADC
Sample : WG566682-09 100.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

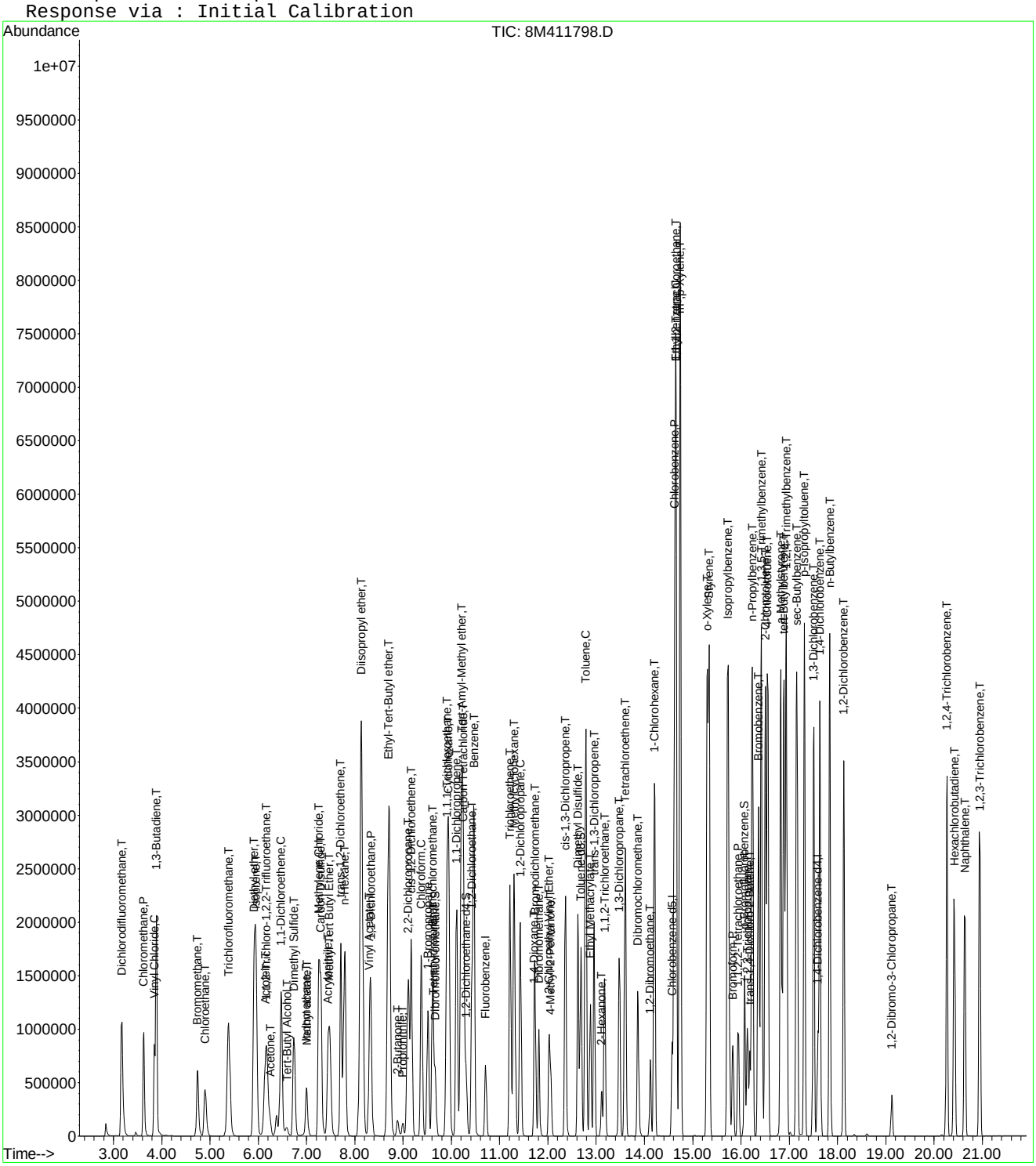

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411799.D Vial: 11
Acq On : 28 Apr 2016 11:52 Operator: ADC
Sample : WG566682-10 200.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07:19 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	740643	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	592078	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	310127	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	942473	101.3462 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 405.40%#		
43) 1,2-Dichloroethane-d4	10.31	65	1118235	105.1053 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 420.44%#		
58) Toluene-d8	12.68	98	2936259	95.9085 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 383.64%#		
80) p-Bromofluorobenzene	16.07	95	1285036	101.2275 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 404.92%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	3241038	208.7979 ug/L	98
3) Chloromethane	3.62	50	2868489	196.1495 ug/L	100
4) Vinyl Chloride	3.85	62	2176875	220.4386 ug/L	99
5) 1,3-Butadiene	3.89	54	2020471	209.4198 ug/L	91
6) Bromomethane	4.74	94	1459364	205.2618 ug/L	98
7) Chloroethane	4.90	64	1306821	202.2195 ug/L	91
8) Trichlorofluoromethane	5.39	101	4023660	205.2528 ug/L	99
9) Diethyl ether	5.91	59	1223	0.2039 ug/L #	55
10) Isoprene	5.94	67	2017667	201.1511 ug/L	72
11) Acrolein	6.14	56	210	0.3943 ug/L #	33
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	1843483	205.3880 ug/L	99
13) Acetone	6.25	43	380297	209.1541 ug/L	97
14) 1,1-Dichloroethene	6.47	61	3484846	200.0489 ug/L	88
15) Tert-Butyl Alcohol	6.59	59	6406	15.3035 ug/L #	73
16) Dimethyl Sulfide	6.74	62	1329931	206.5963 ug/L	76
17) Iodomethane	6.99	142	989674	210.1835 ug/L	89
18) Methyl acetate	7.00	43	1061500	195.3347 ug/L	94
19) Methylene Chloride	7.26	84	1581962	191.6296 ug/L	61
20) Carbon Disulfide	7.30	76	4831214	191.8283 ug/L	99
21) Acrylonitrile	7.46	53	51284	21.9443 ug/L #	30
22) Methyl Tert Butyl Ether	7.47	73	3944434	216.3053 ug/L	93
23) trans-1,2-Dichloroethene	7.71	61	3134962	198.9525 ug/L	87
24) n-Hexane	7.79	57	2796653	195.6216 ug/L	93
26) Vinyl Acetate	8.30	43	3172508	195.2152 ug/L	96
27) 1,1-Dichloroethane	8.33	63	3689791	195.7665 ug/L	99
29) 2-Butanone	8.89	43	605349	207.8737 ug/L	90
30) Propionitrile	8.94	54	226	0.3069 ug/L #	56
31) 2,2-Dichloropropane	9.11	77	3342267	201.2810 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	1854138	196.6468 ug/L	77
33) Chloroform	9.38	83	3493547	199.7698 ug/L	98
34) 1-Bromopropane	9.52	122	315918	212.6832 ug/L	96
35) Bromochloromethane	9.61	130	1035049	209.8176 ug/L	83
36) Tetrahydrofuran	9.64	42	5164	2.6823 ug/L #	73
38) 1,1,1-Trichloroethane	9.91	97	3652076	207.1456 ug/L	99
39) Cyclohexane	9.94	56	3746375	194.6975 ug/L	87
40) 1,1-Dichloropropene	10.11	75	2595547	204.5414 ug/L	100
42) Carbon Tetrachloride	10.25	117	3516224	211.9833 ug/L	99
45) 1,2-Dichloroethane	10.43	62	3016831	205.4029 ug/L	97
46) Benzene	10.47	78	5942714	183.8555 ug/L #	78
47) Trichloroethene	11.22	130	1898309	203.5143 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411799.D Vial: 11
Acq On : 28 Apr 2016 11:52 Operator: ADC
Sample : WG566682-10 200.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07:19 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
48)	Methylcyclohexane	11.30	83	2611697	200.2580 ug/L		82
49)	1,2-Dichloropropane	11.43	63	1860653	197.7549 ug/L		85
50)	Bromodichloromethane	11.73	83	2742201	209.4740 ug/L		98
51)	1,4-Dioxane	11.72	88	4942	131.7535 ug/L	#	30
52)	Dibromomethane	11.81	93	950630	214.6247 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.02	63	827593	210.0837 ug/L		99
54)	4-Methyl-2-Pentanone	12.05	58	465719	216.5877 ug/L		96
55)	cis-1,3-Dichloropropene	12.36	75	2734413	207.5476 ug/L		99
56)	Dimethyl Disulfide	12.62	79	1461110	211.6831 ug/L		98
59)	Toluene	12.79	91	6339121	178.7948 ug/L		93
60)	Ethyl Methacrylate	12.88	69	1394227	209.5737 ug/L		72
62)	trans-1,3-Dichloropropene	12.96	75	2504662	202.4810 ug/L		98
63)	1,1,2-Trichloroethane	13.18	97	1154290	205.1676 ug/L		96
64)	2-Hexanone	13.12	58	420613	208.2858 ug/L	#	92
65)	1,3-Dichloropropane	13.48	76	2032560	194.8023 ug/L		76
66)	Tetrachloroethene	13.60	164	1611262	200.6715 ug/L		93
67)	Dibromochloromethane	13.86	129	1893794	213.5173 ug/L		99
68)	1,2-Dibromoethane	14.12	107	1227784	209.3814 ug/L		99
69)	1-Chlorohexane	14.21	91	2319738	192.0876 ug/L		70
70)	Chlorobenzene	14.63	112	4521921	183.6863 ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	1999764	208.4442 ug/L		99
72)	Ethylbenzene	14.66	106	2657073	190.2204 ug/L		81
73)	m-,p-Xylene	14.74	106	5874686	365.0463 ug/L		80
74)	o-Xylene	15.31	106	3072169	189.4940 ug/L		94
75)	Styrene	15.34	104	4866320	188.2339 ug/L		85
76)	Bromoform	15.84	173	1126176	221.2963 ug/L		99
77)	Isopropylbenzene	15.73	105	7401873	180.0766 ug/L		94
79)	1,1,2,2-Tetrachloroethane	15.94	83	1242763	200.9016 ug/L		98
81)	1,2,3-Trichloropropane	16.13	110	424595	213.5899 ug/L		70
82)	trans-1,4-Dichloro-2-Buten	16.19	53	646191	214.4676 ug/L	#	58
83)	n-Propylbenzene	16.24	91	8151254	170.5517 ug/L		89
84)	Bromobenzene	16.36	156	1977833	198.4959 ug/L		99
85)	1,3,5-Trimethylbenzene	16.42	105	6612873	186.9778 ug/L		96
86)	2-Chlorotoluene	16.51	91	5549936	181.3344 ug/L		94
87)	4-Chlorotoluene	16.56	91	5713786	181.2258 ug/L		97
88)	a-Methylstyrene	16.83	118	3373242	193.5750 ug/L		92
89)	tert-Butylbenzene	16.89	134	1402022	200.0838 ug/L		90
90)	1,2,4-Trimethylbenzene	16.94	105	6622000	182.9289 ug/L		94
91)	sec-Butylbenzene	17.16	105	7512585	176.6613 ug/L		96
92)	p-Isopropyltoluene	17.31	119	6602638	181.8538 ug/L		100
93)	1,3-Dichlorobenzene	17.51	146	3706727	187.4200 ug/L		87
94)	1,4-Dichlorobenzene	17.63	146	3685042	186.6817 ug/L		88
95)	n-Butylbenzene	17.84	91	6172660	178.7347 ug/L		95
96)	1,2-Dichlorobenzene	18.13	146	3349756	193.2707 ug/L		88
97)	1,2-Dibromo-3-Chloropropan	19.12	75	290523	214.4541 ug/L		84
98)	1,2,4-Trichlorobenzene	20.27	180	2574912	191.8141 ug/L		98
99)	Hexachlorobutadiene	20.42	225	1269874	204.4164 ug/L		97
100)	Naphthalene	20.64	128	4028388	197.3639 ug/L		97
101)	1,2,3-Trichlorobenzene	20.94	180	2194079	192.1233 ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411799.D Vial: 11
Acq On : 28 Apr 2016 11:52 Operator: ADC
Sample : WG566682-10 200.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

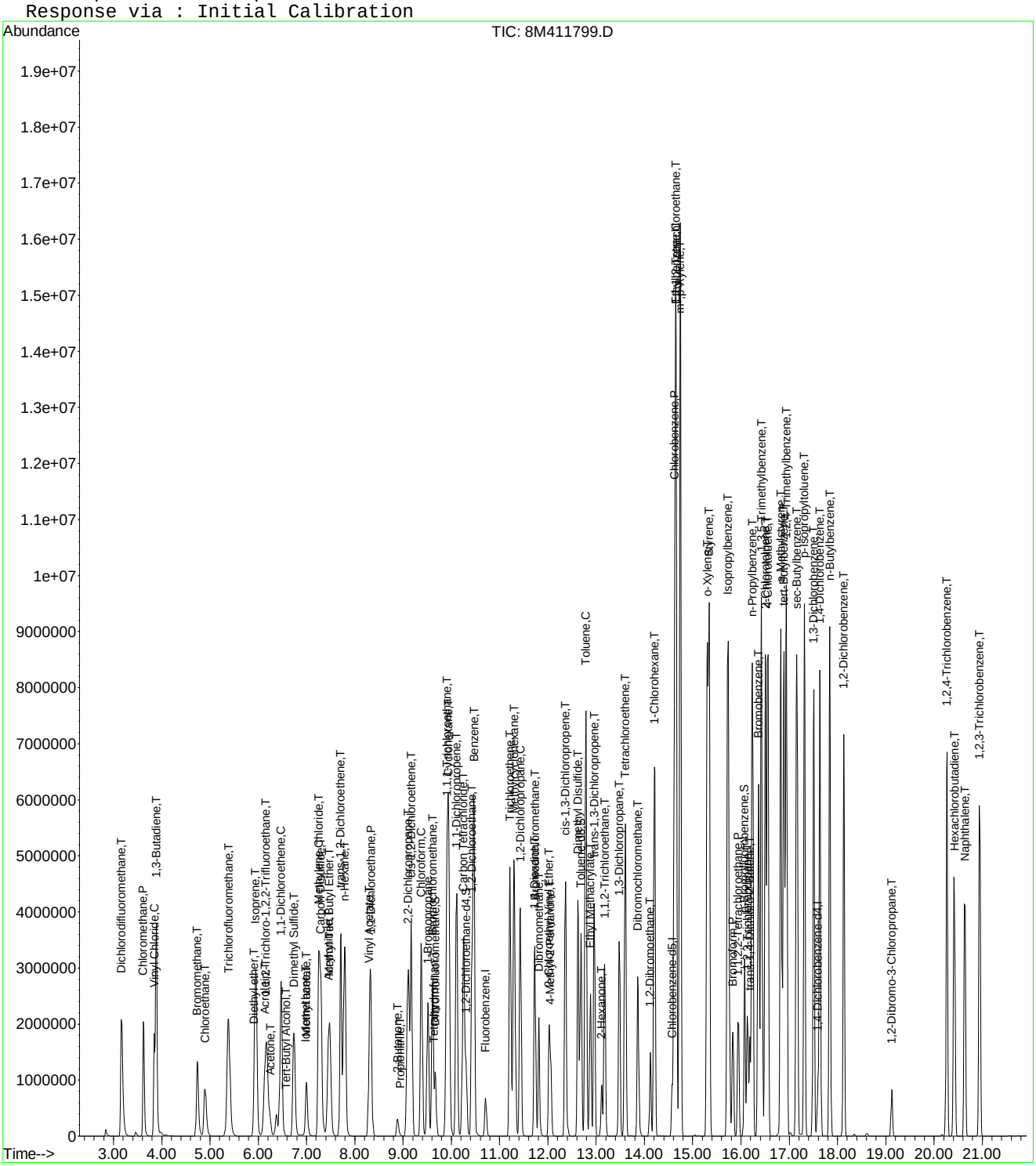

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411800.D Vial: 12
Acq On : 28 Apr 2016 12:21 Operator: ADC
Sample : WG566682-11 300.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07:20 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	771690	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	613540	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	317582	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	1394502	143.9209 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 575.68%#		
43) 1,2-Dichloroethane-d4	10.30	65	1631646	147.1918 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 588.76%#		
58) Toluene-d8	12.68	98	4283511	135.0202 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 540.08%#		
80) p-Bromofluorobenzene	16.07	95	1896676	145.9016 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 583.60%#		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.17	85	4735323	292.7909 ug/L	97
3) Chloromethane	3.62	50	4207382	276.1289 ug/L	98
4) Vinyl Chloride	3.84	62	3293107	320.0561 ug/L	98
5) 1,3-Butadiene	3.89	54	3066958	305.0977 ug/L	91
6) Bromomethane	4.73	94	2271550	306.2598 ug/L	98
7) Chloroethane	4.90	64	1925283	285.9352 ug/L	91
8) Trichlorofluoromethane	5.38	101	6105800	298.9347 ug/L	99
9) Diethyl ether	5.91	59	1812804	290.0841 ug/L	89
10) Isoprene	5.94	67	3048128	291.6568 ug/L	71
11) Acrolein	6.15	56	98202	176.9632 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	2752318	294.3070 ug/L	100
13) Acetone	6.25	43	514846	271.7608 ug/L	99
14) 1,1-Dichloroethene	6.47	61	5105466	281.2898 ug/L	90
15) Tert-Butyl Alcohol	6.59	59	247599	567.7009 ug/L	95
16) Dimethyl Sulfide	6.74	62	2008130	299.3997 ug/L	79
17) Iodomethane	7.00	142	1487925	293.3205 ug/L	92
18) Methyl acetate	7.01	43	1541917	272.3244 ug/L	94
19) Methylene Chloride	7.25	84	2373916	275.9930 ug/L	70
20) Carbon Disulfide	7.30	76	7184219	273.7802 ug/L	98
21) Acrylonitrile	7.44	53	417413	171.4243 ug/L	94
22) Methyl Tert Butyl Ether	7.47	73	5650388	297.3903 ug/L	93
23) trans-1,2-Dichloroethene	7.71	61	4578755	278.8885 ug/L	88
24) n-Hexane	7.79	57	4159179	279.2234 ug/L	95
25) Diisopropyl ether	8.13	45	10905512	258.5521 ug/L	98
26) Vinyl Acetate	8.30	43	4714929	278.4532 ug/L	98
27) 1,1-Dichloroethane	8.33	63	5382830	274.1027 ug/L	100
28) Ethyl-Tert-Butyl ether	8.71	59	8477944	286.3950 ug/L	98
29) 2-Butanone	8.89	43	882786	290.9479 ug/L	90
30) Propionitrile	8.99	54	243424	317.2590 ug/L	98
31) 2,2-Dichloropropane	9.10	77	4910267	283.8133 ug/L	97
32) cis-1,2-Dichloroethene	9.18	96	2721667	277.0422 ug/L	78
33) Chloroform	9.38	83	5068129	278.1486 ug/L	96
34) 1-Bromopropane	9.52	122	481040	310.8179 ug/L	98
35) Bromochloromethane	9.61	130	1525422	296.7817 ug/L	88
36) Tetrahydrofuran	9.63	42	545399	271.8943 ug/L	86
38) 1,1,1-Trichloroethane	9.91	97	5405625	294.2713 ug/L	99
39) Cyclohexane	9.94	56	5558029	277.2273 ug/L	89
40) 1,1-Dichloropropene	10.11	75	3829122	289.6127 ug/L	100
41) Tert-Amyl-Methyl ether	10.21	73	5638675	297.3919 ug/L	88
42) Carbon Tetrachloride	10.25	117	5205873	301.2206 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M411800.D 8260WTR.M Thu Apr 28 15:07:20 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411800.D Vial: 12
Acq On : 28 Apr 2016 12:21 Operator: ADC
Sample : WG566682-11 300.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07:20 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	4353850	284.5085 ug/L		96
46)	Benzene	10.47	78	8337787	247.5761 ug/L	#	74
47)	Trichloroethene	11.21	130	2813039	289.4475 ug/L		98
48)	Methylcyclohexane	11.31	83	3938004	289.8073 ug/L		81
49)	1,2-Dichloropropane	11.43	63	2736680	279.1592 ug/L		83
50)	Bromodichloromethane	11.73	83	4027549	295.2825 ug/L		97
51)	1,4-Dioxane	11.72	88	26069	667.0368 ug/L		99
52)	Dibromomethane	11.81	93	1402599	303.9259 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	1230334	299.7538 ug/L		98
54)	4-Methyl-2-Pentanone	12.06	58	690971	308.4152 ug/L		97
55)	cis-1,3-Dichloropropene	12.36	75	3978049	289.7942 ug/L		97
56)	Dimethyl Disulfide	12.63	79	2222927	309.0968 ug/L		95
59)	Toluene	12.78	91	8726897	237.5318 ug/L		88
60)	Ethyl Methacrylate	12.88	69	2052506	297.7308 ug/L		74
62)	trans-1,3-Dichloropropene	12.96	75	3664001	285.8425 ug/L		96
63)	1,1,2-Trichloroethane	13.18	97	1690811	290.0181 ug/L		95
64)	2-Hexanone	13.11	58	625692	299.0017 ug/L	#	97
65)	1,3-Dichloropropane	13.48	76	2943455	272.2351 ug/L		79
66)	Tetrachloroethene	13.60	164	2420435	290.9036 ug/L		92
67)	Dibromochloromethane	13.87	129	2816697	306.4619 ug/L		100
68)	1,2-Dibromoethane	14.12	107	1807929	297.5319 ug/L		99
69)	1-Chlorohexane	14.21	91	3521806	281.4245 ug/L		71
70)	Chlorobenzene	14.62	112	6484328	254.1879 ug/L		92
71)	1,1,1,2-Tetrachloroethane	14.65	131	3034974	305.2827 ug/L		99
72)	Ethylbenzene	14.65	106	3997030	276.1386 ug/L		66
73)	m-,p-Xylene	14.75	106	8245168	494.4232 ug/L		68
74)	o-Xylene	15.31	106	4552854	271.0005 ug/L		84
75)	Styrene	15.34	104	6908772	257.8898 ug/L		81
76)	Bromoform	15.83	173	1648020	312.5117 ug/L		99
77)	Isopropylbenzene	15.73	105	9933685	233.2179 ug/L		88
79)	1,1,2,2-Tetrachloroethane	15.95	83	1766876	278.9233 ug/L		98
81)	1,2,3-Trichloropropane	16.13	110	614758	301.9908 ug/L		90
82)	trans-1,4-Dichloro-2-Buten	16.18	53	952990	308.8679 ug/L		82
83)	n-Propylbenzene	16.24	91	10590688	216.3912 ug/L	#	81
84)	Bromobenzene	16.37	156	2908504	285.0462 ug/L		99
85)	1,3,5-Trimethylbenzene	16.42	105	8986512	248.1274 ug/L		90
86)	2-Chlorotoluene	16.50	91	8539060	272.4495 ug/L		90
87)	4-Chlorotoluene	16.56	91	6802370	210.6881 ug/L		90
88)	a-Methylstyrene	16.82	118	4992948	279.7966 ug/L		90
89)	tert-Butylbenzene	16.89	134	2096524	292.1734 ug/L		95
90)	1,2,4-Trimethylbenzene	16.94	105	8971043	242.0025 ug/L		87
91)	sec-Butylbenzene	17.16	105	10000418	229.6433 ug/L		90
92)	p-Isopropyltoluene	17.32	119	8994265	241.9103 ug/L		94
93)	1,3-Dichlorobenzene	17.51	146	5377989	265.5394 ug/L		86
94)	1,4-Dichlorobenzene	17.64	146	5248663	259.6521 ug/L		85
95)	n-Butylbenzene	17.84	91	8360190	236.3939 ug/L		90
96)	1,2-Dichlorobenzene	18.13	146	4781001	269.3738 ug/L		86
97)	1,2-Dibromo-3-Chloropropan	19.12	75	418266	301.5019 ug/L		85
98)	1,2,4-Trichlorobenzene	20.27	180	3699038	269.0858 ug/L		97
99)	Hexachlorobutadiene	20.42	225	1920145	301.8372 ug/L		96
100)	Naphthalene	20.64	128	5543033	265.1964 ug/L		95
101)	1,2,3-Trichlorobenzene	20.95	180	3142985	268.7534 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M411800.D 8260WTR.M Thu Apr 28 15:07:20 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411800.D Vial: 12
Acq On : 28 Apr 2016 12:21 Operator: ADC
Sample : WG566682-11 300.0ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD75878 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

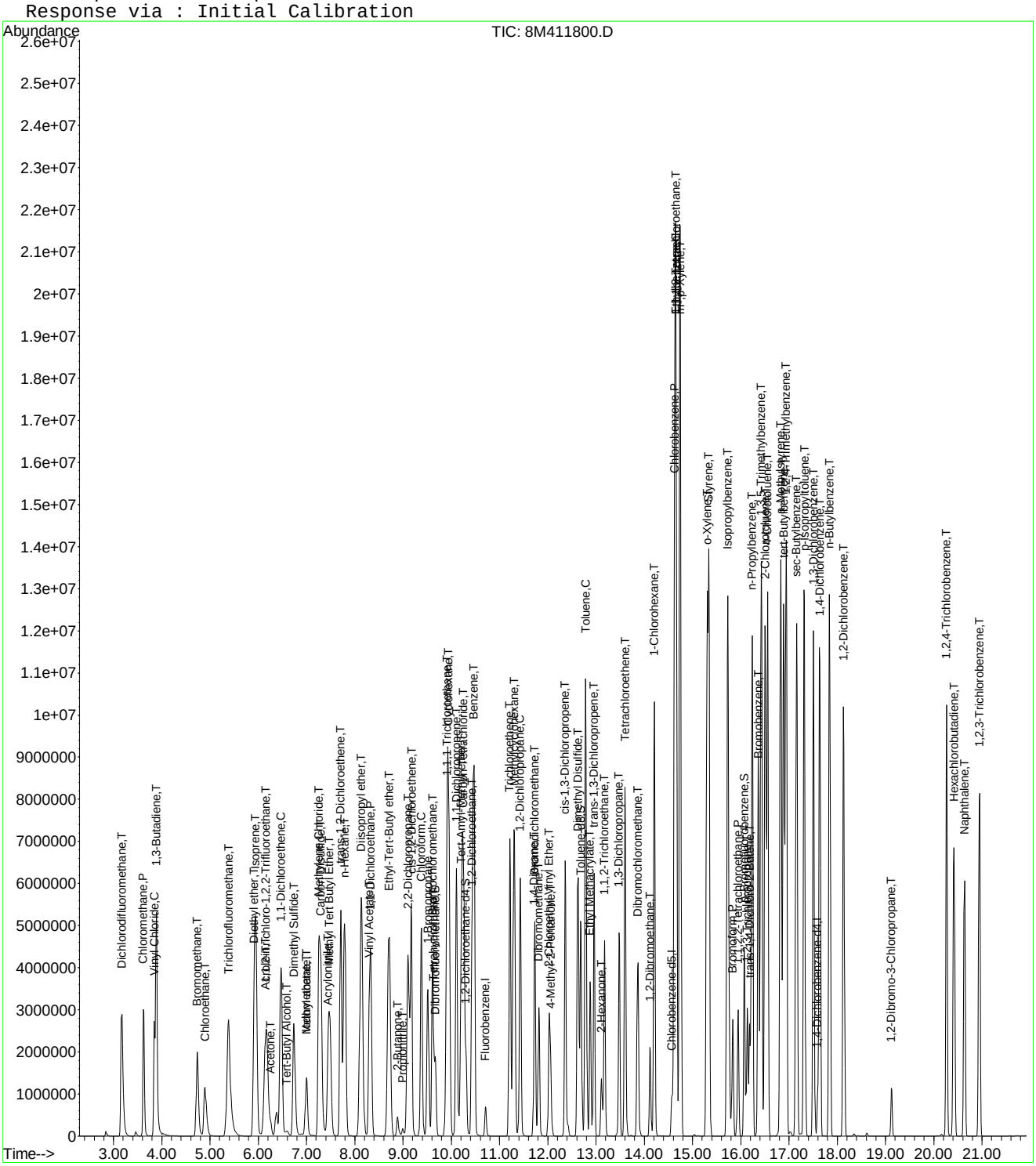

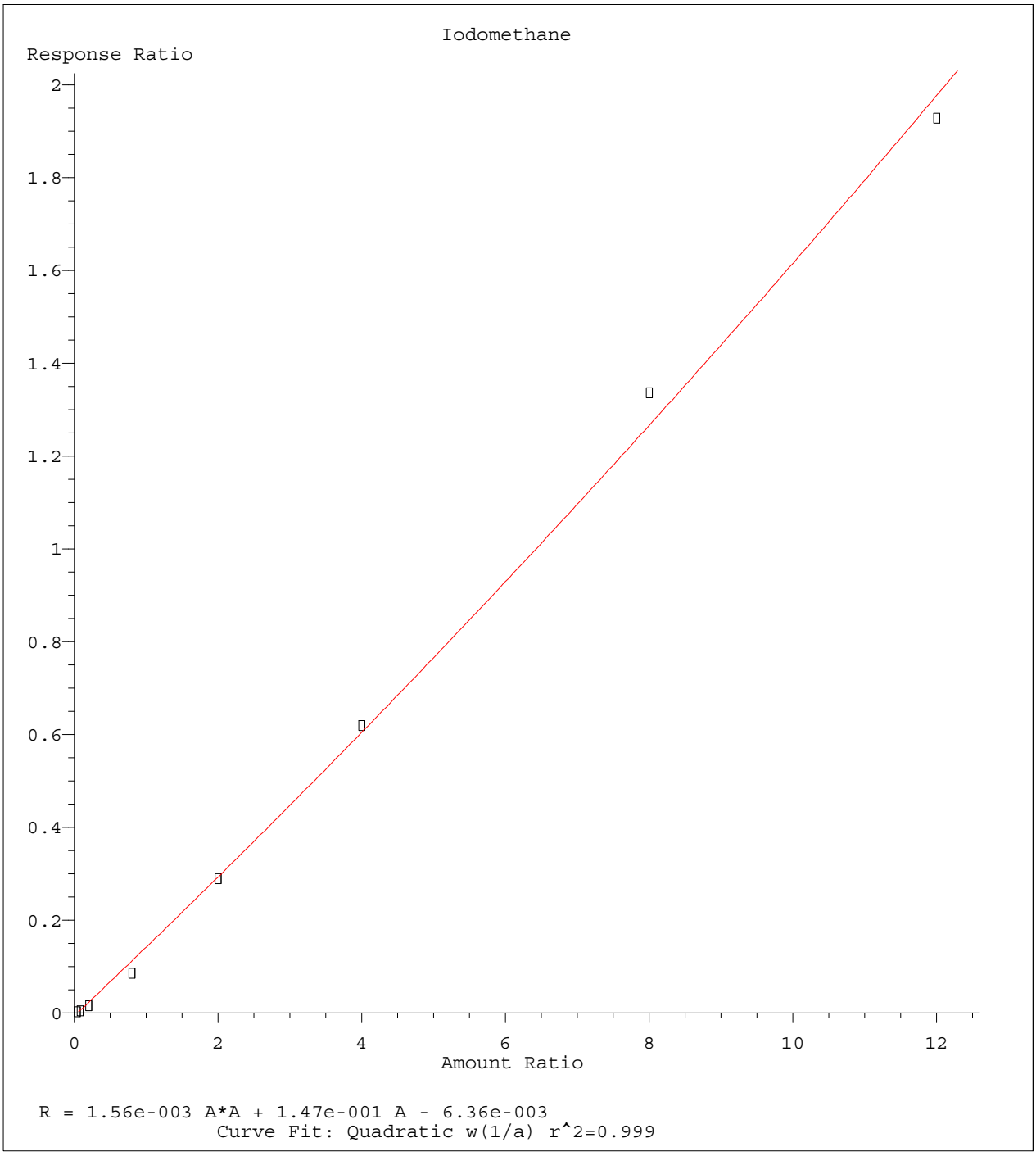

Method Name: C:\MSDCHEM\2\METHODS\8260WTR.M
Calibration Table Last Updated: Thu Apr 28 15:05:04 2016

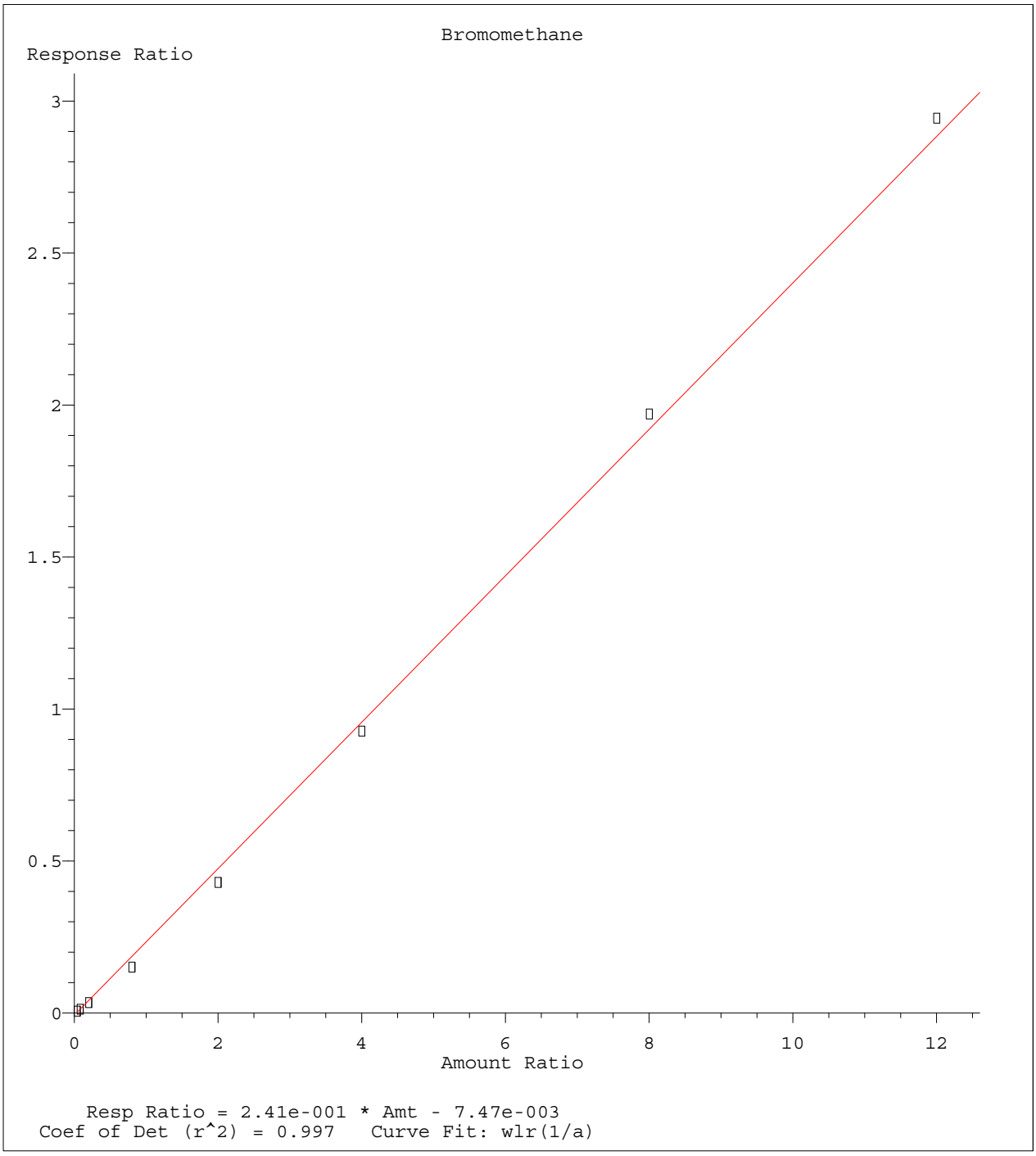

Method Name: C:\MSDCHEM\2\METHODS\8260WTR.M
Calibration Table Last Updated: Thu Apr 28 15:05:04 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411803.D Vial: 15
Acq On : 28 Apr 2016 14:08 Operator: ADC
Sample : WG566682-12 50.0ug/L ALTSRC 8260 Inst : HPMS8
Misc : 1,1 STD75898 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07:21 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	789528	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	608846	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	330921	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.68	111	210927	21.2771 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 85.12%#		
43) 1,2-Dichloroethane-d4	10.31	65	240272	21.1854 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 84.76%		
58) Toluene-d8	12.68	98	691641	21.9692 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 87.88%#		
80) p-Bromofluorobenzene	16.07	95	288541	21.3013 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 85.20%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	922346	55.7413 ug/L	99
3) Chloromethane	3.62	50	769011	49.3296 ug/L	99
4) Vinyl Chloride	3.85	62	602096	57.1954 ug/L	99
5) 1,3-Butadiene	3.89	54	487331	47.3839 ug/L	92
6) Bromomethane	4.74	94	342606	45.8093 ug/L	100
7) Chloroethane	4.90	64	336184	48.8006 ug/L	91
8) Trichlorofluoromethane	5.38	101	999005	47.8054 ug/L	100
9) Diethyl ether	5.91	59	628626	98.3198 ug/L	90
10) Isoprene	5.94	67	612346	57.2679 ug/L	74
11) Acrolein	6.15	56	72733	128.1060 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	473164	49.4526 ug/L	98
13) Acetone	6.25	43	90218	46.5455 ug/L	98
14) 1,1-Dichloroethene	6.47	61	837819	45.1174 ug/L	89
15) Tert-Butyl Alcohol	6.61	59	80473	180.3417 ug/L #	96
16) Dimethyl Sulfide	6.74	62	466906	68.0400 ug/L	80
17) Iodomethane	7.00	142	187662	40.9104 ug/L	91
18) Methyl acetate	7.01	43	250265	43.2017 ug/L	93
19) Methylene Chloride	7.26	84	407431	46.2980 ug/L	67
20) Carbon Disulfide	7.30	76	1197151	44.5910 ug/L	99
21) Acrylonitrile	7.44	53	124461	49.9592 ug/L	98
22) Methyl Tert Butyl Ether	7.47	73	959268	49.3473 ug/L	95
23) trans-1,2-Dichloroethene	7.71	61	801374	47.7083 ug/L	89
24) n-Hexane	7.79	57	724312	47.5275 ug/L	97
25) Diisopropyl ether	8.14	45	3929020	91.0461 ug/L	95
26) Vinyl Acetate	8.30	43	842454	48.6294 ug/L	97
27) 1,1-Dichloroethane	8.33	63	900989	44.8433 ug/L	98
28) Ethyl-Tert-Butyl ether	8.71	59	2783637	91.9100 ug/L	99
29) 2-Butanone	8.89	43	137728	44.3667 ug/L	90
30) Propionitrile	8.99	54	74830	95.3239 ug/L	96
31) 2,2-Dichloropropane	9.11	77	890247	50.2937 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	489347	48.6859 ug/L	79
33) Chloroform	9.39	83	889578	47.7187 ug/L	100
34) 1-Bromopropane	9.52	122	107320	67.7768 ug/L	98
35) Bromochloromethane	9.61	130	259985	49.4391 ug/L	89
36) Tetrahydrofuran	9.63	42	173266	84.4257 ug/L	87
38) 1,1,1-Trichloroethane	9.91	97	924894	49.2118 ug/L	100
39) Cyclohexane	9.94	56	979597	47.7571 ug/L	88
40) 1,1-Dichloropropene	10.11	75	643207	47.5493 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	1943002	100.1615 ug/L	90
42) Carbon Tetrachloride	10.25	117	860614	48.6715 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M411803.D 8260WTR.M Thu Apr 28 15:07:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411803.D Vial: 15
Acq On : 28 Apr 2016 14:08 Operator: ADC
Sample : WG566682-12 50.0ug/L ALTSRC 8260 Inst : HPMS8
Misc : 1,1 STD75898 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07:21 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	753032	48.0962 ug/L		95
46)	Benzene	10.47	78	1621689	47.0653 ug/L		85
47)	Trichloroethene	11.22	130	492803	49.5613 ug/L		98
48)	Methylcyclohexane	11.30	83	686315	49.3665 ug/L		82
49)	1,2-Dichloropropane	11.43	63	479665	47.8235 ug/L		86
50)	Bromodichloromethane	11.73	83	688686	49.3507 ug/L		100
51)	1,4-Dioxane	11.72	88	6947	173.7393 ug/L		98
52)	Dibromomethane	11.81	93	221576	46.9280 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.02	63	208061	49.5459 ug/L		99
54)	4-Methyl-2-Pentanone	12.05	58	106626	46.5173 ug/L		96
55)	cis-1,3-Dichloropropene	12.36	75	755865	53.8194 ug/L		99
56)	Dimethyl Disulfide	12.62	79	382505	51.9854 ug/L		98
59)	Toluene	12.79	91	1788108	49.0446 ug/L		99
60)	Ethyl Methacrylate	12.88	69	360962	52.7638 ug/L		82
62)	trans-1,3-Dichloropropene	12.96	75	637049	50.0818 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	287819	49.7491 ug/L		94
64)	2-Hexanone	13.12	58	97130	46.7737 ug/L	#	98
65)	1,3-Dichloropropane	13.48	76	539436	50.2762 ug/L		82
66)	Tetrachloroethene	13.60	164	409903	49.6446 ug/L		96
67)	Dibromochloromethane	13.86	129	462724	50.7334 ug/L		99
68)	1,2-Dibromoethane	14.12	107	305430	50.6523 ug/L		100
69)	1-Chlorohexane	14.21	91	621519	50.0480 ug/L		73
70)	Chlorobenzene	14.63	112	1267360	50.0640 ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.66	131	503657	51.0526 ug/L		100
72)	Ethylbenzene	14.66	106	702786	48.9270 ug/L		96
73)	m-,p-Xylene	14.74	106	1686439	101.9073 ug/L		99
74)	o-Xylene	15.30	106	845754	50.7301 ug/L		98
75)	Styrene	15.34	104	1349388	50.7581 ug/L		92
76)	Bromoform	15.84	173	259360	49.5613 ug/L		98
77)	Isopropylbenzene	15.73	105	2223381	52.6018 ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.94	83	299327	45.3478 ug/L		97
81)	1,2,3-Trichloropropane	16.13	110	104518	49.2734 ug/L		91
82)	trans-1,4-Dichloro-2-Buten	16.18	53	111080	34.5503 ug/L		80
83)	n-Propylbenzene	16.24	91	2604452	51.0697 ug/L		97
84)	Bromobenzene	16.36	156	513627	48.3087 ug/L		99
85)	1,3,5-Trimethylbenzene	16.42	105	1960949	51.9615 ug/L		98
86)	2-Chlorotoluene	16.51	91	1700362	52.0654 ug/L		99
87)	4-Chlorotoluene	16.55	91	1659105	49.3157 ug/L		99
88)	a-Methylstyrene	16.83	118	1012541	54.4540 ug/L		95
89)	tert-Butylbenzene	16.89	134	380223	50.8523 ug/L		84
90)	1,2,4-Trimethylbenzene	16.94	105	1944261	50.3342 ug/L		99
91)	sec-Butylbenzene	17.16	105	2310610	50.9206 ug/L		99
92)	p-Isopropyltoluene	17.31	119	1982490	51.1719 ug/L		95
93)	1,3-Dichlorobenzene	17.51	146	1041583	49.3554 ug/L		92
94)	1,4-Dichlorobenzene	17.63	146	1038157	49.2876 ug/L		93
95)	n-Butylbenzene	17.84	91	1806327	49.0171 ug/L		99
96)	1,2-Dichlorobenzene	18.13	146	912145	49.3210 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.12	75	69864	48.3306 ug/L		81
98)	1,2,4-Trichlorobenzene	20.27	180	683149	47.6924 ug/L		100
99)	Hexachlorobutadiene	20.42	225	340588	51.3807 ug/L		96
100)	Naphthalene	20.64	128	941717	43.2387 ug/L		99
101)	1,2,3-Trichlorobenzene	20.94	180	555596	45.5934 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M411803.D 8260WTR.M Thu Apr 28 15:07:22 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\042816\8M411803.D Vial: 15
Acq On : 28 Apr 2016 14:08 Operator: ADC
Sample : WG566682-12 50.0ug/L ALTSRC 8260 Inst : HPMS8
Misc : 1,1 STD75898 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 28 15:07 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

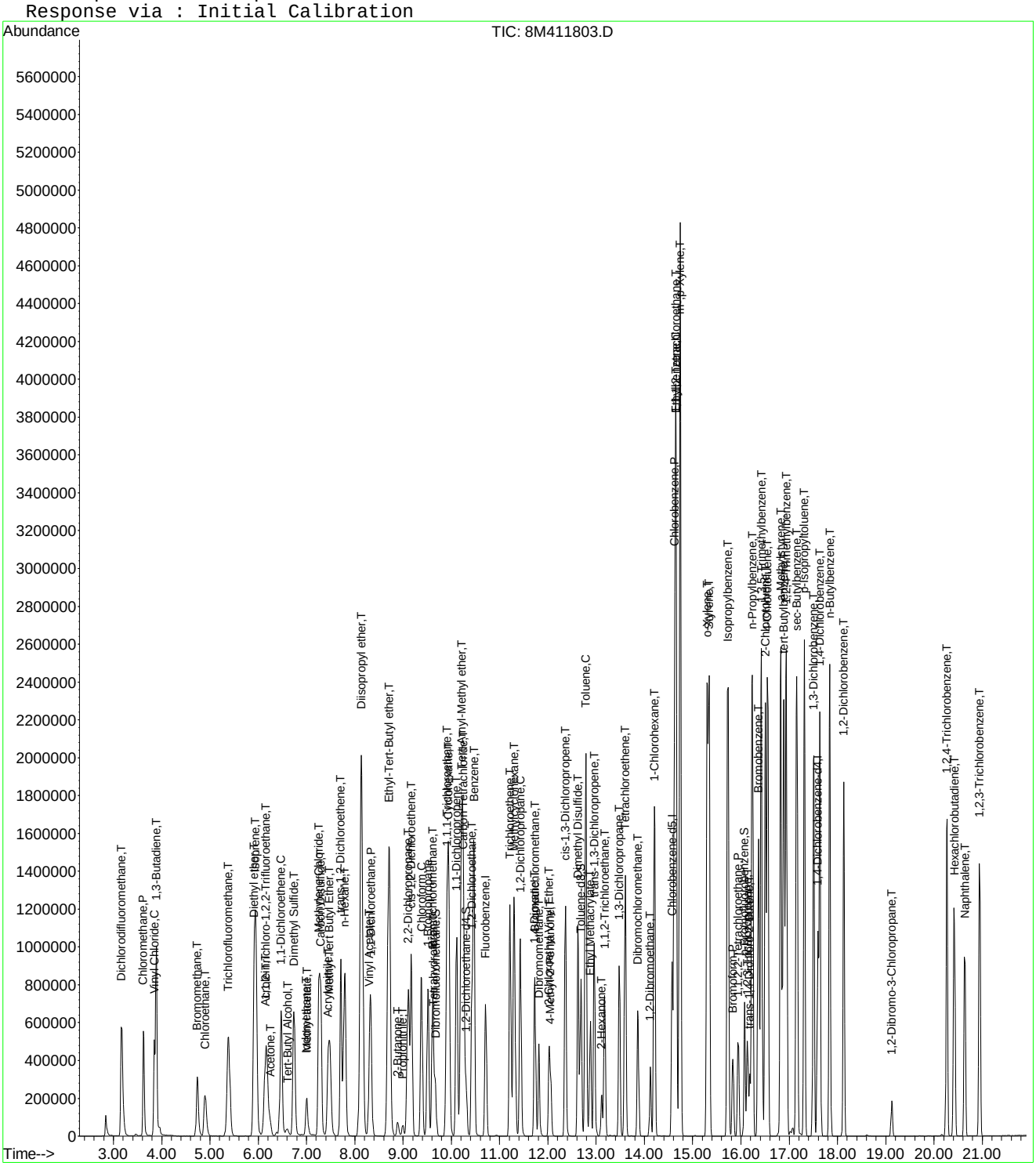

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\042816\8M411803.D Vial: 15
Acq On : 28 Apr 2016 14:08 Operator: ADC
Sample : WG566682-12 50.0ug/L ALTSRC 8260 Inst : HPMS8
Misc : 1,1 STD75898 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	114	0.00
2	T	Dichlorodifluoromethane	50.0000	55.7413	-11.5	118	0.00
3	P	Chloromethane	50.0000	49.3296	1.3	116	0.00
4	C	Vinyl Chloride	50.0000	57.1954	-14.4	129	0.00
5	T	1,3-Butadiene	50.0000	47.3839	5.2	105	0.00
6	T	Bromomethane	50.0000	45.8093	8.4	115	0.00
7	T	Chloroethane	50.0000	48.8006	2.4	111	0.00
8	T	Trichlorofluoromethane	50.0000	47.8054	4.4	108	0.00
9	T	Diethyl ether	100.0000	98.3197	1.7	112	0.00
10	T	Isoprene	50.0000	57.2679	-14.5	127	0.00
11	T	Acrolein	50.0000	128.1060	-156.2#	293	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	49.4526	1.1	112	0.00
13	T	Acetone	50.0000	46.5455	6.9	108	0.00
14	C	1,1-Dichloroethene	50.0000	45.1174	9.8	104	0.00
15	T	Tert-Butyl Alcohol	200.0000	180.3417	9.8	104	0.01
16	T	Dimethyl Sulfide	50.0000	68.0400	-36.1#	149	0.00
17	T	Iodomethane	50.0000	40.9104	18.2	94	0.00
18	T	Methyl acetate	50.0000	43.2017	13.6	100	0.00
19	T	Methylene Chloride	50.0000	46.2980	7.4	109	0.00
20	T	Carbon Disulfide	50.0000	44.5909	10.8	100	0.00
21	T	Acrylonitrile	50.0000	49.9592	0.1	107	0.00
22	T	Methyl Tert Butyl Ether	50.0000	49.3473	1.3	109	0.00
23	T	trans-1,2-Dichloroethene	50.0000	47.7083	4.6	109	0.00
24	T	n-Hexane	50.0000	47.5275	4.9	106	0.00
25	T	Diisopropyl ether	100.0000	91.0461	9.0	102	0.00
26	T	Vinyl Acetate	50.0000	48.6294	2.7	106	0.00
27	P	1,1-Dichloroethane	50.0000	44.8433	10.3	102	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	91.9100	8.1	104	0.00
29	T	2-Butanone	50.0000	44.3667	11.3	101	0.00
30	T	Propionitrile	100.0000	95.3239	4.7	101	0.00
31	T	2,2-Dichloropropane	50.0000	50.2937	-0.6	117	0.00
32	T	cis-1,2-Dichloroethene	50.0000	48.6859	2.6	115	0.00
33	C	Chloroform	50.0000	47.7187	4.6	110	0.00
34		1-Bromopropane	50.0000	67.7768	-35.6#	150	0.00
35	T	Bromochloromethane	50.0000	49.4391	1.1	110	0.00
36	T	Tetrahydrofuran	100.0000	84.4257	15.6	101	0.00
37	S	Dibromofluoromethane	25.0000	21.2771	14.9	95	0.00
38	T	1,1,1-Trichloroethane	50.0000	49.2118	1.6	112	0.00
39	T	Cyclohexane	50.0000	47.7571	4.5	107	0.00
40	T	1,1-Dichloropropene	50.0000	47.5493	4.9	106	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	100.1615	-0.2	114	0.00
42	T	Carbon Tetrachloride	50.0000	48.6715	2.7	108	0.00
43	S	1,2-Dichloroethane-d4	25.0000	21.1854	15.3	92	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	48.0962	3.8	110	0.00
46	T	Benzene	50.0000	47.0653	5.9	107	0.00
47	T	Trichloroethene	50.0000	49.5613	0.9	113	0.00
48	T	Methylcyclohexane	50.0000	49.3665	1.3	109	0.00
49	C	1,2-Dichloropropane	50.0000	47.8235	4.4	110	0.00
50	T	Bromodichloromethane	50.0000	49.3507	1.3	111	0.00
51	T	1,4-Dioxane	200.0000	173.7393	13.1	87	0.00
52	T	Dibromomethane	50.0000	46.9280	6.1	105	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	49.5459	0.9	109	0.00
54	T	4-Methyl-2-Pentanone	50.0000	46.5173	7.0	107	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\042816\8M411803.D Vial: 15
Acq On : 28 Apr 2016 14:08 Operator: ADC
Sample : WG566682-12 50.0ug/L ALTSRC 8260 Inst : HPMS8
Misc : 1,1 STD75898 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.8194	-7.6	119	0.00
56	T	Dimethyl Disulfide	50.0000	51.9855	-4.0	119	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	117	0.00
58	S	Toluene-d8	25.0000	21.9692	12.1	95	0.00
59	C	Toluene	50.0000	49.0446	1.9	110	0.00
60	T	Ethyl Methacrylate	50.0000	52.7638	-5.5	115	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	50.0818	-0.2	113	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.7491	0.5	111	0.00
64	T	2-Hexanone	50.0000	46.7737	6.5	104	0.00
65	T	1,3-Dichloropropane	50.0000	50.2762	-0.6	115	0.00
66	T	Tetrachloroethene	50.0000	49.6446	0.7	114	0.00
67	T	Dibromochloromethane	50.0000	50.7334	-1.5	113	0.00
68	T	1,2-Dibromoethane	50.0000	50.6523	-1.3	111	0.00
69	T	1-Chlorohexane	50.0000	50.0480	-0.1	113	0.00
70	P	Chlorobenzene	50.0000	50.0640	-0.1	114	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	51.0525	-2.1	114	0.00
72	C	Ethylbenzene	50.0000	48.9270	2.1	114	0.00
73	T	m-,p-Xylene	100.0000	101.9073	-1.9	113	0.00
74	T	o-Xylene	50.0000	50.7301	-1.5	114	0.00
75	T	Styrene	50.0000	50.7581	-1.5	112	0.00
76	P	Bromoform	50.0000	49.5613	0.9	110	0.00
77	T	Isopropylbenzene	50.0000	52.6018	-5.2	115	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	115	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	45.3478	9.3	106	0.00
80	S	p-Bromofluorobenzene	25.0000	21.3013	14.8	97	0.00
81	T	1,2,3-Trichloropropane	50.0000	49.2734	1.5	115	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	34.5503	30.9#	78	0.00
83	T	n-Propylbenzene	50.0000	51.0697	-2.1	115	0.00
84	T	Bromobenzene	50.0000	48.3087	3.4	111	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	51.9615	-3.9	116	0.00
86	T	2-Chlorotoluene	50.0000	52.0654	-4.1	121	0.00
87	T	4-Chlorotoluene	50.0000	49.3157	1.4	113	0.00
88	T	a-Methylstyrene	50.0000	54.4540	-8.9	124	0.00
89	T	tert-Butylbenzene	50.0000	50.8523	-1.7	115	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	50.3342	-0.7	112	0.00
91	T	sec-Butylbenzene	50.0000	50.9206	-1.8	115	0.00
92	T	p-Isopropyltoluene	50.0000	51.1719	-2.3	114	0.00
93	T	1,3-Dichlorobenzene	50.0000	49.3554	1.3	113	0.00
94	T	1,4-Dichlorobenzene	50.0000	49.2876	1.4	116	0.00
95	T	n-Butylbenzene	50.0000	49.0172	2.0	110	0.00
96	T	1,2-Dichlorobenzene	50.0000	49.3210	1.4	114	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	48.3306	3.3	116	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	47.6924	4.6	111	0.00
99	T	Hexachlorobutadiene	50.0000	51.3807	-2.8	118	0.00
100	T	Naphthalene	50.0000	43.2387	13.5	98	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	45.5934	8.8	108	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M411803.D 8260WTR.M Thu Apr 28 15:08:48 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972472.D Vial: 3
Acq On : 25 Jan 2016 11:22 Operator: FJB
Sample : WG555000-02 5ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:05 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	367739	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	266763	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.77	152	148882	50.00 ug/kg	0.01

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	1974	5.3580 ug/kg#	1
3) 3-Chloro-1-propene	7.23	41	18322	5.0468 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	19639	4.7564 ug/kg	98
5) Ethyl Acetate	9.24	43	12755	5.2595 ug/kg	91
6) Methacrylonitrile	9.40	67	3744	4.7691 ug/kg	95
7) Isobutyl Alcohol	9.42	43	1055	12.9700 ug/kg#	62
8) 1-Butanol	10.36	56	203	11.8711 ug/kg#	26
9) Methyl methacrylate	11.56	41	8689	4.6908 ug/kg	95
10) 2-Nitropropane	11.90	43	2531	4.2058 ug/kg	96

(#) = qualifier out of range (m) = manual integration
9M972472.D A9FOO_SL.M Wed Jan 27 11:22:42 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972472.D Vial: 3
Acq On : 25 Jan 2016 11:22 Operator: FJB
Sample : WG555000-02 5ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

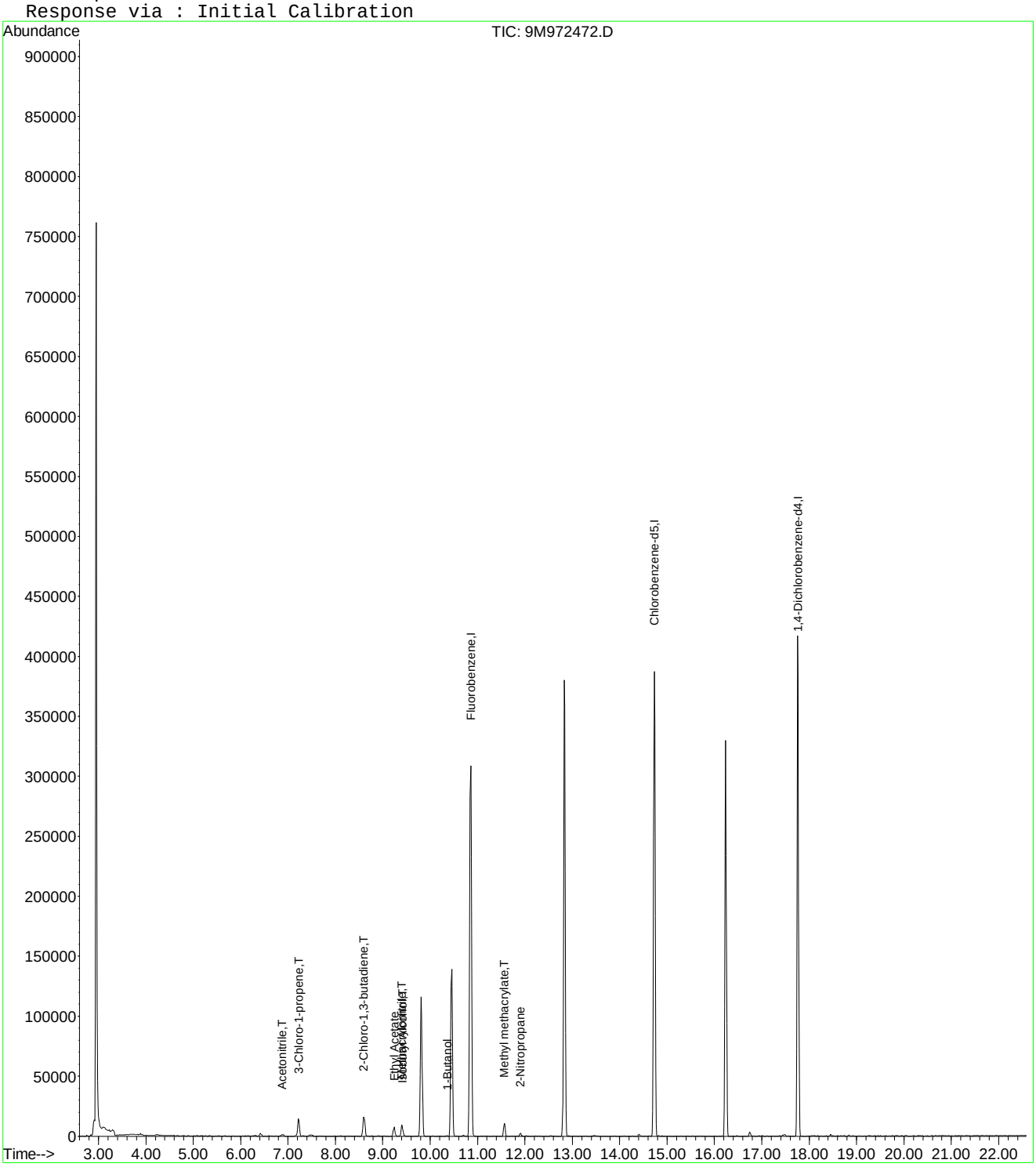

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972473.D Vial: 4
Acq On : 25 Jan 2016 11:52 Operator: FJB
Sample : WG555000-03 20ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:05 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	359691	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	265773	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	149223	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	7669	21.2815 ug/kg#	77
3) 3-Chloro-1-propene	7.23	41	75360	21.2224 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	82865	20.5181 ug/kg	100
5) Ethyl Acetate	9.23	43	47912	20.1986 ug/kg	97
6) Methacrylonitrile	9.40	67	15740	20.4980 ug/kg	98
7) Isobutyl Alcohol	9.42	43	5287	37.9280 ug/kg	95
8) 1-Butanol	10.35	56	1509	22.3153 ug/kg#	81
9) Methyl methacrylate	11.56	41	35437	19.5588 ug/kg	98
10) 2-Nitropropane	11.90	43	10433	17.7247 ug/kg	98
12) Cyclohexanone	16.01	55	2157	16.3929 ug/kg#	86

(#) = qualifier out of range (m) = manual integration
9M972473.D A9FOO_SL.M Wed Jan 27 11:22:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972473.D Vial: 4
Acq On : 25 Jan 2016 11:52 Operator: FJB
Sample : WG555000-03 20ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

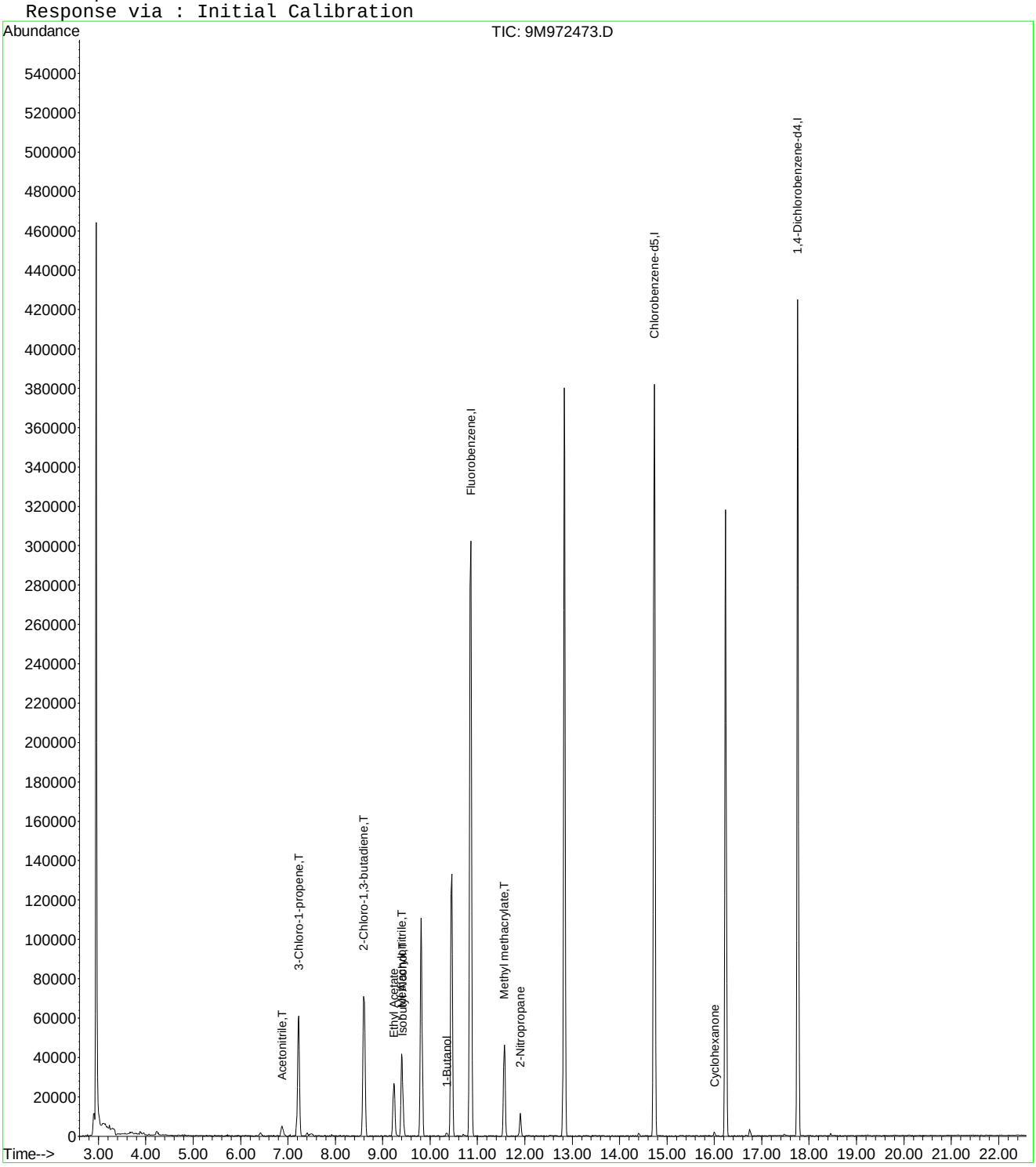

9M972473.D A9FOO_SL.M Wed Jan 27 11:22:46 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972474.D Vial: 5
Acq On : 25 Jan 2016 12:23 Operator: FJB
Sample : WG555000-04 50ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:06 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	356886	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	259679	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	147334	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	16583	46.3795 ug/kg#	94
3) 3-Chloro-1-propene	7.23	41	160601	45.5828 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.61	53	185316	46.2464 ug/kg	99
5) Ethyl Acetate	9.23	43	111538	47.3915 ug/kg	99
6) Methacrylonitrile	9.40	67	36081	47.3572 ug/kg	99
7) Isobutyl Alcohol	9.42	43	12624	81.5447 ug/kg	95
8) 1-Butanol	10.35	56	4707	48.0983 ug/kg#	50
9) Methyl methacrylate	11.56	41	82406	45.8400 ug/kg	99
10) 2-Nitropropane	11.90	43	26302	45.0359 ug/kg	97
12) Cyclohexanone	16.01	55	5625	43.7525 ug/kg	93

(#) = qualifier out of range (m) = manual integration
9M972474.D A9FOO_SL.M Wed Jan 27 11:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972474.D Vial: 5
Acq On : 25 Jan 2016 12:23 Operator: FJB
Sample : WG555000-04 50ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

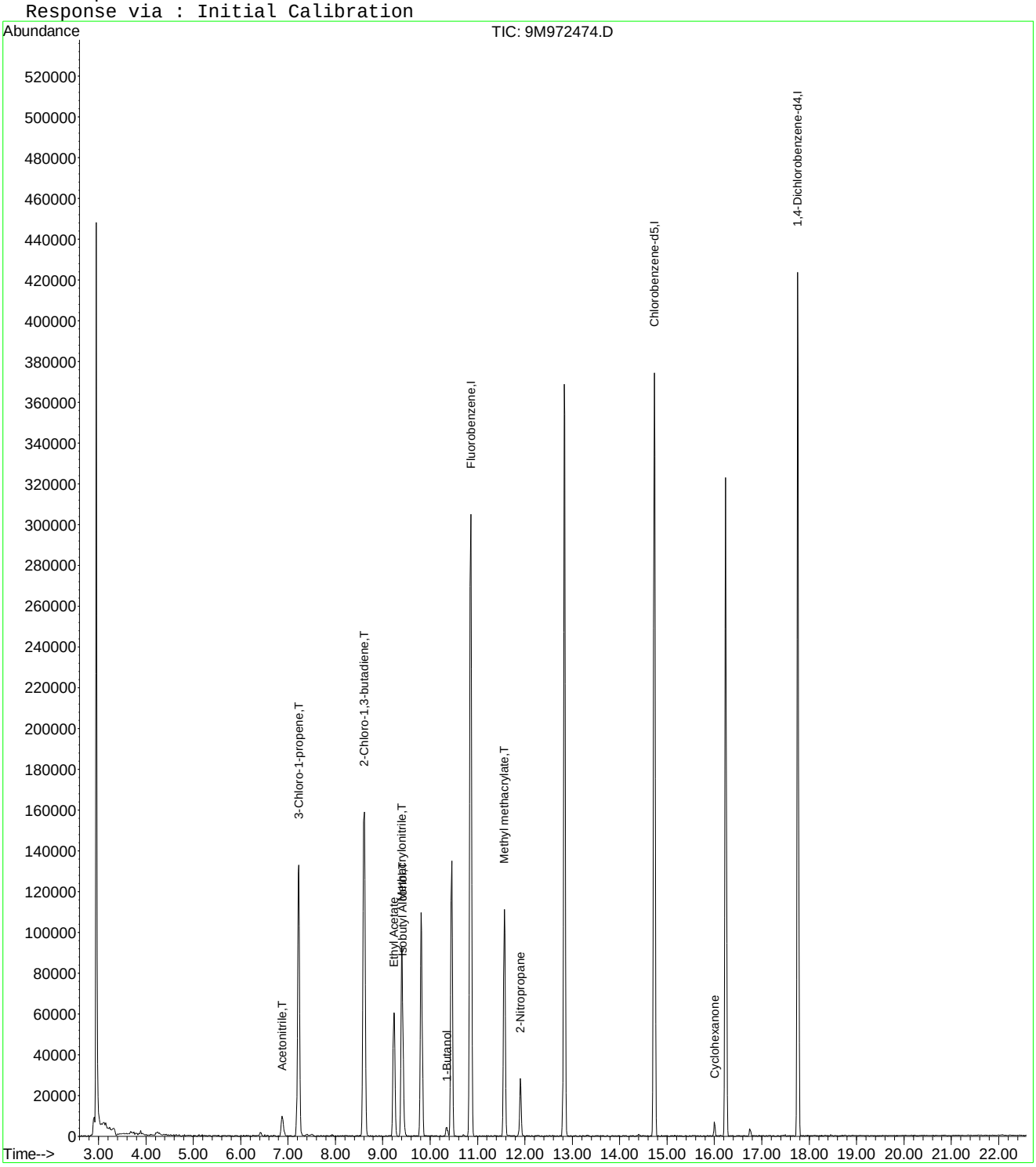

9M972474.D A9FOO_SL.M Wed Jan 27 11:22:51 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972475.D Vial: 6
Acq On : 25 Jan 2016 12:53 Operator: FJB
Sample : WG555000-05 100ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:06 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	394669	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	285851	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	161505	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	37767	95.5151	ug/kg#	100
3) 3-Chloro-1-propene	7.23	41	409870	105.1952	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.61	53	467514	105.5010	ug/kg	100
5) Ethyl Acetate	9.23	43	267513	102.7824	ug/kg	100
6) Methacrylonitrile	9.40	67	88054	104.5088	ug/kg	100
7) Isobutyl Alcohol	9.42	43	33721	187.1766	ug/kg	100
8) 1-Butanol	10.36	56	11671	95.0627	ug/kg	100
9) Methyl methacrylate	11.56	41	209503	105.3834	ug/kg	100
10) 2-Nitropropane	11.90	43	65435	101.3157	ug/kg	100
12) Cyclohexanone	16.01	55	14062	99.3630	ug/kg	100

(#) = qualifier out of range (m) = manual integration
9M972475.D A9FOO_SL.M Wed Jan 27 11:22:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972475.D Vial: 6
Acq On : 25 Jan 2016 12:53 Operator: FJB
Sample : WG555000-05 100ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

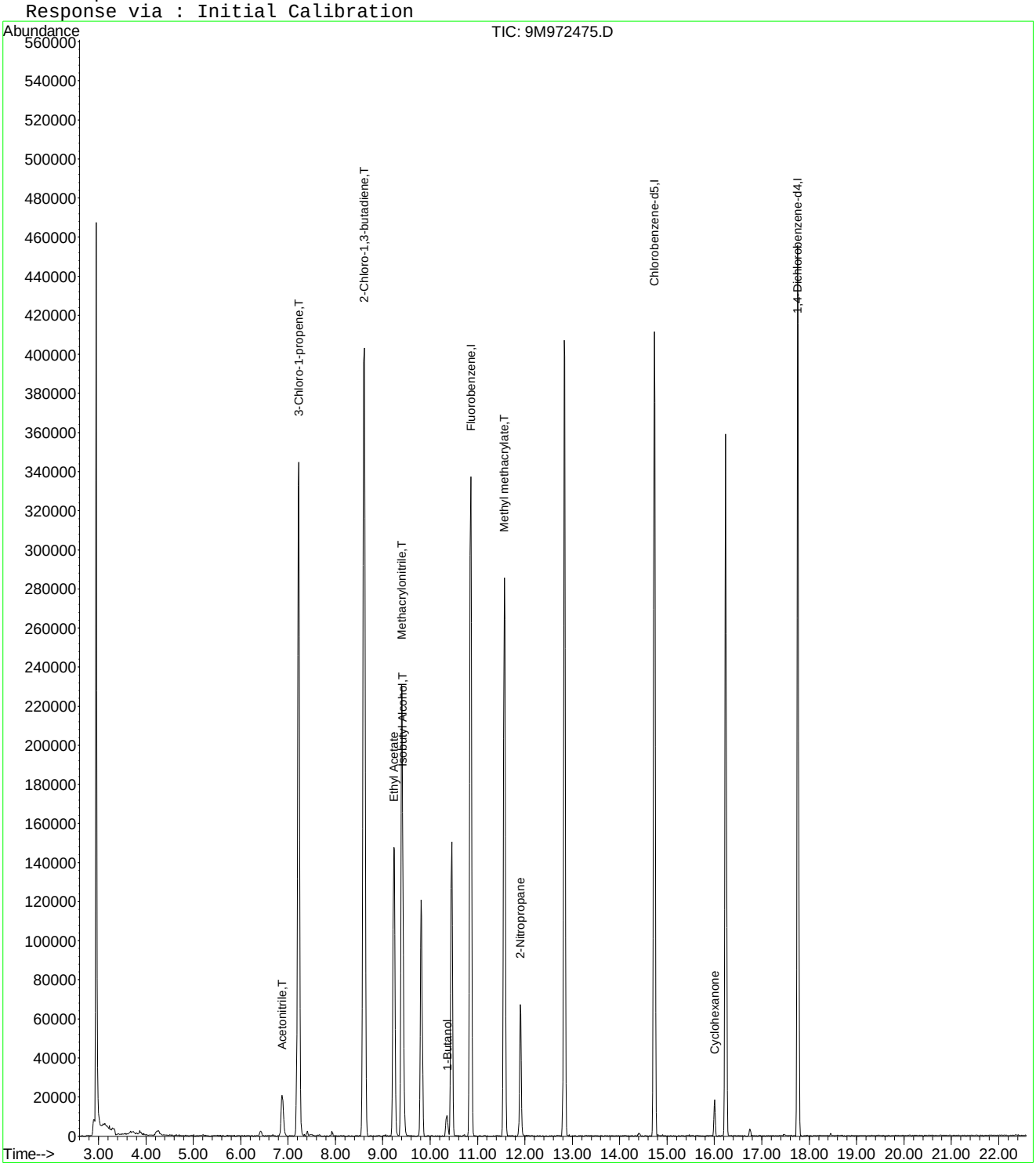

9M972475.D A9FOO_SL.M Wed Jan 27 11:22:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972476.D Vial: 7
Acq On : 25 Jan 2016 13:23 Operator: FJB
Sample : WG555000-06 200ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 09:51:10 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	361792	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	264283	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	150478	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.87	41	75099	207.1896	ug/kg#	94
3) 3-Chloro-1-propene	7.22	41	743262	208.0969	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	846271	208.3269	ug/kg	100
5) Ethyl Acetate	9.23	43	489855	205.3125	ug/kg	100
6) Methacrylonitrile	9.40	67	159879	206.9995	ug/kg	100
7) Isobutyl Alcohol	9.42	43	68551	406.6640	ug/kg	99
8) 1-Butanol	10.35	56	24111	201.3375	ug/kg	97
9) Methyl methacrylate	11.57	41	382820	210.0636	ug/kg	99
10) 2-Nitropropane	11.90	43	129000	217.8866	ug/kg	95
12) Cyclohexanone	16.00	55	30065	229.7785	ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972476.D A9FOO_SL.M Wed Jan 27 09:51:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972476.D Vial: 7
Acq On : 25 Jan 2016 13:23 Operator: FJB
Sample : WG555000-06 200ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 9:51 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

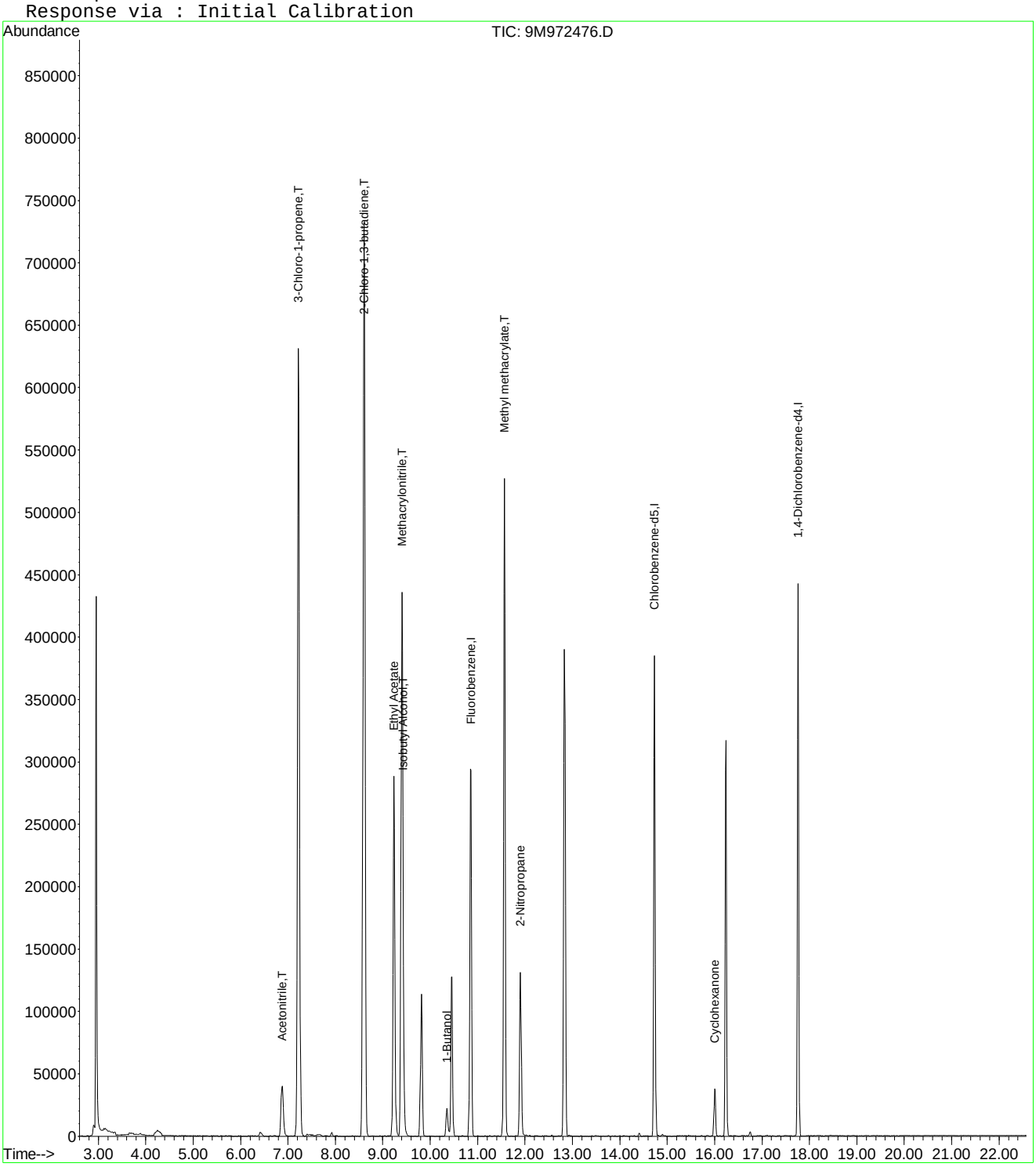

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972477.D Vial: 8
Acq On : 25 Jan 2016 13:54 Operator: FJB
Sample : WG555000-07 300ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:07 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.85	96	362779	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	265659	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	153468	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	99618	274.0870	ug/kg#	97
3) 3-Chloro-1-propene	7.22	41	944879	263.8255	ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	1107217	271.8226	ug/kg	99
5) Ethyl Acetate	9.24	43	652386	272.6900	ug/kg	99
6) Methacrylonitrile	9.40	67	208153	268.7679	ug/kg	98
7) Isobutyl Alcohol	9.43	43	89707	528.6093	ug/kg#	99
8) 1-Butanol	10.35	56	31640	260.3131	ug/kg	98
9) Methyl methacrylate	11.57	41	502506	274.9883	ug/kg	98
10) 2-Nitropropane	11.90	43	172692	290.8907	ug/kg	95
12) Cyclohexanone	16.00	55	36951	280.9436	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972477.D A9FOO_SL.M Wed Jan 27 11:23:05 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972477.D Vial: 8
Acq On : 25 Jan 2016 13:54 Operator: FJB
Sample : WG555000-07 300ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

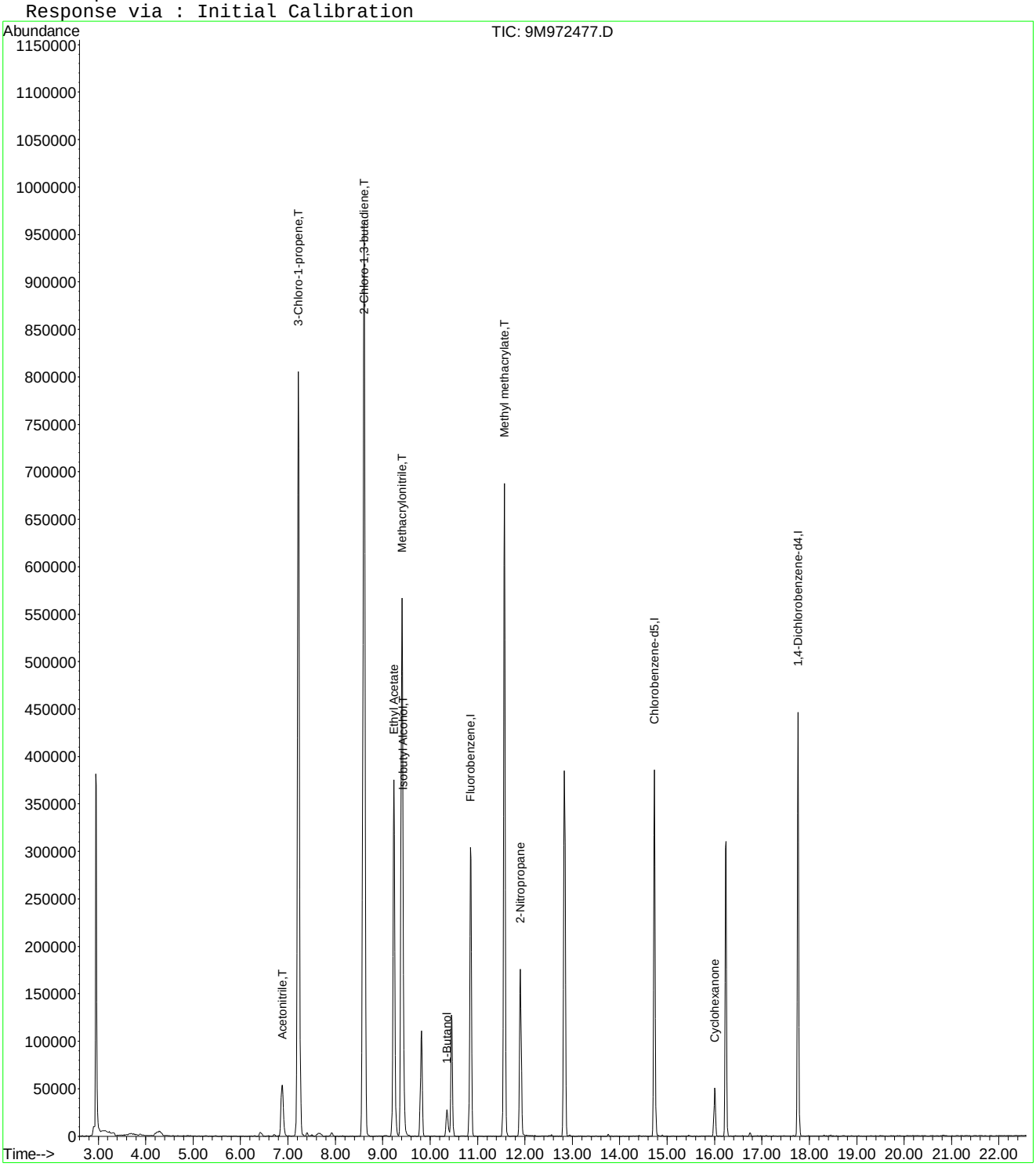

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972478.D Vial: 9
Acq On : 25 Jan 2016 14:25 Operator: FJB
Sample : WG555000-08 400ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 09:51:10 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	359343	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	261674	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	149058	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.89	41	148074	411.3034	ug/kg#	96
3) 3-Chloro-1-propene	7.22	41	1457717	410.9100	ug/kg	99
4) 2-Chloro-1,3-butadiene	8.61	53	1703971	422.3261	ug/kg	100
5) Ethyl Acetate	9.23	43	980479	413.7480	ug/kg	100
6) Methacrylonitrile	9.40	67	321602	419.2243	ug/kg	99
7) Isobutyl Alcohol	9.43	43	142361	842.7355	ug/kg#	98
8) 1-Butanol	10.36	56	51732	422.9922	ug/kg	99
9) Methyl methacrylate	11.56	41	779879	430.8570	ug/kg	98
10) 2-Nitropropane	11.90	43	267565	455.0088	ug/kg	96
12) Cyclohexanone	16.01	55	56623	437.0688	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M972478.D A9FOO_SL.M Wed Jan 27 09:51:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972478.D Vial: 9
Acq On : 25 Jan 2016 14:25 Operator: FJB
Sample : WG555000-08 400ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 9:51 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

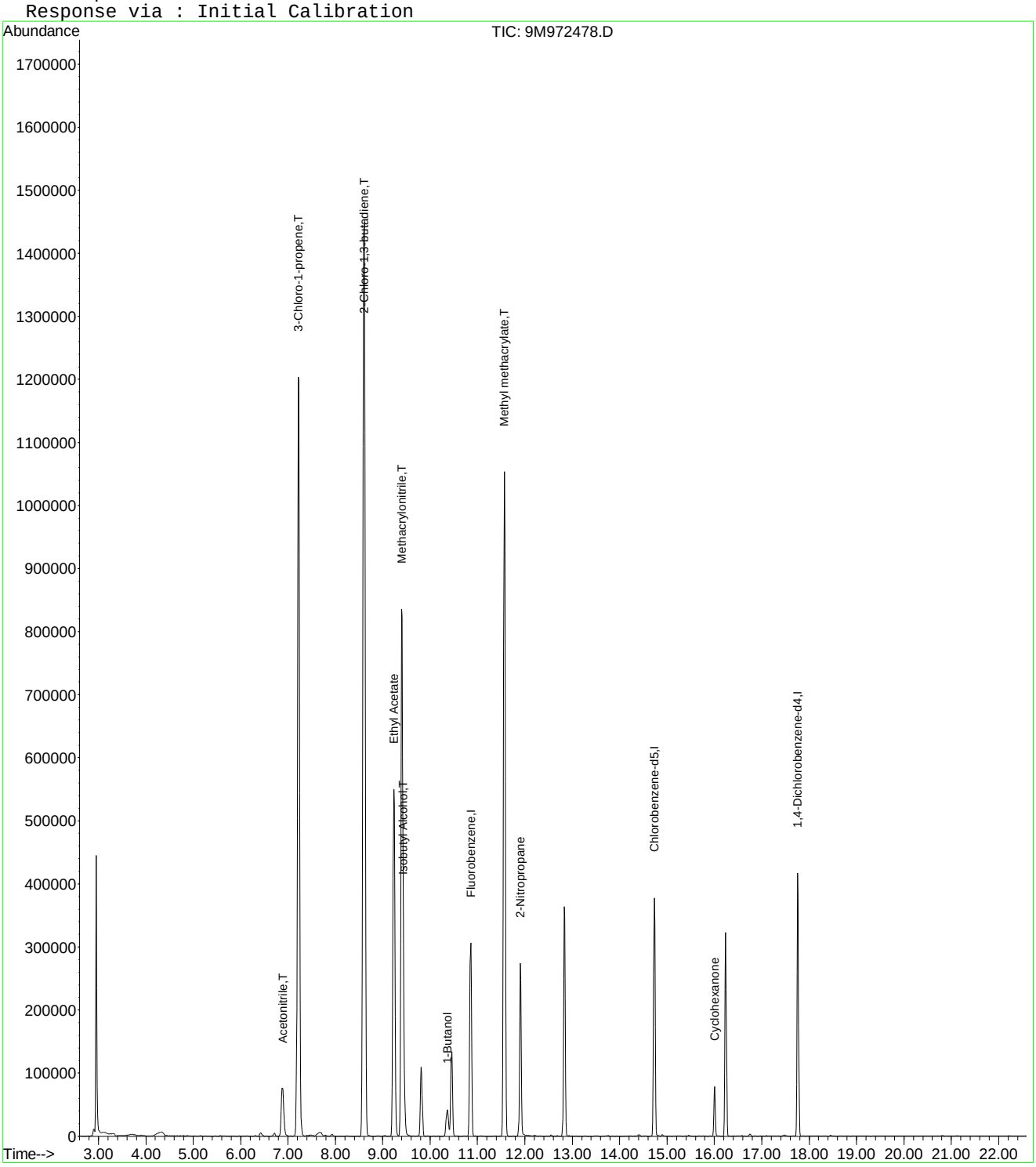

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972479.D Vial: 10
Acq On : 25 Jan 2016 14:56 Operator: FJB
Sample : WG555000-09 500ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:08 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.86	96	364474	50.00	ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	266311	50.00	ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	151707	50.00	ug/kg	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.88	41	196334	537.6773	ug/kg#	94
3) 3-Chloro-1-propene	7.22	41	1832802	509.3680	ug/kg	99
4) 2-Chloro-1,3-butadiene	8.60	53	2126710	519.6807	ug/kg	100
5) Ethyl Acetate	9.23	43	1255294	522.2587	ug/kg	100
6) Methacrylonitrile	9.40	67	408537	525.0513	ug/kg	100
7) Isobutyl Alcohol	9.43	43	180610	1052.3719	ug/kg	98
8) 1-Butanol	10.36	56	64789	519.8809	ug/kg	97
9) Methyl methacrylate	11.56	41	981460	534.5904	ug/kg	100
10) 2-Nitropropane	11.90	43	346571	581.0659	ug/kg	97
12) Cyclohexanone	16.01	55	74733	566.8143	ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972479.D A9FOO_SL.M Wed Jan 27 11:30:29 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972479.D Vial: 10
Acq On : 25 Jan 2016 14:56 Operator: FJB
Sample : WG555000-09 500ug/Kg STD A9 Inst : hpms9
Misc : 7,1 STD74406 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

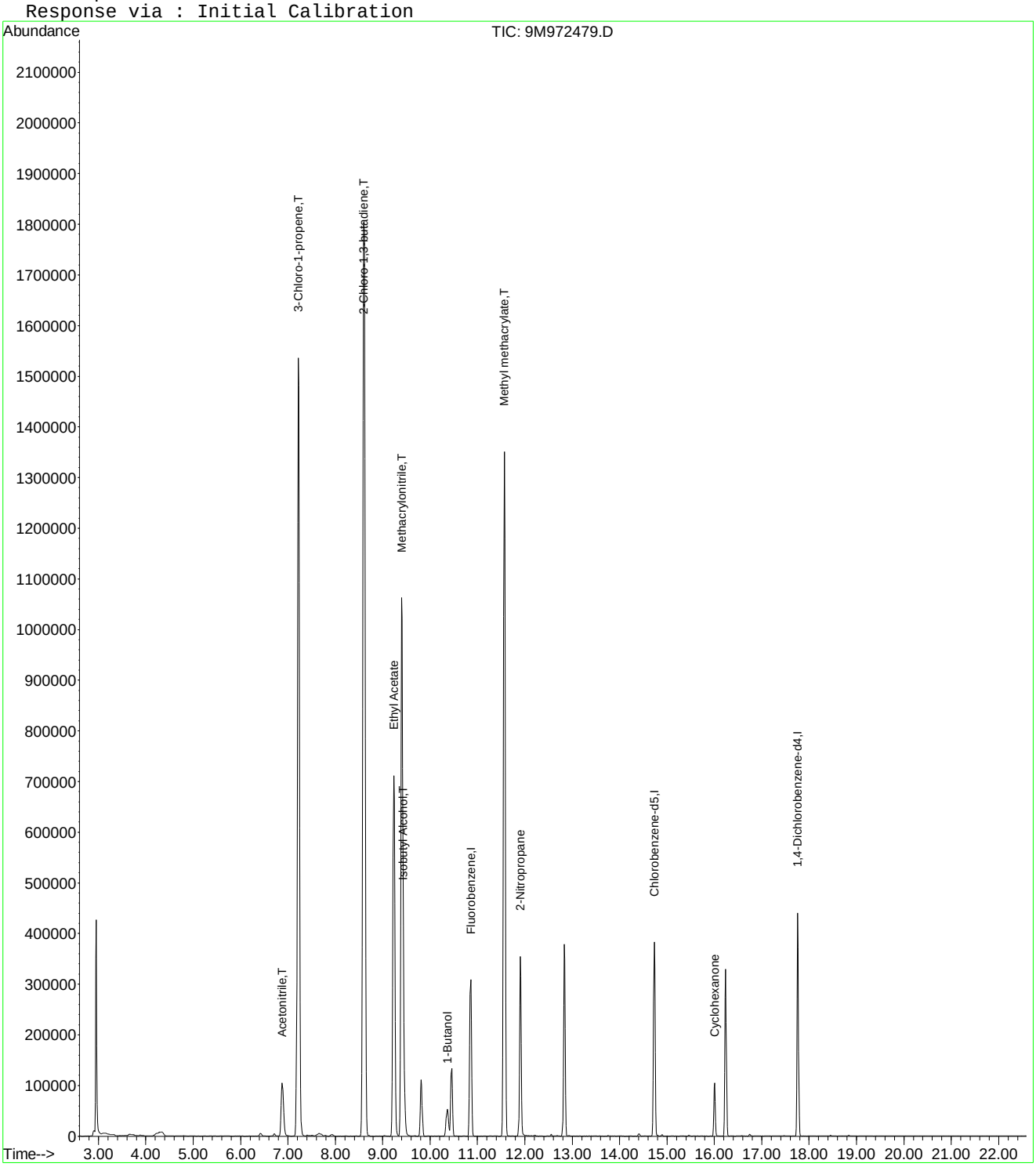

9M972479.D A9FOO_SL.M Wed Jan 27 11:30:29 2016 Page 2

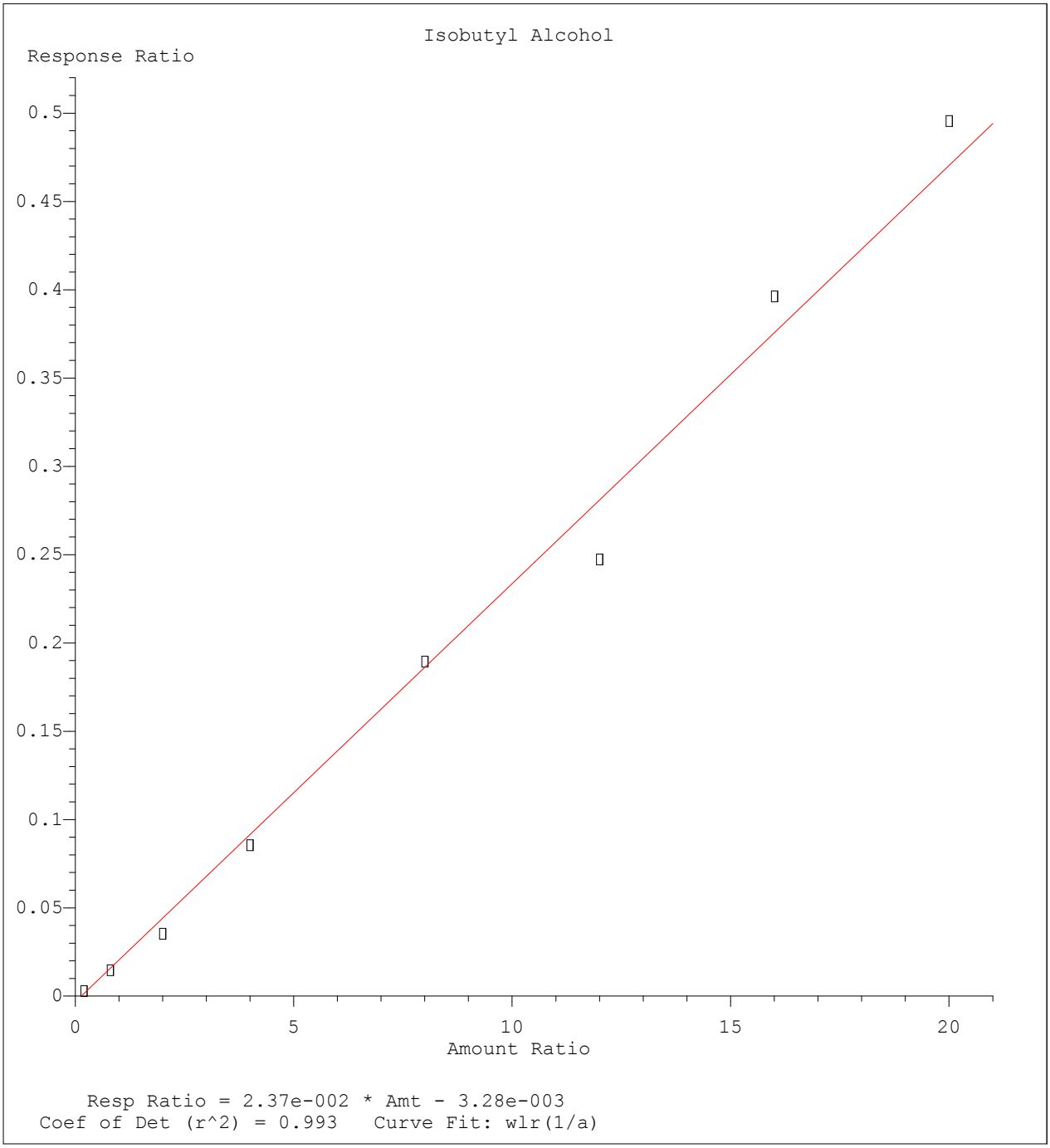

Method Name: C:\MSDCHEM\1\METHODS\A9FOO_SL.M
Calibration Table Last Updated: Wed Jan 27 09:49:02 2016

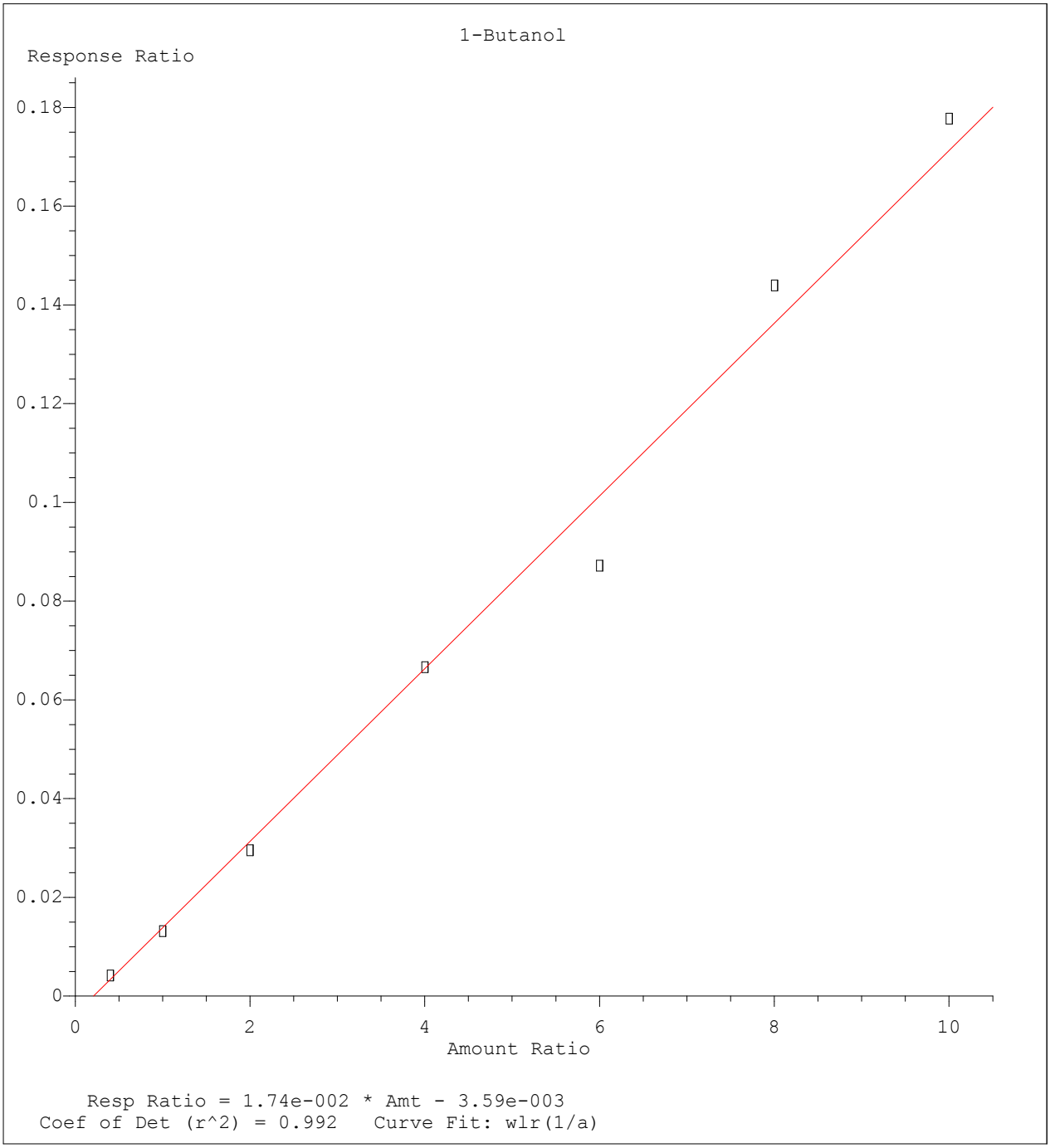

Method Name: C:\MSDCHEM\1\METHODS\A9FOO_SL.M
Calibration Table Last Updated: Wed Jan 27 09:49:02 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15:09 2016 Quant Results File: A9FOO_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration
DataAcq Meth : 8260BSL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.86	96	394765	50.00 ug/kg	0.00
11) Chlorobenzene-d5	14.73	117	285754	50.00 ug/kg	0.00
13) 1,4-Dichlorobenzene-d4	17.76	152	159586	50.00 ug/kg	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.88	41	40054	101.2745 ug/kg#	100
3) 3-Chloro-1-propene	7.22	41	402890	103.3786 ug/kg	100
4) 2-Chloro-1,3-butadiene	8.60	53	572568	129.1764 ug/kg	99
5) Ethyl Acetate	9.23	43	275962	106.0028 ug/kg	99
6) Methacrylonitrile	9.40	67	90289	107.1354 ug/kg	96
7) Isobutyl Alcohol	9.42	43	34031	188.7895 ug/kg	99
8) 1-Butanol	10.35	56	12038	97.7072 ug/kg	97
9) Methyl methacrylate	11.56	41	219363	110.3163 ug/kg	100
10) 2-Nitropropane	11.90	43	69288	107.2554 ug/kg	93
12) Cyclohexanone	16.01	55	14203	100.3934 ug/kg	97

(#) = qualifier out of range (m) = manual integration
9M972481.D A9FOO_SL.M Wed Jan 27 11:15:09 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jan 27 11:15 2016 Quant Results File: A9FOO_SL.RES

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Initial Calibration

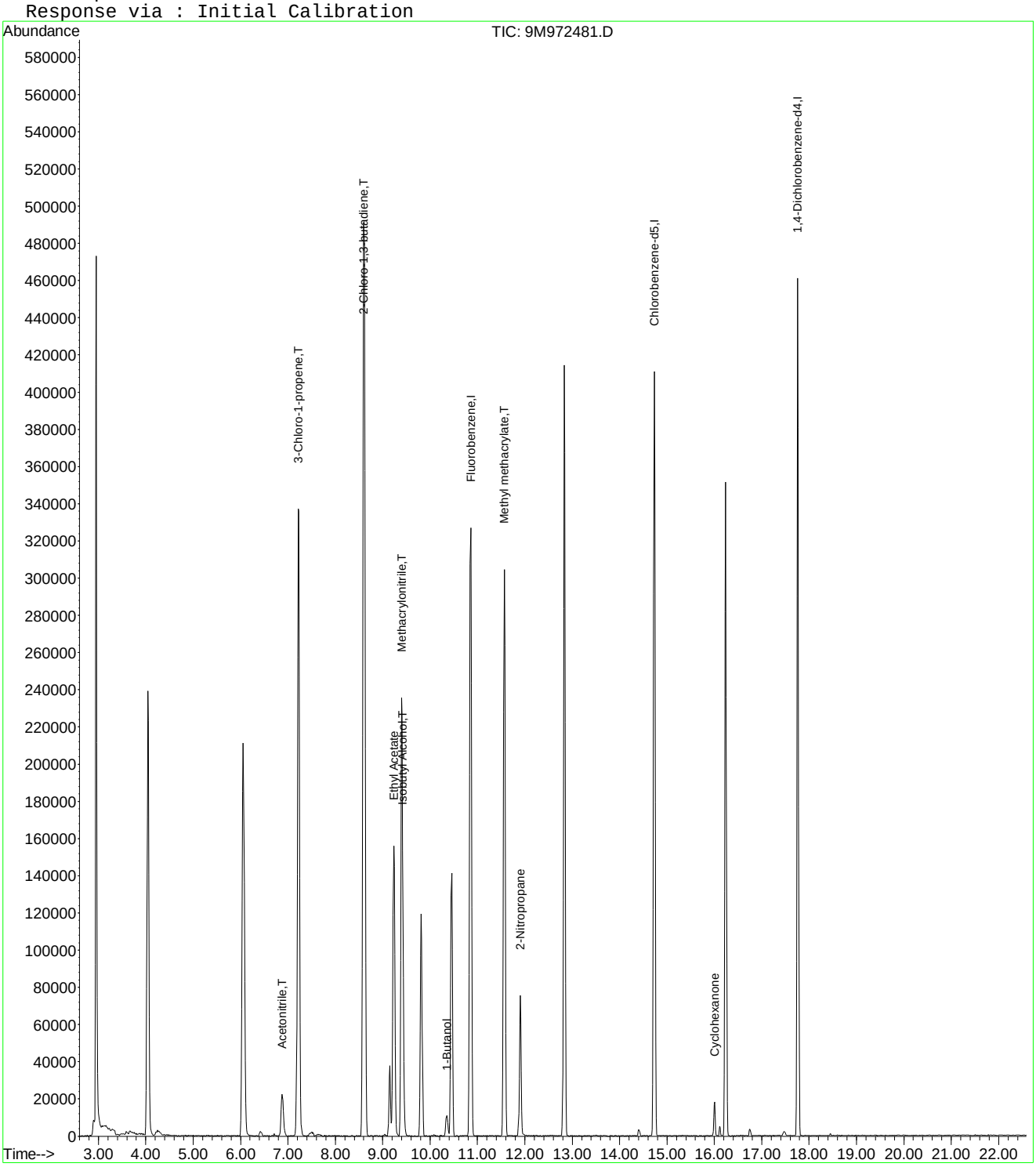

9M972481.D A9FOO_SL.M Wed Jan 27 11:15:09 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\012516\9M972481.D Vial: 12
Acq On : 25 Jan 2016 15:56 Operator: FJB
Sample : WG555000-10 100ug/Kg ICV A9 Inst : hpms9
Misc : 7,1 STD74461 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOO_SL.M (RTE Integrator)
Title : FOO/APPIX SOIL 01/25/16 SOP: OVL MSV01
Last Update : Wed Jan 27 09:49:02 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	101.2745	-1.3	106	0.00
3	T	3-Chloro-1-propene	100.0000	103.3786	-3.4	98	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	129.1764	-29.2	122	0.00
5		Ethyl Acetate	100.0000	106.0028	-6.0	103	0.00
6	T	Methacrylonitrile	100.0000	107.1354	-7.1	103	0.00
7	T	Isobutyl Alcohol	200.0000	188.7895	5.6	101	0.00
8		1-Butanol	100.0000	97.7072	2.3	103	0.00
9	T	Methyl methacrylate	100.0000	110.3163	-10.3	105	0.00
10		2-Nitropropane	100.0000	107.2554	-7.3	106	0.00
11	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
12		Cyclohexanone	100.0000	100.3934	-0.4	101	0.00
13	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	99	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M972481.D A9FOO_SL.M Wed Jan 27 11:32:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974140.D Vial: 3
Acq On : 4 May 2016 12:51 Operator: ADC
Sample : WG567358-03 0.5ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 16:42:24 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	619322	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	468678	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	232303	50.00 ug/kg	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	10.43	65	449	0.1310 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.26%#	
58) Toluene-d8	12.82	98	3036	0.2712 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.54%#	
79) p-Bromofluorobenzene	16.22	95	3186	0.7911 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	1.58%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	1985	0.4697 ug/kg#	65
3) Chloromethane	3.74	50	4097	0.7866 ug/kg	94
5) 1,3-Butadiene	4.02	54	1905	Below Cal #	66
6) Bromomethane	4.88	94	1630	0.6249 ug/kg	86
7) Chloroethane	5.04	64	1223	0.4920 ug/kg#	45
8) Trichlorofluoromethane	5.51	101	2761	0.5204 ug/kg#	63
10) Isoprene	6.09	67	2118	0.5024 ug/kg	87
13) Acetone	6.39	43	4556	1.1964 ug/kg	86
14) 1,1-Dichloroethene	6.60	61	2723	0.5259 ug/kg	95
16) Dimethyl Sulfide	6.87	62	646	0.6738 ug/kg#	58
17) Iodomethane	7.13	142	394	2.6173 ug/kg#	37
18) Methyl acetate	7.14	43	1404	0.4202 ug/kg#	66
19) Methylene Chloride	7.38	84	2210	0.6735 ug/kg	96
20) Carbon Disulfide	7.44	76	6633	0.6540 ug/kg	91
22) Methyl Tert Butyl Ether	7.61	73	4778	0.5212 ug/kg#	56
23) trans-1,2-Dichloroethene	7.84	61	2690	0.5352 ug/kg	86
24) n-Hexane	7.91	57	3329	0.5602 ug/kg	93
26) Vinyl Acetate	8.43	43	3008	0.4715 ug/kg#	78
27) 1,1-Dichloroethane	8.46	63	3251	0.5234 ug/kg#	78
29) 2-Butanone	9.03	43	1041	0.5943 ug/kg#	56
31) 2,2-Dichloropropane	9.22	77	2126	0.4561 ug/kg#	42
32) cis-1,2-Dichloroethene	9.31	96	1411	0.4229 ug/kg	97
33) Chloroform	9.51	83	2791	0.5314 ug/kg	98
36) Tetrahydrofuran	9.77	42	3247	2.6291 ug/kg	83
39) Cyclohexane	10.08	56	3639	0.5264 ug/kg#	78
40) 1,1-Dichloropropene	10.24	75	2041	0.5045 ug/kg#	57
42) Carbon Tetrachloride	10.38	117	2135	0.4677 ug/kg#	80
45) 1,2-Dichloroethane	10.56	62	2513	0.5371 ug/kg#	70
46) Benzene	10.59	78	7077	0.5654 ug/kg	91
47) Trichloroethene	11.35	130	1590	0.4648 ug/kg	82
48) Methylcyclohexane	11.43	83	3019	0.5569 ug/kg	89
49) 1,2-Dichloropropane	11.56	63	1666	0.4840 ug/kg#	38
51) Bromodichloromethane	11.86	83	2030	0.4937 ug/kg#	87
52) Dibromomethane	11.95	174	780	0.6571 ug/kg	78
55) cis-1,3-Dichloropropene	12.49	75	2348	0.4741 ug/kg#	50
59) Toluene	12.91	91	7605	0.5779 ug/kg	94
60) Ethyl Methacrylate	13.02	69	1660	0.4201 ug/kg#	56
61) trans-1,3-Dichloropropene	13.09	75	1881	0.4149 ug/kg#	69
62) 1,1,2-Trichloroethane	13.32	97	1444	0.5419 ug/kg#	54
64) 1,3-Dichloropropane	13.62	76	2051	0.4451 ug/kg	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974140.D Vial: 3
Acq On : 4 May 2016 12:51 Operator: ADC
Sample : WG567358-03 0.5ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 16:42:24 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
65)	Tetrachloroethene	13.75	164	1262	0.4663	ug/kg#	65
66)	Dibromochloromethane	14.00	129	1420	0.4208	ug/kg	75
67)	1,2-Dibromoethane	14.27	107	1386	0.4886	ug/kg	95
68)	1-Chlorohexane	14.34	91	2434	0.5648	ug/kg	96
69)	Chlorobenzene	14.76	112	5023	0.5539	ug/kg	73
70)	1,1,1,2-Tetrachloroethane	14.79	131	1447	0.4340	ug/kg	88
71)	Ethylbenzene	14.78	106	2258	0.4624	ug/kg	63
72)	m-,p-Xylene	14.88	106	7020	1.1648	ug/kg	97
73)	o-Xylene	15.45	106	3150	0.5376	ug/kg	93
74)	Styrene	15.48	104	4629	0.4869	ug/kg	88
76)	Isopropylbenzene	15.86	105	8571	0.5824	ug/kg	88
78)	1,1,2,2-Tetrachloroethane	16.09	83	1451	0.4274	ug/kg#	78
80)	1,2,3-Trichloropropane	16.27	110	482	0.4564	ug/kg#	4
83)	Bromobenzene	16.51	156	2082	0.5793	ug/kg	64
84)	1,3,5-Trimethylbenzene	16.57	105	7992	0.7197	ug/kg	97
85)	2-Chlorotoluene	16.65	91	5987	0.6209	ug/kg	97
86)	4-Chlorotoluene	16.69	91	6160	0.6753	ug/kg	94
87)	a-Methylstyrene	16.97	118	3116	0.5412	ug/kg	93
88)	tert-Butylbenzene	17.03	134	1229	0.4947	ug/kg	56
89)	1,2,4-Trimethylbenzene	17.08	105	11315	0.4706	ug/kg	86
90)	sec-Butylbenzene	17.29	105	9570	0.6421	ug/kg	99
91)	p-Isopropyltoluene	17.45	119	7752	0.6538	ug/kg	96
92)	1,3-Dichlorobenzene	17.65	146	4817	0.6810	ug/kg	92
93)	1,4-Dichlorobenzene	17.78	146	4931	0.6793	ug/kg#	64
94)	n-Butylbenzene	17.98	91	7938	0.7038	ug/kg#	94
95)	1,2-Dichlorobenzene	18.29	146	4228	0.6215	ug/kg	91
97)	1,2,4-Trichlorobenzene	20.43	180	3618	0.7452	ug/kg	89
98)	Hexachlorobutadiene	20.58	225	1560	0.6728	ug/kg#	73
99)	Naphthalene	20.80	128	10058	0.8175	ug/kg	95
100)	1,2,3-Trichlorobenzene	21.10	180	3624	0.7702	ug/kg	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974140.D Vial: 3
Acq On : 4 May 2016 12:51 Operator: ADC
Sample : WG567358-03 0.5ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 5 16:42 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

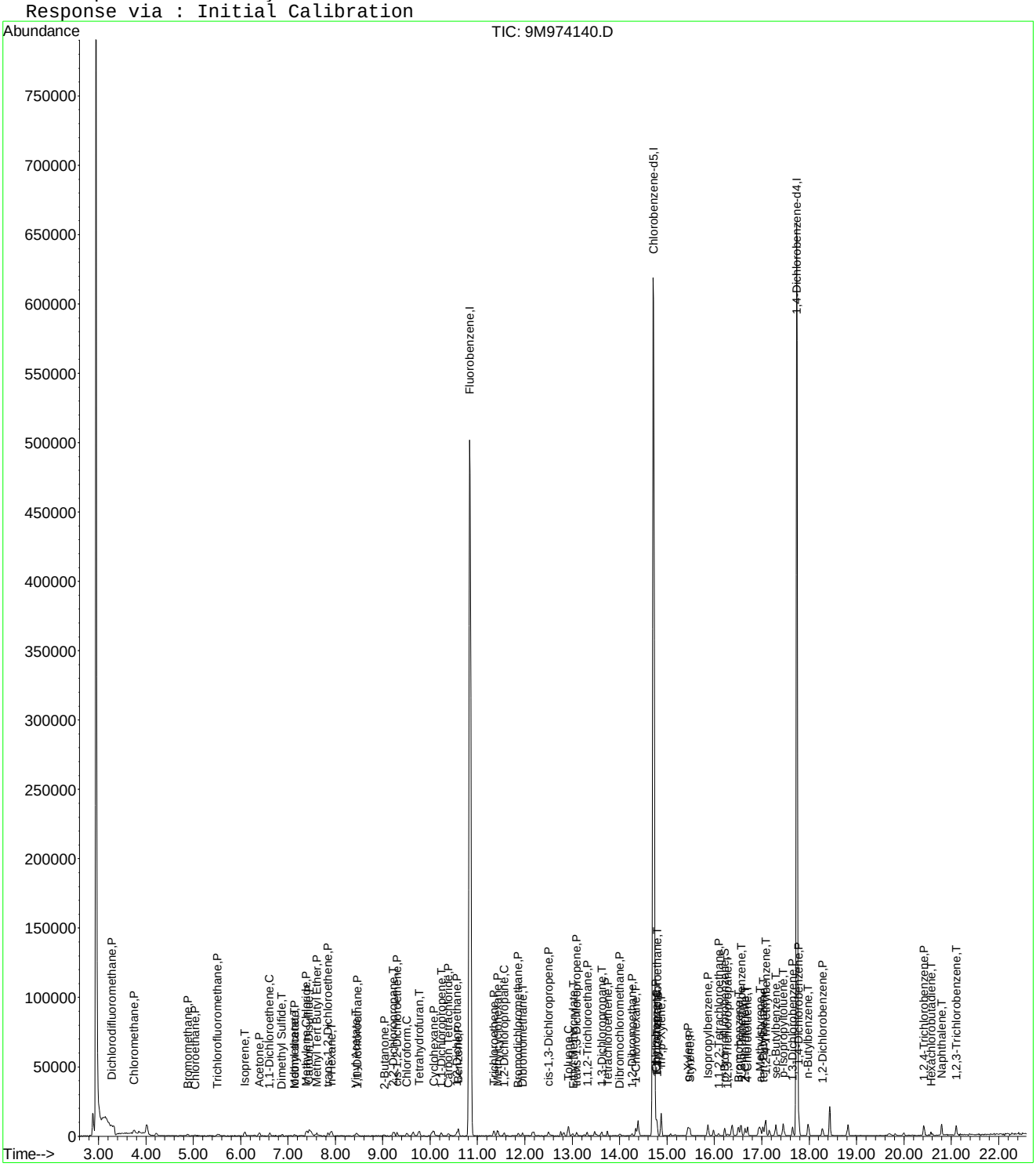

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\050416\9M974140.D Vial: 3
Acq On : 4 May 2016 12:51 Operator: ADC
Sample : WG567358-03 0.5ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	0.4697	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.7866	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.3423	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	-0.1893	0.0	100	0.00
6	P	Bromomethane	-1.0000	0.6249	0.0	100	0.00
7	P	Chloroethane	-1.0000	0.4920	0.0	100	0.00
8	P	Trichlorofluoromethane	-1.0000	0.5204	0.0	100	-0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.05#
10	T	Isoprene	-1.0000	0.5024	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.29#
12	P	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2154	0.0	100	0.00
13	P	Acetone	-1.0000	1.1964	0.0	0	0.00
14	C	1,1-Dichloroethene	-1.0000	0.5259	0.0	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.3944	0.0	100	0.02
16	T	Dimethyl Sulfide	-1.0000	0.6738	0.0	100	0.00
17	T	Iodomethane	-1.0000	2.6173	0.0	100	0.00
18	P	Methyl acetate	-1.0000	0.4202	0.0	100	0.00
19	P	Methylene Chloride	-1.0000	0.6735	0.0	100	0.00
20	P	Carbon Disulfide	-1.0000	0.6540	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.58#
22	P	Methyl Tert Butyl Ether	-1.0000	0.5212	0.0	100	0.00
23	P	trans-1,2-Dichloroethene	-1.0000	0.5352	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.5602	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.25#
26	T	Vinyl Acetate	-1.0000	0.4715	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.5234	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.82#
29	P	2-Butanone	-1.0000	0.5943	0.0	100	0.02
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.13#
31	T	2,2-Dichloropropane	-1.0000	0.4561	0.0	100	-0.01
32	P	cis-1,2-Dichloroethene	-1.0000	0.4229	0.0	100	0.00
33	C	Chloroform	-1.0000	0.5314	0.0	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.65#
35	T	Bromochloromethane	-1.0000	0.3841	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	2.6291	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	-1.0000	0.3942	0.0	100	0.00
39	P	Cyclohexane	-1.0000	0.5264	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.5045	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.33#
42	P	Carbon Tetrachloride	-1.0000	0.4677	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.1310	0.0	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	-1.0000	0.5371	0.0	100	0.00
46	P	Benzene	0.5000	0.5654	-13.1	100	0.00
47	P	Trichloroethene	-1.0000	0.4648	0.0	100	0.00
48	P	Methylcyclohexane	-1.0000	0.5569	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.4840	0.0	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.85#
51	P	Bromodichloromethane	-1.0000	0.4937	0.0	100	0.00
52	T	Dibromomethane	-1.0000	0.6571	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2684	0.0	100	0.00
54	P	4-Methyl-2-Pentanone	-1.0000	0.1688	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\050416\9M974140.D Vial: 3
Acq On : 4 May 2016 12:51 Operator: ADC
Sample : WG567358-03 0.5ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	-1.0000	0.4741	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.3716	0.0	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.2712	0.0	100	0.00
59	C	Toluene	0.5000	0.5779	-15.6	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.4201	0.0	100	0.02
61	P	trans-1,3-Dichloropropene	-1.0000	0.4149	0.0	100	0.00
62	P	1,1,2-Trichloroethane	-1.0000	0.5419	0.0	100	0.00
63	P	2-Hexanone	-1.0000	0.3493	0.0	100	0.00
64	T	1,3-Dichloropropane	-1.0000	0.4451	0.0	100	0.00
65	P	Tetrachloroethene	-1.0000	0.4663	0.0	100	0.00
66	P	Dibromochloromethane	-1.0000	0.4208	0.0	100	0.00
67	P	1,2-Dibromoethane	-1.0000	0.4886	0.0	100	0.00
68	T	1-Chlorohexane	-1.0000	0.5648	0.0	100	0.00
69	P	Chlorobenzene	-1.0000	0.5539	0.0	100	0.00
70	T	1,1,1,2-Tetrachloroethane	-1.0000	0.4340	0.0	100	0.00
71	C	Ethylbenzene	0.5000	0.4624	7.5	100	0.00
72	P	m-,p-Xylene	1.0000	1.1648	-16.5	100	0.00
73	P	o-Xylene	0.5000	0.5376	-7.5	100	0.00
74	P	Styrene	-1.0000	0.4869	0.0	100	0.00
75	P	Bromoform	-1.0000	0.3440	0.0	100	0.00
76	P	Isopropylbenzene	-1.0000	0.5824	0.0	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	-1.0000	0.4274	0.0	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.7911	0.0	100	0.00
80	T	1,2,3-Trichloropropane	-1.0000	0.4564	0.0	100	-0.01
81	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.1627	0.0	100	0.00
82	T	n-Propylbenzene	-1.0000	0.2283	0.0	0	0.00
83	T	Bromobenzene	-1.0000	0.5793	0.0	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	0.7197	0.0	100	0.00
85	T	2-Chlorotoluene	-1.0000	0.6209	0.0	100	0.00
86	T	4-Chlorotoluene	-1.0000	0.6753	0.0	100	0.00
87	T	a-Methylstyrene	-1.0000	0.5412	0.0	100	0.00
88	T	tert-Butylbenzene	-1.0000	0.4947	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	-1.0000	0.4706	0.0	100	0.00
90	T	sec-Butylbenzene	-1.0000	0.6421	0.0	100	0.00
91	T	p-Isopropyltoluene	-1.0000	0.6538	0.0	100	0.00
92	P	1,3-Dichlorobenzene	-1.0000	0.6810	0.0	100	0.00
93	P	1,4-Dichlorobenzene	-1.0000	0.6793	0.0	100	0.00
94	T	n-Butylbenzene	-1.0000	0.7038	0.0	100	0.00
95	P	1,2-Dichlorobenzene	-1.0000	0.6215	0.0	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.28#
97	P	1,2,4-Trichlorobenzene	-1.0000	0.7452	0.0	100	0.00
98	T	Hexachlorobutadiene	-1.0000	0.6728	0.0	100	0.00
99	T	Naphthalene	-1.0000	0.8175	0.0	100	0.00
100	T	1,2,3-Trichlorobenzene	-1.0000	0.7702	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M974140.D 8260SL.M Thu May 05 16:47:07 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974141.D Vial: 4
Acq On : 4 May 2016 13:21 Operator: ADC
Sample : WG567358-04 1.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 16:42:24 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	615313	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	468471	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	232535	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.82	98	2218	0.1982 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.40%#	
79) p-Bromofluorobenzene	16.22	95	2949	0.7315 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	1.46%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	3205	0.7634 ug/kg#	80
3) Chloromethane	3.74	50	6120	1.1826 ug/kg	79
4) Vinyl Chloride	3.98	62	3152	0.5481 ug/kg	88
5) 1,3-Butadiene	4.02	54	3296	0.4981 ug/kg	81
6) Bromomethane	4.88	94	2307	0.8902 ug/kg	99
7) Chloroethane	5.04	64	2041	0.8264 ug/kg#	45
8) Trichlorofluoromethane	5.53	101	4742	0.8995 ug/kg#	83
9) Diethyl ether	6.06	59	12982	4.3807 ug/kg	96
10) Isoprene	6.09	67	3278	0.7826 ug/kg	98
11) Acrolein	6.28	56	1009	2.0431 ug/kg#	43
12) 1,1,2-Trichloro-1,2,2-Trif	6.33	101	1890	0.6126 ug/kg	86
13) Acetone	6.39	43	4414	1.0942 ug/kg	93
14) 1,1-Dichloroethene	6.61	61	4314	0.8385 ug/kg	97
15) Tert-Butyl Alcohol	6.72	59	5758	10.8323 ug/kg#	73
16) Dimethyl Sulfide	6.88	62	1470	1.0027 ug/kg	69
17) Iodomethane	7.13	142	445	2.6496 ug/kg#	37
18) Methyl acetate	7.14	43	2732	0.8231 ug/kg#	66
19) Methylene Chloride	7.39	84	3455	1.0598 ug/kg	98
20) Carbon Disulfide	7.44	76	9946	0.9871 ug/kg	95
21) Acrylonitrile	7.58	53	3202	2.2578 ug/kg	89
22) Methyl Tert Butyl Ether	7.60	73	7861	0.8630 ug/kg	93
23) trans-1,2-Dichloroethene	7.84	61	4334	0.8678 ug/kg	96
24) n-Hexane	7.92	57	5723	0.9692 ug/kg	89
25) Diisopropyl ether	8.26	45	52378	4.4861 ug/kg	97
26) Vinyl Acetate	8.43	43	5729	0.9039 ug/kg#	78
27) 1,1-Dichloroethane	8.46	63	5359	0.8684 ug/kg#	81
28) Ethyl-Tert-Butyl ether	8.83	59	49583	4.4630 ug/kg	98
29) 2-Butanone	9.03	43	1835	1.0544 ug/kg#	56
30) Propionitrile	9.14	54	1690	6.1109 ug/kg#	61
31) 2,2-Dichloropropane	9.24	77	3933	0.8492 ug/kg#	51
32) cis-1,2-Dichloroethene	9.30	96	2862	0.8633 ug/kg	86
33) Chloroform	9.52	83	4363	0.8361 ug/kg	94
34) 1-Bromopropane	9.63	122	390	0.6930 ug/kg	59
35) Bromochloromethane	9.74	130	1748	0.8250 ug/kg	88
36) Tetrahydrofuran	9.77	42	8367	6.8188 ug/kg	98
38) 1,1,1-Trichloroethane	10.04	97	3768	0.8129 ug/kg	91
39) Cyclohexane	10.08	56	6603	0.9613 ug/kg#	89
40) 1,1-Dichloropropene	10.23	75	3293	0.8193 ug/kg	96
41) Tert-Amyl-Methyl ether	10.34	73	38025	4.4925 ug/kg	97
42) Carbon Tetrachloride	10.38	117	3212	0.7082 ug/kg#	86

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974141.D Vial: 4
Acq On : 4 May 2016 13:21 Operator: ADC
Sample : WG567358-04 1.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 16:42:24 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	4085	0.8788	ug/kg	88
46)	Benzene	10.59	78	11125	0.8946	ug/kg	96
47)	Trichloroethene	11.34	130	3072	0.9038	ug/kg	94
48)	Methylcyclohexane	11.43	83	5036	0.9350	ug/kg	94
49)	1,2-Dichloropropane	11.56	63	2927	0.8559	ug/kg	86
51)	Bromodichloromethane	11.87	83	2957	0.7238	ug/kg#	85
52)	Dibromomethane	11.95	174	1379	0.9389	ug/kg	90
53)	2-Chloroethyl Vinyl Ether	12.16	63	1335	0.6545	ug/kg#	49
54)	4-Methyl-2-Pentanone	12.19	58	715	0.4602	ug/kg#	42
55)	cis-1,3-Dichloropropene	12.50	75	4117	0.8368	ug/kg	86
56)	Dimethyl Disulfide	12.77	94	3880	0.6943	ug/kg	91
59)	Toluene	12.91	91	12462	0.9474	ug/kg	99
60)	Ethyl Methacrylate	13.01	69	2650	0.6709	ug/kg#	73
61)	trans-1,3-Dichloropropene	13.09	75	3338	0.7366	ug/kg	81
62)	1,1,2-Trichloroethane	13.32	97	2095	0.7865	ug/kg	97
63)	2-Hexanone	13.25	43	1717	0.6363	ug/kg#	41
64)	1,3-Dichloropropane	13.61	76	4295	0.9324	ug/kg	99
65)	Tetrachloroethene	13.74	164	2482	0.9176	ug/kg	91
66)	Dibromochloromethane	14.01	129	2884	0.8549	ug/kg	78
67)	1,2-Dibromoethane	14.27	107	2602	0.9177	ug/kg	88
68)	1-Chlorohexane	14.34	91	3765	0.8740	ug/kg	81
69)	Chlorobenzene	14.76	112	8249	0.9101	ug/kg	97
70)	1,1,1,2-Tetrachloroethane	14.79	131	2633	0.7900	ug/kg	100
71)	Ethylbenzene	14.78	106	4385	0.8983	ug/kg	92
72)	m-,p-Xylene	14.88	106	10159	1.6864	ug/kg	90
73)	o-Xylene	15.44	106	5211	0.8898	ug/kg	90
74)	Styrene	15.48	104	7782	0.8188	ug/kg	94
75)	Bromoform	15.99	173	1410	0.5940	ug/kg	75
76)	Isopropylbenzene	15.86	105	13147	0.8937	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.08	83	3091	0.9096	ug/kg#	94
80)	1,2,3-Trichloropropane	16.27	110	871	0.8239	ug/kg#	1
81)	trans-1,4-Dichloro-2-Buten	16.32	53	585	0.4617	ug/kg#	1
82)	n-Propylbenzene	16.38	91	14776	0.5755	ug/kg	99
83)	Bromobenzene	16.51	156	3389	0.9420	ug/kg	55
84)	1,3,5-Trimethylbenzene	16.57	105	12905	1.1610	ug/kg	95
85)	2-Chlorotoluene	16.65	91	9669	1.0017	ug/kg	95
86)	4-Chlorotoluene	16.69	91	9690	1.0612	ug/kg	97
87)	a-Methylstyrene	16.97	118	4652	0.8071	ug/kg	96
88)	tert-Butylbenzene	17.02	134	2283	0.9180	ug/kg	70
89)	1,2,4-Trimethylbenzene	17.08	105	14241	0.7350	ug/kg	94
90)	sec-Butylbenzene	17.29	105	14530	0.9739	ug/kg	99
91)	p-Isopropyltoluene	17.45	119	12126	1.0217	ug/kg	94
92)	1,3-Dichlorobenzene	17.65	146	6777	0.9571	ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	7674	1.0562	ug/kg	91
94)	n-Butylbenzene	17.98	91	11262	0.9975	ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	6401	0.9400	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	506	0.6039	ug/kg	97
97)	1,2,4-Trichlorobenzene	20.42	180	5061	1.0414	ug/kg	97
98)	Hexachlorobutadiene	20.57	225	2132	0.9185	ug/kg	94
99)	Naphthalene	20.80	128	12603	1.0234	ug/kg	99
100)	1,2,3-Trichlorobenzene	21.10	180	4927	1.0461	ug/kg	93

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974141.D Vial: 4
Acq On : 4 May 2016 13:21 Operator: ADC
Sample : WG567358-04 1.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 5 16:42 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

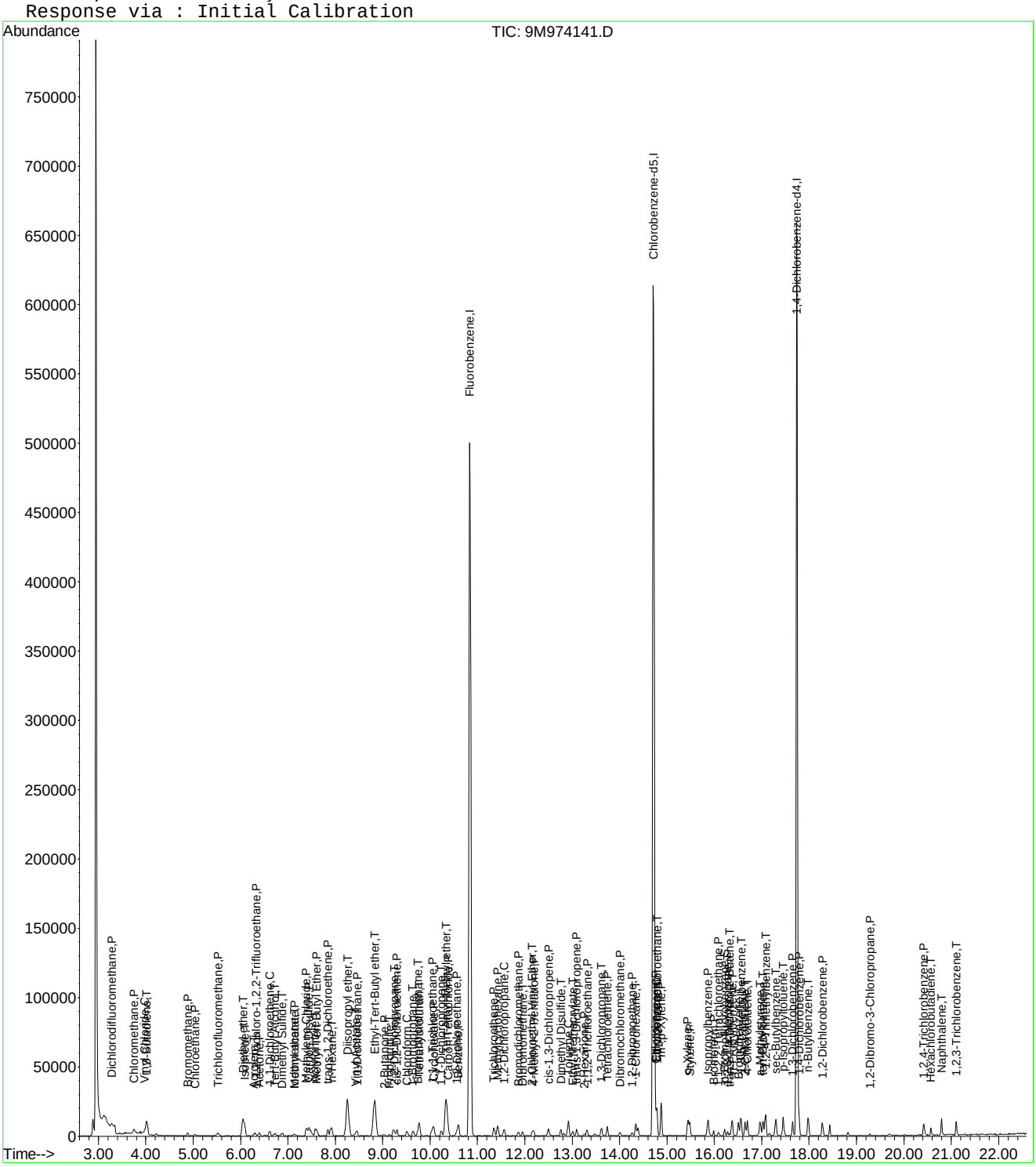

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\050416\9M974141.D Vial: 4
Acq On : 4 May 2016 13:21 Operator: ADC
Sample : WG567358-04 1.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	-1.0000	0.7634	0.0	100	0.00
3	P	Chloromethane	-1.0000	1.1826	0.0	100	0.00
4	C	Vinyl Chloride	1.0000	0.5481	45.2#	100	0.00
5	T	1,3-Butadiene	1.0000	0.4980	50.2#	100	0.00
6	P	Bromomethane	1.0000	0.8902	11.0	100	0.00
7	P	Chloroethane	-1.0000	0.8264	0.0	100	0.00
8	P	Trichlorofluoromethane	1.0000	0.8995	10.0	100	0.00
9	T	Diethyl ether	5.0000	4.3807	12.4	100	0.00
10	T	Isoprene	-1.0000	0.7826	0.0	100	0.00
11	T	Acrolein	2.5000	2.0431	18.3	100	-0.01
12	P	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.6126	0.0	100	0.03
13	P	Acetone	-1.0000	1.0942	0.0	0	0.00
14	C	1,1-Dichloroethene	1.0000	0.8385	16.1	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	10.8323	0.0	100	0.00
16	T	Dimethyl Sulfide	1.0000	1.0027	-0.3	100	0.00
17	T	Iodomethane	-1.0000	2.6496	0.0	100	0.00
18	P	Methyl acetate	-1.0000	0.8231	0.0	100	0.00
19	P	Methylene Chloride	-1.0000	1.0598	0.0	100	0.00
20	P	Carbon Disulfide	-1.0000	0.9871	0.0	100	0.00
21	T	Acrylonitrile	2.5000	2.2578	9.7	100	0.00
22	P	Methyl Tert Butyl Ether	1.0000	0.8630	13.7	100	0.00
23	P	trans-1,2-Dichloroethene	1.0000	0.8678	13.2	100	0.00
24	T	n-Hexane	-1.0000	0.9692	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	4.4861	10.3	100	0.00
26	T	Vinyl Acetate	-1.0000	0.9039	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	0.8685	13.2	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.4630	10.7	100	0.00
29	P	2-Butanone	-1.0000	1.0544	0.0	100	0.02
30	T	Propionitrile	5.0000	6.1109	-22.2	100	0.00
31	T	2,2-Dichloropropane	-1.0000	0.8492	0.0	100	0.00
32	P	cis-1,2-Dichloroethene	1.0000	0.8633	13.7	100	0.00
33	C	Chloroform	1.0000	0.8361	16.4	100	0.00
34	T	1-Bromopropane	-1.0000	0.6930	0.0	100	-0.01
35	T	Bromochloromethane	1.0000	0.8250	17.5	100	0.00
36	T	Tetrahydrofuran	-1.0000	6.8188	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	1.0000	0.8129	18.7	100	0.00
39	P	Cyclohexane	1.0000	0.9613	3.9	100	0.00
40	T	1,1-Dichloropropene	1.0000	0.8193	18.1	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	4.4925	10.2	100	0.00
42	P	Carbon Tetrachloride	-1.0000	0.7082	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	1.0000	0.8788	12.1	100	0.00
46	P	Benzene	1.0000	0.8946	10.5	100	0.00
47	P	Trichloroethene	1.0000	0.9038	9.6	100	0.00
48	P	Methylcyclohexane	1.0000	0.9350	6.5	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.8559	14.4	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.85#
51	P	Bromodichloromethane	-1.0000	0.7238	0.0	100	0.00
52	T	Dibromomethane	1.0000	0.9389	6.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.6545	0.0	100	0.00
54	P	4-Methyl-2-Pentanone	-1.0000	0.4602	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\050416\9M974141.D Vial: 4
Acq On : 4 May 2016 13:21 Operator: ADC
Sample : WG567358-04 1.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	-1.0000	0.8368	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.6943	0.0	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.1982	0.0	100	0.00
59	C	Toluene	1.0000	0.9474	5.3	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.6709	0.0	100	0.00
61	P	trans-1,3-Dichloropropene	-1.0000	0.7366	0.0	100	0.00
62	P	1,1,2-Trichloroethane	1.0000	0.7865	21.3	100	0.00
63	P	2-Hexanone	-1.0000	0.6363	0.0	100	0.00
64	T	1,3-Dichloropropane	1.0000	0.9325	6.8	100	0.00
65	P	Tetrachloroethene	1.0000	0.9176	8.2	100	0.00
66	P	Dibromochloromethane	-1.0000	0.8549	0.0	100	0.00
67	P	1,2-Dibromoethane	-1.0000	0.9177	0.0	100	0.00
68	T	1-Chlorohexane	1.0000	0.8740	12.6	100	0.00
69	P	Chlorobenzene	1.0000	0.9101	9.0	100	0.00
70	T	1,1,1,2-Tetrachloroethane	-1.0000	0.7900	0.0	100	0.00
71	C	Ethylbenzene	1.0000	0.8983	10.2	100	0.00
72	P	m-,p-Xylene	2.0000	1.6864	15.7	100	0.00
73	P	o-Xylene	1.0000	0.8898	11.0	100	0.00
74	P	Styrene	1.0000	0.8188	18.1	100	0.00
75	P	Bromoform	-1.0000	0.5940	0.0	100	0.00
76	P	Isopropylbenzene	1.0000	0.8937	10.6	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	1.0000	0.9096	9.0	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.7315	0.0	100	0.00
80	T	1,2,3-Trichloropropane	1.0000	0.8239	17.6	100	-0.01
81	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.4617	0.0	100	0.00
82	T	n-Propylbenzene	1.0000	0.5755	42.5#	100	0.00
83	T	Bromobenzene	1.0000	0.9420	5.8	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	1.1610	0.0	100	0.00
85	T	2-Chlorotoluene	-1.0000	1.0017	0.0	100	0.00
86	T	4-Chlorotoluene	1.0000	1.0612	-6.1	100	0.00
87	T	a-Methylstyrene	-1.0000	0.8071	0.0	100	0.00
88	T	tert-Butylbenzene	-1.0000	0.9180	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	1.0000	0.7350	26.5#	100	0.00
90	T	sec-Butylbenzene	1.0000	0.9739	2.6	100	0.00
91	T	p-Isopropyltoluene	-1.0000	1.0217	0.0	100	0.00
92	P	1,3-Dichlorobenzene	1.0000	0.9571	4.3	100	0.00
93	P	1,4-Dichlorobenzene	1.0000	1.0562	-5.6	100	0.00
94	T	n-Butylbenzene	1.0000	0.9975	0.2	100	0.00
95	P	1,2-Dichlorobenzene	1.0000	0.9400	6.0	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	-1.0000	0.6039	0.0	0	0.00
97	P	1,2,4-Trichlorobenzene	1.0000	1.0414	-4.1	100	0.00
98	T	Hexachlorobutadiene	1.0000	0.9185	8.1	100	0.00
99	T	Naphthalene	-1.0000	1.0234	0.0	100	0.00
100	T	1,2,3-Trichlorobenzene	1.0000	1.0461	-4.6	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 1
9M974141.D 8260SL.M Thu May 05 16:47:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974142.D Vial: 5
Acq On : 4 May 2016 13:52 Operator: ADC
Sample : WG567358-05 2.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 16:42:24 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	644115	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	486344	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	249239	50.00 ug/kg	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/kg	
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	12.82	98	1460	0.1257 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	0.26%#	
79) p-Bromofluorobenzene	16.21	95	2444	0.5656 ug/kg	-0.01
Spiked Amount 50.000	Range 74 - 121		Recovery =	1.14%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	10046	2.2858 ug/kg	87
3) Chloromethane	3.76	50	13372	2.4684 ug/kg	85
4) Vinyl Chloride	3.99	62	11521	2.5803 ug/kg	100
5) 1,3-Butadiene	4.03	54	8138	2.6916 ug/kg	89
6) Bromomethane	4.87	94	7077	2.6085 ug/kg	99
7) Chloroethane	5.04	64	5843	2.2601 ug/kg	88
8) Trichlorofluoromethane	5.53	101	12969	2.3501 ug/kg#	97
9) Diethyl ether	6.05	59	65304	21.0511 ug/kg	99
10) Isoprene	6.09	67	9828	2.2415 ug/kg	97
11) Acrolein	6.29	56	5702	11.0297 ug/kg	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	7061	2.1863 ug/kg	94
13) Acetone	6.39	43	6336	2.5821 ug/kg	96
14) 1,1-Dichloroethene	6.62	61	12844	2.3849 ug/kg	98
15) Tert-Butyl Alcohol	6.72	59	22928	41.2048 ug/kg	96
16) Dimethyl Sulfide	6.88	62	5197	2.3904 ug/kg	95
17) Iodomethane	7.14	142	2192	3.6444 ug/kg	90
18) Methyl acetate	7.14	43	7934	2.2834 ug/kg#	78
19) Methylene Chloride	7.40	84	8198	2.4023 ug/kg	88
20) Carbon Disulfide	7.44	76	27056	2.5651 ug/kg	100
21) Acrylonitrile	7.58	53	14817	9.9807 ug/kg	99
22) Methyl Tert Butyl Ether	7.60	73	22659	2.3764 ug/kg	97
23) trans-1,2-Dichloroethene	7.84	61	12600	2.4102 ug/kg	97
24) n-Hexane	7.91	57	15578	2.5203 ug/kg	96
25) Diisopropyl ether	8.25	45	260817	21.3399 ug/kg	99
26) Vinyl Acetate	8.43	43	15284	2.3036 ug/kg	91
27) 1,1-Dichloroethane	8.46	63	15837	2.4517 ug/kg	95
28) Ethyl-Tert-Butyl ether	8.83	59	247082	21.2454 ug/kg	99
29) 2-Butanone	9.03	43	4766	2.6160 ug/kg#	65
30) Propionitrile	9.13	54	11119	20.9161 ug/kg	86
31) 2,2-Dichloropropane	9.24	77	11847	2.4435 ug/kg	88
32) cis-1,2-Dichloroethene	9.31	96	7692	2.2165 ug/kg	97
33) Chloroform	9.51	83	12652	2.3162 ug/kg	96
34) 1-Bromopropane	9.64	122	1345	2.2832 ug/kg	84
35) Bromochloromethane	9.75	130	4980	2.2454 ug/kg	90
36) Tetrahydrofuran	9.77	42	27615	21.4988 ug/kg	99
38) 1,1,1-Trichloroethane	10.05	97	11924	2.4573 ug/kg	97
39) Cyclohexane	10.07	56	17145	2.3845 ug/kg	96
40) 1,1-Dichloropropene	10.24	75	9764	2.3207 ug/kg	94
41) Tert-Amyl-Methyl ether	10.34	73	187212	21.1293 ug/kg	98
42) Carbon Tetrachloride	10.38	117	11057	2.3290 ug/kg	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974142.D Vial: 5
Acq On : 4 May 2016 13:52 Operator: ADC
Sample : WG567358-05 2.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 16:42:24 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.55	62	11438	2.3507	ug/kg	95
46)	Benzene	10.59	78	31356	2.4088	ug/kg	98
47)	Trichloroethene	11.34	130	8398	2.3602	ug/kg	94
48)	Methylcyclohexane	11.43	83	13062	2.3167	ug/kg	93
49)	1,2-Dichloropropane	11.55	63	8654	2.4174	ug/kg	97
50)	1,4-Dioxane	11.86	88	1577	50.4271	ug/kg	98
51)	Bromodichloromethane	11.86	83	9631	2.2521	ug/kg	93
52)	Dibromomethane	11.96	174	4813	2.4407	ug/kg	98
53)	2-Chloroethyl Vinyl Ether	12.16	63	4134	1.9361	ug/kg	94
54)	4-Methyl-2-Pentanone	12.19	58	3195	1.9643	ug/kg#	76
55)	cis-1,3-Dichloropropene	12.49	75	11735	2.2785	ug/kg	95
56)	Dimethyl Disulfide	12.76	94	11065	1.8915	ug/kg	95
59)	Toluene	12.92	91	32478	2.3784	ug/kg	98
60)	Ethyl Methacrylate	13.01	69	8584	2.0935	ug/kg	95
61)	trans-1,3-Dichloropropene	13.09	75	10342	2.1982	ug/kg	95
62)	1,1,2-Trichloroethane	13.32	97	6589	2.3829	ug/kg	98
63)	2-Hexanone	13.24	43	5259	1.8774	ug/kg#	79
64)	1,3-Dichloropropane	13.61	76	11459	2.3963	ug/kg	100
65)	Tetrachloroethene	13.74	164	6442	2.2940	ug/kg	95
66)	Dibromochloromethane	14.00	129	7664	2.1885	ug/kg	96
67)	1,2-Dibromoethane	14.27	107	6886	2.3395	ug/kg	97
68)	1-Chlorohexane	14.34	91	10852	2.4265	ug/kg	88
69)	Chlorobenzene	14.76	112	22751	2.4177	ug/kg	72
70)	1,1,1,2-Tetrachloroethane	14.79	131	7912	2.2866	ug/kg	100
71)	Ethylbenzene	14.79	106	11926	2.3534	ug/kg	95
72)	m-,p-Xylene	14.88	106	29740	4.7554	ug/kg	98
73)	o-Xylene	15.44	106	14399	2.3683	ug/kg	98
74)	Styrene	15.48	104	21578	2.1871	ug/kg	98
75)	Bromoform	15.99	173	4940	2.0046	ug/kg	93
76)	Isopropylbenzene	15.86	105	35890	2.3500	ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.08	83	8178	2.2452	ug/kg#	97
80)	1,2,3-Trichloropropane	16.28	110	2764	2.4393	ug/kg#	10
81)	trans-1,4-Dichloro-2-Buten	16.32	53	2781	2.0478	ug/kg#	1
82)	n-Propylbenzene	16.38	91	42787	2.4270	ug/kg	95
83)	Bromobenzene	16.51	156	9335	2.4208	ug/kg	88
84)	1,3,5-Trimethylbenzene	16.56	105	31768	2.6664	ug/kg	100
85)	2-Chlorotoluene	16.65	91	25758	2.4898	ug/kg	98
86)	4-Chlorotoluene	16.69	91	24021	2.4543	ug/kg	97
87)	a-Methylstyrene	16.97	118	12950	2.0962	ug/kg	98
88)	tert-Butylbenzene	17.02	134	6535	2.4517	ug/kg	79
89)	1,2,4-Trimethylbenzene	17.08	105	34583	2.3704	ug/kg	97
90)	sec-Butylbenzene	17.29	105	40038	2.5037	ug/kg	96
91)	p-Isopropyltoluene	17.45	119	31667	2.4894	ug/kg	99
92)	1,3-Dichlorobenzene	17.65	146	18672	2.4604	ug/kg	96
93)	1,4-Dichlorobenzene	17.78	146	18935	2.4313	ug/kg	77
94)	n-Butylbenzene	17.98	91	29222	2.4148	ug/kg	99
95)	1,2-Dichlorobenzene	18.28	146	17242	2.3624	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.28	157	1710	1.9041	ug/kg	88
97)	1,2,4-Trichlorobenzene	20.42	180	12364	2.3737	ug/kg	96
98)	Hexachlorobutadiene	20.58	225	5980	2.4037	ug/kg	96
99)	Naphthalene	20.80	128	28856	2.1861	ug/kg	98
100)	1,2,3-Trichlorobenzene	21.10	180	11124	2.2036	ug/kg	98

(#) = qualifier out of range (m) = manual integration
9M974142.D 8260SL.M Thu May 05 16:48:28 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974142.D Vial: 5
Acq On : 4 May 2016 13:52 Operator: ADC
Sample : WG567358-05 2.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 5 16:42 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

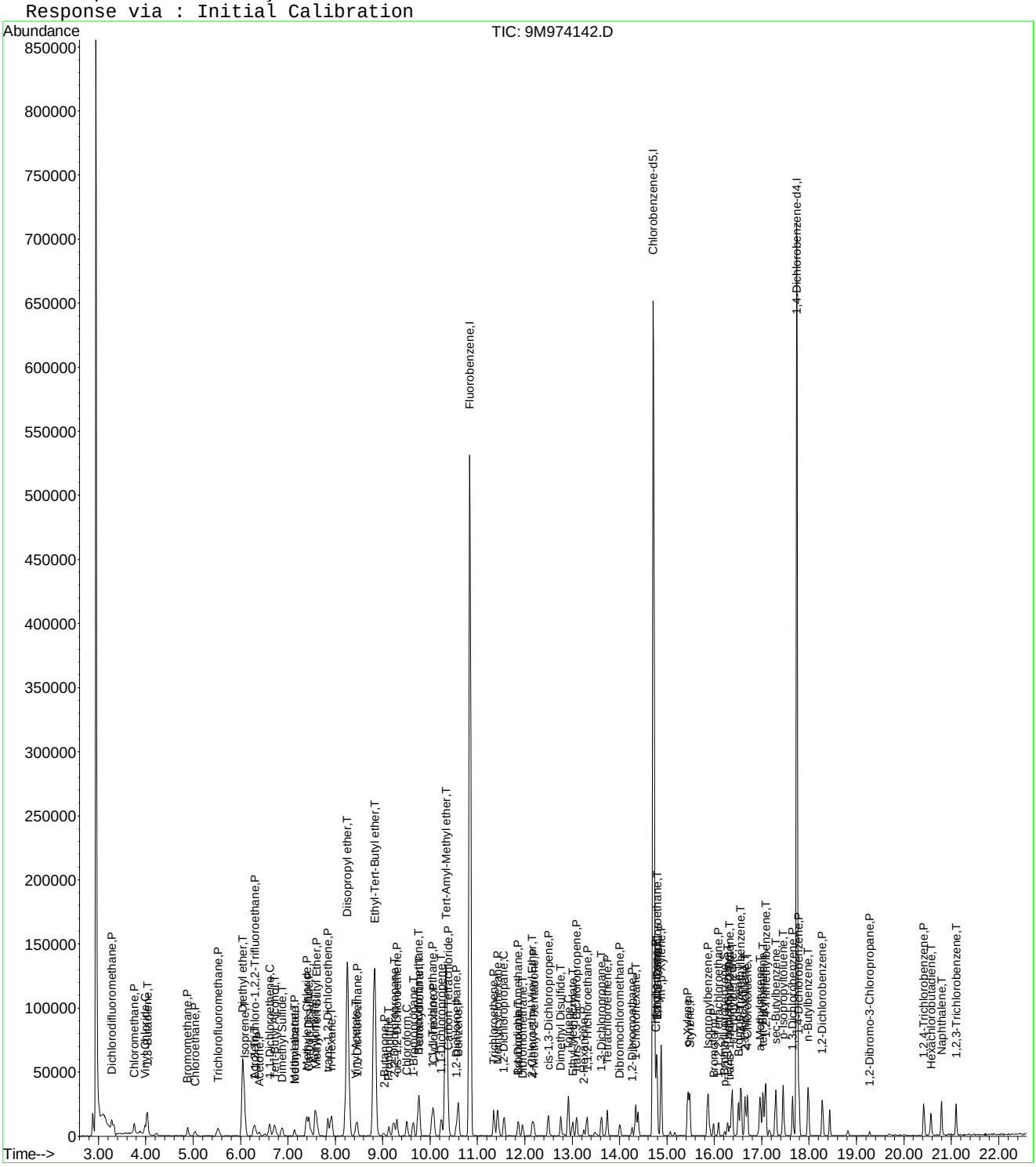

9M974142.D 8260SL.M Thu May 05 16:48:28 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\050416\9M974142.D Vial: 5
Acq On : 4 May 2016 13:52 Operator: ADC
Sample : WG567358-05 2.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	2.0000	2.2858	-14.3	100	0.00
3	P	Chloromethane	2.0000	2.4684	-23.4	102	0.00
4	C	Vinyl Chloride	2.0000	2.5803	-29.0#	100	0.02
5	T	1,3-Butadiene	2.0000	2.6916	-34.6#	100	0.02
6	P	Bromomethane	2.0000	2.6086	-30.4#	100	0.00
7	P	Chloroethane	2.0000	2.2601	-13.0	100	0.00
8	P	Trichlorofluoromethane	2.0000	2.3501	-17.5	100	0.00
9	T	Diethyl ether	25.0000	21.0511	15.8	100	0.00
10	T	Isoprene	2.0000	2.2415	-12.1	100	0.00
11	T	Acrolein	12.5000	11.0298	11.8	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	2.0000	2.1863	-9.3	100	0.00
13	P	Acetone	-1.0000	2.5821	0.0	0	0.00
14	C	1,1-Dichloroethene	2.0000	2.3849	-19.2	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	41.2048	17.6	100	0.00
16	T	Dimethyl Sulfide	2.0000	2.3904	-19.5	100	0.00
17	T	Iodomethane	-1.0000	3.6444	0.0	100	0.00
18	P	Methyl acetate	2.0000	2.2834	-14.2	100	0.00
19	P	Methylene Chloride	2.0000	2.4023	-20.1	100	0.00
20	P	Carbon Disulfide	2.0000	2.5651	-28.3#	100	0.00
21	T	Acrylonitrile	12.5000	9.9807	20.2	100	0.00
22	P	Methyl Tert Butyl Ether	2.0000	2.3764	-18.8	100	0.00
23	P	trans-1,2-Dichloroethene	2.0000	2.4102	-20.5	100	0.00
24	T	n-Hexane	2.0000	2.5203	-26.0#	100	0.00
25	T	Diisopropyl ether	25.0000	21.3398	14.6	100	0.00
26	T	Vinyl Acetate	2.0000	2.3036	-15.2	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.4517	-22.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	21.2455	15.0	100	0.00
29	P	2-Butanone	-1.0000	2.6160	0.0	100	0.02
30	T	Propionitrile	25.0000	20.9161	16.3	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.4435	-22.2	100	0.00
32	P	cis-1,2-Dichloroethene	2.0000	2.2165	-10.8	100	0.00
33	C	Chloroform	2.0000	2.3162	-15.8	100	0.00
34	T	1-Bromopropane	2.0000	2.2832	-14.2	100	0.00
35	T	Bromochloromethane	2.0000	2.2454	-12.3	100	0.00
36	T	Tetrahydrofuran	25.0000	21.4988	14.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.80#
38	P	1,1,1-Trichloroethane	2.0000	2.4573	-22.9	100	0.00
39	P	Cyclohexane	2.0000	2.3845	-19.2	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.3207	-16.0	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	21.1292	15.5	100	0.00
42	P	Carbon Tetrachloride	2.0000	2.3289	-16.4	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.44#
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	2.0000	2.3507	-17.5	100	0.00
46	P	Benzene	2.0000	2.4088	-20.4	100	0.00
47	P	Trichloroethene	2.0000	2.3602	-18.0	100	0.00
48	P	Methylcyclohexane	2.0000	2.3167	-15.8	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.4173	-20.9#	100	0.00
50	T	1,4-Dioxane	50.0000	50.4271	-0.9	100	0.00
51	P	Bromodichloromethane	2.0000	2.2521	-12.6	100	0.00
52	T	Dibromomethane	2.0000	2.4407	-22.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	1.9361	3.2	100	0.00
54	P	4-Methyl-2-Pentanone	-1.0000	1.9643	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\050416\9M974142.D Vial: 5
Acq On : 4 May 2016 13:52 Operator: ADC
Sample : WG567358-05 2.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	2.0000	2.2785	-13.9	100	0.00
56	T	Dimethyl Disulfide	2.0000	1.8915	5.4	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.1257	0.0	100	0.00
59	C	Toluene	2.0000	2.3784	-18.9	100	0.00
60	T	Ethyl Methacrylate	-1.0000	2.0935	0.0	100	0.00
61	P	trans-1,3-Dichloropropene	2.0000	2.1982	-9.9	100	0.00
62	P	1,1,2-Trichloroethane	2.0000	2.3829	-19.1	100	0.00
63	P	2-Hexanone	-1.0000	1.8774	0.0	100	0.00
64	T	1,3-Dichloropropane	2.0000	2.3963	-19.8	100	0.00
65	P	Tetrachloroethene	2.0000	2.2940	-14.7	100	0.00
66	P	Dibromochloromethane	2.0000	2.1885	-9.4	100	0.00
67	P	1,2-Dibromoethane	-1.0000	2.3395	0.0	100	0.00
68	T	1-Chlorohexane	2.0000	2.4265	-21.3	100	0.00
69	P	Chlorobenzene	2.0000	2.4177	-20.9	100	0.00
70	T	1,1,1,2-Tetrachloroethane	2.0000	2.2866	-14.3	100	0.00
71	C	Ethylbenzene	2.0000	2.3534	-17.7	100	0.00
72	P	m-,p-Xylene	4.0000	4.7554	-18.9	100	0.00
73	P	o-Xylene	2.0000	2.3683	-18.4	100	0.00
74	P	Styrene	2.0000	2.1871	-9.4	100	0.00
75	P	Bromoform	2.0000	2.0046	-0.2	100	0.00
76	P	Isopropylbenzene	2.0000	2.3500	-17.5	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	2.0000	2.2452	-12.3	100	0.00
79	S	p-Bromofluorobenzene	-1.0000	0.5656	0.0	100	-0.01
80	T	1,2,3-Trichloropropane	2.0000	2.4393	-22.0	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	2.0000	2.0478	-2.4	100	0.00
82	T	n-Propylbenzene	2.0000	2.4270	-21.3	100	0.00
83	T	Bromobenzene	2.0000	2.4208	-21.0	100	0.00
84	T	1,3,5-Trimethylbenzene	-1.0000	2.6664	0.0	100	0.00
85	T	2-Chlorotoluene	2.0000	2.4898	-24.5	100	0.00
86	T	4-Chlorotoluene	2.0000	2.4543	-22.7	100	0.00
87	T	a-Methylstyrene	-1.0000	2.0962	0.0	100	0.00
88	T	tert-Butylbenzene	-1.0000	2.4517	0.0	100	0.00
89	T	1,2,4-Trimethylbenzene	2.0000	2.3704	-18.5	100	0.00
90	T	sec-Butylbenzene	2.0000	2.5037	-25.2#	100	0.00
91	T	p-Isopropyltoluene	-1.0000	2.4894	0.0	100	0.00
92	P	1,3-Dichlorobenzene	2.0000	2.4604	-23.0	100	0.00
93	P	1,4-Dichlorobenzene	2.0000	2.4313	-21.6	100	0.00
94	T	n-Butylbenzene	2.0000	2.4148	-20.7	100	0.00
95	P	1,2-Dichlorobenzene	2.0000	2.3624	-18.1	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	2.0000	1.9041	4.8	100	0.00
97	P	1,2,4-Trichlorobenzene	2.0000	2.3737	-18.7	100	0.00
98	T	Hexachlorobutadiene	2.0000	2.4037	-20.2	100	0.00
99	T	Naphthalene	2.0000	2.1861	-9.3	100	0.00
100	T	1,2,3-Trichlorobenzene	2.0000	2.2037	-10.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 2
9M974142.D 8260SL.M Thu May 05 16:48:25 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974143.D Vial: 6
Acq On : 4 May 2016 14:23 Operator: ADC
Sample : WG567358-06 5.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 16:50:02 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	612792	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	465827	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	239156	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	29986	9.5750 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 19.14%#		
43) 1,2-Dichloroethane-d4	10.43	65	34704	10.2348 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 20.46%#		
58) Toluene-d8	12.82	98	106758	9.5931 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 19.18%#		
79) p-Bromofluorobenzene	16.22	95	42010	10.1324 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 20.26%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	16624	3.9759 ug/kg	95
3) Chloromethane	3.74	50	22909	4.4451 ug/kg	99
4) Vinyl Chloride	3.98	62	19949	4.9253 ug/kg	96
5) 1,3-Butadiene	4.02	54	12285	4.9259 ug/kg	97
6) Bromomethane	4.88	94	11588	4.4896 ug/kg	95
7) Chloroethane	5.04	64	10121	4.1150 ug/kg	95
8) Trichlorofluoromethane	5.53	101	23843	4.5415 ug/kg	96
9) Diethyl ether	6.04	59	148261	50.2356 ug/kg	99
10) Isoprene	6.09	67	18518	4.4393 ug/kg	100
11) Acrolein	6.29	56	12420	25.2528 ug/kg	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	13278	4.3215 ug/kg	94
13) Acetone	6.38	43	8667	4.9883 ug/kg	94
14) 1,1-Dichloroethene	6.61	61	22322	4.3567 ug/kg	97
15) Tert-Butyl Alcohol	6.71	59	52819	99.7751 ug/kg	99
16) Dimethyl Sulfide	6.87	62	10785	4.7192 ug/kg	97
17) Iodomethane	7.12	142	4639	5.1838 ug/kg	95
18) Methyl acetate	7.13	43	15211	4.6014 ug/kg	96
19) Methylene Chloride	7.40	84	14755	4.5447 ug/kg	97
20) Carbon Disulfide	7.44	76	43288	4.3138 ug/kg	99
21) Acrylonitrile	7.57	53	34811	24.6473 ug/kg	95
22) Methyl Tert Butyl Ether	7.61	73	41147	4.5359 ug/kg	97
23) trans-1,2-Dichloroethene	7.84	61	21332	4.2891 ug/kg	100
24) n-Hexane	7.91	57	25701	4.3706 ug/kg	97
25) Diisopropyl ether	8.25	45	579094	49.8029 ug/kg	99
26) Vinyl Acetate	8.43	43	26677	4.2264 ug/kg	98
27) 1,1-Dichloroethane	8.46	63	27120	4.4130 ug/kg	98
28) Ethyl-Tert-Butyl ether	8.83	59	551903	49.8813 ug/kg	99
29) 2-Butanone	9.02	43	7636	4.4056 ug/kg	91
30) Propionitrile	9.13	54	26268	47.0300 ug/kg	98
31) 2,2-Dichloropropane	9.23	77	20068	4.3508 ug/kg	98
32) cis-1,2-Dichloroethene	9.31	96	14563	4.4110 ug/kg	95
33) Chloroform	9.51	83	22985	4.4229 ug/kg	98
34) 1-Bromopropane	9.65	122	2232	3.9826 ug/kg	84
35) Bromochloromethane	9.74	130	9198	4.3593 ug/kg	95
36) Tetrahydrofuran	9.77	42	60115	49.1930 ug/kg	99
38) 1,1,1-Trichloroethane	10.04	97	19770	4.2825 ug/kg	96
39) Cyclohexane	10.08	56	29222	4.2719 ug/kg	99
40) 1,1-Dichloropropene	10.23	75	17514	4.3756 ug/kg	99
41) Tert-Amyl-Methyl ether	10.34	73	419384	49.7522 ug/kg	98
42) Carbon Tetrachloride	10.38	117	18681	4.1359 ug/kg	98

(#) = qualifier out of range (m) = manual integration
9M974143.D 8260SL.M Thu May 05 16:50:03 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974143.D Vial: 6
Acq On : 4 May 2016 14:23 Operator: ADC
Sample : WG567358-06 5.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 16:50:02 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	21451	4.6338	ug/kg	96
46)	Benzene	10.59	78	53464	4.3171	ug/kg	98
47)	Trichloroethene	11.34	130	14468	4.2740	ug/kg	95
48)	Methylcyclohexane	11.43	83	22609	4.2149	ug/kg	98
49)	1,2-Dichloropropane	11.56	63	14702	4.3167	ug/kg	93
50)	1,4-Dioxane	11.85	88	3844	93.9572	ug/kg	98
51)	Bromodichloromethane	11.86	83	16726	4.1111	ug/kg	99
52)	Dibromomethane	11.95	174	8651	4.3484	ug/kg	96
53)	2-Chloroethyl Vinyl Ether	12.15	63	8162	4.0180	ug/kg	93
54)	4-Methyl-2-Pentanone	12.19	58	6398	4.1347	ug/kg	92
55)	cis-1,3-Dichloropropene	12.49	75	19923	4.0661	ug/kg	99
56)	Dimethyl Disulfide	12.76	94	23118	4.1538	ug/kg	94
59)	Toluene	12.91	91	55482	4.2420	ug/kg	100
60)	Ethyl Methacrylate	13.01	69	14851	3.7814	ug/kg	98
61)	trans-1,3-Dichloropropene	13.09	75	19277	4.2779	ug/kg	95
62)	1,1,2-Trichloroethane	13.32	97	12066	4.5558	ug/kg	100
63)	2-Hexanone	13.24	43	10531	3.9250	ug/kg#	79
64)	1,3-Dichloropropane	13.62	76	20183	4.4066	ug/kg	93
65)	Tetrachloroethene	13.74	164	11964	4.4481	ug/kg	97
66)	Dibromochloromethane	14.01	129	13451	4.0101	ug/kg	96
67)	1,2-Dibromoethane	14.26	107	11651	4.1327	ug/kg	89
68)	1-Chlorohexane	14.34	91	18035	4.2102	ug/kg	98
69)	Chlorobenzene	14.76	112	39290	4.3592	ug/kg	86
70)	1,1,1,2-Tetrachloroethane	14.79	131	13557	4.0907	ug/kg	98
71)	Ethylbenzene	14.78	106	20937	4.3135	ug/kg	97
72)	m-,p-Xylene	14.88	106	50140	8.3704	ug/kg	96
73)	o-Xylene	15.45	106	24478	4.2034	ug/kg	99
74)	Styrene	15.48	104	37817	4.0018	ug/kg	97
75)	Bromoform	15.99	173	8662	3.6697	ug/kg	97
76)	Isopropylbenzene	15.87	105	61128	4.1787	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	15603	4.4643	ug/kg	98
80)	1,2,3-Trichloropropane	16.28	110	4795	4.4101	ug/kg	97
81)	trans-1,4-Dichloro-2-Buten	16.32	53	5158	3.9582	ug/kg	85
82)	n-Propylbenzene	16.38	91	68455	4.3887	ug/kg	98
83)	Bromobenzene	16.51	156	16463	4.4492	ug/kg	70
84)	1,3,5-Trimethylbenzene	16.57	105	51598	4.5134	ug/kg	97
85)	2-Chlorotoluene	16.65	91	42549	4.2862	ug/kg	99
86)	4-Chlorotoluene	16.69	91	42239	4.4977	ug/kg	100
87)	a-Methylstyrene	16.97	118	23285	3.9280	ug/kg	98
88)	tert-Butylbenzene	17.02	134	11030	4.3125	ug/kg	89
89)	1,2,4-Trimethylbenzene	17.08	105	55721	4.3586	ug/kg	99
90)	sec-Butylbenzene	17.29	105	65352	4.2589	ug/kg	97
91)	p-Isopropyltoluene	17.45	119	53242	4.3619	ug/kg	98
92)	1,3-Dichlorobenzene	17.65	146	31713	4.3549	ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	32062	4.2905	ug/kg	86
94)	n-Butylbenzene	17.98	91	49006	4.2204	ug/kg	97
95)	1,2-Dichlorobenzene	18.29	146	29445	4.2045	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.28	157	3226	3.7436	ug/kg	89
97)	1,2,4-Trichlorobenzene	20.43	180	19616	3.9247	ug/kg	99
98)	Hexachlorobutadiene	20.58	225	9071	3.7999	ug/kg	95
99)	Naphthalene	20.80	128	51426	4.0603	ug/kg	99
100)	1,2,3-Trichlorobenzene	21.10	180	19213	3.9665	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974143.D Vial: 6
Acq On : 4 May 2016 14:23 Operator: ADC
Sample : WG567358-06 5.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 5 16:50 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

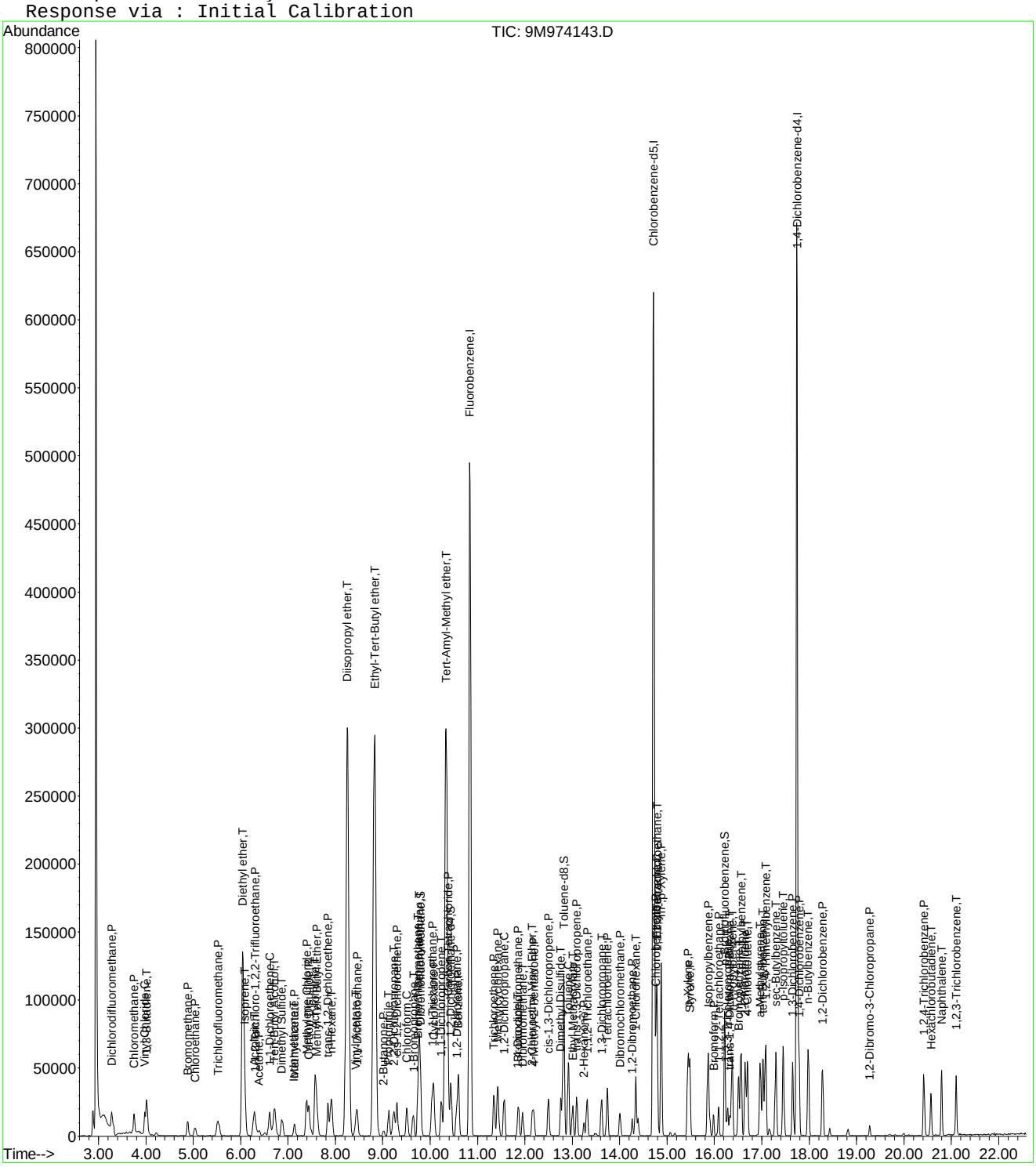

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\050416\9M974143.D Vial: 6
Acq On : 4 May 2016 14:23 Operator: ADC
Sample : WG567358-06 5.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	P	Dichlorodifluoromethane	5.0000	3.9759	20.5	100	0.00
3	P	Chloromethane	5.0000	4.4451	11.1	100	0.00
4	C	Vinyl Chloride	5.0000	4.9253	1.5	100	0.00
5	T	1,3-Butadiene	5.0000	4.9259	1.5	100	0.00
6	P	Bromomethane	5.0000	4.4896	10.2	100	0.00
7	P	Chloroethane	5.0000	4.1150	17.7	100	0.00
8	P	Trichlorofluoromethane	5.0000	4.5415	9.2	100	0.00
9	T	Diethyl ether	50.0000	50.2356	-0.5	100	0.00
10	T	Isoprene	5.0000	4.4393	11.2	100	0.00
11	T	Acrolein	25.0000	25.2528	-1.0	100	0.00
12	P	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.3215	13.6	100	0.00
13	P	Acetone	5.0000	4.9883	0.2	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.3567	12.9	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	99.7751	0.2	100	-0.01
16	T	Dimethyl Sulfide	5.0000	4.7192	5.6	100	0.00
17	T	Iodomethane	5.0000	5.1838	-3.7	100	-0.01
18	P	Methyl acetate	5.0000	4.6014	8.0	100	0.00
19	P	Methylene Chloride	5.0000	4.5447	9.1	100	0.00
20	P	Carbon Disulfide	5.0000	4.3138	13.7	100	0.00
21	T	Acrylonitrile	25.0000	24.6473	1.4	100	0.00
22	P	Methyl Tert Butyl Ether	5.0000	4.5359	9.3	100	0.00
23	P	trans-1,2-Dichloroethene	5.0000	4.2891	14.2	100	0.00
24	T	n-Hexane	5.0000	4.3706	12.6	100	0.00
25	T	Diisopropyl ether	50.0000	49.8029	0.4	100	0.00
26	T	Vinyl Acetate	5.0000	4.2264	15.5	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.4130	11.7	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	49.8813	0.2	100	0.00
29	P	2-Butanone	5.0000	4.4056	11.9	100	0.00
30	T	Propionitrile	50.0000	47.0300	5.9	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.3508	13.0	100	0.00
32	P	cis-1,2-Dichloroethene	5.0000	4.4110	11.8	100	0.00
33	C	Chloroform	5.0000	4.4229	11.5	100	0.00
34	T	1-Bromopropane	5.0000	3.9826	20.3	100	0.00
35	T	Bromochloromethane	5.0000	4.3593	12.8	100	0.00
36	T	Tetrahydrofuran	50.0000	49.1930	1.6	100	0.00
37	S	Dibromofluoromethane	10.0000	9.5750	4.3	100	0.00
38	P	1,1,1-Trichloroethane	5.0000	4.2825	14.4	100	0.00
39	P	Cyclohexane	5.0000	4.2719	14.6	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.3756	12.5	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	49.7522	0.5	100	0.00
42	P	Carbon Tetrachloride	5.0000	4.1359	17.3	100	0.00
43	S	1,2-Dichloroethane-d4	10.0000	10.2348	-2.3	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	P	1,2-Dichloroethane	5.0000	4.6338	7.3	100	0.00
46	P	Benzene	5.0000	4.3171	13.7	100	0.00
47	P	Trichloroethene	5.0000	4.2740	14.5	100	0.00
48	P	Methylcyclohexane	5.0000	4.2149	15.7	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.3167	13.7	100	0.00
50	T	1,4-Dioxane	100.0000	93.9572	6.0	100	0.00
51	P	Bromodichloromethane	5.0000	4.1111	17.8	100	0.00
52	T	Dibromomethane	5.0000	4.3484	13.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.0180	19.6	100	0.00
54	P	4-Methyl-2-Pentanone	5.0000	4.1347	17.3	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\050416\9M974143.D Vial: 6
Acq On : 4 May 2016 14:23 Operator: ADC
Sample : WG567358-06 5.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	5.0000	4.0661	18.7	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.1538	16.9	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	10.0000	9.5931	4.1	100	0.00
59	C	Toluene	5.0000	4.2420	15.2	100	0.00
60	T	Ethyl Methacrylate	5.0000	3.7814	24.4	100	0.00
61	P	trans-1,3-Dichloropropene	5.0000	4.2779	14.4	100	0.00
62	P	1,1,2-Trichloroethane	5.0000	4.5558	8.9	100	0.00
63	P	2-Hexanone	5.0000	3.9250	21.5	100	0.00
64	T	1,3-Dichloropropane	5.0000	4.4066	11.9	100	0.00
65	P	Tetrachloroethene	5.0000	4.4481	11.0	100	0.00
66	P	Dibromochloromethane	5.0000	4.0101	19.8	100	0.00
67	P	1,2-Dibromoethane	5.0000	4.1327	17.3	100	0.00
68	T	1-Chlorohexane	5.0000	4.2102	15.8	100	0.00
69	P	Chlorobenzene	5.0000	4.3592	12.8	100	0.00
70	T	1,1,1,2-Tetrachloroethane	5.0000	4.0907	18.2	100	0.00
71	C	Ethylbenzene	5.0000	4.3135	13.7	100	0.00
72	P	m-,p-Xylene	10.0000	8.3704	16.3	100	0.00
73	P	o-Xylene	5.0000	4.2034	15.9	100	0.00
74	P	Styrene	5.0000	4.0018	20.0	100	0.00
75	P	Bromoform	5.0000	3.6697	26.6#	100	0.00
76	P	Isopropylbenzene	5.0000	4.1787	16.4	100	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
78	P	1,1,2,2-Tetrachloroethane	5.0000	4.4643	10.7	100	0.00
79	S	p-Bromofluorobenzene	10.0000	10.1324	-1.3	100	0.00
80	T	1,2,3-Trichloropropane	5.0000	4.4101	11.8	100	0.00
81	T	trans-1,4-Dichloro-2-Butene	5.0000	3.9582	20.8	100	0.00
82	T	n-Propylbenzene	5.0000	4.3887	12.2	100	0.00
83	T	Bromobenzene	5.0000	4.4492	11.0	100	0.00
84	T	1,3,5-Trimethylbenzene	5.0000	4.5134	9.7	100	0.00
85	T	2-Chlorotoluene	5.0000	4.2862	14.3	100	0.00
86	T	4-Chlorotoluene	5.0000	4.4977	10.0	100	0.00
87	T	a-Methylstyrene	5.0000	3.9280	21.4	100	0.00
88	T	tert-Butylbenzene	5.0000	4.3125	13.8	100	0.00
89	T	1,2,4-Trimethylbenzene	5.0000	4.3586	12.8	100	0.00
90	T	sec-Butylbenzene	5.0000	4.2589	14.8	100	0.00
91	T	p-Isopropyltoluene	5.0000	4.3619	12.8	100	0.00
92	P	1,3-Dichlorobenzene	5.0000	4.3549	12.9	100	0.00
93	P	1,4-Dichlorobenzene	5.0000	4.2905	14.2	100	0.00
94	T	n-Butylbenzene	5.0000	4.2204	15.6	100	0.00
95	P	1,2-Dichlorobenzene	5.0000	4.2045	15.9	100	0.00
96	P	1,2-Dibromo-3-Chloropropane	5.0000	3.7436	25.1#	100	0.00
97	P	1,2,4-Trichlorobenzene	5.0000	3.9247	21.5	100	0.00
98	T	Hexachlorobutadiene	5.0000	3.7999	24.0	100	0.00
99	T	Naphthalene	5.0000	4.0603	18.8	100	0.00
100	T	1,2,3-Trichlorobenzene	5.0000	3.9665	20.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M974143.D 8260SL.M Thu May 05 16:49:41 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974144.D Vial: 7
Acq On : 4 May 2016 14:53 Operator: ADC
Sample : WG567358-07 20.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 16:50:03 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	626764	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	472169	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	244385	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	59118	18.4565 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 36.92%#		
43) 1,2-Dichloroethane-d4	10.43	65	64105	18.4843 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 36.96%#		
58) Toluene-d8	12.82	98	209097	18.5367 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 37.08%#		
79) p-Bromofluorobenzene	16.22	95	80223	18.9350 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 37.88%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	91595	21.4180 ug/kg	99
3) Chloromethane	3.75	50	102346	19.4159 ug/kg	97
4) Vinyl Chloride	3.98	62	97418	24.9996 ug/kg	100
5) 1,3-Butadiene	4.02	54	53098	24.4177 ug/kg	99
6) Bromomethane	4.88	94	55227	20.9199 ug/kg	100
7) Chloroethane	5.04	64	50030	19.8880 ug/kg	99
8) Trichlorofluoromethane	5.52	101	110735	20.6220 ug/kg	99
9) Diethyl ether	6.04	59	262213	86.8656 ug/kg	99
10) Isoprene	6.09	67	82028	19.2259 ug/kg	97
11) Acrolein	6.29	56	20357	40.4680 ug/kg	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.31	101	62875	20.0073 ug/kg	100
13) Acetone	6.39	43	26292	20.5231 ug/kg	98
14) 1,1-Dichloroethene	6.61	61	110174	21.0236 ug/kg	98
15) Tert-Butyl Alcohol	6.72	59	95410	176.2118 ug/kg	99
16) Dimethyl Sulfide	6.88	62	48204	19.2105 ug/kg	97
17) Iodomethane	7.13	142	29955	19.6154 ug/kg	100
18) Methyl acetate	7.14	43	67014	19.8201 ug/kg	100
19) Methylene Chloride	7.40	84	66039	19.8874 ug/kg	96
20) Carbon Disulfide	7.44	76	200201	19.5058 ug/kg	100
21) Acrylonitrile	7.58	53	62501	43.2661 ug/kg	99
22) Methyl Tert Butyl Ether	7.60	73	196497	21.1782 ug/kg	99
23) trans-1,2-Dichloroethene	7.84	61	105773	20.7931 ug/kg	99
24) n-Hexane	7.91	57	108702	18.0735 ug/kg	99
25) Diisopropyl ether	8.25	45	1042426	87.6517 ug/kg	100
26) Vinyl Acetate	8.43	43	127675	19.7762 ug/kg	99
27) 1,1-Dichloroethane	8.46	63	131668	20.9475 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.83	59	988417	87.3423 ug/kg	99
29) 2-Butanone	9.02	43	36354	20.5068 ug/kg	99
30) Propionitrile	9.13	54	46412	78.8356 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	92452	19.5969 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	70587	20.9036 ug/kg	98
33) Chloroform	9.51	83	112904	21.2411 ug/kg	99
34) 1-Bromopropane	9.64	122	10917	19.0450 ug/kg	95
35) Bromochloromethane	9.75	130	45535	21.0996 ug/kg	99
36) Tetrahydrofuran	9.77	42	105018	84.0220 ug/kg	99
38) 1,1,1-Trichloroethane	10.03	97	98111	20.7787 ug/kg	99
39) Cyclohexane	10.08	56	135199	19.3240 ug/kg	99
40) 1,1-Dichloropropene	10.23	75	85750	20.9456 ug/kg	97
41) Tert-Amyl-Methyl ether	10.34	73	742436	86.1130 ug/kg	99
42) Carbon Tetrachloride	10.38	117	93133	20.1598 ug/kg	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974144.D Vial: 7
Acq On : 4 May 2016 14:53 Operator: ADC
Sample : WG567358-07 20.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 16:50:03 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	100942	21.3193 ug/kg	99
46)	Benzene	10.59	78	258615	20.4171 ug/kg	99
47)	Trichloroethene	11.35	130	71680	20.7032 ug/kg	99
48)	Methylcyclohexane	11.43	83	104690	19.0819 ug/kg	97
49)	1,2-Dichloropropane	11.56	63	72335	20.7649 ug/kg	99
50)	1,4-Dioxane	11.85	88	7806	164.3126 ug/kg	96
51)	Bromodichloromethane	11.86	83	84420	20.2870 ug/kg	99
52)	Dibromomethane	11.95	174	44218	20.5494 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.15	63	41197	19.8285 ug/kg	99
54)	4-Methyl-2-Pentanone	12.19	58	31428	19.8575 ug/kg	97
55)	cis-1,3-Dichloropropene	12.49	75	101668	20.2867 ug/kg	99
56)	Dimethyl Disulfide	12.76	94	112163	19.7040 ug/kg	100
59)	Toluene	12.91	91	268663	20.2652 ug/kg	98
60)	Ethyl Methacrylate	13.01	69	79824	20.0519 ug/kg	99
61)	trans-1,3-Dichloropropene	13.09	75	93374	20.4430 ug/kg	99
62)	1,1,2-Trichloroethane	13.32	97	57109	21.2732 ug/kg	100
63)	2-Hexanone	13.24	43	52690	19.3743 ug/kg	96
64)	1,3-Dichloropropane	13.62	76	99082	21.3423 ug/kg	100
65)	Tetrachloroethene	13.74	164	55991	20.5374 ug/kg	99
66)	Dibromochloromethane	14.00	129	68465	20.1371 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	60466	21.1599 ug/kg	99
68)	1-Chlorohexane	14.34	91	82432	18.9851 ug/kg	96
69)	Chlorobenzene	14.76	112	188032	20.5820 ug/kg	97
70)	1,1,1,2-Tetrachloroethane	14.79	131	67933	20.2226 ug/kg	98
71)	Ethylbenzene	14.79	106	103530	21.0431 ug/kg	98
72)	m-,p-Xylene	14.88	106	243257	40.0639 ug/kg	98
73)	o-Xylene	15.45	106	119976	20.3259 ug/kg	100
74)	Styrene	15.48	104	197061	20.5729 ug/kg	99
75)	Bromoform	15.99	173	46560	19.4604 ug/kg	99
76)	Isopropylbenzene	15.87	105	303006	20.4354 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.08	83	73870	20.6834 ug/kg	100
80)	1,2,3-Trichloropropane	16.28	110	23813	21.4328 ug/kg	95
81)	trans-1,4-Dichloro-2-Buten	16.32	53	26678	20.0345 ug/kg	88
82)	n-Propylbenzene	16.38	91	337394	23.1272 ug/kg	99
83)	Bromobenzene	16.51	156	81516	21.5586 ug/kg	100
84)	1,3,5-Trimethylbenzene	16.57	105	260646	22.3116 ug/kg	99
85)	2-Chlorotoluene	16.65	91	212947	20.9924 ug/kg	99
86)	4-Chlorotoluene	16.69	91	206068	21.4728 ug/kg	98
87)	a-Methylstyrene	16.97	118	121783	20.1045 ug/kg	98
88)	tert-Butylbenzene	17.03	134	57196	21.8840 ug/kg	89
89)	1,2,4-Trimethylbenzene	17.08	105	260573	21.9386 ug/kg	100
90)	sec-Butylbenzene	17.29	105	327574	20.8910 ug/kg	99
91)	p-Isopropyltoluene	17.45	119	263893	21.1572 ug/kg	100
92)	1,3-Dichlorobenzene	17.65	146	151935	20.4177 ug/kg	99
93)	1,4-Dichlorobenzene	17.78	146	152830	20.0137 ug/kg	98
94)	n-Butylbenzene	17.98	91	237029	19.9764 ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	144366	20.1730 ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.28	157	16844	19.1282 ug/kg	95
97)	1,2,4-Trichlorobenzene	20.43	180	93417	18.2906 ug/kg	98
98)	Hexachlorobutadiene	20.58	225	47127	19.3196 ug/kg	99
99)	Naphthalene	20.80	128	253804	19.6102 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.10	180	91886	18.5640 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M974144.D 8260SL.M Thu May 05 16:50:04 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974144.D Vial: 7
Acq On : 4 May 2016 14:53 Operator: ADC
Sample : WG567358-07 20.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 5 16:50 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

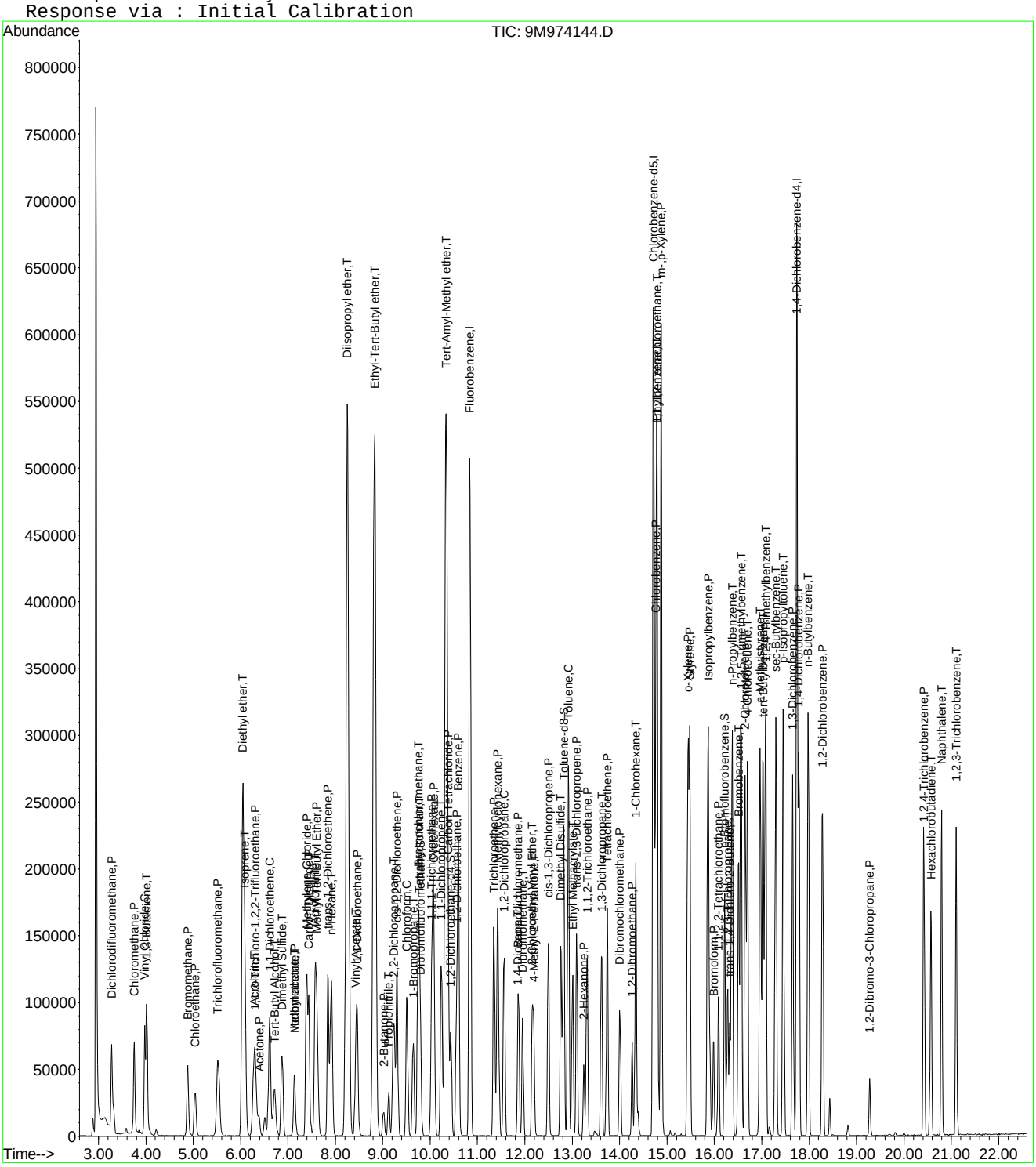

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974146.D Vial: 9
Acq On : 4 May 2016 15:54 Operator: ADC
Sample : WG567358-09 200.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 16:50:05 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	630494	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	484155	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	314739	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.79	111	642080	199.2697 ug/kg	-0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 398.54%#		
43) 1,2-Dichloroethane-d4	10.44	65	674594	193.3643 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 386.72%#		
58) Toluene-d8	12.81	98	2259462	195.3455 ug/kg	-0.01
Spiked Amount 50.000	Range 81 - 117		Recovery = 390.70%#		
79) p-Bromofluorobenzene	16.22	95	958847	175.7277 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 351.46%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	816959	189.9025 ug/kg	100
3) Chloromethane	3.75	50	1127261	212.5859 ug/kg	100
4) Vinyl Chloride	3.97	62	568497	170.3731 ug/kg	99
5) 1,3-Butadiene	4.01	54	268823	127.3920 ug/kg	98
6) Bromomethane	4.86	94	496572	186.9882 ug/kg	99
7) Chloroethane	5.01	64	515296	203.6290 ug/kg	99
8) Trichlorofluoromethane	5.50	101	1065052	197.1690 ug/kg	99
10) Isoprene	6.07	67	869523	202.5953 ug/kg	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	627089	198.3635 ug/kg	98
13) Acetone	6.40	43	224257	195.8066 ug/kg	99
14) 1,1-Dichloroethene	6.60	61	1066403	202.2895 ug/kg	99
15) Tert-Butyl Alcohol	6.77	59	1380	2.5336 ug/kg#	62
16) Dimethyl Sulfide	6.87	62	516563	200.6015 ug/kg	98
17) Iodomethane	7.12	142	483678	208.4790 ug/kg	99
18) Methyl acetate	7.13	43	656088	192.8972 ug/kg	98
19) Methylene Chloride	7.39	84	659986	197.5767 ug/kg	100
20) Carbon Disulfide	7.43	76	2029966	196.6116 ug/kg	99
21) Acrylonitrile	7.61	53	20110	13.8387 ug/kg#	32
22) Methyl Tert Butyl Ether	7.60	73	1845048	197.6809 ug/kg	100
23) trans-1,2-Dichloroethene	7.83	61	1036462	202.5443 ug/kg	100
24) n-Hexane	7.91	57	1172324	193.7647 ug/kg	100
26) Vinyl Acetate	8.42	43	1266836	195.0658 ug/kg	99
27) 1,1-Dichloroethane	8.45	63	1261184	199.4591 ug/kg	100
29) 2-Butanone	9.01	43	352233	197.5148 ug/kg	98
30) Propionitrile	9.03	54	266	3.7399 ug/kg#	1
31) 2,2-Dichloropropane	9.23	77	915242	192.8547 ug/kg	100
32) cis-1,2-Dichloroethene	9.30	96	703714	207.1642 ug/kg	98
33) Chloroform	9.51	83	1089321	203.7263 ug/kg	100
34) 1-Bromopropane	9.65	122	118997	206.3654 ug/kg	99
35) Bromochloromethane	9.74	130	446669	205.7493 ug/kg	98
36) Tetrahydrofuran	9.77	42	4628	3.6808 ug/kg	88
38) 1,1,1-Trichloroethane	10.04	97	972909	204.8309 ug/kg	99
39) Cyclohexane	10.07	56	1425776	202.5810 ug/kg	100
40) 1,1-Dichloropropene	10.24	75	844121	204.9685 ug/kg	99
42) Carbon Tetrachloride	10.39	117	929180	199.9429 ug/kg	100
45) 1,2-Dichloroethane	10.55	62	943639	198.1211 ug/kg	99
46) Benzene	10.60	78	2478939	194.5494 ug/kg	99
47) Trichloroethene	11.35	130	694196	199.3171 ug/kg	99
48) Methylcyclohexane	11.43	83	1126567	204.1250 ug/kg	99
49) 1,2-Dichloropropane	11.56	63	712696	203.3807 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974146.D Vial: 9
Acq On : 4 May 2016 15:54 Operator: ADC
Sample : WG567358-09 200.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 16:50:05 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
50)	1,4-Dioxane	11.86	88	873	38.3206	ug/kg#	8
51)	Bromodichloromethane	11.86	83	855671	204.4104	ug/kg	99
52)	Dibromomethane	11.96	174	432605	197.2760	ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	436088	208.6516	ug/kg	99
54)	4-Methyl-2-Pentanone	12.18	58	327861	205.9301	ug/kg	99
55)	cis-1,3-Dichloropropene	12.50	75	1015500	201.4332	ug/kg	100
56)	Dimethyl Disulfide	12.76	94	1249246	218.1601	ug/kg	99
59)	Toluene	12.92	91	2623928	193.0226	ug/kg	99
60)	Ethyl Methacrylate	13.00	69	876225	214.6599	ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	941287	200.9801	ug/kg	100
62)	1,1,2-Trichloroethane	13.31	97	557657	202.5851	ug/kg	100
63)	2-Hexanone	13.25	43	600577	215.3675	ug/kg	99
64)	1,3-Dichloropropane	13.61	76	934827	196.3769	ug/kg	99
65)	Tetrachloroethene	13.74	164	561144	200.7311	ug/kg	99
66)	Dibromochloromethane	14.00	129	728234	208.8879	ug/kg	100
67)	1,2-Dibromoethane	14.26	107	602563	205.6446	ug/kg	99
68)	1-Chlorohexane	14.34	91	914463	205.3978	ug/kg	99
69)	Chlorobenzene	14.76	112	1882070	200.9116	ug/kg	98
70)	1,1,1,2-Tetrachloroethane	14.80	131	702342	203.9003	ug/kg	100
71)	Ethylbenzene	14.79	106	1043591	206.8647	ug/kg	96
72)	m-,p-Xylene	14.88	106	2476651	397.8013	ug/kg	96
73)	o-Xylene	15.44	106	1218918	201.3923	ug/kg	98
74)	Styrene	15.48	104	2133914	217.2628	ug/kg	99
75)	Bromoform	15.98	173	549670	224.0549	ug/kg	99
76)	Isopropylbenzene	15.86	105	3108244	204.4374	ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.08	83	901519	195.9981	ug/kg	100
80)	1,2,3-Trichloropropane	16.28	110	274182	191.6143	ug/kg	98
81)	trans-1,4-Dichloro-2-Buten	16.33	53	345603	201.5235	ug/kg	98
82)	n-Propylbenzene	16.37	91	3500097	189.9067	ug/kg	99
83)	Bromobenzene	16.51	156	878845	180.4735	ug/kg	98
84)	1,3,5-Trimethylbenzene	16.56	105	2759856	183.4386	ug/kg	99
85)	2-Chlorotoluene	16.65	91	2342521	179.3074	ug/kg	99
86)	4-Chlorotoluene	16.70	91	2102107	170.0818	ug/kg	98
87)	a-Methylstyrene	16.97	118	1582385	202.8348	ug/kg	99
88)	tert-Butylbenzene	17.02	134	641243	190.5054	ug/kg	95
89)	1,2,4-Trimethylbenzene	17.08	105	2881484	192.5998	ug/kg	99
90)	sec-Butylbenzene	17.30	105	3633748	179.9403	ug/kg	99
91)	p-Isopropyltoluene	17.46	119	3067802	190.9773	ug/kg	99
92)	1,3-Dichlorobenzene	17.66	146	1791497	186.9344	ug/kg	99
93)	1,4-Dichlorobenzene	17.78	146	1836798	186.7691	ug/kg	99
94)	n-Butylbenzene	17.98	91	2857014	186.9611	ug/kg	99
95)	1,2-Dichlorobenzene	18.28	146	1836802	199.2934	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.28	157	240943	212.4554	ug/kg	99
97)	1,2,4-Trichlorobenzene	20.42	180	1290706	196.2245	ug/kg	100
98)	Hexachlorobutadiene	20.57	225	636811	202.7043	ug/kg	99
99)	Naphthalene	20.80	128	3259986	195.5791	ug/kg	98
100)	1,2,3-Trichlorobenzene	21.11	180	1272035	199.5471	ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974146.D Vial: 9
Acq On : 4 May 2016 15:54 Operator: ADC
Sample : WG567358-09 200.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 5 16:50 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

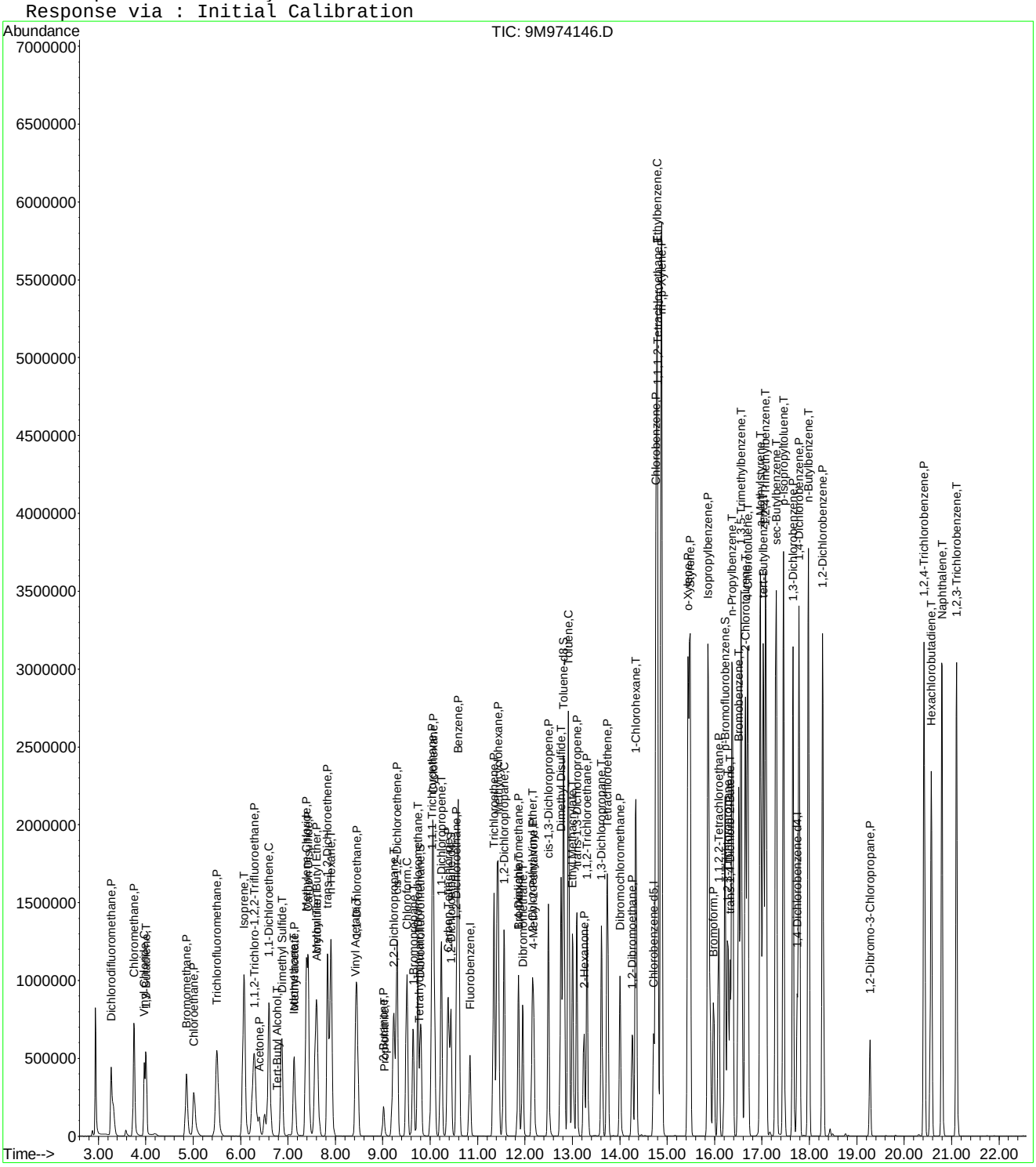

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974147.D Vial: 10
Acq On : 4 May 2016 16:24 Operator: ADC
Sample : WG567358-10 300.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 16:50:06 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	562617	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	452052	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	289236	50.00 ug/kg	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.80	111	1482	0.5154 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	1.04%#	
43) 1,2-Dichloroethane-d4	10.44	65	1998	0.6418 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	1.28%#	
58) Toluene-d8	12.82	98	9163	0.8485 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	1.70%#	
79) p-Bromofluorobenzene	16.22	95	9900	1.9744 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	3.94%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	1129159	294.1397 ug/kg	100
3) Chloromethane	3.75	50	1561962	330.1023 ug/kg	100
4) Vinyl Chloride	3.97	62	799368	325.9734 ug/kg	99
5) 1,3-Butadiene	4.01	54	364863	194.3460 ug/kg	97
6) Bromomethane	4.85	94	698836	294.9003 ug/kg	99
7) Chloroethane	5.01	64	727150	322.0142 ug/kg	100
8) Trichlorofluoromethane	5.50	101	1463020	303.5193 ug/kg	100
9) Diethyl ether	6.05	59	913278	337.0448 ug/kg	100
10) Isoprene	6.07	67	1220606	318.7072 ug/kg	99
11) Acrolein	6.29	56	85355	189.0244 ug/kg	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	876693	310.7765 ug/kg	99
13) Acetone	6.40	43	314378	309.2744 ug/kg	100
14) 1,1-Dichloroethene	6.60	61	1462548	310.9068 ug/kg	98
15) Tert-Butyl Alcohol	6.75	59	374880	771.3021 ug/kg	100
16) Dimethyl Sulfide	6.87	62	720197	313.1870 ug/kg	99
17) Iodomethane	7.12	142	689168	296.5093 ug/kg	99
18) Methyl acetate	7.13	43	926118	305.1393 ug/kg	98
19) Methylene Chloride	7.39	84	921735	309.2254 ug/kg	99
20) Carbon Disulfide	7.43	76	2814887	305.5269 ug/kg	100
21) Acrylonitrile	7.58	53	247246	190.6697 ug/kg	94
22) Methyl Tert Butyl Ether	7.60	73	2583302	310.1704 ug/kg	99
23) trans-1,2-Dichloroethene	7.83	61	1431429	313.4762 ug/kg	99
24) n-Hexane	7.90	57	1690582	313.1349 ug/kg	99
25) Diisopropyl ether	8.25	45	3545105	332.0742 ug/kg	99
26) Vinyl Acetate	8.42	43	1776079	306.4722 ug/kg	99
27) 1,1-Dichloroethane	8.45	63	1754423	310.9410 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	3393912	334.0996 ug/kg	100
29) 2-Butanone	9.01	43	505960	317.9463 ug/kg	98
30) Propionitrile	9.13	54	175167	320.8580 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	1274446	300.9427 ug/kg	100
32) cis-1,2-Dichloroethene	9.30	96	974287	321.4204 ug/kg	98
33) Chloroform	9.51	83	1520502	318.6738 ug/kg	99
34) 1-Bromopropane	9.65	122	168722	327.8994 ug/kg	98
35) Bromochloromethane	9.74	130	630758	325.5992 ug/kg	99
36) Tetrahydrofuran	9.77	42	355431	316.7930 ug/kg	99
38) 1,1,1-Trichloroethane	10.04	97	1342702	316.7897 ug/kg	99
39) Cyclohexane	10.07	56	1981516	315.5099 ug/kg	99
40) 1,1-Dichloropropene	10.24	75	1162054	316.2109 ug/kg	99
41) Tert-Amyl-Methyl ether	10.33	73	2585493	334.0753 ug/kg	100
42) Carbon Tetrachloride	10.38	117	1287065	310.3665 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974147.D Vial: 10
Acq On : 4 May 2016 16:24 Operator: ADC
Sample : WG567358-10 300.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 16:50:06 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.55	62	1304375	306.8990 ug/kg	99
46)	Benzene	10.60	78	3432125	301.8528 ug/kg	99
47)	Trichloroethene	11.34	130	971532	312.5991 ug/kg	99
48)	Methylcyclohexane	11.43	83	1577669	320.3489 ug/kg	99
49)	1,2-Dichloropropane	11.56	63	999130	319.5181 ug/kg	100
50)	1,4-Dioxane	11.85	88	37347	778.0801 ug/kg	97
51)	Bromodichloromethane	11.86	83	1205784	322.8002 ug/kg	99
52)	Dibromomethane	11.96	174	609941	311.5299 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.16	63	620236	332.5620 ug/kg	98
54)	4-Methyl-2-Pentanone	12.19	58	477798	336.3122 ug/kg	99
55)	cis-1,3-Dichloropropene	12.49	75	1429295	317.7175 ug/kg	99
56)	Dimethyl Disulfide	12.76	94	1681097	328.9943 ug/kg	96
59)	Toluene	12.92	91	3613124	284.6658 ug/kg	98
60)	Ethyl Methacrylate	13.01	69	1255087	329.3101 ug/kg	99
61)	trans-1,3-Dichloropropene	13.10	75	1324091	302.7923 ug/kg	99
62)	1,1,2-Trichloroethane	13.31	97	784779	305.3401 ug/kg	100
63)	2-Hexanone	13.24	43	899861	345.6073 ug/kg	100
64)	1,3-Dichloropropane	13.61	76	1316626	296.2222 ug/kg	99
65)	Tetrachloroethene	13.74	164	779456	298.6262 ug/kg	100
66)	Dibromochloromethane	14.00	129	1029106	316.1539 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	854447	312.3173 ug/kg	99
68)	1-Chlorohexane	14.34	91	1292715	310.9771 ug/kg	100
69)	Chlorobenzene	14.76	112	2633354	301.0749 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.80	131	1003278	311.9512 ug/kg	100
71)	Ethylbenzene	14.78	106	1464467	310.9079 ug/kg	95
72)	m-,p-Xylene	14.88	106	3462887	595.7112 ug/kg	94
73)	o-Xylene	15.44	106	1739722	307.8536 ug/kg	96
74)	Styrene	15.48	104	3059763	333.6509 ug/kg	99
75)	Bromoform	15.98	173	818932	357.5166 ug/kg	99
76)	Isopropylbenzene	15.86	105	4366556	307.5957 ug/kg	98
78)	1,1,2,2-Tetrachloroethane	16.08	83	1375472	325.4070 ug/kg	100
80)	1,2,3-Trichloropropane	16.28	110	411230	312.7317 ug/kg#	57
81)	trans-1,4-Dichloro-2-Buten	16.33	53	518749	329.1575 ug/kg	68
82)	n-Propylbenzene	16.38	91	4936254	291.7186 ug/kg	98
83)	Bromobenzene	16.52	156	1274789	284.8641 ug/kg	97
84)	1,3,5-Trimethylbenzene	16.56	105	3921720	283.6475 ug/kg	99
85)	2-Chlorotoluene	16.65	91	3267429	272.1567 ug/kg	98
86)	4-Chlorotoluene	16.69	91	3075513	270.7814 ug/kg	98
87)	a-Methylstyrene	16.97	118	2304225	321.4056 ug/kg	99
88)	tert-Butylbenzene	17.03	134	914369	295.5999 ug/kg	95
89)	1,2,4-Trimethylbenzene	17.09	105	4083436	297.3068 ug/kg	98
90)	sec-Butylbenzene	17.30	105	5128747	276.3651 ug/kg	98
91)	p-Isopropyltoluene	17.45	119	4340068	294.0013 ug/kg	98
92)	1,3-Dichlorobenzene	17.66	146	2609928	296.3466 ug/kg	99
93)	1,4-Dichlorobenzene	17.78	146	2676490	296.1472 ug/kg	99
94)	n-Butylbenzene	17.98	91	4094663	291.5783 ug/kg	99
95)	1,2-Dichlorobenzene	18.28	146	2727035	321.9730 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.28	157	376695	361.4443 ug/kg	97
97)	1,2,4-Trichlorobenzene	20.42	180	2004680	331.6417 ug/kg	100
98)	Hexachlorobutadiene	20.57	225	967036	334.9603 ug/kg	99
99)	Naphthalene	20.80	128	4965520	324.1676 ug/kg	97
100)	1,2,3-Trichlorobenzene	21.11	180	1969254	336.1601 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974147.D Vial: 10
Acq On : 4 May 2016 16:24 Operator: ADC
Sample : WG567358-10 300.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 5 16:50 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

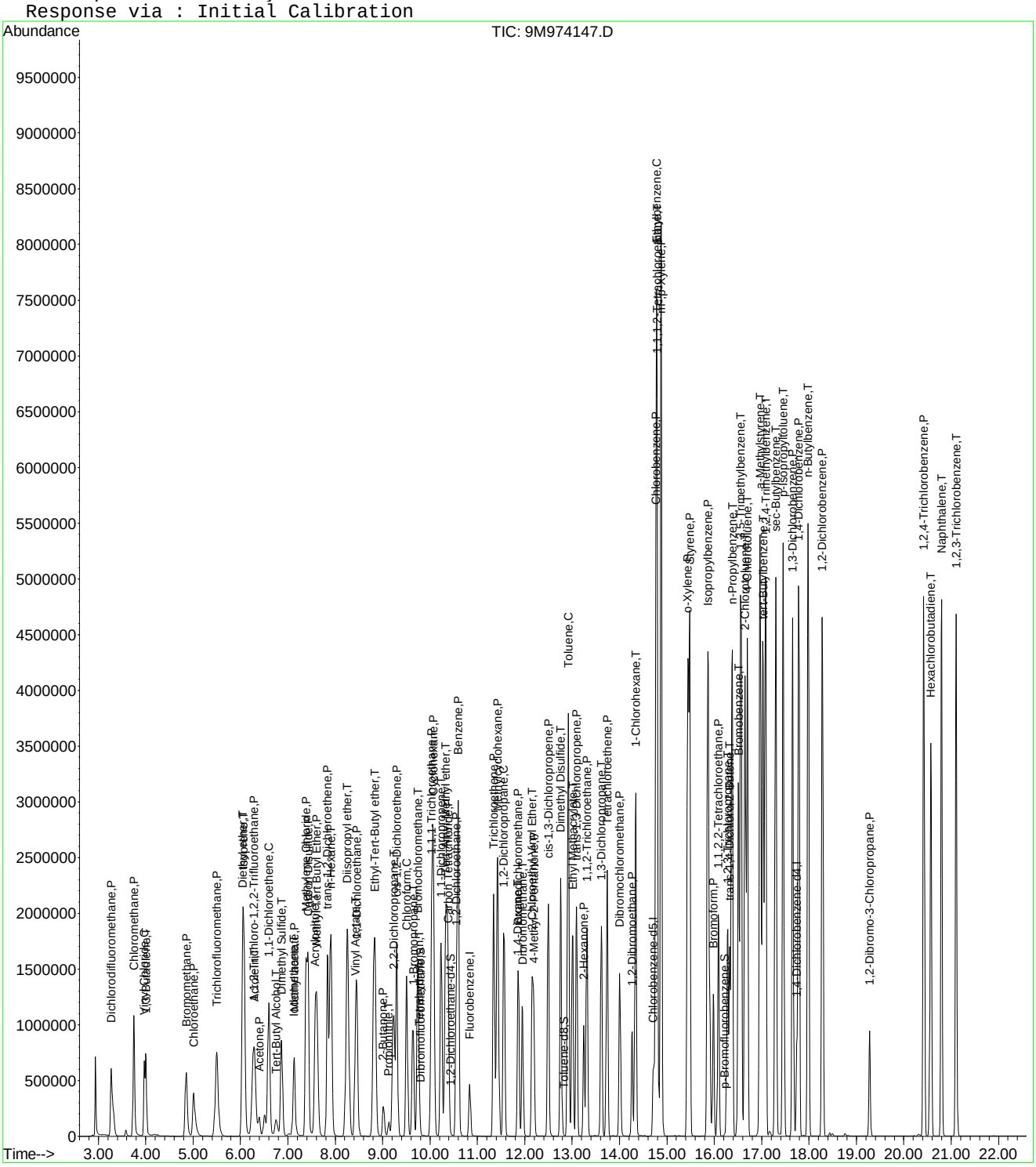

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974149.D Vial: 12
Acq On : 4 May 2016 17:25 Operator: ADC
Sample : WG567358-08 100.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 16:50:07 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	626603	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	475331	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	257003	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	339144	105.9070 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 211.82%#		
43) 1,2-Dichloroethane-d4	10.44	65	365242	105.3424 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 210.68%#		
58) Toluene-d8	12.82	98	1205010	106.1151 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 212.24%#		
79) p-Bromofluorobenzene	16.22	95	474532	106.5047 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 213.00%#		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.27	85	426803	99.8266 ug/kg	100
3) Chloromethane	3.74	50	464209	88.0870 ug/kg	100
4) Vinyl Chloride	3.97	62	389076	109.7057 ug/kg	100
5) 1,3-Butadiene	4.01	54	201746	95.9253 ug/kg	100
6) Bromomethane	4.87	94	240513	91.1295 ug/kg	98
7) Chloroethane	5.02	64	235616	93.6863 ug/kg	99
8) Trichlorofluoromethane	5.51	101	510609	95.1141 ug/kg	99
9) Diethyl ether	6.05	59	585312	193.9512 ug/kg	99
10) Isoprene	6.08	67	398296	93.3776 ug/kg	100
11) Acrolein	6.28	56	55231	109.8227 ug/kg	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	303721	96.6709 ug/kg	99
13) Acetone	6.38	43	106664	92.1911 ug/kg	98
14) 1,1-Dichloroethene	6.60	61	499257	95.2938 ug/kg	100
15) Tert-Butyl Alcohol	6.72	59	209845	387.6602 ug/kg	100
16) Dimethyl Sulfide	6.87	62	226390	88.6962 ug/kg	99
17) Iodomethane	7.12	142	180948	94.1277 ug/kg	100
18) Methyl acetate	7.13	43	310217	91.7736 ug/kg	98
19) Methylene Chloride	7.39	84	295313	88.9553 ug/kg	99
20) Carbon Disulfide	7.44	76	916684	89.3364 ug/kg	100
21) Acrylonitrile	7.58	53	151493	104.8976 ug/kg	100
22) Methyl Tert Butyl Ether	7.60	73	856464	92.3325 ug/kg	99
23) trans-1,2-Dichloroethene	7.84	61	478533	94.0951 ug/kg	100
24) n-Hexane	7.91	57	579599	96.3925 ug/kg	100
25) Diisopropyl ether	8.25	45	2293714	192.9149 ug/kg	100
26) Vinyl Acetate	8.42	43	610610	94.6048 ug/kg	100
27) 1,1-Dichloroethane	8.46	63	580810	92.4268 ug/kg	99
28) Ethyl-Tert-Butyl ether	8.82	59	2187686	193.3663 ug/kg	100
29) 2-Butanone	9.01	43	170463	96.1807 ug/kg	99
30) Propionitrile	9.13	54	110627	183.3787 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	444332	94.2086 ug/kg	99
32) cis-1,2-Dichloroethene	9.30	96	319478	94.6341 ug/kg	100
33) Chloroform	9.51	83	498603	93.8285 ug/kg	100
34) 1-Bromopropane	9.64	122	54606	95.2861 ug/kg	98
35) Bromochloromethane	9.74	130	204319	94.7000 ug/kg	100
36) Tetrahydrofuran	9.76	42	237013	189.6762 ug/kg	99
38) 1,1,1-Trichloroethane	10.03	97	446497	94.5867 ug/kg	99
39) Cyclohexane	10.07	56	653782	93.4693 ug/kg	99
40) 1,1-Dichloropropene	10.23	75	394358	96.3522 ug/kg	99
41) Tert-Amyl-Methyl ether	10.33	73	1680084	194.9182 ug/kg	100
42) Carbon Tetrachloride	10.38	117	432930	93.7373 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974149.D Vial: 12
Acq On : 4 May 2016 17:25 Operator: ADC
Sample : WG567358-08 100.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 16:50:07 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.55	62	435287	91.9579	ug/kg	99
46)	Benzene	10.59	78	1146709	90.5536	ug/kg	100
47)	Trichloroethene	11.34	130	328205	94.8192	ug/kg	98
48)	Methylcyclohexane	11.43	83	530535	96.7257	ug/kg	99
49)	1,2-Dichloropropane	11.56	63	322065	92.4778	ug/kg	99
50)	1,4-Dioxane	11.85	88	20374	392.6334	ug/kg	100
51)	Bromodichloromethane	11.86	83	384991	92.5412	ug/kg	99
52)	Dibromomethane	11.96	174	195690	89.9534	ug/kg	98
53)	2-Chloroethyl Vinyl Ether	12.16	63	205545	98.9562	ug/kg	99
54)	4-Methyl-2-Pentanone	12.19	58	149507	94.4888	ug/kg	98
55)	cis-1,3-Dichloropropene	12.49	75	468890	93.5859	ug/kg	100
56)	Dimethyl Disulfide	12.76	94	562186	98.7861	ug/kg	99
59)	Toluene	12.92	91	1213115	90.8964	ug/kg	99
60)	Ethyl Methacrylate	13.01	69	392053	97.8292	ug/kg	100
61)	trans-1,3-Dichloropropene	13.09	75	439375	95.5553	ug/kg	100
62)	1,1,2-Trichloroethane	13.32	97	255078	94.3847	ug/kg	99
63)	2-Hexanone	13.24	43	258472	94.4090	ug/kg	99
64)	1,3-Dichloropropane	13.61	76	427371	91.4434	ug/kg	99
65)	Tetrachloroethene	13.74	164	263447	95.9891	ug/kg	99
66)	Dibromochloromethane	14.00	129	321786	94.0152	ug/kg	100
67)	1,2-Dibromoethane	14.27	107	276443	96.0968	ug/kg	99
68)	1-Chlorohexane	14.34	91	434301	99.3593	ug/kg	99
69)	Chlorobenzene	14.76	112	856226	93.0992	ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.79	131	313430	92.6826	ug/kg	100
71)	Ethylbenzene	14.79	106	471334	95.1641	ug/kg	99
72)	m-,p-Xylene	14.88	106	1149390	188.0430	ug/kg	98
73)	o-Xylene	15.44	106	550164	92.5868	ug/kg	99
74)	Styrene	15.48	104	944244	97.9222	ug/kg	100
75)	Bromoform	15.99	173	225812	93.7535	ug/kg	100
76)	Isopropylbenzene	15.87	105	1432705	95.9821	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.08	83	336727	89.6535	ug/kg	99
80)	1,2,3-Trichloropropane	16.28	110	108156	92.5661	ug/kg	96
81)	trans-1,4-Dichloro-2-Buten	16.32	53	137668	98.3091	ug/kg	99
82)	n-Propylbenzene	16.38	91	1601829	106.2107	ug/kg	100
83)	Bromobenzene	16.51	156	376473	94.6776	ug/kg	98
84)	1,3,5-Trimethylbenzene	16.56	105	1226843	99.8632	ug/kg	100
85)	2-Chlorotoluene	16.65	91	1005297	94.2370	ug/kg	99
86)	4-Chlorotoluene	16.69	91	962252	95.3464	ug/kg	100
87)	a-Methylstyrene	16.97	118	643558	101.0254	ug/kg	99
88)	tert-Butylbenzene	17.03	134	271557	98.8002	ug/kg	98
89)	1,2,4-Trimethylbenzene	17.08	105	1245266	101.6706	ug/kg	100
90)	sec-Butylbenzene	17.29	105	1596268	96.8037	ug/kg	100
91)	p-Isopropyltoluene	17.45	119	1327446	101.2008	ug/kg	100
92)	1,3-Dichlorobenzene	17.65	146	735478	93.9843	ug/kg	99
93)	1,4-Dichlorobenzene	17.78	146	743062	92.5297	ug/kg	99
94)	n-Butylbenzene	17.98	91	1221571	97.8971	ug/kg	100
95)	1,2-Dichlorobenzene	18.29	146	698206	92.7740	ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.28	157	94330	101.8628	ug/kg	97
97)	1,2,4-Trichlorobenzene	20.42	180	522933	97.3608	ug/kg	99
98)	Hexachlorobutadiene	20.57	225	251531	98.0520	ug/kg	99
99)	Naphthalene	20.80	128	1351333	99.2845	ug/kg	99
100)	1,2,3-Trichlorobenzene	21.10	180	517118	99.3455	ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M974149.D 8260SL.M Thu May 05 16:50:08 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974149.D Vial: 12
Acq On : 4 May 2016 17:25 Operator: ADC
Sample : WG567358-08 100.0ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 5 16:50 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

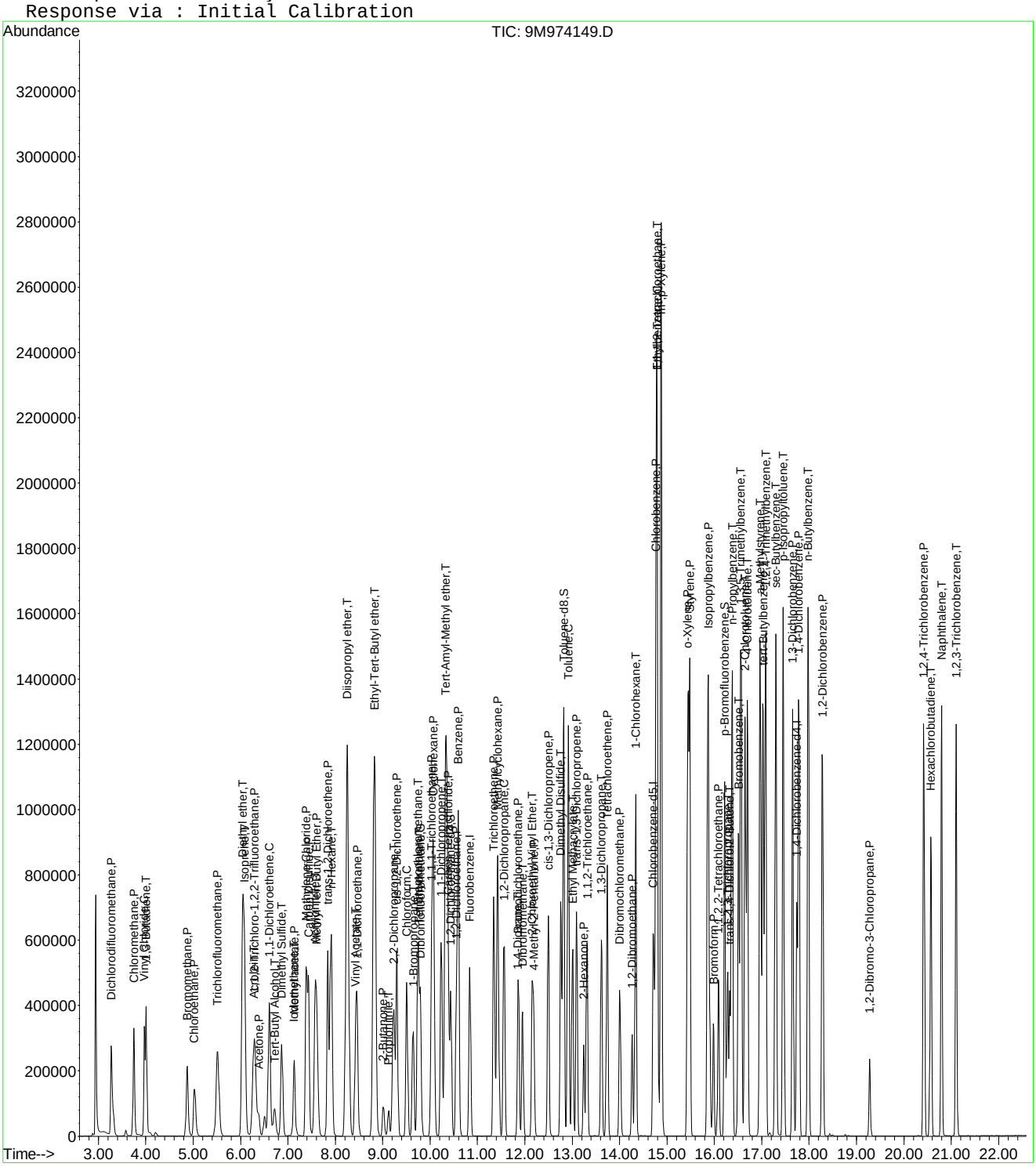

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974150.D Vial: 13
Acq On : 4 May 2016 17:56 Operator: ADC
Sample : WG567358-02 50ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 16:50:08 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	675036	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.71	117	505652	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	266170	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	183574	53.2129 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 106.42%		
43) 1,2-Dichloroethane-d4	10.44	65	192746	51.6028 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 103.20%		
58) Toluene-d8	12.82	98	649893	53.7988 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 107.60%		
79) p-Bromofluorobenzene	16.22	95	252945	54.8161 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 109.64%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	244751	53.1385 ug/kg	100
3) Chloromethane	3.75	50	253390	44.6327 ug/kg	100
4) Vinyl Chloride	3.97	62	186869	45.6530 ug/kg	100
5) 1,3-Butadiene	4.01	54	113456	49.5414 ug/kg	100
6) Bromomethane	4.88	94	146771	51.6210 ug/kg	100
7) Chloroethane	5.03	64	138736	51.2066 ug/kg	100
8) Trichlorofluoromethane	5.52	101	299952	51.8649 ug/kg	100
9) Diethyl ether	6.05	59	356986	109.8049 ug/kg	100
10) Isoprene	6.09	67	234584	51.0506 ug/kg	100
11) Acrolein	6.29	56	31974	59.0163 ug/kg	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	177309	52.3863 ug/kg	100
13) Acetone	6.39	43	66610	52.2165 ug/kg	100
14) 1,1-Dichloroethene	6.61	61	295121	52.2885 ug/kg	100
15) Tert-Butyl Alcohol	6.72	59	129189	221.5357 ug/kg	100
16) Dimethyl Sulfide	6.87	62	131987	48.1926 ug/kg	100
17) Iodomethane	7.13	142	95224	50.5500 ug/kg	100
18) Methyl acetate	7.13	43	190758	52.3842 ug/kg	100
19) Methylene Chloride	7.39	84	176557	49.3674 ug/kg	100
20) Carbon Disulfide	7.44	76	544181	49.2286 ug/kg	100
21) Acrylonitrile	7.58	53	91941	59.0946 ug/kg	100
22) Methyl Tert Butyl Ether	7.60	73	518165	51.8536 ug/kg	100
23) trans-1,2-Dichloroethene	7.84	61	282425	51.5494 ug/kg	100
24) n-Hexane	7.92	57	319189	49.2753 ug/kg	100
25) Diisopropyl ether	8.25	45	1391018	108.5987 ug/kg	100
26) Vinyl Acetate	8.43	43	372395	53.5573 ug/kg	100
27) 1,1-Dichloroethane	8.46	63	344476	50.8848 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.82	59	1325620	108.7628 ug/kg	100
29) 2-Butanone	9.01	43	103517	54.2170 ug/kg	100
30) Propionitrile	9.13	54	65894	102.8706 ug/kg	100
31) 2,2-Dichloropropane	9.23	77	258809	50.9363 ug/kg	100
32) cis-1,2-Dichloroethene	9.30	96	190475	52.3734 ug/kg	100
33) Chloroform	9.51	83	297693	52.0013 ug/kg	100
34) 1-Bromopropane	9.65	122	31855	51.5980 ug/kg	100
35) Bromochloromethane	9.74	130	123691	53.2163 ug/kg	100
36) Tetrahydrofuran	9.76	42	148286	110.1555 ug/kg	100
38) 1,1,1-Trichloroethane	10.04	97	263689	51.8524 ug/kg	100
39) Cyclohexane	10.07	56	386754	51.3259 ug/kg	100
40) 1,1-Dichloropropene	10.24	75	232697	52.7749 ug/kg	100
41) Tert-Amyl-Methyl ether	10.33	73	1018336	109.6675 ug/kg	100
42) Carbon Tetrachloride	10.38	117	255917	51.4351 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974150.D Vial: 13
Acq On : 4 May 2016 17:56 Operator: ADC
Sample : WG567358-02 50ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 16:50:08 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	10.55	62	260051	50.9962	ug/kg	100
46)	Benzene	10.60	78	683034	50.0680	ug/kg	100
47)	Trichloroethene	11.35	130	193782	51.9673	ug/kg	100
48)	Methylcyclohexane	11.43	83	311362	52.6937	ug/kg	100
49)	1,2-Dichloropropane	11.56	63	192678	51.3560	ug/kg	100
50)	1,4-Dioxane	11.85	88	11038	208.6697	ug/kg	100
51)	Bromodichloromethane	11.86	83	227209	50.6962	ug/kg	100
52)	Dibromomethane	11.96	174	119137	50.9633	ug/kg	100
53)	2-Chloroethyl Vinyl Ether	12.16	63	122574	54.7772	ug/kg	100
54)	4-Methyl-2-Pentanone	12.18	58	92440	54.2306	ug/kg	100
55)	cis-1,3-Dichloropropene	12.50	75	278272	51.5555	ug/kg	100
56)	Dimethyl Disulfide	12.76	94	325854	53.1502	ug/kg	100
59)	Toluene	12.92	91	726141	51.1458	ug/kg	100
60)	Ethyl Methacrylate	13.00	69	232734	54.5918	ug/kg	100
61)	trans-1,3-Dichloropropene	13.10	75	257629	52.6694	ug/kg	100
62)	1,1,2-Trichloroethane	13.31	97	154186	53.6313	ug/kg	100
63)	2-Hexanone	13.24	43	156300	53.6665	ug/kg	100
64)	1,3-Dichloropropane	13.61	76	257841	51.8613	ug/kg	100
65)	Tetrachloroethene	13.74	164	154731	52.9969	ug/kg	100
66)	Dibromochloromethane	14.00	129	192693	52.9226	ug/kg	100
67)	1,2-Dibromoethane	14.27	107	166049	54.2605	ug/kg	100
68)	1-Chlorohexane	14.34	91	247443	53.2154	ug/kg	100
69)	Chlorobenzene	14.76	112	509226	52.0490	ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.80	131	187295	52.0629	ug/kg	100
71)	Ethylbenzene	14.79	106	280057	53.1539	ug/kg	100
72)	m-,p-Xylene	14.88	106	674270	103.6974	ug/kg	100
73)	o-Xylene	15.44	106	327051	51.7388	ug/kg	100
74)	Styrene	15.48	104	554396	54.0457	ug/kg	100
75)	Bromoform	15.98	173	133392	52.0613	ug/kg	100
76)	Isopropylbenzene	15.86	105	846758	53.3258	ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.08	83	209968	53.9786	ug/kg	100
80)	1,2,3-Trichloropropane	16.28	110	65142	53.8321	ug/kg	100
81)	trans-1,4-Dichloro-2-Buten	16.33	53	79393	54.7422	ug/kg	100
82)	n-Propylbenzene	16.37	91	935132	59.6457	ug/kg	100
83)	Bromobenzene	16.51	156	222631	54.0603	ug/kg	100
84)	1,3,5-Trimethylbenzene	16.56	105	712777	56.0208	ug/kg	100
85)	2-Chlorotoluene	16.65	91	608843	55.1076	ug/kg	100
86)	4-Chlorotoluene	16.70	91	539340	51.6009	ug/kg	100
87)	a-Methylstyrene	16.97	118	367278	55.6694	ug/kg	100
88)	tert-Butylbenzene	17.02	134	159044	55.8719	ug/kg	100
89)	1,2,4-Trimethylbenzene	17.08	105	726383	57.0202	ug/kg	100
90)	sec-Butylbenzene	17.30	105	929884	54.4495	ug/kg	100
91)	p-Isopropyltoluene	17.46	119	762690	56.1428	ug/kg	100
92)	1,3-Dichlorobenzene	17.66	146	428932	52.9240	ug/kg	100
93)	1,4-Dichlorobenzene	17.78	146	425455	51.1551	ug/kg	100
94)	n-Butylbenzene	17.98	91	689114	53.3238	ug/kg	100
95)	1,2-Dichlorobenzene	18.28	146	402100	51.5889	ug/kg	100
96)	1,2-Dibromo-3-Chloropropan	19.28	157	50693	52.8558	ug/kg	100
97)	1,2,4-Trichlorobenzene	20.42	180	281493	50.6040	ug/kg	100
98)	Hexachlorobutadiene	20.57	225	138556	52.1518	ug/kg	100
99)	Naphthalene	20.80	128	749257	53.1531	ug/kg	100
100)	1,2,3-Trichlorobenzene	21.11	180	274614	50.9402	ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974150.D Vial: 13
Acq On : 4 May 2016 17:56 Operator: ADC
Sample : WG567358-02 50ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 5 16:50 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

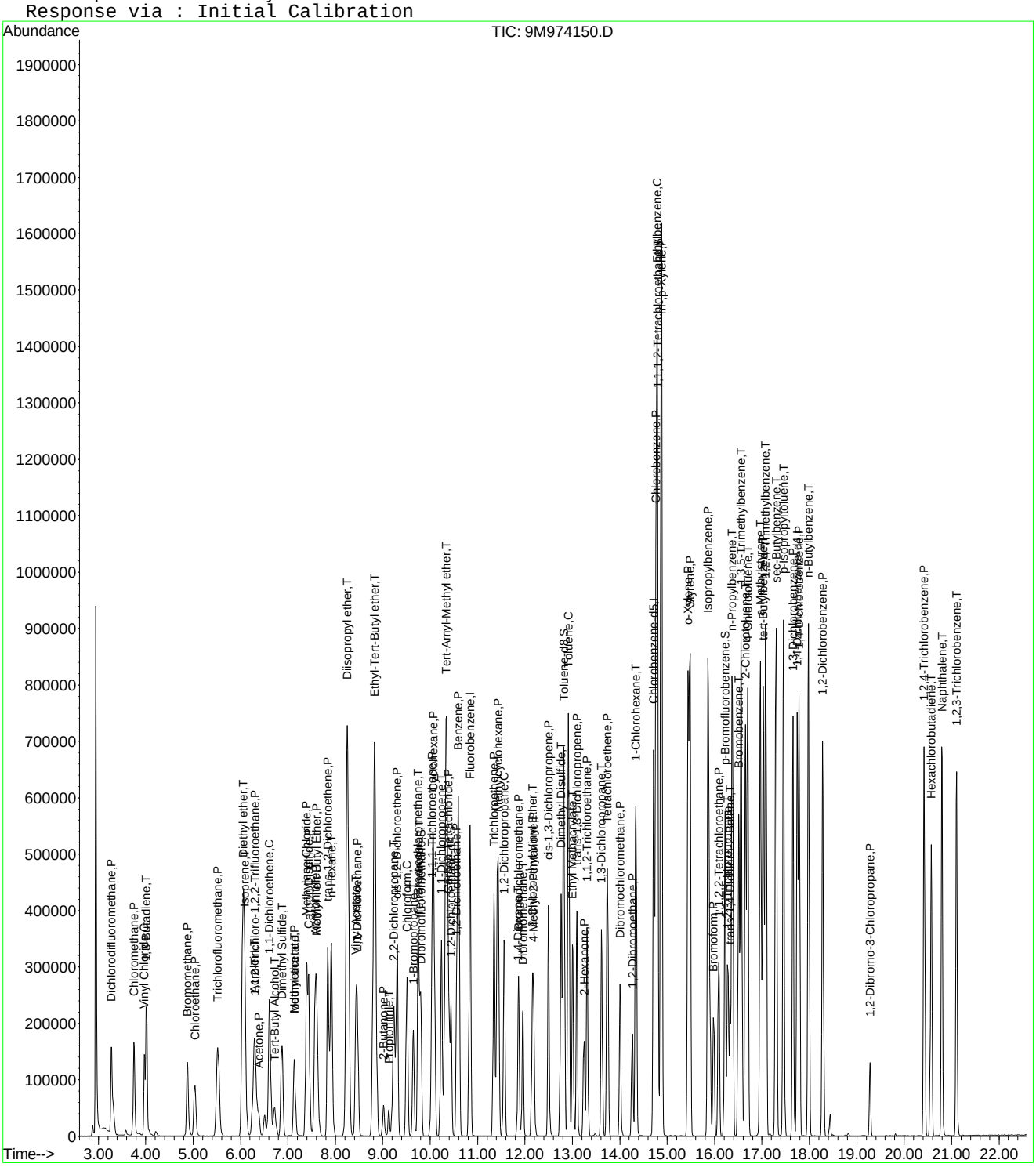

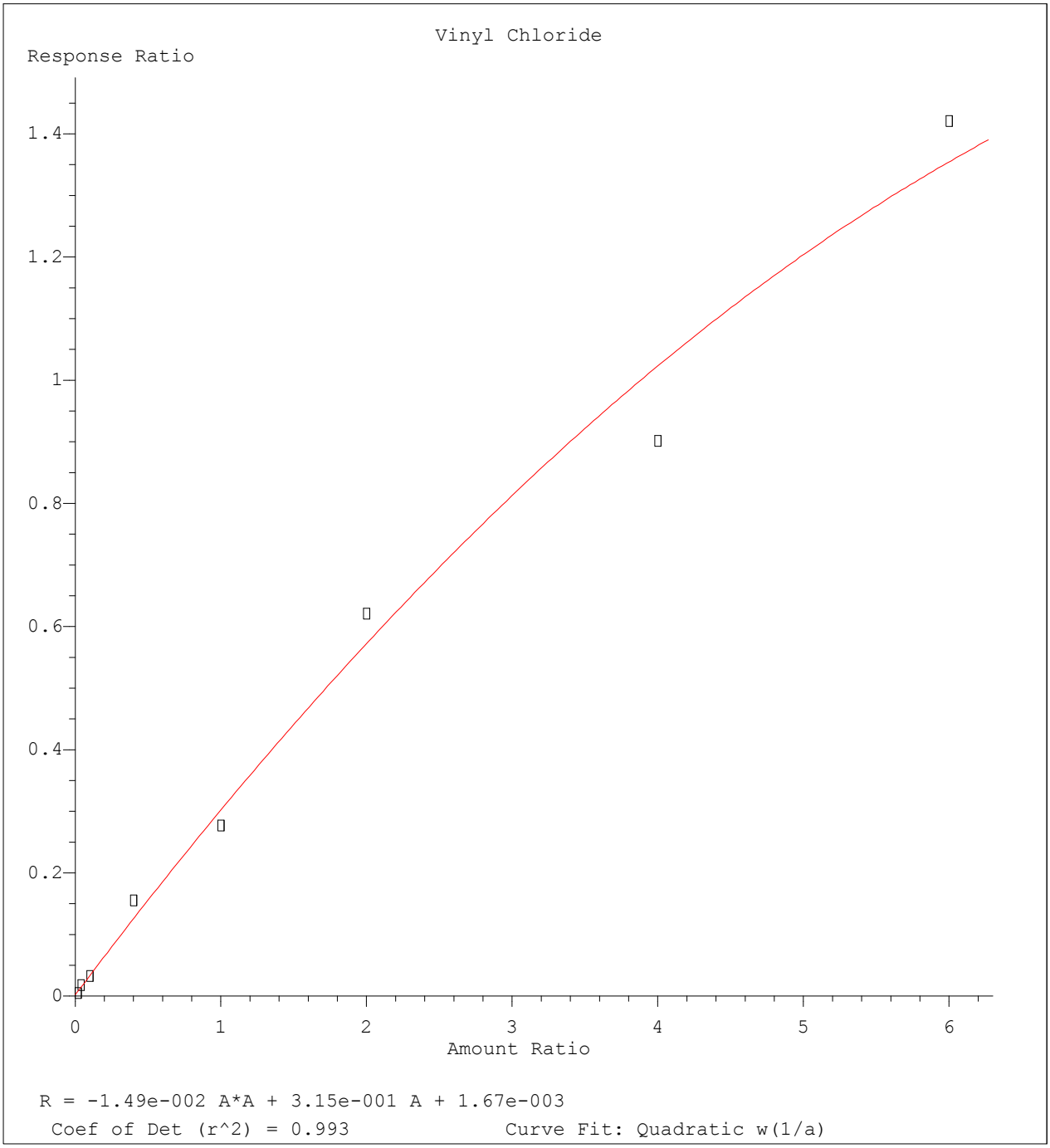

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Thu May 05 08:58:14 2016

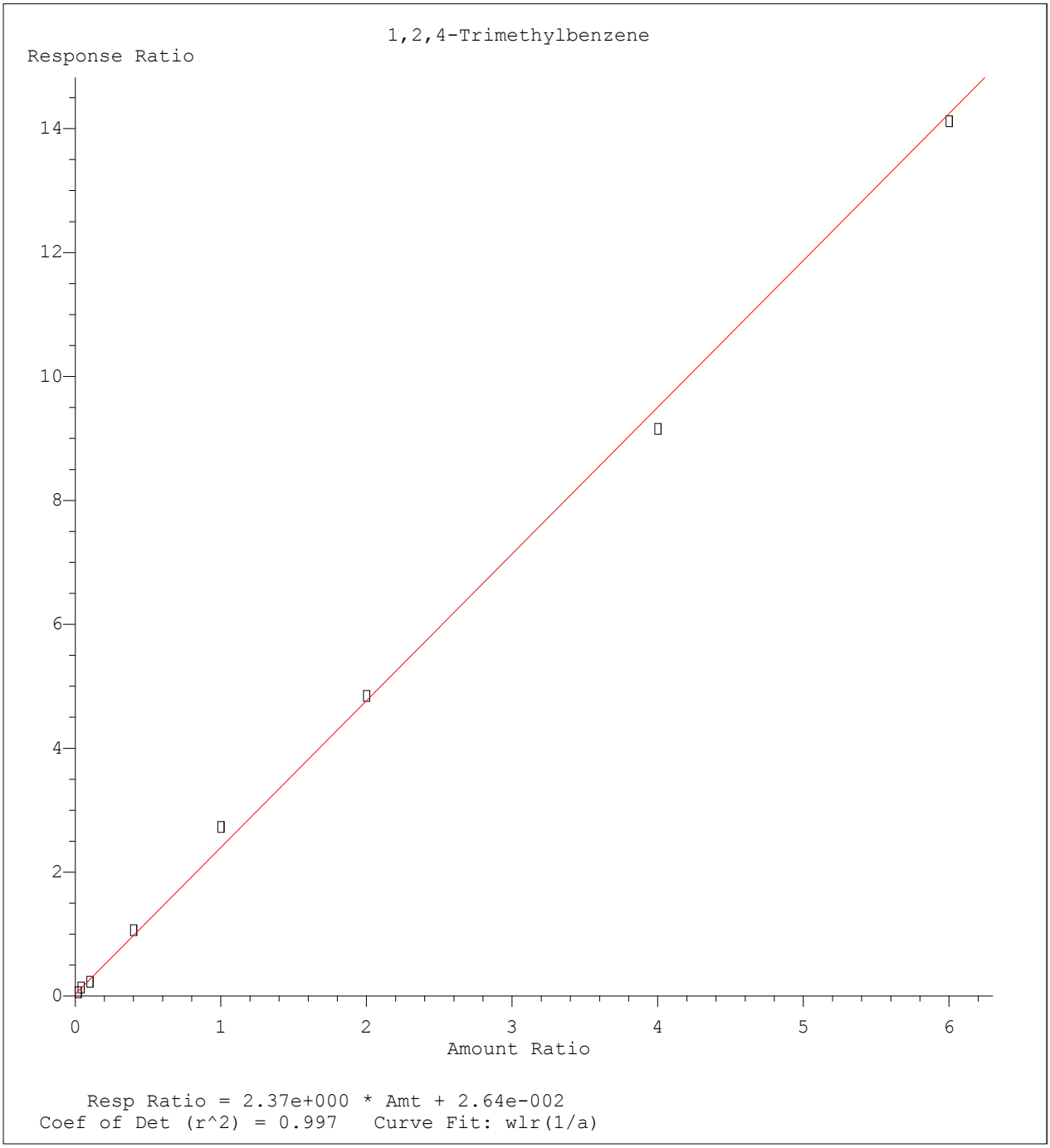

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Thu May 05 08:58:14 2016

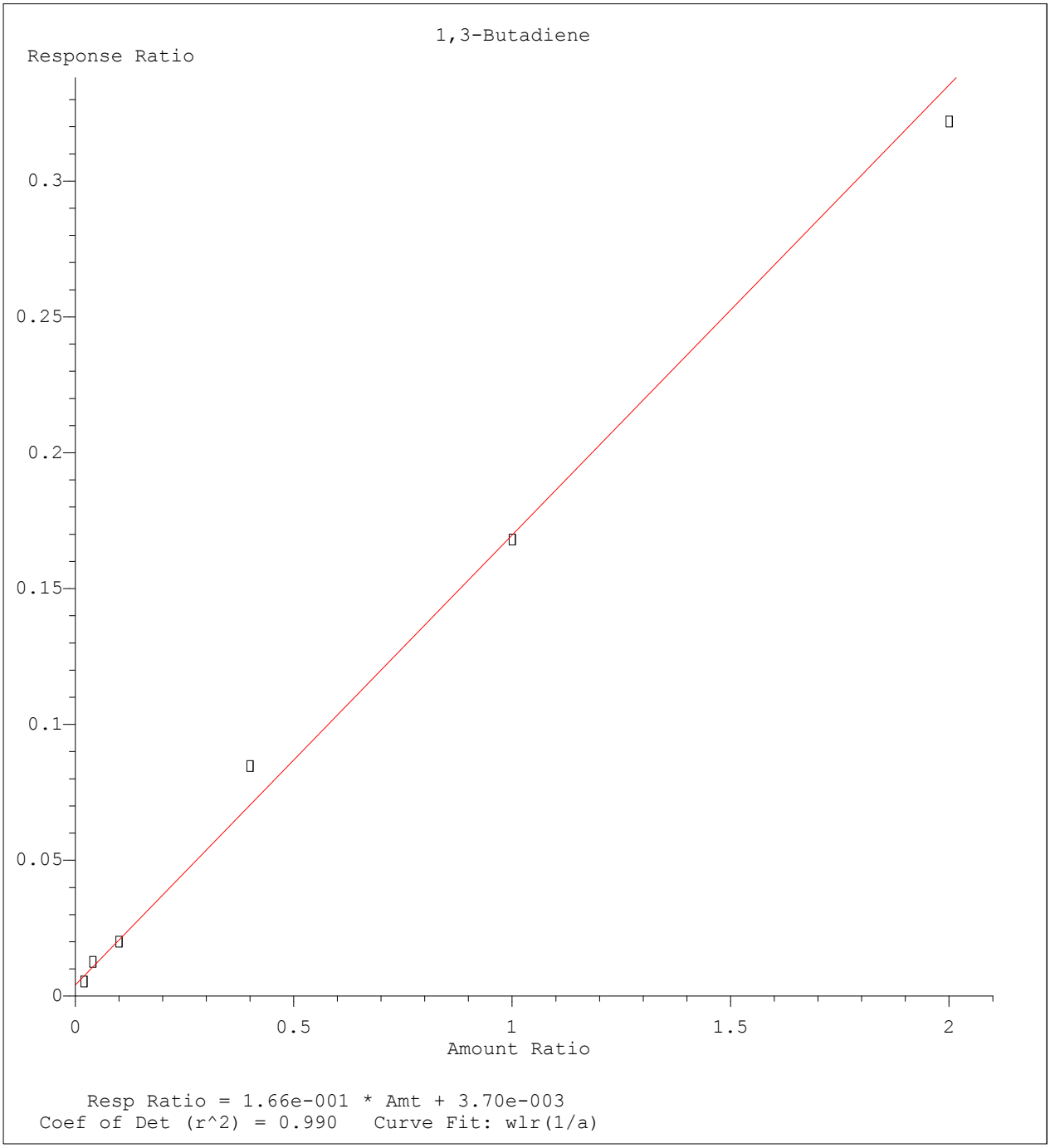

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Thu May 05 08:58:14 2016

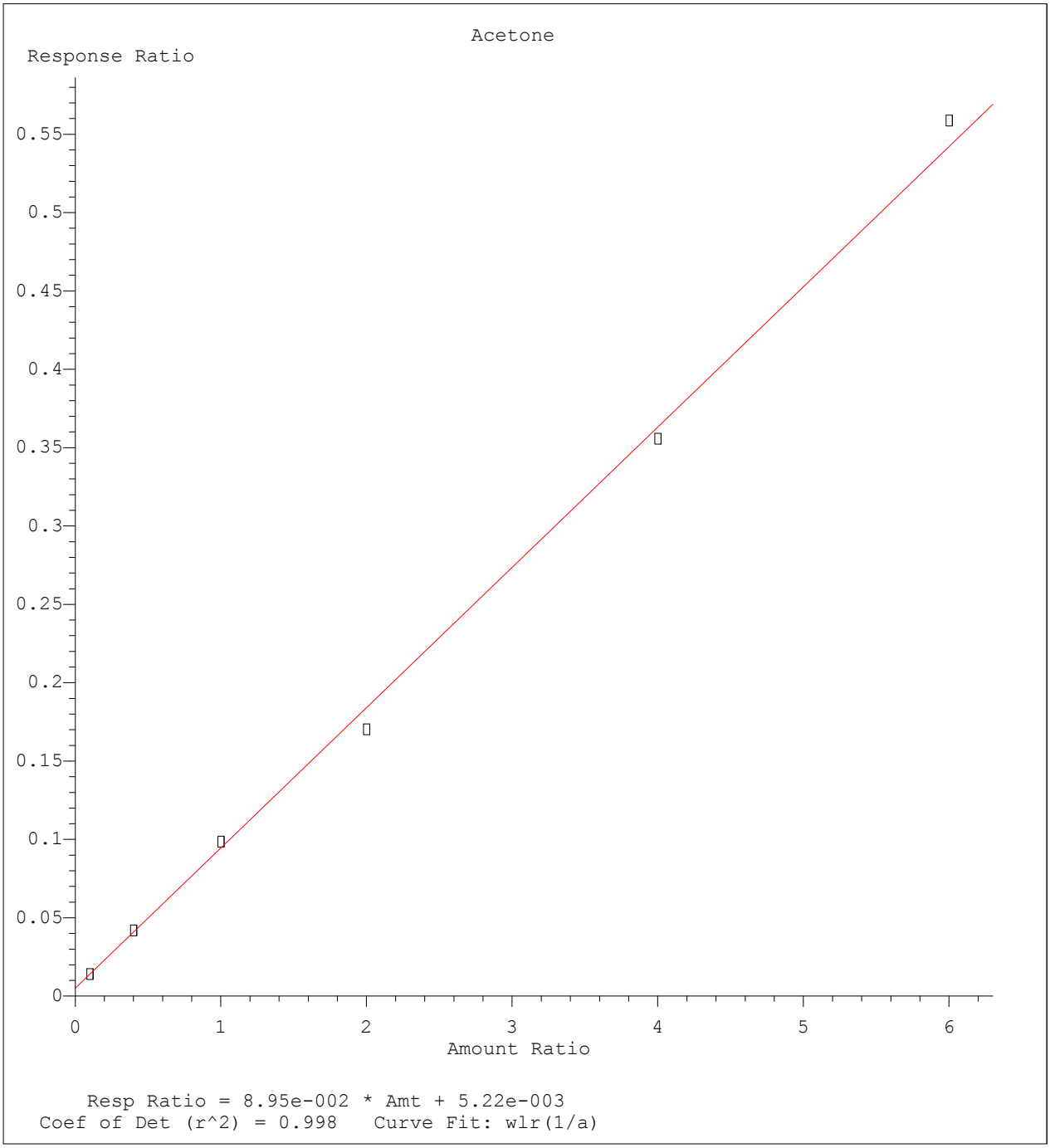

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Thu May 05 08:58:14 2016

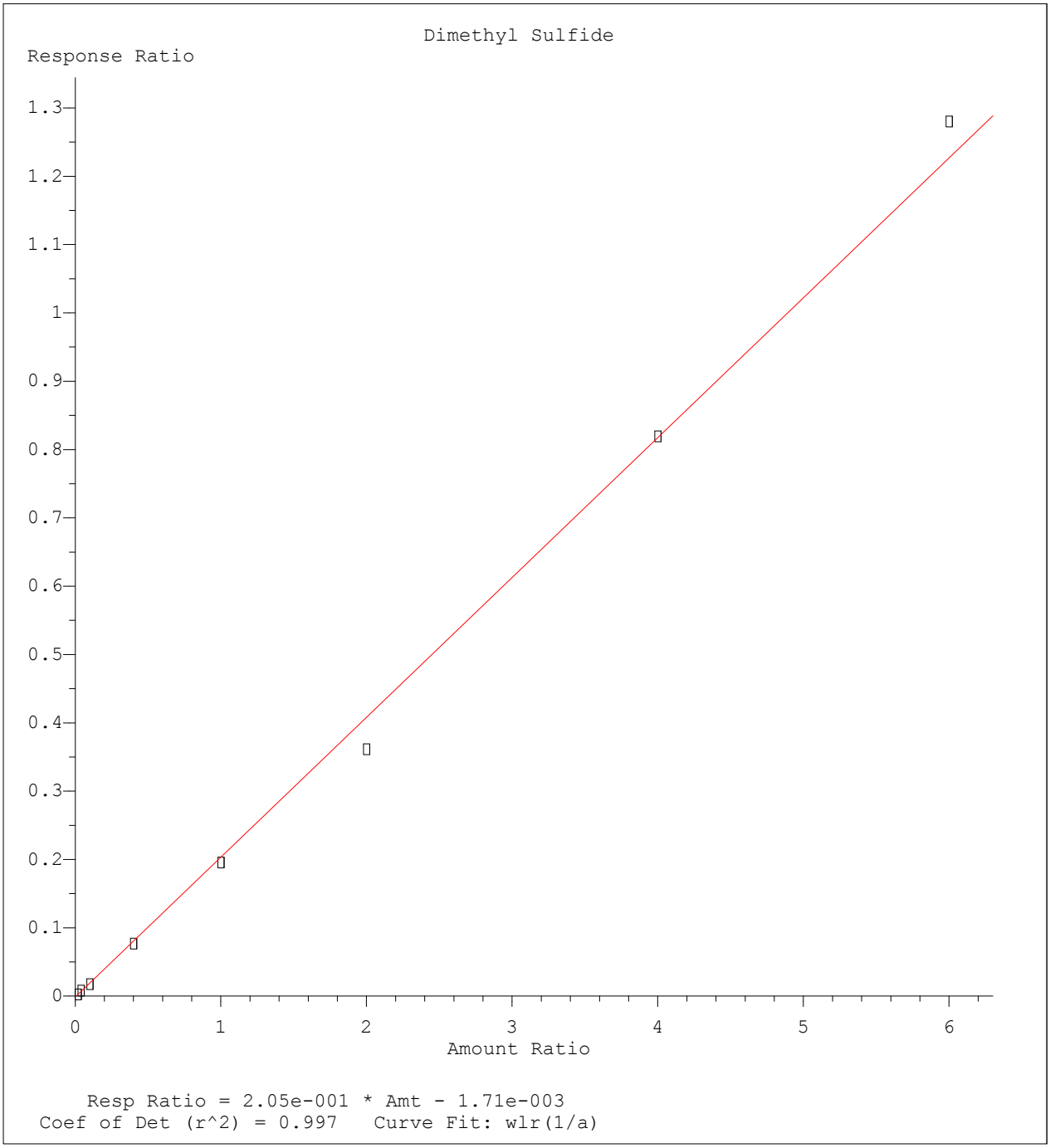

Resp Ratio = 2.05e-001 * Amt - 1.71e-003
Coef of Det (r^2) = 0.997 Curve Fit: wlr(1/a)

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Thu May 05 08:58:14 2016

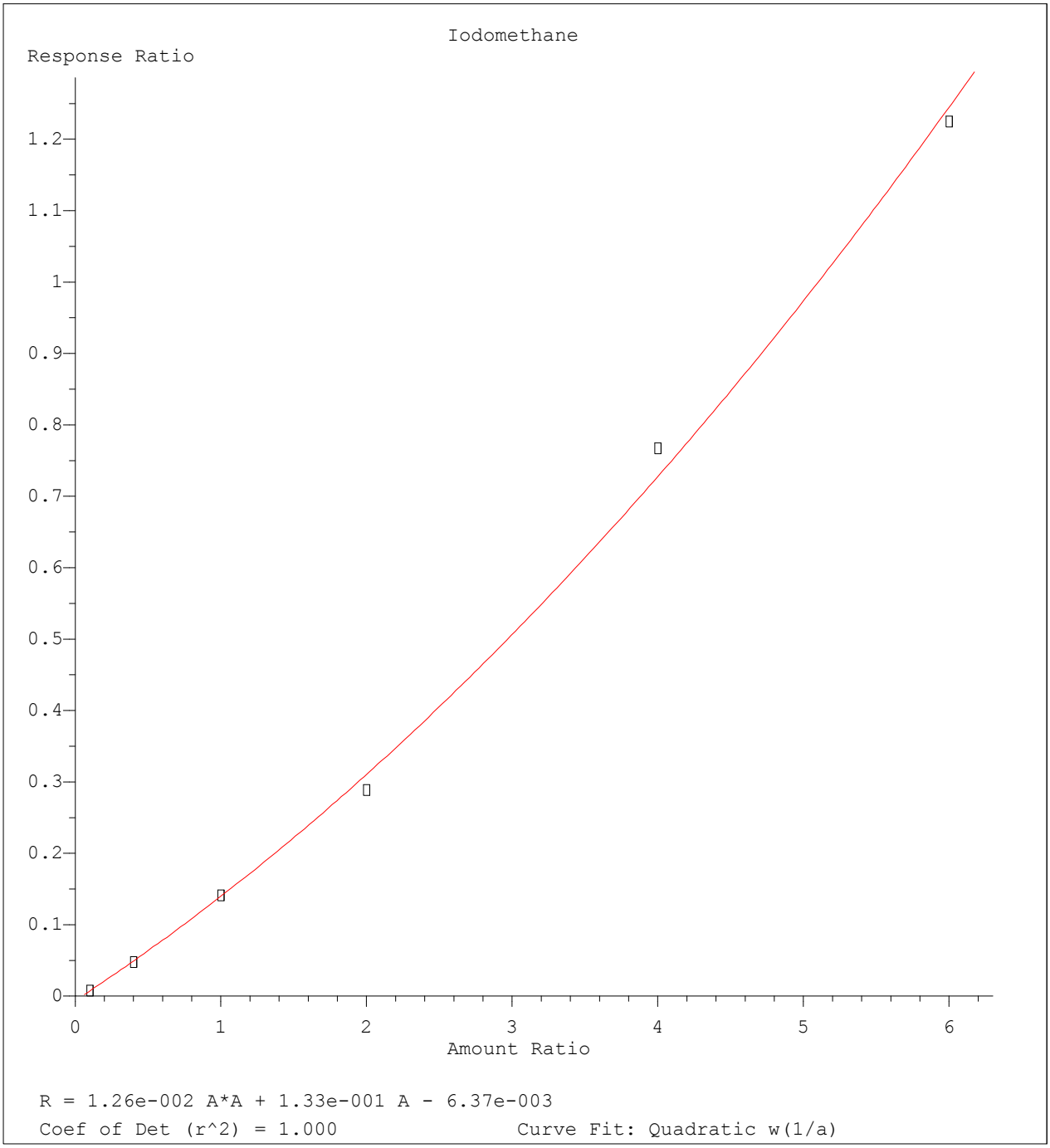

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Thu May 05 08:58:14 2016

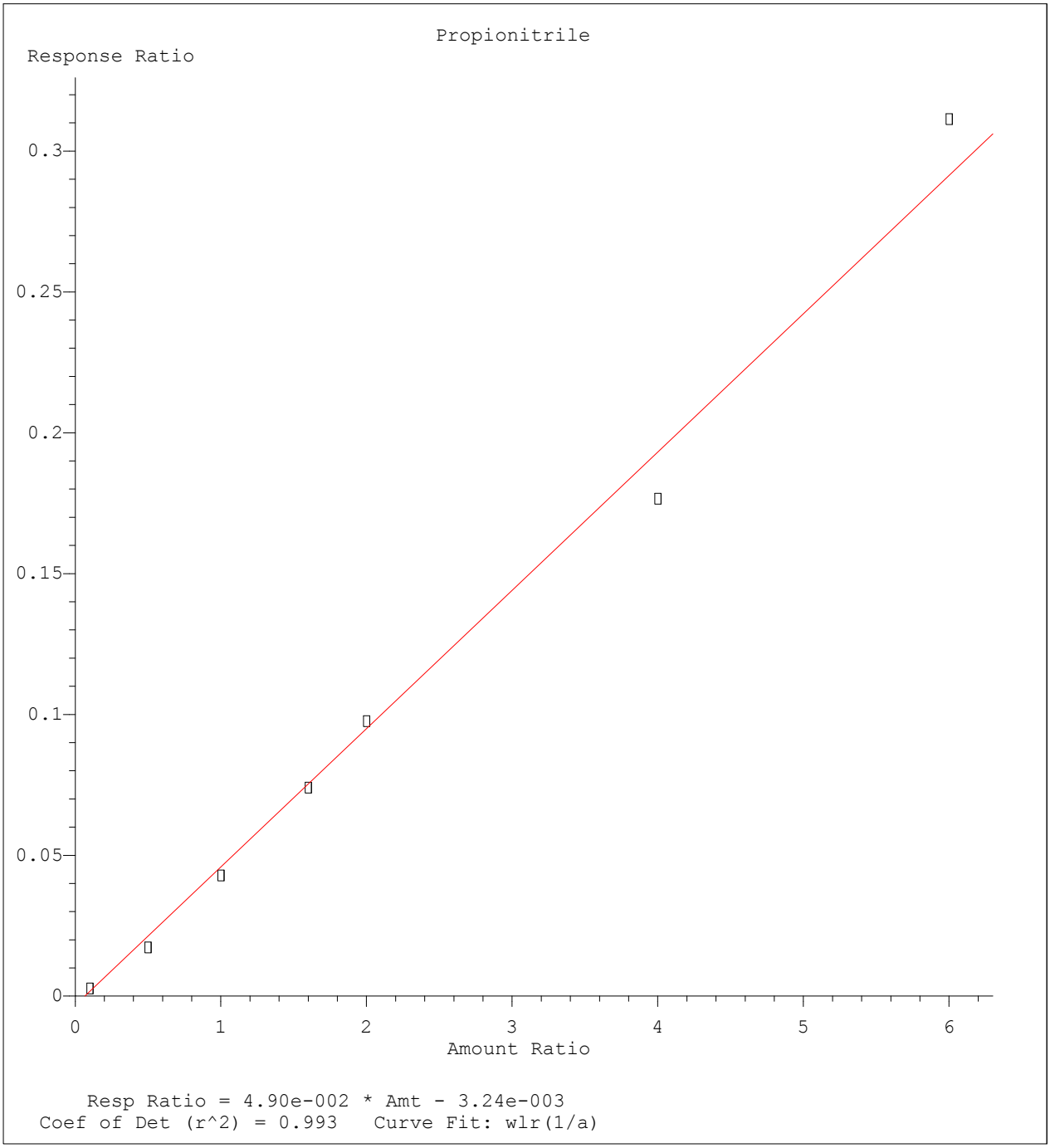

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Thu May 05 08:58:14 2016

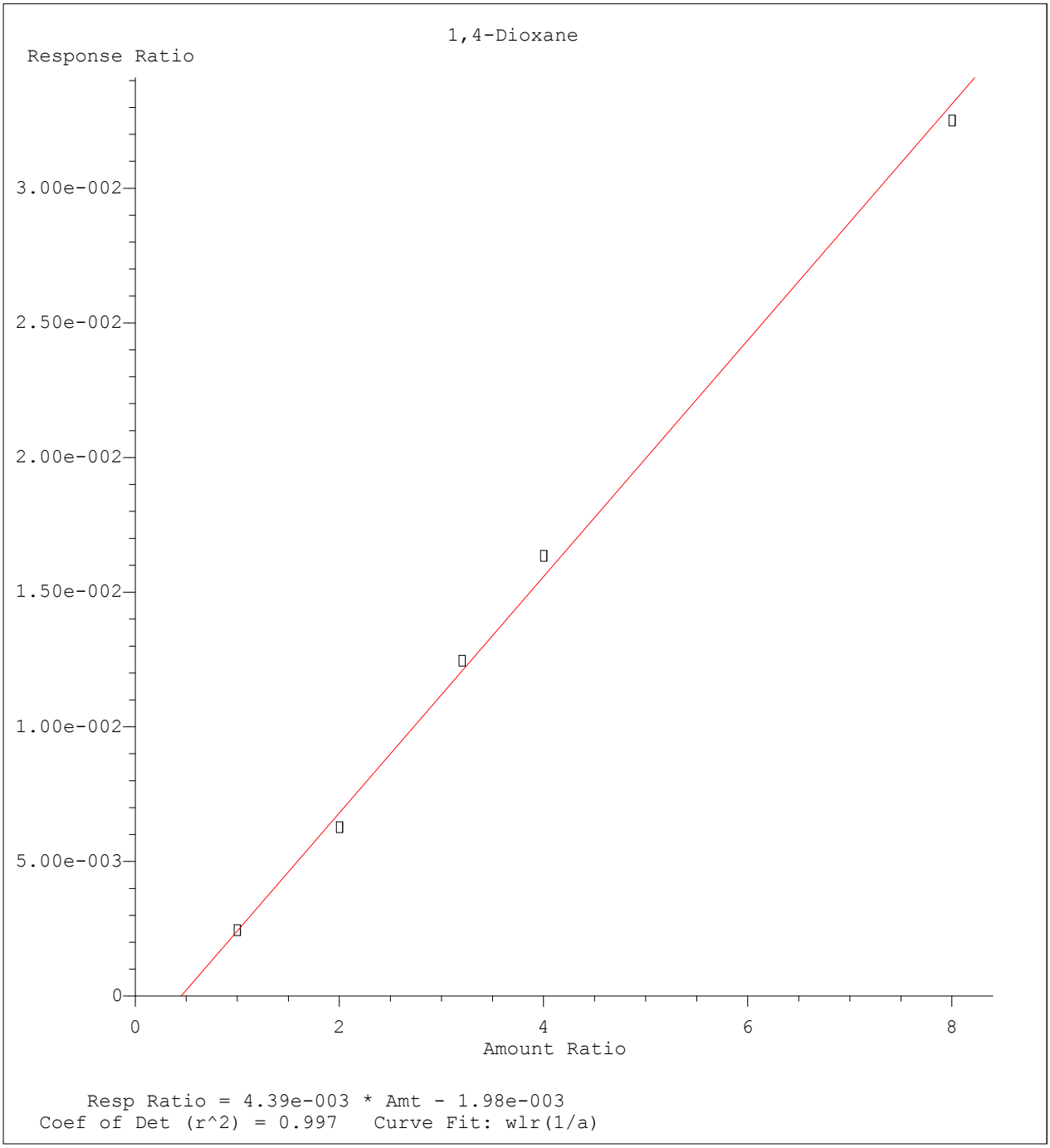

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Thu May 05 08:58:14 2016

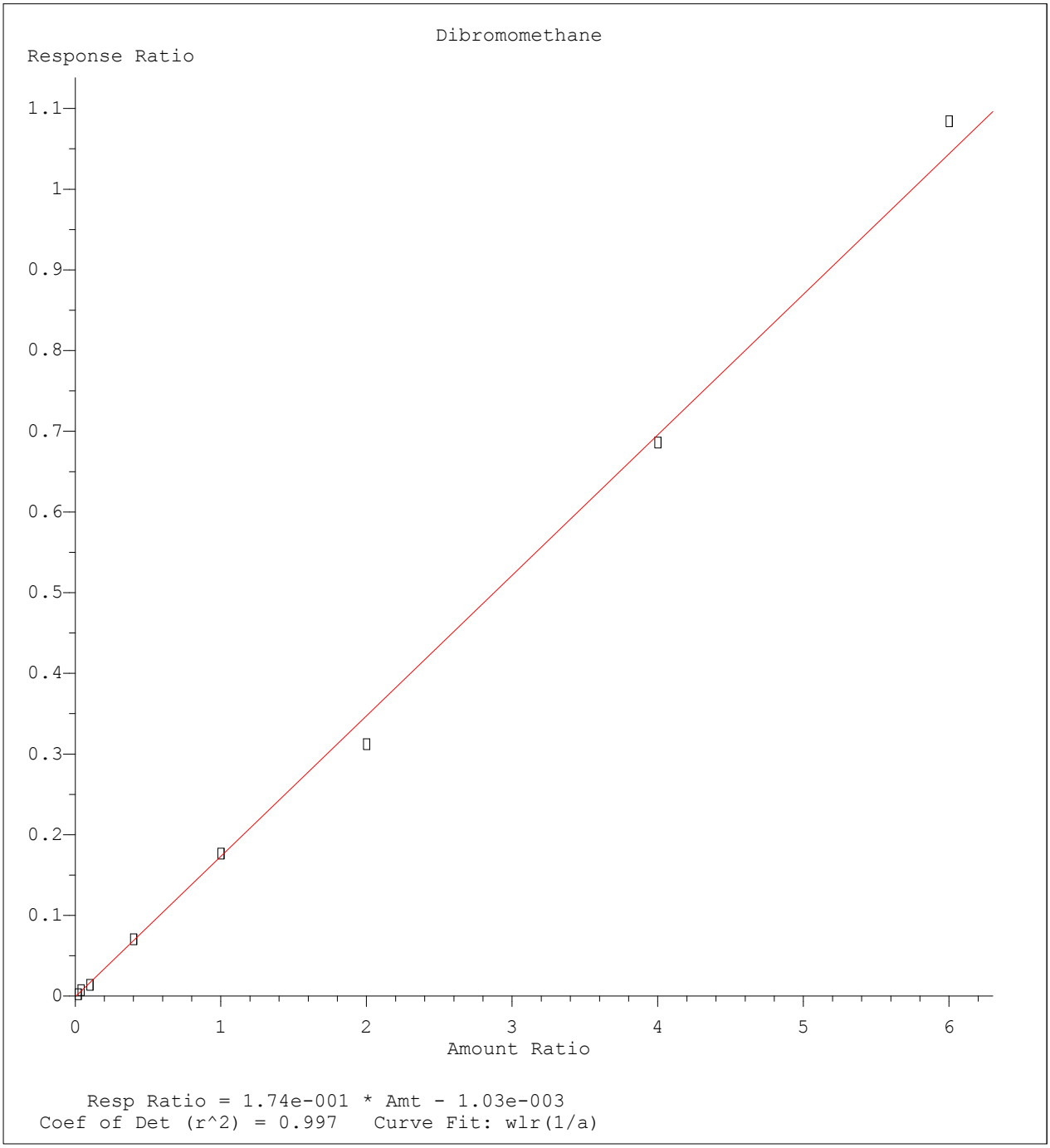

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Thu May 05 08:58:14 2016

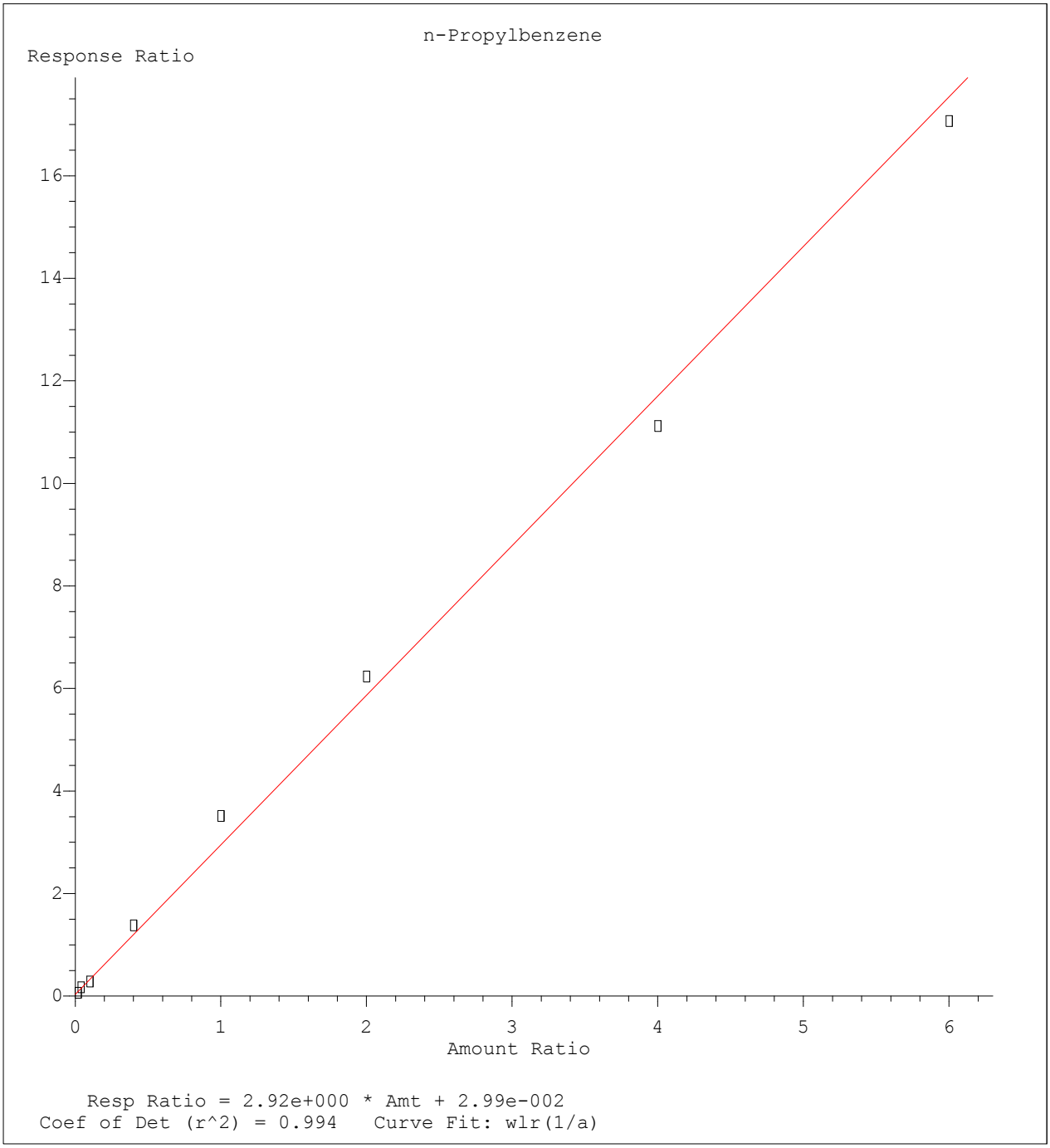

Method Name: C:\MSDCHEM\1\METHODS\8260SL.M
Calibration Table Last Updated: Thu May 05 08:58:14 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974152.D Vial: 15
Acq On : 4 May 2016 18:59 Operator: ADC
Sample : WG567358-11 20.0ug/kg ALTSRC 8260 Inst : hpms9
Misc : 7,1 STD75739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 16:50:10 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	643883	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	486835	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	254991	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	175306	53.2749 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 106.54%		
43) 1,2-Dichloroethane-d4	10.43	65	185237	51.9919 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 103.98%		
58) Toluene-d8	12.82	98	617692	53.1096 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.22%		
79) p-Bromofluorobenzene	16.22	95	242125	54.7717 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 109.54%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.28	85	103029	23.4511 ug/kg	100
3) Chloromethane	3.75	50	111537	20.5969 ug/kg	100
4) Vinyl Chloride	3.98	62	66706	16.4359 ug/kg	96
5) 1,3-Butadiene	4.01	54	369016	171.6202 ug/kg	100
6) Bromomethane	4.87	94	55877	20.6034 ug/kg	99
7) Chloroethane	5.03	64	54801	21.2053 ug/kg	98
8) Trichlorofluoromethane	5.52	101	108723	19.7089 ug/kg	99
9) Diethyl ether	6.04	59	366396	118.1521 ug/kg	99
10) Isoprene	6.08	67	100447	22.9171 ug/kg	97
11) Acrolein	6.28	56	50776	98.2547 ug/kg	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	65917	20.4176 ug/kg	98
13) Acetone	6.39	43	29480	22.6662 ug/kg	99
14) 1,1-Dichloroethene	6.60	61	104541	19.4184 ug/kg	100
15) Tert-Butyl Alcohol	6.72	59	133716	240.3928 ug/kg	100
16) Dimethyl Sulfide	6.87	62	78745	30.3003 ug/kg	99
17) Iodomethane	7.13	142	29044	18.6748 ug/kg	98
18) Methyl acetate	7.13	43	62155	17.8943 ug/kg	99
19) Methylene Chloride	7.40	84	68016	19.9382 ug/kg	100
20) Carbon Disulfide	7.44	76	194578	18.4539 ug/kg	99
21) Acrylonitrile	7.57	53	34218	23.0575 ug/kg	96
22) Methyl Tert Butyl Ether	7.60	73	201841	21.1758 ug/kg	98
23) trans-1,2-Dichloroethene	7.84	61	107179	20.5093 ug/kg	99
24) n-Hexane	7.91	57	118237	19.1361 ug/kg	100
25) Diisopropyl ether	8.25	45	1468379	120.1850 ug/kg	100
26) Vinyl Acetate	8.43	43	151936	22.9084 ug/kg	100
27) 1,1-Dichloroethane	8.46	63	123962	19.1972 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	1318965	113.4526 ug/kg	100
29) 2-Butanone	9.02	43	39697	21.7972 ug/kg	100
30) Propionitrile	9.13	54	63712	104.2313 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	90650	18.7041 ug/kg	99
32) cis-1,2-Dichloroethene	9.31	96	71476	20.6041 ug/kg	99
33) Chloroform	9.51	83	109769	20.1023 ug/kg	98
34) 1-Bromopropane	9.64	122	16913	28.7207 ug/kg	97
35) Bromochloromethane	9.74	130	44368	20.0123 ug/kg	97
36) Tetrahydrofuran	9.77	42	139491	108.6357 ug/kg	99
38) 1,1,1-Trichloroethane	10.03	97	98558	20.3184 ug/kg	100
39) Cyclohexane	10.07	56	142890	19.8803 ug/kg	99
40) 1,1-Dichloropropene	10.23	75	83712	19.9042 ug/kg	100
41) Tert-Amyl-Methyl ether	10.33	73	1062365	119.9446 ug/kg	100
42) Carbon Tetrachloride	10.38	117	90833	19.1392 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974152.D Vial: 15
Acq On : 4 May 2016 18:59 Operator: ADC
Sample : WG567358-11 20.0ug/kg ALTSRC 8260 Inst : hpms9
Misc : 7,1 STD75739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 16:50:10 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	98270	20.2032 ug/kg	99
46)	Benzene	10.59	78	259096	19.9113 ug/kg	99
47)	Trichloroethene	11.34	130	72570	20.4030 ug/kg	99
48)	Methylcyclohexane	11.43	83	113272	20.0972 ug/kg	98
49)	1,2-Dichloropropane	11.56	63	74264	20.7519 ug/kg	98
50)	1,4-Dioxane	11.85	88	12161	237.5249 ug/kg	99
51)	Bromodichloromethane	11.86	83	84232	19.7037 ug/kg	98
52)	Dibromomethane	11.95	174	41634	18.8587 ug/kg	98
53)	2-Chloroethyl Vinyl Ether	12.15	63	44308	20.7589 ug/kg	99
54)	4-Methyl-2-Pentanone	12.19	58	34105	20.9760 ug/kg	98
55)	cis-1,3-Dichloropropene	12.49	75	108409	21.0567 ug/kg	99
56)	Dimethyl Disulfide	12.76	94	133410	22.8134 ug/kg	94
59)	Toluene	12.91	91	268571	19.6480 ug/kg	98
60)	Ethyl Methacrylate	13.01	69	85792	20.9018 ug/kg	98
61)	trans-1,3-Dichloropropene	13.09	75	94348	20.0339 ug/kg	99
62)	1,1,2-Trichloroethane	13.32	97	55686	20.1182 ug/kg	98
63)	2-Hexanone	13.24	43	55541	19.8074 ug/kg	98
64)	1,3-Dichloropropane	13.61	76	102641	21.4429 ug/kg	99
65)	Tetrachloroethene	13.74	164	53984	19.2047 ug/kg	98
66)	Dibromochloromethane	14.00	129	68235	19.4649 ug/kg	99
67)	1,2-Dibromoethane	14.27	107	61872	20.9996 ug/kg	100
68)	1-Chlorohexane	14.34	91	91034	20.3346 ug/kg	99
69)	Chlorobenzene	14.76	112	193451	20.5373 ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.79	131	69378	20.0306 ug/kg	100
71)	Ethylbenzene	14.79	106	102427	20.1917 ug/kg	96
72)	m-,p-Xylene	14.88	106	252141	40.2761 ug/kg	100
73)	o-Xylene	15.44	106	124657	20.4827 ug/kg	100
74)	Styrene	15.48	104	201019	20.3539 ug/kg	98
75)	Bromoform	15.99	173	43603	17.6755 ug/kg	100
76)	Isopropylbenzene	15.87	105	315023	20.6058 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.08	83	73803	19.8051 ug/kg	99
80)	1,2,3-Trichloropropane	16.28	110	24911	21.4885 ug/kg#	19
81)	trans-1,4-Dichloro-2-Buten	16.32	53	21651	15.5830 ug/kg#	1
82)	n-Propylbenzene	16.38	91	345824	22.7101 ug/kg	100
83)	Bromobenzene	16.51	156	82640	20.9468 ug/kg	98
84)	1,3,5-Trimethylbenzene	16.56	105	267694	21.9618 ug/kg	100
85)	2-Chlorotoluene	16.65	91	217459	20.5455 ug/kg	99
86)	4-Chlorotoluene	16.69	91	212047	21.1768 ug/kg	100
87)	a-Methylstyrene	16.97	118	138575	21.9251 ug/kg	98
88)	tert-Butylbenzene	17.03	134	61589	22.5847 ug/kg	96
89)	1,2,4-Trimethylbenzene	17.08	105	263571	21.2510 ug/kg	99
90)	sec-Butylbenzene	17.29	105	339691	20.7627 ug/kg	100
91)	p-Isopropyltoluene	17.45	119	268115	20.6016 ug/kg	100
92)	1,3-Dichlorobenzene	17.65	146	153486	19.7682 ug/kg	98
93)	1,4-Dichlorobenzene	17.78	146	159110	19.9695 ug/kg	99
94)	n-Butylbenzene	17.98	91	240104	19.3938 ug/kg	99
95)	1,2-Dichlorobenzene	18.29	146	149759	20.0562 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.28	157	18657	20.3058 ug/kg	99
97)	1,2,4-Trichlorobenzene	20.42	180	97271	18.2530 ug/kg	99
98)	Hexachlorobutadiene	20.58	225	50965	20.0240 ug/kg	98
99)	Naphthalene	20.80	128	258183	19.1188 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.10	180	100542	19.4679 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050416\9M974152.D Vial: 15
Acq On : 4 May 2016 18:59 Operator: ADC
Sample : WG567358-11 20.0ug/kg ALTSRC 8260 Inst : hpms9
Misc : 7,1 STD75739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 5 16:50 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

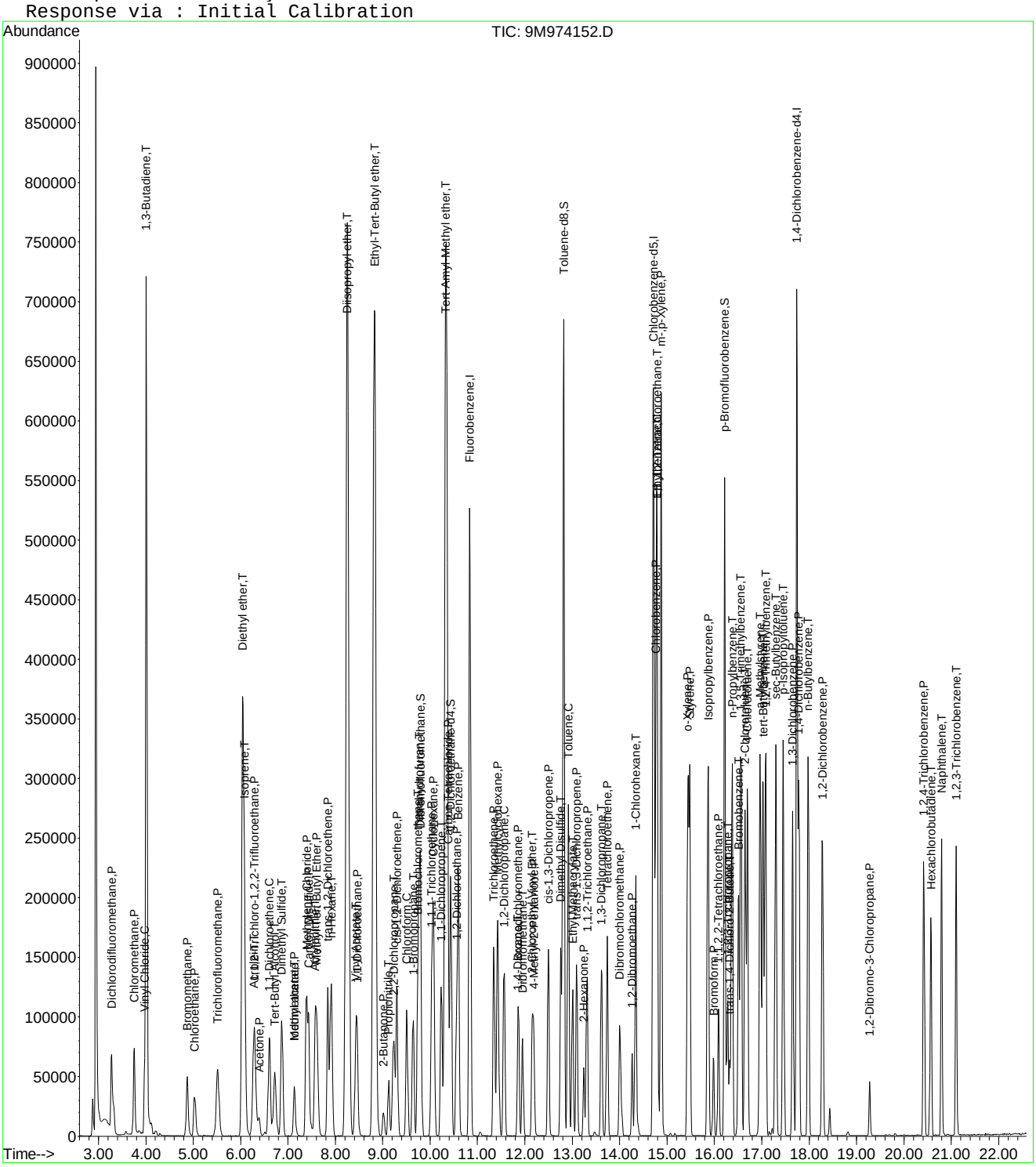

9M974152.D 8260SL.M Thu May 05 16:50:10 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\050416\9M974152.D Vial: 15
Acq On : 4 May 2016 18:59 Operator: ADC
Sample : WG567358-11 20.0ug/kg ALTSRC 8260 Inst : hpms9
Misc : 7,1 STD75739 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	103	0.00
2	P	Dichlorodifluoromethane	20.0000	23.4511	-17.3	112	0.00
3	P	Chloromethane	20.0000	20.5970	-3.0	109	0.00
4	C	Vinyl Chloride	20.0000	16.4359	17.8	68	0.00
5	T	1,3-Butadiene	20.0000	171.6202	-758.1#	695	0.00
6	P	Bromomethane	20.0000	20.6034	-3.0	101	0.00
7	P	Chloroethane	20.0000	21.2053	-6.0	110	0.00
8	P	Trichlorofluoromethane	20.0000	19.7089	1.5	98	0.00
9	T	Diethyl ether	80.0000	118.1521	-47.7#	140	0.00
10	T	Isoprene	20.0000	22.9171	-14.6	122	-0.01
11	T	Acrolein	40.0000	98.2547	-145.6#	249	-0.01
12	P	1,1,2-Trichloro-1,2,2-Trifl	20.0000	20.4176	-2.1	105	-0.01
13	P	Acetone	20.0000	22.6662	-13.3	112	0.00
14	C	1,1-Dichloroethene	20.0000	19.4184	2.9	95	0.00
15	T	Tert-Butyl Alcohol	160.0000	240.3928	-50.2#	140	0.00
16	T	Dimethyl Sulfide	20.0000	30.3003	-51.5#	163	0.00
17	T	Iodomethane	20.0000	18.6748	6.6	97	0.00
18	P	Methyl acetate	20.0000	17.8943	10.5	93	0.00
19	P	Methylene Chloride	20.0000	19.9382	0.3	103	0.00
20	P	Carbon Disulfide	20.0000	18.4539	7.7	97	0.00
21	T	Acrylonitrile	40.0000	23.0575	42.4#	55	0.00
22	P	Methyl Tert Butyl Ether	20.0000	21.1758	-5.9	103	0.00
23	P	trans-1,2-Dichloroethene	20.0000	20.5093	-2.5	101	0.00
24	T	n-Hexane	20.0000	19.1362	4.3	109	0.00
25	T	Diisopropyl ether	80.0000	120.1850	-50.2#	141	0.00
26	T	Vinyl Acetate	20.0000	22.9084	-14.5	119	0.00
27	P	1,1-Dichloroethane	20.0000	19.1972	4.0	94	0.00
28	T	Ethyl-Tert-Butyl ether	80.0000	113.4526	-41.8#	133	0.00
29	P	2-Butanone	20.0000	21.7972	-9.0	109	0.00
30	T	Propionitrile	80.0000	104.2314	-30.3#	137	0.00
31	T	2,2-Dichloropropane	20.0000	18.7041	6.5	98	0.00
32	P	cis-1,2-Dichloroethene	20.0000	20.6041	-3.0	101	0.00
33	C	Chloroform	20.0000	20.1023	-0.5	97	0.00
34	T	1-Bromopropane	20.0000	28.7207	-43.6#	155	0.00
35	T	Bromochloromethane	20.0000	20.0123	-0.1	97	0.00
36	T	Tetrahydrofuran	80.0000	108.6357	-35.8#	133	0.00
37	S	Dibromofluoromethane	20.0000	53.2749	-166.4#	297	0.00
38	P	1,1,1-Trichloroethane	20.0000	20.3184	-1.6	100	0.00
39	P	Cyclohexane	20.0000	19.8803	0.6	106	0.00
40	T	1,1-Dichloropropene	20.0000	19.9042	0.5	98	0.00
41	T	Tert-Amyl-Methyl ether	80.0000	119.9446	-49.9#	143	0.00
42	P	Carbon Tetrachloride	20.0000	19.1392	4.3	98	0.00
43	S	1,2-Dichloroethane-d4	20.0000	51.9919	-160.0#	289	0.00
44		Heptane	-1.0000	0.0000	0.0	103	0.00
45	P	1,2-Dichloroethane	20.0000	20.2032	-1.0	97	0.00
46	P	Benzene	20.0000	19.9113	0.4	100	0.00
47	P	Trichloroethene	20.0000	20.4030	-2.0	101	0.00
48	P	Methylcyclohexane	20.0000	20.0972	-0.5	108	0.00
49	C	1,2-Dichloropropane	20.0000	20.7519	-3.8	103	0.00
50	T	1,4-Dioxane	160.0000	237.5249	-48.5#	156	0.00
51	P	Bromodichloromethane	20.0000	19.7037	1.5	100	0.00
52	T	Dibromomethane	20.0000	18.8587	5.7	94	0.00
53	T	2-Chloroethyl Vinyl Ether	20.0000	20.7589	-3.8	108	0.00
54	P	4-Methyl-2-Pentanone	20.0000	20.9760	-4.9	109	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\050416\9M974152.D Vial: 15
Acq On : 4 May 2016 18:59 Operator: ADC
Sample : WG567358-11 20.0ug/kg ALTSRC 8260 Inst : hpms9
Misc : 7,1 STD75739 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	20.0000	21.0567	-5.3	107	0.00
56	T	Dimethyl Disulfide	20.0000	22.8134	-14.1	119	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	103	0.00
58	S	Toluene-d8	20.0000	53.1096	-165.5#	295	0.00
59	C	Toluene	20.0000	19.6480	1.8	100	0.00
60	T	Ethyl Methacrylate	20.0000	20.9019	-4.5	107	0.00
61	P	trans-1,3-Dichloropropene	20.0000	20.0339	-0.2	101	0.00
62	P	1,1,2-Trichloroethane	20.0000	20.1182	-0.6	98	0.00
63	P	2-Hexanone	20.0000	19.8074	1.0	105	0.00
64	T	1,3-Dichloropropane	20.0000	21.4429	-7.2	104	0.00
65	P	Tetrachloroethene	20.0000	19.2047	4.0	96	0.00
66	P	Dibromochloromethane	20.0000	19.4649	2.7	100	0.00
67	P	1,2-Dibromoethane	20.0000	20.9996	-5.0	102	0.00
68	T	1-Chlorohexane	20.0000	20.3346	-1.7	110	0.00
69	P	Chlorobenzene	20.0000	20.5373	-2.7	103	0.00
70	T	1,1,1,2-Tetrachloroethane	20.0000	20.0306	-0.2	102	0.00
71	C	Ethylbenzene	20.0000	20.1917	-1.0	99	0.00
72	P	m-,p-Xylene	40.0000	40.2761	-0.7	104	0.00
73	P	o-Xylene	20.0000	20.4827	-2.4	104	0.00
74	P	Styrene	20.0000	20.3539	-1.8	102	0.00
75	P	Bromoform	20.0000	17.6755	11.6	94	0.00
76	P	Isopropylbenzene	20.0000	20.6058	-3.0	104	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	104	0.00
78	P	1,1,2,2-Tetrachloroethane	20.0000	19.8051	1.0	100	0.00
79	S	p-Bromofluorobenzene	20.0000	54.7717	-173.9#	302	0.00
80	T	1,2,3-Trichloropropane	20.0000	21.4885	-7.4	105	0.00
81	T	trans-1,4-Dichloro-2-Butene	20.0000	15.5830	22.1	81	0.00
82	T	n-Propylbenzene	20.0000	22.7101	-13.6	102	0.00
83	T	Bromobenzene	20.0000	20.9468	-4.7	101	0.00
84	T	1,3,5-Trimethylbenzene	20.0000	21.9618	-9.8	103	0.00
85	T	2-Chlorotoluene	20.0000	20.5455	-2.7	102	0.00
86	T	4-Chlorotoluene	20.0000	21.1768	-5.9	103	0.00
87	T	a-Methylstyrene	20.0000	21.9251	-9.6	114	0.00
88	T	tert-Butylbenzene	20.0000	22.5847	-12.9	108	0.00
89	T	1,2,4-Trimethylbenzene	20.0000	21.2510	-6.3	101	0.00
90	T	sec-Butylbenzene	20.0000	20.7627	-3.8	104	0.00
91	T	p-Isopropyltoluene	20.0000	20.6016	-3.0	102	0.00
92	P	1,3-Dichlorobenzene	20.0000	19.7682	1.2	101	0.00
93	P	1,4-Dichlorobenzene	20.0000	19.9695	0.2	104	0.00
94	T	n-Butylbenzene	20.0000	19.3938	3.0	101	0.00
95	P	1,2-Dichlorobenzene	20.0000	20.0562	-0.3	104	0.00
96	P	1,2-Dibromo-3-Chloropropane	20.0000	20.3058	-1.5	111	0.00
97	P	1,2,4-Trichlorobenzene	20.0000	18.2530	8.7	104	0.00
98	T	Hexachlorobutadiene	20.0000	20.0240	-0.1	108	0.00
99	T	Naphthalene	20.0000	19.1188	4.4	102	0.00
100	T	1,2,3-Trichlorobenzene	20.0000	19.4679	2.7	109	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M974152.D 8260SL.M Thu May 05 16:51:49 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\050716\8M412047.D Vial: 2
Acq On : 7 May 2016 12:05 Operator: TMB
Sample : WG567934-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD75976 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 07 12:26:58 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	441473	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	347752	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	196094	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	135658	24.4731 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.88%		
43) 1,2-Dichloroethane-d4	10.30	65	174229	27.4737 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 109.88%		
58) Toluene-d8	12.68	98	440195	24.4803 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.92%		
80) p-Bromofluorobenzene	16.07	95	190344	23.7136 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.84%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	486600	52.5919 ug/L	98
3) Chloromethane	3.63	50	433631	49.7461 ug/L	95
4) Vinyl Chloride	3.85	62	322311	54.7563 ug/L	98
5) 1,3-Butadiene	3.90	54	270028	46.9547 ug/L	96
6) Bromomethane	4.74	94	186651	44.6525 ug/L	99
7) Chloroethane	4.90	64	173444	45.0268 ug/L #	83
8) Trichlorofluoromethane	5.38	101	665875	56.9856 ug/L	99
9) Diethyl ether	5.91	59	319792	89.4498 ug/L	85
10) Isoprene	5.94	67	265617	44.4256 ug/L #	54
11) Acrolein	6.15	56	21023	66.2211 ug/L	91
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	261700	48.9153 ug/L	96
13) Acetone	6.25	43	51261	47.2972 ug/L	85
14) 1,1-Dichloroethene	6.47	61	532757	51.3082 ug/L	83
15) Tert-Butyl Alcohol	6.58	59	48129	192.8929 ug/L	98
16) Dimethyl Sulfide	6.74	62	166611	43.4212 ug/L	66
17) Iodomethane	6.99	142	119998	46.5216 ug/L	74
18) Methyl acetate	7.01	43	155572	48.0281 ug/L	89
19) Methylene Chloride	7.25	84	216762	44.0509 ug/L #	40
20) Carbon Disulfide	7.30	76	651762	43.4160 ug/L	100
21) Acrylonitrile	7.44	53	66174	47.5043 ug/L	99
22) Methyl Tert Butyl Ether	7.46	73	516576	47.5249 ug/L	96
23) trans-1,2-Dichloroethene	7.71	61	463601	49.3590 ug/L	85
24) n-Hexane	7.79	57	381776	44.8014 ug/L	87
25) Diisopropyl ether	8.13	45	2197063	91.0507 ug/L	97
26) Vinyl Acetate	8.30	43	399450	41.2362 ug/L	94
27) 1,1-Dichloroethane	8.33	63	547773	48.7576 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	1576418	93.0861 ug/L	98
29) 2-Butanone	8.89	43	75696	43.6085 ug/L	83
30) Propionitrile	8.99	54	37815	86.1496 ug/L	92
31) 2,2-Dichloropropane	9.10	77	563302	56.9125 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	262279	46.6674 ug/L	65
33) Chloroform	9.37	83	548732	52.6415 ug/L	97
34) 1-Bromopropane	9.52	122	40614	45.8711 ug/L	88
35) Bromochloromethane	9.61	130	142052	48.3096 ug/L	73
36) Tetrahydrofuran	9.63	42	118426	103.1981 ug/L	82
38) 1,1,1-Trichloroethane	9.91	97	597636	56.8692 ug/L	100
39) Cyclohexane	9.94	56	526455	45.9003 ug/L	85
40) 1,1-Dichloropropene	10.11	75	378580	50.0512 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	973392	89.7384 ug/L	84
42) Carbon Tetrachloride	10.25	117	588909	59.5632 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M412047.D 8260WTR.M Sat May 07 12:26:59 2016 Page 1

Data File : C:\MSDchem\2\data\050716\8M412047.D Vial: 2
Acq On : 7 May 2016 12:05 Operator: TMB
Sample : WG567934-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD75976 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 07 12:26:58 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	493876	56.4129 ug/L		93
46)	Benzene	10.47	78	901414	46.7865 ug/L	#	76
47)	Trichloroethene	11.21	130	276230	49.6825 ug/L		98
48)	Methylcyclohexane	11.30	83	368716	47.4312 ug/L		77
49)	1,2-Dichloropropane	11.43	63	260355	46.4229 ug/L		73
50)	Bromodichloromethane	11.73	83	432098	55.3755 ug/L		99
51)	1,4-Dioxane	11.71	88	3970	177.5639 ug/L		77
52)	Dibromomethane	11.81	93	136478	51.6935 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	100417	42.7649 ug/L		96
54)	4-Methyl-2-Pentanone	12.05	58	54240	42.3189 ug/L		93
55)	cis-1,3-Dichloropropene	12.36	75	395217	50.3262 ug/L		99
56)	Dimethyl Disulfide	12.62	79	207588	50.4557 ug/L		98
59)	Toluene	12.78	91	1006972	48.3562 ug/L		98
60)	Ethyl Methacrylate	12.88	69	177010	45.3013 ug/L	#	55
62)	trans-1,3-Dichloropropene	12.96	75	378209	52.0567 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	158895	48.0854 ug/L		94
64)	2-Hexanone	13.11	58	47562	40.1002 ug/L	#	72
65)	1,3-Dichloropropane	13.48	76	282994	46.1782 ug/L	#	64
66)	Tetrachloroethene	13.60	164	245877	52.1371 ug/L		91
67)	Dibromochloromethane	13.87	129	277526	53.2737 ug/L		98
68)	1,2-Dibromoethane	14.12	107	167647	48.6767 ug/L		99
69)	1-Chlorohexane	14.21	91	353995	49.9076 ug/L	#	61
70)	Chlorobenzene	14.62	112	725284	50.1616 ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.65	131	314211	55.7624 ug/L		98
72)	Ethylbenzene	14.65	106	407050	49.6147 ug/L		100
73)	m-,p-Xylene	14.74	106	983886	104.0920 ug/L		94
74)	o-Xylene	15.31	106	490536	51.5146 ug/L		97
75)	Styrene	15.34	104	795641	52.3991 ug/L		87
76)	Bromoform	15.83	173	165231	55.2801 ug/L		99
77)	Isopropylbenzene	15.73	105	1303598	53.9969 ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	168576	43.0989 ug/L		99
81)	1,2,3-Trichloropropane	16.13	110	61908	49.2525 ug/L		83
82)	trans-1,4-Dichloro-2-Buten	16.18	53	100557	52.7823 ug/L		71
83)	n-Propylbenzene	16.24	91	1509997	49.9670 ug/L		97
84)	Bromobenzene	16.36	156	312512	49.6025 ug/L		99
85)	1,3,5-Trimethylbenzene	16.42	105	1174152	52.5049 ug/L		98
86)	2-Chlorotoluene	16.50	91	997611	51.5500 ug/L		99
87)	4-Chlorotoluene	16.56	91	1030843	51.7087 ug/L		98
88)	a-Methylstyrene	16.82	118	582900	52.9019 ug/L		93
89)	tert-Butylbenzene	16.89	134	224605	50.6934 ug/L		80
90)	1,2,4-Trimethylbenzene	16.94	105	1217185	53.1771 ug/L		98
91)	sec-Butylbenzene	17.16	105	1368472	50.8936 ug/L		98
92)	p-Isopropyltoluene	17.31	119	1200447	52.2906 ug/L		95
93)	1,3-Dichlorobenzene	17.51	146	642693	51.3930 ug/L		92
94)	1,4-Dichlorobenzene	17.63	146	632516	50.6765 ug/L		92
95)	n-Butylbenzene	17.84	91	1129326	51.7167 ug/L		99
96)	1,2-Dichlorobenzene	18.13	146	557545	50.8754 ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.12	75	43898	51.2476 ug/L		79
98)	1,2,4-Trichlorobenzene	20.27	180	414716	48.8590 ug/L		99
99)	Hexachlorobutadiene	20.42	225	210217	53.5178 ug/L		94
100)	Naphthalene	20.64	128	620178	48.0538 ug/L		100
101)	1,2,3-Trichlorobenzene	20.95	180	339353	46.9953 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412047.D 8260WTR.M Sat May 07 12:26:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\050716\8M412047.D Vial: 2
Acq On : 7 May 2016 12:05 Operator: TMB
Sample : WG567934-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD75976 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 7 12:26 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

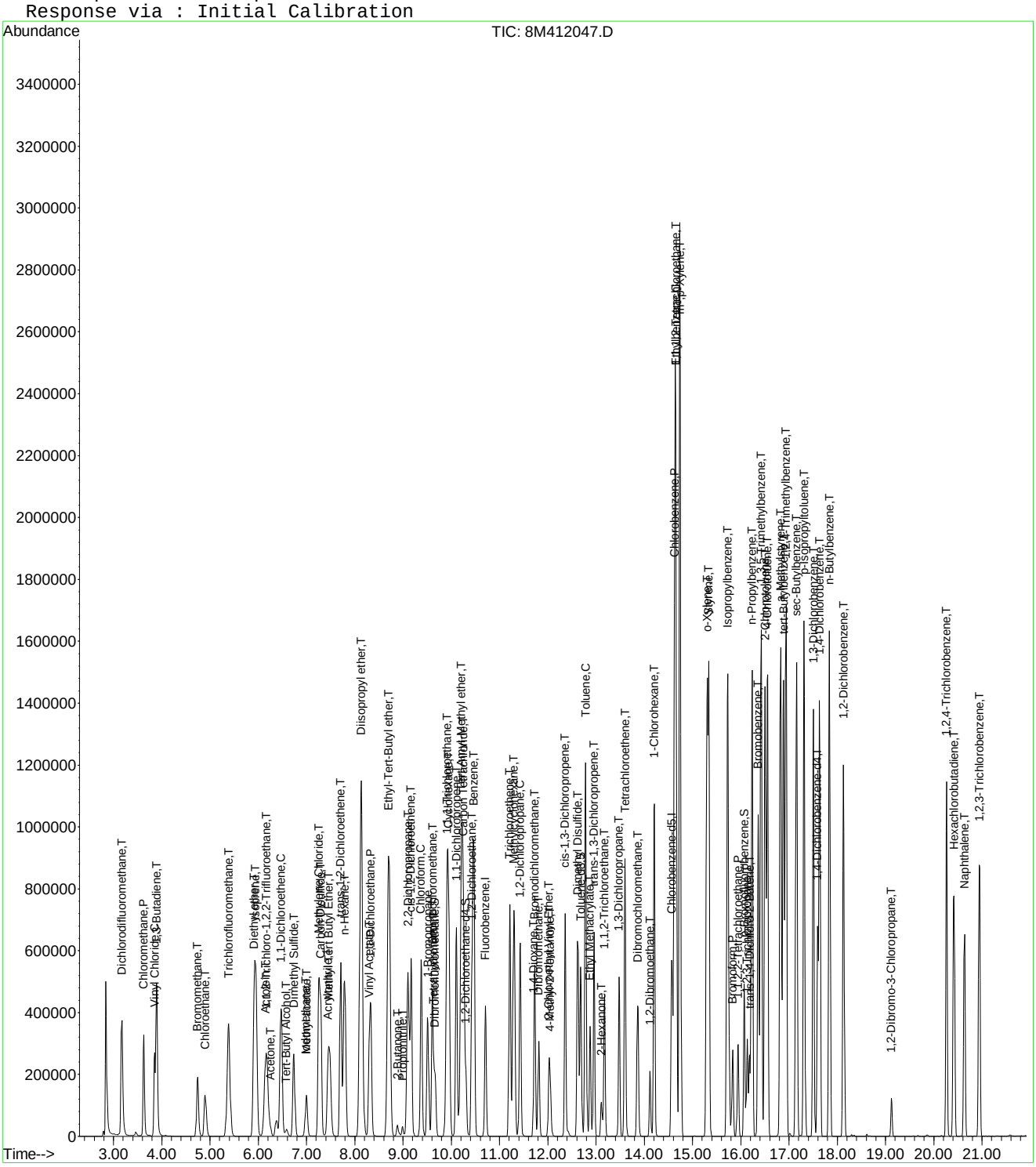

8M412047.D 8260WTR.M Sat May 07 12:26:59 2016 Page 3

Continuing Calibration Area and RT check

Instrument: HPMS8
Initial cal date: 28 Apr 2016 10:54
CCV date: 7 May 2016 12:05
CCV Filename: 8M412047.D

	Fluorobenzene		Chlorobenzene-d5		1,4-Dichlorobenzene-d4	
	Amount	RT	Amount	RT	Amount	RT
InitCal	692530	10.72	522516	14.57	287363	17.59
CCV	441473	10.71	347752	14.57	196094	17.59

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\050716\8M412047.D Vial: 2
Acq On : 7 May 2016 12:05 Operator: TMB
Sample : WG567934-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD75976 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	64	0.00
2	T	Dichlorodifluoromethane	0.5240	0.5511	-5.2	62	0.00
3	P	Chloromethane	0.4936	0.4911	0.5	65	0.01
4	C	Vinyl Chloride	0.3333	0.3650	-9.5	69	0.01
5	T	1,3-Butadiene	0.3257	0.3058	6.1	58	0.01
6	T	Bromomethane	0.1991	0.2114	-6.2	63	0.01
7	T	Chloroethane	0.2181	0.1964	9.9	57	0.00
8	T	Trichlorofluoromethane	0.6617	0.7541	-14.0	72	0.00
9	T	Diethyl ether	0.2024	0.1811	10.6	57	0.00
10	T	Isoprene	0.3386	0.3008	11.1	55	0.00
11	T	Acrolein	0.0180	0.0238	-32.4#	85	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.3030	0.2964	2.2	62	0.01
13	T	Acetone	0.0614	0.0581	5.4	61	0.00
14	C	1,1-Dichloroethene	0.5880	0.6034	-2.6	66	0.00
15	T	Tert-Butyl Alcohol	0.0141	0.0136	3.5	62	-0.01
16	T	Dimethyl Sulfide	0.2173	0.1887	13.2	53	0.00
17	T	Iodomethane	0.1164	0.1359	-16.8	60	-0.01
18	T	Methyl acetate	0.1834	0.1762	3.9	62	0.00
19	T	Methylene Chloride	0.2787	0.2455	11.9	58	0.00
20	T	Carbon Disulfide	0.8501	0.7382	13.2	55	0.00
21	T	Acrylonitrile	0.0789	0.0750	5.0	57	0.00
22	T	Methyl Tert Butyl Ether	0.6155	0.5851	5.0	59	-0.01
23	T	trans-1,2-Dichloroethene	0.5319	0.5251	1.3	63	0.00
24	T	n-Hexane	0.4826	0.4324	10.4	56	0.00
25	T	Diisopropyl ether	1.3664	1.2442	8.9	57	0.00
26	T	Vinyl Acetate	0.5485	0.4524	17.5	50	0.00
27	P	1,1-Dichloroethane	0.6362	0.6204	2.5	62	0.00
28	T	Ethyl-Tert-Butyl ether	0.9590	0.8927	6.9	59	-0.01
29	T	2-Butanone	0.0983	0.0857	12.8	55	0.00
30	T	Propionitrile	0.0249	0.0214	13.9	51	0.00
31	T	2,2-Dichloropropane	0.5605	0.6380	-13.8	74	0.00
32	T	cis-1,2-Dichloroethene	0.3183	0.2970	6.7	62	-0.01
33	C	Chloroform	0.5903	0.6215	-5.3	68	-0.01
34		1-Bromopropane	0.0501	0.0460	8.3	57	0.00
35	T	Bromochloromethane	0.1665	0.1609	3.4	60	0.00
36	T	Tetrahydrofuran	0.0650	0.0671	-3.2	69	0.00
37	S	Dibromofluoromethane	0.3139	0.3073	2.1	61	-0.01
38	T	1,1,1-Trichloroethane	0.5951	0.6769	-13.7	72	0.00
39	T	Cyclohexane	0.6495	0.5962	8.2	58	0.00
40	T	1,1-Dichloropropene	0.4283	0.4288	-0.1	62	0.00
41	T	Tert-Amyl-Methyl ether	0.6142	0.5512	10.3	57	0.00
42	T	Carbon Tetrachloride	0.5599	0.6670	-19.1	74	0.00
43	S	1,2-Dichloroethane-d4	0.3591	0.3947	-9.9	67	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.4958	0.5594	-12.8	72	0.00
46	T	Benzene	1.0910	1.0209	6.4	59	0.00
47	T	Trichloroethene	0.3149	0.3129	0.6	63	0.00
48	T	Methylcyclohexane	0.4402	0.4176	5.1	59	-0.01
49	C	1,2-Dichloropropane	0.3176	0.2949	7.2	60	0.00
50	T	Bromodichloromethane	0.4419	0.4894	-10.7	70	0.00
51	T	1,4-Dioxane	0.0013	0.0011	11.8	50#	-0.01
52	T	Dibromomethane	0.1495	0.1546	-3.4	65	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1330	0.1137	14.5	53	-0.01
54	T	4-Methyl-2-Pentanone	0.0726	0.0614	15.4	54	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\050716\8M412047.D Vial: 2
Acq On : 7 May 2016 12:05 Operator: TMB
Sample : WG567934-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD75976 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4447	0.4476	-0.7	62	0.00
56	T	Dimethyl Disulfide	0.2330	0.2351	-0.9	64	-0.01
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	67	0.00
58	S	Toluene-d8	1.2927	1.2658	2.1	61	0.00
59	C	Toluene	1.4971	1.4478	3.3	62	0.00
60	T	Ethyl Methacrylate	0.2809	0.2545	9.4	56	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.5223	0.5438	-4.1	67	0.00
63	T	1,1,2-Trichloroethane	0.2376	0.2285	3.8	61	0.00
64	T	2-Hexanone	0.0853	0.0684	19.8	51	0.00
65	T	1,3-Dichloropropane	0.4406	0.4069	7.6	60	0.00
66	T	Tetrachloroethene	0.3390	0.3535	-4.3	69	0.00
67	T	Dibromochloromethane	0.3745	0.3990	-6.5	68	0.00
68	T	1,2-Dibromoethane	0.2476	0.2410	2.6	61	0.00
69	T	1-Chlorohexane	0.5099	0.5090	0.2	64	0.00
70	P	Chlorobenzene	1.0395	1.0428	-0.3	65	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4051	0.4518	-11.5	71	0.00
72	C	Ethylbenzene	0.5898	0.5853	0.8	66	0.00
73	T	m-,p-Xylene	0.6795	0.7073	-4.1	66	-0.01
74	T	o-Xylene	0.6846	0.7053	-3.0	66	0.00
75	T	Styrene	1.0916	1.1440	-4.8	66	0.00
76	P	Bromoform	0.2149	0.2376	-10.6	70	0.00
77	T	Isopropylbenzene	1.7356	1.8743	-8.0	68	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	68	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4987	0.4298	13.8	60	0.00
80	S	p-Bromofluorobenzene	1.0233	0.9707	5.1	64	0.00
81	T	1,2,3-Trichloropropane	0.1603	0.1578	1.5	68	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.2429	0.2564	-5.6	71	0.00
83	T	n-Propylbenzene	3.8527	3.8502	0.1	67	0.00
84	T	Bromobenzene	0.8032	0.7968	0.8	67	-0.01
85	T	1,3,5-Trimethylbenzene	2.8510	2.9939	-5.0	70	0.00
86	T	2-Chlorotoluene	2.4672	2.5437	-3.1	71	0.00
87	T	4-Chlorotoluene	2.5416	2.6284	-3.4	70	0.00
88	T	a-Methylstyrene	1.4047	1.4863	-5.8	71	0.00
89	T	tert-Butylbenzene	0.5649	0.5727	-1.4	68	0.00
90	T	1,2,4-Trimethylbenzene	2.9181	3.1036	-6.4	70	0.00
91	T	sec-Butylbenzene	3.4281	3.4893	-1.8	68	0.00
92	T	p-Isopropyltoluene	2.9268	3.0609	-4.6	69	-0.01
93	T	1,3-Dichlorobenzene	1.5943	1.6387	-2.8	70	0.00
94	T	1,4-Dichlorobenzene	1.5913	1.6128	-1.4	71	-0.01
95	T	n-Butylbenzene	2.7840	2.8796	-3.4	69	0.00
96	T	1,2-Dichlorobenzene	1.3972	1.4216	-1.8	70	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1092	0.1119	-2.5	73	0.00
98	T	1,2,4-Trichlorobenzene	1.0821	1.0574	2.3	68	0.00
99	T	Hexachlorobutadiene	0.5008	0.5360	-7.0	73	0.00
100	T	Naphthalene	1.6454	1.5813	3.9	65	0.00
101	T	1,2,3-Trichlorobenzene	0.9206	0.8653	6.0	66	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412047.D 8260WTR.M Sat May 07 12:28:33 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\050716\8M412047.D Vial: 2
Acq On : 7 May 2016 12:05 Operator: TMB
Sample : WG567934-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD75976 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	64	0.00
2	T	Dichlorodifluoromethane	50.0000	52.5919	-5.2	62	0.00
3	P	Chloromethane	50.0000	49.7461	0.5	65	0.01
4	C	Vinyl Chloride	50.0000	54.7563	-9.5	69	0.01
5	T	1,3-Butadiene	50.0000	46.9547	6.1	58	0.01
6	T	Bromomethane	50.0000	44.6525	10.7	63	0.01
7	T	Chloroethane	50.0000	45.0268	9.9	57	0.00
8	T	Trichlorofluoromethane	50.0000	56.9856	-14.0	72	0.00
9	T	Diethyl ether	100.0000	89.4498	10.6	57	0.00
10	T	Isoprene	50.0000	44.4256	11.1	55	0.00
11	T	Acrolein	50.0000	66.2211	-32.4#	85	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	48.9153	2.2	62	0.01
13	T	Acetone	50.0000	47.2972	5.4	61	0.00
14	C	1,1-Dichloroethene	50.0000	51.3082	-2.6	66	0.00
15	T	Tert-Butyl Alcohol	200.0000	192.8929	3.6	62	-0.01
16	T	Dimethyl Sulfide	50.0000	43.4212	13.2	53	0.00
17	T	Iodomethane	50.0000	46.5216	7.0	60	-0.01
18	T	Methyl acetate	50.0000	48.0281	3.9	62	0.00
19	T	Methylene Chloride	50.0000	44.0509	11.9	58	0.00
20	T	Carbon Disulfide	50.0000	43.4160	13.2	55	0.00
21	T	Acrylonitrile	50.0000	47.5043	5.0	57	0.00
22	T	Methyl Tert Butyl Ether	50.0000	47.5249	5.0	59	-0.01
23	T	trans-1,2-Dichloroethene	50.0000	49.3590	1.3	63	0.00
24	T	n-Hexane	50.0000	44.8014	10.4	56	0.00
25	T	Diisopropyl ether	100.0000	91.0507	8.9	57	0.00
26	T	Vinyl Acetate	50.0000	41.2362	17.5	50	0.00
27	P	1,1-Dichloroethane	50.0000	48.7576	2.5	62	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	93.0861	6.9	59	-0.01
29	T	2-Butanone	50.0000	43.6085	12.8	55	0.00
30	T	Propionitrile	100.0000	86.1496	13.9	51	0.00
31	T	2,2-Dichloropropane	50.0000	56.9125	-13.8	74	0.00
32	T	cis-1,2-Dichloroethene	50.0000	46.6673	6.7	62	-0.01
33	C	Chloroform	50.0000	52.6415	-5.3	68	-0.01
34		1-Bromopropane	50.0000	45.8711	8.3	57	0.00
35	T	Bromochloromethane	50.0000	48.3096	3.4	60	0.00
36	T	Tetrahydrofuran	100.0000	103.1981	-3.2	69	0.00
37	S	Dibromofluoromethane	25.0000	24.4731	2.1	61	-0.01
38	T	1,1,1-Trichloroethane	50.0000	56.8692	-13.7	72	0.00
39	T	Cyclohexane	50.0000	45.9003	8.2	58	0.00
40	T	1,1-Dichloropropene	50.0000	50.0512	-0.1	62	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	89.7385	10.3	57	0.00
42	T	Carbon Tetrachloride	50.0000	59.5632	-19.1	74	0.00
43	S	1,2-Dichloroethane-d4	25.0000	27.4737	-9.9	67	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	56.4129	-12.8	72	0.00
46	T	Benzene	50.0000	46.7865	6.4	59	0.00
47	T	Trichloroethene	50.0000	49.6825	0.6	63	0.00
48	T	Methylcyclohexane	50.0000	47.4312	5.1	59	-0.01
49	C	1,2-Dichloropropane	50.0000	46.4229	7.2	60	0.00
50	T	Bromodichloromethane	50.0000	55.3755	-10.8	70	0.00
51	T	1,4-Dioxane	200.0000	177.5639	11.2	50	-0.01
52	T	Dibromomethane	50.0000	51.6935	-3.4	65	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	42.7649	14.5	53	-0.01
54	T	4-Methyl-2-Pentanone	50.0000	42.3189	15.4	54	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\050716\8M412047.D Vial: 2
Acq On : 7 May 2016 12:05 Operator: TMB
Sample : WG567934-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD75976 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	50.3262	-0.7	62	0.00
56	T	Dimethyl Disulfide	50.0000	50.4557	-0.9	64	-0.01
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	67	0.00
58	S	Toluene-d8	25.0000	24.4803	2.1	61	0.00
59	C	Toluene	50.0000	48.3563	3.3	62	0.00
60	T	Ethyl Methacrylate	50.0000	45.3013	9.4	56	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	52.0567	-4.1	67	0.00
63	T	1,1,2-Trichloroethane	50.0000	48.0854	3.8	61	0.00
64	T	2-Hexanone	50.0000	40.1002	19.8	51	0.00
65	T	1,3-Dichloropropane	50.0000	46.1782	7.6	60	0.00
66	T	Tetrachloroethene	50.0000	52.1371	-4.3	69	0.00
67	T	Dibromochloromethane	50.0000	53.2738	-6.5	68	0.00
68	T	1,2-Dibromoethane	50.0000	48.6767	2.6	61	0.00
69	T	1-Chlorohexane	50.0000	49.9076	0.2	64	0.00
70	P	Chlorobenzene	50.0000	50.1616	-0.3	65	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	55.7624	-11.5	71	0.00
72	C	Ethylbenzene	50.0000	49.6147	0.8	66	0.00
73	T	m-,p-Xylene	100.0000	104.0920	-4.1	66	-0.01
74	T	o-Xylene	50.0000	51.5146	-3.0	66	0.00
75	T	Styrene	50.0000	52.3991	-4.8	66	0.00
76	P	Bromoform	50.0000	55.2801	-10.6	70	0.00
77	T	Isopropylbenzene	50.0000	53.9969	-8.0	68	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	68	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	43.0989	13.8	60	0.00
80	S	p-Bromofluorobenzene	25.0000	23.7136	5.1	64	0.00
81	T	1,2,3-Trichloropropane	50.0000	49.2525	1.5	68	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	52.7823	-5.6	71	0.00
83	T	n-Propylbenzene	50.0000	49.9670	0.1	67	0.00
84	T	Bromobenzene	50.0000	49.6025	0.8	67	-0.01
85	T	1,3,5-Trimethylbenzene	50.0000	52.5049	-5.0	70	0.00
86	T	2-Chlorotoluene	50.0000	51.5500	-3.1	71	0.00
87	T	4-Chlorotoluene	50.0000	51.7087	-3.4	70	0.00
88	T	a-Methylstyrene	50.0000	52.9019	-5.8	71	0.00
89	T	tert-Butylbenzene	50.0000	50.6934	-1.4	68	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	53.1771	-6.4	70	0.00
91	T	sec-Butylbenzene	50.0000	50.8936	-1.8	68	0.00
92	T	p-Isopropyltoluene	50.0000	52.2906	-4.6	69	-0.01
93	T	1,3-Dichlorobenzene	50.0000	51.3930	-2.8	70	0.00
94	T	1,4-Dichlorobenzene	50.0000	50.6765	-1.4	71	-0.01
95	T	n-Butylbenzene	50.0000	51.7167	-3.4	69	0.00
96	T	1,2-Dichlorobenzene	50.0000	50.8754	-1.8	70	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	51.2476	-2.5	73	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	48.8590	2.3	68	0.00
99	T	Hexachlorobutadiene	50.0000	53.5178	-7.0	73	0.00
100	T	Naphthalene	50.0000	48.0538	3.9	65	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	46.9954	6.0	66	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412047.D 8260WTR.M Sat May 07 12:28:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\050516\9M974163.D Vial: 2
Acq On : 5 May 2016 11:29 Operator: ADC
Sample : WG567630-02 50ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 11:52:31 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	636564	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	471661	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	248210	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	170091	52.2844 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.56%		
43) 1,2-Dichloroethane-d4	10.43	65	183667	52.1439 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 104.28%		
58) Toluene-d8	12.82	98	600430	53.2862 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 106.58%		
79) p-Bromofluorobenzene	16.22	95	234912	54.5918 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 109.18%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	259462	59.7370 ug/kg	99
3) Chloromethane	3.74	50	325629	60.8236 ug/kg	99
4) Vinyl Chloride	3.97	62	196659	51.2656 ug/kg	98
5) 1,3-Butadiene	4.01	54	164530	76.7857 ug/kg	99
6) Bromomethane	4.87	94	159152	59.3585 ug/kg	99
7) Chloroethane	5.03	64	143398	56.1261 ug/kg	99
8) Trichlorofluoromethane	5.52	101	307566	56.3956 ug/kg	100
9) Diethyl ether	6.04	59	345573	112.7185 ug/kg	99
10) Isoprene	6.08	67	455131	105.0325 ug/kg	100
11) Acrolein	6.28	56	30994	60.6649 ug/kg	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.30	101	182510	57.1818 ug/kg	97
13) Acetone	6.38	43	121236	103.4925 ug/kg	98
14) 1,1-Dichloroethene	6.60	61	304307	57.1746 ug/kg	99
15) Tert-Butyl Alcohol	6.71	59	120213	218.6022 ug/kg	99
16) Dimethyl Sulfide	6.87	62	264988	102.1300 ug/kg	97
17) Iodomethane	7.12	142	231831	114.4512 ug/kg	99
18) Methyl acetate	7.13	43	336225	97.9113 ug/kg	99
19) Methylene Chloride	7.38	84	178916	53.0504 ug/kg	100
20) Carbon Disulfide	7.44	76	1042539	100.0119 ug/kg	100
21) Acrylonitrile	7.56	53	87986	59.9704 ug/kg	98
22) Methyl Tert Butyl Ether	7.60	73	513184	54.4589 ug/kg	100
23) trans-1,2-Dichloroethene	7.84	61	288629	55.8657 ug/kg	99
24) n-Hexane	7.91	57	647336	105.9731 ug/kg	100
25) Diisopropyl ether	8.25	45	1357585	112.3942 ug/kg	99
26) Vinyl Acetate	8.43	43	363656	55.4613 ug/kg	100
27) 1,1-Dichloroethane	8.46	63	350909	54.9679 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.82	59	1274409	110.8805 ug/kg	100
29) 2-Butanone	9.01	43	189530	105.2656 ug/kg	100
30) Propionitrile	9.13	54	61826	102.3699 ug/kg	99
31) 2,2-Dichloropropane	9.23	77	259709	54.2026 ug/kg	100
32) cis-1,2-Dichloroethene	9.29	96	190367	55.5072 ug/kg	99
33) Chloroform	9.51	83	298663	55.3237 ug/kg	100
34) 1-Bromopropane	9.64	122	63479	109.0360 ug/kg	97
35) Bromochloromethane	9.74	130	120700	55.0679 ug/kg	99
36) Tetrahydrofuran	9.76	42	135792	106.9708 ug/kg	99
38) 1,1,1-Trichloroethane	10.04	97	264711	55.1994 ug/kg	99
39) Cyclohexane	10.06	56	742932	104.5527 ug/kg	99
40) 1,1-Dichloropropene	10.23	75	233034	56.0455 ug/kg	99
41) Tert-Amyl-Methyl ether	10.33	73	961413	109.7948 ug/kg	99
42) Carbon Tetrachloride	10.38	117	255597	54.4754 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\050516\9M974163.D Vial: 2
Acq On : 5 May 2016 11:29 Operator: ADC
Sample : WG567630-02 50ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 11:52:31 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	259086	53.8775 ug/kg	100
46)	Benzene	10.59	78	683451	53.1264 ug/kg	100
47)	Trichloroethene	11.34	130	190365	54.1363 ug/kg	98
48)	Methylcyclohexane	11.43	83	594289	106.6537 ug/kg	98
49)	1,2-Dichloropropane	11.56	63	191999	54.2679 ug/kg	99
50)	1,4-Dioxane	11.85	88	11164	222.1704 ug/kg	98
51)	Bromodichloromethane	11.86	83	226495	53.5912 ug/kg	99
52)	Dibromomethane	11.95	174	115392	52.3366 ug/kg	99
53)	2-Chloroethyl Vinyl Ether	12.15	63	226942	107.5477 ug/kg	98
54)	4-Methyl-2-Pentanone	12.19	58	167393	104.1373 ug/kg	98
55)	cis-1,3-Dichloropropene	12.49	75	274433	53.9171 ug/kg	100
56)	Dimethyl Disulfide	12.77	94	627450	108.5289 ug/kg	99
59)	Toluene	12.91	91	709331	53.5624 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	446019	112.1613 ug/kg	99
61)	trans-1,3-Dichloropropene	13.09	75	253283	55.5126 ug/kg	99
62)	1,1,2-Trichloroethane	13.31	97	145830	54.3803 ug/kg	98
63)	2-Hexanone	13.24	43	282471	103.9776 ug/kg	100
64)	1,3-Dichloropropane	13.62	76	247235	53.3118 ug/kg	98
65)	Tetrachloroethene	13.74	164	150836	55.3860 ug/kg	100
66)	Dibromochloromethane	14.01	129	185540	54.6304 ug/kg	99
67)	1,2-Dibromoethane	14.26	107	158342	55.4709 ug/kg	100
68)	1-Chlorohexane	14.34	91	484792	111.7737 ug/kg	100
69)	Chlorobenzene	14.76	112	497144	54.4761 ug/kg	100
70)	1,1,1,2-Tetrachloroethane	14.79	131	182316	54.3311 ug/kg	99
71)	Ethylbenzene	14.79	106	273414	55.6329 ug/kg	100
72)	m-,p-Xylene	14.88	106	655851	108.1337 ug/kg	99
73)	o-Xylene	15.45	106	314687	53.3705 ug/kg	100
74)	Styrene	15.48	104	536199	56.0388 ug/kg	100
75)	Bromoform	15.98	173	125839	52.6529 ug/kg	99
76)	Isopropylbenzene	15.87	105	816646	55.1358 ug/kg	100
78)	1,1,2,2-Tetrachloroethane	16.09	83	191718	52.8532 ug/kg	99
80)	1,2,3-Trichloropropane	16.28	110	61998	54.9412 ug/kg	65
81)	trans-1,4-Dichloro-2-Buten	16.32	53	144290	106.6881 ug/kg	71
82)	n-Propylbenzene	16.38	91	922999	63.1616 ug/kg	100
83)	Bromobenzene	16.51	156	213965	55.7154 ug/kg	98
84)	1,3,5-Trimethylbenzene	16.57	105	691784	58.3050 ug/kg	100
85)	2-Chlorotoluene	16.65	91	549728	53.3573 ug/kg	99
86)	4-Chlorotoluene	16.70	91	561301	57.5877 ug/kg	99
87)	a-Methylstyrene	16.97	118	711827	115.7007 ug/kg	97
88)	tert-Butylbenzene	17.03	134	155889	58.7261 ug/kg	94
89)	1,2,4-Trimethylbenzene	17.08	105	705170	59.3832 ug/kg	100
90)	sec-Butylbenzene	17.29	105	897656	56.3657 ug/kg	100
91)	p-Isopropyltoluene	17.45	119	740847	58.4809 ug/kg	100
92)	1,3-Dichlorobenzene	17.65	146	407964	53.9792 ug/kg	98
93)	1,4-Dichlorobenzene	17.79	146	410849	52.9733 ug/kg	100
94)	n-Butylbenzene	17.98	91	672589	55.8110 ug/kg	100
95)	1,2-Dichlorobenzene	18.29	146	387653	53.3341 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.29	157	48129	53.8135 ug/kg	100
97)	1,2,4-Trichlorobenzene	20.43	180	275136	53.0401 ug/kg	99
98)	Hexachlorobutadiene	20.58	225	133748	53.9847 ug/kg	98
99)	Naphthalene	20.80	128	726529	55.2702 ug/kg	99
100)	1,2,3-Trichlorobenzene	21.10	180	274354	54.5744 ug/kg	99

(#) = qualifier out of range (m) = manual integration
9M974163.D 8260SL.M Thu May 05 11:52:31 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\050516\9M974163.D Vial: 2
Acq On : 5 May 2016 11:29 Operator: ADC
Sample : WG567630-02 50ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 5 11:52 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

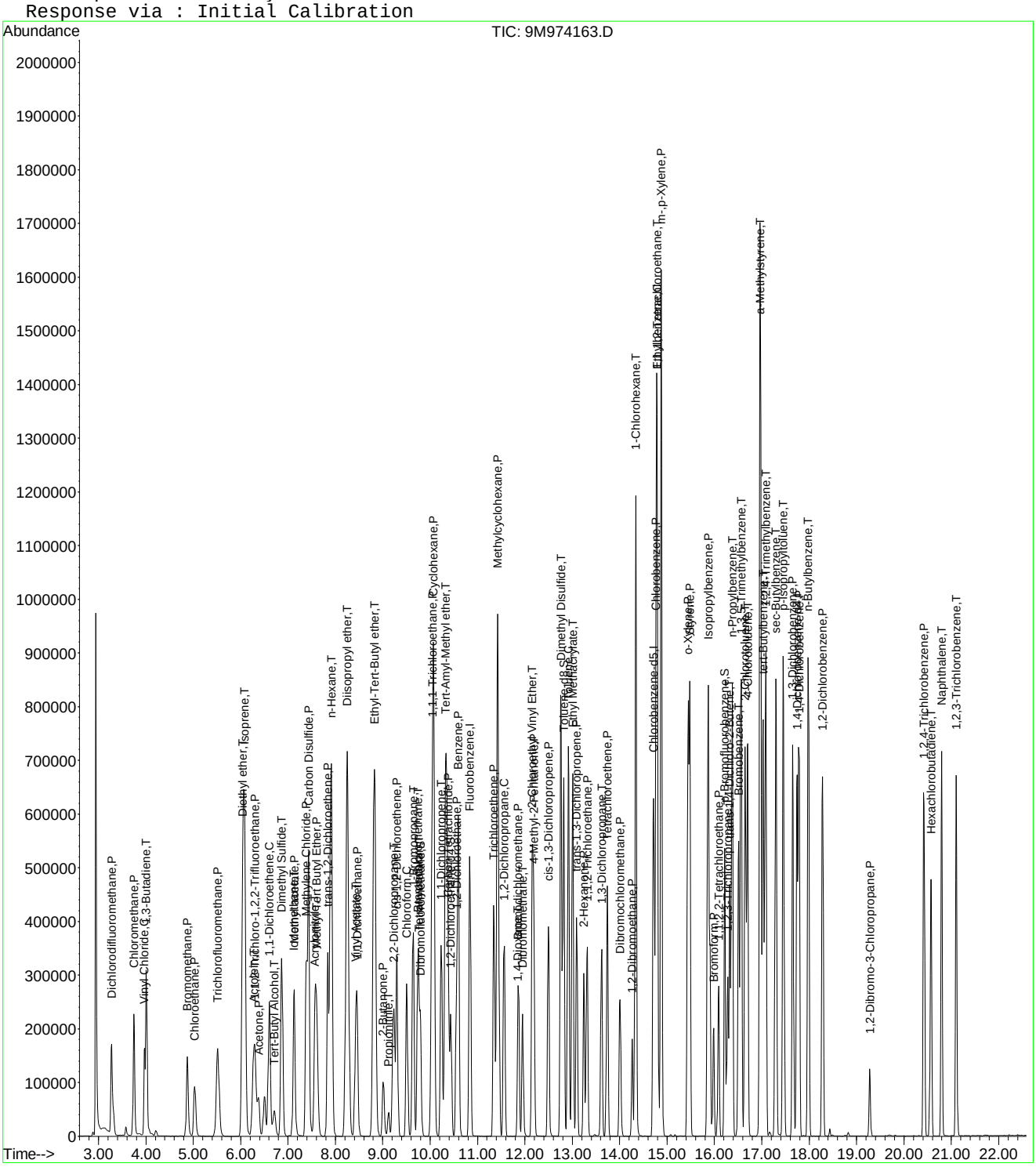

9M974163.D 8260SL.M Thu May 05 11:52:31 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\050516\9M974163.D Vial: 2
Acq On : 5 May 2016 11:29 Operator: ADC
Sample : WG567630-02 50ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	94	0.00
2	P	Dichlorodifluoromethane	0.3412	0.4076	-19.5	106	0.00
3	P	Chloromethane	0.4205	0.5115	-21.6	129	0.00
4	C	Vinyl Chloride	0.3084	0.3089	-0.2	105	0.00
5	T	1,3-Butadiene	0.2208	0.2585	-17.0	145	0.00
6	P	Bromomethane	0.2106	0.2500	-18.7	108	0.00
7	P	Chloroethane	0.2007	0.2253	-12.3	103	0.00
8	P	Trichlorofluoromethane	0.4284	0.4832	-12.8	103	0.00
9	T	Diethyl ether	0.2408	0.2714	-12.7	97	0.00
10	T	Isoprene	0.3404	0.7150	-110.1#	194	-0.01
11	T	Acrolein	0.0401	0.0487	-21.3	97	-0.01
12	P	1,1,2-Trichloro-1,2,2-Trifl	0.2507	0.2867	-14.4	103	0.00
13	P	Acetone	0.1020	0.1905	-86.7#	182	0.00
14	C	1,1-Dichloroethene	0.4181	0.4780	-14.3	103	0.00
15	T	Tert-Butyl Alcohol	0.0432	0.0472	-9.3	93	-0.01
16	T	Dimethyl Sulfide	0.1855	0.4163	-124.4#	201#	0.00
17	T	Iodomethane	0.1461	0.3642	-149.3#	243#	-0.01
18	P	Methyl acetate	0.2697	0.5282	-95.8#	176	0.00
19	P	Methylene Chloride	0.2649	0.2811	-6.1	101	0.00
20	P	Carbon Disulfide	0.8188	1.6378	-100.0#	192	0.00
21	T	Acrylonitrile	0.1152	0.1382	-19.9	96	-0.01
22	P	Methyl Tert Butyl Ether	0.7402	0.8062	-8.9	99	0.00
23	P	trans-1,2-Dichloroethene	0.4058	0.4534	-11.7	102	0.00
24	T	n-Hexane	0.4798	1.0169	-111.9#	203#	0.00
25	T	Diisopropyl ether	0.9487	1.0663	-12.4	98	0.00
26	T	Vinyl Acetate	0.5150	0.5713	-10.9	98	0.00
27	P	1,1-Dichloroethane	0.5014	0.5513	-9.9	102	0.00
28	T	Ethyl-Tert-Butyl ether	0.9028	1.0010	-10.9	96	0.00
29	P	2-Butanone	0.1414	0.2977	-110.5#	183	0.00
30	T	Propionitrile	0.0423	0.0486	-14.9	94	0.00
31	T	2,2-Dichloropropane	0.3764	0.4080	-8.4	100	0.00
32	P	cis-1,2-Dichloroethene	0.2694	0.2990	-11.0	100	0.00
33	C	Chloroform	0.4240	0.4692	-10.6	100	0.00
34	T	1-Bromopropane	0.0457	0.0997	-118.1#	199	0.00
35	T	Bromochloromethane	0.1722	0.1896	-10.1	98	0.00
36	T	Tetrahydrofuran	0.0997	0.1067	-7.0	92	0.00
37	S	Dibromofluoromethane	0.2555	0.2672	-4.6	93	0.00
38	P	1,1,1-Trichloroethane	0.3767	0.4158	-10.4	100	0.00
39	P	Cyclohexane	0.5581	1.1671	-109.1#	192	0.00
40	T	1,1-Dichloropropene	0.3266	0.3661	-12.1	100	0.00
41	T	Tert-Amyl-Methyl ether	0.6878	0.7552	-9.8	94	0.00
42	P	Carbon Tetrachloride	0.3685	0.4015	-9.0	100	0.00
43	S	1,2-Dichloroethane-d4	0.2767	0.2885	-4.3	95	0.00
44		Heptane	0.0000	0.0000	0.0	96	0.00
45	P	1,2-Dichloroethane	0.3777	0.4070	-7.8	100	0.00
46	P	Benzene	1.0105	1.0737	-6.3	100	0.00
47	P	Trichloroethene	0.2762	0.2990	-8.3	98	0.00
48	P	Methylcyclohexane	0.4377	0.9336	-113.3#	191	0.00
49	C	1,2-Dichloropropane	0.2779	0.3016	-8.5	100	0.00
50	T	1,4-Dioxane	0.0035	0.0044	-24.1	101	0.00
51	P	Bromodichloromethane	0.3320	0.3558	-7.2	100	0.00
52	T	Dibromomethane	0.1627	0.1813	-11.4	97	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1658	0.3565	-115.1#	185	0.00
54	P	4-Methyl-2-Pentanone	0.1263	0.2630	-108.3#	181	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\050516\9M974163.D Vial: 2
Acq On : 5 May 2016 11:29 Operator: ADC
Sample : WG567630-02 50ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	0.3998	0.4311	-7.8	99	0.00
56	T	Dimethyl Disulfide	0.4541	0.9857	-117.1#	193	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	93	0.00
58	S	Toluene-d8	1.1945	1.2730	-6.6	92	0.00
59	C	Toluene	1.4039	1.5039	-7.1	98	0.00
60	T	Ethyl Methacrylate	0.4215	0.9456	-124.3#	192	0.00
61	P	trans-1,3-Dichloropropene	0.4837	0.5370	-11.0	98	0.00
62	P	1,1,2-Trichloroethane	0.2843	0.3092	-8.8	95	0.00
63	P	2-Hexanone	0.2880	0.5989	-108.0#	181	0.00
64	T	1,3-Dichloropropane	0.4916	0.5242	-6.6	96	0.00
65	P	Tetrachloroethene	0.2887	0.3198	-10.8	97	0.00
66	P	Dibromochloromethane	0.3600	0.3934	-9.3	96	0.00
67	P	1,2-Dibromoethane	0.3026	0.3357	-10.9	95	0.00
68	T	1-Chlorohexane	0.4598	1.0278	-123.5#	196	0.00
69	P	Chlorobenzene	0.9674	1.0540	-9.0	98	0.00
70	T	1,1,1,2-Tetrachloroethane	0.3557	0.3865	-8.7	97	0.00
71	C	Ethylbenzene	0.5210	0.5797	-11.3	98	0.00
72	P	m-,p-Xylene	0.6430	0.6953	-8.1	97	0.00
73	P	o-Xylene	0.6250	0.6672	-6.7	96	0.00
74	P	Styrene	1.0143	1.1368	-12.1	97	0.00
75	P	Bromoform	0.2534	0.2668	-5.3	94	0.00
76	P	Isopropylbenzene	1.5701	1.7314	-10.3	96	0.00
77	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	93	0.00
78	P	1,1,2,2-Tetrachloroethane	0.7307	0.7724	-5.7	91	0.00
79	S	p-Bromofluorobenzene	0.8668	0.9464	-9.2	93	0.00
80	T	1,2,3-Trichloropropane	0.2273	0.2498	-9.9	95	0.00
81	T	trans-1,4-Dichloro-2-Butene	0.2724	0.5813	-113.4#	182	0.00
82	T	n-Propylbenzene	3.2546	3.7186	-14.3	99	0.00
83	T	Bromobenzene	0.7736	0.8620	-11.4	96	0.00
84	T	1,3,5-Trimethylbenzene	2.3901	2.7871	-16.6	97	0.00
85	T	2-Chlorotoluene	2.0754	2.2148	-6.7	90	0.00
86	T	4-Chlorotoluene	1.9634	2.2614	-15.2	104	0.00
87	T	a-Methylstyrene	1.2393	2.8678	-131.4#	194	0.00
88	T	tert-Butylbenzene	0.5347	0.6281	-17.5	98	0.00
89	T	1,2,4-Trimethylbenzene	2.6650	2.8410	-6.6	97	0.00
90	T	sec-Butylbenzene	3.2081	3.6165	-12.7	97	0.00
91	T	p-Isopropyltoluene	2.5519	2.9848	-17.0	97	0.00
92	P	1,3-Dichlorobenzene	1.5225	1.6436	-8.0	95	0.00
93	P	1,4-Dichlorobenzene	1.5623	1.6553	-5.9	97	0.00
94	T	n-Butylbenzene	2.4276	2.7098	-11.6	98	0.00
95	P	1,2-Dichlorobenzene	1.4642	1.5618	-6.7	96	0.00
96	P	1,2-Dibromo-3-Chloropropane	0.1802	0.1939	-7.6	95	0.00
97	P	1,2,4-Trichlorobenzene	1.0450	1.1085	-6.1	98	0.00
98	T	Hexachlorobutadiene	0.4991	0.5389	-8.0	97	0.00
99	T	Naphthalene	2.6480	2.9271	-10.5	97	0.00
100	T	1,2,3-Trichlorobenzene	1.0127	1.1053	-9.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M974163.D 8260SL.M Thu May 05 11:53:28 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\050516\9M974163.D Vial: 2
Acq On : 5 May 2016 11:29 Operator: ADC
Sample : WG567630-02 50ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	94	0.00
2	P	Dichlorodifluoromethane	50.0000	59.7370	-19.5	106	0.00
3	P	Chloromethane	50.0000	60.8236	-21.6	129	0.00
4	C	Vinyl Chloride	50.0000	51.2656	-2.5	105	0.00
5	T	1,3-Butadiene	50.0000	76.7857	-53.6#	145	0.00
6	P	Bromomethane	50.0000	59.3585	-18.7	108	0.00
7	P	Chloroethane	50.0000	56.1261	-12.3	103	0.00
8	P	Trichlorofluoromethane	50.0000	56.3956	-12.8	103	0.00
9	T	Diethyl ether	100.0000	112.7185	-12.7	97	0.00
10	T	Isoprene	50.0000	105.0325	-110.1#	194	-0.01
11	T	Acrolein	50.0000	60.6649	-21.3	97	-0.01
12	P	1,1,2-Trichloro-1,2,2-Trifl	50.0000	57.1818	-14.4	103	0.00
13	P	Acetone	50.0000	103.4925	-107.0#	182	0.00
14	C	1,1-Dichloroethene	50.0000	57.1746	-14.3	103	0.00
15	T	Tert-Butyl Alcohol	200.0000	218.6022	-9.3	93	-0.01
16	T	Dimethyl Sulfide	50.0000	102.1300	-104.3#	201	0.00
17	T	Iodomethane	50.0000	114.4512	-128.9#	243	-0.01
18	P	Methyl acetate	50.0000	97.9113	-95.8#	176	0.00
19	P	Methylene Chloride	50.0000	53.0504	-6.1	101	0.00
20	P	Carbon Disulfide	50.0000	100.0119	-100.0#	192	0.00
21	T	Acrylonitrile	50.0000	59.9704	-19.9	96	-0.01
22	P	Methyl Tert Butyl Ether	50.0000	54.4589	-8.9	99	0.00
23	P	trans-1,2-Dichloroethene	50.0000	55.8657	-11.7	102	0.00
24	T	n-Hexane	50.0000	105.9731	-111.9#	203	0.00
25	T	Diisopropyl ether	100.0000	112.3942	-12.4	98	0.00
26	T	Vinyl Acetate	50.0000	55.4613	-10.9	98	0.00
27	P	1,1-Dichloroethane	50.0000	54.9679	-9.9	102	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	110.8805	-10.9	96	0.00
29	P	2-Butanone	50.0000	105.2656	-110.5#	183	0.00
30	T	Propionitrile	100.0000	102.3699	-2.4	94	0.00
31	T	2,2-Dichloropropane	50.0000	54.2026	-8.4	100	0.00
32	P	cis-1,2-Dichloroethene	50.0000	55.5072	-11.0	100	0.00
33	C	Chloroform	50.0000	55.3237	-10.6	100	0.00
34	T	1-Bromopropane	50.0000	109.0360	-118.1#	199	0.00
35	T	Bromochloromethane	50.0000	55.0679	-10.1	98	0.00
36	T	Tetrahydrofuran	100.0000	106.9708	-7.0	92	0.00
37	S	Dibromofluoromethane	50.0000	52.2844	-4.6	93	0.00
38	P	1,1,1-Trichloroethane	50.0000	55.1994	-10.4	100	0.00
39	P	Cyclohexane	50.0000	104.5527	-109.1#	192	0.00
40	T	1,1-Dichloropropene	50.0000	56.0455	-12.1	100	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	109.7948	-9.8	94	0.00
42	P	Carbon Tetrachloride	50.0000	54.4755	-9.0	100	0.00
43	S	1,2-Dichloroethane-d4	50.0000	52.1439	-4.3	95	0.00
44		Heptane	-1.0000	0.0000	0.0	96	0.00
45	P	1,2-Dichloroethane	50.0000	53.8775	-7.8	100	0.00
46	P	Benzene	50.0000	53.1264	-6.3	100	0.00
47	P	Trichloroethene	50.0000	54.1363	-8.3	98	0.00
48	P	Methylcyclohexane	50.0000	106.6537	-113.3#	191	0.00
49	C	1,2-Dichloropropane	50.0000	54.2679	-8.5	100	0.00
50	T	1,4-Dioxane	200.0000	222.1704	-11.1	101	0.00
51	P	Bromodichloromethane	50.0000	53.5912	-7.2	100	0.00
52	T	Dibromomethane	50.0000	52.3366	-4.7	97	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	107.5477	-115.1#	185	0.00
54	P	4-Methyl-2-Pentanone	50.0000	104.1373	-108.3#	181	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\050516\9M974163.D Vial: 2
Acq On : 5 May 2016 11:29 Operator: ADC
Sample : WG567630-02 50ug/kg STD 8260 Inst : hpms9
Misc : 7,1 STD75740 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	P	cis-1,3-Dichloropropene	50.0000	53.9171	-7.8	99	0.00
56	T	Dimethyl Disulfide	50.0000	108.5289	-117.1#	193	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	93	0.00
58	S	Toluene-d8	50.0000	53.2862	-6.6	92	0.00
59	C	Toluene	50.0000	53.5624	-7.1	98	0.00
60	T	Ethyl Methacrylate	50.0000	112.1613	-124.3#	192	0.00
61	P	trans-1,3-Dichloropropene	50.0000	55.5126	-11.0	98	0.00
62	P	1,1,2-Trichloroethane	50.0000	54.3803	-8.8	95	0.00
63	P	2-Hexanone	50.0000	103.9776	-108.0#	181	0.00
64	T	1,3-Dichloropropane	50.0000	53.3118	-6.6	96	0.00
65	P	Tetrachloroethene	50.0000	55.3860	-10.8	97	0.00
66	P	Dibromochloromethane	50.0000	54.6304	-9.3	96	0.00
67	P	1,2-Dibromoethane	50.0000	55.4709	-10.9	95	0.00
68	T	1-Chlorohexane	50.0000	111.7737	-123.5#	196	0.00
69	P	Chlorobenzene	50.0000	54.4761	-9.0	98	0.00
70	T	1,1,1,2-Tetrachloroethane	50.0000	54.3311	-8.7	97	0.00
71	C	Ethylbenzene	50.0000	55.6328	-11.3	98	0.00
72	P	m-,p-Xylene	100.0000	108.1337	-8.1	97	0.00
73	P	o-Xylene	50.0000	53.3706	-6.7	96	0.00
74	P	Styrene	50.0000	56.0388	-12.1	97	0.00
75	P	Bromoform	50.0000	52.6529	-5.3	94	0.00
76	P	Isopropylbenzene	50.0000	55.1358	-10.3	96	0.00
77	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	93	0.00
78	P	1,1,2,2-Tetrachloroethane	50.0000	52.8532	-5.7	91	0.00
79	S	p-Bromofluorobenzene	50.0000	54.5918	-9.2	93	0.00
80	T	1,2,3-Trichloropropane	50.0000	54.9412	-9.9	95	0.00
81	T	trans-1,4-Dichloro-2-Butene	50.0000	106.6881	-113.4#	182	0.00
82	T	n-Propylbenzene	50.0000	63.1616	-26.3#	99	0.00
83	T	Bromobenzene	50.0000	55.7154	-11.4	96	0.00
84	T	1,3,5-Trimethylbenzene	50.0000	58.3050	-16.6	97	0.00
85	T	2-Chlorotoluene	50.0000	53.3573	-6.7	90	0.00
86	T	4-Chlorotoluene	50.0000	57.5878	-15.2	104	0.00
87	T	a-Methylstyrene	50.0000	115.7007	-131.4#	194	0.00
88	T	tert-Butylbenzene	50.0000	58.7261	-17.5	98	0.00
89	T	1,2,4-Trimethylbenzene	50.0000	59.3832	-18.8	97	0.00
90	T	sec-Butylbenzene	50.0000	56.3657	-12.7	97	0.00
91	T	p-Isopropyltoluene	50.0000	58.4809	-17.0	97	0.00
92	P	1,3-Dichlorobenzene	50.0000	53.9792	-8.0	95	0.00
93	P	1,4-Dichlorobenzene	50.0000	52.9733	-5.9	97	0.00
94	T	n-Butylbenzene	50.0000	55.8110	-11.6	98	0.00
95	P	1,2-Dichlorobenzene	50.0000	53.3341	-6.7	96	0.00
96	P	1,2-Dibromo-3-Chloropropane	50.0000	53.8135	-7.6	95	0.00
97	P	1,2,4-Trichlorobenzene	50.0000	53.0401	-6.1	98	0.00
98	T	Hexachlorobutadiene	50.0000	53.9847	-8.0	97	0.00
99	T	Naphthalene	50.0000	55.2702	-10.5	97	0.00
100	T	1,2,3-Trichlorobenzene	50.0000	54.5744	-9.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
9M974163.D 8260SL.M Thu May 05 11:53:27 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\2\DATA\042416\8M411681.D          Vial: 1
Acq On    : 24 Apr 2016  16:45                       Operator: JDS
Sample    : WG566154-01 50ng BFB STD 826-A9          Inst    : HPMS8
Misc      : 1,1 STD75485                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

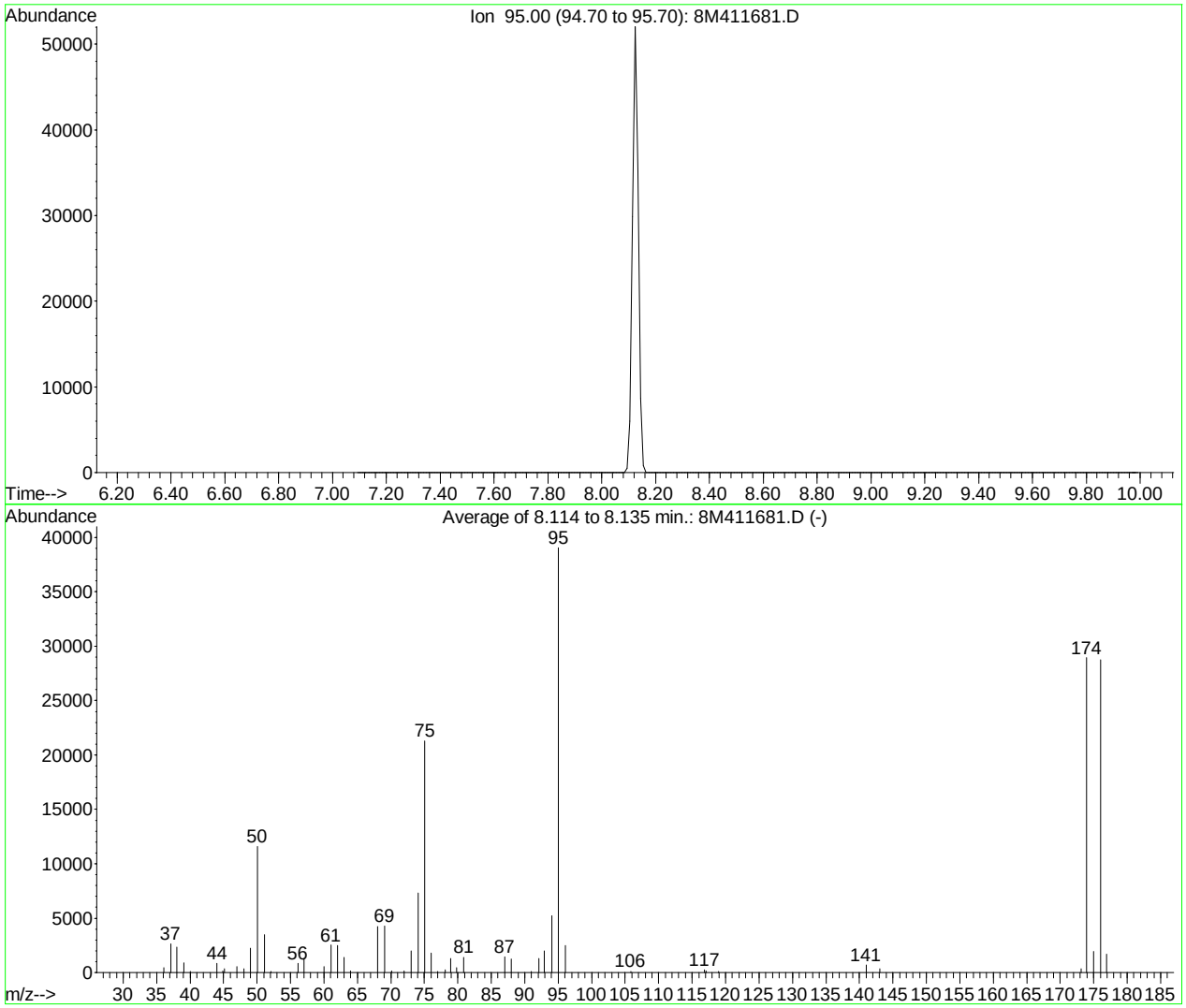

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 96

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	29.7	11578	PASS
75	95	30	60	54.6	21298	PASS
95	95	100	100	100.0	39034	PASS
96	95	5	9	6.3	2474	PASS
173	174	0.00	2	1.2	333	PASS
174	95	50	100	74.1	28941	PASS
175	174	5	9	6.7	1943	PASS
176	174	95	101	99.4	28765	PASS
177	176	5	9	5.9	1691	PASS

8M411681.D BFB.M Mon Apr 25 09:05:43 2016

BFB

Data File : C:\MSDCHEM\2\DATA\042816\8M411789.D Vial: 1
Acq On : 28 Apr 2016 7:05 Operator: ADC
Sample : WG566682-01 50ng BFB STD 8260 Inst : HPMS8
Misc : 1,1 STD75485 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title : SOP:OVL MSV01

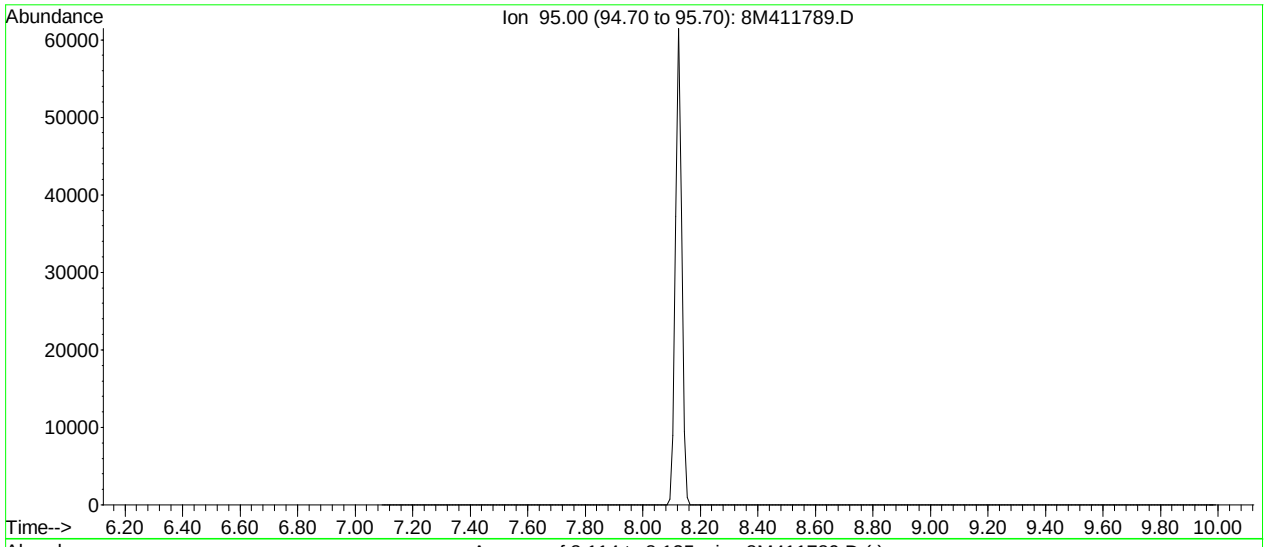

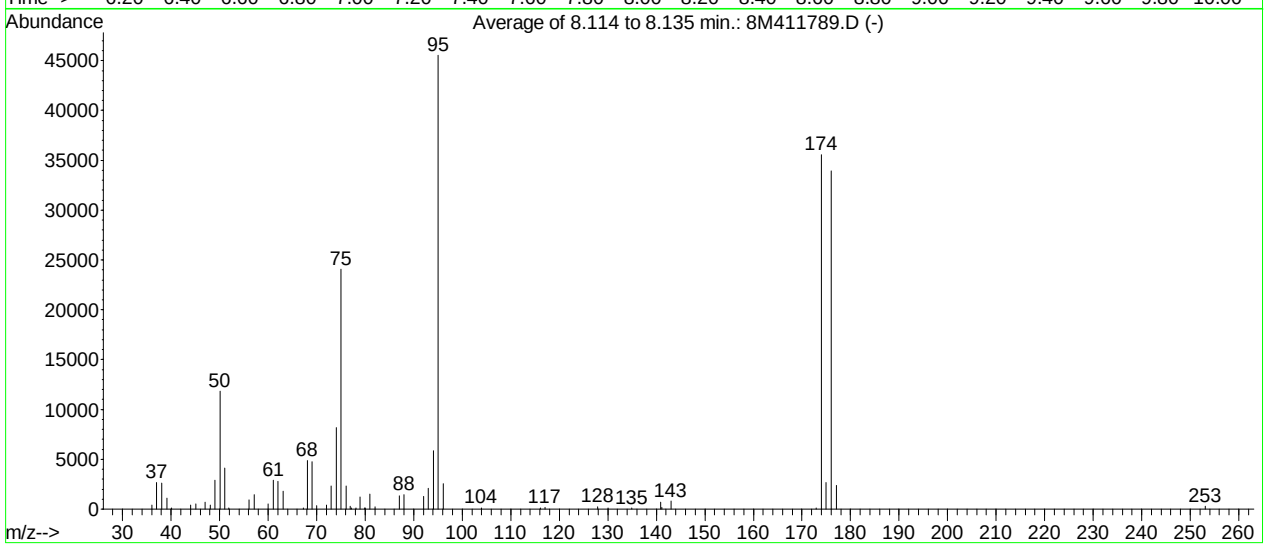

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 96

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	25.9	11810	PASS
75	95	30	60	52.9	24061	PASS
95	95	100	100	100.0	45522	PASS
96	95	5	9	5.6	2567	PASS
173	174	0.00	2	0.3	118	PASS
174	95	50	100	78.1	35560	PASS
175	174	5	9	7.5	2684	PASS
176	174	95	101	95.4	33930	PASS
177	176	5	9	6.9	2358	PASS

8M411789.D BFB.M Thu Apr 28 12:28:52 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\050416\9M974137.D          Vial: 1
Acq On    :  4 May 2016  11:25                        Operator: ADC
Sample    : WG567358-01 BFB 50ng 8260                 Inst    : hpms9
Misc      : 7,1 STD75485                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 05/04/16  HPMS9
```

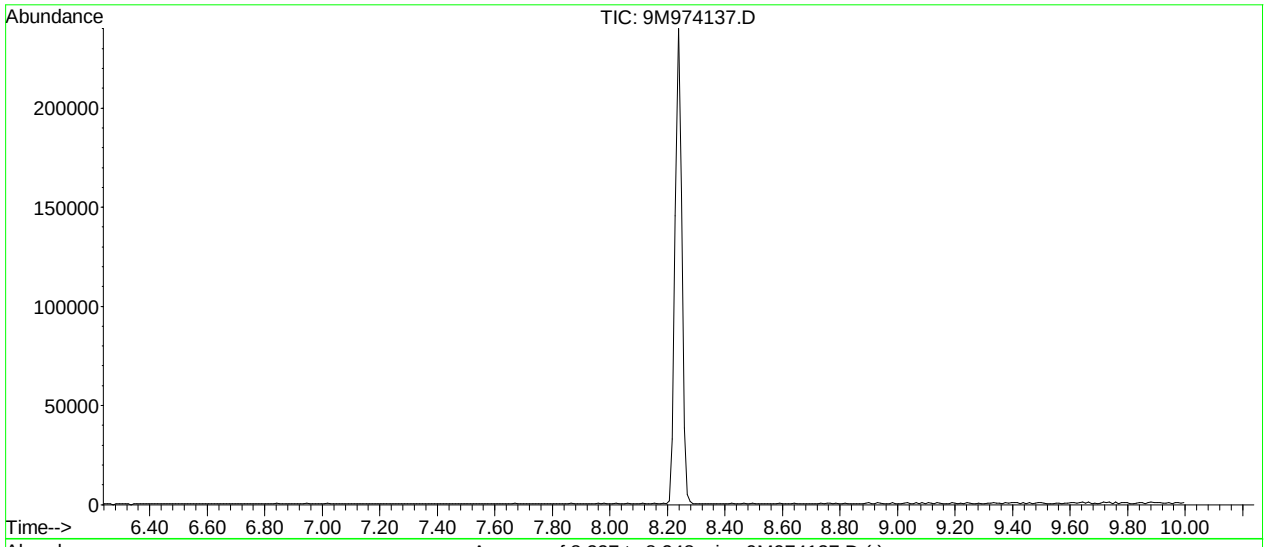

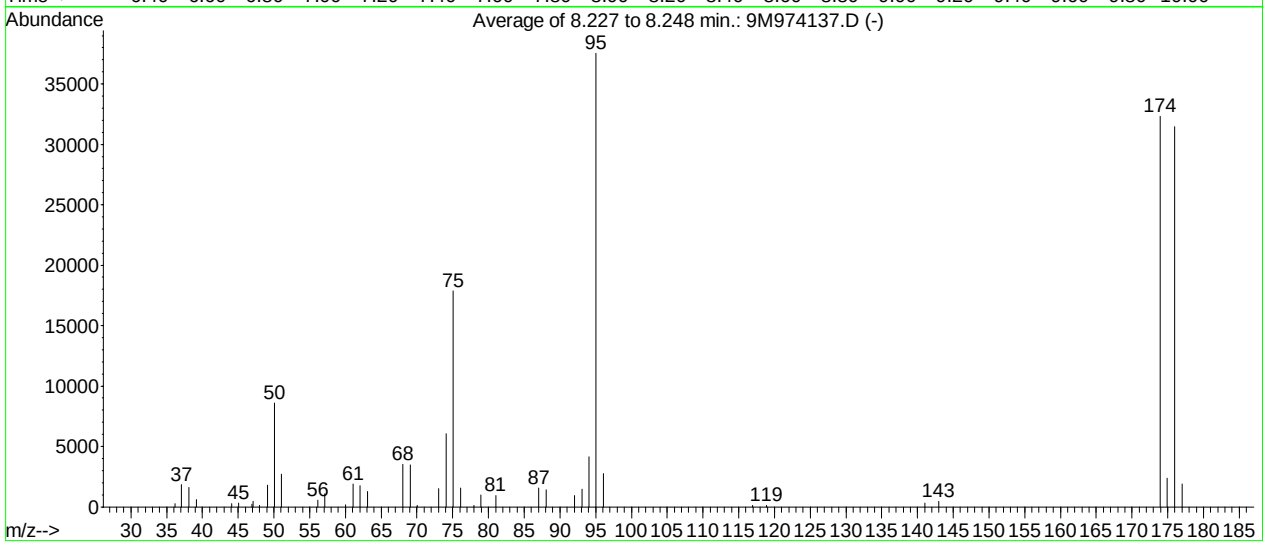

AutoFind: Scans 304, 305, 306; Background Corrected with Scan 299

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.9	8610	PASS
75	95	30	60	47.6	17874	PASS
95	95	100	100	100.0	37554	PASS
96	95	5	9	7.3	2747	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	86.0	32312	PASS
175	174	5	9	7.3	2364	PASS
176	174	95	101	97.4	31461	PASS
177	176	5	9	5.9	1870	PASS

9M974137.D 8260SL.M Thu May 05 16:52:23 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\050516\9M974161.D          Vial: 1
Acq On    :  5 May 2016   9:51                        Operator: ADC
Sample    : WG567630-01 BFB 50ng 8260                 Inst    : hpms9
Misc      : 7,1 STD75485                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title     : 8260(B) SOP: OVL MSV01 SOIL 05/04/16  HPMS9
```

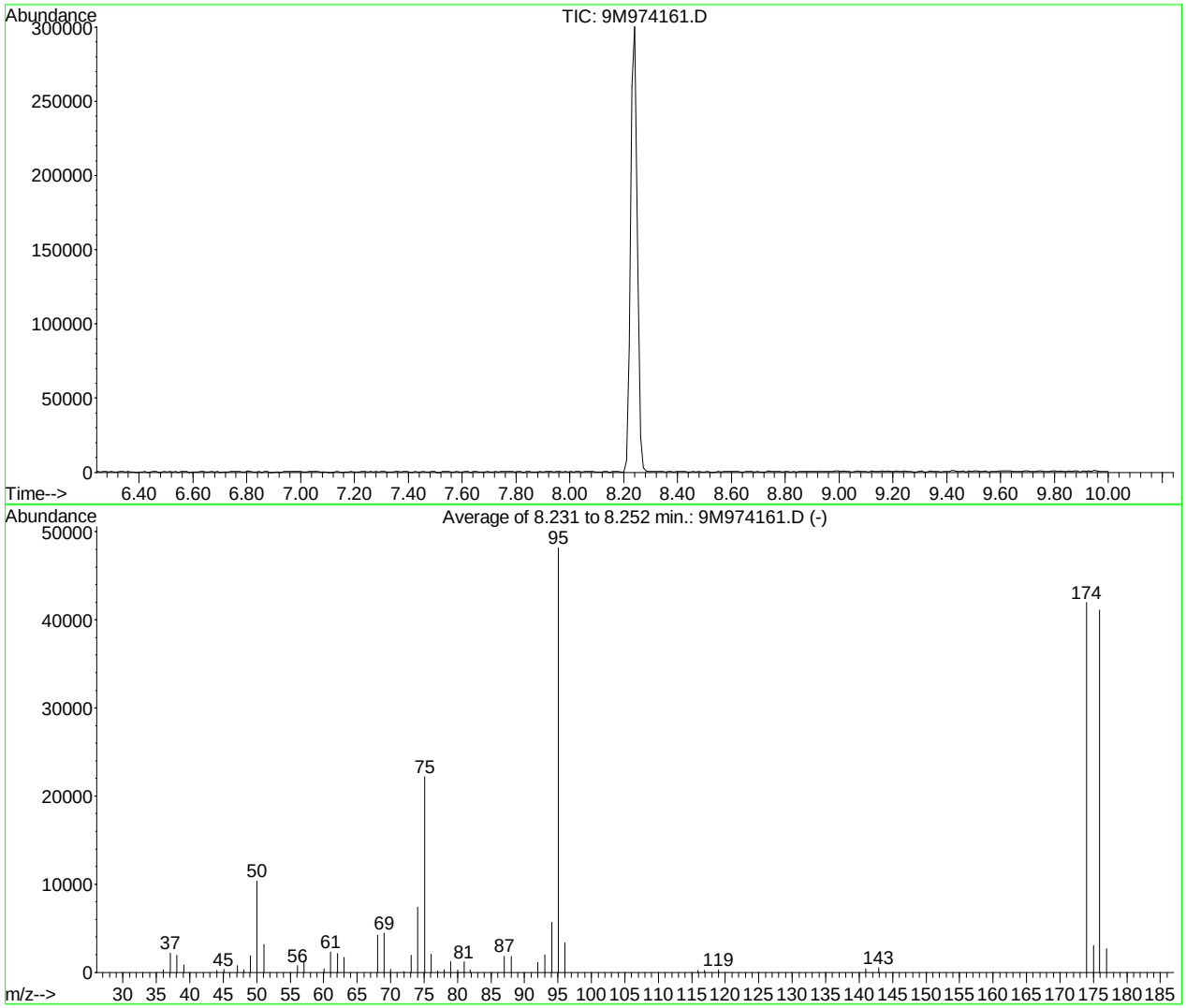

AutoFind: Scans 304, 305, 306; Background Corrected with Scan 299

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.4	10328	PASS
75	95	30	60	46.1	22204	PASS
95	95	100	100	100.0	48200	PASS
96	95	5	9	6.9	3341	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	87.1	41965	PASS
175	174	5	9	7.3	3055	PASS
176	174	95	101	98.0	41133	PASS
177	176	5	9	6.5	2685	PASS

9M974161.D 8260SL.M Thu May 05 11:52:37 2016

BFB

```
Data File : C:\MSDCHEM\2\DATA\050716\8M412046.D          Vial: 2
Acq On    :  7 May 2016  11:41                        Operator: TMB
Sample    : WG567934-01 50ng BFB STD 8260             Inst    : HPMS8
Misc      : 1,1 STD76034                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title     : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
```

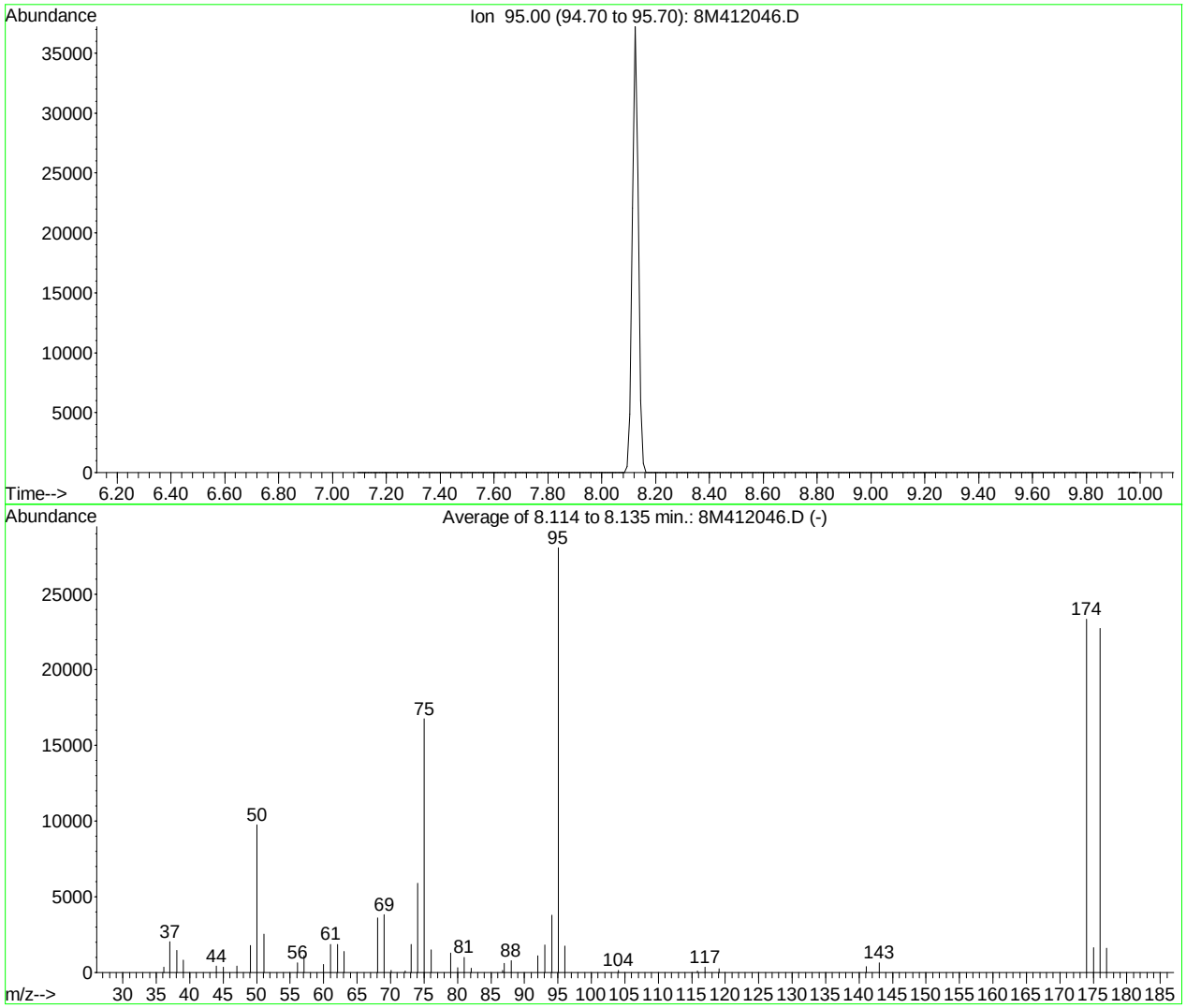

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 96

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	34.8	9756	PASS
75	95	30	60	59.8	16761	PASS
95	95	100	100	100.0	28050	PASS
96	95	5	9	6.2	1742	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	83.2	23343	PASS
175	174	5	9	7.1	1652	PASS
176	174	95	101	97.4	22736	PASS
177	176	5	9	7.2	1627	PASS

8M412046.D 8260WTR.M Sat May 07 12:22:13 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\050716\8M412049.D Vial: 4
Acq On : 7 May 2016 13:02 Operator: TMB
Sample : WG567935-01 VBLK0507 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 09 08:23:59 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	444939	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	351990	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	190127	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	142562	25.5182 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.08%		
43) 1,2-Dichloroethane-d4	10.30	65	185455	29.0161 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 116.08%		
58) Toluene-d8	12.68	98	446279	24.5198 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.08%		
80) p-Bromofluorobenzene	16.07	95	193056	24.8063 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.24%		

Target Compounds					Qvalue
36) Tetrahydrofuran	9.64	42	2028	1.7535 ug/L #	41

(#) = qualifier out of range (m) = manual integration
8M412049.D 8260WTR.M Mon May 09 08:23:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\050716\8M412049.D Vial: 4
Acq On : 7 May 2016 13:02 Operator: TMB
Sample : WG567935-01 VBLK0507 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 9 8:23 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

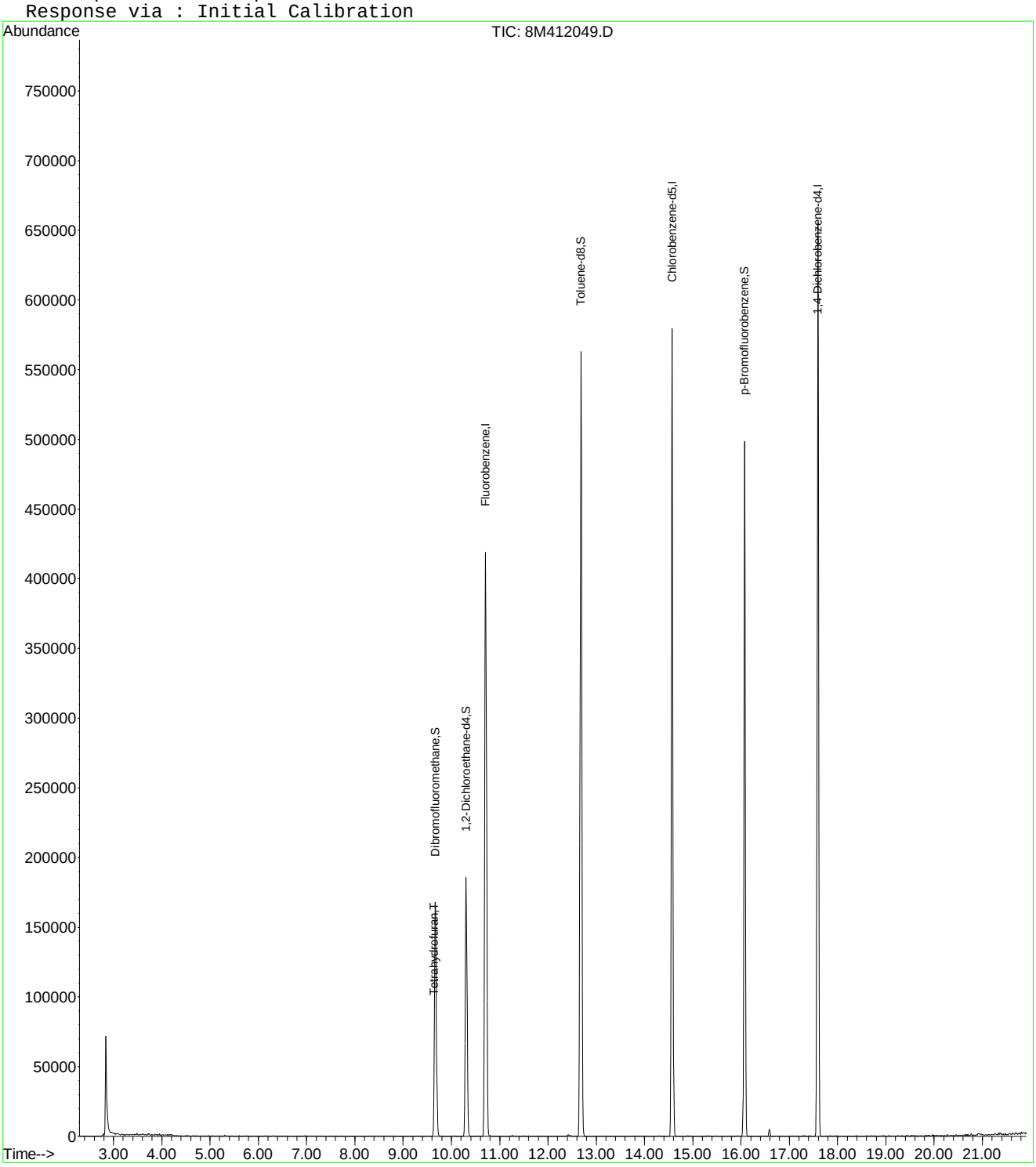

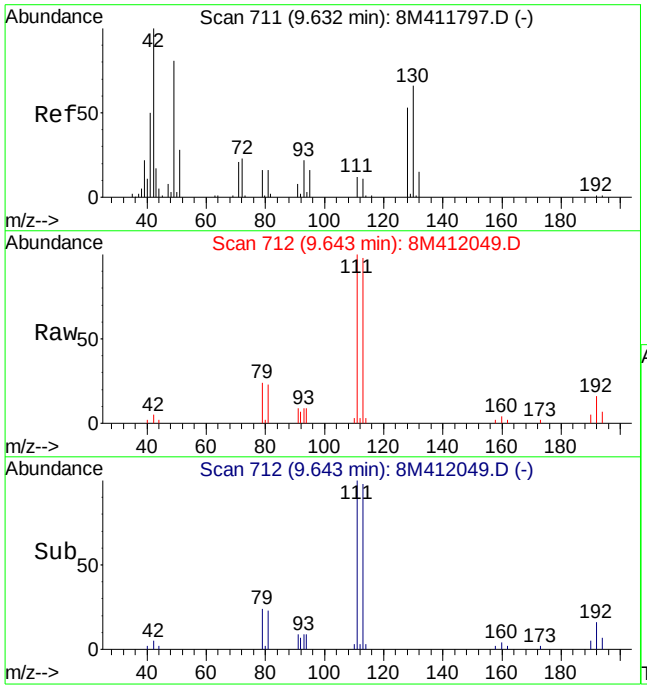

#36
Tetrahydrofuran
Concen: 1.75 ug/L
RT: 9.64 min Scan# 712
Delta R.T. 0.01 min
Lab File: 8M412049.D
Acq: 7 May 2016 13:02

Tgt Ion: 42 Resp: 2028

Ion	Ratio	Lower	Upper
42	100		
72	0.0	20.8	48.6#
71	0.0	19.0	44.4#

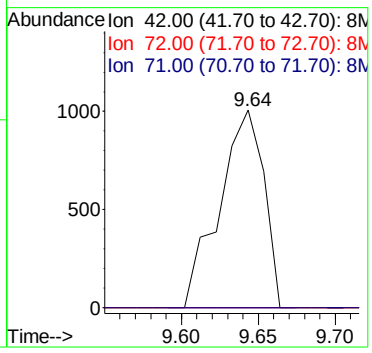

8M412049.D 8260WTR.M Mon May 09 08:23:59 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050516\9M974165.D Vial: 3
Acq On : 5 May 2016 12:32 Operator: ADC
Sample : WG567680-01 BLANK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 11:40:46 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	623086	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	471370	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.74	152	240057	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	160236	50.3205 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.64%		
43) 1,2-Dichloroethane-d4	10.44	65	178616	51.8068 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 103.62%		
58) Toluene-d8	12.82	98	594346	52.7789 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 105.56%		
79) p-Bromofluorobenzene	16.22	95	229553	55.1582 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 110.32%		

Target Compounds

					Qvalue
13) Acetone	6.39	43	4562	1.1769 ug/kg	94
36) Tetrahydrofuran	9.77	42	3537	2.8466 ug/kg	80
56) Dimethyl Disulfide	12.82	94	16557	2.9258 ug/kg#	28
82) n-Propylbenzene	16.38	91	1949	Below Cal #	51
89) 1,2,4-Trimethylbenzene	17.08	105	3715	Below Cal	76

(#) = qualifier out of range (m) = manual integration
9M974165.D 8260SL.M Tue May 10 11:40:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050516\9M974165.D Vial: 3
Acq On : 5 May 2016 12:32 Operator: ADC
Sample : WG567680-01 BLANK 8260 Inst : hpms9
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 10 11:40 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

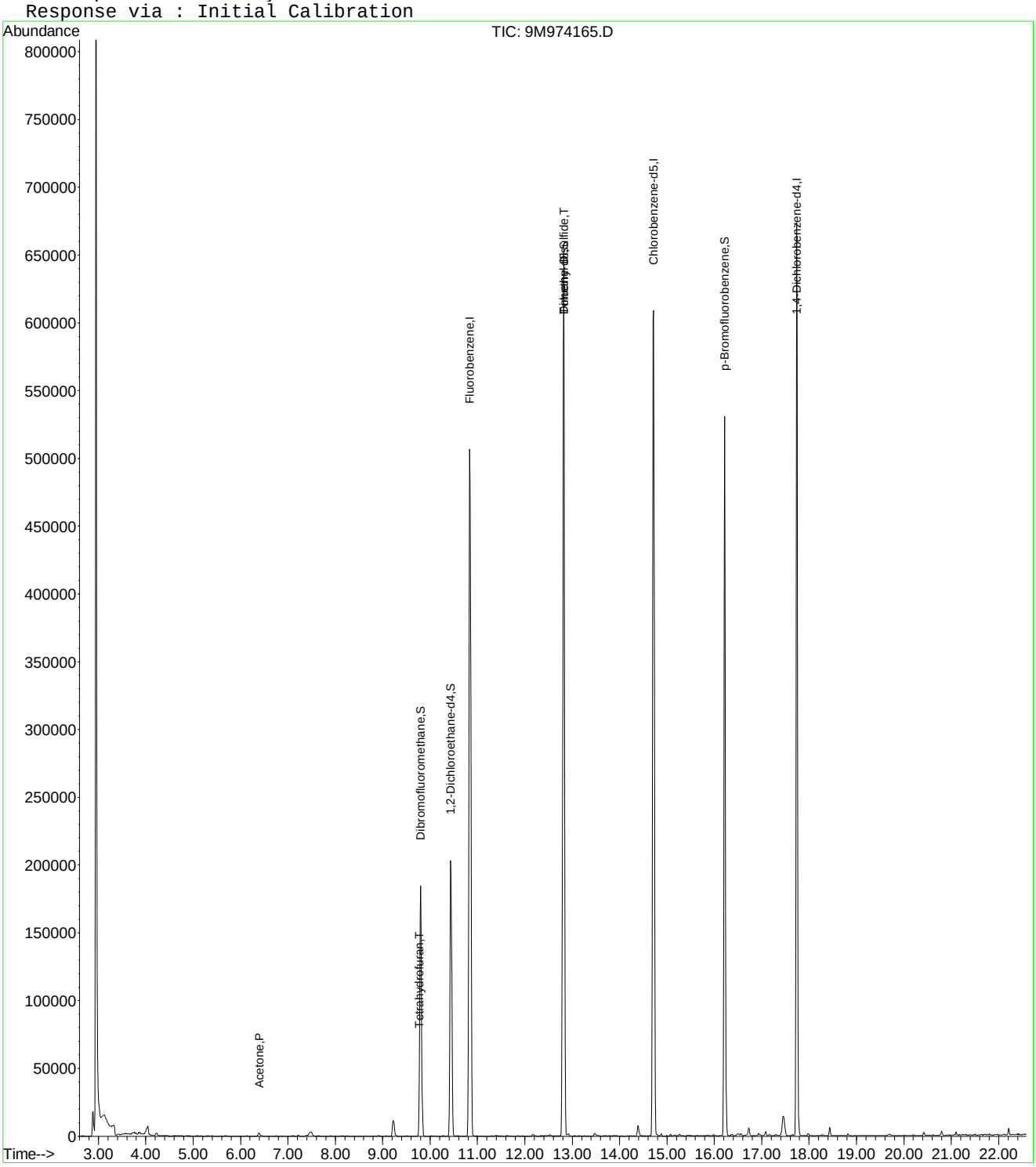

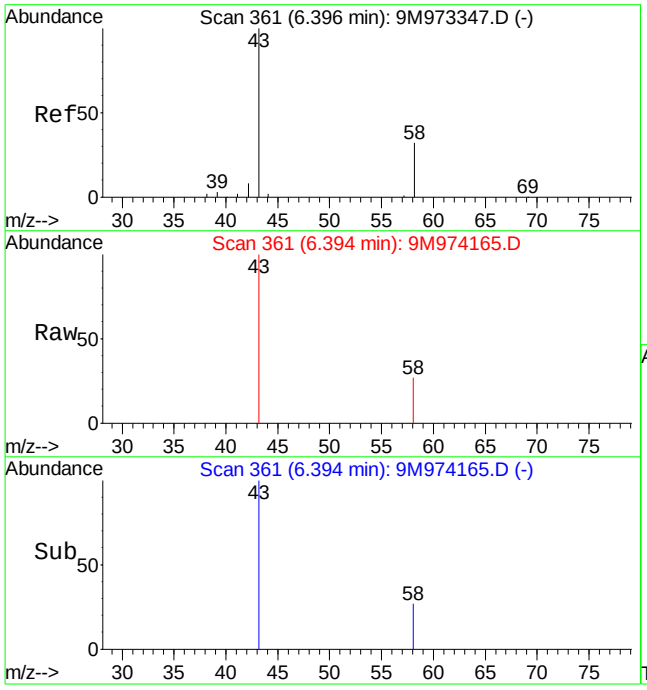

#13
Acetone
Concen: 1.18 ug/kg
RT: 6.39 min Scan# 361
Delta R.T. 0.01 min
Lab File: 9M974165.D
Acq: 5 May 2016 12:32

Tgt Ion: 43 Resp: 4562

Ion	Ratio	Lower	Upper
43	100		
58	30.6	20.2	47.2

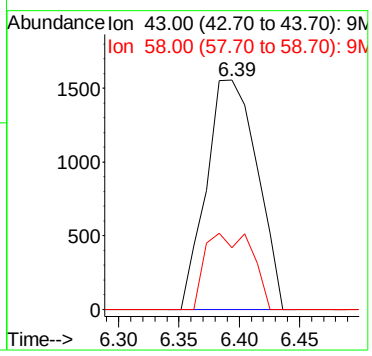

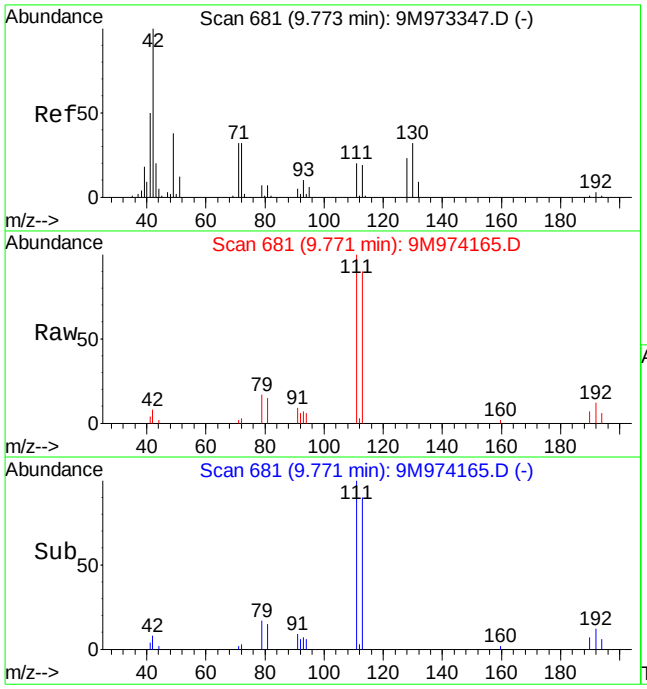

#36
Tetrahydrofuran
Concen: 2.85 ug/kg
RT: 9.77 min Scan# 681
Delta R.T. 0.01 min
Lab File: 9M974165.D
Acq: 5 May 2016 12:32

Tgt Ion: 42 Resp: 3537

Ion	Ratio	Lower	Upper
42	100		
72	24.8	20.8	48.6
71	20.5	20.0	46.8

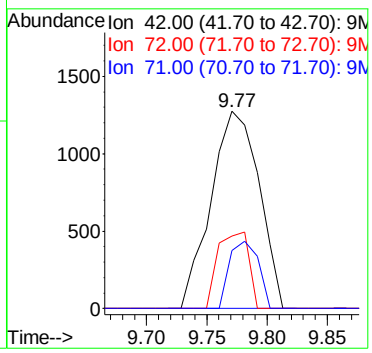

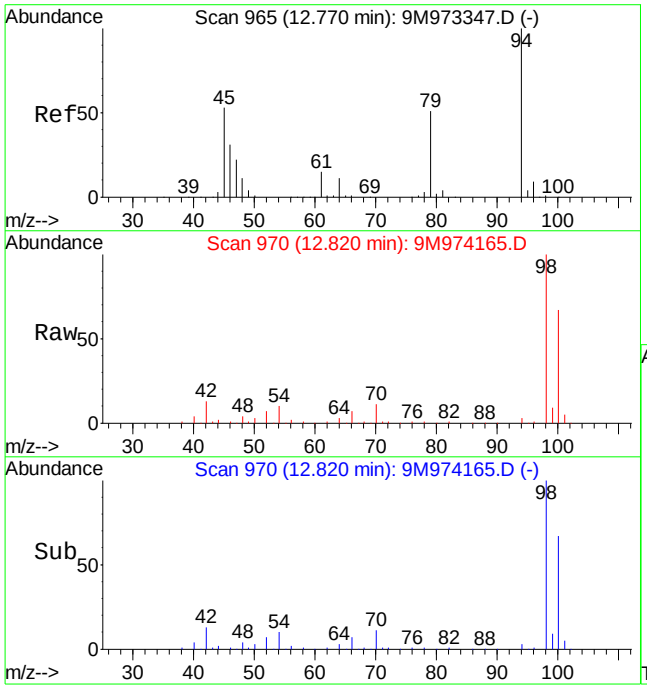

#56
Dimethyl Disulfide
Concen: 2.93 ug/kg
RT: 12.82 min Scan# 970
Delta R.T. 0.06 min
Lab File: 9M974165.D
Acq: 5 May 2016 12:32

Tgt Ion: 94 Resp: 16557

Ion	Ratio	Lower	Upper
94	100		
79	0.0	29.3	68.5#

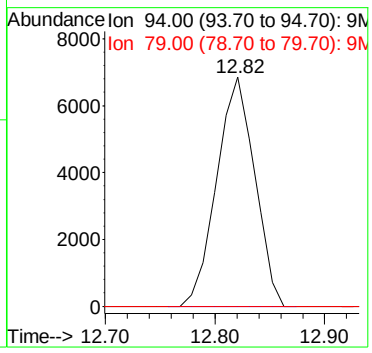

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\050716\8M412068.D Vial: 23
Acq On : 7 May 2016 22:15 Operator: TMB
Sample : WG567935-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD75977 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 07 22:37:24 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	392246	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	313955	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	179323	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	125691	25.5207 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.08%		
43) 1,2-Dichloroethane-d4	10.30	65	165177	29.3151 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 117.28%		
58) Toluene-d8	12.68	98	399641	24.6175 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.48%		
80) p-Bromofluorobenzene	16.07	95	172828	23.5451 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.20%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	157085	19.1085 ug/L	99
3) Chloromethane	3.63	50	141712	18.2975 ug/L	93
4) Vinyl Chloride	3.84	62	111051	21.2338 ug/L	97
5) 1,3-Butadiene	3.89	54	1471844	288.0562 ug/L	94
6) Bromomethane	4.74	94	38507	10.9637 ug/L	100
7) Chloroethane	4.90	64	58876	17.2027 ug/L #	83
8) Trichlorofluoromethane	5.38	101	218745	21.0696 ug/L	99
9) Diethyl ether	5.91	59	321623	101.2522 ug/L	84
10) Isoprene	5.95	67	109174	20.5514 ug/L #	55
11) Acrolein	6.15	56	35915	127.3277 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	91724	19.2961 ug/L	96
13) Acetone	6.25	43	21311	22.1308 ug/L	97
14) 1,1-Dichloroethene	6.47	61	168042	18.2146 ug/L	83
15) Tert-Butyl Alcohol	6.59	59	42757	192.8689 ug/L	96
16) Dimethyl Sulfide	6.74	62	86790	25.4574 ug/L	60
17) Iodomethane	6.99	142	22043	10.6206 ug/L #	72
18) Methyl acetate	7.01	43	54313	18.8718 ug/L	90
19) Methylene Chloride	7.27	84	74143	16.9585 ug/L #	41
20) Carbon Disulfide	7.30	76	220522	16.5333 ug/L	98
21) Acrylonitrile	7.44	53	23706	19.1535 ug/L	94
22) Methyl Tert Butyl Ether	7.48	73	196566	20.3536 ug/L	96
23) trans-1,2-Dichloroethene	7.71	61	158031	18.9369 ug/L	85
24) n-Hexane	7.78	57	114841	15.1679 ug/L	87
25) Diisopropyl ether	8.13	45	2167135	101.0816 ug/L	97
26) Vinyl Acetate	8.31	43	91682	10.6524 ug/L	96
27) 1,1-Dichloroethane	8.33	63	177780	17.8102 ug/L	97
28) Ethyl-Tert-Butyl ether	8.71	59	1476802	98.1480 ug/L	98
29) 2-Butanone	8.89	43	30769	19.9507 ug/L #	81
30) Propionitrile	8.99	54	37718	96.7127 ug/L	95
31) 2,2-Dichloropropane	9.11	77	154215	17.5363 ug/L	100
32) cis-1,2-Dichloroethene	9.18	96	89647	17.9528 ug/L	66
33) Chloroform	9.38	83	186056	20.0890 ug/L	96
34) 1-Bromopropane	9.52	122	20765	26.3962 ug/L	95
35) Bromochloromethane	9.61	130	49257	18.8538 ug/L	77
36) Tetrahydrofuran	9.63	42	89040	87.3284 ug/L	79
38) 1,1,1-Trichloroethane	9.91	97	201224	21.5509 ug/L	99
39) Cyclohexane	9.94	56	189164	18.5626 ug/L	85
40) 1,1-Dichloropropene	10.11	75	121735	18.1142 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	968633	100.5069 ug/L #	86
42) Carbon Tetrachloride	10.25	117	196856	22.4091 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M412068.D 8260WTR.M Sat May 07 22:37:27 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\050716\8M412068.D Vial: 23
Acq On : 7 May 2016 22:15 Operator: TMB
Sample : WG567935-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD75977 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 07 22:37:24 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	178499	22.9478 ug/L		92
46)	Benzene	10.47	78	306411	17.8997 ug/L	#	75
47)	Trichloroethene	11.21	130	103041	20.8588 ug/L		98
48)	Methylcyclohexane	11.30	83	120789	17.4882 ug/L	#	71
49)	1,2-Dichloropropane	11.43	63	92066	18.4762 ug/L		74
50)	Bromodichloromethane	11.73	83	144941	20.9061 ug/L		97
51)	1,4-Dioxane	11.73	88	2817	141.8067 ug/L		79
52)	Dibromomethane	11.81	93	45407	19.3571 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.03	63	39827	19.0899 ug/L		99
54)	4-Methyl-2-Pentanone	12.05	58	20857	18.3152 ug/L		95
55)	cis-1,3-Dichloropropene	12.36	75	138521	19.8527 ug/L		98
56)	Dimethyl Disulfide	12.63	79	76201	20.8456 ug/L		96
59)	Toluene	12.78	91	346158	18.4125 ug/L		99
60)	Ethyl Methacrylate	12.88	69	67713	19.1949 ug/L	#	58
62)	trans-1,3-Dichloropropene	12.96	75	126402	19.2708 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	55498	18.6030 ug/L		95
64)	2-Hexanone	13.12	58	17288	16.1448 ug/L	#	70
65)	1,3-Dichloropropane	13.48	76	101878	18.4138 ug/L	#	55
66)	Tetrachloroethene	13.60	164	81404	19.1195 ug/L		90
67)	Dibromochloromethane	13.87	129	97863	20.8080 ug/L		98
68)	1,2-Dibromoethane	14.12	107	58659	18.8652 ug/L		98
69)	1-Chlorohexane	14.21	91	123143	19.2301 ug/L	#	62
70)	Chlorobenzene	14.62	112	250183	19.1656 ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.66	131	109343	21.4938 ug/L		96
72)	Ethylbenzene	14.64	106	137101	18.5100 ug/L		100
73)	m-,p-Xylene	14.74	106	344282	40.3449 ug/L		94
74)	o-Xylene	15.31	106	168939	19.6513 ug/L		91
75)	Styrene	15.34	104	271683	19.8185 ug/L		89
76)	Bromoform	15.83	173	51619	19.1289 ug/L		99
77)	Isopropylbenzene	15.73	105	453969	20.8283 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.94	83	51304	14.3433 ug/L		99
81)	1,2,3-Trichloropropane	16.13	110	21555	18.7524 ug/L		84
82)	trans-1,4-Dichloro-2-Buten	16.18	53	24745	14.2034 ug/L		90
83)	n-Propylbenzene	16.24	91	532908	19.2836 ug/L		97
84)	Bromobenzene	16.36	156	107445	18.6488 ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	397809	19.4526 ug/L		99
86)	2-Chlorotoluene	16.51	91	348924	19.7164 ug/L		99
87)	4-Chlorotoluene	16.56	91	350625	19.2328 ug/L		100
88)	a-Methylstyrene	16.83	118	218820	21.7166 ug/L		92
89)	tert-Butylbenzene	16.89	134	81328	20.0725 ug/L		80
90)	1,2,4-Trimethylbenzene	16.94	105	418024	19.9709 ug/L		98
91)	sec-Butylbenzene	17.16	105	481109	19.5659 ug/L		98
92)	p-Isopropyltoluene	17.31	119	413403	19.6917 ug/L		94
93)	1,3-Dichlorobenzene	17.51	146	220577	19.2881 ug/L		93
94)	1,4-Dichlorobenzene	17.63	146	226180	19.8161 ug/L		92
95)	n-Butylbenzene	17.84	91	367616	18.4092 ug/L		99
96)	1,2-Dichlorobenzene	18.13	146	196065	19.5639 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.12	75	15567	19.8729 ug/L		74
98)	1,2,4-Trichlorobenzene	20.27	180	143300	18.4615 ug/L		98
99)	Hexachlorobutadiene	20.42	225	71360	19.8661 ug/L		98
100)	Naphthalene	20.64	128	198876	16.8509 ug/L		99
101)	1,2,3-Trichlorobenzene	20.94	180	120567	18.2583 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M412068.D 8260WTR.M Sat May 07 22:37:27 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\050716\8M412068.D Vial: 23
Acq On : 7 May 2016 22:15 Operator: TMB
Sample : WG567935-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD75977 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 7 22:37 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\2\METHODS\8260WTR.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 04-28-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

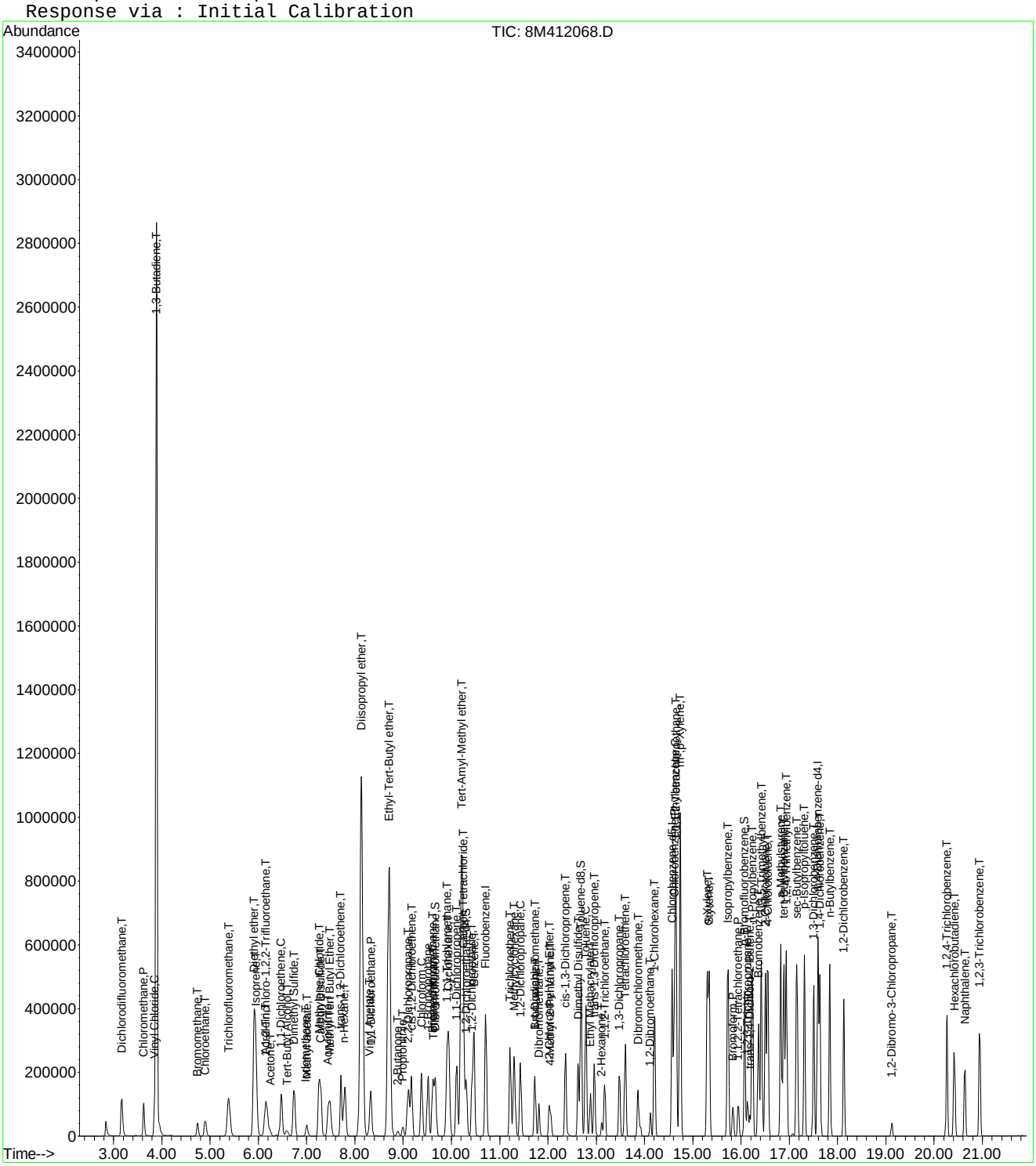

8M412068.D 8260WTR.M Sat May 07 22:37:27 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\050516\9M974166.D Vial: 4
Acq On : 5 May 2016 13:02 Operator: ADC
Sample : WG567680-02 LCS 20ug/kg 8260 Inst : hpms9
Misc : 7,1 STD75739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 13:25:34 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.84	96	634794	50.00 ug/kg	0.00
57) Chlorobenzene-d5	14.72	117	476283	50.00 ug/kg	0.00
77) 1,4-Dichlorobenzene-d4	17.75	152	249978	50.00 ug/kg	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.80	111	167891	51.7521 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 103.50%		
43) 1,2-Dichloroethane-d4	10.43	65	184469	52.5177 ug/kg	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 105.04%		
58) Toluene-d8	12.82	98	601121	52.8299 ug/kg	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 105.66%		
79) p-Bromofluorobenzene	16.22	95	233423	53.8621 ug/kg	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 107.72%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.28	85	94138	21.7342 ug/kg	100
3) Chloromethane	3.75	50	107243	20.0876 ug/kg	100
4) Vinyl Chloride	3.98	62	63954	15.9688 ug/kg	98
5) 1,3-Butadiene	4.02	54	345422	162.8910 ug/kg	99
6) Bromomethane	4.87	94	50519	18.8945 ug/kg	99
7) Chloroethane	5.03	64	52752	20.7047 ug/kg	98
8) Trichlorofluoromethane	5.52	101	111556	20.5120 ug/kg	100
9) Diethyl ether	6.04	59	349647	114.3654 ug/kg	100
10) Isoprene	6.09	67	100844	23.3371 ug/kg	99
11) Acrolein	6.29	56	69679	136.7637 ug/kg	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.29	101	68961	21.6663 ug/kg	99
13) Acetone	6.39	43	28011	21.7395 ug/kg	98
14) 1,1-Dichloroethene	6.60	61	107351	20.2258 ug/kg	98
15) Tert-Butyl Alcohol	6.73	59	130254	237.5217 ug/kg	99
16) Dimethyl Sulfide	6.87	62	75075	29.3155 ug/kg	99
17) Iodomethane	7.13	142	35004	22.1739 ug/kg	99
18) Methyl acetate	7.14	43	60261	17.5974 ug/kg	99
19) Methylene Chloride	7.39	84	63609	18.9133 ug/kg	97
20) Carbon Disulfide	7.44	76	194918	18.7508 ug/kg	99
21) Acrylonitrile	7.57	53	32561	22.2551 ug/kg	100
22) Methyl Tert Butyl Ether	7.60	73	192214	20.4546 ug/kg	98
23) trans-1,2-Dichloroethene	7.84	61	108782	21.1141 ug/kg	98
24) n-Hexane	7.91	57	120273	19.7444 ug/kg	99
25) Diisopropyl ether	8.25	45	1421301	117.9973 ug/kg	99
26) Vinyl Acetate	8.43	43	162194	24.8053 ug/kg	99
27) 1,1-Dichloroethane	8.46	63	121334	19.0593 ug/kg	100
28) Ethyl-Tert-Butyl ether	8.83	59	1254977	109.4942 ug/kg	100
29) 2-Butanone	9.02	43	39075	21.7629 ug/kg	98
30) Propionitrile	9.13	54	62175	103.2068 ug/kg	98
31) 2,2-Dichloropropane	9.23	77	98499	20.6146 ug/kg	100
32) cis-1,2-Dichloroethene	9.30	96	69298	20.2622 ug/kg	90
33) Chloroform	9.51	83	107091	19.8926 ug/kg	97
34) 1-Bromopropane	9.64	122	16632	28.6479 ug/kg	97
35) Bromochloromethane	9.75	130	41994	19.2127 ug/kg	98
36) Tetrahydrofuran	9.77	42	135784	107.2628 ug/kg	100
38) 1,1,1-Trichloroethane	10.04	97	101004	21.1208 ug/kg	99
39) Cyclohexane	10.08	56	148826	21.0027 ug/kg	100
40) 1,1-Dichloropropene	10.23	75	85261	20.5627 ug/kg	100
41) Tert-Amyl-Methyl ether	10.34	73	1012934	116.0011 ug/kg	100
42) Carbon Tetrachloride	10.38	117	91475	19.5504 ug/kg	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\050516\9M974166.D Vial: 4
Acq On : 5 May 2016 13:02 Operator: ADC
Sample : WG567680-02 LCS 20ug/kg 8260 Inst : hpms9
Misc : 7,1 STD75739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 05 13:25:34 2016 Quant Results File: 8260SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.56	62	96070	20.0337 ug/kg	100
46)	Benzene	10.59	78	254254	19.8189 ug/kg	100
47)	Trichloroethene	11.34	130	73389	20.9287 ug/kg	98
48)	Methylcyclohexane	11.43	83	120860	21.7505 ug/kg	100
49)	1,2-Dichloropropane	11.56	63	72057	20.4235 ug/kg	100
50)	1,4-Dioxane	11.86	88	10943	218.7645 ug/kg	94
51)	Bromodichloromethane	11.86	83	80540	19.1098 ug/kg	99
52)	Dibromomethane	11.95	174	38809	17.8469 ug/kg	98
53)	2-Chloroethyl Vinyl Ether	12.15	63	42672	20.2786 ug/kg	100
54)	4-Methyl-2-Pentanone	12.19	58	32408	20.2176 ug/kg	97
55)	cis-1,3-Dichloropropene	12.49	75	106531	20.9882 ug/kg	100
56)	Dimethyl Disulfide	12.77	94	123894	21.4895 ug/kg	95
59)	Toluene	12.91	91	268397	20.0703 ug/kg	99
60)	Ethyl Methacrylate	13.01	69	81946	20.4071 ug/kg	99
61)	trans-1,3-Dichloropropene	13.09	75	91567	19.8742 ug/kg	97
62)	1,1,2-Trichloroethane	13.32	97	53825	19.8767 ug/kg	99
63)	2-Hexanone	13.24	43	55166	20.1095 ug/kg	98
64)	1,3-Dichloropropane	13.62	76	96849	20.6811 ug/kg	98
65)	Tetrachloroethene	13.74	164	56430	20.5196 ug/kg	99
66)	Dibromochloromethane	14.00	129	64138	18.7015 ug/kg	99
67)	1,2-Dibromoethane	14.26	107	57230	19.8545 ug/kg	99
68)	1-Chlorohexane	14.34	91	94117	21.4890 ug/kg	98
69)	Chlorobenzene	14.76	112	191342	20.7634 ug/kg	99
70)	1,1,1,2-Tetrachloroethane	14.79	131	65597	19.3585 ug/kg	100
71)	Ethylbenzene	14.79	106	103935	20.9429 ug/kg	97
72)	m-,p-Xylene	14.88	106	253800	41.4393 ug/kg	99
73)	o-Xylene	15.45	106	120490	20.2367 ug/kg	97
74)	Styrene	15.48	104	194740	20.1550 ug/kg	99
75)	Bromoform	15.98	173	40249	16.6773 ug/kg	97
76)	Isopropylbenzene	15.87	105	321808	21.5160 ug/kg	99
78)	1,1,2,2-Tetrachloroethane	16.09	83	69881	19.1287 ug/kg	97
80)	1,2,3-Trichloropropane	16.28	110	24084	21.1917 ug/kg#	13
81)	trans-1,4-Dichloro-2-Buten	16.32	53	22115	16.2362 ug/kg#	1
82)	n-Propylbenzene	16.38	91	364446	24.4513 ug/kg	99
83)	Bromobenzene	16.51	156	78409	20.2729 ug/kg	98
84)	1,3,5-Trimethylbenzene	16.55	105	272954	22.8424 ug/kg	99
85)	2-Chlorotoluene	16.65	91	220539	21.2544 ug/kg	100
86)	4-Chlorotoluene	16.69	91	219272	22.3375 ug/kg	100
87)	a-Methylstyrene	16.97	118	138800	22.4011 ug/kg	99
88)	tert-Butylbenzene	17.03	134	61508	23.0073 ug/kg	98
89)	1,2,4-Trimethylbenzene	17.08	105	270138	22.2426 ug/kg	100
90)	sec-Butylbenzene	17.29	105	355607	22.1714 ug/kg	100
91)	p-Isopropyltoluene	17.45	119	284835	22.3253 ug/kg	100
92)	1,3-Dichlorobenzene	17.65	146	156155	20.5153 ug/kg	99
93)	1,4-Dichlorobenzene	17.79	146	160277	20.5194 ug/kg	97
94)	n-Butylbenzene	17.98	91	253803	20.9115 ug/kg	100
95)	1,2-Dichlorobenzene	18.29	146	146881	20.0653 ug/kg	99
96)	1,2-Dibromo-3-Chloropropan	19.28	157	17763	19.7205 ug/kg	98
97)	1,2,4-Trichlorobenzene	20.43	180	101080	19.3482 ug/kg	100
98)	Hexachlorobutadiene	20.58	225	53002	21.2419 ug/kg	99
99)	Naphthalene	20.80	128	241000	18.2042 ug/kg	100
100)	1,2,3-Trichlorobenzene	21.10	180	96478	19.0556 ug/kg	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\050516\9M974166.D Vial: 4
Acq On : 5 May 2016 13:02 Operator: ADC
Sample : WG567680-02 LCS 20ug/kg 8260 Inst : hpms9
Misc : 7,1 STD75739 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 5 13:25 2016 Quant Results File: 8260SL.RES

Method : C:\MSDCHEM\1\METHODS\8260SL.M (RTE Integrator)
Title : 8260(B) SOP: OVL MSV01 SOIL 05/04/16 HPMS9
Last Update : Thu May 05 08:58:14 2016
Response via : Initial Calibration

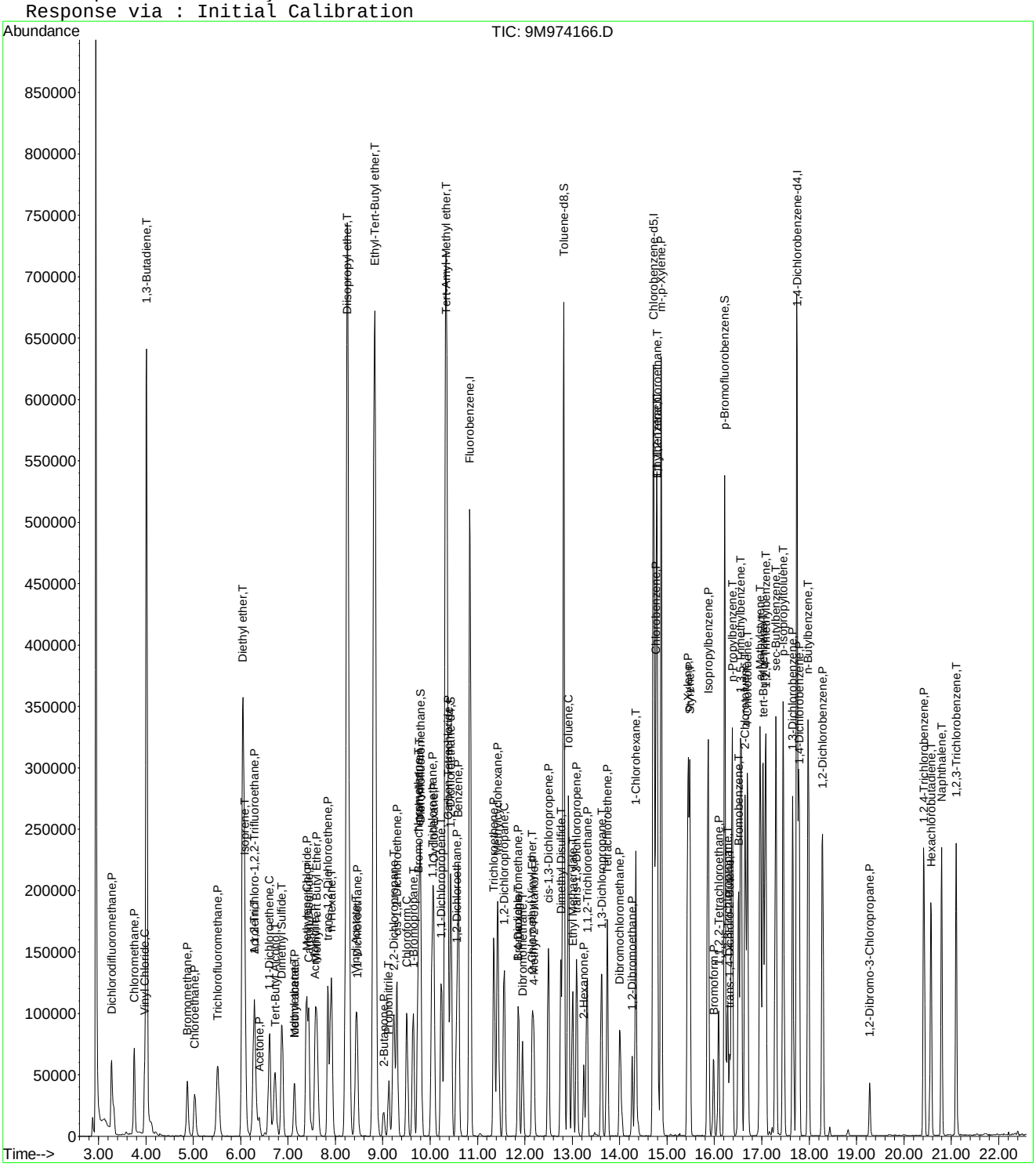

9M974166.D 8260SL.M Thu May 05 13:25:34 2016 Page 3

2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(5-5.5)260416	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 17:53
Collect Date:	04/26/2016 09:05	**Dilution:**	1	**File ID:**	1LM.LM34726
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.34	U	4.69	2.34	1.17

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(10-10.5)260416	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 18:12
Collect Date:	04/26/2016 10:00	**Dilution:**	1	**File ID:**	1LM.LM34727
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.38	U	4.78	2.38	1.19

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(20-20.5)260416	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/05/2016 13:50
Collect Date:	04/26/2016 10:35	**Dilution:**	200	**File ID:**	1LM.LM34755
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	79.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	5400		982	492	246

Certificate of Analysis

Sample #:	L16041580-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(29.5-30)260416	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/05/2016 14:09
Collect Date:	04/26/2016 11:15	**Dilution:**	400	**File ID:**	1LM.LM34756
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	78.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	9440		2010	1000	502

Certificate of Analysis

Sample #:	L16041580-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(40-40.5)260416	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/05/2016 14:28
Collect Date:	04/26/2016 11:55	**Dilution:**	200	**File ID:**	1LM.LM34757
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	79.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	4040		1010	504	252

Certificate of Analysis

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L16041580-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(50-51)260416	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 16:56
Collect Date:	04/26/2016 14:15	**Dilution:**	1	**File ID:**	1LM.LM34723
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3.36	J	4.70	2.34	1.17

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(50-51)260416MS	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 17:15
Collect Date:	04/26/2016 14:15	**Dilution:**	1	**File ID:**	1LM.LM34724
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	4.38	J	4.69	2.34	1.17

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-08	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(50-51)260416MSD	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 17:34
Collect Date:	04/26/2016 14:15	**Dilution:**	1	**File ID:**	1LM.LM34725
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	3.81	J	4.69	2.34	1.17

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-09	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(60-60.5)260416	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 20:24
Collect Date:	04/26/2016 15:00	**Dilution:**	1	**File ID:**	1LM.LM34734
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	86.5

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.26	U	4.52	2.26	1.13

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-10	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(60-60.5)260416DUP	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 20:43
Collect Date:	04/26/2016 15:00	**Dilution:**	1	**File ID:**	1LM.LM34735
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	87.1

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.24	U	4.47	2.24	1.12

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-11	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(70-70.5)260416	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 21:02
Collect Date:	04/26/2016 15:45	**Dilution:**	1	**File ID:**	1LM.LM34736
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	83.7

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.36	U	4.73	2.36	1.18

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-12	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(80-80.5)260416	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 21:21
Collect Date:	04/26/2016 16:45	**Dilution:**	1	**File ID:**	1LM.LM34737
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.3

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.38	U	4.76	2.38	1.19

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-13	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW(89.5-90)260416	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 21:40
Collect Date:	04/26/2016 17:00	**Dilution:**	1	**File ID:**	1LM.LM34738
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.44	U	4.86	2.44	1.22

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041580-14	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	EQUIPMENT BLANK	**Prep Method:**	6850	**Prep Date:**	05/05/2016 17:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567744	**Analyst:**	JWR	**Run Date:**	05/05/2016 20:55
Collect Date:	04/25/2016 17:00	**Dilution:**	1	**File ID:**	1LM.LM34776
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041580
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

MICROBAC

Semivolatile Sample Extract Log

Document Control No.: 1753 Page: 13 of 100

Parameter: Perchlorate
SOP #: HPLC 06
Analyst: JWR
Spike/Surrogate analyst: JWR
Surrogate #: NA
Spike # A: STD75513
Ext Solvent: DI-H2O
Ext Solvent: NA
Ext Disk: NA

Matrix: Soils
Rev #: 08
Date/Time Extracted: 05/04/16/1200
Witness: EC 5-4-16

Spike # B: NA
Lot #: NA
Lot #: NA
Lot #: NA

Extraction Work Group: WG567220
Analytical Work Group: WG567224
Run ID: R4569641

Pipetter(s): Eppendorf #403
Analytical Balance ID: BAL017
Reagent: Tubes Lot #: RGT34011
Reagent: Sand Lot #: COA18813
Other: IS Lot #: COA18071

Color Code
T = Transparent
C = Colored
O = Opaque

	Sample ID	Test Code	pH	Initial Wt / Vol	JWR ~~Surrogate~~ Amount IS	Amount Spike	Final Volume	Extract Color	Comments
1	WG567220-01	6850		5.009g	0.250ml	1.0ml	50ml		MCT (10,000 us)(2ug/kg)
2	WG567220-02			5.014g		NA			Blank
3	WG567220-03			5.009g		1.0ml			LCS (2ug/kg)
4	L16041580-01			5.031g		NA			
5	-02			5.110g		NA			
6	-03			5.138g		NA			
7	-04			5.094g		NA			
8	-05			5.017g		NA			
9	-06 RS			5.100g		NA			WG567220-04 Ref
10	-07 MS			5.109g		1.0ml			WG567220-05 MS (@2ug/kg)
11	-08 MSD			5.104g		1.0ml			WG567220-06 MSD (@2ug/kg)
12	-09			5.114g		NA			
13	-10			5.131g		NA			
14	-11			5.050g		NA			
15	-12			5.111g		NA			
16	-13			5.137g		NA			
17	L16041582-01			5.191g		NA			
18	-02			5.113g		NA			
19	-03			5.095g		NA			
20	-04			5.097g		NA			
21	-05			5.170g		NA			
22	-06			5.194g		NA			
23	-07			5.102g		NA			
24									

Reviewed by: EC 5-4-16

Analytical WG567224 (soils)

Perchlorate Conductivity Check

(perchlorate1)

Conductivity Probe Calibration Check: 1404 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG567220-01 MCT	9,960.	
WG567220-02 Blank	2.14	
WG567220-03 LCS	3.60	
L16041580-01	4.31	
-02	3.67	
-03	30.4	
-04	25.2	
-05	45.5	
-06 RS	53.4	
-07 MS	56.3	
-08 MSD	56.0	
-09	42.4	
-10	34.4	
-11	32.0	
-12	69.5	
-13	168.7	
L16041582-01	15.72	
-02	14.75	
-03	7.79	
-04	15.01	
-05	11.87	
-06	16.03	
-07	17.28	

Analyst: John Richards

Date/Time: 05/05/16 17:00

DCN#118217

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1408 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG567744-01 MCT	9,990.	
-02 Blank	0.33	
-03 LCS	0.51	
-04 LCS2	0.50	
L16041580-14	5.34	
L16050151-01	2,510.	
-03	2,490.	
-05	2,640.	
-07	3,390.	
-09	944.	
L16050221-01	1,933.	
L16050223-01	1,917.	
-02	2,370.	

Analyst: John Richards

Date/Time: 05/06/16 11:30

DCN#118316

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050416_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567224 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: Samples tagged with (NR) had "On Column" results over the calibration range. These samples were reanalyzed on the end of this run at dilutions based on their initial "over-range" results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34717	WG567549-01 CCB	1	1		05/04/16 15:02
2	1LM.LM34718	WG567549-02 CCV (1.0ug/L)	1	1	STD75510	05/04/16 15:21
3	1LM.LM34719	WG567224-07 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 15:40
4	1LM.LM34720	WG567224-01 MCT (2.0ug/kg)	7	1	STD75512	05/04/16 15:59
5	1LM.LM34721	WG567224-02 BLANK	7	1		05/04/16 16:18
6	1LM.LM34722	WG567224-03 LCS (2.0ug/kg)	7	1	STD75512	05/04/16 16:37
7	1LM.LM34723	L16041580-06 RS	7	1		05/04/16 16:56
8	1LM.LM34724	L16041580-07 MS	7	1	STD75512	05/04/16 17:15
9	1LM.LM34725	L16041580-08 MSD	7	1	STD75512	05/04/16 17:34
10	1LM.LM34726	L16041580-01	7	1		05/04/16 17:53
11	1LM.LM34727	L16041580-02	7	1		05/04/16 18:12
12	1LM.LM34728	L16041580-03 (NR)	7	1		05/04/16 18:31
13	1LM.LM34729	L16041580-04 (NR)	7	1		05/04/16 18:50
14	1LM.LM34730	WG567549-03 CCV (1.0ug/L)	1	1	STD75510	05/04/16 19:08
15	1LM.LM34731	WG567224-08 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 19:27
16	1LM.LM34732	WG567549-04 CCB	1	1		05/04/16 19:46
17	1LM.LM34733	L16041580-05 (NR)	7	1		05/04/16 20:05
18	1LM.LM34734	L16041580-09	7	1		05/04/16 20:24
19	1LM.LM34735	L16041580-10	7	1		05/04/16 20:43
20	1LM.LM34736	L16041580-11	7	1		05/04/16 21:02
21	1LM.LM34737	L16041580-12	7	1		05/04/16 21:21
22	1LM.LM34738	L16041580-13	7	1		05/04/16 21:40
23	1LM.LM34739	L16041582-01	7	1		05/04/16 21:59
24	1LM.LM34740	L16041582-02 (NR)	7	1		05/04/16 22:18
25	1LM.LM34741	L16041582-03	7	1		05/04/16 22:37
26	1LM.LM34742	L16041582-04	7	1		05/04/16 22:56
27	1LM.LM34743	WG567549-05 CCV (1.0ug/L)	1	1	STD75510	05/04/16 23:14
28	1LM.LM34744	WG567224-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 23:33
29	1LM.LM34745	WG567549-06 CCB	1	1		05/04/16 23:52
30	1LM.LM34746	L16041582-05	7	1		05/05/16 00:11
31	1LM.LM34747	L16041582-06	7	1		05/05/16 00:30
32	1LM.LM34748	L16041582-07	7	1		05/05/16 00:49
33	1LM.LM34749	WG567549-07 CCV (1.0ug/L)	1	1	STD75510	05/05/16 01:08

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050416_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567224 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM34750	WG567224-10 MRL (2.0ug/kg)	7	1	STD75510	05/05/16 01:27
35	1LM.LM34751	WG567549-08 CCB	1	1		05/05/16 01:46
36	1LM.LM34752	WG567549-09 CCV (1.0ug/L)	1	1	STD75510	05/05/16 12:54
37	1LM.LM34753	WG567224-11 MRL (2.0ug/kg)	7	1	STD75510	05/05/16 13:13
38	1LM.LM34754	WG567549-10 CCB	1	1		05/05/16 13:32
39	1LM.LM34755	L16041580-03 (RR 200x)	7	200		05/05/16 13:50
40	1LM.LM34756	L16041580-04 (RR 400x)	7	400		05/05/16 14:09
41	1LM.LM34757	L16041580-05 (RR 200x)	7	200		05/05/16 14:28
42	1LM.LM34758	L16041582-02 (RR 100x)	7	100		05/05/16 14:47
43	1LM.LM34759	WG567549-11 CCV (1.0ug/L)	1	1	STD75510	05/05/16 15:06
44	1LM.LM34760	WG567224-12 MRL (2.0ug/kg)	7	1	STD75510	05/05/16 15:25
45	1LM.LM34761	WG567549-12 CCB	1	1		05/05/16 15:44

Comments

Seq.	Rerun	Dil.	Reason	Analytes
8				
	L16041580-07 MS : The MS %Rec is below the advisory limit. This sample's matrix is composed of a very wet, non-homogeneous mixture of grey, brown, and orange colored sand.			
9				
	L16041580-08 MSD : The MSD %Rec is below the advisory limit. This sample's matrix is composed of a very wet, non-homogeneous mixture of grey, brown, and orange colored sand.			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050516_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567744 (waters)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments: Samples L16050151(-05,-09) were analyzed at dilutions based on their historical results.
Samples L16050151-01, L16050221-01, and L16050223(-01,-02) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34766	WG567745-01 CCB	1	1		05/05/16 17:45
2	1LM.LM34767	WG567745-02 CCV (1.0ug/L)	1	1	STD75510	05/05/16 18:04
3	1LM.LM34768	WG567744-05 MRL (0.2ug/L)	1	1	STD75510	05/05/16 18:23
4	1LM.LM34769	WG567744-01 MCT (0.2ug/L)	1	1	STD75512	05/05/16 18:42
5	1LM.LM34770	WG567744-02 BLANK	1	1		05/05/16 19:01
6	1LM.LM34771	WG567744-03 LCS (0.2ug/L)	1	1	STD75512	05/05/16 19:20
7	1LM.LM34772	WG567744-04 LCS2 (0.2ug/L)	1	1	STD75512	05/05/16 19:39
8	1LM.LM34773	L16050221-01 (100x)	1	100		05/05/16 19:58
9	1LM.LM34774	L16050223-01 (100x)	1	100		05/05/16 20:17
10	1LM.LM34775	L16050223-02 (100x)	1	100		05/05/16 20:36
11	1LM.LM34776	L16041580-14 EB	1	1		05/05/16 20:55
12	1LM.LM34777	L16050151-01 (100x)	1	100		05/05/16 21:14
13	1LM.LM34778	L16050151-03	1	1		05/05/16 21:33
14	1LM.LM34779	WG567745-03 CCV (1.0ug/L)	1	1	STD75510	05/05/16 21:52
15	1LM.LM34780	WG567744-06 MRL (0.2ug/L)	1	1	STD75510	05/05/16 22:10
16	1LM.LM34781	WG567745-04 CCB	1	1		05/05/16 22:29
17	1LM.LM34782	L16050151-05 (50x)	1	50		05/05/16 22:48
18	1LM.LM34783	L16050151-07	1	1		05/05/16 23:07
19	1LM.LM34784	L16050151-09 (10x)	1	10		05/05/16 23:26
20	1LM.LM34785	WG567745-05 CCV (1.0ug/L)	1	1	STD75510	05/05/16 23:45
21	1LM.LM34786	WG567744-07 MRL (0.2ug/L)	1	1	STD75510	05/06/16 00:04
22	1LM.LM34787	WG567745-06 CCB	1	1		05/06/16 00:23

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 06-MAY-16

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
04-MAY-2016
John Richards

Secondary Reviewer:
05-MAY-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 04-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 74947
Analytical Workgroups: L16041580, 1582 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	LOW
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
06-MAY-2016
John Richards

Secondary Reviewer:
09-MAY-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-09-2016 09:51:39

Microbac Laboratories Inc.

Data Checklist

Date: 05-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 74938
Analytical Workgroups: L16041580-14 L16050151, 0221, 0223 (WATERS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
06-MAY-2016
John Richards

Secondary Reviewer:
06-MAY-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-06-2016 14:31:42

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG567224

Login Number: L16041580

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW22DW(5-5.5)260416	01	04/26/16					05/04/2016	8.1	28		05/04/16	.2	28	
18CPTMW22DW(10-10.5)2604	02	04/26/16					05/04/2016	8.1	28		05/04/16	.3	28	
18CPTMW22DW(20-20.5)2604	03	04/26/16					05/04/2016	8.1	28		05/05/16	1.1	28	
18CPTMW22DW(29.5-30)2604	04	04/26/16					05/04/2016	8	28		05/05/16	1.1	28	
18CPTMW22DW(40-40.5)2604	05	04/26/16					05/04/2016	8	28		05/05/16	1.1	28	
18CPTMW22DW(50-51)260416	06	04/26/16					05/04/2016	7.9	28		05/04/16	.2	28	
18CPTMW22DW(50-51)260416	07	04/26/16					05/04/2016	7.9	28		05/04/16	.2	28	
18CPTMW22DW(50-51)260416	08	04/26/16					05/04/2016	7.9	28		05/04/16	.2	28	
18CPTMW22DW(60-60.5)2604	09	04/26/16					05/04/2016	7.9	28		05/04/16	.4	28	
18CPTMW22DW(60-60.5)2604	10	04/26/16					05/04/2016	7.9	28		05/04/16	.4	28	
18CPTMW22DW(70-70.5)2604	11	04/26/16					05/04/2016	7.8	28		05/04/16	.4	28	
18CPTMW22DW(80-80.5)2604	12	04/26/16					05/04/2016	7.8	28		05/04/16	.4	28	
18CPTMW22DW(89.5-90)2604	13	04/26/16					05/04/2016	7.8	28		05/04/16	.4	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4750548
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG567744

Login Number: L16041580

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
EQUIPMENT BLANK	14	04/25/16					05/05/2016	10	28		05/05/16	.2	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4750548
Report generated 05/10/2016 11:20

METHOD BLANK SUMMARY

Login Number: L16041580
Blank File ID: 1LM.LM34721
Prep Date: 05/04/16 12:00
Analyzed Date: 05/04/16 16:18
Analyst: JWR

Work Group: WG567224
Blank Sample ID: WG567224-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG567224-07	1LM.LM34719	05/04/16 15:40	01
MCT	WG567224-01	1LM.LM34720	05/04/16 15:59	01
LCS	WG567224-03	1LM.LM34722	05/04/16 16:37	01
18CPTMW22DW(50-51)260416	L16041580-06	1LM.LM34723	05/04/16 16:56	01
18CPTMW22DW(50-51)260416MS	L16041580-07	1LM.LM34724	05/04/16 17:15	01
18CPTMW22DW(50-51)260416MSD	L16041580-08	1LM.LM34725	05/04/16 17:34	01
18CPTMW22DW(5-5.5)260416	L16041580-01	1LM.LM34726	05/04/16 17:53	01
18CPTMW22DW(10-10.5)260416	L16041580-02	1LM.LM34727	05/04/16 18:12	01
QCMRL	WG567224-08	1LM.LM34731	05/04/16 19:27	01
18CPTMW22DW(60-60.5)260416	L16041580-09	1LM.LM34734	05/04/16 20:24	01
18CPTMW22DW(60-60.5)260416DUP	L16041580-10	1LM.LM34735	05/04/16 20:43	01
18CPTMW22DW(70-70.5)260416	L16041580-11	1LM.LM34736	05/04/16 21:02	01
18CPTMW22DW(80-80.5)260416	L16041580-12	1LM.LM34737	05/04/16 21:21	01
18CPTMW22DW(89.5-90)260416	L16041580-13	1LM.LM34738	05/04/16 21:40	01
QCMRL	WG567224-09	1LM.LM34744	05/04/16 23:33	01
QCMRL	WG567224-10	1LM.LM34750	05/05/16 01:27	01
QCMRL	WG567224-11	1LM.LM34753	05/05/16 13:13	01
18CPTMW22DW(20-20.5)260416	L16041580-03	1LM.LM34755	05/05/16 13:50	DL01
18CPTMW22DW(29.5-30)260416	L16041580-04	1LM.LM34756	05/05/16 14:09	DL01
18CPTMW22DW(40-40.5)260416	L16041580-05	1LM.LM34757	05/05/16 14:28	DL01
QCMRL	WG567224-12	1LM.LM34760	05/05/16 15:25	01

Report Name: BLANK_SUMMARY
PDF File ID: 4750549
Report generated 05/10/2016 11:20

METHOD BLANK SUMMARY

Login Number: L16041580
Blank File ID: 1LM.LM34770
Prep Date: 05/05/16 17:00
Analyzed Date: 05/05/16 19:01
Analyst: JWR

Work Group: WG567744
Blank Sample ID: WG567744-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG567744-05	1LM.LM34768	05/05/16 18:23	01
MCT	WG567744-01	1LM.LM34769	05/05/16 18:42	01
LCS	WG567744-03	1LM.LM34771	05/05/16 19:20	01
LCS2	WG567744-04	1LM.LM34772	05/05/16 19:39	01
EQUIPMENT BLANK	L16041580-14	1LM.LM34776	05/05/16 20:55	01
QCMRL	WG567744-06	1LM.LM34780	05/05/16 22:10	01
QCMRL	WG567744-07	1LM.LM34786	05/06/16 00:04	01

Report Name: BLANK_SUMMARY
PDF File ID: 4750549
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16041580 Prep Date: 05/04/16 12:00 Sample ID: WG567224-02
Instrument ID: LCMS1 Run Date: 05/04/16 16:18 Prep Method: 6850
File ID: 1LM.LM34721 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567224 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.997	3.99	0.997	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4750550
10-MAY-2016 11:20

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16041580 Prep Date: 05/05/16 17:00 Sample ID: WG567744-02
Instrument ID: LCMS1 Run Date: 05/05/16 19:01 Prep Method: 6850
File ID: 1LM.LM34770 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567744 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4750550
10-MAY-2016 11:20

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16041580 Run Date: 05/04/2016 Sample ID: WG567224-03
Instrument ID: LCMS1 Run Time: 16:37 Prep Method: 6850
File ID: 1LM.LM34722 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567224 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD75512 Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	2.00	1.91	95.5	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4751003
Report generated: 05/10/2016 11:20

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16041580 Analyst: JWR Prep Method: 6850
Instrument ID: LCMS1 Matrix: Water Method: 6850
Workgroup (AAB#): WG567744 Units: ug/L
QC Key: DOD4 Lot #: STD75512

Sample ID: WG567744-03 LCS File ID: 1LM.LM34771 Run Date: 05/05/2016 19:20
Sample ID: WG567744-04 LCS2 File ID: 1LM.LM34772 Run Date: 05/05/2016 19:39

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Perchlorate	0.200	0.204	102	0.200	0.203	102	0.491	80 - 120	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4750552
Report generated: 05/10/2016 11:20

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16041580 Cal ID: LCMS1- 03-MAY-16 Worknum: WG567224
Instrument ID: LCMS1 Contract #: Prep Method: 6850
Parent ID: L16041580-06 File ID: 1LM.LM34723 Dil: 1 Method: 6850
Sample ID: L16041580-07 MS File ID: 1LM.LM34724 Dil: 1 Matrix: Soil
Sample ID: L16041580-08 MSD File ID: 1LM.LM34725 Dil: 1 Units: ug/kg
Percent Solid: 83.5

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Perchlorate	3.36	2.34	4.38	43.7	2.35	3.81	19.4	13.9	80 - 120	15	*

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4751004
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16041580
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4750905
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16041580

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4750905
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16041580

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4750905
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16041580

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008
PDF File ID: 4750905
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16041580 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4750906
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16041580
Run Date: 05/04/2016
Sample ID: WG567549-01
Instrument ID: LCMS1
Run Time: 15:02
Method: 6850
File ID: 1LM.LM34717
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG567224
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4750585
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16041580
Run Date: 05/04/2016
Sample ID: WG567549-04
Instrument ID: LCMS1
Run Time: 19:46
Method: 6850
File ID: 1LM.LM34732
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG567224
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4750585
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16041580
Run Date: 05/04/2016
Sample ID: WG567549-06
Instrument ID: LCMS1
Run Time: 23:52
Method: 6850
File ID: 1LM.LM34745
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG567224
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4750585
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16041580
Run Date: 05/05/2016
Sample ID: WG567549-08
Instrument ID: LCMS1
Run Time: 01:46
Method: 6850
File ID: 1LM.LM34751
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG567224
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4750585
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16041580
Run Date: 05/05/2016
Sample ID: WG567549-10
Instrument ID: LCMS1
Run Time: 13:32
Method: 6850
File ID: 1LM.LM34754
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG567224
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4750585
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16041580
Run Date: 05/05/2016
Sample ID: WG567549-12
Instrument ID: LCMS1
Run Time: 15:44
Method: 6850
File ID: 1LM.LM34761
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG567224
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4750585
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16041580
Run Date: 05/05/2016
Sample ID: WG567745-01
Instrument ID: LCMS1
Run Time: 17:45
Method: 6850
File ID: 1LM.LM34766
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG567744
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	1.00	4.00	1.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4750585
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16041580
Run Date: 05/05/2016
Sample ID: WG567745-04
Instrument ID: LCMS1
Run Time: 22:29
Method: 6850
File ID: 1LM.LM34781
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG567744
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	1.00	4.00	1.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4750585
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16041580
Run Date: 05/06/2016
Sample ID: WG567745-06
Instrument ID: LCMS1
Run Time: 00:23
Method: 6850
File ID: 1LM.LM34787
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG567744
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	1.00	4.00	1.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4750585
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041580
Run Date: 05/04/2016
Sample ID: WG567549-02
Instrument ID: LCMS1
Run Time: 15:21
Method: 6850
File ID: 1LM.LM34718
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG567224
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.996	ug/kg	1.68	0.400	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4750568
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041580
Run Date: 05/04/2016
Sample ID: WG567549-03
Instrument ID: LCMS1
Run Time: 19:08
Method: 6850
File ID: 1LM.LM34730
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG567224
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/kg	1.72	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4750568
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041580
Run Date: 05/04/2016
Sample ID: WG567549-05
Instrument ID: LCMS1
Run Time: 23:14
Method: 6850
File ID: 1LM.LM34743
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG567224
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/kg	1.71	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4750568
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041580 Run Date: 05/05/2016 Sample ID: WG567549-07
Instrument ID: LCMS1 Run Time: 01:08 Method: 6850
File ID: 1LM.LM34749 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG567224 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.990	ug/kg	1.67	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4750568
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041580 Run Date: 05/05/2016 Sample ID: WG567549-09
Instrument ID: LCMS1 Run Time: 12:54 Method: 6850
File ID: 1LM.LM34752 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG567224 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.998	ug/kg	1.68	0.200	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4750568
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041580 Run Date: 05/05/2016 Sample ID: WG567549-11
Instrument ID: LCMS1 Run Time: 15:06 Method: 6850
File ID: 1LM.LM34759 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG567224 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.00	ug/kg	1.69	0	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4750568
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041580 Run Date: 05/05/2016 Sample ID: WG567745-02
Instrument ID: LCMS1 Run Time: 18:04 Method: 6850
File ID: 1LM.LM34767 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG567744 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.70	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4750568
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041580
Run Date: 05/05/2016
Sample ID: WG567745-03
Instrument ID: LCMS1
Run Time: 21:52
Method: 6850
File ID: 1LM.LM34779
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG567744
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.70	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4750568
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041580
Run Date: 05/05/2016
Sample ID: WG567745-05
Instrument ID: LCMS1
Run Time: 23:45
Method: 6850
File ID: 1LM.LM34785
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG567744
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.71	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4750568
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16041580 Run Date: 05/04/2016 Sample ID: WG567224-07
Instrument ID: LCMS1 Run Time: 15:40 Prep Method: 6850
File ID: 1LM.LM34719 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567224 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.01	101	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4750561
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16041580 Run Date: 05/04/2016 Sample ID: WG567224-08
Instrument ID: LCMS1 Run Time: 19:27 Prep Method: 6850
File ID: 1LM.LM34731 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567224 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.10	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4750561
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16041580 Run Date: 05/04/2016 Sample ID: WG567224-09
Instrument ID: LCMS1 Run Time: 23:33 Prep Method: 6850
File ID: 1LM.LM34744 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567224 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.09	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4750561
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16041580 Run Date: 05/05/2016 Sample ID: WG567224-10
Instrument ID: LCMS1 Run Time: 01:27 Prep Method: 6850
File ID: 1LM.LM34750 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567224 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.00	100	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4750561
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16041580 Run Date: 05/05/2016 Sample ID: WG567224-11
Instrument ID: LCMS1 Run Time: 13:13 Prep Method: 6850
File ID: 1LM.LM34753 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567224 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.06	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4750561
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16041580 Run Date: 05/05/2016 Sample ID: WG567224-12
Instrument ID: LCMS1 Run Time: 15:25 Prep Method: 6850
File ID: 1LM.LM34760 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567224 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.00	100	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4750561
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16041580 Run Date: 05/05/2016 Sample ID: WG567744-05
Instrument ID: LCMS1 Run Time: 18:23 Prep Method: 6850
File ID: 1LM.LM34768 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567744 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.209	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4750561
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16041580 Run Date: 05/05/2016 Sample ID: WG567744-06
Instrument ID: LCMS1 Run Time: 22:10 Prep Method: 6850
File ID: 1LM.LM34780 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567744 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4750561
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16041580 Run Date: 05/06/2016 Sample ID: WG567744-07
Instrument ID: LCMS1 Run Time: 00:04 Prep Method: 6850
File ID: 1LM.LM34786 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567744 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.205	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4750561
Report generated 05/10/2016 11:20

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16041580
Instrument ID: LCMS1
Workgroup (AAB#): WG567224

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16041580-01	1.00	01	469000
L16041580-02	1.00	01	467000
L16041580-03	200	DL01	457000
L16041580-04	400	DL01	465000
L16041580-05	200	DL01	471000
L16041580-06	1.00	01	434000
L16041580-07	1.00	01	442000
L16041580-08	1.00	01	449000
L16041580-09	1.00	01	469000
L16041580-10	1.00	01	491000
L16041580-11	1.00	01	480000
L16041580-12	1.00	01	482000
L16041580-13	1.00	01	478000
WG567224-02	1.00	01	442000
WG567224-03	1.00	01	442000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4750606
Report generated 05/10/2016 11:21

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16041580
Instrument ID: LCMS1
Workgroup (AAB#): WG567744

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16041580-14	1.00	01	561000
WG567744-02	1.00	01	528000
WG567744-03	1.00	01	531000
WG567744-04	1.00	01	534000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4750606
Report generated 05/10/2016 11:21

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	L16041580-01
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34726
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 17:53	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	L16041580-02
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34727
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 18:12	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	L16041580-03
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34755
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/05/2016 13:50	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	338000	112000	3.02	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	L16041580-04
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34756
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/05/2016 14:09	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	294000	99300	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	L16041580-05
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34757
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/05/2016 14:28	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	254000	83900	3.03	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	L16041580-06
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34723
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 16:56	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	42300	14400	2.94	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	L16041580-07
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34724
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 17:15	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	56200	19200	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	L16041580-08
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34725
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 17:34	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	49700	18200	2.73	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	L16041580-09
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34734
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 20:24	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1150	1250	0.920	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	L16041580-10
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34735
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 20:43	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	933	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	L16041580-11
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34736
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 21:02	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	2050	2020	1.01	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	L16041580-12
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34737
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 21:21	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	2140	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	L16041580-13
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34738
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 21:40	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	1020	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	L16041580-14
Instrument:	LCMS1	**Prep Date:**	05/05/2016 17:00	**File ID:**	1LM.LM34776
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567744	**Analysis Date:**	05/05/2016 20:55	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	WG567224-01
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34720
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 15:59	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	28100	10100	2.78	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	WG567224-02
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34721
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 16:18	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	2220	592	3.75	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	WG567224-03
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34722
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 16:37	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	28900	11400	2.54	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	WG567224-07
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34719
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 15:40	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	29900	10300	2.90	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	WG567224-08
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34731
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 19:27	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	33400	11300	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	WG567224-09
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34744
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 23:33	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38400	11700	3.28	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	WG567224-10
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34750
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/05/2016 01:27	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36200	13800	2.62	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	WG567224-11
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34753
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/05/2016 13:13	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34200	12500	2.74	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	WG567224-12
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34760
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/05/2016 15:25	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35500	12900	2.75	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567744	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567744	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567744	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567744	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567744	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567744	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567744	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567744	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567549-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34717
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/04/2016 15:02	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567549-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34718
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/04/2016 15:21	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	143000	47800	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567549-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34730
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/04/2016 19:08	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	159000	53200	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567549-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34732
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/04/2016 19:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	604	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567549-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34743
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/04/2016 23:14	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	178000	58200	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567549-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34745
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/04/2016 23:52	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567549-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34749
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/05/2016 01:08	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	177000	59800	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567549-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34751
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/05/2016 01:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567549-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34752
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/05/2016 12:54	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	156000	55000	2.84	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567549-10
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34754
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/05/2016 13:32	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567549-11
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34759
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/05/2016 15:06	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	174000	59100	2.94	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567549-12
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34761
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/05/2016 15:44	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	449	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	WG567744-01
Instrument:	LCMS1	**Prep Date:**	05/05/2016 17:00	**File ID:**	1LM.LM34769
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567744	**Analysis Date:**	05/05/2016 18:42	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32500	11700	2.78	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	WG567744-02
Instrument:	LCMS1	**Prep Date:**	05/05/2016 17:00	**File ID:**	1LM.LM34770
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567744	**Analysis Date:**	05/05/2016 19:01	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	WG567744-03
Instrument:	LCMS1	**Prep Date:**	05/05/2016 17:00	**File ID:**	1LM.LM34771
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567744	**Analysis Date:**	05/05/2016 19:20	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37100	12000	3.09	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	WG567744-04
Instrument:	LCMS1	**Prep Date:**	05/05/2016 17:00	**File ID:**	1LM.LM34772
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567744	**Analysis Date:**	05/05/2016 19:39	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37100	12200	3.04	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	WG567744-05
Instrument:	LCMS1	**Prep Date:**	05/05/2016 17:00	**File ID:**	1LM.LM34768
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567744	**Analysis Date:**	05/05/2016 18:23	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36800	12600	2.92	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	WG567744-06
Instrument:	LCMS1	**Prep Date:**	05/05/2016 17:00	**File ID:**	1LM.LM34780
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567744	**Analysis Date:**	05/05/2016 22:10	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	40600	13500	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**	6850	**Samplenum:**	WG567744-07
Instrument:	LCMS1	**Prep Date:**	05/05/2016 17:00	**File ID:**	1LM.LM34786
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567744	**Analysis Date:**	05/06/2016 00:04	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	42200	14800	2.85	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567745-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34766
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567744	**Analysis Date:**	05/05/2016 17:45	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	258	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567745-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34767
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567744	**Analysis Date:**	05/05/2016 18:04	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	172000	57700	2.98	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567745-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34779
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567744	**Analysis Date:**	05/05/2016 21:52	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	190000	63700	2.98	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567745-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34781
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567744	**Analysis Date:**	05/05/2016 22:29	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567745-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34785
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567744	**Analysis Date:**	05/05/2016 23:45	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	198000	63700	3.11	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041580	**Prep Method:**		**Samplenum:**	WG567745-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34787
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567744	**Analysis Date:**	05/06/2016 00:23	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

2.2.1.3 Sample Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/6/2016 1:50 PM

Data File	LM34726.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 5:53:12 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041580-01	**Injection Vial**	10.00
Data File	LM34726.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 5:53:12 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	L16041580-01	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.690e+05	9.86	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.86(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

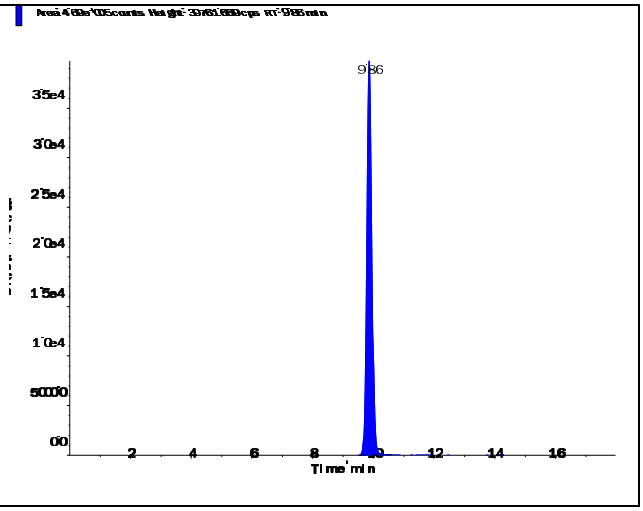

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/6/2016 1:50 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

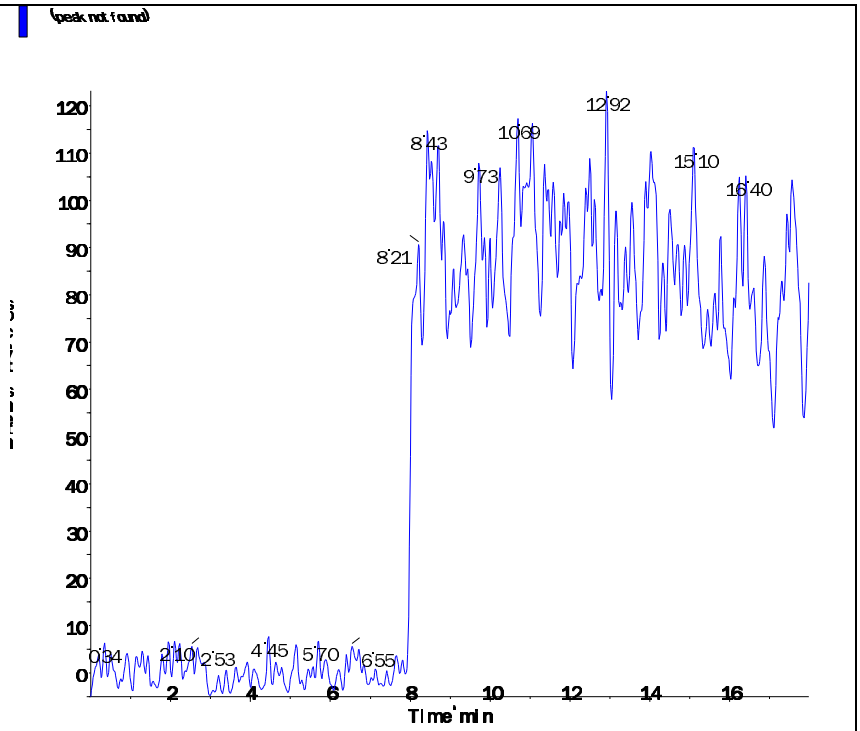

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

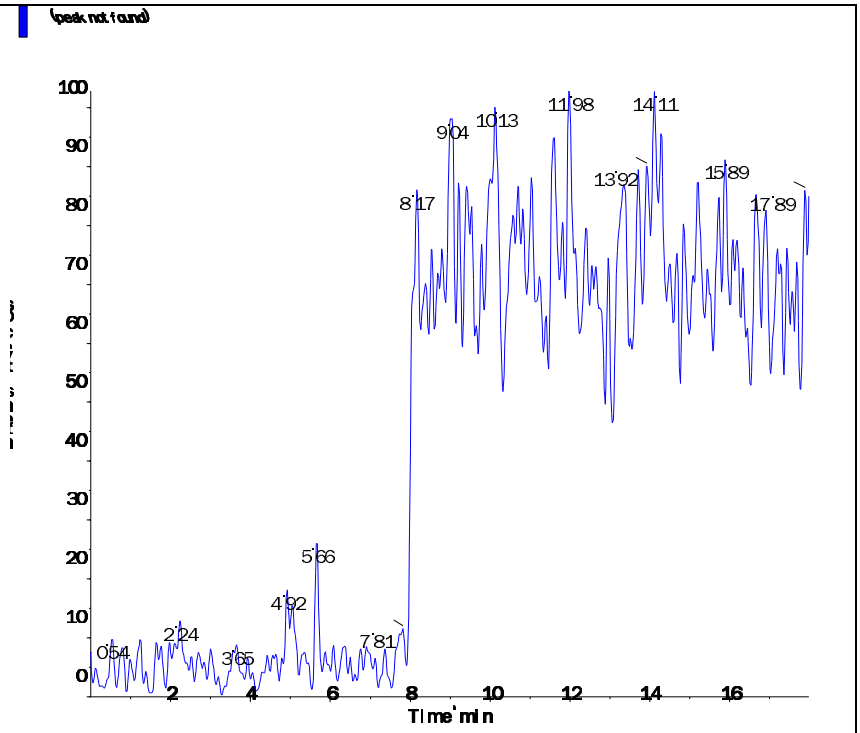

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Data File	LM34727.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 6:12:08 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041580-02	**Injection Vial**	11.00
Data File	LM34727.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 6:12:08 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	L16041580-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.670e+05	9.86	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.86(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

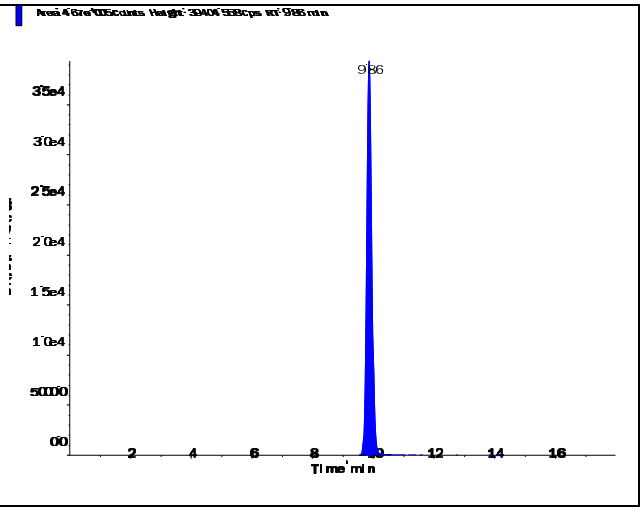

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

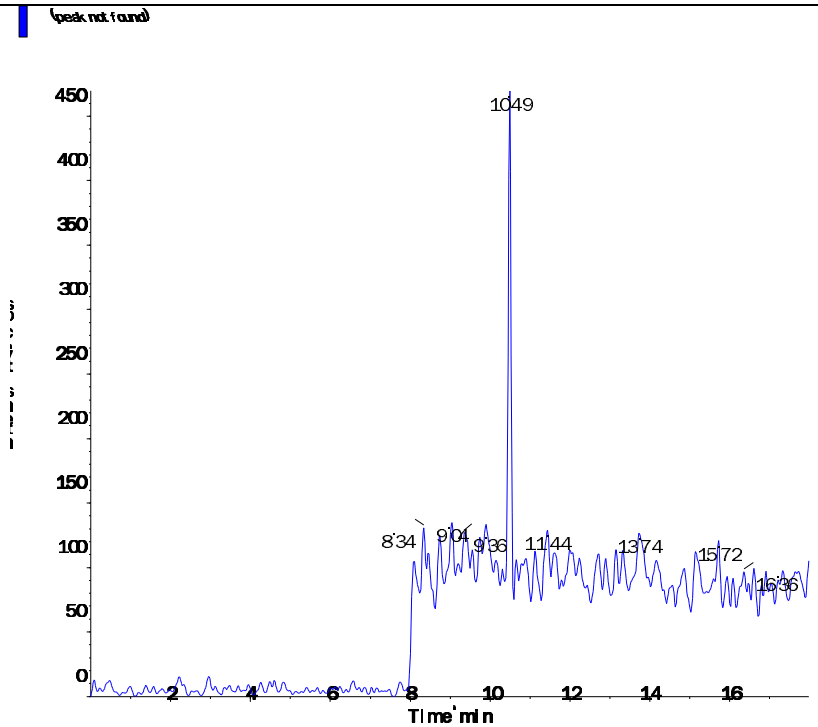

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

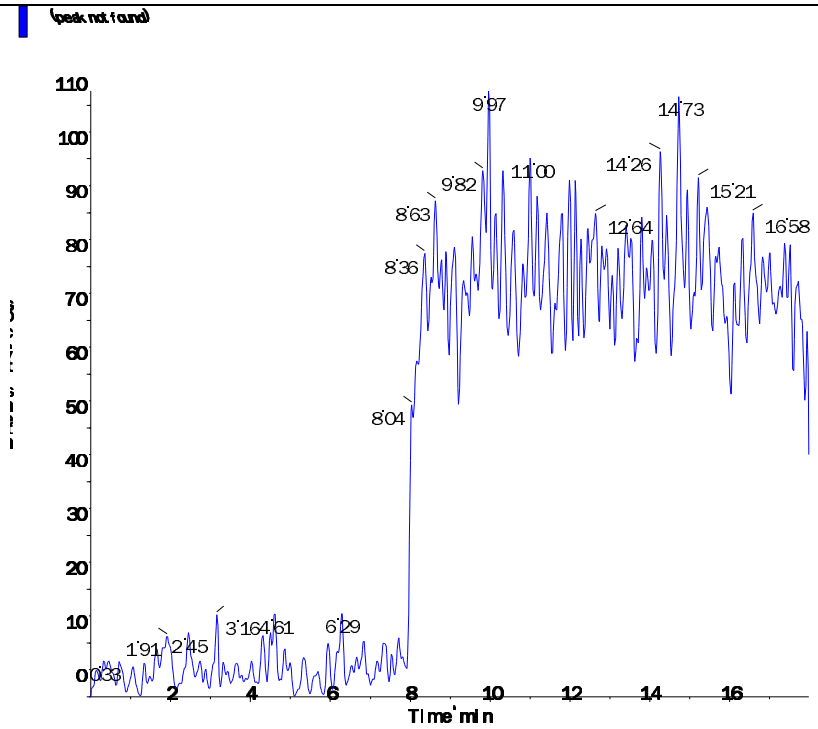

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Data File	LM34755.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 1:50:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041580-03 (RR 200x)	**Injection Vial**	27.00
Data File	LM34755.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 1:50:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	L16041580-03	**Dilution Factor**	1.00
Sample Comment	7,200.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.570e+05	9.85	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.380e+05	9.86	N/A	2.20
Perchlorate conf	1.120e+05	9.85	N/A	2.17

O18LP (Internal Standard)

RT (Exp. RT): 9.85(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

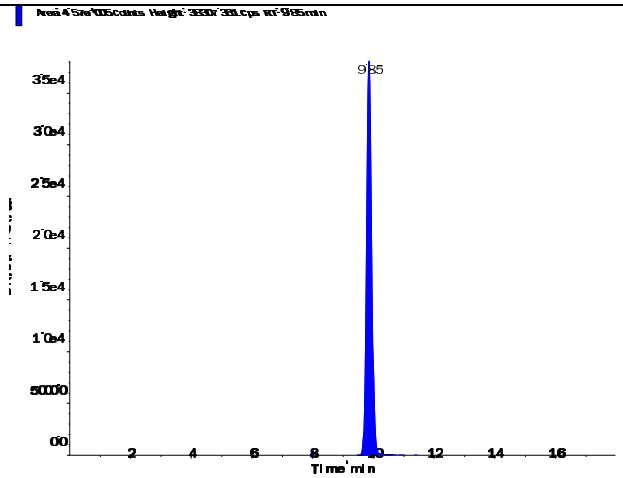

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.86 (9.84) min
Calculated conc:	2.20 ng/ml
Area Ratio:	0.74
Sample Type:	(Unknown)

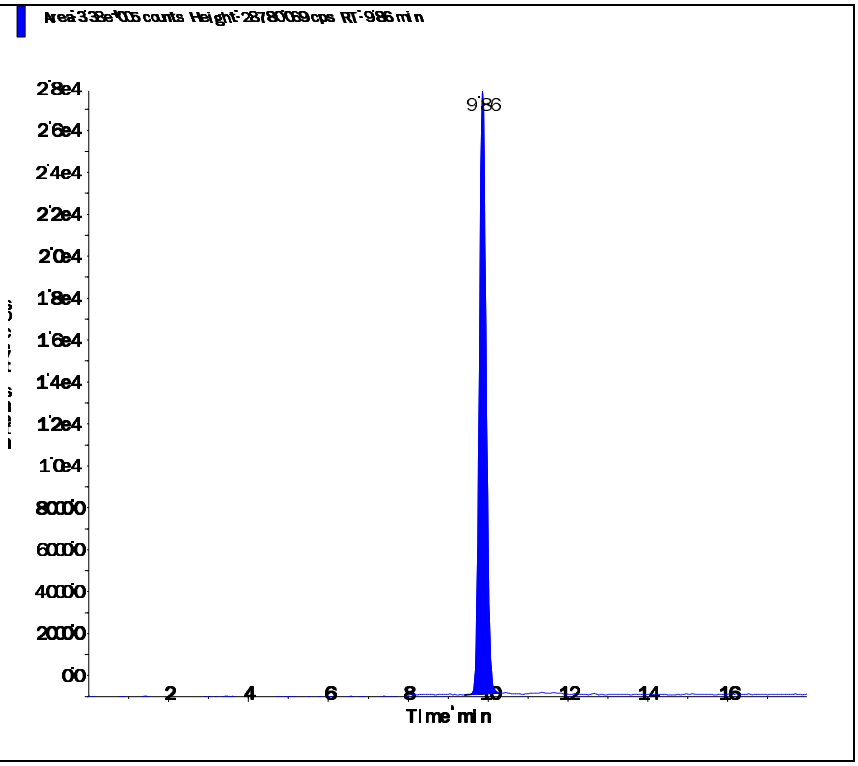

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	2.17 ng/ml
Area Ratio:	0.245
Sample Type:	(Unknown)

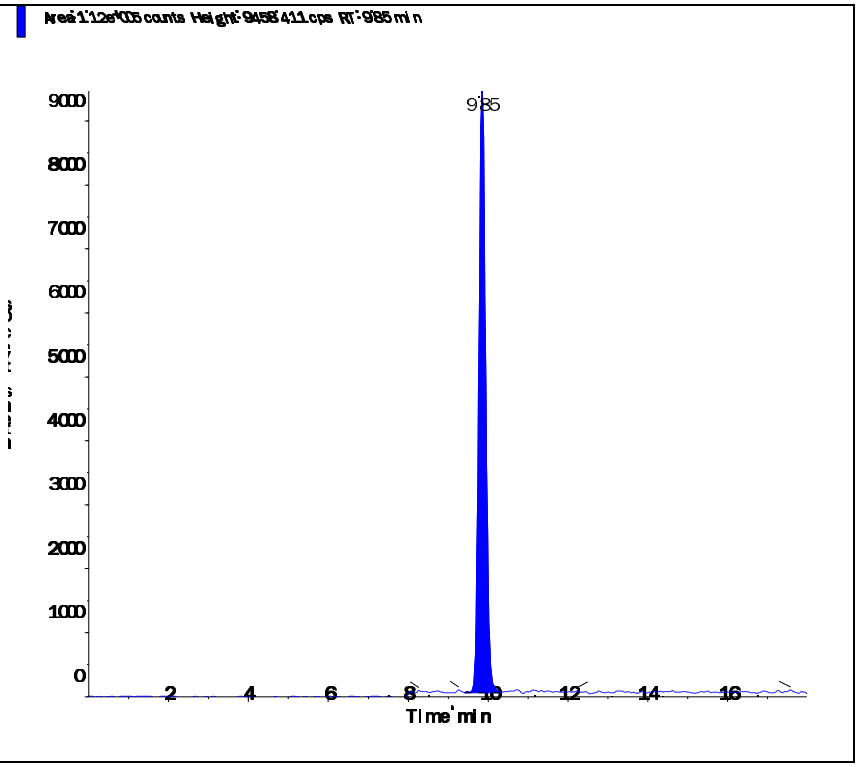

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Data File	LM34756.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 2:09:55 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041580-04 (RR 400x)	**Injection Vial**	28.00
Data File	LM34756.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 2:09:55 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	L16041580-04	**Dilution Factor**	1.00
Sample Comment	7,400.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.650e+05	9.85	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.940e+05	9.86	N/A	1.88
Perchlorate conf	9.930e+04	9.85	N/A	1.89

O18LP (Internal Standard)

RT (Exp. RT): 9.85(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

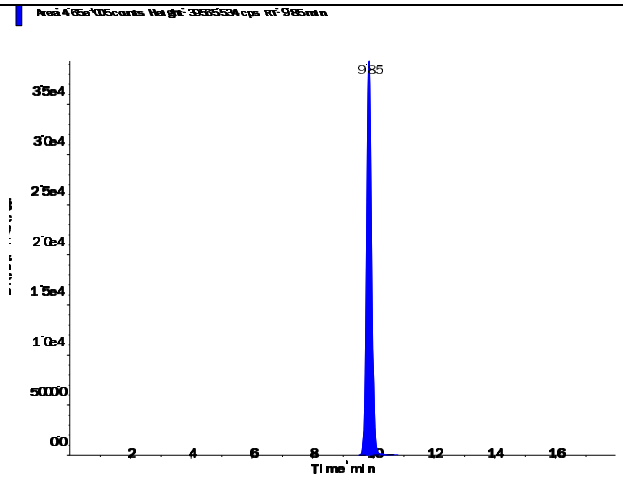

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.86 (9.84) min
Calculated conc:	1.88 ng/ml
Area Ratio:	0.632
Sample Type:	(Unknown)

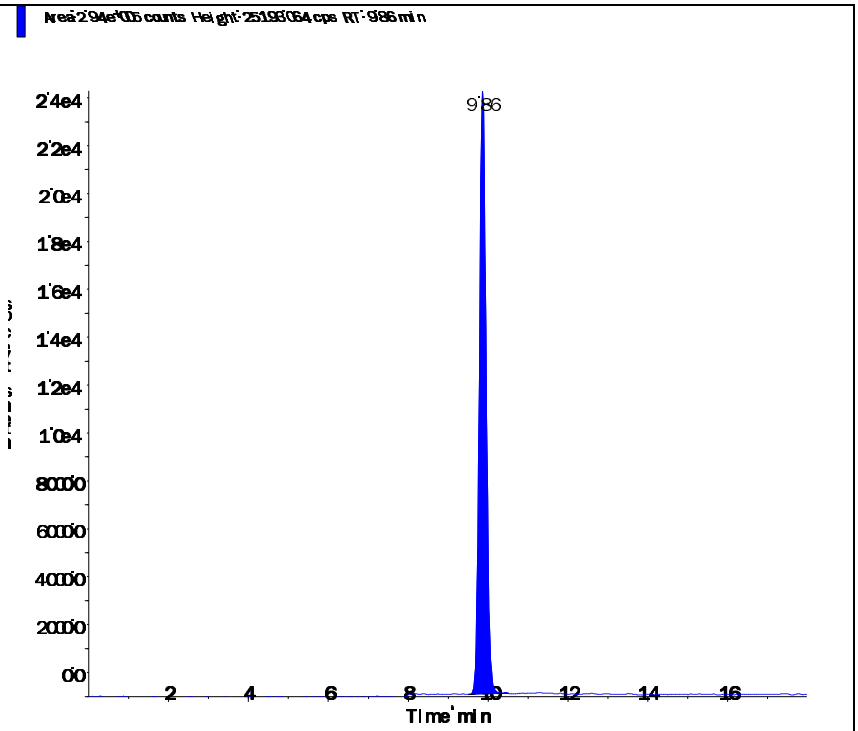

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	1.89 ng/ml
Area Ratio:	0.213
Sample Type:	(Unknown)

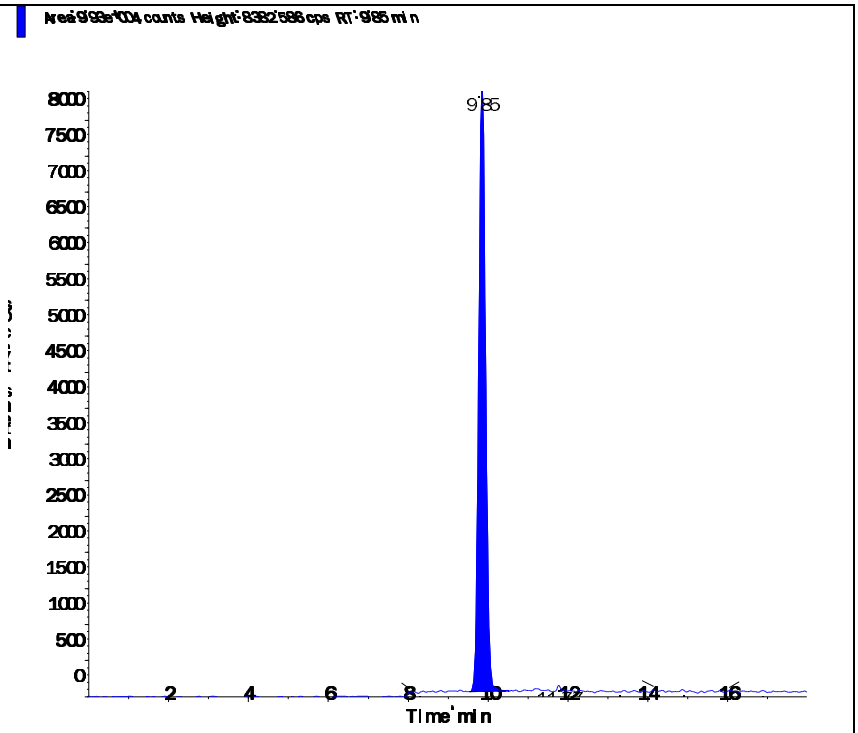

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Data File	LM34757.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 2:28:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041580-05 (RR 200x)	**Injection Vial**	29.00
Data File	LM34757.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 2:28:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	L16041580-05	**Dilution Factor**	1.00
Sample Comment	7,200.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.710e+05	9.85	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.540e+05	9.86	N/A	1.60
Perchlorate conf	8.390e+04	9.85	N/A	1.57

O18LP (Internal Standard)

RT (Exp. RT): 9.85(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

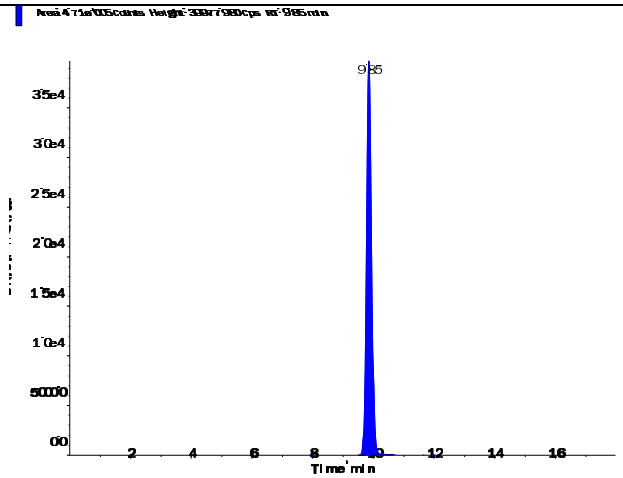

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.86 (9.84) min
Calculated conc:	1.60 ng/ml
Area Ratio:	0.54
Sample Type:	(Unknown)

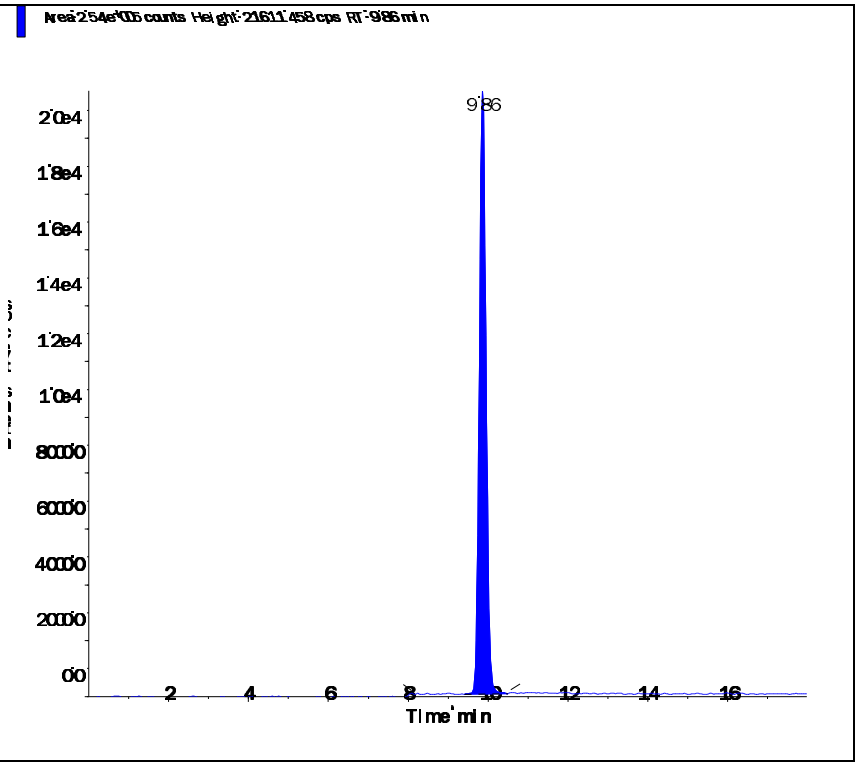

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	1.57 ng/ml
Area Ratio:	0.178
Sample Type:	(Unknown)

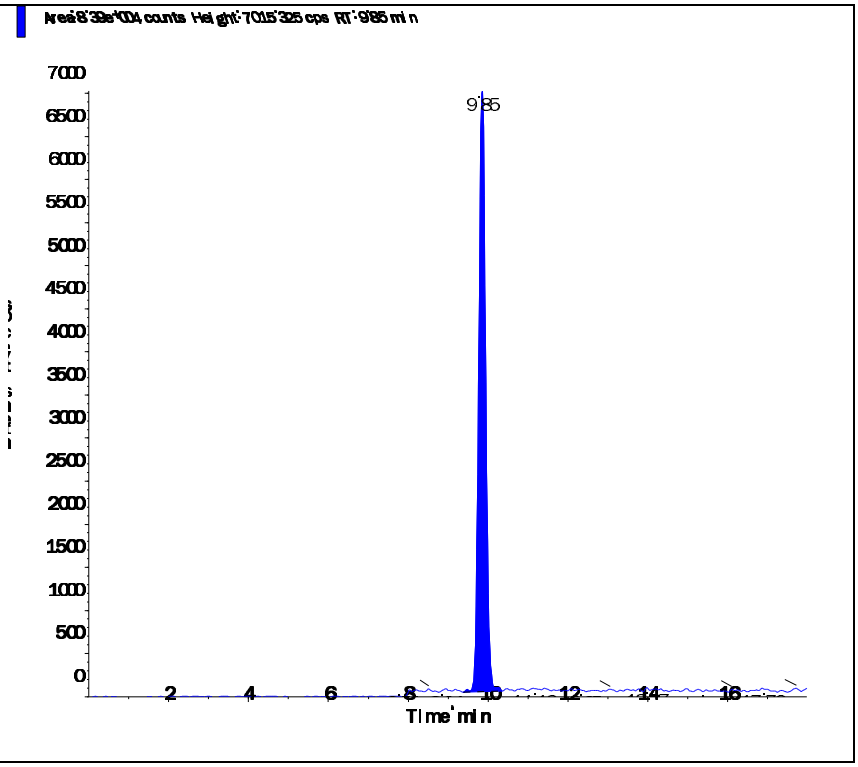

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Data File	LM34723.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 4:56:23 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041580-06 RS	**Injection Vial**	7.00
Data File	LM34723.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 4:56:23 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567224-04	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.340e+05	9.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.230e+04	9.81	N/A	0.286
Perchlorate conf	1.440e+04	9.79	N/A	0.276

O18LP (Internal Standard)

RT (Exp. RT): 9.80(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

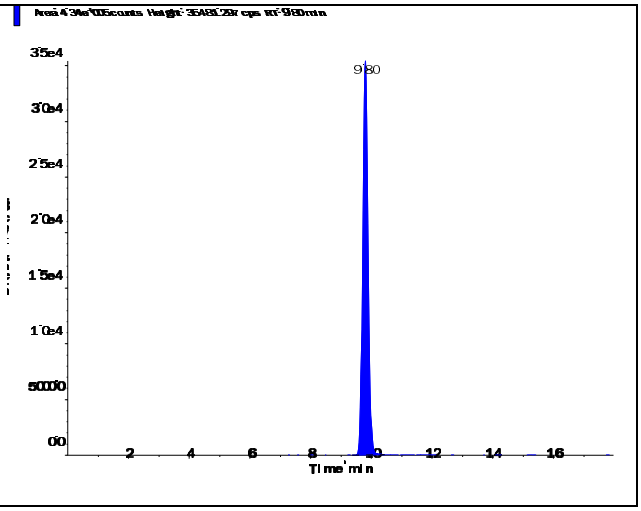

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.81 (9.84) min
Calculated conc:	0.286 ng/ml
Area Ratio:	0.097
Sample Type:	(Unknown)

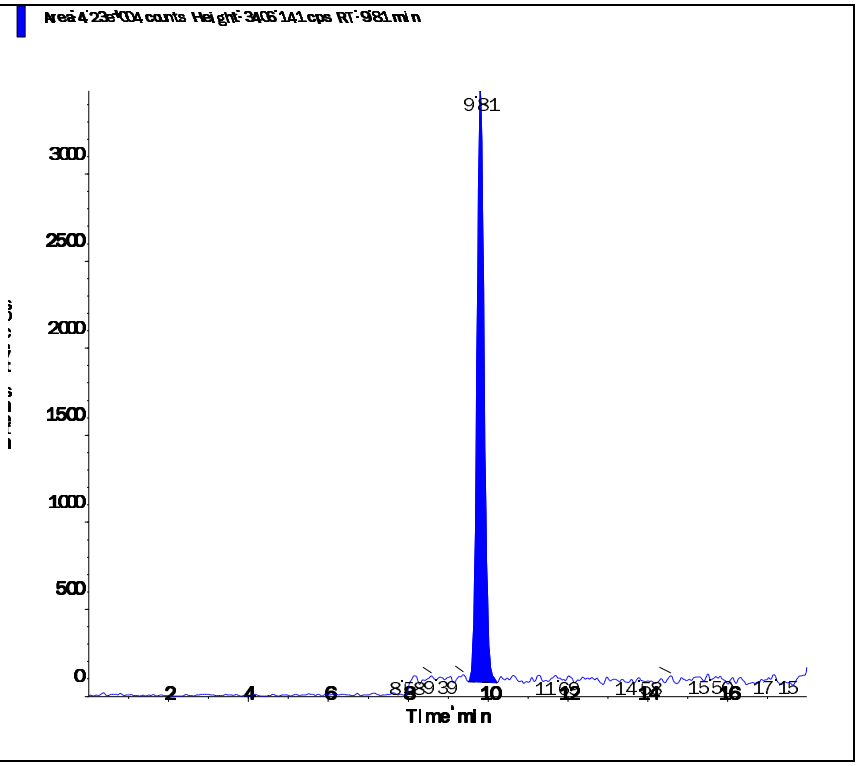

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.79 (9.84) min
Calculated conc:	0.276 ng/ml
Area Ratio:	0.033
Sample Type:	(Unknown)

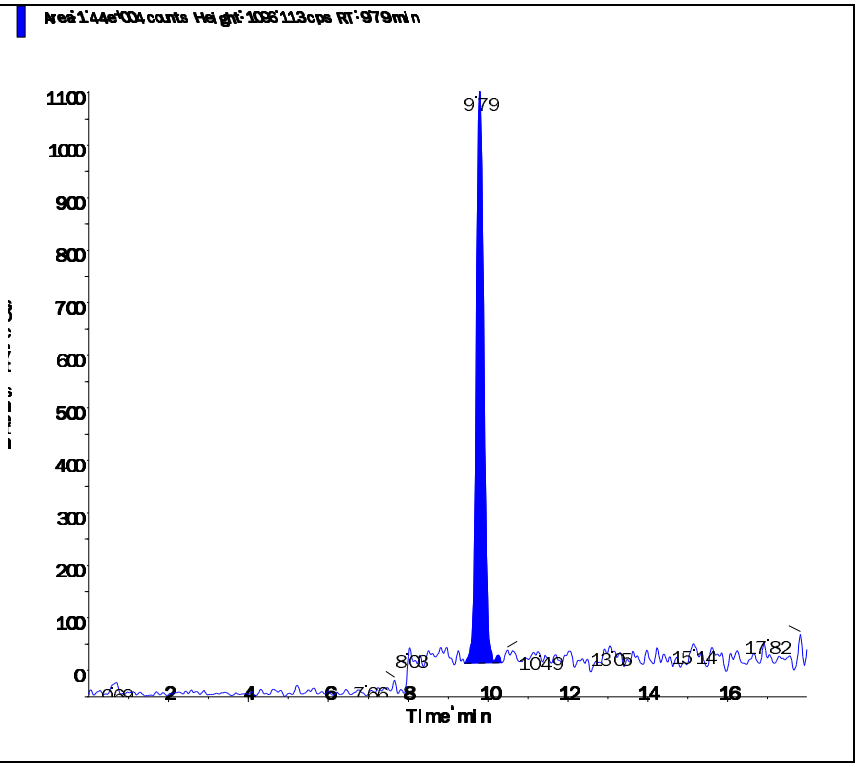

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Data File	LM34724.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 5:15:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041580-07 MS	**Injection Vial**	8.00
Data File	LM34724.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 5:15:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567224-05	**Dilution Factor**	1.00
Sample Comment	7,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.420e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.620e+04	9.81	N/A	0.374
Perchlorate conf	1.920e+04	9.80	N/A	0.369

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

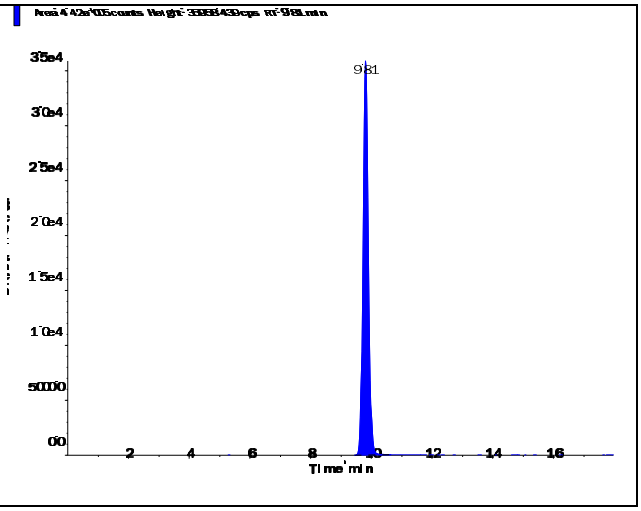

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.81 (9.84) min
Calculated conc:	0.374 ng/ml
Area Ratio:	0.127
Sample Type:	(Unknown)

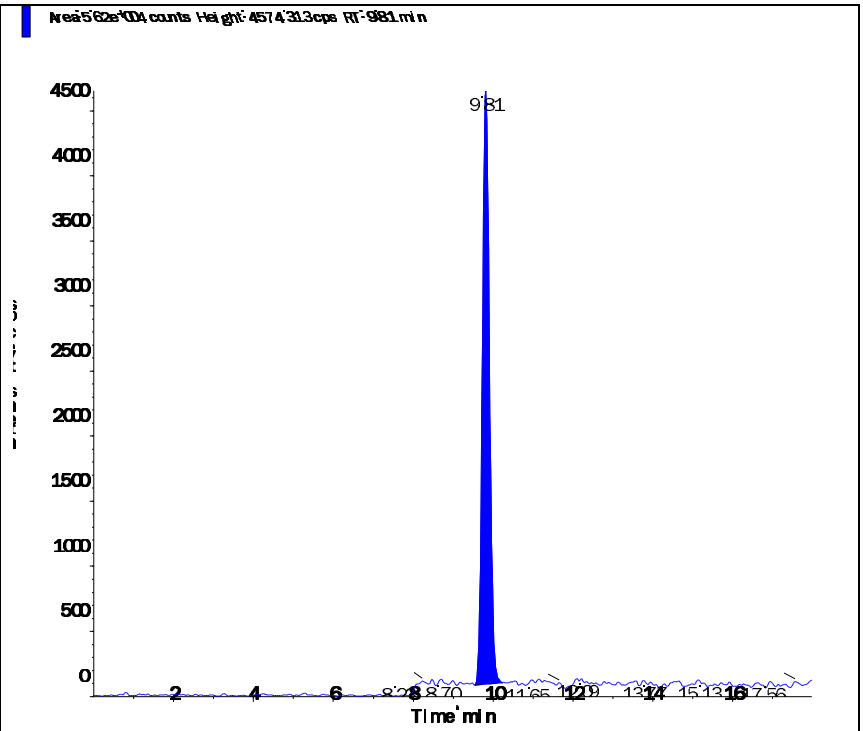

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.80 (9.84) min
Calculated conc:	0.369 ng/ml
Area Ratio:	0.043
Sample Type:	(Unknown)

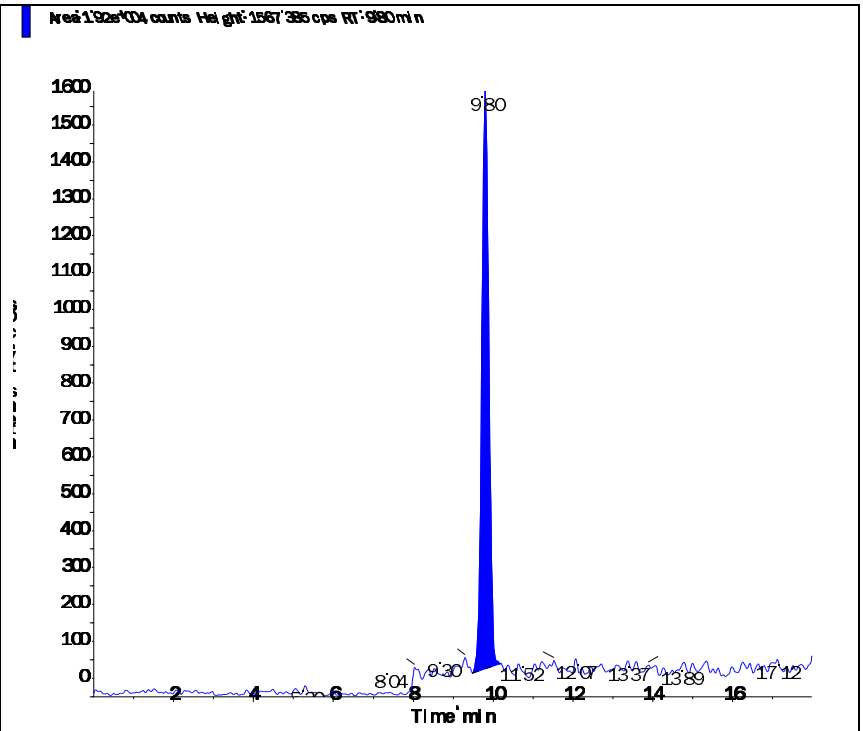

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Data File	LM34725.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 5:34:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041580-08 MSD	**Injection Vial**	9.00
Data File	LM34725.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 5:34:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567224-06	**Dilution Factor**	1.00
Sample Comment	7,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.490e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.970e+04	9.82	N/A	0.325
Perchlorate conf	1.820e+04	9.82	N/A	0.342

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

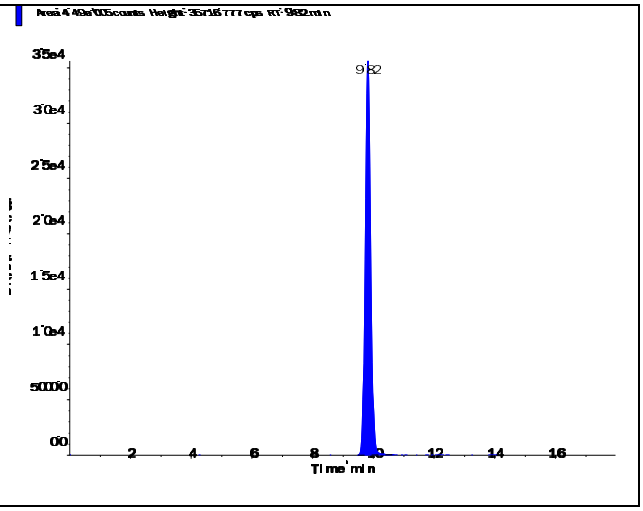

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.82 (9.84) min Calculated conc: 0.325 ng/ml Area Ratio: 0.111 Sample Type: (Unknown)	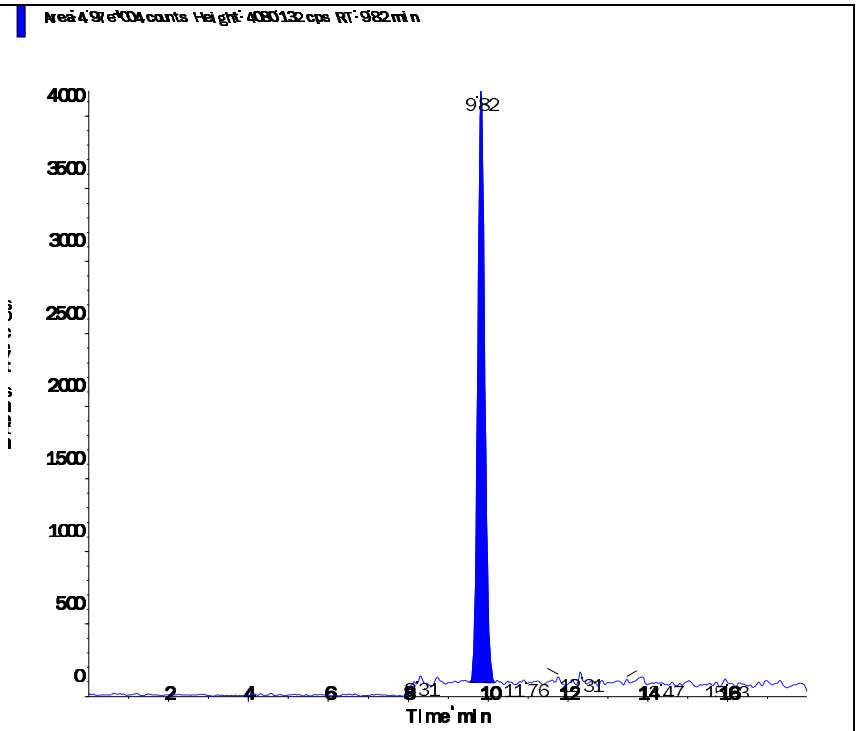
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.82 (9.84) min Calculated conc: 0.342 ng/ml Area Ratio: 0.04 Sample Type: (Unknown)	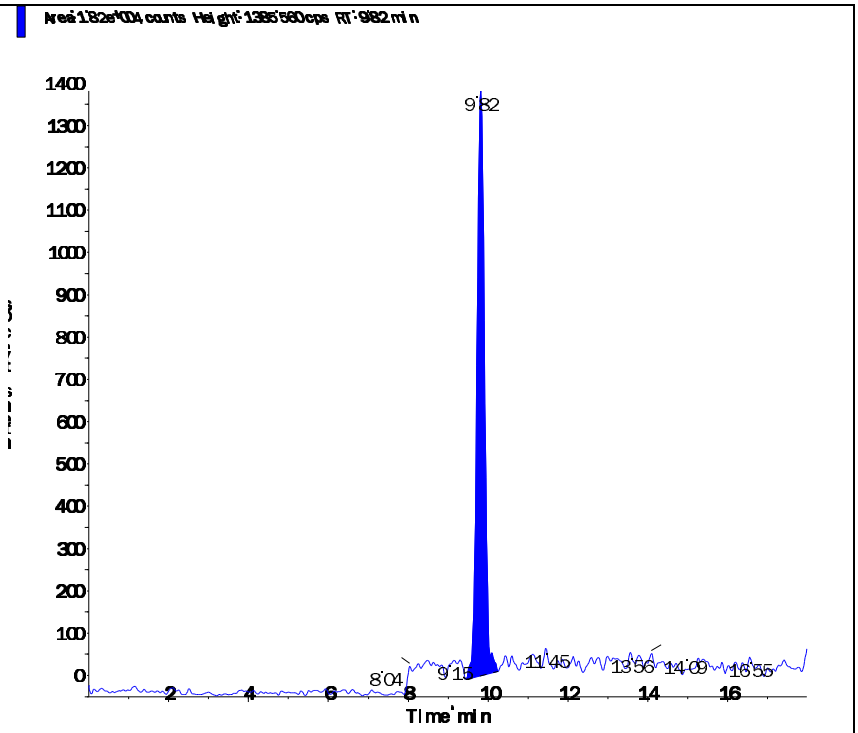

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Data File	LM34734.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 8:24:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041580-09	**Injection Vial**	15.00
Data File	LM34734.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 8:24:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	L16041580-09	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.690e+05	9.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.150e+03	9.82	N/A	0.0035
Perchlorate conf	1.250e+03	9.71	N/A	0.0034

O18LP (Internal Standard)

RT (Exp. RT): 9.80(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

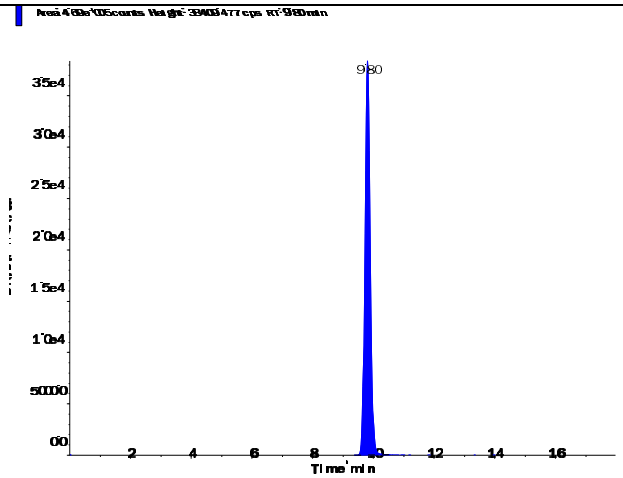

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	0.0035 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

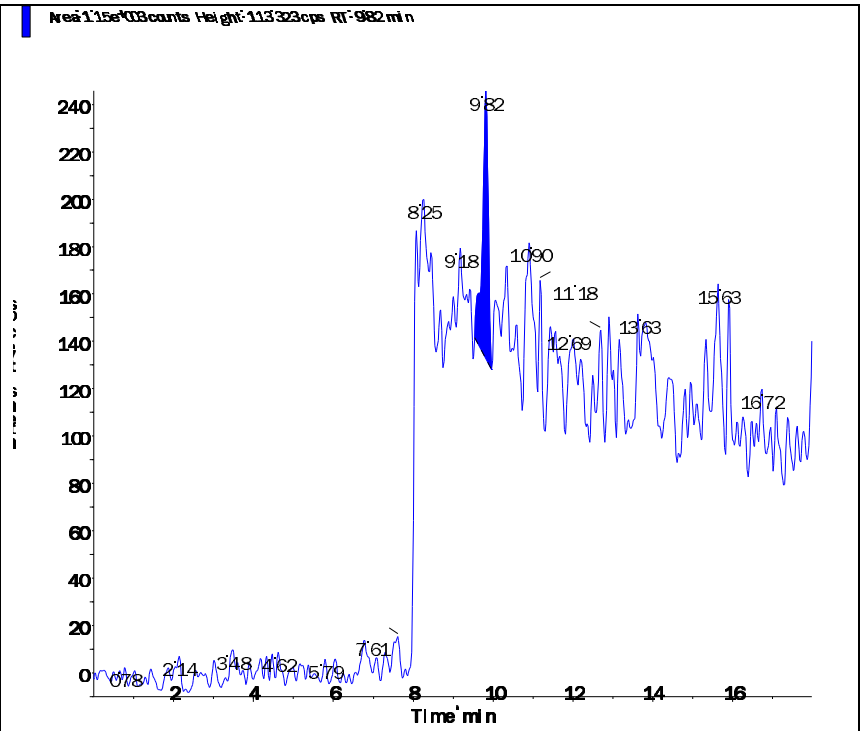

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.71 (9.84) min
Calculated conc:	0.0034 ng/ml
Area Ratio:	0.003
Sample Type:	(Unknown)

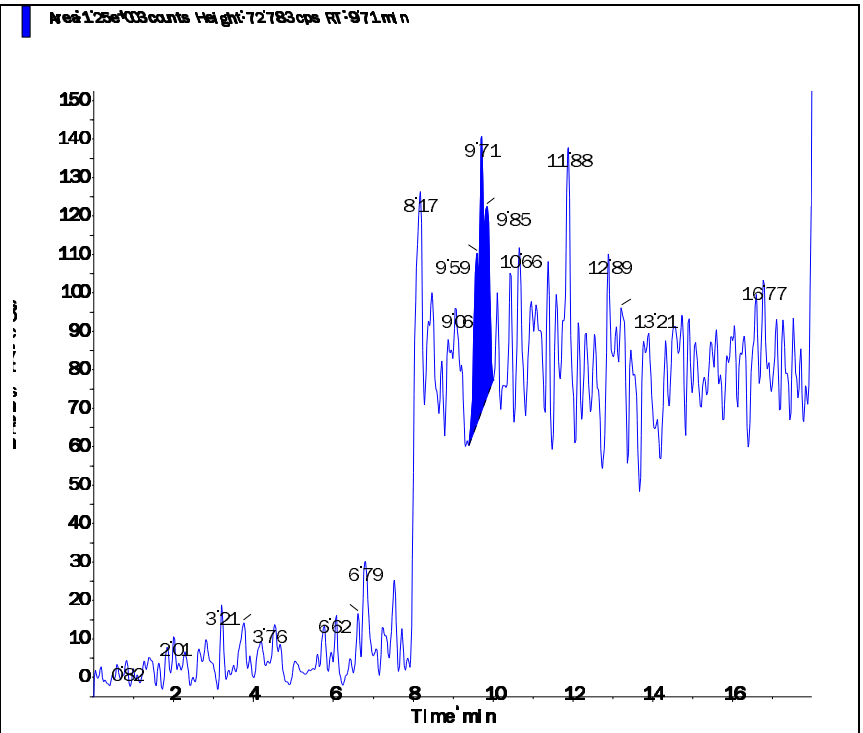

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Data File	LM34735.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 8:43:31 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041580-10	**Injection Vial**	16.00
Data File	LM34735.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 8:43:31 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	L16041580-10	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.910e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	9.330e+02	9.81	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

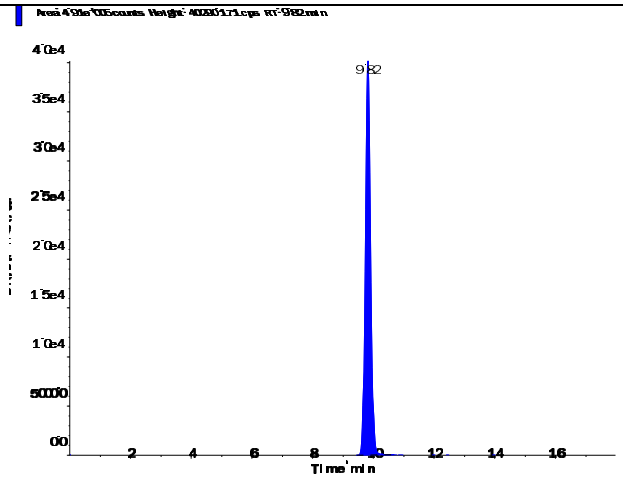

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

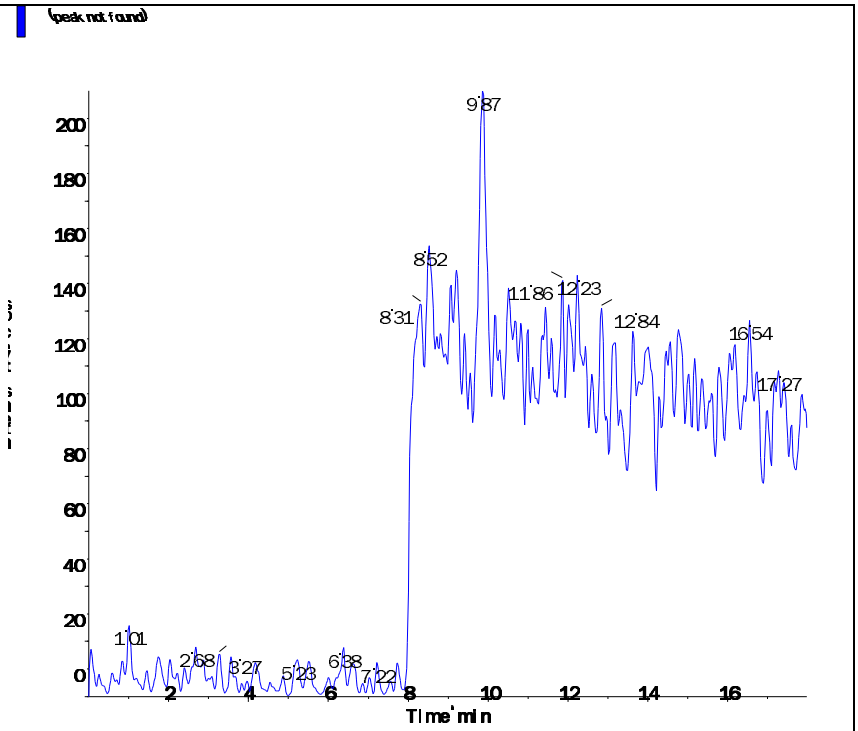

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.81 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

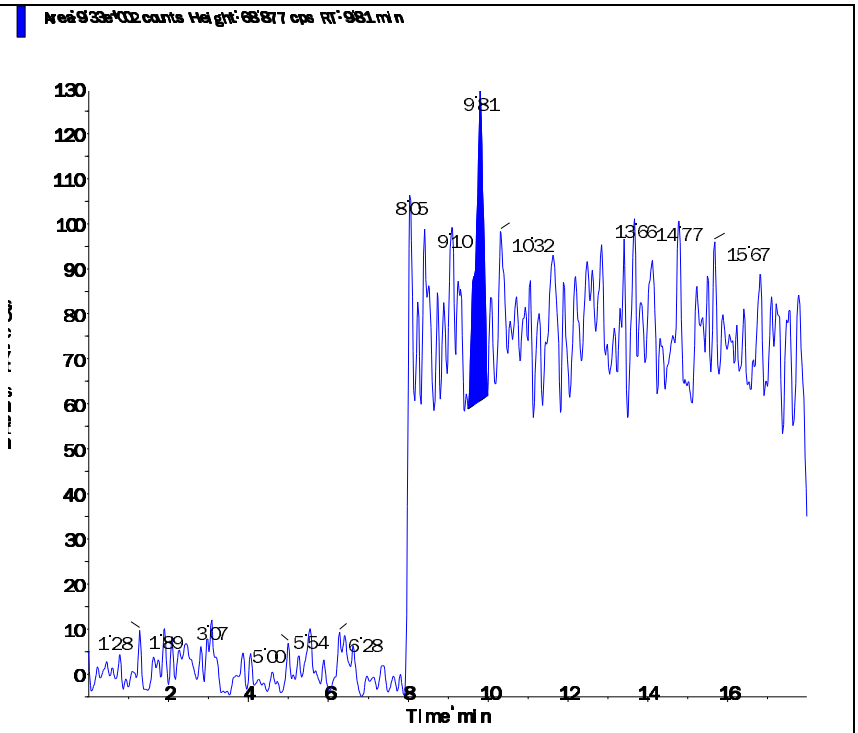

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Data File	LM34736.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 9:02:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041580-11	**Injection Vial**	17.00
Data File	LM34736.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 9:02:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	L16041580-11	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.800e+05	9.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.050e+03	9.80	N/A	0.0089
Perchlorate conf	2.020e+03	9.82	N/A	0.0172

O18LP (Internal Standard)

RT (Exp. RT): 9.80(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

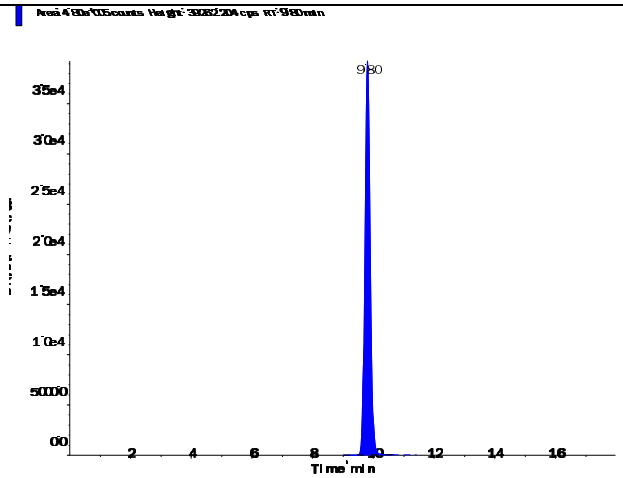

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.80 (9.84) min
Calculated conc:	0.0089 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)

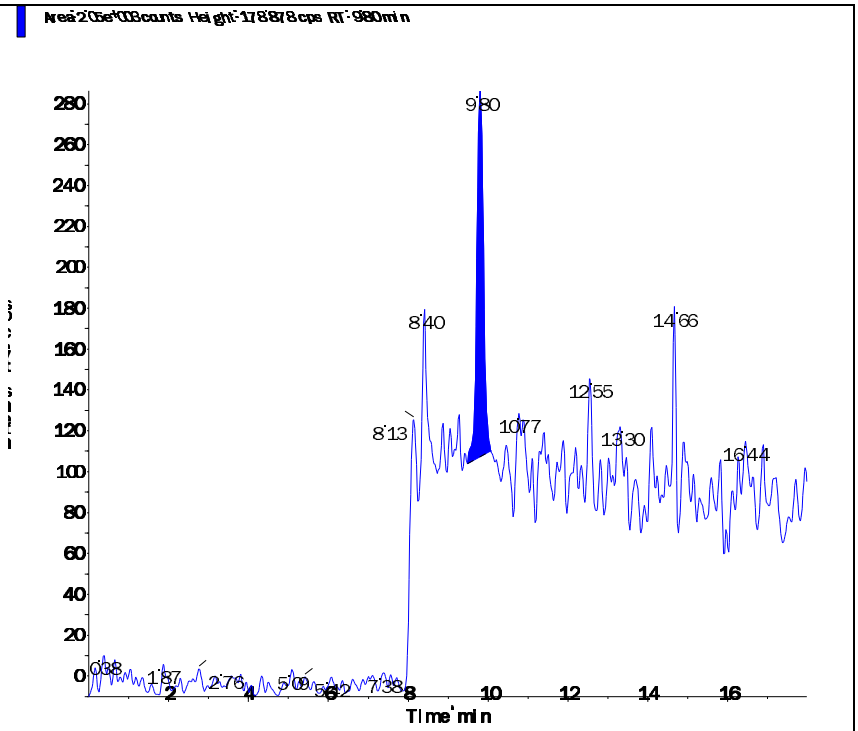

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	0.0172 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)

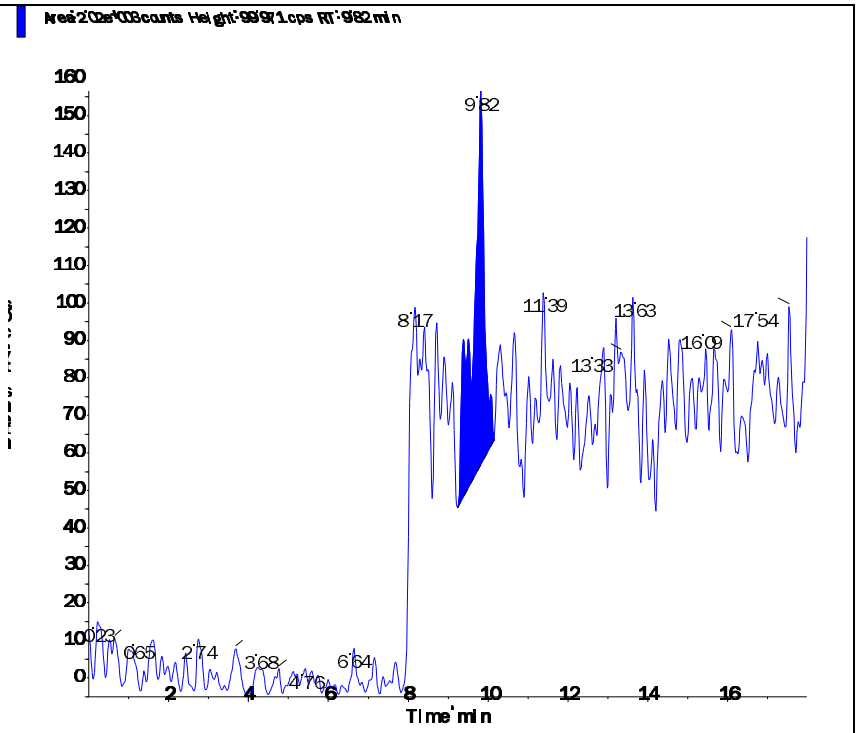

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Data File	LM34737.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 9:21:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041580-12	**Injection Vial**	18.00
Data File	LM34737.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 9:21:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	L16041580-12	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.820e+05	9.76	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	2.140e+03	9.72	N/A	0.0194

O18LP (Internal Standard)

RT (Exp. RT): 9.76(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

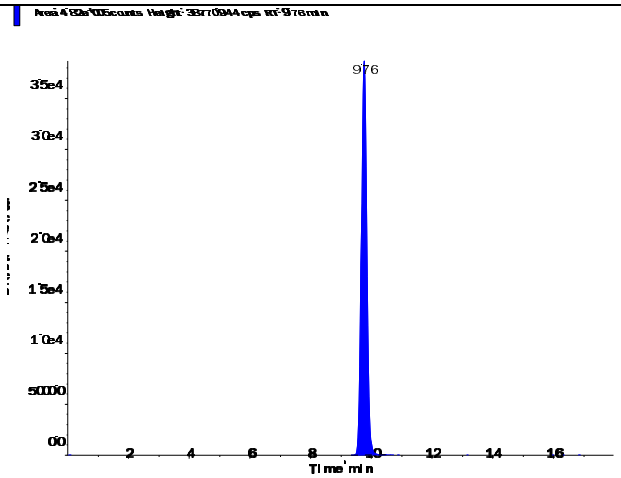

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

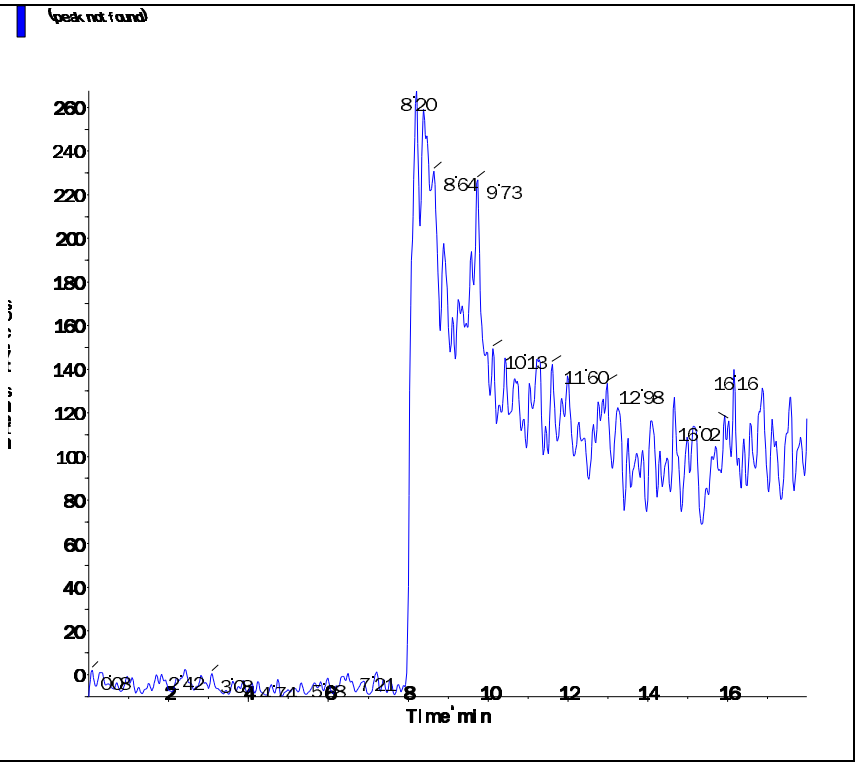

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.72 (9.84) min
Calculated conc:	0.0194 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)

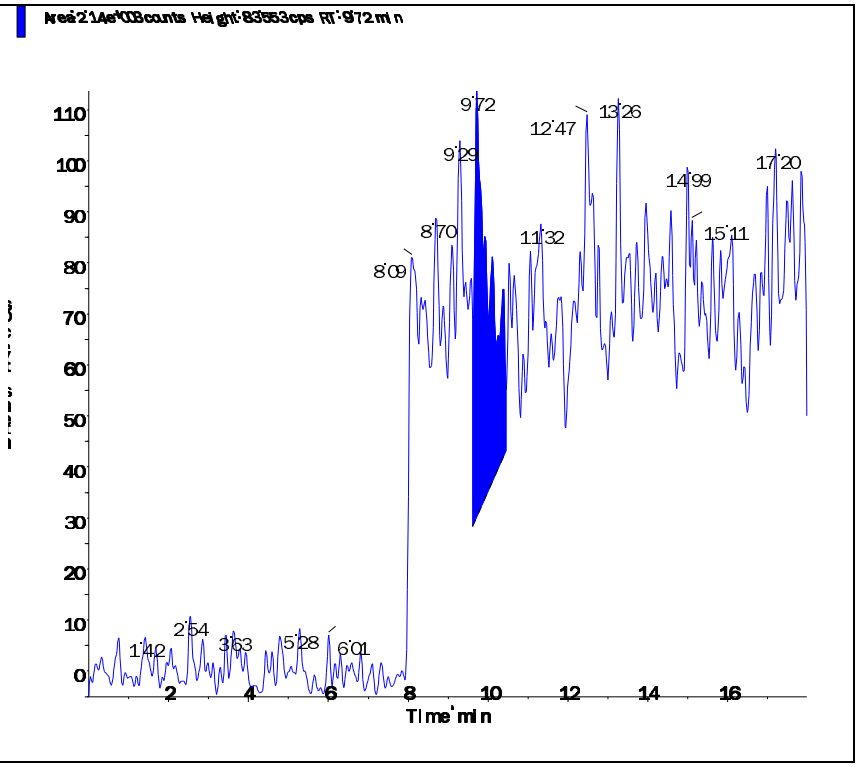

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Data File	LM34738.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 9:40:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041580-13	**Injection Vial**	19.00
Data File	LM34738.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 9:40:18 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	L16041580-13	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.70	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	1.020e+03	9.67	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.70(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

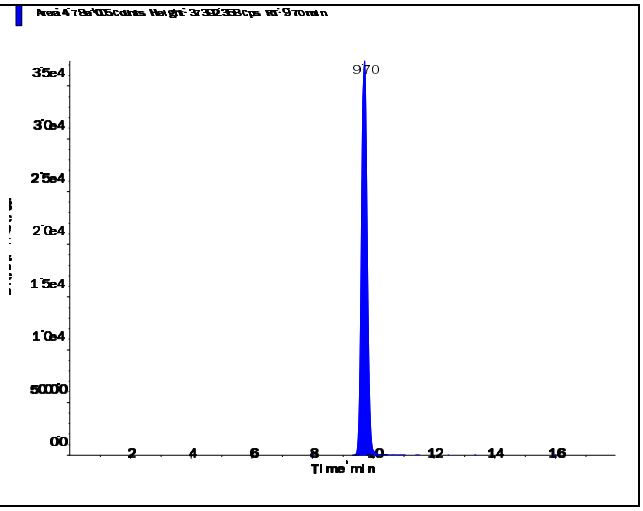

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	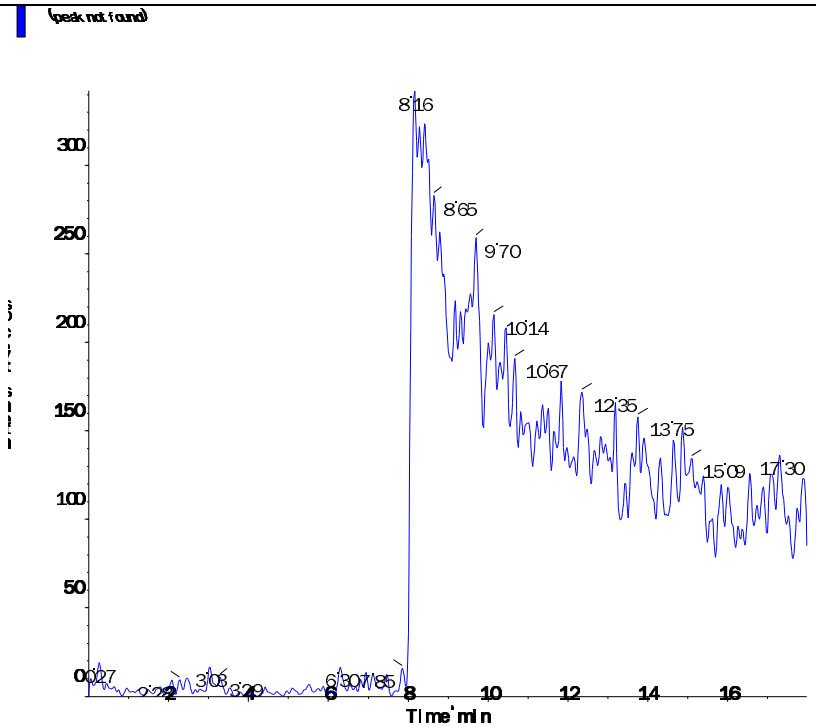
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.67 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	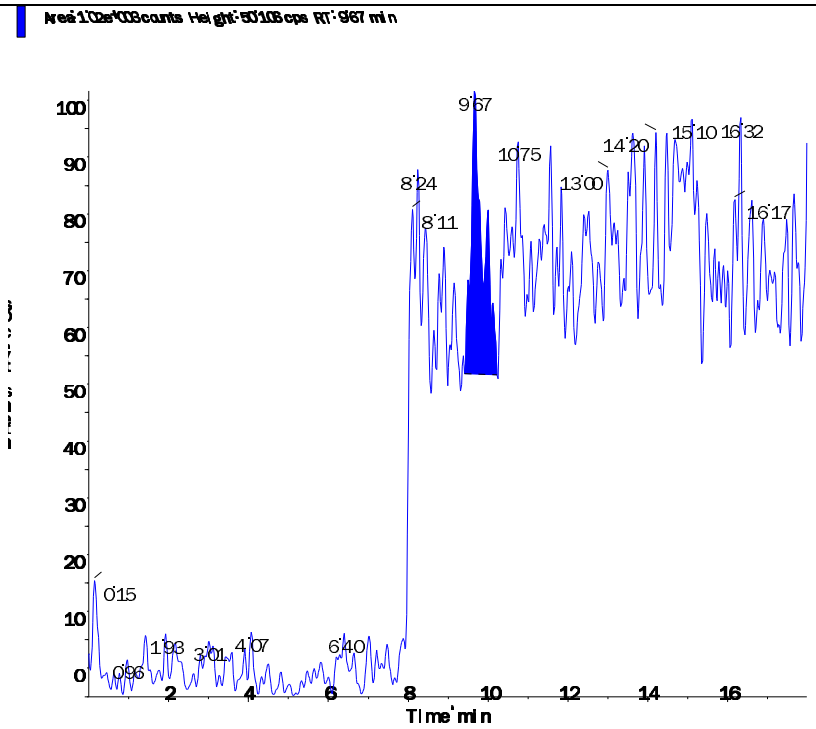

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Data File	LM34776.wiff	**Result Table**	050516_JWR.rdb
Acquisition Date	5/5/2016 8:55:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041580-14 EB	**Injection Vial**	11.00
Data File	LM34776.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 8:55:13 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050516_JWR.rdb
Sample ID	L16041580-14	**Dilution Factor**	1.00
Sample Comment	1,1 (EB)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.610e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

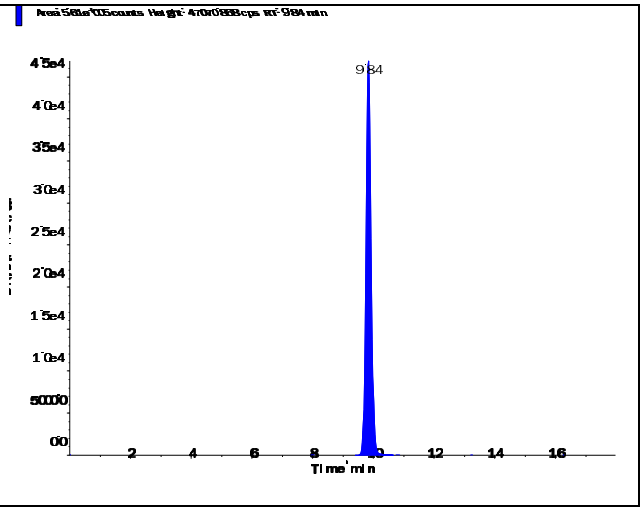

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

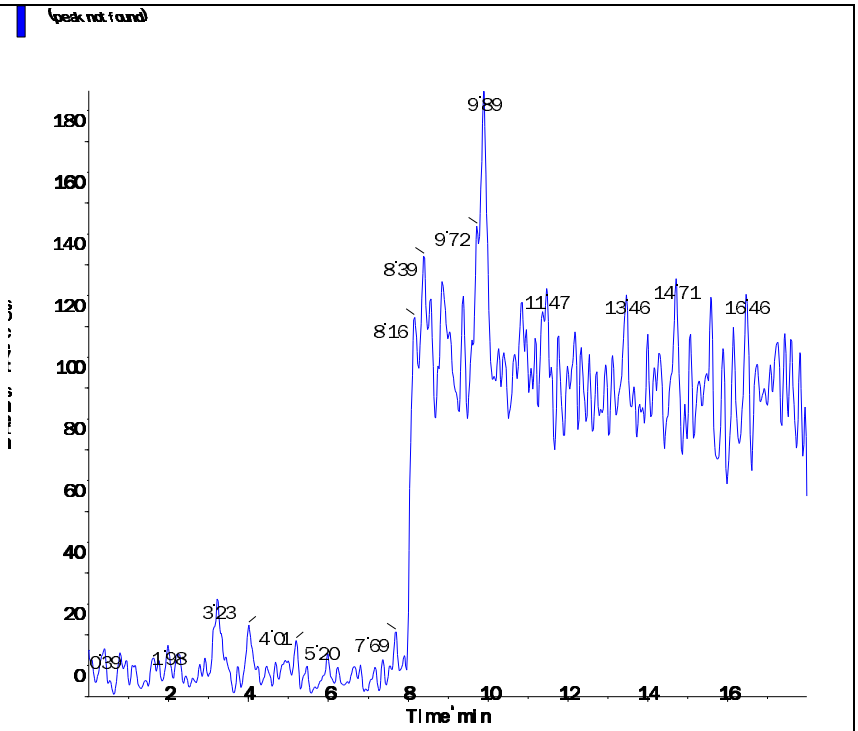

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

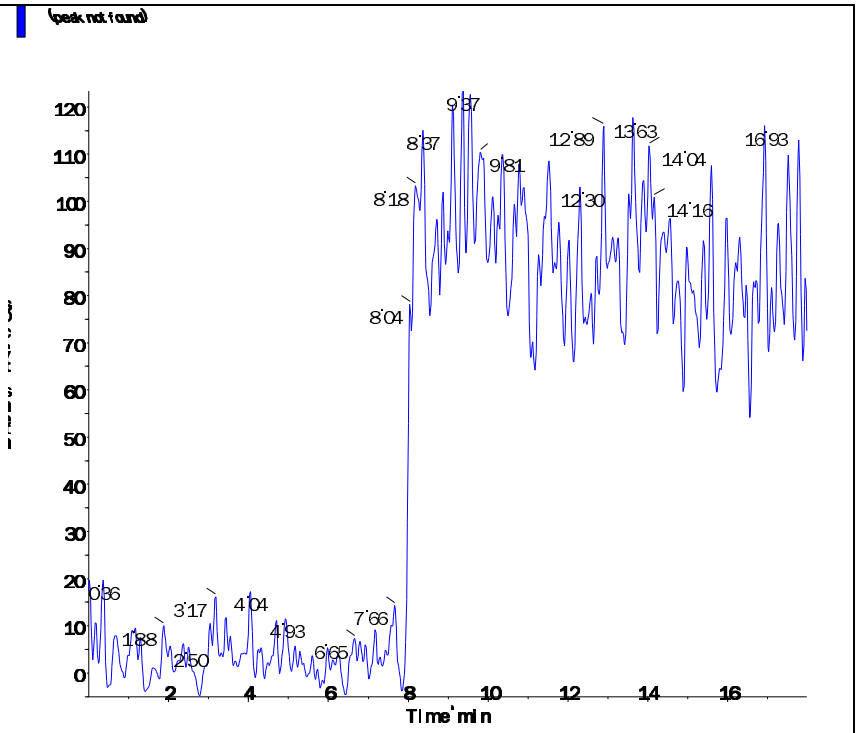

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2.2.1.4 Standards Data

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Data File	LM34686.wiff	**Result Table**	050616_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050616_JWR.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

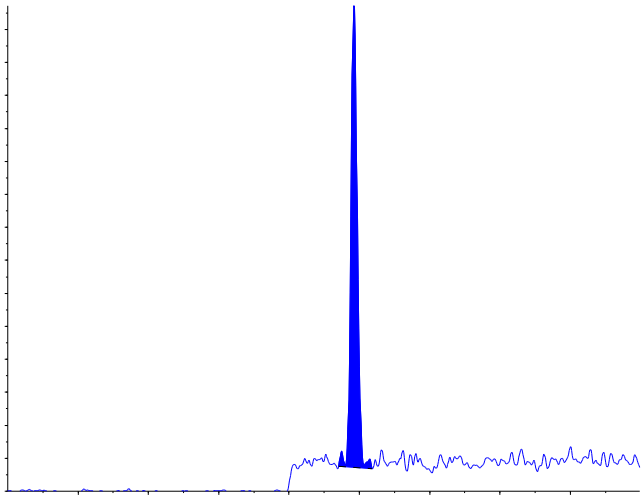

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	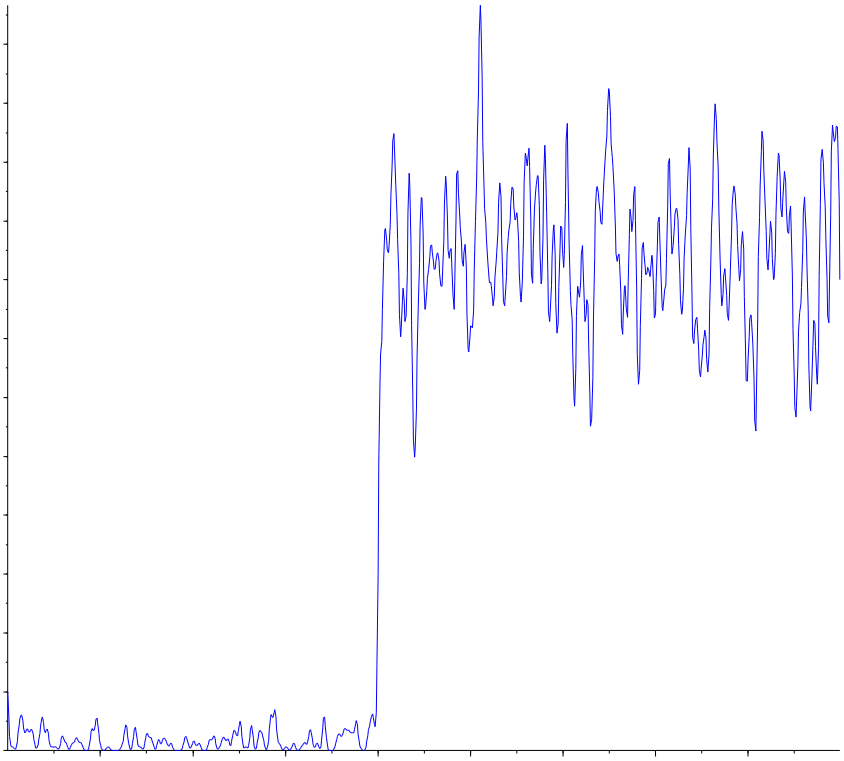
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	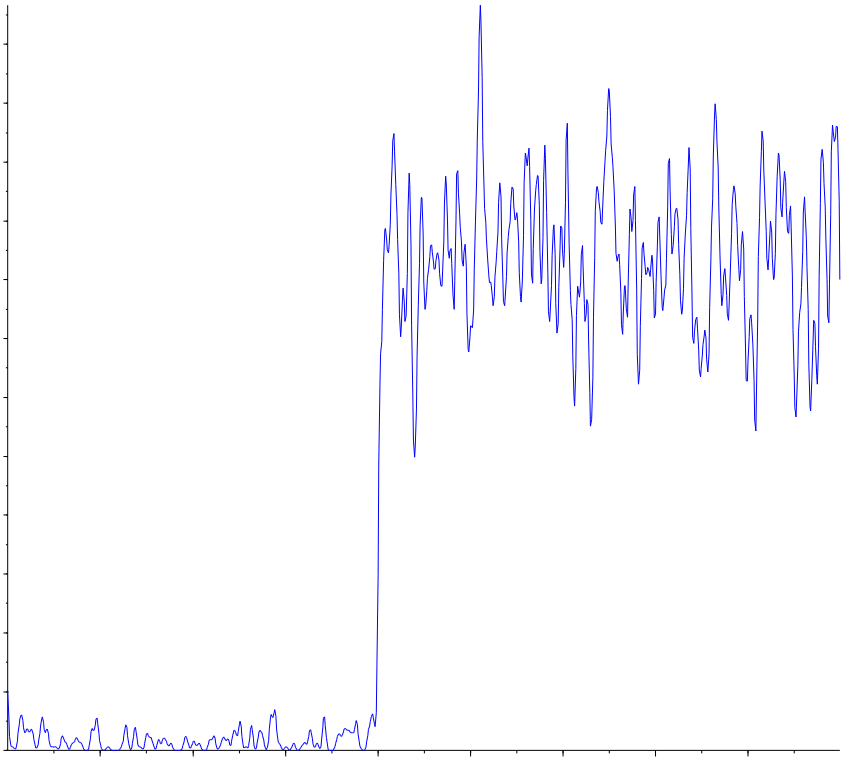

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Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

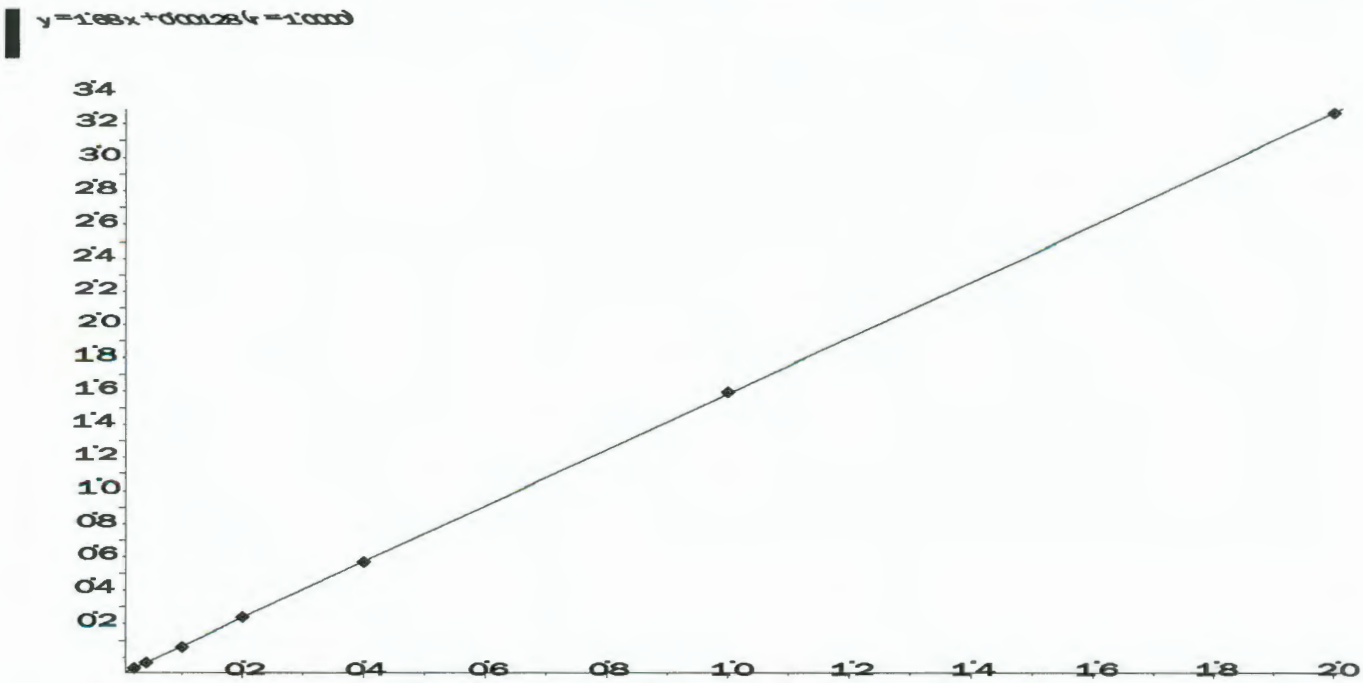

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Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

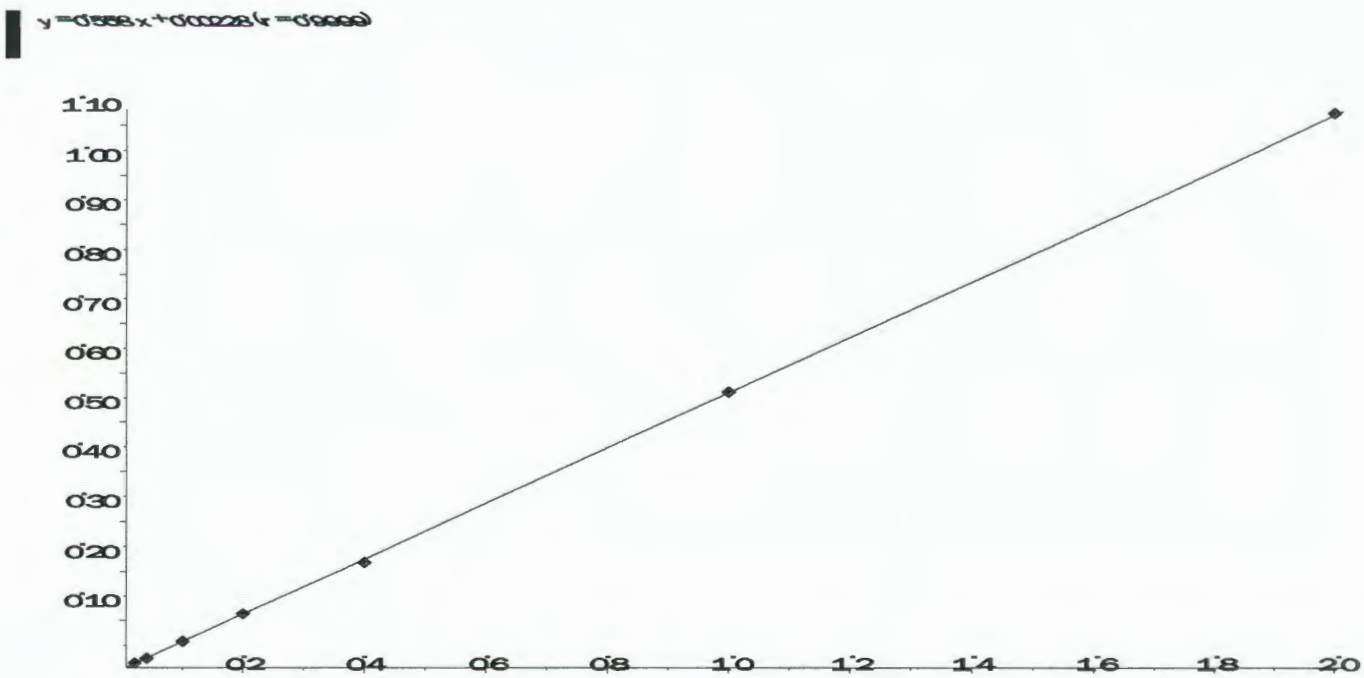

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Data File	LM34687.wiff	**Result Table**	050616_JWR.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050616_JWR.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

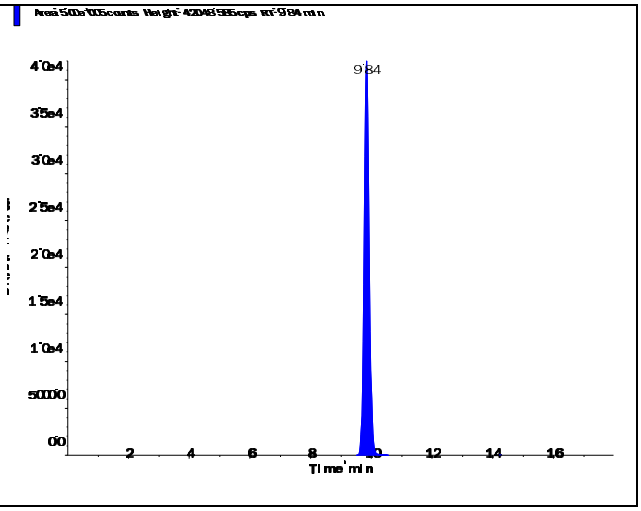

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.103 ng/ml
Area Ratio:	0.036
Sample Type:	(Standard)

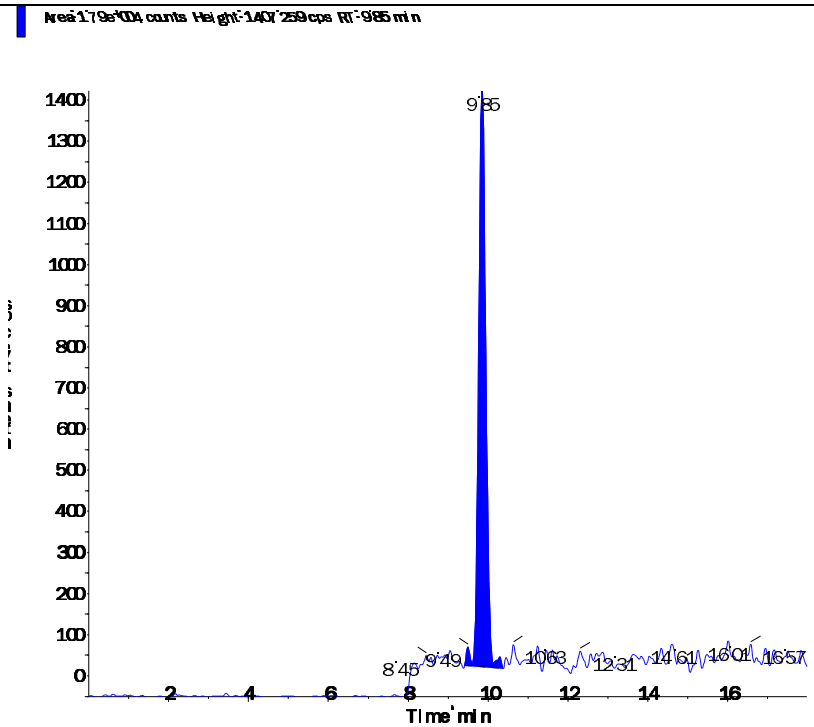

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.104 ng/ml
Area Ratio:	0.014
Sample Type:	(Standard)

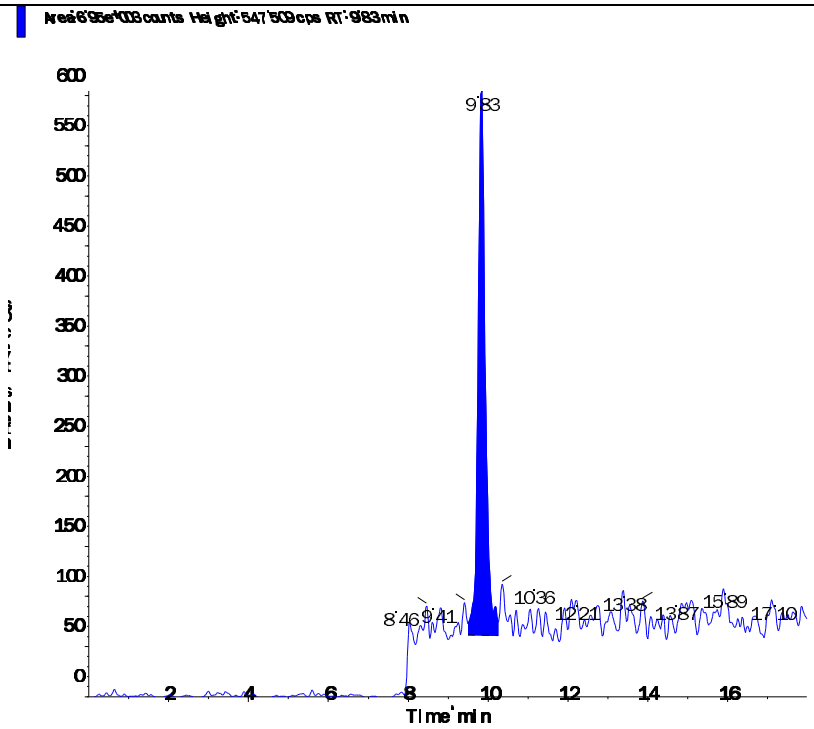

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Printed: 5/9/2016 3:32 PM

Data File	LM34688.wiff	**Result Table**	050616_JWR.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050616_JWR.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

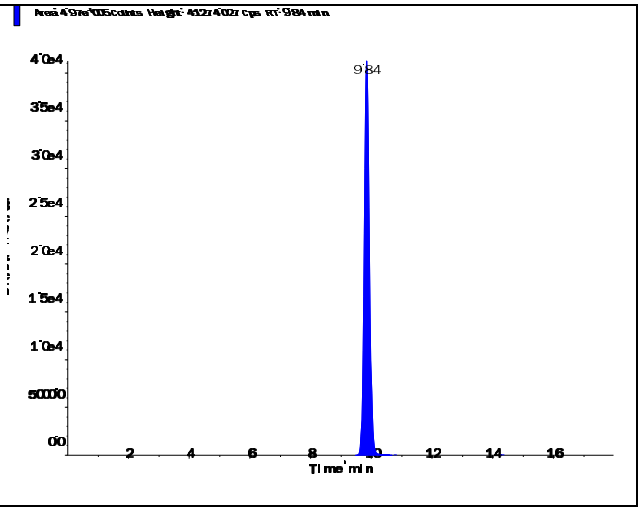

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

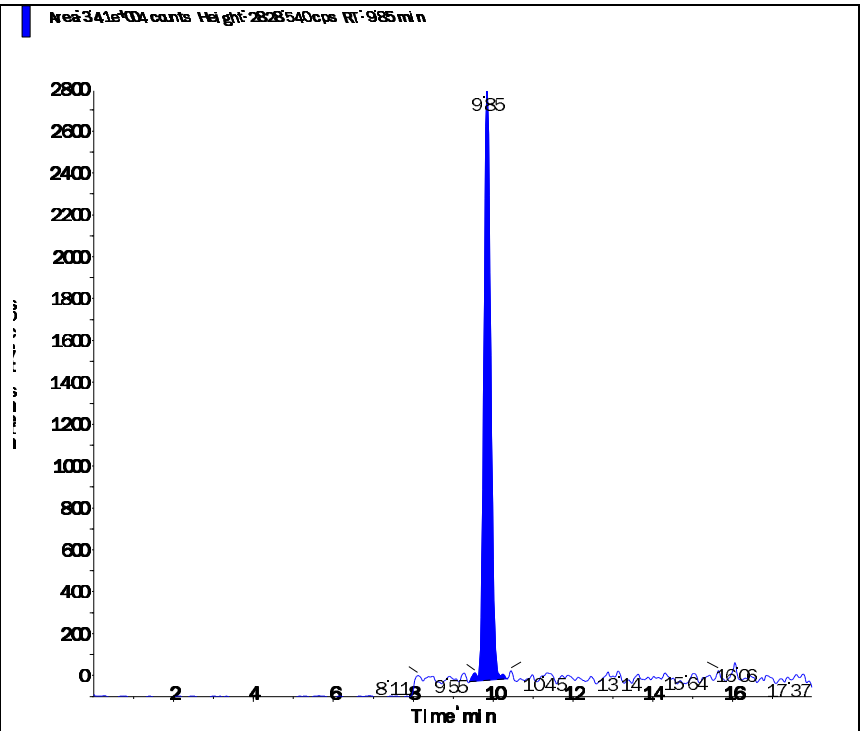

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

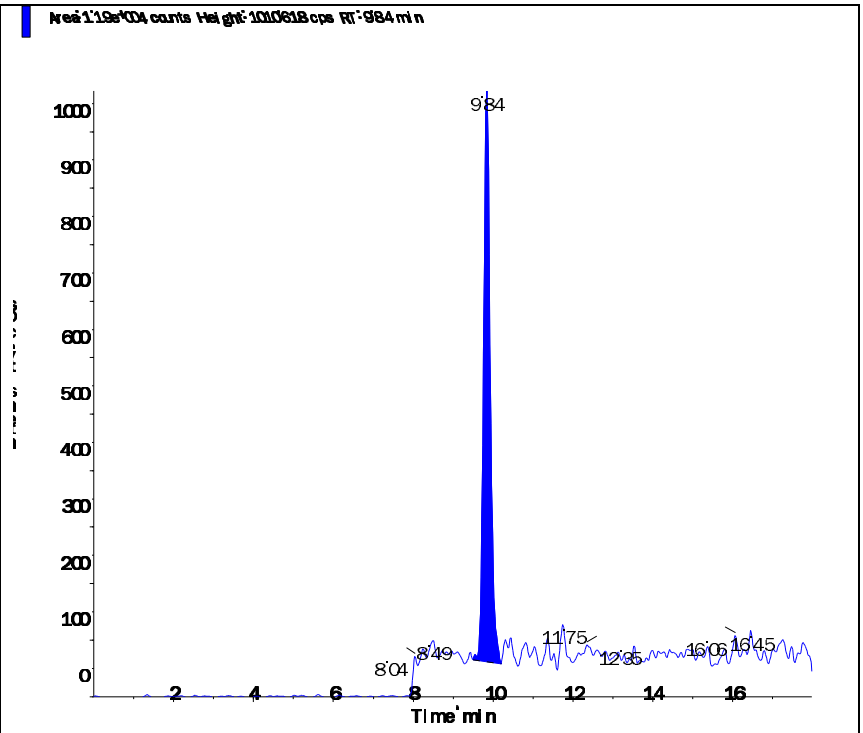

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Data File	LM34689.wiff	**Result Table**	050616_JWR.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050616_JWR.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

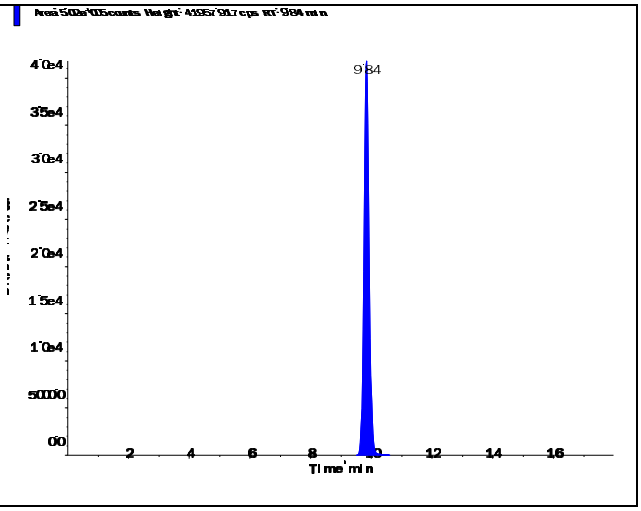

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.483 ng/ml
Area Ratio:	0.164
Sample Type:	(Standard)

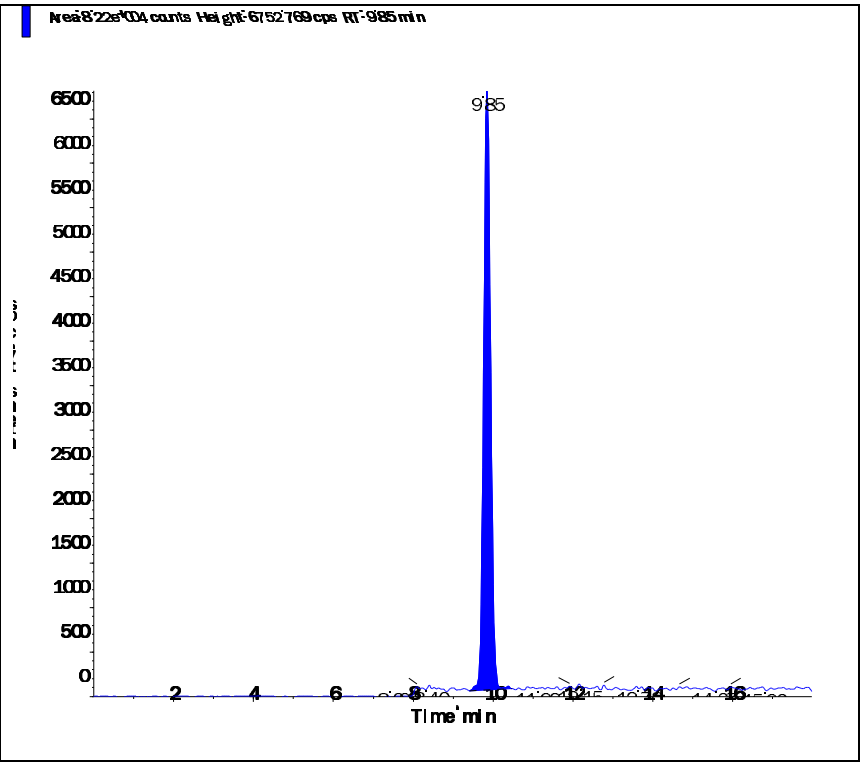

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.503 ng/ml
Area Ratio:	0.058
Sample Type:	(Standard)

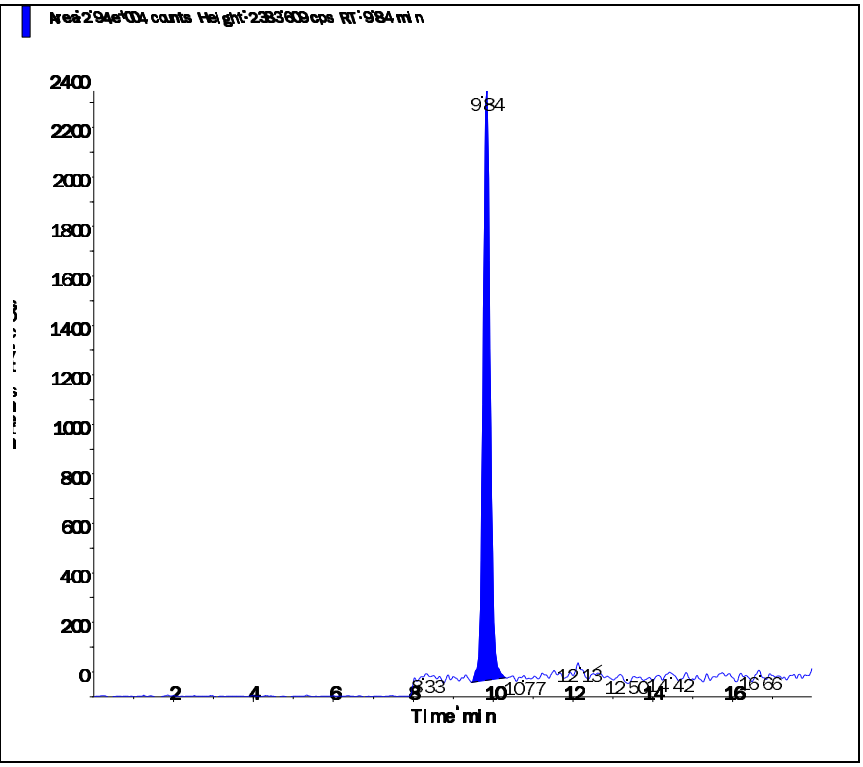

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Data File	LM34690.wiff	**Result Table**	050616_JWR.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050616_JWR.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

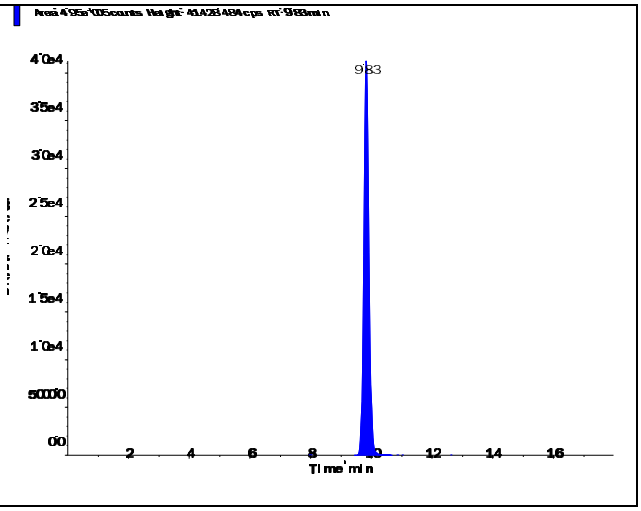

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

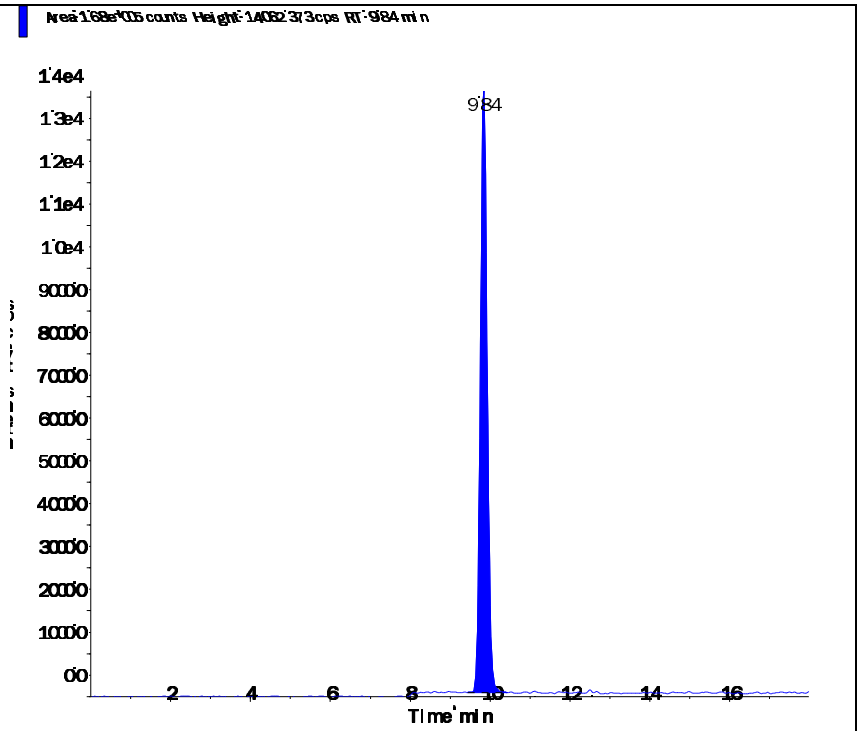

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

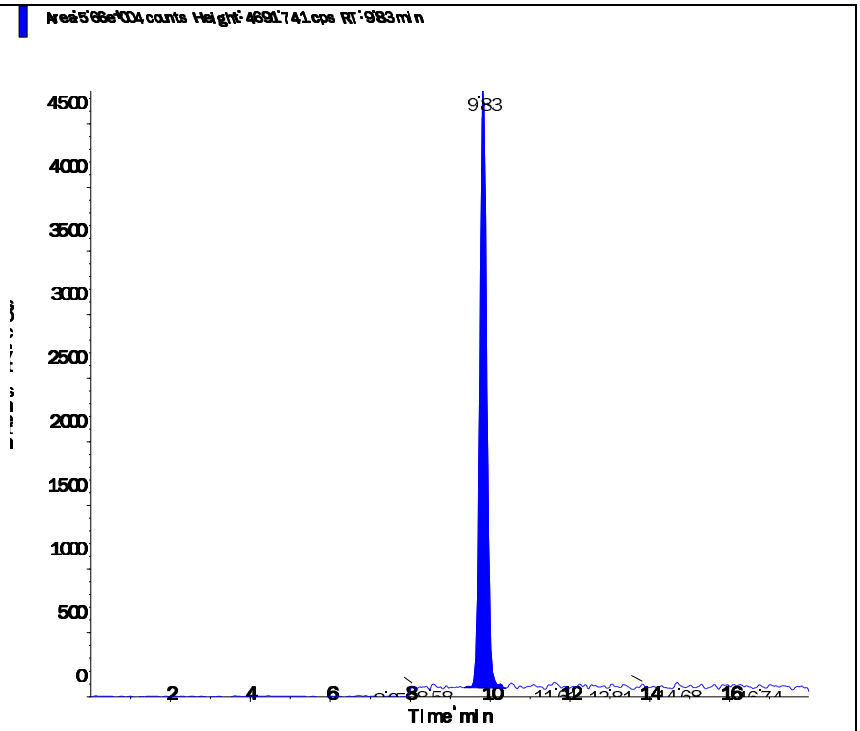

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Data File	LM34691.wiff	**Result Table**	050616_JWR.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050616_JWR.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

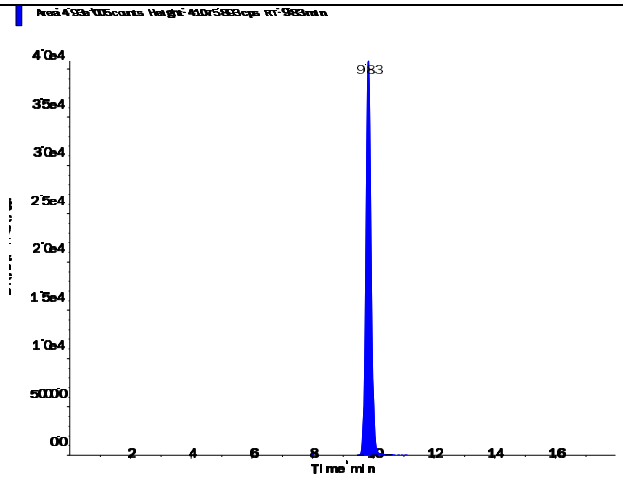

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 1.99 ng/ml Area Ratio: 0.669 Sample Type: (Standard)	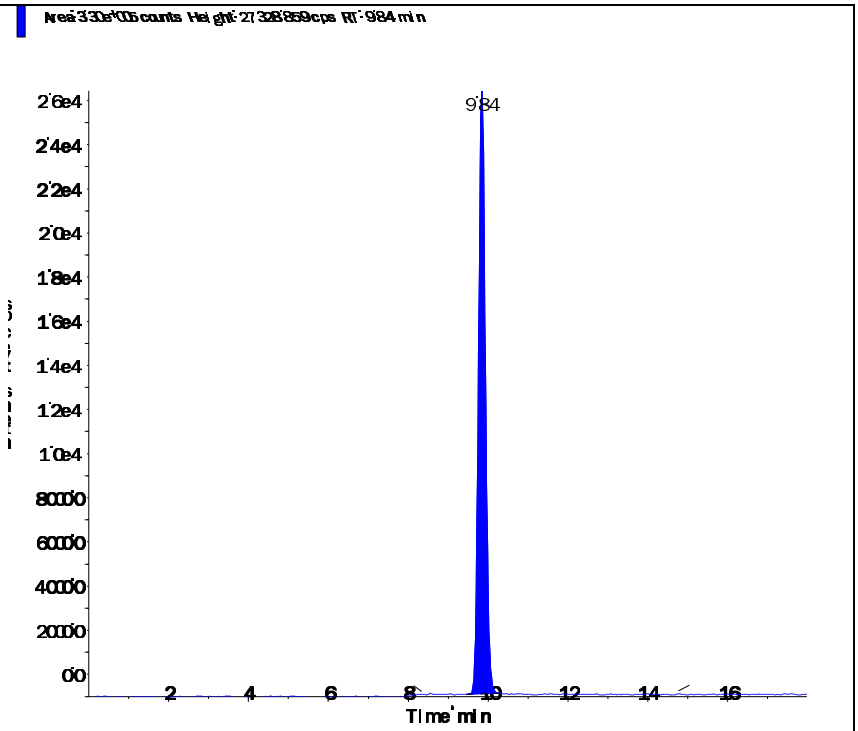
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 1.94 ng/ml Area Ratio: 0.219 Sample Type: (Standard)	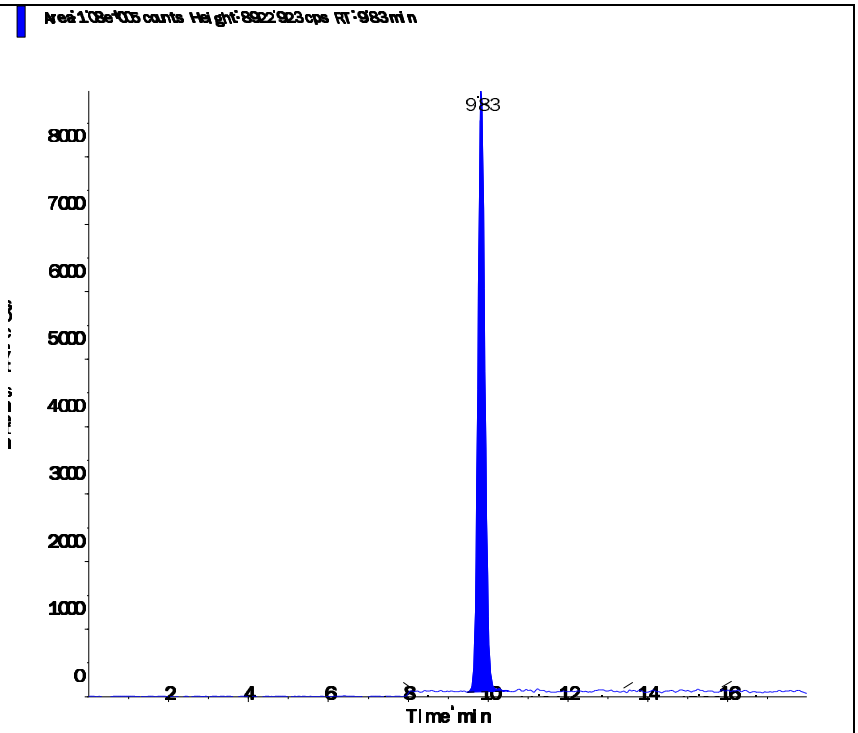

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Data File	LM34692.wiff	**Result Table**	050616_JWR.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050616_JWR.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

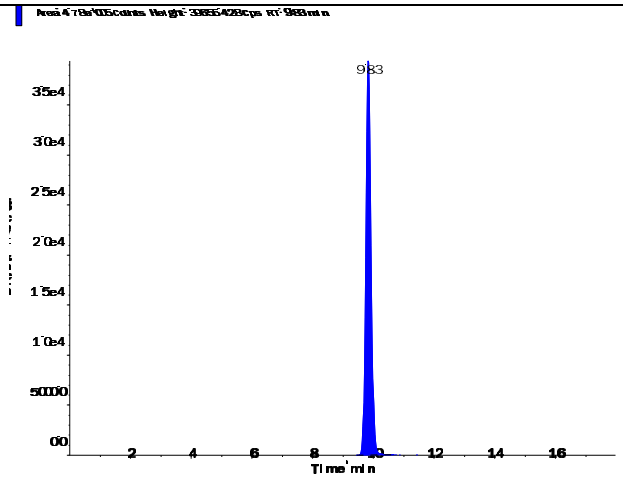

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

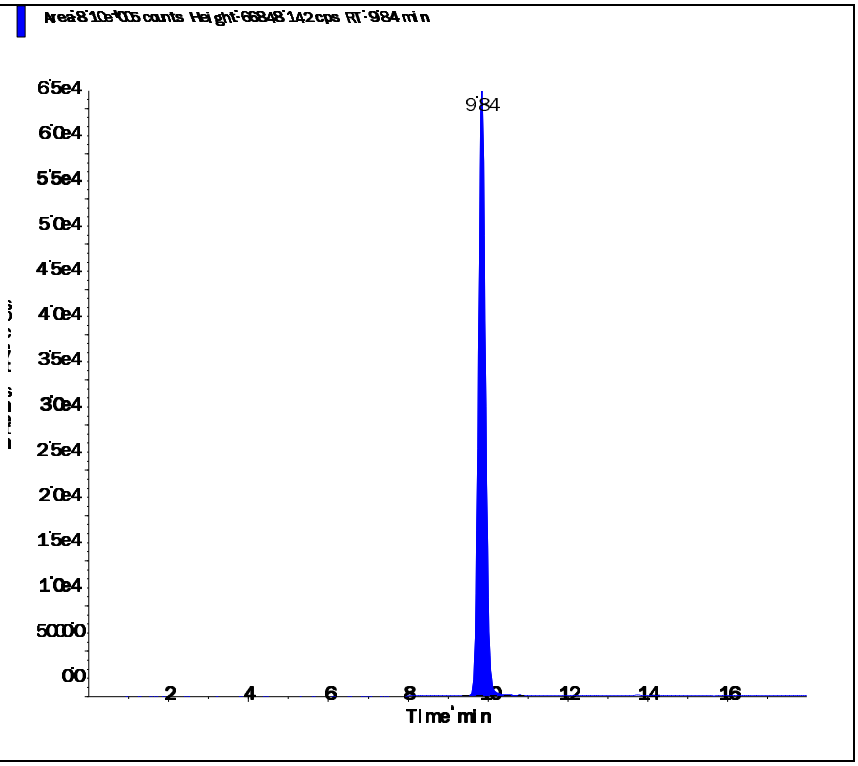

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

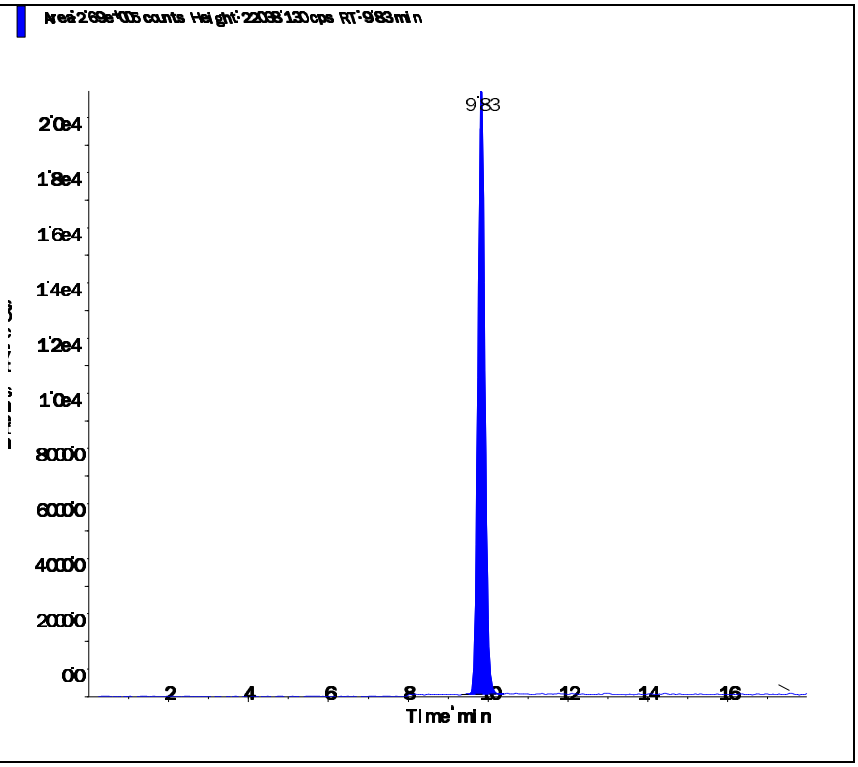

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Data File	LM34693.wiff	**Result Table**	050616_JWR.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050616_JWR.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

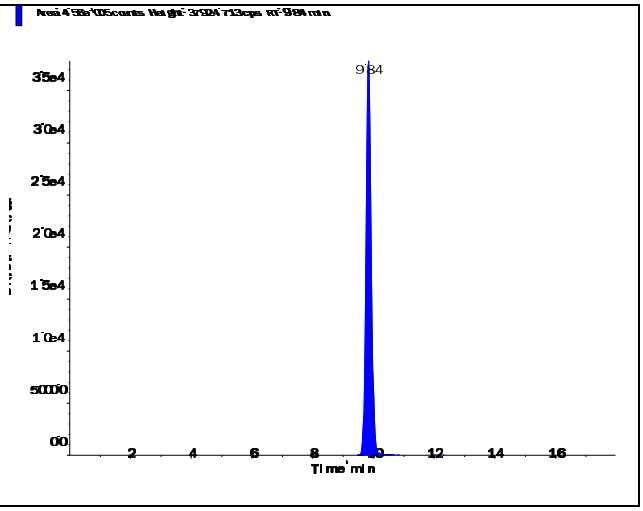

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	9.99 ng/ml
Area Ratio:	3.36
Sample Type:	(Standard)

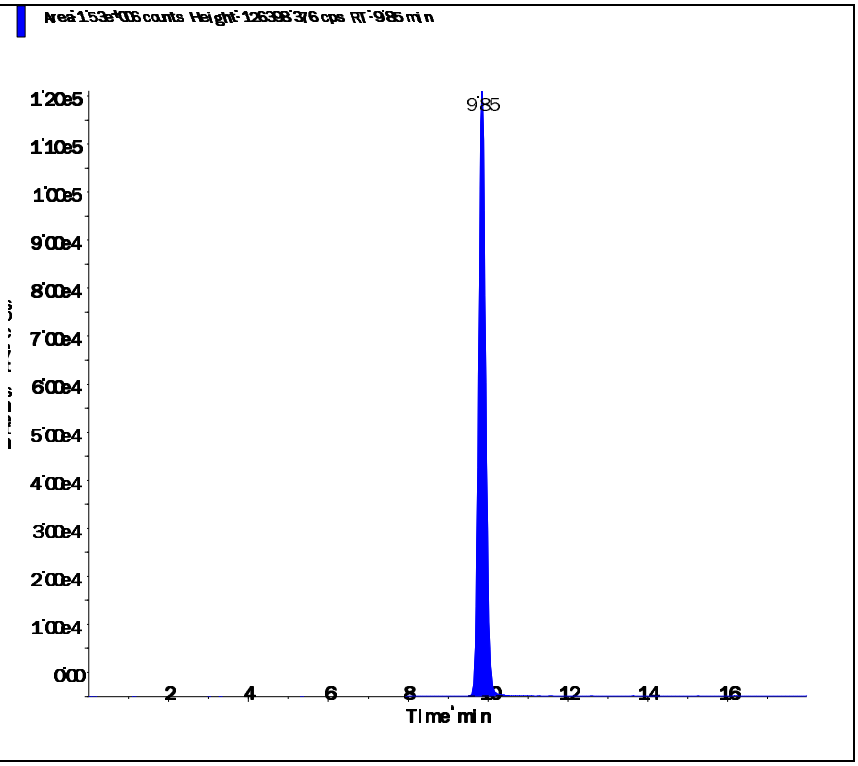

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	10.00 ng/ml
Area Ratio:	1.122
Sample Type:	(Standard)

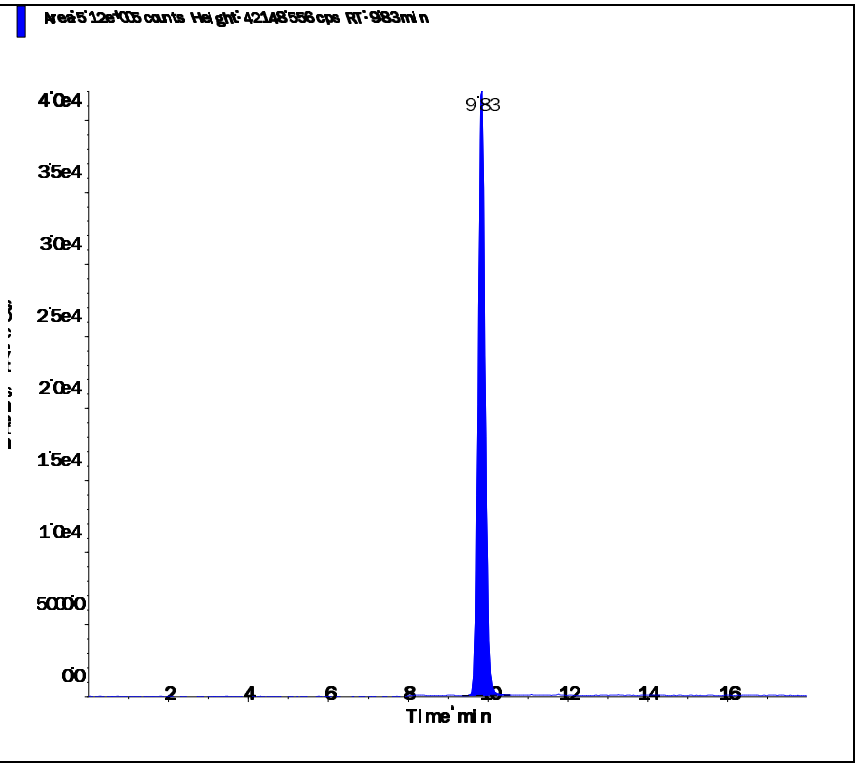

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Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

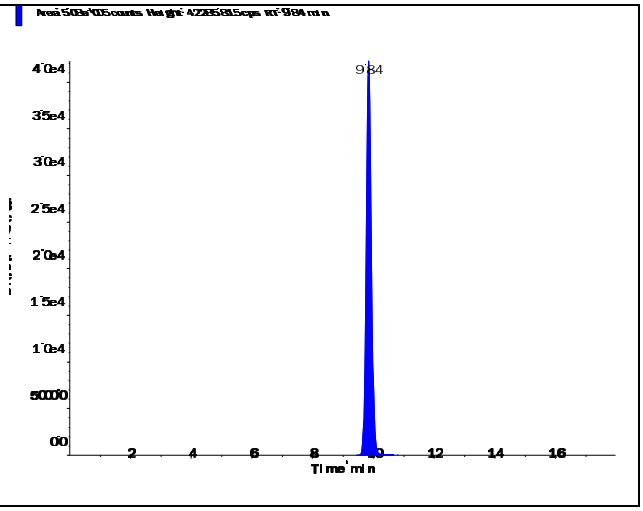

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.332
Sample Type:	(Quality Control)

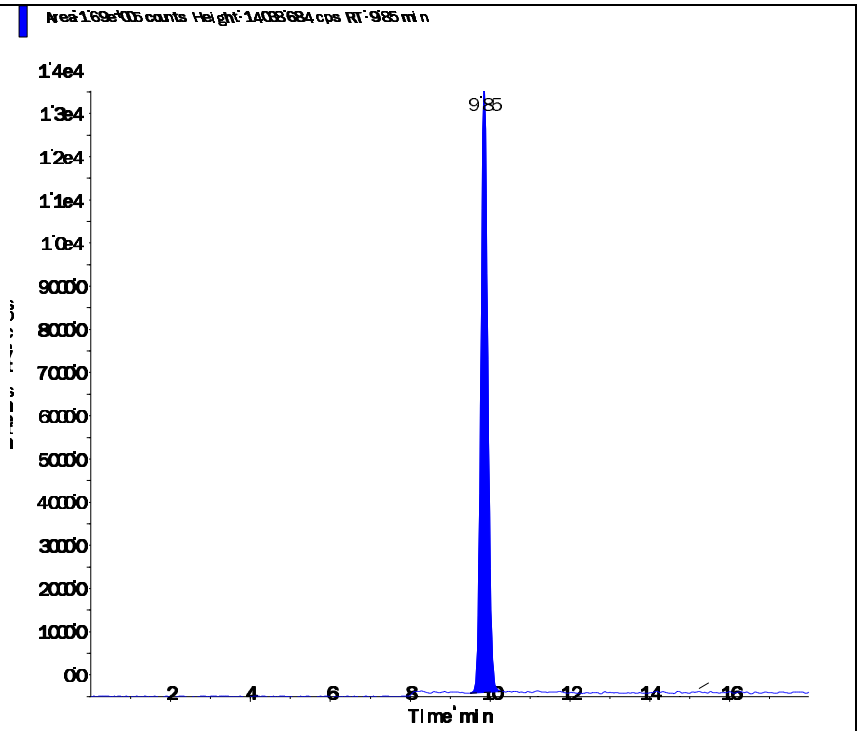

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

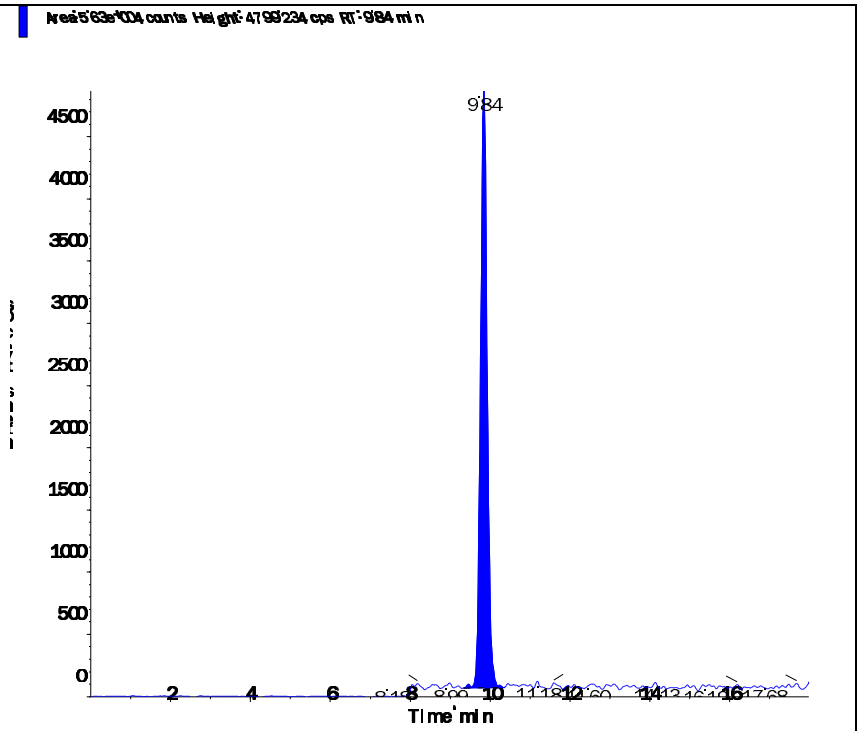

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Data File	LM34718.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 3:21:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567549-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM34718.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 3:21:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567549-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.250e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.430e+05	9.84	1.00	0.996
Perchlorate conf	4.780e+04	9.83	1.00	0.989

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

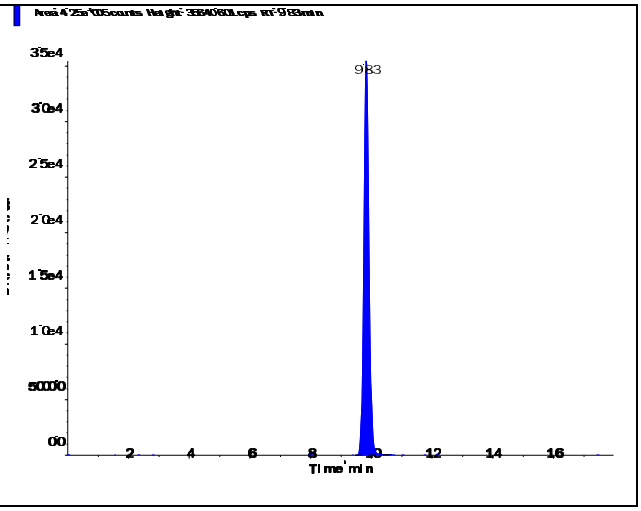

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.996 ng/ml
Area Ratio:	0.336
Sample Type:	(Quality Control)

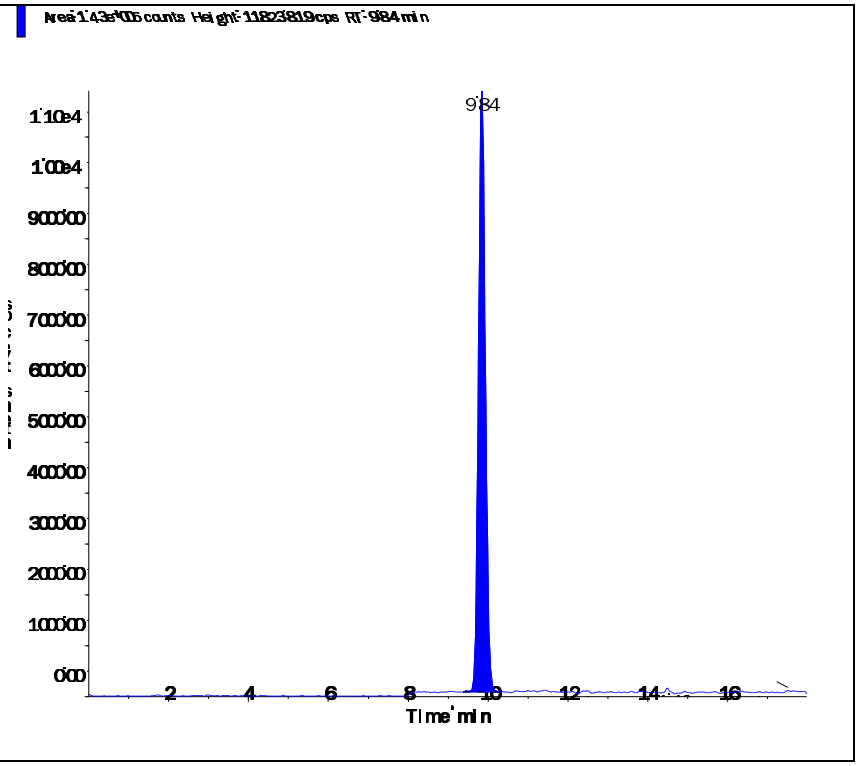

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.989 ng/ml
Area Ratio:	0.113
Sample Type:	(Quality Control)

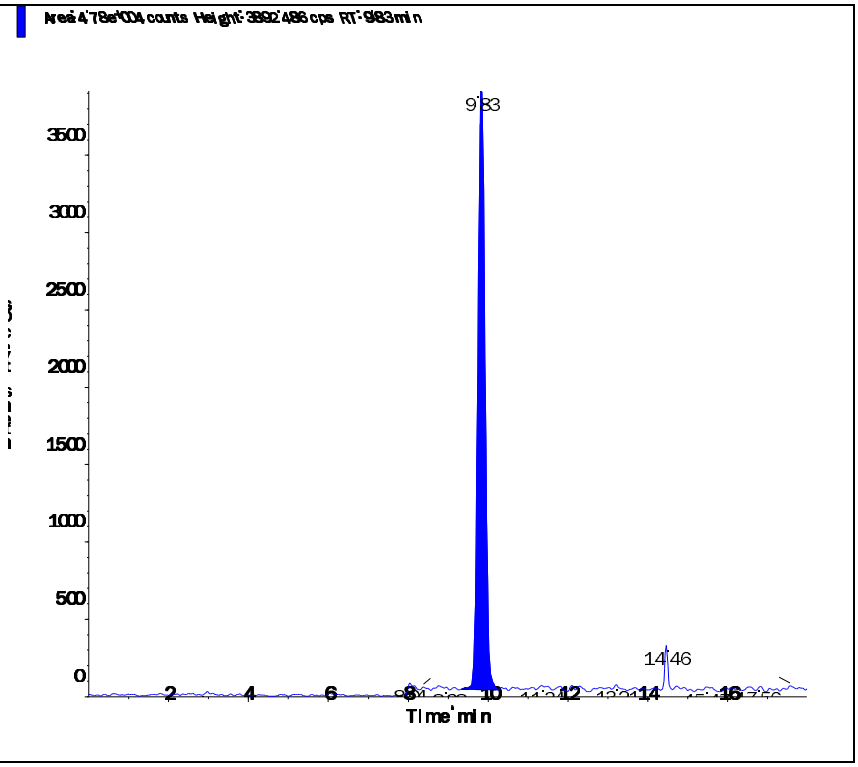

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Data File	LM34730.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 7:08:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567549-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM34730.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 7:08:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567549-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.610e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.590e+05	9.84	1.00	1.02
Perchlorate conf	5.320e+04	9.83	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

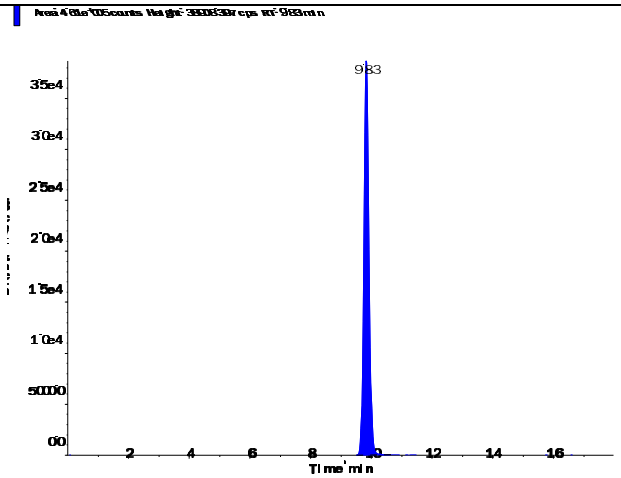

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.344
Sample Type:	(Quality Control)

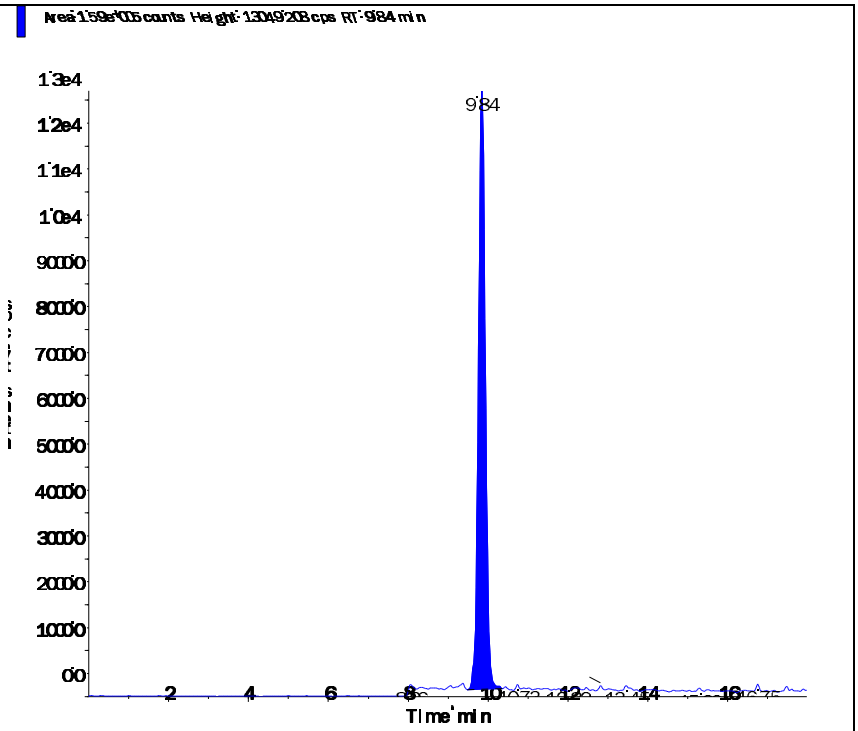

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.115
Sample Type:	(Quality Control)

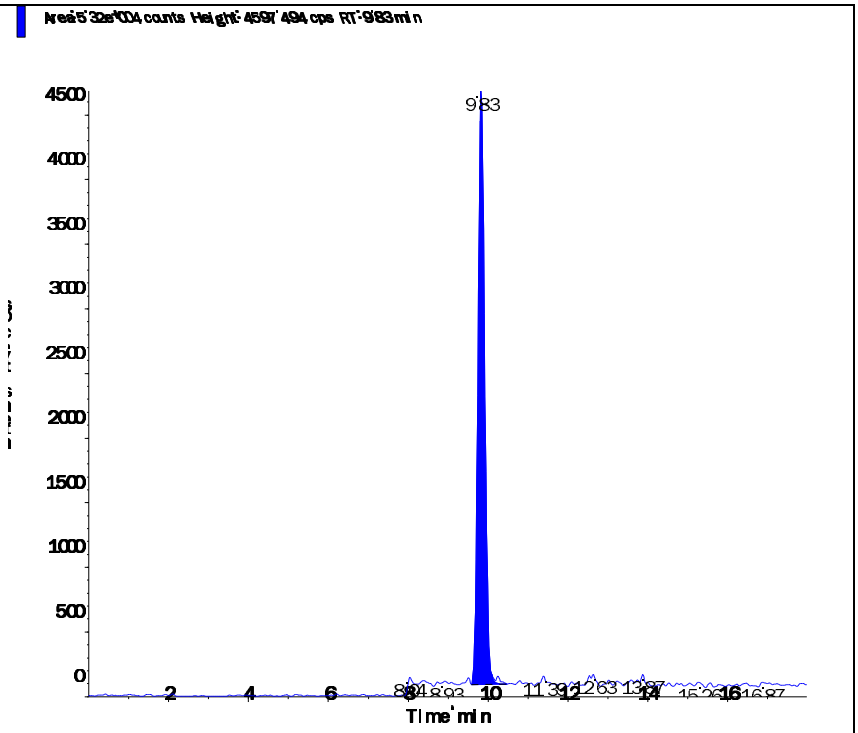

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Data File	LM34743.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 11:14:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567549-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM34743.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 11:14:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567549-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.230e+05	9.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.780e+05	9.82	1.00	1.01
Perchlorate conf	5.820e+04	9.81	1.00	0.977

O18LP (Internal Standard)

RT (Exp. RT): 9.80(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

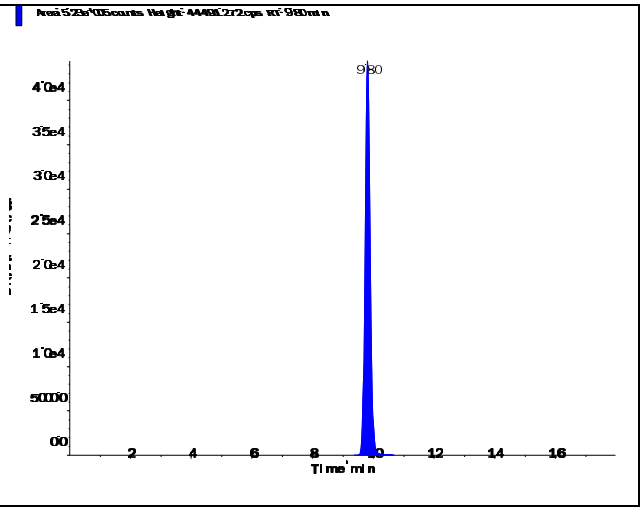

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.341
Sample Type:	(Quality Control)

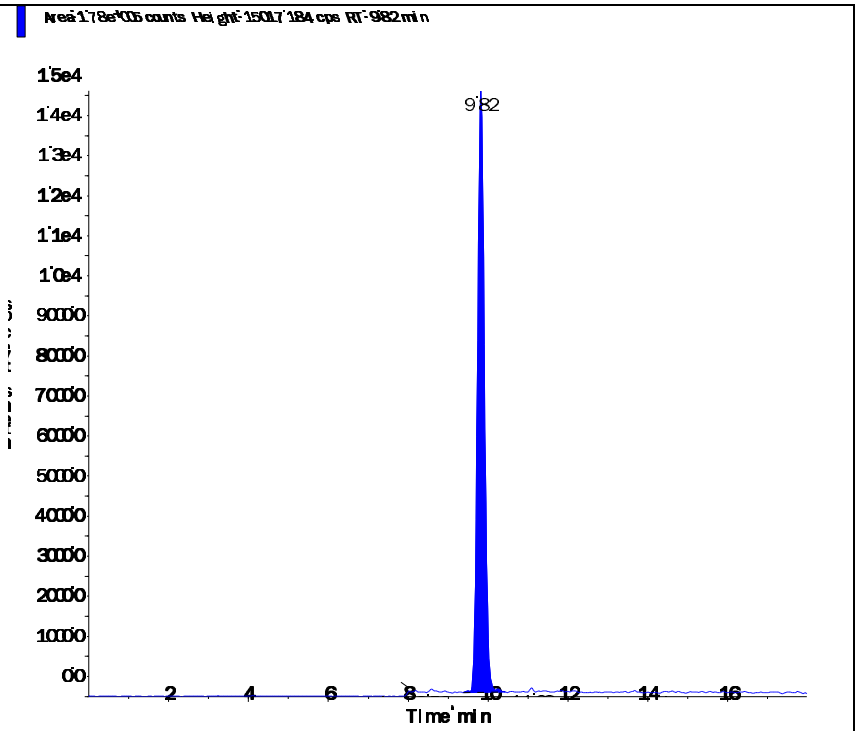

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.81 (9.84) min
Calculated conc:	0.977 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

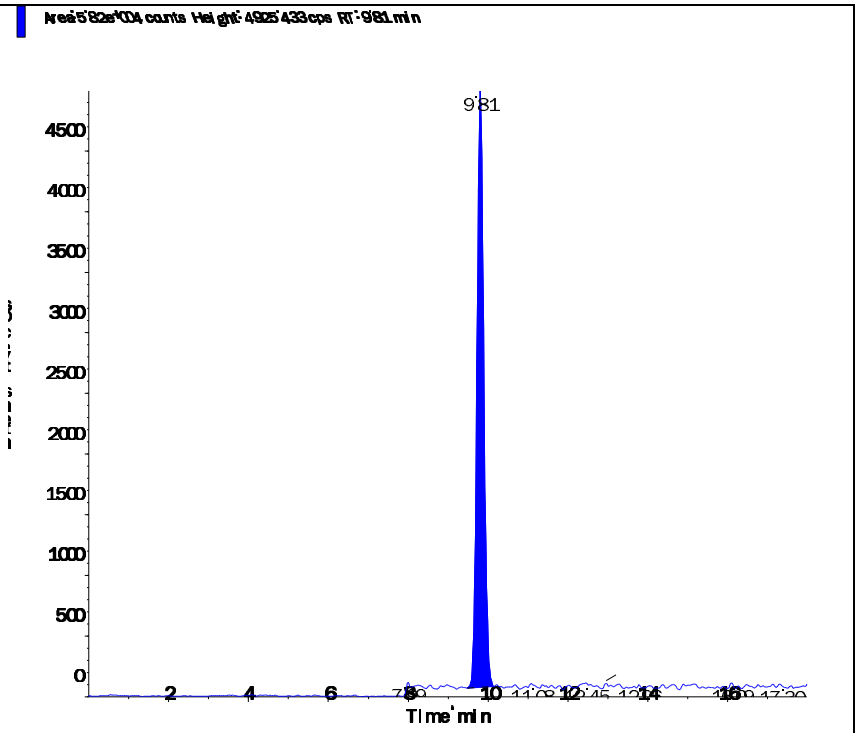

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Data File	LM34749.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 1:08:31 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567549-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM34749.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 1:08:31 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567549-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.280e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.770e+05	9.82	1.00	0.99
Perchlorate conf	5.980e+04	9.81	1.00	0.994

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

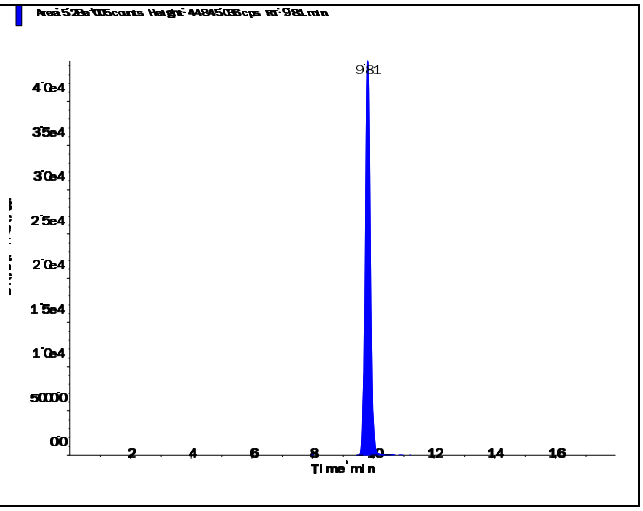

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	0.99 ng/ml
Area Ratio:	0.334
Sample Type:	(Quality Control)

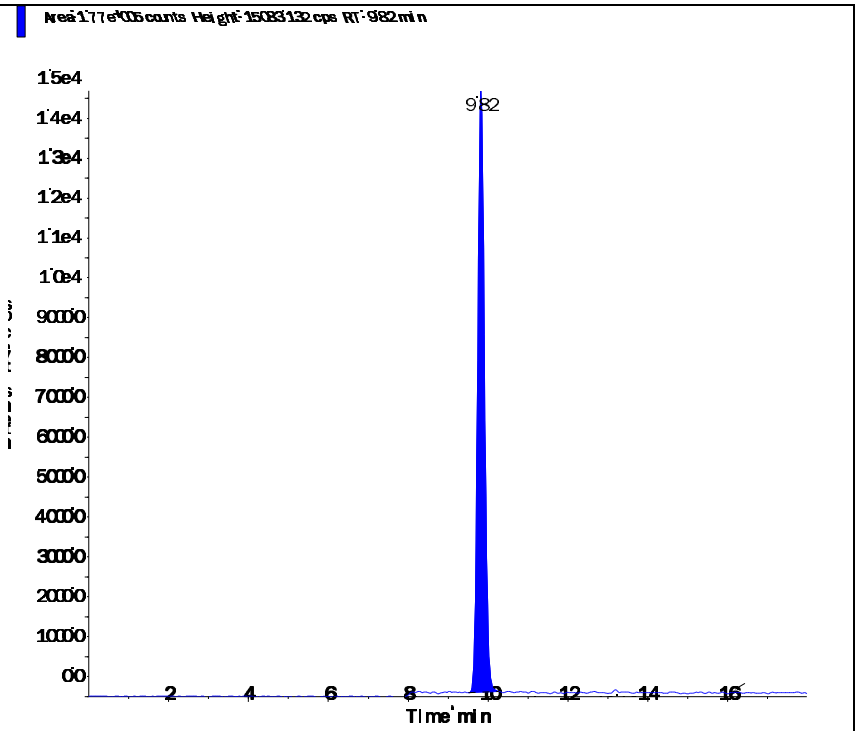

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.81 (9.84) min
Calculated conc:	0.994 ng/ml
Area Ratio:	0.113
Sample Type:	(Quality Control)

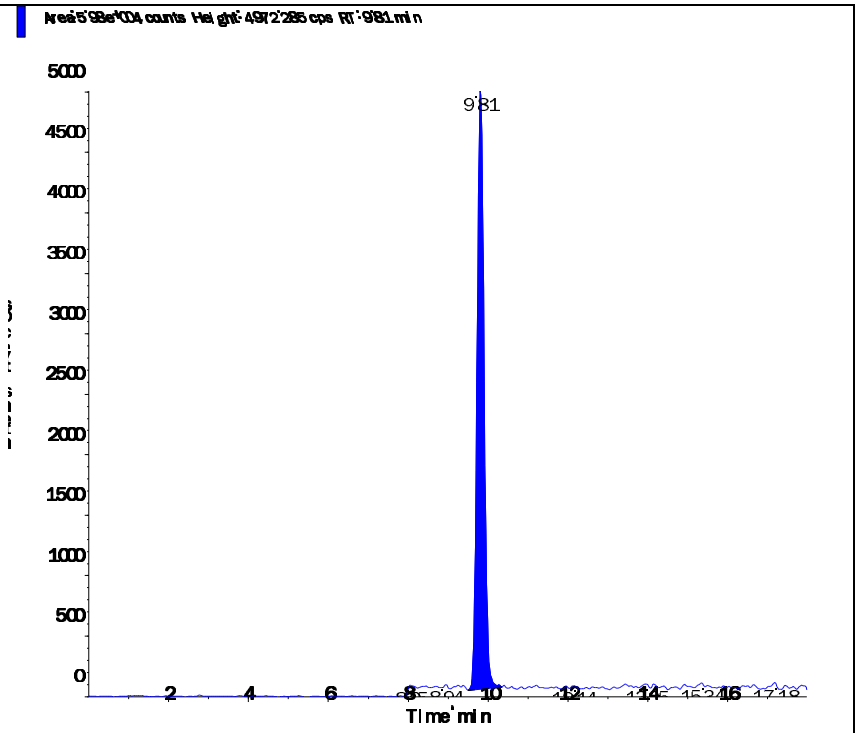

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Data File	LM34752.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 12:54:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567549-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM34752.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 12:54:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567549-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.620e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.560e+05	9.83	1.00	0.998
Perchlorate conf	5.500e+04	9.81	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

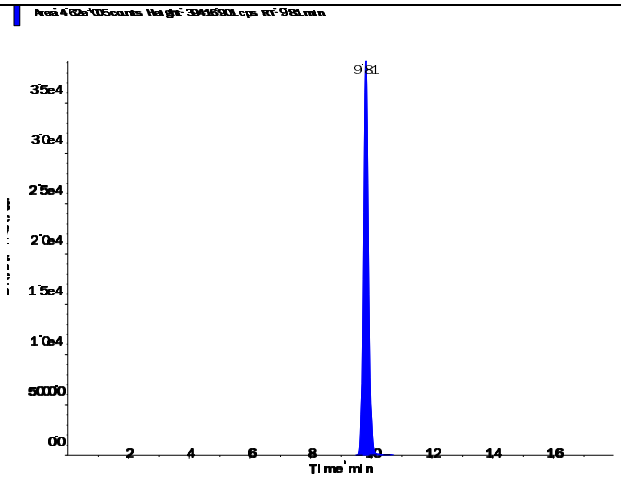

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.998 ng/ml
Area Ratio:	0.337
Sample Type:	(Quality Control)

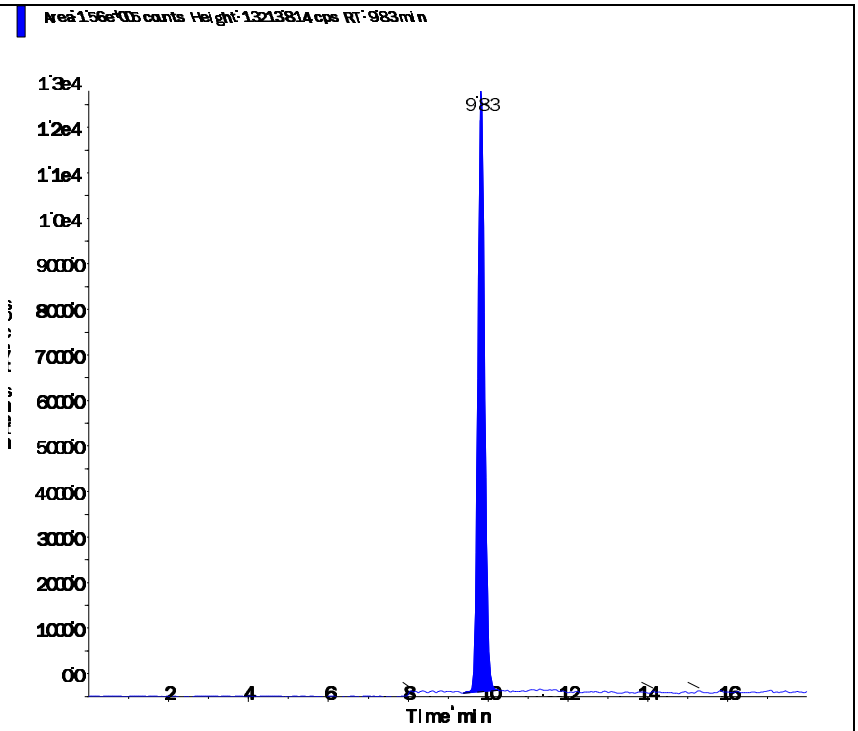

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.81 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

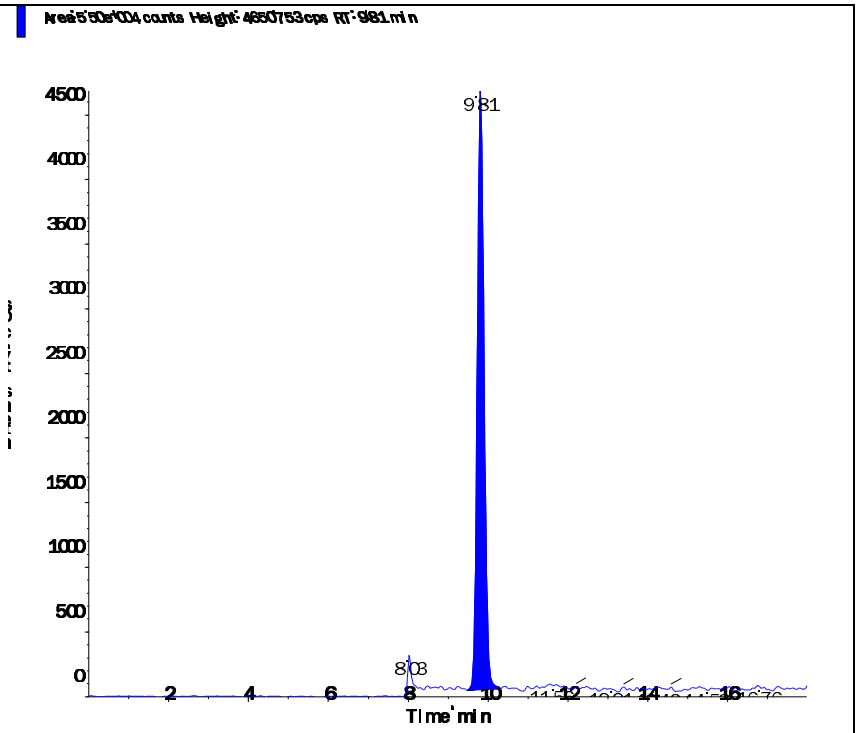

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Data File	LM34759.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 3:06:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567549-11 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM34759.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 3:06:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567549-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.150e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.740e+05	9.83	1.00	1.00
Perchlorate conf	5.910e+04	9.82	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

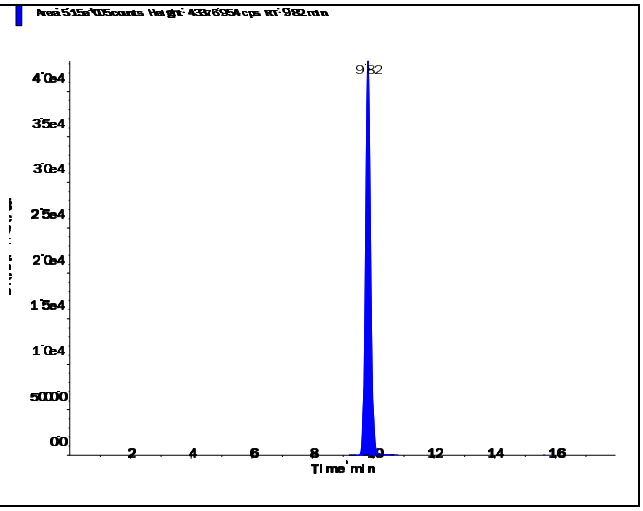

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.339
Sample Type:	(Quality Control)

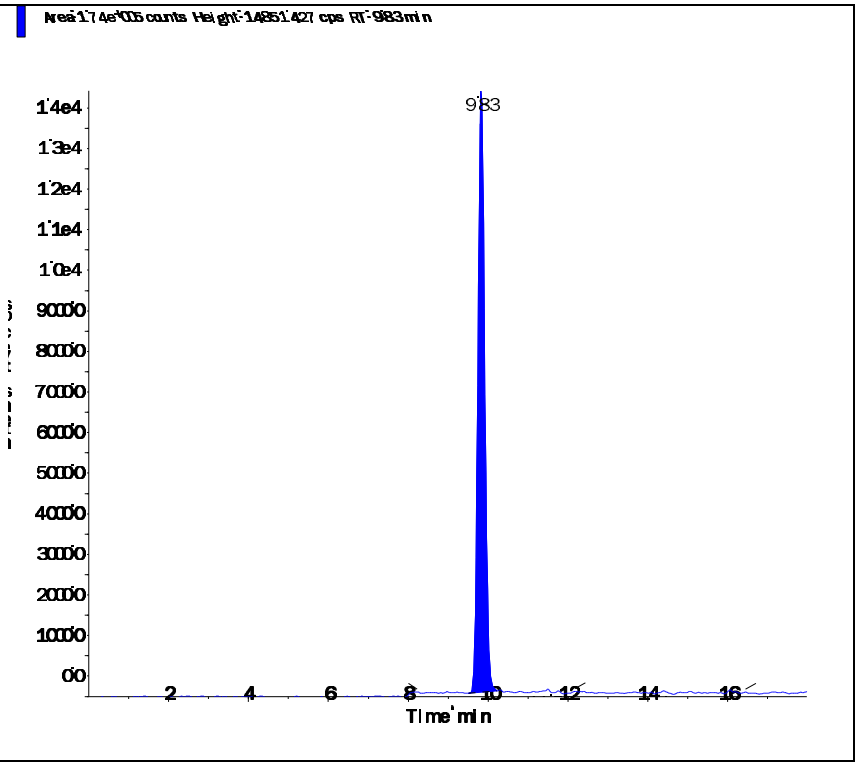

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.115
Sample Type:	(Quality Control)

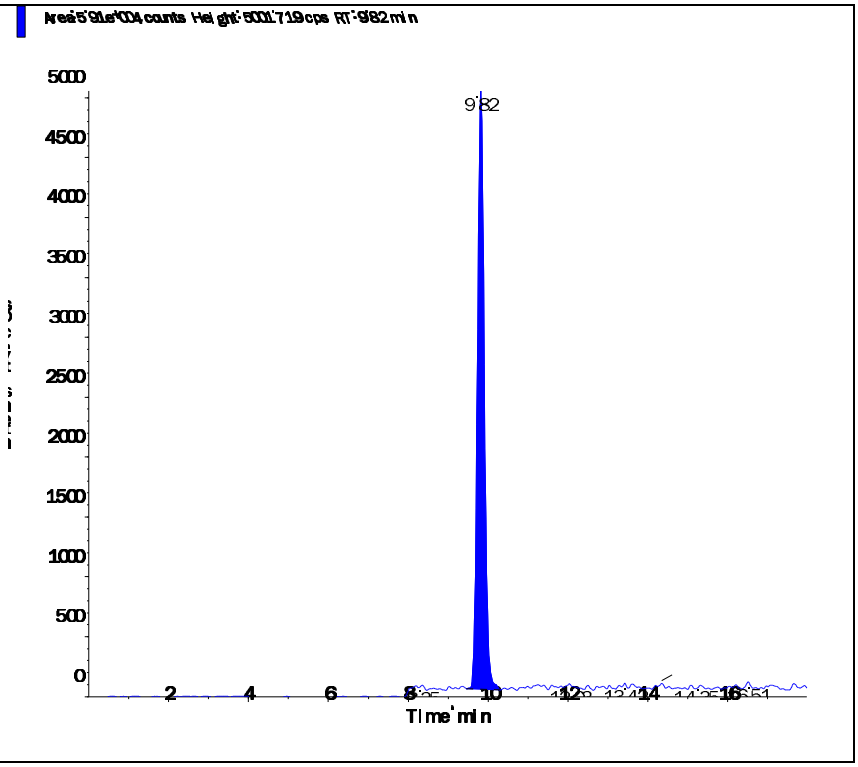

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Data File	LM34767.wiff	**Result Table**	050516_JWR.rdb
Acquisition Date	5/5/2016 6:04:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567745-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM34767.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 6:04:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050516_JWR.rdb
Sample ID	WG567745-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.060e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.720e+05	9.84	1.00	1.01
Perchlorate conf	5.770e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

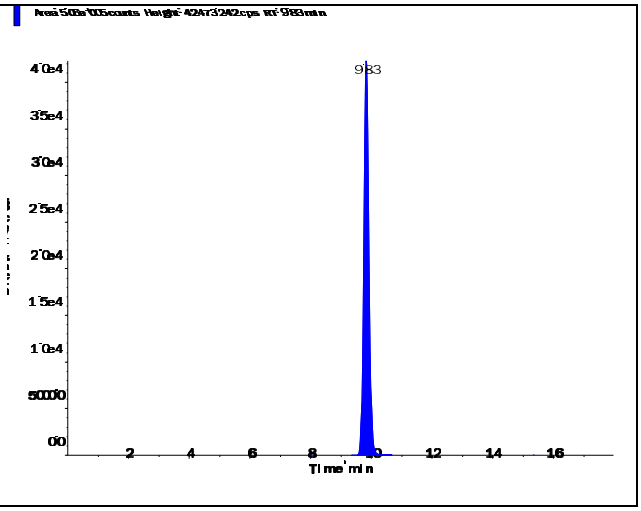

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.34
Sample Type:	(Quality Control)

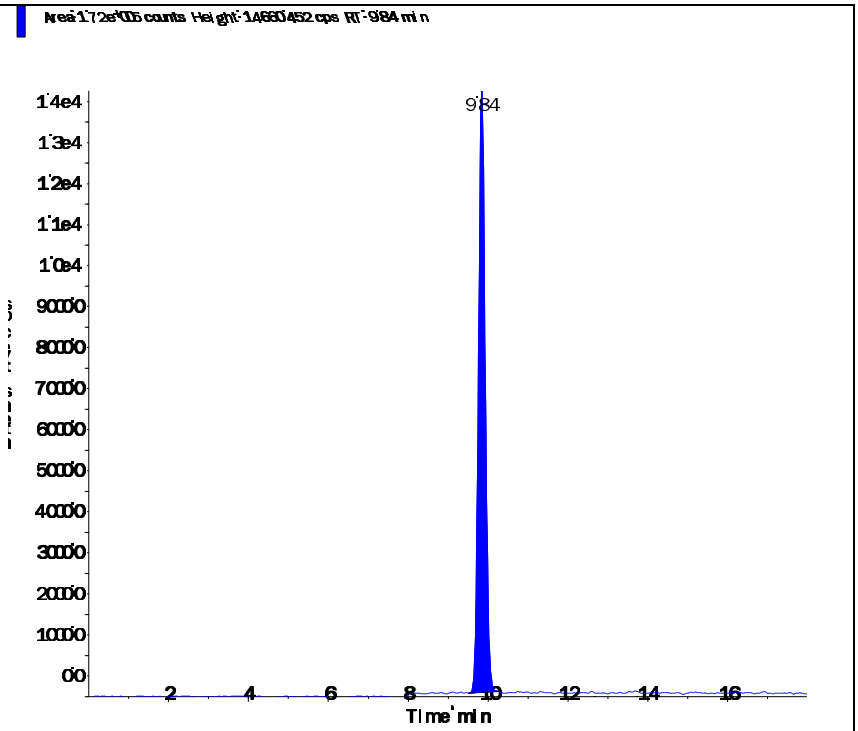

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Quality Control)

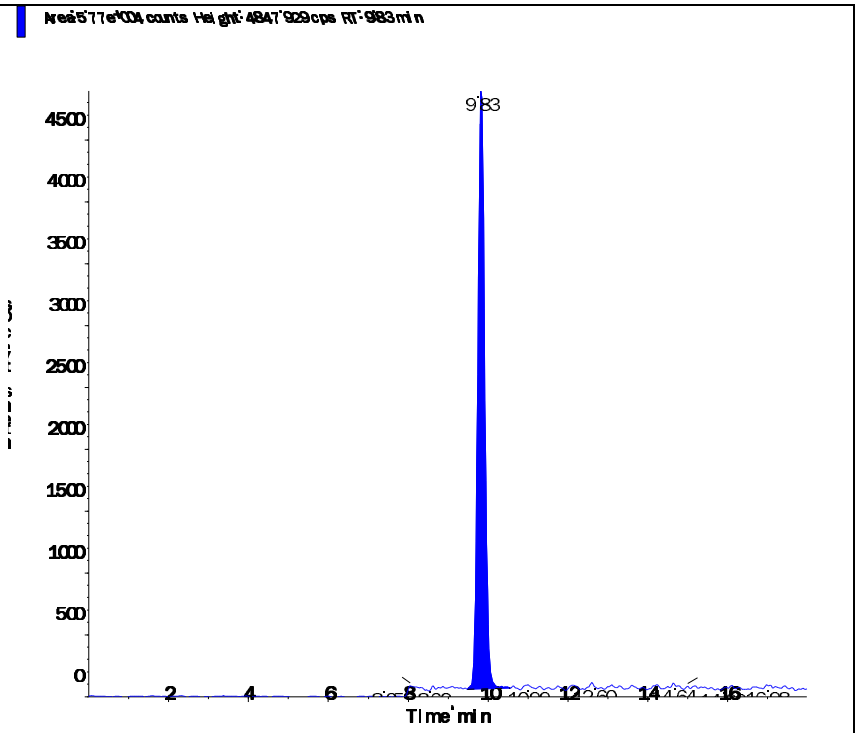

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Data File	LM34779.wiff	**Result Table**	050516_JWR.rdb
Acquisition Date	5/5/2016 9:52:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567745-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM34779.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 9:52:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050516_JWR.rdb
Sample ID	WG567745-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.590e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.900e+05	9.83	1.00	1.01
Perchlorate conf	6.370e+04	9.81	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

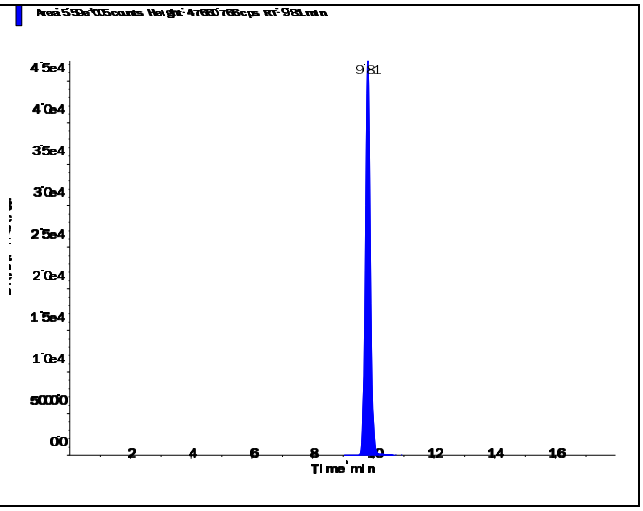

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.34
Sample Type:	(Quality Control)

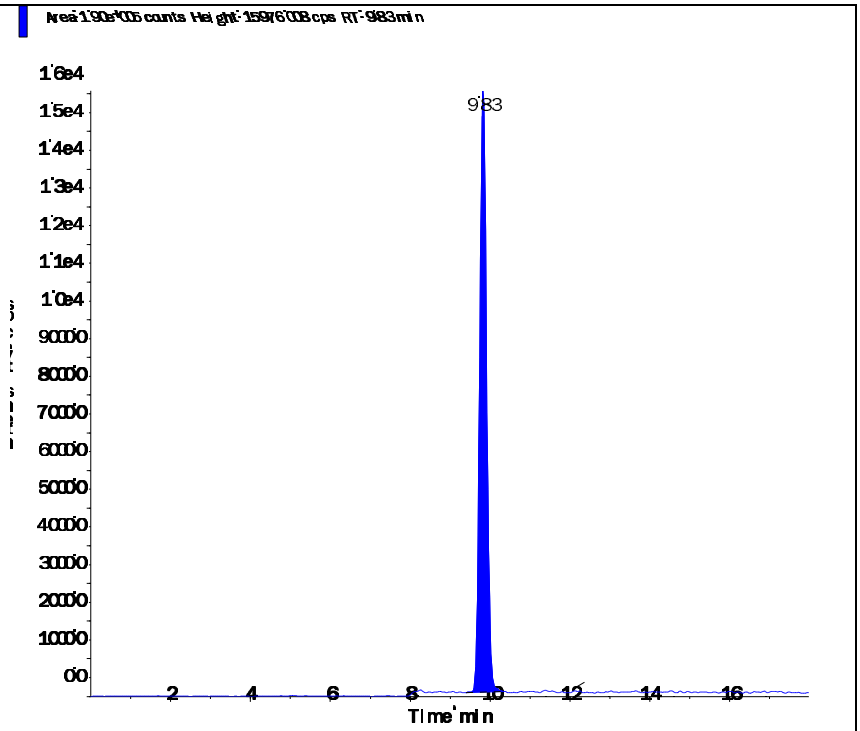

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.81 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Quality Control)

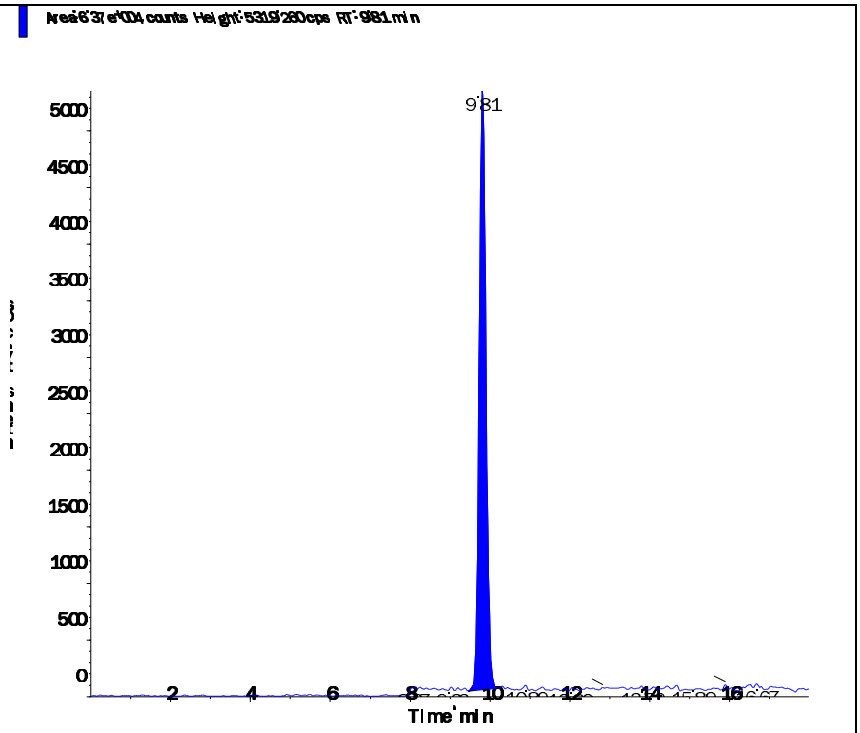

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Printed: 5/6/2016 12:54 PM

Data File	LM34785.wiff	**Result Table**	050516_JWR.rdb
Acquisition Date	5/5/2016 11:45:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567745-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM34785.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 11:45:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050516_JWR.rdb
Sample ID	WG567745-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.770e+05	9.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.980e+05	9.82	1.00	1.02
Perchlorate conf	6.370e+04	9.80	1.00	0.969

O18LP (Internal Standard)

RT (Exp. RT): 9.80(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

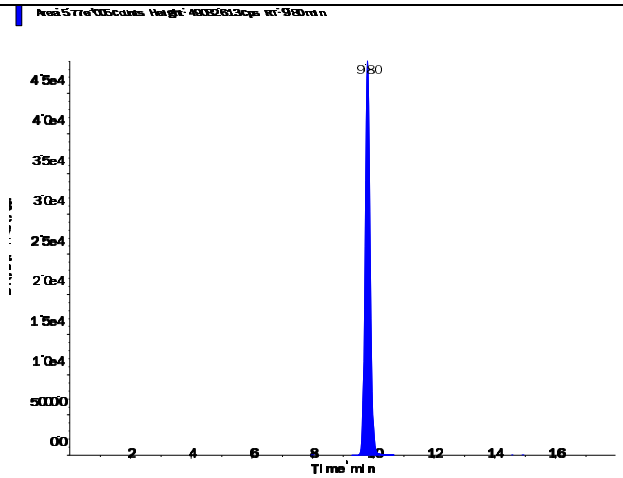

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.343
Sample Type:	(Quality Control)

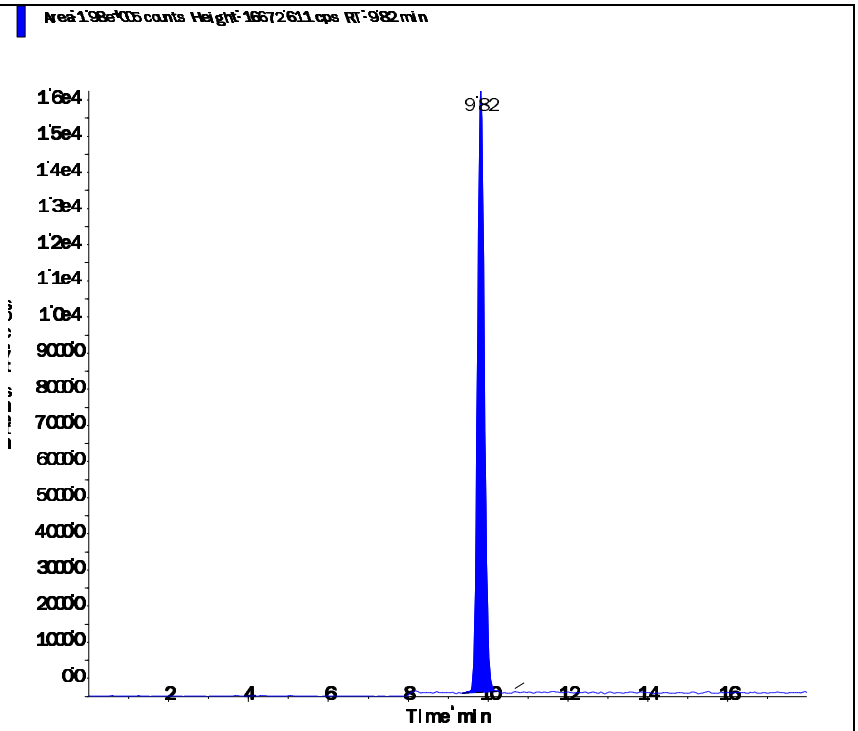

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.80 (9.84) min
Calculated conc:	0.969 ng/ml
Area Ratio:	0.11
Sample Type:	(Quality Control)

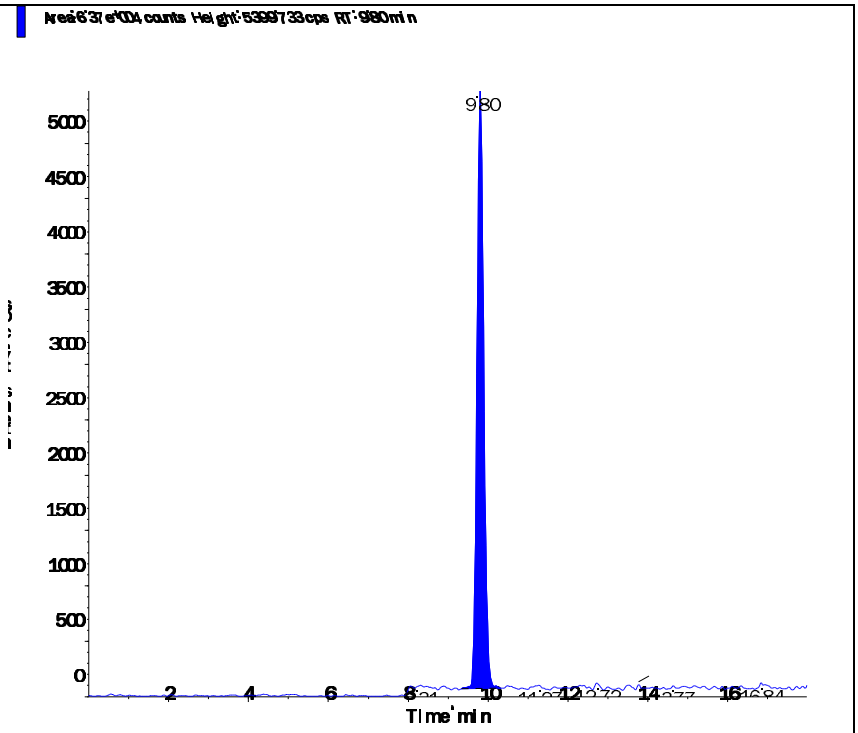

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Printed: 5/6/2016 1:49 PM

Data File	LM34719.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 3:40:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567224-07 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM34719.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 3:40:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567224-07	**Dilution Factor**	1.00
Sample Comment	7,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.350e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.990e+04	9.84	N/A	0.201
Perchlorate conf	1.030e+04	9.83	N/A	0.193

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

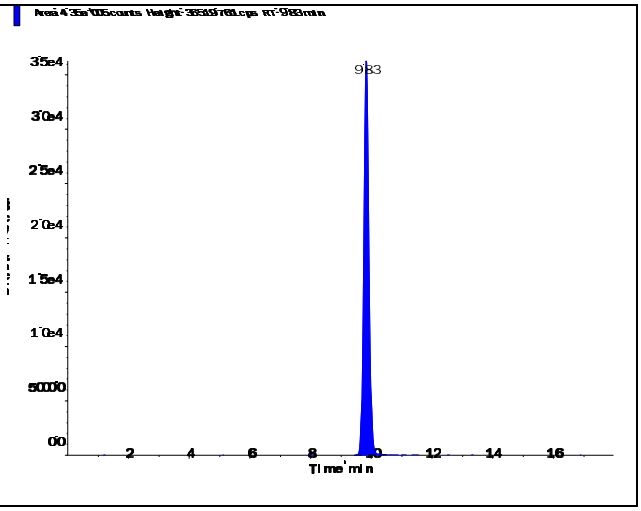

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

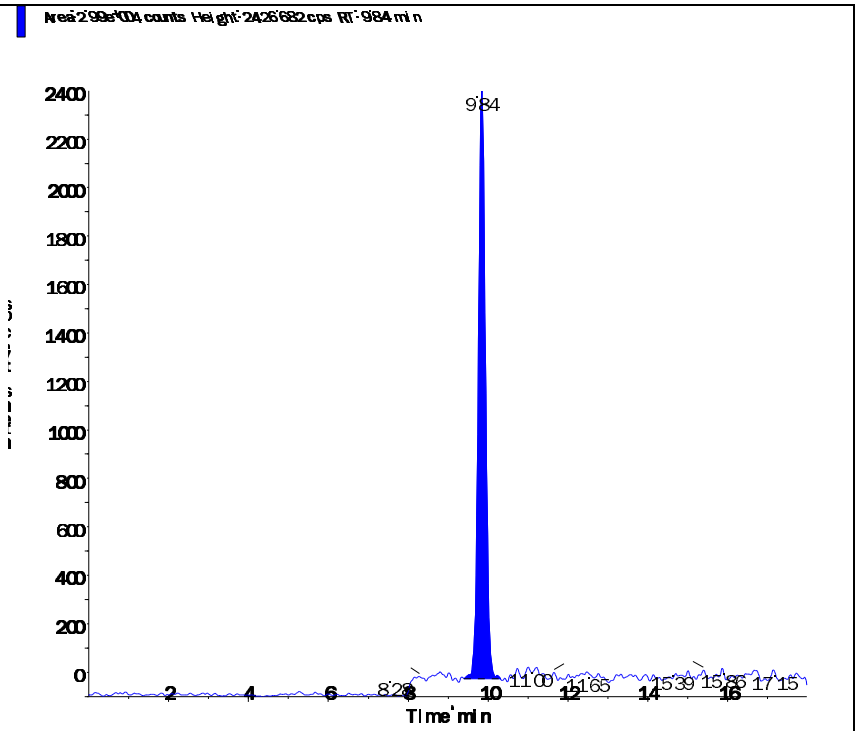

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.193 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

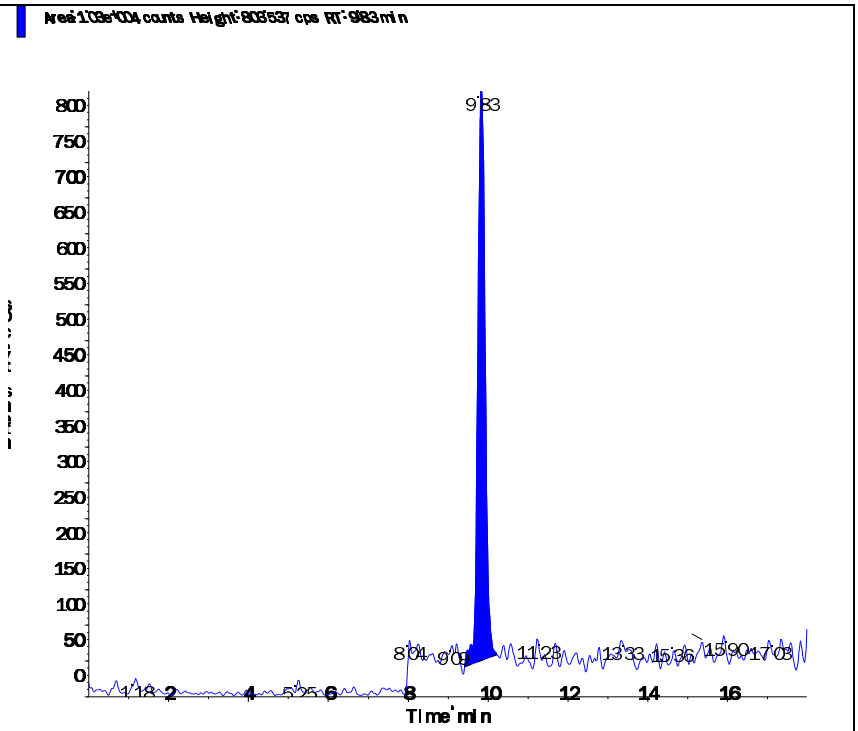

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Data File	LM34731.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 7:27:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567224-08 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM34731.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 7:27:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567224-08	**Dilution Factor**	1.00
Sample Comment	7,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.640e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.340e+04	9.84	N/A	0.21
Perchlorate conf	1.130e+04	9.82	N/A	0.197

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

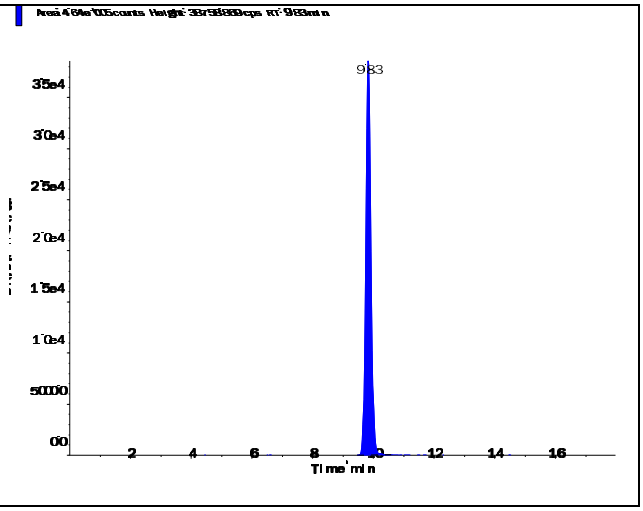

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

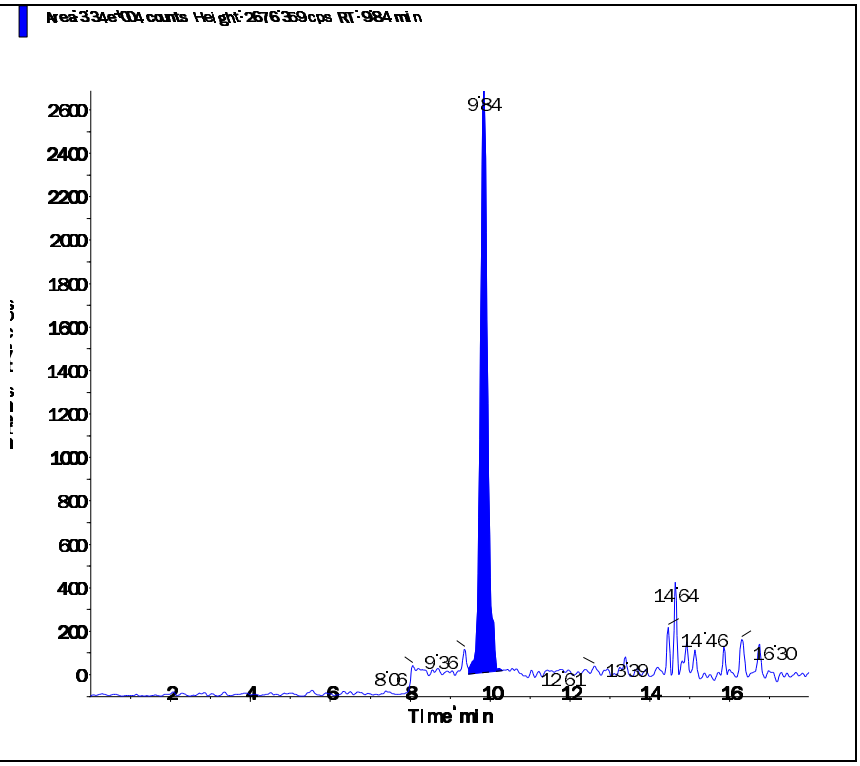

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

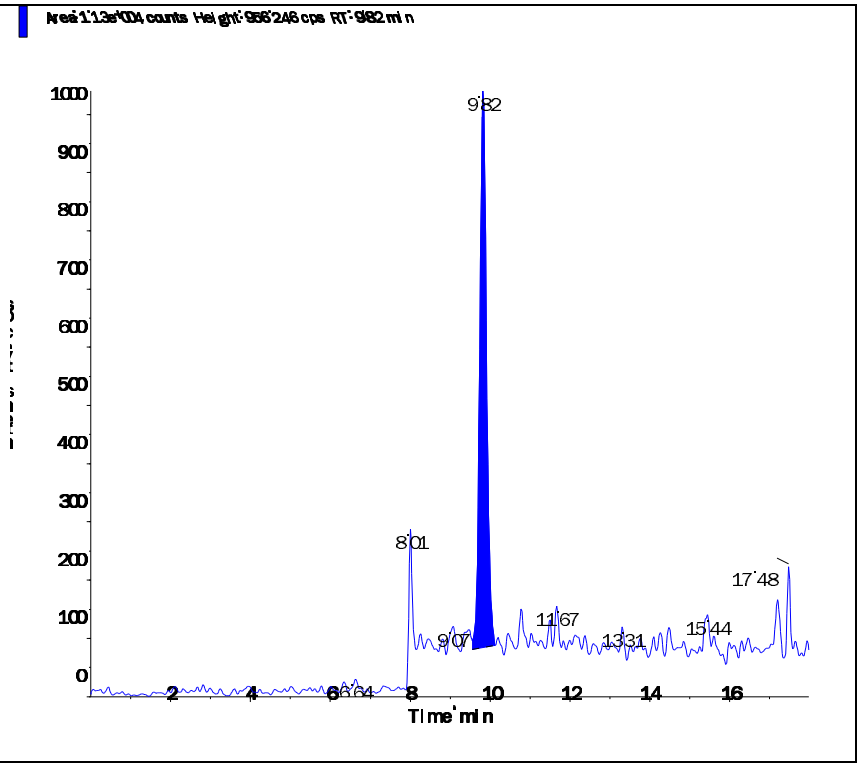

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Data File	LM34744.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 11:33:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567224-09 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM34744.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 11:33:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567224-09	**Dilution Factor**	1.00
Sample Comment	7,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.360e+05	9.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.840e+04	9.82	N/A	0.209
Perchlorate conf	1.170e+04	9.80	N/A	0.176

O18LP (Internal Standard)

RT (Exp. RT): 9.80(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

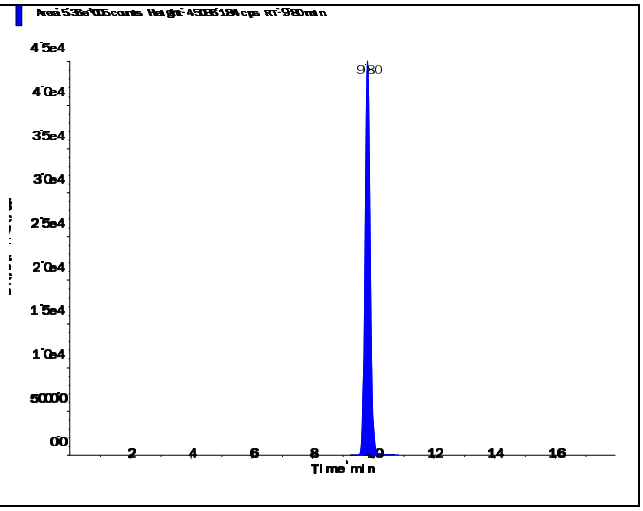

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	0.209 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

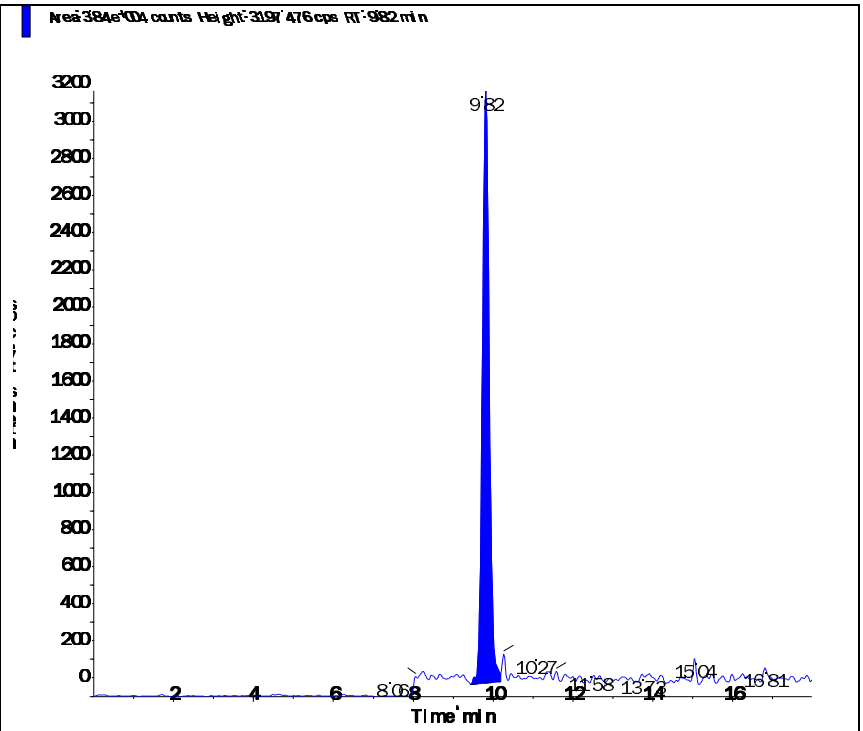

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.80 (9.84) min
Calculated conc:	0.176 ng/ml
Area Ratio:	0.022
Sample Type:	(Unknown)

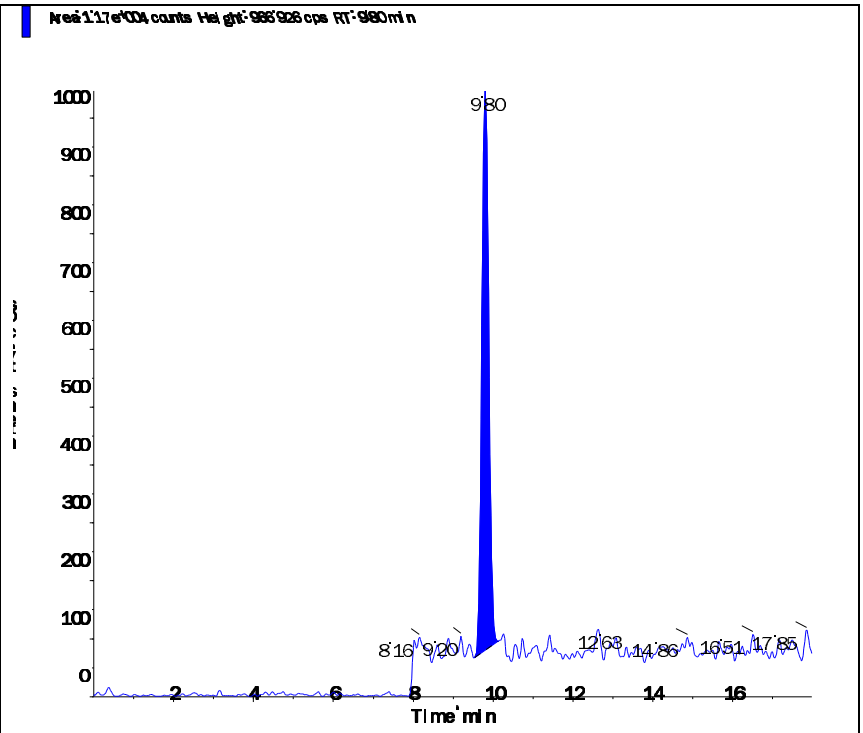

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Data File	LM34750.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 1:27:27 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567224-10 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM34750.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 1:27:27 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567224-10	**Dilution Factor**	1.00
Sample Comment	7,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.280e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.620e+04	9.82	N/A	0.20
Perchlorate conf	1.380e+04	9.81	N/A	0.213

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

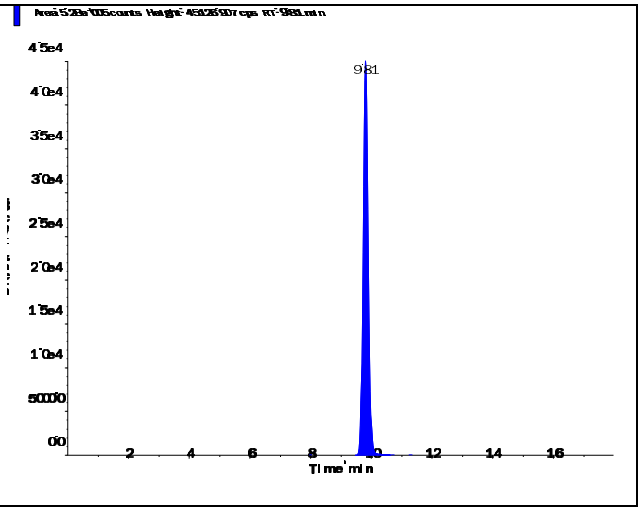

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	0.20 ng/ml
Area Ratio:	0.068
Sample Type:	(Unknown)

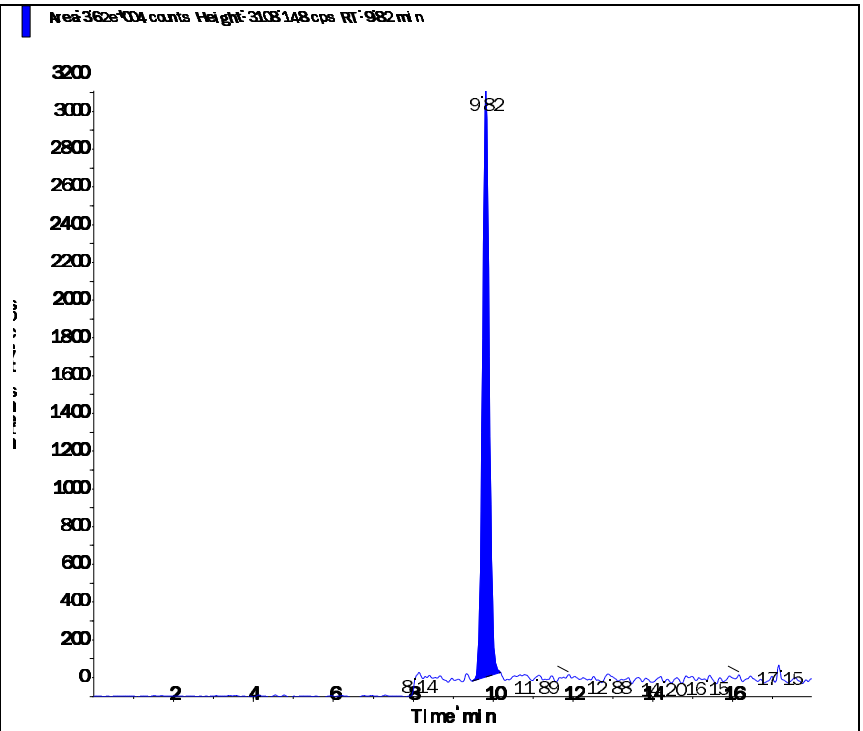

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.81 (9.84) min
Calculated conc:	0.213 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

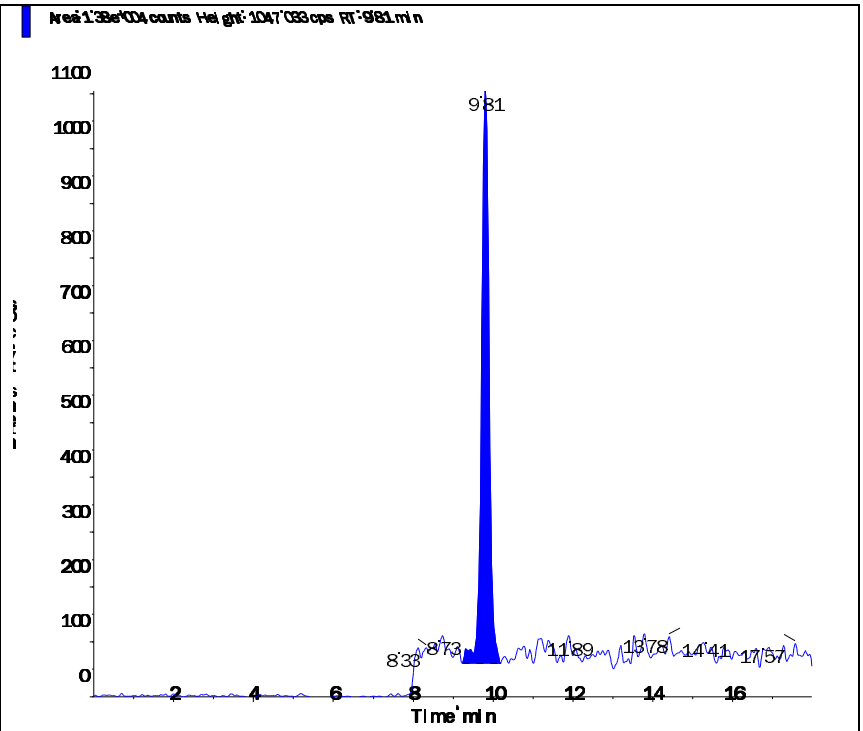

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Data File	LM34753.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 1:13:08 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567224-11 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM34753.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 1:13:08 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567224-11	**Dilution Factor**	1.00
Sample Comment	7,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.840e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.420e+04	9.82	N/A	0.206
Perchlorate conf	1.250e+04	9.80	N/A	0.212

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

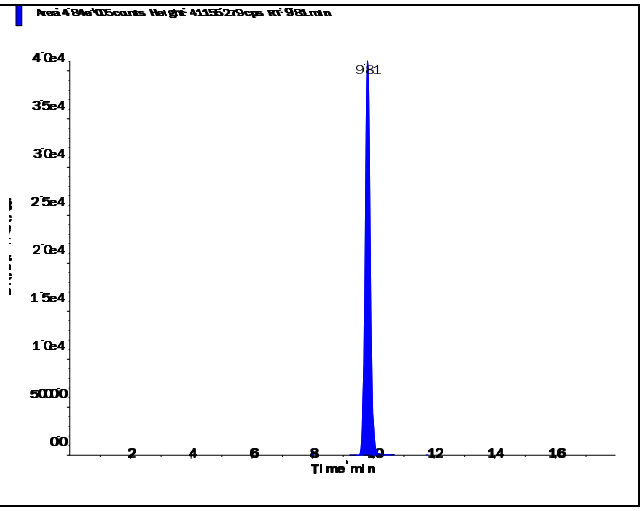

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

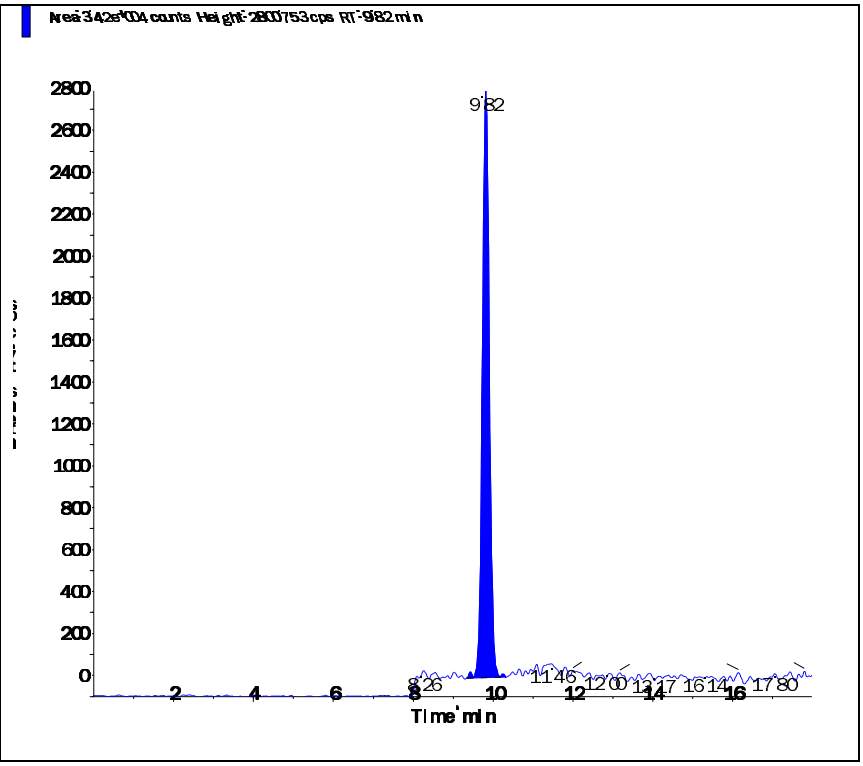

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.80 (9.84) min
Calculated conc:	0.212 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

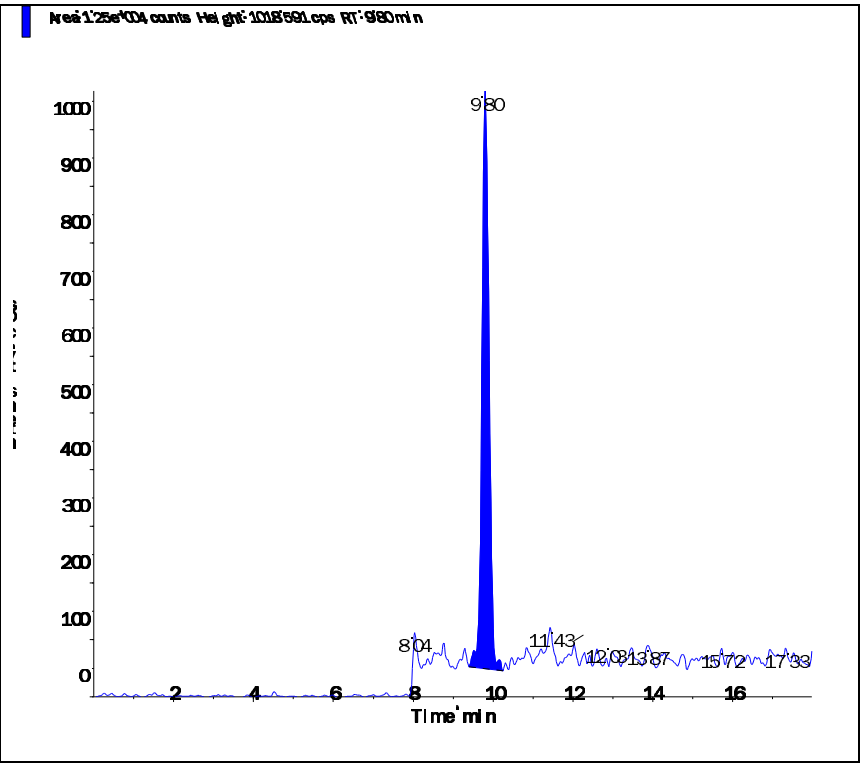

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Data File	LM34760.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 3:25:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567224-12 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM34760.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 3:25:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567224-12	**Dilution Factor**	1.00
Sample Comment	7,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.180e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.550e+04	9.82	N/A	0.20
Perchlorate conf	1.290e+04	9.82	N/A	0.202

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

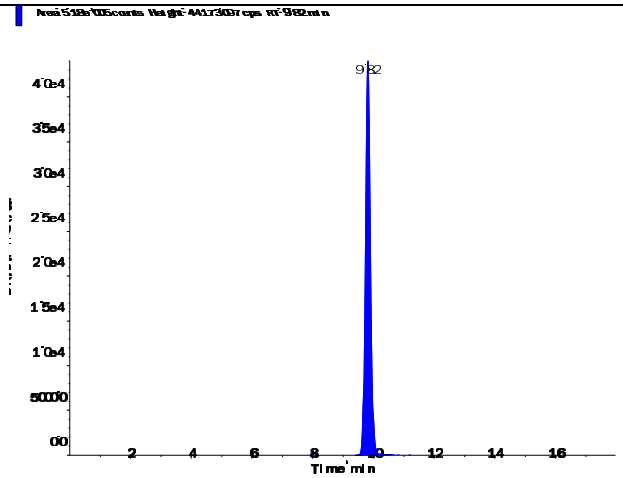

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	0.20 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

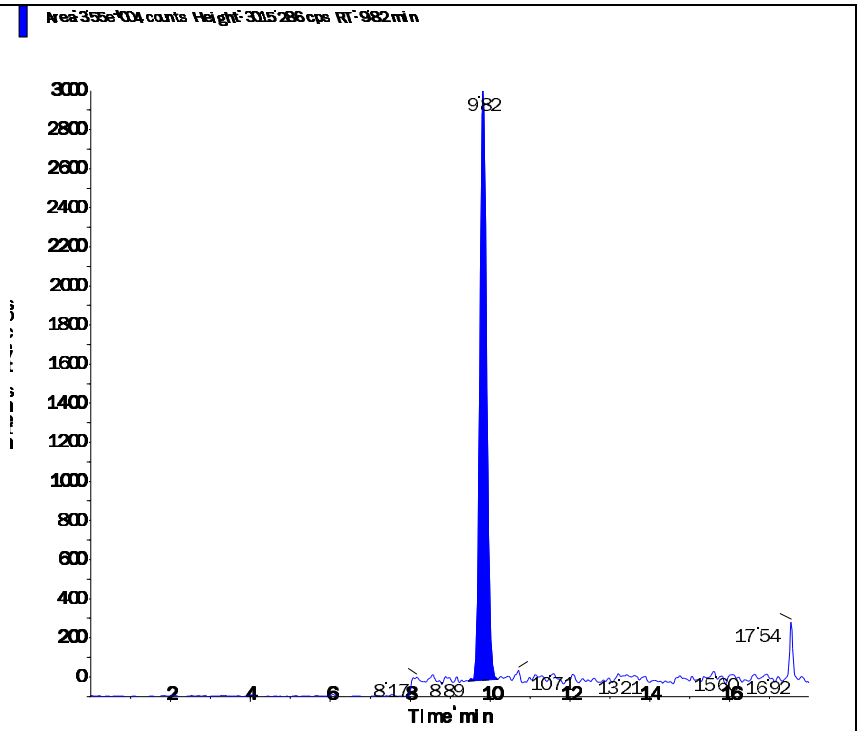

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	0.202 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

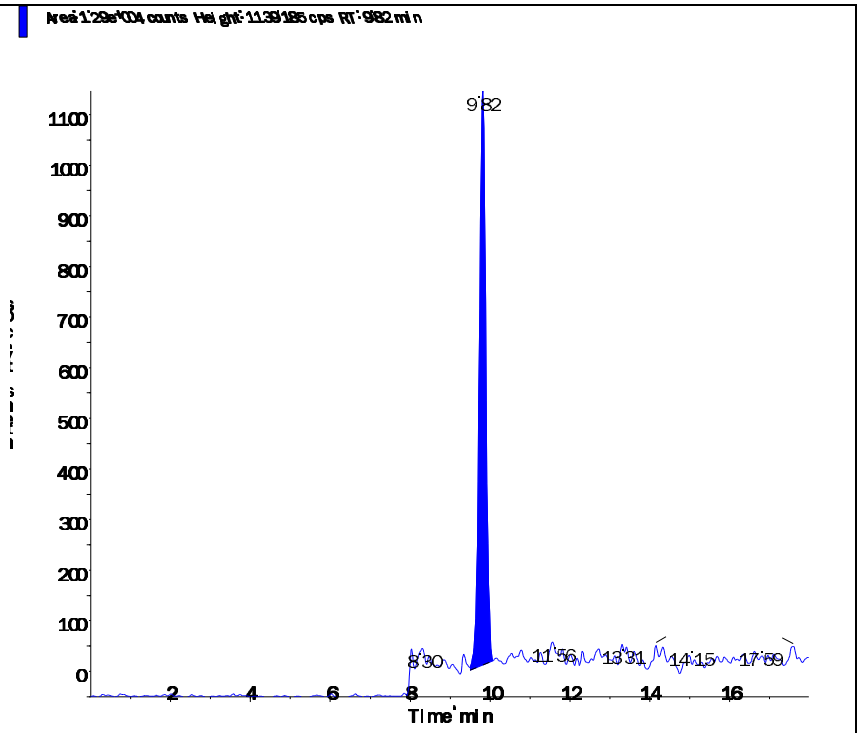

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Data File	LM34768.wiff	**Result Table**	050516_JWR.rdb
Acquisition Date	5/5/2016 6:23:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567744-05 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM34768.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 6:23:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050516_JWR.rdb
Sample ID	WG567744-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.120e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.680e+04	9.83	N/A	0.209
Perchlorate conf	1.260e+04	9.83	N/A	0.201

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

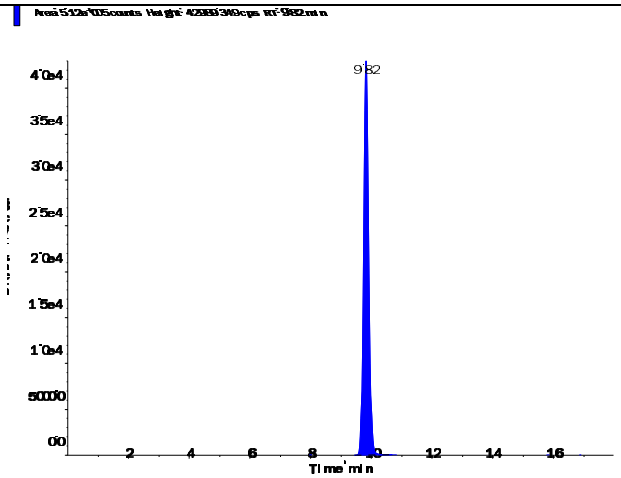

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.209 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

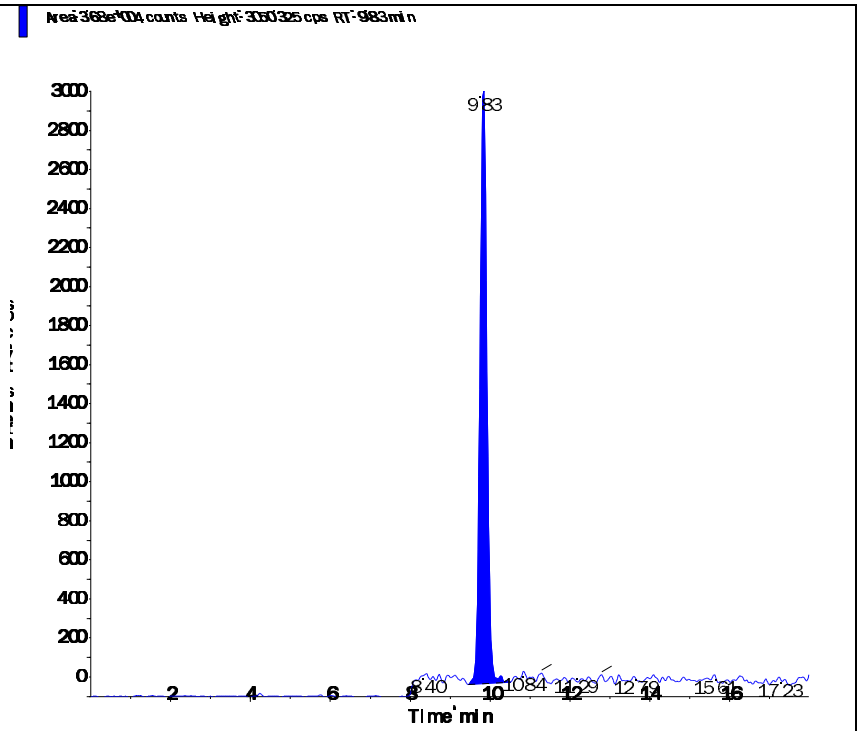

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

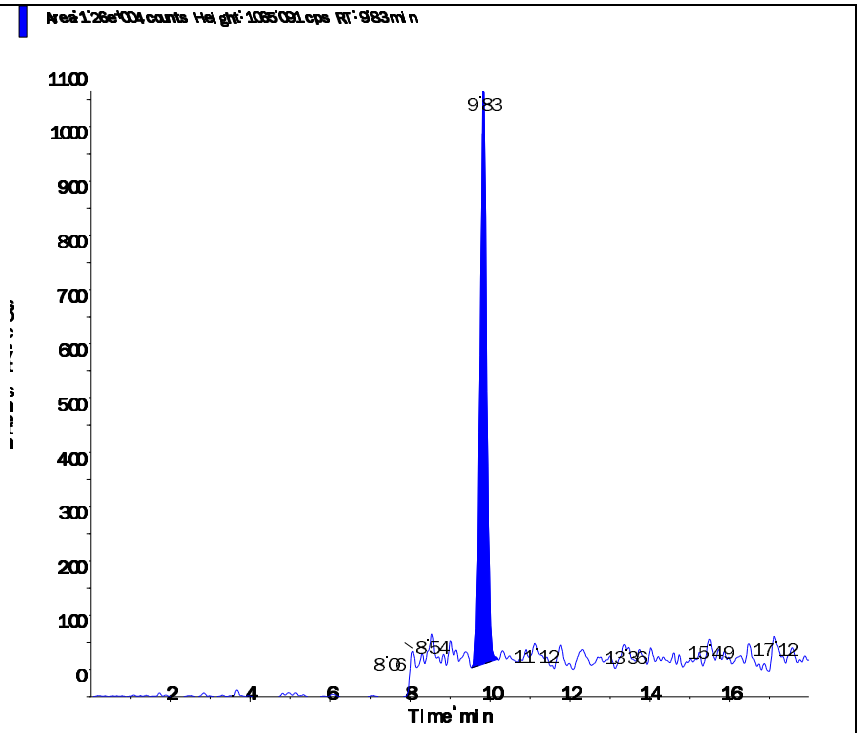

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Data File	LM34780.wiff	**Result Table**	050516_JWR.rdb
Acquisition Date	5/5/2016 10:10:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567744-06 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM34780.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 10:10:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050516_JWR.rdb
Sample ID	WG567744-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.770e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.060e+04	9.82	N/A	0.206
Perchlorate conf	1.350e+04	9.81	N/A	0.19

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

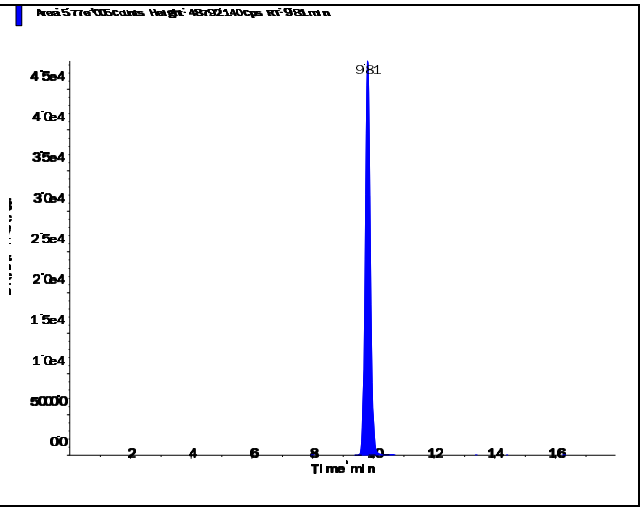

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

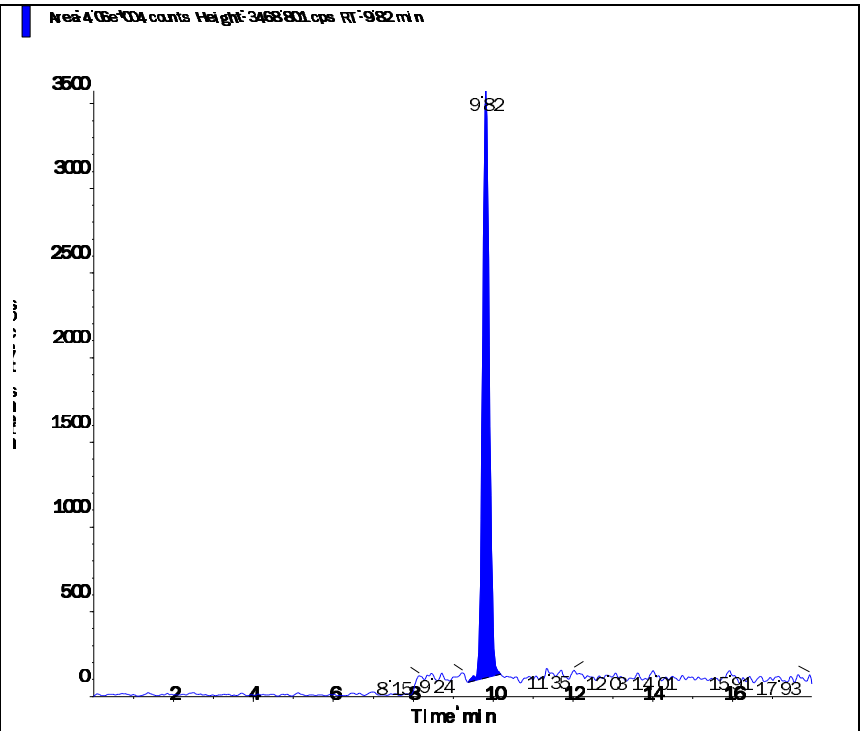

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.81 (9.84) min
Calculated conc:	0.19 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

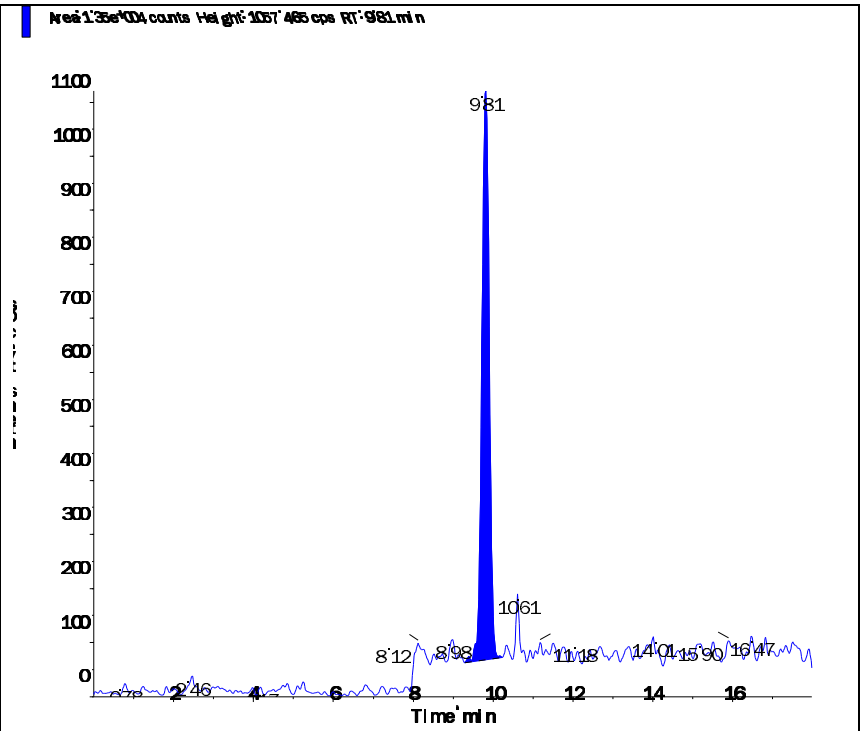

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Data File	LM34786.wiff	**Result Table**	050516_JWR.rdb
Acquisition Date	5/6/2016 12:04:35 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567744-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM34786.wiff	**Injection Volume**	10.00
Acquisition Date	5/6/2016 12:04:35 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050516_JWR.rdb
Sample ID	WG567744-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	6.010e+05	9.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.220e+04	9.82	N/A	0.205
Perchlorate conf	1.480e+04	9.80	N/A	0.20

O18LP (Internal Standard)

RT (Exp. RT): 9.80(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

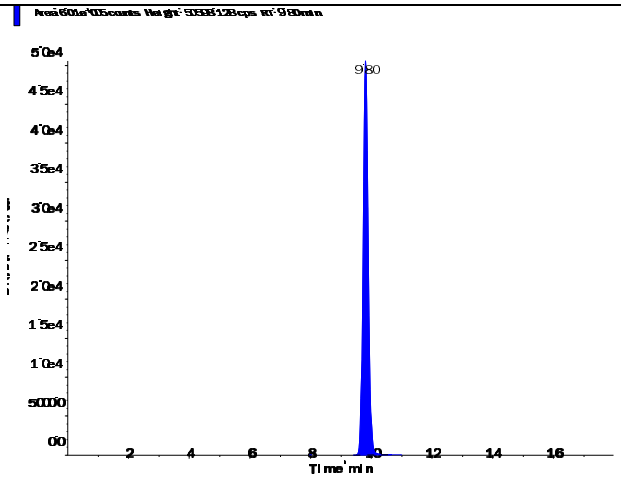

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	0.205 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

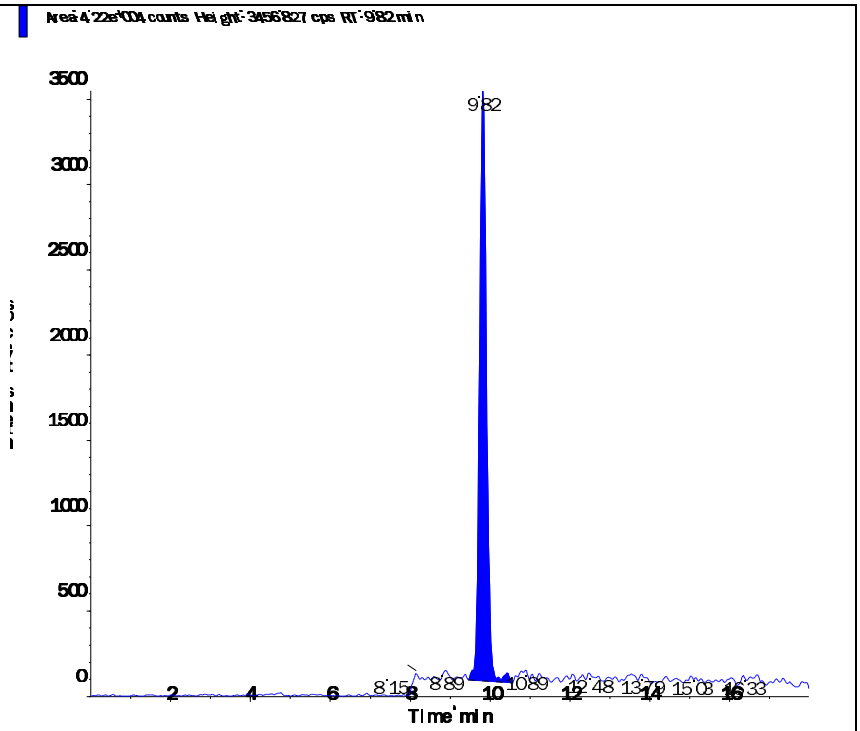

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.80 (9.84) min
Calculated conc:	0.20 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

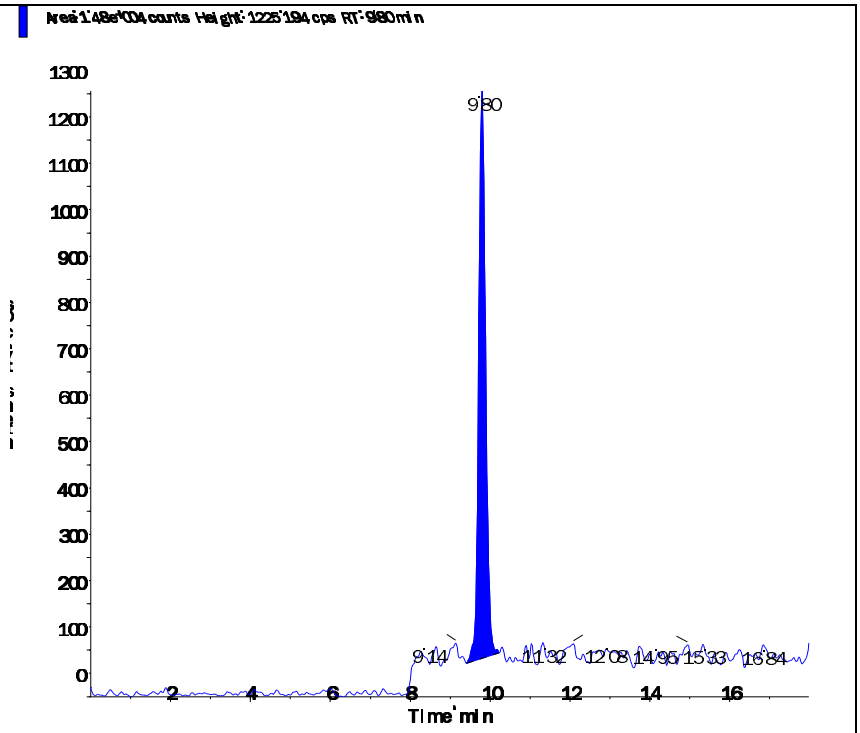

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Data File	LM34717.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 3:02:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567549-01 CCB	**Injection Vial**	1.00
Data File	LM34717.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 3:02:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567549-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.220e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

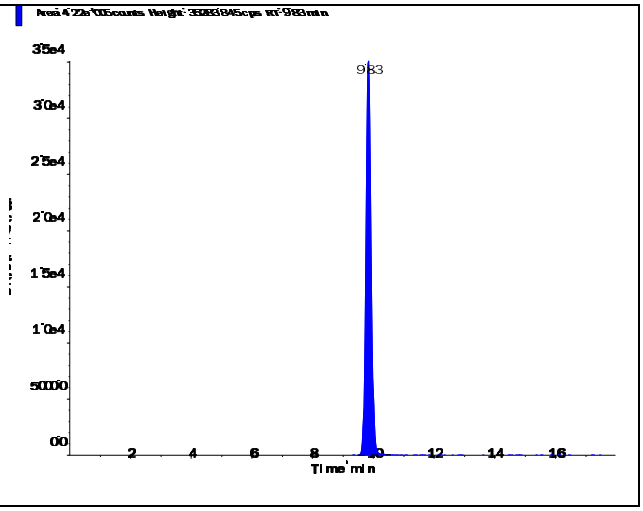

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

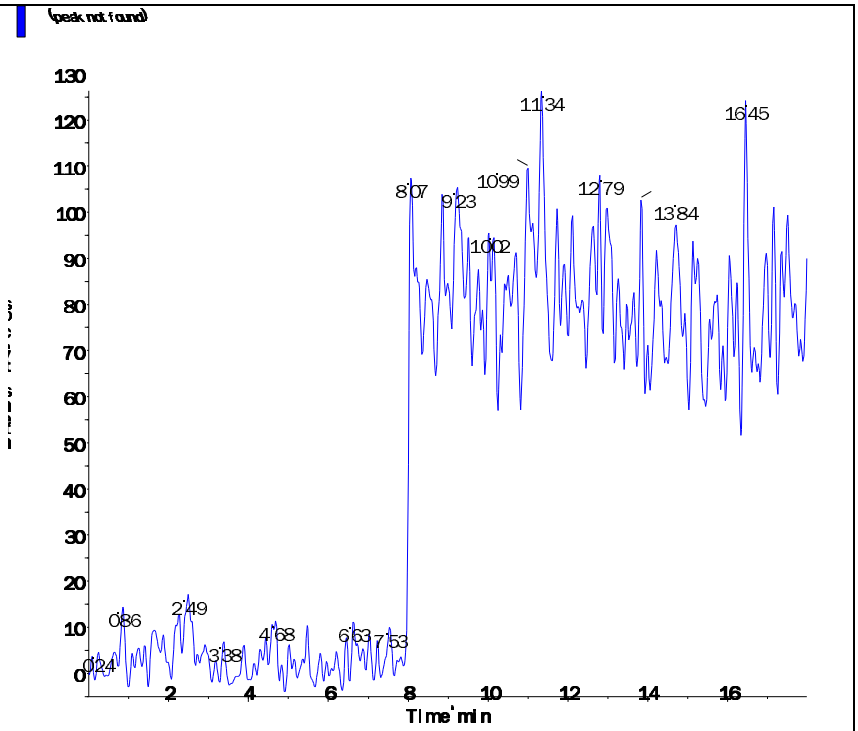

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

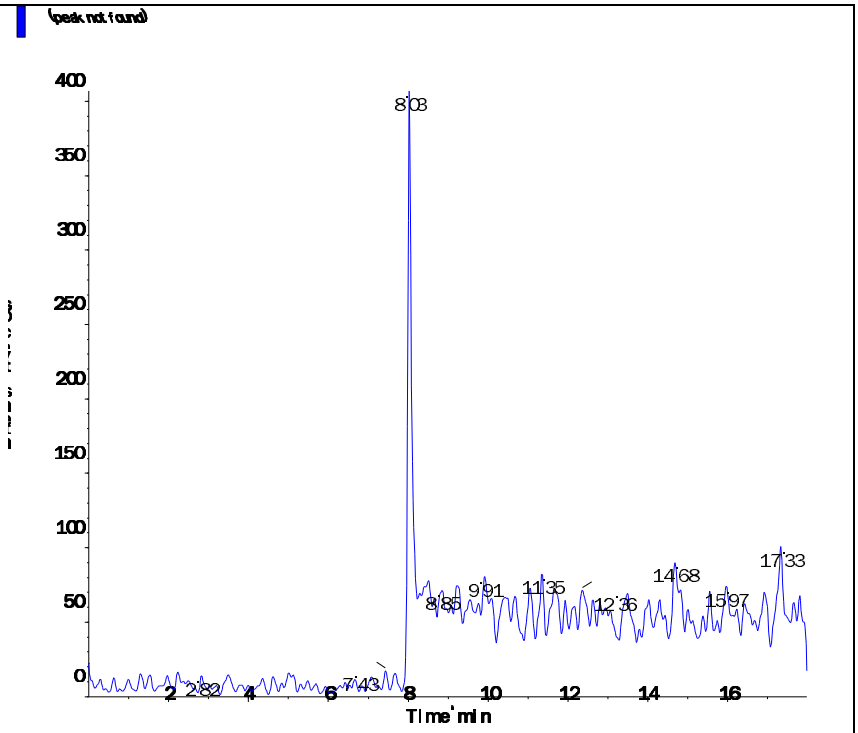

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Data File	LM34732.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 7:46:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567549-04 CCB	**Injection Vial**	1.00
Data File	LM34732.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 7:46:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567549-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.520e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	6.040e+02	9.69	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

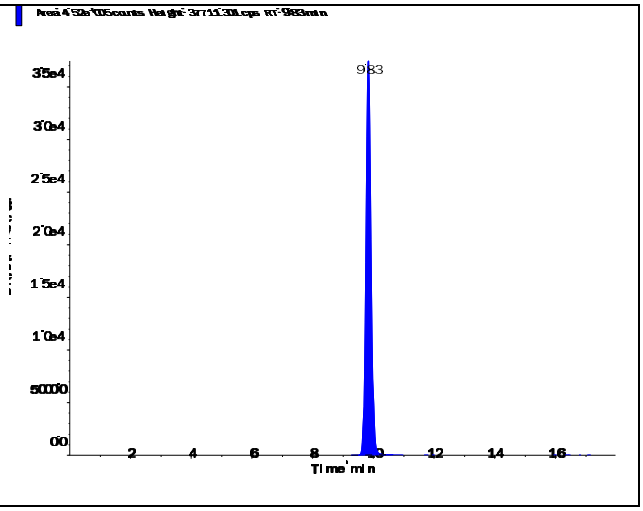

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

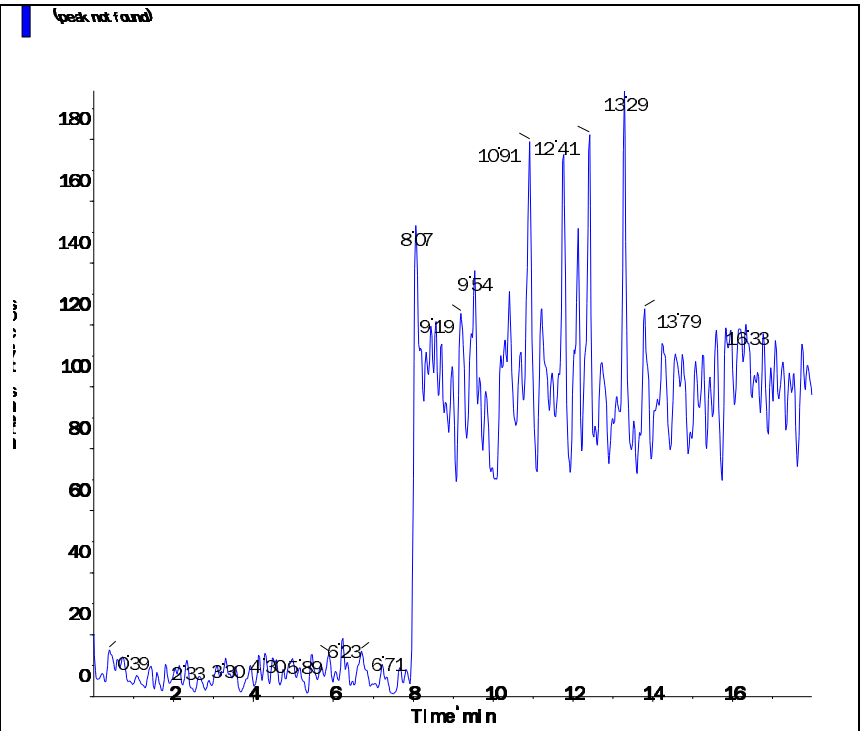

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.69 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

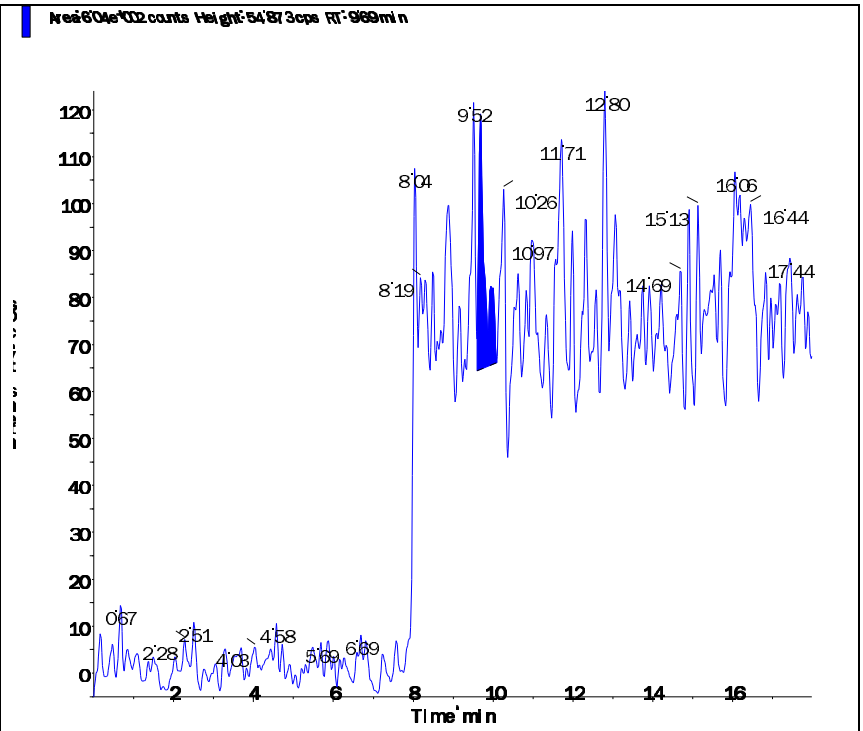

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Data File	LM34745.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 11:52:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567549-06 CCB	**Injection Vial**	1.00
Data File	LM34745.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 11:52:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567549-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.580e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

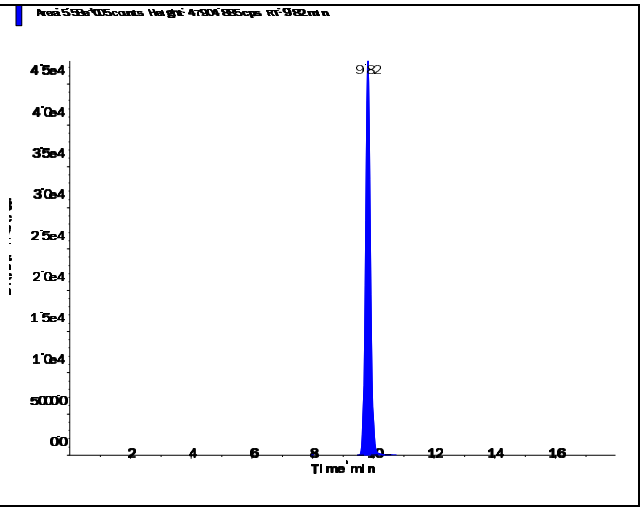

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

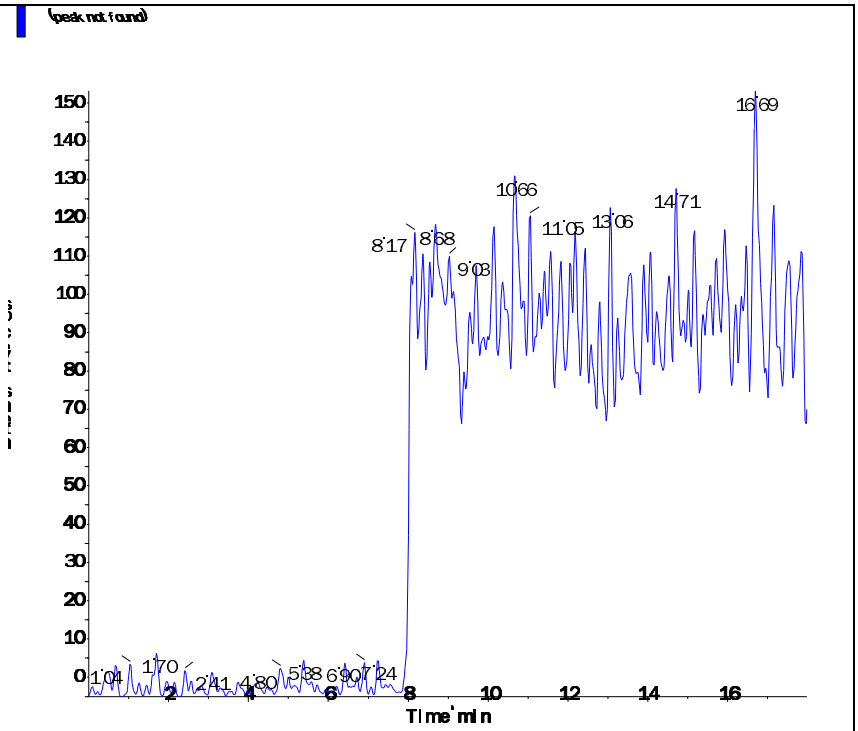

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

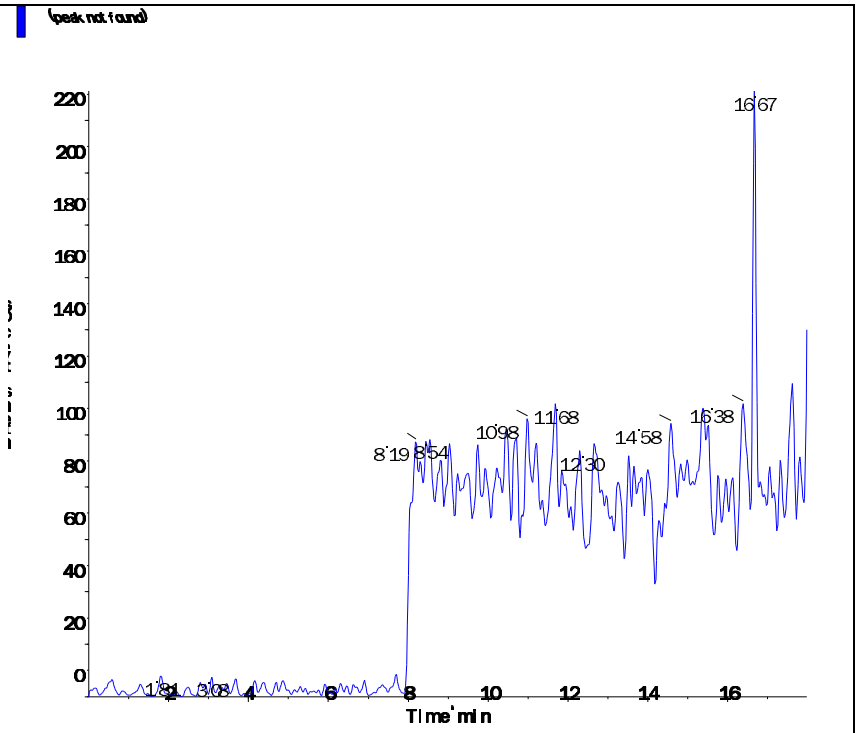

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Data File	LM34751.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 1:46:23 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567549-08 CCB	**Injection Vial**	1.00
Data File	LM34751.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 1:46:23 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567549-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.530e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

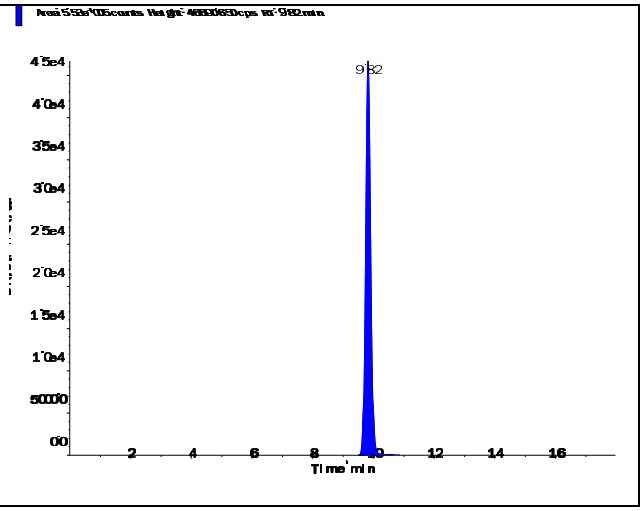

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

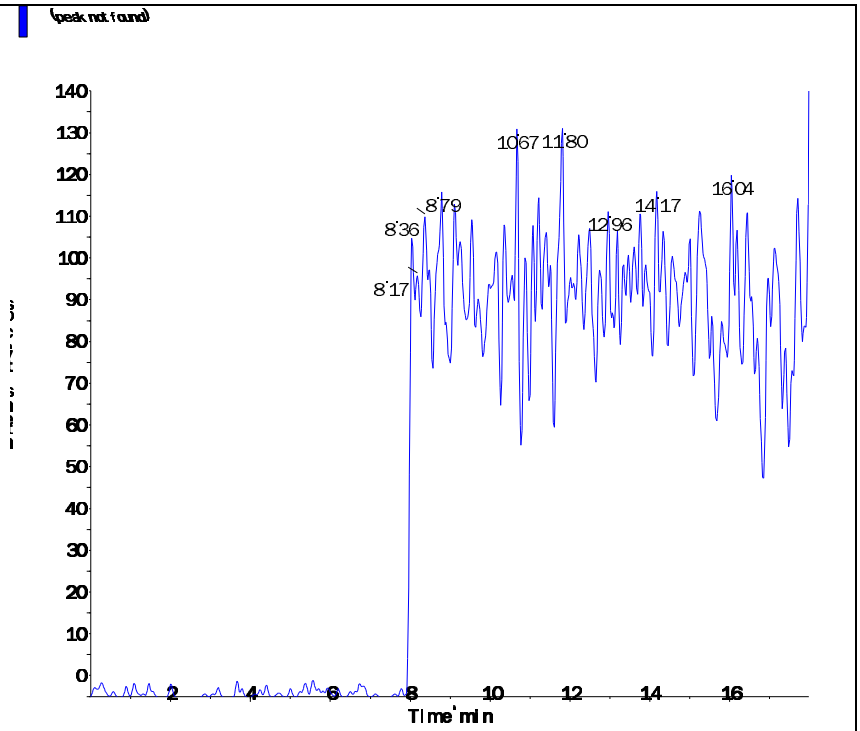

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

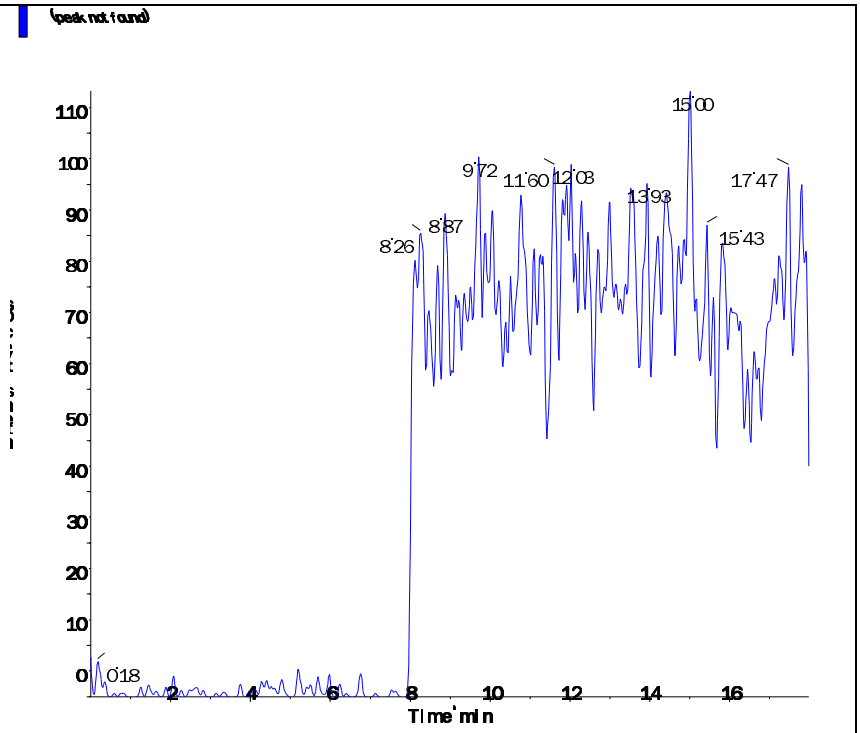

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Data File	LM34754.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 1:32:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567549-10 CCB	**Injection Vial**	1.00
Data File	LM34754.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 1:32:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567549-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.070e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

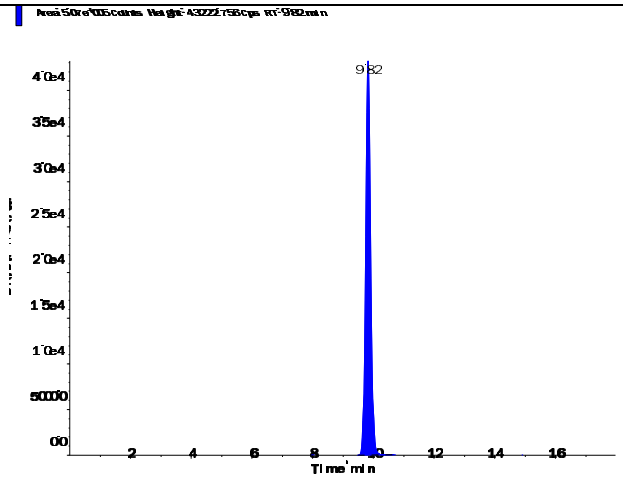

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

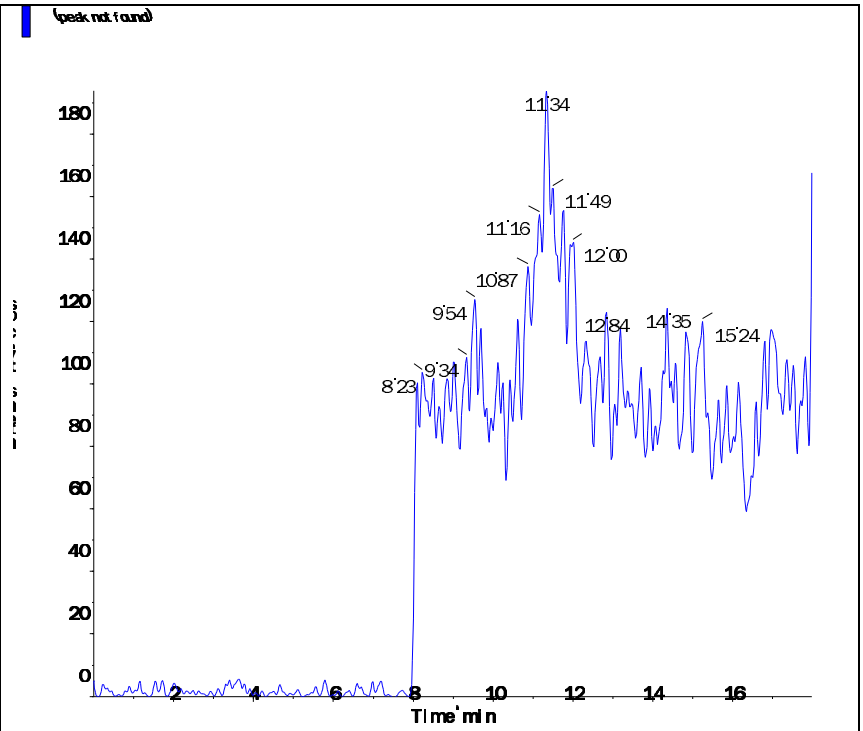

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

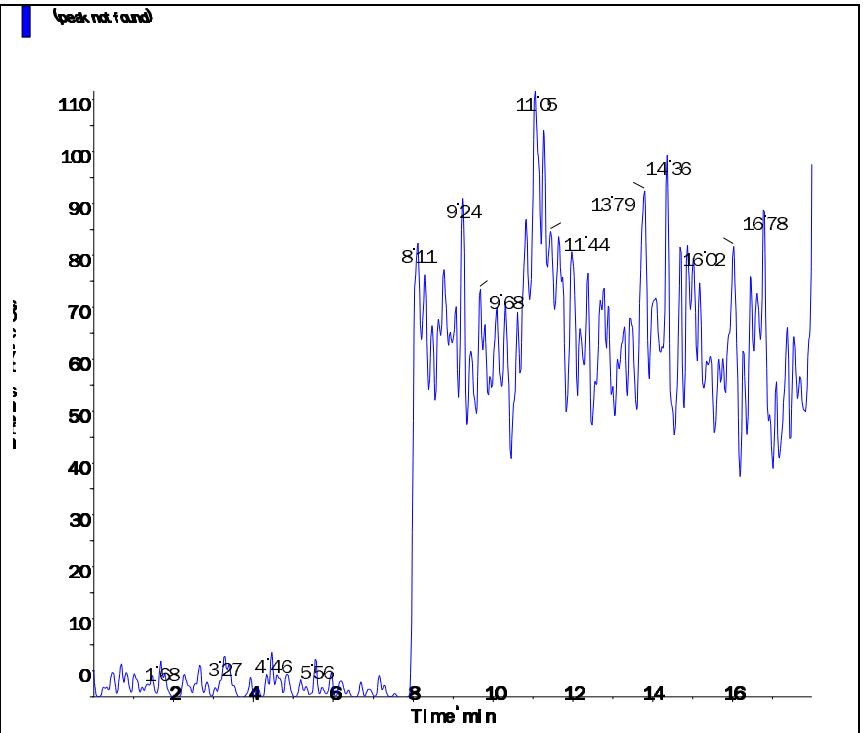

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Printed: 5/6/2016 2:00 PM

Data File	LM34761.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 3:44:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567549-12 CCB	**Injection Vial**	1.00
Data File	LM34761.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 3:44:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567549-12	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.270e+05	9.85	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	4.490e+02	9.89	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.85(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

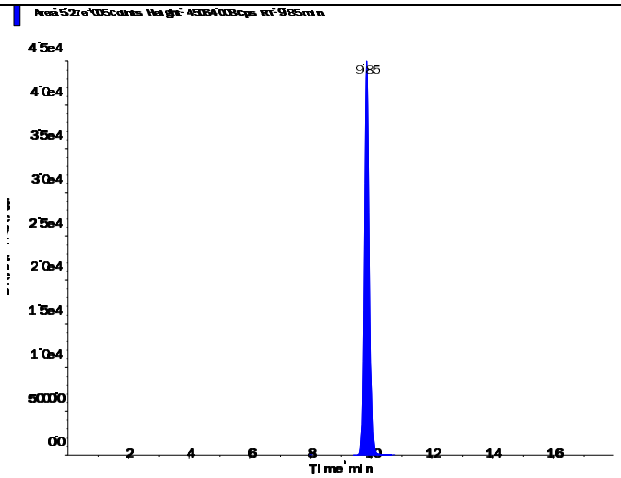

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Printed: 5/6/2016 2:00 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	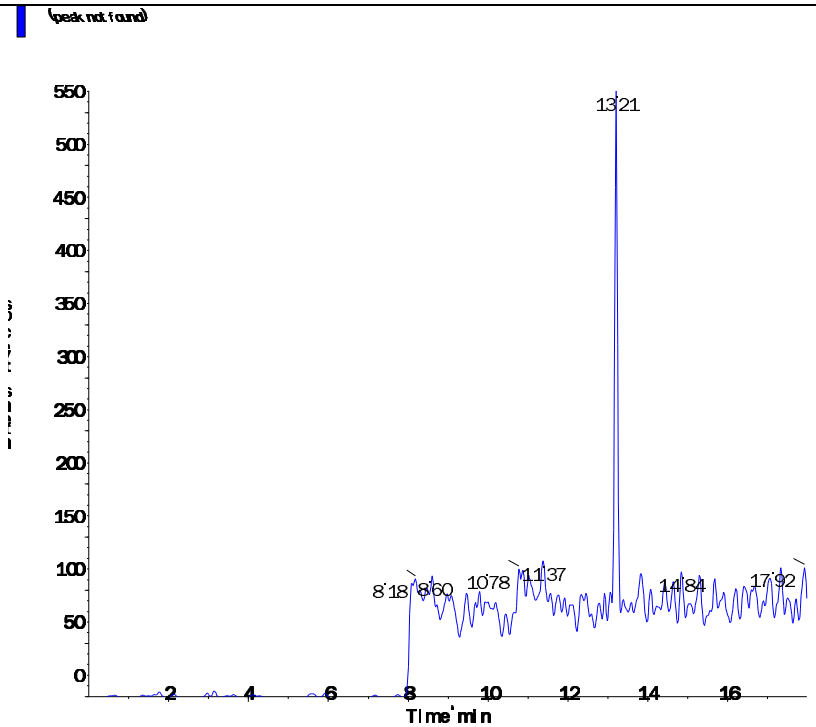
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.89 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	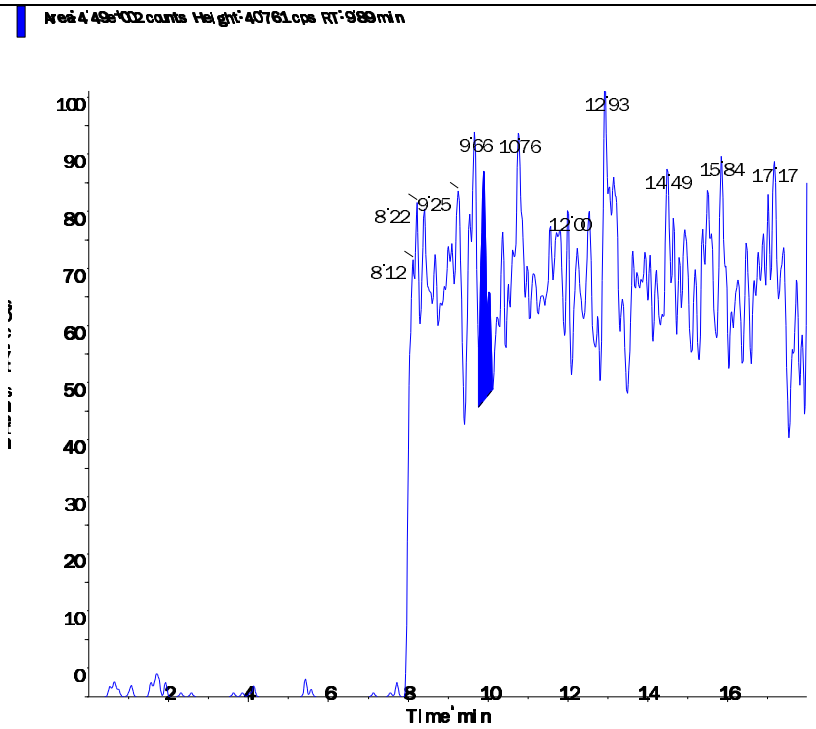

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Created with Analyst Reporter
Printed: 5/6/2016 12:47 PM

Data File	LM34766.wiff	**Result Table**	050516_JWR.rdb
Acquisition Date	5/5/2016 5:45:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567745-01 CCB	**Injection Vial**	1.00
Data File	LM34766.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 5:45:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050516_JWR.rdb
Sample ID	WG567745-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.030e+05	9.85	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	2.580e+02	9.83	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.85(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

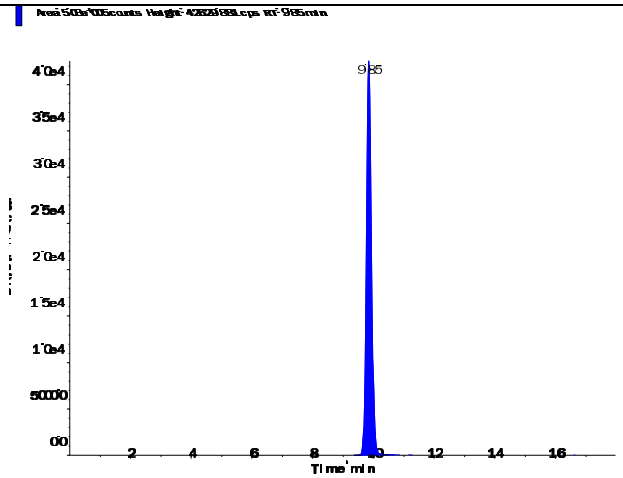

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Created with Analyst Reporter
Printed: 5/6/2016 12:47 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	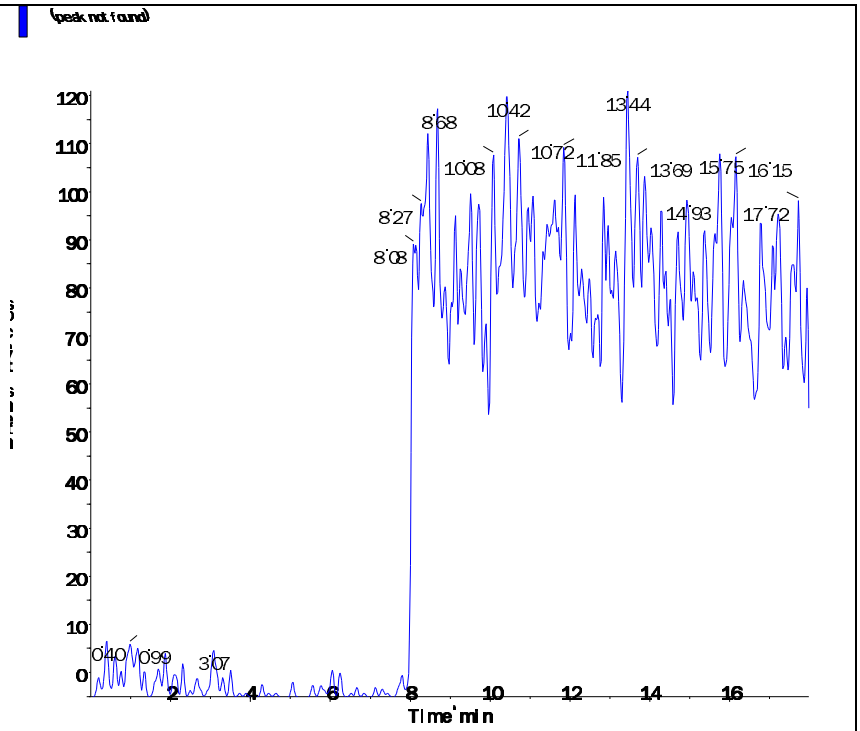
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	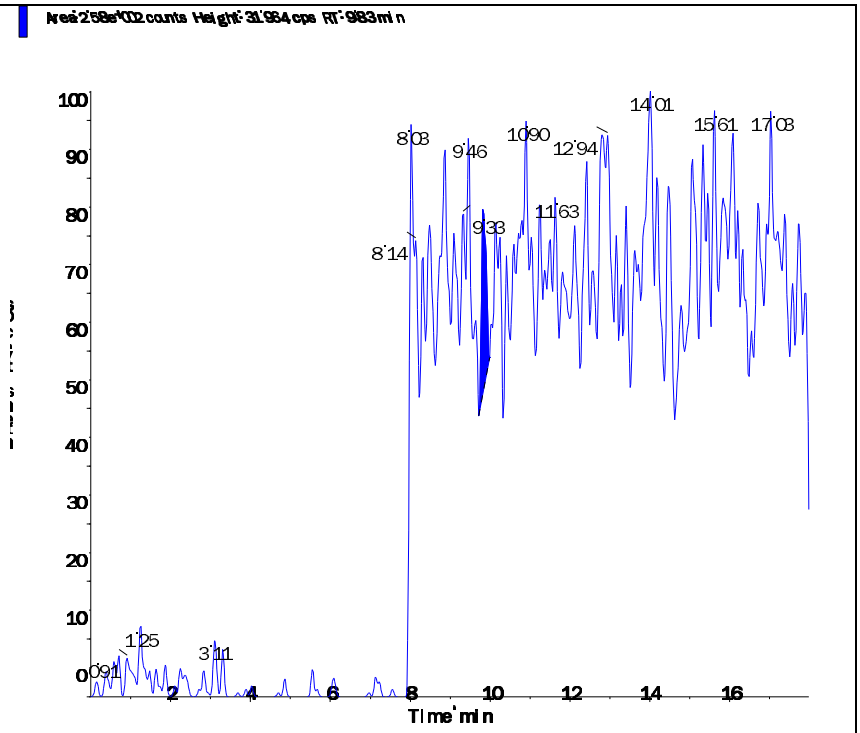

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Created with Analyst Reporter
Printed: 5/6/2016 12:52 PM

Data File	LM34781.wiff	**Result Table**	050516_JWR.rdb
Acquisition Date	5/5/2016 10:29:55 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567745-04 CCB	**Injection Vial**	1.00
Data File	LM34781.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 10:29:55 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050516_JWR.rdb
Sample ID	WG567745-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	6.050e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

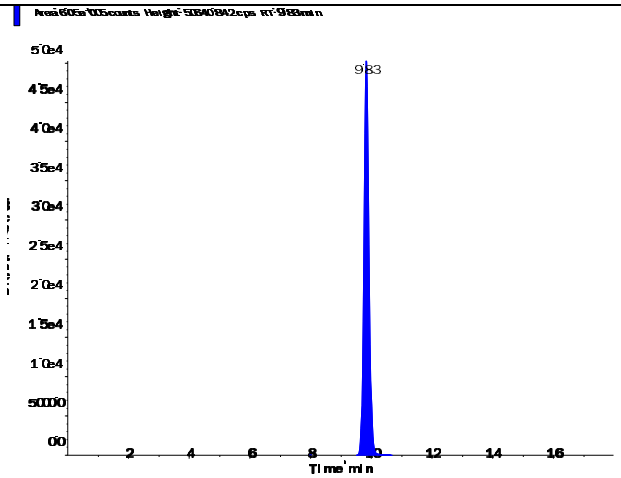

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Printed: 5/6/2016 12:52 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

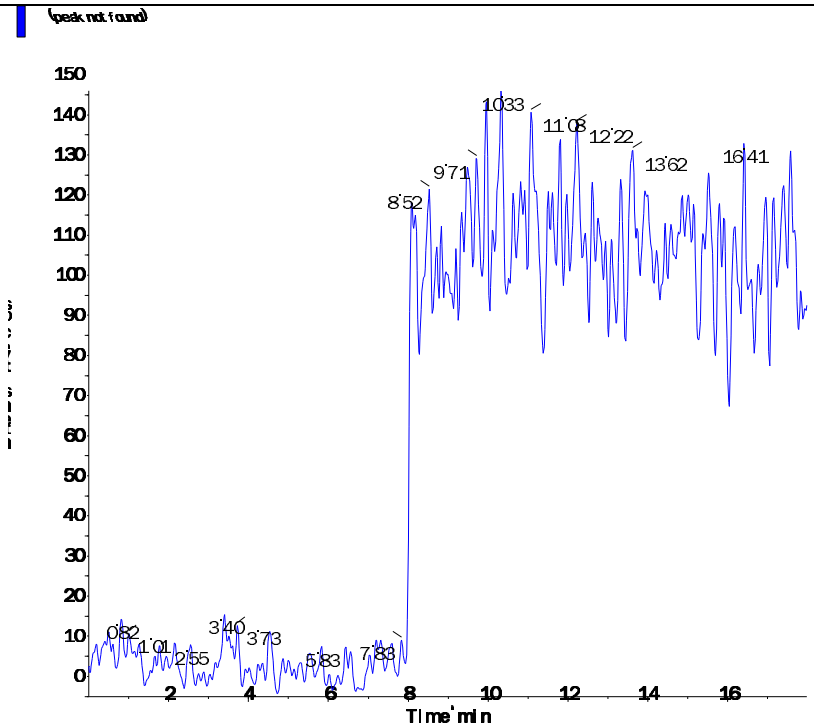

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

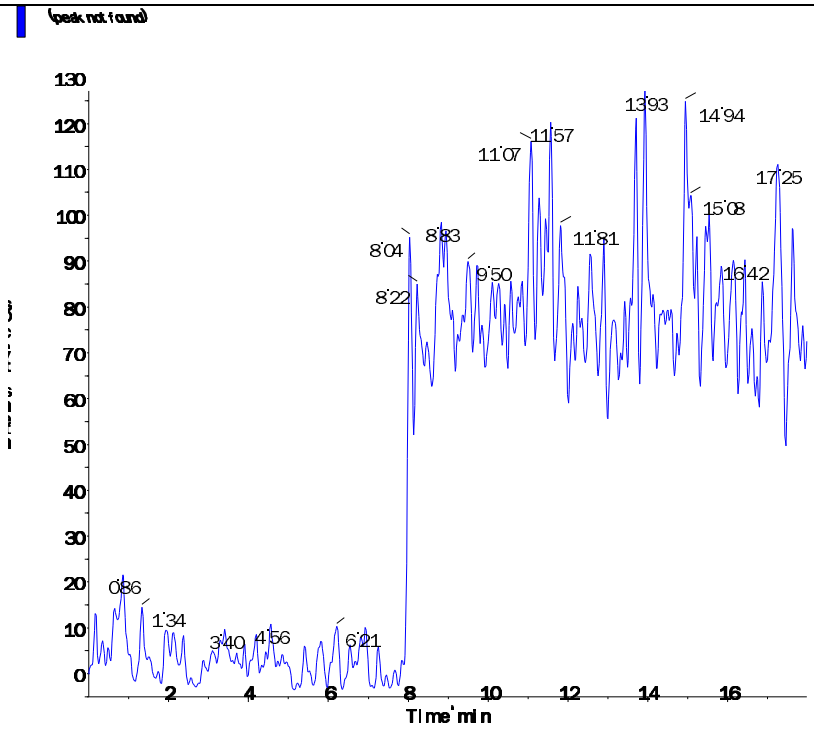

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Created with Analyst Reporter
Printed: 5/6/2016 12:55 PM

Data File	LM34787.wiff	**Result Table**	050516_JWR.rdb
Acquisition Date	5/6/2016 12:23:31 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567745-06 CCB	**Injection Vial**	1.00
Data File	LM34787.wiff	**Injection Volume**	10.00
Acquisition Date	5/6/2016 12:23:31 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050516_JWR.rdb
Sample ID	WG567745-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	6.220e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

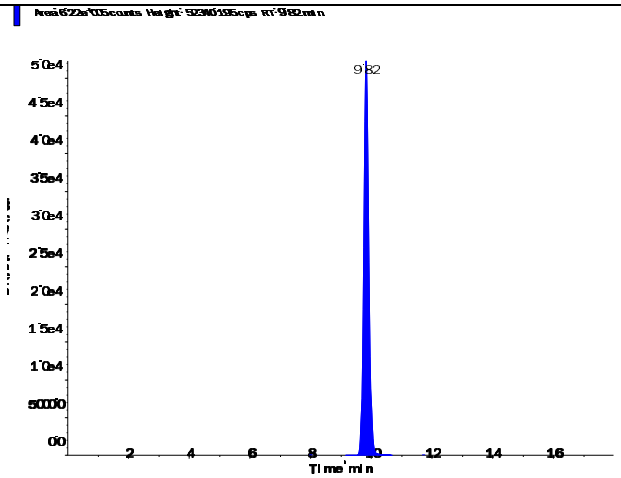

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Created with Analyst Reporter
Printed: 5/6/2016 12:55 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

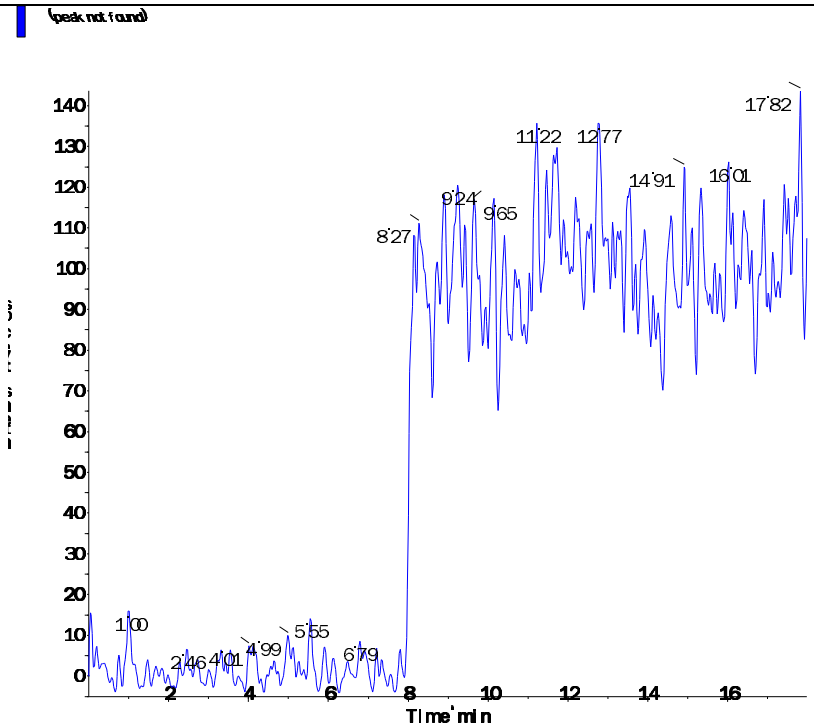

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

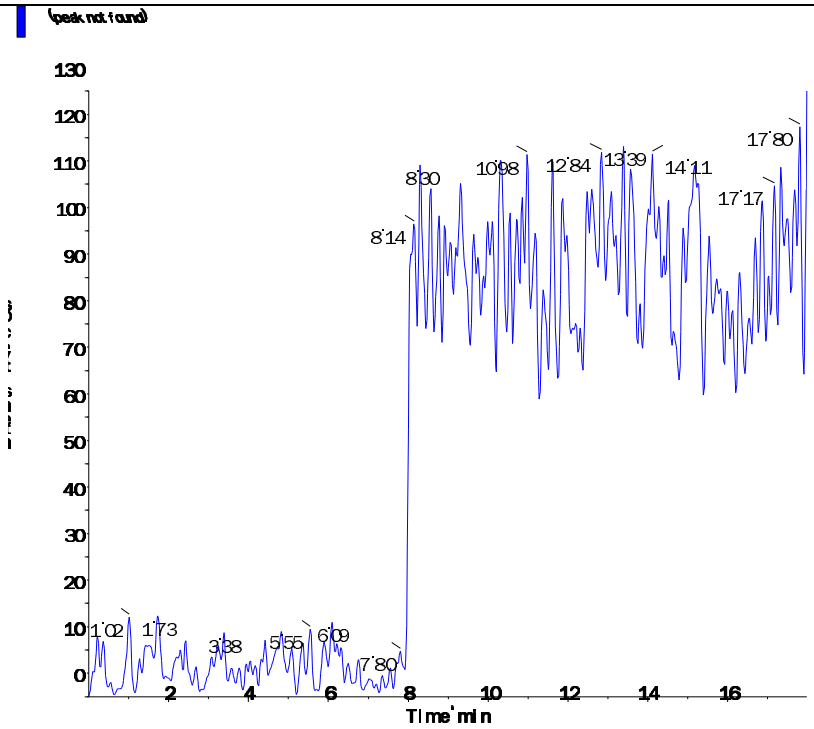

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Created with Analyst Reporter
Printed: 5/6/2016 1:49 PM

Data File	LM34720.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 3:59:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567224-01 MCT (2.0ug/kg)	**Injection Vial**	4.00
Data File	LM34720.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 3:59:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567224-01	**Dilution Factor**	1.00
Sample Comment	7,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.200e+05	9.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.810e+04	9.10	N/A	0.195
Perchlorate conf	1.010e+04	9.10	N/A	0.196

O18LP (Internal Standard)

RT (Exp. RT): 9.10(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

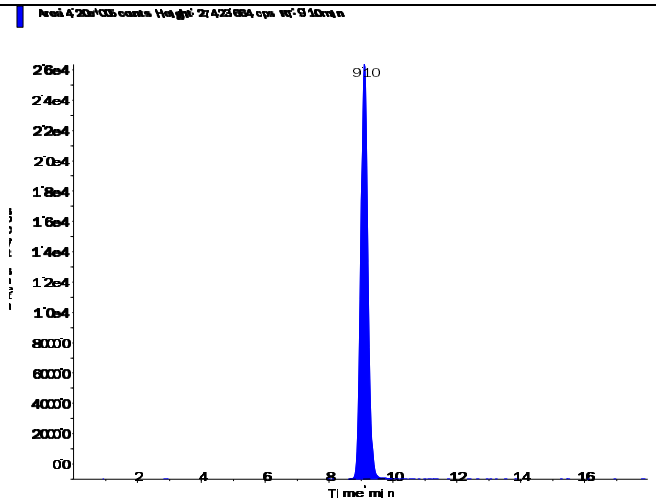

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Created with Analyst Reporter
Printed: 5/6/2016 1:49 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.10 (9.84) min
Calculated conc:	0.195 ng/ml
Area Ratio:	0.067
Sample Type:	(Unknown)

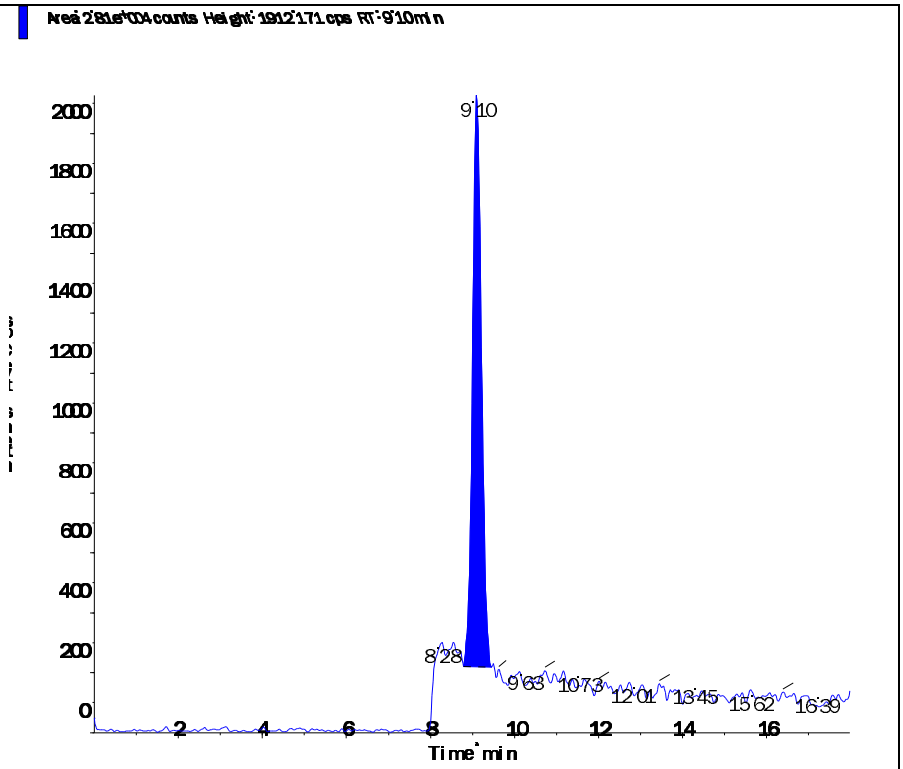

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.10 (9.84) min
Calculated conc:	0.196 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

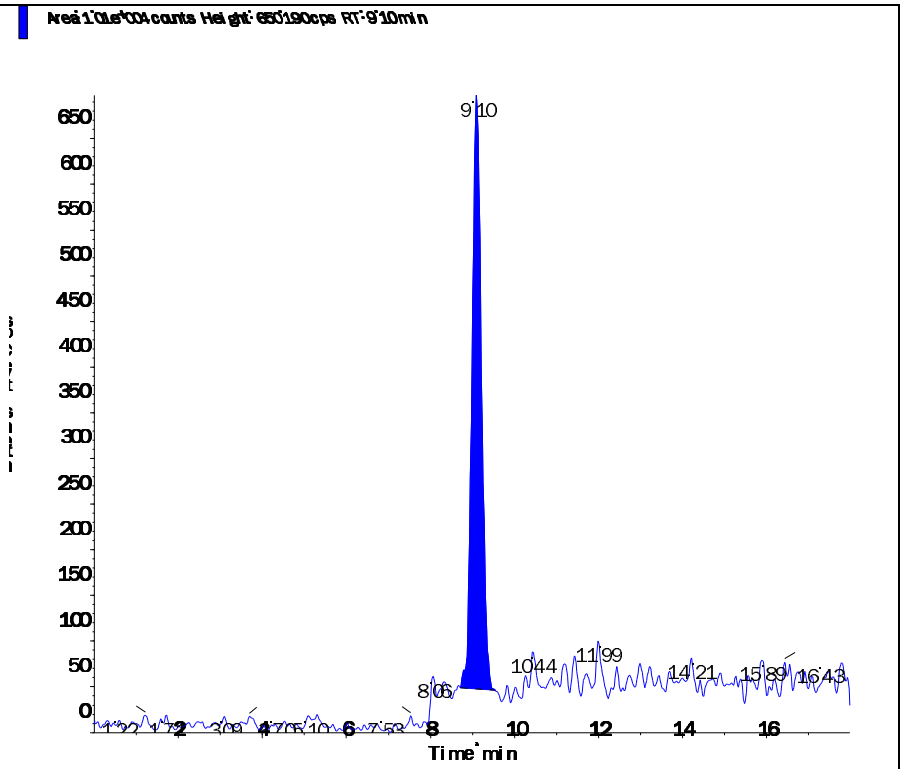

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Printing Time: 4:40:40 PM
Printing Date: Wednesday, May 04, 2016

Sample Name: "WG567224-01 MCT (2.0ug/kg)" Sample ID: "WG567224-01" File: "LM34720.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "7,1 STD75512" Annotation: ""

Sample Index:	1	
Sample Type:	Unknown	
Concentration:	N/A	
Calculated Conc:	0.220	ug/L
Acq. Date:	5/4/2016	
Acq. Time:	3:59:35 PM	
Modified:	No	
Proc. Algorithm:	Analyst Classic	
Punching Factor:	2	
Noise Threshold:	18.48	cps
Area Threshold:	92.40	cps
Num. Smooths:	5	
Sep. Width:	0.20	
Sep. Height:	0.01	
Exp. Peak Ratio:	5.00	
Exp. Adj. Ratio:	4.00	
Exp. Val. Ratio:	3.00	
RT Window:	30.000	sec
Expected RT:	9.84	min
Use Relative RT:	Yes	
Int. Type:	Valley	
Retention Time:	9.10	min
Area:	3.16e+004	counts
Height:	1997.611	cps
Start Time:	8.789	min
End Time:	9.559	min

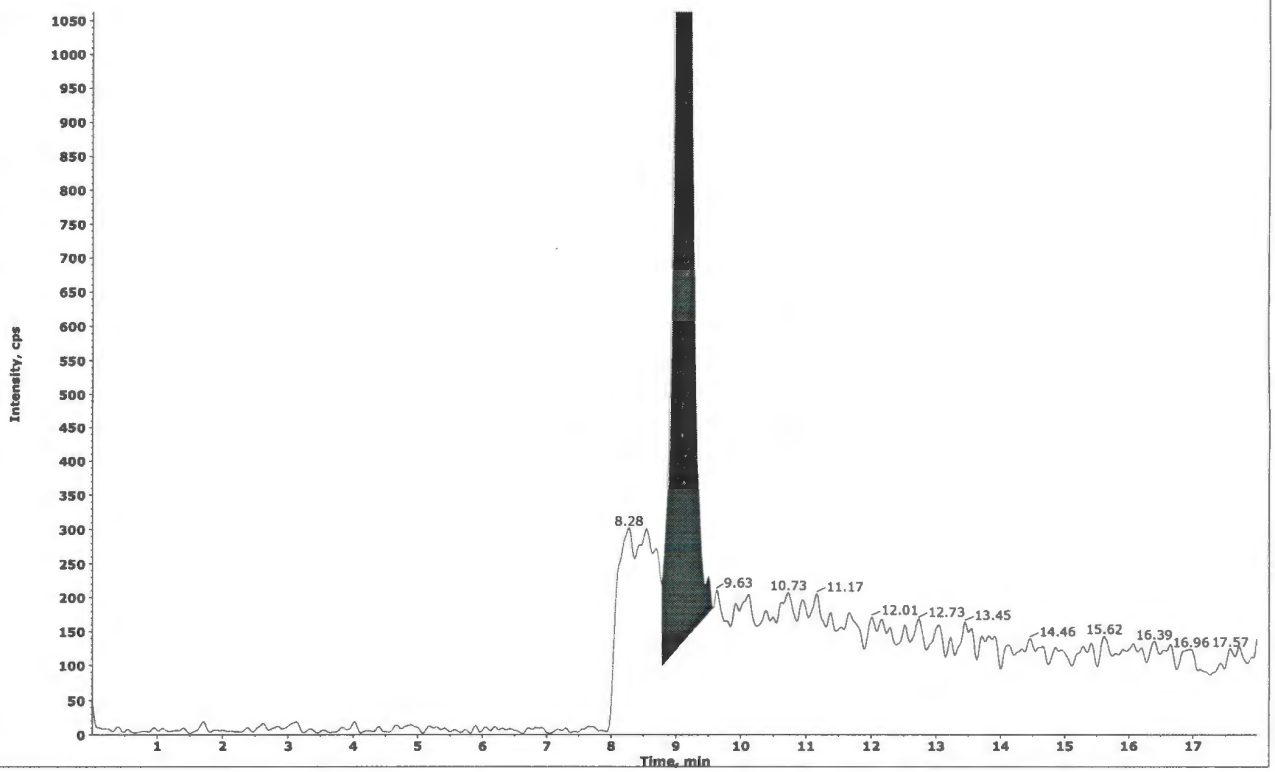

Collected by: N/A
Electronic Signature: no
Operator: lcms1

Printing Time: 4:41:25 PM
Printing Date: Wednesday, May 04, 2016

Sample Name: "WG567224-01 MCT (2.0ug/kg)" Sample ID: "WG567224-01" File: "LM34720.wiff"
Peak Name: "Parchlorate" Mass(es): "98.8/83.3 amu"
Comment: "7.1 STD75512" Annotation: ""

Sample Index:	1	
Sample Type:	Unknown	
Concentration:	N/A	
Calculated Conc:	0.195	mg/L
Acq. Date:	5/4/2016	
Acq. Time:	3:59:35 PM	
Modified:	Yes	
Proc. Algorithm:	Analyst Classic	
Bunching Factor:	1	
Noise Threshold:	18.48	cps
Area Threshold:	92.40	cps
Num. Smooths:	5	
Sep. Width:	0.20	
Sep. Height:	0.01	
Exp. Peak Ratio:	5.00	
Exp. Adj. Ratio:	4.00	
Exp. Val. Ratio:	3.00	
RT Window:	30.000	sec
Expected RT:	9.84	min
Use Relative RT:	Yes	
Int. Type:	Base To Base	
Retention Time:	9.10	min
Area:	2.81e+004	counts
Height:	1912.171	cps
Start Time:	8.789	min
End Time:	9.457	min

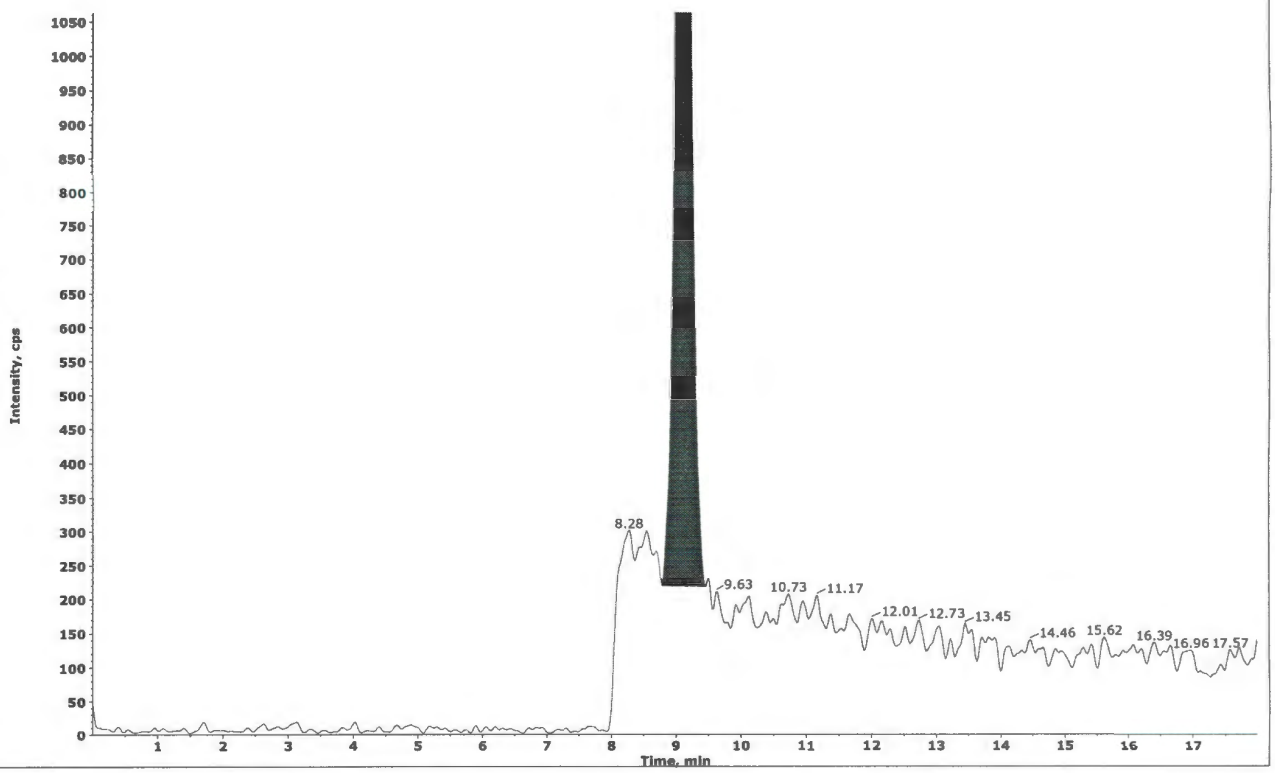

#4
JWR/05/04/16

✓ WD
5-9-16

Collected by: N/A
Electronic Signature: no
Operator: lcms1

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Created with Analyst Reporter
Printed: 5/6/2016 12:48 PM

Data File	LM34769.wiff	**Result Table**	050516_JWR.rdb
Acquisition Date	5/5/2016 6:42:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567744-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM34769.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 6:42:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050516_JWR.rdb
Sample ID	WG567744-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.160e+05	9.09	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.250e+04	9.10	N/A	0.183
Perchlorate conf	1.170e+04	9.09	N/A	0.182

O18LP (Internal Standard)

RT (Exp. RT): 9.09(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

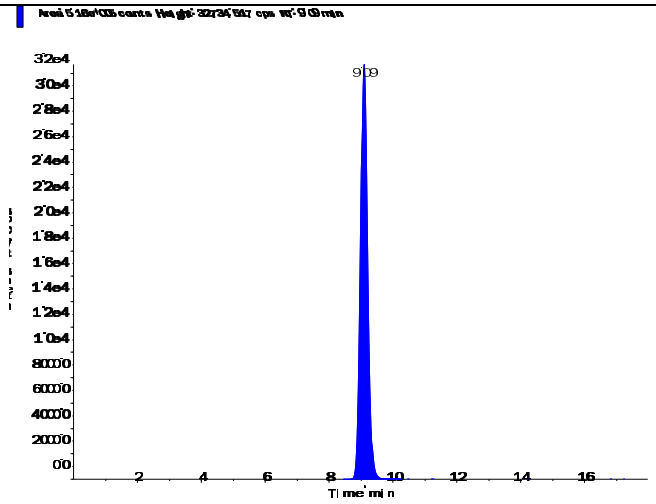

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Created with Analyst Reporter
Printed: 5/6/2016 12:48 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.10 (9.84) min
Calculated conc:	0.183 ng/ml
Area Ratio:	0.063
Sample Type:	(Unknown)

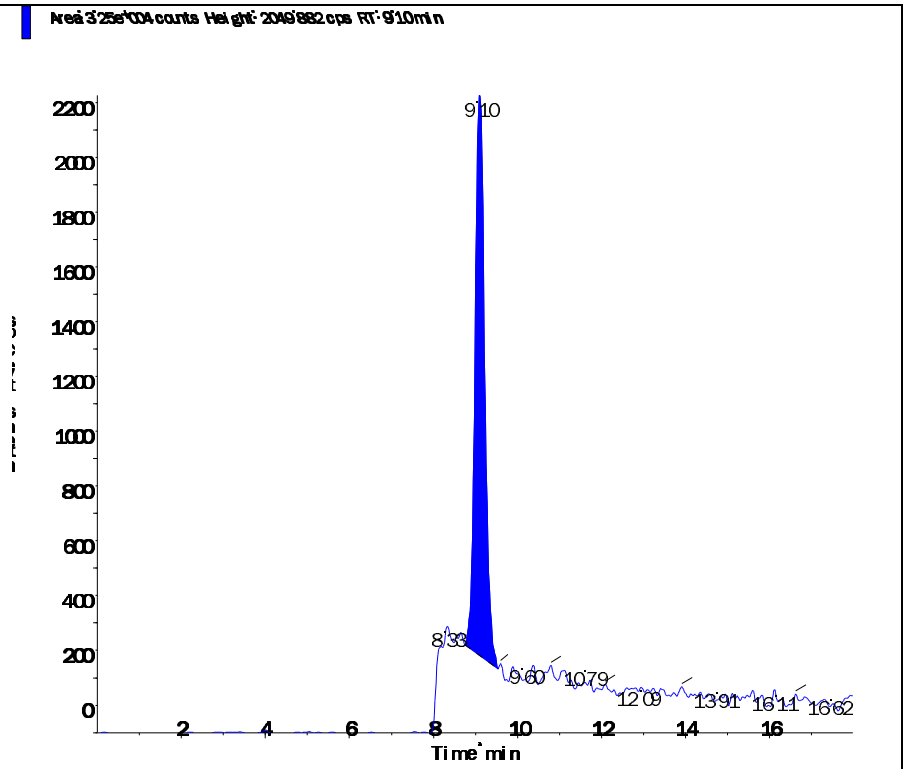

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.09 (9.84) min
Calculated conc:	0.182 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

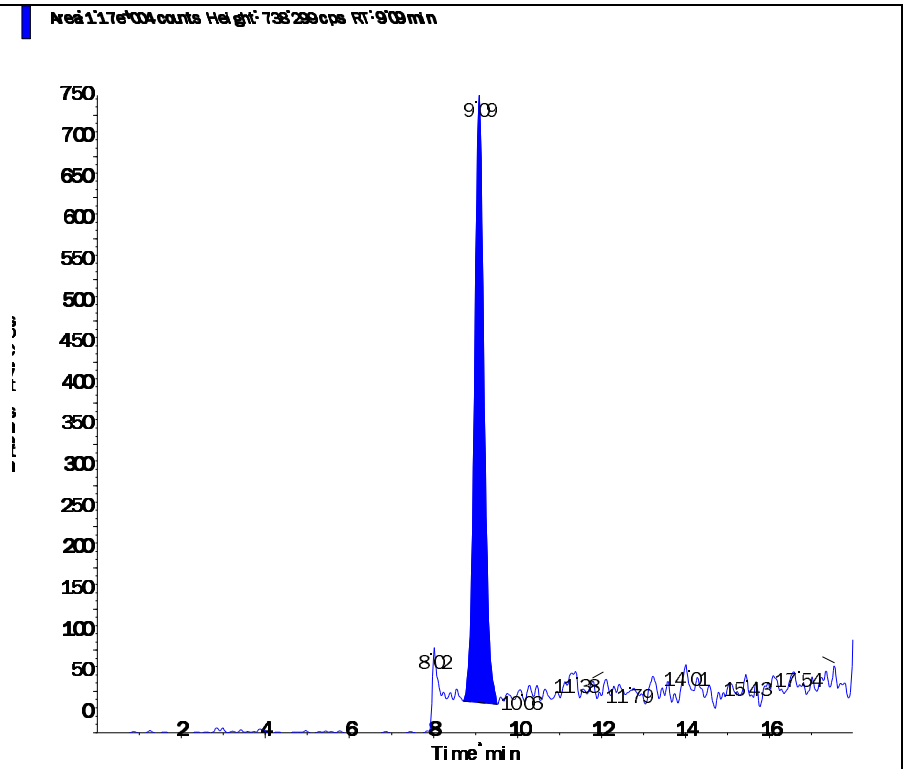

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Printing Time: 10:02:10 AM
Printing Date: Friday, May 06, 2016

Sample Name: "WG567744-01 MCT (0.2ug/L)" Sample ID: "WG567744-01" File: "LM34769.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.230 ug/L
Acq. Date:	5/5/2016
Acq. Time:	6:42:37 PM
Modified:	No
Proc. Algorithm:	Analyst Classic
Bunching Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Sep. Width:	0.20
Sep. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Valley
Retention Time:	9.10 min
Area:	4.05e+004 counts
Height:	2214.111 cps
Start Time:	8.749 min
End Time:	9.781 min

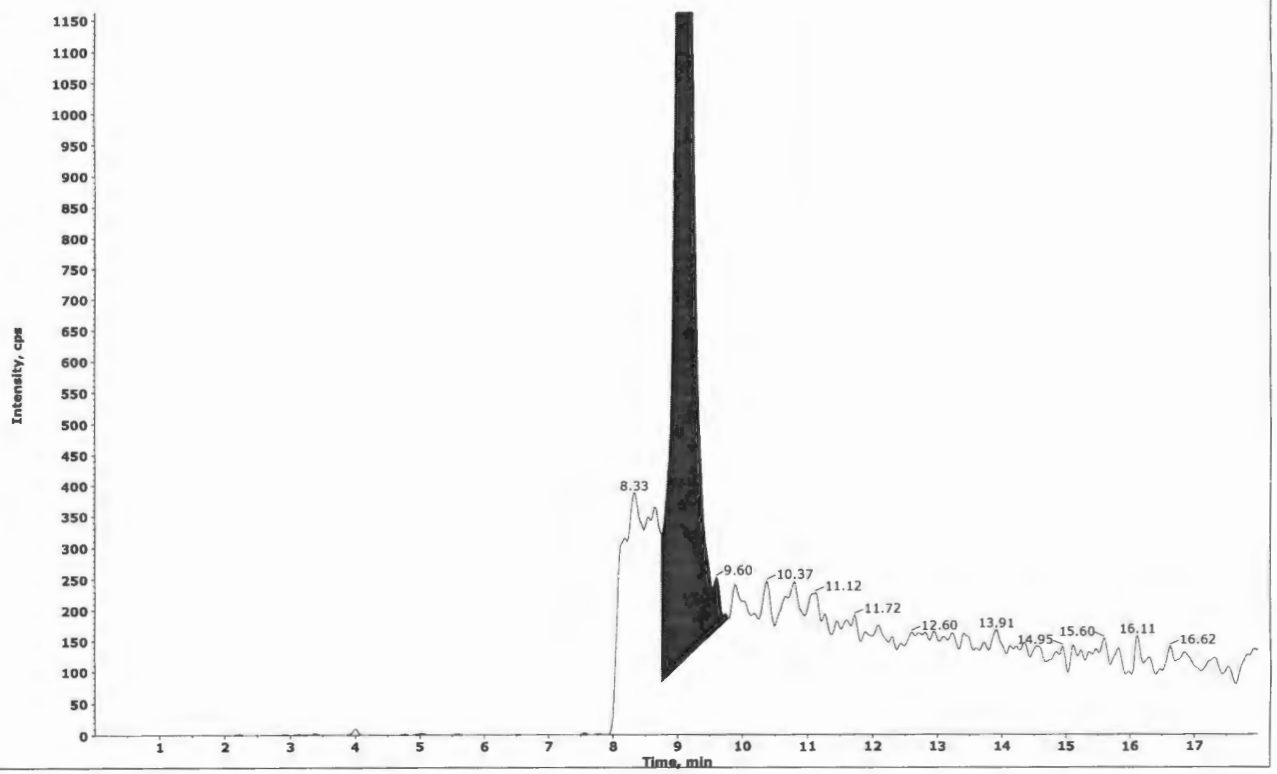

Collected by: N/A
Electronic Signature: no
Operator: lcms1

Printing Time: 10:08:19 AM
Printing Date: Friday, May 06, 2016

Sample Name: "WG567744-01 MCT (0.2ug/L)" Sample ID: "WG567744-01" File: "LM34769.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1.1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.183 ug/L
Acq. Date:	5/5/2016
Acq. Time:	6:42:37 PM
Modified:	Yes
Proc. Algorithm:	Analyst Classic
Smoothing Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Sep. Width:	0.20
Sep. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Manual
Retention Time:	9.10 min
Area:	3.25e+004 counts
Height:	2049.882 cps
Start Time:	8.749 min
End Time:	9.538 min

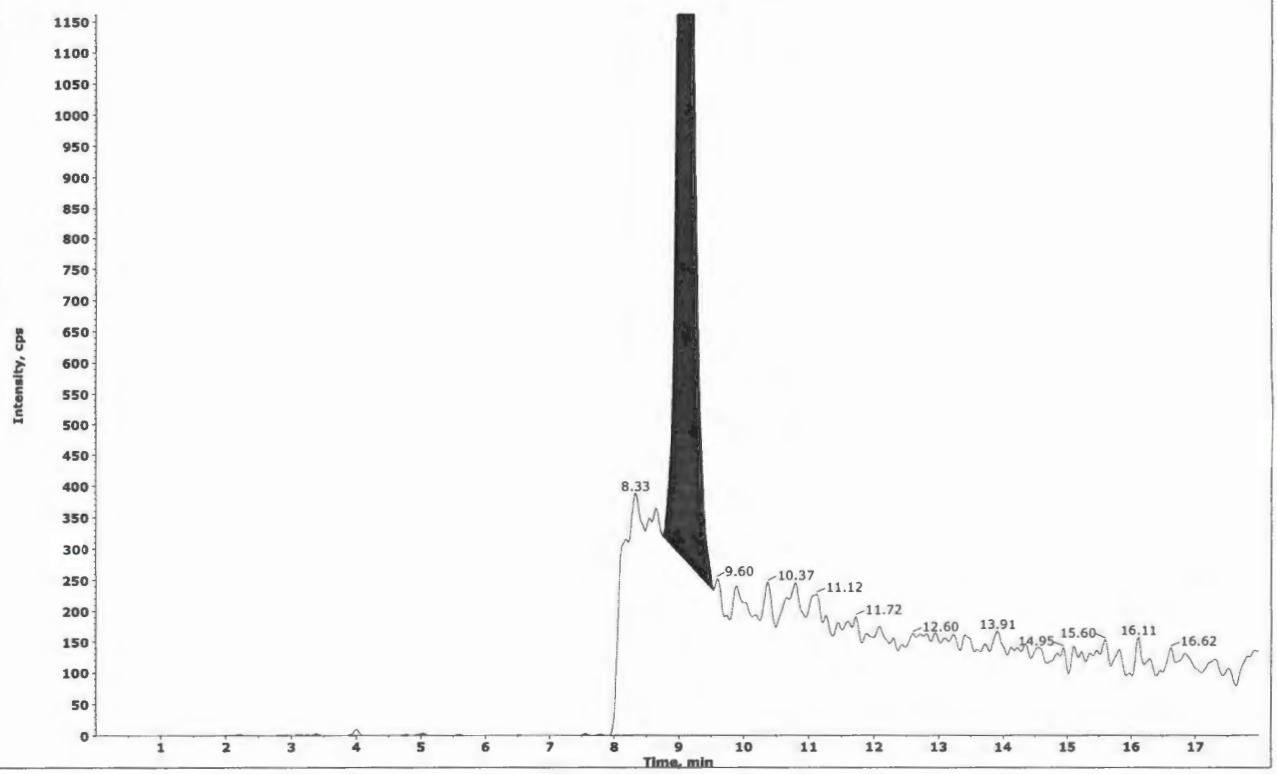

#4
JWR/05/06/16

/WD
05-06-16

Collected by: N/A
Electronic Signature: no
Operator: lcms1

2.2.1.5 Raw QC Data

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Created with Analyst Reporter
Printed: 5/6/2016 1:49 PM

Data File	LM34721.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 4:18:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567224-02 BLANK	**Injection Vial**	5.00
Data File	LM34721.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 4:18:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567224-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.420e+05	9.86	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.220e+03	9.84	N/A	0.0111
Perchlorate conf	5.920e+02	9.89	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.86(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

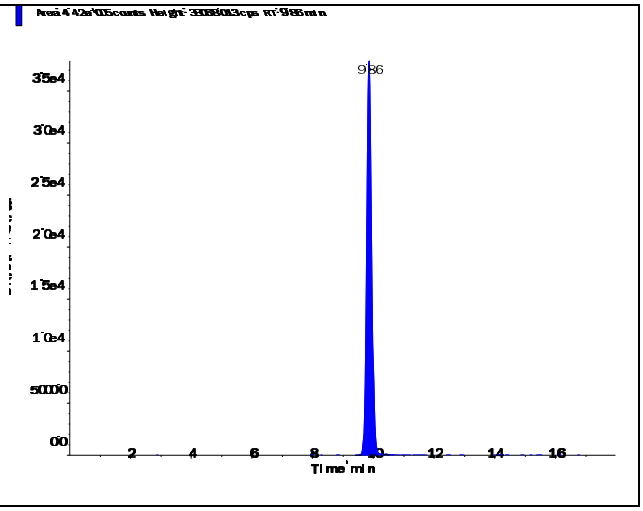

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.0111 ng/ml
Area Ratio:	0.005
Sample Type:	(Unknown)

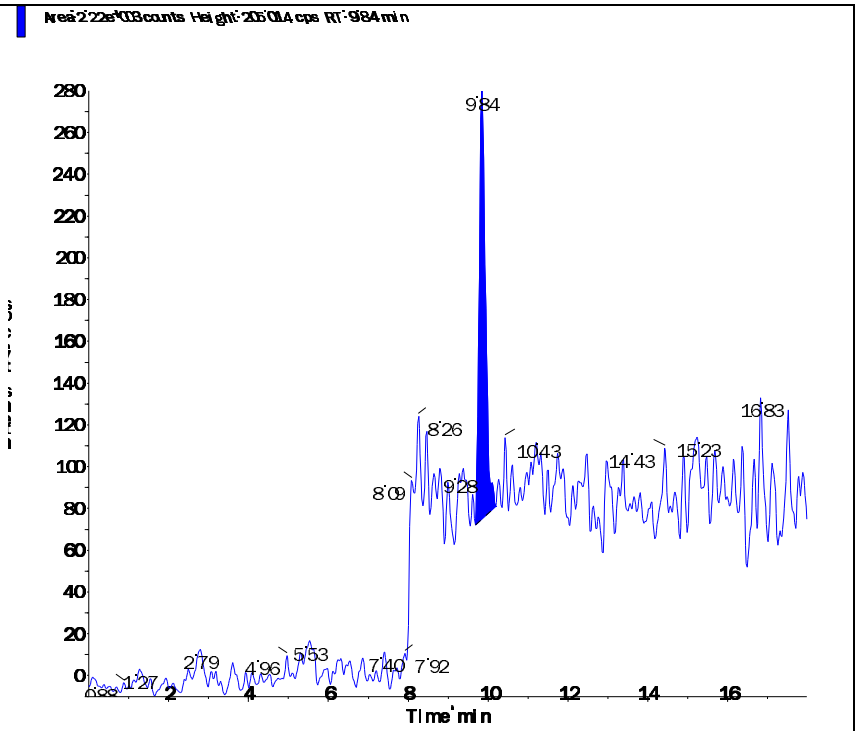

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.89 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

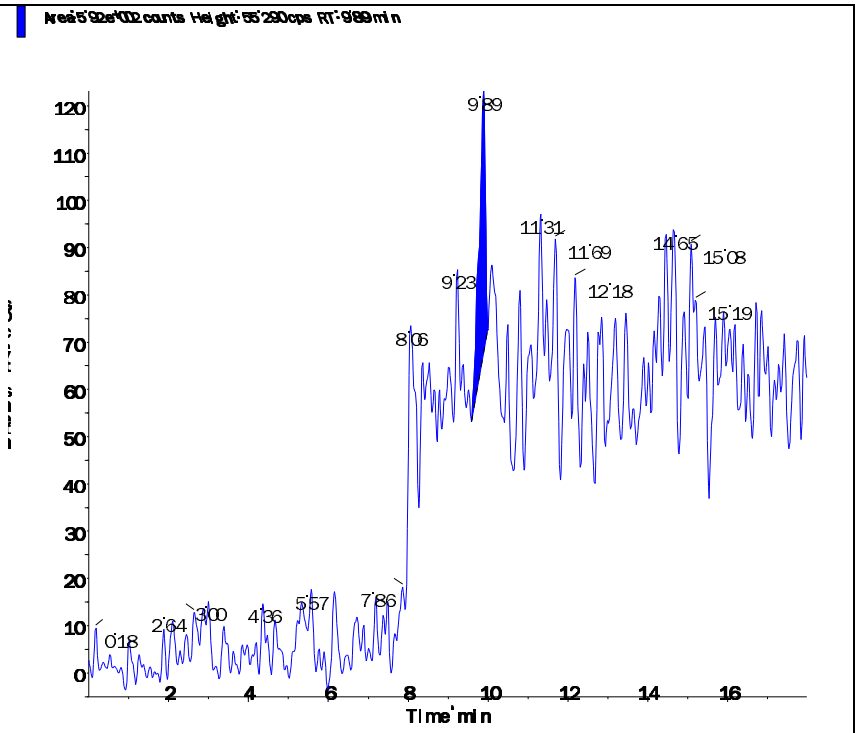

s.dataFile Page 2 of 2

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Created with Analyst Reporter
Printed: 5/6/2016 12:48 PM

Data File	LM34770.wiff	**Result Table**	050516_JWR.rdb
Acquisition Date	5/5/2016 7:01:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567744-02 BLANK	**Injection Vial**	5.00
Data File	LM34770.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 7:01:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050516_JWR.rdb
Sample ID	WG567744-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.280e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

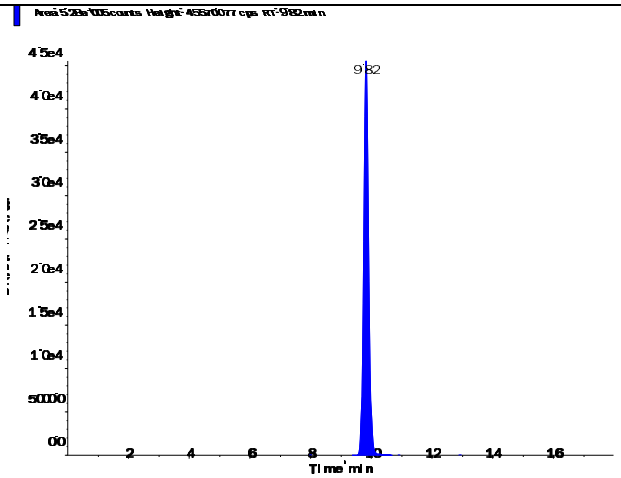

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

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Printed: 5/6/2016 12:48 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

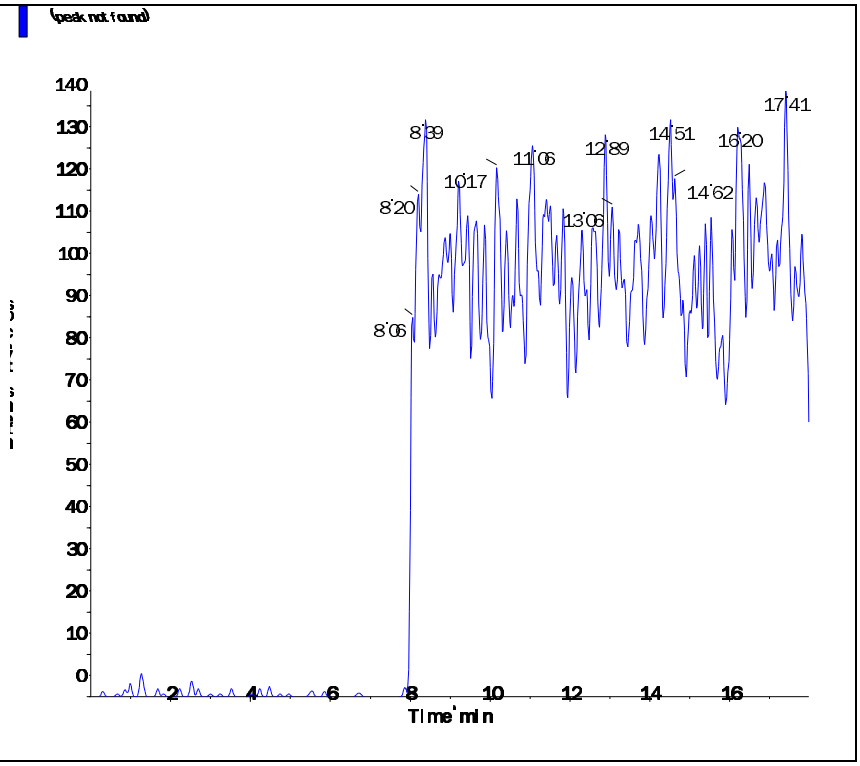

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

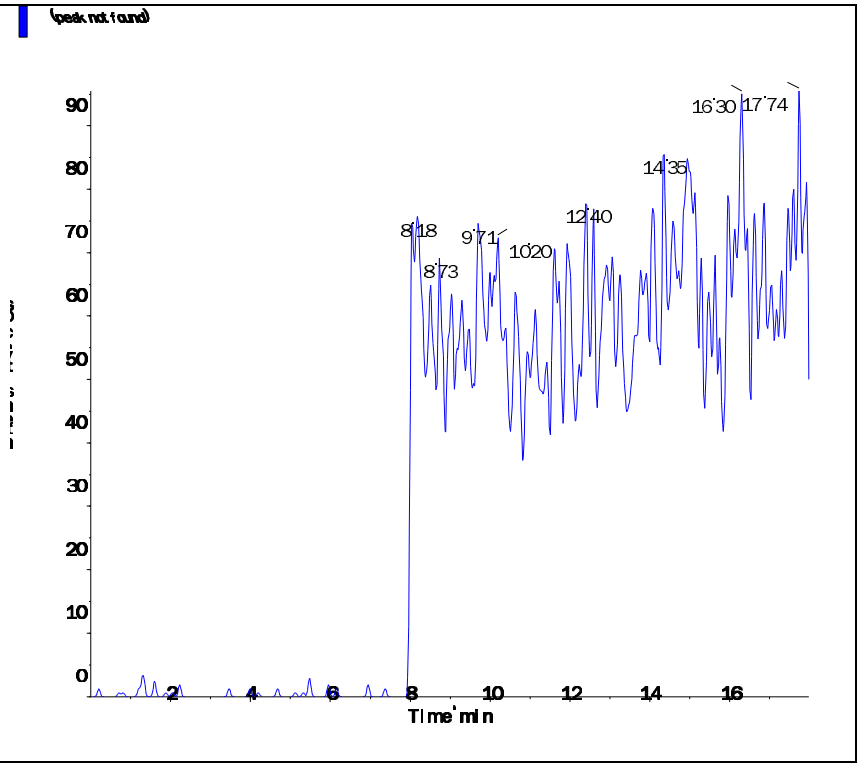

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/6/2016 1:49 PM

Data File	LM34722.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 4:37:26 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567224-03 LCS (2.0ug/kg)	**Injection Vial**	6.00
Data File	LM34722.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 4:37:26 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567224-03	**Dilution Factor**	1.00
Sample Comment	7,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.420e+05	9.86	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.890e+04	9.87	N/A	0.191
Perchlorate conf	1.140e+04	9.85	N/A	0.21

O18LP (Internal Standard)

RT (Exp. RT): 9.86(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

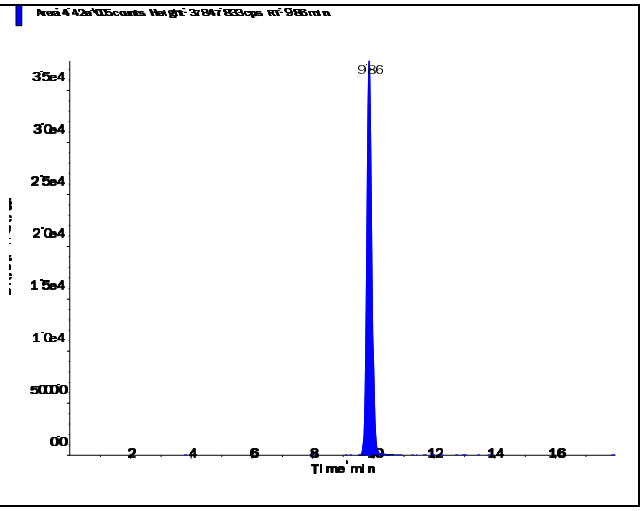

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Printed: 5/6/2016 1:49 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.87 (9.84) min
Calculated conc:	0.191 ng/ml
Area Ratio:	0.065
Sample Type:	(Unknown)

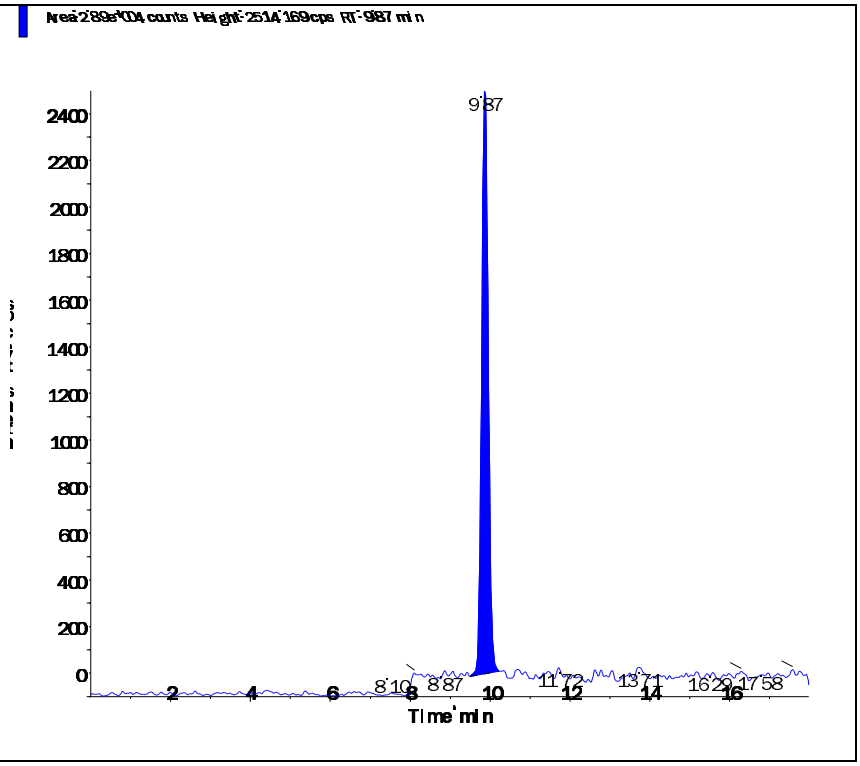

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

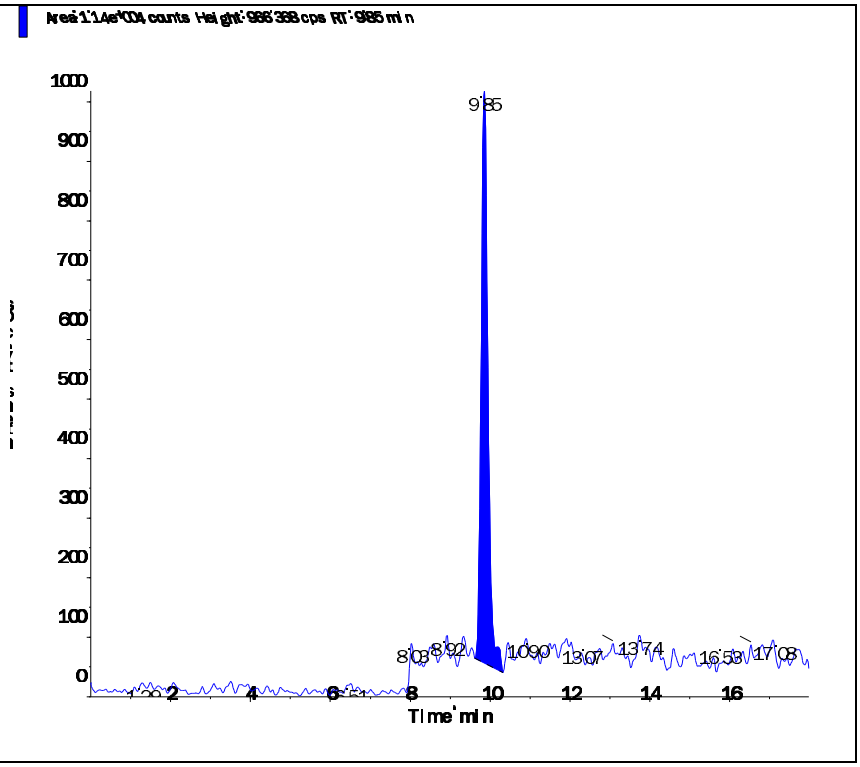

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/6/2016 12:49 PM

Data File	LM34771.wiff	**Result Table**	050516_JWR.rdb
Acquisition Date	5/5/2016 7:20:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567744-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM34771.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 7:20:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050516_JWR.rdb
Sample ID	WG567744-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.310e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.710e+04	9.84	N/A	0.204
Perchlorate conf	1.200e+04	9.83	N/A	0.182

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

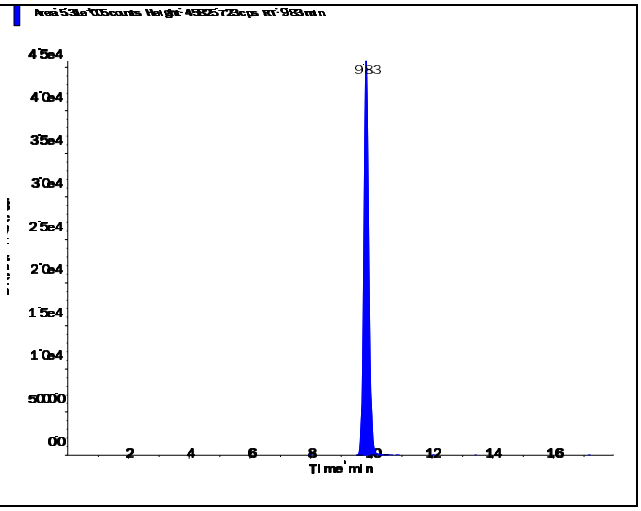

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Printed: 5/6/2016 12:49 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.204 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

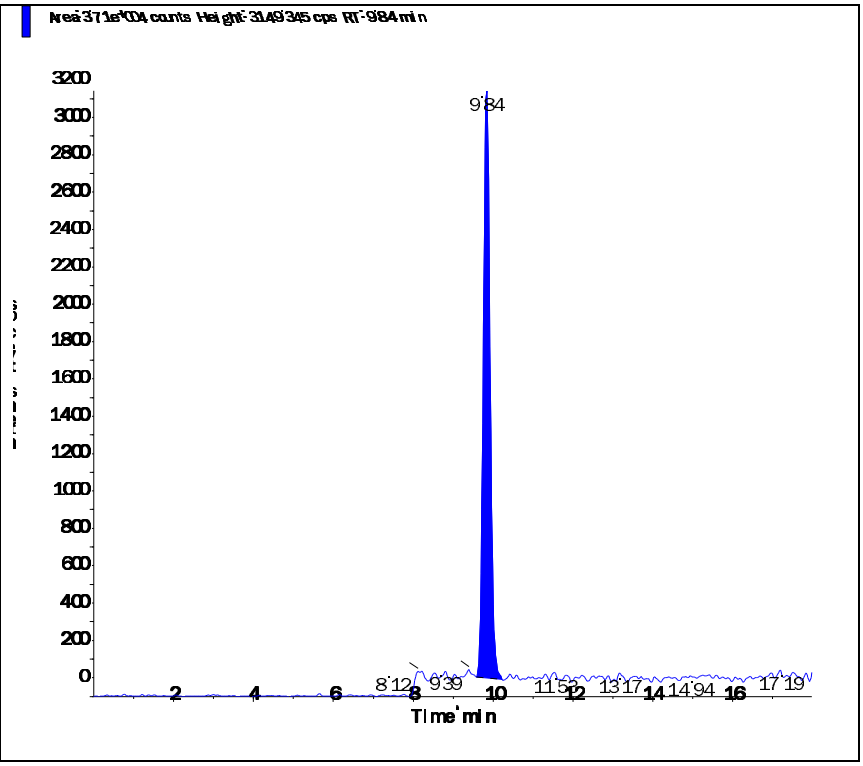

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.182 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

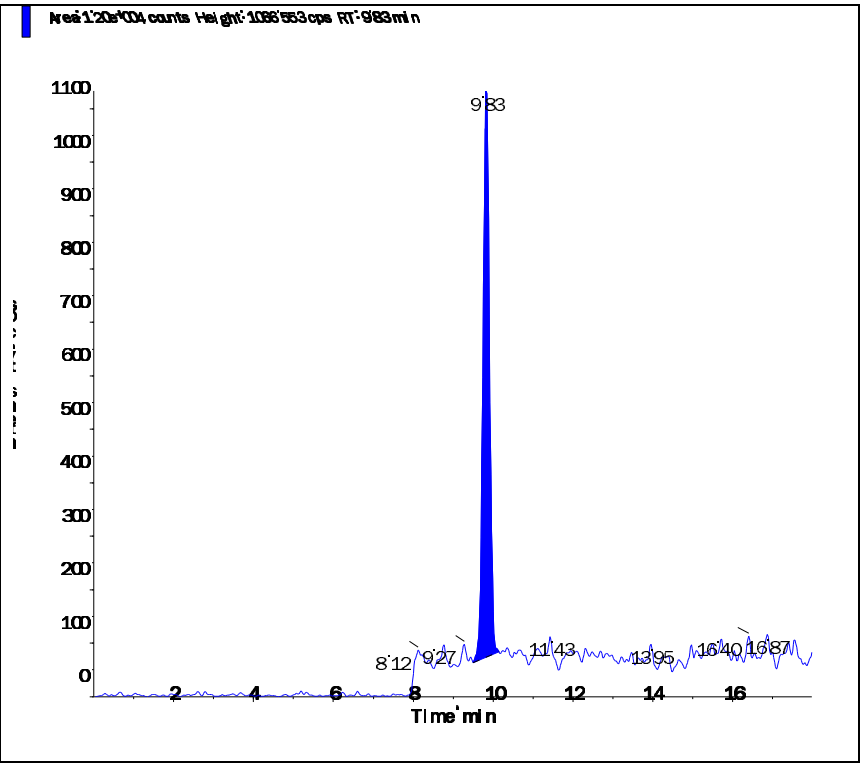

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/6/2016 12:49 PM

Data File	LM34772.wiff	**Result Table**	050516_JWR.rdb
Acquisition Date	5/5/2016 7:39:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567744-04 LCS2 (0.2ug/L)	**Injection Vial**	7.00
Data File	LM34772.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 7:39:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050516_JWR.rdb
Sample ID	WG567744-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.340e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.710e+04	9.84	N/A	0.203
Perchlorate conf	1.220e+04	9.81	N/A	0.185

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

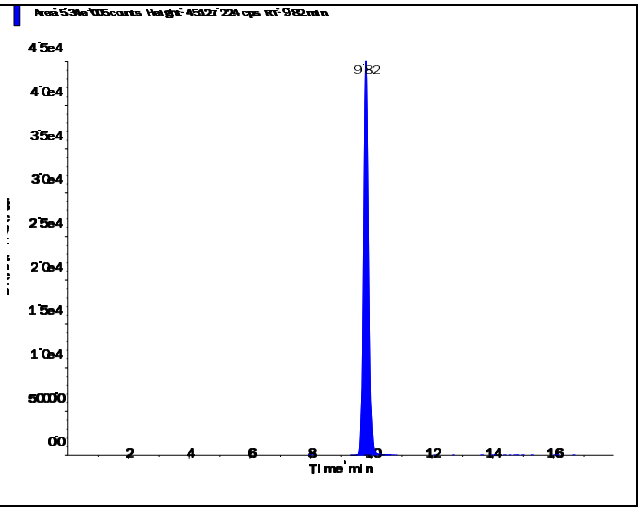

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.203 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

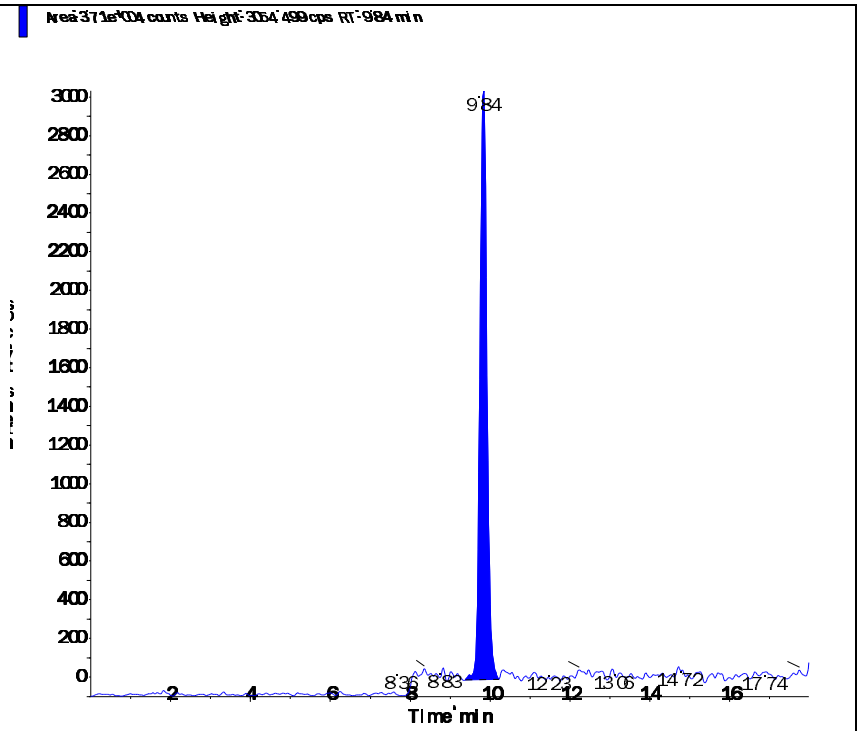

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.81 (9.84) min
Calculated conc:	0.185 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

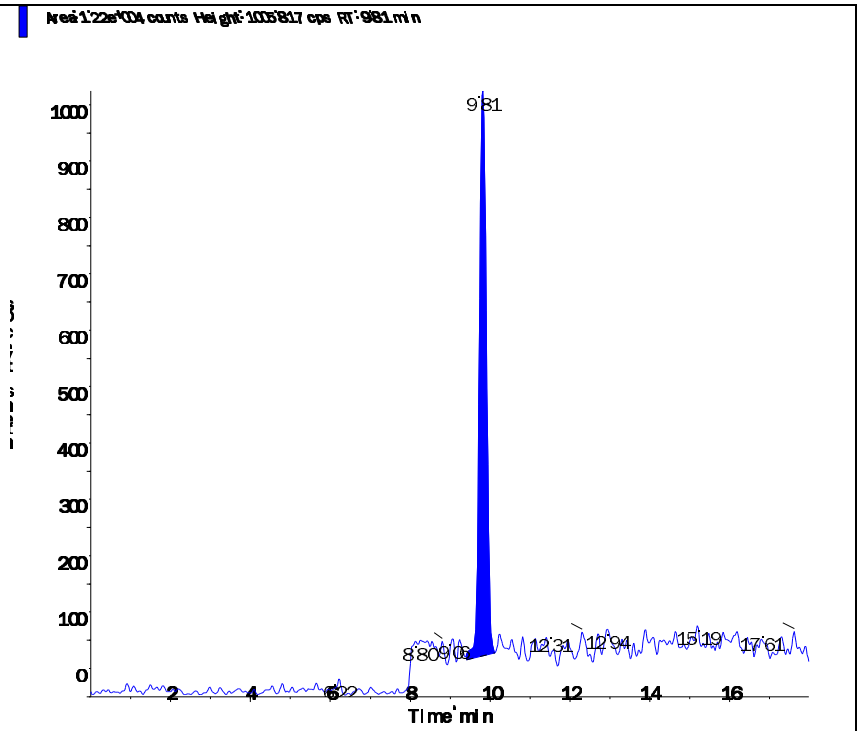

2.3 General Chemistry Data

2.3.1 Percent Solids Data

2.3.1.1 Raw Data

Example Percent Solids Calculations

1.0 Calculating the percent solids of a sample.

$$\%Solids = \frac{WT3 - WT1}{WT2 - WT1} \times F$$

Where:	
WT1 = Weight, in grams, of the empty container	1.30 g
WT2 = Weight, in grams, of the container and wet sample	21.274 g
WT3 = Weight, in grams, of the container and dried sample	5.21 g
F = Factor to get units as percent weight	100
%Solids = Percent solids present in sample.	19.58%

2.0 Calculating the percent moisture of a sample.

% Moisture = 100 - % Solids from 1.0 calculation

Microbac Laboratories Inc.

PERCENT SOLIDS

Workgroup (AAB#): WG567166 Analyst: AC ADT(on): 05/02/2016 13:27
Method: D2216-90 Instrument: BAL021 ADT(off): 05/03/2016 07:46
SOP: K0003 Rev: 14

SAMPLE NUMBER	EMPTY PAN WT 1	WET WT 2	DRY WT 3A	DRY WT 3B	DRY WT 3C	PERCENT SOLID	PERCENT MOISTURE
L16041580-01	1.29	22.615	19.375			84.81	
L16041580-02	1.29	26.3	21.786			81.95	
L16041580-03	1.292	21.625	17.404			79.24	
L16041580-04	1.289	23.096	18.339			78.19	
L16041580-05	1.29	21.915	17.591			79.04	
L16041580-06	1.291	23.333	19.695			83.50	
L16041580-07	1.291	23.333	19.695			83.50	
L16041580-08	1.291	23.333	19.695			83.50	
L16041580-09	1.291	24.126	21.052			86.54	
L16041580-10	1.279	23.631	20.752			87.12	
L16041580-11	1.287	26.575	22.453			83.70	
L16041580-12	1.287	22.289	18.564			82.26	
L16041580-13	1.29	22.339	18.135			80.03	
L16041582-01	1.294	23.384	17.777			74.62	
L16041582-02	1.29	28.32	23.412			81.84	
L16041582-03	1.284	27.318	22.576			81.79	
L16041582-04	1.286	24.705	20.245			80.96	
L16041582-05	1.282	22.281	19.089			84.80	
L16041582-06	1.287	22.079	18.368			82.15	
L16041582-07	1.295	25.736	20.946			80.40	
L16041606-01	1.285	21.833	20.389			92.97	
L16050014-01	1.283	24.256	20.829			85.08	
L16050014-02	1.3	24.953	19.642			77.55	
L16050014-03	1.291	20.806	17.713			84.15	
L16050014-04	1.288	21.983	19.998			90.41	
L16050014-05	1.293	24.293	20.492			83.47	
L16050014-06	1.282	21.966	19.672			88.91	
L16050030-01	1.287	25.15	21.127			83.14	
L16050030-02	1.293	25.733	21.431			82.40	
L16050030-03	1.292	33.629	27.446			80.88	
L16050030-04	1.284	22.714	19.483			84.92	
L16050030-05	1.284	22.779	18.96			82.23	
L16050030-06	1.284	25.307	21.079			82.40	
L16050030-07	1.284	21.993	18.291			82.12	
L16050030-08	1.296	27.13	22.36			81.54	
L16050030-09	1.299	22.008	18.096			81.11	
L16050030-10	1.293	23.646	19.239			80.28	
L16050030-11	1.294	25.085	20.158			79.29	
L16050030-12	1.293	22.244	18.628			82.74	
L16050030-13	1.294	25.484	20.914			81.11	
WG567166-01	1.287	22.079	18.368			82.15	17.85
WG567166-02	1.293	22.244	18.628			82.74	17.26

PERCENT_SOLIDS - Modified 04/24/2008
PDF ID: 4744054
Report generated: 05/03/2016 07:53

Microbac Laboratories Inc.

PERCENT SOLIDS

Workgroup (AAB#): WG567166 Analyst: AC ADT(on): 05/02/2016 13:27
Method: D2216-90 Instrument: BAL021 ADT(off): 05/03/2016 07:46
SOP: K0003 Rev: 14

SAMPLE NUMBER	EMPTY PAN WT 1	WET WT 2	DRY WT 3A	DRY WT 3B	DRY WT 3C	PERCENT SOLID	PERCENT MOISTURE
WG567166-03	1.288	23.865	19.897			82.42	17.58
WG567166-04	1.299	23.081	19.351			82.88	17.12

Analyst: [signature]

PERCENT_SOLIDS - Modified 04/24/2008
PDF ID: 4744054
Report generated: 05/03/2016 07:53

Microbac

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
May 16, 2016

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001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
May 16, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
May 16, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

COC No. A49373

158 Starlite Drive
Marietta, OH 45750

MICROBAC®

CHAIN-OF-CUSTODY RECORD

Phone: 740-373-4071
Toll Free: 800-373-4071

Company Name: AECOM

Project Contact: Linda Raabe ~~Marwan Sakanani~~

Contact Phone #: 210-253-7518

Turn Around Requirements: STANDARD

Location: LHAAP 5.15 18/24

Project ID: 60274185

Sampler (print): KAULIA PATIANES

Signature: Kaulia Patianes

Program: ☐ CWA ☐ RCRA ☐ DOD ☐ AFCEE ☐ Other _____

Sample I.D. No.	Comp	Grab	Date	Time	Matrix*	NUMBER OF CONTAINERS	Hold	VOCs 8260	Benzo[a]anthracene 6850	TOTAL # (LAB USE)	ADDITIONAL REQUIREMENTS
18CPTMW22DW(5-5.5)260416			4/26/16	0905	Soil	2		X	X		
18CPTMW22DW(10-10.5)260416				1000	"	2		X	X		
18CPTMW22DW(20-20.5)260416				1035	"	2		X	X		
18CPTMW22DW(29.5-30)260416				1115	"	2		X	X		
18CPTMW22DW(40-40.5)260416				1155	"	2		X	X		
18CPTMW22DW(50-51)260416				1415	"	2		X	X		
18CPTMW22DW(50-51)260416MS				1415	"	2		X	X		
18CPTMW22DW(50-51)260416MSD				1415	"	2		X	X		
18CPTMW22DW(60-60.5)260416				1500	"	2		X	X		
18CPTMW22DW(60-60.5)260416DUP				1500	"	2		X	X		
18CPTMW22DW(70-70.5)260416				1545	"	2		X	X		
18CPTMW22DW(80-80.5)260416				1645	"	2		X	X		
18CPTMW22DW(89.5-90)260416				1700	"	2		X	X		
Equipment Blank			4/25/16	1700	WQ	2		X	X		

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Relinquished by: (Signature)	Date	Time	Received by: (Signature)
Kaulia Patianes	4/28/16	1500					
Relinquished by: (Signature)	Date	Time	Received by: (Signature)				

Remarks:

Microbac OVD
Received: 04/29/2016 09:52
By: BRENDA GREGORY 221000085220
Brenda Gregory

*Water (W), Soil (S), Solid Waste (SD), Unknown (X)

Page _____ of _____

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041580
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 10-MAY-2016

Samplenum	Container ID	Products
L16041580-01	737053	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-APR-2016 12:58	BRG		
2	ANALYZ	V1	ORG4	29-APR-2016 18:12	AWE	AZH	
3	STORE	ORG4	A1	13-MAY-2016 07:39	CLS	AWE	

Samplenum	Container ID	Products
L16041580-01	737054	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-APR-2016 12:58	BRG		
2	PREP	W1	DIG	02-MAY-2016 13:18	AC	BRG	
3	STORE	DIG	W1	02-MAY-2016 13:56	BRG	AC	
4	ANALYZ	W1	SEM	02-MAY-2016 16:41	JWR	BRG	
5	ANALYZ*	DIG	SEMI	06-MAY-2016 15:22	JWR	AC	
6	STORE	SEM	A1	06-MAY-2016 15:51	CLS	JWR	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041580-02	737055	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-APR-2016 12:58	BRG		
2	ANALYZ	V1	ORG4	29-APR-2016 18:12	AWE	AZH	
3	STORE	ORG4	A1	13-MAY-2016 07:39	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041580
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 10-MAY-2016

Samplenum	Container ID	Products
L16041580-02	737056	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-APR-2016 12:58	BRG		
2	PREP	W1	DIG	02-MAY-2016 13:18	AC	BRG	
3	STORE	DIG	W1	02-MAY-2016 13:56	BRG	AC	
4	ANALYZ	W1	SEM	02-MAY-2016 16:42	JWR	BRG	
5	ANALYZ*	DIG	SEMI	06-MAY-2016 15:22	JWR	AC	
6	STORE	SEM	A1	06-MAY-2016 15:51	CLS	JWR	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041580-03	737057	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-APR-2016 12:58	BRG		
2	ANALYZ	V1	ORG4	29-APR-2016 18:12	AWE	AZH	
3	STORE	ORG4	A1	13-MAY-2016 07:39	CLS	AWE	

Samplenum	Container ID	Products
L16041580-03	737058	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-APR-2016 12:58	BRG		
2	PREP	W1	DIG	02-MAY-2016 13:18	AC	BRG	
3	STORE	DIG	W1	02-MAY-2016 13:56	BRG	AC	
4	ANALYZ	W1	SEM	02-MAY-2016 16:42	JWR	BRG	
5	ANALYZ*	DIG	SEMI	06-MAY-2016 15:22	JWR	AC	
6	STORE	SEM	A1	06-MAY-2016 15:51	CLS	JWR	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041580
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 10-MAY-2016

Samplenum	Container ID	Products
L16041580-04	737059	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-APR-2016 12:58	BRG		
2	ANALYZ	V1	ORG4	29-APR-2016 18:12	AWE	AZH	
3	STORE	ORG4	A1	13-MAY-2016 07:39	CLS	AWE	

Samplenum	Container ID	Products
L16041580-04	737060	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-APR-2016 12:58	BRG		
2	PREP	W1	DIG	02-MAY-2016 13:18	AC	BRG	
3	STORE	DIG	W1	02-MAY-2016 13:56	BRG	AC	
4	ANALYZ	W1	SEM	02-MAY-2016 16:42	JWR	BRG	
5	ANALYZ*	DIG	SEMI	06-MAY-2016 15:22	JWR	AC	
6	STORE	SEM	A1	06-MAY-2016 15:51	CLS	JWR	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041580-05	737061	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-APR-2016 12:58	BRG		
2	ANALYZ	V1	ORG4	29-APR-2016 18:12	AWE	AZH	
3	STORE	ORG4	A1	13-MAY-2016 07:39	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041580
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 10-MAY-2016

Samplenum	Container ID	Products
L16041580-05	737062	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-APR-2016 12:58	BRG		
2	PREP	W1	DIG	02-MAY-2016 13:18	AC	BRG	
3	STORE	DIG	W1	02-MAY-2016 13:56	BRG	AC	
4	ANALYZ	W1	SEM	02-MAY-2016 16:42	JWR	BRG	
5	ANALYZ*	DIG	SEMI	06-MAY-2016 15:22	JWR	AC	
6	STORE	SEM	A1	06-MAY-2016 15:52	CLS	JWR	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041580-06	737063	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-APR-2016 12:58	BRG		
2	ANALYZ	V1	ORG4	29-APR-2016 18:12	AWE	AZH	
3	STORE	ORG4	A1	13-MAY-2016 07:39	CLS	AWE	

Samplenum	Container ID	Products
L16041580-06	737064	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-APR-2016 12:58	BRG		
2	PREP	W1	DIG	02-MAY-2016 13:18	AC	BRG	
3	STORE	DIG	W1	02-MAY-2016 13:56	BRG	AC	
4	ANALYZ	W1	SEM	02-MAY-2016 16:42	JWR	BRG	
5	ANALYZ*	DIG	SEMI	06-MAY-2016 15:22	JWR	AC	
6	STORE	SEM	A1	06-MAY-2016 15:52	CLS	JWR	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041580
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 10-MAY-2016

Samplenum	Container ID	Products
L16041580-07	737065	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-APR-2016 12:58	BRG		
2	ANALYZ	V1	ORG4	29-APR-2016 18:12	AWE	AZH	
3	STORE	ORG4	A1	13-MAY-2016 07:39	CLS	AWE	

Samplenum	Container ID	Products
L16041580-07	737066	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	DIG	29-APR-2016 12:58	BRG		
2	STORE	DIG	W1	02-MAY-2016 13:56	BRG	AC	
3	ANALYZ	W1	SEM	02-MAY-2016 16:42	JWR	BRG	
4	STORE	SEM	A1	06-MAY-2016 15:52	CLS	JWR	

Samplenum	Container ID	Products
L16041580-08	737067	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-APR-2016 12:58	BRG		
2	ANALYZ	V1	ORG4	29-APR-2016 18:12	AWE	AZH	
3	STORE	ORG4	A1	13-MAY-2016 07:39	CLS	AWE	

Samplenum	Container ID	Products
L16041580-08	737068	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-APR-2016 12:58	BRG		
2	PREP	W1	DIG	02-MAY-2016 13:18	AC	BRG	
3	STORE	DIG	W1	02-MAY-2016 13:56	BRG	AC	
4	ANALYZ	W1	SEM	02-MAY-2016 16:42	JWR	BRG	
5	ANALYZ*	DIG	SEMI	06-MAY-2016 15:22	JWR	AC	
6	STORE	SEM	A1	06-MAY-2016 15:52	CLS	JWR	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041580
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 10-MAY-2016

Samplenum	Container ID	Products
L16041580-09	737069	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-APR-2016 12:58	BRG		
2	ANALYZ	V1	ORG4	29-APR-2016 18:12	AWE	AZH	
3	STORE	ORG4	A1	13-MAY-2016 07:39	CLS	AWE	

Samplenum	Container ID	Products
L16041580-09	737070	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-APR-2016 12:58	BRG		
2	PREP	W1	DIG	02-MAY-2016 13:18	AC	BRG	
3	STORE	DIG	W1	02-MAY-2016 13:56	BRG	AC	
4	ANALYZ	W1	SEM	02-MAY-2016 16:42	JWR	BRG	
5	ANALYZ*	DIG	SEMI	06-MAY-2016 15:22	JWR	AC	
6	STORE	SEM	A1	06-MAY-2016 15:52	CLS	JWR	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041580-10	737071	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-APR-2016 12:58	BRG		
2	ANALYZ	V1	ORG4	29-APR-2016 18:12	AWE	AZH	
3	STORE	ORG4	A1	13-MAY-2016 07:39	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041580
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 10-MAY-2016

Samplenum	Container ID	Products
L16041580-10	737072	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-APR-2016 12:58	BRG		
2	PREP	W1	DIG	02-MAY-2016 13:18	AC	BRG	
3	STORE	DIG	W1	02-MAY-2016 13:56	BRG	AC	
4	ANALYZ	W1	SEM	02-MAY-2016 16:42	JWR	BRG	
5	ANALYZ*	DIG	SEMI	06-MAY-2016 15:22	JWR	AC	
6	STORE	SEM	A1	06-MAY-2016 15:52	CLS	JWR	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041580-11	737073	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-APR-2016 12:58	BRG		
2	ANALYZ	V1	ORG4	29-APR-2016 18:12	AWE	AZH	
3	STORE	ORG4	A1	13-MAY-2016 07:39	CLS	AWE	

Samplenum	Container ID	Products
L16041580-11	737074	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-APR-2016 12:58	BRG		
2	PREP	W1	DIG	02-MAY-2016 13:18	AC	BRG	
3	STORE	DIG	W1	02-MAY-2016 13:56	BRG	AC	
4	ANALYZ	W1	SEM	02-MAY-2016 16:42	JWR	BRG	
5	ANALYZ*	DIG	SEMI	06-MAY-2016 15:22	JWR	AC	
6	STORE	SEM	A1	06-MAY-2016 15:52	CLS	JWR	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041580
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 10-MAY-2016

Samplenum	Container ID	Products
L16041580-12	737075	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-APR-2016 12:58	BRG		
2	ANALYZ	V1	ORG4	29-APR-2016 18:12	AWE	AZH	
3	STORE	ORG4	A1	13-MAY-2016 07:39	CLS	AWE	

Samplenum	Container ID	Products
L16041580-12	737076	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-APR-2016 12:58	BRG		
2	PREP	W1	DIG	02-MAY-2016 13:18	AC	BRG	
3	STORE	DIG	W1	02-MAY-2016 13:56	BRG	AC	
4	ANALYZ	W1	SEM	02-MAY-2016 16:42	JWR	BRG	
5	ANALYZ*	DIG	SEMI	06-MAY-2016 15:22	JWR	AC	
6	STORE	SEM	A1	06-MAY-2016 15:52	CLS	JWR	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041580-13	737077	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-APR-2016 12:58	BRG		
2	ANALYZ	V1	ORG4	29-APR-2016 18:12	AWE	AZH	
3	STORE	ORG4	A1	13-MAY-2016 07:39	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041580
Account: 2551
Project: 2551.096
Samples: 14
Due Date: 10-MAY-2016

Samplenum	Container ID	Products
L16041580-13	737078	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-APR-2016 12:58	BRG		
2	PREP	W1	DIG	02-MAY-2016 13:18	AC	BRG	
3	STORE	DIG	W1	02-MAY-2016 13:56	BRG	AC	
4	ANALYZ	W1	SEM	02-MAY-2016 16:42	JWR	BRG	
5	ANALYZ*	DIG	SEMI	06-MAY-2016 15:22	JWR	AC	
6	STORE	SEM	A1	06-MAY-2016 15:52	CLS	JWR	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041580-14	737079	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-APR-2016 12:58	BRG		
2	ANALYZ	V1	ORG4	02-MAY-2016 07:35	AWE	CLS	
3	STORE	ORG4	A1	12-MAY-2016 07:34	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-APR-2016 12:58	BRG		
2	ANALYZ	V1	ORG4	02-MAY-2016 07:35	AWE	CLS	
3	STORE	ORG4	A1	12-MAY-2016 07:34	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-APR-2016 12:58	BRG		
2	ANALYZ	V1	ORG4	02-MAY-2016 07:35	AWE	CLS	

Samplenum	Container ID	Products
L16041580-14	737080	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-APR-2016 12:58	BRG		
2	ANALYZ	W1	SEM	05-MAY-2016 14:26	JWR	CLS	
3	STORE	SEM	A1	06-MAY-2016 15:51	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16041582

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Stephanie Mossburg – Team Chemist/Data Specialist
(740) 373-4071
Stephanie.Mossburg@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on May 12 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00113829	H	0.0		J2317165689	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	NA
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	NA

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18CPTMW23SW(5-5.5)	L16041582-01	04/27/2016 14:15	04/29/2016 09:52
18CPTMW23SW(10-10.5)	L16041582-02	04/27/2016 14:40	04/29/2016 09:52
18CPTMW23SW(20-20.5)	L16041582-03	04/27/2016 14:45	04/29/2016 09:52
18CPTMW23SW(30-30.5)	L16041582-04	04/27/2016 14:50	04/29/2016 09:52
18CPTMW23SW(40-40.5)	L16041582-05	04/27/2016 16:15	04/29/2016 09:52
18CPTMW23SW(60-60.5)	L16041582-06	04/27/2016 17:35	04/29/2016 09:52
18CPTMW23SW(50-50.5)	L16041582-07	04/27/2016 17:45	04/29/2016 09:52

Microbac REPORT L16041582
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.1 Narratives

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041582
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG567938	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-05-11 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2016-05-11 18:24:21

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041582
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG567938	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-05-11 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041582
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG567938	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-05-11 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			1
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041582
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG567938	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-05-11 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			2
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041582
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG567938	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-05-11 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041582
Project Name:		**Method:**	8260
Prep Batch Number(s):	WG567938	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-05-11 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1)Trichloroethene exceeded the UCL in the MS/MSD.

2)1,2-Dibromo-3-Chloropropane, 2-Hexanone, 4-Methyl-2-Pentanone, Naphthalene exceeded the UCL in the CCV.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041582
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG567224	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-05-09 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Wade DeLong	Wade DeLong	Chemist I	2016-05-09 13:44:04

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041582
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG567224	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-05-09 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?	X				
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041582
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG567224	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-05-09 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			ER1
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041582
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG567224	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-05-09 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041582
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG567224	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-05-09 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041582
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG567224	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-05-09 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER1 The MS and MSD recoveries were below the advisory limit. The MS and MSD were not associated with this SDG.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041582
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG567166	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-05-09 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Deanna Hesson	Deanna Hesson	Conventional Lab Supervisor	2016-05-09 16:02:36

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041582
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG567166	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-05-09 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification					
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?			X		
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?			X		
Were sample detection limits reported for all analytes not detected?			X		
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?			X		
Were blanks analyzed at the appropriate frequency?			X		
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?			X		
Were blank concentrations < MQL?			X		
Laboratory control samples (LCS):			X		
Were all COCs included in the LCS?			X		

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041582
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG567166	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-05-09 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?			X		
Were LCSs analyzed at the required frequency?			X		
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?			X		
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?			X		
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?			X		
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?			X		
Are unadjusted MQLs and DCSs included in the laboratory data package?			X		
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?			X		
Were percent RSDs or correlation coefficient criteria met?			X		

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041582
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG567166	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-05-09 00:00:00		

Was the number of standards recommended in the method used for all analytes?			X		
Were all points generated between the lowest and highest standard used to calculate the curve?			X		
Are ICAL data available for all instruments used?			X		
Has the initial calibration curve been verified using an appropriate second source standard?			X		
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?			X		
Were percent differences for each analyte within the method-required QC limits?			X		
Was the ICAL curve verified for each analyte?			X		
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)			X		
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)			X		
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions			X		
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041582
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG567166	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-05-09 00:00:00		

Was a MDL study performed for each reported analyte?			X		
Is the MDL either adjusted or supported by the analysis of DCSs?			X		
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?			X		
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)	X				
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16041582
Project Name:		**Method:**	PCT-S
Prep Batch Number(s):	WG567166	**Reviewer Name:**	Deanna Hesson
LRC Date:	2016-05-09 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041582-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW23SW(5-5.5)	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:52
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG567938	**Analyst:**	TMB	**Run Date:**	05/07/2016 16:44
Collect Date:	04/27/2016 14:15	**Dilution:**	1	**File ID:**	6M139125
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	74.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	14.7	U	29.3	14.7	7.33
Benzene	71-43-2	1.47	U	7.33	1.47	0.733
Bromobenzene	108-86-1	1.47	U	7.33	1.47	0.733
Bromochloromethane	74-97-5	2.94	U	7.33	2.94	1.47
Bromodichloromethane	75-27-4	1.47	U	7.33	1.47	0.733
Bromoform	75-25-2	1.47	U	7.33	1.47	0.733
Bromomethane	74-83-9	2.94	U	7.33	2.94	1.47
2-Butanone	78-93-3	7.34	U	14.7	7.34	3.67
n-Butylbenzene	104-51-8	1.47	U	7.33	1.47	0.733
sec-Butylbenzene	135-98-8	1.47	U	7.33	1.47	0.733
tert-Butylbenzene	98-06-6	1.47	U	7.33	1.47	0.733
Carbon disulfide	75-15-0	1.47	U	7.33	1.47	0.733
Carbon tetrachloride	56-23-5	1.47	U	7.33	1.47	0.733
Chlorobenzene	108-90-7	1.47	U	7.33	1.47	0.733
Chlorodibromomethane	124-48-1	1.47	U	7.33	1.47	0.733
Chloroethane	75-00-3	2.94	U	7.33	2.94	1.47
Chloroform	67-66-3	1.47	U	7.33	1.47	0.733
Chloromethane	74-87-3	5.86	U	14.7	5.86	2.93
2-Chlorotoluene	95-49-8	1.47	U	7.33	1.47	0.733
4-Chlorotoluene	106-43-4	1.47	U	7.33	1.47	0.733
1,2-Dibromo-3-chloropropane	96-12-8	5.86	Q	14.7	5.86	2.93
1,2-Dibromoethane	106-93-4	1.47	U	7.33	1.47	0.733
Dibromomethane	74-95-3	1.47	U	7.33	1.47	0.733
1,2-Dichlorobenzene	95-50-1	1.47	U	7.33	1.47	0.733
1,3-Dichlorobenzene	541-73-1	1.47	U	7.33	1.47	0.733
1,4-Dichlorobenzene	106-46-7	1.47	U	7.33	1.47	0.733
Dichlorodifluoromethane	75-71-8	2.94	U	7.33	2.94	1.47
1,1-Dichloroethane	75-34-3	2.94	U	7.33	2.94	1.47
1,2-Dichloroethane	107-06-2	4.13	J	7.33	1.47	0.733
1,1-Dichloroethene	75-35-4	1.47	U	7.33	1.47	0.733
cis-1,2-Dichloroethene	156-59-2	9.99		7.33	1.47	0.733
trans-1,2-Dichloroethene	156-60-5	1.47	U	7.33	1.47	0.733

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.47	U	7.33	1.47	0.733
1,3-Dichloropropane	142-28-9	1.47	U	7.33	1.47	0.733
2,2-Dichloropropane	594-20-7	1.47	U	7.33	1.47	0.733
cis-1,3-Dichloropropene	10061-01-5	1.47	U	7.33	1.47	0.733
trans-1,3-Dichloropropene	10061-02-6	1.47	U	7.33	1.47	0.733
1,1-Dichloropropene	563-58-6	1.47	U	7.33	1.47	0.733
Ethylbenzene	100-41-4	1.47	U	7.33	1.47	0.733
2-Hexanone	591-78-6	7.34	Q	14.7	7.34	3.67
Hexachlorobutadiene	87-68-3	1.47	U	7.33	1.47	0.733
Isopropylbenzene	98-82-8	1.47	U	7.33	1.47	0.733
p-Isopropyltoluene	99-87-6	4.51	J	7.33	1.47	0.733
4-Methyl-2-pentanone	108-10-1	7.34	Q	14.7	7.34	3.67
Methylene chloride	75-09-2	2.94	U	7.33	2.94	1.47
Naphthalene	91-20-3	1.47	Q	7.33	1.47	0.733
n-Propylbenzene	103-65-1	1.47	U	7.33	1.47	0.733
Styrene	100-42-5	1.47	U	7.33	1.47	0.733
1,1,1,2-Tetrachloroethane	630-20-6	1.47	U	7.33	1.47	0.733
1,1,2,2-Tetrachloroethane	79-34-5	1.47	U	7.33	1.47	0.733
Tetrachloroethene	127-18-4	1.47	U	7.33	1.47	0.733
Toluene	108-88-3	1.47	U	7.33	1.47	0.733
1,2,3-Trichlorobenzene	87-61-6	1.47	U	7.33	1.47	0.733
1,2,4-Trichlorobenzene	120-82-1	1.47	U	7.33	1.47	0.733
1,1,1-Trichloroethane	71-55-6	1.47	U	7.33	1.47	0.733
1,1,2-Trichloroethane	79-00-5	1.47	U	7.33	1.47	0.733
Trichloroethene	79-01-6	47.6		7.33	1.47	0.733
Trichlorofluoromethane	75-69-4	2.94	U	7.33	2.94	1.47
1,2,3-Trichloropropane	96-18-4	2.94	U	7.33	2.94	1.47
1,2,4-Trimethylbenzene	95-63-6	2.29	J	7.33	1.47	0.733
1,3,5-Trimethylbenzene	108-67-8	1.47	U	7.33	1.47	0.733
Vinyl chloride	75-01-4	2.94	U	7.33	2.94	1.47
o-Xylene	95-47-6	1.47	U	7.33	1.47	0.733
m-,p-Xylene	179601-23-1	1.47	U	7.33	1.47	0.733

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.5	80	120	
1,2-Dichloroethane-d4	86.4	80	120	
Toluene-d8	105	85	115	
4-Bromofluorobenzene	106	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041582-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW23SW(5-5.5)	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 21:59
Collect Date:	04/27/2016 14:15	**Dilution:**	1	**File ID:**	1LM.LM34739
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	74.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	19.6		5.16	2.58	1.29

Certificate of Analysis

Sample #:	L16041582-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW23SW(10-10.5)	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:54
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG567938	**Analyst:**	TMB	**Run Date:**	05/07/2016 17:17
Collect Date:	04/27/2016 14:40	**Dilution:**	1	**File ID:**	6M139126
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.4	U	24.8	12.4	6.20
Benzene	71-43-2	1.24	U	6.20	1.24	0.620
Bromobenzene	108-86-1	1.24	U	6.20	1.24	0.620
Bromochloromethane	74-97-5	2.48	U	6.20	2.48	1.24
Bromodichloromethane	75-27-4	1.24	U	6.20	1.24	0.620
Bromoform	75-25-2	1.24	U	6.20	1.24	0.620
Bromomethane	74-83-9	2.48	U	6.20	2.48	1.24
2-Butanone	78-93-3	6.20	U	12.4	6.20	3.10
n-Butylbenzene	104-51-8	1.24	U	6.20	1.24	0.620
sec-Butylbenzene	135-98-8	1.24	U	6.20	1.24	0.620
tert-Butylbenzene	98-06-6	1.24	U	6.20	1.24	0.620
Carbon disulfide	75-15-0	1.24	U	6.20	1.24	0.620
Carbon tetrachloride	56-23-5	1.24	U	6.20	1.24	0.620
Chlorobenzene	108-90-7	1.24	U	6.20	1.24	0.620
Chlorodibromomethane	124-48-1	1.24	U	6.20	1.24	0.620
Chloroethane	75-00-3	2.48	U	6.20	2.48	1.24
Chloroform	67-66-3	1.24	U	6.20	1.24	0.620
Chloromethane	74-87-3	4.96	U	12.4	4.96	2.48
2-Chlorotoluene	95-49-8	1.24	U	6.20	1.24	0.620
4-Chlorotoluene	106-43-4	1.24	U	6.20	1.24	0.620

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	4.96	Q	12.4	4.96	2.48
1,2-Dibromoethane	106-93-4	1.24	U	6.20	1.24	0.620
Dibromomethane	74-95-3	1.24	U	6.20	1.24	0.620
1,2-Dichlorobenzene	95-50-1	1.24	U	6.20	1.24	0.620
1,3-Dichlorobenzene	541-73-1	1.24	U	6.20	1.24	0.620
1,4-Dichlorobenzene	106-46-7	1.24	U	6.20	1.24	0.620
Dichlorodifluoromethane	75-71-8	2.48	U	6.20	2.48	1.24
1,1-Dichloroethane	75-34-3	2.48	U	6.20	2.48	1.24
1,2-Dichloroethane	107-06-2	26.3		6.20	1.24	0.620
1,1-Dichloroethene	75-35-4	1.24	U	6.20	1.24	0.620
cis-1,2-Dichloroethene	156-59-2	10.9		6.20	1.24	0.620
trans-1,2-Dichloroethene	156-60-5	1.24	U	6.20	1.24	0.620
1,2-Dichloropropane	78-87-5	1.24	U	6.20	1.24	0.620
1,3-Dichloropropane	142-28-9	1.24	U	6.20	1.24	0.620
2,2-Dichloropropane	594-20-7	1.24	U	6.20	1.24	0.620
cis-1,3-Dichloropropene	10061-01-5	1.24	U	6.20	1.24	0.620
trans-1,3-Dichloropropene	10061-02-6	1.24	U	6.20	1.24	0.620
1,1-Dichloropropene	563-58-6	1.24	U	6.20	1.24	0.620
Ethylbenzene	100-41-4	1.24	U	6.20	1.24	0.620
2-Hexanone	591-78-6	6.20	Q	12.4	6.20	3.10
Hexachlorobutadiene	87-68-3	1.24	U	6.20	1.24	0.620
Isopropylbenzene	98-82-8	1.24	U	6.20	1.24	0.620
p-Isopropyltoluene	99-87-6	1.24	U	6.20	1.24	0.620
4-Methyl-2-pentanone	108-10-1	6.20	Q	12.4	6.20	3.10
Methylene chloride	75-09-2	2.48	U	6.20	2.48	1.24
Naphthalene	91-20-3	1.24	Q	6.20	1.24	0.620
n-Propylbenzene	103-65-1	1.24	U	6.20	1.24	0.620
Styrene	100-42-5	1.24	U	6.20	1.24	0.620
1,1,1,2-Tetrachloroethane	630-20-6	1.24	U	6.20	1.24	0.620
1,1,2,2-Tetrachloroethane	79-34-5	1.24	U	6.20	1.24	0.620
Tetrachloroethene	127-18-4	1.24	U	6.20	1.24	0.620
Toluene	108-88-3	1.24	U	6.20	1.24	0.620
1,2,3-Trichlorobenzene	87-61-6	1.24	U	6.20	1.24	0.620
1,2,4-Trichlorobenzene	120-82-1	1.24	U	6.20	1.24	0.620
1,1,1-Trichloroethane	71-55-6	1.24	U	6.20	1.24	0.620
1,1,2-Trichloroethane	79-00-5	1.24	U	6.20	1.24	0.620
Trichloroethene	79-01-6	187		6.20	1.24	0.620
Trichlorofluoromethane	75-69-4	2.48	U	6.20	2.48	1.24
1,2,3-Trichloropropane	96-18-4	2.48	U	6.20	2.48	1.24

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Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.24	U	6.20	1.24	0.620
1,3,5-Trimethylbenzene	108-67-8	1.24	U	6.20	1.24	0.620
Vinyl chloride	75-01-4	2.48	U	6.20	2.48	1.24
o-Xylene	95-47-6	1.24	U	6.20	1.24	0.620
m-,p-Xylene	179601-23-1	1.24	U	6.20	1.24	0.620

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.2	80	120	
1,2-Dichloroethane-d4	88.9	80	120	
Toluene-d8	98.7	85	115	
4-Bromofluorobenzene	102	85	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041582-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW23SW(10-10.5)	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/05/2016 14:47
Collect Date:	04/27/2016 14:40	**Dilution:**	100	**File ID:**	1LM.LM34758
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	81.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1920		478	238	119

Certificate of Analysis

Sample #:	L16041582-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW23SW(20-20.5)	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:54
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG567938	**Analyst:**	TMB	**Run Date:**	05/07/2016 17:49
Collect Date:	04/27/2016 14:45	**Dilution:**	1	**File ID:**	6M139127
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.1	J	23.7	11.8	5.92
Benzene	71-43-2	1.18	U	5.92	1.18	0.592
Bromobenzene	108-86-1	1.18	U	5.92	1.18	0.592
Bromochloromethane	74-97-5	2.36	U	5.92	2.36	1.18
Bromodichloromethane	75-27-4	1.18	U	5.92	1.18	0.592
Bromoform	75-25-2	1.18	U	5.92	1.18	0.592
Bromomethane	74-83-9	2.36	U	5.92	2.36	1.18
2-Butanone	78-93-3	5.92	U	11.8	5.92	2.96
n-Butylbenzene	104-51-8	1.18	U	5.92	1.18	0.592
sec-Butylbenzene	135-98-8	1.18	U	5.92	1.18	0.592
tert-Butylbenzene	98-06-6	1.18	U	5.92	1.18	0.592
Carbon disulfide	75-15-0	1.18	U	5.92	1.18	0.592
Carbon tetrachloride	56-23-5	1.18	U	5.92	1.18	0.592
Chlorobenzene	108-90-7	1.18	U	5.92	1.18	0.592
Chlorodibromomethane	124-48-1	1.18	U	5.92	1.18	0.592
Chloroethane	75-00-3	2.36	U	5.92	2.36	1.18
Chloroform	67-66-3	1.18	U	5.92	1.18	0.592
Chloromethane	74-87-3	4.74	U	11.8	4.74	2.37
2-Chlorotoluene	95-49-8	1.18	U	5.92	1.18	0.592
4-Chlorotoluene	106-43-4	1.18	U	5.92	1.18	0.592

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Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	4.74	Q	11.8	4.74	2.37
1,2-Dibromoethane	106-93-4	1.18	U	5.92	1.18	0.592
Dibromomethane	74-95-3	1.18	U	5.92	1.18	0.592
1,2-Dichlorobenzene	95-50-1	1.18	U	5.92	1.18	0.592
1,3-Dichlorobenzene	541-73-1	1.18	U	5.92	1.18	0.592
1,4-Dichlorobenzene	106-46-7	1.18	U	5.92	1.18	0.592
Dichlorodifluoromethane	75-71-8	2.36	U	5.92	2.36	1.18
1,1-Dichloroethane	75-34-3	2.36	U	5.92	2.36	1.18
1,2-Dichloroethane	107-06-2	1.64	J	5.92	1.18	0.592
1,1-Dichloroethene	75-35-4	1.18	U	5.92	1.18	0.592
cis-1,2-Dichloroethene	156-59-2	1.18	U	5.92	1.18	0.592
trans-1,2-Dichloroethene	156-60-5	1.18	U	5.92	1.18	0.592
1,2-Dichloropropane	78-87-5	1.18	U	5.92	1.18	0.592
1,3-Dichloropropane	142-28-9	1.18	U	5.92	1.18	0.592
2,2-Dichloropropane	594-20-7	1.18	U	5.92	1.18	0.592
cis-1,3-Dichloropropene	10061-01-5	1.18	U	5.92	1.18	0.592
trans-1,3-Dichloropropene	10061-02-6	1.18	U	5.92	1.18	0.592
1,1-Dichloropropene	563-58-6	1.18	U	5.92	1.18	0.592
Ethylbenzene	100-41-4	1.18	U	5.92	1.18	0.592
2-Hexanone	591-78-6	5.92	Q	11.8	5.92	2.96
Hexachlorobutadiene	87-68-3	1.18	U	5.92	1.18	0.592
Isopropylbenzene	98-82-8	1.18	U	5.92	1.18	0.592
p-Isopropyltoluene	99-87-6	1.18	U	5.92	1.18	0.592
4-Methyl-2-pentanone	108-10-1	5.92	Q	11.8	5.92	2.96
Methylene chloride	75-09-2	2.36	U	5.92	2.36	1.18
Naphthalene	91-20-3	1.18	Q	5.92	1.18	0.592
n-Propylbenzene	103-65-1	1.18	U	5.92	1.18	0.592
Styrene	100-42-5	1.18	U	5.92	1.18	0.592
1,1,1,2-Tetrachloroethane	630-20-6	1.18	U	5.92	1.18	0.592
1,1,2,2-Tetrachloroethane	79-34-5	1.18	U	5.92	1.18	0.592
Tetrachloroethene	127-18-4	1.18	U	5.92	1.18	0.592
Toluene	108-88-3	1.18	U	5.92	1.18	0.592
1,2,3-Trichlorobenzene	87-61-6	1.18	U	5.92	1.18	0.592
1,2,4-Trichlorobenzene	120-82-1	1.18	U	5.92	1.18	0.592
1,1,1-Trichloroethane	71-55-6	1.18	U	5.92	1.18	0.592
1,1,2-Trichloroethane	79-00-5	1.18	U	5.92	1.18	0.592
Trichloroethene	79-01-6	11.7		5.92	1.18	0.592
Trichlorofluoromethane	75-69-4	2.36	U	5.92	2.36	1.18
1,2,3-Trichloropropane	96-18-4	2.36	U	5.92	2.36	1.18

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Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.18	U	5.92	1.18	0.592
1,3,5-Trimethylbenzene	108-67-8	1.18	U	5.92	1.18	0.592
Vinyl chloride	75-01-4	2.36	U	5.92	2.36	1.18
o-Xylene	95-47-6	1.18	U	5.92	1.18	0.592
m-,p-Xylene	179601-23-1	1.18	U	5.92	1.18	0.592

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.1	80	120	
1,2-Dichloroethane-d4	88.6	80	120	
Toluene-d8	98.9	85	115	
4-Bromofluorobenzene	106	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041582-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW23SW(20-20.5)	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 22:37
Collect Date:	04/27/2016 14:45	**Dilution:**	1	**File ID:**	1LM.LM34741
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	29.3		4.80	2.40	1.20

Certificate of Analysis

Sample #:	L16041582-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW23SW(30-30.5)	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:55
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG567938	**Analyst:**	TMB	**Run Date:**	05/07/2016 18:22
Collect Date:	04/27/2016 14:50	**Dilution:**	1	**File ID:**	6M139128
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	18.9	J	25.9	12.9	6.47
Benzene	71-43-2	1.29	U	6.47	1.29	0.647
Bromobenzene	108-86-1	1.29	U	6.47	1.29	0.647
Bromochloromethane	74-97-5	2.58	U	6.47	2.58	1.29
Bromodichloromethane	75-27-4	1.29	U	6.47	1.29	0.647
Bromoform	75-25-2	1.29	U	6.47	1.29	0.647
Bromomethane	74-83-9	2.58	U	6.47	2.58	1.29
2-Butanone	78-93-3	6.48	U	12.9	6.48	3.24
n-Butylbenzene	104-51-8	1.29	U	6.47	1.29	0.647
sec-Butylbenzene	135-98-8	1.29	U	6.47	1.29	0.647
tert-Butylbenzene	98-06-6	1.29	U	6.47	1.29	0.647
Carbon disulfide	75-15-0	2.62	J	6.47	1.29	0.647
Carbon tetrachloride	56-23-5	1.29	U	6.47	1.29	0.647
Chlorobenzene	108-90-7	1.29	U	6.47	1.29	0.647
Chlorodibromomethane	124-48-1	1.29	U	6.47	1.29	0.647
Chloroethane	75-00-3	2.58	U	6.47	2.58	1.29
Chloroform	67-66-3	1.29	U	6.47	1.29	0.647
Chloromethane	74-87-3	5.18	U	12.9	5.18	2.59
2-Chlorotoluene	95-49-8	1.29	U	6.47	1.29	0.647
4-Chlorotoluene	106-43-4	1.29	U	6.47	1.29	0.647

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Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	5.18	Q	12.9	5.18	2.59
1,2-Dibromoethane	106-93-4	1.29	U	6.47	1.29	0.647
Dibromomethane	74-95-3	1.29	U	6.47	1.29	0.647
1,2-Dichlorobenzene	95-50-1	1.29	U	6.47	1.29	0.647
1,3-Dichlorobenzene	541-73-1	1.29	U	6.47	1.29	0.647
1,4-Dichlorobenzene	106-46-7	1.29	U	6.47	1.29	0.647
Dichlorodifluoromethane	75-71-8	2.58	U	6.47	2.58	1.29
1,1-Dichloroethane	75-34-3	2.58	U	6.47	2.58	1.29
1,2-Dichloroethane	107-06-2	1.29	U	6.47	1.29	0.647
1,1-Dichloroethene	75-35-4	1.29	U	6.47	1.29	0.647
cis-1,2-Dichloroethene	156-59-2	1.29	U	6.47	1.29	0.647
trans-1,2-Dichloroethene	156-60-5	1.29	U	6.47	1.29	0.647
1,2-Dichloropropane	78-87-5	1.29	U	6.47	1.29	0.647
1,3-Dichloropropane	142-28-9	1.29	U	6.47	1.29	0.647
2,2-Dichloropropane	594-20-7	1.29	U	6.47	1.29	0.647
cis-1,3-Dichloropropene	10061-01-5	1.29	U	6.47	1.29	0.647
trans-1,3-Dichloropropene	10061-02-6	1.29	U	6.47	1.29	0.647
1,1-Dichloropropene	563-58-6	1.29	U	6.47	1.29	0.647
Ethylbenzene	100-41-4	1.29	U	6.47	1.29	0.647
2-Hexanone	591-78-6	6.48	Q	12.9	6.48	3.24
Hexachlorobutadiene	87-68-3	1.29	U	6.47	1.29	0.647
Isopropylbenzene	98-82-8	1.29	U	6.47	1.29	0.647
p-Isopropyltoluene	99-87-6	1.29	U	6.47	1.29	0.647
4-Methyl-2-pentanone	108-10-1	6.48	Q	12.9	6.48	3.24
Methylene chloride	75-09-2	2.58	U	6.47	2.58	1.29
Naphthalene	91-20-3	1.29	Q	6.47	1.29	0.647
n-Propylbenzene	103-65-1	1.29	U	6.47	1.29	0.647
Styrene	100-42-5	1.29	U	6.47	1.29	0.647
1,1,1,2-Tetrachloroethane	630-20-6	1.29	U	6.47	1.29	0.647
1,1,2,2-Tetrachloroethane	79-34-5	1.29	U	6.47	1.29	0.647
Tetrachloroethene	127-18-4	1.29	U	6.47	1.29	0.647
Toluene	108-88-3	1.29	U	6.47	1.29	0.647
1,2,3-Trichlorobenzene	87-61-6	1.29	U	6.47	1.29	0.647
1,2,4-Trichlorobenzene	120-82-1	1.29	U	6.47	1.29	0.647
1,1,1-Trichloroethane	71-55-6	1.29	U	6.47	1.29	0.647
1,1,2-Trichloroethane	79-00-5	1.29	U	6.47	1.29	0.647
Trichloroethene	79-01-6	1.29	U	6.47	1.29	0.647
Trichlorofluoromethane	75-69-4	2.58	U	6.47	2.58	1.29
1,2,3-Trichloropropane	96-18-4	2.58	U	6.47	2.58	1.29

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Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.29	U	6.47	1.29	0.647
1,3,5-Trimethylbenzene	108-67-8	1.29	U	6.47	1.29	0.647
Vinyl chloride	75-01-4	2.58	U	6.47	2.58	1.29
o-Xylene	95-47-6	1.29	U	6.47	1.29	0.647
m-,p-Xylene	179601-23-1	1.29	U	6.47	1.29	0.647

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.4	80	120	
1,2-Dichloroethane-d4	89.3	80	120	
Toluene-d8	102	85	115	
4-Bromofluorobenzene	103	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041582-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW23SW(30-30.5)	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 22:56
Collect Date:	04/27/2016 14:50	**Dilution:**	1	**File ID:**	1LM.LM34742
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.42	U	4.85	2.42	1.21

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041582-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW23SW(40-40.5)	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:56
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG567938	**Analyst:**	TMB	**Run Date:**	05/07/2016 18:54
Collect Date:	04/27/2016 16:15	**Dilution:**	1	**File ID:**	6M139129
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	15.4	J	24.1	12.1	6.03
Benzene	71-43-2	1.21	U	6.03	1.21	0.603
Bromobenzene	108-86-1	1.21	U	6.03	1.21	0.603
Bromochloromethane	74-97-5	2.42	U	6.03	2.42	1.21
Bromodichloromethane	75-27-4	1.21	U	6.03	1.21	0.603
Bromoform	75-25-2	1.21	U	6.03	1.21	0.603
Bromomethane	74-83-9	2.42	U	6.03	2.42	1.21
2-Butanone	78-93-3	6.02	U	12.1	6.02	3.01
n-Butylbenzene	104-51-8	1.21	U	6.03	1.21	0.603
sec-Butylbenzene	135-98-8	1.21	U	6.03	1.21	0.603
tert-Butylbenzene	98-06-6	1.21	U	6.03	1.21	0.603
Carbon disulfide	75-15-0	1.21	U	6.03	1.21	0.603
Carbon tetrachloride	56-23-5	1.21	U	6.03	1.21	0.603
Chlorobenzene	108-90-7	1.21	U	6.03	1.21	0.603
Chlorodibromomethane	124-48-1	1.21	U	6.03	1.21	0.603
Chloroethane	75-00-3	2.42	U	6.03	2.42	1.21
Chloroform	67-66-3	1.21	U	6.03	1.21	0.603
Chloromethane	74-87-3	4.82	U	12.1	4.82	2.41
2-Chlorotoluene	95-49-8	1.21	U	6.03	1.21	0.603
4-Chlorotoluene	106-43-4	1.21	U	6.03	1.21	0.603
1,2-Dibromo-3-chloropropane	96-12-8	4.82	Q	12.1	4.82	2.41
1,2-Dibromoethane	106-93-4	1.21	U	6.03	1.21	0.603
Dibromomethane	74-95-3	1.21	U	6.03	1.21	0.603
1,2-Dichlorobenzene	95-50-1	1.21	U	6.03	1.21	0.603
1,3-Dichlorobenzene	541-73-1	1.21	U	6.03	1.21	0.603
1,4-Dichlorobenzene	106-46-7	1.21	U	6.03	1.21	0.603
Dichlorodifluoromethane	75-71-8	2.42	U	6.03	2.42	1.21
1,1-Dichloroethane	75-34-3	2.42	U	6.03	2.42	1.21
1,2-Dichloroethane	107-06-2	1.21	U	6.03	1.21	0.603
1,1-Dichloroethene	75-35-4	1.21	U	6.03	1.21	0.603
cis-1,2-Dichloroethene	156-59-2	1.21	U	6.03	1.21	0.603

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Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.21	U	6.03	1.21	0.603
1,2-Dichloropropane	78-87-5	1.21	U	6.03	1.21	0.603
1,3-Dichloropropane	142-28-9	1.21	U	6.03	1.21	0.603
2,2-Dichloropropane	594-20-7	1.21	U	6.03	1.21	0.603
cis-1,3-Dichloropropene	10061-01-5	1.21	U	6.03	1.21	0.603
trans-1,3-Dichloropropene	10061-02-6	1.21	U	6.03	1.21	0.603
1,1-Dichloropropene	563-58-6	1.21	U	6.03	1.21	0.603
Ethylbenzene	100-41-4	1.21	U	6.03	1.21	0.603
2-Hexanone	591-78-6	6.02	Q	12.1	6.02	3.01
Hexachlorobutadiene	87-68-3	1.21	U	6.03	1.21	0.603
Isopropylbenzene	98-82-8	1.21	U	6.03	1.21	0.603
p-Isopropyltoluene	99-87-6	1.21	U	6.03	1.21	0.603
4-Methyl-2-pentanone	108-10-1	6.02	Q	12.1	6.02	3.01
Methylene chloride	75-09-2	2.42	U	6.03	2.42	1.21
Naphthalene	91-20-3	1.21	Q	6.03	1.21	0.603
n-Propylbenzene	103-65-1	1.21	U	6.03	1.21	0.603
Styrene	100-42-5	1.21	U	6.03	1.21	0.603
1,1,1,2-Tetrachloroethane	630-20-6	1.21	U	6.03	1.21	0.603
1,1,2,2-Tetrachloroethane	79-34-5	1.21	U	6.03	1.21	0.603
Tetrachloroethene	127-18-4	1.21	U	6.03	1.21	0.603
Toluene	108-88-3	1.21	U	6.03	1.21	0.603
1,2,3-Trichlorobenzene	87-61-6	1.21	U	6.03	1.21	0.603
1,2,4-Trichlorobenzene	120-82-1	1.21	U	6.03	1.21	0.603
1,1,1-Trichloroethane	71-55-6	1.21	U	6.03	1.21	0.603
1,1,2-Trichloroethane	79-00-5	1.21	U	6.03	1.21	0.603
Trichloroethene	79-01-6	1.21	U	6.03	1.21	0.603
Trichlorofluoromethane	75-69-4	2.42	U	6.03	2.42	1.21
1,2,3-Trichloropropane	96-18-4	2.42	U	6.03	2.42	1.21
1,2,4-Trimethylbenzene	95-63-6	1.21	U	6.03	1.21	0.603
1,3,5-Trimethylbenzene	108-67-8	1.21	U	6.03	1.21	0.603
Vinyl chloride	75-01-4	2.42	U	6.03	2.42	1.21
o-Xylene	95-47-6	1.21	U	6.03	1.21	0.603
m-,p-Xylene	179601-23-1	1.21	U	6.03	1.21	0.603

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	80	120	
1,2-Dichloroethane-d4	91.2	80	120	
Toluene-d8	100	85	115	
4-Bromofluorobenzene	107	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041582-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW23SW(40-40.5)	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/05/2016 00:11
Collect Date:	04/27/2016 16:15	**Dilution:**	1	**File ID:**	1LM.LM34746
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.28	U	4.56	2.28	1.14

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041582-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW23SW(60-60.5)	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:56
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG567938	**Analyst:**	TMB	**Run Date:**	05/07/2016 19:27
Collect Date:	04/27/2016 17:35	**Dilution:**	1	**File ID:**	6M139130
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	9.75	J	24.3	12.2	6.09
Benzene	71-43-2	1.22	U	6.09	1.22	0.609
Bromobenzene	108-86-1	1.22	U	6.09	1.22	0.609
Bromochloromethane	74-97-5	2.44	U	6.09	2.44	1.22
Bromodichloromethane	75-27-4	1.22	U	6.09	1.22	0.609
Bromoform	75-25-2	1.22	U	6.09	1.22	0.609
Bromomethane	74-83-9	2.44	U	6.09	2.44	1.22
2-Butanone	78-93-3	6.08	U	12.2	6.08	3.04
n-Butylbenzene	104-51-8	1.22	U	6.09	1.22	0.609
sec-Butylbenzene	135-98-8	1.22	U	6.09	1.22	0.609
tert-Butylbenzene	98-06-6	1.22	U	6.09	1.22	0.609
Carbon disulfide	75-15-0	1.22	U	6.09	1.22	0.609
Carbon tetrachloride	56-23-5	1.22	U	6.09	1.22	0.609
Chlorobenzene	108-90-7	1.22	U	6.09	1.22	0.609
Chlorodibromomethane	124-48-1	1.22	U	6.09	1.22	0.609
Chloroethane	75-00-3	2.44	U	6.09	2.44	1.22
Chloroform	67-66-3	1.22	U	6.09	1.22	0.609
Chloromethane	74-87-3	4.86	U	12.2	4.86	2.43
2-Chlorotoluene	95-49-8	1.22	U	6.09	1.22	0.609
4-Chlorotoluene	106-43-4	1.22	U	6.09	1.22	0.609
1,2-Dibromo-3-chloropropane	96-12-8	4.86	Q	12.2	4.86	2.43
1,2-Dibromoethane	106-93-4	1.22	U	6.09	1.22	0.609
Dibromomethane	74-95-3	1.22	U	6.09	1.22	0.609
1,2-Dichlorobenzene	95-50-1	1.22	U	6.09	1.22	0.609
1,3-Dichlorobenzene	541-73-1	1.22	U	6.09	1.22	0.609
1,4-Dichlorobenzene	106-46-7	1.22	U	6.09	1.22	0.609
Dichlorodifluoromethane	75-71-8	2.44	U	6.09	2.44	1.22
1,1-Dichloroethane	75-34-3	2.44	U	6.09	2.44	1.22
1,2-Dichloroethane	107-06-2	1.22	U	6.09	1.22	0.609
1,1-Dichloroethene	75-35-4	1.22	U	6.09	1.22	0.609
cis-1,2-Dichloroethene	156-59-2	1.22	U	6.09	1.22	0.609

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Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.22	U	6.09	1.22	0.609
1,2-Dichloropropane	78-87-5	1.22	U	6.09	1.22	0.609
1,3-Dichloropropane	142-28-9	1.22	U	6.09	1.22	0.609
2,2-Dichloropropane	594-20-7	1.22	U	6.09	1.22	0.609
cis-1,3-Dichloropropene	10061-01-5	1.22	U	6.09	1.22	0.609
trans-1,3-Dichloropropene	10061-02-6	1.22	U	6.09	1.22	0.609
1,1-Dichloropropene	563-58-6	1.22	U	6.09	1.22	0.609
Ethylbenzene	100-41-4	1.22	U	6.09	1.22	0.609
2-Hexanone	591-78-6	6.08	Q	12.2	6.08	3.04
Hexachlorobutadiene	87-68-3	1.22	U	6.09	1.22	0.609
Isopropylbenzene	98-82-8	1.22	U	6.09	1.22	0.609
p-Isopropyltoluene	99-87-6	1.22	U	6.09	1.22	0.609
4-Methyl-2-pentanone	108-10-1	6.08	Q	12.2	6.08	3.04
Methylene chloride	75-09-2	2.44	U	6.09	2.44	1.22
Naphthalene	91-20-3	1.22	Q	6.09	1.22	0.609
n-Propylbenzene	103-65-1	1.22	U	6.09	1.22	0.609
Styrene	100-42-5	1.22	U	6.09	1.22	0.609
1,1,1,2-Tetrachloroethane	630-20-6	1.22	U	6.09	1.22	0.609
1,1,2,2-Tetrachloroethane	79-34-5	1.22	U	6.09	1.22	0.609
Tetrachloroethene	127-18-4	1.22	U	6.09	1.22	0.609
Toluene	108-88-3	1.22	U	6.09	1.22	0.609
1,2,3-Trichlorobenzene	87-61-6	1.22	U	6.09	1.22	0.609
1,2,4-Trichlorobenzene	120-82-1	1.22	U	6.09	1.22	0.609
1,1,1-Trichloroethane	71-55-6	1.22	U	6.09	1.22	0.609
1,1,2-Trichloroethane	79-00-5	1.22	U	6.09	1.22	0.609
Trichloroethene	79-01-6	1.22	U	6.09	1.22	0.609
Trichlorofluoromethane	75-69-4	2.44	U	6.09	2.44	1.22
1,2,3-Trichloropropane	96-18-4	2.44	U	6.09	2.44	1.22
1,2,4-Trimethylbenzene	95-63-6	1.22	U	6.09	1.22	0.609
1,3,5-Trimethylbenzene	108-67-8	1.22	U	6.09	1.22	0.609
Vinyl chloride	75-01-4	2.44	U	6.09	2.44	1.22
o-Xylene	95-47-6	1.22	U	6.09	1.22	0.609
m-,p-Xylene	179601-23-1	1.22	U	6.09	1.22	0.609

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	80	120	
1,2-Dichloroethane-d4	94.2	80	120	
Toluene-d8	98.8	85	115	
4-Bromofluorobenzene	107	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041582-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW23SW(60-60.5)	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/05/2016 00:30
Collect Date:	04/27/2016 17:35	**Dilution:**	1	**File ID:**	1LM.LM34747
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.34	U	4.69	2.34	1.17

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041582-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW23SW(50-50.5)	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:57
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG567938	**Analyst:**	TMB	**Run Date:**	05/07/2016 20:00
Collect Date:	04/27/2016 17:45	**Dilution:**	1	**File ID:**	6M139131
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	8.65	J	24.8	12.4	6.21
Benzene	71-43-2	1.24	U	6.21	1.24	0.621
Bromobenzene	108-86-1	1.24	U	6.21	1.24	0.621
Bromochloromethane	74-97-5	2.48	U	6.21	2.48	1.24
Bromodichloromethane	75-27-4	1.24	U	6.21	1.24	0.621
Bromoform	75-25-2	1.24	U	6.21	1.24	0.621
Bromomethane	74-83-9	2.48	U	6.21	2.48	1.24
2-Butanone	78-93-3	6.20	U	12.4	6.20	3.10
n-Butylbenzene	104-51-8	1.24	U	6.21	1.24	0.621
sec-Butylbenzene	135-98-8	1.24	U	6.21	1.24	0.621
tert-Butylbenzene	98-06-6	1.24	U	6.21	1.24	0.621
Carbon disulfide	75-15-0	1.24	U	6.21	1.24	0.621
Carbon tetrachloride	56-23-5	1.24	U	6.21	1.24	0.621
Chlorobenzene	108-90-7	1.24	U	6.21	1.24	0.621
Chlorodibromomethane	124-48-1	1.24	U	6.21	1.24	0.621
Chloroethane	75-00-3	2.48	U	6.21	2.48	1.24
Chloroform	67-66-3	1.24	U	6.21	1.24	0.621
Chloromethane	74-87-3	4.96	U	12.4	4.96	2.48
2-Chlorotoluene	95-49-8	1.24	U	6.21	1.24	0.621
4-Chlorotoluene	106-43-4	1.24	U	6.21	1.24	0.621
1,2-Dibromo-3-chloropropane	96-12-8	4.96	Q	12.4	4.96	2.48
1,2-Dibromoethane	106-93-4	1.24	U	6.21	1.24	0.621
Dibromomethane	74-95-3	1.24	U	6.21	1.24	0.621
1,2-Dichlorobenzene	95-50-1	1.24	U	6.21	1.24	0.621
1,3-Dichlorobenzene	541-73-1	1.24	U	6.21	1.24	0.621
1,4-Dichlorobenzene	106-46-7	1.24	U	6.21	1.24	0.621
Dichlorodifluoromethane	75-71-8	2.48	U	6.21	2.48	1.24
1,1-Dichloroethane	75-34-3	2.48	U	6.21	2.48	1.24
1,2-Dichloroethane	107-06-2	1.24	U	6.21	1.24	0.621
1,1-Dichloroethene	75-35-4	1.24	U	6.21	1.24	0.621
cis-1,2-Dichloroethene	156-59-2	1.24	U	6.21	1.24	0.621

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.24	U	6.21	1.24	0.621
1,2-Dichloropropane	78-87-5	1.24	U	6.21	1.24	0.621
1,3-Dichloropropane	142-28-9	1.24	U	6.21	1.24	0.621
2,2-Dichloropropane	594-20-7	1.24	U	6.21	1.24	0.621
cis-1,3-Dichloropropene	10061-01-5	1.24	U	6.21	1.24	0.621
trans-1,3-Dichloropropene	10061-02-6	1.24	U	6.21	1.24	0.621
1,1-Dichloropropene	563-58-6	1.24	U	6.21	1.24	0.621
Ethylbenzene	100-41-4	1.24	U	6.21	1.24	0.621
2-Hexanone	591-78-6	6.20	Q	12.4	6.20	3.10
Hexachlorobutadiene	87-68-3	1.24	U	6.21	1.24	0.621
Isopropylbenzene	98-82-8	1.24	U	6.21	1.24	0.621
p-Isopropyltoluene	99-87-6	1.24	U	6.21	1.24	0.621
4-Methyl-2-pentanone	108-10-1	6.20	Q	12.4	6.20	3.10
Methylene chloride	75-09-2	2.48	U	6.21	2.48	1.24
Naphthalene	91-20-3	1.24	Q	6.21	1.24	0.621
n-Propylbenzene	103-65-1	1.24	U	6.21	1.24	0.621
Styrene	100-42-5	1.24	U	6.21	1.24	0.621
1,1,1,2-Tetrachloroethane	630-20-6	1.24	U	6.21	1.24	0.621
1,1,2,2-Tetrachloroethane	79-34-5	1.24	U	6.21	1.24	0.621
Tetrachloroethene	127-18-4	1.24	U	6.21	1.24	0.621
Toluene	108-88-3	1.24	U	6.21	1.24	0.621
1,2,3-Trichlorobenzene	87-61-6	1.24	U	6.21	1.24	0.621
1,2,4-Trichlorobenzene	120-82-1	1.24	U	6.21	1.24	0.621
1,1,1-Trichloroethane	71-55-6	1.24	U	6.21	1.24	0.621
1,1,2-Trichloroethane	79-00-5	1.24	U	6.21	1.24	0.621
Trichloroethene	79-01-6	1.24	U	6.21	1.24	0.621
Trichlorofluoromethane	75-69-4	2.48	U	6.21	2.48	1.24
1,2,3-Trichloropropane	96-18-4	2.48	U	6.21	2.48	1.24
1,2,4-Trimethylbenzene	95-63-6	1.24	U	6.21	1.24	0.621
1,3,5-Trimethylbenzene	108-67-8	1.24	U	6.21	1.24	0.621
Vinyl chloride	75-01-4	2.48	U	6.21	2.48	1.24
o-Xylene	95-47-6	1.24	U	6.21	1.24	0.621
m-,p-Xylene	179601-23-1	1.24	U	6.21	1.24	0.621

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.9	80	120	
1,2-Dichloroethane-d4	90.0	80	120	
Toluene-d8	103	85	115	
4-Bromofluorobenzene	113	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041582-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW23SW(50-50.5)	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/05/2016 00:49
Collect Date:	04/27/2016 17:45	**Dilution:**	1	**File ID:**	1LM.LM34748
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.44	U	4.88	2.44	1.22

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #: L16041582-01 **Client ID:** 18CPTMW23SW(5-5.5) **Matrix:** Soil **Collect Date:** 04/27/2016 14:15

Analyte	Result	Units	Qualifier
Percent Solids	74.6	weight %	

Sample #: L16041582-02 **Client ID:** 18CPTMW23SW(10-10.5) **Matrix:** Soil **Collect Date:** 04/27/2016 14:40

Analyte	Result	Units	Qualifier
Percent Solids	81.8	weight %	

Sample #: L16041582-03 **Client ID:** 18CPTMW23SW(20-20.5) **Matrix:** Soil **Collect Date:** 04/27/2016 14:45

Analyte	Result	Units	Qualifier
Percent Solids	81.8	weight %	

Sample #: L16041582-04 **Client ID:** 18CPTMW23SW(30-30.5) **Matrix:** Soil **Collect Date:** 04/27/2016 14:50

Analyte	Result	Units	Qualifier
Percent Solids	81.0	weight %	

Sample #: L16041582-05 **Client ID:** 18CPTMW23SW(40-40.5) **Matrix:** Soil **Collect Date:** 04/27/2016 16:15

Analyte	Result	Units	Qualifier
Percent Solids	84.8	weight %	

Sample #: L16041582-06 **Client ID:** 18CPTMW23SW(60-60.5) **Matrix:** Soil **Collect Date:** 04/27/2016 17:35

Analyte	Result	Units	Qualifier
Percent Solids	82.2	weight %	

Sample #: L16041582-07 **Client ID:** 18CPTMW23SW(50-50.5) **Matrix:** Soil **Collect Date:** 04/27/2016 17:45

Analyte	Result	Units	Qualifier
Percent Solids	80.4	weight %	

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041582-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW23SW(5-5.5)	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:52
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG567938	**Analyst:**	TMB	**Run Date:**	05/07/2016 16:44
Collect Date:	04/27/2016 14:15	**Dilution:**	1	**File ID:**	6M139125
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	74.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	14.7	U	29.3	14.7	7.33
Benzene	71-43-2	1.47	U	7.33	1.47	0.733
Bromobenzene	108-86-1	1.47	U	7.33	1.47	0.733
Bromochloromethane	74-97-5	2.94	U	7.33	2.94	1.47
Bromodichloromethane	75-27-4	1.47	U	7.33	1.47	0.733
Bromoform	75-25-2	1.47	U	7.33	1.47	0.733
Bromomethane	74-83-9	2.94	U	7.33	2.94	1.47
2-Butanone	78-93-3	7.34	U	14.7	7.34	3.67
n-Butylbenzene	104-51-8	1.47	U	7.33	1.47	0.733
sec-Butylbenzene	135-98-8	1.47	U	7.33	1.47	0.733
tert-Butylbenzene	98-06-6	1.47	U	7.33	1.47	0.733
Carbon disulfide	75-15-0	1.47	U	7.33	1.47	0.733
Carbon tetrachloride	56-23-5	1.47	U	7.33	1.47	0.733
Chlorobenzene	108-90-7	1.47	U	7.33	1.47	0.733
Chlorodibromomethane	124-48-1	1.47	U	7.33	1.47	0.733
Chloroethane	75-00-3	2.94	U	7.33	2.94	1.47
Chloroform	67-66-3	1.47	U	7.33	1.47	0.733
Chloromethane	74-87-3	5.86	U	14.7	5.86	2.93
2-Chlorotoluene	95-49-8	1.47	U	7.33	1.47	0.733
4-Chlorotoluene	106-43-4	1.47	U	7.33	1.47	0.733
1,2-Dibromo-3-chloropropane	96-12-8	5.86	Q	14.7	5.86	2.93
1,2-Dibromoethane	106-93-4	1.47	U	7.33	1.47	0.733
Dibromomethane	74-95-3	1.47	U	7.33	1.47	0.733
1,2-Dichlorobenzene	95-50-1	1.47	U	7.33	1.47	0.733
1,3-Dichlorobenzene	541-73-1	1.47	U	7.33	1.47	0.733
1,4-Dichlorobenzene	106-46-7	1.47	U	7.33	1.47	0.733
Dichlorodifluoromethane	75-71-8	2.94	U	7.33	2.94	1.47
1,1-Dichloroethane	75-34-3	2.94	U	7.33	2.94	1.47
1,2-Dichloroethane	107-06-2	4.13	J	7.33	1.47	0.733
1,1-Dichloroethene	75-35-4	1.47	U	7.33	1.47	0.733
cis-1,2-Dichloroethene	156-59-2	9.99		7.33	1.47	0.733
trans-1,2-Dichloroethene	156-60-5	1.47	U	7.33	1.47	0.733

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Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.47	U	7.33	1.47	0.733
1,3-Dichloropropane	142-28-9	1.47	U	7.33	1.47	0.733
2,2-Dichloropropane	594-20-7	1.47	U	7.33	1.47	0.733
cis-1,3-Dichloropropene	10061-01-5	1.47	U	7.33	1.47	0.733
trans-1,3-Dichloropropene	10061-02-6	1.47	U	7.33	1.47	0.733
1,1-Dichloropropene	563-58-6	1.47	U	7.33	1.47	0.733
Ethylbenzene	100-41-4	1.47	U	7.33	1.47	0.733
2-Hexanone	591-78-6	7.34	Q	14.7	7.34	3.67
Hexachlorobutadiene	87-68-3	1.47	U	7.33	1.47	0.733
Isopropylbenzene	98-82-8	1.47	U	7.33	1.47	0.733
p-Isopropyltoluene	99-87-6	4.51	J	7.33	1.47	0.733
4-Methyl-2-pentanone	108-10-1	7.34	Q	14.7	7.34	3.67
Methylene chloride	75-09-2	2.94	U	7.33	2.94	1.47
Naphthalene	91-20-3	1.47	Q	7.33	1.47	0.733
n-Propylbenzene	103-65-1	1.47	U	7.33	1.47	0.733
Styrene	100-42-5	1.47	U	7.33	1.47	0.733
1,1,1,2-Tetrachloroethane	630-20-6	1.47	U	7.33	1.47	0.733
1,1,2,2-Tetrachloroethane	79-34-5	1.47	U	7.33	1.47	0.733
Tetrachloroethene	127-18-4	1.47	U	7.33	1.47	0.733
Toluene	108-88-3	1.47	U	7.33	1.47	0.733
1,2,3-Trichlorobenzene	87-61-6	1.47	U	7.33	1.47	0.733
1,2,4-Trichlorobenzene	120-82-1	1.47	U	7.33	1.47	0.733
1,1,1-Trichloroethane	71-55-6	1.47	U	7.33	1.47	0.733
1,1,2-Trichloroethane	79-00-5	1.47	U	7.33	1.47	0.733
Trichloroethene	79-01-6	47.6		7.33	1.47	0.733
Trichlorofluoromethane	75-69-4	2.94	U	7.33	2.94	1.47
1,2,3-Trichloropropane	96-18-4	2.94	U	7.33	2.94	1.47
1,2,4-Trimethylbenzene	95-63-6	2.29	J	7.33	1.47	0.733
1,3,5-Trimethylbenzene	108-67-8	1.47	U	7.33	1.47	0.733
Vinyl chloride	75-01-4	2.94	U	7.33	2.94	1.47
o-Xylene	95-47-6	1.47	U	7.33	1.47	0.733
m-,p-Xylene	179601-23-1	1.47	U	7.33	1.47	0.733

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.5	80	120	
1,2-Dichloroethane-d4	86.4	80	120	
Toluene-d8	105	85	115	
4-Bromofluorobenzene	106	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041582-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW23SW(10-10.5)	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:54
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG567938	**Analyst:**	TMB	**Run Date:**	05/07/2016 17:17
Collect Date:	04/27/2016 14:40	**Dilution:**	1	**File ID:**	6M139126
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.4	U	24.8	12.4	6.20
Benzene	71-43-2	1.24	U	6.20	1.24	0.620
Bromobenzene	108-86-1	1.24	U	6.20	1.24	0.620
Bromochloromethane	74-97-5	2.48	U	6.20	2.48	1.24
Bromodichloromethane	75-27-4	1.24	U	6.20	1.24	0.620
Bromoform	75-25-2	1.24	U	6.20	1.24	0.620
Bromomethane	74-83-9	2.48	U	6.20	2.48	1.24
2-Butanone	78-93-3	6.20	U	12.4	6.20	3.10
n-Butylbenzene	104-51-8	1.24	U	6.20	1.24	0.620
sec-Butylbenzene	135-98-8	1.24	U	6.20	1.24	0.620
tert-Butylbenzene	98-06-6	1.24	U	6.20	1.24	0.620
Carbon disulfide	75-15-0	1.24	U	6.20	1.24	0.620
Carbon tetrachloride	56-23-5	1.24	U	6.20	1.24	0.620
Chlorobenzene	108-90-7	1.24	U	6.20	1.24	0.620
Chlorodibromomethane	124-48-1	1.24	U	6.20	1.24	0.620
Chloroethane	75-00-3	2.48	U	6.20	2.48	1.24
Chloroform	67-66-3	1.24	U	6.20	1.24	0.620
Chloromethane	74-87-3	4.96	U	12.4	4.96	2.48
2-Chlorotoluene	95-49-8	1.24	U	6.20	1.24	0.620
4-Chlorotoluene	106-43-4	1.24	U	6.20	1.24	0.620
1,2-Dibromo-3-chloropropane	96-12-8	4.96	Q	12.4	4.96	2.48
1,2-Dibromoethane	106-93-4	1.24	U	6.20	1.24	0.620
Dibromomethane	74-95-3	1.24	U	6.20	1.24	0.620
1,2-Dichlorobenzene	95-50-1	1.24	U	6.20	1.24	0.620
1,3-Dichlorobenzene	541-73-1	1.24	U	6.20	1.24	0.620
1,4-Dichlorobenzene	106-46-7	1.24	U	6.20	1.24	0.620
Dichlorodifluoromethane	75-71-8	2.48	U	6.20	2.48	1.24
1,1-Dichloroethane	75-34-3	2.48	U	6.20	2.48	1.24
1,2-Dichloroethane	107-06-2	26.3		6.20	1.24	0.620
1,1-Dichloroethene	75-35-4	1.24	U	6.20	1.24	0.620
cis-1,2-Dichloroethene	156-59-2	10.9		6.20	1.24	0.620

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Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.24	U	6.20	1.24	0.620
1,2-Dichloropropane	78-87-5	1.24	U	6.20	1.24	0.620
1,3-Dichloropropane	142-28-9	1.24	U	6.20	1.24	0.620
2,2-Dichloropropane	594-20-7	1.24	U	6.20	1.24	0.620
cis-1,3-Dichloropropene	10061-01-5	1.24	U	6.20	1.24	0.620
trans-1,3-Dichloropropene	10061-02-6	1.24	U	6.20	1.24	0.620
1,1-Dichloropropene	563-58-6	1.24	U	6.20	1.24	0.620
Ethylbenzene	100-41-4	1.24	U	6.20	1.24	0.620
2-Hexanone	591-78-6	6.20	Q	12.4	6.20	3.10
Hexachlorobutadiene	87-68-3	1.24	U	6.20	1.24	0.620
Isopropylbenzene	98-82-8	1.24	U	6.20	1.24	0.620
p-Isopropyltoluene	99-87-6	1.24	U	6.20	1.24	0.620
4-Methyl-2-pentanone	108-10-1	6.20	Q	12.4	6.20	3.10
Methylene chloride	75-09-2	2.48	U	6.20	2.48	1.24
Naphthalene	91-20-3	1.24	Q	6.20	1.24	0.620
n-Propylbenzene	103-65-1	1.24	U	6.20	1.24	0.620
Styrene	100-42-5	1.24	U	6.20	1.24	0.620
1,1,1,2-Tetrachloroethane	630-20-6	1.24	U	6.20	1.24	0.620
1,1,2,2-Tetrachloroethane	79-34-5	1.24	U	6.20	1.24	0.620
Tetrachloroethene	127-18-4	1.24	U	6.20	1.24	0.620
Toluene	108-88-3	1.24	U	6.20	1.24	0.620
1,2,3-Trichlorobenzene	87-61-6	1.24	U	6.20	1.24	0.620
1,2,4-Trichlorobenzene	120-82-1	1.24	U	6.20	1.24	0.620
1,1,1-Trichloroethane	71-55-6	1.24	U	6.20	1.24	0.620
1,1,2-Trichloroethane	79-00-5	1.24	U	6.20	1.24	0.620
Trichloroethene	79-01-6	187		6.20	1.24	0.620
Trichlorofluoromethane	75-69-4	2.48	U	6.20	2.48	1.24
1,2,3-Trichloropropane	96-18-4	2.48	U	6.20	2.48	1.24
1,2,4-Trimethylbenzene	95-63-6	1.24	U	6.20	1.24	0.620
1,3,5-Trimethylbenzene	108-67-8	1.24	U	6.20	1.24	0.620
Vinyl chloride	75-01-4	2.48	U	6.20	2.48	1.24
o-Xylene	95-47-6	1.24	U	6.20	1.24	0.620
m-,p-Xylene	179601-23-1	1.24	U	6.20	1.24	0.620

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.2	80	120	
1,2-Dichloroethane-d4	88.9	80	120	
Toluene-d8	98.7	85	115	
4-Bromofluorobenzene	102	85	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041582-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW23SW(20-20.5)	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:54
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG567938	**Analyst:**	TMB	**Run Date:**	05/07/2016 17:49
Collect Date:	04/27/2016 14:45	**Dilution:**	1	**File ID:**	6M139127
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	13.1	J	23.7	11.8	5.92
Benzene	71-43-2	1.18	U	5.92	1.18	0.592
Bromobenzene	108-86-1	1.18	U	5.92	1.18	0.592
Bromochloromethane	74-97-5	2.36	U	5.92	2.36	1.18
Bromodichloromethane	75-27-4	1.18	U	5.92	1.18	0.592
Bromoform	75-25-2	1.18	U	5.92	1.18	0.592
Bromomethane	74-83-9	2.36	U	5.92	2.36	1.18
2-Butanone	78-93-3	5.92	U	11.8	5.92	2.96
n-Butylbenzene	104-51-8	1.18	U	5.92	1.18	0.592
sec-Butylbenzene	135-98-8	1.18	U	5.92	1.18	0.592
tert-Butylbenzene	98-06-6	1.18	U	5.92	1.18	0.592
Carbon disulfide	75-15-0	1.18	U	5.92	1.18	0.592
Carbon tetrachloride	56-23-5	1.18	U	5.92	1.18	0.592
Chlorobenzene	108-90-7	1.18	U	5.92	1.18	0.592
Chlorodibromomethane	124-48-1	1.18	U	5.92	1.18	0.592
Chloroethane	75-00-3	2.36	U	5.92	2.36	1.18
Chloroform	67-66-3	1.18	U	5.92	1.18	0.592
Chloromethane	74-87-3	4.74	U	11.8	4.74	2.37
2-Chlorotoluene	95-49-8	1.18	U	5.92	1.18	0.592
4-Chlorotoluene	106-43-4	1.18	U	5.92	1.18	0.592
1,2-Dibromo-3-chloropropane	96-12-8	4.74	Q	11.8	4.74	2.37
1,2-Dibromoethane	106-93-4	1.18	U	5.92	1.18	0.592
Dibromomethane	74-95-3	1.18	U	5.92	1.18	0.592
1,2-Dichlorobenzene	95-50-1	1.18	U	5.92	1.18	0.592
1,3-Dichlorobenzene	541-73-1	1.18	U	5.92	1.18	0.592
1,4-Dichlorobenzene	106-46-7	1.18	U	5.92	1.18	0.592
Dichlorodifluoromethane	75-71-8	2.36	U	5.92	2.36	1.18
1,1-Dichloroethane	75-34-3	2.36	U	5.92	2.36	1.18
1,2-Dichloroethane	107-06-2	1.64	J	5.92	1.18	0.592
1,1-Dichloroethene	75-35-4	1.18	U	5.92	1.18	0.592
cis-1,2-Dichloroethene	156-59-2	1.18	U	5.92	1.18	0.592

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Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.18	U	5.92	1.18	0.592
1,2-Dichloropropane	78-87-5	1.18	U	5.92	1.18	0.592
1,3-Dichloropropane	142-28-9	1.18	U	5.92	1.18	0.592
2,2-Dichloropropane	594-20-7	1.18	U	5.92	1.18	0.592
cis-1,3-Dichloropropene	10061-01-5	1.18	U	5.92	1.18	0.592
trans-1,3-Dichloropropene	10061-02-6	1.18	U	5.92	1.18	0.592
1,1-Dichloropropene	563-58-6	1.18	U	5.92	1.18	0.592
Ethylbenzene	100-41-4	1.18	U	5.92	1.18	0.592
2-Hexanone	591-78-6	5.92	Q	11.8	5.92	2.96
Hexachlorobutadiene	87-68-3	1.18	U	5.92	1.18	0.592
Isopropylbenzene	98-82-8	1.18	U	5.92	1.18	0.592
p-Isopropyltoluene	99-87-6	1.18	U	5.92	1.18	0.592
4-Methyl-2-pentanone	108-10-1	5.92	Q	11.8	5.92	2.96
Methylene chloride	75-09-2	2.36	U	5.92	2.36	1.18
Naphthalene	91-20-3	1.18	Q	5.92	1.18	0.592
n-Propylbenzene	103-65-1	1.18	U	5.92	1.18	0.592
Styrene	100-42-5	1.18	U	5.92	1.18	0.592
1,1,1,2-Tetrachloroethane	630-20-6	1.18	U	5.92	1.18	0.592
1,1,2,2-Tetrachloroethane	79-34-5	1.18	U	5.92	1.18	0.592
Tetrachloroethene	127-18-4	1.18	U	5.92	1.18	0.592
Toluene	108-88-3	1.18	U	5.92	1.18	0.592
1,2,3-Trichlorobenzene	87-61-6	1.18	U	5.92	1.18	0.592
1,2,4-Trichlorobenzene	120-82-1	1.18	U	5.92	1.18	0.592
1,1,1-Trichloroethane	71-55-6	1.18	U	5.92	1.18	0.592
1,1,2-Trichloroethane	79-00-5	1.18	U	5.92	1.18	0.592
Trichloroethene	79-01-6	11.7		5.92	1.18	0.592
Trichlorofluoromethane	75-69-4	2.36	U	5.92	2.36	1.18
1,2,3-Trichloropropane	96-18-4	2.36	U	5.92	2.36	1.18
1,2,4-Trimethylbenzene	95-63-6	1.18	U	5.92	1.18	0.592
1,3,5-Trimethylbenzene	108-67-8	1.18	U	5.92	1.18	0.592
Vinyl chloride	75-01-4	2.36	U	5.92	2.36	1.18
o-Xylene	95-47-6	1.18	U	5.92	1.18	0.592
m-,p-Xylene	179601-23-1	1.18	U	5.92	1.18	0.592

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.1	80	120	
1,2-Dichloroethane-d4	88.6	80	120	
Toluene-d8	98.9	85	115	
4-Bromofluorobenzene	106	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041582-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW23SW(30-30.5)	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:55
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG567938	**Analyst:**	TMB	**Run Date:**	05/07/2016 18:22
Collect Date:	04/27/2016 14:50	**Dilution:**	1	**File ID:**	6M139128
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	18.9	J	25.9	12.9	6.47
Benzene	71-43-2	1.29	U	6.47	1.29	0.647
Bromobenzene	108-86-1	1.29	U	6.47	1.29	0.647
Bromochloromethane	74-97-5	2.58	U	6.47	2.58	1.29
Bromodichloromethane	75-27-4	1.29	U	6.47	1.29	0.647
Bromoform	75-25-2	1.29	U	6.47	1.29	0.647
Bromomethane	74-83-9	2.58	U	6.47	2.58	1.29
2-Butanone	78-93-3	6.48	U	12.9	6.48	3.24
n-Butylbenzene	104-51-8	1.29	U	6.47	1.29	0.647
sec-Butylbenzene	135-98-8	1.29	U	6.47	1.29	0.647
tert-Butylbenzene	98-06-6	1.29	U	6.47	1.29	0.647
Carbon disulfide	75-15-0	2.62	J	6.47	1.29	0.647
Carbon tetrachloride	56-23-5	1.29	U	6.47	1.29	0.647
Chlorobenzene	108-90-7	1.29	U	6.47	1.29	0.647
Chlorodibromomethane	124-48-1	1.29	U	6.47	1.29	0.647
Chloroethane	75-00-3	2.58	U	6.47	2.58	1.29
Chloroform	67-66-3	1.29	U	6.47	1.29	0.647
Chloromethane	74-87-3	5.18	U	12.9	5.18	2.59
2-Chlorotoluene	95-49-8	1.29	U	6.47	1.29	0.647
4-Chlorotoluene	106-43-4	1.29	U	6.47	1.29	0.647
1,2-Dibromo-3-chloropropane	96-12-8	5.18	Q	12.9	5.18	2.59
1,2-Dibromoethane	106-93-4	1.29	U	6.47	1.29	0.647
Dibromomethane	74-95-3	1.29	U	6.47	1.29	0.647
1,2-Dichlorobenzene	95-50-1	1.29	U	6.47	1.29	0.647
1,3-Dichlorobenzene	541-73-1	1.29	U	6.47	1.29	0.647
1,4-Dichlorobenzene	106-46-7	1.29	U	6.47	1.29	0.647
Dichlorodifluoromethane	75-71-8	2.58	U	6.47	2.58	1.29
1,1-Dichloroethane	75-34-3	2.58	U	6.47	2.58	1.29
1,2-Dichloroethane	107-06-2	1.29	U	6.47	1.29	0.647
1,1-Dichloroethene	75-35-4	1.29	U	6.47	1.29	0.647
cis-1,2-Dichloroethene	156-59-2	1.29	U	6.47	1.29	0.647

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.29	U	6.47	1.29	0.647
1,2-Dichloropropane	78-87-5	1.29	U	6.47	1.29	0.647
1,3-Dichloropropane	142-28-9	1.29	U	6.47	1.29	0.647
2,2-Dichloropropane	594-20-7	1.29	U	6.47	1.29	0.647
cis-1,3-Dichloropropene	10061-01-5	1.29	U	6.47	1.29	0.647
trans-1,3-Dichloropropene	10061-02-6	1.29	U	6.47	1.29	0.647
1,1-Dichloropropene	563-58-6	1.29	U	6.47	1.29	0.647
Ethylbenzene	100-41-4	1.29	U	6.47	1.29	0.647
2-Hexanone	591-78-6	6.48	Q	12.9	6.48	3.24
Hexachlorobutadiene	87-68-3	1.29	U	6.47	1.29	0.647
Isopropylbenzene	98-82-8	1.29	U	6.47	1.29	0.647
p-Isopropyltoluene	99-87-6	1.29	U	6.47	1.29	0.647
4-Methyl-2-pentanone	108-10-1	6.48	Q	12.9	6.48	3.24
Methylene chloride	75-09-2	2.58	U	6.47	2.58	1.29
Naphthalene	91-20-3	1.29	Q	6.47	1.29	0.647
n-Propylbenzene	103-65-1	1.29	U	6.47	1.29	0.647
Styrene	100-42-5	1.29	U	6.47	1.29	0.647
1,1,1,2-Tetrachloroethane	630-20-6	1.29	U	6.47	1.29	0.647
1,1,2,2-Tetrachloroethane	79-34-5	1.29	U	6.47	1.29	0.647
Tetrachloroethene	127-18-4	1.29	U	6.47	1.29	0.647
Toluene	108-88-3	1.29	U	6.47	1.29	0.647
1,2,3-Trichlorobenzene	87-61-6	1.29	U	6.47	1.29	0.647
1,2,4-Trichlorobenzene	120-82-1	1.29	U	6.47	1.29	0.647
1,1,1-Trichloroethane	71-55-6	1.29	U	6.47	1.29	0.647
1,1,2-Trichloroethane	79-00-5	1.29	U	6.47	1.29	0.647
Trichloroethene	79-01-6	1.29	U	6.47	1.29	0.647
Trichlorofluoromethane	75-69-4	2.58	U	6.47	2.58	1.29
1,2,3-Trichloropropane	96-18-4	2.58	U	6.47	2.58	1.29
1,2,4-Trimethylbenzene	95-63-6	1.29	U	6.47	1.29	0.647
1,3,5-Trimethylbenzene	108-67-8	1.29	U	6.47	1.29	0.647
Vinyl chloride	75-01-4	2.58	U	6.47	2.58	1.29
o-Xylene	95-47-6	1.29	U	6.47	1.29	0.647
m-,p-Xylene	179601-23-1	1.29	U	6.47	1.29	0.647

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.4	80	120	
1,2-Dichloroethane-d4	89.3	80	120	
Toluene-d8	102	85	115	
4-Bromofluorobenzene	103	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041582-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW23SW(40-40.5)	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:56
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG567938	**Analyst:**	TMB	**Run Date:**	05/07/2016 18:54
Collect Date:	04/27/2016 16:15	**Dilution:**	1	**File ID:**	6M139129
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	15.4	J	24.1	12.1	6.03
Benzene	71-43-2	1.21	U	6.03	1.21	0.603
Bromobenzene	108-86-1	1.21	U	6.03	1.21	0.603
Bromochloromethane	74-97-5	2.42	U	6.03	2.42	1.21
Bromodichloromethane	75-27-4	1.21	U	6.03	1.21	0.603
Bromoform	75-25-2	1.21	U	6.03	1.21	0.603
Bromomethane	74-83-9	2.42	U	6.03	2.42	1.21
2-Butanone	78-93-3	6.02	U	12.1	6.02	3.01
n-Butylbenzene	104-51-8	1.21	U	6.03	1.21	0.603
sec-Butylbenzene	135-98-8	1.21	U	6.03	1.21	0.603
tert-Butylbenzene	98-06-6	1.21	U	6.03	1.21	0.603
Carbon disulfide	75-15-0	1.21	U	6.03	1.21	0.603
Carbon tetrachloride	56-23-5	1.21	U	6.03	1.21	0.603
Chlorobenzene	108-90-7	1.21	U	6.03	1.21	0.603
Chlorodibromomethane	124-48-1	1.21	U	6.03	1.21	0.603
Chloroethane	75-00-3	2.42	U	6.03	2.42	1.21
Chloroform	67-66-3	1.21	U	6.03	1.21	0.603
Chloromethane	74-87-3	4.82	U	12.1	4.82	2.41
2-Chlorotoluene	95-49-8	1.21	U	6.03	1.21	0.603
4-Chlorotoluene	106-43-4	1.21	U	6.03	1.21	0.603
1,2-Dibromo-3-chloropropane	96-12-8	4.82	Q	12.1	4.82	2.41
1,2-Dibromoethane	106-93-4	1.21	U	6.03	1.21	0.603
Dibromomethane	74-95-3	1.21	U	6.03	1.21	0.603
1,2-Dichlorobenzene	95-50-1	1.21	U	6.03	1.21	0.603
1,3-Dichlorobenzene	541-73-1	1.21	U	6.03	1.21	0.603
1,4-Dichlorobenzene	106-46-7	1.21	U	6.03	1.21	0.603
Dichlorodifluoromethane	75-71-8	2.42	U	6.03	2.42	1.21
1,1-Dichloroethane	75-34-3	2.42	U	6.03	2.42	1.21
1,2-Dichloroethane	107-06-2	1.21	U	6.03	1.21	0.603
1,1-Dichloroethene	75-35-4	1.21	U	6.03	1.21	0.603
cis-1,2-Dichloroethene	156-59-2	1.21	U	6.03	1.21	0.603

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.21	U	6.03	1.21	0.603
1,2-Dichloropropane	78-87-5	1.21	U	6.03	1.21	0.603
1,3-Dichloropropane	142-28-9	1.21	U	6.03	1.21	0.603
2,2-Dichloropropane	594-20-7	1.21	U	6.03	1.21	0.603
cis-1,3-Dichloropropene	10061-01-5	1.21	U	6.03	1.21	0.603
trans-1,3-Dichloropropene	10061-02-6	1.21	U	6.03	1.21	0.603
1,1-Dichloropropene	563-58-6	1.21	U	6.03	1.21	0.603
Ethylbenzene	100-41-4	1.21	U	6.03	1.21	0.603
2-Hexanone	591-78-6	6.02	Q	12.1	6.02	3.01
Hexachlorobutadiene	87-68-3	1.21	U	6.03	1.21	0.603
Isopropylbenzene	98-82-8	1.21	U	6.03	1.21	0.603
p-Isopropyltoluene	99-87-6	1.21	U	6.03	1.21	0.603
4-Methyl-2-pentanone	108-10-1	6.02	Q	12.1	6.02	3.01
Methylene chloride	75-09-2	2.42	U	6.03	2.42	1.21
Naphthalene	91-20-3	1.21	Q	6.03	1.21	0.603
n-Propylbenzene	103-65-1	1.21	U	6.03	1.21	0.603
Styrene	100-42-5	1.21	U	6.03	1.21	0.603
1,1,1,2-Tetrachloroethane	630-20-6	1.21	U	6.03	1.21	0.603
1,1,2,2-Tetrachloroethane	79-34-5	1.21	U	6.03	1.21	0.603
Tetrachloroethene	127-18-4	1.21	U	6.03	1.21	0.603
Toluene	108-88-3	1.21	U	6.03	1.21	0.603
1,2,3-Trichlorobenzene	87-61-6	1.21	U	6.03	1.21	0.603
1,2,4-Trichlorobenzene	120-82-1	1.21	U	6.03	1.21	0.603
1,1,1-Trichloroethane	71-55-6	1.21	U	6.03	1.21	0.603
1,1,2-Trichloroethane	79-00-5	1.21	U	6.03	1.21	0.603
Trichloroethene	79-01-6	1.21	U	6.03	1.21	0.603
Trichlorofluoromethane	75-69-4	2.42	U	6.03	2.42	1.21
1,2,3-Trichloropropane	96-18-4	2.42	U	6.03	2.42	1.21
1,2,4-Trimethylbenzene	95-63-6	1.21	U	6.03	1.21	0.603
1,3,5-Trimethylbenzene	108-67-8	1.21	U	6.03	1.21	0.603
Vinyl chloride	75-01-4	2.42	U	6.03	2.42	1.21
o-Xylene	95-47-6	1.21	U	6.03	1.21	0.603
m-,p-Xylene	179601-23-1	1.21	U	6.03	1.21	0.603

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	80	120	
1,2-Dichloroethane-d4	91.2	80	120	
Toluene-d8	100	85	115	
4-Bromofluorobenzene	107	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041582-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW23SW(60-60.5)	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:56
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG567938	**Analyst:**	TMB	**Run Date:**	05/07/2016 19:27
Collect Date:	04/27/2016 17:35	**Dilution:**	1	**File ID:**	6M139130
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	9.75	J	24.3	12.2	6.09
Benzene	71-43-2	1.22	U	6.09	1.22	0.609
Bromobenzene	108-86-1	1.22	U	6.09	1.22	0.609
Bromochloromethane	74-97-5	2.44	U	6.09	2.44	1.22
Bromodichloromethane	75-27-4	1.22	U	6.09	1.22	0.609
Bromoform	75-25-2	1.22	U	6.09	1.22	0.609
Bromomethane	74-83-9	2.44	U	6.09	2.44	1.22
2-Butanone	78-93-3	6.08	U	12.2	6.08	3.04
n-Butylbenzene	104-51-8	1.22	U	6.09	1.22	0.609
sec-Butylbenzene	135-98-8	1.22	U	6.09	1.22	0.609
tert-Butylbenzene	98-06-6	1.22	U	6.09	1.22	0.609
Carbon disulfide	75-15-0	1.22	U	6.09	1.22	0.609
Carbon tetrachloride	56-23-5	1.22	U	6.09	1.22	0.609
Chlorobenzene	108-90-7	1.22	U	6.09	1.22	0.609
Chlorodibromomethane	124-48-1	1.22	U	6.09	1.22	0.609
Chloroethane	75-00-3	2.44	U	6.09	2.44	1.22
Chloroform	67-66-3	1.22	U	6.09	1.22	0.609
Chloromethane	74-87-3	4.86	U	12.2	4.86	2.43
2-Chlorotoluene	95-49-8	1.22	U	6.09	1.22	0.609
4-Chlorotoluene	106-43-4	1.22	U	6.09	1.22	0.609
1,2-Dibromo-3-chloropropane	96-12-8	4.86	Q	12.2	4.86	2.43
1,2-Dibromoethane	106-93-4	1.22	U	6.09	1.22	0.609
Dibromomethane	74-95-3	1.22	U	6.09	1.22	0.609
1,2-Dichlorobenzene	95-50-1	1.22	U	6.09	1.22	0.609
1,3-Dichlorobenzene	541-73-1	1.22	U	6.09	1.22	0.609
1,4-Dichlorobenzene	106-46-7	1.22	U	6.09	1.22	0.609
Dichlorodifluoromethane	75-71-8	2.44	U	6.09	2.44	1.22
1,1-Dichloroethane	75-34-3	2.44	U	6.09	2.44	1.22
1,2-Dichloroethane	107-06-2	1.22	U	6.09	1.22	0.609
1,1-Dichloroethene	75-35-4	1.22	U	6.09	1.22	0.609
cis-1,2-Dichloroethene	156-59-2	1.22	U	6.09	1.22	0.609

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.22	U	6.09	1.22	0.609
1,2-Dichloropropane	78-87-5	1.22	U	6.09	1.22	0.609
1,3-Dichloropropane	142-28-9	1.22	U	6.09	1.22	0.609
2,2-Dichloropropane	594-20-7	1.22	U	6.09	1.22	0.609
cis-1,3-Dichloropropene	10061-01-5	1.22	U	6.09	1.22	0.609
trans-1,3-Dichloropropene	10061-02-6	1.22	U	6.09	1.22	0.609
1,1-Dichloropropene	563-58-6	1.22	U	6.09	1.22	0.609
Ethylbenzene	100-41-4	1.22	U	6.09	1.22	0.609
2-Hexanone	591-78-6	6.08	Q	12.2	6.08	3.04
Hexachlorobutadiene	87-68-3	1.22	U	6.09	1.22	0.609
Isopropylbenzene	98-82-8	1.22	U	6.09	1.22	0.609
p-Isopropyltoluene	99-87-6	1.22	U	6.09	1.22	0.609
4-Methyl-2-pentanone	108-10-1	6.08	Q	12.2	6.08	3.04
Methylene chloride	75-09-2	2.44	U	6.09	2.44	1.22
Naphthalene	91-20-3	1.22	Q	6.09	1.22	0.609
n-Propylbenzene	103-65-1	1.22	U	6.09	1.22	0.609
Styrene	100-42-5	1.22	U	6.09	1.22	0.609
1,1,1,2-Tetrachloroethane	630-20-6	1.22	U	6.09	1.22	0.609
1,1,2,2-Tetrachloroethane	79-34-5	1.22	U	6.09	1.22	0.609
Tetrachloroethene	127-18-4	1.22	U	6.09	1.22	0.609
Toluene	108-88-3	1.22	U	6.09	1.22	0.609
1,2,3-Trichlorobenzene	87-61-6	1.22	U	6.09	1.22	0.609
1,2,4-Trichlorobenzene	120-82-1	1.22	U	6.09	1.22	0.609
1,1,1-Trichloroethane	71-55-6	1.22	U	6.09	1.22	0.609
1,1,2-Trichloroethane	79-00-5	1.22	U	6.09	1.22	0.609
Trichloroethene	79-01-6	1.22	U	6.09	1.22	0.609
Trichlorofluoromethane	75-69-4	2.44	U	6.09	2.44	1.22
1,2,3-Trichloropropane	96-18-4	2.44	U	6.09	2.44	1.22
1,2,4-Trimethylbenzene	95-63-6	1.22	U	6.09	1.22	0.609
1,3,5-Trimethylbenzene	108-67-8	1.22	U	6.09	1.22	0.609
Vinyl chloride	75-01-4	2.44	U	6.09	2.44	1.22
o-Xylene	95-47-6	1.22	U	6.09	1.22	0.609
m-,p-Xylene	179601-23-1	1.22	U	6.09	1.22	0.609

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	100	80	120	
1,2-Dichloroethane-d4	94.2	80	120	
Toluene-d8	98.8	85	115	
4-Bromofluorobenzene	107	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041582-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW23SW(50-50.5)	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	05/03/2016 09:57
Matrix:	Soil	**Analytical Method:**	8260B	**Cal Date:**	02/26/2016 18:39
Workgroup #:	WG567938	**Analyst:**	TMB	**Run Date:**	05/07/2016 20:00
Collect Date:	04/27/2016 17:45	**Dilution:**	1	**File ID:**	6M139131
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	8.65	J	24.8	12.4	6.21
Benzene	71-43-2	1.24	U	6.21	1.24	0.621
Bromobenzene	108-86-1	1.24	U	6.21	1.24	0.621
Bromochloromethane	74-97-5	2.48	U	6.21	2.48	1.24
Bromodichloromethane	75-27-4	1.24	U	6.21	1.24	0.621
Bromoform	75-25-2	1.24	U	6.21	1.24	0.621
Bromomethane	74-83-9	2.48	U	6.21	2.48	1.24
2-Butanone	78-93-3	6.20	U	12.4	6.20	3.10
n-Butylbenzene	104-51-8	1.24	U	6.21	1.24	0.621
sec-Butylbenzene	135-98-8	1.24	U	6.21	1.24	0.621
tert-Butylbenzene	98-06-6	1.24	U	6.21	1.24	0.621
Carbon disulfide	75-15-0	1.24	U	6.21	1.24	0.621
Carbon tetrachloride	56-23-5	1.24	U	6.21	1.24	0.621
Chlorobenzene	108-90-7	1.24	U	6.21	1.24	0.621
Chlorodibromomethane	124-48-1	1.24	U	6.21	1.24	0.621
Chloroethane	75-00-3	2.48	U	6.21	2.48	1.24
Chloroform	67-66-3	1.24	U	6.21	1.24	0.621
Chloromethane	74-87-3	4.96	U	12.4	4.96	2.48
2-Chlorotoluene	95-49-8	1.24	U	6.21	1.24	0.621
4-Chlorotoluene	106-43-4	1.24	U	6.21	1.24	0.621
1,2-Dibromo-3-chloropropane	96-12-8	4.96	Q	12.4	4.96	2.48
1,2-Dibromoethane	106-93-4	1.24	U	6.21	1.24	0.621
Dibromomethane	74-95-3	1.24	U	6.21	1.24	0.621
1,2-Dichlorobenzene	95-50-1	1.24	U	6.21	1.24	0.621
1,3-Dichlorobenzene	541-73-1	1.24	U	6.21	1.24	0.621
1,4-Dichlorobenzene	106-46-7	1.24	U	6.21	1.24	0.621
Dichlorodifluoromethane	75-71-8	2.48	U	6.21	2.48	1.24
1,1-Dichloroethane	75-34-3	2.48	U	6.21	2.48	1.24
1,2-Dichloroethane	107-06-2	1.24	U	6.21	1.24	0.621
1,1-Dichloroethene	75-35-4	1.24	U	6.21	1.24	0.621
cis-1,2-Dichloroethene	156-59-2	1.24	U	6.21	1.24	0.621

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	1.24	U	6.21	1.24	0.621
1,2-Dichloropropane	78-87-5	1.24	U	6.21	1.24	0.621
1,3-Dichloropropane	142-28-9	1.24	U	6.21	1.24	0.621
2,2-Dichloropropane	594-20-7	1.24	U	6.21	1.24	0.621
cis-1,3-Dichloropropene	10061-01-5	1.24	U	6.21	1.24	0.621
trans-1,3-Dichloropropene	10061-02-6	1.24	U	6.21	1.24	0.621
1,1-Dichloropropene	563-58-6	1.24	U	6.21	1.24	0.621
Ethylbenzene	100-41-4	1.24	U	6.21	1.24	0.621
2-Hexanone	591-78-6	6.20	Q	12.4	6.20	3.10
Hexachlorobutadiene	87-68-3	1.24	U	6.21	1.24	0.621
Isopropylbenzene	98-82-8	1.24	U	6.21	1.24	0.621
p-Isopropyltoluene	99-87-6	1.24	U	6.21	1.24	0.621
4-Methyl-2-pentanone	108-10-1	6.20	Q	12.4	6.20	3.10
Methylene chloride	75-09-2	2.48	U	6.21	2.48	1.24
Naphthalene	91-20-3	1.24	Q	6.21	1.24	0.621
n-Propylbenzene	103-65-1	1.24	U	6.21	1.24	0.621
Styrene	100-42-5	1.24	U	6.21	1.24	0.621
1,1,1,2-Tetrachloroethane	630-20-6	1.24	U	6.21	1.24	0.621
1,1,2,2-Tetrachloroethane	79-34-5	1.24	U	6.21	1.24	0.621
Tetrachloroethene	127-18-4	1.24	U	6.21	1.24	0.621
Toluene	108-88-3	1.24	U	6.21	1.24	0.621
1,2,3-Trichlorobenzene	87-61-6	1.24	U	6.21	1.24	0.621
1,2,4-Trichlorobenzene	120-82-1	1.24	U	6.21	1.24	0.621
1,1,1-Trichloroethane	71-55-6	1.24	U	6.21	1.24	0.621
1,1,2-Trichloroethane	79-00-5	1.24	U	6.21	1.24	0.621
Trichloroethene	79-01-6	1.24	U	6.21	1.24	0.621
Trichlorofluoromethane	75-69-4	2.48	U	6.21	2.48	1.24
1,2,3-Trichloropropane	96-18-4	2.48	U	6.21	2.48	1.24
1,2,4-Trimethylbenzene	95-63-6	1.24	U	6.21	1.24	0.621
1,3,5-Trimethylbenzene	108-67-8	1.24	U	6.21	1.24	0.621
Vinyl chloride	75-01-4	2.48	U	6.21	2.48	1.24
o-Xylene	95-47-6	1.24	U	6.21	1.24	0.621
m-,p-Xylene	179601-23-1	1.24	U	6.21	1.24	0.621

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.9	80	120	
1,2-Dichloroethane-d4	90.0	80	120	
Toluene-d8	103	85	115	
4-Bromofluorobenzene	113	85	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.
VOA Preparation/Preservation/Extraction Log

Batch #: WG567289
Analyst: AWE
Method: 5030B/5030C/5035
Run Date: 05/03/2016 09:42
Product: 826-SPE
Purge and trap methanol COA18540
Purified Lab Sand Lot # COA18552

SAMPLE #	Fraction	Collected	Preserved	PCT-S	Tare Wt	Total Wt	Sample Wt	Water	MeOH	Vt	Comments
L16041580-01	A	04/26/16 09:05	05/03/16 09:42	84.8			4.82	5		5	
L16041580-02	A	04/26/16 10:00	05/03/16 09:42	82.0			4.91	5		5	
L16041580-03	A	04/26/16 10:35	05/03/16 09:44	79.2			4.68	5		5	
L16041580-04	A	04/26/16 11:15	05/03/16 09:44	78.2			4.75	5		5	
L16041580-05	A	04/26/16 11:55	05/03/16 09:45	79.0			5.28	5		5	
L16041580-06	A	04/26/16 14:15	05/03/16 09:45	83.5			5.14	5		5	
L16041580-07	A	04/26/16 14:15	05/03/16 09:46	83.5			5.38	5		5	
L16041580-08	A	04/26/16 14:15	05/03/16 09:47	83.5			5.02	5		5	
L16041580-09	A	04/26/16 15:00	05/03/16 09:48	86.5			4.77	5		5	
L16041580-10	A	04/26/16 15:00	05/03/16 09:48	87.1			4.65	5		5	
L16041580-11	A	04/26/16 15:45	05/03/16 09:49	83.7			4.92	5		5	
L16041580-12	A	04/26/16 16:45	05/03/16 09:50	82.3			4.82	5		5	
L16041580-13	A	04/26/16 17:00	05/03/16 09:51	80.0			4.92	5		5	
L16041582-01	A	04/27/16 14:15	05/03/16 09:52	74.6			4.57	5		5	
L16041582-02	A	04/27/16 14:40	05/03/16 09:54	81.8			4.93	5		5	
L16041582-03	A	04/27/16 14:45	05/03/16 09:54	81.8			5.16	5		5	
L16041582-04	A	04/27/16 14:50	05/03/16 09:55	81.0			4.77	5		5	
L16041582-05	A	04/27/16 16:15	05/03/16 09:56	84.8			4.89	5		5	
L16041582-06	A	04/27/16 17:35	05/03/16 09:56	82.2			5.00	5		5	
L16041582-07	A	04/27/16 17:45	05/03/16 09:57	80.4			5.01	5		5	
L16041606-01	A	04/28/16 08:30	05/03/16 09:57	93.0			5.09	5		5	
WG567289-01	A		05/03/16 09:52	74.6			4.57	5		5	
WG567289-02	A		05/03/16 09:52	74.6			4.80	5		5	
WG567289-03	A		05/03/16 09:53	74.6			4.86	5		5	

Comments:
1 = improperly sealed cap
2 = preserved out of hold
3 = effervesced
4 = preserved with NaHSO4
5 = preserved by freezing
6 = preserved in field

Analyst: Andrew Casey

VOA_EXT - Modified 05/22/2008
PDF ID: 4744440
Report generated: 05/07/2016 13:20

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 022616
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Method: 8260C SOP: MSV01-C Rev: 2
Maintenance Log ID:

Internal Standard: STD74756 Surrogate Standard: STD74756
CCV: STD74897 LCS: STD74755 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG558920

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M137521	RINSE	NA	7	1		02/26/16 12:22
6M137522	WG558920-01 50ng BFB STD 8260	NA	7	1	STD74606	02/26/16 13:16
6M137523	WG558920-02 0.5ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 13:41
6M137524	WG558920-03 1ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 14:13
6M137525	WG558920-04 2ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 14:46
6M137526	WG558920-05 5ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 15:26
6M137527	WG558920-06 10ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 15:58
6M137528	WG558920-07 20ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 16:30
6M137529	WG558920-08 50ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 17:03
6M137530	WG558920-09 100ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 17:35
6M137531	WG558920-10 200ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 18:07
6M137532	WG558920-11 300ug/Kg STD 8260	NA	7	1	STD74897	02/26/16 18:39
6M137533	RINSE	NA	7	1		02/26/16 19:11
6M137534	RINSE	NA	7	1		02/26/16 19:43
6M137535	WG558920-12 50ug/Kg ALT SRC STD 826	NA	7	1	STD74755	02/26/16 20:15
6M137536	RINSE	NA	7	1		02/26/16 20:48

Comments

Seq.	Rerun	Dil.	Reason	Analytes
15				
File ID: 6M137535				
Surrogates are spiked at 25 not 50.				

Approved: March 02, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 050716
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD75822 Surrogate Standard: STD75822
CCV: STD75976 LCS: STD75977 MS/MSD: STD75977

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG567938

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M139116	RINSE	NA	7	1		05/07/16 11:42
6M139117	WG567937-01 50ng BFB STD 8260	NA	7	1	STD76034	05/07/16 12:31
6M139118	WG567937-02 50ug/Kg CCV STD 8260	NA	7	1	STD75976	05/07/16 12:55
6M139119	WG000000-01 100ug/Kg A9 CCV STD 826	NA	7	1	STD75791	05/07/16 13:28
6M139120	WG567938-01 VBLK0507 BLANK STD 826	NA	7	1		05/07/16 14:01
6M139121	WG567938-02 20ug/Kg LCS STD 8260	NA	7	1	STD75977	05/07/16 14:33
6M139122	WG567289-02 MS 1582-01 8260 4.80g	NA	7	1	STD75977	05/07/16 15:06
6M139123	WG567289-03 MSD 1582-01 8260 4.86g	NA	7	1	STD75977	05/07/16 15:38
6M139124	RINSE	NA	7	1		05/07/16 16:12
6M139125	L16041582-01 8260 4.57g	NA	7	1		05/07/16 16:44
6M139126	L16041582-02 8260 4.93g	NA	7	1		05/07/16 17:17
6M139127	L16041582-03 8260 5.16g	NA	7	1		05/07/16 17:49
6M139128	L16041582-04 8260 4.77g	NA	7	1		05/07/16 18:22
6M139129	L16041582-05 8260 4.89g	NA	7	1		05/07/16 18:54
6M139130	L16041582-06 8260 5.00g	NA	7	1		05/07/16 19:27
6M139131	L16041582-07 8260 5.01g	NA	7	1		05/07/16 20:00
6M139132	L16050063-01 8260 5.25g	NA	7	1		05/07/16 20:33
6M139133	L16050063-02 8260 4.74g	NA	7	1		05/07/16 21:05
6M139134	L16050063-03 8260 5.48g	NA	7	1		05/07/16 21:38
6M139135	L16050063-04 8260 5.36g	NA	7	1		05/07/16 22:10
6M139136	L16050063-05 8260 4.95g	NA	7	1		05/07/16 22:43
6M139137	L16050063-06 8260 4.63g	NA	7	1		05/07/16 23:16
6M139138	CCV	NA	7	1		05/07/16 23:48
6M139139	RINSE	NA	7	1		05/08/16 00:20

Comments

Seq.	Rerun	Dil.	Reason	Analytes
4				
File ID: 6M139119				
	Not needed. DNR.			
17	X	5	Over Calibration Range	ACETONE
File ID: 6M139132				
18	X	5	Over Calibration Range	ACETONE

Approved: May 10, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 050716
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD75822 Surrogate Standard: STD75822
CCV: STD75976 LCS: STD75977 MS/MSD: STD75977

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG567938

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
File ID: 6M139133				
19	X	5	Over Calibration Range	ACETONE
File ID: 6M139134				

Approved: May 10, 2016

Page: 2

Microbac Laboratories Inc.

Data Checklist

Date: 26-FEB-2016
Analyst: TMB
Analyst: NA
Method: 8260B/C
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 73548
Analytical Workgroups: WG558920

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	NA
TCL Hits	NA
Spectra of TCL Hits	NA
Surrogates	NA
Internal Standards Criteria	NA
Library Searches	NA
Calculations & Correct Factors	NA
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
29-FEB-2016
Tiffany Bailey

Secondary Reviewer:
02-MAR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAR-02-2016 12:31:18

Microbac Laboratories Inc.

Data Checklist

Date: 07-MAY-2016
Analyst: TMB
Analyst: NA
Method: 8260B
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 74976
Analytical Workgroups: WG567938

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
09-MAY-2016
Tiffany Bailey

Secondary Reviewer:
10-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-10-2016 14:57:04

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG567938

Login Number: L16041582

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW23SW(5-5.5)	01	04/27/16					05/03/2016	5.8	14		05/07/16	10.1	14	
18CPTMW23SW(10-10.5)	02	04/27/16					05/03/2016	5.8	14		05/07/16	10.1	14	
18CPTMW23SW(20-20.5)	03	04/27/16					05/03/2016	5.8	14		05/07/16	10.1	14	
18CPTMW23SW(30-30.5)	04	04/27/16					05/03/2016	5.8	14		05/07/16	10.1	14	
18CPTMW23SW(40-40.5)	05	04/27/16					05/03/2016	5.7	14		05/07/16	10.1	14	
18CPTMW23SW(60-60.5)	06	04/27/16					05/03/2016	5.7	14		05/07/16	10.1	14	
18CPTMW23SW(50-50.5)	07	04/27/16					05/03/2016	5.7	14		05/07/16	10.1	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4753298
Report generated 05/11/2016 14:00

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16041582
Instrument Id: HPMS6
Workgroup (AAB#): WG567938

Method: 8260
CAL ID: HPMS6-26-FEB-16
Matrix: Soil

Sample Number	Dilution	Tag	1	2	3	4
L16041582-01	1.00	01	86.4	93.5	106	105
L16041582-02	1.00	01	88.9	98.2	102	98.7
L16041582-03	1.00	01	88.6	95.1	106	98.9
L16041582-04	1.00	01	89.3	93.4	103	102
L16041582-05	1.00	01	91.2	101	107	100
L16041582-06	1.00	01	94.2	100	107	98.8
L16041582-07	1.00	01	90.0	93.9	113	103
WG567938-01	1.00	01	95.5	97.6	103	100
WG567938-02	1.00	01	94.7	97.7	104	102

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	80	-	120
2 - Dibromofluoromethane	80	-	120
3 - 4-Bromofluorobenzene	85	-	120
4 - Toluene-d8	85	-	115

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4753304
Report generated: 05/11/2016 14:00

METHOD BLANK SUMMARY

Login Number: L16041582
Blank File ID: 6M139120
Prep Date: 05/07/16 14:01
Analyzed Date: 05/07/16 14:01
Analyst: TMB

Work Group: WG567938
Blank Sample ID: WG567938-01
Instrument ID: HPMS6
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG567938-02	6M139121	05/07/16 14:33	01
18CPTMW23SW(5-5.5)	L16041582-01	6M139125	05/07/16 16:44	01
18CPTMW23SW(10-10.5)	L16041582-02	6M139126	05/07/16 17:17	01
18CPTMW23SW(20-20.5)	L16041582-03	6M139127	05/07/16 17:49	01
18CPTMW23SW(30-30.5)	L16041582-04	6M139128	05/07/16 18:22	01
18CPTMW23SW(40-40.5)	L16041582-05	6M139129	05/07/16 18:54	01
18CPTMW23SW(60-60.5)	L16041582-06	6M139130	05/07/16 19:27	01
18CPTMW23SW(50-50.5)	L16041582-07	6M139131	05/07/16 20:00	01

Report Name: BLANK_SUMMARY
PDF File ID: 4756961
Report generated 05/11/2016 14:00

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16041582 Prep Date: 05/07/16 14:01 Sample ID: WG567938-01
Instrument ID: HPMS6 Run Date: 05/07/16 14:01 Prep Method: 5030B/5030C/503
File ID: 6M139120 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG567938 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS6-26-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	5.00	20.0	5.00	1	U
Benzene	0.500	5.00	0.500	1	U
Bromobenzene	0.500	5.00	0.500	1	U
Bromochloromethane	1.00	5.00	1.00	1	U
Bromodichloromethane	0.500	5.00	0.500	1	U
Bromoform	0.500	5.00	0.500	1	U
Bromomethane	1.00	5.00	1.00	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.500	5.00	0.500	1	U
sec-Butylbenzene	0.500	5.00	0.500	1	U
tert-Butylbenzene	0.500	5.00	0.500	1	U
Carbon disulfide	0.500	5.00	0.500	1	U
Carbon tetrachloride	0.500	5.00	0.500	1	U
Chlorobenzene	0.500	5.00	0.500	1	U
Chlorodibromomethane	0.500	5.00	0.500	1	U
Chloroethane	1.00	5.00	1.00	1	U
Chloroform	0.500	5.00	0.500	1	U
Chloromethane	2.00	10.0	2.00	1	U
2-Chlorotoluene	0.500	5.00	0.500	1	U
4-Chlorotoluene	0.500	5.00	0.500	1	U
1,2-Dibromo-3-chloropropane	2.00	10.0	2.00	1	U
1,2-Dibromoethane	0.500	5.00	0.500	1	U
Dibromomethane	0.500	5.00	0.500	1	U
1,2-Dichlorobenzene	0.500	5.00	0.500	1	U
1,3-Dichlorobenzene	0.500	5.00	0.500	1	U
1,4-Dichlorobenzene	0.500	5.00	0.500	1	U
Dichlorodifluoromethane	1.00	5.00	1.00	1	U
1,1-Dichloroethane	1.00	5.00	1.00	1	U
1,2-Dichloroethane	0.500	5.00	0.500	1	U
1,1-Dichloroethene	0.500	5.00	0.500	1	U
cis-1,2-Dichloroethene	0.500	5.00	0.500	1	U
trans-1,2-Dichloroethene	0.500	5.00	0.500	1	U
1,2-Dichloropropane	0.500	5.00	0.500	1	U
1,3-Dichloropropane	0.500	5.00	0.500	1	U
2,2-Dichloropropane	0.500	5.00	0.500	1	U
cis-1,3-Dichloropropene	0.500	5.00	0.500	1	U
trans-1,3-Dichloropropene	0.500	5.00	0.500	1	U
1,1-Dichloropropene	0.500	5.00	0.500	1	U
Ethylbenzene	0.500	5.00	0.500	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.500	5.00	0.500	1	U
Isopropylbenzene	0.500	5.00	0.500	1	U

Report Name: BLANK
PDF ID: 4756962
11-MAY-2016 14:00

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16041582 Prep Date: 05/07/16 14:01 Sample ID: WG567938-01
Instrument ID: HPMS6 Run Date: 05/07/16 14:01 Prep Method: 5030B/5030C/503
File ID: 6M139120 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG567938 Matrix: Soil Units: ug/kg
Contract #: Cal ID: HPMS6-26-FEB-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.500	5.00	0.500	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	1.00	5.00	1.00	1	U
Naphthalene	0.500	5.00	0.500	1	U
n-Propylbenzene	0.500	5.00	0.500	1	U
Styrene	0.500	5.00	0.500	1	U
1,1,1,2-Tetrachloroethane	0.500	5.00	0.500	1	U
1,1,2,2-Tetrachloroethane	0.500	5.00	0.500	1	U
Tetrachloroethene	0.500	5.00	0.500	1	U
Toluene	0.500	5.00	0.500	1	U
1,2,3-Trichlorobenzene	0.500	5.00	0.500	1	U
1,2,4-Trichlorobenzene	0.500	5.00	0.500	1	U
1,1,1-Trichloroethane	0.500	5.00	0.500	1	U
1,1,2-Trichloroethane	0.500	5.00	0.500	1	U
Trichloroethene	0.500	5.00	0.500	1	U
Trichlorofluoromethane	1.00	5.00	1.00	1	U
1,2,3-Trichloropropane	1.00	5.00	1.00	1	U
1,2,4-Trimethylbenzene	0.500	5.00	0.500	1	U
1,3,5-Trimethylbenzene	0.500	5.00	0.500	1	U
Vinyl chloride	1.00	5.00	1.00	1	U
o-Xylene	0.500	5.00	0.500	1	U
m-,p-Xylene	0.500	5.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	97.6	80 - 120	PASS
1,2-Dichloroethane-d4	95.5	80 - 120	PASS
Toluene-d8	100	85 - 115	PASS
4-Bromofluorobenzene	103	85 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4756962
11-MAY-2016 14:00

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16041582 Run Date: 05/07/2016 Sample ID: WG567938-02
Instrument ID: HPMS6 Run Time: 14:33 Prep Method: 5030B/5030C/503
File ID: 6M139121 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG567938 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD75977 Cal ID: HPMS6-26-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	23.1	116	20 - 160	
Benzene	20.0	19.4	97.2	75 - 125	
Bromobenzene	20.0	19.7	98.3	65 - 120	
Bromochloromethane	20.0	18.9	94.4	70 - 125	
Bromodichloromethane	20.0	19.4	97.1	70 - 130	
Bromoform	20.0	17.3	86.3	55 - 135	
Bromomethane	20.0	20.4	102	30 - 160	
2-Butanone	20.0	22.7	114	30 - 160	
n-Butylbenzene	20.0	19.8	99.2	65 - 140	
sec-Butylbenzene	20.0	21.3	106	65 - 130	
tert-Butylbenzene	20.0	21.2	106	65 - 130	
Carbon disulfide	20.0	19.3	96.6	45 - 160	
Carbon tetrachloride	20.0	20.3	102	65 - 135	
Chlorobenzene	20.0	19.8	99.0	75 - 125	
Chlorodibromomethane	20.0	18.6	92.8	65 - 130	
Chloroethane	20.0	21.7	108	40 - 155	
Chloroform	20.0	19.5	97.5	70 - 125	
Chloromethane	20.0	20.8	104	50 - 130	
2-Chlorotoluene	20.0	20.9	104	70 - 130	
4-Chlorotoluene	20.0	20.8	104	75 - 125	
1,2-Dibromo-3-chloropropane	20.0	20.8	104	40 - 135	
1,2-Dibromoethane	20.0	19.5	97.7	70 - 125	
Dibromomethane	20.0	18.5	92.5	75 - 130	
1,2-Dichlorobenzene	20.0	20.2	101	75 - 120	
1,3-Dichlorobenzene	20.0	20.1	101	70 - 125	
1,4-Dichlorobenzene	20.0	20.0	99.8	70 - 125	
Dichlorodifluoromethane	20.0	21.2	106	35 - 135	
1,1-Dichloroethane	20.0	19.3	96.4	75 - 125	
1,2-Dichloroethane	20.0	19.8	99.0	70 - 135	
1,1-Dichloroethene	20.0	19.8	99.0	65 - 135	
cis-1,2-Dichloroethene	20.0	19.9	99.5	65 - 125	
trans-1,2-Dichloroethene	20.0	20.1	100	65 - 135	
1,2-Dichloropropane	20.0	20.4	102	70 - 120	
1,3-Dichloropropane	20.0	20.6	103	75 - 125	
2,2-Dichloropropane	20.0	21.4	107	65 - 135	
cis-1,3-Dichloropropene	20.0	21.8	109	70 - 125	
trans-1,3-Dichloropropene	20.0	19.6	98.0	65 - 125	
1,1-Dichloropropene	20.0	20.4	102	70 - 135	
Ethylbenzene	20.0	19.6	98.2	75 - 125	
2-Hexanone	20.0	21.7	108	45 - 145	
Hexachlorobutadiene	20.0	22.0	110	55 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4753299
Report generated: 05/11/2016 14:00

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16041582 Run Date: 05/07/2016 Sample ID: WG567938-02
Instrument ID: HPMS6 Run Time: 14:33 Prep Method: 5030B/5030C/503
File ID: 6M139121 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG567938 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD75977 Cal ID: HPMS6-26-FEB-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	20.9	104	75 - 130	
p-Isopropyltoluene	20.0	20.8	104	75 - 135	
4-Methyl-2-pentanone	20.0	23.0	115	45 - 145	
Methylene chloride	20.0	19.6	98.2	55 - 140	
Naphthalene	20.0	18.6	93.1	40 - 125	
n-Propylbenzene	20.0	21.4	107	65 - 135	
Styrene	20.0	19.8	99.2	75 - 125	
1,1,1,2-Tetrachloroethane	20.0	18.9	94.7	75 - 125	
1,1,2,2-Tetrachloroethane	20.0	19.9	99.5	55 - 130	
Tetrachloroethene	20.0	19.5	97.4	65 - 140	
Toluene	20.0	19.8	99.2	70 - 125	
1,2,3-Trichlorobenzene	20.0	18.5	92.5	60 - 135	
1,2,4-Trichlorobenzene	20.0	19.6	98.2	65 - 130	
1,1,1-Trichloroethane	20.0	20.7	103	70 - 135	
1,1,2-Trichloroethane	20.0	19.6	98.0	60 - 125	
Trichloroethene	20.0	20.5	102	75 - 125	
Trichlorofluoromethane	20.0	19.5	97.7	25 - 185	
1,2,3-Trichloropropane	20.0	20.7	104	65 - 130	
1,2,4-Trimethylbenzene	20.0	20.6	103	65 - 135	
1,3,5-Trimethylbenzene	20.0	21.3	106	65 - 135	
Vinyl chloride	20.0	18.2	90.9	60 - 125	
o-Xylene	20.0	20.9	105	75 - 125	
m-,p-Xylene	40.0	40.4	101	80 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	97.7	80 - 120	PASS
1,2-Dichloroethane-d4	94.7	80 - 120	PASS
Toluene-d8	102	85 - 115	PASS
4-Bromofluorobenzene	104	85 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4753299
Report generated: 05/11/2016 14:00

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16041582 Cal ID: HPMS6 - Worknum: WG567938
Instrument ID: HPMS6 Contract #: Method: 8260B
Parent ID: WG567289-01 File ID: 6M139125 Dil: 1 Matrix: SOLID
Sample ID: WG567289-02 MS File ID: 6M139122 Dil: 1 Units: ug/kg
Sample ID: WG567289-03 MSD File ID: 6M139123 Dil: 1 Percent Solid: 74.6

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,1,1,2-Tetrachloroethane	ND	27.9	28.6	102	27.6	27.6	100	3.41	75 - 125	30	
1,1,1-Trichloroethane	ND	27.9	30.5	109	27.6	30.3	110	0.762	70 - 135	30	
1,1,2,2-Tetrachloroethane	ND	27.9	25.8	92.3	27.6	29.0	105	11.8	55 - 130	30	
1,1,2-Trichloroethane	ND	27.9	26.8	95.9	27.6	30.2	110	12.1	60 - 125	30	
1,1-Dichloroethane	ND	27.9	29.2	105	27.6	28.0	102	4.15	75 - 125	30	
1,1-Dichloroethene	ND	27.9	29.6	106	27.6	28.7	104	3.18	65 - 135	30	
1,1-Dichloropropene	ND	27.9	30.2	108	27.6	30.2	110	0.0561	70 - 135	30	
1,2,3-Trichlorobenzene	ND	27.9	29.7	106	27.6	26.3	95.4	12.1	60 - 135	30	
1,2,3-Trichloropropane	ND	27.9	26.8	95.9	27.6	29.4	107	9.47	65 - 130	30	
1,2,4-Trichlorobenzene	ND	27.9	30.1	108	27.6	27.4	99.5	9.33	65 - 130	30	
1,2,4-Trimethylbenzene	2.29	27.9	32.4	108	27.6	29.3	97.8	10.2	65 - 135	30	
1,2-Dibromo-3-chloropropane	ND	27.9	28.2	101	27.6	29.2	106	3.43	40 - 135	30	
1,2-Dibromoethane	ND	27.9	28.7	103	27.6	28.9	105	0.361	70 - 125	30	
1,2-Dichlorobenzene	ND	27.9	29.9	107	27.6	29.7	108	0.722	75 - 120	30	
1,2-Dichloroethane	4.13	27.9	32.6	102	27.6	32.1	101	1.47	70 - 135	30	
1,2-Dichloropropane	ND	27.9	30.9	111	27.6	29.5	107	4.84	70 - 120	30	
1,3,5-Trimethylbenzene	ND	27.9	29.4	105	27.6	30.4	110	3.47	65 - 135	30	
1,3-Dichlorobenzene	ND	27.9	30.0	107	27.6	29.6	107	1.16	70 - 125	30	
1,3-Dichloropropane	ND	27.9	27.7	99.3	27.6	29.6	107	6.48	75 - 125	30	
1,4-Dichlorobenzene	ND	27.9	29.7	106	27.6	29.2	106	1.61	70 - 125	30	
2,2-Dichloropropane	ND	27.9	31.9	114	27.6	30.9	112	3.18	65 - 135	30	
2-Butanone	ND	27.9	28.1	101	27.6	28.0	101	0.403	30 - 160	30	
2-Chlorotoluene	ND	27.9	29.4	105	27.6	29.1	105	1.21	70 - 130	30	
2-Hexanone	ND	27.9	24.4	87.4	27.6	26.7	96.8	8.99	45 - 145	30	
4-Chlorotoluene	ND	27.9	28.8	103	27.6	32.1	116	10.9	75 - 125	30	
4-Methyl-2-pentanone	ND	27.9	28.9	104	27.6	29.6	107	2.38	45 - 145	30	
Acetone	ND	27.9	33.0	118	27.6	36.2	131	9.41	20 - 160	30	
Benzene	ND	27.9	29.2	105	27.6	29.3	106	0.256	75 - 125	30	
Bromobenzene	ND	27.9	27.7	99.3	27.6	28.7	104	3.37	65 - 120	30	
Bromochloromethane	ND	27.9	28.1	101	27.6	29.3	106	4.16	70 - 125	30	
Bromodichloromethane	ND	27.9	28.8	103	27.6	28.2	102	1.88	70 - 130	30	
Bromoform	ND	27.9	24.9	89.0	27.6	24.4	88.6	1.70	55 - 135	30	
Bromomethane	ND	27.9	28.9	104	27.6	28.9	105	0.211	30 - 160	30	
Carbon disulfide	ND	27.9	26.8	96.0	27.6	24.9	90.2	7.56	45 - 160	30	
Carbon tetrachloride	ND	27.9	30.2	108	27.6	30.0	109	0.628	65 - 135	30	
Chlorobenzene	ND	27.9	29.9	107	27.6	29.2	106	2.23	75 - 125	30	
Chlorodibromomethane	ND	27.9	28.0	100	27.6	26.7	96.9	4.47	65 - 130	30	
Chloroethane	ND	27.9	31.7	114	27.6	30.2	110	4.86	40 - 155	30	
Chloroform	ND	27.9	30.1	108	27.6	28.3	103	6.07	70 - 125	30	

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4753300
Report generated 05/09/2016 16:13

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16041582 Cal ID: HPMS6 Worknum: WG567938
Instrument ID: HPMS6 Contract #: Method: 8260B
Parent ID: WG567289-01 File ID: 6M139125 Dil: 1 Matrix: SOLID
Sample ID: WG567289-02 MS File ID: 6M139122 Dil: 1 Units: ug/kg
Sample ID: WG567289-03 MSD File ID: 6M139123 Dil: 1 Percent Solid: 74.6

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chloromethane	ND	27.9	31.6	113	27.6	31.2	113	1.17	50 - 130	30	
Dibromomethane	ND	27.9	27.1	97.0	27.6	26.9	97.5	0.753	75 - 130	30	
Dichlorodifluoromethane	ND	27.9	30.9	111	27.6	30.0	109	2.89	35 - 135	30	
Ethylbenzene	ND	27.9	30.0	107	27.6	28.5	103	4.91	75 - 125	30	
Hexachlorobutadiene	ND	27.9	31.6	113	27.6	30.1	109	4.67	55 - 140	30	
Isopropylbenzene	ND	27.9	31.1	111	27.6	29.8	108	4.41	75 - 130	30	
Methylene chloride	ND	27.9	29.8	107	27.6	29.0	105	2.53	55 - 140	30	
Naphthalene	ND	27.9	27.3	97.8	27.6	25.7	93.3	5.92	40 - 125	30	
Styrene	ND	27.9	30.2	108	27.6	30.0	109	0.533	75 - 125	30	
Tetrachloroethene	ND	27.9	30.6	109	27.6	27.9	101	9.17	65 - 140	30	
Toluene	ND	27.9	30.1	108	27.6	30.0	109	0.230	70 - 125	30	
Trichloroethene	47.6	27.9	64.7	61.3	27.6	61.0	48.6	5.89	75 - 125	30	*
Trichlorofluoromethane	ND	27.9	28.6	103	27.6	28.3	103	1.31	25 - 185	30	
Vinyl chloride	ND	27.9	26.8	96.0	27.6	27.0	97.8	0.643	60 - 125	30	
cis-1,2-Dichloroethene	9.99	27.9	38.3	101	27.6	36.4	95.7	5.08	65 - 125	30	
cis-1,3-Dichloropropene	ND	27.9	32.1	115	27.6	32.4	118	0.953	70 - 125	30	
m-,p-Xylene	ND	55.8	61.5	110	55.2	57.7	105	6.49	80 - 125	30	
n-Butylbenzene	ND	27.9	29.2	105	27.6	28.2	102	3.74	65 - 140	30	
n-Propylbenzene	ND	27.9	29.9	107	27.6	31.8	115	6.36	65 - 135	30	
o-Xylene	ND	27.9	32.0	115	27.6	32.0	116	0.132	75 - 125	30	
p-Isopropyltoluene	4.51	27.9	34.1	106	27.6	34.5	109	1.18	75 - 135	30	
sec-Butylbenzene	ND	27.9	31.1	111	27.6	31.1	113	0.101	65 - 130	30	
tert-Butylbenzene	ND	27.9	32.9	118	27.6	30.4	110	7.84	65 - 130	30	
trans-1,2-Dichloroethene	ND	27.9	30.3	109	27.6	29.2	106	3.78	65 - 135	30	
trans-1,3-Dichloropropene	ND	27.9	28.3	101	27.6	28.3	103	0.0292	65 - 125	30	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4753300
Report generated 05/09/2016 16:13

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16041582
Instrument: HPMS6
Analyst: TMB
Workgroup: WG558920

Tune ID: WG558920-01
Run Date: 02/26/2016
Run Time: 13:16
File ID: 6M137522
Cal ID: HPMS6 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	25.4	9030	PASS
75.0	95.0	30.0	60.0	55.4	19666	PASS
95.0	95.0	100	100	100	35512	PASS
96.0	95.0	5.00	9.00	7.25	2576	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	73.2	26011	PASS
175	174	5.00	9.00	7.36	1914	PASS
176	174	95.0	101	96.1	24992	PASS
177	176	5.00	9.00	6.64	1660	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG558920-02	STD-S	01	02/26/2016 13:41	
WG558920-03	STD-S	01	02/26/2016 14:13	
WG558920-04	STD-S	01	02/26/2016 14:46	
WG558920-05	STD-S	01	02/26/2016 15:26	
WG558920-06	STD-S	01	02/26/2016 15:58	
WG558920-07	STD-S	01	02/26/2016 16:30	
WG558920-08	STD-CCV-S	01	02/26/2016 17:03	
WG558920-09	STD-S	01	02/26/2016 17:35	
WG558920-10	STD-S	01	02/26/2016 18:07	
WG558920-11	STD-S	01	02/26/2016 18:39	
WG558920-12	SSCV-S	01	02/26/2016 20:15	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4753302
Report generated 05/11/2016 14:00

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16041582
Instrument: HPMS6
Analyst: TMB
Workgroup: WG567937

Tune ID: WG567937-01
Run Date: 05/07/2016
Run Time: 12:31
File ID: 6M139117
Cal ID: HPMS6 - 26-FEB-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.7	8437	PASS
75.0	95.0	30.0	60.0	52.9	20594	PASS
95.0	95.0	100	100	100	38933	PASS
96.0	95.0	5.00	9.00	6.87	2676	PASS
173	174	0	2.00	0.356	109	PASS
174	95.0	50.0	100	78.7	30637	PASS
175	174	5.00	9.00	6.97	2135	PASS
176	174	95.0	101	97.5	29856	PASS
177	176	5.00	9.00	7.40	2208	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG567937-02	CCV-S	01	05/07/2016 12:55	
WG567938-01	BLANK	01	05/07/2016 14:01	
WG567938-02	LCS	01	05/07/2016 14:33	
WG567289-02	MS	01	05/07/2016 15:06	
WG567289-03	MSD	01	05/07/2016 15:38	
L16041582-01	18CPTMW23SW(5-5.5)	01	05/07/2016 16:44	
L16041582-02	18CPTMW23SW(10-10.5)	01	05/07/2016 17:17	
L16041582-03	18CPTMW23SW(20-20.5)	01	05/07/2016 17:49	
L16041582-04	18CPTMW23SW(30-30.5)	01	05/07/2016 18:22	
L16041582-05	18CPTMW23SW(40-40.5)	01	05/07/2016 18:54	
L16041582-06	18CPTMW23SW(60-60.5)	01	05/07/2016 19:27	
L16041582-07	18CPTMW23SW(50-50.5)	01	05/07/2016 20:00	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4753302
Report generated 05/11/2016 14:00

Calibration Table Report
Method: 826_SL.M
Title: 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Calibration: Mon Feb 29 15:59:52 2016
Curve: WG558920
Calibration Files

	Compound	0.5 6M137523.D	1 6M137524.D	2 6M137525.D	5 6M137526.D	10 6M137527.D	20 6M137528.D	50 6M137529.D	100 6M137530.D	200 6M137531.D	300 6M137532.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.386	0.437	0.426	0.515	0.537	0.438	0.464	0.471	0.459	10.647		
P	Chloromethane			0.578	0.509	0.480	0.500	0.503	0.398	0.425	0.436	0.479	11.984		
C	Vinyl Chloride			0.371	0.405	0.376	0.415	0.431	0.353	0.374	0.357	0.385	7.341		
T	1,3-Butadiene				0.369	0.322	0.361	0.344	0.289	0.282	0.277	0.320	11.982		
T	Bromomethane			0.192	0.207	0.206	0.215	0.213	0.184	0.207	0.218	0.205	5.643		
T	Chloroethane			0.199	0.219	0.208	0.232	0.244	0.202	0.219	0.224	0.218	6.941		
T	Trichlorofluoromethane			0.535	0.557	0.513	0.525	0.558	0.462	0.490	0.501	0.518	6.398		
T	Diethyl ether		0.243	0.231	0.234	0.251	0.241	0.233	0.233		0.238	0.238	2.758		
T	Isoprene				0.333	0.322	0.327	0.355	0.334	0.338	0.351	0.337	3.613		
T	Acrolein		0.044	0.045	0.044	0.050	0.045	0.042	0.045		0.047	0.045	5.301		
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.199	0.268	0.248	0.256	0.277	0.230	0.245	0.252	0.247	9.700		
T	Acetone					0.152	0.130	0.112	0.104	0.110	0.106	0.119	15.588	0.999	
C	1,1-Dichloroethene			0.380	0.462	0.424	0.453	0.487	0.410	0.439	0.447	0.438	7.530		
T	Tert-Butyl Alcohol		0.039	0.035	0.040	0.044	0.044	0.040	0.040		0.044	0.041	7.378		
T	Dimethyl Sulfide				0.204	0.210	0.197	0.223	0.210	0.218	0.224	0.212	4.669		
T	Iodomethane				0.056	0.082	0.123	0.197	0.197	0.211	0.207	0.153	42.723	0.998	
T	Methyl acetate				0.309	0.317	0.309	0.308	0.292	0.293	0.300	0.304	3.023		
T	Methylene Chloride			0.256	0.273	0.264	0.268	0.287	0.242	0.257	0.260	0.264	5.015		
T	Carbon Disulfide			0.821	0.880	0.808	0.840	0.872	0.808	0.825	0.844	0.837	3.273		
T	Acrylonitrile		0.108	0.114	0.119	0.133	0.128	0.130	0.129		0.140	0.125	8.391		
T	Methyl Tert Butyl Ether	0.732	0.693	0.663	0.725	0.773	0.787	0.833	0.734	0.785	0.799	0.753	6.930		
T	trans-1,2-Dichloroethene			0.227	0.244	0.240	0.247	0.265	0.226	0.240	0.244	0.242	5.097		
T	n-Hexane			0.407	0.452	0.430	0.435	0.466	0.433	0.438	0.452	0.439	4.050		
T	Diisopropyl ether		1.143	1.120	1.122	1.188	1.168	1.117	1.121		1.127	1.138	2.317		
T	Vinyl Acetate				0.493	0.583	0.630	0.596	0.570	0.626	0.621	0.588	8.090		
P	1,1-Dichloroethane			0.484	0.538	0.522	0.539	0.568	0.484	0.514	0.521	0.521	5.427		
T	Ethyl-Tert-Butyl ether		0.841	0.891	0.897	0.963	0.947	0.909	0.912		0.938	0.912	4.185		
T	2-Butanone				0.186	0.176	0.176	0.169	0.161	0.170	0.172	0.173	4.334		
T	Propionitrile		0.047	0.045	0.045	0.051	0.050	0.048	0.047		0.049	0.048	4.489		
T	2,2-Dichloropropane			0.413	0.427	0.425	0.415	0.454	0.383	0.410	0.420	0.418	4.750		
T	cis-1,2-Dichloroethene			0.265	0.274	0.263	0.275	0.290	0.250	0.269	0.273	0.270	4.259		
C	Chloroform			0.502	0.499	0.475	0.499	0.520	0.443	0.476	0.481	0.487	4.825		
T	1-Bromopropane				0.033	0.034	0.037	0.040	0.037	0.038	0.039	0.037	7.440		
T	Bromochloromethane			0.151	0.148	0.152	0.165	0.176	0.151	0.162	0.164	0.159	6.123		
T	Tetrahydrofuran		0.173	0.111	0.113	0.121	0.123	0.115	0.112		0.116	0.123	16.774	0.998	
S	Dibromofluoromethane			0.280	0.265	0.272	0.276	0.272	0.253	0.265	0.262	0.268	3.189		
T	1,1,1-Trichloroethane			0.412	0.417	0.434	0.435	0.474	0.398	0.430	0.438	0.430	5.218		
T	Cyclohexane			0.396	0.493	0.473	0.495	0.533	0.492	0.499	0.519	0.487	8.433		
T	1,1-Dichloropropene			0.306	0.372	0.338	0.347	0.383	0.324	0.345	0.355	0.346	7.125		
T	Tert-Amyl-Methyl ether		0.664	0.687	0.706	0.759	0.757	0.723	0.732		0.762	0.724	4.986		
T	Carbon Tetrachloride			0.351	0.409	0.4	0.412	0.445	0.378	0.403	0.416	0.4017	6.9015		
S	1,2-Dichloroethane-d4			0.36	0.365	0.337	0.366	0.353	0.329	0.34	0.336	0.3482	4.16		
T	Heptane											0	0		
T	1,2-Dichloroethane			0.387	0.414	0.422	0.43	0.449	0.388	0.415	0.419	0.4154	4.951		
T	Benzene	1.229	1.128	1.036	1.038	1.011	1.023	1.078	0.921	0.973	0.979	1.0416	8.3738		
T	Trichloroethene			0.223	0.257	0.243	0.254	0.268	0.229	0.245	0.249	0.2461	6.0218		
T	Methylcyclohexane			0.321	0.406	0.387	0.403	0.435	0.401	0.406	0.424	0.3978	8.6044		
C	1,2-Dichloropropane			0.249	0.279	0.277	0.29	0.305	0.266	0.286	0.29	0.2802	6.0373		
T	1,4-Dioxane			0.002	0.003	0.003	0.003	0.003	0.003		0.004	0.0031	18.585	0.996	
T	Bromodichloromethane			0.336	0.359	0.35	0.37	0.402	0.352	0.384	0.39	0.3678	6.1125		
T	Dibromomethane			0.145	0.152	0.16	0.169	0.185	0.158	0.171	0.173	0.1639	7.836		
T	2-Chloroethyl Vinyl Ether				0.126	0.141	0.155	0.164	0.161	0.178		0.1541	11.732		
T	4-Methyl-2-Pentanone				0.101	0.11	0.122	0.117	0.113	0.125	0.128	0.1167	8.1948		
T	cis-1,3-Dichloropropene			0.338	0.374	0.39	0.412	0.454	0.396	0.435	0.442	0.4052	9.5304		
T	Dimethyl Disulfide				0.171	0.174	0.192	0.225	0.22	0.245		0.2044	14.756		
I	Chlorobenzene-d5	ISTD													
S	Toluene-d8			1.274	1.278	1.167	1.22	1.21	1.113	1.144	1.105	1.1888	5.6789		
C	Toluene	1.627	1.459	1.33	1.431	1.418	1.424	1.504	1.27	1.35	1.331	1.4144	7.2521		
T	Ethyl Methacrylate			0.326	0.401	0.428	0.461	0.503	0.477	0.511	0.518	0.4532	14.498		
T	Paraldehyde											0	0		
T	trans-1,3-Dichloropropene			0.461	0.507	0.529	0.558	0.603	0.53	0.579	0.582	0.5439	8.4811		
T	1,1,2-Trichloroethane			0.265	0.288	0.302	0.309	0.319	0.28	0.302	0.299	0.2956	5.771		
T	2-Hexanone				0.298	0.324	0.345	0.341	0.328	0.359	0.366	0.3373	6.878		
T	1,3-Dichloropropane			0.488	0.541	0.538	0.558	0.579	0.503	0.54	0.54	0.5358	5.3786		
T	Tetrachloroethene			0.332	0.375	0.358	0.359	0.376	0.318	0.336	0.337	0.3489	6.0417		
T	Dibromochloromethane			0.318	0.369	0.378	0.394	0.425	0.373	0.407	0.41	0.3845	8.6342		
T	1,2-Dibromoethane			0.271	0.289	0.29	0.309	0.332	0.29	0.318	0.32	0.3023	6.7531		
T	1-Chlorohexane			0.358	0.417	0.417	0.441	0.485	0.451	0.47	0.474	0.4392	9.3805		
P	Chlorobenzene			0.915	0.966	0.916	0.927	0.958	0.821	0.89	0.88	0.909	5.1018		
T	1,1,1,2-Tetrachloroethane			0.348	0.343	0.362	0.374	0.393	0.344	0.376	0.38	0.365	5.0679		
C	Ethylbenzene	0.49	0.466	0.473	0.486	0.481	0.497	0.531	0.453	0.494	0.494	0.4864	4.3098		
T	m-,p-Xylene	0.674	0.598	0.537	0.6	0.59	0.605	0.637	0.546	0.585	0.58	0.5952	6.6768		
T	o-Xylene	0.574	0.512	0.494	0.539	0.544	0.588	0.634	0.54	0.59	0.591	0.5606	7.5243		
T	Styrene			0.772	0.876	0.918	0.982	1.071	0.935	1.037	1.041	0.9542	10.466		
P	Bromoform			0.222	0.256	0.259	0.275	0.298	0.261	0.293	0.307	0.2715	10.256		
T	Isopropylbenzene			1.284	1.474	1.498	1.583	1.683	1.433	1.559	1.542	1.507	7.8153		
I	1,4-Dichlorobenzene-d4	ISTD													
P	1,1,2,2-Tetrachloroethane			0.689	0.783	0.798	0.815	0.842	0.74	0.785	0.797	0.7811	6.0053		
S	p-Bromofluorobenzene			0.997	0.956	0.921	0.925	0.941	0.864	0.892	0.852	0.9184	5.2432		

T	1,2,3-Trichloropropane	0.202	0.247	0.251	0.244	0.258	0.225	0.243	0.244	0.2391	7.3405
T	trans-1,4-Dichloro-2-Butene	0.247	0.255	0.285	0.287	0.308	0.295	0.311	0.318	0.2883	8.9009
T	n-Propylbenzene	3.037	3.536	3.508	3.571	3.802	3.207	3.325	3.178	3.3956	7.429
T	Bromobenzene	0.67	0.762	0.744	0.775	0.808	0.694	0.733	0.719	0.7381	6.0417
T	1,3,5-Trimethylbenzene	2.096	2.503	2.443	2.485	2.702	2.295	2.435	2.377	2.417	7.2332
T	2-Chlorotoluene	1.974	2.457	2.366	2.375	2.437	2.106	2.239	2.178	2.2664	7.5835
T	4-Chlorotoluene	2.163	2.182	2.123	2.094	2.235	1.885	1.964	1.933	2.0723	6.208
T	a-Methylstyrene	0.921	1.071	1.127	1.156	1.295	1.234	1.294	1.291	1.1737	11.321
T	tert-Butylbenzene	0.437	0.508	0.504	0.521	0.567	0.48	0.511	0.502	0.5037	7.2697
T	1,2,4-Trimethylbenzene	2.274	2.614	2.634	2.636	2.804	2.386	2.535	2.452	2.5419	6.5668
T	sec-Butylbenzene	2.804	3.169	3.104	3.238	3.474	2.92	3.078	2.976	3.0953	6.6823
T	p-Isopropyltoluene	2.183	2.603	2.54	2.657	2.885	2.449	2.589	2.523	2.5537	7.7414
T	1,3-Dichlorobenzene	1.331	1.516	1.491	1.451	1.537	1.319	1.391	1.389	1.4282	5.8154
T	1,4-Dichlorobenzene	1.528	1.507	1.501	1.476	1.529	1.31	1.39	1.389	1.4537	5.5603
T	n-Butylbenzene	2.282	2.598	2.578	2.654	2.852	2.445	2.576	2.563	2.5684	6.3469
T	1,2-Dichlorobenzene	1.324	1.401	1.407	1.397	1.474	1.278	1.357	1.356	1.3743	4.3244
T	1,2-Dibromo-3-Chloropropane		0.159	0.163	0.176	0.183	0.167	0.179	0.182	0.1728	5.5543
T	1,2,4-Trichlorobenzene	0.968	0.981	1.002	1.008	1.105	0.936	0.963	0.985	0.9935	5.0666
T	Hexachlorobutadiene	0.528	0.583	0.572	0.579	0.635	0.532	0.546	0.571	0.5682	6.0591
T	Naphthalene	1.901	2.081	2.291	2.365	2.601	2.29	2.356	2.387	2.2839	9.2287
T	1,2,3-Trichlorobenzene	0.961	0.977	0.98	0.987	1.094	0.917	0.949	0.961	0.9783	5.2988

Mon Feb 29 16:03:43 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16041582 Run Date: 02/26/2016 Sample ID: WG558920-12
Instrument ID: HPMS6 Run Time: 20:15 Method: 8260B
File ID: 6M137535 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG558920 Cal ID: HPMS6 - 26-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.7	ug/kg	0.494	1.40	20	
1,1-Dichloroethene	CCC	50.0	51.6	ug/kg	0.452	3.30	20	
1,2-Dichloropropane	CCC	50.0	55.0	ug/kg	0.308	10.1	20	
Ethylbenzene	CCC	50.0	52.4	ug/kg	0.510	4.80	20	
Toluene	CCC	50.0	51.4	ug/kg	1.45	2.80	20	
Vinyl Chloride	CCC	50.0	43.3	ug/kg	0.334	13.3	20	
Bromoform	SPCC	50.0	49.2	ug/kg	0.267	1.50	20	
Chlorobenzene	SPCC	50.0	52.9	ug/kg	0.961	5.70	20	
Chloromethane	SPCC	50.0	50.9	ug/kg	0.487	1.80	20	
1,1-Dichloroethane	SPCC	50.0	50.3	ug/kg	0.525	0.700	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	52.1	ug/kg	0.815	4.30	20	
Acetone		50.0	48.7	ug/kg	0.111	2.70	20	
Benzene		50.0	50.4	ug/kg	1.05	0.900	20	
Bromobenzene		50.0	51.8	ug/kg	0.765	3.70	20	
Bromochloromethane		50.0	52.1	ug/kg	0.165	4.20	20	
Bromodichloromethane		50.0	51.6	ug/kg	0.380	3.30	20	
Bromomethane		50.0	58.6	ug/kg	0.240	17.1	20	
2-Butanone		50.0	49.2	ug/kg	0.170	1.50	20	
n-Butylbenzene		50.0	48.8	ug/kg	2.50	2.50	20	
sec-Butylbenzene		50.0	50.7	ug/kg	3.14	1.40	20	
tert-Butylbenzene		50.0	53.2	ug/kg	0.536	6.40	20	
Carbon Disulfide		50.0	44.4	ug/kg	0.743	11.2	20	
Carbon Tetrachloride		50.0	51.2	ug/kg	0.411	2.30	20	
Dibromochloromethane		50.0	51.8	ug/kg	0.399	3.70	20	
Chloroethane		50.0	56.6	ug/kg	0.247	13.2	20	
2-Chlorotoluene		50.0	52.1	ug/kg	2.36	4.20	20	
4-Chlorotoluene		50.0	52.1	ug/kg	2.16	4.10	20	
1,2-Dibromo-3-Chloropropane		50.0	52.1	ug/kg	0.180	4.30	20	
1,2-Dibromoethane		50.0	53.7	ug/kg	0.325	7.30	20	
Dibromomethane		50.0	50.4	ug/kg	0.165	0.800	20	
1,2-Dichlorobenzene		50.0	54.5	ug/kg	1.50	9.00	20	
1,3-Dichlorobenzene		50.0	52.0	ug/kg	1.49	4.00	20	
1,4-Dichlorobenzene		50.0	51.8	ug/kg	1.51	3.60	20	
Dichlorodifluoromethane		50.0	55.5	ug/kg	0.509	10.9	20	
1,2-Dichloroethane		50.0	51.3	ug/kg	0.426	2.50	20	
cis-1,2-Dichloroethene		50.0	54.1	ug/kg	0.292	8.30	20	
trans-1,2-Dichloroethene		50.0	53.7	ug/kg	0.260	7.50	20	
1,3-Dichloropropane		50.0	54.9	ug/kg	0.589	9.80	20	
2,2-Dichloropropane		50.0	53.1	ug/kg	0.444	6.20	20	
cis-1,3-Dichloropropene		50.0	58.8	ug/kg	0.476	17.5	20	
trans-1,3-Dichloropropene		50.0	52.9	ug/kg	0.575	5.70	20	
1,1-Dichloropropene		50.0	52.8	ug/kg	0.365	5.50	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4753301
Report generated 05/11/2016 14:00

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16041582 Run Date: 02/26/2016 Sample ID: WG558920-12
Instrument ID: HPMS6 Run Time: 20:15 Method: 8260B
File ID: 6M137535 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG558920 Cal ID: HPMS6 - 26-FEB-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	51.3	ug/kg	0.346	2.60	20	
Hexachlorobutadiene		50.0	47.6	ug/kg	0.541	4.80	20	
Isopropylbenzene		50.0	54.6	ug/kg	1.64	9.10	20	
p-Isopropyltoluene		50.0	50.9	ug/kg	2.60	1.80	20	
4-Methyl-2-Pentanone		50.0	51.3	ug/kg	0.120	2.50	20	
Methylene Chloride		50.0	53.4	ug/kg	0.281	6.80	20	
Naphthalene		50.0	49.8	ug/kg	2.28	0.300	20	
n-Propylbenzene		50.0	52.6	ug/kg	3.57	5.30	20	
Styrene		50.0	55.3	ug/kg	1.06	10.6	20	
1,1,1,2-Tetrachloroethane		50.0	51.8	ug/kg	0.379	3.70	20	
Tetrachloroethene		50.0	51.1	ug/kg	0.357	2.20	20	
1,2,3-Trichlorobenzene		50.0	51.0	ug/kg	0.997	2.00	20	
1,2,4-Trichlorobenzene		50.0	51.0	ug/kg	1.01	2.10	20	
1,1,1-Trichloroethane		50.0	52.0	ug/kg	0.447	4.00	20	
1,1,2-Trichloroethane		50.0	53.2	ug/kg	0.315	6.40	20	
Trichloroethene		50.0	54.7	ug/kg	0.269	9.40	20	
Trichlorofluoromethane		50.0	47.9	ug/kg	0.496	4.20	20	
1,2,3-Trichloropropane		50.0	53.2	ug/kg	0.254	6.30	20	
1,2,4-Trimethylbenzene		50.0	51.1	ug/kg	2.60	2.30	20	
1,3,5-Trimethylbenzene		50.0	52.7	ug/kg	2.55	5.30	20	
o-Xylene		50.0	56.9	ug/kg	0.638	13.8	20	
m-,p-Xylene		100	105	ug/kg	0.626	5.20	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4753301
Report generated 05/11/2016 14:00

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041582 Run Date: 05/07/2016 Sample ID: WG567937-02
Instrument ID: HPMS6 Run Time: 12:55 Method: 8260B
File ID: 6M139118 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG567938 Cal ID: HPMS6 - 26-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	52.6	ug/kg	0.512	5.27	20	
1,1-Dichloroethene	CCC	50.0	55.0	ug/kg	0.481	10.0	20	
1,2-Dichloropropane	CCC	50.0	53.4	ug/kg	0.299	6.77	20	
Ethylbenzene	CCC	50.0	54.8	ug/kg	0.533	9.65	20	
Toluene	CCC	50.0	52.7	ug/kg	1.49	5.38	20	
Vinyl Chloride	CCC	50.0	47.3	ug/kg	0.365	5.34	20	
Bromoform	SPCC	50.0	56.4	ug/kg	0.306	12.8	20	
Chlorobenzene	SPCC	50.0	52.6	ug/kg	0.957	5.26	20	
Chloromethane	SPCC	50.0	47.1	ug/kg	0.451	5.73	20	
1,1-Dichloroethane	SPCC	50.0	53.4	ug/kg	0.557	6.82	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	58.8	ug/kg	0.919	17.7	20	
Xylenes		150	165	ug/kg	0.641	10.1	20	
Acetone		50.0	55.4	ug/kg	0.125	10.8	20	
Benzene		50.0	51.8	ug/kg	1.08	3.56	20	
Bromobenzene		50.0	54.4	ug/kg	0.803	8.77	20	
Bromochloromethane		50.0	53.1	ug/kg	0.168	6.16	20	
Bromodichloromethane		50.0	54.1	ug/kg	0.398	8.15	20	
Bromomethane		50.0	52.5	ug/kg	0.216	4.97	20	
2-Butanone		50.0	57.4	ug/kg	0.198	14.8	20	
n-Butylbenzene		50.0	57.2	ug/kg	2.94	14.5	20	
sec-Butylbenzene		50.0	57.1	ug/kg	3.54	14.2	20	
tert-Butylbenzene		50.0	55.6	ug/kg	0.560	11.2	20	
Carbon Disulfide		50.0	48.8	ug/kg	0.817	2.47	20	
Carbon Tetrachloride		50.0	56.0	ug/kg	0.450	11.9	20	
Dibromochloromethane		50.0	54.5	ug/kg	0.419	9.07	20	
Chloroethane		50.0	52.7	ug/kg	0.230	5.34	20	
2-Chlorotoluene		50.0	55.7	ug/kg	2.53	11.5	20	
4-Chlorotoluene		50.0	55.3	ug/kg	2.29	10.6	20	
1,2-Dibromo-3-Chloropropane		50.0	63.4	ug/kg	0.219	26.9	20	*
1,2-Dibromoethane		50.0	55.5	ug/kg	0.336	11.1	20	
Dibromomethane		50.0	53.9	ug/kg	0.177	7.90	20	
1,2-Dichlorobenzene		50.0	54.3	ug/kg	1.49	8.56	20	
1,3-Dichlorobenzene		50.0	54.6	ug/kg	1.56	9.10	20	
1,4-Dichlorobenzene		50.0	54.0	ug/kg	1.57	8.00	20	
Dichlorodifluoromethane		50.0	47.4	ug/kg	0.435	5.21	20	
1,2-Dichloroethane		50.0	52.9	ug/kg	0.439	5.74	20	
cis-1,2-Dichloroethene		50.0	53.6	ug/kg	0.289	7.19	20	
trans-1,2-Dichloroethene		50.0	54.6	ug/kg	0.264	9.23	20	
1,3-Dichloropropane		50.0	53.4	ug/kg	0.572	6.73	20	
2,2-Dichloropropane		50.0	56.2	ug/kg	0.470	12.4	20	
cis-1,3-Dichloropropene		50.0	56.1	ug/kg	0.454	12.2	20	
trans-1,3-Dichloropropene		50.0	55.8	ug/kg	0.607	11.6	20	

CCV - Modified 03/05/2008
PDF File ID: 4753303
Report generated 05/11/2016 14:00

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041582 Run Date: 05/07/2016 Sample ID: WG567937-02
Instrument ID: HPMS6 Run Time: 12:55 Method: 8260B
File ID: 6M139118 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG567938 Cal ID: HPMS6 - 26-FEB-16
Matrix: SOIL

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	56.2	ug/kg	0.390	12.5	20	
2-Hexanone		50.0	62.4	ug/kg	0.421	24.8	20	*
Hexachlorobutadiene		50.0	57.4	ug/kg	0.652	14.8	20	
Isopropylbenzene		50.0	57.1	ug/kg	1.72	14.2	20	
p-Isopropyltoluene		50.0	58.3	ug/kg	2.98	16.5	20	
4-Methyl-2-Pentanone		50.0	64.7	ug/kg	0.151	29.4	20	*
Methylene Chloride		50.0	52.8	ug/kg	0.278	5.64	20	
Naphthalene		50.0	61.9	ug/kg	2.83	23.9	20	*
n-Propylbenzene		50.0	57.1	ug/kg	3.88	14.2	20	
Styrene		50.0	57.1	ug/kg	1.09	14.1	20	
1,1,1,2-Tetrachloroethane		50.0	53.3	ug/kg	0.389	6.69	20	
Tetrachloroethene		50.0	55.0	ug/kg	0.384	9.93	20	
1,2,3-Trichlorobenzene		50.0	55.2	ug/kg	1.08	10.5	20	
1,2,4-Trichlorobenzene		50.0	56.4	ug/kg	1.12	12.8	20	
1,1,1-Trichloroethane		50.0	55.0	ug/kg	0.473	9.93	20	
1,1,2-Trichloroethane		50.0	54.1	ug/kg	0.320	8.30	20	
Trichloroethene		50.0	54.4	ug/kg	0.268	8.79	20	
Trichlorofluoromethane		50.0	51.8	ug/kg	0.536	3.52	20	
1,2,3-Trichloropropane		50.0	59.7	ug/kg	0.285	19.3	20	
1,2,4-Trimethylbenzene		50.0	56.3	ug/kg	2.86	12.6	20	
1,3,5-Trimethylbenzene		50.0	57.2	ug/kg	2.76	14.3	20	
o-Xylene		50.0	56.6	ug/kg	0.635	13.2	20	
m-,p-Xylene		100	109	ug/kg	0.646	8.57	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4753303
Report generated 05/11/2016 14:00

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16041582
Instrument ID: HPMS6
Workgroup (AAB#): WG567938

ICAL CCV Number: WG558920-08
CAL ID: HPMS6-26-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558920-08	NA	NA	237573	439950	607631
Upper Limit	NA	NA	475146	879900	1215262
Lower Limit	NA	NA	118787	219975	303816
L16041582-01	1.00	01	238576	443813	642138
L16041582-02	1.00	01	239440	466587	621498
L16041582-03	1.00	01	222792	460669	637553
L16041582-04	1.00	01	239130	464811	665493
L16041582-05	1.00	01	231486	463590	631906
L16041582-06	1.00	01	241818	472281	655810
L16041582-07	1.00	01	210978	442743	645261
WG567938-01	1.00	01	245657	472074	638259
WG567938-02	1.00	01	252881	473112	639989

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4756963
Report generated 05/11/2016 14:00

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16041582
Instrument ID: HPMS6
Workgroup (AAB#): WG567938

ICAL CCV Number: WG558920-08
CAL ID: HPMS6-26-FEB-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG558920-08	NA	NA	19.6	16.01	11.51
Upper Limit	NA	NA	20.1	16.51	12.01
Lower Limit	NA	NA	19.1	15.51	11.01
L16041582-01	1.00	01	19.59	16.01	11.51
L16041582-02	1.00	01	19.6	16.01	11.52
L16041582-03	1.00	01	19.59	16.01	11.51
L16041582-04	1.00	01	19.59	16.01	11.52
L16041582-05	1.00	01	19.58	16.01	11.52
L16041582-06	1.00	01	19.59	16.01	11.52
L16041582-07	1.00	01	19.58	16.01	11.52
WG567938-01	1.00	01	19.59	16.01	11.52
WG567938-02	1.00	01	19.58	16.01	11.52

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4756964
Report generated: 05/11/2016 14:00

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050716\6M139125.D Vial: 9
Acq On : 7 May 2016 16:44 Operator: TMB
Sample : L16041582-01 8260 4.57g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 09 08:33:08 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	642138	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	443813	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	238576	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	161019	46.7445 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.48%		
43) 1,2-Dichloroethane-d4	11.06	65	193320	43.2245 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 86.44%		
58) Toluene-d8	13.80	98	554324	52.5334 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 105.06%		
80) p-Bromofluorobenzene	17.79	95	231882	52.9152 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 105.84%		

Target Compounds

					Qvalue
3) Chloromethane	3.89	50	2366	0.3850 ug/L #	60
4) Vinyl Chloride	4.13	62	2326	0.4702 ug/L #	44
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	1597	0.5034 ug/L #	27
13) Acetone	6.60	43	10167	3.1816 ug/L	97
14) 1,1-Dichloroethene	6.85	61	1815	0.3230 ug/L #	24
29) 2-Butanone	9.47	43	797	0.3591 ug/L #	56
32) cis-1,2-Dichloroethene	9.77	96	23624	6.8164 ug/L	96
36) Tetrahydrofuran	10.30	42	3134	Below Cal	87
45) 1,2-Dichloroethane	11.19	62	15034	2.8180 ug/L #	83
47) Trichloroethene	12.09	130	102483	32.4305 ug/L	94
59) Toluene	13.91	91	3727	0.2969 ug/L	90
60) Ethyl Methacrylate	13.80	69	1441	0.3582 ug/L	91
89) tert-Butylbenzene	18.82	134	2859	1.1896 ug/L	80
90) 1,2,4-Trimethylbenzene	18.82	105	18930	1.5608 ug/L #	49
92) p-Isopropyltoluene	19.26	119	37507	3.0782 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M139125.D 826_SL.M Mon May 09 08:33:09 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050716\6M139125.D Vial: 9
Acq On : 7 May 2016 16:44 Operator: TMB
Sample : L16041582-01 8260 4.57g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 9 8:33 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

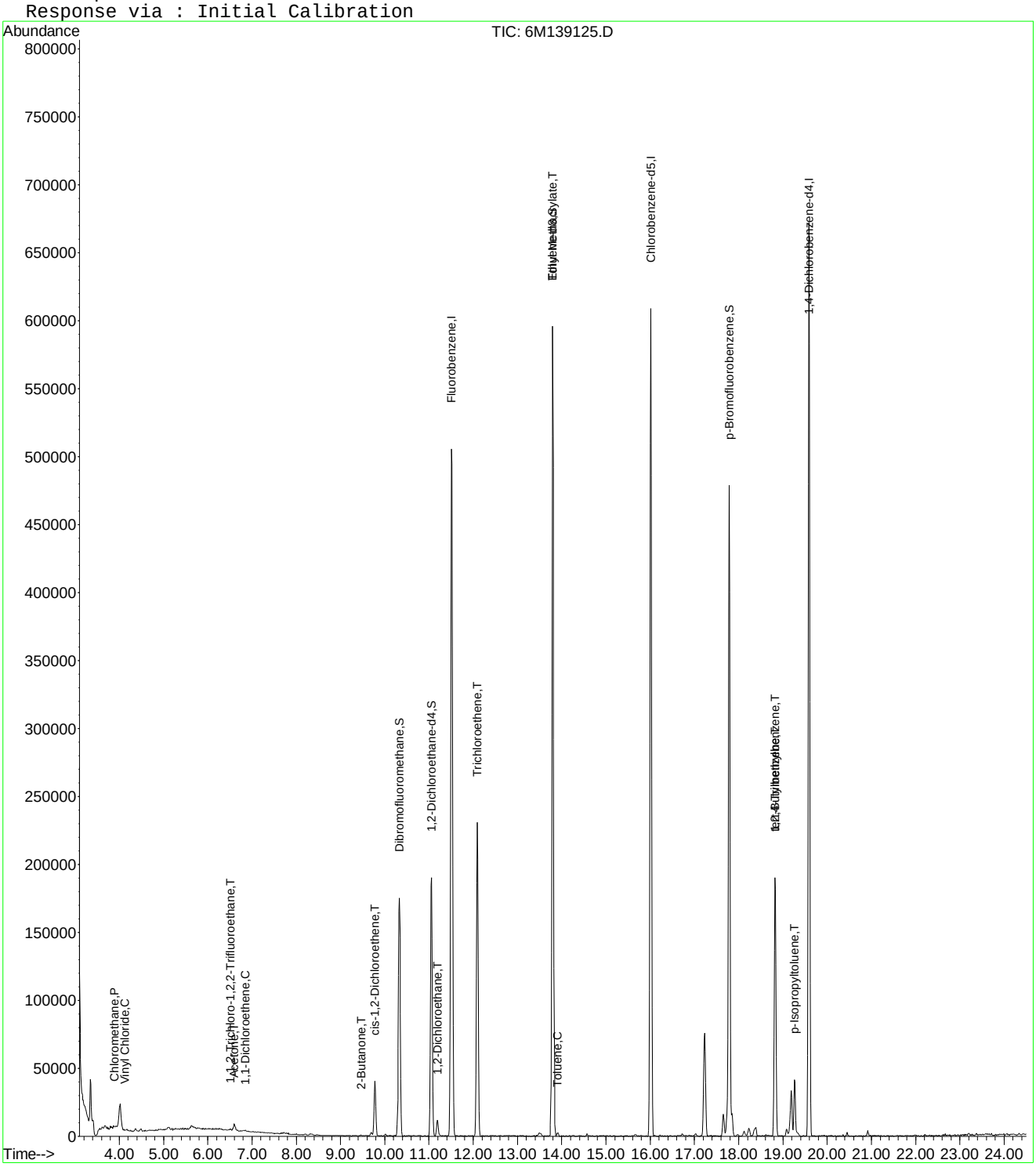

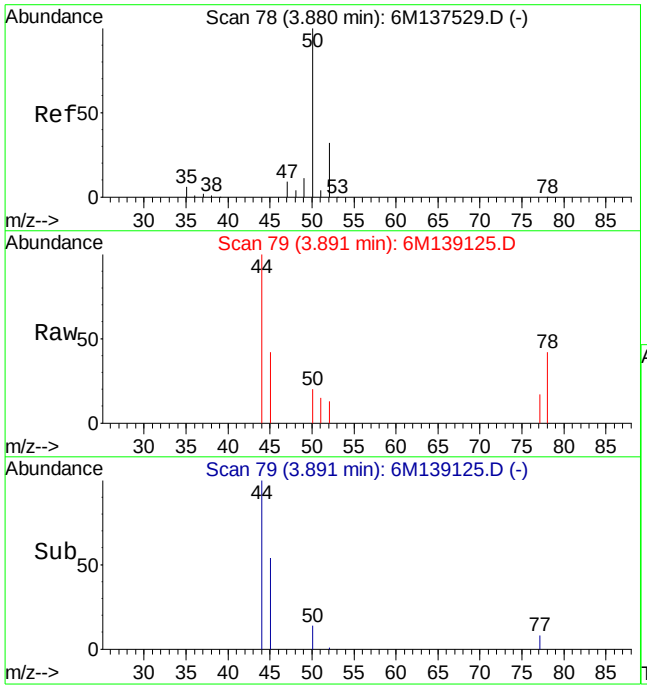

#3
Chloromethane
Concen: 0.38 ug/L
RT: 3.89 min Scan# 79
Delta R.T. 0.01 min
Lab File: 6M139125.D
Acq: 7 May 2016 16:44

Tgt Ion: 50 Resp: 2366

Ion	Ratio	Lower	Upper
50	100		
52	9.3	18.8	44.0#

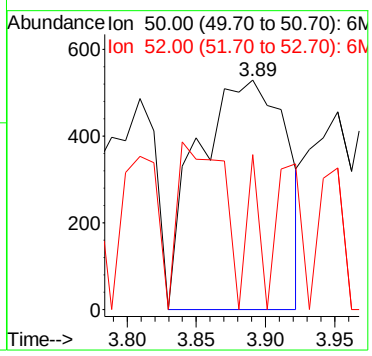

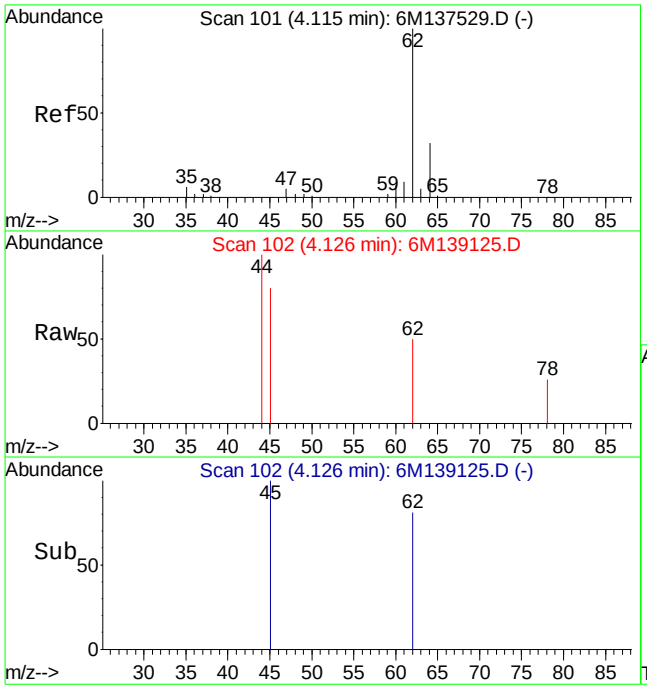

#4
Vinyl Chloride
Concen: 0.47 ug/L
RT: 4.13 min Scan# 102
Delta R.T. 0.01 min
Lab File: 6M139125.D
Acq: 7 May 2016 16:44

Tgt Ion: 62 Resp: 2326

Ion	Ratio	Lower	Upper
62	100		
64	0.0	18.5	43.1#

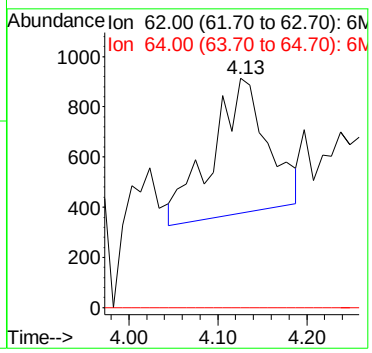

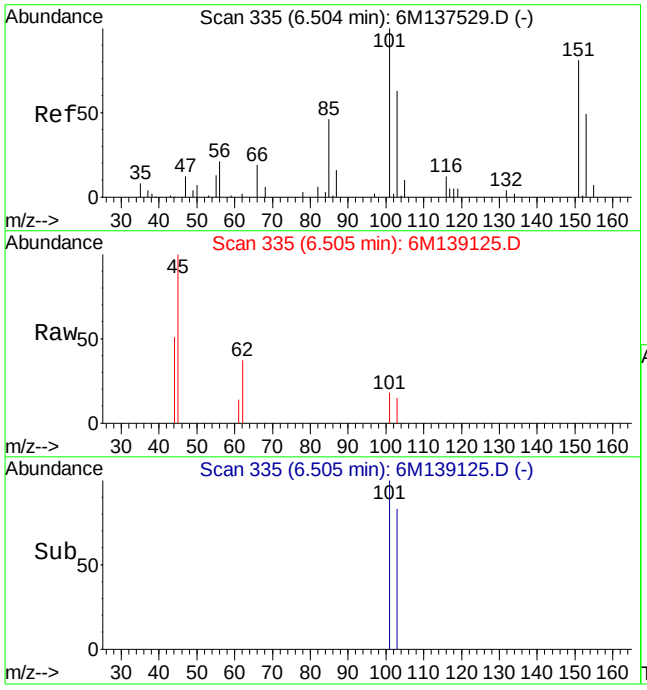

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 0.50 ug/L
RT: 6.51 min Scan# 335
Delta R.T. 0.00 min
Lab File: 6M139125.D
Acq: 7 May 2016 16:44

Tgt Ion:101 Resp: 1597

Ion	Ratio	Lower	Upper
101	100		
151	12.7	51.8	121.0#
103	13.5	38.2	89.0#

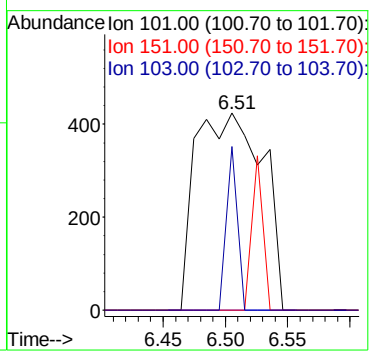

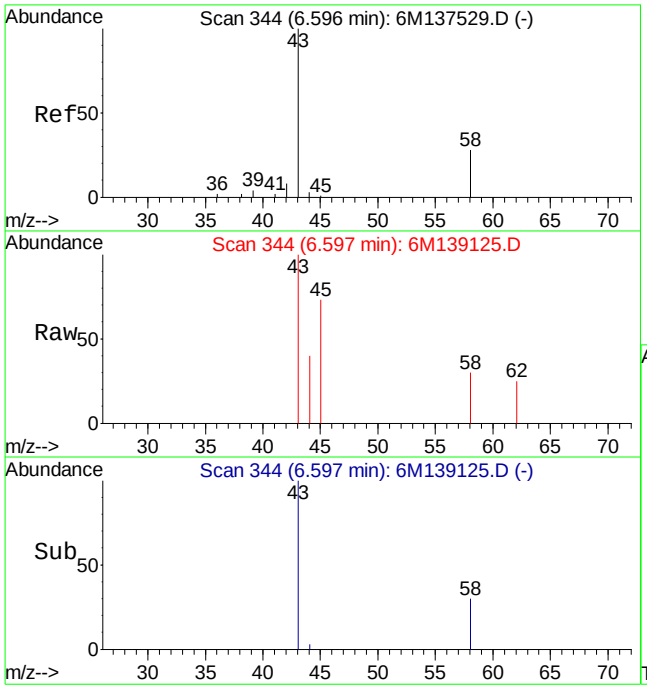

#13
Acetone
Concen: 3.18 ug/L
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M139125.D
Acq: 7 May 2016 16:44

Tgt Ion: 43 Resp: 10167

Ion	Ratio	Lower	Upper
43	100		
58	28.5	16.1	37.7

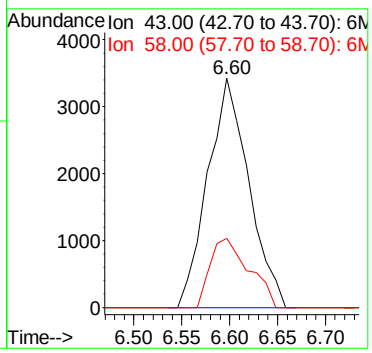

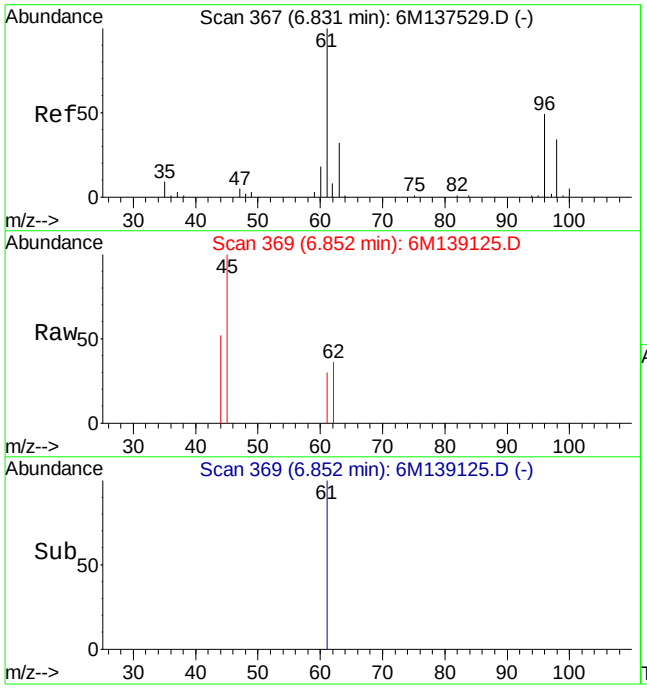

#14
1,1-Dichloroethene
Concen: 0.32 ug/L
RT: 6.85 min Scan# 369
Delta R.T. 0.02 min
Lab File: 6M139125.D
Acq: 7 May 2016 16:44

Tgt Ion: 61 Resp: 1815

Ion	Ratio	Lower	Upper
61	100		
96	0.0	33.3	77.7#

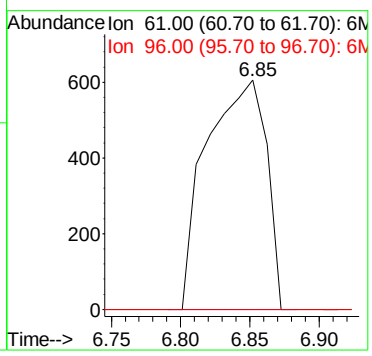

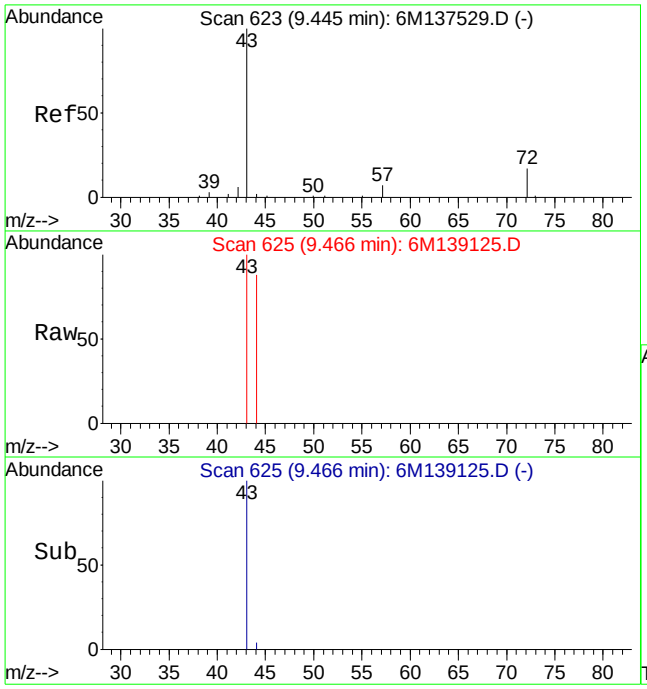

#29
2-Butanone
Concen: 0.36 ug/L
RT: 9.47 min Scan# 625
Delta R.T. 0.02 min
Lab File: 6M139125.D
Acq: 7 May 2016 16:44

Tgt Ion: 43 Resp: 797

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.2	28.4#

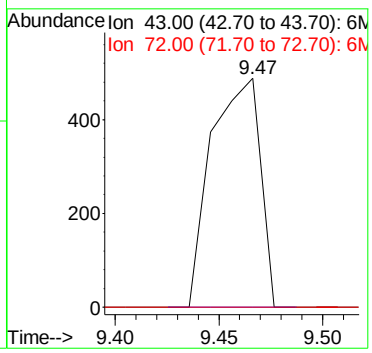

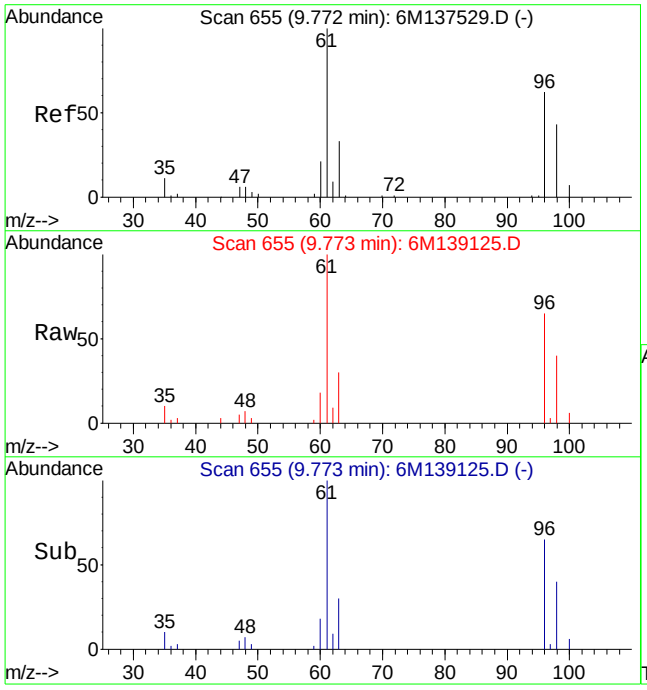

#32
cis-1,2-Dichloroethene
Concen: 6.82 ug/L
RT: 9.77 min Scan# 655
Delta R.T. -0.00 min
Lab File: 6M139125.D
Acq: 7 May 2016 16:44

Tgt Ion: 96 Resp: 23624

Ion	Ratio	Lower	Upper
96	100		
61	155.6	96.7	225.7

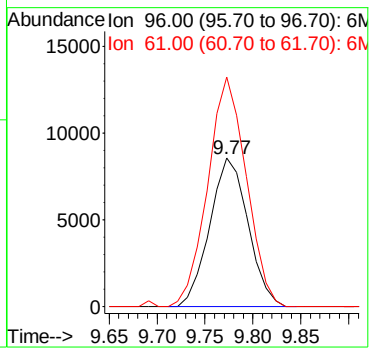

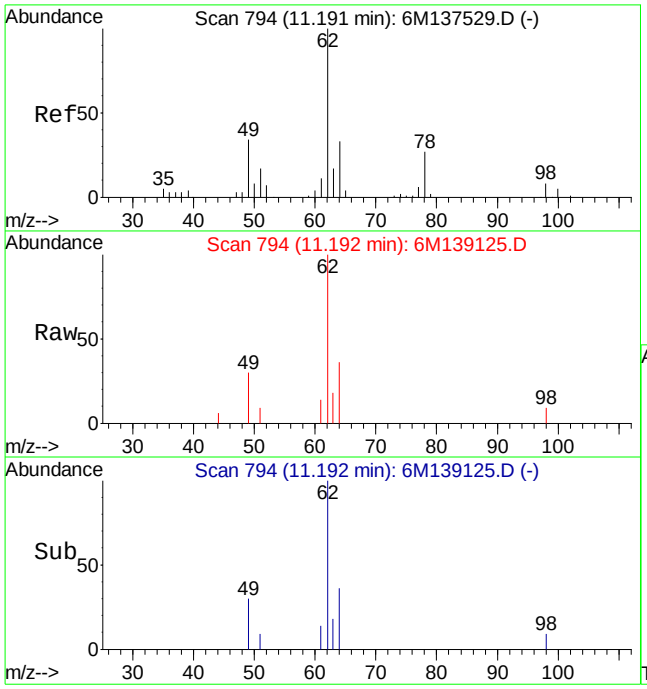

#45
1,2-Dichloroethane
Concen: 2.82 ug/L
RT: 11.19 min Scan# 794
Delta R.T. -0.00 min
Lab File: 6M139125.D
Acq: 7 May 2016 16:44

Tgt Ion: 62 Resp: 15034

Ion	Ratio	Lower	Upper
62	100		
49	27.7	22.9	53.3
98	3.3	4.7	10.9#

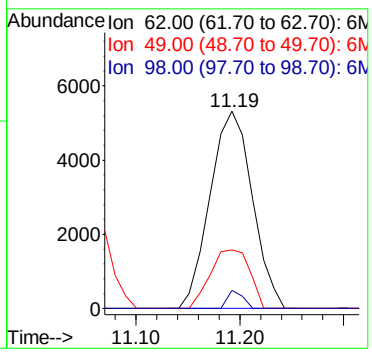

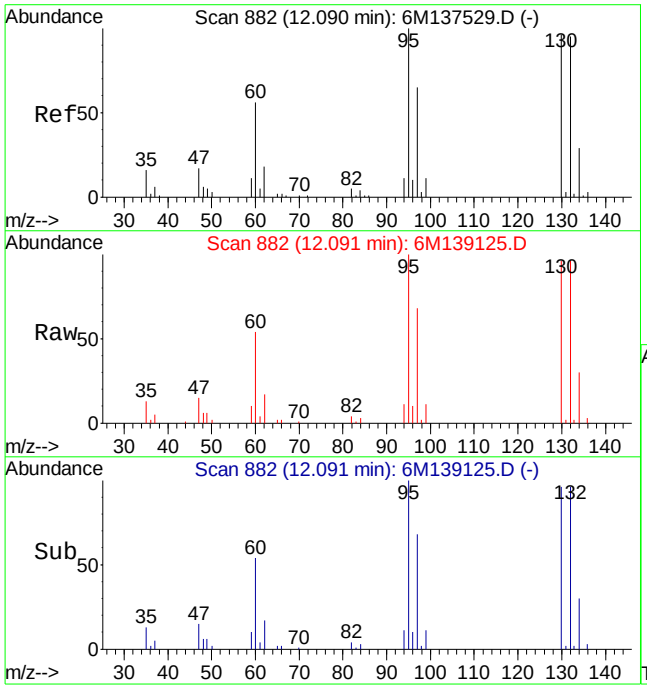

#47
Trichloroethene
Concen: 32.43 ug/L
RT: 12.09 min Scan# 882
Delta R.T. -0.00 min
Lab File: 6M139125.D
Acq: 7 May 2016 16:44

Tgt Ion:130 Resp: 102483

Ion	Ratio	Lower	Upper
130	100		
60	55.9	31.2	72.8

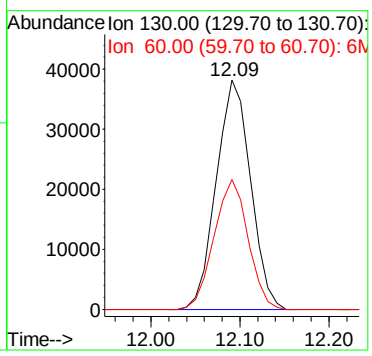

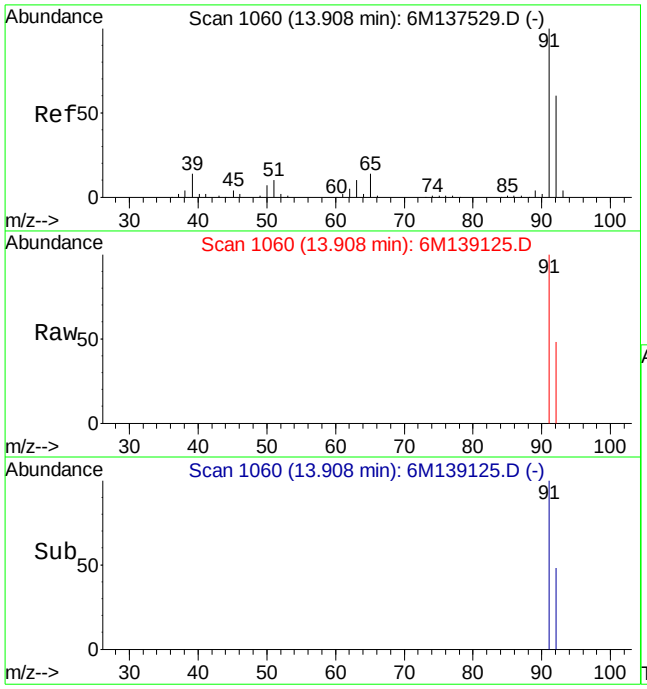

#59
Toluene
Concen: 0.30 ug/L
RT: 13.91 min Scan# 1060
Delta R.T. -0.00 min
Lab File: 6M139125.D
Acq: 7 May 2016 16:44

Tgt Ion: 91 Resp: 3727

Ion	Ratio	Lower	Upper
91	100		
92	51.6	35.5	82.9

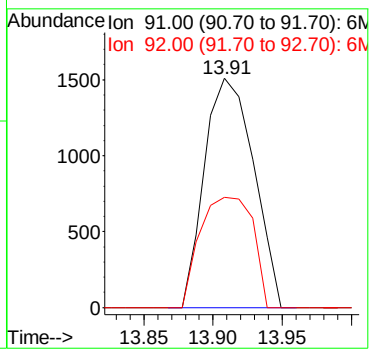

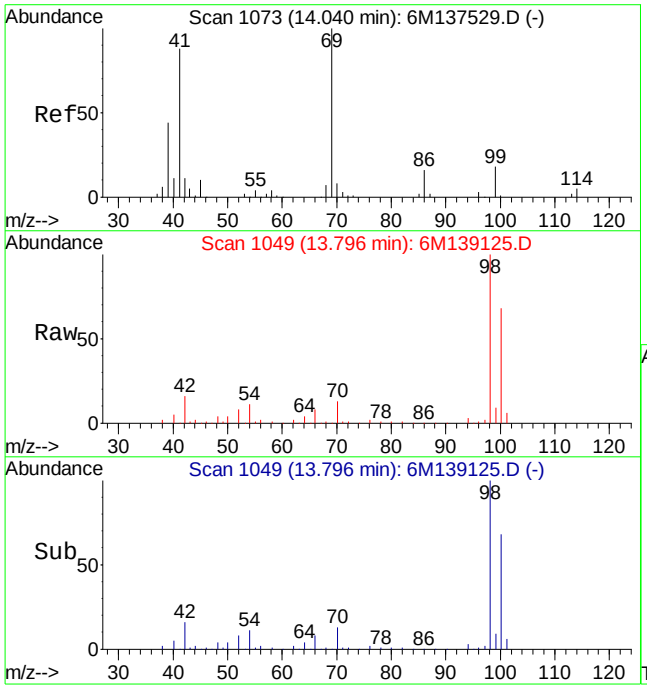

#60
Ethyl Methacrylate
Concen: 0.36 ug/L
RT: 13.80 min Scan# 1049
Delta R.T. -0.24 min
Lab File: 6M139125.D
Acq: 7 May 2016 16:44

Tgt Ion: 69 Resp: 1441

Ion	Ratio	Lower	Upper
69	100		
41	92.9	50.6	118.2

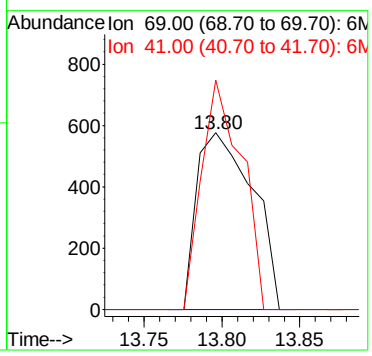

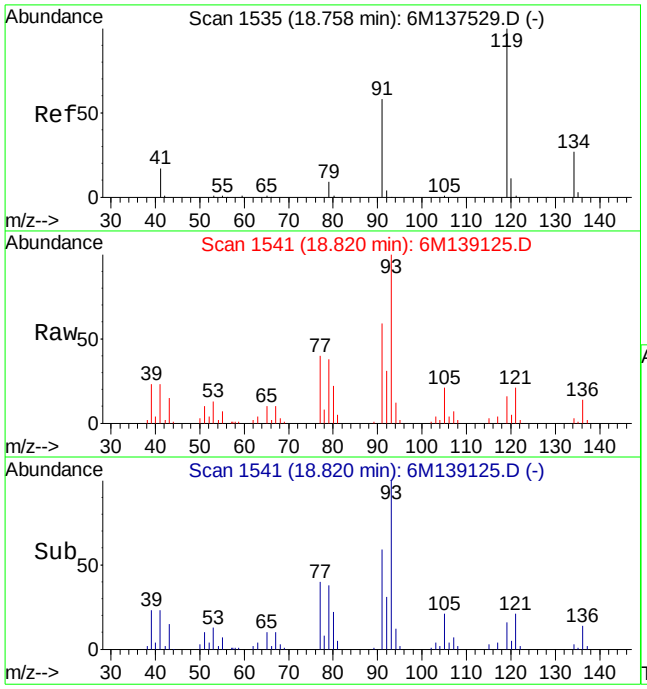

#89
tert-Butylbenzene
Concen: 1.19 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. 0.06 min
Lab File: 6M139125.D
Acq: 7 May 2016 16:44

Tgt Ion:134 Resp: 2859

Ion	Ratio	Lower	Upper
134	100		
119	537.9	290.4	677.6

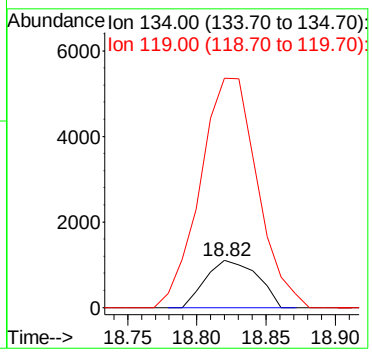

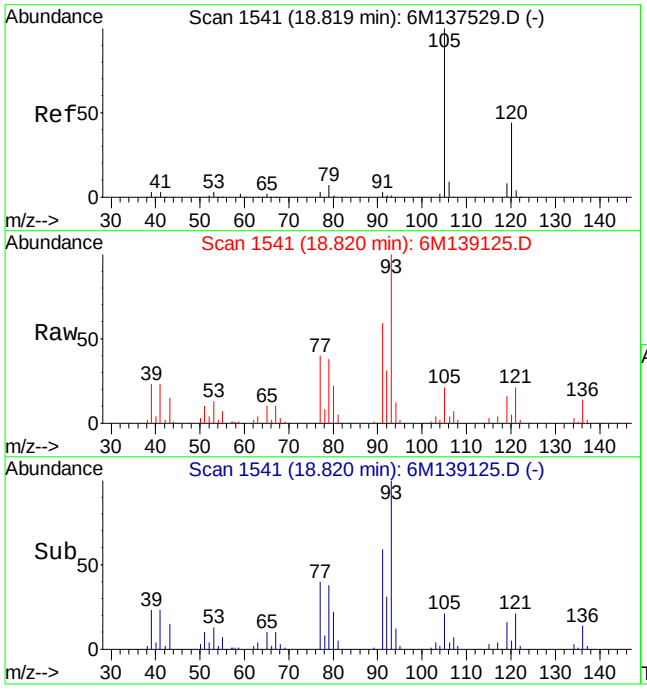

#90
1,2,4-Trimethylbenzene
Concen: 1.56 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. -0.00 min
Lab File: 6M139125.D
Acq: 7 May 2016 16:44

Tgt Ion:105 Resp: 18930

Ion	Ratio	Lower	Upper
105	100		
120	19.5	34.3	79.9#

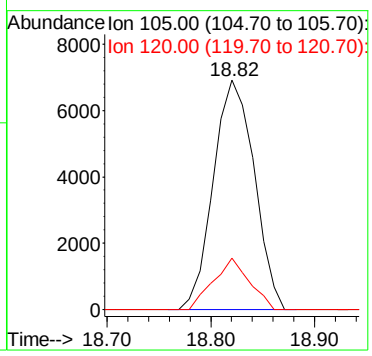

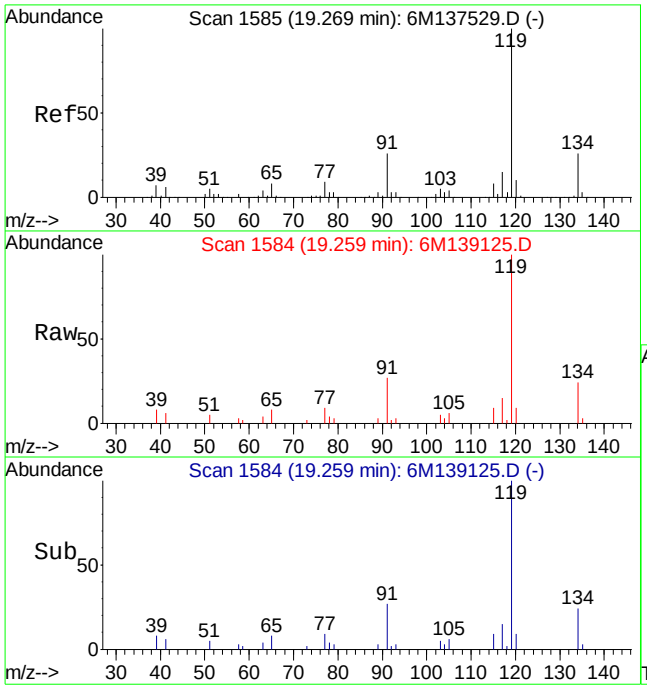

#92
p-Isopropyltoluene
Concen: 3.08 ug/L
RT: 19.26 min Scan# 1584
Delta R.T. -0.00 min
Lab File: 6M139125.D
Acq: 7 May 2016 16:44

Tgt Ion:119 Resp: 37507

Ion	Ratio	Lower	Upper
119	100		
134	26.5	15.6	36.4

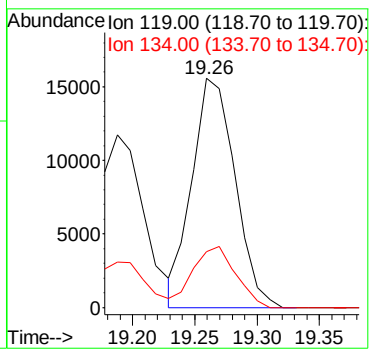

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050716\6M139126.D Vial: 10
Acq On : 7 May 2016 17:17 Operator: TMB
Sample : L16041582-02 8260 4.93g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 09 08:33:10 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	621498	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	466587	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	239440	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	163751	49.1164 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.24%		
43) 1,2-Dichloroethane-d4	11.06	65	192447	44.4584 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 88.92%		
58) Toluene-d8	13.79	98	547536	49.3573 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.72%		
80) p-Bromofluorobenzene	17.79	95	224092	50.9530 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 101.90%		

Target Compounds

					Qvalue
3) Chloromethane	3.88	50	1966	0.3305 ug/L	88
4) Vinyl Chloride	4.16	62	1866	0.3898 ug/L #	44
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	2810	0.9151 ug/L	92
13) Acetone	6.61	43	4021	Below Cal	96
32) cis-1,2-Dichloroethene	9.77	96	29575	8.8169 ug/L	97
33) Chloroform	10.02	83	2237	0.3698 ug/L #	83
36) Tetrahydrofuran	10.29	42	3670	0.4290 ug/L	78
45) 1,2-Dichloroethane	11.19	62	109613	21.2283 ug/L	90
47) Trichloroethene	12.09	130	461696	150.9546 ug/L	93
48) Methylcyclohexane	12.09	83	6395	1.2934 ug/L #	1
49) 1,2-Dichloropropane	12.08	63	1556	0.4467 ug/L #	33
90) 1,2,4-Trimethylbenzene	18.82	105	3727	0.3062 ug/L	73

(#) = qualifier out of range (m) = manual integration
6M139126.D 826_SL.M Mon May 09 08:33:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050716\6M139126.D Vial: 10
Acq On : 7 May 2016 17:17 Operator: TMB
Sample : L16041582-02 8260 4.93g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 9 8:33 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

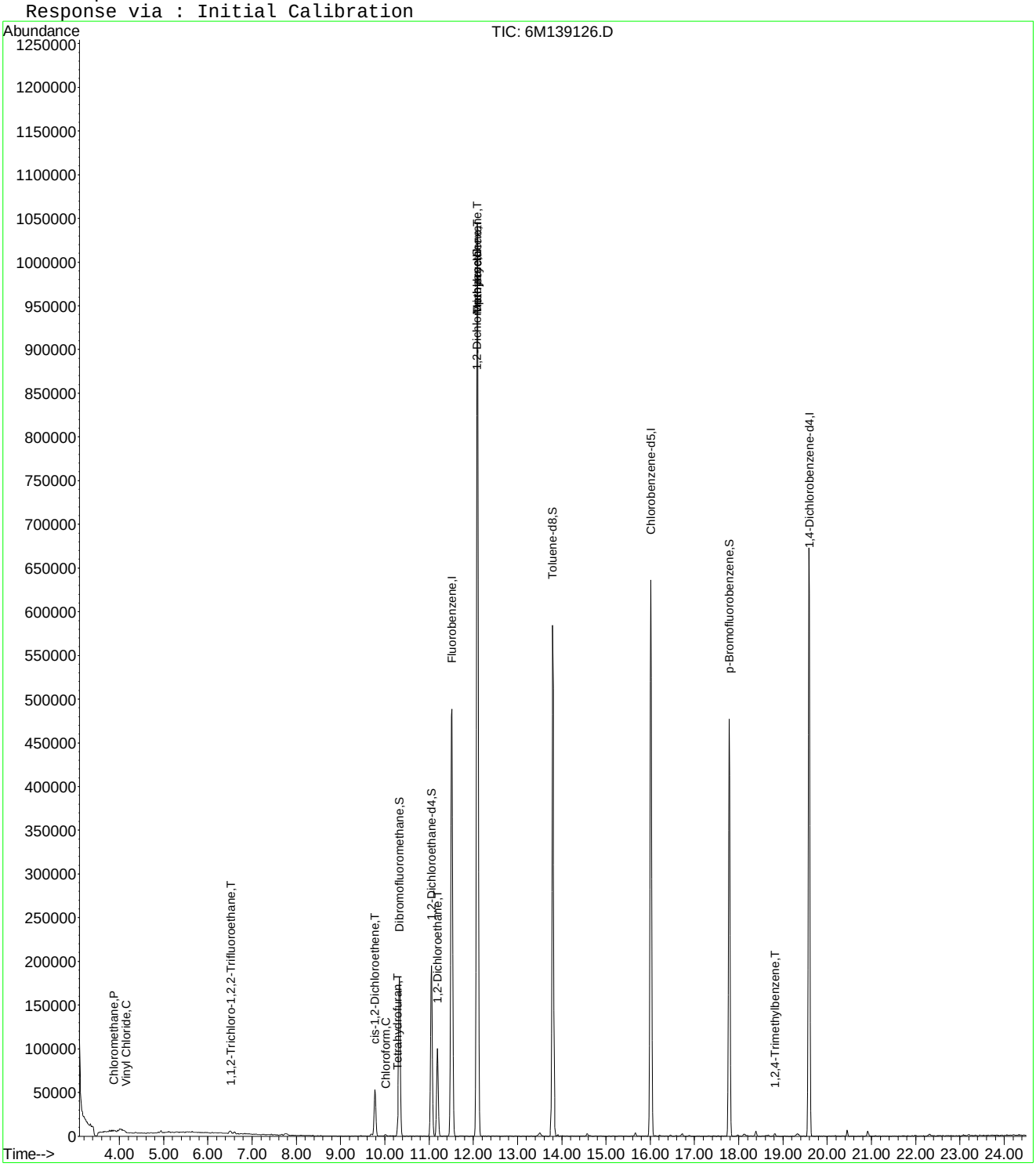

6M139126.D 826_SL.M Mon May 09 08:33:11 2016 Page 2

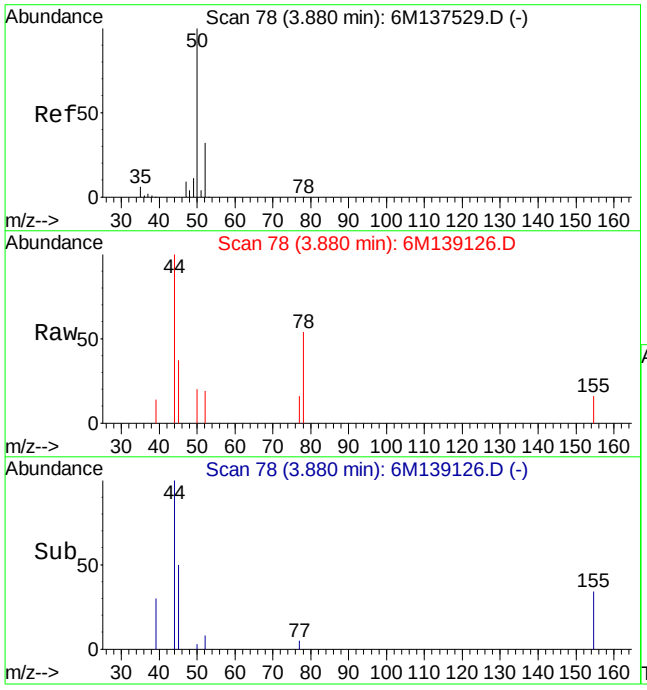

#3
Chloromethane
Concen: 0.33 ug/L
RT: 3.88 min Scan# 78
Delta R.T. -0.00 min
Lab File: 6M139126.D
Acq: 7 May 2016 17:17

Tgt Ion: 50 Resp: 1966

Ion	Ratio	Lower	Upper
50	100		
52	24.6	18.8	44.0

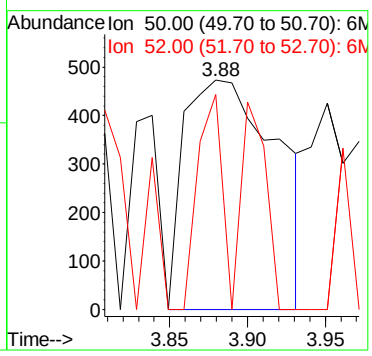

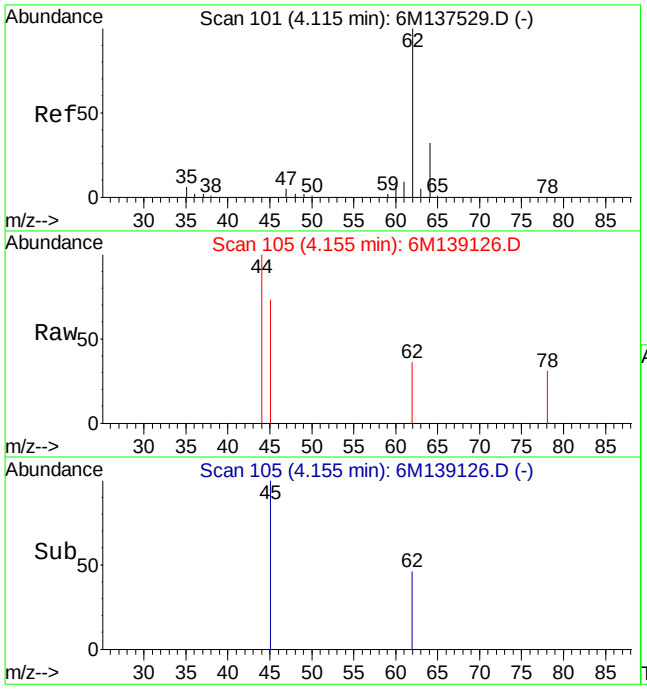

#4
Vinyl Chloride
Concen: 0.39 ug/L
RT: 4.16 min Scan# 105
Delta R.T. 0.04 min
Lab File: 6M139126.D
Acq: 7 May 2016 17:17

Tgt Ion: 62 Resp: 1866

Ion	Ratio	Lower	Upper
62	100		
64	0.0	18.5	43.1#

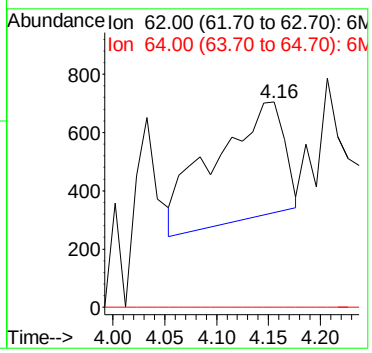

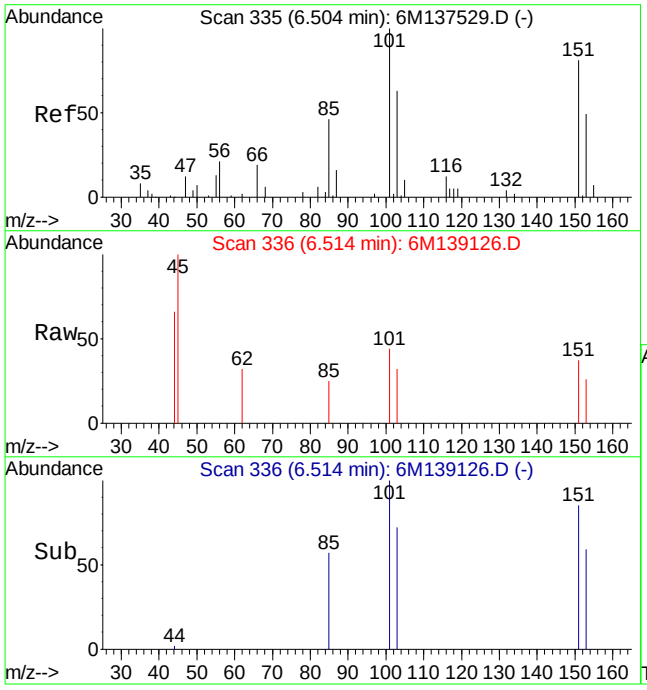

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 0.92 ug/L
RT: 6.51 min Scan# 336
Delta R.T. 0.01 min
Lab File: 6M139126.D
Acq: 7 May 2016 17:17

Tgt Ion:101 Resp: 2810

Ion	Ratio	Lower	Upper
101	100		
151	97.1	51.8	121.0
103	62.0	38.2	89.0

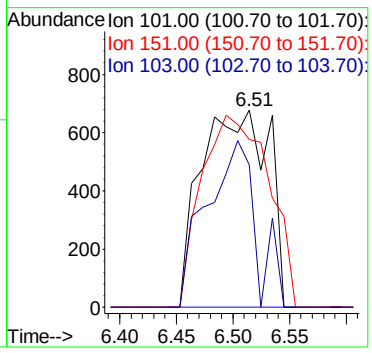

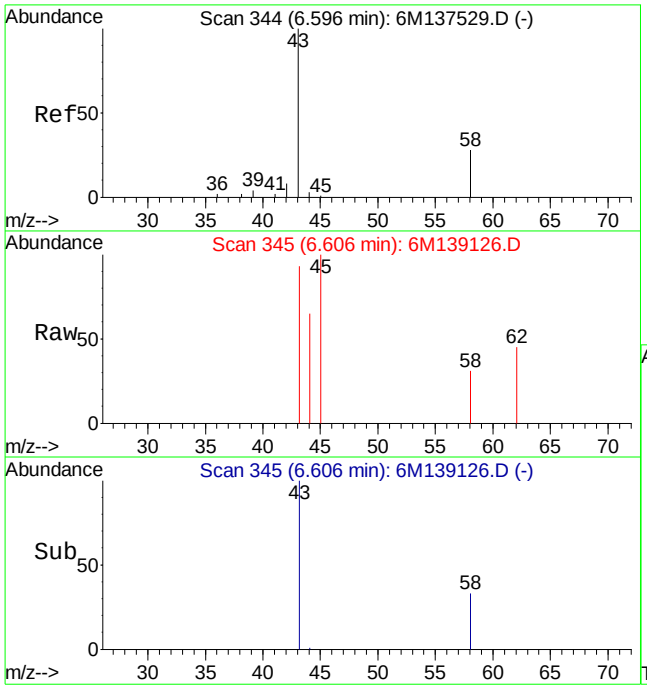

#13
Acetone
Concen: Below Cal
RT: 6.61 min Scan# 345
Delta R.T. 0.02 min
Lab File: 6M139126.D
Acq: 7 May 2016 17:17

Tgt Ion: 43 Resp: 4021

Ion	Ratio	Lower	Upper
43	100		
58	24.7	16.1	37.7

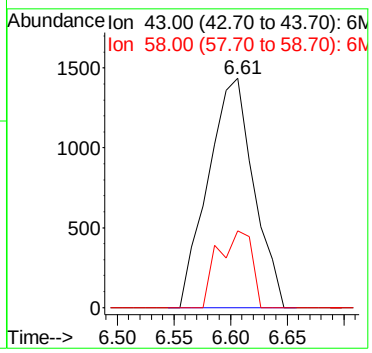

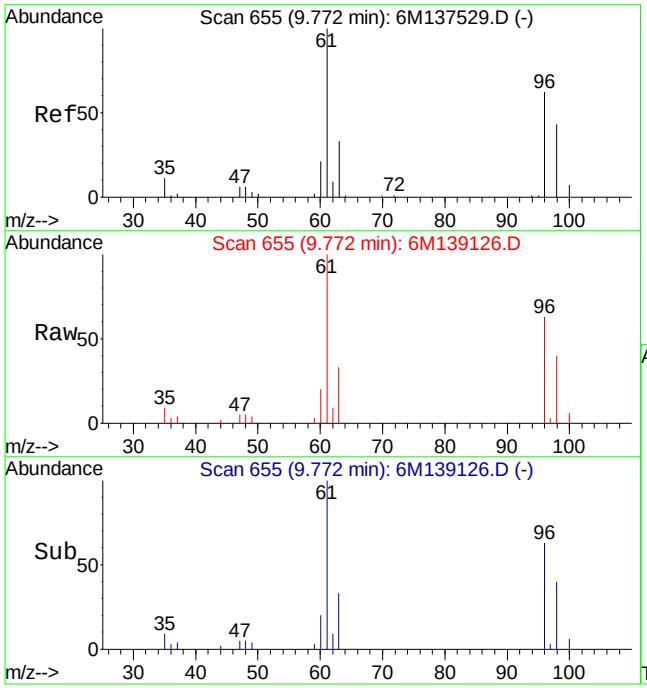

#32
cis-1,2-Dichloroethene
Concen: 8.82 ug/L
RT: 9.77 min Scan# 655
Delta R.T. -0.00 min
Lab File: 6M139126.D
Acq: 7 May 2016 17:17

Tgt Ion: 96 Resp: 29575

Ion	Ratio	Lower	Upper
96	100		
61	164.6	96.7	225.7

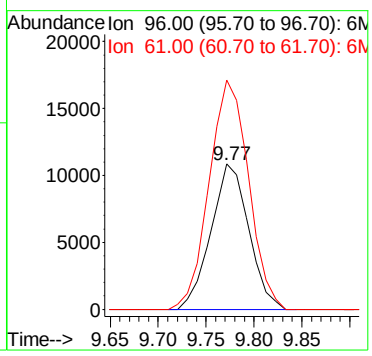

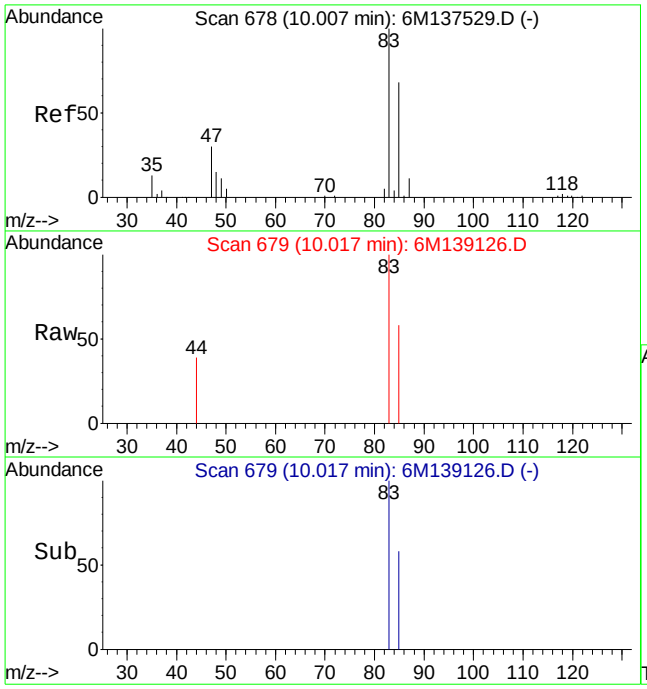

#33
Chloroform
Concen: 0.37 ug/L
RT: 10.02 min Scan# 679
Delta R.T. 0.01 min
Lab File: 6M139126.D
Acq: 7 May 2016 17:17

Tgt Ion: 83 Resp: 2237

Ion	Ratio	Lower	Upper
83	100		
85	63.0	38.4	89.6
47	0.0	16.9	39.5#

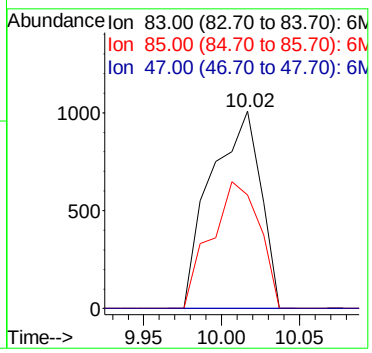

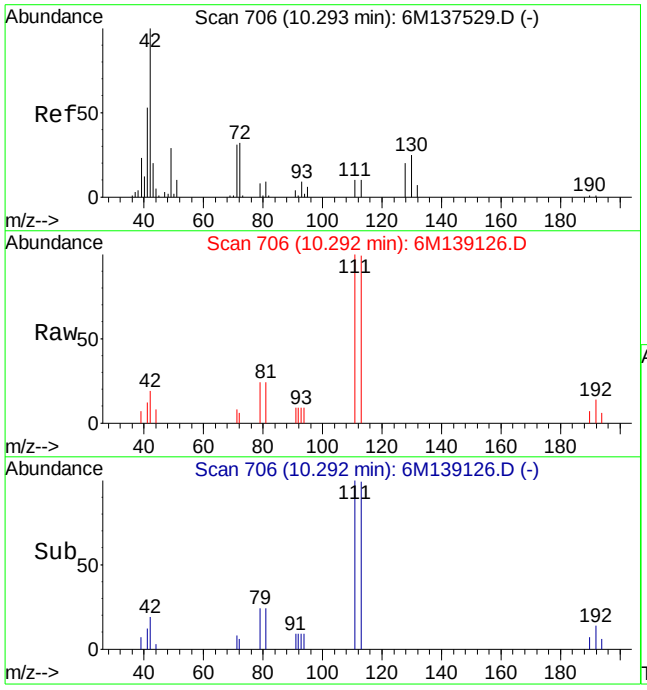

#36
Tetrahydrofuran
Concen: 0.43 ug/L
RT: 10.29 min Scan# 706
Delta R.T. -0.00 min
Lab File: 6M139126.D
Acq: 7 May 2016 17:17

Tgt Ion: 42 Resp: 3670

Ion	Ratio	Lower	Upper
42	100		
72	23.4	21.0	49.0
71	20.7	20.6	48.2

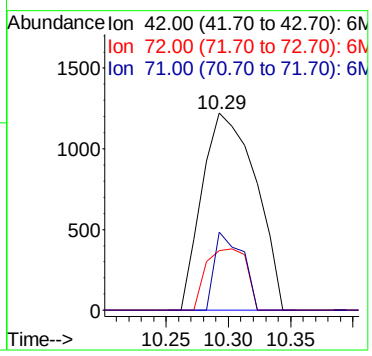

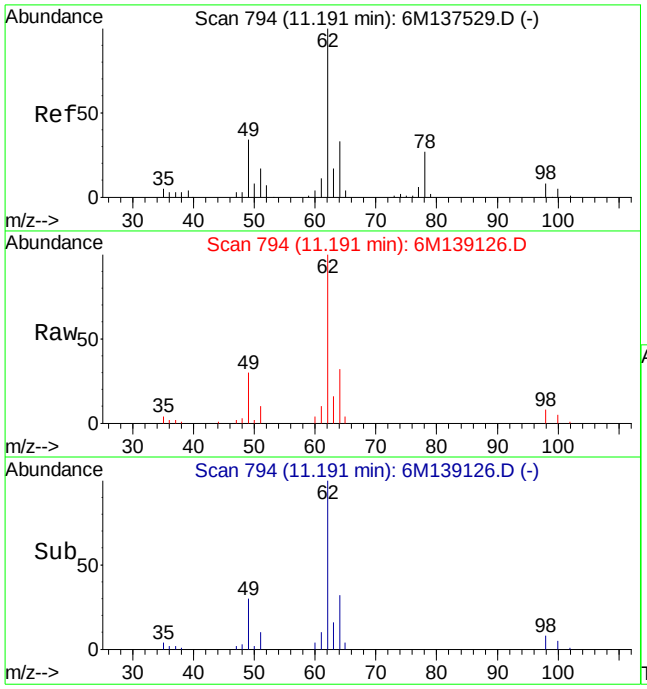

#45
1,2-Dichloroethane
Concen: 21.23 ug/L
RT: 11.19 min Scan# 794
Delta R.T. -0.00 min
Lab File: 6M139126.D
Acq: 7 May 2016 17:17

Tgt Ion: 62 Resp: 109613

Ion	Ratio	Lower	Upper
62	100		
49	30.9	22.9	53.3
98	8.1	4.7	10.9

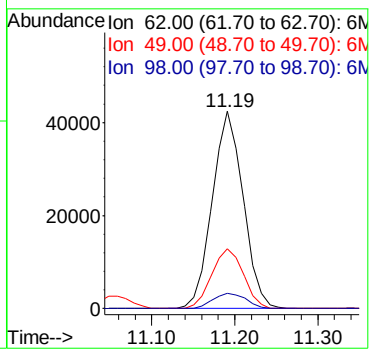

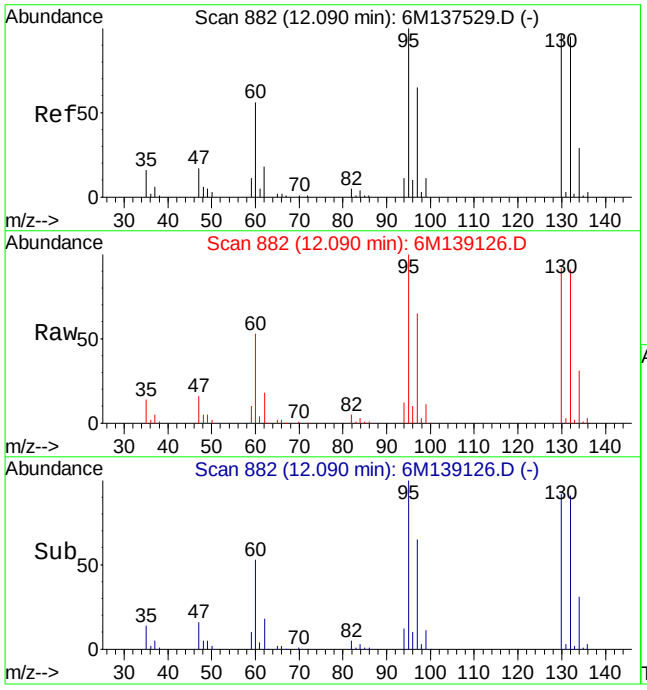

#47
Trichloroethene
Concen: 150.95 ug/L
RT: 12.09 min Scan# 882
Delta R.T. -0.00 min
Lab File: 6M139126.D
Acq: 7 May 2016 17:17

Tgt Ion:130 Resp: 461696

Ion	Ratio	Lower	Upper
130	100		
60	57.1	31.2	72.8

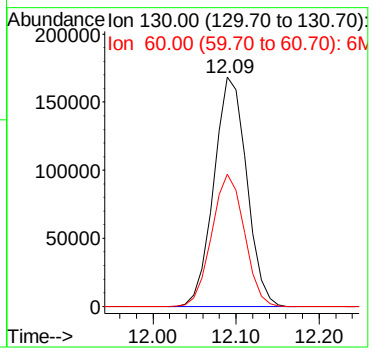

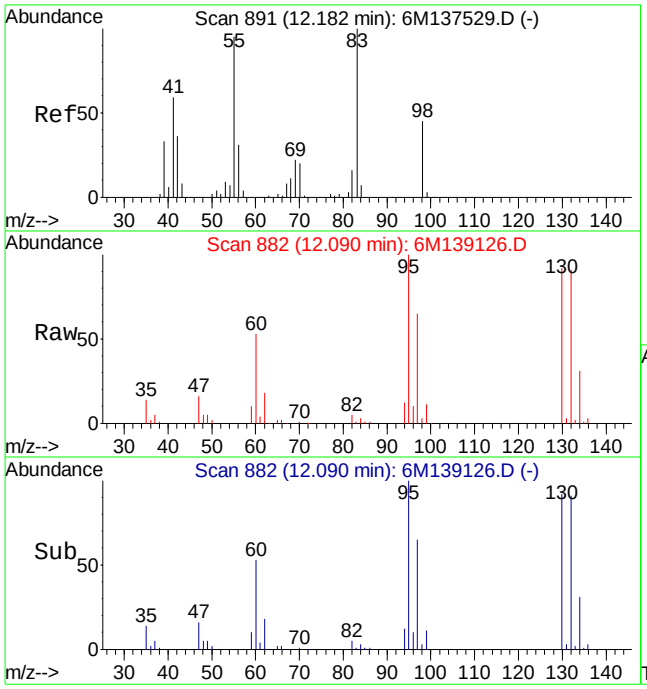

#48
Methylcyclohexane
Concen: 1.29 ug/L
RT: 12.09 min Scan# 882
Delta R.T. -0.09 min
Lab File: 6M139126.D
Acq: 7 May 2016 17:17

Tgt Ion: 83 Resp: 6395

Ion	Ratio	Lower	Upper
83	100		
55	0.0	48.3	112.7#
98	205.6	27.5	64.1#

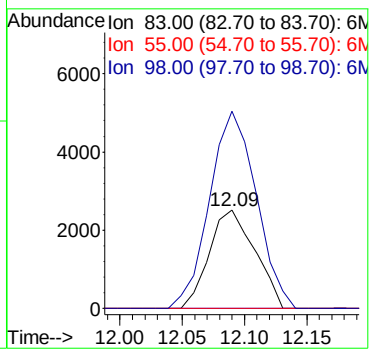

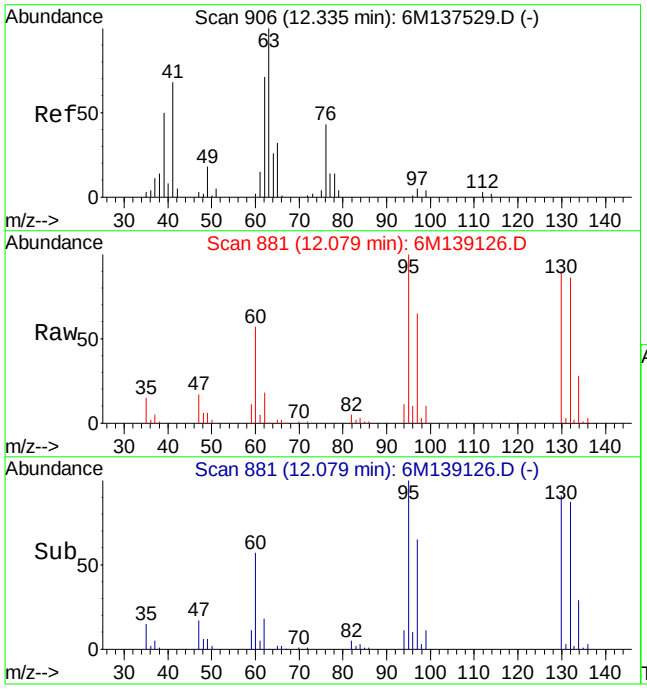

#49
1,2-Dichloropropane
Concen: 0.45 ug/L
RT: 12.08 min Scan# 881
Delta R.T. -0.26 min
Lab File: 6M139126.D
Acq: 7 May 2016 17:17

Tgt Ion: 63 Resp: 1556

Ion	Ratio	Lower	Upper
63	100		
76	0.0	25.9	60.5#

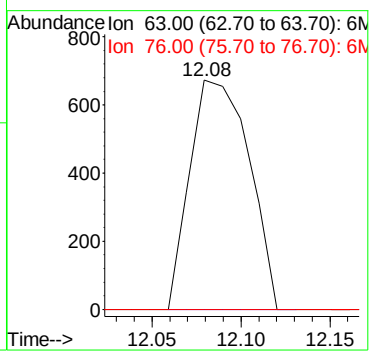

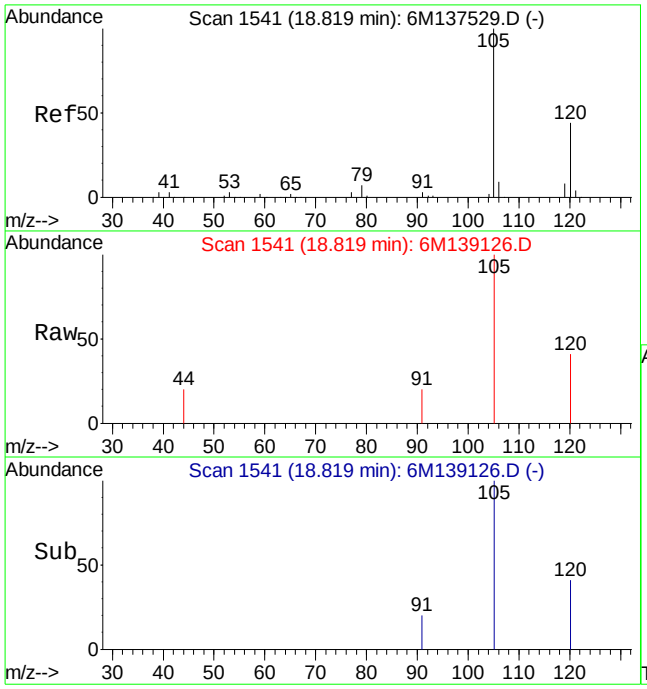

#90
1,2,4-Trimethylbenzene
Concen: 0.31 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. -0.00 min
Lab File: 6M139126.D
Acq: 7 May 2016 17:17

Tgt Ion:105 Resp: 3727

Ion	Ratio	Lower	Upper
105	100		
120	37.4	34.3	79.9

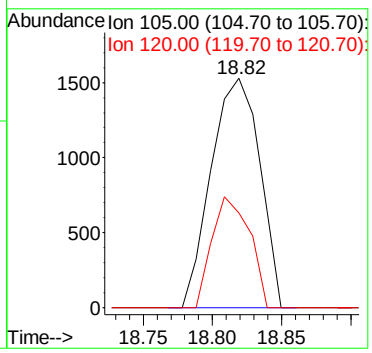

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050716\6M139127.D Vial: 11
Acq On : 7 May 2016 17:49 Operator: TMB
Sample : L16041582-03 8260 5.16g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 09 08:33:12 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	637553	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	460669	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	222792	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	162600	47.5429 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.08%		
43) 1,2-Dichloroethane-d4	11.06	65	196641	44.2833 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 88.56%		
58) Toluene-d8	13.80	98	541496	49.4399 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.88%		
80) p-Bromofluorobenzene	17.79	95	217715	53.2022 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 106.40%		

Target Compounds

					Qvalue
13) Acetone	6.60	43	20566	11.0383 ug/L #	77
16) Dimethyl Sulfide	7.14	62	814	0.3007 ug/L #	1
29) 2-Butanone	9.46	43	3882	1.7615 ug/L #	67
36) Tetrahydrofuran	10.30	42	2839	Below Cal #	60
45) 1,2-Dichloroethane	11.19	62	7314	1.3808 ug/L #	78
47) Trichloroethene	12.09	130	31070	9.9027 ug/L	94
60) Ethyl Methacrylate	13.81	69	1128	0.2702 ug/L #	40
90) 1,2,4-Trimethylbenzene	18.82	105	3022	0.2668 ug/L #	65

(#) = qualifier out of range (m) = manual integration
6M139127.D 826_SL.M Mon May 09 08:33:12 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050716\6M139127.D Vial: 11
Acq On : 7 May 2016 17:49 Operator: TMB
Sample : L16041582-03 8260 5.16g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 9 8:33 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

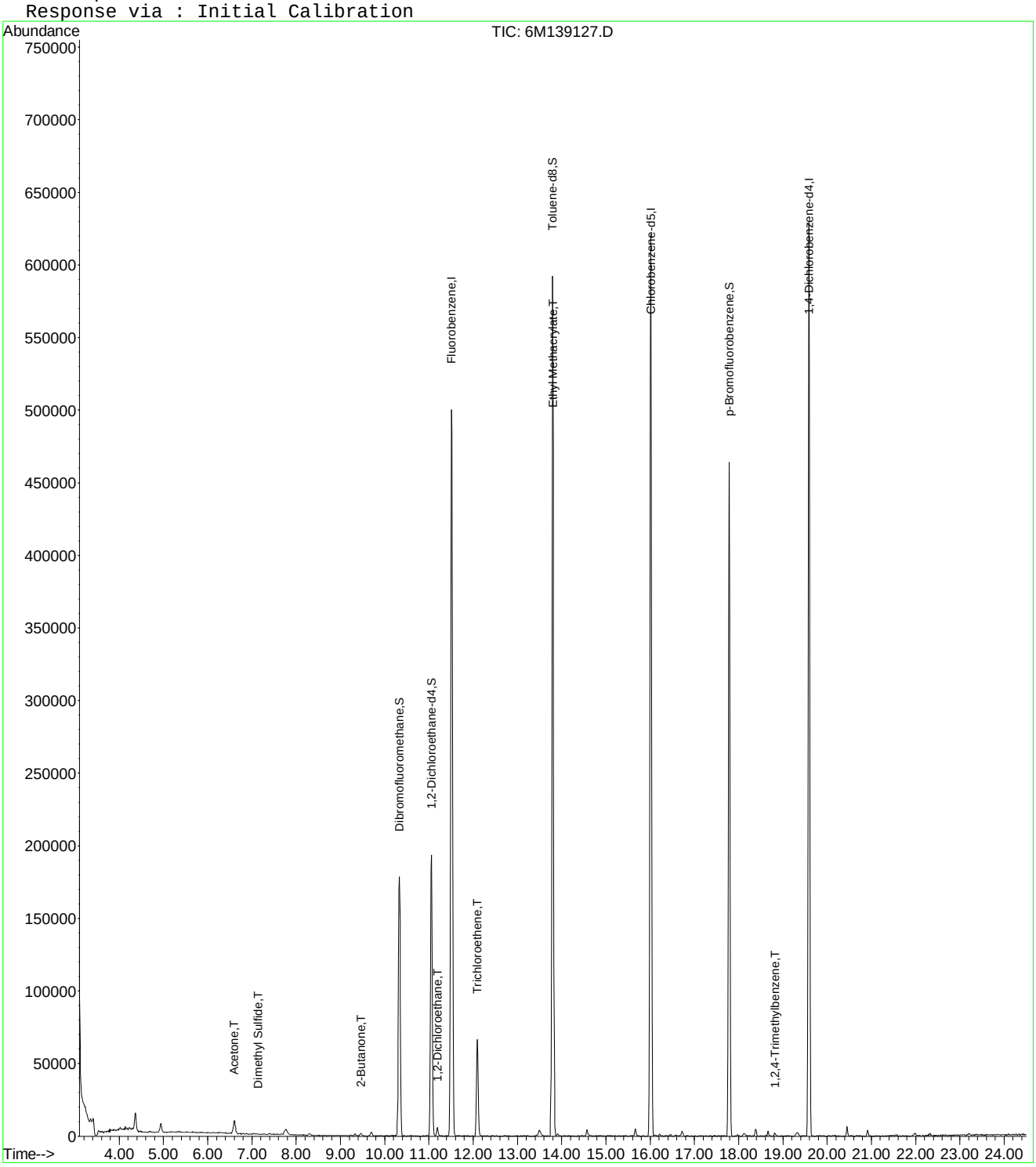

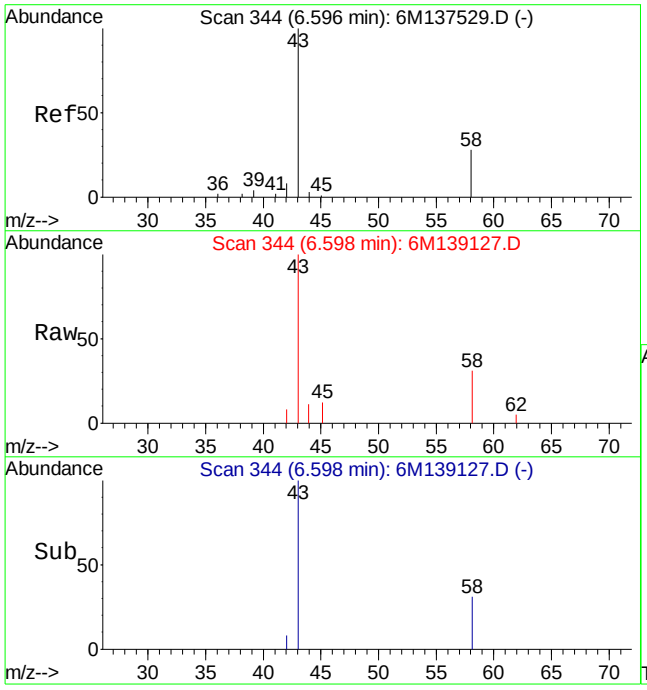

#13
Acetone
Concen: 11.04 ug/L
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M139127.D
Acq: 7 May 2016 17:49

Tgt Ion: 43 Resp: 20566

Ion	Ratio	Lower	Upper
43	100		
58	38.8	16.1	37.7#

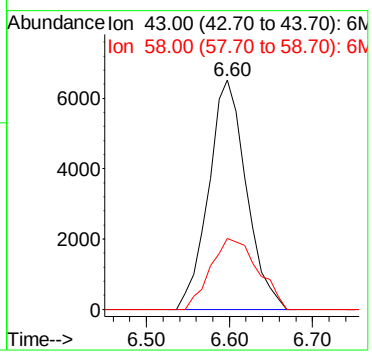

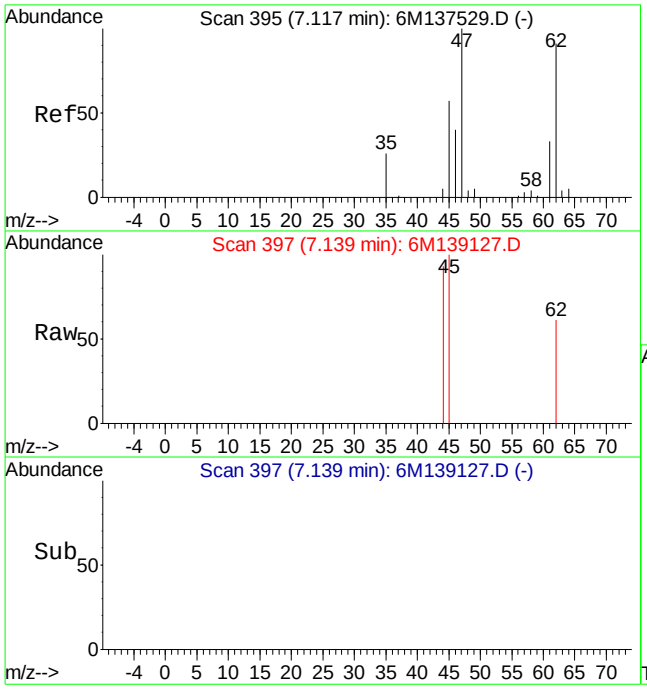

#16
Dimethyl Sulfide
Concen: 0.30 ug/L
RT: 7.14 min Scan# 397
Delta R.T. 0.02 min
Lab File: 6M139127.D
Acq: 7 May 2016 17:49

Tgt Ion: 62 Resp: 814

Ion	Ratio	Lower	Upper
62	100		
47	0.0	62.4	145.6#

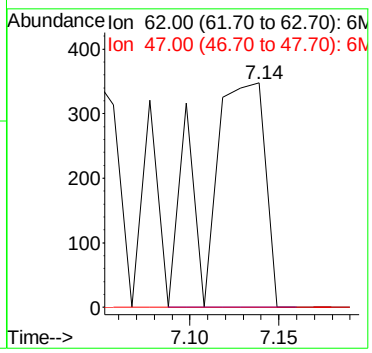

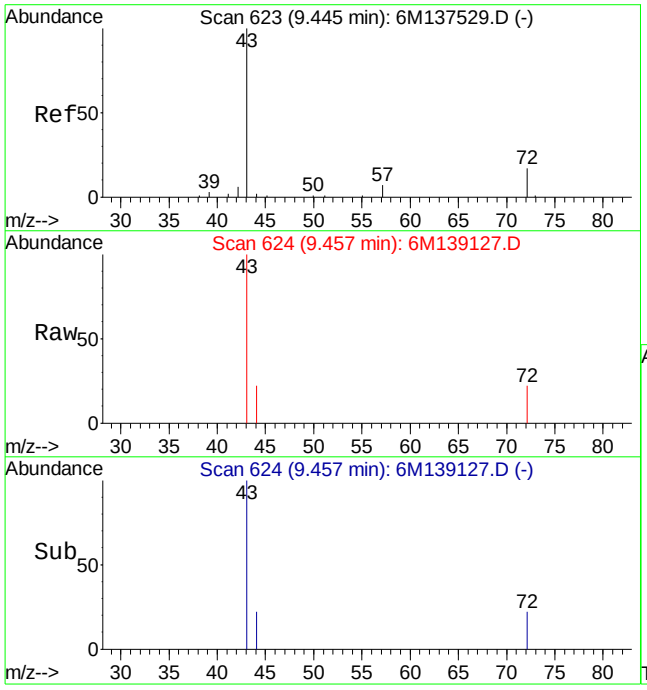

#29
2-Butanone
Concen: 1.76 ug/L
RT: 9.46 min Scan# 624
Delta R.T. 0.01 min
Lab File: 6M139127.D
Acq: 7 May 2016 17:49

Tgt Ion: 43 Resp: 3882

Ion	Ratio	Lower	Upper
43	100		
72	5.0	12.2	28.4#

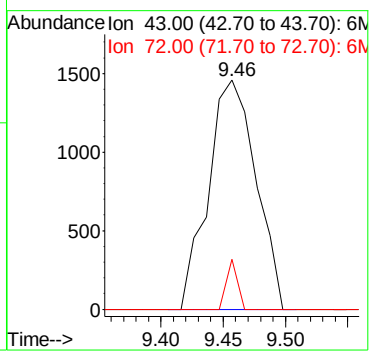

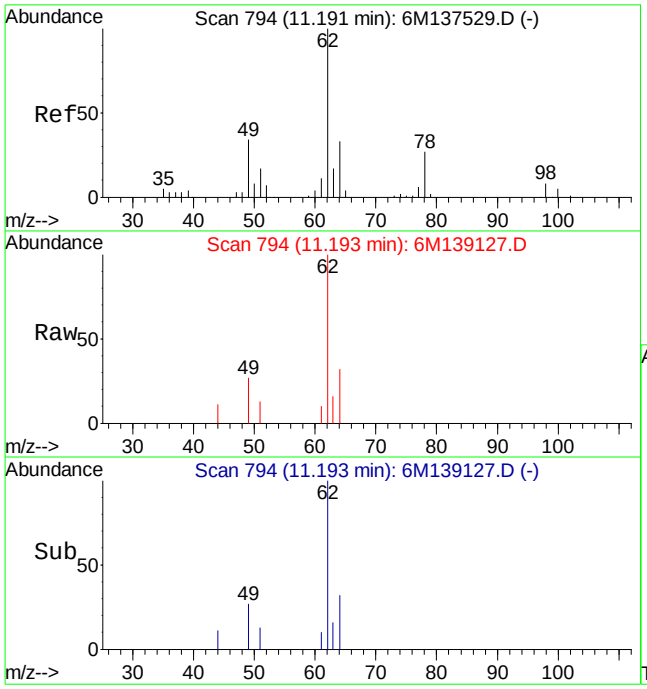

#45
1,2-Dichloroethane
Concen: 1.38 ug/L
RT: 11.19 min Scan# 794
Delta R.T. 0.00 min
Lab File: 6M139127.D
Acq: 7 May 2016 17:49

Tgt Ion: 62 Resp: 7314

Ion	Ratio	Lower	Upper
62	100		
49	25.0	22.9	53.3
98	0.0	4.7	10.9#

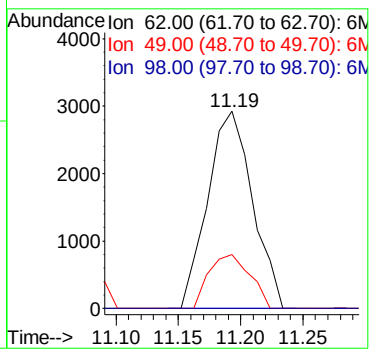

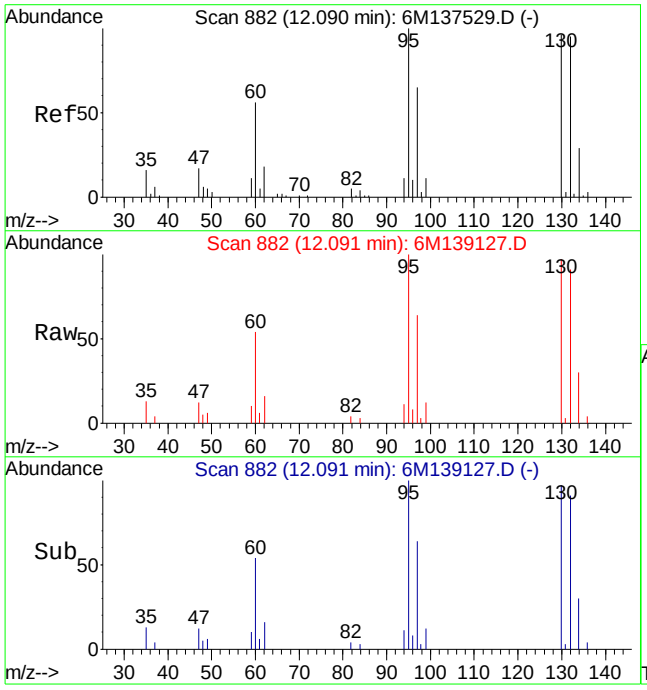

#47
Trichloroethene
Concen: 9.90 ug/L
RT: 12.09 min Scan# 882
Delta R.T. 0.00 min
Lab File: 6M139127.D
Acq: 7 May 2016 17:49

Tgt Ion:130 Resp: 31070

Ion	Ratio	Lower	Upper
130	100		
60	56.0	31.2	72.8

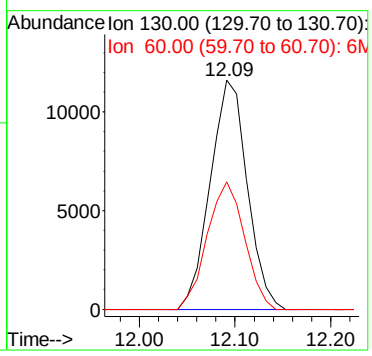

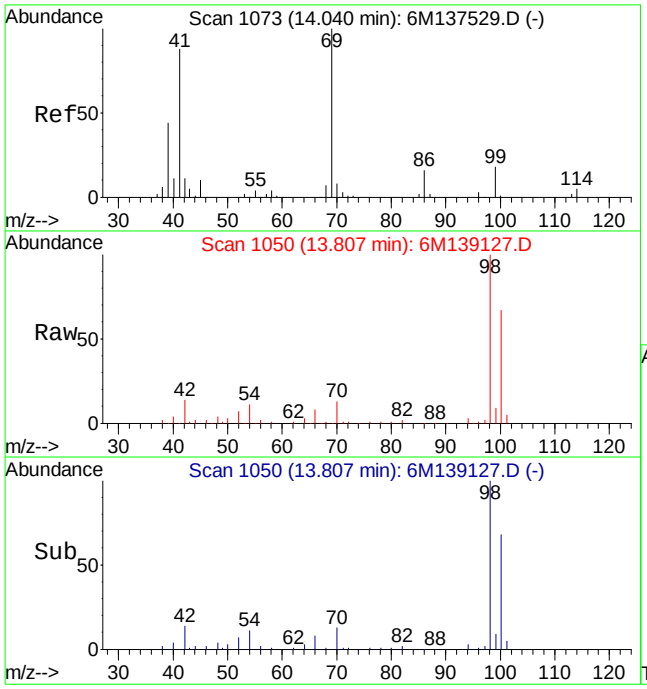

#60
Ethyl Methacrylate
Concen: 0.27 ug/L
RT: 13.81 min Scan# 1050
Delta R.T. -0.22 min
Lab File: 6M139127.D
Acq: 7 May 2016 17:49

Tgt Ion: 69 Resp: 1128

Ion	Ratio	Lower	Upper
69	100		
41	139.0	50.6	118.2#

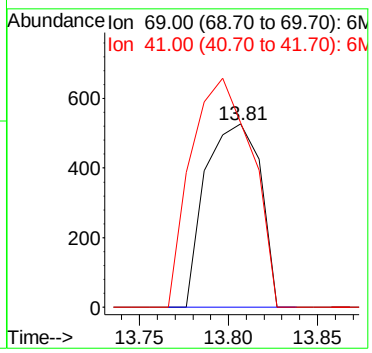

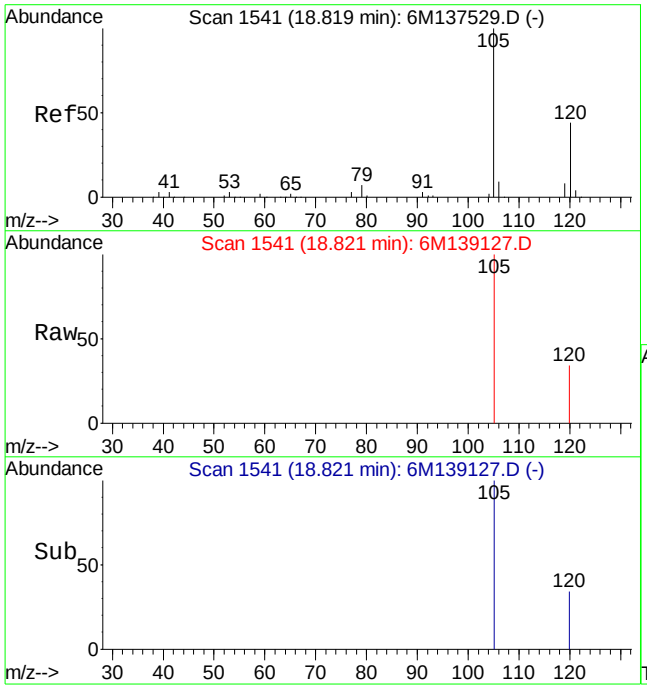

#90
1,2,4-Trimethylbenzene
Concen: 0.27 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. 0.00 min
Lab File: 6M139127.D
Acq: 7 May 2016 17:49

Tgt Ion:105 Resp: 3022

Ion	Ratio	Lower	Upper
105	100		
120	31.1	34.3	79.9#

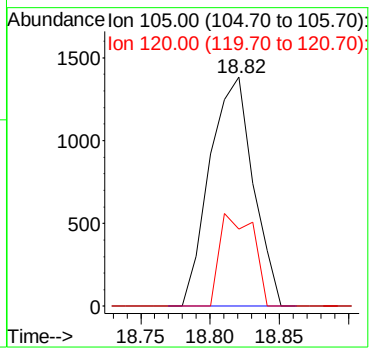

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050716\6M139128.D Vial: 12
Acq On : 7 May 2016 18:22 Operator: TMB
Sample : L16041582-04 8260 4.77g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 09 08:33:13 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	665493	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	464811	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	239130	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	166776	46.7167 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.44%		
43) 1,2-Dichloroethane-d4	11.06	65	206888	44.6348 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 89.26%		
58) Toluene-d8	13.80	98	562305	50.8824 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.76%		
80) p-Bromofluorobenzene	17.79	95	225326	51.3000 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.60%		

Target Compounds					Qvalue
3) Chloromethane	3.90	50	3369	0.5290 ug/L #	43
13) Acetone	6.60	43	26440	14.6127 ug/L #	75
20) Carbon Disulfide	7.72	76	22530	2.0219 ug/L	98
29) 2-Butanone	9.47	43	4571	1.9871 ug/L	87
36) Tetrahydrofuran	10.30	42	3046	Below Cal #	72
60) Ethyl Methacrylate	13.80	69	1193	0.2832 ug/L #	23

(#) = qualifier out of range (m) = manual integration
6M139128.D 826_SL.M Mon May 09 08:33:14 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050716\6M139128.D Vial: 12
Acq On : 7 May 2016 18:22 Operator: TMB
Sample : L16041582-04 8260 4.77g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 9 8:33 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

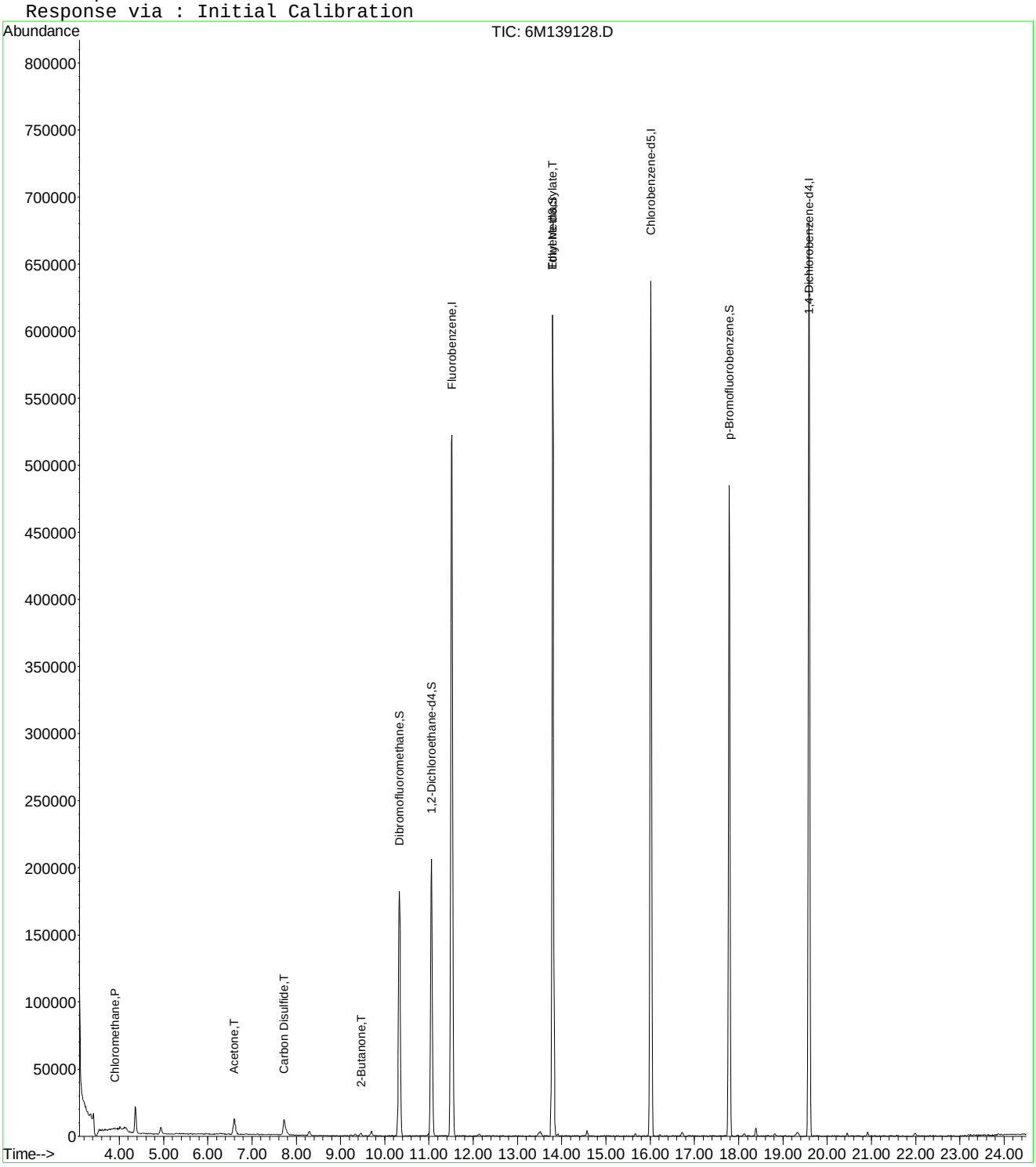

6M139128.D 826_SL.M Mon May 09 08:33:14 2016 Page 2

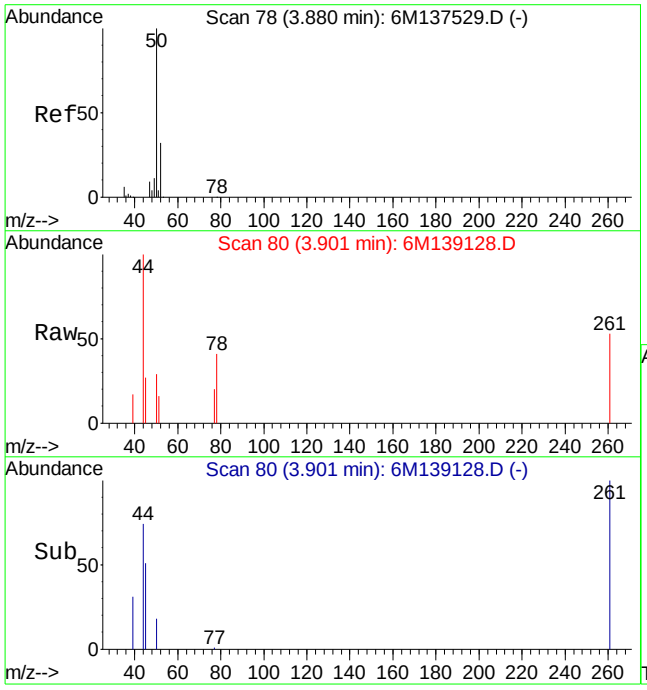

#3
Chloromethane
Concen: 0.53 ug/L
RT: 3.90 min Scan# 80
Delta R.T. 0.02 min
Lab File: 6M139128.D
Acq: 7 May 2016 18:22

Tgt Ion: 50 Resp: 3369

Ion	Ratio	Lower	Upper
50	100		
52	0.0	18.8	44.0#

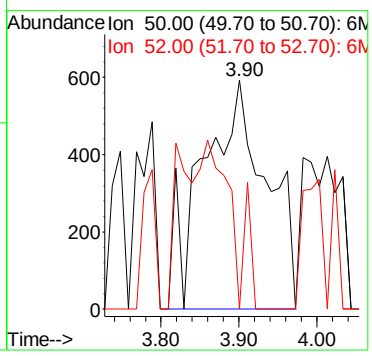

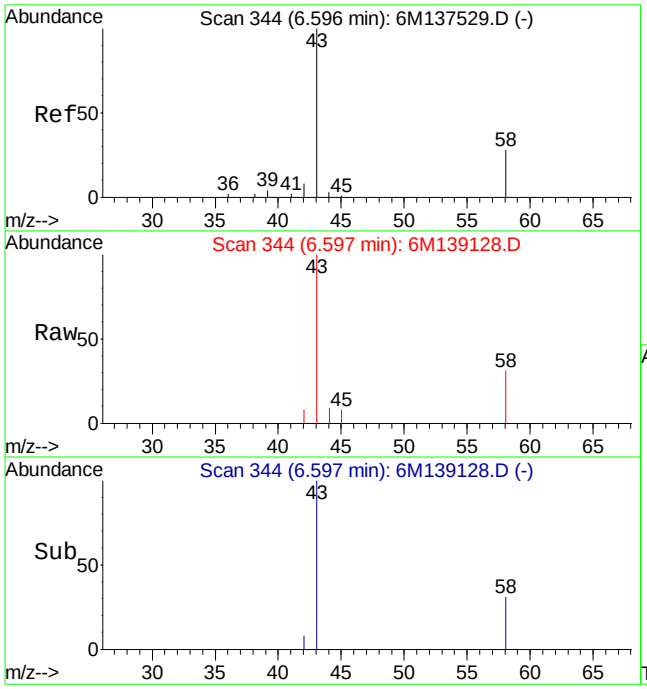

#13
Acetone
Concen: 14.61 ug/L
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M139128.D
Acq: 7 May 2016 18:22

Tgt Ion: 43 Resp: 26440

Ion	Ratio	Lower	Upper
43	100		
58	40.0	16.1	37.7#

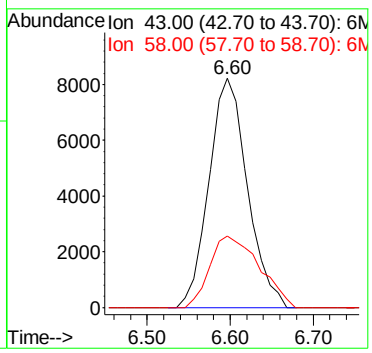

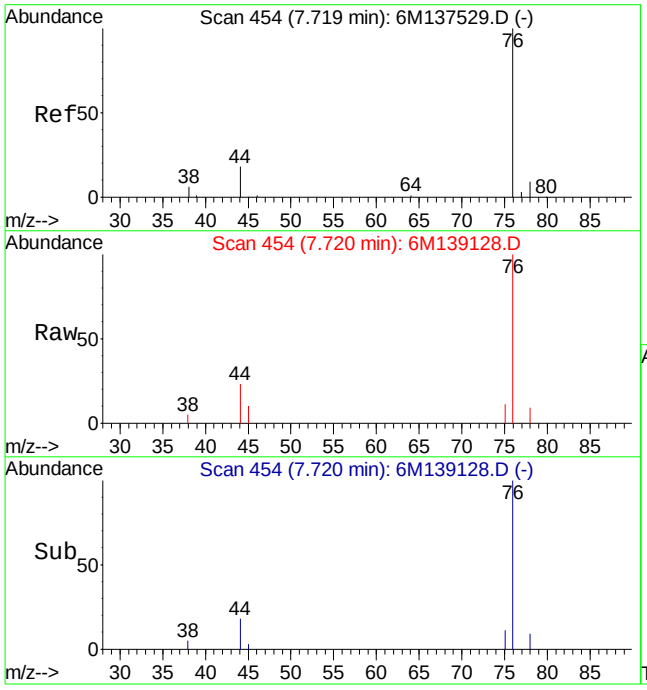

#20
Carbon Disulfide
Concen: 2.02 ug/L
RT: 7.72 min Scan# 454
Delta R.T. -0.00 min
Lab File: 6M139128.D
Acq: 7 May 2016 18:22

Tgt Ion: 76 Resp: 22530

Ion	Ratio	Lower	Upper
76	100		
78	8.2	5.3	12.5

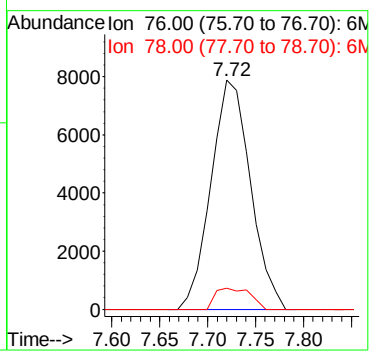

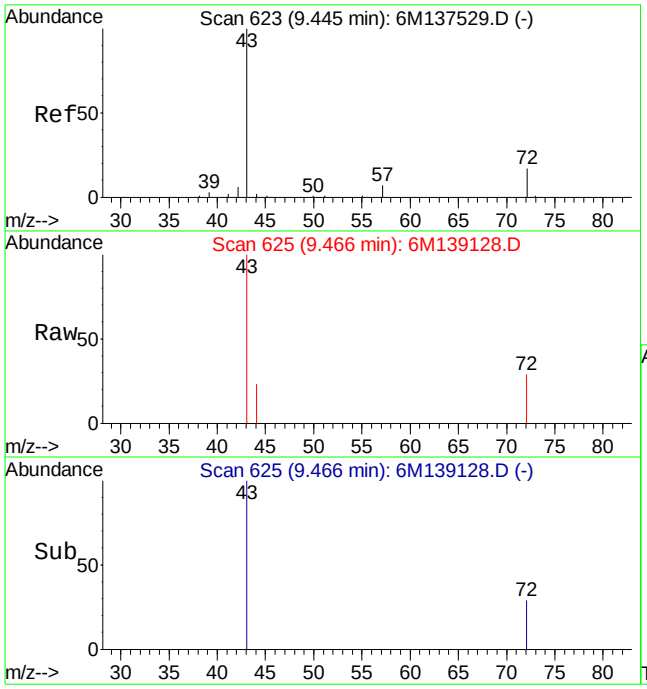

#29
2-Butanone
Concen: 1.99 ug/L
RT: 9.47 min Scan# 625
Delta R.T. 0.02 min
Lab File: 6M139128.D
Acq: 7 May 2016 18:22

Tgt Ion: 43 Resp: 4571

Ion	Ratio	Lower	Upper
43	100		
72	14.5	12.2	28.4

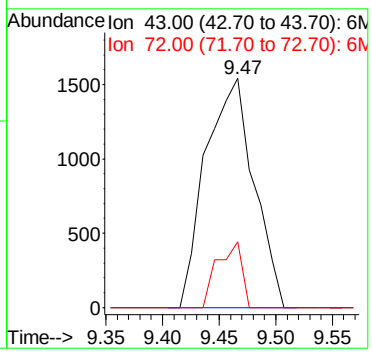

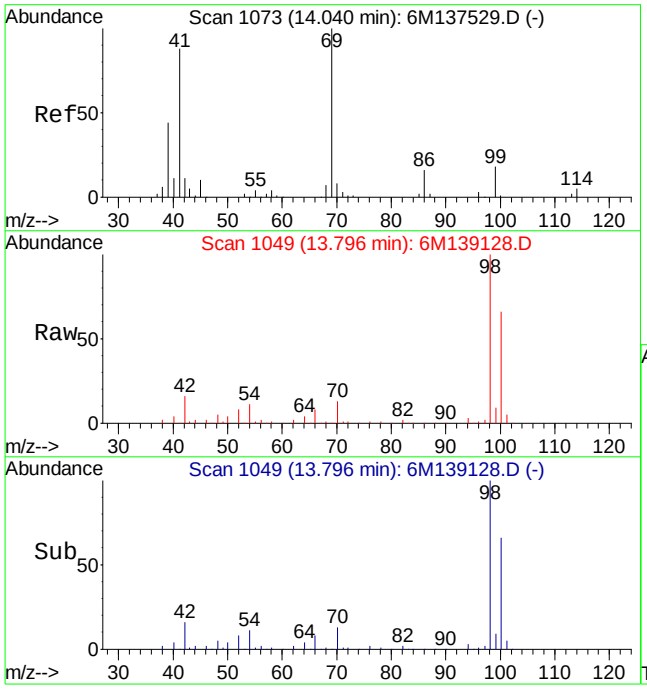

#60
Ethyl Methacrylate
Concen: 0.28 ug/L
RT: 13.80 min Scan# 1049
Delta R.T. -0.24 min
Lab File: 6M139128.D
Acq: 7 May 2016 18:22

Tgt Ion: 69 Resp: 1193

Ion	Ratio	Lower	Upper
69	100		
41	154.2	50.6	118.2#

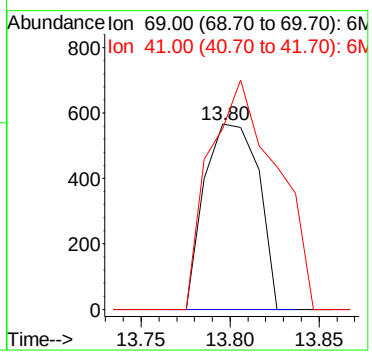

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050716\6M139129.D Vial: 13
Acq On : 7 May 2016 18:54 Operator: TMB
Sample : L16041582-05 8260 4.89g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 09 08:33:14 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	631906	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	463590	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.58	152	231486	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	171028	50.4541 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.90%		
43) 1,2-Dichloroethane-d4	11.06	65	200803	45.6247 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 91.24%		
58) Toluene-d8	13.79	98	552549	50.1312 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 100.26%		
80) p-Bromofluorobenzene	17.79	95	226659	53.3076 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 106.62%		

Target Compounds					Qvalue
3) Chloromethane	3.89	50	1548	0.2560 ug/L #	65
13) Acetone	6.60	43	22638	12.7447 ug/L	81
15) Tert-Butyl Alcohol	6.95	59	194	0.3760 ug/L #	57
20) Carbon Disulfide	7.73	76	4011	0.3791 ug/L #	75
29) 2-Butanone	9.47	43	2544	1.1647 ug/L #	56
36) Tetrahydrofuran	10.30	42	3658	0.3778 ug/L #	75
60) Ethyl Methacrylate	13.79	69	1441	0.3429 ug/L #	53

(#) = qualifier out of range (m) = manual integration
6M139129.D 826_SL.M Mon May 09 08:33:15 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050716\6M139129.D Vial: 13
Acq On : 7 May 2016 18:54 Operator: TMB
Sample : L16041582-05 8260 4.89g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 9 8:33 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

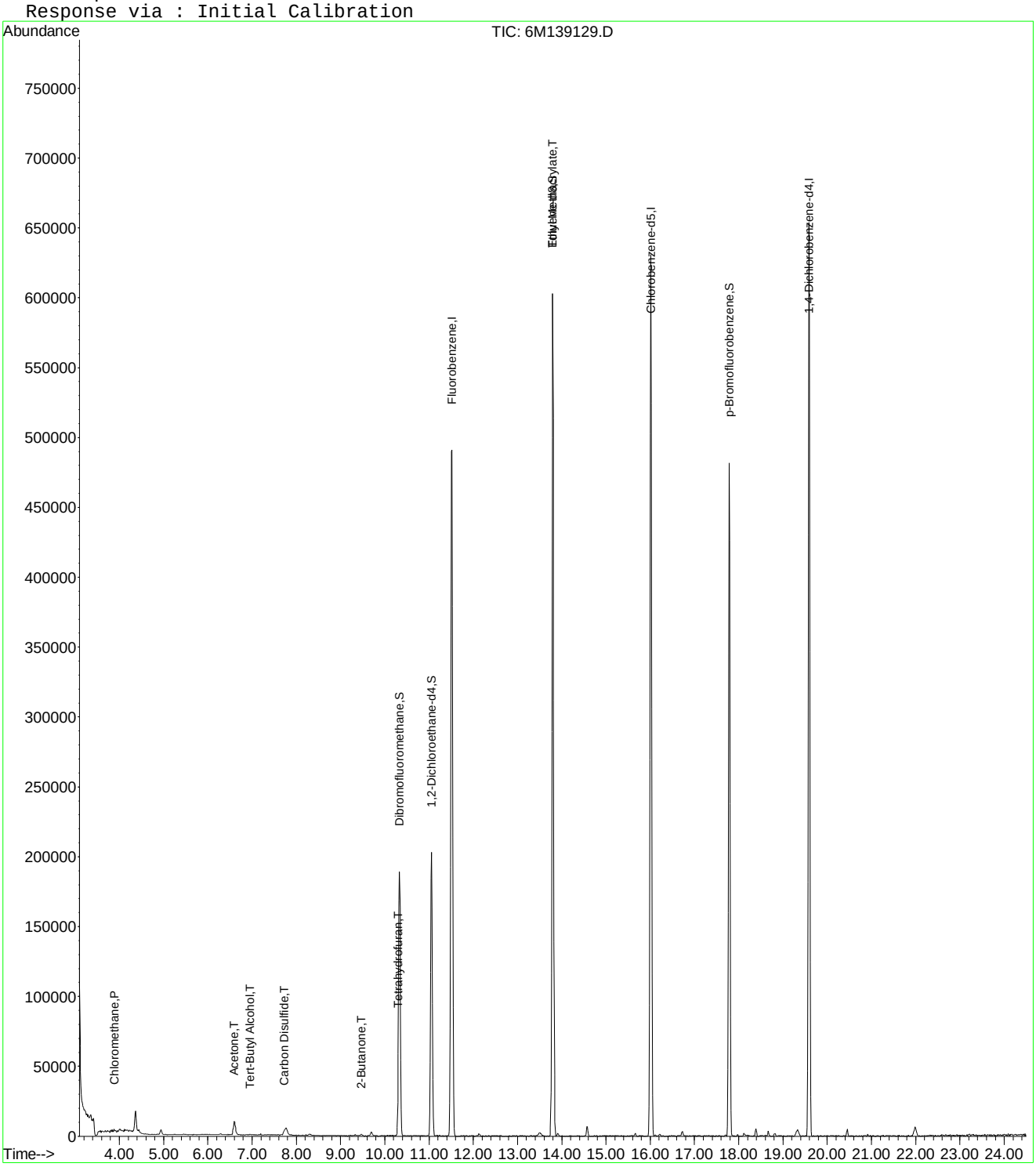

6M139129.D 826_SL.M Mon May 09 08:33:15 2016 Page 2

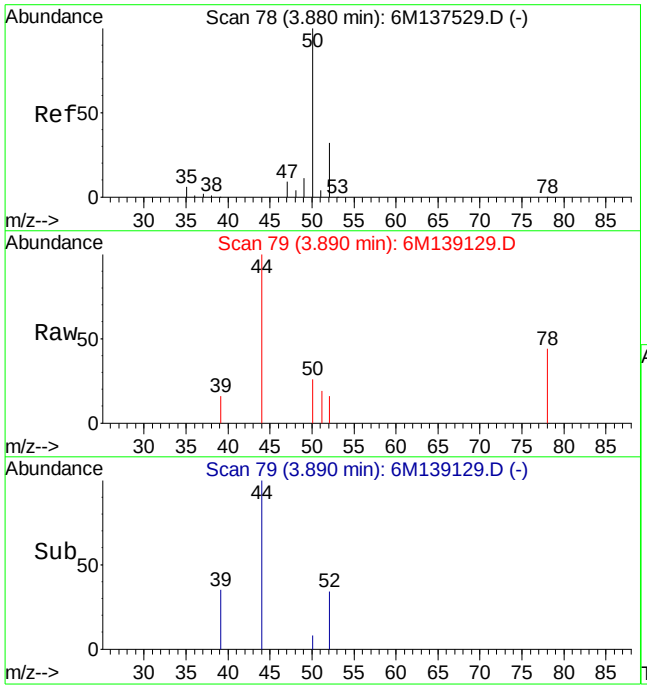

#3
Chloromethane
Concen: 0.26 ug/L
RT: 3.89 min Scan# 79
Delta R.T. 0.01 min
Lab File: 6M139129.D
Acq: 7 May 2016 18:54

Tgt Ion: 50 Resp: 1548

Ion	Ratio	Lower	Upper
50	100		
52	12.0	18.8	44.0#

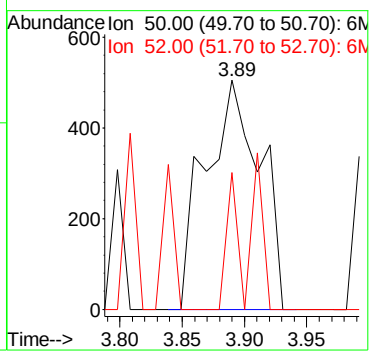

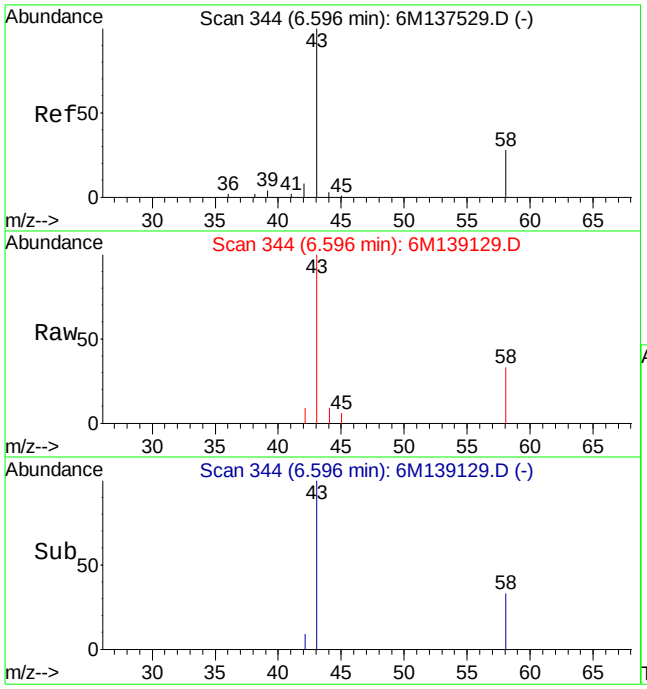

#13
Acetone
Concen: 12.74 ug/L
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M139129.D
Acq: 7 May 2016 18:54

Tgt Ion: 43 Resp: 22638

Ion	Ratio	Lower	Upper
43	100		
58	36.7	16.1	37.7

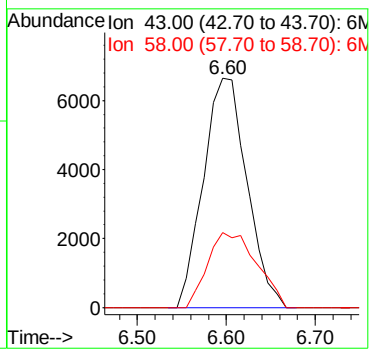

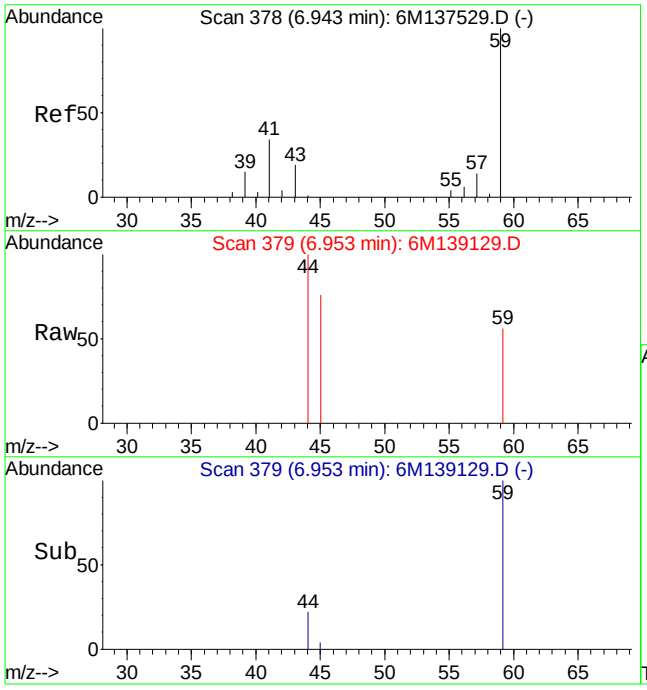

#15
Tert-Butyl Alcohol
Concen: 0.38 ug/L
RT: 6.95 min Scan# 379
Delta R.T. 0.02 min
Lab File: 6M139129.D
Acq: 7 May 2016 18:54

Tgt Ion: 59 Resp: 194

Ion	Ratio	Lower	Upper
59	100		
41	0.0	15.0	35.0#
57	0.0	5.9	13.9#

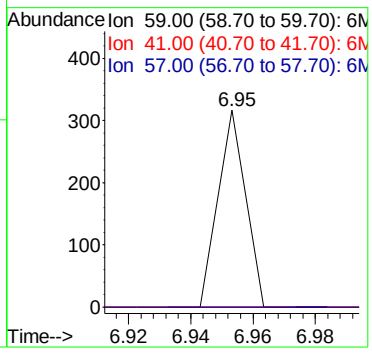

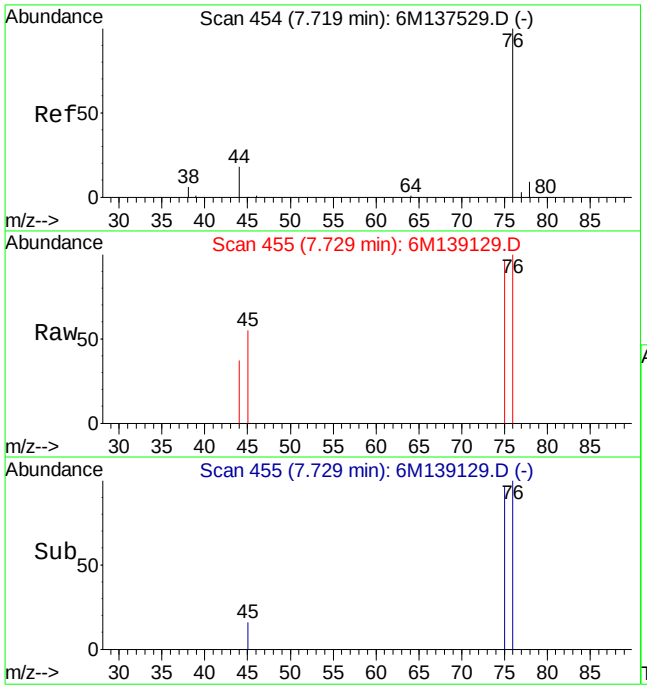

#20
Carbon Disulfide
Concen: 0.38 ug/L
RT: 7.73 min Scan# 455
Delta R.T. 0.01 min
Lab File: 6M139129.D
Acq: 7 May 2016 18:54

Tgt Ion: 76 Resp: 4011

Ion	Ratio	Lower	Upper
76	100		
78	0.0	5.3	12.5#

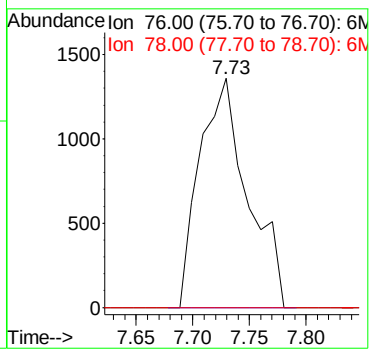

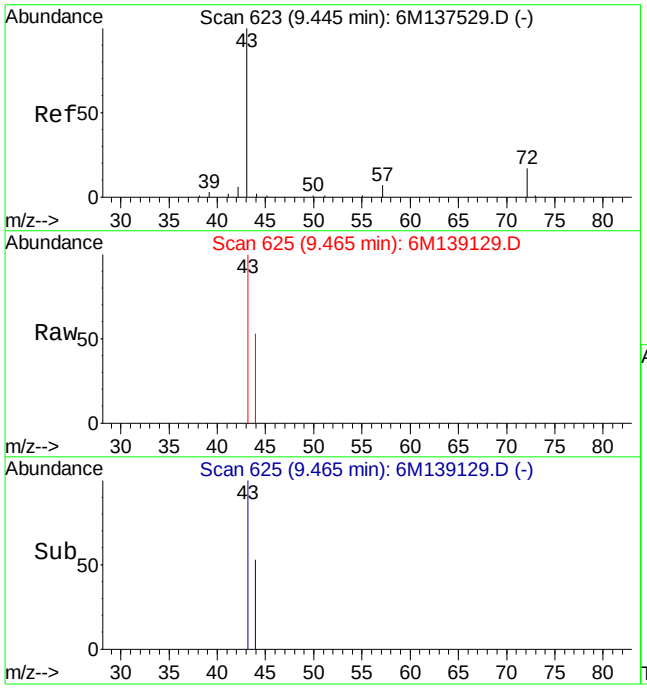

#29
2-Butanone
Concen: 1.16 ug/L
RT: 9.47 min Scan# 625
Delta R.T. 0.02 min
Lab File: 6M139129.D
Acq: 7 May 2016 18:54

Tgt Ion: 43 Resp: 2544

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.2	28.4#

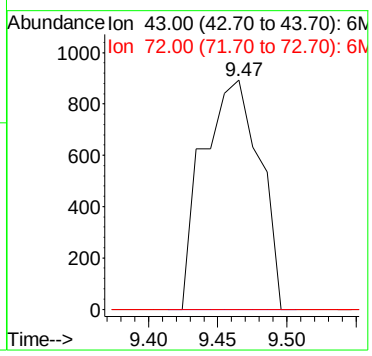

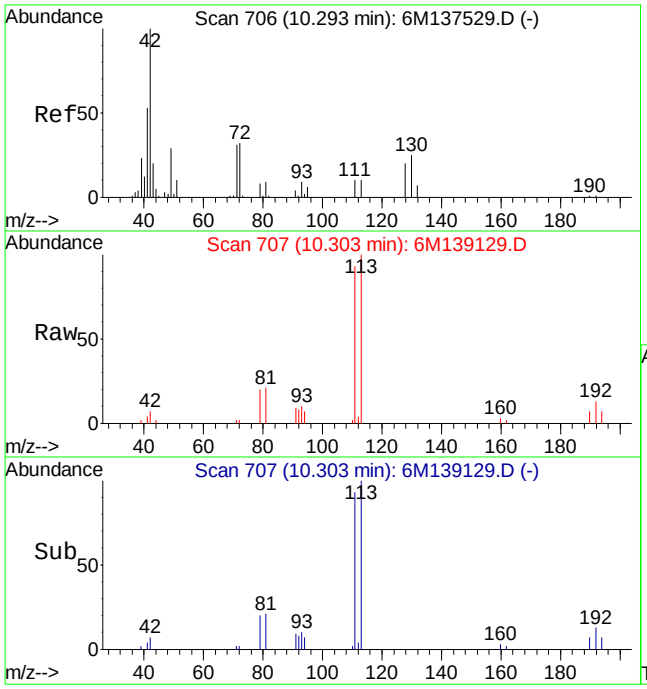

#36
Tetrahydrofuran
Concen: 0.38 ug/L
RT: 10.30 min Scan# 707
Delta R.T. 0.01 min
Lab File: 6M139129.D
Acq: 7 May 2016 18:54

Tgt Ion: 42 Resp: 3658

Ion	Ratio	Lower	Upper
42	100		
72	18.7	21.0	49.0#
71	22.1	20.6	48.2

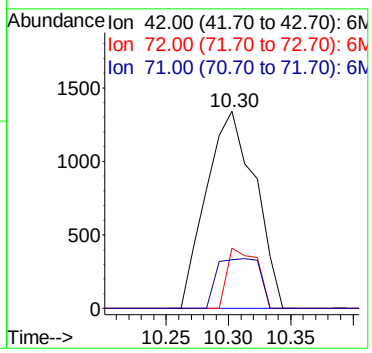

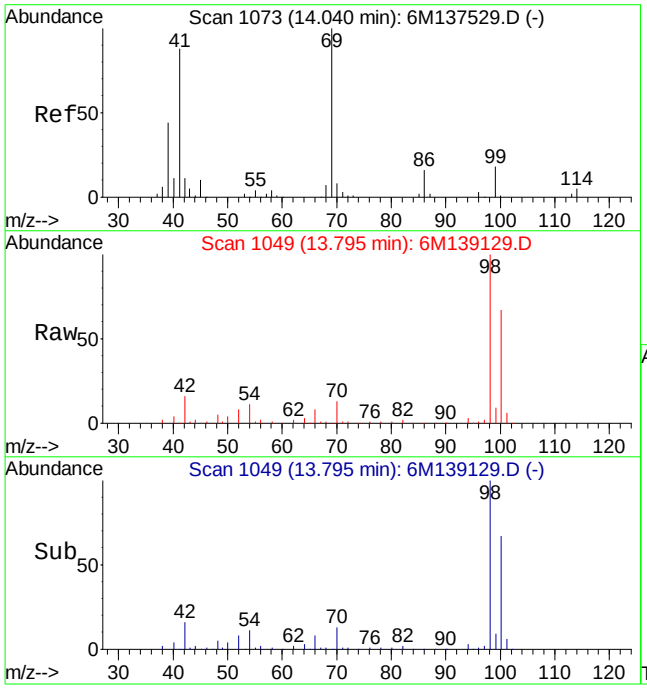

#60
Ethyl Methacrylate
Concen: 0.34 ug/L
RT: 13.79 min Scan# 1049
Delta R.T. -0.24 min
Lab File: 6M139129.D
Acq: 7 May 2016 18:54

Tgt Ion: 69 Resp: 1441

Ion	Ratio	Lower	Upper
69	100		
41	127.6	50.6	118.2#

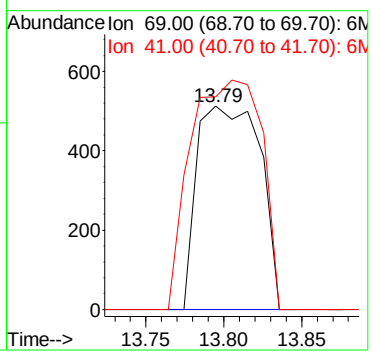

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050716\6M139130.D Vial: 14
Acq On : 7 May 2016 19:27 Operator: TMB
Sample : L16041582-06 8260 5.00g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 09 08:33:16 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	655810	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	472281	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	241818	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	175996	50.0272 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 100.06%		
43) 1,2-Dichloroethane-d4	11.06	65	215158	47.1044 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.20%		
58) Toluene-d8	13.80	98	554438	49.3769 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 98.76%		
80) p-Bromofluorobenzene	17.79	95	237968	53.5760 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 107.16%		

Target Compounds					Qvalue
3) Chloromethane	3.90	50	1680	0.2677 ug/L	91
13) Acetone	6.60	43	17004	8.0106 ug/L #	65
15) Tert-Butyl Alcohol	6.93	59	192	0.3585 ug/L #	57
20) Carbon Disulfide	7.72	76	3825	0.3483 ug/L #	75
29) 2-Butanone	9.47	43	4332	1.9110 ug/L #	56
60) Ethyl Methacrylate	13.81	69	1407	0.3287 ug/L #	54

(#) = qualifier out of range (m) = manual integration
6M139130.D 826_SL.M Mon May 09 08:33:16 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050716\6M139130.D Vial: 14
Acq On : 7 May 2016 19:27 Operator: TMB
Sample : L16041582-06 8260 5.00g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 9 8:33 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

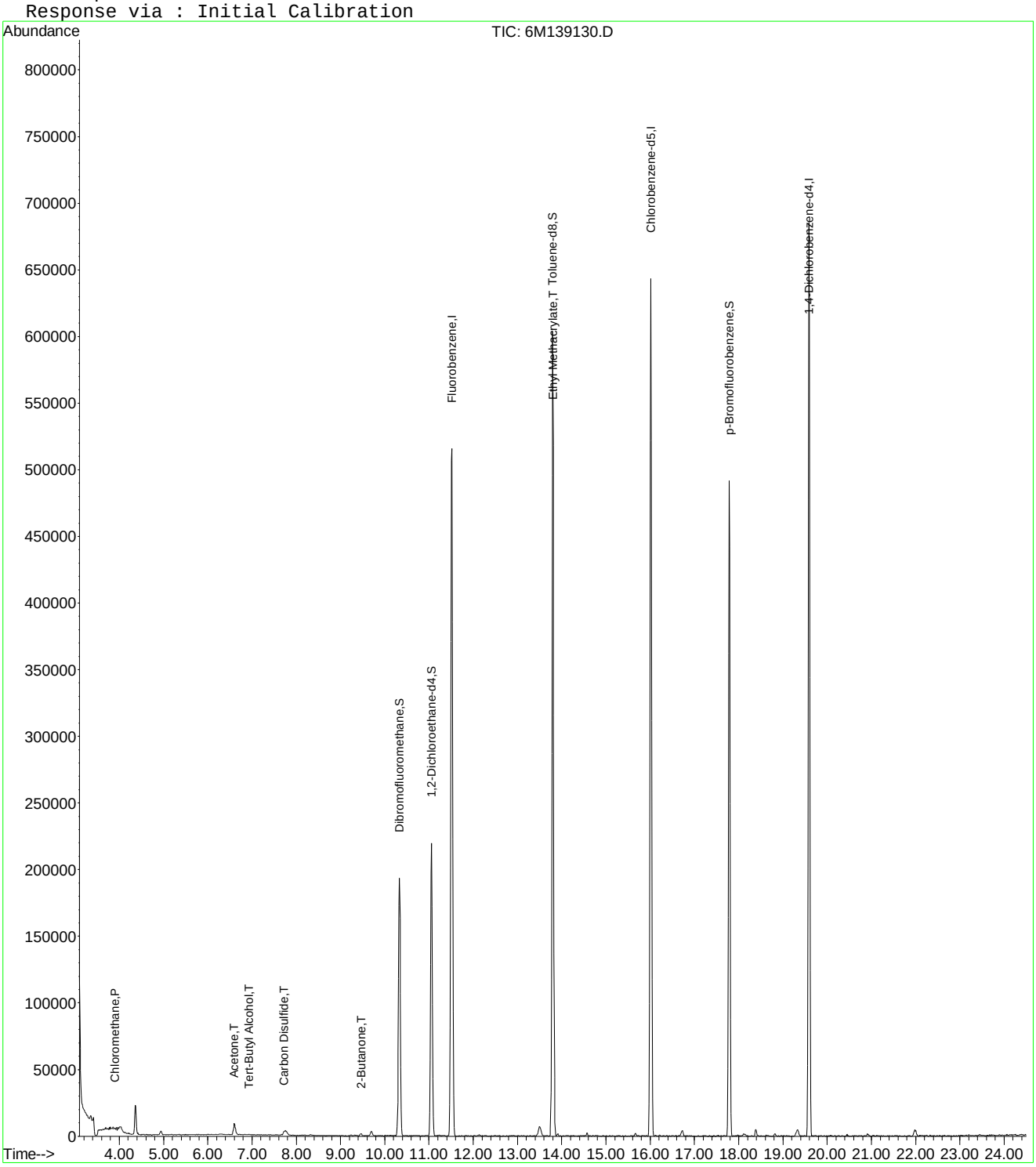

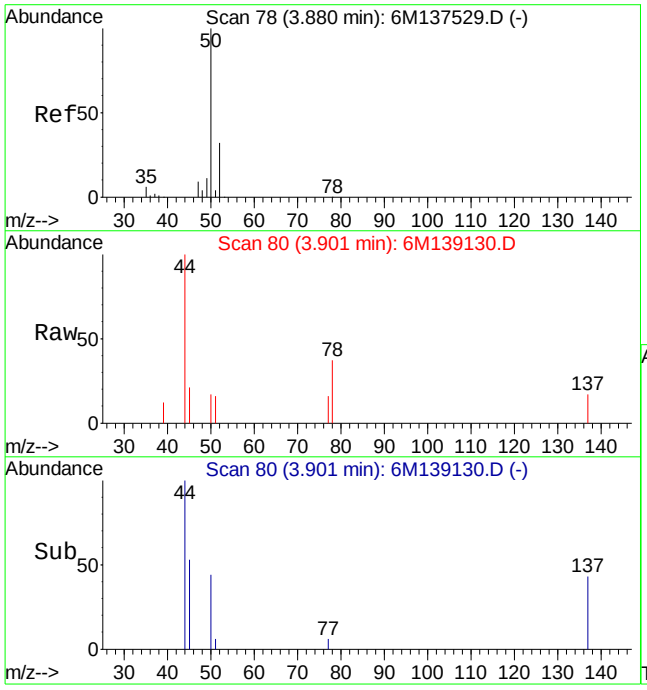

#3
Chloromethane
Concen: 0.27 ug/L
RT: 3.90 min Scan# 80
Delta R.T. 0.02 min
Lab File: 6M139130.D
Acq: 7 May 2016 19:27

Tgt Ion: 50 Resp: 1680

Ion	Ratio	Lower	Upper
50	100		
52	36.4	18.8	44.0

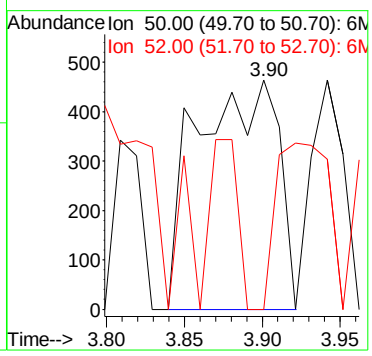

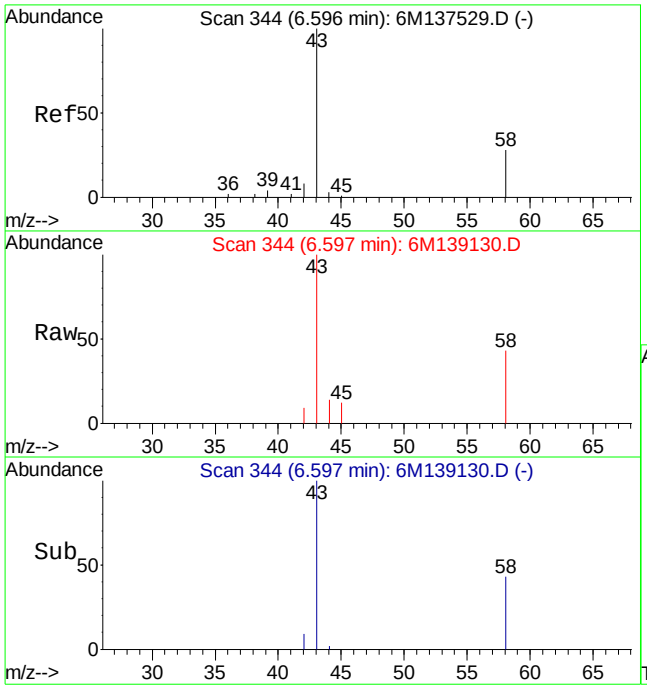

#13
Acetone
Concen: 8.01 ug/L
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M139130.D
Acq: 7 May 2016 19:27

Tgt Ion: 43 Resp: 17004

Ion	Ratio	Lower	Upper
43	100		
58	44.8	16.1	37.7#

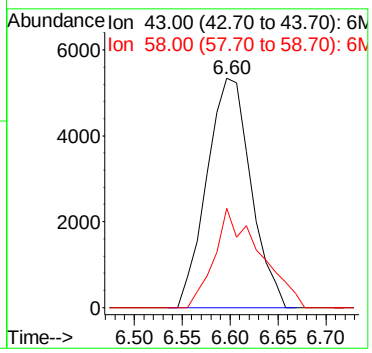

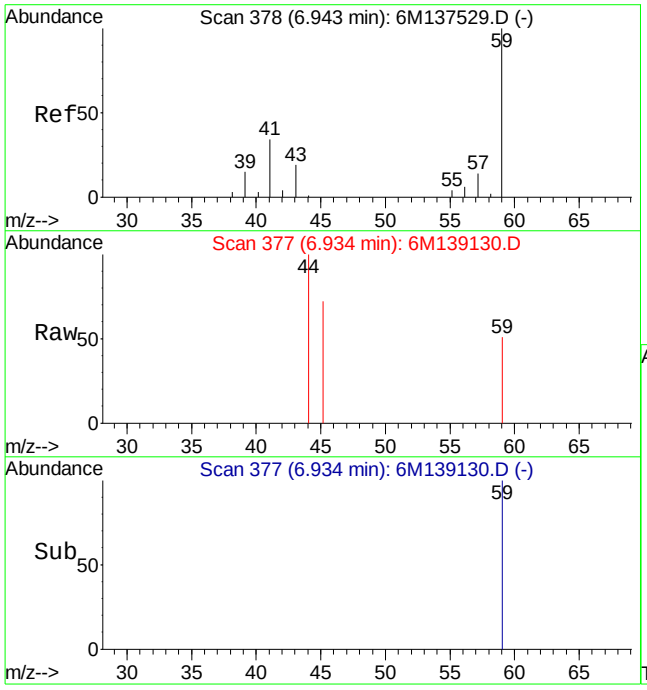

#15
Tert-Butyl Alcohol
Concen: 0.36 ug/L
RT: 6.93 min Scan# 377
Delta R.T. -0.00 min
Lab File: 6M139130.D
Acq: 7 May 2016 19:27

Tgt Ion: 59 Resp: 192

Ion	Ratio	Lower	Upper
59	100		
41	0.0	15.0	35.0#
57	0.0	5.9	13.9#

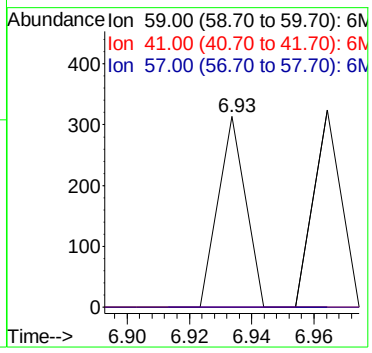

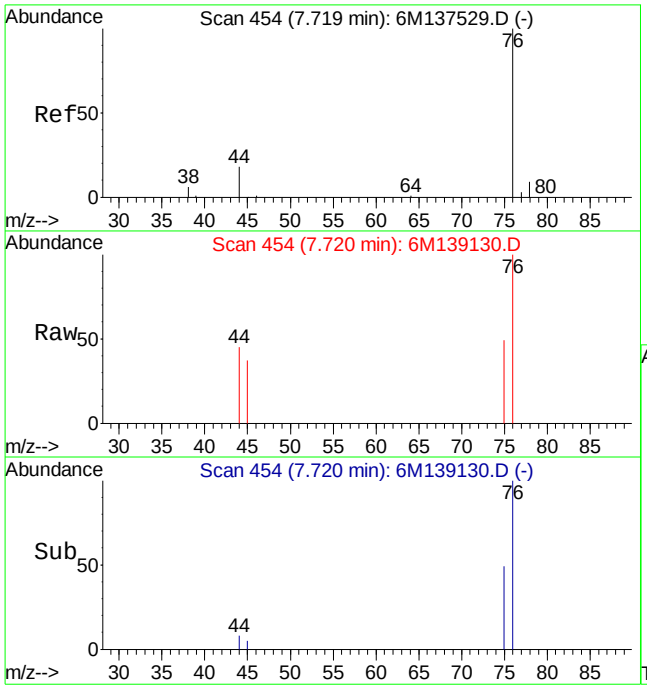

#20
Carbon Disulfide
Concen: 0.35 ug/L
RT: 7.72 min Scan# 454
Delta R.T. -0.00 min
Lab File: 6M139130.D
Acq: 7 May 2016 19:27

Tgt Ion: 76 Resp: 3825

Ion	Ratio	Lower	Upper
76	100		
78	0.0	5.3	12.5#

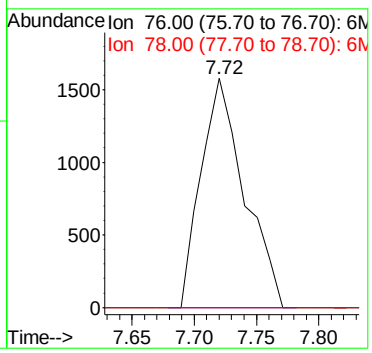

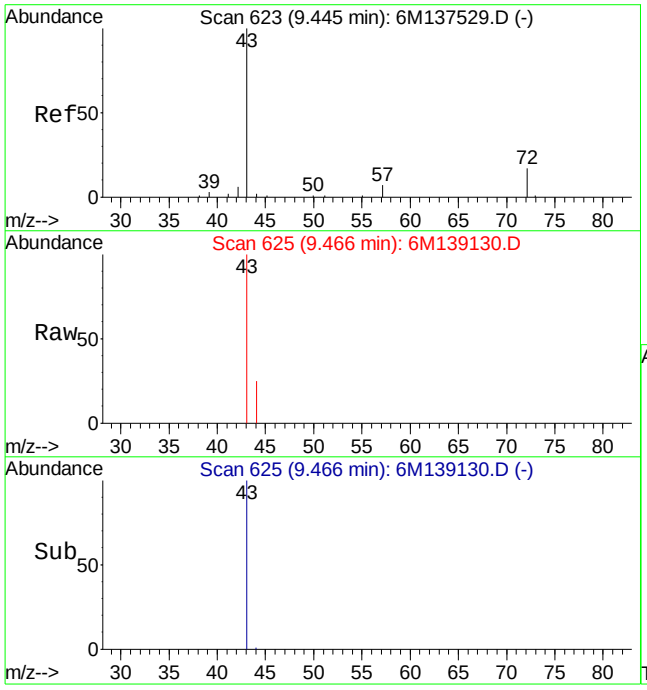

#29
2-Butanone
Concen: 1.91 ug/L
RT: 9.47 min Scan# 625
Delta R.T. 0.02 min
Lab File: 6M139130.D
Acq: 7 May 2016 19:27

Tgt Ion: 43 Resp: 4332

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.2	28.4#

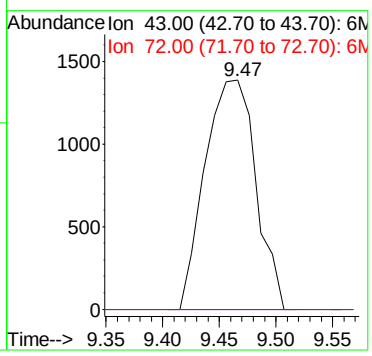

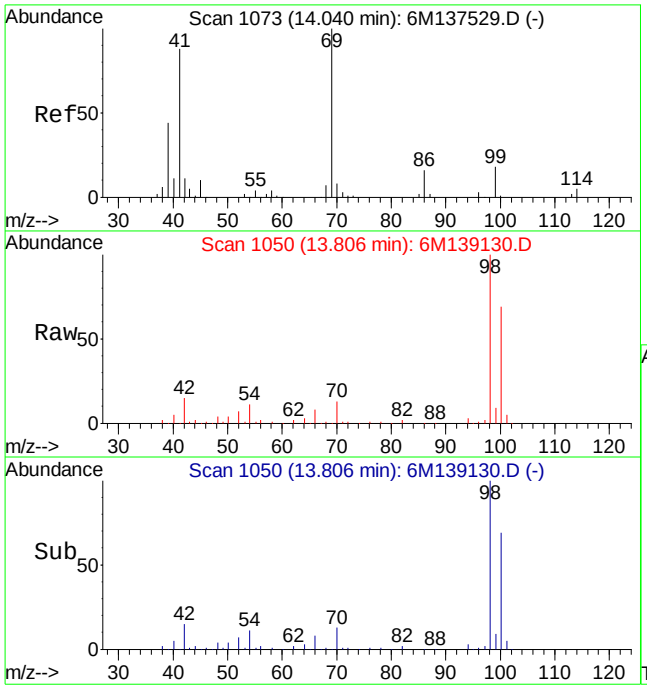

#60
Ethyl Methacrylate
Concen: 0.33 ug/L
RT: 13.81 min Scan# 1050
Delta R.T. -0.23 min
Lab File: 6M139130.D
Acq: 7 May 2016 19:27

Tgt Ion: 69 Resp: 1407

Ion	Ratio	Lower	Upper
69	100		
41	126.1	50.6	118.2#

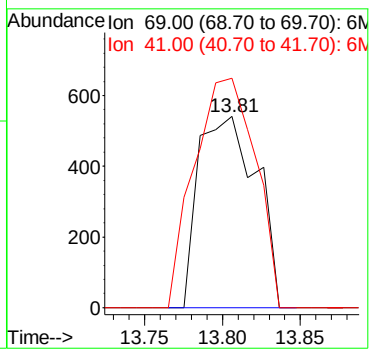

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050716\6M139131.D Vial: 15
Acq On : 7 May 2016 20:00 Operator: TMB
Sample : L16041582-07 8260 5.01g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 09 08:33:17 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	645261	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	442743	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.58	152	210978	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	162558	46.9629 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 93.92%		
43) 1,2-Dichloroethane-d4	11.06	65	202197	44.9905 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 89.98%		
58) Toluene-d8	13.79	98	543809	51.6614 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 103.32%		
80) p-Bromofluorobenzene	17.79	95	218071	56.2732 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 112.54%		

Target Compounds

					Qvalue
13) Acetone	6.60	43	15322	6.9664 ug/L #	67
20) Carbon Disulfide	7.72	76	4694	0.4345 ug/L #	75
29) 2-Butanone	9.47	43	2687	1.2047 ug/L #	56
36) Tetrahydrofuran	10.29	42	2912	Below Cal #	47
60) Ethyl Methacrylate	13.79	69	1332	0.3319 ug/L	80
90) 1,2,4-Trimethylbenzene	18.82	105	2969	0.2768 ug/L	82

(#) = qualifier out of range (m) = manual integration
6M139131.D 826_SL.M Mon May 09 08:33:17 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050716\6M139131.D Vial: 15
Acq On : 7 May 2016 20:00 Operator: TMB
Sample : L16041582-07 8260 5.01g Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 9 8:33 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

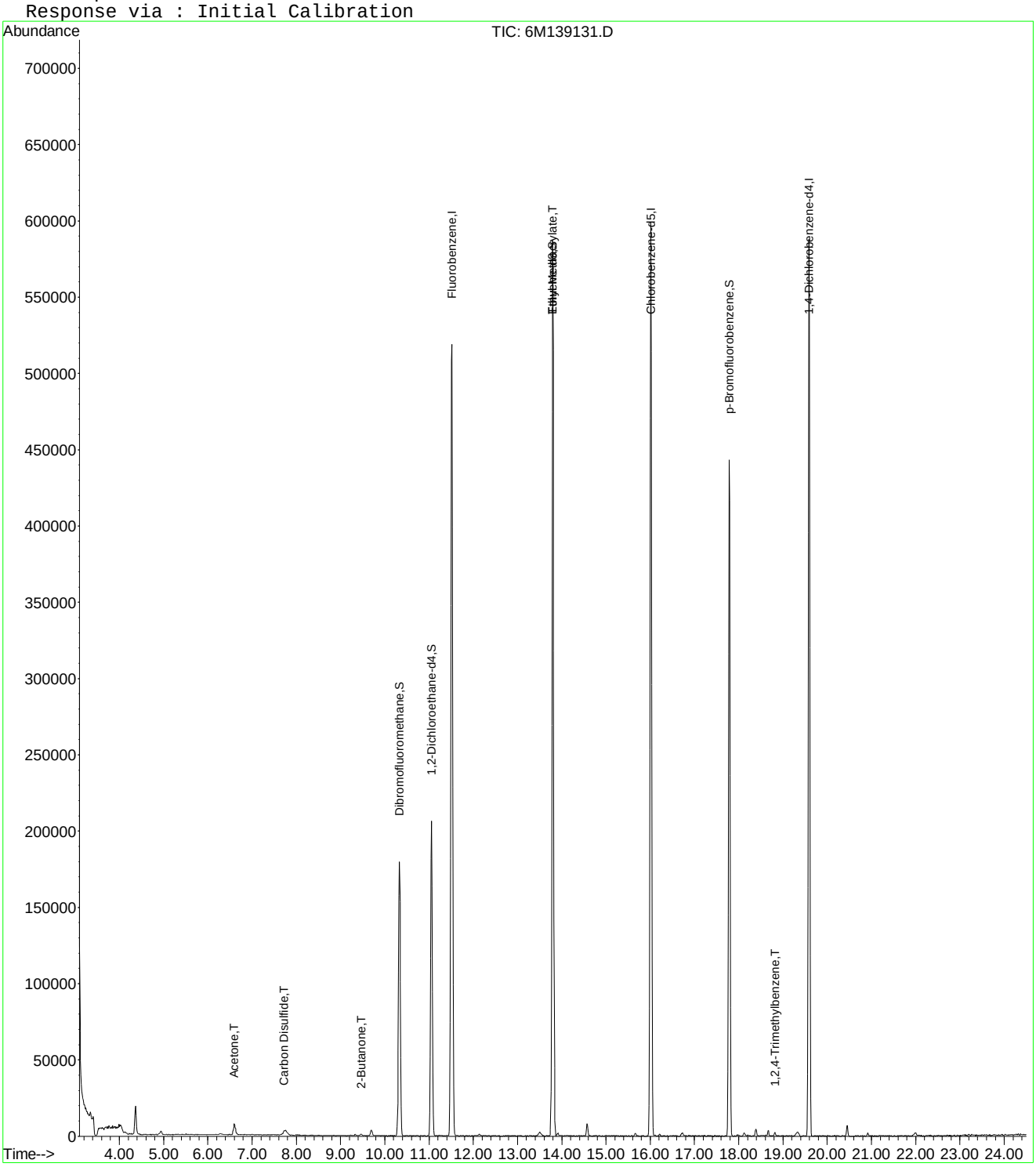

6M139131.D 826_SL.M Mon May 09 08:33:17 2016 Page 2

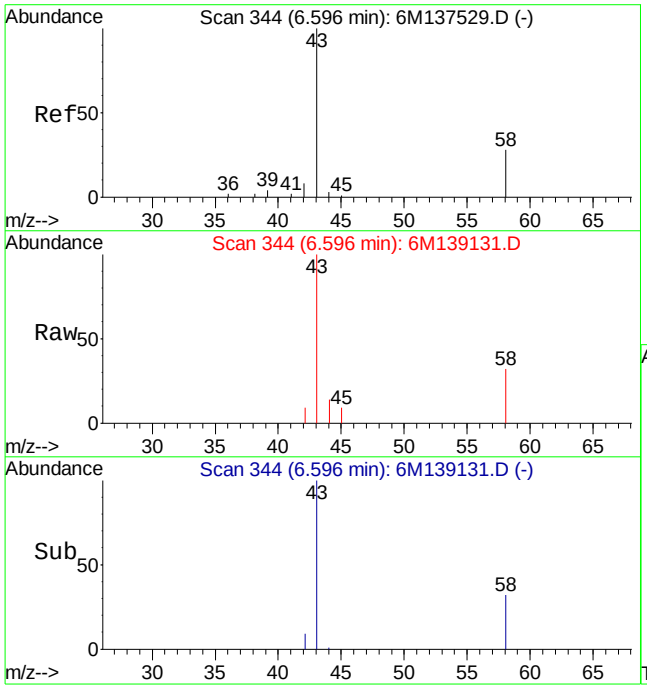

#13
Acetone
Concen: 6.97 ug/L
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M139131.D
Acq: 7 May 2016 20:00

Tgt Ion: 43 Resp: 15322

Ion	Ratio	Lower	Upper
43	100		
58	44.0	16.1	37.7#

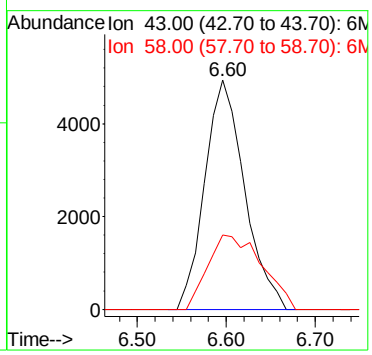

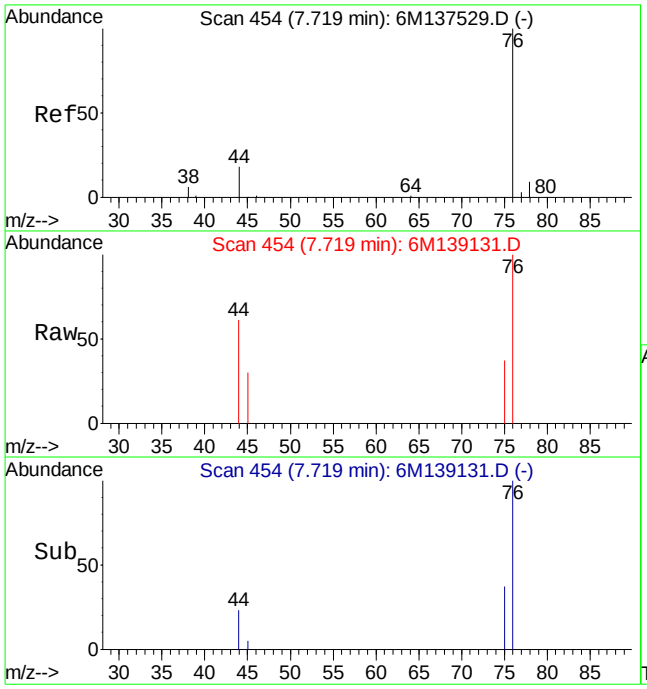

#20
Carbon Disulfide
Concen: 0.43 ug/L
RT: 7.72 min Scan# 454
Delta R.T. -0.00 min
Lab File: 6M139131.D
Acq: 7 May 2016 20:00

Tgt Ion: 76 Resp: 4694

Ion	Ratio	Lower	Upper
76	100		
78	0.0	5.3	12.5#

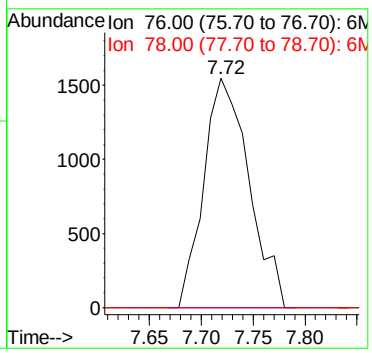

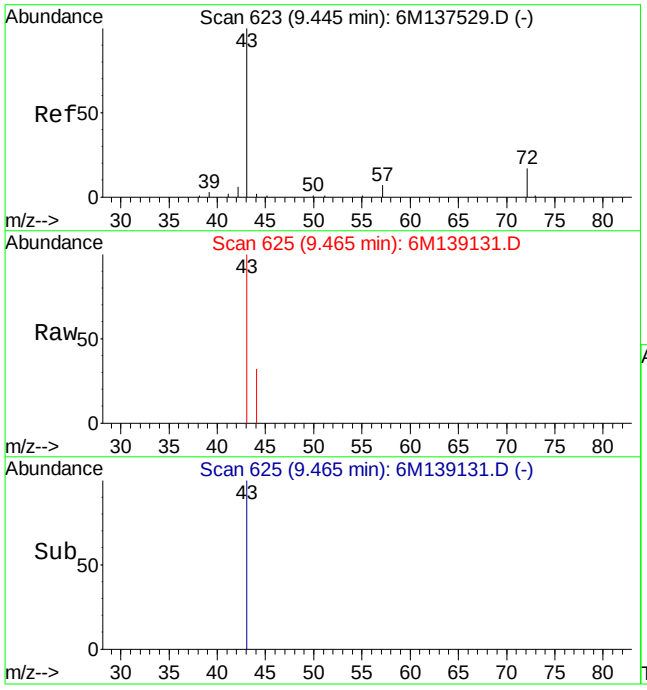

#29
2-Butanone
Concen: 1.20 ug/L
RT: 9.47 min Scan# 625
Delta R.T. 0.02 min
Lab File: 6M139131.D
Acq: 7 May 2016 20:00

Tgt Ion: 43 Resp: 2687

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.2	28.4#

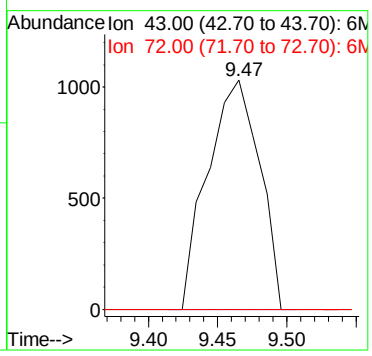

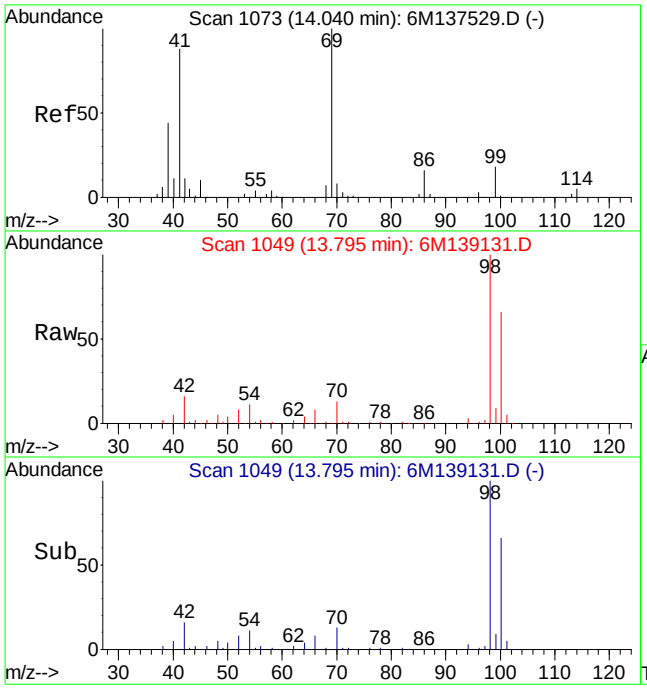

#60
Ethyl Methacrylate
Concen: 0.33 ug/L
RT: 13.79 min Scan# 1049
Delta R.T. -0.24 min
Lab File: 6M139131.D
Acq: 7 May 2016 20:00

Tgt Ion: 69 Resp: 1332

Ion	Ratio	Lower	Upper
69	100		
41	66.3	50.6	118.2

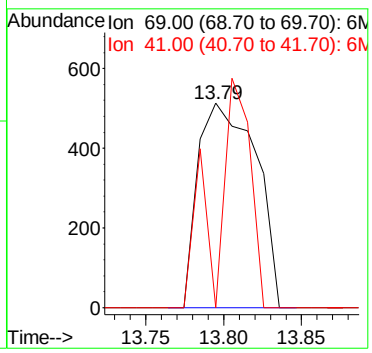

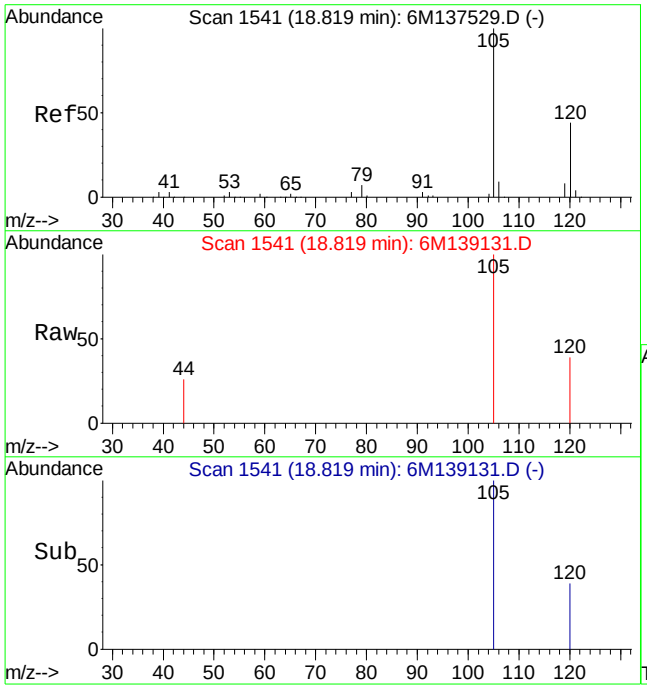

#90
1,2,4-Trimethylbenzene
Concen: 0.28 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. -0.00 min
Lab File: 6M139131.D
Acq: 7 May 2016 20:00

Tgt Ion:105 Resp: 2969

Ion	Ratio	Lower	Upper
105	100		
120	43.8	34.3	79.9

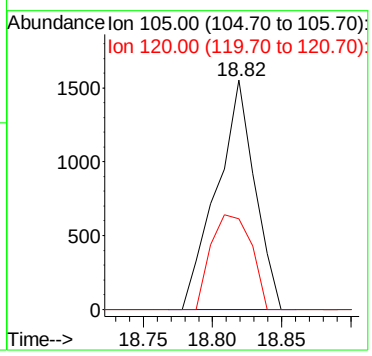

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:35 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:12:24 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	662608	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	467802	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	239669	50.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.32	111	1132	0.3185 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.64%#	
43) 1,2-Dichloroethane-d4	11.05	65	1872	0.4056 ug/L	-0.01
Spiked Amount 50.000	Range 80 - 120		Recovery =	0.82%#	
58) Toluene-d8	13.80	98	5704	0.5128 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	1.02%#	
80) p-Bromofluorobenzene	17.79	95	2210	0.5020 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	1.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	3454	0.5676 ug/L #	66
3) Chloromethane	3.88	50	8579	1.3528 ug/L	90
4) Vinyl Chloride	4.12	62	3760	0.7367 ug/L #	74
5) 1,3-Butadiene	4.18	54	3027	0.7128 ug/L #	61
6) Bromomethane	5.03	94	1550	0.5697 ug/L	88
7) Chloroethane	5.19	64	1482	0.5121 ug/L #	45
8) Trichlorofluoromethane	5.69	101	6717	0.9794 ug/L #	89
10) Isoprene	6.27	67	1888	0.4226 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	1199	0.3663 ug/L #	55
13) Acetone	6.59	43	9375	2.3758 ug/L	94
14) 1,1-Dichloroethene	6.83	61	2956	0.5098 ug/L	84
15) Tert-Butyl Alcohol	6.94	59	200	0.3696 ug/L #	57
18) Methyl acetate	7.39	43	2867	0.7115 ug/L #	64
19) Methylene Chloride	7.67	84	2652	0.7594 ug/L	75
20) Carbon Disulfide	7.72	76	8199	0.7390 ug/L #	82
22) Methyl Tert Butyl Ether	7.88	73	4851	0.4864 ug/L #	63
23) trans-1,2-Dichloroethene	8.16	96	1352	0.4221 ug/L #	10
24) n-Hexane	8.23	57	3942	0.6777 ug/L	92
26) Vinyl Acetate	8.79	43	2062	0.2645 ug/L #	78
27) 1,1-Dichloroethane	8.82	63	3798	0.5499 ug/L #	68
29) 2-Butanone	9.46	43	1832	0.7999 ug/L #	56
31) 2,2-Dichloropropane	9.69	77	2885	0.5204 ug/L	96
32) cis-1,2-Dichloroethene	9.76	96	1812	0.5067 ug/L	93
33) Chloroform	10.01	83	3647	0.5654 ug/L	91
35) Bromochloromethane	10.26	130	694	0.3303 ug/L #	47
36) Tetrahydrofuran	10.29	42	9683	4.2648 ug/L	95
38) 1,1,1-Trichloroethane	10.59	97	2858	0.5017 ug/L	84
39) Cyclohexane	10.62	56	2886	0.4467 ug/L	94
40) 1,1-Dichloropropene	10.82	75	2042	0.4451 ug/L #	76
42) Carbon Tetrachloride	10.99	117	2712	0.5095 ug/L #	85
45) 1,2-Dichloroethane	11.19	62	3101	0.5633 ug/L #	75
46) Benzene	11.23	78	8142	0.5899 ug/L	89
47) Trichloroethene	12.09	130	1950	0.5980 ug/L	81
48) Methylcyclohexane	12.18	83	2990	0.5672 ug/L #	73
49) 1,2-Dichloropropane	12.34	63	1667	0.4489 ug/L #	69
51) Bromodichloromethane	12.68	83	2589	0.5312 ug/L	92
52) Dibromomethane	12.78	93	741	0.3411 ug/L	80
55) cis-1,3-Dichloropropene	13.42	75	2628	0.4894 ug/L #	74
56) Dimethyl Disulfide	13.71	79	853	0.3150 ug/L #	49
59) Toluene	13.92	91	7610	0.5751 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M137523.D 826_SL.M Mon Feb 29 16:01:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:35 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:12:24 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
60)	Ethyl Methacrylate	14.04	69	1764	0.4160 ug/L		85
62)	trans-1,3-Dichloropropene	14.12	75	2064	0.4056 ug/L	#	71
63)	1,1,2-Trichloroethane	14.37	97	1621	0.5861 ug/L	#	75
64)	2-Hexanone	14.32	43	1822	0.5773 ug/L	#	48
65)	1,3-Dichloropropane	14.75	76	2715	0.5416 ug/L		83
66)	Tetrachloroethene	14.86	166	1836	0.5624 ug/L		91
67)	Dibromochloromethane	15.18	129	1663	0.4623 ug/L		94
68)	1,2-Dibromoethane	15.48	107	1262	0.4462 ug/L		99
69)	1-Chlorohexane	15.59	91	2113	0.5142 ug/L		96
70)	Chlorobenzene	16.07	112	4991	0.5869 ug/L		75
71)	1,1,1,2-Tetrachloroethane	16.11	131	1409	0.4126 ug/L	#	79
72)	Ethylbenzene	16.11	106	2290	0.5032 ug/L		61
73)	m-,p-Xylene	16.22	106	6307	1.1326 ug/L		90
74)	o-Xylene	16.88	106	2685	0.5119 ug/L		71
75)	Styrene	16.92	104	4645	0.5203 ug/L		93
76)	Bromoform	17.49	173	756	0.2977 ug/L	#	62
77)	Isopropylbenzene	17.38	105	7047	0.4998 ug/L		82
79)	1,1,2,2-Tetrachloroethane	17.64	83	1948	0.5203 ug/L		84
83)	n-Propylbenzene	17.98	91	9243	0.5679 ug/L	#	92
84)	Bromobenzene	18.13	156	1885	0.5328 ug/L		100
85)	1,3,5-Trimethylbenzene	18.21	105	6007	0.5185 ug/L		90
86)	2-Chlorotoluene	18.29	91	5403	0.4973 ug/L		88
87)	4-Chlorotoluene	18.35	91	5598	0.5635 ug/L	#	83
88)	a-Methylstyrene	18.69	118	3780	0.6719 ug/L		93
89)	tert-Butylbenzene	18.76	134	1072	0.4440 ug/L		84
90)	1,2,4-Trimethylbenzene	18.82	105	7288	0.5982 ug/L		78
91)	sec-Butylbenzene	19.08	105	8207	0.5532 ug/L		85
92)	p-Isopropyltoluene	19.27	119	6156	0.5029 ug/L		99
93)	1,3-Dichlorobenzene	19.48	146	3876	0.5662 ug/L		99
94)	1,4-Dichlorobenzene	19.64	146	4389	0.6299 ug/L	#	36
95)	n-Butylbenzene	19.89	91	6993	0.5680 ug/L		91
96)	1,2-Dichlorobenzene	20.23	146	3739	0.5676 ug/L		89
98)	1,2,4-Trichlorobenzene	22.76	180	2881	0.6050 ug/L		89
99)	Hexachlorobutadiene	22.95	225	1268	0.4656 ug/L		81
100)	Naphthalene	23.20	128	5965	0.5449 ug/L		95
101)	1,2,3-Trichlorobenzene	23.58	180	2914	0.6214 ug/L	#	69

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

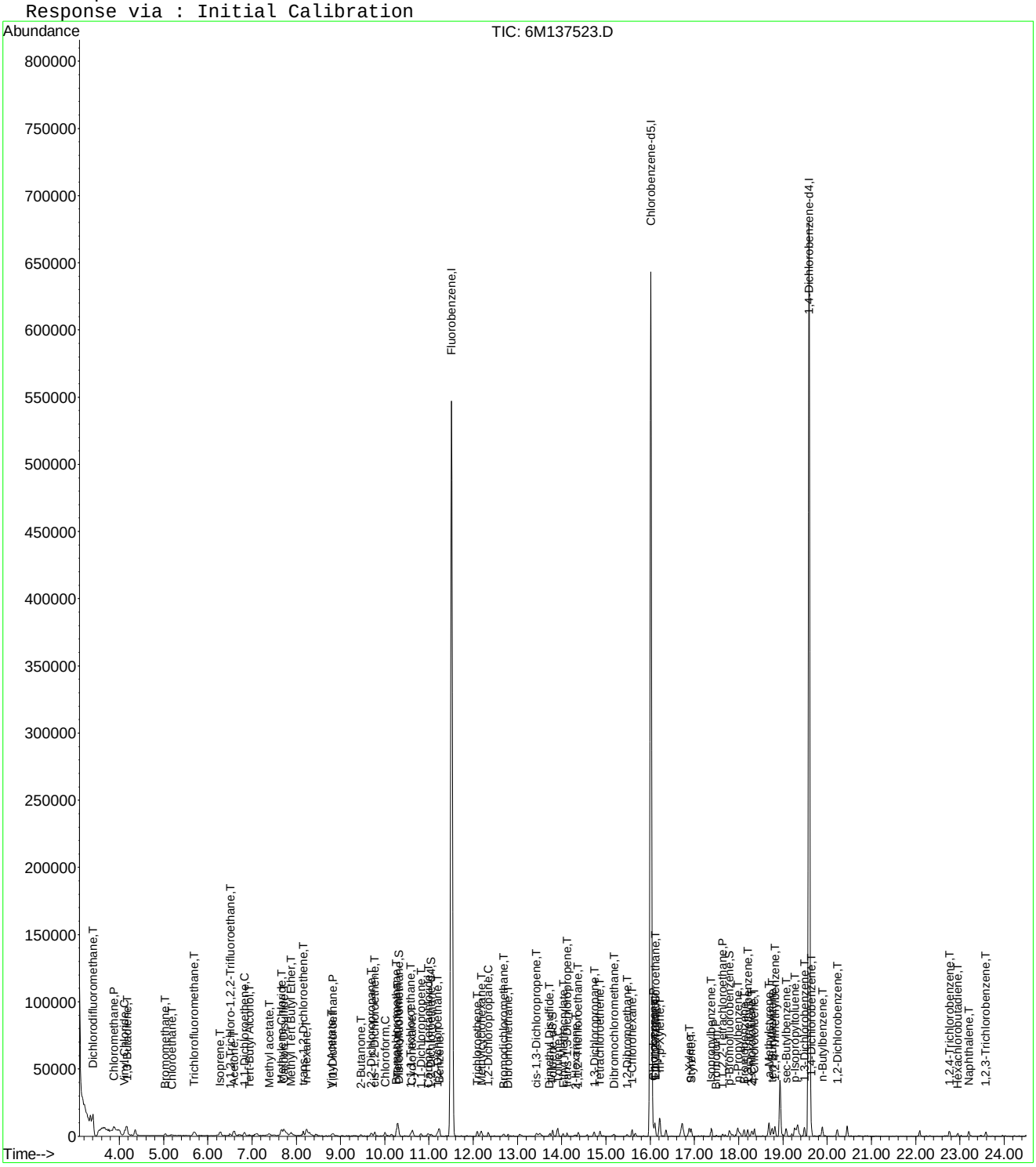

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.5676	0.0	0	0.00
3	P	Chloromethane	-1.0000	1.3528	0.0	0	0.00
4	C	Vinyl Chloride	-1.0000	0.7367	0.0	0	0.00
5	T	1,3-Butadiene	-1.0000	0.7128	0.0	0	0.01
6	T	Bromomethane	-1.0000	0.5697	0.0	0	0.00
7	T	Chloroethane	-1.0000	0.5121	0.0	0	0.00
8	T	Trichlorofluoromethane	-1.0000	0.9794	0.0	0	-0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.24#
10	T	Isoprene	-1.0000	0.4226	0.0	0	-0.01
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.48#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3663	0.0	0	0.00
13	T	Acetone	-1.0000	2.3758	0.0	0	0.00
14	C	1,1-Dichloroethene	-1.0000	0.5098	0.0	0	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.3696	0.0	0	0.00
16	T	Dimethyl Sulfide	-1.0000	0.2328	0.0	0	-0.02
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.38#
18	T	Methyl acetate	-1.0000	0.7115	0.0	0	0.00
19	T	Methylene Chloride	-1.0000	0.7594	0.0	0	0.00
20	T	Carbon Disulfide	-1.0000	0.7390	0.0	0	0.00
21	T	Acrylonitrile	-1.0000	0.1371	0.0	0	0.02
22	T	Methyl Tert Butyl Ether	0.5000	0.4864	2.7	100	-0.01
23	T	trans-1,2-Dichloroethene	-1.0000	0.4221	0.0	0	0.00
24	T	n-Hexane	-1.0000	0.6777	0.0	0	-0.01
25	T	Diisopropyl ether	-1.0000	0.1069	0.0	0	-0.16
26	T	Vinyl Acetate	-1.0000	0.2645	0.0	0	0.00
27	P	1,1-Dichloroethane	-1.0000	0.5499	0.0	0	-0.01
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-9.24#
29	T	2-Butanone	-1.0000	0.7999	0.0	0	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.58#
31	T	2,2-Dichloropropane	-1.0000	0.5204	0.0	0	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.5067	0.0	0	-0.01
33	C	Chloroform	-1.0000	0.5654	0.0	0	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-10.16#
35	T	Bromochloromethane	-1.0000	0.3303	0.0	0	0.00
36	T	Tetrahydrofuran	-1.0000	4.2648	0.0	0	0.00
37	S	Dibromofluoromethane	-1.0000	0.3185	0.0	0	0.00
38	T	1,1,1-Trichloroethane	-1.0000	0.5017	0.0	0	-0.01
39	T	Cyclohexane	-1.0000	0.4467	0.0	0	-0.02
40	T	1,1-Dichloropropene	-1.0000	0.4451	0.0	0	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.94#
42	T	Carbon Tetrachloride	-1.0000	0.5095	0.0	0	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.4056	0.0	0	-0.01
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	-1.0000	0.5633	0.0	0	0.00
46	T	Benzene	0.5000	0.5899	-18.0	100	0.00
47	T	Trichloroethene	-1.0000	0.5980	0.0	0	0.00
48	T	Methylcyclohexane	-1.0000	0.5672	0.0	0	0.00
49	C	1,2-Dichloropropane	-1.0000	0.4489	0.0	0	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-12.67#
51	T	Bromodichloromethane	-1.0000	0.5312	0.0	0	0.00
52	T	Dibromomethane	-1.0000	0.3411	0.0	0	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1346	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-13.07#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137523.D Vial: 2
Acq On : 26 Feb 2016 13:41 Operator: TMB
Sample : WG558920-02 0.5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.4894	0.0	0	-0.01
56	T	Dimethyl Disulfide	-1.0000	0.3150	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.5128	0.0	0	0.00
59	C	Toluene	0.5000	0.5751	-15.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.4160	0.0	0	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	-1.0000	0.4056	0.0	0	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.5861	0.0	0	0.00
64	T	2-Hexanone	-1.0000	0.5773	0.0	0	0.00
65	T	1,3-Dichloropropane	-1.0000	0.5416	0.0	0	0.00
66	T	Tetrachloroethene	-1.0000	0.5624	0.0	0	-0.01
67	T	Dibromochloromethane	-1.0000	0.4623	0.0	0	0.00
68	T	1,2-Dibromoethane	-1.0000	0.4462	0.0	0	0.00
69	T	1-Chlorohexane	-1.0000	0.5142	0.0	0	0.00
70	P	Chlorobenzene	-1.0000	0.5869	0.0	0	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.4126	0.0	0	0.00
72	C	Ethylbenzene	0.5000	0.5032	-0.6	100	0.00
73	T	m-,p-Xylene	1.0000	1.1326	-13.3	100	0.00
74	T	o-Xylene	0.5000	0.5119	-2.4	100	0.00
75	T	Styrene	-1.0000	0.5203	0.0	0	0.00
76	P	Bromoform	-1.0000	0.2977	0.0	0	0.00
77	T	Isopropylbenzene	-1.0000	0.4998	0.0	0	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.5203	0.0	0	-0.01
80	S	p-Bromofluorobenzene	-1.0000	0.5020	0.0	0	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.1823	0.0	0	0.01
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.1476	0.0	0	0.00
83	T	n-Propylbenzene	-1.0000	0.5679	0.0	0	0.00
84	T	Bromobenzene	-1.0000	0.5328	0.0	0	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.5185	0.0	0	0.00
86	T	2-Chlorotoluene	-1.0000	0.4973	0.0	0	-0.01
87	T	4-Chlorotoluene	-1.0000	0.5635	0.0	0	0.00
88	T	a-Methylstyrene	-1.0000	0.6719	0.0	0	0.00
89	T	tert-Butylbenzene	-1.0000	0.4440	0.0	0	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.5982	0.0	0	0.00
91	T	sec-Butylbenzene	-1.0000	0.5532	0.0	0	0.00
92	T	p-Isopropyltoluene	-1.0000	0.5029	0.0	0	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.5662	0.0	0	0.00
94	T	1,4-Dichlorobenzene	-1.0000	0.6299	0.0	0	0.00
95	T	n-Butylbenzene	-1.0000	0.5680	0.0	0	0.00
96	T	1,2-Dichlorobenzene	-1.0000	0.5676	0.0	0	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-21.41#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.6050	0.0	0	0.00
99	T	Hexachlorobutadiene	-1.0000	0.4656	0.0	0	-0.01
100	T	Naphthalene	-1.0000	0.5449	0.0	0	0.00
101	T	1,2,3-Trichlorobenzene	-1.0000	0.6214	0.0	0	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137523.D 826_SL.M Mon Feb 29 16:01:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:37 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	594307	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	418336	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	217318	50.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.34	111	2084	0.6537 ug/L	0.02
Spiked Amount 50.000	Range 80 - 120		Recovery =	1.30%#	
43) 1,2-Dichloroethane-d4	11.06	65	2834	0.6847 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	1.36%#	
58) Toluene-d8	13.80	98	7503	0.7544 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	1.50%#	
80) p-Bromofluorobenzene	17.79	95	3135	0.7854 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	1.58%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	6025	1.1039 ug/L	88
3) Chloromethane	3.88	50	8942	1.5721 ug/L	80
4) Vinyl Chloride	4.13	62	5159	1.1269 ug/L	96
5) 1,3-Butadiene	4.18	54	4578	1.2019 ug/L #	67
6) Bromomethane	5.03	94	2477	1.0150 ug/L	94
7) Chloroethane	5.20	64	2347	0.9041 ug/L #	77
8) Trichlorofluoromethane	5.70	101	7751	1.2600 ug/L #	92
9) Diethyl ether	6.23	59	14414	5.0935 ug/L	81
10) Isoprene	6.28	67	3598	0.8978 ug/L	94
11) Acrolein	6.48	56	1307	2.4320 ug/L #	51
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	3197	1.0888 ug/L	73
13) Acetone	6.60	43	5933	0.3832 ug/L	97
14) 1,1-Dichloroethene	6.84	61	5455	1.0489 ug/L	83
15) Tert-Butyl Alcohol	6.93	59	4660	9.6025 ug/L #	86
16) Dimethyl Sulfide	7.13	62	2208	0.8750 ug/L	94
18) Methyl acetate	7.40	43	3574	0.9889 ug/L #	64
19) Methylene Chloride	7.66	84	3682	1.1755 ug/L	75
20) Carbon Disulfide	7.72	76	11945	1.2004 ug/L	97
21) Acrylonitrile	7.86	53	3216	2.1651 ug/L	84
22) Methyl Tert Butyl Ether	7.90	73	8242	0.9214 ug/L	91
23) trans-1,2-Dichloroethene	8.17	96	2437	0.8482 ug/L	60
24) n-Hexane	8.23	57	4827	0.9252 ug/L	90
25) Diisopropyl ether	8.62	45	67920	5.0212 ug/L	97
26) Vinyl Acetate	8.80	43	6077	0.8691 ug/L #	78
27) 1,1-Dichloroethane	8.83	63	6295	1.0162 ug/L	88
28) Ethyl-Tert-Butyl ether	9.25	59	49996	4.6114 ug/L	96
29) 2-Butanone	9.47	43	2247	1.0938 ug/L #	56
30) Propionitrile	9.57	54	2816	4.9529 ug/L #	71
31) 2,2-Dichloropropane	9.70	77	5030	1.0116 ug/L	94
32) cis-1,2-Dichloroethene	9.77	96	2740	0.8542 ug/L	83
33) Chloroform	10.00	83	6439	1.1130 ug/L	98
35) Bromochloromethane	10.26	130	1361	0.7221 ug/L	97
36) Tetrahydrofuran	10.29	42	10271	5.4403 ug/L	94
38) 1,1,1-Trichloroethane	10.61	97	5241	1.0257 ug/L	95
39) Cyclohexane	10.63	56	5811	1.0029 ug/L	86
40) 1,1-Dichloropropene	10.82	75	4038	0.9813 ug/L #	89
41) Tert-Amyl-Methyl ether	10.95	73	39464	4.5884 ug/L #	83
42) Carbon Tetrachloride	11.00	117	4871	1.0202 ug/L #	88
45) 1,2-Dichloroethane	11.19	62	4707	0.9533 ug/L #	86
46) Benzene	11.23	78	13412	1.0834 ug/L	93

(#) = qualifier out of range (m) = manual integration
6M137524.D 826_SL.M Mon Feb 29 16:01:38 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:37 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
47)	Trichloroethene	12.09	130	2983	1.0199 ug/L		90
48)	Methylcyclohexane	12.19	83	4295	0.9084 ug/L		77
49)	1,2-Dichloropropane	12.35	63	3111	0.9339 ug/L	#	69
51)	Bromodichloromethane	12.68	83	4337	0.9921 ug/L		97
52)	Dibromomethane	12.77	93	1629	0.8361 ug/L		91
53)	2-Chloroethyl Vinyl Ether	13.04	63	1268	0.6921 ug/L	#	43
54)	4-Methyl-2-Pentanone	13.08	58	633	0.4563 ug/L	#	34
55)	cis-1,3-Dichloropropene	13.43	75	4040	0.8388 ug/L		98
56)	Dimethyl Disulfide	13.72	79	1323	0.5447 ug/L	#	49
59)	Toluene	13.91	91	12207	1.0316 ug/L		97
60)	Ethyl Methacrylate	14.03	69	2818	0.7432 ug/L		100
62)	trans-1,3-Dichloropropene	14.12	75	3878	0.8522 ug/L		100
63)	1,1,2-Trichloroethane	14.38	97	2441	0.9869 ug/L		93
64)	2-Hexanone	14.31	43	2064	0.7313 ug/L		93
65)	1,3-Dichloropropane	14.73	76	4145	0.9246 ug/L		83
66)	Tetrachloroethene	14.87	166	3009	1.0308 ug/L		96
67)	Dibromochloromethane	15.17	129	2840	0.8829 ug/L		96
68)	1,2-Dibromoethane	15.48	107	1912	0.7559 ug/L		85
69)	1-Chlorohexane	15.59	91	3045	0.8286 ug/L	#	59
70)	Chlorobenzene	16.06	112	8053	1.0589 ug/L	#	66
71)	1,1,1,2-Tetrachloroethane	16.11	131	2914	0.9542 ug/L		92
72)	Ethylbenzene	16.10	106	3899	0.9580 ug/L		89
73)	m-,p-Xylene	16.21	106	9999	2.0079 ug/L		90
74)	o-Xylene	16.88	106	4283	0.9131 ug/L		84
75)	Styrene	16.92	104	6414	0.8034 ug/L		92
76)	Bromoform	17.49	173	1706	0.7511 ug/L	#	70
77)	Isopropylbenzene	17.38	105	11886	0.9427 ug/L		95
79)	1,1,2,2-Tetrachloroethane	17.65	83	3500	1.0310 ug/L		95
81)	1,2,3-Trichloropropane	17.87	110	811	0.7802 ug/L	#	55
82)	trans-1,4-Dichloro-2-Buten	17.93	53	959	0.7652 ug/L		70
83)	n-Propylbenzene	17.98	91	14256	0.9660 ug/L	#	91
84)	Bromobenzene	18.13	156	3248	1.0125 ug/L		98
85)	1,3,5-Trimethylbenzene	18.21	105	9438	0.8984 ug/L		95
86)	2-Chlorotoluene	18.30	91	9880	1.0030 ug/L		97
87)	4-Chlorotoluene	18.35	91	8357	0.9278 ug/L		93
88)	a-Methylstyrene	18.68	118	4374	0.8574 ug/L		95
89)	tert-Butylbenzene	18.75	134	1999	0.9131 ug/L		84
90)	1,2,4-Trimethylbenzene	18.82	105	10630	0.9622 ug/L		79
91)	sec-Butylbenzene	19.07	105	13062	0.9709 ug/L		95
92)	p-Isopropyltoluene	19.27	119	10400	0.9370 ug/L		89
93)	1,3-Dichlorobenzene	19.48	146	6397	1.0306 ug/L		97
94)	1,4-Dichlorobenzene	19.64	146	7211	1.1413 ug/L		83
95)	n-Butylbenzene	19.88	91	10811	0.9684 ug/L		88
96)	1,2-Dichlorobenzene	20.22	146	5973	1.0000 ug/L		96
97)	1,2-Dibromo-3-Chloropropan	21.41	75	191	0.2543 ug/L	#	1
98)	1,2,4-Trichlorobenzene	22.76	180	4430	1.0259 ug/L		93
99)	Hexachlorobutadiene	22.94	225	2385	0.9658 ug/L		90
100)	Naphthalene	23.20	128	8770	0.8835 ug/L		92
101)	1,2,3-Trichlorobenzene	23.59	180	4309	1.0134 ug/L		95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

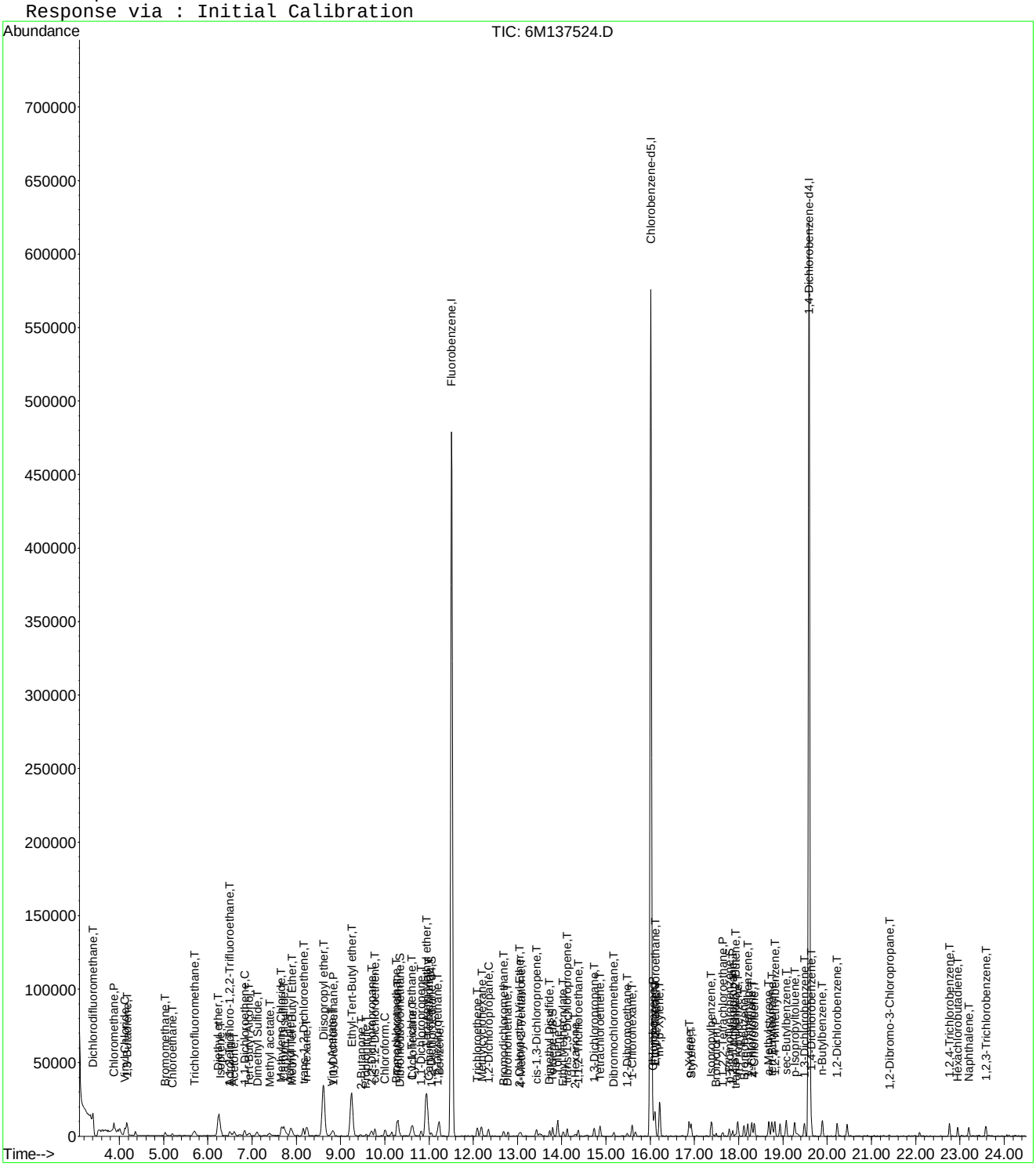

6M137524.D 826_SL.M Mon Feb 29 16:01:38 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	1.1039	0.0	0	0.00
3	P	Chloromethane	-1.0000	1.5721	0.0	0	0.00
4	C	Vinyl Chloride	-1.0000	1.1269	0.0	0	0.01
5	T	1,3-Butadiene	-1.0000	1.2019	0.0	0	0.01
6	T	Bromomethane	-1.0000	1.0150	0.0	0	0.00
7	T	Chloroethane	-1.0000	0.9041	0.0	0	0.00
8	T	Trichlorofluoromethane	-1.0000	1.2600	0.0	0	0.00
9	T	Diethyl ether	5.0000	5.0935	-1.9	100	-0.01
10	T	Isoprene	-1.0000	0.8978	0.0	0	0.00
11	T	Acrolein	2.5000	2.4320	2.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	1.0888	0.0	0	-0.01
13	T	Acetone	-1.0000	0.3832	0.0	0	0.01
14	C	1,1-Dichloroethene	-1.0000	1.0489	0.0	0	0.00
15	T	Tert-Butyl Alcohol	10.0000	9.6025	4.0	100	0.00
16	T	Dimethyl Sulfide	-1.0000	0.8750	0.0	0	0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.38#
18	T	Methyl acetate	-1.0000	0.9889	0.0	0	0.01
19	T	Methylene Chloride	-1.0000	1.1755	0.0	0	-0.01
20	T	Carbon Disulfide	-1.0000	1.2004	0.0	0	0.00
21	T	Acrylonitrile	2.5000	2.1651	13.4	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9214	7.9	100	0.00
23	T	trans-1,2-Dichloroethene	-1.0000	0.8482	0.0	0	0.00
24	T	n-Hexane	-1.0000	0.9252	0.0	0	-0.01
25	T	Diisopropyl ether	5.0000	5.0212	-0.4	100	0.01
26	T	Vinyl Acetate	-1.0000	0.8691	0.0	0	0.00
27	P	1,1-Dichloroethane	-1.0000	1.0162	0.0	0	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.6114	7.8	100	0.01
29	T	2-Butanone	-1.0000	1.0938	0.0	0	0.02
30	T	Propionitrile	5.0000	4.9529	0.9	100	-0.01
31	T	2,2-Dichloropropane	-1.0000	1.0116	0.0	0	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.8542	0.0	0	0.00
33	C	Chloroform	-1.0000	1.1130	0.0	0	-0.01
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-10.16#
35	T	Bromochloromethane	-1.0000	0.7221	0.0	0	0.00
36	T	Tetrahydrofuran	5.0000	5.4403	-8.8	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.6537	0.0	0	0.02
38	T	1,1,1-Trichloroethane	-1.0000	1.0257	0.0	0	0.00
39	T	Cyclohexane	-1.0000	1.0029	0.0	0	-0.01
40	T	1,1-Dichloropropene	-1.0000	0.9813	0.0	0	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	4.5884	8.2	100	0.00
42	T	Carbon Tetrachloride	-1.0000	1.0202	0.0	0	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.6847	0.0	0	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	-1.0000	0.9533	0.0	0	0.00
46	T	Benzene	1.0000	1.0834	-8.3	100	0.00
47	T	Trichloroethene	-1.0000	1.0199	0.0	0	0.00
48	T	Methylcyclohexane	-1.0000	0.9084	0.0	0	0.01
49	C	1,2-Dichloropropane	-1.0000	0.9339	0.0	0	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-12.67#
51	T	Bromodichloromethane	-1.0000	0.9921	0.0	0	0.00
52	T	Dibromomethane	-1.0000	0.8361	0.0	0	-0.01
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.6921	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.4563	0.0	0	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137524.D Vial: 3
Acq On : 26 Feb 2016 14:13 Operator: TMB
Sample : WG558920-03 1ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.8388	0.0	0	0.00
56	T	Dimethyl Disulfide	-1.0000	0.5447	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.7544	0.0	0	0.00
59	C	Toluene	1.0000	1.0316	-3.2	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.7432	0.0	0	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	-1.0000	0.8522	0.0	0	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.9869	0.0	0	0.00
64	T	2-Hexanone	-1.0000	0.7313	0.0	0	0.00
65	T	1,3-Dichloropropane	-1.0000	0.9246	0.0	0	0.00
66	T	Tetrachloroethene	-1.0000	1.0308	0.0	0	0.00
67	T	Dibromochloromethane	-1.0000	0.8829	0.0	0	0.00
68	T	1,2-Dibromoethane	-1.0000	0.7559	0.0	0	0.00
69	T	1-Chlorohexane	-1.0000	0.8286	0.0	0	0.00
70	P	Chlorobenzene	-1.0000	1.0589	0.0	0	-0.01
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.9542	0.0	0	0.00
72	C	Ethylbenzene	1.0000	0.9580	4.2	100	0.00
73	T	m-,p-Xylene	2.0000	2.0079	-0.4	100	-0.01
74	T	o-Xylene	1.0000	0.9132	8.7	100	0.00
75	T	Styrene	-1.0000	0.8034	0.0	0	0.00
76	P	Bromoform	-1.0000	0.7511	0.0	0	0.00
77	T	Isopropylbenzene	-1.0000	0.9427	0.0	0	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	1.0310	0.0	0	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.7854	0.0	0	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.7802	0.0	0	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.7652	0.0	0	0.00
83	T	n-Propylbenzene	-1.0000	0.9660	0.0	0	0.00
84	T	Bromobenzene	-1.0000	1.0125	0.0	0	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.8984	0.0	0	0.00
86	T	2-Chlorotoluene	-1.0000	1.0030	0.0	0	0.00
87	T	4-Chlorotoluene	-1.0000	0.9278	0.0	0	0.00
88	T	a-Methylstyrene	-1.0000	0.8574	0.0	0	-0.01
89	T	tert-Butylbenzene	-1.0000	0.9131	0.0	0	-0.01
90	T	1,2,4-Trimethylbenzene	-1.0000	0.9622	0.0	0	0.00
91	T	sec-Butylbenzene	-1.0000	0.9709	0.0	0	0.00
92	T	p-Isopropyltoluene	-1.0000	0.9370	0.0	0	0.00
93	T	1,3-Dichlorobenzene	-1.0000	1.0306	0.0	0	0.00
94	T	1,4-Dichlorobenzene	-1.0000	1.1413	0.0	0	0.00
95	T	n-Butylbenzene	-1.0000	0.9684	0.0	0	-0.01
96	T	1,2-Dichlorobenzene	-1.0000	1.0000	0.0	0	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.2543	0.0	0	0.00
98	T	1,2,4-Trichlorobenzene	-1.0000	1.0259	0.0	0	0.00
99	T	Hexachlorobutadiene	-1.0000	0.9658	0.0	0	-0.01
100	T	Naphthalene	-1.0000	0.8835	0.0	0	0.00
101	T	1,2,3-Trichlorobenzene	-1.0000	1.0134	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137524.D 826_SL.M Mon Feb 29 16:02:09 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:38 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	572212	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	404562	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	206668	50.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.32	111	3202	1.0431 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	2.08%#	
43) 1,2-Dichloroethane-d4	11.05	65	4123	1.0345 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	2.06%#	
58) Toluene-d8	13.80	98	10309	1.0718 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	2.14%#	
80) p-Bromofluorobenzene	17.79	95	4120	1.0853 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	2.18%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	8843	1.6827 ug/L	90
3) Chloromethane	3.88	50	13225	2.4149 ug/L	95
4) Vinyl Chloride	4.12	62	8482	1.9243 ug/L	95
5) 1,3-Butadiene	4.18	54	8044	2.1934 ug/L	77
6) Bromomethane	5.04	94	4396	1.8709 ug/L	94
7) Chloroethane	5.20	64	4555	1.8225 ug/L	99
8) Trichlorofluoromethane	5.70	101	12235	2.0657 ug/L #	96
9) Diethyl ether	6.24	59	66018	24.2296 ug/L	90
10) Isoprene	6.28	67	6318	1.6374 ug/L	84
11) Acrolein	6.49	56	6390	12.3492 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	4561	1.6133 ug/L	91
13) Acetone	6.60	43	7504	1.8809 ug/L	97
14) 1,1-Dichloroethene	6.83	61	8701	1.7376 ug/L	89
15) Tert-Butyl Alcohol	6.94	59	20238	43.3134 ug/L	94
16) Dimethyl Sulfide	7.11	62	4075	1.6773 ug/L	98
17) Iodomethane	7.39	142	581	5.2052 ug/L #	30
18) Methyl acetate	7.39	43	6390	1.8363 ug/L #	70
19) Methylene Chloride	7.67	84	5869	1.9461 ug/L	65
20) Carbon Disulfide	7.71	76	18795	1.9617 ug/L	99
21) Acrylonitrile	7.86	53	16272	11.3775 ug/L	99
22) Methyl Tert Butyl Ether	7.89	73	15172	1.7617 ug/L	96
23) trans-1,2-Dichloroethene	8.16	96	5205	1.8816 ug/L	79
24) n-Hexane	8.23	57	9310	1.8534 ug/L	99
25) Diisopropyl ether	8.61	45	320400	24.6012 ug/L	97
26) Vinyl Acetate	8.80	43	10816	1.6066 ug/L #	78
27) 1,1-Dichloroethane	8.83	63	11076	1.8571 ug/L	98
28) Ethyl-Tert-Butyl ether	9.25	59	254827	24.4116 ug/L	95
29) 2-Butanone	9.45	43	4021	2.0330 ug/L #	56
30) Propionitrile	9.58	54	12821	23.4210 ug/L	98
31) 2,2-Dichloropropane	9.69	77	9442	1.9723 ug/L	95
32) cis-1,2-Dichloroethene	9.77	96	6066	1.9642 ug/L	93
33) Chloroform	10.01	83	11484	2.0618 ug/L	99
34) 1-Bromopropane	10.16	122	398	0.9400 ug/L	97
35) Bromochloromethane	10.27	130	3448	1.9001 ug/L	92
36) Tetrahydrofuran	10.29	42	31678	22.2128 ug/L	93
38) 1,1,1-Trichloroethane	10.60	97	9432	1.9171 ug/L	98
39) Cyclohexane	10.63	56	9073	1.6263 ug/L	92
40) 1,1-Dichloropropene	10.82	75	7003	1.7675 ug/L	93
41) Tert-Amyl-Methyl ether	10.95	73	196452	23.7231 ug/L #	87
42) Carbon Tetrachloride	10.99	117	8034	1.7476 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:38 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45) 1,2-Dichloroethane	11.19	62	8853	1.8622 ug/L #	93
46) Benzene	11.23	78	23723	1.9902 ug/L	97
47) Trichloroethene	12.09	130	5099	1.8107 ug/L	92
48) Methylcyclohexane	12.17	83	7350	1.6146 ug/L	79
49) 1,2-Dichloropropane	12.34	63	5698	1.7766 ug/L	95
50) 1,4-Dioxane	12.67	88	1122	55.6272 ug/L	88
51) Bromodichloromethane	12.68	83	7699	1.8293 ug/L	96
52) Dibromomethane	12.79	93	3316	1.7677 ug/L	91
53) 2-Chloroethyl Vinyl Ether	13.04	63	2386	1.3526 ug/L #	61
54) 4-Methyl-2-Pentanone	13.06	58	1423	1.0653 ug/L #	60
55) cis-1,3-Dichloropropene	13.43	75	7739	1.6689 ug/L	96
56) Dimethyl Disulfide	13.72	79	3072	1.3135 ug/L #	66
59) Toluene	13.91	91	21516	1.8801 ug/L	99
60) Ethyl Methacrylate	14.03	69	5274	1.4383 ug/L	90
62) trans-1,3-Dichloropropene	14.12	75	7466	1.6966 ug/L	95
63) 1,1,2-Trichloroethane	14.37	97	4294	1.7952 ug/L	96
64) 2-Hexanone	14.32	43	4342	1.5908 ug/L	87
65) 1,3-Dichloropropane	14.74	76	7896	1.8213 ug/L	99
66) Tetrachloroethene	14.88	166	5376	1.9043 ug/L	96
67) Dibromochloromethane	15.17	129	5153	1.6564 ug/L	94
68) 1,2-Dibromoethane	15.47	107	4387	1.7934 ug/L	97
69) 1-Chlorohexane	15.58	91	5799	1.6318 ug/L	88
70) Chlorobenzene	16.07	112	14803	2.0127 ug/L	82
71) 1,1,1,2-Tetrachloroethane	16.11	131	5636	1.9085 ug/L	89
72) Ethylbenzene	16.10	106	7654	1.9447 ug/L	97
73) m-,p-Xylene	16.22	106	17383	3.6096 ug/L	95
74) o-Xylene	16.88	106	7997	1.7630 ug/L	95
75) Styrene	16.92	104	12496	1.6186 ug/L	87
76) Bromoform	17.49	173	3589	1.6340 ug/L	95
77) Isopropylbenzene	17.38	105	20776	1.7039 ug/L	96
79) 1,1,2,2-Tetrachloroethane	17.64	83	5699	1.7652 ug/L	97
81) 1,2,3-Trichloropropane	17.86	110	1672	1.6915 ug/L	85
82) trans-1,4-Dichloro-2-Buten	17.93	53	2042	1.7133 ug/L	78
83) n-Propylbenzene	17.98	91	25104	1.7886 ug/L #	95
84) Bromobenzene	18.13	156	5535	1.8143 ug/L	100
85) 1,3,5-Trimethylbenzene	18.21	105	17326	1.7343 ug/L	94
86) 2-Chlorotoluene	18.30	91	16320	1.7421 ug/L	90
87) 4-Chlorotoluene	18.35	91	17884	2.0879 ug/L	93
88) a-Methylstyrene	18.69	118	7613	1.5692 ug/L	95
89) tert-Butylbenzene	18.76	134	3612	1.7349 ug/L	82
90) 1,2,4-Trimethylbenzene	18.82	105	18800	1.7894 ug/L	86
91) sec-Butylbenzene	19.08	105	23176	1.8115 ug/L	95
92) p-Isopropyltoluene	19.26	119	18048	1.7099 ug/L	98
93) 1,3-Dichlorobenzene	19.48	146	10999	1.8633 ug/L	93
94) 1,4-Dichlorobenzene	19.64	146	12629	2.1018 ug/L	96
95) n-Butylbenzene	19.89	91	18864	1.7769 ug/L	98
96) 1,2-Dichlorobenzene	20.23	146	10946	1.9270 ug/L	93
97) 1,2-Dibromo-3-Chloropropan	21.40	75	890	1.2459 ug/L	91
98) 1,2,4-Trichlorobenzene	22.77	180	8004	1.9491 ug/L	94
99) Hexachlorobutadiene	22.95	225	4367	1.8595 ug/L	98
100) Naphthalene	23.20	128	15712	1.6644 ug/L	96
101) 1,2,3-Trichlorobenzene	23.59	180	7942	1.9641 ug/L	93

(#) = qualifier out of range (m) = manual integration
6M137525.D 826_SL.M Mon Feb 29 16:01:38 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

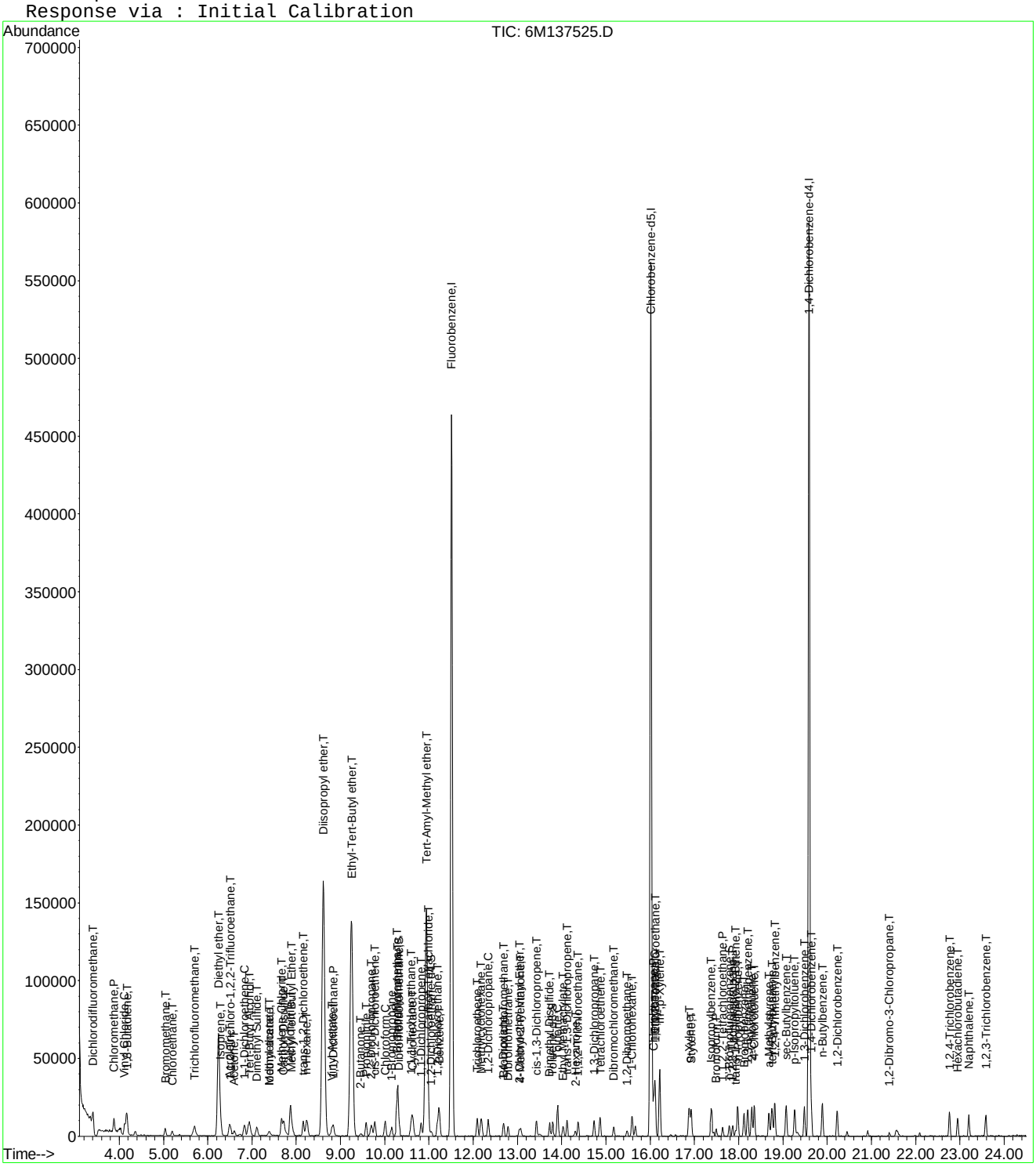

6M137525.D 826_SL.M Mon Feb 29 16:01:39 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.6827	15.9	100	0.00
3	P	Chloromethane	2.0000	2.4150	-20.7	100	0.00
4	C	Vinyl Chloride	2.0000	1.9243	3.8	100	0.00
5	T	1,3-Butadiene	-1.0000	2.1934	0.0	0	0.01
6	T	Bromomethane	2.0000	1.8709	6.5	100	0.01
7	T	Chloroethane	2.0000	1.8225	8.9	100	0.01
8	T	Trichlorofluoromethane	2.0000	2.0658	-3.3	100	0.00
9	T	Diethyl ether	25.0000	24.2296	3.1	100	0.00
10	T	Isoprene	-1.0000	1.6374	0.0	0	0.00
11	T	Acrolein	12.5000	12.3492	1.2	100	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.6134	19.3	100	0.00
13	T	Acetone	-1.0000	1.8809	0.0	0	0.01
14	C	1,1-Dichloroethene	2.0000	1.7376	13.1	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	43.3134	13.4	100	0.01
16	T	Dimethyl Sulfide	-1.0000	1.6773	0.0	0	0.00
17	T	Iodomethane	-1.0000	5.2052	0.0	0	0.01
18	T	Methyl acetate	-1.0000	1.8363	0.0	0	0.00
19	T	Methylene Chloride	2.0000	1.9461	2.7	100	0.00
20	T	Carbon Disulfide	2.0000	1.9617	1.9	100	0.00
21	T	Acrylonitrile	12.5000	11.3775	9.0	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.7617	11.9	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.8816	5.9	100	0.00
24	T	n-Hexane	2.0000	1.8534	7.3	100	-0.01
25	T	Diisopropyl ether	25.0000	24.6012	1.6	100	0.00
26	T	Vinyl Acetate	-1.0000	1.6066	0.0	0	0.00
27	P	1,1-Dichloroethane	2.0000	1.8571	7.1	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	24.4116	2.4	100	0.01
29	T	2-Butanone	-1.0000	2.0330	0.0	0	0.00
30	T	Propionitrile	25.0000	23.4210	6.3	100	0.00
31	T	2,2-Dichloropropane	2.0000	1.9723	1.4	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	1.9642	1.8	100	0.00
33	C	Chloroform	2.0000	2.0618	-3.1	100	0.00
34		1-Bromopropane	-1.0000	0.9400	0.0	0	0.00
35	T	Bromochloromethane	2.0000	1.9001	5.0	100	0.01
36	T	Tetrahydrofuran	25.0000	22.2128	11.1	100	0.00
37	S	Dibromofluoromethane	1.0000	1.0432	-4.3	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.9171	4.1	100	0.00
39	T	Cyclohexane	2.0000	1.6263	18.7	100	-0.01
40	T	1,1-Dichloropropene	2.0000	1.7675	11.6	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	23.7231	5.1	100	0.01
42	T	Carbon Tetrachloride	2.0000	1.7476	12.6	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0345	-3.5	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	2.0000	1.8622	6.9	100	0.00
46	T	Benzene	2.0000	1.9902	0.5	100	0.00
47	T	Trichloroethene	2.0000	1.8108	9.5	100	0.00
48	T	Methylcyclohexane	2.0000	1.6146	19.3	100	0.00
49	C	1,2-Dichloropropane	2.0000	1.7766	11.2	100	0.00
50	T	1,4-Dioxane	50.0000	55.6272	-11.3	100	0.00
51	T	Bromodichloromethane	2.0000	1.8293	8.5	100	0.00
52	T	Dibromomethane	2.0000	1.7677	11.6	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	1.3526	0.0	0	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.0653	0.0	0	-0.01

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137525.D Vial: 4
Acq On : 26 Feb 2016 14:46 Operator: TMB
Sample : WG558920-04 2ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.6689	16.6	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.3135	0.0	0	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	1.0718	-7.2	100	0.00
59	C	Toluene	2.0000	1.8801	6.0	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.4383	28.1#	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	2.0000	1.6966	15.2	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.7952	10.2	100	0.00
64	T	2-Hexanone	-1.0000	1.5908	0.0	0	0.01
65	T	1,3-Dichloropropane	2.0000	1.8213	8.9	100	0.00
66	T	Tetrachloroethene	2.0000	1.9043	4.8	100	0.01
67	T	Dibromochloromethane	2.0000	1.6565	17.2	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.7934	10.3	100	-0.01
69	T	1-Chlorohexane	2.0000	1.6318	18.4	100	-0.01
70	P	Chlorobenzene	2.0000	2.0127	-0.6	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.9085	4.6	100	0.01
72	C	Ethylbenzene	2.0000	1.9447	2.8	100	0.00
73	T	m-,p-Xylene	4.0000	3.6096	9.8	100	0.00
74	T	o-Xylene	2.0000	1.7630	11.8	100	0.00
75	T	Styrene	2.0000	1.6186	19.1	100	0.00
76	P	Bromoform	2.0000	1.6340	18.3	100	0.00
77	T	Isopropylbenzene	2.0000	1.7039	14.8	100	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	1.7653	11.7	100	-0.01
80	S	p-Bromofluorobenzene	1.0000	1.0853	-8.5	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	1.6915	15.4	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	1.7133	14.3	100	0.00
83	T	n-Propylbenzene	2.0000	1.7886	10.6	100	0.00
84	T	Bromobenzene	2.0000	1.8143	9.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	1.7343	13.3	100	0.00
86	T	2-Chlorotoluene	2.0000	1.7421	12.9	100	0.00
87	T	4-Chlorotoluene	2.0000	2.0879	-4.4	100	0.00
88	T	a-Methylstyrene	2.0000	1.5692	21.5	100	0.00
89	T	tert-Butylbenzene	2.0000	1.7349	13.3	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	1.7894	10.5	100	0.00
91	T	sec-Butylbenzene	2.0000	1.8115	9.4	100	0.00
92	T	p-Isopropyltoluene	2.0000	1.7099	14.5	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	1.8633	6.8	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.1018	-5.1	100	0.00
95	T	n-Butylbenzene	2.0000	1.7769	11.2	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	1.9270	3.6	100	0.01
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.2459	0.0	0	-0.01
98	T	1,2,4-Trichlorobenzene	2.0000	1.9491	2.5	100	0.01
99	T	Hexachlorobutadiene	2.0000	1.8596	7.0	100	-0.01
100	T	Naphthalene	2.0000	1.6644	16.8	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9641	1.8	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137525.D 826_SL.M Mon Feb 29 16:02:19 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:39 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	643219	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	454348	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	233655	50.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.32	111	8526	2.4710 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	4.94%#	
43) 1,2-Dichloroethane-d4	11.06	65	11725	2.6172 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery =	5.24%#	
58) Toluene-d8	13.80	98	29032	2.6876 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery =	5.38%#	
80) p-Bromofluorobenzene	17.79	95	11167	2.6020 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery =	5.20%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	28102	4.7571 ug/L	100
3) Chloromethane	3.88	50	32755	5.3209 ug/L	91
4) Vinyl Chloride	4.12	62	26049	5.2573 ug/L	99
5) 1,3-Butadiene	4.17	54	23717	5.7531 ug/L	82
6) Bromomethane	5.03	94	13346	5.0529 ug/L	95
7) Chloroethane	5.19	64	14096	5.0173 ug/L	95
8) Trichlorofluoromethane	5.70	101	35831	5.3818 ug/L	98
9) Diethyl ether	6.24	59	150730	49.2132 ug/L	93
10) Isoprene	6.28	67	21438	4.9428 ug/L	81
11) Acrolein	6.48	56	14248	24.4956 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	17247	5.4273 ug/L	95
13) Acetone	6.59	43	13051	5.3136 ug/L	94
14) 1,1-Dichloroethene	6.83	61	29698	5.2760 ug/L	91
15) Tert-Butyl Alcohol	6.93	59	51304	97.6795 ug/L	93
16) Dimethyl Sulfide	7.12	62	13140	4.8115 ug/L	98
17) Iodomethane	7.38	142	3580	6.2818 ug/L	92
18) Methyl acetate	7.39	43	19888	5.0842 ug/L	93
19) Methylene Chloride	7.67	84	17567	5.1820 ug/L	73
20) Carbon Disulfide	7.72	76	56579	5.2535 ug/L	99
21) Acrylonitrile	7.86	53	38170	23.7426 ug/L	95
22) Methyl Tert Butyl Ether	7.89	73	46633	4.8170 ug/L	97
23) trans-1,2-Dichloroethene	8.16	96	15681	5.0428 ug/L	87
24) n-Hexane	8.24	57	29042	5.1432 ug/L	92
25) Diisopropyl ether	8.61	45	721466	49.2807 ug/L	97
26) Vinyl Acetate	8.80	43	31741	4.1943 ug/L	93
27) 1,1-Dichloroethane	8.83	63	34581	5.1581 ug/L	100
28) Ethyl-Tert-Butyl ether	9.24	59	576725	49.1494 ug/L	95
29) 2-Butanone	9.45	43	11939	5.3698 ug/L	87
30) Propionitrile	9.58	54	29074	47.2483 ug/L	96
31) 2,2-Dichloropropane	9.69	77	27493	5.1089 ug/L	98
32) cis-1,2-Dichloroethene	9.77	96	17624	5.0766 ug/L	93
33) Chloroform	10.01	83	32075	5.1228 ug/L	96
34) 1-Bromopropane	10.16	122	2123	4.4605 ug/L	82
35) Bromochloromethane	10.26	130	9542	4.6779 ug/L	100
36) Tetrahydrofuran	10.29	42	72518	47.4879 ug/L	94
38) 1,1,1-Trichloroethane	10.60	97	26846	4.8542 ug/L	94
39) Cyclohexane	10.64	56	31697	5.0544 ug/L	89
40) 1,1-Dichloropropene	10.82	75	23898	5.3658 ug/L	97
41) Tert-Amyl-Methyl ether	10.94	73	454105	48.7831 ug/L #	89
42) Carbon Tetrachloride	10.99	117	26296	5.0887 ug/L	96

(#) = qualifier out of range (m) = manual integration
6M137526.D 826_SL.M Mon Feb 29 16:01:39 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:39 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45) 1,2-Dichloroethane	11.19	62	26611	4.9796 ug/L	97
46) Benzene	11.23	78	66739	4.9809 ug/L	93
47) Trichloroethene	12.09	130	16560	5.2316 ug/L	93
48) Methylcyclohexane	12.18	83	26100	5.1005 ug/L	86
49) 1,2-Dichloropropane	12.34	63	17955	4.9803 ug/L	94
50) 1,4-Dioxane	12.67	88	3919	107.9166 ug/L	93
51) Bromodichloromethane	12.68	83	23069	4.8760 ug/L	92
52) Dibromomethane	12.79	93	9757	4.6271 ug/L	97
53) 2-Chloroethyl Vinyl Ether	13.04	63	8133	4.1014 ug/L	99
54) 4-Methyl-2-Pentanone	13.07	58	6484	4.3183 ug/L	81
55) cis-1,3-Dichloropropene	13.43	75	24075	4.6186 ug/L	98
56) Dimethyl Disulfide	13.72	79	10983	4.1777 ug/L	91
59) Toluene	13.91	91	65025	5.0594 ug/L	100
60) Ethyl Methacrylate	14.03	69	18200	4.4195 ug/L	95
62) trans-1,3-Dichloropropene	14.12	75	23055	4.6650 ug/L	96
63) 1,1,2-Trichloroethane	14.37	97	13105	4.8784 ug/L	97
64) 2-Hexanone	14.31	43	13531	4.4142 ug/L	93
65) 1,3-Dichloropropane	14.74	76	24567	5.0457 ug/L	96
66) Tetrachloroethene	14.87	166	17025	5.3699 ug/L	96
67) Dibromochloromethane	15.17	129	16779	4.8026 ug/L	98
68) 1,2-Dibromoethane	15.48	107	13121	4.7760 ug/L	98
69) 1-Chlorohexane	15.59	91	18960	4.7505 ug/L	75
70) Chlorobenzene	16.07	112	43871	5.3112 ug/L #	60
71) 1,1,1,2-Tetrachloroethane	16.10	131	15603	4.7045 ug/L	95
72) Ethylbenzene	16.10	106	22079	4.9950 ug/L	94
73) m-,p-Xylene	16.22	106	54549	10.0858 ug/L	96
74) o-Xylene	16.88	106	24478	4.8051 ug/L	92
75) Styrene	16.92	104	39808	4.5913 ug/L	95
76) Bromoform	17.49	173	11643	4.7199 ug/L	97
77) Isopropylbenzene	17.38	105	66989	4.8919 ug/L	99
79) 1,1,2,2-Tetrachloroethane	17.65	83	18286	5.0098 ug/L	96
81) 1,2,3-Trichloropropane	17.87	110	5764	5.1577 ug/L	93
82) trans-1,4-Dichloro-2-Buten	17.93	53	5968	4.4290 ug/L	92
83) n-Propylbenzene	17.98	91	82621	5.2068 ug/L	98
84) Bromobenzene	18.13	156	17797	5.1598 ug/L	96
85) 1,3,5-Trimethylbenzene	18.21	105	58488	5.1783 ug/L	94
86) 2-Chlorotoluene	18.30	91	57419	5.4213 ug/L	96
87) 4-Chlorotoluene	18.35	91	50976	5.2638 ug/L	97
88) a-Methylstyrene	18.69	118	25024	4.5623 ug/L	100
89) tert-Butylbenzene	18.76	134	11873	5.0441 ug/L	95
90) 1,2,4-Trimethylbenzene	18.82	105	61081	5.1422 ug/L	83
91) sec-Butylbenzene	19.08	105	74051	5.1195 ug/L	98
92) p-Isopropyltoluene	19.26	119	60824	5.0969 ug/L	97
93) 1,3-Dichlorobenzene	19.48	146	35412	5.3060 ug/L	98
94) 1,4-Dichlorobenzene	19.64	146	35211	5.1831 ug/L	83
95) n-Butylbenzene	19.89	91	60714	5.0584 ug/L	95
96) 1,2-Dichlorobenzene	20.22	146	32728	5.0962 ug/L	95
97) 1,2-Dibromo-3-Chloropropan	21.41	75	3714	4.5988 ug/L	88
98) 1,2,4-Trichlorobenzene	22.76	180	22925	4.9379 ug/L	93
99) Hexachlorobutadiene	22.96	225	13612	5.1268 ug/L	94
100) Naphthalene	23.20	128	48617	4.5551 ug/L	99
101) 1,2,3-Trichlorobenzene	23.59	180	22839	4.9959 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

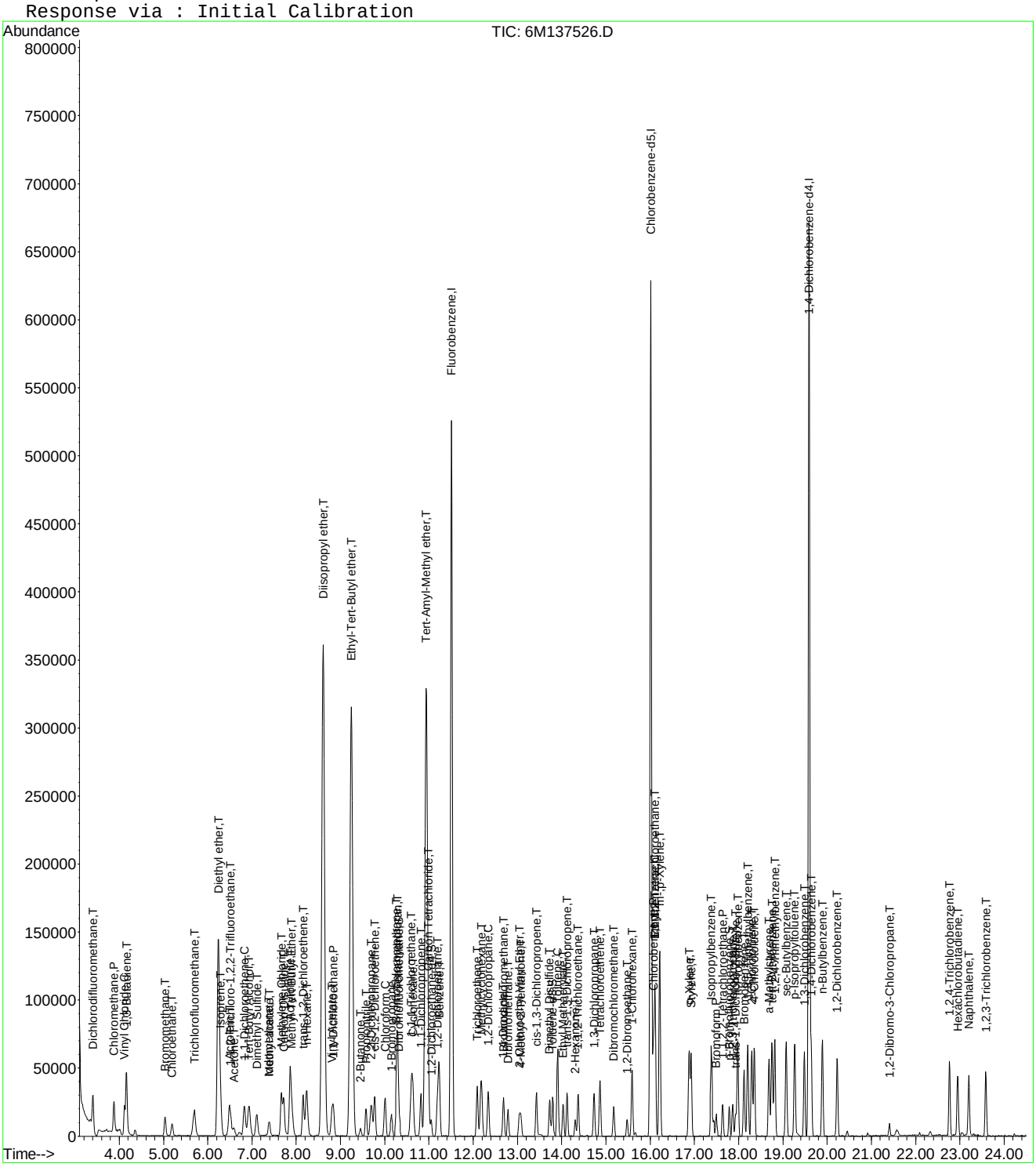

6M137526.D 826_SL.M Mon Feb 29 16:01:39 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.7571	4.9	100	0.00
3	P	Chloromethane	5.0000	5.3209	-6.4	100	0.00
4	C	Vinyl Chloride	5.0000	5.2573	-5.1	100	0.00
5	T	1,3-Butadiene	5.0000	5.7531	-15.1	100	0.00
6	T	Bromomethane	5.0000	5.0529	-1.1	100	0.00
7	T	Chloroethane	5.0000	5.0173	-0.3	100	0.00
8	T	Trichlorofluoromethane	5.0000	5.3818	-7.6	100	0.00
9	T	Diethyl ether	50.0000	49.2132	1.6	100	0.00
10	T	Isoprene	5.0000	4.9428	1.1	100	0.00
11	T	Acrolein	25.0000	24.4957	2.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	5.4272	-8.5	100	0.00
13	T	Acetone	-1.0000	5.3136	0.0	0	0.00
14	C	1,1-Dichloroethene	5.0000	5.2760	-5.5	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	97.6795	2.3	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.8115	3.8	100	0.00
17	T	Iodomethane	5.0000	6.2818	-25.6#	100	0.00
18	T	Methyl acetate	5.0000	5.0842	-1.7	100	0.00
19	T	Methylene Chloride	5.0000	5.1820	-3.6	100	0.00
20	T	Carbon Disulfide	5.0000	5.2535	-5.1	100	0.00
21	T	Acrylonitrile	25.0000	23.7426	5.0	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.8170	3.7	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	5.0428	-0.9	100	0.00
24	T	n-Hexane	5.0000	5.1432	-2.9	100	0.00
25	T	Diisopropyl ether	50.0000	49.2807	1.4	100	0.00
26	T	Vinyl Acetate	5.0000	4.1943	16.1	100	0.00
27	P	1,1-Dichloroethane	5.0000	5.1581	-3.2	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	49.1494	1.7	100	0.00
29	T	2-Butanone	5.0000	5.3698	-7.4	100	0.00
30	T	Propionitrile	50.0000	47.2483	5.5	100	0.00
31	T	2,2-Dichloropropane	5.0000	5.1089	-2.2	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	5.0766	-1.5	100	0.00
33	C	Chloroform	5.0000	5.1228	-2.5	100	0.00
34		1-Bromopropane	5.0000	4.4605	10.8	100	0.00
35	T	Bromochloromethane	5.0000	4.6779	6.4	100	0.00
36	T	Tetrahydrofuran	50.0000	47.4879	5.0	100	0.00
37	S	Dibromofluoromethane	2.5000	2.4710	1.2	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.8542	2.9	100	0.00
39	T	Cyclohexane	5.0000	5.0544	-1.1	100	0.00
40	T	1,1-Dichloropropene	5.0000	5.3658	-7.3	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	48.7831	2.4	100	0.00
42	T	Carbon Tetrachloride	5.0000	5.0887	-1.8	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.6172	-4.7	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	5.0000	4.9796	0.4	100	0.00
46	T	Benzene	5.0000	4.9809	0.4	100	0.00
47	T	Trichloroethene	5.0000	5.2316	-4.6	100	0.00
48	T	Methylcyclohexane	5.0000	5.1005	-2.0	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.9803	0.4	100	0.00
50	T	1,4-Dioxane	100.0000	107.9166	-7.9	100	0.00
51	T	Bromodichloromethane	5.0000	4.8760	2.5	100	0.00
52	T	Dibromomethane	5.0000	4.6271	7.5	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.1014	18.0	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.3183	13.6	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137526.D Vial: 5
Acq On : 26 Feb 2016 15:26 Operator: TMB
Sample : WG558920-05 5ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.6186	7.6	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.1777	16.4	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.6876	-7.5	100	0.00
59	C	Toluene	5.0000	5.0594	-1.2	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.4195	11.6	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	5.0000	4.6650	6.7	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.8784	2.4	100	0.00
64	T	2-Hexanone	5.0000	4.4142	11.7	100	0.00
65	T	1,3-Dichloropropane	5.0000	5.0457	-0.9	100	0.00
66	T	Tetrachloroethene	5.0000	5.3699	-7.4	100	0.00
67	T	Dibromochloromethane	5.0000	4.8026	3.9	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.7760	4.5	100	0.00
69	T	1-Chlorohexane	5.0000	4.7505	5.0	100	0.00
70	P	Chlorobenzene	5.0000	5.3112	-6.2	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.7045	5.9	100	0.00
72	C	Ethylbenzene	5.0000	4.9950	0.1	100	0.00
73	T	m-,p-Xylene	10.0000	10.0858	-0.9	100	0.00
74	T	o-Xylene	5.0000	4.8051	3.9	100	0.00
75	T	Styrene	5.0000	4.5913	8.2	100	0.00
76	P	Bromoform	5.0000	4.7199	5.6	100	0.00
77	T	Isopropylbenzene	5.0000	4.8919	2.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	5.0098	-0.2	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.6020	-4.1	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.1577	-3.2	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.4290	11.4	100	0.00
83	T	n-Propylbenzene	5.0000	5.2068	-4.1	100	0.00
84	T	Bromobenzene	5.0000	5.1597	-3.2	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	5.1783	-3.6	100	0.00
86	T	2-Chlorotoluene	5.0000	5.4214	-8.4	100	0.00
87	T	4-Chlorotoluene	5.0000	5.2638	-5.3	100	0.00
88	T	a-Methylstyrene	5.0000	4.5623	8.8	100	0.00
89	T	tert-Butylbenzene	5.0000	5.0441	-0.9	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.1422	-2.8	100	0.00
91	T	sec-Butylbenzene	5.0000	5.1195	-2.4	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.0969	-1.9	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	5.3060	-6.1	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	5.1831	-3.7	100	0.00
95	T	n-Butylbenzene	5.0000	5.0584	-1.2	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	5.0962	-1.9	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	4.5988	8.0	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.9379	1.2	100	0.00
99	T	Hexachlorobutadiene	5.0000	5.1268	-2.5	100	0.00
100	T	Naphthalene	5.0000	4.5552	8.9	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.9959	0.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137526.D 826_SL.M Mon Feb 29 16:02:29 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:40 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	607286	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	435504	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	227713	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	16492	5.0625 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 10.12%#		
43) 1,2-Dichloroethane-d4	11.06	65	20491	4.8445 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 9.68%#		
58) Toluene-d8	13.80	98	50808	4.9069 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 9.82%#		
80) p-Bromofluorobenzene	17.79	95	20967	5.0129 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 10.02%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	51684	9.2668 ug/L	100
3) Chloromethane	3.88	50	58275	10.0267 ug/L	97
4) Vinyl Chloride	4.12	62	45684	9.7657 ug/L	98
5) 1,3-Butadiene	4.16	54	39114	10.0495 ug/L	90
6) Bromomethane	5.03	94	25017	10.0321 ug/L	98
7) Chloroethane	5.20	64	25248	9.5185 ug/L	95
8) Trichlorofluoromethane	5.69	101	62268	9.9061 ug/L	98
9) Diethyl ether	6.24	59	197846	68.4186 ug/L	92
10) Isoprene	6.28	67	39072	9.5415 ug/L	91
11) Acrolein	6.48	56	19614	35.7163 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	30114	10.0369 ug/L	94
13) Acetone	6.60	43	18461	10.1493 ug/L	97
14) 1,1-Dichloroethene	6.83	61	51482	9.6871 ug/L	94
15) Tert-Butyl Alcohol	6.93	59	70054	141.2703 ug/L	95
16) Dimethyl Sulfide	7.12	62	25452	9.8712 ug/L	97
17) Iodomethane	7.38	142	9906	8.8243 ug/L	91
18) Methyl acetate	7.39	43	38451	10.4113 ug/L	93
19) Methylene Chloride	7.67	84	32006	10.0000 ug/L	78
20) Carbon Disulfide	7.72	76	98104	9.6481 ug/L	100
21) Acrylonitrile	7.86	53	52450	34.5555 ug/L	97
22) Methyl Tert Butyl Ether	7.89	73	93836	10.2663 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	29186	9.9411 ug/L	85
24) n-Hexane	8.24	57	52226	9.7962 ug/L	99
25) Diisopropyl ether	8.61	45	937664	67.8382 ug/L	97
26) Vinyl Acetate	8.80	43	70808	9.9102 ug/L	96
27) 1,1-Dichloroethane	8.83	63	63440	10.0226 ug/L	98
28) Ethyl-Tert-Butyl ether	9.24	59	760504	68.6462 ug/L	96
29) 2-Butanone	9.45	43	21373	10.1817 ug/L	94
30) Propionitrile	9.58	54	40026	68.8953 ug/L	100
31) 2,2-Dichloropropane	9.69	77	51602	10.1564 ug/L	98
32) cis-1,2-Dichloroethene	9.77	96	31900	9.7326 ug/L	99
33) Chloroform	10.01	83	57702	9.7611 ug/L	96
34) 1-Bromopropane	10.15	122	4101	9.1261 ug/L	96
35) Bromochloromethane	10.26	130	18414	9.5616 ug/L	96
36) Tetrahydrofuran	10.29	42	95905	67.3892 ug/L	94
38) 1,1,1-Trichloroethane	10.60	97	52695	10.0919 ug/L	100
39) Cyclohexane	10.63	56	57419	9.6977 ug/L	90
40) 1,1-Dichloropropene	10.82	75	41095	9.7729 ug/L	98
41) Tert-Amyl-Methyl ether	10.95	73	598972	68.1530 ug/L	90
42) Carbon Tetrachloride	10.99	117	48542	9.9495 ug/L	96

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:40 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	11.19	62	51284	10.1644 ug/L		99
46)	Benzene	11.23	78	122737	9.7022 ug/L		94
47)	Trichloroethene	12.09	130	29481	9.8646 ug/L		92
48)	Methylcyclohexane	12.18	83	46982	9.7245 ug/L		87
49)	1,2-Dichloropropane	12.34	63	33640	9.8830 ug/L		97
50)	1,4-Dioxane	12.68	88	4932	133.5880 ug/L		83
51)	Bromodichloromethane	12.68	83	42482	9.5106 ug/L		92
52)	Dibromomethane	12.78	93	19421	9.7551 ug/L		99
53)	2-Chloroethyl Vinyl Ether	13.04	63	17139	9.1546 ug/L		98
54)	4-Methyl-2-Pentanone	13.07	58	13343	9.4122 ug/L		90
55)	cis-1,3-Dichloropropene	13.43	75	47323	9.6158 ug/L		96
56)	Dimethyl Disulfide	13.72	79	21113	8.5060 ug/L		97
59)	Toluene	13.91	91	123480	10.0233 ug/L		99
60)	Ethyl Methacrylate	14.04	69	37321	9.4549 ug/L		94
62)	trans-1,3-Dichloropropene	14.12	75	46119	9.7357 ug/L		96
63)	1,1,2-Trichloroethane	14.38	97	26300	10.2139 ug/L		99
64)	2-Hexanone	14.31	43	28213	9.6021 ug/L		99
65)	1,3-Dichloropropane	14.73	76	46832	10.0347 ug/L		94
66)	Tetrachloroethene	14.87	166	31153	10.2512 ug/L		97
67)	Dibromochloromethane	15.18	129	32946	9.8381 ug/L		99
68)	1,2-Dibromoethane	15.48	107	25271	9.5966 ug/L		95
69)	1-Chlorohexane	15.59	91	36355	9.5030 ug/L		82
70)	Chlorobenzene	16.07	112	79785	10.0771 ug/L	#	63
71)	1,1,1,2-Tetrachloroethane	16.11	131	31524	9.9162 ug/L		97
72)	Ethylbenzene	16.10	106	41898	9.8889 ug/L		95
73)	m-,p-Xylene	16.22	106	102847	19.8387 ug/L		96
74)	o-Xylene	16.88	106	47393	9.7060 ug/L		93
75)	Styrene	16.92	104	79997	9.6257 ug/L		97
76)	Bromoform	17.49	173	22569	9.5450 ug/L		99
77)	Isopropylbenzene	17.38	105	130459	9.9391 ug/L		96
79)	1,1,2,2-Tetrachloroethane	17.65	83	36327	10.2123 ug/L		95
81)	1,2,3-Trichloropropane	17.87	110	11417	10.4826 ug/L		96
82)	trans-1,4-Dichloro-2-Buten	17.93	53	12994	9.8948 ug/L		85
83)	n-Propylbenzene	17.98	91	159783	10.3323 ug/L		98
84)	Bromobenzene	18.13	156	33893	10.0828 ug/L		95
85)	1,3,5-Trimethylbenzene	18.21	105	111252	10.1069 ug/L		94
86)	2-Chlorotoluene	18.30	91	107737	10.4377 ug/L		98
87)	4-Chlorotoluene	18.36	91	96695	10.2453 ug/L		95
88)	a-Methylstyrene	18.69	118	51340	9.6043 ug/L		97
89)	tert-Butylbenzene	18.76	134	22949	10.0040 ug/L		90
90)	1,2,4-Trimethylbenzene	18.82	105	119948	10.3616 ug/L		79
91)	sec-Butylbenzene	19.07	105	141383	10.0296 ug/L		97
92)	p-Isopropyltoluene	19.27	119	115695	9.9480 ug/L		99
93)	1,3-Dichlorobenzene	19.48	146	67906	10.4404 ug/L		100
94)	1,4-Dichlorobenzene	19.64	146	68350	10.3238 ug/L		93
95)	n-Butylbenzene	19.89	91	117398	10.0364 ug/L		96
96)	1,2-Dichlorobenzene	20.22	146	64067	10.2365 ug/L		98
97)	1,2-Dibromo-3-Chloropropan	21.40	75	7444	9.4579 ug/L		93
98)	1,2,4-Trichlorobenzene	22.76	180	45615	10.0816 ug/L		99
99)	Hexachlorobutadiene	22.94	225	26046	10.0659 ug/L		100
100)	Naphthalene	23.20	128	104354	10.0325 ug/L		99
101)	1,2,3-Trichlorobenzene	23.59	180	44630	10.0173 ug/L		99

(#) = qualifier out of range (m) = manual integration
6M137527.D 826_SL.M Mon Feb 29 16:01:40 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

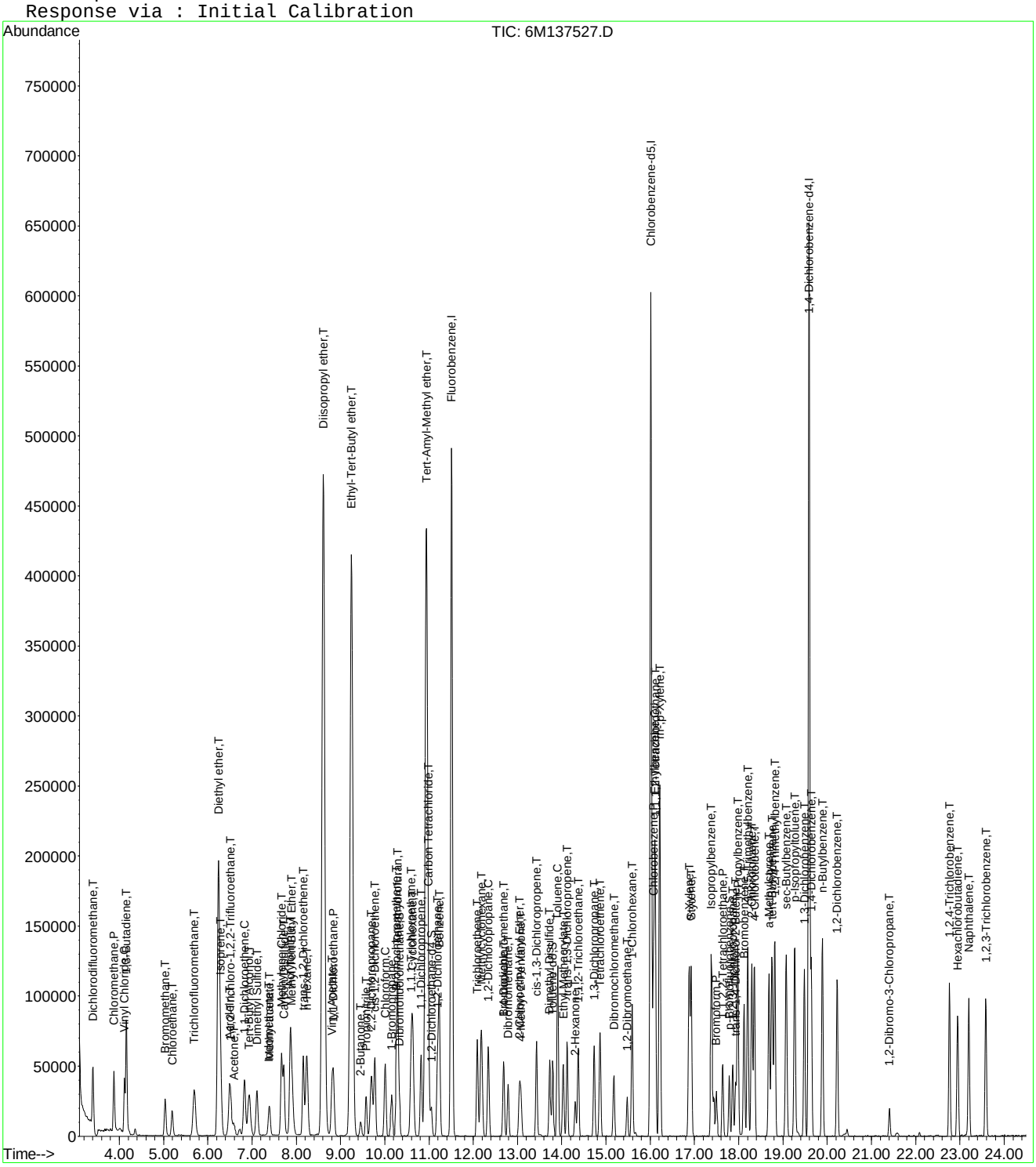

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	10.0000	9.2668	7.3	100	0.00
3	P	Chloromethane	10.0000	10.0267	-0.3	100	0.00
4	C	Vinyl Chloride	10.0000	9.7657	2.3	100	0.00
5	T	1,3-Butadiene	10.0000	10.0495	-0.5	100	-0.01
6	T	Bromomethane	10.0000	10.0321	-0.3	100	0.00
7	T	Chloroethane	10.0000	9.5185	4.8	100	0.00
8	T	Trichlorofluoromethane	10.0000	9.9061	0.9	100	-0.01
9	T	Diethyl ether	65.0000	68.4186	-5.3	100	0.00
10	T	Isoprene	10.0000	9.5415	4.6	100	0.00
11	T	Acrolein	32.5000	35.7163	-9.9	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	10.0000	10.0369	-0.4	100	0.00
13	T	Acetone	10.0000	10.1493	-1.5	100	0.01
14	C	1,1-Dichloroethene	10.0000	9.6871	3.1	100	0.00
15	T	Tert-Butyl Alcohol	130.0000	141.2703	-8.7	100	0.00
16	T	Dimethyl Sulfide	10.0000	9.8712	1.3	100	0.00
17	T	Iodomethane	10.0000	8.8243	11.8	100	0.00
18	T	Methyl acetate	10.0000	10.4113	-4.1	100	0.00
19	T	Methylene Chloride	10.0000	10.0000	0.0	100	0.00
20	T	Carbon Disulfide	10.0000	9.6481	3.5	100	0.00
21	T	Acrylonitrile	32.5000	34.5555	-6.3	100	0.00
22	T	Methyl Tert Butyl Ether	10.0000	10.2663	-2.7	100	0.00
23	T	trans-1,2-Dichloroethene	10.0000	9.9411	0.6	100	0.00
24	T	n-Hexane	10.0000	9.7962	2.0	100	0.00
25	T	Diisopropyl ether	65.0000	67.8382	-4.4	100	0.00
26	T	Vinyl Acetate	10.0000	9.9102	0.9	100	0.00
27	P	1,1-Dichloroethane	10.0000	10.0226	-0.2	100	0.00
28	T	Ethyl-Tert-Butyl ether	65.0000	68.6462	-5.6	100	0.00
29	T	2-Butanone	10.0000	10.1817	-1.8	100	0.00
30	T	Propionitrile	65.0000	68.8953	-6.0	100	0.00
31	T	2,2-Dichloropropane	10.0000	10.1564	-1.6	100	0.00
32	T	cis-1,2-Dichloroethene	10.0000	9.7326	2.7	100	0.00
33	C	Chloroform	10.0000	9.7611	2.4	100	0.00
34		1-Bromopropane	10.0000	9.1261	8.7	100	-0.01
35	T	Bromochloromethane	10.0000	9.5616	4.4	100	0.00
36	T	Tetrahydrofuran	65.0000	67.3892	-3.7	100	0.00
37	S	Dibromofluoromethane	5.0000	5.0625	-1.2	100	0.00
38	T	1,1,1-Trichloroethane	10.0000	10.0919	-0.9	100	0.00
39	T	Cyclohexane	10.0000	9.6977	3.0	100	-0.01
40	T	1,1-Dichloropropene	10.0000	9.7729	2.3	100	0.00
41	T	Tert-Amyl-Methyl ether	65.0000	68.1530	-4.9	100	0.00
42	T	Carbon Tetrachloride	10.0000	9.9495	0.5	100	0.00
43	S	1,2-Dichloroethane-d4	5.0000	4.8445	3.1	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	10.0000	10.1644	-1.6	100	0.00
46	T	Benzene	10.0000	9.7022	3.0	100	0.00
47	T	Trichloroethene	10.0000	9.8646	1.4	100	0.00
48	T	Methylcyclohexane	10.0000	9.7245	2.8	100	0.00
49	C	1,2-Dichloropropane	10.0000	9.8831	1.2	100	0.00
50	T	1,4-Dioxane	130.0000	133.5880	-2.8	100	0.00
51	T	Bromodichloromethane	10.0000	9.5106	4.9	100	0.00
52	T	Dibromomethane	10.0000	9.7551	2.4	100	0.00
53	T	2-Chloroethyl Vinyl Ether	10.0000	9.1546	8.5	100	0.00
54	T	4-Methyl-2-Pentanone	10.0000	9.4122	5.9	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137527.D Vial: 6
Acq On : 26 Feb 2016 15:58 Operator: TMB
Sample : WG558920-06 10ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	10.0000	9.6158	3.8	100	0.00
56	T	Dimethyl Disulfide	10.0000	8.5060	14.9	100	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	100	0.00
58	S	Toluene-d8	5.0000	4.9070	1.9	100	0.00
59	C	Toluene	10.0000	10.0233	-0.2	100	0.00
60	T	Ethyl Methacrylate	10.0000	9.4549	5.5	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	10.0000	9.7357	2.6	100	0.00
63	T	1,1,2-Trichloroethane	10.0000	10.2139	-2.1	100	0.00
64	T	2-Hexanone	10.0000	9.6021	4.0	100	0.00
65	T	1,3-Dichloropropane	10.0000	10.0347	-0.3	100	0.00
66	T	Tetrachloroethene	10.0000	10.2512	-2.5	100	0.00
67	T	Dibromochloromethane	10.0000	9.8381	1.6	100	0.00
68	T	1,2-Dibromoethane	10.0000	9.5966	4.0	100	0.00
69	T	1-Chlorohexane	10.0000	9.5030	5.0	100	0.00
70	P	Chlorobenzene	10.0000	10.0771	-0.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	10.0000	9.9162	0.8	100	0.00
72	C	Ethylbenzene	10.0000	9.8889	1.1	100	0.00
73	T	m-,p-Xylene	20.0000	19.8387	0.8	100	0.00
74	T	o-Xylene	10.0000	9.7060	2.9	100	0.00
75	T	Styrene	10.0000	9.6258	3.7	100	0.00
76	P	Bromoform	10.0000	9.5450	4.6	100	0.00
77	T	Isopropylbenzene	10.0000	9.9391	0.6	100	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	10.0000	10.2123	-2.1	100	0.00
80	S	p-Bromofluorobenzene	5.0000	5.0129	-0.3	100	0.00
81	T	1,2,3-Trichloropropane	10.0000	10.4826	-4.8	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	10.0000	9.8948	1.1	100	0.00
83	T	n-Propylbenzene	10.0000	10.3323	-3.3	100	0.00
84	T	Bromobenzene	10.0000	10.0828	-0.8	100	0.00
85	T	1,3,5-Trimethylbenzene	10.0000	10.1069	-1.1	100	0.00
86	T	2-Chlorotoluene	10.0000	10.4377	-4.4	100	0.00
87	T	4-Chlorotoluene	10.0000	10.2453	-2.5	100	0.00
88	T	a-Methylstyrene	10.0000	9.6043	4.0	100	0.00
89	T	tert-Butylbenzene	10.0000	10.0040	-0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	10.0000	10.3616	-3.6	100	0.00
91	T	sec-Butylbenzene	10.0000	10.0296	-0.3	100	0.00
92	T	p-Isopropyltoluene	10.0000	9.9480	0.5	100	0.00
93	T	1,3-Dichlorobenzene	10.0000	10.4404	-4.4	100	0.00
94	T	1,4-Dichlorobenzene	10.0000	10.3238	-3.2	100	0.00
95	T	n-Butylbenzene	10.0000	10.0364	-0.4	100	0.00
96	T	1,2-Dichlorobenzene	10.0000	10.2365	-2.4	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	10.0000	9.4579	5.4	100	-0.01
98	T	1,2,4-Trichlorobenzene	10.0000	10.0816	-0.8	100	0.00
99	T	Hexachlorobutadiene	10.0000	10.0659	-0.7	100	-0.01
100	T	Naphthalene	10.0000	10.0325	-0.3	100	0.00
101	T	1,2,3-Trichlorobenzene	10.0000	10.0173	-0.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137527.D 826_SL.M Mon Feb 29 16:02:41 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137528.D Vial: 7
Acq On : 26 Feb 2016 16:30 Operator: TMB
Sample : WG558920-07 20ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:40 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	604454	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	432511	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	231578	50.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.33	111	33417	10.3059 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 20.62%#		
43) 1,2-Dichloroethane-d4	11.05	65	44264	10.5140 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 21.02%#		
58) Toluene-d8	13.80	98	105494	10.2589 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 20.52%#		
80) p-Bromofluorobenzene	17.79	95	42856	10.0752 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 20.16%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	124530	22.4325 ug/L	99
3) Chloromethane	3.88	50	120837	20.8884 ug/L	97
4) Vinyl Chloride	4.12	62	100224	21.5249 ug/L	99
5) 1,3-Butadiene	4.17	54	87169	22.5011 ug/L	89
6) Bromomethane	5.03	94	52021	20.9587 ug/L	100
7) Chloroethane	5.20	64	56109	21.2522 ug/L	96
8) Trichlorofluoromethane	5.70	101	126994	20.2979 ug/L	100
9) Diethyl ether	6.24	59	233490	81.1233 ug/L	92
10) Isoprene	6.28	67	78978	19.3770 ug/L	88
11) Acrolein	6.48	56	21732	39.7585 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	61970	20.7512 ug/L	94
13) Acetone	6.60	43	31313	20.3882 ug/L	94
14) 1,1-Dichloroethene	6.83	61	109604	20.7203 ug/L	92
15) Tert-Butyl Alcohol	6.93	59	84577	171.3564 ug/L	95
16) Dimethyl Sulfide	7.12	62	47686	18.5811 ug/L	91
17) Iodomethane	7.38	142	29628	16.5619 ug/L	87
18) Methyl acetate	7.39	43	74780	20.3429 ug/L	95
19) Methylene Chloride	7.67	84	64851	20.3571 ug/L	76
20) Carbon Disulfide	7.72	76	202990	20.0567 ug/L	99
21) Acrylonitrile	7.86	53	61697	40.8381 ug/L	94
22) Methyl Tert Butyl Ether	7.89	73	190370	20.9254 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	59769	20.4535 ug/L	87
24) n-Hexane	8.24	57	105156	19.8169 ug/L	97
25) Diisopropyl ether	8.61	45	1129584	82.1061 ug/L	96
26) Vinyl Acetate	8.80	43	152272	21.4117 ug/L	97
27) 1,1-Dichloroethane	8.83	63	130302	20.6823 ug/L	99
28) Ethyl-Tert-Butyl ether	9.24	59	915394	83.0143 ug/L	96
29) 2-Butanone	9.46	43	42524	20.3527 ug/L	97
30) Propionitrile	9.58	54	48414	83.7237 ug/L	100
31) 2,2-Dichloropropane	9.69	77	100380	19.8495 ug/L	98
32) cis-1,2-Dichloroethene	9.77	96	66403	20.3543 ug/L	100
33) Chloroform	10.01	83	120566	20.4910 ug/L	97
34) 1-Bromopropane	10.15	122	8978	20.0727 ug/L	94
35) Bromochloromethane	10.26	130	39989	20.8618 ug/L	98
36) Tetrahydrofuran	10.29	42	119054	84.5841 ug/L	93
38) 1,1,1-Trichloroethane	10.60	97	105282	20.2577 ug/L	96
39) Cyclohexane	10.63	56	119680	20.3079 ug/L	89
40) 1,1-Dichloropropene	10.82	75	83869	20.0386 ug/L	96
41) Tert-Amyl-Methyl ether	10.94	73	732522	83.7393 ug/L	91
42) Carbon Tetrachloride	10.99	117	99704	20.5318 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M137528.D 826_SL.M Mon Feb 29 16:01:41 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137528.D Vial: 7
Acq On : 26 Feb 2016 16:30 Operator: TMB
Sample : WG558920-07 20ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:40 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	11.19	62	103881	20.6854 ug/L		99
46)	Benzene	11.23	78	247381	19.6467 ug/L		92
47)	Trichloroethene	12.09	130	61373	20.6321 ug/L		91
48)	Methylcyclohexane	12.18	83	97333	20.2407 ug/L		88
49)	1,2-Dichloropropane	12.34	63	69997	20.6607 ug/L		99
50)	1,4-Dioxane	12.68	88	6222	161.0769 ug/L		84
51)	Bromodichloromethane	12.68	83	89367	20.1007 ug/L		96
52)	Dibromomethane	12.79	93	40905	20.6426 ug/L		98
53)	2-Chloroethyl Vinyl Ether	13.04	63	37392	20.0660 ug/L		99
54)	4-Methyl-2-Pentanone	13.07	58	29543	20.9375 ug/L		90
55)	cis-1,3-Dichloropropene	13.43	75	99671	20.3475 ug/L		97
56)	Dimethyl Disulfide	13.72	79	46329	18.7525 ug/L		98
59)	Toluene	13.91	91	246419	20.1412 ug/L		99
60)	Ethyl Methacrylate	14.04	69	79829	20.3638 ug/L		96
62)	trans-1,3-Dichloropropene	14.12	75	96621	20.5377 ug/L		98
63)	1,1,2-Trichloroethane	14.38	97	53425	20.8919 ug/L		97
64)	2-Hexanone	14.31	43	59605	20.4265 ug/L		97
65)	1,3-Dichloropropane	14.74	76	96517	20.8239 ug/L		94
66)	Tetrachloroethene	14.87	166	62111	20.5796 ug/L		96
67)	Dibromochloromethane	15.17	129	68185	20.5019 ug/L		99
68)	1,2-Dibromoethane	15.48	107	53387	20.4138 ug/L		100
69)	1-Chlorohexane	15.59	91	76216	20.0602 ug/L		83
70)	Chlorobenzene	16.07	112	160312	20.3880 ug/L	#	66
71)	1,1,1,2-Tetrachloroethane	16.11	131	64649	20.4768 ug/L		97
72)	Ethylbenzene	16.10	106	86018	20.4427 ug/L		96
73)	m-,p-Xylene	16.22	106	209303	40.6530 ug/L		95
74)	o-Xylene	16.87	106	101781	20.9889 ug/L		94
75)	Styrene	16.92	104	169811	20.5741 ug/L		94
76)	Bromoform	17.49	173	47615	20.2769 ug/L		98
77)	Isopropylbenzene	17.38	105	273784	21.0027 ug/L		97
79)	1,1,2,2-Tetrachloroethane	17.65	83	75470	20.8621 ug/L		95
81)	1,2,3-Trichloropropane	17.87	110	22588	20.3932 ug/L		90
82)	trans-1,4-Dichloro-2-Buten	17.93	53	26581	19.9034 ug/L		88
83)	n-Propylbenzene	17.98	91	330830	21.0359 ug/L		97
84)	Bromobenzene	18.13	156	71833	21.0128 ug/L		95
85)	1,3,5-Trimethylbenzene	18.21	105	230218	20.5655 ug/L		96
86)	2-Chlorotoluene	18.30	91	219979	20.9561 ug/L		97
87)	4-Chlorotoluene	18.35	91	193947	20.2066 ug/L		97
88)	a-Methylstyrene	18.69	118	107098	19.7008 ug/L		96
89)	tert-Butylbenzene	18.75	134	48246	20.6806 ug/L		94
90)	1,2,4-Trimethylbenzene	18.82	105	244152	20.7388 ug/L		84
91)	sec-Butylbenzene	19.08	105	299927	20.9214 ug/L		98
92)	p-Isopropyltoluene	19.27	119	246088	20.8066 ug/L		100
93)	1,3-Dichlorobenzene	19.48	146	134407	20.3198 ug/L		98
94)	1,4-Dichlorobenzene	19.64	146	136759	20.3118 ug/L		97
95)	n-Butylbenzene	19.89	91	245859	20.6677 ug/L		97
96)	1,2-Dichlorobenzene	20.22	146	129420	20.3333 ug/L		96
97)	1,2-Dibromo-3-Chloropropan	21.41	75	16283	20.3429 ug/L		85
98)	1,2,4-Trichlorobenzene	22.76	180	93373	20.2924 ug/L		99
99)	Hexachlorobutadiene	22.95	225	53674	20.3969 ug/L		99
100)	Naphthalene	23.20	128	219058	20.7086 ug/L		99
101)	1,2,3-Trichlorobenzene	23.58	180	91461	20.1860 ug/L		98

(#) = qualifier out of range (m) = manual integration
6M137528.D 826_SL.M Mon Feb 29 16:01:41 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137528.D Vial: 7
Acq On : 26 Feb 2016 16:30 Operator: TMB
Sample : WG558920-07 20ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

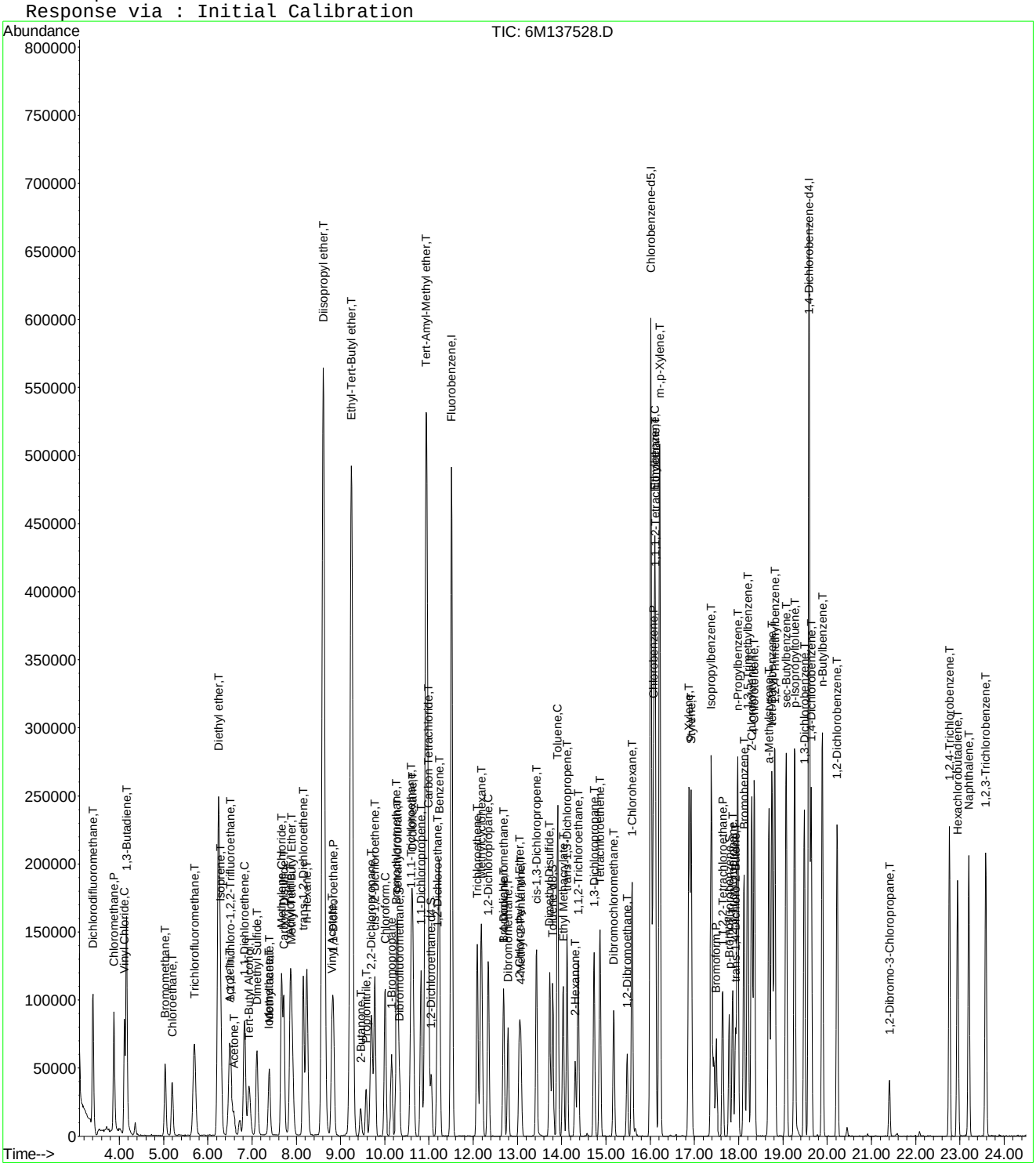

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137529.D Vial: 8
Acq On : 26 Feb 2016 17:03 Operator: TMB
Sample : WG558920-08 50ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:41 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	607631	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	439950	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.60	152	237573	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	82729	25.3805 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 50.76%#		
43) 1,2-Dichloroethane-d4	11.06	65	107163	25.3214 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 50.64%#		
58) Toluene-d8	13.80	98	266157	25.4452 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 50.90%#		
80) p-Bromofluorobenzene	17.79	95	111797	25.6197 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 51.24%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	326358	58.4819 ug/L	99
3) Chloromethane	3.88	50	305583	52.5483 ug/L	99
4) Vinyl Chloride	4.11	62	261948	55.9639 ug/L	98
5) 1,3-Butadiene	4.17	54	208973	53.6605 ug/L	91
6) Bromomethane	5.03	94	129157	51.7638 ug/L	100
7) Chloroethane	5.20	64	147959	55.7489 ug/L	95
8) Trichlorofluoromethane	5.70	101	339023	53.9039 ug/L	99
9) Diethyl ether	6.24	59	283385	97.9439 ug/L	93
10) Isoprene	6.28	67	215850	52.6813 ug/L	86
11) Acrolein	6.48	56	25264	45.9786 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	168394	56.0934 ug/L	94
13) Acetone	6.60	43	68176	49.2786 ug/L	100
14) 1,1-Dichloroethene	6.83	61	295734	55.6154 ug/L	92
15) Tert-Butyl Alcohol	6.94	59	97040	195.5789 ug/L	97
16) Dimethyl Sulfide	7.12	62	135657	52.5830 ug/L	94
17) Iodomethane	7.38	142	119726	51.5829 ug/L	91
18) Methyl acetate	7.39	43	187187	50.6554 ug/L	95
19) Methylene Chloride	7.67	84	174497	54.4892 ug/L	80
20) Carbon Disulfide	7.72	76	530150	52.1084 ug/L	98
21) Acrylonitrile	7.86	53	78970	51.9980 ug/L	98
22) Methyl Tert Butyl Ether	7.89	73	506330	55.3647 ug/L	93
23) trans-1,2-Dichloroethene	8.16	96	161116	54.8470 ug/L	86
24) n-Hexane	8.24	57	282956	53.0449 ug/L	98
25) Diisopropyl ether	8.61	45	1357488	98.1559 ug/L	97
26) Vinyl Acetate	8.80	43	361913	50.6243 ug/L	97
27) 1,1-Dichloroethane	8.84	63	345084	54.4873 ug/L	98
28) Ethyl-Tert-Butyl ether	9.24	59	1104598	99.6489 ug/L	96
29) 2-Butanone	9.45	43	102919	49.0011 ug/L	94
30) Propionitrile	9.58	54	57786	99.4084 ug/L	100
31) 2,2-Dichloropropane	9.70	77	275709	54.2347 ug/L	99
32) cis-1,2-Dichloroethene	9.77	96	176368	53.7788 ug/L	98
33) Chloroform	10.01	83	316097	53.4420 ug/L	96
34) 1-Bromopropane	10.16	122	24579	54.6655 ug/L	98
35) Bromochloromethane	10.26	130	106752	55.4000 ug/L	99
36) Tetrahydrofuran	10.29	42	139800	99.1693 ug/L	94
38) 1,1,1-Trichloroethane	10.60	97	287959	55.1175 ug/L	98
39) Cyclohexane	10.63	56	324068	54.7019 ug/L	90
40) 1,1-Dichloropropene	10.82	75	232925	55.3612 ug/L	98
41) Tert-Amyl-Methyl ether	10.95	73	878188	99.8664 ug/L	92
42) Carbon Tetrachloride	10.99	117	270388	55.3891 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137529.D Vial: 8
Acq On : 26 Feb 2016 17:03 Operator: TMB
Sample : WG558920-08 50ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:41 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	272804	54.0384 ug/L	98
46)	Benzene	11.23	78	654918	51.7410 ug/L	91
47)	Trichloroethene	12.09	130	163002	54.5109 ug/L	91
48)	Methylcyclohexane	12.18	83	264045	54.6220 ug/L	88
49)	1,2-Dichloropropane	12.34	63	185139	54.3608 ug/L	99
50)	1,4-Dioxane	12.67	88	7470	186.3872 ug/L	86
51)	Bromodichloromethane	12.68	83	244077	54.6116 ug/L	96
52)	Dibromomethane	12.78	93	112269	56.3600 ug/L	97
53)	2-Chloroethyl Vinyl Ether	13.04	63	99869	53.3134 ug/L	98
54)	4-Methyl-2-Pentanone	13.07	58	71173	50.1774 ug/L	95
55)	cis-1,3-Dichloropropene	13.43	75	275770	56.0032 ug/L	97
56)	Dimethyl Disulfide	13.72	79	136937	55.1380 ug/L	96
59)	Toluene	13.91	91	661797	53.1777 ug/L	100
60)	Ethyl Methacrylate	14.04	69	221335	55.5062 ug/L	94
62)	trans-1,3-Dichloropropene	14.12	75	265281	55.4346 ug/L	99
63)	1,1,2-Trichloroethane	14.38	97	140534	54.0266 ug/L	99
64)	2-Hexanone	14.31	43	150141	50.5831 ug/L	99
65)	1,3-Dichloropropane	14.73	76	254916	54.0691 ug/L	94
66)	Tetrachloroethene	14.87	166	165478	53.9016 ug/L	97
67)	Dibromochloromethane	15.17	129	187125	55.3134 ug/L	98
68)	1,2-Dibromoethane	15.48	107	145905	54.8470 ug/L	99
69)	1-Chlorohexane	15.59	91	213275	55.1854 ug/L	86
70)	Chlorobenzene	16.07	112	421684	52.7217 ug/L #	68
71)	1,1,1,2-Tetrachloroethane	16.11	131	172886	53.8335 ug/L	98
72)	Ethylbenzene	16.11	106	233514	54.5577 ug/L	98
73)	m-,p-Xylene	16.22	106	560207	106.9693 ug/L	96
74)	o-Xylene	16.88	106	278846	56.5302 ug/L	96
75)	Styrene	16.92	104	471370	56.1451 ug/L	94
76)	Bromoform	17.49	173	131127	54.8964 ug/L	99
77)	Isopropylbenzene	17.38	105	740395	55.8373 ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.65	83	199941	53.8747 ug/L	96
81)	1,2,3-Trichloropropane	17.87	110	61269	53.9200 ug/L	97
82)	trans-1,4-Dichloro-2-Buten	17.93	53	73183	53.4153 ug/L	91
83)	n-Propylbenzene	17.98	91	903295	55.9869 ug/L	98
84)	Bromobenzene	18.12	156	191943	54.7308 ug/L	98
85)	1,3,5-Trimethylbenzene	18.21	105	641908	55.8951 ug/L	95
86)	2-Chlorotoluene	18.30	91	578848	53.7519 ug/L	97
87)	4-Chlorotoluene	18.36	91	530900	53.9168 ug/L	97
88)	a-Methylstyrene	18.69	118	307671	55.1682 ug/L	99
89)	tert-Butylbenzene	18.76	134	134676	56.2719 ug/L	98
90)	1,2,4-Trimethylbenzene	18.82	105	666066	55.1494 ug/L	81
91)	sec-Butylbenzene	19.07	105	825213	56.1103 ug/L	99
92)	p-Isopropyltoluene	19.27	119	685445	56.4914 ug/L	100
93)	1,3-Dichlorobenzene	19.48	146	365219	53.8210 ug/L	96
94)	1,4-Dichlorobenzene	19.64	146	363309	52.5979 ug/L	98
95)	n-Butylbenzene	19.89	91	677494	55.5152 ug/L	98
96)	1,2-Dichlorobenzene	20.23	146	350298	53.6470 ug/L	96
97)	1,2-Dibromo-3-Chloropropan	21.41	75	43537	53.0196 ug/L	90
98)	1,2,4-Trichlorobenzene	22.76	180	262463	55.6006 ug/L	99
99)	Hexachlorobutadiene	22.95	225	150922	55.9053 ug/L	100
100)	Naphthalene	23.20	128	617866	56.9360 ug/L	100
101)	1,2,3-Trichlorobenzene	23.59	180	259953	55.9254 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137529.D Vial: 8
Acq On : 26 Feb 2016 17:03 Operator: TMB
Sample : WG558920-08 50ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

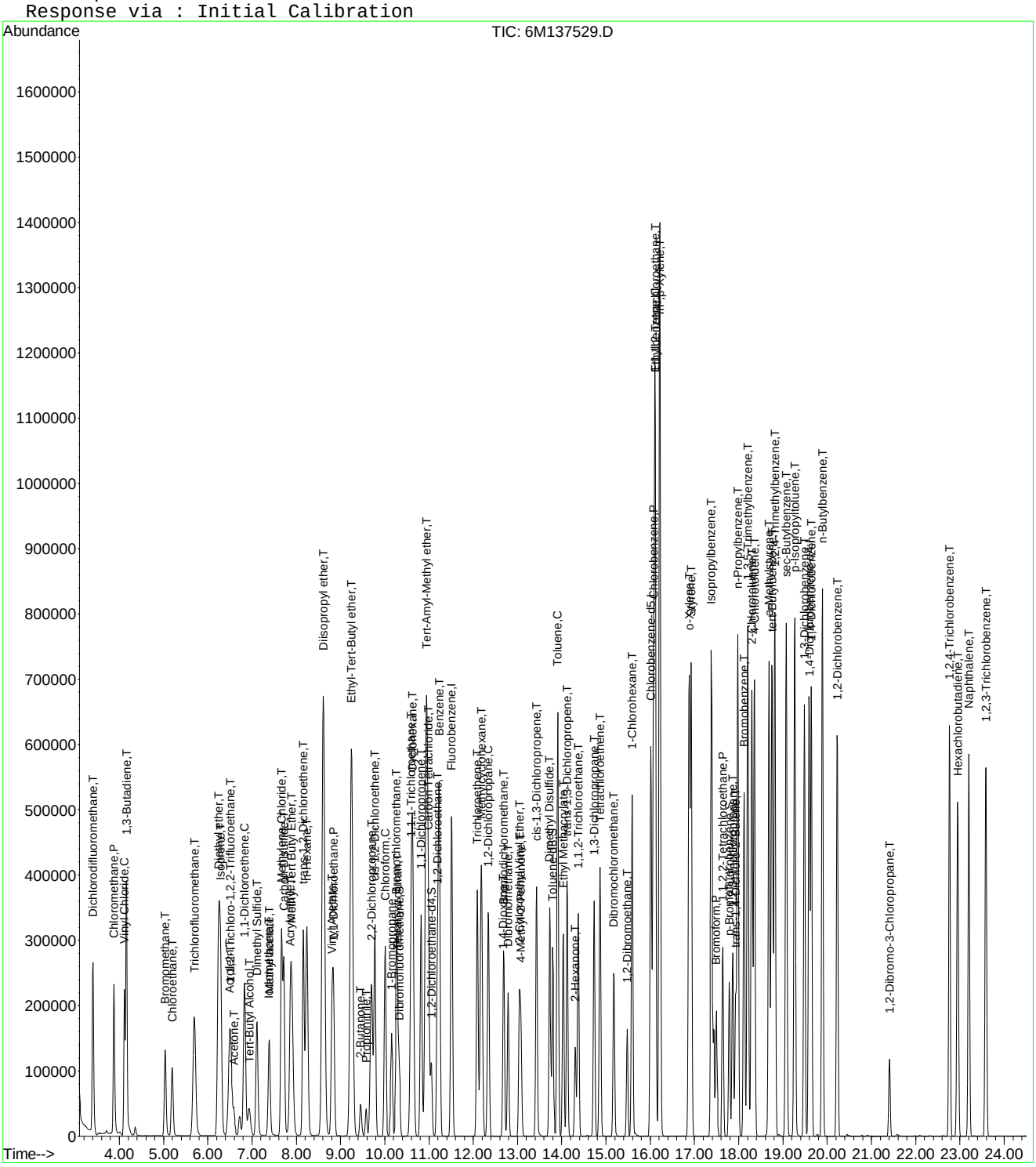

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137530.D Vial: 9
Acq On : 26 Feb 2016 17:35 Operator: TMB
Sample : WG558920-09 100ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:42 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	642087	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	466249	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	253947	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.32	111	162548	47.1921 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.38%		
43) 1,2-Dichloroethane-d4	11.06	65	210928	47.1653 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.34%		
58) Toluene-d8	13.80	98	518743	46.7957 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 93.60%		
80) p-Bromofluorobenzene	17.79	95	219336	47.0227 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 94.04%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	562397	95.3710 ug/L	99
3) Chloromethane	3.88	50	511342	83.2121 ug/L	98
4) Vinyl Chloride	4.12	62	453722	91.7337 ug/L	97
5) 1,3-Butadiene	4.16	54	371216	90.2064 ug/L	92
6) Bromomethane	5.03	94	236484	89.6925 ug/L	99
7) Chloroethane	5.19	64	259484	92.5233 ug/L	94
8) Trichlorofluoromethane	5.69	101	593589	89.3146 ug/L	99
9) Diethyl ether	6.23	59	599424	196.0563 ug/L	94
10) Isoprene	6.28	67	429478	99.1954 ug/L	86
11) Acrolein	6.48	56	58142	100.1359 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	295880	93.2711 ug/L	94
13) Acetone	6.59	43	134155	95.5525 ug/L	97
14) 1,1-Dichloroethene	6.83	61	525920	93.5964 ug/L	92
15) Tert-Butyl Alcohol	6.94	59	207755	396.2496 ug/L	97
16) Dimethyl Sulfide	7.11	62	269784	98.9613 ug/L	92
17) Iodomethane	7.38	142	252699	98.0787 ug/L	90
18) Methyl acetate	7.39	43	375036	96.0437 ug/L	97
19) Methylene Chloride	7.67	84	311212	91.9654 ug/L	80
20) Carbon Disulfide	7.72	76	1037082	96.4646 ug/L	99
21) Acrylonitrile	7.86	53	165829	103.3311 ug/L	99
22) Methyl Tert Butyl Ether	7.89	73	942489	97.5263 ug/L	93
23) trans-1,2-Dichloroethene	8.16	96	289637	93.3071 ug/L	87
24) n-Hexane	8.23	57	555752	98.5944 ug/L	98
25) Diisopropyl ether	8.61	45	2877959	196.9296 ug/L	96
26) Vinyl Acetate	8.80	43	731541	96.8365 ug/L	99
27) 1,1-Dichloroethane	8.83	63	621539	92.8721 ug/L	98
28) Ethyl-Tert-Butyl ether	9.24	59	2342177	199.9557 ug/L	96
29) 2-Butanone	9.45	43	207126	93.3235 ug/L	95
30) Propionitrile	9.57	54	121992	198.5994 ug/L	98
31) 2,2-Dichloropropane	9.69	77	491609	91.5150 ug/L	98
32) cis-1,2-Dichloroethene	9.77	96	321521	92.7784 ug/L	96
33) Chloroform	10.01	83	568519	90.9606 ug/L	95
34) 1-Bromopropane	10.16	122	47570	100.1217 ug/L	99
35) Bromochloromethane	10.26	130	193434	94.9975 ug/L	100
36) Tetrahydrofuran	10.29	42	287880	195.3143 ug/L	95
38) 1,1,1-Trichloroethane	10.60	97	511473	92.6461 ug/L	98
39) Cyclohexane	10.63	56	631373	100.8552 ug/L	90
40) 1,1-Dichloropropene	10.82	75	416243	93.6230 ug/L	97
41) Tert-Amyl-Methyl ether	10.94	73	1879478	202.2624 ug/L	92
42) Carbon Tetrachloride	10.99	117	485191	94.0581 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137530.D Vial: 9
Acq On : 26 Feb 2016 17:35 Operator: TMB
Sample : WG558920-09 100ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:42 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	498315	93.4118	ug/L	98
46)	Benzene	11.23	78	1182199	88.3862	ug/L	91
47)	Trichloroethene	12.09	130	294176	93.0987	ug/L	90
48)	Methylcyclohexane	12.18	83	515585	100.9337	ug/L	88
49)	1,2-Dichloropropane	12.34	63	342055	95.0452	ug/L	100
50)	1,4-Dioxane	12.67	88	17776	381.1583	ug/L	84
51)	Bromodichloromethane	12.68	83	452280	95.7660	ug/L	97
52)	Dibromomethane	12.79	93	202292	96.1028	ug/L	98
53)	2-Chloroethyl Vinyl Ether	13.04	63	206349	104.2447	ug/L	97
54)	4-Methyl-2-Pentanone	13.07	58	145646	97.1712	ug/L	93
55)	cis-1,3-Dichloropropene	13.43	75	509093	97.8384	ug/L	95
56)	Dimethyl Disulfide	13.72	79	282091	107.4894	ug/L	96
59)	Toluene	13.91	91	1184465	89.8074	ug/L	100
60)	Ethyl Methacrylate	14.04	69	445228	105.3560	ug/L	94
62)	trans-1,3-Dichloropropene	14.12	75	494673	97.5390	ug/L	99
63)	1,1,2-Trichloroethane	14.38	97	261258	94.7723	ug/L	99
64)	2-Hexanone	14.31	43	305856	97.2318	ug/L	100
65)	1,3-Dichloropropane	14.74	76	469121	93.8906	ug/L	93
66)	Tetrachloroethene	14.87	166	296672	91.1851	ug/L	98
67)	Dibromochloromethane	15.17	129	347661	96.9706	ug/L	98
68)	1,2-Dibromoethane	15.48	107	270599	95.9830	ug/L	97
69)	1-Chlorohexane	15.59	91	420885	102.7620	ug/L	86
70)	Chlorobenzene	16.07	112	765249	90.2797	ug/L	69
71)	1,1,1,2-Tetrachloroethane	16.11	131	320669	94.2184	ug/L	97
72)	Ethylbenzene	16.10	106	422350	93.1110	ug/L	97
73)	m-,p-Xylene	16.22	106	1018750	183.5539	ug/L	96
74)	o-Xylene	16.87	106	503867	96.3867	ug/L	94
75)	Styrene	16.92	104	871975	98.0029	ug/L	94
76)	Bromoform	17.49	173	243410	96.1558	ug/L	99
77)	Isopropylbenzene	17.38	105	1335991	95.0715	ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.65	83	376052	94.7950	ug/L	96
81)	1,2,3-Trichloropropane	17.87	110	114333	94.1314	ug/L	95
82)	trans-1,4-Dichloro-2-Buten	17.93	53	150048	102.4566	ug/L	89
83)	n-Propylbenzene	17.98	91	1628674	94.4377	ug/L	98
84)	Bromobenzene	18.13	156	352357	93.9933	ug/L	98
85)	1,3,5-Trimethylbenzene	18.21	105	1165530	94.9464	ug/L	95
86)	2-Chlorotoluene	18.30	91	1069398	92.9015	ug/L	97
87)	4-Chlorotoluene	18.35	91	957337	90.9557	ug/L	97
88)	a-Methylstyrene	18.69	118	626810	105.1459	ug/L	98
89)	tert-Butylbenzene	18.75	134	243763	95.2846	ug/L	87
90)	1,2,4-Trimethylbenzene	18.82	105	1211949	93.8776	ug/L	81
91)	sec-Butylbenzene	19.08	105	1482811	94.3227	ug/L	99
92)	p-Isopropyltoluene	19.27	119	1243718	95.8928	ug/L	100
93)	1,3-Dichlorobenzene	19.48	146	670076	92.3797	ug/L	97
94)	1,4-Dichlorobenzene	19.64	146	665185	90.0925	ug/L	97
95)	n-Butylbenzene	19.89	91	1241772	95.1924	ug/L	98
96)	1,2-Dichlorobenzene	20.22	146	649160	93.0065	ug/L	96
97)	1,2-Dibromo-3-Chloropropan	21.41	75	84975	96.8107	ug/L	89
98)	1,2,4-Trichlorobenzene	22.76	180	475402	94.2164	ug/L	99
99)	Hexachlorobutadiene	22.95	225	270006	93.5681	ug/L	100
100)	Naphthalene	23.20	128	1163220	100.2786	ug/L	100
101)	1,2,3-Trichlorobenzene	23.58	180	465522	93.6933	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137530.D Vial: 9
Acq On : 26 Feb 2016 17:35 Operator: TMB
Sample : WG558920-09 100ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

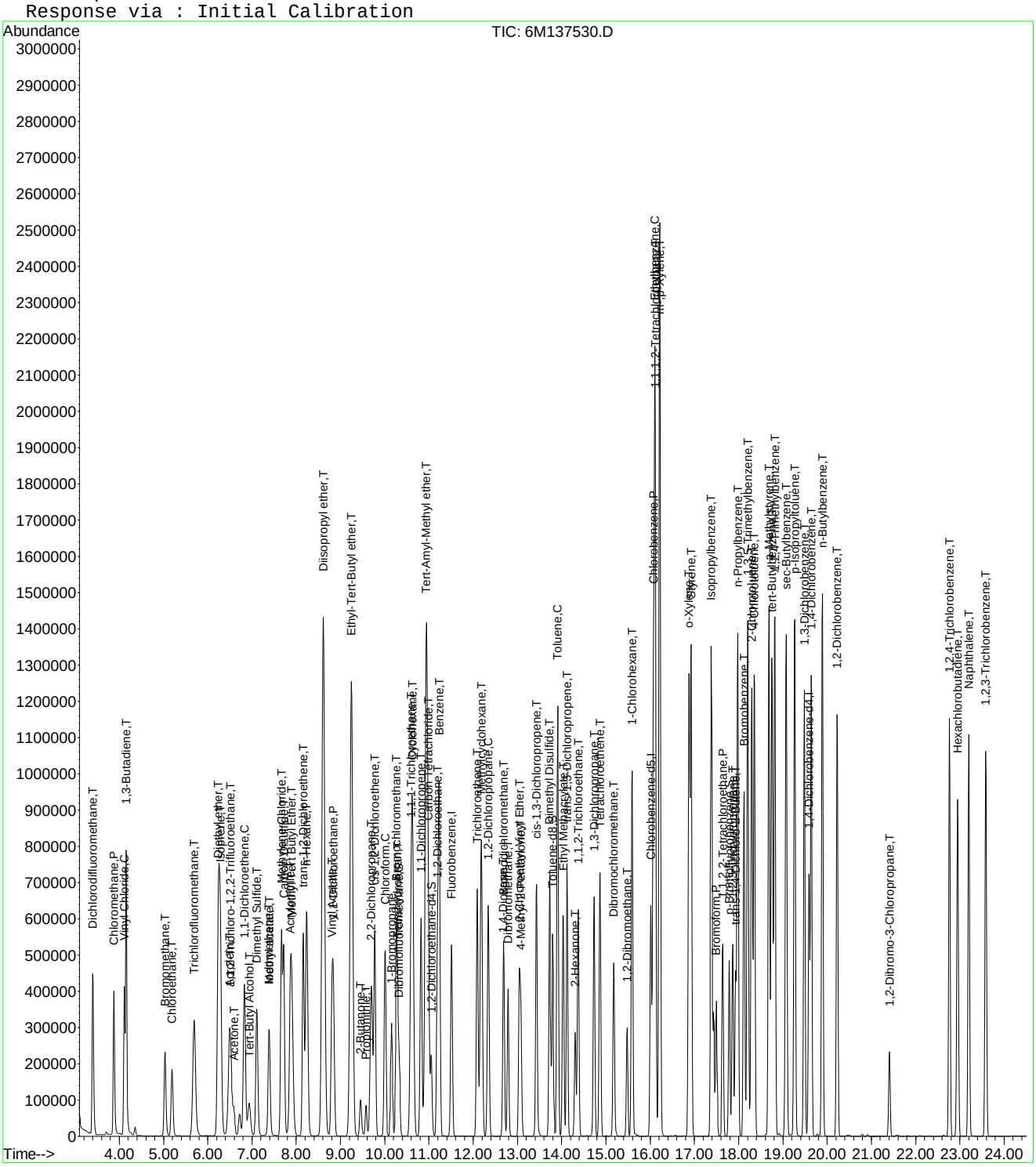

6M137530.D 826_SL.M Mon Feb 29 16:01:43 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137531.D Vial: 10
Acq On : 26 Feb 2016 18:07 Operator: TMB
Sample : WG558920-10 200ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:43 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	661999	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	479329	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	273657	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	351336	98.9344 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 197.86%#		
43) 1,2-Dichloroethane-d4	11.05	65	450300	97.6622 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 195.32%#		
58) Toluene-d8	13.80	98	1096959	96.2561 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 192.52%#		
80) p-Bromofluorobenzene	17.79	95	487968	97.0790 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 194.16%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	1228760	202.1049 ug/L	98
3) Chloromethane	3.88	50	1125279	177.6118 ug/L	98
4) Vinyl Chloride	4.12	62	989076	193.9570 ug/L	97
5) 1,3-Butadiene	4.16	54	745589	175.7303 ug/L	94
6) Bromomethane	5.03	94	548799	201.8852 ug/L	100
7) Chloroethane	5.19	64	579871	200.5435 ug/L	96
8) Trichlorofluoromethane	5.69	101	1297014	189.2858 ug/L	100
9) Diethyl ether	6.23	59	1563	0.4958 ug/L #	49
10) Isoprene	6.27	67	894422	200.3686 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	649915	198.7121 ug/L	93
13) Acetone	6.59	43	290441	205.4763 ug/L	99
14) 1,1-Dichloroethene	6.83	61	1161250	200.4481 ug/L	92
15) Tert-Butyl Alcohol	6.83	59	39858	73.7343 ug/L #	57
16) Dimethyl Sulfide	7.11	62	576142	204.9817 ug/L	92
17) Iodomethane	7.38	142	559892	205.0669 ug/L	91
18) Methyl acetate	7.39	43	775842	192.7107 ug/L	97
19) Methylene Chloride	7.67	84	681801	195.4170 ug/L	78
20) Carbon Disulfide	7.72	76	2184454	197.0763 ug/L	98
21) Acrylonitrile	7.90	53	25391	15.3457 ug/L #	34
22) Methyl Tert Butyl Ether	7.90	73	2079733	208.7322 ug/L	92
23) trans-1,2-Dichloroethene	8.16	96	635434	198.5489 ug/L	86
24) n-Hexane	8.23	57	1159756	199.5603 ug/L	99
25) Diisopropyl ether	8.63	45	8975	0.5957 ug/L #	37
26) Vinyl Acetate	8.80	43	1656751	212.7131 ug/L	98
27) 1,1-Dichloroethane	8.83	63	1360017	197.1051 ug/L	97
28) Ethyl-Tert-Butyl ether	9.23	59	4690	0.3884 ug/L #	76
29) 2-Butanone	9.45	43	450489	196.8688 ug/L	97
30) Propionitrile	9.59	54	193	0.3047 ug/L #	55
31) 2,2-Dichloropropane	9.69	77	1084788	195.8637 ug/L	97
32) cis-1,2-Dichloroethene	9.77	96	711282	199.0746 ug/L	99
33) Chloroform	10.00	83	1259701	195.4845 ug/L	96
34) 1-Bromopropane	10.16	122	101190	206.5710 ug/L	98
35) Bromochloromethane	10.26	130	430294	204.9658 ug/L	100
36) Tetrahydrofuran	10.31	42	4560	0.8620 ug/L #	82
38) 1,1,1-Trichloroethane	10.60	97	1139307	200.1621 ug/L	98
39) Cyclohexane	10.63	56	1322081	204.8363 ug/L	90
40) 1,1-Dichloropropene	10.83	75	913448	199.2765 ug/L	99
41) Tert-Amyl-Methyl ether	10.93	73	3689	0.3851 ug/L #	57
42) Carbon Tetrachloride	10.99	117	1067649	200.7466 ug/L	97
45) 1,2-Dichloroethane	11.19	62	1098127	199.6582 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M137531.D 826_SL.M Mon Feb 29 16:01:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137531.D Vial: 10
Acq On : 26 Feb 2016 18:07 Operator: TMB
Sample : WG558920-10 200ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:43 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
46)	Benzene	11.23	78	2576436	186.8313 ug/L	90
47)	Trichloroethene	12.09	130	648704	199.1220 ug/L	90
48)	Methylcyclohexane	12.18	83	1075003	204.1184 ug/L	87
49)	1,2-Dichloropropane	12.34	63	757110	204.0468 ug/L	100
50)	1,4-Dioxane	12.68	88	863	47.3107 ug/L #	17
51)	Bromodichloromethane	12.68	83	1017483	208.9621 ug/L	97
52)	Dibromomethane	12.79	93	451601	208.0889 ug/L	97
53)	2-Chloroethyl Vinyl Ether	13.03	63	470311	230.4481 ug/L	98
54)	4-Methyl-2-Pentanone	13.07	58	332135	214.9265 ug/L	95
55)	cis-1,3-Dichloropropene	13.43	75	1150962	214.5407 ug/L	96
56)	Dimethyl Disulfide	13.73	79	648612	239.7166 ug/L	96
59)	Toluene	13.91	91	2588299	190.8923 ug/L	99
60)	Ethyl Methacrylate	14.03	69	978791	225.2947 ug/L	94
62)	trans-1,3-Dichloropropene	14.12	75	1110336	212.9604 ug/L	98
63)	1,1,2-Trichloroethane	14.38	97	578586	204.1568 ug/L	99
64)	2-Hexanone	14.31	43	689071	213.0784 ug/L	99
65)	1,3-Dichloropropane	14.74	76	1034423	201.3815 ug/L	93
66)	Tetrachloroethene	14.87	166	644718	192.7530 ug/L	97
67)	Dibromochloromethane	15.18	129	780769	211.8317 ug/L	100
68)	1,2-Dibromoethane	15.48	107	610277	210.5616 ug/L	98
69)	1-Chlorohexane	15.59	91	900931	213.9661 ug/L	86
70)	Chlorobenzene	16.07	112	1706160	195.7904 ug/L #	68
71)	1,1,1,2-Tetrachloroethane	16.11	131	721225	206.1264 ug/L	97
72)	Ethylbenzene	16.11	106	946980	203.0736 ug/L	98
73)	m-,p-Xylene	16.22	106	2242794	393.0696 ug/L	97
74)	o-Xylene	16.87	106	1130903	210.4315 ug/L	95
75)	Styrene	16.92	104	1988734	217.4182 ug/L	93
76)	Bromoform	17.49	173	561872	215.9030 ug/L	99
77)	Isopropylbenzene	17.38	105	2989967	206.9652 ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.64	83	859540	201.0666 ug/L	95
81)	1,2,3-Trichloropropane	17.87	110	265884	203.1382 ug/L	89
82)	trans-1,4-Dichloro-2-Buten	17.93	53	340440	215.7181 ug/L	90
83)	n-Propylbenzene	17.98	91	3639812	195.8513 ug/L	98
84)	Bromobenzene	18.13	156	802539	198.6628 ug/L	99
85)	1,3,5-Trimethylbenzene	18.21	105	2665531	201.5000 ug/L	96
86)	2-Chlorotoluene	18.30	91	2450953	197.5855 ug/L	97
87)	4-Chlorotoluene	18.35	91	2149568	189.5191 ug/L	97
88)	a-Methylstyrene	18.69	118	1416560	220.5099 ug/L	98
89)	tert-Butylbenzene	18.75	134	559469	202.9400 ug/L	85
90)	1,2,4-Trimethylbenzene	18.82	105	2775173	199.4822 ug/L	81
91)	sec-Butylbenzene	19.08	105	3369131	198.8771 ug/L	100
92)	p-Isopropyltoluene	19.26	119	2833911	202.7621 ug/L	99
93)	1,3-Dichlorobenzene	19.49	146	1523154	194.8646 ug/L	95
94)	1,4-Dichlorobenzene	19.64	146	1521474	191.2260 ug/L	97
95)	n-Butylbenzene	19.89	91	2819417	200.5655 ug/L	98
96)	1,2-Dichlorobenzene	20.22	146	1485290	197.4738 ug/L	95
97)	1,2-Dibromo-3-Chloropropan	21.41	75	195547	206.7378 ug/L	89
98)	1,2,4-Trichlorobenzene	22.76	180	1054519	193.9351 ug/L	98
99)	Hexachlorobutadiene	22.95	225	597195	192.0469 ug/L	99
100)	Naphthalene	23.20	128	2579088	206.3237 ug/L	99
101)	1,2,3-Trichlorobenzene	23.58	180	1038439	193.9482 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M137531.D 826_SL.M Mon Feb 29 16:01:43 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137531.D Vial: 10
Acq On : 26 Feb 2016 18:07 Operator: TMB
Sample : WG558920-10 200ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

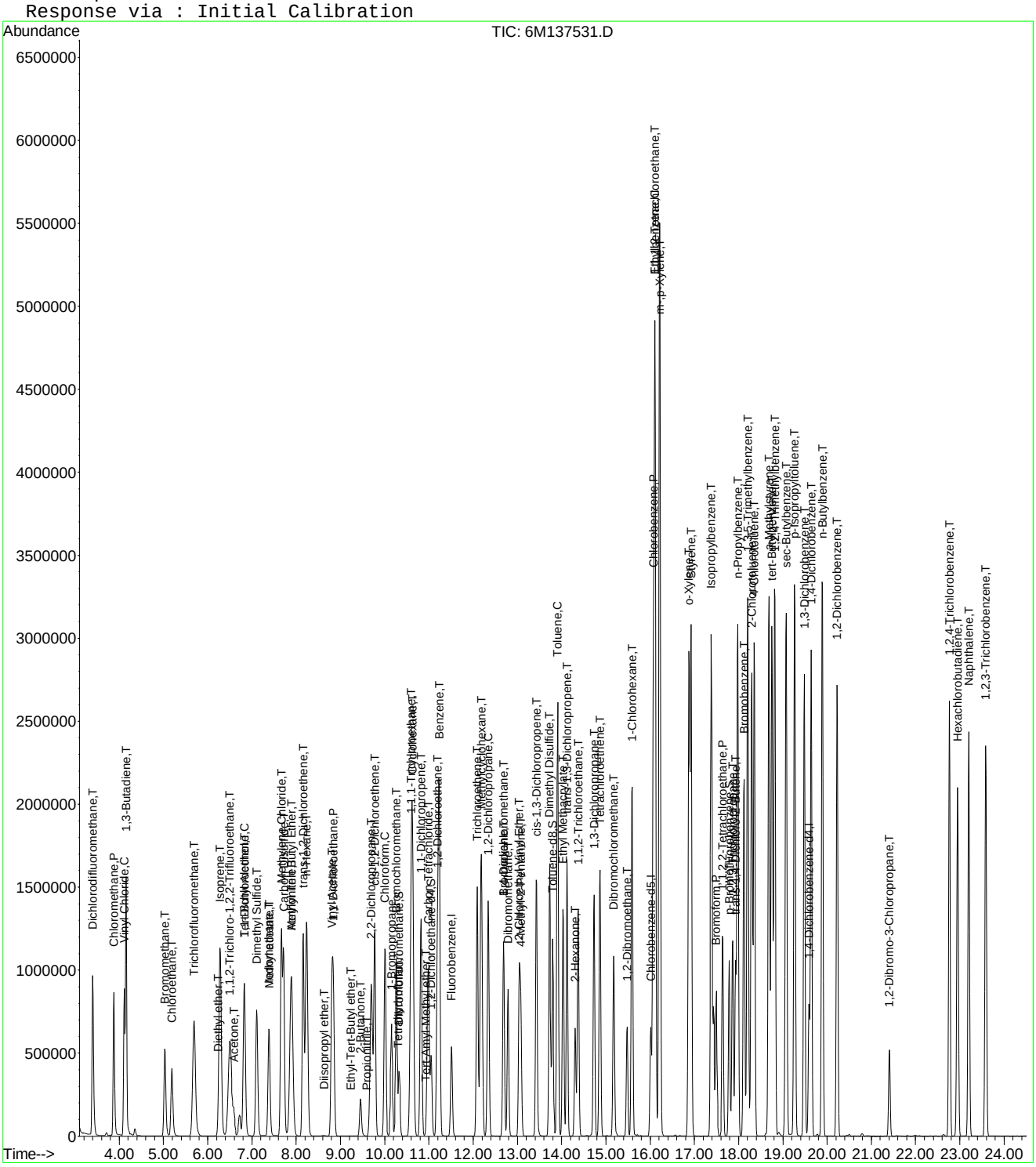

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137532.D Vial: 11
Acq On : 26 Feb 2016 18:39 Operator: TMB
Sample : WG558920-11 300ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:43 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	707233	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	525178	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	308135	50.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.33	111	555974	146.5460 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 293.10%#		
43) 1,2-Dichloroethane-d4	11.05	65	713394	144.8268 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 289.66%#		
58) Toluene-d8	13.80	98	1741152	139.4446 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 278.88%#		
80) p-Bromofluorobenzene	17.79	95	787625	139.1615 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 278.32%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	1997367	307.5122 ug/L	98
3) Chloromethane	3.88	50	1848014	273.0309 ug/L	98
4) Vinyl Chloride	4.11	62	1515327	278.1486 ug/L	97
5) 1,3-Butadiene	4.15	54	1176840	259.6328 ug/L	94
6) Bromomethane	5.03	94	924558	318.3612 ug/L	100
7) Chloroethane	5.18	64	952580	308.3709 ug/L	96
8) Trichlorofluoromethane	5.68	101	2124957	290.2808 ug/L	99
9) Diethyl ether	6.23	59	1011802	300.4509 ug/L	94
10) Isoprene	6.27	67	1489357	312.3064 ug/L	86
11) Acrolein	6.49	56	100305	156.8389 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	1067610	305.5451 ug/L	94
13) Acetone	6.59	43	448789	299.1551 ug/L	99
14) 1,1-Dichloroethene	6.82	61	1895304	306.2315 ug/L	92
15) Tert-Butyl Alcohol	6.95	59	370925	642.2954 ug/L	99
16) Dimethyl Sulfide	7.11	62	950681	316.6032 ug/L	94
17) Iodomethane	7.38	142	877751	298.6036 ug/L	91
18) Methyl acetate	7.40	43	1274555	296.3371 ug/L	98
19) Methylene Chloride	7.66	84	1102725	295.8467 ug/L	79
20) Carbon Disulfide	7.71	76	3583096	302.5832 ug/L	98
21) Acrylonitrile	7.86	53	296066	167.4906 ug/L	98
22) Methyl Tert Butyl Ether	7.90	73	3392519	318.7124 ug/L	92
23) trans-1,2-Dichloroethene	8.16	96	1037130	303.3368 ug/L	86
24) n-Hexane	8.23	57	1917686	308.8729 ug/L	99
25) Diisopropyl ether	8.61	45	4780310	296.9708 ug/L	96
26) Vinyl Acetate	8.80	43	2633859	316.5369 ug/L	99
27) 1,1-Dichloroethane	8.83	63	2210234	299.8379 ug/L	97
28) Ethyl-Tert-Butyl ether	9.24	59	3979837	308.4685 ug/L	96
29) 2-Butanone	9.45	43	727982	297.7887 ug/L	98
30) Propionitrile	9.58	54	209887	310.2156 ug/L	99
31) 2,2-Dichloropropane	9.69	77	1783568	301.4350 ug/L	96
32) cis-1,2-Dichloroethene	9.77	96	1159875	303.8646 ug/L	98
33) Chloroform	10.00	83	2040554	296.4065 ug/L	96
34) 1-Bromopropane	10.15	122	167090	319.2839 ug/L	98
35) Bromochloromethane	10.26	130	694571	309.6903 ug/L	99
36) Tetrahydrofuran	10.30	42	490636	303.4020 ug/L	96
38) 1,1,1-Trichloroethane	10.60	97	1858746	305.6722 ug/L	98
39) Cyclohexane	10.63	56	2201094	319.2142 ug/L	89
40) 1,1-Dichloropropene	10.83	75	1504422	307.2111 ug/L	99
41) Tert-Amyl-Methyl ether	10.94	73	3231746	315.7523 ug/L	93
42) Carbon Tetrachloride	10.99	117	1763858	310.4404 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M137532.D 826_SL.M Mon Feb 29 16:01:44 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137532.D Vial: 11
Acq On : 26 Feb 2016 18:39 Operator: TMB
Sample : WG558920-11 300ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:43 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45) 1,2-Dichloroethane	11.19	62	1778788	302.7287 ug/L	98
46) Benzene	11.23	78	4155462	282.0619 ug/L	90
47) Trichloroethene	12.09	130	1058154	304.0300 ug/L	90
48) Methylcyclohexane	12.18	83	1798917	319.7263 ug/L	88
49) 1,2-Dichloropropane	12.34	63	1232481	310.9180 ug/L	100
50) 1,4-Dioxane	12.67	88	32606	614.2458 ug/L	84
51) Bromodichloromethane	12.68	83	1653218	317.8084 ug/L	96
52) Dibromomethane	12.79	93	733410	316.3265 ug/L	98
53) 2-Chloroethyl Vinyl Ether	13.03	63	766489	351.5513 ug/L	97
54) 4-Methyl-2-Pentanone	13.07	58	543988	329.5031 ug/L	95
55) cis-1,3-Dichloropropene	13.42	75	1877090	327.5130 ug/L	95
56) Dimethyl Disulfide	13.73	79	1088350	376.5100 ug/L	96
59) Toluene	13.91	91	4193210	282.2590 ug/L	99
60) Ethyl Methacrylate	14.03	69	1632375	342.9321 ug/L	95
62) trans-1,3-Dichloropropene	14.12	75	1832609	320.8053 ug/L	98
63) 1,1,2-Trichloroethane	14.38	97	942438	303.5120 ug/L	98
64) 2-Hexanone	14.31	43	1154652	325.8770 ug/L	98
65) 1,3-Dichloropropane	14.74	76	1702509	302.5088 ug/L	94
66) Tetrachloroethene	14.87	166	1062175	289.8375 ug/L	97
67) Dibromochloromethane	15.18	129	1292929	320.1624 ug/L	100
68) 1,2-Dibromoethane	15.48	107	1008106	317.4575 ug/L	98
69) 1-Chlorohexane	15.59	91	1494127	323.8681 ug/L	86
70) Chlorobenzene	16.07	112	2773062	290.4413 ug/L #	66
71) 1,1,1,2-Tetrachloroethane	16.11	131	1196001	311.9762 ug/L	97
72) Ethylbenzene	16.11	106	1556732	304.6869 ug/L	100
73) m-,p-Xylene	16.22	106	3653753	584.4488 ug/L	99
74) o-Xylene	16.87	106	1861503	316.1378 ug/L	96
75) Styrene	16.92	104	3280614	327.3419 ug/L	91
76) Bromoform	17.49	173	968059	339.5083 ug/L	100
77) Isopropylbenzene	17.38	105	4859396	307.0014 ug/L	99
79) 1,1,2,2-Tetrachloroethane	17.64	83	1473362	306.0898 ug/L	95
81) 1,2,3-Trichloropropane	17.87	110	450710	305.8173 ug/L	97
82) trans-1,4-Dichloro-2-Buten	17.93	53	587175	330.4298 ug/L	92
83) n-Propylbenzene	17.98	91	5875551	280.7771 ug/L	99
84) Bromobenzene	18.13	156	1329308	292.2413 ug/L	98
85) 1,3,5-Trimethylbenzene	18.21	105	4394146	295.0064 ug/L	96
86) 2-Chlorotoluene	18.30	91	4027318	288.3378 ug/L	97
87) 4-Chlorotoluene	18.35	91	3574535	279.8896 ug/L	97
88) a-Methylstyrene	18.69	118	2387215	330.0275 ug/L	99
89) tert-Butylbenzene	18.75	134	927820	298.8965 ug/L	84
90) 1,2,4-Trimethylbenzene	18.82	105	4532965	289.3756 ug/L	82
91) sec-Butylbenzene	19.08	105	5502198	288.4488 ug/L	100
92) p-Isopropyltoluene	19.27	119	4664534	296.3974 ug/L	98
93) 1,3-Dichlorobenzene	19.49	146	2567994	291.7754 ug/L	95
94) 1,4-Dichlorobenzene	19.64	146	2568075	286.6525 ug/L	96
95) n-Butylbenzene	19.89	91	4738000	299.3349 ug/L	98
96) 1,2-Dichlorobenzene	20.22	146	2506554	295.9653 ug/L	94
97) 1,2-Dibromo-3-Chloropropan	21.41	75	337125	316.5375 ug/L	88
98) 1,2,4-Trichlorobenzene	22.76	180	1820641	297.3664 ug/L	98
99) Hexachlorobutadiene	22.95	225	1055064	301.3252 ug/L	99
100) Naphthalene	23.20	128	4412465	313.4943 ug/L	98
101) 1,2,3-Trichlorobenzene	23.58	180	1777074	294.7650 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M137532.D 826_SL.M Mon Feb 29 16:01:44 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137532.D Vial: 11
Acq On : 26 Feb 2016 18:39 Operator: TMB
Sample : WG558920-11 300ug/Kg STD 8260 Inst : HPMS6
Misc : 7,1 STD74897 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

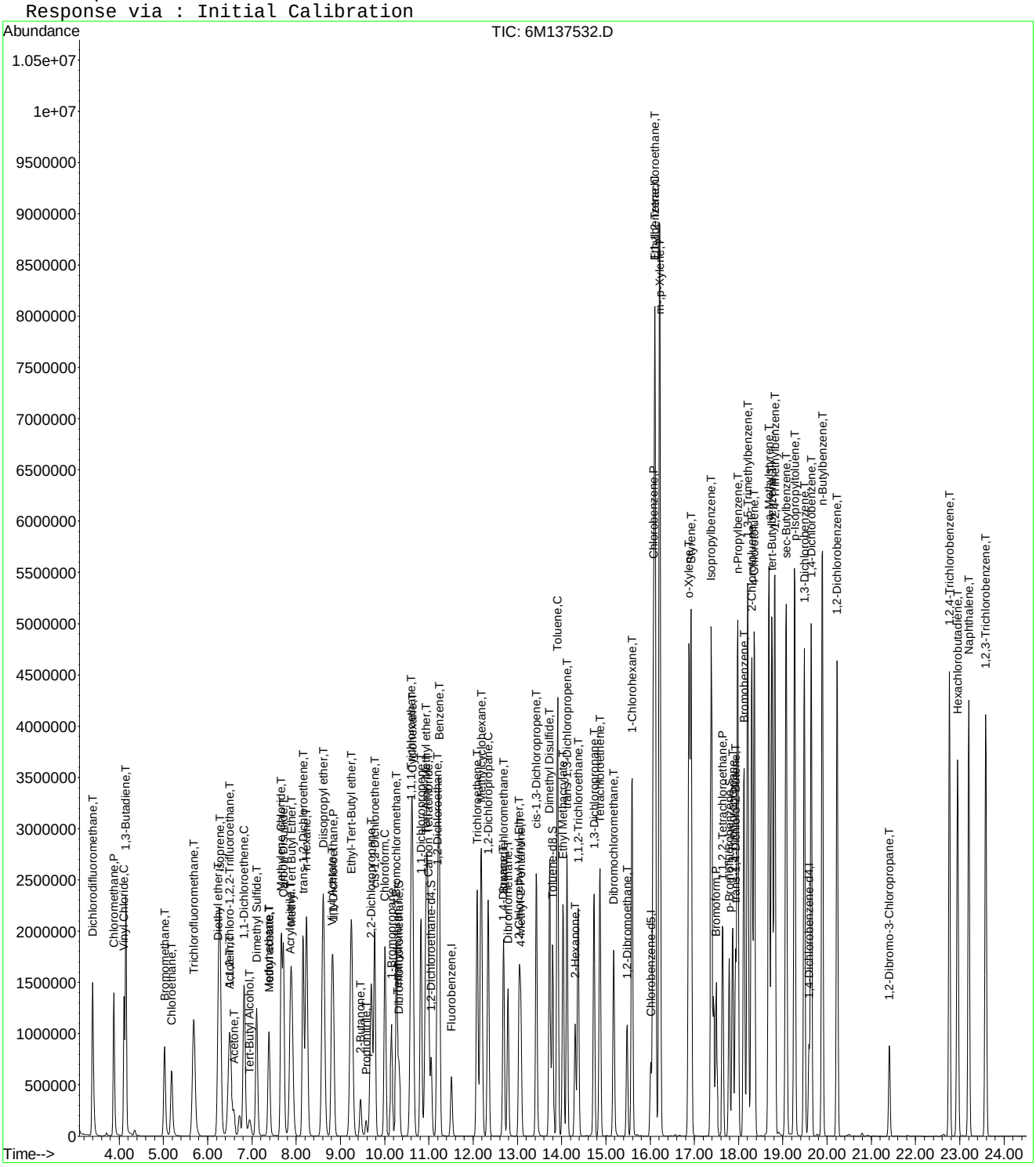

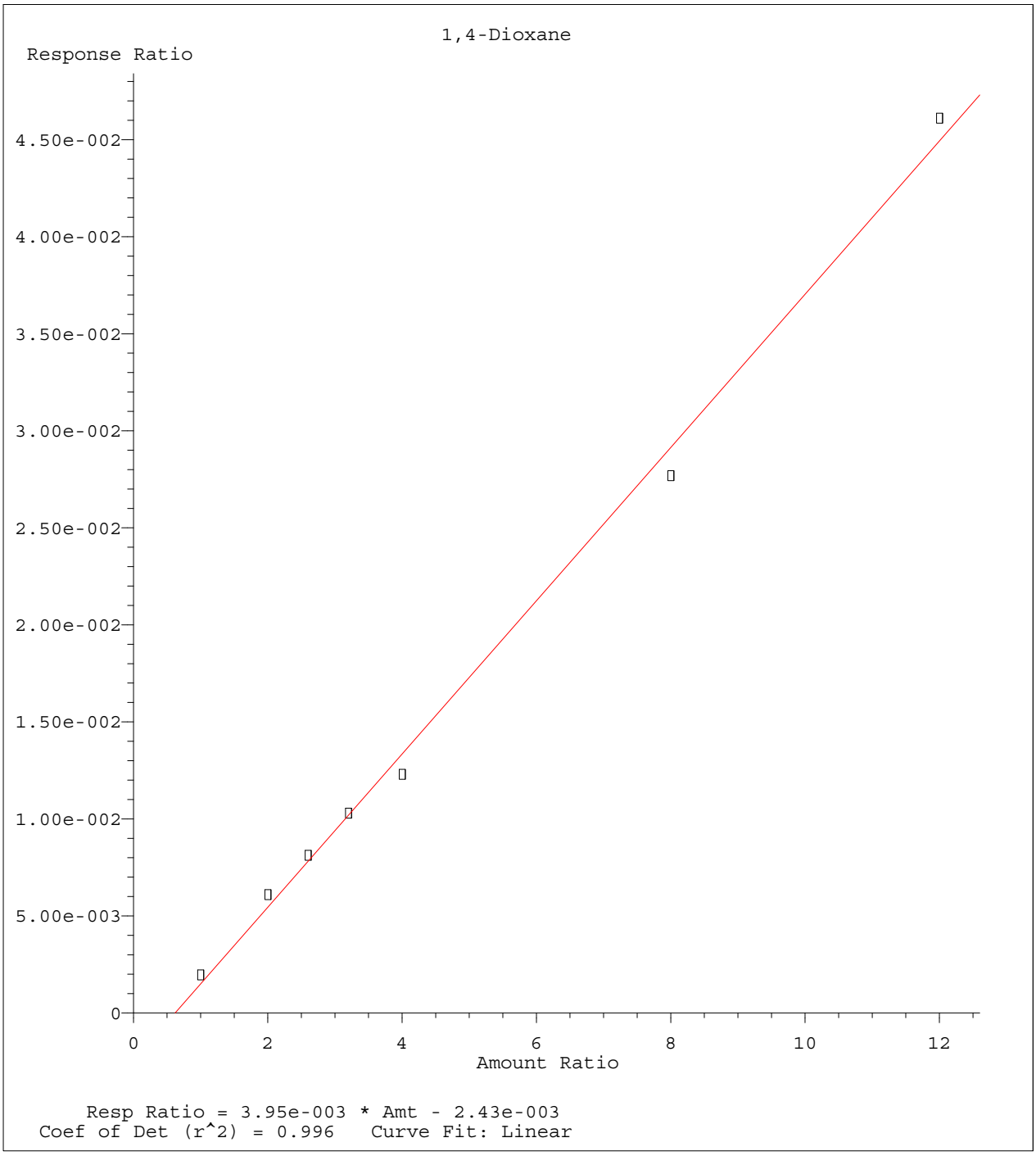

Method Name: C:\MSDCHEM\1\METHODS\826_SL.M
Calibration Table Last Updated: Mon Feb 29 08:51:12 2016

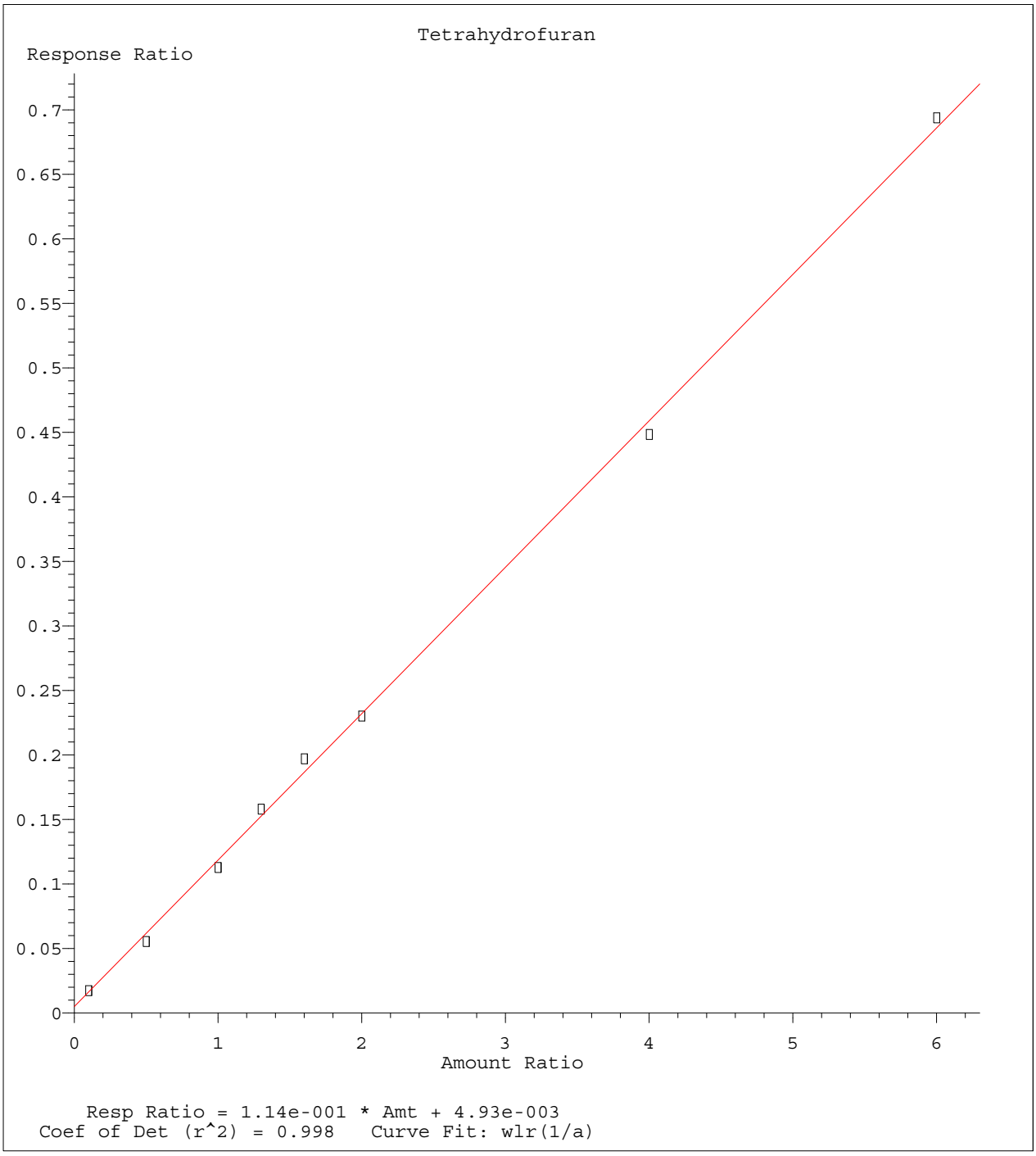

Method Name: C:\MSDCHEM\1\METHODS\826_SL.M
Calibration Table Last Updated: Mon Feb 29 08:51:12 2016

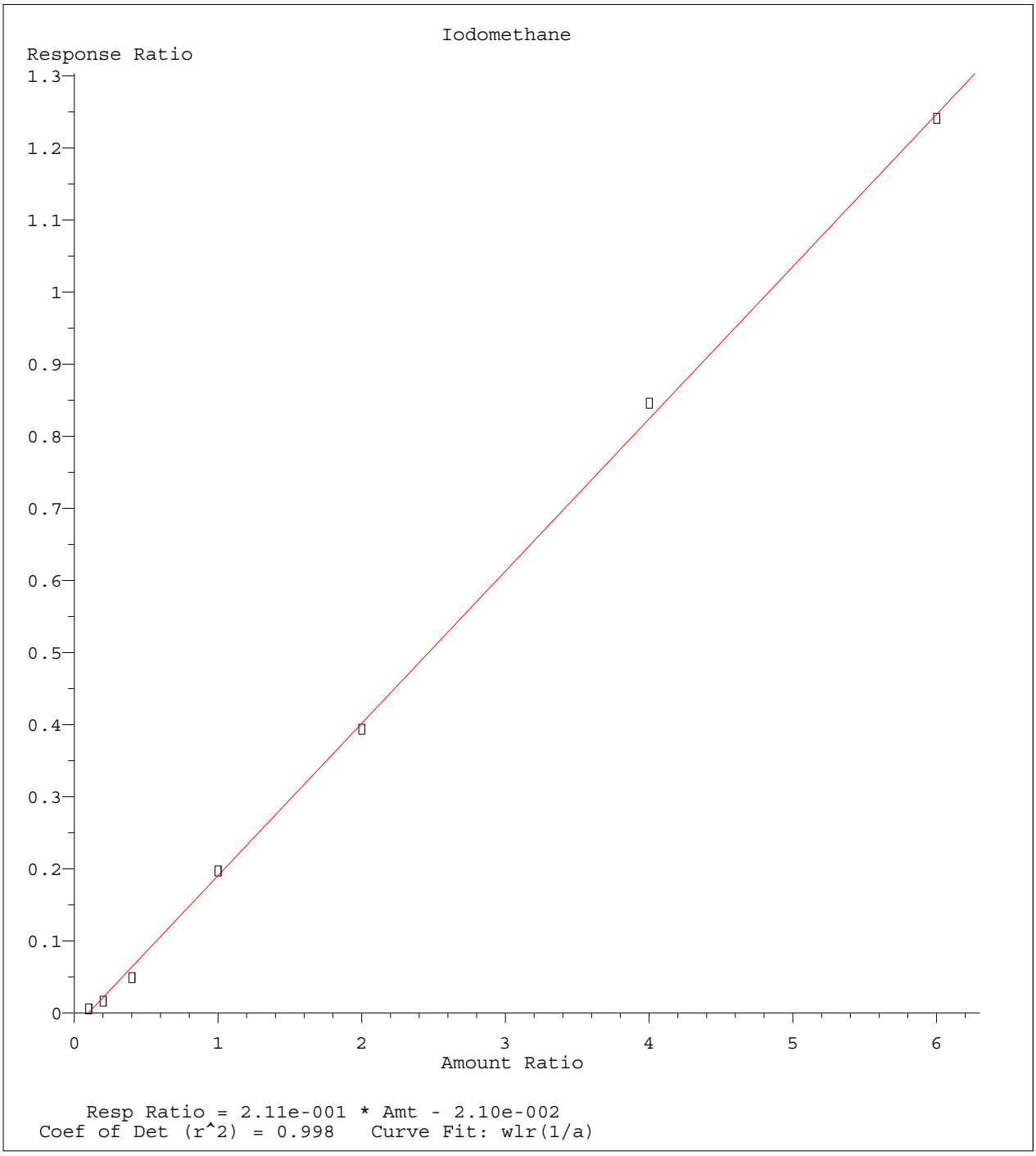

Method Name: C:\MSDCHEM\1\METHODS\826_SL.M
Calibration Table Last Updated: Mon Feb 29 08:51:12 2016

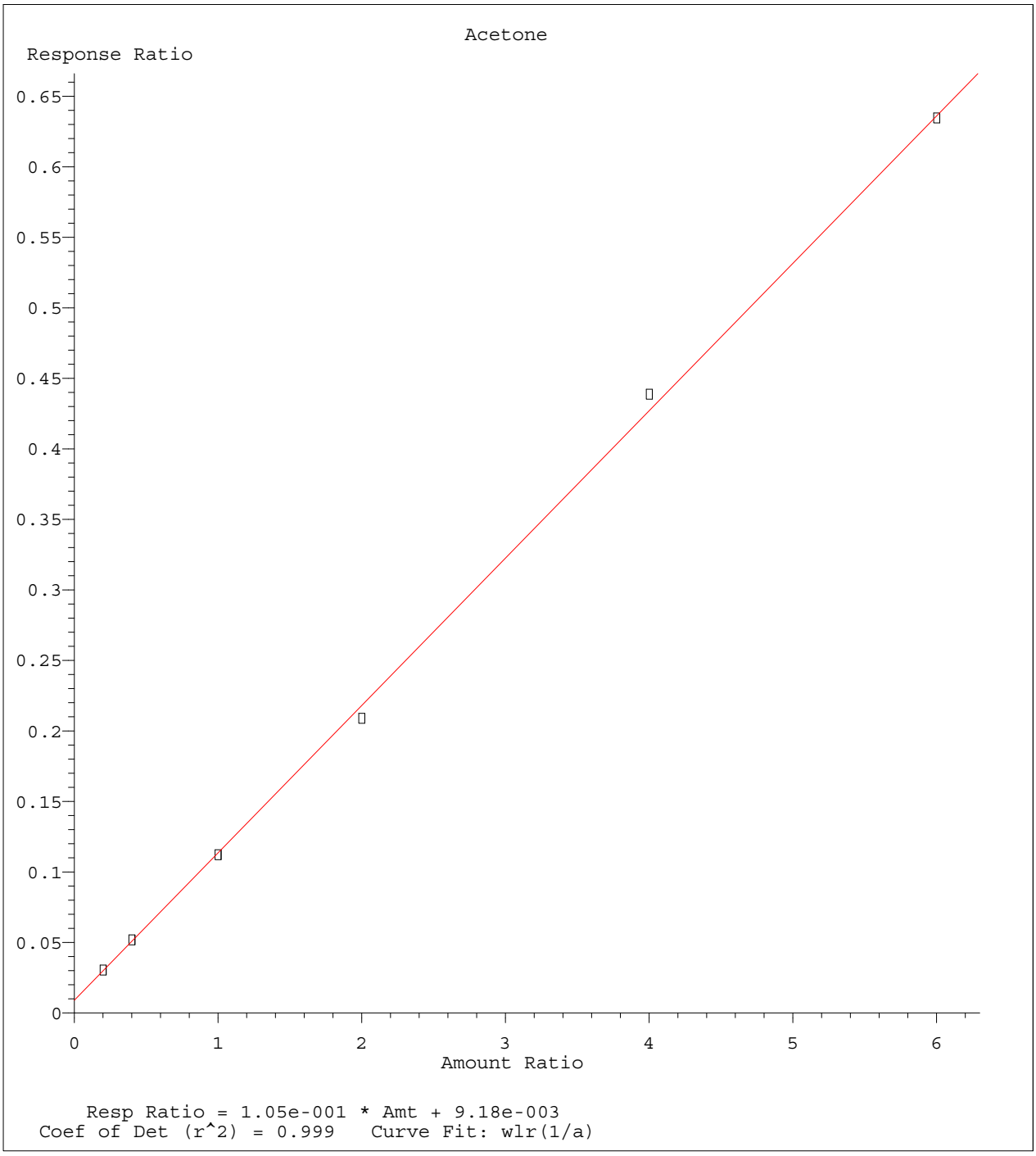

Method Name: C:\MSDCHEM\1\METHODS\826_SL.M
Calibration Table Last Updated: Mon Feb 29 08:51:12 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:44 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	697242	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	504277	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	281494	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.32	111	83790	22.4022 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 44.80%#		
43) 1,2-Dichloroethane-d4	11.05	65	107686	22.1747 ug/L	-0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 44.34%#		
58) Toluene-d8	13.80	98	259069	21.6082 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 43.22%#		
80) p-Bromofluorobenzene	17.79	95	108251	20.9365 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 41.88%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.40	85	355154	55.4626 ug/L	99
3) Chloromethane	3.88	50	339693	50.9064 ug/L	98
4) Vinyl Chloride	4.11	62	232790	43.3425 ug/L	98
5) 1,3-Butadiene	4.16	54	191696	42.8977 ug/L	93
6) Bromomethane	5.02	94	167650	58.5556 ug/L	99
7) Chloroethane	5.19	64	172370	56.5995 ug/L	98
8) Trichlorofluoromethane	5.68	101	345771	47.9110 ug/L	99
9) Diethyl ether	6.24	59	244439	73.6254 ug/L	93
10) Isoprene	6.27	67	268171	57.0391 ug/L	88
11) Acrolein	6.48	56	38698	61.3760 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	185858	53.9539 ug/L	94
13) Acetone	6.60	43	77335	48.6644 ug/L	96
14) 1,1-Dichloroethene	6.83	61	315114	51.6437 ug/L	92
15) Tert-Butyl Alcohol	6.95	59	120780	212.1401 ug/L	97
16) Dimethyl Sulfide	7.11	62	234426	79.1891 ug/L	96
17) Iodomethane	7.38	142	96886	37.8412 ug/L	92
18) Methyl acetate	7.39	43	223958	52.8169 ug/L	96
19) Methylene Chloride	7.67	84	196184	53.3878 ug/L	82
20) Carbon Disulfide	7.71	76	518243	44.3914 ug/L	99
21) Acrylonitrile	7.86	53	88595	50.8382 ug/L	99
22) Methyl Tert Butyl Ether	7.89	73	557115	53.0885 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	181115	53.7310 ug/L	84
24) n-Hexane	8.23	57	293885	48.0130 ug/L	99
25) Diisopropyl ether	8.61	45	1440779	90.7892 ug/L	96
26) Vinyl Acetate	8.80	43	309031	37.6715 ug/L	98
27) 1,1-Dichloroethane	8.83	63	365886	50.3469 ug/L	98
28) Ethyl-Tert-Butyl ether	9.25	59	1142199	89.7979 ug/L	96
29) 2-Butanone	9.46	43	118678	49.2421 ug/L	97
30) Propionitrile	9.58	54	62654	93.9303 ug/L	99
31) 2,2-Dichloropropane	9.69	77	309886	53.1233 ug/L	95
32) cis-1,2-Dichloroethene	9.77	96	203750	54.1434 ug/L	96
33) Chloroform	10.01	83	344145	50.7061 ug/L	96
34) 1-Bromopropane	10.15	122	45722	88.6198 ug/L	99
35) Bromochloromethane	10.26	130	115189	52.0956 ug/L	100
36) Tetrahydrofuran	10.29	42	140281	86.4486 ug/L	95
38) 1,1,1-Trichloroethane	10.60	97	311688	51.9918 ug/L	98
39) Cyclohexane	10.63	56	356880	52.4982 ug/L	88
40) 1,1-Dichloropropene	10.82	75	254739	52.7645 ug/L	97
41) Tert-Amyl-Methyl ether	10.95	73	1007162	99.8131 ug/L	93
42) Carbon Tetrachloride	10.99	117	286624	51.1689 ug/L	96

(#) = qualifier out of range (m) = manual integration
6M137535.D 826_SL.M Mon Feb 29 16:01:45 2016 Page 1

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01:44 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.19	62	296979	51.2665 ug/L	98
46)	Benzene	11.23	78	732452	50.4293 ug/L	92
47)	Trichloroethene	12.09	130	187775	54.7248 ug/L	93
48)	Methylcyclohexane	12.18	83	293690	52.9463 ug/L	89
49)	1,2-Dichloropropane	12.33	63	215054	55.0291 ug/L	100
50)	1,4-Dioxane	12.67	88	9692	206.7214 ug/L	86
51)	Bromodichloromethane	12.68	83	264833	51.6400 ug/L	97
52)	Dibromomethane	12.78	93	115173	50.3870 ug/L	97
53)	2-Chloroethyl Vinyl Ether	13.04	63	118032	54.9113 ug/L	99
54)	4-Methyl-2-Pentanone	13.07	58	83435	51.2622 ug/L	92
55)	cis-1,3-Dichloropropene	13.43	75	332086	58.7723 ug/L	97
56)	Dimethyl Disulfide	13.72	79	160314	56.2546 ug/L	97
59)	Toluene	13.91	91	733544	51.4239 ug/L	99
60)	Ethyl Methacrylate	14.04	69	253929	55.5569 ug/L	99
62)	trans-1,3-Dichloropropene	14.12	75	289951	52.8608 ug/L	100
63)	1,1,2-Trichloroethane	14.38	97	158637	53.2065 ug/L	98
64)	2-Hexanone	14.31	43	174540	51.3021 ug/L	98
65)	1,3-Dichloropropane	14.73	76	296777	54.9182 ug/L	95
66)	Tetrachloroethene	14.87	166	179884	51.1197 ug/L	98
67)	Dibromochloromethane	15.17	129	201014	51.8393 ug/L	99
68)	1,2-Dibromoethane	15.48	107	163614	53.6583 ug/L	99
69)	1-Chlorohexane	15.59	91	237869	53.6977 ug/L	87
70)	Chlorobenzene	16.07	112	484642	52.8637 ug/L	70
71)	1,1,1,2-Tetrachloroethane	16.11	131	190856	51.8481 ug/L	98
72)	Ethylbenzene	16.10	106	257103	52.4064 ug/L	97
73)	m-,p-Xylene	16.22	106	631680	105.2305 ug/L	96
74)	o-Xylene	16.88	106	321591	56.8793 ug/L	96
75)	Styrene	16.92	104	532085	55.2923 ug/L	95
76)	Bromoform	17.49	173	134827	49.2451 ug/L	99
77)	Isopropylbenzene	17.38	105	829435	54.5730 ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.64	83	229283	52.1415 ug/L	96
81)	1,2,3-Trichloropropane	17.87	110	71564	53.1534 ug/L	99
82)	trans-1,4-Dichloro-2-Buten	17.93	53	68292	42.0681 ug/L	85
83)	n-Propylbenzene	17.98	91	1006100	52.6291 ug/L	98
84)	Bromobenzene	18.12	156	215387	51.8331 ug/L	99
85)	1,3,5-Trimethylbenzene	18.21	105	716527	52.6576 ug/L	95
86)	2-Chlorotoluene	18.30	91	664750	52.0974 ug/L	96
87)	4-Chlorotoluene	18.36	91	607350	52.0569 ug/L	97
88)	a-Methylstyrene	18.69	118	378204	57.2343 ug/L	98
89)	tert-Butylbenzene	18.76	134	150883	53.2071 ug/L	99
90)	1,2,4-Trimethylbenzene	18.82	105	731933	51.1473 ug/L	81
91)	sec-Butylbenzene	19.07	105	883157	50.6807 ug/L	100
92)	p-Isopropyltoluene	19.27	119	732050	50.9189 ug/L	99
93)	1,3-Dichlorobenzene	19.48	146	418127	52.0038 ug/L	96
94)	1,4-Dichlorobenzene	19.64	146	423834	51.7864 ug/L	98
95)	n-Butylbenzene	19.89	91	705101	48.7625 ug/L	98
96)	1,2-Dichlorobenzene	20.22	146	421505	54.4802 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	21.41	75	50722	52.1318 ug/L	89
98)	1,2,4-Trichlorobenzene	22.76	180	285471	51.0389 ug/L	97
99)	Hexachlorobutadiene	22.94	225	152283	47.6080 ug/L	99
100)	Naphthalene	23.20	128	640676	49.8263 ug/L	100
101)	1,2,3-Trichlorobenzene	23.59	180	280768	50.9788 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Feb 29 16:01 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Initial Calibration

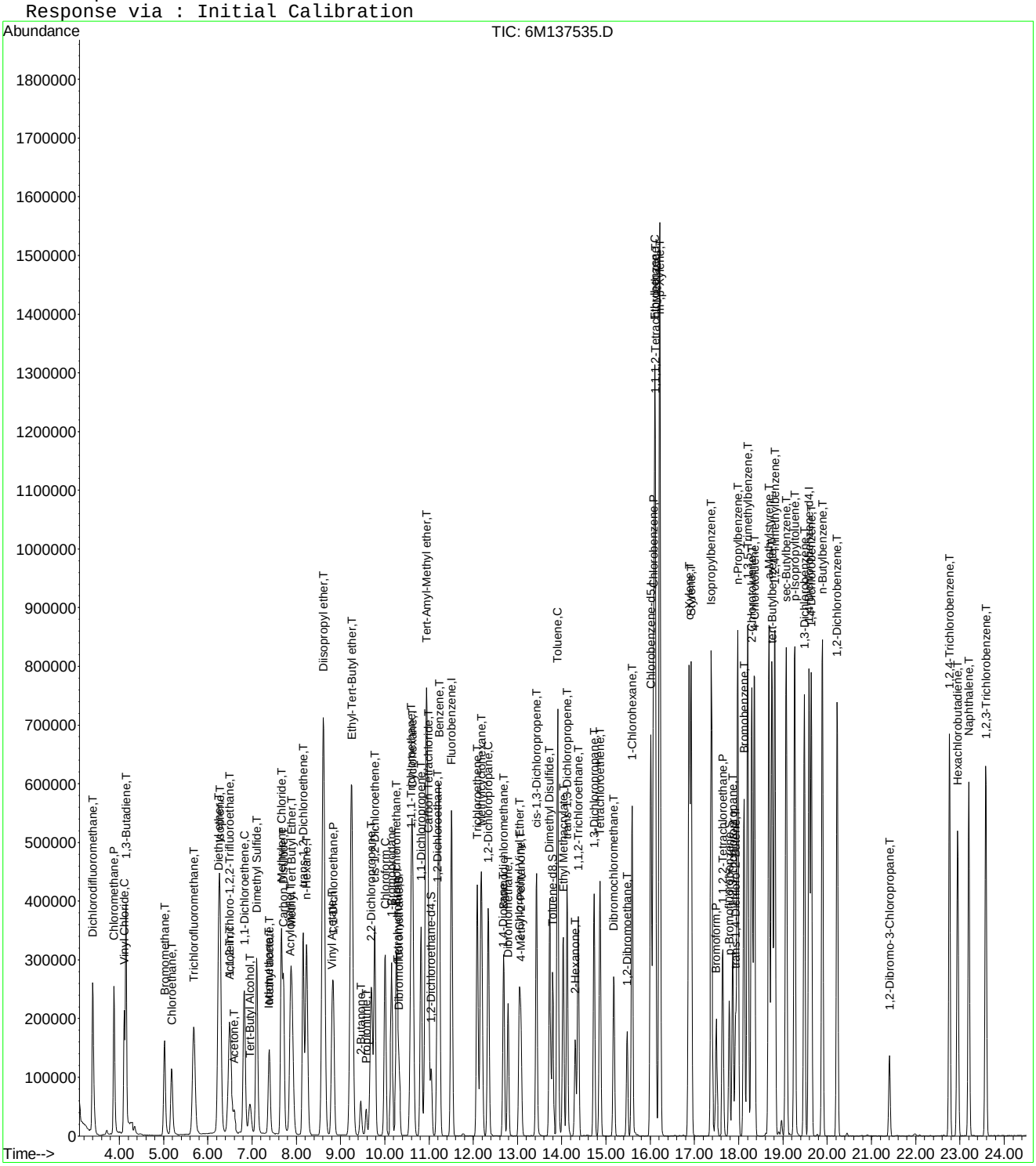

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	115	0.00
2	T	Dichlorodifluoromethane	50.0000	55.4626	-10.9	109	-0.01
3	P	Chloromethane	50.0000	50.9064	-1.8	111	0.00
4	C	Vinyl Chloride	50.0000	43.3425	13.3	89	0.00
5	T	1,3-Butadiene	50.0000	42.8977	14.2	92	-0.01
6	T	Bromomethane	50.0000	58.5556	-17.1	130	-0.01
7	T	Chloroethane	50.0000	56.5995	-13.2	116	0.00
8	T	Trichlorofluoromethane	50.0000	47.9111	4.2	102	-0.02
9	T	Diethyl ether	100.0000	73.6254	26.4#	86	0.00
10	T	Isoprene	50.0000	57.0391	-14.1	124	-0.01
11	T	Acrolein	50.0000	61.3760	-22.8	153	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	53.9539	-7.9	110	-0.01
13	T	Acetone	50.0000	48.6644	2.7	113	0.01
14	C	1,1-Dichloroethene	50.0000	51.6437	-3.3	107	0.00
15	T	Tert-Butyl Alcohol	200.0000	212.1401	-6.1	124	0.02
16	T	Dimethyl Sulfide	50.0000	79.1891	-58.4#	173	-0.01
17	T	Iodomethane	50.0000	37.8412	24.3	81	0.00
18	T	Methyl acetate	50.0000	52.8169	-5.6	120	0.00
19	T	Methylene Chloride	50.0000	53.3878	-6.8	112	0.00
20	T	Carbon Disulfide	50.0000	44.3914	11.2	98	-0.01
21	T	Acrylonitrile	50.0000	50.8382	-1.7	112	0.00
22	T	Methyl Tert Butyl Ether	50.0000	53.0885	-6.2	110	0.00
23	T	trans-1,2-Dichloroethene	50.0000	53.7311	-7.5	112	0.00
24	T	n-Hexane	50.0000	48.0130	4.0	104	-0.01
25	T	Diisopropyl ether	100.0000	90.7892	9.2	106	0.00
26	T	Vinyl Acetate	50.0000	37.6715	24.7	85	0.00
27	P	1,1-Dichloroethane	50.0000	50.3469	-0.7	106	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	89.7979	10.2	103	0.01
29	T	2-Butanone	50.0000	49.2421	1.5	115	0.00
30	T	Propionitrile	100.0000	93.9303	6.1	108	0.00
31	T	2,2-Dichloropropane	50.0000	53.1233	-6.2	112	0.00
32	T	cis-1,2-Dichloroethene	50.0000	54.1434	-8.3	116	0.00
33	C	Chloroform	50.0000	50.7061	-1.4	109	0.00
34		1-Bromopropane	50.0000	88.6198	-77.2#	186	-0.01
35	T	Bromochloromethane	50.0000	52.0956	-4.2	108	0.00
36	T	Tetrahydrofuran	100.0000	86.4486	13.6	100	0.00
37	S	Dibromofluoromethane	25.0000	22.4022	10.4	101	0.00
38	T	1,1,1-Trichloroethane	50.0000	51.9918	-4.0	108	0.00
39	T	Cyclohexane	50.0000	52.4982	-5.0	110	-0.01
40	T	1,1-Dichloropropene	50.0000	52.7645	-5.5	109	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	99.8131	0.2	115	0.00
42	T	Carbon Tetrachloride	50.0000	51.1689	-2.3	106	0.00
43	S	1,2-Dichloroethane-d4	25.0000	22.1747	11.3	100	-0.01
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	50.0000	51.2666	-2.5	109	0.00
46	T	Benzene	50.0000	50.4293	-0.9	112	0.00
47	T	Trichloroethene	50.0000	54.7248	-9.4	115	0.00
48	T	Methylcyclohexane	50.0000	52.9463	-5.9	111	0.00
49	C	1,2-Dichloropropane	50.0000	55.0291	-10.1	116	0.00
50	T	1,4-Dioxane	200.0000	206.7214	-3.4	130	0.00
51	T	Bromodichloromethane	50.0000	51.6400	-3.3	109	0.00
52	T	Dibromomethane	50.0000	50.3870	-0.8	103	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	54.9113	-9.8	118	0.00
54	T	4-Methyl-2-Pentanone	50.0000	51.2622	-2.5	117	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\022616\6M137535.D Vial: 14
Acq On : 26 Feb 2016 20:15 Operator: TMB
Sample : WG558920-12 50ug/Kg ALT SRC STD 8260 Inst : HPMS6
Misc : 7,1 STD74755 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B SOIL SOP:OVLMSV01 02/26/16 - HPMS6
Last Update : Mon Feb 29 15:59:52 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	58.7723	-17.5	120	0.00
56	T	Dimethyl Disulfide	50.0000	56.2546	-12.5	117	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	115	0.00
58	S	Toluene-d8	25.0000	21.6082	13.6	97	0.00
59	C	Toluene	50.0000	51.4239	-2.8	111	0.00
60	T	Ethyl Methacrylate	50.0000	55.5569	-11.1	115	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	50.0000	52.8608	-5.7	109	0.00
63	T	1,1,2-Trichloroethane	50.0000	53.2065	-6.4	113	0.00
64	T	2-Hexanone	50.0000	51.3021	-2.6	116	0.00
65	T	1,3-Dichloropropane	50.0000	54.9182	-9.8	116	0.00
66	T	Tetrachloroethene	50.0000	51.1197	-2.2	109	0.00
67	T	Dibromochloromethane	50.0000	51.8393	-3.7	107	0.00
68	T	1,2-Dibromoethane	50.0000	53.6583	-7.3	112	0.00
69	T	1-Chlorohexane	50.0000	53.6977	-7.4	112	0.00
70	P	Chlorobenzene	50.0000	52.8637	-5.7	115	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	51.8481	-3.7	110	0.00
72	C	Ethylbenzene	50.0000	52.4064	-4.8	110	0.00
73	T	m-,p-Xylene	100.0000	105.2305	-5.2	113	0.00
74	T	o-Xylene	50.0000	56.8792	-13.8	115	0.00
75	T	Styrene	50.0000	55.2923	-10.6	113	0.00
76	P	Bromoform	50.0000	49.2451	1.5	103	0.00
77	T	Isopropylbenzene	50.0000	54.5730	-9.1	112	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	118	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	52.1415	-4.3	115	0.00
80	S	p-Bromofluorobenzene	25.0000	20.9365	16.3	97	0.00
81	T	1,2,3-Trichloropropane	50.0000	53.1534	-6.3	117	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	42.0681	15.9	93	0.00
83	T	n-Propylbenzene	50.0000	52.6291	-5.3	111	0.00
84	T	Bromobenzene	50.0000	51.8331	-3.7	112	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	52.6576	-5.3	112	0.00
86	T	2-Chlorotoluene	50.0000	52.0974	-4.2	115	0.00
87	T	4-Chlorotoluene	50.0000	52.0569	-4.1	114	0.00
88	T	a-Methylstyrene	50.0000	57.2343	-14.5	123	0.00
89	T	tert-Butylbenzene	50.0000	53.2071	-6.4	112	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	51.1473	-2.3	110	0.00
91	T	sec-Butylbenzene	50.0000	50.6807	-1.4	107	0.00
92	T	p-Isopropyltoluene	50.0000	50.9189	-1.8	107	0.00
93	T	1,3-Dichlorobenzene	50.0000	52.0038	-4.0	114	0.00
94	T	1,4-Dichlorobenzene	50.0000	51.7864	-3.6	117	0.00
95	T	n-Butylbenzene	50.0000	48.7625	2.5	104	0.00
96	T	1,2-Dichlorobenzene	50.0000	54.4802	-9.0	120	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	52.1318	-4.3	117	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	51.0389	-2.1	109	0.00
99	T	Hexachlorobutadiene	50.0000	47.6080	4.8	101	-0.01
100	T	Naphthalene	50.0000	49.8263	0.3	104	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	50.9788	-2.0	108	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M137535.D 826_SL.M Mon Feb 29 16:03:13 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\050716\6M139118.D Vial: 2
Acq On : 7 May 2016 12:55 Operator: TMB
Sample : WG567937-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75976 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 07 13:22:50 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	714376	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	523600	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	283697	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	187470	48.9200 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.84%		
43) 1,2-Dichloroethane-d4	11.05	65	238636	47.9613 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.92%		
58) Toluene-d8	13.80	98	640907	51.4834 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 102.96%		
80) p-Bromofluorobenzene	17.79	95	267479	51.3305 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 102.66%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	310951	47.3950 ug/L	99
3) Chloromethane	3.88	50	322262	47.1358 ug/L	96
4) Vinyl Chloride	4.12	62	260456	47.3304 ug/L	98
5) 1,3-Butadiene	4.17	54	147198	32.1499 ug/L	93
6) Bromomethane	5.04	94	153969	52.4874 ug/L	100
7) Chloroethane	5.20	64	164341	52.6688 ug/L	98
8) Trichlorofluoromethane	5.70	101	382716	51.7583 ug/L	99
9) Diethyl ether	6.24	59	363678	106.9130 ug/L	95
10) Isoprene	6.28	67	245883	51.0442 ug/L	89
11) Acrolein	6.49	56	36210	56.0526 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.51	101	201749	57.1623 ug/L	95
13) Acetone	6.60	43	89293	55.3990 ug/L	97
14) 1,1-Dichloroethene	6.83	61	343834	54.9991 ug/L	93
15) Tert-Butyl Alcohol	6.94	59	128399	220.1132 ug/L	98
16) Dimethyl Sulfide	7.12	62	136695	45.0680 ug/L	98
17) Iodomethane	7.38	142	108948	41.0475 ug/L	93
18) Methyl acetate	7.39	43	250248	57.6015 ug/L	97
19) Methylene Chloride	7.67	84	198865	52.8194 ug/L	85
20) Carbon Disulfide	7.72	76	583264	48.7626 ug/L	99
21) Acrylonitrile	7.86	53	102086	57.1747 ug/L	100
22) Methyl Tert Butyl Ether	7.89	73	602214	56.0097 ug/L	94
23) trans-1,2-Dichloroethene	8.16	96	188623	54.6163 ug/L	87
24) n-Hexane	8.24	57	336896	53.7197 ug/L	99
25) Diisopropyl ether	8.61	45	1529577	94.0729 ug/L	96
26) Vinyl Acetate	8.80	43	400862	47.6939 ug/L	99
27) 1,1-Dichloroethane	8.83	63	397677	53.4090 ug/L	98
28) Ethyl-Tert-Butyl ether	9.24	59	1337188	102.6062 ug/L	95
29) 2-Butanone	9.46	43	141766	57.4110 ug/L	97
30) Propionitrile	9.58	54	72246	105.7128 ug/L	98
31) 2,2-Dichloropropane	9.70	77	335801	56.1852 ug/L	93
32) cis-1,2-Dichloroethene	9.77	96	206635	53.5931 ug/L	96
33) Chloroform	10.01	83	366000	52.6328 ug/L	97
34) 1-Bromopropane	10.16	122	33166	62.7416 ug/L	97
35) Bromochloromethane	10.26	130	120254	53.0819 ug/L	100
36) Tetrahydrofuran	10.29	42	186613	112.8907 ug/L	97
38) 1,1,1-Trichloroethane	10.60	97	337595	54.9626 ug/L	100
39) Cyclohexane	10.63	56	396025	56.8593 ug/L	88
40) 1,1-Dichloropropene	10.82	75	278214	56.2447 ug/L	98
41) Tert-Amyl-Methyl ether	10.95	73	1061481	102.6732 ug/L	91
42) Carbon Tetrachloride	10.99	117	321161	55.9594 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M139118.D 826_SL.M Sat May 07 13:22:58 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\050716\6M139118.D Vial: 2
Acq On : 7 May 2016 12:55 Operator: TMB
Sample : WG567937-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75976 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 07 13:22:50 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	11.19	62	313807	52.8722	ug/L		99
46)	Benzene	11.23	78	770547	51.7797	ug/L		92
47)	Trichloroethene	12.09	130	191228	54.3945	ug/L		93
48)	Methylcyclohexane	12.18	83	336258	59.1664	ug/L		88
49)	1,2-Dichloropropane	12.34	63	213758	53.3855	ug/L		99
50)	1,4-Dioxane	12.68	88	9107	192.1394	ug/L		86
51)	Bromodichloromethane	12.68	83	284147	54.0772	ug/L		96
52)	Dibromomethane	12.79	93	126342	53.9476	ug/L		97
53)	2-Chloroethyl Vinyl Ether	13.04	63	125940	57.1850	ug/L		97
54)	4-Methyl-2-Pentanone	13.07	58	107908	64.7082	ug/L		96
55)	cis-1,3-Dichloropropene	13.43	75	324636	56.0758	ug/L		97
56)	Dimethyl Disulfide	13.72	79	166625	57.0668	ug/L		96
59)	Toluene	13.91	91	780377	52.6881	ug/L		99
60)	Ethyl Methacrylate	14.04	69	287359	60.5508	ug/L		100
62)	trans-1,3-Dichloropropene	14.12	75	317829	55.8049	ug/L		98
63)	1,1,2-Trichloroethane	14.38	97	167629	54.1476	ug/L		99
64)	2-Hexanone	14.31	43	220373	62.3832	ug/L		96
65)	1,3-Dichloropropane	14.74	76	299421	53.3627	ug/L		96
66)	Tetrachloroethene	14.87	166	200835	54.9674	ug/L		98
67)	Dibromochloromethane	15.18	129	219560	54.5325	ug/L		100
68)	1,2-Dibromoethane	15.48	107	175798	55.5265	ug/L		99
69)	1-Chlorohexane	15.59	91	279770	60.8259	ug/L		85
70)	Chlorobenzene	16.07	112	500983	52.6294	ug/L	#	66
71)	1,1,1,2-Tetrachloroethane	16.11	131	203889	53.3446	ug/L		97
72)	Ethylbenzene	16.10	106	279282	54.8264	ug/L		98
73)	m-,p-Xylene	16.22	106	676708	108.5714	ug/L		95
74)	o-Xylene	16.88	106	332373	56.6168	ug/L		94
75)	Styrene	16.92	104	570057	57.0521	ug/L		93
76)	Bromoform	17.49	173	160317	56.3943	ug/L		99
77)	Isopropylbenzene	17.38	105	901034	57.0961	ug/L		98
79)	1,1,2,2-Tetrachloroethane	17.65	83	260798	58.8478	ug/L		95
81)	1,2,3-Trichloropropane	17.87	110	80964	59.6682	ug/L		97
82)	trans-1,4-Dichloro-2-Buten	17.93	53	100528	61.4448	ug/L		90
83)	n-Propylbenzene	17.98	91	1099866	57.0873	ug/L		98
84)	Bromobenzene	18.13	156	227765	54.3863	ug/L		98
85)	1,3,5-Trimethylbenzene	18.21	105	783796	57.1539	ug/L		95
86)	2-Chlorotoluene	18.30	91	716728	55.7348	ug/L		97
87)	4-Chlorotoluene	18.35	91	650018	55.2814	ug/L		96
88)	a-Methylstyrene	18.69	118	397598	59.7020	ug/L		98
89)	tert-Butylbenzene	18.76	134	158945	55.6148	ug/L		90
90)	1,2,4-Trimethylbenzene	18.82	105	812014	56.3027	ug/L		81
91)	sec-Butylbenzene	19.08	105	1003021	57.1122	ug/L		99
92)	p-Isopropyltoluene	19.27	119	844221	58.2651	ug/L		100
93)	1,3-Dichlorobenzene	19.48	146	442049	54.5521	ug/L		95
94)	1,4-Dichlorobenzene	19.64	146	445409	53.9999	ug/L		97
95)	n-Butylbenzene	19.89	91	834285	57.2484	ug/L		98
96)	1,2-Dichlorobenzene	20.23	146	423229	54.2782	ug/L		95
97)	1,2-Dibromo-3-Chloropropan	21.41	75	62212	63.4446	ug/L		82
98)	1,2,4-Trichlorobenzene	22.76	180	317845	56.3857	ug/L		98
99)	Hexachlorobutadiene	22.96	225	185064	57.4070	ug/L		100
100)	Naphthalene	23.20	128	802508	61.9276	ug/L		100
101)	1,2,3-Trichlorobenzene	23.59	180	306567	55.2309	ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\050716\6M139118.D Vial: 2
Acq On : 7 May 2016 12:55 Operator: TMB
Sample : WG567937-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75976 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 7 13:22 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

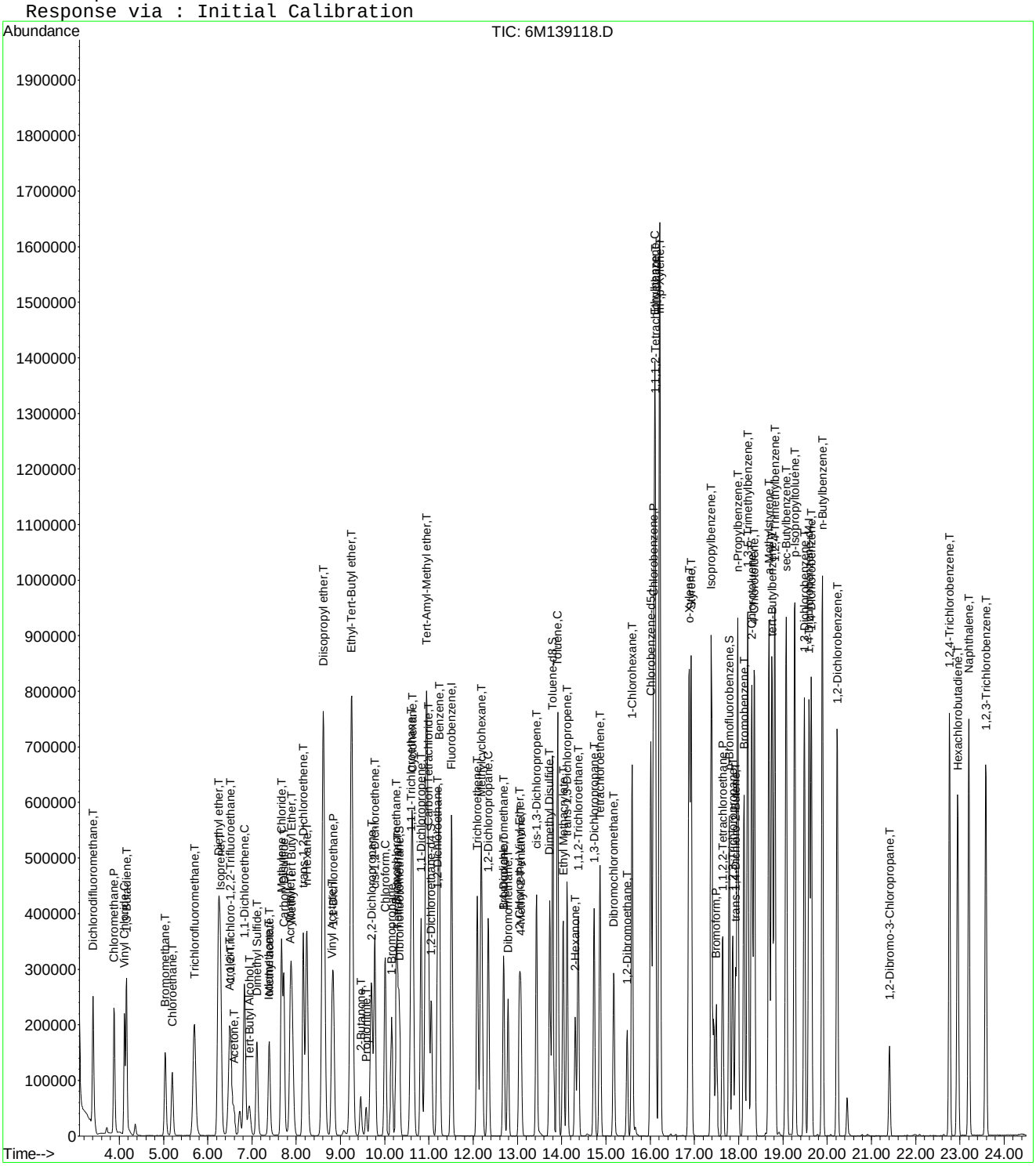

6M139118.D 826_SL.M Sat May 07 13:23:00 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\050716\6M139118.D Vial: 2
Acq On : 7 May 2016 12:55 Operator: TMB
Sample : WG567937-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75976 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	118	0.00
2	T	Dichlorodifluoromethane	0.4592	0.4353	5.2	95	0.00
3	P	Chloromethane	0.4785	0.4511	5.7	105	0.00
4	C	Vinyl Chloride	0.3852	0.3646	5.3	99	0.00
5	T	1,3-Butadiene	0.3205	0.2061	35.7#	70	0.00
6	T	Bromomethane	0.2053	0.2155	-5.0	119	0.00
7	T	Chloroethane	0.2184	0.2301	-5.3	111	0.01
8	T	Trichlorofluoromethane	0.5175	0.5357	-3.5	113	0.00
9	T	Diethyl ether	0.2381	0.2545	-6.9	128	0.00
10	T	Isoprene	0.3372	0.3442	-2.1	114	0.00
11	T	Acrolein	0.0452	0.0507	-12.1	143	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2470	0.2824	-14.3	120	0.00
13	T	Acetone	0.1189	0.1250	-5.1	131	0.01
14	C	1,1-Dichloroethene	0.4376	0.4813	-10.0	116	0.00
15	T	Tert-Butyl Alcohol	0.0408	0.0449	-10.0	132	0.01
16	T	Dimethyl Sulfide	0.2123	0.1913	9.9	101	0.00
17	T	Iodomethane	0.1531	0.1525	0.4	91	0.00
18	T	Methyl acetate	0.3041	0.3503	-15.2	134	0.00
19	T	Methylene Chloride	0.2635	0.2784	-5.6	114	0.00
20	T	Carbon Disulfide	0.8372	0.8165	2.5	110	0.00
21	T	Acrylonitrile	0.1250	0.1429	-14.3	129	0.00
22	T	Methyl Tert Butyl Ether	0.7525	0.8430	-12.0	119	0.00
23	T	trans-1,2-Dichloroethene	0.2417	0.2640	-9.2	117	0.00
24	T	n-Hexane	0.4389	0.4716	-7.4	119	0.00
25	T	Diisopropyl ether	1.1380	1.0706	5.9	113	0.00
26	T	Vinyl Acetate	0.5883	0.5611	4.6	111	0.00
27	P	1,1-Dichloroethane	0.5212	0.5567	-6.8	115	0.00
28	T	Ethyl-Tert-Butyl ether	0.9121	0.9359	-2.6	121	0.00
29	T	2-Butanone	0.1728	0.1984	-14.8	138	0.01
30	T	Propionitrile	0.0478	0.0506	-5.7	125	0.00
31	T	2,2-Dichloropropane	0.4183	0.4701	-12.4	122	0.01
32	T	cis-1,2-Dichloroethene	0.2699	0.2893	-7.2	117	0.00
33	C	Chloroform	0.4867	0.5123	-5.3	116	0.00
34		1-Bromopropane	0.0370	0.0464	-25.5#	135	0.00
35	T	Bromochloromethane	0.1586	0.1683	-6.2	113	0.00
36	T	Tetrahydrofuran	0.1230	0.1306	-6.2	133	0.00
37	S	Dibromofluoromethane	0.2682	0.5249	-95.7#	227#	0.01
38	T	1,1,1-Trichloroethane	0.4299	0.4726	-9.9	117	0.00
39	T	Cyclohexane	0.4875	0.5544	-13.7	122	-0.01
40	T	1,1-Dichloropropene	0.3462	0.3895	-12.5	119	0.00
41	T	Tert-Amyl-Methyl ether	0.7236	0.7429	-2.7	121	0.01
42	T	Carbon Tetrachloride	0.4017	0.4496	-11.9	119	0.00
43	S	1,2-Dichloroethane-d4	0.3483	0.6681	-91.8#	223#	0.00
44		Heptane	0.0000	0.0000	0.0	0#	0.00
45	T	1,2-Dichloroethane	0.4154	0.4393	-5.7	115	0.00
46	T	Benzene	1.0416	1.0786	-3.6	118	0.00
47	T	Trichloroethene	0.2461	0.2677	-8.8	117	0.00
48	T	Methylcyclohexane	0.3978	0.4707	-18.3	127	0.00
49	C	1,2-Dichloropropane	0.2803	0.2992	-6.8	115	0.00
50	T	1,4-Dioxane	0.0031	0.0032	-2.9	122	0.01
51	T	Bromodichloromethane	0.3678	0.3978	-8.2	116	0.00
52	T	Dibromomethane	0.1639	0.1769	-7.9	113	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1541	0.1763	-14.4	126	0.00
54	T	4-Methyl-2-Pentanone	0.1167	0.1510	-29.4#	152#	0.00

(#) = Out of Range
6M139118.D 826_SL.M Sat May 07 13:24:50 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\050716\6M139118.D Vial: 2
Acq On : 7 May 2016 12:55 Operator: TMB
Sample : WG567937-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75976 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4052	0.4544	-12.2	118	0.00
56	T	Dimethyl Disulfide	0.2044	0.2333	-14.1	122	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	119	0.00
58	S	Toluene-d8	1.1888	2.4481	-105.9#	241#	0.00
59	C	Toluene	1.4144	1.4904	-5.4	118	0.00
60	T	Ethyl Methacrylate	0.4532	0.5488	-21.1	130	0.01
61		Paraldehyde	0.0000	0.0000	0.0	0#	-15.13#
62	T	trans-1,3-Dichloropropene	0.5439	0.6070	-11.6	120	0.00
63	T	1,1,2-Trichloroethane	0.2956	0.3201	-8.3	119	0.01
64	T	2-Hexanone	0.3373	0.4209	-24.8	147	0.00
65	T	1,3-Dichloropropane	0.5358	0.5718	-6.7	117	0.00
66	T	Tetrachloroethene	0.3489	0.3836	-9.9	121	0.00
67	T	Dibromochloromethane	0.3845	0.4193	-9.1	117	0.00
68	T	1,2-Dibromoethane	0.3023	0.3357	-11.1	120	0.00
69	T	1-Chlorohexane	0.4392	0.5343	-21.7	131	0.00
70	P	Chlorobenzene	0.9090	0.9568	-5.3	119	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3650	0.3894	-6.7	118	0.01
72	C	Ethylbenzene	0.4864	0.5334	-9.7	120	0.00
73	T	m-,p-Xylene	0.5952	0.6462	-8.6	121	0.00
74	T	o-Xylene	0.5606	0.6348	-13.2	119	0.00
75	T	Styrene	0.9542	1.0887	-14.1	121	0.00
76	P	Bromoform	0.2715	0.3062	-12.8	122	0.00
77	T	Isopropylbenzene	1.5070	1.7208	-14.2	122	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	119	0.00
79	P	1,1,2,2-Tetrachloroethane	0.7811	0.9193	-17.7	130	0.00
80	S	p-Bromofluorobenzene	0.9184	1.8857	-105.3#	239#	0.00
81	T	1,2,3-Trichloropropane	0.2392	0.2854	-19.3	132	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.2884	0.3544	-22.9	137	0.00
83	T	n-Propylbenzene	3.3956	3.8769	-14.2	122	0.00
84	T	Bromobenzene	0.7381	0.8028	-8.8	119	0.00
85	T	1,3,5-Trimethylbenzene	2.4170	2.7628	-14.3	122	0.00
86	T	2-Chlorotoluene	2.2664	2.5264	-11.5	124	0.00
87	T	4-Chlorotoluene	2.0723	2.2912	-10.6	122	0.00
88	T	a-Methylstyrene	1.1737	1.4015	-19.4	129	0.00
89	T	tert-Butylbenzene	0.5037	0.5603	-11.2	118	0.00
90	T	1,2,4-Trimethylbenzene	2.5419	2.8623	-12.6	122	0.00
91	T	sec-Butylbenzene	3.0953	3.5355	-14.2	122	0.00
92	T	p-Isopropyltoluene	2.5537	2.9758	-16.5	123	0.01
93	T	1,3-Dichlorobenzene	1.4282	1.5582	-9.1	121	0.00
94	T	1,4-Dichlorobenzene	1.4537	1.5700	-8.0	123	0.00
95	T	n-Butylbenzene	2.5684	2.9408	-14.5	123	0.00
96	T	1,2-Dichlorobenzene	1.3743	1.4918	-8.6	121	0.01
97	T	1,2-Dibromo-3-Chloropropane	0.1728	0.2193	-26.9#	143	0.00
98	T	1,2,4-Trichlorobenzene	0.9935	1.1204	-12.8	121	0.00
99	T	Hexachlorobutadiene	0.5682	0.6523	-14.8	123	0.00
100	T	Naphthalene	2.2839	2.8287	-23.9	130	0.00
101	T	1,2,3-Trichlorobenzene	0.9783	1.0806	-10.5	118	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M139118.D 826_SL.M Sat May 07 13:24:50 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\050716\6M139118.D Vial: 2
Acq On : 7 May 2016 12:55 Operator: TMB
Sample : WG567937-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75976 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	50.0000	50.0000	0.0	118	0.00
2	T	Dichlorodifluoromethane	50.0000	47.3950	5.2	95	0.00
3	P	Chloromethane	50.0000	47.1358	5.7	105	0.00
4	C	Vinyl Chloride	50.0000	47.3304	5.3	99	0.00
5	T	1,3-Butadiene	50.0000	32.1499	35.7#	70	0.00
6	T	Bromomethane	50.0000	52.4874	-5.0	119	0.00
7	T	Chloroethane	50.0000	52.6688	-5.3	111	0.01
8	T	Trichlorofluoromethane	50.0000	51.7584	-3.5	113	0.00
9	T	Diethyl ether	100.0000	106.9130	-6.9	128	0.00
10	T	Isoprene	50.0000	51.0442	-2.1	114	0.00
11	T	Acrolein	50.0000	56.0526	-12.1	143	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	57.1623	-14.3	120	0.00
13	T	Acetone	50.0000	55.3990	-10.8	131	0.01
14	C	1,1-Dichloroethene	50.0000	54.9991	-10.0	116	0.00
15	T	Tert-Butyl Alcohol	200.0000	220.1132	-10.1	132	0.01
16	T	Dimethyl Sulfide	50.0000	45.0680	9.9	101	0.00
17	T	Iodomethane	50.0000	41.0475	17.9	91	0.00
18	T	Methyl acetate	50.0000	57.6015	-15.2	134	0.00
19	T	Methylene Chloride	50.0000	52.8194	-5.6	114	0.00
20	T	Carbon Disulfide	50.0000	48.7626	2.5	110	0.00
21	T	Acrylonitrile	50.0000	57.1747	-14.3	129	0.00
22	T	Methyl Tert Butyl Ether	50.0000	56.0097	-12.0	119	0.00
23	T	trans-1,2-Dichloroethene	50.0000	54.6163	-9.2	117	0.00
24	T	n-Hexane	50.0000	53.7197	-7.4	119	0.00
25	T	Diisopropyl ether	100.0000	94.0729	5.9	113	0.00
26	T	Vinyl Acetate	50.0000	47.6938	4.6	111	0.00
27	P	1,1-Dichloroethane	50.0000	53.4090	-6.8	115	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	102.6062	-2.6	121	0.00
29	T	2-Butanone	50.0000	57.4110	-14.8	138	0.01
30	T	Propionitrile	100.0000	105.7128	-5.7	125	0.00
31	T	2,2-Dichloropropane	50.0000	56.1852	-12.4	122	0.01
32	T	cis-1,2-Dichloroethene	50.0000	53.5930	-7.2	117	0.00
33	C	Chloroform	50.0000	52.6328	-5.3	116	0.00
34		1-Bromopropane	50.0000	62.7416	-25.5#	135	0.00
35	T	Bromochloromethane	50.0000	53.0819	-6.2	113	0.00
36	T	Tetrahydrofuran	100.0000	112.8906	-12.9	133	0.00
37	S	Dibromofluoromethane	25.0000	48.9200	-95.7#	227	0.01
38	T	1,1,1-Trichloroethane	50.0000	54.9626	-9.9	117	0.00
39	T	Cyclohexane	50.0000	56.8593	-13.7	122	-0.01
40	T	1,1-Dichloropropene	50.0000	56.2447	-12.5	119	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	102.6732	-2.7	121	0.01
42	T	Carbon Tetrachloride	50.0000	55.9594	-11.9	119	0.00
43	S	1,2-Dichloroethane-d4	25.0000	47.9613	-91.8#	223	0.00
44		Heptane	-1.0000	0.0000	0.0	0	0.00
45	T	1,2-Dichloroethane	50.0000	52.8722	-5.7	115	0.00
46	T	Benzene	50.0000	51.7798	-3.6	118	0.00
47	T	Trichloroethene	50.0000	54.3945	-8.8	117	0.00
48	T	Methylcyclohexane	50.0000	59.1664	-18.3	127	0.00
49	C	1,2-Dichloropropane	50.0000	53.3855	-6.8	115	0.00
50	T	1,4-Dioxane	200.0000	192.1394	3.9	122	0.01
51	T	Bromodichloromethane	50.0000	54.0772	-8.2	116	0.00
52	T	Dibromomethane	50.0000	53.9476	-7.9	113	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	57.1850	-14.4	126	0.00
54	T	4-Methyl-2-Pentanone	50.0000	64.7082	-29.4#	152	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\050716\6M139118.D Vial: 2
Acq On : 7 May 2016 12:55 Operator: TMB
Sample : WG567937-02 50ug/Kg CCV STD 8260 Inst : HPMS6
Misc : 7,1 STD75976 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	56.0758	-12.2	118	0.00
56	T	Dimethyl Disulfide	50.0000	57.0668	-14.1	122	0.00
57	I	Chlorobenzene-d5	50.0000	50.0000	0.0	119	0.00
58	S	Toluene-d8	25.0000	51.4834	-105.9#	241	0.00
59	C	Toluene	50.0000	52.6881	-5.4	118	0.00
60	T	Ethyl Methacrylate	50.0000	60.5508	-21.1	130	0.01
61		Paraldehyde	-1.0000	0.0000	0.0	0	-15.13#
62	T	trans-1,3-Dichloropropene	50.0000	55.8049	-11.6	120	0.00
63	T	1,1,2-Trichloroethane	50.0000	54.1476	-8.3	119	0.01
64	T	2-Hexanone	50.0000	62.3832	-24.8	147	0.00
65	T	1,3-Dichloropropane	50.0000	53.3627	-6.7	117	0.00
66	T	Tetrachloroethene	50.0000	54.9674	-9.9	121	0.00
67	T	Dibromochloromethane	50.0000	54.5326	-9.1	117	0.00
68	T	1,2-Dibromoethane	50.0000	55.5265	-11.1	120	0.00
69	T	1-Chlorohexane	50.0000	60.8259	-21.7	131	0.00
70	P	Chlorobenzene	50.0000	52.6294	-5.3	119	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	53.3446	-6.7	118	0.01
72	C	Ethylbenzene	50.0000	54.8264	-9.7	120	0.00
73	T	m-,p-Xylene	100.0000	108.5714	-8.6	121	0.00
74	T	o-Xylene	50.0000	56.6168	-13.2	119	0.00
75	T	Styrene	50.0000	57.0521	-14.1	121	0.00
76	P	Bromoform	50.0000	56.3943	-12.8	122	0.00
77	T	Isopropylbenzene	50.0000	57.0961	-14.2	122	0.00
78	I	1,4-Dichlorobenzene-d4	50.0000	50.0000	0.0	119	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	58.8478	-17.7	130	0.00
80	S	p-Bromofluorobenzene	25.0000	51.3305	-105.3#	239	0.00
81	T	1,2,3-Trichloropropane	50.0000	59.6682	-19.3	132	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	61.4448	-22.9	137	0.00
83	T	n-Propylbenzene	50.0000	57.0872	-14.2	122	0.00
84	T	Bromobenzene	50.0000	54.3863	-8.8	119	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	57.1540	-14.3	122	0.00
86	T	2-Chlorotoluene	50.0000	55.7348	-11.5	124	0.00
87	T	4-Chlorotoluene	50.0000	55.2814	-10.6	122	0.00
88	T	a-Methylstyrene	50.0000	59.7020	-19.4	129	0.00
89	T	tert-Butylbenzene	50.0000	55.6148	-11.2	118	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	56.3027	-12.6	122	0.00
91	T	sec-Butylbenzene	50.0000	57.1122	-14.2	122	0.00
92	T	p-Isopropyltoluene	50.0000	58.2651	-16.5	123	0.01
93	T	1,3-Dichlorobenzene	50.0000	54.5521	-9.1	121	0.00
94	T	1,4-Dichlorobenzene	50.0000	53.9999	-8.0	123	0.00
95	T	n-Butylbenzene	50.0000	57.2484	-14.5	123	0.00
96	T	1,2-Dichlorobenzene	50.0000	54.2782	-8.6	121	0.01
97	T	1,2-Dibromo-3-Chloropropane	50.0000	63.4446	-26.9#	143	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	56.3857	-12.8	121	0.00
99	T	Hexachlorobutadiene	50.0000	57.4070	-14.8	123	0.00
100	T	Naphthalene	50.0000	61.9276	-23.9	130	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	55.2309	-10.5	118	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M139118.D 826_SL.M Sat May 07 13:24:53 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\1\DATA\022616\6M137522.D          Vial: 1
Acq On    : 26 Feb 2016  13:16                       Operator: TMB
Sample    : WG558920-01 50ng BFB STD 8260            Inst    : HPMS6
Misc      : 7,1 STD74606                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP: OVL MSV01
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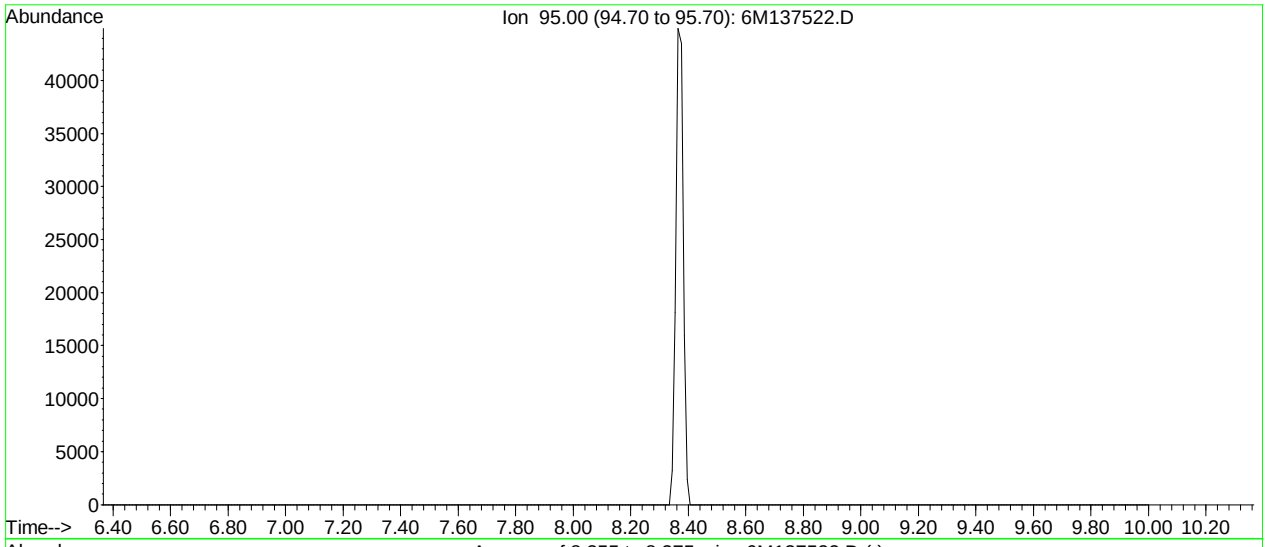

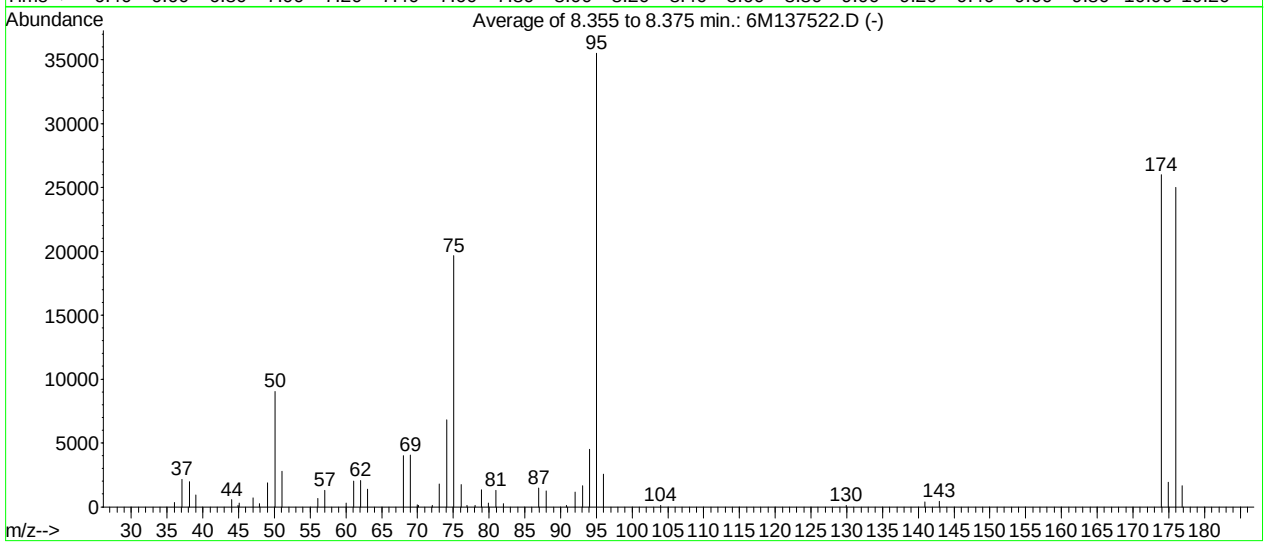

AutoFind: Scans 320, 321, 322; Background Corrected with Scan 316

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	25.4	9030	PASS
75	95	30	60	55.4	19666	PASS
95	95	100	100	100.0	35512	PASS
96	95	5	9	7.3	2576	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	73.2	26011	PASS
175	174	5	9	7.4	1914	PASS
176	174	95	101	96.1	24992	PASS
177	176	5	9	6.6	1660	PASS

6M137522.D BFB.M Fri Feb 26 13:26:46 2016

BFB

Data File : C:\MSDCHEM\1\DATA\050716\6M139117.D Vial: 1
Acq On : 7 May 2016 12:31 Operator: TMB
Sample : WG567937-01 50ng BFB STD 8260 Inst : HPMS6
Misc : 7,1 STD76034 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title : SOP: OVL MSV01

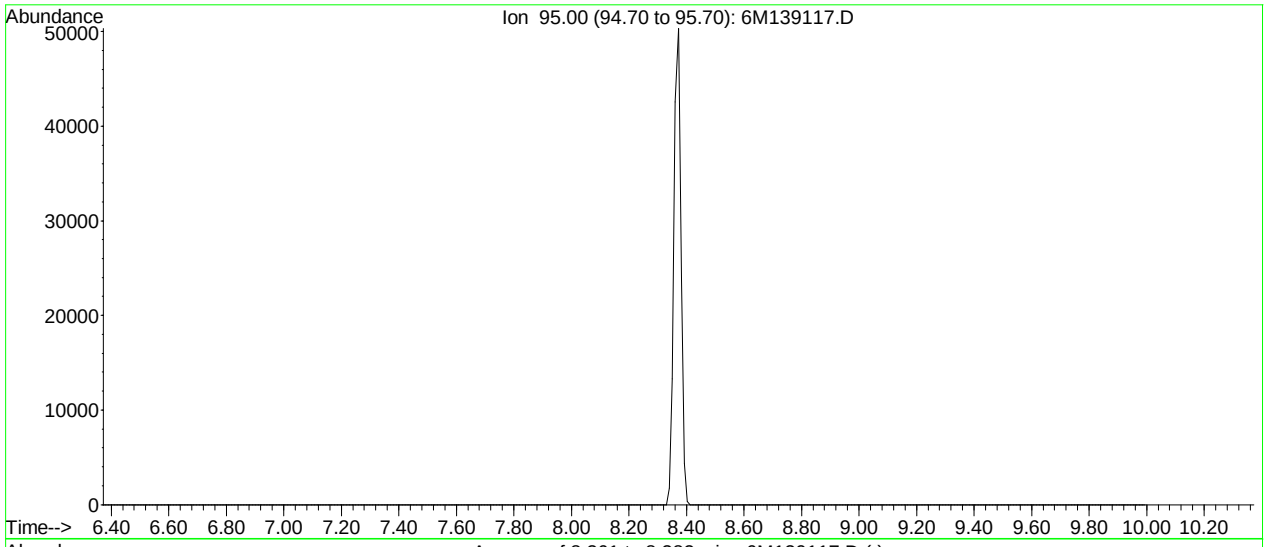

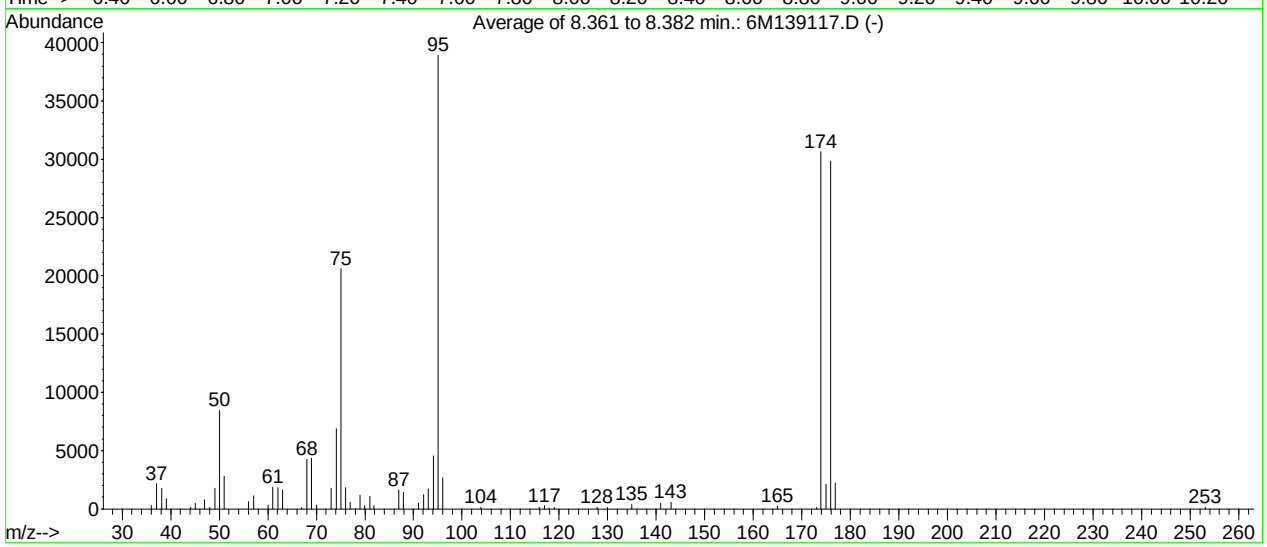

AutoFind: Scans 321, 322, 323; Background Corrected with Scan 316

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.7	8437	PASS
75	95	30	60	52.9	20594	PASS
95	95	100	100	100.0	38933	PASS
96	95	5	9	6.9	2676	PASS
173	174	0.00	2	0.4	109	PASS
174	95	50	100	78.7	30637	PASS
175	174	5	9	7.0	2135	PASS
176	174	95	101	97.5	29856	PASS
177	176	5	9	7.4	2208	PASS

6M139117.D BFB.M Sat May 07 12:43:47 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050716\6M139120.D Vial: 4
Acq On : 7 May 2016 14:01 Operator: TMB
Sample : WG567938-01 VBLK0507 BLANK STD 8260 Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 09 08:33:06 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	638259	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	472074	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	245657	50.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.33	111	167125	48.8120 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.62%		
43) 1,2-Dichloroethane-d4	11.06	65	212175	47.7287 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 95.46%		
58) Toluene-d8	13.80	98	562383	50.1065 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 100.22%		
80) p-Bromofluorobenzene	17.79	95	232809	51.5954 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 103.20%		

Target Compounds					Qvalue
3) Chloromethane	3.90	50	2447	0.4006 ug/L	# 77
13) Acetone	6.60	43	4182	Below Cal	# 57
16) Dimethyl Sulfide	7.17	62	2416	0.8915 ug/L	# 1
29) 2-Butanone	9.69	43	19542	8.8577 ug/L	# 56
36) Tetrahydrofuran	10.29	42	4039	0.6153 ug/L	# 71
59) Toluene	13.92	91	3898	0.2919 ug/L	96
60) Ethyl Methacrylate	13.81	69	1253	0.2928 ug/L	# 50
90) 1,2,4-Trimethylbenzene	18.82	105	4832	0.3869 ug/L	72
91) sec-Butylbenzene	18.82	105	3807	0.2503 ug/L	# 56
100) Naphthalene	23.20	128	4009	0.3573 ug/L	# 80

(#) = qualifier out of range (m) = manual integration
6M139120.D 826_SL.M Mon May 09 08:33:07 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\050716\6M139120.D Vial: 4
Acq On : 7 May 2016 14:01 Operator: TMB
Sample : WG567938-01 VBLK0507 BLANK STD 8260 Inst : HPMS6
Misc : 7,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 9 8:33 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

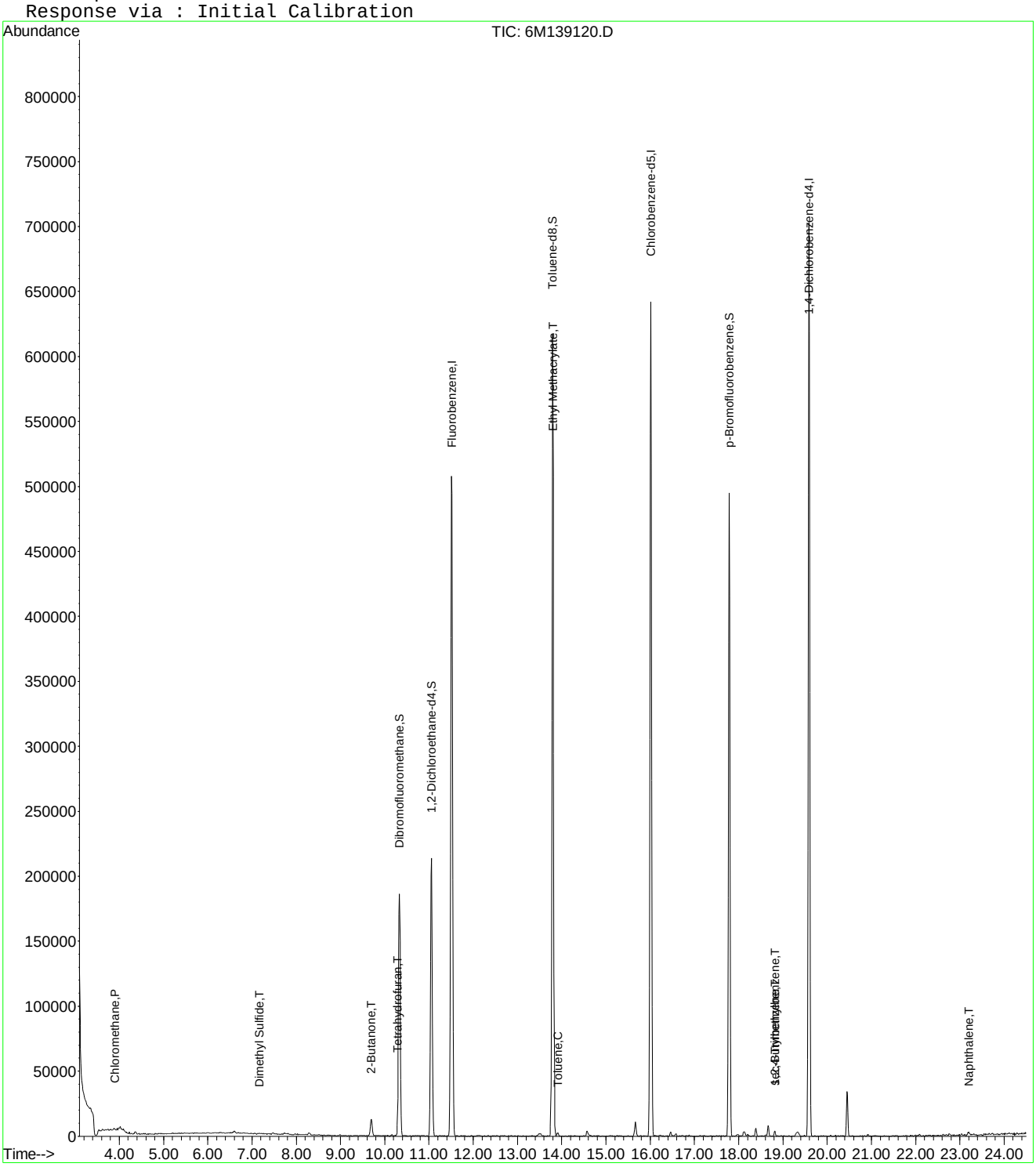

6M139120.D 826_SL.M Mon May 09 08:33:07 2016 Page 2

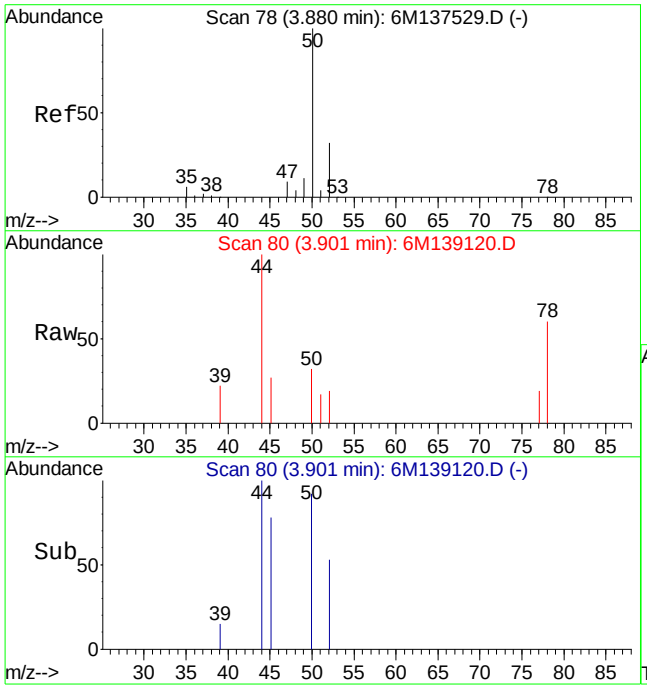

#3
Chloromethane
Concen: 0.40 ug/L
RT: 3.90 min Scan# 80
Delta R.T. 0.02 min
Lab File: 6M139120.D
Acq: 7 May 2016 14:01

Tgt Ion: 50 Resp: 2447

Ion	Ratio	Lower	Upper
50	100		
52	44.3	18.8	44.0#

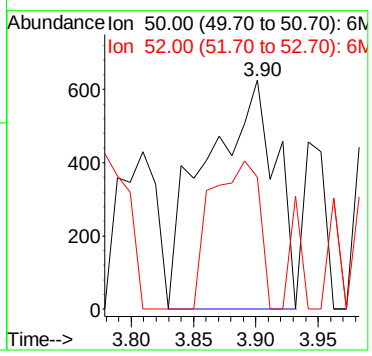

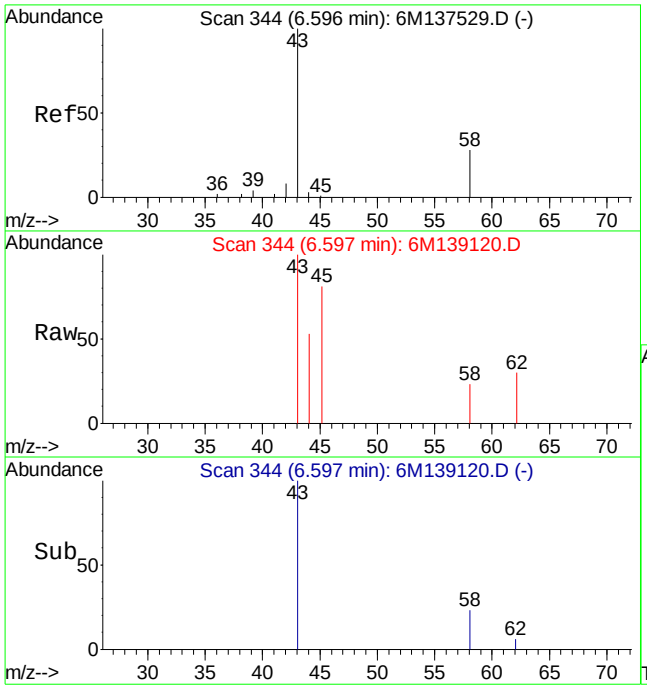

#13
Acetone
Concen: Below Cal
RT: 6.60 min Scan# 344
Delta R.T. 0.01 min
Lab File: 6M139120.D
Acq: 7 May 2016 14:01

Tgt Ion: 43 Resp: 4182

Ion	Ratio	Lower	Upper
43	100		
58	4.9	16.1	37.7#

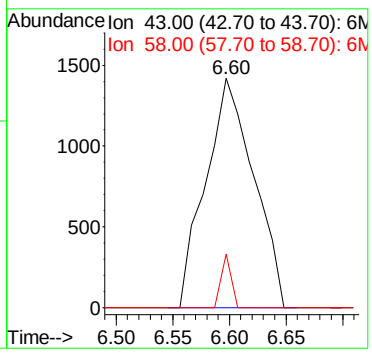

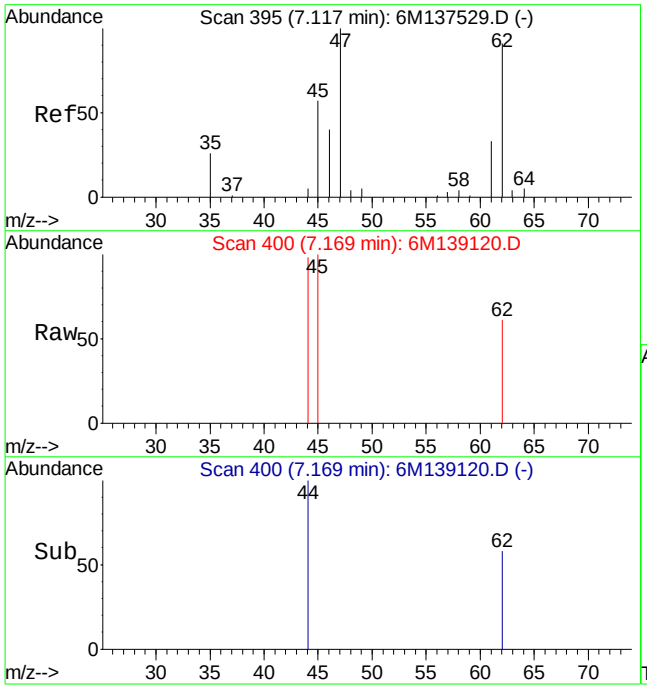

#16
Dimethyl Sulfide
Concen: 0.89 ug/L
RT: 7.17 min Scan# 400
Delta R.T. 0.05 min
Lab File: 6M139120.D
Acq: 7 May 2016 14:01

Tgt Ion: 62 Resp: 2416

Ion	Ratio	Lower	Upper
62	100		
47	0.0	62.4	145.6#

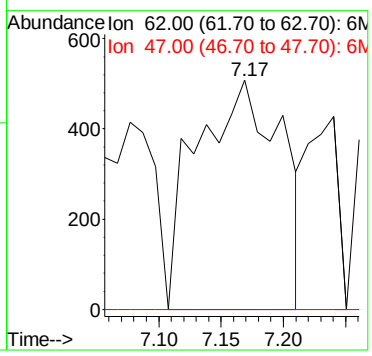

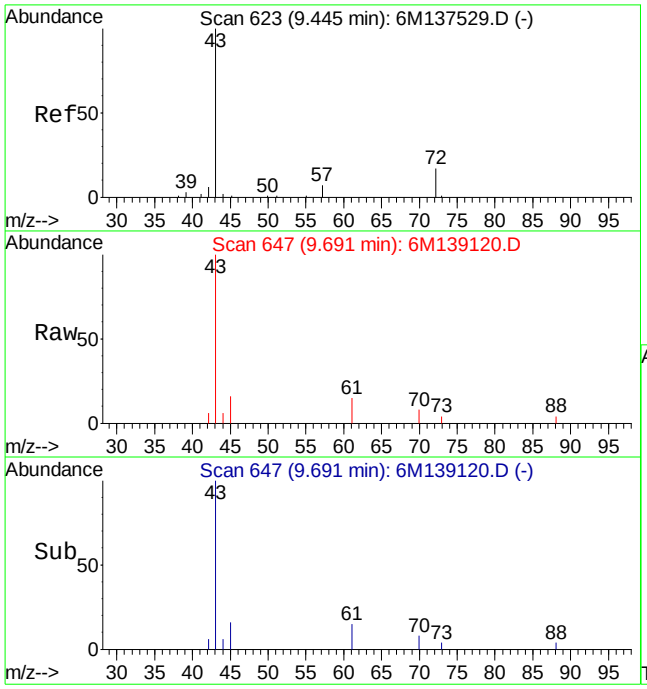

#29
2-Butanone
Concen: 8.86 ug/L
RT: 9.69 min Scan# 647
Delta R.T. 0.24 min
Lab File: 6M139120.D
Acq: 7 May 2016 14:01

Tgt Ion: 43 Resp: 19542

Ion	Ratio	Lower	Upper
43	100		
72	0.0	12.2	28.4#

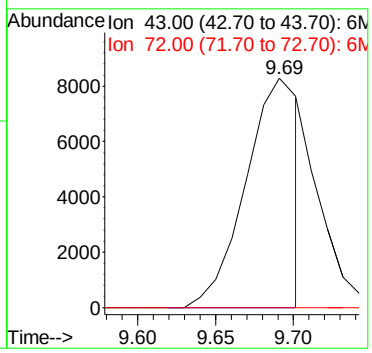

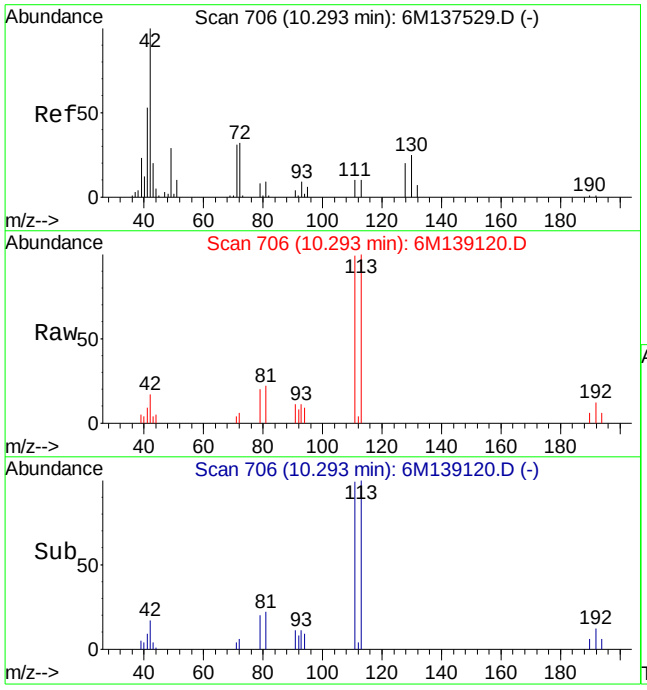

#36
Tetrahydrofuran
Concen: 0.62 ug/L
RT: 10.29 min Scan# 706
Delta R.T. 0.00 min
Lab File: 6M139120.D
Acq: 7 May 2016 14:01

Tgt Ion: 42 Resp: 4039

Ion	Ratio	Lower	Upper
42	100		
72	18.1	21.0	49.0#
71	17.7	20.6	48.2#

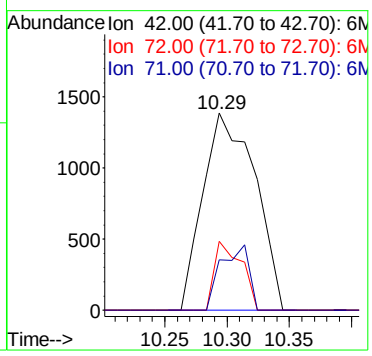

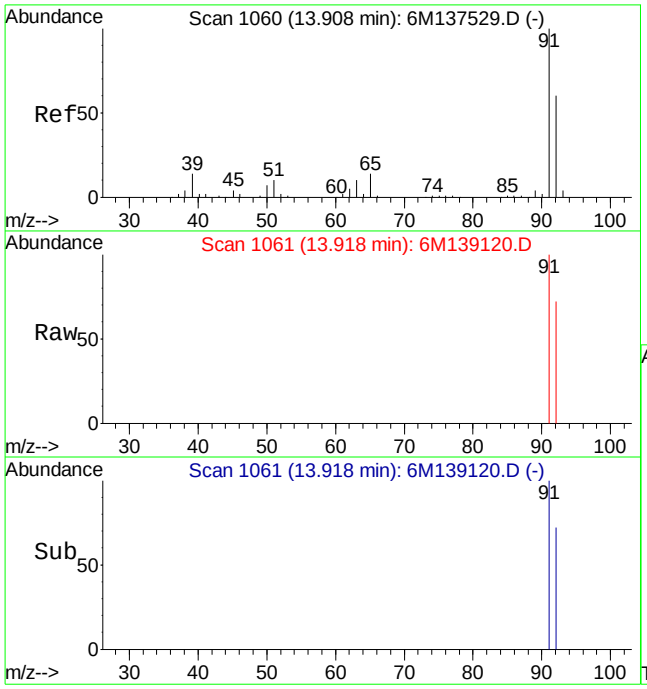

#59
Toluene
Concen: 0.29 ug/L
RT: 13.92 min Scan# 1061
Delta R.T. 0.01 min
Lab File: 6M139120.D
Acq: 7 May 2016 14:01

Tgt Ion: 91 Resp: 3898

Ion	Ratio	Lower	Upper
91	100		
92	56.2	35.5	82.9

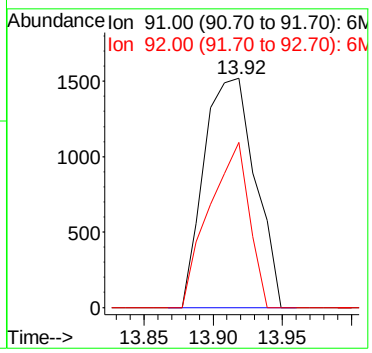

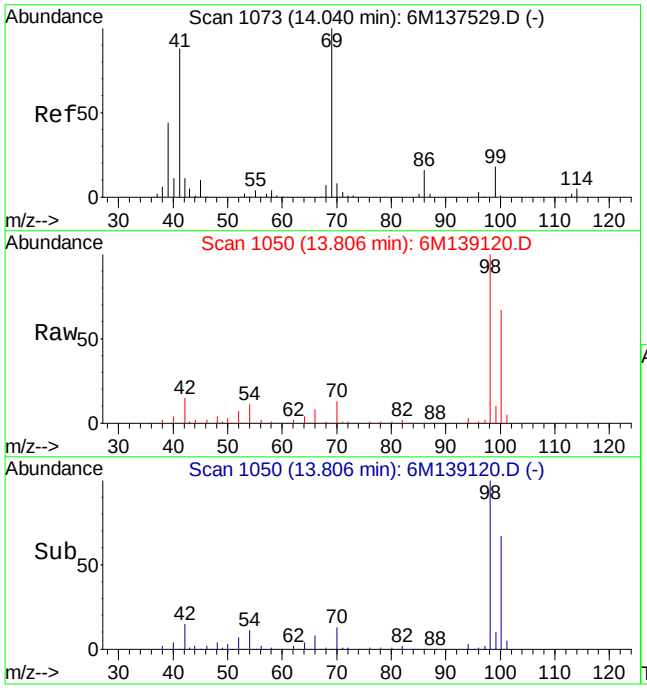

#60
Ethyl Methacrylate
Concen: 0.29 ug/L
RT: 13.81 min Scan# 1050
Delta R.T. -0.22 min
Lab File: 6M139120.D
Acq: 7 May 2016 14:01

Tgt Ion: 69 Resp: 1253

Ion	Ratio	Lower	Upper
69	100		
41	130.0	50.6	118.2#

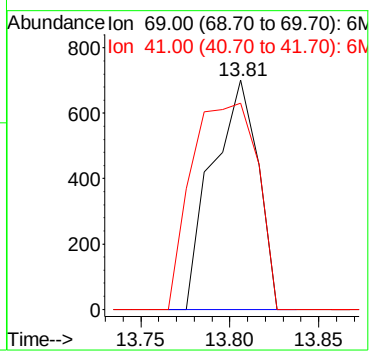

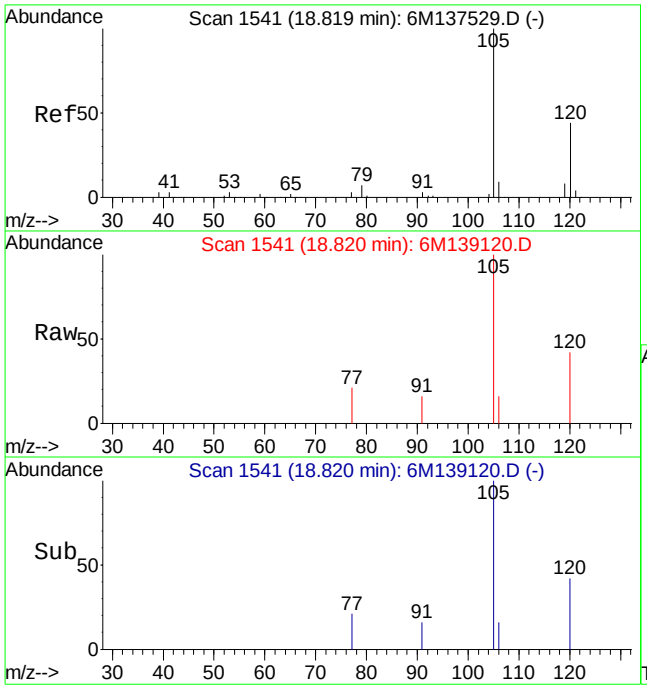

#90
1,2,4-Trimethylbenzene
Concen: 0.39 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. -0.00 min
Lab File: 6M139120.D
Acq: 7 May 2016 14:01

Tgt Ion:105 Resp: 4832

Ion	Ratio	Lower	Upper
105	100		
120	36.7	34.3	79.9

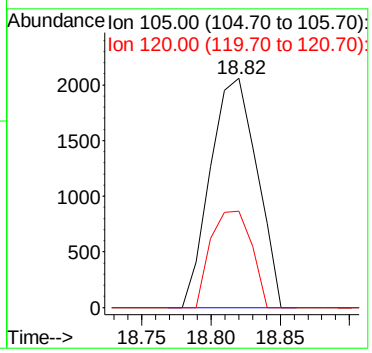

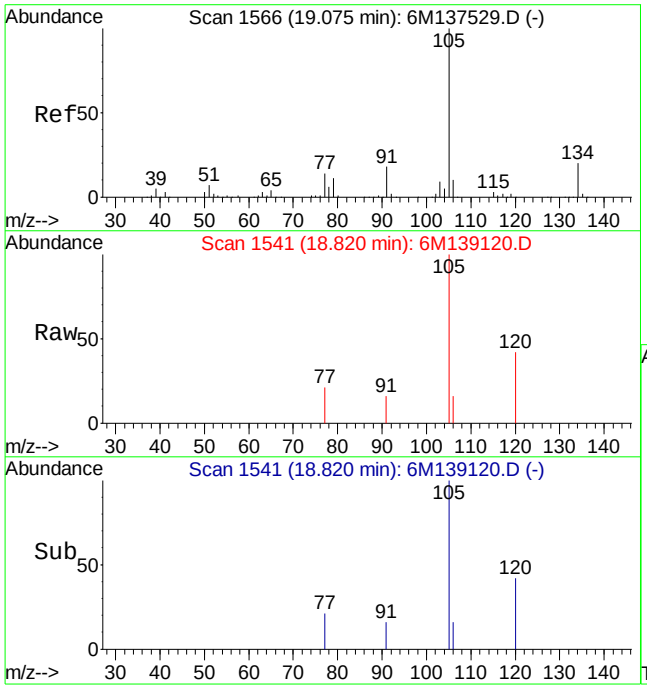

#91
sec-Butylbenzene
Concen: 0.25 ug/L
RT: 18.82 min Scan# 1541
Delta R.T. -0.26 min
Lab File: 6M139120.D
Acq: 7 May 2016 14:01

Tgt Ion:105 Resp: 3807

Ion	Ratio	Lower	Upper
105	100		
134	0.0	12.2	28.6#

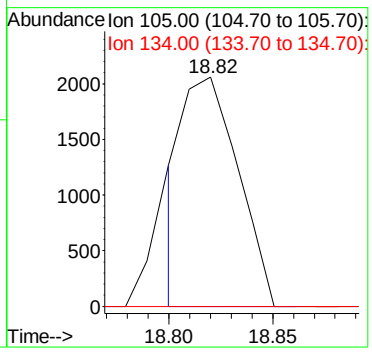

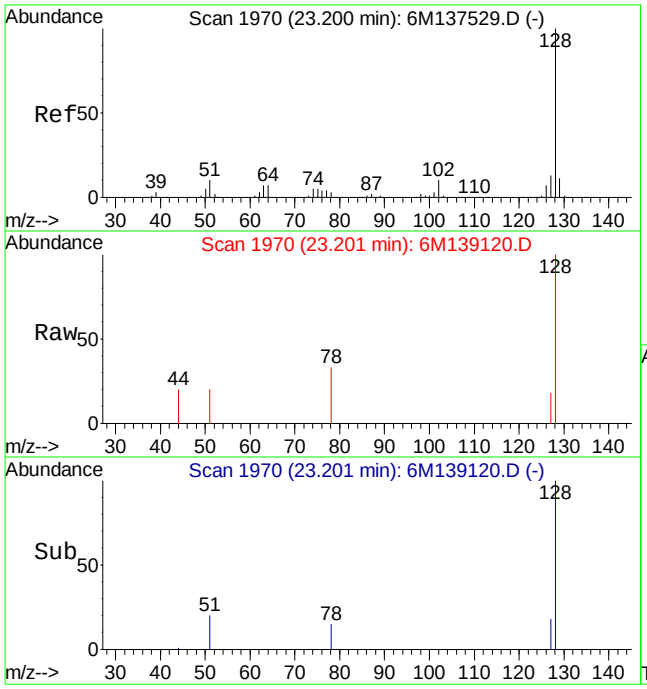

#100
Naphthalene
Concen: 0.36 ug/L
RT: 23.20 min Scan# 1970
Delta R.T. -0.00 min
Lab File: 6M139120.D
Acq: 7 May 2016 14:01

Tgt Ion:128 Resp: 4009

Ion	Ratio	Lower	Upper
128	100		
127	4.8	7.7	18.1#

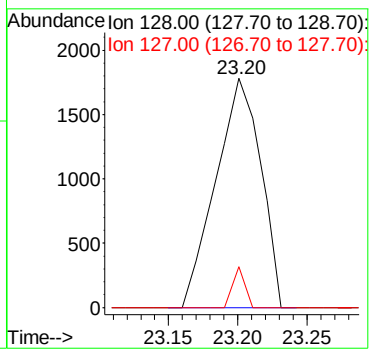

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\050716\6M139121.D Vial: 5
Acq On : 7 May 2016 14:33 Operator: TMB
Sample : WG567938-02 20ug/Kg LCS STD 8260 Inst : HPMS6
Misc : 7,1 STD75977 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 07 14:58:24 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	639989	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	473112	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.58	152	252881	50.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.33	111	167728	48.8557 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 97.72%		
43) 1,2-Dichloroethane-d4	11.06	65	211004	47.3369 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 94.68%		
58) Toluene-d8	13.79	98	572106	50.8609 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.72%		
80) p-Bromofluorobenzene	17.79	95	241438	51.9792 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 103.96%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	124876	21.2458 ug/L	98
3) Chloromethane	3.89	50	127303	20.7843 ug/L	98
4) Vinyl Chloride	4.12	62	89674	18.1898 ug/L	98
5) 1,3-Butadiene	4.17	54	529333	129.0509 ug/L	93
6) Bromomethane	5.03	94	53561	20.3810 ug/L	99
7) Chloroethane	5.19	64	60587	21.6741 ug/L	100
8) Trichlorofluoromethane	5.70	101	129461	19.5433 ug/L	99
9) Diethyl ether	6.24	59	342696	112.4545 ug/L	95
10) Isoprene	6.28	67	104421	24.1969 ug/L	89
11) Acrolein	6.49	56	69014	119.2500 ug/L	91
12) 1,1,2-Trichloro-1,2,2-Trif	6.49	101	67768	21.4327 ug/L	94
13) Acetone	6.60	43	36843	23.1456 ug/L	96
14) 1,1-Dichloroethene	6.83	61	110912	19.8034 ug/L	92
15) Tert-Butyl Alcohol	6.94	59	125105	239.3941 ug/L	97
16) Dimethyl Sulfide	7.12	62	78102	28.7430 ug/L	100
17) Iodomethane	7.39	142	36573	18.4854 ug/L	90
18) Methyl acetate	7.39	43	82079	21.0887 ug/L	98
19) Methylene Chloride	7.67	84	66272	19.6481 ug/L	83
20) Carbon Disulfide	7.72	76	206923	19.3101 ug/L	99
21) Acrylonitrile	7.86	53	36435	22.7777 ug/L	100
22) Methyl Tert Butyl Ether	7.90	73	227298	23.5973 ug/L	93
23) trans-1,2-Dichloroethene	8.16	96	62110	20.0744 ug/L	83
24) n-Hexane	8.24	57	122732	21.8449 ug/L	99
25) Diisopropyl ether	8.61	45	1489542	102.2587 ug/L	96
26) Vinyl Acetate	8.80	43	161173	21.4049 ug/L	98
27) 1,1-Dichloroethane	8.84	63	128642	19.2851 ug/L	98
28) Ethyl-Tert-Butyl ether	9.25	59	1316977	112.8012 ug/L	91
29) 2-Butanone	9.45	43	50321	22.7471 ug/L	97
30) Propionitrile	9.58	54	66491	108.6003 ug/L	97
31) 2,2-Dichloropropane	9.70	77	114626	21.4080 ug/L	93
32) cis-1,2-Dichloroethene	9.77	96	68766	19.9082 ug/L	100
33) Chloroform	10.01	83	121512	19.5051 ug/L	98
34) 1-Bromopropane	10.16	122	16750	35.3697 ug/L	99
35) Bromochloromethane	10.27	130	38316	18.8791 ug/L	100
36) Tetrahydrofuran	10.29	42	155911	105.1339 ug/L	96
38) 1,1,1-Trichloroethane	10.60	97	113776	20.6765 ug/L	100
39) Cyclohexane	10.64	56	145070	23.2494 ug/L	87
40) 1,1-Dichloropropene	10.82	75	90577	20.4397 ug/L	96
41) Tert-Amyl-Methyl ether	10.95	73	1010940	109.1502 ug/L	92
42) Carbon Tetrachloride	10.99	117	104622	20.3483 ug/L	97

(#) = qualifier out of range (m) = manual integration
6M139121.D 826_SL.M Sat May 07 14:58:25 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\050716\6M139121.D Vial: 5
Acq On : 7 May 2016 14:33 Operator: TMB
Sample : WG567938-02 20ug/Kg LCS STD 8260 Inst : HPMS6
Misc : 7,1 STD75977 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 07 14:58:24 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	11.19	62	105241	19.7927 ug/L		98
46)	Benzene	11.23	78	259119	19.4363 ug/L		92
47)	Trichloroethene	12.09	130	64534	20.4902 ug/L		93
48)	Methylcyclohexane	12.18	83	118082	23.1921 ug/L		86
49)	1,2-Dichloropropane	12.33	63	73195	20.4050 ug/L		99
50)	1,4-Dioxane	12.68	88	8894	206.6788 ug/L		81
51)	Bromodichloromethane	12.68	83	91392	19.4148 ug/L		95
52)	Dibromomethane	12.78	93	38803	18.4946 ug/L		99
53)	2-Chloroethyl Vinyl Ether	13.04	63	42552	21.5672 ug/L		97
54)	4-Methyl-2-Pentanone	13.07	58	34393	23.0213 ug/L		97
55)	cis-1,3-Dichloropropene	13.43	75	112933	21.7748 ug/L		98
56)	Dimethyl Disulfide	13.72	79	57223	21.8760 ug/L		95
59)	Toluene	13.91	91	265408	19.8316 ug/L		100
60)	Ethyl Methacrylate	14.04	69	97558	22.7506 ug/L		97
62)	trans-1,3-Dichloropropene	14.12	75	100858	19.5986 ug/L		98
63)	1,1,2-Trichloroethane	14.38	97	54835	19.6030 ug/L		99
64)	2-Hexanone	14.31	43	69221	21.6862 ug/L		97
65)	1,3-Dichloropropane	14.73	76	104217	20.5556 ug/L		98
66)	Tetrachloroethene	14.87	166	64309	19.4793 ug/L		97
67)	Dibromochloromethane	15.17	129	67502	18.5547 ug/L		99
68)	1,2-Dibromoethane	15.48	107	55921	19.5478 ug/L		96
69)	1-Chlorohexane	15.59	91	99016	23.8248 ug/L		85
70)	Chlorobenzene	16.07	112	170377	19.8085 ug/L	#	66
71)	1,1,1,2-Tetrachloroethane	16.11	131	65399	18.9367 ug/L		95
72)	Ethylbenzene	16.10	106	90379	19.6359 ug/L		94
73)	m-,p-Xylene	16.21	106	227386	40.3751 ug/L		96
74)	o-Xylene	16.88	106	110977	20.9213 ug/L		94
75)	Styrene	16.92	104	179034	19.8301 ug/L		93
76)	Bromoform	17.49	173	44338	17.2610 ug/L		99
77)	Isopropylbenzene	17.38	105	297539	20.8663 ug/L		97
79)	1,1,2,2-Tetrachloroethane	17.64	83	78646	19.9086 ug/L		95
81)	1,2,3-Trichloropropane	17.87	110	25096	20.7489 ug/L		90
82)	trans-1,4-Dichloro-2-Buten	17.93	53	25098	17.2098 ug/L		92
83)	n-Propylbenzene	17.98	91	368090	21.4334 ug/L		98
84)	Bromobenzene	18.12	156	73358	19.6512 ug/L		100
85)	1,3,5-Trimethylbenzene	18.21	105	260042	21.2728 ug/L		95
86)	2-Chlorotoluene	18.30	91	239007	20.8507 ug/L		97
87)	4-Chlorotoluene	18.35	91	217632	20.7642 ug/L		96
88)	a-Methylstyrene	18.69	118	145632	24.5324 ug/L		97
89)	tert-Butylbenzene	18.76	134	54063	21.2218 ug/L		92
90)	1,2,4-Trimethylbenzene	18.82	105	265134	20.6239 ug/L		83
91)	sec-Butylbenzene	19.07	105	333071	21.2762 ug/L		98
92)	p-Isopropyltoluene	19.27	119	268585	20.7957 ug/L		100
93)	1,3-Dichlorobenzene	19.48	146	145503	20.1443 ug/L		95
94)	1,4-Dichlorobenzene	19.64	146	146713	19.9545 ug/L		95
95)	n-Butylbenzene	19.89	91	257808	19.8465 ug/L		99
96)	1,2-Dichlorobenzene	20.23	146	140476	20.2111 ug/L		96
97)	1,2-Dibromo-3-Chloropropan	21.41	75	18173	20.7915 ug/L		85
98)	1,2,4-Trichlorobenzene	22.76	180	98659	19.6349 ug/L		98
99)	Hexachlorobutadiene	22.94	225	63121	21.9662 ug/L		99
100)	Naphthalene	23.20	128	215027	18.6151 ug/L		100
101)	1,2,3-Trichlorobenzene	23.59	180	91500	18.4934 ug/L		99

(#) = qualifier out of range (m) = manual integration
6M139121.D 826_SL.M Sat May 07 14:58:25 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\050716\6M139121.D Vial: 5
Acq On : 7 May 2016 14:33 Operator: TMB
Sample : WG567938-02 20ug/Kg LCS STD 8260 Inst : HPMS6
Misc : 7,1 STD75977 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 7 14:58 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

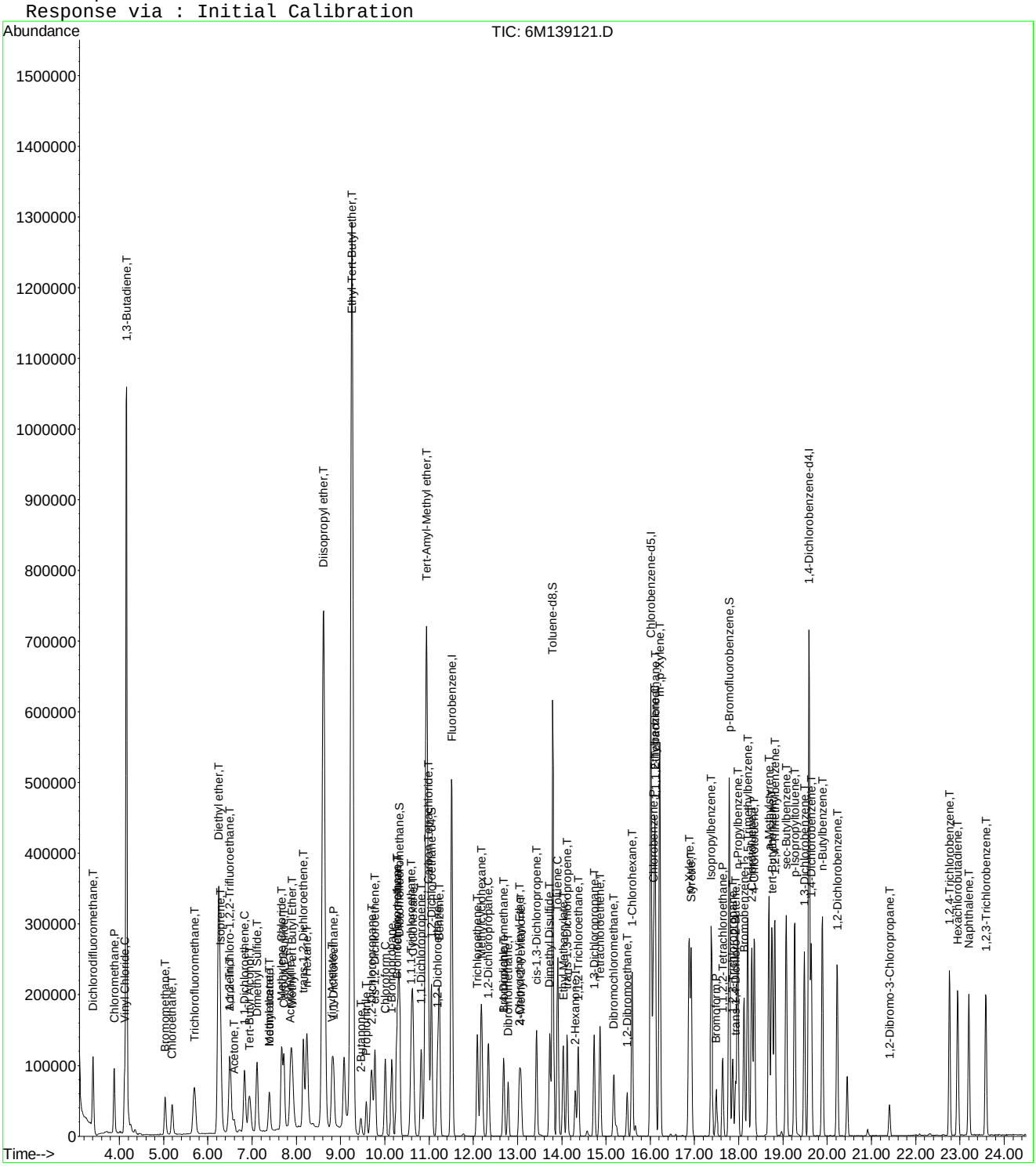

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\050716\6M139122.D Vial: 6
Acq On : 7 May 2016 15:06 Operator: TMB
Sample : WG567289-02 MS 1582-01 8260 4.80g Inst : HPMS6
Misc : 7,1 STD75977 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 07 15:31:04 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.52	96	637607	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	466978	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	253514	50.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.33	111	168327	49.2133 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.42%		
43) 1,2-Dichloroethane-d4	11.06	65	202119	45.5131 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 91.02%		
58) Toluene-d8	13.80	98	563407	50.7455 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 101.50%		
80) p-Bromofluorobenzene	17.79	95	229587	49.3044 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 98.60%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	129694	22.1480 ug/L	98
3) Chloromethane	3.89	50	138209	22.6492 ug/L	97
4) Vinyl Chloride	4.13	62	94284	19.1963 ug/L	99
5) 1,3-Butadiene	4.17	54	541266	132.4531 ug/L	93
6) Bromomethane	5.03	94	54264	20.7256 ug/L	99
7) Chloroethane	5.20	64	63325	22.7382 ug/L	98
8) Trichlorofluoromethane	5.70	101	135393	20.5151 ug/L	99
9) Diethyl ether	6.25	59	4677	1.5405 ug/L	78
10) Isoprene	6.28	67	100307	23.3304 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.50	101	74552	23.6664 ug/L	94
13) Acetone	6.60	43	37328	23.6123 ug/L	85
14) 1,1-Dichloroethene	6.84	61	118284	21.1986 ug/L	91
15) Tert-Butyl Alcohol	6.95	59	1010	1.9399 ug/L #	57
16) Dimethyl Sulfide	7.12	62	81156	29.9785 ug/L	99
17) Iodomethane	7.39	142	41219	20.2599 ug/L	93
18) Methyl acetate	7.39	43	71032	18.3185 ug/L	99
19) Methylene Chloride	7.67	84	71712	21.3403 ug/L	83
20) Carbon Disulfide	7.72	76	205049	19.2067 ug/L	99
21) Acrylonitrile	7.86	53	31580	19.8163 ug/L	100
22) Methyl Tert Butyl Ether	7.89	73	212456	22.1389 ug/L	93
23) trans-1,2-Dichloroethene	8.16	96	66945	21.7180 ug/L	84
24) n-Hexane	8.24	57	124529	22.2476 ug/L	100
25) Diisopropyl ether	8.62	45	10625	0.7321 ug/L #	79
26) Vinyl Acetate	8.80	43	157667	21.0176 ug/L	99
27) 1,1-Dichloroethane	8.84	63	138987	20.9137 ug/L	99
28) Ethyl-Tert-Butyl ether	9.25	59	97394	8.3731 ug/L #	37
29) 2-Butanone	9.46	43	44316	20.1075 ug/L	98
31) 2,2-Dichloropropane	9.69	77	121988	22.8681 ug/L	94
32) cis-1,2-Dichloroethene	9.77	96	94340	27.4141 ug/L	87
33) Chloroform	10.01	83	133620	21.5288 ug/L	98
34) 1-Bromopropane	10.16	122	16793	35.5930 ug/L	97
35) Bromochloromethane	10.27	130	40674	20.1158 ug/L	96
36) Tetrahydrofuran	10.30	42	5042	1.3111 ug/L	90
38) 1,1,1-Trichloroethane	10.60	97	119896	21.8701 ug/L	99
39) Cyclohexane	10.63	56	141097	22.6971 ug/L	88
40) 1,1-Dichloropropene	10.82	75	95587	21.6509 ug/L	96
41) Tert-Amyl-Methyl ether	10.95	73	3738	0.4051 ug/L #	69
42) Carbon Tetrachloride	10.99	117	110892	21.6483 ug/L	96
45) 1,2-Dichloroethane	11.19	62	123621	23.3362 ug/L	99
46) Benzene	11.23	78	278014	20.9315 ug/L	93

(#) = qualifier out of range (m) = manual integration
6M139122.D 826_SL.M Sat May 07 15:31:05 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\050716\6M139122.D Vial: 6
Acq On : 7 May 2016 15:06 Operator: TMB
Sample : WG567289-02 MS 1582-01 8260 4.80g Inst : HPMS6
Misc : 7,1 STD75977 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 07 15:31:04 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
47)	Trichloroethene	12.09	130	145337	46.3184	ug/L		95
48)	Methylcyclohexane	12.18	83	118117	23.2857	ug/L		86
49)	1,2-Dichloropropane	12.35	63	79156	22.1492	ug/L		100
51)	Bromodichloromethane	12.68	83	96596	20.5970	ug/L		97
52)	Dibromomethane	12.78	93	40561	19.4047	ug/L		97
53)	2-Chloroethyl Vinyl Ether	13.04	63	39869	20.2828	ug/L		97
54)	4-Methyl-2-Pentanone	13.07	58	30862	20.7350	ug/L		95
55)	cis-1,3-Dichloropropene	13.43	75	118931	23.0170	ug/L		98
56)	Dimethyl Disulfide	13.72	79	54379	20.8665	ug/L		97
59)	Toluene	13.91	91	284370	21.5276	ug/L		99
60)	Ethyl Methacrylate	14.04	69	88358	20.8759	ug/L		100
62)	trans-1,3-Dichloropropene	14.12	75	103104	20.2982	ug/L		99
63)	1,1,2-Trichloroethane	14.38	97	52948	19.1771	ug/L		99
64)	2-Hexanone	14.31	43	55051	17.4734	ug/L		99
65)	1,3-Dichloropropane	14.73	76	99399	19.8628	ug/L		96
66)	Tetrachloroethene	14.87	166	71328	21.8891	ug/L		98
67)	Dibromochloromethane	15.18	129	71896	20.0221	ug/L		99
68)	1,2-Dibromoethane	15.48	107	58147	20.5929	ug/L		99
69)	1-Chlorohexane	15.59	91	95610	23.3074	ug/L		83
70)	Chlorobenzene	16.07	112	181668	21.3987	ug/L	#	66
71)	1,1,1,2-Tetrachloroethane	16.11	131	69760	20.4648	ug/L		97
72)	Ethylbenzene	16.10	106	97480	21.4568	ug/L		96
73)	m-,p-Xylene	16.22	106	244989	44.0721	ug/L		96
74)	o-Xylene	16.87	106	119991	22.9177	ug/L		96
75)	Styrene	16.92	104	192833	21.6390	ug/L		92
76)	Bromoform	17.49	173	45145	17.8061	ug/L		97
77)	Isopropylbenzene	17.38	105	313671	22.2865	ug/L		98
79)	1,1,2,2-Tetrachloroethane	17.65	83	73145	18.4698	ug/L		97
81)	1,2,3-Trichloropropane	17.87	110	23265	19.1870	ug/L		88
82)	trans-1,4-Dichloro-2-Buten	17.93	53	21615	14.7845	ug/L		92
83)	n-Propylbenzene	17.98	91	368412	21.3986	ug/L		98
84)	Bromobenzene	18.13	156	74323	19.8600	ug/L		96
85)	1,3,5-Trimethylbenzene	18.21	105	257658	21.0252	ug/L		95
86)	2-Chlorotoluene	18.30	91	242384	21.0925	ug/L		95
87)	4-Chlorotoluene	18.35	91	216515	20.6060	ug/L		96
88)	a-Methylstyrene	18.69	118	146551	24.6256	ug/L		99
89)	tert-Butylbenzene	18.76	134	60098	23.5319	ug/L		86
90)	1,2,4-Trimethylbenzene	18.82	105	299354	23.2276	ug/L		81
91)	sec-Butylbenzene	19.07	105	349531	22.2719	ug/L		98
92)	p-Isopropyltoluene	19.27	119	316063	24.4106	ug/L		100
93)	1,3-Dichlorobenzene	19.48	146	155373	21.4570	ug/L		96
94)	1,4-Dichlorobenzene	19.64	146	156689	21.2582	ug/L		95
95)	n-Butylbenzene	19.89	91	272627	20.9349	ug/L		97
96)	1,2-Dichlorobenzene	20.22	146	149088	21.3966	ug/L		96
97)	1,2-Dibromo-3-Chloropropan	21.41	75	17718	20.2203	ug/L		85
98)	1,2,4-Trichlorobenzene	22.76	180	108684	21.5761	ug/L		99
99)	Hexachlorobutadiene	22.96	225	65164	22.6206	ug/L		99
100)	Naphthalene	23.20	128	226516	19.5608	ug/L		100
101)	1,2,3-Trichlorobenzene	23.59	180	105501	21.2699	ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\050716\6M139122.D Vial: 6
Acq On : 7 May 2016 15:06 Operator: TMB
Sample : WG567289-02 MS 1582-01 8260 4.80g Inst : HPMS6
Misc : 7,1 STD75977 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 7 15:31 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

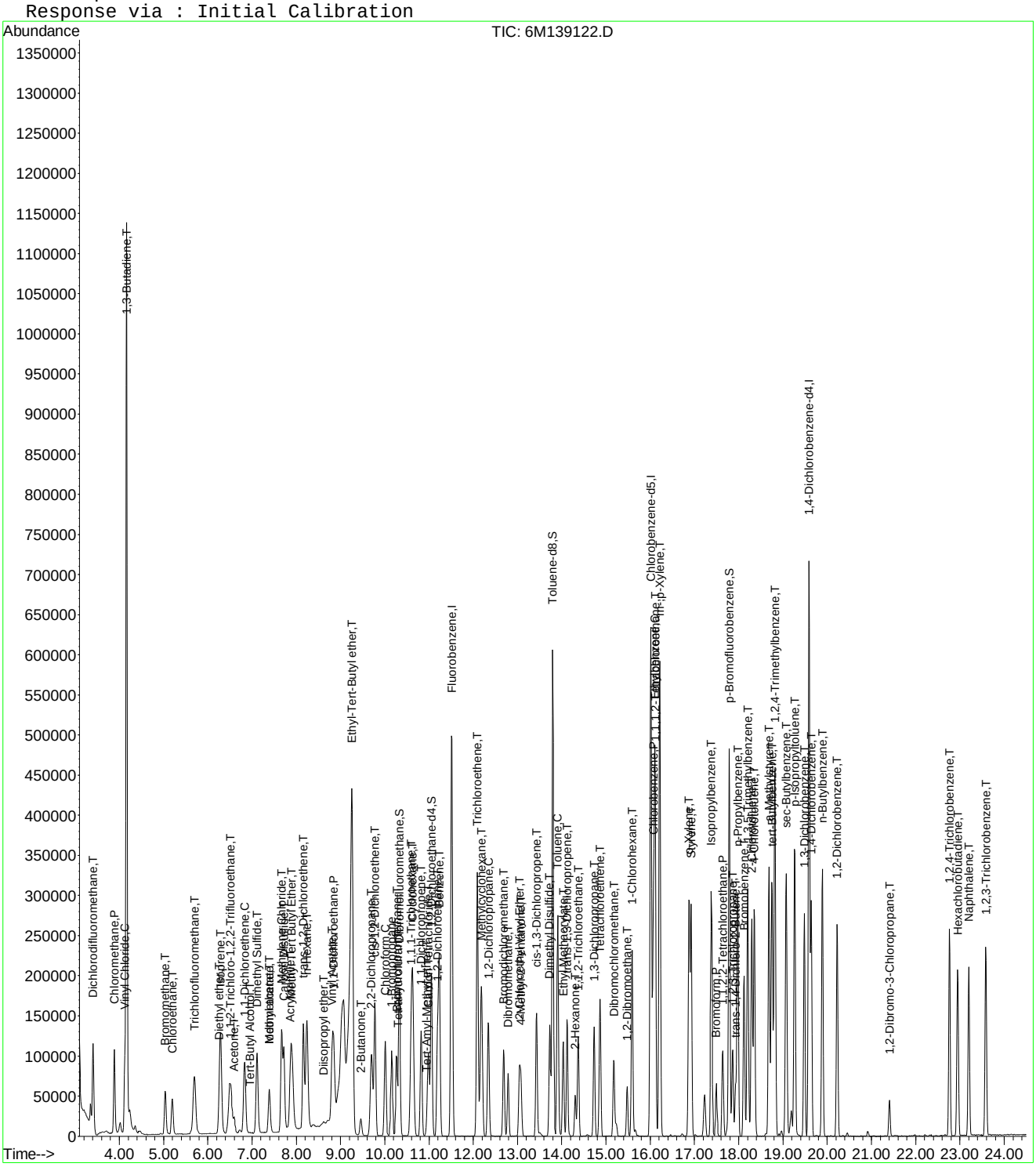

6M139122.D 826_SL.M Sat May 07 15:31:05 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\050716\6M139123.D Vial: 7
Acq On : 7 May 2016 15:38 Operator: TMB
Sample : WG567289-03 MSD 1582-01 8260 4.86g Inst : HPMS6
Misc : 7,1 STD75977 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 07 16:03:29 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.51	96	644848	50.00 ug/L	0.00
57) Chlorobenzene-d5	16.01	117	471234	50.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.59	152	247043	50.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.34	111	170528	49.2970 ug/L	0.01
Spiked Amount 50.000	Range 80 - 120		Recovery = 98.60%		
43) 1,2-Dichloroethane-d4	11.06	65	208354	46.3902 ug/L	0.00
Spiked Amount 50.000	Range 80 - 120		Recovery = 92.78%		
58) Toluene-d8	13.80	98	560888	50.0623 ug/L	0.00
Spiked Amount 50.000	Range 81 - 117		Recovery = 100.12%		
80) p-Bromofluorobenzene	17.79	95	241431	53.2060 ug/L	0.00
Spiked Amount 50.000	Range 74 - 121		Recovery = 106.42%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.41	85	129029	21.7870 ug/L	99
3) Chloromethane	3.89	50	139873	22.6645 ug/L	96
4) Vinyl Chloride	4.13	62	97169	19.5616 ug/L	98
5) 1,3-Butadiene	4.17	54	557245	134.8321 ug/L	94
6) Bromomethane	5.04	94	55449	20.9404 ug/L	98
7) Chloroethane	5.20	64	61771	21.9312 ug/L	98
8) Trichlorofluoromethane	5.70	101	136832	20.5003 ug/L	99
9) Diethyl ether	6.24	59	4118	1.3411 ug/L #	71
10) Isoprene	6.29	67	92584	21.2923 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.52	101	75966	23.8444 ug/L	94
13) Acetone	6.60	43	41331	26.2673 ug/L	81
14) 1,1-Dichloroethene	6.83	61	117335	20.7924 ug/L	91
15) Tert-Butyl Alcohol	6.93	59	335	0.6362 ug/L #	57
16) Dimethyl Sulfide	7.12	62	74708	27.2868 ug/L	97
17) Iodomethane	7.38	142	41488	20.1869 ug/L	94
18) Methyl acetate	7.39	43	73413	18.7200 ug/L #	97
19) Methylene Chloride	7.67	84	71596	21.0666 ug/L	80
20) Carbon Disulfide	7.72	76	194677	18.0304 ug/L	99
21) Acrylonitrile	7.87	53	31713	19.6763 ug/L	99
22) Methyl Tert Butyl Ether	7.89	73	207514	21.3811 ug/L	92
23) trans-1,2-Dichloroethene	8.16	96	66007	21.1732 ug/L	83
24) n-Hexane	8.24	57	118845	20.9937 ug/L	98
26) Vinyl Acetate	8.80	43	155519	20.4984 ug/L	99
27) 1,1-Dichloroethane	8.84	63	136538	20.3145 ug/L	100
28) Ethyl-Tert-Butyl ether	9.25	59	41894	3.5613 ug/L #	38
29) 2-Butanone	9.46	43	45197	20.2769 ug/L	98
31) 2,2-Dichloropropane	9.70	77	121006	22.4293 ug/L	92
32) cis-1,2-Dichloroethene	9.77	96	91814	26.3805 ug/L	100
33) Chloroform	10.01	83	128763	20.5133 ug/L	98
34) 1-Bromopropane	10.15	122	15242	31.9429 ug/L	99
35) Bromochloromethane	10.26	130	43420	21.2327 ug/L	99
36) Tetrahydrofuran	10.29	42	4474	0.8840 ug/L	81
38) 1,1,1-Trichloroethane	10.60	97	121841	21.9753 ug/L	100
39) Cyclohexane	10.63	56	138193	21.9804 ug/L	89
40) 1,1-Dichloropropene	10.83	75	97826	21.9092 ug/L	96
41) Tert-Amyl-Methyl ether	10.83	73	14718	1.5771 ug/L #	55
42) Carbon Tetrachloride	10.99	117	112842	21.7816 ug/L	96
45) 1,2-Dichloroethane	11.19	62	124746	23.2842 ug/L	98
46) Benzene	11.23	78	285416	21.2475 ug/L	92
47) Trichloroethene	12.09	130	140308	44.2135 ug/L	93

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\050716\6M139123.D Vial: 7
Acq On : 7 May 2016 15:38 Operator: TMB
Sample : WG567289-03 MSD 1582-01 8260 4.86g Inst : HPMS6
Misc : 7,1 STD75977 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 07 16:03:29 2016 Quant Results File: 826_SL.RES

Quant Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration
DataAcq Meth : 826_SL

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
48)	Methylcyclohexane	12.18	83	109445	21.3338 ug/L	85
49)	1,2-Dichloropropane	12.34	63	77222	21.3654 ug/L	100
51)	Bromodichloromethane	12.68	83	97075	20.4667 ug/L	98
52)	Dibromomethane	12.79	93	41223	19.5000 ug/L	98
53)	2-Chloroethyl Vinyl Ether	13.04	63	38090	19.1602 ug/L	98
54)	4-Methyl-2-Pentanone	13.07	58	32364	21.5000 ug/L	93
55)	cis-1,3-Dichloropropene	13.43	75	122951	23.5278 ug/L	98
56)	Dimethyl Disulfide	13.73	79	53128	20.1575 ug/L	98
59)	Toluene	13.91	91	289881	21.7466 ug/L	99
60)	Ethyl Methacrylate	14.04	69	89941	21.0579 ug/L	97
62)	trans-1,3-Dichloropropene	14.12	75	105375	20.5579 ug/L	98
63)	1,1,2-Trichloroethane	14.38	97	61084	21.9240 ug/L	98
64)	2-Hexanone	14.31	43	61541	19.3570 ug/L	96
65)	1,3-Dichloropropane	14.74	76	108360	21.4579 ug/L	97
66)	Tetrachloroethene	14.87	166	66486	20.2190 ug/L	99
67)	Dibromochloromethane	15.18	129	70243	19.3851 ug/L	99
68)	1,2-Dibromoethane	15.48	107	59625	20.9256 ug/L	99
69)	1-Chlorohexane	15.59	91	93398	22.5625 ug/L	86
70)	Chlorobenzene	16.07	112	181513	21.1873 ug/L #	66
71)	1,1,1,2-Tetrachloroethane	16.11	131	68884	20.0253 ug/L	98
72)	Ethylbenzene	16.10	106	94829	20.6848 ug/L	98
73)	m-,p-Xylene	16.22	106	234574	41.8174 ug/L	95
74)	o-Xylene	16.87	106	122760	23.2348 ug/L	96
75)	Styrene	16.92	104	195976	21.7931 ug/L	93
76)	Bromoform	17.49	173	45350	17.7254 ug/L	98
77)	Isopropylbenzene	17.38	105	306657	21.5914 ug/L	97
79)	1,1,2,2-Tetrachloroethane	17.65	83	81230	21.0487 ug/L	96
81)	1,2,3-Trichloropropane	17.87	110	25237	21.3585 ug/L	95
82)	trans-1,4-Dichloro-2-Buten	17.93	53	24549	17.2311 ug/L	84
83)	n-Propylbenzene	17.98	91	387369	23.0891 ug/L	98
84)	Bromobenzene	18.13	156	75848	20.7983 ug/L	96
85)	1,3,5-Trimethylbenzene	18.21	105	263210	22.0408 ug/L	96
86)	2-Chlorotoluene	18.30	91	236266	21.0987 ug/L	97
87)	4-Chlorotoluene	18.35	91	238370	23.2802 ug/L	96
88)	a-Methylstyrene	18.69	118	128687	22.1902 ug/L	98
89)	tert-Butylbenzene	18.75	134	54820	22.0275 ug/L	83
90)	1,2,4-Trimethylbenzene	18.81	105	266586	21.2268 ug/L	78
91)	sec-Butylbenzene	19.08	105	345216	22.5731 ug/L	99
92)	p-Isopropyltoluene	19.26	119	315556	25.0098 ug/L	99
93)	1,3-Dichlorobenzene	19.48	146	151532	21.4747 ug/L	98
94)	1,4-Dichlorobenzene	19.64	146	152122	21.1792 ug/L	96
95)	n-Butylbenzene	19.89	91	259105	20.4177 ug/L	96
96)	1,2-Dichlorobenzene	20.22	146	146041	21.5083 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	21.41	75	18091	21.1868 ug/L	92
98)	1,2,4-Trichlorobenzene	22.76	180	97676	19.8987 ug/L	98
99)	Hexachlorobutadiene	22.95	225	61362	21.8587 ug/L	97
100)	Naphthalene	23.20	128	210642	18.6665 ug/L	99
101)	1,2,3-Trichlorobenzene	23.58	180	92194	19.0740 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M139123.D 826_SL.M Sat May 07 16:03:29 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\050716\6M139123.D Vial: 7
Acq On : 7 May 2016 15:38 Operator: TMB
Sample : WG567289-03 MSD 1582-01 8260 4.86g Inst : HPMS6
Misc : 7,1 STD75977 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 7 16:03 2016 Quant Results File: 826_SL.RES

Method : C:\MSDCHEM\1\METHODS\826_SL.M (RTE Integrator)
Title : 8260B/C SOIL SOP:OVLMSV01/-C 02/26/16 - HPMS6
Last Update : Mon Feb 29 16:03:26 2016
Response via : Initial Calibration

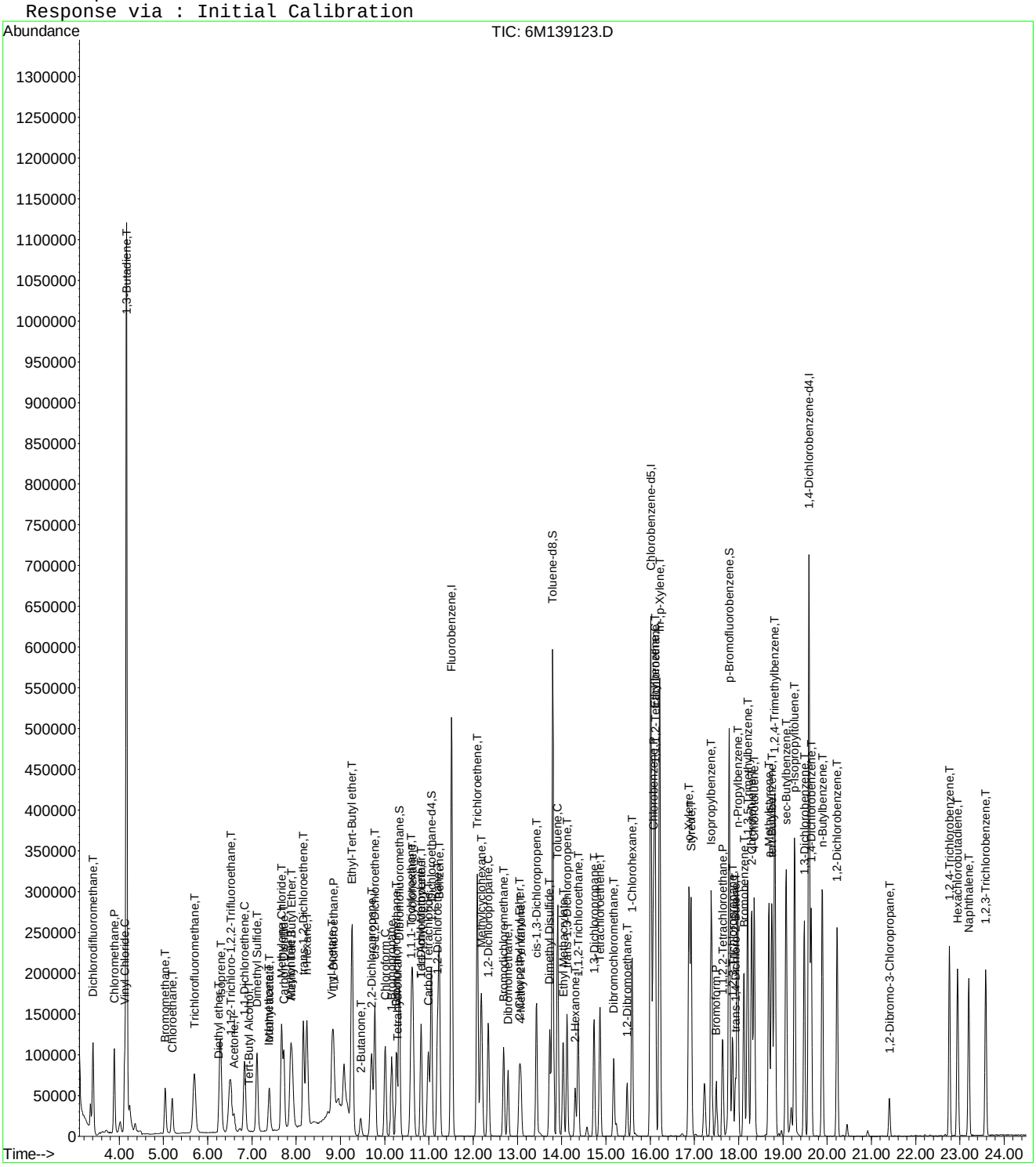

6M139123.D 826_SL.M Sat May 07 16:03:30 2016 Page 3

2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041582-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW23SW(5-5.5)	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 21:59
Collect Date:	04/27/2016 14:15	**Dilution:**	1	**File ID:**	1LM.LM34739
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	74.6

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	19.6		5.16	2.58	1.29

Certificate of Analysis

Sample #:	L16041582-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW23SW(10-10.5)	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/05/2016 14:47
Collect Date:	04/27/2016 14:40	**Dilution:**	100	**File ID:**	1LM.LM34758
Sample Tag:	DL01	**Units:**	ug/kg	**Percent Solid:**	81.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1920		478	238	119

Certificate of Analysis

Sample #:	L16041582-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW23SW(20-20.5)	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 22:37
Collect Date:	04/27/2016 14:45	**Dilution:**	1	**File ID:**	1LM.LM34741
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	29.3		4.80	2.40	1.20

Certificate of Analysis

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Sample #:	L16041582-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW23SW(30-30.5)	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/04/2016 22:56
Collect Date:	04/27/2016 14:50	**Dilution:**	1	**File ID:**	1LM.LM34742
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	81.0

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.42	U	4.85	2.42	1.21

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041582-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW23SW(40-40.5)	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/05/2016 00:11
Collect Date:	04/27/2016 16:15	**Dilution:**	1	**File ID:**	1LM.LM34746
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	84.8

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.28	U	4.56	2.28	1.14

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041582-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW23SW(60-60.5)	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/05/2016 00:30
Collect Date:	04/27/2016 17:35	**Dilution:**	1	**File ID:**	1LM.LM34747
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	82.2

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.34	U	4.69	2.34	1.17

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

Certificate of Analysis

Sample #:	L16041582-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW23SW(50-50.5)	**Prep Method:**	6850	**Prep Date:**	05/04/2016 12:00
Matrix:	Soil	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG567224	**Analyst:**	JWR	**Run Date:**	05/05/2016 00:49
Collect Date:	04/27/2016 17:45	**Dilution:**	1	**File ID:**	1LM.LM34748
Sample Tag:	01	**Units:**	ug/kg	**Percent Solid:**	80.4

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.44	U	4.88	2.44	1.22

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16041582
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Stephanie Mossburg

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

MICROBAC

Semivolatile Sample Extract Log

Document Control No.: 1753 Page: 13 of 100

Parameter: Perchlorate
SOP #: HPLC 06
Analyst: JWR
Spike/Surrogate analyst: JWR
Surrogate #: NA
Spike # A: STD75513
Ext Solvent: DI-H2O
Ext Solvent: NA
Ext Disk: NA

Matrix: Soils
Rev #: 08
Date/Time Extracted: 05/04/16/1200
Witness: EC 5-4-16

Spike # B: NA
Lot #: NA
Lot #: NA
Lot #: NA

Extraction Work Group: WG567220
Analytical Work Group: WG567224
Run ID: R4569641

Pipetter(s): Eppendorf #403
Analytical Balance ID: BAL017
Reagent: Tubes Lot #: RGT34011
Reagent: Sand Lot #: COA18813
Other: IS Lot #: COA18071

Color Code
T = Transparent
C = Colored
O = Opaque

	Sample ID	Test Code	pH	Initial Wt / Vol	JWR ~~Surrogate~~ IS Amount	Amount Spike	Final Volume	Extract Color	Comments
1	WG567220-01	6850		5.009g	0.250ml	1.0ml	50ml		MCT (10,000 us)(2ug/kg)
2	WG567220-02			5.014g		NA			Blank
3	WG567220-03			5.009g		1.0ml			LCS (2ug/kg)
4	L16041580-01			5.031g		NA			
5	-02			5.110g		NA			
6	-03			5.138g		NA			
7	-04			5.094g		NA			
8	-05			5.017g		NA			
9	-06 RS			5.100g		NA			WG567220-04 Ref
10	-07 MS			5.109g		1.0ml			WG567220-05 MS (@2ug/kg)
11	-08 MSD			5.104g		1.0ml			WG567220-06 MSD (@2ug/kg)
12	-09			5.114g		NA			
13	-10			5.131g		NA			
14	-11			5.050g		NA			
15	-12			5.111g		NA			
16	-13			5.137g		NA			
17	L16041582-01			5.191g		NA			
18	-02			5.113g		NA			
19	-03			5.095g		NA			
20	-04			5.097g		NA			
21	-05			5.170g		NA			
22	-06			5.194g		NA			
23	-07			5.102g		NA			
24									

Reviewed by: EC 5-4-16

Analytical WG567224 (soils)

Perchlorate Conductivity Check

(perchlorate1)

Conductivity Probe Calibration Check: 1404 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG567220-01 MCT	9,960.	
WG567220-02 Blank	2.14	
WG567220-03 LCS	3.60	
L16041580-01	4.31	
-02	3.67	
-03	30.4	
-04	25.2	
-05	45.5	
-06 RS	53.4	
-07 MS	56.3	
-08 MSD	56.0	
-09	42.4	
-10	34.4	
-11	32.0	
-12	69.5	
-13	168.7	
L16041582-01	15.72	
-02	14.75	
-03	7.79	
-04	15.01	
-05	11.87	
-06	16.03	
-07	17.28	

Analyst: John Richards

Date/Time: 05/05/16 17:00

DCN#118217

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050416_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567224 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: Samples tagged with (NR) had "On Column" results over the calibration range. These samples were reanalyzed on the end of this run at dilutions based on their initial "over-range" results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34717	WG567549-01 CCB	1	1		05/04/16 15:02
2	1LM.LM34718	WG567549-02 CCV (1.0ug/L)	1	1	STD75510	05/04/16 15:21
3	1LM.LM34719	WG567224-07 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 15:40
4	1LM.LM34720	WG567224-01 MCT (2.0ug/kg)	7	1	STD75512	05/04/16 15:59
5	1LM.LM34721	WG567224-02 BLANK	7	1		05/04/16 16:18
6	1LM.LM34722	WG567224-03 LCS (2.0ug/kg)	7	1	STD75512	05/04/16 16:37
7	1LM.LM34723	L16041580-06 RS	7	1		05/04/16 16:56
8	1LM.LM34724	L16041580-07 MS	7	1	STD75512	05/04/16 17:15
9	1LM.LM34725	L16041580-08 MSD	7	1	STD75512	05/04/16 17:34
10	1LM.LM34726	L16041580-01	7	1		05/04/16 17:53
11	1LM.LM34727	L16041580-02	7	1		05/04/16 18:12
12	1LM.LM34728	L16041580-03 (NR)	7	1		05/04/16 18:31
13	1LM.LM34729	L16041580-04 (NR)	7	1		05/04/16 18:50
14	1LM.LM34730	WG567549-03 CCV (1.0ug/L)	1	1	STD75510	05/04/16 19:08
15	1LM.LM34731	WG567224-08 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 19:27
16	1LM.LM34732	WG567549-04 CCB	1	1		05/04/16 19:46
17	1LM.LM34733	L16041580-05 (NR)	7	1		05/04/16 20:05
18	1LM.LM34734	L16041580-09	7	1		05/04/16 20:24
19	1LM.LM34735	L16041580-10	7	1		05/04/16 20:43
20	1LM.LM34736	L16041580-11	7	1		05/04/16 21:02
21	1LM.LM34737	L16041580-12	7	1		05/04/16 21:21
22	1LM.LM34738	L16041580-13	7	1		05/04/16 21:40
23	1LM.LM34739	L16041582-01	7	1		05/04/16 21:59
24	1LM.LM34740	L16041582-02 (NR)	7	1		05/04/16 22:18
25	1LM.LM34741	L16041582-03	7	1		05/04/16 22:37
26	1LM.LM34742	L16041582-04	7	1		05/04/16 22:56
27	1LM.LM34743	WG567549-05 CCV (1.0ug/L)	1	1	STD75510	05/04/16 23:14
28	1LM.LM34744	WG567224-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 23:33
29	1LM.LM34745	WG567549-06 CCB	1	1		05/04/16 23:52
30	1LM.LM34746	L16041582-05	7	1		05/05/16 00:11
31	1LM.LM34747	L16041582-06	7	1		05/05/16 00:30
32	1LM.LM34748	L16041582-07	7	1		05/05/16 00:49
33	1LM.LM34749	WG567549-07 CCV (1.0ug/L)	1	1	STD75510	05/05/16 01:08

Page: 1 Approved: 09-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050416_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567224 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM34750	WG567224-10 MRL (2.0ug/kg)	7	1	STD75510	05/05/16 01:27
35	1LM.LM34751	WG567549-08 CCB	1	1		05/05/16 01:46
36	1LM.LM34752	WG567549-09 CCV (1.0ug/L)	1	1	STD75510	05/05/16 12:54
37	1LM.LM34753	WG567224-11 MRL (2.0ug/kg)	7	1	STD75510	05/05/16 13:13
38	1LM.LM34754	WG567549-10 CCB	1	1		05/05/16 13:32
39	1LM.LM34755	L16041580-03 (RR 200x)	7	200		05/05/16 13:50
40	1LM.LM34756	L16041580-04 (RR 400x)	7	400		05/05/16 14:09
41	1LM.LM34757	L16041580-05 (RR 200x)	7	200		05/05/16 14:28
42	1LM.LM34758	L16041582-02 (RR 100x)	7	100		05/05/16 14:47
43	1LM.LM34759	WG567549-11 CCV (1.0ug/L)	1	1	STD75510	05/05/16 15:06
44	1LM.LM34760	WG567224-12 MRL (2.0ug/kg)	7	1	STD75510	05/05/16 15:25
45	1LM.LM34761	WG567549-12 CCB	1	1		05/05/16 15:44

Comments

Seq.	Rerun	Dil.	Reason	Analytes
8				
	L16041580-07 MS : The MS %Rec is below the advisory limit. This sample's matrix is composed of a very wet, non-homogeneous mixture of grey, brown, and orange colored sand.			
9				
	L16041580-08 MSD : The MSD %Rec is below the advisory limit. This sample's matrix is composed of a very wet, non-homogeneous mixture of grey, brown, and orange colored sand.			

Page: 2 Approved: 09-MAY-16

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
04-MAY-2016
John Richards

Secondary Reviewer:
05-MAY-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 04-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 74947
Analytical Workgroups: L16041580, 1582 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	LOW
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
06-MAY-2016
John Richards

Secondary Reviewer:
09-MAY-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-09-2016 09:51:39

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG567224

Login Number: L16041582

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW23SW(5-5.5)	01	04/27/16					05/04/2016	6.9	28		05/04/16	.4	28	
18CPTMW23SW(10-10.5)	02	04/27/16					05/04/2016	6.9	28		05/05/16	1.1	28	
18CPTMW23SW(20-20.5)	03	04/27/16					05/04/2016	6.9	28		05/04/16	.4	28	
18CPTMW23SW(30-30.5)	04	04/27/16					05/04/2016	6.9	28		05/04/16	.5	28	
18CPTMW23SW(40-40.5)	05	04/27/16					05/04/2016	6.8	28		05/05/16	.5	28	
18CPTMW23SW(60-60.5)	06	04/27/16					05/04/2016	6.8	28		05/05/16	.5	28	
18CPTMW23SW(50-50.5)	07	04/27/16					05/04/2016	6.8	28		05/05/16	.5	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4751011
Report generated 05/10/2016 11:23

METHOD BLANK SUMMARY

Login Number: L16041582
Blank File ID: 1LM.LM34721
Prep Date: 05/04/16 12:00
Analyzed Date: 05/04/16 16:18
Analyst: JWR

Work Group: WG567224
Blank Sample ID: WG567224-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG567224-07	1LM.LM34719	05/04/16 15:40	01
MCT	WG567224-01	1LM.LM34720	05/04/16 15:59	01
LCS	WG567224-03	1LM.LM34722	05/04/16 16:37	01
QCMRL	WG567224-08	1LM.LM34731	05/04/16 19:27	01
18CPTMW23SW(5-5.5)	L16041582-01	1LM.LM34739	05/04/16 21:59	01
18CPTMW23SW(20-20.5)	L16041582-03	1LM.LM34741	05/04/16 22:37	01
18CPTMW23SW(30-30.5)	L16041582-04	1LM.LM34742	05/04/16 22:56	01
QCMRL	WG567224-09	1LM.LM34744	05/04/16 23:33	01
18CPTMW23SW(40-40.5)	L16041582-05	1LM.LM34746	05/05/16 00:11	01
18CPTMW23SW(60-60.5)	L16041582-06	1LM.LM34747	05/05/16 00:30	01
18CPTMW23SW(50-50.5)	L16041582-07	1LM.LM34748	05/05/16 00:49	01
QCMRL	WG567224-10	1LM.LM34750	05/05/16 01:27	01
QCMRL	WG567224-11	1LM.LM34753	05/05/16 13:13	01
18CPTMW23SW(10-10.5)	L16041582-02	1LM.LM34758	05/05/16 14:47	DL01
QCMRL	WG567224-12	1LM.LM34760	05/05/16 15:25	01

Report Name: BLANK_SUMMARY
PDF File ID: 4751012
Report generated 05/10/2016 11:23

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16041582 Prep Date: 05/04/16 12:00 Sample ID: WG567224-02
Instrument ID: LCMS1 Run Date: 05/04/16 16:18 Prep Method: 6850
File ID: 1LM.LM34721 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567224 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.997	3.99	0.997	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4751013
10-MAY-2016 11:23

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16041582 Run Date: 05/04/2016 Sample ID: WG567224-03
Instrument ID: LCMS1 Run Time: 16:37 Prep Method: 6850
File ID: 1LM.LM34722 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567224 Matrix: Soil Units: ug/kg
QC Key: DOD4 Lot#: STD75512 Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	2.00	1.91	95.5	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4751014
Report generated: 05/10/2016 11:23

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16041582
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4754245
Report generated 05/10/2016 11:23

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16041582
Analytical Method: 6850

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4754245
Report generated 05/10/2016 11:23

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16041582

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4754245
Report generated 05/10/2016 11:23

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16041582
Analytical Method: 6850

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008
PDF File ID: 4754245
Report generated 05/10/2016 11:23

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16041582 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4754246
Report generated 05/10/2016 11:23

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16041582
Run Date: 05/04/2016
Sample ID: WG567549-01
Instrument ID: LCMS1
Run Time: 15:02
Method: 6850
File ID: 1LM.LM34717
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG567224
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4751017
Report generated 05/10/2016 11:23

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16041582
Run Date: 05/04/2016
Sample ID: WG567549-04
Instrument ID: LCMS1
Run Time: 19:46
Method: 6850
File ID: 1LM.LM34732
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG567224
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4751017
Report generated 05/10/2016 11:23

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16041582
Run Date: 05/04/2016
Sample ID: WG567549-06
Instrument ID: LCMS1
Run Time: 23:52
Method: 6850
File ID: 1LM.LM34745
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG567224
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4751017
Report generated 05/10/2016 11:23

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16041582
Run Date: 05/05/2016
Sample ID: WG567549-08
Instrument ID: LCMS1
Run Time: 01:46
Method: 6850
File ID: 1LM.LM34751
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG567224
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4751017
Report generated 05/10/2016 11:23

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16041582
Run Date: 05/05/2016
Sample ID: WG567549-10
Instrument ID: LCMS1
Run Time: 13:32
Method: 6850
File ID: 1LM.LM34754
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG567224
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4751017
Report generated 05/10/2016 11:23

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16041582
Run Date: 05/05/2016
Sample ID: WG567549-12
Instrument ID: LCMS1
Run Time: 15:44
Method: 6850
File ID: 1LM.LM34761
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG567224
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4751017
Report generated 05/10/2016 11:23

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041582
Run Date: 05/04/2016
Sample ID: WG567549-02
Instrument ID: LCMS1
Run Time: 15:21
Method: 6850
File ID: 1LM.LM34718
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG567224
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.996	ug/kg	1.68	0.400	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4751016
Report generated 05/10/2016 11:23

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041582
Run Date: 05/04/2016
Sample ID: WG567549-03
Instrument ID: LCMS1
Run Time: 19:08
Method: 6850
File ID: 1LM.LM34730
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG567224
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/kg	1.72	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4751016
Report generated 05/10/2016 11:23

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041582
Run Date: 05/04/2016
Sample ID: WG567549-05
Instrument ID: LCMS1
Run Time: 23:14
Method: 6850
File ID: 1LM.LM34743
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG567224
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/kg	1.71	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4751016
Report generated 05/10/2016 11:23

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041582 Run Date: 05/05/2016 Sample ID: WG567549-07
Instrument ID: LCMS1 Run Time: 01:08 Method: 6850
File ID: 1LM.LM34749 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG567224 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.990	ug/kg	1.67	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4751016
Report generated 05/10/2016 11:23

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041582
Run Date: 05/05/2016
Sample ID: WG567549-09
Instrument ID: LCMS1
Run Time: 12:54
Method: 6850
File ID: 1LM.LM34752
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG567224
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.998	ug/kg	1.68	0.200	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4751016
Report generated 05/10/2016 11:23

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16041582
Run Date: 05/05/2016
Sample ID: WG567549-11
Instrument ID: LCMS1
Run Time: 15:06
Method: 6850
File ID: 1LM.LM34759
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG567224
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.00	ug/kg	1.69	0	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4751016
Report generated 05/10/2016 11:23

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16041582 Run Date: 05/04/2016 Sample ID: WG567224-07
Instrument ID: LCMS1 Run Time: 15:40 Prep Method: 6850
File ID: 1LM.LM34719 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567224 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.01	101	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4751015
Report generated 05/10/2016 11:23

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16041582 Run Date: 05/04/2016 Sample ID: WG567224-08
Instrument ID: LCMS1 Run Time: 19:27 Prep Method: 6850
File ID: 1LM.LM34731 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567224 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.10	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4751015
Report generated 05/10/2016 11:23

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16041582 Run Date: 05/04/2016 Sample ID: WG567224-09
Instrument ID: LCMS1 Run Time: 23:33 Prep Method: 6850
File ID: 1LM.LM34744 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567224 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.09	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4751015
Report generated 05/10/2016 11:23

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16041582 Run Date: 05/05/2016 Sample ID: WG567224-10
Instrument ID: LCMS1 Run Time: 01:27 Prep Method: 6850
File ID: 1LM.LM34750 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567224 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.00	100	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4751015
Report generated 05/10/2016 11:23

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16041582 Run Date: 05/05/2016 Sample ID: WG567224-11
Instrument ID: LCMS1 Run Time: 13:13 Prep Method: 6850
File ID: 1LM.LM34753 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567224 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.06	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4751015
Report generated 05/10/2016 11:23

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16041582 Run Date: 05/05/2016 Sample ID: WG567224-12
Instrument ID: LCMS1 Run Time: 15:25 Prep Method: 6850
File ID: 1LM.LM34760 Analyst: JWR Method: 6850
Workgroup (AAB#): WG567224 Matrix: Soil Units: ug/kg
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	2.00	2.00	100	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4751015
Report generated 05/10/2016 11:23

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16041582
Instrument ID: LCMS1
Workgroup (AAB#): WG567224

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: SOLID

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16041582-01	1.00	01	491000
L16041582-02	100	DL01	470000
L16041582-03	1.00	01	524000
L16041582-04	1.00	01	524000
L16041582-05	1.00	01	518000
L16041582-06	1.00	01	520000
L16041582-07	1.00	01	535000
WG567224-02	1.00	01	442000
WG567224-03	1.00	01	442000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4751018
Report generated 05/10/2016 11:24

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**	6850	**Samplenum:**	L16041582-01
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34739
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 21:59	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	252000	82100	3.07	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**	6850	**Samplenum:**	L16041582-02
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34758
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/05/2016 14:47	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	255000	84700	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**	6850	**Samplenum:**	L16041582-03
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34741
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 22:37	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	431000	145000	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**	6850	**Samplenum:**	L16041582-04
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34742
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 22:56	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	5550	2140	2.59	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**	6850	**Samplenum:**	L16041582-05
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34746
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/05/2016 00:11	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**	6850	**Samplenum:**	L16041582-06
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34747
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/05/2016 00:30	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1400	549	2.55	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**	6850	**Samplenum:**	L16041582-07
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34748
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/05/2016 00:49	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	236	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**	6850	**Samplenum:**	WG567224-01
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34720
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 15:59	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	28100	10100	2.78	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**	6850	**Samplenum:**	WG567224-02
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34721
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 16:18	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	2220	592	3.75	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**	6850	**Samplenum:**	WG567224-03
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34722
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 16:37	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	28900	11400	2.54	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**	6850	**Samplenum:**	WG567224-07
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34719
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 15:40	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	29900	10300	2.90	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**	6850	**Samplenum:**	WG567224-08
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34731
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 19:27	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	33400	11300	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**	6850	**Samplenum:**	WG567224-09
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34744
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/04/2016 23:33	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38400	11700	3.28	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**	6850	**Samplenum:**	WG567224-10
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34750
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/05/2016 01:27	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36200	13800	2.62	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**	6850	**Samplenum:**	WG567224-11
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34753
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/05/2016 13:13	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34200	12500	2.74	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**	6850	**Samplenum:**	WG567224-12
Instrument:	LCMS1	**Prep Date:**	05/04/2016 12:00	**File ID:**	1LM.LM34760
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Soil
Worknum:	WG567224	**Analysis Date:**	05/05/2016 15:25	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35500	12900	2.75	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**		**Samplenum:**	WG567549-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34717
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/04/2016 15:02	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**		**Samplenum:**	WG567549-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34718
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/04/2016 15:21	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	143000	47800	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**		**Samplenum:**	WG567549-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34730
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/04/2016 19:08	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	159000	53200	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**		**Samplenum:**	WG567549-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34732
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/04/2016 19:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	604	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**		**Samplenum:**	WG567549-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34743
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/04/2016 23:14	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	178000	58200	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**		**Samplenum:**	WG567549-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34745
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/04/2016 23:52	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**		**Samplenum:**	WG567549-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34749
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/05/2016 01:08	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	177000	59800	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**		**Samplenum:**	WG567549-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34751
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/05/2016 01:46	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**		**Samplenum:**	WG567549-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34752
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/05/2016 12:54	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	156000	55000	2.84	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**		**Samplenum:**	WG567549-10
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34754
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/05/2016 13:32	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**		**Samplenum:**	WG567549-11
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34759
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/05/2016 15:06	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	174000	59100	2.94	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16041582	**Prep Method:**		**Samplenum:**	WG567549-12
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34761
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG567224	**Analysis Date:**	05/05/2016 15:44	**Units:**	ug/kg

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	449	0.000	2.3	3.8	*

2.2.1.3 Sample Data

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Created with Analyst Reporter
Printed: 5/6/2016 1:53 PM

Data File	LM34739.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 9:59:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041582-01	**Injection Vial**	20.00
Data File	LM34739.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 9:59:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	L16041582-01	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.910e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.520e+05	9.82	N/A	1.52
Perchlorate conf	8.210e+04	9.82	N/A	1.48

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

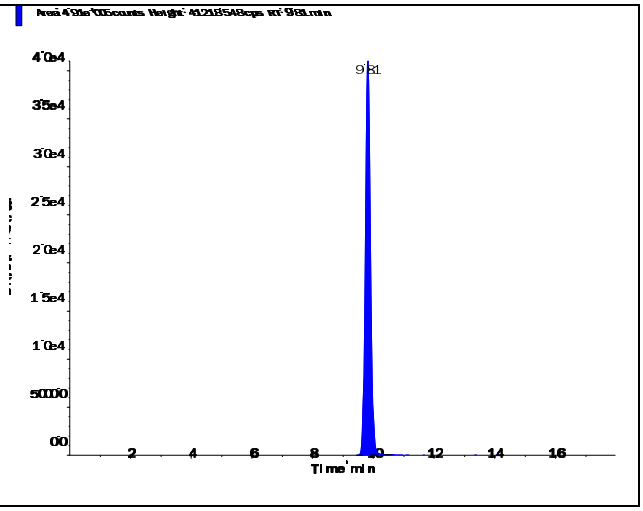

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	1.52 ng/ml
Area Ratio:	0.513
Sample Type:	(Unknown)

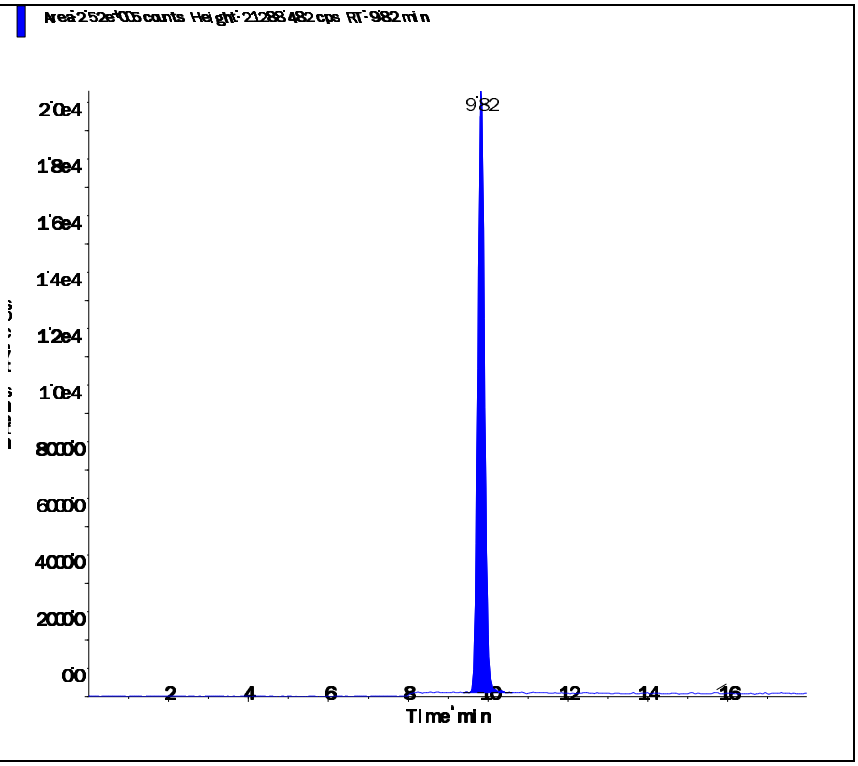

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	1.48 ng/ml
Area Ratio:	0.167
Sample Type:	(Unknown)

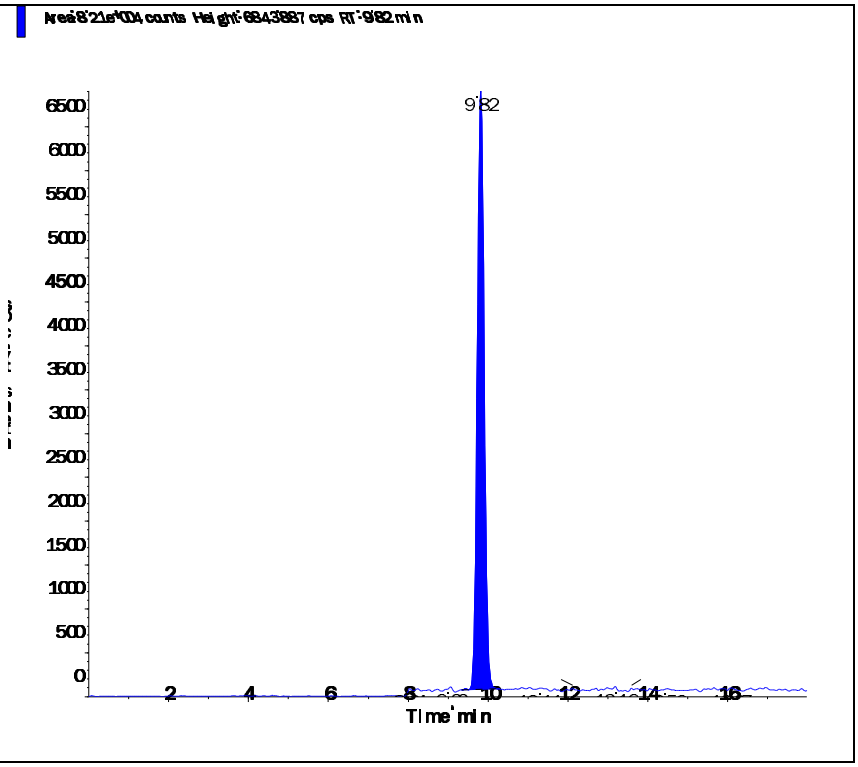

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Created with Analyst Reporter
Printed: 5/6/2016 1:59 PM

Data File	LM34758.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 2:47:47 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041582-02 (RR 100x)	**Injection Vial**	30.00
Data File	LM34758.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 2:47:47 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	L16041582-02	**Dilution Factor**	1.00
Sample Comment	7,100.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.700e+05	9.86	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.550e+05	9.87	N/A	1.61
Perchlorate conf	8.470e+04	9.85	N/A	1.59

O18LP (Internal Standard)

RT (Exp. RT): 9.86(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

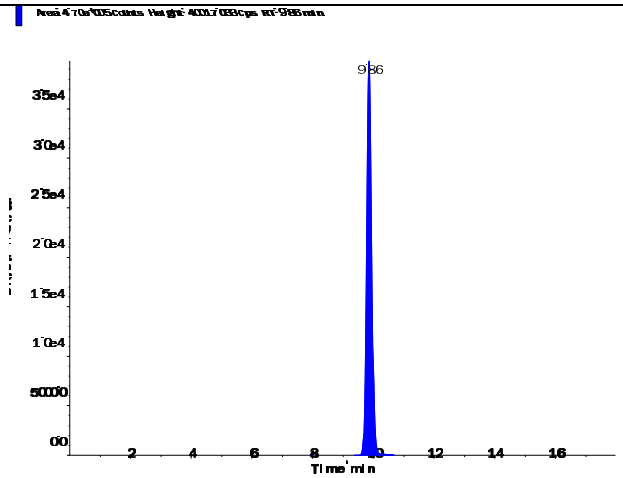

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Printed: 5/6/2016 1:59 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.87 (9.84) min
Calculated conc:	1.61 ng/ml
Area Ratio:	0.542
Sample Type:	(Unknown)

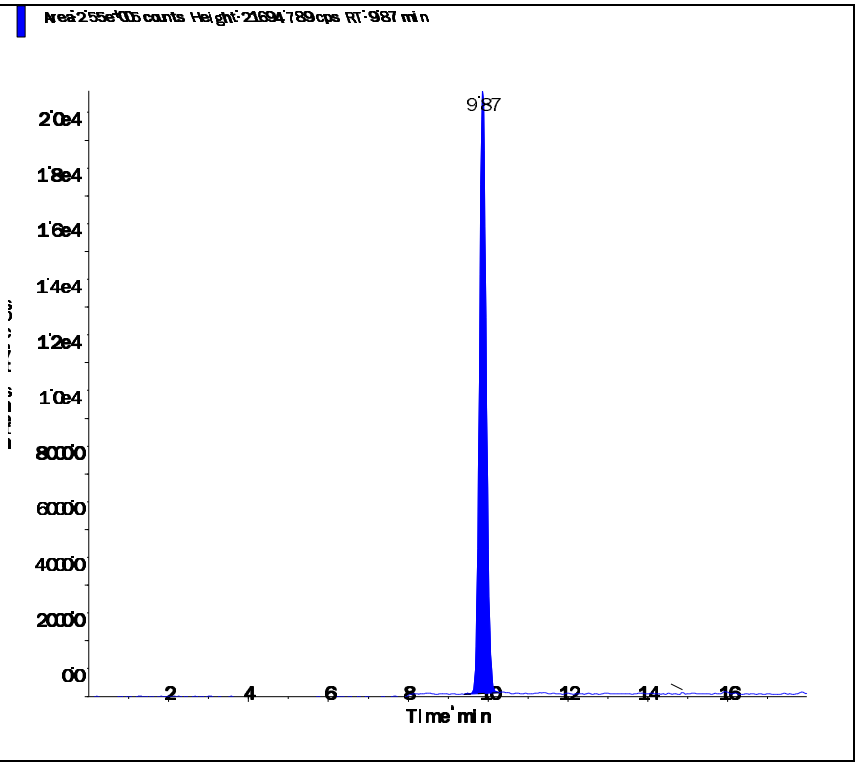

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	1.59 ng/ml
Area Ratio:	0.18
Sample Type:	(Unknown)

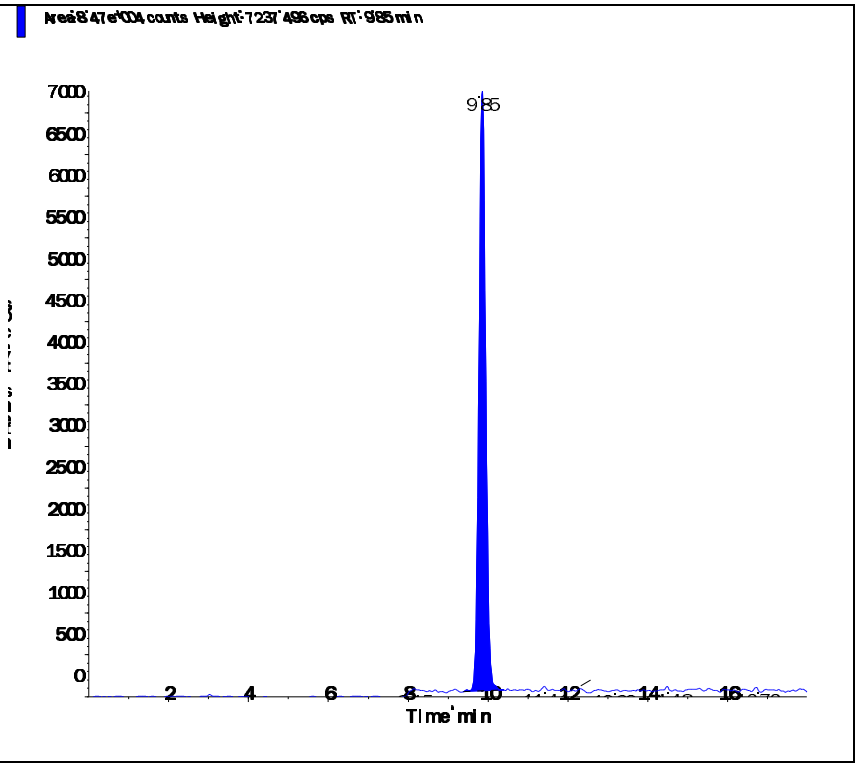

s.dataFile Page 2 of 2

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Created with Analyst Reporter
Printed: 5/6/2016 1:54 PM

Data File	LM34741.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 10:37:07 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041582-03	**Injection Vial**	22.00
Data File	LM34741.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 10:37:07 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	L16041582-03	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.240e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.310e+05	9.84	N/A	2.44
Perchlorate conf	1.450e+05	9.83	N/A	2.46

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

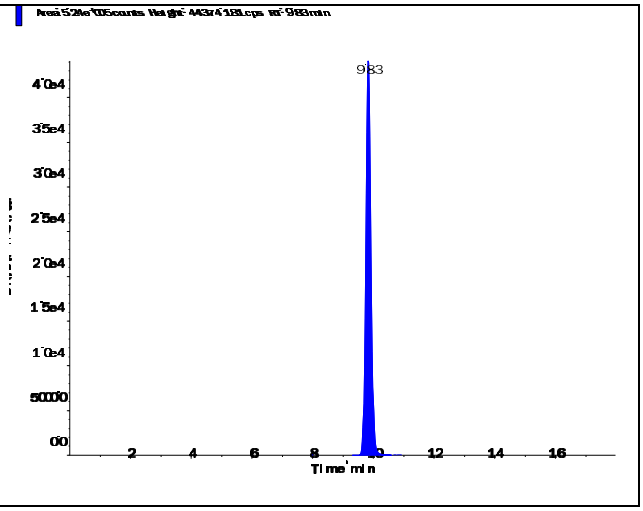

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 2.44 ng/ml Area Ratio: 0.821 Sample Type: (Unknown)	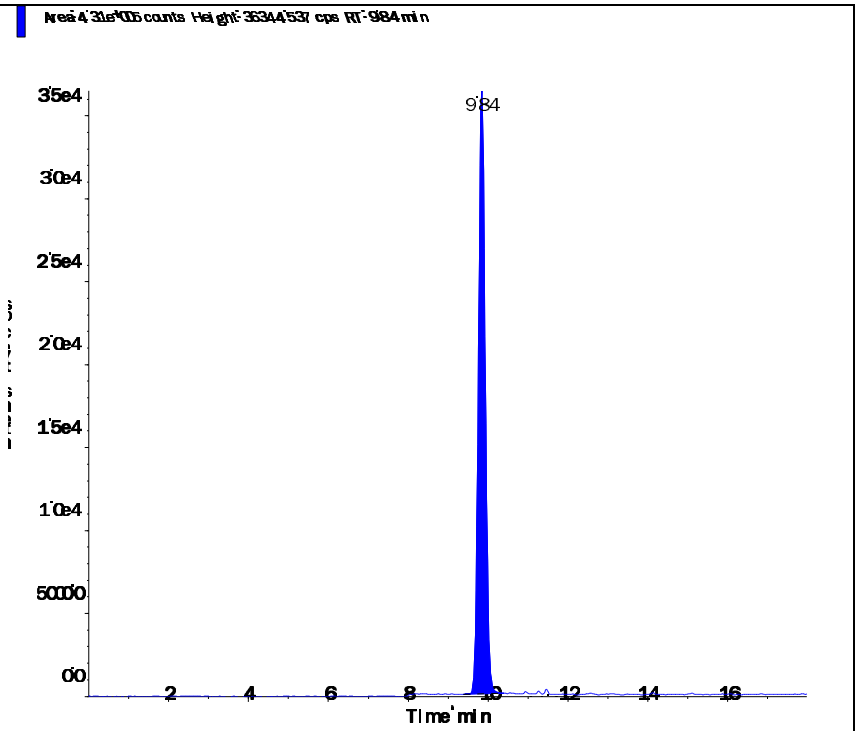
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 2.46 ng/ml Area Ratio: 0.277 Sample Type: (Unknown)	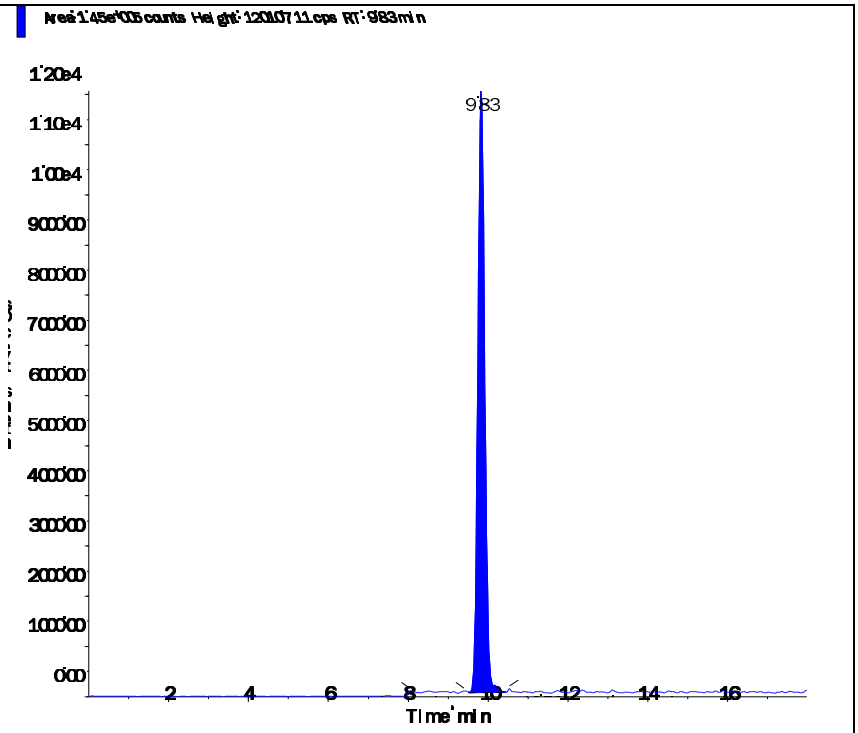

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Printed: 5/6/2016 1:54 PM

Data File	LM34742.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 10:56:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041582-04	**Injection Vial**	23.00
Data File	LM34742.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 10:56:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	L16041582-04	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.240e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.550e+03	9.83	N/A	0.0277
Perchlorate conf	2.140e+03	9.83	N/A	0.0162

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

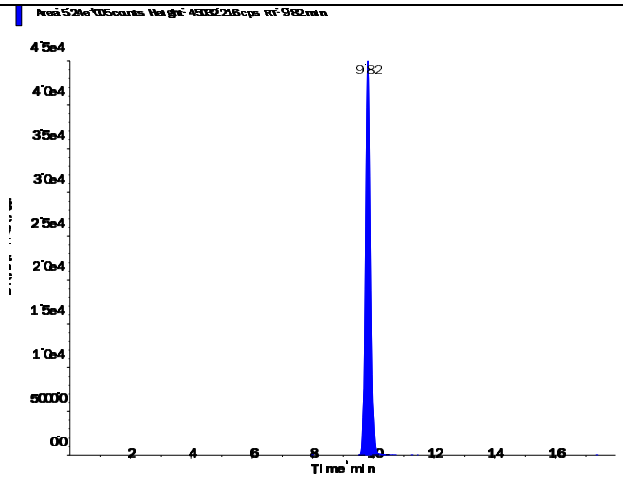

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.0277 ng/ml
Area Ratio:	0.011
Sample Type:	(Unknown)

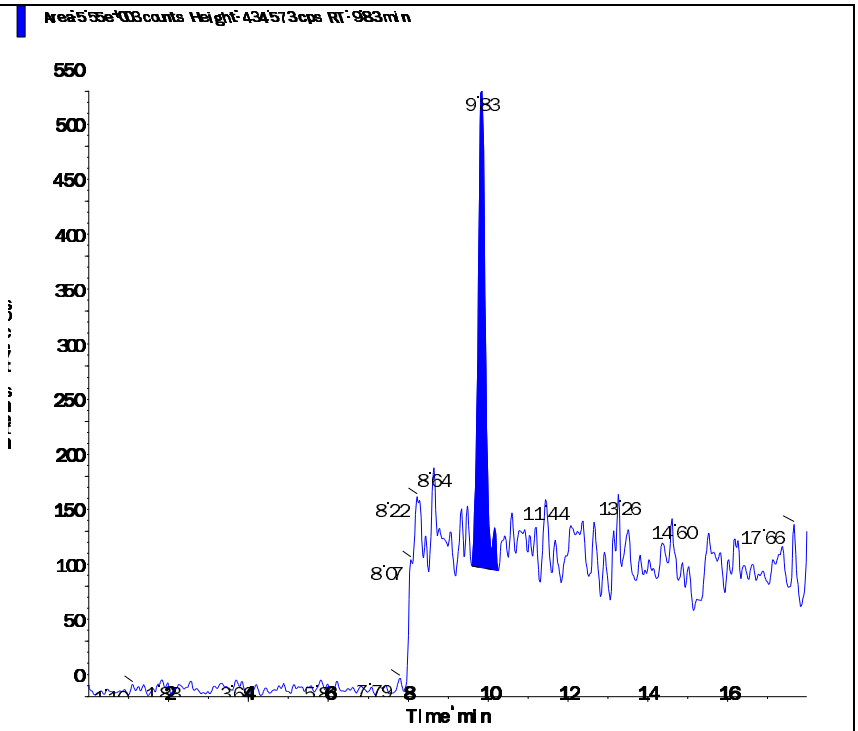

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.0162 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)

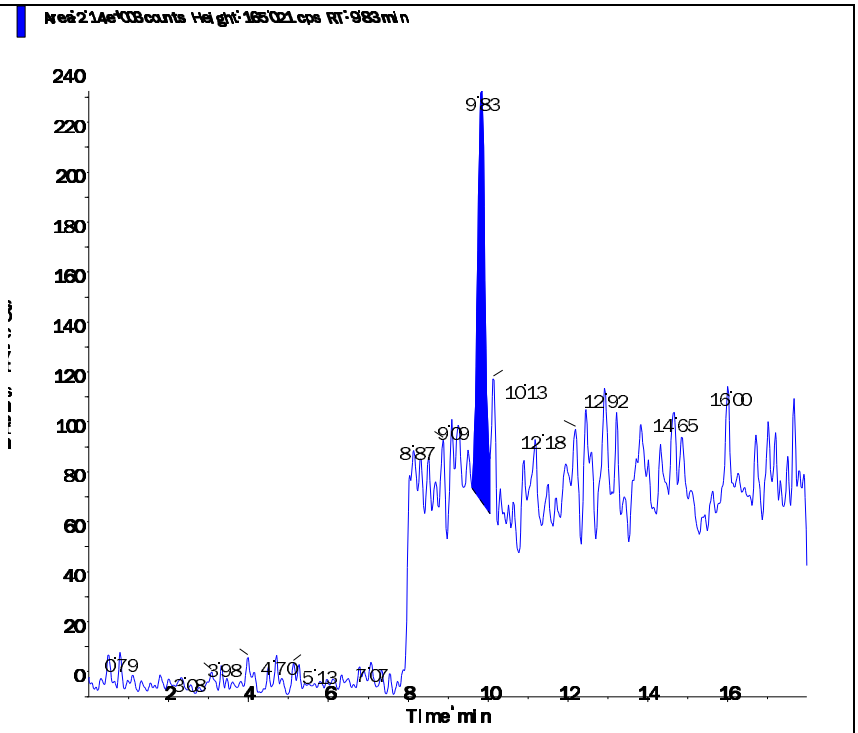

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Printed: 5/6/2016 1:55 PM

Data File	LM34746.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 12:11:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041582-05	**Injection Vial**	24.00
Data File	LM34746.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 12:11:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	L16041582-05	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.180e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

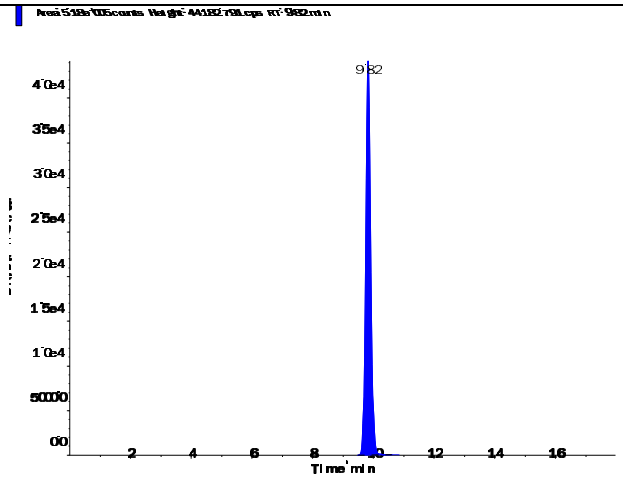

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

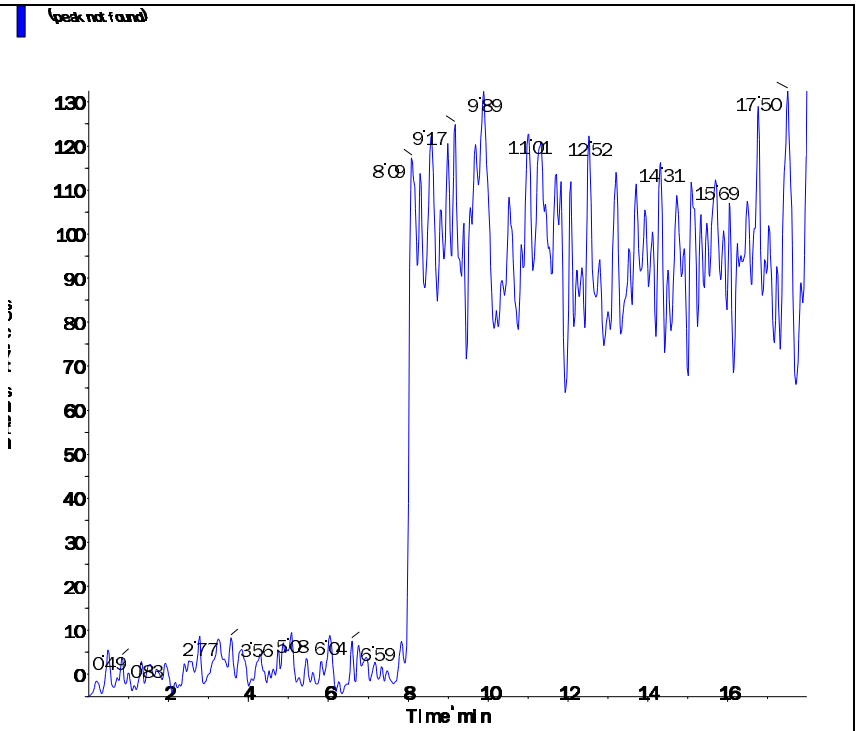

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

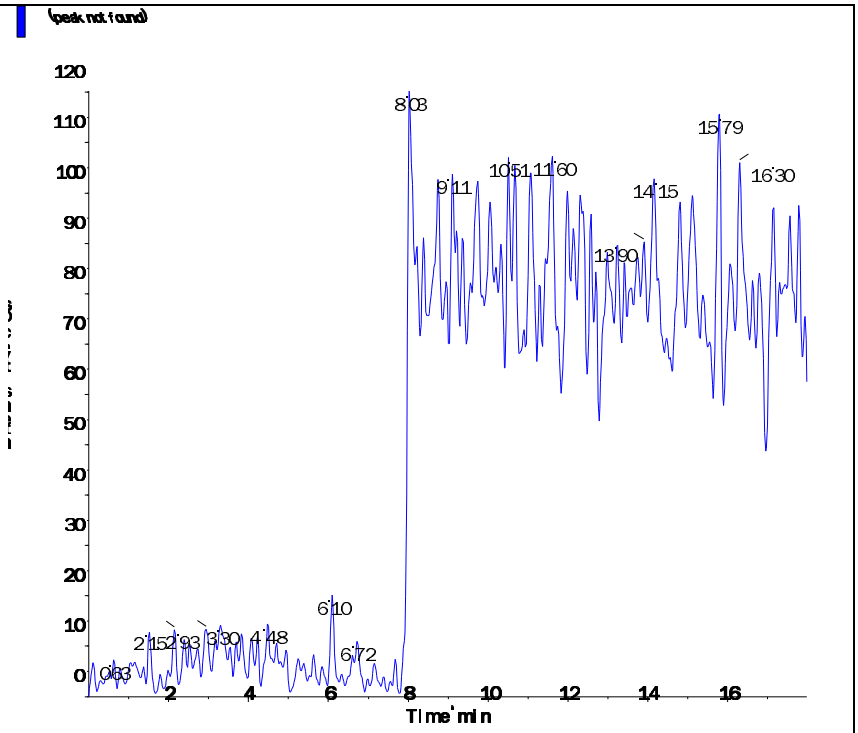

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Printed: 5/6/2016 1:56 PM

Data File	LM34747.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 12:30:40 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041582-06	**Injection Vial**	25.00
Data File	LM34747.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 12:30:40 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	L16041582-06	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.200e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.400e+03	9.84	N/A	0.0042
Perchlorate conf	5.490e+02	9.85	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

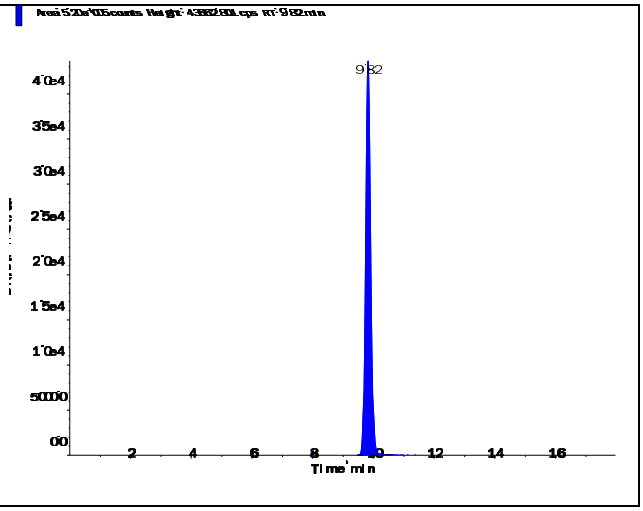

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 0.0042 ng/ml Area Ratio: 0.003 Sample Type: (Unknown)	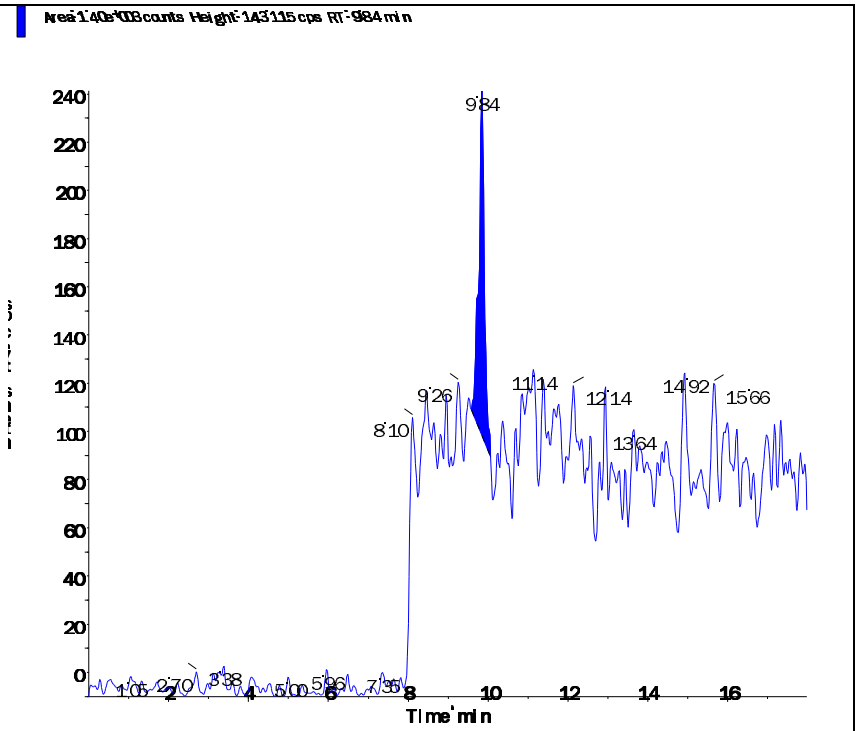
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	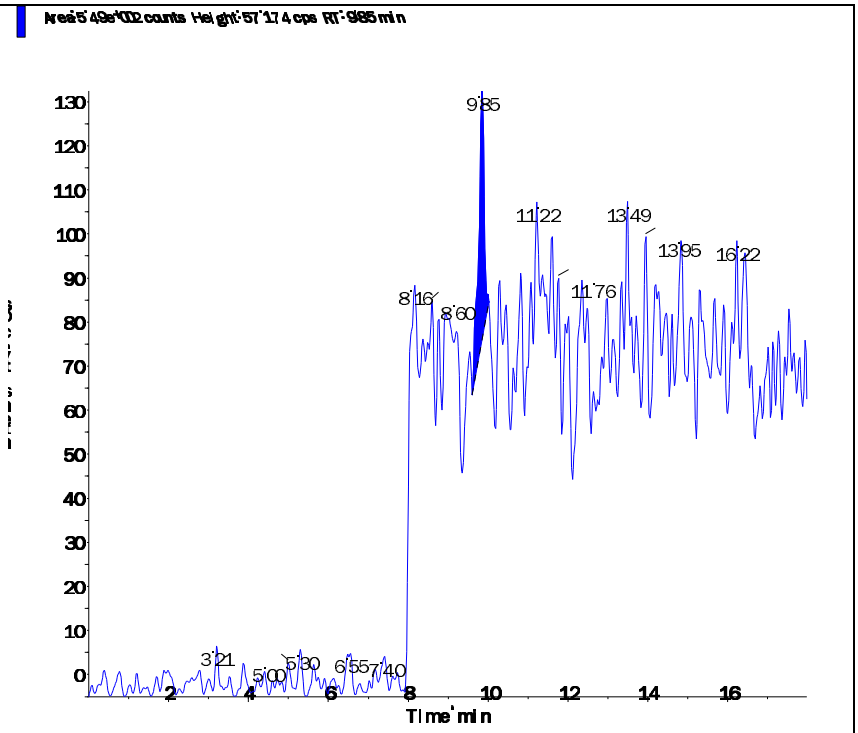

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Data File	LM34748.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 12:49:35 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16041582-07	**Injection Vial**	26.00
Data File	LM34748.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 12:49:35 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	L16041582-07	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.350e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	2.360e+02	10.10	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

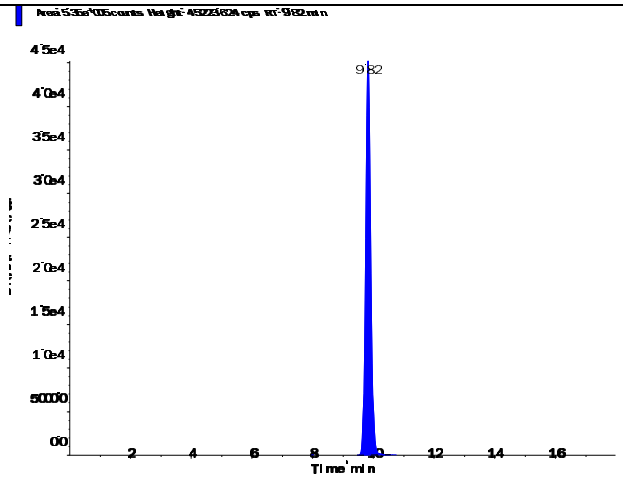

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

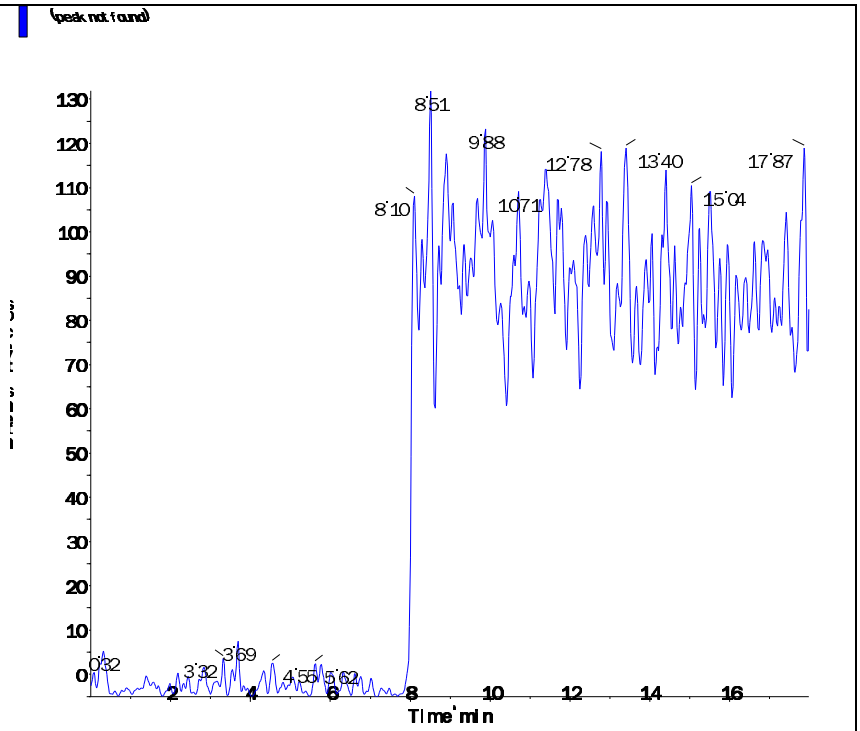

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.10 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

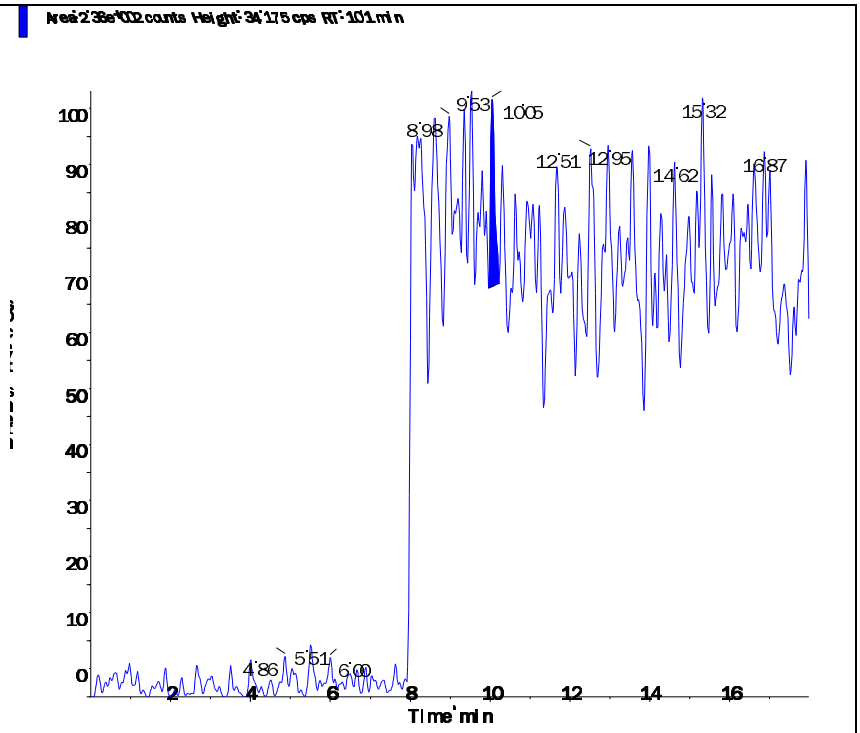

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2.2.1.4 Standards Data

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Data File	LM34686.wiff	**Result Table**	050616_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050616_JWR.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

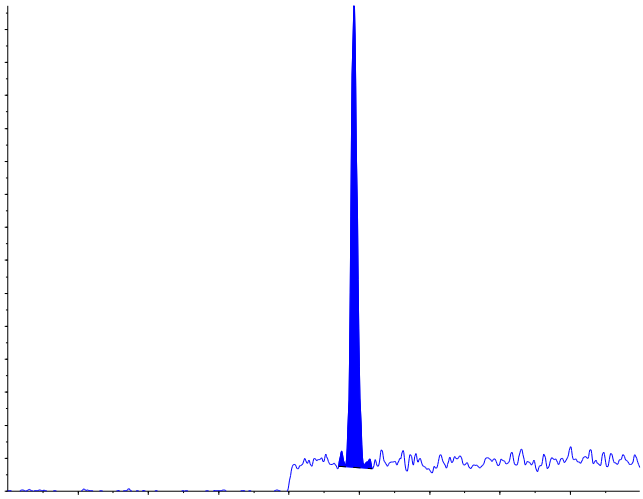

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	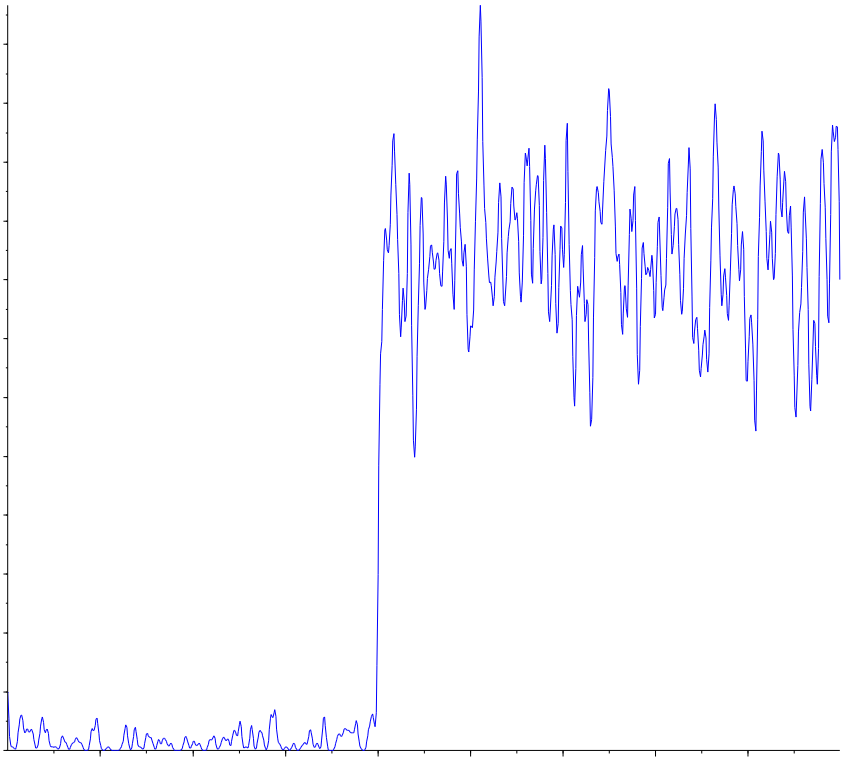
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	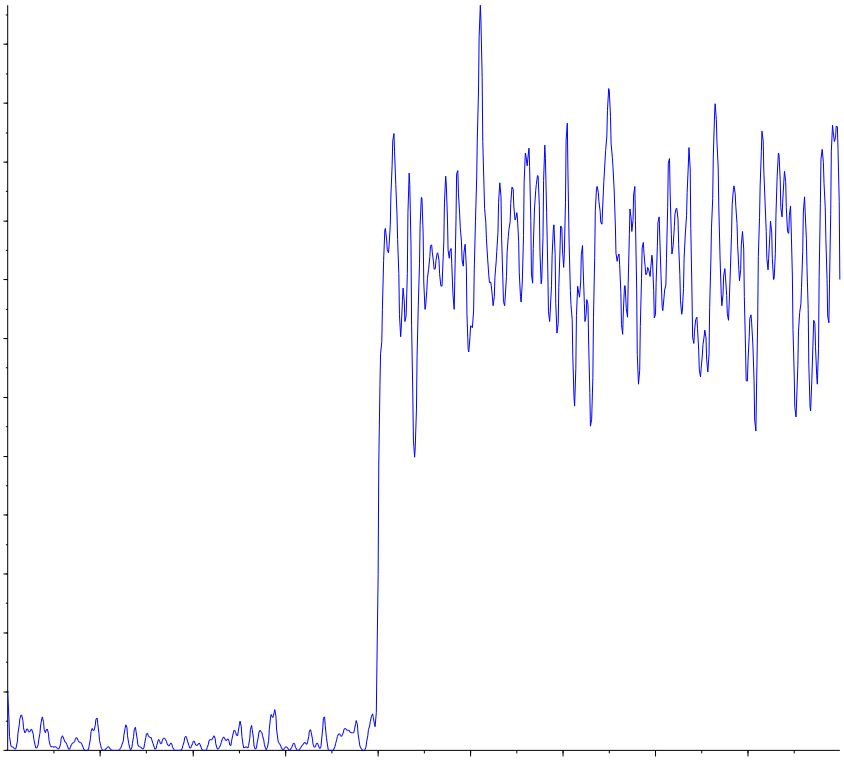

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Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

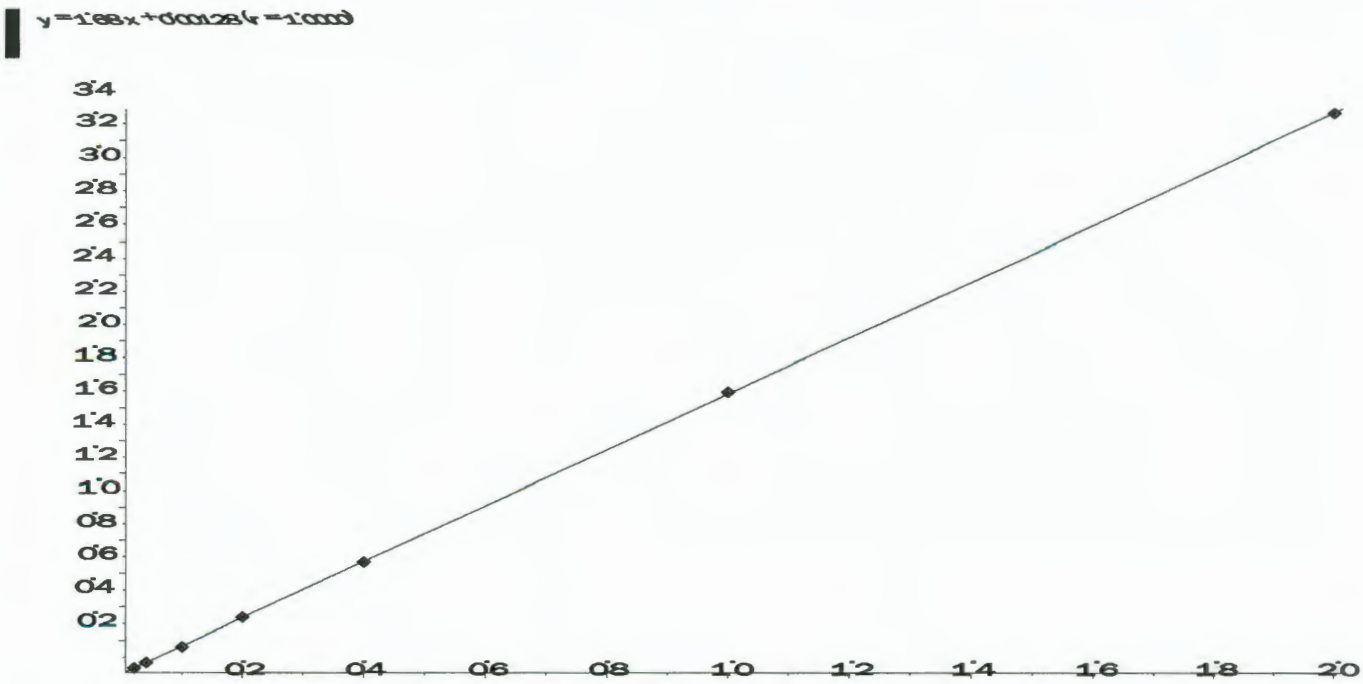

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Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

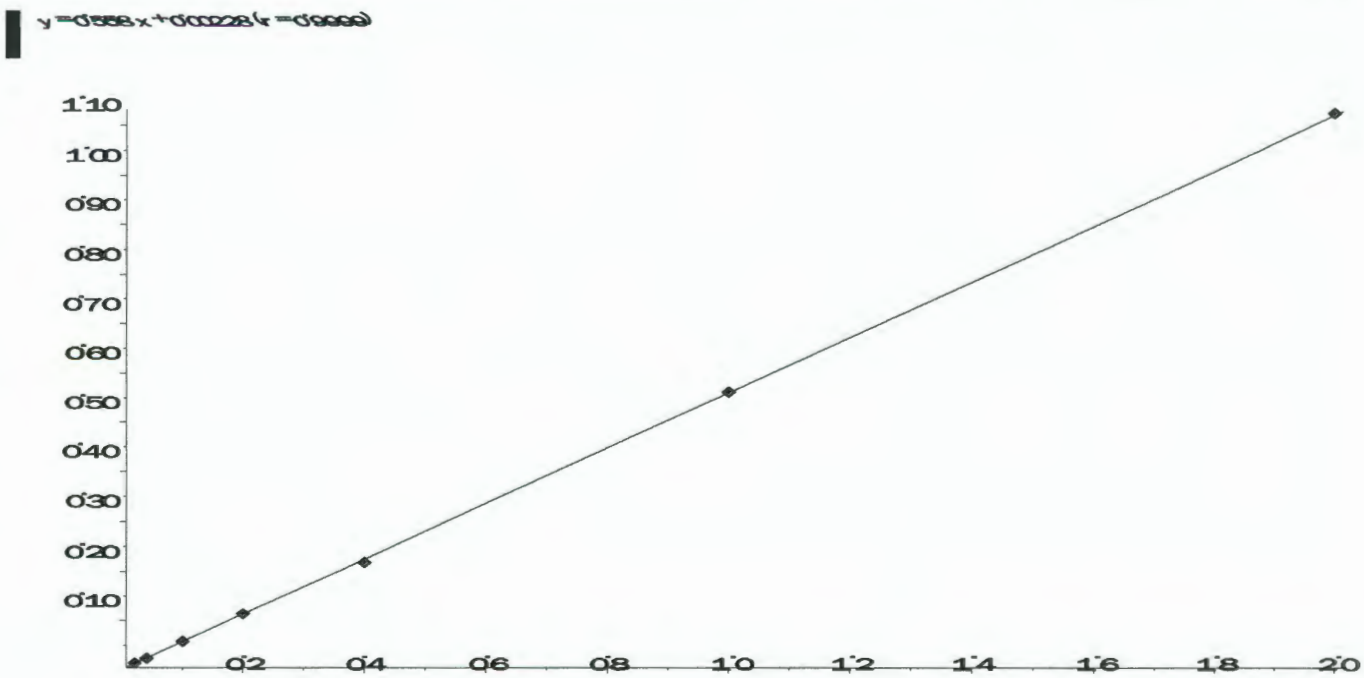

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Data File	LM34687.wiff	**Result Table**	050616_JWR.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050616_JWR.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

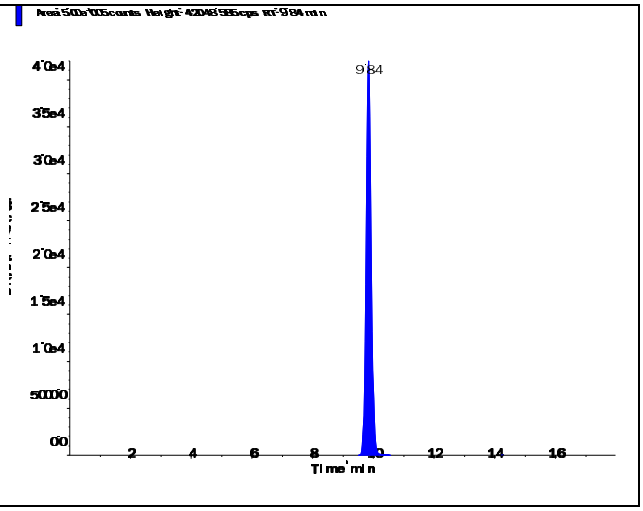

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.103 ng/ml
Area Ratio:	0.036
Sample Type:	(Standard)

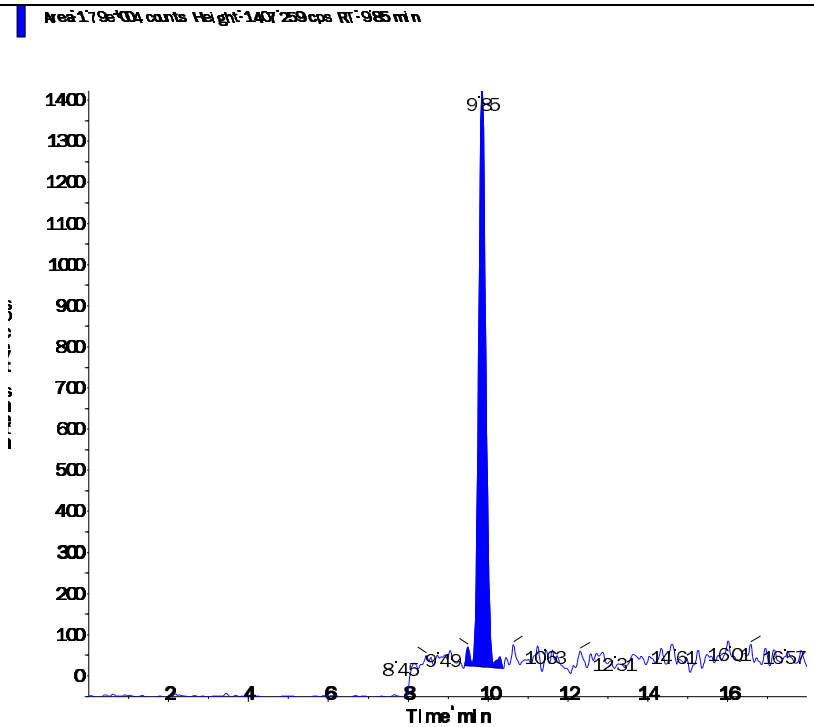

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.104 ng/ml
Area Ratio:	0.014
Sample Type:	(Standard)

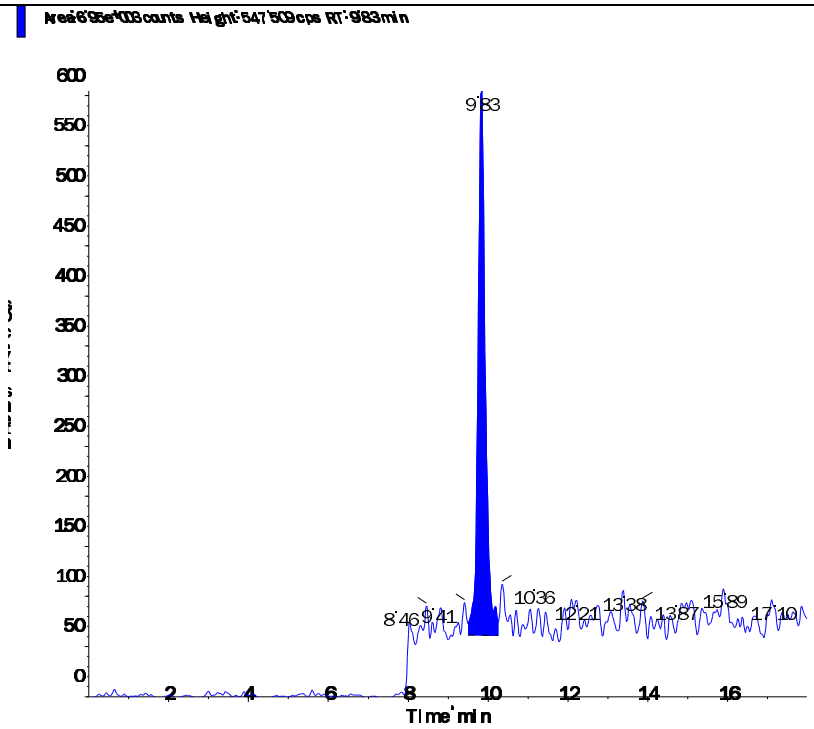

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Data File	LM34688.wiff	**Result Table**	050616_JWR.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050616_JWR.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

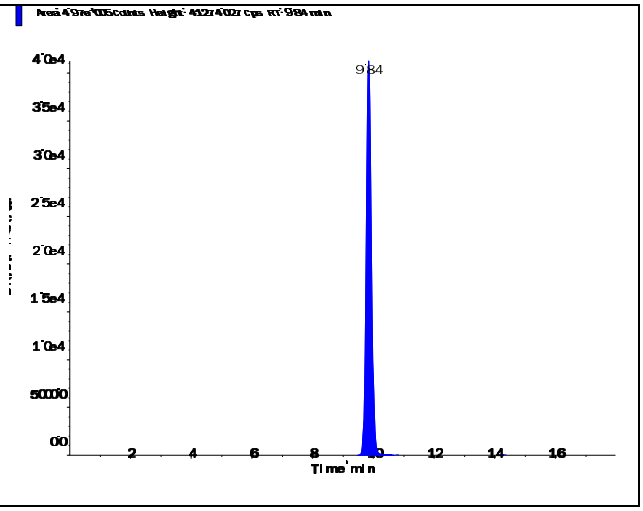

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

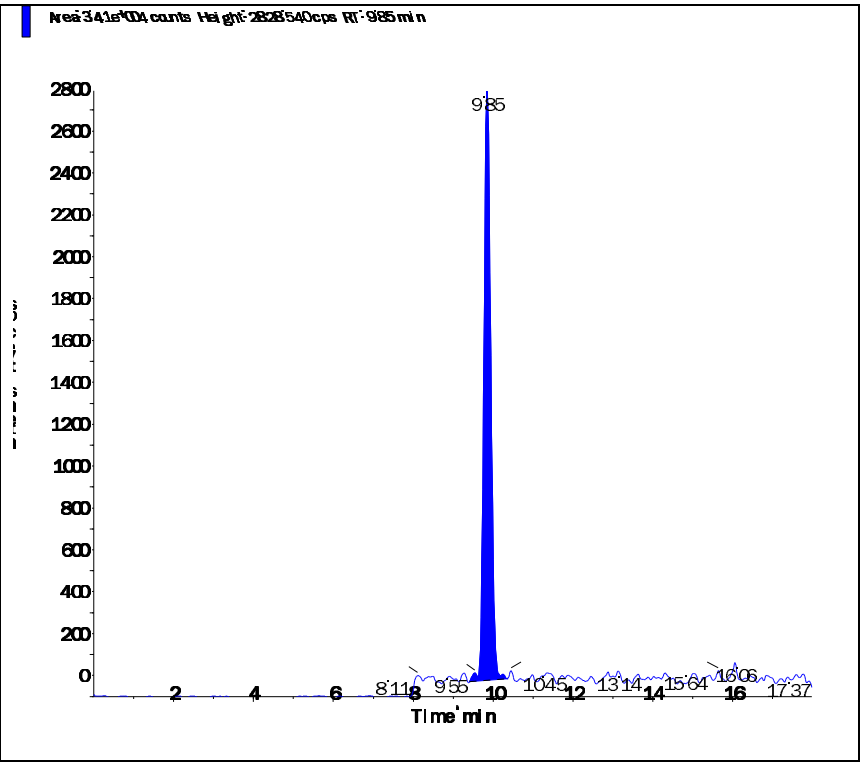

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

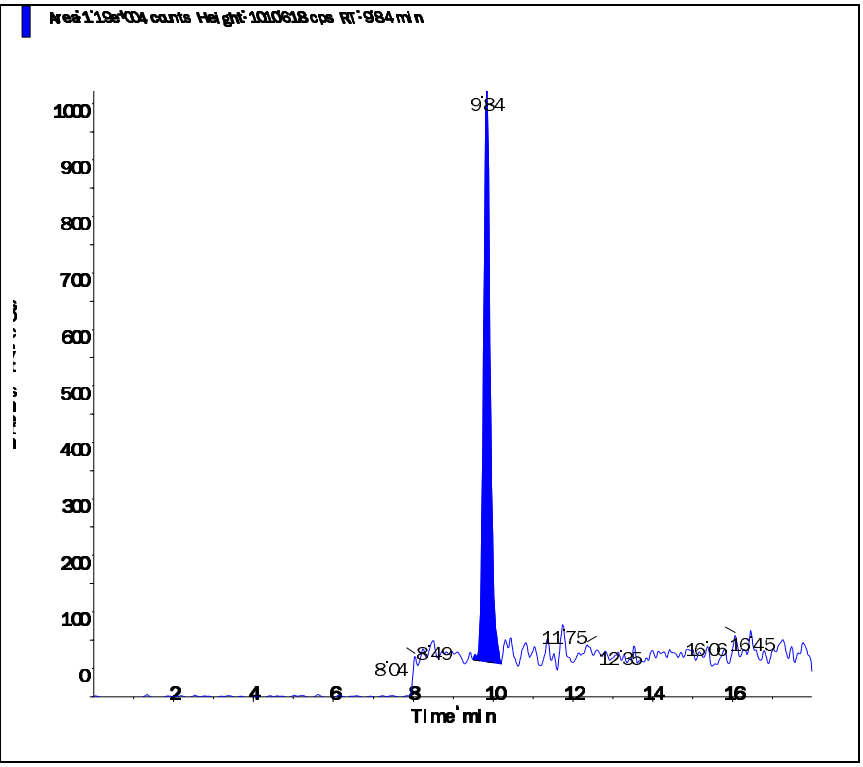

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Data File	LM34689.wiff	**Result Table**	050616_JWR.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050616_JWR.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

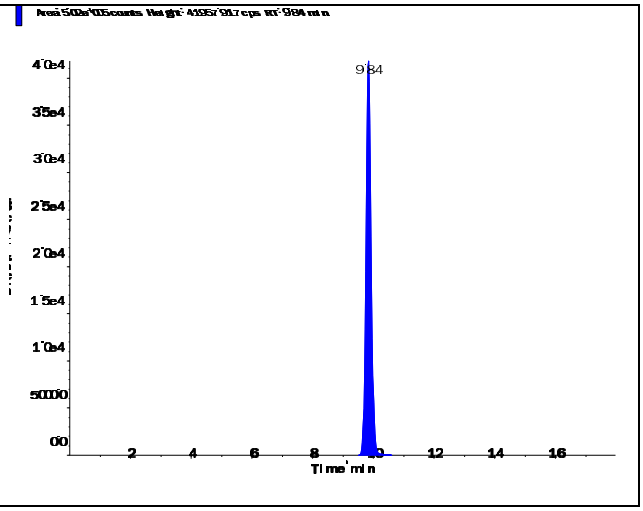

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.483 ng/ml
Area Ratio:	0.164
Sample Type:	(Standard)

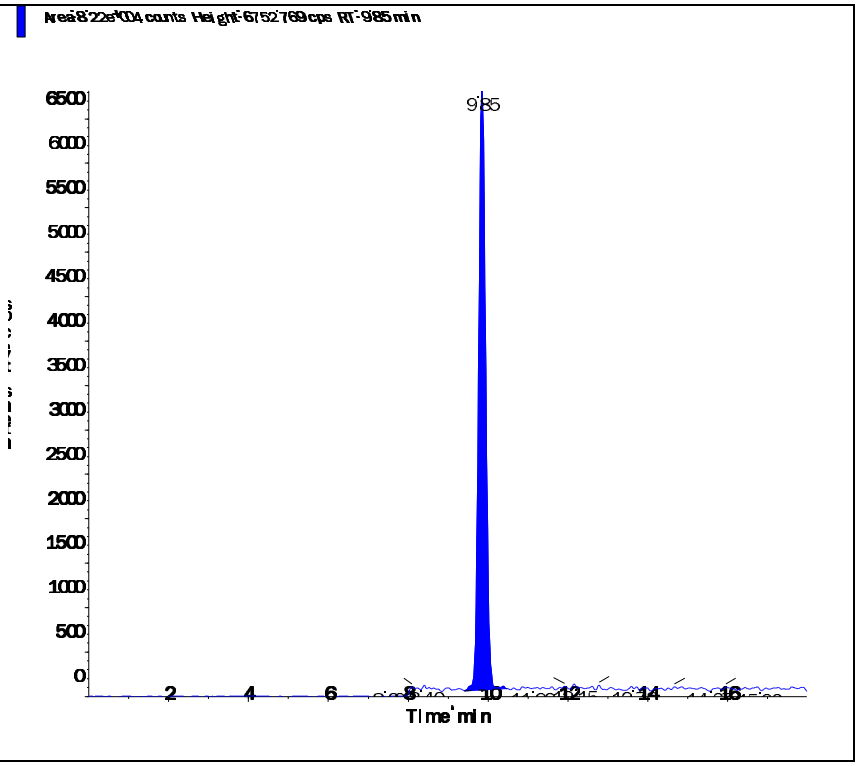

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.503 ng/ml
Area Ratio:	0.058
Sample Type:	(Standard)

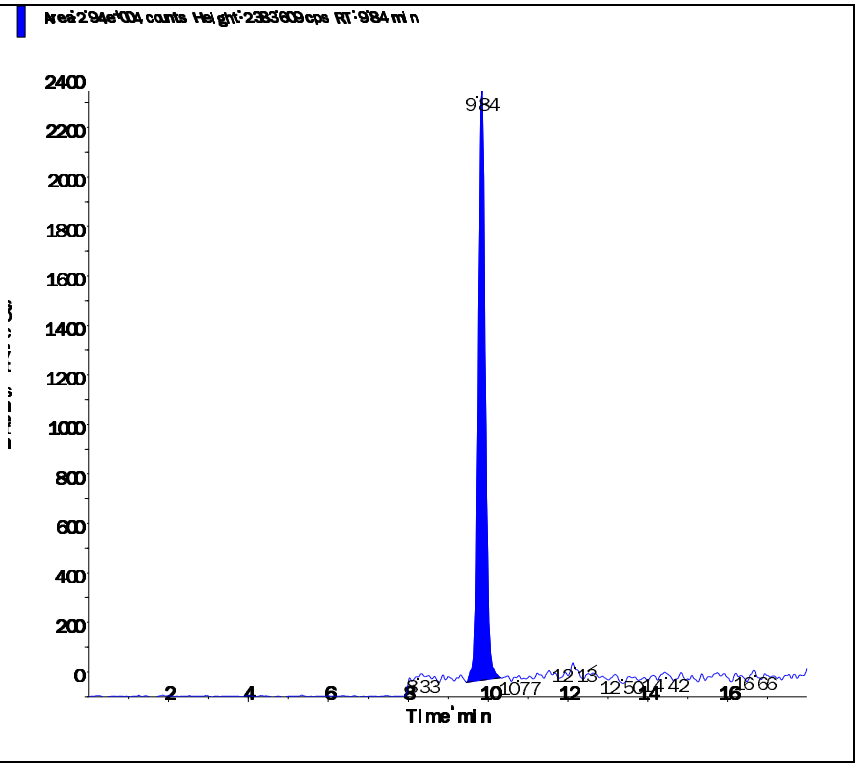

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Data File	LM34690.wiff	**Result Table**	050616_JWR.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050616_JWR.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

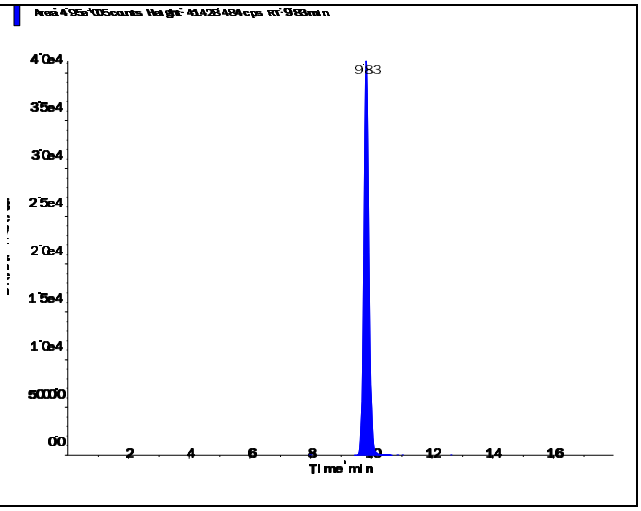

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

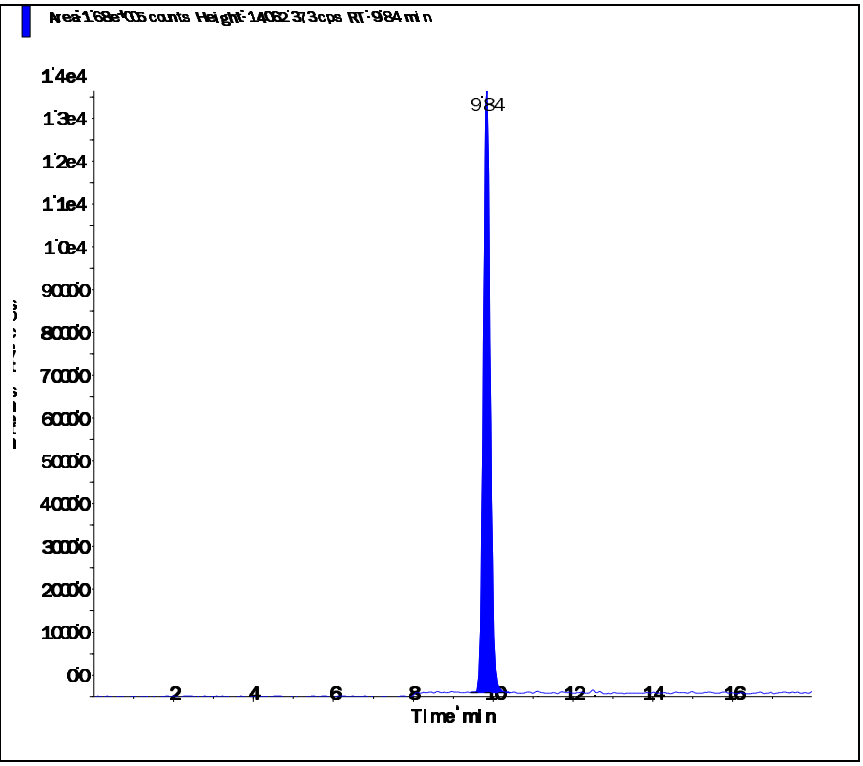

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

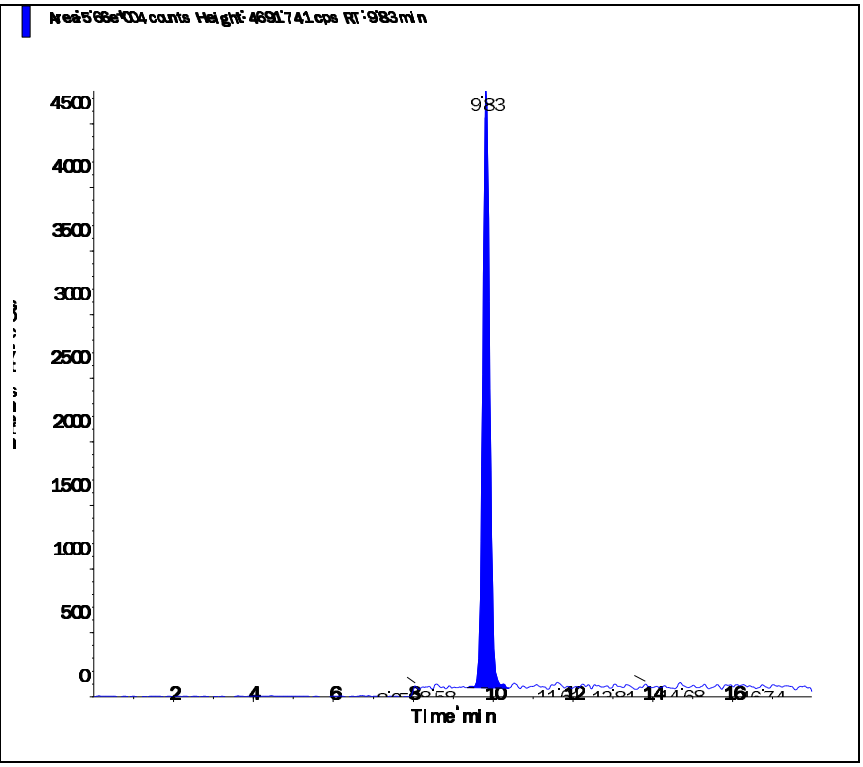

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Data File	LM34691.wiff	**Result Table**	050616_JWR.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050616_JWR.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

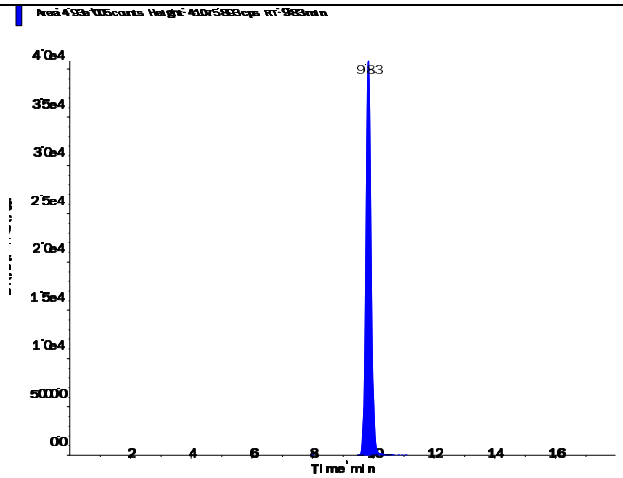

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.99 ng/ml
Area Ratio:	0.669
Sample Type:	(Standard)

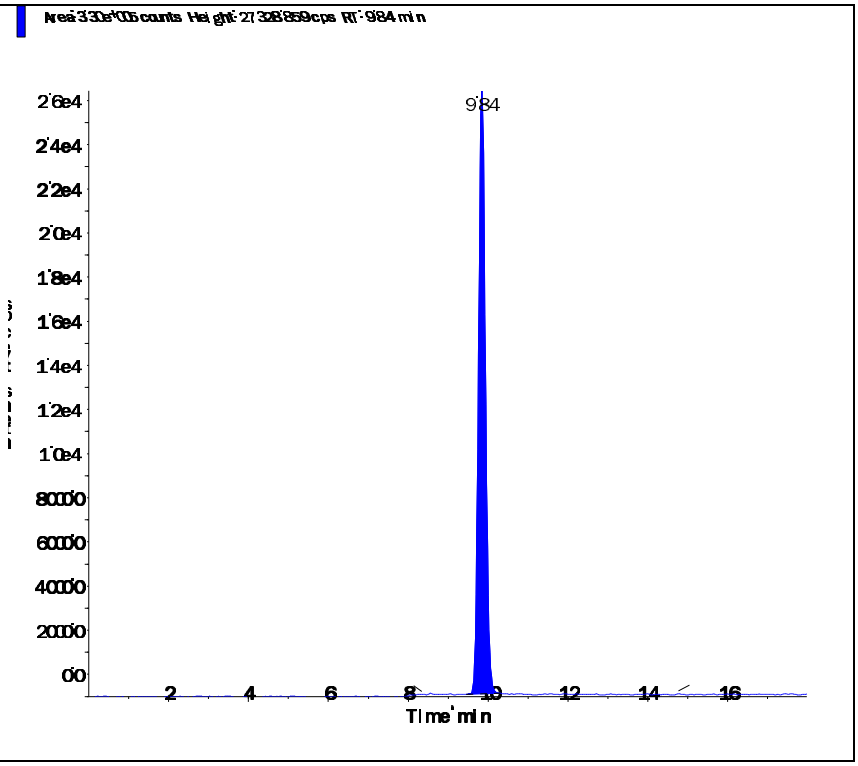

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.94 ng/ml
Area Ratio:	0.219
Sample Type:	(Standard)

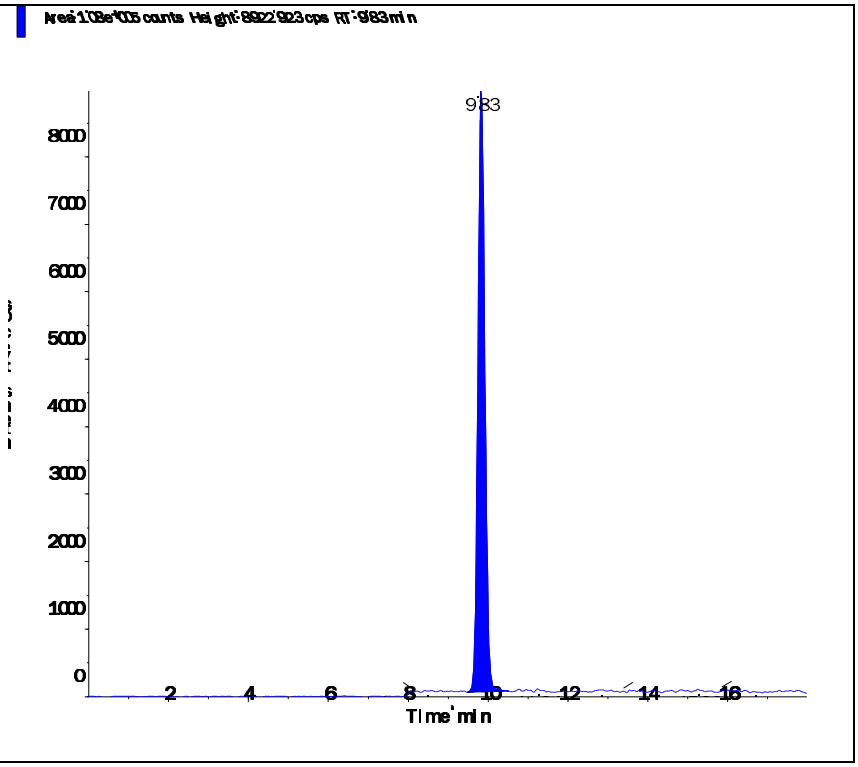

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Data File	LM34692.wiff	**Result Table**	050616_JWR.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050616_JWR.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

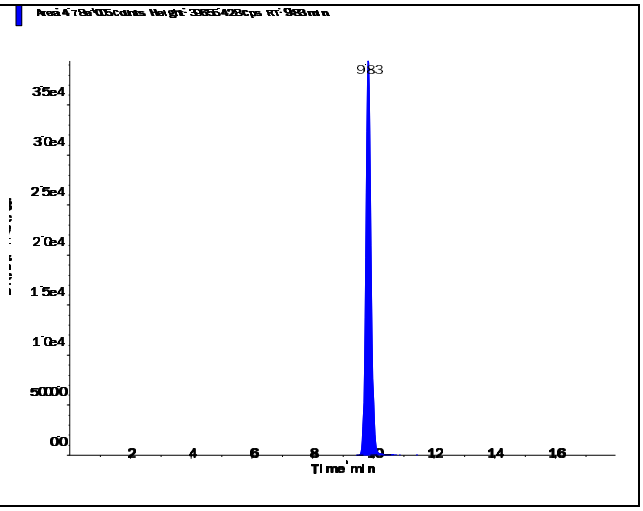

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

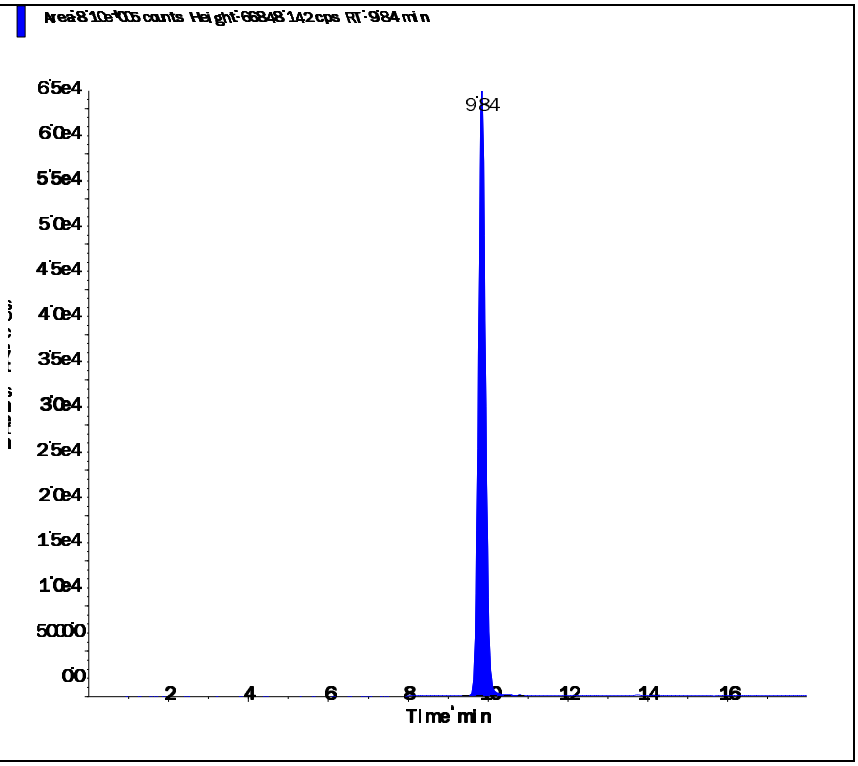

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

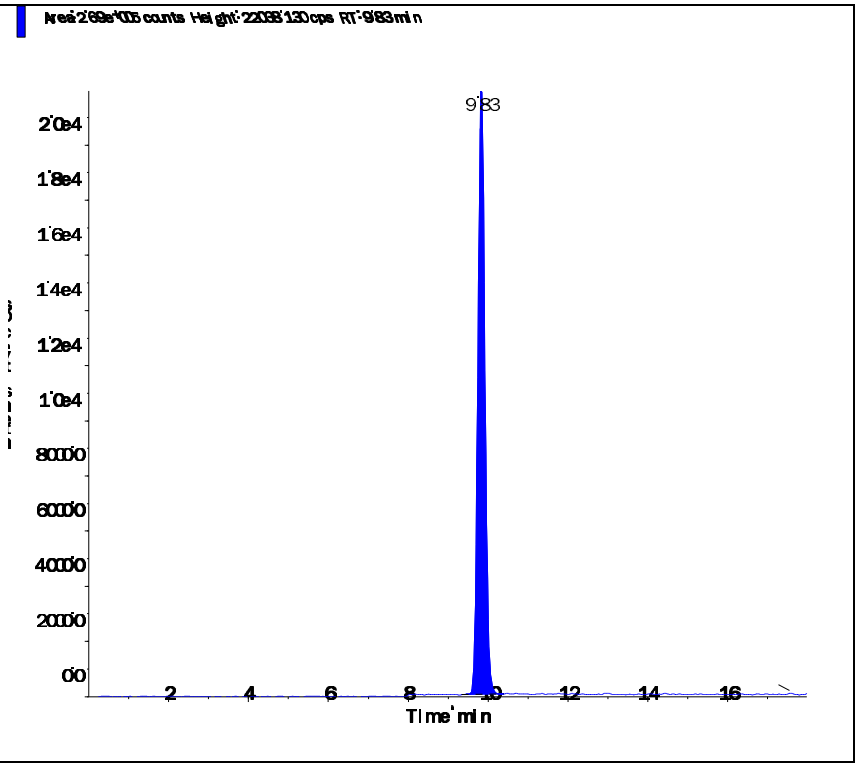

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Data File	LM34693.wiff	**Result Table**	050616_JWR.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	050616_JWR.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

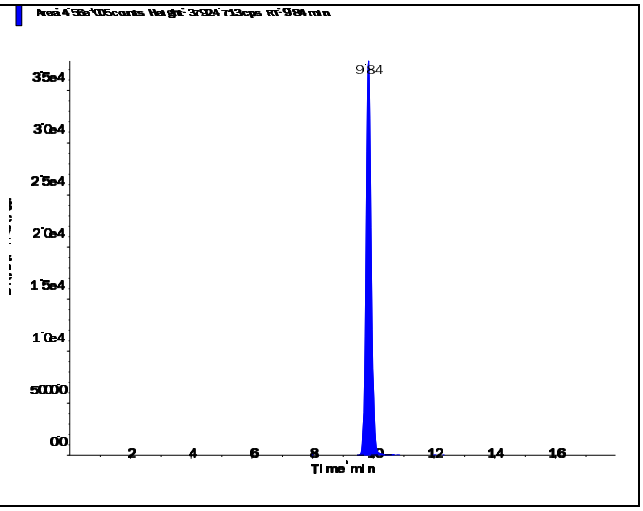

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 9.99 ng/ml Area Ratio: 3.36 Sample Type: (Standard)	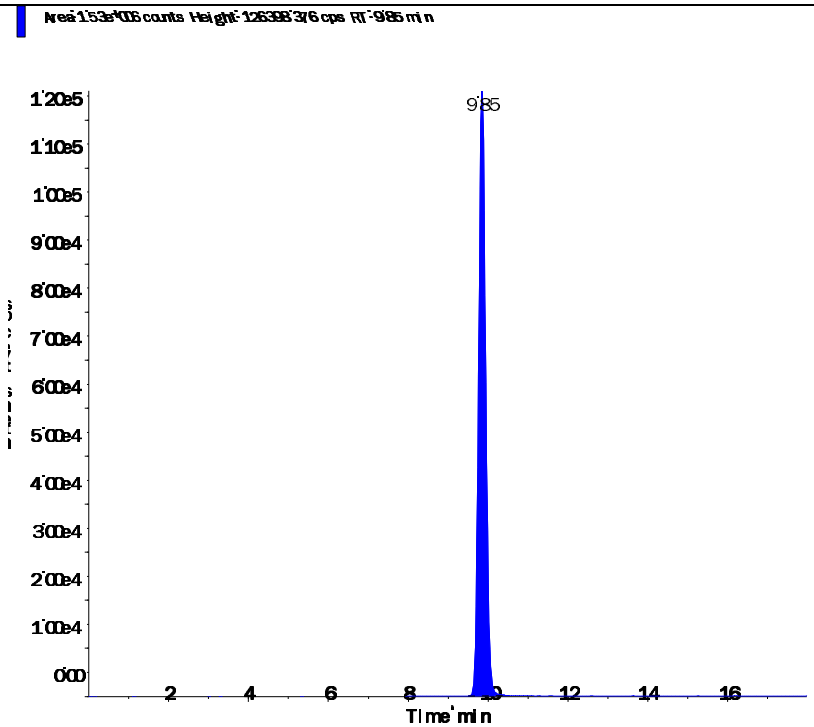
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 10.00 ng/ml Area Ratio: 1.122 Sample Type: (Standard)	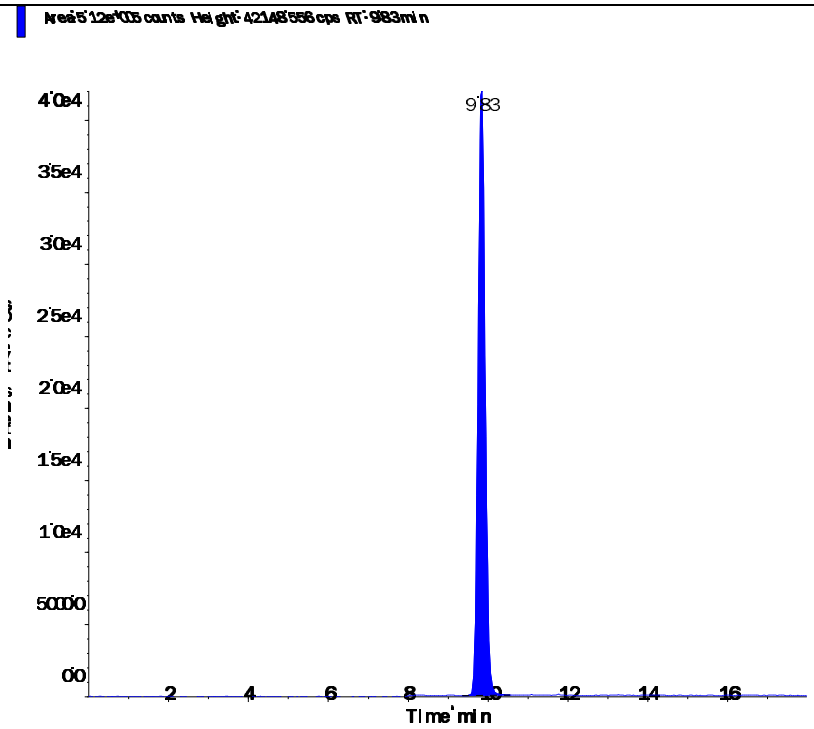

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Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

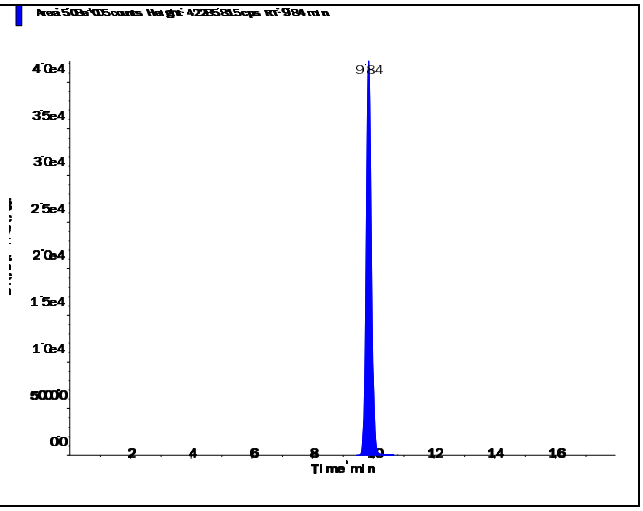

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.332
Sample Type:	(Quality Control)

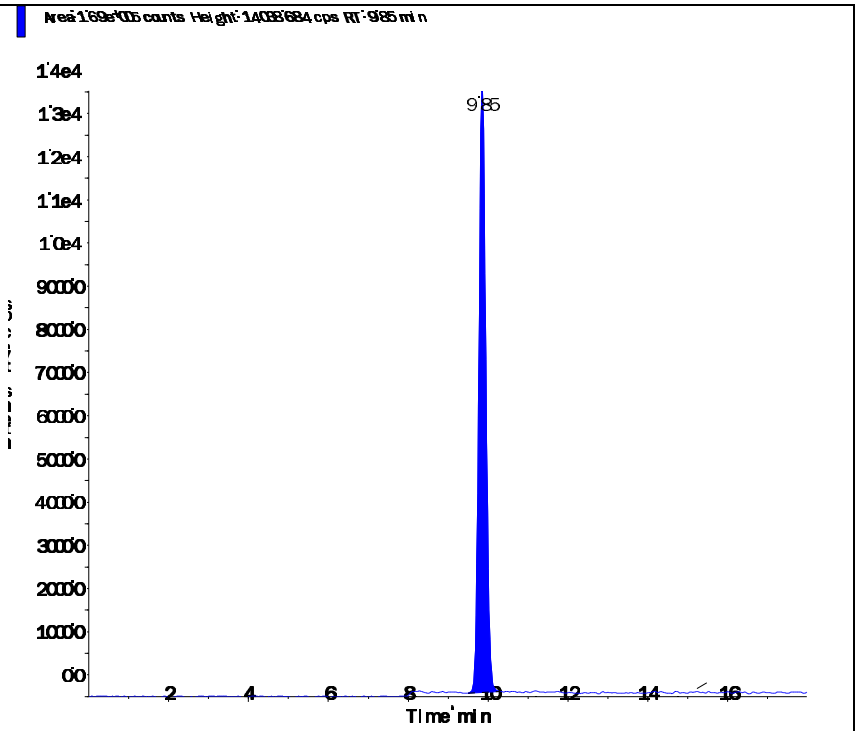

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

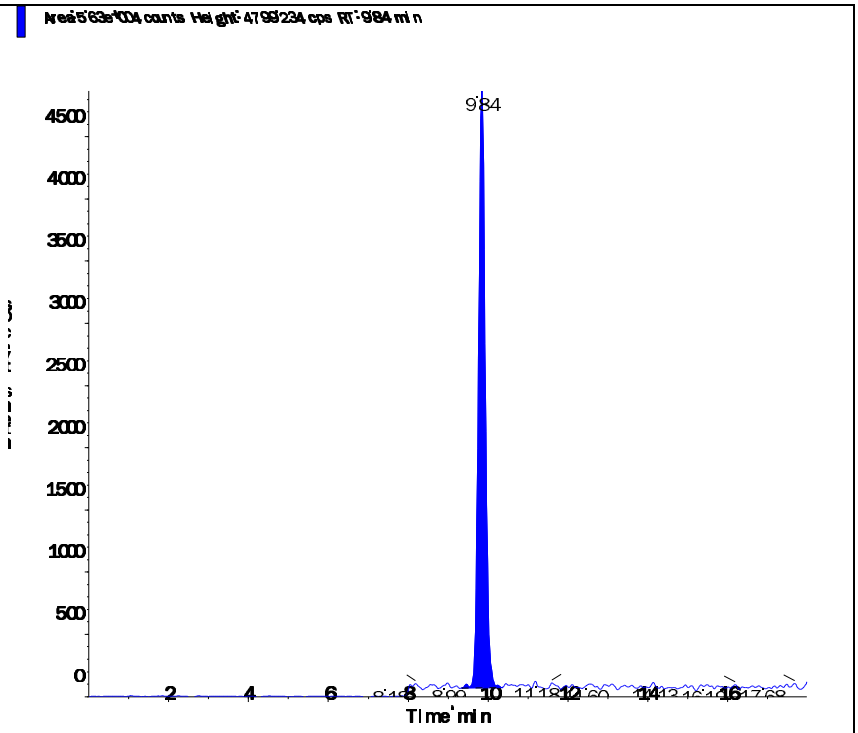

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Data File	LM34718.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 3:21:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567549-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM34718.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 3:21:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567549-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.250e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.430e+05	9.84	1.00	0.996
Perchlorate conf	4.780e+04	9.83	1.00	0.989

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

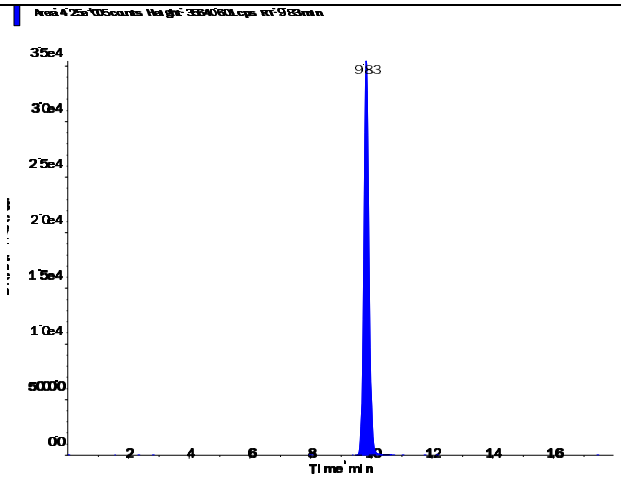

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.996 ng/ml
Area Ratio:	0.336
Sample Type:	(Quality Control)

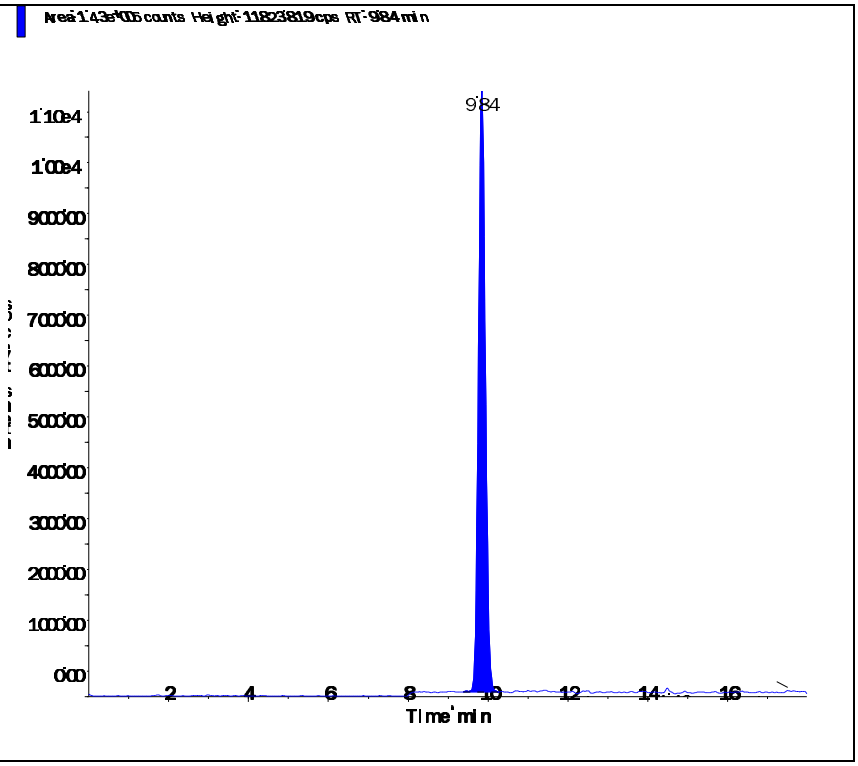

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.989 ng/ml
Area Ratio:	0.113
Sample Type:	(Quality Control)

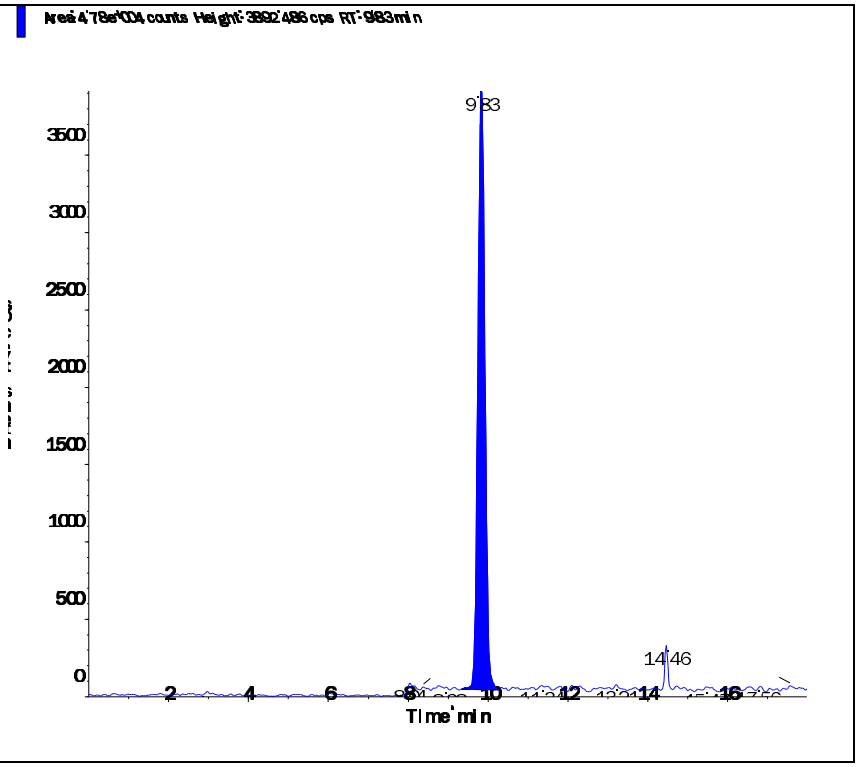

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Data File	LM34730.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 7:08:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567549-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM34730.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 7:08:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567549-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.610e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.590e+05	9.84	1.00	1.02
Perchlorate conf	5.320e+04	9.83	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

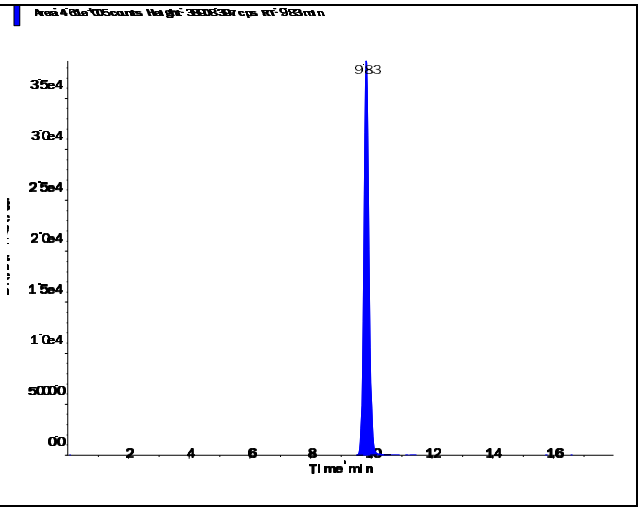

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.344
Sample Type:	(Quality Control)

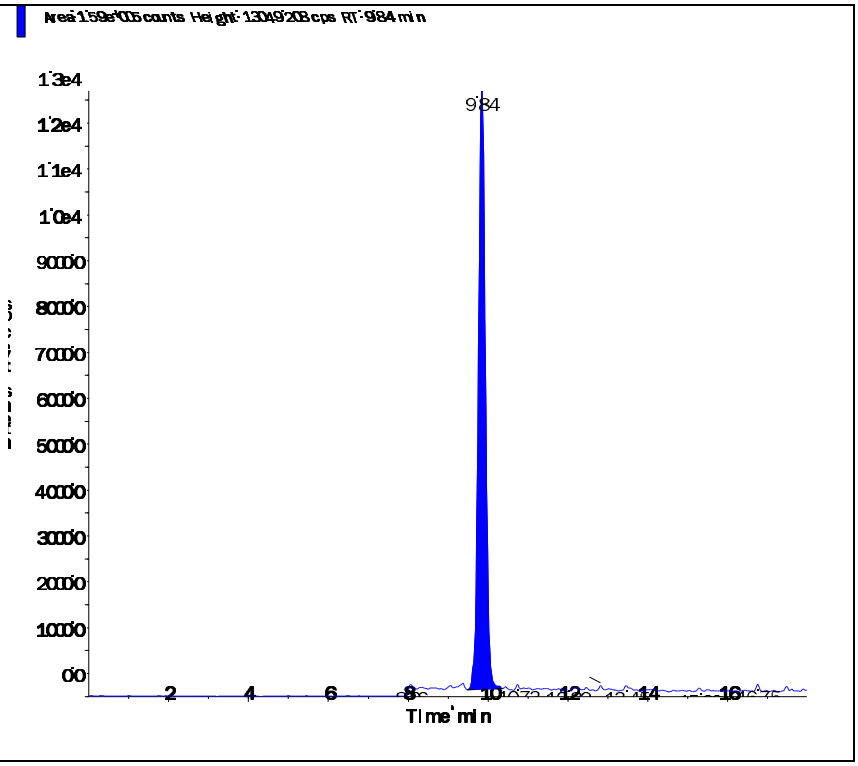

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.115
Sample Type:	(Quality Control)

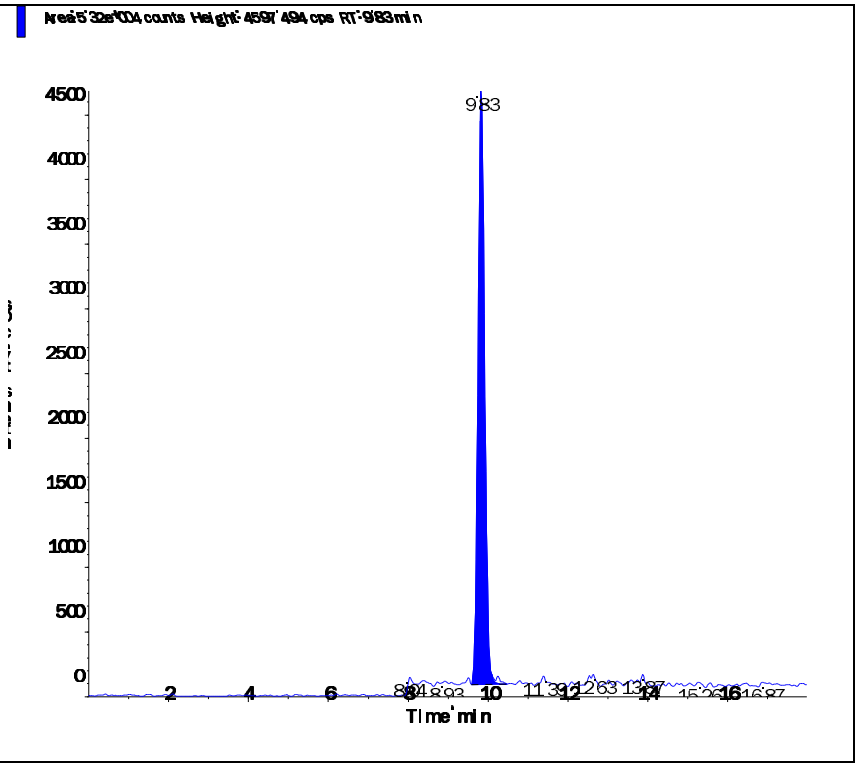

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Data File	LM34743.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 11:14:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567549-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM34743.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 11:14:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567549-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.230e+05	9.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.780e+05	9.82	1.00	1.01
Perchlorate conf	5.820e+04	9.81	1.00	0.977

O18LP (Internal Standard)

RT (Exp. RT): 9.80(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

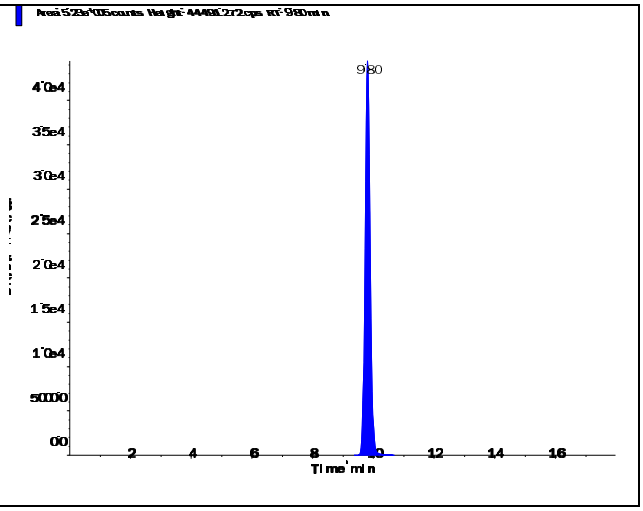

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.341
Sample Type:	(Quality Control)

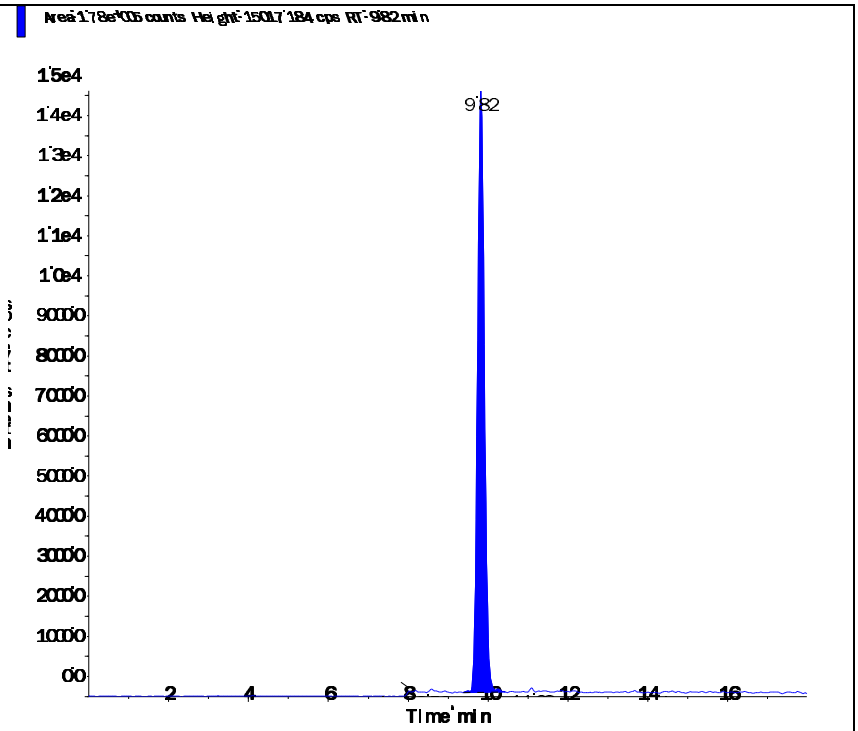

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.81 (9.84) min
Calculated conc:	0.977 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

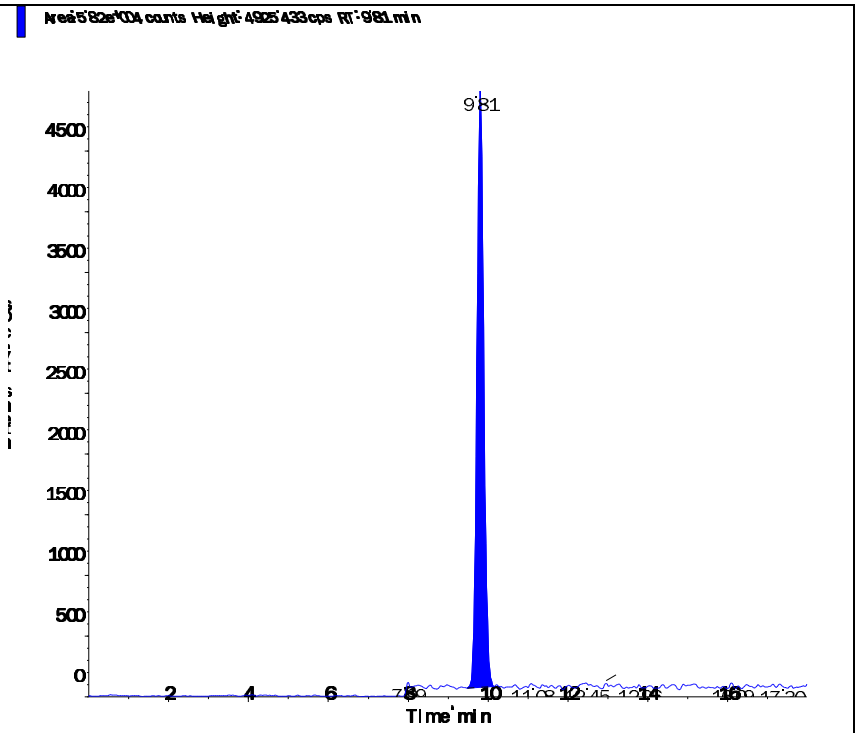

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Data File	LM34749.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 1:08:31 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567549-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM34749.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 1:08:31 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567549-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.280e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.770e+05	9.82	1.00	0.99
Perchlorate conf	5.980e+04	9.81	1.00	0.994

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

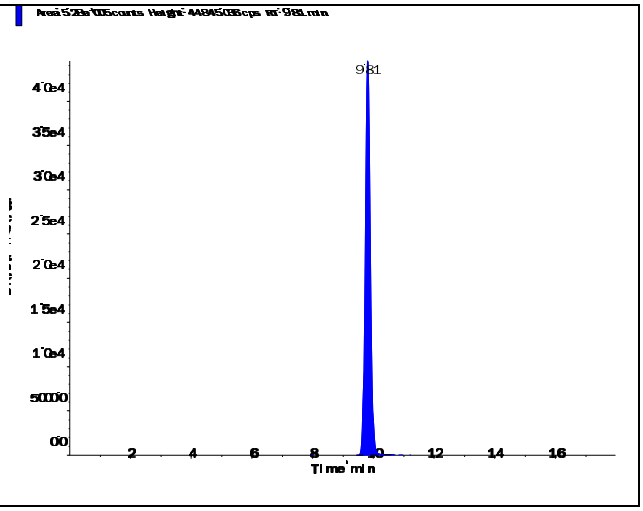

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	0.99 ng/ml
Area Ratio:	0.334
Sample Type:	(Quality Control)

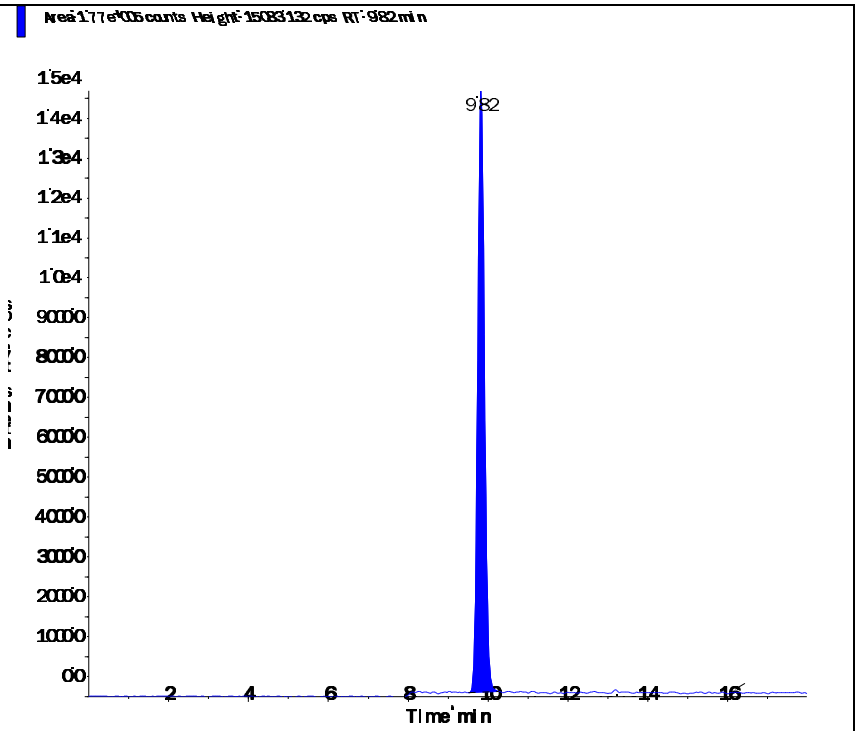

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.81 (9.84) min
Calculated conc:	0.994 ng/ml
Area Ratio:	0.113
Sample Type:	(Quality Control)

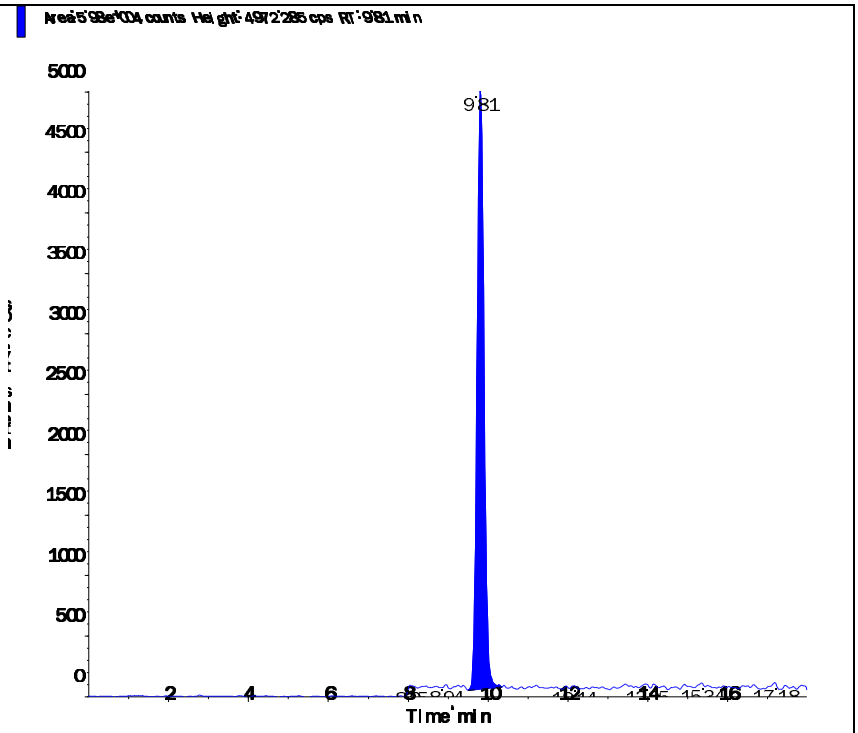

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Data File	LM34752.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 12:54:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567549-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM34752.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 12:54:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567549-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.620e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.560e+05	9.83	1.00	0.998
Perchlorate conf	5.500e+04	9.81	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

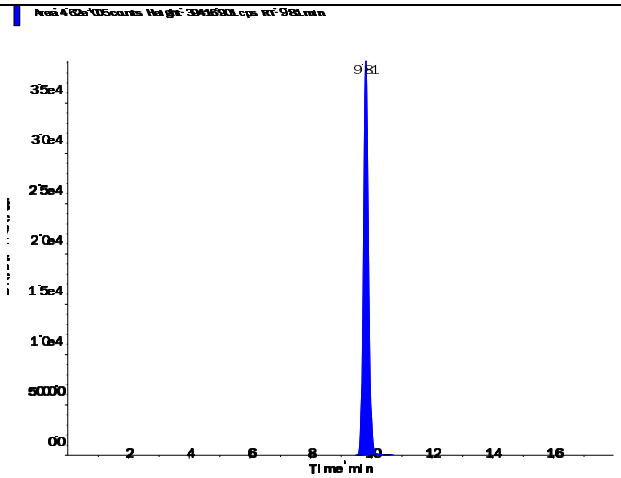

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.998 ng/ml
Area Ratio:	0.337
Sample Type:	(Quality Control)

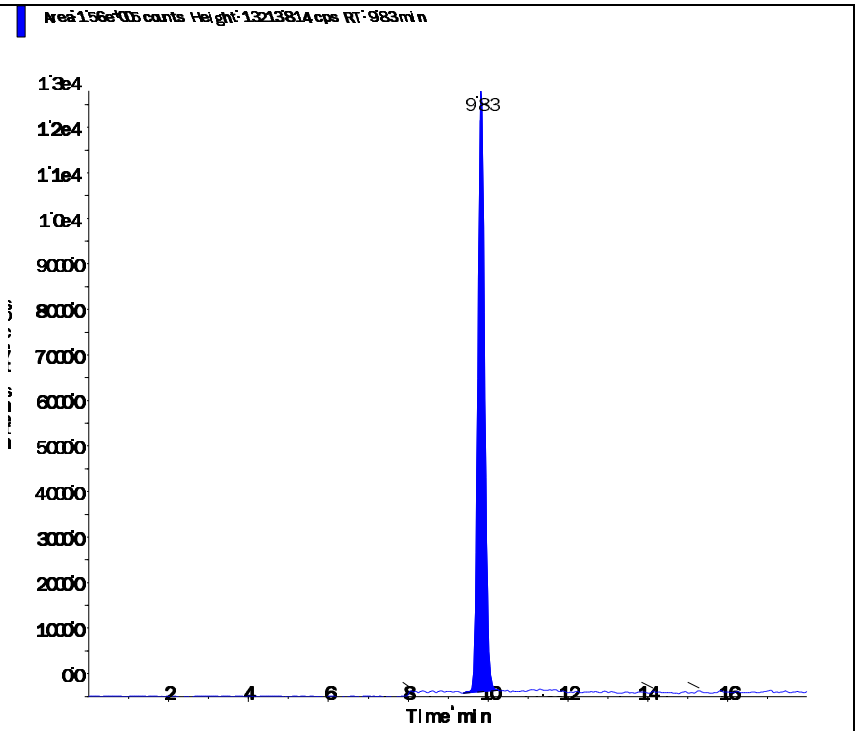

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.81 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

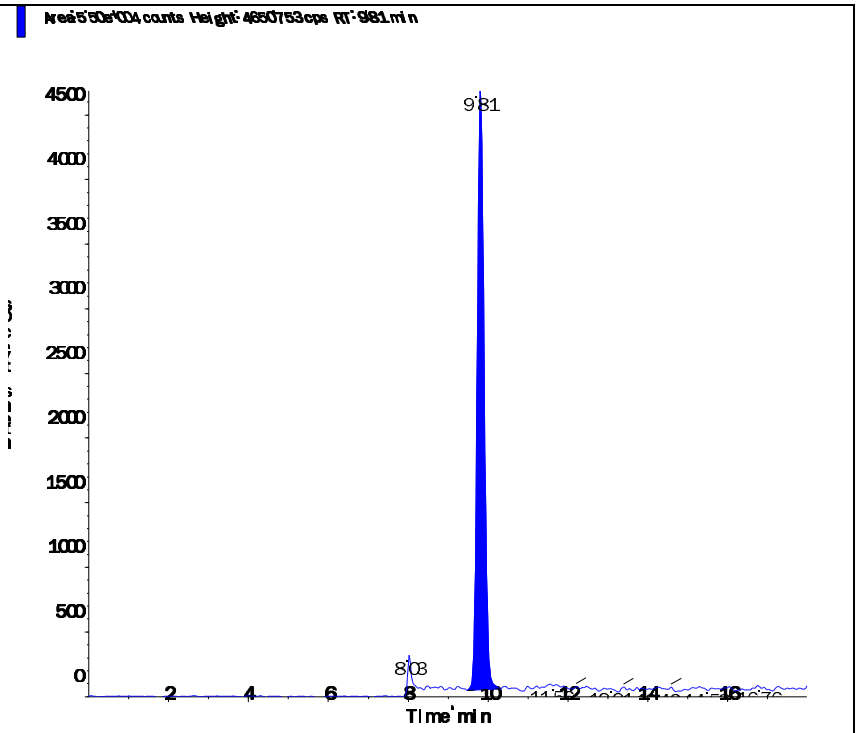

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Data File	LM34759.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 3:06:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567549-11 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM34759.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 3:06:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567549-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.150e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.740e+05	9.83	1.00	1.00
Perchlorate conf	5.910e+04	9.82	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

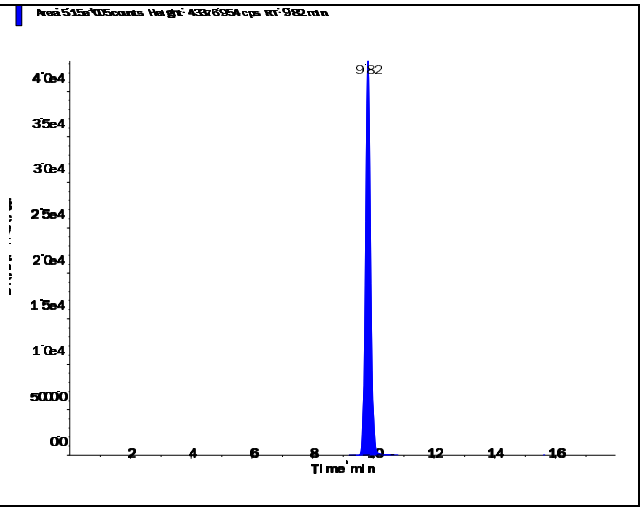

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.339
Sample Type:	(Quality Control)

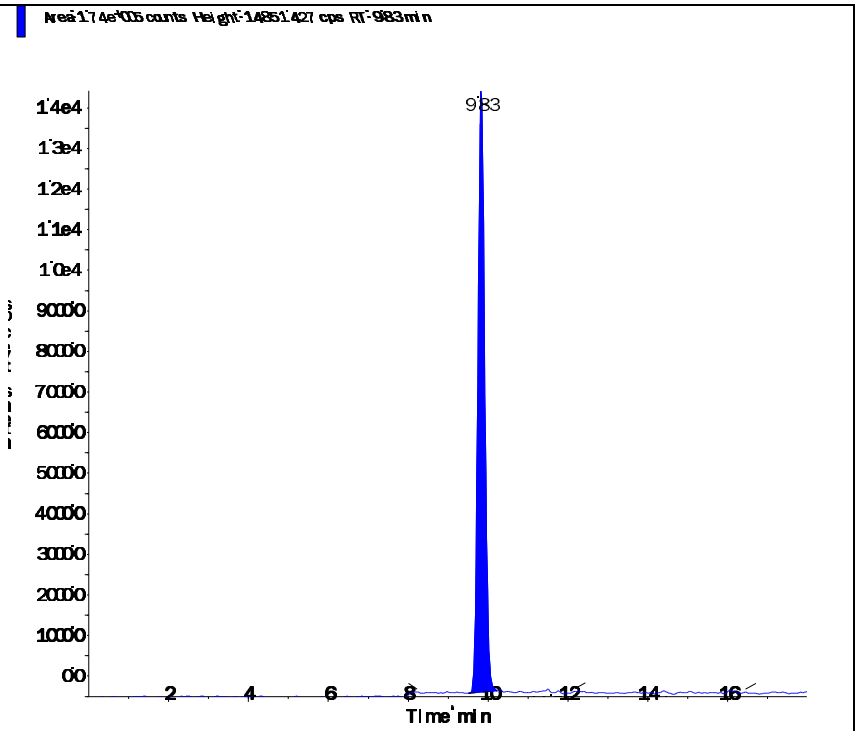

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.115
Sample Type:	(Quality Control)

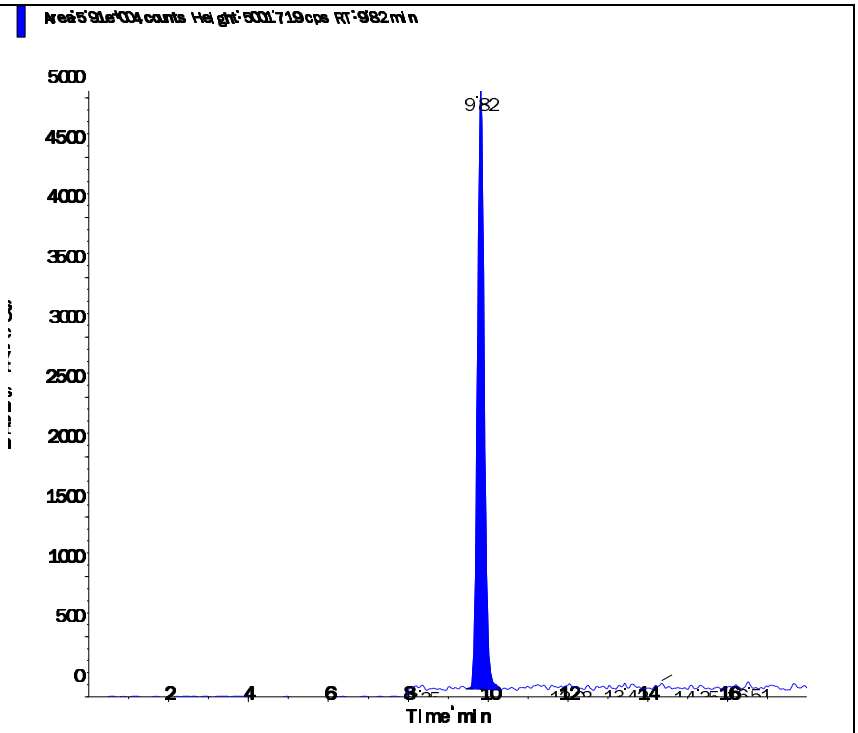

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Data File	LM34719.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 3:40:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567224-07 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM34719.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 3:40:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567224-07	**Dilution Factor**	1.00
Sample Comment	7,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.350e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.990e+04	9.84	N/A	0.201
Perchlorate conf	1.030e+04	9.83	N/A	0.193

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

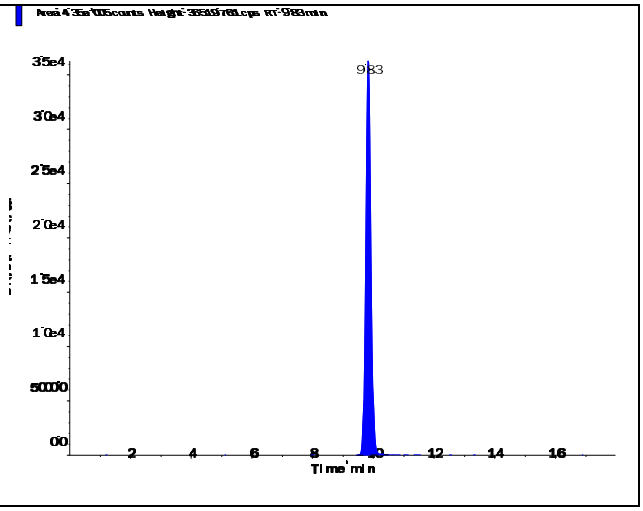

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

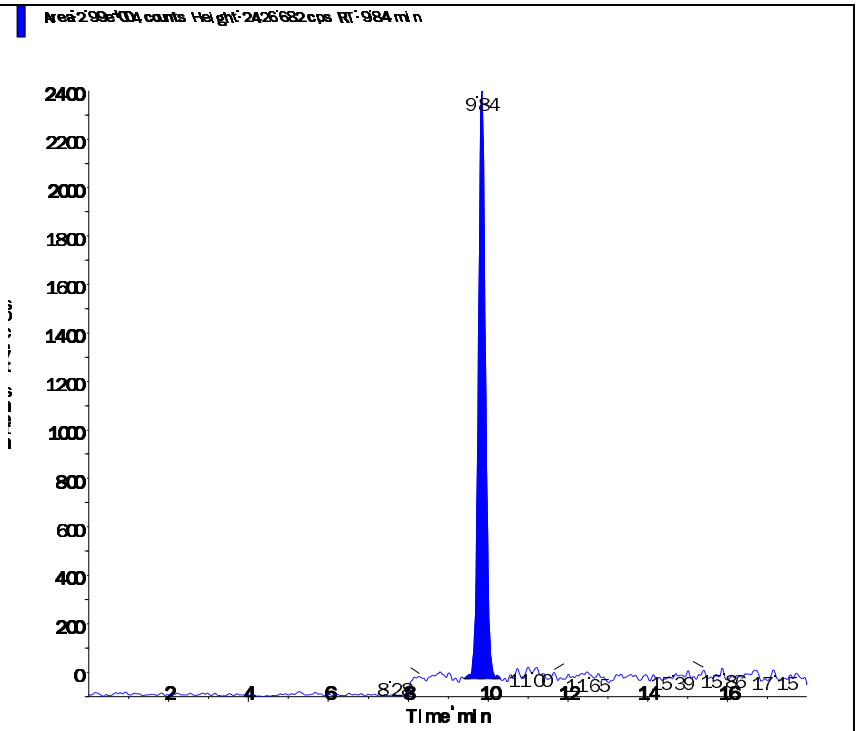

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.193 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

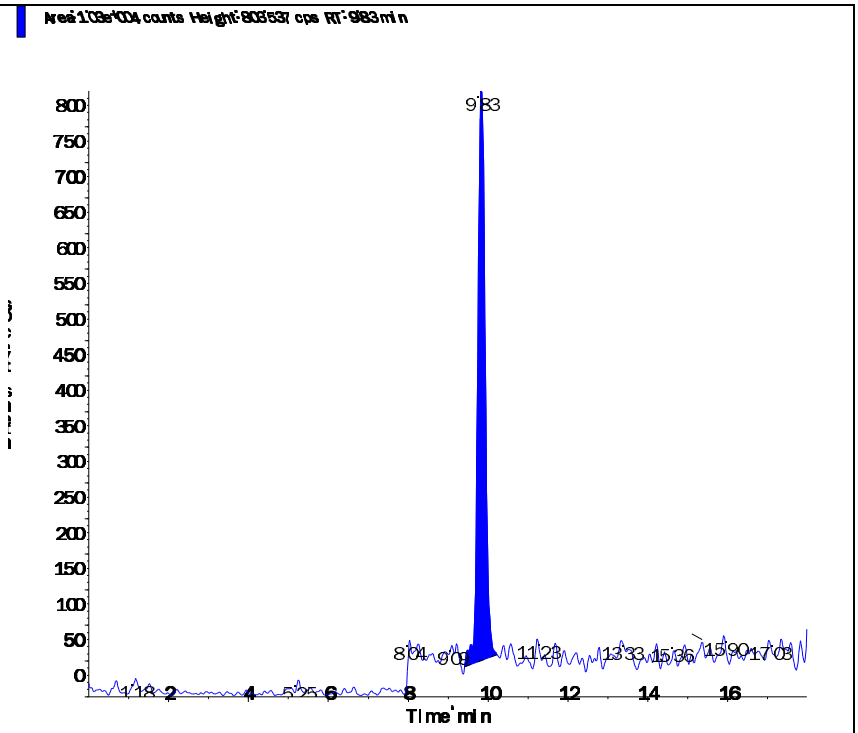

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Data File	LM34731.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 7:27:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567224-08 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM34731.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 7:27:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567224-08	**Dilution Factor**	1.00
Sample Comment	7,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.640e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.340e+04	9.84	N/A	0.21
Perchlorate conf	1.130e+04	9.82	N/A	0.197

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

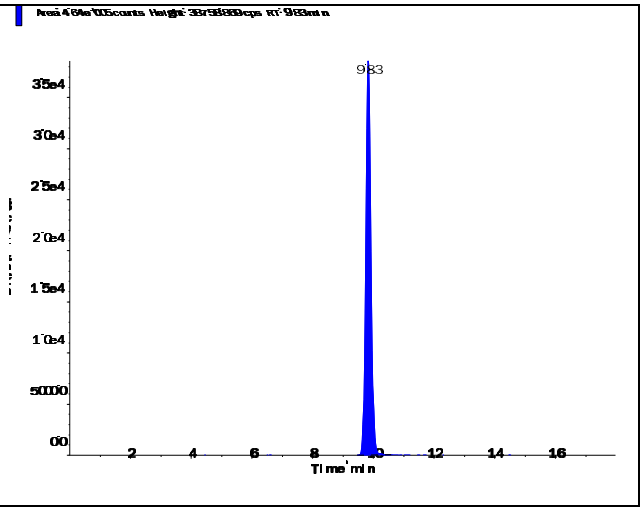

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

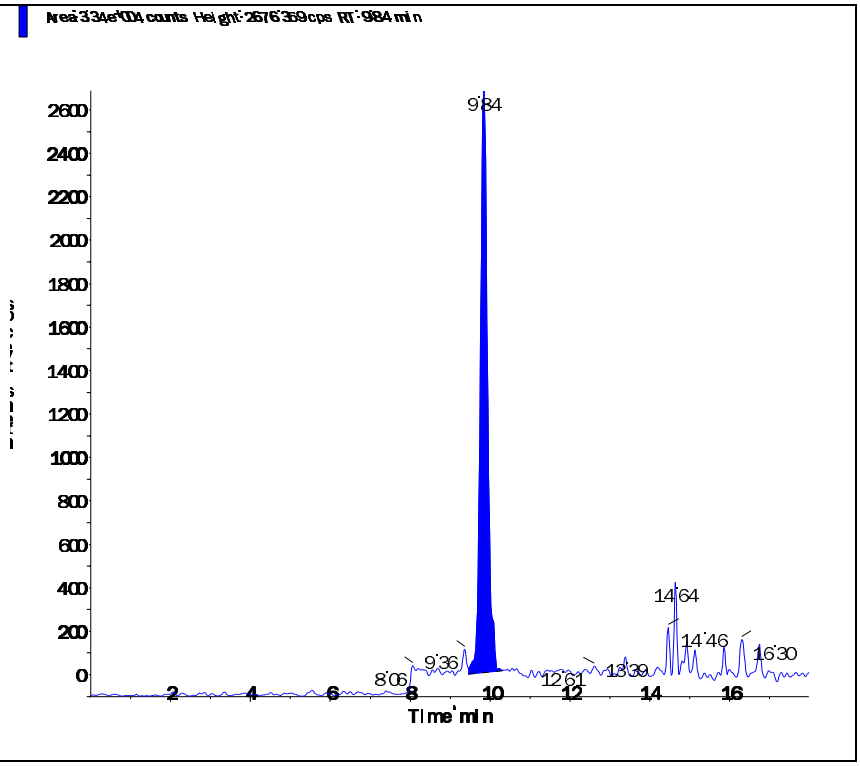

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

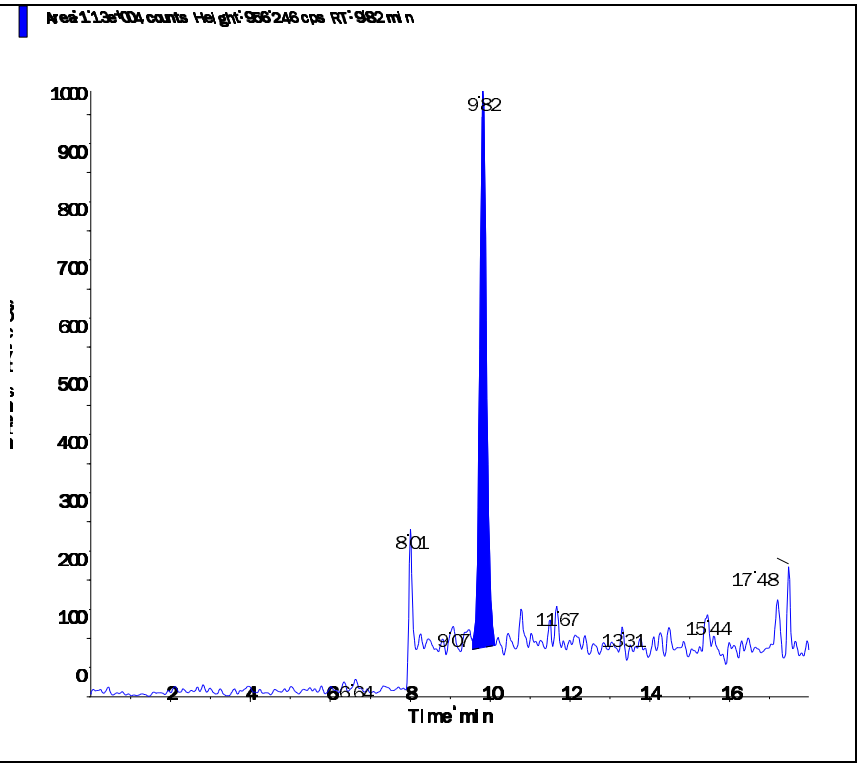

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Data File	LM34744.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 11:33:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567224-09 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM34744.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 11:33:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567224-09	**Dilution Factor**	1.00
Sample Comment	7,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.360e+05	9.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.840e+04	9.82	N/A	0.209
Perchlorate conf	1.170e+04	9.80	N/A	0.176

O18LP (Internal Standard)

RT (Exp. RT): 9.80(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

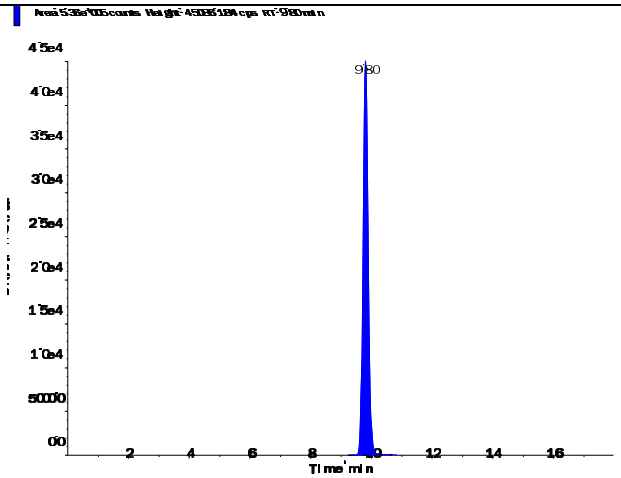

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	0.209 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

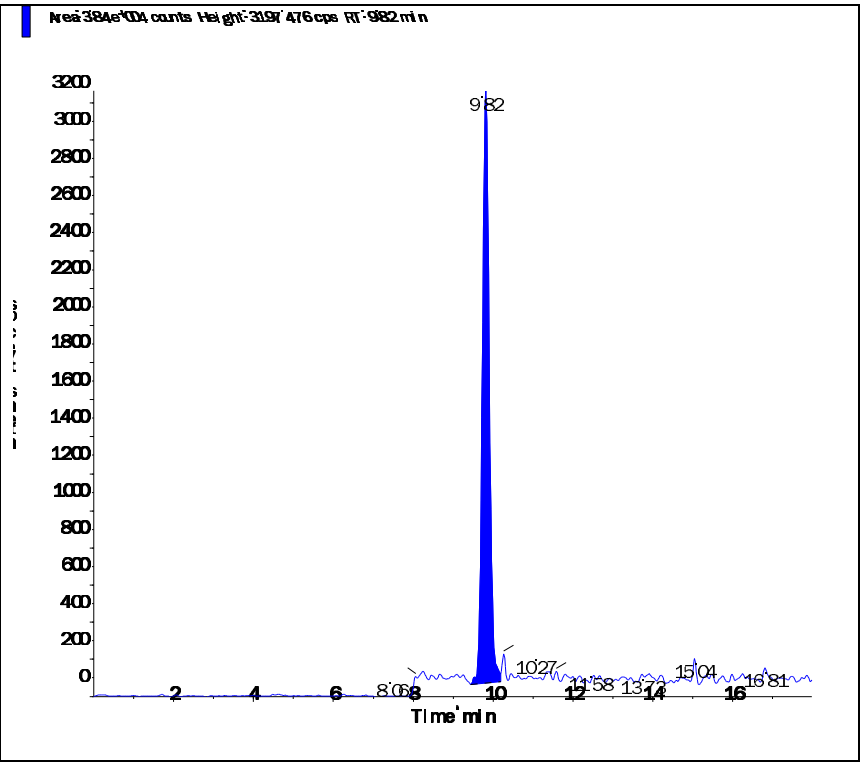

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.80 (9.84) min
Calculated conc:	0.176 ng/ml
Area Ratio:	0.022
Sample Type:	(Unknown)

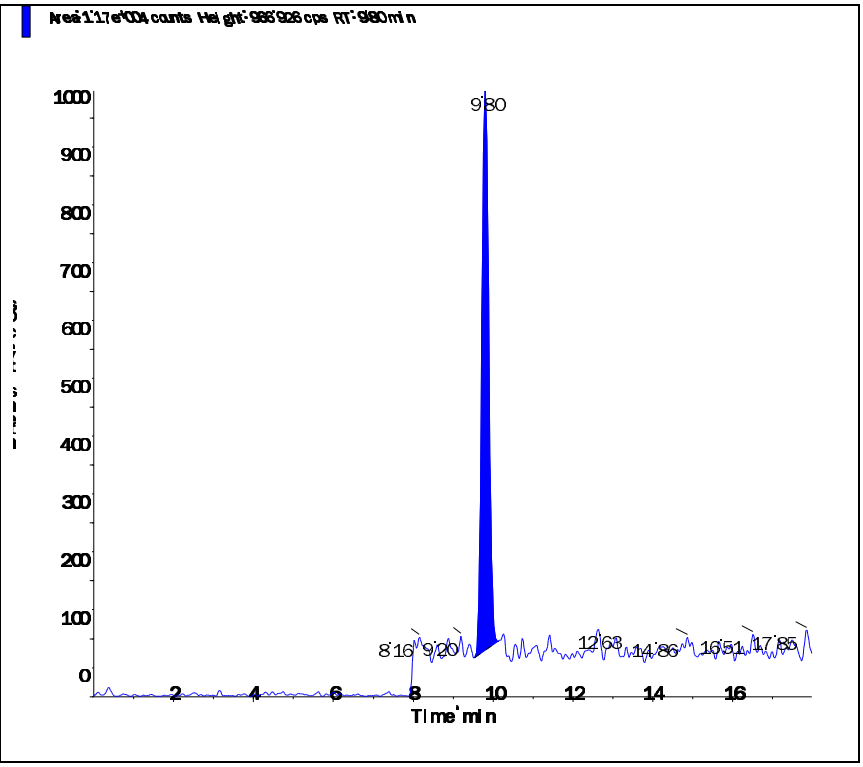

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Printed: 5/6/2016 1:56 PM

Data File	LM34750.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 1:27:27 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567224-10 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM34750.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 1:27:27 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567224-10	**Dilution Factor**	1.00
Sample Comment	7,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.280e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.620e+04	9.82	N/A	0.20
Perchlorate conf	1.380e+04	9.81	N/A	0.213

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

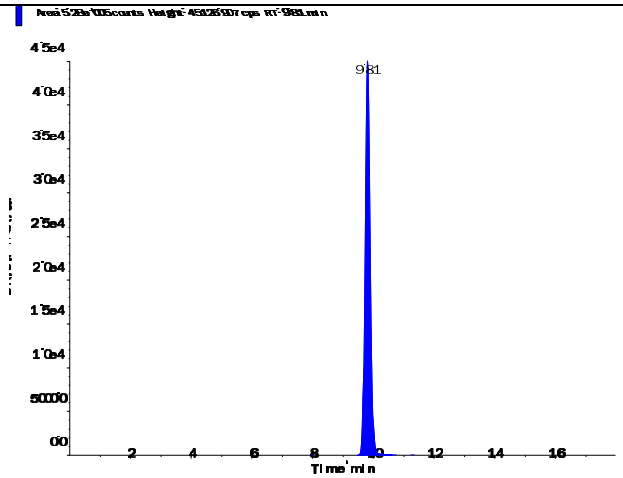

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	0.20 ng/ml
Area Ratio:	0.068
Sample Type:	(Unknown)

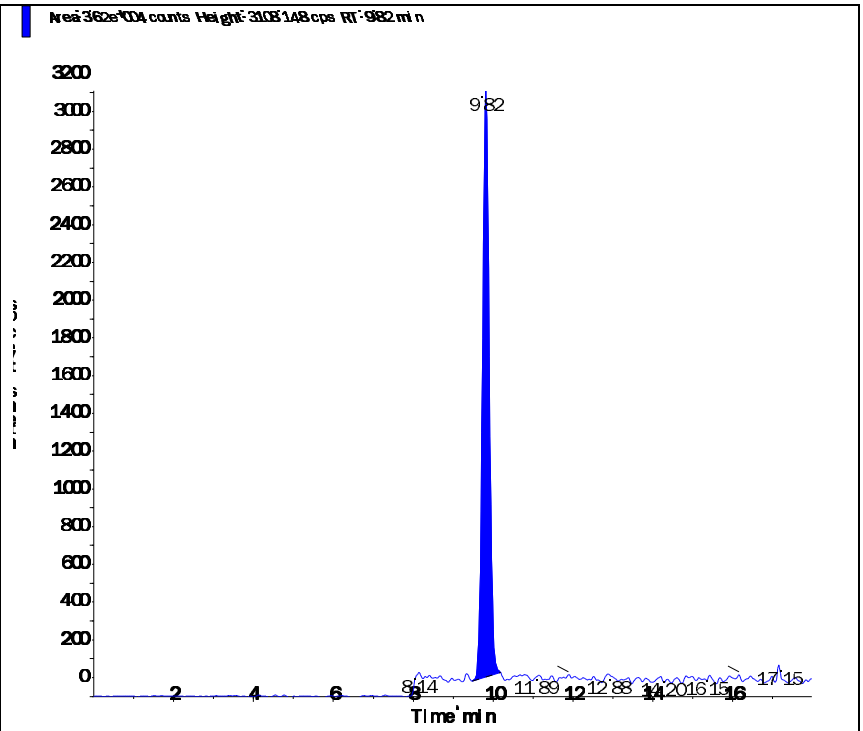

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.81 (9.84) min
Calculated conc:	0.213 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

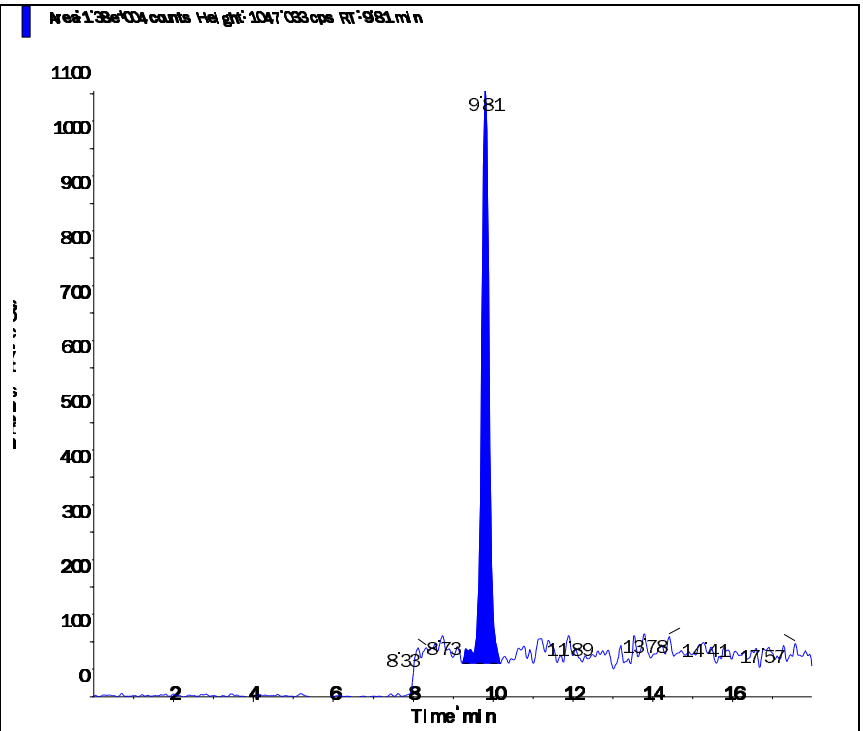

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Data File	LM34753.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 1:13:08 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567224-11 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM34753.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 1:13:08 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567224-11	**Dilution Factor**	1.00
Sample Comment	7,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.840e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.420e+04	9.82	N/A	0.206
Perchlorate conf	1.250e+04	9.80	N/A	0.212

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

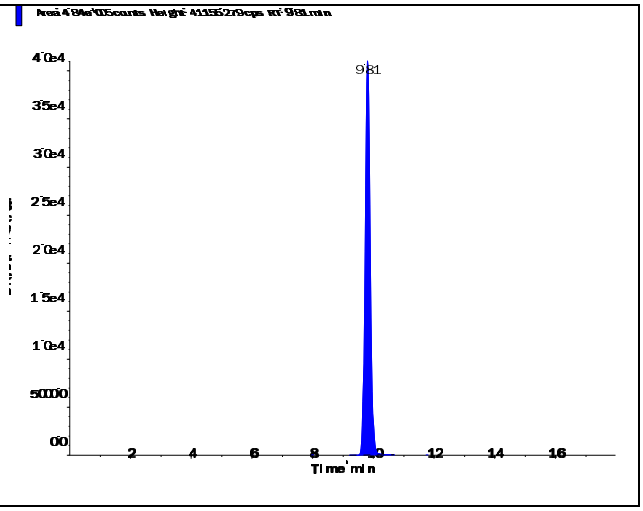

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

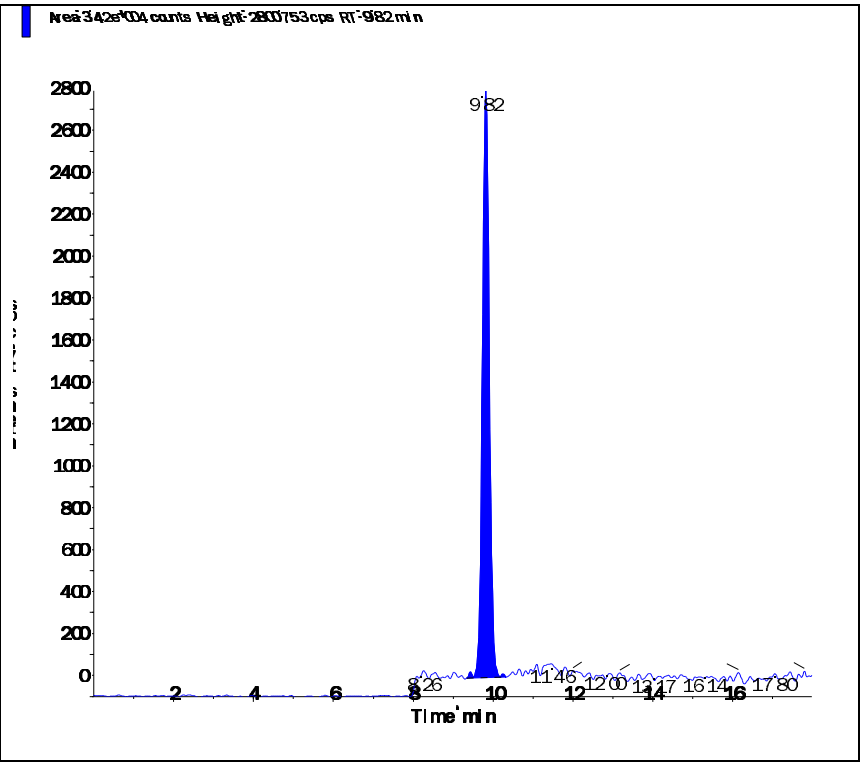

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.80 (9.84) min
Calculated conc:	0.212 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

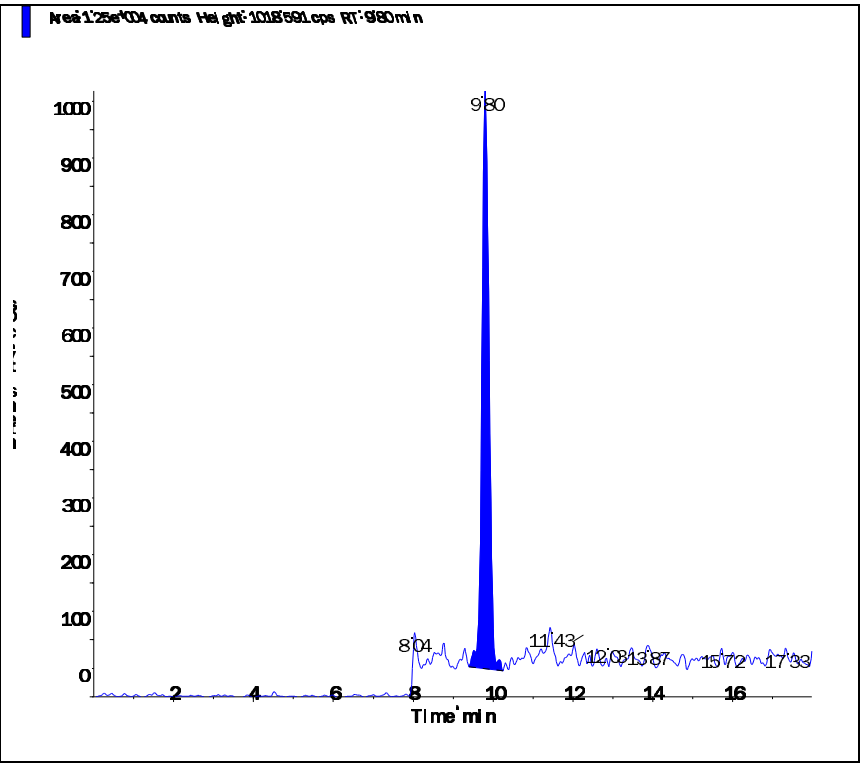

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Data File	LM34760.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 3:25:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567224-12 MRL (2.0ug/kg)	**Injection Vial**	2.00
Data File	LM34760.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 3:25:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567224-12	**Dilution Factor**	1.00
Sample Comment	7,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.180e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.550e+04	9.82	N/A	0.20
Perchlorate conf	1.290e+04	9.82	N/A	0.202

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

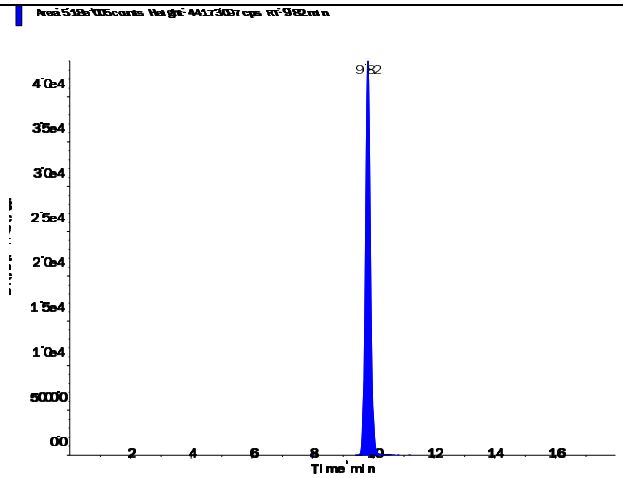

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	0.20 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

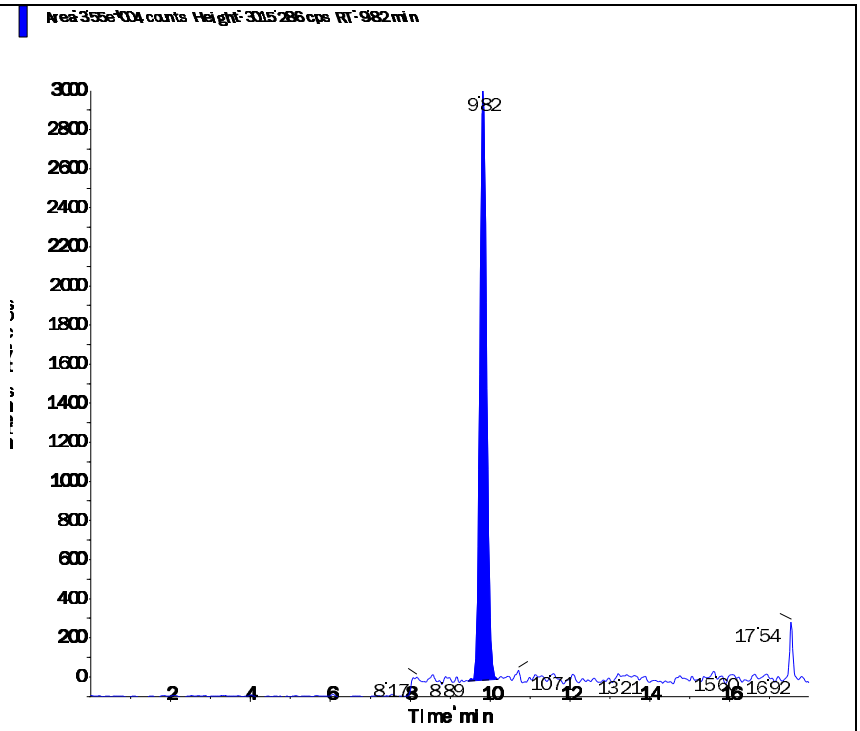

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	0.202 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

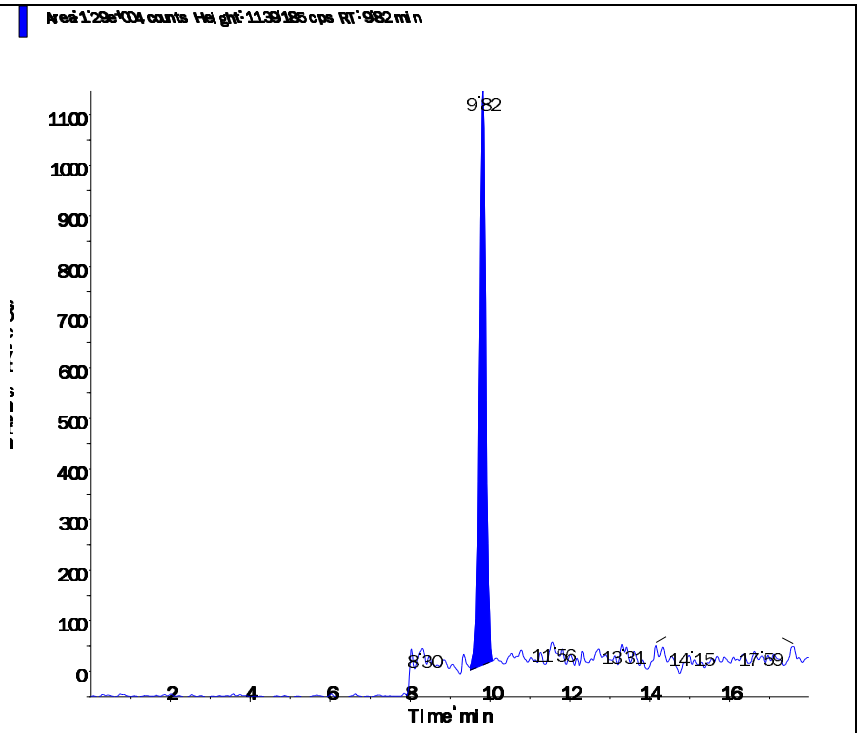

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Data File	LM34717.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 3:02:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567549-01 CCB	**Injection Vial**	1.00
Data File	LM34717.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 3:02:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567549-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.220e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

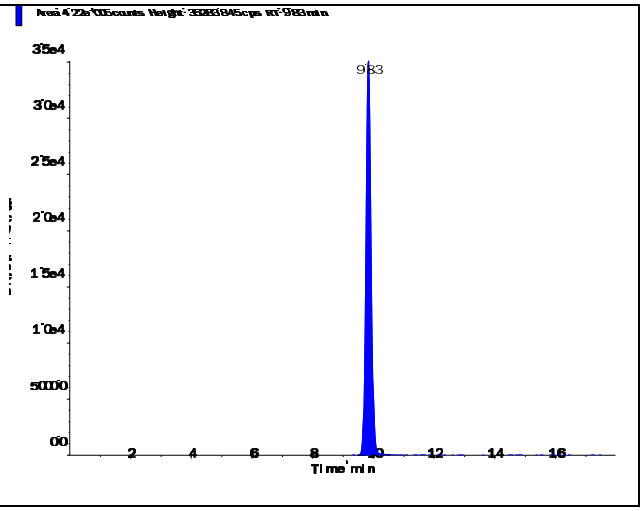

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

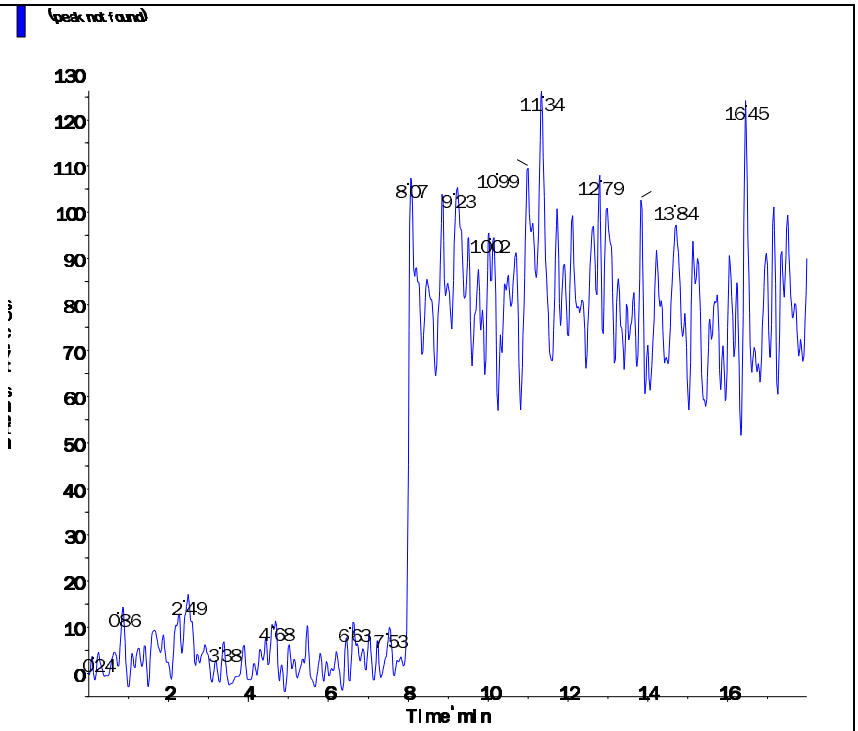

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

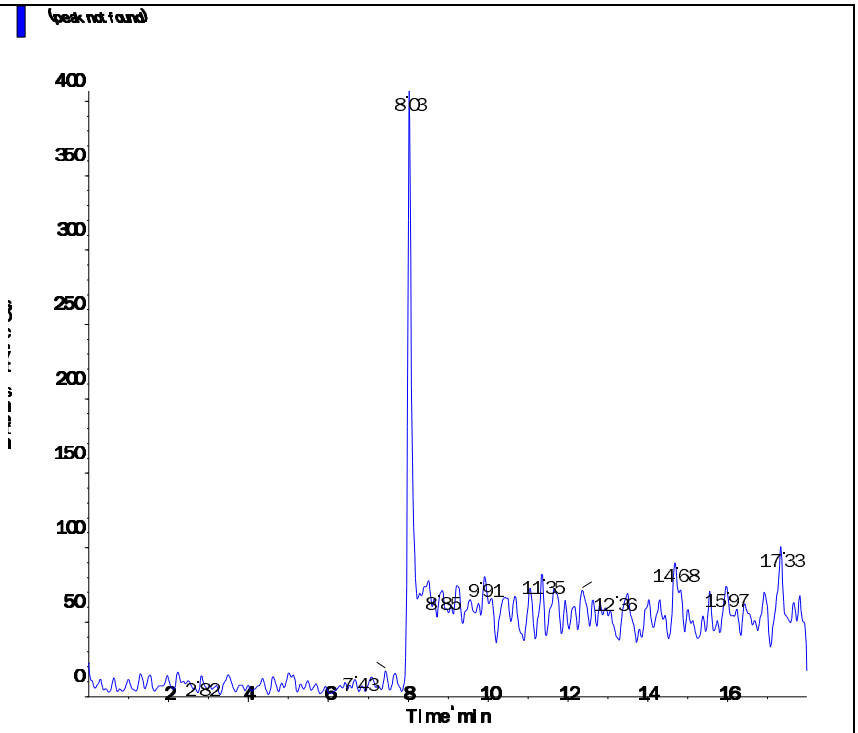

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Data File	LM34732.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 7:46:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567549-04 CCB	**Injection Vial**	1.00
Data File	LM34732.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 7:46:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567549-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.520e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	6.040e+02	9.69	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

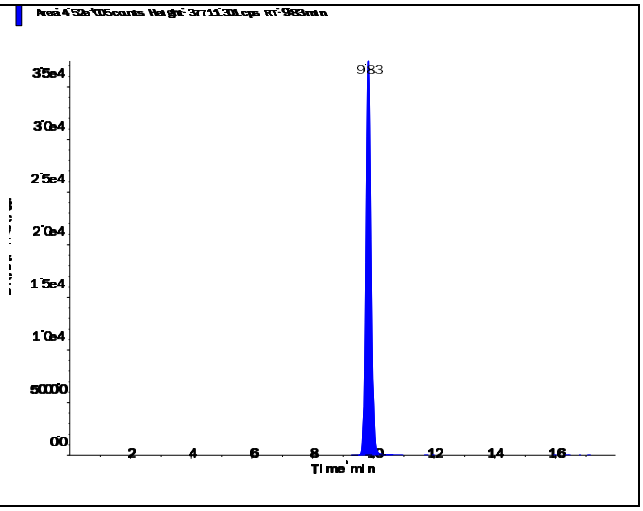

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

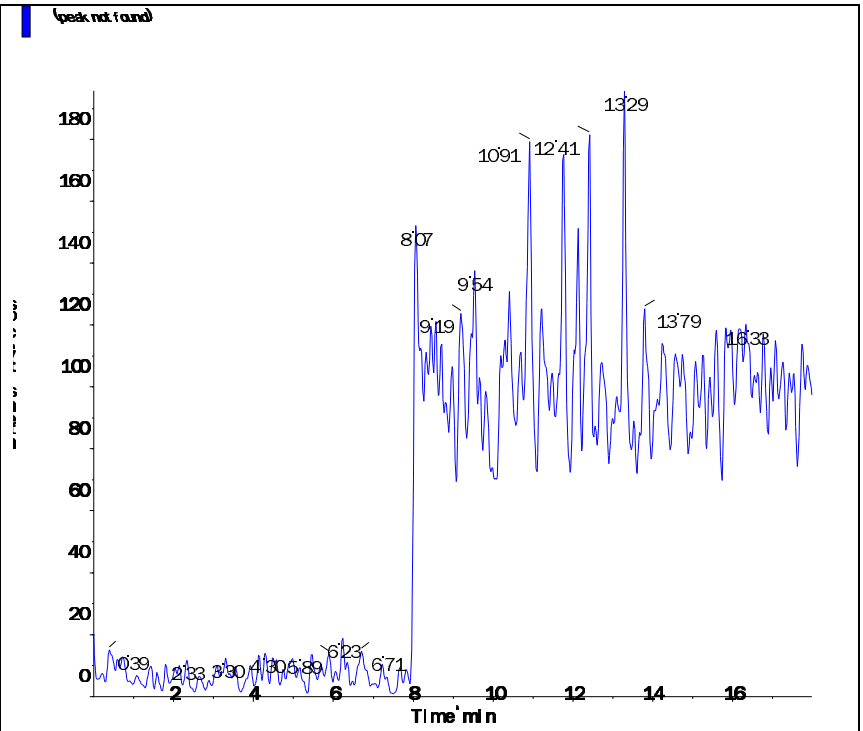

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.69 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

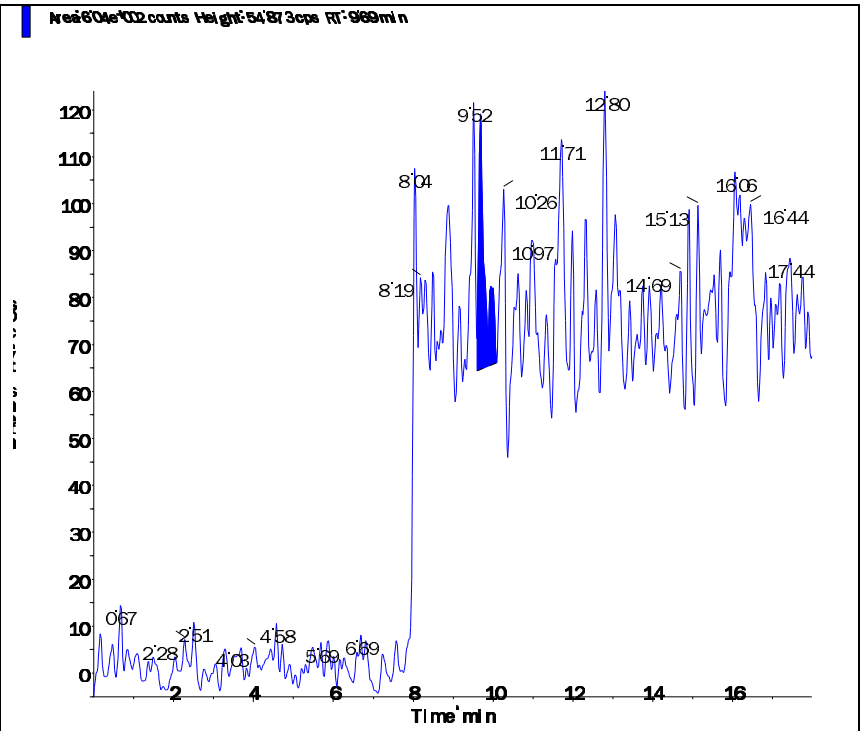

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Data File	LM34745.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 11:52:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567549-06 CCB	**Injection Vial**	1.00
Data File	LM34745.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 11:52:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567549-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.580e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

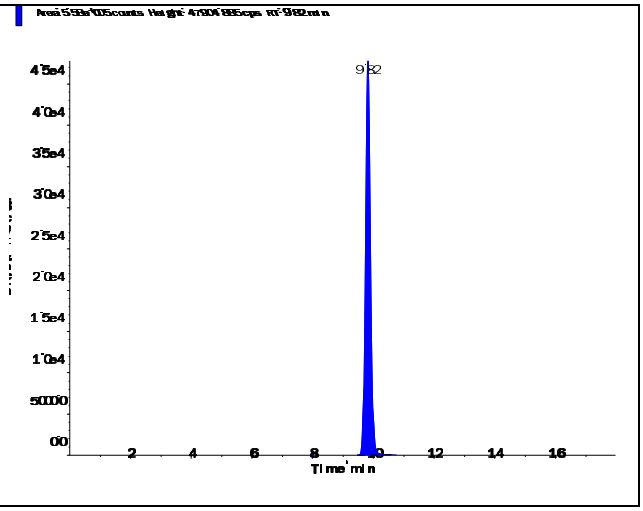

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

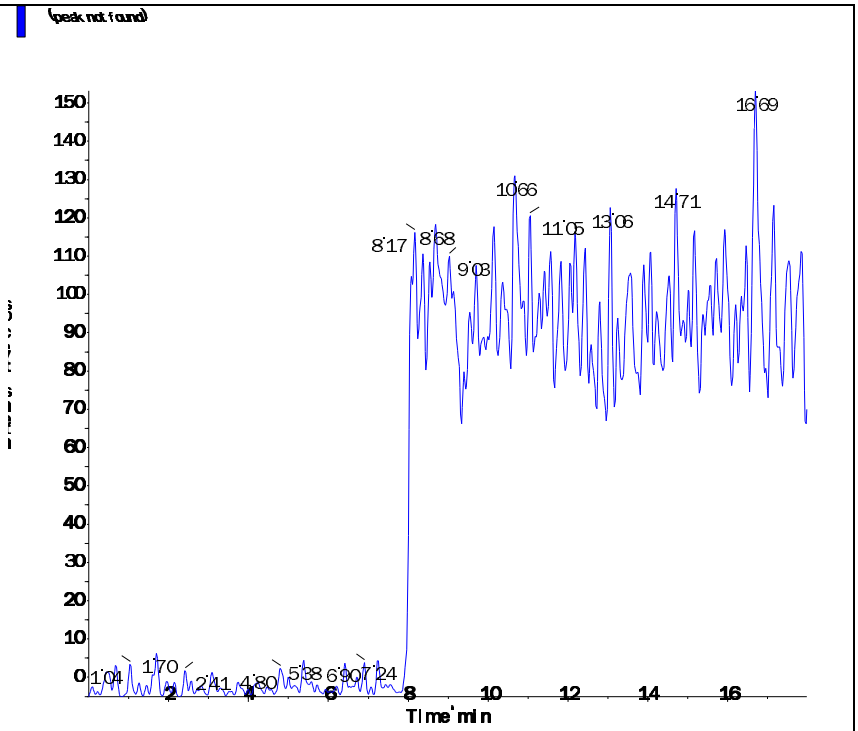

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

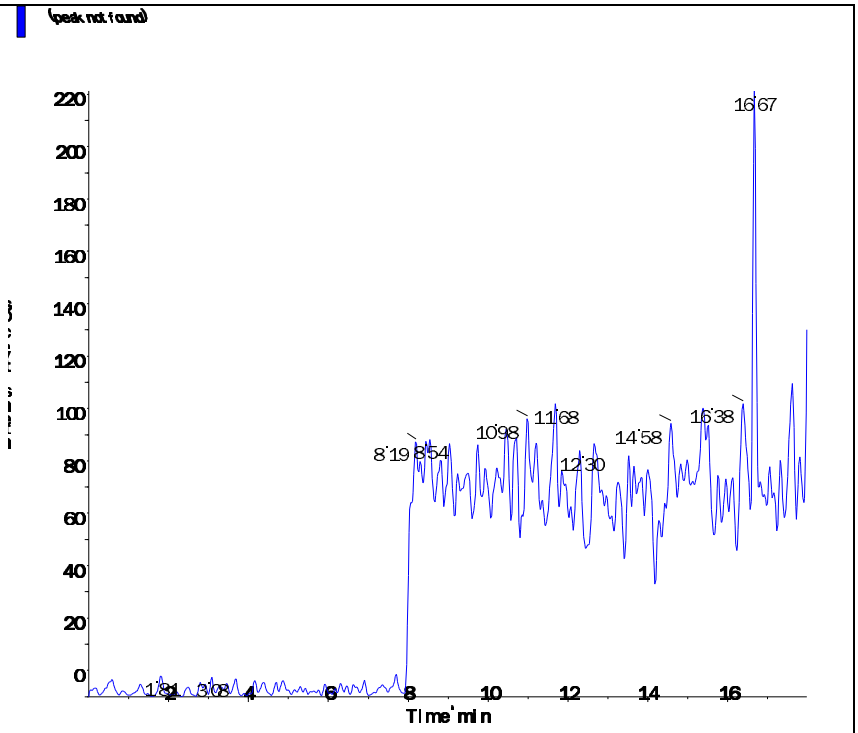

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Data File	LM34751.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 1:46:23 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567549-08 CCB	**Injection Vial**	1.00
Data File	LM34751.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 1:46:23 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567549-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.530e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

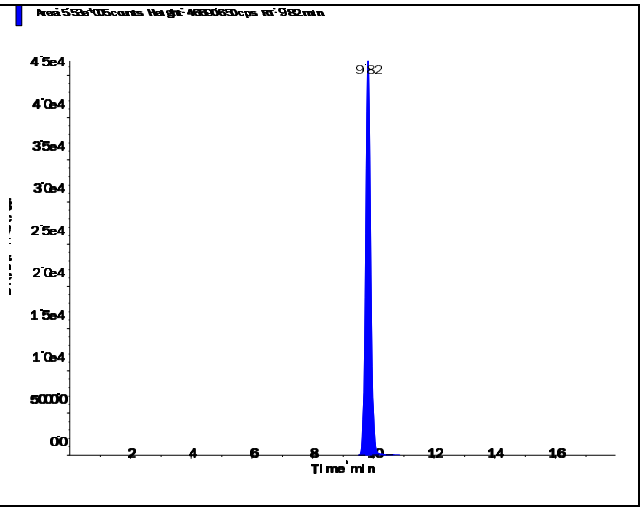

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

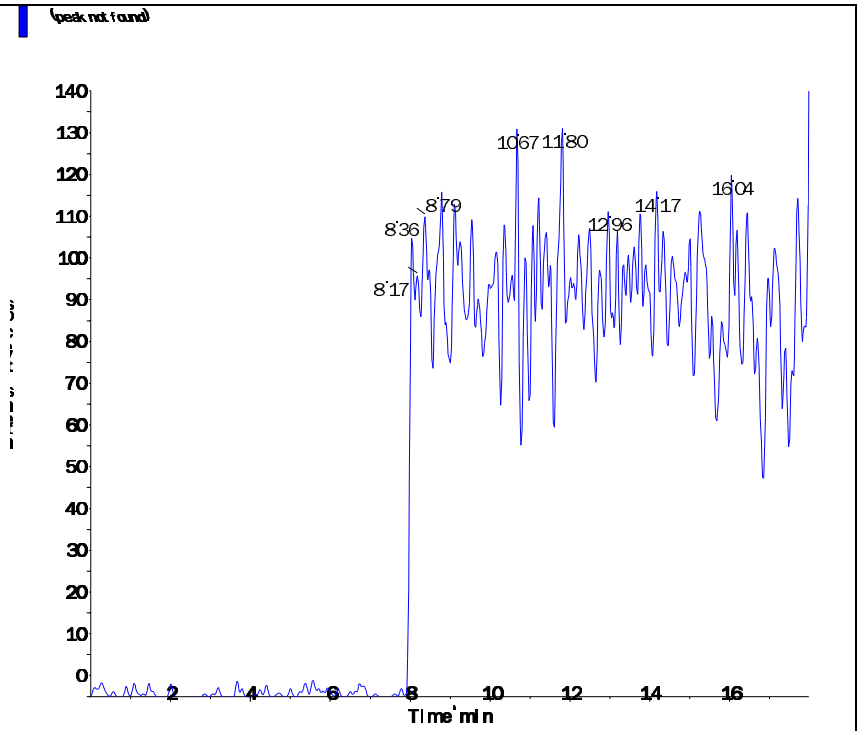

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

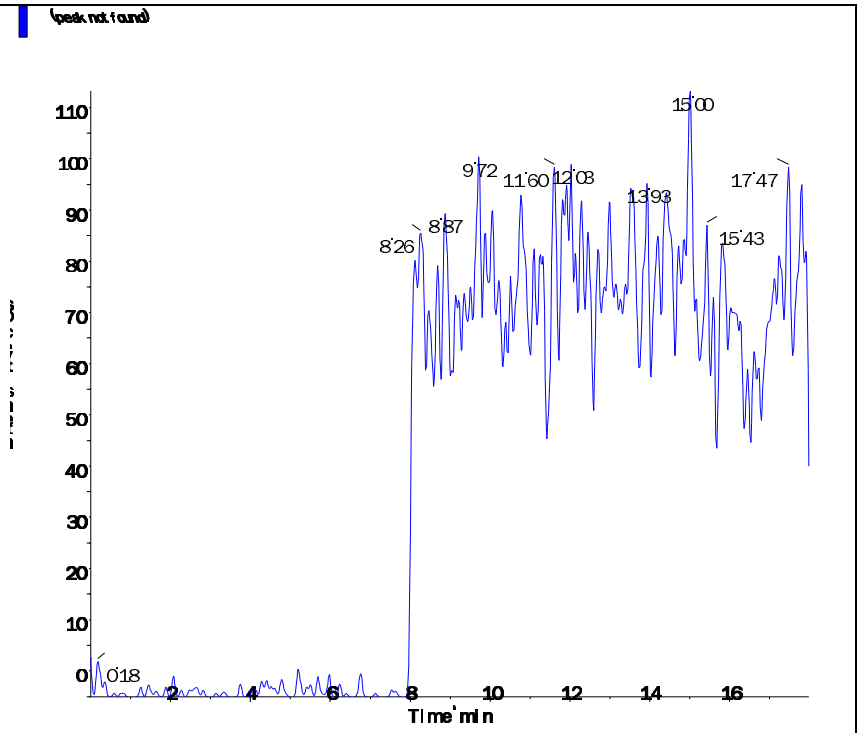

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Data File	LM34754.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 1:32:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567549-10 CCB	**Injection Vial**	1.00
Data File	LM34754.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 1:32:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567549-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.070e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

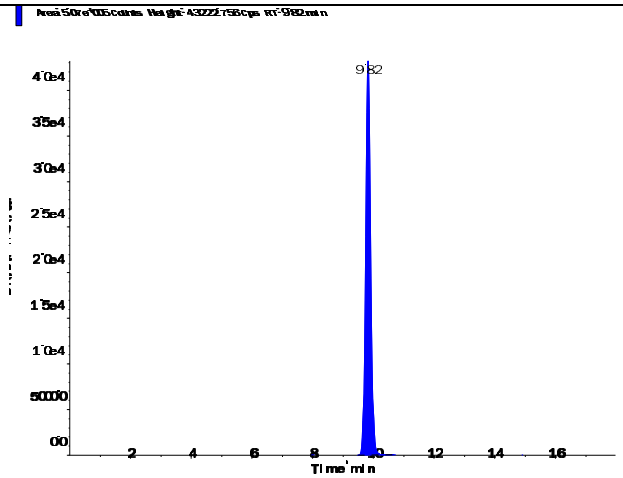

s.dataFile Page 1 of 2

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Printed: 5/6/2016 1:58 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

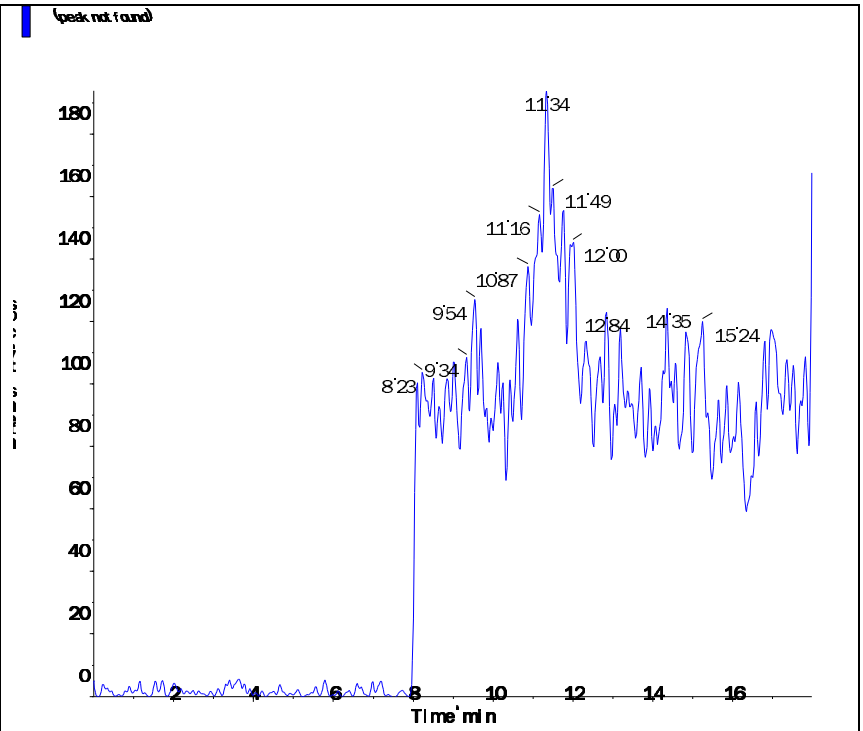

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

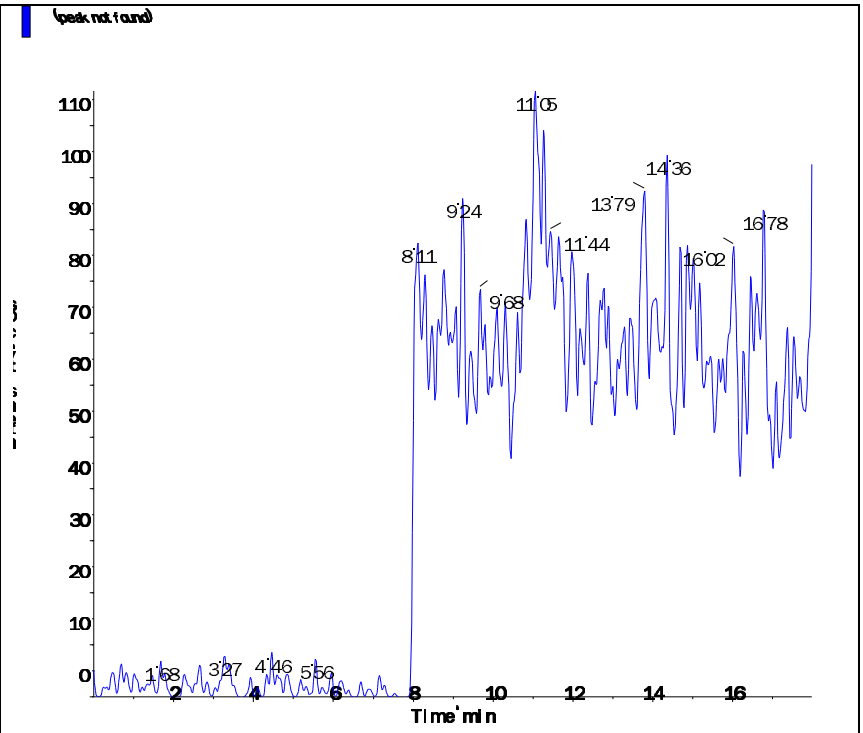

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/6/2016 2:00 PM

Data File	LM34761.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/5/2016 3:44:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567549-12 CCB	**Injection Vial**	1.00
Data File	LM34761.wiff	**Injection Volume**	10.00
Acquisition Date	5/5/2016 3:44:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567549-12	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.270e+05	9.85	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	4.490e+02	9.89	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.85(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

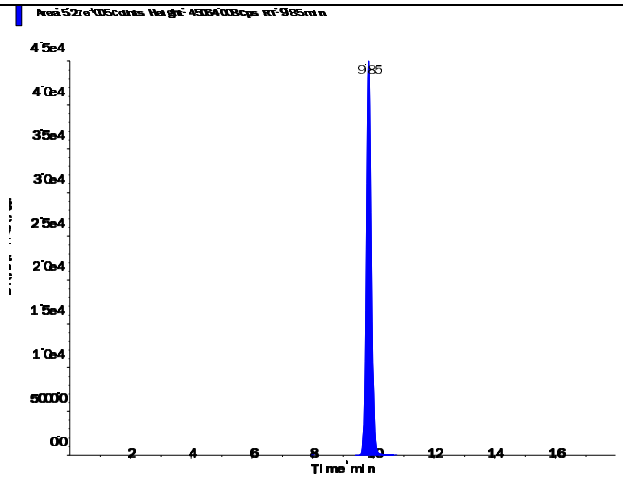

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/6/2016 2:00 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	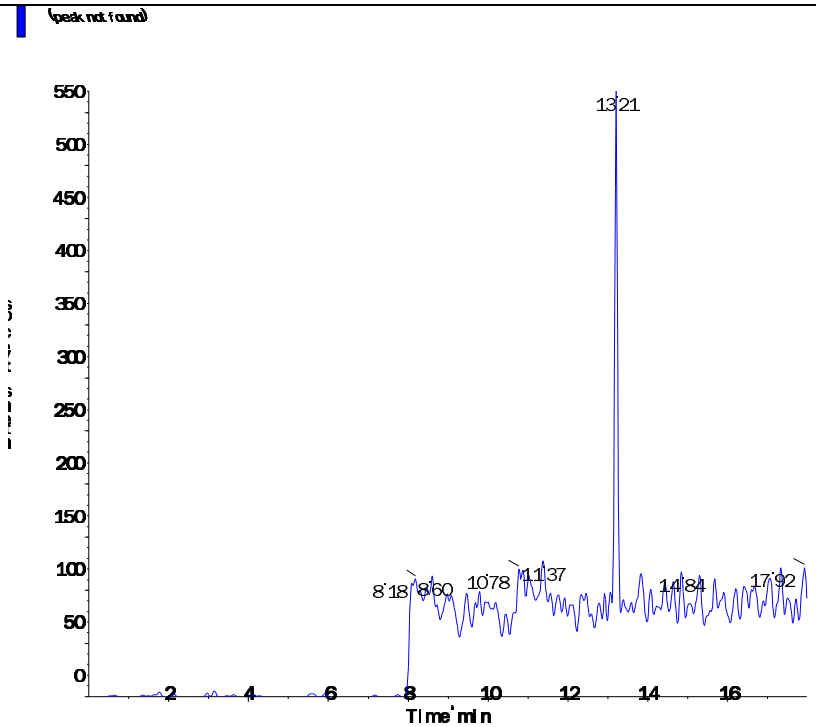
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.89 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	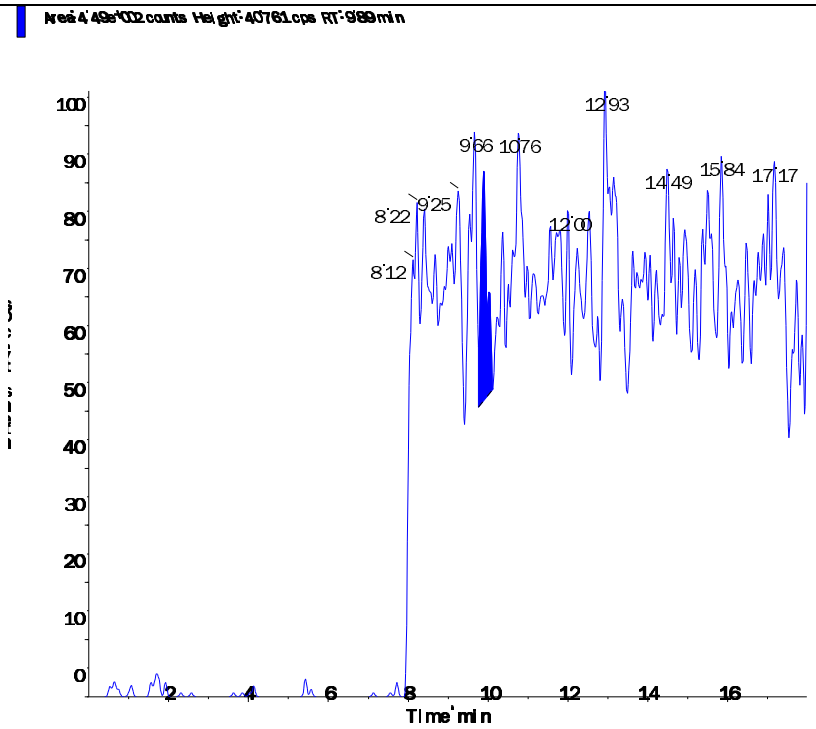

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/6/2016 1:49 PM

Data File	LM34720.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 3:59:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567224-01 MCT (2.0ug/kg)	**Injection Vial**	4.00
Data File	LM34720.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 3:59:35 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567224-01	**Dilution Factor**	1.00
Sample Comment	7,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.200e+05	9.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.810e+04	9.10	N/A	0.195
Perchlorate conf	1.010e+04	9.10	N/A	0.196

O18LP (Internal Standard)

RT (Exp. RT): 9.10(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

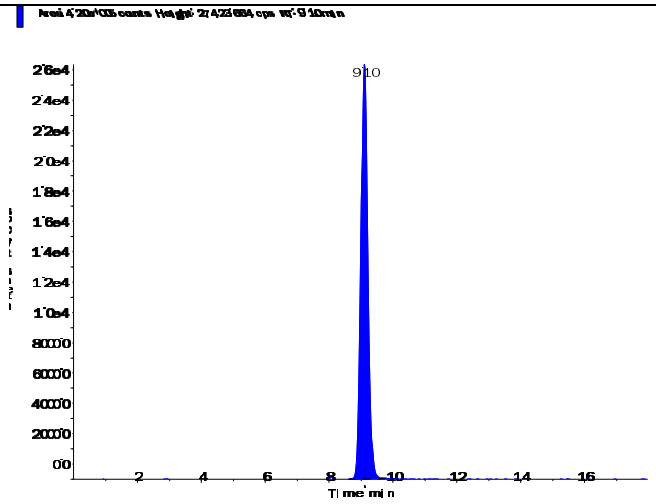

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 5/6/2016 1:49 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.10 (9.84) min
Calculated conc:	0.195 ng/ml
Area Ratio:	0.067
Sample Type:	(Unknown)

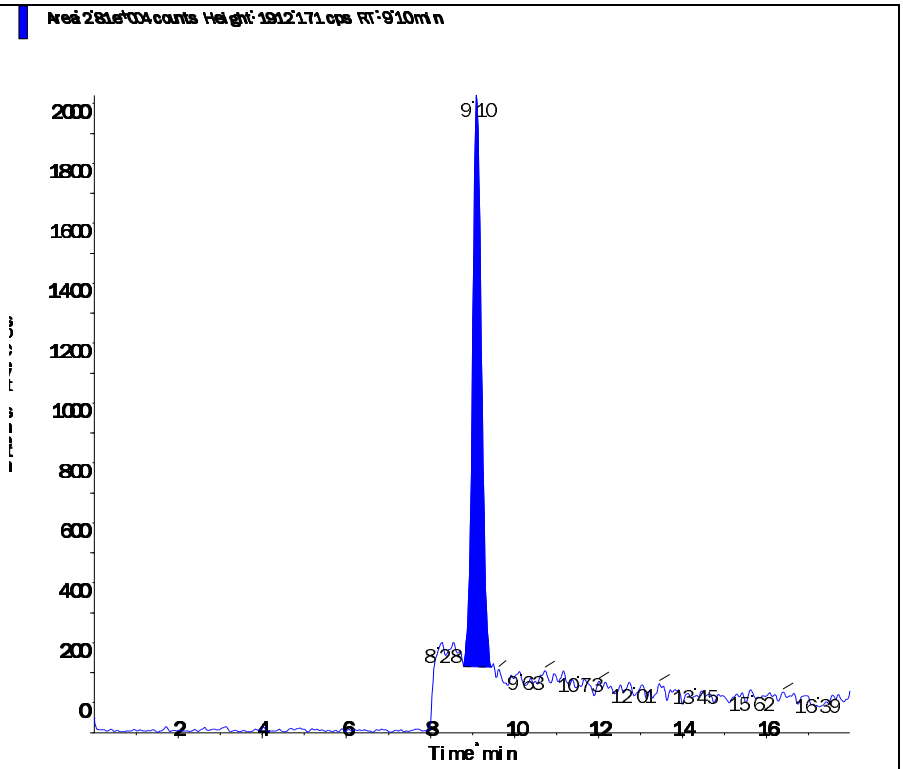

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.10 (9.84) min
Calculated conc:	0.196 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

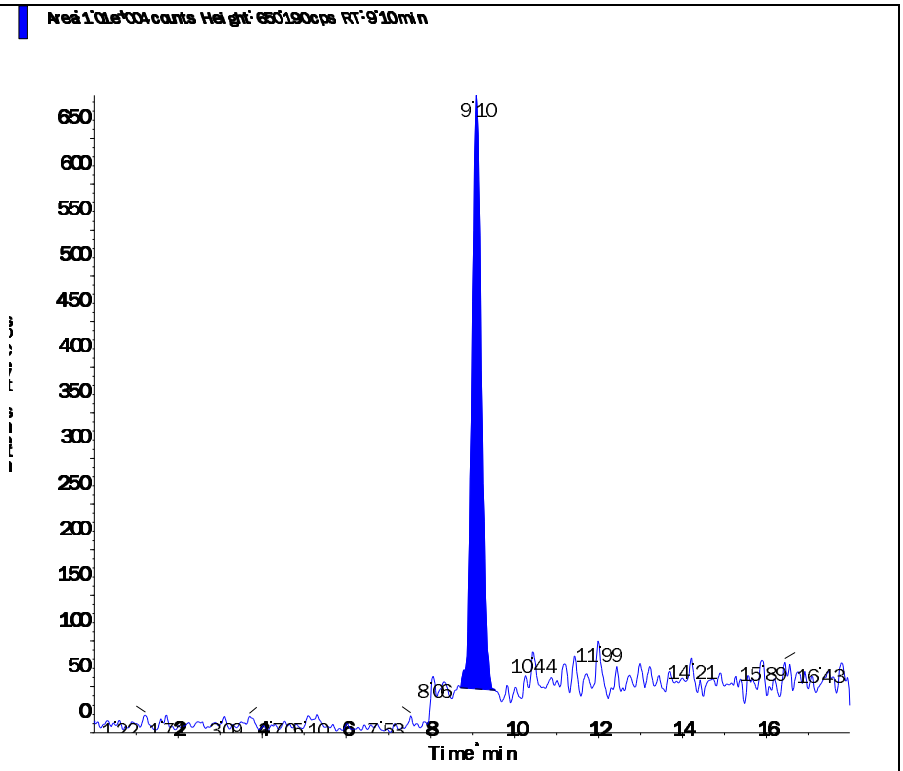

s.dataFile Page 2 of 2

Printing Time: 4:40:40 PM
Printing Date: Wednesday, May 04, 2016

Sample Name: "WG567224-01 MCT (2.0ug/kg)" Sample ID: "WG567224-01" File: "LM34720.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "7,1 STD75512" Annotation: ""

Sample Index:	1	
Sample Type:	Unknown	
Concentration:	N/A	
Calculated Conc:	0.220	ug/L
Acq. Date:	5/4/2016	
Acq. Time:	3:59:35 PM	
Modified:	No	
Proc. Algorithm:	Analyst Classic	
Punching Factor:	2	
Noise Threshold:	18.48	cps
Area Threshold:	92.40	cps
Num. Smooths:	5	
Sep. Width:	0.20	
Sep. Height:	0.01	
Exp. Peak Ratio:	5.00	
Exp. Adj. Ratio:	4.00	
Exp. Val. Ratio:	3.00	
RT Window:	30.000	sec
Expected RT:	9.84	min
Use Relative RT:	Yes	
Int. Type:	Valley	
Retention Time:	9.10	min
Area:	3.16e+004	counts
Height:	1997.611	cps
Start Time:	8.789	min
End Time:	9.559	min

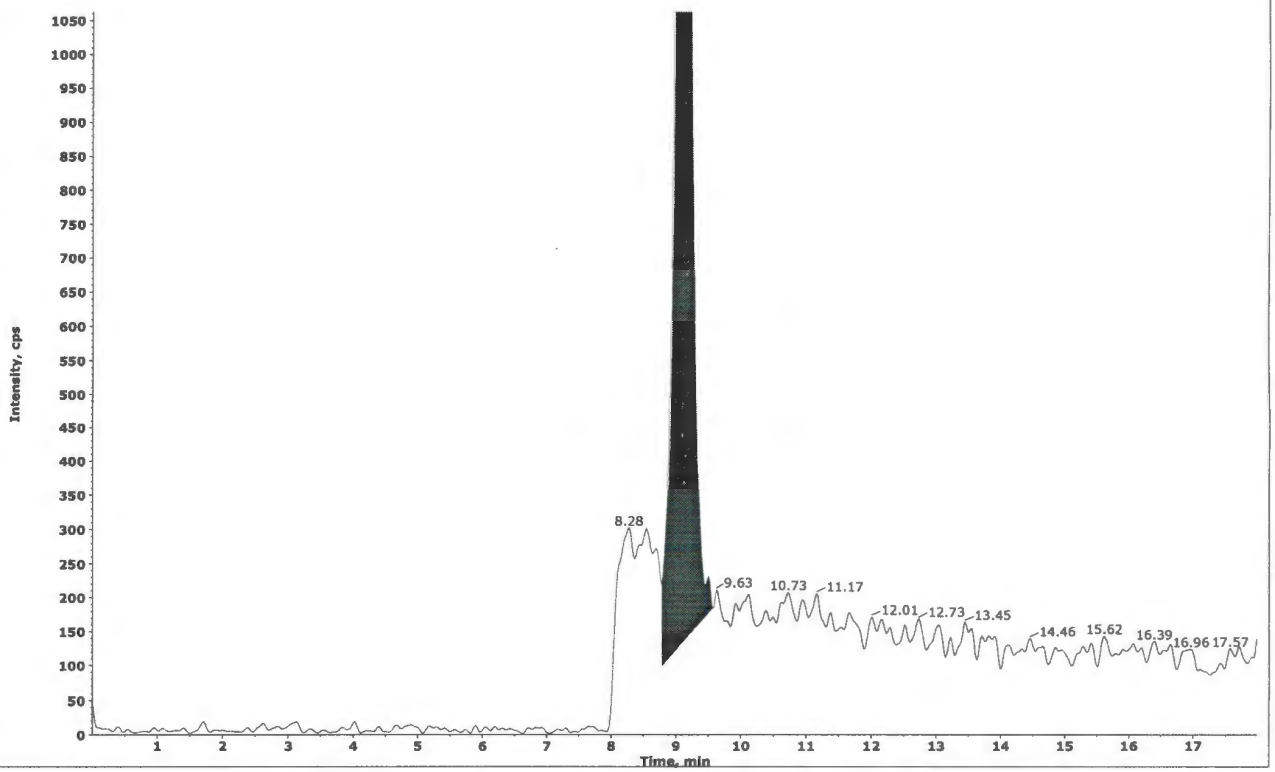

Collected by: N/A
Electronic Signature: no
Operator: lcms1

Printing Time: 4:41:25 PM
Printing Date: Wednesday, May 04, 2016

Sample Name: "WG567224-01 MCT (2.0ug/kg)" Sample ID: "WG567224-01" File: "LM34720.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "7.1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.195 mg/L
Acq. Date:	5/4/2016
Acq. Time:	3:59:35 PM
Modified:	Yes
Proc. Algorithm:	Analyst Classic
Bunching Factor:	1
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Sep. Width:	0.20
Sep. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Base To Base
Retention Time:	9.10 min
Area:	2.81e+004 counts
Height:	1912.171 cps
Start Time:	8.789 min
End Time:	9.457 min

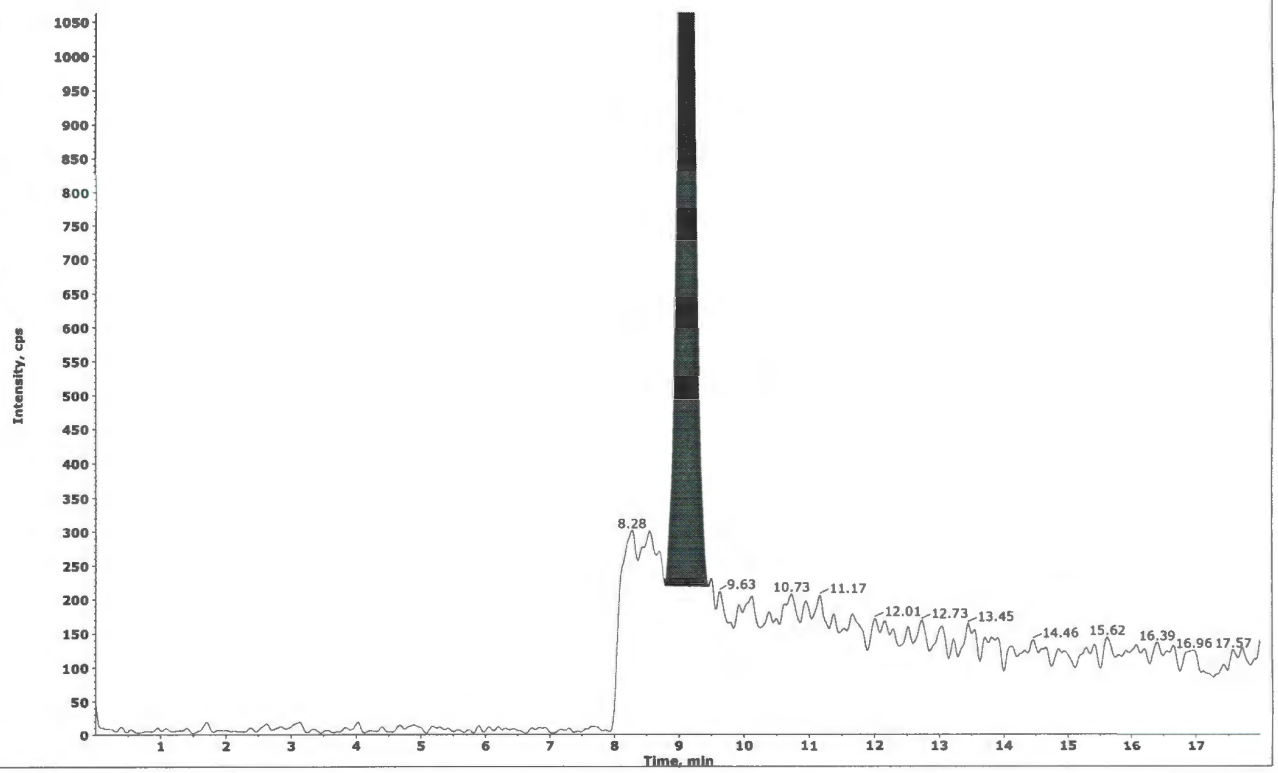

#4
JWR/05/04/16

✓ WD
5-9-16

Collected by: N/A
Electronic Signature: no
Operator: lcms1

2.2.1.5 Raw QC Data

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Created with Analyst Reporter
Printed: 5/6/2016 1:49 PM

Data File	LM34721.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 4:18:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567224-02 BLANK	**Injection Vial**	5.00
Data File	LM34721.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 4:18:30 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567224-02	**Dilution Factor**	1.00
Sample Comment	71.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.420e+05	9.86	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.220e+03	9.84	N/A	0.0111
Perchlorate conf	5.920e+02	9.89	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.86(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

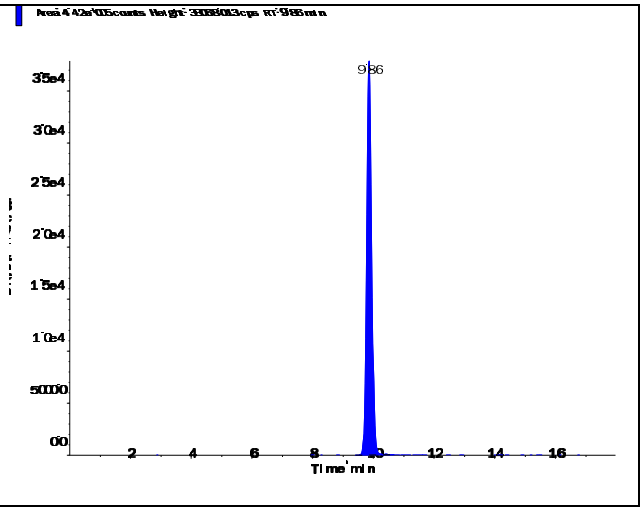

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.0111 ng/ml
Area Ratio:	0.005
Sample Type:	(Unknown)

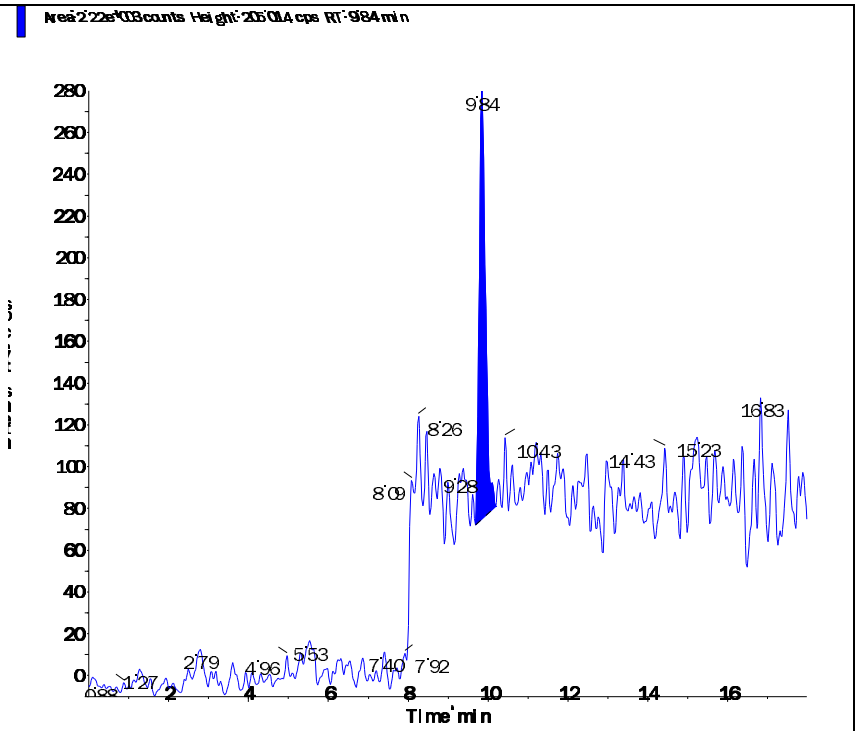

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.89 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

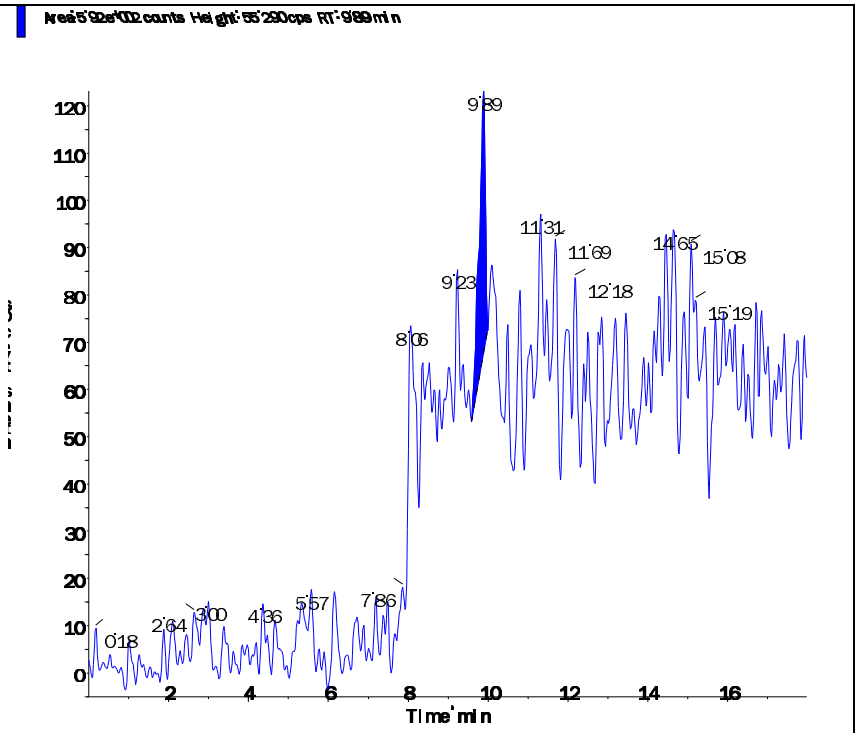

s.dataFile Page 2 of 2

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Created with Analyst Reporter
Printed: 5/6/2016 1:49 PM

Data File	LM34722.wiff	**Result Table**	050416_JWR.rdb
Acquisition Date	5/4/2016 4:37:26 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567224-03 LCS (2.0ug/kg)	**Injection Vial**	6.00
Data File	LM34722.wiff	**Injection Volume**	10.00
Acquisition Date	5/4/2016 4:37:26 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	050416_JWR.rdb
Sample ID	WG567224-03	**Dilution Factor**	1.00
Sample Comment	7,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.420e+05	9.86	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.890e+04	9.87	N/A	0.191
Perchlorate conf	1.140e+04	9.85	N/A	0.21

O18LP (Internal Standard)

RT (Exp. RT): 9.86(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

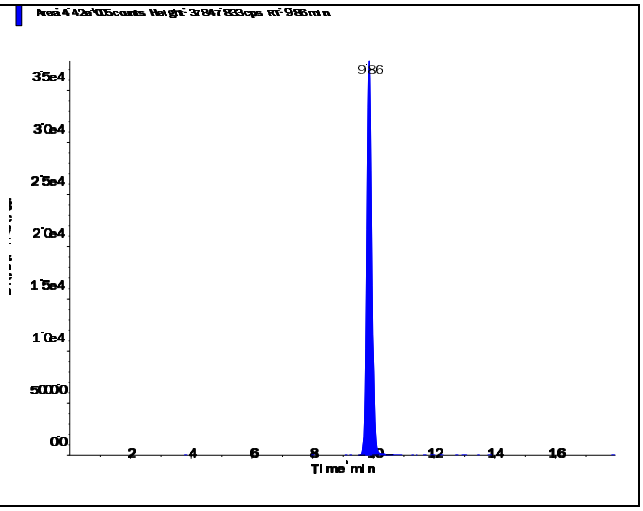

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.87 (9.84) min
Calculated conc:	0.191 ng/ml
Area Ratio:	0.065
Sample Type:	(Unknown)

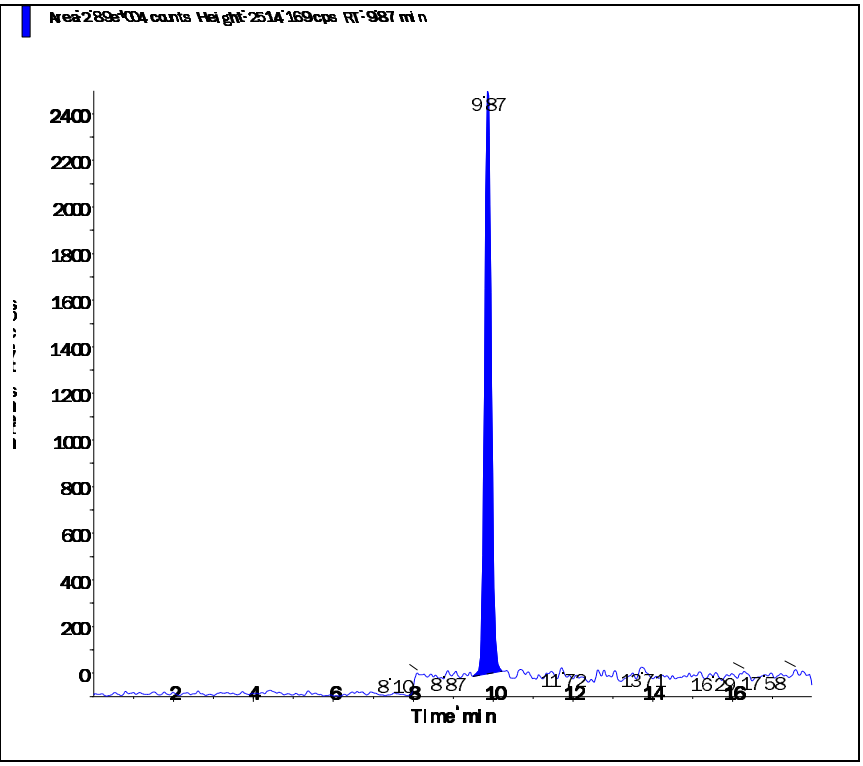

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

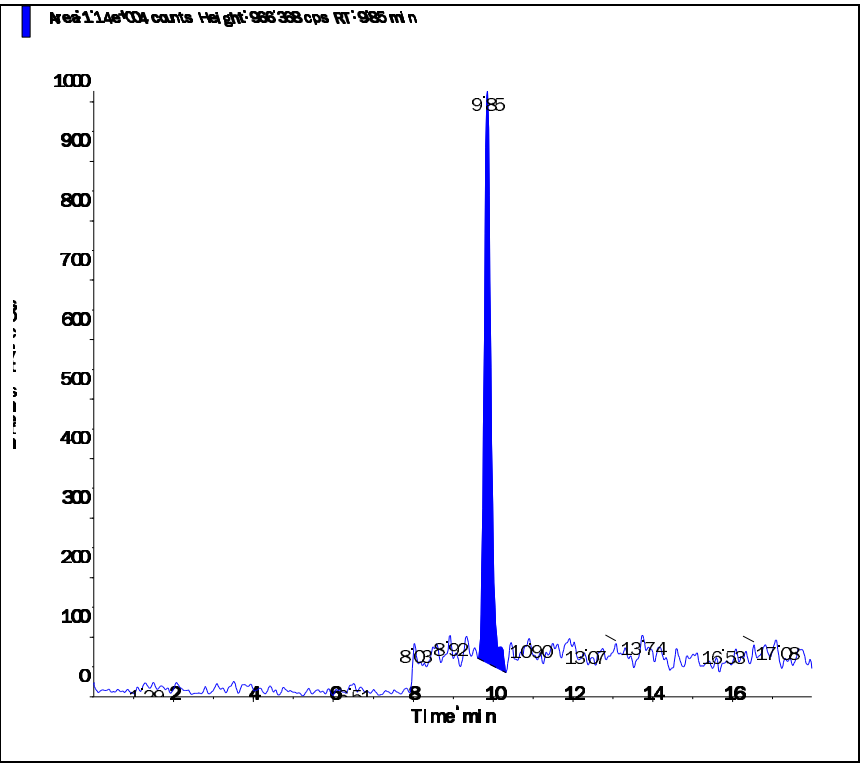

2.3 General Chemistry Data

2.3.1 Percent Solids Data

2.3.1.1 Raw Data

Example Percent Solids Calculations

1.0 Calculating the percent solids of a sample.

$$\%Solids = \frac{WT3 - WT1}{WT2 - WT1} \times F$$

Where:	
WT1 = Weight, in grams, of the empty container	1.30 g
WT2 = Weight, in grams, of the container and wet sample	21.274 g
WT3 = Weight, in grams, of the container and dried sample	5.21 g
F = Factor to get units as percent weight	100
%Solids = Percent solids present in sample.	19.58%

2.0 Calculating the percent moisture of a sample.

% Moisture = 100 - % Solids from 1.0 calculation

Microbac Laboratories Inc.

PERCENT SOLIDS

Workgroup (AAB#): WG567166 Analyst: AC ADT(on): 05/02/2016 13:27
Method: D2216-90 Instrument: BAL021 ADT(off): 05/03/2016 07:46
SOP: K0003 Rev: 14

SAMPLE NUMBER	EMPTY PAN WT 1	WET WT 2	DRY WT 3A	DRY WT 3B	DRY WT 3C	PERCENT SOLID	PERCENT MOISTURE
L16041580-01	1.29	22.615	19.375			84.81	
L16041580-02	1.29	26.3	21.786			81.95	
L16041580-03	1.292	21.625	17.404			79.24	
L16041580-04	1.289	23.096	18.339			78.19	
L16041580-05	1.29	21.915	17.591			79.04	
L16041580-06	1.291	23.333	19.695			83.50	
L16041580-07	1.291	23.333	19.695			83.50	
L16041580-08	1.291	23.333	19.695			83.50	
L16041580-09	1.291	24.126	21.052			86.54	
L16041580-10	1.279	23.631	20.752			87.12	
L16041580-11	1.287	26.575	22.453			83.70	
L16041580-12	1.287	22.289	18.564			82.26	
L16041580-13	1.29	22.339	18.135			80.03	
L16041582-01	1.294	23.384	17.777			74.62	
L16041582-02	1.29	28.32	23.412			81.84	
L16041582-03	1.284	27.318	22.576			81.79	
L16041582-04	1.286	24.705	20.245			80.96	
L16041582-05	1.282	22.281	19.089			84.80	
L16041582-06	1.287	22.079	18.368			82.15	
L16041582-07	1.295	25.736	20.946			80.40	
L16041606-01	1.285	21.833	20.389			92.97	
L16050014-01	1.283	24.256	20.829			85.08	
L16050014-02	1.3	24.953	19.642			77.55	
L16050014-03	1.291	20.806	17.713			84.15	
L16050014-04	1.288	21.983	19.998			90.41	
L16050014-05	1.293	24.293	20.492			83.47	
L16050014-06	1.282	21.966	19.672			88.91	
L16050030-01	1.287	25.15	21.127			83.14	
L16050030-02	1.293	25.733	21.431			82.40	
L16050030-03	1.292	33.629	27.446			80.88	
L16050030-04	1.284	22.714	19.483			84.92	
L16050030-05	1.284	22.779	18.96			82.23	
L16050030-06	1.284	25.307	21.079			82.40	
L16050030-07	1.284	21.993	18.291			82.12	
L16050030-08	1.296	27.13	22.36			81.54	
L16050030-09	1.299	22.008	18.096			81.11	
L16050030-10	1.293	23.646	19.239			80.28	
L16050030-11	1.294	25.085	20.158			79.29	
L16050030-12	1.293	22.244	18.628			82.74	
L16050030-13	1.294	25.484	20.914			81.11	
WG567166-01	1.287	22.079	18.368			82.15	17.85
WG567166-02	1.293	22.244	18.628			82.74	17.26

PERCENT_SOLIDS - Modified 04/24/2008
PDF ID: 4744056
Report generated: 05/03/2016 07:53

Microbac Laboratories Inc.

PERCENT SOLIDS

Workgroup (AAB#): WG567166 Analyst: AC ADT(on): 05/02/2016 13:27
Method: D2216-90 Instrument: BAL021 ADT(off): 05/03/2016 07:46
SOP: K0003 Rev: 14

SAMPLE NUMBER	EMPTY PAN WT 1	WET WT 2	DRY WT 3A	DRY WT 3B	DRY WT 3C	PERCENT SOLID	PERCENT MOISTURE
WG567166-03	1.288	23.865	19.897			82.42	17.58
WG567166-04	1.299	23.081	19.351			82.88	17.12

Analyst: Andrea R Cochran

PERCENT_SOLIDS - Modified 04/24/2008
PDF ID: 4744056
Report generated: 05/03/2016 07:53

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
May 12, 2016

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001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
May 12, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
May 12, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

COC No. A 49776

158 Starlite Drive
Marietta, OH 45750

MICROBAC®

CHAIN-OF-CUSTODY RECORD

Phone: 740-373-4071
Toll Free: 800-373-4071

Company Name: AECOM

Project Contact: Linda Raabe

Contact Phone #: 210-253-7518

Turn Around Requirements: STANDARD

Location: 18/24

Project ID: 60274185

Sampler (print): KAYLA PALLANES

Signature: Kayla Pallanes

Program: ☐ CWA ☐ RCRA ☐ DOD ☐ AFCEE ☐ Other _____

Sample I.D. No.	Comp	Grab	Date	Time	Matrix*	NUMBER OF CONTAINERS	Hold	VOC 8260	Perchlorate 6850	TOTAL # (LAB USE)	ADDITIONAL REQUIREMENTS
18CPTMW235W(5-5-5)270416			4/27/16	1415	S	2		X	X		
18CPTMW235W(10-10-5)270416			4/27/16	1440	S	2		X	X		
18CPTMW235W(20-20-5)270416			4/27/16	1445	S	2		X	X		
18CPTMW235W(30-30-5)270416			4/27/16	1450	S	2		X	X		
18CPTMW235W(40-40-5)270416			4/27/16	1615	S	2		X	X		* Dont Hold
18CPTMW235W(60-60-5)270416			4/27/16	1735	S	2		X	X		
18CPTMW235W(50-50-5)270416			4/27/16	1745	S	2		X	X		

Relinquished by: (Signature) Kayla Pallanes — Date 4/28/16 — Time 1500 — Received by: (Signature)

Relinquished by: (Signature) — Date — Time — Received by: (Signature)

Relinquished by: — Date — Time — Received by: (Signature)

Remarks:

Microbac OVD
Received: 04/29/2016 09:52
By: BRENDA GREGORY 221000085218
Brenda Gregory

*Water (W), Soil (S), Solid Waste (SD), Unknown (X)

Page _____ of _____

00790304

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041582
Account: 2551
Project: 2551.096
Samples: 7
Due Date: 10-MAY-2016

Samplenum	Container ID	Products
L16041582-01	737085	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-APR-2016 13:06	BRG		
2	ANALYZ	V1	ORG4	29-APR-2016 18:12	AWE	AZH	

Samplenum	Container ID	Products
L16041582-01	737086	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-APR-2016 13:06	BRG		
2	PREP	W1	DIG	02-MAY-2016 13:18	AC	BRG	
3	STORE	DIG	W1	02-MAY-2016 13:57	BRG	AC	
4	ANALYZ	W1	SEM	02-MAY-2016 16:42	JWR	BRG	
5	ANALYZ*	DIG	SEMI	06-MAY-2016 15:22	JWR	AC	
6	STORE	SEM	A1	06-MAY-2016 15:52	CLS	JWR	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041582-02	737087	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-APR-2016 13:06	BRG		
2	ANALYZ	V1	ORG4	29-APR-2016 18:12	AWE	AZH	

Samplenum	Container ID	Products
L16041582-02	737088	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-APR-2016 13:06	BRG		
2	PREP	W1	DIG	02-MAY-2016 13:18	AC	BRG	
3	STORE	DIG	W1	02-MAY-2016 13:57	BRG	AC	
4	ANALYZ	W1	SEM	02-MAY-2016 16:42	JWR	BRG	
5	ANALYZ*	DIG	SEMI	06-MAY-2016 15:22	JWR	AC	
6	STORE	SEM	A1	06-MAY-2016 15:52	CLS	JWR	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041582
Account: 2551
Project: 2551.096
Samples: 7
Due Date: 10-MAY-2016

Samplenum	Container ID	Products
L16041582-03	737089	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-APR-2016 13:06	BRG		
2	ANALYZ	V1	ORG4	29-APR-2016 18:12	AWE	AZH	

Samplenum	Container ID	Products
L16041582-03	737090	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-APR-2016 13:06	BRG		
2	PREP	W1	DIG	02-MAY-2016 13:18	AC	BRG	
3	STORE	DIG	W1	02-MAY-2016 13:57	BRG	AC	
4	ANALYZ	W1	SEM	02-MAY-2016 16:42	JWR	BRG	
5	ANALYZ*	DIG	SEMI	06-MAY-2016 15:22	JWR	AC	
6	STORE	SEM	A1	06-MAY-2016 15:52	CLS	JWR	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041582-04	737091	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-APR-2016 13:06	BRG		
2	ANALYZ	V1	ORG4	29-APR-2016 18:12	AWE	AZH	

Samplenum	Container ID	Products
L16041582-04	737092	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-APR-2016 13:06	BRG		
2	PREP	W1	DIG	02-MAY-2016 13:18	AC	BRG	
3	STORE	DIG	W1	02-MAY-2016 13:57	BRG	AC	
4	ANALYZ	W1	SEM	02-MAY-2016 16:42	JWR	BRG	
5	ANALYZ*	DIG	SEMI	06-MAY-2016 15:22	JWR	AC	
6	STORE	SEM	A1	06-MAY-2016 15:52	CLS	JWR	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041582
Account: 2551
Project: 2551.096
Samples: 7
Due Date: 10-MAY-2016

Samplenum	Container ID	Products
L16041582-05	737093	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-APR-2016 13:06	BRG		

Samplenum	Container ID	Products
L16041582-05	737094	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-APR-2016 13:06	BRG		
2	PREP	W1	DIG	02-MAY-2016 13:18	AC	BRG	
3	STORE	DIG	W1	02-MAY-2016 13:56	BRG	AC	
4	ANALYZ	W1	SEM	02-MAY-2016 16:42	JWR	BRG	
5	ANALYZ*	DIG	SEMI	06-MAY-2016 15:22	JWR	AC	
6	STORE	SEM	A1	06-MAY-2016 15:52	CLS	JWR	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16041582-06	737095	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-APR-2016 13:06	BRG		

Samplenum	Container ID	Products
L16041582-06	737096	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-APR-2016 13:06	BRG		
2	PREP	W1	DIG	02-MAY-2016 13:18	AC	BRG	
3	STORE	DIG	W1	02-MAY-2016 13:56	BRG	AC	
4	ANALYZ	W1	SEM	02-MAY-2016 16:42	JWR	BRG	
5	ANALYZ*	DIG	SEMI	06-MAY-2016 15:22	JWR	AC	
6	STORE	SEM	A1	06-MAY-2016 15:52	CLS	JWR	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16041582
Account: 2551
Project: 2551.096
Samples: 7
Due Date: 10-MAY-2016

Samplenum	Container ID	Products
L16041582-07	737097	G-60-S

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	29-APR-2016 13:06	BRG		
2	ANALYZ	V1	ORG4	29-APR-2016 18:12	AWE	AZH	

Samplenum	Container ID	Products
L16041582-07	737098	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	29-APR-2016 13:06	BRG		
2	PREP	W1	DIG	02-MAY-2016 13:18	AC	BRG	
3	STORE	DIG	W1	02-MAY-2016 13:56	BRG	AC	
4	ANALYZ	W1	SEM	02-MAY-2016 16:42	JWR	BRG	
5	ANALYZ*	DIG	SEMI	06-MAY-2016 15:22	JWR	AC	
6	STORE	SEM	A1	06-MAY-2016 15:52	CLS	JWR	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
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F1 - Volatiles Freezer in Login
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W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16060411

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Michelle Taylor – Client Services Specialist
(740) 373-4071
Michelle.Taylor@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on June 23 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00110430	I	5.0		J2317165107	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18CPTMW15T-060716	L16060411-01	06/07/2016 13:15	06/08/2016 09:58
18CPTMW15B-060716	L16060411-02	06/07/2016 13:55	06/08/2016 09:58
AWD4T-060716	L16060411-03	06/07/2016 15:00	06/08/2016 09:58
AWD4B-060716	L16060411-04	06/07/2016 15:30	06/08/2016 09:58
TRIP BLANK	L16060411-05	06/07/2016 00:01	06/08/2016 09:58

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16060411
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	8260
Prep Batch Number(s):	572348	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-14 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2016-06-14 18:03:20

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	8260
Prep Batch Number(s):	572348	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-14 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	8260
Prep Batch Number(s):	572348	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-14 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	8260
Prep Batch Number(s):	572348	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-14 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	8260
Prep Batch Number(s):	572348	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-14 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	8260
Prep Batch Number(s):	572348	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-14 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1)Bromomethane, Carbon Tetrachloride, 2,2-Dichloropropane, and Naphthalene exceeded the UCL in the CCV.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG571956	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-17 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-06-17 20:54:37

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG571956	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-17 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG571956	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-17 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG571956	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-17 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG571956	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-17 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG571956	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-17 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572200	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-06-14 16:43:43

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572200	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572200	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572200	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572200	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572200	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572463	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-23 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-06-23 20:02:20

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572463	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-23 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572463	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-23 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572463	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-23 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572463	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-23 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572463	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-23 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG571964	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-23 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-06-23 19:50:25

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG571964	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-23 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?		X			ER#2
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG571964	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-23 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG571964	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-23 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			ER#1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG571964	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-23 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG571964	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-23 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - A continuing calibration verification on 16-JUN-2016 at 21:45 yielded a marginally high recovery for manganese. All client samples had substantial results for manganese. With permission from the project manager, manganese was reported and no further action was taken.

ER#2 - Client sample 04 required dilution analysis in order to obtain a result for nickel within the calibration range.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG571962	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-23 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-06-23 19:49:25

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG571962	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-23 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG571962	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-23 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG571962	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-23 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG571962	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-23 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060411
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG571962	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-23 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW15T-060716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572348	**Analyst:**	FJB	**Run Date:**	06/11/2016 20:19
Collect Date:	06/07/2016 13:15	**Dilution:**	1	**File ID:**	8M412935
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.566	J	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	3.23		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.311	J	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	111	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	101	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW15T-060716	**Prep Method:**	3520C	**Prep Date:**	06/11/2016 13:19
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572361	**Analyst:**	MES	**Run Date:**	06/13/2016 11:04
Collect Date:	06/07/2016 13:15	**Dilution:**	1	**File ID:**	15M18369
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	52.6	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW15T-060716	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/11/2016 12:24
Collect Date:	06/07/2016 13:15	**Dilution:**	500	**File ID:**	1LM.LM35282
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1630		200	100	50.0

Certificate of Analysis

Sample #:	L16060411-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW15B-060716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572348	**Analyst:**	FJB	**Run Date:**	06/11/2016 20:48
Collect Date:	06/07/2016 13:55	**Dilution:**	1	**File ID:**	8M412936
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.532	J	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	3.22		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.319	J	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	116	70	120	
Toluene-d8	106	85	120	
4-Bromofluorobenzene	101	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW15B-060716	**Prep Method:**	3520C	**Prep Date:**	06/11/2016 13:19
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572361	**Analyst:**	MES	**Run Date:**	06/13/2016 11:27
Collect Date:	06/07/2016 13:55	**Dilution:**	1	**File ID:**	15M18370
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	35.3	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW15B-060716	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/11/2016 12:43
Collect Date:	06/07/2016 13:55	**Dilution:**	100	**File ID:**	1LM.LM35283
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	555		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L16060411-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	AWD4T-060716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572348	**Analyst:**	FJB	**Run Date:**	06/11/2016 21:17
Collect Date:	06/07/2016 15:00	**Dilution:**	1	**File ID:**	8M412937
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.274	J	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	2.21		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	111	85	115	
1,2-Dichloroethane-d4	112	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	100	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	AWD4T-060716	**Prep Method:**	3520C	**Prep Date:**	06/11/2016 13:19
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572361	**Analyst:**	MES	**Run Date:**	06/13/2016 11:50
Collect Date:	06/07/2016 15:00	**Dilution:**	1	**File ID:**	15M18371
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	75.4	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	AWD4T-060716	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/10/2016 17:24
Collect Date:	06/07/2016 15:00	**Dilution:**	200	**File ID:**	1LM.LM35249
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	712		80.0	40.0	20.0

Certificate of Analysis

Sample #:	L16060411-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	AWD4T-060716	**Prep Method:**	3015	**Prep Date:**	06/13/2016 12:41
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/14/2016 12:52
Workgroup #:	WG572626	**Analyst:**	JYH	**Run Date:**	06/14/2016 16:54
Collect Date:	06/07/2016 15:00	**Dilution:**	1	**File ID:**	T3.061416.165411
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	5.71		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	8.62		0.500	0.250	0.125
Iron, Total	7439-89-6	5.13		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	5.98		1.00	0.500	0.250
Potassium, Total	7440-09-7	1.00	U	2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0161	J	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	70.6		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	AWD4T-060716	**Prep Method:**	3015	**Prep Date:**	06/09/2016 07:45
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572085	**Analyst:**	BKT	**Run Date:**	06/16/2016 22:10
Collect Date:	06/07/2016 15:00	**Dilution:**	1	**File ID:**	NI.061616.221057
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00170	J	0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.205		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.0946		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00650		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00851		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00305		0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.0466		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.230		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000120	J	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.0174		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0348	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-03	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	AWD4T-060716	**Prep Method:**	7470A	**Prep Date:**	06/09/2016 07:15
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/13/2016 10:16
Workgroup #:	WG572241	**Analyst:**	AMA	**Run Date:**	06/13/2016 11:06
Collect Date:	06/07/2016 15:00	**Dilution:**	1	**File ID:**	M7.061316.110655
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	AWD4B-060716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572348	**Analyst:**	FJB	**Run Date:**	06/11/2016 21:46
Collect Date:	06/07/2016 15:30	**Dilution:**	1	**File ID:**	8M412938
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.338	J	1.00	0.500	0.250

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	2.40		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	116	70	120	
Toluene-d8	106	85	120	
4-Bromofluorobenzene	101	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	AWD4B-060716	**Prep Method:**	3520C	**Prep Date:**	06/11/2016 13:19
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572361	**Analyst:**	MES	**Run Date:**	06/13/2016 12:12
Collect Date:	06/07/2016 15:30	**Dilution:**	1	**File ID:**	15M18372
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	50.8	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	AWD4B-060716	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/10/2016 17:43
Collect Date:	06/07/2016 15:30	**Dilution:**	200	**File ID:**	1LM.LM35250
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	726		80.0	40.0	20.0

Certificate of Analysis

Sample #:	L16060411-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	AWD4B-060716	**Prep Method:**	3015	**Prep Date:**	06/13/2016 12:41
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/14/2016 12:52
Workgroup #:	WG572626	**Analyst:**	JYH	**Run Date:**	06/14/2016 16:58
Collect Date:	06/07/2016 15:30	**Dilution:**	1	**File ID:**	T3.061416.165809
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	5.34		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	8.65		0.500	0.250	0.125
Iron, Total	7439-89-6	4.64		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	5.75		1.00	0.500	0.250
Potassium, Total	7440-09-7	1.00	U	2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	J	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	72.0		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	AWD4B-060716	**Prep Method:**	3015	**Prep Date:**	06/09/2016 07:45
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572085	**Analyst:**	BKT	**Run Date:**	06/16/2016 22:14
Collect Date:	06/07/2016 15:30	**Dilution:**	1	**File ID:**	NI.061616.221409
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00124	J	0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.195		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.0892		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00687		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00717		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00258		0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.0529		0.00400	0.00200	0.00100
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.0124		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0260	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	AWD4B-060716	**Prep Method:**	3015	**Prep Date:**	06/09/2016 07:45
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572085	**Analyst:**	BKT	**Run Date:**	06/16/2016 22:20
Collect Date:	06/07/2016 15:30	**Dilution:**	5	**File ID:**	NI.061616.222032
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nickel, Total	7440-02-0	0.283		0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-04	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	AWD4B-060716	**Prep Method:**	7470A	**Prep Date:**	06/09/2016 07:15
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/13/2016 10:16
Workgroup #:	WG572241	**Analyst:**	AMA	**Run Date:**	06/13/2016 11:09
Collect Date:	06/07/2016 15:30	**Dilution:**	1	**File ID:**	M7.061316.110925
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572348	**Analyst:**	FJB	**Run Date:**	06/11/2016 17:54
Collect Date:	06/07/2016 00:01	**Dilution:**	1	**File ID:**	8M412930
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	112	70	120	
Toluene-d8	106	85	120	
4-Bromofluorobenzene	101	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW15T-060716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572348	**Analyst:**	FJB	**Run Date:**	06/11/2016 20:19
Collect Date:	06/07/2016 13:15	**Dilution:**	1	**File ID:**	8M412935
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.566	J	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	3.23		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.311	J	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	111	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	101	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW15B-060716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572348	**Analyst:**	FJB	**Run Date:**	06/11/2016 20:48
Collect Date:	06/07/2016 13:55	**Dilution:**	1	**File ID:**	8M412936
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.532	J	1.00	0.500	0.250

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	3.22		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.319	J	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	116	70	120	
Toluene-d8	106	85	120	
4-Bromofluorobenzene	101	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	AWD4T-060716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572348	**Analyst:**	FJB	**Run Date:**	06/11/2016 21:17
Collect Date:	06/07/2016 15:00	**Dilution:**	1	**File ID:**	8M412937
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.274	J	1.00	0.500	0.250

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	2.21		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	111	85	115	
1,2-Dichloroethane-d4	112	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	100	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	AWD4B-060716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572348	**Analyst:**	FJB	**Run Date:**	06/11/2016 21:46
Collect Date:	06/07/2016 15:30	**Dilution:**	1	**File ID:**	8M412938
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.338	J	1.00	0.500	0.250

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	2.40		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	116	70	120	
Toluene-d8	106	85	120	
4-Bromofluorobenzene	101	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572348	**Analyst:**	FJB	**Run Date:**	06/11/2016 17:54
Collect Date:	06/07/2016 00:01	**Dilution:**	1	**File ID:**	8M412930
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	112	70	120	
Toluene-d8	106	85	120	
4-Bromofluorobenzene	101	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051316
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53752

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG568561

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412209	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 08:38
8M412210	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 08:57
8M412211	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 09:29
8M412212	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 09:56
8M412213	WG568561-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/13/16 10:19
8M412214	WG568561-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/13/16 10:51
8M412215	WG568565-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76072	05/13/16 11:36
8M412216	BFB CHECK	NA	1	1	STD76034	05/13/16 12:04
8M412217	BFB CHECK	NA	1	1	STD76034	05/13/16 12:18
8M412218	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 12:36
8M412219	RINSE	NA	1	1		05/13/16 13:00
8M412220	WG568561-02 0.3ug/L STD 8260	NA	1	1	STD76127	05/13/16 13:29
8M412221	WG568561-03 0.4ug/L STD 8260	NA	1	1	STD76127	05/13/16 13:58
8M412222	WG568561-04 1ug/L STD 8260	NA	1	1	STD76127	05/13/16 14:27
8M412223	WG568561-05 2ug/L STD 8260	NA	1	1	STD76127	05/13/16 14:56
8M412224	WG568561-06 5ug/L STD 8260	NA	1	1	STD76127	05/13/16 15:25
8M412225	WG568561-07 20ug/L STD 8260	NA	1	1	STD76127	05/13/16 15:54
8M412226	WG568561-08 50ug/L STD 8260	NA	1	1	STD76127	05/13/16 16:23
8M412227	WG568561-09 100ug/L STD 8260	NA	1	1	STD76127	05/13/16 16:52
8M412228	WG568561-10 200ug/L STD 8260	NA	1	1	STD76127	05/13/16 17:21
8M412229	WG568561-11 300ug/L STD 8260	NA	1	1	STD76127	05/13/16 17:50
8M412230	RINSE	NA	1	1		05/13/16 18:19
8M412231	RINSE	NA	1	1		05/13/16 18:49
8M412232	WG568561-12 50ug/L ALT SRC STD 8260	NA	1	1	STD76109	05/13/16 19:17
8M412233	RINSE	NA	1	1		05/13/16 19:46

Comments

Seq.	Rerun	Dil.	Reason	Analytes
5	X			
File ID: 8M412213				
	Several compounds were low, DNR.			
6				
File ID: 8M412214				

Approved: May 20, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS8	Dataset:	051316		
Analyst1:	TMB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	23
Method:	624	SOP:	MSV10	Rev:	14
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:	53752				

Internal Standard: STD75899 Surrogate Standard: STD75899

CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG568561

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			Two C compounds failed. DNR. Run a curve.	
7 File ID: 8M412215				
			DNR.	

Approved: May 20, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051716
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76072; STD76127 LCS: STD76109; STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG569079; WG569083

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412319	WG569084-01 50ng BFB STD 8260	NA	1	1	STD76034	05/17/16 08:53
8M412320	WG569084-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/17/16 09:18
8M412321	WG569079-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76072	05/17/16 09:47
8M412322	WG569079-03 50ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 10:16
8M412323	WG569079-04 20ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 10:44
8M412324	WG569079-05 5ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 11:13
8M412325	WG569079-06 200ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 11:42
8M412326	WG569079-07 300ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 12:40
8M412327	WG569079-08 400ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 13:10
8M412328	WG569079-09 500ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 13:39
8M412329	RINSE	NA	1	1		05/17/16 14:08
8M412330	RINSE	NA	1	1		05/17/16 14:37
8M412331	WG569079-10 100ug/L ALT SRC STD 826	NA	1	1	STD75801	05/17/16 15:06
8M412332	WG569259-01 BFB 50ng 8260	NA	1	1	STD76034	05/17/16 18:27
8M412333	WG569259-02 50ug/L CCV 8260	NA	1	1	STD76034	05/17/16 18:53
8M412334	WG569260-01 100ug/L CCV A9	NA	1	1	STD76072	05/17/16 19:22
8M412335	WG569083-01 VBLK0517 BLANK 8260	NA	1	1		05/17/16 19:51
8M412336	WG569083-02 20ug/L LCS 8260	NA	1	1	STD76109	05/17/16 20:20
8M412337	WG569083-03 20ug/L LCS2 8260	NA	1	1	STD76109	05/17/16 20:49
8M412338	WG569083-04 100ug/L LCS A9	NA	1	1	STD75801	05/17/16 21:18
8M412339	WG569083-05 100ug/L LCS2 A9	NA	1	1	STD75801	05/17/16 21:46
8M412340	L16050844-01 TB A 826-A9-SPE	5	1	1		05/17/16 22:16
8M412341	L16050844-07 EB A 826-A9-SPE	5	1	1		05/17/16 22:45
8M412342	L16050844-11 AB A 826-A9-SPE	5	1	1		05/17/16 23:14
8M412343	L16050844-02 A 826-A9-SPE	6	1	1		05/17/16 23:43
8M412344	L16050844-05 A 826-A9-SPE	6	1	1		05/18/16 00:12
8M412345	L16050844-06 A 826-A9-SPE	6	1	1		05/18/16 00:41
8M412346	L16050844-12 A 826-A9-SPE	6	1	1		05/18/16 01:10
8M412347	L16050840-01 A 826-A9-SPE	7	1	1		05/18/16 01:38
8M412348	L16050844-08 A 826-A9-SPE	7	1	1		05/18/16 02:07
8M412349	L16050844-13 A 826-A9-SPE	7	1	1		05/18/16 02:36
8M412350	L16050844-15 A 826-A9-SPE	7	1	1		05/18/16 03:05
8M412351	L16050839-01 A 826-A9-SPE	7	1	1		05/18/16 03:33
8M412352	L16050844-03 2.5X A 826-A9-SPE	7	1	2.5		05/18/16 04:02

Approved: May 20, 2016

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Instrument Run Log

Instrument: HPMS8 Dataset: 051716
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76072; STD76127 LCS: STD76109; STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG569079; WG569083

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412353	L16050844-04 5X A 826-A9-SPE	7	1	5		05/18/16 04:31
8M412354	L16050844-09 5X A 826-A9-SPE	7	1	5		05/18/16 05:01
8M412355	L16050844-10 5X A 826-A9-SPE	7	1	5		05/18/16 05:30
8M412356	L16050844-14 50X A 826-A9-SPE	7	1	50		05/18/16 05:59
8M412357	RINSE	NA	1	1		05/18/16 06:28

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
File ID: 8M412320				
	DNR. Running an a9/foo curve.			
32	X	10	Over Calibration Range	CIS12-DCE
File ID: 8M412350				
40	X	2.5	Analyzed too dilute	
File ID: 8M412353				
	DNR.			
37	X	25	Over Calibration Range	TCE
File ID: 8M412355				
38	X	20	Analyzed too dilute	
File ID: 8M412356				
	DNR.			

Approved: May 20, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 061116
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD76370 Surrogate Standard: STD76370
CCV: STD76405 LCS: STD76540 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG572348

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412920	WG572347-01 BFB 50ng 8260	NA	1	1	STD76496	06/11/16 13:08
8M412921	WG572347-02 50ug/L CCV 8260	NA	1	1	STD76405	06/11/16 13:34
8M412922	WG572XXX-01 100ug/L CCV A9	NA	1	1	STDXXXXX	06/11/16 14:03
8M412923	WG572348-01 VBLK0611 BLANK 8260	NA	1	1		06/11/16 14:32
8M412924	WG572348-02 20ug/L LCS 8260	NA	1	1	STD76540	06/11/16 15:00
8M412925	WG572348-03 20ug/L LCS2 8260	NA	1	1	STD76540	06/11/16 15:29
8M412926	L16060493-01 A 826-BETX	<2	1	1		06/11/16 15:57
8M412927	L16060493-08 A 826-BETX	<2	1	1		06/11/16 16:26
8M412928	L16060493-19 A 826-BETX	<2	1	1		06/11/16 16:56
8M412929	L16060387-02 A 826-SPE2	<2	1	1		06/11/16 17:25
8M412930	L16060411-05 A 826-LOW	<2	1	1		06/11/16 17:54
8M412931	L16060387-01 A 826-SPE2	<2	1	1		06/11/16 18:23
8M412932	L16060387-03 A 826-SPE2	<2	1	1		06/11/16 18:52
8M412933	L16060387-04 A 826-SPE2	<2	1	1		06/11/16 19:21
8M412934	L16060387-05 A 826-SPE2	<2	1	1		06/11/16 19:50
8M412935	L16060411-01 A 826-LOW	<2	1	1		06/11/16 20:19
8M412936	L16060411-02 A 826-LOW	<2	1	1		06/11/16 20:48
8M412937	L16060411-03 A 826-LOW	<2	1	1		06/11/16 21:17
8M412938	L16060411-04 A 826-LOW	<2	1	1		06/11/16 21:46
8M412939	L16060395-01 A 826-BETX	<2	1	1		06/11/16 22:15
8M412940	L16060395-03 A 826-BETX	<2	1	1		06/11/16 22:44
8M412941	L16060395-05 A 826-BETX	<2	1	1		06/11/16 23:13

Comments

Seq.	Rerun	Dil.	Reason	Analytes
3				
File ID: 8M412922				
	Not needed. DNR.			

Approved: June 14, 2016

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Data Checklist

Date: 13-MAY-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75126
Analytical Workgroups: WG568561

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	TMB
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
17-MAY-2016
Tiffany Bailey

Secondary Reviewer:
20-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2016 11:18:36

Microbac Laboratories Inc.

Data Checklist

Date: 17-MAY-2016
Analyst: TMB
Analyst: FJB
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75174
Analytical Workgroups: WG569079; WG569083

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
19-MAY-2016
Tiffany Bailey

Secondary Reviewer:
20-MAY-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2016 11:05:37

Microbac Laboratories Inc.

Data Checklist

Date: 11-JUN-2016
Analyst: FJB
Analyst: NA
Method: 8260B
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75654
Analytical Workgroups: WG572348

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
13-JUN-2016
Tiffany Bailey

Secondary Reviewer:
14-JUN-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-14-2016 13:11:47

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG572348

Login Number: L16060411

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW15T-060716	01	06/07/16					06/11/2016	4.3	14		06/11/16	4.3	14	
18CPTMW15B-060716	02	06/07/16					06/11/2016	4.3	14		06/11/16	4.3	14	
AWD4T-060716	03	06/07/16					06/11/2016	4.3	14		06/11/16	4.3	14	
AWD4B-060716	04	06/07/16					06/11/2016	4.3	14		06/11/16	4.3	14	
TRIP BLANK	05	06/07/16					06/11/2016	4.7	14		06/11/16	4.7	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4804427
Report generated 06/14/2016 13:38

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060411
Instrument Id: HPMS8
Workgroup (AAB#): WG572348

Method: 8260
CAL ID: HPMS8-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16060411-01	1.00	01	111	110	101	105
L16060411-02	1.00	01	116	110	101	106
L16060411-03	1.00	01	112	111	100	105
L16060411-04	1.00	01	116	112	101	106
L16060411-05	1.00	01	112	110	101	106
WG572348-01	1.00	01	116	112	100	105
WG572348-02	1.00	01	112	108	99.6	105
WG572348-03	1.00	01	111	110	98.9	105

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4804433
Report generated: 06/14/2016 13:38

METHOD BLANK SUMMARY

Login Number: L16060411
Blank File ID: 8M412923
Prep Date: 06/11/16 14:32
Analyzed Date: 06/11/16 14:32
Analyst: FJB

Work Group: WG572348
Blank Sample ID: WG572348-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572348-02	8M412924	06/11/16 15:00	01
LCS2	WG572348-03	8M412925	06/11/16 15:29	01
TRIP BLANK	L16060411-05	8M412930	06/11/16 17:54	01
18CPTMW15T-060716	L16060411-01	8M412935	06/11/16 20:19	01
18CPTMW15B-060716	L16060411-02	8M412936	06/11/16 20:48	01
AWD4T-060716	L16060411-03	8M412937	06/11/16 21:17	01
AWD4B-060716	L16060411-04	8M412938	06/11/16 21:46	01

Report Name: BLANK_SUMMARY
PDF File ID: 4807242
Report generated 06/14/2016 13:38

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16060411 Prep Date: 06/11/16 14:32 Sample ID: WG572348-01
Instrument ID: HPMS8 Run Date: 06/11/16 14:32 Prep Method: 5030B/5030C/503
File ID: 8M412923 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG572348 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4804428
14-JUN-2016 13:38

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060411 Prep Date: 06/11/16 14:32 Sample ID: WG572348-01
Instrument ID: HPMS8 Run Date: 06/11/16 14:32 Prep Method: 5030B/5030C/503
File ID: 8M412923 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG572348 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.711	1	*
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	112	85 - 115	PASS
1,2-Dichloroethane-d4	116	70 - 120	PASS
Toluene-d8	105	85 - 120	PASS
4-Bromofluorobenzene	100	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4804428
14-JUN-2016 13:38

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060411 Analyst: FJB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG572348 Units: ug/L
QC Key: DOD4 Lot #: STD76540

Sample ID: WG572348-02 LCS File ID: 8M412924 Run Date: 06/11/2016 15:00
Sample ID: WG572348-03 LCS2 File ID: 8M412925 Run Date: 06/11/2016 15:29

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	20.7	103	20.0	20.2	101	2.30	80 - 130	30	
1,1,1-Trichloroethane	20.0	22.7	113	20.0	21.9	109	3.49	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	17.0	85.1	20.0	17.6	87.8	3.06	65 - 130	30	
1,1,2-Trichloroethane	20.0	18.9	94.3	20.0	18.7	93.5	0.928	75 - 125	30	
1,1-Dichloroethane	20.0	19.9	99.5	20.0	19.2	96.1	3.51	70 - 135	30	
1,1-Dichloroethene	20.0	19.6	98.1	20.0	19.0	95.2	2.99	70 - 130	30	
1,1-Dichloropropene	20.0	20.6	103	20.0	20.1	100	2.34	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	16.9	84.7	20.0	16.9	84.6	0.0959	55 - 140	30	
1,2,3-Trichloropropane	20.0	18.4	92.1	20.0	18.9	94.6	2.67	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	18.4	92.1	20.0	18.2	90.9	1.32	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	19.9	99.7	20.0	19.2	96.0	3.80	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	16.7	83.3	20.0	17.5	87.6	5.09	50 - 130	30	
1,2-Dibromoethane	20.0	19.7	98.7	20.0	19.1	95.6	3.26	80 - 120	30	
1,2-Dichlorobenzene	20.0	19.3	96.4	20.0	19.1	95.4	1.02	70 - 120	30	
1,2-Dichloroethane	20.0	22.7	114	20.0	21.8	109	4.07	70 - 130	30	
1,2-Dichloropropane	20.0	19.7	98.7	20.0	20.2	101	2.38	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	20.7	103	20.0	19.6	98.2	5.11	75 - 130	30	
1,3-Dichlorobenzene	20.0	19.6	97.9	20.0	19.6	98.0	0.0658	75 - 125	30	
1,3-Dichloropropane	20.0	20.7	103	20.0	20.6	103	0.349	75 - 125	30	
1,4-Dichlorobenzene	20.0	20.1	100	20.0	19.5	97.3	3.09	75 - 125	30	
2,2-Dichloropropane	20.0	23.8	119	20.0	22.6	113	5.34	70 - 135	30	
2-Butanone	20.0	18.3	91.6	20.0	19.6	97.9	6.68	30 - 150	30	
2-Chlorotoluene	20.0	20.2	101	20.0	19.6	97.9	3.31	75 - 125	30	
2-Hexanone	20.0	17.1	85.4	20.0	17.4	87.2	2.06	55 - 130	30	
4-Chlorotoluene	20.0	19.6	98.1	20.0	19.7	98.3	0.111	75 - 130	30	
4-Methyl-2-pentanone	20.0	18.1	90.6	20.0	18.8	93.8	3.50	60 - 135	30	
Acetone	20.0	20.3	102	20.0	21.4	107	5.48	40 - 140	30	
Benzene	20.0	20.6	103	20.0	20.1	100	2.39	80 - 120	30	
Bromobenzene	20.0	19.3	96.5	20.0	18.6	93.2	3.42	75 - 125	30	
Bromochloromethane	20.0	20.3	102	20.0	20.3	102	0.0023	65 - 130	30	
Bromodichloromethane	20.0	21.8	109	20.0	21.3	106	2.67	75 - 120	30	
Bromoform	20.0	19.2	95.9	20.0	19.2	95.8	0.114	70 - 130	30	
Bromomethane	20.0	15.4	77.0	20.0	14.6	73.2	5.16	30 - 145	30	
Carbon disulfide	20.0	20.4	102	20.0	19.5	97.6	4.19	35 - 160	30	
Carbon tetrachloride	20.0	23.1	116	20.0	21.9	109	5.40	65 - 140	30	
Chlorobenzene	20.0	20.4	102	20.0	19.9	99.3	2.48	80 - 120	30	
Chloroethane	20.0	22.7	113	20.0	21.0	105	7.69	60 - 135	30	
Chloroform	20.0	21.0	105	20.0	20.7	104	1.28	65 - 135	30	
Chloromethane	20.0	20.7	103	20.0	20.7	104	0.394	40 - 125	30	
cis-1,2-Dichloroethene	20.0	20.4	102	20.0	20.3	102	0.182	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4804429
Report generated: 06/14/2016 13:38

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060411 Analyst: FJB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG572348 Units: ug/L
QC Key: DOD4 Lot #: STD76540

Sample ID: WG572348-02 LCS File ID: 8M412924 Run Date: 06/11/2016 15:00
Sample ID: WG572348-03 LCS2 File ID: 8M412925 Run Date: 06/11/2016 15:29

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	22.5	113	20.0	22.3	111	1.15	70 - 130	30	
Chlorodibromomethane	20.0	19.8	98.9	20.0	19.8	99.2	0.316	60 - 135	30	
Dibromomethane	20.0	18.9	94.5	20.0	18.9	94.7	0.125	75 - 125	30	
Dichlorodifluoromethane	20.0	26.2	131	20.0	25.4	127	3.16	30 - 155	30	
Ethylbenzene	20.0	19.7	98.4	20.0	19.0	95.0	3.52	75 - 125	30	
Hexachlorobutadiene	20.0	21.0	105	20.0	20.2	101	4.09	50 - 140	30	
Isopropylbenzene	20.0	21.6	108	20.0	21.1	106	1.93	75 - 125	30	
m-,p-Xylene	40.0	41.4	103	40.0	40.3	101	2.72	75 - 130	30	
Methylene chloride	20.0	19.4	97.1	20.0	19.1	95.5	1.65	55 - 140	30	
n-Butylbenzene	20.0	19.4	97.0	20.0	19.0	95.0	2.03	70 - 135	30	
n-Propylbenzene	20.0	20.7	104	20.0	19.9	99.6	3.98	70 - 130	30	
Naphthalene	20.0	15.2	75.9	20.0	15.7	78.7	3.61	55 - 140	30	
o-Xylene	20.0	21.1	105	20.0	20.2	101	4.21	80 - 120	30	
p-Isopropyltoluene	20.0	20.3	101	20.0	19.7	98.5	2.81	75 - 130	30	
sec-Butylbenzene	20.0	20.3	101	20.0	19.6	98.0	3.40	70 - 125	30	
Styrene	20.0	20.5	102	20.0	20.1	101	1.68	65 - 135	30	
tert-Butylbenzene	20.0	20.1	100	20.0	19.6	97.8	2.50	70 - 130	30	
Tetrachloroethene	20.0	20.5	102	20.0	19.9	99.5	2.88	45 - 150	30	
Toluene	20.0	19.7	98.5	20.0	19.4	97.2	1.29	75 - 120	30	
trans-1,2-Dichloroethene	20.0	20.1	101	20.0	19.8	99.1	1.48	60 - 140	30	
trans-1,3-Dichloropropene	20.0	20.1	100	20.0	20.0	99.8	0.543	55 - 140	30	
Trichloroethene	20.0	21.6	108	20.0	21.7	109	0.535	70 - 125	30	
Trichlorofluoromethane	20.0	23.4	117	20.0	22.5	113	3.66	60 - 145	30	
Vinyl chloride	20.0	25.0	125	20.0	24.7	124	1.18	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	112	111	70 - 120	PASS
Dibromofluoromethane	108	110	85 - 115	PASS
4-Bromofluorobenzene	99.6	98.9	75 - 120	PASS
Toluene-d8	105	105	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4804429
Report generated: 06/14/2016 13:38

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060411
Instrument: HPMS8
Analyst: TMB
Workgroup: WG568561

Tune ID: WG568561-01
Run Date: 05/13/2016
Run Time: 12:36
File ID: 8M412218
Cal ID: HPMS8 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	16.7	6575	PASS
75.0	95.0	30.0	60.0	51.3	20171	PASS
95.0	95.0	100	100	100	39312	PASS
96.0	95.0	5.00	9.00	6.74	2649	PASS
173	174	0	2.00	0.363	122	PASS
174	95.0	50.0	100	85.5	33616	PASS
175	174	5.00	9.00	8.17	2746	PASS
176	174	95.0	101	99.2	33360	PASS
177	176	5.00	9.00	6.80	2267	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG568561-02	STD	01	05/13/2016 13:29	
WG568561-03	STD	01	05/13/2016 13:58	
WG568561-04	STD	01	05/13/2016 14:27	
WG568561-05	STD	01	05/13/2016 14:56	
WG568561-06	STD	01	05/13/2016 15:25	
WG568561-07	STD	01	05/13/2016 15:54	
WG568561-08	STD-CCV	01	05/13/2016 16:23	
WG568561-09	STD	01	05/13/2016 16:52	
WG568561-10	STD	01	05/13/2016 17:21	
WG568561-11	STD	01	05/13/2016 17:50	
WG568561-12	SSCV	01	05/13/2016 19:17	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4804431
Report generated 06/14/2016 13:38

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060411
Instrument: HPMS8
Analyst: TMB
Workgroup: WG569084

Tune ID: WG569084-01
Run Date: 05/17/2016
Run Time: 08:53
File ID: 8M412319
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.1	6316	PASS
75.0	95.0	30.0	60.0	54.7	18130	PASS
95.0	95.0	100	100	100	33138	PASS
96.0	95.0	5.00	9.00	6.76	2241	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	72.2	23934	PASS
175	174	5.00	9.00	7.88	1886	PASS
176	174	95.0	101	96.8	23159	PASS
177	176	5.00	9.00	7.15	1655	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG569079-01	STD-CCV	01	05/17/2016 09:47	
WG569079-03	STD	01	05/17/2016 10:16	
WG569079-04	STD	01	05/17/2016 10:44	
WG569079-05	STD	01	05/17/2016 11:13	
WG569079-06	STD	01	05/17/2016 11:42	
WG569079-07	STD	01	05/17/2016 12:40	
WG569079-08	STD	01	05/17/2016 13:10	
WG569079-09	STD	01	05/17/2016 13:39	
WG569079-10	SSCV	01	05/17/2016 15:06	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4804431
Report generated 06/14/2016 13:38

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060411
Instrument: HPMS8
Analyst: FJB
Workgroup: WG572347

Tune ID: WG572347-01
Run Date: 06/11/2016
Run Time: 13:08
File ID: 8M412920
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	17.8	8071	PASS
75.0	95.0	30.0	60.0	58.5	26476	PASS
95.0	95.0	100	100	100	45256	PASS
96.0	95.0	5.00	9.00	6.94	3142	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	77.0	34867	PASS
175	174	5.00	9.00	7.00	2439	PASS
176	174	95.0	101	96.0	33456	PASS
177	176	5.00	9.00	6.58	2202	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG572347-02	CCV	01	06/11/2016 13:34	
WG572348-01	BLANK	01	06/11/2016 14:32	
WG572348-02	LCS	01	06/11/2016 15:00	
WG572348-03	LCS2	01	06/11/2016 15:29	
L16060411-05	TRIP BLANK	01	06/11/2016 17:54	
L16060411-01	18CPTMW15T-060716	01	06/11/2016 20:19	
L16060411-02	18CPTMW15B-060716	01	06/11/2016 20:48	
L16060411-03	AWD4T-060716	01	06/11/2016 21:17	
L16060411-04	AWD4B-060716	01	06/11/2016 21:46	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4804431
Report generated 06/14/2016 13:38

Calibration Table Report
Method: 8260WT.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Calibration: Sat May 14 18:08:06 2016
Curve: WG568561
Calibration Files

	Compound	0.3 8M412220.D	0.4 8M412221.D	1 8M412222.D	2 8M412223.D	5 8M412224.D	20 8M412225.D	50 8M412226.D	100 8M412227.D	200 8M412228.D	300 8M412229.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane		0.427	0.390	0.397	0.364	0.468	0.439	0.452	0.427	0.408	0.419	7.751		
P	Chloromethane			0.264	0.257	0.223	0.253	0.240	0.240	0.239	0.241	0.245	5.336		
C	Vinyl Chloride		0.274	0.296	0.297	0.277	0.299	0.292	0.299	0.292	0.288	0.290	3.191		
T	1,3-Butadiene				0.218	0.208	0.242	0.251	0.277	0.254	0.254	0.243	9.644		
T	Bromomethane			0.129	0.133	0.127	0.162	0.167	0.187	0.205	0.212	0.165	20.449		1.000
T	Chloroethane		0.173	0.157	0.153	0.143	0.164	0.157	0.163	0.164	0.164	0.160	5.354		
T	Trichlorofluoromethane		0.544	0.538	0.559	0.506	0.570	0.538	0.551	0.531	0.525	0.540	3.520		
T	Diethyl ether			0.130	0.138	0.123	0.132	0.125	0.128		0.127	0.129	3.866		
T	Isoprene		0.335	0.351	0.334	0.293	0.334	0.320	0.334	0.322	0.329	0.328	4.867		
T	Acrolein				0.012	0.010	0.010	0.011	0.012		0.014	0.012	12.987		
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.256	0.269	0.240	0.260	0.249	0.257	0.251	0.250	0.254	3.397		
T	Acetone					0.023	0.030	0.029	0.030	0.028	0.028	0.028	9.132		
C	1,1-Dichloroethene		0.424	0.407	0.406	0.387	0.416	0.398	0.409	0.400	0.393	0.404	2.830		
T	Tert-Butyl Alcohol				0.010	0.009	0.009	0.009	0.009		0.009	0.009	2.872		
T	Dimethyl Sulfide		0.133	0.142	0.152	0.137	0.145	0.142	0.151	0.147	0.151	0.145	4.534		
T	Iodomethane				0.019	0.024	0.066	0.101	0.129	0.135	0.131	0.087	58.244		0.998
T	Methyl acetate					0.075	0.076	0.074	0.078	0.076	0.078	0.076	2.221		
T	Methylene Chloride			0.274	0.265	0.244	0.263	0.250	0.255	0.254	0.252	0.257	3.686		
T	Carbon Disulfide			0.888	0.922	0.801	0.873	0.816	0.854	0.813	0.802	0.846	5.346		
T	Acrylonitrile			0.027	0.035	0.033	0.038	0.038	0.039		0.044	0.036	14.671		
T	Methyl Tert Butyl Ether			0.534	0.543	0.521	0.586	0.579	0.585	0.560	0.546	0.557	4.455		
T	trans-1,2-Dichloroethene		0.389	0.395	0.364	0.352	0.381	0.367	0.372	0.364	0.358	0.371	3.858		
T	n-Hexane					0.265	0.280	0.270	0.286	0.275	0.279	0.276	2.732		
T	Diisopropyl ether			0.600	0.607	0.548	0.588	0.572	0.571		0.567	0.579	3.559		
T	Vinyl Acetate				0.256	0.243	0.270	0.275	0.266	0.271	0.275	0.265	4.509		
P	1,1-Dichloroethane		0.441	0.463	0.486	0.434	0.488	0.464	0.470	0.459	0.447	0.461	4.012		
T	Ethyl-Tert-Butyl ether			0.616	0.645	0.590	0.641	0.628	0.619		0.603	0.620	3.188		
T	2-Butanone					0.035	0.042	0.043	0.045	0.041	0.043	0.041	8.268		
T	Propionitrile			0.010	0.012	0.012	0.013	0.012	0.013		0.013	0.012	8.354		
T	2,2-Dichloropropane		0.471	0.462	0.520	0.476	0.503	0.494	0.497	0.483	0.470	0.486	3.839		
T	cis-1,2-Dichloroethene		0.299	0.298	0.291	0.267	0.295	0.282	0.289	0.283	0.277	0.287	3.685		
C	Chloroform	0.563	0.567	0.581	0.536	0.509	0.566	0.543	0.546	0.529	0.506	0.545	4.619		
T	1-Bromopropane			0.034	0.040	0.040	0.043	0.041	0.043	0.043	0.044	0.041	7.649		
T	Bromochloromethane		0.131	0.164	0.147	0.137	0.154	0.148	0.151	0.148	0.145	0.147	6.598		
T	Tetrahydrofuran			0.034	0.028	0.025	0.026	0.026	0.026		0.026	0.027	11.724		
S	Dibromofluoromethane			0.249	0.261	0.257	0.280	0.271	0.284	0.271	0.275	0.269	4.465		
T	1,1,1-Trichloroethane		0.492	0.537	0.515	0.496	0.545	0.525	0.533	0.515	0.499	0.517	3.660		
T	Cyclohexane			0.373	0.369	0.335	0.359	0.344	0.366	0.356	0.364	0.358	3.619		
T	1,1-Dichloropropene			0.414	0.399	0.369	0.403	0.395	0.399	0.392	0.382	0.394	3.488		
T	Tert-Amyl-Methyl ether			0.567	0.587	0.534	0.576	0.568	0.561		0.549	0.563	3.077		
T	Carbon Tetrachloride		0.444	0.456	0.462	0.441	0.481	0.465	0.474	0.462	0.448	0.4594	2.92173		
S	1,2-Dichloroethane-d4			0.241	0.309	0.276	0.312	0.295	0.301	0.284	0.286	0.288	7.93644		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.347	0.335	0.354	0.336	0.371	0.36	0.364	0.349	0.338	0.3505	3.65503		
T	Benzene		1.128	1.084	1.071	0.977	1.085	1.033	1.019	0.963	0.883	1.0269	7.39343		
T	Trichloroethene		0.285	0.275	0.276	0.251	0.283	0.273	0.279	0.273	0.27	0.2739	3.66126		
T	Methylcyclohexane					0.396	0.426	0.408	0.429	0.416	0.422	0.4161	2.94153		
C	1,2-Dichloropropane		0.239	0.222	0.233	0.207	0.238	0.226	0.233	0.231	0.229	0.2286	4.30096		
T	Bromodichloromethane		0.369	0.382	0.412	0.385	0.426	0.421	0.417	0.41	0.395	0.4018	4.93305		
T	1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.0011	14.5817		
T	Dibromomethane		0.141	0.13	0.137	0.128	0.141	0.134	0.137	0.136	0.133	0.1353	3.26799		
T	2-Chloroethyl Vinyl Ether				0.1	0.084	0.103	0.104	0.103	0.095	0.098	0.0983	7.09792		
T	4-Methyl-2-Pentanone					0.033	0.042	0.042	0.043	0.04	0.041	0.0401	8.66859		
T	cis-1,3-Dichloropropene		0.391	0.393	0.386	0.398	0.431	0.428	0.428	0.42	0.405	0.409	4.41527		

T	Dimethyl Disulfide					0.182	0.218	0.221	0.23	0.229	0.23	0.2183	8.49419	
I	Chlorobenzene-d5	ISTD												
S	Toluene-d8			1.282	1.295	1.228	1.385	1.333	1.378	1.289	1.278	1.3084	4.07746	
C	Toluene		1.653	1.696	1.678	1.507	1.647	1.554	1.545	1.418	1.27	1.552	8.98325	
T	Ethyl Methacrylate			0.251	0.293	0.268	0.314	0.314	0.327	0.309	0.31	0.2981	8.76897	
T	Paraldehyde											0	0	
T	trans-1,3-Dichloropropene			0.472	0.51	0.466	0.561	0.552	0.553	0.533	0.515	0.5201	7.01006	
T	1,1,2-Trichloroethane		0.261	0.241	0.242	0.222	0.254	0.249	0.252	0.243	0.241	0.2449	4.54209	
T	2-Hexanone					0.042	0.053	0.053	0.056	0.051	0.053	0.0515	9.50479	
T	1,3-Dichloropropane		0.355	0.442	0.465	0.42	0.468	0.454	0.457	0.437	0.428	0.436	7.93348	
T	Tetrachloroethene		0.355	0.337	0.336	0.306	0.333	0.325	0.337	0.334	0.33	0.3325	3.83886	
T	Dibromochloromethane		0.349	0.336	0.338	0.328	0.373	0.372	0.383	0.373	0.367	0.3576	5.60043	
T	1,2-Dibromoethane		0.233	0.234	0.234	0.227	0.259	0.254	0.258	0.251	0.247	0.2441	5.04151	
T	1-Chlorohexane		0.532	0.584	0.505	0.502	0.54	0.52	0.547	0.521	0.516	0.5298	4.7826	
P	Chlorobenzene		1.029	1.173	1.09	1.007	1.099	1.037	1.043	1.002	0.939	1.0466	6.41465	
T	1,1,1,2-Tetrachloroethane		0.392	0.399	0.403	0.357	0.431	0.414	0.424	0.417	0.413	0.4055	5.39495	
C	Ethylbenzene		0.6	0.594	0.59	0.532	0.586	0.559	0.57	0.564	0.558	0.5726	3.7769	
T	m-,p-Xylene		0.744	0.696	0.691	0.643	0.713	0.67	0.673	0.634	0.581	0.6716	7.12586	
T	o-Xylene			0.691	0.651	0.614	0.692	0.658	0.667	0.65	0.63	0.6567	4.11758	
T	Styrene		1.05	1.06	1.096	1.043	1.159	1.124	1.12	1.061	0.98	1.077	4.96781	
P	Bromoform			0.177	0.21	0.181	0.226	0.221	0.232	0.227	0.223	0.2121	10.0546	
T	Isopropylbenzene		1.853	1.891	1.871	1.708	1.897	1.781	1.75	1.573	1.377	1.7444	9.92447	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.426	0.492	0.503	0.486	0.543	0.51	0.527	0.513	0.514	0.5018	6.60291	
S	p-Bromofluorobenzene				1.054	0.976	1.071	1.016	1.053	1.031	1.046	1.0352	3.05136	
T	1,2,3-Trichloropropane			0.119	0.158	0.161	0.162	0.155	0.162	0.16	0.158	0.1545	9.40789	
T	trans-1,4-Dichloro-2-Butene			0.085	0.118	0.12	0.149	0.151	0.16	0.159	0.161	0.1376	19.9543	1.000
T	n-Propylbenzene		4.139	4.239	4.243	4.051	4.241	3.953	3.882	3.419	2.935	3.9003	11.4439	
T	Bromobenzene	0.796	0.708	0.843	0.837	0.778	0.84	0.798	0.817	0.803	0.803	0.8022	4.93253	
T	1,3,5-Trimethylbenzene		2.941	2.93	2.941	2.839	3.053	2.882	2.871	2.689	2.423	2.8411	6.50391	
T	2-Chlorotoluene		2.917	2.935	2.929	2.712	2.861	2.795	2.682	2.533	2.145	2.7231	9.37022	
T	4-Chlorotoluene		2.681	2.596	2.581	2.474	2.625	2.326	2.447	2.286	2.121	2.4597	7.49558	
T	a-Methylstyrene					1.257	1.406	1.34	1.384	1.35	1.351	1.3479	3.77654	
T	tert-Butylbenzene			0.587	0.555	0.53	0.571	0.533	0.552	0.561	0.558	0.5558	3.34508	
T	1,2,4-Trimethylbenzene		2.955	3.168	3.127	2.936	3.12	2.914	2.937	2.709	2.427	2.9214	7.97314	
T	sec-Butylbenzene			3.701	3.536	3.487	3.607	3.34	3.332	3.045	2.69	3.3424	9.93324	
T	p-Isopropyltoluene			3.112	3.062	2.903	2.988	2.813	2.809	2.634	2.382	2.8379	8.45265	
T	1,3-Dichlorobenzene		1.484	1.617	1.627	1.53	1.605	1.531	1.549	1.51	1.45	1.5448	3.95774	
T	1,4-Dichlorobenzene	1.713	1.524	1.672	1.594	1.503	1.6	1.511	1.535	1.49	1.431	1.5574	5.56562	
T	n-Butylbenzene			3.143	2.96	2.895	3.002	2.791	2.792	2.571	2.292	2.8056	9.55812	
T	1,2-Dichlorobenzene	1.59	1.307	1.415	1.41	1.322	1.404	1.333	1.356	1.315	1.286	1.3739	6.4618	
T	1,2-Dibromo-3-Chloropropane				0.085	0.103	0.102	0.103	0.106	0.104	0.103	0.1007	6.86771	
T	1,2,4-Trichlorobenzene		1.074	1.01	1.028	0.982	1.069	1.013	1.036	1.029	1.002	1.0269	2.90829	
T	Hexachlorobutadiene		0.516	0.476	0.483	0.447	0.487	0.459	0.48	0.485	0.485	0.4798	4.00465	
T	Naphthalene		1.594	1.457	1.574	1.455	1.63	1.552	1.564	1.485	1.422	1.5258	4.75891	
T	1,2,3-Trichlorobenzene	0.913	0.934	0.905	0.862	0.805	0.877	0.824	0.862	0.846	0.835	0.8664	4.7474	

Tue May 17 11:49:41 2016

Calibration Table Report
Method: A9FOOWT.M
Title: A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Calibration: Thu May 19 08:54:31 2016
Curve: WG569079
Calibration Files

	Compound	5 8M412324.D	20 8M412323.D	50 8M412322.D	100 8M412321.D	200 8M412325.D	300 8M412326.D	400 8M412327.D	500 8M412328.D	Avg	%RSD
I	Fluorobenzene	ISTD									
T	Acetonitrile		0.009	0.010	0.010	0.010	0.010	0.010	0.010	0.010	2.076
T	3-Chloro-1-propene	0.306	0.330	0.335	0.331	0.324	0.307	0.304	0.304	0.318	4.307
T	2-Chloro-1,3-butadiene	0.368	0.420	0.420	0.419	0.419	0.392	0.389	0.387	0.402	5.022
T	Ethyl Acetate	0.080	0.096	0.097	0.100	0.099	0.098	0.100	0.095	0.096	6.751
T	Methacrylonitrile	0.041	0.054	0.055	0.055	0.055	0.054	0.055	0.052	0.053	9.227
T	Isobutyl Alcohol			0.003	0.003	0.003	0.003	0.003	0.003	0.003	3.599
T	1-Butanol									0.000	0.000
T	Methyl methacrylate	0.089	0.106	0.106	0.105	0.106	0.105	0.107	0.102	0.103	5.868
T	2-Nitropropane		0.041	0.042	0.043	0.046	0.047	0.048	0.046	0.045	5.992
I	Chlorobenzene-d5	ISTD									
I	1,4-Dichlorobenzene-d4	ISTD									
T	Cyclohexanone		0.011	0.010	0.010	0.009	0.010	0.011	0.010	0.010	4.971

Thu May 19 09:04:52 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060411 Run Date: 05/13/2016 Sample ID: WG568561-12
Instrument ID: HPMS8 Run Time: 19:17 Method: 8260B
File ID: 8M412232 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG568561 Cal ID: HPMS8 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.1	ug/L	0.513	5.70	20	
1,1-Dichloroethene	CCC	50.0	46.0	ug/L	0.372	8.10	20	
1,2-Dichloropropane	CCC	50.0	51.0	ug/L	0.233	1.90	20	
Ethylbenzene	CCC	50.0	48.2	ug/L	0.552	3.60	20	
Toluene	CCC	50.0	49.1	ug/L	1.52	1.80	20	
Vinyl Chloride	CCC	50.0	52.4	ug/L	0.304	4.80	20	
Bromoform	SPCC	50.0	48.2	ug/L	0.205	3.60	20	
Chlorobenzene	SPCC	50.0	50.2	ug/L	1.05	0.400	20	
Chloromethane	SPCC	50.0	50.7	ug/L	0.248	1.40	20	
1,1-Dichloroethane	SPCC	50.0	46.7	ug/L	0.431	6.60	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.6	ug/L	0.498	0.800	20	
Acetone		50.0	57.5	ug/L	0.0324	15.1	20	
Benzene		50.0	48.5	ug/L	0.997	3.00	20	
Bromobenzene		50.0	49.5	ug/L	0.794	1.10	20	
Bromochloromethane		50.0	47.5	ug/L	0.140	4.90	20	
Bromodichloromethane		50.0	48.3	ug/L	0.388	3.40	20	
Bromomethane		50.0	46.4	ug/L	0.162	7.20	20	
2-Butanone		50.0	53.0	ug/L	0.0438	6.00	20	
n-Butylbenzene		50.0	49.7	ug/L	2.79	0.700	20	
sec-Butylbenzene		50.0	51.3	ug/L	3.43	2.70	20	
tert-Butylbenzene		50.0	50.9	ug/L	0.566	1.90	20	
Carbon Disulfide		50.0	42.3	ug/L	0.716	15.4	20	
Carbon Tetrachloride		50.0	46.2	ug/L	0.425	7.50	20	
Dibromochloromethane		50.0	49.7	ug/L	0.355	0.700	20	
Chloroethane		50.0	53.3	ug/L	0.170	6.70	20	
2-Chlorotoluene		50.0	51.6	ug/L	2.81	3.10	20	
4-Chlorotoluene		50.0	48.3	ug/L	2.37	3.50	20	
1,2-Dibromo-3-Chloropropane		50.0	48.5	ug/L	0.0977	3.00	20	
1,2-Dibromoethane		50.0	51.1	ug/L	0.250	2.20	20	
Dibromomethane		50.0	45.8	ug/L	0.124	8.40	20	
1,2-Dichlorobenzene		50.0	50.5	ug/L	1.39	1.00	20	
1,3-Dichlorobenzene		50.0	50.9	ug/L	1.57	1.80	20	
1,4-Dichlorobenzene		50.0	50.5	ug/L	1.57	0.900	20	
Dichlorodifluoromethane		50.0	54.2	ug/L	0.455	8.40	20	
1,2-Dichloroethane		50.0	49.0	ug/L	0.344	2.00	20	
cis-1,2-Dichloroethene		50.0	48.9	ug/L	0.281	2.20	20	
trans-1,2-Dichloroethene		50.0	48.1	ug/L	0.357	3.90	20	
1,3-Dichloropropane		50.0	53.7	ug/L	0.468	7.30	20	
2,2-Dichloropropane		50.0	47.9	ug/L	0.466	4.20	20	
cis-1,3-Dichloropropene		50.0	53.9	ug/L	0.441	7.80	20	
trans-1,3-Dichloropropene		50.0	50.7	ug/L	0.527	1.30	20	
1,1-Dichloropropene		50.0	47.5	ug/L	0.374	5.10	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4804430
Report generated 06/14/2016 13:38

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060411 Run Date: 05/13/2016 Sample ID: WG568561-12
Instrument ID: HPMS8 Run Time: 19:17 Method: 8260B
File ID: 8M412232 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG568561 Cal ID: HPMS8 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	53.6	ug/L	0.0552	7.20	20	
Hexachlorobutadiene		50.0	52.1	ug/L	0.500	4.20	20	
Isopropylbenzene		50.0	51.1	ug/L	1.78	2.20	20	
p-Isopropyltoluene		50.0	50.1	ug/L	2.85	0.300	20	
4-Methyl-2-Pentanone		50.0	51.9	ug/L	0.0416	3.70	20	
Methylene Chloride		50.0	48.4	ug/L	0.249	3.10	20	
Naphthalene		50.0	45.8	ug/L	1.40	8.40	20	
n-Propylbenzene		50.0	51.9	ug/L	4.05	3.80	20	
Styrene		50.0	51.5	ug/L	1.11	3.00	20	
1,1,1,2-Tetrachloroethane		50.0	49.4	ug/L	0.400	1.20	20	
Tetrachloroethene		50.0	47.8	ug/L	0.318	4.40	20	
1,2,3-Trichlorobenzene		50.0	47.7	ug/L	0.827	4.50	20	
1,2,4-Trichlorobenzene		50.0	50.1	ug/L	1.03	0.200	20	
1,1,1-Trichloroethane		50.0	47.6	ug/L	0.492	4.80	20	
1,1,2-Trichloroethane		50.0	49.0	ug/L	0.240	1.90	20	
Trichloroethene		50.0	51.1	ug/L	0.280	2.10	20	
Trichlorofluoromethane		50.0	46.9	ug/L	0.507	6.10	20	
1,2,3-Trichloropropane		50.0	50.1	ug/L	0.155	0.200	20	
1,2,4-Trimethylbenzene		50.0	49.7	ug/L	2.90	0.700	20	
1,3,5-Trimethylbenzene		50.0	51.6	ug/L	2.93	3.30	20	
o-Xylene		50.0	50.6	ug/L	0.664	1.10	20	
m-,p-Xylene		100	101	ug/L	0.679	1.10	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4804430
Report generated 06/14/2016 13:38

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060411 Run Date: 06/11/2016 Sample ID: WG572347-02
Instrument ID: HPMS8 Run Time: 13:34 Method: 8260B
File ID: 8M412921 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG572348 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	53.4	ug/L	0.582	6.90	20	
1,1-Dichloroethene	CCC	50.0	54.4	ug/L	0.440	8.76	20	
1,2-Dichloropropane	CCC	50.0	47.8	ug/L	0.219	4.35	20	
Ethylbenzene	CCC	50.0	50.0	ug/L	0.573	0.0186	20	
Toluene	CCC	50.0	50.4	ug/L	1.57	0.899	20	
Vinyl Chloride	CCC	50.0	54.5	ug/L	0.316	9.01	20	
Bromoform	SPCC	50.0	50.3	ug/L	0.213	0.542	20	
Chlorobenzene	SPCC	50.0	49.7	ug/L	1.04	0.521	20	
Chloromethane	SPCC	50.0	46.7	ug/L	0.229	6.54	20	
1,1-Dichloroethane	SPCC	50.0	52.2	ug/L	0.482	4.41	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	40.6	ug/L	0.407	18.8	20	
Xylenes		150	154	ug/L	0.681	2.61	20	
Acetone		50.0	49.1	ug/L	0.0276	1.89	20	
Benzene		50.0	51.5	ug/L	1.06	2.95	20	
Bromobenzene		50.0	48.4	ug/L	0.777	3.10	20	
Bromochloromethane		50.0	50.9	ug/L	0.150	1.87	20	
Bromodichloromethane		50.0	53.7	ug/L	0.431	7.38	20	
Bromomethane		50.0	36.0	ug/L	0.125	28.0	20	*
2-Butanone		50.0	42.5	ug/L	0.0351	15.0	20	
n-Butylbenzene		50.0	50.3	ug/L	2.82	0.574	20	
sec-Butylbenzene		50.0	50.5	ug/L	3.38	1.01	20	
tert-Butylbenzene		50.0	49.4	ug/L	0.549	1.26	20	
Carbon Disulfide		50.0	50.2	ug/L	0.849	0.409	20	
Carbon Tetrachloride		50.0	60.1	ug/L	0.553	20.3	20	*
Dibromochloromethane		50.0	49.7	ug/L	0.355	0.649	20	
Chloroethane		50.0	49.7	ug/L	0.159	0.538	20	
2-Chlorotoluene		50.0	48.8	ug/L	2.66	2.49	20	
4-Chlorotoluene		50.0	48.7	ug/L	2.39	2.67	20	
1,2-Dibromo-3-Chloropropane		50.0	43.1	ug/L	0.0868	13.8	20	
1,2-Dibromoethane		50.0	47.0	ug/L	0.230	5.99	20	
Dibromomethane		50.0	48.1	ug/L	0.130	3.72	20	
1,2-Dichlorobenzene		50.0	46.8	ug/L	1.29	6.34	20	
1,3-Dichlorobenzene		50.0	49.2	ug/L	1.52	1.58	20	
1,4-Dichlorobenzene		50.0	47.6	ug/L	1.48	4.80	20	
Dichlorodifluoromethane		50.0	60.9	ug/L	0.510	21.7	20	*
1,2-Dichloroethane		50.0	54.0	ug/L	0.379	8.02	20	
cis-1,2-Dichloroethene		50.0	51.2	ug/L	0.294	2.45	20	
trans-1,2-Dichloroethene		50.0	52.3	ug/L	0.388	4.56	20	
1,3-Dichloropropane		50.0	46.8	ug/L	0.408	6.41	20	
2,2-Dichloropropane		50.0	61.4	ug/L	0.597	22.8	20	*
cis-1,3-Dichloropropene		50.0	51.8	ug/L	0.424	3.59	20	
trans-1,3-Dichloropropene		50.0	49.9	ug/L	0.519	0.172	20	

CCV - Modified 03/05/2008
PDF File ID: 4804432
Report generated 06/14/2016 13:38

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060411 Run Date: 06/11/2016 Sample ID: WG572347-02
Instrument ID: HPMS8 Run Time: 13:34 Method: 8260B
File ID: 8M412921 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG572348 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	53.9	ug/L	0.425	7.82	20	
2-Hexanone		50.0	40.5	ug/L	0.0417	19.0	20	
Hexachlorobutadiene		50.0	51.9	ug/L	0.498	3.76	20	
Isopropylbenzene		50.0	53.6	ug/L	1.87	7.12	20	
p-Isopropyltoluene		50.0	50.9	ug/L	2.89	1.87	20	
4-Methyl-2-Pentanone		50.0	40.4	ug/L	0.0324	19.2	20	
Methylene Chloride		50.0	48.9	ug/L	0.251	2.27	20	
Naphthalene		50.0	39.9	ug/L	1.22	20.1	20	*
n-Propylbenzene		50.0	50.0	ug/L	3.90	0.0424	20	
Styrene		50.0	51.9	ug/L	1.12	3.84	20	
1,1,1,2-Tetrachloroethane		50.0	51.3	ug/L	0.416	2.66	20	
Tetrachloroethene		50.0	53.6	ug/L	0.356	7.13	20	
1,2,3-Trichlorobenzene		50.0	41.2	ug/L	0.715	17.5	20	
1,2,4-Trichlorobenzene		50.0	45.7	ug/L	0.939	8.61	20	
1,1,1-Trichloroethane		50.0	58.9	ug/L	0.609	17.7	20	
1,1,2-Trichloroethane		50.0	45.9	ug/L	0.225	8.18	20	
Trichloroethene		50.0	54.0	ug/L	0.296	8.02	20	
Trichlorofluoromethane		50.0	60.0	ug/L	0.648	19.9	20	
1,2,3-Trichloropropane		50.0	43.5	ug/L	0.134	13.0	20	
1,2,4-Trimethylbenzene		50.0	50.2	ug/L	2.93	0.450	20	
1,3,5-Trimethylbenzene		50.0	51.1	ug/L	2.90	2.14	20	
o-Xylene		50.0	51.1	ug/L	0.671	2.25	20	
m-,p-Xylene		100	103	ug/L	0.690	2.79	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4804432
Report generated 06/14/2016 13:38

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060411
Instrument ID: HPMS8
Workgroup (AAB#): WG572348

ICAL CCV Number: WG568561-08
CAL ID: HPMS8-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	288225	539116	778260
Upper Limit	NA	NA	576450	1078232	1556520
Lower Limit	NA	NA	144113	269558	389130
L16060411-01	1.00	01	287339	532126	721432
L16060411-02	1.00	01	285082	519779	699421
L16060411-03	1.00	01	285695	523959	707715
L16060411-04	1.00	01	278231	511939	685801
L16060411-05	1.00	01	288696	528325	714491
WG572348-01	1.00	01	292600	533285	717003
WG572348-02	1.00	01	300500	536970	722554
WG572348-03	1.00	01	313632	552978	748082

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4807243
Report generated 06/14/2016 13:38

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060411
Instrument ID: HPMS8
Workgroup (AAB#): WG572348

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	17.6	14.58	10.71
Upper Limit	NA	NA	18.1	15.08	11.21
Lower Limit	NA	NA	17.1	14.08	10.21
L16060411-01	1.00	01	17.6	14.57	10.71
L16060411-02	1.00	01	17.6	14.57	10.71
L16060411-03	1.00	01	17.6	14.57	10.71
L16060411-04	1.00	01	17.6	14.57	10.71
L16060411-05	1.00	01	17.6	14.57	10.71
WG572348-01	1.00	01	17.6	14.57	10.71
WG572348-02	1.00	01	17.6	14.57	10.71
WG572348-03	1.00	01	17.6	14.57	10.71

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4807244
Report generated: 06/14/2016 13:38

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412935.D Vial: 16
Acq On : 11 Jun 2016 20:19 Operator: FJB
Sample : L16060411-01 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 08:49:10 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	721432	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	532126	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	287339	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	213719	27.5725 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.28%		
43) 1,2-Dichloroethane-d4	10.31	65	230145	27.6910 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 110.76%		
58) Toluene-d8	12.68	98	728925	26.1742 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.68%		
80) p-Bromofluorobenzene	16.07	95	299075	25.1368 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.56%		

Target Compounds					Qvalue
4) Vinyl Chloride	3.85	62	2606	0.3111 ug/L #	72
32) cis-1,2-Dichloroethene	9.17	96	4689	0.5662 ug/L	83
47) Trichloroethene	11.22	130	25538	3.2311 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412935.D 8260WT.M Mon Jun 13 08:49:13 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412935.D Vial: 16
Acq On : 11 Jun 2016 20:19 Operator: FJB
Sample : L16060411-01 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 8:49 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

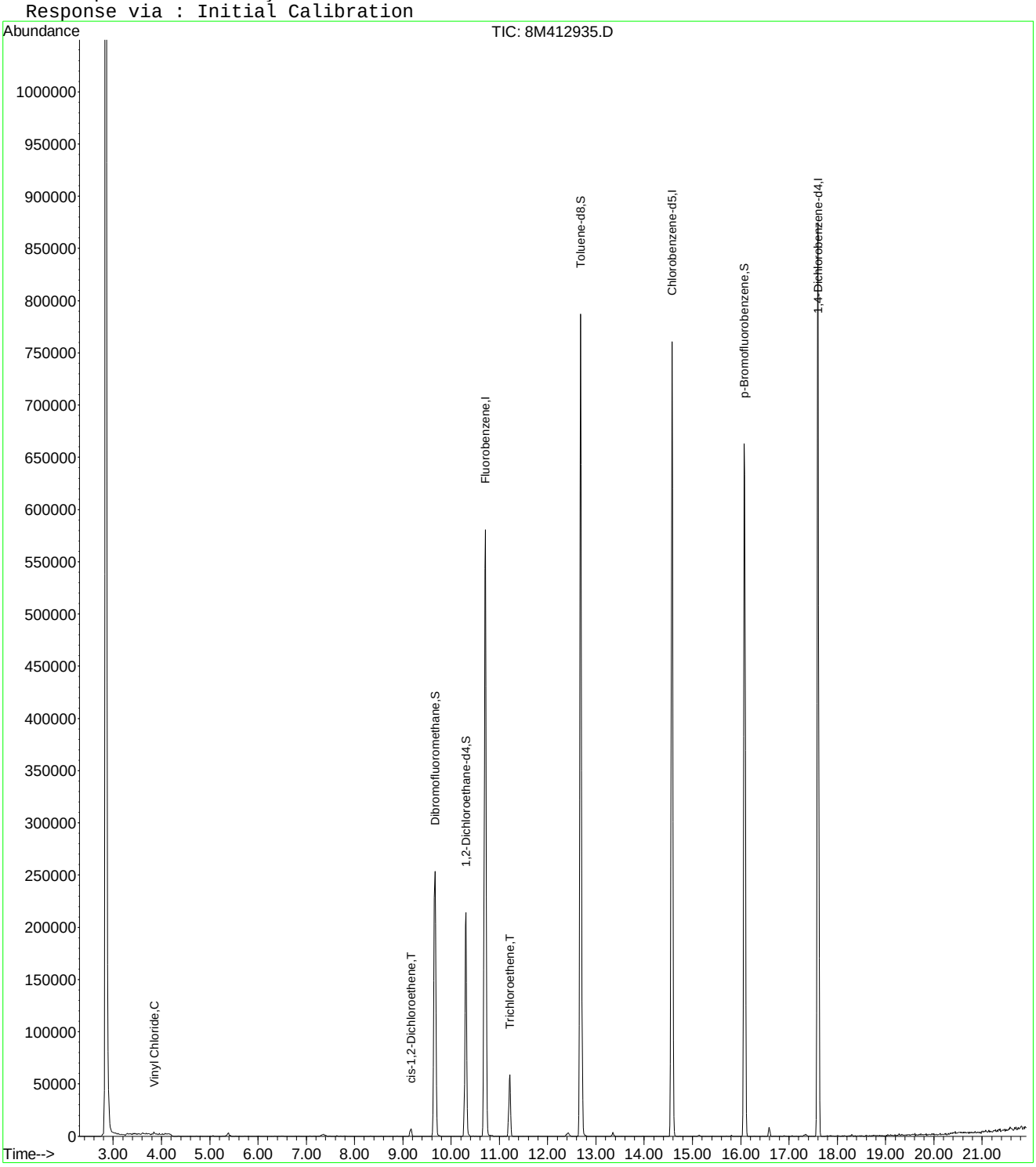

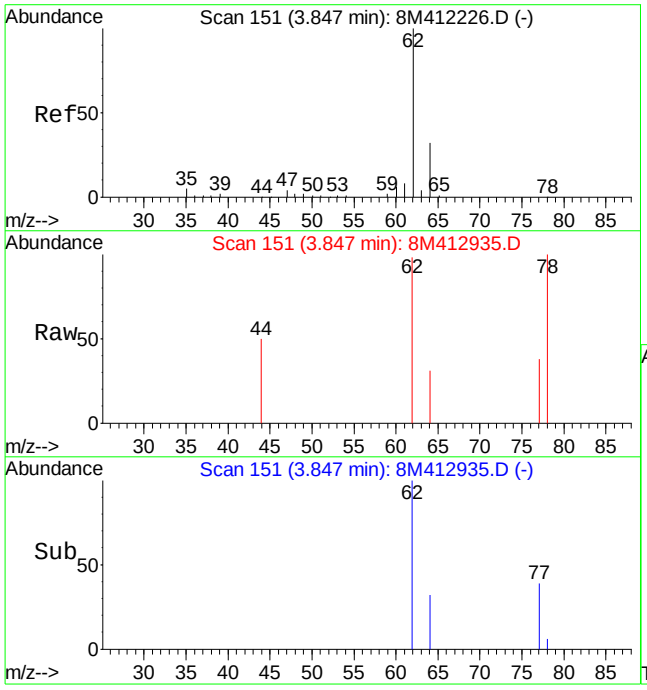

#4
Vinyl Chloride
Concen: 0.31 ug/L
RT: 3.85 min Scan# 151
Delta R.T. -0.00 min
Lab File: 8M412935.D
Acq: 11 Jun 2016 20:19

Tgt Ion: 62 Resp: 2606

Ion	Ratio	Lower	Upper
62	100		
64	16.5	19.3	45.1#

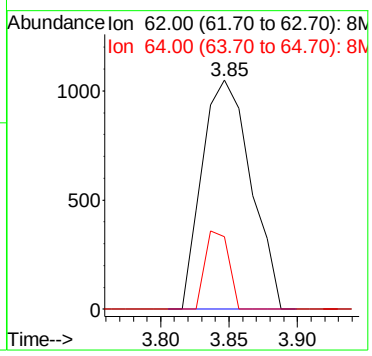

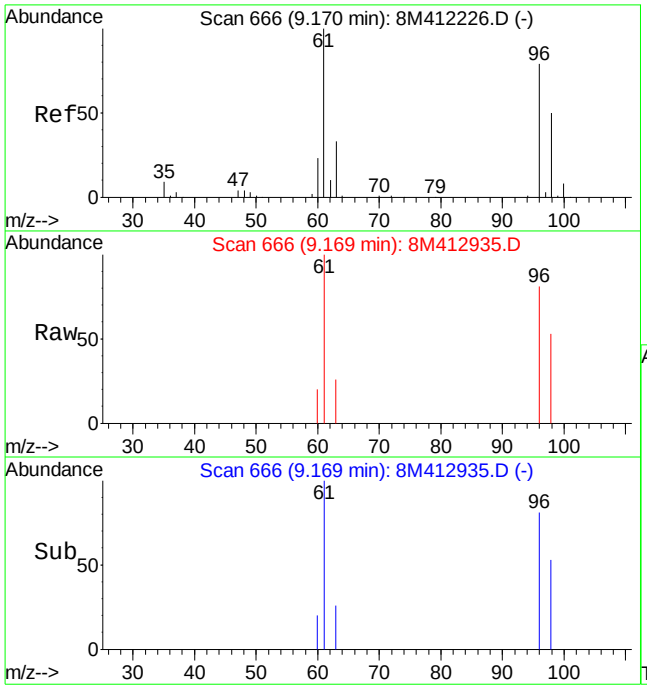

#32
cis-1,2-Dichloroethene
Concen: 0.57 ug/L
RT: 9.17 min Scan# 666
Delta R.T. -0.00 min
Lab File: 8M412935.D
Acq: 11 Jun 2016 20:19

Tgt Ion: 96 Resp: 4689

Ion	Ratio	Lower	Upper
96	100		
61	130.2	91.5	213.5

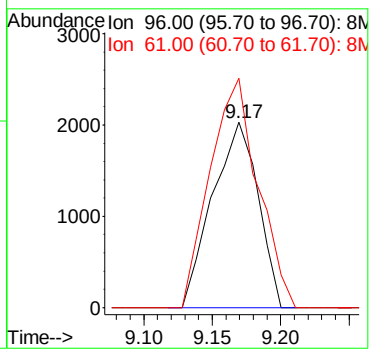

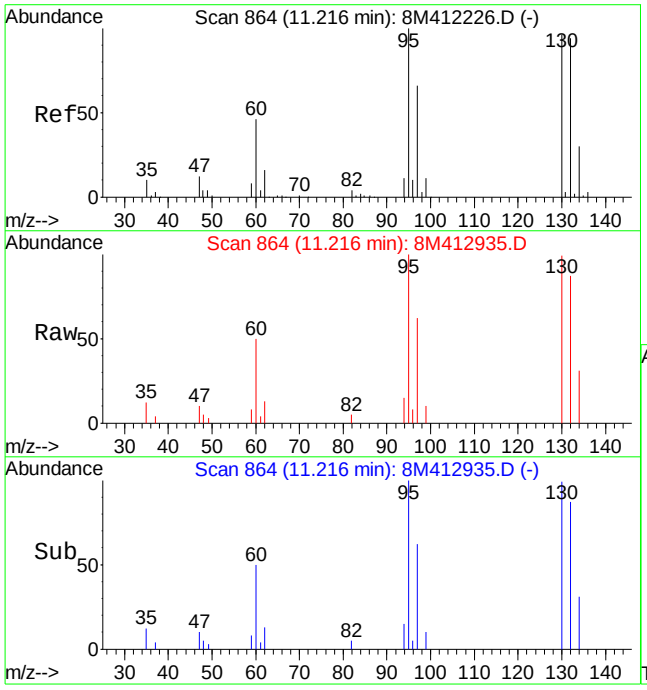

#47
Trichloroethene
Concen: 3.23 ug/L
RT: 11.22 min Scan# 864
Delta R.T. -0.00 min
Lab File: 8M412935.D
Acq: 11 Jun 2016 20:19

Tgt Ion:130 Resp: 25538

Ion	Ratio	Lower	Upper
130	100		
132	93.6	58.0	135.2
95	109.2	64.9	151.5

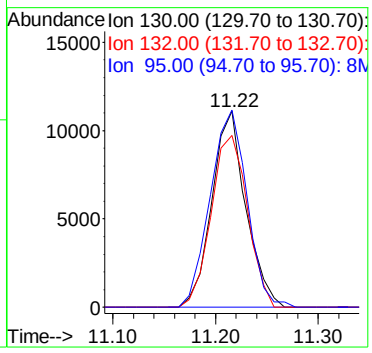

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412936.D Vial: 17
Acq On : 11 Jun 2016 20:48 Operator: FJB
Sample : L16060411-02 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 08:49:16 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	699421	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	519779	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	285082	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	206473	27.4759 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.92%		
43) 1,2-Dichloroethane-d4	10.30	65	232707	28.8804 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 115.52%		
58) Toluene-d8	12.68	98	719239	26.4399 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.76%		
80) p-Bromofluorobenzene	16.08	95	298948	25.3251 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.32%		

Target Compounds					Qvalue
4) Vinyl Chloride	3.84	62	2587	0.3186 ug/L	83
32) cis-1,2-Dichloroethene	9.17	96	4273	0.5322 ug/L	71
47) Trichloroethene	11.21	130	24708	3.2244 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412936.D 8260WT.M Mon Jun 13 08:49:19 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412936.D Vial: 17
Acq On : 11 Jun 2016 20:48 Operator: FJB
Sample : L16060411-02 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 8:49 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

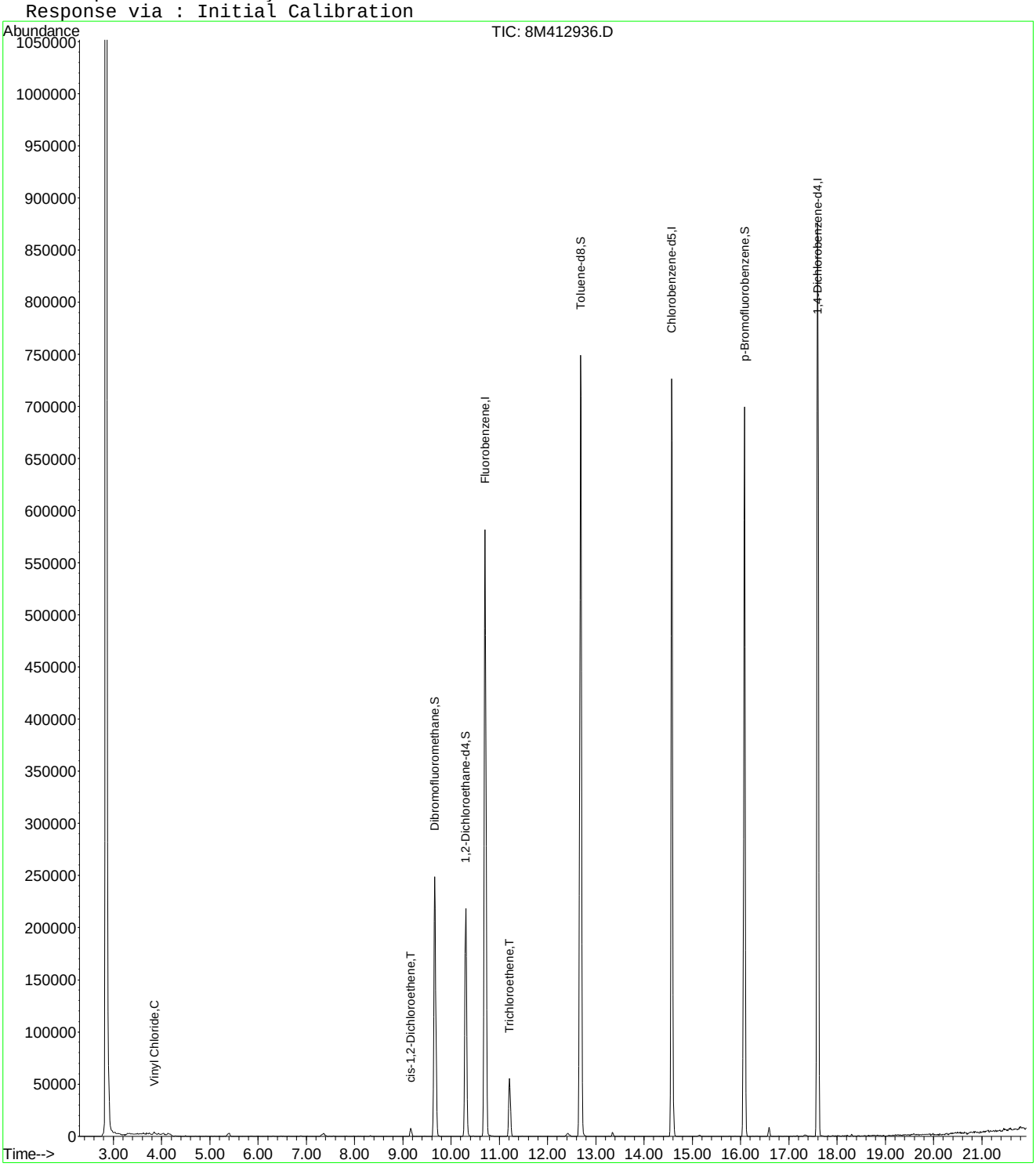

8M412936.D 8260WT.M Mon Jun 13 08:49:19 2016 Page 2

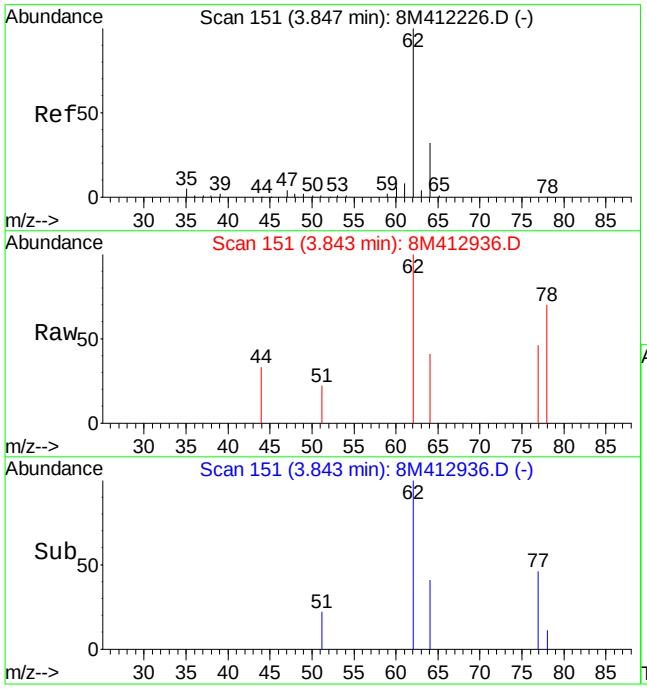

#4
Vinyl Chloride
Concen: 0.32 ug/L
RT: 3.84 min Scan# 151
Delta R.T. -0.00 min
Lab File: 8M412936.D
Acq: 11 Jun 2016 20:48

Tgt Ion: 62 Resp: 2587

Ion	Ratio	Lower	Upper
62	100		
64	22.5	19.3	45.1

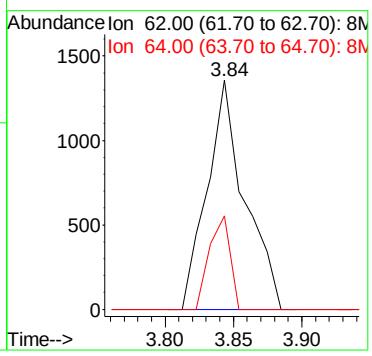

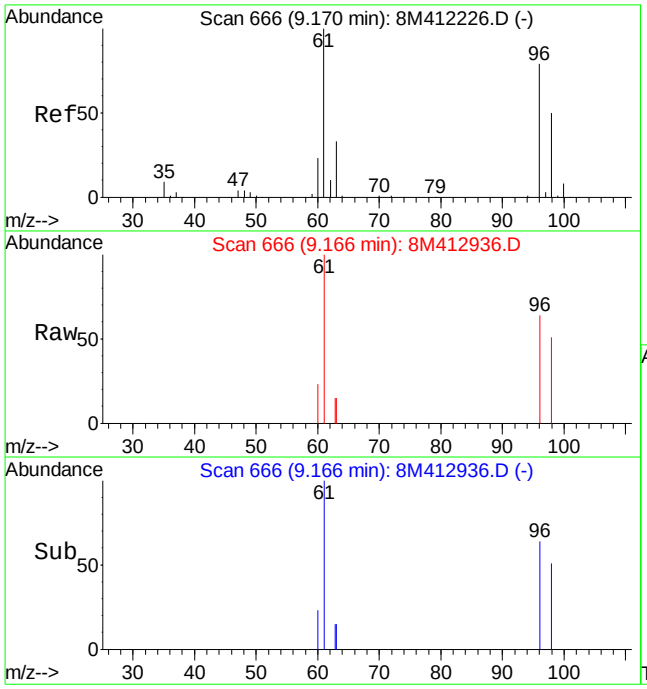

#32
cis-1,2-Dichloroethene
Concen: 0.53 ug/L
RT: 9.17 min Scan# 666
Delta R.T. -0.00 min
Lab File: 8M412936.D
Acq: 11 Jun 2016 20:48

Tgt Ion: 96 Resp: 4273

Ion	Ratio	Lower	Upper
96	100		
61	115.8	91.5	213.5

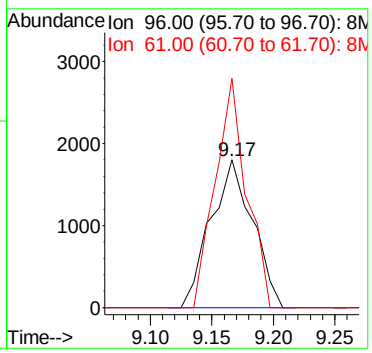

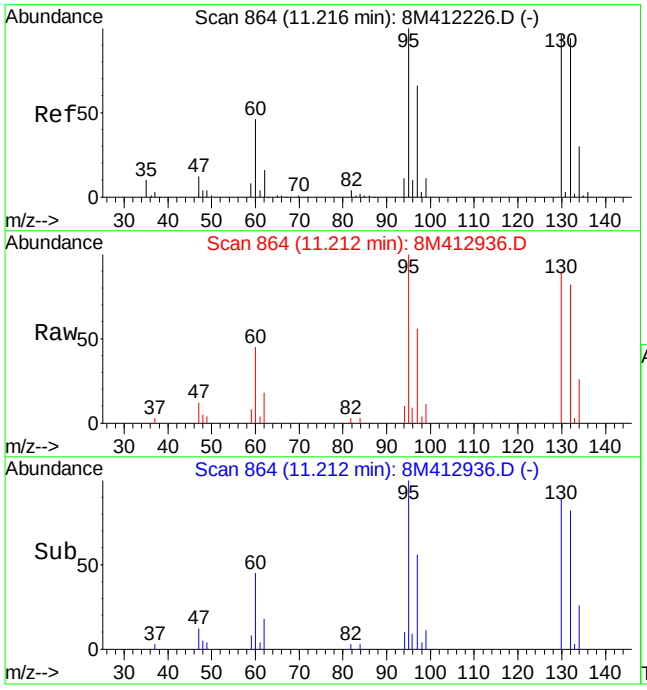

#47
Trichloroethene
Concen: 3.22 ug/L
RT: 11.21 min Scan# 864
Delta R.T. -0.00 min
Lab File: 8M412936.D
Acq: 11 Jun 2016 20:48

Tgt Ion:130 Resp: 24708

Ion	Ratio	Lower	Upper
130	100		
132	97.2	58.0	135.2
95	106.0	64.9	151.5

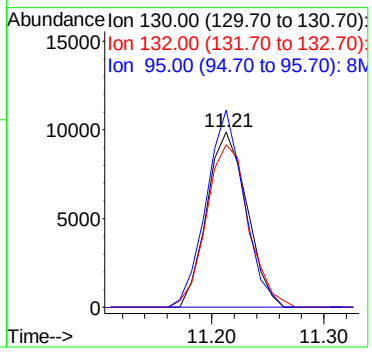

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412937.D Vial: 18
Acq On : 11 Jun 2016 21:17 Operator: FJB
Sample : L16060411-03 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 08:49:22 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	707715	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	523959	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	285695	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	210936	27.7409 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.96%		
43) 1,2-Dichloroethane-d4	10.30	65	229063	28.0950 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.36%		
58) Toluene-d8	12.68	98	717847	26.1782 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.72%		
80) p-Bromofluorobenzene	16.08	95	295762	25.0014 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.00%		
Target Compounds					Qvalue
3) Chloromethane	3.61	50	1449	0.2092 ug/L #	42
32) cis-1,2-Dichloroethene	9.18	96	2226	0.2740 ug/L	72
47) Trichloroethene	11.21	130	17157	2.2128 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412937.D 8260WT.M Mon Jun 13 08:49:25 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412937.D Vial: 18
Acq On : 11 Jun 2016 21:17 Operator: FJB
Sample : L16060411-03 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 8:49 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

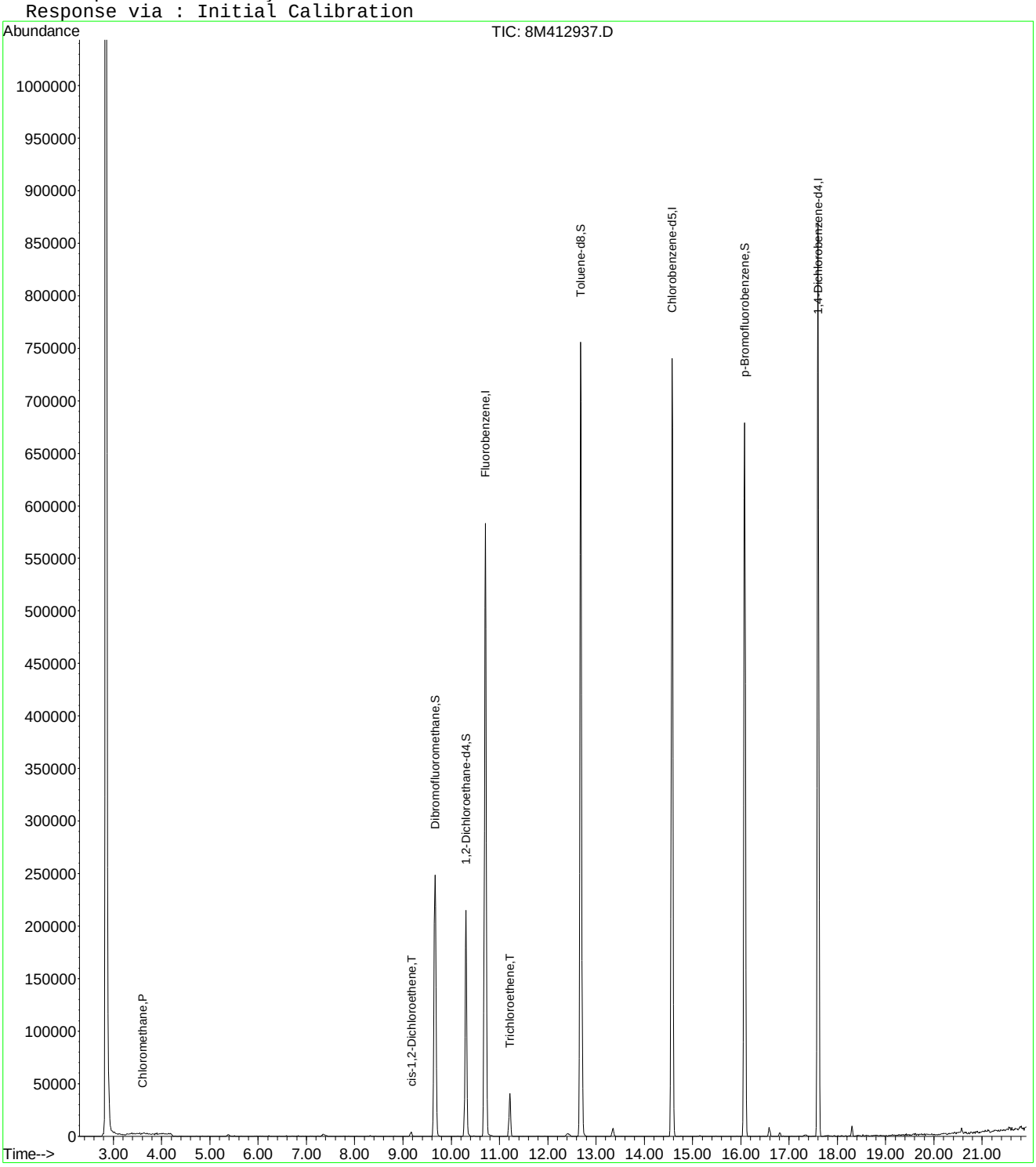

8M412937.D 8260WT.M Mon Jun 13 08:49:26 2016 Page 2

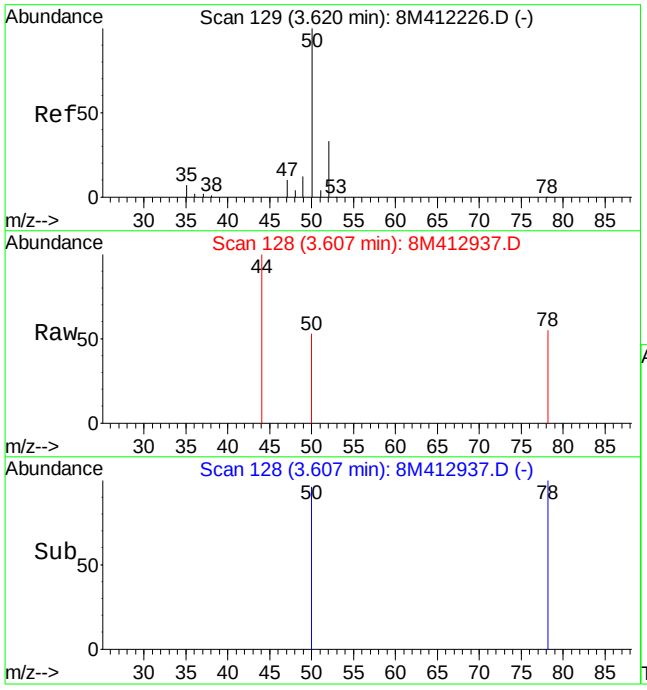

#3
Chloromethane
Concen: 0.21 ug/L
RT: 3.61 min Scan# 128
Delta R.T. -0.01 min
Lab File: 8M412937.D
Acq: 11 Jun 2016 21:17

Tgt Ion: 50 Resp: 1449

Ion	Ratio	Lower	Upper
50	100		
52	0.0	19.9	46.3#

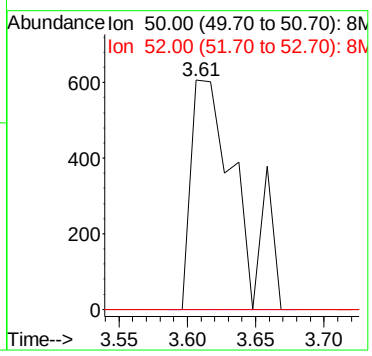

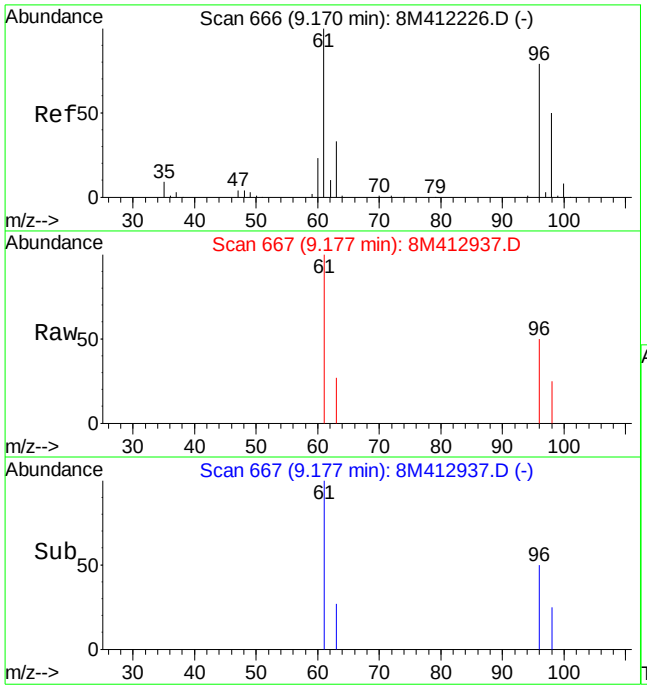

#32
cis-1,2-Dichloroethene
Concen: 0.27 ug/L
RT: 9.18 min Scan# 667
Delta R.T. 0.01 min
Lab File: 8M412937.D
Acq: 11 Jun 2016 21:17

Tgt Ion: 96 Resp: 2226

Ion	Ratio	Lower	Upper
96	100		
61	188.1	91.5	213.5

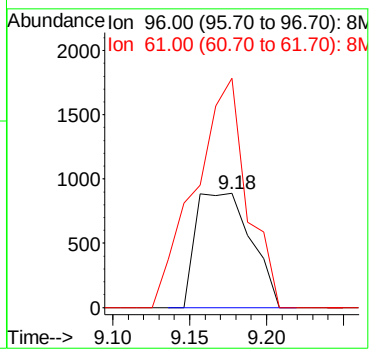

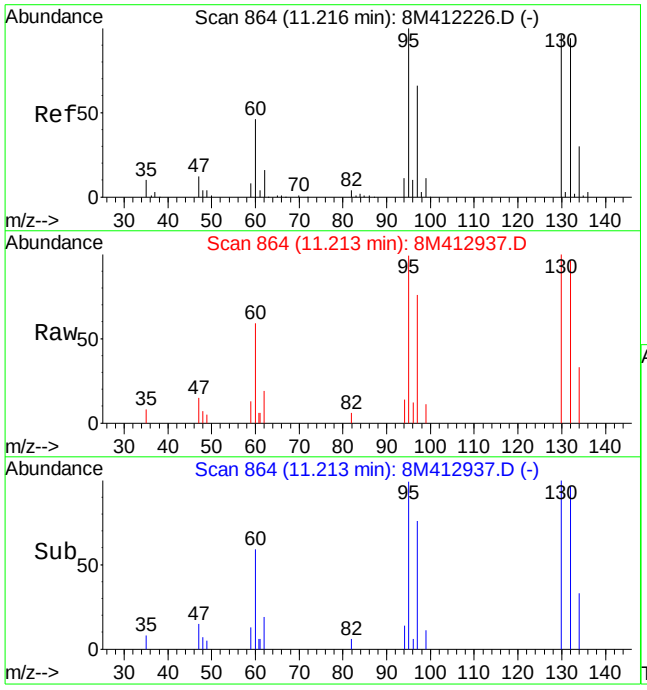

#47
Trichloroethene
Concen: 2.21 ug/L
RT: 11.21 min Scan# 864
Delta R.T. -0.00 min
Lab File: 8M412937.D
Acq: 11 Jun 2016 21:17

Tgt Ion:130 Resp: 17157

Ion	Ratio	Lower	Upper
130	100		
132	98.6	58.0	135.2
95	106.6	64.9	151.5

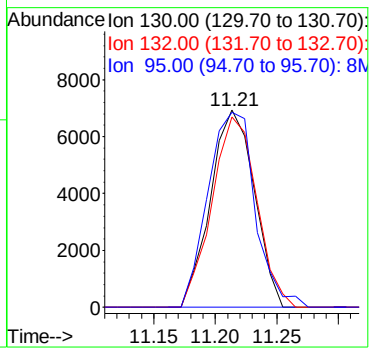

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412938.D Vial: 19
Acq On : 11 Jun 2016 21:46 Operator: FJB
Sample : L16060411-04 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 08:49:28 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	685801	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	511939	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	278231	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	206042	27.9631 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.84%		
43) 1,2-Dichloroethane-d4	10.30	65	229057	28.9920 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 115.96%		
58) Toluene-d8	12.68	98	707601	26.4104 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.64%		
80) p-Bromofluorobenzene	16.08	95	290125	25.1828 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.72%		

Target Compounds					Qvalue
32) cis-1,2-Dichloroethene	9.16	96	2657	0.3375 ug/L	98
47) Trichloroethene	11.21	130	18029	2.3996 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412938.D 8260WT.M Mon Jun 13 08:49:31 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412938.D Vial: 19
Acq On : 11 Jun 2016 21:46 Operator: FJB
Sample : L16060411-04 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 8:49 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

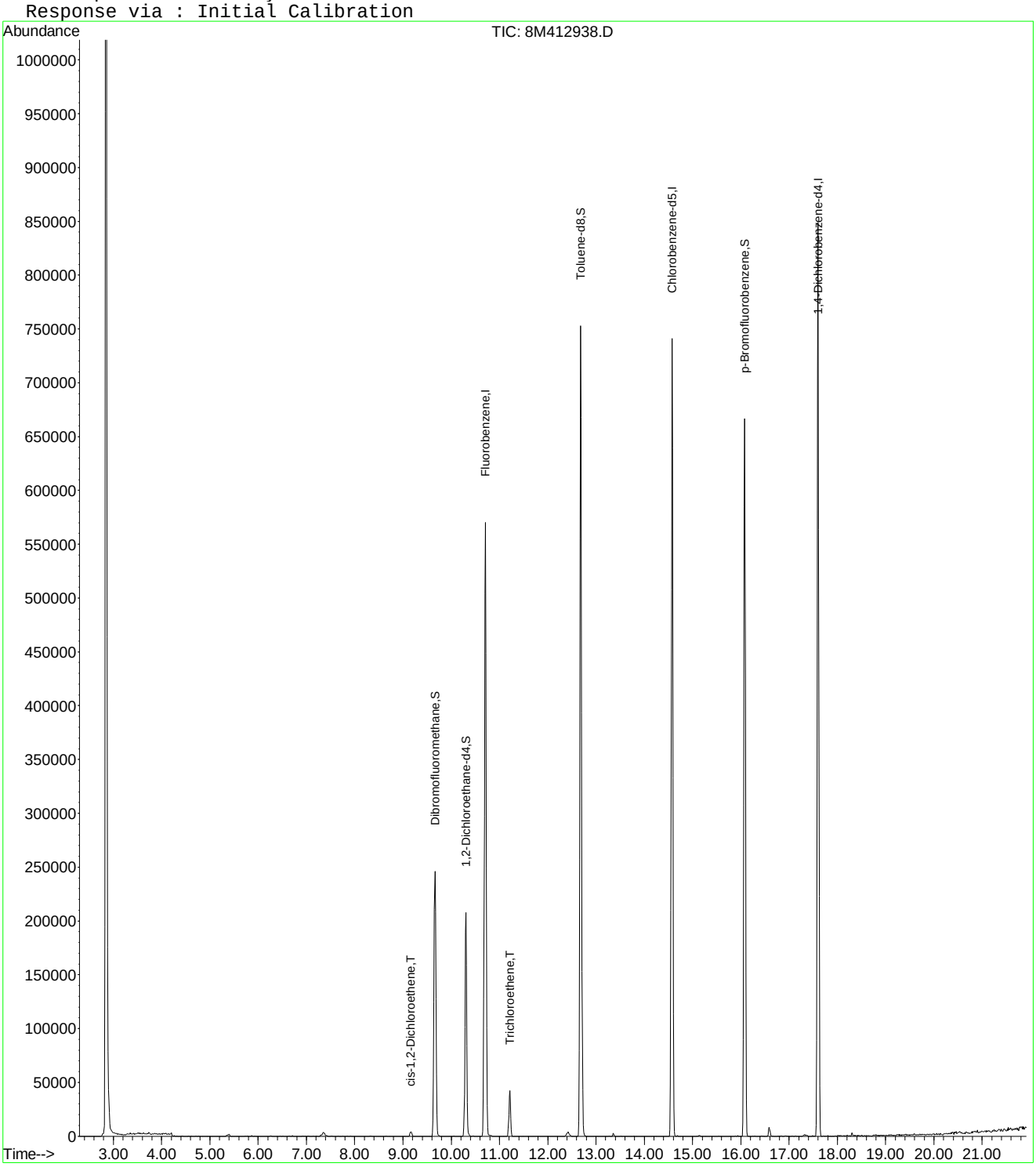

8M412938.D 8260WT.M Mon Jun 13 08:49:32 2016 Page 2

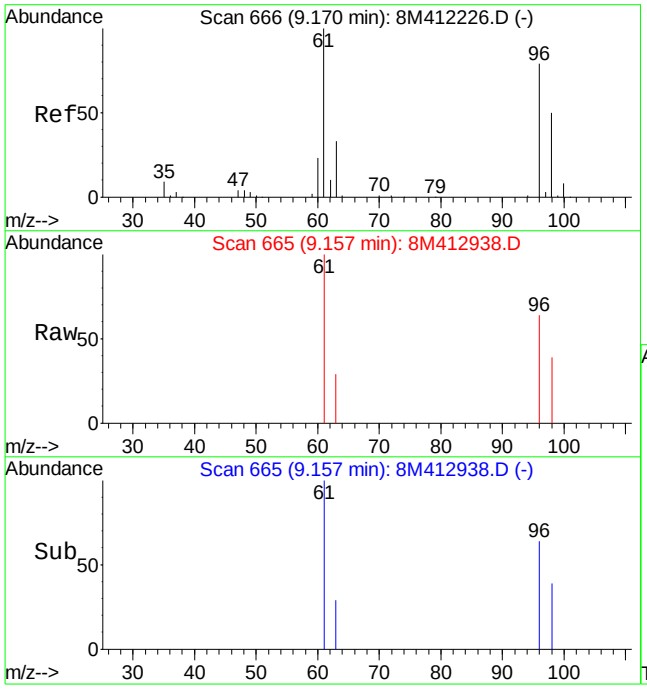

#32
cis-1,2-Dichloroethene
Concen: 0.34 ug/L
RT: 9.16 min Scan# 665
Delta R.T. -0.01 min
Lab File: 8M412938.D
Acq: 11 Jun 2016 21:46

Tgt Ion: 96 Resp: 2657

Ion	Ratio	Lower	Upper
96	100		
61	154.9	91.5	213.5

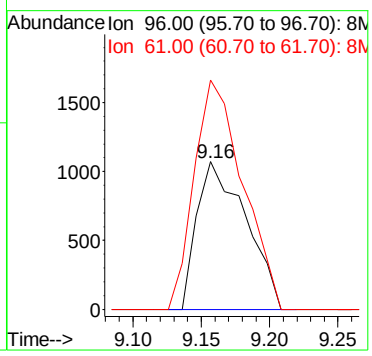

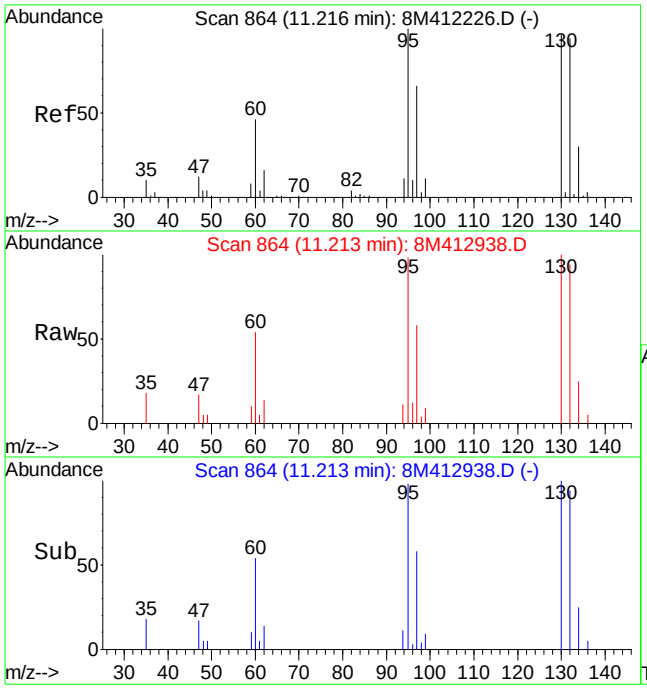

#47
Trichloroethene
Concen: 2.40 ug/L
RT: 11.21 min Scan# 864
Delta R.T. -0.00 min
Lab File: 8M412938.D
Acq: 11 Jun 2016 21:46

Tgt Ion:130 Resp: 18029

Ion	Ratio	Lower	Upper
130	100		
132	96.9	58.0	135.2
95	109.3	64.9	151.5

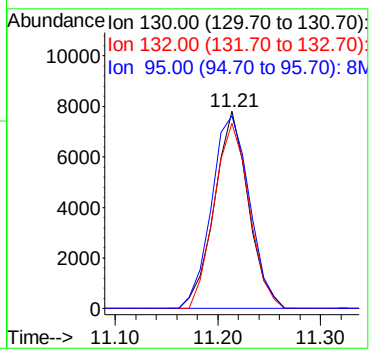

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412930.D Vial: 11
Acq On : 11 Jun 2016 17:54 Operator: FJB
Sample : L16060411-05 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 08:48:37 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	714491	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	528325	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	288696	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	210826	27.4635 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.84%		
43) 1,2-Dichloroethane-d4	10.30	65	230381	27.9887 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.96%		
58) Toluene-d8	12.68	98	731427	26.4530 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.80%		
80) p-Bromofluorobenzene	16.08	95	301278	25.2030 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.80%		

Target Compounds					Qvalue
3) Chloromethane	3.63	50	863	0.1234 ug/L #	42
36) Tetrahydrofuran	9.62	42	528	0.6788 ug/L #	18

(#) = qualifier out of range (m) = manual integration
8M412930.D 8260WT.M Mon Jun 13 08:48:40 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412930.D Vial: 11
Acq On : 11 Jun 2016 17:54 Operator: FJB
Sample : L16060411-05 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 8:48 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

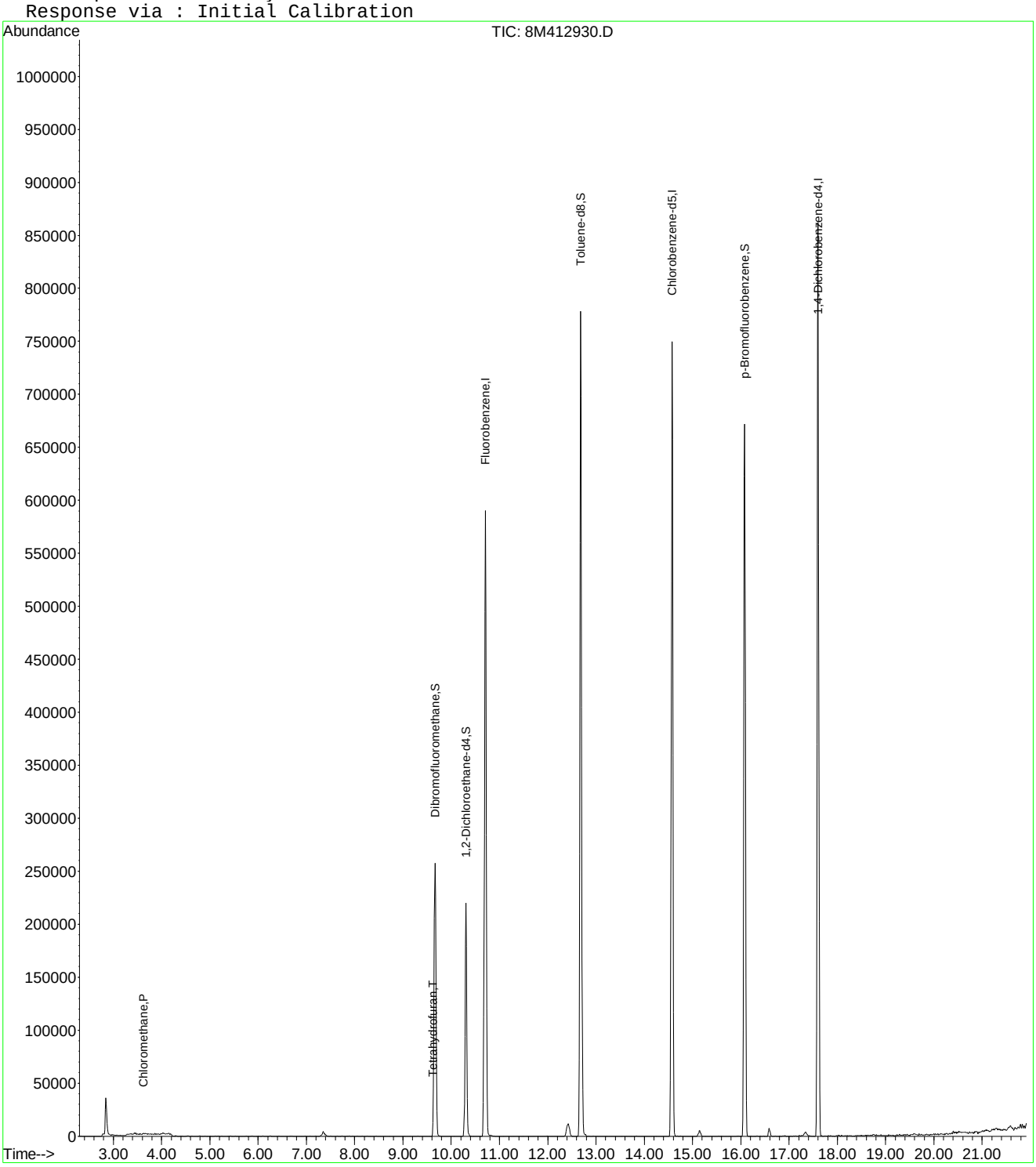

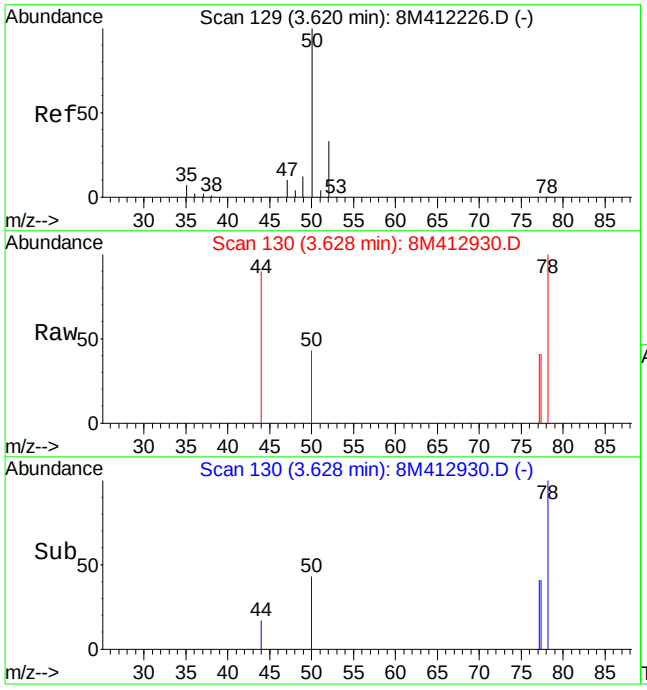

#3
Chloromethane
Concen: 0.12 ug/L
RT: 3.63 min Scan# 130
Delta R.T. 0.01 min
Lab File: 8M412930.D
Acq: 11 Jun 2016 17:54

Tgt Ion: 50 Resp: 863

Ion	Ratio	Lower	Upper
50	100		
52	0.0	19.9	46.3#

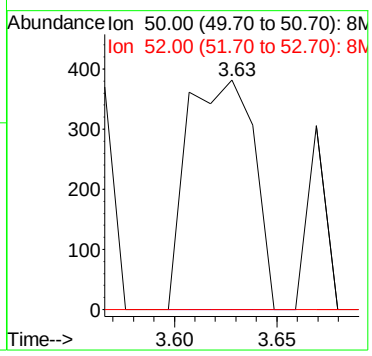

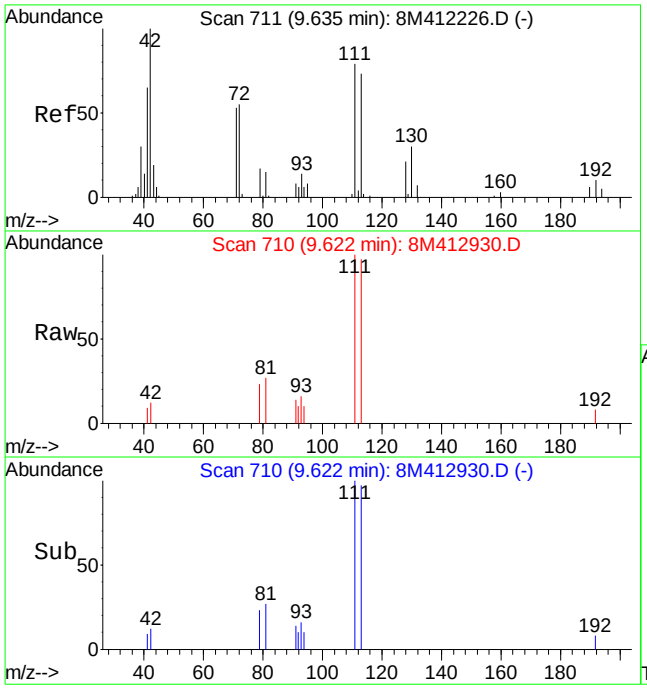

#36
Tetrahydrofuran
Concen: 0.68 ug/L
RT: 9.62 min Scan# 710
Delta R.T. -0.01 min
Lab File: 8M412930.D
Acq: 11 Jun 2016 17:54

Tgt Ion: 42 Resp: 528

Ion	Ratio	Lower	Upper
42	100		
72	0.0	33.8	78.8#
71	115.7	32.0	74.8#

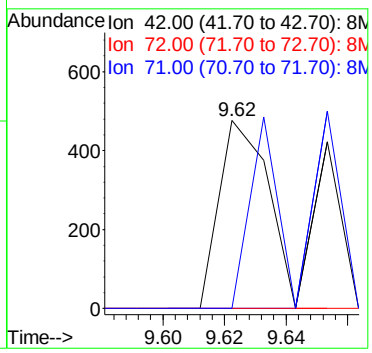

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:40:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	823748	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	571926	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	299321	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	12.68	98	567	0.0189 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.08%#	
80) p-Bromofluorobenzene	16.08	95	313	0.0253 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	3836	0.2778 ug/L	91
3) Chloromethane	3.62	50	3658	0.4537 ug/L	95
4) Vinyl Chloride	3.85	62	2516	0.2630 ug/L #	58
5) 1,3-Butadiene	3.91	54	2079	0.2592 ug/L	71
6) Bromomethane	4.73	94	1152	0.6530 ug/L #	55
7) Chloroethane	4.90	64	1112	0.2113 ug/L #	72
8) Trichlorofluoromethane	5.35	101	2706	0.1520 ug/L #	53
10) Isoprene	5.93	67	2147	0.1987 ug/L	85
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1746	0.2087 ug/L	97
14) 1,1-Dichloroethene	6.48	61	3332	0.2501 ug/L	75
16) Dimethyl Sulfide	6.73	62	1099	0.2308 ug/L	95
19) Methylene Chloride	7.26	84	3414	0.4028 ug/L	88
20) Carbon Disulfide	7.30	76	10739	0.3853 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	4927	0.2686 ug/L #	60
23) trans-1,2-Dichloroethene	7.70	61	3879	0.3170 ug/L	98
24) n-Hexane	7.78	57	2794	0.3075 ug/L	85
26) Vinyl Acetate	8.30	43	1973	0.2259 ug/L #	70
27) 1,1-Dichloroethane	8.33	63	4881	0.3212 ug/L #	88
31) 2,2-Dichloropropane	9.11	77	4966	0.3101 ug/L	89
32) cis-1,2-Dichloroethene	9.17	96	2958	0.3128 ug/L	87
33) Chloroform	9.37	83	5564	0.3101 ug/L	95
34) 1-Bromopropane	9.52	122	210	0.1551 ug/L #	1
35) Bromochloromethane	9.60	130	1386	0.2858 ug/L	76
36) Tetrahydrofuran	9.62	42	1849	2.0617 ug/L #	60
38) 1,1,1-Trichloroethane	9.91	97	4978	0.2921 ug/L	95
39) Cyclohexane	9.93	56	3120	0.2644 ug/L #	85
40) 1,1-Dichloropropene	10.11	75	3779	0.2909 ug/L	97
42) Carbon Tetrachloride	10.24	117	4835	0.3194 ug/L #	74
45) 1,2-Dichloroethane	10.43	62	3295	0.2853 ug/L #	81
46) Benzene	10.46	78	11279	0.3333 ug/L	93
47) Trichloroethene	11.20	130	2410	0.2670 ug/L	97
48) Methylcyclohexane	11.31	83	3936	0.2871 ug/L	84
49) 1,2-Dichloropropane	11.42	63	2136	0.2836 ug/L	88
50) Bromodichloromethane	11.73	83	3767	0.2845 ug/L #	91
52) Dibromomethane	11.82	93	700	0.1570 ug/L #	59
53) 2-Chloroethyl Vinyl Ether	12.02	63	847	0.2616 ug/L #	47
55) cis-1,3-Dichloropropene	12.36	75	4763	0.3535 ug/L	84
56) Dimethyl Disulfide	12.63	79	1647	0.2290 ug/L	82
59) Toluene	12.78	91	11513	0.3243 ug/L	92
60) Ethyl Methacrylate	12.89	69	1631	0.2392 ug/L #	64

(#) = qualifier out of range (m) = manual integration
8M412220.D 8260WT.M Tue May 17 11:40:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:40:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
62)	trans-1,3-Dichloropropene	12.96	75	3626	0.3047 ug/L		82
63)	1,1,2-Trichloroethane	13.18	97	1409	0.2515 ug/L		98
65)	1,3-Dichloropropane	13.49	76	2584	0.2590 ug/L		93
66)	Tetrachloroethene	13.61	164	2678	0.3520 ug/L	#	75
67)	Dibromochloromethane	13.87	129	2126	0.2599 ug/L		79
68)	1,2-Dibromoethane	14.12	107	1895	0.3394 ug/L		91
69)	1-Chlorohexane	14.21	91	3835	0.3164 ug/L		99
70)	Chlorobenzene	14.62	112	7968	0.3328 ug/L		88
71)	1,1,1,2-Tetrachloroethane	14.67	131	2872	0.3096 ug/L		87
72)	Ethylbenzene	14.64	106	3844	0.2934 ug/L		81
73)	m-,p-Xylene	14.75	106	10447	0.6799 ug/L		96
74)	o-Xylene	15.31	106	4577	0.3047 ug/L		97
75)	Styrene	15.35	104	7545	0.3062 ug/L		95
76)	Bromoform	15.84	173	1301	0.2681 ug/L	#	51
77)	Isopropylbenzene	15.74	105	13119	0.3287 ug/L		90
79)	1,1,2,2-Tetrachloroethane	15.96	83	1714	0.2853 ug/L	#	85
83)	n-Propylbenzene	16.24	91	15676	0.3357 ug/L		92
84)	Bromobenzene	16.38	156	2859	0.2977 ug/L		90
85)	1,3,5-Trimethylbenzene	16.43	105	10873	0.3196 ug/L		99
86)	2-Chlorotoluene	16.52	91	11133	0.3415 ug/L		96
87)	4-Chlorotoluene	16.56	91	10305	0.3499 ug/L		97
88)	a-Methylstyrene	16.83	118	4090	0.2534 ug/L		86
89)	tert-Butylbenzene	16.90	134	1734	0.2606 ug/L		72
90)	1,2,4-Trimethylbenzene	16.95	105	10734	0.3069 ug/L		89
91)	sec-Butylbenzene	17.16	105	13749	0.3436 ug/L		97
92)	p-Isopropyltoluene	17.32	119	10847	0.3192 ug/L		95
93)	1,3-Dichlorobenzene	17.52	146	6023	0.3257 ug/L		99
94)	1,4-Dichlorobenzene	17.65	146	6152	0.3299 ug/L	#	60
95)	n-Butylbenzene	17.85	91	11161	0.3323 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	5711	0.3472 ug/L		92
98)	1,2,4-Trichlorobenzene	20.29	180	4203	0.3418 ug/L		91
99)	Hexachlorobutadiene	20.43	225	1894	0.3297 ug/L		84
100)	Naphthalene	20.65	128	6039	0.3306 ug/L		91
101)	1,2,3-Trichlorobenzene	20.96	180	3279	0.3161 ug/L		86

(#) = qualifier out of range (m) = manual integration
8M412220.D 8260WT.M Tue May 17 11:40:55 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2778	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.4537	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.2630	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	0.2592	0.0	100	0.03
6	T	Bromomethane	-1.0000	0.9911	0.0	100	0.00
7	T	Chloroethane	-1.0000	0.2113	0.0	100	0.00
8	T	Trichlorofluoromethane	-1.0000	0.1520	0.0	100	-0.02
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.90#
10	T	Isoprene	-1.0000	0.1987	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.13#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2087	0.0	100	0.00
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	-1.0000	0.2501	0.0	100	0.02
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.58#
16	T	Dimethyl Sulfide	-1.0000	0.2308	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.0000	0.0	0	-7.00#
19	T	Methylene Chloride	-1.0000	0.4028	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.3853	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.43#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2686	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	-1.0000	0.3170	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.3075	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.2259	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.3212	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.98#
31	T	2,2-Dichloropropane	-1.0000	0.3101	0.0	100	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.3128	0.0	100	0.00
33	C	Chloroform	0.3000	0.3101	-3.4	100	0.00
34		1-Bromopropane	-1.0000	0.1551	0.0	100	0.00
35	T	Bromochloromethane	-1.0000	0.2858	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	2.0617	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	-1.0000	0.2921	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.2644	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.2909	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	-1.0000	0.3194	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	-1.0000	0.2853	0.0	100	0.00
46	T	Benzene	-1.0000	0.3333	0.0	100	0.00
47	T	Trichloroethene	-1.0000	0.2670	0.0	100	-0.01
48	T	Methylcyclohexane	-1.0000	0.2871	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2836	0.0	100	0.00
50	T	Bromodichloromethane	-1.0000	0.2845	0.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	-1.0000	0.1570	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2616	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.05#

(#) = Out of Range

8M412220.D 8260WT.M Sat May 14 18:03:33 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.3535	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2290	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0189	0.0	100	0.00
59	C	Toluene	-1.0000	0.3243	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2392	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3047	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.2515	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	-1.0000	0.2590	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.3520	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.2599	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.3394	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.3164	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.3328	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.3096	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.2934	0.0	100	-0.01
73	T	m-,p-Xylene	-1.0000	0.6799	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.3047	0.0	100	0.00
75	T	Styrene	-1.0000	0.3062	0.0	100	0.00
76	P	Bromoform	-1.0000	0.2681	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.3287	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2853	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0253	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.1103	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	-1.0000	0.3357	0.0	100	0.00
84	T	Bromobenzene	0.3000	0.2977	0.8	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.3196	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.3415	0.0	100	0.00
87	T	4-Chlorotoluene	-1.0000	0.3499	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2534	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.2606	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.3069	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3436	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.3192	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.3257	0.0	100	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.3299	-10.0	100	0.00
95	T	n-Butylbenzene	-1.0000	0.3323	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.3472	-15.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.3418	0.0	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.3297	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.3306	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.3161	-5.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412220.D 8260WT.M Sat May 14 18:03:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	801173	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	557498	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	293108	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
80) p-Bromofluorobenzene	16.08	95	343	0.0286 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	5478	0.3262 ug/L	79
3) Chloromethane	3.63	50	3930	0.2484 ug/L	85
4) Vinyl Chloride	3.84	62	3512	0.3288 ug/L	97
5) 1,3-Butadiene	3.90	54	2479	0.2375 ug/L #	75
6) Bromomethane	4.73	94	1343	0.9497 ug/L	85
7) Chloroethane	4.90	64	2219	0.3174 ug/L #	43
8) Trichlorofluoromethane	5.36	101	6974	0.3289 ug/L #	93
10) Isoprene	5.94	67	4288	0.3952 ug/L #	62
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	3168	0.3263 ug/L #	40
14) 1,1-Dichloroethene	6.47	61	5431	0.2882 ug/L	92
16) Dimethyl Sulfide	6.74	62	1708	0.2453 ug/L	64
19) Methylene Chloride	7.24	84	3785	0.4239 ug/L #	43
20) Carbon Disulfide	7.29	76	12437	0.4565 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	6580	0.3336 ug/L #	76
23) trans-1,2-Dichloroethene	7.71	61	4990	0.2928 ug/L	96
24) n-Hexane	7.79	57	3110	0.2011 ug/L	99
26) Vinyl Acetate	8.31	43	2753	0.1566 ug/L	100
27) 1,1-Dichloroethane	8.32	63	5655	0.2774 ug/L #	92
31) 2,2-Dichloropropane	9.10	77	6035	0.3360 ug/L	82
32) cis-1,2-Dichloroethene	9.16	96	3837	0.3762 ug/L	74
33) Chloroform	9.37	83	7267	0.3842 ug/L	100
34) 1-Bromopropane	9.50	122	234	0.1456 ug/L #	1
35) Bromochloromethane	9.60	130	1674	0.3137 ug/L	62
36) Tetrahydrofuran	9.62	42	447	0.2146 ug/L #	41
38) 1,1,1-Trichloroethane	9.91	97	6304	0.3305 ug/L	90
39) Cyclohexane	9.94	56	4658	0.2238 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	5172	0.3768 ug/L	80
42) Carbon Tetrachloride	10.25	117	5692	0.3172 ug/L	95
45) 1,2-Dichloroethane	10.43	62	4443	0.2796 ug/L #	63
46) Benzene	10.46	78	14456	0.4134 ug/L #	77
47) Trichloroethene	11.21	130	3659	0.3626 ug/L	98
48) Methylcyclohexane	11.29	83	5025	0.3562 ug/L	84
49) 1,2-Dichloropropane	11.42	63	3060	0.3007 ug/L	98
50) Bromodichloromethane	11.73	83	4734	0.3343 ug/L #	93
52) Dibromomethane	11.82	93	1805	0.3767 ug/L	84
55) cis-1,3-Dichloropropene	12.36	75	5008	0.3514 ug/L	90
56) Dimethyl Disulfide	12.63	79	1921	0.2573 ug/L	85
59) Toluene	12.78	91	14742	0.4416 ug/L	98
60) Ethyl Methacrylate	12.90	69	2062	0.3292 ug/L	66
62) trans-1,3-Dichloropropene	12.96	75	3693	0.3171 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M412221.D 8260WT.M Fri May 13 14:20:38 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
63)	1,1,2-Trichloroethane	13.18	97	2326	0.4391 ug/L		70
65)	1,3-Dichloropropane	13.49	76	3163	0.3219 ug/L		88
66)	Tetrachloroethene	13.61	164	3164	0.4185 ug/L		93
67)	Dibromochloromethane	13.87	129	3113	0.3727 ug/L		86
68)	1,2-Dibromoethane	14.12	107	2076	0.3760 ug/L		90
69)	1-Chlorohexane	14.21	91	4746	0.4174 ug/L		80
70)	Chlorobenzene	14.62	112	9180	0.3960 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.66	131	3501	0.3876 ug/L		95
72)	Ethylbenzene	14.65	106	5348	0.4066 ug/L		84
73)	m-,p-Xylene	14.75	106	13269	0.8757 ug/L		89
74)	o-Xylene	15.31	106	6019	0.3943 ug/L		97
75)	Styrene	15.35	104	9370	0.3849 ug/L		95
76)	Bromoform	15.83	173	1198	0.2500 ug/L	#	76
77)	Isopropylbenzene	15.73	105	16528	0.4270 ug/L		92
79)	1,1,2,2-Tetrachloroethane	15.96	83	1999	0.3419 ug/L	#	83
83)	n-Propylbenzene	16.25	91	19410	0.4297 ug/L		95
84)	Bromobenzene	16.37	156	3319	0.3524 ug/L		75
85)	1,3,5-Trimethylbenzene	16.42	105	13794	0.4127 ug/L		95
86)	2-Chlorotoluene	16.51	91	13678	0.4729 ug/L		90
87)	4-Chlorotoluene	16.56	91	12572	0.4219 ug/L		98
88)	a-Methylstyrene	16.84	118	5739	0.3485 ug/L		96
89)	tert-Butylbenzene	16.90	134	2254	0.3403 ug/L		55
90)	1,2,4-Trimethylbenzene	16.95	105	13859	0.4051 ug/L		90
91)	sec-Butylbenzene	17.17	105	17612	0.4382 ug/L		90
92)	p-Isopropyltoluene	17.32	119	13616	0.3968 ug/L		90
93)	1,3-Dichlorobenzene	17.52	146	6961	0.3724 ug/L		86
94)	1,4-Dichlorobenzene	17.64	146	7149	0.3832 ug/L	#	1
95)	n-Butylbenzene	17.85	91	15223	0.4664 ug/L		91
96)	1,2-Dichlorobenzene	18.14	146	6129	0.3742 ug/L		92
98)	1,2,4-Trichlorobenzene	20.28	180	5035	0.3969 ug/L		97
99)	Hexachlorobutadiene	20.44	225	2420	0.4122 ug/L		83
100)	Naphthalene	20.65	128	7474	0.3874 ug/L	#	84
101)	1,2,3-Trichlorobenzene	20.96	180	4378	0.4056 ug/L	#	78

(#) = qualifier out of range (m) = manual integration
8M412221.D 8260WT.M Fri May 13 14:20:39 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

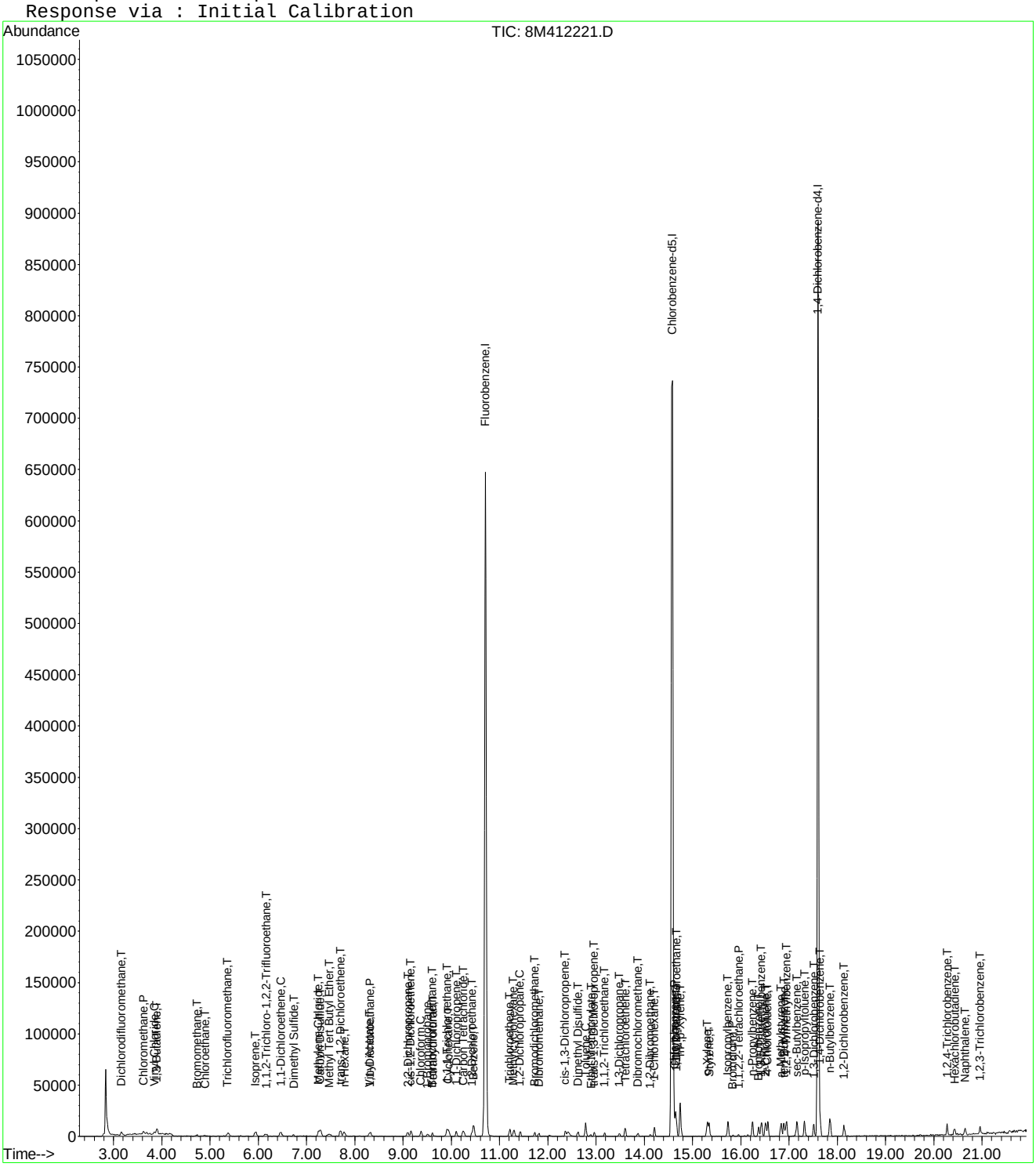

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	0.4000	0.4078	-2.0	100	0.00
3	P	Chloromethane	-1.0000	0.5012	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.3775	5.6	100	0.00
5	T	1,3-Butadiene	-1.0000	0.3178	0.0	100	0.02
6	T	Bromomethane	-1.0000	1.0253	0.0	100	0.00
7	T	Chloroethane	0.4000	0.4335	-8.4	100	0.00
8	T	Trichlorofluoromethane	0.4000	0.4029	-0.7	100	-0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.90#
10	T	Isoprene	0.4000	0.4079	-2.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.13#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3894	0.0	100	0.02
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	0.4000	0.4192	-4.8	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.58#
16	T	Dimethyl Sulfide	0.4000	0.3687	7.8	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.2179	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4591	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4587	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.43#
22	T	Methyl Tert Butyl Ether	-1.0000	0.3688	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.4193	-4.8	100	0.00
24	T	n-Hexane	-1.0000	0.3519	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.3241	0.0	100	0.02
27	P	1,1-Dichloroethane	0.4000	0.3826	4.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.98#
31	T	2,2-Dichloropropane	0.4000	0.3874	3.1	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.4172	-4.3	100	-0.01
33	C	Chloroform	0.4000	0.4164	-4.1	100	0.00
34		1-Bromopropane	-1.0000	0.1776	0.0	100	-0.01
35	T	Bromochloromethane	0.4000	0.3550	11.3	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.5125	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	0.4000	0.3803	4.9	100	0.00
39	T	Cyclohexane	-1.0000	0.4058	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4093	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	0.4000	0.3867	3.3	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	0.4000	0.3955	1.1	100	0.00
46	T	Benzene	0.4000	0.4393	-9.8	100	0.00
47	T	Trichloroethene	0.4000	0.4169	-4.2	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3768	0.0	100	-0.01
49	C	1,2-Dichloropropane	0.4000	0.4177	-4.4	100	0.00
50	T	Bromodichloromethane	0.4000	0.3676	8.1	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	0.4000	0.4162	-4.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1401	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.05#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3821	4.5	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2746	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0000	0.0	0	-12.68#
59	C	Toluene	0.4000	0.4259	-6.5	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3102	0.0	100	0.02
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3184	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.4259	-6.5	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	0.4000	0.3253	18.7	100	0.00
66	T	Tetrachloroethene	0.4000	0.4267	-6.7	100	0.00
67	T	Dibromochloromethane	0.4000	0.3904	2.4	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.3814	4.6	100	0.00
69	T	1-Chlorohexane	0.4000	0.4017	-0.4	100	0.00
70	P	Chlorobenzene	0.4000	0.3933	1.7	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3872	3.2	100	0.00
72	C	Ethylbenzene	0.4000	0.4188	-4.7	100	0.00
73	T	m-,p-Xylene	0.8000	0.8859	-10.7	100	0.00
74	T	o-Xylene	-1.0000	0.4110	0.0	100	0.00
75	T	Styrene	0.4000	0.3901	2.5	100	0.00
76	P	Bromoform	-1.0000	0.2533	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.4249	-6.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.3398	15.1	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0283	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.14#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	0.4000	0.4245	-6.1	100	0.00
84	T	Bromobenzene	0.4000	0.3529	11.8	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.4141	-3.5	100	0.00
86	T	2-Chlorotoluene	0.4000	0.4284	-7.1	100	0.00
87	T	4-Chlorotoluene	0.4000	0.4359	-9.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.3631	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3459	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	0.4000	0.4046	-1.2	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.4494	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4092	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.3844	3.9	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.3915	2.1	100	0.00
95	T	n-Butylbenzene	-1.0000	0.4628	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.3805	4.9	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	0.4000	0.4182	-4.5	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.4302	-7.5	100	0.00
100	T	Naphthalene	0.4000	0.4178	-4.5	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.4310	-7.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412221.D 8260WT.M Sat May 14 18:03:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	795577	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	547129	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	284579	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.65	111	3962	0.3966 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery	= 1.60%#	
43) 1,2-Dichloroethane-d4	10.31	65	3835	0.3356 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery	= 1.36%#	
58) Toluene-d8	12.68	98	14023	0.4957 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 2.00%#	
80) p-Bromofluorobenzene	16.08	95	6483	0.5565 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery	= 2.24%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	12402	0.7438 ug/L	97
3) Chloromethane	3.62	50	8415	0.5357 ug/L #	75
4) Vinyl Chloride	3.84	62	9412	0.8873 ug/L	89
5) 1,3-Butadiene	3.90	54	6974	0.6729 ug/L	81
6) Bromomethane	4.73	94	4114	1.3123 ug/L	92
7) Chloroethane	4.90	64	4983	0.7178 ug/L #	80
8) Trichlorofluoromethane	5.38	101	17133	0.8136 ug/L #	96
9) Diethyl ether	5.90	59	20707	3.2140 ug/L	84
10) Isoprene	5.94	67	11176	1.0373 ug/L	76
11) Acrolein	6.14	56	246	0.4300 ug/L #	15
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	8135	0.8438 ug/L	96
13) Acetone	6.24	43	413	0.2115 ug/L #	48
14) 1,1-Dichloroethene	6.46	61	12947	0.6919 ug/L	91
15) Tert-Butyl Alcohol	6.59	59	3316	7.3747 ug/L #	55
16) Dimethyl Sulfide	6.72	62	4505	0.6515 ug/L	79
18) Methyl acetate	7.00	43	2119	0.3630 ug/L #	66
19) Methylene Chloride	7.24	84	8723	0.9837 ug/L #	43
20) Carbon Disulfide	7.29	76	28246	1.0441 ug/L	100
21) Acrylonitrile	7.43	53	2164	0.8620 ug/L	76
22) Methyl Tert Butyl Ether	7.47	73	16998	0.8678 ug/L	84
23) trans-1,2-Dichloroethene	7.70	61	12571	0.7427 ug/L	100
24) n-Hexane	7.78	57	9382	0.6109 ug/L	82
25) Diisopropyl ether	8.12	45	95400	2.1939 ug/L #	91
26) Vinyl Acetate	8.30	43	6750	0.3867 ug/L #	89
27) 1,1-Dichloroethane	8.32	63	14721	0.7271 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	97972	3.2102 ug/L	88
29) 2-Butanone	8.88	43	380	0.1215 ug/L #	57
30) Propionitrile	8.99	54	1593	2.0138 ug/L #	56
31) 2,2-Dichloropropane	9.09	77	14691	0.8236 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	9482	0.9362 ug/L	72
33) Chloroform	9.37	83	18494	0.9845 ug/L	94
34) 1-Bromopropane	9.50	122	1092	0.6844 ug/L	80
35) Bromochloromethane	9.61	130	5234	0.9877 ug/L #	55
36) Tetrahydrofuran	9.63	42	5415	2.6185 ug/L #	68
38) 1,1,1-Trichloroethane	9.91	97	17074	0.9016 ug/L	92
39) Cyclohexane	9.94	56	11865	0.5740 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	13172	0.9663 ug/L	87
41) Tert-Amyl-Methyl ether	10.21	73	90255	4.6173 ug/L #	88
42) Carbon Tetrachloride	10.25	117	14515	0.8146 ug/L	95
45) 1,2-Dichloroethane	10.42	62	10675	0.6766 ug/L	85

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	10.47	78	34504	0.9938 ug/L		84
47)	Trichloroethene	11.21	130	8752	0.8735 ug/L		93
48)	Methylcyclohexane	11.30	83	13513	0.9646 ug/L		79
49)	1,2-Dichloropropane	11.43	63	7057	0.6982 ug/L	#	67
50)	Bromodichloromethane	11.73	83	12147	0.8638 ug/L		96
52)	Dibromomethane	11.81	93	4130	0.8681 ug/L		95
53)	2-Chloroethyl Vinyl Ether	12.03	63	2694	0.6366 ug/L		86
54)	4-Methyl-2-Pentanone	12.06	58	848	0.3671 ug/L	#	41
55)	cis-1,3-Dichloropropene	12.36	75	12521	0.8847 ug/L		97
56)	Dimethyl Disulfide	12.63	79	5799	0.7821 ug/L		96
59)	Toluene	12.79	91	37114	1.1328 ug/L		95
60)	Ethyl Methacrylate	12.88	69	5490	0.8930 ug/L		69
62)	trans-1,3-Dichloropropene	12.96	75	10328	0.9035 ug/L		92
63)	1,1,2-Trichloroethane	13.18	97	5274	1.0144 ug/L		93
64)	2-Hexanone	13.10	58	397	0.2127 ug/L	#	1
65)	1,3-Dichloropropane	13.49	76	9673	1.0032 ug/L		73
66)	Tetrachloroethene	13.61	164	7373	0.9937 ug/L		95
67)	Dibromochloromethane	13.87	129	7358	0.8977 ug/L		95
68)	1,2-Dibromoethane	14.13	107	5123	0.9454 ug/L		95
69)	1-Chlorohexane	14.21	91	12790	1.1461 ug/L		79
70)	Chlorobenzene	14.62	112	25662	1.1281 ug/L		89
71)	1,1,1,2-Tetrachloroethane	14.66	131	8722	0.9838 ug/L		94
72)	Ethylbenzene	14.65	106	13009	1.0078 ug/L		87
73)	m-,p-Xylene	14.75	106	30465	2.0486 ug/L		84
74)	o-Xylene	15.31	106	15133	1.0101 ug/L		84
75)	Styrene	15.35	104	23191	0.9707 ug/L		91
76)	Bromoform	15.84	173	3875	0.8240 ug/L		96
77)	Isopropylbenzene	15.74	105	41382	1.0895 ug/L		95
79)	1,1,2,2-Tetrachloroethane	15.95	83	5604	0.9873 ug/L	#	93
81)	1,2,3-Trichloropropane	16.15	110	1355	0.7428 ug/L	#	1
82)	trans-1,4-Dichloro-2-Buten	16.19	53	962	0.3479 ug/L	#	1
83)	n-Propylbenzene	16.25	91	48249	1.1002 ug/L		99
84)	Bromobenzene	16.37	156	9598	1.0497 ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	33355	1.0278 ug/L		96
86)	2-Chlorotoluene	16.51	91	33408	1.1895 ug/L		94
87)	4-Chlorotoluene	16.56	91	29548	1.0213 ug/L		95
88)	a-Methylstyrene	16.84	118	14414	0.9014 ug/L		91
89)	tert-Butylbenzene	16.89	134	6686	1.0398 ug/L		86
90)	1,2,4-Trimethylbenzene	16.95	105	36066	1.0857 ug/L		96
91)	sec-Butylbenzene	17.16	105	42128	1.0796 ug/L		96
92)	p-Isopropyltoluene	17.32	119	35424	1.0633 ug/L		94
93)	1,3-Dichlorobenzene	17.52	146	18409	1.0144 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	19031	1.0506 ug/L	#	62
95)	n-Butylbenzene	17.85	91	35772	1.1288 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	16104	1.0126 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.14	75	1262	1.0152 ug/L	#	53
98)	1,2,4-Trichlorobenzene	20.28	180	11494	0.9331 ug/L		98
99)	Hexachlorobutadiene	20.43	225	5421	0.9510 ug/L		98
100)	Naphthalene	20.65	128	16581	0.8853 ug/L		100
101)	1,2,3-Trichlorobenzene	20.96	180	10306	0.9835 ug/L		94

(#) = qualifier out of range (m) = manual integration
8M412222.D 8260WT.M Fri May 13 14:49:48 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

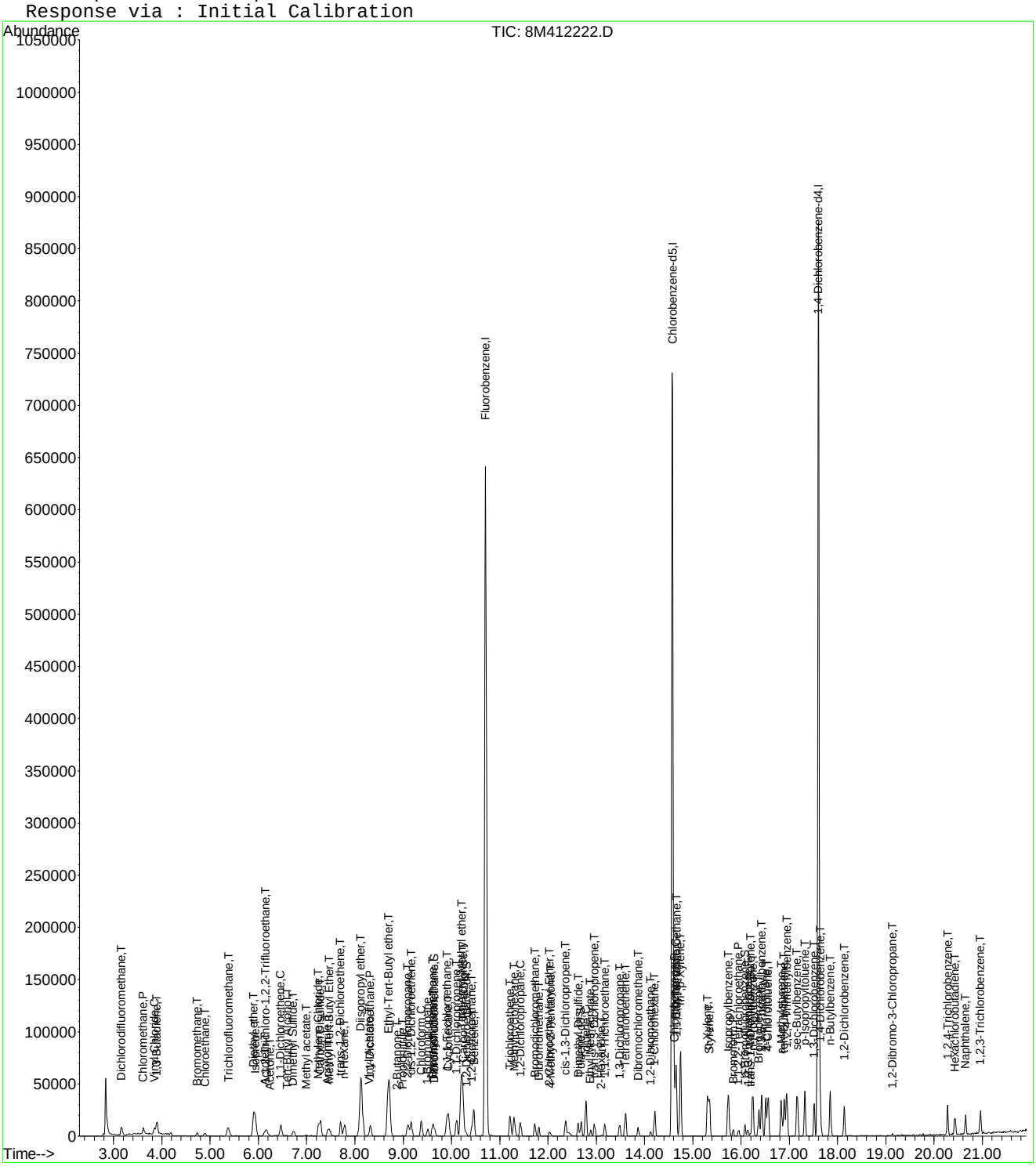

8M412222.D 8260WT.M Fri May 13 14:49:48 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:05:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9298	7.0	100	0.00
3	P	Chloromethane	1.0000	1.0808	-8.1	100	0.00
4	C	Vinyl Chloride	1.0000	1.0189	-1.9	100	0.00
5	T	1,3-Butadiene	-1.0000	0.9002	0.0	100	0.02
6	T	Bromomethane	1.0000	1.2082	-20.8	100	0.00
7	T	Chloroethane	1.0000	0.9803	2.0	100	0.00
8	T	Trichlorofluoromethane	1.0000	0.9968	0.3	100	0.00
9	T	Diethyl ether	5.0000	5.0462	-0.9	100	0.00
10	T	Isoprene	1.0000	1.0707	-7.1	100	0.00
11	T	Acrolein	-1.0000	0.6696	0.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0069	-0.7	100	0.00
13	T	Acetone	-1.0000	0.4614	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	1.0064	-0.6	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	11.5604	0.0	0	0.02
16	T	Dimethyl Sulfide	1.0000	0.9794	2.1	100	-0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.8758	0.0	100	0.00
19	T	Methylene Chloride	1.0000	1.0655	-6.5	100	0.00
20	T	Carbon Disulfide	1.0000	1.0492	-4.9	100	0.00
21	T	Acrylonitrile	2.5000	1.8633	25.5#	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9593	4.1	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	1.0636	-6.4	100	0.00
24	T	n-Hexane	-1.0000	1.0690	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	5.1784	-3.6	100	0.00
26	T	Vinyl Acetate	-1.0000	0.8002	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0029	-0.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.9635	0.7	100	0.00
29	T	2-Butanone	-1.0000	0.2889	0.0	100	0.00
30	T	Propionitrile	5.0000	4.1566	16.9	100	0.00
31	T	2,2-Dichloropropane	1.0000	0.9498	5.0	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	1.0383	-3.8	100	0.00
33	C	Chloroform	1.0000	1.0671	-6.7	100	0.00
34		1-Bromopropane	1.0000	0.8348	16.5	100	-0.01
35	T	Bromochloromethane	1.0000	1.1177	-11.8	100	0.00
36	T	Tetrahydrofuran	5.0000	6.2516	-25.0#	100	0.00
37	S	Dibromofluoromethane	0.5000	0.4635	7.3	100	-0.01
38	T	1,1,1-Trichloroethane	1.0000	1.0372	-3.7	100	0.00
39	T	Cyclohexane	1.0000	1.0411	-4.1	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0498	-5.0	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	5.0344	-0.7	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.9930	0.7	100	0.00
43	S	1,2-Dichloroethane-d4	0.5000	0.4184	16.3	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	1.0000	0.9570	4.3	100	0.00
46	T	Benzene	1.0000	1.0558	-5.6	100	0.00
47	T	Trichloroethene	1.0000	1.0041	-0.4	100	0.00
48	T	Methylcyclohexane	-1.0000	1.0205	0.0	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.9700	3.0	100	0.00
50	T	Bromodichloromethane	1.0000	0.9500	5.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	1.0000	0.9590	4.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.8616	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.6639	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:05:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9621	3.8	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.8348	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	0.5000	0.4897	2.1	100	0.00
59	C	Toluene	1.0000	1.0927	-9.3	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.8416	15.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	1.0000	0.9073	9.3	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.9840	1.6	100	0.00
64	T	2-Hexanone	-1.0000	0.3525	0.0	100	-0.01
65	T	1,3-Dichloropropane	1.0000	1.0137	-1.4	100	0.00
66	T	Tetrachloroethene	1.0000	1.0132	-1.3	100	0.00
67	T	Dibromochloromethane	1.0000	0.9402	6.0	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.9590	4.1	100	0.00
69	T	1-Chlorohexane	1.0000	1.1031	-10.3	100	0.00
70	P	Chlorobenzene	1.0000	1.1204	-12.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.9829	1.7	100	0.00
72	C	Ethylbenzene	1.0000	1.0381	-3.8	100	0.00
73	T	m-,p-Xylene	2.0000	2.0726	-3.6	100	0.00
74	T	o-Xylene	1.0000	1.0530	-5.3	100	0.00
75	T	Styrene	1.0000	0.9839	1.6	100	0.00
76	P	Bromoform	1.0000	0.8348	16.5	100	0.00
77	T	Isopropylbenzene	1.0000	1.0840	-8.4	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	0.9810	1.9	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5502	0.0	100	0.00
81	T	1,2,3-Trichloropropane	1.0000	0.7703	23.0	100	0.02
82	T	trans-1,4-Dichloro-2-Butene	1.0000	1.1443	-14.4	100	0.00
83	T	n-Propylbenzene	1.0000	1.0868	-8.7	100	0.00
84	T	Bromobenzene	1.0000	1.0510	-5.1	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	1.0314	-3.1	100	0.00
86	T	2-Chlorotoluene	1.0000	1.0778	-7.8	100	0.00
87	T	4-Chlorotoluene	1.0000	1.0553	-5.5	100	0.00
88	T	a-Methylstyrene	-1.0000	0.9394	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	1.0567	-5.7	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	1.0845	-8.5	100	0.00
91	T	sec-Butylbenzene	1.0000	1.1073	-10.7	100	0.00
92	T	p-Isopropyltoluene	1.0000	1.0966	-9.7	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0469	-4.7	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	1.0735	-7.3	100	0.00
95	T	n-Butylbenzene	1.0000	1.1201	-12.0	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0297	-3.0	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.1006	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	1.0000	0.9832	1.7	100	0.00
99	T	Hexachlorobutadiene	1.0000	0.9925	0.7	100	0.00
100	T	Naphthalene	1.0000	0.9547	4.5	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	1.0450	-4.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	782460	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.57	117	543252	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	286450	25.00	ug/L	0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	8161	0.8307	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.32%#		
43) 1,2-Dichloroethane-d4	10.30	65	9681	0.8613	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.44%#		
58) Toluene-d8	12.68	98	28135	1.0016	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.00%#		
80) p-Bromofluorobenzene	16.08	95	12079	1.0302	ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.12%#		

Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.16	85	24870	1.5166	ug/L	98
3) Chloromethane	3.62	50	16106	1.0425	ug/L	93
4) Vinyl Chloride	3.85	62	18562	1.7792	ug/L	94
5) 1,3-Butadiene	3.90	54	13617	1.3360	ug/L	92
6) Bromomethane	4.73	94	8329	1.8804	ug/L	94
7) Chloroethane	4.90	64	9562	1.4006	ug/L	86
8) Trichlorofluoromethane	5.39	101	34970	1.6885	ug/L	97
9) Diethyl ether	5.90	59	107986	17.0420	ug/L	79
10) Isoprene	5.93	67	20936	1.9757	ug/L	73
11) Acrolein	6.14	56	4864	8.6444	ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	16832	1.7751	ug/L	99
13) Acetone	6.23	43	1519	0.7908	ug/L #	48
14) 1,1-Dichloroethene	6.47	61	25394	1.3798	ug/L	89
15) Tert-Butyl Alcohol	6.58	59	14891	33.6725	ug/L	85
16) Dimethyl Sulfide	6.73	62	9489	1.3953	ug/L	79
17) Iodomethane	6.98	142	1211	1.3472	ug/L #	60
18) Methyl acetate	7.01	43	5064	0.8821	ug/L #	79
19) Methylene Chloride	7.25	84	16579	1.9010	ug/L	52
20) Carbon Disulfide	7.29	76	57693	2.1683	ug/L	98
21) Acrylonitrile	7.43	53	13848	5.6089	ug/L	93
22) Methyl Tert Butyl Ether	7.47	73	33991	1.7644	ug/L	84
23) trans-1,2-Dichloroethene	7.70	61	22786	1.3688	ug/L	88
24) n-Hexane	7.79	57	18282	1.2105	ug/L	84
25) Diisopropyl ether	8.12	45	475271	11.1128	ug/L #	92
26) Vinyl Acetate	8.29	43	15998	0.9318	ug/L	93
27) 1,1-Dichloroethane	8.32	63	30419	1.5277	ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	505010	16.8250	ug/L	89
29) 2-Butanone	8.90	43	2250	0.7313	ug/L #	57
30) Propionitrile	8.99	54	9373	12.0479	ug/L	86
31) 2,2-Dichloropropane	9.10	77	32521	1.8538	ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	18238	1.8309	ug/L	91
33) Chloroform	9.37	83	33543	1.8156	ug/L	99
34) 1-Bromopropane	9.52	122	2513	1.6014	ug/L	88
35) Bromochloromethane	9.60	130	9189	1.7632	ug/L	67
36) Tetrahydrofuran	9.63	42	22074	10.8529	ug/L #	66
38) 1,1,1-Trichloroethane	9.90	97	32268	1.7324	ug/L	96
39) Cyclohexane	9.93	56	23097	1.1362	ug/L #	65
40) 1,1-Dichloropropene	10.10	75	24988	1.8639	ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	459535	23.9029	ug/L	87
42) Carbon Tetrachloride	10.24	117	28935	1.6512	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412223.D 8260WT.M Fri May 13 15:18:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.42	62	22142	1.4270 ug/L #	83
46)	Benzene	10.46	78	67028	1.9629 ug/L	83
47)	Trichloroethene	11.21	130	17287	1.7543 ug/L	96
48)	Methylcyclohexane	11.30	83	26050	1.8907 ug/L	84
49)	1,2-Dichloropropane	11.42	63	14582	1.4670 ug/L	77
50)	Bromodichloromethane	11.73	83	25794	1.8651 ug/L	93
51)	1,4-Dioxane	11.73	88	1282	32.3515 ug/L	74
52)	Dibromomethane	11.81	93	8575	1.8325 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.02	63	6234	1.4979 ug/L	100
54)	4-Methyl-2-Pentanone	12.06	58	2139	0.9416 ug/L	84
55)	cis-1,3-Dichloropropene	12.37	75	24153	1.7353 ug/L	98
56)	Dimethyl Disulfide	12.62	79	12288	1.6851 ug/L	99
59)	Toluene	12.79	91	72944	2.2423 ug/L	95
60)	Ethyl Methacrylate	12.88	69	12716	2.0832 ug/L	71
62)	trans-1,3-Dichloropropene	12.96	75	22163	1.9527 ug/L	100
63)	1,1,2-Trichloroethane	13.18	97	10537	2.0412 ug/L	99
64)	2-Hexanone	13.13	58	2200	1.1873 ug/L #	65
65)	1,3-Dichloropropane	13.49	76	20212	2.1112 ug/L	72
66)	Tetrachloroethene	13.60	164	14595	1.9811 ug/L	90
67)	Dibromochloromethane	13.87	129	14698	1.8061 ug/L	98
68)	1,2-Dibromoethane	14.12	107	10152	1.8869 ug/L	95
69)	1-Chlorohexane	14.21	91	21960	1.9818 ug/L	89
70)	Chlorobenzene	14.62	112	47376	2.0974 ug/L	81
71)	1,1,1,2-Tetrachloroethane	14.66	131	17526	1.9910 ug/L	97
72)	Ethylbenzene	14.66	106	25628	1.9996 ug/L	92
73)	m-,p-Xylene	14.74	106	60087	4.0693 ug/L	84
74)	o-Xylene	15.31	106	28289	1.9017 ug/L	79
75)	Styrene	15.35	104	47644	2.0086 ug/L	92
76)	Bromoform	15.84	173	9145	1.9585 ug/L	95
77)	Isopropylbenzene	15.73	105	81301	2.1557 ug/L	97
79)	1,1,2,2-Tetrachloroethane	15.95	83	11538	2.0194 ug/L	95
81)	1,2,3-Trichloropropane	16.13	110	3630	1.9770 ug/L	94
82)	trans-1,4-Dichloro-2-Buten	16.19	53	2699	0.9698 ug/L #	36
83)	n-Propylbenzene	16.24	91	97233	2.2026 ug/L	96
84)	Bromobenzene	16.37	156	19174	2.0834 ug/L	92
85)	1,3,5-Trimethylbenzene	16.42	105	67395	2.0631 ug/L	97
86)	2-Chlorotoluene	16.51	91	67110	2.3739 ug/L	94
87)	4-Chlorotoluene	16.56	91	59154	2.0313 ug/L	92
88)	a-Methylstyrene	16.84	118	29415	1.8275 ug/L	86
89)	tert-Butylbenzene	16.89	134	12716	1.9647 ug/L	67
90)	1,2,4-Trimethylbenzene	16.95	105	71669	2.1435 ug/L	94
91)	sec-Butylbenzene	17.17	105	81038	2.0632 ug/L	98
92)	p-Isopropyltoluene	17.32	119	70170	2.0924 ug/L	92
93)	1,3-Dichlorobenzene	17.52	146	37289	2.0413 ug/L	93
94)	1,4-Dichlorobenzene	17.64	146	36528	2.0034 ug/L #	73
95)	n-Butylbenzene	17.85	91	67823	2.1262 ug/L	96
96)	1,2-Dichlorobenzene	18.14	146	32322	2.0190 ug/L	92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	1955	1.5624 ug/L	94
98)	1,2,4-Trichlorobenzene	20.28	180	23558	1.9000 ug/L	98
99)	Hexachlorobutadiene	20.43	225	11066	1.9286 ug/L	99
100)	Naphthalene	20.65	128	36066	1.9130 ug/L	99
101)	1,2,3-Trichlorobenzene	20.96	180	19765	1.8738 ug/L	95

(#) = qualifier out of range (m) = manual integration
8M412223.D 8260WT.M Fri May 13 15:18:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

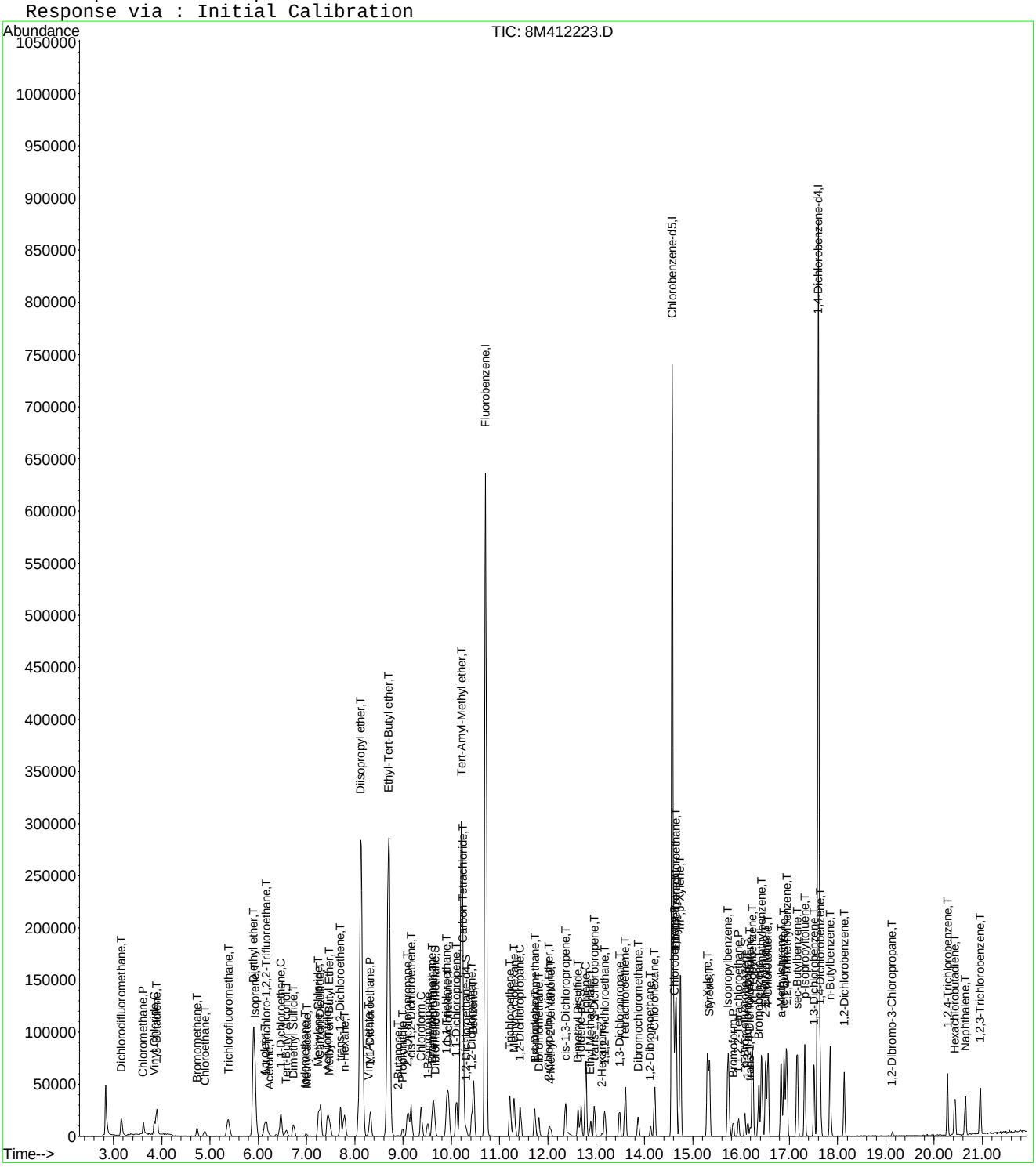

8M412223.D 8260WT.M Fri May 13 15:18:37 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.8958	5.2	100	0.00
3	P	Chloromethane	2.0000	2.1033	-5.2	100	0.00
4	C	Vinyl Chloride	2.0000	2.0431	-2.2	100	0.00
5	T	1,3-Butadiene	2.0000	1.7872	10.6	100	0.02
6	T	Bromomethane	2.0000	2.0126	-0.6	100	0.00
7	T	Chloroethane	2.0000	1.9127	4.4	100	0.00
8	T	Trichlorofluoromethane	2.0000	2.0686	-3.4	100	0.00
9	T	Diethyl ether	25.0000	26.7567	-7.0	100	0.00
10	T	Isoprene	2.0000	2.0394	-2.0	100	0.00
11	T	Acrolein	12.5000	13.4606	-7.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	2.1182	-5.9	100	0.02
13	T	Acetone	-1.0000	1.7255	0.0	100	-0.01
14	C	1,1-Dichloroethene	2.0000	2.0070	-0.4	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	52.7840	-5.6	100	0.00
16	T	Dimethyl Sulfide	2.0000	2.0975	-4.9	100	0.00
17	T	Iodomethane	2.0000	3.0680	-53.4#	100	0.00
18	T	Methyl acetate	-1.0000	2.1281	0.0	100	0.00
19	T	Methylene Chloride	2.0000	2.0590	-3.0	100	0.00
20	T	Carbon Disulfide	2.0000	2.1789	-8.9	100	0.00
21	T	Acrylonitrile	12.5000	12.1237	3.0	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.9505	2.5	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.9603	2.0	100	0.00
24	T	n-Hexane	-1.0000	2.1181	0.0	100	0.00
25	T	Diisopropyl ether	25.0000	26.2305	-4.9	100	0.00
26	T	Vinyl Acetate	2.0000	1.9284	3.6	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.1072	-5.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	26.0139	-4.1	100	0.00
29	T	2-Butanone	-1.0000	1.7396	0.0	100	0.02
30	T	Propionitrile	25.0000	24.8668	0.5	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1378	-6.9	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0306	-1.5	100	0.00
33	C	Chloroform	2.0000	1.9679	1.6	100	0.00
34		1-Bromopropane	2.0000	1.9533	2.3	100	0.00
35	T	Bromochloromethane	2.0000	1.9951	0.2	100	0.00
36	T	Tetrahydrofuran	25.0000	25.9117	-3.6	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9708	2.9	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.9930	0.3	100	0.00
39	T	Cyclohexane	2.0000	2.0605	-3.0	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0248	-1.2	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	26.0627	-4.3	100	0.00
42	T	Carbon Tetrachloride	2.0000	2.0126	-0.6	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0740	-7.4	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	2.0000	2.0183	-0.9	100	0.00
46	T	Benzene	2.0000	2.0854	-4.3	100	0.00
47	T	Trichloroethene	2.0000	2.0166	-0.8	100	0.00
48	T	Methylcyclohexane	-1.0000	2.0003	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0380	-1.9	100	0.00
50	T	Bromodichloromethane	2.0000	2.0511	-2.6	100	0.00
51	T	1,4-Dioxane	-1.0000	35.6688	0.0	100	0.02
52	T	Dibromomethane	2.0000	2.0246	-1.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	2.0271	-1.4	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.7027	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.8869	5.7	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.7986	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	0.9896	1.0	100	0.00
59	C	Toluene	2.0000	2.1628	-8.1	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.9633	1.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	2.0000	1.9609	2.0	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.9800	1.0	100	0.00
64	T	2-Hexanone	-1.0000	1.9672	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.1332	-6.7	100	0.00
66	T	Tetrachloroethene	2.0000	2.0198	-1.0	100	0.00
67	T	Dibromochloromethane	2.0000	1.8915	5.4	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.9141	4.3	100	0.00
69	T	1-Chlorohexane	2.0000	1.9075	4.6	100	0.00
70	P	Chlorobenzene	2.0000	2.0831	-4.2	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.9892	0.5	100	0.00
72	C	Ethylbenzene	2.0000	2.0596	-3.0	100	0.00
73	T	m-,p-Xylene	4.0000	4.1170	-2.9	100	0.00
74	T	o-Xylene	2.0000	1.9825	0.9	100	0.00
75	T	Styrene	2.0000	2.0358	-1.8	100	0.00
76	P	Bromoform	2.0000	1.9841	0.8	100	0.00
77	T	Isopropylbenzene	2.0000	2.1448	-7.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	2.0066	-0.3	100	0.00
80	S	p-Bromofluorobenzene	1.0000	1.0184	-1.8	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	2.0501	-2.5	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	2.0915	-4.6	100	0.00
83	T	n-Propylbenzene	2.0000	2.1757	-8.8	100	0.00
84	T	Bromobenzene	2.0000	2.0859	-4.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.0703	-3.5	100	0.00
86	T	2-Chlorotoluene	2.0000	2.1509	-7.5	100	0.00
87	T	4-Chlorotoluene	2.0000	2.0989	-4.9	100	0.00
88	T	a-Methylstyrene	-1.0000	1.9045	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	1.9967	0.2	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.1411	-7.1	100	0.00
91	T	sec-Butylbenzene	2.0000	2.1161	-5.8	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.1579	-7.9	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.1067	-5.3	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.0470	-2.4	100	0.00
95	T	n-Butylbenzene	2.0000	2.1098	-5.5	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0532	-2.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.6938	15.3	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	2.0021	-0.1	100	0.00
99	T	Hexachlorobutadiene	2.0000	2.0128	-0.6	100	0.00
100	T	Naphthalene	2.0000	2.0630	-3.2	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9910	0.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412223.D 8260WT.M Sat May 14 18:08:14 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	768397	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	534372	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	274234	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	19775	2.0496 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	8.20%#	
43) 1,2-Dichloroethane-d4	10.30	65	21200	1.9207 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	7.68%#	
58) Toluene-d8	12.68	98	65647	2.3758 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	9.52%#	
80) p-Bromofluorobenzene	16.08	95	26759	2.3838 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	9.52%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	55961	3.4750 ug/L	99
3) Chloromethane	3.62	50	34194	2.2538 ug/L	100
4) Vinyl Chloride	3.84	62	42506	4.1488 ug/L	99
5) 1,3-Butadiene	3.89	54	32006	3.1976 ug/L	93
6) Bromomethane	4.72	94	19582	3.4204 ug/L	94
7) Chloroethane	4.90	64	22000	3.2814 ug/L	84
8) Trichlorofluoromethane	5.37	101	77715	3.8212 ug/L	96
9) Diethyl ether	5.90	59	188516	30.2955 ug/L	79
10) Isoprene	5.94	67	44975	4.3218 ug/L	78
11) Acrolein	6.15	56	7712	13.9568 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	36867	3.9591 ug/L	99
13) Acetone	6.24	43	3578	1.8967 ug/L	85
14) 1,1-Dichloroethene	6.47	61	59405	3.2870 ug/L	95
15) Tert-Butyl Alcohol	6.58	59	27833	64.0897 ug/L #	82
16) Dimethyl Sulfide	6.73	62	21102	3.1597 ug/L	77
17) Iodomethane	6.99	142	3667	1.8964 ug/L	95
18) Methyl acetate	7.00	43	11500	2.0398 ug/L #	86
19) Methylene Chloride	7.24	84	37533	4.3823 ug/L	52
20) Carbon Disulfide	7.29	76	123060	4.7097 ug/L	100
21) Acrylonitrile	7.43	53	25653	10.5804 ug/L	99
22) Methyl Tert Butyl Ether	7.47	73	80005	4.2289 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	54124	3.3108 ug/L	94
24) n-Hexane	7.78	57	40758	2.7480 ug/L	82
25) Diisopropyl ether	8.12	45	841400	20.0337 ug/L #	91
26) Vinyl Acetate	8.30	43	37284	2.2113 ug/L #	90
27) 1,1-Dichloroethane	8.32	63	66711	3.4116 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	907423	30.7852 ug/L	89
29) 2-Butanone	8.89	43	5359	1.7738 ug/L #	82
30) Propionitrile	8.99	54	17933	23.4726 ug/L	100
31) 2,2-Dichloropropane	9.10	77	73150	4.2462 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	41036	4.1950 ug/L	89
33) Chloroform	9.37	83	78227	4.3116 ug/L	99
34) 1-Bromopropane	9.52	122	6162	3.9986 ug/L	99
35) Bromochloromethane	9.60	130	20988	4.1009 ug/L #	62
36) Tetrahydrofuran	9.62	42	38098	19.0742 ug/L #	62
38) 1,1,1-Trichloroethane	9.91	97	76152	4.1633 ug/L	97
39) Cyclohexane	9.94	56	51439	2.5767 ug/L #	66
40) 1,1-Dichloropropene	10.11	75	56645	4.3027 ug/L	93
41) Tert-Amyl-Methyl ether	10.21	73	821180	43.4958 ug/L	87
42) Carbon Tetrachloride	10.25	117	67831	3.9416 ug/L	96

(#) = qualifier out of range (m) = manual integration
8M412224.D 8260WT.M Fri May 13 15:47:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	51708	3.3934 ug/L		85
46)	Benzene	10.46	78	150204	4.4792 ug/L		86
47)	Trichloroethene	11.21	130	38500	3.9784 ug/L		94
48)	Methylcyclohexane	11.30	83	60897	4.5008 ug/L		81
49)	1,2-Dichloropropane	11.43	63	31773	3.2549 ug/L		77
50)	Bromodichloromethane	11.73	83	59127	4.3535 ug/L		94
51)	1,4-Dioxane	11.71	88	2719	69.8702 ug/L	#	62
52)	Dibromomethane	11.81	93	19711	4.2894 ug/L		96
53)	2-Chloroethyl Vinyl Ether	12.03	63	12946	3.1676 ug/L		98
54)	4-Methyl-2-Pentanone	12.05	58	5129	2.2991 ug/L	#	78
55)	cis-1,3-Dichloropropene	12.36	75	61169	4.4752 ug/L		94
56)	Dimethyl Disulfide	12.62	79	27966	3.9053 ug/L		98
59)	Toluene	12.78	91	161007	5.0316 ug/L		97
60)	Ethyl Methacrylate	12.88	69	28595	4.7624 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	49791	4.4599 ug/L		97
63)	1,1,2-Trichloroethane	13.18	97	23678	4.6631 ug/L		99
64)	2-Hexanone	13.11	58	4499	2.4685 ug/L	#	97
65)	1,3-Dichloropropane	13.49	76	44838	4.7614 ug/L		73
66)	Tetrachloroethene	13.60	164	32715	4.5144 ug/L		97
67)	Dibromochloromethane	13.87	129	35009	4.3734 ug/L		98
68)	1,2-Dibromoethane	14.13	107	24247	4.5815 ug/L		99
69)	1-Chlorohexane	14.21	91	53599	4.9176 ug/L		84
70)	Chlorobenzene	14.62	112	107618	4.8437 ug/L		95
71)	1,1,1,2-Tetrachloroethane	14.65	131	38120	4.4025 ug/L		96
72)	Ethylbenzene	14.65	106	56905	4.5138 ug/L		91
73)	m-,p-Xylene	14.75	106	137390	9.4592 ug/L		86
74)	o-Xylene	15.31	106	65650	4.4866 ug/L		85
75)	Styrene	15.35	104	111433	4.7758 ug/L		91
76)	Bromoform	15.84	173	19346	4.2121 ug/L		97
77)	Isopropylbenzene	15.73	105	182523	4.9200 ug/L		96
79)	1,1,2,2-Tetrachloroethane	15.95	83	26655	4.8730 ug/L		99
81)	1,2,3-Trichloropropane	16.13	110	8840	5.0289 ug/L		81
82)	trans-1,4-Dichloro-2-Buten	16.19	53	6584	2.4712 ug/L	#	51
83)	n-Propylbenzene	16.24	91	222196	5.2576 ug/L		96
84)	Bromobenzene	16.37	156	42665	4.8423 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	155714	4.9790 ug/L		93
86)	2-Chlorotoluene	16.52	91	148764	5.4968 ug/L		94
87)	4-Chlorotoluene	16.56	91	135679	4.8666 ug/L		94
88)	a-Methylstyrene	16.84	118	68945	4.4743 ug/L		91
89)	tert-Butylbenzene	16.89	134	29069	4.6914 ug/L		77
90)	1,2,4-Trimethylbenzene	16.95	105	161016	5.0301 ug/L		94
91)	sec-Butylbenzene	17.17	105	191273	5.0866 ug/L		94
92)	p-Isopropyltoluene	17.32	119	159232	4.9597 ug/L		93
93)	1,3-Dichlorobenzene	17.52	146	83896	4.7972 ug/L		95
94)	1,4-Dichlorobenzene	17.64	146	82462	4.7242 ug/L		86
95)	n-Butylbenzene	17.85	91	158787	5.1996 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	72524	4.7321 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	5629	4.6990 ug/L		76
98)	1,2,4-Trichlorobenzene	20.28	180	53855	4.5369 ug/L		98
99)	Hexachlorobutadiene	20.43	225	24504	4.4608 ug/L		93
100)	Naphthalene	20.65	128	79806	4.4217 ug/L		98
101)	1,2,3-Trichlorobenzene	20.96	180	44150	4.3720 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412224.D 8260WT.M Fri May 13 15:47:44 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

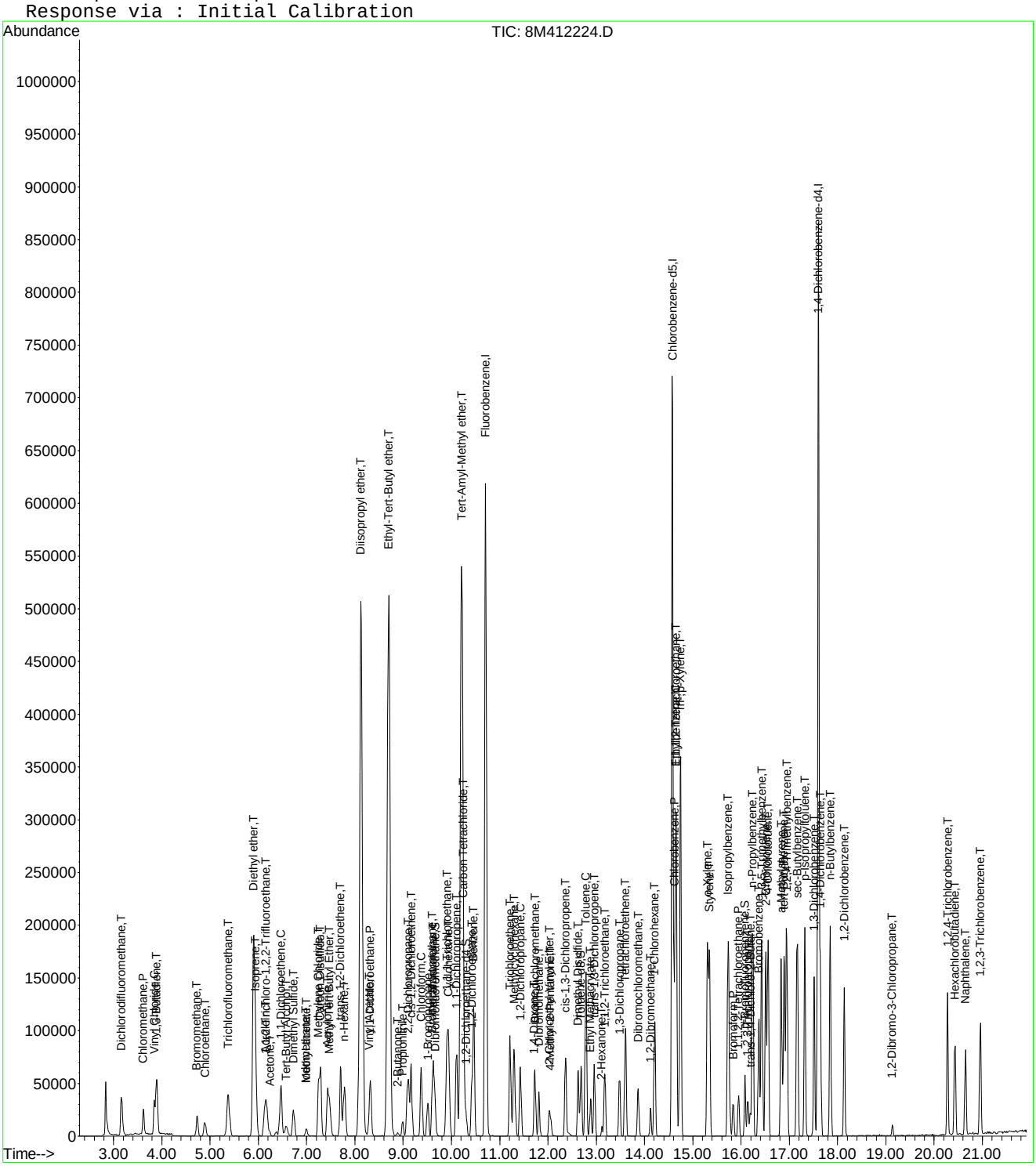

8M412224.D 8260WT.M Fri May 13 15:47:44 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.3438	13.1	100	0.00
3	P	Chloromethane	5.0000	4.5471	9.1	100	0.00
4	C	Vinyl Chloride	5.0000	4.7641	4.7	100	0.00
5	T	1,3-Butadiene	5.0000	4.2777	14.4	100	0.00
6	T	Bromomethane	5.0000	4.1880	16.2	100	-0.01
7	T	Chloroethane	5.0000	4.4813	10.4	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.6812	6.4	100	0.00
9	T	Diethyl ether	50.0000	47.5652	4.9	100	0.00
10	T	Isoprene	5.0000	4.4611	10.8	100	0.00
11	T	Acrolein	25.0000	21.7328	13.1	100	0.02
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.7244	5.5	100	0.00
13	T	Acetone	5.0000	4.1387	17.2	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.7810	4.4	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	100.4650	-0.5	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.7499	5.0	100	0.00
17	T	Iodomethane	5.0000	3.7634	24.7	100	0.00
18	T	Methyl acetate	5.0000	4.9211	1.6	100	0.00
19	T	Methylene Chloride	5.0000	4.7467	5.1	100	0.00
20	T	Carbon Disulfide	5.0000	4.7328	5.3	100	0.00
21	T	Acrylonitrile	25.0000	22.8698	8.5	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.6750	6.5	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.7415	5.2	100	0.00
24	T	n-Hexane	5.0000	4.8084	3.8	100	0.00
25	T	Diisopropyl ether	50.0000	47.2872	5.4	100	0.00
26	T	Vinyl Acetate	5.0000	4.5766	8.5	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.7058	5.9	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	47.5984	4.8	100	0.00
29	T	2-Butanone	5.0000	4.2191	15.6	100	0.00
30	T	Propionitrile	50.0000	48.4475	3.1	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.8965	2.1	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.6525	7.0	100	0.00
33	C	Chloroform	5.0000	4.6735	6.5	100	0.00
34		1-Bromopropane	5.0000	4.8774	2.5	100	0.00
35	T	Bromochloromethane	5.0000	4.6403	7.2	100	0.00
36	T	Tetrahydrofuran	50.0000	45.5400	8.9	100	-0.01
37	S	Dibromofluoromethane	2.5000	2.3953	4.2	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.7896	4.2	100	0.00
39	T	Cyclohexane	5.0000	4.6730	6.5	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.6741	6.5	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	47.6211	4.8	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.8044	3.9	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.3949	4.2	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	5.0000	4.7996	4.0	100	0.00
46	T	Benzene	5.0000	4.7588	4.8	100	0.00
47	T	Trichloroethene	5.0000	4.5733	8.5	100	0.00
48	T	Methylcyclohexane	5.0000	4.7616	4.8	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.5219	9.6	100	0.00
50	T	Bromodichloromethane	5.0000	4.7878	4.2	100	0.00
51	T	1,4-Dioxane	100.0000	77.0346	23.0	100	0.00
52	T	Dibromomethane	5.0000	4.7390	5.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.2867	14.3	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.1576	16.8	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.8662	2.7	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.1683	16.6	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.3473	6.1	100	0.00
59	C	Toluene	5.0000	4.8533	2.9	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.4883	10.2	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	5.0000	4.4786	10.4	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.5231	9.5	100	0.00
64	T	2-Hexanone	5.0000	4.0898	18.2	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.8109	3.8	100	0.00
66	T	Tetrachloroethene	5.0000	4.6028	7.9	100	0.00
67	T	Dibromochloromethane	5.0000	4.5802	8.4	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.6475	7.1	100	0.00
69	T	1-Chlorohexane	5.0000	4.7331	5.3	100	0.00
70	P	Chlorobenzene	5.0000	4.8107	3.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.3984	12.0	100	0.00
72	C	Ethylbenzene	5.0000	4.6492	7.0	100	0.00
73	T	m-,p-Xylene	10.0000	9.5700	4.3	100	0.00
74	T	o-Xylene	5.0000	4.6773	6.5	100	0.00
75	T	Styrene	5.0000	4.8405	3.2	100	0.00
76	P	Bromoform	5.0000	4.2672	14.7	100	0.00
77	T	Isopropylbenzene	5.0000	4.8951	2.1	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	4.8422	3.2	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.3565	5.7	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.2150	-4.3	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.3781	12.4	100	0.00
83	T	n-Propylbenzene	5.0000	5.1935	-3.9	100	0.00
84	T	Bromobenzene	5.0000	4.8483	3.0	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	4.9964	0.1	100	0.00
86	T	2-Chlorotoluene	5.0000	4.9803	0.4	100	0.00
87	T	4-Chlorotoluene	5.0000	5.0286	-0.6	100	0.00
88	T	a-Methylstyrene	5.0000	4.6629	6.7	100	0.00
89	T	tert-Butylbenzene	5.0000	4.7677	4.6	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.0245	-0.5	100	0.00
91	T	sec-Butylbenzene	5.0000	5.2170	-4.3	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.1150	-2.3	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	4.9511	1.0	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	4.8270	3.5	100	0.00
95	T	n-Butylbenzene	5.0000	5.1595	-3.2	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	4.8122	3.8	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	5.0942	-1.9	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.7808	4.4	100	0.00
99	T	Hexachlorobutadiene	5.0000	4.6555	6.9	100	0.00
100	T	Naphthalene	5.0000	4.7684	4.6	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.6455	7.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412224.D 8260WT.M Sat May 14 18:08:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	770027	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	531490	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	283594	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	86295	10.9569 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 43.84%#		
43) 1,2-Dichloroethane-d4	10.30	65	96239	11.3450 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 45.36%#		
58) Toluene-d8	12.68	98	294491	10.9223 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 43.68%#		
80) p-Bromofluorobenzene	16.08	95	121459	10.5490 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 42.20%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	288235	23.7135 ug/L	99
3) Chloromethane	3.62	50	155712	20.3784 ug/L	98
4) Vinyl Chloride	3.84	62	184250	20.9368 ug/L	95
5) 1,3-Butadiene	3.89	54	149348	22.7750 ug/L	96
6) Bromomethane	4.73	94	100098	25.0143 ug/L	99
7) Chloroethane	4.89	64	100876	20.9404 ug/L	91
8) Trichlorofluoromethane	5.37	101	351299	21.2512 ug/L	98
9) Diethyl ether	5.90	59	324317	80.8265 ug/L	78
10) Isoprene	5.94	67	205842	20.3622 ug/L	77
11) Acrolein	6.14	56	12049	34.8201 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	159996	20.3859 ug/L	97
13) Acetone	6.25	43	18459	25.7405 ug/L	98
14) 1,1-Dichloroethene	6.47	61	256241	20.5065 ug/L	92
15) Tert-Butyl Alcohol	6.57	59	43922	153.5712 ug/L	93
16) Dimethyl Sulfide	6.73	62	89456	20.6087 ug/L	83
17) Iodomethane	6.99	142	40622	61.0474 ug/L	93
18) Methyl acetate	7.00	43	46598	20.2171 ug/L #	85
19) Methylene Chloride	7.25	84	161897	20.1338 ug/L	52
20) Carbon Disulfide	7.30	76	538090	20.0802 ug/L	98
21) Acrylonitrile	7.43	53	46305	46.9889 ug/L	100
22) Methyl Tert Butyl Ether	7.47	73	361116	22.0137 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	234754	20.3175 ug/L	90
24) n-Hexane	7.78	57	172498	21.1165 ug/L	84
25) Diisopropyl ether	8.12	45	1447822	80.3755 ug/L #	91
26) Vinyl Acetate	8.30	43	166501	21.7017 ug/L #	88
27) 1,1-Dichloroethane	8.33	63	300321	21.3849 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	1579265	83.0733 ug/L	89
29) 2-Butanone	8.88	43	25681	23.9099 ug/L	87
30) Propionitrile	8.98	54	30953	89.5673 ug/L	94
31) 2,2-Dichloropropane	9.10	77	309575	20.8527 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	181973	20.4488 ug/L	89
33) Chloroform	9.37	83	348925	20.5535 ug/L	96
34) 1-Bromopropane	9.52	122	26723	22.7206 ug/L	96
35) Bromochloromethane	9.61	130	94952	21.3181 ug/L	65
36) Tetrahydrofuran	9.63	42	63066	70.5772 ug/L #	57
38) 1,1,1-Trichloroethane	9.91	97	335486	21.3640 ug/L	99
39) Cyclohexane	9.94	56	221040	19.9984 ug/L #	64
40) 1,1-Dichloropropene	10.11	75	248373	20.4717 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1418183	81.7883 ug/L	88
42) Carbon Tetrachloride	10.25	117	296471	21.3449 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412225.D 8260WT.M Fri May 13 16:16:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	228665	21.6403	ug/L		85
46)	Benzene	10.46	78	668449	20.3769	ug/L		86
47)	Trichloroethene	11.21	130	174107	20.7980	ug/L		96
48)	Methylcyclohexane	11.29	83	262275	21.4887	ug/L		82
49)	1,2-Dichloropropane	11.43	63	146868	21.1883	ug/L	#	72
50)	Bromodichloromethane	11.73	83	262192	21.9986	ug/L		98
51)	1,4-Dioxane	11.71	88	5351	196.3837	ug/L		76
52)	Dibromomethane	11.81	93	86951	21.0734	ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	63586	22.4600	ug/L		91
54)	4-Methyl-2-Pentanone	12.05	58	25754	25.0531	ug/L	#	73
55)	cis-1,3-Dichloropropene	12.36	75	265439	21.9841	ug/L		99
56)	Dimethyl Disulfide	12.63	79	134192	23.9412	ug/L		100
59)	Toluene	12.78	91	700473	20.1722	ug/L		99
60)	Ethyl Methacrylate	12.88	69	133361	23.2046	ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	238585	23.2548	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	107901	21.0216	ug/L		99
64)	2-Hexanone	13.11	58	22561	25.2093	ug/L	#	85
65)	1,3-Dichloropropane	13.49	76	198804	22.2491	ug/L		74
66)	Tetrachloroethene	13.60	164	141791	20.0055	ug/L		94
67)	Dibromochloromethane	13.87	129	158465	22.0695	ug/L		99
68)	1,2-Dibromoethane	14.13	107	110085	22.3366	ug/L		100
69)	1-Chlorohexane	14.21	91	229753	20.3591	ug/L		83
70)	Chlorobenzene	14.62	112	467492	20.4613	ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.65	131	183079	22.2095	ug/L		96
72)	Ethylbenzene	14.65	106	249016	20.2289	ug/L		90
73)	m-,p-Xylene	14.75	106	606381	41.1308	ug/L		88
74)	o-Xylene	15.30	106	294106	21.2106	ug/L		90
75)	Styrene	15.35	104	492781	21.8207	ug/L		89
76)	Bromoform	15.83	173	95911	23.8070	ug/L		99
77)	Isopropylbenzene	15.73	105	806678	20.7280	ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	123253	22.7779	ug/L		95
81)	1,2,3-Trichloropropane	16.14	110	36712	22.1354	ug/L		94
82)	trans-1,4-Dichloro-2-Buten	16.18	53	33702	27.6513	ug/L	#	56
83)	n-Propylbenzene	16.24	91	962196	20.3511	ug/L		97
84)	Bromobenzene	16.37	156	190566	21.2033	ug/L		94
85)	1,3,5-Trimethylbenzene	16.43	105	692633	20.9615	ug/L		94
86)	2-Chlorotoluene	16.51	91	649077	19.9155	ug/L		96
87)	4-Chlorotoluene	16.56	91	595446	20.3225	ug/L		95
88)	a-Methylstyrene	16.83	118	318960	22.3680	ug/L		92
89)	tert-Butylbenzene	16.90	134	129440	20.4705	ug/L		83
90)	1,2,4-Trimethylbenzene	16.95	105	707749	20.4783	ug/L		94
91)	sec-Butylbenzene	17.17	105	818359	20.1802	ug/L		97
92)	p-Isopropyltoluene	17.32	119	677859	19.7492	ug/L		96
93)	1,3-Dichlorobenzene	17.52	146	364065	20.5126	ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	363066	19.9874	ug/L		92
95)	n-Butylbenzene	17.85	91	681055	20.0187	ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	318612	19.9358	ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	23070	21.6419	ug/L		93
98)	1,2,4-Trichlorobenzene	20.28	180	242455	20.8863	ug/L		98
99)	Hexachlorobutadiene	20.43	225	110384	20.2523	ug/L		96
100)	Naphthalene	20.65	128	369849	21.4526	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	198876	19.8356	ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration

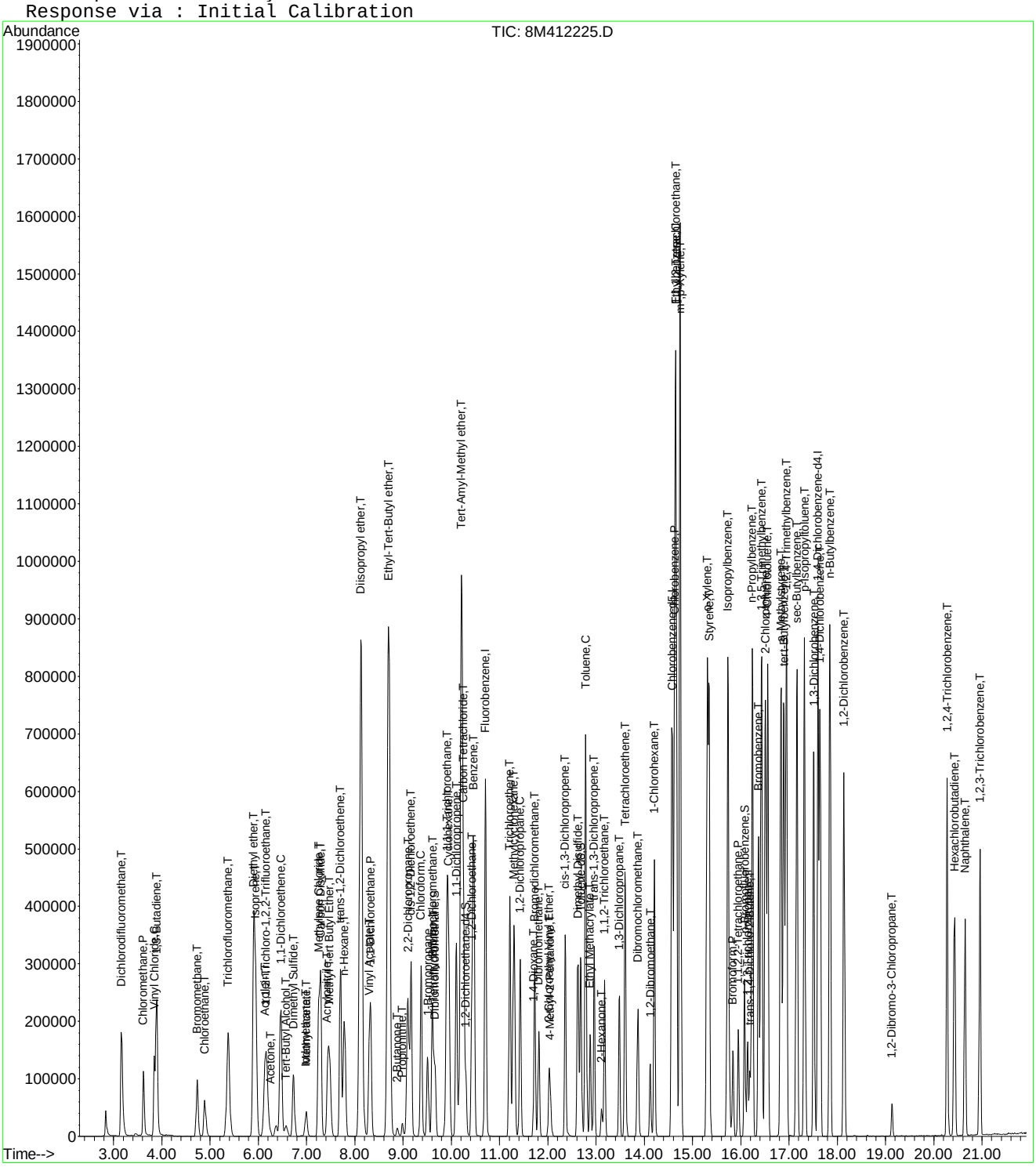

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45:30 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	778260	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	539116	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	288225	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	211053	26.5139 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.04%		
43) 1,2-Dichloroethane-d4	10.31	65	229348	26.7504 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.00%		
58) Toluene-d8	12.68	98	718491	26.2709 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.08%		
80) p-Bromofluorobenzene	16.07	95	292755	25.0180 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.08%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	682745	55.5761 ug/L	100
3) Chloromethane	3.62	50	372858	48.2806 ug/L	98
4) Vinyl Chloride	3.85	62	453905	51.0328 ug/L	96
5) 1,3-Butadiene	3.88	54	390501	58.9199 ug/L	99
6) Bromomethane	4.74	94	260493	64.4080 ug/L	97
7) Chloroethane	4.89	64	244336	50.1840 ug/L	91
8) Trichlorofluoromethane	5.38	101	837676	50.1376 ug/L	99
9) Diethyl ether	5.90	59	389327	96.0019 ug/L	79
10) Isoprene	5.94	67	498060	48.7477 ug/L	76
11) Acrolein	6.13	56	17644	50.4496 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	387643	48.8691 ug/L	97
13) Acetone	6.25	43	45901	63.3305 ug/L	97
14) 1,1-Dichloroethene	6.46	61	619744	49.0724 ug/L	94
15) Tert-Butyl Alcohol	6.58	59	53656	185.6211 ug/L	91
16) Dimethyl Sulfide	6.73	62	221107	50.3993 ug/L	82
17) Iodomethane	6.98	142	157872	234.7428 ug/L	94
18) Methyl acetate	7.00	43	114759	49.2629 ug/L #	81
19) Methylene Chloride	7.25	84	389653	47.9453 ug/L	52
20) Carbon Disulfide	7.29	76	1269941	46.8897 ug/L	99
21) Acrylonitrile	7.43	53	59882	60.1236 ug/L	97
22) Methyl Tert Butyl Ether	7.46	73	901668	54.3843 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	571507	48.9396 ug/L	93
24) n-Hexane	7.79	57	419656	50.8290 ug/L	83
25) Diisopropyl ether	8.13	45	1781012	97.8265 ug/L #	90
26) Vinyl Acetate	8.29	43	428708	55.2866 ug/L #	89
27) 1,1-Dichloroethane	8.32	63	722574	50.9078 ug/L	96
28) Ethyl-Tert-Butyl ether	8.71	59	1955100	101.7552 ug/L	89
29) 2-Butanone	8.88	43	66579	61.3316 ug/L #	82
30) Propionitrile	8.98	54	38235	109.4684 ug/L	95
31) 2,2-Dichloropropane	9.10	77	768496	51.2175 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	439590	48.8754 ug/L	91
33) Chloroform	9.38	83	844564	49.2230 ug/L	97
34) 1-Bromopropane	9.51	122	63442	53.3693 ug/L	99
35) Bromochloromethane	9.60	130	230119	51.1185 ug/L	66
36) Tetrahydrofuran	9.64	42	79437	87.9575 ug/L #	62
38) 1,1,1-Trichloroethane	9.90	97	817606	51.5150 ug/L	99
39) Cyclohexane	9.93	56	535882	47.9707 ug/L #	65
40) 1,1-Dichloropropene	10.10	75	615439	50.1899 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1769381	100.9628 ug/L	88
42) Carbon Tetrachloride	10.24	117	724058	51.5782 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412226.D 8260WT.M Fri May 13 16:45:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45:30 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	561107	52.5401	ug/L		85
46)	Benzene	10.46	78	1607407	48.4816	ug/L		86
47)	Trichloroethene	11.22	130	424998	50.2312	ug/L		96
48)	Methylcyclohexane	11.30	83	635339	51.5040	ug/L		83
49)	1,2-Dichloropropane	11.42	63	351908	50.2320	ug/L	#	71
50)	Bromodichloromethane	11.72	83	654943	54.3701	ug/L		97
51)	1,4-Dioxane	11.71	88	7573	274.9918	ug/L		73
52)	Dibromomethane	11.82	93	209167	50.1574	ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	162319	56.7281	ug/L		93
54)	4-Methyl-2-Pentanone	12.05	58	64928	62.4928	ug/L		80
55)	cis-1,3-Dichloropropene	12.36	75	666861	54.6463	ug/L		98
56)	Dimethyl Disulfide	12.62	79	343446	60.6260	ug/L		96
59)	Toluene	12.79	91	1676069	47.5846	ug/L		100
60)	Ethyl Methacrylate	12.88	69	338996	58.1503	ug/L		69
62)	trans-1,3-Dichloropropene	12.96	75	594749	57.1499	ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	268432	51.5570	ug/L		98
64)	2-Hexanone	13.12	58	56859	62.6347	ug/L	#	83
65)	1,3-Dichloropropane	13.48	76	489226	53.9770	ug/L		75
66)	Tetrachloroethene	13.60	164	350332	48.7296	ug/L		95
67)	Dibromochloromethane	13.86	129	401149	55.0780	ug/L		100
68)	1,2-Dibromoethane	14.12	107	273580	54.7252	ug/L		99
69)	1-Chlorohexane	14.21	91	560883	48.9984	ug/L		82
70)	Chlorobenzene	14.63	112	1117812	48.2326	ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	446892	53.4462	ug/L		99
72)	Ethylbenzene	14.66	106	603074	48.2980	ug/L		91
73)	m-,p-Xylene	14.74	106	1443780	96.5463	ug/L		90
74)	o-Xylene	15.31	106	709244	50.4265	ug/L		90
75)	Styrene	15.34	104	1212099	52.9133	ug/L		91
76)	Bromoform	15.84	173	238354	58.3272	ug/L		100
77)	Isopropylbenzene	15.73	105	1919993	48.6372	ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	294266	53.5083	ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	89279	52.9656	ug/L		93
82)	trans-1,4-Dichloro-2-Buten	16.19	53	86829	70.0956	ug/L	#	53
83)	n-Propylbenzene	16.24	91	2278994	47.4277	ug/L		98
84)	Bromobenzene	16.37	156	459959	50.3549	ug/L		93
85)	1,3,5-Trimethylbenzene	16.43	105	1661486	49.4745	ug/L		95
86)	2-Chlorotoluene	16.51	91	1611031	48.6367	ug/L		97
87)	4-Chlorotoluene	16.56	91	1341051	45.0344	ug/L		95
88)	a-Methylstyrene	16.83	118	772611	53.3111	ug/L		90
89)	tert-Butylbenzene	16.89	134	307503	47.8493	ug/L		81
90)	1,2,4-Trimethylbenzene	16.94	105	1679809	47.8234	ug/L		95
91)	sec-Butylbenzene	17.16	105	1925411	46.7166	ug/L		97
92)	p-Isopropyltoluene	17.32	119	1621383	46.4795	ug/L		95
93)	1,3-Dichlorobenzene	17.51	146	882656	48.9327	ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	871210	47.1909	ug/L		92
95)	n-Butylbenzene	17.85	91	1608832	46.5296	ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	768548	47.3159	ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	59586	54.9992	ug/L		86
98)	1,2,4-Trichlorobenzene	20.28	180	583880	49.4902	ug/L		100
99)	Hexachlorobutadiene	20.44	225	264699	47.7844	ug/L		98
100)	Naphthalene	20.65	128	894629	51.0579	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	475246	46.6387	ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412226.D 8260WT.M Fri May 13 16:45:33 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration

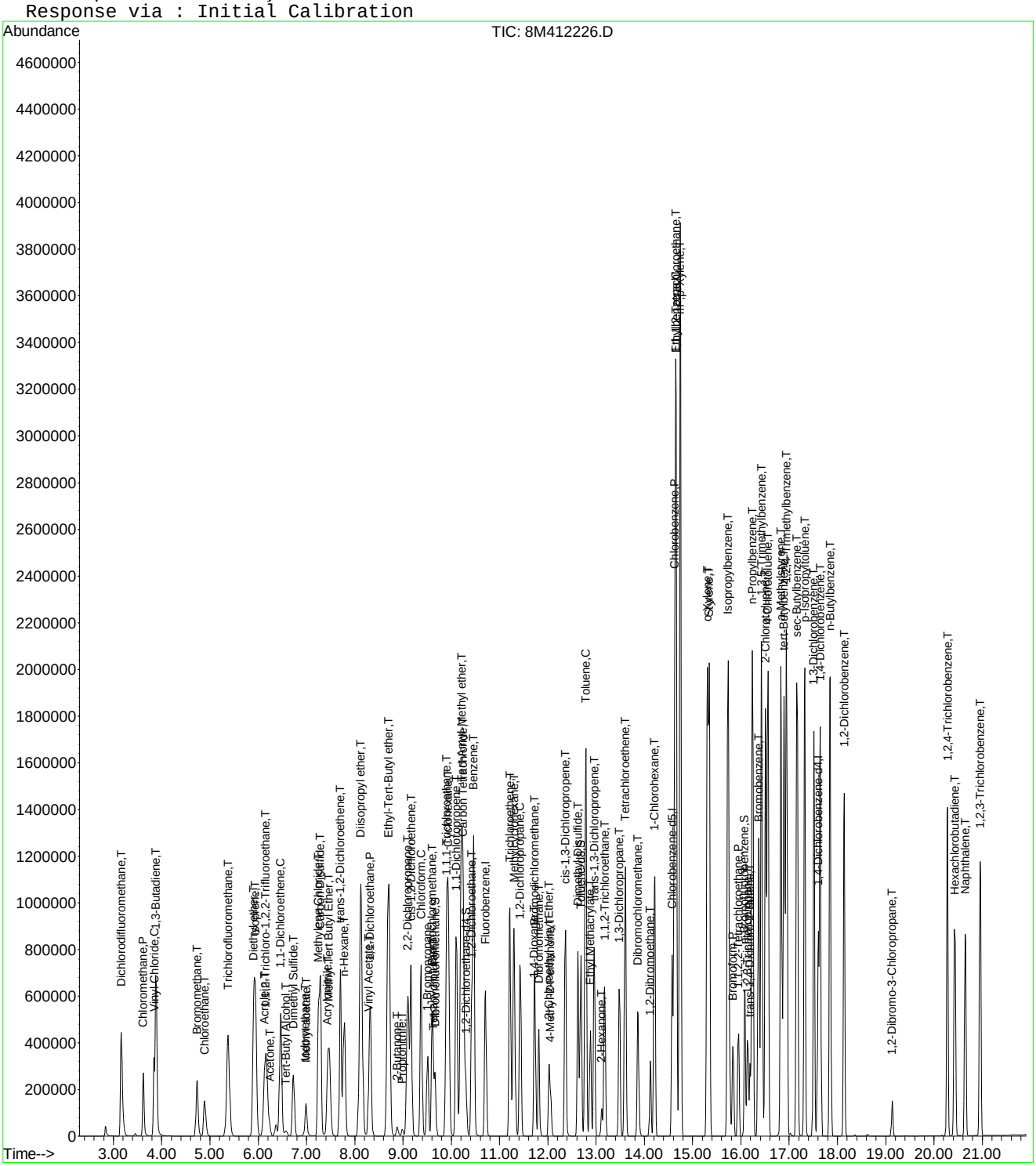

8M412226.D 8260WT.M Fri May 13 16:45:33 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	809533	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	559075	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	296193	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	460283	53.9056 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 215.64%#		
43) 1,2-Dichloroethane-d4	10.30	65	488116	52.5821 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 210.32%#		
58) Toluene-d8	12.68	98	1540572	52.8075 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 211.24%#		
80) p-Bromofluorobenzene	16.08	95	623735	51.1573 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 204.64%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	1463283	109.1068 ug/L	100
3) Chloromethane	3.62	50	778702	97.2380 ug/L	98
4) Vinyl Chloride	3.84	62	968312	103.4979 ug/L	95
5) 1,3-Butadiene	3.88	54	896569	120.4972 ug/L	95
6) Bromomethane	4.73	94	605228	129.8677 ug/L	99
7) Chloroethane	4.89	64	528153	103.4126 ug/L	90
8) Trichlorofluoromethane	5.37	101	1782726	101.4754 ug/L	99
9) Diethyl ether	5.90	59	828091	197.4770 ug/L	79
10) Isoprene	5.94	67	1080684	101.8037 ug/L	78
11) Acrolein	6.14	56	38655	109.5572 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	833546	101.0906 ug/L	97
13) Acetone	6.24	43	97515	109.1944 ug/L	100
14) 1,1-Dichloroethene	6.46	61	1323999	100.6729 ug/L	93
15) Tert-Butyl Alcohol	6.57	59	114220	387.5328 ug/L	91
16) Dimethyl Sulfide	6.73	62	489571	106.5996 ug/L	82
17) Iodomethane	6.99	142	416890	244.5557 ug/L	97
18) Methyl acetate	7.00	43	252444	104.3161 ug/L #	81
19) Methylene Chloride	7.24	84	827241	98.5346 ug/L	53
20) Carbon Disulfide	7.29	76	2766110	99.3432 ug/L	100
21) Acrylonitrile	7.43	53	126153	113.2272 ug/L	98
22) Methyl Tert Butyl Ether	7.46	73	1894494	105.8643 ug/L	87
23) trans-1,2-Dichloroethene	7.70	61	1203701	99.1822 ug/L	93
24) n-Hexane	7.78	57	926226	105.3097 ug/L	84
25) Diisopropyl ether	8.12	45	3699807	196.0386 ug/L #	90
26) Vinyl Acetate	8.29	43	860820	101.8643 ug/L #	88
27) 1,1-Dichloroethane	8.32	63	1521237	101.5567 ug/L	96
28) Ethyl-Tert-Butyl ether	8.70	59	4005676	198.2271 ug/L	89
29) 2-Butanone	8.88	43	145126	112.6698 ug/L #	81
30) Propionitrile	8.98	54	83038	219.1648 ug/L	97
31) 2,2-Dichloropropane	9.11	77	1610615	102.0557 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	935490	99.9944 ug/L	89
33) Chloroform	9.37	83	1766988	98.8341 ug/L	98
34) 1-Bromopropane	9.51	122	139657	108.5299 ug/L	100
35) Bromochloromethane	9.61	130	488678	102.8480 ug/L	66
36) Tetrahydrofuran	9.63	42	167812	187.5699 ug/L #	61
38) 1,1,1-Trichloroethane	9.91	97	1724504	102.7713 ug/L	100
39) Cyclohexane	9.94	56	1185537	102.8628 ug/L #	66
40) 1,1-Dichloropropene	10.11	75	1293224	100.8377 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	3634806	198.1264 ug/L	88
42) Carbon Tetrachloride	10.25	117	1534696	103.3979 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412227.D 8260WT.M Fri May 13 17:14:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	1177876	103.7352	ug/L		85
46)	Benzene	10.46	78	3298928	95.8405	ug/L		87
47)	Trichloroethene	11.21	130	903490	101.9036	ug/L		97
48)	Methylcyclohexane	11.30	83	1389528	104.6454	ug/L		83
49)	1,2-Dichloropropane	11.43	63	755128	102.5297	ug/L		73
50)	Bromodichloromethane	11.73	83	1351612	104.6036	ug/L		99
51)	1,4-Dioxane	11.72	88	16303	473.9624	ug/L		68
52)	Dibromomethane	11.81	93	445130	101.6543	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.02	63	333977	105.4228	ug/L		92
54)	4-Methyl-2-Pentanone	12.05	58	138980	110.1494	ug/L	#	77
55)	cis-1,3-Dichloropropene	12.36	75	1387475	105.9136	ug/L		100
56)	Dimethyl Disulfide	12.62	79	745504	111.3169	ug/L		97
59)	Toluene	12.78	91	3455614	95.2346	ug/L		99
60)	Ethyl Methacrylate	12.88	69	731009	113.5760	ug/L		70
62)	trans-1,3-Dichloropropene	12.96	75	1236182	107.9445	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	564076	103.0604	ug/L		99
64)	2-Hexanone	13.12	58	126268	114.5366	ug/L	#	79
65)	1,3-Dichloropropane	13.48	76	1021082	105.2672	ug/L		74
66)	Tetrachloroethene	13.60	164	752835	101.4023	ug/L		95
67)	Dibromochloromethane	13.87	129	856499	109.6525	ug/L		100
68)	1,2-Dibromoethane	14.12	107	577701	107.6426	ug/L		98
69)	1-Chlorohexane	14.21	91	1222720	103.0385	ug/L		82
70)	Chlorobenzene	14.62	112	2332247	97.2408	ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	947925	106.1463	ug/L		99
72)	Ethylbenzene	14.66	106	1275519	98.8771	ug/L		97
73)	m-,p-Xylene	14.75	106	3009424	194.2602	ug/L		98
74)	o-Xylene	15.31	106	1490638	100.8068	ug/L		93
75)	Styrene	15.35	104	2503721	102.8373	ug/L		88
76)	Bromoform	15.83	173	517827	114.0520	ug/L		100
77)	Isopropylbenzene	15.73	105	3913141	95.4433	ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	624965	106.8610	ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	192087	107.3268	ug/L		97
82)	trans-1,4-Dichloro-2-Buten	16.18	53	189214	128.4818	ug/L	#	59
83)	n-Propylbenzene	16.24	91	4599057	93.6644	ug/L		100
84)	Bromobenzene	16.37	156	968011	102.1426	ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	3401719	97.9556	ug/L		97
86)	2-Chlorotoluene	16.52	91	3177047	93.8267	ug/L		98
87)	4-Chlorotoluene	16.56	91	2899171	96.0712	ug/L		96
88)	a-Methylstyrene	16.84	118	1639166	103.6811	ug/L		90
89)	tert-Butylbenzene	16.90	134	654025	99.4199	ug/L		85
90)	1,2,4-Trimethylbenzene	16.95	105	3479295	96.7054	ug/L		97
91)	sec-Butylbenzene	17.17	105	3947832	94.2785	ug/L		98
92)	p-Isopropyltoluene	17.32	119	3328450	94.4148	ug/L		97
93)	1,3-Dichlorobenzene	17.52	146	1834740	98.9074	ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	1818309	96.6271	ug/L		92
95)	n-Butylbenzene	17.85	91	3308330	94.4002	ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	1606254	97.0179	ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	125368	107.7020	ug/L		87
98)	1,2,4-Trichlorobenzene	20.28	180	1227926	100.7076	ug/L		99
99)	Hexachlorobutadiene	20.43	225	569213	100.5231	ug/L		97
100)	Naphthalene	20.65	128	1852486	101.2968	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	1021163	98.5794	ug/L		100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration

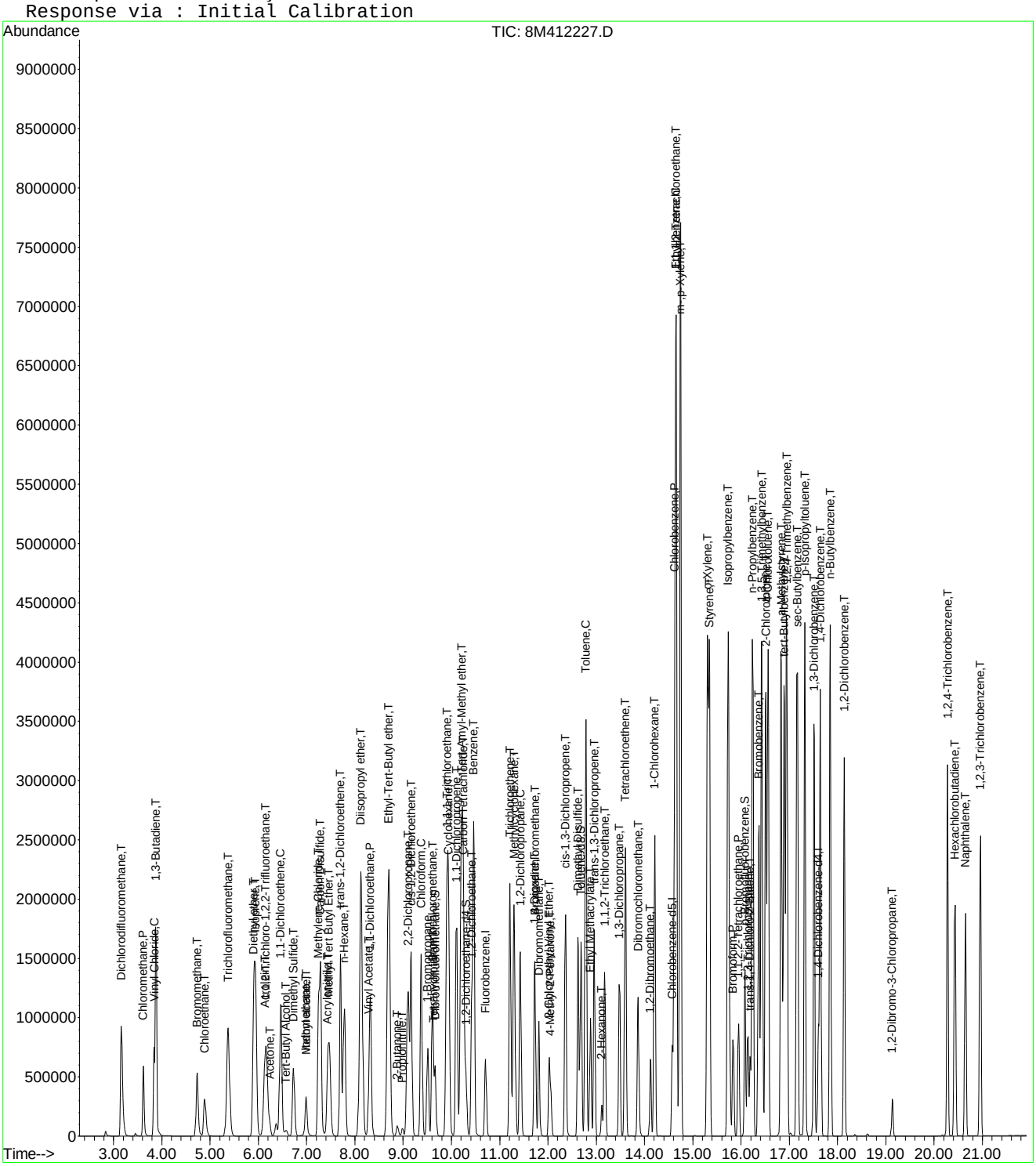

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	828540	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	578848	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	301401	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	898145	101.4517 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 405.80%#		
43) 1,2-Dichloroethane-d4	10.30	65	939848	98.0779 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 392.32%#		
58) Toluene-d8	12.68	98	2984162	97.8805 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 391.52%#		
80) p-Bromofluorobenzene	16.08	95	1242720	99.7023 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 398.80%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	2830517	203.5621 ug/L	98
3) Chloromethane	3.62	50	1586058	194.4056 ug/L	97
4) Vinyl Chloride	3.83	62	1935009	201.0738 ug/L	94
5) 1,3-Butadiene	3.88	54	1684964	212.5477 ug/L	94
6) Bromomethane	4.72	94	1358068	271.2231 ug/L	99
7) Chloroethane	4.89	64	1084803	206.5255 ug/L	90
8) Trichlorofluoromethane	5.37	101	3516760	195.1756 ug/L	99
10) Isoprene	5.94	67	2136665	196.1573 ug/L	78
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1662142	196.5993 ug/L	95
13) Acetone	6.24	43	187748	200.7963 ug/L	97
14) 1,1-Dichloroethene	6.46	61	2649821	196.6732 ug/L	92
15) Tert-Butyl Alcohol	6.58	59	6024	20.0950 ug/L #	87
16) Dimethyl Sulfide	6.73	62	976862	205.8822 ug/L	82
17) Iodomethane	6.99	142	896947	398.7987 ug/L	100
18) Methyl acetate	7.00	43	504293	201.4324 ug/L #	81
19) Methylene Chloride	7.25	84	1684780	196.5546 ug/L	52
20) Carbon Disulfide	7.29	76	5386210	189.2120 ug/L	99
21) Acrylonitrile	7.45	53	30354	26.0447 ug/L #	32
22) Methyl Tert Butyl Ether	7.46	73	3711011	200.6529 ug/L	87
23) trans-1,2-Dichloroethene	7.70	61	2410498	194.2902 ug/L	92
24) n-Hexane	7.78	57	1821777	199.7288 ug/L	84
26) Vinyl Acetate	8.29	43	1796217	206.9060 ug/L #	88
27) 1,1-Dichloroethane	8.32	63	3042055	197.9863 ug/L	95
29) 2-Butanone	8.88	43	271767	199.8193 ug/L #	77
30) Propionitrile	8.90	54	208	0.5280 ug/L #	1
31) 2,2-Dichloropropane	9.11	77	3202633	197.6970 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	1875631	195.8883 ug/L	89
33) Chloroform	9.37	83	3506648	191.9199 ug/L	99
34) 1-Bromopropane	9.51	122	286158	214.2313 ug/L	99
35) Bromochloromethane	9.60	130	980373	200.7807 ug/L	66
36) Tetrahydrofuran	9.62	42	2381	2.6275 ug/L	87
38) 1,1,1-Trichloroethane	9.91	97	3410306	197.7909 ug/L	99
39) Cyclohexane	9.94	56	2357393	198.8974 ug/L #	66
40) 1,1-Dichloropropene	10.10	75	2601175	197.8946 ug/L	96
42) Carbon Tetrachloride	10.25	117	3062767	200.6417 ug/L	99
45) 1,2-Dichloroethane	10.42	62	2313662	198.0324 ug/L	85
46) Benzene	10.46	78	6379817	182.1771 ug/L	89
47) Trichloroethene	11.21	130	1810459	198.9741 ug/L	97
48) Methylcyclohexane	11.30	83	2755373	200.4193 ug/L	83
49) 1,2-Dichloropropane	11.43	63	1528407	202.0331 ug/L	74

(#) = qualifier out of range (m) = manual integration
8M412228.D 8260WT.M Fri May 13 17:43:34 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
50)	Bromodichloromethane	11.73	83	2716764	204.0895 ug/L		99
51)	1,4-Dioxane	11.73	88	3865	104.9352 ug/L	#	18
52)	Dibromomethane	11.81	93	898971	200.1154 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.02	63	631656	192.7236 ug/L		90
54)	4-Methyl-2-Pentanone	12.05	58	262702	198.3957 ug/L	#	75
55)	cis-1,3-Dichloropropene	12.36	75	2784162	205.9153 ug/L		99
56)	Dimethyl Disulfide	12.62	79	1518705	215.4711 ug/L		95
59)	Toluene	12.78	91	6564353	175.9274 ug/L		96
60)	Ethyl Methacrylate	12.88	69	1429837	209.8161 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	2468609	205.4771 ug/L		98
63)	1,1,2-Trichloroethane	13.18	97	1124672	197.6019 ug/L		100
64)	2-Hexanone	13.12	58	237678	200.9290 ug/L	#	81
65)	1,3-Dichloropropane	13.48	76	2023247	199.9545 ug/L		76
66)	Tetrachloroethene	13.60	164	1546618	200.8018 ug/L		97
67)	Dibromochloromethane	13.87	129	1726523	210.5823 ug/L		100
68)	1,2-Dibromoethane	14.12	107	1163160	207.0667 ug/L		99
69)	1-Chlorohexane	14.21	91	2414147	195.6413 ug/L		83
70)	Chlorobenzene	14.62	112	4641169	187.6386 ug/L		94
71)	1,1,1,2-Tetrachloroethane	14.66	131	1929251	206.8372 ug/L		99
72)	Ethylbenzene	14.66	106	2611321	195.8267 ug/L		88
73)	m-,p-Xylene	14.75	106	5876234	367.8657 ug/L		83
74)	o-Xylene	15.31	106	3012318	196.4899 ug/L		98
75)	Styrene	15.35	104	4913204	194.1235 ug/L		86
76)	Bromoform	15.83	173	1052629	218.7989 ug/L		100
77)	Isopropylbenzene	15.73	105	7284624	172.7305 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	1237171	205.8673 ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	386738	209.7906 ug/L	#	54
82)	trans-1,4-Dichloro-2-Buten	16.19	53	382467	243.6526 ug/L		76
83)	n-Propylbenzene	16.24	91	8244387	166.5110 ug/L		93
84)	Bromobenzene	16.37	156	1935166	200.1305 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	6482975	183.9948 ug/L		98
86)	2-Chlorotoluene	16.52	91	6108308	178.8549 ug/L		99
87)	4-Chlorotoluene	16.56	91	5513221	180.5508 ug/L		99
88)	a-Methylstyrene	16.84	118	3255254	200.4995 ug/L		89
89)	tert-Butylbenzene	16.90	134	1351569	202.1005 ug/L		92
90)	1,2,4-Trimethylbenzene	16.95	105	6531416	179.2445 ug/L		97
91)	sec-Butylbenzene	17.17	105	7342730	173.9814 ug/L		97
92)	p-Isopropyltoluene	17.32	119	6352010	178.7315 ug/L		99
93)	1,3-Dichlorobenzene	17.52	146	3640547	193.1654 ug/L		90
94)	1,4-Dichlorobenzene	17.64	146	3593548	188.4603 ug/L		91
95)	n-Butylbenzene	17.85	91	6198060	175.4375 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	3171699	188.9651 ug/L		89
97)	1,2-Dibromo-3-Chloropropan	19.13	75	249646	207.5645 ug/L		88
98)	1,2,4-Trichlorobenzene	20.28	180	2480626	199.7296 ug/L		99
99)	Hexachlorobutadiene	20.43	225	1169411	202.7981 ug/L		98
100)	Naphthalene	20.65	128	3580198	192.0323 ug/L		97
101)	1,2,3-Trichlorobenzene	20.96	180	2040570	193.9298 ug/L		100

(#) = qualifier out of range (m) = manual integration
8M412228.D 8260WT.M Fri May 13 17:43:35 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration

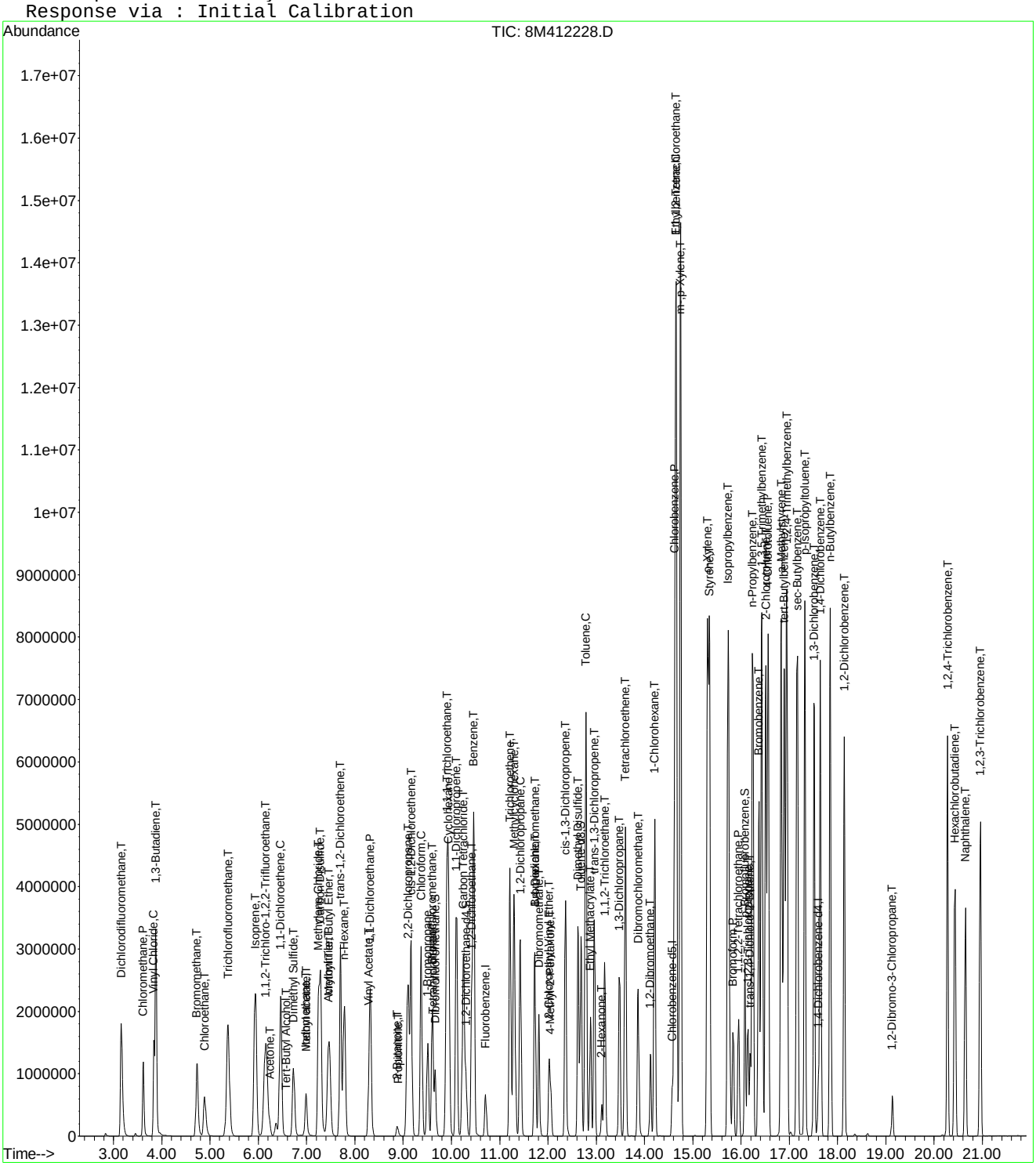

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	855409	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	599314	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	305726	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	1411837	154.4674 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 617.88%#		
43) 1,2-Dichloroethane-d4	10.30	65	1466019	148.1811 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 592.72%#		
58) Toluene-d8	12.69	98	4594713	145.5601 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 582.24%#		
80) p-Bromofluorobenzene	16.08	95	1918996	151.7813 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 607.12%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	4191932	292.0014 ug/L	97
3) Chloromethane	3.62	50	2474035	293.7212 ug/L	97
4) Vinyl Chloride	3.83	62	2956347	297.5552 ug/L	94
5) 1,3-Butadiene	3.87	54	2605506	318.3447 ug/L	94
6) Bromomethane	4.72	94	2177550	421.2239 ug/L	98
7) Chloroethane	4.89	64	1688005	311.2693 ug/L	90
8) Trichlorofluoromethane	5.37	101	5387662	289.6161 ug/L	99
9) Diethyl ether	5.90	59	1306432	295.4610 ug/L	80
10) Isoprene	5.93	67	3377164	300.3032 ug/L	78
11) Acrolein	6.14	56	70572	185.7401 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	2563878	293.7317 ug/L	94
13) Acetone	6.24	43	283185	293.3529 ug/L	90
14) 1,1-Dichloroethene	6.46	61	4031745	289.8421 ug/L	91
15) Tert-Butyl Alcohol	6.58	59	181796	587.3907 ug/L	90
16) Dimethyl Sulfide	6.73	62	1553493	317.1280 ug/L	81
17) Iodomethane	6.99	142	1347307	580.2206 ug/L	98
18) Methyl acetate	7.00	43	800046	309.5287 ug/L #	80
19) Methylene Chloride	7.24	84	2587731	292.4144 ug/L	52
20) Carbon Disulfide	7.29	76	8228181	279.9683 ug/L	98
21) Acrylonitrile	7.43	53	228227	189.6753 ug/L	94
22) Methyl Tert Butyl Ether	7.46	73	5605924	293.5892 ug/L	88
23) trans-1,2-Dichloroethene	7.70	61	3678699	287.1957 ug/L	92
24) n-Hexane	7.78	57	2863434	304.0691 ug/L	86
25) Diisopropyl ether	8.12	45	5819647	292.7898 ug/L #	89
26) Vinyl Acetate	8.30	43	2819503	314.5767 ug/L #	87
27) 1,1-Dichloroethane	8.32	63	4586531	289.1293 ug/L	94
28) Ethyl-Tert-Butyl ether	8.70	59	6190206	290.3321 ug/L	89
29) 2-Butanone	8.88	43	439359	312.8959 ug/L #	76
30) Propionitrile	8.99	54	133197	327.4673 ug/L	95
31) 2,2-Dichloropropane	9.10	77	4821388	288.2735 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	2847005	287.9976 ug/L	89
33) Chloroform	9.37	83	5197860	275.5447 ug/L	100
34) 1-Bromopropane	9.51	122	450012	326.3179 ug/L	100
35) Bromochloromethane	9.61	130	1490221	295.6112 ug/L	66
36) Tetrahydrofuran	9.63	42	271736	290.4491 ug/L #	62
38) 1,1,1-Trichloroethane	9.91	97	5126354	287.9792 ug/L	98
39) Cyclohexane	9.94	56	3733392	305.0987 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	3923871	289.1471 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	5639573	291.3713 ug/L	88
42) Carbon Tetrachloride	10.25	117	4598150	291.7629 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412229.D 8260WT.M Fri May 13 18:12:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	3468738	287.5726	ug/L		86
46)	Benzene	10.46	78	9065861	250.7462	ug/L		93
47)	Trichloroethene	11.21	130	2772282	295.1106	ug/L		97
48)	Methylcyclohexane	11.30	83	4327357	304.8748	ug/L		84
49)	1,2-Dichloropropane	11.43	63	2350729	300.9718	ug/L		74
50)	Bromodichloromethane	11.73	83	4051493	294.7973	ug/L		99
51)	1,4-Dioxane	11.72	88	26614	699.8767	ug/L		67
52)	Dibromomethane	11.81	93	1369945	295.3776	ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.03	63	1006317	297.3917	ug/L		90
54)	4-Methyl-2-Pentanone	12.06	58	424684	310.6522	ug/L	#	76
55)	cis-1,3-Dichloropropene	12.36	75	4156310	297.7431	ug/L		97
56)	Dimethyl Disulfide	12.63	79	2359825	324.2911	ug/L		94
59)	Toluene	12.78	91	9135213	236.4669	ug/L		90
60)	Ethyl Methacrylate	12.88	69	2228037	315.7801	ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	3700845	297.5240	ug/L		96
63)	1,1,2-Trichloroethane	13.18	97	1730199	293.6104	ug/L		100
64)	2-Hexanone	13.11	58	381967	311.8816	ug/L	#	78
65)	1,3-Dichloropropane	13.49	76	3080177	294.0141	ug/L		76
66)	Tetrachloroethene	13.60	164	2374435	297.7522	ug/L		96
67)	Dibromochloromethane	13.87	129	2638145	310.7838	ug/L		100
68)	1,2-Dibromoethane	14.13	107	1778561	305.8085	ug/L		99
69)	1-Chlorohexane	14.21	91	3712592	290.5924	ug/L		84
70)	Chlorobenzene	14.63	112	6754240	263.7433	ug/L		90
71)	1,1,1,2-Tetrachloroethane	14.65	131	2967650	307.3001	ug/L		100
72)	Ethylbenzene	14.65	106	4014412	290.7661	ug/L		70
73)	m-,p-Xylene	14.75	106	8357822	505.3514	ug/L		70
74)	o-Xylene	15.31	106	4530840	285.4488	ug/L		88
75)	Styrene	15.35	104	7050702	269.0641	ug/L		82
76)	Bromoform	15.84	173	1602587	321.7373	ug/L		99
77)	Isopropylbenzene	15.73	105	9900817	226.7477	ug/L		90
79)	1,1,2,2-Tetrachloroethane	15.95	83	1885953	309.3861	ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	581198	310.8176	ug/L		61
82)	trans-1,4-Dichloro-2-Buten	16.18	53	589705	370.3601	ug/L		82
83)	n-Propylbenzene	16.25	91	10768378	214.4110	ug/L		86
84)	Bromobenzene	16.37	156	2947671	300.5290	ug/L		99
85)	1,3,5-Trimethylbenzene	16.43	105	8890651	248.7580	ug/L		92
86)	2-Chlorotoluene	16.51	91	7868844	227.1449	ug/L		92
87)	4-Chlorotoluene	16.57	91	7782731	251.2687	ug/L		93
88)	a-Methylstyrene	16.84	118	4955768	300.9205	ug/L		86
89)	tert-Butylbenzene	16.90	134	2046401	301.6701	ug/L		95
90)	1,2,4-Trimethylbenzene	16.95	105	8903769	240.8932	ug/L		89
91)	sec-Butylbenzene	17.17	105	9867862	230.5051	ug/L		91
92)	p-Isopropyltoluene	17.32	119	8738927	242.4155	ug/L		94
93)	1,3-Dichlorobenzene	17.52	146	5319954	278.2806	ug/L		87
94)	1,4-Dichlorobenzene	17.64	146	5248511	271.3593	ug/L		88
95)	n-Butylbenzene	17.85	91	8408157	234.6279	ug/L		92
96)	1,2-Dichlorobenzene	18.14	146	4717385	277.0787	ug/L		87
97)	1,2-Dibromo-3-Chloropropan	19.13	75	377070	309.0741	ug/L		91
98)	1,2,4-Trichlorobenzene	20.28	180	3677657	291.9206	ug/L		98
99)	Hexachlorobutadiene	20.43	225	1780695	304.4378	ug/L		96
100)	Naphthalene	20.65	128	5216751	275.8542	ug/L		95
101)	1,2,3-Trichlorobenzene	20.96	180	3064908	287.1593	ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration

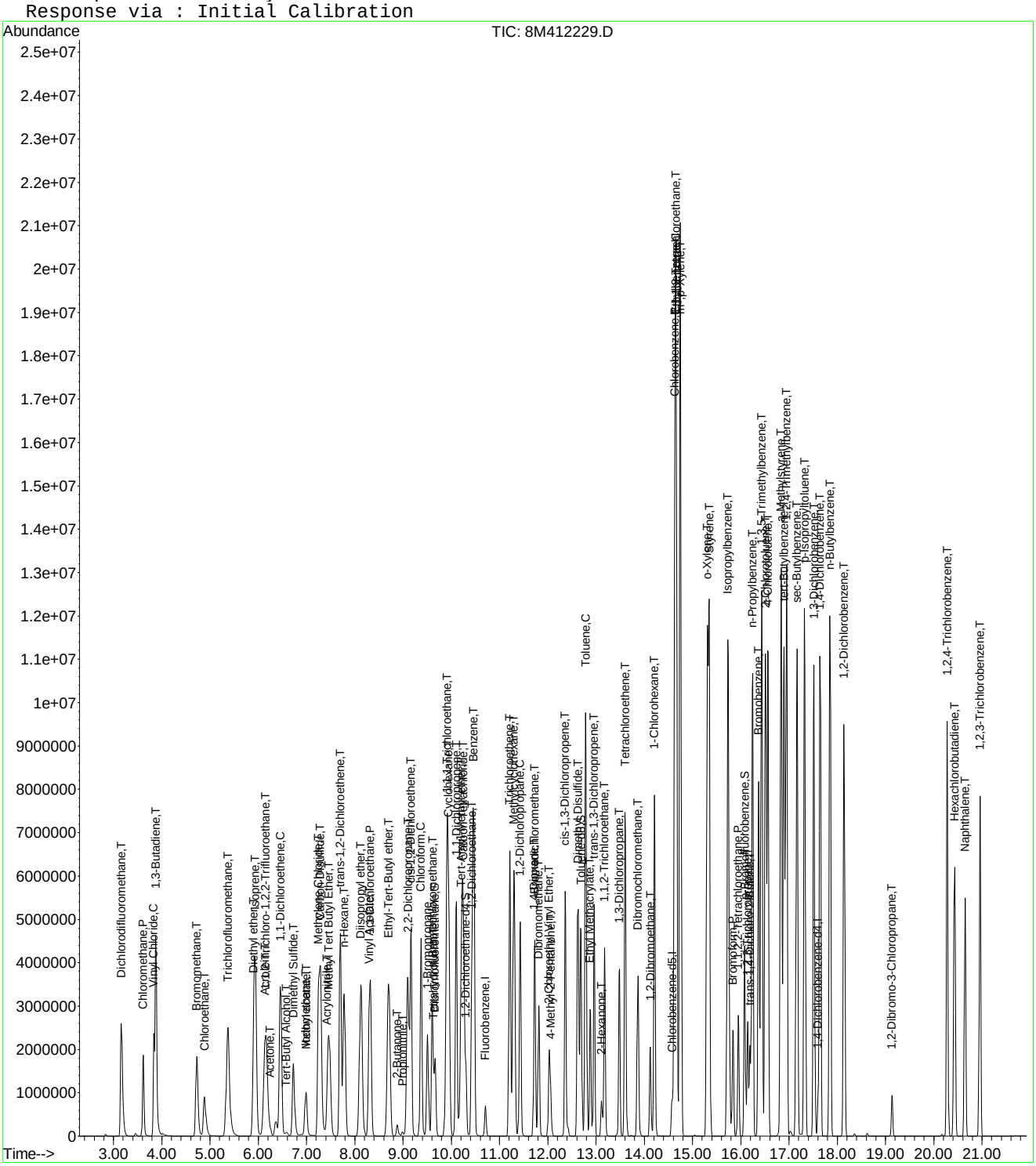
Abundance
TIC: 8M412229.D
Time-->
Dichlorodifluoromethane,T
Chloromethane,P
Vinyl Chloride,C
1,3-Butadiene,T
Bromomethane,T
Chloroethane,T
Trichlorofluoromethane,T
Acetone,T
Tert-Butyl Alcohol,T
Dimethyl Sulfide,T
1,1-Dichloroethene,C
Acrylonitrile,T
Methyl Tert Butyl Ether,T
n-Hexane,T
trans-1,2-Dichloroethene,T
Diisopropyl ether,T
Vinyl Acetate,T
Chloroethane,P
Ethyl-Tert-Butyl ether,T
2-Butanone,T
Propionitrile,T
2,2-Dichloropropane,T
Chloroform,C
Benzene,T
Fluorobenzene,I
1,2-Dichloroethane,T
1,1,1-Trichloroethane,T
Cyclohexane,C
Tert-Amyl Methyl Ether,T
1,1-Dichloropropene,T
Carbon Tetrachloride,T
1,2-Dichloroethane-d4,I
1,2-Dichloropropane,T
Trichloroethene,T
Methylcyclohexane,C
1,2-Dichloroethane,T
Bromodichloromethane,T
4-Methyl-2-Pentanone,T
Toluene,C
Ethyl Methacrylate,T
2-Hexanone,T
Dibromochloromethane,T
1,2-Dibromoethane,T
Chlorobenzene-d5,I
Chlorobenzene,T
Ethylbenzene,T
o-Xylene,T
Isopropylbenzene,T
n-Propylbenzene,T
Bromobenzene,T
1,2,4-Trichlorobenzene,T
1,2,3-Trichlorobenzene,T
Naphthalene,T
Hexachlorobutadiene,T
1,2-Dibromo-3-Chloropropane,T
1,2-Dichlorobenzene,T
n-Butylbenzene,T
1,4-Dichlorobenzene,T
1,3-Dichlorobenzene,T
sec-Butylbenzene,T
p-Isopropyltoluene,T
1,2,4-Trimethylbenzene,T
1,3,5-Trimethylbenzene,T
4-Chlorotoluene,T
tert-Butylbenzene,T
1,4-Dichlorobenzene-d4,I
2-Chlorotoluene,T
1,2,3-Trichlorobenzene,S
Tetrachloroethene,T
1,1,2-Trichloroethane,T
1,3-Dichloropropane,T
1-Chlorohexane,T
cis-1,3-Dichloropropene,T
trans-1,3-Dichloropropene,T
Dibromomethane,T
Methyl Iodide,T
Methyl Tert Butyl Ether,T
Methyl Acrylate,T
Methyl Methacrylate,T
Methyl Acrylate,T
Methyl Methacrylate,T
Methyl Acrylate,T
Methyl Methacrylate

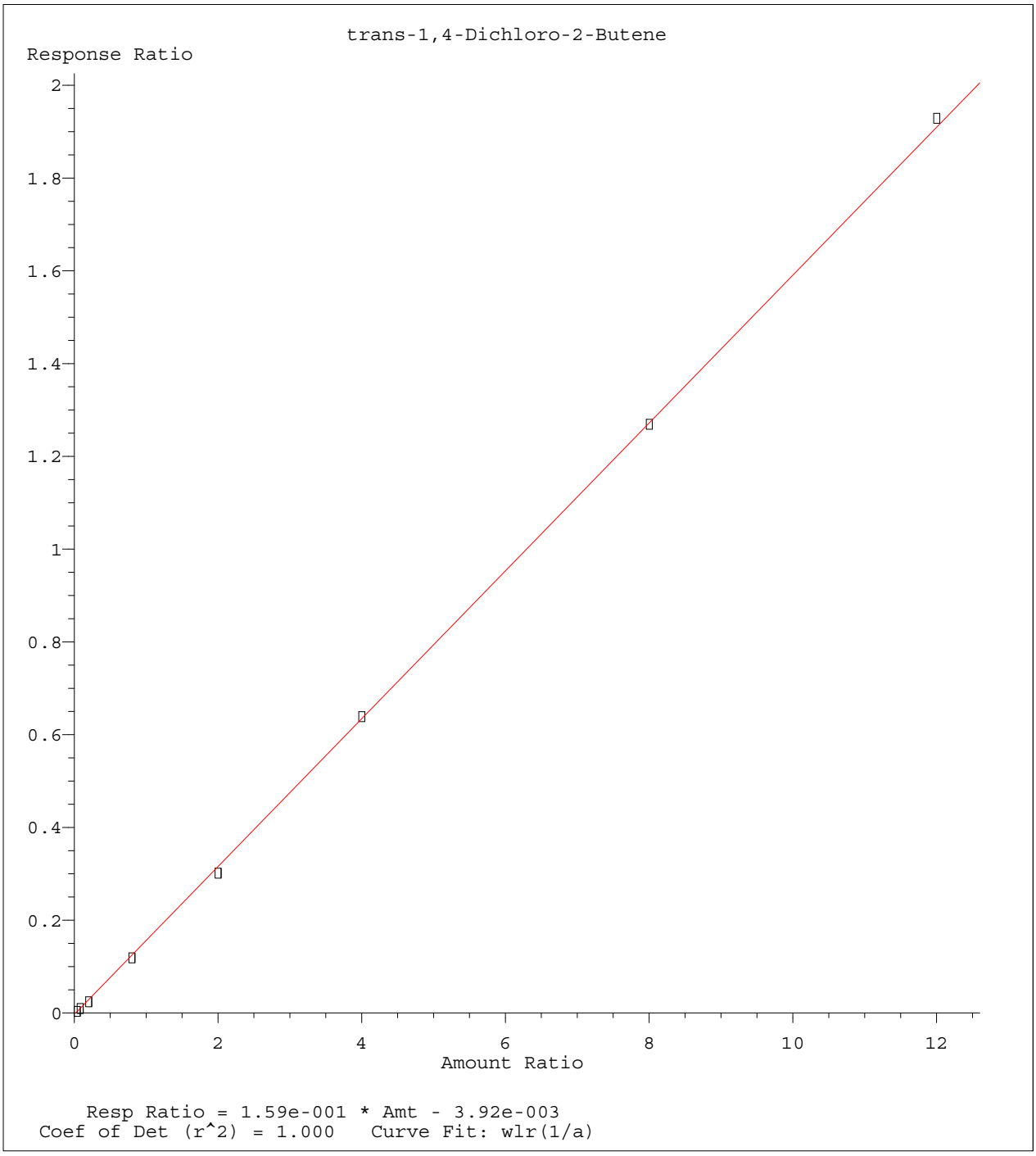

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

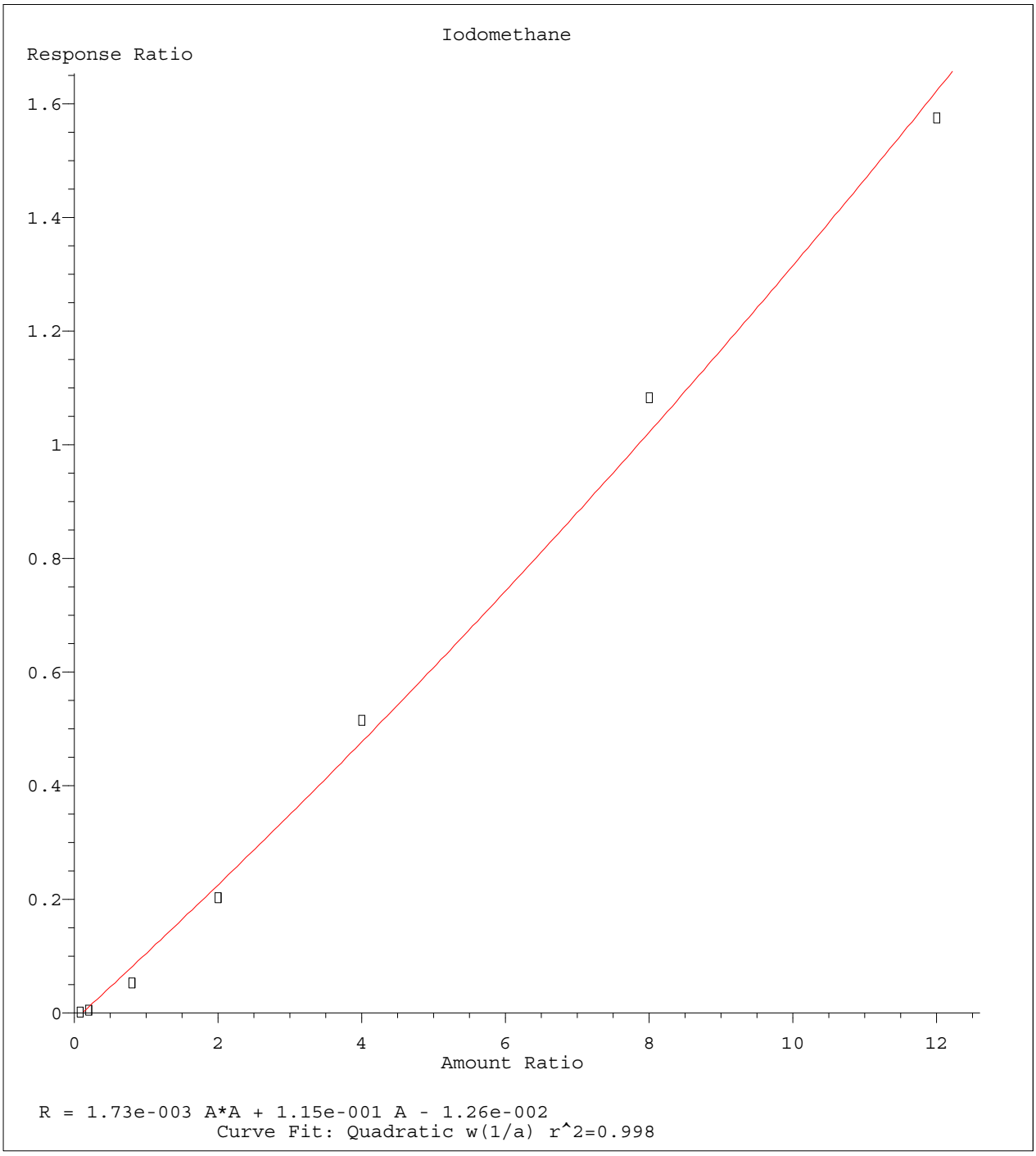

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

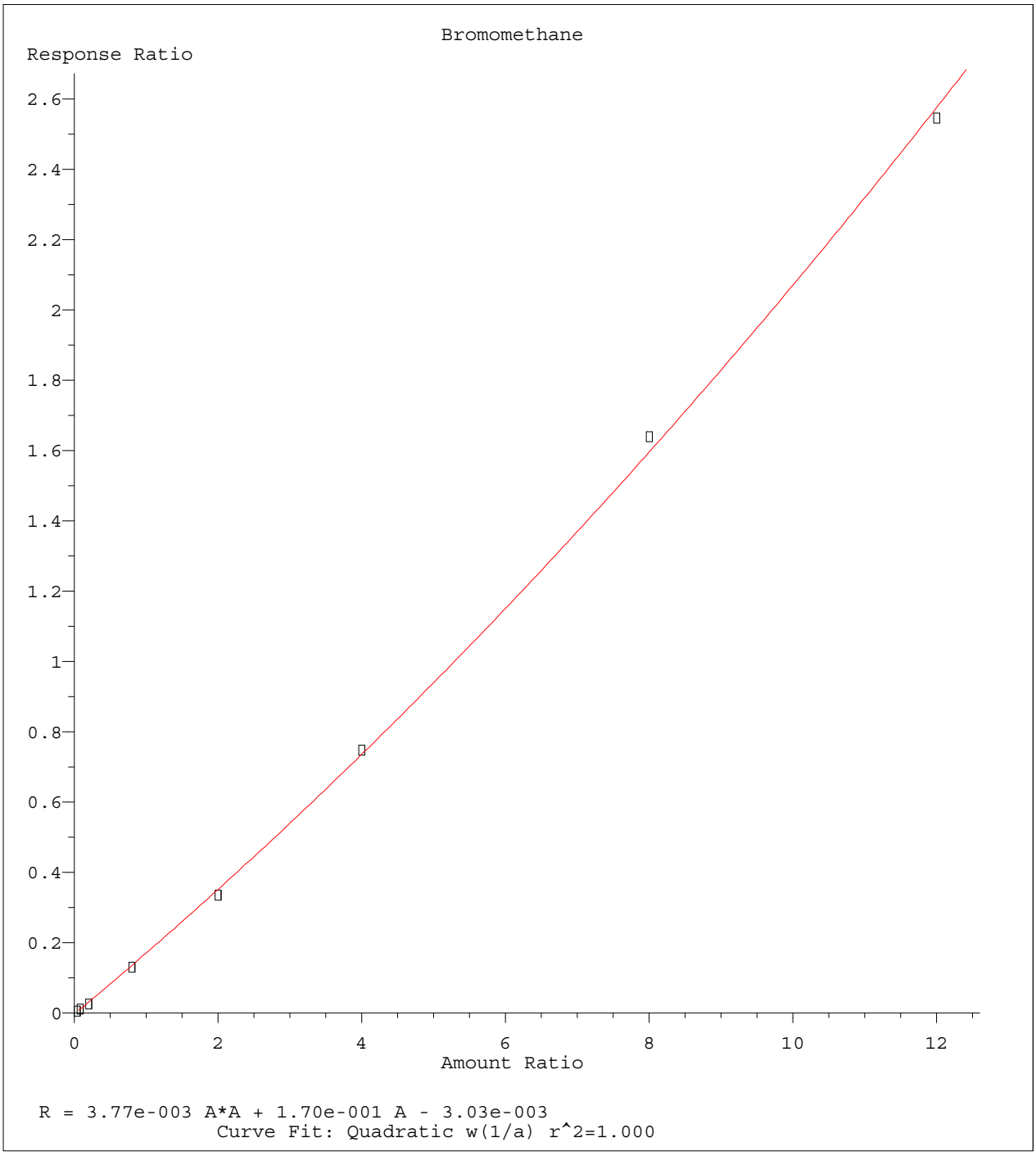

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:44:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Tue May 17 11:43:20 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	837879	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	574720	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	304324	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	229742	25.5204 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.08%		
43) 1,2-Dichloroethane-d4	10.31	65	238672	24.7259 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.92%		
58) Toluene-d8	12.68	98	776362	25.8115 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.24%		
80) p-Bromofluorobenzene	16.07	95	315683	25.0519 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.20%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	761591	54.2141 ug/L	99
3) Chloromethane	3.62	50	415589	50.6814 ug/L	100
4) Vinyl Chloride	3.84	62	509607	52.3810 ug/L	100
5) 1,3-Butadiene	3.88	54	347562	42.6002 ug/L	97
6) Bromomethane	4.73	94	272060	46.3924 ug/L	99
7) Chloroethane	4.88	64	285509	53.3336 ug/L	98
8) Trichlorofluoromethane	5.37	101	849580	46.9313 ug/L	100
9) Diethyl ether	5.90	59	451307	104.4282 ug/L	99
10) Isoprene	5.93	67	582863	53.0208 ug/L	99
11) Acrolein	6.13	56	38877	100.4722 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	419584	49.3091 ug/L	97
13) Acetone	6.23	43	54234	57.5310 ug/L	94
14) 1,1-Dichloroethene	6.46	61	622831	45.9700 ug/L	99
15) Tert-Butyl Alcohol	6.59	59	59797	197.9422 ug/L	97
16) Dimethyl Sulfide	6.73	62	351814	72.6234 ug/L	98
17) Iodomethane	6.99	142	92716	26.2832 ug/L	99
18) Methyl acetate	7.00	43	127540	50.0514 ug/L	98
19) Methylene Chloride	7.25	84	417642	48.4385 ug/L	99
20) Carbon Disulfide	7.29	76	1199899	42.3200 ug/L	100
21) Acrylonitrile	7.43	53	65324	53.4074 ug/L	93
22) Methyl Tert Butyl Ether	7.46	73	949572	50.8859 ug/L	97
23) trans-1,2-Dichloroethene	7.70	61	598296	48.0666 ug/L	99
24) n-Hexane	7.77	57	425106	45.9930 ug/L	99
25) Diisopropyl ether	8.13	45	2040382	105.1615 ug/L	98
26) Vinyl Acetate	8.29	43	415568	46.7802 ug/L	99
27) 1,1-Dichloroethane	8.32	63	721661	46.6846 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	2040020	98.1343 ug/L	99
29) 2-Butanone	8.88	43	73394	52.9905 ug/L	99
30) Propionitrile	8.98	54	42290	104.7756 ug/L	100
31) 2,2-Dichloropropane	9.10	77	780073	47.8861 ug/L	99
32) cis-1,2-Dichloroethene	9.16	96	470465	48.9162 ug/L	98
33) Chloroform	9.38	83	860252	47.1317 ug/L	100
34) 1-Bromopropane	9.51	122	98585	71.5615 ug/L	98
35) Bromochloromethane	9.60	130	234493	47.5456 ug/L	99
36) Tetrahydrofuran	9.62	42	86049	94.3281 ug/L	99
38) 1,1,1-Trichloroethane	9.90	97	825167	47.5949 ug/L	100
39) Cyclohexane	9.93	56	586721	48.8808 ug/L	97
40) 1,1-Dichloropropene	10.10	75	627217	47.4632 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1962875	103.9618 ug/L	99
42) Carbon Tetrachloride	10.24	117	711823	46.2363 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M412232.D 8260WT.M Tue May 17 11:44:38 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	108	0.00
2	T	Dichlorodifluoromethane	50.0000	54.2141	-8.4	112	0.00
3	P	Chloromethane	50.0000	50.6814	-1.4	111	0.00
4	C	Vinyl Chloride	50.0000	52.3811	-4.8	112	-0.01
5	T	1,3-Butadiene	50.0000	42.6002	14.8	89	0.00
6	T	Bromomethane	50.0000	46.3924	7.2	104	-0.01
7	T	Chloroethane	50.0000	53.3336	-6.7	117	-0.01
8	T	Trichlorofluoromethane	50.0000	46.9313	6.1	101	-0.01
9	T	Diethyl ether	100.0000	104.4282	-4.4	116	0.00
10	T	Isoprene	50.0000	53.0208	-6.0	117	0.00
11	T	Acrolein	50.0000	100.4722	-100.9#	220	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	49.3091	1.4	108	0.00
13	T	Acetone	50.0000	57.5310	-15.1	118	-0.01
14	C	1,1-Dichloroethene	50.0000	45.9700	8.1	100	0.00
15	T	Tert-Butyl Alcohol	200.0000	197.9423	1.0	108	0.01
16	T	Dimethyl Sulfide	50.0000	72.6234	-45.2#	159	0.00
17	T	Iodomethane	50.0000	26.2832	47.4#	59	0.01
18	T	Methyl acetate	50.0000	50.0514	-0.1	111	0.00
19	T	Methylene Chloride	50.0000	48.4385	3.1	107	0.00
20	T	Carbon Disulfide	50.0000	42.3200	15.4	94	0.00
21	T	Acrylonitrile	50.0000	53.4074	-6.8	109	0.00
22	T	Methyl Tert Butyl Ether	50.0000	50.8859	-1.8	105	0.00
23	T	trans-1,2-Dichloroethene	50.0000	48.0666	3.9	105	0.00
24	T	n-Hexane	50.0000	45.9930	8.0	101	-0.01
25	T	Diisopropyl ether	100.0000	105.1615	-5.2	115	0.00
26	T	Vinyl Acetate	50.0000	46.7802	6.4	97	0.00
27	P	1,1-Dichloroethane	50.0000	46.6846	6.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.1343	1.9	104	0.00
29	T	2-Butanone	50.0000	52.9905	-6.0	110	0.00
30	T	Propionitrile	100.0000	104.7756	-4.8	111	0.00
31	T	2,2-Dichloropropane	50.0000	47.8861	4.2	102	0.00
32	T	cis-1,2-Dichloroethene	50.0000	48.9162	2.2	107	-0.01
33	C	Chloroform	50.0000	47.1317	5.7	102	0.00
34		1-Bromopropane	50.0000	71.5615	-43.1#	155	0.00
35	T	Bromochloromethane	50.0000	47.5456	4.9	102	0.00
36	T	Tetrahydrofuran	100.0000	94.3281	5.7	108	-0.01
37	S	Dibromofluoromethane	25.0000	25.5204	-2.1	109	0.00
38	T	1,1,1-Trichloroethane	50.0000	47.5949	4.8	101	0.00
39	T	Cyclohexane	50.0000	48.8808	2.2	109	0.00
40	T	1,1-Dichloropropene	50.0000	47.4632	5.1	102	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	103.9618	-4.0	111	0.00
42	T	Carbon Tetrachloride	50.0000	46.2363	7.5	98	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.7259	1.1	104	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	49.0148	2.0	103	0.00
46	T	Benzene	50.0000	48.5232	3.0	104	0.00
47	T	Trichloroethene	50.0000	51.0658	-2.1	110	0.00
48	T	Methylcyclohexane	50.0000	49.8573	0.3	109	0.00
49	C	1,2-Dichloropropane	50.0000	50.9747	-1.9	111	0.00
50	T	Bromodichloromethane	50.0000	48.3053	3.4	99	0.00
51	T	1,4-Dioxane	200.0000	216.9538	-8.5	110	0.01
52	T	Dibromomethane	50.0000	45.8126	8.4	99	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	51.2623	-2.5	104	0.00
54	T	4-Methyl-2-Pentanone	50.0000	51.8715	-3.7	107	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.8979	-7.8	111	0.00
56	T	Dimethyl Disulfide	50.0000	52.2714	-4.5	111	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	107	0.00
58	S	Toluene-d8	25.0000	25.8115	-3.2	108	0.00
59	C	Toluene	50.0000	49.0912	1.8	105	0.00
60	T	Ethyl Methacrylate	50.0000	55.9509	-11.9	113	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	50.6740	-1.3	102	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.0377	1.9	103	0.00
64	T	2-Hexanone	50.0000	53.6057	-7.2	112	0.00
65	T	1,3-Dichloropropane	50.0000	53.6720	-7.3	110	0.00
66	T	Tetrachloroethene	50.0000	47.8053	4.4	104	0.00
67	T	Dibromochloromethane	50.0000	49.6585	0.7	102	0.00
68	T	1,2-Dibromoethane	50.0000	51.1121	-2.2	105	0.00
69	T	1-Chlorohexane	50.0000	51.0611	-2.1	111	0.00
70	P	Chlorobenzene	50.0000	50.1844	-0.4	108	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	49.3793	1.2	103	0.00
72	C	Ethylbenzene	50.0000	48.2013	3.6	105	0.00
73	T	m-,p-Xylene	100.0000	101.1341	-1.1	108	0.00
74	T	o-Xylene	50.0000	50.5675	-1.1	108	0.00
75	T	Styrene	50.0000	51.5086	-3.0	105	0.00
76	P	Bromoform	50.0000	48.2227	3.6	99	0.00
77	T	Isopropylbenzene	50.0000	51.1140	-2.2	107	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	106	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	49.6172	0.8	103	0.00
80	S	p-Bromofluorobenzene	25.0000	25.0519	-0.2	108	0.00
81	T	1,2,3-Trichloropropane	50.0000	50.0849	-0.2	106	0.01
82	T	trans-1,4-Dichloro-2-Butene	50.0000	39.2043	21.6	86	0.00
83	T	n-Propylbenzene	50.0000	51.9237	-3.8	108	0.00
84	T	Bromobenzene	50.0000	49.4648	1.1	105	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	51.6344	-3.3	107	0.00
86	T	2-Chlorotoluene	50.0000	51.5639	-3.1	106	0.00
87	T	4-Chlorotoluene	50.0000	48.2650	3.5	108	0.00
88	T	a-Methylstyrene	50.0000	56.4132	-12.8	120	0.00
89	T	tert-Butylbenzene	50.0000	50.9494	-1.9	112	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	49.6617	0.7	105	0.00
91	T	sec-Butylbenzene	50.0000	51.3386	-2.7	108	0.00
92	T	p-Isopropyltoluene	50.0000	50.1261	-0.3	107	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.8943	-1.8	108	0.00
94	T	1,4-Dichlorobenzene	50.0000	50.4742	-0.9	110	0.00
95	T	n-Butylbenzene	50.0000	49.6520	0.7	105	0.00
96	T	1,2-Dichlorobenzene	50.0000	50.4907	-1.0	110	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	48.4851	3.0	100	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	50.1129	-0.2	107	0.00
99	T	Hexachlorobutadiene	50.0000	52.0919	-4.2	115	0.00
100	T	Naphthalene	50.0000	45.8047	8.4	95	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	47.7353	4.5	106	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412232.D 8260WT.M Sat May 14 18:09:03 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:21 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	709364	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	505399	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	272922	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	27428	100.2132 ug/L	99
3) 3-Chloro-1-propene	7.07	41	940418	104.3259 ug/L	82
4) 2-Chloro-1,3-butadiene	8.45	53	1188994	104.3183 ug/L	86
5) Ethyl Acetate	9.10	43	283167	104.3264 ug/L	95
6) Methacrylonitrile	9.25	67	155775	104.5365 ug/L #	63
7) Isobutyl Alcohol	9.25	43	17893	197.3629 ug/L #	96
9) Methyl methacrylate	11.42	41	298802	102.0346 ug/L	70
10) 2-Nitropropane	11.75	43	121321	95.8263 ug/L	97
13) Cyclohexanone	15.84	55	11401	102.1363 ug/L #	70

(#) = qualifier out of range (m) = manual integration
8M412321.D A9FOOWT.M Thu May 19 09:01:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

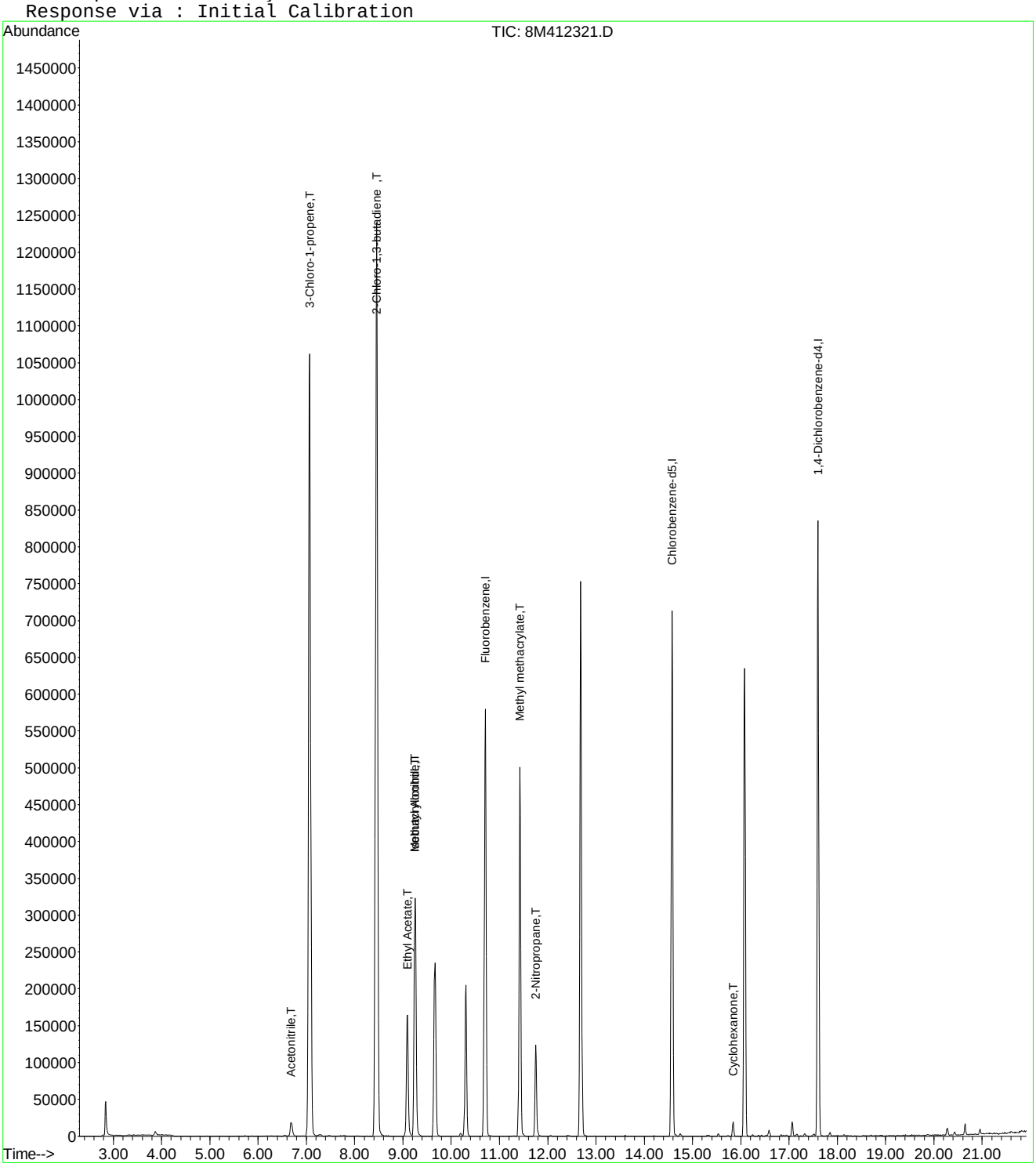

8M412321.D A9FOOWT.M Thu May 19 09:01:22 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	100.2132	-0.2	100	0.00
3	T	3-Chloro-1-propene	100.0000	104.3259	-4.3	100	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	104.3183	-4.3	100	0.00
5	T	Ethyl Acetate	100.0000	104.3264	-4.3	100	0.00
6	T	Methacrylonitrile	100.0000	104.5365	-4.5	100	0.00
7	T	Isobutyl Alcohol	200.0000	197.3629	1.3	100	-0.01
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.02
9	T	Methyl methacrylate	100.0000	102.0346	-2.0	100	0.00
10	T	2-Nitropropane	100.0000	95.8263	4.2	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	100.0000	102.1363	-2.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412321.D A9FOOWT.M Thu May 19 09:02:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:20:35 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	677339	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	488377	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	260939	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	13323	50.9795 ug/L	98
3) 3-Chloro-1-propene	7.07	41	453655	52.7060 ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	568765	52.2609 ug/L	87
5) Ethyl Acetate	9.09	43	131636	50.7913 ug/L	97
6) Methacrylonitrile	9.25	67	74064	52.0523 ug/L #	62
7) Isobutyl Alcohol	9.26	43	8483	97.9930 ug/L	95
9) Methyl methacrylate	11.42	41	143892	51.4593 ug/L	70
10) 2-Nitropropane	11.75	43	56559	46.7858 ug/L	95
13) Cyclohexanone	15.84	55	5225	48.9579 ug/L	83

(#) = qualifier out of range (m) = manual integration
8M412322.D A9FOOWT.M Thu May 19 09:20:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:19 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

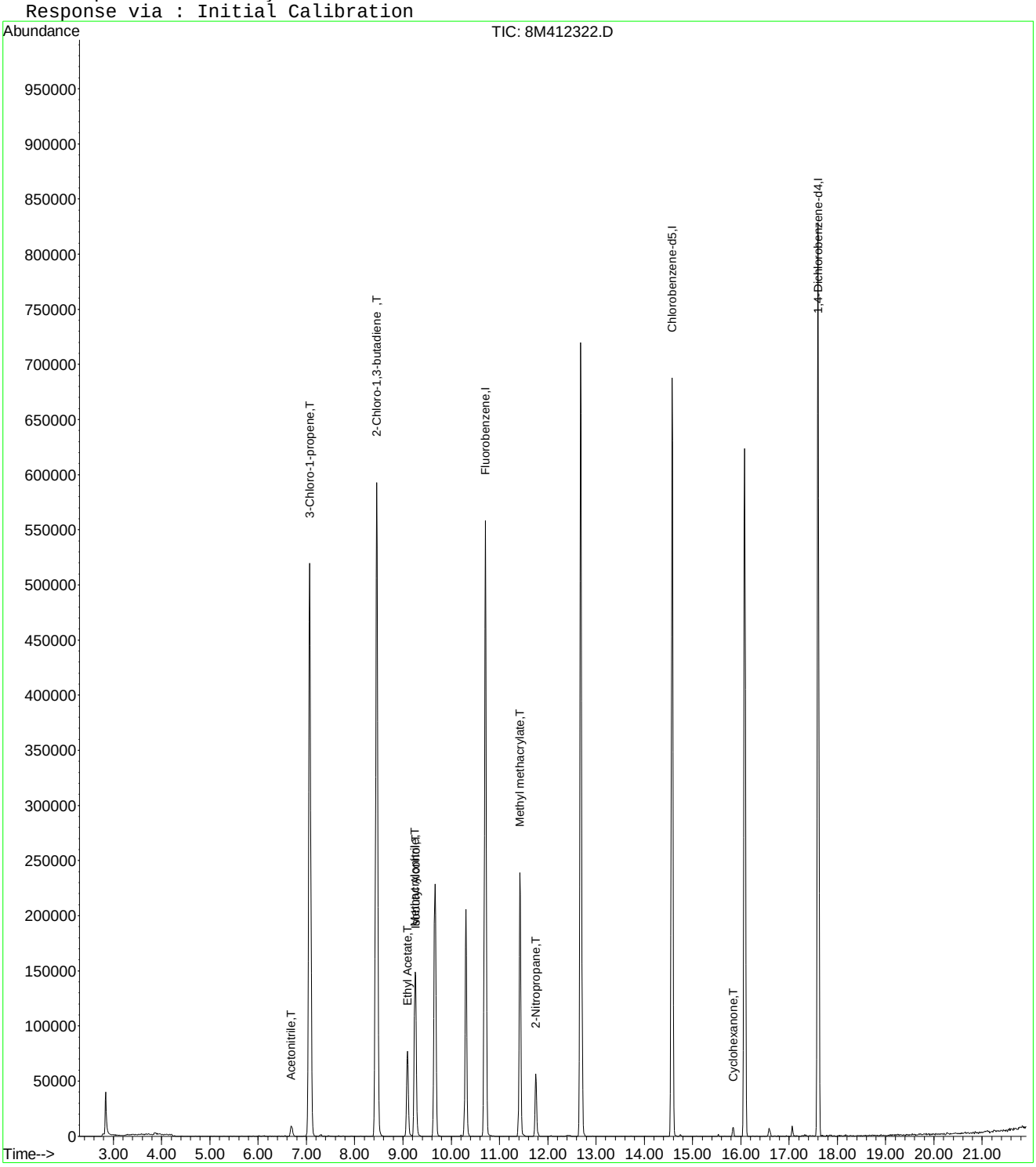

8M412322.D A9FOOWT.M Thu May 19 09:20:36 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	50.9795	-2.0	100	0.00
3	T	3-Chloro-1-propene	50.0000	52.7060	-5.4	100	0.00
4	T	2-Chloro-1,3-butadiene	50.0000	52.2609	-4.5	100	0.00
5	T	Ethyl Acetate	50.0000	50.7913	-1.6	100	0.00
6	T	Methacrylonitrile	50.0000	52.0523	-4.1	100	0.00
7	T	Isobutyl Alcohol	100.0000	97.9929	2.0	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.02
9	T	Methyl methacrylate	50.0000	51.4592	-2.9	100	0.00
10	T	2-Nitropropane	50.0000	46.7858	6.4	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	50.0000	48.9579	2.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412322.D A9FOOWT.M Thu May 19 09:02:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:22:33 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	652985	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	476539	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	256082	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	4873	19.3416 ug/L	80
3) 3-Chloro-1-propene	7.07	41	172467	20.7847 ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	219296	20.9015 ug/L	87
5) Ethyl Acetate	9.09	43	50385	20.1659 ug/L	100
6) Methacrylonitrile	9.26	67	28119	20.4992 ug/L #	63
7) Isobutyl Alcohol	9.27	43	2774	33.2395 ug/L #	8
9) Methyl methacrylate	11.42	41	55309	20.5176 ug/L	73
10) 2-Nitropropane	11.75	43	21584	18.5202 ug/L	99
13) Cyclohexanone	15.84	55	2230	21.2913 ug/L	87

(#) = qualifier out of range (m) = manual integration
8M412323.D A9FOOWT.M Thu May 19 09:22:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:21 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

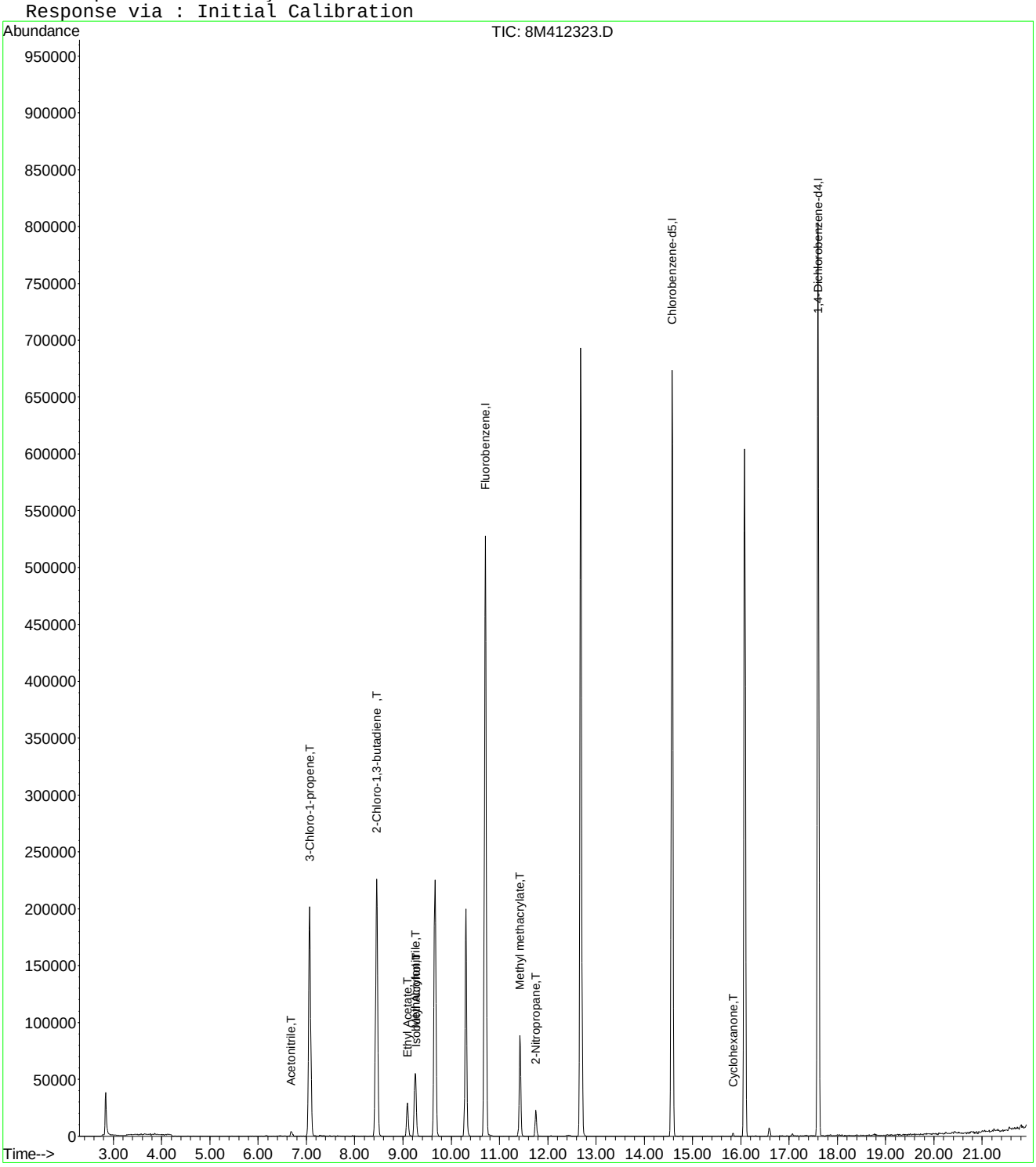

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	19.3416	3.3	100	0.00
3	T	3-Chloro-1-propene	20.0000	20.7847	-3.9	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	20.9015	-4.5	100	0.00
5	T	Ethyl Acetate	20.0000	20.1659	-0.8	100	0.00
6	T	Methacrylonitrile	20.0000	20.4992	-2.5	100	0.00
7	T	Isobutyl Alcohol	-1.0000	33.2395	0.0	0	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.18#
9	T	Methyl methacrylate	20.0000	20.5176	-2.6	100	0.00
10	T	2-Nitropropane	20.0000	18.5203	7.4	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	20.0000	21.2913	-6.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412323.D A9FOOWT.M Thu May 19 09:02:17 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:22:43 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	665645	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	483812	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	257678	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	405	1.5769 ug/L #	23
3) 3-Chloro-1-propene	7.07	41	40699	4.8115 ug/L	84
4) 2-Chloro-1,3-butadiene	8.45	53	48973	4.5789 ug/L	81
5) Ethyl Acetate	9.09	43	10675	4.1913 ug/L	95
6) Methacrylonitrile	9.26	67	5417	3.8740 ug/L #	72
7) Isobutyl Alcohol	9.27	43	441	5.1838 ug/L #	8
9) Methyl methacrylate	11.43	41	11811	4.2981 ug/L	65
10) 2-Nitropropane	11.76	43	4170	3.5100 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412324.D A9FOOWT.M Thu May 19 09:22:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:21 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

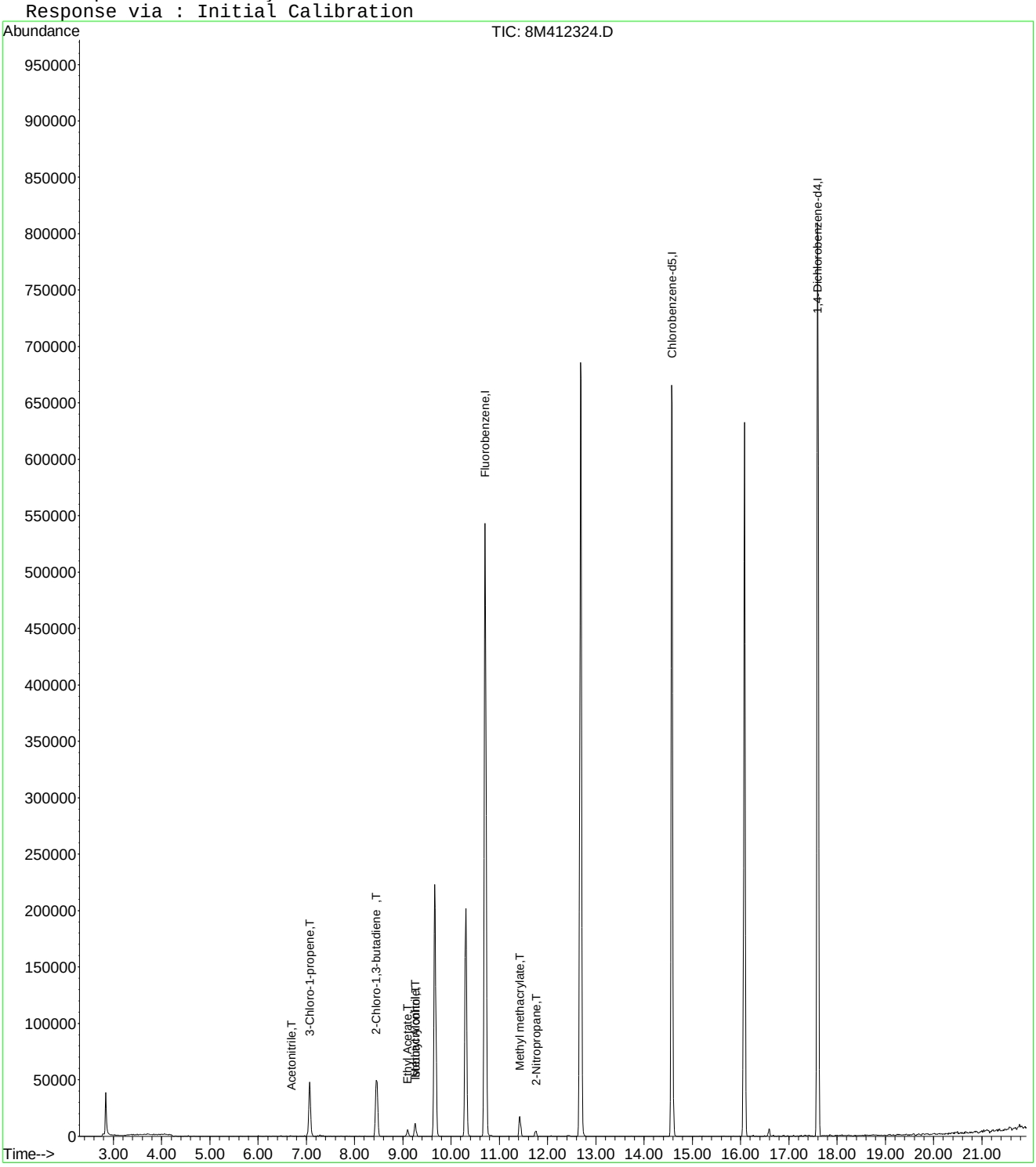

8M412324.D A9FOOWT.M Thu May 19 09:22:43 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	-1.0000	1.5769	0.0	0	0.00
3	T	3-Chloro-1-propene	5.0000	4.8115	3.8	100	0.00
4	T	2-Chloro-1,3-butadiene	5.0000	4.5789	8.4	100	0.00
5	T	Ethyl Acetate	5.0000	4.1913	16.2	100	0.00
6	T	Methacrylonitrile	5.0000	3.8740	22.5	100	0.00
7	T	Isobutyl Alcohol	-1.0000	5.1838	0.0	0	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.18#
9	T	Methyl methacrylate	5.0000	4.2981	14.0	100	0.00
10	T	2-Nitropropane	-1.0000	3.5100	0.0	0	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	0.0000	0.0	0	-15.84#

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412324.D A9FOOWT.M Thu May 19 09:02:03 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412325.D Vial: 7
Acq On : 17 May 2016 11:42 Operator: TMB
Sample : WG569079-06 200ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:27 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	682012	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	491515	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	261877	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.68	41	52022	197.6946 ug/L	97
3) 3-Chloro-1-propene	7.06	41	1768403	204.0468 ug/L	83
4) 2-Chloro-1,3-butadiene	8.46	53	2283706	208.4003 ug/L	87
5) Ethyl Acetate	9.09	43	537585	206.0040 ug/L	94
6) Methacrylonitrile	9.25	67	297408	207.5869 ug/L #	63
7) Isobutyl Alcohol	9.26	43	34441	395.1256 ug/L	95
9) Methyl methacrylate	11.42	41	577612	205.1526 ug/L	72
10) 2-Nitropropane	11.75	43	248395	204.0652 ug/L	95
13) Cyclohexanone	15.85	55	19752	184.4122 ug/L #	59

(#) = qualifier out of range (m) = manual integration
8M412325.D A9FOOWT.M Thu May 19 09:01:28 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412325.D Vial: 7
Acq On : 17 May 2016 11:42 Operator: TMB
Sample : WG569079-06 200ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

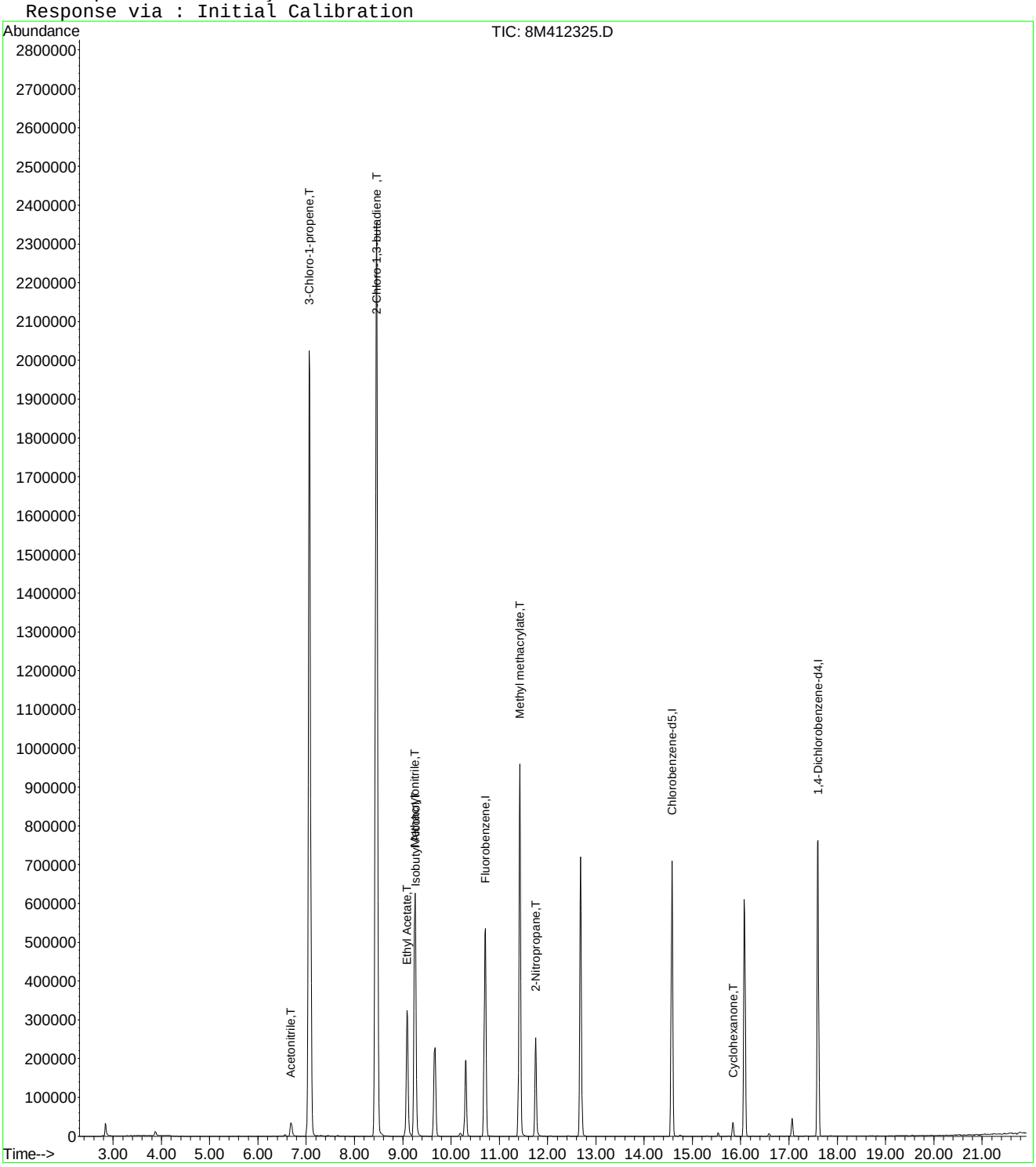

8M412325.D A9FOOWT.M Thu May 19 09:01:28 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412326.D Vial: 8
Acq On : 17 May 2016 12:40 Operator: TMB
Sample : WG569079-07 300ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:29 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	694903	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	496643	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	267309	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.69	41	81471	303.8636	ug/L	98
3) 3-Chloro-1-propene	7.06	41	2563559	290.3084	ug/L	83
4) 2-Chloro-1,3-butadiene	8.46	53	3270971	292.9562	ug/L	86
5) Ethyl Acetate	9.09	43	821184	308.8424	ug/L	95
6) Methacrylonitrile	9.25	67	451708	309.4374	ug/L #	62
7) Isobutyl Alcohol	9.26	43	55071	620.0836	ug/L	94
9) Methyl methacrylate	11.42	41	874430	304.8132	ug/L	70
10) 2-Nitropropane	11.75	43	392965	316.8456	ug/L	94
13) Cyclohexanone	15.84	55	33523	306.6233	ug/L #	61

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412326.D Vial: 8
Acq On : 17 May 2016 12:40 Operator: TMB
Sample : WG569079-07 300ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

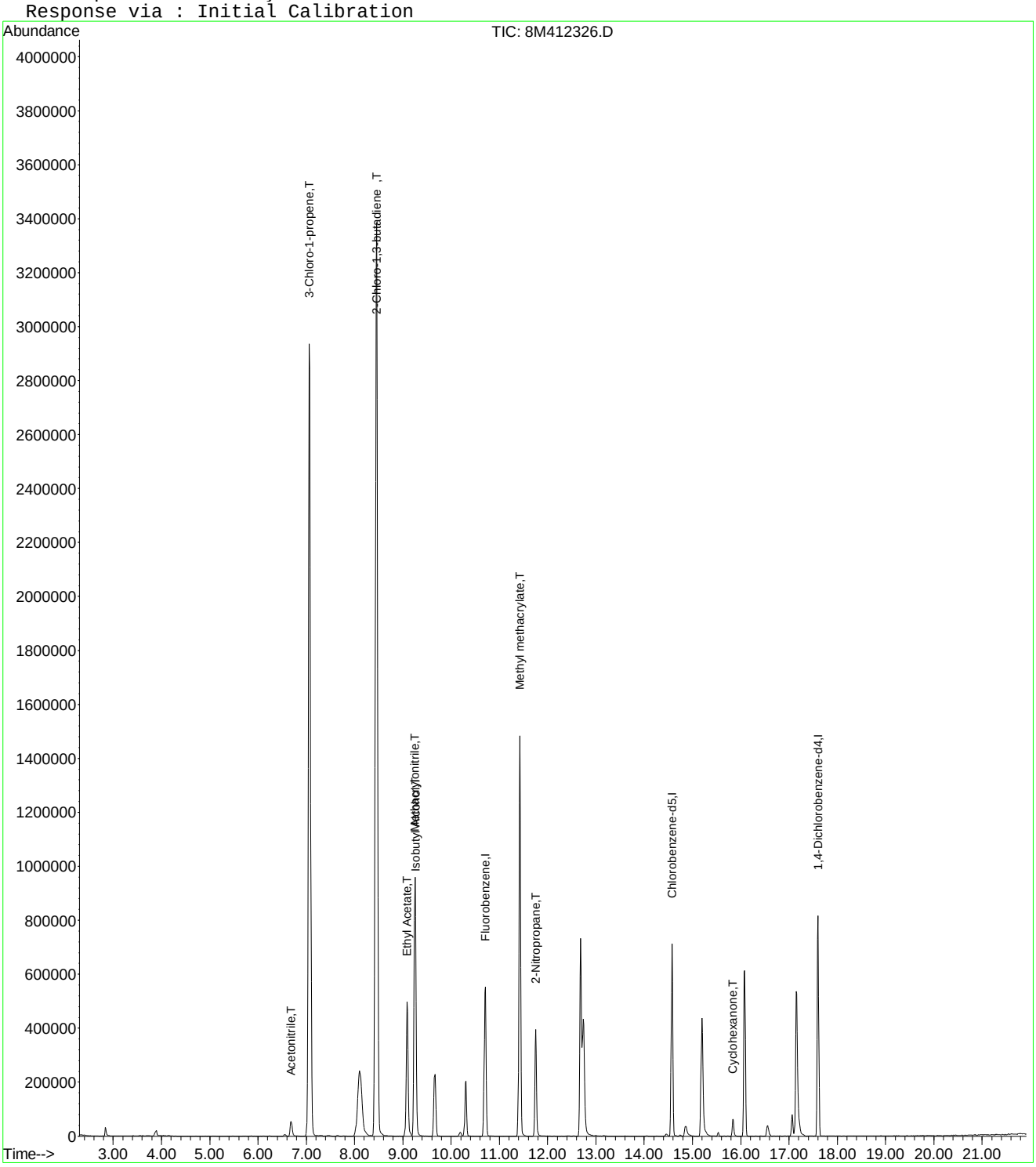

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412327.D Vial: 9
Acq On : 17 May 2016 13:10 Operator: TMB
Sample : WG569079-08 400ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:30 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	700514	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	502552	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	270883	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	110761	409.7980 ug/L	97
3) 3-Chloro-1-propene	7.07	41	3406131	382.6353 ug/L	82
4) 2-Chloro-1,3-butadiene	8.45	53	4356691	387.0705 ug/L	85
5) Ethyl Acetate	9.09	43	1116818	416.6642 ug/L	94
6) Methacrylonitrile	9.25	67	615482	418.2517 ug/L #	62
7) Isobutyl Alcohol	9.26	43	75472	842.9862 ug/L	97
9) Methyl methacrylate	11.42	41	1199317	414.7153 ug/L	71
10) 2-Nitropropane	11.75	43	538580	430.7760 ug/L	94
13) Cyclohexanone	15.84	55	45874	414.0575 ug/L #	55

(#) = qualifier out of range (m) = manual integration
8M412327.D A9FOOWT.M Thu May 19 09:01:31 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412327.D Vial: 9
Acq On : 17 May 2016 13:10 Operator: TMB
Sample : WG569079-08 400ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

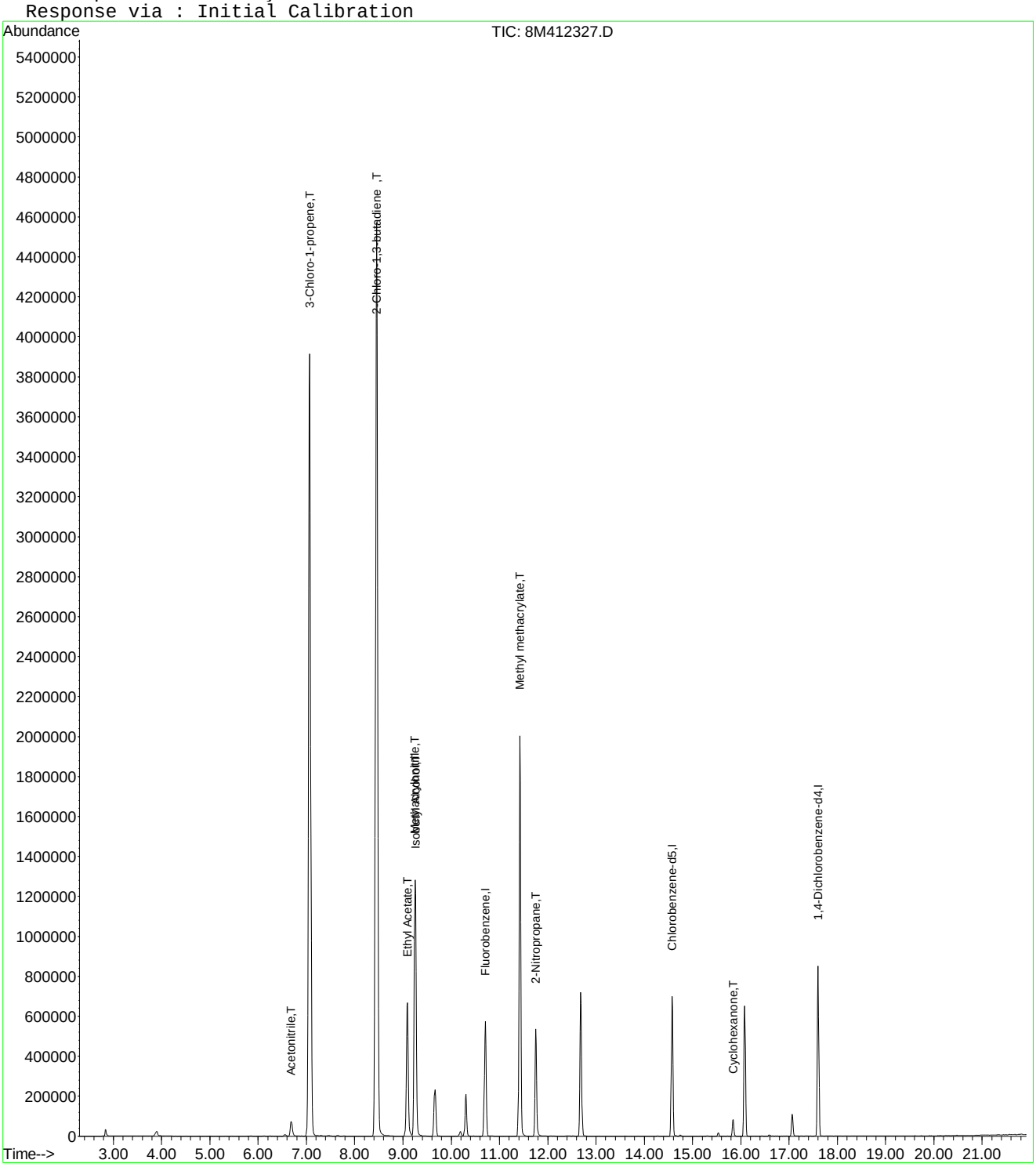

8M412327.D A9FOOWT.M Thu May 19 09:01:31 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412328.D Vial: 10
Acq On : 17 May 2016 13:39 Operator: TMB
Sample : WG569079-09 500ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:31 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	695694	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	495257	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	266442	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	132245	492.6753 ug/L	99
3) 3-Chloro-1-propene	7.06	41	4228273	478.2834 ug/L	82
4) 2-Chloro-1,3-butadiene	8.46	53	5390856	482.2693 ug/L	85
5) Ethyl Acetate	9.09	43	1321922	496.6017 ug/L	95
6) Methacrylonitrile	9.25	67	729852	499.4083 ug/L #	61
7) Isobutyl Alcohol	9.26	43	85200	958.2367 ug/L	96
9) Methyl methacrylate	11.42	41	1416438	493.1877 ug/L	72
10) 2-Nitropropane	11.75	43	637335	513.2956 ug/L	93
13) Cyclohexanone	15.84	55	52070	477.8160 ug/L #	61

(#) = qualifier out of range (m) = manual integration
8M412328.D A9FOOWT.M Thu May 19 09:01:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412328.D Vial: 10
Acq On : 17 May 2016 13:39 Operator: TMB
Sample : WG569079-09 500ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

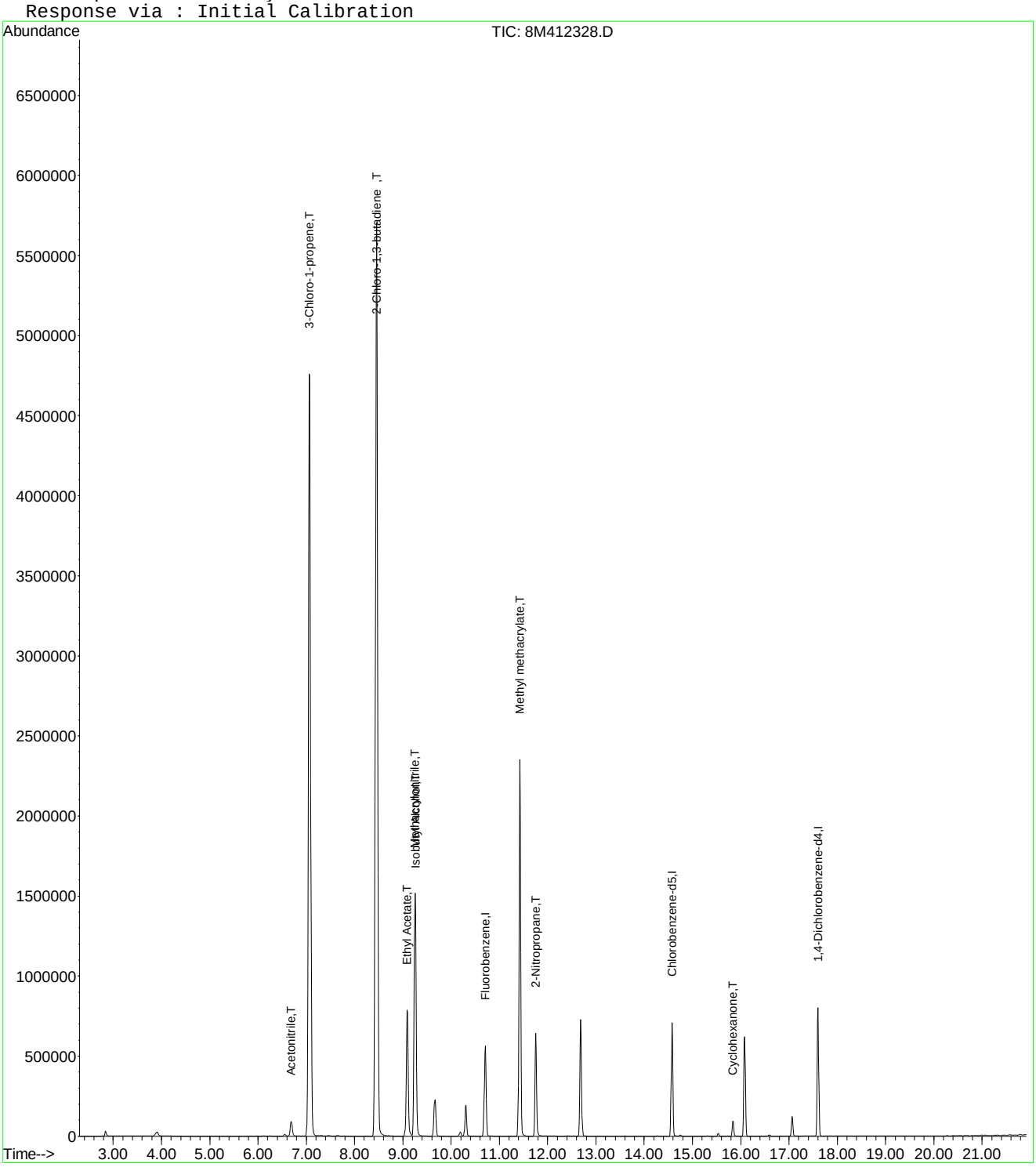

8M412328.D A9FOOWT.M Thu May 19 09:01:32 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:32 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	676765	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	486447	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	263036	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.69	41	29876	114.4154	ug/L	97
3) 3-Chloro-1-propene	7.07	41	858035	99.7718	ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	1224194	112.5803	ug/L	87
5) Ethyl Acetate	9.09	43	295545	114.1317	ug/L	96
6) Methacrylonitrile	9.25	67	161574	113.6509	ug/L #	63
7) Isobutyl Alcohol	9.26	43	19948	230.6285	ug/L	94
9) Methyl methacrylate	11.42	41	326465	116.8508	ug/L	72
10) 2-Nitropropane	11.75	43	131261	108.6716	ug/L	94
13) Cyclohexanone	15.83	55	10459	97.2189	ug/L #	74

(#) = qualifier out of range (m) = manual integration
8M412331.D A9FOOWT.M Thu May 19 09:01:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

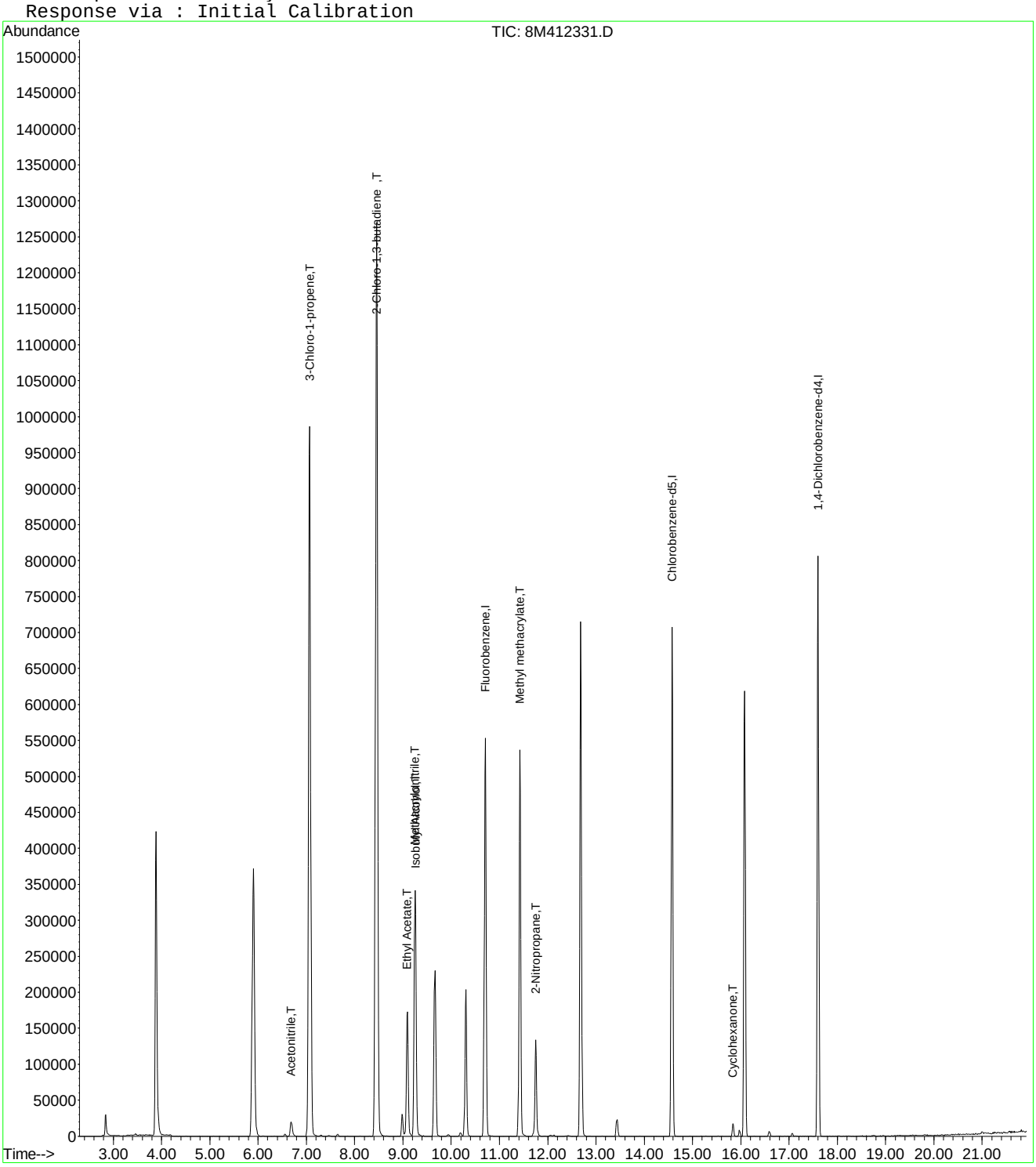

8M412331.D A9FOOWT.M Thu May 19 09:01:33 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	95	0.00
2	T	Acetonitrile	100.0000	114.4154	-14.4	109	0.00
3	T	3-Chloro-1-propene	100.0000	99.7718	0.2	91	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	112.5803	-12.6	103	0.00
5	T	Ethyl Acetate	100.0000	114.1317	-14.1	104	0.00
6	T	Methacrylonitrile	100.0000	113.6509	-13.7	104	0.00
7	T	Isobutyl Alcohol	200.0000	230.6285	-15.3	111	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.01
9	T	Methyl methacrylate	100.0000	116.8508	-16.9	109	0.00
10	T	2-Nitropropane	100.0000	108.6716	-8.7	108	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	96	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	96	0.00
13	T	Cyclohexanone	100.0000	97.2189	2.8	92	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412331.D A9FOOWT.M Thu May 19 09:03:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412921.D Vial: 2
Acq On : 11 Jun 2016 13:34 Operator: FJB
Sample : WG572347-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 08:30:26 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	767885	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	556927	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	312691	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	221998	26.9080 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.64%		
43) 1,2-Dichloroethane-d4	10.30	65	238787	26.9927 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.96%		
58) Toluene-d8	12.68	98	763405	26.1916 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.76%		
80) p-Bromofluorobenzene	16.08	95	316687	24.4591 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.84%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	783630	60.8677 ug/L	99
3) Chloromethane	3.62	50	351160	46.7278 ug/L	99
4) Vinyl Chloride	3.84	62	485953	54.5027 ug/L	99
5) 1,3-Butadiene	3.89	54	419214	56.0660 ug/L	96
6) Bromomethane	4.73	94	191226	36.0005 ug/L	100
7) Chloroethane	4.89	64	243985	49.7312 ug/L	98
8) Trichlorofluoromethane	5.37	101	994750	59.9594 ug/L	99
9) Diethyl ether	5.90	59	364028	91.9106 ug/L	98
10) Isoprene	5.94	67	487571	48.3952 ug/L	99
11) Acrolein	6.14	56	15007	42.3187 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	431413	55.3206 ug/L	98
13) Acetone	6.24	43	42382	49.0565 ug/L	99
14) 1,1-Dichloroethene	6.47	61	675252	54.3820 ug/L	98
15) Tert-Butyl Alcohol	6.57	59	50360	181.8988 ug/L	97
16) Dimethyl Sulfide	6.73	62	199668	44.9735 ug/L	99
17) Iodomethane	6.99	142	84211	26.0755 ug/L	95
18) Methyl acetate	7.00	43	109096	46.7158 ug/L	97
19) Methylene Chloride	7.25	84	386107	48.8629 ug/L	98
20) Carbon Disulfide	7.29	76	1304541	50.2046 ug/L	100
21) Acrylonitrile	7.43	53	51363	45.8209 ug/L	100
22) Methyl Tert Butyl Ether	7.46	73	835188	48.8358 ug/L	98
23) trans-1,2-Dichloroethene	7.70	61	596356	52.2779 ug/L	99
24) n-Hexane	7.78	57	431041	50.8860 ug/L	99
25) Diisopropyl ether	8.12	45	1662443	93.4926 ug/L	96
26) Vinyl Acetate	8.29	43	295549	36.3023 ug/L	98
27) 1,1-Dichloroethane	8.32	63	739562	52.2036 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1883130	98.8444 ug/L	98
29) 2-Butanone	8.88	43	53936	42.4914 ug/L	98
30) Propionitrile	8.99	54	32700	88.4006 ug/L	100
31) 2,2-Dichloropropane	9.10	77	916418	61.3836 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	451494	51.2227 ug/L	98
33) Chloroform	9.37	83	894074	53.4498 ug/L	100
34) 1-Bromopropane	9.51	122	68971	54.6286 ug/L	97
35) Bromochloromethane	9.60	130	230220	50.9341 ug/L	96
36) Tetrahydrofuran	9.63	42	85388	102.1356 ug/L	94
38) 1,1,1-Trichloroethane	9.91	97	935070	58.8502 ug/L	99
39) Cyclohexane	9.94	56	525995	47.8160 ug/L	96
40) 1,1-Dichloropropene	10.11	75	652918	53.9117 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1685964	97.4349 ug/L	100
42) Carbon Tetrachloride	10.25	117	848645	60.1482 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412921.D 8260WT.M Mon Jun 13 08:30:28 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412921.D Vial: 2
Acq On : 11 Jun 2016 13:34 Operator: FJB
Sample : WG572347-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 08:30:26 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	581486	54.0099	ug/L		99
46)	Benzene	10.46	78	1623668	51.4752	ug/L		100
47)	Trichloroethene	11.21	130	454369	54.0094	ug/L		100
48)	Methylcyclohexane	11.30	83	655858	51.3169	ug/L		98
49)	1,2-Dichloropropane	11.43	63	335818	47.8254	ug/L		90
50)	Bromodichloromethane	11.73	83	662595	53.6889	ug/L		99
51)	1,4-Dioxane	11.71	88	6154	174.4710	ug/L		100
52)	Dibromomethane	11.81	93	200098	48.1406	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.03	63	124571	41.2757	ug/L		97
54)	4-Methyl-2-Pentanone	12.06	58	49793	40.3896	ug/L		90
55)	cis-1,3-Dichloropropene	12.36	75	650654	51.7963	ug/L		100
56)	Dimethyl Disulfide	12.63	79	322033	48.0310	ug/L		100
59)	Toluene	12.78	91	1744290	50.4495	ug/L		100
60)	Ethyl Methacrylate	12.88	69	289546	43.6065	ug/L		99
62)	trans-1,3-Dichloropropene	12.96	75	578341	49.9142	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	250480	45.9107	ug/L		100
64)	2-Hexanone	13.11	58	46425	40.4931	ug/L	#	98
65)	1,3-Dichloropropane	13.48	76	454542	46.7948	ug/L		98
66)	Tetrachloroethene	13.60	164	396786	53.5643	ug/L		98
67)	Dibromochloromethane	13.87	129	395724	49.6754	ug/L		100
68)	1,2-Dibromoethane	14.13	107	255599	47.0072	ug/L		100
69)	1-Chlorohexane	14.21	91	578156	48.9870	ug/L		99
70)	Chlorobenzene	14.62	112	1159672	49.7395	ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.65	131	463624	51.3284	ug/L		97
72)	Ethylbenzene	14.65	106	637930	50.0093	ug/L		100
73)	m-,p-Xylene	14.75	106	1537933	102.7868	ug/L		99
74)	o-Xylene	15.31	106	747891	51.1263	ug/L		99
75)	Styrene	15.35	104	1245661	51.9183	ug/L		97
76)	Bromoform	15.83	173	237534	50.2711	ug/L		100
77)	Isopropylbenzene	15.73	105	2081353	53.5594	ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	254750	40.5869	ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	84030	43.4753	ug/L		84
82)	trans-1,4-Dichloro-2-Buten	16.18	53	81794	41.6214	ug/L		83
83)	n-Propylbenzene	16.24	91	2440195	50.0212	ug/L		99
84)	Bromobenzene	16.37	156	486149	48.4494	ug/L		96
85)	1,3,5-Trimethylbenzene	16.42	105	1814775	51.0692	ug/L		100
86)	2-Chlorotoluene	16.51	91	1660551	48.7547	ug/L		100
87)	4-Chlorotoluene	16.56	91	1497194	48.6650	ug/L		100
88)	a-Methylstyrene	16.84	118	773891	45.9023	ug/L		100
89)	tert-Butylbenzene	16.89	134	343226	49.3705	ug/L		98
90)	1,2,4-Trimethylbenzene	16.94	105	1835226	50.2251	ug/L		100
91)	sec-Butylbenzene	17.17	105	2111318	50.5038	ug/L		99
92)	p-Isopropyltoluene	17.32	119	1808058	50.9371	ug/L		99
93)	1,3-Dichlorobenzene	17.52	146	950820	49.2112	ug/L		100
94)	1,4-Dichlorobenzene	17.64	146	927258	47.6025	ug/L		99
95)	n-Butylbenzene	17.85	91	1764653	50.2872	ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	804738	46.8302	ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	54275	43.0779	ug/L		99
98)	1,2,4-Trichlorobenzene	20.28	180	586925	45.6941	ug/L		100
99)	Hexachlorobutadiene	20.43	225	311373	51.8824	ug/L		99
100)	Naphthalene	20.65	128	762241	39.9424	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	446875	41.2380	ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412921.D Vial: 2
Acq On : 11 Jun 2016 13:34 Operator: FJB
Sample : WG572347-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 8:30 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

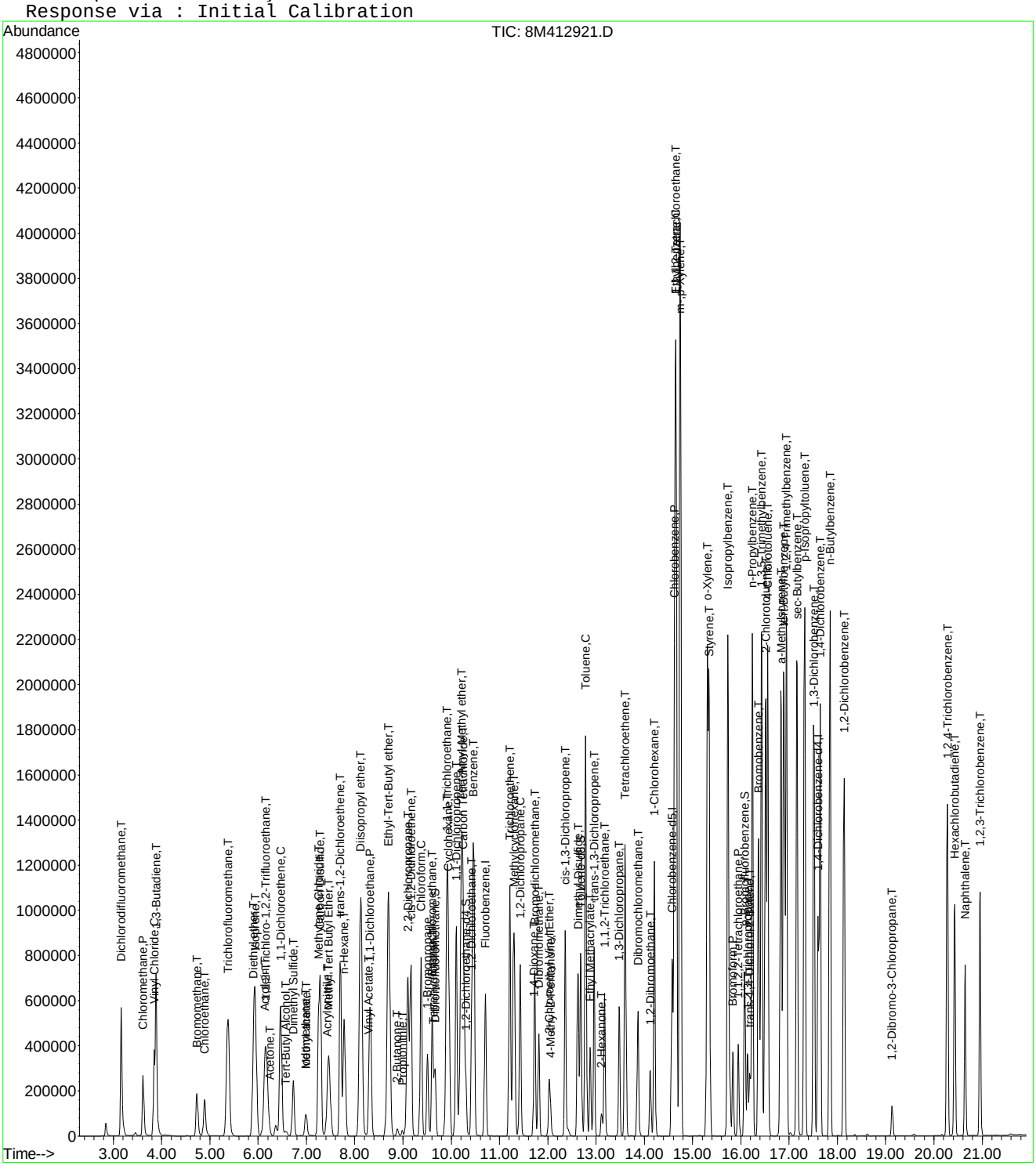

8M412921.D 8260WT.M Mon Jun 13 08:30:30 2016 Page 3

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412921.D Vial: 2
Acq On : 11 Jun 2016 13:34 Operator: FJB
Sample : WG572347-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	99	0.00
2	T	Dichlorodifluoromethane	0.4192	0.5102	-21.7	115	0.00
3	P	Chloromethane	0.2447	0.2286	6.5	94	0.00
4	C	Vinyl Chloride	0.2903	0.3164	-9.0	107	0.00
5	T	1,3-Butadiene	0.2434	0.2730	-12.1	107	0.00
6	T	Bromomethane	0.1654	0.1245	24.7	73	0.00
7	T	Chloroethane	0.1597	0.1589	0.5	100	0.00
8	T	Trichlorofluoromethane	0.5401	0.6477	-19.9	119	0.00
9	T	Diethyl ether	0.1290	0.1185	8.1	94	0.00
10	T	Isoprene	0.3280	0.3175	3.2	98	0.00
11	T	Acrolein	0.0116	0.0098	15.4	85	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2539	0.2809	-10.6	111	0.00
13	T	Acetone	0.0281	0.0276	1.9	92	0.00
14	C	1,1-Dichloroethene	0.4043	0.4397	-8.8	109	0.00
15	T	Tert-Butyl Alcohol	0.0090	0.0082	9.0	91	0.00
16	T	Dimethyl Sulfide	0.1445	0.1300	10.1	90	0.00
17	T	Iodomethane	0.0866	0.0548	36.7#	53	0.00
18	T	Methyl acetate	0.0760	0.0710	6.6	95	0.00
19	T	Methylene Chloride	0.2573	0.2514	2.3	99	0.00
20	T	Carbon Disulfide	0.8460	0.8494	-0.4	103	0.00
21	T	Acrylonitrile	0.0365	0.0334	8.4	86	0.00
22	T	Methyl Tert Butyl Ether	0.5568	0.5438	2.3	93	0.00
23	T	trans-1,2-Dichloroethene	0.3714	0.3883	-4.6	104	0.00
24	T	n-Hexane	0.2758	0.2807	-1.8	103	0.00
25	T	Diisopropyl ether	0.5789	0.5412	6.5	93	0.00
26	T	Vinyl Acetate	0.2651	0.1924	27.4#	69	0.00
27	P	1,1-Dichloroethane	0.4612	0.4816	-4.4	102	0.00
28	T	Ethyl-Tert-Butyl ether	0.6203	0.6131	1.2	96	0.00
29	T	2-Butanone	0.0413	0.0351	15.0	81	0.00
30	T	Propionitrile	0.0120	0.0107	11.5	86	0.00
31	T	2,2-Dichloropropane	0.4860	0.5967	-22.8	119	0.00
32	T	cis-1,2-Dichloroethene	0.2870	0.2940	-2.4	103	0.00
33	C	Chloroform	0.5446	0.5822	-6.9	106	0.00
34		1-Bromopropane	0.0411	0.0449	-9.3	109	0.00
35	T	Bromochloromethane	0.1472	0.1499	-1.9	100	0.00
36	T	Tetrahydrofuran	0.0272	0.0278	-2.1	107	0.00
37	S	Dibromofluoromethane	0.2686	0.2891	-7.6	105	0.00
38	T	1,1,1-Trichloroethane	0.5173	0.6089	-17.7	114	0.00
39	T	Cyclohexane	0.3581	0.3425	4.4	98	0.00
40	T	1,1-Dichloropropene	0.3943	0.4251	-7.8	106	0.00
41	T	Tert-Amyl-Methyl ether	0.5634	0.5489	2.6	95	0.00
42	T	Carbon Tetrachloride	0.4593	0.5526	-20.3	117	0.00
43	S	1,2-Dichloroethane-d4	0.2880	0.3110	-8.0	104	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.3505	0.3786	-8.0	104	0.00
46	T	Benzene	1.0269	1.0572	-3.0	101	0.00
47	T	Trichloroethene	0.2739	0.2959	-8.0	107	0.00
48	T	Methylcyclohexane	0.4161	0.4270	-2.6	103	0.00
49	C	1,2-Dichloropropane	0.2286	0.2187	4.4	95	0.00
50	T	Bromodichloromethane	0.4018	0.4314	-7.4	101	0.00
51	T	1,4-Dioxane	0.0012	0.0010	13.0	81	0.00
52	T	Dibromomethane	0.1353	0.1303	3.7	96	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0983	0.0811	17.5	77	0.00
54	T	4-Methyl-2-Pentanone	0.0401	0.0324	19.2	77	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412921.D Vial: 2
Acq On : 11 Jun 2016 13:34 Operator: FJB
Sample : WG572347-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4090	0.4237	-3.6	98	0.00
56	T	Dimethyl Disulfide	0.2183	0.2097	3.9	94	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	103	0.00
58	S	Toluene-d8	1.3084	1.3707	-4.8	106	0.00
59	C	Toluene	1.5520	1.5660	-0.9	104	0.00
60	T	Ethyl Methacrylate	0.2981	0.2600	12.8	85	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.5201	0.5192	0.2	97	0.00
63	T	1,1,2-Trichloroethane	0.2449	0.2249	8.2	93	0.00
64	T	2-Hexanone	0.0515	0.0417	19.0	82	0.00
65	T	1,3-Dichloropropane	0.4360	0.4081	6.4	93	0.00
66	T	Tetrachloroethene	0.3325	0.3562	-7.1	113	0.00
67	T	Dibromochloromethane	0.3576	0.3553	0.7	99	0.00
68	T	1,2-Dibromoethane	0.2441	0.2295	6.0	93	0.00
69	T	1-Chlorohexane	0.5298	0.5191	2.0	103	0.00
70	P	Chlorobenzene	1.0466	1.0411	0.5	104	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4055	0.4162	-2.7	104	0.00
72	C	Ethylbenzene	0.5726	0.5727	-0.0	106	0.00
73	T	m-,p-Xylene	0.6716	0.6904	-2.8	107	0.00
74	T	o-Xylene	0.6566	0.6714	-2.3	105	0.00
75	T	Styrene	1.0770	1.1183	-3.8	103	0.00
76	P	Bromoform	0.2121	0.2133	-0.5	100	0.00
77	T	Isopropylbenzene	1.7444	1.8686	-7.1	108	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	108	0.00
79	P	1,1,2,2-Tetrachloroethane	0.5018	0.4073	18.8	87	0.00
80	S	p-Bromofluorobenzene	1.0352	1.0128	2.2	108	0.00
81	T	1,2,3-Trichloropropane	0.1545	0.1344	13.0	94	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1376	0.1308	4.9	94	0.00
83	T	n-Propylbenzene	3.9003	3.9019	-0.0	107	0.00
84	T	Bromobenzene	0.8022	0.7774	3.1	106	0.00
85	T	1,3,5-Trimethylbenzene	2.8411	2.9019	-2.1	109	0.00
86	T	2-Chlorotoluene	2.7231	2.6553	2.5	103	0.00
87	T	4-Chlorotoluene	2.4597	2.3941	2.7	112	0.00
88	T	a-Methylstyrene	1.3479	1.2375	8.2	100	0.00
89	T	tert-Butylbenzene	0.5558	0.5488	1.3	112	0.00
90	T	1,2,4-Trimethylbenzene	2.9214	2.9346	-0.5	109	0.00
91	T	sec-Butylbenzene	3.3424	3.3761	-1.0	110	0.00
92	T	p-Isopropyltoluene	2.8379	2.8911	-1.9	112	0.00
93	T	1,3-Dichlorobenzene	1.5448	1.5204	1.6	108	0.00
94	T	1,4-Dichlorobenzene	1.5574	1.4827	4.8	106	0.00
95	T	n-Butylbenzene	2.8056	2.8217	-0.6	110	0.00
96	T	1,2-Dichlorobenzene	1.3739	1.2868	6.3	105	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1007	0.0868	13.8	91	0.00
98	T	1,2,4-Trichlorobenzene	1.0269	0.9385	8.6	101	0.00
99	T	Hexachlorobutadiene	0.4798	0.4979	-3.8	118	0.00
100	T	Naphthalene	1.5257	1.2188	20.1	85	0.00
101	T	1,2,3-Trichlorobenzene	0.8664	0.7146	17.5	94	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412921.D 8260WT.M Mon Jun 13 08:52:17 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412921.D Vial: 2
Acq On : 11 Jun 2016 13:34 Operator: FJB
Sample : WG572347-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	99	0.00
2	T	Dichlorodifluoromethane	50.0000	60.8677	-21.7	115	0.00
3	P	Chloromethane	50.0000	46.7278	6.5	94	0.00
4	C	Vinyl Chloride	50.0000	54.5027	-9.0	107	0.00
5	T	1,3-Butadiene	50.0000	56.0660	-12.1	107	0.00
6	T	Bromomethane	50.0000	36.0005	28.0#	73	0.00
7	T	Chloroethane	50.0000	49.7312	0.5	100	0.00
8	T	Trichlorofluoromethane	50.0000	59.9594	-19.9	119	0.00
9	T	Diethyl ether	100.0000	91.9106	8.1	94	0.00
10	T	Isoprene	50.0000	48.3952	3.2	98	0.00
11	T	Acrolein	50.0000	42.3187	15.4	85	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	55.3206	-10.6	111	0.00
13	T	Acetone	50.0000	49.0565	1.9	92	0.00
14	C	1,1-Dichloroethene	50.0000	54.3820	-8.8	109	0.00
15	T	Tert-Butyl Alcohol	200.0000	181.8989	9.1	91	0.00
16	T	Dimethyl Sulfide	50.0000	44.9735	10.1	90	0.00
17	T	Iodomethane	50.0000	26.0755	47.8#	53	0.00
18	T	Methyl acetate	50.0000	46.7158	6.6	95	0.00
19	T	Methylene Chloride	50.0000	48.8629	2.3	99	0.00
20	T	Carbon Disulfide	50.0000	50.2046	-0.4	103	0.00
21	T	Acrylonitrile	50.0000	45.8209	8.4	86	0.00
22	T	Methyl Tert Butyl Ether	50.0000	48.8359	2.3	93	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.2779	-4.6	104	0.00
24	T	n-Hexane	50.0000	50.8860	-1.8	103	0.00
25	T	Diisopropyl ether	100.0000	93.4926	6.5	93	0.00
26	T	Vinyl Acetate	50.0000	36.3023	27.4#	69	0.00
27	P	1,1-Dichloroethane	50.0000	52.2036	-4.4	102	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.8444	1.2	96	0.00
29	T	2-Butanone	50.0000	42.4914	15.0	81	0.00
30	T	Propionitrile	100.0000	88.4006	11.6	86	0.00
31	T	2,2-Dichloropropane	50.0000	61.3836	-22.8	119	0.00
32	T	cis-1,2-Dichloroethene	50.0000	51.2227	-2.4	103	0.00
33	C	Chloroform	50.0000	53.4498	-6.9	106	0.00
34		1-Bromopropane	50.0000	54.6286	-9.3	109	0.00
35	T	Bromochloromethane	50.0000	50.9341	-1.9	100	0.00
36	T	Tetrahydrofuran	100.0000	102.1356	-2.1	107	0.00
37	S	Dibromofluoromethane	25.0000	26.9080	-7.6	105	0.00
38	T	1,1,1-Trichloroethane	50.0000	58.8502	-17.7	114	0.00
39	T	Cyclohexane	50.0000	47.8160	4.4	98	0.00
40	T	1,1-Dichloropropene	50.0000	53.9117	-7.8	106	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	97.4349	2.6	95	0.00
42	T	Carbon Tetrachloride	50.0000	60.1482	-20.3	117	0.00
43	S	1,2-Dichloroethane-d4	25.0000	26.9927	-8.0	104	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	54.0099	-8.0	104	0.00
46	T	Benzene	50.0000	51.4752	-3.0	101	0.00
47	T	Trichloroethene	50.0000	54.0094	-8.0	107	0.00
48	T	Methylcyclohexane	50.0000	51.3169	-2.6	103	0.00
49	C	1,2-Dichloropropane	50.0000	47.8254	4.3	95	0.00
50	T	Bromodichloromethane	50.0000	53.6889	-7.4	101	0.00
51	T	1,4-Dioxane	200.0000	174.4710	12.8	81	0.00
52	T	Dibromomethane	50.0000	48.1405	3.7	96	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	41.2757	17.4	77	0.00
54	T	4-Methyl-2-Pentanone	50.0000	40.3896	19.2	77	0.00

(#) = Out of Range

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412921.D Vial: 2
Acq On : 11 Jun 2016 13:34 Operator: FJB
Sample : WG572347-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	51.7963	-3.6	98	0.00
56	T	Dimethyl Disulfide	50.0000	48.0310	3.9	94	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	103	0.00
58	S	Toluene-d8	25.0000	26.1916	-4.8	106	0.00
59	C	Toluene	50.0000	50.4495	-0.9	104	0.00
60	T	Ethyl Methacrylate	50.0000	43.6065	12.8	85	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	49.9142	0.2	97	0.00
63	T	1,1,2-Trichloroethane	50.0000	45.9107	8.2	93	0.00
64	T	2-Hexanone	50.0000	40.4931	19.0	82	0.00
65	T	1,3-Dichloropropane	50.0000	46.7948	6.4	93	0.00
66	T	Tetrachloroethene	50.0000	53.5643	-7.1	113	0.00
67	T	Dibromochloromethane	50.0000	49.6754	0.6	99	0.00
68	T	1,2-Dibromoethane	50.0000	47.0072	6.0	93	0.00
69	T	1-Chlorohexane	50.0000	48.9870	2.0	103	0.00
70	P	Chlorobenzene	50.0000	49.7395	0.5	104	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	51.3284	-2.7	104	0.00
72	C	Ethylbenzene	50.0000	50.0093	-0.0	106	0.00
73	T	m-,p-Xylene	100.0000	102.7868	-2.8	107	0.00
74	T	o-Xylene	50.0000	51.1264	-2.3	105	0.00
75	T	Styrene	50.0000	51.9183	-3.8	103	0.00
76	P	Bromoform	50.0000	50.2711	-0.5	100	0.00
77	T	Isopropylbenzene	50.0000	53.5594	-7.1	108	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	108	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	40.5869	18.8	87	0.00
80	S	p-Bromofluorobenzene	25.0000	24.4591	2.2	108	0.00
81	T	1,2,3-Trichloropropane	50.0000	43.4753	13.0	94	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	41.6215	16.8	94	0.00
83	T	n-Propylbenzene	50.0000	50.0212	-0.0	107	0.00
84	T	Bromobenzene	50.0000	48.4494	3.1	106	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	51.0692	-2.1	109	0.00
86	T	2-Chlorotoluene	50.0000	48.7547	2.5	103	0.00
87	T	4-Chlorotoluene	50.0000	48.6650	2.7	112	0.00
88	T	a-Methylstyrene	50.0000	45.9023	8.2	100	0.00
89	T	tert-Butylbenzene	50.0000	49.3705	1.3	112	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	50.2251	-0.5	109	0.00
91	T	sec-Butylbenzene	50.0000	50.5038	-1.0	110	0.00
92	T	p-Isopropyltoluene	50.0000	50.9371	-1.9	112	0.00
93	T	1,3-Dichlorobenzene	50.0000	49.2112	1.6	108	0.00
94	T	1,4-Dichlorobenzene	50.0000	47.6025	4.8	106	0.00
95	T	n-Butylbenzene	50.0000	50.2872	-0.6	110	0.00
96	T	1,2-Dichlorobenzene	50.0000	46.8302	6.3	105	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	43.0779	13.8	91	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	45.6941	8.6	101	0.00
99	T	Hexachlorobutadiene	50.0000	51.8824	-3.8	118	0.00
100	T	Naphthalene	50.0000	39.9424	20.1	85	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	41.2380	17.5	94	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412921.D 8260WT.M Mon Jun 13 08:52:20 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\2\DATA\051316\8M412218.D          Vial: 3
Acq On    : 13 May 2016  12:36                       Operator: TMB
Sample    : WG568561-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD76034                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
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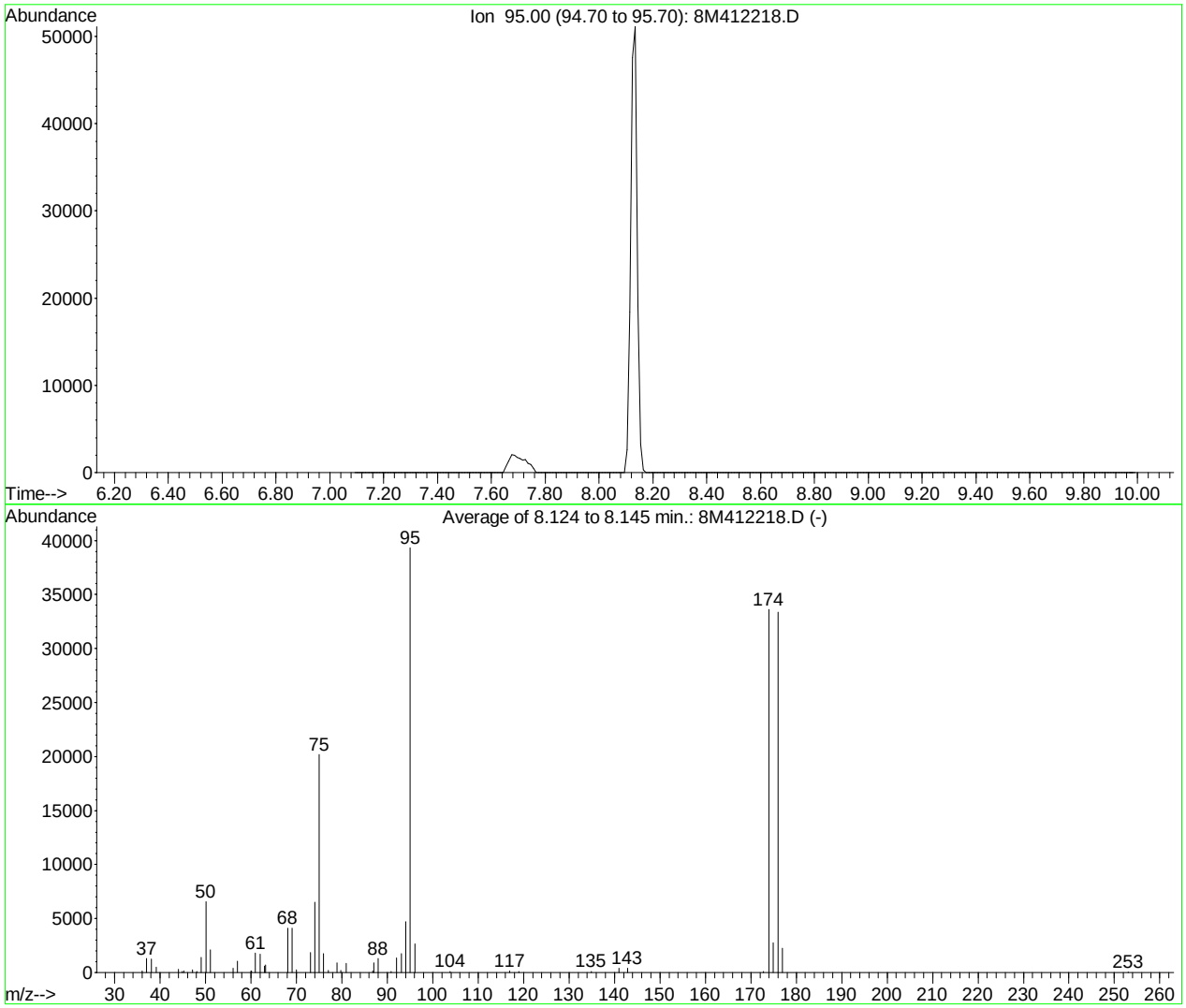

AutoFind: Scans 102, 103, 104; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.7	6575	PASS
75	95	30	60	51.3	20171	PASS
95	95	100	100	100.0	39312	PASS
96	95	5	9	6.7	2649	PASS
173	174	0.00	2	0.4	122	PASS
174	95	50	100	85.5	33616	PASS
175	174	5	9	8.2	2746	PASS
176	174	95	101	99.2	33360	PASS
177	176	5	9	6.8	2267	PASS

8M412218.D BFB.M Fri May 13 12:47:24 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412920.D Vial: 1
Acq On    : 11 Jun 2016  13:08                        Operator: FJB
Sample    : WG572347-01 BFB 50ng 8260                 Inst    : HPMS8
Misc      : 1,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title     : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
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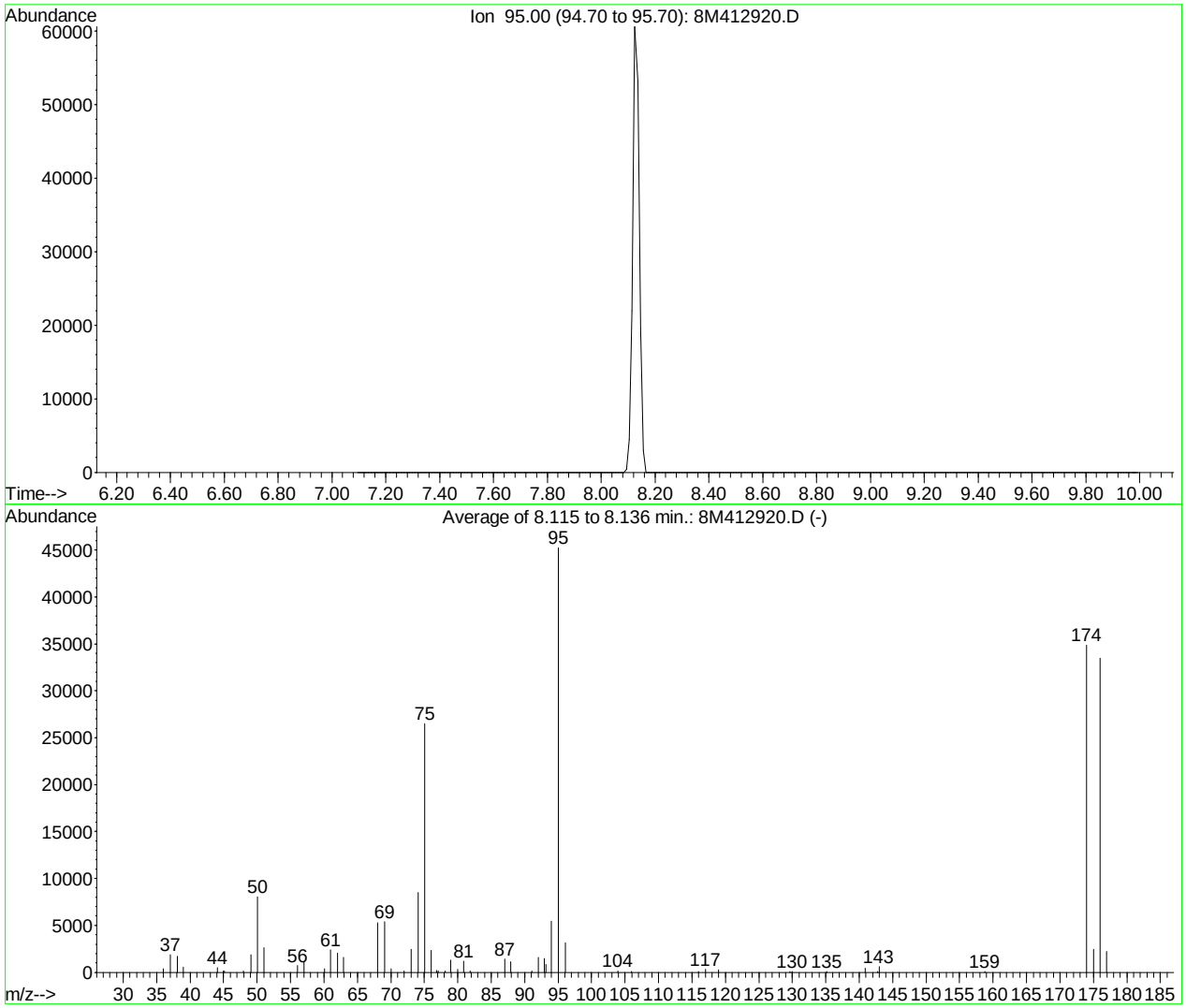

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 96

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.8	8071	PASS
75	95	30	60	58.5	26476	PASS
95	95	100	100	100.0	45256	PASS
96	95	5	9	6.9	3142	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	77.0	34867	PASS
175	174	5	9	7.0	2439	PASS
176	174	95	101	96.0	33456	PASS
177	176	5	9	6.6	2202	PASS

8M412920.D 8260WT.M Mon Jun 13 08:52:07 2016

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412923.D Vial: 4
Acq On : 11 Jun 2016 14:32 Operator: FJB
Sample : WG572348-01 VBLK0611 BLANK 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 08:48:07 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	717003	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	533285	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	292600	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	215990	28.0376 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 112.16%		
43) 1,2-Dichloroethane-d4	10.31	65	238635	28.8899 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 115.56%		
58) Toluene-d8	12.68	98	735549	26.3546 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.40%		
80) p-Bromofluorobenzene	16.07	95	303859	25.0797 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.32%		

Target Compounds					Qvalue
19) Methylene Chloride	7.25	84	5244	0.7107 ug/L	95
36) Tetrahydrofuran	9.63	42	482	0.6175 ug/L #	24

(#) = qualifier out of range (m) = manual integration
8M412923.D 8260WT.M Mon Jun 13 08:48:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412923.D Vial: 4
Acq On : 11 Jun 2016 14:32 Operator: FJB
Sample : WG572348-01 VBLK0611 BLANK 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 8:48 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

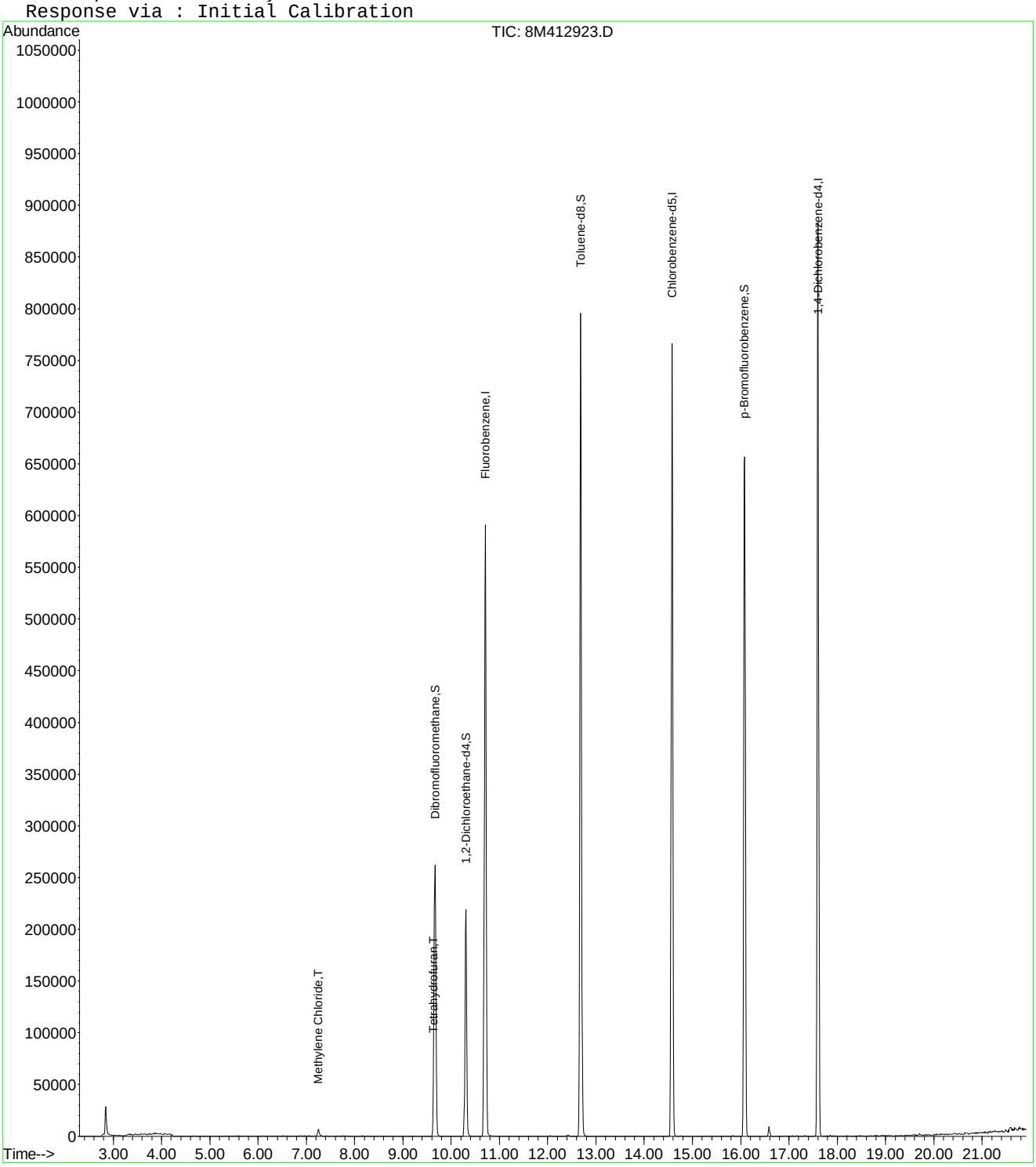

8M412923.D 8260WT.M Mon Jun 13 08:48:10 2016 Page 2

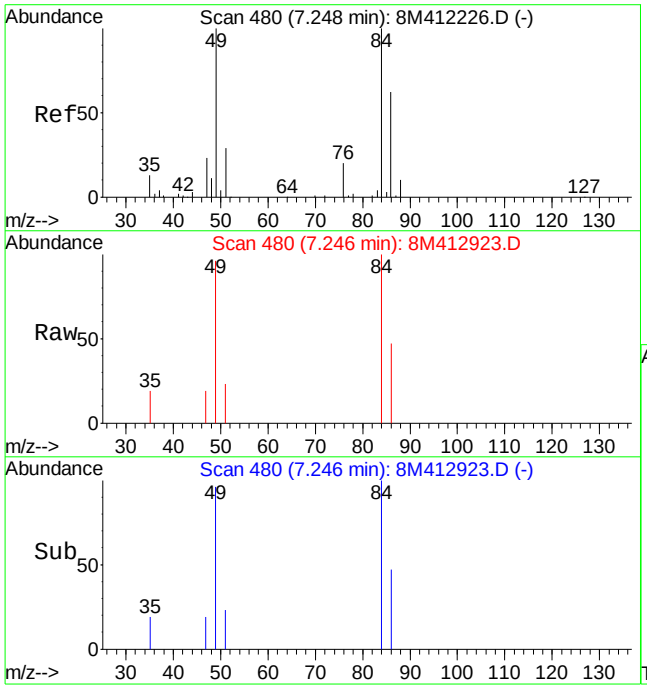

#19
Methylene Chloride
Concen: 0.71 ug/L
RT: 7.25 min Scan# 480
Delta R.T. -0.00 min
Lab File: 8M412923.D
Acq: 11 Jun 2016 14:32

Tgt Ion: 84 Resp: 5244

Ion	Ratio	Lower	Upper
84	100		
49	95.9	60.5	141.3

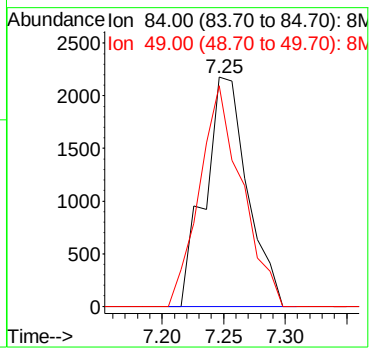

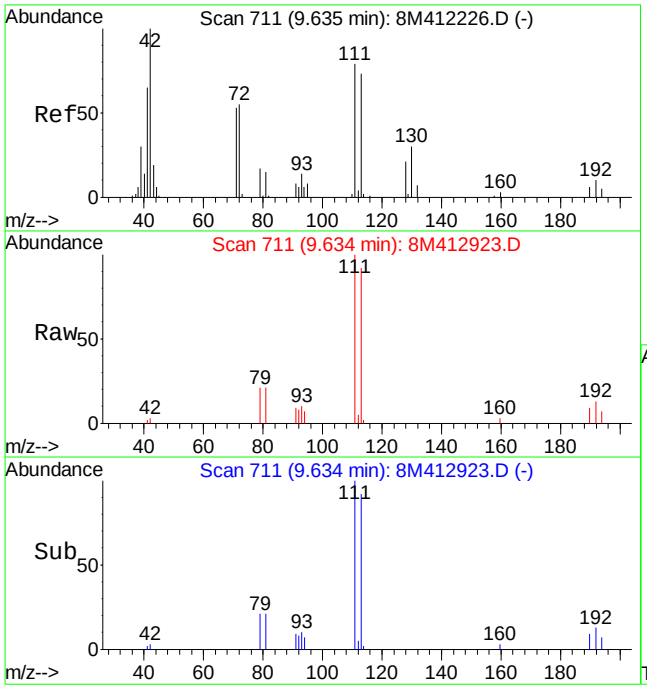

#36
Tetrahydrofuran
Concen: 0.62 ug/L
RT: 9.63 min Scan# 711
Delta R.T. -0.00 min
Lab File: 8M412923.D
Acq: 11 Jun 2016 14:32

Tgt Ion: 42 Resp: 482

Ion	Ratio	Lower	Upper
42	100		
72	0.0	33.8	78.8#
71	0.0	32.0	74.8#

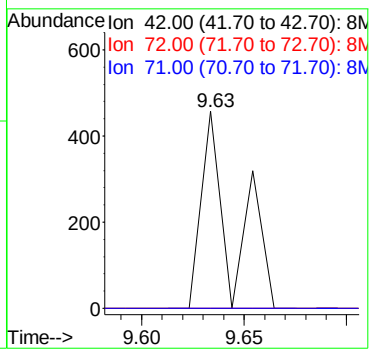

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412924.D Vial: 5
Acq On : 11 Jun 2016 15:00 Operator: FJB
Sample : WG572348-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 08:30:40 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	722554	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	536970	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	300500	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	208874	26.9056 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.64%		
43) 1,2-Dichloroethane-d4	10.30	65	233627	28.0663 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.28%		
58) Toluene-d8	12.68	98	736580	26.2105 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.84%		
80) p-Bromofluorobenzene	16.08	95	309769	24.8954 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.60%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	317051	26.1716 ug/L	99
3) Chloromethane	3.62	50	146042	20.6525 ug/L	100
4) Vinyl Chloride	3.84	62	209953	25.0249 ug/L	99
5) 1,3-Butadiene	3.89	54	58985	8.3836 ug/L	96
6) Bromomethane	4.73	94	74362	15.4056 ug/L	98
7) Chloroethane	4.89	64	104778	22.6967 ug/L	98
8) Trichlorofluoromethane	5.37	101	364574	23.3537 ug/L	100
9) Diethyl ether	5.90	59	171354	45.9781 ug/L	97
10) Isoprene	5.93	67	224501	23.6815 ug/L	98
11) Acrolein	6.14	56	19715	59.0828 ug/L	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	166906	22.7453 ug/L	96
13) Acetone	6.24	43	16507	20.3053 ug/L	92
14) 1,1-Dichloroethene	6.46	61	229178	19.6150 ug/L	98
15) Tert-Butyl Alcohol	6.57	59	40840	156.7674 ug/L	97
16) Dimethyl Sulfide	6.73	62	154843	37.0652 ug/L	100
17) Iodomethane	6.99	142	30383	11.7602 ug/L	94
18) Methyl acetate	7.00	43	41560	18.9128 ug/L	98
19) Methylene Chloride	7.26	84	144385	19.4187 ug/L	99
20) Carbon Disulfide	7.29	76	497894	20.3633 ug/L	100
21) Acrylonitrile	7.43	53	20125	19.0799 ug/L	96
22) Methyl Tert Butyl Ether	7.46	73	352036	21.8760 ug/L	100
23) trans-1,2-Dichloroethene	7.70	61	215962	20.1194 ug/L	97
24) n-Hexane	7.78	57	164799	20.6757 ug/L	98
25) Diisopropyl ether	8.12	45	1381117	82.5443 ug/L	96
26) Vinyl Acetate	8.30	43	134712	17.5848 ug/L	98
27) 1,1-Dichloroethane	8.32	63	265378	19.9075 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	1532763	85.5013 ug/L	98
29) 2-Butanone	8.88	43	21885	18.3229 ug/L	93
30) Propionitrile	8.99	54	30982	89.0108 ug/L	99
31) 2,2-Dichloropropane	9.11	77	334370	23.8019 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	169003	20.3766 ug/L	98
33) Chloroform	9.37	83	330468	20.9956 ug/L	98
34) 1-Bromopropane	9.51	122	34117	28.7177 ug/L	94
35) Bromochloromethane	9.60	130	86412	20.3173 ug/L	96
36) Tetrahydrofuran	9.63	42	55385	70.4041 ug/L	95
38) 1,1,1-Trichloroethane	9.90	97	338939	22.6700 ug/L	100
39) Cyclohexane	9.94	56	213799	20.6549 ug/L	96
40) 1,1-Dichloropropene	10.10	75	234287	20.5588 ug/L	100
41) Tert-Amyl-Methyl ether	10.21	73	1635665	100.4585 ug/L	99
42) Carbon Tetrachloride	10.25	117	306804	23.1091 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412924.D 8260WT.M Mon Jun 13 08:30:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412924.D Vial: 5
Acq On : 11 Jun 2016 15:00 Operator: FJB
Sample : WG572348-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 08:30:40 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	230207	22.7237 ug/L		97
46)	Benzene	10.46	78	610201	20.5589 ug/L		100
47)	Trichloroethene	11.21	130	171102	21.6143 ug/L		98
48)	Methylcyclohexane	11.30	83	260942	21.6980 ug/L		100
49)	1,2-Dichloropropane	11.43	63	130480	19.7481 ug/L		90
50)	Bromodichloromethane	11.73	83	253683	21.8451 ug/L		100
51)	1,4-Dioxane	11.72	88	2818	84.9049 ug/L		86
52)	Dibromomethane	11.81	93	73955	18.9087 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.02	63	55019	19.3738 ug/L		98
54)	4-Methyl-2-Pentanone	12.06	58	21013	18.1140 ug/L		93
55)	cis-1,3-Dichloropropene	12.36	75	266134	22.5151 ug/L		100
56)	Dimethyl Disulfide	12.63	79	132718	21.0367 ug/L		92
59)	Toluene	12.78	91	656829	19.7033 ug/L		99
60)	Ethyl Methacrylate	12.88	69	128874	20.1301 ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	224261	20.0744 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	99246	18.8670 ug/L		99
64)	2-Hexanone	13.13	58	18887	17.0860 ug/L	#	96
65)	1,3-Dichloropropane	13.48	76	193420	20.6525 ug/L		100
66)	Tetrachloroethene	13.60	164	146218	20.4724 ug/L		99
67)	Dibromochloromethane	13.87	129	151926	19.7801 ug/L		99
68)	1,2-Dibromoethane	14.12	107	103515	19.7450 ug/L		96
69)	1-Chlorohexane	14.21	91	235888	20.7295 ug/L		100
70)	Chlorobenzene	14.62	112	457782	20.3645 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.66	131	180241	20.6963 ug/L		99
72)	Ethylbenzene	14.66	106	242005	19.6766 ug/L		100
73)	m-,p-Xylene	14.75	106	597164	41.3944 ug/L		97
74)	o-Xylene	15.31	106	297411	21.0869 ug/L		99
75)	Styrene	15.35	104	473460	20.4669 ug/L		96
76)	Bromoform	15.83	173	87412	19.1872 ug/L		99
77)	Isopropylbenzene	15.73	105	807777	21.5590 ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	102680	17.0227 ug/L		99
81)	1,2,3-Trichloropropane	16.13	110	34201	18.4127 ug/L		76
82)	trans-1,4-Dichloro-2-Buten	16.18	53	29302	15.9008 ug/L		88
83)	n-Propylbenzene	16.24	91	972189	20.7372 ug/L		100
84)	Bromobenzene	16.37	156	186080	19.2970 ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	706189	20.6789 ug/L		99
86)	2-Chlorotoluene	16.51	91	662576	20.2428 ug/L		100
87)	4-Chlorotoluene	16.56	91	580327	19.6283 ug/L		100
88)	a-Methylstyrene	16.83	118	344906	21.2876 ug/L		100
89)	tert-Butylbenzene	16.89	134	133999	20.0567 ug/L		97
90)	1,2,4-Trimethylbenzene	16.94	105	700066	19.9361 ug/L		99
91)	sec-Butylbenzene	17.16	105	815053	20.2874 ug/L		100
92)	p-Isopropyltoluene	17.32	119	690944	20.2552 ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	363614	19.5829 ug/L		99
94)	1,4-Dichlorobenzene	17.64	146	375724	20.0710 ug/L		98
95)	n-Butylbenzene	17.85	91	654054	19.3947 ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	318381	19.2792 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	20169	16.6575 ug/L		92
98)	1,2,4-Trichlorobenzene	20.28	180	227353	18.4183 ug/L		99
99)	Hexachlorobutadiene	20.43	225	121152	21.0059 ug/L		98
100)	Naphthalene	20.65	128	278297	15.1747 ug/L		98
101)	1,2,3-Trichlorobenzene	20.95	180	176442	16.9428 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M412924.D 8260WT.M Mon Jun 13 08:30:43 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412924.D Vial: 5
Acq On : 11 Jun 2016 15:00 Operator: FJB
Sample : WG572348-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 8:30 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

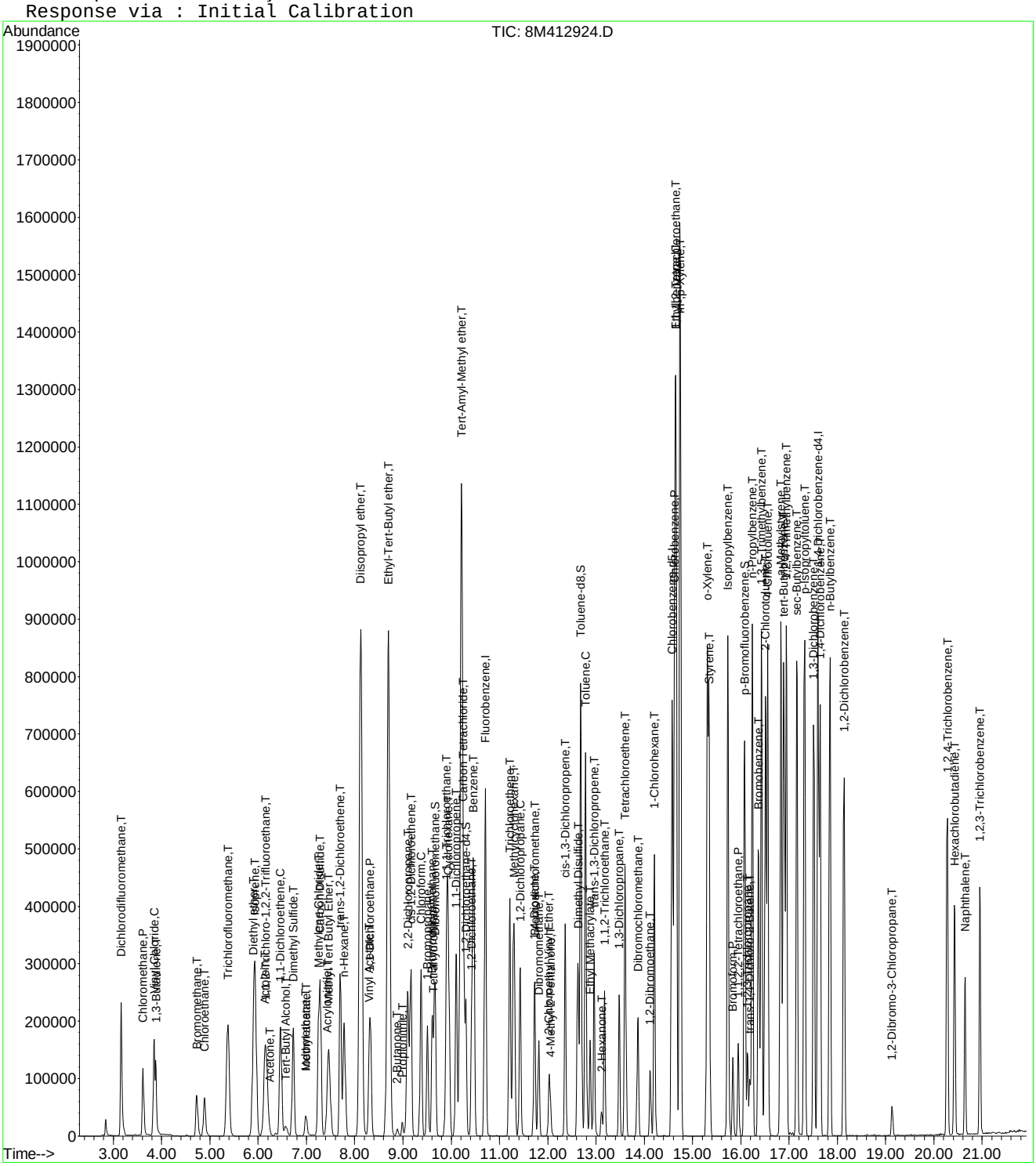

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412925.D Vial: 6
Acq On : 11 Jun 2016 15:29 Operator: FJB
Sample : WG572348-03 20ug/L LCS2 8260 Inst : HPMS8
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 08:30:45 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	748082	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	552978	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	313632	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	221583	27.5686 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.28%		
43) 1,2-Dichloroethane-d4	10.30	65	238822	27.7113 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 110.84%		
58) Toluene-d8	12.68	98	756269	26.1320 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.52%		
80) p-Bromofluorobenzene	16.08	95	321075	24.7236 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.88%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	318030	25.3566 ug/L	100
3) Chloromethane	3.62	50	151799	20.7341 ug/L	100
4) Vinyl Chloride	3.84	62	214813	24.7304 ug/L	97
5) 1,3-Butadiene	3.89	54	63285	8.6878 ug/L	99
6) Bromomethane	4.73	94	72954	14.6312 ug/L	100
7) Chloroethane	4.89	64	100451	21.0168 ug/L	98
8) Trichlorofluoromethane	5.37	101	363892	22.5145 ug/L	99
9) Diethyl ether	5.90	59	176736	45.8039 ug/L	98
10) Isoprene	5.94	67	221372	22.5546 ug/L	98
11) Acrolein	6.14	56	23793	68.8707 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	163002	21.4552 ug/L	94
13) Acetone	6.24	43	18053	21.4492 ug/L	94
14) 1,1-Dichloroethene	6.47	61	230284	19.0371 ug/L	99
15) Tert-Butyl Alcohol	6.57	59	54049	200.3913 ug/L	98
16) Dimethyl Sulfide	6.73	62	159097	36.7839 ug/L	98
17) Iodomethane	6.99	142	38947	13.8953 ug/L	98
18) Methyl acetate	7.00	43	44884	19.7285 ug/L	98
19) Methylene Chloride	7.25	84	147046	19.1017 ug/L	99
20) Carbon Disulfide	7.29	76	494338	19.5280 ug/L	99
21) Acrylonitrile	7.43	53	21886	20.0413 ug/L	98
22) Methyl Tert Butyl Ether	7.46	73	367911	22.0823 ug/L	100
23) trans-1,2-Dichloroethene	7.70	61	220314	19.8245 ug/L	100
24) n-Hexane	7.78	57	166178	20.1373 ug/L	97
25) Diisopropyl ether	8.12	45	1440803	83.1730 ug/L	97
26) Vinyl Acetate	8.30	43	138362	17.4449 ug/L	100
27) 1,1-Dichloroethane	8.33	63	265287	19.2216 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	1594083	85.8874 ug/L	98
29) 2-Butanone	8.89	43	24225	19.5900 ug/L	95
30) Propionitrile	8.99	54	33220	92.1837 ug/L	97
31) 2,2-Dichloropropane	9.09	77	328166	22.5631 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	174656	20.3395 ug/L	99
33) Chloroform	9.37	83	337779	20.7277 ug/L	99
34) 1-Bromopropane	9.52	122	35374	28.7597 ug/L	96
35) Bromochloromethane	9.61	130	89467	20.3178 ug/L	93
36) Tetrahydrofuran	9.63	42	60803	74.6538 ug/L	95
38) 1,1,1-Trichloroethane	9.90	97	338886	21.8930 ug/L	100
39) Cyclohexane	9.94	56	212395	19.8190 ug/L	96
40) 1,1-Dichloropropene	10.11	75	236953	20.0832 ug/L	100
41) Tert-Amyl-Methyl ether	10.21	73	1712436	101.5845 ug/L	100
42) Carbon Tetrachloride	10.25	117	300947	21.8944 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412925.D Vial: 6
Acq On : 11 Jun 2016 15:29 Operator: FJB
Sample : WG572348-03 20ug/L LCS2 8260 Inst : HPMS8
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 08:30:45 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.42	62	228841	21.8180 ug/L	98
46)	Benzene	10.46	78	616864	20.0742 ug/L	99
47)	Trichloroethene	11.21	130	178098	21.7303 ug/L	97
48)	Methylcyclohexane	11.30	83	265783	21.3464 ug/L	99
49)	1,2-Dichloropropane	11.43	63	138345	20.2239 ug/L	94
50)	Bromodichloromethane	11.73	83	255727	21.2696 ug/L	99
51)	1,4-Dioxane	11.72	88	6120	178.1001 ug/L	99
52)	Dibromomethane	11.81	93	76664	18.9324 ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.02	63	55264	18.7961 ug/L	93
54)	4-Methyl-2-Pentanone	12.06	58	22531	18.7598 ug/L	90
55)	cis-1,3-Dichloropropene	12.36	75	272379	22.2571 ug/L	98
56)	Dimethyl Disulfide	12.63	79	135457	20.7381 ug/L	92
59)	Toluene	12.78	91	667710	19.4499 ug/L	99
60)	Ethyl Methacrylate	12.88	69	133869	20.3050 ug/L	100
62)	trans-1,3-Dichloropropene	12.96	75	229695	19.9656 ug/L	98
63)	1,1,2-Trichloroethane	13.18	97	101261	18.6928 ug/L	97
64)	2-Hexanone	13.11	58	19855	17.4417 ug/L #	93
65)	1,3-Dichloropropane	13.48	76	198493	20.5807 ug/L	99
66)	Tetrachloroethene	13.60	164	146308	19.8920 ug/L	97
67)	Dibromochloromethane	13.87	129	156950	19.8427 ug/L	100
68)	1,2-Dibromoethane	14.12	107	103182	19.1117 ug/L	99
69)	1-Chlorohexane	14.21	91	229945	19.6223 ug/L	99
70)	Chlorobenzene	14.62	112	459892	19.8661 ug/L	99
71)	1,1,1,2-Tetrachloroethane	14.65	131	181401	20.2265 ug/L	100
72)	Ethylbenzene	14.65	106	240593	18.9955 ug/L	97
73)	m-,p-Xylene	14.75	106	598449	40.2826 ug/L	97
74)	o-Xylene	15.31	106	293638	20.2166 ug/L	97
75)	Styrene	15.35	104	479445	20.1257 ug/L	97
76)	Bromoform	15.83	173	89915	19.1653 ug/L	98
77)	Isopropylbenzene	15.73	105	815929	21.1462 ug/L	100
79)	1,1,2,2-Tetrachloroethane	15.95	83	110498	17.5518 ug/L	98
81)	1,2,3-Trichloropropane	16.14	110	36661	18.9107 ug/L	75
82)	trans-1,4-Dichloro-2-Buten	16.18	53	32382	16.8002 ug/L	83
83)	n-Propylbenzene	16.24	91	975045	19.9273 ug/L	100
84)	Bromobenzene	16.37	156	187681	18.6481 ug/L	96
85)	1,3,5-Trimethylbenzene	16.42	105	700357	19.6495 ug/L	99
86)	2-Chlorotoluene	16.51	91	669014	19.5837 ug/L	98
87)	4-Chlorotoluene	16.56	91	606358	19.6500 ug/L	100
88)	a-Methylstyrene	16.84	118	342024	20.2258 ug/L	100
89)	tert-Butylbenzene	16.90	134	136408	19.5624 ug/L	99
90)	1,2,4-Trimethylbenzene	16.94	105	703396	19.1922 ug/L	100
91)	sec-Butylbenzene	17.17	105	822250	19.6096 ug/L	99
92)	p-Isopropyltoluene	17.32	119	701167	19.6942 ug/L	99
93)	1,3-Dichlorobenzene	17.51	146	379754	19.5958 ug/L	100
94)	1,4-Dichlorobenzene	17.64	146	380225	19.4610 ug/L	99
95)	n-Butylbenzene	17.85	91	668937	19.0055 ug/L	100
96)	1,2-Dichlorobenzene	18.14	146	328935	19.0843 ug/L	100
97)	1,2-Dibromo-3-Chloropropan	19.13	75	22150	17.5276 ug/L	92
98)	1,2,4-Trichlorobenzene	20.28	180	234168	18.1761 ug/L	98
99)	Hexachlorobutadiene	20.43	225	121384	20.1649 ug/L	98
100)	Naphthalene	20.65	128	301128	15.7321 ug/L	99
101)	1,2,3-Trichlorobenzene	20.96	180	183976	16.9265 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412925.D 8260WT.M Mon Jun 13 08:30:49 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061116\8M412925.D Vial: 6
Acq On : 11 Jun 2016 15:29 Operator: FJB
Sample : WG572348-03 20ug/L LCS2 8260 Inst : HPMS8
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 8:30 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

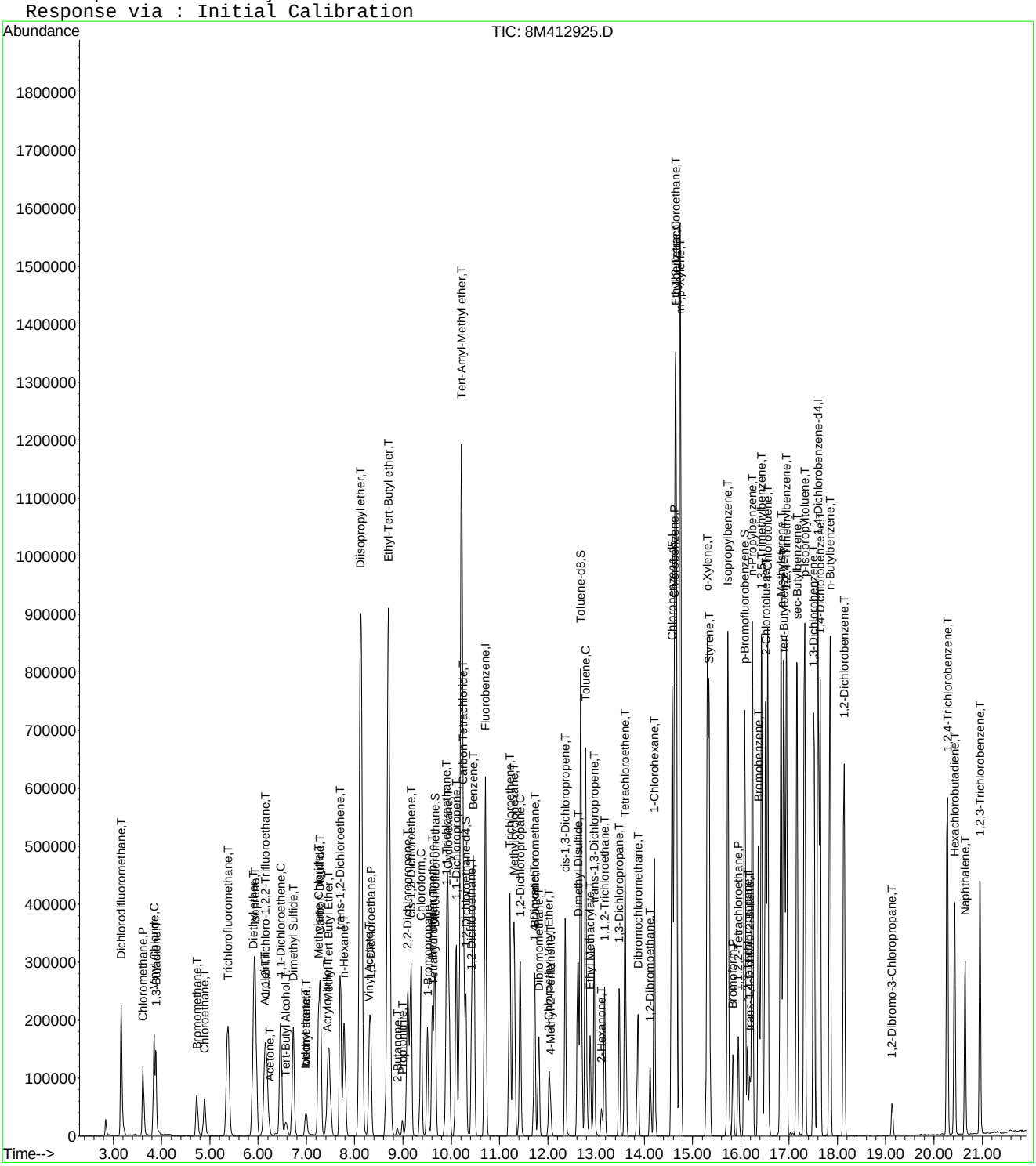

2.2 Semivolatiles Data

2.2.1 Semivolatiles GC/MS Data (Dioxane)

2.2.1.1 Summary Data

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW15T-060716	**Prep Method:**	3520C	**Prep Date:**	06/11/2016 13:19
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572361	**Analyst:**	MES	**Run Date:**	06/13/2016 11:04
Collect Date:	06/07/2016 13:15	**Dilution:**	1	**File ID:**	15M18369
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	52.6	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW15B-060716	**Prep Method:**	3520C	**Prep Date:**	06/11/2016 13:19
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572361	**Analyst:**	MES	**Run Date:**	06/13/2016 11:27
Collect Date:	06/07/2016 13:55	**Dilution:**	1	**File ID:**	15M18370
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	35.3	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	AWD4T-060716	**Prep Method:**	3520C	**Prep Date:**	06/11/2016 13:19
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572361	**Analyst:**	MES	**Run Date:**	06/13/2016 11:50
Collect Date:	06/07/2016 15:00	**Dilution:**	1	**File ID:**	15M18371
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	75.4	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	AWD4B-060716	**Prep Method:**	3520C	**Prep Date:**	06/11/2016 13:19
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572361	**Analyst:**	MES	**Run Date:**	06/13/2016 12:12
Collect Date:	06/07/2016 15:30	**Dilution:**	1	**File ID:**	15M18372
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	50.8	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.2.1.2 QC Summary Data

Example 8270 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	1261197
Cis = Concentration of the specific internal standard (ug/mL)	40
Ais = Area of the characteristic ion of the specific internal standard	608044
Cx = Concentration of the compound in the standard being measured (ug/mL)	50
RF = Calculated Response Factor	**1.65935**

2.0 Calculating the concentration (C) of a compound in water using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Vi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Vi = Initial volume of sample extracted from prep log (mL)	1021
Cx = Concentration of the compound in the sample being measured (ug/mL)	0.016947
Cx = Concentration of the compound in the sample being measured (ug/L)	**16.947**

3.0 Calculating the concentration (C) of a compound in soil using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Wi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Wi = Initial weight of sample extracted (g) from prep log	30
Cx = Concentration of the compound in the sample being measured (ug/g)	0.576763
Cx = Concentration of the compound in the sample being measured (ug/kg)	**576.7627**

Dry weight correction:

Percent solids (PCT_S)	50
Cd = (Cx) (100)/PCT_S	**1153.525** ug/kg

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve plot

b = intercept from curve plot

Step 2: Calculate y from Quantitation Report

y = 16790/784838 = 0.02139

Step 3: Solve for x

x = (y - b)/m = [(0.02139 -(- 0.0435)]/ 0.0783 = 0.829

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.829) = 20.72 ug/L

Example Spreadsheet Calculation:

Slope from curve, m:	0.0783	
Intercept from curve, b:	-0.0435	
Area of analyte, Ax:	16790	
Area of Internal Standard , Ais:	784484	
Concentration of IS, Cis	25.00	ug/L
Response Ratio (y) :	0.021403	
Amount Ratio:	0.828897	
Concentration (Cx):	20.72241	ug/L

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**0.0259**	
Value of B from plot:	**0.0596**	
Value of C from plot:	**-0.0165**	
Area of analyte from quantitation report:	**203233**	
Area of IS from quantiation report:	**1425653**	
Response ratio, y:	**0.142554**	
C - y:	**-0.15905**	
Root 1 - Computed amount ratio , X1:	**-3.88278**	
Root 2 - Computed amount ratio , X2:	**1.581623**	use this solution
Concentration of IS, Cis:	**40.00**	
Concentration of analyte, Cx:	**63.26**	ug/L

Microbac Laboratories Inc.
Continuous Sample Extract Log

Workgroup: WG571956
Analyst: CPD
Spike Analyst: CPD
Method: 3520C
Run Date: 06/11/2016 13:19
SOP: EXB01 Revison 20
Spike Witness: EMW
Surr Solution: STD74051

TIME ON: 16:35 OFF: 10:50 ON: _____ OFF: _____

CH2CL2 Lot #: COA18968
sodium sulfate Lot #: COA18814
1:1 H2SO4 Lot #: RGT36755

	SAMPLE #	Type	Reference	Prod	pH	Init Amnt	Surr Amnt	Spike Amnt	Spike Sol	Final Vol	Color
1	L16051582-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
2	L16060302-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
3	L16060411-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
4	L16060411-02	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
5	L16060411-03	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
6	L16060411-04	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
7	L16060414-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Colored
8	L16060414-02	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Colored
9	L16060414-03	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
10	L16060414-04	SAMP		827-DIOXANE	<2	910 mL	.05 mL			1 mL	Transparent
11	WG571956-01	BLANK		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
12	WG571956-02	LCS		827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD66388	1 mL	Transparent
13	WG571956-03	LCS2		827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD66388	1 mL	Transparent

L16051582-01	RE-EXT OUT OF HOLD

Analyst: Chelsick Davis

Reviewer: Chris Hill

EXTRACT - Modified 01/23/2009
PDF ID: 4803800
Report generated: 06/11/2016 13:21

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 061016
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG571947

Internal STD: STD75471 Surrogate STD: NA Calibration STD
CCV STD: STD74784 LCS STD: STD74214 MS/MSD STD:

Comments: L16051582-01, and L16060024-01,03,05 were already sent for re-extract due to QC contamination. L16060024s are being re-extracted as 827-SPE-DIOX only.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18332	BAKEOUT-IS CHECK	1	1		06/10/16 08:27
2	15M18333	BAKEOUT-IS CHECK	1	1		06/10/16 08:53
3	15M18334	WG571981-01 5PPM DFTPP STD	1	1	STD75016	06/10/16 09:13
4	15M18335	BAKEOUT-IS CHECK	1	1		06/10/16 09:31
5	15M18336	BAKEOUT-IS CHECK	1	1		06/10/16 09:53
6	15M18337	WG572230-01 5PPM DFTPP STD	1	1	STD75016	06/10/16 10:18
7	15M18338	WG572230-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 10:36
8	15M18339	WG572230-03 10 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 11:00
9	15M18340	WG572230-04 7.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 11:22
10	15M18341	WG572230-05 2.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 11:45
11	15M18342	WG572230-06 1 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 12:08
12	15M18343	WG572230-07 0.4 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 12:30
13	15M18344	WG572230-08 5PPM 1,4-DIOXANE ALT SRC	1	1	STD74214	06/10/16 12:52
14	15M18345	WG571410-01 BLANK 6/6	1	1		06/10/16 13:15
15	15M18346	WG571410-02 LCS 6/6	1	1		06/10/16 13:38
16	15M18347	WG571410-03 LCSDUP 6/6	1	1		06/10/16 14:01
17	15M18348	WG571404-01 BLANK 6/2	1	1		06/10/16 14:24
18	15M18349	WG571404-02 LCS 6/2	1	1		06/10/16 14:47
19	15M18350	WG571404-03 LCSDUP 6/2	1	1		06/10/16 15:09
20	15M18351	L16060067-01 827-DIOX	1	1		06/10/16 15:32
21	15M18352	L16051582-01 5X 827-DIOX	1	5		06/10/16 15:55
22	15M18353	L16060024-05 20X 827-DIOX	1	20		06/10/16 16:18
23	15M18354	L16060024-03 20X 827-DIOX	1	20		06/10/16 16:40
24	15M18355	L16060024-01 20,000X 827-DIOX	1	20000		06/10/16 17:03
25	15M18356	L16060067-01 2X 827-DIOX	1	2		06/10/16 17:26
26	15M18357	L16060024-03 100X 827-DIOX	1	100		06/10/16 17:49

Comments

Seq.	Rerun	Dil.	Reason	Analytes
3				
	DFTPP check after installing new source and retuning.			
17				
	WG571404-01 BLANK 6/2 dioxane hit above the RL.			

Page: 1 Approved: 13-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 061016

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG571947

Internal STD: STD75471 Surrogate STD: NA

CCV STD: STD74784 LCS STD: STD74214

Comments

Seq.	Rerun	Dil.	Reason	Analytes
18				
	WG571404-02 LCS 6/2 fails high.			
19				
	WG571404-03 LCSDUP 6/2 fails high.			
20	X	2	Over Calibration Range	
	L16060067-01			
23	X	100	Over Calibration Range	
	L16060024-03 20X DNR			

Page: 2 Approved: 13-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 061316

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG572361

Internal STD: STD75471 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18361	BAKEOUT	1	1		06/13/16 08:10
2	15M18362	WG572383-01 5PPM DFTPP STD	1	1	STD75016	06/13/16 08:30
3	15M18363	WG572383-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/13/16 08:48
4	15M18364	WG571956-01 BLANK 6/11	1	1		06/13/16 09:11
5	15M18365	WG571956-02 LCS 6/11	1	1		06/13/16 09:34
6	15M18366	WG571956-03 LCSDUP 6/11	1	1		06/13/16 09:56
7	15M18367	L16051582-01 RE	1	1		06/13/16 10:19
8	15M18368	L16060302-01	1	1		06/13/16 10:42
9	15M18369	L16060411-01	1	1		06/13/16 11:04
10	15M18370	L16060411-02	1	1		06/13/16 11:27
11	15M18371	L16060411-03	1	1		06/13/16 11:50
12	15M18372	L16060411-04	1	1		06/13/16 12:12
13	15M18373	L16060414-01	1	1		06/13/16 12:35
14	15M18374	L16060414-02	1	1		06/13/16 12:58
15	15M18375	L16060414-03	1	1		06/13/16 13:20
16	15M18376	L16060414-04	1	1		06/13/16 13:43
17	15M18377	BAKEOUT	1	1		06/13/16 14:05
18	15M18378	L16051582-01 5X RE	1	5		06/13/16 14:28
19	15M18379	L16060302-01 5X	1	5		06/13/16 14:51
20	15M18380	L16060414-03 50X	1	50		06/13/16 15:14
21	15M18381	L16060414-04 50X	1	50		06/13/16 15:36
22	15M18382	L16060414-01 10X	1	10		06/13/16 15:59
23	15M18383	L16060414-02 10X	1	10		06/13/16 16:22
24	15M18384	L16060414-03 10X	1	10		06/13/16 16:44
25	15M18385	L16060414-04 10X	1	10		06/13/16 17:07
26	15M18386	BAKEOUT	1	1		06/13/16 17:29

Comments

Seq.	Rerun	Dil.	Reason	Analytes
7	X	5	Over Calibration Range	
	L16051582-01 RE			
8	X	5	Over Calibration Range	
	L16060302-01			

Page: 1 Approved: 16-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 061316

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG572361

Internal STD: STD75471 Surrogate STD: NA

CCV STD: STD74784 LCS STD:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
13				
	L16060414-01 surrogate recovery is high due to SMI.			
14				
	L16060414-02 surrogate recovery is high due to SMI.			
15	X	50	Over Calibration Range	
	L16060414-03			
16	X	50	Over Calibration Range	
	L16060414-04			
22				
	L16060414-01 10X DNR			
23				
	L16060414-02 10X DNR			
24				
	L16060414-03 10X DNR			
25				
	L16060414-04 10X DNR			

Page: 2 Approved: 16-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 10-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75640
Analytical Workgroups: L16051582, L16060024, L16060067

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 12-JUN-2016

Secondary Reviewer: 13-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-13-2016 08:34:44

Microbac Laboratories Inc.

Data Checklist

Date: 13-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75685
Analytical Workgroups: L160601582, L16060302, L16060411, L16060414

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 14-JUN-2016

Secondary Reviewer: 16-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-16-2016 09:47:19

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8270D

AAB#: WG572361

Login Number: L16060411

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW15T-060716	01	06/07/16					06/11/2016	4	7		06/13/16	1.9	40	
18CPTMW15B-060716	02	06/07/16					06/11/2016	4	7		06/13/16	1.9	40	
AWD4T-060716	03	06/07/16					06/11/2016	3.9	7		06/13/16	1.9	40	
AWD4B-060716	04	06/07/16					06/11/2016	3.9	7		06/13/16	2	40	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4807636
Report generated 06/14/2016 15:28

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060411
Instrument Id: HPMS15
Workgroup (AAB#): WG572361

Method: 827-DIOXANE
CAL ID: HPMS15-10-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1
L16060411-01	1.00	01	52.6
L16060411-02	1.00	01	35.3
L16060411-03	1.00	01	75.4
L16060411-04	1.00	01	50.8
WG571956-01	1.00	01	55.6
WG571956-02	1.00	01	54.8
WG571956-03	1.00	01	61.1

Surrogates	Surrogate Limits
1 - 1,4-Dioxane-d8	20 - 129

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4807644
Report generated: 06/14/2016 15:28

METHOD BLANK SUMMARY

Login Number: L16060411
Blank File ID: 15M18364
Prep Date: 06/11/16 13:19
Analyzed Date: 06/13/16 09:11
Analyst: MES

Work Group: WG572361
Blank Sample ID: WG571956-01
Instrument ID: HPMS15
Method: 8270D

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG571956-02	15M18365	06/13/16 09:34	01
LCS2	WG571956-03	15M18366	06/13/16 09:56	01
18CPTMW15T-060716	L16060411-01	15M18369	06/13/16 11:04	01
18CPTMW15B-060716	L16060411-02	15M18370	06/13/16 11:27	01
AWD4T-060716	L16060411-03	15M18371	06/13/16 11:50	01
AWD4B-060716	L16060411-04	15M18372	06/13/16 12:12	01

Report Name: BLANK_SUMMARY
PDF File ID: 4811267
Report generated 06/17/2016 08:51

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060411 Prep Date: 06/11/16 13:19 Sample ID: WG571956-01
Instrument ID: HPMS15 Run Date: 06/13/16 09:11 Prep Method: 3520C
File ID: 15M18364 Analyst: MES Method: 8270D
Workgroup (AAB#): WG572361 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS15-10-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
1,4-Dioxane	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	55.6	20 - 129	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4807637
14-JUN-2016 15:28

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060411 Analyst: MES Prep Method: 3520C
Instrument ID: HPMS15 Matrix: Water Method: 8270D
Workgroup (AAB#): WG572361 Units: ug/L
QC Key: DOD4 Lot #: STD66388

Sample ID: WG571956-02 LCS File ID: 15M18365 Run Date: 06/13/2016 09:34
Sample ID: WG571956-03 LCS2 File ID: 15M18366 Run Date: 06/13/2016 09:56

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,4-Dioxane	5.00	2.63	52.6	5.00	2.97	59.4	12.0	30 - 104	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,4-Dioxane-d8	54.8	61.1	20 - 129	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4807638
Report generated: 06/14/2016 15:28

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16060411
Instrument: HPMS15
Analyst: MES
Workgroup: WG572230

Tune ID: WG572230-01
Run Date: 06/10/2016
Run Time: 10:18
File ID: 15M18337
Cal ID: HPMS15 - 10-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	39.5	52157	PASS
68.0	69.0	0	2.00	1.91	1026	PASS
69.0	198	0	100	40.8	53844	PASS
70.0	69.0	0	2.00	0.223	120	PASS
127	198	40.0	60.0	51.4	67853	PASS
197	198	0	1.00	0.383	505	PASS
198	198	100	100	100	131981	PASS
199	198	5.00	9.00	6.72	8869	PASS
275	198	10.0	30.0	26.4	34853	PASS
365	198	1.00	100	3.17	4186	PASS
441	443	0.0100	100	73.9	15632	PASS
442	198	40.0	100	83.4	110112	PASS
443	442	17.0	23.0	19.2	21163	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG572230-02	STD-CCV	01	06/10/2016 10:36	
WG572230-03	STD	01	06/10/2016 11:00	
WG572230-04	STD	01	06/10/2016 11:22	
WG572230-05	STD	01	06/10/2016 11:45	
WG572230-06	STD	01	06/10/2016 12:08	
WG572230-07	STD	01	06/10/2016 12:30	
WG572230-08	SSCV	01	06/10/2016 12:52	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4807641
Report generated 06/14/2016 15:28

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16060411
Instrument: HPMS15
Analyst: MES
Workgroup: WG572383

Tune ID: WG572383-01
Run Date: 06/13/2016
Run Time: 08:30
File ID: 15M18362
Cal ID: HPMS15 - 10-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	41.7	58608	PASS
68.0	69.0	0	2.00	1.47	891	PASS
69.0	198	0	100	43.0	60438	PASS
70.0	69.0	0	2.00	0	0	PASS
127	198	40.0	60.0	52.6	73908	PASS
197	198	0	1.00	0.289	406	PASS
198	198	100	100	100	140616	PASS
199	198	5.00	9.00	6.82	9594	PASS
275	198	10.0	30.0	24.7	34747	PASS
365	198	1.00	100	2.69	3776	PASS
441	443	0.0100	100	72.0	14703	PASS
442	198	40.0	100	75.2	105688	PASS
443	442	17.0	23.0	19.3	20429	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG572383-02	CCV	01	06/13/2016 08:48	
WG571956-01	BLANK	01	06/13/2016 09:11	
WG571956-02	LCS	01	06/13/2016 09:34	
WG571956-03	LCS2	01	06/13/2016 09:56	
L16060411-01	18CPTMW15T-060716	01	06/13/2016 11:04	
L16060411-02	18CPTMW15B-060716	01	06/13/2016 11:27	
L16060411-03	AWD4T-060716	01	06/13/2016 11:50	
L16060411-04	AWD4B-060716	01	06/13/2016 12:12	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4807641
Report generated 06/14/2016 15:28

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060411
Analytical Method: 8270D
ICAL Workgroup: WG572230

Instrument ID: HPMS15
Initial Calibration Date: 10-JUN-16 12:30
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
1,4-Dioxane		0.3253	2.74		

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4807639
Report generated 06/14/2016 15:28

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060411

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 10-JUN-16 12:30

Column ID: F

Analyte	WG572230-02			WG572230-03			WG572230-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	5.00	107215.000	0.3234	10.0	192761.000	0.3420	7.50	146003.000	0.3236

INT_CAL - Modified 03/06/2008
PDF File ID: 4807639
Report generated 06/14/2016 15:28

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060411

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 10-JUN-16 12:30

Column ID: F

Analyte	WG572230-05			WG572230-06			WG572230-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	2.50	36488.0000	0.3190	1.00	18621.0000	0.3169	0.400	6733.00000	0.3266

INT_CAL - Modified 03/06/2008
PDF File ID: 4807639
Report generated 06/14/2016 15:28

Calibration Table Report
Method: DIOXANE_D8.M
Title: OVD MSS01 SIM 1,4-dioxane ICAL 061016
Last Calibration: Fri Jun 10 12:46:00 2016
Curve:WG572230
Calibration Files

Compound	10 15M18339.D	7.5 15M18340.D	5 15M18338.D	2.5 15M18341.D	1 15M18342.D	0.4 15M18343.D	Avg	%RSD	Linear
1,4-Dichlorobenzene-d4	ISTD								
1,4-Dioxane	0.342	0.324	0.324	0.319	0.317	0.327	0.325	2.735	
1,4-Dioxane-d8	0.440	0.415	0.417	0.411	0.409		0.419	2.988	
Nitrobenzene-d5	1.115	1.034	0.970	0.852	0.755	0.697	0.904	18.064	0.994
2-Fluorobiphenyl	2.685	2.595	2.549	2.638	2.570	2.639	2.613	1.934	
p-Terphenyl-d14	2.815	2.671	2.579	2.506	2.382	2.421	2.562	6.338	

Sun Jun 12 19:13:55 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060411 Run Date: 06/10/2016 Sample ID: WG572230-08
Instrument ID: HPMS15 Run Time: 12:52 Method: 8270D
File ID: 15M18344 Analyst: MES QC Key: DOD4
ICal Workgroup: WG572230 Cal ID: HPMS15 - 10-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
1,4-Dioxane		5000	5110	ug/L	0.333	2.30	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4807640
Report generated 06/14/2016 15:28

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060411
Run Date: 06/13/2016
Sample ID: WG572383-02
Instrument ID: HPMS15
Run Time: 08:48
Method: 8270D
File ID: 15M18363
Analyst: MES
QC Key: DOD4
Workgroup (AAB#): WG572361
Cal ID: HPMS15 - 10-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,4-Dioxane		5000	4970	ug/L	0.323	0.622	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4807642
Report generated 06/14/2016 15:28

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060411
Instrument ID: HPMS15
Workgroup (AAB#): WG572361

ICAL CCV Number: WG572230-02
CAL ID: HPMS15-10-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG572230-02	NA	NA	66625
Upper Limit	NA	NA	133250
Lower Limit	NA	NA	33313
L16060411-01	1.00	01	39918
L16060411-02	1.00	01	39865
L16060411-03	1.00	01	46066
L16060411-04	1.00	01	49342
WG571956-01	1.00	01	51747
WG571956-02	1.00	01	51838
WG571956-03	1.00	01	51677

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4807643
Report generated 06/14/2016 15:28

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060411
Instrument ID: HPMS15
Workgroup (AAB#): WG572361

ICAL CCV Number: WG572230-02
CAL ID: HPMS15-10-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG572230-02	NA	NA	6.94
Upper Limit	NA	NA	7.44
Lower Limit	NA	NA	6.44
L16060411-01	1.00	01	6.94
L16060411-02	1.00	01	6.94
L16060411-03	1.00	01	6.94
L16060411-04	1.00	01	6.94
WG571956-01	1.00	01	6.94
WG571956-02	1.00	01	6.94
WG571956-03	1.00	01	6.94

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4811268
Report generated: 06/17/2016 08:52

2.2.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18369.D
Acq On : 13 Jun 2016 11:04
Operator : MES
Sample : L16060411-01
Misc : 1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 13 12:05:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	39918	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.848	96	43938	2.6298	ug/L	-0.01
Spiked Amount 5.000			Recovery	=	52.60%	
4) Nitrobenzene-d5	7.442	82	4371	0.3200	ug/L	0.00
Spiked Amount 5.000			Recovery	=	6.40%	
5) 2-Fluorobiphenyl	8.930	172	103	0.0010	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.166	244	347	0.0034	ug/L	-0.01
Spiked Amount 5.000			Recovery	=	0.00%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18369.D
Acq On : 13 Jun 2016 11:04
Operator : MES
Sample : L16060411-01
Misc : 1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 13 12:05:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

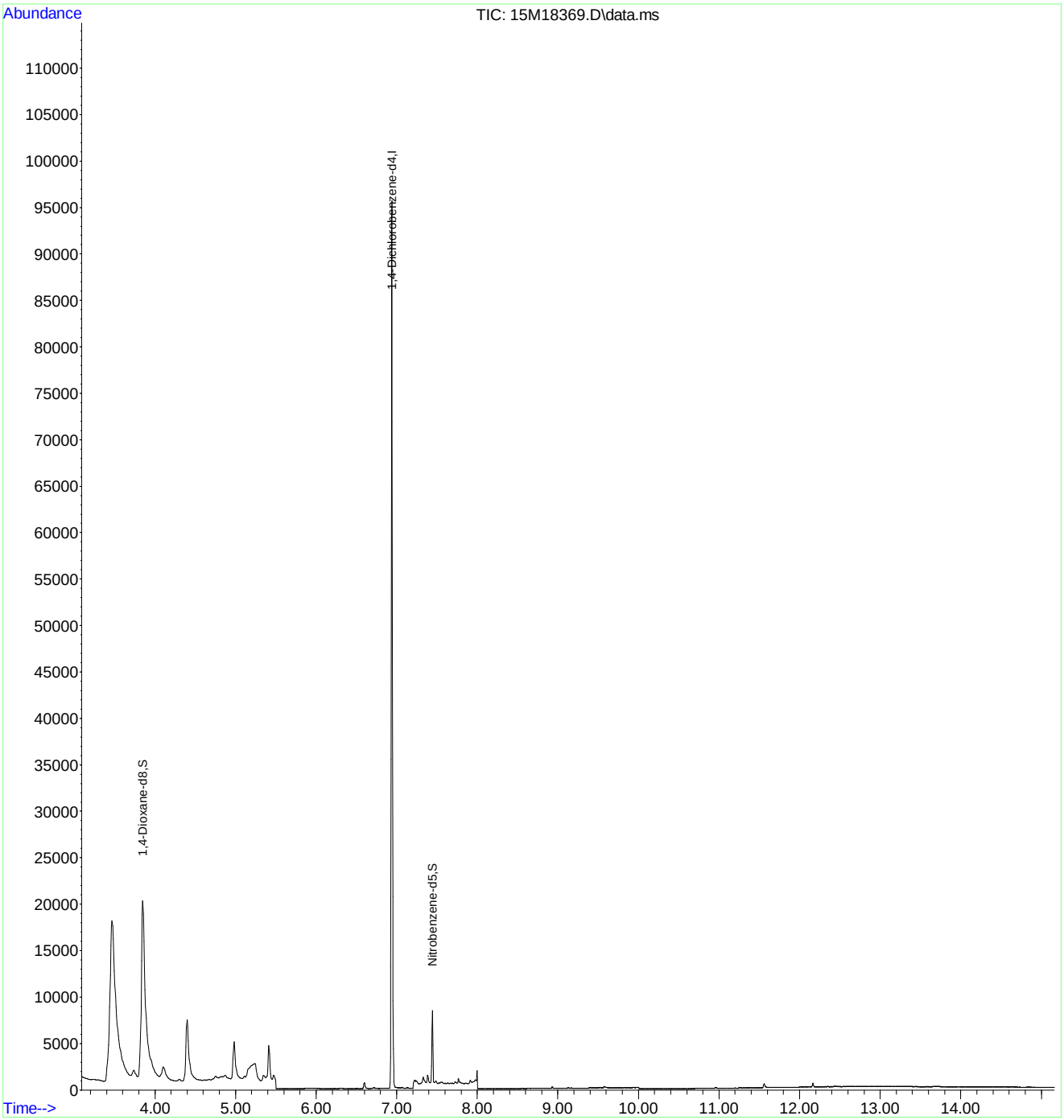

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18370.D
Acq On : 13 Jun 2016 11:27
Operator : MES
Sample : L16060411-02
Misc : 1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 13 12:05:52 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	39865	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.855	96	29452	1.7651	ug/L	0.00
Spiked Amount 5.000			Recovery	=	35.40%	
4) Nitrobenzene-d5	7.442	82	2976	0.2875	ug/L	0.00
Spiked Amount 5.000			Recovery	=	5.80%	
5) 2-Fluorobiphenyl	8.930	172	79	0.0008	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.177	244	188	0.0018	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18370.D
Acq On : 13 Jun 2016 11:27
Operator : MES
Sample : L16060411-02
Misc : 1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 13 12:05:52 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

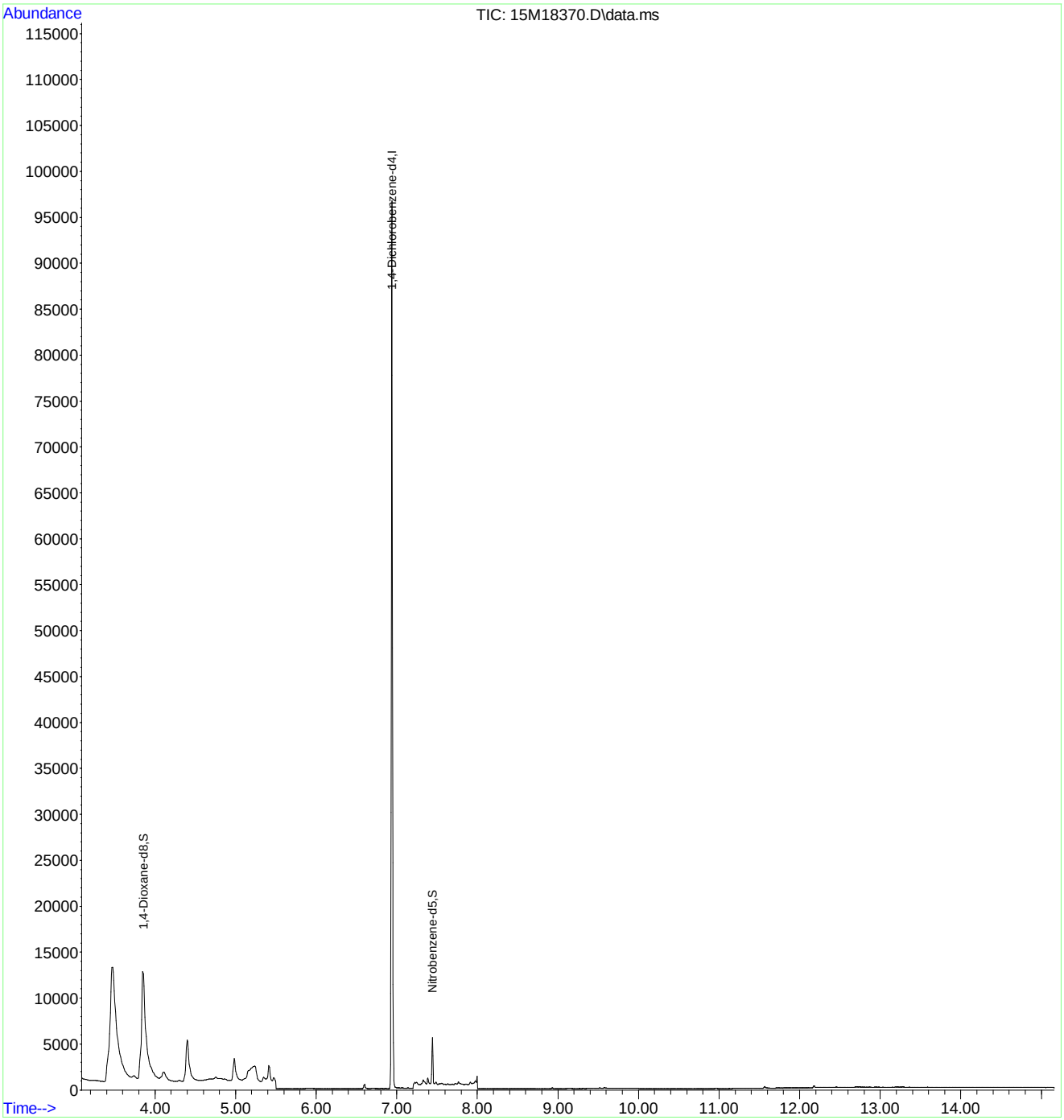

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18371.D
Acq On : 13 Jun 2016 11:50
Operator : MES
Sample : L16060411-03
Misc : 1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 13 12:05:55 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	46066	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.855	96	72680	3.7696	ug/L	0.00
Spiked Amount 5.000			Recovery	=	75.40%	
4) Nitrobenzene-d5	7.442	82	8094	0.3817	ug/L	0.00
Spiked Amount 5.000			Recovery	=	7.60%	
5) 2-Fluorobiphenyl	8.930	172	194	0.0016	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.184	244	5264	0.0446	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.80%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	5298	0.3535	ug/L #	46

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18371.D
Acq On : 13 Jun 2016 11:50
Operator : MES
Sample : L16060411-03
Misc : 1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 13 12:05:55 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

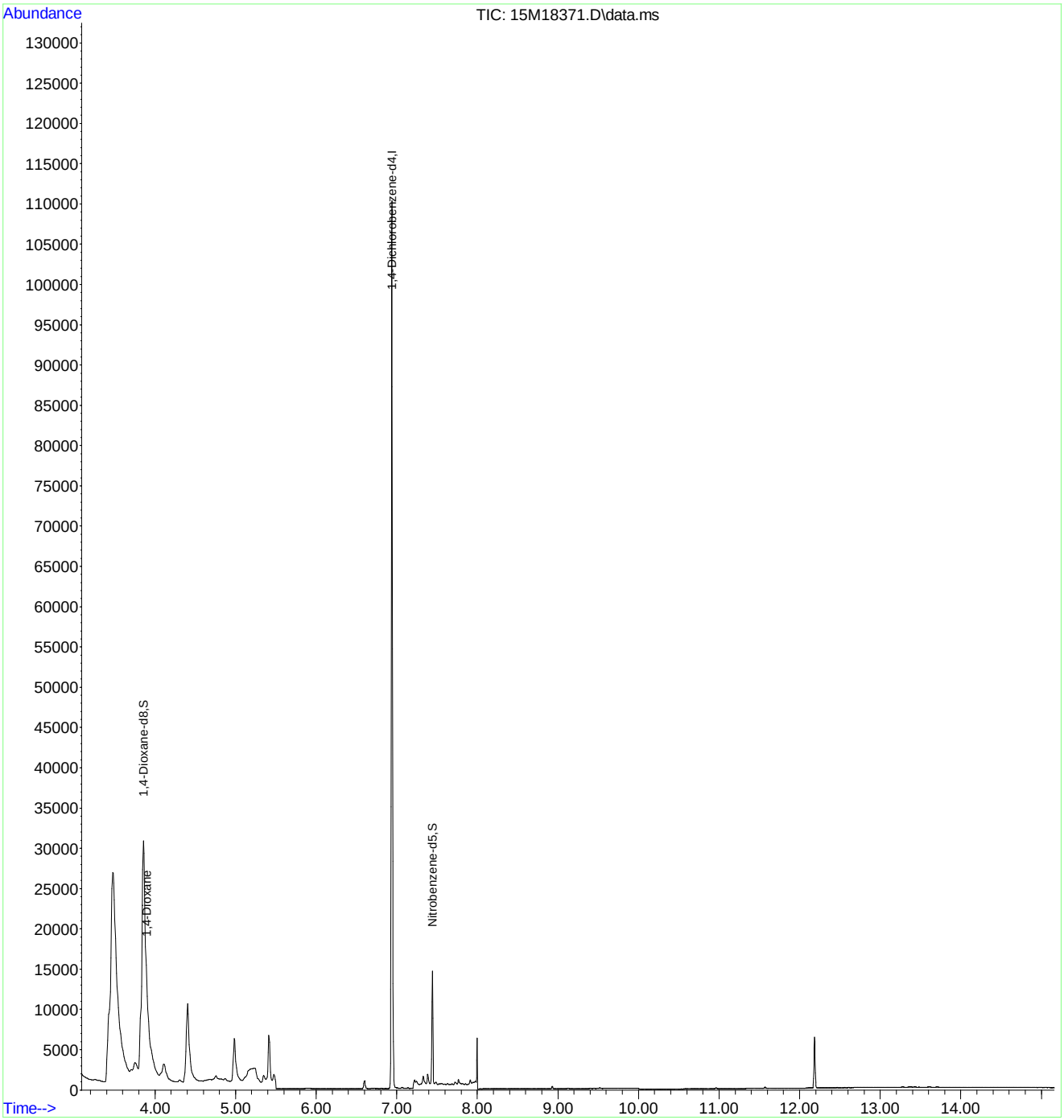

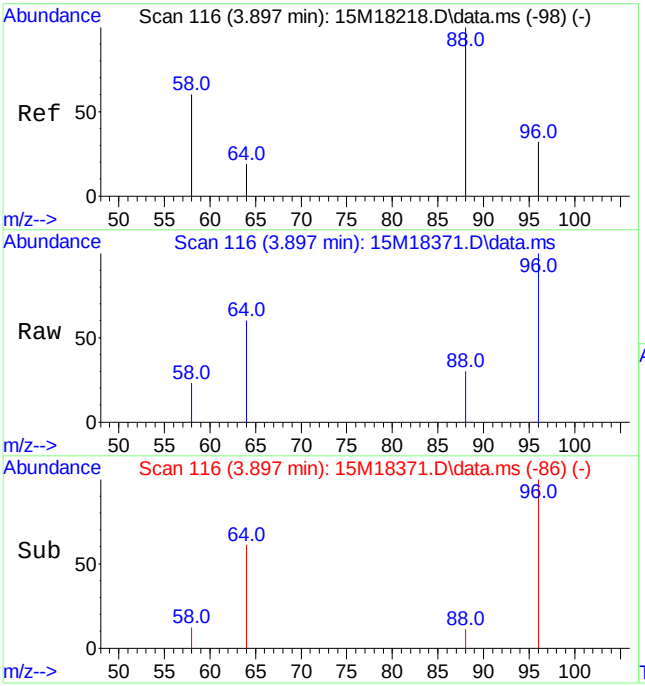

#2
1,4-Dioxane
Concen: 0.35 ug/L
RT: 3.897 min Scan# 116
Delta R.T. 0.000 min
Lab File: 15M18371.D
Acq: 13 Jun 2016 11:50

Tgt Ion: 58 Resp: 5298

Ion	Ratio	Lower	Upper
58	100		
88	97.8	103.1	240.7#

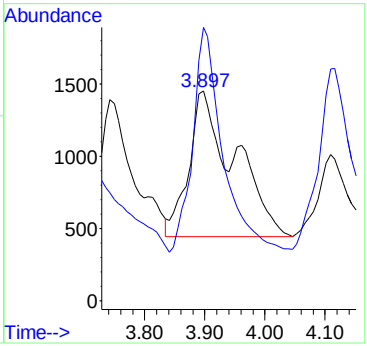

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18372.D
Acq On : 13 Jun 2016 12:12
Operator : MES
Sample : L16060411-04
Misc : 1,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jun 13 12:54:21 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	49342	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	52465	2.5404	ug/L	0.00
Spiked Amount 5.000			Recovery	=	50.80%	
4) Nitrobenzene-d5	7.442	82	4513	0.3032	ug/L	0.00
Spiked Amount 5.000			Recovery	=	6.00%	
5) 2-Fluorobiphenyl	8.930	172	118	0.0009	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.177	244	303	0.0024	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	6654	0.4145	ug/L	63

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18372.D
Acq On : 13 Jun 2016 12:12
Operator : MES
Sample : L16060411-04
Misc : 1,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jun 13 12:54:21 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

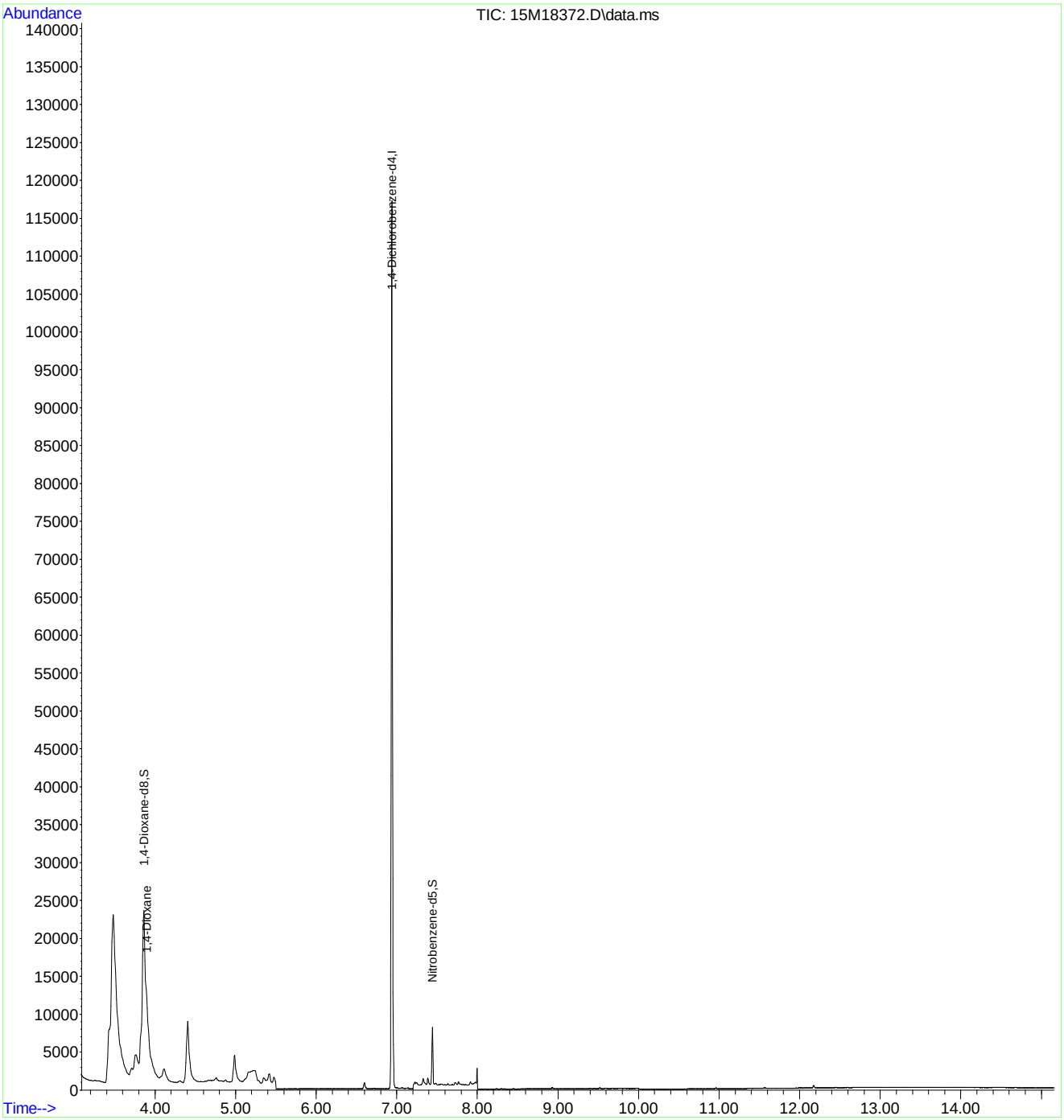

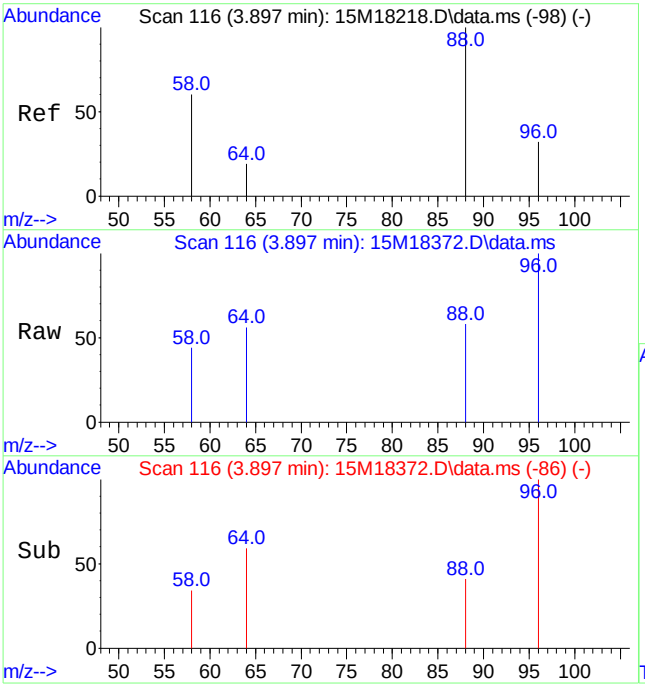

#2
1,4-Dioxane
Concen: 0.41 ug/L
RT: 3.897 min Scan# 116
Delta R.T. 0.000 min
Lab File: 15M18372.D
Acq: 13 Jun 2016 12:12

Tgt Ion: 58 Resp: 6654

Ion	Ratio	Lower	Upper
58	100		
88	120.9	103.1	240.7

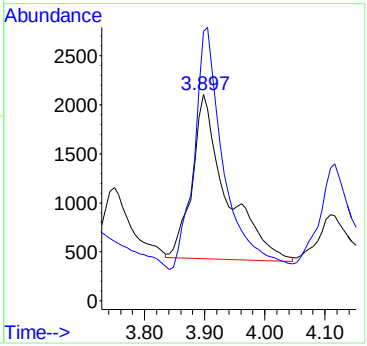

2.2.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18338.D
Acq On : 10 Jun 2016 10:36
Operator : MES
Sample : WG572230-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 10 18:15:30 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	66625	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	138302	4.9596	ug/L	0.00
Spiked Amount 5.000			Recovery	=	99.20%	
4) Nitrobenzene-d5	7.436	82	321639	4.7189	ug/L	0.00
Spiked Amount 5.000			Recovery	=	94.40%	
5) 2-Fluorobiphenyl	8.926	172	845013	4.8542	ug/L	0.00
Spiked Amount 5.000			Recovery	=	97.00%	
6) p-Terphenyl-d14	12.181	244	855352	5.0103	ug/L	0.00
Spiked Amount 5.000			Recovery	=	100.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	107215	4.9462	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18338.D
Acq On : 10 Jun 2016 10:36
Operator : MES
Sample : WG572230-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 10 18:15:30 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

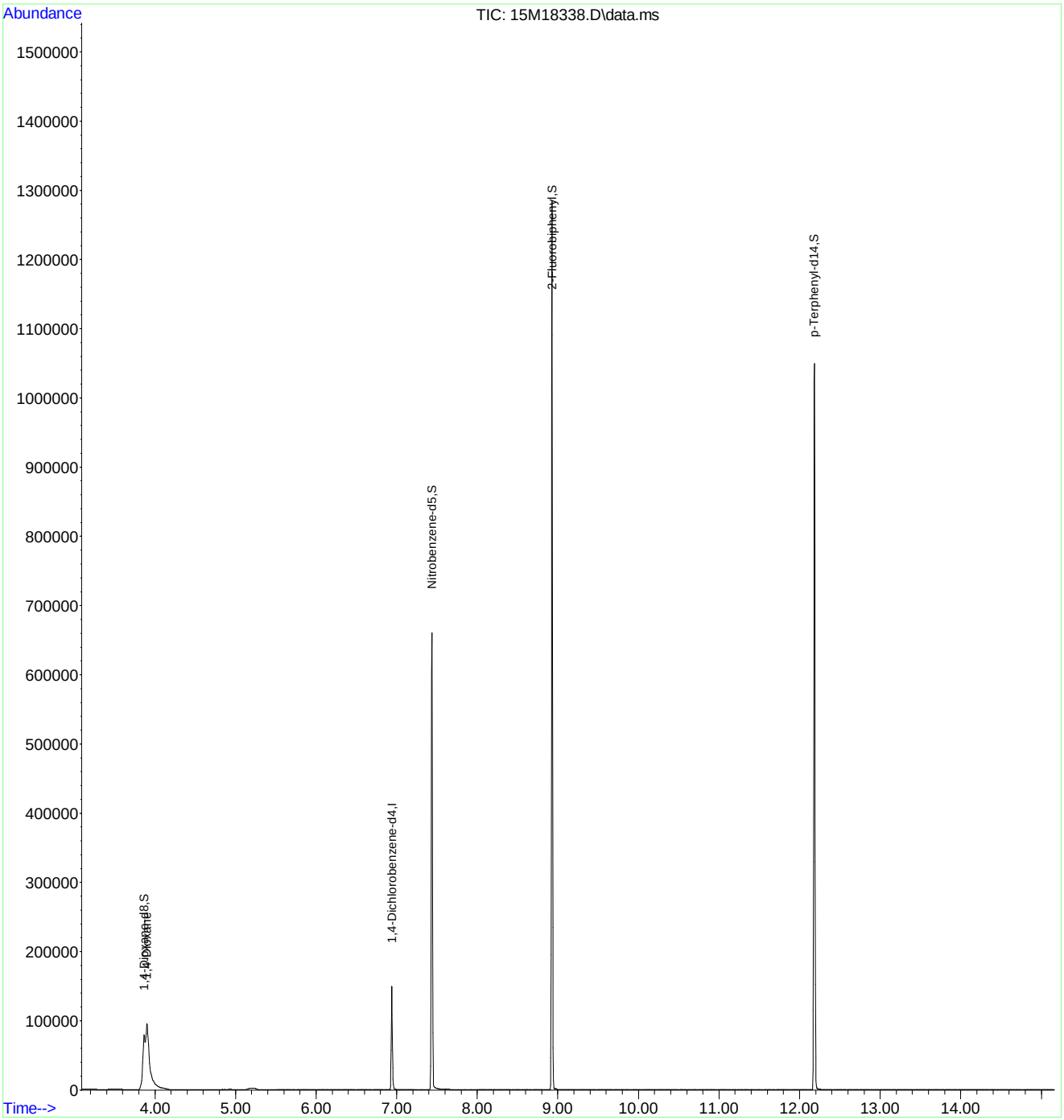

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18339.D
Acq On : 10 Jun 2016 11:00
Operator : MES
Sample : WG572230-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 10 18:15:34 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	56194	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	248072	10.5474	ug/L	0.00
Spiked Amount 5.000			Recovery = 211.00%			
4) Nitrobenzene-d5	7.436	82	628184	10.6403	ug/L	0.00
Spiked Amount 5.000			Recovery = 212.80%			
5) 2-Fluorobiphenyl	8.926	172	1513331	10.3070	ug/L	0.00
Spiked Amount 5.000			Recovery = 206.20%			
6) p-Terphenyl-d14	12.184	244	1587021	11.0217	ug/L	0.00
Spiked Amount 5.000			Recovery = 220.40%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	192761	10.5434	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18339.D
Acq On : 10 Jun 2016 11:00
Operator : MES
Sample : WG572230-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 10 18:15:34 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

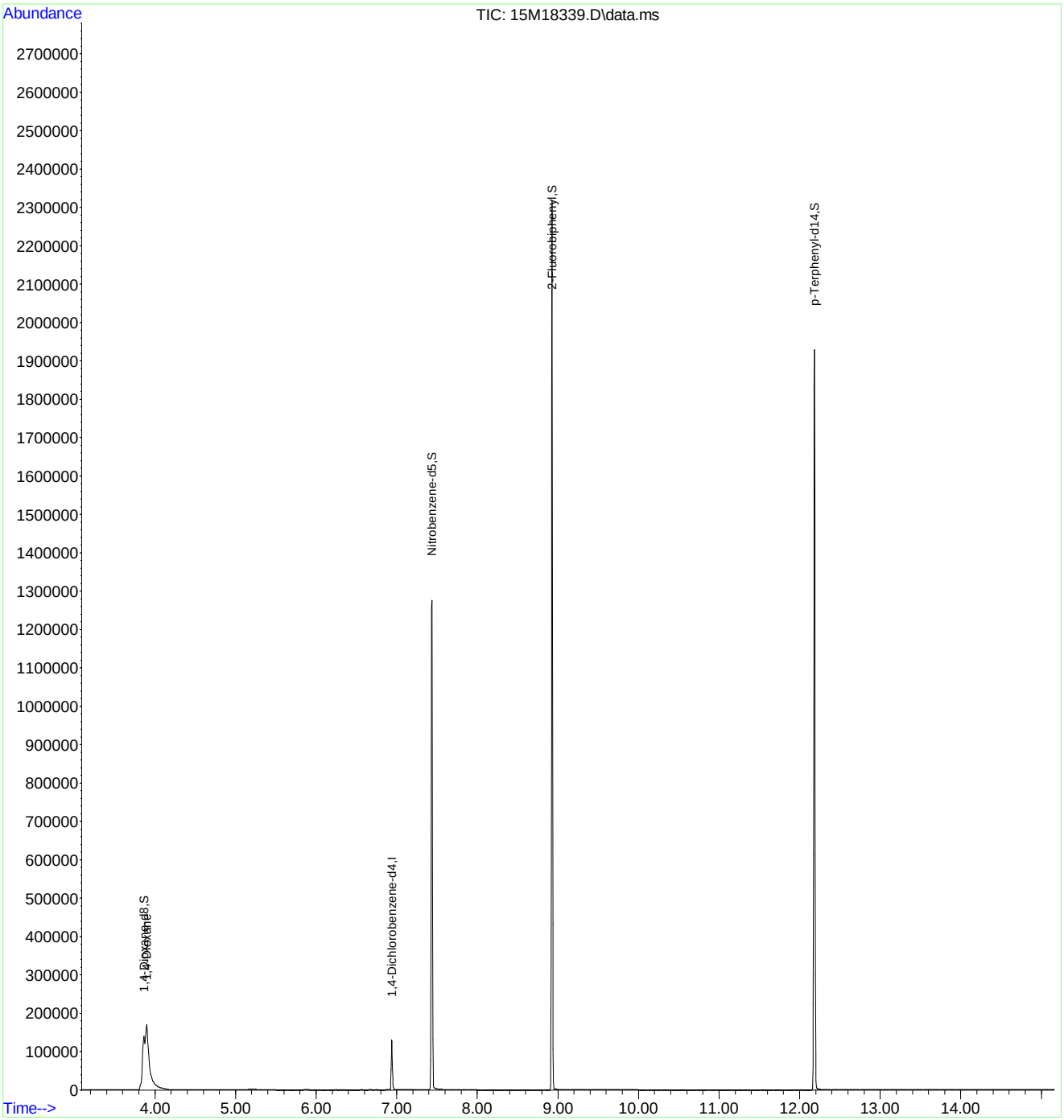

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18340.D
Acq On : 10 Jun 2016 11:22
Operator : MES
Sample : WG572230-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 10 18:15:37 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	60457	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	187351	7.4040	ug/L	0.00
Spiked Amount 5.000			Recovery	= 148.00%		
4) Nitrobenzene-d5	7.431	82	466388	7.4103	ug/L	0.00
Spiked Amount 5.000			Recovery	= 148.20%		
5) 2-Fluorobiphenyl	8.926	172	1170859	7.4122	ug/L	0.00
Spiked Amount 5.000			Recovery	= 148.20%		
6) p-Terphenyl-d14	12.192	244	1205938	7.7846	ug/L	0.01
Spiked Amount 5.000			Recovery	= 155.60%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	146003	7.4228	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18340.D
Acq On : 10 Jun 2016 11:22
Operator : MES
Sample : WG572230-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 10 18:15:37 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

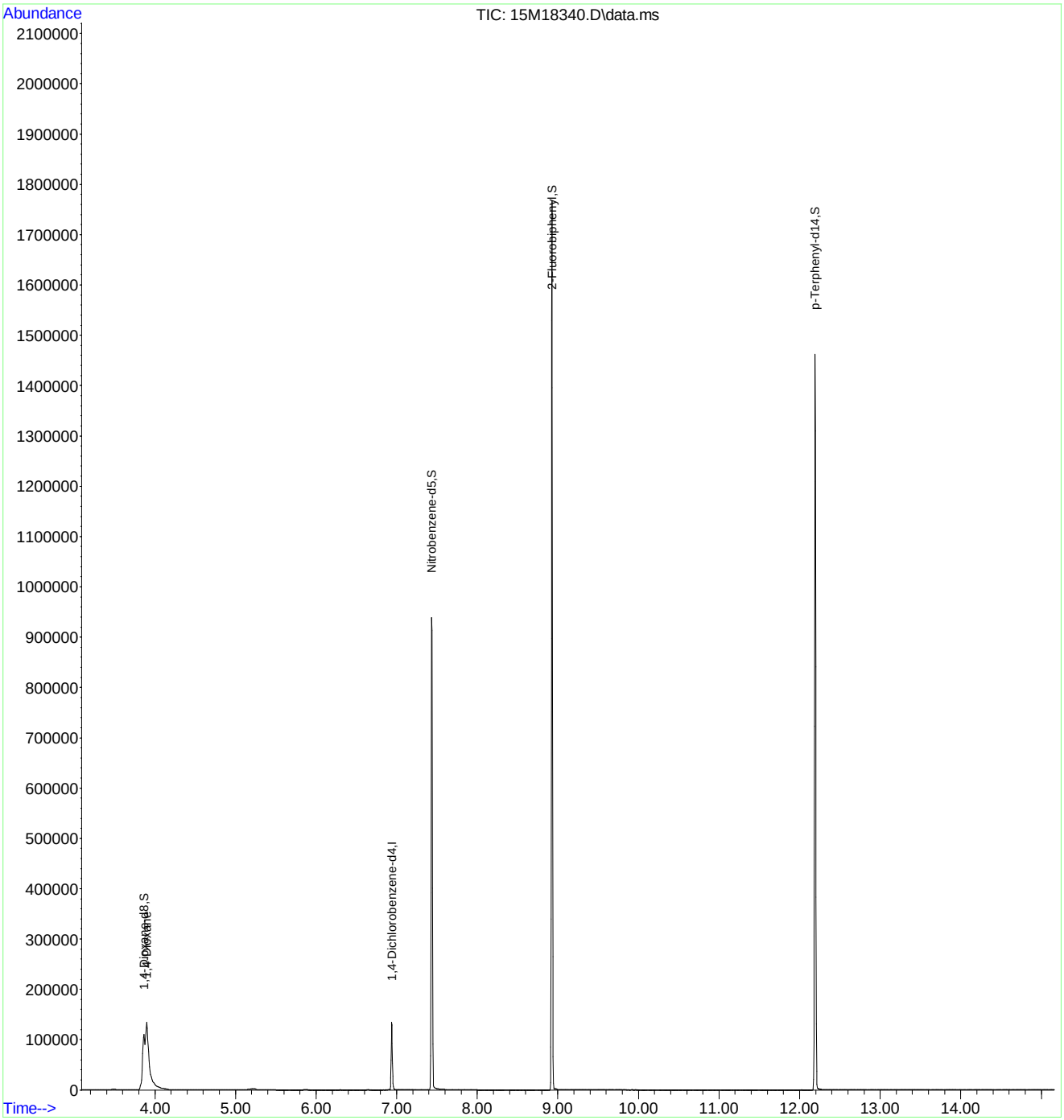

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18341.D
Acq On : 10 Jun 2016 11:45
Operator : MES
Sample : WG572230-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 10 18:15:40 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.940	152	45954	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.848	96	46972	2.4422 ug/L	-0.01
Spiked Amount 5.000			Recovery	= 48.80%	
4) Nitrobenzene-d5	7.436	82	97423	2.1945 ug/L	0.00
Spiked Amount 5.000			Recovery	= 43.80%	
5) 2-Fluorobiphenyl	8.926	172	301696	2.5127 ug/L	0.00
Spiked Amount 5.000			Recovery	= 50.20%	
6) p-Terphenyl-d14	12.188	244	286720	2.4350 ug/L	0.00
Spiked Amount 5.000			Recovery	= 48.60%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.883	58	36488	2.4405 ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18341.D
Acq On : 10 Jun 2016 11:45
Operator : MES
Sample : WG572230-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 10 18:15:40 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

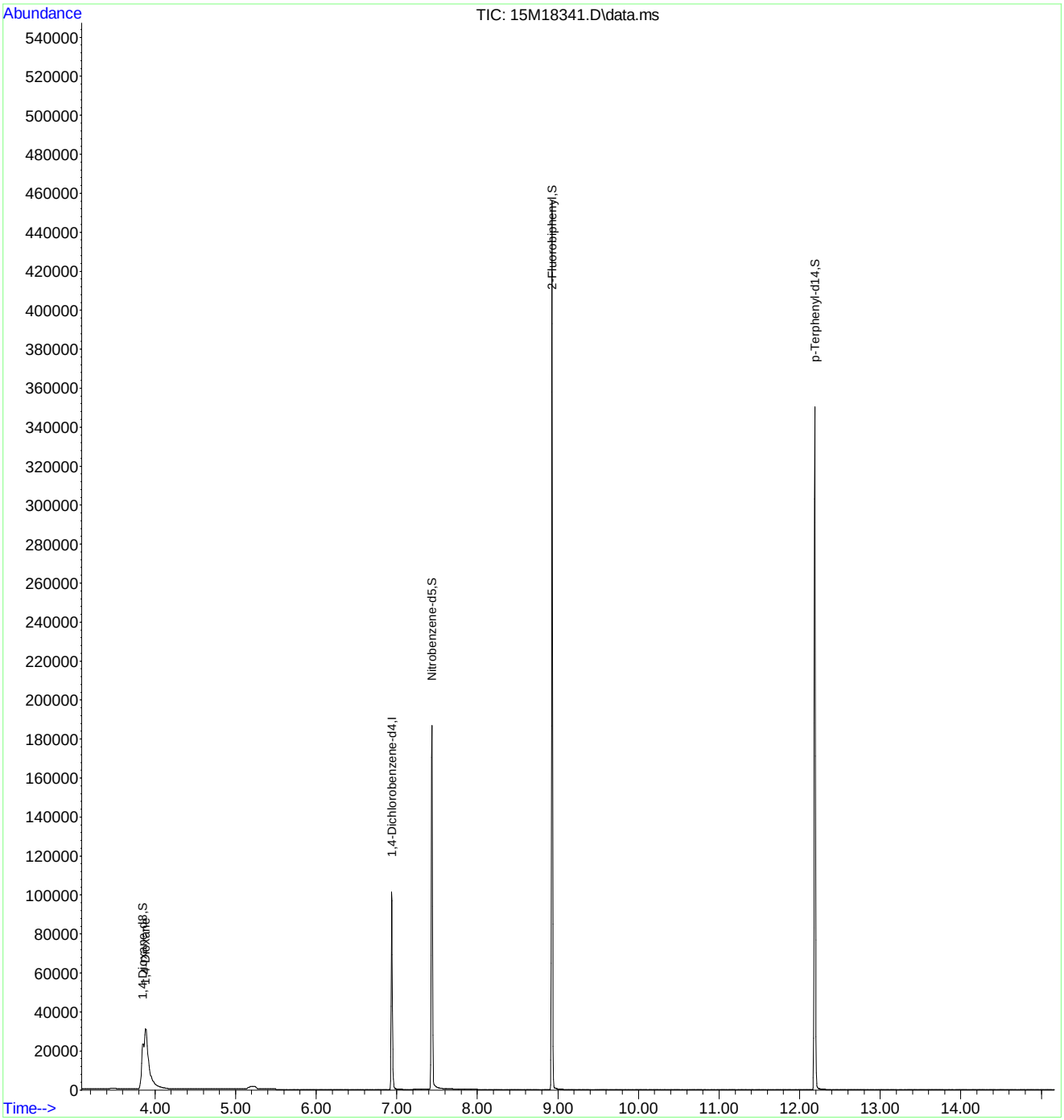

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18342.D
Acq On : 10 Jun 2016 12:08
Operator : MES
Sample : WG572230-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 10 18:15:43 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	59037	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	24054	0.9735	ug/L	0.00
Spiked Amount 5.000			Recovery = 19.40%			
4) Nitrobenzene-d5	7.436	82	44358	0.9184	ug/L	0.00
Spiked Amount 5.000			Recovery = 18.40%			
5) 2-Fluorobiphenyl	8.926	172	151018	0.9790	ug/L	0.00
Spiked Amount 5.000			Recovery = 19.60%			
6) p-Terphenyl-d14	12.199	244	140040	0.9257	ug/L	0.02
Spiked Amount 5.000			Recovery = 18.60%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.904	58	18621	0.9695	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18342.D
Acq On : 10 Jun 2016 12:08
Operator : MES
Sample : WG572230-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 10 18:15:43 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

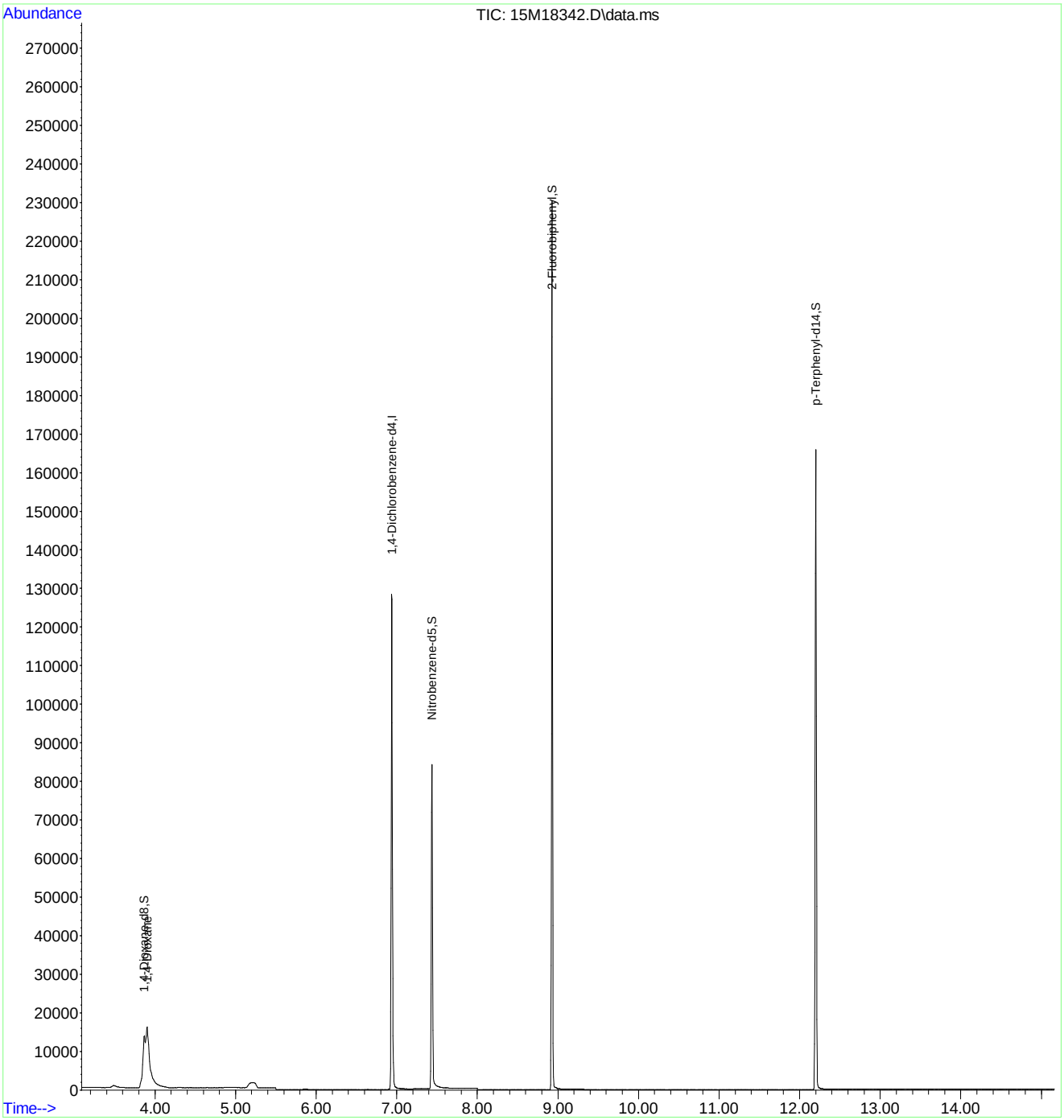

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18343.D
Acq On : 10 Jun 2016 12:30
Operator : MES
Sample : WG572230-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 10 18:15:46 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	51531	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	8760	0.4062	ug/L	0.00
Spiked Amount 5.000			Recovery	=	8.20%	
4) Nitrobenzene-d5	7.436	82	14371	0.4779	ug/L	0.00
Spiked Amount 5.000			Recovery	=	9.60%	
5) 2-Fluorobiphenyl	8.926	172	54404	0.4041	ug/L	0.00
Spiked Amount 5.000			Recovery	=	8.00%	
6) p-Terphenyl-d14	12.203	244	49910	0.3780	ug/L	0.02
Spiked Amount 5.000			Recovery	=	7.60%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	6733	0.4016	ug/L	79

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18343.D
Acq On : 10 Jun 2016 12:30
Operator : MES
Sample : WG572230-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 10 18:15:46 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

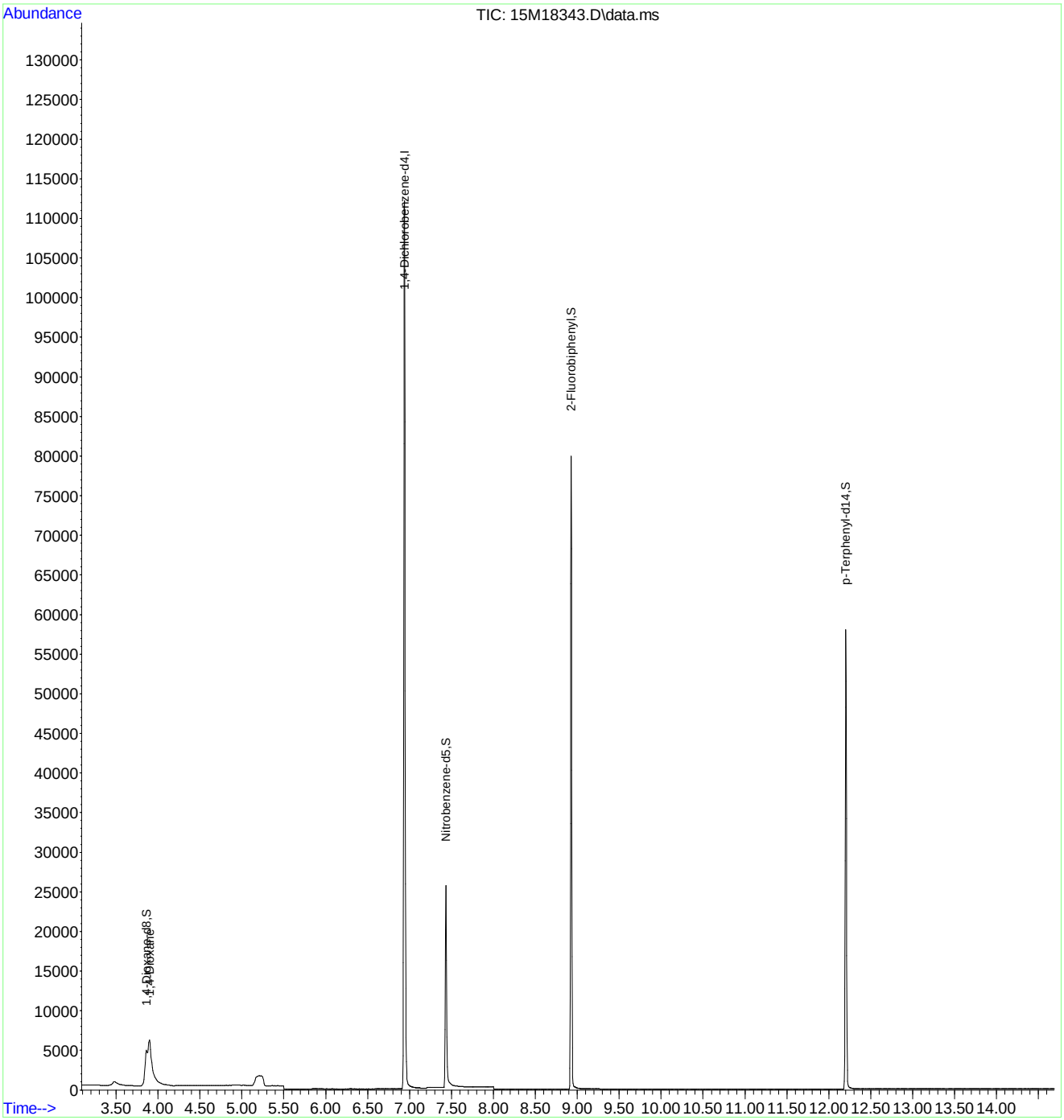

Nitrobenzene-d5

00700596

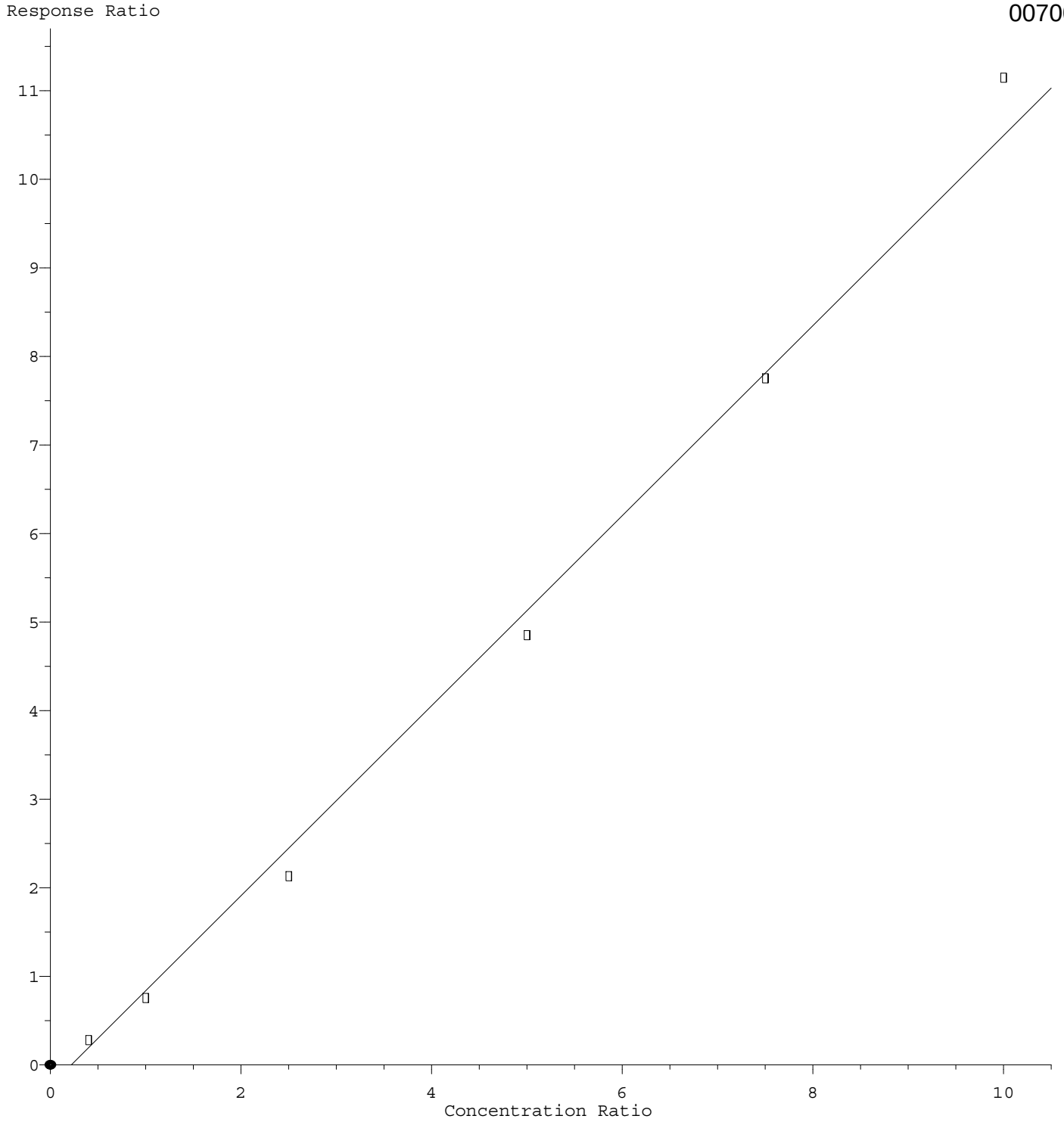

Response = 1.07e+000 * Amt - 2.34e-001
Coef of Det (r^2) = 0.994 Curve Fit: wlr(1/a)
Method Name: C:\msdchem\1\methods\DIOXANE_D8.M
Calibration Table Last Updated: Fri Jun 10 12:46:00 2016

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18344.D
Acq On : 10 Jun 2016 12:52
Operator : MES
Sample : WG572230-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 10 18:15:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	51498	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.897	96	61	0.0028	ug/L	0.04
Spiked Amount 5.000			Recovery	=	0.00%	
4) Nitrobenzene-d5	7.442	82	61	0.2190	ug/L	0.00
Spiked Amount 5.000			Recovery	=	4.40%	
5) 2-Fluorobiphenyl	8.926	172	23	0.0002	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.214	244	150	0.0011	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	85662	5.1127	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18344.D
Acq On : 10 Jun 2016 12:52
Operator : MES
Sample : WG572230-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 10 18:15:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

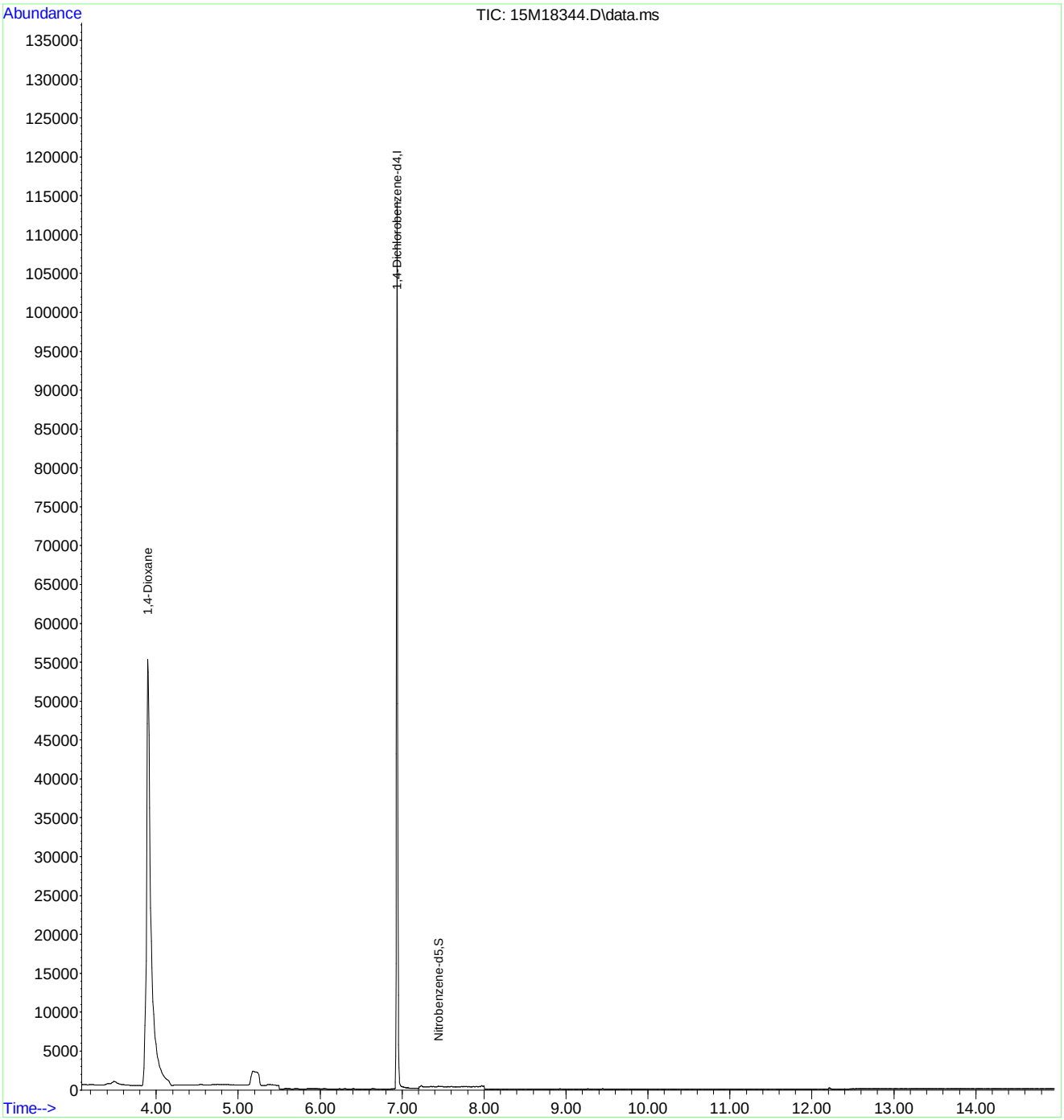

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18344.D
Acq On : 10 Jun 2016 12:52
Operator : MES
Sample : WG572230-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 10 18:15:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	78	0.00
2	1,4-Dioxane	5.000	5.113	-2.3	80	0.00
3 S	1,4-Dioxane-d8	5.000	0.003	99.9#	0	0.04
4 S	Nitrobenzene-d5	5.000	0.219	95.6#	0	0.00
5 S	2-Fluorobiphenyl	5.000	0.000	100.0#	0	0.00
6 S	p-Terphenyl-d14	5.000	0.001	100.0#	0	0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18363.D
Acq On : 13 Jun 2016 8:48
Operator : MES
Sample : WG572383-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 13 09:03:10 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	61399	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.855	96	130273	5.0693	ug/L	0.00
Spiked Amount 5.000			Recovery	= 101.40%		
4) Nitrobenzene-d5	7.436	82	233410	3.7622	ug/L	0.00
Spiked Amount 5.000			Recovery	= 75.20%		
5) 2-Fluorobiphenyl	8.926	172	816071	5.0869	ug/L	0.00
Spiked Amount 5.000			Recovery	= 101.80%		
6) p-Terphenyl-d14	12.162	244	817726	5.1976	ug/L	-0.02
Spiked Amount 5.000			Recovery	= 104.00%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.890	58	99259	4.9689	ug/L	81

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18363.D
Acq On : 13 Jun 2016 8:48
Operator : MES
Sample : WG572383-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 13 09:03:10 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

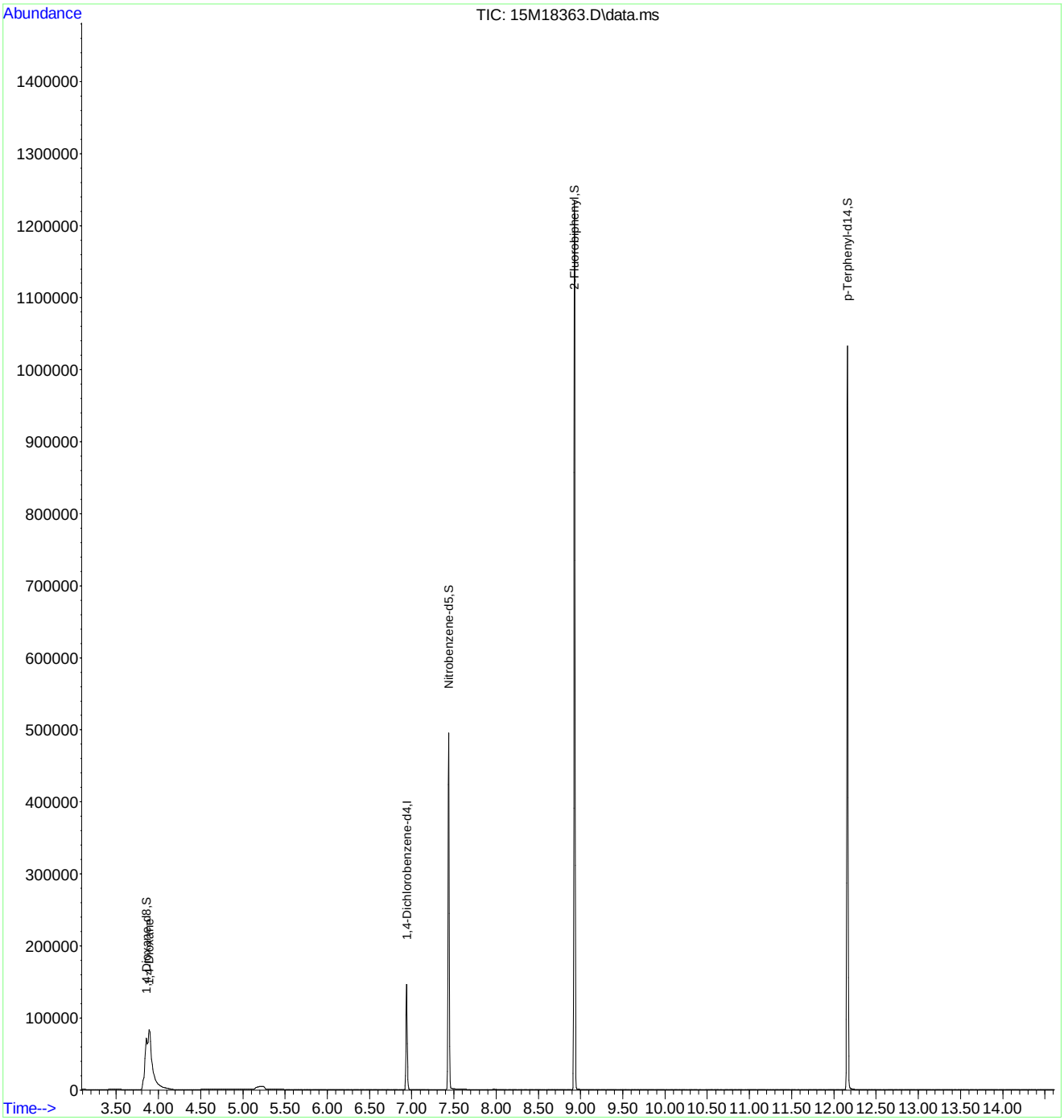

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18363.D
Acq On : 13 Jun 2016 8:48
Operator : MES
Sample : WG572383-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 13 09:03:10 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	93	0.00
2	1,4-Dioxane	0.325	0.323	0.6	93	0.00
3 S	1,4-Dioxane-d8	0.419	0.424	-1.2	94	0.00
4 S	Nitrobenzene-d5	0.904	0.760	15.9	73	0.00
5 S	2-Fluorobiphenyl	2.613	2.658	-1.7	97	0.00
6 S	p-Terphenyl-d14	2.562	2.664	-4.0	96	-0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18363.D
Acq On : 13 Jun 2016 8:48
Operator : MES
Sample : WG572383-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 13 09:03:10 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	93	0.00
2	1,4-Dioxane	5.000	4.969	0.6	93	0.00
3 S	1,4-Dioxane-d8	5.000	5.069	-1.4	94	0.00
4 S	Nitrobenzene-d5	5.000	3.762	24.8	73	0.00
5 S	2-Fluorobiphenyl	5.000	5.087	-1.7	97	0.00
6 S	p-Terphenyl-d14	5.000	5.198	-4.0	96	-0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 0

2.2.1.5 Raw QC Data

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18337.D
Acq On : 10 Jun 2016 10:18
Operator : MES
Sample : WG572230-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

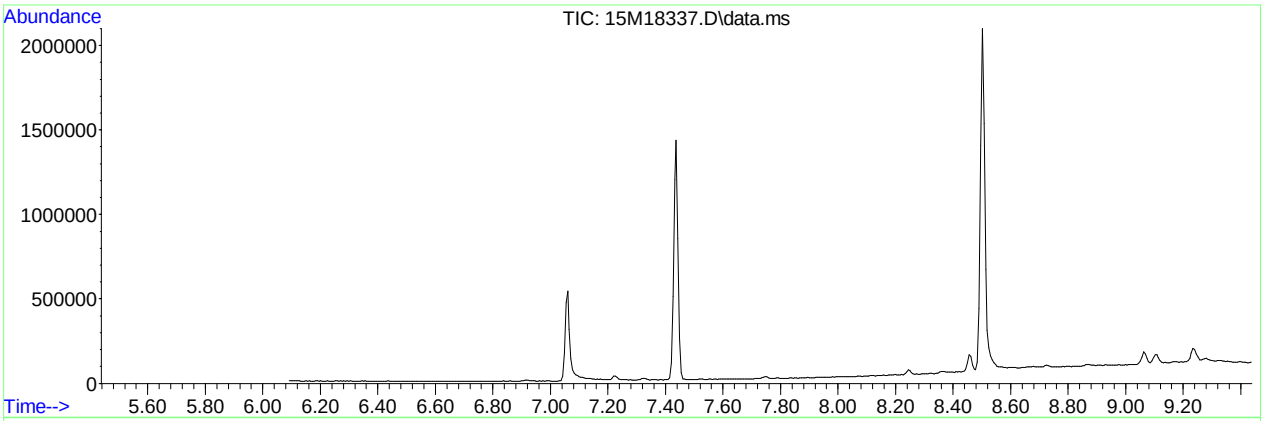

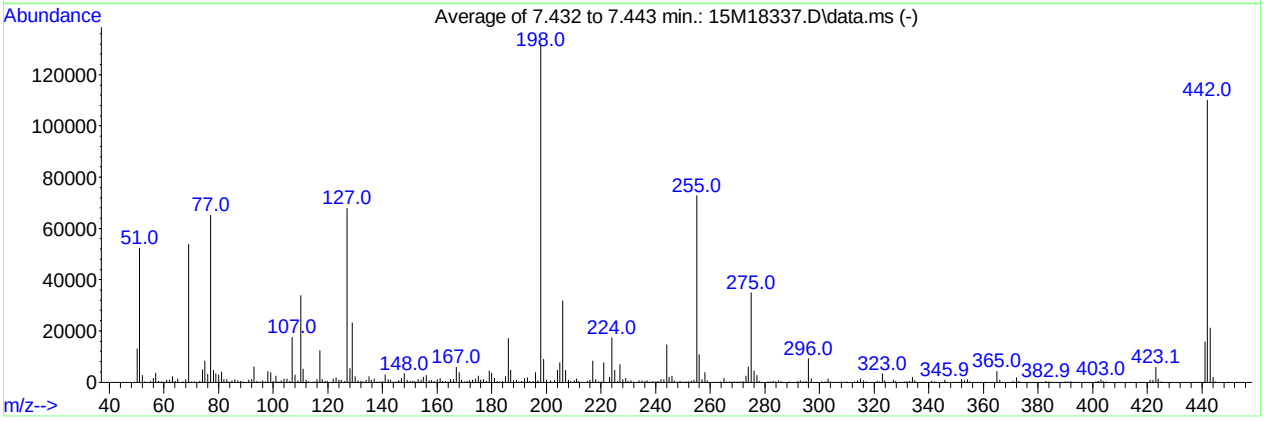

AutoFind: Scans 235, 236, 237; Background Corrected with Scan 229

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	39.5	52157	PASS
68	69	0.00	2	1.9	1026	PASS
69	198	0.00	100	40.8	53844	PASS
70	69	0.00	2	0.2	120	PASS
127	198	40	60	51.4	67853	PASS
197	198	0.00	1	0.4	505	PASS
198	198	100	100	100.0	131981	PASS
199	198	5	9	6.7	8869	PASS
275	198	10	30	26.4	34853	PASS
365	198	1	100	3.2	4186	PASS
441	443	0.01	100	73.9	15632	PASS
442	198	40	100	83.4	110112	PASS
443	442	17	23	19.2	21163	PASS

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18337.D
Acq On : 10 Jun 2016 10:18
Operator : MES
Sample : WG572230-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 10 10:29:37 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

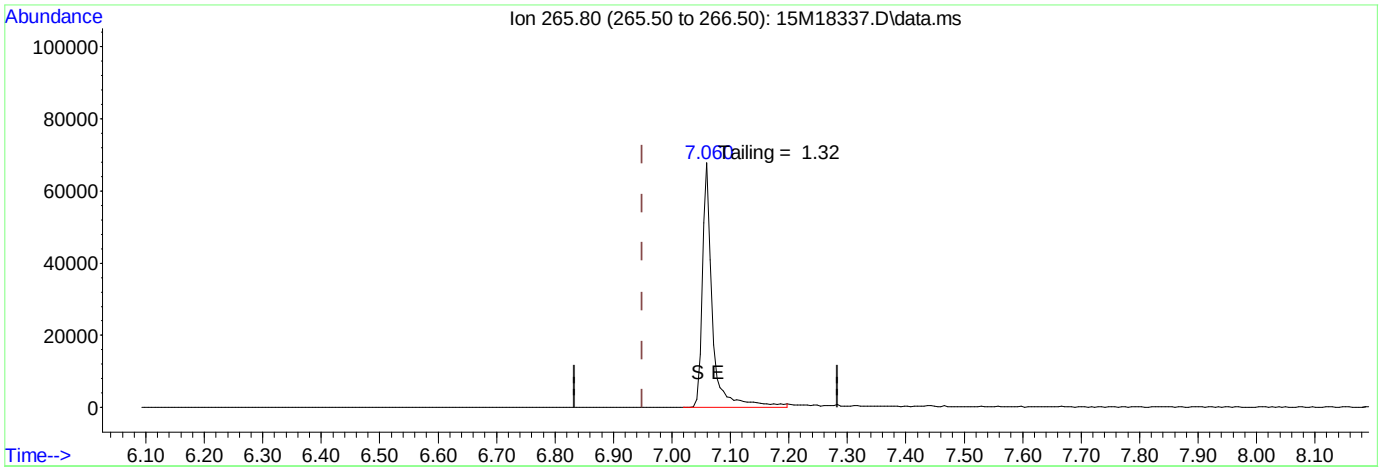

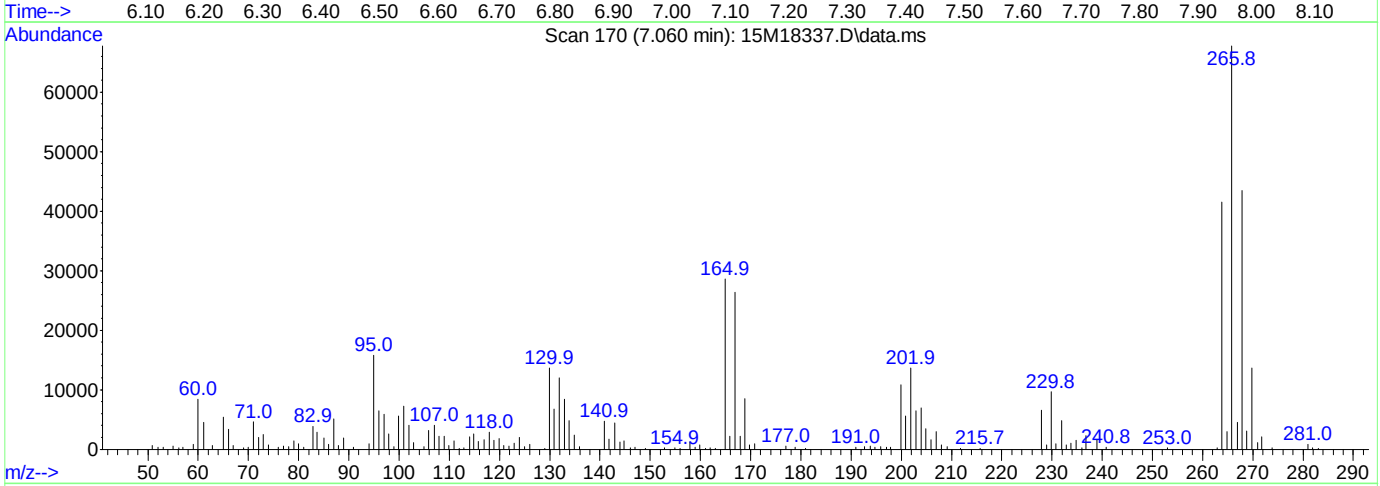

(1) Pentachlorophenol

7.060min (+ 0.111) 0.00 ug/ml

response 82111

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18337.D
Acq On : 10 Jun 2016 10:18
Operator : MES
Sample : WG572230-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 10 10:29:37 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

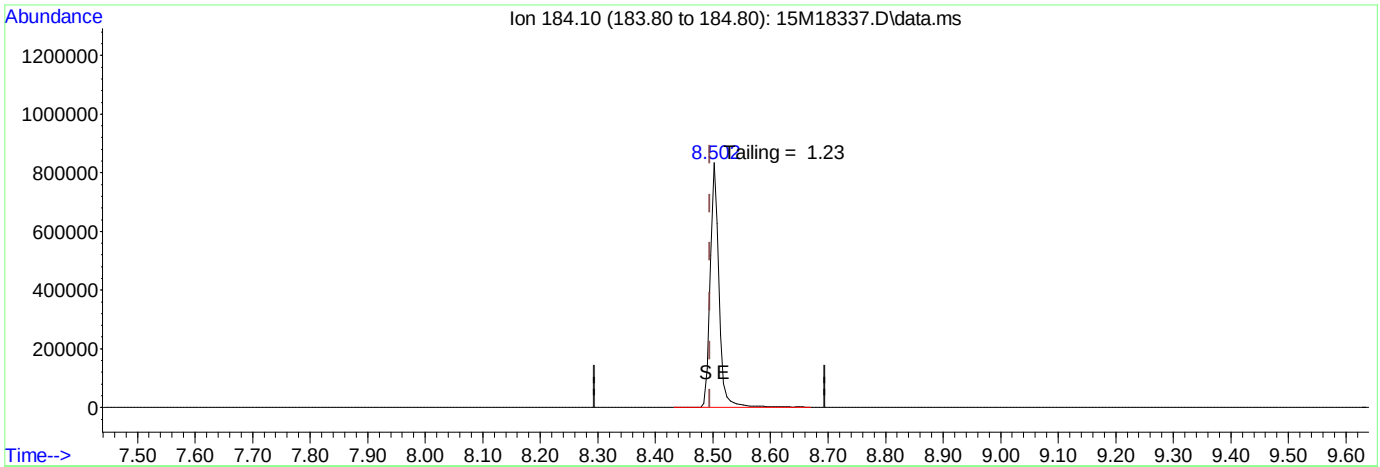

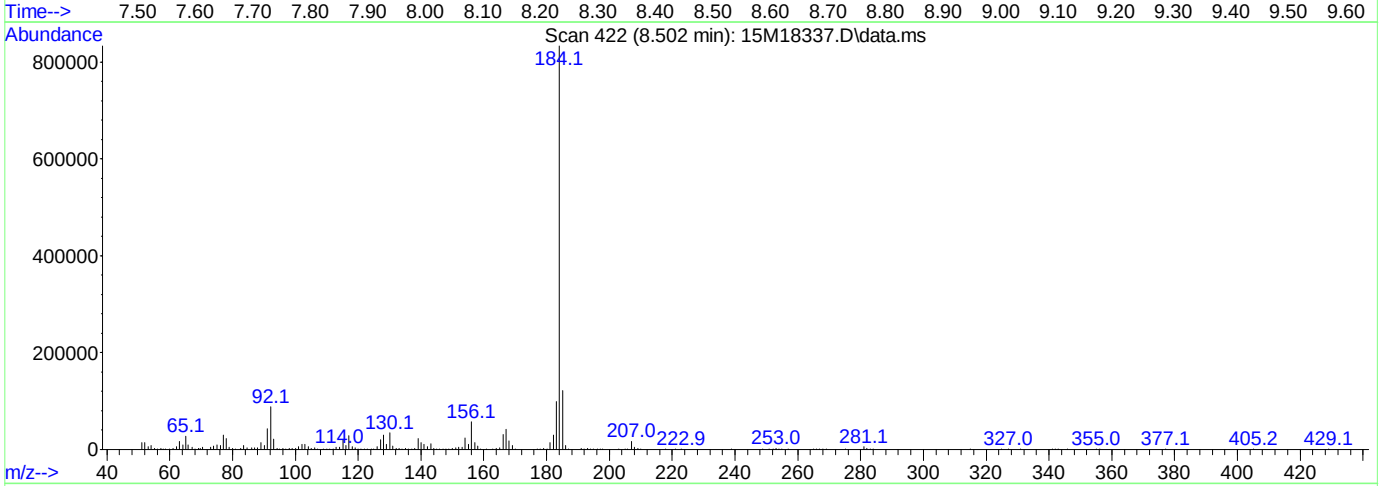

TIC: 15M18337.D\data.ms

(2) Benzidine

8.502min (+ 0.008) 0.00 ug/ml

response 896980

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18337.D
Acq On : 10 Jun 2016 10:18
Operator : MES
Sample : WG572230-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 10 10:29:37 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

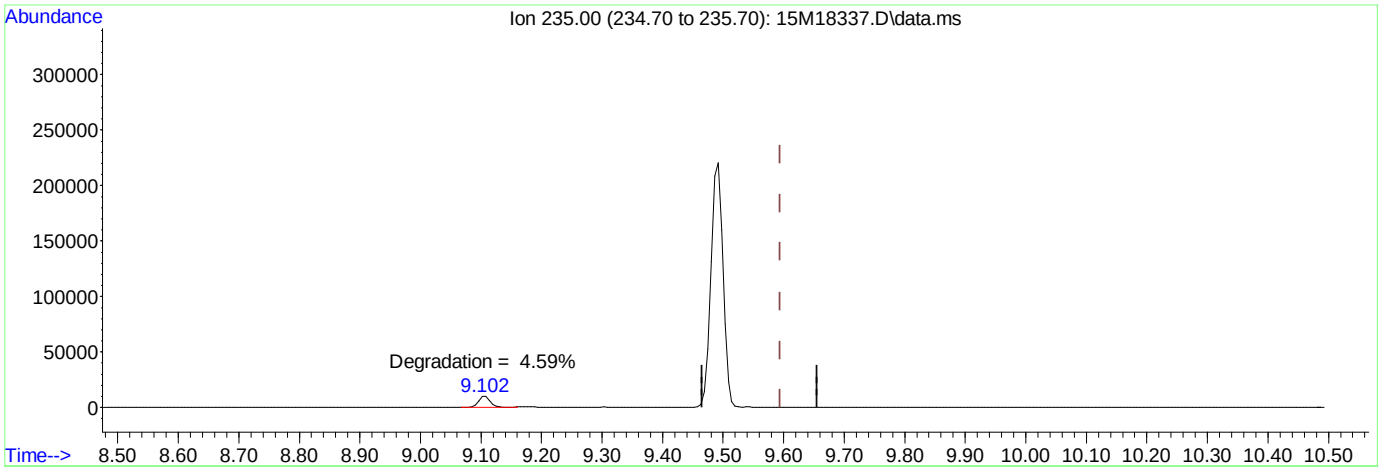

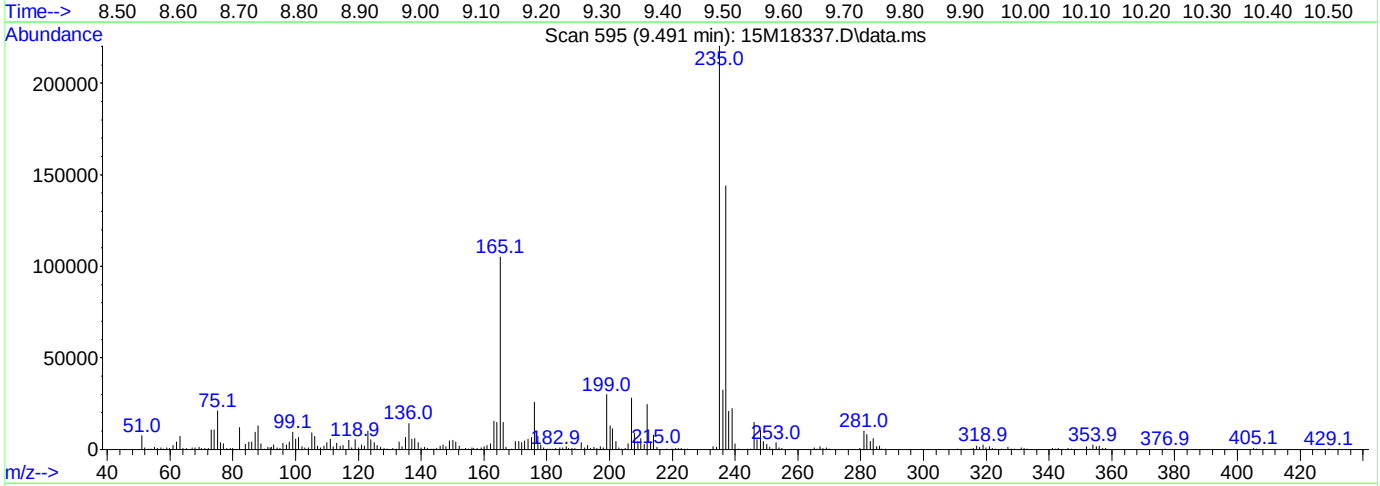

TIC: 15M18337.D\data.ms

(3) DDT

9.491min (-0.103) 0.00 ug/ml

response 283319

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18362.D
Acq On : 13 Jun 2016 8:30
Operator : MES
Sample : WG572383-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

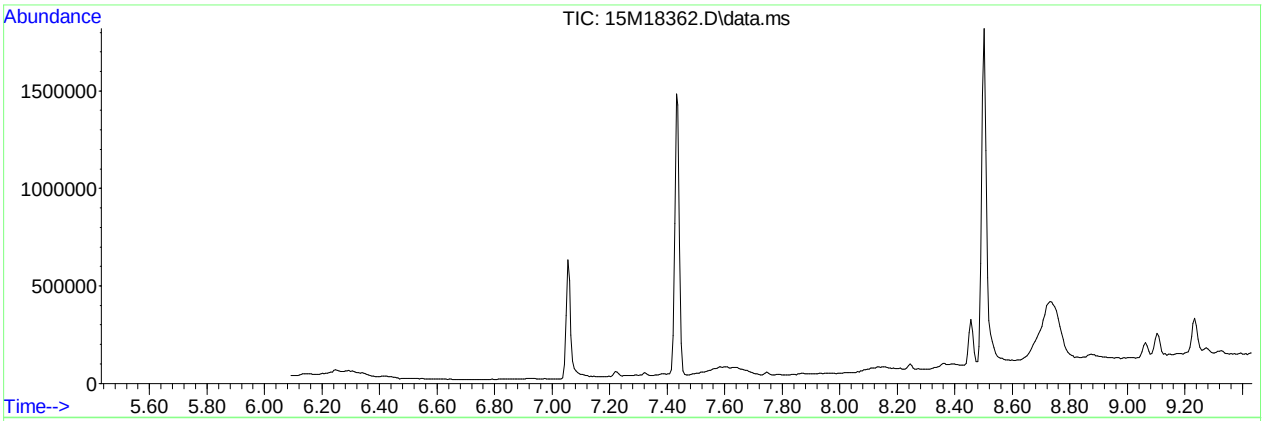

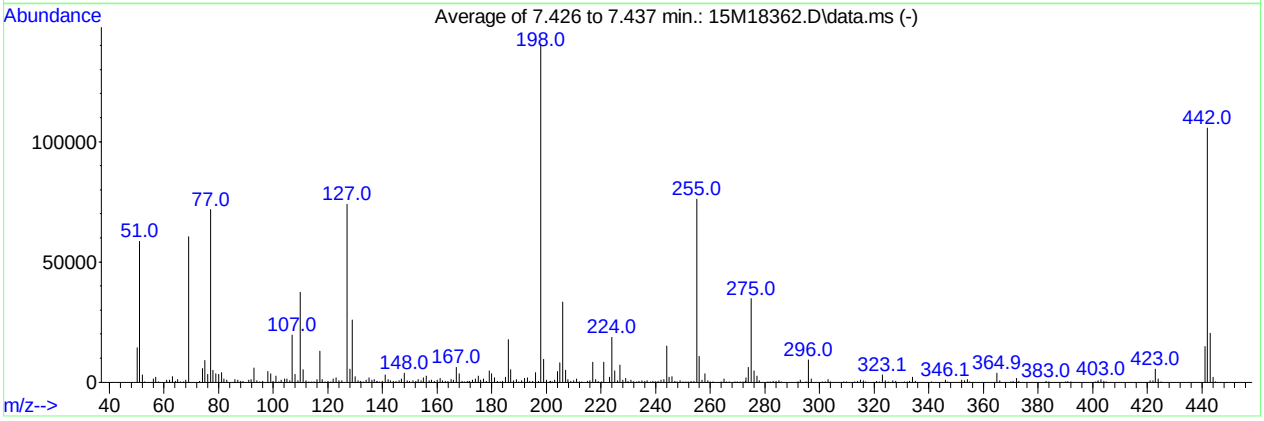

AutoFind: Scans 234, 235, 236; Background Corrected with Scan 228

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	41.7	58608	PASS
68	69	0.00	2	1.5	891	PASS
69	198	0.00	100	43.0	60438	PASS
70	69	0.00	2	0.0	0	PASS
127	198	40	60	52.6	73908	PASS
197	198	0.00	1	0.3	406	PASS
198	198	100	100	100.0	140616	PASS
199	198	5	9	6.8	9594	PASS
275	198	10	30	24.7	34747	PASS
365	198	1	100	2.7	3776	PASS
441	443	0.01	100	72.0	14703	PASS
442	198	40	100	75.2	105688	PASS
443	442	17	23	19.3	20429	PASS

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18362.D
Acq On : 13 Jun 2016 8:30
Operator : MES
Sample : WG572383-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 13 08:43:56 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

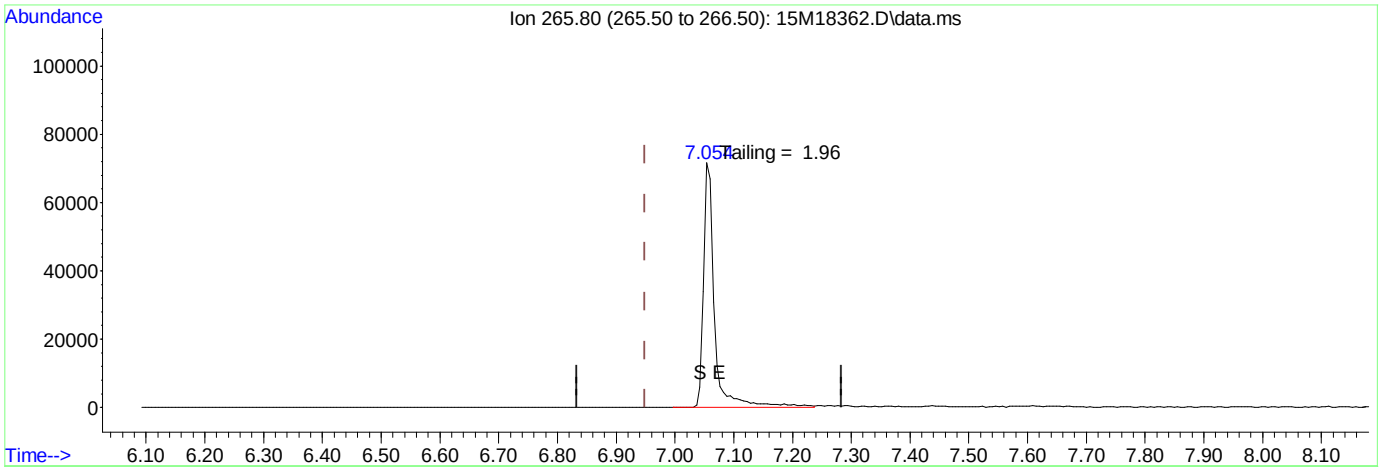

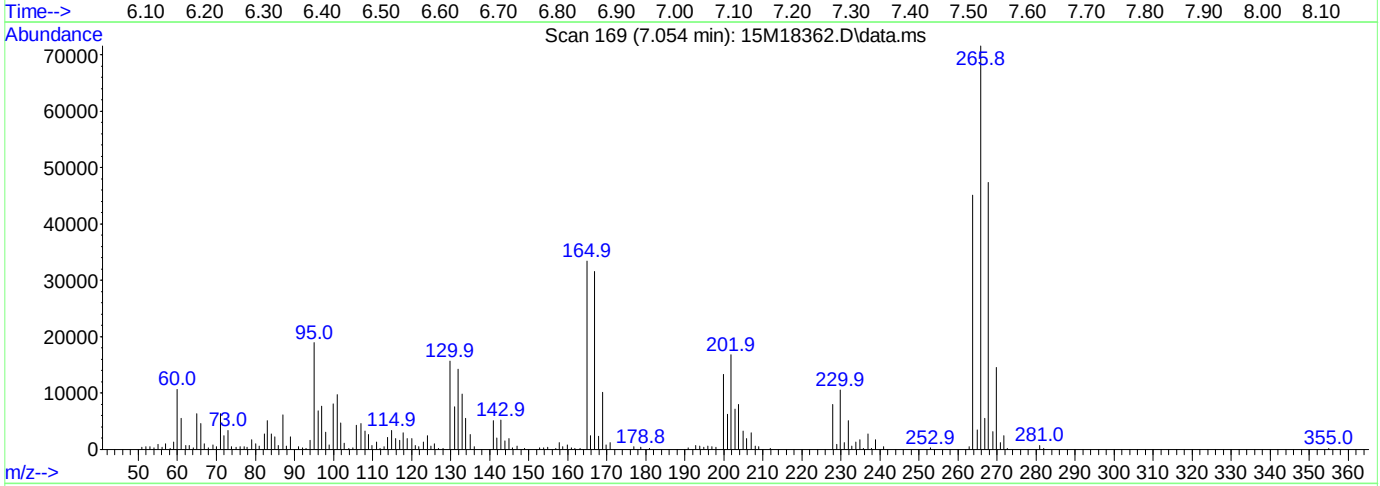

TIC: 15M18362.D\data.ms

(1) Pentachlorophenol

7.054min (+ 0.105) 0.00 ug/ml

response 89487

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18362.D
Acq On : 13 Jun 2016 8:30
Operator : MES
Sample : WG572383-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 13 08:43:56 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

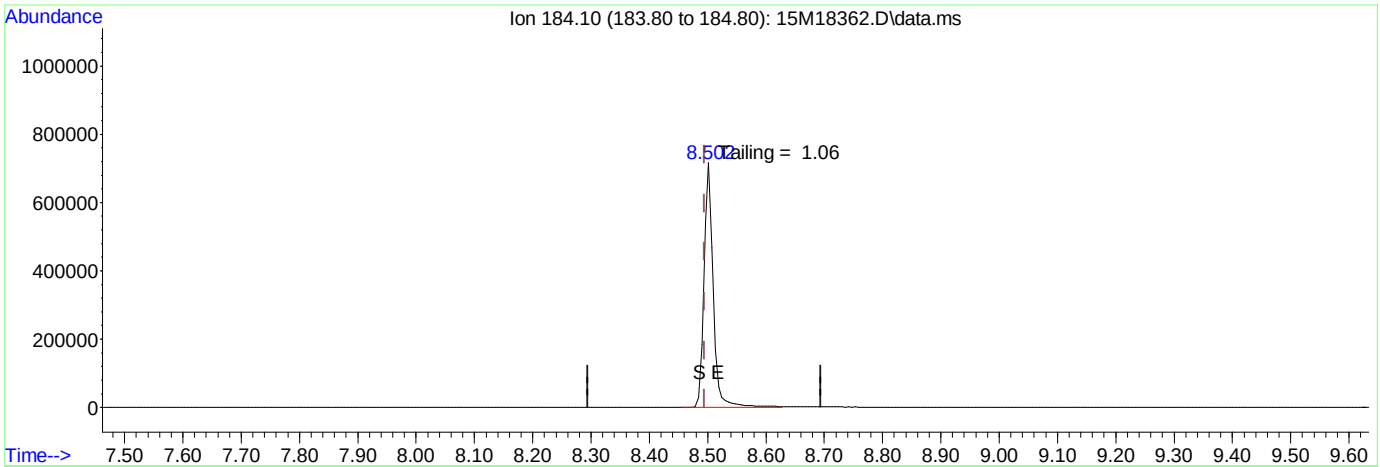

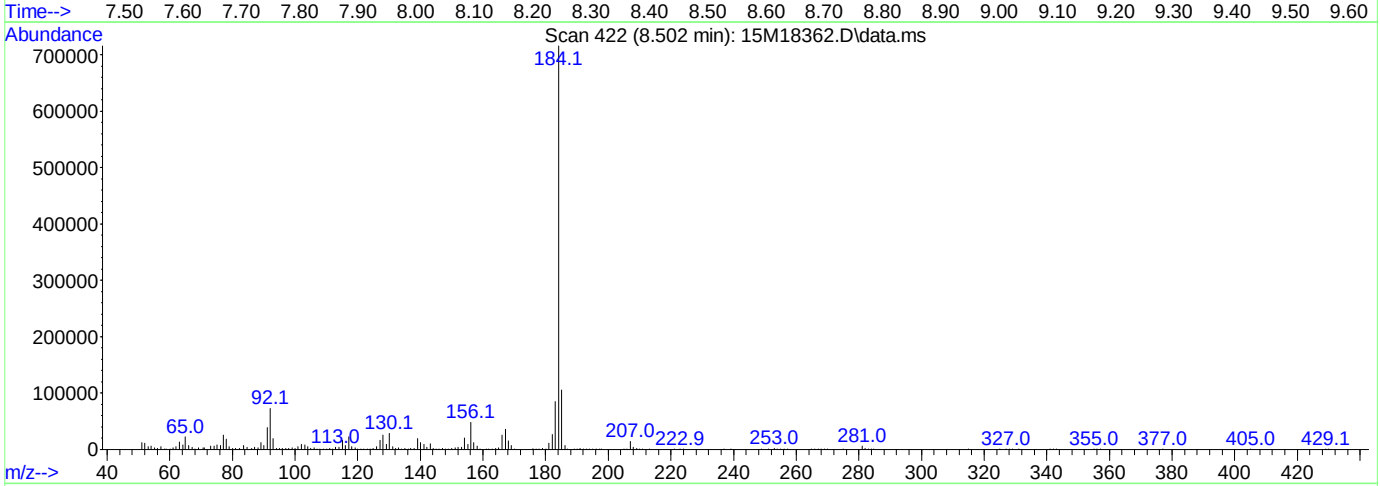

TIC: 15M18362.D\data.ms

(2) Benzidine

8.502min (+ 0.008) 0.00 ug/ml

response 797115

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18362.D
Acq On : 13 Jun 2016 8:30
Operator : MES
Sample : WG572383-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 13 08:43:56 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

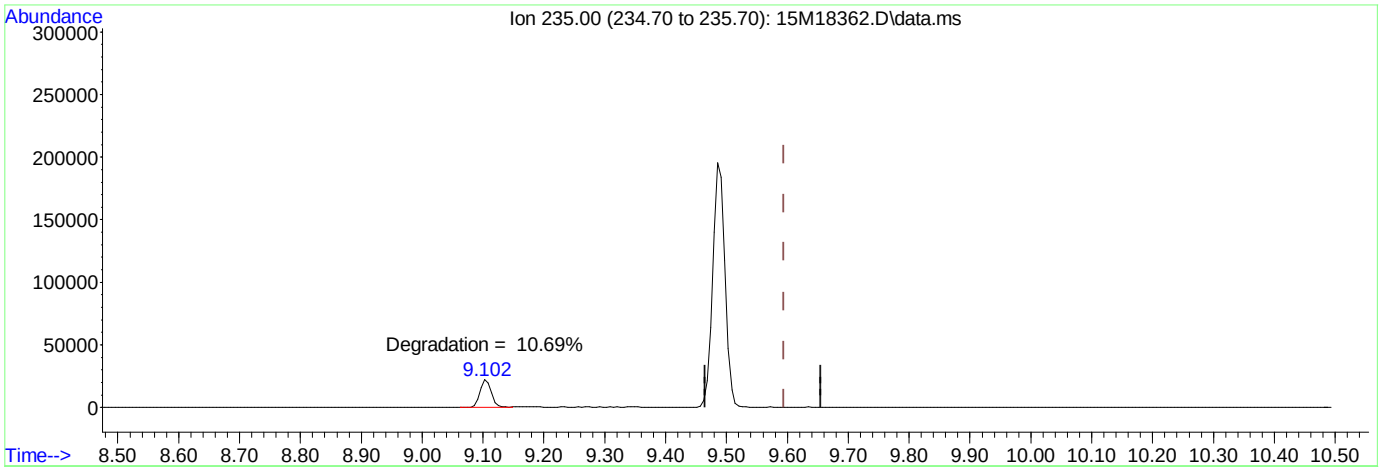

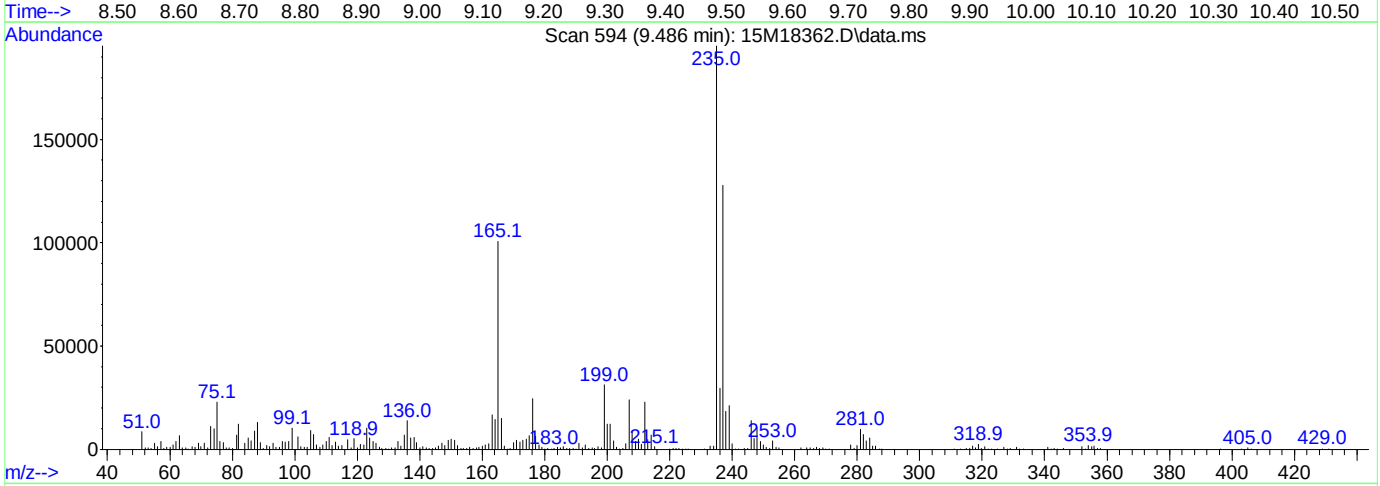

(3) DDT

9.486min (-0.108) 0.00 ug/ml

response 240504

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18364.D
Acq On : 13 Jun 2016 9:11
Operator : MES
Sample : WG571956-01 BLANK 6/11
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 13 12:05:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	51747	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	60207	2.7798	ug/L	0.00
Spiked Amount 5.000			Recovery	=	55.60%	
4) Nitrobenzene-d5	7.442	82	3682	0.2843	ug/L	0.00
Spiked Amount 5.000			Recovery	=	5.60%	
5) 2-Fluorobiphenyl	8.930	172	149	0.0011	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.166	244	553	0.0042	ug/L	-0.02
Spiked Amount 5.000			Recovery	=	0.00%	

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18364.D
Acq On : 13 Jun 2016 9:11
Operator : MES
Sample : WG571956-01 BLANK 6/11
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 13 12:05:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

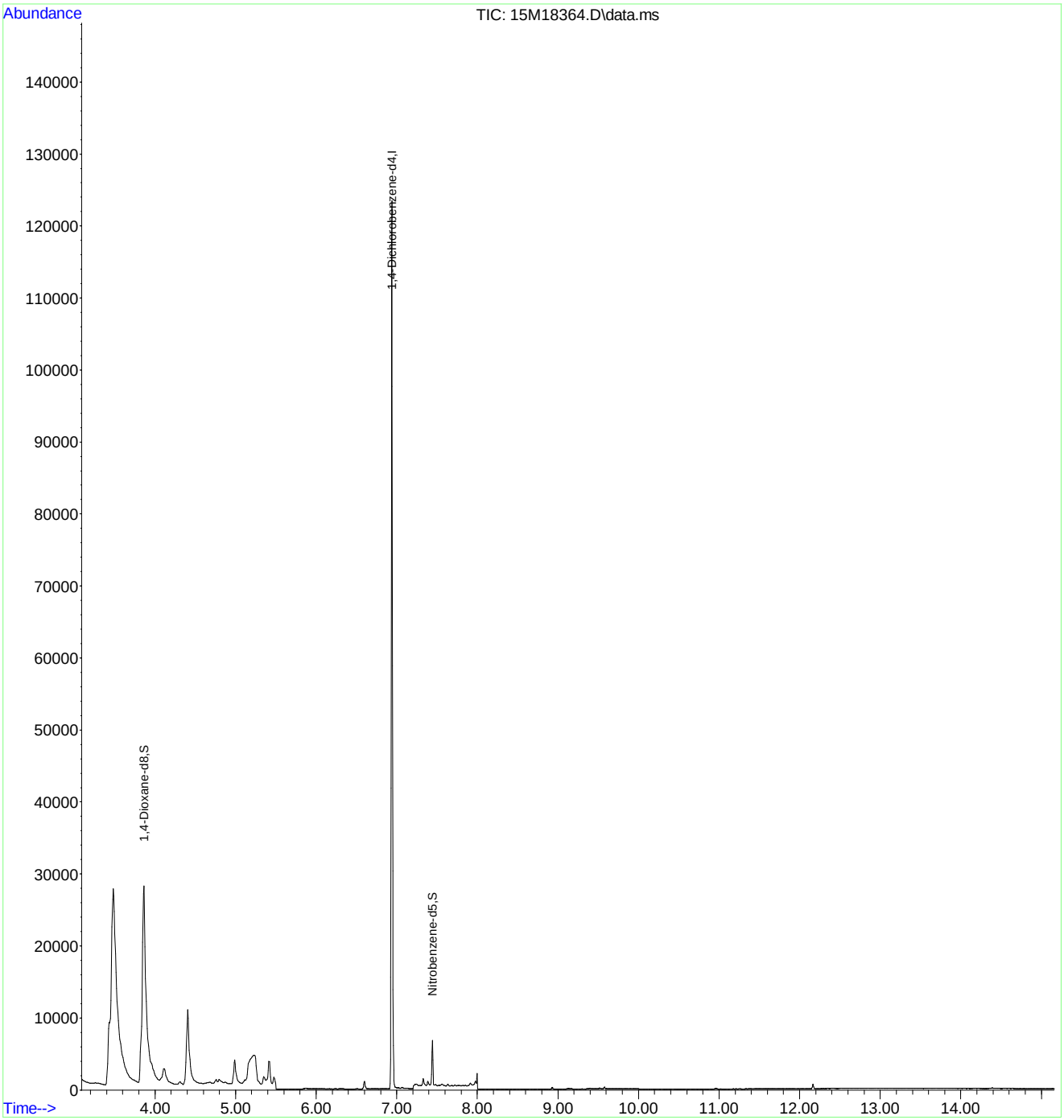

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18365.D
Acq On : 13 Jun 2016 9:34
Operator : MES
Sample : WG571956-02 LCS 6/11
Misc : 1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 13 12:06:05 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	51838	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	59406	2.7380	ug/L	0.00
Spiked Amount 5.000			Recovery	=	54.80%	
4) Nitrobenzene-d5	7.442	82	1957	0.2531	ug/L	0.00
Spiked Amount 5.000			Recovery	=	5.00%	
5) 2-Fluorobiphenyl	8.930	172	134	0.0010	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.162	244	564	0.0042	ug/L	-0.02
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	44373	2.6310	ug/L	75

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18365.D
Acq On : 13 Jun 2016 9:34
Operator : MES
Sample : WG571956-02 LCS 6/11
Misc : 1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 13 12:06:05 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

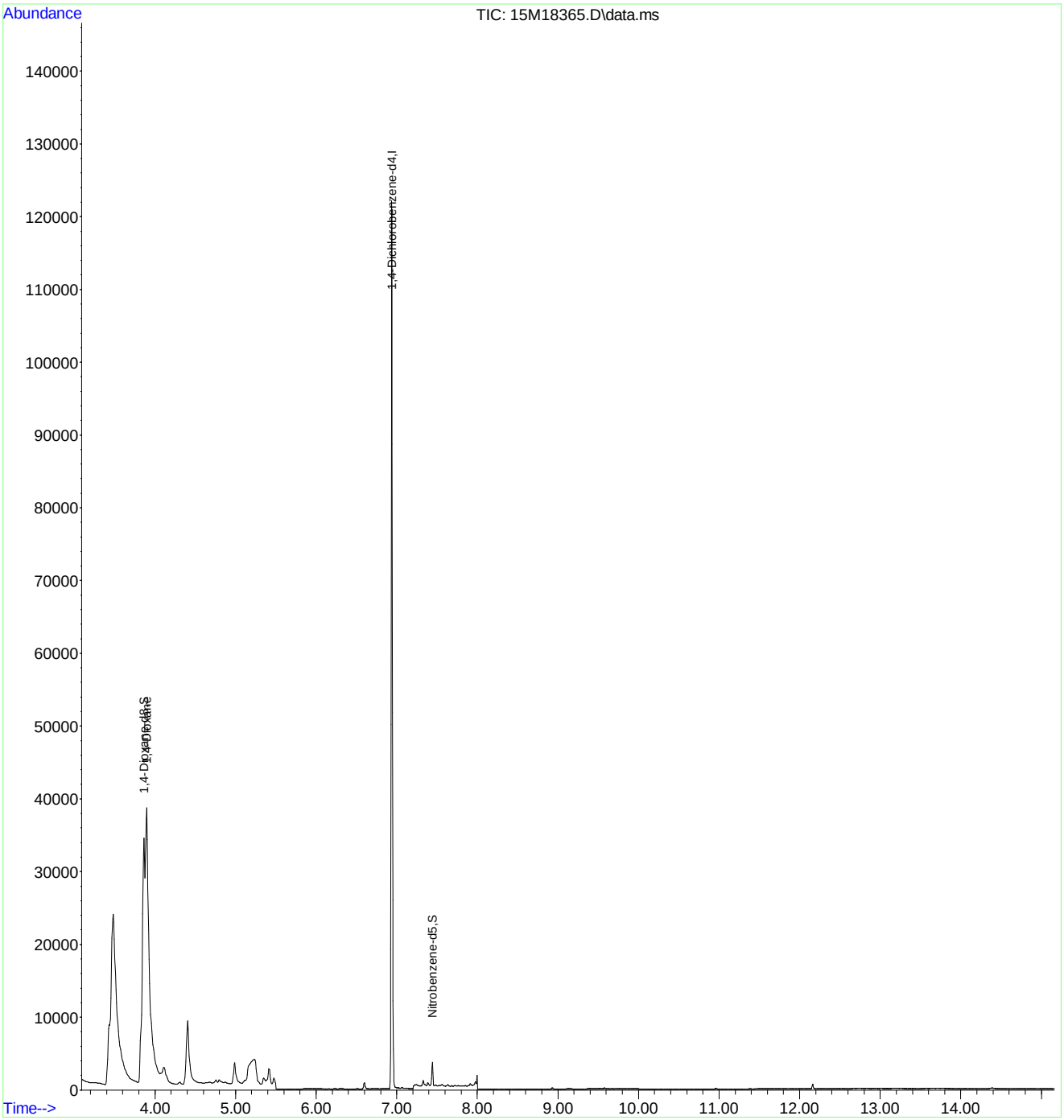

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18366.D
Acq On : 13 Jun 2016 9:56
Operator : MES
Sample : WG571956-03 LCSDUP 6/11
Misc : 1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 13 12:06:08 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	51677	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	66123	3.0571	ug/L	0.00
Spiked Amount 5.000			Recovery	=	61.20%	
4) Nitrobenzene-d5	7.442	82	2977	0.2716	ug/L	0.00
Spiked Amount 5.000			Recovery	=	5.40%	
5) 2-Fluorobiphenyl	8.926	172	132	0.0010	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.162	244	1175	0.0089	ug/L	-0.02
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	49897	2.9678	ug/L	76

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18366.D
Acq On : 13 Jun 2016 9:56
Operator : MES
Sample : WG571956-03 LCSDUP 6/11
Misc : 1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 13 12:06:08 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

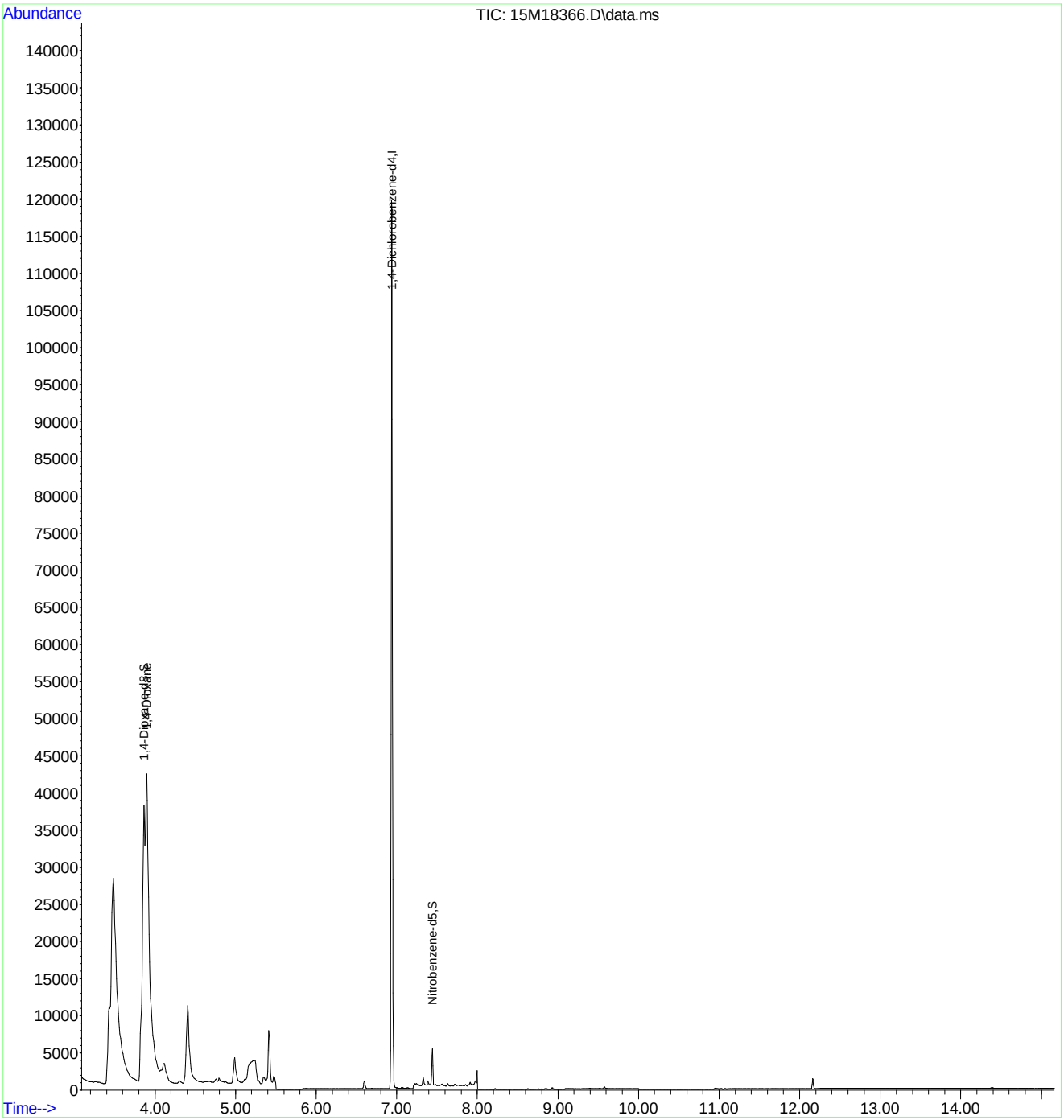

2.2 General Chromatography Data

2.2.2 6850 LC/MS Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW15T-060716	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/11/2016 12:24
Collect Date:	06/07/2016 13:15	**Dilution:**	500	**File ID:**	1LM.LM35282
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1630		200	100	50.0

Certificate of Analysis

Sample #:	L16060411-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW15B-060716	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/11/2016 12:43
Collect Date:	06/07/2016 13:55	**Dilution:**	100	**File ID:**	1LM.LM35283
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	555		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L16060411-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	AWD4T-060716	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/10/2016 17:24
Collect Date:	06/07/2016 15:00	**Dilution:**	200	**File ID:**	1LM.LM35249
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	712		80.0	40.0	20.0

Certificate of Analysis

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Sample #:	L16060411-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	AWD4B-060716	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/10/2016 17:43
Collect Date:	06/07/2016 15:30	**Dilution:**	200	**File ID:**	1LM.LM35250
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	726		80.0	40.0	20.0

2.2.2.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1402 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG572200-01 MCT	9,990	
-02 BLK	0.93	
-03 LCS	1.04	
L16060411-01	1433	
-02	1475	
-03	349	
-04	356	
L16060414-01	327	
-02	319	
-03	3510	
-04	4180	
L16060497-01	1546	
-02	1445	
-03	1450	
-04	2560	
L16060504-01	1254	
-02	853	
-03	938	
-04	2350	
L16060575-01	595	
-02	583	
-03	505	

Analyst: Wade T. De[illegible]

Date/Time: 6-10-16 / 1354

DCN#119023

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061016_WTD.TXT
Analyst1: WTD Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)
CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35225	WG572198-01 CCB	1	1		06/10/16 09:49
2	1LM.LM35226	WG572198-02 CCV (1.0ug/L)	1	1	STD75510	06/10/16 10:08
3	1LM.LM35227	WG572200-07 MRL (0.2ug/L)	1	1	STD75510	06/10/16 10:27
4	1LM.LM35228	WG572200-01 MCT (0.2ug/L)	1	1	STD75512	06/10/16 10:46
5	1LM.LM35229	WG572200-02 BLANK	1	1		06/10/16 11:05
6	1LM.LM35230	WG572200-03 LCS (0.2ug/L)	1	1	STD75512	06/10/16 11:24
22	1LM.LM35231	L16060497-01	1	1		06/10/16 11:43
23	1LM.LM35232	L16060497-02 MS (0.2ug/L)	1	1	STD75512	06/10/16 12:02
24	1LM.LM35233	L16060497-03 MSD (0.2ug/L)	1	1	STD75512	06/10/16 12:21
10	1LM.LM35234	L16060497-04 50X	1	50		06/10/16 12:40
11	1LM.LM35235	L16060575-01	1	1		06/10/16 12:59
12	1LM.LM35236	L16060575-02	1	1		06/10/16 13:18
13	1LM.LM35237	L16060575-03	1	1		06/10/16 13:37
14	1LM.LM35238	WG572198-03 CCV (1.0ug/L)	1	1	STD75510	06/10/16 13:55
15	1LM.LM35239	WG572200-08 MRL (0.2ug/L)	1	1	STD75510	06/10/16 14:14
16	1LM.LM35240	WG572198-04 CCB	1	1		06/10/16 14:33
17	1LM.LM35241	L16060575-01 100X	1	100		06/10/16 14:52
18	1LM.LM35242	L16060575-02	1	1		06/10/16 15:11
19	1LM.LM35243	L16060575-03	1	1		06/10/16 15:30
20	1LM.LM35244	WG572198-05 CCV (1.0ug/L)	1	1	STD75510	06/10/16 15:49
21	1LM.LM35245	WG572200-09 MRL (0.2ug/L)	1	1	STD75510	06/10/16 16:08
25	1LM.LM35246	WG572198-06 CCB	1	1		06/10/16 16:27
26	1LM.LM35247	L16060411-01 50X	1	50		06/10/16 16:46
27	1LM.LM35248	L16060411-02 50X	1	50		06/10/16 17:05
28	1LM.LM35249	L16060411-03 200X	1	200		06/10/16 17:24
29	1LM.LM35250	L16060411-04 200X	1	200		06/10/16 17:43
30	1LM.LM35251	L16060414-01	1	1		06/10/16 18:02
31	1LM.LM35252	L16060414-02	1	1		06/10/16 18:21
32	1LM.LM35253	L16060414-03 20X	1	20		06/10/16 18:40
33	1LM.LM35254	L16060414-04 20X	1	20		06/10/16 18:59
58	1LM.LM35255	L16060497-01 10X	1	10		06/10/16 19:18
35	1LM.LM35256	L16060497-04 500X	1	500		06/10/16 19:37
36	1LM.LM35257	WG572198-07 CCV (1.0ug/L)	1	1	STD75510	06/10/16 19:56

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061016_WTD.TXT

Analyst1: WTD Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups:

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 NA

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
37	1LM.LM35258	WG572200-10 MRL (0.2ug/L)	1	1	STD75510	06/10/16 20:15
38	1LM.LM35259	WG572198-08 CCB	1	1		06/10/16 20:34
39	1LM.LM35260	L16060504-01 1000X	1	1000		06/10/16 20:53
40	1LM.LM35261	L16060504-02 1000X	1	1000		06/10/16 21:12
41	1LM.LM35262	L16060504-03 1000X	1	1000		06/10/16 21:31
42	1LM.LM35263	L16060504-04 10000X	1	10000		06/10/16 21:50
43	1LM.LM35264	WG572198-09 CCV (1.0ug/L)	1	1	STD75510	06/10/16 22:09
44	1LM.LM35265	WG572200-11 MRL (0.2ug/L)	1	1	STD75510	06/10/16 22:27
45	1LM.LM35266	WG572198-10 CCB	1	1		06/10/16 22:46
46	1LM.LM35267	WG572289-07 MRL (0.2ug/L)	1	1	STD75510	06/10/16 23:05
47	1LM.LM35268	WG572289-01 MCT (0.2ug/l)	1	1	STD75512	06/10/16 23:24
48	1LM.LM35269	WG572289-02 BLANK	1	1		06/10/16 23:43
49	1LM.LM35270	WG572289-03 LCS (0.2ug/L)	1	1	STD75512	06/11/16 00:02
50	1LM.LM35271	L16060582-01 100X	1	100		06/11/16 00:21
51	1LM.LM35272	L16060582-02	1	1		06/11/16 00:40
59	1LM.LM35273	L16060582-03	1	1		06/11/16 00:59
53	1LM.LM35274	L16060582-03 MS (0.2ug/L)	1	1	STD75512	06/11/16 01:18
54	1LM.LM35275	L16060582-03 MSD (0.2ug/L)	1	1	STD75512	06/11/16 01:37
55	1LM.LM35276	WG572198-11 CCV (1.0ug/L)	1	1	STD75510	06/11/16 01:56
56	1LM.LM35277	WG572289-08 MRL (0.2ug/L)	1	1	STD75510	06/11/16 02:15
57	1LM.LM35278	WG572198-12 CCB	1	1		06/11/16 02:34

Comments

Seq.	Rerun	Dil.	Reason	Analytes
22	X	10	Over Calibration Range	
	L16060497-01			
23				
	WG572200-05 - Sample does not appear to be homogenous with Sample 01, the reference and Sample 03, the MSD.			
24				
	WG572200-06 - Sample does not appear to be homogenous with Sample 01, the reference and Sample 02, the MS.			
10	X	500	Over Calibration Range	
	L16060497-04			
11	X	100	Over Calibration Range	
	L16060575-01			
12	X	1	Carry-over contamination	
	L16060575-02			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061016_WTD.TXT

Analyst1: WTD Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 NA

Comments

Seq.	Rerun	Dil.	Reason	Analytes
13	X	1	Carry-over contamination	
	L16060575-03			
26	X	500	Over Calibration Range	
	L16060411-01			
27	X	100	Over Calibration Range	
	L16060411-02			
32	X	10000	Over Calibration Range	
	L16060414-03			
33	X	10000	Over Calibration Range	
	L16060414-04			
39	X	10000	Over Calibration Range	
	L16060504-01			
40	X		Internal standard failure	
	L16060504-02 - No Internal Standard added.			
41	X	10000	Over Calibration Range	
	L16060504-03 - No Internal Standard added.			
42	X	1000	Analyzed too dilute	
	L16060504-04 - No Internal Standard added.			
50				
	L16060582-01 - Analyzed at a dilution based on information from the client.			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061116_WTD.TXT
Analyst1: WTD Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)
CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35279	WG572339-01 CCB	1	1		06/11/16 11:27
2	1LM.LM35280	WG572339-02 CCV (1.0ug/L)	1	1	STD75510	06/11/16 11:46
3	1LM.LM35281	WG572200-12 MRL (0.2ug/L)	1	1	STD75510	06/11/16 12:05
4	1LM.LM35282	L16060411-01 500X	1	500		06/11/16 12:24
5	1LM.LM35283	L16060411-02 100X	1	100		06/11/16 12:43
6	1LM.LM35284	L16060414-03 10000X	1	10000		06/11/16 13:02
7	1LM.LM35285	L16060414-04 10000X	1	10000		06/11/16 13:21
8	1LM.LM35286	L16060504-01 10000X	1	10000		06/11/16 13:40
9	1LM.LM35287	L16060504-02 1000X	1	1000		06/11/16 13:58
10	1LM.LM35288	L16060504-03 10000X	1	10000		06/11/16 14:17
11	1LM.LM35289	L16060504-04 1000X	1	1000		06/11/16 14:36
12	1LM.LM35290	L16060414-03 100000X	1	100000		06/11/16 14:55
13	1LM.LM35291	L16060414-04 100000X	1	100000		06/11/16 15:15
14	1LM.LM35292	WG572339-03 CCV (1.0ug/L)	1	1	STD75510	06/11/16 15:34
15	1LM.LM35293	WG572200-13 MRL (0.2ug/L)	1	1	STD75510	06/11/16 16:41
16	1LM.LM35294	WG572339-04 CCB	1	1		06/11/16 17:00
17	1LM.LM35295	L16060504-04 100X	1	100		06/11/16 17:19
18	1LM.LM35296	WG572339-05 CCV (1.0ug/L)	1	1	STD75510	06/11/16 17:38
19	1LM.LM35297	WG572200-14 MRL (0.2ug/L)	1	1	STD75510	06/11/16 17:57
20	1LM.LM35298	WG572339-06 CCB	1	1		06/11/16 18:16
21	1LM.LM35299	WG572350-05 MRL (0.2ug/L)	1	1	STD75510	06/11/16 18:35
22	1LM.LM35300	WG572350-01 MCT (0.2ug/l)	1	1	STD75512	06/11/16 18:54
23	1LM.LM35301	WG572350-02 BLANK	1	1		06/11/16 19:13
24	1LM.LM35302	WG572350-03 LCS (0.2ug/L)	1	1	STD75512	06/11/16 19:32
25	1LM.LM35303	WG572350-03 LCSD (0.2ug/L)	1	1	STD75512	06/11/16 19:51
26	1LM.LM35304	L16060632-01 100X	1	100		06/11/16 20:10
27	1LM.LM35305	L16060632-02 100X	1	100		06/11/16 20:29
28	1LM.LM35306	L16060632-03 100X	1	100		06/11/16 20:48
29	1LM.LM35307	L16060632-04 100X	1	100		06/11/16 21:07
30	1LM.LM35308	L16060615-01 10000X	1	10000		06/11/16 21:26
31	1LM.LM35309	L16060615-02 100X	1	100		06/11/16 21:44
43	1LM.LM35310	WG572339-07 CCV (1.0ug/L)	1	1	STD75510	06/11/16 22:03
33	1LM.LM35311	WG572350-06 MRL (0.2ug/L)	1	1	STD75510	06/11/16 22:22

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061116_WTD.TXT

Analyst1: WTD Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 NA

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
44	1LM.LM35312	WG572339-08 CCB	1	1		06/11/16 22:41
35	1LM.LM35313	L16060615-03 100X	1	100		06/11/16 23:00
36	1LM.LM35314	L16060615-04 100X	1	100		06/11/16 23:19
37	1LM.LM35315	L16060616-01 10000X	1	10000		06/11/16 23:38
38	1LM.LM35316	L16060616-02 10000X	1	10000		06/11/16 23:57
39	1LM.LM35317	L16060616-03	1	1		06/12/16 00:16
45	1LM.LM35318	WG572339-09 CCV (1.0ug/L)	1	1	STD75510	06/12/16 00:35
41	1LM.LM35319	WG572350-07 MRL (0.2ug/L)	1	1	STD75510	06/12/16 00:54
46	1LM.LM35320	WG572339-10 CCB	1	1		06/12/16 01:13

Comments

Seq.	Rerun	Dil.	Reason	Analytes
6	X	100000	Over Calibration Range	
	L16060414-03			
7	X	100000	Over Calibration Range	
	L16060414-04			
11	X	100	Analyzed too dilute	
	L16060504-04			
26	X	1	Analyzed too dilute	
	L16060632-01			
27	X	1	Analyzed too dilute	
	L16060632-02			
28	X	1	Analyzed too dilute	
	L16060632-03			
29	X	1	Analyzed too dilute	
	L16060632-04			
30	X	1	Analyzed too dilute	
	L16060615-01			
31	X	1	Analyzed too dilute	
	L16060615-02			
35	X	1	Analyzed too dilute	
	L16060615-03			
36	X	10000	Over Calibration Range	
	L16060615-04			
37				
	L16060616-01 Analyzed at a dilution based on historical data			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061116_WTD.TXT

Analyst1: WTD Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups:

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 NA

Comments

Seq.	Rerun	Dil.	Reason	Analytes
38	X	100	Analyzed too dilute	
	L16060616-02			

Page: 3 Approved: 13-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 04-MAY-2016 John Richards

Secondary Reviewer: 05-MAY-2016 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 10-JUN-2016
Analyst: WTD
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 75634
Analytical Workgroups: WG572200, WG572289

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	WTD
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MES

Primary Reviewer: 11-JUN-2016

Secondary Reviewer: 13-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-13-2016 11:53:25

Microbac Laboratories Inc.

Data Checklist

Date: 11-JUN-2016
Analyst: WTD
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 75641
Analytical Workgroups: L16060411, L16060414, L16060504, L16060616

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	WTD
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 12-JUN-2016

Secondary Reviewer: 13-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-14-2016 08:50:47

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG572200

Login Number: L16060411

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW15T-060716	01	06/07/16					06/10/2016	2.8	28		06/11/16	1.1	28	
18CPTMW15B-060716	02	06/07/16					06/10/2016	2.8	28		06/11/16	1.2	28	
AWD4T-060716	03	06/07/16					06/10/2016	2.8	28		06/10/16	.4	28	
AWD4B-060716	04	06/07/16					06/10/2016	2.7	28		06/10/16	.4	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4803801
Report generated 06/14/2016 08:39

METHOD BLANK SUMMARY

Login Number: L16060411
Blank File ID: 1LM.LM35229
Prep Date: 06/10/16 09:00
Analyzed Date: 06/10/16 11:05
Analyst: WTD

Work Group: WG572200
Blank Sample ID: WG572200-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG572200-07	1LM.LM35227	06/10/16 10:27	01
MCT	WG572200-01	1LM.LM35228	06/10/16 10:46	01
LCS	WG572200-03	1LM.LM35230	06/10/16 11:24	01
QCMRL	WG572200-08	1LM.LM35239	06/10/16 14:14	01
QCMRL	WG572200-09	1LM.LM35245	06/10/16 16:08	01
AWD4T-060716	L16060411-03	1LM.LM35249	06/10/16 17:24	DL01
AWD4B-060716	L16060411-04	1LM.LM35250	06/10/16 17:43	DL01
QCMRL	WG572200-10	1LM.LM35258	06/10/16 20:15	01
QCMRL	WG572200-11	1LM.LM35265	06/10/16 22:27	01
QCMRL	WG572200-12	1LM.LM35281	06/11/16 12:05	01
18CPTMW15T-060716	L16060411-01	1LM.LM35282	06/11/16 12:24	DL01
18CPTMW15B-060716	L16060411-02	1LM.LM35283	06/11/16 12:43	DL01
QCMRL	WG572200-13	1LM.LM35293	06/11/16 16:41	01
QCMRL	WG572200-14	1LM.LM35297	06/11/16 17:57	01

Report Name: BLANK_SUMMARY
PDF File ID: 4803802
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060411 Prep Date: 06/10/16 09:00 Sample ID: WG572200-02
Instrument ID: LCMS1 Run Date: 06/10/16 11:05 Prep Method: 6850
File ID: 1LM.LM35229 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4803803
14-JUN-2016 08:39

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060411 Run Date: 06/10/2016 Sample ID: WG572200-03
Instrument ID: LCMS1 Run Time: 11:24 Prep Method: 6850
File ID: 1LM.LM35230 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD75512 Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	0.200	0.201	101	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4803804
Report generated: 06/14/2016 08:39

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060411
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4803806
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060411

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4803806
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060411

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4803806
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060411

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008

PDF File ID: 4803806

Report generated 06/14/2016 08:39

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060411 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4803807
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060411
Run Date: 06/10/2016
Sample ID: WG572198-01
Instrument ID: LCMS1
Run Time: 09:49
Method: 6850
File ID: 1LM.LM35225
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4803809
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060411
Run Date: 06/10/2016
Sample ID: WG572198-04
Instrument ID: LCMS1
Run Time: 14:33
Method: 6850
File ID: 1LM.LM35240
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4803809
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060411
Run Date: 06/10/2016
Sample ID: WG572198-06
Instrument ID: LCMS1
Run Time: 16:27
Method: 6850
File ID: 1LM.LM35246
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4803809
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060411
Run Date: 06/10/2016
Sample ID: WG572198-08
Instrument ID: LCMS1
Run Time: 20:34
Method: 6850
File ID: 1LM.LM35259
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4803809
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060411
Run Date: 06/10/2016
Sample ID: WG572198-10
Instrument ID: LCMS1
Run Time: 22:46
Method: 6850
File ID: 1LM.LM35266
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4803809
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060411
Run Date: 06/11/2016
Sample ID: WG572339-01
Instrument ID: LCMS1
Run Time: 11:27
Method: 6850
File ID: 1LM.LM35279
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4803809
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060411
Run Date: 06/11/2016
Sample ID: WG572339-04
Instrument ID: LCMS1
Run Time: 17:00
Method: 6850
File ID: 1LM.LM35294
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4803809
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060411
Run Date: 06/11/2016
Sample ID: WG572339-06
Instrument ID: LCMS1
Run Time: 18:16
Method: 6850
File ID: 1LM.LM35298
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4803809
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060411
Run Date: 06/10/2016
Sample ID: WG572198-02
Instrument ID: LCMS1
Run Time: 10:08
Method: 6850
File ID: 1LM.LM35226
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.70	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4803808
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060411
Run Date: 06/10/2016
Sample ID: WG572198-03
Instrument ID: LCMS1
Run Time: 13:55
Method: 6850
File ID: 1LM.LM35238
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.71	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4803808
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060411
Run Date: 06/10/2016
Sample ID: WG572198-05
Instrument ID: LCMS1
Run Time: 15:49
Method: 6850
File ID: 1LM.LM35244
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.05	ug/L	1.77	5.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4803808
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060411
Run Date: 06/10/2016
Sample ID: WG572198-07
Instrument ID: LCMS1
Run Time: 19:56
Method: 6850
File ID: 1LM.LM35257
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.08	ug/L	1.82	8.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4803808
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060411
Run Date: 06/10/2016
Sample ID: WG572198-09
Instrument ID: LCMS1
Run Time: 22:09
Method: 6850
File ID: 1LM.LM35264
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.74	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4803808
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060411 Run Date: 06/11/2016 Sample ID: WG572198-11
Instrument ID: LCMS1 Run Time: 01:56 Method: 6850
File ID: 1LM.LM35276 Analyst: WTD QC Key: DOD4
Workgroup (AAB#): WG572200 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.74	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4803808
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060411 Run Date: 06/11/2016 Sample ID: WG572339-02
Instrument ID: LCMS1 Run Time: 11:46 Method: 6850
File ID: 1LM.LM35280 Analyst: WTD QC Key: DOD4
Workgroup (AAB#): WG572200 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.75	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4803808
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060411 Run Date: 06/11/2016 Sample ID: WG572339-03
Instrument ID: LCMS1 Run Time: 15:34 Method: 6850
File ID: 1LM.LM35292 Analyst: WTD QC Key: DOD4
Workgroup (AAB#): WG572200 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.05	ug/L	1.78	5.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4803808
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060411
Run Date: 06/11/2016
Sample ID: WG572339-05
Instrument ID: LCMS1
Run Time: 17:38
Method: 6850
File ID: 1LM.LM35296
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.73	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4803808
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060411
Run Date: 06/11/2016
Sample ID: WG572339-07
Instrument ID: LCMS1
Run Time: 22:03
Method: 6850
File ID: 1LM.LM35310
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.06	ug/L	1.79	6.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4803808
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060411 Run Date: 06/10/2016 Sample ID: WG572200-07
Instrument ID: LCMS1 Run Time: 10:27 Prep Method: 6850
File ID: 1LM.LM35227 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.202	101	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4803805
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060411 Run Date: 06/10/2016 Sample ID: WG572200-08
Instrument ID: LCMS1 Run Time: 14:14 Prep Method: 6850
File ID: 1LM.LM35239 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.215	108	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4803805
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060411 Run Date: 06/10/2016 Sample ID: WG572200-09
Instrument ID: LCMS1 Run Time: 16:08 Prep Method: 6850
File ID: 1LM.LM35245 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.210	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4803805
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060411 Run Date: 06/10/2016 Sample ID: WG572200-10
Instrument ID: LCMS1 Run Time: 20:15 Prep Method: 6850
File ID: 1LM.LM35258 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.222	111	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4803805
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060411 Run Date: 06/10/2016 Sample ID: WG572200-11
Instrument ID: LCMS1 Run Time: 22:27 Prep Method: 6850
File ID: 1LM.LM35265 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.216	108	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4803805
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060411 Run Date: 06/11/2016 Sample ID: WG572200-12
Instrument ID: LCMS1 Run Time: 12:05 Prep Method: 6850
File ID: 1LM.LM35281 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4803805
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060411 Run Date: 06/11/2016 Sample ID: WG572200-13
Instrument ID: LCMS1 Run Time: 16:41 Prep Method: 6850
File ID: 1LM.LM35293 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4803805
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060411 Run Date: 06/11/2016 Sample ID: WG572200-14
Instrument ID: LCMS1 Run Time: 17:57 Prep Method: 6850
File ID: 1LM.LM35297 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.215	108	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4803805
Report generated 06/14/2016 08:39

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16060411
Instrument ID: LCMS1
Workgroup (AAB#): WG572200

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16060411-01	500	DL01	446000
L16060411-02	100	DL01	441000
L16060411-03	200	DL01	467000
L16060411-04	200	DL01	468000
WG572200-02	1.00	01	441000
WG572200-03	1.00	01	434000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4803810
Report generated 06/14/2016 08:39

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**	6850	**Samplenum:**	L16060411-01
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35282
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 12:24	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	489000	170000	2.88	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**	6850	**Samplenum:**	L16060411-02
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35283
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 12:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	824000	288000	2.86	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**	6850	**Samplenum:**	L16060411-03
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35249
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 17:24	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	560000	196000	2.86	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**	6850	**Samplenum:**	L16060411-04
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35250
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 17:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	573000	195000	2.94	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG572198-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35225
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 09:49	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG572198-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35226
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 10:08	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	151000	53700	2.81	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG572198-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35238
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 13:55	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	172000	59600	2.89	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG572198-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35240
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 14:33	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	3660	1770	2.07	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG572198-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35244
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 15:49	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	179000	63400	2.82	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG572198-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35246
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 16:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	377	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG572198-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35257
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 19:56	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	175000	58000	3.02	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG572198-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35259
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 20:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG572198-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35264
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 22:09	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	57800	2.92	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG572198-10
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35266
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 22:46	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	971	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG572198-11
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35276
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 01:56	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	183000	61800	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**	6850	**Samplenum:**	WG572200-01
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35228
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 10:46	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35200	10400	3.38	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**	6850	**Samplenum:**	WG572200-02
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35229
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 11:05	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	309	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**	6850	**Samplenum:**	WG572200-03
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35230
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 11:24	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	30000	11800	2.54	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**	6850	**Samplenum:**	WG572200-07
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35227
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 10:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	30600	11100	2.76	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**	6850	**Samplenum:**	WG572200-08
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35239
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 14:14	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36500	13800	2.64	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**	6850	**Samplenum:**	WG572200-09
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35245
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 16:08	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36700	12600	2.91	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**	6850	**Samplenum:**	WG572200-10
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35258
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 20:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36200	12400	2.92	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**	6850	**Samplenum:**	WG572200-11
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35265
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 22:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35800	11700	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**	6850	**Samplenum:**	WG572200-12
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35281
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 12:05	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	33000	11900	2.77	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**	6850	**Samplenum:**	WG572200-13
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35293
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 16:41	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	33900	12200	2.78	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**	6850	**Samplenum:**	WG572200-14
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35297
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 17:57	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36500	12700	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG572339-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35279
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 11:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	7310	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG572339-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35280
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 11:46	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	160000	54700	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG572339-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35292
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 15:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	171000	56800	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG572339-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35294
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 17:00	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG572339-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35296
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 17:38	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	172000	59300	2.90	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG572339-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35298
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 18:16	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060411	**Prep Method:**		**Samplenum:**	WG572339-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35310
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 22:03	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	180000	60500	2.98	2.3	3.8	

2.2.2.3 Sample Data

Applied Biosystems | MDS SCIEX

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Printed: 6/12/2016 9:37 PM

Data File	LM35282.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 12:24:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060411-01 500X	**Injection Vial**	14.00
Data File	LM35282.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 12:24:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	L16060411-01	**Dilution Factor**	1.00
Sample Comment	1,500.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.460e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.890e+05	9.84	N/A	3.26
Perchlorate conf	1.700e+05	9.82	N/A	3.39

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

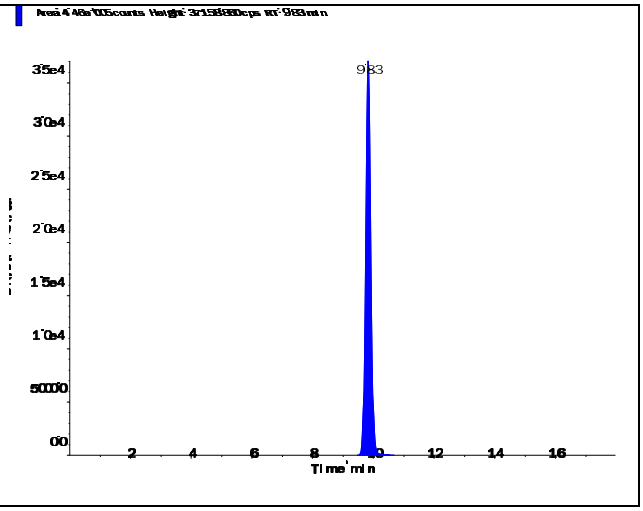

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	3.26 ng/ml
Area Ratio:	1.097
Sample Type:	(Unknown)

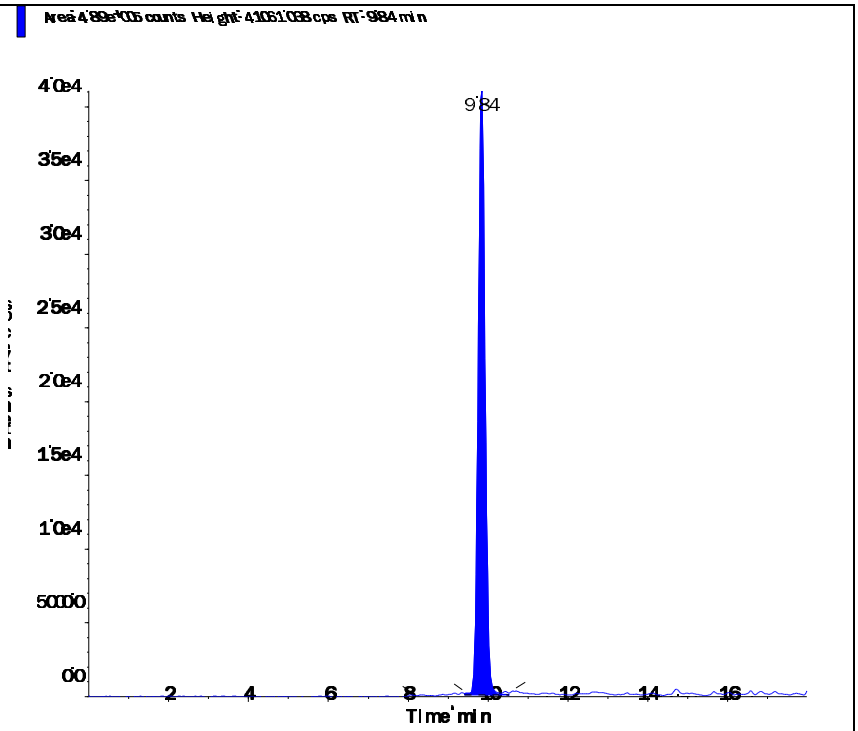

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	3.39 ng/ml
Area Ratio:	0.381
Sample Type:	(Unknown)

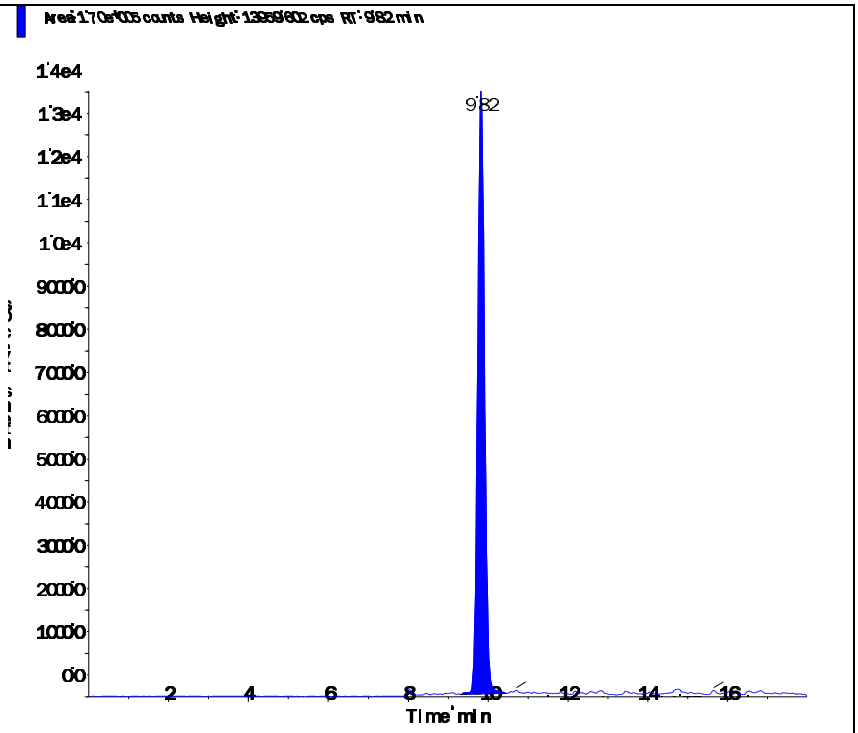

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Data File	LM35283.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 12:43:12 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060411-02 100X	**Injection Vial**	15.00
Data File	LM35283.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 12:43:12 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	L16060411-02	**Dilution Factor**	1.00
Sample Comment	1,100.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.410e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.240e+05	9.82	N/A	5.55
Perchlorate conf	2.880e+05	9.81	N/A	5.83

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

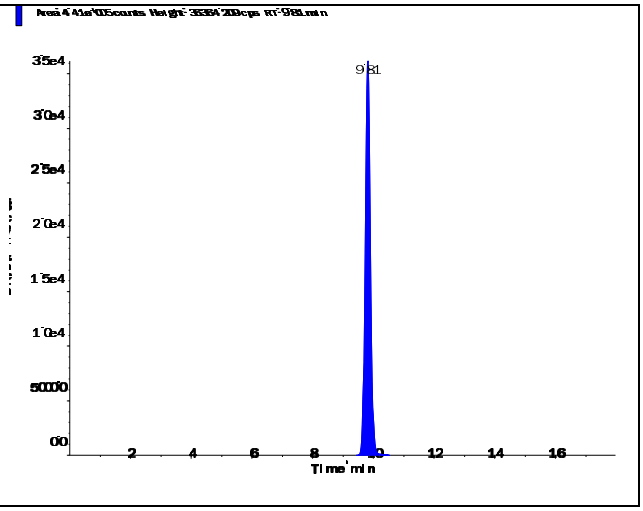

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	5.55 ng/ml
Area Ratio:	1.866
Sample Type:	(Unknown)

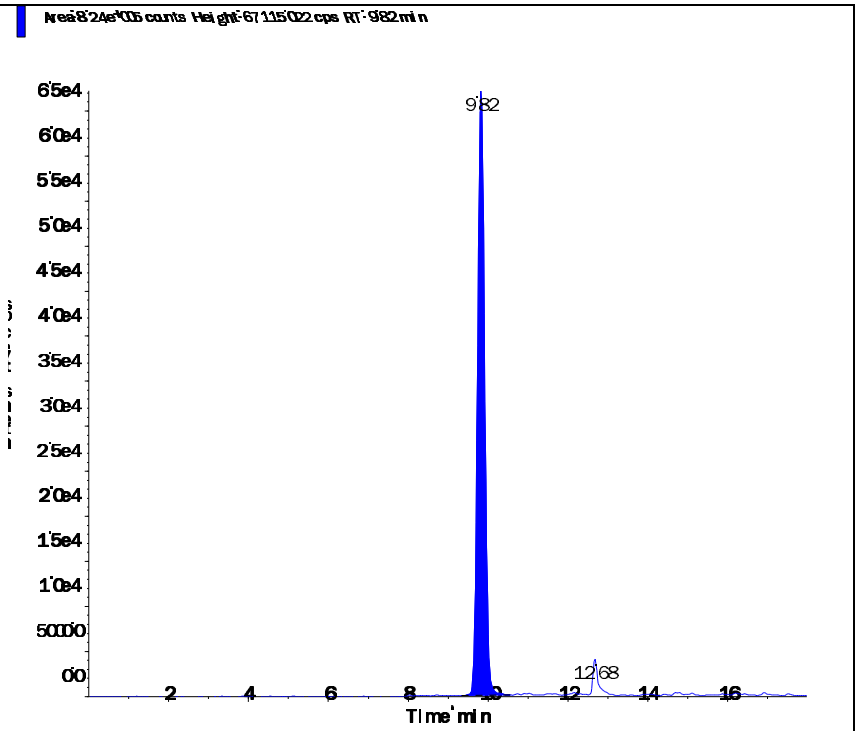

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.81 (9.84) min
Calculated conc:	5.83 ng/ml
Area Ratio:	0.653
Sample Type:	(Unknown)

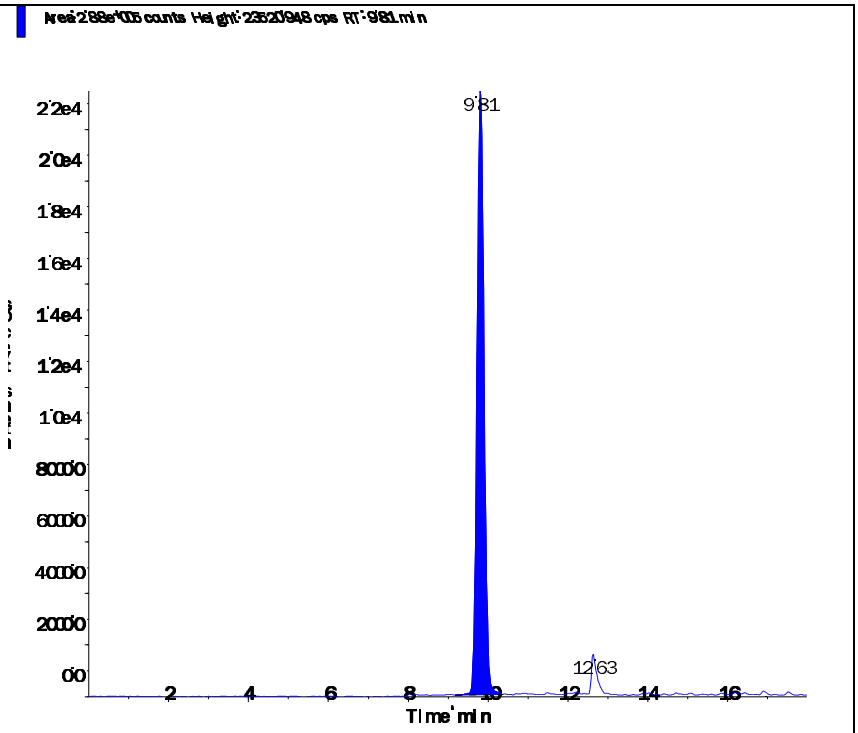

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Data File	LM35249.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 5:24:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060411-03 200X	**Injection Vial**	16.00
Data File	LM35249.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 5:24:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	L16060411-03	**Dilution Factor**	1.00
Sample Comment	1,200.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.670e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.600e+05	9.85	N/A	3.56
Perchlorate conf	1.960e+05	9.83	N/A	3.74

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

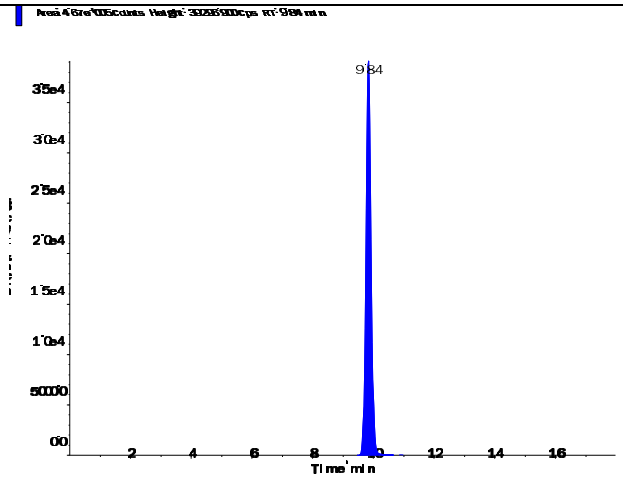

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 3.56 ng/ml Area Ratio: 1.199 Sample Type: (Unknown)	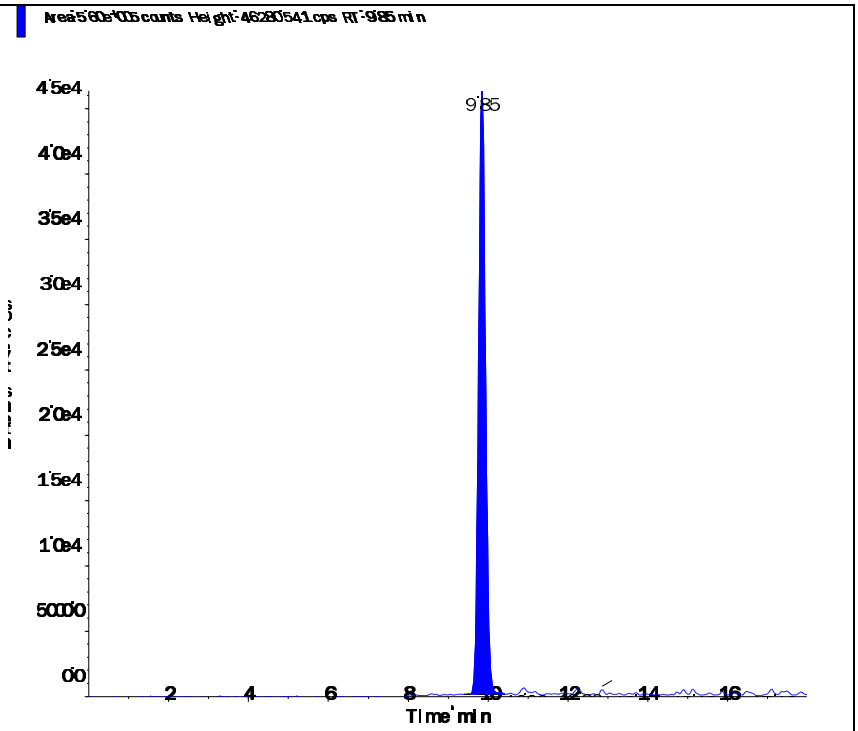
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 3.74 ng/ml Area Ratio: 0.42 Sample Type: (Unknown)	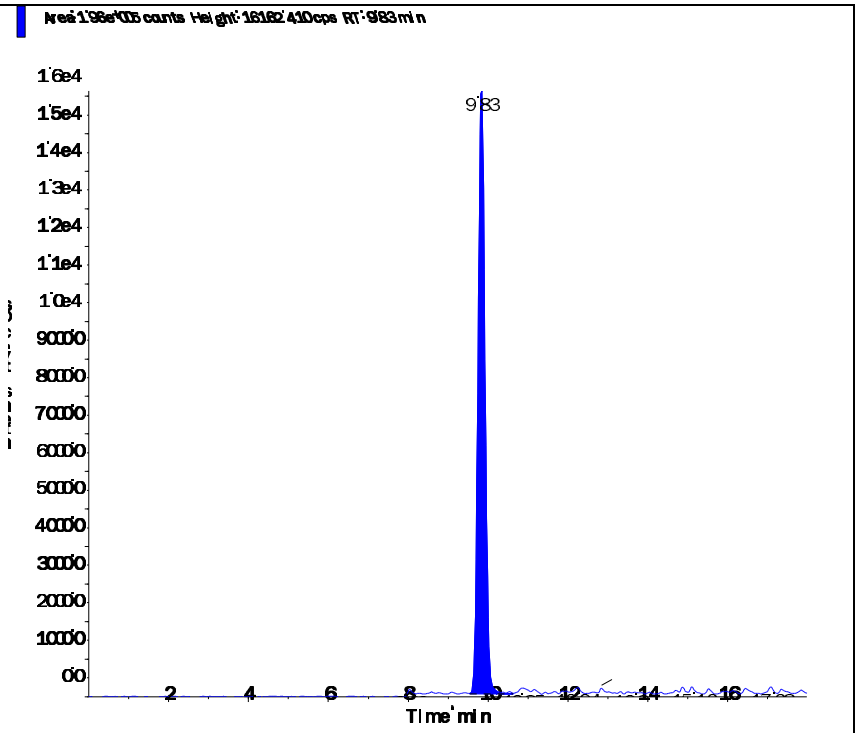

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Data File	LM35250.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 5:43:47 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060411-04 200X	**Injection Vial**	17.00
Data File	LM35250.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 5:43:47 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	L16060411-04	**Dilution Factor**	1.00
Sample Comment	1,200.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.680e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.730e+05	9.84	N/A	3.63
Perchlorate conf	1.950e+05	9.83	N/A	3.72

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

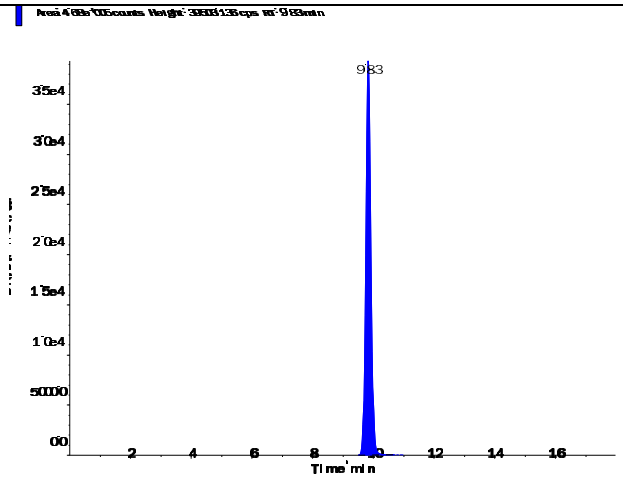

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 3.63 ng/ml Area Ratio: 1.223 Sample Type: (Unknown)	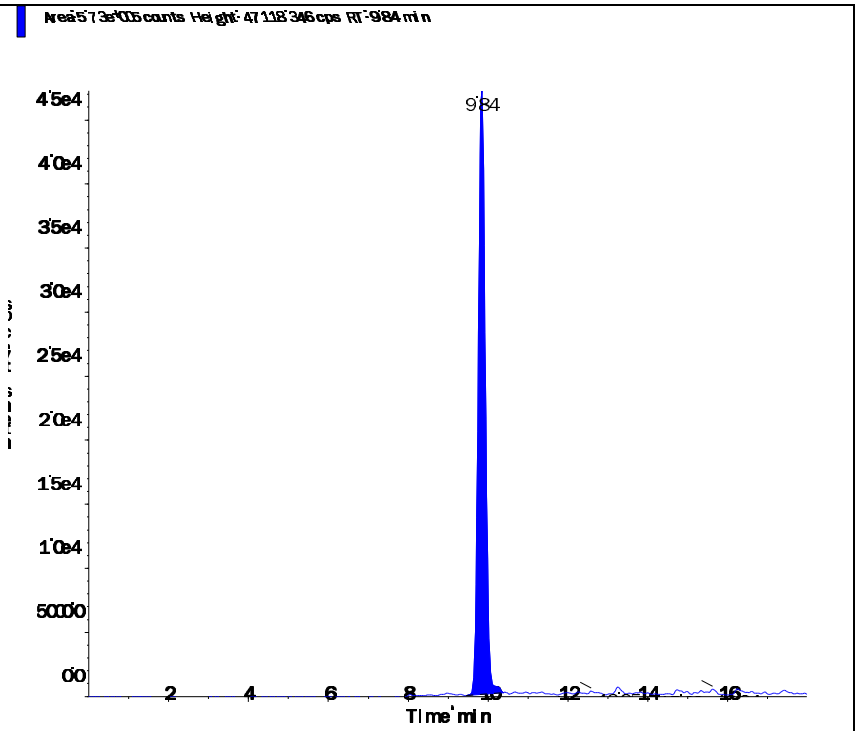
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 3.72 ng/ml Area Ratio: 0.417 Sample Type: (Unknown)	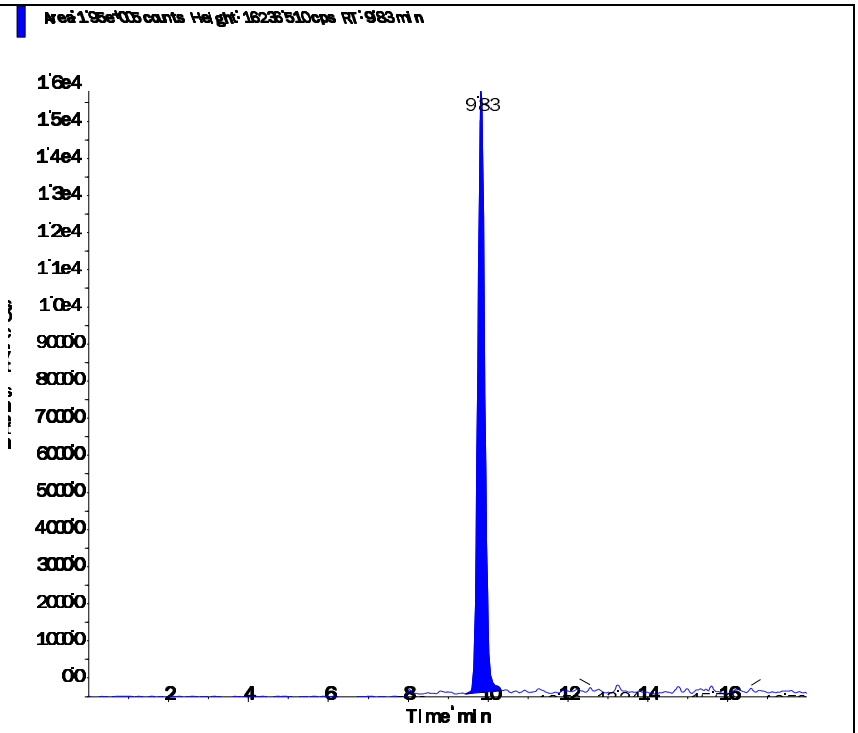

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2.2.2.4 Standards Data

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Data File	LM34686.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

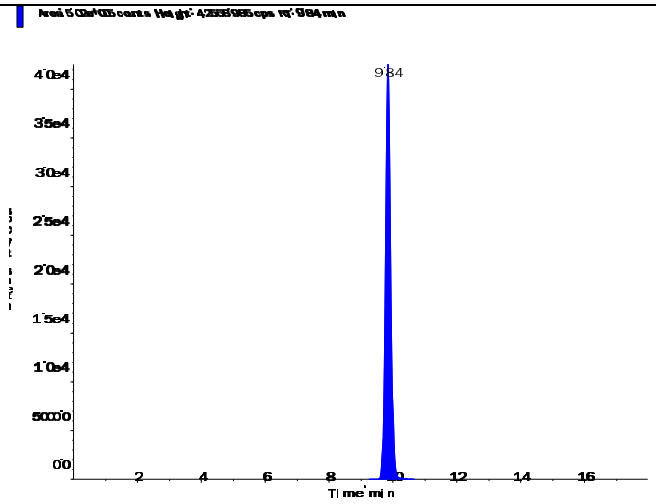

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

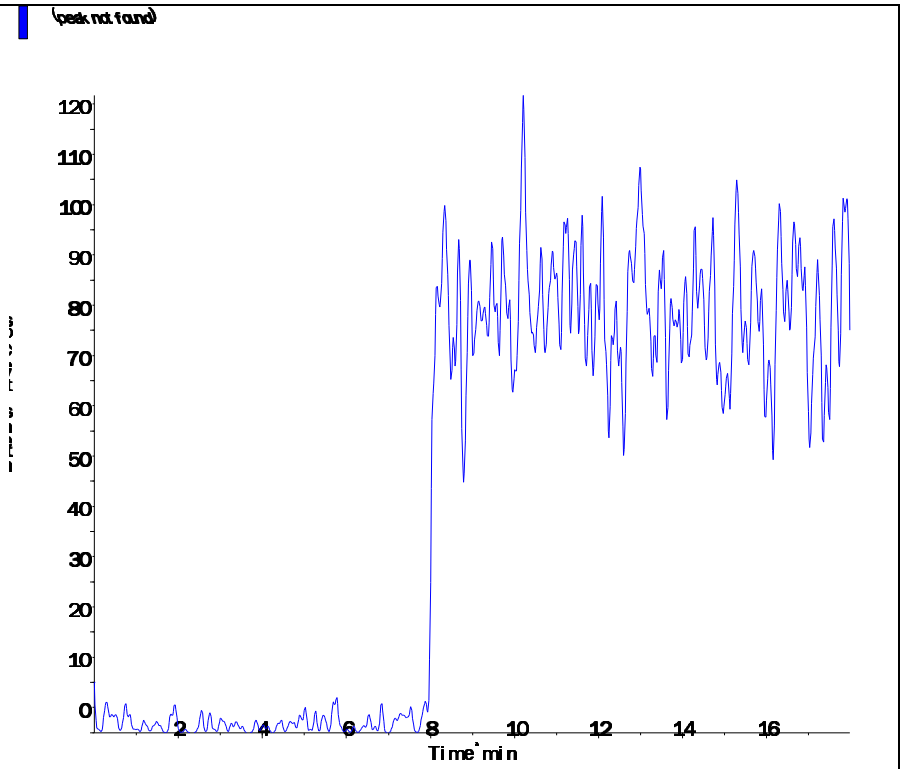

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

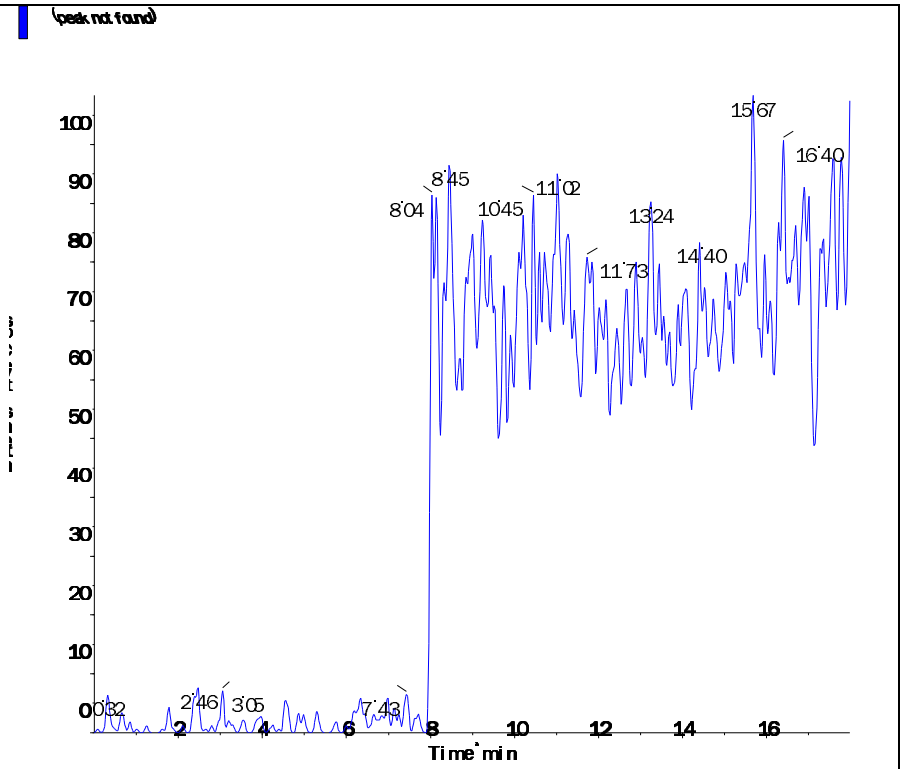

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Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

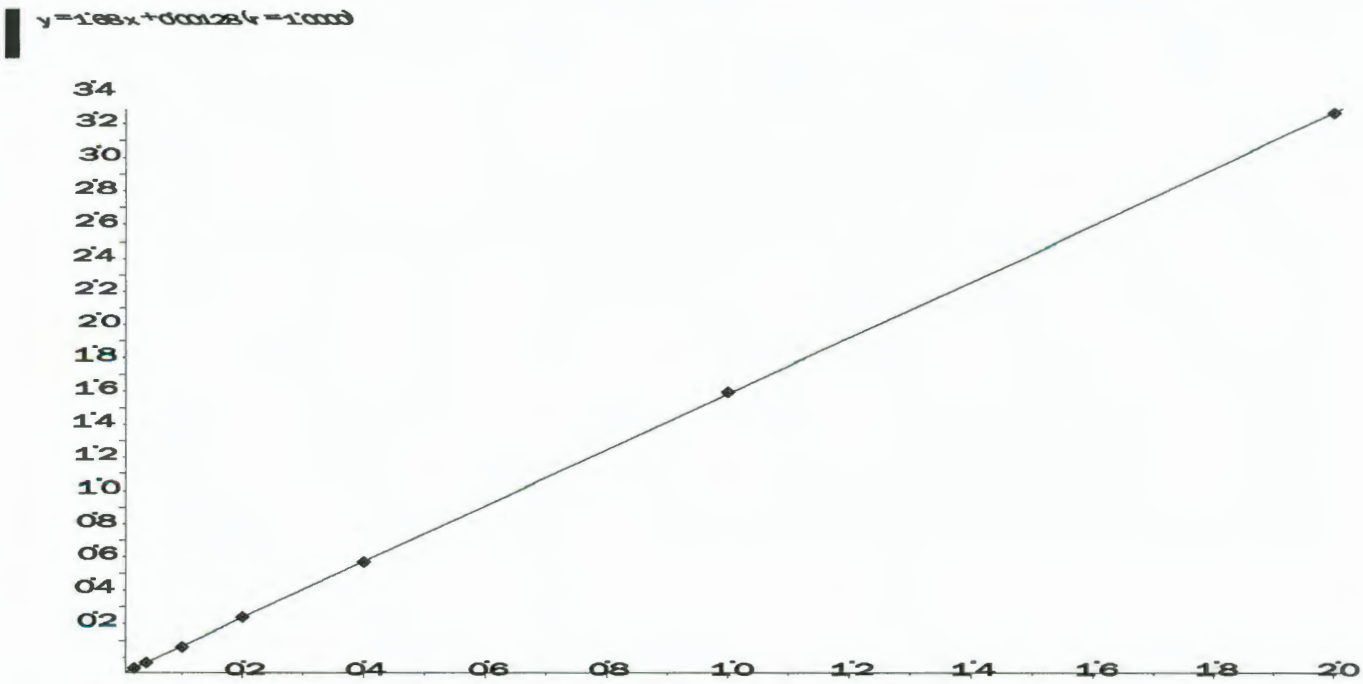

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Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

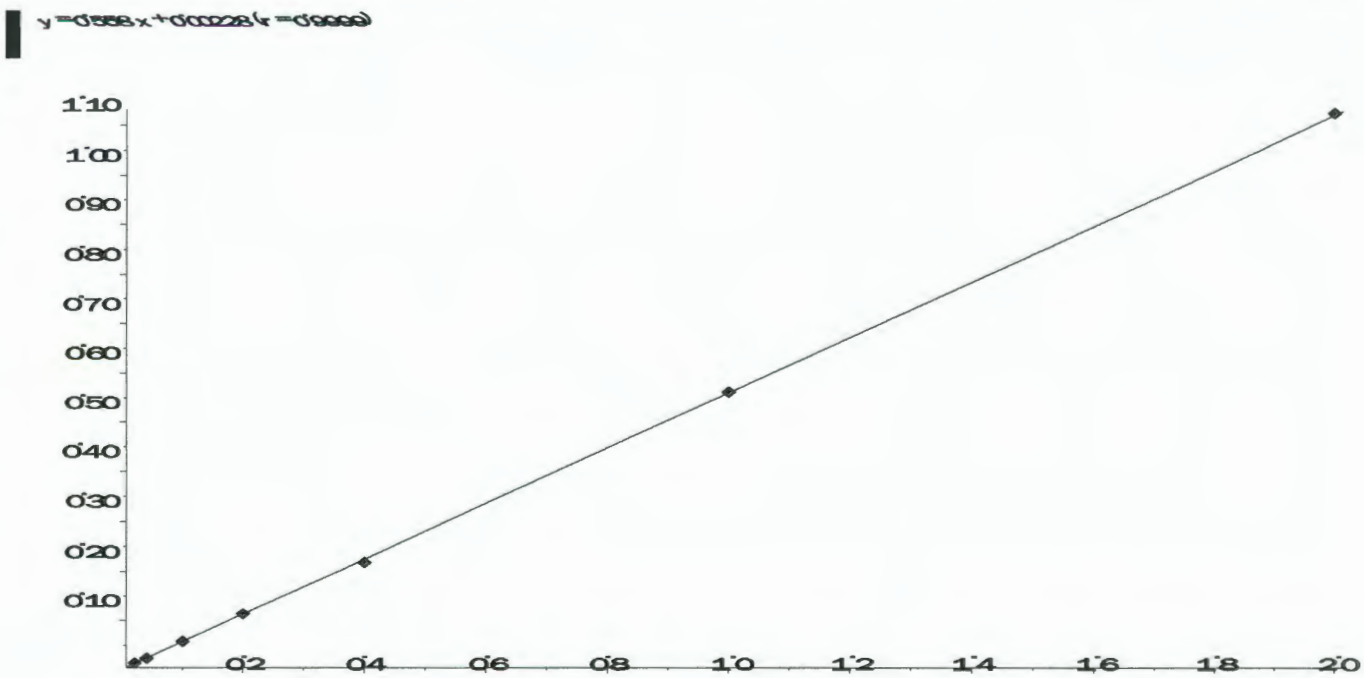

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Data File	LM34687.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

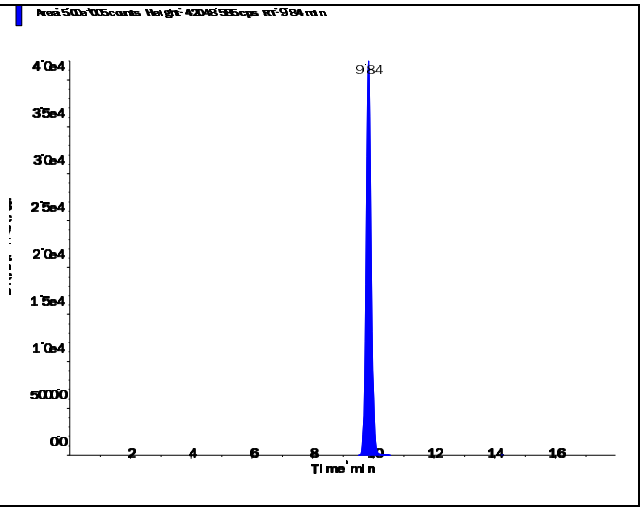

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.103 ng/ml
Area Ratio:	0.036
Sample Type:	(Standard)

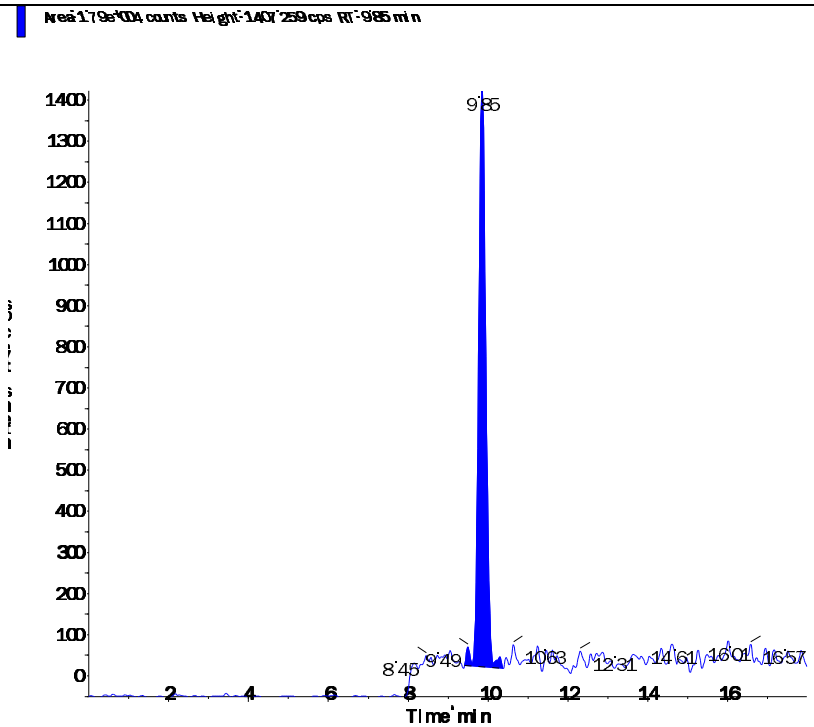

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.104 ng/ml
Area Ratio:	0.014
Sample Type:	(Standard)

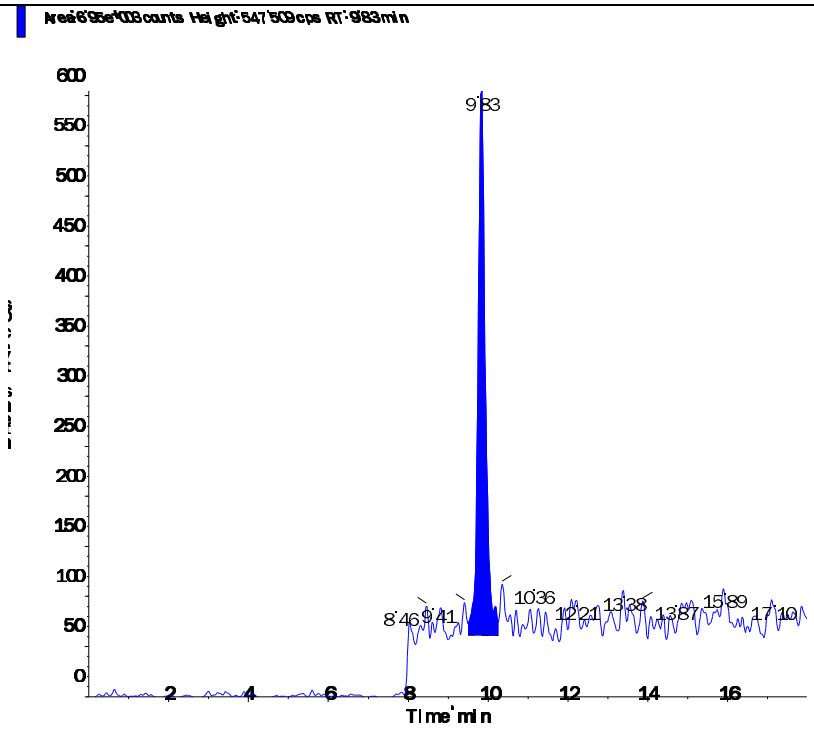

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Data File	LM34688.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

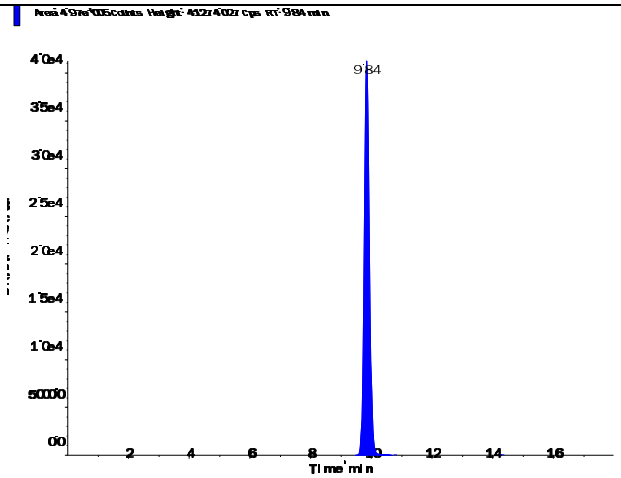

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

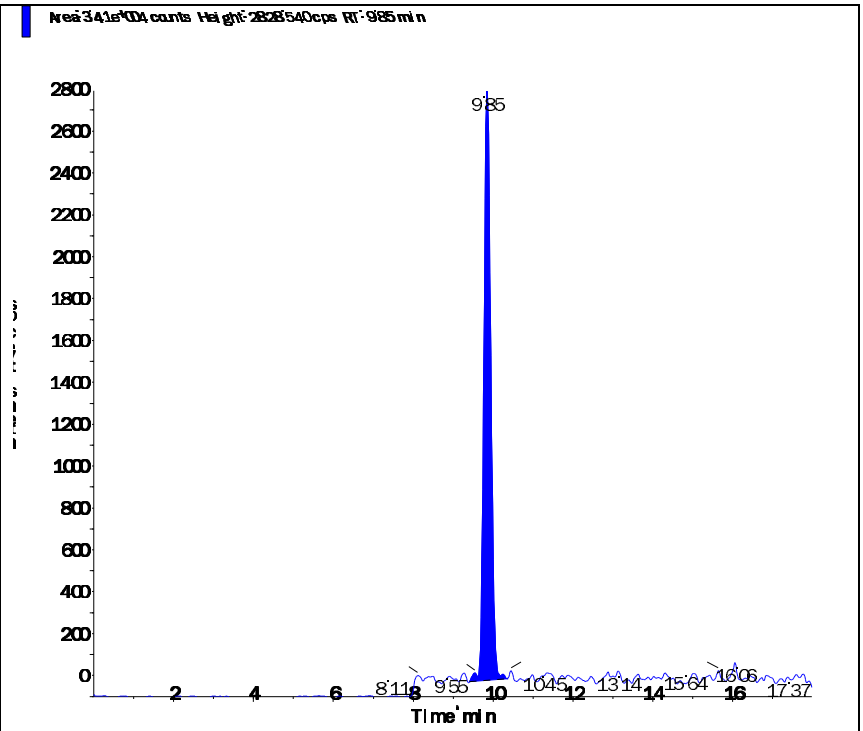

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

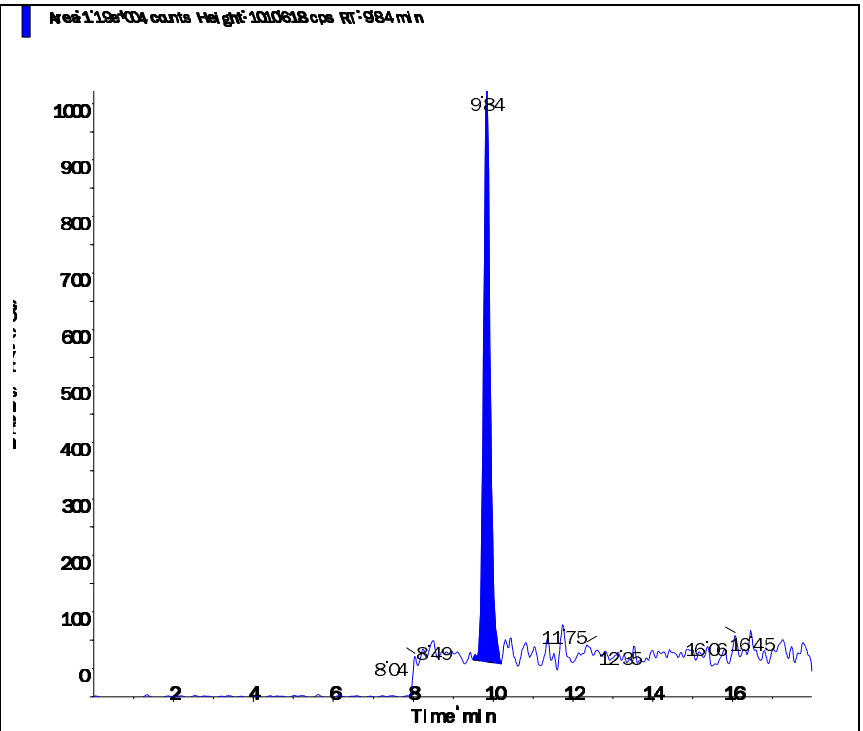

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Created with Analyst Reporter
Printed: 6/13/2016 10:28 AM

Data File	LM34689.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

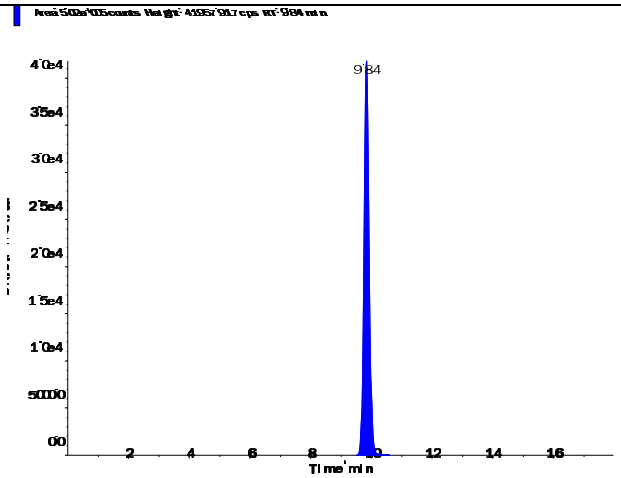

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Printed: 6/13/2016 10:28 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 0.483 ng/ml Area Ratio: 0.164 Sample Type: (Standard)	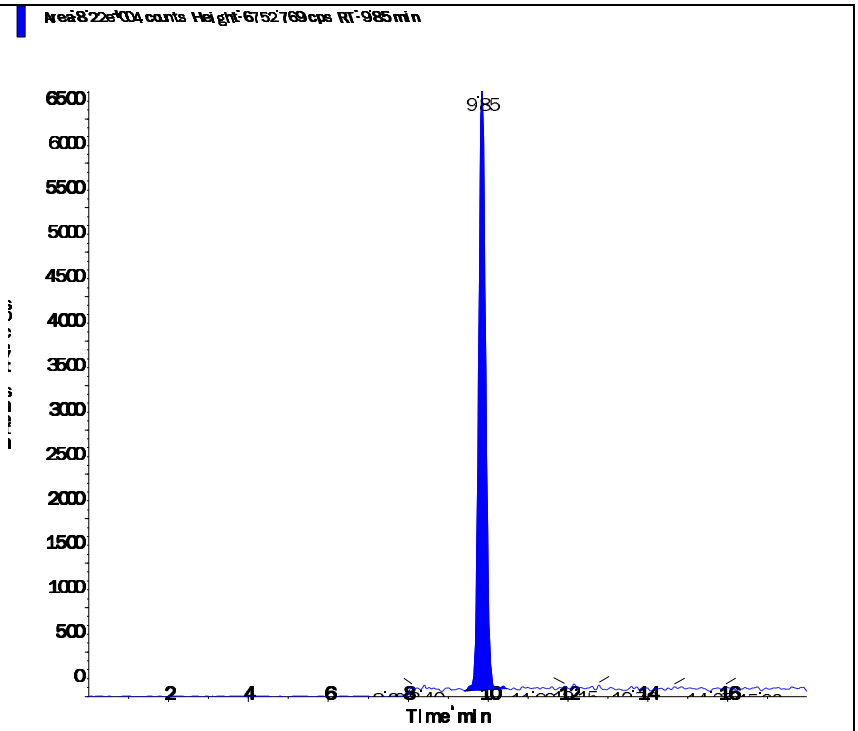
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 0.503 ng/ml Area Ratio: 0.058 Sample Type: (Standard)	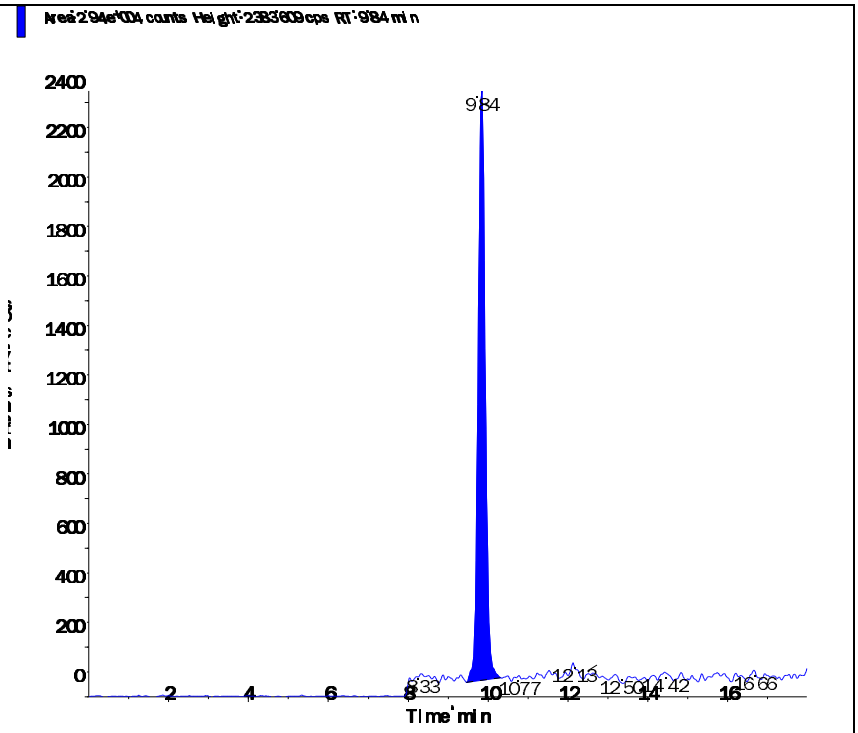

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Created with Analyst Reporter
Printed: 6/13/2016 10:29 AM

Data File	LM34690.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

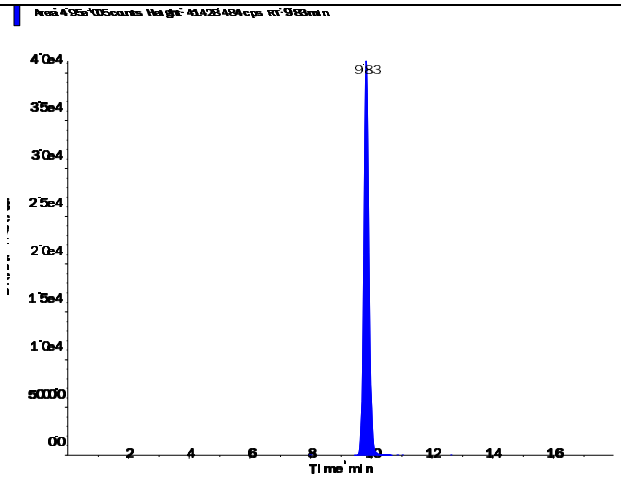

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Printed: 6/13/2016 10:29 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

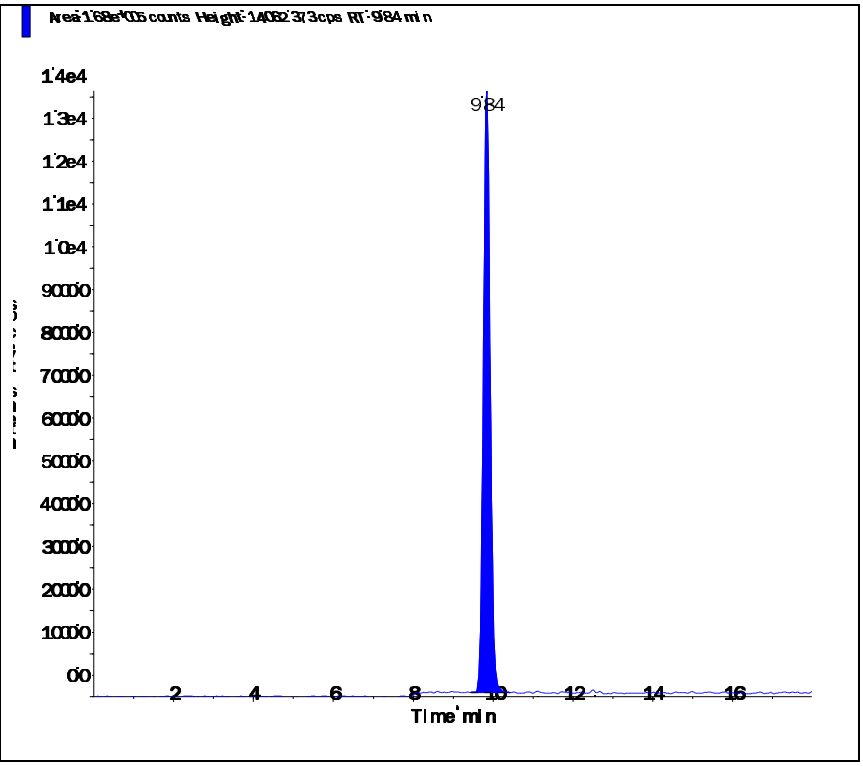

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

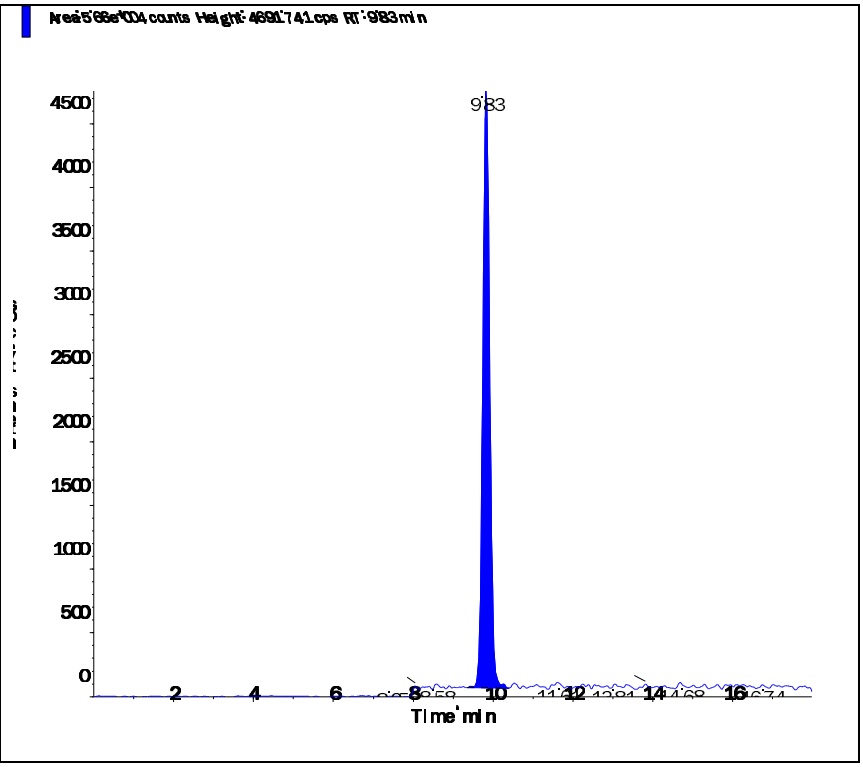

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Created with Analyst Reporter
Printed: 6/13/2016 10:29 AM

Data File	LM34691.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

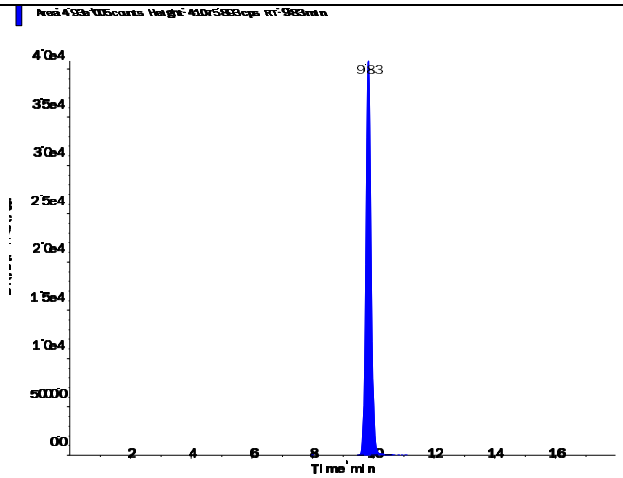

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Printed: 6/13/2016 10:29 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 1.99 ng/ml Area Ratio: 0.669 Sample Type: (Standard)	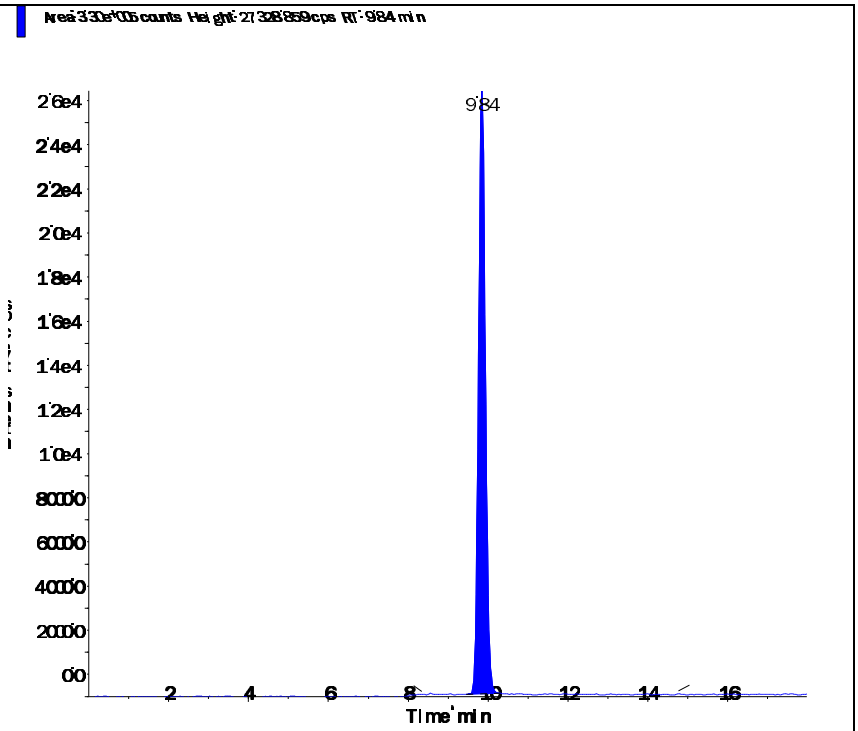
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 1.94 ng/ml Area Ratio: 0.219 Sample Type: (Standard)	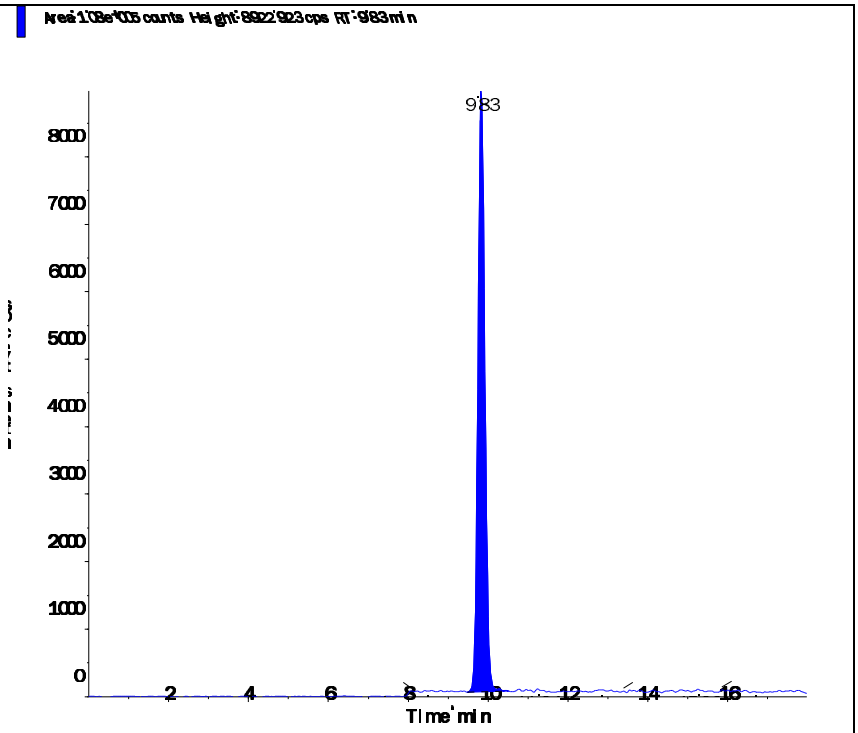

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Printed: 6/13/2016 10:29 AM

Data File	LM34692.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

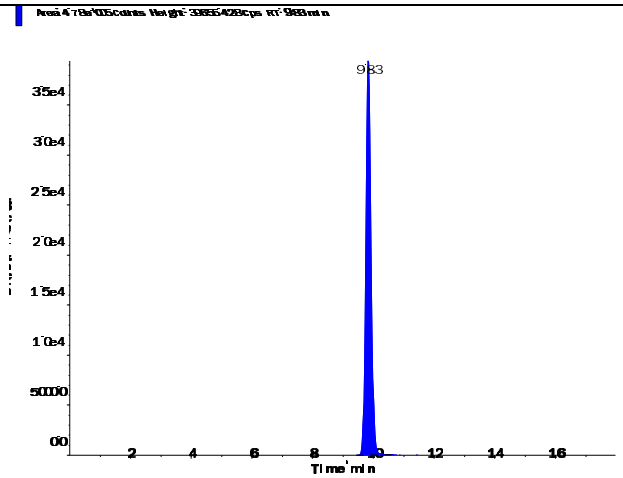

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

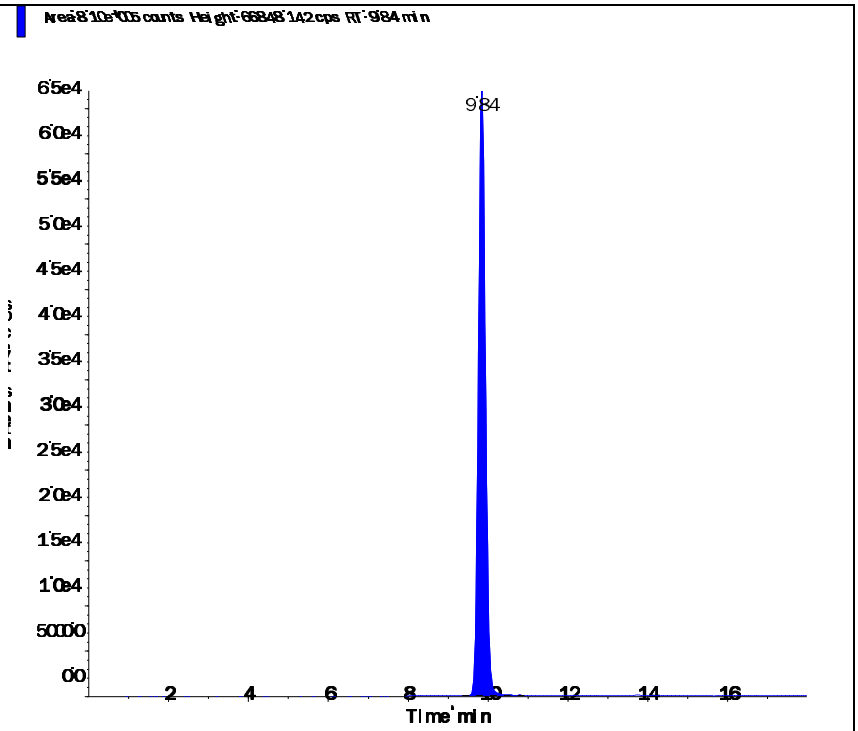

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

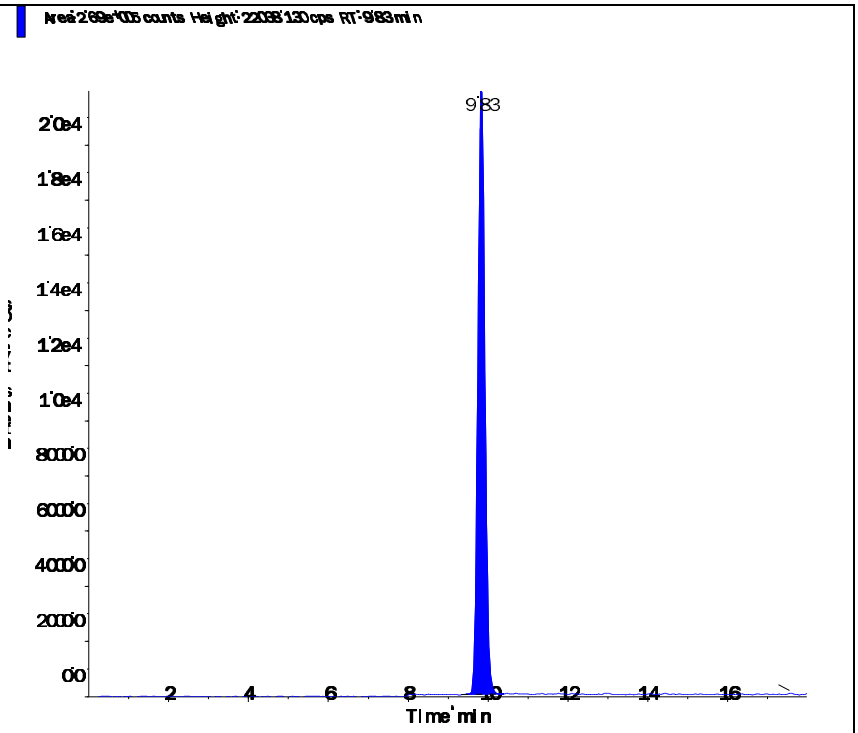

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Created with Analyst Reporter
Printed: 6/13/2016 10:30 AM

Data File	LM34693.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

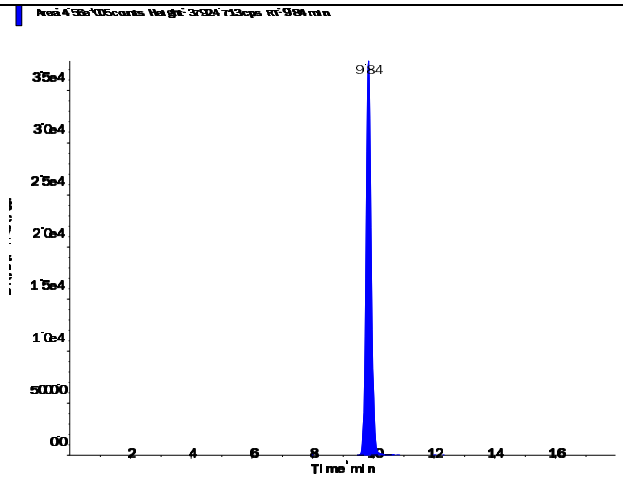

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Created with Analyst Reporter
Printed: 6/13/2016 10:30 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 9.99 ng/ml Area Ratio: 3.36 Sample Type: (Standard)	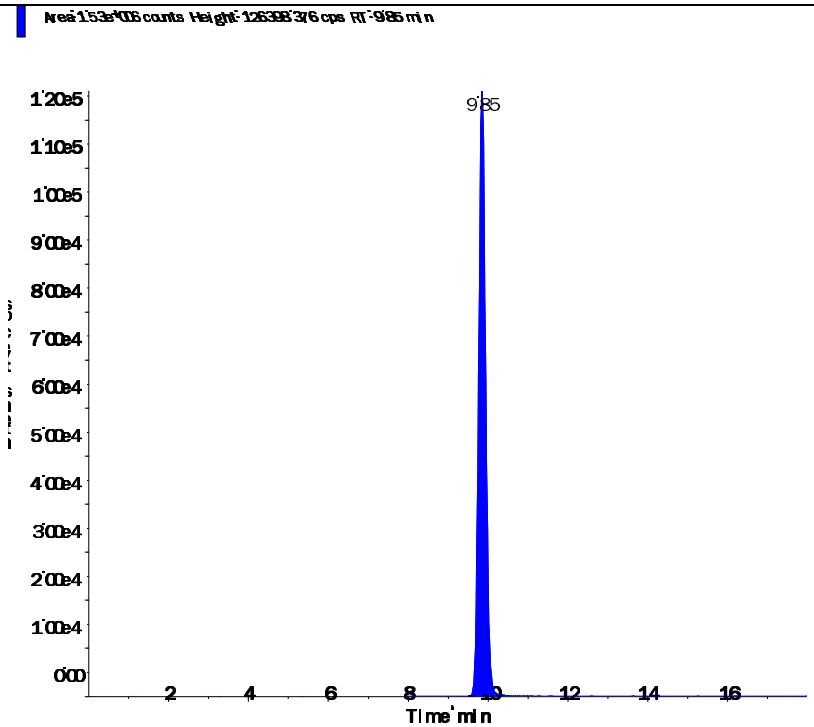
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 10.00 ng/ml Area Ratio: 1.122 Sample Type: (Standard)	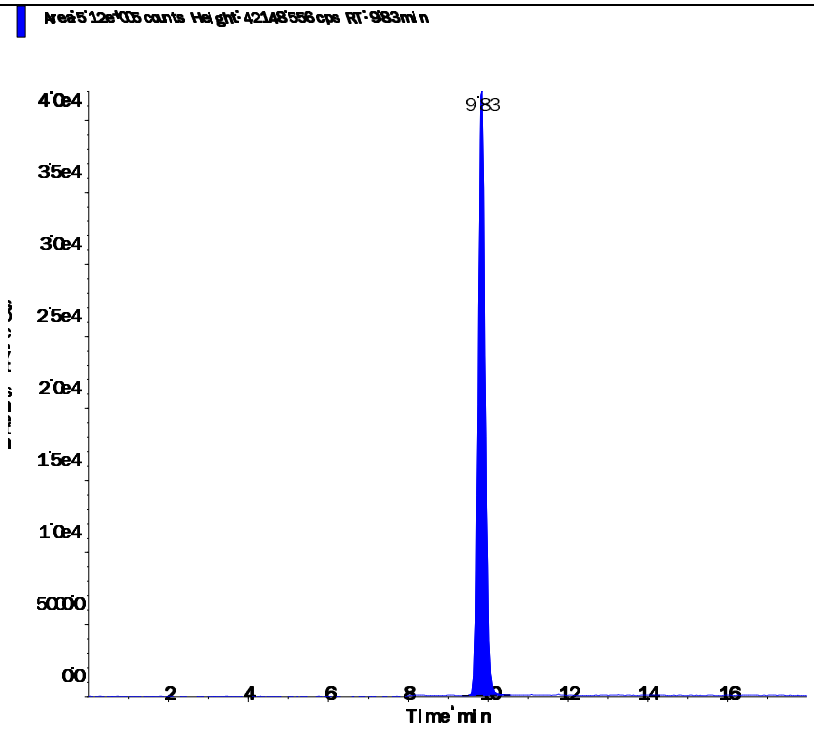

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Created with Analyst Reporter
Printed: 5/4/2016 1:23 PM

Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

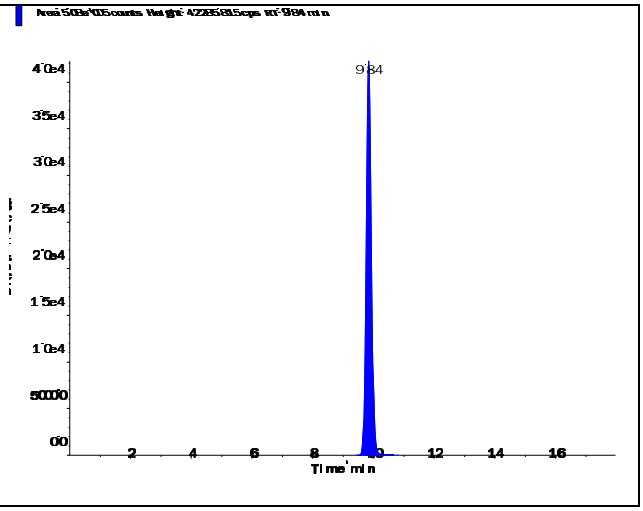

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Created with Analyst Reporter
Printed: 5/4/2016 1:23 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 0.985 ng/ml Area Ratio: 0.332 Sample Type: (Quality Control)	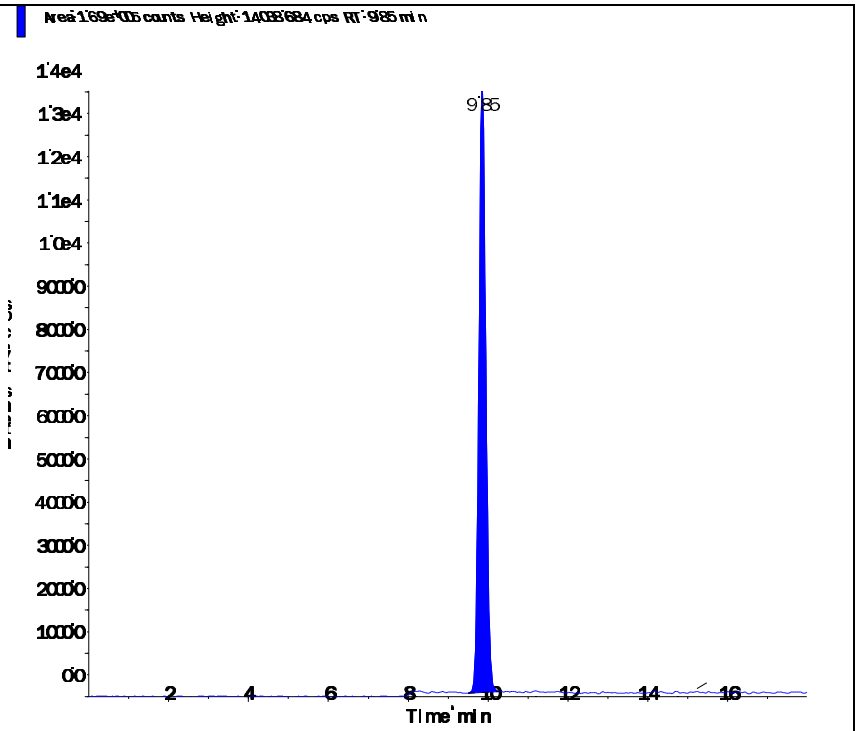
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 0.973 ng/ml Area Ratio: 0.111 Sample Type: (Quality Control)	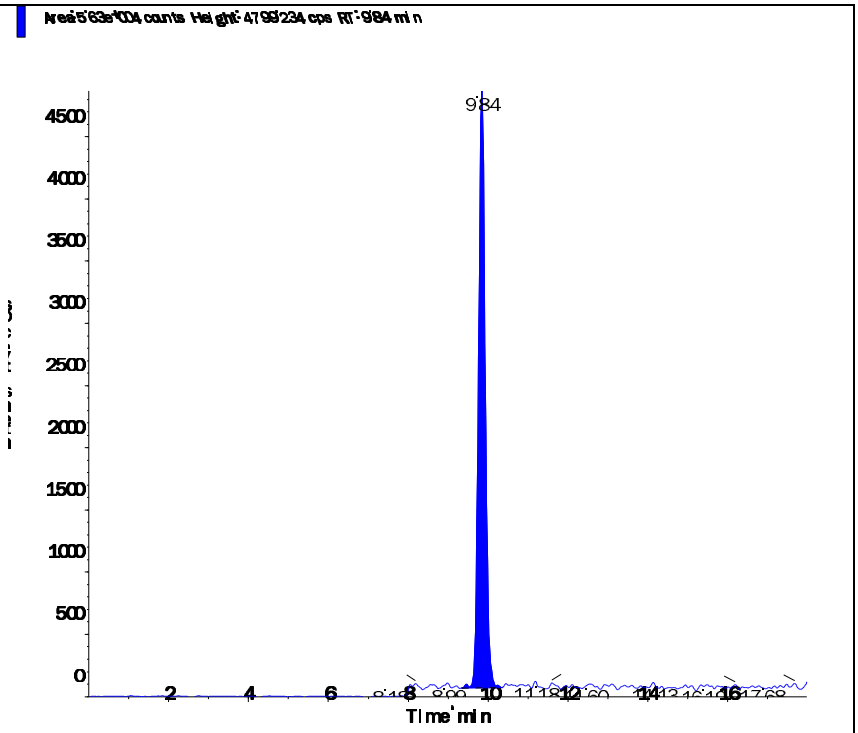

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Created with Analyst Reporter
Printed: 6/11/2016 12:59 PM

Data File	LM35226.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 10:08:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35226.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 10:08:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.430e+05	9.64	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.510e+05	9.65	1.00	1.01
Perchlorate conf	5.370e+04	9.63	1.00	1.06

O18LP (Internal Standard)

RT (Exp. RT): 9.64(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

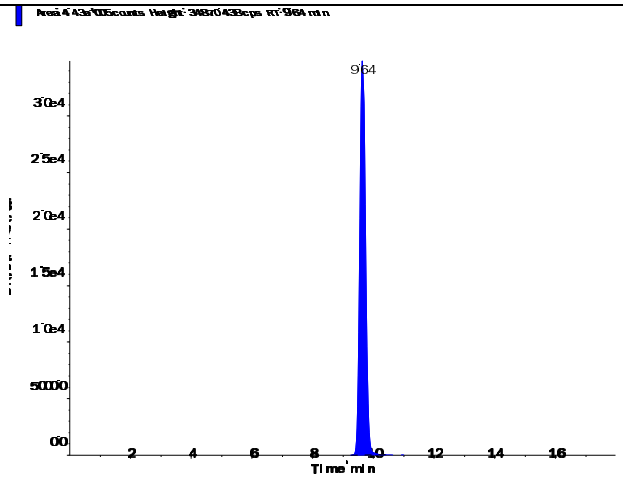

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Created with Analyst Reporter
Printed: 6/11/2016 12:59 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.65 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.34
Sample Type:	(Quality Control)

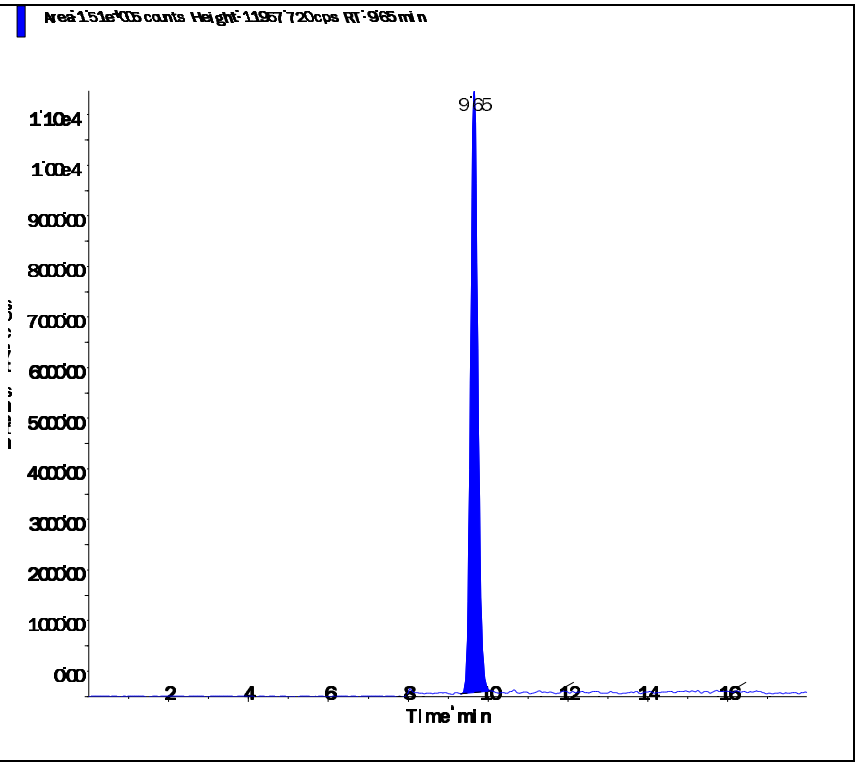

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

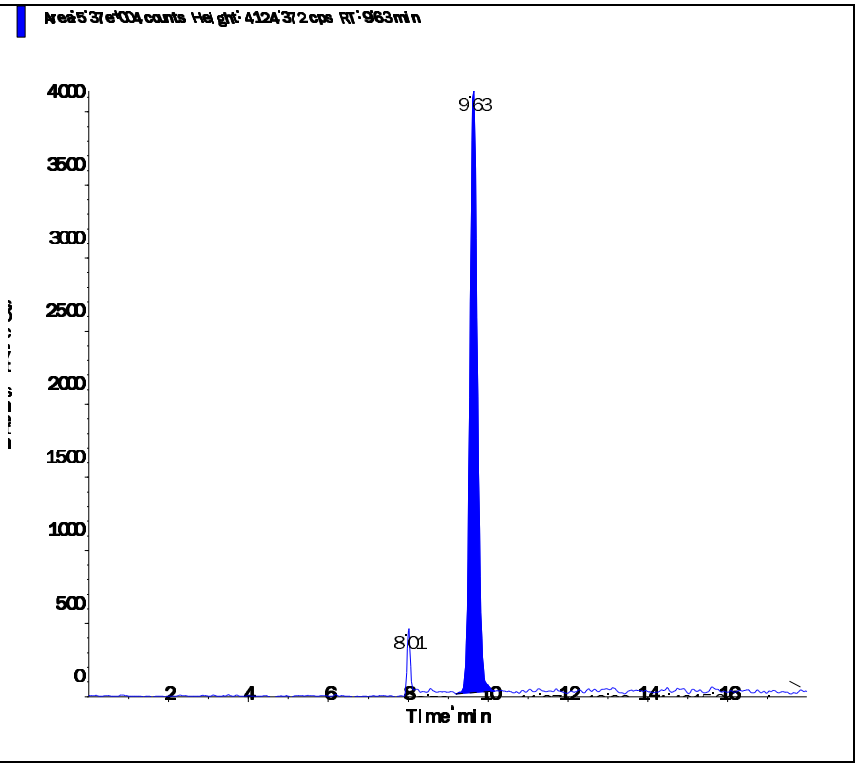

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Created with Analyst Reporter
Printed: 6/11/2016 1:03 PM

Data File	LM35238.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 1:55:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35238.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 1:55:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.720e+05	9.64	1.00	1.01
Perchlorate conf	5.960e+04	9.63	1.00	1.04

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

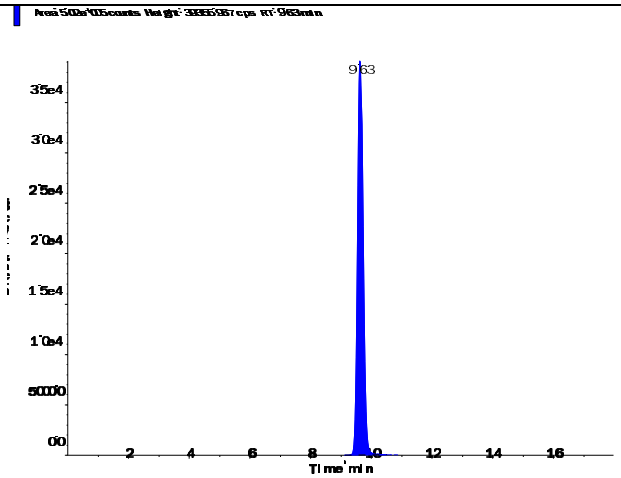

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Printed: 6/11/2016 1:03 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.342
Sample Type:	(Quality Control)

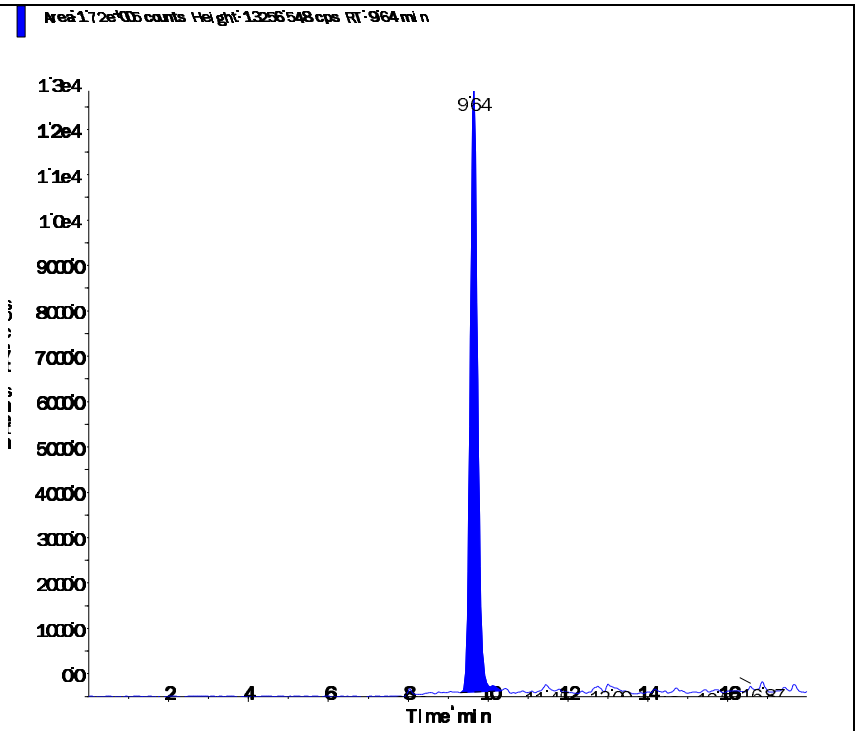

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

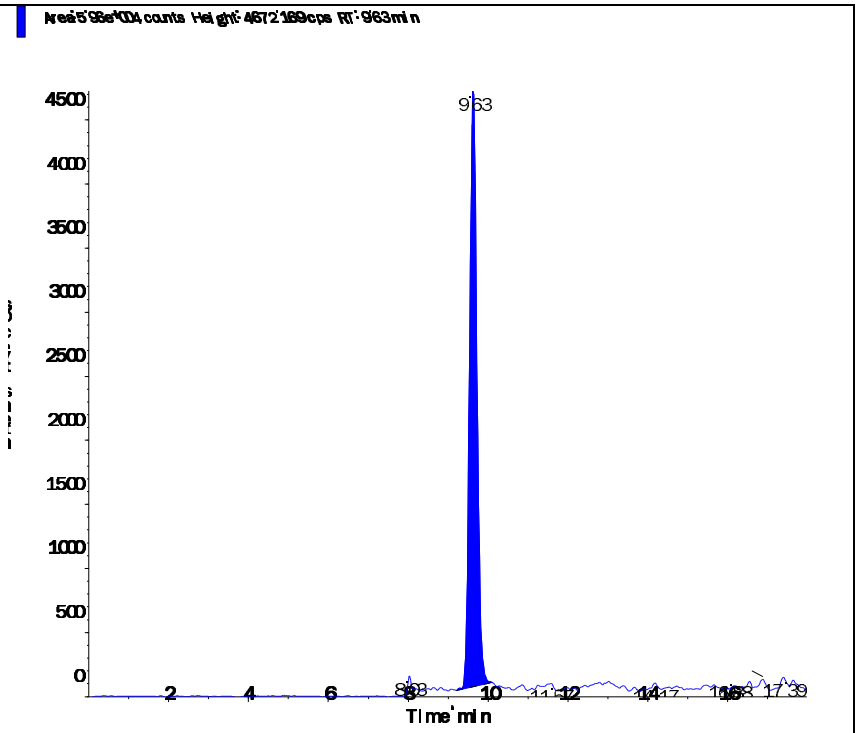

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Created with Analyst Reporter
Printed: 6/11/2016 1:05 PM

Data File	LM35244.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 3:49:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35244.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 3:49:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+05	9.64	1.00	1.05
Perchlorate conf	6.340e+04	9.64	1.00	1.10

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

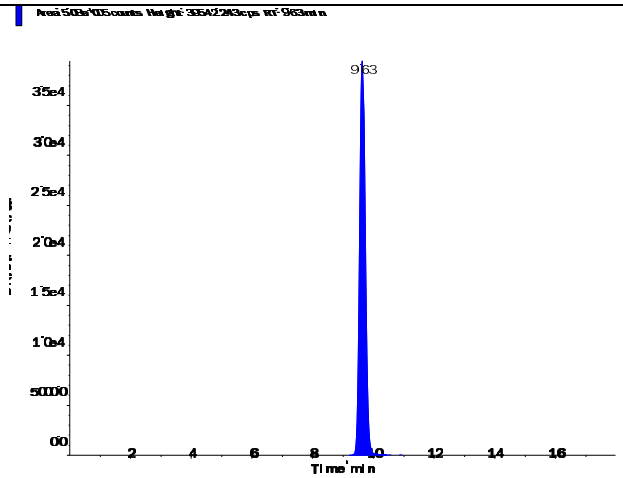

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Printed: 6/11/2016 1:05 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.353
Sample Type:	(Quality Control)

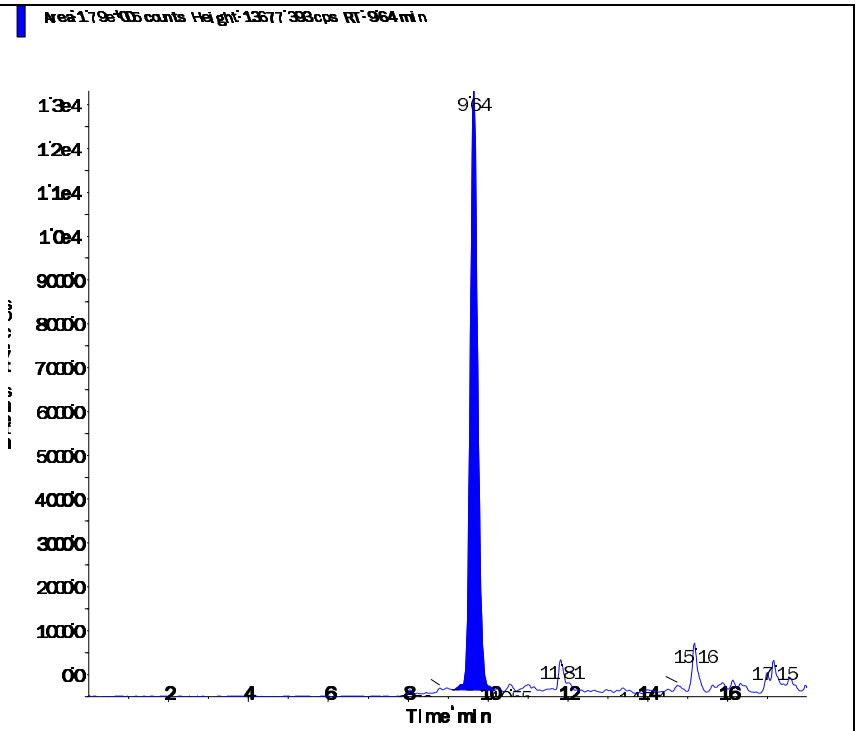

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.10 ng/ml
Area Ratio:	0.125
Sample Type:	(Quality Control)

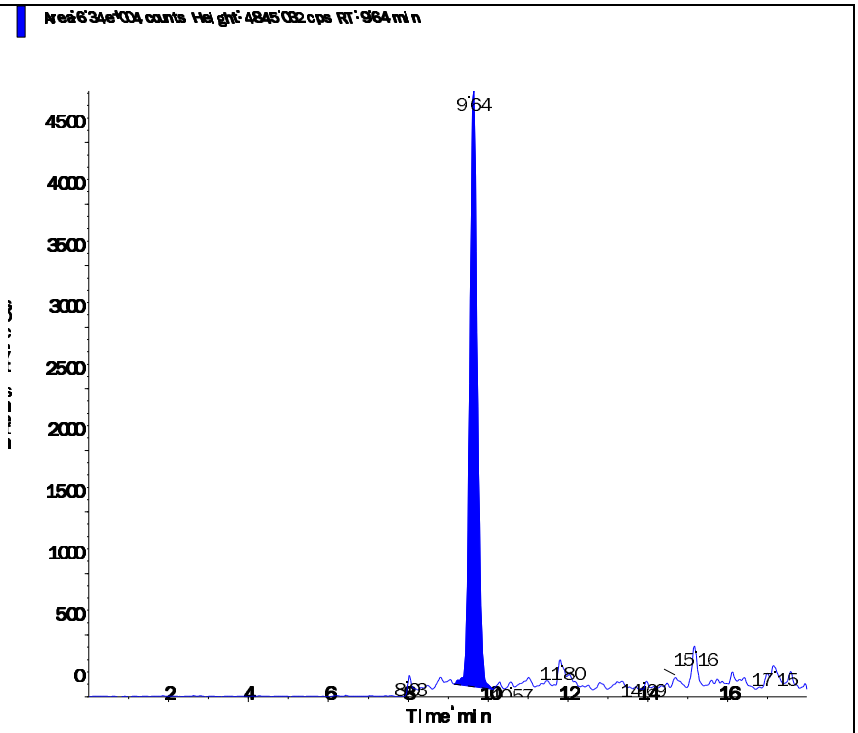

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Created with Analyst Reporter
Printed: 6/11/2016 1:10 PM

Data File	LM35257.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 7:56:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35257.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 7:56:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.810e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.750e+05	9.64	1.00	1.08
Perchlorate conf	5.800e+04	9.62	1.00	1.06

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

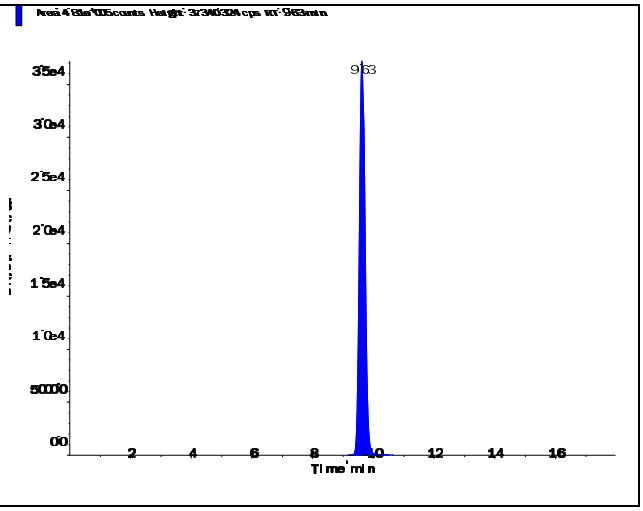

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.08 ng/ml
Area Ratio:	0.363
Sample Type:	(Quality Control)

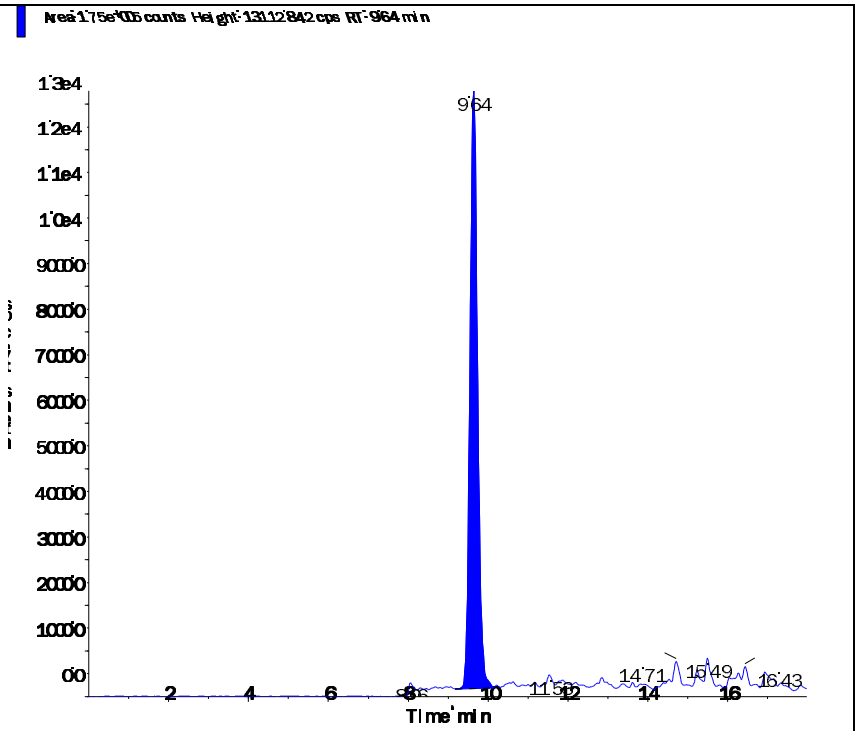

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.62 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

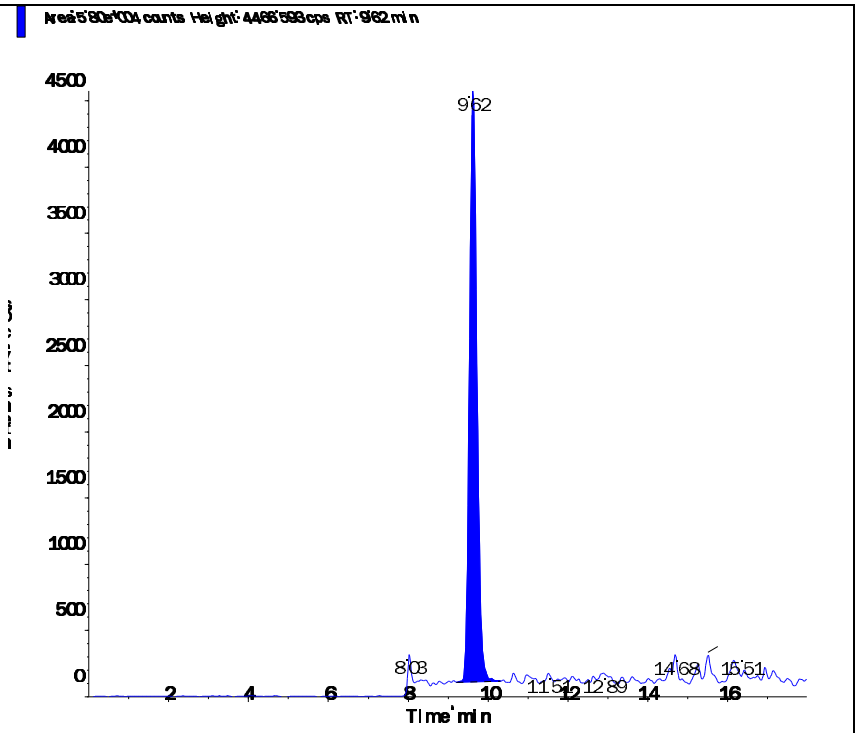

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Created with Analyst Reporter
Printed: 6/11/2016 1:12 PM

Data File	LM35264.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 10:09:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35264.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 10:09:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.860e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.64	1.00	1.03
Perchlorate conf	5.780e+04	9.63	1.00	1.04

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

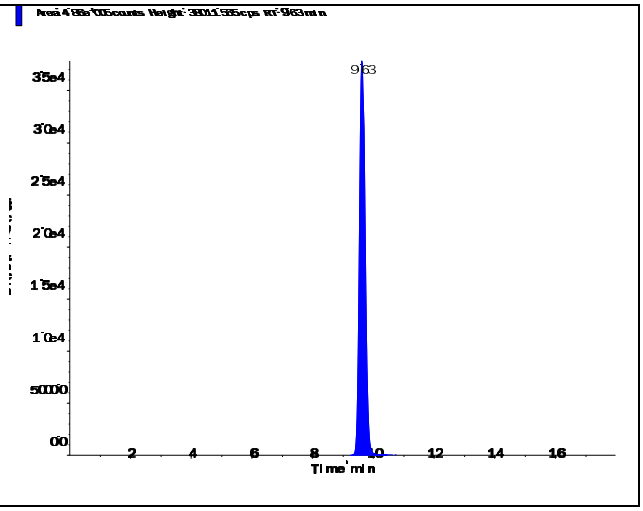

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.348
Sample Type:	(Quality Control)

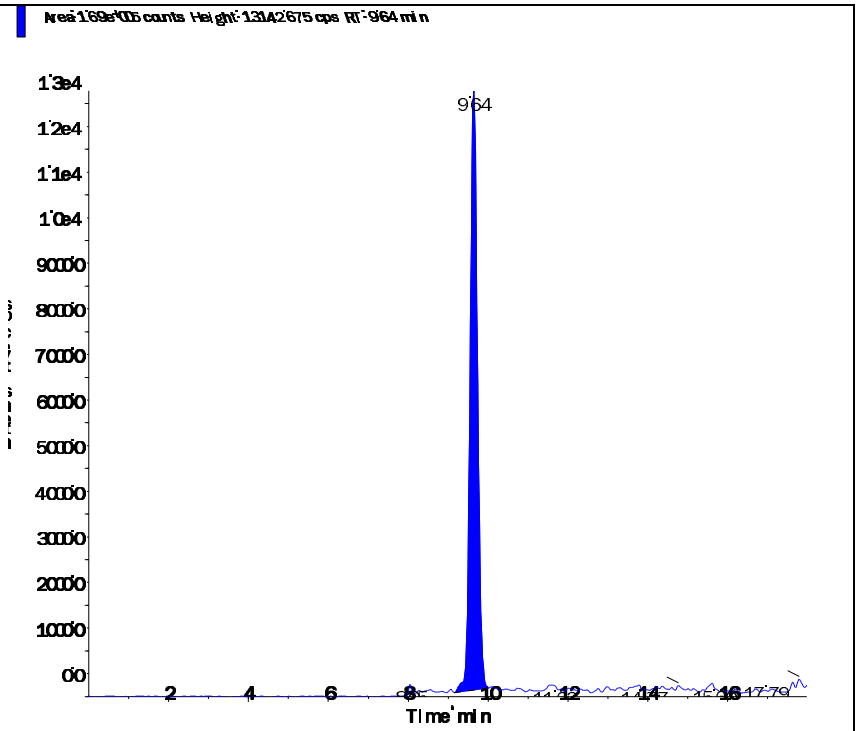

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

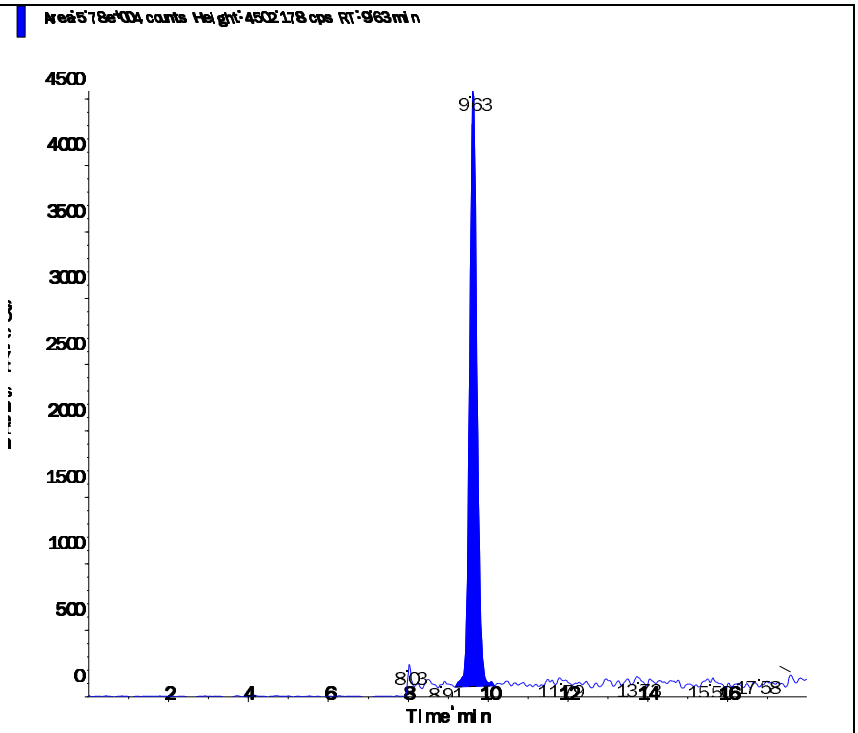

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Data File	LM35276.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/11/2016 1:56:12 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-11 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35276.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 1:56:12 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.260e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.830e+05	9.64	1.00	1.03
Perchlorate conf	6.180e+04	9.62	1.00	1.03

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

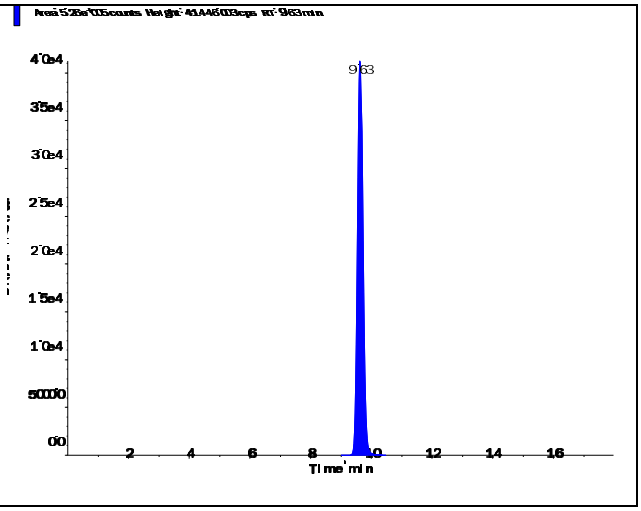

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Printed: 6/11/2016 1:16 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.349
Sample Type:	(Quality Control)

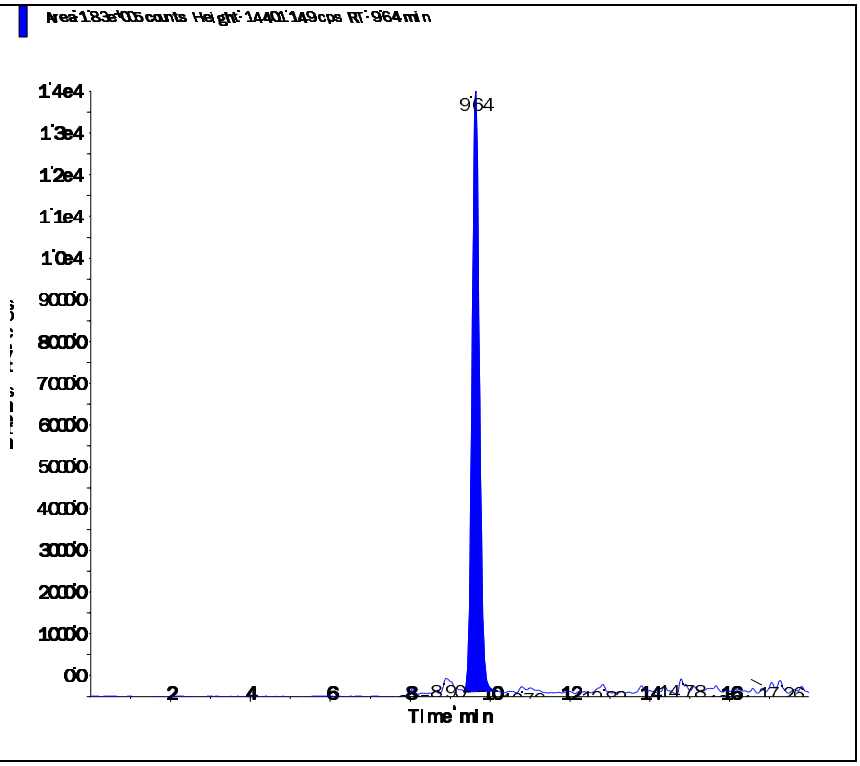

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.62 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.117
Sample Type:	(Quality Control)

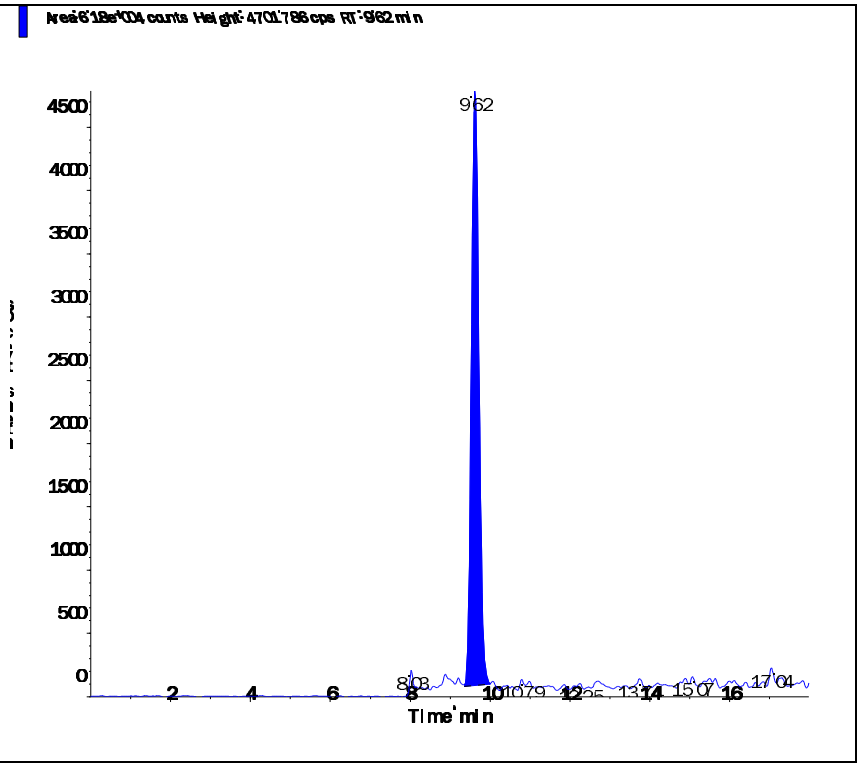

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Printed: 6/12/2016 9:37 PM

Data File	LM35280.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 11:46:23 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35280.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 11:46:23 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.580e+05	9.62	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.600e+05	9.63	1.00	1.04
Perchlorate conf	5.470e+04	9.61	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.62(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

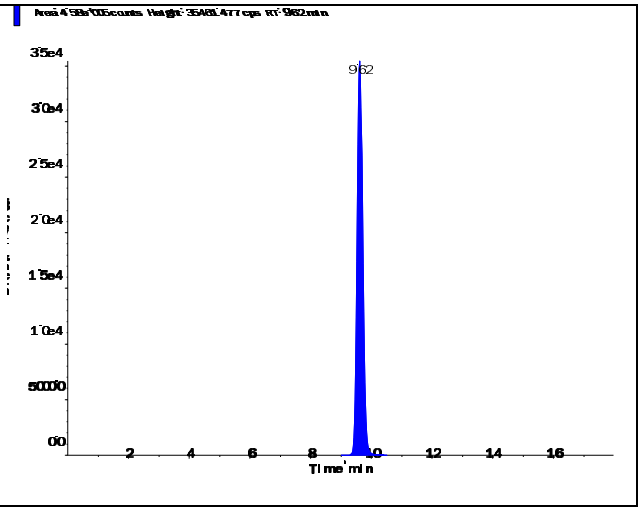

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.35
Sample Type:	(Quality Control)

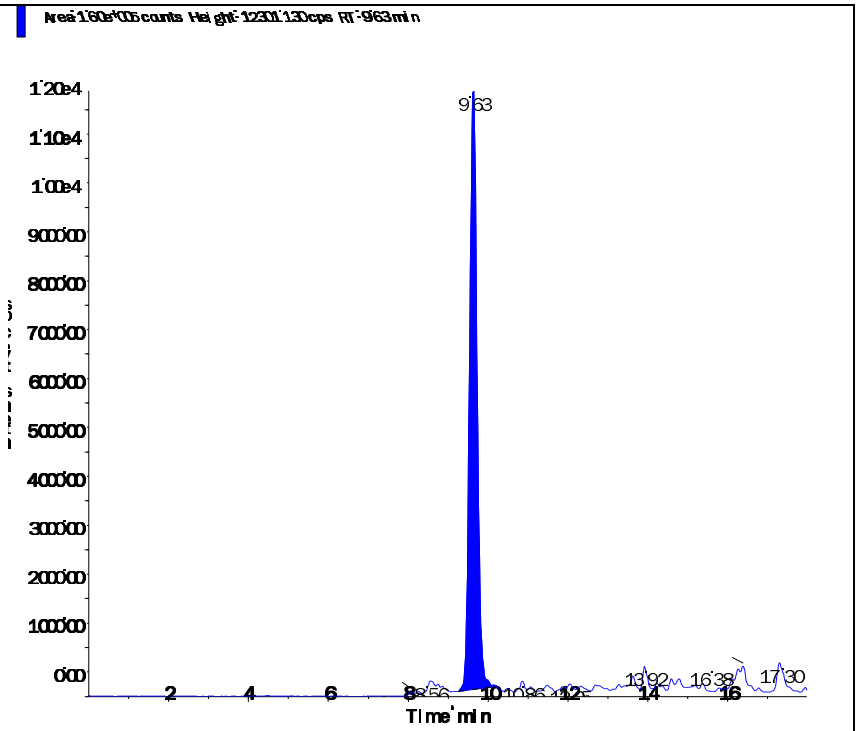

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.61 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

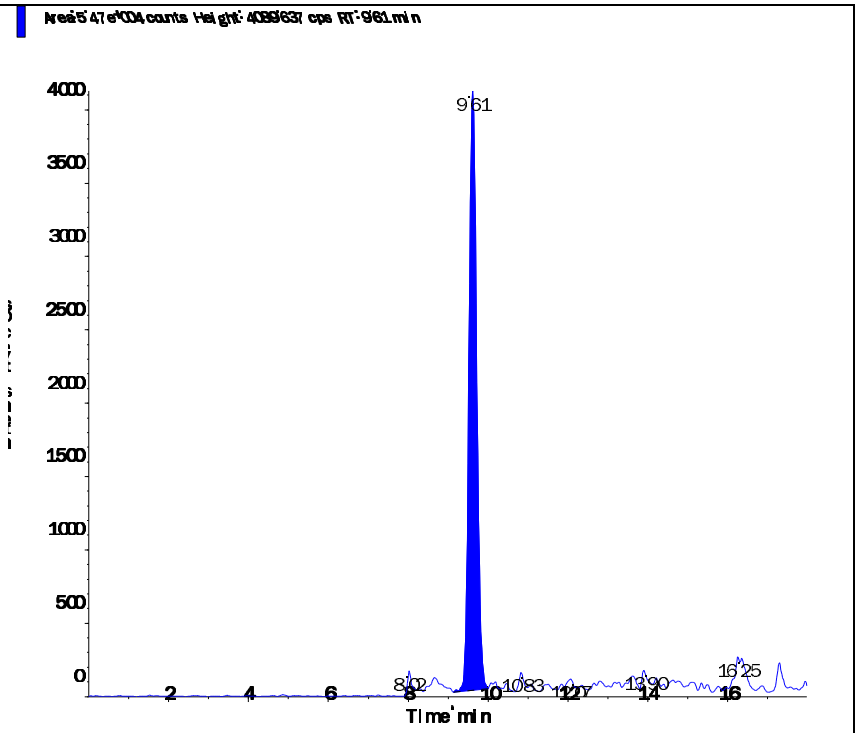

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Data File	LM35292.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 3:34:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35292.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 3:34:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.800e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.710e+05	9.64	1.00	1.05
Perchlorate conf	5.680e+04	9.63	1.00	1.04

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

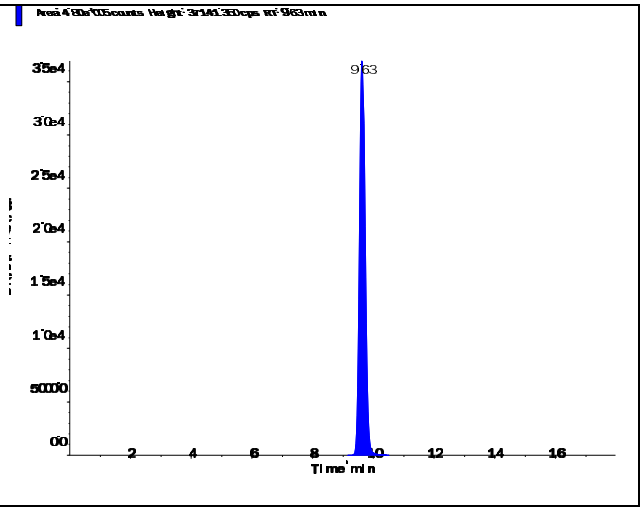

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.355
Sample Type:	(Quality Control)

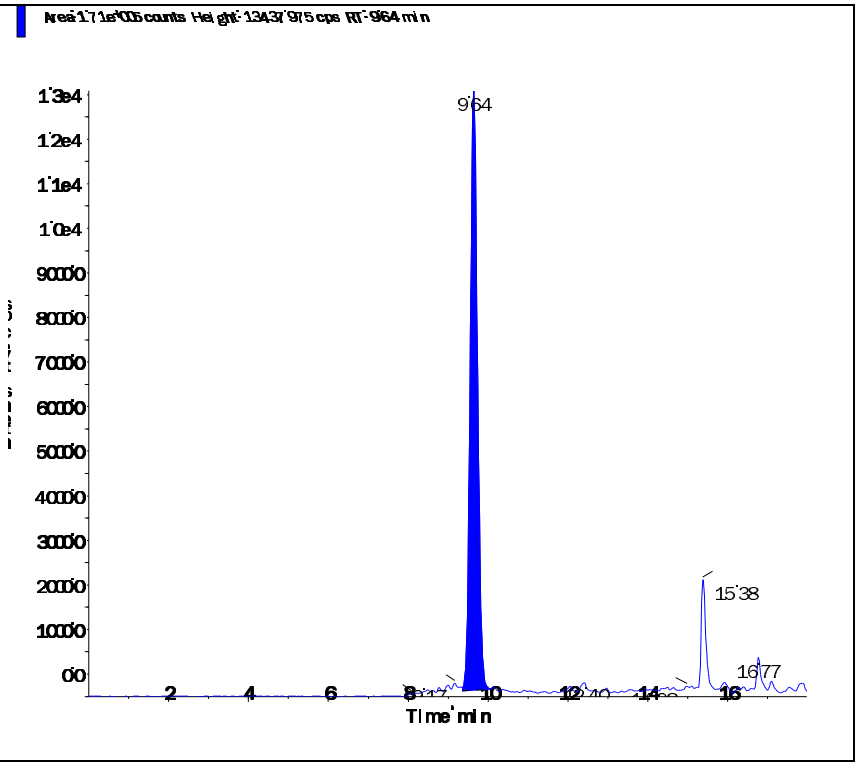

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.118
Sample Type:	(Quality Control)

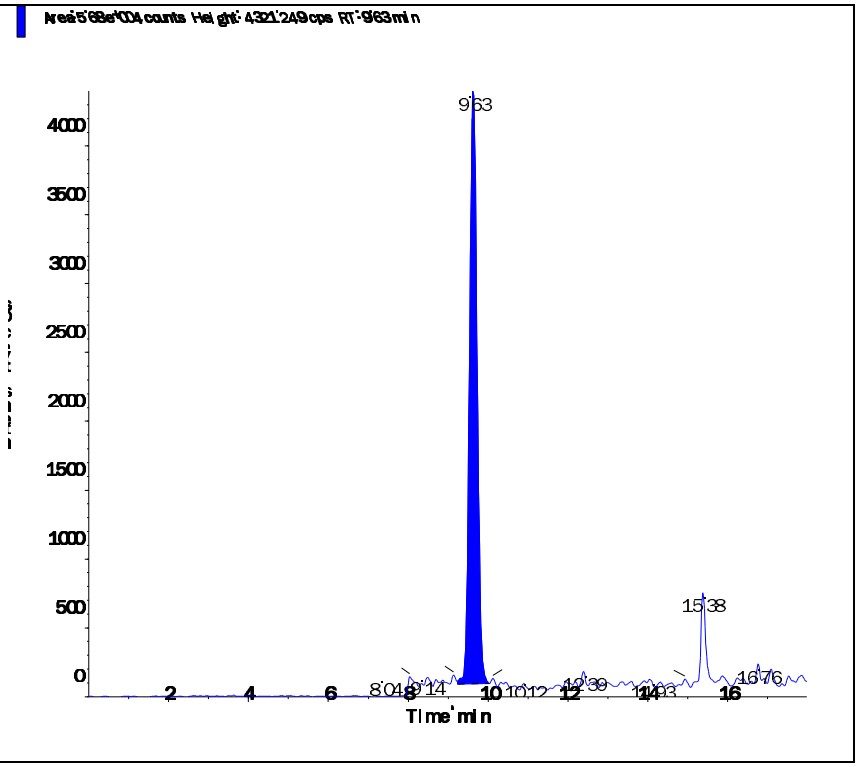

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Data File	LM35296.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 5:38:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35296.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 5:38:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.960e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.720e+05	9.65	1.00	1.03
Perchlorate conf	5.930e+04	9.64	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

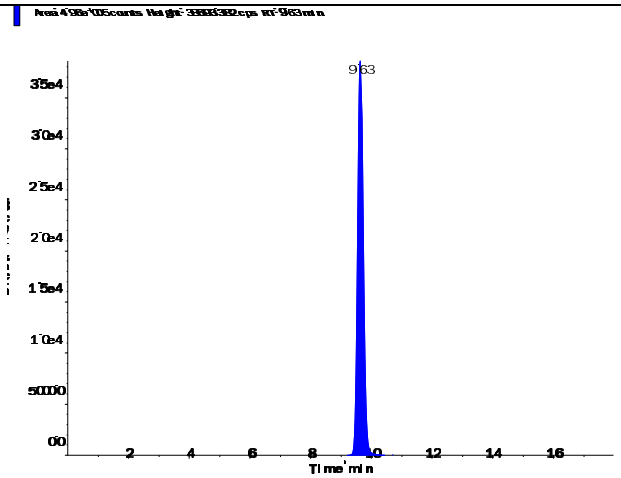

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.65 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.346
Sample Type:	(Quality Control)

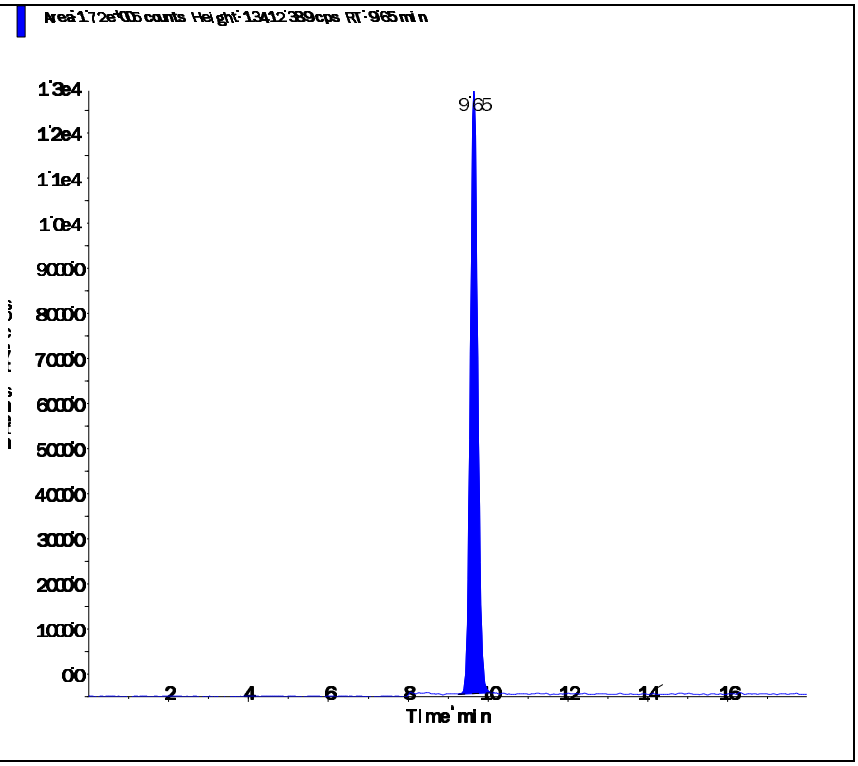

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

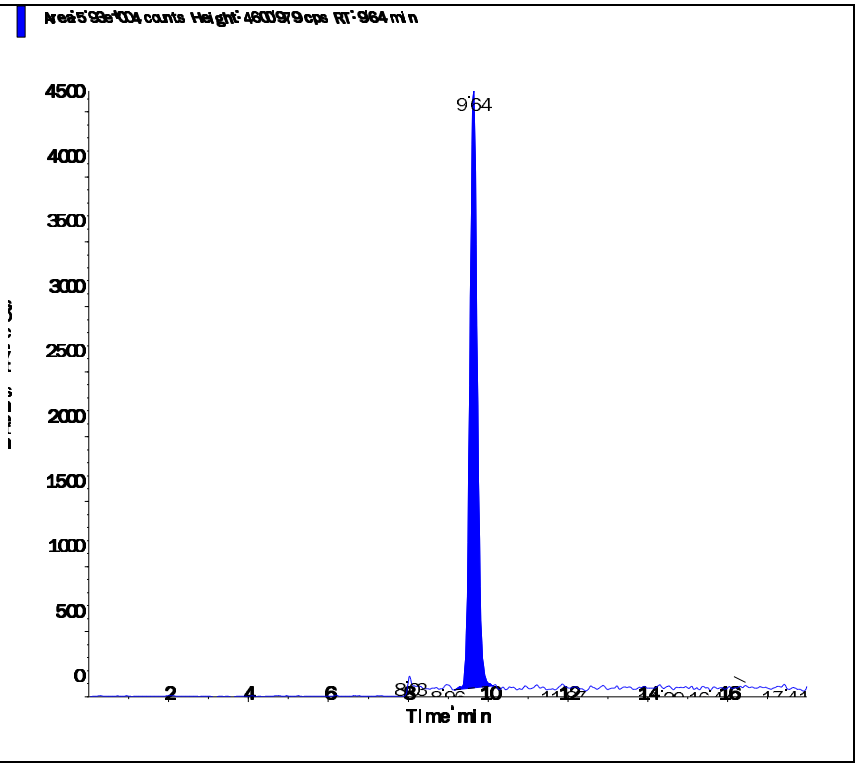

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Data File	LM35310.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 10:03:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35310.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 10:03:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.050e+05	9.62	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.800e+05	9.63	1.00	1.06
Perchlorate conf	6.050e+04	9.62	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.62(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

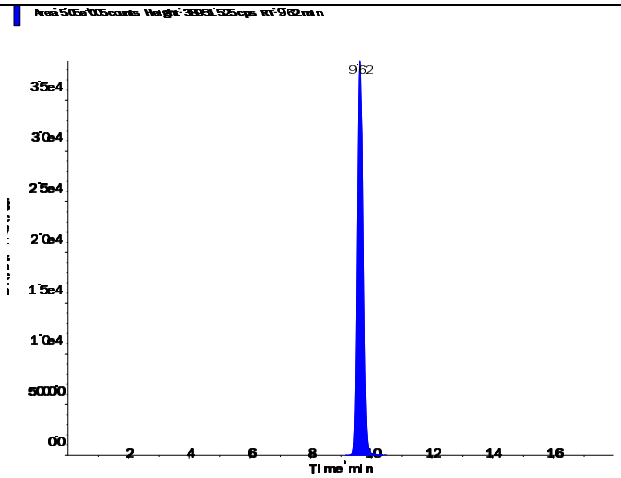

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.357
Sample Type:	(Quality Control)

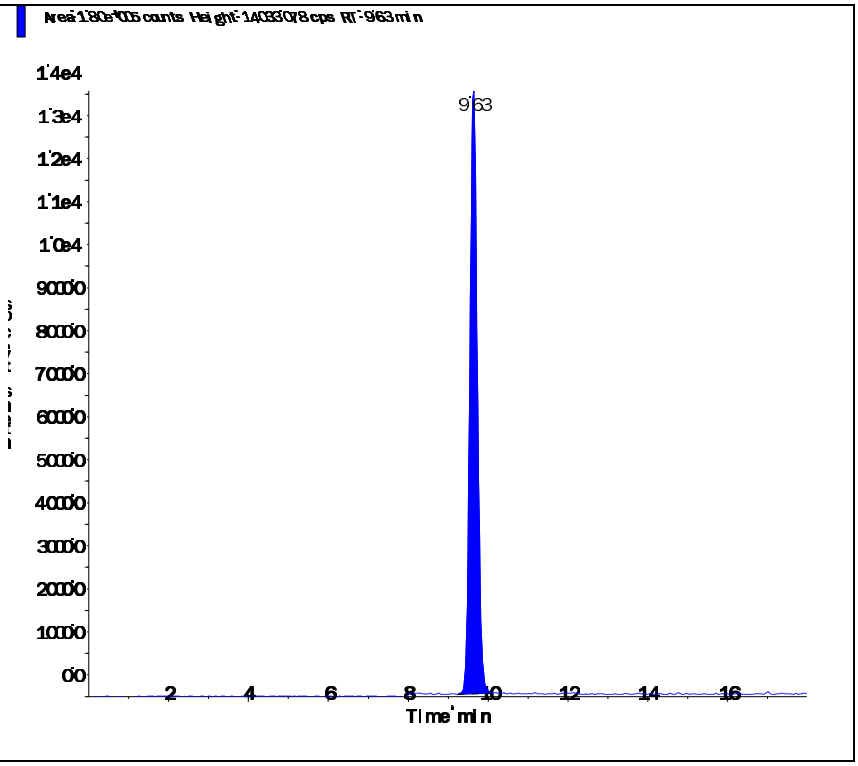

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.62 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.12
Sample Type:	(Quality Control)

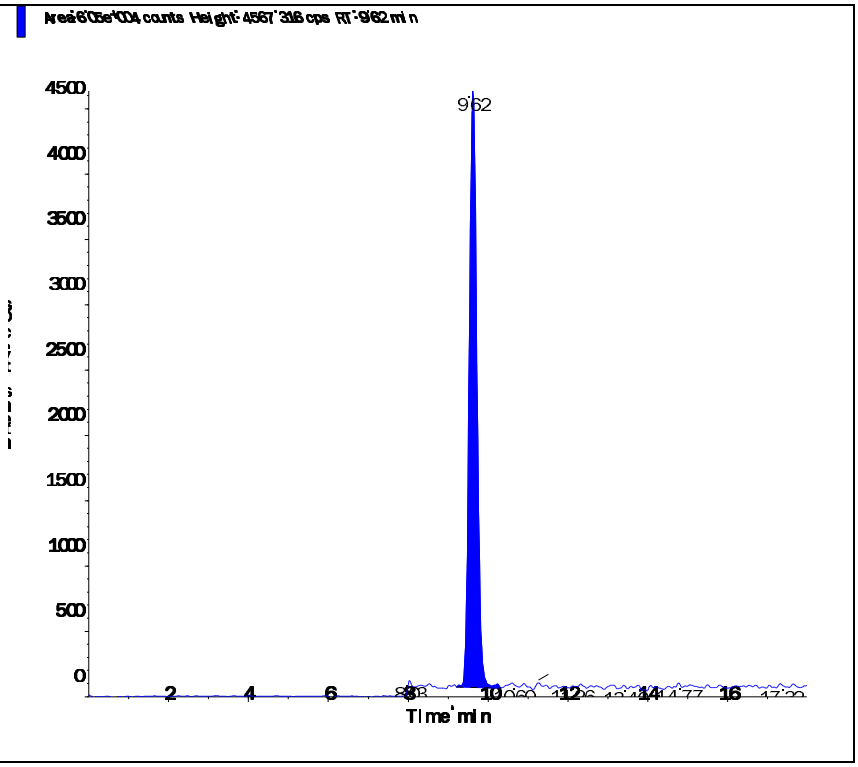

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Created with Analyst Reporter
Printed: 6/11/2016 12:59 PM

Data File	LM35227.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 10:27:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35227.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 10:27:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.430e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.060e+04	9.68	N/A	0.202
Perchlorate conf	1.110e+04	9.67	N/A	0.204

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

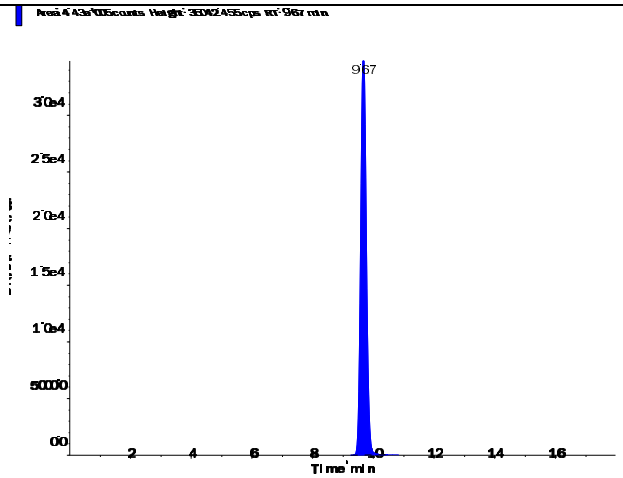

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.68 (9.84) min
Calculated conc:	0.202 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

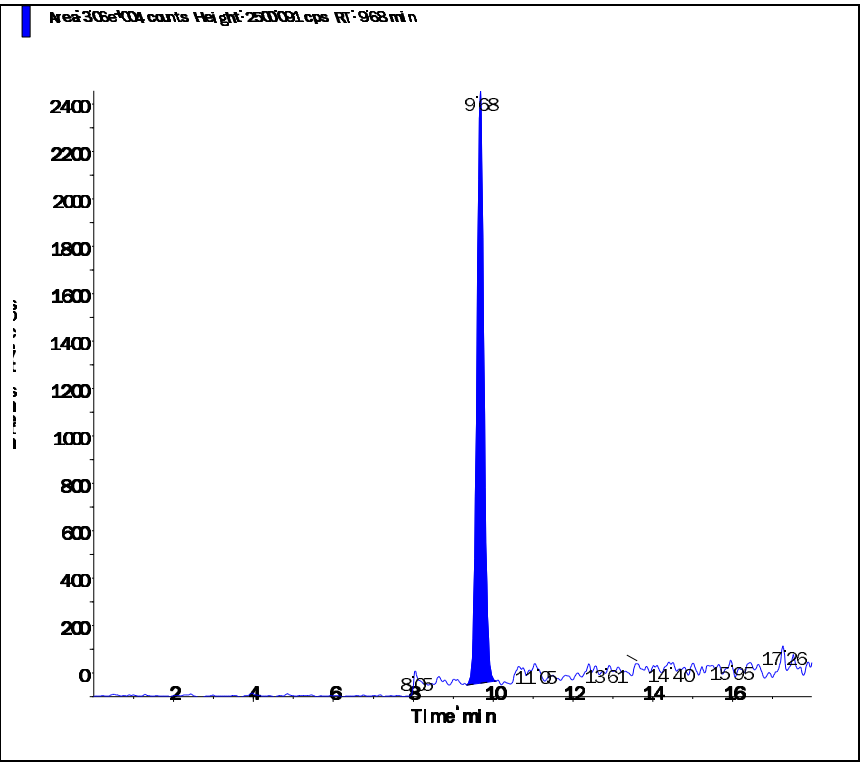

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.67 (9.84) min
Calculated conc:	0.204 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

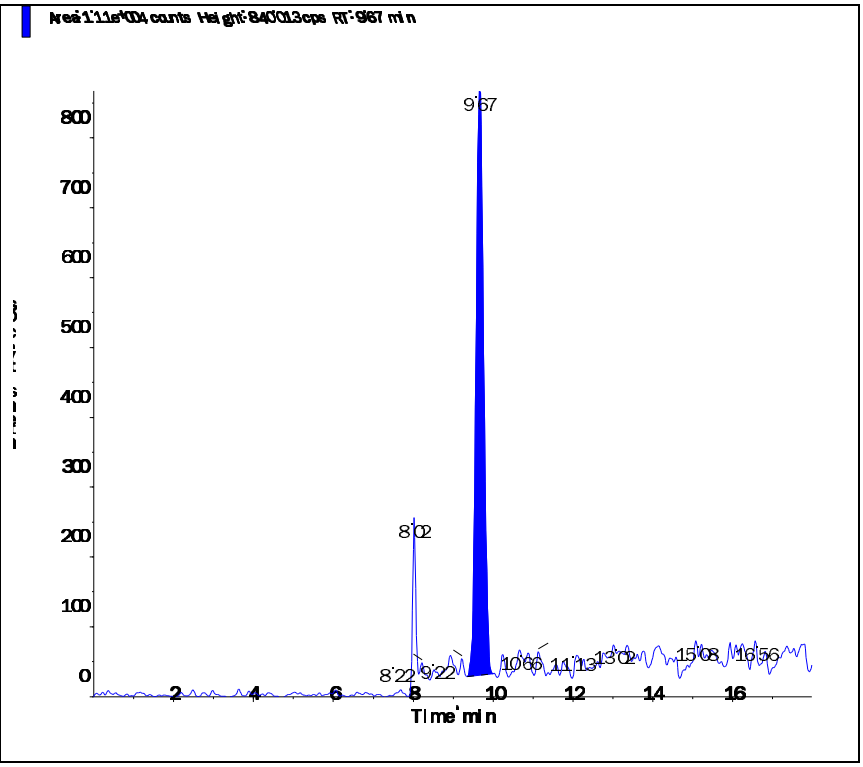

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Data File	LM35239.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 2:14:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-08 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35239.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 2:14:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.960e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.650e+04	9.68	N/A	0.215
Perchlorate conf	1.380e+04	9.66	N/A	0.228

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

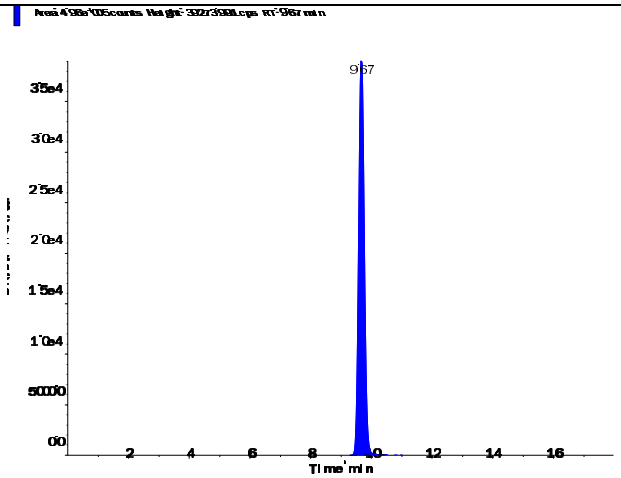

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.68 (9.84) min
Calculated conc:	0.215 ng/ml
Area Ratio:	0.074
Sample Type:	(Unknown)

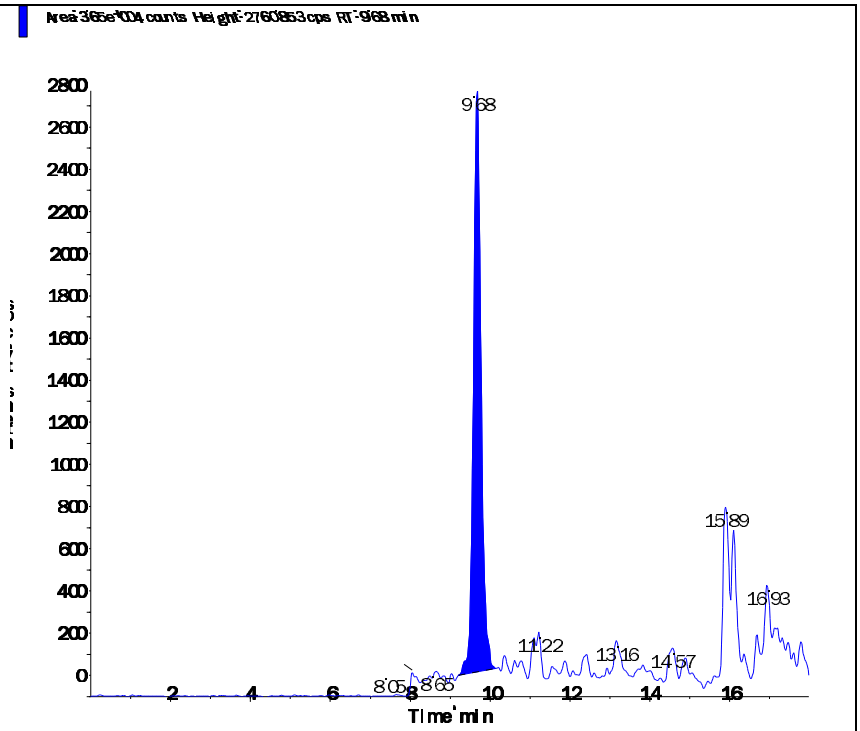

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.228 ng/ml
Area Ratio:	0.028
Sample Type:	(Unknown)

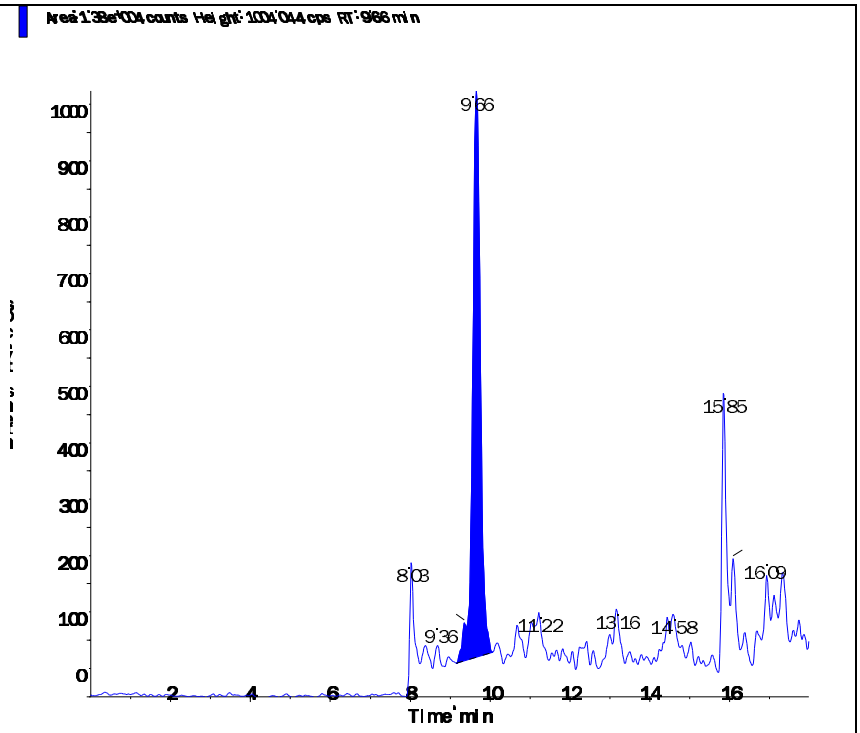

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Data File	LM35245.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 4:08:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-09 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35245.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 4:08:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.670e+04	9.69	N/A	0.21
Perchlorate conf	1.260e+04	9.66	N/A	0.201

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

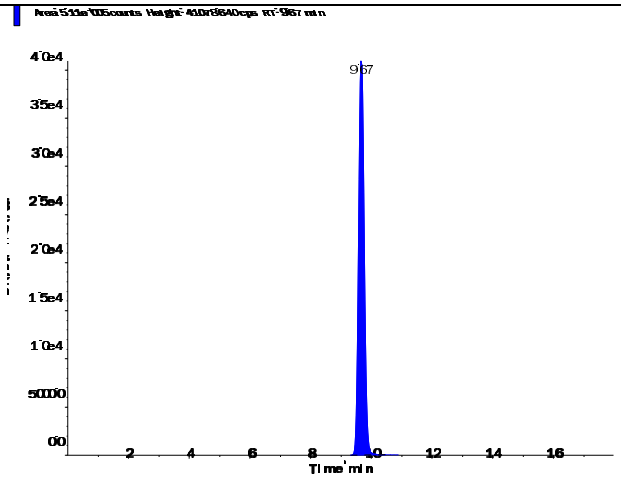

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.69 (9.84) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

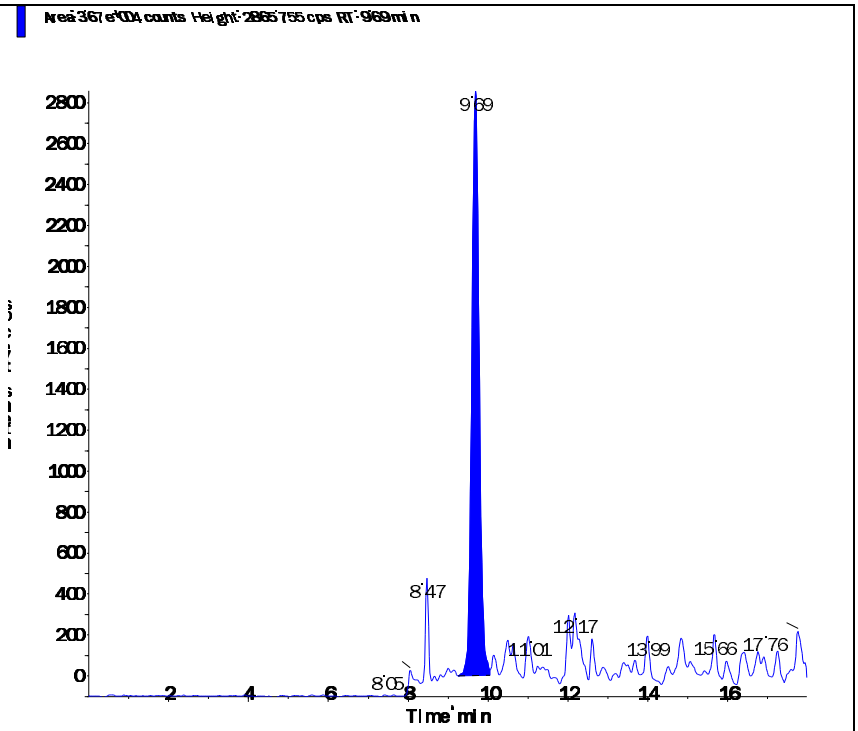

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

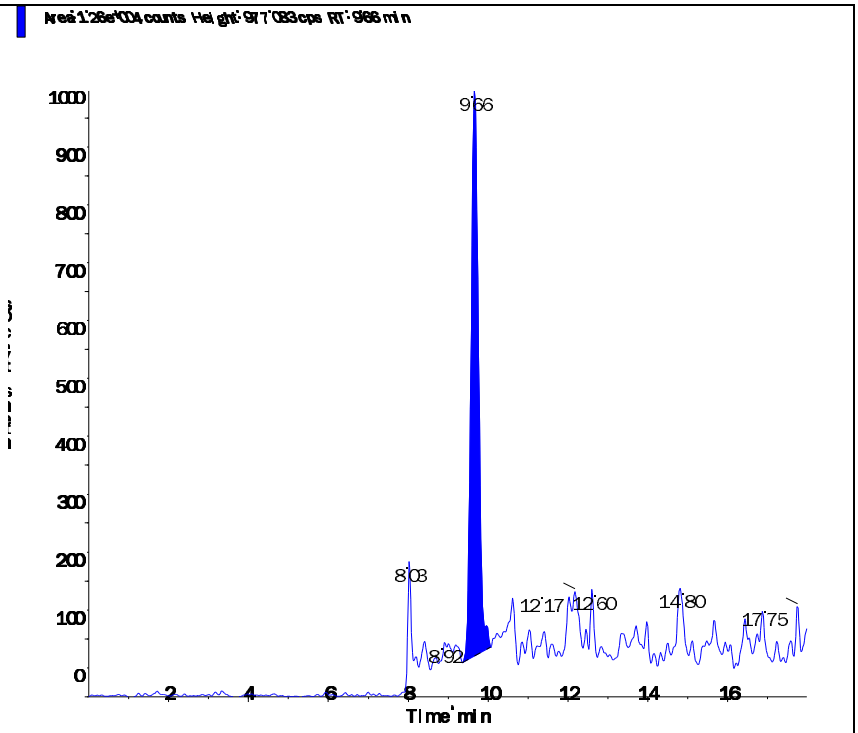

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Data File	LM35258.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 8:15:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-10 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35258.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 8:15:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-10	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.620e+04	9.68	N/A	0.222
Perchlorate conf	1.240e+04	9.66	N/A	0.212

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

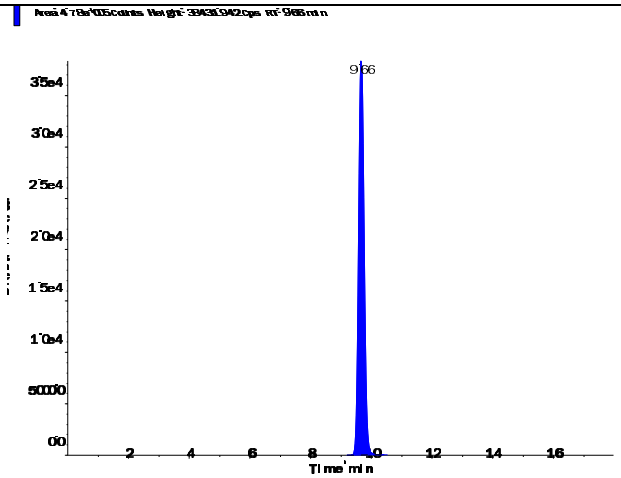

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.68 (9.84) min
Calculated conc:	0.222 ng/ml
Area Ratio:	0.076
Sample Type:	(Unknown)

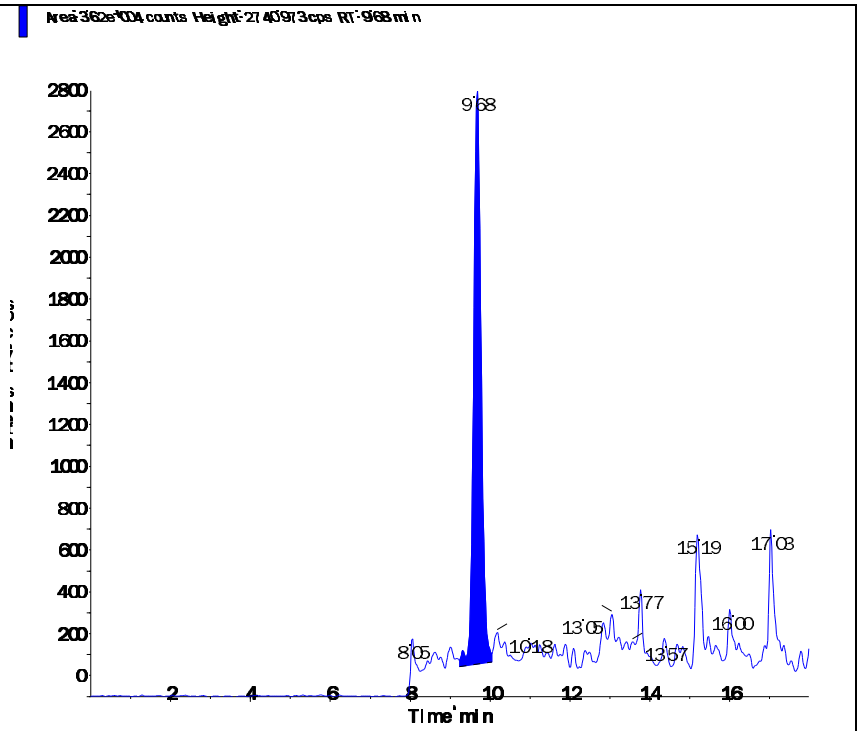

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.212 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

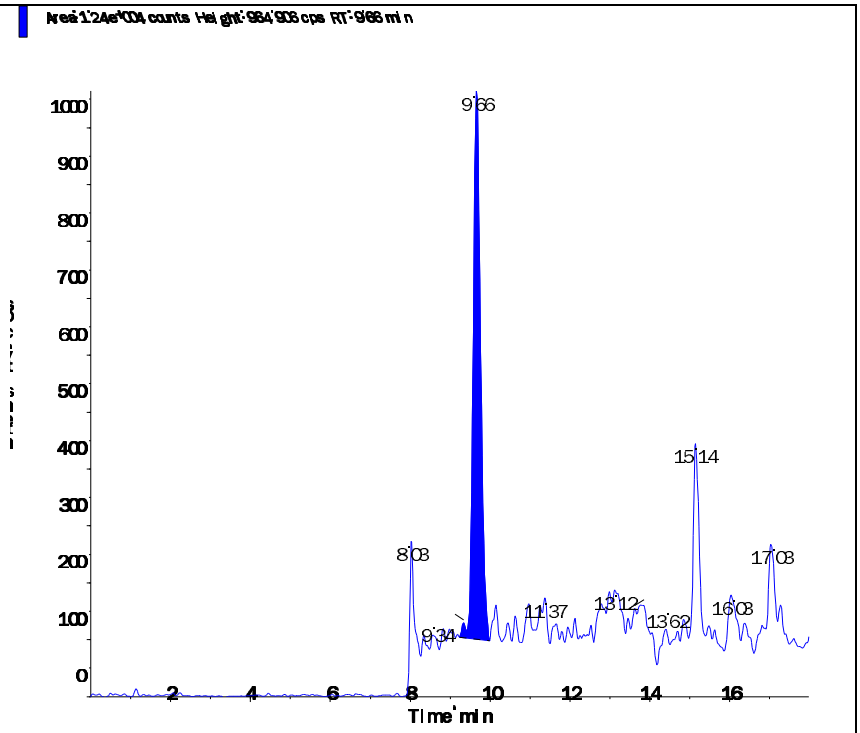

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Data File	LM35265.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 10:27:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-11 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35265.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 10:27:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.850e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.580e+04	9.67	N/A	0.216
Perchlorate conf	1.170e+04	9.66	N/A	0.197

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

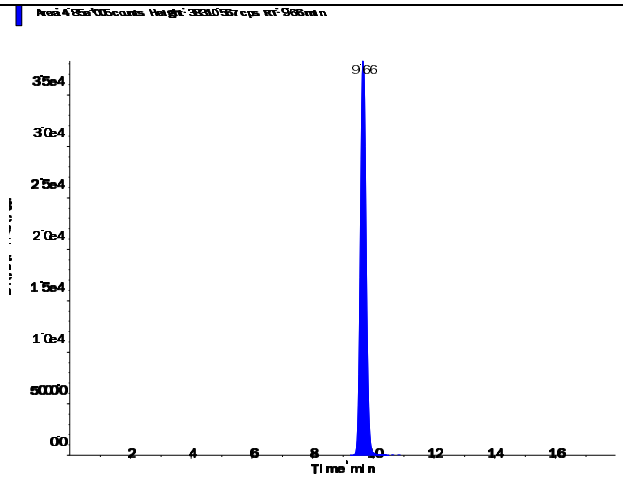

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.67 (9.84) min
Calculated conc:	0.216 ng/ml
Area Ratio:	0.074
Sample Type:	(Unknown)

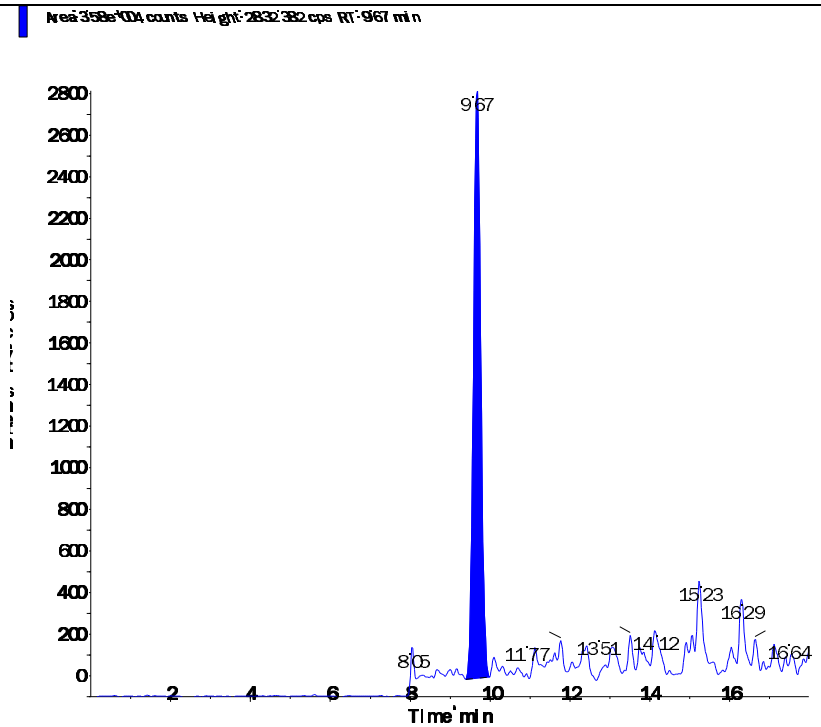

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

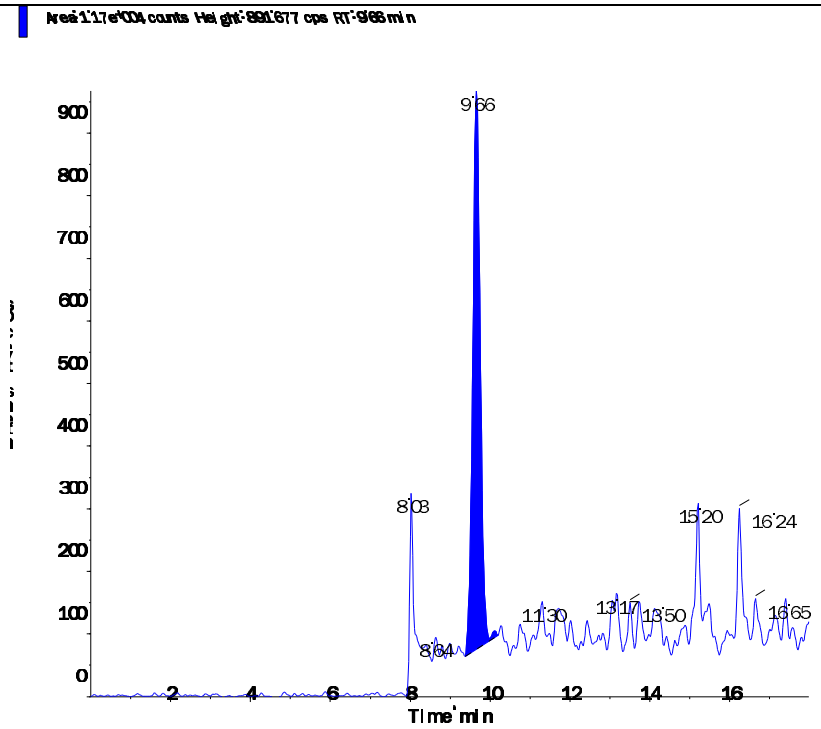

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Data File	LM35281.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 12:05:19 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-12 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35281.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 12:05:19 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572200-12	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.660e+05	9.65	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+04	9.66	N/A	0.206
Perchlorate conf	1.190e+04	9.65	N/A	0.209

O18LP (Internal Standard)

RT (Exp. RT): 9.65(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

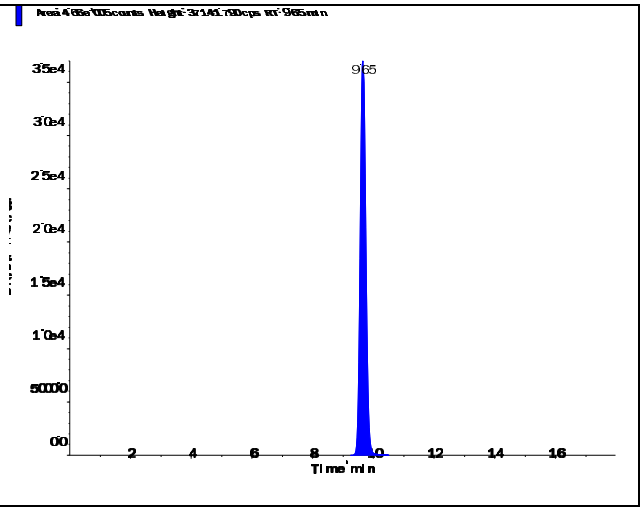

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

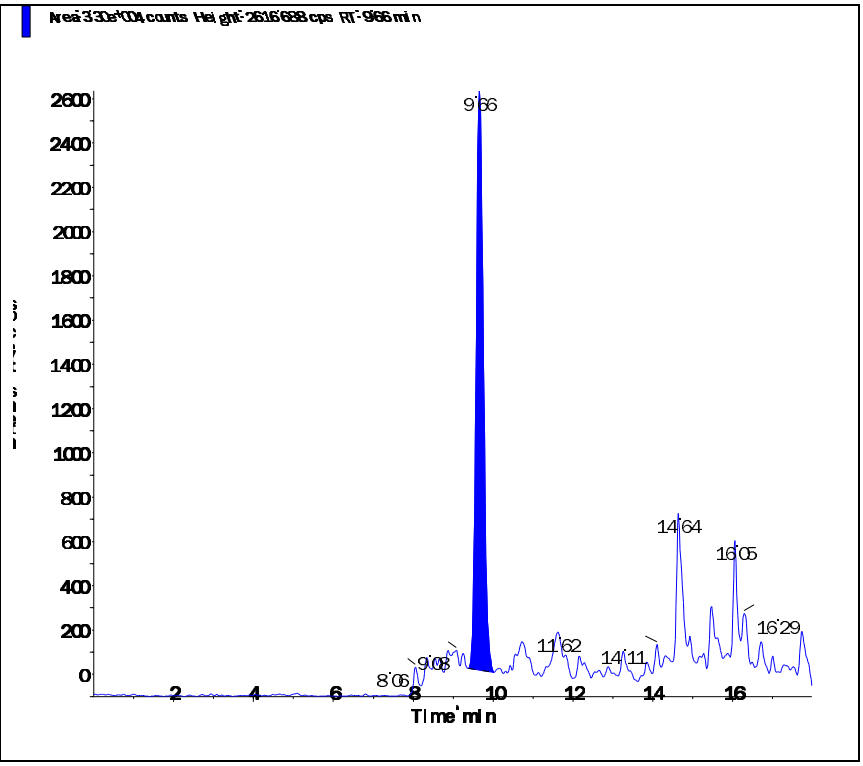

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.65 (9.84) min
Calculated conc:	0.209 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

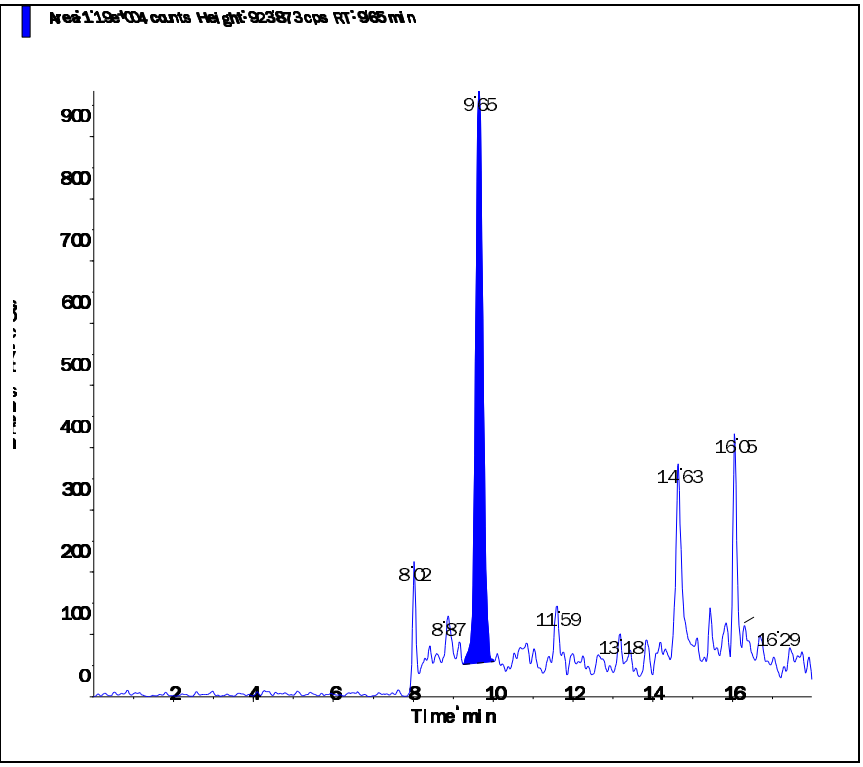

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Data File	LM35293.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 4:41:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-13 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35293.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 4:41:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572200-13	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.800e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.390e+04	9.68	N/A	0.206
Perchlorate conf	1.220e+04	9.66	N/A	0.207

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

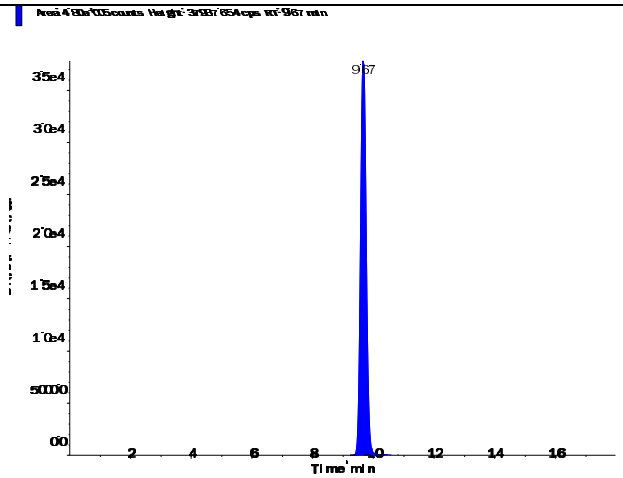

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.68 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

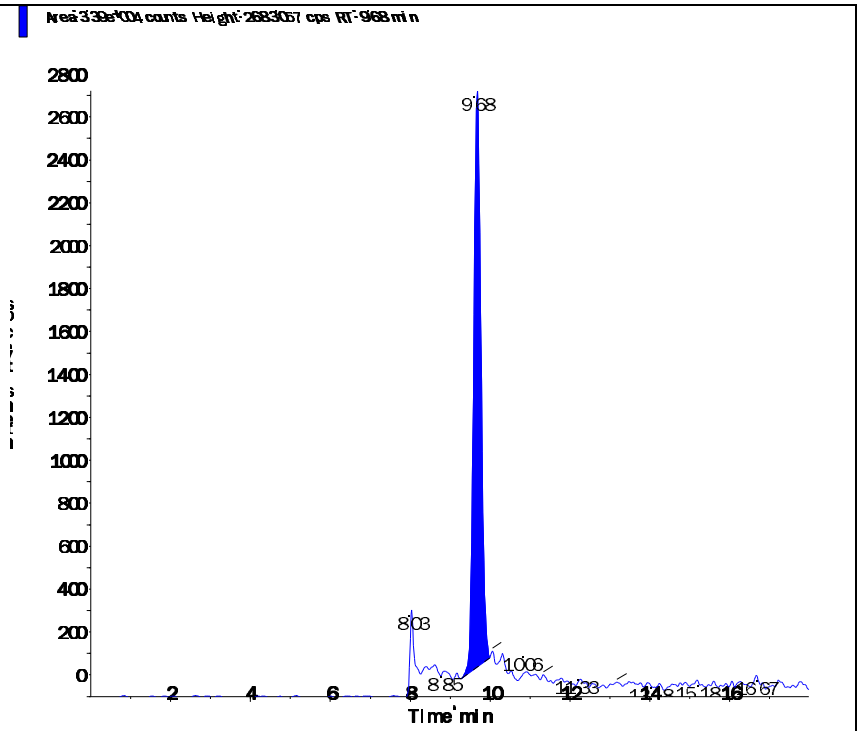

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

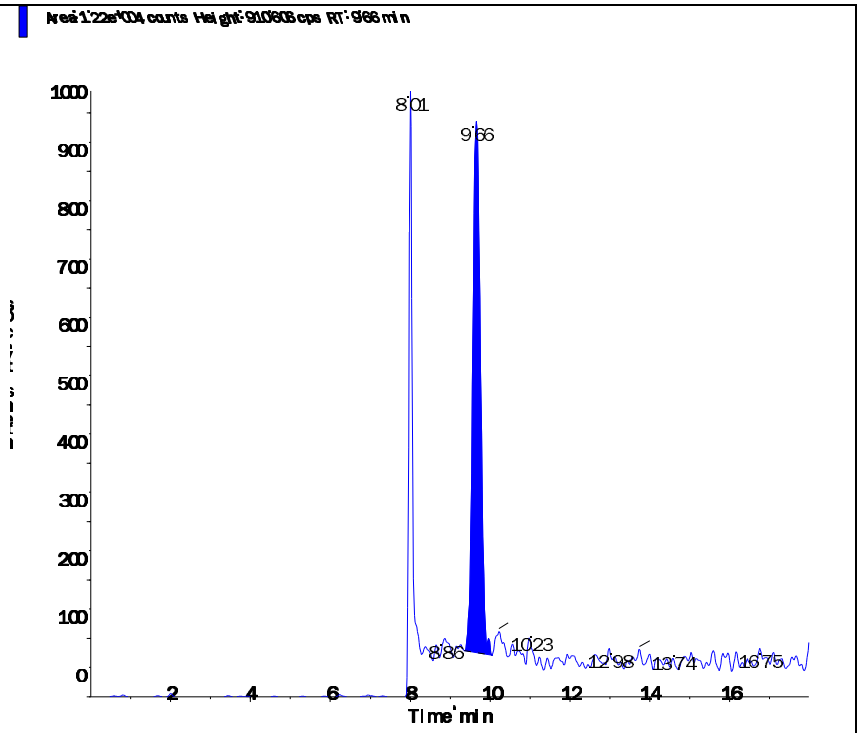

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Printed: 6/12/2016 9:42 PM

Data File	LM35297.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 5:57:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-14 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35297.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 5:57:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572200-14	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.980e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.650e+04	9.67	N/A	0.215
Perchlorate conf	1.270e+04	9.66	N/A	0.208

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

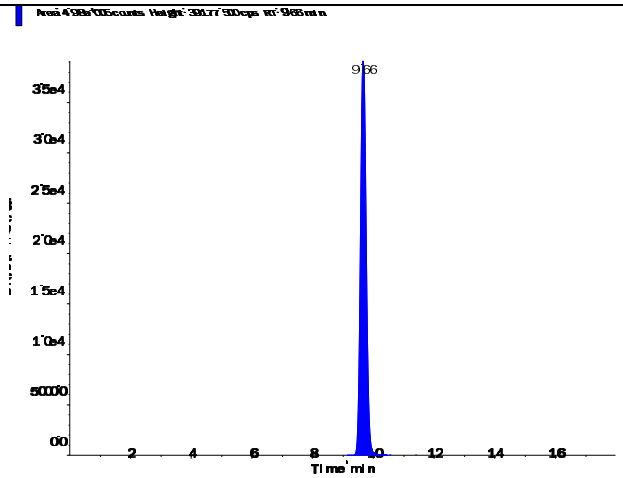

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.67 (9.84) min
Calculated conc:	0.215 ng/ml
Area Ratio:	0.073
Sample Type:	(Unknown)

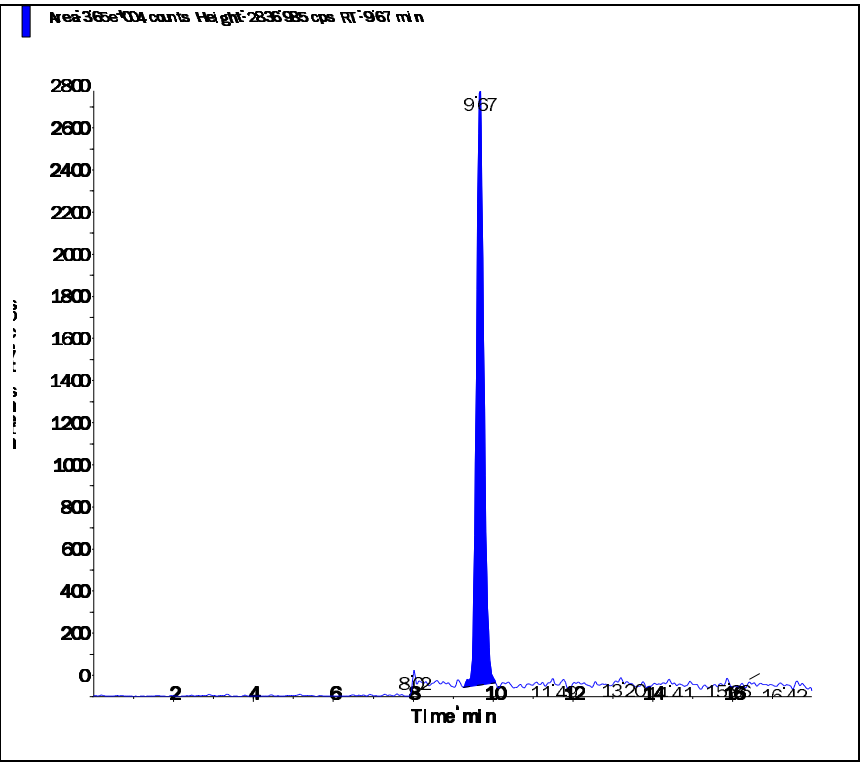

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.208 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

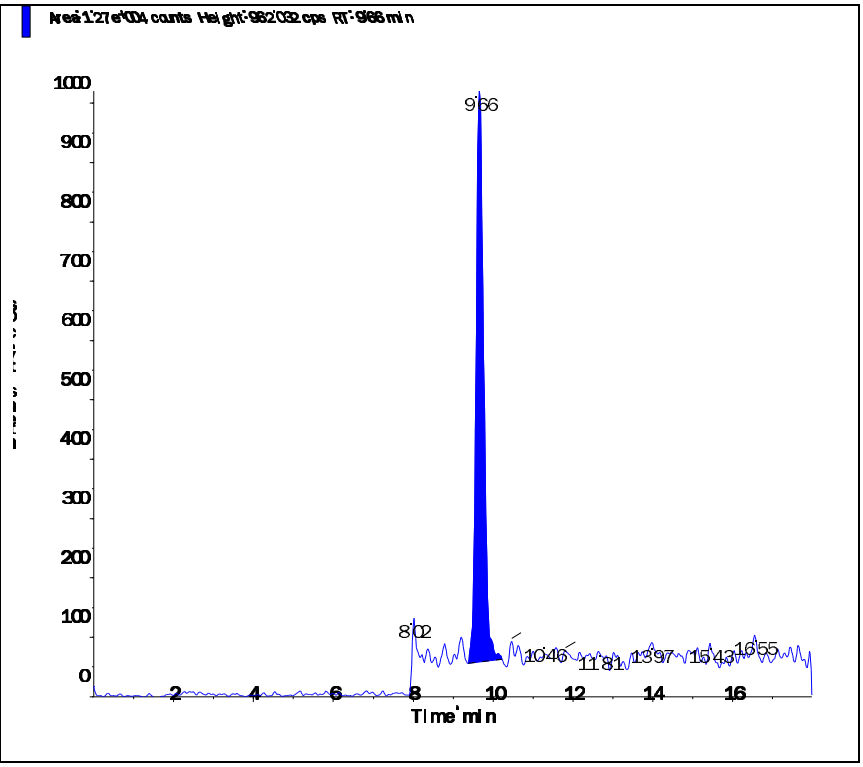

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Printed: 6/11/2016 12:59 PM

Data File	LM35225.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 9:49:48 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-01 CCB	**Injection Vial**	1.00
Data File	LM35225.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 9:49:48 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.710e+05	9.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.80(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

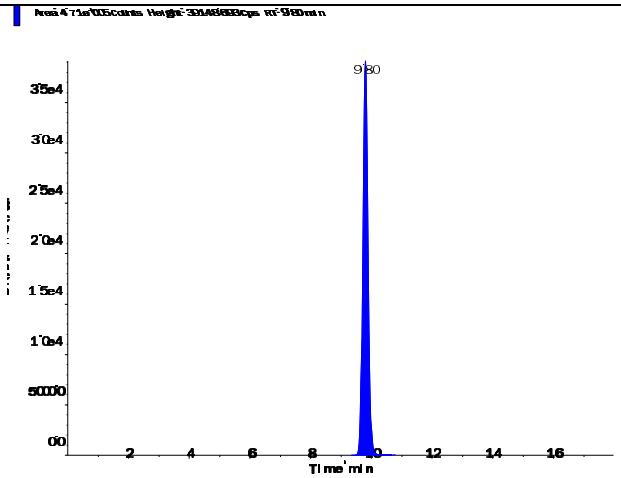

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

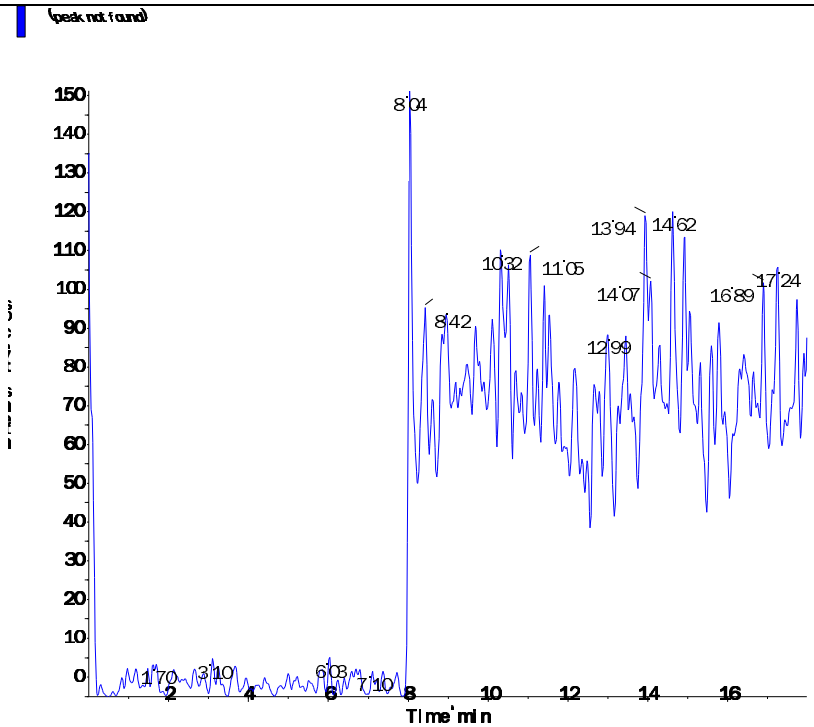

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

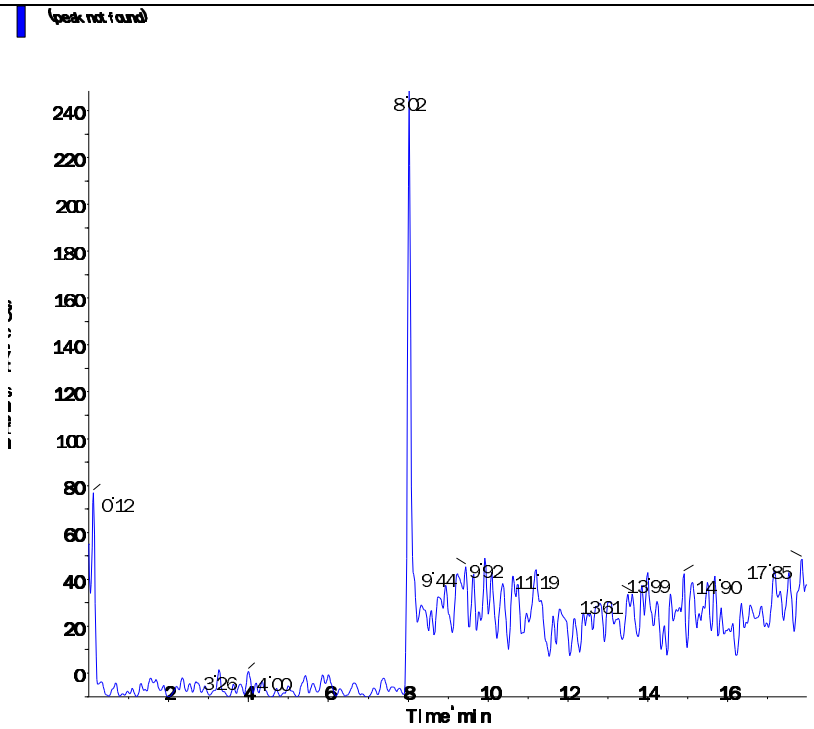

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Data File	LM35240.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 2:33:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-04 CCB	**Injection Vial**	1.00
Data File	LM35240.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 2:33:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.660e+03	10.00	N/A	0.018
Perchlorate conf	1.770e+03	10.00	N/A	0.0114

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

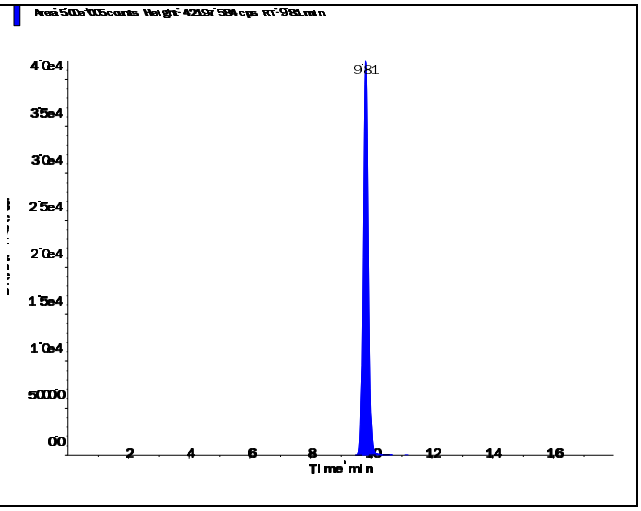

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.00 (9.84) min
Calculated conc:	0.018 ng/ml
Area Ratio:	0.007
Sample Type:	(Unknown)

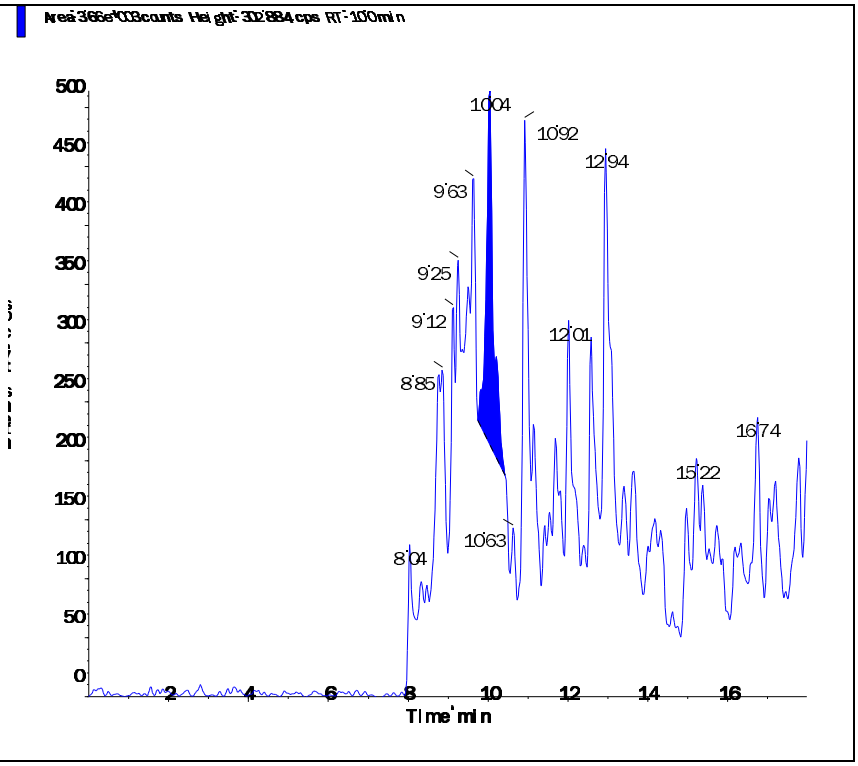

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.00 (9.84) min
Calculated conc:	0.0114 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)

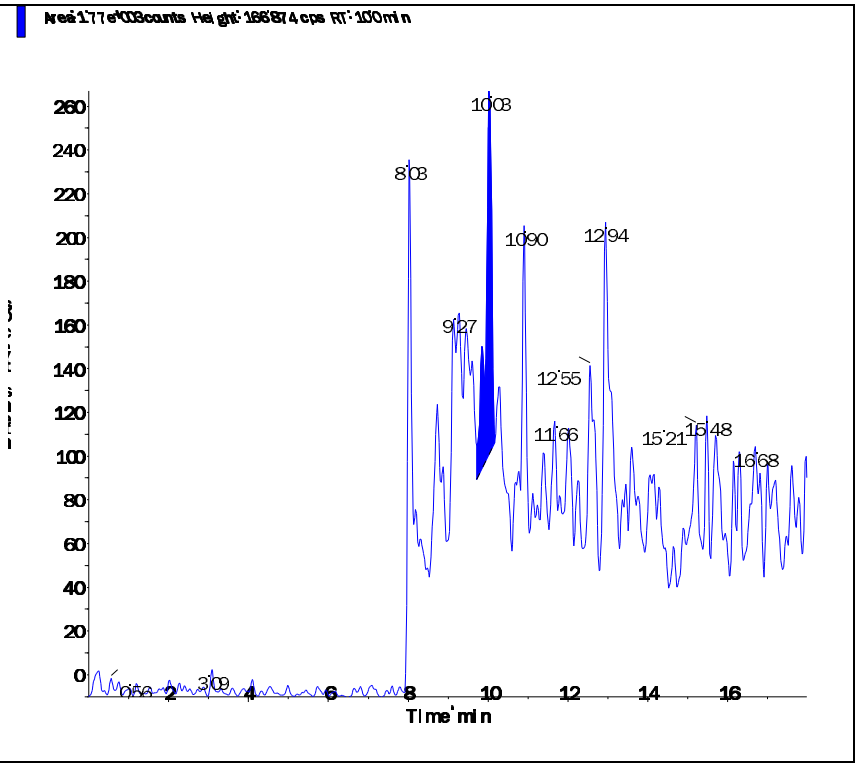

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Data File	LM35246.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 4:27:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-06 CCB	**Injection Vial**	1.00
Data File	LM35246.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 4:27:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.160e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	3.770e+02	9.80	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

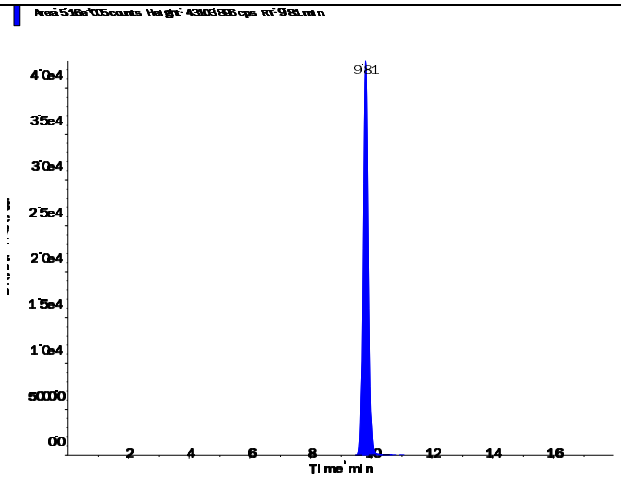

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Printed: 6/11/2016 1:06 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

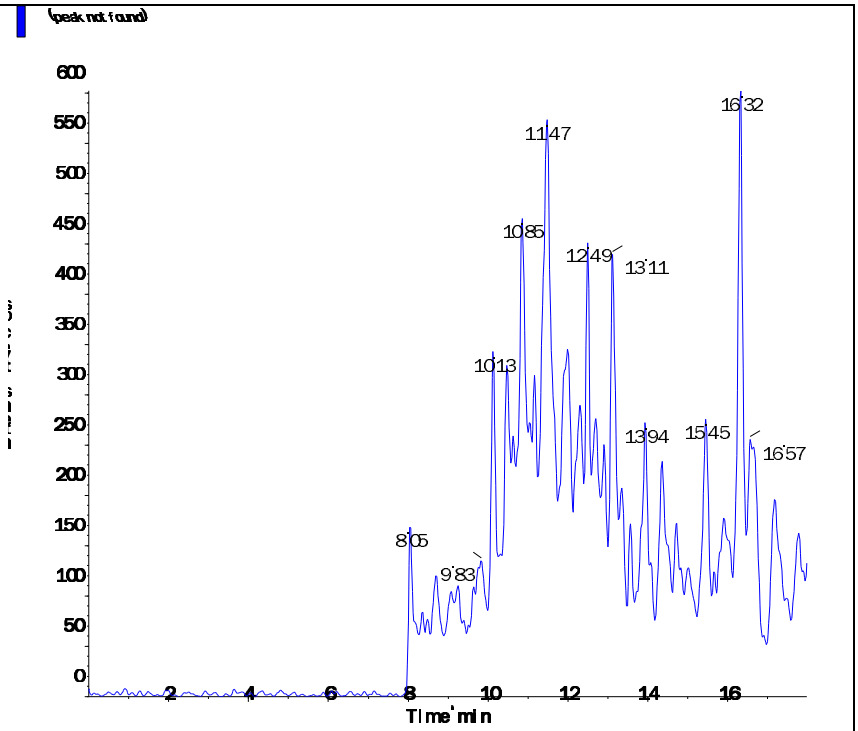

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.80 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

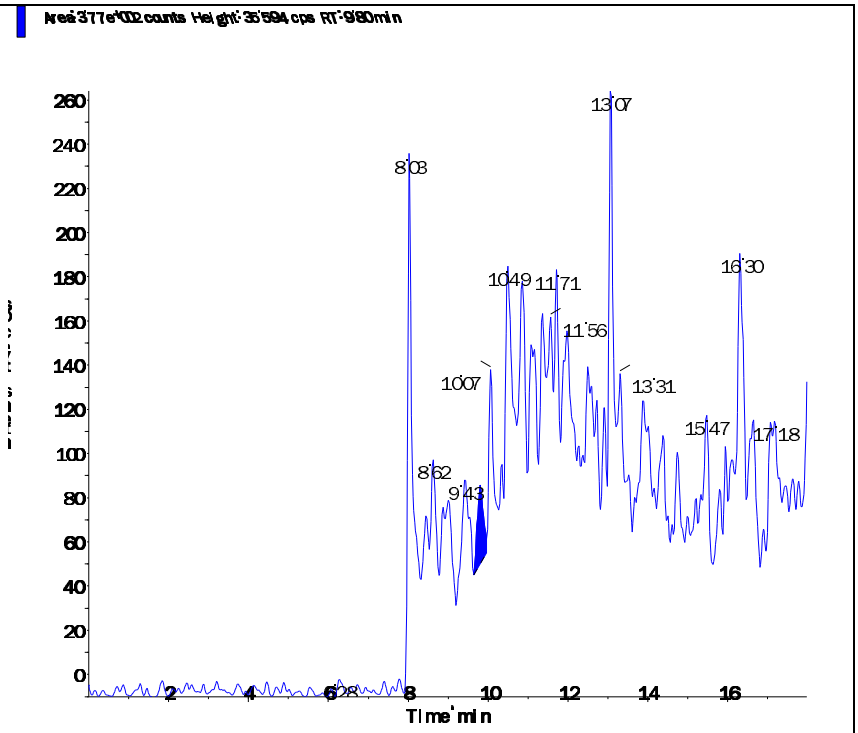

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Printed: 6/11/2016 1:11 PM

Data File	LM35259.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 8:34:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-08 CCB	**Injection Vial**	1.00
Data File	LM35259.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 8:34:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.920e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

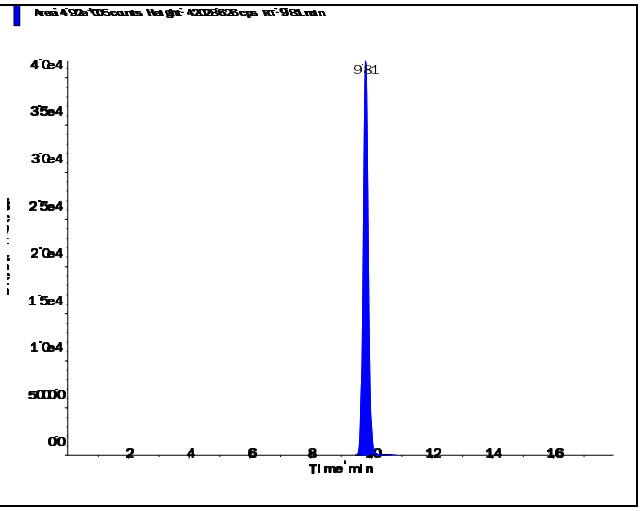

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

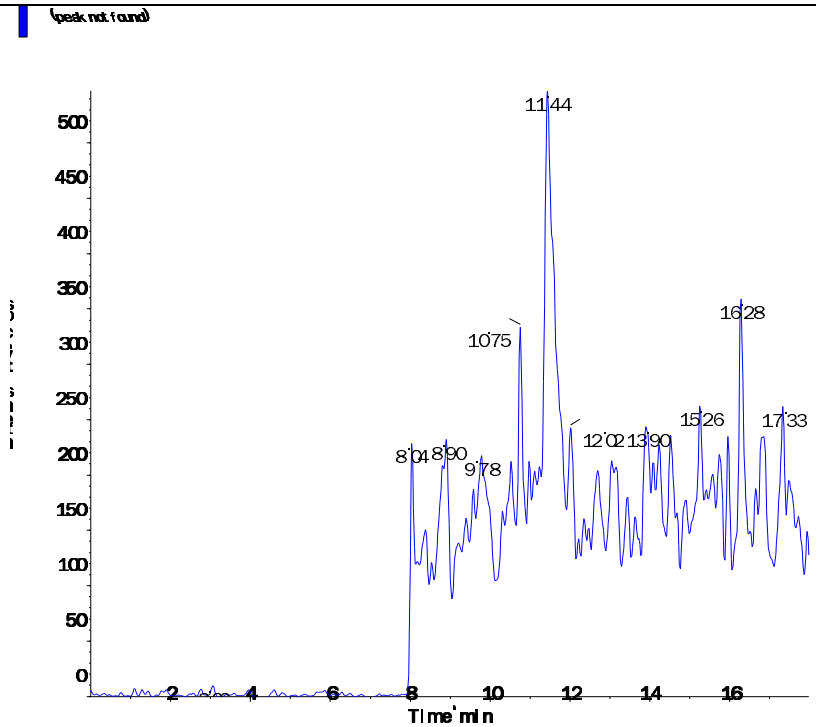

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

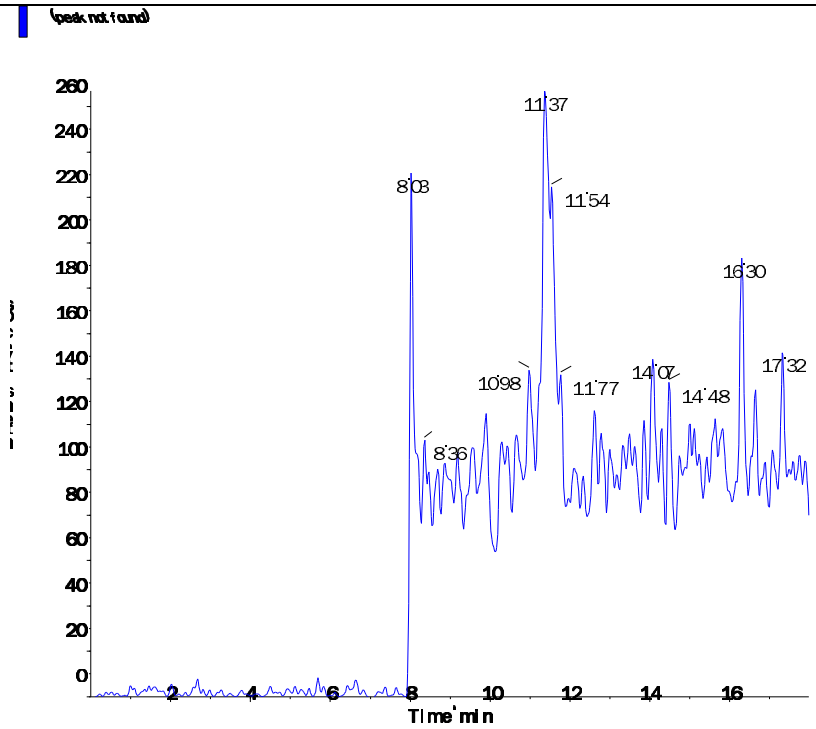

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Data File	LM35266.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 10:46:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-10 CCB	**Injection Vial**	1.00
Data File	LM35266.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 10:46:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.990e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	9.710e+02	9.90	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

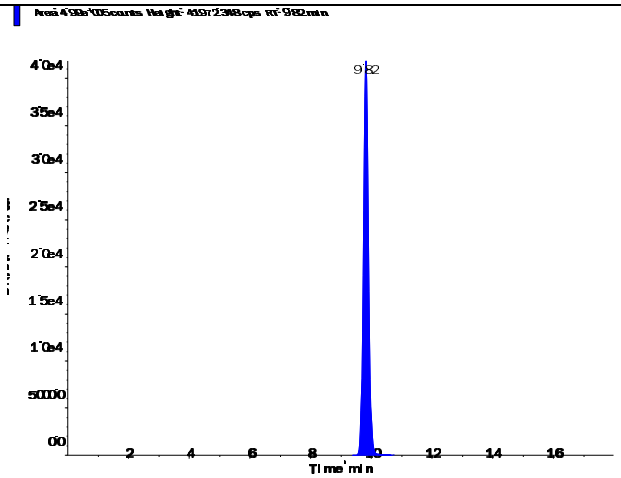

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	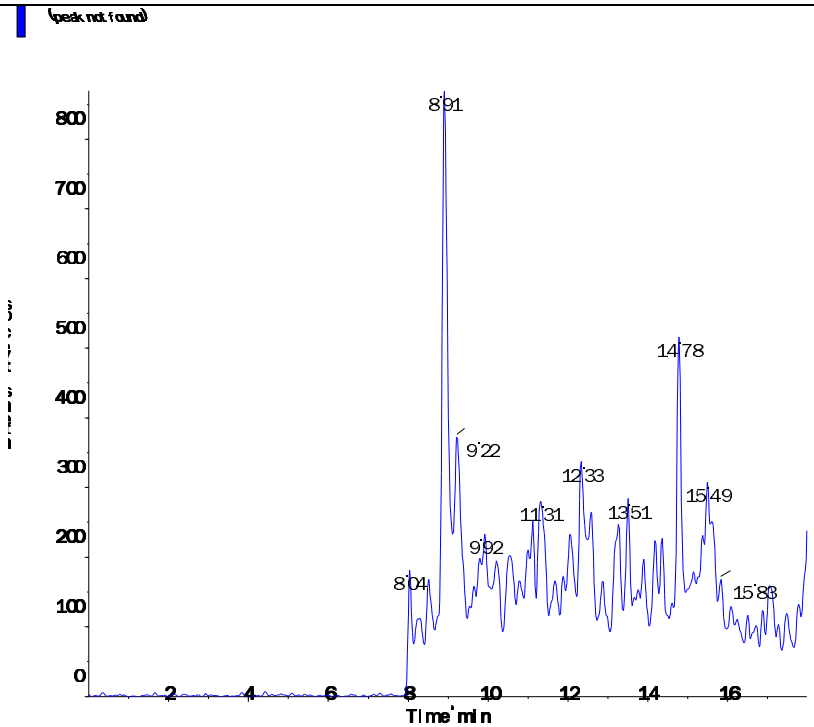
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.90 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	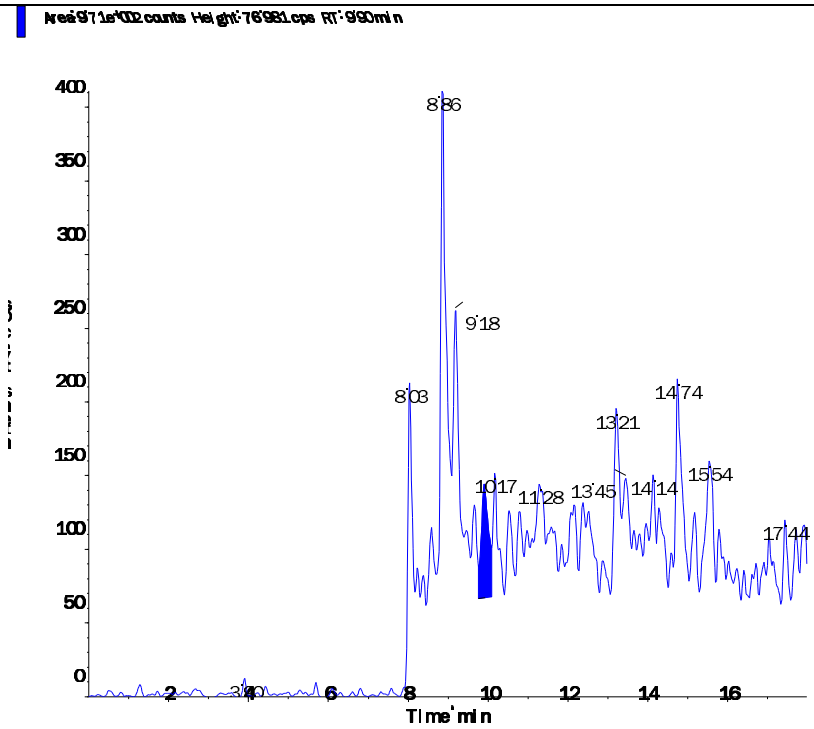

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Data File	LM35279.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 11:27:29 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-01 CCB	**Injection Vial**	1.00
Data File	LM35279.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 11:27:29 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.540e+05	9.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.310e+03	9.56	N/A	0.0441
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.80(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

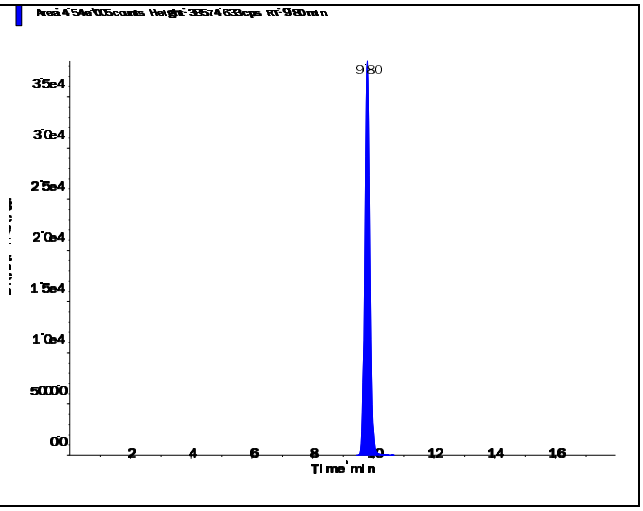

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.56 (9.84) min
Calculated conc:	0.0441 ng/ml
Area Ratio:	0.016
Sample Type:	(Unknown)

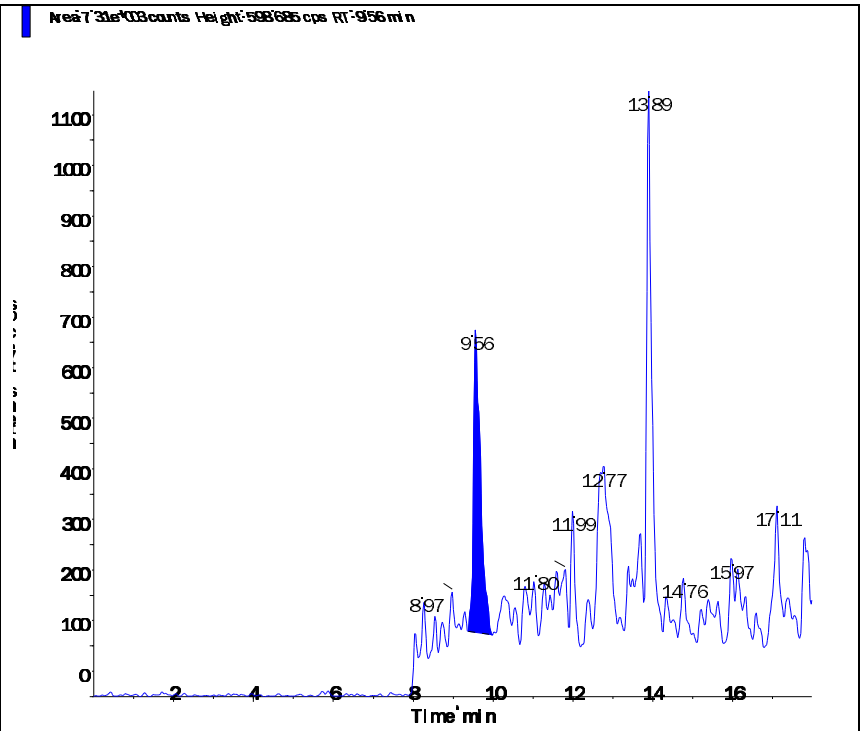

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

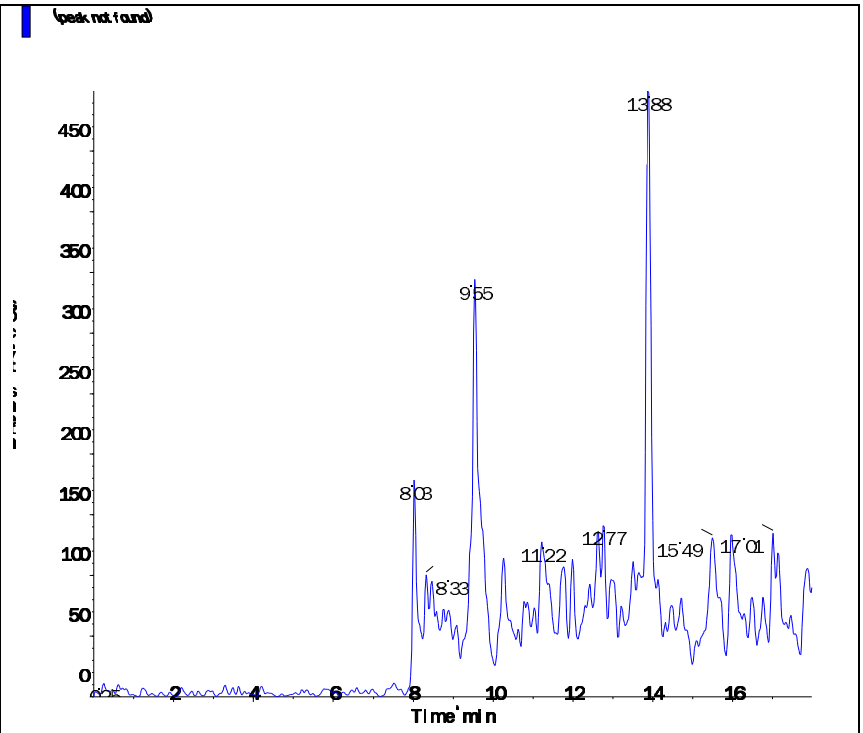

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Data File	LM35294.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 5:00:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-04 CCB	**Injection Vial**	1.00
Data File	LM35294.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 5:00:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.960e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

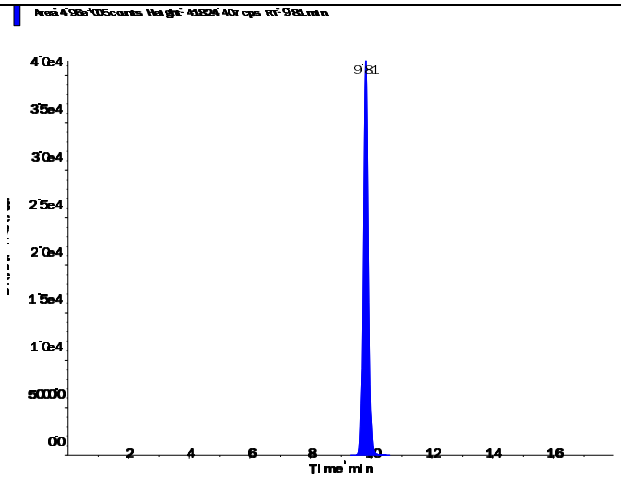

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/12/2016 9:41 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

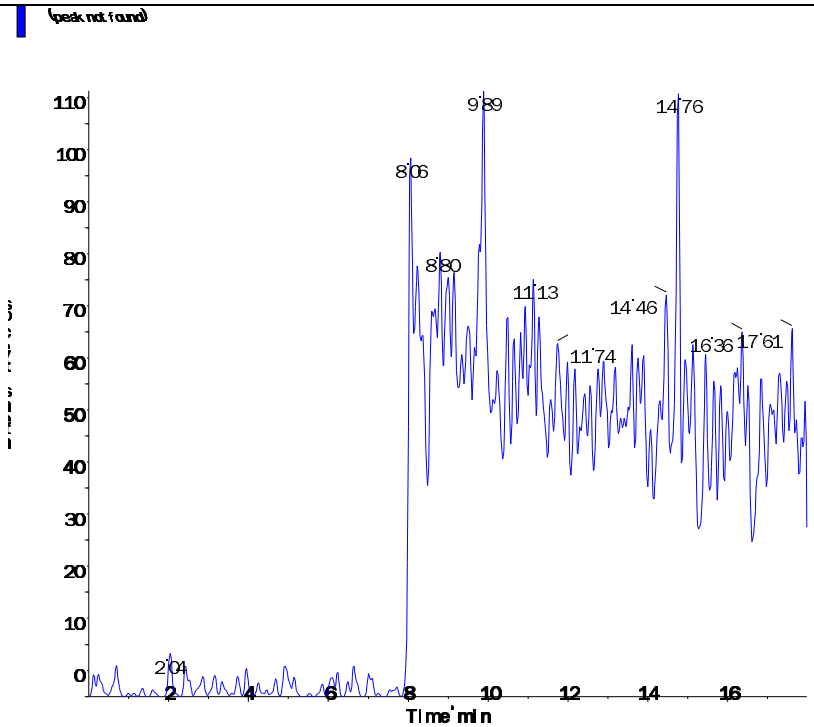

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

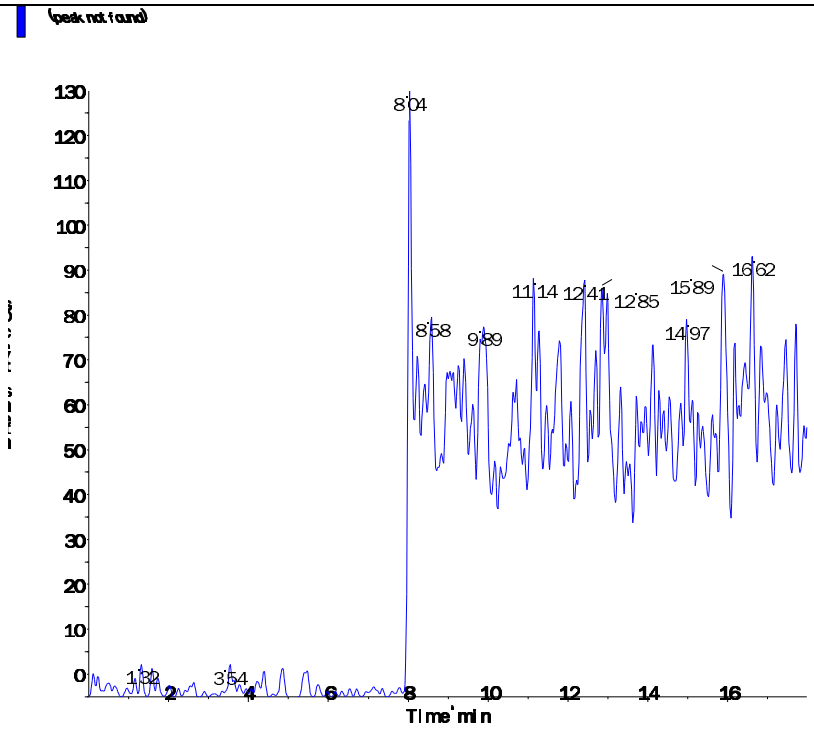

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/12/2016 9:42 PM

Data File	LM35298.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 6:16:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-06 CCB	**Injection Vial**	1.00
Data File	LM35298.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 6:16:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.040e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

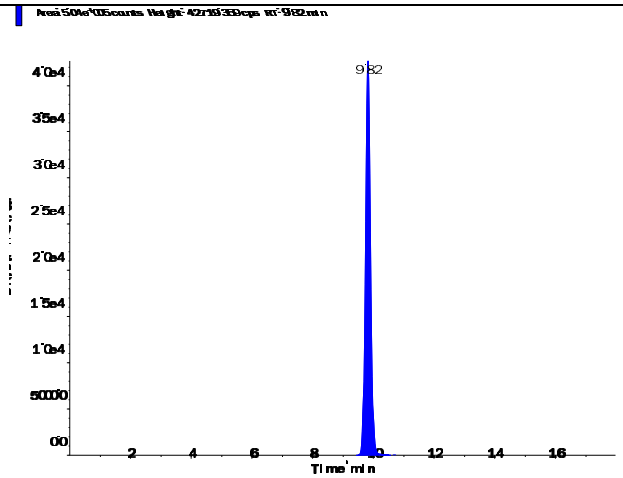

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/12/2016 9:42 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

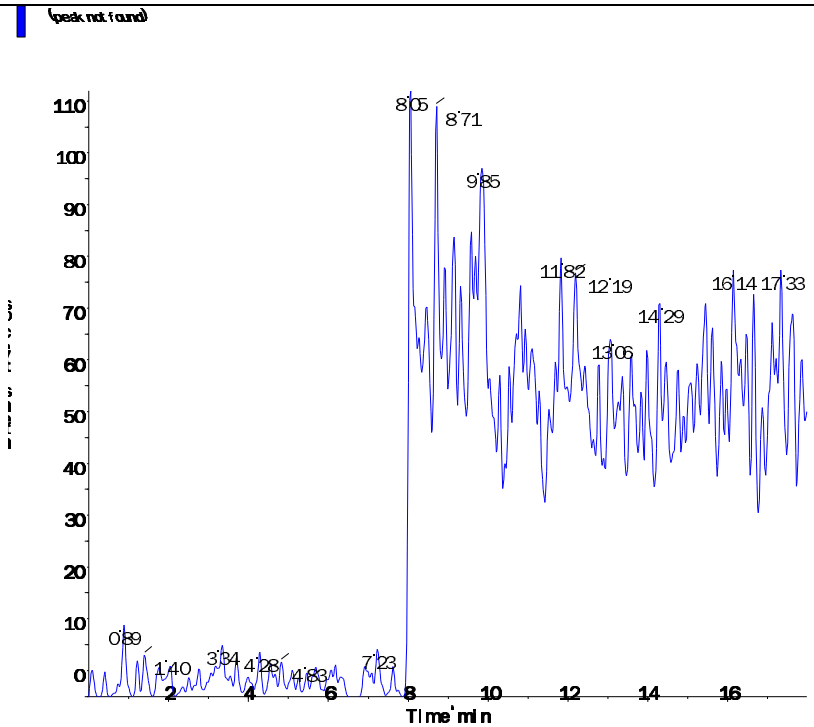

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

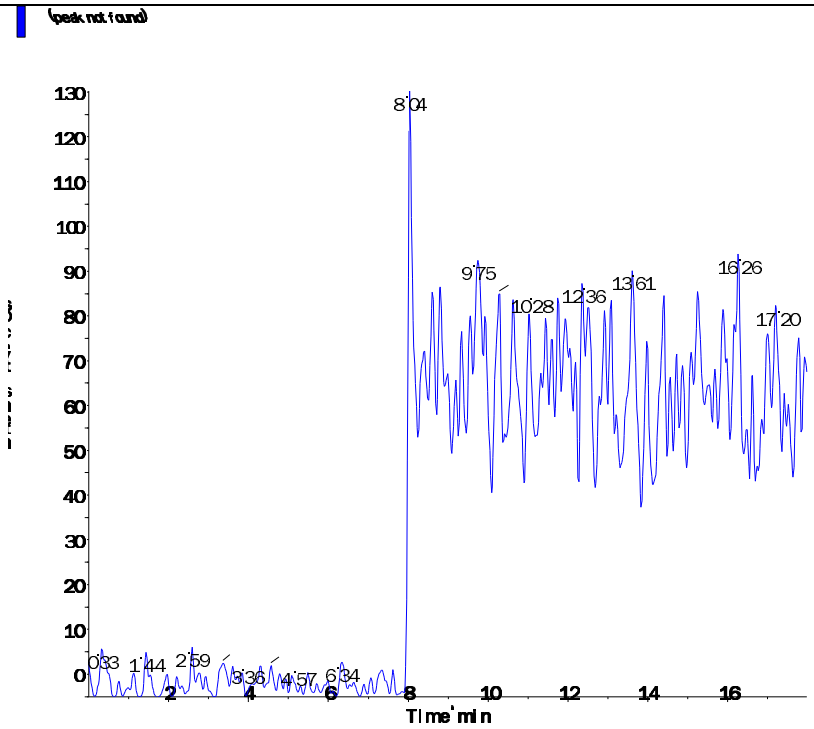

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/11/2016 1:00 PM

Data File	LM35228.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 10:46:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM35228.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 10:46:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.550e+05	9.16	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.520e+04	9.17	N/A	0.226
Perchlorate conf	1.040e+04	9.17	N/A	0.184

O18LP (Internal Standard)

RT (Exp. RT): 9.16(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

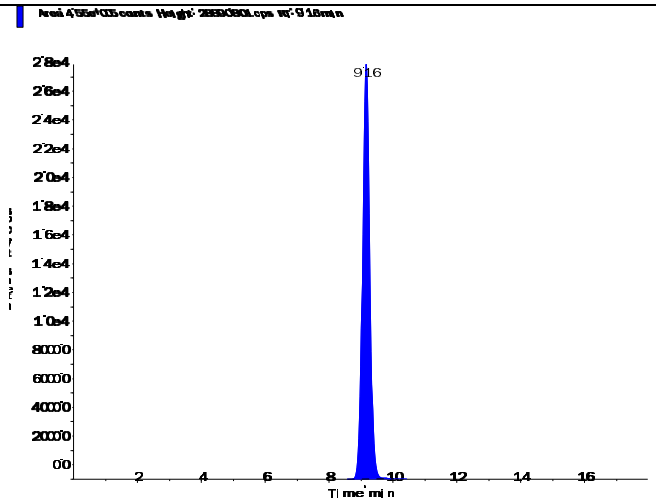

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/11/2016 1:00 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.17 (9.84) min
Calculated conc:	0.226 ng/ml
Area Ratio:	0.077
Sample Type:	(Unknown)

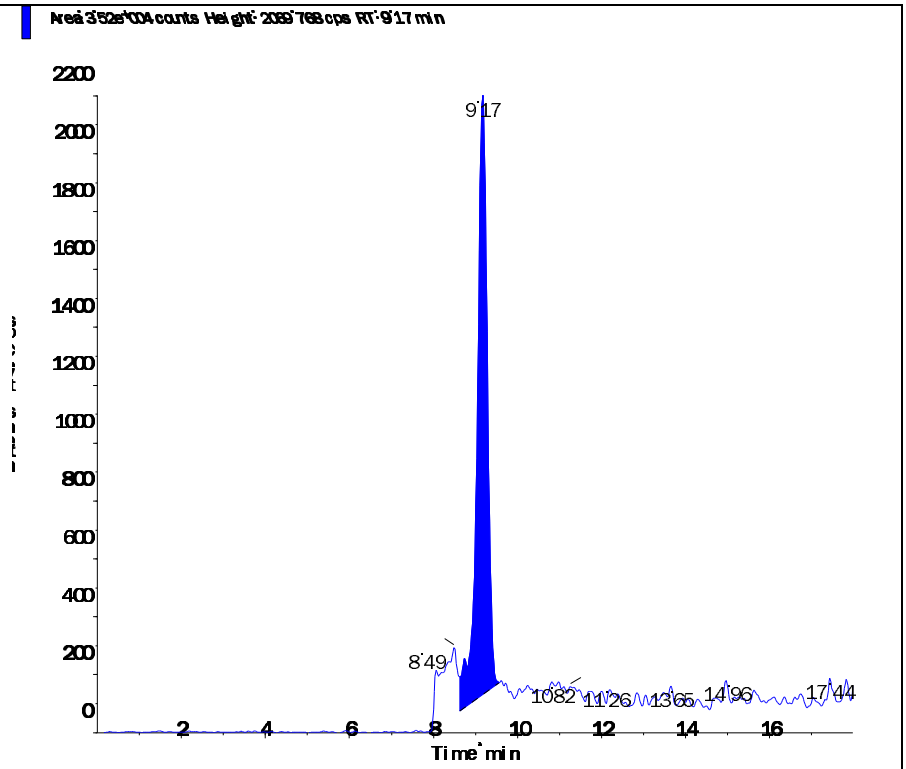

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.17 (9.84) min
Calculated conc:	0.184 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

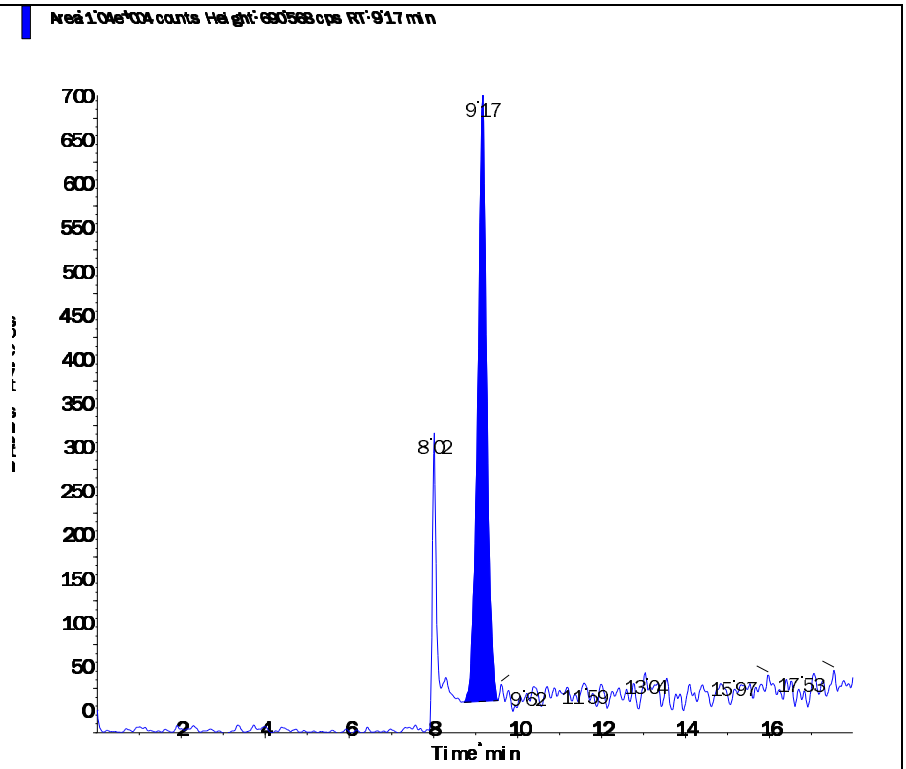

s.dataFile Page 2 of 2

2.2.2.5 Raw QC Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/11/2016 1:00 PM

Data File	LM35229.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 11:05:30 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-02 BLANK	**Injection Vial**	5.00
Data File	LM35229.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 11:05:30 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.410e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	3.090e+02	9.81	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

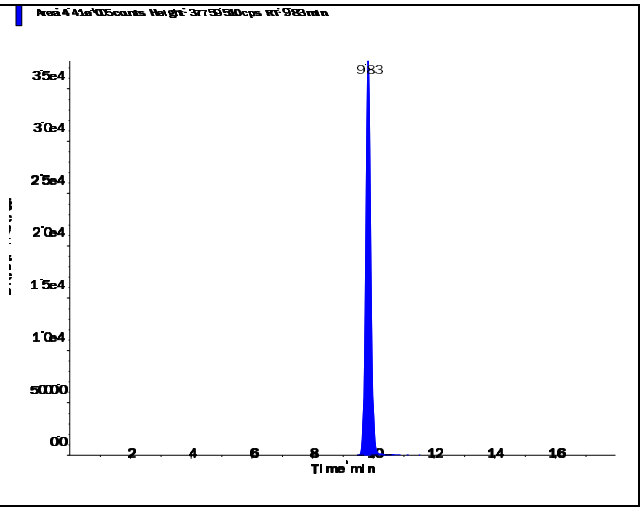

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	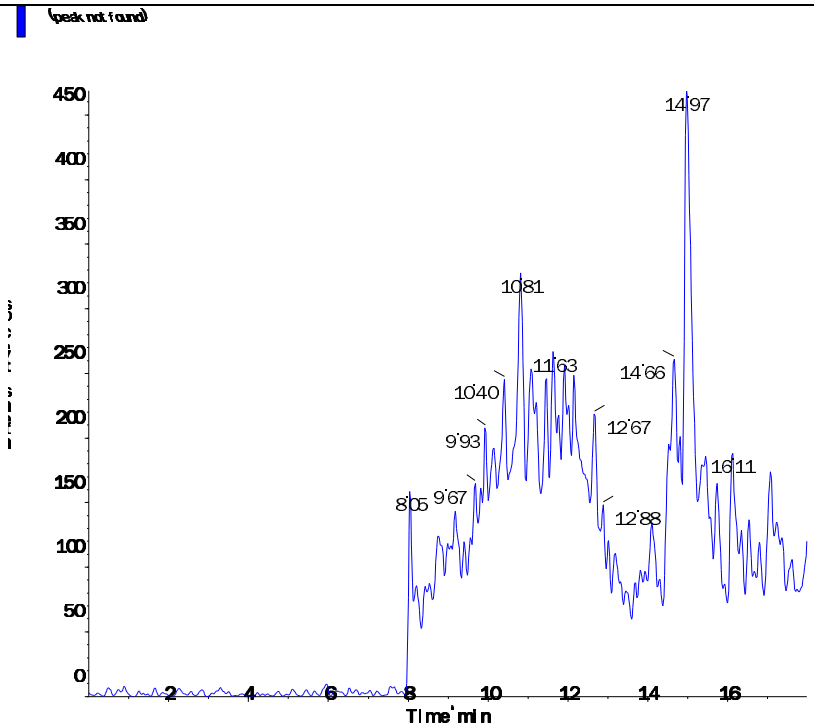
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.81 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	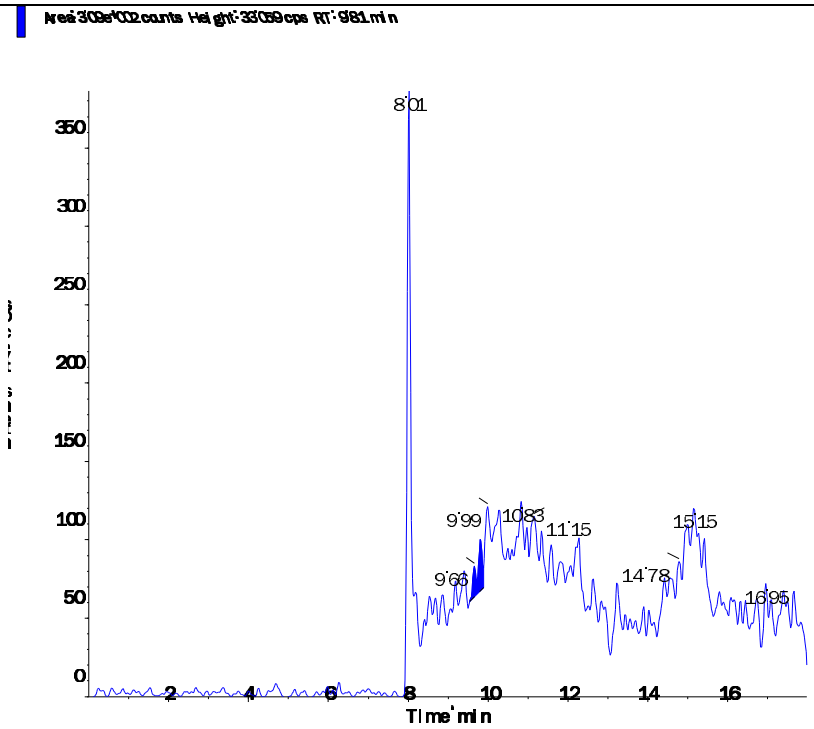

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/11/2016 1:01 PM

Data File	LM35230.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 11:24:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM35230.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 11:24:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.340e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.000e+04	9.83	N/A	0.201
Perchlorate conf	1.180e+04	9.83	N/A	0.223

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

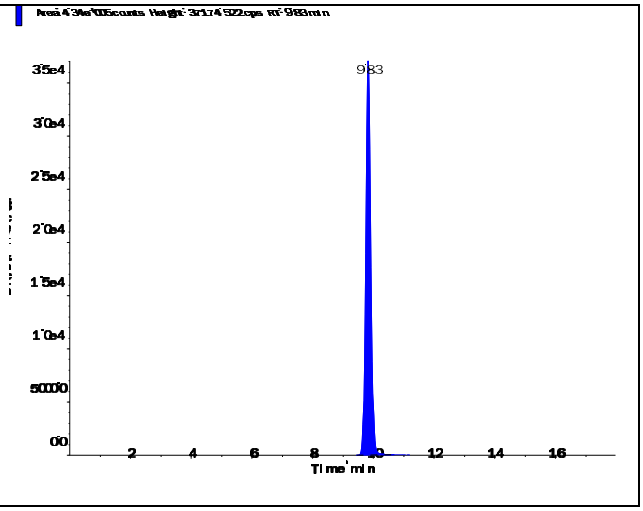

s.dataFile Page 1 of 2

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

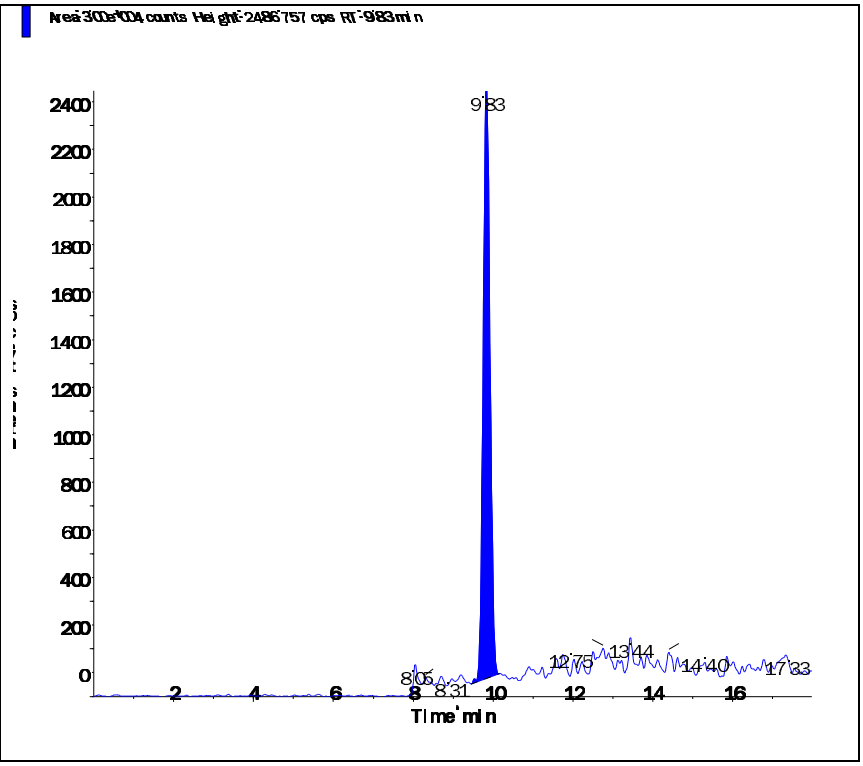

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.223 ng/ml
Area Ratio:	0.027
Sample Type:	(Unknown)

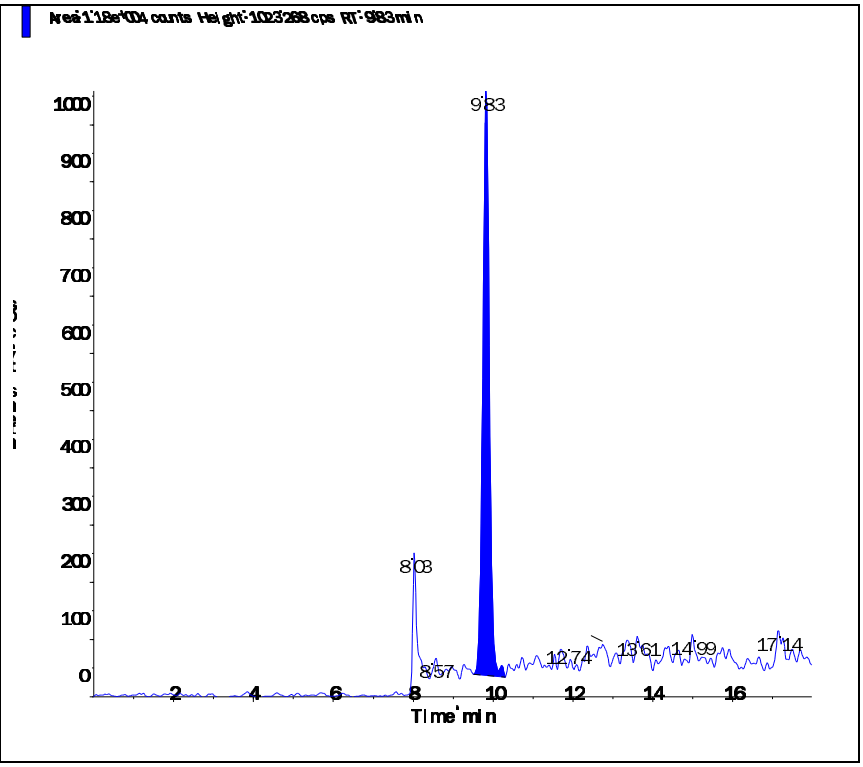

2.3 Metals Data

2.3.1 Metals I C P Data

2.3.1.1 Summary Data

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	AWD4T-060716	**Prep Method:**	3015	**Prep Date:**	06/13/2016 12:41
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/14/2016 12:52
Workgroup #:	WG572626	**Analyst:**	JYH	**Run Date:**	06/14/2016 16:54
Collect Date:	06/07/2016 15:00	**Dilution:**	1	**File ID:**	T3.061416.165411
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	5.71		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	8.62		0.500	0.250	0.125
Iron, Total	7439-89-6	5.13		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	5.98		1.00	0.500	0.250
Potassium, Total	7440-09-7	1.00	U	2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0161	J	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	70.6		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	AWD4B-060716	**Prep Method:**	3015	**Prep Date:**	06/13/2016 12:41
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/14/2016 12:52
Workgroup #:	WG572626	**Analyst:**	JYH	**Run Date:**	06/14/2016 16:58
Collect Date:	06/07/2016 15:30	**Dilution:**	1	**File ID:**	T3.061416.165809
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	5.34		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	8.65		0.500	0.250	0.125
Iron, Total	7439-89-6	4.64		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	5.75		1.00	0.500	0.250
Potassium, Total	7440-09-7	1.00	U	2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	J	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	72.0		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.1.2 QC Summary Data

Example 6010 Calculations
Thermo Scientific iCAP

1.0 Initial Calibration (ICAL) Parameters
For a multi-point calibration, the system performs linear regression from data consisting of a blank and four standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG572463
Analyst: REK
Spike Analyst: REK
Run Date: 06/13/2016 12:41
Method: 3015
Balance: BAL019
Instrument: MW-4
Instrument Start: 06/13/2016 12:49

SOP: ME407 Revison 19
Spike Solution: STD76255
Spike Witness: VC
40 & 50 ML. DIGESTION TU COA18772
HCL Lot #: COA18769
HNO3 Lot #: COA18905
ICP Filters- fisher-Lot# RGT35619

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG572463-02	BLANK	1	40 mL	50 mL	205.386 g	205.358 g		
2	WG572463-04	FLT_BLK	1	40 mL	50 mL	204.898 g	204.891 g		
3	WG572463-03	LCS	1	40 mL	50 mL	211.015 g	211.005 g	5 mL	
4	L16060411-03	SAMP	1	40 mL	50 mL	205.577 g	205.571 g		06/17/16
5	L16060411-04	SAMP	1	40 mL	50 mL	207.508 g	207.504 g		06/17/16
6	L16060485-03	SAMP	1	40 mL	50 mL	205.787 g	205.782 g		06/20/16
7	L16060485-04	SAMP	1	40 mL	50 mL	207.274 g	207.256 g		06/20/16
8	L16060485-05	SAMP	1	40 mL	50 mL	206.268 g	206.265 g		06/20/16
9	L16060485-06	SAMP	1	40 mL	50 mL	206.472 g	206.455 g		06/20/16
10	L16060492-01	SAMP	1	40 mL	50 mL	206.875 g	206.85 g		06/20/16
11	L16060492-02	SAMP	1	40 mL	50 mL	211.523 g	211.526 g		06/20/16
12	WG572463-01	REF	1	40 mL	50 mL	205.617 g	205.601 g		
13	L16060540-06	RS01	1	40 mL	50 mL	205.617 g	205.601 g		06/20/16
14	WG572463-05	MS	1	40 mL	50 mL	212.286 g	212.265 g	5 mL	
15	L16060540-07	MS01	1	40 mL	50 mL	212.286 g	212.265 g	5 mL	06/20/16
16	WG572463-06	MSD	1	40 mL	50 mL	211.012 g	210.994 g	5 mL	
17	L16060540-08	SD01	1	40 mL	50 mL	211.012 g	210.994 g	5 mL	06/20/16
18	L16060540-09	SAMP	1	40 mL	50 mL	204.956 g	204.933 g		06/20/16
19	L16060540-10	SAMP	1	40 mL	50 mL	207.687 g	207.671 g		06/20/16
20	L16060540-11	SAMP	1	40 mL	50 mL	207.697 g	207.667 g		06/20/16
21	L16060540-14	SAMP	1	40 mL	50 mL	205.077 g	205.054 g		06/20/16
22	L16060540-15	SAMP	1	40 mL	50 mL	205.616 g	205.621 g		06/20/16
23	L16060540-16	SAMP	1	40 mL	50 mL	206.317 g	206.293 g		06/20/16
24	L16060645-01	SAMP	1	40 mL	50 mL	207.15 g	207.138 g		06/20/16
25	L16060645-02	SAMP	1	40 mL	50 mL	205.612 g	205.607 g		06/20/16
26	L16060645-03	SAMP	1	40 mL	50 mL	207.496 g	207.483 g		06/20/16

L16060540-10	filtered digestate
L16060540-11	filtered digestate

Analyst: _____

Reviewer: _____

MW_DIG - Modified 09/30/2009
PDF ID: 4805192
Report generated: 06/13/2016 13:58

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 061416T3.2R.TXT

Analyst1: Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 572544, 572626, 572020

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.061416.123628	WG572687-01	Calibration Point		1		06/14/16 12:36
2	T3.061416.124032	WG572687-02	Calibration Point		1		06/14/16 12:40
3	T3.061416.124435	WG572687-03	Calibration Point		1		06/14/16 12:44
4	T3.061416.124840	WG572687-04	Calibration Point		1		06/14/16 12:48
5	T3.061416.125223	WG572687-05	Calibration Point		1		06/14/16 12:52
6	T3.061416.125605	WG572687-06	Initial Calibration Verification		1		06/14/16 12:56
7	T3.061416.125947	WG572687-07	Initial Calib Blank		1		06/14/16 12:59
8	T3.061416.130350	WG572687-08	Low Level Initial Calibration V		1		06/14/16 13:03
9	T3.061416.130753	WG572687-09	Low Level Initial Calibration V		1		06/14/16 13:07
10	T3.061416.131152	WG572687-10	Interference Check		1		06/14/16 13:11
11	T3.061416.131551	WG572687-11	Interference Check		1		06/14/16 13:15
12	T3.061416.131940	WG572687-12	CCV		1		06/14/16 13:19
13	T3.061416.132323	WG572687-13	CCB		1		06/14/16 13:23
14	T3.061416.133305	WG572244-02	Method/Prep Blank	40/50	1		06/14/16 13:33
15	T3.061416.133710	WG572244-03	Laboratory Control S	40/50	1		06/14/16 13:37
16	T3.061416.134058	WG572115-01	Fluid Blank 1		1		06/14/16 13:40
17	T3.061416.134504	WG572115-02	Fluid Blank 2		1		06/14/16 13:45
18	T3.061416.134908	WG572244-01	Reference Sample		1	L16060401-01	06/14/16 13:49
19	T3.061416.135310	WG572244-04	Matrix Spike	40/50	1	L16060401-01	06/14/16 13:53
20	T3.061416.135655	WG572244-05	Matrix Spike Duplica	40/50	1	L16060401-01	06/14/16 13:56
21	T3.061416.140044	L16060360-02	V6F0104-02	5/50	1		06/14/16 14:00
22	T3.061416.140444	L16060403-01	KAISER 12 BAGS 6/6/16	5/50	1		06/14/16 14:04
23	T3.061416.140844	WG572687-14	CCV		1		06/14/16 14:08
24	T3.061416.141227	WG572687-15	CCB		1		06/14/16 14:12
25	T3.061416.141631	L16060438-01	PIT WATER	40/50	1		06/14/16 14:16
26	T3.061416.142028	L16060482-01	13837-SSP0551	5/50	1		06/14/16 14:20
27	T3.061416.142427	L16060504-03	MW5-060816	40/50	1		06/14/16 14:24
28	T3.061416.142829	WG572544-01	Post Digestion Spike		1	L16060504-03	06/14/16 14:28
29	T3.061416.143214	WG572544-02	Serial Dilution		5	L16060504-03	06/14/16 14:32
30	T3.061416.143615	WG572544-02	Serial Dilution		25	L16060504-03	06/14/16 14:36
31	T3.061416.144017	WG572687-16	CCV		1		06/14/16 14:40
32	T3.061416.144359	WG572687-17	CCB		1		06/14/16 14:43
33	T3.061416.144804	WG572687-18	Low Level Continuing Calibra		1		06/14/16 14:48
34	T3.061416.145155	WG572687-19	Low Level Continuing Calibra		1		06/14/16 14:51

Page: 1 Approved: June 14, 2016

Kim H. Rhoden

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Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 061416T3.2R.TXT
Analyst1: Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 572544, 572626, 572020

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.061416.145555	L16060403-01	KAISER 12 BAGS 6/6/16		1		06/14/16 14:55
36	T3.061416.145955	L16060437-01	0101-151-B	40/50	1		06/14/16 14:59
37	T3.061416.150355	L16060442-01	27-3-25.14 S1	40/50	1		06/14/16 15:03
38	T3.061416.150755	L16060442-02	6-10-15.01 S12	40/50	1		06/14/16 15:07
39	T3.061416.151155	L16060442-03	6-10-15.01 S11		1		06/14/16 15:11
40	T3.061416.151559	L16060442-04	6-10-15.01 S7	40/50	1		06/14/16 15:15
41	T3.061416.152000	L16060442-05	6-10-15.01 S8	40/50	1		06/14/16 15:20
42	T3.061416.152359	L16060442-06	6-10-15.01 S1	40/50	1		06/14/16 15:23
43	T3.061416.152759	WG572687-20	CCV		1		06/14/16 15:27
44	T3.061416.153141	WG572687-21	CCB		1		06/14/16 15:31
45	T3.061416.153545	L16060443-01	45-11-15.02 S2	40/50	1		06/14/16 15:35
46	T3.061416.153934	L16060443-02	45-11-15.02 S1	40/50	1		06/14/16 15:39
47	T3.061416.154331	L16060443-03	1803-126 W1	40/50	1		06/14/16 15:43
48	T3.061416.154727	L16060446-01	1802-116-A W1	40/50	1		06/14/16 15:47
49	T3.061416.155127	L16060447-01	6-7-32 W1	40/50	1		06/14/16 15:51
50	T3.061416.155527	L16060442-03	6-10-15.01 S11	40/50	1		06/14/16 15:55
51	T3.061416.155927	WG572687-22	CCV		1		06/14/16 15:59
52	T3.061416.160309	WG572687-23	CCB		1		06/14/16 16:03
53	T3.061416.160713	WG572463-02	Method/Prep Blank	40/50	1		06/14/16 16:07
54	T3.061416.161106	WG572463-03	Laboratory Control S	40/50	1		06/14/16 16:11
55	T3.061416.161451	WG572463-04	Filter Blank		1		06/14/16 16:14
56	T3.061416.161854	WG572463-01	Reference Sample		1	L16060540-06	06/14/16 16:18
57	T3.061416.162255	WG572463-05	Matrix Spike	40/50	1	L16060540-06	06/14/16 16:22
58	T3.061416.162640	WG572463-06	Matrix Spike Duplica	40/50	1	L16060540-06	06/14/16 16:26
59	T3.061416.163026	L16060645-03	5506-G01-WQ-W0163	40/50	1		06/14/16 16:30
60	T3.061416.163430	WG572626-01	Post Digestion Spike		1	L16060645-03	06/14/16 16:34
61	T3.061416.163816	WG572626-02	Serial Dilution		5	L16060645-03	06/14/16 16:38
62	T3.061416.164220	WG572626-02	Serial Dilution		25	L16060645-03	06/14/16 16:42
63	T3.061416.164625	WG572687-24	CCV		1		06/14/16 16:46
64	T3.061416.165007	WG572687-25	CCB		1		06/14/16 16:50
65	T3.061416.165411	L16060411-03	AWD4T-060716	40/50	1		06/14/16 16:54
66	T3.061416.165809	L16060411-04	AWD4B-060716	40/50	1		06/14/16 16:58
67	T3.061416.170207	L16060485-03	FTB-034-GM-MW16B-06081	40/50	1		06/14/16 17:02
68	T3.061416.170608	L16060485-04	FTB-034-GM-MW08B-06081	40/50	1		06/14/16 17:06

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Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 061416T3.2R.TXT
Analyst1: Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 572544, 572626, 572020

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.061416.170958	L16060485-05	FTB-034-GM-MW15A-06081	40/50	1		06/14/16 17:09
70	T3.061416.171358	L16060485-06	FTB-034-GM-MW11B-06081	40/50	1		06/14/16 17:13
71	T3.061416.171759	L16060540-09	AG4578	40/50	1		06/14/16 17:17
72	T3.061416.172158	L16060540-10	AG4579	40/50	1		06/14/16 17:21
73	T3.061416.172558	L16060540-11	AG4580	40/50	1		06/14/16 17:25
74	T3.061416.172958	L16060540-14	AG4584	40/50	1		06/14/16 17:29
75	T3.061416.173357	WG572687-26	CCV		1		06/14/16 17:33
76	T3.061416.173740	WG572687-27	CCB		1		06/14/16 17:37
77	T3.061416.174143	L16060492-01	SPW_06082016	40/50	100		06/14/16 17:41
78	T3.061416.174556	L16060492-02	SPW_06082016	40/50	100		06/14/16 17:45
79	T3.061416.175013	L16060540-15	AG4587	40/50	1		06/14/16 17:50
80	T3.061416.175412	L16060540-16	AG4589	40/50	1		06/14/16 17:54
81	T3.061416.175813	L16060645-01	5003-G15-WQ-W0222	40/50	1		06/14/16 17:58
82	T3.061416.180216	L16060645-02	5320-G02-WQ-W0182	40/50	1		06/14/16 18:02
83	T3.061416.180620	L16060411-03	AWD4T-060716		20		06/14/16 18:06
84	T3.061416.181023	WG572687-28	CCV		1		06/14/16 18:10
85	T3.061416.181405	WG572687-29	CCB		1		06/14/16 18:14
86	T3.061416.181809	L16060411-04	AWD4B-060716		20		06/14/16 18:18
87	T3.061416.182210	L16060485-03	FTB-034-GM-MW16B-06081	40/50	20		06/14/16 18:22
88	T3.061416.182614	L16060485-04	FTB-034-GM-MW08B-06081	40/50	20		06/14/16 18:26
89	T3.061416.183019	L16060485-05	FTB-034-GM-MW15A-06081	40/50	20		06/14/16 18:30
90	T3.061416.183422	L16060485-06	FTB-034-GM-MW11B-06081	40/50	20		06/14/16 18:34
91	T3.061416.183825	WG572687-30	CCV		1		06/14/16 18:38
92	T3.061416.184207	WG572687-31	CCB		1		06/14/16 18:42
93	T3.061416.184611	WG572687-32	Low Level Continuing Calibra		1		06/14/16 18:46
94	T3.061416.185013	WG571814-02	Method/Prep Blank	40/50	1		06/14/16 18:50
95	T3.061416.185417	WG571814-03	Laboratory Control S	40/50	1		06/14/16 18:54
96	T3.061416.185803	WG571814-01	Reference Sample		1	L16060308-01	06/14/16 18:58
97	T3.061416.190204	WG571814-04	Matrix Spike	40/50	1	L16060308-01	06/14/16 19:02
98	T3.061416.190549	WG571814-05	Matrix Spike Duplica	40/50	1	L16060308-01	06/14/16 19:05
99	T3.061416.190934	L16060303-01	LH18/24-SP650-6368-GRAB	40/50	1		06/14/16 19:09
100	T3.061416.191335	L16060303-02	LH18/24-SP650-6368-COMP	40/50	1		06/14/16 19:13
101	T3.061416.191734	L16060304-02	LH18/24-SP650-6369-GRAB	40/50	1		06/14/16 19:17
102	T3.061416.192134	WG572020-03	Post Digestion Spike		1	L16060304-02	06/14/16 19:21

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Kim H. Rhoden

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 061416T3.2R.TXT

Analyst1: Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 572544, 572626, 572020

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T3.061416.192521	WG572020-04	Serial Dilution		5	L16060304-02	06/14/16 19:25
104	T3.061416.192921	WG572687-33	CCV		1		06/14/16 19:29
105	T3.061416.193304	WG572687-34	CCB		1		06/14/16 19:33
106	T3.061416.193707	WG571974-02	Method/Prep Blank	40/50	1		06/14/16 19:37
107	T3.061416.194111	WG571974-03	Laboratory Control S	40/50	1		06/14/16 19:41
108	T3.061416.194456	L16060395-08	MW-4		1	WG571974-01	06/14/16 19:44
109	T3.061416.194858	WG571974-04	Matrix Spike	40/50	1	L16060395-08	06/14/16 19:48
110	T3.061416.195242	WG571974-05	Matrix Spike Duplica	40/50	1	L16060395-08	06/14/16 19:52
111	T3.061416.195628	L16060376-01	FTB-034-GM-MW12B-06071	40/50	10		06/14/16 19:56
112	T3.061416.200030	L16060376-02	FTB-034-GM-MW1C-060716	40/50	10		06/14/16 20:00
113	T3.061416.200432	L16060376-03	FTB-034-GM-MW07B-06071	40/50	10		06/14/16 20:04
114	T3.061416.200832	WG572145-03	Post Digestion Spike		10	L16060376-03	06/14/16 20:08
115	T3.061416.201218	WG572145-04	Serial Dilution		50	L16060376-03	06/14/16 20:12
116	T3.061416.201622	WG572687-35	CCV		1		06/14/16 20:16
117	T3.061416.202004	WG572687-36	CCB		1		06/14/16 20:20
118	T3.061416.202408	L16060376-04	FTB-034-GM-MW13B-06071	40/50	10		06/14/16 20:24
119	T3.061416.202810	WG572687-37	CCV		1		06/14/16 20:28
120	T3.061416.203152	WG572687-38	CCB		1		06/14/16 20:31
121	T3.061416.203555	WG572687-39	Low Level Continuing Calibra		1		06/14/16 20:35

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Kim H. Rhoden

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Microbac Laboratories Inc.

Data Checklist

Date: 14-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 572687
Runlog ID: 75684
Analytical Workgroups: 572544, 572626, 572020

Additional Workgroup	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	
Client Forms	X
Level X	
Level 3	
Level 4	482
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer:

Secondary Reviewer:
14-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-15-2016 10:40:52

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010C

AAB#: WG572626

Login Number: L16060411

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
AWD4T-060716	03	06/07/16					06/13/2016	5.9	180		06/14/16	7.1	180	
AWD4B-060716	04	06/07/16					06/13/2016	5.9	180		06/14/16	7.1	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4807969
Report generated 06/15/2016 08:56

METHOD BLANK SUMMARY

Login Number: L16060411
Blank File ID: T3.061416.160713
Prep Date: 06/13/16 12:41
Analyzed Date: 06/14/16 16:07
Analyst: JYH

Work Group: WG572626
Blank Sample ID: WG572463-02
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572463-03	T3.061416.161106	06/14/16 16:11	01
FLT_BLK	WG572463-04	T3.061416.161451	06/14/16 16:14	01
AWD4T-060716	L16060411-03	T3.061416.165411	06/14/16 16:54	01
AWD4B-060716	L16060411-04	T3.061416.165809	06/14/16 16:58	01

Report Name: BLANK_SUMMARY
PDF File ID: 4807970
Report generated 06/15/2016 09:00

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060411 Prep Date: 06/13/16 12:41 Sample ID: WG572463-02
Instrument ID: ICP-THERMO3 Run Date: 06/14/16 16:07 Prep Method: 3015
File ID: T3.061416.160713 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG572626 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-14-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Aluminum, Total	0.0500	0.200	0.0500	1	U
Beryllium, Total	0.00500	0.0200	0.00500	1	U
Calcium, Total	0.125	0.500	0.125	1	U
Iron, Total	0.0500	0.200	0.0500	1	U
Magnesium, Total	0.250	1.00	0.250	1	U
Potassium, Total	0.500	2.00	0.500	1	U
Selenium, Total	0.00500	0.0200	0.00890	1	J
Sodium, Total	0.250	1.00	0.250	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4807971
15-JUN-2016 09:00

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060411 Run Date: 06/14/2016 Sample ID: WG572463-03
Instrument ID: ICP-THERMO3 Run Time: 16:11 Prep Method: 3015
File ID: T3.061416.161106 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG572626 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76255 Cal ID: ICP-TH-14-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Aluminum, Total	6.25	6.53	104	80 - 120	
Beryllium, Total	0.0313	0.0318	102	80 - 120	
Calcium, Total	6.25	6.53	104	80 - 120	
Iron, Total	2.50	2.60	104	80 - 120	
Magnesium, Total	6.25	6.49	104	80 - 120	
Potassium, Total	31.3	32.0	102	80 - 120	
Selenium, Total	0.250	0.253	101	80 - 120	
Sodium, Total	31.3	32.5	104	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4807972
Report generated: 06/15/2016 09:00

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060411 Cal ID: ICP-THERMO3 - Worknum: WG572626
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG572463-01 File ID: T3.061416.161854 Dil: 1 Matrix: WATER
Sample ID: WG572463-05 MS File ID: T3.061416.162255 Dil: 1 Units: mg/L
Sample ID: WG572463-06 MSD File ID: T3.061416.162640 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Aluminum	0.385	6.25	6.90	104	6.25	6.83	103	1.05	80 - 120	20	
Beryllium	ND	0.0313	0.0324	104	0.0313	0.0322	103	0.813	80 - 120	20	
Calcium	14.3	6.25	20.1	91.4	6.25	19.9	89.6	0.556	80 - 120	20	
Iron	1.84	2.50	4.44	104	2.50	4.56	109	2.65	80 - 120	20	
Magnesium	3.73	6.25	9.96	99.6	6.25	9.93	99.2	0.288	80 - 120	20	
Potassium	ND	31.3	32.1	103	31.3	32.0	103	0.0819	80 - 120	20	
Selenium	0.00516	0.250	0.253	99.1	0.250	0.255	99.9	0.748	80 - 120	20	
Sodium	6.30	31.3	36.7	97.3	31.3	36.5	96.6	0.567	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4807973
Report generated 06/15/2016 09:00

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16060411 **Worknum:** WG572626
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG572626-02 **File ID:** T3.061416.163816 **Dil:** 5 **Units:** ug/L
Sample: L16060645-03 **File ID:** T3.061416.163026 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	11.5		ND	U		
Beryllium	0.110		0.400		264.00	E
Calcium	ND	U	57.1		1610.00	
Iron	13.0		ND	U		
Magnesium	4.20	X	173		4020.00	
Potassium	ND	U	ND	U		
Selenium	1.70		40.2		2260.00	E
Sodium	1.93	X	ND	U		

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4807967
06/15/2016 09:00

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060411 **Worknum:** WG572626
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG572626-01 **File ID:** T3.061416.163430 **Dil:** 1 **Units:** ug/L
Sample ID: L16060645-03 **File ID:** T3.061416.163026 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	5120		0	U	5000	102.4	75 - 125	
BERYLLIUM	25.2		0	U	25	100.6	75 - 125	
CALCIUM	5090		0	U	5000	101.8	75 - 125	
IRON	2060		0	U	2000	102.8	75 - 125	
MAGNESIUM	5080		0	U	5000	101.7	75 - 125	
POTASSIUM	25000		0	U	25000	100.1	75 - 125	
SELENIUM	201		0	U	200	100.6	75 - 125	
SODIUM	25500		0	U	25000	102.0	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4807968
Report generated: 06/15/2016 09:00

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16060411	Workgroup (AAB#):	WG572626
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG572687	Initial Calibration Date:	14-JUN-2016 12:52

	WG572687-01		WG572687-02		WG572687-03		WG572687-04		WG572687-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000680	.1	0.00147	.2	0.00211	10	0.0887	20	0.181	.99992	
BERYLLIUM	0	0.000320	.0005	0.000740	.001	0.00120	.05	0.0569	.1	0.114	.999978	
CALCIUM	0	-0.000380	.1	0.00268	.2	0.00754	10	0.461	20	0.895	.999844	
IRON	0	-0.000350	.04	0.000330	.08	0.00108	4	0.0868	8	0.169	.999976	
MAGNESIUM	0	-0.000290	NA	NA	.2	0.000600	10	0.0603	20	0.118	.999915	
POTASSIUM	0	0.00895	.5	0.0284	1	0.0488	50	3.19	100	6.17	.999883	
SELENIUM	0	-0.0000600	NA	NA	.008	0.0000700	.4	0.00607	.8	0.0124	.999714	
SODIUM	0	0.000500	.5	0.0620	1	0.131	50	8.64	100	16.8	.999875	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4807976
Report generated: 15-JUN-2016 08:56

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060411
Run Date: 06/14/2016
Sample ID: WG572687-07
Instrument ID: ICP-THERMO3
Run Time: 12:59
Method: 6010C
File ID: T3.061416.125947
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG572626
Cal ID: ICP-THERI - 14-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	.004	U
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4807978
Report generated 06/15/2016 08:56

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060411
Run Date: 06/14/2016
Sample ID: WG572687-13
Instrument ID: ICP-THERMO3
Run Time: 13:23
Method: 6010C
File ID: T3.061416.132323
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG572626
Cal ID: ICP-TH - 14-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00506	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4807981
Report generated 06/15/2016 08:56

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060411
Run Date: 06/14/2016
Sample ID: WG572687-23
Instrument ID: ICP-THERMO3
Run Time: 16:03
Method: 6010C
File ID: T3.061416.160309
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG572626
Cal ID: ICP-TH - 14-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4807981
Report generated 06/15/2016 08:56

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060411
Run Date: 06/14/2016
Sample ID: WG572687-25
Instrument ID: ICP-THERMO3
Run Time: 16:50
Method: 6010C
File ID: T3.061416.165007
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG572626
Cal ID: ICP-TH - 14-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00409	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4807981
Report generated 06/15/2016 08:56

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060411
Run Date: 06/14/2016
Sample ID: WG572687-27
Instrument ID: ICP-THERMO3
Run Time: 17:37
Method: 6010C
File ID: T3.061416.173740
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG572626
Cal ID: ICP-TH - 14-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4807981
Report generated 06/15/2016 08:56

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060411
Run Date: 06/14/2016
Sample ID: WG572687-06
Instrument ID: ICP-THERMO3
Run Time: 12:56
Method: 6010C
File ID: T3.061416.125605
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG572626
Cal ID: ICP-TH - 14-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	9.66	96.6	90 - 110	
Beryllium		.05	0.0488	97.5	90 - 110	
Calcium		10	9.73	97.3	90 - 110	
Iron		4	3.88	96.9	90 - 110	
Magnesium		10	9.72	97.2	90 - 110	
Potassium		50	49.0	98.0	90 - 110	
Selenium		.4	0.394	98.5	90 - 110	
Sodium		50	48.7	97.3	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4807977
Report generated 06/15/2016 08:56

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060411
Run Date: 06/14/2016
Sample ID: WG572687-12
Instrument ID: ICP-THERMO3
Run Time: 13:19
Method: 6010C
File ID: T3.061416.131940
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG572626
Cal ID: ICP-TH - 14-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.68	mg/L	96.8	90 - 110		
Beryllium		0.0500	0.0485	mg/L	96.9	90 - 110		
Calcium		10.0	9.59	mg/L	95.9	90 - 110		
Iron		4.00	3.86	mg/L	96.4	90 - 110		
Magnesium		10.0	9.62	mg/L	96.2	90 - 110		
Potassium		50.0	48.2	mg/L	96.4	90 - 110		
Selenium		0.400	0.381	mg/L	95.2	90 - 110		
Sodium		50.0	48.1	mg/L	96.1	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4807980
Report generated 06/15/2016 08:56

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060411
Run Date: 06/14/2016
Sample ID: WG572687-22
Instrument ID: ICP-THERMO3
Run Time: 15:59
Method: 6010C
File ID: T3.061416.155927
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG572626
Cal ID: ICP-TH - 14-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.71	mg/L	97.1	90 - 110		
Beryllium		0.0500	0.0485	mg/L	97.0	90 - 110		
Calcium		10.0	9.40	mg/L	94.0	90 - 110		
Iron		4.00	3.82	mg/L	95.6	90 - 110		
Magnesium		10.0	9.47	mg/L	94.7	90 - 110		
Potassium		50.0	47.4	mg/L	94.7	90 - 110		
Selenium		0.400	0.380	mg/L	95.0	90 - 110		
Sodium		50.0	47.6	mg/L	95.3	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4807980
Report generated 06/15/2016 08:56

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060411
Run Date: 06/14/2016
Sample ID: WG572687-24
Instrument ID: ICP-THERMO3
Run Time: 16:46
Method: 6010C
File ID: T3.061416.164625
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG572626
Cal ID: ICP-TH - 14-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.77	mg/L	97.7	90 - 110		
Beryllium		0.0500	0.0487	mg/L	97.5	90 - 110		
Calcium		10.0	9.53	mg/L	95.3	90 - 110		
Iron		4.00	3.89	mg/L	97.2	90 - 110		
Magnesium		10.0	9.52	mg/L	95.2	90 - 110		
Potassium		50.0	48.1	mg/L	96.2	90 - 110		
Selenium		0.400	0.389	mg/L	97.3	90 - 110		
Sodium		50.0	48.5	mg/L	96.9	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4807980
Report generated 06/15/2016 08:56

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060411
Run Date: 06/14/2016
Sample ID: WG572687-26
Instrument ID: ICP-THERMO3
Run Time: 17:33
Method: 6010C
File ID: T3.061416.173357
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG572626
Cal ID: ICP-TH - 14-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.63	mg/L	96.3	90 - 110		
Beryllium		0.0500	0.0482	mg/L	96.4	90 - 110		
Calcium		10.0	9.31	mg/L	93.1	90 - 110		
Iron		4.00	3.84	mg/L	95.9	90 - 110		
Magnesium		10.0	9.40	mg/L	94.0	90 - 110		
Potassium		50.0	47.5	mg/L	94.9	90 - 110		
Selenium		0.400	0.374	mg/L	93.4	90 - 110		
Sodium		50.0	47.8	mg/L	95.6	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4807980
Report generated 06/15/2016 08:56

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060411
Run Date: 06/14/2016
Sample ID: WG572687-08
Instrument ID: ICP-THERMO3
Run Time: 13:03
Method: 6010C
File ID: T3.061416.130350
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG572626
Cal ID: ICP-TH - 14-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.161	mg/L	101	70 - 130		
Beryllium		0.00160	0.00154	mg/L	96.3	70 - 130		
Calcium		0.400	0.398	mg/L	99.5	70 - 130		
Iron		0.0800	0.0751	mg/L	93.8	70 - 130		
Magnesium		0.400	0.282	mg/L	70.5	70 - 130		
Potassium		0.800	0.644	mg/L	80.6	70 - 130		
Selenium		0.0160	0.0176	mg/L	110	70 - 130		
Sodium		0.400	0.385	mg/L	96.2	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4807982
Report generated 06/15/2016 09:00

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060411
Run Date: 06/14/2016
Sample ID: WG572687-18
Instrument ID: ICP-THERMO3
Run Time: 14:48
Method: 6010C
File ID: T3.061416.144804
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG572626
Cal ID: ICP-TH - 14-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.161	mg/L	101	70 - 130		
Beryllium		0.00160	0.00157	mg/L	98.1	70 - 130		
Calcium		0.400	0.383	mg/L	95.8	70 - 130		
Iron		0.0800	0.0806	mg/L	101	70 - 130		
Magnesium		0.400	0.332	mg/L	82.9	70 - 130		
Potassium		0.800	0.679	mg/L	84.8	70 - 130		
Selenium		0.0160	0.0153	mg/L	95.4	70 - 130		
Sodium		0.400	0.382	mg/L	95.5	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4807982
Report generated 06/15/2016 09:00

Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060411
Run Date: 06/14/2016
Sample ID: WG572687-32
Instrument ID: ICP-THERMO3
Run Time: 18:46
Method: 6010C
File ID: T3.061416.184611
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG572626
Cal ID: ICP-TH - 14-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.163	mg/L	102	70 - 130		
Beryllium		0.00160	0.00155	mg/L	96.9	70 - 130		
Calcium		0.400	0.377	mg/L	94.4	70 - 130		
Iron		0.0800	0.0844	mg/L	106	70 - 130		
Magnesium		0.400	0.357	mg/L	89.2	70 - 130		
Potassium		0.800	0.613	mg/L	76.6	70 - 130		
Selenium		0.0160	0.0169	mg/L	105	70 - 130		
Sodium		0.400	0.367	mg/L	91.8	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4807982
Report generated 06/15/2016 09:00

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060411
Instrument ID: ICP-THERMO3
Sol. A : WG572687-10 **File ID:** T3.061416.131152
Sol. AB : WG572687-11 **File ID:** T3.061416.131551

Workgroup (AAB#): WG572626
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	263	105	250	265	106	
Beryllium	NS	-0.000100	NS	0.250	0.248	99.2	
Calcium	250	235	94.0	250	238	95.2	
Iron	100	94.4	94.4	100	93.4	93.4	
Magnesium	250	242	96.8	250	238	95.2	
Potassium	NS	-0.0698	NS	5.00	5.06	101	
Selenium	NS	0.00541	NS	0.250	0.256	102	
Sodium	NS	0.0153	NS	5.00	5.12	102	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4807979
Report generated 06/15/2016 08:56

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060411 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	AG	AL	AS	B	BA
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000410	0	0	0
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0.0115	0	-0.0000800
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0.000260	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	-0.000289	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	-0.0000490	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.0000120	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0.0000300	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4807975
Report generated: 06/15/2016 08:56

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060411 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	BE	CA	CD	CO	CR
ALUMINUM	308.20	0	0	0	-0.000820	0
ANTIMONY	206.80	0	0	0	0	0.0200
ARSENIC	189.00	0	0	0	0	-0.00190
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0.00343	0
CADMIUM	228.80	0	0	0	-0.00390	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	-0.000200
COPPER	224.70	0	0	0	0.0000770	-0.00100
IRON	261.10	0	0	0	0	-0.00100
LEAD	220.30	0	0	0	-0.0000130	-0.000132
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.0000500
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	-0.000860	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0.00000500	0	0	0
THALLIUM	190.80	0	0	0	0.00240	0.000276
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	-0.00480
ZINC	206.20	0	0	0	0	-0.00180
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4807975
Report generated: 06/15/2016 08:56

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060411 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	CU	FE	K	LI	MG
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000560	0	0	0
ARSENIC	189.00	0	-0.0000500	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0.000300	0	0	0
CADMIUM	228.80	0	-0.0000190	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000500	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0.00160	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0.000609	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.00000300
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0.0000420	0	0	0
PHOSPHORUS	214.90	-0.323	0.000900	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000270	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000400	0	0	0
VANADIUM	292.40	0	0.00000700	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	-0.0000300	0	0	0

CORR_FACTORS - Modified 03/05/2008
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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060411 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	MN	MO	NA	NI	P
ALUMINUM	308.20	0	0.0163	0	0	0
ANTIMONY	206.80	0	-0.00310	0	-0.00350	0
ARSENIC	189.00	0	0.00120	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	-0.00190	0	0	0
CADMIUM	228.80	0	0.0000320	0	-0.000770	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0.000360	0	0	0	0
COBALT	228.60	0	-0.00200	0	0.000100	0
COPPER	224.70	0	0.00160	0	-0.0123	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	-0.00210	0	0.000110	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	-0.00290	-0.0230	0	0	0
MANGANESE	257.60	0	0.0000300	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0.00710	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0.000600	0.000580	0	0	0
SILICON	212.40	0	0.0187	0	0	0
SILVER	328.00	0	-0.0000430	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0.00100	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000153	0	0	0
VANADIUM	292.40	-0.000200	-0.00830	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060411 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	PB	SB	SE	SI	SN
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0	0	0	-0.0220
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0.00440	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060411 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	SR	TI	TL	V	ZN
ALUMINUM	308.20	0	0	0	0.0950	0
ANTIMONY	206.80	0	0.00110	0	-0.00360	0
ARSENIC	189.00	0	0	0	0.000107	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	-0.00000700	0	0.000990	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0.000102	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000550	0	0	0
COBALT	228.60	0	0.00210	0	0.0000200	0
COPPER	224.70	0	0.000269	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	-0.000126	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	-0.00290	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	-0.000110	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	-0.00100	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000720	0	-0.000260	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.000800	0	-0.00490	0
TIN	189.90	0	-0.00190	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0.000820	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4807975
Report generated: 06/15/2016 08:56

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060411 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	ZR
ALUMINUM	308.20	0
ANTIMONY	206.80	0
ARSENIC	189.00	0
BARIUM	455.40	0
BERYLLIUM	313.10	0
BORON	249.60	0
CADMIUM	228.80	0
CALCIUM	422.60	0
CHROMIUM	267.70	0
COBALT	228.60	0
COPPER	224.70	0
IRON	261.10	0
LEAD	220.30	0
LITHIUM	670.70	0
MAGNESIUM	279.00	0
MANGANESE	257.60	0
MOLYBDENUM	202.00	0
NICKEL	231.60	0
PHOSPHORUS	214.90	0
POTASSIUM	766.40	0
SELENIUM	196.00	0
SILICON	212.40	0
SILVER	328.00	0
SODIUM	589.50	0
STRONTIUM	407.70	0
THALLIUM	190.80	0
TIN	189.90	0
TITANIUM	337.20	0
VANADIUM	292.40	0
ZINC	206.20	0
ZIRCONIUM	339.10	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4807975
Report generated: 06/15/2016 08:56

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16060411 **Date:** 04/29/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	900.0
Antimony	20.00	45.0
Arsenic	10.00	45.0
Barium	10.00	45.0
Beryllium	10.00	1.8
Boron	20.00	45.0
Cadmium	20.00	4.5
Calcium	5.00	270.0
Chromium	20.00	36.0
Cobalt	20.00	45.0
Copper	20.00	180.0
Iron	5.00	720.0
Lead	20.00	225.0
Lithium	5.00	36.0
Magnesium	5.00	900.0
Manganese	10.00	36.0
Molybdenum	20.00	27.0
Nickel	20.00	90.0
Phosphorus	20.00	180.0
Potassium	5.00	450.0
Selenium	20.00	90.0
Silicon	20.00	36.0
Silver	10.00	9.0
Sodium	5.00	270.0
Strontium	5.00	9.0
Thallium	20.00	18.0
Tin	20.00	45.0
Titanium	5.00	36.0
Vanadium	20.00	27.0
Zinc	20.00	45.0
Zirconium	10.00	45.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4807974
Report generated: 06/15/2016 08:56

2.3.1.3 Raw Data

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000058	0.054734	0.000000	1.000000
Al 308.215 {109}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.000676	0.008865	0.000000	1.000000
As 189.042 {478}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.000051	0.022803	0.000000	1.000000
B 249.678 {135}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000098	0.021859	0.000000	1.000000
Ba 455.403 { 74}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.003817	2.128212	0.000000	1.000000
Be 313.107 {108}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.000323	1.115211	0.000000	1.000000
Ca 422.673 { 80}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000378	0.045215	0.000000	1.000000
Cd 228.802 {447}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000159	0.571631	0.000000	1.000000
Co 228.616 {447}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000049	0.361318	0.000000	1.000000
Cr 267.716 {126}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.000083	0.065120	0.000000	1.000000
Cu 224.700 {450}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000084	0.124789	0.000000	1.000000
Fe 261.187 {129}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000350	0.021350	0.000000	1.000000
K 766.490 { 44}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.008937	0.062121	0.000000	1.000000
Li 670.784 { 50}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000147	1.592157	0.000000	1.000000
Mg 279.079 {121}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000292	0.005969	0.000000	1.000000
Mn 257.610 {131}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.000124	0.270877	0.000000	1.000000
Mo 202.030 {467}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.000062	0.185810	0.000000	1.000000
Na 589.592 { 57}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.000491	0.169204	0.000000	1.000000
Ni 231.604 {446}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000561	0.135561	0.000000	1.000000
P 214.914 {457}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000073	0.012159	0.000000	1.000000
Pb 220.353 {453}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000166	0.060818	0.000000	1.000000
Sb 206.833 {463}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.000246	0.029184	0.000000	1.000000
Se 196.090 {472}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000062	0.015516	0.000000	1.000000
Si 212.412 {459}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.001290	0.038259	0.000000	1.000000
Sn 189.989 {477}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000057	0.067376	0.000000	1.000000
Sr 407.771 { 83}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.000549	3.551418	0.000000	1.000000
Ti 337.280 {100}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.002165	0.117486	0.000000	1.000000
Tl 190.856 {477}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000146	0.028829	0.000000	1.000000
V 292.402 {115}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000079	0.081335	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.000320	0.361669	0.000000	1.000000
Zr 339.198 { 99}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.002492	2.733046	0.000000	1.000000

Approved: June 15, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999652	0.000004	0.002198	0.007327	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999920	0.000007	0.009539	0.031798	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999693	0.000002	0.003424	0.011414	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999881	0.000002	0.003259	0.010862	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999873	0.000215	0.001054	0.003514	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999978	0.000002	0.000096	0.000321	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999844	0.000051	0.040539	0.135129	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999707	0.000005	0.000276	0.000920	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999981	0.000003	0.000418	0.001394	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999949	0.000002	0.001251	0.004171	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999976	0.000003	0.001417	0.004724	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999883	0.000008	0.022505	0.075016	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999721	0.000465	0.100125	0.333750	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999900	0.000222	0.003661	0.012204	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999915	0.000008	0.087992	0.293308	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999573	0.000025	0.002464	0.008212	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999961	0.000010	0.000428	0.001425	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999875	0.000849	0.031334	0.104447	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999899	0.000006	0.001189	0.003962	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999898	0.000011	0.008173	0.027242	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999271	0.000007	0.003806	0.012688	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999909	0.000003	0.004621	0.015404	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999714	0.000001	0.007217	0.024056	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999985	0.000007	0.002442	0.008140	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999947	0.000004	0.000958	0.003195	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999869	0.000364	0.000427	0.001423	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999565	0.000022	0.006792	0.022640	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999488	0.000004	0.003185	0.010616	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999984	0.000003	0.000968	0.003227	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999970	0.000018	0.000237	0.000790	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.999838	0.000312	0.000590	0.001966	OK.	1.000000	0.000000	1	0

Approved: June 15, 2016

Sample Name: S0 Acquired: 6/14/2016 12:36:28 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00006**	**.00068**	**.00005**	**-.00010**	**.00382**	**.00032**	**-.00038**
Stddev	.00007	.00005	.00006	.00003	.00149	.00008	.00199
%RSD	127.78	6.9540	108.69	28.204	39.007	23.984	527.67
#1	.00002	.00062	.00012	-.00013	.00360	.00023	-.00135
#2	-.00007	.00071	.00002	-.00007	.00244	.00037	.00192
#3	-.00013	.00069	.00001	-.00010	.00540	.00036	-.00170

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00016**	**-.00005**	**.00008**	**-.00008**	**-.00035**	**.00895**	**-.00014**
Stddev	.00018	.00017	.00004	.00010	.00030	.00651	.00294
%RSD	112.42	354.51	53.601	115.31	85.792	72.797	2024.9
#1	-.00036	.00010	.00005	-.00005	-.00062	.00659	-.00183
#2	-.00006	-.00001	.00013	-.00001	-.00003	.00394	-.00185
#3	-.00006	-.00024	.00007	-.00019	-.00040	.01631	.00324

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00029**	**.00012**	**.00006**	**.00050**	**-.00056**	**-.00007**	**-.00017**
Stddev	.00027	.00039	.00003	.00316	.00021	.00004	.00010
%RSD	92.089	311.89	55.494	634.63	37.660	61.525	58.515
#1	-.00011	-.00024	.00008	.00363	-.00076	-.00004	-.00015
#2	-.00060	.00007	.00002	-.00270	-.00058	-.00006	-.00008
#3	-.00017	.00054	.00008	.00056	-.00034	-.00012	-.00027

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00025**	**-.00006**	**.00129**	**-.00006**	**.00055**	**-.00217**	**-.00015**
Stddev	.00005	.00010	.00006	.00001	.00029	.00059	.00010
%RSD	18.752	156.41	4.9051	14.171	52.353	27.408	68.703
#1	.00029	.00005	.00136	-.00006	.00026	-.00176	-.00003
#2	.00020	-.00012	.00125	-.00006	.00083	-.00189	-.00019
#3	.00026	-.00012	.00125	-.00005	.00055	-.00285	-.00022

Approved: June 15, 2016

Sample Name: S0 Acquired: 6/14/2016 12:36:28 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	-.00008	.00032	-.00249
Stddev	.00006	.00004	.00068
%RSD	75.710	11.449	27.236
#1	-.00001	.00031	-.00218
#2	-.00013	.00036	-.00202
#3	-.00010	.00029	-.00326
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8286.5	48489.	3106.1
Stddev	36.0	91.	15.4
%RSD	.43455	.18721	.49564
#1	8272.1	48593.	3092.5
#2	8327.5	48450.	3122.8
#3	8259.9	48424.	3103.0

Approved: June 15, 2016

Sample Name: S1 Acquired: 6/14/2016 12:40:32 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00018**	**.00147**	**.02156**	**.00074**	**.00268**	**.00005**	**.00049**
Stddev	.00004	.00003	.00115	.00006	.00139	.00006	.00025
%RSD	20.982	2.1261	5.3558	8.4884	51.728	121.46	51.031
#1	.00021	.00150	.02122	.00071	.00282	-.00002	.00038
#2	.00014	.00144	.02284	.00070	.00123	.00009	.00032
#3	.00018	.00147	.02061	.00081	.00400	.00008	.00078

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00033**	**.00046**	**.00033**	**.02836**	**.00069**	**.00138**	**.06202**
Stddev	.00003	.00004	.00035	.00810	.00037	.00002	.00264
%RSD	8.6292	9.0648	107.92	28.561	54.643	1.5320	4.2600
#1	.00030	.00041	.00044	.03146	.00104	.00136	.05897
#2	.00036	.00048	.00062	.03445	.00072	.00140	.06342
#3	.00034	.00048	-.00007	.01917	.00029	.00139	.06367

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00004**	**.00089**	**-.00004**	**.00054**	**.00276**	**.00054**	**.02900**
Stddev	.00004	.00010	.00016	.00002	.00003	.00001	.00154
%RSD	97.321	11.053	374.77	3.1119	1.0891	2.3218	5.3103
#1	.00008	.00094	.00001	.00052	.00272	.00053	.02965
#2	-.00000	.00078	.00008	.00054	.00278	.00055	.02724
#3	.00005	.00096	-.00022	.00055	.00277	.00054	.03011

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00081**	**.00057**	**.00313**	**.01677**
Stddev	.00019	.00005	.00008	.00099
%RSD	23.545	9.5839	2.5270	5.9201
#1	-.00102	.00061	.00312	.01792
#2	-.00066	.00060	.00321	.01628
#3	-.00073	.00051	.00305	.01612

Approved: June 15, 2016

Sample Name: S1 Acquired: 6/14/2016 12:40:32 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8265.3**	**47968.**	**3073.4**
Stddev	16.3	320.	22.8
%RSD	.19662	.66685	.74067
#1	8282.0	47602.	3070.6
#2	8249.5	48110.	3097.4
#3	8264.2	48192.	3052.1

Approved: June 15, 2016

Sample Name: S2 Acquired: 6/14/2016 12:44:35 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00038**	**.00211**	**.00016**	**.00005**	**.03946**	**.00120**	**.00754**
Stddev	.00002	.00002	.00007	.00008	.00240	.00005	.00038
%RSD	6.4916	.78489	44.539	143.44	6.0801	4.1595	5.0864
#1	.00040	.00213	.00009	.00011	.03998	.00120	.00774
#2	.00037	.00209	.00023	-.00003	.03684	.00115	.00710
#3	.00035	.00211	.00015	.00008	.04156	.00124	.00779

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00019**	**.00106**	**.00056**	**.00091**	**.00108**	**.04882**	**.02325**
Stddev	.00016	.00021	.00003	.00002	.00053	.00323	.00105
%RSD	83.759	20.238	6.2018	2.1298	49.185	6.6257	4.5078
#1	.00023	.00102	.00054	.00091	.00080	.04535	.02209
#2	.00032	.00129	.00053	.00093	.00075	.05175	.02414
#3	.00001	.00087	.00060	.00089	.00169	.04936	.02352

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00060**	**.00203**	**.00289**	**.13050**	**.00070**	**.00177**	**.00014**
Stddev	.00011	.00036	.00006	.00243	.00011	.00004	.00024
%RSD	17.637	17.923	1.9674	1.8619	15.197	2.3554	174.50
#1	.00055	.00176	.00293	.13247	.00064	.00180	.00015
#2	.00052	.00244	.00291	.13125	.00082	.00179	.00037
#3	.00072	.00189	.00282	.12778	.00063	.00172	-.00011

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00082**	**.00007**	**.00427**	**.00105**	**.05852**	**-.00002**	**.00016**
Stddev	.00007	.00004	.00016	.00004	.00110	.00029	.00000
%RSD	8.5855	61.985	3.8021	3.8322	1.8794	1625.3	1.8552
#1	.00090	.00012	.00440	.00108	.05978	-.00024	.00016
#2	.00078	.00005	.00432	.00105	.05774	.00031	.00016
#3	.00078	.00004	.00409	.00100	.05804	-.00012	.00016

Approved: June 15, 2016

Sample Name: S2 Acquired: 6/14/2016 12:44:35 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00120	.00606	.03826
Stddev	.00006	.00019	.00061
%RSD	5.1133	3.1020	1.6008
#1	.00120	.00623	.03831
#2	.00114	.00608	.03762
#3	.00126	.00586	.03884

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8152.7	47552.	3052.8
Stddev	29.5	83.	45.6
%RSD	.36198	.17399	1.4946
#1	8120.4	47457.	3000.7
#2	8159.5	47611.	3071.7
#3	8178.2	47587.	3085.9

Approved: June 15, 2016

Sample Name: S3 Acquired: 6/14/2016 12:48:40 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.02147	.08865	.00894	.01055	2.1778	.05685	.46084	.03067
Stddev	.00019	.00063	.00015	.00006	.1313	.00018	.02607	.00025
%RSD	.87764	.70925	1.7234	.54571	6.0300	.31600	5.6581	.82726
#1	.02141	.08907	.00885	.01049	2.0765	.05670	.44238	.03078
#2	.02168	.08895	.00885	.01060	2.1307	.05705	.44949	.03038
#3	.02132	.08793	.00912	.01055	2.3261	.05680	.49067	.03085

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.07167	.03236	.06180	.08683	3.1858	1.6217	.06028	.13829
Stddev	.00031	.00005	.00012	.00479	.1845	.1048	.00364	.00846
%RSD	.43603	.15877	.20220	5.5215	5.7921	6.4614	6.0324	6.1165
#1	.07151	.03236	.06172	.08385	3.0466	1.5456	.05768	.13209
#2	.07148	.03241	.06173	.08428	3.1156	1.5784	.05872	.13486
#3	.07203	.03230	.06194	.09236	3.3951	1.7412	.06444	.14793

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.18449	8.6426	.06665	.11728	.03029	.03400	.00607	.19214
Stddev	.00031	.5042	.00021	.00051	.00013	.00013	.00011	.00052
%RSD	.16673	5.8344	.31349	.43130	.43664	.38359	1.8578	.27196
#1	.18463	8.2643	.06652	.11714	.03019	.03396	.00620	.19211
#2	.18414	8.4485	.06654	.11685	.03024	.03390	.00601	.19163
#3	.18471	9.2151	.06689	.11784	.03044	.03415	.00600	.19268

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.06636	3.6329	.11746	.01302	.08043	.35793	2.7949
Stddev	.00026	.2154	.00729	.00006	.00052	.00088	.1051
%RSD	.38747	5.9283	6.2067	.44274	.64284	.24518	3.7586
#1	.06627	3.4707	.11175	.01299	.08042	.35722	2.7056
#2	.06616	3.5508	.11496	.01298	.08095	.35767	2.7683
#3	.06665	3.8773	.12567	.01309	.07992	.35891	2.9106

Approved: June 15, 2016

Sample Name: S3 Acquired: 6/14/2016 12:48:40 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8036.1**	**46688.**	**2947.0**
Stddev	28.9	254.	111.6
%RSD	.35913	.54439	3.7880
#1	8067.6	46396.	3032.5
#2	8030.0	46805.	2987.9
#3	8010.8	46862.	2820.7

Approved: June 15, 2016

Sample Name: S4 Acquired: 6/14/2016 12:52:23 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.04359	.18090	.01840	.02175	4.2122	.11444	.89472	.06280
Stddev	.00016	.00050	.00008	.00005	.0277	.00022	.00335	.00004
%RSD	.37046	.27391	.43894	.21845	.65634	.18788	.37436	.05607
#1	.04362	.18133	.01833	.02178	4.1822	.11456	.89133	.06284
#2	.04373	.18101	.01849	.02170	4.2176	.11456	.89803	.06280
#3	.04341	.18036	.01839	.02178	4.2367	.11419	.89480	.06277

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.14474	.06563	.12514	.16858	6.1655	3.1565	.11778	.26918
Stddev	.00031	.00005	.00063	.00137	.0319	.0155	.00109	.00355
%RSD	.21748	.08337	.50365	.81267	.51675	.48947	.92432	1.3204
#1	.14447	.06565	.12458	.16709	6.1292	3.1387	.11664	.26508
#2	.14509	.06568	.12582	.16887	6.1785	3.1666	.11881	.27137
#3	.14467	.06557	.12502	.16979	6.1887	3.1642	.11789	.27110

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.37331	16.750	.13533	.24176	.06145	.06963	.01242	.38663
Stddev	.00108	.061	.00053	.00064	.00039	.00033	.00010	.00080
%RSD	.29054	.36204	.39317	.26501	.63244	.47878	.81305	.20587
#1	.37363	16.682	.13501	.24117	.06100	.06945	.01248	.38614
#2	.37421	16.774	.13595	.24244	.06166	.07002	.01230	.38755
#3	.37211	16.796	.13504	.24168	.06169	.06943	.01248	.38621

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13518	7.0217	.22950	.02621	.16285	.72726	5.4039
Stddev	.00039	.0367	.00162	.00011	.00027	.00157	.0423
%RSD	.28600	.52243	.70585	.40655	.16349	.21522	.78237
#1	.13481	6.9820	.22778	.02612	.16314	.72583	5.3960
#2	.13558	7.0287	.22975	.02632	.16278	.72893	5.4495
#3	.13516	7.0544	.23099	.02618	.16262	.72701	5.3661

Approved: June 15, 2016

Sample Name: S4 Acquired: 6/14/2016 12:52:23 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7822.2**	**45311.**	**2998.8**
Stddev	28.2	227.	12.6
%RSD	.36089	.50117	.42036
#1	7833.8	45107.	2994.8
#2	7790.0	45556.	2988.6
#3	7842.8	45271.	3012.9

Approved: June 15, 2016

Sample Name: ICV Acquired: 6/14/2016 12:56:05 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.38543	9.6557	.39426	.49034	.97556	.04877	9.7251	.04918
Stddev	.01774	.4641	.00050	.02173	.01359	.00226	.1000	.00025
%RSD	4.6025	4.8067	.12759	4.4321	1.3927	4.6241	1.0285	.51776
#1	.40071	10.089	.39484	.51051	.96249	.05089	9.6197	.04929
#2	.36598	9.1661	.39401	.46733	.97460	.04640	9.7368	.04889
#3	.38961	9.7117	.39393	.49318	.98961	.04902	9.8187	.04936
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19716	.48666	.49480	3.8772	48.994	.97078	9.7206	.48890
Stddev	.00029	.02364	.00027	.0845	.688	.01104	.2437	.00666
%RSD	.14939	4.8571	.05481	2.1802	1.4035	1.1376	2.5074	1.3632
#1	.19698	.50898	.49492	3.7928	48.342	.95932	9.4806	.48144
#2	.19750	.46189	.49449	3.8770	48.928	.97166	9.7134	.49100
#3	.19700	.48910	.49499	3.9619	49.713	.98136	9.9679	.49427
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99560	48.662	.49303	9.7939	.49546	1.1765	.39409	4.9575
Stddev	.00075	.610	.00114	.0104	.00196	.0027	.00187	.0084
%RSD	.07581	1.2528	.23061	.10658	.39603	.23247	.47510	.17014
#1	.99520	48.095	.49208	9.7985	.49333	1.1743	.39434	4.9576
#2	.99513	48.583	.49271	9.7819	.49720	1.1758	.39582	4.9490
#3	.99647	49.307	.49429	9.8012	.49585	1.1796	.39210	4.9659
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 15, 2016

Sample Name: ICV Acquired: 6/14/2016 12:56:05 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98209	.97713	.96807	.49283	.97367	.98465	.98282
Stddev	.00262	.01108	.01267	.00210	.04662	.00197	.01299
%RSD	.26629	1.1338	1.3085	.42575	4.7878	.19972	1.3213
#1	.98103	.96733	.95745	.49525	1.0166	.98669	.97922
#2	.98017	.97490	.96467	.49178	.92408	.98276	.97201
#3	.98507	.98915	.98209	.49147	.98034	.98450	.99722
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8082.9	47341.	3031.3
Stddev	21.3	1786.	40.9
%RSD	.26345	3.7721	1.3486
#1	8073.9	45699.	3074.5
#2	8107.2	49242.	3026.3
#3	8067.6	47081.	2993.2

Approved: June 15, 2016

Sample Name: ICB Acquired: 6/14/2016 12:59:47 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00098	.00942	-.00171	.00363	.00011	.00002	.03576	.00005
Stddev	.00078	.00820	.00266	.00212	.00122	.00005	.03492	.00017
%RSD	80.233	87.066	155.97	58.314	1137.9	265.56	97.651	327.57
#1	.00156	.00319	-.00295	.00400	.00074	.00002	-.00424	.00013
#2	.00009	.00635	-.00353	.00554	.00088	.00006	.05135	-.00014
#3	.00129	.01871	.00135	.00135	-.00130	-.00003	.06017	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	.00047	-.00019	.01795	-.08212	.00115	.01184	-.00022
Stddev	.00033	.00091	.00038	.01447	.05829	.00182	.05225	.00316
%RSD	176.47	192.38	202.82	80.618	70.987	158.00	441.14	1423.9
#1	-.00031	.00001	-.00042	.00497	-.04252	.00296	.00562	-.00222
#2	-.00044	-.00011	-.00039	.03356	-.14906	-.00068	.06693	.00343
#3	.00019	.00152	.00025	.01533	-.05477	.00117	-.03701	-.00187
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00248	-.00804	.00009	.00401	-.00201	.00298	.00393	.00114
Stddev	.00043	.02558	.00090	.00372	.00255	.00250	.00519	.00226
%RSD	17.436	318.18	1005.9	92.759	127.12	83.827	132.08	198.39
#1	.00257	.00629	-.00095	.00764	-.00338	.00037	-.00156	.00346
#2	.00201	-.03757	.00062	.00021	.00094	.00534	.00874	.00102
#3	.00286	.00716	.00060	.00416	-.00357	.00323	.00460	-.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: ICB Acquired: 6/14/2016 12:59:47 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00109	.00025	.00491	.00055	-.00068	.00019	.00086
Stddev	.00066	.00022	.00321	.00307	.00056	.00014	.00021
%RSD	60.629	87.512	65.448	554.99	83.490	73.830	23.999
#1	.00179	.00046	.00635	.00132	-.00004	.00032	.00066
#2	.00047	.00027	.00123	.00317	-.00086	.00023	.00107
#3	.00102	.00002	.00715	-.00283	-.00112	.00004	.00085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8272.2	48161.	3104.2
Stddev	22.8	82.	33.4
%RSD	.27532	.16928	1.0772
#1	8279.7	48125.	3070.9
#2	8290.4	48255.	3104.0
#3	8246.7	48104.	3137.8

Approved: June 15, 2016

Sample Name: LLICV Acquired: 6/14/2016 13:03:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00880**	**.16139**	**.00761**	**.07641**	**.00824**	**.00154**	**.39811**	**.00067**
Stddev	.00106	.00724	.00219	.00166	.00029	.00004	.01409	.00009
%RSD	12.035	4.4839	28.794	2.1759	3.5038	2.5652	3.5387	12.844
#1	.00983	.15309	.00858	.07600	.00810	.00156	.40270	.00058
#2	.00772	.16472	.00510	.07500	.00858	.00149	.40932	.00076
#3	.00884	.16636	.00916	.07824	.00805	.00156	.38229	.00068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00405**	**.00423**	**.00388**	**.07505**	**.64449**	**.07565**	**.28195**	**.00660**
Stddev	.00028	.00036	.00040	.00975	.06457	.00211	.06127	.00066
%RSD	6.8288	8.4594	10.205	12.990	10.019	2.7873	21.732	9.9473
#1	.00392	.00459	.00421	.08174	.66926	.07329	.25661	.00708
#2	.00437	.00421	.00399	.07954	.69301	.07734	.23742	.00585
#3	.00387	.00388	.00344	.06386	.57120	.07633	.35183	.00687
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00788**	**.38497**	**.01646**	**.74511**	**.00759**	**.07609**	**.01758**	**.76337**
Stddev	.00018	.01539	.00091	.00508	.00213	.00245	.00573	.00199
%RSD	2.3375	3.9984	5.5065	.68178	28.124	3.2251	32.583	.26020
#1	.00800	.39677	.01652	.74025	.00575	.07875	.01529	.76557
#2	.00766	.39058	.01734	.75039	.00993	.07562	.01335	.76283
#3	.00796	.36756	.01553	.74468	.00709	.07391	.02410	.76171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: LLICV Acquired: 6/14/2016 13:03:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.38632	.03829	.03165	.14530	.00724	.01558	.04231
Stddev	.00287	.00112	.00591	.00348	.00092	.00016	.00124
%RSD	.74389	2.9297	18.689	2.3966	12.749	1.0443	2.9326
#1	.38917	.03700	.03437	.14402	.00619	.01565	.04090
#2	.38636	.03885	.03572	.14925	.00759	.01539	.04279
#3	.38343	.03902	.02486	.14264	.00793	.01569	.04324
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8334.6	48400.	3138.3
Stddev	10.8	361.	29.0
%RSD	.13011	.74658	.92345
#1	8325.4	48694.	3151.1
#2	8331.9	48510.	3158.8
#3	8346.5	47997.	3105.2

Approved: June 15, 2016

Sample Name: LLICV Acquired: 6/14/2016 13:07:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01991	.39026	.01795	.18610	.01975	.00371	.94504	.00202
Stddev	.00019	.01061	.00271	.00129	.00108	.00005	.00570	.00011
%RSD	.96690	2.7190	15.095	.69199	5.4909	1.2610	.60301	5.4056
#1	.01970	.38072	.01988	.18732	.02040	.00366	.94317	.00215
#2	.01999	.40169	.01911	.18476	.02034	.00371	.94051	.00199
#3	.02006	.38838	.01485	.18623	.01849	.00376	.95143	.00194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00962	.00984	.00984	.18756	1.7940	.18739	.94403	.01808
Stddev	.00041	.00070	.00088	.01679	.1044	.00308	.07072	.00340
%RSD	4.2785	7.0637	8.9550	8.9517	5.8207	1.6431	7.4909	18.795
#1	.01008	.00937	.00884	.20458	1.7125	.18652	.86440	.02042
#2	.00928	.01064	.01016	.18710	1.9117	.19081	.96819	.01963
#3	.00952	.00952	.01051	.17101	1.7578	.18484	.99949	.01418
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01794	.93632	.03985	1.8373	.01717	.18868	.03666	1.9003
Stddev	.00031	.01666	.00136	.0085	.00129	.00169	.00731	.0062
%RSD	1.7382	1.7798	3.4162	.46128	7.5186	.89723	19.946	.32625
#1	.01765	.92444	.03991	1.8275	.01733	.18677	.03653	1.8932
#2	.01827	.95537	.04118	1.8425	.01837	.19001	.04404	1.9044
#3	.01791	.92916	.03846	1.8418	.01580	.18925	.02942	1.9034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: LLICV Acquired: 6/14/2016 13:07:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.96121	.09463	.06084	.36358	.01926	.03933	.09673
Stddev	.00258	.00079	.00302	.00212	.00069	.00028	.00035
%RSD	.26849	.83553	4.9712	.58445	3.5652	.71646	.36438
#1	.95841	.09448	.05930	.36237	.01976	.03901	.09667
#2	.96172	.09548	.05889	.36233	.01954	.03942	.09711
#3	.96349	.09392	.06432	.36603	.01848	.03955	.09641
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8214.6	47987.	3082.1
Stddev	36.9	116.	8.8
%RSD	.44975	.24179	.28564
#1	8237.1	48067.	3081.2
#2	8234.7	48041.	3073.8
#3	8172.0	47854.	3091.3

Approved: June 15, 2016

Sample Name: ICSA Acquired: 6/14/2016 13:11:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00253**	**262.58**	**.00384**	**.06070**	**-.00003**	**-.00010**	**235.11**	**-.00006**
Stddev	.00220	.29	.00235	.00160	.00016	.00010	.65	.00032
%RSD	86.930	.11149	61.149	2.6307	621.80	95.355	.27559	534.39
#1	.00504	262.54	.00223	.06238	.00016	-.00005	235.84	.00030
#2	.00091	262.88	.00653	.06054	-.00013	-.00021	234.89	-.00017
#3	.00164	262.30	.00275	.05920	-.00011	-.00005	234.61	-.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00096**	**-.00132**	**-.00273**	**94.416**	**-.06977**	**.00355**	**241.82**	**-.00121**
Stddev	.00023	.00121	.00196	.391	.00708	.00354	.90	.00150
%RSD	23.683	91.662	71.863	.41427	10.151	99.797	.37401	123.89
#1	-.00093	-.00243	-.00356	94.399	-.07486	.00706	242.75	-.00082
#2	-.00120	-.00149	-.00049	94.815	-.06168	-.00003	241.75	.00006
#3	-.00075	-.00003	-.00415	94.033	-.07277	.00362	240.95	-.00287
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00156**	**.01529**	**.00217**	**.06058**	**.00007**	**-.00481**	**.00541**	**.00486**
Stddev	.00020	.00891	.00164	.01011	.00331	.00662	.00382	.00038
%RSD	12.683	58.263	75.524	16.694	4644.1	137.44	70.478	7.8520
#1	-.00145	.00545	.00097	.06875	-.00287	-.01225	.00445	.00474
#2	-.00144	.01760	.00150	.06372	-.00057	-.00261	.00217	.00529
#3	-.00179	.02281	.00404	.04927	.00365	.00042	.00962	.00455
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: ICSA Acquired: 6/14/2016 13:11:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00108	.00006	-.00440	.00243	-.00681	.00109	-.00527
Stddev	.00068	.00007	.00288	.00105	.00090	.00049	.00026
%RSD	63.354	105.93	65.411	43.154	13.237	44.987	4.9047
#1	.00187	.00011	-.00125	.00364	-.00642	.00089	-.00513
#2	.00066	-.00001	-.00506	.00176	-.00784	.00164	-.00556
#3	.00071	.00009	-.00690	.00189	-.00617	.00073	-.00510
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7567.3	43764.	2994.7
Stddev	6.1	135.	18.2
%RSD	.08020	.30953	.60792
#1	7562.8	43847.	2974.9
#2	7574.2	43607.	3010.7
#3	7564.9	43837.	2998.6

Approved: June 15, 2016

Sample Name: ICSAB Acquired: 6/14/2016 13:15:51 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51506	264.64	.25166	.06052	.24591	.24846	238.35	.48785
Stddev	.00145	1.17	.00554	.00533	.00201	.00127	1.23	.00130
%RSD	.28058	.44173	2.2010	8.8082	.81911	.51078	.51598	.26736
#1	.51603	265.66	.25793	.06570	.24823	.24965	239.49	.48677
#2	.51576	264.89	.24746	.05505	.24462	.24861	237.05	.48930
#3	.51340	263.36	.24957	.06080	.24488	.24712	238.52	.48749
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.23689	.24763	.23943	93.425	5.0594	.00409	238.48	.23704
Stddev	.00063	.00124	.00226	.388	.0869	.00160	1.50	.00169
%RSD	.26564	.50095	.94539	.41581	1.7181	39.192	.63072	.71306
#1	.23620	.24900	.23725	93.833	5.1304	.00246	239.93	.23802
#2	.23742	.24732	.24177	93.060	5.0853	.00566	236.93	.23509
#3	.23705	.24658	.23927	93.382	4.9624	.00416	238.57	.23801
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00157	5.1161	.47379	.12146	.48868	.50579	.25646	.01152
Stddev	.00011	.0060	.00276	.01111	.00053	.00493	.01094	.00161
%RSD	7.0318	.11748	.58202	9.1449	.10760	.97382	4.2677	13.950
#1	-.00164	5.1136	.47069	.11309	.48914	.50285	.24427	.01179
#2	-.00163	5.1118	.47470	.13406	.48811	.51148	.26546	.01297
#3	-.00144	5.1230	.47598	.11722	.48881	.50304	.25965	.00979
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: ICSAB Acquired: 6/14/2016 13:15:51 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**.00036**	**-.00226**	**.45396**	**.24570**	**.47320**	**-.00522**
Stddev	.00076	.00033	.00394	.00178	.00158	.00162	.00024
%RSD	717.90	91.178	174.48	.39200	.64430	.34159	4.6419
#1	-.00027	-.00001	-.00171	.45204	.24753	.47141	-.00531
#2	-.00078	.00063	-.00644	.45556	.24483	.47454	-.00495
#3	.00072	.00047	.00138	.45429	.24475	.47365	-.00541
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7513.1**	**43560.**	**2982.5**
Stddev	19.0	244.	20.4
%RSD	.25242	.56027	.68385
#1	7524.1	43280.	2975.5
#2	7491.2	43665.	3005.4
#3	7523.9	43733.	2966.5

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 13:19:40 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.38842	9.6766	.38670	.48146	.96406	.04846	9.5852	.04848
Stddev	.00098	.0297	.00253	.00416	.01300	.00044	.1732	.00040
%RSD	.25157	.30735	.65463	.86489	1.3487	.91791	1.8064	.81691
#1	.38857	9.7094	.38712	.48625	.94993	.04897	9.4127	.04850
#2	.38932	9.6689	.38399	.47945	.97553	.04822	9.7589	.04807
#3	.38738	9.6514	.38900	.47868	.96671	.04818	9.5839	.04886
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19459	.48546	.48652	3.8561	48.199	.96251	9.6204	.48138
Stddev	.00098	.00499	.00342	.0607	.641	.00860	.1903	.00688
%RSD	.50162	1.0279	.70275	1.5736	1.3303	.89352	1.9776	1.4298
#1	.19526	.49097	.48987	3.8001	47.506	.95695	9.4044	.47514
#2	.19347	.48417	.48304	3.9206	48.772	.97241	9.6937	.48876
#3	.19505	.48124	.48667	3.8477	48.318	.95816	9.7630	.48022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.97291	48.050	.48501	9.6373	.48965	1.1590	.38093	4.8869
Stddev	.00494	.696	.00161	.0194	.00476	.0037	.00079	.0127
%RSD	.50749	1.4491	.33221	.20096	.97245	.31640	.20650	.26006
#1	.97811	47.304	.48658	9.6588	.49203	1.1568	.38012	4.8994
#2	.96829	48.683	.48336	9.6317	.48417	1.1570	.38169	4.8740
#3	.97234	48.164	.48509	9.6213	.49275	1.1633	.38096	4.8872
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 13:19:40 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.96575	.96428	.95494	.48624	.96823	.97016	.97459
Stddev	.00169	.01391	.02178	.00378	.00985	.00094	.00888
%RSD	.17512	1.4429	2.2804	.77775	1.0173	.09644	.91115
#1	.96675	.94960	.92982	.48816	.97960	.97099	.96517
#2	.96380	.97727	.96856	.48188	.96284	.96915	.98280
#3	.96670	.96597	.96644	.48867	.96226	.97035	.97581
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8121.3	46861.	3044.5
Stddev	6.6	174.	24.7
%RSD	.08169	.37150	.81231
#1	8121.3	46669.	3071.6
#2	8128.0	47009.	3023.3
#3	8114.7	46903.	3038.5

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 13:23:23 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.01018	.00017	.00437	.00045	.00003	-.01350	-.00019
Stddev	.00185	.00088	.00277	.00270	.00058	.00006	.02608	.00008
%RSD	687.15	8.6656	1611.9	61.807	127.00	195.02	193.09	42.189
#1	-.00181	.00930	-.00181	.00585	.00083	-.00004	-.04335	-.00017
#2	.00175	.01106	-.00102	.00125	-.00021	.00006	.00485	-.00012
#3	.00087	.01019	.00334	.00601	.00075	.00008	-.00201	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	-.00032	.00005	.01705	-.09454	-.00109	.03233	-.00144
Stddev	.00008	.00135	.00142	.01744	.11900	.00207	.12089	.00023
%RSD	42.335	421.58	2661.9	102.25	125.86	189.98	373.89	15.988
#1	-.00023	-.00080	.00087	.00263	.03856	.00130	-.10164	-.00165
#2	-.00009	.00121	-.00159	.01210	-.19064	-.00241	.06536	-.00148
#3	-.00023	-.00137	.00088	.03643	-.13154	-.00216	.13328	-.00119
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00166	-.00824	.00052	.00046	-.00300	.00064	.00506	.00065
Stddev	.00017	.02537	.00078	.00248	.00188	.00012	.00386	.00218
%RSD	10.394	307.81	149.96	537.03	62.740	19.075	76.221	337.18
#1	.00151	.01786	.00017	.00314	-.00092	.00074	.00577	-.00182
#2	.00162	-.00978	.00141	-.00002	-.00460	.00069	.00090	.00231
#3	.00185	-.03281	-.00002	-.00174	-.00348	.00050	.00852	.00144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 13:23:23 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00140**	**.00011**	**.00599**	**-.00037**	**.00039**	**-.00005**	**.00046**
Stddev	.00059	.00015	.00636	.00033	.00057	.00017	.00065
%RSD	41.947	133.47	106.18	88.219	144.29	355.84	140.69
#1	.00074	.00028	.00405	-.00062	.00028	-.00025	-.00015
#2	.00185	.00003	.00083	-.00050	.00102	.00008	.00040
#3	.00161	.00002	.01309	-.00000	-.00011	.00002	.00115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8279.0**	**48298.**	**3150.0**
Stddev	18.1	229.	46.0
%RSD	.21838	.47431	1.4612
#1	8279.2	48072.	3107.6
#2	8297.0	48530.	3143.4
#3	8260.9	48293.	3198.9

Approved: June 15, 2016

Sample Name: PBW 46 Acquired: 6/14/2016 13:33:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572244-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00167	.01388	.00104	.00274	-.00034	.00003	.02791	-.00005
Stddev	.00094	.00439	.00157	.00153	.00115	.00004	.01471	.00011
%RSD	56.568	31.644	151.23	55.699	337.19	120.34	52.715	224.25
#1	.00246	.01051	.00181	.00314	-.00124	.00005	.01675	-.00005
#2	.00063	.01885	-.00077	.00403	-.00073	.00006	.04458	.00006
#3	.00192	.01229	.00207	.00106	.00095	-.00001	.02240	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	.00071	-.00014	.02199	-.15165	-.00055	-.04599	-.00023
Stddev	.00014	.00042	.00094	.01014	.08201	.00046	.08242	.00223
%RSD	104.13	59.240	668.69	46.130	54.078	82.275	179.19	983.85
#1	-.00030	.00024	.00010	.02468	-.18048	-.00030	-.05233	.00067
#2	-.00002	.00106	-.00118	.01077	-.21534	-.00028	-.12506	.00141
#3	-.00010	.00084	.00066	.03051	-.05912	-.00108	.03941	-.00276
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	-.00852	.00096	-.00216	.00101	-.00161	-.00102	.00482
Stddev	.00048	.00751	.00028	.00632	.00246	.00429	.00539	.00199
%RSD	190.24	88.124	29.094	292.35	243.46	265.68	526.40	41.278
#1	-.00001	-.00365	.00064	-.00716	-.00098	.00320	.00472	.00347
#2	-.00004	-.01717	.00104	.00494	.00024	-.00304	-.00599	.00387
#3	.00080	-.00474	.00118	-.00427	.00377	-.00501	-.00181	.00710
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: PBW 46 Acquired: 6/14/2016 13:33:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572244-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	.00007	.00408	-.00157	.00006	.00105	.00068
Stddev	.00108	.00022	.00071	.00099	.00060	.00019	.00065
%RSD	179.70	333.32	17.312	63.182	979.98	17.830	96.256
#1	-.00051	.00032	.00382	-.00086	.00057	.00127	.00057
#2	.00164	-.00010	.00487	-.00271	.00022	.00093	.00138
#3	.00067	-.00002	.00354	-.00116	-.00060	.00096	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7863.8	45826.	2967.5
Stddev	15.1	145.	24.8
%RSD	.19230	.31735	.83681
#1	7881.2	45800.	2945.9
#2	7853.7	45695.	2961.9
#3	7856.6	45983.	2994.6

Approved: June 15, 2016

Sample Name: LCSW 46 Acquired: 6/14/2016 13:37:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572244-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19704**	**5.0144**	**.19968**	**.96617**	**.49809**	**.02448**	**5.0003**	**.02463**
Stddev	.00259	.0093	.00495	.00478	.00282	.00006	.0498	.00023
%RSD	1.3127	.18499	2.4785	.49492	.56657	.22489	.99603	.94804
#1	.19426	5.0094	.20392	.97139	.50122	.02453	5.0247	.02488
#2	.19749	5.0251	.20088	.96512	.49731	.02448	4.9430	.02462
#3	.19937	5.0086	.19424	.96200	.49573	.02442	5.0332	.02441
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10135**	**.25165**	**.25303**	**2.0001**	**24.272**	**.49883**	**4.9824**	**.24610**
Stddev	.00031	.00138	.00087	.0308	.137	.00123	.1846	.00466
%RSD	.30274	.54872	.34331	1.5397	.56601	.24576	3.7049	1.8926
#1	.10168	.25187	.25388	2.0040	24.430	.49827	5.0916	.25147
#2	.10131	.25290	.25308	1.9675	24.181	.50023	5.0863	.24355
#3	.10107	.25017	.25214	2.0288	24.205	.49798	4.7692	.24327
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51104**	**24.461**	**.25342**	**4.8383**	**.25092**	**.59123**	**.20401**	**2.5663**
Stddev	.00152	.145	.00050	.0218	.00320	.00037	.00930	.0035
%RSD	.29711	.59146	.19600	.45011	1.2737	.06220	4.5568	.13735
#1	.51249	24.612	.25388	4.8563	.24757	.59085	.19730	2.5675
#2	.50946	24.449	.25289	4.8141	.25394	.59159	.21462	2.5623
#3	.51118	24.323	.25350	4.8444	.25124	.59126	.20010	2.5691
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: LCSW 46 Acquired: 6/14/2016 13:37:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572244-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50211**	**.50421**	**.49421**	**.25176**	**.50027**	**.50541**	**.00451**
Stddev	.00113	.00139	.00229	.00210	.00179	.00065	.00081
%RSD	.22533	.27517	.46297	.83466	.35715	.12806	17.975
#1	.50305	.50577	.49685	.25188	.50233	.50544	.00358
#2	.50085	.50376	.49281	.24959	.49917	.50475	.00486
#3	.50242	.50311	.49296	.25379	.49931	.50604	.00508
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7849.3**	**45516.**	**2986.3**
Stddev	9.1	95.	21.8
%RSD	.11540	.20802	.72880
#1	7848.6	45539.	2971.2
#2	7858.8	45411.	3011.2
#3	7840.7	45596.	2976.5

Approved: June 15, 2016

Sample Name: F BLANK Acquired: 6/14/2016 13:40:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572115-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00185**	**.01400**	**.00026**	**.00476**	**.00092**	**.00004**	**.02957**	**-.00022**
Stddev	.00213	.00374	.00154	.00200	.00091	.00006	.02948	.00014
%RSD	115.20	26.739	594.17	42.124	98.264	149.28	99.713	61.633
#1	-.00056	.01531	-.00127	.00664	.00037	.00010	.04968	-.00022
#2	.00349	.01692	.00024	.00497	.00043	-.00002	-.00428	-.00036
#3	.00261	.00978	.00181	.00265	.00197	.00003	.04330	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00044**	**.00075**	**.00060**	**.02464**	**-.14630**	**-.00035**	**-.03295**	**-.00164**
Stddev	.00031	.00072	.00044	.00914	.06975	.00275	.08765	.00307
%RSD	71.037	96.066	72.661	37.109	47.677	783.39	265.99	187.60
#1	.00014	.00157	.00012	.01419	-.06736	-.00212	-.03307	.00129
#2	.00041	.00025	.00097	.03118	-.19961	-.00174	-.12054	-.00136
#3	.00076	.00043	.00071	.02854	-.17193	.00282	.05475	-.00484
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**160.32**	**.00146**	**-.00184**	**.00085**	**.00136**	**.00519**	**.01119**
Stddev	.00028	.87	.00075	.00269	.00024	.00391	.00753	.00213
%RSD	1943.5	.54401	51.722	145.79	28.371	287.40	145.07	19.075
#1	.00028	160.84	.00174	-.00493	.00110	-.00028	.01066	.01313
#2	-.00006	160.81	.00203	-.00054	.00084	-.00146	.00830	.00891
#3	-.00026	159.31	.00060	-.00005	.00062	.00582	-.00339	.01153
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: F BLANK Acquired: 6/14/2016 13:40:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572115-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00123	.00013	.00803	-.00134	-.00004	.00271	-.00017
Stddev	.00082	.00053	.00222	.00184	.00075	.00010	.00010
%RSD	66.327	398.01	27.614	136.77	1965.9	3.8033	59.138
#1	.00182	-.00043	.00550	.00075	-.00055	.00283	-.00023
#2	.00158	.00021	.00896	-.00267	-.00038	.00264	-.00005
#3	.00030	.00062	.00962	-.00211	.00082	.00267	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7878.8	45526.	3023.1
Stddev	12.8	222.	25.0
%RSD	.16243	.48791	.82843
#1	7864.9	45272.	3021.7
#2	7890.1	45623.	2998.8
#3	7881.3	45683.	3048.9

Approved: June 15, 2016

Sample Name: F BLANK Acquired: 6/14/2016 13:45:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572115-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00136	.00351	-.00192	.00345	.00034	.00001	-.00726	.00006
Stddev	.00252	.00131	.00242	.00488	.00029	.00001	.01582	.00022
%RSD	185.37	37.172	125.83	141.41	84.450	129.93	217.92	362.52
#1	-.00243	.00404	-.00445	.00904	.00006	-.00001	.01088	.00007
#2	.00152	.00447	-.00170	.00003	.00033	.00002	-.01815	.00028
#3	-.00316	.00202	.00038	.00128	.00063	.00002	-.01451	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	.00051	.00038	-.01203	-.15029	-.00189	.02947	-.00004
Stddev	.00020	.00043	.00113	.00493	.04617	.00174	.04121	.00159
%RSD	75.575	84.376	297.20	40.977	30.719	91.879	139.83	3862.3
#1	-.00026	.00086	-.00077	-.00758	-.20186	-.00320	-.00969	.00170
#2	-.00006	.00003	.00149	-.01733	-.13619	.00008	.02564	-.00042
#3	-.00045	.00064	.00042	-.01119	-.11282	-.00257	.07246	-.00141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	3.7215	.00127	-.00241	.00047	-.00102	.00776	.00564
Stddev	.00029	.0188	.00041	.00360	.00187	.00062	.00547	.00068
%RSD	50.759	.50397	32.698	149.11	396.34	60.607	70.470	12.073
#1	-.00054	3.7362	.00093	-.00570	-.00102	-.00094	.00899	.00588
#2	-.00086	3.7004	.00115	.00143	-.00014	-.00168	.01251	.00617
#3	-.00029	3.7280	.00173	-.00296	.00258	-.00045	.00178	.00487
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: F BLANK Acquired: 6/14/2016 13:45:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572115-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00079	.00002	.00524	-.00270	.00012	.00291	-.00032
Stddev	.00031	.00074	.00246	.00052	.00043	.00035	.00023
%RSD	38.972	3192.4	46.992	19.091	363.05	12.182	72.008
#1	.00046	.00082	.00240	-.00329	.00061	.00316	-.00006
#2	.00106	-.00013	.00674	-.00231	-.00014	.00251	-.00040
#3	.00085	-.00062	.00659	-.00251	-.00012	.00308	-.00049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8052.0	47666.	3085.0
Stddev	9.9	193.	21.7
%RSD	.12270	.40467	.70499
#1	8063.3	47469.	3072.0
#2	8045.2	47854.	3073.0
#3	8047.4	47675.	3110.2

Approved: June 15, 2016

Sample Name: L1606040101 Acquired: 6/14/2016 13:49:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572244-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00068**	**.03606**	**-.00019**	**.04592**	**.71433**	**.00002**	F **338.51**
Stddev	.00085	.00748	.00279	.00153	.00631	.00007	2.54
%RSD	125.55	20.735	1478.1	3.3300	.88317	416.14	.75155
#1	-.00019	.02770	-.00292	.04444	.72051	-.00007	341.17
#2	-.00019	.03839	-.00031	.04749	.71457	.00005	338.28
#3	-.00166	.04210	.00266	.04583	.70790	.00007	336.09
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.00063**	**.00091**	**.00356**	**.00913**	**253.60**	**.04717**
Stddev	.00007	.00006	.00098	.00090	.02653	1.92	.00396
%RSD	53.778	9.8659	107.64	25.247	290.55	.75540	8.3932
#1	.00022	.00056	.00027	.00362	.01490	255.61	.05134
#2	.00008	.00065	.00204	.00443	.03230	253.40	.04346
#3	.00011	.00068	.00042	.00263	-.01981	251.79	.04670
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09247**	**-.00210**	**.00670**	F **316.05**	**.00021**	**.07799**	**.01568**
Stddev	.11383	.00121	.00047	2.24	.00017	.00668	.00370
%RSD	123.10	57.721	6.9900	.70779	82.322	8.5685	23.601
#1	.12617	-.00306	.00643	318.39	.00039	.07211	.01702
#2	-.03440	-.00249	.00643	315.83	.00018	.08526	.01852
#3	.18565	-.00074	.00724	313.93	.00005	.07660	.01149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 15, 2016

Sample Name: L1606040101 Acquired: 6/14/2016 13:49:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572244-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00223**	**.02642**	**.27128**	**.00085**	**.42467**	F **-.04716**	**-.00249**
Stddev	.00127	.00543	.00084	.00088	.00237	.00308	.00187
%RSD	56.993	20.546	.30879	103.84	.55858	6.5360	75.050
#1	-.00326	.02629	.27160	.00101	.42711	-.05067	-.00386
#2	-.00081	.02105	.27033	-.00010	.42451	-.04593	-.00036
#3	-.00261	.03191	.27191	.00164	.42238	-.04489	-.00326
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00004**	**.01324**	**-.00006**
Stddev	.00105	.00024	.00018
%RSD	2770.5	1.7772	296.48
#1	-.00033	.01314	.00012
#2	-.00091	.01351	-.00023
#3	.00113	.01308	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7563.1**	**43779.**	**3072.4**
Stddev	12.8	81.	43.0
%RSD	.16968	.18476	1.4009
#1	7562.4	43826.	3025.1
#2	7550.7	43826.	3082.6
#3	7576.3	43686.	3109.4

Approved: June 15, 2016

Sample Name: L1606040101S Acquired: 6/14/2016 13:53:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572244-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19684	5.0967	.20209	1.0293	1.2091	.02436	F 348.43
Stddev	.00072	.0198	.00364	.0035	.0047	.00016	1.04
%RSD	.36586	.38874	1.8037	.33737	.38871	.66177	.29871
#1	.19607	5.0758	.20622	1.0256	1.2140	.02442	349.63
#2	.19749	5.0989	.20070	1.0325	1.2089	.02417	347.79
#3	.19697	5.1153	.19934	1.0298	1.2046	.02448	347.87
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02502	.09564	.24613	.24077	1.8978	279.57	.55292
Stddev	.00022	.00088	.00145	.00121	.0280	1.03	.00424
%RSD	.87422	.91844	.58870	.50163	1.4759	.36950	.76626
#1	.02481	.09556	.24642	.24212	1.9301	280.64	.55508
#2	.02525	.09656	.24742	.23978	1.8804	279.50	.55564
#3	.02500	.09481	.24456	.24042	1.8828	278.58	.54804
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.7110	.23643	.50454	F 342.92	.23553	5.1054	.25383
Stddev	.1325	.00250	.00285	1.61	.00135	.0181	.00445
%RSD	2.8116	1.0580	.56389	.46928	.57240	.35448	1.7549
#1	4.6985	.23703	.50781	344.77	.23515	5.1263	.25324
#2	4.5853	.23857	.50257	342.04	.23702	5.0944	.25855
#3	4.8493	.23368	.50325	341.93	.23441	5.0955	.24969
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 15, 2016

Sample Name: L1606040101S Acquired: 6/14/2016 13:53:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572244-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.59878	.22037	2.8542	.47468	.90635	.43516	.11372
Stddev	.00379	.00716	.0077	.00230	.00451	.00599	.00231
%RSD	.63362	3.2478	.27084	.48499	.49797	1.3757	2.0338
#1	.59849	.22049	2.8625	.47709	.91125	.44190	.11155
#2	.60271	.21315	2.8471	.47250	.90543	.43315	.11615
#3	.59514	.22747	2.8531	.47444	.90237	.43044	.11345
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.50185	.50996	.00426
Stddev	.00231	.00221	.00033
%RSD	.46044	.43407	7.8538
#1	.50384	.51250	.00388
#2	.50239	.50894	.00438
#3	.49932	.50844	.00452
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7390.0	42543.	2969.4
Stddev	21.9	114.	29.1
%RSD	.29659	.26750	.97982
#1	7365.7	42638.	2958.4
#2	7408.2	42573.	3002.4
#3	7396.1	42417.	2947.5

Approved: June 15, 2016

Sample Name: L1606040101SD Acquired: 6/14/2016 13:56:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572244-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20087**	**5.1294**	**.20614**	**1.0412**	**1.1986**	**.02468**	F **342.25**
Stddev	.00169	.0132	.00305	.0012	.0027	.00015	.37
%RSD	.84103	.25629	1.4807	.11249	.22860	.59405	.10873
#1	.20023	5.1306	.20420	1.0399	1.2013	.02470	342.61
#2	.20279	5.1419	.20966	1.0417	1.1988	.02453	342.26
#3	.19959	5.1157	.20457	1.0421	1.1958	.02482	341.87
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02550**	**.09821**	**.24874**	**.24766**	**1.9147**	**277.25**	**.55479**
Stddev	.00025	.00024	.00049	.00122	.0433	.18	.00297
%RSD	.96207	.23992	.19544	.49076	2.2609	.06416	.53472
#1	.02575	.09796	.24907	.24906	1.8856	277.40	.55786
#2	.02526	.09842	.24897	.24698	1.9644	277.30	.55194
#3	.02547	.09824	.24818	.24694	1.8940	277.05	.55456
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.6163**	**.23816**	**.51974**	F **338.95**	**.24144**	**5.2503**	**.25969**
Stddev	.0907	.00076	.00121	2.46	.00117	.0100	.00390
%RSD	1.9649	.31723	.23234	.72579	.48290	.19104	1.5019
#1	4.5117	.23878	.51963	340.51	.24229	5.2430	.26015
#2	4.6733	.23732	.52100	340.23	.24192	5.2617	.25558
#3	4.6640	.23837	.51859	336.12	.24011	5.2461	.26334
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 15, 2016

Sample Name: L1606040101SD Acquired: 6/14/2016 13:56:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572244-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.60859	.22837	2.9129	.48961	.90083	.44288	.18565
Stddev	.00407	.00257	.0028	.00167	.00054	.00669	.00295
%RSD	.66861	1.1272	.09542	.34067	.05968	1.5113	1.5903
#1	.60971	.22771	2.9148	.49096	.90135	.45032	.18245
#2	.61198	.22619	2.9097	.49014	.90027	.43737	.18625
#3	.60408	.23121	2.9142	.48775	.90088	.44094	.18826
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.50879	.51735	.00053
Stddev	.00181	.00047	.00037
%RSD	.35485	.08989	69.842
#1	.51013	.51755	.00022
#2	.50951	.51769	.00043
#3	.50674	.51682	.00095
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7437.0	42930.	3011.0
Stddev	12.2	77.	22.8
%RSD	.16370	.17893	.75631
#1	7440.7	42873.	2987.5
#2	7423.4	42901.	3012.5
#3	7446.9	43018.	3033.0

Approved: June 15, 2016

Sample Name: L1606036002 Acquired: 6/14/2016 14:00:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.03539	-.00160	.04716	.04338	-.00005	13.438	.00025
Stddev	.00179	.00562	.00262	.00095	.00044	.00006	.139	.00008
%RSD	919.45	15.871	163.58	2.0212	1.0145	118.33	1.0321	31.622
#1	.00208	.02891	-.00460	.04742	.04372	-.00004	13.563	.00026
#2	-.00002	.03830	-.00049	.04795	.04288	-.00000	13.289	.00031
#3	-.00148	.03895	.00028	.04610	.04353	-.00012	13.462	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00084	.00068	.00095	.03898	.90932	-.00296	1.7377	.47740
Stddev	.00022	.00054	.00095	.01689	.06082	.00668	.0489	.00609
%RSD	25.717	79.454	100.28	43.336	6.6885	225.59	2.8148	1.2751
#1	.00067	.00102	.00046	.05629	.95023	.00129	1.7694	.48173
#2	.00078	.00006	.00034	.03810	.83943	-.01066	1.6814	.47044
#3	.00109	.00098	.00204	.02254	.93830	.00049	1.7623	.48003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	142.73	.00267	.13572	-.00105	-.00124	.00664	.78284
Stddev	.00019	1.62	.00011	.00523	.00149	.00318	.00793	.00198
%RSD	40.060	1.1376	4.0493	3.8535	141.40	256.83	119.47	.25278
#1	.00027	144.10	.00258	.13845	-.00164	.00208	-.00008	.78083
#2	.00048	140.93	.00266	.12969	-.00216	-.00427	.01539	.78288
#3	.00064	143.15	.00279	.13901	.00064	-.00152	.00460	.78479
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606036002 Acquired: 6/14/2016 14:00:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00136	.21742	.00701	-.00042	-.00004	.10829	-.00001
Stddev	.00043	.00286	.00337	.00141	.00024	.00008	.00063
%RSD	31.504	1.3143	47.997	338.48	626.59	.07249	4577.5
#1	.00136	.21922	.01043	.00093	.00018	.10824	-.00058
#2	.00180	.21412	.00370	-.00189	-.00029	.10838	.00067
#3	.00094	.21890	.00690	-.00029	.00000	.10826	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7913.7	46461.	3136.3
Stddev	21.5	120.	39.8
%RSD	.27174	.25909	1.2706
#1	7938.5	46580.	3096.1
#2	7902.6	46464.	3175.8
#3	7900.1	46340.	3136.9

Approved: June 15, 2016

Sample Name: L1606040301 Acquired: 6/14/2016 14:04:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.10870**	**.00259**	**.03180**	**.22091**	**-.00009**	F **301.33**
Stddev	.00155	.00247	.00230	.00096	.00055	.00004	.70
%RSD	1520.2	2.2763	89.084	3.0261	.24692	43.359	.23170
#1	.00093	.10812	.00521	.03224	.22056	-.00006	301.23
#2	.00064	.10656	.00090	.03247	.22063	-.00008	300.69
#3	-.00188	.11141	.00164	.03070	.22154	-.00014	302.08
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00006**	**.00053**	**.00168**	**.00808**	**.02703**	**246.44**	**1.0250**
Stddev	.00024	.00051	.00026	.00030	.01540	.42	.0030
%RSD	423.83	95.084	15.494	3.6767	56.974	.16978	.29649
#1	-.00003	.00106	.00191	.00833	.03321	246.48	1.0283
#2	.00033	.00051	.00140	.00776	.00950	246.01	1.0224
#3	-.00013	.00004	.00175	.00817	.03838	246.84	1.0243
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.01867**	**-.00091**	**.00410**	F **290.21**	**.00079**	**.05312**	**.01345**
Stddev	.08012	.00232	.00018	1.00	.00078	.00725	.00471
%RSD	429.05	253.68	4.4741	.34363	98.782	13.654	35.045
#1	-.06132	-.00046	.00413	290.01	-.00011	.06077	.01735
#2	-.06845	-.00342	.00427	289.32	.00131	.04634	.00821
#3	.07375	.00114	.00391	291.29	.00117	.05227	.01479
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 15, 2016

Sample Name: L1606040301 Acquired: 6/14/2016 14:04:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00185	.01201	.14023	.00097	.37299	F -.03665	-.00129
Stddev	.00194	.00714	.00189	.00047	.00184	.00141	.00126
%RSD	104.92	59.445	1.3470	48.573	.49453	3.8444	98.372
#1	.00250	.01999	.14122	.00130	.37392	-.03822	-.00095
#2	.00339	.00625	.14141	.00043	.37087	-.03622	-.00268
#3	-.00033	.00978	.13805	.00118	.37418	-.03551	-.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00027	.17242	.00003
Stddev	.00025	.00091	.00049
%RSD	93.764	.53063	1635.1
#1	-.00031	.17166	-.00053
#2	.00000	.17218	.00022
#3	-.00049	.17344	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7444.8	43321.	3001.6
Stddev	15.4	236.	17.0
%RSD	.20751	.54453	.56728
#1	7462.3	43447.	2995.9
#2	7438.7	43468.	3020.8
#3	7433.3	43049.	2988.2

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 14:08:44 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40287	10.072	.40039	.50197	.99037	.05023	9.8363	.05078
Stddev	.00087	.036	.00475	.00183	.00406	.00019	.0185	.00018
%RSD	.21505	.35972	1.1875	.36411	.40995	.37307	.18826	.36196
#1	.40380	10.096	.40588	.50315	.98913	.05040	9.8176	.05057
#2	.40273	10.090	.39749	.50290	.98708	.05025	9.8546	.05090
#3	.40208	10.031	.39781	.49987	.99491	.05003	9.8367	.05087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20329	.50144	.51034	3.9786	49.552	.99098	9.8437	.49205
Stddev	.00043	.00148	.00280	.0079	.197	.00940	.1177	.00061
%RSD	.21307	.29611	.54897	.19805	.39701	.94882	1.1959	.12430
#1	.20368	.50306	.51307	3.9695	49.492	1.0017	9.7321	.49239
#2	.20335	.50115	.51049	3.9841	49.393	.98432	9.8323	.49242
#3	.20283	.50013	.50747	3.9821	49.772	.98688	9.9667	.49135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0152	49.223	.50945	10.062	.50837	1.2088	.40379	5.1182
Stddev	.0049	.070	.00238	.024	.00034	.0042	.00577	.0128
%RSD	.48067	.14158	.46713	.24339	.06659	.34938	1.4280	.25044
#1	1.0199	49.180	.50995	10.082	.50798	1.2073	.40904	5.1186
#2	1.0155	49.187	.51154	10.069	.50860	1.2135	.40472	5.1308
#3	1.0101	49.304	.50686	10.035	.50852	1.2055	.39762	5.1051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 14:08:44 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0080**	**.98991**	**.97455**	**.50425**	**1.0045**	**1.0128**	**1.0065**
Stddev	.0023	.00126	.00867	.00178	.0013	.0037	.0121
%RSD	.22662	.12763	.88921	.35217	.12434	.36160	1.2030
#1	1.0095	.98913	.96990	.50273	1.0056	1.0154	1.0139
#2	1.0092	.98924	.96921	.50620	1.0032	1.0144	1.0131
#3	1.0054	.99137	.98455	.50381	1.0048	1.0086	.99255
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7855.3**	**45661.**	**2998.7**
Stddev	37.4	35.	28.3
%RSD	.47565	.07626	.94396
#1	7833.8	45698.	2982.9
#2	7833.7	45630.	2981.9
#3	7898.5	45654.	3031.4

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 14:12:27 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00145**	**.01301**	**-.00079**	**-.00040**	**.00054**	**.00007**	**.01269**	**-.00023**
Stddev	.00118	.00272	.00417	.00138	.00097	.00007	.03045	.00008
%RSD	81.520	20.883	524.30	345.41	180.39	104.37	240.01	35.478
#1	-.00270	.01093	.00374	-.00170	.00118	.00013	.04622	-.00026
#2	-.00128	.01609	-.00446	-.00054	-.00058	.00008	-.01323	-.00029
#3	-.00036	.01201	-.00166	.00104	.00101	-.00001	.00506	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00018**	**.00013**	**.00040**	**.01146**	**.06408**	**.00116**	**-.01836**	**.00048**
Stddev	.00004	.00111	.00068	.00923	.12796	.00095	.09556	.00146
%RSD	20.747	871.23	171.02	80.558	199.68	82.263	520.63	301.52
#1	.00022	.00129	.00118	.00158	-.05158	.00029	-.05564	-.00119
#2	.00017	-.00093	.00010	.01987	.04229	.00218	-.08965	.00151
#3	.00015	.00002	-.00009	.01294	.20154	.00102	.09023	.00113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00188**	**.04883**	**.00055**	**.00620**	**-.00235**	**-.00116**	**.00621**	**.00071**
Stddev	.00047	.00950	.00034	.00186	.00127	.00391	.00979	.00029
%RSD	25.115	19.460	62.211	29.933	54.281	337.62	157.71	40.450
#1	.00138	.03930	.00037	.00801	-.00095	-.00325	-.00115	.00092
#2	.00194	.04888	.00095	.00630	-.00266	.00335	.00246	.00082
#3	.00232	.05830	.00033	.00430	-.00344	-.00357	.01732	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 14:12:27 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00108**	**.00026**	**-.00208**	**-.00069**	**-.00014**	**-.00007**	**.00042**
Stddev	.00137	.00012	.00089	.00375	.00011	.00016	.00033
%RSD	127.39	44.068	42.741	546.89	80.729	233.21	78.883
#1	-.00002	.00013	-.00189	.00363	-.00006	-.00022	.00039
#2	.00064	.00033	-.00130	-.00318	-.00026	-.00009	.00010
#3	.00262	.00033	-.00305	-.00250	-.00009	.00010	.00076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8026.3**	**46832.**	**3019.4**
Stddev	38.7	175.	16.9
%RSD	.48212	.37290	.55903
#1	8019.8	46693.	3038.0
#2	8067.9	46775.	3005.0
#3	7991.3	47028.	3015.3

Approved: June 15, 2016

Sample Name: L1606043801 Acquired: 6/14/2016 14:16:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00165	18.316	.01107	.04675	.24795	.00123	34.387	.00070
Stddev	.00207	.005	.00205	.00153	.00128	.00004	.043	.00027
%RSD	126.09	.02538	18.509	3.2756	.51748	3.6422	.12484	38.470
#1	-.00021	18.321	.00872	.04595	.24937	.00120	34.420	.00099
#2	.00388	18.312	.01205	.04578	.24687	.00128	34.339	.00045
#3	.00127	18.317	.01245	.04851	.24761	.00121	34.404	.00068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01989	.02761	.05076	30.488	5.6678	.02554	8.3554	1.4174
Stddev	.00035	.00051	.00115	.151	.0258	.00282	.1122	.0016
%RSD	1.7556	1.8359	2.2696	.49600	.45490	11.029	1.3425	.11480
#1	.02010	.02783	.04943	30.662	5.6387	.02237	8.4726	1.4179
#2	.02008	.02703	.05139	30.383	5.6767	.02773	8.3448	1.4188
#3	.01949	.02797	.05146	30.421	5.6880	.02653	8.2490	1.4156
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01045	37.585	.04256	.60322	.06107	-.00016	.00245	23.598
Stddev	.00003	.051	.00062	.00847	.00290	.00213	.00511	.032
%RSD	.25053	.13511	1.4618	1.4044	4.7555	1293.5	208.89	.13456
#1	.01048	37.637	.04280	.59622	.05778	.00196	.00627	23.564
#2	.01043	37.536	.04185	.60079	.06328	-.00015	.00443	23.603
#3	.01044	37.581	.04303	.61264	.06216	-.00230	-.00336	23.627
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606043801 Acquired: 6/14/2016 14:16:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00637	.22090	.19006	.00477	.03490	.30164	.00430
Stddev	.00082	.00022	.01097	.00202	.00052	.00091	.00035
%RSD	12.836	.10049	5.7697	42.372	1.5013	.30290	8.0336
#1	.00621	.22112	.18150	.00542	.03436	.30069	.00414
#2	.00726	.22090	.18626	.00639	.03541	.30172	.00406
#3	.00565	.22068	.20242	.00251	.03493	.30251	.00469
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7828.9	45876.	3028.8
Stddev	16.2	108.	7.8
%RSD	.20630	.23627	.25736
#1	7844.9	45985.	3029.3
#2	7812.6	45875.	3036.3
#3	7829.1	45768.	3020.7

Approved: June 15, 2016

Sample Name: L1606048201 Acquired: 6/14/2016 14:20:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00085	.07848	.00518	.02726	.06388	-.00011	28.356	.01239
Stddev	.00064	.00608	.00266	.00275	.00096	.00010	.053	.00052
%RSD	75.865	7.7426	51.490	10.105	1.5100	94.103	.18745	4.1888
#1	-.00018	.07727	.00716	.02410	.06442	.00001	28.398	.01182
#2	-.00089	.08507	.00215	.02851	.06445	-.00016	28.296	.01253
#3	-.00146	.07310	.00621	.02916	.06276	-.00018	28.375	.01283
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00044	.00153	.07861	.04250	1.1855	.00277	1.5701	.18421
Stddev	.00011	.00083	.00132	.03136	.1146	.00370	.0638	.00117
%RSD	24.371	53.840	1.6782	73.778	9.6697	133.39	4.0625	.63391
#1	.00049	.00102	.07937	.03282	1.3150	.00132	1.5014	.18286
#2	.00032	.00110	.07937	.07756	1.1447	.00002	1.5812	.18488
#3	.00052	.00249	.07709	.01713	1.0969	.00698	1.6275	.18489
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	145.37	.00618	.18213	.00681	-.00178	-.00056	.77992
Stddev	.00009	.04	.00049	.00367	.00330	.00142	.00695	.00200
%RSD	35.255	.02705	7.9203	2.0166	48.520	79.994	1239.9	.25675
#1	-.00022	145.40	.00568	.18637	.00820	-.00341	-.00102	.78213
#2	-.00038	145.37	.00666	.17994	.00919	-.00110	-.00726	.77824
#3	-.00020	145.33	.00620	.18007	.00304	-.00082	.00660	.77938
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606048201 Acquired: 6/14/2016 14:20:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00209	.11794	-.00157	.00100	.00008	3.4861	.00045
Stddev	.00035	.00088	.00575	.00326	.00054	.0158	.00026
%RSD	16.953	.74517	367.13	327.49	642.94	.45166	57.234
#1	.00248	.11895	-.00570	.00132	-.00035	3.4688	.00064
#2	.00178	.11737	-.00400	.00408	-.00008	3.4900	.00016
#3	.00201	.11748	.00500	-.00241	.00068	3.4996	.00055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7671.0	44631.	2991.1
Stddev	8.3	158.	9.8
%RSD	.10797	.35449	.32775
#1	7677.5	44580.	2982.7
#2	7673.9	44505.	3001.9
#3	7661.7	44809.	2988.8

Approved: June 15, 2016

Sample Name: L1606050403 Acquired: 6/14/2016 14:24:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	.05079	-.00123	.00648	.85105	.00009	19.884	.00060
Stddev	.00104	.00255	.00161	.00149	.00455	.00011	.174	.00017
%RSD	242.60	5.0206	131.10	23.050	.53491	123.44	.87263	28.694
#1	.00162	.05313	-.00181	.00807	.85592	.00012	20.072	.00057
#2	-.00008	.05116	.00059	.00625	.85035	-.00003	19.849	.00079
#3	-.00026	.04807	-.00247	.00511	.84689	.00018	19.731	.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00246	.11916	.00293	.80214	1.9322	.05798	21.538	.08731
Stddev	.00010	.00051	.00104	.02673	.0534	.00348	.052	.00209
%RSD	4.0606	.42953	35.447	3.3319	2.7623	6.0091	.24147	2.3890
#1	.00238	.11862	.00366	.79050	1.9822	.06056	21.593	.08943
#2	.00257	.11963	.00340	.78321	1.8760	.05402	21.533	.08725
#3	.00243	.11923	.00174	.83271	1.9385	.05937	21.489	.08526
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	103.53	.06954	.07095	.00117	-.00111	.00156	27.182
Stddev	.00005	.66	.00176	.00512	.00059	.00188	.00471	.081
%RSD	9.2590	.63559	2.5372	7.2097	49.911	169.06	302.33	.29633
#1	.00061	104.18	.06951	.07437	.00075	.00095	.00637	27.102
#2	.00053	103.56	.07132	.06507	.00184	-.00156	-.00303	27.263
#3	.00052	102.86	.06780	.07342	.00093	-.00273	.00133	27.181
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606050403 Acquired: 6/14/2016 14:24:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00123**	**.51113**	**-.00066**	**.00109**	**.00001**	**.01901**	**.00040**
Stddev	.00015	.00256	.00586	.00237	.00050	.00009	.00049
%RSD	12.178	.50066	889.16	217.32	8878.0	.49488	124.24
#1	.00119	.51387	.00499	.00093	.00019	.01891	.00079
#2	.00140	.51072	-.00025	.00354	.00039	.01903	.00055
#3	.00111	.50881	-.00672	-.00120	-.00057	.01909	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7629.8**	**44279.**	**2952.6**
Stddev	27.8	185.	27.3
%RSD	.36469	.41871	.92453
#1	7651.8	44069.	2923.9
#2	7639.1	44421.	2978.2
#3	7598.5	44348.	2955.6

Approved: June 15, 2016

Sample Name: L1606050403PS Acquired: 6/14/2016 14:28:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572544-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20301**	**5.2332**	**.20434**	**1.0191**	**1.2721**	**.02548**	**22.935**	**.02626**
Stddev	.00168	.0230	.00109	.0066	.0014	.00008	.154	.00007
%RSD	.82639	.43963	.53159	.65216	.11363	.32356	.66937	.28400
#1	.20367	5.2532	.20556	1.0189	1.2738	.02539	22.784	.02630
#2	.20426	5.2384	.20401	1.0259	1.2710	.02555	22.931	.02631
#3	.20111	5.2081	.20346	1.0126	1.2717	.02551	23.091	.02618
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10490**	**.36618**	**.25717**	**2.7294**	**26.890**	**.56771**	**24.122**	**.32859**
Stddev	.00058	.00261	.00314	.0179	.024	.00044	.167	.00185
%RSD	.55188	.71375	1.2227	.65570	.08857	.07694	.69034	.56393
#1	.10537	.36918	.26040	2.7201	26.863	.56752	24.123	.33034
#2	.10426	.36493	.25701	2.7182	26.900	.56739	23.956	.32665
#3	.10509	.36442	.25411	2.7501	26.907	.56821	24.289	.32876
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52374**	**118.31**	**.31687**	**5.0964**	**.25698**	**.61196**	**.20359**	**26.803**
Stddev	.00137	.10	.00202	.0159	.00328	.00379	.00561	.038
%RSD	.26119	.08347	.63803	.31259	1.2746	.61899	2.7532	.14288
#1	.52532	118.25	.31900	5.1130	.25917	.60877	.19721	26.839
#2	.52299	118.27	.31662	5.0813	.25321	.61615	.20585	26.763
#3	.52292	118.43	.31498	5.0948	.25855	.61096	.20771	26.809
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606050403PS Acquired: 6/14/2016 14:28:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572544-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51195**	**.95388**	**.50326**	**.25080**	**.51838**	**.53084**	**.00305**
Stddev	.00047	.00310	.00682	.00349	.00242	.00090	.00062
%RSD	.09277	.32492	1.3555	1.3911	.46705	.17019	20.386
#1	.51249	.95571	.51082	.25310	.51944	.53188	.00234
#2	.51159	.95030	.49756	.25252	.52009	.53041	.00332
#3	.51177	.95563	.50140	.24679	.51561	.53024	.00349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7614.3**	**44074.**	**2952.6**
Stddev	10.9	75.	8.0
%RSD	.14253	.16944	.27154
#1	7623.5	44151.	2960.7
#2	7616.9	44002.	2952.6
#3	7602.3	44068.	2944.6

Approved: June 15, 2016

Sample Name: L1606050403SDL Acquired: 6/14/2016 14:32:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG572544-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00062	.00700	.00023	.00421	.16210	.00006	3.7959	-.00001
Stddev	.00089	.00370	.00210	.00182	.00087	.00014	.0433	.00023
%RSD	143.33	52.855	895.70	43.236	.53705	240.43	1.1397	1571.9
#1	-.00122	.00299	.00233	.00623	.16311	-.00003	3.7819	.00012
#2	-.00106	.01029	.00024	.00369	.16161	.00022	3.8444	-.00028
#3	.00040	.00773	-.00187	.00270	.16159	-.00001	3.7614	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.02231	.00117	.16394	.28556	.00746	4.1825	.01651
Stddev	.00020	.00034	.00099	.01427	.08847	.00125	.1080	.00110
%RSD	41.665	1.5310	85.024	8.7072	30.980	16.695	2.5820	6.6413
#1	.00056	.02230	.00003	.15170	.19046	.00870	4.1005	.01615
#2	.00026	.02197	.00159	.17962	.30082	.00747	4.1422	.01774
#3	.00064	.02265	.00188	.16051	.36540	.00621	4.3049	.01564
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	19.761	.01384	.01190	-.00090	.00033	.00273	5.1779
Stddev	.00042	.075	.00067	.00387	.00193	.00212	.00368	.0337
%RSD	229.98	.37868	4.8657	32.494	212.86	644.73	134.54	.65079
#1	.00053	19.690	.01361	.01305	-.00219	.00272	.00525	5.1686
#2	-.00028	19.839	.01460	.00759	-.00183	-.00130	-.00149	5.2153
#3	.00029	19.753	.01332	.01507	.00131	-.00043	.00444	5.1499
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606050403SDL Acquired: 6/14/2016 14:32:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG572544-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00124**	**.09713**	**.00696**	**.00230**	**.00076**	**.00430**	**-.00038**
Stddev	.00064	.00077	.00455	.00259	.00065	.00012	.00044
%RSD	51.460	.79200	65.353	112.64	85.408	2.8192	115.86
#1	.00072	.09662	.01075	.00054	.00116	.00431	-.00081
#2	.00105	.09801	.00192	.00108	.00110	.00417	-.00041
#3	.00196	.09675	.00821	.00528	.00001	.00441	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8107.0**	**46979.**	**3023.3**
Stddev	27.4	142.	14.8
%RSD	.33816	.30134	.48798
#1	8077.2	46827.	3030.2
#2	8131.1	47107.	3006.4
#3	8112.7	47003.	3033.4

Approved: June 15, 2016

Sample Name: L1606050403SDL Acquired: 6/14/2016 14:36:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG572544-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	-.00070	-.00123	.00078	.03286	.00005	.73716	-.00006
Stddev	.00087	.00243	.00190	.00359	.00141	.00008	.04250	.00018
%RSD	117.38	347.31	155.02	460.34	4.2955	150.55	5.7652	295.61
#1	.00004	.00067	-.00340	.00492	.03133	.00014	.69290	-.00021
#2	.00171	-.00351	-.00038	-.00118	.03411	.00004	.77765	.00015
#3	.00047	.00073	.00011	-.00140	.03314	-.00002	.74092	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	.00544	.00053	.03295	-.00023	.00065	.86507	.00262
Stddev	.00020	.00120	.00089	.00496	.04743	.00164	.03420	.00146
%RSD	1719.1	21.985	168.02	15.056	20796.	251.35	3.9539	55.605
#1	.00013	.00409	-.00049	.03130	-.00117	.00055	.90454	.00148
#2	-.00024	.00587	.00096	.02903	.04767	.00234	.84646	.00426
#3	.00008	.00637	.00112	.03853	-.04718	-.00093	.84420	.00212
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	3.9177	.00340	.01257	-.00178	.00162	-.00304	.97233
Stddev	.00040	.0387	.00093	.00205	.00154	.00458	.00214	.02609
%RSD	103.20	.98745	27.225	16.330	86.252	281.99	70.452	2.6830
#1	.00001	3.8792	.00258	.01425	-.00106	.00668	-.00386	1.0024
#2	-.00038	3.9173	.00323	.01028	-.00355	.00045	-.00465	.95901
#3	-.00079	3.9566	.00440	.01316	-.00074	-.00225	-.00061	.95560
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606050403SDL Acquired: 6/14/2016 14:36:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG572544-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00062	.01898	.00344	.00253	-.00028	.00097	-.00018
Stddev	.00081	.00011	.00184	.00165	.00040	.00018	.00010
%RSD	132.03	.56699	53.424	65.164	141.54	18.829	57.425
#1	.00067	.01897	.00452	.00157	-.00047	.00096	-.00029
#2	.00140	.01888	.00448	.00443	-.00056	.00115	-.00008
#3	-.00022	.01909	.00132	.00159	.00018	.00079	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8471.1	47626.	3070.0
Stddev	143.8	163.	28.6
%RSD	1.6969	.34178	.93160
#1	8308.3	47801.	3098.4
#2	8524.6	47479.	3070.5
#3	8580.5	47598.	3041.2

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 14:40:17 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.38909	9.6925	.37921	.48367	.94871	.04815	9.4357	.04840
Stddev	.00150	.0208	.00565	.00297	.00487	.00025	.0808	.00058
%RSD	.38504	.21460	1.4889	.61360	.51314	.52837	.85669	1.1917
#1	.39014	9.6698	.38569	.48326	.95060	.04785	9.4155	.04905
#2	.38738	9.6973	.37533	.48682	.95236	.04830	9.5247	.04821
#3	.38976	9.7106	.37660	.48092	.94318	.04829	9.3668	.04794
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19468	.48259	.48474	3.7712	47.215	.94232	9.3385	.47111
Stddev	.00042	.00173	.00305	.0229	.122	.00410	.0059	.00172
%RSD	.21660	.35788	.62936	.60684	.25821	.43465	.06276	.36550
#1	.19514	.48063	.48724	3.7604	47.310	.94206	9.3397	.47065
#2	.19430	.48329	.48134	3.7975	47.258	.94654	9.3436	.47301
#3	.19461	.48386	.48565	3.7557	47.078	.93837	9.3321	.46966
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.96477	47.183	.48606	9.6057	.48725	1.1594	.37971	4.8773
Stddev	.00630	.258	.00293	.0486	.00226	.0115	.00691	.0230
%RSD	.65277	.54583	.60290	.50597	.46433	.98923	1.8187	.47161
#1	.97196	47.262	.48785	9.6534	.48882	1.1722	.38287	4.9025
#2	.96023	47.392	.48268	9.5562	.48826	1.1500	.38447	4.8575
#3	.96213	46.895	.48766	9.6074	.48465	1.1559	.37179	4.8718
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 14:40:17 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.96127	.94929	.93896	.48362	.96581	.96673	.96510
Stddev	.00529	.00476	.00767	.00467	.00268	.00448	.00130
%RSD	.55082	.50164	.81734	.96621	.27763	.46292	.13436
#1	.96644	.95118	.94655	.48681	.96273	.97185	.96425
#2	.95586	.95281	.93912	.47825	.96768	.96354	.96659
#3	.96151	.94387	.93121	.48579	.96700	.96481	.96446
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8074.8	46641.	3084.8
Stddev	12.8	133.	18.4
%RSD	.15824	.28428	.59486
#1	8061.4	46785.	3088.3
#2	8086.9	46523.	3064.9
#3	8076.2	46615.	3101.1

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 14:43:59 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.00075	.00026	.00206	.00087	.00006	-.00390	-.00007
Stddev	.00156	.00812	.00068	.00160	.00062	.00004	.02599	.00036
%RSD	1035.0	1088.9	258.25	77.620	72.146	75.951	665.62	529.10
#1	.00100	.00596	-.00046	.00365	.00132	.00010	-.03020	.00015
#2	-.00165	.00489	.00037	.00045	.00112	.00002	-.00329	.00014
#3	.00111	-.00861	.00089	.00207	.00015	.00005	.02177	-.00049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00061	.00026	-.00361	-.07520	.00069	.01969	-.00125
Stddev	.00016	.00033	.00088	.00455	.07635	.00199	.00698	.00017
%RSD	124.76	53.924	334.68	126.06	101.53	290.03	35.426	13.319
#1	-.00005	.00082	.00126	-.00811	.01272	-.00150	.02673	-.00138
#2	.00026	.00023	-.00042	-.00369	-.11353	.00238	.01277	-.00130
#3	.00016	.00077	-.00005	.00098	-.12479	.00117	.01957	-.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00166	-.00275	.00037	.00208	-.00144	.00044	.00560	.00117
Stddev	.00029	.02001	.00045	.00113	.00140	.00241	.00185	.00112
%RSD	17.264	727.08	119.88	54.385	97.115	551.63	32.972	95.725
#1	.00136	.01876	.00036	.00297	-.00290	.00006	.00774	.00241
#2	.00169	-.00621	.00083	.00081	-.00133	-.00176	.00455	.00091
#3	.00194	-.02082	-.00007	.00245	-.00010	.00302	.00452	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 14:43:59 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00012**	**.00020**	**.00268**	**.00090**	**-.00002**	**.00007**	**.00079**
Stddev	.00049	.00031	.00608	.00338	.00092	.00007	.00022
%RSD	403.62	153.43	226.69	373.90	5032.9	104.09	27.352
#1	-.00049	.00055	-.00003	.00467	.00008	-.00001	.00054
#2	-.00032	.00013	.00964	-.00187	.00085	.00009	.00093
#3	.00044	-.00007	-.00157	-.00008	-.00099	.00013	.00090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8172.0**	**47648.**	**3078.1**
Stddev	64.9	350.	9.5
%RSD	.79392	.73460	.30987
#1	8101.1	47961.	3087.4
#2	8228.4	47714.	3068.4
#3	8186.4	47270.	3078.7

Approved: June 15, 2016

Sample Name: LLCCV Acquired: 6/14/2016 14:48:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00979	.16139	.00635	.07835	.00792	.00157	.38322	.00073
Stddev	.00179	.00594	.00207	.00088	.00061	.00003	.05584	.00011
%RSD	18.313	3.6833	32.545	1.1236	7.6693	2.1807	14.570	14.738
#1	.01185	.15625	.00826	.07743	.00850	.00157	.31895	.00084
#2	.00863	.16790	.00664	.07918	.00729	.00160	.41981	.00062
#3	.00887	.16001	.00415	.07843	.00796	.00153	.41090	.00074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00370	.00385	.00386	.08058	.67879	.07657	.33166	.00633
Stddev	.00039	.00073	.00103	.01502	.02336	.00300	.05512	.00237
%RSD	10.417	19.063	26.542	18.641	3.4417	3.9149	16.621	37.471
#1	.00414	.00336	.00293	.08770	.68168	.07837	.32433	.00375
#2	.00347	.00349	.00371	.06332	.65412	.07825	.28056	.00681
#3	.00349	.00469	.00496	.09071	.70057	.07311	.39008	.00842
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00736	.38207	.01611	.75146	.00769	.07705	.01527	.76721
Stddev	.00029	.00935	.00057	.01311	.00339	.00101	.00082	.00931
%RSD	3.8806	2.4471	3.5650	1.7447	44.017	1.3142	5.3546	1.2136
#1	.00703	.39162	.01658	.76590	.00507	.07696	.01442	.77085
#2	.00753	.38164	.01628	.74819	.01152	.07608	.01535	.77415
#3	.00751	.37294	.01547	.74030	.00650	.07810	.01605	.75663
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: LLCCV Acquired: 6/14/2016 14:48:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38819**	**.03866**	**.03101**	**.14787**	**.00784**	**.01607**	**.04257**
Stddev	.00667	.00044	.00342	.00413	.00022	.00032	.00135
%RSD	1.7177	1.1337	11.035	2.7928	2.8059	1.9833	3.1768
#1	.39344	.03817	.03295	.14966	.00775	.01637	.04102
#2	.39045	.03879	.02706	.15080	.00810	.01611	.04352
#3	.38069	.03902	.03303	.14314	.00769	.01574	.04317
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8296.2**	**47601.**	**3111.3**
Stddev	90.1	568.	13.6
%RSD	1.0858	1.1931	.43636
#1	8224.2	47445.	3122.5
#2	8267.2	47127.	3096.2
#3	8397.2	48230.	3115.2

Approved: June 15, 2016

Sample Name: LLCCV Acquired: 6/14/2016 14:51:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02082	.39736	.01945	.19110	.01962	.00387	.96551	.00167
Stddev	.00017	.01047	.00274	.00416	.00055	.00004	.03154	.00022
%RSD	.83706	2.6349	14.094	2.1769	2.8156	.99294	3.2670	13.376
#1	.02064	.38704	.01648	.18827	.01923	.00383	.99855	.00181
#2	.02085	.40798	.02189	.18915	.01938	.00389	.93571	.00142
#3	.02098	.39707	.01998	.19587	.02025	.00390	.96228	.00180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00938	.00996	.01040	.19547	1.7662	.18239	.96403	.01771
Stddev	.00030	.00104	.00168	.01682	.0591	.00312	.01940	.00042
%RSD	3.1795	10.411	16.126	8.6059	3.3449	1.7112	2.0125	2.3793
#1	.00910	.01049	.01233	.18962	1.7045	.18589	.95579	.01806
#2	.00969	.01062	.00947	.18236	1.8222	.17990	.95011	.01724
#3	.00936	.00877	.00939	.21444	1.7720	.18138	.98619	.01784
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01760	.94036	.03831	1.7960	.01636	.18198	.03416	1.8563
Stddev	.00047	.01118	.00083	.0228	.00371	.00232	.00543	.0273
%RSD	2.6648	1.1889	2.1625	1.2682	22.677	1.2728	15.891	1.4732
#1	.01714	.92881	.03808	1.7714	.01289	.17976	.03561	1.8275
#2	.01759	.94114	.03923	1.8164	.02027	.18180	.03872	1.8819
#3	.01808	.95113	.03762	1.8002	.01593	.18438	.02816	1.8594
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: LLCCV Acquired: 6/14/2016 14:51:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.93317	.09426	.05656	.35433	.01897	.03880	.09721
Stddev	.00966	.00085	.00744	.00369	.00021	.00070	.00052
%RSD	1.0356	.90449	13.146	1.0417	1.1135	1.7944	.53191
#1	.92360	.09447	.05025	.35013	.01894	.03800	.09672
#2	.94292	.09332	.05468	.35578	.01878	.03925	.09717
#3	.93298	.09498	.06476	.35707	.01920	.03916	.09775
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8395.4	47540.	3117.8
Stddev	101.0	351.	5.0
%RSD	1.2028	.73785	.16055
#1	8511.1	47945.	3121.8
#2	8325.2	47345.	3119.5
#3	8349.9	47331.	3112.2

Approved: June 15, 2016

Sample Name: L1606040301 Acquired: 6/14/2016 14:55:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00044	.11669	.00278	.03288	.23711	-.00002	F 320.06
Stddev	.00109	.00421	.00460	.00346	.00353	.00004	4.65
%RSD	246.41	3.6090	165.31	10.508	1.4879	222.16	1.4526
#1	-.00074	.11285	.00442	.02891	.23351	.00000	314.89
#2	.00140	.11603	.00634	.03458	.24057	-.00006	323.90
#3	.00067	.12119	-.00241	.03516	.23725	.00001	321.38
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	.00073	.00156	.00943	.00460	259.36	1.0897
Stddev	.00013	.00018	.00069	.00107	.01334	3.30	.0182
%RSD	542.41	24.811	43.871	11.301	290.11	1.2740	1.6702
#1	-.00008	.00089	.00190	.00830	.01810	255.75	1.0703
#2	.00012	.00054	.00077	.01042	.00426	262.24	1.1064
#3	-.00012	.00076	.00201	.00955	-.00857	260.09	1.0924
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.03325	.00101	.00395	F 306.28	.00090	.05246	.01346
Stddev	.05226	.00381	.00023	4.34	.00022	.00477	.00396
%RSD	157.20	378.83	5.8151	1.4154	24.384	9.1005	29.393
#1	-.08555	.00356	.00372	301.61	.00109	.05152	.01000
#2	-.03318	-.00337	.00418	310.18	.00066	.05763	.01778
#3	.01898	.00283	.00395	307.05	.00094	.04822	.01261
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 15, 2016

Sample Name: L1606040301 Acquired: 6/14/2016 14:55:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00314	.01843	.13831	.00117	.39726	F -.04397	.00046
Stddev	.00134	.00502	.00251	.00077	.00693	.00264	.00412
%RSD	42.657	27.220	1.8138	65.252	1.7446	5.9945	905.34
#1	.00159	.02144	.13974	.00041	.38942	-.04171	-.00100
#2	.00386	.02121	.13977	.00194	.40258	-.04687	-.00274
#3	.00396	.01264	.13541	.00118	.39977	-.04332	.00511
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00019	.17944	.00124
Stddev	.00045	.00095	.00012
%RSD	234.31	.52849	10.038
#1	.00014	.17876	.00129
#2	-.00001	.18052	.00109
#3	-.00071	.17903	.00132
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7268.2	42211.	2905.0
Stddev	19.3	805.	36.6
%RSD	.26544	1.9060	1.2612
#1	7285.4	43079.	2937.7
#2	7247.4	41490.	2865.4
#3	7271.8	42066.	2912.0

Approved: June 15, 2016

Sample Name: L1606043701 Acquired: 6/14/2016 14:59:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	.20249	.00014	.01592	.04863	-.00003	46.657	-.00009
Stddev	.00154	.01292	.00087	.00166	.00064	.00002	1.430	.00036
%RSD	258.11	6.3819	607.42	10.410	1.3109	55.475	3.0651	379.11
#1	-.00095	.21556	.00015	.01725	.04934	-.00005	47.944	.00028
#2	.00214	.20218	.00101	.01407	.04811	-.00002	46.909	-.00013
#3	.00060	.18972	-.00073	.01645	.04843	-.00002	45.117	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00094	.00181	.16114	.91914	.00368	8.4800	.00804
Stddev	.00024	.00066	.00033	.01534	.02724	.00649	.1670	.00161
%RSD	432.95	70.175	18.521	9.5207	2.9635	176.31	1.9688	20.032
#1	.00012	.00062	.00144	.17156	.93200	.00684	8.6616	.00898
#2	-.00021	.00169	.00189	.16834	.88785	.00799	8.4452	.00897
#3	.00026	.00050	.00209	.14353	.93757	-.00378	8.3332	.00618
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	3.4956	.00161	.00083	-.00103	-.00270	.00463	4.2291
Stddev	.00022	.1165	.00055	.00923	.00111	.00159	.00420	.0240
%RSD	39.374	3.3333	34.071	1116.8	107.14	58.829	90.524	.56690
#1	-.00049	3.6042	.00154	.00362	-.00120	-.00187	.00870	4.2055
#2	-.00038	3.5101	.00218	-.00948	-.00205	-.00169	.00032	4.2284
#3	-.00080	3.3725	.00109	.00834	.00015	-.00452	.00489	4.2534
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606043701 Acquired: 6/14/2016 14:59:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00142	.12394	.00401	.00187	.00065	.00122	.00068
Stddev	.00118	.00388	.00562	.00191	.00063	.00010	.00038
%RSD	82.618	3.1280	140.20	102.44	97.242	7.9647	55.336
#1	.00044	.12713	.00176	.00132	.00136	.00129	.00025
#2	.00111	.12505	.01040	.00029	.00019	.00111	.00084
#3	.00273	.11962	-.00014	.00400	.00039	.00125	.00096
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7666.9	44676.	2932.8
Stddev	38.9	621.	82.3
%RSD	.50787	1.3906	2.8070
#1	7702.9	43965.	2855.3
#2	7672.3	44948.	2924.0
#3	7625.6	45114.	3019.3

Approved: June 15, 2016

Sample Name: L1606044201 Acquired: 6/14/2016 15:03:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.06775	-.00099	.01077	.03792	-.00001	35.951	-.00002
Stddev	.00142	.00217	.00121	.00116	.00058	.00005	.612	.00015
%RSD	348.65	3.2042	122.65	10.798	1.5279	465.80	1.7012	664.77
#1	.00196	.06598	.00017	.01186	.03726	-.00007	35.720	.00013
#2	.00012	.07017	-.00089	.01091	.03837	.00001	36.644	-.00003
#3	-.00085	.06710	-.00225	.00954	.03812	.00003	35.488	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00012	.00190	.00069	.05905	.42169	.00245	3.0962	.00091
Stddev	.00010	.00056	.00055	.02738	.02928	.00330	.1260	.00190
%RSD	80.494	29.481	79.975	46.366	6.9432	134.62	4.0706	208.96
#1	-.00020	.00126	.00073	.03276	.45069	.00189	2.9539	.00060
#2	-.00014	.00230	.00012	.05700	.42224	-.00053	3.1938	.00294
#3	-.00001	.00214	.00121	.08740	.39214	.00600	3.1408	-.00082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00034	2.0353	.00145	.00938	-.00048	.00198	.00441	3.1225
Stddev	.00019	.0518	.00087	.00904	.00251	.00080	.00294	.0016
%RSD	55.912	2.5449	59.807	96.346	525.99	40.298	66.533	.05125
#1	-.00049	1.9937	.00071	.01109	-.00213	.00290	.00200	3.1219
#2	-.00013	2.0933	.00123	.01744	.00241	.00157	.00768	3.1213
#3	-.00042	2.0188	.00240	-.00039	-.00170	.00147	.00356	3.1243
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606044201 Acquired: 6/14/2016 15:03:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.07580	.00001	-.00149	.00037	.00103	.00011
Stddev	.00073	.00107	.00444	.00076	.00054	.00017	.00074
%RSD	234.83	1.4172	51040.	51.307	145.88	16.090	641.66
#1	-.00003	.07488	-.00391	-.00109	.00088	.00100	-.00028
#2	.00114	.07698	-.00090	-.00101	.00042	.00088	-.00035
#3	-.00019	.07554	.00484	-.00237	-.00019	.00121	.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7655.1	45324.	2926.6
Stddev	29.2	249.	58.7
%RSD	.38133	.55021	2.0066
#1	7676.9	45217.	2926.8
#2	7666.3	45609.	2867.8
#3	7621.9	45147.	2985.2

Approved: June 15, 2016

Sample Name: L1606044202 Acquired: 6/14/2016 15:07:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00071	5.0155	.00085	.01962	.10381	.00031	39.957	.00007
Stddev	.00079	.0624	.00173	.00170	.00182	.00003	.627	.00016
%RSD	111.37	1.2437	203.52	8.6473	1.7492	9.8758	1.5704	222.28
#1	.00002	5.0432	.00250	.02129	.10566	.00030	40.269	-.00011
#2	-.00155	4.9441	.00099	.01968	.10375	.00028	40.367	.00015
#3	-.00061	5.0593	-.00094	.01790	.10203	.00034	39.235	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00219	.00739	.00574	6.1191	1.5761	.00646	7.3380	.11606
Stddev	.00008	.00089	.00034	.0746	.0682	.00451	.0440	.00358
%RSD	3.8501	12.059	6.0032	1.2197	4.3287	69.752	.59930	3.0856
#1	.00228	.00660	.00556	6.1907	1.6008	.00290	7.3655	.11479
#2	.00219	.00836	.00614	6.1247	1.6286	.01153	7.3612	.12010
#3	.00211	.00723	.00552	6.0418	1.4990	.00496	7.2873	.11328
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	3.1686	.00652	.09920	.00355	-.00101	.00107	10.533
Stddev	.00027	.0466	.00088	.00648	.00250	.00236	.00267	.025
%RSD	263.85	1.4714	13.431	6.5323	70.426	232.59	249.65	.24009
#1	.00020	3.2130	.00712	.09543	.00123	-.00323	.00091	10.515
#2	-.00032	3.1727	.00552	.09549	.00620	.00146	-.00152	10.521
#3	-.00019	3.1200	.00693	.10668	.00323	-.00126	.00381	10.562
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606044202 Acquired: 6/14/2016 15:07:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00079	.11398	.05807	.00114	.00826	.03322	.00109
Stddev	.00157	.00167	.00612	.00182	.00050	.00019	.00037
%RSD	199.48	1.4686	10.542	159.45	6.0809	.58566	33.428
#1	.00158	.11525	.05991	.00303	.00851	.03341	.00151
#2	.00179	.11461	.05123	.00098	.00768	.03302	.00096
#3	-.00102	.11208	.06305	-.00059	.00859	.03324	.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7634.9	44727.	2918.7
Stddev	9.8	314.	31.4
%RSD	.12817	.70175	1.0746
#1	7633.5	44505.	2917.5
#2	7645.4	45086.	2887.9
#3	7626.0	44591.	2950.6

Approved: June 15, 2016

Sample Name: L1606044203 Acquired: 6/14/2016 15:11:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	s .00054	s .01992	s .00079	s -.00118	.62846	s .00046
Stddev	.00276	.07964	.00274	.00294	.88673	.00068
%RSD	516.65	399.70	348.55	248.40	141.10	147.45
#1	s .00325	s -.02648	s .00359	s .00146	1.6429	s .00010
#2	.00063	-.02563	.00066	-.00067	.24135	.00003
#3	s -.00228	s .11188	k -.00189	s -.00434	.00111	s .00124
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Elem	Ca4226	Cd2288	Co2286	Cr2677	Cu2247	Fe2611
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -30.820	s .00004	s .00110	s .00140	s -.00014	k 2.7346
Stddev	49.164	.00019	.00135	.00266	.00100	4.0096
%RSD	159.52	483.93	122.55	190.52	710.88	146.62
#1	-87.516	s -.00017	s .00078	s .00078	s -.00118	k 7.3417
#2	-4.9774	.00017	.00259	-.00090	-.00007	.82745
#3	.0328	k .00012	k -.00005	s .00432	k .00082	k .03457
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	270.00					
Low Limit	-.10000					

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	29.752	F -1.7197	k 13.519	k .30236	s -.00125	F -24.342
Stddev	54.733	1.8429	21.494	.55439	.00062	36.570
%RSD	183.96	107.16	158.98	183.36	50.004	150.23
#1	92.919	-3.6653	k 38.307	k .94211	s -.00196	-66.396
#2	-3.5891	-1.4933	2.2059	-.03735	-.00080	-6.6160
#3	-.07354	-.00043	k .04565	k .00232	k -.00098	-.0131
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit		36.000				270.00
Low Limit		-.10000				-.50000

Approved: June 15, 2016

Sample Name: L1606044203 Acquired: 6/14/2016 15:11:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	s **-.00058**	s **-.01024**	sF **-.00505**	s **.00295**	s **.00306**	s **.01376**
Stddev	.00345	.01054	.01028	.00401	.00551	.03196
%RSD	591.14	102.97	203.73	135.92	179.85	232.32
#1	s -.00452	s -.02193	s -.01686	s .00414	s .00942	s .05066
#2	.00083	-.00146	.00190	.00623	-.00002	-.00396
#3	k .00194	k -.00732	k -.00019	k -.00152	k -.00022	k -.00542
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit			225.00			
Low Limit			-.00500			

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	s **-.00050**	F **-.03956**	kF **-6.3621**	s **-.00132**	s **-.00018**	s **-.00031**
Stddev	.00218	.15821	9.6749	.00091	.00194	.00014
%RSD	434.82	399.95	152.07	69.394	1053.7	44.620
#1	s .00030	-.21371	k -17.496	s -.00139	s -.00009	s -.00015
#2	-.00296	.09528	-1.5844	-.00219	.00171	-.00039
#3	k .00116	-.00024	k -.0054	k -.00037	s -.00217	k -.00039
Check ?	Chk Pass	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit		9.0000	36.000			
Low Limit		-.01000	-.03000			

Elem	Zr3391
Units	ppm
Avg	kF **-.27723**
Stddev	.50436
%RSD	181.93
#1	k -.85940
#2	.02775
#3	k -.00005
Check ?	Chk Fail
High Limit	36.000
Low Limit	-.04000

Approved: June 15, 2016

Sample Name: L1606044203 Acquired: 6/14/2016 15:11:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	^ *****	^ *****	939.44
Stddev	-----	-----	1604.6
%RSD	-----	-----	170.80
#1	^ -----	^ -----	2.742
#2	10803.	61946.	23.363
#3	11948.	^ -----	2792.2

Approved: June 15, 2016

Sample Name: L1606044204 Acquired: 6/14/2016 15:15:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00035	.90382	.00126	.01646	.06374	.00013	38.916	-.00008
Stddev	.00097	.00368	.00341	.00103	.00081	.00012	.215	.00023
%RSD	272.85	.40767	270.34	6.2701	1.2688	94.647	.55343	301.83
#1	.00073	.89997	.00520	.01752	.06458	.00025	38.910	.00019
#2	-.00068	.90731	-.00052	.01546	.06370	.00001	38.704	-.00025
#3	-.00111	.90418	-.00089	.01639	.06296	.00012	39.134	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	.00180	.00686	1.3185	.73503	.00102	7.3251	.04660
Stddev	.00032	.00100	.00056	.0217	.01613	.00271	.0264	.00175
%RSD	59.950	55.538	8.1129	1.6466	2.1949	265.70	.36005	3.7497
#1	.00091	.00085	.00634	1.3024	.75359	.00040	7.3547	.04459
#2	.00031	.00171	.00679	1.3100	.72439	-.00132	7.3167	.04767
#3	.00040	.00284	.00745	1.3432	.72711	.00398	7.3040	.04755
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00033	2.8064	.00247	.05513	.00250	.00200	.00793	4.9379
Stddev	.00054	.0316	.00060	.00939	.00208	.00056	.00531	.0407
%RSD	165.02	1.1270	24.108	17.022	83.219	28.057	66.981	.82438
#1	-.00095	2.8419	.00296	.06417	.00327	.00152	.00197	4.9840
#2	.00008	2.7963	.00266	.05580	.00014	.00185	.00964	4.9070
#3	-.00013	2.7812	.00181	.04543	.00407	.00262	.01217	4.9226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606044204 Acquired: 6/14/2016 15:15:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00162	.12336	.00737	-.00004	.00081	.02701	.00020
Stddev	.00073	.00030	.00493	.00400	.00098	.00014	.00044
%RSD	45.314	.24134	66.822	9146.5	121.00	.50285	221.72
#1	.00132	.12370	.00982	.00257	.00193	.02712	.00002
#2	.00245	.12317	.01060	.00195	.00035	.02704	-.00013
#3	.00108	.12320	.00170	-.00465	.00014	.02686	.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7754.1	45315.	2957.6
Stddev	42.8	241.	20.0
%RSD	.55216	.53105	.67617
#1	7707.7	45257.	2940.2
#2	7762.5	45108.	2979.4
#3	7792.1	45579.	2953.2

Approved: June 15, 2016

Sample Name: L1606044205 Acquired: 6/14/2016 15:20:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00049	.67935	.00094	.01451	.11454	.00004	54.607	.00007
Stddev	.00105	.01333	.00197	.00060	.00113	.00009	.192	.00005
%RSD	216.84	1.9628	209.41	4.1071	.98534	237.97	.35243	81.897
#1	-.00062	.68505	-.00069	.01451	.11548	-.00004	54.798	.00007
#2	.00063	.68889	.00039	.01392	.11485	.00001	54.610	.00001
#3	-.00147	.66411	.00312	.01511	.11329	.00014	54.413	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.00260	.00117	.77831	.74549	.00402	7.3643	.03508
Stddev	.00033	.00046	.00160	.03294	.04549	.00151	.0950	.00178
%RSD	210.03	17.659	136.21	4.2323	6.1016	37.607	1.2902	5.0604
#1	.00047	.00253	-.00046	.74129	.75116	.00498	7.2563	.03661
#2	.00019	.00310	.00274	.80440	.78787	.00228	7.4350	.03313
#3	-.00019	.00219	.00124	.78923	.69743	.00481	7.4015	.03549
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	2.8626	.00154	.03129	.00208	-.00346	.00510	5.3358
Stddev	.00020	.0203	.00043	.00486	.00307	.00175	.00021	.0265
%RSD	154.01	.70797	27.735	15.544	147.86	50.678	4.1587	.49572
#1	.00007	2.8660	.00198	.02813	.00046	-.00147	.00487	5.3137
#2	-.00013	2.8810	.00154	.03689	.00562	-.00479	.00529	5.3651
#3	-.00033	2.8409	.00112	.02884	.00015	-.00412	.00514	5.3286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606044205 Acquired: 6/14/2016 15:20:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00152	.17678	.00473	.00077	.00066	.00321	.00048
Stddev	.00030	.00079	.00381	.00153	.00117	.00019	.00029
%RSD	19.441	.44752	80.498	198.57	177.07	5.9449	59.784
#1	.00124	.17746	.00780	-.00013	-.00000	.00326	.00079
#2	.00149	.17696	.00047	.00253	.00200	.00337	.00022
#3	.00183	.17591	.00592	-.00010	-.00003	.00300	.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7713.4	44825.	2930.5
Stddev	21.8	248.	11.9
%RSD	.28287	.55396	.40531
#1	7736.6	44748.	2927.0
#2	7693.3	44625.	2920.8
#3	7710.4	45103.	2943.8

Approved: June 15, 2016

Sample Name: L1606044206 Acquired: 6/14/2016 15:23:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.78971	-.00105	.02039	.07992	.00008	53.195	-.00010
Stddev	.00155	.00820	.00371	.00081	.00125	.00008	.554	.00029
%RSD	508.09	1.0389	353.17	3.9831	1.5583	100.42	1.0419	282.75
#1	.00023	.79790	.00046	.01948	.08059	.00013	53.801	.00022
#2	.00189	.78149	-.00527	.02104	.08069	-.00001	53.072	-.00034
#3	-.00121	.78974	.00167	.02065	.07848	.00013	52.713	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	.00218	.00231	.87911	1.0840	.00272	6.9008	.03949
Stddev	.00019	.00073	.00097	.03512	.2109	.00171	.0985	.00186
%RSD	73.437	33.617	42.108	3.9953	19.456	62.810	1.4280	4.7025
#1	.00043	.00209	.00140	.91957	1.2558	.00097	6.8220	.03940
#2	.00032	.00150	.00333	.85641	.84863	.00437	6.8691	.03768
#3	.00005	.00296	.00220	.86136	1.1476	.00281	7.0113	.04140
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00047	3.2767	.00138	.04207	-.00010	-.00210	.00767	5.0194
Stddev	.00013	.0160	.00064	.00473	.00080	.00565	.00218	.0064
%RSD	28.605	.48933	46.377	11.253	818.94	268.51	28.392	.12725
#1	-.00057	3.2941	.00064	.03682	-.00100	-.00176	.01018	5.0185
#2	-.00051	3.2735	.00166	.04601	.00051	.00336	.00623	5.0262
#3	-.00032	3.2625	.00182	.04339	.00020	-.00792	.00660	5.0135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606044206 Acquired: 6/14/2016 15:23:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00044	.19373	.00199	.00119	.00131	.01675	.00042
Stddev	.00092	.00071	.00447	.00133	.00002	.00007	.00052
%RSD	209.64	.36464	224.35	111.45	1.5482	.40557	125.48
#1	-.00054	.19434	-.00133	.00085	.00129	.01673	.00092
#2	.00058	.19390	.00023	.00266	.00131	.01683	-.00012
#3	.00128	.19296	.00708	.00007	.00133	.01670	.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7704.3	44843.	2915.4
Stddev	16.8	228.	40.0
%RSD	.21830	.50801	1.3718
#1	7717.5	44737.	2891.9
#2	7685.4	44688.	2892.8
#3	7710.1	45105.	2961.6

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 15:27:59 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37019**	**9.2290**	**.36188**	**.46327**	**.90739**	**.04601**	F **8.9539**
Stddev	.00352	.0830	.00051	.00383	.00395	.00055	.0256
%RSD	.95044	.89904	.14152	.82653	.43543	1.1953	.28644
#1	.36957	9.2356	.36242	.46323	.90732	.04595	8.9702
#2	.37398	9.3084	.36182	.46711	.90347	.04659	8.9243
#3	.36703	9.1429	.36140	.45945	.91138	.04550	8.9671
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
Value							10.000
Range							-10.000%

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04629**	**.18621**	**.46236**	**.46486**	**3.6336**	**45.441**	**.90441**
Stddev	.00013	.00071	.00538	.00058	.0480	.162	.00628
%RSD	.27125	.37872	1.1625	.12502	1.3206	.35748	.69435
#1	.04642	.18549	.46097	.46537	3.6051	45.473	.91153
#2	.04626	.18690	.46830	.46500	3.6068	45.265	.89964
#3	.04617	.18624	.45782	.46423	3.6890	45.585	.90207
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **8.9682**	**.45212**	**.92258**	**45.466**	**.46577**	**9.2421**	**.46721**
Stddev	.0196	.00369	.00353	.238	.00181	.0276	.00534
%RSD	.21844	.81578	.38249	.52331	.38795	.29887	1.1433
#1	8.9475	.44813	.92401	45.430	.46725	9.2441	.46738
#2	8.9707	.45281	.92516	45.249	.46631	9.2686	.47247
#3	8.9864	.45541	.91856	45.720	.46376	9.2135	.46179
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	10.000						
Range	-10.000%						

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 15:27:59 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.1065	.36190	4.6690	.92220	.90503	F .89756	.46070
Stddev	.0037	.01232	.0140	.00277	.00456	.00795	.00212
%RSD	.33129	3.4043	.29997	.30051	.50383	.88590	.46092
#1	1.1081	.36969	4.6626	.92337	.90591	.89217	.46276
#2	1.1091	.36831	4.6851	.92420	.90009	.89383	.46083
#3	1.1023	.34769	4.6594	.91904	.90909	.90670	.45852
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
Value						1.0000	
Range						-10.000%	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.92561	.93083	.93804
Stddev	.01088	.00205	.00891
%RSD	1.1754	.22003	.95026
#1	.92367	.92865	.94614
#2	.93733	.93272	.92849
#3	.91583	.93112	.93949
Check ?	Chk Pass	Chk Pass	Chk Pass
Value			
Range			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8391.5	48659.	3170.6
Stddev	26.5	196.	26.9
%RSD	.31626	.40316	.84886
#1	8395.5	48726.	3156.5
#2	8363.2	48438.	3201.6
#3	8415.8	48813.	3153.5

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 15:31:41 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	.00829	-.00086	.00211	.00086	.00005	.00731	-.00017
Stddev	.00171	.00239	.00363	.00085	.00009	.00009	.02393	.00012
%RSD	322.91	28.835	422.57	40.186	10.518	197.52	327.25	66.290
#1	-.00117	.00574	-.00029	.00137	.00093	.00011	-.01856	-.00026
#2	.00225	.01047	-.00474	.00193	.00089	.00008	.02865	-.00022
#3	.00051	.00865	.00245	.00304	.00076	-.00006	.01185	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	-.00053	.00005	.02835	-.14787	.00015	.01936	-.00097
Stddev	.00030	.00040	.00111	.01256	.07615	.00395	.08605	.00385
%RSD	220.00	75.448	2129.9	44.295	51.500	2718.9	444.45	395.98
#1	.00048	-.00061	.00073	.03420	-.23525	.00325	-.07841	-.00207
#2	-.00002	-.00089	-.00123	.03692	-.09564	-.00430	.08356	-.00415
#3	-.00006	-.00010	.00066	.01394	-.11271	.00148	.05293	.00331
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00178	-.01343	.00079	.00419	-.00178	-.00120	.00084	.00142
Stddev	.00043	.01144	.00060	.00347	.00174	.00401	.00240	.00094
%RSD	24.300	85.175	76.408	82.936	98.074	334.16	286.95	66.123
#1	.00130	-.01354	.00009	.00166	-.00282	.00277	.00165	.00060
#2	.00189	-.02481	.00114	.00814	.00024	-.00526	-.00187	.00123
#3	.00214	-.00194	.00113	.00275	-.00275	-.00111	.00273	.00245
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 15:31:41 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00144**	**-.00015**	**.00829**	**.00071**	**.00060**	**-.00027**	**.00048**
Stddev	.00021	.00025	.00385	.00305	.00095	.00032	.00041
%RSD	14.613	163.08	46.437	430.49	160.23	118.65	85.624
#1	.00121	.00009	.00834	.00148	.00103	.00010	.00005
#2	.00162	-.00013	.01212	.00330	-.00050	-.00049	.00086
#3	.00148	-.00041	.00442	-.00265	.00126	-.00042	.00052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8439.4**	**49045.**	**3190.3**
Stddev	36.7	215.	18.8
%RSD	.43529	.43903	.58776
#1	8448.0	49185.	3203.4
#2	8471.1	48797.	3198.8
#3	8399.1	49153.	3168.8

Approved: June 15, 2016

Sample Name: L1606044301 Acquired: 6/14/2016 15:35:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00083	.94483	-.00077	.01655	.05842	.00010	55.517	.00001
Stddev	.00080	.01282	.00471	.00060	.00033	.00009	.209	.00003
%RSD	95.507	1.3568	611.07	3.6218	.57276	90.815	.37579	373.01
#1	-.00007	.95472	-.00053	.01678	.05819	.00014	55.734	.00001
#2	.00144	.94943	.00381	.01699	.05880	-.00000	55.318	-.00003
#3	.00112	.93035	-.00559	.01587	.05826	.00016	55.497	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.00140	.00161	.82585	1.5152	-.00017	11.041	.02198
Stddev	.00008	.00028	.00042	.00767	.0714	.00158	.206	.00163
%RSD	19.490	19.904	26.087	.92853	4.7105	944.41	1.8614	7.4226
#1	.00039	.00135	.00200	.83241	1.4975	-.00085	11.122	.02056
#2	.00034	.00114	.00116	.81742	1.5938	-.00129	10.807	.02377
#3	.00050	.00169	.00167	.82772	1.4544	.00164	11.193	.02162
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	4.2627	.00174	.03928	.00201	-.00196	.00097	5.0783
Stddev	.00019	.0574	.00030	.00947	.00245	.00241	.00332	.0117
%RSD	107.79	1.3460	17.454	24.109	121.41	123.00	340.48	.23054
#1	.00006	4.2825	.00193	.03192	.00032	-.00293	.00301	5.0875
#2	.00007	4.1981	.00139	.03595	.00090	-.00372	.00277	5.0823
#3	.00039	4.3076	.00189	.04996	.00482	.00079	-.00285	5.0652
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606044301 Acquired: 6/14/2016 15:35:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00087	.12664	.01000	-.00067	.00186	.01953	.00143
Stddev	.00045	.00010	.00269	.00183	.00034	.00002	.00023
%RSD	51.898	.07772	26.930	275.48	18.205	.10556	16.329
#1	.00048	.12675	.00833	-.00275	.00147	.01953	.00148
#2	.00077	.12659	.01310	.00071	.00199	.01950	.00118
#3	.00136	.12658	.00856	.00004	.00211	.01954	.00163
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7648.5	44599.	2914.5
Stddev	13.7	198.	16.7
%RSD	.17869	.44313	.57148
#1	7641.1	44599.	2897.3
#2	7664.3	44401.	2915.7
#3	7640.1	44796.	2930.6

Approved: June 15, 2016

Sample Name: L1606044302 Acquired: 6/14/2016 15:39:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	.31425	-.00280	.01501	.05999	.00004	43.485	.00009
Stddev	.00169	.00500	.00193	.00271	.00104	.00007	.260	.00043
%RSD	277.77	1.5906	68.793	18.086	1.7418	172.00	.59711	457.14
#1	.00194	.31017	-.00058	.01188	.05978	.00010	43.752	-.00030
#2	-.00129	.31276	-.00400	.01667	.06112	.00006	43.472	.00054
#3	.00117	.31983	-.00384	.01648	.05906	-.00004	43.233	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00041	.00018	.43885	.23787	.49483	.00015	5.4956	.00096
Stddev	.00027	.00085	.00144	.01500	.03424	.00236	.0245	.00030
%RSD	65.688	471.53	.32740	6.3079	6.9196	1550.7	.44681	31.612
#1	-.00040	.00091	.43984	.24714	.53194	-.00252	5.4992	.00128
#2	-.00014	.00037	.43951	.22056	.48812	.00103	5.4694	.00068
#3	-.00068	-.00075	.43720	.24590	.46445	.00195	5.5182	.00092
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	3.0559	.00190	.12813	.00381	.00193	-.00055	4.9185
Stddev	.00026	.0336	.00040	.01180	.00387	.00142	.00988	.0138
%RSD	68.764	1.1012	20.993	9.2062	101.58	73.572	1785.6	.28151
#1	-.00066	3.0532	.00162	.13002	.00128	.00266	.01043	4.9342
#2	-.00037	3.0909	.00236	.13887	.00826	.00285	-.00870	4.9078
#3	-.00013	3.0238	.00173	.11551	.00188	.00029	-.00340	4.9136
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606044302 Acquired: 6/14/2016 15:39:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.15898	.00558	.00058	.00106	.09812	.00095
Stddev	.00108	.00135	.00502	.00238	.00029	.00040	.00063
%RSD	330.35	.84703	89.858	410.53	26.892	.40424	66.505
#1	.00004	.15983	.00119	.00319	.00098	.09808	.00035
#2	.00152	.15968	.01105	-.00147	.00138	.09853	.00161
#3	-.00058	.15742	.00451	.00002	.00083	.09774	.00089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7669.7	44854.	2899.8
Stddev	24.4	236.	14.7
%RSD	.31765	.52585	.50829
#1	7666.9	44611.	2885.4
#2	7646.9	44869.	2899.1
#3	7695.4	45082.	2914.8

Approved: June 15, 2016

Sample Name: L1606044303 Acquired: 6/14/2016 15:43:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00192	.06868	.00062	.01204	.02592	-.00003	47.125	-.00016
Stddev	.00223	.00330	.00339	.00465	.00096	.00004	.501	.00017
%RSD	115.82	4.7994	550.31	38.640	3.7083	111.70	1.0633	107.83
#1	.00395	.06487	.00075	.00713	.02610	-.00000	47.635	-.00003
#2	.00229	.07073	-.00284	.01639	.02678	-.00002	47.105	-.00010
#3	-.00046	.07042	.00394	.01260	.02488	-.00007	46.634	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.00071	.00154	.05952	.86052	.00487	5.3933	.00488
Stddev	.00031	.00079	.00044	.02152	.11673	.00275	.0232	.00290
%RSD	1753.1	110.70	28.366	36.162	13.565	56.602	.43099	59.379
#1	.00038	.00160	.00178	.04194	.95094	.00788	5.4060	.00389
#2	-.00011	.00009	.00182	.08353	.72874	.00426	5.4074	.00815
#3	-.00021	.00045	.00104	.05310	.90188	.00247	5.3665	.00261
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	3.4088	.00121	.10337	-.00263	.00085	.00133	4.2146
Stddev	.00019	.0392	.00040	.00520	.00140	.00243	.00426	.0129
%RSD	117.75	1.1508	32.874	5.0262	53.377	287.74	320.72	.30560
#1	-.00036	3.4506	.00127	.09962	-.00102	.00363	-.00276	4.2293
#2	-.00015	3.3728	.00079	.10120	-.00360	-.00088	.00100	4.2095
#3	.00002	3.4030	.00158	.10930	-.00327	-.00021	.00574	4.2050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606044303 Acquired: 6/14/2016 15:43:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.13830	-.00843	.00082	-.00023	.00100	.00069
Stddev	.00054	.00099	.00311	.00249	.00049	.00009	.00031
%RSD	249.80	.71918	36.859	303.24	216.47	8.9909	45.504
#1	-.00006	.13944	-.01026	.00312	.00032	.00107	.00070
#2	-.00013	.13790	-.01018	-.00182	-.00036	.00090	.00037
#3	.00084	.13758	-.00484	.00116	-.00064	.00103	.00099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7655.8	45074.	2925.2
Stddev	25.7	330.	40.5
%RSD	.33624	.73106	1.3836
#1	7628.7	44706.	2879.2
#2	7680.0	45173.	2941.2
#3	7658.6	45343.	2955.3

Approved: June 15, 2016

Sample Name: L1606044601 Acquired: 6/14/2016 15:47:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00080	.03283	-.00210	.01285	.08206	.00004	28.822	-.00008
Stddev	.00146	.00667	.00072	.00446	.00077	.00005	.286	.00026
%RSD	182.20	20.307	34.086	34.746	.93723	123.48	.99355	320.10
#1	-.00072	.02516	-.00128	.01161	.08195	.00010	29.141	-.00037
#2	.00062	.03606	-.00244	.00913	.08135	.00003	28.587	-.00001
#3	-.00231	.03726	-.00258	.01780	.08288	-.00000	28.738	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.00140	.05688	.81359	.41082	.00176	5.4125	.36346
Stddev	.00031	.00107	.00111	.01675	.05974	.00276	.1335	.00176
%RSD	2959.0	76.740	1.9535	2.0591	14.541	156.52	2.4660	.48543
#1	.00034	.00232	.05816	.81207	.43404	.00005	5.5071	.36470
#2	-.00004	.00022	.05630	.79765	.34295	.00494	5.2598	.36425
#3	-.00027	.00166	.05619	.83105	.45545	.00029	5.4706	.36144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00060	11.894	.00143	.04483	-.00076	.00045	.00040	5.6474
Stddev	.00054	.103	.00087	.00510	.00348	.00096	.00380	.0084
%RSD	90.785	.86679	61.013	11.379	456.15	215.61	960.82	.14967
#1	-.00099	12.013	.00187	.03900	-.00157	.00108	-.00219	5.6569
#2	-.00083	11.848	.00198	.04848	-.00376	-.00066	.00476	5.6443
#3	.00002	11.823	.00042	.04701	.00305	.00092	-.00138	5.6409
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606044601 Acquired: 6/14/2016 15:47:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00085	.13394	.00143	.00015	-.00060	.02010	.00054
Stddev	.00025	.00125	.00347	.00203	.00054	.00005	.00081
%RSD	29.080	.93161	241.50	1315.7	89.901	.23060	150.64
#1	.00106	.13536	.00534	-.00042	-.00018	.02011	.00065
#2	.00058	.13344	.00022	.00241	-.00041	.02014	-.00032
#3	.00091	.13302	-.00126	-.00152	-.00120	.02005	.00129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7671.8	44661.	2894.4
Stddev	24.4	417.	52.3
%RSD	.31835	.93286	1.8066
#1	7645.6	44196.	2844.2
#2	7675.9	44787.	2890.5
#3	7694.0	45001.	2948.5

Approved: June 15, 2016

Sample Name: L1606044701 Acquired: 6/14/2016 15:51:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00040	.01675	-.00233	.01185	.08080	.00001	107.29	.00013
Stddev	.00263	.00406	.00217	.00379	.00030	.00012	.64	.00027
%RSD	652.02	24.229	93.196	31.979	.37610	2143.5	.59439	211.01
#1	-.00083	.01266	-.00072	.01620	.08068	-.00014	108.02	-.00017
#2	.00241	.02077	-.00480	.01003	.08115	.00008	107.00	.00020
#3	-.00279	.01682	-.00147	.00931	.08058	.00008	106.84	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	.00157	.06676	.02685	1.0096	.00493	8.2299	.00074
Stddev	.00010	.00075	.00043	.01320	.1054	.00459	.0218	.00075
%RSD	62.888	47.612	.65037	49.178	10.443	93.171	.26502	101.69
#1	-.00026	.00177	.06691	.02916	1.1302	.00948	8.2537	.00001
#2	-.00016	.00220	.06709	.01264	.93506	.00029	8.2252	.00069
#3	-.00006	.00074	.06627	.03875	.96343	.00501	8.2108	.00151
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00064	5.5572	.00069	.02575	.00281	-.00010	.00314	4.8264
Stddev	.00034	.0190	.00058	.00140	.00068	.00467	.00191	.0154
%RSD	53.302	.34155	83.998	5.4386	24.061	4744.8	60.793	.31803
#1	-.00101	5.5638	.00047	.02474	.00350	.00031	.00197	4.8287
#2	-.00059	5.5358	.00025	.02517	.00277	.00436	.00212	4.8405
#3	-.00033	5.5720	.00134	.02735	.00215	-.00496	.00535	4.8100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606044701 Acquired: 6/14/2016 15:51:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00126	.28580	-.01963	-.00067	-.00037	.05982	-.00015
Stddev	.00057	.00037	.00570	.00284	.00063	.00030	.00078
%RSD	45.524	.12779	29.018	425.88	170.42	.49562	508.44
#1	.00063	.28566	-.02579	-.00097	.00033	.06010	-.00077
#2	.00139	.28622	-.01455	.00231	-.00055	.05984	-.00043
#3	.00176	.28553	-.01855	-.00334	-.00088	.05951	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7550.7	44078.	2904.1
Stddev	3.5	167.	29.8
%RSD	.04633	.37836	1.0246
#1	7552.5	44215.	2874.7
#2	7553.0	43893.	2903.3
#3	7546.7	44127.	2934.2

Approved: June 15, 2016

Sample Name: L1606044203 Acquired: 6/14/2016 15:55:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00131	11.112	.00161	.02302	.15599	.00065	37.525	.00016
Stddev	.00136	.042	.00103	.00167	.00104	.00010	.057	.00010
%RSD	103.90	.37520	63.879	7.2535	.66564	15.171	.15132	62.036
#1	.00007	11.083	.00155	.02421	.15676	.00056	37.564	.00012
#2	-.00135	11.093	.00061	.02112	.15481	.00075	37.550	.00028
#3	-.00264	11.160	.00266	.02374	.15639	.00063	37.459	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00456	.01455	.01003	12.098	3.0486	.01840	7.6211	.19756
Stddev	.00057	.00205	.00098	.042	.0756	.00083	.0508	.00057
%RSD	12.525	14.093	9.7234	.34548	2.4813	4.5384	.66641	.28648
#1	.00390	.01360	.00937	12.140	3.1033	.01749	7.5668	.19812
#2	.00484	.01691	.01115	12.098	2.9623	.01857	7.6289	.19757
#3	.00492	.01315	.00958	12.056	3.0802	.01914	7.6675	.19699
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	3.0577	.01273	.19586	.00832	-.00305	.00300	18.992
Stddev	.00032	.0079	.00024	.00861	.00057	.00238	.00382	.087
%RSD	247.33	.25810	1.8938	4.3984	6.8097	77.867	127.64	.45862
#1	-.00048	3.0622	.01281	.18736	.00844	-.00539	-.00003	18.908
#2	.00017	3.0624	.01246	.19565	.00771	-.00313	.00172	19.082
#3	-.00008	3.0486	.01292	.20459	.00883	-.00064	.00730	18.988
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606044203 Acquired: 6/14/2016 15:55:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00147	.11444	.12341	.00291	.01817	.08390	.00170
Stddev	.00018	.00085	.00681	.00156	.00050	.00046	.00033
%RSD	12.268	.74678	5.5166	53.415	2.7290	.55383	19.220
#1	.00164	.11399	.12441	.00260	.01804	.08339	.00138
#2	.00149	.11390	.11615	.00460	.01775	.08402	.00204
#3	.00128	.11542	.12966	.00153	.01872	.08429	.00169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7772.8	45486.	2934.4
Stddev	39.2	53.	6.6
%RSD	.50428	.11606	.22468
#1	7810.2	45505.	2928.1
#2	7776.3	45426.	2941.3
#3	7732.0	45526.	2933.7

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 15:59:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.38891	9.7125	.37998	.48822	.95091	.04849	9.4023	.04812
Stddev	.00293	.0408	.00051	.00240	.00479	.00025	.0796	.00022
%RSD	.75420	.42011	.13412	.49100	.50342	.51406	.84648	.46490
#1	.39225	9.7596	.38013	.48582	.94841	.04866	9.3911	.04830
#2	.38673	9.6873	.38039	.49062	.94788	.04860	9.3290	.04820
#3	.38777	9.6907	.37941	.48822	.95643	.04820	9.4870	.04787
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19607	.48779	.48916	3.8239	47.366	.94326	9.4722	.47492
Stddev	.00107	.00373	.00382	.0265	.180	.00342	.0706	.00305
%RSD	.54588	.76387	.78192	.69417	.38084	.36297	.74564	.64195
#1	.19710	.49112	.49085	3.7947	47.206	.94177	9.5253	.47291
#2	.19497	.48850	.48478	3.8467	47.331	.94083	9.4993	.47341
#3	.19614	.48376	.49184	3.8302	47.562	.94718	9.3920	.47843
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.96730	47.630	.49065	9.7031	.49070	1.1679	.37988	4.8920
Stddev	.00778	.255	.00409	.0539	.00399	.0060	.00902	.0247
%RSD	.80397	.53592	.83410	.55504	.81226	.51680	2.3738	.50458
#1	.97622	47.436	.49475	9.7545	.49529	1.1715	.38855	4.9124
#2	.96196	47.534	.48657	9.6471	.48808	1.1714	.37055	4.8645
#3	.96371	47.919	.49064	9.7076	.48873	1.1610	.38052	4.8991
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 15:59:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.96738**	**.94921**	**.93495**	**.48534**	**.97439**	**.97833**	**.98533**
Stddev	.00366	.00545	.00103	.00596	.00678	.00607	.00704
%RSD	.37794	.57410	.11058	1.2280	.69586	.62056	.71495
#1	.97078	.94734	.93568	.49181	.97746	.98512	.99347
#2	.96351	.94494	.93377	.48008	.97910	.97344	.98140
#3	.96783	.95535	.93541	.48412	.96662	.97641	.98113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8114.7**	**46873.**	**3071.7**
Stddev	23.9	188.	13.5
%RSD	.29483	.40094	.43845
#1	8091.4	46745.	3061.4
#2	8113.4	47089.	3086.9
#3	8139.2	46787.	3066.6

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 16:03:09 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00063**	**.00601**	**.00010**	**.00281**	**.00034**	**.00004**	**-.00166**	**-.00003**
Stddev	.00178	.00640	.00377	.00038	.00089	.00005	.02435	.00020
%RSD	283.54	106.40	3764.9	13.448	258.27	122.00	1470.6	590.98
#1	.00005	-.00106	-.00403	.00239	-.00024	-.00002	-.01899	-.00027
#2	-.00265	.00771	.00335	.00313	.00137	.00008	-.01216	.00007
#3	.00071	.01139	.00098	.00291	-.00009	.00007	.02618	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**-.00030**	**.00036**	**.01279**	**-.12005**	**-.00056**	**-.05022**	**-.00285**
Stddev	.00069	.00092	.00100	.01697	.07647	.00076	.13069	.00065
%RSD	1776.4	305.09	273.63	132.65	63.699	136.14	260.22	22.979
#1	-.00008	-.00071	.00041	-.00644	-.04591	-.00090	.09093	-.00216
#2	.00067	.00075	.00133	.02567	-.11558	-.00108	-.16704	-.00346
#3	-.00070	-.00095	-.00066	.01914	-.19866	.00031	-.07456	-.00293
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00151**	**-.03119**	**.00106**	**.00584**	**.00053**	**-.00247**	**-.00147**	**.00152**
Stddev	.00042	.04482	.00091	.00766	.00200	.00558	.00067	.00151
%RSD	27.751	143.70	85.600	131.20	380.16	226.39	45.698	99.453
#1	.00118	-.05886	.00070	-.00296	-.00055	.00371	-.00129	-.00015
#2	.00137	.02052	.00210	.01108	.00283	-.00396	-.00221	.00191
#3	.00198	-.05521	.00039	.00940	-.00071	-.00715	-.00091	.00280
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 16:03:09 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	-.00007	-.00042	.00031	-.00026	-.00025	.00102
Stddev	.00062	.00033	.00669	.00104	.00059	.00019	.00019
%RSD	98.839	500.26	1604.2	340.25	230.81	75.967	18.598
#1	.00025	.00024	.00629	-.00042	.00039	-.00003	.00097
#2	.00029	-.00042	-.00045	.00150	-.00037	-.00033	.00085
#3	.00135	-.00002	-.00709	-.00016	-.00078	-.00039	.00122
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8232.4	47973.	3040.4
Stddev	31.1	288.	5.5
%RSD	.37775	.60022	.17943
#1	8197.2	47801.	3045.7
#2	8256.1	47812.	3034.8
#3	8243.8	48305.	3040.7

Approved: June 15, 2016

Sample Name: PBW 53 Acquired: 6/14/2016 16:07:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572463-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	.02998	-.00013	.00649	.00094	.00013	.05144	-.00024
Stddev	.00075	.00761	.00099	.00070	.00022	.00013	.02465	.00005
%RSD	87.541	25.370	749.41	10.727	23.200	97.464	47.926	19.015
#1	.00154	.03432	-.00127	.00728	.00076	.00024	.05075	-.00020
#2	.00005	.02120	.00053	.00595	.00087	-.00001	.07644	-.00029
#3	.00099	.03442	.00034	.00625	.00118	.00017	.02714	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00063	.00022	.00749	-.14447	-.00333	-.02923	-.00060
Stddev	.00019	.00169	.00053	.00649	.09010	.00042	.09794	.00285
%RSD	157.60	266.70	244.38	86.675	62.367	12.701	335.06	478.79
#1	-.00004	.00243	-.00037	.00438	-.24851	-.00361	-.00672	.00133
#2	.00033	-.00092	.00035	.00314	-.09178	-.00353	-.13646	-.00387
#3	.00007	.00039	.00067	.01495	-.09312	-.00284	.05549	.00075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	-.02146	.00131	-.00648	.00005	-.00086	.00712	.00204
Stddev	.00058	.01487	.00154	.00488	.00248	.00455	.00238	.00008
%RSD	289.27	69.325	117.54	75.247	5206.9	527.23	33.431	4.1127
#1	-.00045	-.03458	.00024	-.00453	-.00034	-.00258	.00915	.00213
#2	.00040	-.00530	.00307	-.00288	-.00221	.00430	.00450	.00204
#3	.00064	-.02449	.00061	-.01203	.00270	-.00431	.00770	.00196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: PBW 53 Acquired: 6/14/2016 16:07:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572463-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00062**	**.00116**	**.00369**	**-.00074**	**.00015**	**.00252**	**.00083**
Stddev	.00084	.00029	.00218	.00268	.00047	.00004	.00047
%RSD	135.67	25.163	59.057	360.86	304.10	1.6265	57.345
#1	.00098	.00117	.00167	-.00163	.00059	.00250	.00034
#2	.00123	.00145	.00600	.00227	.00022	.00249	.00086
#3	-.00034	.00087	.00340	-.00287	-.00034	.00256	.00128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7737.0**	**45156.**	**2929.4**
Stddev	23.3	249.	37.2
%RSD	.30064	.55160	1.2693
#1	7722.8	44906.	2887.1
#2	7724.4	45159.	2956.6
#3	7763.9	45404.	2944.6

Approved: June 15, 2016

Sample Name: LCSW 53 Acquired: 6/14/2016 16:11:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572463-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20502**	**5.2225**	**.20642**	**1.0182**	**.52227**	**.02545**	**5.2203**	**.02613**
Stddev	.00345	.0454	.00026	.0111	.00382	.00028	.1066	.00035
%RSD	1.6817	.86924	.12803	1.0894	.73163	1.0919	2.0428	1.3502
#1	.20232	5.1729	.20648	1.0055	.52201	.02515	5.1822	.02622
#2	.20383	5.2620	.20665	1.0240	.51859	.02553	5.1380	.02642
#3	.20890	5.2327	.20614	1.0253	.52622	.02568	5.3408	.02573
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10689**	**.26365**	**.26616**	**2.0833**	**25.570**	**.51931**	**5.1932**	**.25849**
Stddev	.00021	.00198	.00196	.0036	.123	.00291	.0839	.00488
%RSD	.19311	.74994	.73506	.17375	.48025	.56062	1.6162	1.8879
#1	.10687	.26146	.26392	2.0818	25.530	.51743	5.2674	.26315
#2	.10669	.26532	.26752	2.0875	25.471	.51784	5.1021	.25342
#3	.10710	.26417	.26704	2.0807	25.707	.52266	5.2099	.25891
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53219**	**25.989**	**.26935**	**5.1157**	**.26583**	**.63140**	**.20253**	**2.6705**
Stddev	.00130	.235	.00082	.0122	.00559	.00279	.00298	.0044
%RSD	.24461	.90267	.30355	.23929	2.1024	.44109	1.4715	.16477
#1	.53069	26.047	.26855	5.1044	.27196	.62820	.20539	2.6654
#2	.53284	25.730	.27018	5.1287	.26102	.63321	.19944	2.6734
#3	.53303	26.188	.26933	5.1141	.26452	.63280	.20277	2.6726
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: LCSW 53 Acquired: 6/14/2016 16:11:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572463-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52854**	**.52944**	**.51750**	**.26366**	**.52365**	**.53202**	**.00444**
Stddev	.00045	.00403	.01055	.00473	.00620	.00114	.00121
%RSD	.08522	.76107	2.0378	1.7945	1.1844	.21430	27.365
#1	.52858	.52895	.50980	.25880	.51649	.53072	.00333
#2	.52808	.52568	.51319	.26393	.52739	.53244	.00425
#3	.52898	.53369	.52952	.26825	.52706	.53288	.00574
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7655.3**	**44877.**	**2918.8**
Stddev	38.0	268.	11.4
%RSD	.49703	.59614	.39040
#1	7663.6	45156.	2915.4
#2	7688.5	44623.	2931.5
#3	7613.8	44852.	2909.5

Approved: June 15, 2016

Sample Name: F BLANK Acquired: 6/14/2016 16:14:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572463-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00054	.01871	.00246	.00331	.00203	.00007	.04530	-.00009
Stddev	.00032	.00452	.00296	.00277	.00084	.00003	.04120	.00028
%RSD	60.483	24.171	120.34	83.684	41.492	43.432	90.942	301.74
#1	-.00027	.01918	.00066	.00234	.00136	.00005	.07727	.00015
#2	-.00090	.01398	.00085	.00116	.00175	.00006	-.00119	-.00040
#3	-.00044	.02299	.00588	.00644	.00297	.00010	.05981	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00038	.00119	.00049	.01827	-.11284	-.00438	-.00184	.00025
Stddev	.00029	.00050	.00054	.02171	.14297	.00156	.07871	.00165
%RSD	75.410	42.227	109.51	118.83	126.70	35.544	4266.6	656.42
#1	-.00071	.00167	.00107	.00623	-.27793	-.00529	-.08921	-.00126
#2	-.00028	.00123	.00000	.00525	-.03024	-.00526	.06355	.00202
#3	-.00016	.00067	.00041	.04333	-.03035	-.00258	.02013	.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.02769	-.00007	-.00504	.00126	-.00282	.00159	.00261
Stddev	.00023	.00982	.00050	.00733	.00168	.00172	.00745	.00041
%RSD	93.807	35.460	706.74	145.25	133.76	60.989	469.40	15.677
#1	.00013	.03872	.00018	.00194	.00302	-.00177	-.00618	.00305
#2	.00009	.02446	.00026	-.01266	.00107	-.00188	.00866	.00253
#3	.00050	.01990	-.00064	-.00441	-.00032	-.00480	.00228	.00224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: F BLANK Acquired: 6/14/2016 16:14:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572463-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00144	.00176	.00556	-.00010	.00021	.00147	-.00001
Stddev	.00066	.00027	.00127	.00137	.00042	.00004	.00018
%RSD	45.684	15.394	22.866	1397.3	202.39	2.9369	1486.2
#1	.00073	.00170	.00582	.00010	.00052	.00145	.00013
#2	.00202	.00206	.00418	-.00156	.00036	.00152	-.00021
#3	.00158	.00153	.00668	.00116	-.00027	.00144	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7758.8	45493.	2929.1
Stddev	5.5	16.	17.7
%RSD	.07131	.03506	.60517
#1	7762.6	45478.	2909.9
#2	7761.3	45509.	2932.6
#3	7752.5	45493.	2944.8

Approved: June 15, 2016

Sample Name: L1606054006 Acquired: 6/14/2016 16:18:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572463-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00053**	**.30826**	**.00245**	**.01619**	**.05438**	**.00073**	**11.475**	**.00026**
Stddev	.00136	.00441	.00152	.00158	.00099	.00006	.079	.00020
%RSD	258.25	1.4316	61.903	9.7770	1.8117	7.9344	.68606	76.539
#1	-.00070	.30354	.00111	.01773	.05549	.00067	11.554	.00003
#2	.00029	.30897	.00410	.01457	.05362	.00073	11.477	.00036
#3	.00199	.31228	.00213	.01628	.05403	.00078	11.396	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00902**	**.00105**	**.00123**	**1.4758**	**.14149**	**-.00240**	**2.9836**	**.02658**
Stddev	.00042	.00100	.00056	.0180	.04944	.00226	.1232	.00106
%RSD	4.6701	95.639	45.460	1.2224	34.938	94.324	4.1278	3.9726
#1	.00875	.00109	.00096	1.4966	.17939	-.00010	3.1192	.02537
#2	.00880	.00202	.00086	1.4659	.08557	-.00462	2.9528	.02701
#3	.00950	.00002	.00188	1.4648	.15952	-.00247	2.8787	.02734
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00065**	**5.0398**	**.01193**	**.00647**	**-.00183**	**.00112**	**.00413**	**3.3850**
Stddev	.00017	.0118	.00141	.00153	.00220	.00096	.00489	.0058
%RSD	26.198	.23311	11.846	23.705	120.34	85.390	118.27	.17205
#1	-.00082	5.0513	.01082	.00824	-.00008	.00125	.00391	3.3852
#2	-.00065	5.0404	.01352	.00545	-.00431	.00011	.00913	3.3791
#3	-.00048	5.0278	.01144	.00573	-.00110	.00201	-.00064	3.3908
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606054006 Acquired: 6/14/2016 16:18:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572463-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00123**	**.13012**	**.00443**	**-.00030**	**.00027**	**.00613**	**.00062**
Stddev	.00021	.00089	.00192	.00093	.00031	.00010	.00062
%RSD	17.414	.68145	43.381	313.26	116.66	1.6216	100.99
#1	.00109	.13111	.00664	.00075	-.00002	.00619	.00001
#2	.00111	.12985	.00313	-.00063	.00059	.00602	.00059
#3	.00147	.12940	.00352	-.00101	.00023	.00618	.00125
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7770.7**	**45610.**	**2938.3**
Stddev	18.6	149.	16.1
%RSD	.23915	.32683	.54842
#1	7763.3	45519.	2921.5
#2	7791.9	45529.	2939.7
#3	7757.0	45782.	2953.6

Approved: June 15, 2016

Sample Name: L1606054007S Acquired: 6/14/2016 16:22:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572463-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20330**	**5.5213**	**.20524**	**1.0135**	**.56339**	**.02595**	**16.043**	**.02570**
Stddev	.00096	.0256	.00256	.0059	.00201	.00005	.066	.00008
%RSD	.47259	.46290	1.2486	.57778	.35592	.18431	.41312	.30634
#1	.20333	5.5162	.20814	1.0181	.56111	.02590	16.012	.02576
#2	.20232	5.5490	.20327	1.0156	.56422	.02598	15.998	.02572
#3	.20424	5.4987	.20430	1.0069	.56485	.02598	16.119	.02561
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.11422**	**.26088**	**.26148**	**3.5507**	**25.657**	**.51757**	**7.9644**	**.28160**
Stddev	.00047	.00130	.00175	.0302	.068	.00476	.0721	.00185
%RSD	.40804	.49953	.66936	.85073	.26578	.91886	.90524	.65681
#1	.11375	.26219	.26264	3.5458	25.676	.51991	7.9460	.28139
#2	.11468	.26087	.26234	3.5232	25.582	.51210	7.9033	.28354
#3	.11422	.25959	.25947	3.5830	25.715	.52070	8.0439	.27986
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52538**	**29.363**	**.27468**	**5.0878**	**.26080**	**.62073**	**.20239**	**6.1089**
Stddev	.00281	.043	.00095	.0171	.00390	.00074	.00306	.0218
%RSD	.53537	.14793	.34666	.33563	1.4947	.11842	1.5136	.35630
#1	.52220	29.318	.27390	5.0724	.26429	.62008	.20077	6.0838
#2	.52757	29.367	.27440	5.0847	.25659	.62153	.20592	6.1224
#3	.52635	29.405	.27574	5.1062	.26151	.62057	.20047	6.1204
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606054007S Acquired: 6/14/2016 16:22:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572463-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52322**	**.59450**	**.51115**	**.26026**	**.52151**	**.52827**	**.00073**
Stddev	.00198	.00101	.00748	.00099	.00031	.00095	.00104
%RSD	.37895	.17036	1.4624	.38160	.05849	.17995	141.87
#1	.52099	.59344	.50369	.25922	.52172	.52745	.00028
#2	.52391	.59458	.51864	.26119	.52165	.52931	-.00000
#3	.52476	.59547	.51114	.26038	.52116	.52804	.00192
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7653.6**	**44760.**	**2920.2**
Stddev	4.3	121.	10.2
%RSD	.05601	.27046	.34770
#1	7658.1	44631.	2929.3
#2	7653.2	44778.	2922.2
#3	7649.6	44871.	2909.3

Approved: June 15, 2016

Sample Name: L1606054008SD Acquired: 6/14/2016 16:26:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572463-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20242**	**5.4639**	**.20654**	**1.0107**	**.55978**	**.02574**	**15.954**	**.02572**
Stddev	.00252	.0625	.00249	.0095	.00367	.00020	.113	.00015
%RSD	1.2442	1.1446	1.2051	.94401	.65617	.76165	.70968	.59265
#1	.20426	5.5118	.20912	1.0195	.56271	.02586	16.050	.02581
#2	.19955	5.3931	.20637	1.0006	.56097	.02551	15.983	.02554
#3	.20344	5.4866	.20415	1.0121	.55566	.02584	15.829	.02580
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.11401**	**.26012**	**.26185**	**3.6461**	**25.636**	**.51350**	**7.9415**	**.27893**
Stddev	.00072	.00244	.00037	.0381	.058	.00572	.1108	.00250
%RSD	.63524	.93979	.14071	1.0446	.22574	1.1148	1.3948	.89454
#1	.11384	.26294	.26226	3.6581	25.703	.51891	8.0651	.28062
#2	.11339	.25860	.26154	3.6767	25.600	.51410	7.8511	.28010
#3	.11481	.25883	.26176	3.6034	25.606	.50750	7.9084	.27606
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52546**	**29.197**	**.27393**	**5.0795**	**.26474**	**.62390**	**.20391**	**6.0710**
Stddev	.00261	.175	.00085	.0176	.00234	.00057	.00447	.0287
%RSD	.49680	.59815	.31129	.34592	.88574	.09073	2.1903	.47293
#1	.52602	29.359	.27402	5.0770	.26366	.62424	.19882	6.0612
#2	.52262	29.221	.27303	5.0632	.26743	.62324	.20719	6.0485
#3	.52775	29.012	.27473	5.0981	.26314	.62421	.20572	6.1034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606054008SD Acquired: 6/14/2016 16:26:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572463-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52265**	**.59843**	**.50614**	**.25658**	**.51560**	**.52711**	**.00017**
Stddev	.00284	.00366	.01422	.00267	.00612	.00167	.00052
%RSD	.54266	.61143	2.8095	1.0391	1.1866	.31640	300.48
#1	.51961	.60253	.52203	.25677	.51933	.52667	-.00042
#2	.52312	.59727	.49461	.25382	.50854	.52571	.00043
#3	.52522	.59549	.50179	.25914	.51894	.52896	.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7649.1**	**44897.**	**2907.9**
Stddev	23.2	331.	9.2
%RSD	.30322	.73616	.31680
#1	7668.9	44526.	2897.3
#2	7654.8	45160.	2913.2
#3	7623.6	45006.	2913.2

Approved: June 15, 2016

Sample Name: L1606064503 Acquired: 6/14/2016 16:30:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00132	.01150	-.00005	.00614	.00013	.00011	-.00379	-.00012
Stddev	.00141	.00180	.00044	.00112	.00120	.00005	.00432	.00020
%RSD	106.66	15.628	824.28	18.242	888.48	45.176	114.24	167.64
#1	.00014	.01228	-.00055	.00735	.00109	.00015	.00106	.00009
#2	-.00267	.01278	.00025	.00593	-.00121	.00012	-.00516	-.00014
#3	-.00143	.00945	.00014	.00514	.00052	.00005	-.00726	-.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	.00094	.00065	.01297	-.13267	-.00173	.00420	-.00047
Stddev	.00021	.00056	.00045	.00272	.13746	.00286	.03994	.00122
%RSD	114.11	59.466	69.557	20.939	103.61	164.81	951.59	257.72
#1	.00006	.00066	.00086	.01535	-.16257	-.00096	.02232	.00093
#2	-.00028	.00058	.00097	.01357	.01728	.00066	-.04160	-.00130
#3	-.00032	.00159	.00013	.01001	-.25272	-.00490	.03186	-.00105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	.00193	.00094	-.00041	-.00413	.00133	.00170	.01392
Stddev	.00007	.03674	.00025	.00534	.00267	.00167	.00316	.00203
%RSD	26.491	1899.3	26.499	1287.9	64.724	125.33	186.06	14.584
#1	-.00021	-.00807	.00066	.00177	-.00487	-.00052	-.00024	.01511
#2	-.00022	-.02877	.00104	.00348	-.00635	.00271	.00535	.01158
#3	-.00033	.04263	.00112	-.00650	-.00116	.00179	-.00001	.01509
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606064503 Acquired: 6/14/2016 16:30:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00101	.00037	.00505	.00047	-.00013	.00108	.00020
Stddev	.00050	.00023	.00363	.00061	.00029	.00025	.00066
%RSD	48.934	63.513	71.935	128.98	220.01	22.710	326.63
#1	.00136	.00058	.00112	-.00014	-.00043	.00131	.00021
#2	.00045	.00040	.00829	.00108	.00015	.00082	.00086
#3	.00124	.00012	.00572	.00049	-.00012	.00112	-.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7747.7	45488.	2923.1
Stddev	26.9	238.	5.4
%RSD	.34760	.52374	.18486
#1	7725.3	45398.	2926.6
#2	7740.3	45309.	2916.9
#3	7777.6	45759.	2925.8

Approved: June 15, 2016

Sample Name: L1606064503PS Acquired: 6/14/2016 16:34:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572626-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20186**	**5.1173**	**.20038**	**.99917**	**.50876**	**.02515**	**5.0916**	**.02544**
Stddev	.00076	.0138	.00013	.00125	.00454	.00006	.0328	.00044
%RSD	.37426	.26892	.06509	.12559	.89193	.24877	.64438	1.7465
#1	.20226	5.1229	.20028	.99775	.51165	.02521	5.0720	.02536
#2	.20099	5.1016	.20053	.99960	.51110	.02509	5.1295	.02505
#3	.20233	5.1273	.20033	1.0001	.50353	.02514	5.0733	.02592
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10526**	**.26078**	**.26205**	**2.0565**	**25.036**	**.50867**	**5.0830**	**.25411**
Stddev	.00081	.00124	.00224	.0079	.201	.00113	.0500	.00451
%RSD	.77104	.47527	.85303	.38346	.80461	.22161	.98310	1.7748
#1	.10448	.26206	.25978	2.0630	25.045	.50878	5.0640	.25847
#2	.10520	.26070	.26212	2.0477	25.233	.50973	5.1396	.25440
#3	.10610	.25959	.26425	2.0590	24.830	.50749	5.0453	.24946
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52345**	**25.498**	**.26585**	**5.0506**	**.26419**	**.61973**	**.20113**	**2.6205**
Stddev	.00145	.178	.00168	.0320	.00199	.00277	.00142	.0129
%RSD	.27632	.69756	.63256	.63420	.75234	.44634	.70372	.49073
#1	.52224	25.575	.26779	5.0176	.26549	.61676	.20202	2.6121
#2	.52306	25.626	.26480	5.0525	.26517	.62022	.19950	2.6142
#3	.52505	25.295	.26496	5.0816	.26190	.62222	.20187	2.6353
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606064503PS Acquired: 6/14/2016 16:34:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572626-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52056	.51391	.50709	.26014	.51580	.54913	.00073
Stddev	.00071	.00321	.00384	.00456	.00216	.00206	.00013
%RSD	.13609	.62439	.75822	1.7536	.41917	.37507	18.080
#1	.52095	.51608	.50893	.26540	.51513	.54760	.00058
#2	.51974	.51544	.50268	.25779	.51822	.54832	.00082
#3	.52098	.51023	.50967	.25723	.51405	.55148	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7681.7	45046.	2903.6
Stddev	20.7	143.	28.5
%RSD	.26996	.31727	.98236
#1	7658.2	44883.	2888.7
#2	7697.3	45147.	2885.7
#3	7689.7	45108.	2936.5

Approved: June 15, 2016

Sample Name: L1606064503SDL Acquired: 6/14/2016 16:38:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG572626-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00086**	**-.00132**	**-.00064**	**.00241**	**.00013**	**.00008**	**.01142**	**-.00008**
Stddev	.00280	.00394	.00095	.00099	.00109	.00003	.02207	.00016
%RSD	327.95	298.49	147.02	41.076	838.13	35.092	193.22	201.73
#1	-.00083	-.00566	-.00007	.00185	.00139	.00008	-.00249	.00005
#2	-.00069	-.00032	-.00173	.00356	-.00056	.00011	-.00011	-.00003
#3	.00409	.00202	-.00012	.00184	-.00044	.00005	.03686	-.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00004**	**.00049**	**.00070**	**-.00875**	**-.12175**	**-.00307**	**.03462**	**-.00139**
Stddev	.00039	.00108	.00091	.02446	.05201	.00171	.05768	.00146
%RSD	1001.2	218.09	129.25	279.55	42.715	55.890	166.59	104.91
#1	.00010	.00174	-.00032	-.03097	-.14052	-.00162	.00634	-.00282
#2	.00040	-.00009	.00100	.01745	-.16177	-.00262	-.00345	-.00144
#3	-.00038	-.00017	.00143	-.01273	-.06297	-.00496	.10099	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00056**	**-.00631**	**.00097**	**.00222**	**-.00123**	**.00255**	**.00803**	**.00158**
Stddev	.00022	.02640	.00060	.00113	.00166	.00209	.00387	.00033
%RSD	38.696	418.14	61.760	50.792	135.23	81.960	48.190	20.922
#1	-.00055	-.02847	.00058	.00247	-.00028	.00347	.00920	.00184
#2	-.00035	-.01337	.00067	.00099	-.00314	.00016	.01117	.00170
#3	-.00079	.02290	.00166	.00321	-.00026	.00403	.00371	.00121
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606064503SDL Acquired: 6/14/2016 16:38:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG572626-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00099	-.00014	.00360	.00074	.00020	.00084	.00037
Stddev	.00066	.00023	.00386	.00062	.00023	.00018	.00045
%RSD	66.595	160.02	107.32	84.512	116.94	21.341	120.74
#1	.00077	-.00041	-.00023	.00028	.00012	.00097	.00071
#2	.00173	.00002	.00353	.00145	.00046	.00091	-.00014
#3	.00047	-.00004	.00750	.00048	.00002	.00064	.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8489.3	49496.	3124.4
Stddev	13.1	124.	7.5
%RSD	.15402	.25143	.23943
#1	8478.8	49391.	3123.6
#2	8504.0	49634.	3132.2
#3	8485.2	49465.	3117.3

Approved: June 15, 2016

Sample Name: L1606064503SDL Acquired: 6/14/2016 16:42:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG572626-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**.00106**	**-.00069**	**.00143**	**.00069**	**.00007**	**-.02519**	**-.00008**
Stddev	.00058	.00443	.00246	.00196	.00020	.00008	.03601	.00012
%RSD	688.48	419.34	353.83	137.46	28.716	112.27	142.96	148.74
#1	-.00063	.00295	-.00034	.00353	.00088	-.00002	-.05078	-.00022
#2	-.00016	-.00400	-.00331	.00110	.00071	.00015	.01599	-.00000
#3	.00053	.00422	.00157	-.00035	.00048	.00009	-.04079	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**.00119**	**.00031**	**-.00661**	**-.17608**	**-.00028**	**.04324**	**-.00129**
Stddev	.00010	.00011	.00090	.02052	.10371	.00267	.04520	.00122
%RSD	67.477	9.0638	288.36	310.21	58.899	939.34	104.53	94.298
#1	.00018	.00126	.00135	-.02862	-.23476	-.00030	.08704	-.00117
#2	.00024	.00106	-.00015	.01200	-.05633	-.00295	.04593	-.00257
#3	.00004	.00124	-.00026	-.00322	-.23714	.00239	-.00324	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00077**	**-.02028**	**.00061**	**.00338**	**.00083**	**-.00143**	**.00178**	**-.00235**
Stddev	.00011	.02046	.00059	.00394	.00282	.00314	.00413	.00203
%RSD	14.613	100.88	95.791	116.47	337.45	220.51	232.12	86.314
#1	-.00079	-.04134	.00128	.00783	-.00163	-.00423	.00078	-.00456
#2	-.00065	-.00048	.00035	.00031	.00023	-.00202	.00632	-.00057
#3	-.00087	-.01901	.00020	.00202	.00391	.00197	-.00176	-.00191
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606064503SDL Acquired: 6/14/2016 16:42:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG572626-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.00014	.00387	.00018	.00007	.00051	-.00004
Stddev	.00026	.00018	.00134	.00191	.00021	.00008	.00100
%RSD	81.755	127.45	34.714	1052.9	284.80	15.405	2464.1
#1	.00030	.00004	.00298	.00138	.00011	.00052	-.00086
#2	.00007	.00004	.00321	.00119	-.00015	.00058	.00107
#3	.00059	.00035	.00541	-.00203	.00026	.00042	-.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8461.6	49123.	3127.6
Stddev	25.4	107.	14.7
%RSD	.30044	.21688	.46882
#1	8482.6	49231.	3128.9
#2	8468.9	49121.	3141.6
#3	8433.4	49018.	3112.4

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 16:46:25 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39081**	**9.7719**	**.38242**	**.49067**	**.96258**	**.04873**	**9.5257**	**.04896**
Stddev	.00243	.0072	.00249	.00509	.00353	.00030	.0605	.00014
%RSD	.62175	.07369	.65224	1.0375	.36707	.62365	.63483	.28628
#1	.39344	9.7714	.38513	.49003	.96243	.04864	9.5913	.04883
#2	.38865	9.7793	.38023	.48594	.95913	.04849	9.5136	.04893
#3	.39035	9.7650	.38189	.49606	.96619	.04907	9.4722	.04911
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19898**	**.49121**	**.49478**	**3.8869**	**48.124**	**.95094**	**9.5171**	**.47509**
Stddev	.00009	.00301	.00133	.0319	.240	.00557	.1776	.00391
%RSD	.04391	.61353	.26810	.82011	.49874	.58621	1.8659	.82349
#1	.19900	.48811	.49412	3.9078	48.372	.95547	9.5166	.47912
#2	.19888	.49140	.49391	3.8502	47.892	.94472	9.6950	.47131
#3	.19905	.49413	.49631	3.9026	48.108	.95265	9.3398	.47483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.98127**	**48.463**	**.49860**	**9.8742**	**.49982**	**1.1859**	**.38935**	**4.9766**
Stddev	.00366	.211	.00115	.0300	.00206	.0040	.00201	.0076
%RSD	.37269	.43504	.23027	.30428	.41226	.33810	.51546	.15339
#1	.98440	48.651	.49970	9.8816	.50140	1.1900	.38705	4.9778
#2	.98215	48.235	.49868	9.8999	.50058	1.1820	.39029	4.9836
#3	.97725	48.504	.49741	9.8412	.49749	1.1856	.39072	4.9685
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 16:46:25 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98198	.96216	.94599	.48903	.97974	.99268	.99805
Stddev	.00342	.00368	.00950	.00455	.00391	.00161	.00449
%RSD	.34803	.38298	1.0039	.93033	.39906	.16249	.45023
#1	.98593	.96593	.95555	.48842	.97845	.99445	1.0020
#2	.97999	.95857	.94587	.48481	.97664	.99231	.99316
#3	.98003	.96197	.93656	.49385	.98413	.99128	.99900
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7978.8	46288.	3015.8
Stddev	.5	215.	15.7
%RSD	.00636	.46417	.51920
#1	7979.4	46139.	2998.0
#2	7978.5	46192.	3027.6
#3	7978.5	46535.	3021.8

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 16:50:07 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	.00460	-.00224	.00243	.00122	.00008	.00179	.00001
Stddev	.00065	.00884	.00189	.00187	.00109	.00005	.01725	.00031
%RSD	95.680	192.37	84.306	76.954	88.817	57.942	963.10	4374.3
#1	-.00007	.00642	-.00039	.00452	.00248	.00014	-.01032	.00014
#2	.00107	.01239	-.00416	.00091	.00062	.00007	.02154	.00022
#3	.00103	-.00502	-.00217	.00187	.00057	.00004	-.00584	-.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	-.00012	.00028	.01260	-.15716	-.00016	-.02234	-.00193
Stddev	.00022	.00116	.00085	.01322	.11156	.00233	.09453	.00098
%RSD	226.25	986.00	306.85	104.92	70.985	1472.7	423.09	50.832
#1	-.00010	.00016	.00109	-.00234	-.07470	.00242	.07940	-.00123
#2	.00006	-.00139	-.00060	.01736	-.28409	-.00081	-.03896	-.00151
#3	.00034	.00088	.00034	.02277	-.11267	-.00209	-.10747	-.00306
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00167	.00017	.00101	-.00098	-.00154	-.00057	.00409	.00298
Stddev	.00045	.02520	.00077	.00275	.00418	.00109	.00373	.00206
%RSD	26.941	14627.	76.465	280.19	270.71	191.92	91.120	69.068
#1	.00120	-.01174	.00189	-.00110	.00066	.00058	.00116	.00357
#2	.00169	.02912	.00071	-.00367	-.00636	-.00070	.00829	.00069
#3	.00210	-.01686	.00044	.00182	.00107	-.00158	.00282	.00468
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 16:50:07 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00075**	**.00027**	**.00391**	**.00022**	**-.00064**	**-.00034**	**.00045**
Stddev	.00035	.00043	.00220	.00160	.00020	.00015	.00071
%RSD	46.883	158.52	56.384	723.05	31.461	43.608	159.63
#1	.00041	.00069	.00275	-.00121	-.00059	-.00039	.00018
#2	.00072	.00031	.00645	-.00007	-.00086	-.00017	-.00010
#3	.00111	-.00018	.00253	.00195	-.00046	-.00045	.00126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8070.0**	**46856.**	**3017.3**
Stddev	36.4	288.	32.9
%RSD	.45120	.61475	1.0900
#1	8041.5	47170.	3017.9
#2	8111.0	46603.	3049.9
#3	8057.5	46794.	2984.1

Approved: June 15, 2016

Sample Name: L1606041103 Acquired: 6/14/2016 16:54:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	4.5647	.00040	.01039	.18545	.00030	6.8971
Stddev	.00094	.0044	.00363	.00249	.00046	.00006	.0258
%RSD	115.39	.09682	902.93	23.992	.25015	21.821	.37378
#1	-.00010	4.5630	-.00316	.01230	.18549	.00022	6.9015
#2	.00076	4.5614	.00410	.00757	.18497	.00033	6.8695
#3	.00178	4.5697	.00026	.01129	.18589	.00034	6.9205
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00411	.07832	.00873	4.1063	.36153	.01555
Stddev	.00014	.00026	.00012	.00103	.0360	.10287	.00115
%RSD	79.888	6.3763	.14901	11.764	.87604	28.454	7.3859
#1	.00034	.00441	.07845	.00769	4.0674	.24610	.01422
#2	.00008	.00398	.07826	.00876	4.1132	.39498	.01620
#3	.00012	.00394	.07824	.00975	4.1384	.44352	.01622
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.7810	.03458	.00201	56.450	.20838	.02547	.00721
Stddev	.0177	.00119	.00033	.069	.00108	.00272	.00260
%RSD	.36954	3.4284	16.570	.12255	.52014	10.671	36.089
#1	4.7797	.03585	.00175	56.529	.20961	.02515	.00459
#2	4.7992	.03351	.00189	56.422	.20757	.02292	.00725
#3	4.7640	.03438	.00239	56.399	.20797	.02833	.00980
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 15, 2016

Sample Name: L1606041103 Acquired: 6/14/2016 16:54:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00083**	**.01289**	F **47.548**	**.00068**	**.14132**	**.03990**	**-.00083**
Stddev	.00358	.00245	.078	.00064	.00012	.00485	.00215
%RSD	430.25	19.002	.16342	94.147	.08329	12.166	258.14
#1	-.00476	.01232	47.596	-.00003	.14118	.03464	.00017
#2	.00002	.01558	47.589	.00085	.14138	.04085	.00063
#3	.00225	.01078	47.458	.00123	.14140	.04421	-.00331
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-1.0000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00701**	**.01622**	**.00206**
Stddev	.00081	.00032	.00036
%RSD	11.554	1.9585	17.664
#1	.00747	.01585	.00248
#2	.00750	.01638	.00188
#3	.00608	.01642	.00183
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7655.9**	**44658.**	**2904.3**
Stddev	5.9	251.	23.1
%RSD	.07647	.56235	.79553
#1	7653.4	44498.	2877.6
#2	7651.7	44528.	2918.1
#3	7662.6	44947.	2917.1

Approved: June 15, 2016

Sample Name: L1606041104 Acquired: 6/14/2016 16:58:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**4.2703**	**-.00025**	**.01115**	**.16700**	**.00024**	**6.9209**
Stddev	.00085	.0189	.00275	.00378	.00144	.00007	.0649
%RSD	4105.9	.44349	1094.0	33.872	.86054	27.267	.93815
#1	-.00028	4.2629	.00083	.00684	.16681	.00031	6.8710
#2	.00099	4.2563	-.00338	.01274	.16852	.00019	6.9943
#3	-.00064	4.2919	.00180	.01387	.16566	.00022	6.8975
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**.00493**	**.07583**	**.00744**	**3.7095**	**.34502**	**.01555**
Stddev	.00013	.00031	.00042	.00053	.0351	.06596	.00152
%RSD	68.175	6.2644	.55838	7.1285	.94733	19.119	9.7561
#1	.00007	.00525	.07562	.00750	3.7368	.28315	.01384
#2	.00016	.00463	.07632	.00688	3.7219	.41443	.01674
#3	.00033	.00491	.07555	.00793	3.6699	.33746	.01606
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.5990**	**.03824**	**.00328**	**57.589**	**.24632**	**.02793**	**.00685**
Stddev	.1291	.00387	.00048	.313	.00195	.00899	.00195
%RSD	2.8071	10.111	14.656	.54293	.79021	32.181	28.417
#1	4.7046	.03390	.00274	57.819	.24856	.02090	.00464
#2	4.4551	.03952	.00344	57.714	.24513	.03806	.00762
#3	4.6373	.04131	.00366	57.233	.24525	.02484	.00830
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 15, 2016

Sample Name: L1606041104 Acquired: 6/14/2016 16:58:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00134**	**.00802**	F **47.724**	**.00153**	**.13535**	**.04339**	**-.00167**
Stddev	.00223	.00215	.137	.00025	.00030	.00514	.00107
%RSD	166.50	26.828	.28606	16.627	.21970	11.845	63.926
#1	-.00315	.00617	47.876	.00125	.13535	.04706	-.00106
#2	-.00201	.01038	47.684	.00161	.13506	.04561	-.00290
#3	.00115	.00750	47.612	.00174	.13565	.03752	-.00105
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-1.0000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00638**	**.01397**	**.00198**
Stddev	.00029	.00007	.00041
%RSD	4.4695	.50623	20.917
#1	.00650	.01405	.00196
#2	.00606	.01391	.00158
#3	.00659	.01395	.00241
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7657.4**	**44804.**	**2917.9**
Stddev	9.3	34.	11.3
%RSD	.12094	.07598	.38571
#1	7656.3	44843.	2916.1
#2	7667.1	44790.	2907.6
#3	7648.7	44780.	2929.9

Approved: June 15, 2016

Sample Name: L1606048503 Acquired: 6/14/2016 17:02:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00152	.01061	.00001	.05813	.06331	.00007	72.107	-.00018
Stddev	.00196	.00546	.00231	.00301	.00087	.00008	.445	.00011
%RSD	128.95	51.417	21723.	5.1731	1.3806	103.08	.61711	58.387
#1	-.00309	.01509	-.00178	.05550	.06364	.00008	72.620	-.00007
#2	.00068	.01222	-.00081	.06141	.06396	-.00001	71.870	-.00020
#3	-.00214	.00453	.00262	.05749	.06231	.00014	71.831	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.00069	.00108	.25572	2.0912	.00196	18.924	.29265
Stddev	.00003	.00089	.00204	.02174	.0273	.00392	.228	.00607
%RSD	28.787	128.75	188.42	8.5010	1.3052	199.53	1.2052	2.0751
#1	.00013	.00033	.00268	.25034	2.1093	.00647	19.122	.29908
#2	.00008	.00170	.00177	.23718	2.0598	-.00058	18.975	.28700
#3	.00009	.00004	-.00121	.27965	2.1045	-.00000	18.674	.29188
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	42.483	.00008	.01719	.00025	-.00220	.00591	9.3210
Stddev	.00025	.228	.00112	.00580	.00262	.00462	.00430	.0317
%RSD	34.474	.53784	1380.0	33.727	1047.0	210.40	72.775	.34014
#1	.00046	42.745	-.00035	.01615	-.00139	-.00084	.00094	9.3538
#2	.00076	42.327	-.00076	.02343	-.00114	.00160	.00836	9.3186
#3	.00096	42.377	.00135	.01198	.00327	-.00734	.00842	9.2906
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606048503 Acquired: 6/14/2016 17:02:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00099	.47561	-.01092	.00058	.00034	.00357	.00121
Stddev	.00056	.00310	.00259	.00147	.00106	.00011	.00052
%RSD	56.087	.65238	23.751	253.30	312.19	3.0534	43.100
#1	.00090	.47907	-.01348	.00126	.00105	.00367	.00079
#2	.00159	.47468	-.01098	-.00111	.00085	.00358	.00104
#3	.00049	.47308	-.00830	.00159	-.00088	.00346	.00180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7623.1	44400.	2911.5
Stddev	9.3	312.	23.1
%RSD	.12201	.70181	.79392
#1	7612.8	44046.	2888.8
#2	7631.0	44519.	2935.0
#3	7625.4	44634.	2910.8

Approved: June 15, 2016

Sample Name: L1606048504 Acquired: 6/14/2016 17:06:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.00809**	**-.00089**	**.07200**	**.13789**	**.00004**	**73.871**	**.00005**
Stddev	.00109	.01401	.00392	.00141	.00087	.00003	.386	.00014
%RSD	285.56	173.15	439.20	1.9544	.63250	71.483	.52261	261.72
#1	-.00164	-.00354	.00208	.07163	.13777	.00003	74.265	.00009
#2	.00031	.02365	-.00534	.07082	.13708	.00003	73.493	.00016
#3	.00018	.00417	.00058	.07356	.13881	.00008	73.856	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.00039**	**.00084**	**.02766**	**2.0711**	**.01202**	**20.170**	**.05556**
Stddev	.00022	.00029	.00055	.02848	.0287	.00105	.136	.00248
%RSD	156.26	73.397	65.603	102.97	1.3843	8.7239	.67280	4.4606
#1	-.00032	.00022	.00147	.04751	2.1041	.01280	20.323	.05598
#2	-.00019	.00072	.00056	-.00497	2.0516	.01244	20.125	.05781
#3	.00010	.00023	.00048	.04045	2.0578	.01083	20.063	.05290
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00280**	**34.620**	**.00007**	**.00202**	**-.00033**	**.00195**	**.00608**	**12.532**
Stddev	.00034	.214	.00071	.00171	.00108	.00316	.00199	.015
%RSD	12.163	.61684	960.77	84.643	325.44	161.76	32.708	.12208
#1	.00315	34.830	-.00073	.00400	-.00155	.00490	.00755	12.542
#2	.00247	34.403	.00062	.00095	.00004	-.00138	.00382	12.539
#3	.00276	34.625	.00033	.00112	.00052	.00233	.00687	12.514
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606048504 Acquired: 6/14/2016 17:06:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00090	1.0465	-.00796	-.00112	-.00050	.00188	.00125
Stddev	.00082	.0048	.00800	.00102	.00041	.00013	.00046
%RSD	90.993	.46043	100.58	91.021	81.907	7.1181	37.021
#1	.00184	1.0510	-.00792	-.00154	-.00096	.00176	.00090
#2	.00055	1.0414	.00003	.00004	-.00016	.00188	.00108
#3	.00032	1.0470	-.01598	-.00187	-.00039	.00202	.00177
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7632.8	44543.	2912.7
Stddev	9.8	160.	18.7
%RSD	.12845	.36000	.64357
#1	7625.6	44386.	2909.4
#2	7644.0	44536.	2932.9
#3	7628.9	44707.	2895.9

Approved: June 15, 2016

Sample Name: L1606048505 Acquired: 6/14/2016 17:09:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00034	.01879	.04944	.04926	.22831	-.00001	102.09	.00009
Stddev	.00089	.00569	.00246	.00208	.00242	.00006	.53	.00036
%RSD	263.15	30.297	4.9718	4.2151	1.0581	600.25	.52002	405.18
#1	-.00049	.02331	.04743	.04823	.23095	-.00006	102.47	-.00022
#2	-.00114	.01240	.04870	.05165	.22620	.00006	101.48	.00048
#3	.00062	.02068	.05218	.04791	.22778	-.00003	102.31	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00107	.00105	.00285	13.621	.91780	.00699	11.647	1.6925
Stddev	.00038	.00031	.00048	.062	.03718	.00117	.017	.0045
%RSD	35.181	29.478	16.814	.45567	4.0507	16.764	.14949	.26564
#1	.00131	.00140	.00287	13.693	.91341	.00570	11.658	1.6967
#2	.00127	.00093	.00332	13.584	.88302	.00799	11.627	1.6878
#3	.00064	.00082	.00236	13.586	.95698	.00728	11.655	1.6929
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00880	35.195	.00148	.02014	-.00029	-.00276	.01014	10.052
Stddev	.00006	.204	.00087	.01116	.00179	.00420	.00716	.022
%RSD	.73480	.57867	58.755	55.430	626.55	152.01	70.557	.21544
#1	.00886	35.317	.00233	.03297	-.00103	.00025	.01403	10.046
#2	.00879	34.960	.00060	.01272	-.00159	-.00098	.00188	10.035
#3	.00873	35.308	.00150	.01472	.00176	-.00757	.01451	10.076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606048505 Acquired: 6/14/2016 17:09:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00093	.40788	-.00619	-.00136	-.00112	.00233	.00017
Stddev	.00066	.00052	.00468	.00199	.00031	.00029	.00002
%RSD	70.386	.12751	75.605	146.60	27.400	12.617	11.831
#1	.00165	.40754	-.00081	-.00023	-.00133	.00262	.00017
#2	.00076	.40763	-.00847	-.00019	-.00127	.00203	.00015
#3	.00038	.40848	-.00931	-.00365	-.00077	.00233	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7618.3	44475.	2925.7
Stddev	13.0	191.	30.7
%RSD	.17002	.42925	1.0494
#1	7625.7	44377.	2897.2
#2	7603.4	44696.	2958.2
#3	7625.9	44354.	2921.7

Approved: June 15, 2016

Sample Name: L1606048506 Acquired: 6/14/2016 17:13:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.01138	.00024	.03778	.00736	.00004	106.04	.00006
Stddev	.00023	.00375	.00193	.00217	.00076	.00005	1.13	.00030
%RSD	180.26	32.932	818.96	5.7541	10.303	105.02	1.0640	546.35
#1	-.00010	.00982	-.00051	.03571	.00767	.00009	107.11	.00032
#2	.00036	.00867	-.00122	.04005	.00792	.00003	104.86	.00012
#3	.00012	.01566	.00243	.03757	.00650	.00001	106.15	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00089	.00151	.00421	1.0217	.00847	10.023	.10725
Stddev	.00000	.00105	.00061	.01495	.0430	.00400	.113	.00472
%RSD	1.0820	117.63	39.949	355.30	4.2070	47.284	1.1264	4.3971
#1	.00009	.00086	.00151	-.01303	1.0602	.00631	10.129	.11074
#2	.00009	.00195	.00091	.01365	.97531	.01309	9.9045	.10189
#3	.00009	-.00014	.00212	.01201	1.0295	.00601	10.034	.10913
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	21.638	.00000	.01440	-.00287	-.00145	.00559	8.2477
Stddev	.00052	.238	.00066	.00749	.00105	.00489	.00222	.0108
%RSD	197.84	1.1021	44082.	52.014	36.461	337.86	39.709	.13085
#1	-.00042	21.839	-.00044	.00576	-.00211	.00287	.00583	8.2486
#2	.00032	21.374	.00076	.01837	-.00406	-.00045	.00768	8.2580
#3	-.00069	21.701	-.00032	.01906	-.00244	-.00676	.00326	8.2365
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606048506 Acquired: 6/14/2016 17:13:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00134	.40115	-.01349	-.00088	.00037	.01164	.00050
Stddev	.00061	.00470	.00459	.00242	.00086	.00016	.00059
%RSD	45.823	1.1720	34.033	274.17	230.70	1.3342	116.57
#1	.00069	.40585	-.00890	-.00046	.00101	.01179	.00115
#2	.00191	.39645	-.01349	.00130	.00071	.01148	.00000
#3	.00141	.40117	-.01808	-.00348	-.00060	.01165	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7638.1	44699.	2914.0
Stddev	20.7	111.	24.2
%RSD	.27089	.24803	.83147
#1	7627.6	44571.	2886.5
#2	7624.8	44757.	2923.7
#3	7661.9	44769.	2931.9

Approved: June 15, 2016

Sample Name: L1606054009 Acquired: 6/14/2016 17:17:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00111	.03943	.00779	.03258	.15787	.00002	41.513	.00028
Stddev	.00130	.00427	.00101	.00104	.00054	.00010	.055	.00022
%RSD	117.32	10.835	12.972	3.2060	.34408	668.10	.13286	79.532
#1	-.00041	.03453	.00685	.03157	.15758	.00006	41.574	.00012
#2	-.00031	.04241	.00886	.03252	.15754	.00009	41.498	.00053
#3	-.00261	.04133	.00766	.03365	.15850	-.00010	41.466	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00148	-.00019	.00256	24.059	73.927	.00089	4.3234	1.9945
Stddev	.00020	.00070	.00122	.087	.392	.00382	.0764	.0055
%RSD	13.837	359.54	47.717	.36250	.53075	427.61	1.7681	.27412
#1	.00130	-.00048	.00319	24.132	74.358	-.00319	4.3759	2.0004
#2	.00170	.00060	.00333	24.084	73.831	.00147	4.2357	1.9933
#3	.00143	-.00070	.00115	23.962	73.592	.00440	4.3587	1.9897
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	26.005	.00333	.03353	-.00058	.00218	.00638	3.0621
Stddev	.00037	.076	.00117	.00682	.00205	.00145	.00436	.0032
%RSD	367.07	.29119	34.967	20.331	351.12	66.629	68.369	.10485
#1	-.00021	26.091	.00363	.02576	.00144	.00082	.00868	3.0626
#2	.00001	25.978	.00432	.03850	-.00265	.00200	.00910	3.0650
#3	.00050	25.947	.00205	.03633	-.00054	.00371	.00135	3.0586
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606054009 Acquired: 6/14/2016 17:17:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.25224	.00858	-.00274	-.00072	.00584	-.00049
Stddev	.00024	.00083	.00691	.00074	.00081	.00017	.00026
%RSD	34.529	.32894	80.505	27.008	112.85	2.9778	52.350
#1	.00042	.25172	.01378	-.00359	-.00065	.00603	-.00044
#2	.00078	.25319	.00074	-.00242	.00006	.00583	-.00077
#3	.00088	.25179	.01121	-.00221	-.00156	.00568	-.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7903.6	46315.	3079.0
Stddev	7.7	134.	26.8
%RSD	.09746	.29005	.86994
#1	7912.4	46452.	3048.4
#2	7898.1	46183.	3090.9
#3	7900.2	46311.	3097.8

Approved: June 15, 2016

Sample Name: L1606054010 Acquired: 6/14/2016 17:21:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00068	.52065	.00622	.03095	.07368	.00009	111.16	.00014
Stddev	.00155	.00029	.00578	.00107	.00070	.00004	.16	.00040
%RSD	227.75	.05474	92.951	3.4634	.94507	48.885	.14044	287.60
#1	-.00202	.52086	.00654	.03041	.07448	.00012	111.17	-.00007
#2	.00101	.52033	.00029	.03218	.07321	.00010	111.01	.00060
#3	-.00103	.52077	.01183	.03025	.07336	.00004	111.32	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	.00275	.00284	3.1244	9.8775	.01955	3.4781	.24503
Stddev	.00010	.00086	.00090	.0122	.0402	.00231	.0584	.00219
%RSD	11.831	31.373	31.651	.38957	.40690	11.827	1.6799	.89444
#1	.00100	.00358	.00388	3.1212	9.9088	.02219	3.5227	.24286
#2	.00079	.00282	.00238	3.1378	9.8915	.01789	3.4119	.24498
#3	.00088	.00186	.00227	3.1141	9.8321	.01857	3.4995	.24724
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00296	139.31	.00163	.10512	.00187	-.00071	.00573	9.0899
Stddev	.00030	.13	.00007	.00533	.00224	.00522	.00584	.0241
%RSD	9.9861	.09166	4.5431	5.0677	119.75	731.40	101.80	.26556
#1	.00319	139.45	.00163	.10531	.00197	-.00669	.01044	9.0921
#2	.00263	139.30	.00170	.11035	-.00042	.00161	-.00080	9.1128
#3	.00307	139.19	.00155	.09970	.00406	.00294	.00756	9.0647
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606054010 Acquired: 6/14/2016 17:21:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00128	.52415	-.00141	.00026	.00251	.03824	.00089
Stddev	.00019	.00015	.00263	.00482	.00017	.00012	.00034
%RSD	14.500	.02827	187.00	1865.9	6.5933	.32280	38.664
#1	.00141	.52411	-.00087	-.00414	.00236	.03835	.00087
#2	.00107	.52431	.00091	-.00050	.00249	.03811	.00055
#3	.00138	.52402	-.00426	.00542	.00269	.03827	.00124
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7560.1	43953.	2932.6
Stddev	31.2	87.	3.3
%RSD	.41305	.19687	.11312
#1	7528.5	43862.	2935.6
#2	7560.8	43962.	2929.0
#3	7590.9	44034.	2933.2

Approved: June 15, 2016

Sample Name: L1606054011 Acquired: 6/14/2016 17:25:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.59515	.00344	.02999	.07563	.00005	115.10	.00000
Stddev	.00078	.00265	.00380	.00089	.00043	.00002	.67	.00016
%RSD	464.25	.44542	110.46	2.9844	.56630	42.594	.58592	7754.2
#1	-.00079	.59669	.00756	.02951	.07514	.00006	115.78	-.00007
#2	-.00044	.59667	.00008	.02943	.07578	.00006	115.07	.00018
#3	.00071	.59209	.00267	.03102	.07596	.00002	114.44	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00106	.00229	.00148	3.2444	10.063	.01918	3.7279	.25161
Stddev	.00025	.00123	.00161	.0362	.046	.00176	.1735	.00137
%RSD	23.474	53.530	108.64	1.1150	.45978	9.1615	4.6546	.54645
#1	.00094	.00127	.00149	3.2072	10.116	.01931	3.9133	.25305
#2	.00089	.00195	.00308	3.2465	10.033	.02087	3.7009	.25145
#3	.00135	.00365	-.00013	3.2795	10.039	.01736	3.5694	.25032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00326	143.24	.00151	.11253	.00076	.00277	.00059	9.5696
Stddev	.00037	.47	.00105	.00442	.00357	.00485	.00570	.0206
%RSD	11.251	.32871	69.691	3.9282	469.50	175.36	962.96	.21480
#1	.00358	143.73	.00087	.11680	-.00197	.00552	-.00589	9.5755
#2	.00335	143.18	.00093	.11283	.00480	.00562	.00485	9.5865
#3	.00286	142.80	.00272	.10797	-.00055	-.00284	.00282	9.5467
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606054011 Acquired: 6/14/2016 17:25:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00112	.54100	-.00388	-.00133	.00210	.03558	.00074
Stddev	.00029	.00204	.00158	.00292	.00047	.00016	.00021
%RSD	26.123	.37736	40.668	218.80	22.534	.45204	28.694
#1	.00145	.54304	-.00563	-.00065	.00220	.03545	.00056
#2	.00102	.54103	-.00342	.00118	.00251	.03576	.00069
#3	.00089	.53895	-.00258	-.00453	.00158	.03553	.00098
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7562.5	43692.	2925.3
Stddev	7.4	94.	21.7
%RSD	.09845	.21575	.74097
#1	7554.0	43714.	2902.1
#2	7567.7	43589.	2928.7
#3	7565.9	43773.	2945.1

Approved: June 15, 2016

Sample Name: L1606054014 Acquired: 6/14/2016 17:29:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	.02147	.02563	.03147	.10443	.00052	44.979	-.00011
Stddev	.00177	.00155	.00230	.00162	.00075	.00003	.156	.00026
%RSD	199.14	7.2106	8.9775	5.1480	.72193	5.1761	.34687	233.98
#1	.00248	.02013	.02523	.03283	.10519	.00055	45.131	-.00040
#2	.00119	.02112	.02811	.02968	.10369	.00052	44.819	.00001
#3	-.00101	.02317	.02356	.03190	.10441	.00050	44.986	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.00065	.00171	11.927	2.8315	.00332	5.0603	4.2095
Stddev	.00032	.00163	.00073	.043	.1122	.00300	.1266	.0225
%RSD	1719.9	252.70	42.747	.35731	3.9615	90.325	2.5015	.53536
#1	.00016	-.00096	.00098	11.976	2.7301	.00471	5.2016	4.2183
#2	-.00035	.00060	.00171	11.903	2.8124	.00537	5.0222	4.1839
#3	.00025	.00230	.00244	11.902	2.9520	-.00012	4.9572	4.2263
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	21.056	.00746	.29297	.00171	.00052	.00342	6.5374
Stddev	.00023	.085	.00023	.00731	.00278	.00281	.00238	.0082
%RSD	182.43	.40320	3.0991	2.4950	162.25	545.40	69.447	.12564
#1	-.00005	21.154	.00721	.28603	.00243	-.00223	.00546	6.5457
#2	.00005	21.000	.00767	.30060	-.00135	.00038	.00400	6.5293
#3	.00039	21.014	.00750	.29228	.00405	.00339	.00081	6.5371
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606054014 Acquired: 6/14/2016 17:29:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	.26905	.00054	-.00104	.00010	.01946	-.00030
Stddev	.00041	.00145	.00327	.00117	.00069	.00024	.00033
%RSD	73.408	.53923	602.21	112.06	703.56	1.2360	108.01
#1	.00057	.27052	-.00004	-.00228	-.00015	.01972	-.00066
#2	.00014	.26761	-.00239	-.00087	.00088	.01941	-.00002
#3	.00095	.26901	.00406	.00003	-.00044	.01925	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7940.0	46251.	3083.1
Stddev	9.7	187.	14.5
%RSD	.12161	.40489	.46939
#1	7929.3	46036.	3071.7
#2	7942.6	46371.	3099.4
#3	7948.1	46347.	3078.2

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 17:33:57 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38498**	**9.6272**	**.37768**	**.48429**	**.94492**	**.04818**	**9.3126**	**.04814**
Stddev	.00131	.0270	.00464	.00312	.00340	.00031	.0767	.00045
%RSD	.34096	.28029	1.2295	.64359	.35938	.63947	.82387	.93562
#1	.38416	9.6046	.38110	.48253	.94654	.04783	9.2598	.04787
#2	.38650	9.6570	.37954	.48789	.94721	.04830	9.4006	.04788
#3	.38429	9.6198	.37239	.48245	.94102	.04841	9.2774	.04866
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19534**	**.48542**	**.48677**	**3.8362**	**47.458**	**.93559**	**9.3954**	**.47377**
Stddev	.00076	.00459	.00292	.0239	.143	.00233	.0588	.00374
%RSD	.38763	.94577	.59982	.62337	.30195	.24913	.62580	.79026
#1	.19614	.48012	.48785	3.8326	47.408	.93568	9.4629	.47387
#2	.19526	.48816	.48900	3.8618	47.620	.93788	9.3675	.47746
#3	.19463	.48798	.48347	3.8143	47.347	.93322	9.3557	.46998
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.96293**	**47.783**	**.49303**	**9.7488**	**.49339**	**1.1697**	**.37378**	**4.9113**
Stddev	.00208	.121	.00182	.0030	.00369	.0094	.00622	.0034
%RSD	.21557	.25352	.36828	.03101	.74785	.80324	1.6639	.06973
#1	.96524	47.741	.49512	9.7514	.49140	1.1747	.37155	4.9082
#2	.96231	47.919	.49215	9.7455	.49113	1.1589	.38080	4.9109
#3	.96123	47.688	.49183	9.7495	.49765	1.1756	.36898	4.9150
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 17:33:57 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.96781	.94451	.93961	.48614	.97117	.98136	.98482
Stddev	.00181	.00385	.00962	.00086	.00421	.00059	.00966
%RSD	.18691	.40778	1.0241	.17744	.43323	.05993	.98123
#1	.96572	.94685	.94895	.48553	.96634	.98200	.97784
#2	.96894	.94662	.92973	.48577	.97403	.98084	.99585
#3	.96877	.94006	.94013	.48713	.97313	.98125	.98076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8106.1	46904.	3053.5
Stddev	14.2	116.	28.0
%RSD	.17535	.24722	.91848
#1	8121.6	46783.	3068.5
#2	8093.5	46913.	3021.2
#3	8103.3	47015.	3070.9

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 17:37:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00093	-.00096	-.00201	.00104	.00066	.00001	.00291	-.00007
Stddev	.00099	.00384	.00191	.00196	.00047	.00000	.02138	.00030
%RSD	105.58	400.76	94.758	188.90	72.011	16.008	735.63	416.90
#1	-.00011	-.00218	-.00126	.00294	.00114	.00001	.02266	.00028
#2	.00184	.00335	-.00418	.00114	.00019	.00001	.00586	-.00026
#3	.00107	-.00405	-.00060	-.00097	.00064	.00001	-.01979	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	.00027	.00078	.02860	-.07775	-.00235	-.08523	-.00011
Stddev	.00030	.00025	.00097	.00867	.03524	.00291	.06296	.00090
%RSD	5543.4	92.384	124.39	30.305	45.320	123.77	73.865	815.20
#1	.00007	-.00001	.00038	.02834	-.06394	.00061	-.12601	-.00105
#2	-.00033	.00033	.00189	.03740	-.11780	-.00246	-.01272	-.00002
#3	.00025	.00047	.00008	.02007	-.05151	-.00521	-.11697	.00074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00172	-.00758	.00067	.00433	-.00180	-.00156	.00163	-.00062
Stddev	.00008	.01278	.00113	.01084	.00201	.00169	.00204	.00304
%RSD	4.5302	168.50	169.28	250.54	111.94	108.44	125.35	492.42
#1	.00171	-.02228	.00050	-.00116	-.00407	-.00172	.00386	.00264
#2	.00180	.00085	-.00037	-.00267	-.00023	-.00317	-.00012	-.00338
#3	.00164	-.00131	.00187	.01681	-.00110	.00020	.00114	-.00111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 17:37:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00084	-.00027	.00695	-.00077	.00062	-.00018	.00097
Stddev	.00053	.00031	.00335	.00191	.00048	.00010	.00019
%RSD	63.218	114.23	48.177	248.77	77.522	56.107	20.049
#1	.00080	-.00012	.01069	-.00296	.00010	-.00019	.00075
#2	.00033	-.00062	.00424	.00015	.00105	-.00007	.00103
#3	.00138	-.00007	.00591	.00051	.00072	-.00027	.00112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8221.5	47984.	3086.2
Stddev	10.2	168.	9.4
%RSD	.12365	.35008	.30370
#1	8233.2	47792.	3094.9
#2	8216.7	48103.	3087.6
#3	8214.6	48058.	3076.3

Approved: June 15, 2016

Sample Name: L1606049201 Acquired: 6/14/2016 17:41:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00215	.02347	-.00090	.87063	2.3677	.00000	156.67
Stddev	.00076	.00683	.00200	.00033	.0092	.00006	.58
%RSD	35.428	29.125	221.66	.03805	.38693	2330.6	.36866
#1	.00177	.03088	-.00085	.87026	2.3679	-.00003	156.49
#2	.00302	.02210	-.00293	.87087	2.3768	.00007	157.32
#3	.00164	.01742	.00107	.87077	2.3585	-.00003	156.21
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00000	.00055	.00120	.00105	.83013	12.176	.50661
Stddev	.00012	.00039	.00010	.00099	.01750	.096	.00296
%RSD	3139.3	70.493	8.6986	93.534	2.1085	.78722	.58363
#1	-.00014	.00046	.00132	.00001	.84409	12.169	.50520
#2	.00005	.00098	.00115	.00117	.81050	12.275	.51000
#3	.00008	.00022	.00114	.00197	.83581	12.084	.50461
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	15.352	.07152	-.00082	F 354.19	-.00034	.00655	-.00109
Stddev	.280	.00339	.00031	3.41	.00046	.00996	.00207
%RSD	1.8248	4.7469	38.053	.96361	134.77	152.05	189.28
#1	15.232	.06772	-.00047	355.31	.00011	.01803	.00022
#2	15.672	.07426	-.00094	356.91	-.00081	.00016	-.00348
#3	15.151	.07257	-.00105	350.36	-.00033	.00147	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 15, 2016

Sample Name: L1606049201 Acquired: 6/14/2016 17:41:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00095	-.00089	.06448	.00014	F 29.923	-.02126	.00098
Stddev	.00435	.00190	.00066	.00042	.450	.00367	.00313
%RSD	459.30	214.91	1.0207	304.06	1.5039	17.247	319.44
#1	-.00507	.00097	.06471	.00049	29.773	-.02328	.00152
#2	.00360	-.00080	.06374	.00026	30.429	-.01702	-.00239
#3	-.00137	-.00283	.06499	-.00033	29.568	-.02346	.00381
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00047	.00109	.00001
Stddev	.00091	.00012	.00069
%RSD	193.35	10.669	5931.7
#1	-.00072	.00111	-.00022
#2	-.00122	.00096	.00078
#3	.00054	.00119	-.00053
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7971.4	46009.	3079.7
Stddev	44.5	243.	45.5
%RSD	.55834	.52921	1.4758
#1	8008.8	45858.	3084.4
#2	7983.2	46289.	3032.1
#3	7922.1	45878.	3122.7

Approved: June 15, 2016

Sample Name: L1606049202 Acquired: 6/14/2016 17:45:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00195**	**.00584**	**.00047**	**1.0255**	**2.6925**	**.00009**	**180.26**
Stddev	.00068	.00645	.00085	.0065	.0203	.00003	1.46
%RSD	34.850	110.34	180.73	.63199	.75419	32.062	.80934
#1	-.00257	-.00080	-.00038	1.0180	2.6710	.00013	178.80
#2	-.00122	.01207	.00047	1.0288	2.6952	.00007	180.25
#3	-.00206	.00626	.00131	1.0297	2.7113	.00009	181.72
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.00079**	**.00206**	**.00117**	**.80917**	**13.992**	**.58500**
Stddev	.00025	.00028	.00050	.00038	.03069	.046	.00087
%RSD	778.47	34.987	24.093	32.200	3.7932	.32920	.14892
#1	-.00025	.00073	.00253	.00152	.83454	13.944	.58447
#2	-.00008	.00055	.00154	.00077	.77505	13.997	.58452
#3	.00023	.00109	.00209	.00123	.81791	14.036	.58600
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**17.741**	**.08635**	**-.00109**	F **400.16**	**-.00018**	**.00481**	**.00113**
Stddev	.218	.00134	.00022	8.06	.00014	.00366	.00227
%RSD	1.2310	1.5470	20.438	2.0149	81.500	76.151	200.09
#1	17.627	.08556	-.00096	391.97	-.00009	.00321	.00263
#2	17.602	.08561	-.00096	408.09	-.00010	.00900	-.00148
#3	17.992	.08789	-.00135	400.41	-.00034	.00222	.00225
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 15, 2016

Sample Name: L1606049202 Acquired: 6/14/2016 17:45:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.00457	.04502	-.00029	F 34.426	F -.03234	.00220
Stddev	.00339	.00346	.00083	.00061	.642	.00135	.00088
%RSD	1434.2	75.822	1.8512	208.45	1.8663	4.1862	39.887
#1	.00407	.00823	.04585	-.00048	33.778	-.03372	.00174
#2	-.00103	.00135	.04418	-.00078	35.063	-.03229	.00322
#3	-.00233	.00413	.04504	.00039	34.438	-.03101	.00165
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Pass
High Limit					9.0000	36.000	
Low Limit					-.01000	-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00070	.00074	-.00023
Stddev	.00078	.00008	.00039
%RSD	111.90	11.119	170.09
#1	.00007	.00083	.00021
#2	-.00068	.00067	-.00051
#3	-.00149	.00072	-.00039
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7566.0	42993.	2923.4
Stddev	67.3	191.	41.8
%RSD	.88952	.44475	1.4309
#1	7497.0	42999.	2969.9
#2	7631.5	42800.	2911.5
#3	7569.4	43182.	2888.8

Approved: June 15, 2016

Sample Name: L1606054015 Acquired: 6/14/2016 17:50:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00064	.05888	.00391	.03129	.16499	.00027	40.028	.00011
Stddev	.00270	.01280	.00389	.00177	.00170	.00005	.239	.00016
%RSD	420.10	21.745	99.359	5.6446	1.0311	18.510	.59756	141.22
#1	.00248	.05199	.00681	.02980	.16350	.00032	40.036	.00006
#2	-.00213	.07366	.00544	.03083	.16461	.00022	39.785	-.00001
#3	-.00228	.05100	-.00051	.03324	.16684	.00027	40.263	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.00069	.03741	4.4993	3.4523	.01652	2.7005	.07158
Stddev	.00032	.00045	.00198	.0435	.1087	.00228	.0240	.00236
%RSD	66.875	65.605	5.2808	.96762	3.1471	13.820	.88807	3.3023
#1	.00057	.00091	.03513	4.5082	3.4758	.01902	2.6975	.06963
#2	.00012	.00017	.03859	4.4520	3.3338	.01601	2.6782	.07421
#3	.00075	.00098	.03852	4.5377	3.5473	.01454	2.7259	.07090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00049	39.854	.00303	.84930	.00486	.00570	.00528	26.027
Stddev	.00017	.187	.00016	.00705	.00313	.00445	.00855	.255
%RSD	35.759	.46881	5.2195	.82978	64.456	78.013	161.81	.97825
#1	-.00032	39.893	.00286	.84246	.00140	.00990	-.00455	25.734
#2	-.00048	39.650	.00317	.84890	.00751	.00104	.00948	26.144
#3	-.00067	40.018	.00308	.85653	.00566	.00617	.01092	26.202
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606054015 Acquired: 6/14/2016 17:50:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.22818	.00295	-.00203	.00146	.12516	.00158
Stddev	.00045	.00177	.00178	.00115	.00067	.00151	.00063
%RSD	65.519	.77458	60.266	56.639	46.052	1.2053	39.886
#1	.00112	.23020	.00164	-.00084	.00155	.12343	.00108
#2	.00072	.22743	.00224	-.00212	.00208	.12584	.00138
#3	.00022	.22691	.00498	-.00314	.00075	.12620	.00229
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7466.8	45349.	3005.3
Stddev	49.7	420.	11.4
%RSD	.66497	.92717	.38026
#1	7515.0	45835.	3008.6
#2	7415.9	45119.	3014.8
#3	7469.6	45094.	2992.6

Approved: June 15, 2016

Sample Name: L1606054016 Acquired: 6/14/2016 17:54:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00142	.04949	.00150	.04448	.03246	.00005	80.331	-.00002
Stddev	.00148	.00818	.00200	.00064	.00080	.00009	.248	.00003
%RSD	104.47	16.534	132.84	1.4344	2.4673	178.94	.30895	121.34
#1	-.00034	.04796	.00298	.04492	.03313	.00010	80.364	-.00004
#2	-.00311	.05834	-.00077	.04375	.03157	.00010	80.560	.00001
#3	-.00081	.04219	.00230	.04477	.03268	-.00005	80.067	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00216	.00326	6.3843	1.8356	.00865	2.6804	.16626
Stddev	.00019	.00076	.00062	.0555	.1457	.00281	.0710	.00030
%RSD	336.57	35.200	19.078	.86908	7.9350	32.493	2.6487	.18110
#1	-.00015	.00299	.00377	6.3295	1.8467	.00688	2.6981	.16642
#2	.00009	.00149	.00257	6.4405	1.9753	.01189	2.7408	.16591
#3	.00022	.00201	.00345	6.3829	1.6847	.00718	2.6022	.16645
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00051	28.673	.01287	1.2137	-.00003	-.00234	.00358	17.085
Stddev	.00059	.126	.00065	.0083	.00374	.00162	.00762	.070
%RSD	116.54	.43795	5.0508	.68200	14167.	68.985	212.89	.40749
#1	-.00093	28.719	.01337	1.2208	-.00418	-.00264	-.00418	17.141
#2	-.00075	28.770	.01214	1.2046	.00103	-.00060	.00387	17.107
#3	.00017	28.531	.01310	1.2156	.00306	-.00379	.01105	17.007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606054016 Acquired: 6/14/2016 17:54:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.36984	-.00618	-.00191	.00059	.01730	.00109
Stddev	.00061	.00119	.00630	.00126	.00147	.00026	.00044
%RSD	225.55	.32169	101.96	66.068	248.31	1.5198	40.069
#1	.00028	.36997	-.00452	-.00184	.00151	.01758	.00072
#2	.00087	.37096	-.00088	-.00068	.00137	.01706	.00098
#3	-.00035	.36859	-.01315	-.00320	-.00110	.01724	.00157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7408.5	43089.	2810.4
Stddev	18.4	120.	10.8
%RSD	.24900	.27807	.38501
#1	7406.7	43207.	2798.0
#2	7391.0	42967.	2815.0
#3	7427.7	43091.	2818.2

Approved: June 15, 2016

Sample Name: L1606064501 Acquired: 6/14/2016 17:58:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00078	.01025	-.00002	-.00000	.00016	.00003	.03499	.00015
Stddev	.00153	.00759	.00189	.00291	.00078	.00004	.03521	.00014
%RSD	195.57	74.093	8696.6	192800.	487.87	169.86	100.63	88.637
#1	.00236	.01552	-.00015	-.00318	.00090	.00005	.06275	.00004
#2	-.00070	.00154	-.00184	.00253	-.00065	.00005	-.00462	.00031
#3	.00068	.01368	.00193	.00064	.00024	-.00002	.04685	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.00099	.00057	-.01457	-.15866	-.00222	.04173	-.00039
Stddev	.00049	.00030	.00097	.02016	.08192	.00402	.07812	.00141
%RSD	291.16	30.575	170.64	138.36	51.630	181.25	187.17	359.52
#1	-.00049	.00109	.00110	-.01251	-.20689	-.00680	.04278	-.00202
#2	.00039	.00124	-.00055	-.03568	-.06408	-.00063	-.03690	.00042
#3	-.00040	.00066	.00116	.00448	-.20501	.00076	.11932	.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00085	.00805	.00038	.00129	-.00172	.00184	.00683	.00181
Stddev	.00052	.03487	.00113	.00101	.00059	.00376	.00256	.00082
%RSD	61.179	433.14	298.55	78.644	34.357	203.67	37.470	45.144
#1	-.00132	-.00592	.00143	.00012	-.00143	.00565	.00716	.00087
#2	-.00029	.04774	.00050	.00190	-.00240	-.00186	.00412	.00235
#3	-.00094	-.01767	-.00081	.00184	-.00133	.00175	.00921	.00220
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606064501 Acquired: 6/14/2016 17:58:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00072**	**.00202**	**.00582**	**-.00226**	**-.00020**	**.00124**	**.00022**
Stddev	.00080	.00024	.00162	.00041	.00026	.00024	.00049
%RSD	110.54	11.685	27.792	18.274	127.80	19.136	221.29
#1	.00150	.00201	.00671	-.00192	.00003	.00151	-.00026
#2	-.00010	.00179	.00396	-.00214	-.00048	.00106	.00020
#3	.00078	.00226	.00681	-.00272	-.00015	.00116	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7507.7**	**44131.**	**2809.4**
Stddev	13.4	94.	31.1
%RSD	.17810	.21357	1.1071
#1	7518.9	44175.	2839.8
#2	7492.9	44022.	2810.9
#3	7511.4	44194.	2777.6

Approved: June 15, 2016

Sample Name: L1606064502 Acquired: 6/14/2016 18:02:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	.01881	.00154	.00007	.00199	.00007	2.0964	.00007
Stddev	.00069	.00654	.00252	.00417	.00148	.00003	.0317	.00012
%RSD	301.82	34.769	163.36	6334.4	74.144	50.420	1.5101	171.99
#1	-.00056	.01507	.00410	.00395	.00029	.00003	2.1239	.00002
#2	.00057	.02637	.00148	-.00433	.00281	.00009	2.0618	.00022
#3	-.00069	.01501	-.00094	.00058	.00289	.00008	2.1035	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00041	.00401	.00151	.14379	-.13332	-.00298	.18185	.00254
Stddev	.00034	.00065	.00128	.01005	.04769	.00094	.05404	.00171
%RSD	81.289	16.084	84.714	6.9902	35.772	31.467	29.716	67.419
#1	-.00074	.00458	.00285	.13275	-.13561	-.00406	.15507	.00267
#2	-.00007	.00331	.00032	.15240	-.08452	-.00244	.24405	.00077
#3	-.00042	.00415	.00135	.14623	-.17982	-.00243	.14643	.00418
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00161	.12292	.00091	.00800	-.00174	-.00264	.00870	.02305
Stddev	.00028	.02001	.00036	.00376	.00146	.00326	.00775	.00248
%RSD	17.696	16.283	39.156	47.061	83.994	123.62	89.101	10.767
#1	.00144	.10059	.00085	.01072	-.00080	.00061	.00585	.02030
#2	.00145	.12894	.00059	.00957	-.00100	-.00261	.00277	.02373
#3	.00194	.13924	.00130	.00370	-.00343	-.00591	.01747	.02512
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606064502 Acquired: 6/14/2016 18:02:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00098	.00416	.00548	.00105	.00104	.01146	.00028
Stddev	.00027	.00051	.00609	.00146	.00110	.00008	.00074
%RSD	27.372	12.269	111.11	139.01	105.08	.68979	269.70
#1	.00067	.00405	.00747	.00173	.00092	.01138	.00113
#2	.00114	.00472	.01034	-.00063	.00001	.01154	-.00018
#3	.00113	.00372	-.00135	.00203	.00219	.01145	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7566.2	43999.	2794.7
Stddev	29.7	263.	11.9
%RSD	.39244	.59722	.42516
#1	7552.8	43697.	2793.1
#2	7545.6	44175.	2807.4
#3	7600.2	44124.	2783.8

Approved: June 15, 2016

Sample Name: L1606041103 Acquired: 6/14/2016 18:06:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	.20230	.00188	.00134	.00804	.00007	.28731	-.00033
Stddev	.00176	.01138	.00080	.00109	.00111	.00003	.00779	.00013
%RSD	767.36	5.6245	42.755	80.910	13.797	45.161	2.7124	39.586
#1	-.00173	.19806	.00276	.00259	.00803	.00006	.29383	-.00044
#2	.00171	.19364	.00169	.00062	.00916	.00011	.27868	-.00019
#3	-.00066	.21518	.00118	.00082	.00694	.00005	.28943	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.00419	.00119	.18721	-.10774	.00140	.17924	-.00033
Stddev	.00046	.00080	.00086	.01977	.11543	.00464	.07879	.00056
%RSD	188.83	19.056	72.501	10.561	107.14	330.49	43.958	168.60
#1	.00034	.00508	.00024	.20924	-.03738	-.00349	.17519	-.00098
#2	-.00026	.00394	.00193	.18138	-.24096	.00197	.10255	.00001
#3	.00064	.00354	.00139	.17101	-.04488	.00573	.25998	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00079	2.5002	.00968	.00687	-.00215	.00170	.00475	2.0899
Stddev	.00039	.0483	.00004	.00785	.00209	.00229	.00239	.0163
%RSD	49.721	1.9311	.44513	114.29	97.277	134.93	50.212	.77799
#1	-.00114	2.5217	.00968	.00211	-.00117	.00162	.00313	2.0989
#2	-.00087	2.5341	.00964	.00257	-.00455	.00403	.00749	2.0997
#3	-.00037	2.4449	.00972	.01593	-.00073	-.00055	.00363	2.0711
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606041103 Acquired: 6/14/2016 18:06:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00076**	**.00576**	**.00895**	**.00105**	**.00066**	**.00138**	**.00045**
Stddev	.00051	.00044	.00280	.00269	.00107	.00008	.00036
%RSD	66.900	7.5966	31.228	257.44	163.17	5.7236	79.319
#1	.00027	.00553	.00573	.00403	-.00051	.00146	.00008
#2	.00128	.00627	.01044	.00033	.00159	.00131	.00048
#3	.00073	.00549	.01069	-.00121	.00089	.00137	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8530.4**	**49451.**	**3121.0**
Stddev	21.2	309.	21.4
%RSD	.24892	.62577	.68619
#1	8525.3	49735.	3096.4
#2	8553.8	49122.	3130.9
#3	8512.3	49497.	3135.7

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 18:10:23 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41032	10.299	.40306	.51555	1.0137	.05157	10.006	.05125
Stddev	.00257	.028	.00072	.00347	.0058	.00042	.020	.00054
%RSD	.62607	.26727	.17928	.67253	.57243	.81202	.19734	1.0553
#1	.41221	10.319	.40315	.51181	1.0080	.05120	9.9914	.05095
#2	.40739	10.310	.40230	.51865	1.0134	.05150	9.9979	.05188
#3	.41135	10.268	.40374	.51620	1.0196	.05203	10.028	.05093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20946	.51928	.52086	4.1267	50.524	1.0038	10.045	.50685
Stddev	.00093	.00422	.00400	.0344	.316	.0040	.110	.00328
%RSD	.44362	.81356	.76862	.83412	.62457	.39440	1.0941	.64805
#1	.20904	.51956	.52195	4.0871	50.168	1.0079	9.9715	.50329
#2	.21053	.51493	.52421	4.1484	50.634	1.0035	9.9918	.50748
#3	.20882	.52336	.51643	4.1448	50.770	1.0000	10.171	.50976
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0294	50.978	.52495	10.362	.52713	1.2490	.39867	5.2281
Stddev	.0067	.288	.00357	.043	.00573	.0091	.00494	.0229
%RSD	.65493	.56404	.68059	.41261	1.0865	.73063	1.2401	.43742
#1	1.0335	50.653	.52609	10.372	.52995	1.2508	.39409	5.2355
#2	1.0331	51.079	.52780	10.399	.53091	1.2571	.40391	5.2463
#3	1.0216	51.201	.52094	10.315	.52054	1.2391	.39801	5.2024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 18:10:23 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0354**	**1.0131**	**1.0079**	**.51623**	**1.0349**	**1.0503**	**1.0615**
Stddev	.0051	.0040	.0032	.00447	.0075	.0036	.0080
%RSD	.49400	.39648	.31784	.86522	.71980	.34332	.75490
#1	1.0358	1.0092	1.0085	.51656	1.0289	1.0498	1.0637
#2	1.0403	1.0129	1.0045	.52053	1.0326	1.0541	1.0526
#3	1.0301	1.0172	1.0109	.51161	1.0432	1.0469	1.0681
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7559.0**	**43649.**	**2831.4**
Stddev	16.5	283.	9.1
%RSD	.21858	.64896	.31973
#1	7539.9	43844.	2838.9
#2	7568.3	43324.	2833.9
#3	7568.7	43779.	2821.3

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 18:14:05 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00113**	**.00778**	**.00082**	**.00237**	**.00115**	**.00017**	**-.00480**	**-.00014**
Stddev	.00080	.00665	.00358	.00224	.00102	.00006	.01651	.00017
%RSD	70.779	85.381	438.45	94.230	88.415	36.371	344.24	119.88
#1	-.00105	.01184	.00405	.00402	.00000	.00021	-.01106	.00005
#2	-.00037	.00011	.00144	.00326	.00194	.00010	-.01725	-.00024
#3	-.00196	.01140	-.00304	-.00017	.00152	.00019	.01393	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**.00075**	**.00023**	**-.00304**	**-.12504**	**-.00263**	**-.02184**	**-.00041**
Stddev	.00011	.00079	.00057	.01464	.02078	.00206	.02081	.00430
%RSD	128.23	105.22	252.89	481.50	16.619	78.140	95.243	1048.0
#1	-.00022	.00165	.00027	-.01353	-.12219	-.00391	-.04166	.00456
#2	-.00004	.00015	-.00037	-.00928	-.10582	-.00373	-.02369	-.00301
#3	-.00001	.00046	.00077	.01369	-.14709	-.00026	-.00018	-.00278
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00184**	**-.00565**	**.00087**	**.00224**	**-.00282**	**.00051**	**.00861**	**.00271**
Stddev	.00047	.02805	.00043	.01179	.00159	.00047	.00687	.00133
%RSD	25.554	496.30	49.363	526.04	56.340	93.444	79.771	48.940
#1	.00146	-.03535	.00131	-.01108	-.00317	.00026	.00279	.00409
#2	.00170	-.00200	.00045	.00648	-.00108	.00105	.01619	.00261
#3	.00237	.02040	.00085	.01132	-.00420	.00021	.00685	.00144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 18:14:05 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00133	.00014	.00722	.00127	-.00037	-.00014	.00108
Stddev	.00068	.00010	.00779	.00275	.00054	.00008	.00055
%RSD	51.355	70.111	107.90	215.96	143.80	59.039	50.667
#1	.00091	.00019	-.00027	.00081	-.00017	-.00015	.00051
#2	.00211	.00020	.00665	.00423	.00003	-.00021	.00160
#3	.00096	.00003	.01529	-.00122	-.00098	-.00005	.00111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7731.7	45144.	2870.4
Stddev	35.6	209.	39.0
%RSD	.46004	.46369	1.3589
#1	7699.2	44902.	2846.8
#2	7726.0	45253.	2848.9
#3	7769.7	45276.	2915.4

Approved: June 15, 2016

Sample Name: L1606041104 Acquired: 6/14/2016 18:18:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00044	.19521	.00109	.00048	.00823	.00005	.30813	-.00016
Stddev	.00144	.00461	.00128	.00292	.00062	.00004	.04735	.00001
%RSD	329.00	2.3633	117.97	606.69	7.5050	75.630	15.366	3.6712
#1	-.00058	.19072	.00245	.00361	.00769	.00006	.28619	-.00016
#2	-.00180	.19497	-.00010	.00001	.00810	.00001	.27574	-.00017
#3	.00107	.19994	.00091	-.00217	.00891	.00009	.36247	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.00350	.00048	.15658	-.10616	.00126	.15753	.00213
Stddev	.00064	.00090	.00102	.01788	.11285	.00341	.02033	.00122
%RSD	189.36	25.626	212.11	11.421	106.31	271.11	12.909	57.205
#1	.00044	.00270	.00145	.13774	-.12677	.00198	.18071	.00218
#2	.00092	.00447	-.00058	.15869	.01558	-.00246	.14269	.00089
#3	-.00035	.00333	.00058	.17331	-.20728	.00425	.14918	.00333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00062	2.5794	.01140	-.00045	-.00159	-.00393	.00168	2.1311
Stddev	.00014	.0085	.00031	.00882	.00310	.00227	.00399	.0073
%RSD	23.379	.32897	2.6775	1942.8	195.12	57.783	237.06	.34468
#1	-.00068	2.5781	.01147	-.00216	.00146	-.00159	.00104	2.1329
#2	-.00072	2.5716	.01107	-.00830	-.00149	-.00613	.00596	2.1373
#3	-.00045	2.5885	.01167	.00910	-.00475	-.00408	-.00195	2.1230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606041104 Acquired: 6/14/2016 18:18:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00111**	**.00582**	**.00470**	**.00111**	**.00046**	**.00090**	**.00056**
Stddev	.00105	.00014	.00103	.00138	.00055	.00005	.00037
%RSD	94.390	2.4767	21.984	123.73	117.56	5.1249	65.026
#1	.00230	.00567	.00458	.00265	.00079	.00095	.00082
#2	.00070	.00584	.00373	-.00002	-.00017	.00085	.00014
#3	.00032	.00595	.00578	.00072	.00077	.00090	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8444.9**	**48946.**	**3101.3**
Stddev	14.8	250.	19.0
%RSD	.17482	.51108	.61358
#1	8461.5	49117.	3121.9
#2	8439.8	48659.	3097.7
#3	8433.3	49061.	3084.3

Approved: June 15, 2016

Sample Name: L1606048503 Acquired: 6/14/2016 18:22:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00058**	**.00254**	**.00128**	**.00221**	**.00376**	**.00014**	**3.2725**	**-.00004**
Stddev	.00202	.00600	.00310	.00076	.00140	.00005	.0107	.00019
%RSD	347.20	236.50	242.50	34.549	37.260	32.373	.32565	498.52
#1	.00095	.00885	.00485	.00300	.00329	.00016	3.2610	-.00024
#2	-.00288	-.00309	-.00054	.00148	.00266	.00009	3.2746	.00013
#3	.00017	.00185	-.00048	.00213	.00534	.00017	3.2819	-.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**-.00031**	**.00023**	**-.00132**	**-.06347**	**-.00035**	**.93682**	**.01121**
Stddev	.00031	.00085	.00040	.00460	.06537	.00299	.07738	.00361
%RSD	159.75	278.32	178.44	349.46	103.00	850.12	8.2594	32.208
#1	-.00016	-.00097	.00061	.00211	.00627	.00041	.90753	.00734
#2	.00042	-.00060	.00026	.00049	-.07332	-.00364	1.0246	.01449
#3	.00032	.00065	-.00019	-.00655	-.12335	.00218	.87837	.01180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00059**	**1.9280**	**.00051**	**.00463**	**-.00199**	**-.00168**	**.00135**	**.41261**
Stddev	.00022	.0235	.00035	.00539	.00139	.00394	.00217	.00375
%RSD	37.233	1.2187	67.504	116.36	69.919	234.73	160.18	.90853
#1	-.00045	1.9122	.00082	.00069	-.00200	.00016	.00019	.40925
#2	-.00084	1.9167	.00014	.01077	-.00338	.00101	.00386	.41665
#3	-.00048	1.9550	.00059	.00243	-.00060	-.00621	.00001	.41192
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606048503 Acquired: 6/14/2016 18:22:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	.02080	.00951	-.00064	.00001	.00086	-.00037
Stddev	.00052	.00028	.00247	.00222	.00064	.00004	.00059
%RSD	132.27	1.3291	25.919	345.32	6624.0	4.6434	160.18
#1	.00063	.02049	.00809	.00085	-.00059	.00086	-.00103
#2	-.00020	.02088	.01236	-.00320	-.00006	.00082	.00010
#3	.00077	.02103	.00808	.00042	.00068	.00090	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8407.4	48756.	3086.6
Stddev	20.9	237.	25.6
%RSD	.24893	.48688	.83029
#1	8431.4	48977.	3089.7
#2	8392.5	48505.	3110.6
#3	8398.4	48785.	3059.6

Approved: June 15, 2016

Sample Name: L1606048504 Acquired: 6/14/2016 18:26:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00045	.00098	.00006	.00218	.00711	.00006	3.3571	.00008
Stddev	.00104	.00627	.00148	.00141	.00106	.00004	.0451	.00027
%RSD	233.10	641.65	2510.0	64.848	14.945	76.439	1.3427	341.24
#1	-.00158	.00274	.00151	.00168	.00590	.00001	3.3096	.00028
#2	.00048	.00618	.00012	.00378	.00754	.00006	3.3992	.00019
#3	-.00024	-.00599	-.00145	.00109	.00788	.00010	3.3627	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	-.00045	-.00053	.00386	-.09403	-.00304	.92898	.00177
Stddev	.00025	.00033	.00105	.00685	.06519	.00159	.09330	.00246
%RSD	123.37	72.868	197.72	177.67	69.332	52.321	10.043	139.40
#1	-.00002	-.00007	-.00175	.00029	-.10545	-.00474	1.0102	-.00098
#2	.00048	-.00068	.00002	.01175	-.15276	-.00280	.94970	.00251
#3	.00015	-.00060	.00013	-.00048	-.02388	-.00158	.82707	.00377
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00084	1.5620	.00088	.00463	-.00211	.00083	.00265	.55044
Stddev	.00013	.0322	.00075	.00429	.00351	.00220	.00452	.00142
%RSD	15.857	2.0638	85.246	92.836	166.39	264.78	170.92	.25850
#1	-.00093	1.5794	.00003	-.00033	-.00225	.00072	.00344	.54956
#2	-.00090	1.5818	.00118	.00699	.00147	.00308	.00672	.54966
#3	-.00068	1.5248	.00143	.00722	-.00555	-.00131	-.00222	.55208
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606048504 Acquired: 6/14/2016 18:26:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.04727	.00667	-.00152	.00023	.00048	.00024
Stddev	.00029	.00090	.00460	.00123	.00062	.00013	.00026
%RSD	81.209	1.8954	69.026	80.601	269.03	25.958	109.58
#1	.00011	.04646	.00207	-.00049	-.00006	.00063	.00008
#2	.00028	.04712	.00666	-.00288	-.00019	.00043	.00054
#3	.00067	.04823	.01128	-.00120	.00094	.00040	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8436.1	48837.	3119.8
Stddev	21.5	146.	17.4
%RSD	.25510	.29970	.55763
#1	8421.4	48972.	3114.2
#2	8460.8	48682.	3139.3
#3	8426.0	48858.	3105.8

Approved: June 15, 2016

Sample Name: L1606048505 Acquired: 6/14/2016 18:30:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00083	.00445	.00078	.00185	.00999	.00013	4.6841	-.00010
Stddev	.00047	.00402	.00268	.00158	.00053	.00002	.0160	.00016
%RSD	56.539	90.453	342.81	85.685	5.3470	16.719	.34123	151.60
#1	.00104	.00859	.00373	.00002	.00938	.00012	4.7026	-.00007
#2	.00029	.00421	-.00151	.00274	.01034	.00011	4.6748	-.00028
#3	.00115	.00055	.00012	.00279	.01026	.00015	4.6751	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00028	.00072	.00057	.61374	-.17492	-.00242	.52461	.07515
Stddev	.00031	.00136	.00070	.00905	.06054	.00423	.00041	.00209
%RSD	112.90	188.34	123.55	1.4744	34.609	174.86	.07910	2.7832
#1	-.00034	.00201	.00064	.62149	-.20814	-.00227	.52429	.07636
#2	.00006	.00086	-.00017	.60380	-.10505	.00173	.52508	.07635
#3	-.00055	-.00070	.00123	.61594	-.21158	-.00672	.52446	.07273
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00041	1.5866	.00067	.00377	-.00126	-.00263	-.00066	.44091
Stddev	.00018	.0273	.00091	.00176	.00360	.00354	.00654	.00084
%RSD	43.607	1.7237	135.54	46.702	285.20	134.77	999.04	.19116
#1	-.00037	1.5869	.00033	.00237	-.00414	-.00582	.00617	.44114
#2	-.00060	1.6139	-.00002	.00319	-.00243	.00118	-.00127	.43997
#3	-.00025	1.5592	.00170	.00574	.00278	-.00324	-.00687	.44161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606048505 Acquired: 6/14/2016 18:30:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.01787	.00933	-.00022	.00072	.00032	.00018
Stddev	.00039	.00008	.00676	.00059	.00102	.00021	.00023
%RSD	56.937	.47570	72.461	262.69	141.06	67.491	130.76
#1	.00086	.01796	.00164	-.00048	-.00023	.00008	.00006
#2	.00098	.01784	.01200	.00045	.00060	.00037	.00044
#3	.00024	.01780	.01435	-.00064	.00179	.00049	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8429.3	48865.	3091.3
Stddev	36.1	178.	8.3
%RSD	.42862	.36515	.26929
#1	8460.6	49064.	3093.3
#2	8437.4	48720.	3082.2
#3	8389.7	48811.	3098.5

Approved: June 15, 2016

Sample Name: L1606048506 Acquired: 6/14/2016 18:34:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00168	-.00820	.00027	-.00185	.00094	.00014	4.7670	-.00010
Stddev	.00273	.00704	.00198	.00190	.00125	.00003	.0185	.00021
%RSD	162.99	85.857	727.08	102.67	132.47	24.575	.38836	220.74
#1	.00382	-.01162	-.00181	-.00148	.00081	.00015	4.7789	-.00031
#2	-.00140	-.00010	.00213	-.00390	.00225	.00010	4.7457	.00012
#3	.00261	-.01288	.00049	-.00016	-.00024	.00016	4.7765	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.00030	.00040	.01260	-.16821	-.00191	.35472	.00380
Stddev	.00010	.00099	.00201	.01751	.09808	.00189	.03415	.00102
%RSD	350.66	332.79	503.89	138.95	58.309	98.734	9.6286	26.773
#1	.00002	.00087	.00082	.00016	-.28006	-.00345	.32173	.00460
#2	-.00014	-.00085	-.00179	.00503	-.12769	.00019	.35251	.00414
#3	.00004	.00087	.00216	.03262	-.09688	-.00247	.38993	.00266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00073	.94385	.00083	.00634	-.00363	-.00009	.00168	.35914
Stddev	.00045	.00809	.00069	.00605	.00329	.00319	.00041	.00237
%RSD	61.788	.85693	82.879	95.403	90.695	3491.7	24.317	.65887
#1	-.00097	.95250	.00009	.01212	-.00683	-.00002	.00161	.35648
#2	-.00102	.94257	.00145	.00005	-.00025	-.00332	.00131	.36099
#3	-.00021	.93648	.00096	.00685	-.00382	.00307	.00212	.35996
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606048506 Acquired: 6/14/2016 18:34:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	.01749	.00512	-.00046	.00036	.00073	.00017
Stddev	.00042	.00027	.00617	.00013	.00047	.00032	.00060
%RSD	90.558	1.5678	120.47	28.235	132.43	43.531	358.82
#1	.00090	.01777	.00844	-.00032	-.00018	.00046	.00063
#2	.00006	.01746	.00891	-.00058	.00070	.00108	.00039
#3	.00043	.01723	-.00200	-.00048	.00054	.00066	-.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8416.3	48869.	3117.6
Stddev	8.4	313.	16.6
%RSD	.09954	.64122	.53141
#1	8422.3	48705.	3134.3
#2	8406.7	48673.	3101.2
#3	8419.9	49231.	3117.5

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 18:38:25 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37274**	**9.3653**	**.36703**	**.47488**	**.92360**	**.04696**	**9.1202**	**.04737**
Stddev	.00134	.0510	.00363	.00362	.00453	.00032	.0773	.00032
%RSD	.35883	.54508	.98905	.76257	.49001	.68764	.84750	.67029
#1	.37191	9.3403	.36303	.47282	.91867	.04664	9.0562	.04772
#2	.37428	9.3317	.36793	.47277	.92757	.04695	9.0983	.04711
#3	.37203	9.4241	.37013	.47906	.92455	.04729	9.2060	.04727
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19201**	**.47216**	**.47977**	**3.7033**	**46.458**	**.91691**	**9.1244**	**.46057**
Stddev	.00050	.00483	.00235	.0236	.146	.00279	.1308	.00329
%RSD	.26014	1.0227	.48972	.63846	.31321	.30386	1.4335	.71400
#1	.19161	.46705	.48075	3.6768	46.328	.92004	8.9963	.45718
#2	.19184	.47278	.47710	3.7223	46.615	.91600	9.2577	.46375
#3	.19257	.47664	.48148	3.7107	46.431	.91469	9.1193	.46079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.94277**	**46.744**	**.48271**	**9.5480**	**.48330**	**1.1424**	**.37235**	**4.8111**
Stddev	.00261	.200	.00239	.0174	.00182	.0059	.00249	.0055
%RSD	.27714	.42770	.49593	.18237	.37693	.51475	.66988	.11352
#1	.94575	46.545	.48067	9.5290	.48146	1.1367	.37126	4.8120
#2	.94086	46.944	.48535	9.5518	.48510	1.1420	.37059	4.8053
#3	.94171	46.742	.48211	9.5631	.48334	1.1485	.37521	4.8161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 18:38:25 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.94699	.91805	.90974	.47244	.94584	.96456	.96527
Stddev	.00181	.00419	.00971	.00132	.00791	.00170	.00518
%RSD	.19122	.45684	1.0672	.27897	.83580	.17614	.53644
#1	.94683	.91342	.90198	.47396	.93770	.96260	.95930
#2	.94888	.92159	.90662	.47164	.94634	.96559	.96855
#3	.94527	.91914	.92063	.47171	.95348	.96549	.96796
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8063.2	47010.	3057.0
Stddev	17.3	244.	17.2
%RSD	.21481	.51893	.56114
#1	8057.6	47116.	3074.7
#2	8049.3	47182.	3040.5
#3	8082.6	46731.	3055.9

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 18:42:07 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.00600	.00009	.00022	.00034	.00006	-.00541	-.00007
Stddev	.00170	.00632	.00131	.00112	.00040	.00005	.02196	.00030
%RSD	1887.5	105.34	1439.3	511.75	114.92	81.633	405.75	420.91
#1	.00187	-.00032	.00114	.00146	.00075	.00009	.01783	-.00042
#2	-.00093	.01233	.00051	-.00072	-.00004	.00000	-.02581	.00013
#3	-.00121	.00600	-.00138	-.00008	.00033	.00008	-.00826	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00032	-.00081	.00003	.02147	-.05580	-.00112	-.02941	-.00024
Stddev	.00042	.00063	.00192	.03470	.08976	.00086	.09497	.00102
%RSD	133.48	77.830	5607.3	161.62	160.86	76.588	322.96	427.33
#1	-.00028	-.00068	-.00212	.00337	-.02672	-.00206	-.01489	.00042
#2	.00008	-.00026	.00155	.06148	.01581	-.00095	.05747	.00028
#3	-.00076	-.00150	.00068	-.00044	-.15649	-.00036	-.13080	-.00142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00147	-.00272	.00046	.00153	-.00219	.00120	.00256	.00126
Stddev	.00037	.01584	.00075	.00616	.00232	.00095	.00265	.00094
%RSD	25.463	583.30	164.17	401.98	106.10	79.560	103.41	74.211
#1	.00108	-.02051	-.00031	-.00397	-.00478	.00090	.00560	.00162
#2	.00150	.00983	.00049	.00819	-.00149	.00226	.00139	.00197
#3	.00183	.00253	.00119	.00038	-.00030	.00043	.00070	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 18:42:07 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00112	.00048	.00352	.00219	.00003	-.00039	.00088
Stddev	.00016	.00017	.00461	.00227	.00030	.00020	.00017
%RSD	14.068	34.660	130.87	103.84	860.88	51.149	19.189
#1	.00126	.00064	-.00090	-.00016	-.00023	-.00058	.00073
#2	.00095	.00031	.00317	.00438	.00036	-.00018	.00084
#3	.00115	.00048	.00830	.00236	-.00003	-.00043	.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8215.9	47868.	3055.8
Stddev	14.8	104.	40.5
%RSD	.18052	.21828	1.3267
#1	8199.4	47752.	3075.6
#2	8228.2	47895.	3009.2
#3	8220.1	47956.	3082.7

Approved: June 15, 2016

Sample Name: LLCCV Acquired: 6/14/2016 18:46:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00798	.16315	.00817	.07319	.00789	.00155	.37749	.00044
Stddev	.00104	.00903	.00056	.00026	.00031	.00006	.05271	.00028
%RSD	13.084	5.5357	6.8744	.35783	3.9768	3.8843	13.962	62.553
#1	.00883	.15394	.00752	.07289	.00765	.00149	.32452	.00019
#2	.00682	.16354	.00842	.07339	.00777	.00157	.37802	.00073
#3	.00830	.17199	.00856	.07328	.00824	.00160	.42993	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00376	.00399	.00500	.08442	.61306	.07166	.35674	.00688
Stddev	.00013	.00040	.00056	.02379	.06630	.00403	.04913	.00129
%RSD	3.3607	10.023	11.105	28.186	10.814	5.6263	13.771	18.728
#1	.00381	.00443	.00545	.08961	.67849	.07614	.33374	.00816
#2	.00361	.00390	.00518	.05845	.54593	.06833	.41314	.00690
#3	.00384	.00364	.00438	.10518	.61477	.07051	.32332	.00558
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00692	.36710	.01663	.73730	.00701	.07462	.01686	.75697
Stddev	.00040	.01092	.00054	.00538	.00158	.00239	.00068	.00168
%RSD	5.7176	2.9739	3.2572	.73035	22.502	3.2073	4.0544	.22256
#1	.00661	.37923	.01601	.73657	.00567	.07678	.01652	.75561
#2	.00737	.35807	.01702	.74301	.00875	.07504	.01764	.75644
#3	.00679	.36399	.01684	.73231	.00661	.07205	.01641	.75886
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: LLCCV Acquired: 6/14/2016 18:46:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38559**	**.03748**	**.02579**	**.14398**	**.00705**	**.01793**	**.04204**
Stddev	.00077	.00025	.00251	.00189	.00087	.00014	.00135
%RSD	.19844	.67853	9.7484	1.3141	12.389	.75305	3.2147
#1	.38633	.03720	.02823	.14595	.00604	.01809	.04084
#2	.38563	.03768	.02594	.14382	.00752	.01785	.04179
#3	.38481	.03757	.02321	.14218	.00758	.01786	.04351
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8291.9**	**48232.**	**3085.5**
Stddev	23.9	66.	36.0
%RSD	.28860	.13642	1.1683
#1	8268.2	48157.	3125.8
#2	8291.5	48276.	3056.3
#3	8316.1	48264.	3074.3

Approved: June 15, 2016

Sample Name: PBW 17 Acquired: 6/14/2016 18:50:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571814-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00051**	**.02468**	**-.00105**	**.00628**	**.00138**	**.00008**	**.05267**	**-.00014**
Stddev	.00170	.00685	.00113	.00072	.00033	.00011	.02410	.00014
%RSD	332.22	27.752	107.87	11.501	24.202	143.89	45.760	96.762
#1	-.00230	.01993	-.00199	.00702	.00176	.00003	.08014	-.00027
#2	.00109	.03253	.00021	.00558	.00126	.00020	.04279	.00000
#3	-.00033	.02158	-.00136	.00624	.00113	.00000	.03507	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.00088**	**.00035**	**.00586**	**-.06296**	**-.00161**	**.03112**	**.00009**
Stddev	.00032	.00025	.00092	.02103	.06670	.00582	.11790	.00293
%RSD	247.63	28.236	260.21	359.08	105.95	362.49	378.92	3187.5
#1	.00023	.00073	.00127	.02986	-.12655	.00438	.09487	.00280
#2	-.00021	.00075	.00036	-.00294	-.06879	-.00196	-.10494	.00049
#3	-.00040	.00117	-.00057	-.00935	.00647	-.00724	.10342	-.00301
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**-.00995**	**.00087**	**-.00250**	**-.00099**	**-.00027**	**-.00549**	**.05286**
Stddev	.00018	.02677	.00021	.00255	.00178	.00185	.00448	.00171
%RSD	135.07	269.16	23.933	101.98	180.81	695.80	81.631	3.2432
#1	.00001	-.04047	.00104	.00028	-.00303	-.00009	-.00853	.05216
#2	-.00008	.00956	.00094	-.00473	.00026	.00149	-.00761	.05160
#3	-.00034	.00107	.00064	-.00307	-.00020	-.00219	-.00034	.05481
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: PBW 17 Acquired: 6/14/2016 18:50:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571814-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**.00153**	**-.00135**	**.00051**	**.00001**	**.00194**	**.00042**
Stddev	.00035	.00029	.00531	.00072	.00074	.00013	.00042
%RSD	244.19	18.664	392.83	141.06	7560.1	6.5013	98.186
#1	.00054	.00183	-.00557	.00084	-.00046	.00208	.00073
#2	-.00012	.00151	.00461	.00100	-.00037	.00184	-.00005
#3	.00001	.00126	-.00309	-.00031	.00086	.00190	.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7689.5**	**44705.**	**2859.4**
Stddev	19.7	153.	14.5
%RSD	.25604	.34284	.50814
#1	7668.2	44541.	2865.8
#2	7707.0	44844.	2869.7
#3	7693.3	44730.	2842.8

Approved: June 15, 2016

Sample Name: LCSW 17 Acquired: 6/14/2016 18:54:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571814-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20598	5.2596	.20344	1.0180	.51982	.02559	5.2299	.02594
Stddev	.00217	.0042	.00146	.0029	.00436	.00008	.0654	.00012
%RSD	1.0543	.07910	.71623	.28485	.83942	.32218	1.2502	.46800
#1	.20357	5.2638	.20502	1.0214	.52484	.02556	5.3022	.02588
#2	.20657	5.2555	.20314	1.0167	.51692	.02553	5.1750	.02608
#3	.20779	5.2595	.20215	1.0161	.51770	.02569	5.2125	.02586
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10708	.26691	.26658	2.1224	25.321	.51860	5.2287	.25794
Stddev	.00020	.00188	.00074	.0070	.161	.00430	.1258	.00478
%RSD	.18536	.70334	.27923	.32977	.63658	.82820	2.4061	1.8538
#1	.10726	.26806	.26682	2.1144	25.507	.51708	5.3686	.25733
#2	.10687	.26794	.26574	2.1277	25.228	.51527	5.1249	.25349
#3	.10712	.26475	.26717	2.1249	25.227	.52345	5.1927	.26300
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53157	25.885	.27151	5.1280	.26913	.62741	.20347	2.9553
Stddev	.00087	.171	.00050	.0064	.00047	.00332	.00208	.0060
%RSD	.16430	.66175	.18488	.12459	.17524	.52993	1.0227	.20402
#1	.53240	26.068	.27106	5.1248	.26954	.62833	.20389	2.9483
#2	.53066	25.728	.27143	5.1238	.26862	.63018	.20531	2.9588
#3	.53166	25.858	.27205	5.1353	.26924	.62372	.20121	2.9587
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: LCSW 17 Acquired: 6/14/2016 18:54:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571814-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52856	.52429	.50473	.26522	.52582	.54577	.00342
Stddev	.00193	.00218	.00065	.00201	.00088	.00103	.00085
%RSD	.36426	.41657	.12903	.75767	.16726	.18839	24.808
#1	.52729	.52629	.50409	.26404	.52588	.54516	.00245
#2	.52761	.52196	.50472	.26754	.52490	.54520	.00400
#3	.53077	.52463	.50540	.26409	.52666	.54696	.00382
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7534.5	43877.	2842.3
Stddev	4.4	144.	42.4
%RSD	.05883	.32754	1.4903
#1	7538.2	44036.	2793.4
#2	7529.6	43838.	2866.1
#3	7535.7	43756.	2867.4

Approved: June 15, 2016

Sample Name: L1606030801 Acquired: 6/14/2016 18:58:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571814-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	.02242	-.00112	.12124	.05938	.00009	76.611	-.00004
Stddev	.00102	.00692	.00177	.00226	.00113	.00005	.443	.00003
%RSD	118.66	30.851	158.69	1.8678	1.9070	58.435	.57770	93.387
#1	.00150	.03002	.00088	.12248	.05998	.00010	77.113	-.00003
#2	-.00032	.02077	-.00173	.11863	.06009	.00003	76.447	-.00001
#3	.00141	.01649	-.00250	.12261	.05808	.00013	76.275	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.00130	.00224	.07656	2.1859	.00686	21.950	.07143
Stddev	.00035	.00084	.00106	.01324	.0107	.00225	.042	.00214
%RSD	786.29	64.466	47.374	17.296	.48943	32.827	.19281	3.0009
#1	-.00034	.00148	.00313	.09114	2.1766	.00856	21.902	.06997
#2	.00012	.00204	.00106	.06527	2.1976	.00772	21.982	.07044
#3	.00035	.00039	.00254	.07327	2.1835	.00431	21.966	.07389
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00283	48.809	.00040	.00276	.00231	.00008	.00141	12.663
Stddev	.00054	.307	.00048	.00468	.00146	.00272	.00154	.023
%RSD	19.130	.62999	120.87	169.96	62.889	3589.5	109.63	.18225
#1	.00220	49.161	.00072	.00816	.00131	.00185	.00204	12.648
#2	.00312	48.668	-.00016	.00026	.00164	.00144	-.00035	12.690
#3	.00316	48.596	.00064	-.00015	.00398	-.00306	.00252	12.652
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606030801 Acquired: 6/14/2016 18:58:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571814-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	.93998	-.00948	.00023	.00065	.00446	.00036
Stddev	.00067	.00533	.00108	.00312	.00045	.00028	.00018
%RSD	94.864	.56733	11.404	1349.8	69.250	6.2130	49.868
#1	.00148	.94604	-.01045	.00085	.00098	.00426	.00047
#2	.00036	.93788	-.00967	.00300	.00083	.00477	.00047
#3	.00028	.93602	-.00831	-.00315	.00014	.00434	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7436.0	43134.	2815.2
Stddev	9.2	251.	18.3
%RSD	.12369	.58076	.65017
#1	7436.6	43022.	2810.5
#2	7444.9	42960.	2835.4
#3	7426.6	43421.	2799.7

Approved: June 15, 2016

Sample Name: L1606030802S Acquired: 6/14/2016 19:02:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571814-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20854**	**5.3073**	**.20999**	**1.1552**	**.57984**	**.02610**	**82.512**	**.02617**
Stddev	.00264	.0137	.00471	.0047	.00507	.00005	.582	.00017
%RSD	1.2660	.25776	2.2453	.40985	.87482	.19170	.70558	.64413
#1	.20615	5.2916	.21457	1.1598	.58409	.02605	83.094	.02636
#2	.21137	5.3161	.20515	1.1554	.58121	.02615	82.512	.02610
#3	.20809	5.3143	.21024	1.1503	.57423	.02609	81.930	.02604
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10496**	**.26631**	**.26067**	**2.1725**	**28.222**	**.53424**	**27.217**	**.33167**
Stddev	.00013	.00188	.00241	.0103	.288	.00453	.379	.00291
%RSD	.12668	.70702	.92492	.47246	1.0218	.84755	1.3929	.87677
#1	.10485	.26413	.26317	2.1714	28.470	.53706	26.970	.33005
#2	.10511	.26742	.25836	2.1628	28.290	.53665	27.653	.33503
#3	.10493	.26737	.26048	2.1832	27.906	.52902	27.027	.32994
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53852**	**75.773**	**.26178**	**5.2904**	**.26538**	**.63873**	**.20557**	**15.610**
Stddev	.00227	.437	.00225	.0146	.00446	.00383	.00649	.030
%RSD	.42221	.57696	.86040	.27651	1.6814	.59966	3.1567	.19182
#1	.53819	76.173	.25962	5.3029	.26910	.63472	.20705	15.604
#2	.53643	75.839	.26159	5.2743	.26661	.63911	.19846	15.583
#3	.54094	75.306	.26412	5.2940	.26043	.64235	.21118	15.642
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606030802S Acquired: 6/14/2016 19:02:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571814-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53213	1.4639	.51003	.25626	.53177	.53841	.00066
Stddev	.00076	.0086	.00891	.00282	.00080	.00145	.00049
%RSD	.14293	.59087	1.7476	1.1007	.14972	.26878	73.735
#1	.53256	1.4719	.51540	.25620	.53127	.53758	.00035
#2	.53125	1.4651	.51496	.25348	.53269	.53756	.00041
#3	.53257	1.4548	.49974	.25912	.53135	.54008	.00122
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7385.7	42973.	2817.7
Stddev	21.3	279.	25.1
%RSD	.28879	.65015	.89148
#1	7362.2	42818.	2794.0
#2	7391.0	42806.	2815.0
#3	7403.9	43296.	2844.0

Approved: June 15, 2016

Sample Name: L1606030803SD Acquired: 6/14/2016 19:05:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571814-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20901**	**5.3769**	**.21028**	**1.1784**	**.58833**	**.02630**	**82.590**	**.02637**
Stddev	.00238	.0105	.00198	.0027	.00473	.00011	.635	.00016
%RSD	1.1372	.19530	.94293	.23229	.80332	.41396	.76911	.60864
#1	.20650	5.3855	.21232	1.1771	.59327	.02624	83.245	.02639
#2	.21123	5.3800	.20836	1.1766	.58788	.02623	82.548	.02620
#3	.20930	5.3652	.21018	1.1816	.58385	.02642	81.976	.02652
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10653**	**.26918**	**.26383**	**2.1850**	**28.541**	**.54186**	**27.103**	**.33541**
Stddev	.00020	.00136	.00151	.0082	.283	.00482	.080	.00300
%RSD	.18373	.50378	.57354	.37464	.99235	.88896	.29601	.89365
#1	.10673	.26845	.26521	2.1887	28.842	.54691	27.195	.33683
#2	.10635	.27075	.26221	2.1906	28.499	.54136	27.063	.33743
#3	.10650	.26835	.26407	2.1756	28.281	.53732	27.051	.33197
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.54505**	**76.360**	**.26744**	**5.3480**	**.26828**	**.64664**	**.21093**	**15.617**
Stddev	.00306	.525	.00178	.0279	.00449	.00524	.00905	.064
%RSD	.56103	.68814	.66643	.52101	1.6739	.81088	4.2925	.40748
#1	.54815	76.957	.26942	5.3783	.26346	.65083	.21309	15.672
#2	.54497	76.158	.26692	5.3419	.27234	.64833	.20099	15.632
#3	.54204	75.966	.26597	5.3236	.26905	.64076	.21871	15.547
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606030803SD Acquired: 6/14/2016 19:05:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571814-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53706	1.4729	.51688	.26207	.54027	.54531	.00066
Stddev	.00106	.0122	.00615	.00144	.00152	.00105	.00023
%RSD	.19681	.83012	1.1891	.54763	.28146	.19216	34.873
#1	.53809	1.4853	.52389	.26372	.53908	.54650	.00050
#2	.53711	1.4727	.51431	.26109	.54198	.54451	.00056
#3	.53598	1.4608	.51243	.26142	.53976	.54493	.00093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7395.5	42933.	2822.4
Stddev	25.4	128.	23.3
%RSD	.34379	.29830	.82376
#1	7367.0	43059.	2796.5
#2	7403.3	42803.	2829.2
#3	7416.0	42936.	2841.4

Approved: June 15, 2016

Sample Name: L1606030301 Acquired: 6/14/2016 19:09:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00094**	**.02561**	**.00009**	**.03370**	**.27526**	**.00010**	**34.425**
Stddev	.00066	.00510	.00232	.00082	.00064	.00003	.257
%RSD	70.159	19.896	2451.3	2.4305	.23199	31.215	.74549
#1	-.00046	.02602	.00277	.03407	.27600	.00013	34.711
#2	-.00067	.03049	-.00138	.03276	.27481	.00007	34.215
#3	-.00169	.02032	-.00111	.03426	.27498	.00010	34.348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**.00142**	**.00160**	**.00078**	**.12819**	**1.4329**	**.02149**
Stddev	.00017	.00034	.00081	.00070	.01700	.0736	.00230
%RSD	68.829	23.765	50.457	90.379	13.264	5.1373	10.697
#1	-.00028	.00161	.00159	.00149	.11594	1.3479	.01888
#2	-.00039	.00103	.00241	.00075	.12103	1.4750	.02322
#3	-.00006	.00162	.00080	.00009	.14760	1.4759	.02237
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**39.760**	**.05630**	**.00020**	F **360.13**	**.00187**	**1.7585**	**-.00211**
Stddev	.187	.00172	.00026	2.84	.00129	.0125	.00201
%RSD	.46957	3.0503	130.15	.78947	69.122	.71314	95.240
#1	39.877	.05828	-.00010	363.31	.00066	1.7501	-.00443
#2	39.544	.05536	.00031	357.83	.00324	1.7729	-.00079
#3	39.857	.05525	.00039	359.25	.00172	1.7525	-.00112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 15, 2016

Sample Name: L1606030301 Acquired: 6/14/2016 19:09:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00213	.00476	16.167	.00099	.65002	.00199	-.00095
Stddev	.00167	.00114	.021	.00061	.01290	.00304	.00107
%RSD	78.527	23.879	.13049	60.961	1.9842	152.87	112.66
#1	.00318	.00475	16.190	.00133	.66491	.00322	-.00210
#2	.00300	.00590	16.150	.00029	.64229	-.00147	-.00073
#3	.00020	.00363	16.159	.00136	.64286	.00422	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00086	.00790	.00041
Stddev	.00009	.00015	.00077
%RSD	10.367	1.9145	188.33
#1	-.00096	.00785	.00086
#2	-.00079	.00807	-.00048
#3	-.00082	.00778	.00084
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7267.7	41836.	2822.8
Stddev	45.9	257.	32.4
%RSD	.63161	.61406	1.1475
#1	7235.1	41564.	2786.0
#2	7247.7	41870.	2835.3
#3	7320.2	42074.	2847.0

Approved: June 15, 2016

Sample Name: L1606030302 Acquired: 6/14/2016 19:13:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00044	.03559	-.00044	.03092	.26461	.00001	33.104
Stddev	.00039	.00868	.00188	.00189	.00432	.00006	.395
%RSD	87.497	24.386	426.27	6.1079	1.6328	430.22	1.1935
#1	.00037	.03223	.00157	.03260	.26781	.00007	33.478
#2	.00009	.04545	-.00074	.02887	.26633	-.00005	33.144
#3	.00086	.02909	-.00216	.03129	.25970	.00002	32.691
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00000	.00126	.00205	.00188	.18886	1.4522	.02124
Stddev	.00017	.00026	.00023	.00055	.01820	.0778	.00555
%RSD	3694.4	20.669	11.219	29.409	9.6354	5.3548	26.129
#1	-.00002	.00127	.00179	.00205	.16885	1.5252	.01666
#2	-.00015	.00099	.00215	.00233	.19333	1.4609	.01964
#3	.00019	.00151	.00223	.00126	.20441	1.3704	.02741
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	37.836	.05394	-.00005	F 344.59	.00217	1.7031	.00015
Stddev	.580	.00293	.00018	4.32	.00121	.0153	.00135
%RSD	1.5326	5.4407	365.11	1.2542	55.839	.89731	870.71
#1	38.503	.05731	.00011	349.14	.00185	1.7147	.00169
#2	37.451	.05193	-.00001	344.11	.00115	1.7088	-.00084
#3	37.555	.05258	-.00025	340.54	.00351	1.6858	-.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 15, 2016

Sample Name: L1606030302 Acquired: 6/14/2016 19:13:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00115**	**.00106**	**16.148**	**.00074**	**.62653**	**-.00058**	**.00083**
Stddev	.00291	.00135	.033	.00087	.01164	.00393	.00075
%RSD	253.59	128.23	.20357	117.71	1.8572	677.66	90.535
#1	-.00030	.00226	16.176	.00114	.63930	.00147	.00030
#2	-.00439	-.00041	16.155	.00135	.62377	.00190	.00050
#3	.00124	.00132	16.112	-.00026	.61653	-.00511	.00168
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00094**	**.00970**	**-.00003**
Stddev	.00053	.00009	.00059
%RSD	56.435	.89047	2036.3
#1	-.00151	.00961	-.00070
#2	-.00046	.00975	.00041
#3	-.00084	.00976	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7307.8**	**41959.**	**2801.5**
Stddev	27.4	342.	55.2
%RSD	.37463	.81610	1.9720
#1	7276.2	41603.	2738.1
#2	7324.2	41986.	2827.3
#3	7323.0	42286.	2839.2

Approved: June 15, 2016

Sample Name: L1606030402 Acquired: 6/14/2016 19:17:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	.03015	.00182	.02867	.25811	.00008	32.990
Stddev	.00138	.00433	.00203	.00122	.00258	.00002	.370
%RSD	204.76	14.351	111.57	4.2535	1.0003	22.938	1.1215
#1	-.00073	.02520	.00242	.02924	.26078	.00006	33.410
#2	.00071	.03323	-.00044	.02727	.25562	.00010	32.710
#3	.00204	.03202	.00347	.02950	.25794	.00009	32.851
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.00156	.00211	.00125	.13755	1.4713	.02050
Stddev	.00033	.00042	.00076	.00007	.01539	.1025	.00201
%RSD	364.38	26.952	36.303	5.4418	11.187	6.9638	9.8081
#1	-.00001	.00171	.00268	.00123	.15504	1.4645	.02268
#2	.00019	.00109	.00240	.00132	.12610	1.5770	.01872
#3	-.00045	.00189	.00124	.00119	.13151	1.3724	.02009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	37.039	.05311	-.00047	F 326.91	.00179	1.5936	.00352
Stddev	.458	.00337	.00019	3.29	.00097	.0060	.00499
%RSD	1.2376	6.3398	40.068	1.0063	54.341	.37596	141.72
#1	37.528	.05457	-.00043	330.71	.00245	1.5990	.00813
#2	36.619	.05551	-.00031	325.05	.00067	1.5947	.00420
#3	36.971	.04926	-.00068	324.97	.00225	1.5872	-.00177
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 15, 2016

Sample Name: L1606030402 Acquired: 6/14/2016 19:17:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00076	16.412	.00060	.62324	-.00001	-.00050
Stddev	.00431	.00409	.031	.00052	.01053	.00329	.00088
%RSD	7156.8	534.50	.18932	86.965	1.6898	26749.	177.90
#1	-.00489	-.00395	16.430	.00075	.63540	-.00370	-.00074
#2	.00300	.00308	16.429	.00104	.61692	.00260	-.00123
#3	.00207	.00317	16.376	.00002	.61741	.00106	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00092	.00784	-.00025
Stddev	.00115	.00012	.00054
%RSD	124.39	1.5091	221.00
#1	-.00003	.00771	-.00083
#2	-.00222	.00790	-.00015
#3	-.00052	.00792	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7323.3	41993.	2789.0
Stddev	20.3	242.	32.0
%RSD	.27717	.57550	1.1470
#1	7299.8	41753.	2754.2
#2	7334.9	41990.	2817.2
#3	7335.0	42236.	2795.7

Approved: June 15, 2016

Sample Name: L1606030402PS Acquired: 6/14/2016 19:21:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572020-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20716**	**5.3118**	**.21056**	**1.0592**	**.75547**	**.02620**	**34.998**
Stddev	.00096	.0185	.00287	.0044	.00700	.00007	.267
%RSD	.46463	.34851	1.3632	.41668	.92721	.27594	.76303
#1	.20679	5.3199	.21217	1.0623	.76212	.02628	35.243
#2	.20644	5.3249	.21226	1.0610	.75614	.02617	35.037
#3	.20825	5.2906	.20724	1.0541	.74816	.02614	34.713
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02582**	**.10585**	**.26541**	**.26089**	**2.2193**	**27.784**	**.54758**
Stddev	.00031	.00006	.00111	.00156	.0087	.323	.00395
%RSD	1.2146	.05795	.41956	.59606	.39191	1.1636	.72175
#1	.02607	.10584	.26597	.25952	2.2246	28.103	.54467
#2	.02547	.10580	.26614	.26057	2.2241	27.792	.54600
#3	.02591	.10592	.26413	.26258	2.2093	27.456	.55208
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**38.334**	**.30344**	**.53016**	F **321.49**	**.26333**	**6.7219**	**.25823**
Stddev	.126	.00480	.00125	2.47	.00106	.0263	.00091
%RSD	.32902	1.5811	.23525	.76926	.40435	.39101	.35323
#1	38.317	.30706	.52968	323.38	.26432	6.6920	.25922
#2	38.467	.30528	.53157	322.41	.26346	6.7414	.25806
#3	38.217	.29800	.52921	318.69	.26221	6.7322	.25742
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 15, 2016

Sample Name: L1606030402PS Acquired: 6/14/2016 19:21:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572020-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.63492**	**.20066**	**17.488**	**.52603**	**1.0714**	**.50816**	**.24861**
Stddev	.00819	.00346	.049	.00105	.0079	.00820	.00198
%RSD	1.2897	1.7225	.28101	.19876	.73529	1.6139	.79641
#1	.62615	.20454	17.431	.52505	1.0792	.50866	.24835
#2	.64237	.19952	17.516	.52713	1.0716	.49972	.25071
#3	.63624	.19792	17.517	.52589	1.0634	.51610	.24678
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.53155**	**.53916**	**-.00020**
Stddev	.00151	.00058	.00011
%RSD	.28468	.10824	55.034
#1	.53133	.53866	-.00028
#2	.53316	.53980	-.00008
#3	.53016	.53903	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7310.5**	**41943.**	**2781.5**
Stddev	15.7	117.	21.1
%RSD	.21455	.27937	.75858
#1	7298.3	41808.	2762.8
#2	7305.1	42003.	2777.5
#3	7328.2	42018.	2804.4

Approved: June 15, 2016

Sample Name: L1606030402SDL Acquired: 6/14/2016 19:25:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG572020-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00117	.00571	.00101	.00740	.04361	.00014	5.4801	-.00010
Stddev	.00135	.01502	.00205	.00306	.00091	.00009	.0698	.00019
%RSD	115.68	263.28	203.68	41.393	2.0835	67.058	1.2739	185.54
#1	-.00268	-.00334	-.00105	.00398	.04270	.00014	5.4292	-.00031
#2	-.00070	-.00258	.00305	.00832	.04451	.00005	5.4515	.00007
#3	-.00011	.02304	.00102	.00990	.04362	.00024	5.5597	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	-.00002	.00067	.02565	.19574	.00072	6.4219	.01051
Stddev	.00019	.00044	.00168	.01486	.06160	.00039	.0540	.00077
%RSD	2431.7	2734.0	250.33	57.920	31.470	53.959	.84022	7.3661
#1	.00022	-.00010	.00098	.03488	.12863	.00105	6.3675	.01060
#2	-.00007	-.00041	-.00114	.03355	.20886	.00029	6.4754	.01124
#3	-.00013	.00046	.00218	.00851	.24972	.00083	6.4226	.00970
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	54.984	.00117	.26580	-.00313	.00179	-.00024	2.8192
Stddev	.00017	.237	.00063	.00815	.00250	.00202	.00191	.0036
%RSD	172.16	.43085	54.055	3.0670	79.803	112.95	785.76	.12845
#1	-.00018	54.739	.00164	.26260	-.00034	.00060	-.00074	2.8190
#2	-.00021	55.001	.00142	.27507	-.00390	.00412	.00187	2.8157
#3	.00010	55.212	.00045	.25974	-.00515	.00065	-.00186	2.8229
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606030402SDL Acquired: 6/14/2016 19:25:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG572020-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	.10587	.00245	.00126	.00036	.00177	-.00014
Stddev	.00120	.00085	.00449	.00181	.00063	.00019	.00027
%RSD	196.39	.80757	183.63	143.96	176.29	10.821	188.65
#1	.00094	.10544	-.00149	.00071	.00069	.00183	.00003
#2	-.00072	.10531	.00149	.00327	.00075	.00156	-.00001
#3	.00160	.10685	.00734	-.00022	-.00037	.00193	-.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8270.6	47795.	3071.7
Stddev	13.8	199.	16.2
%RSD	.16681	.41665	.52828
#1	8265.2	47756.	3072.7
#2	8286.2	48011.	3087.4
#3	8260.2	47618.	3055.0

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 19:29:21 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37506**	**9.3974**	**.36909**	**.47805**	**.91683**	**.04727**	**9.0768**	**.04742**
Stddev	.00353	.0191	.00176	.00407	.00871	.00023	.0698	.00007
%RSD	.94038	.20293	.47672	.85179	.95044	.49652	.76959	.13993
#1	.37424	9.3868	.37093	.47559	.90776	.04700	9.0578	.04743
#2	.37202	9.3860	.36743	.47581	.91758	.04742	9.0185	.04747
#3	.37893	9.4194	.36892	.48275	.92514	.04740	9.1542	.04734
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19204**	**.47573**	**.47884**	**3.7028**	**45.974**	**.90927**	**9.1493**	**.45874**
Stddev	.00043	.00308	.00152	.0688	.476	.00799	.0809	.00684
%RSD	.22562	.64671	.31678	1.8587	1.0357	.87897	.88445	1.4913
#1	.19199	.47256	.47714	3.6263	45.629	.90277	9.0946	.45518
#2	.19164	.47592	.47933	3.7224	45.775	.90686	9.1111	.45442
#3	.19250	.47871	.48005	3.7597	46.517	.91819	9.2423	.46663
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.94632**	**46.252**	**.48300**	**9.5302**	**.48341**	**1.1449**	**.37311**	**4.8067**
Stddev	.00098	.486	.00184	.0157	.00293	.0047	.00354	.0064
%RSD	.10325	1.0501	.38123	.16437	.60631	.40947	.94810	.13271
#1	.94744	45.866	.48334	9.5325	.48054	1.1432	.37478	4.8007
#2	.94564	46.093	.48101	9.5135	.48329	1.1413	.36905	4.8060
#3	.94587	46.798	.48464	9.5446	.48640	1.1502	.37550	4.8134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 19:29:21 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.94958**	**.91521**	**.91034**	**.47524**	**.94987**	**.96174**	**.96285**
Stddev	.00351	.00813	.01228	.00124	.00696	.00095	.01228
%RSD	.36999	.88803	1.3490	.26100	.73306	.09921	1.2749
#1	.94758	.90751	.90035	.47510	.94196	.96211	.95842
#2	.94753	.91441	.90661	.47655	.95256	.96066	.95341
#3	.95364	.92371	.92405	.47408	.95508	.96246	.97672
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8049.1**	**46705.**	**3036.1**
Stddev	17.8	43.	35.0
%RSD	.22149	.09260	1.1522
#1	8062.1	46683.	3048.2
#2	8056.3	46754.	3063.4
#3	8028.8	46676.	2996.6

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 19:33:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	.00265	.00141	.00105	.00070	.00009	.03686	-.00034
Stddev	.00076	.00140	.00015	.00068	.00088	.00014	.01834	.00006
%RSD	180.29	52.712	10.480	64.570	126.63	150.66	49.766	17.366
#1	.00032	.00208	.00144	.00153	-.00030	-.00005	.05223	-.00028
#2	-.00028	.00424	.00153	.00028	.00138	.00023	.04180	-.00040
#3	.00123	.00162	.00124	.00135	.00101	.00009	.01655	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00000	.00131	.00087	-.00376	-.14930	-.00253	.00807	-.00216
Stddev	.00014	.00053	.00033	.00841	.01221	.00239	.06261	.00104
%RSD	3001.5	40.686	38.603	223.47	8.1768	94.446	775.94	48.168
#1	.00013	.00129	.00121	-.01248	-.16067	-.00010	.07963	-.00308
#2	-.00015	.00185	.00054	.00431	-.15082	-.00487	-.01882	-.00103
#3	.00001	.00079	.00085	-.00312	-.13640	-.00261	-.03660	-.00238
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00135	-.01983	.00054	.00492	-.00144	.00011	.00275	.00153
Stddev	.00042	.02377	.00102	.00972	.00168	.00122	.00295	.00092
%RSD	31.199	119.85	188.52	197.76	116.62	1092.0	107.10	60.095
#1	.00091	-.03222	.00164	.01574	.00014	.00065	-.00024	.00255
#2	.00141	.00757	.00036	.00206	-.00125	-.00129	.00284	.00124
#3	.00175	-.03486	-.00037	-.00306	-.00320	.00098	.00565	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 19:33:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00111	.00015	.00516	-.00218	.00018	-.00030	.00092
Stddev	.00064	.00038	.00845	.00060	.00012	.00016	.00036
%RSD	57.434	246.29	163.76	27.548	64.141	52.839	39.305
#1	.00179	.00057	.00693	-.00187	.00006	-.00014	.00128
#2	.00054	.00003	.01258	-.00179	.00028	-.00046	.00056
#3	.00099	-.00015	-.00404	-.00287	.00020	-.00030	.00091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8190.1	47609.	3025.4
Stddev	37.2	128.	21.8
%RSD	.45429	.26849	.72140
#1	8150.5	47546.	3050.4
#2	8195.8	47525.	3009.9
#3	8224.2	47756.	3015.9

Approved: June 15, 2016

Sample Name: PBW A7 Acquired: 6/14/2016 19:37:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571974-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.00720	.00087	.00055	.00184	.00007	-.04157	.00003
Stddev	.00147	.01132	.00379	.00049	.00109	.00010	.02939	.00027
%RSD	850.81	157.25	435.32	88.623	59.140	142.26	70.709	882.98
#1	-.00151	-.00477	-.00184	.00110	.00302	.00005	-.05691	.00020
#2	.00081	.01774	.00520	.00041	.00161	.00018	-.00768	-.00028
#3	.00122	.00864	-.00075	.00015	.00088	-.00002	-.06011	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00060	.00032	-.00907	-.12906	-.00203	-.05239	-.00079
Stddev	.00012	.00048	.00152	.01275	.10454	.00262	.03768	.00352
%RSD	185.65	80.493	471.75	140.59	81.000	129.41	71.923	444.81
#1	-.00007	.00062	.00207	.00565	-.00849	.00076	-.03880	-.00259
#2	.00009	.00011	-.00048	-.01609	-.19444	-.00444	-.09497	.00326
#3	.00016	.00107	-.00063	-.01677	-.18426	-.00240	-.02339	-.00304
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	-.00351	.00072	-.00331	-.00074	.00211	.00983	.03320
Stddev	.00058	.02246	.00069	.00245	.00092	.00499	.00752	.00014
%RSD	8665.7	639.87	96.310	74.047	125.62	236.68	76.523	.40960
#1	.00026	-.00652	.00070	-.00254	-.00022	-.00010	.01178	.03310
#2	-.00065	.02031	.00004	-.00134	-.00019	.00782	.00153	.03336
#3	.00041	-.02432	.00142	-.00606	-.00180	-.00139	.01619	.03315
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: PBW A7 Acquired: 6/14/2016 19:37:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571974-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00105	.00030	-.00260	-.00307	.00050	.00077	.00059
Stddev	.00125	.00028	.00409	.00326	.00045	.00005	.00030
%RSD	118.85	94.383	157.60	106.16	89.721	6.3200	50.880
#1	.00120	.00061	-.00166	-.00280	.00084	.00082	.00031
#2	-.00027	.00021	.00094	.00005	-.00001	.00076	.00054
#3	.00222	.00007	-.00707	-.00645	.00066	.00072	.00091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7568.6	43918.	2787.6
Stddev	12.6	145.	19.8
%RSD	.16596	.33103	.71091
#1	7558.8	43910.	2772.6
#2	7582.8	43777.	2780.2
#3	7564.4	44067.	2810.1

Approved: June 15, 2016

Sample Name: LCSW A7 Acquired: 6/14/2016 19:41:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571974-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20807**	**5.2852**	**.20553**	**1.0275**	**.52606**	**.02592**	**5.2718**	**.02606**
Stddev	.00197	.0088	.00236	.0027	.00556	.00005	.0775	.00042
%RSD	.94632	.16701	1.1506	.26298	1.0570	.20552	1.4706	1.6247
#1	.20593	5.2945	.20382	1.0294	.53244	.02586	5.3274	.02575
#2	.20846	5.2769	.20453	1.0244	.52345	.02594	5.3047	.02654
#3	.20981	5.2844	.20823	1.0286	.52228	.02596	5.1832	.02588
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10824**	**.26830**	**.27004**	**2.1237**	**26.008**	**.52386**	**5.2434**	**.26123**
Stddev	.00062	.00227	.00041	.0419	.286	.00256	.0732	.00355
%RSD	.57695	.84641	.15223	1.9746	1.1007	.48924	1.3964	1.3586
#1	.10837	.26744	.27003	2.1466	26.339	.52681	5.2546	.26482
#2	.10756	.26659	.27045	2.1493	25.843	.52264	5.1652	.26114
#3	.10880	.27088	.26963	2.0753	25.842	.52214	5.3104	.25773
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53678**	**26.331**	**.27362**	**5.1611**	**.26830**	**.63319**	**.20684**	**2.8617**
Stddev	.00128	.206	.00065	.0100	.00224	.00177	.00413	.0026
%RSD	.23837	.78206	.23909	.19312	.83363	.27976	1.9964	.09044
#1	.53658	26.569	.27432	5.1519	.26573	.63427	.20414	2.8646
#2	.53562	26.211	.27302	5.1596	.26939	.63416	.21159	2.8595
#3	.53815	26.213	.27352	5.1717	.26978	.63115	.20478	2.8610
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: LCSW A7 Acquired: 6/14/2016 19:41:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571974-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53563**	**.53378**	**.51587**	**.26514**	**.53250**	**.53776**	**.00413**
Stddev	.00079	.00412	.00397	.00249	.00160	.00091	.00110
%RSD	.14697	.77145	.77052	.93894	.30052	.16838	26.657
#1	.53525	.53844	.51258	.26507	.53321	.53834	.00316
#2	.53654	.53226	.51474	.26767	.53067	.53672	.00389
#3	.53511	.53064	.52029	.26269	.53362	.53823	.00533
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7498.6**	**43546.**	**2803.0**
Stddev	15.2	234.	43.1
%RSD	.20258	.53779	1.5362
#1	7484.2	43290.	2753.9
#2	7497.3	43749.	2834.3
#3	7514.5	43599.	2820.8

Approved: June 15, 2016

Sample Name: L1606039508 Acquired: 6/14/2016 19:44:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571974-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**.01639**	**-.00015**	**.01975**	**.08787**	**.00010**	**65.420**	**-.00005**
Stddev	.00150	.00814	.00338	.00291	.00091	.00012	.406	.00018
%RSD	612.46	49.655	2188.6	14.735	1.0393	116.48	.62037	396.50
#1	.00148	.00820	-.00083	.02247	.08892	-.00003	65.887	-.00011
#2	-.00115	.02448	-.00314	.02009	.08724	.00019	65.229	-.00018
#3	-.00107	.01649	.00351	.01668	.08746	.00014	65.146	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.00074**	**.00230**	**.02232**	**1.7167**	**.00758**	**14.923**	**.00195**
Stddev	.00034	.00041	.00127	.01034	.0941	.00477	.058	.00136
%RSD	168.62	55.487	55.388	46.345	5.4830	62.936	.38825	69.665
#1	-.00005	.00080	.00375	.01050	1.7924	.01300	14.981	.00347
#2	.00004	.00112	.00176	.02671	1.7464	.00570	14.865	.00089
#3	-.00059	.00030	.00138	.02974	1.6113	.00403	14.922	.00148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00031**	**9.0544**	**.00111**	**.00635**	**-.00305**	**.00122**	**.00944**	**2.5428**
Stddev	.00032	.0906	.00058	.00660	.00168	.00403	.00806	.0105
%RSD	106.12	1.0011	52.196	103.86	55.043	330.14	85.392	.41368
#1	-.00001	9.1589	.00089	.00496	-.00370	-.00163	.00318	2.5463
#2	.00063	9.0065	.00068	.00056	-.00431	-.00054	.00660	2.5510
#3	.00029	8.9976	.00177	.01353	-.00114	.00583	.01853	2.5309
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606039508 Acquired: 6/14/2016 19:44:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571974-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.27938	-.00328	.00131	-.00043	.00191	.00002
Stddev	.00050	.00187	.00461	.00107	.00085	.00004	.00076
%RSD	272.59	.66811	140.75	81.879	197.81	2.2227	3783.1
#1	.00062	.28132	.00086	.00250	.00013	.00186	-.00086
#2	.00029	.27760	-.00825	.00042	-.00142	.00193	.00053
#3	-.00036	.27921	-.00244	.00101	-.00001	.00193	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7485.5	43573.	2795.9
Stddev	13.6	272.	30.6
%RSD	.18208	.62346	1.0928
#1	7472.5	43651.	2764.9
#2	7484.4	43270.	2796.8
#3	7499.7	43796.	2826.0

Approved: June 15, 2016

Sample Name: L1606039508S Acquired: 6/14/2016 19:48:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571974-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21003**	**5.4004**	**.21220**	**1.0640**	**.62209**	**.02634**	**72.551**	**.02624**
Stddev	.00030	.0056	.00204	.0034	.00216	.00003	.252	.00021
%RSD	.14384	.10280	.96108	.31692	.34720	.11663	.34739	.78334
#1	.21038	5.4068	.21160	1.0605	.62229	.02635	72.803	.02647
#2	.20982	5.3971	.21447	1.0672	.61984	.02636	72.299	.02607
#3	.20989	5.3974	.21052	1.0643	.62414	.02630	72.552	.02618
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10639**	**.27104**	**.26556**	**2.1376**	**28.231**	**.54738**	**20.453**	**.26857**
Stddev	.00050	.00197	.00124	.0222	.164	.00181	.152	.00190
%RSD	.47429	.72857	.46541	1.0369	.58063	.33065	.74273	.70922
#1	.10694	.26925	.26679	2.1241	28.214	.54587	20.371	.26877
#2	.10630	.27316	.26432	2.1632	28.076	.54688	20.628	.26658
#3	.10594	.27072	.26557	2.1256	28.403	.54938	20.360	.27037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.54526**	**35.974**	**.26676**	**5.3429**	**.26913**	**.64798**	**.20364**	**5.3639**
Stddev	.00277	.030	.00217	.0240	.00218	.00065	.00281	.0233
%RSD	.50825	.08384	.81499	.44925	.81078	.09958	1.3807	.43369
#1	.54846	36.002	.26874	5.3705	.27076	.64777	.20569	5.3907
#2	.54359	35.942	.26444	5.3307	.26999	.64747	.20480	5.3492
#3	.54373	35.978	.26712	5.3273	.26665	.64871	.20044	5.3518
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606039508S Acquired: 6/14/2016 19:48:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571974-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53794	.80495	.51824	.26501	.54074	.53367	.00057
Stddev	.00307	.00129	.00764	.00658	.00171	.00281	.00044
%RSD	.57045	.16062	1.4749	2.4844	.31661	.52634	76.984
#1	.54144	.80478	.52694	.27219	.54058	.53691	.00007
#2	.53662	.80375	.51522	.25925	.54252	.53212	.00075
#3	.53574	.80632	.51257	.26360	.53911	.53197	.00090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7401.9	42787.	2797.6
Stddev	43.8	116.	23.0
%RSD	.59240	.27032	.82384
#1	7351.3	42653.	2781.9
#2	7427.5	42857.	2824.0
#3	7427.0	42850.	2786.8

Approved: June 15, 2016

Sample Name: L1606039508SD Acquired: 6/14/2016 19:52:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571974-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20851	5.3665	.20899	1.0619	.62106	.02632	72.427	.02675
Stddev	.00270	.0172	.00276	.0024	.00329	.00009	.229	.00005
%RSD	1.2926	.32056	1.3219	.22839	.52977	.32479	.31647	.18053
#1	.21144	5.3725	.20582	1.0638	.62316	.02641	72.687	.02670
#2	.20613	5.3799	.21027	1.0592	.62275	.02632	72.342	.02678
#3	.20795	5.3471	.21087	1.0628	.61727	.02624	72.252	.02679
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10707	.27170	.26697	2.1111	28.377	.54651	20.400	.26652
Stddev	.00055	.00127	.00075	.0083	.190	.00518	.056	.00292
%RSD	.51616	.46853	.28076	.39356	.66862	.94844	.27536	1.0960
#1	.10753	.27057	.26778	2.1082	28.596	.55190	20.390	.26913
#2	.10723	.27144	.26631	2.1046	28.258	.54605	20.350	.26707
#3	.10646	.27308	.26681	2.1205	28.277	.54156	20.461	.26337
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.54821	36.067	.26714	5.3592	.27142	.64907	.21231	5.3873
Stddev	.00158	.135	.00028	.0095	.00304	.00480	.00566	.0105
%RSD	.28732	.37522	.10369	.17697	1.1192	.73895	2.6662	.19454
#1	.55000	36.161	.26702	5.3680	.27404	.64701	.21853	5.3958
#2	.54703	36.127	.26695	5.3605	.26809	.65456	.20746	5.3905
#3	.54759	35.912	.26746	5.3492	.27213	.64566	.21095	5.3756
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606039508SD Acquired: 6/14/2016 19:52:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571974-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.54066**	**.80474**	**.52622**	**.26649**	**.54208**	**.53669**	**.00046**
Stddev	.00132	.00376	.00890	.00354	.00109	.00110	.00052
%RSD	.24472	.46719	1.6906	1.3276	.20129	.20446	113.12
#1	.54217	.80820	.52425	.26720	.54214	.53737	.00040
#2	.54011	.80527	.53594	.26264	.54097	.53728	-.00003
#3	.53970	.80074	.51848	.26961	.54315	.53543	.00101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7390.9**	**43047.**	**2800.8**
Stddev	17.0	267.	14.1
%RSD	.23008	.62072	.50521
#1	7377.3	42745.	2784.5
#2	7385.6	43142.	2808.9
#3	7410.0	43253.	2809.0

Approved: June 15, 2016

Sample Name: L1606037601 Acquired: 6/14/2016 19:56:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	-.00014	.00094	.00726	.00371	.00011	6.0557	-.00020
Stddev	.00150	.00851	.00054	.00024	.00072	.00003	.0567	.00018
%RSD	205.65	6070.8	57.218	3.3266	19.533	24.154	.93610	88.758
#1	-.00094	.00305	.00033	.00726	.00453	.00010	6.0436	-.00001
#2	.00117	.00632	.00136	.00702	.00317	.00009	6.0061	-.00037
#3	.00197	-.00979	.00114	.00750	.00342	.00014	6.1175	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.00093	.00084	-.00926	-.02341	.00207	1.9740	.00190
Stddev	.00015	.00060	.00062	.01229	.04957	.00216	.0819	.00112
%RSD	450.72	64.373	74.097	132.77	211.75	104.05	4.1494	59.160
#1	-.00008	.00146	.00093	-.02345	-.07749	.00184	2.0682	.00110
#2	-.00002	.00028	.00018	-.00230	-.01263	.00004	1.9191	.00142
#3	.00020	.00104	.00141	-.00203	.01988	.00434	1.9348	.00319
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	2.4390	.00034	.00575	.00036	.00286	.00141	.67438
Stddev	.00011	.0467	.00138	.00687	.00293	.00177	.00067	.00389
%RSD	132.32	1.9138	400.87	119.34	816.88	61.951	47.777	.57680
#1	.00010	2.3999	.00189	.00080	-.00265	.00093	.00120	.67886
#2	.00019	2.4265	-.00077	.00287	.00053	.00322	.00216	.67226
#3	-.00003	2.4907	-.00008	.01359	.00320	.00441	.00086	.67200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606037601 Acquired: 6/14/2016 19:56:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	.12237	.00187	.00147	.00073	.00297	-.00011
Stddev	.00051	.00017	.00895	.00106	.00057	.00007	.00065
%RSD	57.552	.13790	477.52	71.939	77.807	2.3218	566.12
#1	.00092	.12220	.00919	.00035	.00072	.00290	-.00031
#2	.00036	.12237	-.00811	.00245	.00131	.00295	-.00064
#3	.00138	.12254	.00454	.00160	.00017	.00304	.00061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8367.7	48536.	3026.6
Stddev	16.7	329.	33.1
%RSD	.19959	.67740	1.0928
#1	8386.1	48895.	3043.3
#2	8353.5	48464.	3048.0
#3	8363.4	48249.	2988.5

Approved: June 15, 2016

Sample Name: L1606037602 Acquired: 6/14/2016 20:00:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	.00592	-.00091	.00782	.00354	.00007	5.9713	-.00003
Stddev	.00307	.00708	.00202	.00289	.00026	.00005	.0317	.00025
%RSD	344.07	119.69	220.80	36.909	7.4289	70.102	.53161	932.08
#1	-.00256	.00231	.00049	.00694	.00338	.00004	5.9390	-.00032
#2	.00192	.00136	-.00000	.00548	.00385	.00013	6.0025	.00015
#3	.00332	.01408	-.00323	.01105	.00340	.00004	5.9725	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	-.00001	-.00033	.03570	-.05760	-.00271	2.1279	.00219
Stddev	.00021	.00115	.00115	.02041	.01524	.00211	.1105	.00083
%RSD	152.47	15261.	345.69	57.159	26.463	77.893	5.1935	37.762
#1	.00010	.00132	.00072	.01495	-.04001	-.00390	2.1230	.00220
#2	-.00024	-.00059	-.00157	.05574	-.06574	-.00396	2.0199	.00136
#3	-.00028	-.00075	-.00015	.03641	-.06704	-.00027	2.2408	.00302
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	2.3138	.00030	.00544	-.00128	.00145	.00263	.66338
Stddev	.00036	.0343	.00116	.00122	.00220	.00238	.00089	.00341
%RSD	165.63	1.4830	385.02	22.336	172.23	164.18	33.857	.51465
#1	.00005	2.3113	.00164	.00530	-.00359	.00071	.00173	.66405
#2	-.00062	2.3493	-.00028	.00672	-.00102	-.00047	.00351	.66641
#3	-.00007	2.2808	-.00045	.00430	.00078	.00412	.00264	.65968
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606037602 Acquired: 6/14/2016 20:00:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00098	.12589	.00504	.00091	-.00058	.00165	-.00027
Stddev	.00056	.00094	.00194	.00237	.00037	.00026	.00032
%RSD	57.044	.74629	38.505	261.46	64.091	15.772	117.99
#1	.00155	.12485	.00713	.00070	-.00099	.00138	.00004
#2	.00097	.12613	.00330	.00337	-.00027	.00166	-.00059
#3	.00043	.12668	.00470	-.00135	-.00048	.00190	-.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8346.8	48368.	3061.9
Stddev	19.9	133.	44.9
%RSD	.23813	.27530	1.4650
#1	8369.7	48513.	3076.7
#2	8333.5	48250.	3011.5
#3	8337.3	48341.	3097.4

Approved: June 15, 2016

Sample Name: L1606037603 Acquired: 6/14/2016 20:04:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00096	.02968	.00056	.07611	.10444	-.00001	95.727	-.00019
Stddev	.00095	.00304	.00516	.00094	.00195	.00011	.930	.00033
%RSD	98.134	10.231	925.81	1.2340	1.8680	1336.6	.97202	172.21
#1	.00196	.03189	-.00270	.07707	.10649	.00009	96.590	-.00049
#2	.00007	.03093	-.00213	.07607	.10424	-.00012	95.851	.00017
#3	.00086	.02621	.00651	.07519	.10260	.00000	94.741	-.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	.00154	.00136	.22364	2.0989	.00833	50.340	.14855
Stddev	.00015	.00127	.00161	.01700	.0889	.00290	.333	.00193
%RSD	19.058	82.160	119.06	7.6001	4.2342	34.767	.66152	1.3009
#1	.00093	.00012	.00232	.24130	2.1119	.00752	50.603	.14977
#2	.00066	.00255	-.00051	.22222	2.0042	.00593	50.451	.14632
#3	.00071	.00195	.00226	.20739	2.1805	.01154	49.966	.14955
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00304	83.455	.00081	.01036	.00176	-.00253	.00653	9.3352
Stddev	.00024	.785	.00079	.00625	.00391	.00509	.00407	.0339
%RSD	7.9983	.94114	97.320	60.365	222.30	201.08	62.292	.36345
#1	.00312	84.149	.00168	.00802	-.00135	-.00105	.00183	9.3690
#2	.00323	83.613	.00015	.00561	.00614	.00166	.00894	9.3356
#3	.00276	82.603	.00060	.01745	.00048	-.00820	.00883	9.3011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606037603 Acquired: 6/14/2016 20:04:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00078**	**1.4500**	**-.01203**	**-.00400**	**-.00070**	**.00146**	**-.00024**
Stddev	.00069	.0150	.00372	.00078	.00128	.00009	.00044
%RSD	87.683	1.0373	30.925	19.362	183.82	5.8270	185.51
#1	-.00000	1.4640	-.01576	-.00318	-.00201	.00148	.00024
#2	.00107	1.4518	-.00832	-.00410	-.00064	.00153	-.00063
#3	.00128	1.4341	-.01201	-.00473	.00055	.00137	-.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7293.7**	**42511.**	**2808.7**
Stddev	15.6	250.	35.6
%RSD	.21378	.58896	1.2663
#1	7293.7	42569.	2769.0
#2	7278.1	42237.	2819.5
#3	7309.3	42727.	2837.6

Approved: June 15, 2016

Sample Name: L1606037603PS Acquired: 6/14/2016 20:08:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG572145-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.16732**	**4.2412**	**.16944**	**.83702**	**.41439**	**.02074**	**11.579**	**.02115**
Stddev	.00139	.0191	.00055	.00429	.00359	.00011	.063	.00010
%RSD	.82837	.45074	.32693	.51228	.86551	.53973	.54503	.45567
#1	.16603	4.2333	.16930	.84081	.41141	.02062	11.543	.02107
#2	.16878	4.2272	.16896	.83237	.41337	.02076	11.542	.02112
#3	.16714	4.2630	.17004	.83789	.41837	.02084	11.651	.02125
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.08601**	**.21073**	**.21599**	**1.6632**	**20.569**	**.40388**	**8.1236**	**.21564**
Stddev	.00040	.00198	.00122	.0255	.143	.00058	.0942	.00140
%RSD	.46318	.93892	.56504	1.5349	.69709	.14430	1.1594	.65062
#1	.08561	.21093	.21589	1.6338	20.497	.40327	8.1811	.21440
#2	.08601	.21260	.21482	1.6797	20.477	.40444	8.0149	.21535
#3	.08641	.20866	.21726	1.6762	20.735	.40393	8.1747	.21716
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41572**	**27.073**	**.21550**	**4.2521**	**.21524**	**.51017**	**.17452**	**2.8867**
Stddev	.00074	.163	.00156	.0179	.00219	.00226	.00975	.0102
%RSD	.17800	.60189	.72201	.42172	1.0170	.44375	5.5860	.35409
#1	.41638	26.907	.21398	4.2603	.21760	.50995	.16328	2.8804
#2	.41586	27.080	.21541	4.2316	.21327	.51254	.17973	2.8813
#3	.41492	27.233	.21709	4.2645	.21486	.50803	.18056	2.8985
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606037603PS Acquired: 6/14/2016 20:08:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG572145-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.42434**	**.52719**	**.39763**	**.21184**	**.41778**	**.44062**	**.00026**
Stddev	.00079	.00274	.00417	.00138	.00012	.00160	.00018
%RSD	.18688	.51925	1.0479	.65013	.02859	.36335	70.019
#1	.42415	.52439	.39765	.21034	.41792	.43949	.00011
#2	.42367	.52734	.39346	.21213	.41770	.43991	.00046
#3	.42522	.52986	.40179	.21305	.41773	.44245	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8298.7**	**48092.**	**3084.7**
Stddev	12.4	86.	20.2
%RSD	.14907	.17788	.65460
#1	8288.8	48133.	3072.9
#2	8312.6	48150.	3073.2
#3	8294.8	47994.	3108.1

Approved: June 15, 2016

Sample Name: L1606037603SDL Acquired: 6/14/2016 20:12:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 50 Custom ID2: Custom ID3:
Comment: WG572145-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00031	-.00011	-.00097	.00240	.00192	.00011	.87778	.00003
Stddev	.00260	.00534	.00110	.00082	.00097	.00007	.01744	.00017
%RSD	841.71	5015.3	113.10	34.080	50.302	59.901	1.9871	678.48
#1	-.00185	-.00220	-.00008	.00334	.00301	.00004	.85985	.00013
#2	-.00177	.00596	-.00064	.00201	.00115	.00016	.89469	.00011
#3	.00269	-.00408	-.00219	.00185	.00161	.00014	.87880	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	-.00023	.00070	.01828	-.16788	-.00115	.47163	.00013
Stddev	.00048	.00071	.00071	.01664	.04101	.00386	.02394	.00101
%RSD	223.31	310.73	101.23	91.044	24.431	334.03	5.0753	777.31
#1	.00012	-.00097	.00149	.00012	-.14254	.00224	.44631	.00080
#2	-.00077	-.00015	.00010	.02193	-.21520	-.00035	.49389	.00062
#3	.00000	.00044	.00052	.03280	-.14590	-.00535	.47469	-.00103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00111	.72833	.00096	.00426	-.00417	.00129	-.00065	.08029
Stddev	.00041	.02820	.00090	.00142	.00166	.00287	.00232	.00106
%RSD	36.848	3.8712	93.807	33.267	39.811	223.01	360.18	1.3149
#1	.00073	.76071	.00140	.00373	-.00324	-.00167	.00199	.08117
#2	.00105	.71513	-.00008	.00319	-.00609	.00147	-.00150	.08057
#3	.00154	.70916	.00156	.00587	-.00318	.00407	-.00242	.07912
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606037603SDL Acquired: 6/14/2016 20:12:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 50 Custom ID2: Custom ID3:
Comment: WG572145-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00079**	**.01313**	**.01047**	**.00019**	**.00030**	**.00034**	**-.00008**
Stddev	.00037	.00024	.00514	.00188	.00079	.00023	.00040
%RSD	46.789	1.8404	49.142	988.87	263.82	67.672	497.35
#1	.00042	.01340	.00662	.00146	.00115	.00020	-.00004
#2	.00115	.01293	.00847	-.00197	-.00040	.00022	-.00050
#3	.00079	.01307	.01631	.00108	.00015	.00061	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8299.8**	**48423.**	**3040.2**
Stddev	2.4	241.	19.9
%RSD	.02852	.49677	.65448
#1	8300.5	48697.	3022.5
#2	8301.7	48325.	3061.7
#3	8297.1	48246.	3036.3

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 20:16:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37667**	**9.4035**	**.37286**	**.47167**	**.91227**	**.04717**	**9.0153**	**.04733**
Stddev	.00057	.0112	.00507	.00209	.00363	.00052	.0508	.00009
%RSD	.15239	.11915	1.3598	.44295	.39777	1.1056	.56302	.18986
#1	.37679	9.4093	.36870	.47367	.91318	.04776	8.9983	.04732
#2	.37717	9.3906	.37138	.47184	.90827	.04680	8.9752	.04724
#3	.37604	9.4106	.37851	.46950	.91535	.04694	9.0723	.04742
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19138**	**.47412**	**.47768**	**3.6643**	**45.667**	**.90836**	**9.0831**	**.45268**
Stddev	.00014	.00427	.00155	.0187	.193	.01297	.0576	.00104
%RSD	.07565	.89993	.32400	.51025	.42192	1.4277	.63437	.22950
#1	.19134	.47904	.47937	3.6823	45.628	.92071	9.0439	.45192
#2	.19154	.47152	.47633	3.6658	45.497	.89485	9.0561	.45386
#3	.19126	.47178	.47734	3.6449	45.876	.90952	9.1492	.45225
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.94376**	**45.777**	**.47920**	**9.4727**	**.47711**	**1.1407**	**.37357**	**4.7802**
Stddev	.00129	.168	.00165	.0120	.00216	.0020	.00433	.0044
%RSD	.13645	.36596	.34418	.12611	.45245	.17860	1.1581	.09222
#1	.94378	45.655	.47935	9.4621	.47545	1.1412	.37603	4.7810
#2	.94504	45.708	.48076	9.4704	.47634	1.1424	.36858	4.7754
#3	.94246	45.968	.47748	9.4856	.47955	1.1384	.37611	4.7841
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 20:16:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.94598	.91008	.90369	.47410	.94227	.95554	.94155
Stddev	.00185	.00240	.00268	.00143	.00647	.00081	.00205
%RSD	.19513	.26351	.29672	.30197	.68629	.08453	.21754
#1	.94734	.90976	.90113	.47353	.94973	.95463	.94138
#2	.94671	.90785	.90648	.47304	.93835	.95617	.93959
#3	.94388	.91261	.90346	.47573	.93872	.95582	.94367
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7990.7	46358.	3064.5
Stddev	9.5	189.	12.5
%RSD	.11949	.40691	.40645
#1	7986.0	46249.	3065.8
#2	8001.6	46576.	3076.3
#3	7984.4	46249.	3051.5

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 20:20:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00041**	**.00477**	**-.00352**	**.00434**	**.00063**	**.00004**	**.00529**	**-.00028**
Stddev	.00148	.00927	.00260	.00261	.00035	.00005	.02742	.00023
%RSD	358.80	194.45	73.925	60.210	55.103	124.46	518.08	79.970
#1	-.00068	.01259	-.00192	.00391	.00096	.00007	-.02614	-.00007
#2	.00119	-.00547	-.00212	.00713	.00027	-.00002	.01776	-.00052
#3	-.00175	.00717	-.00652	.00197	.00067	.00008	.02427	-.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00027**	**.00049**	**.00115**	**-.01548**	**-.16235**	**-.00338**	**-.10490**	**-.00144**
Stddev	.00043	.00079	.00098	.01032	.08835	.00370	.07013	.00188
%RSD	159.36	160.48	85.441	66.640	54.419	109.36	66.857	130.28
#1	-.00056	.00140	.00228	-.01628	-.26434	-.00613	-.17497	-.00361
#2	-.00048	-.00003	.00064	-.00479	-.11311	-.00484	-.10501	-.00034
#3	.00023	.00010	.00052	-.02537	-.10959	.00082	-.03471	-.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00154**	**-.01137**	**.00094**	**-.00396**	**.00016**	**-.00066**	**.00783**	**.00086**
Stddev	.00031	.00719	.00070	.00432	.00142	.00225	.00680	.00113
%RSD	20.100	63.243	74.541	109.13	914.54	343.13	86.840	131.58
#1	.00122	-.00683	.00175	-.00894	-.00062	.00151	.01483	.00213
#2	.00183	-.00761	.00062	-.00187	.00179	-.00298	.00126	.00044
#3	.00157	-.01965	.00046	-.00108	-.00071	-.00050	.00738	-.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 20:20:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00072**	**-.00001**	**.00377**	**.00009**	**.00009**	**-.00035**	**.00075**
Stddev	.00107	.00035	.00166	.00197	.00007	.00014	.00032
%RSD	147.86	2694.1	44.168	2118.5	76.833	38.859	42.404
#1	.00191	.00026	.00246	-.00218	.00004	-.00049	.00092
#2	-.00014	.00011	.00320	.00136	.00006	-.00036	.00094
#3	.00039	-.00041	.00564	.00110	.00017	-.00021	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8168.3**	**47490.**	**3047.5**
Stddev	10.3	198.	12.7
%RSD	.12556	.41629	.41563
#1	8176.9	47701.	3044.4
#2	8170.9	47308.	3061.5
#3	8156.9	47462.	3036.7

Approved: June 15, 2016

Sample Name: L1606037604 Acquired: 6/14/2016 20:24:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00032	.00756	-.00185	.00469	.00404	.00007	8.7792	-.00032
Stddev	.00019	.00312	.00051	.00180	.00005	.00008	.0398	.00009
%RSD	59.067	41.210	27.877	38.444	1.2193	113.73	.45339	29.604
#1	-.00026	.01101	-.00206	.00275	.00402	-.00001	8.7433	-.00028
#2	-.00016	.00494	-.00222	.00500	.00400	.00015	8.7724	-.00025
#3	-.00053	.00674	-.00126	.00632	.00409	.00008	8.8220	-.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.00039	.00058	.00730	.00847	.00083	1.2642	.03208
Stddev	.00038	.00082	.00073	.01936	.04904	.00128	.0199	.00048
%RSD	1319.7	212.15	125.15	265.20	579.15	154.65	1.5728	1.4950
#1	.00046	-.00036	.00116	.02451	-.04789	.00204	1.2658	.03202
#2	-.00026	.00026	.00083	-.01366	.03191	.00097	1.2832	.03164
#3	-.00011	.00126	-.00024	.01105	.04139	-.00052	1.2435	.03259
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00030	3.7411	.00189	.00717	-.00387	.00020	-.00206	.76318
Stddev	.00045	.0143	.00183	.00136	.00242	.00213	.00680	.00111
%RSD	150.40	.38310	96.540	18.952	62.478	1056.0	330.72	.14550
#1	-.00074	3.7570	.00399	.00765	-.00665	-.00221	-.00933	.76446
#2	.00016	3.7370	.00062	.00564	-.00219	.00099	-.00099	.76269
#3	-.00033	3.7292	.00107	.00822	-.00279	.00183	.00414	.76241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606037604 Acquired: 6/14/2016 20:24:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00072**	**.04318**	**-.00014**	**.00075**	**.00033**	**.00145**	**-.00023**
Stddev	.00006	.00011	.00435	.00228	.00014	.00014	.00105
%RSD	8.4337	.25383	3096.5	301.47	43.640	9.5729	452.41
#1	.00074	.04307	.00031	.00337	.00016	.00153	-.00117
#2	.00065	.04319	-.00470	-.00073	.00043	.00129	-.00044
#3	.00077	.04329	.00396	-.00037	.00039	.00153	.00091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8314.4**	**48031.**	**3034.3**
Stddev	12.3	138.	25.7
%RSD	.14819	.28704	.84757
#1	8306.7	47891.	3030.2
#2	8328.6	48034.	3061.8
#3	8307.8	48167.	3010.9

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 20:28:10 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38145**	**9.5297**	**.37179**	**.47895**	**.91835**	**.04744**	**9.0623**	**.04770**
Stddev	.00074	.0208	.00359	.00192	.00362	.00029	.0379	.00014
%RSD	.19353	.21829	.96432	.40042	.39393	.61309	.41775	.28741
#1	.38124	9.5376	.36791	.48097	.91631	.04778	9.0921	.04762
#2	.38228	9.5455	.37246	.47873	.91622	.04725	9.0197	.04763
#3	.38084	9.5061	.37499	.47715	.92253	.04730	9.0750	.04786
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19264**	**.47622**	**.48088**	**3.6771**	**46.027**	**.91668**	**9.1578**	**.46068**
Stddev	.00058	.00219	.00109	.0271	.144	.00757	.0724	.00386
%RSD	.29895	.45902	.22576	.73645	.31279	.82598	.79011	.83793
#1	.19200	.47875	.48020	3.6525	45.914	.92433	9.0875	.45627
#2	.19281	.47502	.48030	3.6728	45.977	.90919	9.2320	.46341
#3	.19311	.47491	.48213	3.7061	46.189	.91650	9.1539	.46237
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.95289**	**46.112**	**.48191**	**9.5513**	**.48065**	**1.1478**	**.37978**	**4.8187**
Stddev	.00288	.222	.00113	.0283	.00473	.0063	.00516	.0172
%RSD	.30192	.48246	.23487	.29588	.98378	.54720	1.3580	.35629
#1	.95113	45.892	.48073	9.5206	.47833	1.1406	.38331	4.8019
#2	.95621	46.107	.48299	9.5571	.47754	1.1507	.38218	4.8362
#3	.95134	46.337	.48202	9.5763	.48609	1.1521	.37386	4.8182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 20:28:10 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.95214	.91766	.91145	.47927	.95378	.96314	.95662
Stddev	.00224	.00487	.00908	.00249	.00832	.00208	.00950
%RSD	.23556	.53063	.99667	.51969	.87275	.21595	.99290
#1	.95106	.91471	.90663	.47834	.96319	.96092	.95069
#2	.95472	.91500	.90579	.48209	.95078	.96504	.95161
#3	.95064	.92328	.92193	.47737	.94737	.96345	.96758
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8029.3	46259.	3052.8
Stddev	40.6	206.	17.4
%RSD	.50537	.44620	.57101
#1	8035.1	46087.	3059.4
#2	7986.2	46203.	3065.9
#3	8066.7	46488.	3033.0

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 20:31:52 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00069	.00437	.00079	.00195	.00089	.00004	.01496	-.00002
Stddev	.00059	.00687	.00511	.00214	.00047	.00006	.03133	.00015
%RSD	85.649	157.29	643.31	109.54	53.013	160.33	209.40	643.65
#1	-.00030	.01102	-.00465	.00409	.00085	.00002	.03337	.00015
#2	-.00137	-.00271	.00548	-.00019	.00044	.00011	-.02121	-.00008
#3	-.00040	.00481	.00156	.00197	.00138	-.00001	.03273	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00047	.00090	.00007	-.00390	-.12491	-.00044	-.03143	-.00151
Stddev	.00024	.00117	.00052	.03152	.11655	.00214	.00810	.00239
%RSD	50.813	129.53	737.64	807.40	93.313	487.54	25.752	158.74
#1	-.00038	-.00041	.00057	.03124	-.24893	.00139	-.02619	.00055
#2	-.00074	.00127	-.00047	-.01327	-.10814	.00008	-.02736	-.00094
#3	-.00028	.00185	.00012	-.02968	-.01764	-.00279	-.04076	-.00413
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00150	-.01020	-.00000	.00303	-.00270	-.00035	.00675	.00182
Stddev	.00038	.02614	.00033	.00543	.00172	.00335	.00318	.00079
%RSD	25.535	256.29	12533.	179.56	63.729	958.50	47.058	43.331
#1	.00106	-.03994	-.00014	-.00311	-.00379	.00159	.00633	.00273
#2	.00165	.00912	-.00024	.00498	-.00072	.00158	.01012	.00140
#3	.00177	.00023	.00037	.00721	-.00359	-.00422	.00381	.00133
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 20:31:52 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	.00014	.00541	.00038	-.00080	-.00014	.00069
Stddev	.00060	.00004	.00437	.00194	.00017	.00017	.00006
%RSD	282.76	31.285	80.645	506.67	20.920	125.59	8.2535
#1	.00049	.00018	.00744	-.00159	-.00096	-.00003	.00066
#2	-.00048	.00014	.00040	.00045	-.00081	-.00005	.00075
#3	.00063	.00009	.00840	.00229	-.00062	-.00034	.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8164.0	47462.	3072.1
Stddev	14.2	179.	18.2
%RSD	.17425	.37672	.59115
#1	8152.7	47258.	3051.6
#2	8159.2	47592.	3078.4
#3	8180.0	47536.	3086.3

Approved: June 15, 2016

Sample Name: LLCCV Acquired: 6/14/2016 20:35:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00796	.15654	.00520	.07362	.00772	.00155	.36450	.00072
Stddev	.00058	.00604	.00233	.00171	.00060	.00003	.00774	.00008
%RSD	7.2560	3.8586	44.788	2.3295	7.7289	1.8142	2.1230	11.177
#1	.00863	.16003	.00770	.07267	.00720	.00156	.35816	.00064
#2	.00766	.14956	.00309	.07259	.00759	.00151	.37312	.00071
#3	.00760	.16002	.00482	.07560	.00837	.00156	.36222	.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00374	.00376	.00416	.08157	.58896	.07087	.34991	.00537
Stddev	.00013	.00055	.00080	.00802	.06552	.00052	.04718	.00220
%RSD	3.4987	14.670	19.296	9.8277	11.124	.73849	13.483	40.929
#1	.00389	.00388	.00409	.08757	.56210	.07050	.40372	.00309
#2	.00367	.00316	.00499	.08467	.54115	.07064	.31562	.00748
#3	.00367	.00425	.00339	.07246	.66364	.07147	.33040	.00555
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00723	.35769	.01538	.72222	.00467	.07288	.01608	.74185
Stddev	.00045	.01580	.00072	.00535	.00062	.00148	.00634	.00241
%RSD	6.2012	4.4166	4.6660	.74030	13.263	2.0373	39.420	.32510
#1	.00671	.37510	.01481	.72802	.00439	.07167	.02340	.74233
#2	.00746	.34427	.01618	.71749	.00424	.07245	.01257	.74399
#3	.00751	.35370	.01514	.72115	.00538	.07454	.01227	.73924
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: LLCCV Acquired: 6/14/2016 20:35:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37476**	**.03636**	**.02406**	**.14149**	**.00689**	**.01529**	**.04153**
Stddev	.00102	.00023	.00222	.00136	.00043	.00012	.00094
%RSD	.27273	.63775	9.2116	.96161	6.2626	.77005	2.2600
#1	.37560	.03610	.02169	.14259	.00666	.01517	.04059
#2	.37506	.03645	.02441	.14192	.00661	.01541	.04153
#3	.37362	.03654	.02608	.13997	.00738	.01529	.04247
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8208.9**	**47722.**	**3044.8**
Stddev	14.5	284.	6.1
%RSD	.17665	.59522	.20194
#1	8214.3	47755.	3047.5
#2	8192.5	47423.	3037.7
#3	8220.0	47989.	3049.0

Approved: June 15, 2016

2.3.2 Metals ICP-MS Data

2.3.2.1 Summary Data

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	AWD4T-060716	**Prep Method:**	3015	**Prep Date:**	06/09/2016 07:45
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572085	**Analyst:**	BKT	**Run Date:**	06/16/2016 22:10
Collect Date:	06/07/2016 15:00	**Dilution:**	1	**File ID:**	NI.061616.221057
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00170	J	0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.205		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.0946		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00650		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00851		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00305		0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.0466		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.230		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000120	J	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.0174		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0348	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	AWD4B-060716	**Prep Method:**	3015	**Prep Date:**	06/09/2016 07:45
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572085	**Analyst:**	BKT	**Run Date:**	06/16/2016 22:14
Collect Date:	06/07/2016 15:30	**Dilution:**	1	**File ID:**	NI.061616.221409
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00124	J	0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.195		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.0892		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00687		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00717		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00258		0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.0529		0.00400	0.00200	0.00100
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.0124		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0260	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	AWD4B-060716	**Prep Method:**	3015	**Prep Date:**	06/09/2016 07:45
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572085	**Analyst:**	BKT	**Run Date:**	06/16/2016 22:20
Collect Date:	06/07/2016 15:30	**Dilution:**	5	**File ID:**	NI.061616.222032
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nickel, Total	7440-02-0	0.283		0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer NexION 300X

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	100
Vi = Initial volume	40
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/L)	0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	200
Vi = Initial volume	0.5
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/kg)	40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	40
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	50

50 ug/kg = 0.050 mg/kg

Perkin Elmer NexION ICP/MS

STANDARDS KEY

QC Std 1 - ICV
QC Std 2 - ICB
QC Std 3 - LLICV
QC Std 4 - ICSA
QC Std 5 - ICSAB
QC Std 6 - CCV
QC Std 7 - CCB
QC Std 8 - LLCCV

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.00005	0.05	0.1
Sb	10	0	0.00005	0.05	0.1
As	10	0	0.00005	0.05	0.1
Ba	10	0	0.00005	0.05	0.1
Be	10	0	0.00005	0.05	0.1
Ca	1000	0	0.005	5	10
Cd	10	0	0.0005	0.05	0.1
Cr	10	0	0.0005	0.05	0.1
Co	10	0	0.0005	0.05	0.1
Cu	10	0	0.0005	0.05	0.1
Fe	1000	0	0.005	5	10
Pb	10	0	0.00005	0.05	0.1
Mg	1000	0	0.005	5	10
Mn	10	0	0.00005	0.05	0.1
Ni	10	0	0.00005	0.05	0.1
K	1000	0	0.005	5	10
Se	10	0	0.00005	0.05	0.1
Ag	10	0	0.00005	0.05	0.1
Na	1000	0	0.005	5	10
Tl	10	0	0.00005	0.05	0.1
V	10	0	0.00005	0.05	0.1
U	1000	0	0.00005	0.05	0.1
Zn	10	0	0.00005	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG571964
Analyst: VC
Spike Analyst: VC
Run Date: 06/09/2016 07:45
Method: 3015
Balance: BAL016
Instrument: MW-3
Instrument Start: 06/09/2016 07:54

SOP: ME407 Revison 19
Spike Solution: STD75998
Spike Witness: ERP
40 & 50 ML. DIGESTION TU COA18772
HNO3 Lot #: COA18905
MS Filters- fisher-Lot#R RGT35621

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG571964-02	BLANK	1	20 mL	50 mL	184.032 g	184.036 g		
2	WG571964-03	LCS	1	20 mL	50 mL	181.351 g	181.339 g	.25 mL	
3	L16060410-01	SAMP	2	20 mL	50 mL	183.076 g	183.051 g		06/16/16
4	L16060410-02	SAMP	2	20 mL	50 mL	180.945 g	180.932 g		06/16/16
5	L16060411-03	SAMP	1	20 mL	50 mL	183.652 g	183.639 g		06/17/16
6	L16060411-04	SAMP	1	20 mL	50 mL	185.692 g	185.682 g		06/17/16
7	L16060416-05	SAMP	2	20 mL	50 mL	182.672 g	182.624 g		06/17/16
8	L16060423-03	SAMP	2	20 mL	50 mL	183.716 g	183.689 g		06/13/16
9	L16060424-01	SAMP	2	20 mL	50 mL	184.132 g	184.119 g		06/13/16
10	WG571964-01	REF	2	20 mL	50 mL	183.332 g	183.318 g		
11	L16060428-01	SAMP	2	20 mL	50 mL	183.332 g	183.318 g		06/15/16
12	L16060430-01	SAMP	2	20 mL	50 mL	181.769 g	181.756 g		06/15/16
13	L16060430-02	SAMP	2	20 mL	50 mL	183.246 g	183.23 g		06/15/16
14	L16060430-03	SAMP	2	20 mL	50 mL	181.199 g	181.176 g		06/15/16
15	L16060430-04	SAMP	2	20 mL	50 mL	182.82 g	182.806 g		06/15/16
16	L16060430-05	SAMP	2	20 mL	50 mL	184.964 g	184.948 g		06/15/16
17	WG571964-04	DUP	1	20 mL	50 mL	181.084 g	181.063 g		
18	WG571964-05	MS	1	20 mL	50 mL	182.397 g	182.373 g	.25 mL	
19	WG571964-06	MSD	1	20 mL	50 mL	182.792 g	182.778 g	.25 mL	

WG571964-04	FILTERED DIGESTATE
WG571964-05	FILTERED DIGESTATE
WG571964-06	FILTERED DIGESTATE
L16060416-05	FILTERED DIGESTATE
L16060428-01	FILTERED DIGESTATE
WG571964-01	FILTERED DIGESTATE

Analyst: Vicki Collins

Reviewer: Erin Potter

MW_DIG - Modified 09/30/2009
PDF ID: 4799472
Report generated: 06/09/2016 08:37

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 061616A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573083,572869,572085,572184

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.061616.153014	Blank	Blank		1		06/16/16 15:30
2	NI.061616.153326	WG573095-01	Calibration Point		1		06/16/16 15:33
3	NI.061616.153637	WG573095-02	Calibration Point		1		06/16/16 15:36
4	NI.061616.153949	WG573095-03	Calibration Point		1		06/16/16 15:39
5	NI.061616.154300	WG573095-04	Calibration Point		1		06/16/16 15:43
6	NI.061616.154613	WG573095-05	ICV		1		06/16/16 15:46
7	NI.061616.154926	WG573095-06	ICB		1		06/16/16 15:49
8	NI.061616.155239	WG573095-07	Low Level Initial Calibration V		1		06/16/16 15:52
9	NI.061616.155746	WG573095-08	Initial Calibration Verification		1		06/16/16 15:57
10	NI.061616.160355	WG573095-09	Initial Calib Blank		1		06/16/16 16:03
11	NI.061616.160740	WG573095-10	Interference Check		1		06/16/16 16:07
12	NI.061616.162201	WG573095-11	Interference Check		1		06/16/16 16:22
13	NI.061616.162516	WG573095-12	CCV		1		06/16/16 16:25
14	NI.061616.163850	WG573095-13	CCB		1		06/16/16 16:38
15	NI.061616.173543	WG572432-04	Method/Prep Blank	20/50	1		06/16/16 17:35
16	NI.061616.173854	WG572432-05	Laboratory Control S	20/50	1		06/16/16 17:38
17	NI.061616.174206	WG572432-01	Reference Sample		1	L16060540-06	06/16/16 17:42
18	NI.061616.174517	WG572432-06	Matrix Spike	20/50	1	L16060540-06	06/16/16 17:45
19	NI.061616.174829	WG572432-07	Matrix Spike Duplica	20/50	1	L16060540-06	06/16/16 17:48
20	NI.061616.175140	L16060533-01	16F0399-01	20/50	1		06/16/16 17:51
21	NI.061616.175452	L16060540-03	AG4573	20/50	1		06/16/16 17:54
22	NI.061616.175803	WG573083-01	Post Digestion Spike		1	L16060540-03	06/16/16 17:58
23	NI.061616.180115	WG573083-02	Serial Dilution		5	L16060540-03	06/16/16 18:01
24	NI.061616.180426	WG573083-02	Serial Dilution		25	L16060540-03	06/16/16 18:04
25	NI.061616.180739	WG573095-14	CCV		1		06/16/16 18:07
26	NI.061616.181051	WG573095-15	CCB		1		06/16/16 18:10
27	NI.061616.181404	L16060540-09	AG4578	20/50	1		06/16/16 18:14
28	NI.061616.181715	L16060540-10	AG4579	20/50	1		06/16/16 18:17
29	NI.061616.182027	L16060540-11	AG4580	20/50	1		06/16/16 18:20
30	NI.061616.182338	L16060540-14	AG4584	20/50	1		06/16/16 18:23
31	NI.061616.182650	L16060540-15	AG4587	20/50	1		06/16/16 18:26
32	NI.061616.183001	L16060540-16	AG4589	20/50	1		06/16/16 18:30
33	NI.061616.183313	L16060549-01	J6F0164-01	20/50	1		06/16/16 18:33
34	NI.061616.183624	L16060614-01	WATER PLANT B/W	20/50	1		06/16/16 18:36

Page: 1 Approved: June 20, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 061616A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573083,572869,572085,572184

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.061616.183936	L16060624-01	16F1312-03	20/50	1		06/16/16 18:39
36	NI.061616.184247	WG572432-03	Reference Sample		1	L16060630-01	06/16/16 18:42
37	NI.061616.184600	WG573095-16	CCV		1		06/16/16 18:46
38	NI.061616.184912	WG573095-17	CCB		1		06/16/16 18:49
39	NI.061616.185225	WG572432-10	Duplicate	20/50	1	L16060630-01	06/16/16 18:52
40	NI.061616.185538	WG573095-18	CCV		1		06/16/16 18:55
41	NI.061616.185850	WG573095-19	CCB		1		06/16/16 18:58
42	NI.061616.190202	WG573095-20	Low Level Continuing Calibra		1		06/16/16 19:02
43	NI.061616.190516	WG572730-03	Method/Prep Blank	20/50	1		06/16/16 19:05
44	NI.061616.190828	WG572730-04	Laboratory Control S	20/50	1		06/16/16 19:08
45	NI.061616.191230	WG572730-01	Reference Sample		1	L16060664-01	06/16/16 19:12
46	NI.061616.191541	WG572730-05	Duplicate	20/50	1	L16060664-01	06/16/16 19:15
47	NI.061616.191852	WG572730-02	Reference Sample		1	L16060729-03	06/16/16 19:18
48	NI.061616.192204	WG572730-06	Matrix Spike	20/50	1	L16060729-03	06/16/16 19:22
49	NI.061616.192515	WG572730-07	Matrix Spike Duplica	20/50	1	L16060729-03	06/16/16 19:25
50	NI.061616.192827	L16060754-01	V6F0103-02	20/50	1		06/16/16 19:28
51	NI.061616.193138	WG572869-01	Post Digestion Spike		1	L16060754-01	06/16/16 19:31
52	NI.061616.193450	L16060754-01	V6F0103-02		5		06/16/16 19:34
53	NI.061616.193803	WG573095-21	CCV		1		06/16/16 19:38
54	NI.061616.194114	WG573095-22	CCB		1		06/16/16 19:41
55	NI.061616.194427	WG572869-02	Serial Dilution		25	L16060754-01	06/16/16 19:44
56	NI.061616.194738	L16060616-01	MW8-060916	20/50	1		06/16/16 19:47
57	NI.061616.195050	L16060616-02	18CPTMW26SW-060916	20/50	1		06/16/16 19:50
58	NI.061616.195401	L16060616-04	MW10F-060916	20/50	1		06/16/16 19:54
59	NI.061616.195713	L16060649-01	V6F0102-02	20/50	1		06/16/16 19:57
60	NI.061616.200024	L16060650-01	MW1-061016	20/50	1		06/16/16 20:00
61	NI.061616.200336	L16060650-02	MW3-061016	20/50	1		06/16/16 20:03
62	NI.061616.200647	L16060650-03	17WW08-061016	20/50	1		06/16/16 20:06
63	NI.061616.201257	L16060650-08	18WW24F-061016	20/50	1		06/16/16 20:12
64	NI.061616.201608	L16060729-01	A09-MW10-Y1S2	20/50	1		06/16/16 20:16
65	NI.061616.201921	WG573095-23	CCV		1		06/16/16 20:19
66	NI.061616.202232	WG573095-24	CCB		1		06/16/16 20:22
67	NI.061616.202638	L16060729-02	A09-MW11-Y1S2	20/50	1		06/16/16 20:26
68	NI.061616.202950	L16060730-01	18CPTMW14-061316	20/50	1		06/16/16 20:29

Page: 2 Approved: June 20, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 061616A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573083,572869,572085,572184

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.061616.204020	L16060730-02	18CPTMW14FD-061316	20/50	1		06/16/16 20:40
70	NI.061616.204331	L16060730-03	18CPTMW24-061316	20/50	1		06/16/16 20:43
71	NI.061616.204643	L16060731-02	60500-SSP0041-SSP0041	20/50	1		06/16/16 20:46
72	NI.061616.204954	L16060731-02	60500-SSP0041-SSP0041	20/50	10		06/16/16 20:49
73	NI.061616.205306	L16060540-09	AG4578	20/50	100		06/16/16 20:53
74	NI.061616.205727	L16060540-10	AG4579	20/50	10		06/16/16 20:57
75	NI.061616.210039	L16060540-11	AG4580	20/50	10		06/16/16 21:00
76	NI.061616.210350	L16060540-14	AG4584	20/50	100		06/16/16 21:03
77	NI.061616.210702	WG573095-25	CCV		1		06/16/16 21:07
78	NI.061616.211014	WG573095-26	CCB		1		06/16/16 21:10
79	NI.061616.211326	L16060616-01	MW8-060916	20/50	10		06/16/16 21:13
80	NI.061616.211638	L16060616-02	18CPTMW26SW-060916	20/50	10		06/16/16 21:16
81	NI.061616.211949	L16060616-04	MW10F-060916	20/50	10		06/16/16 21:19
82	NI.061616.212301	L16060650-01	MW1-061016	20/50	50		06/16/16 21:23
83	NI.061616.212612	L16060650-02	MW3-061016	20/50	10		06/16/16 21:26
84	NI.061616.212923	L16060650-03	17WW08-061016	20/50	10		06/16/16 21:29
85	NI.061616.213235	L16060650-08	18WW24F-061016	20/50	10		06/16/16 21:32
86	NI.061616.213546	L16060730-01	18CPTMW14-061316	20/50	50		06/16/16 21:35
87	NI.061616.213859	L16060730-02	18CPTMW14FD-061316	20/50	50		06/16/16 21:38
88	NI.061616.214210	L16060730-03	18CPTMW24-061316	20/50	50		06/16/16 21:42
89	NI.061616.214523	WG573095-27	CCV		1		06/16/16 21:45
90	NI.061616.214835	WG573095-28	CCB		1		06/16/16 21:48
91	NI.061616.215148	WG573095-29	Low Level Continuing Calibra		1		06/16/16 21:51
92	NI.061616.215500	WG571964-02	Method/Prep Blank	20/50	1		06/16/16 21:55
93	NI.061616.215811	WG571964-03	Laboratory Control S	20/50	1		06/16/16 21:58
94	NI.061616.220123	WG571964-01	Reference Sample		5	L16060428-01	06/16/16 22:01
95	NI.061616.220434	WG571964-05	Matrix Spike	20/50	5	L16060428-01	06/16/16 22:04
96	NI.061616.220746	WG571964-06	Matrix Spike Duplica	20/50	5	L16060428-01	06/16/16 22:07
97	NI.061616.221057	L16060411-03	AWD4T-060716	20/50	1		06/16/16 22:10
98	NI.061616.221409	L16060411-04	AWD4B-060716	20/50	1		06/16/16 22:14
99	NI.061616.221720	WG572085-03	Post Digestion Spike		1	L16060411-04	06/16/16 22:17
100	NI.061616.222032	L16060411-04	AWD4B-060716		5		06/16/16 22:20
101	NI.061616.222343	WG572085-04	Serial Dilution		25	L16060411-04	06/16/16 22:23
102	NI.061616.222656	WG573095-30	CCV		1		06/16/16 22:26

Page: 3 Approved: June 20, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 061616A.REP

Analyst1: BKT Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705

ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607

CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345

Stannous : Hydroxylamine :

Workgroups: 573083,572869,572085,572184

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.061616.223007	WG573095-31	CCB		1		06/16/16 22:30
104	NI.061616.223320	WG571834-02	Method/Prep Blank	20/50	1		06/16/16 22:33
105	NI.061616.223632	WG571834-03	Laboratory Control S	20/50	1		06/16/16 22:36
106	NI.061616.223943	WG571834-01	Reference Sample		1	L16060337-02	06/16/16 22:39
107	NI.061616.224254	WG571834-04	Matrix Spike	20/50	1	L16060337-02	06/16/16 22:42
108	NI.061616.224606	WG571834-05	Matrix Spike Duplica	20/50	1	L16060337-02	06/16/16 22:46
109	NI.061616.224917	L16060303-01	LH18/24-SP650-6368-GRAB	20/50	1		06/16/16 22:49
110	NI.061616.225229	L16060303-02	LH18/24-SP650-6368-COMP	20/50	1		06/16/16 22:52
111	NI.061616.225540	L16060304-02	LH18/24-SP650-6369-GRAB	20/50	1		06/16/16 22:55
112	NI.061616.225852	WG572184-03	Post Digestion Spike		1	L16060304-02	06/16/16 22:58
113	NI.061616.230203	WG572184-04	Serial Dilution		5	L16060304-02	06/16/16 23:02
114	NI.061616.230516	WG573095-32	CCV		1		06/16/16 23:05
115	NI.061616.230827	WG573095-33	CCB		1		06/16/16 23:08
116	NI.061616.231140	WG573095-34	Low Level Continuing Calibra		1		06/16/16 23:11

Page: 4 Approved: June 20, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 16-JUN-2016
Analyst: BKT
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 573095
Runlog ID: 75740
Analytical Workgroups: 573083,572869,572085,572184

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	
Level 4	303,304,411,540,616,650,729,730,731
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BKT
Secondary Reviewer	KHR
Comments	

Primary Reviewer:
20-JUN-2016

Secondary Reviewer:
20-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-20-2016 14:36:34

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG572085

Login Number: L16060411

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
AWD4T-060716	03	06/07/16					06/09/2016	1.7	180		06/16/16	9.3	180	
AWD4B-060716	04	06/07/16					06/09/2016	1.7	180		06/16/16	9.3	180	
AWD4B-060716	04	06/07/16					06/09/2016	1.7	180		06/16/16	9.3	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4812358
Report generated 06/17/2016 14:17

METHOD BLANK SUMMARY

Login Number: L16060411
Blank File ID: NI.061616.215500
Prep Date: 06/09/16 07:45
Analyzed Date: 06/16/16 21:55
Analyst: BKT

Work Group: WG572085
Blank Sample ID: WG571964-02
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG571964-03	NI.060916.160543	06/09/16 16:05	01
DUP	WG571964-04	NI.060916.161206	06/09/16 16:12	01
LCS	WG571964-03	NI.061616.215811	06/16/16 21:58	02
AWD4T-060716	L16060411-03	NI.061616.221057	06/16/16 22:10	01
AWD4B-060716	L16060411-04	NI.061616.221409	06/16/16 22:14	01
AWD4B-060716	L16060411-04	NI.061616.222032	06/16/16 22:20	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4812359
Report generated 06/17/2016 14:17

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060411 Prep Date: 06/09/16 07:45 Sample ID: WG571964-02
Instrument ID: ICP-MS2 Run Date: 06/16/16 21:55 Prep Method: 3015
File ID: NI.061616.215500 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG572085 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-16-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Antimony, Total	0.000500	0.00200	0.000500	1	U
Arsenic, Total	0.000500	0.00200	0.000500	1	U
Barium, Total	0.00150	0.00600	0.00150	1	U
Cadmium, Total	0.000300	0.00120	0.000300	1	U
Chromium, Total	0.00100	0.00400	0.00100	1	U
Cobalt, Total	0.000500	0.00200	0.000500	1	U
Copper, Total	0.00100	0.00400	0.00100	1	U
Lead, Total	0.000500	0.00200	0.000500	1	U
Manganese, Total	0.00100	0.00400	0.00100	1	U
Nickel, Total	0.00200	0.00800	0.00200	1	U
Silver, Total	0.000500	0.00200	0.000500	1	U
Thallium, Total	0.000100	0.000400	0.000100	1	U
Vanadium, Total	0.000500	0.00200	0.000500	1	U
Zinc, Total	0.0125	0.0500	0.0125	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4812360
17-JUN-2016 14:17

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060411 Run Date: 06/16/2016 Sample ID: WG571964-03
Instrument ID: ICP-MS2 Run Time: 21:58 Prep Method: 3015
File ID: NI.061616.215811 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG572085 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD75998 Cal ID: ICP-MS-16-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Antimony, Total	0.125	0.117	93.4	80 - 120	
Arsenic, Total	0.125	0.127	101	80 - 120	
Barium, Total	0.125	0.119	95.5	80 - 120	
Cadmium, Total	0.125	0.122	97.9	80 - 120	
Chromium, Total	0.125	0.129	103	80 - 120	
Cobalt, Total	0.125	0.128	103	80 - 120	
Copper, Total	0.125	0.130	104	80 - 120	
Lead, Total	0.125	0.129	103	80 - 120	
Manganese, Total	0.125	0.141	113	80 - 120	
Nickel, Total	0.125	0.128	102	80 - 120	
Silver, Total	0.125	0.120	95.9	80 - 120	
Thallium, Total	0.125	0.121	96.8	80 - 120	
Vanadium, Total	0.125	0.129	103	80 - 120	
Zinc, Total	0.125	0.129	104	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4812361
Report generated: 06/17/2016 14:17

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060411 | Cal ID: ICP-MS2- | Worknum: WG572085
Instrument ID: ICP-MS2 | Contract #: | Method: 6020A
Parent ID: WG571964-01 | File ID: NI.061616.220123 | Dil: 5 | Matrix: WATER
Sample ID: WG571964-05 MS | File ID: NI.061616.220434 | Dil: 5 | Units: mg/L
Sample ID: WG571964-06 MSD | File ID: NI.061616.220746 | Dil: 5

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Antimony	0.00628	0.125	0.126	95.7	0.125	0.126	95.7	0.0119	80 - 120	20	
Arsenic	0.000580	0.125	0.121	96.6	0.125	0.125	99.2	2.65	80 - 120	20	
Barium	0.144	0.125	0.254	87.8	0.125	0.293	120	14.5	80 - 120	20	
Cadmium	ND	0.125	0.121	96.9	0.125	0.121	97.0	0.0866	80 - 120	20	
Chromium	0.00237	0.125	0.121	95.0	0.125	0.128	101	5.95	80 - 120	20	
Cobalt	ND	0.125	0.120	96.1	0.125	0.124	99.4	3.38	80 - 120	20	
Copper	0.496	0.125	0.578	64.9	0.125	0.681	148	16.5	80 - 120	20	*
Lead	0.0892	0.125	0.205	92.6	0.125	0.210	96.9	2.59	80 - 120	20	
Manganese	0.0349	0.125	0.162	101	0.125	0.167	105	2.95	80 - 120	20	
Nickel	0.0736	0.125	0.188	91.9	0.125	0.197	98.9	4.53	80 - 120	20	
Silver	0.00202	0.125	0.120	94.7	0.125	0.122	95.9	1.22	80 - 120	20	
Thallium	0.000228	0.125	0.119	94.9	0.125	0.122	97.1	2.25	80 - 120	20	
Vanadium	0.000571	0.125	0.122	97.3	0.125	0.126	101	3.31	80 - 120	20	
Zinc	0.0743	0.125	0.187	90.3	0.125	0.198	99.3	5.85	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4812362
Report generated 06/17/2016 14:17

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16060411 **Worknum:** WG572085
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG572085-04 **File ID:** NI.061616.222343 **Dil:** 25 **Units:** ug/L
Sample: L16060411-04 **File ID:** NI.061616.222032 **Dil:** 5

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	2.29	F	ND	U		
Arsenic	ND	U	ND	U		
Barium	73.6	X	77.0	X	4.62	
Cadmium	ND	U	ND	U		
Chromium	37.4	X	36.1	F	3.41	
Cobalt	2.81	F	ND	U		
Copper	3.24	F	ND	U		
Lead	ND	U	ND	U		
Manganese	22.0	X	22.0	F	0.03	
Nickel	113	X	112	X	0.70	
Silver	ND	U	ND	U		
Thallium	ND	U	ND	U		
Vanadium	5.21	X	5.04	F	3.31	
Zinc	ND	U	ND	U		

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4812356
06/17/2016 14:17

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16060411 **Worknum:** WG572085
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG572085-04 **File ID:** NI.061616.222032 **Dil:** 5 **Units:** ug/L
Sample: L16060411-04 **File ID:** NI.061616.221409 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	ND	U	2.29	F	2710.00	
Arsenic	0.498	F	ND	U		
Barium	78.1		73.6		5.83	
Cadmium	ND	U	ND	U		
Chromium	35.7	X	37.4	X	4.76	
Cobalt	2.75	X	2.81	F	2.42	
Copper	2.87	X	3.24	F	13.00	
Lead	1.03	X	ND	U		
Manganese	21.1	X	22.0	X	4.01	
Nickel	109		113		4.15	
Silver	ND	U	ND	U		
Thallium	ND	U	ND	U		
Vanadium	4.96	X	5.21	X	5.15	
Zinc	10.4	F	ND	U		

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4812356
06/17/2016 14:17

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060411 **Worknum:** WG572085
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG572085-03 **File ID:** NI.061616.221720 **Dil:** 1 **Units:** ug/L
Sample ID: L16060411-04 **File ID:** NI.061616.221409 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	49.3		0	U	50	98.6	75 - 125	
ARSENIC	49.9		0.498	F	50	98.9	75 - 125	
BARIUM	124		78.1		50	91.4	75 - 125	
CADMIUM	49.2		0	U	50	98.3	75 - 125	
CHROMIUM	85.5		35.7		50	99.6	75 - 125	
COBALT	53.3		2.75		50	101.1	75 - 125	
COPPER	52.1		2.87		50	98.4	75 - 125	
LEAD	50.3		1.03		50	98.5	75 - 125	
MANGANESE	73.6		21.1		50	104.8	75 - 125	
NICKEL	159		109		50	101.2	75 - 125	
SILVER	48.8		0	U	50	97.5	75 - 125	
THALLIUM	47.9		0	U	50	95.9	75 - 125	
VANADIUM	56.1		4.96		50	102.3	75 - 125	
ZINC	60.2		10.4	F	50	99.6	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4812357
Report generated: 06/17/2016 14:17

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16060411	Workgroup (AAB#):	WG572085
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG573095	Initial Calibration Date:	16-JUN-2016 15:43

	WG573095-01		WG573095-02		WG573095-03		WG573095-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	44.3	.4	294	50	219000	100	429000	.999808	
ARSENIC	0	72.1	.4	27.4	50	55400	100	107000	.999975	
BARIUM	0	17.0	.4	202	50	90500	100	179000	.999915	
CADMIUM	0	3.70	.4	107	50	96700	100	192000	.999929	
CHROMIUM	0	2890	.4	7150	50	370000	100	726000	.999966	
COBALT	0	263	.4	583	50	321000	100	621000	.999989	
COPPER	0	79.7	.4	217	50	93700	100	182000	.999999	
LEAD	0	828	.4	1800	50	831000	100	1630000	.999997	
MANGANESE	0	613	.4	1040	50	296000	100	576000	1	
NICKEL	0	108	.4	245	50	96000	100	187000	1	
SILVER	0	82.7	.4	386	50	301000	100	584000	.999738	
THALLIUM	0	10.0	.4	392	50	373000	100	729000	.999991	
VANADIUM	0	581	.4	1540	50	356000	100	688000	.999992	
ZINC	0	145	.4	311	50	55400	100	108000	1	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4812365
Report generated: 17-JUN-2016 14:17

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060411
Run Date: 06/16/2016
Sample ID: WG573095-09
Instrument ID: ICP-MS2
Run Time: 16:03
Method: 6020A
File ID: NI.061616.160355
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572085
Cal ID: ICP-MS2 - 16-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
COPPER	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.268	F
THALLIUM	.04	.16	.04	U
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4812367
Report generated 06/17/2016 14:17

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060411
Run Date: 06/16/2016
Sample ID: WG573095-13
Instrument ID: ICP-MS2
Run Time: 16:38
Method: 6020A
File ID: NI.061616.163850
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572085
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812370
Report generated 06/17/2016 14:18

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060411
Run Date: 06/16/2016
Sample ID: WG573095-28
Instrument ID: ICP-MS2
Run Time: 21:48
Method: 6020A
File ID: NI.061616.214835
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572085
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812370
Report generated 06/17/2016 14:18

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060411
Run Date: 06/16/2016
Sample ID: WG573095-31
Instrument ID: ICP-MS2
Run Time: 22:30
Method: 6020A
File ID: NI.061616.223007
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572085
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812370
Report generated 06/17/2016 14:18

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060411 Run Date: 06/16/2016 Sample ID: WG573095-08
Instrument ID: ICP-MS2 Run Time: 15:57 Method: 6020A
File ID: NI.061616.155746 Analyst: BKT Units: ug/L
Workgroup (AAB#): WG572085 Cal ID: ICP-MS - 16-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	46.9	93.8	90 - 110	
Arsenic		50	49.9	99.8	90 - 110	
Barium		50	47.7	95.3	90 - 110	
Cadmium		50	48.1	96.2	90 - 110	
Chromium		50	50.4	101	90 - 110	
Cobalt		50	49.2	98.4	90 - 110	
Copper		50	50.2	100	90 - 110	
Lead		50	48.5	96.9	90 - 110	
Manganese		50	51.6	103	90 - 110	
Nickel		50	50.1	100	90 - 110	
Silver		50	48.2	96.4	90 - 110	
Thallium		50	47.8	95.7	90 - 110	
Vanadium		50	48.7	97.3	90 - 110	
Zinc		50	50.0	100	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4812366
Report generated 06/17/2016 14:17

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060411
Run Date: 06/16/2016
Sample ID: WG573095-12
Instrument ID: ICP-MS2
Run Time: 16:25
Method: 6020A
File ID: NI.061616.162516
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572085
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0492	mg/L	98.4	90 - 110		
Arsenic		0.0500	0.0498	mg/L	99.6	90 - 110		
Barium		0.0500	0.0480	mg/L	96.0	90 - 110		
Cadmium		0.0500	0.0483	mg/L	96.7	90 - 110		
Chromium		0.0500	0.0497	mg/L	99.4	90 - 110		
Cobalt		0.0500	0.0504	mg/L	101	90 - 110		
Copper		0.0500	0.0502	mg/L	100	90 - 110		
Lead		0.0500	0.0490	mg/L	98.0	90 - 110		
Manganese		0.0500	0.0514	mg/L	103	90 - 110		
Nickel		0.0500	0.0501	mg/L	100	90 - 110		
Silver		0.0500	0.0482	mg/L	96.4	90 - 110		
Thallium		0.0500	0.0491	mg/L	98.2	90 - 110		
Vanadium		0.0500	0.0497	mg/L	99.3	90 - 110		
Zinc		0.0500	0.0499	mg/L	99.7	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812369
Report generated 06/17/2016 14:17

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060411
Run Date: 06/16/2016
Sample ID: WG573095-27
Instrument ID: ICP-MS2
Run Time: 21:45
Method: 6020A
File ID: NI.061616.214523
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572085
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0479	mg/L	95.7	90 - 110		
Arsenic		0.0500	0.0498	mg/L	99.7	90 - 110		
Barium		0.0500	0.0478	mg/L	95.6	90 - 110		
Cadmium		0.0500	0.0483	mg/L	96.6	90 - 110		
Chromium		0.0500	0.0507	mg/L	101	90 - 110		
Cobalt		0.0500	0.0512	mg/L	102	90 - 110		
Copper		0.0500	0.0503	mg/L	101	90 - 110		
Lead		0.0500	0.0512	mg/L	102	90 - 110		
Manganese		0.0500	0.0553	mg/L	111	90 - 110		*
Nickel		0.0500	0.0504	mg/L	101	90 - 110		
Silver		0.0500	0.0468	mg/L	93.5	90 - 110		
Thallium		0.0500	0.0492	mg/L	98.4	90 - 110		
Vanadium		0.0500	0.0507	mg/L	101	90 - 110		
Zinc		0.0500	0.0501	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812369
Report generated 06/17/2016 14:17

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060411
Run Date: 06/16/2016
Sample ID: WG573095-30
Instrument ID: ICP-MS2
Run Time: 22:26
Method: 6020A
File ID: NI.061616.222656
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572085
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0490	mg/L	98.1	90 - 110		
Arsenic		0.0500	0.0500	mg/L	99.9	90 - 110		
Barium		0.0500	0.0478	mg/L	95.6	90 - 110		
Cadmium		0.0500	0.0479	mg/L	95.9	90 - 110		
Chromium		0.0500	0.0513	mg/L	103	90 - 110		
Cobalt		0.0500	0.0518	mg/L	104	90 - 110		
Copper		0.0500	0.0509	mg/L	102	90 - 110		
Lead		0.0500	0.0497	mg/L	99.3	90 - 110		
Manganese		0.0500	0.0541	mg/L	108	90 - 110		
Nickel		0.0500	0.0506	mg/L	101	90 - 110		
Silver		0.0500	0.0482	mg/L	96.4	90 - 110		
Thallium		0.0500	0.0491	mg/L	98.2	90 - 110		
Vanadium		0.0500	0.0511	mg/L	102	90 - 110		
Zinc		0.0500	0.0506	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812369
Report generated 06/17/2016 14:17

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060411
Run Date: 06/16/2016
Sample ID: WG573095-07
Instrument ID: ICP-MS2
Run Time: 15:52
Method: 6020A
File ID: NI.061616.155239
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572085
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.437	ug/L	109	70 - 130		
Arsenic		0.400	0.412	ug/L	103	70 - 130		
Barium		0.750	0.670	ug/L	89.4	70 - 130		
Cadmium		0.240	0.237	ug/L	98.6	70 - 130		
Chromium		0.800	0.723	ug/L	90.4	70 - 130		
Cobalt		0.400	0.380	ug/L	95.0	70 - 130		
Copper		0.800	0.790	ug/L	98.7	70 - 130		
Lead		0.200	0.183	ug/L	91.4	70 - 130		
Manganese		0.500	0.452	ug/L	90.4	70 - 130		
Nickel		1.60	1.54	ug/L	96.1	70 - 130		
Silver		0.400	0.386	ug/L	96.6	70 - 130		
Thallium		0.0800	0.0818	ug/L	102	70 - 130		
Vanadium		0.400	0.354	ug/L	88.5	70 - 130		
Zinc		6.25	6.72	ug/L	107	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4812371
Report generated 06/17/2016 14:18

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060411
Run Date: 06/16/2016
Sample ID: WG573095-20
Instrument ID: ICP-MS2
Run Time: 19:02
Method: 6020A
File ID: NI.061616.190202
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572085
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.394	ug/L	98.5	70 - 130		
Arsenic		0.400	0.383	ug/L	95.8	70 - 130		
Barium		0.750	0.633	ug/L	84.4	70 - 130		
Cadmium		0.240	0.238	ug/L	99.0	70 - 130		
Chromium		0.800	0.710	ug/L	88.8	70 - 130		
Cobalt		0.400	0.391	ug/L	97.6	70 - 130		
Copper		0.800	0.779	ug/L	97.4	70 - 130		
Lead		0.200	0.185	ug/L	92.4	70 - 130		
Manganese		0.500	0.600	ug/L	120	70 - 130		
Nickel		1.60	1.49	ug/L	93.1	70 - 130		
Silver		0.400	0.379	ug/L	94.7	70 - 130		
Thallium		0.0800	0.0829	ug/L	104	70 - 130		
Vanadium		0.400	0.360	ug/L	90.1	70 - 130		
Zinc		6.25	6.68	ug/L	107	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4812371
Report generated 06/17/2016 14:18

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060411
Run Date: 06/16/2016
Sample ID: WG573095-29
Instrument ID: ICP-MS2
Run Time: 21:51
Method: 6020A
File ID: NI.061616.215148
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572085
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.379	ug/L	94.7	70 - 130		
Arsenic		0.400	0.373	ug/L	93.3	70 - 130		
Barium		0.750	0.661	ug/L	88.1	70 - 130		
Cadmium		0.240	0.222	ug/L	92.4	70 - 130		
Chromium		0.800	0.719	ug/L	89.8	70 - 130		
Cobalt		0.400	0.364	ug/L	91.0	70 - 130		
Copper		0.800	0.802	ug/L	100	70 - 130		
Lead		0.200	0.176	ug/L	88.2	70 - 130		
Manganese		0.500	0.484	ug/L	96.8	70 - 130		
Nickel		1.60	1.55	ug/L	96.6	70 - 130		
Silver		0.400	0.362	ug/L	90.5	70 - 130		
Thallium		0.0800	0.0736	ug/L	92.0	70 - 130		
Vanadium		0.400	0.363	ug/L	90.7	70 - 130		
Zinc		6.25	6.31	ug/L	101	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4812371
Report generated 06/17/2016 14:18

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060411
Run Date: 06/16/2016
Sample ID: WG573095-34
Instrument ID: ICP-MS2
Run Time: 23:11
Method: 6020A
File ID: NI.061616.231140
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572085
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.389	ug/L	97.4	70 - 130		
Arsenic		0.400	0.373	ug/L	93.3	70 - 130		
Barium		0.750	0.626	ug/L	83.4	70 - 130		
Cadmium		0.240	0.227	ug/L	94.8	70 - 130		
Chromium		0.800	0.712	ug/L	89.0	70 - 130		
Cobalt		0.400	0.394	ug/L	98.4	70 - 130		
Copper		0.800	0.808	ug/L	101	70 - 130		
Lead		0.200	0.190	ug/L	95.2	70 - 130		
Manganese		0.500	0.484	ug/L	96.8	70 - 130		
Nickel		1.60	1.56	ug/L	97.7	70 - 130		
Silver		0.400	0.361	ug/L	90.3	70 - 130		
Thallium		0.0800	0.0805	ug/L	101	70 - 130		
Vanadium		0.400	0.386	ug/L	96.4	70 - 130		
Zinc		6.25	6.49	ug/L	104	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4812371
Report generated 06/17/2016 14:18

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060411
Instrument ID: ICP-MS2
Sol. A : WG573095-10 **File ID:** NI.061616.160740
Sol. AB : WG573095-11 **File ID:** NI.061616.162201

Workgroup (AAB#): WG572085
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.0793	NS	100	94.6	94.6	
Arsenic	NS	-0.0113	NS	100	102	102	
Barium	NS	0.0676	NS	100	94.7	94.7	
Cadmium	NS	-0.0599	NS	100	96.1	96.1	
Chromium	NS	0.0900	NS	100	99.8	99.8	
Cobalt	NS	0.0224	NS	100	104	104	
Copper	NS	0.277	NS	100	99.9	99.9	
Lead	NS	0.0928	NS	100	98.9	98.9	
Manganese	NS	0.0620	NS	100	106	106	
Nickel	NS	0.326	NS	100	99.4	99.4	
Silver	NS	0.0163	NS	100	85.5	85.5	
Thallium	NS	0.113	NS	100	98.0	98.0	
Vanadium	NS	0.00810	NS	100	100	100	
Zinc	NS	1.37	NS	100	102	102	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4812368
Report generated 06/17/2016 14:17

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060411 **Analytical Method:** 6020
Analytical Workgroup: WG572085 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 16-JUN-2016 15:33

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060411-03	SAMP	16-JUN-2016 22:10	98.034	97.491	104.07
L16060411-04	SAMP	16-JUN-2016 22:14	97.281	105.56	103.468
L16060411-04	SAMP	16-JUN-2016 22:20	98.406	97.649	105.403
WG571964-02	BLANK	16-JUN-2016 21:55	99.009	98.66	100.89
WG571964-03	LCS	16-JUN-2016 21:58	98.2	97.5	104.45
WG572085-03	PSPK	16-JUN-2016 22:17	102.245	104.042	104.814
WG572085-04	SERIAL	16-JUN-2016 22:20	98.406	97.649	105.403
WG572085-04	SERIAL	16-JUN-2016 22:23	96.58	98.38	101.533
WG573095-07	LLICV	16-JUN-2016 15:52	96.13	93.157	96.318
WG573095-08	ICV	16-JUN-2016 15:57	97.13	96.114	99.927
WG573095-09	ICB	16-JUN-2016 16:03	97.661	96.107	100.676
WG573095-10	ICS	16-JUN-2016 16:07	96.606	97.591	98.938
WG573095-11	ICS	16-JUN-2016 16:22	96.039	94.231	101.38
WG573095-12	CCV	16-JUN-2016 16:25	96.818	96.058	101.069
WG573095-13	CCB	16-JUN-2016 16:38	95.395	96.878	98.817
WG573095-20	LLCCV	16-JUN-2016 19:02	98.621	96.559	99.934
WG573095-27	CCV	16-JUN-2016 21:45	94.877	96.278	101.991
WG573095-28	CCB	16-JUN-2016 21:48	95.773	98.51	99.349
WG573095-29	LLCCV	16-JUN-2016 21:51	96.58	95.236	98.152
WG573095-30	CCV	16-JUN-2016 22:26	97.687	97.298	103.451
WG573095-31	CCB	16-JUN-2016 22:30	95.592	97.108	101.466
WG573095-34	LLCCV	16-JUN-2016 23:11	98.537	96.177	103.485

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4812375
Report generated: 06/17/2016 14:17

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16060411 **Date:** 04/19/2016
Insturment ID: ICP-MS2 **Method:** 6020A

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Uranium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4812363
Report generated: 06/17/2016 14:17

2.3.2.3 Raw Data

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Thursday, June 16, 2016 14:07:39

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1326	2024	0.708	
Mg	23.985	23.975	4498	2020	0.704	
Co	58.933	58.975	11692	2022	0.692	
In	114.904	114.875	22859	2028	0.691	
U	238.050	238.075	47457	2043	0.702	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	7.436
5.575	8.287
5.625	3.892
5.675	4.802
5.725	2.185
5.775	3.031
5.825	4.638
5.875	2.806
5.925	2.266
5.975	4.757
6.025	3.190
6.075	3.669
6.125	3.622
6.175	3.148
6.225	8.886
6.275	33.166
6.325	46.481
6.375	46.566
6.425	40.745
6.475	56.845
6.525	15.768
6.575	18.835
6.625	3.774
6.675	4.099
6.725	2.150
6.775	4.632
6.825	1.659

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6.875	4.657
6.925	1.715
6.975	2.467
7.025	2.458
7.075	2.433
7.125	2.586
7.175	4.875
7.225	1.268
7.275	2.064
7.325	10.536
7.375	54.398
7.425	60.990
7.475	63.888
7.525	51.618
7.575	39.529
7.625	69.722
7.675	47.507
7.725	16.110
7.775	58.685
7.825	58.330
7.875	66.667
7.925	61.450
7.975	55.902
8.025	102.740
8.075	55.902
8.125	38.401
8.175	63.949
8.225	43.853
8.275	60.858
8.325	45.079
8.375	40.074
8.425	40.074
8.475	54.149
22.525	
22.575	50.619
22.625	33.641
22.675	51.618
22.725	55.902
22.775	25.951
22.825	27.809
22.875	40.946
22.925	49.701
22.975	18.923
23.025	32.442
23.075	23.055
23.125	25.635
23.175	20.888

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23.225	21.374
23.275	25.000
23.325	45.400
23.375	27.285
23.425	30.987
23.475	25.476
23.525	13.045
23.575	6.296
23.625	2.182
23.675	2.995
23.725	2.713
23.775	2.035
23.825	1.176
23.875	0.613
23.925	0.955
23.975	1.904
24.025	1.612
24.075	1.077
24.125	1.787
24.175	1.904
24.225	1.298
24.275	1.635
24.325	13.413
24.375	39.123
24.425	39.529
24.475	21.077
24.525	2.911
24.575	3.152
24.625	1.254
24.675	1.656
24.725	1.429
24.775	1.818
24.825	1.348
24.875	0.955
24.925	1.650
24.975	0.624
25.025	1.148
25.075	1.394
25.125	0.398
25.175	1.878
25.225	3.006
25.275	5.326
25.325	42.950
25.375	30.619
25.425	70.613
25.475	32.723
57.525	12.330

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57.575	7.587
57.625	2.112
57.675	3.255
57.725	2.490
57.775	2.165
57.825	1.108
57.875	2.141
57.925	2.456
57.975	1.875
58.025	3.007
58.075	2.288
58.125	0.909
58.175	2.980
58.225	2.412
58.275	3.761
58.325	25.824
58.375	36.748
58.425	23.570
58.475	18.248
58.525	7.221
58.575	2.071
58.625	1.712
58.675	1.278
58.725	1.414
58.775	1.870
58.825	1.537
58.875	1.904
58.925	2.989
58.975	2.279
59.025	1.504
59.075	1.307
59.125	2.089
59.175	2.055
59.225	1.826
59.275	4.437
59.325	13.359
59.375	41.110
59.425	58.736
59.475	26.307
59.525	11.352
59.575	4.879
59.625	5.862
59.675	3.367
59.725	2.650
59.775	4.079
59.825	1.668
59.875	2.310

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59.925	1.238
59.975	3.774
60.025	3.677
60.075	1.742
60.125	2.822
60.175	4.864
60.225	4.103
60.275	3.750
60.325	18.054
60.375	31.623
60.425	49.739
60.475	56.723
113.525	6.653
113.575	1.927
113.625	2.838
113.675	2.697
113.725	2.195
113.775	4.236
113.825	2.523
113.875	1.968
113.925	2.426
113.975	2.953
114.025	1.676
114.075	1.976
114.125	1.813
114.175	2.440
114.225	7.942
114.275	11.452
114.325	42.061
114.375	20.163
114.425	13.593
114.475	1.983
114.525	1.683
114.575	2.531
114.625	0.874
114.675	1.279
114.725	0.891
114.775	1.779
114.825	1.186
114.875	1.029
114.925	1.564
114.975	0.950
115.025	1.530
115.075	1.114
115.125	2.208
115.175	3.123
115.225	4.486

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115.275	7.177
115.325	14.172
115.375	54.799
115.425	53.420
115.475	16.011
115.525	12.692
115.575	2.883
115.625	6.251
115.675	4.509
115.725	4.245
115.775	1.283
115.825	4.008
115.875	1.211
115.925	2.114
115.975	7.687
116.025	5.271
116.075	5.578
116.125	4.248
116.175	11.979
116.225	16.277
116.275	30.596
116.325	24.845
116.375	28.284
116.425	54.149
116.475	40.000
236.525	
236.575	23.855
236.625	34.401
236.675	27.422
236.725	35.668
236.775	39.989
236.825	18.757
236.875	23.077
236.925	20.761
236.975	14.650
237.025	36.943
237.075	27.109
237.125	25.586
237.175	42.799
237.225	24.325
237.275	21.429
237.325	30.129
237.375	15.267
237.425	4.597
237.475	48.577
237.525	19.963
237.575	13.238

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237.625	6.730
237.675	7.800
237.725	2.904
237.775	1.428
237.825	2.396
237.875	1.255
237.925	0.555
237.975	1.682
238.025	0.745
238.075	0.906
238.125	0.901
238.175	0.264
238.225	0.953
238.275	0.886
238.325	1.395
238.375	2.556
238.425	2.763
238.475	2.183
238.525	12.890
238.575	14.452
238.625	38.797
238.675	16.933
238.725	6.952
238.775	20.328
238.825	29.472
238.875	37.989
238.925	27.140
238.975	18.731
239.025	17.049
239.075	5.454
239.125	29.410
239.175	29.569
239.225	22.608
239.275	13.847
239.325	15.978
239.375	4.980
239.425	11.111
239.475	34.914

Approved: June 20, 2016

SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\ReportOutput\a.swz

Start Time: 6/16/2016 3:04:36 PM
End Time: 6/16/2016 3:07:03 PM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 4248.80
        Obtained Intensity (Mg 23.985): 62852.37
        Obtained Intensity (In 114.904): 59263.95
        Obtained Intensity (U 238.05): 123631.92
        Obtained Intensity (Bkgd 220): 0.53
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.020 (=3505.01 / 175287.61)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.005 (=894.29 / 175287.61)
```

Report Date/Time: Thursday, June 16, 2016 15:07:03
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SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\ReportOutput\a.swz

Optimization Status

Start Time: 6/16/2016 3:04:36 PM

Daily Performance Check
        Optimization Settings:
                Method: Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 1
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 4248.80
                Obtained Intensity (Mg 23.985): 62852.37
                Obtained Intensity (In 114.904): 59263.95
                Obtained Intensity (U 238.05): 123631.92
                Obtained Intensity (Bkgd 220): 0.53
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.020 (=3505.01 / 175287.61)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.005 (=894.29 / 175287.61)
[Passed]  Optimum value(s): N/A

End Time: 6/16/2016 3:07:03 PM
```


Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Thursday, June 16, 2016 15:30:14
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	51024.1	2.3				ug/L		Standard
	Be	9	6.7	43.3				ug/L		Standard
	Al	27	625.0	8.5				ug/L		Standard
	Sc	45	29647.3	3.2				ug/L		Standard
	Ti	47	57.3	8.1				ug/L		Standard
	V	51	1141.9	1.8				ug/L		Standard
	Cr	52	6628.1	1.7				ug/L		Standard
	Cr	53	430.0	9.1				ug/L		Standard
	Mn	55	603.3	5.5				ug/L		Standard
	Co	59	237.3	7.6				ug/L		Standard
	Ni	60	141.0	3.9				ug/L		Standard
	Cu	65	109.0	10.8				ug/L		Standard
	Zn	66	159.0	8.8				ug/L		Standard
>	Ge	72	474053.1	1.2				ug/L		Standard
	As	75	-34.2	89.8				ug/L		Standard
	Se	82	14.4	39.0				ug/L		Standard
	Se-1	77	55.3	3.8				ug/L		Standard
>	Ga	71	50.0	36.1				mg/L		Standard
	Rb	85	20.0	43.3				ug/L		Standard
	Y	89	376601.7	1.2				ug/L		Standard
>	Rh	103	16.7	69.3				ug/L		Standard
	Mo	98	8.0	17.7				ug/L		Standard
	Ag	107	80.7	16.9				ug/L		Standard
	Cd	111	3.0	0.1				mg/L		Standard
	Cd	114	7.5	153.9				ug/L		Standard
>	In	115	524721.8	2.2				ug/L		Standard
	Sn	118	715.0	18.5				ug/L		Standard
	Sb	123	200.9	30.1				ug/L		Standard
	Ba	135	107.7	7.0				ug/L		Standard
	Ce	140	30.0	0.0				ug/L		Standard
>	Tb	159	792236.5	1.3				ug/L		Standard
	Ho	165	6.7	43.3				ug/L		Standard
	Tl	203	9.0	50.9				ug/L		Standard
	Tl	205	0.0					ug/L		Standard
	Pb	206	216.0	6.4				ug/L		Standard
	Pb	207	179.7	5.8				ug/L		Standard
	Pb	208	717.3	4.2				ug/L		Standard
	U	238	3.7	15.7				ug/L		Standard
>	Bi	209	460342.9	1.5				ug/L		Standard

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	Na	23	0.0		mg/L	Standard
	Mg	24	20.0	50.0	mg/L	Standard
	K	39	21.7	26.6	mg/L	Standard
	Ca	43	46.7	27.0	mg/L	Standard
	Fe	54	151.0	18.9	mg/L	Standard
	Fe	57	195.0	11.2	mg/L	Standard
>	**Sc-1**	45	29647.3	3.2	mg/L	Standard
	Cl	35	154151.6	0.9	ug/L	Standard
	Kr	83	3.3	17.3	ug/L	Standard
	Br	81	1606.8	11.7	ug/L	Standard
	P	31	22752.1	1.8	ug/L	Standard
	S	34	5049.2	1.8	ug/L	Standard
	Sr	88	86.7	6.7	ug/L	Standard
	C	12	46.7	24.7	mg/L	Standard
	N	14	0.0		mg/L	Standard
	Hg	202	0.0		mg/L	Standard
	Dy	164	9.8	99.2	mg/L	Standard
	Ho-1	165	6.7	43.3	mg/L	Standard
	Er	166	3.3	173.2	mg/L	Standard
	I	127	841.7	10.5	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Blank
Report Date/Time: Thursday, June 16, 2016 15:32:31
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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Thursday, June 16, 2016 15:33:26
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61336.5	17.7				ug/L	51024	Standard
	Be	9	5.0	100.0				ug/L	7	Standard
	Al	27	221.7	31.9				ug/L	625	Standard
	Sc	45	28802.5	9.9				ug/L	29647	Standard
	Ti	47	62.3	33.0				ug/L	57	Standard
	V	51	580.8	14.0				ug/L	1142	Standard
	Cr	52	2885.9	3.7				ug/L	6628	Standard
	Cr	53	203.3	7.5				ug/L	430	Standard
	Mn	55	613.3	37.8				ug/L	603	Standard
	Co	59	262.7	10.4				ug/L	237	Standard
	Ni	60	108.3	5.6				ug/L	141	Standard
	Cu	65	79.7	10.1				ug/L	109	Standard
	Zn	66	145.3	10.1				ug/L	159	Standard
>	**Ge**	72	493610.1	8.2				ug/L	474053	Standard
	As	75	72.1	70.6				ug/L	-34	Standard
	Se	82	46.9	37.4				ug/L	14	Standard
	Se-1	77	47.7	12.6				ug/L	55	Standard
>	**Ga**	71	35.0	37.8				mg/L	50	Standard
	Rb	85	20.0	0.0				ug/L	20	Standard
	Y	89	401482.6	6.9				ug/L	376602	Standard
>	**Rh**	103	11.7	107.9				ug/L	17	Standard
	Mo	98	7.8	54.6				ug/L	8	Standard
	Ag	107	82.7	18.8				ug/L	81	Standard
	Cd	111	3.7	15.8				mg/L	3	Standard
	Cd	114	6.4	91.9				ug/L	7	Standard
>	**In**	115	555148.6	6.0				ug/L	524722	Standard
	Sn	118	256.7	2.2				ug/L	715	Standard
	Sb	123	44.3	25.6				ug/L	201	Standard
	Ba	135	17.0	5.9				ug/L	108	Standard
	Ce	140	18.3	15.7				ug/L	30	Standard
>	**Tb**	159	901198.6	13.9				ug/L	792236	Standard
	Ho	165	1.7	173.2				ug/L	7	Standard
	Tl	203	10.0	75.5				ug/L	9	Standard
	Tl	205	8.3	124.9				ug/L	0	Standard
	Pb	206	256.7	23.8				ug/L	216	Standard
	Pb	207	208.0	18.4				ug/L	180	Standard
	Pb	208	827.7	17.4				ug/L	717	Standard
	U	238	2.7	21.7				ug/L	4	Standard
>	**Bi**	209	546132.2	18.5				ug/L	460343	Standard

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	Na	23	0.0		mg/L	0	Standard
	Mg	24	28.3	10.2	mg/L	20	Standard
	K	39	15.0	33.3	mg/L	22	Standard
	Ca	43	50.0	17.3	mg/L	47	Standard
	Fe	54	136.0	58.3	mg/L	151	Standard
	Fe	57	195.0	23.5	mg/L	195	Standard
>	**Sc-1**	45	28802.5	9.9	mg/L	29647	Standard
	Cl	35	67826.3	3.7	ug/L	154152	Standard
	Kr	83	1.7	34.6	ug/L	3	Standard
	Br	81	586.7	16.8	ug/L	1607	Standard
	P	31	15342.0	42.1	ug/L	22752	Standard
	S	34	2116.8	1.5	ug/L	5049	Standard
	Sr	88	106.7	39.0	ug/L	87	Standard
	C	12	23.3	24.7	mg/L	47	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	3.3	173.2	mg/L	0	Standard
	Dy	164	9.5	5.0	mg/L	10	Standard
	Ho-1	165	1.7	173.2	mg/L	7	Standard
	Er	166	10.0	100.0	mg/L	3	Standard
	I	127	316.7	10.7	mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Thursday, June 16, 2016 15:36:37
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48482.4	0.7				ug/L	51024	Standard
	Be	9	56.7	51.7				ug/L	7	Standard
	Al	27	8083.8	2.1				ug/L	625	Standard
	Sc	45	30706.1	1.7				ug/L	29647	Standard
	Ti	47	79.3	15.6				ug/L	57	Standard
	V	51	1543.2	4.3				ug/L	1142	Standard
	Cr	52	7153.0	1.0				ug/L	6628	Standard
	Cr	53	445.0	12.2				ug/L	430	Standard
	Mn	55	1041.0	0.8				ug/L	603	Standard
	Co	59	583.0	7.0				ug/L	237	Standard
	Ni	60	245.0	4.3				ug/L	141	Standard
	Cu	65	217.0	8.3				ug/L	109	Standard
	Zn	66	310.7	2.1				ug/L	159	Standard
>	**Ge**	72	471168.8	0.1				ug/L	474053	Standard
	As	75	27.4	88.1				ug/L	-34	Standard
	Se	82	24.1	10.8				ug/L	14	Standard
	Se-1	77	60.7	6.2				ug/L	55	Standard
>	**Ga**	71	60.0	28.9				mg/L	50	Standard
	Rb	85	21.7	26.6				ug/L	20	Standard
	Y	89	408481.5	2.2				ug/L	376602	Standard
>	**Rh**	103	23.3	24.7				ug/L	17	Standard
	Mo	98	258.4	4.9				ug/L	8	Standard
	Ag	107	385.7	3.9				ug/L	81	Standard
	Cd	111	107.2	4.8				mg/L	3	Standard
	Cd	114	267.5	8.7				ug/L	7	Standard
>	**In**	115	544133.0	1.6				ug/L	524722	Standard
	Sn	118	778.4	8.1				ug/L	715	Standard
	Sb	123	293.5	11.5				ug/L	201	Standard
	Ba	135	202.3	5.5				ug/L	108	Standard
	Ce	140	46.7	80.4				ug/L	30	Standard
>	**Tb**	159	788761.6	1.1				ug/L	792236	Standard
	Ho	165	18.3	56.8				ug/L	7	Standard
	Tl	203	392.3	6.9				ug/L	9	Standard
	Tl	205	366.7	20.5				ug/L	0	Standard
	Pb	206	479.7	4.5				ug/L	216	Standard
	Pb	207	426.3	6.0				ug/L	180	Standard
	Pb	208	1798.4	0.2				ug/L	717	Standard
	U	238	349.3	5.8				ug/L	4	Standard
>	**Bi**	209	449760.6	0.7				ug/L	460343	Standard

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Na	23	3.3	86.6	mg/L	0	Standard
Mg	24	38.3	27.2	mg/L	20	Standard
K	39	31.7	24.1	mg/L	22	Standard
Ca	43	58.3	21.6	mg/L	47	Standard
Fe	54	152.6	18.2	mg/L	151	Standard
Fe	57	218.3	10.3	mg/L	195	Standard
> **Sc-1**	45	30706.1	1.7	mg/L	29647	Standard
Cl	35	159978.9	1.3	ug/L	154152	Standard
Kr	83	1.3	43.3	ug/L	3	Standard
Br	81	1600.1	10.1	ug/L	1607	Standard
P	31	22997.4	1.5	ug/L	22752	Standard
S	34	5302.6	1.3	ug/L	5049	Standard
Sr	88	58.3	27.6	ug/L	87	Standard
C	12	23.3	65.5	mg/L	47	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	0.0		mg/L	0	Standard
Dy	164	2.7	234.8	mg/L	10	Standard
Ho-1	165	18.3	56.8	mg/L	7	Standard
Er	166	13.3	86.6	mg/L	3	Standard
I	127	928.4	11.9	mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Thursday, June 16, 2016 15:39:49
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50565.9	1.8				ug/L	51024	Standard
	Be	9	42044.9	2.0	**50.0000**	1.656	3.3	ug/L	7	Standard
	Al	27	7094492.1	1.7	**50.0000**	0.240	0.5	ug/L	625	Standard
	Sc	45	29363.4	3.4				ug/L	29647	Standard
	Ti	47	29759.2	1.6	**100.0000**	1.722	1.7	ug/L	57	Standard
	V	51	356139.2	0.8	**50.0000**	0.331	0.7	ug/L	1142	Standard
	Cr	52	369550.1	0.3	**50.0000**	0.347	0.7	ug/L	6628	Standard
	Cr	53	46382.6	2.2	**50.0000**	0.884	1.8	ug/L	430	Standard
	Mn	55	295860.1	0.8	**50.0000**	0.768	1.5	ug/L	603	Standard
	Co	59	321303.4	0.4	**50.0000**	0.569	1.1	ug/L	237	Standard
	Ni	60	95975.7	0.7	**50.0000**	0.220	0.4	ug/L	141	Standard
	Cu	65	93739.7	0.2	**50.0000**	0.238	0.5	ug/L	109	Standard
	Zn	66	55396.4	0.5	**50.0000**	0.181	0.4	ug/L	159	Standard
>	**Ge**	72	471316.6	0.7				ug/L	474053	Standard
	As	75	55401.6	1.7	**50.0000**	1.157	2.3	ug/L	-34	Standard
	Se	82	5512.4	2.0	**50.0000**	1.370	2.7	ug/L	14	Standard
	Se-1	77	3915.5	0.9	**50.0000**	0.786	1.6	ug/L	55	Standard
>	**Ga**	71	120.0	8.3				mg/L	50	Standard
	Rb	85	818.4	2.5				ug/L	20	Standard
	Y	89	383423.6	1.9				ug/L	376602	Standard
>	**Rh**	103	26.7	39.0				ug/L	17	Standard
	Mo	98	238525.6	1.7	**100.0000**	2.248	2.2	ug/L	8	Standard
	Ag	107	300586.5	1.0	**50.0000**	0.931	1.9	ug/L	81	Standard
	Cd	111	96734.5	0.7	**50.0000**	0.446	0.9	mg/L	3	Standard
	Cd	114	239222.4	0.8	**50.0000**	0.320	0.6	ug/L	7	Standard
>	**In**	115	516883.8	1.3				ug/L	524722	Standard
	Sn	118	269170.5	1.9	**50.0000**	0.357	0.7	ug/L	715	Standard
	Sb	123	219395.1	0.6	**50.0000**	0.615	1.2	ug/L	201	Standard
	Ba	135	90538.0	0.9	**50.0000**	0.240	0.5	ug/L	108	Standard
	Ce	140	98.3	33.1				ug/L	30	Standard
>	**Tb**	159	780626.5	1.3				ug/L	792236	Standard
	Ho	165	5.0	0.0				ug/L	7	Standard
	Tl	203	372504.5	0.5	**50.0000**	0.339	0.7	ug/L	9	Standard
	Tl	205	316386.0	0.8	**50.0000**	0.414	0.8	ug/L	0	Standard
	Pb	206	225338.3	0.7	**50.0000**	0.467	0.9	ug/L	216	Standard
	Pb	207	205697.6	0.7	**50.0000**	0.491	1.0	ug/L	180	Standard
	Pb	208	831229.4	0.5	**50.0000**	0.375	0.7	ug/L	717	Standard
	U	238	300295.4	0.8	**50.0000**	0.316	0.6	ug/L	4	Standard
>	**Bi**	209	447053.1	1.0				ug/L	460343	Standard

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	Na	23	1.7	173.2	**5.0000**	10.302	206.0	mg/L	0	Standard
	Mg	24	3705.5	6.1	**5.0000**	0.367	7.3	mg/L	20	Standard
	K	39	671.7	7.3	**5.0000**	0.265	5.3	mg/L	22	Standard
	Ca	43	63.3	43.5	**5.0000**	18.565	371.3	mg/L	47	Standard
	Fe	54	6334.8	3.3	**5.0000**	0.319	6.4	mg/L	151	Standard
	Fe	57	1861.8	5.0	**5.0000**	0.466	9.3	mg/L	195	Standard
>	**Sc-1**	45	29363.4	3.4				mg/L	29647	Standard
	Cl	35	161698.3	1.0				ug/L	154152	Standard
	Kr	83	2.7	21.7				ug/L	3	Standard
	Br	81	1496.7	10.1				ug/L	1607	Standard
	P	31	25361.3	5.9				ug/L	22752	Standard
	S	34	5722.8	8.3				ug/L	5049	Standard
	Sr	88	76.7	13.6				ug/L	87	Standard
	C	12	36.7	41.7				mg/L	47	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	0	Standard
	Dy	164	16.3	126.2				mg/L	10	Standard
	Ho-1	165	5.0	0.0				mg/L	7	Standard
	Er	166	6.7	86.6				mg/L	3	Standard
	I	127	6142.9	1.3				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Thursday, June 16, 2016 15:43:00
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	50435.5	1.6				ug/L	51024	Standard
	Be	9	82346.5	1.2	**99.0819**	1.677	1.7	ug/L	7	Standard
	Al	27	13992181.1	1.0	**99.4387**	0.736	0.7	ug/L	625	Standard
	Sc	45	30006.4	2.8				ug/L	29647	Standard
	Ti	47	58505.4	1.0	**200.8925**	5.085	2.5	ug/L	57	Standard
	V	51	687977.3	0.6	**99.6029**	0.871	0.9	ug/L	1142	Standard
	Cr	52	725902.3	0.9	**100.8293**	2.361	2.3	ug/L	6628	Standard
	Cr	53	91049.5	2.4	**100.5343**	1.118	1.1	ug/L	430	Standard
	Mn	55	576461.1	0.2	**100.0121**	1.485	1.5	ug/L	603	Standard
	Co	59	620596.3	0.4	**99.5359**	1.816	1.8	ug/L	237	Standard
	Ni	60	187359.0	1.0	**100.0839**	1.180	1.2	ug/L	141	Standard
	Cu	65	182121.9	1.8	**99.8326**	0.584	0.6	ug/L	109	Standard
	Zn	66	107693.4	1.7	**99.9466**	0.229	0.2	ug/L	159	Standard
>	Ge	72	459665.5	1.5				ug/L	474053	Standard
	As	75	106571.4	0.3	**99.2933**	1.200	1.2	ug/L	-34	Standard
	Se	82	10745.6	0.0	**100.0548**	1.484	1.5	ug/L	14	Standard
	Se-1	77	7418.5	2.3	**98.9131**	3.363	3.4	ug/L	55	Standard
>	Ga	71	103.3	32.2				mg/L	50	Standard
	Rb	85	1393.4	13.3				ug/L	20	Standard
	Y	89	377187.2	0.3				ug/L	376602	Standard
>	Rh	103	38.3	45.8				ug/L	17	Standard
	Mo	98	461069.8	0.9	**194.9574**	1.968	1.0	ug/L	8	Standard
	Ag	107	583703.5	0.6	**97.7109**	0.535	0.5	ug/L	81	Standard
	Cd	111	192033.7	0.5	**98.8117**	0.100	0.1	mg/L	3	Standard
	Cd	114	474593.2	1.8	**98.7794**	1.465	1.5	ug/L	7	Standard
>	In	115	525374.3	0.4				ug/L	524722	Standard
	Sn	118	532965.7	1.1	**98.7299**	1.022	1.0	ug/L	715	Standard
	Sb	123	428817.2	1.1	**98.0404**	1.345	1.4	ug/L	201	Standard
	Ba	135	179232.3	1.1	**98.7001**	1.049	1.1	ug/L	108	Standard
	Ce	140	138.3	11.0				ug/L	30	Standard
>	Tb	159	777561.5	1.7				ug/L	792236	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	728897.3	1.0	**99.5734**	0.952	1.0	ug/L	9	Standard
	Tl	205	620686.4	2.0	**99.7030**	1.645	1.6	ug/L	0	Standard
	Pb	206	440868.6	1.2	**99.5956**	1.751	1.8	ug/L	216	Standard
	Pb	207	400234.3	1.0	**99.3185**	1.537	1.5	ug/L	180	Standard
	Pb	208	1631531.3	1.4	**99.7532**	0.911	0.9	ug/L	717	Standard
	U	238	597917.2	1.3	**100.4447**	0.594	0.6	ug/L	4	Standard
>	Bi	209	441150.8	1.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	7450.2	2.2	**9.9373**	0.220	2.2	mg/L	20	Standard
K	39	1375.1	15.8	**10.1223**	1.524	15.1	mg/L	22	Standard
Ca	43	130.0	15.4	**16.7571**	3.894	23.2	mg/L	47	Standard
Fe	54	12357.9	4.2	**9.8157**	0.430	4.4	mg/L	151	Standard
Fe	57	3355.4	5.1	**9.6321**	0.814	8.4	mg/L	195	Standard
Sc-1	45	30006.4	2.8				mg/L	29647	Standard
Cl	35	163219.8	1.1				ug/L	154152	Standard
Kr	83	2.3	99.0				ug/L	3	Standard
Br	81	1446.7	4.9				ug/L	1607	Standard
P	31	26878.8	3.1				ug/L	22752	Standard
S	34	5969.5	3.7				ug/L	5049	Standard
Sr	88	53.3	21.7				ug/L	87	Standard
C	12	56.7	36.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	16.2	33.1				mg/L	10	Standard
Ho-1	165	8.3	69.3				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	6194.6	1.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998
Corr. Coef.	Ca	43	Correlation coefficient < 0.998

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Thursday, June 16, 2016 15:46:13
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	48900.5	1.4				ug/L	51024	Standard
	Be	9	40029.5	1.7	**49.6695**	1.322	2.7	ug/L	7	Standard
	Al	27	6807595.1	1.1	**49.8931**	0.613	1.2	ug/L	625	Standard
	Sc	45	29859.4	2.2				ug/L	29647	Standard
	Ti	47	30234.8	0.9	**101.5179**	0.557	0.5	ug/L	57	Standard
	V	51	345968.9	0.4	**48.9414**	0.135	0.3	ug/L	1142	Standard
	Cr	52	361268.5	1.4	**48.6339**	0.583	1.2	ug/L	6628	Standard
	Cr	53	44796.1	1.2	**48.2008**	0.799	1.7	ug/L	430	Standard
	Mn	55	290150.7	1.7	**49.2058**	0.854	1.7	ug/L	603	Standard
	Co	59	308353.8	2.9	**48.3820**	1.390	2.9	ug/L	237	Standard
	Ni	60	93264.8	0.6	**48.7266**	0.581	1.2	ug/L	141	Standard
	Cu	65	92121.6	1.1	**49.4021**	0.815	1.6	ug/L	109	Standard
	Zn	66	55388.4	1.1	**50.2077**	0.826	1.6	ug/L	159	Standard
>	Ge	72	469579.4	0.6				ug/L	474053	Standard
	As	75	54025.0	1.0	**49.2819**	0.719	1.5	ug/L	-34	Standard
	Se	82	5305.3	2.4	**48.2613**	1.119	2.3	ug/L	14	Standard
	Se-1	77	3733.1	1.8	**48.3299**	0.600	1.2	ug/L	55	Standard
>	Ga	71	121.7	8.6				mg/L	50	Standard
	Rb	85	516.7	11.5				ug/L	20	Standard
	Y	89	375718.4	2.6				ug/L	376602	Standard
>	Rh	103	33.3	67.6				ug/L	17	Standard
	Mo	98	242646.9	2.2	**104.6905**	2.943	2.8	ug/L	8	Standard
	Ag	107	289971.5	0.6	**49.5201**	0.189	0.4	ug/L	81	Standard
	Cd	111	93046.4	0.5	**48.8483**	0.170	0.3	mg/L	3	Standard
	Cd	114	230715.9	0.2	**48.9961**	0.373	0.8	ug/L	7	Standard
>	In	115	514920.2	0.6				ug/L	524722	Standard
	Sn	118	284710.7	1.9	**53.7768**	1.357	2.5	ug/L	715	Standard
	Sb	123	208688.7	0.3	**48.6728**	0.184	0.4	ug/L	201	Standard
	Ba	135	85799.9	0.5	**48.1785**	0.093	0.2	ug/L	108	Standard
	Ce	140	120.0	21.7				ug/L	30	Standard
>	Tb	159	776088.7	0.5				ug/L	792236	Standard
	Ho	165	16.7	45.8				ug/L	7	Standard
	Tl	203	358537.1	1.1	**48.0462**	0.455	0.9	ug/L	9	Standard
	Tl	205	307552.3	1.7	**48.4612**	0.738	1.5	ug/L	0	Standard
	Pb	206	224129.9	0.7	**49.6400**	0.561	1.1	ug/L	216	Standard
	Pb	207	195303.0	0.4	**47.5147**	0.574	1.2	ug/L	180	Standard
	Pb	208	802915.7	0.1	**48.1309**	0.507	1.1	ug/L	717	Standard
	U	238	288986.2	0.3	**47.6224**	0.342	0.7	ug/L	4	Standard
>	Bi	209	449693.2	1.0				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3802.1	3.0	**5.0768**	0.262	5.2	mg/L	20	Standard
K	39	675.0	17.5	**4.8950**	0.999	20.4	mg/L	22	Standard
Ca	43	53.3	10.8	**-0.7985**	1.553	194.4	mg/L	47	Standard
Fe	54	5993.9	4.1	**4.7227**	0.110	2.3	mg/L	151	Standard
Fe	57	1776.8	6.7	**4.8135**	0.313	6.5	mg/L	195	Standard
> **Sc-1**	45	29859.4	2.2				mg/L	29647	Standard
Cl	35	159749.2	1.5				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	1490.1	3.7				ug/L	1607	Standard
P	31	25977.3	1.4				ug/L	22752	Standard
S	34	5996.2	1.4				ug/L	5049	Standard
Sr	88	60.0	22.0				ug/L	87	Standard
C	12	80.0	66.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	13.3	43.3				mg/L	10	Standard
Ho-1	165	16.7	45.8				mg/L	7	Standard
Er	166	0.0					mg/L	3	Standard
I	127	935.0	3.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	99.339		
Al	27	99.786		
Sc	45			
Ti	47	101.518		
V	51	97.883		
Cr	52	97.268		
Cr	53			
Mn	55	98.412		
Co	59	96.764		
Ni	60	97.453		
Cu	65	98.804		
Zn	66	100.415		
> Ge	72		99.056	
As	75	98.564		
Se	82	96.523		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	104.691		
Ag	107	99.040		
Cd	111	97.697		
Cd	114			
In	115		98.132	
Sn	118	107.554		
Sb	123	97.346		
Ba	135	96.357		
Ce	140			
Tb	159			
Ho	165			
Tl	203	96.092		
Tl	205			
Pb	206	99.280		
Pb	207	95.029		
Pb	208	96.262		
U	238	95.245		
Bi	209		97.687	
Na	23	209.044		
Mg	24	101.535		
K	39	97.901		
Ca	43	-15.971		
Fe	54	94.453		
Fe	57	96.269		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	K	39	
QC Std 1	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Thursday, June 16, 2016 15:49:26
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48778.4	0.5				ug/L	51024	Standard
	Be	9	35.0	28.6	**0.0225**	0.013	56.3	ug/L	7	Standard
	Al	27	2908.6	43.3	**0.0116**	0.009	80.6	ug/L	625	Standard
	Sc	45	29670.7	2.3				ug/L	29647	Standard
	Ti	47	66.7	16.0	**0.0643**	0.036	55.5	ug/L	57	Standard
	V	51	1072.6	10.6	**-0.0119**	0.017	142.0	ug/L	1142	Standard
	Cr	52	6126.6	0.6	**-0.0646**	0.004	6.2	ug/L	6628	Standard
	Cr	53	356.7	16.1	**-0.0336**	0.065	194.5	ug/L	430	Standard
	Mn	55	698.3	6.8	**-0.0044**	0.009	209.1	ug/L	603	Standard
	Co	59	364.0	15.3	**0.0175**	0.009	54.1	ug/L	237	Standard
	Ni	60	154.7	17.5	**0.0055**	0.015	280.7	ug/L	141	Standard
	Cu	65	145.3	17.7	**0.0141**	0.015	104.9	ug/L	109	Standard
	Zn	66	148.7	11.8	**-0.0929**	0.016	17.2	ug/L	159	Standard
>	**Ge**	72	457105.8	0.9				ug/L	474053	Standard
	As	75	54.4	52.5	**0.0762**	0.027	35.8	ug/L	-34	Standard
	Se	82	25.8	22.3	**0.0738**	0.056	76.3	ug/L	14	Standard
	Se-1	77	51.3	21.0	**-0.0508**	0.151	296.8	ug/L	55	Standard
>	**Ga**	71	53.3	14.3				mg/L	50	Standard
	Rb	85	23.3	65.5				ug/L	20	Standard
	Y	89	386808.9	0.9				ug/L	376602	Standard
>	**Rh**	103	15.0	88.2				ug/L	17	Standard
	Mo	98	421.2	15.5	**0.1736**	0.026	15.2	ug/L	8	Standard
	Ag	107	183.0	26.0	**0.0185**	0.008	41.8	ug/L	81	Standard
	Cd	111	25.9	54.3	**0.0101**	0.007	70.6	mg/L	3	Standard
	Cd	114	76.1	40.9	**0.0121**	0.006	52.7	ug/L	7	Standard
>	**In**	115	521804.6	1.0				ug/L	524722	Standard
	Sn	118	1013.4	16.6	**0.0999**	0.033	32.7	ug/L	715	Standard
	Sb	123	1969.5	19.3	**0.4392**	0.092	20.9	ug/L	201	Standard
	Ba	135	122.3	18.3	**0.0101**	0.012	117.5	ug/L	108	Standard
	Ce	140	26.7	10.8				ug/L	30	Standard
>	**Tb**	159	767907.3	1.3				ug/L	792236	Standard
	Ho	165	6.7	173.2				ug/L	7	Standard
	Tl	203	152.0	42.0	**0.0183**	0.009	47.5	ug/L	9	Standard
	Tl	205	141.7	44.8	**0.0150**	0.010	67.4	ug/L	0	Standard
	Pb	206	285.3	8.6	**0.0085**	0.005	61.9	ug/L	216	Standard
	Pb	207	228.0	15.9	**0.0031**	0.009	284.7	ug/L	180	Standard
	Pb	208	1006.0	13.7	**0.0040**	0.008	208.4	ug/L	717	Standard
	U	238	107.3	30.4	**0.0105**	0.005	51.5	ug/L	4	Standard
>	**Bi**	209	438481.4	0.6				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	33.3	31.2	**-0.0002**	0.013	6870.4	mg/L	20	Standard
K	39	25.0	20.0	**-0.0379**	0.034	91.0	mg/L	22	Standard
Ca	43	46.7	37.6	**-2.2322**	4.367	195.6	mg/L	47	Standard
Fe	54	197.5	14.9	**0.0458**	0.026	57.7	mg/L	151	Standard
Fe	57	191.7	16.8	**-0.0529**	0.109	205.7	mg/L	195	Standard
Sc-1	45	29670.7	2.3				mg/L	29647	Standard
Cl	35	161750.4	2.1				ug/L	154152	Standard
Kr	83	2.7	21.7				ug/L	3	Standard
Br	81	1533.4	11.2				ug/L	1607	Standard
P	31	25499.8	1.3				ug/L	22752	Standard
S	34	5937.8	4.1				ug/L	5049	Standard
Sr	88	66.7	35.4				ug/L	87	Standard
C	12	33.3	75.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.0	187.0				mg/L	10	Standard
Ho-1	165	6.7	173.2				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	1050.0	3.1				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.425	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.444
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.251
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Na	23	
QC Std 2	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Thursday, June 16, 2016 15:52:39
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	47293.7	2.4				ug/L	51024	Standard
	Be	9	145.0	20.7	**0.1655**	0.042	25.4	ug/L	7	Standard
	Al	27	1435.1	31.2	**0.0012**	0.004	314.1	ug/L	625	Standard
	Sc	45	28264.7	3.0				ug/L	29647	Standard
	Ti	47	62.3	15.2	**0.0569**	0.033	58.3	ug/L	57	Standard
	V	51	3460.4	3.6	**0.3540**	0.018	5.2	ug/L	1142	Standard
	Cr	52	11315.9	0.6	**0.7230**	0.033	4.5	ug/L	6628	Standard
	Cr	53	1030.0	4.2	**0.7573**	0.039	5.1	ug/L	430	Standard
	Mn	55	3199.7	2.3	**0.4520**	0.007	1.5	ug/L	603	Standard
	Co	59	2520.2	3.3	**0.3798**	0.019	5.0	ug/L	237	Standard
	Ni	60	2902.6	0.9	**1.5376**	0.034	2.2	ug/L	141	Standard
	Cu	65	1498.7	1.3	**0.7897**	0.019	2.5	ug/L	109	Standard
	Zn	66	7175.7	0.5	**6.7167**	0.069	1.0	ug/L	159	Standard
>	**Ge**	72	441612.7	1.4				ug/L	474053	Standard
	As	75	399.1	9.4	**0.4120**	0.037	8.9	ug/L	-34	Standard
	Se	82	50.3	13.1	**0.3188**	0.059	18.5	ug/L	14	Standard
	Se-1	77	79.7	18.1	**0.3705**	0.214	57.7	ug/L	55	Standard
>	**Ga**	71	46.7	22.3				mg/L	50	Standard
	Rb	85	16.7	96.4				ug/L	20	Standard
	Y	89	357595.4	2.3				ug/L	376602	Standard
>	**Rh**	103	11.7	49.5				ug/L	17	Standard
	Mo	98	140.4	6.4	**0.0562**	0.004	6.6	ug/L	8	Standard
	Ag	107	2290.2	1.1	**0.3863**	0.009	2.4	ug/L	81	Standard
	Cd	111	448.4	2.4	**0.2366**	0.001	0.5	mg/L	3	Standard
	Cd	114	1122.4	5.7	**0.2391**	0.015	6.2	ug/L	7	Standard
>	**In**	115	505402.5	2.0				ug/L	524722	Standard
	Sn	118	471.7	16.6	**0.0014**	0.014	1036.4	ug/L	715	Standard
	Sb	123	1900.7	8.3	**0.4366**	0.030	6.9	ug/L	201	Standard
	Ba	135	1270.4	2.8	**0.6703**	0.033	4.9	ug/L	108	Standard
	Ce	140	16.7	62.4				ug/L	30	Standard
>	**Tb**	159	761635.7	0.6				ug/L	792236	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	619.3	5.8	**0.0818**	0.004	5.4	ug/L	9	Standard
	Tl	205	548.3	4.7	**0.0800**	0.003	4.2	ug/L	0	Standard
	Pb	206	1103.4	2.4	**0.1922**	0.004	2.3	ug/L	216	Standard
	Pb	207	900.7	2.9	**0.1691**	0.006	3.6	ug/L	180	Standard
	Pb	208	3946.5	2.5	**0.1828**	0.006	3.5	ug/L	717	Standard
	U	238	2295.5	1.9	**0.3769**	0.006	1.5	ug/L	4	Standard
>	**Bi**	209	442529.2	1.0				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	23.3	12.4	**-0.0120**	0.004	34.9	mg/L	20	Standard
K	39	20.0	25.0	**-0.0675**	0.043	63.8	mg/L	22	Standard
Ca	43	46.7	52.9	**-1.7510**	6.062	346.2	mg/L	47	Standard
Fe	54	119.0	25.4	**-0.0137**	0.024	175.0	mg/L	151	Standard
Fe	57	175.0	35.1	**-0.0751**	0.210	280.1	mg/L	195	Standard
Sc-1	45	28264.7	3.0				mg/L	29647	Standard
Cl	35	154177.8	0.4				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	1336.7	4.9				ug/L	1607	Standard
P	31	17880.5	2.1				ug/L	22752	Standard
S	34	5776.1	4.1				ug/L	5049	Standard
Sr	88	76.7	43.4				ug/L	87	Standard
C	12	16.7	69.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.4	191.0				mg/L	10	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	3	Standard
I	127	743.4	2.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	82.727		
Al	27	0.117		
Sc	45			
Ti	47			
V	51	88.501		
Cr	52	90.378		
Cr	53			
Mn	55	90.403		
Co	59	94.938		
Ni	60	96.097		
Cu	65	98.718		
Zn	66	107.467		
Ge	72		93.157	
As	75	103.009		
Se	82	79.699		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	96.587		
Cd	111	98.585		
Cd	114			
> In	115			96.318
Sn	118			
Sb	123	109.162		
Ba	135	89.380		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	102.188		
Tl	205			
Pb	206			
Pb	207			
Pb	208	91.390		
U	238	94.214		
> Bi	209			96.130
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Thursday, June 16, 2016 15:57:46
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	49537.5	0.6				ug/L	51024	Standard
	Be	9	39588.3	1.2	**48.4820**	0.764	1.6	ug/L	7	Standard
	Al	27	6811607.5	1.0	**49.2765**	0.287	0.6	ug/L	625	Standard
	Sc	45	29944.6	0.9				ug/L	29647	Standard
	Ti	47	30600.5	1.8	**105.9033**	0.546	0.5	ug/L	57	Standard
	V	51	333819.4	1.0	**48.6741**	0.557	1.1	ug/L	1142	Standard
	Cr	52	362624.9	0.8	**50.3521**	0.653	1.3	ug/L	6628	Standard
	Cr	53	44669.1	0.6	**49.5578**	1.018	2.1	ug/L	430	Standard
	Mn	55	295010.7	1.9	**51.5679**	0.147	0.3	ug/L	603	Standard
	Co	59	304256.6	2.3	**49.2031**	0.778	1.6	ug/L	237	Standard
	Ni	60	92980.9	2.3	**50.0643**	0.335	0.7	ug/L	141	Standard
	Cu	65	90826.1	1.2	**50.2022**	0.411	0.8	ug/L	109	Standard
	Zn	66	53553.2	3.1	**50.0191**	0.561	1.1	ug/L	159	Standard
>	Ge	72	455630.4	2.0				ug/L	474053	Standard
	As	75	53060.3	1.3	**49.8858**	0.388	0.8	ug/L	-34	Standard
	Se	82	5361.3	1.9	**50.2739**	0.522	1.0	ug/L	14	Standard
	Se-1	77	3719.8	1.8	**49.6698**	1.476	3.0	ug/L	55	Standard
>	Ga	71	106.7	19.5				mg/L	50	Standard
	Rb	85	516.7	9.1				ug/L	20	Standard
	Y	89	378420.4	2.1				ug/L	376602	Standard
>	Rh	103	21.7	74.2				ug/L	17	Standard
	Mo	98	235943.4	1.8	**99.9874**	3.042	3.0	ug/L	8	Standard
	Ag	107	287193.3	1.4	**48.1797**	1.433	3.0	ug/L	81	Standard
	Cd	111	93247.5	0.8	**48.0828**	0.885	1.8	mg/L	3	Standard
	Cd	114	229861.4	1.2	**47.9476**	1.147	2.4	ug/L	7	Standard
>	In	115	524337.5	1.6				ug/L	524722	Standard
	Sn	118	280407.9	1.2	**52.0144**	1.090	2.1	ug/L	715	Standard
	Sb	123	204641.1	2.4	**46.8900**	1.860	4.0	ug/L	201	Standard
	Ba	135	86406.7	0.9	**47.6572**	1.015	2.1	ug/L	108	Standard
	Ce	140	135.0	7.4				ug/L	30	Standard
>	Tb	159	786784.4	0.3				ug/L	792236	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	354843.5	0.6	**47.8254**	0.499	1.0	ug/L	9	Standard
	Tl	205	306407.3	0.5	**48.5592**	0.423	0.9	ug/L	0	Standard
	Pb	206	218264.7	1.4	**48.6127**	0.167	0.3	ug/L	216	Standard
	Pb	207	191093.3	1.2	**46.7522**	0.112	0.2	ug/L	180	Standard
	Pb	208	804010.8	0.5	**48.4716**	0.281	0.6	ug/L	717	Standard
	U	238	288392.8	0.3	**47.7978**	0.457	1.0	ug/L	4	Standard
>	Bi	209	447132.2	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3715.5	2.1	**4.9417**	0.061	1.2	mg/L	20	Standard
K	39	701.7	9.7	**5.0672**	0.500	9.9	mg/L	22	Standard
Ca	43	61.7	24.8	**1.0552**	3.413	323.4	mg/L	47	Standard
Fe	54	6212.5	1.3	**4.8866**	0.105	2.2	mg/L	151	Standard
Fe	57	1778.4	8.4	**4.8076**	0.510	10.6	mg/L	195	Standard
> **Sc-1**	45	29944.6	0.9				mg/L	29647	Standard
Cl	35	161455.3	2.4				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	1416.7	8.8				ug/L	1607	Standard
P	31	25623.3	0.9				ug/L	22752	Standard
S	34	5979.5	3.9				ug/L	5049	Standard
Sr	88	73.3	41.7				ug/L	87	Standard
C	12	33.3	69.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.0	37.7				mg/L	10	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	1055.0	6.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	96.964		
Al	27	98.553		
Sc	45			
Ti	47	105.903		
V	51	97.348		
Cr	52	100.704		
Cr	53			
Mn	55	103.136		
Co	59	98.406		
Ni	60	100.129		
Cu	65	100.404		
Zn	66	100.038		
> Ge	72		96.114	
As	75	99.772		
Se	82	100.548		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	99.987		
Ag	107	96.359		
Cd	111	96.166		
Cd	114			
> In	115			99.927
Sn	118	104.029		
Sb	123	93.780		
Ba	135	95.314		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	95.651		
Tl	205			
Pb	206	97.225		
Pb	207	93.504		
Pb	208	96.943		
U	238	95.596		
> Bi	209			97.130
Na	23	209.044		
Mg	24	98.834		
K	39	101.344		
Ca	43	21.103		
Fe	54	97.732		
Fe	57	96.152		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Thursday, June 16, 2016 16:03:55
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48694.8	0.2				ug/L	51024	Standard
	Be	9	11.7	24.7	**-0.0065**	0.004	55.1	ug/L	7	Standard
	Al	27	941.7	10.9	**-0.0028**	0.001	26.9	ug/L	625	Standard
	Sc	45	29877.8	0.9				ug/L	29647	Standard
	Ti	47	54.3	5.3	**0.0224**	0.010	44.8	ug/L	57	Standard
	V	51	957.2	10.4	**-0.0283**	0.014	48.1	ug/L	1142	Standard
	Cr	52	6138.9	3.0	**-0.0600**	0.025	41.4	ug/L	6628	Standard
	Cr	53	340.0	7.8	**-0.0510**	0.030	59.6	ug/L	430	Standard
	Mn	55	634.3	2.6	**-0.0152**	0.003	19.9	ug/L	603	Standard
	Co	59	238.0	8.6	**-0.0027**	0.004	132.9	ug/L	237	Standard
	Ni	60	130.0	7.3	**-0.0077**	0.005	63.8	ug/L	141	Standard
	Cu	65	103.7	15.4	**-0.0087**	0.009	107.0	ug/L	109	Standard
	Zn	66	127.0	5.2	**-0.1127**	0.007	6.0	ug/L	159	Standard
>	**Ge**	72	455597.3	0.8				ug/L	474053	Standard
	As	75	-43.2	74.2	**-0.0157**	0.030	193.2	ug/L	-34	Standard
	Se	82	18.2	18.4	**0.0019**	0.030	1563.3	ug/L	14	Standard
	Se-1	77	53.3	8.5	**-0.0219**	0.067	305.9	ug/L	55	Standard
>	**Ga**	71	65.0	20.4				mg/L	50	Standard
	Rb	85	26.7	39.0				ug/L	20	Standard
	Y	89	385670.5	2.5				ug/L	376602	Standard
>	**Rh**	103	21.7	48.0				ug/L	17	Standard
	Mo	98	109.5	11.0	**0.0404**	0.004	10.6	ug/L	8	Standard
	Ag	107	89.3	19.3	**0.0026**	0.003	126.0	ug/L	81	Standard
	Cd	111	7.4	34.0	**0.0006**	0.001	222.3	mg/L	3	Standard
	Cd	114	19.0	7.1	**0.0001**	0.000	161.5	ug/L	7	Standard
>	**In**	115	528269.6	2.4				ug/L	524722	Standard
	Sn	118	783.4	18.1	**0.0547**	0.023	42.9	ug/L	715	Standard
	Sb	123	1248.5	31.3	**0.2679**	0.083	31.1	ug/L	201	Standard
	Ba	135	101.3	11.9	**-0.0020**	0.008	395.1	ug/L	108	Standard
	Ce	140	18.3	56.8				ug/L	30	Standard
>	**Tb**	159	789316.7	0.7				ug/L	792236	Standard
	Ho	165	3.3	173.2				ug/L	7	Standard
	Tl	203	34.3	9.4	**0.0020**	0.000	19.3	ug/L	9	Standard
	Tl	205	23.3	61.9	**-0.0042**	0.002	53.7	ug/L	0	Standard
	Pb	206	215.0	9.3	**-0.0087**	0.004	50.2	ug/L	216	Standard
	Pb	207	177.7	3.1	**-0.0106**	0.001	10.4	ug/L	180	Standard
	Pb	208	745.3	3.0	**-0.0132**	0.001	9.1	ug/L	717	Standard
	U	238	19.7	20.5	**-0.0043**	0.001	15.7	ug/L	4	Standard
>	**Bi**	209	449575.7	0.9				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	26.7	60.3	**-0.0094**	0.021	228.0	mg/L	20	Standard
K	39	16.7	45.8	**-0.1015**	0.059	58.3	mg/L	22	Standard
Ca	43	35.0	0.0	**-5.0734**	0.077	1.5	mg/L	47	Standard
Fe	54	139.4	7.2	**-0.0024**	0.009	374.1	mg/L	151	Standard
Fe	57	198.3	8.1	**-0.0375**	0.053	141.8	mg/L	195	Standard
Sc-1	45	29877.8	0.9				mg/L	29647	Standard
Cl	35	160882.5	1.9				ug/L	154152	Standard
Kr	83	1.0	0.0				ug/L	3	Standard
Br	81	1510.1	12.6				ug/L	1607	Standard
P	31	25673.4	1.5				ug/L	22752	Standard
S	34	5894.5	3.2				ug/L	5049	Standard
Sr	88	76.7	32.2				ug/L	87	Standard
C	12	23.3	49.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.4	107.5				mg/L	10	Standard
Ho-1	165	3.3	173.2				mg/L	7	Standard
Er	166	13.3	173.2				mg/L	3	Standard
I	127	965.0	3.2				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.107	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.676
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.661
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Na	23	
QC Std 2	K	39	

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QC Std 2	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Thursday, June 16, 2016 16:07:40
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55474.7	2.1				ug/L	51024	Standard
	Be	9	18.3	15.7	**-0.0010**	0.003	338.2	ug/L	7	Standard
	Al	27	6905396.8	2.8	**44.6071**	0.703	1.6	ug/L	625	Standard
	Sc	45	29577.2	0.8				ug/L	29647	Standard
	Ti	47	31418.2	1.3	**107.0966**	1.877	1.8	ug/L	57	Standard
	V	51	1222.8	22.4	**0.0081**	0.041	507.7	ug/L	1142	Standard
	Cr	52	7310.1	0.7	**0.0900**	0.007	8.1	ug/L	6628	Standard
	Cr	53	3288.7	9.3	**3.1897**	0.292	9.2	ug/L	430	Standard
	Mn	55	1091.7	3.2	**0.0620**	0.006	9.4	ug/L	603	Standard
	Co	59	399.3	5.7	**0.0224**	0.003	12.6	ug/L	237	Standard
	Ni	60	759.0	2.6	**0.3255**	0.016	4.9	ug/L	141	Standard
	Cu	65	628.7	2.7	**0.2766**	0.010	3.8	ug/L	109	Standard
	Zn	66	1729.4	2.6	**1.3663**	0.021	1.6	ug/L	159	Standard
>	**Ge**	72	462633.9	1.3				ug/L	474053	Standard
	As	75	-39.5	207.4	**-0.0113**	0.076	672.8	ug/L	-34	Standard
	Se	82	21.1	40.5	**0.0261**	0.078	299.6	ug/L	14	Standard
	Se-1	77	277.0	14.2	**2.9476**	0.479	16.2	ug/L	55	Standard
>	**Ga**	71	155.0	16.8				mg/L	50	Standard
	Rb	85	810.0	10.2				ug/L	20	Standard
	Y	89	382532.7	1.4				ug/L	376602	Standard
>	**Rh**	103	13.3	57.3				ug/L	17	Standard
	Mo	98	234826.0	1.7	**100.4857**	2.149	2.1	ug/L	8	Standard
	Ag	107	169.0	8.6	**0.0163**	0.002	15.1	ug/L	81	Standard
	Cd	111	-108.8	6.6	**-0.0599**	0.004	5.9	mg/L	3	Standard
	Cd	114	586.7	17.3	**0.1197**	0.021	17.4	ug/L	7	Standard
>	**In**	115	519149.4	0.5				ug/L	524722	Standard
	Sn	118	681.7	7.9	**0.0385**	0.011	27.7	ug/L	715	Standard
	Sb	123	406.1	34.2	**0.0793**	0.032	41.0	ug/L	201	Standard
	Ba	135	224.7	3.6	**0.0676**	0.005	7.3	ug/L	108	Standard
	Ce	140	145.0	18.2				ug/L	30	Standard
>	**Tb**	159	796726.8	0.9				ug/L	792236	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	851.7	23.5	**0.1131**	0.029	25.4	ug/L	9	Standard
	Tl	205	813.4	19.5	**0.1220**	0.027	21.9	ug/L	0	Standard
	Pb	206	671.0	13.8	**0.0943**	0.023	24.1	ug/L	216	Standard
	Pb	207	610.0	7.6	**0.0965**	0.013	13.8	ug/L	180	Standard
	Pb	208	2481.7	5.9	**0.0928**	0.011	11.7	ug/L	717	Standard
	U	238	11.0	24.1	**-0.0057**	0.000	8.1	ug/L	4	Standard
>	**Bi**	209	444717.2	1.3				ug/L	460343	Standard

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Na	23	1.7	173.2	**4.9320**	9.561	193.9	mg/L	0	Standard
Mg	24	9214.5	2.3	**12.4761**	0.188	1.5	mg/L	20	Standard
K	39	665.0	6.6	**4.8546**	0.351	7.2	mg/L	22	Standard
Ca	43	148.3	13.6	**21.5299**	4.516	21.0	mg/L	47	Standard
Fe	54	14427.7	3.0	**11.6428**	0.306	2.6	mg/L	151	Standard
Fe	57	3798.8	1.5	**11.1428**	0.194	1.7	mg/L	195	Standard
> **Sc-1**	45	29577.2	0.8				mg/L	29647	Standard
Cl	35	176475.5	2.2				ug/L	154152	Standard
Kr	83	2.0	86.6				ug/L	3	Standard
Br	81	1553.4	2.3				ug/L	1607	Standard
P	31	23887.2	3.9				ug/L	22752	Standard
S	34	5340.9	1.7				ug/L	5049	Standard
Sr	88	58.3	9.9				ug/L	87	Standard
C	12	96.7	58.8				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	30.0	0.0				mg/L	0	Standard
Dy	164	2.4	262.3				mg/L	10	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	3	Standard
I	127	1410.1	5.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27	0.892		
Sc	45			
Ti	47	107.097		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.591	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	100.486		
Ag	107			
Cd	111			
Cd	114			
> In	115			98.938
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209			96.606
Na	23	39.456		
Mg	24	249.521		
K	39	97.091		
Ca	43	143.533		
Fe	54	93.142		
Fe	57	89.142		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Tl	203	
QC Std 4	Na	23	

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QC Std 4	Mg	24
QC Std 4	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Thursday, June 16, 2016 16:22:01
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	58477.6	0.2				ug/L	51024	Standard
	Be	9	88548.0	0.3	**91.8774**	0.469	0.5	ug/L	7	Standard
	Al	27	7648485.8	0.8	**46.8715**	0.352	0.8	ug/L	625	Standard
	Sc	45	29133.0	2.0				ug/L	29647	Standard
	Ti	47	33470.3	2.4	**118.1657**	2.723	2.3	ug/L	57	Standard
	V	51	673843.7	0.9	**100.3884**	1.672	1.7	ug/L	1142	Standard
	Cr	52	698679.1	1.4	**99.8305**	1.037	1.0	ug/L	6628	Standard
	Cr	53	90290.0	2.1	**102.5975**	1.386	1.4	ug/L	430	Standard
	Mn	55	596300.3	1.2	**106.4457**	0.466	0.4	ug/L	603	Standard
	Co	59	629938.1	1.8	**103.9511**	1.908	1.8	ug/L	237	Standard
	Ni	60	180922.1	0.3	**99.4431**	0.584	0.6	ug/L	141	Standard
	Cu	65	177067.3	0.6	**99.8815**	0.324	0.3	ug/L	109	Standard
	Zn	66	106852.8	0.0	**102.0554**	0.902	0.9	ug/L	159	Standard
>	Ge	72	446706.3	0.8				ug/L	474053	Standard
	As	75	106615.2	0.2	**102.2086**	1.049	1.0	ug/L	-34	Standard
	Se	82	10642.5	1.1	**101.9658**	1.771	1.7	ug/L	14	Standard
	Se-1	77	7567.2	2.1	**103.8353**	2.380	2.3	ug/L	55	Standard
>	Ga	71	153.3	10.5				mg/L	50	Standard
	Rb	85	808.4	8.9				ug/L	20	Standard
	Y	89	396492.9	1.1				ug/L	376602	Standard
>	Rh	103	48.3	15.8				ug/L	17	Standard
	Mo	98	245151.1	0.7	**102.3761**	1.234	1.2	ug/L	8	Standard
	Ag	107	517251.9	0.7	**85.5144**	0.680	0.8	ug/L	81	Standard
	Cd	111	189019.4	1.2	**96.0637**	1.742	1.8	mg/L	3	Standard
	Cd	114	457330.5	1.6	**94.0204**	2.156	2.3	ug/L	7	Standard
>	In	115	531964.2	0.7				ug/L	524722	Standard
	Sn	118	896.7	15.7	**0.0749**	0.027	35.8	ug/L	715	Standard
	Sb	123	419181.5	1.0	**94.6488**	1.016	1.1	ug/L	201	Standard
	Ba	135	174129.5	0.2	**94.7022**	0.497	0.5	ug/L	108	Standard
	Ce	140	123.3	45.2				ug/L	30	Standard
>	Tb	159	792285.1	1.1				ug/L	792236	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	718957.1	0.3	**98.0117**	1.579	1.6	ug/L	9	Standard
	Tl	205	627537.4	1.6	**100.6124**	3.065	3.0	ug/L	0	Standard
	Pb	206	453228.9	0.3	**102.1662**	1.141	1.1	ug/L	216	Standard
	Pb	207	393799.0	0.5	**97.5071**	0.924	0.9	ug/L	180	Standard
	Pb	208	1620914.8	1.9	**98.9101**	2.956	3.0	ug/L	717	Standard
	U	238	599569.3	0.5	**100.5173**	1.718	1.7	ug/L	4	Standard
>	Bi	209	442109.9	1.4				ug/L	460343	Standard

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Na	23	1.7	173.2	**4.7867**	9.813	205.0	mg/L	0	Standard
Mg	24	10183.4	1.3	**14.0071**	0.241	1.7	mg/L	20	Standard
K	39	573.3	13.1	**4.2150**	0.510	12.1	mg/L	22	Standard
Ca	43	138.3	13.7	**19.6561**	3.893	19.8	mg/L	47	Standard
Fe	54	15280.5	1.4	**12.5337**	0.416	3.3	mg/L	151	Standard
Fe	57	4085.6	2.5	**12.2326**	0.552	4.5	mg/L	195	Standard
> **Sc-1**	45	29133.0	2.0				mg/L	29647	Standard
Cl	35	179327.8	1.3				ug/L	154152	Standard
Kr	83	1.3	114.6				ug/L	3	Standard
Br	81	1623.4	4.9				ug/L	1607	Standard
P	31	23591.7	0.4				ug/L	22752	Standard
S	34	5254.2	2.3				ug/L	5049	Standard
Sr	88	70.0	42.9				ug/L	87	Standard
C	12	133.3	4.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	15.9	94.6				mg/L	10	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	3	Standard
I	127	930.0	5.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	91.877		
Al	27	0.937		
Sc	45			
Ti	47	118.166		
V	51	100.388		
Cr	52	99.830		
Cr	53			
Mn	55	106.446		
Co	59	103.951		
Ni	60	99.443		
Cu	65	99.882		
Zn	66	102.055		
> Ge	72		94.231	
As	75	102.209		
Se	82	101.966		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	102.376		
Ag	107	85.514		
Cd	111	96.064		
Cd	114			
In	115		101.380	
Sn	118			
Sb	123	94.649		
Ba	135	94.702		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.012		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.910		
U	238	100.517		
Bi	209		96.039	
Na	23	38.294		
Mg	24	280.142		
K	39	84.299		
Ca	43	131.041		
Fe	54	100.269		
Fe	57	97.861		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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QC Std 5	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 16:25:16
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55603.6	4.4				ug/L	51024	Standard
	Be	9	43453.9	2.4	**47.4947**	3.006	6.3	ug/L	7	Standard
	Al	27	7054078.0	1.0	**45.5100**	1.586	3.5	ug/L	625	Standard
	Sc	45	29373.5	1.7				ug/L	29647	Standard
	Ti	47	28713.9	1.4	**99.4855**	3.895	3.9	ug/L	57	Standard
	V	51	340364.3	1.3	**49.6680**	0.932	1.9	ug/L	1142	Standard
	Cr	52	357828.9	0.7	**49.7225**	1.608	3.2	ug/L	6628	Standard
	Cr	53	43806.6	0.8	**48.6374**	1.665	3.4	ug/L	430	Standard
	Mn	55	293651.9	1.1	**51.3908**	1.852	3.6	ug/L	603	Standard
	Co	59	311248.9	1.6	**50.3908**	1.771	3.5	ug/L	237	Standard
	Ni	60	92893.9	1.1	**50.0647**	1.079	2.2	ug/L	141	Standard
	Cu	65	90724.2	1.5	**50.1802**	0.633	1.3	ug/L	109	Standard
	Zn	66	53344.1	1.6	**49.8682**	0.504	1.0	ug/L	159	Standard
>	**Ge**	72	455364.8	2.6				ug/L	474053	Standard
	As	75	52938.3	1.1	**49.8092**	0.820	1.6	ug/L	-34	Standard
	Se	82	5329.6	1.7	**50.0105**	0.490	1.0	ug/L	14	Standard
	Se-1	77	3723.8	2.6	**49.7421**	0.784	1.6	ug/L	55	Standard
>	**Ga**	71	95.0	22.9				mg/L	50	Standard
	Rb	85	726.7	4.9				ug/L	20	Standard
	Y	89	384472.0	0.6				ug/L	376602	Standard
>	**Rh**	103	16.7	62.4				ug/L	17	Standard
	Mo	98	232118.8	0.3	**97.2358**	1.022	1.1	ug/L	8	Standard
	Ag	107	290638.3	1.3	**48.1940**	0.630	1.3	ug/L	81	Standard
	Cd	111	94793.4	0.9	**48.3272**	1.004	2.1	mg/L	3	Standard
	Cd	114	234828.4	1.3	**48.4291**	1.209	2.5	ug/L	7	Standard
>	**In**	115	530331.4	1.3				ug/L	524722	Standard
	Sn	118	263139.7	2.6	**48.2596**	1.845	3.8	ug/L	715	Standard
	Sb	123	217327.7	1.3	**49.2164**	0.579	1.2	ug/L	201	Standard
	Ba	135	88067.5	0.7	**48.0226**	0.952	2.0	ug/L	108	Standard
	Ce	140	81.7	18.7				ug/L	30	Standard
>	**Tb**	159	794129.5	1.0				ug/L	792236	Standard
	Ho	165	6.7	86.6				ug/L	7	Standard
	Tl	203	362843.1	1.0	**49.0795**	1.497	3.1	ug/L	9	Standard
	Tl	205	310212.2	1.3	**49.3427**	1.712	3.5	ug/L	0	Standard
	Pb	206	222989.0	0.9	**49.8435**	1.206	2.4	ug/L	216	Standard
	Pb	207	201083.3	0.8	**49.3722**	1.064	2.2	ug/L	180	Standard
	Pb	208	809454.4	0.8	**48.9759**	1.413	2.9	ug/L	717	Standard
	U	238	299066.7	0.4	**49.7396**	1.132	2.3	ug/L	4	Standard
>	**Bi**	209	445696.2	2.2				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3647.1	3.0	**4.9460**	0.155	3.1	mg/L	20	Standard
K	39	621.7	4.7	**4.5576**	0.277	6.1	mg/L	22	Standard
Ca	43	53.3	19.5	**-0.5868**	2.635	449.0	mg/L	47	Standard
Fe	54	5858.9	4.9	**4.6943**	0.261	5.6	mg/L	151	Standard
Fe	57	1763.4	1.3	**4.8648**	0.124	2.5	mg/L	195	Standard
> **Sc-1**	45	29373.5	1.7				mg/L	29647	Standard
Cl	35	157950.4	0.4				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	1363.4	1.1				ug/L	1607	Standard
P	31	23531.6	2.3				ug/L	22752	Standard
S	34	5542.7	3.1				ug/L	5049	Standard
Sr	88	65.0	38.5				ug/L	87	Standard
C	12	56.7	71.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.4	50.3				mg/L	10	Standard
Ho-1	165	6.7	86.6				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	3	Standard
I	127	1150.0	8.7				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	94.989		
	Al	27	91.020		
	Sc	45			
	Ti	47	99.485		
	V	51	99.336		
	Cr	52	99.445		
	Cr	53			
	Mn	55	102.782		
	Co	59	100.782		
	Ni	60	100.129		
	Cu	65	100.360		
	Zn	66	99.736		
>	Ge	72		96.058	
	As	75	99.618		
	Se	82	100.021		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	97.236		
Ag	107	96.388		
Cd	111	96.654		
Cd	114			
In	115			101.069
Sn	118	96.519		
Sb	123	98.433		
Ba	135	96.045		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.159		
Tl	205			
Pb	206			
Pb	207			
Pb	208	97.952		
U	238	99.479		
Bi	209			96.818
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 16:38:50
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52378.7	2.1				ug/L	51024	Standard
	Be	9	15.0	120.2	**-0.0040**	0.020	512.1	ug/L	7	Standard
	Al	27	540.0	3.7	**-0.0061**	0.000	3.2	ug/L	625	Standard
	Sc	45	28712.2	1.8				ug/L	29647	Standard
	Ti	47	44.7	11.0	**-0.0123**	0.017	140.3	ug/L	57	Standard
	V	51	1065.6	4.8	**-0.0136**	0.008	61.5	ug/L	1142	Standard
	Cr	52	6160.3	1.0	**-0.0638**	0.013	21.0	ug/L	6628	Standard
	Cr	53	386.7	19.4	**-0.0026**	0.081	3156.3	ug/L	430	Standard
	Mn	55	621.0	4.1	**-0.0185**	0.004	21.4	ug/L	603	Standard
	Co	59	231.0	6.0	**-0.0042**	0.002	52.0	ug/L	237	Standard
	Ni	60	109.7	8.8	**-0.0191**	0.005	25.2	ug/L	141	Standard
	Cu	65	97.3	15.8	**-0.0127**	0.008	65.1	ug/L	109	Standard
	Zn	66	133.3	9.4	**-0.1078**	0.012	11.3	ug/L	159	Standard
>	**Ge**	72	459252.1	0.6				ug/L	474053	Standard
	As	75	-47.4	46.6	**-0.0192**	0.021	107.9	ug/L	-34	Standard
	Se	82	15.8	37.3	**-0.0216**	0.055	252.4	ug/L	14	Standard
	Se-1	77	46.7	11.0	**-0.1173**	0.072	61.6	ug/L	55	Standard
>	**Ga**	71	35.0	14.3				mg/L	50	Standard
	Rb	85	20.0	43.3				ug/L	20	Standard
	Y	89	388770.9	2.1				ug/L	376602	Standard
>	**Rh**	103	16.7	62.4				ug/L	17	Standard
	Mo	98	68.1	14.3	**0.0237**	0.004	18.9	ug/L	8	Standard
	Ag	107	85.7	13.7	**0.0022**	0.002	97.9	ug/L	81	Standard
	Cd	111	2.9	60.6	**-0.0017**	0.001	51.5	mg/L	3	Standard
	Cd	114	9.5	115.0	**-0.0018**	0.002	124.6	ug/L	7	Standard
>	**In**	115	518516.6	1.3				ug/L	524722	Standard
	Sn	118	641.7	18.0	**0.0313**	0.023	74.8	ug/L	715	Standard
	Sb	123	920.4	35.2	**0.1991**	0.078	39.0	ug/L	201	Standard
	Ba	135	100.7	10.0	**-0.0014**	0.006	433.1	ug/L	108	Standard
	Ce	140	18.3	78.7				ug/L	30	Standard
>	**Tb**	159	769102.4	0.6				ug/L	792236	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	15.7	25.8	**-0.0004**	0.001	125.3	ug/L	9	Standard
	Tl	205	10.0	50.0	**-0.0062**	0.001	13.5	ug/L	0	Standard
	Pb	206	207.3	13.7	**-0.0092**	0.007	79.6	ug/L	216	Standard
	Pb	207	175.3	4.3	**-0.0101**	0.002	22.2	ug/L	180	Standard
	Pb	208	743.7	4.7	**-0.0122**	0.003	22.5	ug/L	717	Standard
	U	238	8.7	35.3	**-0.0061**	0.000	8.0	ug/L	4	Standard
>	**Bi**	209	439141.9	1.8				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	28.3	66.8	**-0.0053**	0.027	522.2	mg/L	20	Standard
K	39	10.0	86.6	**-0.1489**	0.068	45.9	mg/L	22	Standard
Ca	43	36.7	47.9	**-4.3876**	4.095	93.3	mg/L	47	Standard
Fe	54	152.8	18.0	**0.0136**	0.026	187.8	mg/L	151	Standard
Fe	57	166.7	14.2	**-0.1136**	0.080	70.6	mg/L	195	Standard
> **Sc-1**	45	28712.2	1.8				mg/L	29647	Standard
Cl	35	160111.2	2.5				ug/L	154152	Standard
Kr	83	2.3	89.2				ug/L	3	Standard
Br	81	1460.1	8.4				ug/L	1607	Standard
P	31	22964.1	2.3				ug/L	22752	Standard
S	34	5249.2	1.7				ug/L	5049	Standard
Sr	88	68.3	27.7				ug/L	87	Standard
C	12	40.0	66.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	13.0	113.4				mg/L	10	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	3	Standard
I	127	923.4	1.6				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.878	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.817
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.395
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW B7 WG572432-04
Sample Date/Time: Thursday, June 16, 2016 17:35:43
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50888.7	1.4				ug/L	51024	Standard
	Be	9	10.0	50.0	**-0.0092**	0.006	65.8	ug/L	7	Standard
	Al	27	7250.1	1.6	**0.0413**	0.001	3.2	ug/L	625	Standard
	Sc	45	27620.2	1.5				ug/L	29647	Standard
	Ti	47	62.3	15.4	**0.0529**	0.035	66.0	ug/L	57	Standard
	V	51	1096.4	11.0	**-0.0060**	0.018	297.3	ug/L	1142	Standard
	Cr	52	7148.7	0.7	**0.0949**	0.009	9.1	ug/L	6628	Standard
	Cr	53	635.0	13.1	**0.2873**	0.091	31.7	ug/L	430	Standard
	Mn	55	19861.3	0.9	**3.3957**	0.050	1.5	ug/L	603	Standard
	Co	59	181.7	9.8	**-0.0115**	0.003	26.7	ug/L	237	Standard
	Ni	60	180.7	8.3	**0.0208**	0.008	36.7	ug/L	141	Standard
	Cu	65	122.3	7.7	**0.0024**	0.006	234.7	ug/L	109	Standard
	Zn	66	1100.0	2.9	**0.8128**	0.032	3.9	ug/L	159	Standard
>	**Ge**	72	450229.5	0.6				ug/L	474053	Standard
	As	75	-42.0	42.9	**-0.0149**	0.017	113.9	ug/L	-34	Standard
	Se	82	9.3	47.0	**-0.0801**	0.042	52.5	ug/L	14	Standard
	Se-1	77	64.0	16.5	**0.1328**	0.147	110.5	ug/L	55	Standard
>	**Ga**	71	50.0	26.5				mg/L	50	Standard
	Rb	85	73.3	20.8				ug/L	20	Standard
	Y	89	383468.8	0.7				ug/L	376602	Standard
>	**Rh**	103	13.3	21.7				ug/L	17	Standard
	Mo	98	675.4	5.9	**0.2913**	0.019	6.7	ug/L	8	Standard
	Ag	107	79.3	11.9	**0.0015**	0.002	113.9	ug/L	81	Standard
	Cd	111	2.4	24.1	**-0.0019**	0.000	15.9	mg/L	3	Standard
	Cd	114	32.5	70.3	**0.0032**	0.005	153.9	ug/L	7	Standard
>	**In**	115	505606.7	0.8				ug/L	524722	Standard
	Sn	118	778.4	13.1	**0.0606**	0.021	34.0	ug/L	715	Standard
	Sb	123	423.2	31.6	**0.0859**	0.032	37.8	ug/L	201	Standard
	Ba	135	197.0	6.6	**0.0551**	0.008	14.5	ug/L	108	Standard
	Ce	140	71.7	20.1				ug/L	30	Standard
>	**Tb**	159	761176.8	0.6				ug/L	792236	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	45.0	11.1	**0.0037**	0.001	19.6	ug/L	9	Standard
	Tl	205	38.3	27.2	**-0.0016**	0.002	107.0	ug/L	0	Standard
	Pb	206	207.0	9.6	**-0.0086**	0.005	56.9	ug/L	216	Standard
	Pb	207	183.0	3.8	**-0.0075**	0.002	22.0	ug/L	180	Standard
	Pb	208	773.7	0.5	**-0.0097**	0.001	6.3	ug/L	717	Standard
	U	238	7.0	14.3	**-0.0064**	0.000	2.5	ug/L	4	Standard
>	**Bi**	209	432877.1	0.8				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	46.7	37.6	**0.0228**	0.026	113.0	mg/L	20	Standard
K	39	25.0	20.0	**-0.0231**	0.042	181.8	mg/L	22	Standard
Ca	43	38.3	19.9	**-3.5551**	2.049	57.6	mg/L	47	Standard
Fe	54	166.0	7.2	**0.0299**	0.009	28.8	mg/L	151	Standard
Fe	57	193.3	5.4	**-0.0042**	0.043	1021.8	mg/L	195	Standard
Sc-1	45	27620.2	1.5				mg/L	29647	Standard
Cl	35	157510.0	2.0				ug/L	154152	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	1796.8	8.2				ug/L	1607	Standard
P	31	21511.9	1.4				ug/L	22752	Standard
S	34	4927.5	1.4				ug/L	5049	Standard
Sr	88	76.7	10.0				ug/L	87	Standard
C	12	53.3	47.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	18.7	50.9				mg/L	10	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	26.7	57.3				mg/L	3	Standard
I	127	1125.0	8.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.734	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.974	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.357
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.034
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW B7 WG572432-05
Sample Date/Time: Thursday, June 16, 2016 17:38:54
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51783.3	1.2				ug/L	51024	Standard
	Be	9	41423.2	1.3	**48.5300**	0.724	1.5	ug/L	7	Standard
	Al	27	8105.5	5.6	**0.0464**	0.004	7.6	ug/L	625	Standard
	Sc	45	29290.0	1.1				ug/L	29647	Standard
	Ti	47	66.0	28.8	**0.0608**	0.069	114.0	ug/L	57	Standard
	V	51	347988.7	1.1	**50.1052**	0.398	0.8	ug/L	1142	Standard
	Cr	52	363767.8	1.3	**49.8723**	1.265	2.5	ug/L	6628	Standard
	Cr	53	46272.2	1.3	**50.7068**	1.549	3.1	ug/L	430	Standard
	Mn	55	322059.4	1.1	**55.6120**	1.299	2.3	ug/L	603	Standard
	Co	59	318198.3	0.5	**50.8192**	0.688	1.4	ug/L	237	Standard
	Ni	60	95145.8	1.0	**50.6010**	1.153	2.3	ug/L	141	Standard
	Cu	65	93949.4	0.3	**51.2847**	1.031	2.0	ug/L	109	Standard
	Zn	66	55650.7	0.4	**51.3490**	0.838	1.6	ug/L	159	Standard
>	**Ge**	72	461424.2	1.8				ug/L	474053	Standard
	As	75	53752.8	0.6	**49.9059**	0.739	1.5	ug/L	-34	Standard
	Se	82	5332.6	1.0	**49.3792**	0.829	1.7	ug/L	14	Standard
	Se-1	77	3747.5	1.7	**49.4072**	1.506	3.0	ug/L	55	Standard
>	**Ga**	71	81.7	30.2				mg/L	50	Standard
	Rb	85	53.3	23.6				ug/L	20	Standard
	Y	89	377535.8	0.4				ug/L	376602	Standard
>	**Rh**	103	36.7	31.5				ug/L	17	Standard
	Mo	98	750.8	4.4	**0.3174**	0.017	5.4	ug/L	8	Standard
	Ag	107	297266.0	1.0	**50.6052**	0.925	1.8	ug/L	81	Standard
	Cd	111	95234.0	1.1	**49.8345**	0.593	1.2	mg/L	3	Standard
	Cd	114	234836.7	1.4	**49.7088**	0.798	1.6	ug/L	7	Standard
>	**In**	115	516621.5	1.2				ug/L	524722	Standard
	Sn	118	736.7	13.8	**0.0494**	0.018	37.2	ug/L	715	Standard
	Sb	123	208987.1	0.3	**48.5849**	0.463	1.0	ug/L	201	Standard
	Ba	135	88485.0	1.6	**49.5270**	0.847	1.7	ug/L	108	Standard
	Ce	140	93.3	22.3				ug/L	30	Standard
>	**Tb**	159	786575.0	1.5				ug/L	792236	Standard
	Ho	165	15.0	120.2				ug/L	7	Standard
	Tl	203	367143.4	1.3	**48.6717**	0.655	1.3	ug/L	9	Standard
	Tl	205	311332.9	0.6	**48.5309**	0.337	0.7	ug/L	0	Standard
	Pb	206	233648.2	1.0	**51.1920**	0.365	0.7	ug/L	216	Standard
	Pb	207	204781.6	0.5	**49.2852**	0.113	0.2	ug/L	180	Standard
	Pb	208	826562.7	0.6	**49.0156**	0.301	0.6	ug/L	717	Standard
	U	238	299484.9	0.7	**48.8217**	0.244	0.5	ug/L	4	Standard
>	**Bi**	209	454561.3	0.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	50.0	17.3	**0.0233**	0.011	48.4	mg/L	20	Standard
K	39	26.7	28.6	**-0.0218**	0.061	278.8	mg/L	22	Standard
Ca	43	35.0	75.6	**-4.9193**	6.254	127.1	mg/L	47	Standard
Fe	54	111.6	12.4	**-0.0232**	0.011	46.2	mg/L	151	Standard
Fe	57	160.0	10.8	**-0.1456**	0.055	37.5	mg/L	195	Standard
> **Sc-1**	45	29290.0	1.1				mg/L	29647	Standard
Cl	35	154390.7	1.3				ug/L	154152	Standard
Kr	83	3.3	45.8				ug/L	3	Standard
Br	81	1633.4	8.8				ug/L	1607	Standard
P	31	21568.7	2.2				ug/L	22752	Standard
S	34	5032.5	1.0				ug/L	5049	Standard
Sr	88	65.0	15.4				ug/L	87	Standard
C	12	66.7	17.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	23.2	25.5				mg/L	10	Standard
Ho-1	165	15.0	120.2				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	1071.7	9.3				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		101.488	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.336	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.456
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.744
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW B7 WG572432-05
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Method 6020 - Summary Report

Sample ID: L1606054006 WG572432-01
Sample Date/Time: Thursday, June 16, 2016 17:42:06
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52547.6	1.2				ug/L	51024	Standard
	Be	9	281.7	11.8	**0.3044**	0.040	13.2	ug/L	7	Standard
	Al	27	1816487.4	0.8	**12.3812**	0.043	0.4	ug/L	625	Standard
	Sc	45	29675.7	4.3				ug/L	29647	Standard
	Ti	47	527.0	16.5	**1.6748**	0.301	18.0	ug/L	57	Standard
	V	51	3476.6	2.8	**0.3441**	0.007	2.0	ug/L	1142	Standard
	Cr	52	8938.3	3.6	**0.3455**	0.039	11.3	ug/L	6628	Standard
	Cr	53	901.7	9.0	**0.5864**	0.111	18.9	ug/L	430	Standard
	Mn	55	80134.4	1.0	**14.0253**	0.252	1.8	ug/L	603	Standard
	Co	59	25491.1	1.0	**4.1165**	0.049	1.2	ug/L	237	Standard
	Ni	60	8570.8	3.1	**4.5794**	0.092	2.0	ug/L	141	Standard
	Cu	65	650.0	5.0	**0.2962**	0.012	4.0	ug/L	109	Standard
	Zn	66	3464.7	2.4	**3.0444**	0.035	1.2	ug/L	159	Standard
>	**Ge**	72	452166.6	1.8				ug/L	474053	Standard
	As	75	1182.5	5.5	**1.1442**	0.046	4.0	ug/L	-34	Standard
	Se	82	46.0	21.8	**0.2663**	0.087	32.8	ug/L	14	Standard
	Se-1	77	85.7	5.5	**0.4258**	0.086	20.3	ug/L	55	Standard
>	**Ga**	71	278.3	3.7				mg/L	50	Standard
	Rb	85	4193.9	3.2				ug/L	20	Standard
	Y	89	416460.7	2.0				ug/L	376602	Standard
>	**Rh**	103	23.3	12.4				ug/L	17	Standard
	Mo	98	357.6	5.0	**0.1457**	0.008	5.8	ug/L	8	Standard
	Ag	107	158.3	24.9	**0.0142**	0.007	47.6	ug/L	81	Standard
	Cd	111	270.7	5.4	**0.1360**	0.007	5.2	mg/L	3	Standard
	Cd	114	622.1	11.8	**0.1257**	0.017	13.1	ug/L	7	Standard
>	**In**	115	525525.2	1.0				ug/L	524722	Standard
	Sn	118	728.4	8.0	**0.0455**	0.009	20.8	ug/L	715	Standard
	Sb	123	2010.9	21.8	**0.4446**	0.099	22.2	ug/L	201	Standard
	Ba	135	37719.2	0.5	**20.7210**	0.204	1.0	ug/L	108	Standard
	Ce	140	135002.2	1.6				ug/L	30	Standard
>	**Tb**	159	783120.3	1.3				ug/L	792236	Standard
	Ho	165	2456.9	1.5				ug/L	7	Standard
	Tl	203	253.7	10.2	**0.0320**	0.003	10.8	ug/L	9	Standard
	Tl	205	226.7	16.3	**0.0285**	0.006	20.3	ug/L	0	Standard
	Pb	206	765.0	5.7	**0.1161**	0.008	6.7	ug/L	216	Standard
	Pb	207	652.7	5.5	**0.1078**	0.008	7.7	ug/L	180	Standard
	Pb	208	2766.1	3.6	**0.1109**	0.007	6.4	ug/L	717	Standard
	U	238	1954.1	0.9	**0.3200**	0.006	1.9	ug/L	4	Standard
>	**Bi**	209	442196.1	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1238.4	6.5	**1.6323**	0.087	5.4	mg/L	20	Standard
K	39	41.7	36.7	**0.0889**	0.112	125.7	mg/L	22	Standard
Ca	43	68.3	11.2	**2.8122**	2.229	79.3	mg/L	47	Standard
Fe	54	837.8	5.1	**0.5655**	0.012	2.1	mg/L	151	Standard
Fe	57	411.7	13.3	**0.6277**	0.175	27.9	mg/L	195	Standard
Sc-1	45	29675.7	4.3				mg/L	29647	Standard
Cl	35	169997.1	1.0				ug/L	154152	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	5057.5	1.3				ug/L	1607	Standard
P	31	24386.3	0.9				ug/L	22752	Standard
S	34	5092.5	0.4				ug/L	5049	Standard
Sr	88	103.3	7.4				ug/L	87	Standard
C	12	76.7	60.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	3712.9	1.1				mg/L	10	Standard
Ho-1	165	2456.9	1.5				mg/L	7	Standard
Er	166	2246.8	5.2				mg/L	3	Standard
I	127	9703.1	8.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.986	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.383	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.153
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.058
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606054007S WG572432-06
Sample Date/Time: Thursday, June 16, 2016 17:45:17
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53706.7	0.9				ug/L	51024	Standard
	Be	9	43749.7	1.2	**49.4168**	0.266	0.5	ug/L	7	Standard
	Al	27	1932307.9	0.8	**12.8870**	0.144	1.1	ug/L	625	Standard
	Sc	45	29268.3	2.3				ug/L	29647	Standard
	Ti	47	482.3	20.5	**1.5217**	0.334	21.9	ug/L	57	Standard
	V	51	343151.9	1.8	**50.5559**	1.238	2.4	ug/L	1142	Standard
	Cr	52	356598.9	0.1	**50.0133**	0.323	0.6	ug/L	6628	Standard
	Cr	53	44079.0	0.2	**49.3948**	0.256	0.5	ug/L	430	Standard
	Mn	55	413833.9	0.6	**73.1363**	0.045	0.1	ug/L	603	Standard
	Co	59	348825.8	0.4	**56.9989**	0.424	0.7	ug/L	237	Standard
	Ni	60	100519.4	0.8	**54.6907**	0.393	0.7	ug/L	141	Standard
	Cu	65	91430.0	0.8	**51.0559**	0.663	1.3	ug/L	109	Standard
	Zn	66	56968.2	0.3	**53.7844**	0.273	0.5	ug/L	159	Standard
>	**Ge**	72	450975.6	0.7				ug/L	474053	Standard
	As	75	55730.0	0.9	**52.9297**	0.224	0.4	ug/L	-34	Standard
	Se	82	5454.0	1.2	**51.6747**	0.725	1.4	ug/L	14	Standard
	Se-1	77	3763.1	1.1	**50.7665**	0.264	0.5	ug/L	55	Standard
>	**Ga**	71	263.3	20.3				mg/L	50	Standard
	Rb	85	4255.6	2.8				ug/L	20	Standard
	Y	89	417195.5	2.9				ug/L	376602	Standard
>	**Rh**	103	30.0	16.7				ug/L	17	Standard
	Mo	98	249.7	0.8	**0.1017**	0.004	4.1	ug/L	8	Standard
	Ag	107	291868.5	0.9	**49.6480**	2.126	4.3	ug/L	81	Standard
	Cd	111	96723.0	1.0	**50.5615**	1.461	2.9	mg/L	3	Standard
	Cd	114	235539.9	2.1	**49.7930**	0.984	2.0	ug/L	7	Standard
>	**In**	115	517505.1	3.8				ug/L	524722	Standard
	Sn	118	1476.7	5.3	**0.1884**	0.005	2.4	ug/L	715	Standard
	Sb	123	206896.8	0.8	**48.0521**	1.564	3.3	ug/L	201	Standard
	Ba	135	127540.2	0.0	**71.3559**	2.754	3.9	ug/L	108	Standard
	Ce	140	139925.0	2.0				ug/L	30	Standard
>	**Tb**	159	770775.9	3.8				ug/L	792236	Standard
	Ho	165	2476.9	1.1				ug/L	7	Standard
	Tl	203	360327.5	0.9	**50.2317**	2.202	4.4	ug/L	9	Standard
	Tl	205	316813.0	0.1	**51.9255**	1.944	3.7	ug/L	0	Standard
	Pb	206	230620.2	0.3	**53.1250**	1.777	3.3	ug/L	216	Standard
	Pb	207	202090.2	0.6	**51.1482**	2.204	4.3	ug/L	180	Standard
	Pb	208	841767.9	0.1	**52.4861**	1.864	3.6	ug/L	717	Standard
	U	238	302598.3	0.9	**51.8585**	1.621	3.1	ug/L	4	Standard
>	**Bi**	209	432715.9	3.6				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1251.7	2.3	**1.6745**	0.059	3.5	mg/L	20	Standard
K	39	36.7	20.8	**0.0560**	0.065	115.4	mg/L	22	Standard
Ca	43	53.3	32.9	**-0.5302**	4.352	820.7	mg/L	47	Standard
Fe	54	1026.3	1.7	**0.7308**	0.034	4.6	mg/L	151	Standard
Fe	57	418.3	7.7	**0.6667**	0.128	19.3	mg/L	195	Standard
> **Sc-1**	45	29268.3	2.3				mg/L	29647	Standard
Cl	35	169666.9	1.9				ug/L	154152	Standard
Kr	83	2.0	100.0				ug/L	3	Standard
Br	81	2960.3	5.9				ug/L	1607	Standard
P	31	24135.9	2.5				ug/L	22752	Standard
S	34	4849.1	3.1				ug/L	5049	Standard
Sr	88	106.7	33.9				ug/L	87	Standard
C	12	40.0	50.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	0	Standard
Dy	164	3819.4	7.1				mg/L	10	Standard
Ho-1	165	2476.9	1.1				mg/L	7	Standard
Er	166	2390.2	5.9				mg/L	3	Standard
I	127	12700.3	5.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.257	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.132	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.625
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.999
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606054008SD WG572432-07
Sample Date/Time: Thursday, June 16, 2016 17:48:29
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54998.0	2.9				ug/L	51024	Standard
	Be	9	42282.3	1.6	**46.6702**	1.847	4.0	ug/L	7	Standard
	Al	27	1853346.2	1.8	**12.0720**	0.192	1.6	ug/L	625	Standard
	Sc	45	28618.7	1.6				ug/L	29647	Standard
	Ti	47	438.7	18.4	**1.3101**	0.274	20.9	ug/L	57	Standard
	V	51	339071.1	1.2	**47.9811**	0.898	1.9	ug/L	1142	Standard
	Cr	52	348951.5	0.9	**46.9627**	0.693	1.5	ug/L	6628	Standard
	Cr	53	43296.8	2.2	**46.5875**	1.128	2.4	ug/L	430	Standard
	Mn	55	386934.9	1.9	**65.6847**	1.414	2.2	ug/L	603	Standard
	Co	59	342375.5	0.7	**53.7459**	0.809	1.5	ug/L	237	Standard
	Ni	60	97792.2	0.5	**51.1109**	0.332	0.6	ug/L	141	Standard
	Cu	65	89033.2	0.9	**47.7559**	0.143	0.3	ug/L	109	Standard
	Zn	66	55887.9	0.5	**50.6770**	0.331	0.7	ug/L	159	Standard
>	**Ge**	72	469439.2	1.1				ug/L	474053	Standard
	As	75	54484.6	0.9	**49.7143**	0.277	0.6	ug/L	-34	Standard
	Se	82	5325.5	1.9	**48.4642**	1.024	2.1	ug/L	14	Standard
	Se-1	77	3702.8	2.9	**47.9415**	0.927	1.9	ug/L	55	Standard
>	**Ga**	71	271.7	17.7				mg/L	50	Standard
	Rb	85	4088.9	2.2				ug/L	20	Standard
	Y	89	413416.3	1.0				ug/L	376602	Standard
>	**Rh**	103	41.7	30.2				ug/L	17	Standard
	Mo	98	249.2	1.7	**0.1026**	0.001	1.4	ug/L	8	Standard
	Ag	107	286615.9	0.3	**49.2507**	0.777	1.6	ug/L	81	Standard
	Cd	111	93885.9	0.7	**49.5954**	0.904	1.8	mg/L	3	Standard
	Cd	114	226454.5	0.3	**48.3871**	0.650	1.3	ug/L	7	Standard
>	**In**	115	511810.4	1.2				ug/L	524722	Standard
	Sn	118	701.7	6.8	**0.0441**	0.009	19.5	ug/L	715	Standard
	Sb	123	206600.1	0.8	**48.4856**	0.964	2.0	ug/L	201	Standard
	Ba	135	122408.2	0.7	**69.1850**	1.061	1.5	ug/L	108	Standard
	Ce	140	131819.3	0.1				ug/L	30	Standard
>	**Tb**	159	776885.2	2.2				ug/L	792236	Standard
	Ho	165	2331.8	5.4				ug/L	7	Standard
	Tl	203	352123.1	0.6	**47.6812**	0.707	1.5	ug/L	9	Standard
	Tl	205	309331.5	1.9	**49.2466**	0.608	1.2	ug/L	0	Standard
	Pb	206	228474.4	0.6	**51.1335**	0.852	1.7	ug/L	216	Standard
	Pb	207	200368.2	0.3	**49.2580**	0.755	1.5	ug/L	180	Standard
	Pb	208	813075.7	0.6	**49.2521**	0.923	1.9	ug/L	717	Standard
	U	238	295399.0	1.0	**49.1860**	0.564	1.1	ug/L	4	Standard
>	**Bi**	209	445087.6	1.7				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1281.7	3.9	**1.7556**	0.088	5.0	mg/L	20	Standard
K	39	31.7	63.8	**0.0238**	0.162	681.6	mg/L	22	Standard
Ca	43	90.0	29.4	**8.6263**	6.605	76.6	mg/L	47	Standard
Fe	54	882.7	7.0	**0.6290**	0.061	9.7	mg/L	151	Standard
Fe	57	415.0	3.6	**0.6838**	0.030	4.4	mg/L	195	Standard
> **Sc-1**	45	28618.7	1.6				mg/L	29647	Standard
Cl	35	164516.5	1.8				ug/L	154152	Standard
Kr	83	2.7	78.1				ug/L	3	Standard
Br	81	3177.0	4.4				ug/L	1607	Standard
P	31	23216.1	2.6				ug/L	22752	Standard
S	34	4752.4	2.2				ug/L	5049	Standard
Sr	88	88.3	40.2				ug/L	87	Standard
C	12	76.7	30.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	3671.9	4.0				mg/L	10	Standard
Ho-1	165	2331.8	5.4				mg/L	7	Standard
Er	166	2266.8	11.6				mg/L	3	Standard
I	127	12179.9	5.6				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		107.788	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.027	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606054008SD WG572432-07
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.539
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.686
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606053301
Sample Date/Time: Thursday, June 16, 2016 17:51:40
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60559.2	3.2				ug/L	51024	Standard
	Be	9	28.3	10.2	**0.0074**	0.004	49.8	ug/L	7	Standard
	Al	27	7003612.2	2.3	**41.4514**	0.476	1.1	ug/L	625	Standard
	Sc	45	30053.2	5.5				ug/L	29647	Standard
	Ti	47	795.7	5.5	**2.5457**	0.146	5.8	ug/L	57	Standard
	V	51	2693.3	6.1	**0.2191**	0.025	11.3	ug/L	1142	Standard
	Cr	52	8930.0	3.3	**0.3138**	0.057	18.2	ug/L	6628	Standard
	Cr	53	2155.2	15.7	**1.9427**	0.407	21.0	ug/L	430	Standard
	Mn	55	115337.0	0.2	**19.7464**	0.327	1.7	ug/L	603	Standard
	Co	59	1383.4	9.3	**0.1788**	0.018	10.2	ug/L	237	Standard
	Ni	60	2905.3	1.7	**1.4630**	0.043	2.9	ug/L	141	Standard
	Cu	65	10476.6	1.4	**5.6346**	0.098	1.7	ug/L	109	Standard
	Zn	66	21460.2	1.0	**19.5697**	0.101	0.5	ug/L	159	Standard
>	**Ge**	72	463434.7	1.4				ug/L	474053	Standard
	As	75	3767.1	1.6	**3.5052**	0.045	1.3	ug/L	-34	Standard
	Se	82	163.8	10.0	**1.3482**	0.174	12.9	ug/L	14	Standard
	Se-1	77	257.3	5.7	**2.6846**	0.227	8.5	ug/L	55	Standard
>	**Ga**	71	133.3	15.6				mg/L	50	Standard
	Rb	85	28246.3	1.8				ug/L	20	Standard
	Y	89	371509.9	1.1				ug/L	376602	Standard
>	**Rh**	103	53.3	54.1				ug/L	17	Standard
	Mo	98	1868.0	0.8	**0.7966**	0.012	1.5	ug/L	8	Standard
	Ag	107	323.0	60.8	**0.0424**	0.033	77.8	ug/L	81	Standard
	Cd	111	115.7	21.0	**0.0572**	0.012	21.6	mg/L	3	Standard
	Cd	114	360.8	28.5	**0.0723**	0.021	29.2	ug/L	7	Standard
>	**In**	115	517402.5	1.9				ug/L	524722	Standard
	Sn	118	1711.8	7.1	**0.2327**	0.020	8.5	ug/L	715	Standard
	Sb	123	4614.0	12.3	**1.0551**	0.113	10.7	ug/L	201	Standard
	Ba	135	35141.4	1.4	**19.6067**	0.326	1.7	ug/L	108	Standard
	Ce	140	703.4	25.4				ug/L	30	Standard
>	**Tb**	159	794129.4	2.7				ug/L	792236	Standard
	Ho	165	41.7	38.6				ug/L	7	Standard
	Tl	203	449.0	60.2	**0.0569**	0.035	62.3	ug/L	9	Standard
	Tl	205	276.7	17.7	**0.0354**	0.008	22.9	ug/L	0	Standard
	Pb	206	1738.1	4.6	**0.3254**	0.021	6.4	ug/L	216	Standard
	Pb	207	1473.7	6.2	**0.3016**	0.022	7.3	ug/L	180	Standard
	Pb	208	5917.1	2.4	**0.2937**	0.008	2.7	ug/L	717	Standard
	U	238	273.7	21.5	**0.0370**	0.009	24.9	ug/L	4	Standard
>	**Bi**	209	454186.9	1.7				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.2936**	8.935	168.8	mg/L	0	Standard
Mg	24	24845.4	1.6	**33.2336**	1.348	4.1	mg/L	20	Standard
K	39	435.0	8.7	**3.0600**	0.462	15.1	mg/L	22	Standard
Ca	43	158.3	13.1	**23.4759**	6.234	26.6	mg/L	47	Standard
Fe	54	199.1	33.0	**0.0465**	0.059	127.4	mg/L	151	Standard
Fe	57	291.7	13.3	**0.2501**	0.172	68.9	mg/L	195	Standard
> **Sc-1**	45	30053.2	5.5				mg/L	29647	Standard
Cl	35	199161.9	1.2				ug/L	154152	Standard
Kr	83	2.3	49.5				ug/L	3	Standard
Br	81	12578.6	3.0				ug/L	1607	Standard
P	31	24539.9	2.1				ug/L	22752	Standard
S	34	5079.2	4.0				ug/L	5049	Standard
Sr	88	208.3	14.7				ug/L	87	Standard
C	12	96.7	36.3				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	0	Standard
Dy	164	61.3	25.3				mg/L	10	Standard
Ho-1	165	41.7	38.6				mg/L	7	Standard
Er	166	43.3	13.3				mg/L	3	Standard
I	127	46957.7	3.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.687	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.760	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606053301
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.605
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.663
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606054003
Sample Date/Time: Thursday, June 16, 2016 17:54:52
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69060.4	2.1				ug/L	51024	Standard
	Be	9	195.0	15.6	**0.1507**	0.030	20.2	ug/L	7	Standard
	Al	27	5538034.2	2.1	**28.7382**	0.596	2.1	ug/L	625	Standard
	Sc	45	34442.5	3.5				ug/L	29647	Standard
	Ti	47	14518.0	3.2	**50.5821**	0.898	1.8	ug/L	57	Standard
	V	51	33577.2	0.6	**4.7869**	0.070	1.5	ug/L	1142	Standard
	Cr	52	33773.6	0.6	**3.8889**	0.037	1.0	ug/L	6628	Standard
	Cr	53	7016.6	2.1	**7.4876**	0.191	2.6	ug/L	430	Standard
	Mn	55	504059.4	0.9	**88.9661**	0.527	0.6	ug/L	603	Standard
	Co	59	17512.8	1.2	**2.8178**	0.022	0.8	ug/L	237	Standard
	Ni	60	10317.5	0.9	**5.5347**	0.034	0.6	ug/L	141	Standard
	Cu	65	2208.5	1.2	**1.1669**	0.032	2.7	ug/L	109	Standard
	Zn	66	8517.7	1.0	**7.8315**	0.096	1.2	ug/L	159	Standard
>	**Ge**	72	451723.4	1.4				ug/L	474053	Standard
	As	75	12920.2	3.5	**12.2750**	0.581	4.7	ug/L	-34	Standard
	Se	82	2961.0	4.8	**27.9437**	1.699	6.1	ug/L	14	Standard
	Se-1	77	326.3	1.4	**3.7149**	0.003	0.1	ug/L	55	Standard
>	**Ga**	71	2480.2	6.2				mg/L	50	Standard
	Rb	85	38117.9	1.8				ug/L	20	Standard
	Y	89	421962.4	2.5				ug/L	376602	Standard
>	**Rh**	103	78.3	24.2				ug/L	17	Standard
	Mo	98	3944.4	0.7	**1.6261**	0.009	0.6	ug/L	8	Standard
	Ag	107	112.0	6.7	**0.0060**	0.001	21.5	ug/L	81	Standard
	Cd	111	53.6	6.7	**0.0237**	0.002	7.8	mg/L	3	Standard
	Cd	114	133.4	41.0	**0.0233**	0.011	47.5	ug/L	7	Standard
>	**In**	115	537036.3	0.3				ug/L	524722	Standard
	Sn	118	2543.5	1.4	**0.3719**	0.007	2.0	ug/L	715	Standard
	Sb	123	798.0	25.2	**0.1636**	0.044	27.1	ug/L	201	Standard
	Ba	135	340692.9	0.8	**183.5929**	1.953	1.1	ug/L	108	Standard
	Ce	140	164779.7	1.7				ug/L	30	Standard
>	**Tb**	159	813065.5	1.9				ug/L	792236	Standard
	Ho	165	2875.3	7.5				ug/L	7	Standard
	Tl	203	422.0	6.7	**0.0538**	0.003	6.1	ug/L	9	Standard
	Tl	205	353.3	13.4	**0.0477**	0.007	15.2	ug/L	0	Standard
	Pb	206	3737.8	1.9	**0.7699**	0.010	1.3	ug/L	216	Standard
	Pb	207	3100.7	1.2	**0.6991**	0.004	0.6	ug/L	180	Standard
	Pb	208	12994.2	0.7	**0.7197**	0.013	1.8	ug/L	717	Standard
	U	238	1498.4	1.2	**0.2387**	0.006	2.5	ug/L	4	Standard
>	**Bi**	209	451028.7	1.3				ug/L	460343	Standard

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Na	23	6.7	114.6	**-8.8575**	22.422	253.1	mg/L	0	Standard
Mg	24	23361.3	1.7	**27.2407**	1.080	4.0	mg/L	20	Standard
K	39	78.3	19.5	**0.2883**	0.117	40.4	mg/L	22	Standard
Ca	43	363.3	8.7	**59.9201**	6.518	10.9	mg/L	47	Standard
Fe	54	6234.3	4.5	**4.2529**	0.273	6.4	mg/L	151	Standard
Fe	57	2021.8	6.4	**4.7439**	0.351	7.4	mg/L	195	Standard
> **Sc-1**	45	34442.5	3.5				mg/L	29647	Standard
Cl	35	236460.3	1.1				ug/L	154152	Standard
Kr	83	2.0	0.0				ug/L	3	Standard
Br	81	708935.6	4.3				ug/L	1607	Standard
P	31	40141.4	0.8				ug/L	22752	Standard
S	34	5004.2	5.7				ug/L	5049	Standard
Sr	88	448.3	5.6				ug/L	87	Standard
C	12	160.0	16.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	4859.0	3.9				mg/L	10	Standard
Ho-1	165	2875.3	7.5				mg/L	7	Standard
Er	166	2543.5	9.9				mg/L	3	Standard
I	127	141220.9	4.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		135.349	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.290	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.347	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.977	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606054003PS WG573083-01
Sample Date/Time: Thursday, June 16, 2016 17:58:03
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70691.2	0.9				ug/L	51024	Standard
	Be	9	50693.0	1.7	**43.5062**	1.094	2.5	ug/L	7	Standard
	Al	27	5657732.1	0.5	**28.6796**	0.340	1.2	ug/L	625	Standard
	Sc	45	32850.6	4.5				ug/L	29647	Standard
	Ti	47	14458.2	2.7	**49.6930**	1.695	3.4	ug/L	57	Standard
	V	51	385117.2	0.8	**55.8774**	0.585	1.0	ug/L	1142	Standard
	Cr	52	382916.9	0.3	**52.9297**	0.331	0.6	ug/L	6628	Standard
	Cr	53	51097.7	0.4	**56.4380**	0.261	0.5	ug/L	430	Standard
	Mn	55	810895.8	0.8	**141.2253**	1.951	1.4	ug/L	603	Standard
	Co	59	346570.3	0.8	**55.7548**	0.081	0.1	ug/L	237	Standard
	Ni	60	100953.5	0.6	**54.0794**	0.195	0.4	ug/L	141	Standard
	Cu	65	91462.3	1.6	**50.2871**	1.080	2.1	ug/L	109	Standard
	Zn	66	61341.3	0.6	**57.0367**	0.769	1.3	ug/L	159	Standard
>	**Ge**	72	458036.5	0.7				ug/L	474053	Standard
	As	75	68674.9	0.5	**64.2143**	0.182	0.3	ug/L	-34	Standard
	Se	82	8569.6	1.8	**80.0280**	0.981	1.2	ug/L	14	Standard
	Se-1	77	4022.5	4.5	**53.4821**	2.795	5.2	ug/L	55	Standard
>	**Ga**	71	2441.9	7.4				mg/L	50	Standard
	Rb	85	38290.0	2.9				ug/L	20	Standard
	Y	89	428743.2	0.3				ug/L	376602	Standard
>	**Rh**	103	91.7	35.1				ug/L	17	Standard
	Mo	98	3923.8	0.2	**1.6525**	0.023	1.4	ug/L	8	Standard
	Ag	107	276547.4	3.6	**46.2633**	2.008	4.3	ug/L	81	Standard
	Cd	111	96223.0	0.5	**49.4786**	0.725	1.5	mg/L	3	Standard
	Cd	114	238042.9	1.3	**49.5078**	0.331	0.7	ug/L	7	Standard
>	**In**	115	525777.0	1.3				ug/L	524722	Standard
	Sn	118	2560.2	3.5	**0.3851**	0.023	6.0	ug/L	715	Standard
	Sb	123	215296.5	0.5	**49.1839**	0.834	1.7	ug/L	201	Standard
	Ba	135	428635.4	1.2	**235.9452**	0.924	0.4	ug/L	108	Standard
	Ce	140	165650.7	1.3				ug/L	30	Standard
>	**Tb**	159	801648.7	1.5				ug/L	792236	Standard
	Ho	165	2957.0	2.0				ug/L	7	Standard
	Tl	203	362265.3	0.3	**49.7124**	0.432	0.9	ug/L	9	Standard
	Tl	205	324753.6	0.8	**52.4032**	0.722	1.4	ug/L	0	Standard
	Pb	206	240535.6	0.4	**54.5563**	0.254	0.5	ug/L	216	Standard
	Pb	207	210550.9	0.8	**52.4580**	0.578	1.1	ug/L	180	Standard
	Pb	208	845714.1	0.6	**51.9167**	0.481	0.9	ug/L	717	Standard
	U	238	316985.2	0.3	**53.4916**	0.510	1.0	ug/L	4	Standard
>	**Bi**	209	439144.9	0.6				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.2953**	8.932	168.7	mg/L	0	Standard
Mg	24	23556.6	1.1	**28.8162**	1.308	4.5	mg/L	20	Standard
K	39	103.3	22.9	**0.4849**	0.170	35.0	mg/L	22	Standard
Ca	43	350.0	13.1	**60.9958**	12.902	21.2	mg/L	47	Standard
Fe	54	6036.8	1.7	**4.3211**	0.223	5.2	mg/L	151	Standard
Fe	57	2113.5	3.5	**5.2621**	0.189	3.6	mg/L	195	Standard
> **Sc-1**	45	32850.6	4.5				mg/L	29647	Standard
Cl	35	237983.9	1.1				ug/L	154152	Standard
Kr	83	0.0					ug/L	3	Standard
Br	81	723069.8	1.3				ug/L	1607	Standard
P	31	40273.5	4.5				ug/L	22752	Standard
S	34	4915.8	1.6				ug/L	5049	Standard
Sr	88	436.7	3.5				ug/L	87	Standard
C	12	133.3	4.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	4443.9	9.4				mg/L	10	Standard
Ho-1	165	2957.0	2.0				mg/L	7	Standard
Er	166	2646.9	6.4				mg/L	3	Standard
I	127	140910.6	0.9				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		138.545	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.621	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.201
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.395
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606054003PS WG573083-01
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Method 6020 - Summary Report

Sample ID: L1606054003SDL WG573083-02
Sample Date/Time: Thursday, June 16, 2016 18:01:15
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67421.4	2.2				ug/L	51024	Standard
	Be	9	65.0	23.1	**0.0373**	0.012	33.1	ug/L	7	Standard
	Al	27	1133068.0	1.4	**6.0172**	0.214	3.6	ug/L	625	Standard
	Sc	45	29907.8	2.2				ug/L	29647	Standard
	Ti	47	2896.9	2.4	**9.4986**	0.237	2.5	ug/L	57	Standard
	V	51	8118.9	1.6	**0.9749**	0.019	2.0	ug/L	1142	Standard
	Cr	52	11547.7	1.7	**0.6435**	0.029	4.5	ug/L	6628	Standard
	Cr	53	2378.5	3.7	**2.1298**	0.095	4.5	ug/L	430	Standard
	Mn	55	103741.0	1.9	**17.3694**	0.315	1.8	ug/L	603	Standard
	Co	59	3838.8	2.5	**0.5567**	0.015	2.6	ug/L	237	Standard
	Ni	60	2235.5	2.6	**1.0826**	0.031	2.9	ug/L	141	Standard
	Cu	65	647.7	4.8	**0.2788**	0.016	5.8	ug/L	109	Standard
	Zn	66	2803.6	0.9	**2.3005**	0.025	1.1	ug/L	159	Standard
>	**Ge**	72	473393.6	0.2				ug/L	474053	Standard
	As	75	2692.6	2.6	**2.4601**	0.062	2.5	ug/L	-34	Standard
	Se	82	639.2	5.1	**5.6193**	0.300	5.3	ug/L	14	Standard
	Se-1	77	131.7	10.1	**0.9721**	0.173	17.8	ug/L	55	Standard
>	**Ga**	71	563.3	2.9				mg/L	50	Standard
	Rb	85	7626.9	1.4				ug/L	20	Standard
	Y	89	387376.2	0.4				ug/L	376602	Standard
>	**Rh**	103	25.0	34.6				ug/L	17	Standard
	Mo	98	784.5	4.4	**0.3255**	0.017	5.2	ug/L	8	Standard
	Ag	107	1243.4	2.6	**0.1954**	0.006	3.2	ug/L	81	Standard
	Cd	111	29.9	54.1	**0.0121**	0.008	67.3	mg/L	3	Standard
	Cd	114	69.0	67.7	**0.0105**	0.010	91.0	ug/L	7	Standard
>	**In**	115	526626.8	0.9				ug/L	524722	Standard
	Sn	118	845.0	11.0	**0.0669**	0.018	26.5	ug/L	715	Standard
	Sb	123	2277.2	24.6	**0.5055**	0.132	26.2	ug/L	201	Standard
	Ba	135	69797.7	0.8	**38.3133**	0.615	1.6	ug/L	108	Standard
	Ce	140	34238.6	1.3				ug/L	30	Standard
>	**Tb**	159	801692.0	0.8				ug/L	792236	Standard
	Ho	165	618.3	9.3				ug/L	7	Standard
	Tl	203	344.7	8.1	**0.0429**	0.004	8.5	ug/L	9	Standard
	Tl	205	311.7	8.8	**0.0405**	0.004	10.8	ug/L	0	Standard
	Pb	206	1064.0	3.5	**0.1759**	0.009	4.9	ug/L	216	Standard
	Pb	207	867.0	6.7	**0.1540**	0.013	8.6	ug/L	180	Standard
	Pb	208	3581.5	3.9	**0.1537**	0.009	6.2	ug/L	717	Standard
	U	238	339.0	2.5	**0.0474**	0.001	2.9	ug/L	4	Standard
>	**Bi**	209	456914.2	0.6				ug/L	460343	Standard

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Na	23	5.0	173.2	**-5.5106**	27.648	501.7	mg/L	0	Standard
Mg	24	4740.7	2.0	**6.3283**	0.198	3.1	mg/L	20	Standard
K	39	31.7	32.9	**0.0103**	0.074	719.1	mg/L	22	Standard
Ca	43	96.7	10.8	**9.2099**	2.490	27.0	mg/L	47	Standard
Fe	54	1310.9	5.1	**0.9427**	0.077	8.2	mg/L	151	Standard
Fe	57	518.3	4.8	**0.9451**	0.104	11.0	mg/L	195	Standard
> **Sc-1**	45	29907.8	2.2				mg/L	29647	Standard
Cl	35	171537.6	0.9				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	154143.7	2.2				ug/L	1607	Standard
P	31	26042.4	2.9				ug/L	22752	Standard
S	34	4889.1	5.0				ug/L	5049	Standard
Sr	88	148.3	17.0				ug/L	87	Standard
C	12	73.3	47.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	929.7	4.3				mg/L	10	Standard
Ho-1	165	618.3	9.3				mg/L	7	Standard
Er	166	563.3	6.2				mg/L	3	Standard
I	127	30853.1	2.8				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.136	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.861	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.363
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.255
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: L1606054003SDL WG573083-02
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Method 6020 - Summary Report

Sample ID: L1606054003SDL WG573083-02
Sample Date/Time: Thursday, June 16, 2016 18:04:26
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65921.5	1.7				ug/L	51024	Standard
	Be	9	28.3	10.2	**0.0050**	0.002	49.4	ug/L	7	Standard
	Al	27	234588.9	1.0	**1.2659**	0.010	0.8	ug/L	625	Standard
	Sc	45	29675.7	0.4				ug/L	29647	Standard
	Ti	47	693.0	13.8	**2.1806**	0.270	12.4	ug/L	57	Standard
	V	51	2547.4	1.6	**0.1965**	0.004	2.1	ug/L	1142	Standard
	Cr	52	7577.9	0.6	**0.1209**	0.025	20.3	ug/L	6628	Standard
	Cr	53	1020.0	10.6	**0.6861**	0.125	18.2	ug/L	430	Standard
	Mn	55	22549.8	0.3	**3.7420**	0.091	2.4	ug/L	603	Standard
	Co	59	941.7	6.4	**0.1080**	0.010	9.7	ug/L	237	Standard
	Ni	60	563.3	5.9	**0.2199**	0.025	11.2	ug/L	141	Standard
	Cu	65	269.3	8.9	**0.0800**	0.016	20.5	ug/L	109	Standard
	Zn	66	1451.4	2.3	**1.1019**	0.057	5.2	ug/L	159	Standard
>	**Ge**	72	465567.5	2.4				ug/L	474053	Standard
	As	75	572.2	6.7	**0.5515**	0.039	7.1	ug/L	-34	Standard
	Se	82	153.8	5.1	**1.2486**	0.091	7.3	ug/L	14	Standard
	Se-1	77	80.7	9.5	**0.3264**	0.123	37.8	ug/L	55	Standard
>	**Ga**	71	155.0	27.6				mg/L	50	Standard
	Rb	85	1620.1	5.6				ug/L	20	Standard
	Y	89	390804.2	2.3				ug/L	376602	Standard
>	**Rh**	103	10.0	50.0				ug/L	17	Standard
	Mo	98	177.1	5.2	**0.0674**	0.004	5.5	ug/L	8	Standard
	Ag	107	160.0	23.9	**0.0138**	0.006	46.0	ug/L	81	Standard
	Cd	111	25.4	77.5	**0.0095**	0.010	103.8	mg/L	3	Standard
	Cd	114	52.9	101.2	**0.0069**	0.011	156.6	ug/L	7	Standard
>	**In**	115	539456.4	0.6				ug/L	524722	Standard
	Sn	118	513.3	2.8	**0.0033**	0.003	95.9	ug/L	715	Standard
	Sb	123	668.0	33.5	**0.1338**	0.049	36.9	ug/L	201	Standard
	Ba	135	14458.9	2.3	**7.7012**	0.163	2.1	ug/L	108	Standard
	Ce	140	7036.6	6.6				ug/L	30	Standard
>	**Tb**	159	818023.3	1.0				ug/L	792236	Standard
	Ho	165	115.0	27.2				ug/L	7	Standard
	Tl	203	200.0	22.5	**0.0231**	0.006	25.9	ug/L	9	Standard
	Tl	205	161.7	23.6	**0.0166**	0.006	35.1	ug/L	0	Standard
	Pb	206	434.7	9.5	**0.0360**	0.009	24.6	ug/L	216	Standard
	Pb	207	375.3	3.2	**0.0337**	0.004	10.7	ug/L	180	Standard
	Pb	208	1515.7	5.1	**0.0292**	0.005	17.5	ug/L	717	Standard
	U	238	114.7	29.0	**0.0105**	0.005	51.2	ug/L	4	Standard
>	**Bi**	209	469475.2	1.0				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1023.4	7.3	**1.3409**	0.102	7.6	mg/L	20	Standard
K	39	6.7	43.3	**-0.1772**	0.022	12.3	mg/L	22	Standard
Ca	43	43.3	46.6	**-3.0610**	4.758	155.5	mg/L	47	Standard
Fe	54	379.2	10.8	**0.1931**	0.034	17.8	mg/L	151	Standard
Fe	57	256.7	21.5	**0.1469**	0.171	116.2	mg/L	195	Standard
Sc-1	45	29675.7	0.4				mg/L	29647	Standard
Cl	35	160581.2	1.2				ug/L	154152	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	34599.5	0.7				ug/L	1607	Standard
P	31	23708.5	0.9				ug/L	22752	Standard
S	34	4770.8	0.4				ug/L	5049	Standard
Sr	88	63.3	39.7				ug/L	87	Standard
C	12	46.7	44.6				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	195.8	8.2				mg/L	10	Standard
Ho-1	165	115.0	27.2				mg/L	7	Standard
Er	166	156.7	19.5				mg/L	3	Standard
I	127	7458.5	3.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.197	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.210	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	102.808
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.984
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 18:07:39
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64746.4	0.3				ug/L	51024	Standard
	Be	9	46935.9	0.9	**43.9752**	0.492	1.1	ug/L	7	Standard
	Al	27	7535309.9	1.9	**41.7048**	0.653	1.6	ug/L	625	Standard
	Sc	45	31043.5	4.7				ug/L	29647	Standard
	Ti	47	28772.6	0.9	**96.6294**	1.169	1.2	ug/L	57	Standard
	V	51	348687.3	1.9	**49.3361**	0.535	1.1	ug/L	1142	Standard
	Cr	52	360685.6	0.1	**48.5749**	1.035	2.1	ug/L	6628	Standard
	Cr	53	45317.7	1.7	**48.7728**	0.185	0.4	ug/L	430	Standard
	Mn	55	312229.0	0.7	**52.9756**	0.740	1.4	ug/L	603	Standard
	Co	59	328785.3	1.7	**51.5998**	0.220	0.4	ug/L	237	Standard
	Ni	60	92818.4	0.9	**48.5066**	0.760	1.6	ug/L	141	Standard
	Cu	65	91019.6	1.6	**48.8181**	0.503	1.0	ug/L	109	Standard
	Zn	66	54227.6	1.6	**49.1583**	0.511	1.0	ug/L	159	Standard
>	Ge	72	469521.9	2.1				ug/L	474053	Standard
	As	75	53936.9	1.2	**49.2114**	0.450	0.9	ug/L	-34	Standard
	Se	82	5505.5	2.6	**50.0972**	0.955	1.9	ug/L	14	Standard
	Se-1	77	3726.1	1.9	**48.2480**	0.384	0.8	ug/L	55	Standard
>	Ga	71	78.3	14.7				mg/L	50	Standard
	Rb	85	671.7	4.5				ug/L	20	Standard
	Y	89	383452.4	1.6				ug/L	376602	Standard
>	Rh	103	25.0	0.0				ug/L	17	Standard
	Mo	98	247423.8	2.1	**101.1140**	2.305	2.3	ug/L	8	Standard
	Ag	107	299585.0	1.0	**48.4657**	0.725	1.5	ug/L	81	Standard
	Cd	111	97195.1	1.0	**48.3387**	0.865	1.8	mg/L	3	Standard
	Cd	114	237825.0	2.4	**47.8442**	1.314	2.7	ug/L	7	Standard
>	In	115	543596.8	0.8				ug/L	524722	Standard
	Sn	118	268878.5	1.5	**48.0977**	1.025	2.1	ug/L	715	Standard
	Sb	123	216173.0	0.7	**47.7614**	0.695	1.5	ug/L	201	Standard
	Ba	135	89328.2	0.9	**47.5171**	0.807	1.7	ug/L	108	Standard
	Ce	140	83.3	25.0				ug/L	30	Standard
>	Tb	159	826706.5	0.3				ug/L	792236	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	368647.9	0.4	**47.0636**	0.889	1.9	ug/L	9	Standard
	Tl	205	321431.2	2.0	**48.2447**	0.798	1.7	ug/L	0	Standard
	Pb	206	230222.8	1.5	**48.5740**	1.152	2.4	ug/L	216	Standard
	Pb	207	209229.9	1.3	**48.4917**	1.019	2.1	ug/L	180	Standard
	Pb	208	835767.1	0.5	**47.7236**	0.588	1.2	ug/L	717	Standard
	U	238	311255.6	0.4	**48.8622**	0.739	1.5	ug/L	4	Standard
>	Bi	209	472106.5	1.5				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3973.9	4.2	**5.1144**	0.463	9.1	mg/L	20	Standard
K	39	603.3	5.9	**4.1749**	0.393	9.4	mg/L	22	Standard
Ca	43	58.3	34.6	**-0.2925**	4.036	1380.2	mg/L	47	Standard
Fe	54	5929.6	4.5	**4.5027**	0.427	9.5	mg/L	151	Standard
Fe	57	1646.8	4.1	**4.2259**	0.199	4.7	mg/L	195	Standard
Sc-1	45	31043.5	4.7				mg/L	29647	Standard
Cl	35	162653.1	0.8				ug/L	154152	Standard
Kr	83	1.0	0.0				ug/L	3	Standard
Br	81	4067.2	17.6				ug/L	1607	Standard
P	31	24251.1	1.7				ug/L	22752	Standard
S	34	5482.7	3.7				ug/L	5049	Standard
Sr	88	45.0	33.3				ug/L	87	Standard
C	12	60.0	28.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	22.5	26.8				mg/L	10	Standard
Ho-1	165	8.3	69.3				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	3	Standard
I	127	1428.4	5.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	87.950		
Al	27	83.410		
Sc	45			
Ti	47	96.629		
V	51	98.672		
Cr	52	97.150		
Cr	53			
Mn	55	105.951		
Co	59	103.200		
Ni	60	97.013		
Cu	65	97.636		
Zn	66	98.317		
Ge	72		99.044	
As	75	98.423		
Se	82	100.194		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.114		
Ag	107	96.931		
Cd	111	96.677		
Cd	114			
In	115		103.597	
Sn	118	96.195		
Sb	123	95.523		
Ba	135	95.034		
Ce	140			
Tb	159			
Ho	165			
Tl	203	94.127		
Tl	205			
Pb	206			
Pb	207			
Pb	208	95.447		
U	238	97.724		
Bi	209		102.555	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 18:10:51
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61896.2	1.1				ug/L	51024	Standard
	Be	9	18.3	56.8	**-0.0031**	0.010	331.6	ug/L	7	Standard
	Al	27	1523.4	19.5	**-0.0009**	0.002	172.8	ug/L	625	Standard
	Sc	45	30746.2	4.2				ug/L	29647	Standard
	Ti	47	48.7	24.0	**0.0041**	0.040	983.7	ug/L	57	Standard
	V	51	1096.5	7.2	**-0.0066**	0.011	164.7	ug/L	1142	Standard
	Cr	52	6114.9	1.9	**-0.0559**	0.020	35.8	ug/L	6628	Standard
	Cr	53	420.0	14.4	**0.0427**	0.071	166.6	ug/L	430	Standard
	Mn	55	696.3	8.0	**-0.0034**	0.009	280.9	ug/L	603	Standard
	Co	59	257.0	3.7	**0.0007**	0.001	190.7	ug/L	237	Standard
	Ni	60	98.3	19.1	**-0.0243**	0.010	42.2	ug/L	141	Standard
	Cu	65	138.3	15.9	**0.0111**	0.013	114.3	ug/L	109	Standard
	Zn	66	155.0	9.1	**-0.0853**	0.013	14.8	ug/L	159	Standard
>	**Ge**	72	451752.5	0.6				ug/L	474053	Standard
	As	75	-25.7	89.3	**0.0007**	0.022	2895.4	ug/L	-34	Standard
	Se	82	22.8	34.8	**0.0475**	0.075	158.2	ug/L	14	Standard
	Se-1	77	56.0	11.7	**0.0207**	0.094	453.1	ug/L	55	Standard
>	**Ga**	71	41.7	18.3				mg/L	50	Standard
	Rb	85	23.3	32.7				ug/L	20	Standard
	Y	89	396184.8	0.8				ug/L	376602	Standard
>	**Rh**	103	16.7	45.8				ug/L	17	Standard
	Mo	98	276.1	23.5	**0.1082**	0.027	25.2	ug/L	8	Standard
	Ag	107	114.0	9.8	**0.0063**	0.002	31.9	ug/L	81	Standard
	Cd	111	11.2	11.3	**0.0024**	0.001	28.4	mg/L	3	Standard
	Cd	114	27.7	73.8	**0.0018**	0.004	228.8	ug/L	7	Standard
>	**In**	115	539405.0	1.3				ug/L	524722	Standard
	Sn	118	770.0	23.8	**0.0496**	0.033	67.2	ug/L	715	Standard
	Sb	123	621.2	30.2	**0.1235**	0.042	34.0	ug/L	201	Standard
	Ba	135	117.7	23.5	**0.0055**	0.015	275.0	ug/L	108	Standard
	Ce	140	10.0	50.0				ug/L	30	Standard
>	**Tb**	159	804197.7	0.7				ug/L	792236	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	67.0	31.6	**0.0062**	0.003	43.0	ug/L	9	Standard
	Tl	205	75.0	13.3	**0.0038**	0.001	37.5	ug/L	0	Standard
	Pb	206	240.0	10.9	**-0.0040**	0.005	132.8	ug/L	216	Standard
	Pb	207	198.7	7.7	**-0.0062**	0.004	60.3	ug/L	180	Standard
	Pb	208	866.3	5.4	**-0.0067**	0.003	50.1	ug/L	717	Standard
	U	238	48.0	12.7	**0.0002**	0.001	508.3	ug/L	4	Standard
>	**Bi**	209	456732.7	1.5				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	38.3	82.8	**0.0048**	0.041	858.7	mg/L	20	Standard
K	39	21.7	87.4	**-0.0684**	0.138	202.1	mg/L	22	Standard
Ca	43	51.7	45.7	**-1.4837**	5.565	375.1	mg/L	47	Standard
Fe	54	127.7	12.6	**-0.0146**	0.015	100.1	mg/L	151	Standard
Fe	57	163.3	30.7	**-0.1626**	0.130	79.6	mg/L	195	Standard
Sc-1	45	30746.2	4.2				mg/L	29647	Standard
Cl	35	165606.2	1.3				ug/L	154152	Standard
Kr	83	3.0	57.7				ug/L	3	Standard
Br	81	2933.6	13.2				ug/L	1607	Standard
P	31	25216.0	5.8				ug/L	22752	Standard
S	34	5477.7	2.3				ug/L	5049	Standard
Sr	88	56.7	33.4				ug/L	87	Standard
C	12	36.7	41.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.9	86.8				mg/L	10	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	10.0	173.2				mg/L	3	Standard
I	127	1125.0	7.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.296	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.798	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.216	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606054009
Sample Date/Time: Thursday, June 16, 2016 18:14:04
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62868.5	2.1				ug/L	51024	Standard
	Be	9	25.0	40.0	**0.0030**	0.010	320.4	ug/L	7	Standard
	Al	27	3263361.8	1.6	**18.5978**	0.187	1.0	ug/L	625	Standard
	Sc	45	30816.3	0.3				ug/L	29647	Standard
	Ti	47	176.7	8.1	**0.4336**	0.054	12.4	ug/L	57	Standard
	V	51	2352.6	1.3	**0.1685**	0.004	2.6	ug/L	1142	Standard
	Cr	52	8208.2	0.8	**0.2076**	0.006	3.1	ug/L	6628	Standard
	Cr	53	778.4	12.3	**0.4216**	0.115	27.4	ug/L	430	Standard
	Mn	55	6000883.1	1.3	**1028.9465**	25.297	2.5	ug/L	603	Standard
	Co	59	5272.3	0.9	**0.7938**	0.018	2.3	ug/L	237	Standard
	Ni	60	2681.9	0.9	**1.3375**	0.018	1.4	ug/L	141	Standard
	Cu	65	979.4	2.5	**0.4642**	0.012	2.6	ug/L	109	Standard
	Zn	66	3790.8	1.0	**3.2497**	0.077	2.4	ug/L	159	Standard
>	**Ge**	72	465659.8	1.3				ug/L	474053	Standard
	As	75	5887.6	1.1	**5.4382**	0.057	1.1	ug/L	-34	Standard
	Se	82	141.8	7.0	**1.1369**	0.108	9.5	ug/L	14	Standard
	Se-1	77	74.7	2.0	**0.2451**	0.023	9.4	ug/L	55	Standard
>	**Ga**	71	296.7	5.1				mg/L	50	Standard
	Rb	85	53373.9	1.9				ug/L	20	Standard
	Y	89	385477.9	2.9				ug/L	376602	Standard
>	**Rh**	103	46.7	16.4				ug/L	17	Standard
	Mo	98	1798.6	2.7	**0.7471**	0.020	2.7	ug/L	8	Standard
	Ag	107	110.0	13.7	**0.0059**	0.003	44.0	ug/L	81	Standard
	Cd	111	71.5	14.9	**0.0332**	0.006	17.6	mg/L	3	Standard
	Cd	114	137.0	6.5	**0.0244**	0.002	7.2	ug/L	7	Standard
>	**In**	115	530892.7	1.2				ug/L	524722	Standard
	Sn	118	731.7	10.0	**0.0448**	0.013	28.2	ug/L	715	Standard
	Sb	123	625.1	16.6	**0.1265**	0.022	17.3	ug/L	201	Standard
	Ba	135	131604.4	0.3	**71.7085**	0.676	0.9	ug/L	108	Standard
	Ce	140	6654.8	2.0				ug/L	30	Standard
>	**Tb**	159	816377.9	1.5				ug/L	792236	Standard
	Ho	165	238.3	11.6				ug/L	7	Standard
	Tl	203	76.0	23.3	**0.0075**	0.002	32.6	ug/L	9	Standard
	Tl	205	63.3	64.3	**0.0021**	0.006	310.8	ug/L	0	Standard
	Pb	206	386.0	5.1	**0.0283**	0.005	18.8	ug/L	216	Standard
	Pb	207	347.0	4.2	**0.0297**	0.005	15.2	ug/L	180	Standard
	Pb	208	1437.7	3.0	**0.0274**	0.003	12.5	ug/L	717	Standard
	U	238	4379.0	0.5	**0.7057**	0.012	1.8	ug/L	4	Standard
>	**Bi**	209	455069.1	1.2				ug/L	460343	Standard

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Na	23	5.0	100.0	**-5.2765**	15.737	298.3	mg/L	0	Standard
Mg	24	9816.5	6.9	**12.7603**	0.918	7.2	mg/L	20	Standard
K	39	4015.5	6.3	**29.2188**	1.778	6.1	mg/L	22	Standard
Ca	43	165.0	35.7	**23.9101**	13.280	55.5	mg/L	47	Standard
Fe	54	13256.8	2.9	**10.2548**	0.305	3.0	mg/L	151	Standard
Fe	57	3875.5	1.1	**10.8966**	0.106	1.0	mg/L	195	Standard
> **Sc-1**	45	30816.3	0.3				mg/L	29647	Standard
Cl	35	225833.9	0.4				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	25945.6	7.7				ug/L	1607	Standard
P	31	26763.6	2.0				ug/L	22752	Standard
S	34	5200.9	3.2				ug/L	5049	Standard
Sr	88	240.0	9.1				ug/L	87	Standard
C	12	193.3	18.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	262.1	17.3				mg/L	10	Standard
Ho-1	165	238.3	11.6				mg/L	7	Standard
Er	166	303.3	18.2				mg/L	3	Standard
I	127	75002.8	8.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.213	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.229	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.176	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.854	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606054010
Sample Date/Time: Thursday, June 16, 2016 18:17:15
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65588.3	0.4				ug/L	51024	Standard
	Be	9	30.0	60.1	**0.0066**	0.017	249.6	ug/L	7	Standard
	Al	27	2526422.5	0.3	**13.7972**	0.064	0.5	ug/L	625	Standard
	Sc	45	30417.2	3.2				ug/L	29647	Standard
	Ti	47	2810.3	3.2	**9.9401**	0.380	3.8	ug/L	57	Standard
	V	51	10857.2	0.9	**1.4795**	0.027	1.9	ug/L	1142	Standard
	Cr	52	13448.6	1.8	**1.0447**	0.048	4.6	ug/L	6628	Standard
	Cr	53	1738.4	6.6	**1.5855**	0.118	7.5	ug/L	430	Standard
	Mn	55	662471.2	0.9	**120.2964**	1.474	1.2	ug/L	603	Standard
	Co	59	2699.2	0.2	**0.4120**	0.004	0.9	ug/L	237	Standard
	Ni	60	3377.4	1.2	**1.8118**	0.036	2.0	ug/L	141	Standard
	Cu	65	1366.7	4.1	**0.7187**	0.039	5.4	ug/L	109	Standard
	Zn	66	9779.2	1.9	**9.2895**	0.243	2.6	ug/L	159	Standard
>	**Ge**	72	439226.0	0.9				ug/L	474053	Standard
	As	75	11053.2	2.0	**10.7998**	0.276	2.6	ug/L	-34	Standard
	Se	82	3723.6	2.4	**36.1764**	1.076	3.0	ug/L	14	Standard
	Se-1	77	120.3	17.9	**0.9478**	0.313	33.0	ug/L	55	Standard
>	**Ga**	71	653.3	7.7				mg/L	50	Standard
	Rb	85	17974.0	0.9				ug/L	20	Standard
	Y	89	392749.3	1.5				ug/L	376602	Standard
>	**Rh**	103	83.3	30.2				ug/L	17	Standard
	Mo	98	4323.3	0.4	**1.8596**	0.045	2.4	ug/L	8	Standard
	Ag	107	99.7	3.2	**0.0047**	0.001	17.3	ug/L	81	Standard
	Cd	111	51.2	16.5	**0.0236**	0.004	17.1	mg/L	3	Standard
	Cd	114	147.6	10.0	**0.0276**	0.004	13.0	ug/L	7	Standard
>	**In**	115	515115.8	2.2				ug/L	524722	Standard
	Sn	118	1333.4	7.7	**0.1626**	0.017	10.4	ug/L	715	Standard
	Sb	123	590.9	5.0	**0.1232**	0.010	8.0	ug/L	201	Standard
	Ba	135	57030.1	1.1	**31.9969**	0.347	1.1	ug/L	108	Standard
	Ce	140	21293.3	3.8				ug/L	30	Standard
>	**Tb**	159	786053.3	2.1				ug/L	792236	Standard
	Ho	165	341.7	14.7				ug/L	7	Standard
	Tl	203	337.7	6.2	**0.0450**	0.003	7.2	ug/L	9	Standard
	Tl	205	321.7	3.2	**0.0455**	0.003	5.8	ug/L	0	Standard
	Pb	206	1862.1	0.7	**0.3774**	0.005	1.2	ug/L	216	Standard
	Pb	207	1577.4	0.7	**0.3498**	0.004	1.2	ug/L	180	Standard
	Pb	208	6669.9	1.5	**0.3627**	0.014	3.8	ug/L	717	Standard
	U	238	10873.6	0.3	**1.8752**	0.033	1.8	ug/L	4	Standard
>	**Bi**	209	428106.7	1.8				ug/L	460343	Standard

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Na	23	6.7	114.6	**-10.3208**	23.457	227.3	mg/L	0	Standard
Mg	24	48188.2	2.0	**63.6943**	3.015	4.7	mg/L	20	Standard
K	39	553.3	6.8	**3.8849**	0.281	7.2	mg/L	22	Standard
Ca	43	321.7	16.0	**60.3557**	13.874	23.0	mg/L	47	Standard
Fe	54	1808.8	3.2	**1.3200**	0.080	6.1	mg/L	151	Standard
Fe	57	981.7	5.4	**2.3180**	0.200	8.6	mg/L	195	Standard
> **Sc-1**	45	30417.2	3.2				mg/L	29647	Standard
Cl	35	209372.7	0.6				ug/L	154152	Standard
Kr	83	0.7	173.2				ug/L	3	Standard
Br	81	933072.6	1.4				ug/L	1607	Standard
P	31	28264.7	0.7				ug/L	22752	Standard
S	34	4879.1	1.2				ug/L	5049	Standard
Sr	88	365.0	15.8				ug/L	87	Standard
C	12	160.0	28.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	522.9	18.7				mg/L	10	Standard
Ho-1	165	341.7	14.7				mg/L	7	Standard
Er	166	356.7	9.8				mg/L	3	Standard
I	127	158946.5	8.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.544	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.653	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.169
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.997
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606054011
Sample Date/Time: Thursday, June 16, 2016 18:20:27
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66415.2	0.8				ug/L	51024	Standard
	Be	9	31.7	92.5	**0.0080**	0.027	339.9	ug/L	7	Standard
	Al	27	2599405.0	0.8	**14.0190**	0.029	0.2	ug/L	625	Standard
	Sc	45	30612.6	1.1				ug/L	29647	Standard
	Ti	47	3388.4	4.8	**11.4676**	0.712	6.2	ug/L	57	Standard
	V	51	11365.4	1.1	**1.4778**	0.020	1.3	ug/L	1142	Standard
	Cr	52	14126.6	0.8	**1.0496**	0.030	2.9	ug/L	6628	Standard
	Cr	53	1888.5	10.3	**1.6589**	0.194	11.7	ug/L	430	Standard
	Mn	55	683276.7	0.4	**118.4238**	2.389	2.0	ug/L	603	Standard
	Co	59	2752.6	2.0	**0.3999**	0.015	3.8	ug/L	237	Standard
	Ni	60	3356.7	1.2	**1.7147**	0.043	2.5	ug/L	141	Standard
	Cu	65	1350.7	3.3	**0.6741**	0.033	5.0	ug/L	109	Standard
	Zn	66	8668.5	0.7	**7.8234**	0.178	2.3	ug/L	159	Standard
>	**Ge**	72	460253.4	1.6				ug/L	474053	Standard
	As	75	11667.3	1.2	**10.8800**	0.252	2.3	ug/L	-34	Standard
	Se	82	3942.6	1.6	**36.5587**	0.912	2.5	ug/L	14	Standard
	Se-1	77	129.7	8.5	**0.9935**	0.130	13.1	ug/L	55	Standard
>	**Ga**	71	686.7	16.0				mg/L	50	Standard
	Rb	85	19050.3	3.1				ug/L	20	Standard
	Y	89	381859.4	1.4				ug/L	376602	Standard
>	**Rh**	103	103.3	43.9				ug/L	17	Standard
	Mo	98	4373.4	1.2	**1.9146**	0.031	1.6	ug/L	8	Standard
	Ag	107	74.0	18.9	**0.0005**	0.002	456.1	ug/L	81	Standard
	Cd	111	45.0	20.2	**0.0208**	0.005	23.5	mg/L	3	Standard
	Cd	114	116.5	10.2	**0.0214**	0.003	12.0	ug/L	7	Standard
>	**In**	115	506011.1	0.4				ug/L	524722	Standard
	Sn	118	1185.0	3.8	**0.1387**	0.010	6.9	ug/L	715	Standard
	Sb	123	571.9	4.2	**0.1210**	0.005	4.2	ug/L	201	Standard
	Ba	135	57088.3	0.4	**32.6025**	0.223	0.7	ug/L	108	Standard
	Ce	140	20652.4	1.0				ug/L	30	Standard
>	**Tb**	159	785323.2	1.2				ug/L	792236	Standard
	Ho	165	306.7	8.0				ug/L	7	Standard
	Tl	203	332.3	7.5	**0.0441**	0.003	7.8	ug/L	9	Standard
	Tl	205	303.3	2.5	**0.0423**	0.001	2.9	ug/L	0	Standard
	Pb	206	1906.8	2.4	**0.3865**	0.007	1.8	ug/L	216	Standard
	Pb	207	1585.1	0.2	**0.3506**	0.006	1.6	ug/L	180	Standard
	Pb	208	6566.9	1.1	**0.3550**	0.006	1.8	ug/L	717	Standard
	U	238	10922.6	1.0	**1.8784**	0.027	1.4	ug/L	4	Standard
>	**Bi**	209	429255.9	1.2				ug/L	460343	Standard

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Na	23	10.0		**-21.2549**	0.358	1.7	mg/L	0	Standard
Mg	24	49766.6	0.9	**65.3028**	0.773	1.2	mg/L	20	Standard
K	39	513.3	10.0	**3.5605**	0.354	9.9	mg/L	22	Standard
Ca	43	375.0	2.3	**71.6613**	1.832	2.6	mg/L	47	Standard
Fe	54	1685.6	3.3	**1.2127**	0.057	4.7	mg/L	151	Standard
Fe	57	868.4	4.3	**1.9576**	0.137	7.0	mg/L	195	Standard
> **Sc-1**	45	30612.6	1.1				mg/L	29647	Standard
Cl	35	212698.7	1.3				ug/L	154152	Standard
Kr	83	1.3	114.6				ug/L	3	Standard
Br	81	930543.4	1.3				ug/L	1607	Standard
P	31	28647.1	1.3				ug/L	22752	Standard
S	34	4877.5	1.7				ug/L	5049	Standard
Sr	88	360.0	7.7				ug/L	87	Standard
C	12	163.3	18.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	0	Standard
Dy	164	512.3	22.5				mg/L	10	Standard
Ho-1	165	306.7	8.0				mg/L	7	Standard
Er	166	300.0	28.9				mg/L	3	Standard
I	127	165895.7	6.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		130.164	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.089	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.434
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.247
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606054014
Sample Date/Time: Thursday, June 16, 2016 18:23:38
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68457.7	1.1				ug/L	51024	Standard
	Be	9	223.3	18.0	**0.1767**	0.033	18.9	ug/L	7	Standard
	Al	27	3707488.9	1.7	**19.4017**	0.122	0.6	ug/L	625	Standard
	Sc	45	30515.7	3.4				ug/L	29647	Standard
	Ti	47	294.7	2.2	**0.8253**	0.029	3.5	ug/L	57	Standard
	V	51	3410.3	2.9	**0.3157**	0.010	3.3	ug/L	1142	Standard
	Cr	52	8854.9	2.4	**0.2871**	0.040	14.1	ug/L	6628	Standard
	Cr	53	1000.0	7.8	**0.6537**	0.075	11.4	ug/L	430	Standard
	Mn	55	12117646.4	0.4	**2060.2552**	13.775	0.7	ug/L	603	Standard
	Co	59	1473.7	1.2	**0.1902**	0.002	1.2	ug/L	237	Standard
	Ni	60	5603.4	1.0	**2.8548**	0.061	2.1	ug/L	141	Standard
	Cu	65	1122.7	1.8	**0.5367**	0.010	1.8	ug/L	109	Standard
	Zn	66	11386.6	1.1	**10.1370**	0.058	0.6	ug/L	159	Standard
>	**Ge**	72	469570.6	1.1				ug/L	474053	Standard
	As	75	14849.9	0.4	**13.5649**	0.144	1.1	ug/L	-34	Standard
	Se	82	356.9	5.3	**3.0899**	0.192	6.2	ug/L	14	Standard
	Se-1	77	81.7	2.5	**0.3287**	0.021	6.5	ug/L	55	Standard
>	**Ga**	71	528.3	9.7				mg/L	50	Standard
	Rb	85	19908.1	1.7				ug/L	20	Standard
	Y	89	397696.3	3.0				ug/L	376602	Standard
>	**Rh**	103	73.3	28.4				ug/L	17	Standard
	Mo	98	1099.6	1.0	**0.4465**	0.011	2.4	ug/L	8	Standard
	Ag	107	113.3	53.3	**0.0062**	0.010	164.1	ug/L	81	Standard
	Cd	111	46.4	117.1	**0.0203**	0.028	137.1	mg/L	3	Standard
	Cd	114	110.7	115.4	**0.0188**	0.026	140.1	ug/L	7	Standard
>	**In**	115	540492.7	1.5				ug/L	524722	Standard
	Sn	118	843.4	3.6	**0.0625**	0.003	5.4	ug/L	715	Standard
	Sb	123	260.9	5.7	**0.0432**	0.004	9.7	ug/L	201	Standard
	Ba	135	85652.2	2.1	**45.8145**	0.326	0.7	ug/L	108	Standard
	Ce	140	2418.5	4.8				ug/L	30	Standard
>	**Tb**	159	825063.1	0.9				ug/L	792236	Standard
	Ho	165	370.0	15.3				ug/L	7	Standard
	Tl	203	165.0	77.7	**0.0187**	0.017	89.0	ug/L	9	Standard
	Tl	205	83.3	48.9	**0.0048**	0.006	129.6	ug/L	0	Standard
	Pb	206	781.7	2.4	**0.1102**	0.005	4.7	ug/L	216	Standard
	Pb	207	661.7	6.1	**0.1011**	0.010	10.0	ug/L	180	Standard
	Pb	208	2756.1	3.9	**0.1010**	0.006	6.3	ug/L	717	Standard
	U	238	69.7	29.4	**0.0035**	0.003	95.7	ug/L	4	Standard
>	**Bi**	209	467941.3	0.6				ug/L	460343	Standard

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Na	23	1.7	173.2	**4.9367**	9.553	193.5	mg/L	0	Standard
Mg	24	7730.3	2.8	**10.1412**	0.303	3.0	mg/L	20	Standard
K	39	158.3	7.9	**0.9473**	0.128	13.5	mg/L	22	Standard
Ca	43	168.3	19.8	**24.8759**	6.392	25.7	mg/L	47	Standard
Fe	54	6384.0	2.9	**4.9326**	0.253	5.1	mg/L	151	Standard
Fe	57	1760.1	6.1	**4.6585**	0.505	10.8	mg/L	195	Standard
> **Sc-1**	45	30515.7	3.4				mg/L	29647	Standard
Cl	35	207881.0	0.4				ug/L	154152	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	77943.4	2.4				ug/L	1607	Standard
P	31	27538.3	2.1				ug/L	22752	Standard
S	34	5344.3	4.3				ug/L	5049	Standard
Sr	88	228.3	5.5				ug/L	87	Standard
C	12	153.3	22.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	364.7	19.0				mg/L	10	Standard
Ho-1	165	370.0	15.3				mg/L	7	Standard
Er	166	390.0	7.7				mg/L	3	Standard
I	127	96865.7	4.2				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		134.167	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.054	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.006
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.651
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606054015
Sample Date/Time: Thursday, June 16, 2016 18:26:50
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70212.3	1.0				ug/L	51024	Standard
	Be	9	93.3	11.2	**0.0596**	0.009	14.8	ug/L	7	Standard
	Al	27	2156794.6	1.5	**11.0022**	0.244	2.2	ug/L	625	Standard
	Sc	45	32787.1	2.8				ug/L	29647	Standard
	Ti	47	872.7	1.5	**2.8741**	0.038	1.3	ug/L	57	Standard
	V	51	4953.3	2.7	**0.5601**	0.025	4.5	ug/L	1142	Standard
	Cr	52	12535.5	0.5	**0.8533**	0.007	0.8	ug/L	6628	Standard
	Cr	53	3772.1	6.1	**3.8114**	0.290	7.6	ug/L	430	Standard
	Mn	55	223713.2	0.6	**39.2731**	0.557	1.4	ug/L	603	Standard
	Co	59	2453.9	1.1	**0.3579**	0.004	1.1	ug/L	237	Standard
	Ni	60	3886.2	1.3	**2.0286**	0.038	1.9	ug/L	141	Standard
	Cu	65	32893.7	0.8	**18.2296**	0.262	1.4	ug/L	109	Standard
	Zn	66	61284.4	0.6	**57.5727**	0.568	1.0	ug/L	159	Standard
>	**Ge**	72	453357.9	0.8				ug/L	474053	Standard
	As	75	5903.1	1.9	**5.6002**	0.148	2.6	ug/L	-34	Standard
	Se	82	1422.0	3.2	**13.2789**	0.537	4.0	ug/L	14	Standard
	Se-1	77	189.7	16.8	**1.8389**	0.442	24.1	ug/L	55	Standard
>	**Ga**	71	225.0	13.5				mg/L	50	Standard
	Rb	85	13973.1	2.8				ug/L	20	Standard
	Y	89	404441.3	1.8				ug/L	376602	Standard
>	**Rh**	103	65.0	38.5				ug/L	17	Standard
	Mo	98	294.7	2.2	**0.1146**	0.002	2.0	ug/L	8	Standard
	Ag	107	105.0	9.1	**0.0046**	0.002	33.3	ug/L	81	Standard
	Cd	111	122.5	4.2	**0.0575**	0.003	4.7	mg/L	3	Standard
	Cd	114	252.7	21.3	**0.0469**	0.011	22.8	ug/L	7	Standard
>	**In**	115	544955.5	0.5				ug/L	524722	Standard
	Sn	118	895.0	4.4	**0.0706**	0.008	11.3	ug/L	715	Standard
	Sb	123	270.4	10.2	**0.0448**	0.006	14.2	ug/L	201	Standard
	Ba	135	146088.3	0.9	**77.5484**	1.011	1.3	ug/L	108	Standard
	Ce	140	17523.5	3.1				ug/L	30	Standard
>	**Tb**	159	819658.6	1.6				ug/L	792236	Standard
	Ho	165	628.3	0.5				ug/L	7	Standard
	Tl	203	235.3	10.6	**0.0288**	0.003	9.6	ug/L	9	Standard
	Tl	205	200.0	25.0	**0.0236**	0.008	34.4	ug/L	0	Standard
	Pb	206	6489.4	1.2	**1.3771**	0.042	3.0	ug/L	216	Standard
	Pb	207	5497.7	0.5	**1.2800**	0.026	2.0	ug/L	180	Standard
	Pb	208	22985.2	1.3	**1.3164**	0.041	3.1	ug/L	717	Standard
	U	238	227.3	4.1	**0.0298**	0.002	7.0	ug/L	4	Standard
>	**Bi**	209	451512.8	1.8				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.4796**	8.613	157.2	mg/L	0	Standard
Mg	24	16031.8	1.4	**19.6235**	0.803	4.1	mg/L	20	Standard
K	39	240.0	3.6	**1.4284**	0.103	7.2	mg/L	22	Standard
Ca	43	188.3	18.1	**26.5601**	6.775	25.5	mg/L	47	Standard
Fe	54	2702.3	1.1	**1.8725**	0.045	2.4	mg/L	151	Standard
Fe	57	970.0	7.1	**2.0665**	0.116	5.6	mg/L	195	Standard
> **Sc-1**	45	32787.1	2.8				mg/L	29647	Standard
Cl	35	187497.7	0.8				ug/L	154152	Standard
Kr	83	2.3	49.5				ug/L	3	Standard
Br	81	349533.5	4.1				ug/L	1607	Standard
P	31	41573.8	6.0				ug/L	22752	Standard
S	34	4967.5	2.6				ug/L	5049	Standard
Sr	88	208.3	5.5				ug/L	87	Standard
C	12	116.7	26.2				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	870.5	12.8				mg/L	10	Standard
Ho-1	165	628.3	0.5				mg/L	7	Standard
Er	166	616.7	28.8				mg/L	3	Standard
I	127	319694.7	6.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		137.606	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.634	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.856	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.082	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606054016
Sample Date/Time: Thursday, June 16, 2016 18:30:01
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68176.4	1.2				ug/L	51024	Standard
	Be	9	21.7	13.3	**-0.0018**	0.003	143.7	ug/L	7	Standard
	Al	27	2075359.9	0.4	**10.9025**	0.136	1.2	ug/L	625	Standard
	Sc	45	31050.1	1.7				ug/L	29647	Standard
	Ti	47	887.4	5.3	**2.8528**	0.151	5.3	ug/L	57	Standard
	V	51	3806.8	2.6	**0.3783**	0.010	2.7	ug/L	1142	Standard
	Cr	52	10637.4	1.5	**0.5485**	0.036	6.6	ug/L	6628	Standard
	Cr	53	1405.1	2.8	**1.1115**	0.040	3.6	ug/L	430	Standard
	Mn	55	486178.5	1.9	**83.5032**	2.235	2.7	ug/L	603	Standard
	Co	59	1054.7	3.8	**0.1263**	0.008	6.2	ug/L	237	Standard
	Ni	60	11529.4	0.9	**6.0257**	0.114	1.9	ug/L	141	Standard
	Cu	65	2707.2	1.0	**1.4044**	0.012	0.8	ug/L	109	Standard
	Zn	66	9083.1	1.3	**8.1357**	0.169	2.1	ug/L	159	Standard
>	**Ge**	72	464207.3	1.0				ug/L	474053	Standard
	As	75	2758.8	3.0	**2.5691**	0.059	2.3	ug/L	-34	Standard
	Se	82	1024.4	2.4	**9.2906**	0.197	2.1	ug/L	14	Standard
	Se-1	77	98.0	6.2	**0.5580**	0.071	12.7	ug/L	55	Standard
>	**Ga**	71	195.0	23.5				mg/L	50	Standard
	Rb	85	7673.6	3.9				ug/L	20	Standard
	Y	89	397515.6	2.3				ug/L	376602	Standard
>	**Rh**	103	68.3	30.5				ug/L	17	Standard
	Mo	98	786.7	1.9	**0.3292**	0.014	4.4	ug/L	8	Standard
	Ag	107	78.0	2.6	**0.0008**	0.000	5.5	ug/L	81	Standard
	Cd	111	30.9	35.5	**0.0127**	0.005	42.9	mg/L	3	Standard
	Cd	114	65.2	1.1	**0.0098**	0.000	2.0	ug/L	7	Standard
>	**In**	115	522465.9	2.4				ug/L	524722	Standard
	Sn	118	738.4	3.7	**0.0483**	0.008	17.1	ug/L	715	Standard
	Sb	123	275.0	16.0	**0.0486**	0.012	23.8	ug/L	201	Standard
	Ba	135	25240.0	1.7	**13.9295**	0.222	1.6	ug/L	108	Standard
	Ce	140	3872.2	6.3				ug/L	30	Standard
>	**Tb**	159	782878.6	0.7				ug/L	792236	Standard
	Ho	165	290.0	15.0				ug/L	7	Standard
	Tl	203	118.7	19.0	**0.0136**	0.003	22.8	ug/L	9	Standard
	Tl	205	133.3	20.7	**0.0136**	0.004	32.8	ug/L	0	Standard
	Pb	206	2356.5	1.5	**0.4750**	0.007	1.6	ug/L	216	Standard
	Pb	207	2055.5	1.9	**0.4553**	0.008	1.8	ug/L	180	Standard
	Pb	208	8501.6	2.4	**0.4610**	0.013	2.9	ug/L	717	Standard
	U	238	331.0	4.1	**0.0479**	0.002	5.0	ug/L	4	Standard
>	**Bi**	209	442159.2	0.2				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.1730**	9.144	176.8	mg/L	0	Standard
Mg	24	10690.4	1.9	**13.7935**	0.084	0.6	mg/L	20	Standard
K	39	96.7	13.0	**0.4748**	0.079	16.7	mg/L	22	Standard
Ca	43	233.3	8.9	**38.9201**	5.419	13.9	mg/L	47	Standard
Fe	54	3334.2	1.9	**2.4739**	0.064	2.6	mg/L	151	Standard
Fe	57	1251.7	5.3	**3.0560**	0.253	8.3	mg/L	195	Standard
> **Sc-1**	45	31050.1	1.7				mg/L	29647	Standard
Cl	35	170093.6	1.6				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	245182.8	3.5				ug/L	1607	Standard
P	31	32394.6	2.5				ug/L	22752	Standard
S	34	5009.2	1.9				ug/L	5049	Standard
Sr	88	261.7	17.8				ug/L	87	Standard
C	12	140.0	12.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	323.0	18.5				mg/L	10	Standard
Ho-1	165	290.0	15.0				mg/L	7	Standard
Er	166	216.7	25.4				mg/L	3	Standard
I	127	55511.6	2.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		133.616	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.923	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.570
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.050
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606054901
Sample Date/Time: Thursday, June 16, 2016 18:33:13
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72709.1	1.6				ug/L	51024	Standard
	Be	9	15.0	88.2	**-0.0087**	0.011	126.1	ug/L	7	Standard
	Al	27	11667015.3	1.5	**57.5082**	0.540	0.9	ug/L	625	Standard
	Sc	45	28668.8	2.1				ug/L	29647	Standard
	Ti	47	148.7	19.1	**0.3823**	0.104	27.3	ug/L	57	Standard
	V	51	2595.6	16.9	**0.2356**	0.067	28.4	ug/L	1142	Standard
	Cr	52	17123.0	0.8	**1.6486**	0.049	3.0	ug/L	6628	Standard
	Cr	53	9336.3	15.0	**10.6848**	1.682	15.7	ug/L	430	Standard
	Mn	55	18549.3	0.3	**3.3327**	0.052	1.6	ug/L	603	Standard
	Co	59	5007.8	1.9	**0.8213**	0.019	2.4	ug/L	237	Standard
	Ni	60	15512.9	1.9	**8.8253**	0.199	2.3	ug/L	141	Standard
	Cu	65	297329.3	1.3	**175.0473**	3.650	2.1	ug/L	109	Standard
	Zn	66	4856.4	2.5	**4.6181**	0.121	2.6	ug/L	159	Standard
>	**Ge**	72	428183.3	1.3				ug/L	474053	Standard
	As	75	2686.3	8.7	**2.7111**	0.235	8.7	ug/L	-34	Standard
	Se	82	880.4	5.1	**8.6464**	0.479	5.5	ug/L	14	Standard
	Se-1	77	1273.7	6.1	**17.6237**	1.226	7.0	ug/L	55	Standard
>	**Ga**	71	535.0	8.9				mg/L	50	Standard
	Rb	85	254257.5	1.2				ug/L	20	Standard
	Y	89	359721.9	0.6				ug/L	376602	Standard
>	**Rh**	103	140.0	9.4				ug/L	17	Standard
	Mo	98	3488.6	3.7	**1.5905**	0.067	4.2	ug/L	8	Standard
	Ag	107	123.7	2.8	**0.0101**	0.001	6.2	ug/L	81	Standard
	Cd	111	15.6	26.6	**0.0055**	0.002	42.5	mg/L	3	Standard
	Cd	114	44.2	40.8	**0.0061**	0.004	65.8	ug/L	7	Standard
>	**In**	115	485628.6	0.5				ug/L	524722	Standard
	Sn	118	1148.4	1.8	**0.1409**	0.005	3.6	ug/L	715	Standard
	Sb	123	1921.7	1.1	**0.4606**	0.007	1.6	ug/L	201	Standard
	Ba	135	96043.1	1.3	**57.1923**	0.511	0.9	ug/L	108	Standard
	Ce	140	93.3	49.8				ug/L	30	Standard
>	**Tb**	159	766976.5	0.2				ug/L	792236	Standard
	Ho	165	5.0	173.2				ug/L	7	Standard
	Tl	203	328.3	20.2	**0.0463**	0.010	21.2	ug/L	9	Standard
	Tl	205	263.3	14.0	**0.0383**	0.006	16.9	ug/L	0	Standard
	Pb	206	413.7	9.2	**0.0455**	0.009	20.2	ug/L	216	Standard
	Pb	207	380.0	6.3	**0.0489**	0.006	12.7	ug/L	180	Standard
	Pb	208	1519.7	11.6	**0.0434**	0.011	26.5	ug/L	717	Standard
	U	238	31.3	49.5	**-0.0018**	0.003	153.2	ug/L	4	Standard
>	**Bi**	209	404872.2	0.7				ug/L	460343	Standard

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Na	23	10.0	86.6	**-23.4566**	29.384	125.3	mg/L	0	Standard
Mg	24	267948.6	0.7	**375.7604**	9.820	2.6	mg/L	20	Standard
K	39	5807.8	3.4	**45.5805**	2.203	4.8	mg/L	22	Standard
Ca	43	638.3	3.5	**141.1529**	8.616	6.1	mg/L	47	Standard
Fe	54	146.9	19.8	**0.0083**	0.022	270.3	mg/L	151	Standard
Fe	57	816.7	4.9	**1.9694**	0.159	8.1	mg/L	195	Standard
> **Sc-1**	45	28668.8	2.1				mg/L	29647	Standard
Cl	35	417643.9	1.4				ug/L	154152	Standard
Kr	83	3.0	57.7				ug/L	3	Standard
Br	81	229759.6	2.4				ug/L	1607	Standard
P	31	23254.5	2.6				ug/L	22752	Standard
S	34	4967.5	4.2				ug/L	5049	Standard
Sr	88	355.0	7.8				ug/L	87	Standard
C	12	183.3	32.0				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	56.7	27.0				mg/L	0	Standard
Dy	164	9.8	2.8				mg/L	10	Standard
Ho-1	165	5.0	173.2				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	1031517.8	6.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		142.499	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.324	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	92.550
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	87.950
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: L1606061401
Sample Date/Time: Thursday, June 16, 2016 18:36:24
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67849.9	1.1				ug/L	51024	Standard
	Be	9	10.0	100.0	**-0.0122**	0.009	72.4	ug/L	7	Standard
	Al	27	7374370.7	1.4	**38.9545**	0.953	2.4	ug/L	625	Standard
	Sc	45	31795.0	3.3				ug/L	29647	Standard
	Ti	47	313.7	6.8	**0.9174**	0.076	8.3	ug/L	57	Standard
	V	51	2621.7	2.2	**0.2138**	0.007	3.4	ug/L	1142	Standard
	Cr	52	11091.1	1.0	**0.6343**	0.009	1.4	ug/L	6628	Standard
	Cr	53	2283.5	15.4	**2.1128**	0.383	18.1	ug/L	430	Standard
	Mn	55	22885192.4	0.4	**3995.0920**	30.113	0.8	ug/L	603	Standard
	Co	59	1232.4	2.0	**0.1575**	0.003	2.1	ug/L	237	Standard
	Ni	60	2098.5	2.4	**1.0496**	0.022	2.1	ug/L	141	Standard
	Cu	65	1216.4	7.2	**0.6044**	0.045	7.4	ug/L	109	Standard
	Zn	66	2288.2	0.5	**1.9075**	0.018	1.0	ug/L	159	Standard
>	**Ge**	72	457333.9	0.5				ug/L	474053	Standard
	As	75	909.5	3.9	**0.8764**	0.032	3.6	ug/L	-34	Standard
	Se	82	87.0	7.9	**0.6466**	0.066	10.1	ug/L	14	Standard
	Se-1	77	157.0	28.6	**1.3726**	0.597	43.5	ug/L	55	Standard
>	**Ga**	71	960.0	12.3				mg/L	50	Standard
	Rb	85	5015.8	1.4				ug/L	20	Standard
	Y	89	394642.7	2.8				ug/L	376602	Standard
>	**Rh**	103	63.3	16.4				ug/L	17	Standard
	Mo	98	105.8	7.3	**0.0386**	0.003	8.5	ug/L	8	Standard
	Ag	107	76.0	8.0	**0.0002**	0.001	446.5	ug/L	81	Standard
	Cd	111	105.5	11.4	**0.0504**	0.007	13.1	mg/L	3	Standard
	Cd	114	217.3	8.1	**0.0408**	0.003	7.9	ug/L	7	Standard
>	**In**	115	532134.8	0.9				ug/L	524722	Standard
	Sn	118	536.7	2.8	**0.0088**	0.003	34.6	ug/L	715	Standard
	Sb	123	277.5	10.8	**0.0479**	0.007	15.3	ug/L	201	Standard
	Ba	135	159442.6	1.1	**86.6865**	1.387	1.6	ug/L	108	Standard
	Ce	140	1033.4	5.7				ug/L	30	Standard
>	**Tb**	159	812600.2	1.7				ug/L	792236	Standard
	Ho	165	136.7	12.8				ug/L	7	Standard
	Tl	203	148.0	12.8	**0.0171**	0.003	14.9	ug/L	9	Standard
	Tl	205	111.7	14.4	**0.0097**	0.003	26.2	ug/L	0	Standard
	Pb	206	315.7	1.6	**0.0132**	0.001	8.8	ug/L	216	Standard
	Pb	207	263.7	2.5	**0.0100**	0.002	15.2	ug/L	180	Standard
	Pb	208	1172.4	3.4	**0.0120**	0.002	19.7	ug/L	717	Standard
	U	238	803.7	2.6	**0.1241**	0.003	2.8	ug/L	4	Standard
>	**Bi**	209	452405.5	0.1				ug/L	460343	Standard

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Na	23	10.0	50.0	**-19.9609**	15.153	75.9	mg/L	0	Standard
Mg	24	11375.9	2.6	**14.3383**	0.138	1.0	mg/L	20	Standard
K	39	516.7	6.4	**3.4516**	0.346	10.0	mg/L	22	Standard
Ca	43	308.3	25.1	**54.1698**	18.153	33.5	mg/L	47	Standard
Fe	54	4619.7	1.0	**3.3894**	0.094	2.8	mg/L	151	Standard
Fe	57	1538.4	4.2	**3.7997**	0.290	7.6	mg/L	195	Standard
> **Sc-1**	45	31795.0	3.3				mg/L	29647	Standard
Cl	35	183919.6	1.0				ug/L	154152	Standard
Kr	83	2.3	89.2				ug/L	3	Standard
Br	81	17553.5	2.0				ug/L	1607	Standard
P	31	29355.1	2.7				ug/L	22752	Standard
S	34	5200.9	1.9				ug/L	5049	Standard
Sr	88	190.0	11.5				ug/L	87	Standard
C	12	103.3	53.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	152.8	48.1				mg/L	10	Standard
Ho-1	165	136.7	12.8				mg/L	7	Standard
Er	166	150.0	34.6				mg/L	3	Standard
I	127	70208.0	15.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.976	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.473	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	101.413
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.276
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606062401
Sample Date/Time: Thursday, June 16, 2016 18:39:36
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69110.6	0.2				ug/L	51024	Standard
	Be	9	15.0	33.3	**-0.0079**	0.004	55.0	ug/L	7	Standard
	Al	27	7936210.1	0.6	**41.1512**	0.274	0.7	ug/L	625	Standard
	Sc	45	30823.0	3.2				ug/L	29647	Standard
	Ti	47	221.7	9.7	**0.5979**	0.081	13.6	ug/L	57	Standard
	V	51	218784.0	0.6	**31.6314**	0.474	1.5	ug/L	1142	Standard
	Cr	52	16406.2	1.4	**1.3767**	0.046	3.3	ug/L	6628	Standard
	Cr	53	3238.7	7.2	**3.1676**	0.244	7.7	ug/L	430	Standard
	Mn	55	47582.7	4.0	**8.1574**	0.347	4.3	ug/L	603	Standard
	Co	59	6337.0	0.6	**0.9777**	0.004	0.4	ug/L	237	Standard
	Ni	60	16455.3	0.3	**8.7388**	0.105	1.2	ug/L	141	Standard
	Cu	65	7946.8	1.2	**4.3032**	0.079	1.8	ug/L	109	Standard
	Zn	66	49099.1	1.5	**45.5445**	0.480	1.1	ug/L	159	Standard
>	**Ge**	72	458635.0	1.0				ug/L	474053	Standard
	As	75	1613.9	2.7	**1.5315**	0.033	2.1	ug/L	-34	Standard
	Se	82	632.2	1.0	**5.7396**	0.015	0.3	ug/L	14	Standard
	Se-1	77	198.0	8.1	**1.9191**	0.191	10.0	ug/L	55	Standard
>	**Ga**	71	478.3	12.6				mg/L	50	Standard
	Rb	85	15694.8	4.0				ug/L	20	Standard
	Y	89	402857.7	1.3				ug/L	376602	Standard
>	**Rh**	103	55.0	41.7				ug/L	17	Standard
	Mo	98	250973.6	0.6	**101.4589**	1.305	1.3	ug/L	8	Standard
	Ag	107	107.3	16.2	**0.0049**	0.003	57.8	ug/L	81	Standard
	Cd	111	-120.2	20.3	**-0.0625**	0.013	20.5	mg/L	3	Standard
	Cd	114	568.4	5.3	**0.1093**	0.006	5.7	ug/L	7	Standard
>	**In**	115	549544.5	1.2				ug/L	524722	Standard
	Sn	118	805.0	7.3	**0.0532**	0.009	16.5	ug/L	715	Standard
	Sb	123	561.0	5.0	**0.1078**	0.005	5.0	ug/L	201	Standard
	Ba	135	33980.1	2.6	**17.8424**	0.439	2.5	ug/L	108	Standard
	Ce	140	471.7	1.2				ug/L	30	Standard
>	**Tb**	159	820522.7	2.1				ug/L	792236	Standard
	Ho	165	20.0	25.0				ug/L	7	Standard
	Tl	203	251.3	7.2	**0.0306**	0.002	5.8	ug/L	9	Standard
	Tl	205	235.0	7.7	**0.0286**	0.002	7.0	ug/L	0	Standard
	Pb	206	1733.1	4.4	**0.3220**	0.019	5.8	ug/L	216	Standard
	Pb	207	1553.1	3.0	**0.3188**	0.020	6.4	ug/L	180	Standard
	Pb	208	6433.5	1.7	**0.3223**	0.016	4.9	ug/L	717	Standard
	U	238	255.3	11.3	**0.0338**	0.004	11.1	ug/L	4	Standard
>	**Bi**	209	456920.5	2.4				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.0019**	9.440	188.7	mg/L	0	Standard
Mg	24	19250.6	2.3	**25.0636**	0.292	1.2	mg/L	20	Standard
K	39	168.3	17.4	**1.0102**	0.242	24.0	mg/L	22	Standard
Ca	43	145.0	18.2	**19.2916**	5.015	26.0	mg/L	47	Standard
Fe	54	151.8	11.3	**0.0041**	0.017	409.5	mg/L	151	Standard
Fe	57	315.0	7.3	**0.2903**	0.041	14.1	mg/L	195	Standard
> **Sc-1**	45	30823.0	3.2				mg/L	29647	Standard
Cl	35	228215.4	1.2				ug/L	154152	Standard
Kr	83	1.7	124.9				ug/L	3	Standard
Br	81	147558.5	1.4				ug/L	1607	Standard
P	31	26561.6	1.8				ug/L	22752	Standard
S	34	5117.5	2.5				ug/L	5049	Standard
Sr	88	270.0	14.7				ug/L	87	Standard
C	12	100.0	17.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	70.0	24.7				mg/L	0	Standard
Dy	164	58.9	45.9				mg/L	10	Standard
Ho-1	165	20.0	25.0				mg/L	7	Standard
Er	166	23.3	49.5				mg/L	3	Standard
I	127	16912.8	6.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		135.447	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.748	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	104.731	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.257	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	

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Method 6020 - Summary Report

Sample ID: L1606063001 WG572432-03
Sample Date/Time: Thursday, June 16, 2016 18:42:47
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69631.3	1.0				ug/L	51024	Standard
	Be	9	8.3	34.6	**-0.0138**	0.003	18.5	ug/L	7	Standard
	Al	27	1739354.1	0.6	**8.9445**	0.105	1.2	ug/L	625	Standard
	Sc	45	30928.2	2.9				ug/L	29647	Standard
	Ti	47	665.7	3.5	**2.0953**	0.107	5.1	ug/L	57	Standard
	V	51	2109.1	2.9	**0.1339**	0.005	3.7	ug/L	1142	Standard
	Cr	52	7651.6	0.5	**0.1320**	0.020	15.0	ug/L	6628	Standard
	Cr	53	2638.6	11.3	**2.4577**	0.289	11.8	ug/L	430	Standard
	Mn	55	27736.7	1.0	**4.6358**	0.114	2.5	ug/L	603	Standard
	Co	59	815.4	0.8	**0.0880**	0.002	1.9	ug/L	237	Standard
	Ni	60	1350.7	2.9	**0.6359**	0.022	3.4	ug/L	141	Standard
	Cu	65	5230.6	1.3	**2.7695**	0.021	0.8	ug/L	109	Standard
	Zn	66	9220.1	0.6	**8.2452**	0.069	0.8	ug/L	159	Standard
>	**Ge**	72	465111.5	1.4				ug/L	474053	Standard
	As	75	269.2	8.8	**0.2730**	0.025	9.0	ug/L	-34	Standard
	Se	82	49.8	13.6	**0.2903**	0.068	23.4	ug/L	14	Standard
	Se-1	77	173.0	5.2	**1.5506**	0.090	5.8	ug/L	55	Standard
>	**Ga**	71	241.7	10.4				mg/L	50	Standard
	Rb	85	36829.7	1.3				ug/L	20	Standard
	Y	89	384374.8	2.5				ug/L	376602	Standard
>	**Rh**	103	41.7	25.0				ug/L	17	Standard
	Mo	98	728.3	12.5	**0.3031**	0.038	12.6	ug/L	8	Standard
	Ag	107	82.0	10.4	**0.0014**	0.002	110.2	ug/L	81	Standard
	Cd	111	14.7	18.3	**0.0044**	0.001	34.2	mg/L	3	Standard
	Cd	114	39.2	43.5	**0.0044**	0.004	82.7	ug/L	7	Standard
>	**In**	115	524227.9	1.2				ug/L	524722	Standard
	Sn	118	960.0	3.9	**0.0890**	0.009	10.3	ug/L	715	Standard
	Sb	123	670.5	6.9	**0.1389**	0.011	8.0	ug/L	201	Standard
	Ba	135	8761.5	1.0	**4.7811**	0.086	1.8	ug/L	108	Standard
	Ce	140	878.4	8.1				ug/L	30	Standard
>	**Tb**	159	793064.4	3.2				ug/L	792236	Standard
	Ho	165	38.3	19.9				ug/L	7	Standard
	Tl	203	150.0	18.8	**0.0177**	0.004	22.6	ug/L	9	Standard
	Tl	205	133.3	15.6	**0.0133**	0.003	25.5	ug/L	0	Standard
	Pb	206	508.3	5.7	**0.0571**	0.007	12.3	ug/L	216	Standard
	Pb	207	414.7	10.5	**0.0477**	0.010	21.1	ug/L	180	Standard
	Pb	208	1771.7	0.4	**0.0490**	0.001	1.6	ug/L	717	Standard
	U	238	19.0	24.1	**-0.0044**	0.001	16.6	ug/L	4	Standard
>	**Bi**	209	447050.8	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	28164.5	1.9	**36.5804**	1.386	3.8	mg/L	20	Standard
K	39	385.0	0.0	**2.5870**	0.080	3.1	mg/L	22	Standard
Ca	43	85.0	20.4	**5.9218**	4.410	74.5	mg/L	47	Standard
Fe	54	182.6	15.8	**0.0273**	0.022	80.2	mg/L	151	Standard
Fe	57	225.0	0.0	**0.0211**	0.019	90.5	mg/L	195	Standard
Sc-1	45	30928.2	2.9				mg/L	29647	Standard
Cl	35	213453.3	1.7				ug/L	154152	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	8942.7	8.2				ug/L	1607	Standard
P	31	31840.1	1.6				ug/L	22752	Standard
S	34	5007.5	0.9				ug/L	5049	Standard
Sr	88	131.7	11.6				ug/L	87	Standard
C	12	73.3	34.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	40.5	49.2				mg/L	10	Standard
Ho-1	165	38.3	19.9				mg/L	7	Standard
Er	166	60.0	33.3				mg/L	3	Standard
I	127	51039.4	6.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		136.467	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.114	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.906
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.113
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 18:46:00
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68225.0	3.2				ug/L	51024	Standard
	Be	9	50708.1	3.5	**45.0847**	0.435	1.0	ug/L	7	Standard
	Al	27	7858332.7	1.5	**41.2907**	0.687	1.7	ug/L	625	Standard
	Sc	45	30560.8	2.3				ug/L	29647	Standard
	Ti	47	29370.1	1.8	**100.7639**	1.653	1.6	ug/L	57	Standard
	V	51	355260.2	0.6	**51.3611**	0.501	1.0	ug/L	1142	Standard
	Cr	52	364134.0	1.1	**50.1157**	0.189	0.4	ug/L	6628	Standard
	Cr	53	45359.5	2.1	**49.8880**	1.306	2.6	ug/L	430	Standard
	Mn	55	315438.4	1.3	**54.6794**	1.132	2.1	ug/L	603	Standard
	Co	59	335779.3	1.2	**53.8409**	0.832	1.5	ug/L	237	Standard
	Ni	60	93086.4	0.8	**49.6929**	0.140	0.3	ug/L	141	Standard
	Cu	65	91127.3	1.4	**49.9327**	0.679	1.4	ug/L	109	Standard
	Zn	66	54195.8	1.1	**50.1944**	0.353	0.7	ug/L	159	Standard
>	Ge	72	459562.3	0.8				ug/L	474053	Standard
	As	75	53571.2	0.7	**49.9335**	0.666	1.3	ug/L	-34	Standard
	Se	82	5527.7	0.4	**51.3922**	0.186	0.4	ug/L	14	Standard
	Se-1	77	3740.1	0.8	**49.4994**	0.726	1.5	ug/L	55	Standard
>	Ga	71	238.3	8.5				mg/L	50	Standard
	Rb	85	728.4	8.0				ug/L	20	Standard
	Y	89	403863.1	2.0				ug/L	376602	Standard
>	Rh	103	30.0	16.7				ug/L	17	Standard
	Mo	98	249432.2	1.4	**100.2684**	1.541	1.5	ug/L	8	Standard
	Ag	107	296071.6	1.7	**47.1134**	0.851	1.8	ug/L	81	Standard
	Cd	111	98641.2	1.4	**48.2538**	0.726	1.5	mg/L	3	Standard
	Cd	114	241419.7	2.8	**47.7722**	1.408	2.9	ug/L	7	Standard
>	In	115	552610.2	0.1				ug/L	524722	Standard
	Sn	118	274943.9	0.8	**48.3767**	0.444	0.9	ug/L	715	Standard
	Sb	123	217314.9	1.3	**47.2274**	0.669	1.4	ug/L	201	Standard
	Ba	135	89302.7	0.5	**46.7236**	0.287	0.6	ug/L	108	Standard
	Ce	140	61.7	32.8				ug/L	30	Standard
>	Tb	159	816119.0	0.8				ug/L	792236	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	369419.3	1.5	**48.6376**	0.510	1.0	ug/L	9	Standard
	Tl	205	333866.9	0.9	**51.6890**	0.388	0.8	ug/L	0	Standard
	Pb	206	232126.7	1.0	**50.5119**	0.450	0.9	ug/L	216	Standard
	Pb	207	210545.8	0.6	**50.3290**	0.336	0.7	ug/L	180	Standard
	Pb	208	855972.8	0.6	**50.4191**	0.795	1.6	ug/L	717	Standard
	U	238	320948.2	1.1	**51.9636**	0.277	0.5	ug/L	4	Standard
>	Bi	209	457695.0	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	4200.6	2.8	**5.4815**	0.198	3.6	mg/L	20	Standard
K	39	558.3	18.4	**3.8970**	0.711	18.2	mg/L	22	Standard
Ca	43	60.0	25.0	**0.3745**	3.188	851.1	mg/L	47	Standard
Fe	54	6005.7	4.5	**4.6268**	0.322	7.0	mg/L	151	Standard
Fe	57	1721.8	7.2	**4.5229**	0.315	7.0	mg/L	195	Standard
> **Sc-1**	45	30560.8	2.3				mg/L	29647	Standard
Cl	35	169117.3	1.2				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	2713.6	7.9				ug/L	1607	Standard
P	31	25114.1	2.9				ug/L	22752	Standard
S	34	5354.3	6.7				ug/L	5049	Standard
Sr	88	73.3	32.2				ug/L	87	Standard
C	12	66.7	67.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	23.0	67.5				mg/L	10	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	3423.7	23.7				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	90.169		
	Al	27	82.581		
	Sc	45			
	Ti	47	100.764		
	V	51	102.722		
	Cr	52	100.231		
	Cr	53			
	Mn	55	109.359		
	Co	59	107.682		
	Ni	60	99.386		
	Cu	65	99.865		
	Zn	66	100.389		
>	Ge	72		96.943	
	As	75	99.867		
	Se	82	102.784		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	100.268		
Ag	107	94.227		
Cd	111	96.508		
Cd	114			
In	115		105.315	
Sn	118	96.753		
Sb	123	94.455		
Ba	135	93.447		
Ce	140			
Tb	159			
Ho	165			
Tl	203	97.275		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.838		
U	238	103.927		
Bi	209		99.425	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 18:49:12
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64312.9	1.7				ug/L	51024	Standard
	Be	9	10.0	100.0	**-0.0116**	0.009	81.0	ug/L	7	Standard
	Al	27	1253.4	11.0	**-0.0028**	0.001	25.9	ug/L	625	Standard
	Sc	45	30213.4	2.2				ug/L	29647	Standard
	Ti	47	46.7	13.1	**-0.0109**	0.022	201.6	ug/L	57	Standard
	V	51	1033.9	3.5	**-0.0234**	0.008	34.0	ug/L	1142	Standard
	Cr	52	6122.9	0.9	**-0.0987**	0.025	25.4	ug/L	6628	Standard
	Cr	53	575.0	8.8	**0.1852**	0.063	34.2	ug/L	430	Standard
	Mn	55	1171.4	5.3	**0.0703**	0.014	19.8	ug/L	603	Standard
	Co	59	202.3	7.7	**-0.0099**	0.003	28.8	ug/L	237	Standard
	Ni	60	113.3	11.9	**-0.0193**	0.006	33.6	ug/L	141	Standard
	Cu	65	139.7	5.5	**0.0080**	0.006	71.9	ug/L	109	Standard
	Zn	66	162.0	9.1	**-0.0865**	0.010	11.9	ug/L	159	Standard
>	**Ge**	72	475844.7	2.3				ug/L	474053	Standard
	As	75	5.3	48.7	**0.0299**	0.002	7.8	ug/L	-34	Standard
	Se	82	21.3	16.5	**0.0231**	0.034	148.8	ug/L	14	Standard
	Se-1	77	70.7	7.0	**0.1723**	0.070	40.6	ug/L	55	Standard
>	**Ga**	71	140.0	34.1				mg/L	50	Standard
	Rb	85	38.3	49.4				ug/L	20	Standard
	Y	89	392359.8	3.0				ug/L	376602	Standard
>	**Rh**	103	15.0	57.7				ug/L	17	Standard
	Mo	98	303.5	29.0	**0.1205**	0.035	28.8	ug/L	8	Standard
	Ag	107	88.3	9.9	**0.0022**	0.001	58.2	ug/L	81	Standard
	Cd	111	9.2	17.1	**0.0014**	0.001	58.9	mg/L	3	Standard
	Cd	114	26.1	34.4	**0.0015**	0.002	118.0	ug/L	7	Standard
>	**In**	115	533517.8	1.4				ug/L	524722	Standard
	Sn	118	766.7	17.2	**0.0508**	0.026	51.1	ug/L	715	Standard
	Sb	123	454.0	26.6	**0.0877**	0.028	32.4	ug/L	201	Standard
	Ba	135	106.0	9.4	**-0.0001**	0.006	3944.8	ug/L	108	Standard
	Ce	140	23.3	44.6				ug/L	30	Standard
>	**Tb**	159	792169.2	1.1				ug/L	792236	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	62.3	2.5	**0.0057**	0.000	2.0	ug/L	9	Standard
	Tl	205	51.7	49.7	**0.0003**	0.004	1341.8	ug/L	0	Standard
	Pb	206	226.7	8.4	**-0.0062**	0.005	76.5	ug/L	216	Standard
	Pb	207	203.3	4.0	**-0.0045**	0.002	40.0	ug/L	180	Standard
	Pb	208	845.7	5.1	**-0.0073**	0.002	33.6	ug/L	717	Standard
	U	238	36.0	10.0	**-0.0017**	0.001	31.3	ug/L	4	Standard
>	**Bi**	209	451238.0	1.2				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	41.7	38.6	**0.0104**	0.022	211.4	mg/L	20	Standard
K	39	10.0	50.0	**-0.1532**	0.037	24.4	mg/L	22	Standard
Ca	43	38.3	32.8	**-4.4370**	2.704	60.9	mg/L	47	Standard
Fe	54	137.9	7.6	**-0.0050**	0.006	124.9	mg/L	151	Standard
Fe	57	133.3	7.8	**-0.2416**	0.038	15.5	mg/L	195	Standard
Sc-1	45	30213.4	2.2				mg/L	29647	Standard
Cl	35	167592.0	1.8				ug/L	154152	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	2426.9	7.0				ug/L	1607	Standard
P	31	25579.9	2.0				ug/L	22752	Standard
S	34	5439.3	0.7				ug/L	5049	Standard
Sr	88	61.7	9.4				ug/L	87	Standard
C	12	56.7	56.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.0	93.6				mg/L	10	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	2145.2	8.8				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.378	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.676	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.022	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, June 16, 2016 18:51:29
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Method 6020 - Summary Report

Sample ID: L1606063001DP WG572432-10
Sample Date/Time: Thursday, June 16, 2016 18:52:25
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68712.2	2.1				ug/L	51024	Standard
	Be	9	13.3	57.3	**-0.0092**	0.007	74.2	ug/L	7	Standard
	Al	27	1694606.4	2.1	**8.8301**	0.029	0.3	ug/L	625	Standard
	Sc	45	32870.6	1.4				ug/L	29647	Standard
	Ti	47	632.0	2.3	**1.9902**	0.036	1.8	ug/L	57	Standard
	V	51	2183.1	15.2	**0.1462**	0.049	33.7	ug/L	1142	Standard
	Cr	52	8437.7	0.6	**0.2463**	0.014	5.5	ug/L	6628	Standard
	Cr	53	3582.1	45.8	**3.5137**	1.806	51.4	ug/L	430	Standard
	Mn	55	25959.2	3.5	**4.3517**	0.184	4.2	ug/L	603	Standard
	Co	59	780.0	4.2	**0.0830**	0.005	6.3	ug/L	237	Standard
	Ni	60	1265.7	3.1	**0.5941**	0.019	3.2	ug/L	141	Standard
	Cu	65	4964.1	2.1	**2.6377**	0.034	1.3	ug/L	109	Standard
	Zn	66	7744.6	0.4	**6.9226**	0.090	1.3	ug/L	159	Standard
>	**Ge**	72	462903.9	0.9				ug/L	474053	Standard
	As	75	268.6	20.8	**0.2737**	0.054	19.7	ug/L	-34	Standard
	Se	82	41.2	34.5	**0.2137**	0.136	63.4	ug/L	14	Standard
	Se-1	77	155.7	4.3	**1.3316**	0.104	7.8	ug/L	55	Standard
>	**Ga**	71	160.0	9.4				mg/L	50	Standard
	Rb	85	36001.1	1.5				ug/L	20	Standard
	Y	89	387483.8	2.3				ug/L	376602	Standard
>	**Rh**	103	38.3	41.9				ug/L	17	Standard
	Mo	98	602.0	7.2	**0.2407**	0.015	6.4	ug/L	8	Standard
	Ag	107	97.7	12.0	**0.0035**	0.002	49.5	ug/L	81	Standard
	Cd	111	14.9	82.6	**0.0042**	0.006	147.6	mg/L	3	Standard
	Cd	114	54.8	20.5	**0.0072**	0.002	30.8	ug/L	7	Standard
>	**In**	115	542940.9	1.2				ug/L	524722	Standard
	Sn	118	1003.4	7.5	**0.0905**	0.011	12.7	ug/L	715	Standard
	Sb	123	760.6	4.7	**0.1535**	0.006	4.0	ug/L	201	Standard
	Ba	135	8458.7	1.6	**4.4523**	0.053	1.2	ug/L	108	Standard
	Ce	140	761.7	12.9				ug/L	30	Standard
>	**Tb**	159	813941.2	0.6				ug/L	792236	Standard
	Ho	165	46.7	60.9				ug/L	7	Standard
	Tl	203	213.3	5.0	**0.0252**	0.001	4.7	ug/L	9	Standard
	Tl	205	173.3	1.7	**0.0188**	0.000	1.2	ug/L	0	Standard
	Pb	206	486.7	2.6	**0.0486**	0.003	6.9	ug/L	216	Standard
	Pb	207	410.0	4.9	**0.0433**	0.005	11.5	ug/L	180	Standard
	Pb	208	1804.7	2.7	**0.0475**	0.003	5.4	ug/L	717	Standard
	U	238	45.0	13.3	**-0.0004**	0.001	279.8	ug/L	4	Standard
>	**Bi**	209	462206.0	0.8				ug/L	460343	Standard

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Na	23	5.0	100.0	**-4.2590**	14.576	342.2	mg/L	0	Standard
Mg	24	26429.7	2.8	**32.2858**	1.354	4.2	mg/L	20	Standard
K	39	396.7	3.9	**2.4991**	0.082	3.3	mg/L	22	Standard
Ca	43	96.7	7.9	**7.1952**	1.844	25.6	mg/L	47	Standard
Fe	54	180.8	15.4	**0.0178**	0.022	121.6	mg/L	151	Standard
Fe	57	203.3	16.0	**-0.0787**	0.096	122.2	mg/L	195	Standard
> **Sc-1**	45	32870.6	1.4				mg/L	29647	Standard
Cl	35	203581.4	1.3				ug/L	154152	Standard
Kr	83	2.0	0.0				ug/L	3	Standard
Br	81	6207.9	4.2				ug/L	1607	Standard
P	31	32229.2	1.5				ug/L	22752	Standard
S	34	4830.8	4.5				ug/L	5049	Standard
Sr	88	108.3	30.0				ug/L	87	Standard
C	12	86.7	6.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	47.3	42.6				mg/L	10	Standard
Ho-1	165	46.7	60.9				mg/L	7	Standard
Er	166	56.7	81.5				mg/L	3	Standard
I	127	39314.5	7.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		134.666	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.648	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.472
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.405
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 18:55:38
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67264.1	3.2				ug/L	51024	Standard
	Be	9	51087.7	3.5	**46.0740**	0.786	1.7	ug/L	7	Standard
	Al	27	7974693.7	0.5	**42.5107**	1.182	2.8	ug/L	625	Standard
	Sc	45	31289.0	2.9				ug/L	29647	Standard
	Ti	47	29983.3	1.5	**100.8099**	2.621	2.6	ug/L	57	Standard
	V	51	356976.4	1.6	**50.5633**	0.626	1.2	ug/L	1142	Standard
	Cr	52	371000.0	2.2	**50.0293**	1.004	2.0	ug/L	6628	Standard
	Cr	53	45682.1	3.1	**49.2179**	1.406	2.9	ug/L	430	Standard
	Mn	55	318039.5	1.1	**54.0099**	0.158	0.3	ug/L	603	Standard
	Co	59	338391.0	1.1	**53.1626**	0.493	0.9	ug/L	237	Standard
	Ni	60	94145.4	2.5	**49.2417**	1.028	2.1	ug/L	141	Standard
	Cu	65	92379.1	1.4	**49.5948**	0.289	0.6	ug/L	109	Standard
	Zn	66	54668.5	1.5	**49.6081**	0.589	1.2	ug/L	159	Standard
>	Ge	72	469038.3	1.3				ug/L	474053	Standard
	As	75	54293.6	1.3	**49.5816**	0.207	0.4	ug/L	-34	Standard
	Se	82	5559.0	0.1	**50.6424**	0.722	1.4	ug/L	14	Standard
	Se-1	77	3786.5	1.3	**49.0965**	0.931	1.9	ug/L	55	Standard
>	Ga	71	158.3	25.7				mg/L	50	Standard
	Rb	85	761.7	7.0				ug/L	20	Standard
	Y	89	395591.6	1.3				ug/L	376602	Standard
>	Rh	103	25.0	80.0				ug/L	17	Standard
	Mo	98	251383.1	0.4	**103.0718**	1.215	1.2	ug/L	8	Standard
	Ag	107	306968.8	0.5	**49.8241**	0.634	1.3	ug/L	81	Standard
	Cd	111	100215.1	0.7	**50.0041**	0.742	1.5	mg/L	3	Standard
	Cd	114	243336.5	2.3	**49.1181**	1.543	3.1	ug/L	7	Standard
>	In	115	541813.2	0.8				ug/L	524722	Standard
	Sn	118	281669.0	0.4	**50.5528**	0.296	0.6	ug/L	715	Standard
	Sb	123	222839.5	0.9	**49.3972**	0.805	1.6	ug/L	201	Standard
	Ba	135	91045.1	0.4	**48.5895**	0.562	1.2	ug/L	108	Standard
	Ce	140	61.7	12.4				ug/L	30	Standard
>	Tb	159	817844.5	0.4				ug/L	792236	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	379786.0	0.6	**49.2821**	0.368	0.7	ug/L	9	Standard
	Tl	205	336318.4	0.5	**51.3165**	0.323	0.6	ug/L	0	Standard
	Pb	206	235111.2	1.0	**50.4225**	0.567	1.1	ug/L	216	Standard
	Pb	207	213294.2	0.5	**50.2491**	0.369	0.7	ug/L	180	Standard
	Pb	208	862915.5	0.7	**50.0892**	0.286	0.6	ug/L	717	Standard
	U	238	324915.2	0.1	**51.8469**	0.100	0.2	ug/L	4	Standard
>	Bi	209	464391.0	0.2				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	4073.9	4.4	**5.1949**	0.373	7.2	mg/L	20	Standard
K	39	616.7	11.0	**4.2379**	0.622	14.7	mg/L	22	Standard
Ca	43	71.7	38.4	**2.7208**	6.257	230.0	mg/L	47	Standard
Fe	54	6184.7	3.6	**4.6538**	0.266	5.7	mg/L	151	Standard
Fe	57	1603.4	6.3	**4.0588**	0.310	7.6	mg/L	195	Standard
> **Sc-1**	45	31289.0	2.9				mg/L	29647	Standard
Cl	35	168092.6	0.3				ug/L	154152	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	1803.4	11.3				ug/L	1607	Standard
P	31	25418.0	3.0				ug/L	22752	Standard
S	34	5476.0	0.8				ug/L	5049	Standard
Sr	88	68.3	36.1				ug/L	87	Standard
C	12	76.7	30.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.5	122.8				mg/L	10	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	3	Standard
I	127	2120.2	19.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	92.148		
Al	27	85.021		
Sc	45			
Ti	47	100.810		
V	51	101.127		
Cr	52	100.059		
Cr	53			
Mn	55	108.020		
Co	59	106.325		
Ni	60	98.483		
Cu	65	99.190		
Zn	66	99.216		
> Ge	72		98.942	
As	75	99.163		
Se	82	101.285		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	103.072		
Ag	107	99.648		
Cd	111	100.008		
Cd	114			
> In	115		103.257	
Sn	118	101.106		
Sb	123	98.794		
Ba	135	97.179		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.564		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.178		
U	238	103.694		
> Bi	209		100.879	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 18:58:50
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65086.2	2.0				ug/L	51024	Standard
	Be	9	21.7	58.1	**-0.0010**	0.011	1171.7	ug/L	7	Standard
	Al	27	2008.5	34.3	**0.0013**	0.004	284.1	ug/L	625	Standard
	Sc	45	30751.2	2.4				ug/L	29647	Standard
	Ti	47	41.3	24.7	**-0.0285**	0.034	119.2	ug/L	57	Standard
	V	51	1096.5	3.2	**-0.0144**	0.004	27.7	ug/L	1142	Standard
	Cr	52	6076.9	0.1	**-0.1037**	0.008	7.3	ug/L	6628	Standard
	Cr	53	488.3	13.0	**0.0929**	0.070	75.6	ug/L	430	Standard
	Mn	55	1470.4	24.5	**0.1211**	0.063	51.8	ug/L	603	Standard
	Co	59	206.0	14.6	**-0.0092**	0.005	53.2	ug/L	237	Standard
	Ni	60	120.7	4.2	**-0.0153**	0.002	15.6	ug/L	141	Standard
	Cu	65	142.0	16.7	**0.0093**	0.013	141.3	ug/L	109	Standard
	Zn	66	152.7	7.5	**-0.0944**	0.011	12.1	ug/L	159	Standard
>	**Ge**	72	474934.0	0.8				ug/L	474053	Standard
	As	75	-45.5	82.0	**-0.0158**	0.033	212.2	ug/L	-34	Standard
	Se	82	16.2	50.9	**-0.0227**	0.076	333.7	ug/L	14	Standard
	Se-1	77	66.0	6.9	**0.1132**	0.063	55.7	ug/L	55	Standard
>	**Ga**	71	136.7	9.2				mg/L	50	Standard
	Rb	85	30.0	28.9				ug/L	20	Standard
	Y	89	402114.5	0.5				ug/L	376602	Standard
>	**Rh**	103	21.7	35.3				ug/L	17	Standard
	Mo	98	281.3	33.4	**0.1095**	0.037	34.1	ug/L	8	Standard
	Ag	107	96.3	13.1	**0.0033**	0.002	62.1	ug/L	81	Standard
	Cd	111	10.2	38.2	**0.0019**	0.002	104.1	mg/L	3	Standard
	Cd	114	23.6	19.2	**0.0010**	0.001	99.3	ug/L	7	Standard
>	**In**	115	541583.6	1.8				ug/L	524722	Standard
	Sn	118	860.0	27.1	**0.0652**	0.041	63.3	ug/L	715	Standard
	Sb	123	479.5	22.9	**0.0918**	0.026	27.9	ug/L	201	Standard
	Ba	135	123.3	8.3	**0.0082**	0.005	60.8	ug/L	108	Standard
	Ce	140	23.3	65.5				ug/L	30	Standard
>	**Tb**	159	792193.7	1.1				ug/L	792236	Standard
	Ho	165	13.3	78.1				ug/L	7	Standard
	Tl	203	66.0	21.2	**0.0060**	0.002	29.5	ug/L	9	Standard
	Tl	205	46.7	12.4	**-0.0007**	0.001	132.6	ug/L	0	Standard
	Pb	206	228.3	5.2	**-0.0071**	0.002	32.1	ug/L	216	Standard
	Pb	207	200.3	2.5	**-0.0063**	0.001	19.4	ug/L	180	Standard
	Pb	208	858.7	6.2	**-0.0078**	0.003	36.1	ug/L	717	Standard
	U	238	38.3	37.5	**-0.0014**	0.002	161.1	ug/L	4	Standard
>	**Bi**	209	462016.2	0.6				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	36.7	70.0	**0.0029**	0.034	1195.5	mg/L	20	Standard
K	39	18.3	56.8	**-0.0943**	0.072	76.9	mg/L	22	Standard
Ca	43	45.0	22.2	**-3.0781**	2.040	66.3	mg/L	47	Standard
Fe	54	114.4	7.6	**-0.0252**	0.008	31.9	mg/L	151	Standard
Fe	57	173.3	9.3	**-0.1300**	0.041	31.6	mg/L	195	Standard
Sc-1	45	30751.2	2.4				mg/L	29647	Standard
Cl	35	167486.4	2.8				ug/L	154152	Standard
Kr	83	2.0	86.6				ug/L	3	Standard
Br	81	1856.8	2.2				ug/L	1607	Standard
P	31	26229.4	1.8				ug/L	22752	Standard
S	34	5394.3	3.3				ug/L	5049	Standard
Sr	88	46.7	37.6				ug/L	87	Standard
C	12	50.0	20.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.9	187.9				mg/L	10	Standard
Ho-1	165	13.3	78.1				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	1466.7	5.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.186	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.213
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.363
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, June 16, 2016 19:01:07
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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, June 16, 2016 19:02:02
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62105.4	2.6				ug/L	51024	Standard
	Be	9	230.0	20.7	**0.2030**	0.041	20.0	ug/L	7	Standard
	Al	27	2411.9	57.3	**0.0040**	0.008	188.2	ug/L	625	Standard
	Sc	45	29320.0	1.0				ug/L	29647	Standard
	Ti	47	44.0	15.9	**-0.0143**	0.023	160.1	ug/L	57	Standard
	V	51	3629.6	1.0	**0.3604**	0.013	3.7	ug/L	1142	Standard
	Cr	52	11639.8	0.7	**0.7104**	0.026	3.6	ug/L	6628	Standard
	Cr	53	1218.4	6.6	**0.9247**	0.069	7.5	ug/L	430	Standard
	Mn	55	4165.6	11.2	**0.6000**	0.079	13.2	ug/L	603	Standard
	Co	59	2679.2	3.3	**0.3905**	0.015	4.0	ug/L	237	Standard
	Ni	60	2918.9	1.9	**1.4896**	0.048	3.2	ug/L	141	Standard
	Cu	65	1533.7	1.1	**0.7788**	0.010	1.3	ug/L	109	Standard
	Zn	66	7393.8	1.4	**6.6758**	0.118	1.8	ug/L	159	Standard
>	**Ge**	72	457738.9	1.6				ug/L	474053	Standard
	As	75	382.8	8.7	**0.3830**	0.030	7.9	ug/L	-34	Standard
	Se	82	57.3	9.5	**0.3683**	0.054	14.6	ug/L	14	Standard
	Se-1	77	79.7	6.9	**0.3297**	0.074	22.6	ug/L	55	Standard
>	**Ga**	71	103.3	23.9				mg/L	50	Standard
	Rb	85	18.3	41.7				ug/L	20	Standard
	Y	89	375631.5	1.4				ug/L	376602	Standard
>	**Rh**	103	10.0	86.6				ug/L	17	Standard
	Mo	98	122.4	54.4	**0.0465**	0.029	61.8	ug/L	8	Standard
	Ag	107	2330.2	1.4	**0.3786**	0.008	2.1	ug/L	81	Standard
	Cd	111	467.2	1.7	**0.2376**	0.006	2.6	mg/L	3	Standard
	Cd	114	1116.8	1.3	**0.2291**	0.004	1.8	ug/L	7	Standard
>	**In**	115	524377.5	1.0				ug/L	524722	Standard
	Sn	118	430.0	17.1	**-0.0096**	0.013	134.4	ug/L	715	Standard
	Sb	123	1783.9	4.5	**0.3940**	0.022	5.6	ug/L	201	Standard
	Ba	135	1250.7	1.9	**0.6328**	0.015	2.4	ug/L	108	Standard
	Ce	140	8.3	91.7				ug/L	30	Standard
>	**Tb**	159	782327.7	0.6				ug/L	792236	Standard
	Ho	165	11.7	107.9				ug/L	7	Standard
	Tl	203	644.0	4.6	**0.0829**	0.005	5.6	ug/L	9	Standard
	Tl	205	603.3	8.3	**0.0864**	0.009	9.9	ug/L	0	Standard
	Pb	206	1176.0	6.8	**0.2020**	0.018	8.8	ug/L	216	Standard
	Pb	207	1021.4	8.8	**0.1927**	0.023	12.1	ug/L	180	Standard
	Pb	208	4081.2	6.5	**0.1848**	0.017	9.4	ug/L	717	Standard
	U	238	2503.2	1.2	**0.4011**	0.007	1.8	ug/L	4	Standard
>	**Bi**	209	453995.6	0.8				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	40.0	25.0	**0.0095**	0.013	138.3	mg/L	20	Standard
K	39	13.3	43.3	**-0.1249**	0.045	36.2	mg/L	22	Standard
Ca	43	35.0	28.6	**-4.9048**	2.432	49.6	mg/L	47	Standard
Fe	54	120.6	31.6	**-0.0158**	0.032	201.6	mg/L	151	Standard
Fe	57	148.3	13.6	**-0.1825**	0.065	35.6	mg/L	195	Standard
Sc-1	45	29320.0	1.0				mg/L	29647	Standard
Cl	35	160593.3	0.6				ug/L	154152	Standard
Kr	83	0.3	173.2				ug/L	3	Standard
Br	81	1753.4	6.3				ug/L	1607	Standard
P	31	18406.2	0.9				ug/L	22752	Standard
S	34	5287.6	2.4				ug/L	5049	Standard
Sr	88	66.7	18.9				ug/L	87	Standard
C	12	56.7	36.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	13.0	46.6				mg/L	10	Standard
Ho-1	165	11.7	107.9				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	3	Standard
I	127	1111.7	9.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	101.480		
Al	27			
Sc	45			
Ti	47			
V	51	90.091		
Cr	52	88.800		
Cr	53			
Mn	55	120.007		
Co	59	97.613		
Ni	60	93.098		
Cu	65	97.350		
Zn	66	106.813		
Ge	72		96.559	
As	75	95.761		
Se	82	92.069		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	94.641		
Cd	111	99.021		
Cd	114			
> In	115			99.934
Sn	118			
Sb	123	98.503		
Ba	135	84.376		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	103.666		
Tl	205			
Pb	206			
Pb	207			
Pb	208	92.383		
U	238	100.273		
> Bi	209			98.621
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW 42 WG572730-03
Sample Date/Time: Thursday, June 16, 2016 19:05:16
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62749.7	0.4				ug/L	51024	Standard
	Be	9	18.3	95.8	**-0.0034**	0.017	498.2	ug/L	7	Standard
	Al	27	45563.5	4.1	**0.2505**	0.010	4.1	ug/L	625	Standard
	Sc	45	30499.0	0.2				ug/L	29647	Standard
	Ti	47	51.3	19.1	**0.0066**	0.033	492.2	ug/L	57	Standard
	V	51	1097.4	4.3	**-0.0126**	0.007	55.7	ug/L	1142	Standard
	Cr	52	7963.4	1.0	**0.1642**	0.013	7.9	ug/L	6628	Standard
	Cr	53	896.7	4.5	**0.5418**	0.048	8.8	ug/L	430	Standard
	Mn	55	2548.5	1.6	**0.3068**	0.006	2.0	ug/L	603	Standard
	Co	59	285.7	3.7	**0.0036**	0.002	42.0	ug/L	237	Standard
	Ni	60	410.7	8.1	**0.1371**	0.018	13.2	ug/L	141	Standard
	Cu	65	253.3	2.8	**0.0699**	0.004	5.6	ug/L	109	Standard
	Zn	66	1271.7	3.2	**0.9258**	0.037	4.0	ug/L	159	Standard
>	**Ge**	72	469694.2	0.4				ug/L	474053	Standard
	As	75	1524.9	4.2	**1.4151**	0.063	4.5	ug/L	-34	Standard
	Se	82	670.0	3.5	**5.9461**	0.237	4.0	ug/L	14	Standard
	Se-1	77	66.0	18.4	**0.1230**	0.163	132.4	ug/L	55	Standard
>	**Ga**	71	123.3	16.4				mg/L	50	Standard
	Rb	85	295.0	3.4				ug/L	20	Standard
	Y	89	394476.0	3.2				ug/L	376602	Standard
>	**Rh**	103	20.0	66.1				ug/L	17	Standard
	Mo	98	84.7	10.3	**0.0293**	0.004	12.7	ug/L	8	Standard
	Ag	107	83.0	7.9	**0.0012**	0.001	88.8	ug/L	81	Standard
	Cd	111	13.9	21.7	**0.0037**	0.001	39.9	mg/L	3	Standard
	Cd	114	54.3	34.3	**0.0072**	0.004	52.7	ug/L	7	Standard
>	**In**	115	540141.2	0.4				ug/L	524722	Standard
	Sn	118	648.3	6.2	**0.0275**	0.007	26.0	ug/L	715	Standard
	Sb	123	144.9	16.0	**0.0174**	0.005	30.4	ug/L	201	Standard
	Ba	135	21260.9	1.4	**11.3366**	0.117	1.0	ug/L	108	Standard
	Ce	140	155.0	8.5				ug/L	30	Standard
>	**Tb**	159	801981.8	0.8				ug/L	792236	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	205.7	5.0	**0.0243**	0.001	5.5	ug/L	9	Standard
	Tl	205	185.0	17.7	**0.0206**	0.005	24.4	ug/L	0	Standard
	Pb	206	277.0	10.2	**0.0035**	0.006	164.3	ug/L	216	Standard
	Pb	207	230.3	3.9	**0.0008**	0.002	210.4	ug/L	180	Standard
	Pb	208	975.0	1.4	**-0.0009**	0.000	49.0	ug/L	717	Standard
	U	238	16.3	25.5	**-0.0050**	0.001	13.9	ug/L	4	Standard
>	**Bi**	209	461335.7	0.7				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	403.3	18.0	**0.4864**	0.096	19.7	mg/L	20	Standard
K	39	18.3	56.8	**-0.0922**	0.077	83.3	mg/L	22	Standard
Ca	43	38.3	27.2	**-4.4783**	2.388	53.3	mg/L	47	Standard
Fe	54	151.1	15.7	**0.0044**	0.018	419.9	mg/L	151	Standard
Fe	57	180.0	9.6	**-0.1053**	0.052	49.8	mg/L	195	Standard
> **Sc-1**	45	30499.0	0.2				mg/L	29647	Standard
Cl	35	167221.1	1.1				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	161399.3	3.9				ug/L	1607	Standard
P	31	23832.1	1.6				ug/L	22752	Standard
S	34	5314.3	4.0				ug/L	5049	Standard
Sr	88	105.0	12.6				ug/L	87	Standard
C	12	53.3	43.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.5	177.6				mg/L	10	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	4855.8	5.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		122.980	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.081	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.939
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.216
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: PBW 42 WG572730-03
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Method 6020 - Summary Report

Sample ID: LCSW 42 WG572730-04
Sample Date/Time: Thursday, June 16, 2016 19:08:28
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62985.7	0.9				ug/L	51024	Standard
	Be	9	48407.2	1.0	**46.6239**	0.599	1.3	ug/L	7	Standard
	Al	27	15242.7	3.1	**0.0770**	0.003	4.2	ug/L	625	Standard
	Sc	45	31167.0	1.6				ug/L	29647	Standard
	Ti	47	51.0	3.9	**0.0042**	0.006	137.2	ug/L	57	Standard
	V	51	362150.1	1.2	**50.8470**	1.498	2.9	ug/L	1142	Standard
	Cr	52	375631.9	0.2	**50.2056**	0.853	1.7	ug/L	6628	Standard
	Cr	53	46496.2	1.5	**49.6449**	0.253	0.5	ug/L	430	Standard
	Mn	55	324366.5	2.3	**54.5814**	0.385	0.7	ug/L	603	Standard
	Co	59	341108.8	1.8	**53.1006**	0.301	0.6	ug/L	237	Standard
	Ni	60	95614.1	1.0	**49.5608**	0.383	0.8	ug/L	141	Standard
	Cu	65	93513.4	0.6	**49.7560**	0.725	1.5	ug/L	109	Standard
	Zn	66	55921.0	0.3	**50.2961**	0.929	1.8	ug/L	159	Standard
>	**Ge**	72	473336.6	1.7				ug/L	474053	Standard
	As	75	54052.4	0.1	**48.9231**	0.858	1.8	ug/L	-34	Standard
	Se	82	5549.3	0.5	**50.0944**	0.667	1.3	ug/L	14	Standard
	Se-1	77	3851.2	1.4	**49.4942**	1.249	2.5	ug/L	55	Standard
>	**Ga**	71	148.3	5.1				mg/L	50	Standard
	Rb	85	50.0	45.8				ug/L	20	Standard
	Y	89	393664.1	1.4				ug/L	376602	Standard
>	**Rh**	103	30.0	66.7				ug/L	17	Standard
	Mo	98	67.7	16.2	**0.0222**	0.004	19.7	ug/L	8	Standard
	Ag	107	9538.7	1.3	**1.5370**	0.009	0.6	ug/L	81	Standard
	Cd	111	98094.4	0.8	**48.9748**	0.877	1.8	mg/L	3	Standard
	Cd	114	242274.5	1.2	**48.9293**	1.051	2.1	ug/L	7	Standard
>	**In**	115	541531.8	1.4				ug/L	524722	Standard
	Sn	118	718.4	12.9	**0.0399**	0.018	44.4	ug/L	715	Standard
	Sb	123	213208.4	0.4	**47.2901**	0.830	1.8	ug/L	201	Standard
	Ba	135	91061.5	0.2	**48.6273**	0.710	1.5	ug/L	108	Standard
	Ce	140	75.0	30.6				ug/L	30	Standard
>	**Tb**	159	801949.7	1.3				ug/L	792236	Standard
	Ho	165	15.0	66.7				ug/L	7	Standard
	Tl	203	366890.3	0.3	**47.3558**	0.332	0.7	ug/L	9	Standard
	Tl	205	325136.0	2.3	**49.3487**	1.280	2.6	ug/L	0	Standard
	Pb	206	237911.3	0.3	**50.7518**	0.233	0.5	ug/L	216	Standard
	Pb	207	208877.0	1.0	**48.9436**	0.182	0.4	ug/L	180	Standard
	Pb	208	858938.6	1.3	**49.5964**	0.972	2.0	ug/L	717	Standard
	U	238	311185.8	0.3	**49.3920**	0.274	0.6	ug/L	4	Standard
>	**Bi**	209	466882.1	0.8				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	43.3	37.1	**0.0108**	0.021	197.0	mg/L	20	Standard
K	39	21.7	26.6	**-0.0712**	0.040	55.8	mg/L	22	Standard
Ca	43	35.0	37.8	**-5.4027**	2.947	54.5	mg/L	47	Standard
Fe	54	122.0	30.6	**-0.0208**	0.028	132.3	mg/L	151	Standard
Fe	57	123.3	18.3	**-0.2836**	0.067	23.8	mg/L	195	Standard
Sc-1	45	31167.0	1.6				mg/L	29647	Standard
Cl	35	163506.3	1.5				ug/L	154152	Standard
Kr	83	0.3	173.2				ug/L	3	Standard
Br	81	5531.1	27.3				ug/L	1607	Standard
P	31	23947.2	1.0				ug/L	22752	Standard
S	34	5137.5	2.8				ug/L	5049	Standard
Sr	88	76.7	46.3				ug/L	87	Standard
C	12	70.0	14.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	13.2	44.9				mg/L	10	Standard
Ho-1	165	15.0	66.7				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	1283.4	6.1				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.443	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.849	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.204
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.421
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: LCSW 42 WG572730-04
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Method 6020 - Summary Report

Sample ID: L1606066401 WG572730-01
Sample Date/Time: Thursday, June 16, 2016 19:12:30
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75454.2	2.8				ug/L	51024	Standard
	Be	9	20.0	90.1	**-0.0048**	0.015	318.2	ug/L	7	Standard
	Al	27	11047678.0	1.9	**52.4883**	1.233	2.3	ug/L	625	Standard
	Sc	45	29264.9	1.3				ug/L	29647	Standard
	Ti	47	190.7	4.0	**0.5084**	0.037	7.3	ug/L	57	Standard
	V	51	1712.7	18.3	**0.0872**	0.046	52.6	ug/L	1142	Standard
	Cr	52	16604.1	1.9	**1.4659**	0.021	1.4	ug/L	6628	Standard
	Cr	53	9623.1	1.9	**10.5512**	0.372	3.5	ug/L	430	Standard
	Mn	55	18349.1	1.7	**3.1531**	0.090	2.8	ug/L	603	Standard
	Co	59	837.4	4.2	**0.0969**	0.005	4.7	ug/L	237	Standard
	Ni	60	47686.6	1.9	**26.1478**	0.400	1.5	ug/L	141	Standard
	Cu	65	35936.9	2.3	**20.2125**	0.174	0.9	ug/L	109	Standard
	Zn	66	7845.4	2.5	**7.2754**	0.080	1.1	ug/L	159	Standard
>	**Ge**	72	446804.8	1.5				ug/L	474053	Standard
	As	75	226.8	62.9	**0.2410**	0.135	55.9	ug/L	-34	Standard
	Se	82	88.3	14.1	**0.6770**	0.108	16.0	ug/L	14	Standard
	Se-1	77	1010.0	4.4	**13.2164**	0.770	5.8	ug/L	55	Standard
>	**Ga**	71	121.7	4.7				mg/L	50	Standard
	Rb	85	9374.6	1.9				ug/L	20	Standard
	Y	89	379651.4	1.2				ug/L	376602	Standard
>	**Rh**	103	176.7	43.0				ug/L	17	Standard
	Mo	98	6942.1	1.1	**3.0258**	0.008	0.3	ug/L	8	Standard
	Ag	107	107.7	10.4	**0.0063**	0.002	31.0	ug/L	81	Standard
	Cd	111	16.0	28.8	**0.0053**	0.002	45.3	mg/L	3	Standard
	Cd	114	155.3	55.3	**0.0296**	0.019	62.9	ug/L	7	Standard
>	**In**	115	508746.6	0.9				ug/L	524722	Standard
	Sn	118	32234.3	2.4	**6.0825**	0.133	2.2	ug/L	715	Standard
	Sb	123	2505.0	15.1	**0.5762**	0.084	14.6	ug/L	201	Standard
	Ba	135	56364.3	0.3	**32.0167**	0.382	1.2	ug/L	108	Standard
	Ce	140	273.3	12.5				ug/L	30	Standard
>	**Tb**	159	786168.7	0.3				ug/L	792236	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	162.7	17.5	**0.0211**	0.005	21.6	ug/L	9	Standard
	Tl	205	136.7	17.3	**0.0156**	0.004	27.5	ug/L	0	Standard
	Pb	206	51660.3	0.9	**12.3691**	0.134	1.1	ug/L	216	Standard
	Pb	207	43372.0	1.0	**11.4048**	0.082	0.7	ug/L	180	Standard
	Pb	208	183979.7	0.6	**11.9203**	0.168	1.4	ug/L	717	Standard
	U	238	40.0	22.9	**-0.0004**	0.002	429.9	ug/L	4	Standard
>	**Bi**	209	414575.6	1.7				ug/L	460343	Standard

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Na	23	3.3	173.2	**-0.6680**	19.261	2883.4	mg/L	0	Standard
Mg	24	393015.0	2.1	**539.7437**	8.154	1.5	mg/L	20	Standard
K	39	755.0	20.2	**5.6021**	1.177	21.0	mg/L	22	Standard
Ca	43	273.3	16.4	**51.4216**	9.712	18.9	mg/L	47	Standard
Fe	54	153.2	8.8	**0.0113**	0.013	111.5	mg/L	151	Standard
Fe	57	410.0	9.5	**0.6384**	0.113	17.7	mg/L	195	Standard
> **Sc-1**	45	29264.9	1.3				mg/L	29647	Standard
Cl	35	947330.3	0.6				ug/L	154152	Standard
Kr	83	2.7	86.6				ug/L	3	Standard
Br	81	16345.5	3.0				ug/L	1607	Standard
P	31	24364.6	0.6				ug/L	22752	Standard
S	34	5329.3	1.4				ug/L	5049	Standard
Sr	88	195.0	4.4				ug/L	87	Standard
C	12	283.3	24.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	0	Standard
Dy	164	16.0	130.4				mg/L	10	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	339108.5	7.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		147.879	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.252	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.955
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.058
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606066401DP WG572730-05
Sample Date/Time: Thursday, June 16, 2016 19:15:41
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82599.5	0.8				ug/L	51024	Standard
	Be	9	18.3	31.5	**-0.0076**	0.004	53.8	ug/L	7	Standard
	Al	27	12101738.6	2.4	**52.5022**	0.943	1.8	ug/L	625	Standard
	Sc	45	29381.8	2.9				ug/L	29647	Standard
	Ti	47	224.3	6.3	**0.6337**	0.051	8.1	ug/L	57	Standard
	V	51	1757.9	10.9	**0.0962**	0.030	31.3	ug/L	1142	Standard
	Cr	52	17254.5	0.4	**1.5806**	0.019	1.2	ug/L	6628	Standard
	Cr	53	9484.6	4.9	**10.4776**	0.447	4.3	ug/L	430	Standard
	Mn	55	18275.7	1.8	**3.1668**	0.077	2.4	ug/L	603	Standard
	Co	59	934.4	2.3	**0.1143**	0.005	4.1	ug/L	237	Standard
	Ni	60	50219.4	0.9	**27.7712**	0.300	1.1	ug/L	141	Standard
	Cu	65	38180.1	1.8	**21.6588**	0.226	1.0	ug/L	109	Standard
	Zn	66	9011.3	2.3	**8.4634**	0.126	1.5	ug/L	159	Standard
>	**Ge**	72	443106.2	0.8				ug/L	474053	Standard
	As	75	276.8	42.6	**0.2919**	0.111	38.1	ug/L	-34	Standard
	Se	82	109.2	13.4	**0.8866**	0.132	14.9	ug/L	14	Standard
	Se-1	77	1030.4	1.0	**13.6099**	0.054	0.4	ug/L	55	Standard
>	**Ga**	71	125.0	10.6				mg/L	50	Standard
	Rb	85	9914.9	0.9				ug/L	20	Standard
	Y	89	378132.1	0.5				ug/L	376602	Standard
>	**Rh**	103	276.7	11.8				ug/L	17	Standard
	Mo	98	7350.8	1.1	**3.1941**	0.056	1.8	ug/L	8	Standard
	Ag	107	113.3	9.2	**0.0072**	0.002	27.2	ug/L	81	Standard
	Cd	111	7.2	44.2	**0.0006**	0.002	301.0	mg/L	3	Standard
	Cd	114	112.0	53.6	**0.0203**	0.013	64.2	ug/L	7	Standard
>	**In**	115	510414.8	1.0				ug/L	524722	Standard
	Sn	118	31860.1	0.6	**5.9914**	0.071	1.2	ug/L	715	Standard
	Sb	123	1301.1	10.9	**0.2913**	0.031	10.6	ug/L	201	Standard
	Ba	135	58474.3	1.0	**33.1066**	0.180	0.5	ug/L	108	Standard
	Ce	140	143.3	4.0				ug/L	30	Standard
>	**Tb**	159	793633.3	0.5				ug/L	792236	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	126.3	11.6	**0.0156**	0.002	13.8	ug/L	9	Standard
	Tl	205	108.3	7.1	**0.0105**	0.001	12.1	ug/L	0	Standard
	Pb	206	55773.5	1.1	**13.2134**	0.113	0.9	ug/L	216	Standard
	Pb	207	47080.7	0.8	**12.2506**	0.066	0.5	ug/L	180	Standard
	Pb	208	190215.8	0.7	**12.1921**	0.079	0.7	ug/L	717	Standard
	U	238	29.3	17.2	**-0.0024**	0.001	37.4	ug/L	4	Standard
>	**Bi**	209	419055.7	0.3				ug/L	460343	Standard

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Na	23	10.0	50.0	**-22.7084**	17.142	75.5	mg/L	0	Standard
Mg	24	418232.9	1.5	**572.3635**	15.570	2.7	mg/L	20	Standard
K	39	648.3	17.8	**4.7577**	0.876	18.4	mg/L	22	Standard
Ca	43	226.7	8.4	**40.2176**	3.679	9.1	mg/L	47	Standard
Fe	54	135.1	14.9	**-0.0042**	0.016	368.6	mg/L	151	Standard
Fe	57	428.3	6.4	**0.6912**	0.080	11.6	mg/L	195	Standard
Sc-1	45	29381.8	2.9				mg/L	29647	Standard
Cl	35	974394.4	0.6				ug/L	154152	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	16325.5	4.8				ug/L	1607	Standard
P	31	25179.2	0.8				ug/L	22752	Standard
S	34	5427.6	0.7				ug/L	5049	Standard
Sr	88	171.7	19.8				ug/L	87	Standard
C	12	336.7	27.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	12.9	93.1				mg/L	10	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	345162.2	8.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		161.883	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.472	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.273
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.031
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: L1606066401DP WG572730-05
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Method 6020 - Summary Report

Sample ID: L1606072903 WG572730-02
Sample Date/Time: Thursday, June 16, 2016 19:18:52
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83167.6	0.4				ug/L	51024	Standard
	Be	9	1595.1	11.9	**1.1433**	0.143	12.5	ug/L	7	Standard
	Al	27	12508760.9	0.4	**53.9014**	0.277	0.5	ug/L	625	Standard
	Sc	45	32636.8	2.2				ug/L	29647	Standard
	Ti	47	734.7	25.1	**2.2005**	0.603	27.4	ug/L	57	Standard
	V	51	2647.4	9.7	**0.1914**	0.035	18.3	ug/L	1142	Standard
	Cr	52	10901.3	2.2	**0.5035**	0.035	7.0	ug/L	6628	Standard
	Cr	53	1756.8	5.0	**1.3940**	0.093	6.7	ug/L	430	Standard
	Mn	55	2418538.1	0.3	**393.4562**	2.564	0.7	ug/L	603	Standard
	Co	59	167227.2	1.2	**25.0953**	0.408	1.6	ug/L	237	Standard
	Ni	60	19549.3	0.9	**9.7135**	0.121	1.2	ug/L	141	Standard
	Cu	65	6980.3	2.4	**3.5215**	0.098	2.8	ug/L	109	Standard
	Zn	66	33084.1	0.4	**28.6038**	0.229	0.8	ug/L	159	Standard
>	**Ge**	72	490606.8	0.4				ug/L	474053	Standard
	As	75	126.0	22.9	**0.1350**	0.026	18.9	ug/L	-34	Standard
	Se	82	91.9	23.2	**0.6344**	0.188	29.7	ug/L	14	Standard
	Se-1	77	154.7	9.2	**1.2017**	0.186	15.5	ug/L	55	Standard
>	**Ga**	71	938.4	4.7				mg/L	50	Standard
	Rb	85	17583.5	1.7				ug/L	20	Standard
	Y	89	717044.0	1.5				ug/L	376602	Standard
>	**Rh**	103	161.7	28.1				ug/L	17	Standard
	Mo	98	55.5	8.7	**0.0173**	0.002	11.5	ug/L	8	Standard
	Ag	107	113.0	9.4	**0.0061**	0.002	26.4	ug/L	81	Standard
	Cd	111	309.2	2.3	**0.1520**	0.004	2.4	mg/L	3	Standard
	Cd	114	755.2	14.7	**0.1496**	0.023	15.3	ug/L	7	Standard
>	**In**	115	538550.6	0.6				ug/L	524722	Standard
	Sn	118	861.7	3.5	**0.0664**	0.005	7.2	ug/L	715	Standard
	Sb	123	1408.2	6.3	**0.2992**	0.018	6.0	ug/L	201	Standard
	Ba	135	39659.2	1.6	**21.2618**	0.456	2.1	ug/L	108	Standard
	Ce	140	1381297.9	0.5				ug/L	30	Standard
>	**Tb**	159	851012.3	2.0				ug/L	792236	Standard
	Ho	165	27889.0	1.7				ug/L	7	Standard
	Tl	203	294.7	3.0	**0.0347**	0.002	6.0	ug/L	9	Standard
	Tl	205	265.0	1.9	**0.0316**	0.001	3.8	ug/L	0	Standard
	Pb	206	5868.1	0.6	**1.1726**	0.027	2.3	ug/L	216	Standard
	Pb	207	4864.8	1.2	**1.0656**	0.042	4.0	ug/L	180	Standard
	Pb	208	20514.5	1.0	**1.1052**	0.038	3.5	ug/L	717	Standard
	U	238	2495.2	0.6	**0.3809**	0.010	2.6	ug/L	4	Standard
>	**Bi**	209	476253.4	2.7				ug/L	460343	Standard

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Na	23	11.7	24.7	**-24.3418**	9.212	37.8	mg/L	0	Standard
Mg	24	2530.2	1.8	**3.0712**	0.030	1.0	mg/L	20	Standard
K	39	120.0	8.3	**0.6043**	0.087	14.3	mg/L	22	Standard
Ca	43	210.0	28.9	**31.2136**	11.780	37.7	mg/L	47	Standard
Fe	54	1764.1	4.7	**1.1881**	0.059	5.0	mg/L	151	Standard
Fe	57	758.4	15.5	**1.4817**	0.281	18.9	mg/L	195	Standard
> **Sc-1**	45	32636.8	2.2				mg/L	29647	Standard
Cl	35	300327.3	0.4				ug/L	154152	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	5971.2	0.5				ug/L	1607	Standard
P	31	27339.7	3.0				ug/L	22752	Standard
S	34	4589.0	1.4				ug/L	5049	Standard
Sr	88	426.7	18.4				ug/L	87	Standard
C	12	223.3	9.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	48154.5	2.6				mg/L	10	Standard
Ho-1	165	27889.0	1.7				mg/L	7	Standard
Er	166	24125.9	1.2				mg/L	3	Standard
I	127	233033.3	7.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		162.997	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.492	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	102.635
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.456
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606072903 WG572730-02
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Method 6020 - Summary Report

Sample ID: L1606072903S WG572730-06
Sample Date/Time: Thursday, June 16, 2016 19:22:04
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84593.9	1.7				ug/L	51024	Standard
	Be	9	63747.2	1.4	**45.7285**	1.409	3.1	ug/L	7	Standard
	Al	27	12163442.1	0.7	**51.5412**	1.132	2.2	ug/L	625	Standard
	Sc	45	33602.2	1.6				ug/L	29647	Standard
	Ti	47	659.7	12.0	**2.0785**	0.257	12.4	ug/L	57	Standard
	V	51	353641.1	0.6	**50.6609**	2.238	4.4	ug/L	1142	Standard
	Cr	52	356717.6	1.1	**48.6215**	2.101	4.3	ug/L	6628	Standard
	Cr	53	45185.6	0.4	**49.2470**	2.494	5.1	ug/L	430	Standard
	Mn	55	2601278.5	0.7	**447.6689**	18.661	4.2	ug/L	603	Standard
	Co	59	487177.6	1.1	**77.4106**	2.935	3.8	ug/L	237	Standard
	Ni	60	108783.5	0.6	**57.5580**	2.469	4.3	ug/L	141	Standard
	Cu	65	95167.6	1.2	**51.6700**	2.084	4.0	ug/L	109	Standard
	Zn	66	84097.8	1.1	**77.2971**	3.015	3.9	ug/L	159	Standard
>	**Ge**	72	464397.8	4.8				ug/L	474053	Standard
	As	75	53679.2	1.0	**49.5736**	2.027	4.1	ug/L	-34	Standard
	Se	82	5551.8	0.7	**51.1533**	2.421	4.7	ug/L	14	Standard
	Se-1	77	3791.1	3.4	**49.6831**	1.424	2.9	ug/L	55	Standard
>	**Ga**	71	958.4	5.4				mg/L	50	Standard
	Rb	85	16624.1	3.0				ug/L	20	Standard
	Y	89	707625.8	0.5				ug/L	376602	Standard
>	**Rh**	103	125.0	8.0				ug/L	17	Standard
	Mo	98	62.1	4.6	**0.0194**	0.002	8.1	ug/L	8	Standard
	Ag	107	8913.6	1.8	**1.4061**	0.009	0.7	ug/L	81	Standard
	Cd	111	96671.0	1.6	**47.2862**	1.085	2.3	mg/L	3	Standard
	Cd	114	237983.0	1.9	**47.0816**	0.696	1.5	ug/L	7	Standard
>	**In**	115	552753.1	1.8				ug/L	524722	Standard
	Sn	118	638.3	15.9	**0.0231**	0.018	79.7	ug/L	715	Standard
	Sb	123	215408.0	1.4	**46.8023**	0.239	0.5	ug/L	201	Standard
	Ba	135	124502.1	0.5	**65.1569**	0.974	1.5	ug/L	108	Standard
	Ce	140	1314417.9	1.3				ug/L	30	Standard
>	**Tb**	159	881280.8	1.9				ug/L	792236	Standard
	Ho	165	27413.1	3.0				ug/L	7	Standard
	Tl	203	374882.9	0.8	**46.6863**	0.358	0.8	ug/L	9	Standard
	Tl	205	338218.3	0.5	**49.5337**	0.988	2.0	ug/L	0	Standard
	Pb	206	247963.0	0.9	**51.0419**	0.964	1.9	ug/L	216	Standard
	Pb	207	216265.5	0.6	**48.8980**	0.689	1.4	ug/L	180	Standard
	Pb	208	876968.0	0.5	**48.8596**	0.973	2.0	ug/L	717	Standard
	U	238	329321.5	0.3	**50.4388**	0.916	1.8	ug/L	4	Standard
>	**Bi**	209	483914.0	1.5				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.7187**	8.199	143.4	mg/L	0	Standard
Mg	24	2360.2	1.3	**2.7784**	0.056	2.0	mg/L	20	Standard
K	39	110.0	31.5	**0.5143**	0.242	47.0	mg/L	22	Standard
Ca	43	180.0	27.4	**23.8358**	9.598	40.3	mg/L	47	Standard
Fe	54	1737.6	2.8	**1.1314**	0.022	1.9	mg/L	151	Standard
Fe	57	686.7	6.3	**1.2285**	0.107	8.7	mg/L	195	Standard
Sc-1	45	33602.2	1.6				mg/L	29647	Standard
Cl	35	293323.6	1.0				ug/L	154152	Standard
Kr	83	1.7	124.9				ug/L	3	Standard
Br	81	5094.2	9.2				ug/L	1607	Standard
P	31	27336.3	1.5				ug/L	22752	Standard
S	34	4702.4	5.5				ug/L	5049	Standard
Sr	88	400.0	11.5				ug/L	87	Standard
C	12	270.0	13.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	45484.4	2.9				mg/L	10	Standard
Ho-1	165	27413.1	3.0				mg/L	7	Standard
Er	166	23461.5	1.2				mg/L	3	Standard
I	127	221641.3	5.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		165.792	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.963	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.342
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.120
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606072903SD WG572730-07
Sample Date/Time: Thursday, June 16, 2016 19:25:15
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86461.0	1.0				ug/L	51024	Standard
	Be	9	64063.5	1.0	**44.9486**	0.413	0.9	ug/L	7	Standard
	Al	27	12456061.3	1.7	**51.6274**	0.457	0.9	ug/L	625	Standard
	Sc	45	32062.2	2.4				ug/L	29647	Standard
	Ti	47	858.4	8.8	**2.9028**	0.272	9.4	ug/L	57	Standard
	V	51	359033.7	1.5	**54.0078**	1.033	1.9	ug/L	1142	Standard
	Cr	52	357394.7	0.2	**51.1915**	0.354	0.7	ug/L	6628	Standard
	Cr	53	45598.6	3.3	**52.1815**	1.498	2.9	ug/L	430	Standard
	Mn	55	2668759.8	1.0	**482.1929**	4.954	1.0	ug/L	603	Standard
	Co	59	502894.6	1.2	**83.9097**	1.409	1.7	ug/L	237	Standard
	Ni	60	107927.8	1.4	**59.9510**	0.489	0.8	ug/L	141	Standard
	Cu	65	93853.1	1.2	**53.5019**	0.490	0.9	ug/L	109	Standard
	Zn	66	83974.7	0.9	**81.0494**	0.217	0.3	ug/L	159	Standard
>	**Ge**	72	441763.7	0.6				ug/L	474053	Standard
	As	75	55613.6	0.2	**53.9212**	0.243	0.5	ug/L	-34	Standard
	Se	82	6086.3	0.3	**58.8898**	0.200	0.3	ug/L	14	Standard
	Se-1	77	3831.8	0.4	**52.8020**	0.183	0.3	ug/L	55	Standard
>	**Ga**	71	981.7	7.0				mg/L	50	Standard
	Rb	85	19140.4	1.5				ug/L	20	Standard
	Y	89	713271.6	1.4				ug/L	376602	Standard
>	**Rh**	103	201.7	43.7				ug/L	17	Standard
	Mo	98	570.8	5.1	**0.2183**	0.009	3.9	ug/L	8	Standard
	Ag	107	9150.1	1.0	**1.4089**	0.031	2.2	ug/L	81	Standard
	Cd	111	99261.8	1.0	**47.3819**	0.778	1.6	mg/L	3	Standard
	Cd	114	244188.0	1.4	**47.1444**	0.226	0.5	ug/L	7	Standard
>	**In**	115	566399.8	1.8				ug/L	524722	Standard
	Sn	118	1108.4	1.6	**0.1012**	0.003	3.2	ug/L	715	Standard
	Sb	123	226221.3	0.0	**47.9756**	0.857	1.8	ug/L	201	Standard
	Ba	135	281949.2	0.1	**144.0743**	2.519	1.7	ug/L	108	Standard
	Ce	140	1344322.7	0.7				ug/L	30	Standard
>	**Tb**	159	856521.4	0.5				ug/L	792236	Standard
	Ho	165	27917.4	1.4				ug/L	7	Standard
	Tl	203	379214.9	0.1	**48.6259**	0.229	0.5	ug/L	9	Standard
	Tl	205	341701.9	0.7	**51.5229**	0.634	1.2	ug/L	0	Standard
	Pb	206	250400.5	0.4	**53.0698**	0.469	0.9	ug/L	216	Standard
	Pb	207	218768.7	0.4	**50.9304**	0.424	0.8	ug/L	180	Standard
	Pb	208	894325.1	0.6	**51.3006**	0.445	0.9	ug/L	717	Standard
	U	238	333573.8	0.7	**52.6006**	0.628	1.2	ug/L	4	Standard
>	**Bi**	209	469954.5	0.6				ug/L	460343	Standard

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Na	23	3.3	173.2	**0.1020**	17.927	17574.6	mg/L	0	Standard
Mg	24	6119.6	7.0	**7.6313**	0.602	7.9	mg/L	20	Standard
K	39	128.3	31.7	**0.6738**	0.269	39.8	mg/L	22	Standard
Ca	43	203.3	13.5	**30.6746**	5.036	16.4	mg/L	47	Standard
Fe	54	1790.2	1.0	**1.2312**	0.019	1.5	mg/L	151	Standard
Fe	57	780.0	10.9	**1.5831**	0.191	12.1	mg/L	195	Standard
Sc-1	45	32062.2	2.4				mg/L	29647	Standard
Cl	35	296539.1	0.3				ug/L	154152	Standard
Kr	83	1.0	0.0				ug/L	3	Standard
Br	81	116096.7	2.9				ug/L	1607	Standard
P	31	27080.9	1.8				ug/L	22752	Standard
S	34	4614.0	1.1				ug/L	5049	Standard
Sr	88	778.4	3.2				ug/L	87	Standard
C	12	196.7	22.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	46630.2	1.4				mg/L	10	Standard
Ho-1	165	27917.4	1.4				mg/L	7	Standard
Er	166	24322.8	2.2				mg/L	3	Standard
I	127	176317.1	2.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		169.451	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.189	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	107.943
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.088
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606075401
Sample Date/Time: Thursday, June 16, 2016 19:28:27
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82366.7	2.1				ug/L	51024	Standard
	Be	9	51.7	14.8	**0.0170**	0.006	32.8	ug/L	7	Standard
	Al	27	17891826.3	2.7	**77.8692**	2.435	3.1	ug/L	625	Standard
	Sc	45	30427.2	1.9				ug/L	29647	Standard
	Ti	47	2820.9	1.0	**9.4421**	0.167	1.8	ug/L	57	Standard
	V	51	13745.3	1.6	**1.8076**	0.041	2.3	ug/L	1142	Standard
	Cr	52	20733.8	0.8	**1.9525**	0.033	1.7	ug/L	6628	Standard
	Cr	53	4984.2	5.0	**5.0448**	0.169	3.3	ug/L	430	Standard
	Mn	55	105692.4	1.8	**18.0774**	0.683	3.8	ug/L	603	Standard
	Co	59	4134.2	4.3	**0.6164**	0.033	5.4	ug/L	237	Standard
	Ni	60	5645.1	0.8	**2.9135**	0.034	1.2	ug/L	141	Standard
	Cu	65	191176.6	0.9	**103.9111**	2.891	2.8	ug/L	109	Standard
	Zn	66	106024.3	0.8	**97.5572**	2.630	2.7	ug/L	159	Standard
>	**Ge**	72	463769.1	2.0				ug/L	474053	Standard
	As	75	301.2	25.5	**0.3039**	0.075	24.6	ug/L	-34	Standard
	Se	82	127.3	9.6	**1.0095**	0.134	13.3	ug/L	14	Standard
	Se-1	77	289.7	4.6	**3.1103**	0.134	4.3	ug/L	55	Standard
>	**Ga**	71	440.0	5.9				mg/L	50	Standard
	Rb	85	66395.2	1.7				ug/L	20	Standard
	Y	89	407745.6	2.4				ug/L	376602	Standard
>	**Rh**	103	96.7	20.9				ug/L	17	Standard
	Mo	98	1561.5	1.4	**0.6398**	0.014	2.1	ug/L	8	Standard
	Ag	107	747.4	3.8	**0.1101**	0.008	7.2	ug/L	81	Standard
	Cd	111	185.0	11.1	**0.0900**	0.013	14.1	mg/L	3	Standard
	Cd	114	453.1	6.4	**0.0885**	0.009	9.7	ug/L	7	Standard
>	**In**	115	537707.7	3.1				ug/L	524722	Standard
	Sn	118	4545.7	5.8	**0.7338**	0.032	4.3	ug/L	715	Standard
	Sb	123	909.7	21.3	**0.1892**	0.048	25.1	ug/L	201	Standard
	Ba	135	39811.9	1.6	**21.3825**	0.338	1.6	ug/L	108	Standard
	Ce	140	8849.3	2.5				ug/L	30	Standard
>	**Tb**	159	810136.1	3.5				ug/L	792236	Standard
	Ho	165	230.0	24.5				ug/L	7	Standard
	Tl	203	286.7	27.5	**0.0315**	0.010	30.7	ug/L	9	Standard
	Tl	205	228.3	32.9	**0.0241**	0.011	44.8	ug/L	0	Standard
	Pb	206	10175.4	0.5	**1.9406**	0.024	1.2	ug/L	216	Standard
	Pb	207	8305.3	0.7	**1.7365**	0.026	1.5	ug/L	180	Standard
	Pb	208	35130.3	0.9	**1.8082**	0.024	1.3	ug/L	717	Standard
	U	238	1915.5	3.0	**0.2719**	0.010	3.6	ug/L	4	Standard
>	**Bi**	209	508087.3	0.9				ug/L	460343	Standard

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Na	23	3.3	86.6	**-0.2885**	9.302	3224.4	mg/L	0	Standard
Mg	24	30961.6	1.7	**40.8617**	0.835	2.0	mg/L	20	Standard
K	39	656.7	18.1	**4.6487**	0.870	18.7	mg/L	22	Standard
Ca	43	158.3	34.8	**22.7292**	12.064	53.1	mg/L	47	Standard
Fe	54	990.1	10.0	**0.6701**	0.088	13.2	mg/L	151	Standard
Fe	57	505.0	3.4	**0.8773**	0.078	8.8	mg/L	195	Standard
> **Sc-1**	45	30427.2	1.9				mg/L	29647	Standard
Cl	35	217230.9	2.7				ug/L	154152	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	12551.9	10.7				ug/L	1607	Standard
P	31	26334.5	1.0				ug/L	22752	Standard
S	34	4555.7	2.6				ug/L	5049	Standard
Sr	88	170.0	8.8				ug/L	87	Standard
C	12	793.4	8.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	96.7	15.8				mg/L	0	Standard
Dy	164	343.6	11.4				mg/L	10	Standard
Ho-1	165	230.0	24.5				mg/L	7	Standard
Er	166	203.3	15.0				mg/L	3	Standard
I	127	19776.3	5.9				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		161.427	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.831	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	102.475
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	110.371
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

Sample ID: L1606075401
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Method 6020 - Summary Report

Sample ID: L1606075401PS WG572869-01
Sample Date/Time: Thursday, June 16, 2016 19:31:38
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83402.3	0.7				ug/L	51024	Standard
	Be	9	63124.6	1.4	**45.9169**	0.909	2.0	ug/L	7	Standard
	Al	27	17971744.4	2.8	**77.2382**	2.615	3.4	ug/L	625	Standard
	Sc	45	30682.7	4.2				ug/L	29647	Standard
	Ti	47	2792.9	5.6	**9.1051**	0.451	5.0	ug/L	57	Standard
	V	51	382253.4	0.5	**53.4006**	0.320	0.6	ug/L	1142	Standard
	Cr	52	373919.2	1.3	**49.7147**	0.405	0.8	ug/L	6628	Standard
	Cr	53	49711.5	2.7	**52.8478**	1.467	2.8	ug/L	430	Standard
	Mn	55	406935.5	0.9	**68.1780**	0.090	0.1	ug/L	603	Standard
	Co	59	347435.1	1.8	**53.8207**	0.541	1.0	ug/L	237	Standard
	Ni	60	95683.2	0.8	**49.3519**	0.338	0.7	ug/L	141	Standard
	Cu	65	276145.4	0.3	**146.3258**	0.986	0.7	ug/L	109	Standard
	Zn	66	154951.3	0.2	**139.0713**	0.812	0.6	ug/L	159	Standard
>	Ge	72	475646.5	0.8				ug/L	474053	Standard
	As	75	55395.2	0.9	**49.8846**	0.262	0.5	ug/L	-34	Standard
	Se	82	5840.3	1.9	**52.4634**	0.711	1.4	ug/L	14	Standard
	Se-1	77	4138.2	1.9	**52.9629**	0.853	1.6	ug/L	55	Standard
>	Ga	71	441.7	10.5				mg/L	50	Standard
	Rb	85	63605.0	2.6				ug/L	20	Standard
	Y	89	384934.5	2.9				ug/L	376602	Standard
>	Rh	103	75.0	30.6				ug/L	17	Standard
	Mo	98	1506.0	0.6	**0.6341**	0.012	1.9	ug/L	8	Standard
	Ag	107	301051.6	0.9	**50.6101**	0.914	1.8	ug/L	81	Standard
	Cd	111	98227.5	0.6	**50.7616**	0.701	1.4	mg/L	3	Standard
	Cd	114	243020.5	0.8	**50.8000**	0.654	1.3	ug/L	7	Standard
>	In	115	523174.3	1.7				ug/L	524722	Standard
	Sn	118	4532.3	4.2	**0.7549**	0.047	6.3	ug/L	715	Standard
	Sb	123	222938.5	1.8	**51.1866**	1.325	2.6	ug/L	201	Standard
	Ba	135	127885.1	0.6	**70.7164**	1.199	1.7	ug/L	108	Standard
	Ce	140	8752.5	5.4				ug/L	30	Standard
>	Tb	159	809108.6	3.0				ug/L	792236	Standard
	Ho	165	236.7	12.0				ug/L	7	Standard
	Tl	203	379894.9	0.9	**44.3716**	1.016	2.3	ug/L	9	Standard
	Tl	205	341979.7	0.7	**46.9709**	1.246	2.7	ug/L	0	Standard
	Pb	206	255943.3	0.4	**49.4070**	1.138	2.3	ug/L	216	Standard
	Pb	207	222866.5	0.7	**47.2585**	1.195	2.5	ug/L	180	Standard
	Pb	208	910678.1	0.7	**47.5815**	1.216	2.6	ug/L	717	Standard
	U	238	341419.2	0.1	**49.0368**	0.922	1.9	ug/L	4	Standard
>	Bi	209	516066.4	2.0				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.2328**	9.040	172.8	mg/L	0	Standard
Mg	24	30580.8	0.9	**40.0684**	1.906	4.8	mg/L	20	Standard
K	39	683.3	11.4	**4.8016**	0.478	10.0	mg/L	22	Standard
Ca	43	166.7	18.3	**24.6755**	8.602	34.9	mg/L	47	Standard
Fe	54	991.6	6.4	**0.6639**	0.031	4.7	mg/L	151	Standard
Fe	57	553.3	10.9	**1.0152**	0.249	24.5	mg/L	195	Standard
> **Sc-1**	45	30682.7	4.2				mg/L	29647	Standard
Cl	35	218863.4	0.6				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	11077.4	2.3				ug/L	1607	Standard
P	31	26757.0	3.2				ug/L	22752	Standard
S	34	4704.1	1.5				ug/L	5049	Standard
Sr	88	165.0	10.9				ug/L	87	Standard
C	12	693.3	9.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	90.0	50.9				mg/L	0	Standard
Dy	164	284.7	30.5				mg/L	10	Standard
Ho-1	165	236.7	12.0				mg/L	7	Standard
Er	166	180.0	22.2				mg/L	3	Standard
I	127	17368.3	4.1				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		163.456	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.336	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.705	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	112.105	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1606075401SDL WG572869-02
Sample Date/Time: Thursday, June 16, 2016 19:34:50
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84174.9	1.5				ug/L	51024	Standard
	Be	9	35.0	14.3	**0.0042**	0.004	88.5	ug/L	7	Standard
	Al	27	3660235.8	1.3	**15.5808**	0.435	2.8	ug/L	625	Standard
	Sc	45	32820.5	2.8				ug/L	29647	Standard
	Ti	47	607.7	5.7	**1.8669**	0.107	5.7	ug/L	57	Standard
	V	51	4082.9	1.0	**0.4082**	0.006	1.6	ug/L	1142	Standard
	Cr	52	9894.2	1.7	**0.4222**	0.007	1.6	ug/L	6628	Standard
	Cr	53	1803.4	1.6	**1.5160**	0.013	0.8	ug/L	430	Standard
	Mn	55	21935.9	0.6	**3.5843**	0.077	2.1	ug/L	603	Standard
	Co	59	994.0	3.5	**0.1140**	0.003	2.9	ug/L	237	Standard
	Ni	60	1361.1	4.8	**0.6305**	0.026	4.2	ug/L	141	Standard
	Cu	65	40184.2	0.6	**21.4035**	0.546	2.6	ug/L	109	Standard
	Zn	66	22341.5	1.6	**20.0059**	0.236	1.2	ug/L	159	Standard
>	**Ge**	72	472090.7	2.0				ug/L	474053	Standard
	As	75	70.8	22.3	**0.0894**	0.015	16.6	ug/L	-34	Standard
	Se	82	38.3	18.3	**0.1793**	0.069	38.5	ug/L	14	Standard
	Se-1	77	126.7	16.1	**0.9154**	0.302	33.0	ug/L	55	Standard
>	**Ga**	71	170.0	15.6				mg/L	50	Standard
	Rb	85	13192.4	0.8				ug/L	20	Standard
	Y	89	392636.4	3.5				ug/L	376602	Standard
>	**Rh**	103	25.0	69.3				ug/L	17	Standard
	Mo	98	328.6	6.7	**0.1240**	0.011	8.7	ug/L	8	Standard
	Ag	107	258.3	8.0	**0.0280**	0.003	12.2	ug/L	81	Standard
	Cd	111	44.1	38.1	**0.0179**	0.008	45.4	mg/L	3	Standard
	Cd	114	91.6	47.0	**0.0140**	0.009	61.0	ug/L	7	Standard
>	**In**	115	563812.4	1.7				ug/L	524722	Standard
	Sn	118	1306.7	7.2	**0.1365**	0.020	14.5	ug/L	715	Standard
	Sb	123	2201.6	19.8	**0.4534**	0.085	18.8	ug/L	201	Standard
	Ba	135	8201.6	0.8	**4.1541**	0.077	1.9	ug/L	108	Standard
	Ce	140	1823.4	12.4				ug/L	30	Standard
>	**Tb**	159	855756.3	0.3				ug/L	792236	Standard
	Ho	165	45.0	11.1				ug/L	7	Standard
	Tl	203	135.3	4.5	**0.0137**	0.001	4.2	ug/L	9	Standard
	Tl	205	115.0	7.5	**0.0084**	0.001	13.4	ug/L	0	Standard
	Pb	206	2315.2	1.8	**0.4035**	0.003	0.8	ug/L	216	Standard
	Pb	207	1893.5	0.7	**0.3593**	0.003	0.7	ug/L	180	Standard
	Pb	208	7952.2	1.5	**0.3697**	0.005	1.4	ug/L	717	Standard
	U	238	417.0	3.9	**0.0540**	0.002	3.2	ug/L	4	Standard
>	**Bi**	209	501935.6	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	6119.6	2.2	**7.4516**	0.184	2.5	mg/L	20	Standard
K	39	163.3	26.0	**0.8923**	0.268	30.1	mg/L	22	Standard
Ca	43	58.3	13.1	**-0.8716**	1.621	186.0	mg/L	47	Standard
Fe	54	338.9	14.2	**0.1347**	0.043	31.9	mg/L	151	Standard
Fe	57	201.7	14.9	**-0.0843**	0.069	82.1	mg/L	195	Standard
> **Sc-1**	45	32820.5	2.8				mg/L	29647	Standard
Cl	35	191817.3	0.7				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	3760.5	5.3				ug/L	1607	Standard
P	31	26361.2	0.5				ug/L	22752	Standard
S	34	5075.9	2.0				ug/L	5049	Standard
Sr	88	91.7	22.0				ug/L	87	Standard
C	12	203.3	19.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	124.9				mg/L	0	Standard
Dy	164	57.6	17.4				mg/L	10	Standard
Ho-1	165	45.0	11.1				mg/L	7	Standard
Er	166	50.0	34.6				mg/L	3	Standard
I	127	5225.9	3.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		164.971	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.586	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.450
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.035
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 19:38:03
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75524.5	1.6				ug/L	51024	Standard
	Be	9	58757.1	2.5	**47.1905**	0.427	0.9	ug/L	7	Standard
	Al	27	8592238.6	0.7	**40.7782**	0.896	2.2	ug/L	625	Standard
	Sc	45	30089.9	1.6				ug/L	29647	Standard
	Ti	47	29681.7	0.7	**100.0625**	1.696	1.7	ug/L	57	Standard
	V	51	362295.0	0.1	**51.4700**	1.097	2.1	ug/L	1142	Standard
	Cr	52	362530.7	0.7	**49.0151**	1.305	2.7	ug/L	6628	Standard
	Cr	53	44988.4	1.6	**48.6083**	1.321	2.7	ug/L	430	Standard
	Mn	55	309292.7	1.9	**52.6874**	2.042	3.9	ug/L	603	Standard
	Co	59	348007.0	1.3	**54.8425**	1.822	3.3	ug/L	237	Standard
	Ni	60	92789.3	1.3	**48.6823**	1.578	3.2	ug/L	141	Standard
	Cu	65	90263.4	0.9	**48.6062**	1.434	3.0	ug/L	109	Standard
	Zn	66	54352.7	0.8	**49.4652**	1.123	2.3	ug/L	159	Standard
>	Ge	72	467786.9	2.0				ug/L	474053	Standard
	As	75	53262.0	0.4	**48.7810**	0.849	1.7	ug/L	-34	Standard
	Se	82	5640.4	1.6	**51.5356**	1.525	3.0	ug/L	14	Standard
	Se-1	77	3823.8	0.2	**49.7310**	1.059	2.1	ug/L	55	Standard
>	Ga	71	100.0	10.0				mg/L	50	Standard
	Rb	85	738.4	4.8				ug/L	20	Standard
	Y	89	389211.3	4.2				ug/L	376602	Standard
>	Rh	103	41.7	45.4				ug/L	17	Standard
	Mo	98	258410.6	0.4	**108.3200**	0.551	0.5	ug/L	8	Standard
	Ag	107	305258.5	0.7	**50.6525**	0.191	0.4	ug/L	81	Standard
	Cd	111	98577.0	0.6	**50.2856**	0.543	1.1	mg/L	3	Standard
	Cd	114	240956.8	0.8	**49.7198**	0.544	1.1	ug/L	7	Standard
>	In	115	529955.9	0.8				ug/L	524722	Standard
	Sn	118	279031.2	1.4	**51.1979**	0.292	0.6	ug/L	715	Standard
	Sb	123	225733.2	0.6	**51.1556**	0.269	0.5	ug/L	201	Standard
	Ba	135	88992.9	0.5	**48.5568**	0.564	1.2	ug/L	108	Standard
	Ce	140	98.3	54.8				ug/L	30	Standard
>	Tb	159	792501.9	1.8				ug/L	792236	Standard
	Ho	165	15.0	57.7				ug/L	7	Standard
	Tl	203	380190.8	0.8	**49.9446**	0.519	1.0	ug/L	9	Standard
	Tl	205	340670.7	0.6	**52.6256**	0.733	1.4	ug/L	0	Standard
	Pb	206	240176.7	0.8	**52.1541**	1.146	2.2	ug/L	216	Standard
	Pb	207	218112.4	0.3	**52.0255**	0.882	1.7	ug/L	180	Standard
	Pb	208	878933.8	0.7	**51.6572**	1.015	2.0	ug/L	717	Standard
	U	238	331188.2	0.5	**53.5069**	0.993	1.9	ug/L	4	Standard
>	Bi	209	458755.1	1.5				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	4233.9	2.0	**5.6123**	0.183	3.3	mg/L	20	Standard
K	39	481.7	4.2	**3.3891**	0.102	3.0	mg/L	22	Standard
Ca	43	51.7	40.3	**-1.3433**	4.578	340.8	mg/L	47	Standard
Fe	54	6013.8	2.7	**4.7022**	0.066	1.4	mg/L	151	Standard
Fe	57	1661.8	4.6	**4.4228**	0.232	5.3	mg/L	195	Standard
> **Sc-1**	45	30089.9	1.6				mg/L	29647	Standard
Cl	35	174583.8	2.5				ug/L	154152	Standard
Kr	83	2.7	108.3				ug/L	3	Standard
Br	81	1656.8	6.5				ug/L	1607	Standard
P	31	26137.5	2.6				ug/L	22752	Standard
S	34	5366.0	2.6				ug/L	5049	Standard
Sr	88	61.7	56.9				ug/L	87	Standard
C	12	73.3	56.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.5	105.0				mg/L	10	Standard
Ho-1	165	15.0	57.7				mg/L	7	Standard
Er	166	10.0					mg/L	3	Standard
I	127	1988.5	11.5				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	94.381		
	Al	27	81.556		
	Sc	45			
	Ti	47	100.063		
	V	51	102.940		
	Cr	52	98.030		
	Cr	53			
	Mn	55	105.375		
	Co	59	109.685		
	Ni	60	97.365		
	Cu	65	97.212		
	Zn	66	98.930		
>	Ge	72		98.678	
	As	75	97.562		
	Se	82	103.071		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	108.320		
Ag	107	101.305		
Cd	111	100.571		
Cd	114			
In	115		100.997	
Sn	118	102.396		
Sb	123	102.311		
Ba	135	97.114		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.889		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.314		
U	238	107.014		
Bi	209		99.655	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 19:41:14
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75737.2	0.8				ug/L	51024	Standard
	Be	9	36.7	64.4	**0.0082**	0.019	228.1	ug/L	7	Standard
	Al	27	2361.9	43.7	**0.0014**	0.005	343.6	ug/L	625	Standard
	Sc	45	30985.0	1.8				ug/L	29647	Standard
	Ti	47	35.3	4.3	**-0.0458**	0.006	13.8	ug/L	57	Standard
	V	51	1037.4	10.2	**-0.0196**	0.013	66.8	ug/L	1142	Standard
	Cr	52	6028.9	1.0	**-0.0922**	0.013	14.2	ug/L	6628	Standard
	Cr	53	500.0	1.7	**0.1170**	0.007	5.6	ug/L	430	Standard
	Mn	55	801.0	1.0	**0.0112**	0.003	28.0	ug/L	603	Standard
	Co	59	242.3	16.2	**-0.0028**	0.006	218.5	ug/L	237	Standard
	Ni	60	194.3	2.8	**0.0250**	0.004	15.2	ug/L	141	Standard
	Cu	65	159.3	5.3	**0.0203**	0.005	24.2	ug/L	109	Standard
	Zn	66	178.7	4.3	**-0.0675**	0.009	14.0	ug/L	159	Standard
>	**Ge**	72	464739.5	1.5				ug/L	474053	Standard
	As	75	7.6	225.8	**0.0322**	0.016	48.9	ug/L	-34	Standard
	Se	82	25.4	8.4	**0.0649**	0.020	31.4	ug/L	14	Standard
	Se-1	77	61.7	15.6	**0.0734**	0.117	159.7	ug/L	55	Standard
>	**Ga**	71	83.3	36.7				mg/L	50	Standard
	Rb	85	23.3	44.6				ug/L	20	Standard
	Y	89	383264.6	3.0				ug/L	376602	Standard
>	**Rh**	103	33.3	8.7				ug/L	17	Standard
	Mo	98	271.3	23.3	**0.1065**	0.026	24.6	ug/L	8	Standard
	Ag	107	117.3	15.5	**0.0068**	0.003	41.5	ug/L	81	Standard
	Cd	111	10.2	68.0	**0.0019**	0.003	183.2	mg/L	3	Standard
	Cd	114	44.5	65.5	**0.0053**	0.006	115.1	ug/L	7	Standard
>	**In**	115	537976.2	1.6				ug/L	524722	Standard
	Sn	118	825.0	17.9	**0.0600**	0.027	44.4	ug/L	715	Standard
	Sb	123	661.4	27.1	**0.1329**	0.040	29.8	ug/L	201	Standard
	Ba	135	101.0	9.8	**-0.0033**	0.006	183.9	ug/L	108	Standard
	Ce	140	31.7	79.5				ug/L	30	Standard
>	**Tb**	159	808787.7	0.7				ug/L	792236	Standard
	Ho	165	10.0					ug/L	7	Standard
	Tl	203	70.0	26.5	**0.0063**	0.002	37.5	ug/L	9	Standard
	Tl	205	83.3	42.1	**0.0046**	0.005	114.0	ug/L	0	Standard
	Pb	206	238.3	5.7	**-0.0064**	0.003	45.5	ug/L	216	Standard
	Pb	207	219.3	6.5	**-0.0033**	0.003	100.2	ug/L	180	Standard
	Pb	208	893.7	3.3	**-0.0072**	0.002	24.1	ug/L	717	Standard
	U	238	52.0	44.7	**0.0005**	0.004	686.7	ug/L	4	Standard
>	**Bi**	209	475308.5	0.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	48.3	26.0	**0.0174**	0.016	91.5	mg/L	20	Standard
K	39	13.3	114.6	**-0.1319**	0.110	83.1	mg/L	22	Standard
Ca	43	30.0	33.3	**-6.4628**	2.334	36.1	mg/L	47	Standard
Fe	54	156.0	6.5	**0.0065**	0.010	153.3	mg/L	151	Standard
Fe	57	171.7	23.4	**-0.1375**	0.125	91.1	mg/L	195	Standard
Sc-1	45	30985.0	1.8				mg/L	29647	Standard
Cl	35	175790.7	1.2				ug/L	154152	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	1680.1	2.7				ug/L	1607	Standard
P	31	26980.7	1.7				ug/L	22752	Standard
S	34	5335.9	0.5				ug/L	5049	Standard
Sr	88	53.3	19.5				ug/L	87	Standard
C	12	106.7	44.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.8	173.2				mg/L	10	Standard
Ho-1	165	10.0					mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	1423.4	7.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.035	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.526
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.251
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606075401SDL WG572869-02
Sample Date/Time: Thursday, June 16, 2016 19:44:27
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75285.0	2.4				ug/L	51024	Standard
	Be	9	28.3	27.0	**0.0018**	0.006	349.7	ug/L	7	Standard
	Al	27	678933.6	1.5	**3.2237**	0.074	2.3	ug/L	625	Standard
	Sc	45	30959.9	1.5				ug/L	29647	Standard
	Ti	47	147.0	11.8	**0.3390**	0.053	15.6	ug/L	57	Standard
	V	51	1608.8	3.2	**0.0651**	0.007	11.5	ug/L	1142	Standard
	Cr	52	6858.9	5.4	**0.0335**	0.040	118.0	ug/L	6628	Standard
	Cr	53	711.7	14.1	**0.3581**	0.110	30.8	ug/L	430	Standard
	Mn	55	5081.9	4.1	**0.7566**	0.025	3.3	ug/L	603	Standard
	Co	59	396.3	6.0	**0.0224**	0.003	13.2	ug/L	237	Standard
	Ni	60	495.3	27.9	**0.1866**	0.070	37.6	ug/L	141	Standard
	Cu	65	8119.8	4.3	**4.3896**	0.136	3.1	ug/L	109	Standard
	Zn	66	5396.3	4.5	**4.7897**	0.160	3.3	ug/L	159	Standard
>	**Ge**	72	459379.8	1.3				ug/L	474053	Standard
	As	75	30.4	143.6	**0.0532**	0.040	75.8	ug/L	-34	Standard
	Se	82	25.8	13.6	**0.0723**	0.035	48.4	ug/L	14	Standard
	Se-1	77	72.3	3.5	**0.2270**	0.021	9.3	ug/L	55	Standard
>	**Ga**	71	85.0	20.4				mg/L	50	Standard
	Rb	85	2591.9	3.3				ug/L	20	Standard
	Y	89	395811.5	2.1				ug/L	376602	Standard
>	**Rh**	103	21.7	48.0				ug/L	17	Standard
	Mo	98	145.0	5.9	**0.0524**	0.004	7.4	ug/L	8	Standard
	Ag	107	135.7	35.4	**0.0092**	0.008	85.2	ug/L	81	Standard
	Cd	111	32.4	102.6	**0.0126**	0.016	129.9	mg/L	3	Standard
	Cd	114	75.7	59.7	**0.0111**	0.009	81.1	ug/L	7	Standard
>	**In**	115	555911.8	0.9				ug/L	524722	Standard
	Sn	118	780.0	12.2	**0.0473**	0.018	37.9	ug/L	715	Standard
	Sb	123	369.0	35.2	**0.0651**	0.029	44.3	ug/L	201	Standard
	Ba	135	1717.1	2.7	**0.8366**	0.031	3.7	ug/L	108	Standard
	Ce	140	485.0	42.7				ug/L	30	Standard
>	**Tb**	159	813354.7	3.1				ug/L	792236	Standard
	Ho	165	18.3	87.7				ug/L	7	Standard
	Tl	203	138.7	62.7	**0.0153**	0.011	74.9	ug/L	9	Standard
	Tl	205	61.7	4.7	**0.0015**	0.001	38.9	ug/L	0	Standard
	Pb	206	674.3	7.5	**0.0868**	0.013	15.5	ug/L	216	Standard
	Pb	207	582.7	6.3	**0.0820**	0.010	12.7	ug/L	180	Standard
	Pb	208	2365.1	0.5	**0.0779**	0.003	3.7	ug/L	717	Standard
	U	238	97.7	25.6	**0.0079**	0.004	53.7	ug/L	4	Standard
>	**Bi**	209	470182.7	2.2				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1275.1	3.2	**1.6099**	0.030	1.9	mg/L	20	Standard
K	39	51.7	39.1	**0.1491**	0.148	99.3	mg/L	22	Standard
Ca	43	31.7	9.1	**-6.0988**	0.709	11.6	mg/L	47	Standard
Fe	54	199.5	21.2	**0.0405**	0.034	83.1	mg/L	151	Standard
Fe	57	250.0	6.0	**0.0939**	0.035	37.2	mg/L	195	Standard
> **Sc-1**	45	30959.9	1.5				mg/L	29647	Standard
Cl	35	180506.2	0.5				ug/L	154152	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	1983.5	10.4				ug/L	1607	Standard
P	31	26828.7	3.3				ug/L	22752	Standard
S	34	5309.3	3.4				ug/L	5049	Standard
Sr	88	65.0	13.3				ug/L	87	Standard
C	12	93.3	12.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	25.5	47.4				mg/L	10	Standard
Ho-1	165	18.3	87.7				mg/L	7	Standard
Er	166	23.3	49.5				mg/L	3	Standard
I	127	1906.8	3.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		147.548	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.905	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.944
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.137
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606061601
Sample Date/Time: Thursday, June 16, 2016 19:47:38
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76809.2	0.5				ug/L	51024	Standard
	Be	9	595.0	11.7	**0.4492**	0.056	12.5	ug/L	7	Standard
	Al	27	4369598.1	0.7	**20.3813**	0.060	0.3	ug/L	625	Standard
	Sc	45	31414.2	1.5				ug/L	29647	Standard
	Ti	47	432.0	2.5	**1.3649**	0.030	2.2	ug/L	57	Standard
	V	51	-3320.7	72.4	**-0.6635**	0.356	53.6	ug/L	1142	Standard
	Cr	52	750024.0	0.5	**107.4925**	0.659	0.6	ug/L	6628	Standard
	Cr	53	103144.9	1.1	**117.5491**	0.704	0.6	ug/L	430	Standard
	Mn	55	749735.1	1.9	**134.2073**	3.843	2.9	ug/L	603	Standard
	Co	59	100276.4	1.1	**16.5512**	0.155	0.9	ug/L	237	Standard
	Ni	60	309778.2	0.7	**170.7218**	1.330	0.8	ug/L	141	Standard
	Cu	65	7659.6	1.1	**4.2680**	0.087	2.0	ug/L	109	Standard
	Zn	66	11362.9	1.9	**10.6718**	0.281	2.6	ug/L	159	Standard
>	**Ge**	72	445665.4	0.9				ug/L	474053	Standard
	As	75	686.6	13.7	**0.6845**	0.089	13.0	ug/L	-34	Standard
	Se	82	286.4	5.1	**2.5855**	0.133	5.1	ug/L	14	Standard
	Se-1	77	537.0	3.8	**6.6929**	0.237	3.5	ug/L	55	Standard
>	**Ga**	71	176.7	15.6				mg/L	50	Standard
	Rb	85	2721.9	5.5				ug/L	20	Standard
	Y	89	383236.3	0.5				ug/L	376602	Standard
>	**Rh**	103	50.0	36.1				ug/L	17	Standard
	Mo	98	2500.1	3.0	**1.0779**	0.045	4.2	ug/L	8	Standard
	Ag	107	102.0	12.9	**0.0051**	0.002	37.3	ug/L	81	Standard
	Cd	111	267.3	12.2	**0.1375**	0.014	10.4	mg/L	3	Standard
	Cd	114	603.9	11.8	**0.1249**	0.014	11.6	ug/L	7	Standard
>	**In**	115	512847.6	2.1				ug/L	524722	Standard
	Sn	118	1035.0	6.1	**0.1070**	0.008	7.4	ug/L	715	Standard
	Sb	123	393.5	17.2	**0.0775**	0.017	21.9	ug/L	201	Standard
	Ba	135	97635.9	1.0	**55.0639**	0.765	1.4	ug/L	108	Standard
	Ce	140	12988.9	1.1				ug/L	30	Standard
>	**Tb**	159	771242.3	0.7				ug/L	792236	Standard
	Ho	165	400.0	11.9				ug/L	7	Standard
	Tl	203	321.0	11.6	**0.0421**	0.006	13.3	ug/L	9	Standard
	Tl	205	538.3	98.5	**0.0807**	0.088	108.8	ug/L	0	Standard
	Pb	206	832.7	2.1	**0.1353**	0.003	2.1	ug/L	216	Standard
	Pb	207	700.3	3.6	**0.1232**	0.007	5.6	ug/L	180	Standard
	Pb	208	3407.2	29.9	**0.1547**	0.065	42.3	ug/L	717	Standard
	U	238	614.7	59.9	**0.0979**	0.064	65.5	ug/L	4	Standard
>	**Bi**	209	433217.0	0.9				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.3851**	8.776	163.0	mg/L	0	Standard
Mg	24	53123.0	1.4	**67.9338**	1.263	1.9	mg/L	20	Standard
K	39	26.7	39.0	**-0.0366**	0.073	198.4	mg/L	22	Standard
Ca	43	46.7	27.0	**-2.9236**	2.617	89.5	mg/L	47	Standard
Fe	54	466.9	13.1	**0.2433**	0.047	19.5	mg/L	151	Standard
Fe	57	296.7	18.2	**0.2213**	0.168	75.8	mg/L	195	Standard
> **Sc-1**	45	31414.2	1.5				mg/L	29647	Standard
Cl	35	180426.0	1.3				ug/L	154152	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	63948.0	2.0				ug/L	1607	Standard
P	31	35653.6	1.9				ug/L	22752	Standard
S	34	4944.1	4.8				ug/L	5049	Standard
Sr	88	168.3	28.8				ug/L	87	Standard
C	12	176.7	33.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	644.2	6.3				mg/L	10	Standard
Ho-1	165	400.0	11.9				mg/L	7	Standard
Er	166	330.0	18.9				mg/L	3	Standard
I	127	86114.1	2.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		150.535	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.012	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.737
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.107
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
V 51 Lower	V	51	
Cr 52 Upper, S, EEE	Cr	52	

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Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Ni 60 Upper, S, EEE	Ni	60

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Method 6020 - Summary Report

Sample ID: L1606061602
Sample Date/Time: Thursday, June 16, 2016 19:50:50
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75748.9	1.4				ug/L	51024	Standard
	Be	9	48.3	39.2	**0.0176**	0.015	86.0	ug/L	7	Standard
	Al	27	19995852.4	2.5	**94.6007**	1.188	1.3	ug/L	625	Standard
	Sc	45	30053.1	1.9				ug/L	29647	Standard
	Ti	47	826.4	6.6	**2.7223**	0.220	8.1	ug/L	57	Standard
	V	51	3891.9	11.8	**0.4057**	0.069	17.0	ug/L	1142	Standard
	Cr	52	13157.7	1.1	**0.9469**	0.019	2.0	ug/L	6628	Standard
	Cr	53	8188.9	18.5	**8.8148**	1.816	20.6	ug/L	430	Standard
	Mn	55	3666201.0	1.1	**647.3586**	10.609	1.6	ug/L	603	Standard
	Co	59	2221.5	3.8	**0.3212**	0.018	5.6	ug/L	237	Standard
	Ni	60	1892.5	1.4	**0.9508**	0.014	1.5	ug/L	141	Standard
	Cu	65	951.0	2.0	**0.4643**	0.013	2.7	ug/L	109	Standard
	Zn	66	2843.9	2.3	**2.4576**	0.033	1.3	ug/L	159	Standard
>	**Ge**	72	452100.4	1.1				ug/L	474053	Standard
	As	75	2291.3	4.3	**2.1952**	0.104	4.7	ug/L	-34	Standard
	Se	82	731.9	2.7	**6.7722**	0.229	3.4	ug/L	14	Standard
	Se-1	77	824.7	4.7	**10.5195**	0.619	5.9	ug/L	55	Standard
>	**Ga**	71	260.0	5.8				mg/L	50	Standard
	Rb	85	20994.5	2.7				ug/L	20	Standard
	Y	89	374644.2	1.4				ug/L	376602	Standard
>	**Rh**	103	175.0	2.9				ug/L	17	Standard
	Mo	98	1524.1	2.8	**0.6737**	0.024	3.5	ug/L	8	Standard
	Ag	107	85.0	16.3	**0.0027**	0.002	93.3	ug/L	81	Standard
	Cd	111	31.4	24.1	**0.0138**	0.004	30.8	mg/L	3	Standard
	Cd	114	85.3	56.7	**0.0150**	0.011	72.0	ug/L	7	Standard
>	**In**	115	498521.0	0.9				ug/L	524722	Standard
	Sn	118	2845.3	2.5	**0.4666**	0.019	4.0	ug/L	715	Standard
	Sb	123	273.4	5.3	**0.0511**	0.003	6.4	ug/L	201	Standard
	Ba	135	433999.4	0.6	**251.9694**	2.189	0.9	ug/L	108	Standard
	Ce	140	9039.4	2.4				ug/L	30	Standard
>	**Tb**	159	767594.4	2.3				ug/L	792236	Standard
	Ho	165	158.3	4.8				ug/L	7	Standard
	Tl	203	240.0	18.3	**0.0311**	0.007	21.8	ug/L	9	Standard
	Tl	205	225.0	23.4	**0.0292**	0.009	30.5	ug/L	0	Standard
	Pb	206	742.7	3.3	**0.1155**	0.009	7.8	ug/L	216	Standard
	Pb	207	635.7	4.8	**0.1077**	0.010	9.0	ug/L	180	Standard
	Pb	208	2598.4	5.5	**0.1049**	0.012	11.7	ug/L	717	Standard
	U	238	474.7	5.4	**0.0741**	0.006	7.6	ug/L	4	Standard
>	**Bi**	209	431218.2	2.1				ug/L	460343	Standard

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Na	23	3.3	86.6	**-0.3991**	9.400	2355.4	mg/L	0	Standard
Mg	24	98133.5	1.2	**131.2521**	3.929	3.0	mg/L	20	Standard
K	39	131.7	7.9	**0.7615**	0.060	7.9	mg/L	22	Standard
Ca	43	168.3	4.5	**25.6161**	1.859	7.3	mg/L	47	Standard
Fe	54	29671.0	1.6	**23.6871**	0.442	1.9	mg/L	151	Standard
Fe	57	7898.7	1.9	**23.4845**	0.677	2.9	mg/L	195	Standard
> **Sc-1**	45	30053.1	1.9				mg/L	29647	Standard
Cl	35	175045.0	2.3				ug/L	154152	Standard
Kr	83	2.7	43.3				ug/L	3	Standard
Br	81	182091.9	3.5				ug/L	1607	Standard
P	31	33082.7	1.0				ug/L	22752	Standard
S	34	5377.6	4.5				ug/L	5049	Standard
Sr	88	866.7	3.5				ug/L	87	Standard
C	12	170.0	42.4				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	258.0	17.6				mg/L	10	Standard
Ho-1	165	158.3	4.8				mg/L	7	Standard
Er	166	180.0	25.5				mg/L	3	Standard
I	127	271715.3	7.5				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		148.457	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.369	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.007
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.673
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606061604
Sample Date/Time: Thursday, June 16, 2016 19:54:01
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73209.8	0.9				ug/L	51024	Standard
	Be	9	28.3	50.9	**0.0025**	0.012	495.3	ug/L	7	Standard
	Al	27	1228067.5	0.3	**6.0032**	0.043	0.7	ug/L	625	Standard
	Sc	45	32386.3	3.3				ug/L	29647	Standard
	Ti	47	334.0	17.6	**0.9832**	0.212	21.6	ug/L	57	Standard
	V	51	1789.1	4.9	**0.0914**	0.018	19.4	ug/L	1142	Standard
	Cr	52	14674.8	1.1	**1.1301**	0.065	5.7	ug/L	6628	Standard
	Cr	53	2643.6	3.1	**2.5012**	0.083	3.3	ug/L	430	Standard
	Mn	55	705467.3	1.0	**122.4541**	1.381	1.1	ug/L	603	Standard
	Co	59	3430.7	0.7	**0.5095**	0.015	2.8	ug/L	237	Standard
	Ni	60	3839.5	0.3	**1.9758**	0.045	2.3	ug/L	141	Standard
	Cu	65	1168.4	5.1	**0.5751**	0.034	5.9	ug/L	109	Standard
	Zn	66	2259.5	2.7	**1.8718**	0.099	5.3	ug/L	159	Standard
>	**Ge**	72	459550.4	2.1				ug/L	474053	Standard
	As	75	131.8	16.1	**0.1477**	0.018	12.1	ug/L	-34	Standard
	Se	82	59.0	11.8	**0.3811**	0.061	16.1	ug/L	14	Standard
	Se-1	77	99.0	11.6	**0.5837**	0.132	22.6	ug/L	55	Standard
>	**Ga**	71	130.0	11.5				mg/L	50	Standard
	Rb	85	9683.1	3.7				ug/L	20	Standard
	Y	89	395829.7	1.7				ug/L	376602	Standard
>	**Rh**	103	50.0	26.5				ug/L	17	Standard
	Mo	98	129.8	4.6	**0.0461**	0.003	6.2	ug/L	8	Standard
	Ag	107	119.7	9.2	**0.0065**	0.002	28.9	ug/L	81	Standard
	Cd	111	317.1	3.2	**0.1502**	0.006	3.9	mg/L	3	Standard
	Cd	114	681.4	6.2	**0.1296**	0.010	7.4	ug/L	7	Standard
>	**In**	115	558854.3	1.4				ug/L	524722	Standard
	Sn	118	820.0	7.6	**0.0535**	0.012	21.9	ug/L	715	Standard
	Sb	123	282.5	7.4	**0.0459**	0.004	9.0	ug/L	201	Standard
	Ba	135	35268.3	1.2	**18.2144**	0.408	2.2	ug/L	108	Standard
	Ce	140	2163.5	3.8				ug/L	30	Standard
>	**Tb**	159	825700.5	0.4				ug/L	792236	Standard
	Ho	165	51.7	14.8				ug/L	7	Standard
	Tl	203	156.7	22.7	**0.0174**	0.005	26.5	ug/L	9	Standard
	Tl	205	173.3	46.6	**0.0182**	0.012	67.6	ug/L	0	Standard
	Pb	206	424.7	5.7	**0.0331**	0.006	16.7	ug/L	216	Standard
	Pb	207	356.0	3.9	**0.0286**	0.004	13.3	ug/L	180	Standard
	Pb	208	1553.0	4.6	**0.0306**	0.005	14.8	ug/L	717	Standard
	U	238	81.0	68.7	**0.0051**	0.009	171.7	ug/L	4	Standard
>	**Bi**	209	473355.3	0.7				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.6238**	8.363	148.7	mg/L	0	Standard
Mg	24	2843.6	1.0	**3.4857**	0.082	2.3	mg/L	20	Standard
K	39	78.3	14.7	**0.3207**	0.096	29.9	mg/L	22	Standard
Ca	43	50.0	20.0	**-2.4661**	2.354	95.5	mg/L	47	Standard
Fe	54	2460.3	3.7	**1.7187**	0.119	6.9	mg/L	151	Standard
Fe	57	721.7	11.5	**1.4022**	0.269	19.2	mg/L	195	Standard
Sc-1	45	32386.3	3.3				mg/L	29647	Standard
Cl	35	167245.3	0.7				ug/L	154152	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	10406.9	6.9				ug/L	1607	Standard
P	31	27868.9	1.7				ug/L	22752	Standard
S	34	4945.8	3.9				ug/L	5049	Standard
Sr	88	151.7	1.9				ug/L	87	Standard
C	12	130.0	26.6				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	93.0	49.2				mg/L	10	Standard
Ho-1	165	51.7	14.8				mg/L	7	Standard
Er	166	76.7	32.8				mg/L	3	Standard
I	127	108192.1	4.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		143.481	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.941	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	106.505
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.827
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606064901
Sample Date/Time: Thursday, June 16, 2016 19:57:13
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73899.8	1.9				ug/L	51024	Standard
	Be	9	28.3	20.4	**0.0021**	0.004	205.1	ug/L	7	Standard
	Al	27	17068640.1	0.5	**82.8031**	1.944	2.3	ug/L	625	Standard
	Sc	45	31098.6	0.8				ug/L	29647	Standard
	Ti	47	2220.5	15.6	**7.6952**	1.219	15.8	ug/L	57	Standard
	V	51	3330.6	5.2	**0.3294**	0.025	7.6	ug/L	1142	Standard
	Cr	52	12294.7	1.4	**0.8476**	0.021	2.5	ug/L	6628	Standard
	Cr	53	3545.4	12.3	**3.6195**	0.491	13.6	ug/L	430	Standard
	Mn	55	65149.4	0.9	**11.5346**	0.133	1.2	ug/L	603	Standard
	Co	59	1855.8	3.0	**0.2656**	0.010	3.6	ug/L	237	Standard
	Ni	60	2852.6	1.9	**1.4936**	0.030	2.0	ug/L	141	Standard
	Cu	65	55047.8	0.2	**31.0509**	0.094	0.3	ug/L	109	Standard
	Zn	66	20763.6	1.9	**19.6724**	0.380	1.9	ug/L	159	Standard
>	**Ge**	72	446059.8	0.2				ug/L	474053	Standard
	As	75	230.9	30.1	**0.2467**	0.067	27.2	ug/L	-34	Standard
	Se	82	114.1	10.5	**0.9274**	0.115	12.4	ug/L	14	Standard
	Se-1	77	255.7	12.3	**2.7929**	0.427	15.3	ug/L	55	Standard
>	**Ga**	71	203.3	6.2				mg/L	50	Standard
	Rb	85	64731.4	2.1				ug/L	20	Standard
	Y	89	406326.7	3.3				ug/L	376602	Standard
>	**Rh**	103	48.3	21.5				ug/L	17	Standard
	Mo	98	623.5	1.9	**0.2468**	0.013	5.5	ug/L	8	Standard
	Ag	107	134.0	13.8	**0.0091**	0.002	26.2	ug/L	81	Standard
	Cd	111	49.6	6.5	**0.0211**	0.001	3.6	mg/L	3	Standard
	Cd	114	143.2	27.3	**0.0245**	0.007	27.9	ug/L	7	Standard
>	**In**	115	549535.8	3.5				ug/L	524722	Standard
	Sn	118	1373.4	4.5	**0.1543**	0.017	10.8	ug/L	715	Standard
	Sb	123	311.5	9.8	**0.0535**	0.009	17.0	ug/L	201	Standard
	Ba	135	22377.2	0.2	**11.7401**	0.432	3.7	ug/L	108	Standard
	Ce	140	280.0	11.2				ug/L	30	Standard
>	**Tb**	159	815853.8	2.8				ug/L	792236	Standard
	Ho	165	18.3	95.8				ug/L	7	Standard
	Tl	203	193.0	9.7	**0.0237**	0.002	10.2	ug/L	9	Standard
	Tl	205	165.0	24.1	**0.0186**	0.007	36.0	ug/L	0	Standard
	Pb	206	1296.1	2.0	**0.2354**	0.004	1.8	ug/L	216	Standard
	Pb	207	1110.4	3.4	**0.2207**	0.006	2.5	ug/L	180	Standard
	Pb	208	4630.9	2.3	**0.2243**	0.008	3.6	ug/L	717	Standard
	U	238	1289.4	2.5	**0.2082**	0.002	1.1	ug/L	4	Standard
>	**Bi**	209	442943.4	2.1				ug/L	460343	Standard

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Na	23	6.7	86.6	**-10.3108**	17.983	174.4	mg/L	0	Standard
Mg	24	29769.2	2.1	**38.4319**	0.806	2.1	mg/L	20	Standard
K	39	731.7	8.5	**5.0889**	0.443	8.7	mg/L	22	Standard
Ca	43	196.7	13.0	**30.5875**	5.364	17.5	mg/L	47	Standard
Fe	54	365.7	3.5	**0.1685**	0.008	4.7	mg/L	151	Standard
Fe	57	391.7	14.9	**0.5082**	0.163	32.1	mg/L	195	Standard
> **Sc-1**	45	31098.6	0.8				mg/L	29647	Standard
Cl	35	222953.8	0.9				ug/L	154152	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	17977.3	3.7				ug/L	1607	Standard
P	31	27297.9	1.8				ug/L	22752	Standard
S	34	5117.5	2.7				ug/L	5049	Standard
Sr	88	170.0	7.8				ug/L	87	Standard
C	12	300.0	21.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	86.6				mg/L	0	Standard
Dy	164	34.9	61.4				mg/L	10	Standard
Ho-1	165	18.3	95.8				mg/L	7	Standard
Er	166	36.7	41.7				mg/L	3	Standard
I	127	36641.0	3.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		144.833	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.095	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.729
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.220
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606065001
Sample Date/Time: Thursday, June 16, 2016 20:00:24
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72946.9	1.0				ug/L	51024	Standard
	Be	9	18.3	31.5	**-0.0058**	0.005	85.0	ug/L	7	Standard
	Al	27	25893242.1	1.3	**127.2227**	1.176	0.9	ug/L	625	Standard
	Sc	45	31297.3	0.7				ug/L	29647	Standard
	Ti	47	363.0	6.9	**1.0820**	0.092	8.5	ug/L	57	Standard
	V	51	26598.7	23.4	**3.6881**	0.888	24.1	ug/L	1142	Standard
	Cr	52	3600275.3	0.7	**503.8543**	2.642	0.5	ug/L	6628	Standard
	Cr	53	441968.5	0.3	**489.9131**	0.755	0.2	ug/L	430	Standard
	Mn	55	3750356.5	0.6	**651.5298**	1.262	0.2	ug/L	603	Standard
	Co	59	140636.7	1.1	**22.5301**	0.278	1.2	ug/L	237	Standard
	Ni	60	1491493.6	1.2	**797.5118**	6.177	0.8	ug/L	141	Standard
	Cu	65	3267.0	3.0	**1.7266**	0.047	2.7	ug/L	109	Standard
	Zn	66	3425.7	1.8	**2.9563**	0.067	2.3	ug/L	159	Standard
>	**Ge**	72	459475.2	0.5				ug/L	474053	Standard
	As	75	556.7	15.6	**0.5440**	0.082	15.1	ug/L	-34	Standard
	Se	82	222.9	6.2	**1.9114**	0.137	7.2	ug/L	14	Standard
	Se-1	77	721.0	7.2	**8.9403**	0.656	7.3	ug/L	55	Standard
>	**Ga**	71	291.7	10.5				mg/L	50	Standard
	Rb	85	7967.1	5.2				ug/L	20	Standard
	Y	89	376366.8	3.1				ug/L	376602	Standard
>	**Rh**	103	188.3	17.7				ug/L	17	Standard
	Mo	98	4038.0	0.7	**1.7616**	0.010	0.6	ug/L	8	Standard
	Ag	107	92.0	19.6	**0.0036**	0.003	90.6	ug/L	81	Standard
	Cd	111	324.1	6.9	**0.1694**	0.013	7.5	mg/L	3	Standard
	Cd	114	819.8	8.2	**0.1728**	0.014	8.3	ug/L	7	Standard
>	**In**	115	507645.2	1.3				ug/L	524722	Standard
	Sn	118	691.7	9.8	**0.0432**	0.012	27.3	ug/L	715	Standard
	Sb	123	362.3	12.4	**0.0710**	0.011	16.1	ug/L	201	Standard
	Ba	135	933624.2	0.5	**532.4126**	8.811	1.7	ug/L	108	Standard
	Ce	140	3360.4	5.9				ug/L	30	Standard
>	**Tb**	159	768822.1	0.7				ug/L	792236	Standard
	Ho	165	56.7	48.6				ug/L	7	Standard
	Tl	203	246.7	11.1	**0.0318**	0.003	11.0	ug/L	9	Standard
	Tl	205	253.3	31.2	**0.0337**	0.013	38.1	ug/L	0	Standard
	Pb	206	530.7	3.2	**0.0660**	0.004	5.7	ug/L	216	Standard
	Pb	207	474.0	4.9	**0.0662**	0.005	7.1	ug/L	180	Standard
	Pb	208	1991.7	8.7	**0.0664**	0.011	16.6	ug/L	717	Standard
	U	238	2713.6	2.5	**0.4575**	0.014	3.0	ug/L	4	Standard
>	**Bi**	209	432460.1	1.2				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.2420**	9.024	172.2	mg/L	0	Standard
Mg	24	90814.7	0.4	**116.5891**	0.672	0.6	mg/L	20	Standard
K	39	136.7	18.8	**0.7598**	0.192	25.3	mg/L	22	Standard
Ca	43	113.3	24.3	**11.8769**	5.966	50.2	mg/L	47	Standard
Fe	54	8598.8	2.1	**6.5077**	0.130	2.0	mg/L	151	Standard
Fe	57	2420.2	4.0	**6.4526**	0.333	5.2	mg/L	195	Standard
> **Sc-1**	45	31297.3	0.7				mg/L	29647	Standard
Cl	35	172318.1	2.4				ug/L	154152	Standard
Kr	83	2.7	43.3				ug/L	3	Standard
Br	81	54798.9	1.9				ug/L	1607	Standard
P	31	33010.9	0.2				ug/L	22752	Standard
S	34	5099.2	1.3				ug/L	5049	Standard
Sr	88	600.0	8.0				ug/L	87	Standard
C	12	176.7	34.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	96.6	30.8				mg/L	10	Standard
Ho-1	165	56.7	48.6				mg/L	7	Standard
Er	166	70.0	14.3				mg/L	3	Standard
I	127	400706.8	6.8				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		142.965	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.925	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.746
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.943
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Cr 52 Upper, S, EEE	Cr	52	

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Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Ni 60 Upper, S, EEE	Ni	60
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606065002
Sample Date/Time: Thursday, June 16, 2016 20:03:36
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74923.1	0.9				ug/L	51024	Standard
	Be	9	10.0	86.6	**-0.0129**	0.007	54.5	ug/L	7	Standard
	Al	27	11445723.9	1.0	**54.7538**	1.040	1.9	ug/L	625	Standard
	Sc	45	33881.2	2.3				ug/L	29647	Standard
	Ti	47	432.3	7.3	**1.3384**	0.080	6.0	ug/L	57	Standard
	V	51	2150.8	34.9	**0.1495**	0.116	77.8	ug/L	1142	Standard
	Cr	52	17737.4	0.6	**1.5921**	0.067	4.2	ug/L	6628	Standard
	Cr	53	10231.8	13.3	**11.0925**	1.758	15.8	ug/L	430	Standard
	Mn	55	1115003.1	1.6	**196.2265**	7.080	3.6	ug/L	603	Standard
	Co	59	2902.3	1.7	**0.4307**	0.009	2.2	ug/L	237	Standard
	Ni	60	3566.1	4.1	**1.8534**	0.037	2.0	ug/L	141	Standard
	Cu	65	1206.0	1.3	**0.6044**	0.011	1.8	ug/L	109	Standard
	Zn	66	2690.2	1.2	**2.3054**	0.087	3.8	ug/L	159	Standard
>	**Ge**	72	453598.8	2.2				ug/L	474053	Standard
	As	75	280.7	13.7	**0.2904**	0.040	13.9	ug/L	-34	Standard
	Se	82	128.1	7.4	**1.0434**	0.112	10.7	ug/L	14	Standard
	Se-1	77	619.3	6.2	**7.6936**	0.694	9.0	ug/L	55	Standard
>	**Ga**	71	105.0	17.2				mg/L	50	Standard
	Rb	85	9451.3	1.9				ug/L	20	Standard
	Y	89	391791.6	1.5				ug/L	376602	Standard
>	**Rh**	103	140.0	6.2				ug/L	17	Standard
	Mo	98	235.6	9.4	**0.0929**	0.011	11.9	ug/L	8	Standard
	Ag	107	90.7	15.8	**0.0026**	0.002	86.9	ug/L	81	Standard
	Cd	111	142.6	5.5	**0.0692**	0.005	7.6	mg/L	3	Standard
	Cd	114	324.8	13.1	**0.0629**	0.009	15.1	ug/L	7	Standard
>	**In**	115	532666.5	2.0				ug/L	524722	Standard
	Sn	118	630.0	6.3	**0.0258**	0.009	33.7	ug/L	715	Standard
	Sb	123	425.3	4.8	**0.0811**	0.005	5.7	ug/L	201	Standard
	Ba	135	317814.3	1.2	**172.6789**	1.361	0.8	ug/L	108	Standard
	Ce	140	4260.6	3.9				ug/L	30	Standard
>	**Tb**	159	822106.7	0.8				ug/L	792236	Standard
	Ho	165	98.3	10.6				ug/L	7	Standard
	Tl	203	236.3	5.5	**0.0291**	0.002	5.8	ug/L	9	Standard
	Tl	205	180.0	7.3	**0.0206**	0.002	9.9	ug/L	0	Standard
	Pb	206	404.0	5.2	**0.0334**	0.005	14.3	ug/L	216	Standard
	Pb	207	342.3	3.2	**0.0297**	0.003	8.7	ug/L	180	Standard
	Pb	208	1396.4	3.4	**0.0260**	0.003	10.6	ug/L	717	Standard
	U	238	1612.4	1.0	**0.2586**	0.003	1.2	ug/L	4	Standard
>	**Bi**	209	449004.5	0.2				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	75132.5	1.7	**89.1275**	2.931	3.3	mg/L	20	Standard
K	39	103.3	14.8	**0.4601**	0.085	18.5	mg/L	22	Standard
Ca	43	118.3	6.5	**11.0359**	2.111	19.1	mg/L	47	Standard
Fe	54	299.8	4.4	**0.0986**	0.014	14.4	mg/L	151	Standard
Fe	57	295.0	19.5	**0.1539**	0.166	108.1	mg/L	195	Standard
> **Sc-1**	45	33881.2	2.3				mg/L	29647	Standard
Cl	35	177255.5	0.3				ug/L	154152	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	27852.3	4.5				ug/L	1607	Standard
P	31	36888.2	1.8				ug/L	22752	Standard
S	34	5134.2	5.6				ug/L	5049	Standard
Sr	88	336.7	12.1				ug/L	87	Standard
C	12	236.7	6.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	125.5	16.3				mg/L	10	Standard
Ho-1	165	98.3	10.6				mg/L	7	Standard
Er	166	93.3	16.4				mg/L	3	Standard
I	127	795775.9	5.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		146.839	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.685	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.514	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.537	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606065003
Sample Date/Time: Thursday, June 16, 2016 20:06:47
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73049.1	2.8				ug/L	51024	Standard
	Be	9	56.7	53.2	**0.0258**	0.025	96.4	ug/L	7	Standard
	Al	27	6795723.2	1.7	**33.3429**	0.423	1.3	ug/L	625	Standard
	Sc	45	32349.5	2.7				ug/L	29647	Standard
	Ti	47	1362.4	1.5	**4.5490**	0.135	3.0	ug/L	57	Standard
	V	51	-1621.9	225.1	**-0.4056**	0.530	130.6	ug/L	1142	Standard
	Cr	52	1449129.7	0.3	**203.6270**	3.465	1.7	ug/L	6628	Standard
	Cr	53	186956.4	0.3	**208.3861**	2.811	1.3	ug/L	430	Standard
	Mn	55	969240.4	1.1	**169.4166**	2.152	1.3	ug/L	603	Standard
	Co	59	17799.4	0.3	**2.8346**	0.031	1.1	ug/L	237	Standard
	Ni	60	82918.9	0.7	**44.5655**	0.800	1.8	ug/L	141	Standard
	Cu	65	12426.8	2.2	**6.7981**	0.081	1.2	ug/L	109	Standard
	Zn	66	16815.7	1.7	**15.5225**	0.331	2.1	ug/L	159	Standard
>	**Ge**	72	456450.5	1.3				ug/L	474053	Standard
	As	75	1966.3	2.2	**1.8692**	0.017	0.9	ug/L	-34	Standard
	Se	82	293.5	2.7	**2.5875**	0.085	3.3	ug/L	14	Standard
	Se-1	77	432.0	3.1	**5.0994**	0.235	4.6	ug/L	55	Standard
>	**Ga**	71	736.7	9.9				mg/L	50	Standard
	Rb	85	15683.1	2.3				ug/L	20	Standard
	Y	89	407716.2	0.3				ug/L	376602	Standard
>	**Rh**	103	95.0	13.9				ug/L	17	Standard
	Mo	98	6403.0	2.3	**2.6056**	0.071	2.7	ug/L	8	Standard
	Ag	107	109.7	3.7	**0.0054**	0.001	15.4	ug/L	81	Standard
	Cd	111	1059.3	1.9	**0.5225**	0.015	2.8	mg/L	3	Standard
	Cd	114	2761.6	6.2	**0.5508**	0.040	7.3	ug/L	7	Standard
>	**In**	115	544816.8	1.1				ug/L	524722	Standard
	Sn	118	1191.7	7.7	**0.1237**	0.018	14.6	ug/L	715	Standard
	Sb	123	304.1	8.3	**0.0523**	0.006	10.7	ug/L	201	Standard
	Ba	135	110831.6	1.3	**58.8309**	0.136	0.2	ug/L	108	Standard
	Ce	140	24424.7	1.3				ug/L	30	Standard
>	**Tb**	159	809371.8	1.0				ug/L	792236	Standard
	Ho	165	351.7	3.0				ug/L	7	Standard
	Tl	203	219.0	7.6	**0.0268**	0.002	7.8	ug/L	9	Standard
	Tl	205	185.0	24.8	**0.0214**	0.007	34.0	ug/L	0	Standard
	Pb	206	2753.6	3.0	**0.5549**	0.011	2.0	ug/L	216	Standard
	Pb	207	2285.2	1.4	**0.5035**	0.014	2.7	ug/L	180	Standard
	Pb	208	9786.6	1.2	**0.5303**	0.014	2.6	ug/L	717	Standard
	U	238	353.7	1.7	**0.0508**	0.000	0.5	ug/L	4	Standard
>	**Bi**	209	449128.9	1.4				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	37974.2	2.9	**47.1394**	0.683	1.4	mg/L	20	Standard
K	39	91.7	3.1	**0.4128**	0.025	6.0	mg/L	22	Standard
Ca	43	75.0	26.7	**2.9551**	4.725	159.9	mg/L	47	Standard
Fe	54	5125.4	2.8	**3.7060**	0.149	4.0	mg/L	151	Standard
Fe	57	1555.1	4.8	**3.7648**	0.143	3.8	mg/L	195	Standard
> **Sc-1**	45	32349.5	2.7				mg/L	29647	Standard
Cl	35	176741.0	1.5				ug/L	154152	Standard
Kr	83	1.3	86.6				ug/L	3	Standard
Br	81	69459.0	3.9				ug/L	1607	Standard
P	31	30123.3	2.4				ug/L	22752	Standard
S	34	4967.5	1.4				ug/L	5049	Standard
Sr	88	190.0	9.5				ug/L	87	Standard
C	12	126.7	12.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	637.1	0.5				mg/L	10	Standard
Ho-1	165	351.7	3.0				mg/L	7	Standard
Er	166	340.0	15.3				mg/L	3	Standard
I	127	176369.6	3.2				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		143.166	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.287	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.830	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.564	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
V 51 Lower	V	51	
Cr 52 Upper, S, EEE	Cr	52	

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Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55

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Method 6020 - Summary Report

Sample ID: L1606065008
Sample Date/Time: Thursday, June 16, 2016 20:12:57
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72941.9	1.7				ug/L	51024	Standard
	Be	9	75.0	11.5	**0.0413**	0.007	17.1	ug/L	7	Standard
	Al	27	2553806.5	1.0	**12.5408**	0.102	0.8	ug/L	625	Standard
	Sc	45	32038.9	2.8				ug/L	29647	Standard
	Ti	47	722.7	5.7	**2.2554**	0.110	4.9	ug/L	57	Standard
	V	51	3819.2	3.9	**0.3720**	0.024	6.3	ug/L	1142	Standard
	Cr	52	10926.9	1.1	**0.5663**	0.038	6.8	ug/L	6628	Standard
	Cr	53	5912.8	6.8	**5.9618**	0.341	5.7	ug/L	430	Standard
	Mn	55	1386219.7	0.5	**234.7938**	4.744	2.0	ug/L	603	Standard
	Co	59	5557.7	1.4	**0.8285**	0.006	0.8	ug/L	237	Standard
	Ni	60	17011.5	0.7	**8.7950**	0.195	2.2	ug/L	141	Standard
	Cu	65	1618.4	1.4	**0.8000**	0.013	1.6	ug/L	109	Standard
	Zn	66	33299.6	0.0	**29.9907**	0.453	1.5	ug/L	159	Standard
>	**Ge**	72	471205.0	1.5				ug/L	474053	Standard
	As	75	966.9	5.2	**0.9032**	0.033	3.6	ug/L	-34	Standard
	Se	82	311.0	2.5	**2.6600**	0.029	1.1	ug/L	14	Standard
	Se-1	77	329.3	6.4	**3.5702**	0.277	7.8	ug/L	55	Standard
>	**Ga**	71	258.3	15.5				mg/L	50	Standard
	Rb	85	8330.6	3.2				ug/L	20	Standard
	Y	89	401951.6	2.1				ug/L	376602	Standard
>	**Rh**	103	36.7	43.8				ug/L	17	Standard
	Mo	98	105.4	14.0	**0.0382**	0.006	14.8	ug/L	8	Standard
	Ag	107	90.7	18.0	**0.0026**	0.003	103.7	ug/L	81	Standard
	Cd	111	115.2	13.8	**0.0550**	0.008	14.6	mg/L	3	Standard
	Cd	114	259.1	8.3	**0.0492**	0.005	9.4	ug/L	7	Standard
>	**In**	115	535100.4	1.1				ug/L	524722	Standard
	Sn	118	718.4	7.1	**0.0413**	0.008	20.4	ug/L	715	Standard
	Sb	123	448.1	4.2	**0.0858**	0.005	5.4	ug/L	201	Standard
	Ba	135	68982.0	0.6	**37.2626**	0.244	0.7	ug/L	108	Standard
	Ce	140	25868.7	1.1				ug/L	30	Standard
>	**Tb**	159	806521.0	1.2				ug/L	792236	Standard
	Ho	165	500.0	12.5				ug/L	7	Standard
	Tl	203	215.0	12.2	**0.0260**	0.004	15.1	ug/L	9	Standard
	Tl	205	150.0	6.7	**0.0156**	0.002	10.9	ug/L	0	Standard
	Pb	206	509.0	3.9	**0.0556**	0.003	5.6	ug/L	216	Standard
	Pb	207	432.0	1.7	**0.0505**	0.001	2.1	ug/L	180	Standard
	Pb	208	1819.0	0.9	**0.0504**	0.002	3.5	ug/L	717	Standard
	U	238	230.0	2.3	**0.0300**	0.001	2.2	ug/L	4	Standard
>	**Bi**	209	453449.6	1.5				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	38452.1	0.8	**48.2252**	1.630	3.4	mg/L	20	Standard
K	39	58.3	38.7	**0.1852**	0.162	87.6	mg/L	22	Standard
Ca	43	35.0	51.5	**-5.6048**	3.899	69.6	mg/L	47	Standard
Fe	54	249.0	20.9	**0.0731**	0.044	60.8	mg/L	151	Standard
Fe	57	205.0	6.5	**-0.0599**	0.029	47.9	mg/L	195	Standard
> **Sc-1**	45	32038.9	2.8				mg/L	29647	Standard
Cl	35	205402.9	2.6				ug/L	154152	Standard
Kr	83	2.3	24.7				ug/L	3	Standard
Br	81	66452.1	2.3				ug/L	1607	Standard
P	31	28505.1	1.9				ug/L	22752	Standard
S	34	4827.4	1.0				ug/L	5049	Standard
Sr	88	103.3	7.4				ug/L	87	Standard
C	12	290.0	39.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	843.5	10.6				mg/L	10	Standard
Ho-1	165	500.0	12.5				mg/L	7	Standard
Er	166	483.3	20.9				mg/L	3	Standard
I	127	65771.0	5.3				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		142.956	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.399	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	101.978
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.503
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606072901
Sample Date/Time: Thursday, June 16, 2016 20:16:08
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	71451.4	0.2				ug/L	51024	Standard
	Be	9	156.7	13.3	**0.1120**	0.018	15.8	ug/L	7	Standard
	Al	27	1783026.0	1.0	**8.9350**	0.113	1.3	ug/L	625	Standard
	Sc	45	33488.6	0.2				ug/L	29647	Standard
	Ti	47	3847.8	0.7	**12.4804**	0.276	2.2	ug/L	57	Standard
	V	51	20969.4	1.8	**2.7398**	0.019	0.7	ug/L	1142	Standard
	Cr	52	17305.9	0.3	**1.3919**	0.032	2.3	ug/L	6628	Standard
	Cr	53	2988.6	7.9	**2.7405**	0.281	10.3	ug/L	430	Standard
	Mn	55	363989.8	1.4	**60.3519**	1.596	2.6	ug/L	603	Standard
	Co	59	13842.7	0.2	**2.0829**	0.032	1.5	ug/L	237	Standard
	Ni	60	5649.1	2.1	**2.8101**	0.018	0.6	ug/L	141	Standard
	Cu	65	2744.6	2.9	**1.3736**	0.022	1.6	ug/L	109	Standard
	Zn	66	21962.9	1.2	**19.3089**	0.151	0.8	ug/L	159	Standard
>	Ge	72	480623.4	1.5				ug/L	474053	Standard
	As	75	604.0	4.6	**0.5630**	0.022	3.9	ug/L	-34	Standard
	Se	82	62.7	5.3	**0.3902**	0.037	9.5	ug/L	14	Standard
	Se-1	77	114.3	16.4	**0.7262**	0.260	35.8	ug/L	55	Standard
>	Ga	71	1213.4	6.6				mg/L	50	Standard
	Rb	85	49025.9	0.6				ug/L	20	Standard
	Y	89	427519.3	0.4				ug/L	376602	Standard
>	Rh	103	33.3	37.7				ug/L	17	Standard
	Mo	98	183.9	8.3	**0.0677**	0.006	8.8	ug/L	8	Standard
	Ag	107	84.7	15.9	**0.0010**	0.002	216.4	ug/L	81	Standard
	Cd	111	55.6	11.8	**0.0237**	0.003	13.7	mg/L	3	Standard
	Cd	114	123.4	16.9	**0.0204**	0.004	20.0	ug/L	7	Standard
>	In	115	557933.4	0.7				ug/L	524722	Standard
	Sn	118	618.3	8.9	**0.0185**	0.009	49.1	ug/L	715	Standard
	Sb	123	180.1	11.3	**0.0240**	0.004	17.3	ug/L	201	Standard
	Ba	135	83499.8	1.0	**43.2656**	0.170	0.4	ug/L	108	Standard
	Ce	140	144607.0	2.1				ug/L	30	Standard
>	Tb	159	830815.8	1.2				ug/L	792236	Standard
	Ho	165	2081.8	4.4				ug/L	7	Standard
	Tl	203	322.3	0.4	**0.0385**	0.000	1.0	ug/L	9	Standard
	Tl	205	275.0	3.6	**0.0334**	0.001	4.5	ug/L	0	Standard
	Pb	206	5048.5	0.5	**1.0085**	0.002	0.2	ug/L	216	Standard
	Pb	207	4178.9	1.8	**0.9144**	0.020	2.2	ug/L	180	Standard
	Pb	208	17525.7	1.4	**0.9427**	0.011	1.1	ug/L	717	Standard
	U	238	621.3	3.2	**0.0898**	0.003	3.0	ug/L	4	Standard
>	Bi	209	472687.9	0.6				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.6311**	8.350	148.3	mg/L	0	Standard
Mg	24	3158.7	1.3	**3.7460**	0.051	1.3	mg/L	20	Standard
K	39	215.0	8.1	**1.2230**	0.115	9.4	mg/L	22	Standard
Ca	43	38.3	27.2	**-5.2593**	2.154	41.0	mg/L	47	Standard
Fe	54	3415.5	7.7	**2.3435**	0.190	8.1	mg/L	151	Standard
Fe	57	1036.7	4.4	**2.1944**	0.121	5.5	mg/L	195	Standard
> **Sc-1**	45	33488.6	0.2				mg/L	29647	Standard
Cl	35	164707.7	0.4				ug/L	154152	Standard
Kr	83	3.0	33.3				ug/L	3	Standard
Br	81	11457.7	7.7				ug/L	1607	Standard
P	31	28214.6	1.7				ug/L	22752	Standard
S	34	4967.5	1.9				ug/L	5049	Standard
Sr	88	113.3	6.7				ug/L	87	Standard
C	12	80.0	12.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	0	Standard
Dy	164	3722.9	5.4				mg/L	10	Standard
Ho-1	165	2081.8	4.4				mg/L	7	Standard
Er	166	1966.8	4.6				mg/L	3	Standard
I	127	28066.0	3.2				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		140.035	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.386	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	106.329
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.682
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 20:19:21
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70359.7	1.3				ug/L	51024	Standard
	Be	9	53312.1	5.5	**45.9476**	1.930	4.2	ug/L	7	Standard
	Al	27	8077611.0	1.8	**41.1433**	0.785	1.9	ug/L	625	Standard
	Sc	45	32289.4	1.8				ug/L	29647	Standard
	Ti	47	30321.3	1.6	**100.0769**	1.272	1.3	ug/L	57	Standard
	V	51	360120.0	0.4	**50.0825**	0.106	0.2	ug/L	1142	Standard
	Cr	52	369947.6	1.5	**48.9622**	0.470	1.0	ug/L	6628	Standard
	Cr	53	47002.8	0.4	**49.7282**	0.165	0.3	ug/L	430	Standard
	Mn	55	317711.3	0.7	**52.9755**	0.531	1.0	ug/L	603	Standard
	Co	59	339862.8	0.3	**52.4255**	0.355	0.7	ug/L	237	Standard
	Ni	60	93112.6	1.0	**47.8173**	0.235	0.5	ug/L	141	Standard
	Cu	65	91542.1	0.9	**48.2534**	0.241	0.5	ug/L	109	Standard
	Zn	66	53846.5	0.5	**47.9689**	0.154	0.3	ug/L	159	Standard
>	**Ge**	72	477686.4	0.6				ug/L	474053	Standard
	As	75	53954.1	0.4	**48.3818**	0.469	1.0	ug/L	-34	Standard
	Se	82	5528.9	1.3	**49.4502**	0.921	1.9	ug/L	14	Standard
	Se-1	77	3768.1	3.4	**47.9498**	1.532	3.2	ug/L	55	Standard
>	**Ga**	71	96.7	3.0				mg/L	50	Standard
	Rb	85	860.0	3.6				ug/L	20	Standard
	Y	89	407805.9	2.6				ug/L	376602	Standard
>	**Rh**	103	38.3	19.9				ug/L	17	Standard
	Mo	98	251849.5	0.7	**99.5336**	0.343	0.3	ug/L	8	Standard
	Ag	107	302942.0	0.9	**47.3977**	0.787	1.7	ug/L	81	Standard
	Cd	111	100743.2	0.5	**48.4530**	0.464	1.0	mg/L	3	Standard
	Cd	114	243706.8	2.6	**47.4138**	1.351	2.8	ug/L	7	Standard
>	**In**	115	562084.3	0.9				ug/L	524722	Standard
	Sn	118	283917.6	1.7	**49.1130**	0.500	1.0	ug/L	715	Standard
	Sb	123	223152.0	0.8	**47.6804**	0.566	1.2	ug/L	201	Standard
	Ba	135	90693.3	1.2	**46.6526**	0.606	1.3	ug/L	108	Standard
	Ce	140	95.0	24.1				ug/L	30	Standard
>	**Tb**	159	823567.8	1.3				ug/L	792236	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	373875.5	0.8	**47.8522**	0.141	0.3	ug/L	9	Standard
	Tl	205	338247.8	1.5	**50.9083**	0.885	1.7	ug/L	0	Standard
	Pb	206	233315.4	0.7	**49.3532**	0.331	0.7	ug/L	216	Standard
	Pb	207	211841.0	0.3	**49.2260**	0.469	1.0	ug/L	180	Standard
	Pb	208	876269.3	0.6	**50.1725**	0.549	1.1	ug/L	717	Standard
	U	238	329535.1	0.3	**51.8676**	0.341	0.7	ug/L	4	Standard
>	**Bi**	209	470816.3	0.6				ug/L	460343	Standard

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Na	23	3.3	86.6	**0.5093**	8.613	1691.0	mg/L	0	Standard
Mg	24	4180.6	4.5	**5.1574**	0.149	2.9	mg/L	20	Standard
K	39	543.3	5.4	**3.5784**	0.272	7.6	mg/L	22	Standard
Ca	43	63.3	12.1	**0.3907**	1.523	389.8	mg/L	47	Standard
Fe	54	5922.9	1.4	**4.3077**	0.105	2.4	mg/L	151	Standard
Fe	57	1828.4	2.7	**4.5503**	0.051	1.1	mg/L	195	Standard
Sc-1	45	32289.4	1.8				mg/L	29647	Standard
Cl	35	173385.8	0.9				ug/L	154152	Standard
Kr	83	1.3	114.6				ug/L	3	Standard
Br	81	2136.8	4.6				ug/L	1607	Standard
P	31	26322.9	2.1				ug/L	22752	Standard
S	34	5514.3	2.6				ug/L	5049	Standard
Sr	88	65.0	27.7				ug/L	87	Standard
C	12	70.0	24.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	23.3	89.2				mg/L	10	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	0.0					mg/L	3	Standard
I	127	3703.8	16.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	91.895		
Al	27	82.287		
Sc	45			
Ti	47	100.077		
V	51	100.165		
Cr	52	97.924		
Cr	53			
Mn	55	105.951		
Co	59	104.851		
Ni	60	95.635		
Cu	65	96.507		
Zn	66	95.938		
Ge	72		100.766	
As	75	96.764		
Se	82	98.900		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	99.534		
Ag	107	94.795		
Cd	111	96.906		
Cd	114			
In	115			107.120
Sn	118	98.226		
Sb	123	95.361		
Ba	135	93.305		
Ce	140			
Tb	159			
Ho	165			
Tl	203	95.704		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.345		
U	238	103.735		
Bi	209			102.275
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 20:22:32
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67637.3	2.1				ug/L	51024	Standard
	Be	9	18.3	83.3	**-0.0045**	0.014	309.1	ug/L	7	Standard
	Al	27	1391.7	16.0	**-0.0024**	0.001	50.0	ug/L	625	Standard
	Sc	45	30764.5	1.2				ug/L	29647	Standard
	Ti	47	37.3	15.2	**-0.0462**	0.017	37.4	ug/L	57	Standard
	V	51	1089.5	9.5	**-0.0208**	0.013	60.2	ug/L	1142	Standard
	Cr	52	6209.3	0.8	**-0.1150**	0.004	3.7	ug/L	6628	Standard
	Cr	53	621.7	6.5	**0.2124**	0.037	17.6	ug/L	430	Standard
	Mn	55	764.0	5.2	**-0.0024**	0.006	259.9	ug/L	603	Standard
	Co	59	234.0	4.1	**-0.0062**	0.002	27.4	ug/L	237	Standard
	Ni	60	152.7	14.0	**-0.0015**	0.011	728.7	ug/L	141	Standard
	Cu	65	133.0	12.1	**0.0021**	0.009	425.3	ug/L	109	Standard
	Zn	66	146.0	6.6	**-0.1051**	0.009	8.1	ug/L	159	Standard
>	**Ge**	72	492018.2	1.0				ug/L	474053	Standard
	As	75	-9.0	401.0	**0.0170**	0.032	186.2	ug/L	-34	Standard
	Se	82	25.4	15.9	**0.0523**	0.034	65.9	ug/L	14	Standard
	Se-1	77	66.3	19.1	**0.0882**	0.166	188.3	ug/L	55	Standard
>	**Ga**	71	71.7	20.1				mg/L	50	Standard
	Rb	85	26.7	43.3				ug/L	20	Standard
	Y	89	407999.6	2.7				ug/L	376602	Standard
>	**Rh**	103	20.0	50.0				ug/L	17	Standard
	Mo	98	257.9	34.0	**0.0988**	0.034	34.5	ug/L	8	Standard
	Ag	107	107.0	12.6	**0.0049**	0.002	46.8	ug/L	81	Standard
	Cd	111	7.2	23.1	**0.0003**	0.001	264.5	mg/L	3	Standard
	Cd	114	32.4	23.6	**0.0026**	0.001	54.7	ug/L	7	Standard
>	**In**	115	547642.1	1.6				ug/L	524722	Standard
	Sn	118	781.7	18.0	**0.0498**	0.026	53.2	ug/L	715	Standard
	Sb	123	445.8	26.8	**0.0832**	0.027	32.7	ug/L	201	Standard
	Ba	135	126.0	4.8	**0.0089**	0.003	29.7	ug/L	108	Standard
	Ce	140	16.7	34.6				ug/L	30	Standard
>	**Tb**	159	805057.6	1.1				ug/L	792236	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	50.7	17.0	**0.0040**	0.001	27.9	ug/L	9	Standard
	Tl	205	33.3	22.9	**-0.0027**	0.001	41.6	ug/L	0	Standard
	Pb	206	245.3	6.9	**-0.0038**	0.003	90.3	ug/L	216	Standard
	Pb	207	206.3	2.8	**-0.0052**	0.002	29.4	ug/L	180	Standard
	Pb	208	876.0	4.6	**-0.0071**	0.002	32.4	ug/L	717	Standard
	U	238	36.7	27.6	**-0.0017**	0.002	94.5	ug/L	4	Standard
>	**Bi**	209	464955.7	0.5				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.1330**	9.213	179.5	mg/L	0	Standard
Mg	24	40.0	21.7	**0.0070**	0.011	155.9	mg/L	20	Standard
K	39	16.7	69.3	**-0.1055**	0.085	80.5	mg/L	22	Standard
Ca	43	30.0	66.7	**-6.3982**	4.581	71.6	mg/L	47	Standard
Fe	54	159.4	19.4	**0.0098**	0.023	233.9	mg/L	151	Standard
Fe	57	178.3	15.9	**-0.1151**	0.084	72.7	mg/L	195	Standard
> **Sc-1**	45	30764.5	1.2				mg/L	29647	Standard
Cl	35	172678.1	2.2				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	1756.8	6.0				ug/L	1607	Standard
P	31	26713.5	1.7				ug/L	22752	Standard
S	34	5486.0	1.1				ug/L	5049	Standard
Sr	88	68.3	25.7				ug/L	87	Standard
C	12	46.7	12.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	13.0	43.3				mg/L	10	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	2433.5	7.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.790	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.368
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.002
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606072902
Sample Date/Time: Thursday, June 16, 2016 20:26:38
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67597.1	1.4				ug/L	51024	Standard
	Be	9	58.3	13.1	**0.0313**	0.007	23.7	ug/L	7	Standard
	Al	27	1447794.1	2.6	**7.6674**	0.177	2.3	ug/L	625	Standard
	Sc	45	31928.7	4.9				ug/L	29647	Standard
	Ti	47	305.7	12.8	**0.8104**	0.145	17.9	ug/L	57	Standard
	V	51	1674.4	15.6	**0.0568**	0.033	58.1	ug/L	1142	Standard
	Cr	52	9700.4	2.0	**0.3335**	0.001	0.4	ug/L	6628	Standard
	Cr	53	1893.5	6.0	**1.5168**	0.108	7.1	ug/L	430	Standard
	Mn	55	246384.5	0.3	**39.5930**	0.878	2.2	ug/L	603	Standard
	Co	59	7588.2	2.4	**1.0889**	0.047	4.3	ug/L	237	Standard
	Ni	60	3526.1	1.5	**1.6717**	0.049	2.9	ug/L	141	Standard
	Cu	65	954.7	5.5	**0.4196**	0.020	4.8	ug/L	109	Standard
	Zn	66	5586.0	1.4	**4.5915**	0.148	3.2	ug/L	159	Standard
>	**Ge**	72	495383.3	1.9				ug/L	474053	Standard
	As	75	235.4	13.4	**0.2282**	0.025	10.7	ug/L	-34	Standard
	Se	82	130.5	4.3	**0.9599**	0.027	2.8	ug/L	14	Standard
	Se-1	77	93.7	12.4	**0.4210**	0.125	29.6	ug/L	55	Standard
>	**Ga**	71	108.3	13.3				mg/L	50	Standard
	Rb	85	27304.6	1.0				ug/L	20	Standard
	Y	89	392736.9	2.5				ug/L	376602	Standard
>	**Rh**	103	11.7	49.5				ug/L	17	Standard
	Mo	98	87.5	12.2	**0.0306**	0.004	14.1	ug/L	8	Standard
	Ag	107	101.0	6.0	**0.0042**	0.001	22.2	ug/L	81	Standard
	Cd	111	59.5	14.3	**0.0266**	0.004	15.1	mg/L	3	Standard
	Cd	114	114.2	30.2	**0.0194**	0.007	35.4	ug/L	7	Standard
>	**In**	115	538147.1	0.9				ug/L	524722	Standard
	Sn	118	776.7	8.0	**0.0512**	0.012	24.3	ug/L	715	Standard
	Sb	123	200.6	27.1	**0.0300**	0.012	40.3	ug/L	201	Standard
	Ba	135	61289.0	0.7	**32.9142**	0.504	1.5	ug/L	108	Standard
	Ce	140	11052.4	2.4				ug/L	30	Standard
>	**Tb**	159	799876.8	2.9				ug/L	792236	Standard
	Ho	165	190.0	13.9				ug/L	7	Standard
	Tl	203	282.0	7.3	**0.0338**	0.003	8.0	ug/L	9	Standard
	Tl	205	280.0	6.2	**0.0347**	0.004	10.5	ug/L	0	Standard
	Pb	206	401.7	3.5	**0.0294**	0.002	8.2	ug/L	216	Standard
	Pb	207	341.0	0.8	**0.0262**	0.002	6.1	ug/L	180	Standard
	Pb	208	1409.0	1.3	**0.0235**	0.001	4.4	ug/L	717	Standard
	U	238	76.0	25.2	**0.0044**	0.003	61.0	ug/L	4	Standard
>	**Bi**	209	466934.5	2.6				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3003.6	5.4	**3.7365**	0.119	3.2	mg/L	20	Standard
K	39	200.0	11.5	**1.1940**	0.224	18.7	mg/L	22	Standard
Ca	43	26.7	78.1	**-7.2758**	4.881	67.1	mg/L	47	Standard
Fe	54	197.9	11.4	**0.0352**	0.024	69.0	mg/L	151	Standard
Fe	57	201.7	10.0	**-0.0646**	0.087	134.0	mg/L	195	Standard
> **Sc-1**	45	31928.7	4.9				mg/L	29647	Standard
Cl	35	168064.3	0.8				ug/L	154152	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	30467.4	7.1				ug/L	1607	Standard
P	31	27221.1	1.9				ug/L	22752	Standard
S	34	4829.1	7.9				ug/L	5049	Standard
Sr	88	71.7	28.2				ug/L	87	Standard
C	12	70.0	24.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	346.6	23.4				mg/L	10	Standard
Ho-1	165	190.0	13.9				mg/L	7	Standard
Er	166	140.0	21.4				mg/L	3	Standard
I	127	19342.3	3.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.481	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.500	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	102.559
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.432
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606073001
Sample Date/Time: Thursday, June 16, 2016 20:29:50
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77603.4	4.1				ug/L	51024	Standard
	Be	9	23.3	32.7	**-0.0030**	0.005	179.3	ug/L	7	Standard
	Al	27	6597541.3	1.1	**30.4895**	0.983	3.2	ug/L	625	Standard
	Sc	45	30666.0	3.0				ug/L	29647	Standard
	Ti	47	203.3	18.0	**0.5694**	0.126	22.1	ug/L	57	Standard
	V	51	19344.1	1.4	**2.7880**	0.060	2.2	ug/L	1142	Standard
	Cr	52	223704.1	0.9	**32.1116**	0.253	0.8	ug/L	6628	Standard
	Cr	53	32680.2	2.6	**37.7577**	0.692	1.8	ug/L	430	Standard
	Mn	55	14764.2	0.6	**2.5761**	0.037	1.5	ug/L	603	Standard
	Co	59	8421.3	1.4	**1.3825**	0.016	1.2	ug/L	237	Standard
	Ni	60	8389.0	3.1	**4.6470**	0.087	1.9	ug/L	141	Standard
	Cu	65	2908.6	1.9	**1.6151**	0.017	1.1	ug/L	109	Standard
	Zn	66	3204.0	4.7	**2.9081**	0.114	3.9	ug/L	159	Standard
>	**Ge**	72	436204.2	1.2				ug/L	474053	Standard
	As	75	2688.1	1.6	**2.6639**	0.074	2.8	ug/L	-34	Standard
	Se	82	851.2	1.0	**8.1974**	0.187	2.3	ug/L	14	Standard
	Se-1	77	1137.0	6.7	**15.3552**	1.225	8.0	ug/L	55	Standard
>	**Ga**	71	1600.1	10.1				mg/L	50	Standard
	Rb	85	221561.7	1.4				ug/L	20	Standard
	Y	89	371828.3	2.0				ug/L	376602	Standard
>	**Rh**	103	3242.0	4.8				ug/L	17	Standard
	Mo	98	4562.5	2.6	**2.0314**	0.078	3.9	ug/L	8	Standard
	Ag	107	113.7	11.8	**0.0078**	0.003	32.8	ug/L	81	Standard
	Cd	111	55.8	15.1	**0.0271**	0.005	18.3	mg/L	3	Standard
	Cd	114	143.3	18.4	**0.0277**	0.006	20.9	ug/L	7	Standard
>	**In**	115	497749.4	1.4				ug/L	524722	Standard
	Sn	118	1183.4	2.0	**0.1421**	0.001	1.0	ug/L	715	Standard
	Sb	123	552.4	7.7	**0.1185**	0.008	7.1	ug/L	201	Standard
	Ba	135	1629969.1	1.1	**947.9397**	3.697	0.4	ug/L	108	Standard
	Ce	140	661.7	1.6				ug/L	30	Standard
>	**Tb**	159	768724.3	1.9				ug/L	792236	Standard
	Ho	165	30.0	0.0				ug/L	7	Standard
	Tl	203	273.3	11.0	**0.0373**	0.004	11.6	ug/L	9	Standard
	Tl	205	236.7	11.6	**0.0327**	0.005	13.9	ug/L	0	Standard
	Pb	206	593.0	4.8	**0.0867**	0.006	6.8	ug/L	216	Standard
	Pb	207	503.3	3.4	**0.0795**	0.004	4.6	ug/L	180	Standard
	Pb	208	2099.4	1.6	**0.0791**	0.001	1.5	ug/L	717	Standard
	U	238	272.3	8.1	**0.0412**	0.004	8.8	ug/L	4	Standard
>	**Bi**	209	413369.8	0.7				ug/L	460343	Standard

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Na	23	10.0	86.6	**-20.6958**	26.075	126.0	mg/L	0	Standard
Mg	24	97695.6	0.1	**128.0820**	3.805	3.0	mg/L	20	Standard
K	39	1235.1	6.0	**8.8773**	0.558	6.3	mg/L	22	Standard
Ca	43	1178.4	7.9	**253.1572**	23.304	9.2	mg/L	47	Standard
Fe	54	176.5	19.0	**0.0234**	0.022	95.0	mg/L	151	Standard
Fe	57	1151.7	8.5	**2.8063**	0.366	13.0	mg/L	195	Standard
> **Sc-1**	45	30666.0	3.0				mg/L	29647	Standard
Cl	35	183619.3	0.2				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	216976.2	1.6				ug/L	1607	Standard
P	31	27466.6	2.5				ug/L	22752	Standard
S	34	5401.0	3.5				ug/L	5049	Standard
Sr	88	13359.2	2.8				ug/L	87	Standard
C	12	236.7	14.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	16.2	35.8				mg/L	10	Standard
Ho-1	165	30.0	0.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	172255.5	10.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		152.092	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.016	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.860
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		89.796
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606073002
Sample Date/Time: Thursday, June 16, 2016 20:40:20
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72672.3	2.9				ug/L	51024	Standard
	Be	9	10.0	50.0	**-0.0128**	0.004	30.9	ug/L	7	Standard
	Al	27	6776653.7	2.4	**33.4181**	0.221	0.7	ug/L	625	Standard
	Sc	45	30878.1	3.6				ug/L	29647	Standard
	Ti	47	191.7	10.9	**0.5384**	0.079	14.6	ug/L	57	Standard
	V	51	18320.5	2.2	**2.6731**	0.088	3.3	ug/L	1142	Standard
	Cr	52	218082.0	0.6	**31.7558**	0.128	0.4	ug/L	6628	Standard
	Cr	53	32453.1	2.0	**38.0586**	0.990	2.6	ug/L	430	Standard
	Mn	55	14793.6	1.2	**2.6216**	0.060	2.3	ug/L	603	Standard
	Co	59	8007.4	2.3	**1.3327**	0.045	3.4	ug/L	237	Standard
	Ni	60	8064.8	0.9	**4.5323**	0.032	0.7	ug/L	141	Standard
	Cu	65	2976.0	2.0	**1.6794**	0.017	1.0	ug/L	109	Standard
	Zn	66	2008.5	3.5	**1.7659**	0.064	3.6	ug/L	159	Standard
>	**Ge**	72	429862.6	1.0				ug/L	474053	Standard
	As	75	2572.0	0.4	**2.5869**	0.037	1.4	ug/L	-34	Standard
	Se	82	825.8	3.3	**8.0685**	0.355	4.4	ug/L	14	Standard
	Se-1	77	1141.7	4.7	**15.6522**	0.781	5.0	ug/L	55	Standard
>	**Ga**	71	1611.8	8.9				mg/L	50	Standard
	Rb	85	218102.3	2.0				ug/L	20	Standard
	Y	89	377604.2	0.7				ug/L	376602	Standard
>	**Rh**	103	3075.3	2.3				ug/L	17	Standard
	Mo	98	4376.1	1.3	**1.9206**	0.018	0.9	ug/L	8	Standard
	Ag	107	101.3	11.9	**0.0053**	0.002	42.4	ug/L	81	Standard
	Cd	111	44.3	10.0	**0.0205**	0.002	10.6	mg/L	3	Standard
	Cd	114	101.2	2.7	**0.0181**	0.001	4.2	ug/L	7	Standard
>	**In**	115	504775.6	2.2				ug/L	524722	Standard
	Sn	118	1261.7	9.4	**0.1538**	0.018	12.0	ug/L	715	Standard
	Sb	123	527.5	2.2	**0.1107**	0.000	0.3	ug/L	201	Standard
	Ba	135	1636843.5	1.3	**938.7853**	9.854	1.0	ug/L	108	Standard
	Ce	140	583.3	14.6				ug/L	30	Standard
>	**Tb**	159	772745.6	1.2				ug/L	792236	Standard
	Ho	165	13.3	57.3				ug/L	7	Standard
	Tl	203	237.3	15.4	**0.0328**	0.005	15.8	ug/L	9	Standard
	Tl	205	210.0	10.4	**0.0290**	0.003	11.9	ug/L	0	Standard
	Pb	206	512.7	7.1	**0.0701**	0.008	10.9	ug/L	216	Standard
	Pb	207	440.7	8.2	**0.0656**	0.009	13.2	ug/L	180	Standard
	Pb	208	1827.0	4.1	**0.0642**	0.006	9.9	ug/L	717	Standard
	U	238	243.3	3.8	**0.0371**	0.002	4.2	ug/L	4	Standard
>	**Bi**	209	404002.1	1.1				ug/L	460343	Standard

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Na	23	10.0	86.6	**-20.5285**	26.005	126.7	mg/L	0	Standard
Mg	24	96717.8	1.8	**126.0145**	6.791	5.4	mg/L	20	Standard
K	39	1353.4	2.3	**9.6820**	0.217	2.2	mg/L	22	Standard
Ca	43	1160.0	11.2	**246.7324**	22.672	9.2	mg/L	47	Standard
Fe	54	173.0	8.5	**0.0201**	0.009	45.9	mg/L	151	Standard
Fe	57	1218.4	5.2	**2.9735**	0.072	2.4	mg/L	195	Standard
Sc-1	45	30878.1	3.6				mg/L	29647	Standard
Cl	35	185979.3	1.4				ug/L	154152	Standard
Kr	83	2.7	43.3				ug/L	3	Standard
Br	81	209002.2	2.5				ug/L	1607	Standard
P	31	27092.5	3.1				ug/L	22752	Standard
S	34	5509.3	2.9				ug/L	5049	Standard
Sr	88	11921.4	3.3				ug/L	87	Standard
C	12	216.7	14.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	29.4	59.5				mg/L	10	Standard
Ho-1	165	13.3	57.3				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	173148.1	13.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		142.427	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.678	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.199
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.761
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606073003
Sample Date/Time: Thursday, June 16, 2016 20:43:31
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66295.0	5.6				ug/L	51024	Standard
	Be	9	56.7	36.7	**0.0315**	0.022	69.3	ug/L	7	Standard
	Al	27	140324062.6	0.9	**759.9749**	34.895	4.6	ug/L	625	Standard
	Sc	45	30973.3	2.2				ug/L	29647	Standard
	Ti	47	544.3	4.3	**1.8537**	0.066	3.6	ug/L	57	Standard
	V	51	5988.0	12.5	**0.7695**	0.117	15.2	ug/L	1142	Standard
	Cr	52	16952.1	2.7	**1.6378**	0.039	2.4	ug/L	6628	Standard
	Cr	53	39053.8	8.0	**46.3217**	3.179	6.9	ug/L	430	Standard
	Mn	55	1211107.1	0.8	**227.1129**	4.279	1.9	ug/L	603	Standard
	Co	59	15513.3	2.2	**2.6477**	0.097	3.6	ug/L	237	Standard
	Ni	60	11454.7	1.9	**6.5356**	0.059	0.9	ug/L	141	Standard
	Cu	65	2107.5	3.2	**1.1824**	0.030	2.5	ug/L	109	Standard
	Zn	66	3534.1	3.7	**3.3182**	0.082	2.5	ug/L	159	Standard
>	**Ge**	72	425577.5	1.4				ug/L	474053	Standard
	As	75	6875.0	1.9	**6.9431**	0.226	3.3	ug/L	-34	Standard
	Se	82	1838.5	2.4	**18.3557**	0.698	3.8	ug/L	14	Standard
	Se-1	77	5651.1	6.0	**81.1945**	3.892	4.8	ug/L	55	Standard
>	**Ga**	71	298.3	8.3				mg/L	50	Standard
	Rb	85	18603.1	3.0				ug/L	20	Standard
	Y	89	364931.5	1.6				ug/L	376602	Standard
>	**Rh**	103	1093.4	10.5				ug/L	17	Standard
	Mo	98	426.7	6.4	**0.1986**	0.013	6.7	ug/L	8	Standard
	Ag	107	75.7	8.8	**0.0020**	0.001	63.5	ug/L	81	Standard
	Cd	111	101.2	16.3	**0.0557**	0.010	17.5	mg/L	3	Standard
	Cd	114	239.7	20.6	**0.0526**	0.011	21.7	ug/L	7	Standard
>	**In**	115	464316.0	0.4				ug/L	524722	Standard
	Sn	118	820.0	6.0	**0.0826**	0.010	12.0	ug/L	715	Standard
	Sb	123	404.3	9.7	**0.0898**	0.011	11.7	ug/L	201	Standard
	Ba	135	7189623.7	0.9	**4482.5615**	58.524	1.3	ug/L	108	Standard
	Ce	140	11556.1	1.6				ug/L	30	Standard
>	**Tb**	159	738740.3	1.0				ug/L	792236	Standard
	Ho	165	163.3	8.8				ug/L	7	Standard
	Tl	203	154.3	14.2	**0.0220**	0.003	15.0	ug/L	9	Standard
	Tl	205	155.0	9.7	**0.0212**	0.003	13.2	ug/L	0	Standard
	Pb	206	489.3	5.2	**0.0725**	0.006	7.9	ug/L	216	Standard
	Pb	207	420.0	7.6	**0.0677**	0.009	13.2	ug/L	180	Standard
	Pb	208	1652.4	1.4	**0.0599**	0.003	5.3	ug/L	717	Standard
	U	238	9935.9	1.3	**1.9381**	0.028	1.4	ug/L	4	Standard
>	**Bi**	209	378492.4	1.3				ug/L	460343	Standard

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Na	23	20.0	43.3	**-51.8526**	25.479	49.1	mg/L	0	Standard
Mg	24	304205.5	1.3	**394.7766**	3.601	0.9	mg/L	20	Standard
K	39	283.3	22.2	**1.8451**	0.491	26.6	mg/L	22	Standard
Ca	43	1023.4	14.5	**216.1479**	37.325	17.3	mg/L	47	Standard
Fe	54	3507.0	4.8	**2.6133**	0.070	2.7	mg/L	151	Standard
Fe	57	2098.5	3.6	**5.5706**	0.094	1.7	mg/L	195	Standard
> **Sc-1**	45	30973.3	2.2				mg/L	29647	Standard
Cl	35	171200.0	3.8				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	477807.6	1.2				ug/L	1607	Standard
P	31	31030.1	3.4				ug/L	22752	Standard
S	34	5537.7	3.1				ug/L	5049	Standard
Sr	88	3852.2	4.1				ug/L	87	Standard
C	12	250.0	32.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	197.9	47.2				mg/L	10	Standard
Ho-1	165	163.3	8.8				mg/L	7	Standard
Er	166	183.3	6.3				mg/L	3	Standard
I	127	159354.2	8.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.929	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		89.774	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		88.488
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		82.220
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606073102
Sample Date/Time: Thursday, June 16, 2016 20:46:43
Number of Replicates: 3
Autosampler Position: 346
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55473.1	2.7				ug/L	51024	Standard
	Be	9	55.0	36.4	**0.0390**	0.022	55.7	ug/L	7	Standard
	Al	27	942566.4	1.5	**6.0840**	0.204	3.4	ug/L	625	Standard
	Sc	45	34049.9	0.9				ug/L	29647	Standard
	Ti	47	5731.8	2.0	**18.2913**	0.196	1.1	ug/L	57	Standard
	V	51	32065.1	2.5	**4.1901**	0.107	2.6	ug/L	1142	Standard
	Cr	52	17242.5	0.8	**1.3371**	0.009	0.7	ug/L	6628	Standard
	Cr	53	5039.2	15.0	**4.8012**	0.726	15.1	ug/L	430	Standard
	Mn	55	115479.5	1.7	**18.6730**	0.120	0.6	ug/L	603	Standard
	Co	59	2037.1	3.8	**0.2650**	0.009	3.4	ug/L	237	Standard
	Ni	60	2031.8	4.8	**0.9400**	0.039	4.2	ug/L	141	Standard
	Cu	65	266456.7	0.9	**136.9469**	2.046	1.5	ug/L	109	Standard
	Zn	66	37165.9	1.0	**32.1770**	0.480	1.5	ug/L	159	Standard
>	**Ge**	72	490402.9	1.1				ug/L	474053	Standard
	As	75	12459.1	0.9	**10.9020**	0.085	0.8	ug/L	-34	Standard
	Se	82	127.6	3.2	**0.9465**	0.028	3.0	ug/L	14	Standard
	Se-1	77	270.0	15.8	**2.6503**	0.495	18.7	ug/L	55	Standard
>	**Ga**	71	1921.8	2.3				mg/L	50	Standard
	Rb	85	35595.1	1.8				ug/L	20	Standard
	Y	89	404147.8	1.0				ug/L	376602	Standard
>	**Rh**	103	85.0	15.6				ug/L	17	Standard
	Mo	98	4328.7	1.5	**1.8133**	0.020	1.1	ug/L	8	Standard
	Ag	107	869.7	0.1	**0.1324**	0.001	0.5	ug/L	81	Standard
	Cd	111	482.3	7.8	**0.2434**	0.019	8.0	mg/L	3	Standard
	Cd	114	1335.6	3.6	**0.2724**	0.009	3.3	ug/L	7	Standard
>	**In**	115	528691.1	0.6				ug/L	524722	Standard
	Sn	118	4765.7	3.3	**0.7887**	0.031	4.0	ug/L	715	Standard
	Sb	123	3183.9	1.5	**0.7087**	0.011	1.6	ug/L	201	Standard
	Ba	135	17225.1	3.1	**9.3751**	0.336	3.6	ug/L	108	Standard
	Ce	140	48213.3	1.0				ug/L	30	Standard
>	**Tb**	159	793657.4	1.6				ug/L	792236	Standard
	Ho	165	775.0	7.8				ug/L	7	Standard
	Tl	203	260.0	6.4	**0.0318**	0.003	8.6	ug/L	9	Standard
	Tl	205	233.3	20.4	**0.0285**	0.008	27.8	ug/L	0	Standard
	Pb	206	39704.6	1.2	**8.6323**	0.072	0.8	ug/L	216	Standard
	Pb	207	34342.9	1.0	**8.2030**	0.203	2.5	ug/L	180	Standard
	Pb	208	145934.1	1.3	**8.5861**	0.079	0.9	ug/L	717	Standard
	U	238	420.0	4.3	**0.0608**	0.004	7.1	ug/L	4	Standard
>	**Bi**	209	455671.4	2.1				ug/L	460343	Standard

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Na	23	3.3	173.2	**0.8644**	16.607	1921.3	mg/L	0	Standard
Mg	24	12667.0	1.0	**14.9085**	0.215	1.4	mg/L	20	Standard
K	39	335.0	19.1	**1.9967**	0.430	21.5	mg/L	22	Standard
Ca	43	88.3	18.2	**4.8010**	3.416	71.1	mg/L	47	Standard
Fe	54	995.1	5.6	**0.5893**	0.033	5.5	mg/L	151	Standard
Fe	57	445.0	16.6	**0.5516**	0.188	34.0	mg/L	195	Standard
Sc-1	45	34049.9	0.9				mg/L	29647	Standard
Cl	35	173758.3	2.1				ug/L	154152	Standard
Kr	83	3.3	91.7				ug/L	3	Standard
Br	81	6371.4	18.0				ug/L	1607	Standard
P	31	28039.3	2.8				ug/L	22752	Standard
S	34	5270.9	3.8				ug/L	5049	Standard
Sr	88	90.0	5.6				ug/L	87	Standard
C	12	76.7	58.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	56.8				mg/L	0	Standard
Dy	164	1215.7	9.2				mg/L	10	Standard
Ho-1	165	775.0	7.8				mg/L	7	Standard
Er	166	786.7	6.4				mg/L	3	Standard
I	127	21140.1	20.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		108.719	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.449	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.756
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.985
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: L1606073102
Sample Date/Time: Thursday, June 16, 2016 20:49:54
Number of Replicates: 3
Autosampler Position: 347
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59153.6	1.2				ug/L	51024	Standard
	Be	9	8.3	34.6	**-0.0125**	0.003	23.9	ug/L	7	Standard
	Al	27	100448.6	1.0	**0.5989**	0.007	1.2	ug/L	625	Standard
	Sc	45	33126.2	1.2				ug/L	29647	Standard
	Ti	47	644.7	2.1	**2.0007**	0.071	3.6	ug/L	57	Standard
	V	51	4289.2	6.3	**0.4402**	0.044	10.0	ug/L	1142	Standard
	Cr	52	8064.5	2.5	**0.1771**	0.010	5.7	ug/L	6628	Standard
	Cr	53	1751.8	6.1	**1.4679**	0.099	6.8	ug/L	430	Standard
	Mn	55	12501.5	0.4	**1.9975**	0.048	2.4	ug/L	603	Standard
	Co	59	371.3	7.0	**0.0170**	0.003	18.0	ug/L	237	Standard
	Ni	60	380.0	10.9	**0.1207**	0.019	15.5	ug/L	141	Standard
	Cu	65	26879.2	2.3	**14.3517**	0.162	1.1	ug/L	109	Standard
	Zn	66	5034.5	0.7	**4.3493**	0.122	2.8	ug/L	159	Standard
>	Ge	72	470100.0	2.4				ug/L	474053	Standard
	As	75	1188.6	1.5	**1.1081**	0.042	3.8	ug/L	-34	Standard
	Se	82	31.1	20.0	**0.1142**	0.055	48.5	ug/L	14	Standard
	Se-1	77	110.7	11.2	**0.7077**	0.148	20.9	ug/L	55	Standard
>	Ga	71	223.3	5.6				mg/L	50	Standard
	Rb	85	3760.5	5.0				ug/L	20	Standard
	Y	89	401153.8	1.8				ug/L	376602	Standard
>	Rh	103	35.0	28.6				ug/L	17	Standard
	Mo	98	446.2	5.1	**0.1763**	0.012	6.9	ug/L	8	Standard
	Ag	107	132.3	3.7	**0.0090**	0.001	8.3	ug/L	81	Standard
	Cd	111	53.4	17.3	**0.0233**	0.005	21.5	mg/L	3	Standard
	Cd	114	111.5	28.2	**0.0185**	0.006	33.2	ug/L	7	Standard
>	In	115	545539.1	1.6				ug/L	524722	Standard
	Sn	118	1001.7	15.4	**0.0892**	0.025	28.5	ug/L	715	Standard
	Sb	123	390.2	5.8	**0.0711**	0.004	6.2	ug/L	201	Standard
	Ba	135	2004.1	4.2	**1.0056**	0.035	3.5	ug/L	108	Standard
	Ce	140	4912.5	3.1				ug/L	30	Standard
>	Tb	159	820295.3	0.5				ug/L	792236	Standard
	Ho	165	85.0	35.8				ug/L	7	Standard
	Tl	203	81.3	9.9	**0.0080**	0.001	12.7	ug/L	9	Standard
	Tl	205	81.7	7.1	**0.0047**	0.001	18.7	ug/L	0	Standard
	Pb	206	4339.0	0.8	**0.8817**	0.013	1.4	ug/L	216	Standard
	Pb	207	3847.8	0.9	**0.8599**	0.011	1.3	ug/L	180	Standard
	Pb	208	15987.3	1.8	**0.8776**	0.022	2.5	ug/L	717	Standard
	U	238	37.0	13.5	**-0.0016**	0.001	51.1	ug/L	4	Standard
>	Bi	209	461213.2	0.5				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1265.1	9.3	**1.4911**	0.161	10.8	mg/L	20	Standard
K	39	51.7	11.2	**0.1245**	0.037	30.0	mg/L	22	Standard
Ca	43	36.7	20.8	**-5.5323**	1.502	27.2	mg/L	47	Standard
Fe	54	272.3	11.9	**0.0834**	0.026	30.8	mg/L	151	Standard
Fe	57	213.3	13.3	**-0.0553**	0.084	152.6	mg/L	195	Standard
> **Sc-1**	45	33126.2	1.2				mg/L	29647	Standard
Cl	35	168674.4	1.0				ug/L	154152	Standard
Kr	83	2.7	57.3				ug/L	3	Standard
Br	81	3067.0	8.5				ug/L	1607	Standard
P	31	24656.7	3.1				ug/L	22752	Standard
S	34	5190.9	0.5				ug/L	5049	Standard
Sr	88	70.0	31.1				ug/L	87	Standard
C	12	56.7	40.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	128.2	29.2				mg/L	10	Standard
Ho-1	165	85.0	35.8				mg/L	7	Standard
Er	166	106.7	19.5				mg/L	3	Standard
I	127	4907.5	9.2				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.933	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.166	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.967
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.189
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606054009
Sample Date/Time: Thursday, June 16, 2016 20:53:06
Number of Replicates: 3
Autosampler Position: 348
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57167.7	1.8				ug/L	51024	Standard
	Be	9	16.7	34.6	**-0.0033**	0.006	191.0	ug/L	7	Standard
	Al	27	40703.4	11.7	**0.2452**	0.025	10.3	ug/L	625	Standard
	Sc	45	31935.3	3.8				ug/L	29647	Standard
	Ti	47	33.3	7.5	**-0.0541**	0.007	12.4	ug/L	57	Standard
	V	51	1267.4	7.9	**0.0110**	0.011	98.7	ug/L	1142	Standard
	Cr	52	6813.9	0.7	**0.0049**	0.027	550.7	ug/L	6628	Standard
	Cr	53	1183.4	2.1	**0.8507**	0.047	5.5	ug/L	430	Standard
	Mn	55	63841.2	0.9	**10.7040**	0.156	1.5	ug/L	603	Standard
	Co	59	241.7	8.6	**-0.0034**	0.003	78.7	ug/L	237	Standard
	Ni	60	170.7	5.3	**0.0113**	0.004	35.5	ug/L	141	Standard
	Cu	65	185.7	9.3	**0.0334**	0.011	32.3	ug/L	109	Standard
	Zn	66	1221.7	3.3	**0.8784**	0.051	5.8	ug/L	159	Standard
>	**Ge**	72	470712.9	2.2				ug/L	474053	Standard
	As	75	30.8	16.5	**0.0530**	0.004	7.8	ug/L	-34	Standard
	Se	82	25.1	14.7	**0.0591**	0.030	51.4	ug/L	14	Standard
	Se-1	77	77.3	7.8	**0.2686**	0.059	22.0	ug/L	55	Standard
>	**Ga**	71	51.7	31.1				mg/L	50	Standard
	Rb	85	646.7	20.2				ug/L	20	Standard
	Y	89	396670.0	2.0				ug/L	376602	Standard
>	**Rh**	103	36.7	47.9				ug/L	17	Standard
	Mo	98	41.6	28.6	**0.0117**	0.005	41.7	ug/L	8	Standard
	Ag	107	95.3	39.9	**0.0032**	0.006	177.8	ug/L	81	Standard
	Cd	111	10.6	141.7	**0.0020**	0.007	372.2	mg/L	3	Standard
	Cd	114	31.1	47.0	**0.0025**	0.003	110.7	ug/L	7	Standard
>	**In**	115	535879.5	3.0				ug/L	524722	Standard
	Sn	118	518.3	19.7	**0.0045**	0.016	347.9	ug/L	715	Standard
	Sb	123	86.0	15.9	**0.0044**	0.002	55.3	ug/L	201	Standard
	Ba	135	3179.4	70.5	**1.6371**	1.141	69.7	ug/L	108	Standard
	Ce	140	118.3	56.3				ug/L	30	Standard
>	**Tb**	159	791577.1	1.4				ug/L	792236	Standard
	Ho	165	16.7	62.4				ug/L	7	Standard
	Tl	203	82.0	86.0	**0.0083**	0.009	108.7	ug/L	9	Standard
	Tl	205	38.3	39.8	**-0.0018**	0.002	122.7	ug/L	0	Standard
	Pb	206	276.0	8.2	**0.0051**	0.003	58.8	ug/L	216	Standard
	Pb	207	225.0	9.4	**0.0012**	0.004	310.7	ug/L	180	Standard
	Pb	208	961.3	4.7	**0.0001**	0.001	957.0	ug/L	717	Standard
	U	238	50.7	3.0	**0.0008**	0.000	45.3	ug/L	4	Standard
>	**Bi**	209	447174.4	3.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	178.3	23.3	**0.1782**	0.044	24.8	mg/L	20	Standard
K	39	75.0	0.0	**0.3034**	0.020	6.6	mg/L	22	Standard
Ca	43	26.7	39.0	**-7.4067**	2.216	29.9	mg/L	47	Standard
Fe	54	296.0	2.0	**0.1085**	0.005	4.5	mg/L	151	Standard
Fe	57	203.3	7.1	**-0.0621**	0.045	71.7	mg/L	195	Standard
> **Sc-1**	45	31935.3	3.8				mg/L	29647	Standard
Cl	35	168415.6	1.0				ug/L	154152	Standard
Kr	83	1.0	0.0				ug/L	3	Standard
Br	81	2343.5	14.9				ug/L	1607	Standard
P	31	24079.1	0.8				ug/L	22752	Standard
S	34	5175.9	6.6				ug/L	5049	Standard
Sr	88	91.7	20.7				ug/L	87	Standard
C	12	60.0	28.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	7.9	115.0				mg/L	10	Standard
Ho-1	165	16.7	62.4				mg/L	7	Standard
Er	166	43.3	70.5				mg/L	3	Standard
I	127	3628.8	3.8				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.040	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.295	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.126
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.139
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606054010
Sample Date/Time: Thursday, June 16, 2016 20:57:27
Number of Replicates: 3
Autosampler Position: 349
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56434.9	2.3				ug/L	51024	Standard
	Be	9	8.3	34.6	**-0.0121**	0.003	26.4	ug/L	7	Standard
	Al	27	252906.9	1.5	**1.5971**	0.043	2.7	ug/L	625	Standard
	Sc	45	31920.3	2.1				ug/L	29647	Standard
	Ti	47	312.3	10.2	**0.8821**	0.111	12.6	ug/L	57	Standard
	V	51	2253.7	7.5	**0.1509**	0.028	18.3	ug/L	1142	Standard
	Cr	52	7388.1	1.0	**0.0829**	0.016	19.3	ug/L	6628	Standard
	Cr	53	1196.7	7.3	**0.8649**	0.109	12.6	ug/L	430	Standard
	Mn	55	73740.7	1.7	**12.3802**	0.357	2.9	ug/L	603	Standard
	Co	59	450.0	4.0	**0.0292**	0.003	10.6	ug/L	237	Standard
	Ni	60	555.0	6.8	**0.2120**	0.023	10.8	ug/L	141	Standard
	Cu	65	367.0	6.1	**0.1304**	0.011	8.6	ug/L	109	Standard
	Zn	66	2607.2	1.1	**2.1362**	0.049	2.3	ug/L	159	Standard
>	**Ge**	72	470838.7	1.1				ug/L	474053	Standard
	As	75	1057.7	4.9	**0.9866**	0.037	3.7	ug/L	-34	Standard
	Se	82	371.4	5.2	**3.2111**	0.141	4.4	ug/L	14	Standard
	Se-1	77	82.0	5.3	**0.3308**	0.069	21.0	ug/L	55	Standard
>	**Ga**	71	95.0	21.1				mg/L	50	Standard
	Rb	85	2080.1	6.3				ug/L	20	Standard
	Y	89	394550.0	1.4				ug/L	376602	Standard
>	**Rh**	103	40.0	12.5				ug/L	17	Standard
	Mo	98	432.1	5.5	**0.1778**	0.013	7.4	ug/L	8	Standard
	Ag	107	89.3	6.8	**0.0027**	0.001	34.2	ug/L	81	Standard
	Cd	111	10.8	29.5	**0.0024**	0.002	71.8	mg/L	3	Standard
	Cd	114	7.3	63.1	**-0.0023**	0.001	40.5	ug/L	7	Standard
>	**In**	115	524122.9	2.0				ug/L	524722	Standard
	Sn	118	475.0	16.9	**-0.0012**	0.015	1226.6	ug/L	715	Standard
	Sb	123	126.7	16.7	**0.0143**	0.005	37.6	ug/L	201	Standard
	Ba	135	6164.6	3.3	**3.3481**	0.133	4.0	ug/L	108	Standard
	Ce	140	2293.5	2.9				ug/L	30	Standard
>	**Tb**	159	771498.5	0.9				ug/L	792236	Standard
	Ho	165	40.0	33.1				ug/L	7	Standard
	Tl	203	178.3	6.6	**0.0218**	0.002	7.9	ug/L	9	Standard
	Tl	205	168.3	19.8	**0.0193**	0.006	28.8	ug/L	0	Standard
	Pb	206	424.0	1.9	**0.0396**	0.002	4.6	ug/L	216	Standard
	Pb	207	350.0	3.8	**0.0332**	0.004	10.7	ug/L	180	Standard
	Pb	208	1524.0	3.5	**0.0355**	0.004	11.4	ug/L	717	Standard
	U	238	1126.4	2.3	**0.1820**	0.006	3.2	ug/L	4	Standard
>	**Bi**	209	440459.4	0.9				ug/L	460343	Standard

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Na	23	3.3	86.6	**0.3515**	8.752	2490.2	mg/L	0	Standard
Mg	24	5054.2	1.6	**6.3217**	0.207	3.3	mg/L	20	Standard
K	39	60.0	38.2	**0.1962**	0.161	82.1	mg/L	22	Standard
Ca	43	58.3	27.6	**-0.5341**	3.483	652.1	mg/L	47	Standard
Fe	54	351.0	19.9	**0.1502**	0.054	35.8	mg/L	151	Standard
Fe	57	258.3	13.7	**0.0974**	0.116	119.4	mg/L	195	Standard
> **Sc-1**	45	31920.3	2.1				mg/L	29647	Standard
Cl	35	170598.8	2.4				ug/L	154152	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	89319.4	3.8				ug/L	1607	Standard
P	31	24377.9	0.5				ug/L	22752	Standard
S	34	5239.2	6.6				ug/L	5049	Standard
Sr	88	133.3	15.6				ug/L	87	Standard
C	12	30.0	33.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	52.1	28.7				mg/L	10	Standard
Ho-1	165	40.0	33.1				mg/L	7	Standard
Er	166	26.7	57.3				mg/L	3	Standard
I	127	17059.6	8.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.604	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.322	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.886
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.681
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606054011
Sample Date/Time: Thursday, June 16, 2016 21:00:39
Number of Replicates: 3
Autosampler Position: 350
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58251.8	0.7				ug/L	51024	Standard
	Be	9	10.0	100.0	**-0.0107**	0.010	96.5	ug/L	7	Standard
	Al	27	254779.3	0.3	**1.5580**	0.016	1.0	ug/L	625	Standard
	Sc	45	32790.5	2.0				ug/L	29647	Standard
	Ti	47	354.0	6.1	**1.0202**	0.064	6.3	ug/L	57	Standard
	V	51	2227.5	5.1	**0.1471**	0.023	15.7	ug/L	1142	Standard
	Cr	52	7531.2	1.8	**0.1020**	0.041	40.4	ug/L	6628	Standard
	Cr	53	1105.0	6.8	**0.7629**	0.054	7.1	ug/L	430	Standard
	Mn	55	71367.7	1.1	**11.9661**	0.226	1.9	ug/L	603	Standard
	Co	59	417.3	0.3	**0.0241**	0.001	5.5	ug/L	237	Standard
	Ni	60	538.0	5.0	**0.2029**	0.019	9.2	ug/L	141	Standard
	Cu	65	370.3	6.0	**0.1319**	0.008	6.1	ug/L	109	Standard
	Zn	66	2431.9	0.9	**1.9749**	0.035	1.8	ug/L	159	Standard
>	**Ge**	72	471306.4	2.3				ug/L	474053	Standard
	As	75	1059.1	3.3	**0.9871**	0.024	2.5	ug/L	-34	Standard
	Se	82	374.1	5.5	**3.2332**	0.174	5.4	ug/L	14	Standard
	Se-1	77	74.7	4.7	**0.2331**	0.038	16.2	ug/L	55	Standard
>	**Ga**	71	103.3	15.6				mg/L	50	Standard
	Rb	85	1920.1	7.2				ug/L	20	Standard
	Y	89	383902.2	1.9				ug/L	376602	Standard
>	**Rh**	103	25.0	87.2				ug/L	17	Standard
	Mo	98	436.7	9.1	**0.1748**	0.015	8.7	ug/L	8	Standard
	Ag	107	65.0	9.2	**-0.0017**	0.001	50.8	ug/L	81	Standard
	Cd	111	7.9	14.5	**0.0007**	0.001	83.6	mg/L	3	Standard
	Cd	114	24.6	49.4	**0.0012**	0.002	206.6	ug/L	7	Standard
>	**In**	115	537640.9	1.1				ug/L	524722	Standard
	Sn	118	573.3	39.0	**0.0145**	0.041	281.6	ug/L	715	Standard
	Sb	123	111.2	8.6	**0.0100**	0.002	20.8	ug/L	201	Standard
	Ba	135	6046.2	1.0	**3.1982**	0.060	1.9	ug/L	108	Standard
	Ce	140	2091.8	0.8				ug/L	30	Standard
>	**Tb**	159	809758.8	0.4				ug/L	792236	Standard
	Ho	165	41.7	18.3				ug/L	7	Standard
	Tl	203	180.3	6.1	**0.0211**	0.001	6.1	ug/L	9	Standard
	Tl	205	173.3	24.0	**0.0189**	0.006	33.1	ug/L	0	Standard
	Pb	206	420.3	5.1	**0.0350**	0.005	15.0	ug/L	216	Standard
	Pb	207	374.0	2.6	**0.0354**	0.003	8.0	ug/L	180	Standard
	Pb	208	1541.7	1.3	**0.0327**	0.002	5.1	ug/L	717	Standard
	U	238	1137.0	2.8	**0.1760**	0.006	3.3	ug/L	4	Standard
>	**Bi**	209	459070.7	0.7				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.4041**	8.743	161.8	mg/L	0	Standard
Mg	24	4977.5	2.7	**6.0561**	0.102	1.7	mg/L	20	Standard
K	39	71.7	10.7	**0.2668**	0.063	23.4	mg/L	22	Standard
Ca	43	53.3	10.8	**-1.9274**	1.113	57.7	mg/L	47	Standard
Fe	54	318.9	6.3	**0.1195**	0.015	12.9	mg/L	151	Standard
Fe	57	250.0	29.5	**0.0557**	0.223	399.4	mg/L	195	Standard
Sc-1	45	32790.5	2.0				mg/L	29647	Standard
Cl	35	169793.5	0.8				ug/L	154152	Standard
Kr	83	2.0	0.0				ug/L	3	Standard
Br	81	89396.4	2.9				ug/L	1607	Standard
P	31	24319.5	2.4				ug/L	22752	Standard
S	34	5012.5	5.2				ug/L	5049	Standard
Sr	88	106.7	17.7				ug/L	87	Standard
C	12	46.7	32.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	51.6	38.3				mg/L	10	Standard
Ho-1	165	41.7	18.3				mg/L	7	Standard
Er	166	36.7	63.0				mg/L	3	Standard
I	127	17585.2	6.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.165	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.421	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.462	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.724	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606054014
Sample Date/Time: Thursday, June 16, 2016 21:03:50
Number of Replicates: 3
Autosampler Position: 351
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57943.9	0.3				ug/L	51024	Standard
	Be	9	10.0	50.0	**-0.0106**	0.005	49.0	ug/L	7	Standard
	Al	27	40494.2	7.5	**0.2408**	0.019	8.1	ug/L	625	Standard
	Sc	45	33099.4	0.9				ug/L	29647	Standard
	Ti	47	40.0	11.5	**-0.0319**	0.013	41.5	ug/L	57	Standard
	V	51	1267.4	3.9	**0.0110**	0.004	33.2	ug/L	1142	Standard
	Cr	52	6912.6	1.0	**0.0177**	0.023	132.2	ug/L	6628	Standard
	Cr	53	750.0	9.0	**0.3802**	0.071	18.6	ug/L	430	Standard
	Mn	55	124087.1	1.1	**20.9134**	0.521	2.5	ug/L	603	Standard
	Co	59	211.7	10.1	**-0.0081**	0.004	46.5	ug/L	237	Standard
	Ni	60	248.0	1.5	**0.0516**	0.002	4.7	ug/L	141	Standard
	Cu	65	221.0	10.6	**0.0522**	0.012	22.6	ug/L	109	Standard
	Zn	66	3791.1	1.2	**3.2112**	0.103	3.2	ug/L	159	Standard
>	**Ge**	72	470993.8	1.9				ug/L	474053	Standard
	As	75	110.5	40.9	**0.1251**	0.040	31.9	ug/L	-34	Standard
	Se	82	16.7	56.8	**-0.0174**	0.085	487.8	ug/L	14	Standard
	Se-1	77	66.3	16.1	**0.1259**	0.151	119.8	ug/L	55	Standard
>	**Ga**	71	63.3	27.7				mg/L	50	Standard
	Rb	85	276.7	10.3				ug/L	20	Standard
	Y	89	385833.8	2.0				ug/L	376602	Standard
>	**Rh**	103	31.7	50.8				ug/L	17	Standard
	Mo	98	31.0	14.9	**0.0074**	0.002	27.3	ug/L	8	Standard
	Ag	107	68.0	4.4	**-0.0012**	0.000	32.0	ug/L	81	Standard
	Cd	111	10.9	18.2	**0.0023**	0.001	41.2	mg/L	3	Standard
	Cd	114	35.3	7.7	**0.0034**	0.001	15.7	ug/L	7	Standard
>	**In**	115	534994.4	1.2				ug/L	524722	Standard
	Sn	118	486.7	6.0	**-0.0009**	0.004	488.6	ug/L	715	Standard
	Sb	123	88.5	13.6	**0.0050**	0.002	48.6	ug/L	201	Standard
	Ba	135	1149.4	10.0	**0.5638**	0.054	9.6	ug/L	108	Standard
	Ce	140	73.3	33.6				ug/L	30	Standard
>	**Tb**	159	801412.4	0.6				ug/L	792236	Standard
	Ho	165	16.7	17.3				ug/L	7	Standard
	Tl	203	39.7	22.9	**0.0026**	0.001	46.4	ug/L	9	Standard
	Tl	205	23.3	75.3	**-0.0042**	0.003	64.0	ug/L	0	Standard
	Pb	206	288.7	4.7	**0.0060**	0.003	43.9	ug/L	216	Standard
	Pb	207	232.0	1.6	**0.0012**	0.001	74.1	ug/L	180	Standard
	Pb	208	996.7	1.1	**0.0003**	0.001	274.4	ug/L	717	Standard
	U	238	6.3	48.2	**-0.0066**	0.000	7.5	ug/L	4	Standard
>	**Bi**	209	461918.2	0.5				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.5408**	8.507	153.5	mg/L	0	Standard
Mg	24	155.0	19.6	**0.1428**	0.035	24.6	mg/L	20	Standard
K	39	20.0	75.0	**-0.0919**	0.101	110.1	mg/L	22	Standard
Ca	43	28.3	36.7	**-7.2551**	2.201	30.3	mg/L	47	Standard
Fe	54	217.7	12.7	**0.0436**	0.021	47.7	mg/L	151	Standard
Fe	57	210.0	21.4	**-0.0640**	0.129	201.3	mg/L	195	Standard
> **Sc-1**	45	33099.4	0.9				mg/L	29647	Standard
Cl	35	168257.1	0.3				ug/L	154152	Standard
Kr	83	2.0	86.6				ug/L	3	Standard
Br	81	3430.4	12.2				ug/L	1607	Standard
P	31	24144.2	1.0				ug/L	22752	Standard
S	34	5209.2	2.8				ug/L	5049	Standard
Sr	88	75.0	43.7				ug/L	87	Standard
C	12	36.7	63.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.1	43.3				mg/L	10	Standard
Ho-1	165	16.7	17.3				mg/L	7	Standard
Er	166	26.7	43.3				mg/L	3	Standard
I	127	3078.6	10.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.562	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.355	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.958
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.342
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 21:07:02
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	57216.2	1.8				ug/L	51024	Standard
	Be	9	44266.2	0.8	**46.9448**	1.086	2.3	ug/L	7	Standard
	Al	27	7280291.9	1.0	**45.6137**	1.287	2.8	ug/L	625	Standard
	Sc	45	32309.4	1.7				ug/L	29647	Standard
	Ti	47	30197.4	0.3	**101.5240**	2.598	2.6	ug/L	57	Standard
	V	51	355347.4	0.9	**50.3294**	0.808	1.6	ug/L	1142	Standard
	Cr	52	370024.2	0.4	**49.8980**	1.109	2.2	ug/L	6628	Standard
	Cr	53	45872.7	0.6	**49.4285**	1.135	2.3	ug/L	430	Standard
	Mn	55	314239.7	1.6	**53.3617**	1.128	2.1	ug/L	603	Standard
	Co	59	314388.6	0.3	**49.3919**	1.176	2.4	ug/L	237	Standard
	Ni	60	94820.1	0.2	**49.5997**	1.101	2.2	ug/L	141	Standard
	Cu	65	92383.2	1.4	**49.5924**	0.629	1.3	ug/L	109	Standard
	Zn	66	54761.8	0.6	**49.6923**	0.878	1.8	ug/L	159	Standard
>	Ge	72	469160.5	2.3				ug/L	474053	Standard
	As	75	53380.1	0.9	**48.7528**	1.227	2.5	ug/L	-34	Standard
	Se	82	5320.4	1.7	**48.4684**	1.778	3.7	ug/L	14	Standard
	Se-1	77	3692.8	2.0	**47.8512**	0.716	1.5	ug/L	55	Standard
>	Ga	71	61.7	70.8				mg/L	50	Standard
	Rb	85	808.4	9.3				ug/L	20	Standard
	Y	89	383560.2	1.8				ug/L	376602	Standard
>	Rh	103	35.0	42.9				ug/L	17	Standard
	Mo	98	232242.3	1.1	**96.5061**	2.361	2.4	ug/L	8	Standard
	Ag	107	292582.7	0.8	**48.1206**	0.391	0.8	ug/L	81	Standard
	Cd	111	95603.2	0.1	**48.3402**	0.694	1.4	mg/L	3	Standard
	Cd	114	235634.1	0.2	**48.1942**	0.648	1.3	ug/L	7	Standard
>	In	115	534700.6	1.5				ug/L	524722	Standard
	Sn	118	264473.5	1.3	**48.1050**	1.306	2.7	ug/L	715	Standard
	Sb	123	215670.2	0.6	**48.4479**	0.874	1.8	ug/L	201	Standard
	Ba	135	88155.7	0.1	**47.6769**	0.763	1.6	ug/L	108	Standard
	Ce	140	101.7	19.9				ug/L	30	Standard
>	Tb	159	793079.8	1.0				ug/L	792236	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	358440.3	1.1	**47.4951**	0.142	0.3	ug/L	9	Standard
	Tl	205	312266.9	1.0	**48.6540**	0.130	0.3	ug/L	0	Standard
	Pb	206	224283.0	1.3	**49.1202**	0.907	1.8	ug/L	216	Standard
	Pb	207	204302.6	0.7	**49.1523**	0.806	1.6	ug/L	180	Standard
	Pb	208	833504.1	0.4	**49.4087**	0.646	1.3	ug/L	717	Standard
	U	238	304654.1	0.2	**49.6463**	0.682	1.4	ug/L	4	Standard
>	Bi	209	454777.5	1.2				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.3475**	8.842	165.3	mg/L	0	Standard
Mg	24	4015.5	1.7	**4.9520**	0.163	3.3	mg/L	20	Standard
K	39	633.3	0.9	**4.2037**	0.116	2.8	mg/L	22	Standard
Ca	43	71.7	28.2	**2.1962**	4.389	199.9	mg/L	47	Standard
Fe	54	5816.1	3.6	**4.2263**	0.216	5.1	mg/L	151	Standard
Fe	57	1691.8	3.9	**4.1585**	0.125	3.0	mg/L	195	Standard
> **Sc-1**	45	32309.4	1.7				mg/L	29647	Standard
Cl	35	165447.9	1.5				ug/L	154152	Standard
Kr	83	3.0	33.3				ug/L	3	Standard
Br	81	2063.5	3.6				ug/L	1607	Standard
P	31	25169.2	0.8				ug/L	22752	Standard
S	34	5737.8	0.7				ug/L	5049	Standard
Sr	88	55.0	15.7				ug/L	87	Standard
C	12	53.3	47.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.2	93.3				mg/L	10	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	10.0					mg/L	3	Standard
I	127	1655.1	3.8				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	93.890		
Al	27	91.227		
Sc	45			
Ti	47	101.524		
V	51	100.659		
Cr	52	99.796		
Cr	53			
Mn	55	106.723		
Co	59	98.784		
Ni	60	99.199		
Cu	65	99.185		
Zn	66	99.385		
> Ge	72		98.968	
As	75	97.506		
Se	82	96.937		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	96.506		
Ag	107	96.241		
Cd	111	96.680		
Cd	114			
> In	115			101.902
Sn	118	96.210		
Sb	123	96.896		
Ba	135	95.354		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	94.990		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.817		
U	238	99.293		
> Bi	209			98.791
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 21:10:14
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55944.8	2.0				ug/L	51024	Standard
	Be	9	16.7	34.6	**-0.0030**	0.006	212.8	ug/L	7	Standard
	Al	27	1526.8	38.2	**-0.0000**	0.004	16917.9	ug/L	625	Standard
	Sc	45	31897.0	7.4				ug/L	29647	Standard
	Ti	47	31.0	8.5	**-0.0586**	0.008	13.1	ug/L	57	Standard
	V	51	1141.1	6.7	**-0.0015**	0.010	648.2	ug/L	1142	Standard
	Cr	52	6326.0	1.2	**-0.0342**	0.003	8.9	ug/L	6628	Standard
	Cr	53	638.3	5.1	**0.2820**	0.027	9.6	ug/L	430	Standard
	Mn	55	672.3	5.7	**-0.0087**	0.006	71.9	ug/L	603	Standard
	Co	59	229.3	15.7	**-0.0042**	0.005	126.3	ug/L	237	Standard
	Ni	60	153.7	14.0	**0.0051**	0.012	235.2	ug/L	141	Standard
	Cu	65	131.3	12.6	**0.0065**	0.009	132.4	ug/L	109	Standard
	Zn	66	145.0	12.1	**-0.0961**	0.015	15.1	ug/L	159	Standard
>	**Ge**	72	455945.8	1.4				ug/L	474053	Standard
	As	75	-22.0	198.7	**0.0041**	0.041	1009.9	ug/L	-34	Standard
	Se	82	27.4	26.2	**0.0880**	0.066	75.2	ug/L	14	Standard
	Se-1	77	76.0	21.7	**0.2852**	0.231	80.9	ug/L	55	Standard
>	**Ga**	71	41.7	42.1				mg/L	50	Standard
	Rb	85	23.3	75.3				ug/L	20	Standard
	Y	89	400519.5	2.1				ug/L	376602	Standard
>	**Rh**	103	30.0	57.7				ug/L	17	Standard
	Mo	98	251.1	32.5	**0.0955**	0.032	33.2	ug/L	8	Standard
	Ag	107	99.3	31.3	**0.0035**	0.005	136.7	ug/L	81	Standard
	Cd	111	14.1	69.7	**0.0037**	0.005	129.5	mg/L	3	Standard
	Cd	114	31.9	76.8	**0.0025**	0.005	193.5	ug/L	7	Standard
>	**In**	115	550633.2	1.2				ug/L	524722	Standard
	Sn	118	735.0	12.4	**0.0407**	0.017	42.7	ug/L	715	Standard
	Sb	123	412.2	18.4	**0.0753**	0.017	23.2	ug/L	201	Standard
	Ba	135	126.7	6.0	**0.0089**	0.003	36.5	ug/L	108	Standard
	Ce	140	13.3	43.3				ug/L	30	Standard
>	**Tb**	159	804256.0	1.8				ug/L	792236	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	62.7	29.5	**0.0058**	0.002	40.2	ug/L	9	Standard
	Tl	205	55.0	15.7	**0.0008**	0.001	147.2	ug/L	0	Standard
	Pb	206	234.3	12.8	**-0.0047**	0.006	120.1	ug/L	216	Standard
	Pb	207	197.7	8.5	**-0.0059**	0.003	52.6	ug/L	180	Standard
	Pb	208	861.7	7.3	**-0.0064**	0.003	48.7	ug/L	717	Standard
	U	238	32.7	49.0	**-0.0022**	0.003	112.0	ug/L	4	Standard
>	**Bi**	209	451393.6	2.0				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.7600**	8.127	141.1	mg/L	0	Standard
Mg	24	66.7	18.9	**0.0383**	0.010	25.0	mg/L	20	Standard
K	39	15.0	66.7	**-0.1191**	0.074	61.9	mg/L	22	Standard
Ca	43	28.3	36.7	**-7.1219**	1.762	24.7	mg/L	47	Standard
Fe	54	147.9	22.4	**-0.0038**	0.019	492.3	mg/L	151	Standard
Fe	57	200.0	17.5	**-0.0677**	0.127	187.5	mg/L	195	Standard
> **Sc-1**	45	31897.0	7.4				mg/L	29647	Standard
Cl	35	166760.1	1.1				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	1793.4	4.2				ug/L	1607	Standard
P	31	26206.0	1.2				ug/L	22752	Standard
S	34	5832.8	0.3				ug/L	5049	Standard
Sr	88	61.7	26.1				ug/L	87	Standard
C	12	43.3	35.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.9	118.8				mg/L	10	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	10.0					mg/L	3	Standard
I	127	1290.1	6.5				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.180	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.938
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.056
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606061601
Sample Date/Time: Thursday, June 16, 2016 21:13:26
Number of Replicates: 3
Autosampler Position: 352
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57249.6	1.2				ug/L	51024	Standard
	Be	9	55.0	9.1	**0.0372**	0.006	15.0	ug/L	7	Standard
	Al	27	393587.4	1.7	**2.4548**	0.057	2.3	ug/L	625	Standard
	Sc	45	32406.3	3.0				ug/L	29647	Standard
	Ti	47	74.0	10.7	**0.0892**	0.028	31.0	ug/L	57	Standard
	V	51	636.6	76.8	**-0.0758**	0.071	93.6	ug/L	1142	Standard
	Cr	52	85601.8	0.6	**11.1086**	0.082	0.7	ug/L	6628	Standard
	Cr	53	11320.9	1.4	**12.1647**	0.172	1.4	ug/L	430	Standard
	Mn	55	80985.9	0.3	**13.9862**	0.035	0.3	ug/L	603	Standard
	Co	59	9834.2	0.6	**1.5416**	0.010	0.6	ug/L	237	Standard
	Ni	60	33446.9	0.3	**17.8603**	0.057	0.3	ug/L	141	Standard
	Cu	65	1052.4	3.7	**0.5130**	0.021	4.2	ug/L	109	Standard
	Zn	66	2617.6	1.1	**2.2110**	0.025	1.1	ug/L	159	Standard
>	**Ge**	72	458154.0	0.1				ug/L	474053	Standard
	As	75	49.8	49.2	**0.0716**	0.023	32.0	ug/L	-34	Standard
	Se	82	42.6	32.1	**0.2293**	0.128	56.0	ug/L	14	Standard
	Se-1	77	102.7	16.6	**0.6383**	0.227	35.6	ug/L	55	Standard
>	**Ga**	71	63.3	35.6				mg/L	50	Standard
	Rb	85	306.7	30.8				ug/L	20	Standard
	Y	89	402460.8	1.4				ug/L	376602	Standard
>	**Rh**	103	15.0	0.0				ug/L	17	Standard
	Mo	98	305.2	3.6	**0.1192**	0.004	3.0	ug/L	8	Standard
	Ag	107	82.0	8.5	**0.0009**	0.001	110.4	ug/L	81	Standard
	Cd	111	31.7	1.8	**0.0126**	0.000	1.7	mg/L	3	Standard
	Cd	114	86.0	11.3	**0.0135**	0.002	15.6	ug/L	7	Standard
>	**In**	115	543559.4	0.9				ug/L	524722	Standard
	Sn	118	521.7	5.3	**0.0040**	0.005	126.9	ug/L	715	Standard
	Sb	123	172.0	20.3	**0.0232**	0.008	34.4	ug/L	201	Standard
	Ba	135	10412.6	2.3	**5.4875**	0.099	1.8	ug/L	108	Standard
	Ce	140	1425.1	2.1				ug/L	30	Standard
>	**Tb**	159	802846.0	2.9				ug/L	792236	Standard
	Ho	165	38.3	49.4				ug/L	7	Standard
	Tl	203	181.0	5.8	**0.0217**	0.002	7.1	ug/L	9	Standard
	Tl	205	158.3	6.6	**0.0171**	0.002	12.3	ug/L	0	Standard
	Pb	206	323.7	3.9	**0.0154**	0.001	9.1	ug/L	216	Standard
	Pb	207	297.3	15.5	**0.0184**	0.010	54.3	ug/L	180	Standard
	Pb	208	1247.7	4.4	**0.0169**	0.002	11.0	ug/L	717	Standard
	U	238	59.7	21.2	**0.0022**	0.002	84.4	ug/L	4	Standard
>	**Bi**	209	449878.2	2.0				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	5219.2	4.5	**6.4369**	0.460	7.1	mg/L	20	Standard
K	39	20.0	25.0	**-0.0887**	0.033	37.4	mg/L	22	Standard
Ca	43	31.7	48.2	**-6.3893**	3.387	53.0	mg/L	47	Standard
Fe	54	173.5	30.0	**0.0146**	0.041	283.6	mg/L	151	Standard
Fe	57	193.3	26.5	**-0.1009**	0.133	132.3	mg/L	195	Standard
> **Sc-1**	45	32406.3	3.0				mg/L	29647	Standard
Cl	35	165598.8	1.0				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	7865.4	1.7				ug/L	1607	Standard
P	31	25877.1	1.5				ug/L	22752	Standard
S	34	5332.6	2.3				ug/L	5049	Standard
Sr	88	75.0	53.3				ug/L	87	Standard
C	12	26.7	86.6				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	38.2	28.0				mg/L	10	Standard
Ho-1	165	38.3	49.4				mg/L	7	Standard
Er	166	36.7	41.7				mg/L	3	Standard
I	127	9661.4	1.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.201	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.646	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.590	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.727	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606061602
Sample Date/Time: Thursday, June 16, 2016 21:16:38
Number of Replicates: 3
Autosampler Position: 353
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54740.4	1.6				ug/L	51024	Standard
	Be	9	13.3	78.1	**-0.0064**	0.011	174.7	ug/L	7	Standard
	Al	27	1805152.0	1.4	**11.8114**	0.177	1.5	ug/L	625	Standard
	Sc	45	31105.2	2.7				ug/L	29647	Standard
	Ti	47	145.3	36.9	**0.3297**	0.185	56.3	ug/L	57	Standard
	V	51	1187.4	9.5	**0.0023**	0.015	668.9	ug/L	1142	Standard
	Cr	52	6910.6	1.9	**0.0321**	0.023	70.2	ug/L	6628	Standard
	Cr	53	2121.8	8.3	**1.9016**	0.204	10.7	ug/L	430	Standard
	Mn	55	395363.0	1.6	**67.9452**	1.352	2.0	ug/L	603	Standard
	Co	59	396.7	9.1	**0.0219**	0.006	27.5	ug/L	237	Standard
	Ni	60	325.0	2.7	**0.0944**	0.004	4.0	ug/L	141	Standard
	Cu	65	328.0	3.2	**0.1122**	0.006	5.3	ug/L	109	Standard
	Zn	66	1614.8	2.3	**1.2569**	0.027	2.1	ug/L	159	Standard
>	**Ge**	72	463730.0	0.5				ug/L	474053	Standard
	As	75	191.5	27.2	**0.2018**	0.048	23.7	ug/L	-34	Standard
	Se	82	80.2	8.7	**0.5721**	0.064	11.1	ug/L	14	Standard
	Se-1	77	154.3	3.1	**1.3098**	0.068	5.2	ug/L	55	Standard
>	**Ga**	71	83.3	12.5				mg/L	50	Standard
	Rb	85	2255.2	4.8				ug/L	20	Standard
	Y	89	395085.6	4.8				ug/L	376602	Standard
>	**Rh**	103	30.0	44.1				ug/L	17	Standard
	Mo	98	187.4	6.4	**0.0739**	0.005	6.8	ug/L	8	Standard
	Ag	107	74.0	13.7	**0.0001**	0.002	2155.8	ug/L	81	Standard
	Cd	111	4.7	21.2	**-0.0008**	0.000	58.4	mg/L	3	Standard
	Cd	114	23.6	85.5	**0.0011**	0.004	381.8	ug/L	7	Standard
>	**In**	115	524300.8	1.8				ug/L	524722	Standard
	Sn	118	675.0	7.1	**0.0361**	0.011	30.7	ug/L	715	Standard
	Sb	123	147.3	26.2	**0.0191**	0.009	49.7	ug/L	201	Standard
	Ba	135	46098.7	0.3	**25.3994**	0.381	1.5	ug/L	108	Standard
	Ce	140	986.7	3.2				ug/L	30	Standard
>	**Tb**	159	774505.0	2.0				ug/L	792236	Standard
	Ho	165	13.3	94.4				ug/L	7	Standard
	Tl	203	220.3	5.0	**0.0280**	0.002	6.1	ug/L	9	Standard
	Tl	205	203.3	19.9	**0.0253**	0.006	25.4	ug/L	0	Standard
	Pb	206	323.3	2.8	**0.0179**	0.002	12.9	ug/L	216	Standard
	Pb	207	301.7	4.5	**0.0222**	0.003	14.6	ug/L	180	Standard
	Pb	208	1220.4	3.0	**0.0179**	0.003	14.6	ug/L	717	Standard
	U	238	72.3	70.3	**0.0048**	0.009	183.1	ug/L	4	Standard
>	**Bi**	209	434377.4	0.6				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	9573.0	1.2	**12.3290**	0.229	1.9	mg/L	20	Standard
K	39	33.3	22.9	**0.0143**	0.056	391.5	mg/L	22	Standard
Ca	43	41.7	42.1	**-3.8937**	4.020	103.2	mg/L	47	Standard
Fe	54	3391.5	3.3	**2.5135**	0.063	2.5	mg/L	151	Standard
Fe	57	1036.7	3.7	**2.4151**	0.178	7.4	mg/L	195	Standard
> **Sc-1**	45	31105.2	2.7				mg/L	29647	Standard
Cl	35	163124.3	2.0				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	18861.8	5.5				ug/L	1607	Standard
P	31	25780.2	1.2				ug/L	22752	Standard
S	34	5427.6	1.2				ug/L	5049	Standard
Sr	88	133.3	17.7				ug/L	87	Standard
C	12	63.3	48.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	29.4	2.5				mg/L	10	Standard
Ho-1	165	13.3	94.4				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	3	Standard
I	127	27164.5	9.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.283	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.822	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.920
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.360
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606061604
Sample Date/Time: Thursday, June 16, 2016 21:19:49
Number of Replicates: 3
Autosampler Position: 354
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54814.0	0.5				ug/L	51024	Standard
	Be	9	6.7	86.6	**-0.0137**	0.006	46.5	ug/L	7	Standard
	Al	27	110436.2	2.3	**0.7124**	0.018	2.6	ug/L	625	Standard
	Sc	45	32459.7	0.6				ug/L	29647	Standard
	Ti	47	55.7	9.0	**0.0154**	0.018	115.7	ug/L	57	Standard
	V	51	1190.0	8.3	**-0.0046**	0.017	376.0	ug/L	1142	Standard
	Cr	52	7226.1	2.7	**0.0323**	0.047	144.2	ug/L	6628	Standard
	Cr	53	801.7	5.0	**0.4109**	0.034	8.3	ug/L	430	Standard
	Mn	55	73546.8	1.3	**11.9804**	0.177	1.5	ug/L	603	Standard
	Co	59	487.0	1.6	**0.0328**	0.001	4.1	ug/L	237	Standard
	Ni	60	526.7	1.8	**0.1891**	0.010	5.0	ug/L	141	Standard
	Cu	65	380.0	8.6	**0.1312**	0.013	9.7	ug/L	109	Standard
	Zn	66	2004.8	2.3	**1.5353**	0.023	1.5	ug/L	159	Standard
>	**Ge**	72	485083.0	2.2				ug/L	474053	Standard
	As	75	-27.5	85.1	**0.0005**	0.021	4240.8	ug/L	-34	Standard
	Se	82	14.1	16.8	**-0.0441**	0.023	53.0	ug/L	14	Standard
	Se-1	77	56.3	6.2	**-0.0281**	0.039	138.2	ug/L	55	Standard
>	**Ga**	71	65.0	27.7				mg/L	50	Standard
	Rb	85	975.0	3.7				ug/L	20	Standard
	Y	89	385735.6	1.3				ug/L	376602	Standard
>	**Rh**	103	33.3	48.2				ug/L	17	Standard
	Mo	98	31.0	17.9	**0.0076**	0.002	32.0	ug/L	8	Standard
	Ag	107	69.3	9.6	**-0.0007**	0.001	178.9	ug/L	81	Standard
	Cd	111	35.6	7.1	**0.0152**	0.001	9.3	mg/L	3	Standard
	Cd	114	78.6	33.7	**0.0126**	0.006	43.8	ug/L	7	Standard
>	**In**	115	522479.0	0.6				ug/L	524722	Standard
	Sn	118	488.3	12.5	**0.0016**	0.012	727.2	ug/L	715	Standard
	Sb	123	114.8	19.9	**0.0116**	0.005	46.5	ug/L	201	Standard
	Ba	135	3662.8	1.7	**1.9717**	0.029	1.5	ug/L	108	Standard
	Ce	140	251.7	12.1				ug/L	30	Standard
>	**Tb**	159	792180.5	1.3				ug/L	792236	Standard
	Ho	165	13.3	21.7				ug/L	7	Standard
	Tl	203	47.3	14.4	**0.0036**	0.001	25.0	ug/L	9	Standard
	Tl	205	38.3	27.2	**-0.0019**	0.002	86.2	ug/L	0	Standard
	Pb	206	262.0	5.8	**0.0007**	0.003	518.6	ug/L	216	Standard
	Pb	207	237.7	10.4	**0.0030**	0.006	203.7	ug/L	180	Standard
	Pb	208	979.3	1.2	**-0.0002**	0.001	232.5	ug/L	717	Standard
	U	238	9.3	43.3	**-0.0061**	0.001	10.8	ug/L	4	Standard
>	**Bi**	209	458288.4	0.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	298.3	19.4	**0.3240**	0.070	21.6	mg/L	20	Standard
K	39	26.7	65.8	**-0.0419**	0.123	294.6	mg/L	22	Standard
Ca	43	43.3	52.0	**-3.9540**	4.787	121.1	mg/L	47	Standard
Fe	54	369.3	3.6	**0.1593**	0.010	6.3	mg/L	151	Standard
Fe	57	236.7	13.4	**0.0219**	0.086	394.4	mg/L	195	Standard
Sc-1	45	32459.7	0.6				mg/L	29647	Standard
Cl	35	161744.2	1.3				ug/L	154152	Standard
Kr	83	2.7	78.1				ug/L	3	Standard
Br	81	2450.2	3.6				ug/L	1607	Standard
P	31	25593.3	1.9				ug/L	22752	Standard
S	34	5534.3	4.3				ug/L	5049	Standard
Sr	88	81.7	34.8				ug/L	87	Standard
C	12	56.7	40.8				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.2	113.9				mg/L	10	Standard
Ho-1	165	13.3	21.7				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	3	Standard
I	127	11324.2	2.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		107.428	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.327	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606061604
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.573
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.554
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606065001
Sample Date/Time: Thursday, June 16, 2016 21:23:01
Number of Replicates: 3
Autosampler Position: 355
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56128.8	1.5				ug/L	51024	Standard
	Be	9	8.3	34.6	**-0.0121**	0.003	26.6	ug/L	7	Standard
	Al	27	482122.3	0.7	**3.0698**	0.068	2.2	ug/L	625	Standard
	Sc	45	32641.8	1.6				ug/L	29647	Standard
	Ti	47	45.3	15.0	**-0.0118**	0.021	178.3	ug/L	57	Standard
	V	51	499.2	13.7	**-0.0967**	0.009	9.3	ug/L	1142	Standard
	Cr	52	82458.1	0.9	**10.5208**	0.076	0.7	ug/L	6628	Standard
	Cr	53	10431.9	1.2	**11.0318**	0.293	2.7	ug/L	430	Standard
	Mn	55	79305.3	0.7	**13.5203**	0.175	1.3	ug/L	603	Standard
	Co	59	2974.6	1.7	**0.4315**	0.004	1.0	ug/L	237	Standard
	Ni	60	33369.4	1.4	**17.5928**	0.059	0.3	ug/L	141	Standard
	Cu	65	207.3	9.4	**0.0465**	0.009	20.2	ug/L	109	Standard
	Zn	66	1251.4	5.4	**0.9209**	0.049	5.4	ug/L	159	Standard
>	**Ge**	72	464010.1	1.4				ug/L	474053	Standard
	As	75	2.0	650.9	**0.0269**	0.012	45.0	ug/L	-34	Standard
	Se	82	23.1	30.3	**0.0449**	0.067	148.0	ug/L	14	Standard
	Se-1	77	78.7	3.2	**0.3022**	0.048	15.8	ug/L	55	Standard
>	**Ga**	71	63.3	32.9				mg/L	50	Standard
	Rb	85	220.0	4.5				ug/L	20	Standard
	Y	89	399793.1	1.3				ug/L	376602	Standard
>	**Rh**	103	18.3	103.3				ug/L	17	Standard
	Mo	98	108.7	5.3	**0.0384**	0.002	6.3	ug/L	8	Standard
	Ag	107	73.7	11.4	**-0.0005**	0.001	257.8	ug/L	81	Standard
	Cd	111	9.8	27.0	**0.0016**	0.001	82.1	mg/L	3	Standard
	Cd	114	29.3	22.9	**0.0020**	0.001	66.1	ug/L	7	Standard
>	**In**	115	548875.7	0.2				ug/L	524722	Standard
	Sn	118	460.0	8.7	**-0.0078**	0.007	89.3	ug/L	715	Standard
	Sb	123	86.5	15.7	**0.0041**	0.003	71.3	ug/L	201	Standard
	Ba	135	20540.6	0.3	**10.7757**	0.041	0.4	ug/L	108	Standard
	Ce	140	105.0	17.2				ug/L	30	Standard
>	**Tb**	159	820934.6	1.9				ug/L	792236	Standard
	Ho	165	20.0	25.0				ug/L	7	Standard
	Tl	203	96.0	11.0	**0.0101**	0.002	16.2	ug/L	9	Standard
	Tl	205	83.3	24.2	**0.0050**	0.003	58.6	ug/L	0	Standard
	Pb	206	282.0	1.9	**0.0050**	0.002	36.7	ug/L	216	Standard
	Pb	207	225.3	3.3	**-0.0000**	0.001	53500.0	ug/L	180	Standard
	Pb	208	968.3	3.8	**-0.0009**	0.003	322.0	ug/L	717	Standard
	U	238	52.7	14.0	**0.0010**	0.001	142.8	ug/L	4	Standard
>	**Bi**	209	458406.1	1.9				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1866.8	2.0	**2.2543**	0.080	3.6	mg/L	20	Standard
K	39	16.7	96.4	**-0.1137**	0.109	95.5	mg/L	22	Standard
Ca	43	30.0	44.1	**-6.8062**	2.881	42.3	mg/L	47	Standard
Fe	54	329.9	10.2	**0.1288**	0.026	20.3	mg/L	151	Standard
Fe	57	233.3	15.5	**0.0097**	0.106	1102.3	mg/L	195	Standard
> **Sc-1**	45	32641.8	1.6				mg/L	29647	Standard
Cl	35	163083.7	0.8				ug/L	154152	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	2766.9	2.7				ug/L	1607	Standard
P	31	25266.1	2.8				ug/L	22752	Standard
S	34	5369.3	3.4				ug/L	5049	Standard
Sr	88	88.3	8.6				ug/L	87	Standard
C	12	30.0	57.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.9	122.5				mg/L	10	Standard
Ho-1	165	20.0	25.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	9619.7	7.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.004	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.881	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.603
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.579
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606065001
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Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606065002
Sample Date/Time: Thursday, June 16, 2016 21:26:12
Number of Replicates: 3
Autosampler Position: 356
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54365.7	1.4				ug/L	51024	Standard
	Be	9	15.0	57.7	**-0.0044**	0.010	217.8	ug/L	7	Standard
	Al	27	1025103.4	0.5	**6.7495**	0.066	1.0	ug/L	625	Standard
	Sc	45	32087.3	3.3				ug/L	29647	Standard
	Ti	47	91.0	58.5	**0.1440**	0.181	125.8	ug/L	57	Standard
	V	51	1237.3	4.1	**0.0097**	0.009	93.5	ug/L	1142	Standard
	Cr	52	7747.0	1.2	**0.1491**	0.005	3.5	ug/L	6628	Standard
	Cr	53	1525.1	10.3	**1.2446**	0.145	11.6	ug/L	430	Standard
	Mn	55	121524.7	0.0	**20.8162**	0.350	1.7	ug/L	603	Standard
	Co	59	489.3	10.2	**0.0367**	0.008	22.6	ug/L	237	Standard
	Ni	60	546.0	2.6	**0.2119**	0.012	5.8	ug/L	141	Standard
	Cu	65	411.0	3.0	**0.1575**	0.006	3.6	ug/L	109	Standard
	Zn	66	2195.8	1.8	**1.7944**	0.008	0.5	ug/L	159	Standard
>	**Ge**	72	463367.3	1.7				ug/L	474053	Standard
	As	75	18.1	195.3	**0.0420**	0.032	77.3	ug/L	-34	Standard
	Se	82	30.0	13.1	**0.1083**	0.035	32.1	ug/L	14	Standard
	Se-1	77	106.3	6.3	**0.6711**	0.066	9.8	ug/L	55	Standard
>	**Ga**	71	40.0	54.5				mg/L	50	Standard
	Rb	85	1018.4	11.8				ug/L	20	Standard
	Y	89	407107.2	1.0				ug/L	376602	Standard
>	**Rh**	103	23.3	12.4				ug/L	17	Standard
	Mo	98	59.9	56.3	**0.0195**	0.014	72.7	ug/L	8	Standard
	Ag	107	115.7	63.4	**0.0068**	0.012	179.6	ug/L	81	Standard
	Cd	111	19.6	16.6	**0.0067**	0.002	24.0	mg/L	3	Standard
	Cd	114	62.3	30.6	**0.0090**	0.004	42.7	ug/L	7	Standard
>	**In**	115	532203.3	2.6				ug/L	524722	Standard
	Sn	118	596.7	23.5	**0.0202**	0.028	136.6	ug/L	715	Standard
	Sb	123	167.7	43.4	**0.0231**	0.017	71.6	ug/L	201	Standard
	Ba	135	32786.1	2.0	**17.7838**	0.579	3.3	ug/L	108	Standard
	Ce	140	491.7	8.2				ug/L	30	Standard
>	**Tb**	159	779044.5	1.2				ug/L	792236	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	239.0	44.6	**0.0304**	0.015	49.0	ug/L	9	Standard
	Tl	205	176.7	20.9	**0.0208**	0.006	27.7	ug/L	0	Standard
	Pb	206	322.7	21.3	**0.0173**	0.016	92.8	ug/L	216	Standard
	Pb	207	291.0	18.0	**0.0192**	0.014	70.8	ug/L	180	Standard
	Pb	208	1188.0	5.2	**0.0154**	0.003	22.6	ug/L	717	Standard
	U	238	183.3	6.3	**0.0235**	0.002	9.7	ug/L	4	Standard
>	**Bi**	209	437003.3	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	7120.0	1.8	**8.8768**	0.151	1.7	mg/L	20	Standard
K	39	41.7	27.7	**0.0654**	0.079	121.4	mg/L	22	Standard
Ca	43	41.7	42.1	**-4.2187**	3.620	85.8	mg/L	47	Standard
Fe	54	137.5	7.6	**-0.0117**	0.005	43.2	mg/L	151	Standard
Fe	57	181.7	19.3	**-0.1275**	0.097	75.8	mg/L	195	Standard
> **Sc-1**	45	32087.3	3.3				mg/L	29647	Standard
Cl	35	166481.1	1.4				ug/L	154152	Standard
Kr	83	1.0	0.0				ug/L	3	Standard
Br	81	4110.6	4.2				ug/L	1607	Standard
P	31	25599.9	1.8				ug/L	22752	Standard
S	34	5374.3	5.2				ug/L	5049	Standard
Sr	88	101.7	24.3				ug/L	87	Standard
C	12	36.7	41.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.4	106.9				mg/L	10	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	76002.0	4.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.549	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.746	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.426
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.930
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606065003
Sample Date/Time: Thursday, June 16, 2016 21:29:23
Number of Replicates: 3
Autosampler Position: 357
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54541.3	1.2				ug/L	51024	Standard
	Be	9	8.3	124.9	**-0.0119**	0.012	97.1	ug/L	7	Standard
	Al	27	606559.5	1.5	**3.9772**	0.101	2.5	ug/L	625	Standard
	Sc	45	31063.5	1.7				ug/L	29647	Standard
	Ti	47	165.3	5.8	**0.3810**	0.031	8.1	ug/L	57	Standard
	V	51	733.0	77.1	**-0.0659**	0.079	120.2	ug/L	1142	Standard
	Cr	52	157074.9	2.2	**20.2677**	0.514	2.5	ug/L	6628	Standard
	Cr	53	20141.7	1.4	**21.0752**	0.347	1.6	ug/L	430	Standard
	Mn	55	101750.2	1.1	**16.8892**	0.212	1.3	ug/L	603	Standard
	Co	59	1910.5	3.6	**0.2538**	0.010	4.1	ug/L	237	Standard
	Ni	60	8863.6	2.0	**4.4841**	0.097	2.2	ug/L	141	Standard
	Cu	65	1674.4	2.3	**0.8182**	0.022	2.7	ug/L	109	Standard
	Zn	66	2740.2	2.8	**2.2224**	0.074	3.3	ug/L	159	Standard
>	**Ge**	72	477422.4	0.2				ug/L	474053	Standard
	As	75	139.6	40.2	**0.1503**	0.051	33.7	ug/L	-34	Standard
	Se	82	42.3	11.2	**0.2113**	0.043	20.3	ug/L	14	Standard
	Se-1	77	93.0	6.5	**0.4578**	0.081	17.7	ug/L	55	Standard
>	**Ga**	71	101.7	37.2				mg/L	50	Standard
	Rb	85	1565.1	2.0				ug/L	20	Standard
	Y	89	382720.6	3.5				ug/L	376602	Standard
>	**Rh**	103	20.0	66.1				ug/L	17	Standard
	Mo	98	639.1	4.3	**0.2676**	0.013	4.7	ug/L	8	Standard
	Ag	107	90.7	24.5	**0.0030**	0.004	127.1	ug/L	81	Standard
	Cd	111	110.9	7.8	**0.0545**	0.005	9.0	mg/L	3	Standard
	Cd	114	275.8	13.3	**0.0542**	0.008	14.0	ug/L	7	Standard
>	**In**	115	519830.3	1.0				ug/L	524722	Standard
	Sn	118	653.3	27.4	**0.0332**	0.035	105.0	ug/L	715	Standard
	Sb	123	127.7	28.4	**0.0147**	0.009	58.6	ug/L	201	Standard
	Ba	135	11175.1	0.7	**6.1659**	0.078	1.3	ug/L	108	Standard
	Ce	140	2495.2	5.2				ug/L	30	Standard
>	**Tb**	159	780545.7	0.5				ug/L	792236	Standard
	Ho	165	53.3	48.1				ug/L	7	Standard
	Tl	203	163.0	29.4	**0.0195**	0.006	33.3	ug/L	9	Standard
	Tl	205	135.0	9.8	**0.0137**	0.002	15.9	ug/L	0	Standard
	Pb	206	547.3	5.3	**0.0663**	0.008	11.4	ug/L	216	Standard
	Pb	207	444.0	2.8	**0.0555**	0.004	6.9	ug/L	180	Standard
	Pb	208	1903.7	3.0	**0.0576**	0.005	8.4	ug/L	717	Standard
	U	238	51.3	38.7	**0.0010**	0.003	341.9	ug/L	4	Standard
>	**Bi**	209	444975.8	1.2				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3707.1	1.1	**4.7531**	0.132	2.8	mg/L	20	Standard
K	39	33.3	17.3	**0.0146**	0.042	286.2	mg/L	22	Standard
Ca	43	30.0	57.7	**-6.5001**	3.854	59.3	mg/L	47	Standard
Fe	54	681.6	4.0	**0.4140**	0.022	5.2	mg/L	151	Standard
Fe	57	318.3	7.1	**0.2945**	0.082	27.9	mg/L	195	Standard
> **Sc-1**	45	31063.5	1.7				mg/L	29647	Standard
Cl	35	164261.1	1.5				ug/L	154152	Standard
Kr	83	2.0	86.6				ug/L	3	Standard
Br	81	7888.7	5.8				ug/L	1607	Standard
P	31	24920.5	3.3				ug/L	22752	Standard
S	34	5307.6	1.0				ug/L	5049	Standard
Sr	88	88.3	8.6				ug/L	87	Standard
C	12	40.0	25.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	74.8	18.4				mg/L	10	Standard
Ho-1	165	53.3	48.1				mg/L	7	Standard
Er	166	40.0	90.1				mg/L	3	Standard
I	127	17526.8	1.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.893	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.711	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.068
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.662
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606065003
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Method 6020 - Summary Report

Sample ID: L1606065008
Sample Date/Time: Thursday, June 16, 2016 21:32:35
Number of Replicates: 3
Autosampler Position: 358
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55971.5	1.2				ug/L	51024	Standard
	Be	9	16.7	121.2	**-0.0030**	0.022	732.0	ug/L	7	Standard
	Al	27	227217.9	1.2	**1.4454**	0.014	1.0	ug/L	625	Standard
	Sc	45	33091.1	0.4				ug/L	29647	Standard
	Ti	47	93.0	12.2	**0.1482**	0.035	23.3	ug/L	57	Standard
	V	51	1468.9	10.6	**0.0412**	0.020	48.4	ug/L	1142	Standard
	Cr	52	7242.7	0.8	**0.0709**	0.012	17.1	ug/L	6628	Standard
	Cr	53	1168.4	6.4	**0.8438**	0.086	10.2	ug/L	430	Standard
	Mn	55	143314.1	1.9	**24.3672**	0.286	1.2	ug/L	603	Standard
	Co	59	707.7	4.5	**0.0704**	0.004	5.3	ug/L	237	Standard
	Ni	60	1968.1	3.3	**0.9574**	0.026	2.8	ug/L	141	Standard
	Cu	65	534.7	8.0	**0.2223**	0.018	8.2	ug/L	109	Standard
	Zn	66	4633.0	0.1	**4.0098**	0.079	2.0	ug/L	159	Standard
>	**Ge**	72	467157.4	1.9				ug/L	474053	Standard
	As	75	68.4	19.1	**0.0878**	0.012	13.9	ug/L	-34	Standard
	Se	82	42.7	11.5	**0.2237**	0.049	22.1	ug/L	14	Standard
	Se-1	77	88.3	9.6	**0.4216**	0.095	22.5	ug/L	55	Standard
>	**Ga**	71	53.3	28.6				mg/L	50	Standard
	Rb	85	821.7	8.3				ug/L	20	Standard
	Y	89	390712.9	1.8				ug/L	376602	Standard
>	**Rh**	103	16.7	96.4				ug/L	17	Standard
	Mo	98	26.7	10.2	**0.0055**	0.001	23.5	ug/L	8	Standard
	Ag	107	72.3	16.0	**-0.0005**	0.002	422.0	ug/L	81	Standard
	Cd	111	13.3	4.3	**0.0034**	0.000	6.8	mg/L	3	Standard
	Cd	114	40.2	32.3	**0.0044**	0.003	63.9	ug/L	7	Standard
>	**In**	115	538841.7	2.0				ug/L	524722	Standard
	Sn	118	488.3	14.9	**-0.0013**	0.012	965.6	ug/L	715	Standard
	Sb	123	100.5	11.8	**0.0076**	0.002	30.8	ug/L	201	Standard
	Ba	135	7028.6	0.9	**3.7196**	0.097	2.6	ug/L	108	Standard
	Ce	140	2670.2	3.1				ug/L	30	Standard
>	**Tb**	159	805010.7	0.6				ug/L	792236	Standard
	Ho	165	43.3	40.5				ug/L	7	Standard
	Tl	203	119.0	4.4	**0.0131**	0.001	5.7	ug/L	9	Standard
	Tl	205	95.0	22.9	**0.0069**	0.003	48.8	ug/L	0	Standard
	Pb	206	254.0	2.5	**-0.0008**	0.002	244.2	ug/L	216	Standard
	Pb	207	226.3	9.4	**0.0004**	0.004	982.1	ug/L	180	Standard
	Pb	208	875.0	3.9	**-0.0061**	0.002	39.4	ug/L	717	Standard
	U	238	28.3	19.4	**-0.0030**	0.001	30.6	ug/L	4	Standard
>	**Bi**	209	456325.9	1.4				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3722.1	3.3	**4.4755**	0.132	3.0	mg/L	20	Standard
K	39	21.7	48.0	**-0.0800**	0.071	88.6	mg/L	22	Standard
Ca	43	38.3	49.4	**-5.1655**	3.960	76.7	mg/L	47	Standard
Fe	54	149.3	20.9	**-0.0062**	0.023	370.8	mg/L	151	Standard
Fe	57	191.7	19.2	**-0.1152**	0.104	90.0	mg/L	195	Standard
> **Sc-1**	45	33091.1	0.4				mg/L	29647	Standard
Cl	35	167461.1	1.4				ug/L	154152	Standard
Kr	83	2.3	49.5				ug/L	3	Standard
Br	81	7938.7	3.1				ug/L	1607	Standard
P	31	24910.5	1.2				ug/L	22752	Standard
S	34	5120.9	0.9				ug/L	5049	Standard
Sr	88	83.3	3.5				ug/L	87	Standard
C	12	63.3	48.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	67.9	15.4				mg/L	10	Standard
Ho-1	165	43.3	40.5				mg/L	7	Standard
Er	166	43.3	26.6				mg/L	3	Standard
I	127	7648.6	2.6				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		109.696	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.545	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.691
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.127
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606073001
Sample Date/Time: Thursday, June 16, 2016 21:35:46
Number of Replicates: 3
Autosampler Position: 359
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55371.0	2.2				ug/L	51024	Standard
	Be	9	11.7	65.5	**-0.0084**	0.008	97.7	ug/L	7	Standard
	Al	27	132096.8	1.8	**0.8455**	0.012	1.5	ug/L	625	Standard
	Sc	45	31868.5	4.0				ug/L	29647	Standard
	Ti	47	30.0	17.3	**-0.0614**	0.019	31.4	ug/L	57	Standard
	V	51	1455.6	7.2	**0.0453**	0.013	29.6	ug/L	1142	Standard
	Cr	52	11040.4	2.7	**0.6383**	0.023	3.6	ug/L	6628	Standard
	Cr	53	1623.4	8.3	**1.3902**	0.129	9.3	ug/L	430	Standard
	Mn	55	1201.0	0.7	**0.0848**	0.004	4.7	ug/L	603	Standard
	Co	59	375.7	2.3	**0.0198**	0.001	6.0	ug/L	237	Standard
	Ni	60	312.3	3.4	**0.0912**	0.004	4.7	ug/L	141	Standard
	Cu	65	236.3	2.7	**0.0651**	0.002	3.6	ug/L	109	Standard
	Zn	66	1941.8	2.7	**1.5970**	0.055	3.5	ug/L	159	Standard
>	**Ge**	72	454022.4	1.2				ug/L	474053	Standard
	As	75	11.9	146.3	**0.0364**	0.016	45.2	ug/L	-34	Standard
	Se	82	31.4	12.8	**0.1281**	0.041	32.3	ug/L	14	Standard
	Se-1	77	87.7	5.7	**0.4469**	0.060	13.4	ug/L	55	Standard
>	**Ga**	71	95.0	18.2				mg/L	50	Standard
	Rb	85	4872.5	2.9				ug/L	20	Standard
	Y	89	404770.5	0.6				ug/L	376602	Standard
>	**Rh**	103	80.0	22.5				ug/L	17	Standard
	Mo	98	116.6	2.8	**0.0416**	0.002	4.6	ug/L	8	Standard
	Ag	107	61.3	24.5	**-0.0025**	0.002	96.4	ug/L	81	Standard
	Cd	111	8.1	43.0	**0.0008**	0.002	229.5	mg/L	3	Standard
	Cd	114	29.0	53.2	**0.0020**	0.003	156.6	ug/L	7	Standard
>	**In**	115	550074.8	1.6				ug/L	524722	Standard
	Sn	118	596.7	39.8	**0.0158**	0.040	254.1	ug/L	715	Standard
	Sb	123	117.4	4.2	**0.0108**	0.001	9.0	ug/L	201	Standard
	Ba	135	36971.7	2.1	**19.3982**	0.128	0.7	ug/L	108	Standard
	Ce	140	30.0	16.7				ug/L	30	Standard
>	**Tb**	159	802021.2	1.6				ug/L	792236	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	154.7	7.4	**0.0182**	0.001	7.8	ug/L	9	Standard
	Tl	205	128.3	9.0	**0.0124**	0.002	14.8	ug/L	0	Standard
	Pb	206	255.7	10.1	**0.0005**	0.007	1256.9	ug/L	216	Standard
	Pb	207	236.0	8.3	**0.0037**	0.003	93.0	ug/L	180	Standard
	Pb	208	980.3	1.1	**0.0011**	0.002	149.5	ug/L	717	Standard
	U	238	28.0	18.9	**-0.0030**	0.001	29.7	ug/L	4	Standard
>	**Bi**	209	448836.9	2.3				ug/L	460343	Standard

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Na	23	5.0	100.0	**-5.1594**	15.986	309.8	mg/L	0	Standard
Mg	24	1993.5	3.8	**2.4733**	0.176	7.1	mg/L	20	Standard
K	39	58.3	21.6	**0.1865**	0.091	48.6	mg/L	22	Standard
Ca	43	45.0	19.2	**-3.3710**	2.098	62.2	mg/L	47	Standard
Fe	54	141.5	17.4	**-0.0075**	0.021	284.9	mg/L	151	Standard
Fe	57	231.7	13.9	**0.0185**	0.068	366.5	mg/L	195	Standard
Sc-1	45	31868.5	4.0				mg/L	29647	Standard
Cl	35	162650.5	1.3				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	5611.0	3.8				ug/L	1607	Standard
P	31	25164.2	0.9				ug/L	22752	Standard
S	34	5320.9	2.9				ug/L	5049	Standard
Sr	88	361.7	6.2				ug/L	87	Standard
C	12	50.0	20.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.0	107.3				mg/L	10	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	3	Standard
I	127	5254.2	4.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.519	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.775	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.832
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.501
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606073002
Sample Date/Time: Thursday, June 16, 2016 21:38:59
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52860.4	2.3				ug/L	51024	Standard
	Be	9	10.0	50.0	**-0.0095**	0.006	63.2	ug/L	7	Standard
	Al	27	137711.4	1.6	**0.9241**	0.007	0.7	ug/L	625	Standard
	Sc	45	31095.2	1.2				ug/L	29647	Standard
	Ti	47	32.7	23.2	**-0.0560**	0.026	46.7	ug/L	57	Standard
	V	51	1546.7	3.7	**0.0511**	0.010	20.5	ug/L	1142	Standard
	Cr	52	11025.0	1.4	**0.5840**	0.055	9.5	ug/L	6628	Standard
	Cr	53	1463.4	4.0	**1.1555**	0.040	3.5	ug/L	430	Standard
	Mn	55	1410.7	11.5	**0.1137**	0.033	29.0	ug/L	603	Standard
	Co	59	359.7	1.9	**0.0152**	0.002	14.6	ug/L	237	Standard
	Ni	60	319.3	6.2	**0.0894**	0.014	15.7	ug/L	141	Standard
	Cu	65	200.0	1.3	**0.0412**	0.002	3.9	ug/L	109	Standard
	Zn	66	1969.1	2.4	**1.5596**	0.014	0.9	ug/L	159	Standard
>	**Ge**	72	469994.3	2.3				ug/L	474053	Standard
	As	75	0.5	7482.9	**0.0251**	0.035	138.8	ug/L	-34	Standard
	Se	82	28.5	7.3	**0.0908**	0.014	15.4	ug/L	14	Standard
	Se-1	77	88.7	18.3	**0.4207**	0.218	51.8	ug/L	55	Standard
>	**Ga**	71	73.3	28.4				mg/L	50	Standard
	Rb	85	4865.8	1.3				ug/L	20	Standard
	Y	89	399171.5	2.3				ug/L	376602	Standard
>	**Rh**	103	93.3	12.4				ug/L	17	Standard
	Mo	98	101.9	16.6	**0.0370**	0.006	16.6	ug/L	8	Standard
	Ag	107	61.3	18.0	**-0.0021**	0.002	98.0	ug/L	81	Standard
	Cd	111	6.5	18.0	**0.0001**	0.001	960.6	mg/L	3	Standard
	Cd	114	23.1	68.6	**0.0010**	0.003	344.6	ug/L	7	Standard
>	**In**	115	531069.9	2.8				ug/L	524722	Standard
	Sn	118	445.0	10.3	**-0.0078**	0.009	112.2	ug/L	715	Standard
	Sb	123	65.7	14.2	**0.0001**	0.002	2926.8	ug/L	201	Standard
	Ba	135	36371.9	1.1	**19.7762**	0.433	2.2	ug/L	108	Standard
	Ce	140	41.7	50.0				ug/L	30	Standard
>	**Tb**	159	774515.8	2.9				ug/L	792236	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	160.3	8.2	**0.0195**	0.002	8.6	ug/L	9	Standard
	Tl	205	130.0	21.4	**0.0133**	0.005	36.0	ug/L	0	Standard
	Pb	206	254.0	4.2	**0.0016**	0.003	201.3	ug/L	216	Standard
	Pb	207	204.3	4.4	**-0.0027**	0.002	57.9	ug/L	180	Standard
	Pb	208	941.7	3.4	**0.0002**	0.002	1048.9	ug/L	717	Standard
	U	238	8.3	85.1	**-0.0062**	0.001	19.1	ug/L	4	Standard
>	**Bi**	209	437592.9	1.4				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1953.5	4.1	**2.4795**	0.082	3.3	mg/L	20	Standard
K	39	41.7	13.9	**0.0748**	0.041	54.3	mg/L	22	Standard
Ca	43	46.7	6.2	**-2.7971**	0.513	18.3	mg/L	47	Standard
Fe	54	137.1	22.1	**-0.0088**	0.022	251.4	mg/L	151	Standard
Fe	57	218.3	25.5	**-0.0034**	0.160	4703.1	mg/L	195	Standard
> **Sc-1**	45	31095.2	1.2				mg/L	29647	Standard
Cl	35	164376.3	1.5				ug/L	154152	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	5667.7	1.8				ug/L	1607	Standard
P	31	24892.1	1.3				ug/L	22752	Standard
S	34	5330.9	2.9				ug/L	5049	Standard
Sr	88	315.0	7.3				ug/L	87	Standard
C	12	43.3	26.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.7	100.8				mg/L	10	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	5250.9	7.1				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.599	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.144	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.210
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.058
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606073003
Sample Date/Time: Thursday, June 16, 2016 21:42:10
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	53594.6	1.1				ug/L	51024	Standard
	Be	9	3.3	86.6	**-0.0173**	0.003	18.9	ug/L	7	Standard
	Al	27	2979001.9	0.3	**19.9155**	0.253	1.3	ug/L	625	Standard
	Sc	45	31315.7	0.8				ug/L	29647	Standard
	Ti	47	43.0	24.6	**-0.0251**	0.035	139.3	ug/L	57	Standard
	V	51	1280.4	1.3	**0.0086**	0.002	24.3	ug/L	1142	Standard
	Cr	52	6976.3	2.4	**0.0037**	0.022	588.3	ug/L	6628	Standard
	Cr	53	1470.1	6.4	**1.1220**	0.096	8.5	ug/L	430	Standard
	Mn	55	27960.5	2.4	**4.5016**	0.120	2.7	ug/L	603	Standard
	Co	59	554.3	12.3	**0.0435**	0.010	24.1	ug/L	237	Standard
	Ni	60	395.0	5.1	**0.1235**	0.010	8.4	ug/L	141	Standard
	Cu	65	173.0	8.3	**0.0243**	0.008	31.2	ug/L	109	Standard
	Zn	66	1439.4	0.7	**1.0440**	0.007	0.7	ug/L	159	Standard
>	Ge	72	482360.2	0.2				ug/L	474053	Standard
	As	75	84.5	59.0	**0.1001**	0.044	44.2	ug/L	-34	Standard
	Se	82	47.5	19.6	**0.2529**	0.082	32.5	ug/L	14	Standard
	Se-1	77	132.0	7.2	**0.9443**	0.119	12.5	ug/L	55	Standard
>	Ga	71	60.0	14.4				mg/L	50	Standard
	Rb	85	475.0	12.1				ug/L	20	Standard
	Y	89	391203.2	1.3				ug/L	376602	Standard
>	Rh	103	55.0	9.1				ug/L	17	Standard
	Mo	98	37.9	67.6	**0.0106**	0.011	103.7	ug/L	8	Standard
	Ag	107	71.3	16.2	**-0.0003**	0.002	600.9	ug/L	81	Standard
	Cd	111	5.3	57.7	**-0.0005**	0.002	303.0	mg/L	3	Standard
	Cd	114	27.8	51.3	**0.0020**	0.003	149.5	ug/L	7	Standard
>	In	115	521847.0	1.7				ug/L	524722	Standard
	Sn	118	455.0	13.4	**-0.0046**	0.010	225.0	ug/L	715	Standard
	Sb	123	77.8	11.7	**0.0031**	0.002	74.2	ug/L	201	Standard
	Ba	135	148771.2	0.6	**82.4802**	0.932	1.1	ug/L	108	Standard
	Ce	140	300.0	8.7				ug/L	30	Standard
>	Tb	159	770703.6	1.1				ug/L	792236	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	215.7	6.2	**0.0270**	0.001	5.4	ug/L	9	Standard
	Tl	205	208.3	27.6	**0.0257**	0.009	34.8	ug/L	0	Standard
	Pb	206	272.0	3.0	**0.0054**	0.003	50.7	ug/L	216	Standard
	Pb	207	232.3	12.8	**0.0041**	0.008	195.9	ug/L	180	Standard
	Pb	208	1012.0	13.3	**0.0042**	0.007	176.0	ug/L	717	Standard
	U	238	232.3	16.7	**0.0315**	0.006	19.1	ug/L	4	Standard
>	Bi	209	439553.9	1.5				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	6086.2	1.7	**7.7675**	0.192	2.5	mg/L	20	Standard
K	39	18.3	56.8	**-0.0957**	0.075	77.9	mg/L	22	Standard
Ca	43	40.0	37.5	**-4.3545**	3.269	75.1	mg/L	47	Standard
Fe	54	265.9	15.1	**0.0898**	0.032	35.5	mg/L	151	Standard
Fe	57	201.7	20.0	**-0.0564**	0.115	204.5	mg/L	195	Standard
> **Sc-1**	45	31315.7	0.8				mg/L	29647	Standard
Cl	35	164992.2	0.7				ug/L	154152	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	10840.5	3.2				ug/L	1607	Standard
P	31	25164.2	3.4				ug/L	22752	Standard
S	34	5275.9	3.2				ug/L	5049	Standard
Sr	88	133.3	20.7				ug/L	87	Standard
C	12	53.3	57.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.2	49.6				mg/L	10	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	3	Standard
I	127	4810.8	4.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.038	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.752	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.452
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.484
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 21:45:23
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	52964.1	3.2				ug/L	51024	Standard
	Be	9	42168.6	0.7	**48.3246**	1.216	2.5	ug/L	7	Standard
	Al	27	7159091.1	2.4	**48.4492**	0.473	1.0	ug/L	625	Standard
	Sc	45	31200.4	3.4				ug/L	29647	Standard
	Ti	47	30099.2	0.4	**103.9852**	0.489	0.5	ug/L	57	Standard
	V	51	348173.2	0.9	**50.6797**	0.340	0.7	ug/L	1142	Standard
	Cr	52	366090.7	0.6	**50.7470**	0.566	1.1	ug/L	6628	Standard
	Cr	53	45820.9	1.2	**50.7491**	0.901	1.8	ug/L	430	Standard
	Mn	55	317011.4	2.2	**55.3295**	1.324	2.4	ug/L	603	Standard
	Co	59	316851.8	0.1	**51.1533**	0.313	0.6	ug/L	237	Standard
	Ni	60	93845.8	1.6	**50.4491**	1.080	2.1	ug/L	141	Standard
	Cu	65	91207.1	1.9	**50.3255**	1.210	2.4	ug/L	109	Standard
	Zn	66	53728.8	0.5	**50.1071**	0.516	1.0	ug/L	159	Standard
>	Ge	72	456409.0	0.5				ug/L	474053	Standard
	As	75	53094.6	1.6	**49.8317**	1.034	2.1	ug/L	-34	Standard
	Se	82	5335.2	1.1	**49.9428**	0.782	1.6	ug/L	14	Standard
	Se-1	77	3694.5	1.3	**49.2280**	0.868	1.8	ug/L	55	Standard
>	Ga	71	73.3	28.4				mg/L	50	Standard
	Rb	85	751.7	9.7				ug/L	20	Standard
	Y	89	395355.6	1.3				ug/L	376602	Standard
>	Rh	103	41.7	60.4				ug/L	17	Standard
	Mo	98	229935.7	1.0	**95.4610**	1.901	2.0	ug/L	8	Standard
	Ag	107	284501.2	0.4	**46.7556**	0.793	1.7	ug/L	81	Standard
	Cd	111	95579.3	0.6	**48.2915**	1.096	2.3	mg/L	3	Standard
	Cd	114	235319.3	0.3	**48.0921**	0.943	2.0	ug/L	7	Standard
>	In	115	535171.0	1.8				ug/L	524722	Standard
	Sn	118	268883.3	0.8	**48.8581**	0.478	1.0	ug/L	715	Standard
	Sb	123	213216.9	1.1	**47.8524**	0.650	1.4	ug/L	201	Standard
	Ba	135	88420.6	0.7	**47.7774**	0.620	1.3	ug/L	108	Standard
	Ce	140	60.0	52.0				ug/L	30	Standard
>	Tb	159	778568.6	0.9				ug/L	792236	Standard
	Ho	165	13.3	43.3				ug/L	7	Standard
	Tl	203	356552.0	0.9	**49.1981**	0.525	1.1	ug/L	9	Standard
	Tl	205	312384.5	1.4	**50.6927**	1.380	2.7	ug/L	0	Standard
	Pb	206	221782.7	0.3	**50.5795**	0.697	1.4	ug/L	216	Standard
	Pb	207	201563.9	0.5	**50.4967**	0.774	1.5	ug/L	180	Standard
	Pb	208	829379.7	0.4	**51.1985**	0.900	1.8	ug/L	717	Standard
	U	238	307681.0	0.4	**52.2118**	0.917	1.8	ug/L	4	Standard
>	Bi	209	436760.9	1.5				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.2513**	9.008	171.5	mg/L	0	Standard
Mg	24	3917.2	3.4	**5.0034**	0.184	3.7	mg/L	20	Standard
K	39	655.0	10.8	**4.5166**	0.488	10.8	mg/L	22	Standard
Ca	43	65.0	20.4	**1.3136**	3.422	260.5	mg/L	47	Standard
Fe	54	6192.2	4.0	**4.6769**	0.351	7.5	mg/L	151	Standard
Fe	57	1618.4	6.7	**4.1237**	0.452	11.0	mg/L	195	Standard
Sc-1	45	31200.4	3.4				mg/L	29647	Standard
Cl	35	163997.6	1.9				ug/L	154152	Standard
Kr	83	3.7	15.7				ug/L	3	Standard
Br	81	1766.8	4.0				ug/L	1607	Standard
P	31	25599.9	0.9				ug/L	22752	Standard
S	34	5862.8	2.2				ug/L	5049	Standard
Sr	88	68.3	41.6				ug/L	87	Standard
C	12	33.3	34.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	-1.0	50.0				mg/L	10	Standard
Ho-1	165	13.3	43.3				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	3	Standard
I	127	1488.4	8.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	96.649		
Al	27	96.898		
Sc	45			
Ti	47	103.985		
V	51	101.359		
Cr	52	101.494		
Cr	53			
Mn	55	110.659		
Co	59	102.307		
Ni	60	100.898		
Cu	65	100.651		
Zn	66	100.214		
Ge	72		96.278	
As	75	99.663		
Se	82	99.886		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	95.461		
Ag	107	93.511		
Cd	111	96.583		
Cd	114			
In	115		101.991	
Sn	118	97.716		
Sb	123	95.705		
Ba	135	95.555		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.396		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.397		
U	238	104.424		
Bi	209		94.877	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 21:48:35
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51738.2	1.1				ug/L	51024	Standard
	Be	9	8.3	91.7	**-0.0112**	0.009	80.5	ug/L	7	Standard
	Al	27	1365.1	16.8	**-0.0003**	0.002	478.2	ug/L	625	Standard
	Sc	45	32252.6	1.6				ug/L	29647	Standard
	Ti	47	29.0	17.2	**-0.0677**	0.018	26.3	ug/L	57	Standard
	V	51	928.8	10.2	**-0.0358**	0.012	34.3	ug/L	1142	Standard
	Cr	52	6199.9	1.6	**-0.0728**	0.006	8.7	ug/L	6628	Standard
	Cr	53	526.7	17.6	**0.1435**	0.102	70.8	ug/L	430	Standard
	Mn	55	679.7	4.7	**-0.0102**	0.006	62.4	ug/L	603	Standard
	Co	59	222.0	2.4	**-0.0062**	0.001	15.3	ug/L	237	Standard
	Ni	60	127.3	4.5	**-0.0108**	0.003	24.1	ug/L	141	Standard
	Cu	65	129.3	11.3	**0.0037**	0.008	218.4	ug/L	109	Standard
	Zn	66	156.3	8.5	**-0.0888**	0.012	14.0	ug/L	159	Standard
>	**Ge**	72	466990.8	0.9				ug/L	474053	Standard
	As	75	-31.2	100.9	**-0.0035**	0.029	815.0	ug/L	-34	Standard
	Se	82	18.5	27.4	**0.0013**	0.046	3640.7	ug/L	14	Standard
	Se-1	77	60.7	5.3	**0.0572**	0.045	77.9	ug/L	55	Standard
>	**Ga**	71	66.7	41.3				mg/L	50	Standard
	Rb	85	25.0	20.0				ug/L	20	Standard
	Y	89	391075.9	3.9				ug/L	376602	Standard
>	**Rh**	103	35.0	49.5				ug/L	17	Standard
	Mo	98	246.2	31.0	**0.0990**	0.031	31.0	ug/L	8	Standard
	Ag	107	92.0	11.3	**0.0032**	0.002	60.7	ug/L	81	Standard
	Cd	111	9.2	30.0	**0.0015**	0.001	89.3	mg/L	3	Standard
	Cd	114	8.4	58.3	**-0.0021**	0.001	50.3	ug/L	7	Standard
>	**In**	115	521304.7	2.1				ug/L	524722	Standard
	Sn	118	806.7	12.6	**0.0616**	0.022	35.5	ug/L	715	Standard
	Sb	123	413.8	23.7	**0.0808**	0.024	30.2	ug/L	201	Standard
	Ba	135	135.0	17.1	**0.0173**	0.012	72.2	ug/L	108	Standard
	Ce	140	18.3	78.7				ug/L	30	Standard
>	**Tb**	159	770403.7	2.0				ug/L	792236	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	53.3	21.7	**0.0047**	0.002	33.8	ug/L	9	Standard
	Tl	205	41.7	25.0	**-0.0011**	0.002	147.7	ug/L	0	Standard
	Pb	206	231.3	3.6	**-0.0040**	0.002	55.2	ug/L	216	Standard
	Pb	207	191.7	4.4	**-0.0062**	0.002	38.0	ug/L	180	Standard
	Pb	208	830.7	1.5	**-0.0071**	0.001	9.5	ug/L	717	Standard
	U	238	32.3	17.6	**-0.0021**	0.001	45.2	ug/L	4	Standard
>	**Bi**	209	440882.3	0.7				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	40.0	45.1	**0.0046**	0.022	483.5	mg/L	20	Standard
K	39	21.7	13.3	**-0.0762**	0.019	24.7	mg/L	22	Standard
Ca	43	16.7	62.4	**-9.5897**	2.277	23.7	mg/L	47	Standard
Fe	54	154.6	3.2	**0.0006**	0.004	679.4	mg/L	151	Standard
Fe	57	181.7	39.0	**-0.1287**	0.205	159.3	mg/L	195	Standard
Sc-1	45	32252.6	1.6				mg/L	29647	Standard
Cl	35	162535.6	2.7				ug/L	154152	Standard
Kr	83	2.0	100.0				ug/L	3	Standard
Br	81	1583.4	15.5				ug/L	1607	Standard
P	31	25920.5	3.4				ug/L	22752	Standard
S	34	5491.0	2.1				ug/L	5049	Standard
Sr	88	78.3	13.3				ug/L	87	Standard
C	12	43.3	13.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	2.9	173.2				mg/L	10	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	10.0	173.2				mg/L	3	Standard
I	127	951.7	4.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.510	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.349
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.773
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, June 16, 2016 21:51:48
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51025.8	1.8				ug/L	51024	Standard
	Be	9	158.3	20.5	**0.1674**	0.039	23.3	ug/L	7	Standard
	Al	27	703.4	27.7	**-0.0048**	0.001	26.9	ug/L	625	Standard
	Sc	45	32324.5	3.0				ug/L	29647	Standard
	Ti	47	27.3	27.7	**-0.0704**	0.026	37.0	ug/L	57	Standard
	V	51	3596.4	1.1	**0.3627**	0.006	1.6	ug/L	1142	Standard
	Cr	52	11538.7	0.6	**0.7185**	0.004	0.5	ug/L	6628	Standard
	Cr	53	1191.7	2.4	**0.9142**	0.036	4.0	ug/L	430	Standard
	Mn	55	3452.4	2.2	**0.4841**	0.013	2.6	ug/L	603	Standard
	Co	59	2481.5	3.2	**0.3641**	0.012	3.2	ug/L	237	Standard
	Ni	60	2983.6	1.9	**1.5460**	0.025	1.6	ug/L	141	Standard
	Cu	65	1554.1	2.2	**0.8018**	0.018	2.3	ug/L	109	Standard
	Zn	66	6904.6	0.5	**6.3076**	0.040	0.6	ug/L	159	Standard
>	**Ge**	72	451469.6	0.4				ug/L	474053	Standard
	As	75	367.1	3.5	**0.3732**	0.012	3.2	ug/L	-34	Standard
	Se	82	52.6	5.1	**0.3307**	0.024	7.1	ug/L	14	Standard
	Se-1	77	86.0	19.2	**0.4314**	0.229	53.1	ug/L	55	Standard
>	**Ga**	71	36.7	56.8				mg/L	50	Standard
	Rb	85	15.0	145.3				ug/L	20	Standard
	Y	89	372929.0	2.6				ug/L	376602	Standard
>	**Rh**	103	21.7	58.1				ug/L	17	Standard
	Mo	98	53.2	25.4	**0.0175**	0.006	35.6	ug/L	8	Standard
	Ag	107	2191.8	2.9	**0.3621**	0.015	4.2	ug/L	81	Standard
	Cd	111	428.6	3.0	**0.2218**	0.010	4.4	mg/L	3	Standard
	Cd	114	1072.7	8.3	**0.2242**	0.022	10.0	ug/L	7	Standard
>	**In**	115	515022.5	1.7				ug/L	524722	Standard
	Sn	118	460.0	21.8	**-0.0026**	0.018	670.4	ug/L	715	Standard
	Sb	123	1687.6	0.2	**0.3789**	0.008	2.0	ug/L	201	Standard
	Ba	135	1278.4	5.4	**0.6611**	0.044	6.7	ug/L	108	Standard
	Ce	140	11.7	89.2				ug/L	30	Standard
>	**Tb**	159	775692.8	2.1				ug/L	792236	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	561.7	1.8	**0.0736**	0.001	1.5	ug/L	9	Standard
	Tl	205	431.7	7.1	**0.0610**	0.005	8.2	ug/L	0	Standard
	Pb	206	1089.0	2.6	**0.1879**	0.008	4.3	ug/L	216	Standard
	Pb	207	883.7	5.5	**0.1638**	0.011	6.9	ug/L	180	Standard
	Pb	208	3859.2	0.5	**0.1764**	0.003	1.5	ug/L	717	Standard
	U	238	2254.8	1.2	**0.3683**	0.007	1.9	ug/L	4	Standard
>	**Bi**	209	444599.6	0.7				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.3150**	8.898	167.4	mg/L	0	Standard
Mg	24	30.0	16.7	**-0.0079**	0.006	76.0	mg/L	20	Standard
K	39	21.7	66.6	**-0.0767**	0.101	131.3	mg/L	22	Standard
Ca	43	30.0	28.9	**-6.7278**	2.028	30.1	mg/L	47	Standard
Fe	54	87.5	4.0	**-0.0496**	0.004	9.0	mg/L	151	Standard
Fe	57	195.0	9.2	**-0.0929**	0.056	60.4	mg/L	195	Standard
Sc-1	45	32324.5	3.0				mg/L	29647	Standard
Cl	35	156288.7	1.2				ug/L	154152	Standard
Kr	83	3.3	17.3				ug/L	3	Standard
Br	81	1266.7	10.3				ug/L	1607	Standard
P	31	17852.2	2.6				ug/L	22752	Standard
S	34	5659.4	1.8				ug/L	5049	Standard
Sr	88	65.0	40.7				ug/L	87	Standard
C	12	20.0	0.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.2	100.1				mg/L	10	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	985.0	8.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	83.676		
Al	27			
Sc	45			
Ti	47			
V	51	90.668		
Cr	52	89.809		
Cr	53			
Mn	55	96.822		
Co	59	91.014		
Ni	60	96.626		
Cu	65	100.227		
Zn	66	100.922		
Ge	72		95.236	
As	75	93.291		
Se	82	82.669		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	90.533		
Cd	111	92.425		
Cd	114			
> In	115			98.152
Sn	118			
Sb	123	94.728		
Ba	135	88.151		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	91.941		
Tl	205			
Pb	206			
Pb	207			
Pb	208	88.177		
U	238	92.081		
> Bi	209			96.580
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW 58 WG571964-02
Sample Date/Time: Thursday, June 16, 2016 21:55:00
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51882.0	0.7				ug/L	51024	Standard
	Be	9	8.3	91.7	**-0.0113**	0.009	79.6	ug/L	7	Standard
	Al	27	7225.1	1.7	**0.0402**	0.001	2.5	ug/L	625	Standard
	Sc	45	32848.9	2.3				ug/L	29647	Standard
	Ti	47	51.0	25.0	**0.0065**	0.044	672.4	ug/L	57	Standard
	V	51	1196.1	1.0	**0.0022**	0.004	185.3	ug/L	1142	Standard
	Cr	52	7726.6	1.1	**0.1365**	0.019	13.7	ug/L	6628	Standard
	Cr	53	648.3	14.3	**0.2747**	0.094	34.1	ug/L	430	Standard
	Mn	55	2688.6	3.0	**0.3326**	0.014	4.1	ug/L	603	Standard
	Co	59	223.3	5.2	**-0.0060**	0.001	19.7	ug/L	237	Standard
	Ni	60	306.7	5.4	**0.0833**	0.005	5.7	ug/L	141	Standard
	Cu	65	369.3	3.4	**0.1332**	0.011	8.3	ug/L	109	Standard
	Zn	66	1524.4	0.8	**1.1625**	0.045	3.9	ug/L	159	Standard
>	**Ge**	72	467701.0	2.5				ug/L	474053	Standard
	As	75	-29.1	18.5	**-0.0015**	0.005	304.8	ug/L	-34	Standard
	Se	82	20.2	33.1	**0.0162**	0.062	379.4	ug/L	14	Standard
	Se-1	77	49.0	28.8	**-0.1009**	0.171	169.5	ug/L	55	Standard
>	**Ga**	71	70.0	25.8				mg/L	50	Standard
	Rb	85	63.3	19.9				ug/L	20	Standard
	Y	89	385228.3	1.7				ug/L	376602	Standard
>	**Rh**	103	13.3	43.3				ug/L	17	Standard
	Mo	98	91.6	20.6	**0.0329**	0.008	25.1	ug/L	8	Standard
	Ag	107	70.0	10.3	**-0.0007**	0.001	169.4	ug/L	81	Standard
	Cd	111	7.2	21.3	**0.0004**	0.001	191.2	mg/L	3	Standard
	Cd	114	8.6	219.6	**-0.0020**	0.004	198.4	ug/L	7	Standard
>	**In**	115	529391.3	2.2				ug/L	524722	Standard
	Sn	118	1728.4	4.6	**0.2287**	0.017	7.5	ug/L	715	Standard
	Sb	123	139.5	23.6	**0.0168**	0.007	40.4	ug/L	201	Standard
	Ba	135	108.3	10.8	**0.0016**	0.007	433.3	ug/L	108	Standard
	Ce	140	70.0	18.9				ug/L	30	Standard
>	**Tb**	159	807450.9	1.8				ug/L	792236	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	22.0	12.0	**0.0003**	0.000	106.9	ug/L	9	Standard
	Tl	205	30.0	28.9	**-0.0032**	0.001	42.5	ug/L	0	Standard
	Pb	206	253.7	10.4	**-0.0009**	0.006	689.0	ug/L	216	Standard
	Pb	207	220.0	2.1	**-0.0010**	0.001	126.8	ug/L	180	Standard
	Pb	208	877.3	3.6	**-0.0060**	0.002	33.1	ug/L	717	Standard
	U	238	8.7	63.5	**-0.0062**	0.001	14.5	ug/L	4	Standard
>	**Bi**	209	455782.1	0.2				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.5393**	8.509	153.6	mg/L	0	Standard
Mg	24	36.7	7.9	**-0.0004**	0.003	710.4	mg/L	20	Standard
K	39	8.3	34.6	**-0.1703**	0.021	12.2	mg/L	22	Standard
Ca	43	33.3	8.7	**-6.1652**	0.476	7.7	mg/L	47	Standard
Fe	54	150.7	24.4	**-0.0047**	0.025	526.5	mg/L	151	Standard
Fe	57	176.7	14.2	**-0.1527**	0.076	49.6	mg/L	195	Standard
> **Sc-1**	45	32848.9	2.3				mg/L	29647	Standard
Cl	35	161385.0	1.1				ug/L	154152	Standard
Kr	83	3.3	34.6				ug/L	3	Standard
Br	81	1680.1	1.8				ug/L	1607	Standard
P	31	24029.0	2.1				ug/L	22752	Standard
S	34	5571.0	3.7				ug/L	5049	Standard
Sr	88	66.7	56.3				ug/L	87	Standard
C	12	53.3	94.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.2	100.1				mg/L	10	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	1201.7	0.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.681	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.660	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.890
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.009
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 58 WG571964-02
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Method 6020 - Summary Report

Sample ID: LCSW 58 WG571964-03
Sample Date/Time: Thursday, June 16, 2016 21:58:11
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	53618.1	1.9				ug/L	51024	Standard
	Be	9	43223.2	1.9	**48.9062**	0.701	1.4	ug/L	7	Standard
	Al	27	16045.2	3.1	**0.0975**	0.001	1.5	ug/L	625	Standard
	Sc	45	33034.3	2.7				ug/L	29647	Standard
	Ti	47	54.7	14.9	**0.0208**	0.027	130.9	ug/L	57	Standard
	V	51	357626.2	0.2	**51.4076**	0.356	0.7	ug/L	1142	Standard
	Cr	52	377061.2	0.6	**51.6273**	0.257	0.5	ug/L	6628	Standard
	Cr	53	46803.9	1.6	**51.1933**	1.124	2.2	ug/L	430	Standard
	Mn	55	326931.8	1.1	**56.3462**	0.565	1.0	ug/L	603	Standard
	Co	59	321699.5	0.9	**51.2838**	0.209	0.4	ug/L	237	Standard
	Ni	60	96180.4	1.7	**51.0507**	0.482	0.9	ug/L	141	Standard
	Cu	65	95306.5	1.4	**51.9244**	0.344	0.7	ug/L	109	Standard
	Zn	66	56208.1	0.9	**51.7682**	0.278	0.5	ug/L	159	Standard
>	Ge	72	462203.6	0.8				ug/L	474053	Standard
	As	75	54677.4	1.3	**50.6686**	0.319	0.6	ug/L	-34	Standard
	Se	82	5471.8	2.6	**50.5742**	0.951	1.9	ug/L	14	Standard
	Se-1	77	3817.1	0.9	**50.2380**	0.317	0.6	ug/L	55	Standard
>	Ga	71	60.0	22.0				mg/L	50	Standard
	Rb	85	115.0	15.7				ug/L	20	Standard
	Y	89	401062.4	1.0				ug/L	376602	Standard
>	Rh	103	33.3	37.7				ug/L	17	Standard
	Mo	98	55.7	12.6	**0.0170**	0.003	16.7	ug/L	8	Standard
	Ag	107	298947.0	1.2	**47.9637**	0.316	0.7	ug/L	81	Standard
	Cd	111	99244.6	1.4	**48.9502**	0.549	1.1	mg/L	3	Standard
	Cd	114	239743.2	0.7	**47.8326**	0.248	0.5	ug/L	7	Standard
>	In	115	548071.7	0.8				ug/L	524722	Standard
	Sn	118	1466.7	2.8	**0.1712**	0.008	4.6	ug/L	715	Standard
	Sb	123	213065.5	1.1	**46.6859**	0.143	0.3	ug/L	201	Standard
	Ba	135	90504.9	1.1	**47.7484**	0.750	1.6	ug/L	108	Standard
	Ce	140	71.7	4.0				ug/L	30	Standard
>	Tb	159	809470.0	2.7				ug/L	792236	Standard
	Ho	165	10.0	100.0				ug/L	7	Standard
	Tl	203	363003.7	1.1	**48.3987**	0.635	1.3	ug/L	9	Standard
	Tl	205	319279.0	0.6	**50.0661**	1.366	2.7	ug/L	0	Standard
	Pb	206	230746.8	0.4	**50.8528**	1.062	2.1	ug/L	216	Standard
	Pb	207	202045.2	0.4	**48.9160**	1.313	2.7	ug/L	180	Standard
	Pb	208	862693.1	0.1	**51.4643**	1.296	2.5	ug/L	717	Standard
	U	238	307882.3	0.1	**50.4881**	1.234	2.4	ug/L	4	Standard
>	Bi	209	452058.0	2.3				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.4002**	8.750	162.0	mg/L	0	Standard
Mg	24	33.3	8.7	**-0.0046**	0.004	92.7	mg/L	20	Standard
K	39	38.3	32.8	**0.0349**	0.087	249.1	mg/L	22	Standard
Ca	43	31.7	48.2	**-6.5426**	3.175	48.5	mg/L	47	Standard
Fe	54	129.8	11.6	**-0.0203**	0.010	51.0	mg/L	151	Standard
Fe	57	178.3	5.8	**-0.1508**	0.042	28.0	mg/L	195	Standard
> **Sc-1**	45	33034.3	2.7				mg/L	29647	Standard
Cl	35	160489.1	2.1				ug/L	154152	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	1963.5	7.4				ug/L	1607	Standard
P	31	24446.4	2.0				ug/L	22752	Standard
S	34	5609.4	5.5				ug/L	5049	Standard
Sr	88	61.7	16.9				ug/L	87	Standard
C	12	83.3	59.2				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	16.2	127.9				mg/L	10	Standard
Ho-1	165	10.0	100.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	1580.1	4.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.084	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.500	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.450
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.200
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 58 WG571964-03
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Method 6020 - Summary Report

Sample ID: L1606042801 WG571964-01
Sample Date/Time: Thursday, June 16, 2016 22:01:23
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53056.1	0.8				ug/L	51024	Standard
	Be	9	15.0	120.2	**-0.0038**	0.021	544.4	ug/L	7	Standard
	Al	27	757403.8	1.6	**5.1075**	0.106	2.1	ug/L	625	Standard
	Sc	45	31754.9	2.5				ug/L	29647	Standard
	Ti	47	165.7	8.9	**0.3896**	0.046	11.7	ug/L	57	Standard
	V	51	1511.6	6.0	**0.0457**	0.014	31.1	ug/L	1142	Standard
	Cr	52	8164.9	0.8	**0.1892**	0.010	5.5	ug/L	6628	Standard
	Cr	53	1656.8	10.3	**1.3626**	0.187	13.8	ug/L	430	Standard
	Mn	55	17190.1	1.5	**2.7889**	0.065	2.3	ug/L	603	Standard
	Co	59	391.7	5.3	**0.0201**	0.004	18.4	ug/L	237	Standard
	Ni	60	11431.6	1.7	**5.8888**	0.134	2.3	ug/L	141	Standard
	Cu	65	74287.3	0.4	**39.7191**	0.286	0.7	ug/L	109	Standard
	Zn	66	6798.2	0.6	**5.9426**	0.080	1.3	ug/L	159	Standard
>	**Ge**	72	470820.2	0.8				ug/L	474053	Standard
	As	75	23.4	122.6	**0.0464**	0.026	56.6	ug/L	-34	Standard
	Se	82	24.3	11.2	**0.0524**	0.025	47.2	ug/L	14	Standard
	Se-1	77	121.0	4.3	**0.8414**	0.059	7.0	ug/L	55	Standard
>	**Ga**	71	111.7	6.8				mg/L	50	Standard
	Rb	85	8439.0	5.7				ug/L	20	Standard
	Y	89	394979.4	1.5				ug/L	376602	Standard
>	**Rh**	103	30.0	0.0				ug/L	17	Standard
	Mo	98	18900.0	0.6	**7.8902**	0.142	1.8	ug/L	8	Standard
	Ag	107	1050.7	1.6	**0.1614**	0.000	0.2	ug/L	81	Standard
	Cd	111	8.7	19.0	**0.0012**	0.001	76.4	mg/L	3	Standard
	Cd	114	173.0	66.1	**0.0315**	0.023	73.0	ug/L	7	Standard
>	**In**	115	531861.1	1.7				ug/L	524722	Standard
	Sn	118	33005.9	1.3	**5.9570**	0.142	2.4	ug/L	715	Standard
	Sb	123	2285.8	18.9	**0.5027**	0.106	21.1	ug/L	201	Standard
	Ba	135	21266.9	0.9	**11.5188**	0.132	1.1	ug/L	108	Standard
	Ce	140	228.3	16.1				ug/L	30	Standard
>	**Tb**	159	787998.7	1.7				ug/L	792236	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	150.7	22.9	**0.0182**	0.005	26.8	ug/L	9	Standard
	Tl	205	115.0	41.5	**0.0108**	0.008	72.2	ug/L	0	Standard
	Pb	206	32589.3	0.1	**7.3677**	0.062	0.8	ug/L	216	Standard
	Pb	207	27351.7	1.3	**6.7905**	0.113	1.7	ug/L	180	Standard
	Pb	208	116700.7	0.9	**7.1377**	0.028	0.4	ug/L	717	Standard
	U	238	60.7	30.6	**0.0027**	0.003	116.1	ug/L	4	Standard
>	**Bi**	209	437691.5	0.7				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.5017**	8.575	155.9	mg/L	0	Standard
Mg	24	12460.1	1.8	**15.7356**	0.595	3.8	mg/L	20	Standard
K	39	611.7	9.8	**4.1225**	0.361	8.8	mg/L	22	Standard
Ca	43	61.7	24.8	**0.2569**	3.325	1294.5	mg/L	47	Standard
Fe	54	123.9	25.0	**-0.0210**	0.023	110.5	mg/L	151	Standard
Fe	57	213.3	11.8	**-0.0300**	0.077	258.2	mg/L	195	Standard
Sc-1	45	31754.9	2.5				mg/L	29647	Standard
Cl	35	194533.7	1.6				ug/L	154152	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	3240.3	4.0				ug/L	1607	Standard
P	31	24090.8	3.3				ug/L	22752	Standard
S	34	5104.2	4.8				ug/L	5049	Standard
Sr	88	81.7	19.7				ug/L	87	Standard
C	12	96.7	6.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.5	179.6				mg/L	10	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	13282.5	4.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.982	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.318	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.361
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.079
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606042801S WG571964-05
Sample Date/Time: Thursday, June 16, 2016 22:04:34
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55394.4	1.8				ug/L	51024	Standard
	Be	9	8934.3	3.4	**9.7660**	0.194	2.0	ug/L	7	Standard
	Al	27	748355.5	1.6	**4.8346**	0.168	3.5	ug/L	625	Standard
	Sc	45	32691.9	1.0				ug/L	29647	Standard
	Ti	47	168.3	4.0	**0.3836**	0.024	6.2	ug/L	57	Standard
	V	51	72192.1	1.7	**9.7775**	0.188	1.9	ug/L	1142	Standard
	Cr	52	79707.4	0.5	**9.6848**	0.014	0.1	ug/L	6628	Standard
	Cr	53	10453.6	1.1	**10.5826**	0.158	1.5	ug/L	430	Standard
	Mn	55	79152.9	1.5	**12.9343**	0.146	1.1	ug/L	603	Standard
	Co	59	63320.4	0.7	**9.6094**	0.039	0.4	ug/L	237	Standard
	Ni	60	29840.4	0.9	**15.0769**	0.185	1.2	ug/L	141	Standard
	Cu	65	88796.8	0.4	**46.2088**	0.054	0.1	ug/L	109	Standard
	Zn	66	17201.8	0.7	**14.9707**	0.150	1.0	ug/L	159	Standard
>	**Ge**	72	483837.9	0.4				ug/L	474053	Standard
	As	75	10943.5	1.9	**9.7081**	0.171	1.8	ug/L	-34	Standard
	Se	82	1071.8	4.1	**9.3269**	0.380	4.1	ug/L	14	Standard
	Se-1	77	883.4	1.7	**10.5260**	0.205	1.9	ug/L	55	Standard
>	**Ga**	71	61.7	18.7				mg/L	50	Standard
	Rb	85	8238.9	4.0				ug/L	20	Standard
	Y	89	381877.6	0.5				ug/L	376602	Standard
>	**Rh**	103	51.7	55.9				ug/L	17	Standard
	Mo	98	18040.5	0.2	**7.6113**	0.126	1.7	ug/L	8	Standard
	Ag	107	57677.6	1.0	**9.6285**	0.084	0.9	ug/L	81	Standard
	Cd	111	18876.2	0.3	**9.6948**	0.114	1.2	mg/L	3	Standard
	Cd	114	46340.2	1.4	**9.6280**	0.249	2.6	ug/L	7	Standard
>	**In**	115	526253.2	1.5				ug/L	524722	Standard
	Sn	118	29871.1	0.9	**5.4406**	0.094	1.7	ug/L	715	Standard
	Sb	123	44200.6	1.7	**10.0749**	0.023	0.2	ug/L	201	Standard
	Ba	135	37005.8	1.2	**20.2992**	0.061	0.3	ug/L	108	Standard
	Ce	140	223.3	9.3				ug/L	30	Standard
>	**Tb**	159	800388.6	1.7				ug/L	792236	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	71293.7	0.6	**9.5115**	0.043	0.5	ug/L	9	Standard
	Tl	205	61241.9	1.8	**9.6035**	0.196	2.0	ug/L	0	Standard
	Pb	206	76986.8	0.6	**16.9419**	0.160	0.9	ug/L	216	Standard
	Pb	207	66311.8	0.8	**16.0284**	0.098	0.6	ug/L	180	Standard
	Pb	208	275320.9	0.6	**16.3962**	0.155	0.9	ug/L	717	Standard
	U	238	60579.2	0.6	**9.9347**	0.056	0.6	ug/L	4	Standard
>	**Bi**	209	451597.7	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	12333.4	0.5	**15.1192**	0.089	0.6	mg/L	20	Standard
K	39	615.0	5.3	**4.0231**	0.203	5.0	mg/L	22	Standard
Ca	43	28.3	10.2	**-7.1884**	0.556	7.7	mg/L	47	Standard
Fe	54	187.4	26.5	**0.0230**	0.035	154.6	mg/L	151	Standard
Fe	57	198.3	19.1	**-0.0900**	0.107	118.9	mg/L	195	Standard
> **Sc-1**	45	32691.9	1.0				mg/L	29647	Standard
Cl	35	191462.1	0.2				ug/L	154152	Standard
Kr	83	1.7	124.9				ug/L	3	Standard
Br	81	2590.2	10.5				ug/L	1607	Standard
P	31	24189.3	1.6				ug/L	22752	Standard
S	34	5244.2	0.9				ug/L	5049	Standard
Sr	88	83.3	24.2				ug/L	87	Standard
C	12	146.7	23.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	13.3	114.6				mg/L	10	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	0.0					mg/L	3	Standard
I	127	11335.9	2.7				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		108.565	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		102.064	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115	100.292	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209	98.100	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606042801SD WG571964-06
Sample Date/Time: Thursday, June 16, 2016 22:07:46
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56861.5	1.0				ug/L	51024	Standard
	Be	9	9379.6	0.6	**9.9907**	0.123	1.2	ug/L	7	Standard
	Al	27	791197.5	0.6	**4.9782**	0.076	1.5	ug/L	625	Standard
	Sc	45	33405.1	3.0				ug/L	29647	Standard
	Ti	47	189.0	15.7	**0.4621**	0.100	21.6	ug/L	57	Standard
	V	51	73275.8	0.5	**10.1068**	0.150	1.5	ug/L	1142	Standard
	Cr	52	82693.4	0.6	**10.2789**	0.155	1.5	ug/L	6628	Standard
	Cr	53	11009.0	1.3	**11.3764**	0.331	2.9	ug/L	430	Standard
	Mn	55	80077.1	1.3	**13.3217**	0.087	0.6	ug/L	603	Standard
	Co	59	64342.3	1.0	**9.9396**	0.081	0.8	ug/L	237	Standard
	Ni	60	30668.0	0.6	**15.7751**	0.244	1.5	ug/L	141	Standard
	Cu	65	102903.3	0.9	**54.5140**	0.360	0.7	ug/L	109	Standard
	Zn	66	17903.6	1.4	**15.8728**	0.283	1.8	ug/L	159	Standard
>	**Ge**	72	475415.3	1.6				ug/L	474053	Standard
	As	75	11042.5	1.9	**9.9692**	0.144	1.4	ug/L	-34	Standard
	Se	82	1111.2	2.5	**9.8543**	0.398	4.0	ug/L	14	Standard
	Se-1	77	817.4	1.4	**9.8699**	0.196	2.0	ug/L	55	Standard
>	**Ga**	71	86.7	39.3				mg/L	50	Standard
	Rb	85	8222.2	4.2				ug/L	20	Standard
	Y	89	394850.6	0.8				ug/L	376602	Standard
>	**Rh**	103	35.0	28.6				ug/L	17	Standard
	Mo	98	19398.6	1.2	**8.0048**	0.167	2.1	ug/L	8	Standard
	Ag	107	59697.4	0.4	**9.7470**	0.052	0.5	ug/L	81	Standard
	Cd	111	19317.1	0.2	**9.7032**	0.092	0.9	mg/L	3	Standard
	Cd	114	47826.5	0.6	**9.7171**	0.080	0.8	ug/L	7	Standard
>	**In**	115	538049.7	0.9				ug/L	524722	Standard
	Sn	118	39536.5	1.2	**7.0684**	0.038	0.5	ug/L	715	Standard
	Sb	123	45183.1	0.7	**10.0737**	0.100	1.0	ug/L	201	Standard
	Ba	135	43743.7	0.4	**23.4783**	0.172	0.7	ug/L	108	Standard
	Ce	140	316.7	16.7				ug/L	30	Standard
>	**Tb**	159	823661.0	0.7				ug/L	792236	Standard
	Ho	165	16.7	69.3				ug/L	7	Standard
	Tl	203	73870.7	1.0	**9.7275**	0.120	1.2	ug/L	9	Standard
	Tl	205	62943.8	1.2	**9.7425**	0.171	1.8	ug/L	0	Standard
	Pb	206	79783.5	0.3	**17.3303**	0.067	0.4	ug/L	216	Standard
	Pb	207	68152.3	0.6	**16.2608**	0.196	1.2	ug/L	180	Standard
	Pb	208	286237.0	1.1	**16.8270**	0.286	1.7	ug/L	717	Standard
	U	238	62126.1	0.8	**10.0567**	0.149	1.5	ug/L	4	Standard
>	**Bi**	209	457529.8	0.7				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	13005.6	1.2	**15.6137**	0.541	3.5	mg/L	20	Standard
K	39	631.7	11.7	**4.0527**	0.574	14.2	mg/L	22	Standard
Ca	43	45.0	29.4	**-3.9018**	2.447	62.7	mg/L	47	Standard
Fe	54	151.2	21.8	**-0.0055**	0.026	477.7	mg/L	151	Standard
Fe	57	191.7	21.7	**-0.1180**	0.127	107.5	mg/L	195	Standard
> **Sc-1**	45	33405.1	3.0				mg/L	29647	Standard
Cl	35	198754.5	0.5				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	2900.3	3.8				ug/L	1607	Standard
P	31	24661.7	2.9				ug/L	22752	Standard
S	34	5152.5	2.9				ug/L	5049	Standard
Sr	88	78.3	9.8				ug/L	87	Standard
C	12	96.7	43.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.9	187.9				mg/L	10	Standard
Ho-1	165	16.7	69.3				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	11145.8	3.0				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		111.440	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.287	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.540
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.389
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606042801SD WG571964-06
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Method 6020 - Summary Report

Sample ID: L1606041103
Sample Date/Time: Thursday, June 16, 2016 22:10:57
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62574.0	2.3				ug/L	51024	Standard
	Be	9	160.0	11.3	**0.1339**	0.015	11.0	ug/L	7	Standard
	Al	27	3612417.3	0.5	**20.6888**	0.380	1.8	ug/L	625	Standard
	Sc	45	41445.0	4.1				ug/L	29647	Standard
	Ti	47	11430.0	1.2	**38.8931**	0.503	1.3	ug/L	57	Standard
	V	51	49465.6	5.9	**6.9654**	0.407	5.8	ug/L	1142	Standard
	Cr	52	278119.6	1.2	**37.8421**	0.634	1.7	ug/L	6628	Standard
	Cr	53	35835.7	1.3	**39.0973**	0.639	1.6	ug/L	430	Standard
	Mn	55	108739.8	1.1	**18.6585**	0.168	0.9	ug/L	603	Standard
	Co	59	16555.0	2.3	**2.6001**	0.043	1.6	ug/L	237	Standard
	Ni	60	172929.3	0.8	**91.8635**	0.500	0.5	ug/L	141	Standard
	Cu	65	6358.3	3.5	**3.4028**	0.118	3.5	ug/L	109	Standard
	Zn	66	15282.7	1.5	**13.9075**	0.137	1.0	ug/L	159	Standard
>	**Ge**	72	462157.8	0.7				ug/L	474053	Standard
	As	75	708.4	1.9	**0.6813**	0.015	2.2	ug/L	-34	Standard
	Se	82	305.6	0.9	**2.6661**	0.043	1.6	ug/L	14	Standard
	Se-1	77	262.0	4.6	**2.7550**	0.165	6.0	ug/L	55	Standard
>	**Ga**	71	6034.5	4.8				mg/L	50	Standard
	Rb	85	47790.3	0.2				ug/L	20	Standard
	Y	89	408920.9	2.9				ug/L	376602	Standard
>	**Rh**	103	41.7	34.6				ug/L	17	Standard
	Mo	98	2172.6	4.5	**0.8781**	0.030	3.5	ug/L	8	Standard
	Ag	107	219.7	70.0	**0.0229**	0.024	105.6	ug/L	81	Standard
	Cd	111	75.9	34.7	**0.0343**	0.013	36.7	mg/L	3	Standard
	Cd	114	241.8	20.0	**0.0446**	0.009	20.8	ug/L	7	Standard
>	**In**	115	546080.6	1.7				ug/L	524722	Standard
	Sn	118	1300.1	5.7	**0.1424**	0.011	7.6	ug/L	715	Standard
	Sb	123	571.3	25.0	**0.1106**	0.030	26.8	ug/L	201	Standard
	Ba	135	154749.6	0.9	**81.9842**	0.666	0.8	ug/L	108	Standard
	Ce	140	87014.2	1.0				ug/L	30	Standard
>	**Tb**	159	814427.9	0.6				ug/L	792236	Standard
	Ho	165	750.0	9.7				ug/L	7	Standard
	Tl	203	378.3	10.9	**0.0480**	0.006	11.9	ug/L	9	Standard
	Tl	205	368.3	33.6	**0.0501**	0.020	39.4	ug/L	0	Standard
	Pb	206	5985.2	3.5	**1.2661**	0.051	4.1	ug/L	216	Standard
	Pb	207	4992.8	4.4	**1.1580**	0.058	5.0	ug/L	180	Standard
	Pb	208	21391.6	3.3	**1.2214**	0.047	3.9	ug/L	717	Standard
	U	238	1095.4	14.1	**0.1724**	0.026	15.1	ug/L	4	Standard
>	**Bi**	209	451292.0	0.4				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	20841.0	1.9	**20.1926**	1.006	5.0	mg/L	20	Standard
K	39	73.3	37.6	**0.1715**	0.145	84.8	mg/L	22	Standard
Ca	43	58.3	64.9	**-3.6032**	6.066	168.3	mg/L	47	Standard
Fe	54	4110.0	2.2	**2.2769**	0.060	2.6	mg/L	151	Standard
Fe	57	1281.7	3.9	**2.1921**	0.046	2.1	mg/L	195	Standard
> **Sc-1**	45	41445.0	4.1				mg/L	29647	Standard
Cl	35	174319.7	0.6				ug/L	154152	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	22139.5	6.4				ug/L	1607	Standard
P	31	56868.2	1.9				ug/L	22752	Standard
S	34	4735.7	5.8				ug/L	5049	Standard
Sr	88	138.3	8.3				ug/L	87	Standard
C	12	140.0	24.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	71.3				mg/L	0	Standard
Dy	164	1332.7	14.4				mg/L	10	Standard
Ho-1	165	750.0	9.7				mg/L	7	Standard
Er	166	710.0	11.5				mg/L	3	Standard
I	127	202127.9	4.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		122.636	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.491	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	104.070	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.034	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606041104
Sample Date/Time: Thursday, June 16, 2016 22:14:09
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64240.9	1.6				ug/L	51024	Standard
	Be	9	136.7	22.1	**0.1078**	0.027	24.9	ug/L	7	Standard
	Al	27	3763925.2	1.3	**20.9934**	0.276	1.3	ug/L	625	Standard
	Sc	45	40464.0	1.9				ug/L	29647	Standard
	Ti	47	8699.5	0.7	**27.3016**	0.630	2.3	ug/L	57	Standard
	V	51	38467.6	1.3	**4.9573**	0.087	1.7	ug/L	1142	Standard
	Cr	52	284248.5	0.2	**35.6883**	1.177	3.3	ug/L	6628	Standard
	Cr	53	35927.6	2.1	**36.1893**	1.342	3.7	ug/L	430	Standard
	Mn	55	133272.7	1.8	**21.1444**	0.498	2.4	ug/L	603	Standard
	Co	59	18921.1	3.5	**2.7470**	0.050	1.8	ug/L	237	Standard
	Ni	60	221247.9	1.4	**108.5931**	1.677	1.5	ug/L	141	Standard
	Cu	65	5825.8	2.3	**2.8698**	0.029	1.0	ug/L	109	Standard
	Zn	66	12440.8	1.3	**10.4031**	0.253	2.4	ug/L	159	Standard
>	**Ge**	72	500409.8	2.9				ug/L	474053	Standard
	As	75	551.3	12.2	**0.4975**	0.064	12.9	ug/L	-34	Standard
	Se	82	300.3	5.4	**2.4053**	0.175	7.3	ug/L	14	Standard
	Se-1	77	256.7	3.5	**2.4250**	0.195	8.0	ug/L	55	Standard
>	**Ga**	71	4735.7	2.7				mg/L	50	Standard
	Rb	85	38717.8	2.3				ug/L	20	Standard
	Y	89	413643.0	2.8				ug/L	376602	Standard
>	**Rh**	103	26.7	28.6				ug/L	17	Standard
	Mo	98	7867.7	1.9	**3.2136**	0.028	0.9	ug/L	8	Standard
	Ag	107	99.3	12.1	**0.0038**	0.002	50.7	ug/L	81	Standard
	Cd	111	46.8	16.9	**0.0200**	0.004	18.8	mg/L	3	Standard
	Cd	114	206.0	6.6	**0.0377**	0.003	7.1	ug/L	7	Standard
>	**In**	115	542917.1	1.0				ug/L	524722	Standard
	Sn	118	1081.7	2.4	**0.1046**	0.003	3.0	ug/L	715	Standard
	Sb	123	436.3	12.1	**0.0817**	0.011	13.3	ug/L	201	Standard
	Ba	135	146593.2	1.4	**78.1037**	0.328	0.4	ug/L	108	Standard
	Ce	140	75445.7	1.8				ug/L	30	Standard
>	**Tb**	159	801118.6	3.0				ug/L	792236	Standard
	Ho	165	633.3	15.1				ug/L	7	Standard
	Tl	203	300.0	6.5	**0.0378**	0.003	8.4	ug/L	9	Standard
	Tl	205	321.7	21.6	**0.0433**	0.012	28.2	ug/L	0	Standard
	Pb	206	5087.9	2.5	**1.0767**	0.011	1.0	ug/L	216	Standard
	Pb	207	4144.6	1.8	**0.9603**	0.027	2.8	ug/L	180	Standard
	Pb	208	18065.6	1.4	**1.0314**	0.029	2.8	ug/L	717	Standard
	U	238	874.7	4.0	**0.1374**	0.011	7.8	ug/L	4	Standard
>	**Bi**	209	447824.2	3.4				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	22872.3	0.6	**22.6806**	0.473	2.1	mg/L	20	Standard
K	39	35.0	51.5	**-0.0329**	0.100	305.7	mg/L	22	Standard
Ca	43	48.3	31.6	**-4.9013**	2.699	55.1	mg/L	47	Standard
Fe	54	3361.7	4.8	**1.8885**	0.113	6.0	mg/L	151	Standard
Fe	57	1078.4	5.6	**1.8011**	0.173	9.6	mg/L	195	Standard
Sc-1	45	40464.0	1.9				mg/L	29647	Standard
Cl	35	177669.3	2.1				ug/L	154152	Standard
Kr	83	2.3	24.7				ug/L	3	Standard
Br	81	20991.2	6.6				ug/L	1607	Standard
P	31	55948.1	2.2				ug/L	22752	Standard
S	34	4435.6	2.7				ug/L	5049	Standard
Sr	88	156.7	18.7				ug/L	87	Standard
C	12	160.0	47.2				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	0	Standard
Dy	164	1259.3	5.9				mg/L	10	Standard
Ho-1	165	633.3	15.1				mg/L	7	Standard
Er	166	573.3	7.3				mg/L	3	Standard
I	127	221985.7	5.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		125.903	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.560	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.468
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.281
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ni 60 Upper, S, EEE	Ni	60	

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Method 6020 - Summary Report

Sample ID: L1606041104PS WG572085-03
Sample Date/Time: Thursday, June 16, 2016 22:17:20
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68479.5	2.8				ug/L	51024	Standard
	Be	9	53798.7	2.5	**47.6621**	0.433	0.9	ug/L	7	Standard
	Al	27	3774638.8	2.0	**19.7508**	0.180	0.9	ug/L	625	Standard
	Sc	45	41744.1	0.5				ug/L	29647	Standard
	Ti	47	8543.7	1.2	**27.1926**	0.351	1.3	ug/L	57	Standard
	V	51	416323.5	0.8	**56.1020**	0.898	1.6	ug/L	1142	Standard
	Cr	52	661415.5	1.7	**85.4827**	2.467	2.9	ug/L	6628	Standard
	Cr	53	82886.1	1.6	**85.2548**	2.351	2.8	ug/L	430	Standard
	Mn	55	455226.4	0.8	**73.5653**	0.461	0.6	ug/L	603	Standard
	Co	59	356626.6	0.3	**53.2845**	0.717	1.3	ug/L	237	Standard
	Ni	60	319608.9	1.5	**159.1819**	4.226	2.7	ug/L	141	Standard
	Cu	65	101931.1	1.4	**52.0544**	1.323	2.5	ug/L	109	Standard
	Zn	66	69708.7	0.9	**60.2129**	1.260	2.1	ug/L	159	Standard
>	**Ge**	72	493214.1	1.2				ug/L	474053	Standard
	As	75	57487.0	0.2	**49.9285**	0.540	1.1	ug/L	-34	Standard
	Se	82	5945.0	0.7	**51.5039**	0.559	1.1	ug/L	14	Standard
	Se-1	77	4052.2	2.0	**49.9708**	0.414	0.8	ug/L	55	Standard
>	**Ga**	71	4670.7	3.3				mg/L	50	Standard
	Rb	85	37354.3	0.9				ug/L	20	Standard
	Y	89	401490.0	0.7				ug/L	376602	Standard
>	**Rh**	103	51.7	24.4				ug/L	17	Standard
	Mo	98	7837.2	0.6	**3.1623**	0.111	3.5	ug/L	8	Standard
	Ag	107	304891.6	0.9	**48.7677**	0.989	2.0	ug/L	81	Standard
	Cd	111	99959.3	1.1	**49.1537**	1.231	2.5	mg/L	3	Standard
	Cd	114	244744.0	1.6	**48.6729**	0.677	1.4	ug/L	7	Standard
>	**In**	115	549981.7	2.9				ug/L	524722	Standard
	Sn	118	1156.7	4.0	**0.1154**	0.002	1.9	ug/L	715	Standard
	Sb	123	225529.7	0.1	**49.2752**	1.450	2.9	ug/L	201	Standard
	Ba	135	235280.0	1.6	**123.8168**	1.916	1.5	ug/L	108	Standard
	Ce	140	72287.1	1.8				ug/L	30	Standard
>	**Tb**	159	836927.2	1.6				ug/L	792236	Standard
	Ho	165	618.3	2.8				ug/L	7	Standard
	Tl	203	374508.5	1.3	**47.9478**	0.598	1.2	ug/L	9	Standard
	Tl	205	331693.7	1.7	**49.9323**	0.614	1.2	ug/L	0	Standard
	Pb	206	246855.7	0.5	**52.2356**	0.118	0.2	ug/L	216	Standard
	Pb	207	213815.1	0.2	**49.6985**	0.193	0.4	ug/L	180	Standard
	Pb	208	877795.6	1.2	**50.2714**	0.366	0.7	ug/L	717	Standard
	U	238	322334.9	1.2	**50.7465**	0.349	0.7	ug/L	4	Standard
>	**Bi**	209	470679.1	0.5				ug/L	460343	Standard

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Na	23	3.3	173.2	**2.6916**	13.442	499.4	mg/L	0	Standard
Mg	24	22820.5	2.3	**21.9277**	0.463	2.1	mg/L	20	Standard
K	39	55.0	32.8	**0.0700**	0.098	140.3	mg/L	22	Standard
Ca	43	53.3	28.6	**-4.3313**	2.572	59.4	mg/L	47	Standard
Fe	54	3487.5	4.4	**1.8989**	0.090	4.7	mg/L	151	Standard
Fe	57	1048.4	8.2	**1.6588**	0.199	12.0	mg/L	195	Standard
> **Sc-1**	45	41744.1	0.5				mg/L	29647	Standard
Cl	35	171137.1	0.1				ug/L	154152	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	19926.4	2.2				ug/L	1607	Standard
P	31	55093.4	2.6				ug/L	22752	Standard
S	34	4375.6	3.4				ug/L	5049	Standard
Sr	88	146.7	22.7				ug/L	87	Standard
C	12	130.0	35.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	69.3				mg/L	0	Standard
Dy	164	1135.3	6.0				mg/L	10	Standard
Ho-1	165	618.3	2.8				mg/L	7	Standard
Er	166	516.7	11.3				mg/L	3	Standard
I	127	228888.4	2.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		134.210	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.042	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.814
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.245
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ni 60 Upper, S, EEE	Ni	60	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606041104PS WG572085-03
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Method 6020 - Summary Report

Sample ID: L1606041104SDL WG572085-04
Sample Date/Time: Thursday, June 16, 2016 22:20:32
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64080.3	2.7				ug/L	51024	Standard
	Be	9	40.0	12.5	**0.0168**	0.005	27.3	ug/L	7	Standard
	Al	27	710132.3	2.2	**3.9635**	0.097	2.4	ug/L	625	Standard
	Sc	45	34213.6	1.2				ug/L	29647	Standard
	Ti	47	1665.1	3.3	**5.5149**	0.188	3.4	ug/L	57	Standard
	V	51	8406.9	2.7	**1.0425**	0.044	4.3	ug/L	1142	Standard
	Cr	52	60396.1	0.7	**7.4773**	0.032	0.4	ug/L	6628	Standard
	Cr	53	7433.5	0.9	**7.7546**	0.056	0.7	ug/L	430	Standard
	Mn	55	26233.4	1.3	**4.3983**	0.064	1.4	ug/L	603	Standard
	Co	59	3790.1	2.7	**0.5627**	0.022	4.0	ug/L	237	Standard
	Ni	60	42759.9	1.8	**22.6189**	0.287	1.3	ug/L	141	Standard
	Cu	65	1312.1	2.0	**0.6485**	0.012	1.8	ug/L	109	Standard
	Zn	66	4020.5	0.7	**3.4822**	0.054	1.5	ug/L	159	Standard
>	**Ge**	72	462909.1	1.0				ug/L	474053	Standard
	As	75	127.1	1.3	**0.1426**	0.002	1.2	ug/L	-34	Standard
	Se	82	76.1	4.5	**0.5359**	0.031	5.8	ug/L	14	Standard
	Se-1	77	88.7	7.5	**0.4371**	0.078	17.8	ug/L	55	Standard
>	**Ga**	71	933.4	4.3				mg/L	50	Standard
	Rb	85	7380.1	1.8				ug/L	20	Standard
	Y	89	399286.8	1.5				ug/L	376602	Standard
>	**Rh**	103	10.0	50.0				ug/L	17	Standard
	Mo	98	1500.2	2.7	**0.5970**	0.016	2.6	ug/L	8	Standard
	Ag	107	118.7	15.0	**0.0065**	0.003	41.2	ug/L	81	Standard
	Cd	111	28.9	34.9	**0.0109**	0.005	45.1	mg/L	3	Standard
	Cd	114	79.5	41.7	**0.0119**	0.007	55.5	ug/L	7	Standard
>	**In**	115	553072.6	0.8				ug/L	524722	Standard
	Sn	118	576.7	14.8	**0.0122**	0.016	129.0	ug/L	715	Standard
	Sb	123	2178.3	21.1	**0.4589**	0.103	22.5	ug/L	201	Standard
	Ba	135	28213.6	0.4	**14.7104**	0.164	1.1	ug/L	108	Standard
	Ce	140	14325.1	2.6				ug/L	30	Standard
>	**Tb**	159	808125.3	1.3				ug/L	792236	Standard
	Ho	165	128.3	18.0				ug/L	7	Standard
	Tl	203	157.0	14.8	**0.0183**	0.003	16.5	ug/L	9	Standard
	Tl	205	128.3	27.4	**0.0122**	0.005	43.6	ug/L	0	Standard
	Pb	206	1207.7	4.1	**0.2094**	0.008	3.9	ug/L	216	Standard
	Pb	207	969.0	2.2	**0.1805**	0.006	3.4	ug/L	180	Standard
	Pb	208	4243.2	2.0	**0.1949**	0.007	3.7	ug/L	717	Standard
	U	238	239.0	4.0	**0.0315**	0.002	6.6	ug/L	4	Standard
>	**Bi**	209	453005.7	1.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	4389.0	3.6	**5.1101**	0.132	2.6	mg/L	20	Standard
K	39	13.3	78.1	**-0.1402**	0.068	48.2	mg/L	22	Standard
Ca	43	36.7	43.8	**-5.7822**	3.171	54.8	mg/L	47	Standard
Fe	54	812.9	7.6	**0.4581**	0.050	11.0	mg/L	151	Standard
Fe	57	373.3	8.7	**0.3544**	0.083	23.5	mg/L	195	Standard
> **Sc-1**	45	34213.6	1.2				mg/L	29647	Standard
Cl	35	155114.0	1.0				ug/L	154152	Standard
Kr	83	1.3	114.6				ug/L	3	Standard
Br	81	5447.6	5.1				ug/L	1607	Standard
P	31	29535.4	3.0				ug/L	22752	Standard
S	34	4345.6	4.1				ug/L	5049	Standard
Sr	88	98.3	16.3				ug/L	87	Standard
C	12	66.7	69.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	223.5	3.8				mg/L	10	Standard
Ho-1	165	128.3	18.0				mg/L	7	Standard
Er	166	136.7	22.4				mg/L	3	Standard
I	127	47285.3	1.6				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		125.588	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.649	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	105.403
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.406
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606041104SDL WG572085-04
Sample Date/Time: Thursday, June 16, 2016 22:23:43
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60699.7	1.4				ug/L	51024	Standard
	Be	9	26.7	65.8	**0.0056**	0.018	312.0	ug/L	7	Standard
	Al	27	141309.4	1.9	**0.8247**	0.016	2.0	ug/L	625	Standard
	Sc	45	31491.0	2.2				ug/L	29647	Standard
	Ti	47	381.3	5.6	**1.1251**	0.055	4.9	ug/L	57	Standard
	V	51	2585.2	5.7	**0.2016**	0.028	14.1	ug/L	1142	Standard
	Cr	52	17170.4	0.5	**1.4445**	0.049	3.4	ug/L	6628	Standard
	Cr	53	1966.8	5.0	**1.7199**	0.140	8.1	ug/L	430	Standard
	Mn	55	5874.1	1.6	**0.8794**	0.018	2.1	ug/L	603	Standard
	Co	59	918.7	1.3	**0.1040**	0.001	1.4	ug/L	237	Standard
	Ni	60	8671.8	1.0	**4.4921**	0.067	1.5	ug/L	141	Standard
	Cu	65	375.3	1.5	**0.1368**	0.002	1.4	ug/L	109	Standard
	Zn	66	1553.7	2.6	**1.1927**	0.020	1.7	ug/L	159	Standard
>	**Ge**	72	466371.9	2.3				ug/L	474053	Standard
	As	75	-6.1	252.7	**0.0197**	0.014	72.2	ug/L	-34	Standard
	Se	82	31.9	14.9	**0.1250**	0.051	40.6	ug/L	14	Standard
	Se-1	77	67.3	8.6	**0.1479**	0.098	66.2	ug/L	55	Standard
>	**Ga**	71	236.7	12.4				mg/L	50	Standard
	Rb	85	1530.1	6.8				ug/L	20	Standard
	Y	89	398351.9	2.2				ug/L	376602	Standard
>	**Rh**	103	20.0	90.1				ug/L	17	Standard
	Mo	98	309.3	4.7	**0.1235**	0.007	5.8	ug/L	8	Standard
	Ag	107	82.7	3.5	**0.0013**	0.000	30.9	ug/L	81	Standard
	Cd	111	8.8	17.3	**0.0012**	0.001	68.5	mg/L	3	Standard
	Cd	114	33.8	15.5	**0.0031**	0.001	31.5	ug/L	7	Standard
>	**In**	115	532767.1	1.5				ug/L	524722	Standard
	Sn	118	478.3	5.3	**-0.0020**	0.004	179.1	ug/L	715	Standard
	Sb	123	535.3	25.6	**0.1062**	0.033	30.9	ug/L	201	Standard
	Ba	135	5770.1	0.9	**3.0781**	0.059	1.9	ug/L	108	Standard
	Ce	140	2811.9	5.2				ug/L	30	Standard
>	**Tb**	159	784308.2	0.8				ug/L	792236	Standard
	Ho	165	41.7	18.3				ug/L	7	Standard
	Tl	203	52.7	23.4	**0.0046**	0.002	36.5	ug/L	9	Standard
	Tl	205	35.0	14.3	**-0.0022**	0.001	34.5	ug/L	0	Standard
	Pb	206	411.7	5.6	**0.0360**	0.005	12.9	ug/L	216	Standard
	Pb	207	350.0	3.5	**0.0324**	0.003	8.3	ug/L	180	Standard
	Pb	208	1486.7	0.5	**0.0323**	0.001	2.8	ug/L	717	Standard
	U	238	58.7	16.8	**0.0022**	0.002	75.4	ug/L	4	Standard
>	**Bi**	209	444600.9	0.5				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.3313**	8.870	166.4	mg/L	0	Standard
Mg	24	840.0	10.8	**1.0281**	0.127	12.3	mg/L	20	Standard
K	39	15.0	88.2	**-0.1198**	0.096	80.2	mg/L	22	Standard
Ca	43	18.3	83.3	**-9.1765**	3.343	36.4	mg/L	47	Standard
Fe	54	272.4	14.1	**0.0939**	0.032	34.1	mg/L	151	Standard
Fe	57	256.7	4.9	**0.1011**	0.032	31.4	mg/L	195	Standard
> **Sc-1**	45	31491.0	2.2				mg/L	29647	Standard
Cl	35	151247.9	1.3				ug/L	154152	Standard
Kr	83	3.3	69.3				ug/L	3	Standard
Br	81	2453.5	11.0				ug/L	1607	Standard
P	31	23077.6	3.5				ug/L	22752	Standard
S	34	4429.0	4.8				ug/L	5049	Standard
Sr	88	73.3	21.9				ug/L	87	Standard
C	12	63.3	24.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	47.6	24.3				mg/L	10	Standard
Ho-1	165	41.7	18.3				mg/L	7	Standard
Er	166	50.0	91.7				mg/L	3	Standard
I	127	10970.6	2.1				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.963	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.380	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.533
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.580
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 22:26:56
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59001.4	3.1				ug/L	51024	Standard
	Be	9	47251.9	1.9	**48.5958**	0.632	1.3	ug/L	7	Standard
	Al	27	7707900.4	0.6	**46.8442**	1.367	2.9	ug/L	625	Standard
	Sc	45	32042.2	2.5				ug/L	29647	Standard
	Ti	47	31108.6	0.8	**106.3533**	1.301	1.2	ug/L	57	Standard
	V	51	354930.5	0.4	**51.1260**	0.515	1.0	ug/L	1142	Standard
	Cr	52	373996.6	0.2	**51.3100**	0.429	0.8	ug/L	6628	Standard
	Cr	53	46528.0	1.9	**50.9890**	0.660	1.3	ug/L	430	Standard
	Mn	55	313560.0	0.4	**54.1496**	0.181	0.3	ug/L	603	Standard
	Co	59	324218.3	1.5	**51.7917**	0.391	0.8	ug/L	237	Standard
	Ni	60	95070.0	1.4	**50.5665**	0.352	0.7	ug/L	141	Standard
	Cu	65	93181.7	1.5	**50.8709**	0.430	0.8	ug/L	109	Standard
	Zn	66	54868.9	1.6	**50.6327**	0.507	1.0	ug/L	159	Standard
>	**Ge**	72	461242.2	0.7				ug/L	474053	Standard
	As	75	53786.6	0.6	**49.9506**	0.524	1.0	ug/L	-34	Standard
	Se	82	5398.5	1.3	**50.0080**	1.035	2.1	ug/L	14	Standard
	Se-1	77	3763.8	1.7	**49.6296**	0.770	1.6	ug/L	55	Standard
>	**Ga**	71	83.3	29.6				mg/L	50	Standard
	Rb	85	758.4	8.6				ug/L	20	Standard
	Y	89	392635.2	3.0				ug/L	376602	Standard
>	**Rh**	103	40.0	45.1				ug/L	17	Standard
	Mo	98	239363.5	0.3	**97.9544**	0.320	0.3	ug/L	8	Standard
	Ag	107	297613.5	1.2	**48.2150**	0.880	1.8	ug/L	81	Standard
	Cd	111	96257.9	0.7	**47.9363**	0.352	0.7	mg/L	3	Standard
	Cd	114	237569.3	0.8	**47.8568**	0.430	0.9	ug/L	7	Standard
>	**In**	115	542829.4	0.6				ug/L	524722	Standard
	Sn	118	271504.8	1.8	**48.6303**	0.573	1.2	ug/L	715	Standard
	Sb	123	221602.7	1.2	**49.0302**	0.874	1.8	ug/L	201	Standard
	Ba	135	89759.4	0.9	**47.8096**	0.296	0.6	ug/L	108	Standard
	Ce	140	83.3	15.1				ug/L	30	Standard
>	**Tb**	159	805068.8	1.3				ug/L	792236	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	366179.1	0.5	**49.0753**	0.770	1.6	ug/L	9	Standard
	Tl	205	320780.3	0.9	**50.5527**	0.981	1.9	ug/L	0	Standard
	Pb	206	226792.4	0.6	**50.2313**	0.545	1.1	ug/L	216	Standard
	Pb	207	206205.4	0.5	**50.1728**	0.804	1.6	ug/L	180	Standard
	Pb	208	828355.0	0.6	**49.6609**	0.844	1.7	ug/L	717	Standard
	U	238	311232.5	0.6	**51.2945**	0.952	1.9	ug/L	4	Standard
>	**Bi**	209	449694.2	1.3				ug/L	460343	Standard

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Na	23	3.3	173.2	**0.2298**	17.706	7704.3	mg/L	0	Standard
Mg	24	4013.9	1.6	**4.9932**	0.201	4.0	mg/L	20	Standard
K	39	691.7	2.2	**4.6523**	0.139	3.0	mg/L	22	Standard
Ca	43	66.7	18.9	**1.1897**	2.387	200.6	mg/L	47	Standard
Fe	54	5963.7	3.1	**4.3749**	0.232	5.3	mg/L	151	Standard
Fe	57	1775.1	6.5	**4.4411**	0.377	8.5	mg/L	195	Standard
Sc-1	45	32042.2	2.5				mg/L	29647	Standard
Cl	35	154194.0	0.8				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	1553.4	2.0				ug/L	1607	Standard
P	31	22800.5	1.3				ug/L	22752	Standard
S	34	4925.8	3.9				ug/L	5049	Standard
Sr	88	71.7	8.1				ug/L	87	Standard
C	12	50.0	40.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.7	108.3				mg/L	10	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	3	Standard
I	127	1866.8	9.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	97.192		
Al	27	93.688		
Sc	45			
Ti	47	106.353		
V	51	102.252		
Cr	52	102.620		
Cr	53			
Mn	55	108.299		
Co	59	103.583		
Ni	60	101.133		
Cu	65	101.742		
Zn	66	101.265		
Ge	72		97.298	
As	75	99.901		
Se	82	100.016		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	97.954		
Ag	107	96.430		
Cd	111	95.873		
Cd	114			
> In	115		103.451	
Sn	118	97.261		
Sb	123	98.060		
Ba	135	95.619		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.151		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.322		
U	238	102.589		
> Bi	209		97.687	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 22:30:07
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57406.9	2.2				ug/L	51024	Standard
	Be	9	13.3	86.6	**-0.0071**	0.012	172.1	ug/L	7	Standard
	Al	27	1425.1	26.0	**-0.0009**	0.002	242.5	ug/L	625	Standard
	Sc	45	31355.8	2.5				ug/L	29647	Standard
	Ti	47	24.7	20.0	**-0.0813**	0.017	20.7	ug/L	57	Standard
	V	51	1120.2	2.3	**-0.0061**	0.006	100.1	ug/L	1142	Standard
	Cr	52	6392.0	0.4	**-0.0333**	0.015	44.8	ug/L	6628	Standard
	Cr	53	548.3	18.8	**0.1770**	0.124	70.1	ug/L	430	Standard
	Mn	55	724.0	4.6	**-0.0007**	0.008	1032.9	ug/L	603	Standard
	Co	59	242.7	2.3	**-0.0024**	0.000	19.9	ug/L	237	Standard
	Ni	60	130.3	12.7	**-0.0081**	0.010	124.4	ug/L	141	Standard
	Cu	65	128.7	7.9	**0.0044**	0.007	154.7	ug/L	109	Standard
	Zn	66	153.3	8.3	**-0.0894**	0.013	14.8	ug/L	159	Standard
>	**Ge**	72	460344.2	1.9				ug/L	474053	Standard
	As	75	-26.8	68.7	**0.0000**	0.017	51664.1	ug/L	-34	Standard
	Se	82	13.1	41.0	**-0.0473**	0.049	102.7	ug/L	14	Standard
	Se-1	77	56.7	10.8	**0.0148**	0.078	525.1	ug/L	55	Standard
>	**Ga**	71	50.0	36.1				mg/L	50	Standard
	Rb	85	33.3	8.7				ug/L	20	Standard
	Y	89	391660.9	0.1				ug/L	376602	Standard
>	**Rh**	103	21.7	58.1				ug/L	17	Standard
	Mo	98	296.5	33.7	**0.1177**	0.040	33.6	ug/L	8	Standard
	Ag	107	114.3	9.9	**0.0065**	0.002	24.1	ug/L	81	Standard
	Cd	111	13.8	22.3	**0.0038**	0.001	39.2	mg/L	3	Standard
	Cd	114	58.6	51.2	**0.0082**	0.006	72.9	ug/L	7	Standard
>	**In**	115	532413.4	1.7				ug/L	524722	Standard
	Sn	118	798.4	13.3	**0.0568**	0.021	36.2	ug/L	715	Standard
	Sb	123	522.7	25.9	**0.1035**	0.032	31.2	ug/L	201	Standard
	Ba	135	112.0	12.3	**0.0031**	0.006	206.8	ug/L	108	Standard
	Ce	140	18.3	63.0				ug/L	30	Standard
>	**Tb**	159	782152.3	0.6				ug/L	792236	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	55.3	28.1	**0.0050**	0.002	40.9	ug/L	9	Standard
	Tl	205	48.3	6.0	**-0.0000**	0.000	944.3	ug/L	0	Standard
	Pb	206	239.7	3.4	**-0.0020**	0.002	107.0	ug/L	216	Standard
	Pb	207	204.0	6.9	**-0.0031**	0.003	92.9	ug/L	180	Standard
	Pb	208	866.0	6.6	**-0.0048**	0.003	59.0	ug/L	717	Standard
	U	238	38.3	34.4	**-0.0011**	0.002	189.9	ug/L	4	Standard
>	**Bi**	209	440050.2	1.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	41.7	6.9	**0.0082**	0.003	39.8	mg/L	20	Standard
K	39	13.3	21.7	**-0.1321**	0.019	14.2	mg/L	22	Standard
Ca	43	21.7	53.3	**-8.4223**	2.469	29.3	mg/L	47	Standard
Fe	54	134.4	12.8	**-0.0117**	0.012	103.5	mg/L	151	Standard
Fe	57	178.3	16.9	**-0.1234**	0.101	82.1	mg/L	195	Standard
Sc-1	45	31355.8	2.5				mg/L	29647	Standard
Cl	35	154796.2	1.9				ug/L	154152	Standard
Kr	83	1.3	86.6				ug/L	3	Standard
Br	81	1420.1	12.0				ug/L	1607	Standard
P	31	23807.0	1.6				ug/L	22752	Standard
S	34	4767.4	2.9				ug/L	5049	Standard
Sr	88	76.7	22.9				ug/L	87	Standard
C	12	50.0	60.0				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	6.5	179.6				mg/L	10	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	1236.7	11.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.108	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.466
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.592
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW 41 WG571834-02
Sample Date/Time: Thursday, June 16, 2016 22:33:20
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57729.8	2.4				ug/L	51024	Standard
	Be	9	15.0	66.7	**-0.0052**	0.011	207.3	ug/L	7	Standard
	Al	27	10453.6	1.9	**0.0552**	0.003	5.0	ug/L	625	Standard
	Sc	45	33299.9	2.5				ug/L	29647	Standard
	Ti	47	35.7	25.1	**-0.0492**	0.028	57.5	ug/L	57	Standard
	V	51	1262.4	5.5	**0.0063**	0.008	133.6	ug/L	1142	Standard
	Cr	52	7466.2	1.6	**0.0706**	0.026	36.2	ug/L	6628	Standard
	Cr	53	643.3	12.9	**0.2497**	0.092	36.8	ug/L	430	Standard
	Mn	55	1616.1	2.8	**0.1414**	0.004	2.6	ug/L	603	Standard
	Co	59	253.0	6.6	**-0.0025**	0.002	79.5	ug/L	237	Standard
	Ni	60	378.3	5.2	**0.1151**	0.008	6.8	ug/L	141	Standard
	Cu	65	209.0	6.0	**0.0433**	0.007	15.3	ug/L	109	Standard
	Zn	66	1638.4	1.5	**1.2227**	0.044	3.6	ug/L	159	Standard
>	**Ge**	72	481770.3	1.5				ug/L	474053	Standard
	As	75	-7.3	61.8	**0.0186**	0.004	21.3	ug/L	-34	Standard
	Se	82	21.7	38.5	**0.0252**	0.078	309.4	ug/L	14	Standard
	Se-1	77	49.7	10.3	**-0.1081**	0.069	63.9	ug/L	55	Standard
>	**Ga**	71	81.7	19.7				mg/L	50	Standard
	Rb	85	50.0	17.3				ug/L	20	Standard
	Y	89	391456.0	1.0				ug/L	376602	Standard
>	**Rh**	103	15.0	33.3				ug/L	17	Standard
	Mo	98	98.4	20.8	**0.0355**	0.009	26.7	ug/L	8	Standard
	Ag	107	94.7	3.7	**0.0032**	0.001	16.1	ug/L	81	Standard
	Cd	111	15.5	31.8	**0.0046**	0.003	57.0	mg/L	3	Standard
	Cd	114	31.0	41.6	**0.0025**	0.003	104.4	ug/L	7	Standard
>	**In**	115	534892.9	2.4				ug/L	524722	Standard
	Sn	118	895.0	10.2	**0.0734**	0.014	18.9	ug/L	715	Standard
	Sb	123	243.3	24.4	**0.0397**	0.012	30.7	ug/L	201	Standard
	Ba	135	132.3	7.6	**0.0140**	0.006	42.8	ug/L	108	Standard
	Ce	140	126.7	2.3				ug/L	30	Standard
>	**Tb**	159	808648.5	2.5				ug/L	792236	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	39.3	24.7	**0.0026**	0.001	49.6	ug/L	9	Standard
	Tl	205	40.0	50.0	**-0.0017**	0.003	183.3	ug/L	0	Standard
	Pb	206	250.7	8.4	**-0.0022**	0.005	210.3	ug/L	216	Standard
	Pb	207	220.7	4.6	**-0.0015**	0.003	191.8	ug/L	180	Standard
	Pb	208	931.3	4.0	**-0.0035**	0.003	80.4	ug/L	717	Standard
	U	238	32.0	46.7	**-0.0024**	0.002	99.2	ug/L	4	Standard
>	**Bi**	209	461825.2	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	43.3	46.6	**0.0073**	0.026	347.9	mg/L	20	Standard
K	39	21.7	35.3	**-0.0805**	0.053	65.7	mg/L	22	Standard
Ca	43	33.3	31.2	**-6.2262**	2.322	37.3	mg/L	47	Standard
Fe	54	132.8	30.7	**-0.0183**	0.032	174.0	mg/L	151	Standard
Fe	57	186.7	24.3	**-0.1330**	0.122	92.1	mg/L	195	Standard
Sc-1	45	33299.9	2.5				mg/L	29647	Standard
Cl	35	150658.7	1.1				ug/L	154152	Standard
Kr	83	2.3	24.7				ug/L	3	Standard
Br	81	2026.8	3.8				ug/L	1607	Standard
P	31	21810.7	2.4				ug/L	22752	Standard
S	34	4620.7	1.9				ug/L	5049	Standard
Sr	88	70.0	14.3				ug/L	87	Standard
C	12	86.7	40.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.2	111.3				mg/L	10	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	3	Standard
I	127	2880.3	5.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.142	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.628	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.938
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.322
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: LCSW 41 WG571834-03
Sample Date/Time: Thursday, June 16, 2016 22:36:32
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58134.7	1.4				ug/L	51024	Standard
	Be	9	47481.0	1.2	**49.5549**	1.040	2.1	ug/L	7	Standard
	Al	27	11848.2	29.8	**0.0633**	0.022	34.2	ug/L	625	Standard
	Sc	45	33760.9	2.8				ug/L	29647	Standard
	Ti	47	60.7	19.3	**0.0386**	0.038	99.0	ug/L	57	Standard
	V	51	364743.8	0.9	**51.7833**	1.598	3.1	ug/L	1142	Standard
	Cr	52	384565.8	0.9	**52.0063**	1.376	2.6	ug/L	6628	Standard
	Cr	53	46865.7	2.2	**50.6129**	1.593	3.1	ug/L	430	Standard
	Mn	55	323505.6	0.5	**55.0551**	1.092	2.0	ug/L	603	Standard
	Co	59	330925.6	0.6	**52.1042**	1.547	3.0	ug/L	237	Standard
	Ni	60	98420.3	0.4	**51.5920**	1.168	2.3	ug/L	141	Standard
	Cu	65	96735.2	0.8	**52.0474**	1.195	2.3	ug/L	109	Standard
	Zn	66	60428.3	1.1	**54.9708**	1.052	1.9	ug/L	159	Standard
>	**Ge**	72	468206.5	2.5				ug/L	474053	Standard
	As	75	53251.7	1.1	**48.7274**	0.650	1.3	ug/L	-34	Standard
	Se	82	5558.2	1.1	**50.7386**	1.287	2.5	ug/L	14	Standard
	Se-1	77	3779.1	1.8	**49.0879**	0.350	0.7	ug/L	55	Standard
>	**Ga**	71	95.0	5.3				mg/L	50	Standard
	Rb	85	148.3	20.6				ug/L	20	Standard
	Y	89	410210.7	3.1				ug/L	376602	Standard
>	**Rh**	103	26.7	28.6				ug/L	17	Standard
	Mo	98	76.7	14.4	**0.0250**	0.004	16.4	ug/L	8	Standard
	Ag	107	306600.5	0.9	**48.2949**	0.124	0.3	ug/L	81	Standard
	Cd	111	98706.0	0.5	**47.7973**	0.198	0.4	mg/L	3	Standard
	Cd	114	240379.3	1.1	**47.0837**	0.284	0.6	ug/L	7	Standard
>	**In**	115	558260.1	0.9				ug/L	524722	Standard
	Sn	118	793.4	5.7	**0.0490**	0.008	17.0	ug/L	715	Standard
	Sb	123	217861.1	1.5	**46.8696**	0.887	1.9	ug/L	201	Standard
	Ba	135	91054.1	0.9	**47.1604**	0.551	1.2	ug/L	108	Standard
	Ce	140	330.0	6.6				ug/L	30	Standard
>	**Tb**	159	829912.3	0.8				ug/L	792236	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	372803.8	0.5	**48.2082**	0.596	1.2	ug/L	9	Standard
	Tl	205	323995.9	0.8	**49.2672**	0.912	1.9	ug/L	0	Standard
	Pb	206	236745.0	0.6	**50.5944**	0.255	0.5	ug/L	216	Standard
	Pb	207	206177.7	0.9	**48.4046**	0.929	1.9	ug/L	180	Standard
	Pb	208	859668.8	0.2	**49.7270**	0.479	1.0	ug/L	717	Standard
	U	238	310255.0	0.3	**49.3362**	0.627	1.3	ug/L	4	Standard
>	**Bi**	209	466041.0	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	161.7	12.9	**0.1477**	0.029	19.8	mg/L	20	Standard
K	39	16.7	17.3	**-0.1160**	0.022	19.3	mg/L	22	Standard
Ca	43	33.3	31.2	**-6.3847**	1.928	30.2	mg/L	47	Standard
Fe	54	164.9	14.3	**0.0027**	0.015	570.4	mg/L	151	Standard
Fe	57	196.7	21.3	**-0.1103**	0.128	116.3	mg/L	195	Standard
Sc-1	45	33760.9	2.8				mg/L	29647	Standard
Cl	35	149762.7	1.8				ug/L	154152	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	1560.1	10.1				ug/L	1607	Standard
P	31	22984.1	3.6				ug/L	22752	Standard
S	34	4315.6	2.6				ug/L	5049	Standard
Sr	88	53.3	28.6				ug/L	87	Standard
C	12	83.3	18.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	5.9	86.7				mg/L	10	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	16.7	91.7				mg/L	3	Standard
I	127	1323.4	9.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		113.936	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.767	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.392
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.238
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606033702 WG571834-01
Sample Date/Time: Thursday, June 16, 2016 22:39:43
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64441.8	2.3				ug/L	51024	Standard
	Be	9	20.0	25.0	**-0.0022**	0.005	232.0	ug/L	7	Standard
	Al	27	60114.2	4.5	**0.3246**	0.014	4.3	ug/L	625	Standard
	Sc	45	31512.8	4.2				ug/L	29647	Standard
	Ti	47	128.0	6.2	**0.2921**	0.031	10.5	ug/L	57	Standard
	V	51	53503.8	0.8	**7.9103**	0.048	0.6	ug/L	1142	Standard
	Cr	52	15505.3	1.8	**1.3346**	0.030	2.3	ug/L	6628	Standard
	Cr	53	2881.9	1.2	**2.8964**	0.027	0.9	ug/L	430	Standard
	Mn	55	1707.4	4.0	**0.1824**	0.014	7.5	ug/L	603	Standard
	Co	59	1839.8	1.0	**0.2661**	0.003	1.0	ug/L	237	Standard
	Ni	60	5162.5	5.3	**2.7953**	0.140	5.0	ug/L	141	Standard
	Cu	65	169344.1	2.3	**96.6524**	1.757	1.8	ug/L	109	Standard
	Zn	66	2344.5	2.7	**2.0388**	0.050	2.4	ug/L	159	Standard
>	**Ge**	72	441453.2	0.5				ug/L	474053	Standard
	As	75	1218.2	9.1	**1.2061**	0.101	8.4	ug/L	-34	Standard
	Se	82	116.0	12.5	**0.9573**	0.138	14.4	ug/L	14	Standard
	Se-1	77	201.7	7.0	**2.0760**	0.211	10.2	ug/L	55	Standard
>	**Ga**	71	926.7	11.5				mg/L	50	Standard
	Rb	85	12571.9	3.7				ug/L	20	Standard
	Y	89	399117.1	1.0				ug/L	376602	Standard
>	**Rh**	103	173.3	1.7				ug/L	17	Standard
	Mo	98	29352.9	0.6	**12.3636**	0.369	3.0	ug/L	8	Standard
	Ag	107	149.7	54.9	**0.0129**	0.015	112.8	ug/L	81	Standard
	Cd	111	24.8	238.3	**0.0100**	0.031	310.7	mg/L	3	Standard
	Cd	114	161.6	48.9	**0.0300**	0.017	58.2	ug/L	7	Standard
>	**In**	115	527437.4	2.5				ug/L	524722	Standard
	Sn	118	1430.1	3.9	**0.1747**	0.010	5.4	ug/L	715	Standard
	Sb	123	2404.5	19.4	**0.5345**	0.118	22.0	ug/L	201	Standard
	Ba	135	29634.3	0.9	**16.2125**	0.353	2.2	ug/L	108	Standard
	Ce	140	185.0	4.7				ug/L	30	Standard
>	**Tb**	159	786743.9	2.6				ug/L	792236	Standard
	Ho	165	16.7	105.4				ug/L	7	Standard
	Tl	203	226.3	39.8	**0.0295**	0.013	45.5	ug/L	9	Standard
	Tl	205	155.0	25.2	**0.0180**	0.007	37.6	ug/L	0	Standard
	Pb	206	685.3	11.7	**0.1039**	0.021	20.6	ug/L	216	Standard
	Pb	207	574.0	3.7	**0.0935**	0.008	8.7	ug/L	180	Standard
	Pb	208	2394.4	2.6	**0.0935**	0.004	4.7	ug/L	717	Standard
	U	238	81.3	17.9	**0.0066**	0.003	42.7	ug/L	4	Standard
>	**Bi**	209	426956.6	1.8				ug/L	460343	Standard

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Na	23	5.0	100.0	**-4.6650**	15.246	326.8	mg/L	0	Standard
Mg	24	23326.3	4.3	**29.7226**	1.184	4.0	mg/L	20	Standard
K	39	571.7	12.7	**3.8838**	0.629	16.2	mg/L	22	Standard
Ca	43	926.7	6.8	**191.1093**	22.294	11.7	mg/L	47	Standard
Fe	54	142.0	8.4	**-0.0064**	0.005	79.6	mg/L	151	Standard
Fe	57	988.4	6.7	**2.2303**	0.090	4.0	mg/L	195	Standard
> **Sc-1**	45	31512.8	4.2				mg/L	29647	Standard
Cl	35	486390.1	1.5				ug/L	154152	Standard
Kr	83	3.0	33.3				ug/L	3	Standard
Br	81	9422.9	2.9				ug/L	1607	Standard
P	31	23089.2	1.2				ug/L	22752	Standard
S	34	5072.5	3.6				ug/L	5049	Standard
Sr	88	663.3	3.8				ug/L	87	Standard
C	12	73.3	41.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	0	Standard
Dy	164	22.4	24.2				mg/L	10	Standard
Ho-1	165	16.7	105.4				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	3	Standard
I	127	47469.3	4.2				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		126.297	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		93.123	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.518	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	92.748	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606033702S WG571834-04
Sample Date/Time: Thursday, June 16, 2016 22:42:54
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68019.0	1.4				ug/L	51024	Standard
	Be	9	52452.3	2.6	**46.7932**	1.722	3.7	ug/L	7	Standard
	Al	27	59786.1	1.3	**0.3053**	0.006	2.1	ug/L	625	Standard
	Sc	45	30205.1	3.4				ug/L	29647	Standard
	Ti	47	100.0	14.5	**0.1859**	0.054	29.0	ug/L	57	Standard
	V	51	400824.3	1.2	**59.3044**	1.295	2.2	ug/L	1142	Standard
	Cr	52	361100.0	0.4	**50.8503**	0.412	0.8	ug/L	6628	Standard
	Cr	53	45675.4	2.3	**51.3868**	0.642	1.2	ug/L	430	Standard
	Mn	55	307080.3	1.9	**54.4520**	1.620	3.0	ug/L	603	Standard
	Co	59	323604.2	1.1	**53.0793**	1.177	2.2	ug/L	237	Standard
	Ni	60	93445.6	0.1	**51.0299**	0.526	1.0	ug/L	141	Standard
	Cu	65	247263.6	0.1	**138.7095**	1.722	1.2	ug/L	109	Standard
	Zn	66	54519.2	0.7	**51.6612**	0.952	1.8	ug/L	159	Standard
>	**Ge**	72	449299.9	1.1				ug/L	474053	Standard
	As	75	56719.6	0.9	**54.0778**	1.049	1.9	ug/L	-34	Standard
	Se	82	5785.5	2.0	**55.0413**	1.675	3.0	ug/L	14	Standard
	Se-1	77	3927.8	1.2	**53.2304**	1.135	2.1	ug/L	55	Standard
>	**Ga**	71	895.0	4.4				mg/L	50	Standard
	Rb	85	12290.0	5.9				ug/L	20	Standard
	Y	89	386361.5	1.5				ug/L	376602	Standard
>	**Rh**	103	176.7	6.5				ug/L	17	Standard
	Mo	98	28613.4	1.5	**12.4123**	0.434	3.5	ug/L	8	Standard
	Ag	107	279613.9	0.6	**48.0280**	1.230	2.6	ug/L	81	Standard
	Cd	111	93716.1	1.7	**49.4705**	0.238	0.5	mg/L	3	Standard
	Cd	114	229714.0	2.7	**49.0468**	0.741	1.5	ug/L	7	Standard
>	**In**	115	512129.2	2.1				ug/L	524722	Standard
	Sn	118	1266.7	5.0	**0.1514**	0.007	4.6	ug/L	715	Standard
	Sb	123	219270.1	0.1	**51.4357**	1.142	2.2	ug/L	201	Standard
	Ba	135	113634.2	0.4	**64.1909**	1.164	1.8	ug/L	108	Standard
	Ce	140	183.3	35.2				ug/L	30	Standard
>	**Tb**	159	767306.4	2.1				ug/L	792236	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	352266.3	0.4	**50.2886**	0.147	0.3	ug/L	9	Standard
	Tl	205	319230.0	1.5	**53.5879**	0.832	1.6	ug/L	0	Standard
	Pb	206	230082.1	0.2	**54.2895**	0.055	0.1	ug/L	216	Standard
	Pb	207	199935.5	0.5	**51.8202**	0.151	0.3	ug/L	180	Standard
	Pb	208	828887.7	1.4	**52.9349**	0.572	1.1	ug/L	717	Standard
	U	238	314710.8	1.3	**55.2472**	0.560	1.0	ug/L	4	Standard
>	**Bi**	209	422116.6	0.3				ug/L	460343	Standard

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Na	23	8.3	34.6	**-16.4613**	9.729	59.1	mg/L	0	Standard
Mg	24	22338.1	2.7	**29.6923**	0.787	2.7	mg/L	20	Standard
K	39	545.0	6.6	**3.8545**	0.326	8.5	mg/L	22	Standard
Ca	43	843.4	10.1	**180.3649**	20.489	11.4	mg/L	47	Standard
Fe	54	148.7	22.1	**0.0032**	0.023	711.1	mg/L	151	Standard
Fe	57	781.7	6.7	**1.7339**	0.242	13.9	mg/L	195	Standard
> **Sc-1**	45	30205.1	3.4				mg/L	29647	Standard
Cl	35	476373.7	2.1				ug/L	154152	Standard
Kr	83	2.3	89.2				ug/L	3	Standard
Br	81	9679.8	3.3				ug/L	1607	Standard
P	31	23531.6	1.5				ug/L	22752	Standard
S	34	4985.8	2.7				ug/L	5049	Standard
Sr	88	643.3	5.9				ug/L	87	Standard
C	12	83.3	54.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	100.0				mg/L	0	Standard
Dy	164	9.7	103.3				mg/L	10	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	46467.9	3.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		133.308	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.778	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.600
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	91.696
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: L1606033702SD WG571834-05
Sample Date/Time: Thursday, June 16, 2016 22:46:06
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69477.3	1.8				ug/L	51024	Standard
	Be	9	51502.4	2.4	**44.9684**	0.786	1.7	ug/L	7	Standard
	Al	27	70351.3	0.6	**0.3532**	0.005	1.3	ug/L	625	Standard
	Sc	45	29879.4	2.7				ug/L	29647	Standard
	Ti	47	116.3	8.0	**0.2444**	0.037	15.0	ug/L	57	Standard
	V	51	388223.7	1.2	**57.5908**	0.764	1.3	ug/L	1142	Standard
	Cr	52	347952.9	2.2	**49.1031**	1.033	2.1	ug/L	6628	Standard
	Cr	53	43768.2	2.9	**49.3632**	1.152	2.3	ug/L	430	Standard
	Mn	55	286009.9	1.4	**50.8380**	0.394	0.8	ug/L	603	Standard
	Co	59	307889.4	1.2	**50.6347**	0.555	1.1	ug/L	237	Standard
	Ni	60	89481.8	1.5	**48.9952**	0.439	0.9	ug/L	141	Standard
	Cu	65	241814.9	1.2	**136.0209**	1.038	0.8	ug/L	109	Standard
	Zn	66	51913.8	0.8	**49.3151**	0.405	0.8	ug/L	159	Standard
>	**Ge**	72	448036.8	0.9				ug/L	474053	Standard
	As	75	54590.9	0.7	**52.1892**	0.176	0.3	ug/L	-34	Standard
	Se	82	5464.5	2.1	**52.1104**	0.678	1.3	ug/L	14	Standard
	Se-1	77	3736.5	2.4	**50.7332**	0.775	1.5	ug/L	55	Standard
>	**Ga**	71	880.0	7.8				mg/L	50	Standard
	Rb	85	11956.4	0.5				ug/L	20	Standard
	Y	89	354548.8	0.8				ug/L	376602	Standard
>	**Rh**	103	176.7	9.9				ug/L	17	Standard
	Mo	98	28019.9	1.2	**12.5852**	0.199	1.6	ug/L	8	Standard
	Ag	107	268450.3	0.3	**47.7483**	0.458	1.0	ug/L	81	Standard
	Cd	111	88694.5	1.0	**48.4950**	0.379	0.8	mg/L	3	Standard
	Cd	114	219923.4	1.6	**48.6380**	0.413	0.8	ug/L	7	Standard
>	**In**	115	494421.9	1.1				ug/L	524722	Standard
	Sn	118	1316.7	9.7	**0.1699**	0.024	14.2	ug/L	715	Standard
	Sb	123	211754.6	0.6	**51.4377**	0.300	0.6	ug/L	201	Standard
	Ba	135	110652.9	0.5	**64.7326**	0.425	0.7	ug/L	108	Standard
	Ce	140	260.0	20.0				ug/L	30	Standard
>	**Tb**	159	762292.0	2.0				ug/L	792236	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	342694.3	1.4	**48.0097**	0.052	0.1	ug/L	9	Standard
	Tl	205	304091.9	1.8	**50.0920**	0.270	0.5	ug/L	0	Standard
	Pb	206	222070.0	1.1	**51.4209**	0.338	0.7	ug/L	216	Standard
	Pb	207	193776.6	0.8	**49.2893**	0.546	1.1	ug/L	180	Standard
	Pb	208	789689.1	0.4	**49.4955**	0.776	1.6	ug/L	717	Standard
	U	238	302421.4	0.6	**52.1051**	0.540	1.0	ug/L	4	Standard
>	**Bi**	209	430141.1	1.5				ug/L	460343	Standard

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Na	23	11.7	24.7	**-27.5524**	10.035	36.4	mg/L	0	Standard
Mg	24	22465.0	1.9	**30.1800**	0.330	1.1	mg/L	20	Standard
K	39	500.0	5.0	**3.5529**	0.109	3.1	mg/L	22	Standard
Ca	43	825.0	4.8	**178.0126**	5.766	3.2	mg/L	47	Standard
Fe	54	141.0	25.7	**-0.0008**	0.031	4097.7	mg/L	151	Standard
Fe	57	861.7	4.4	**2.0033**	0.182	9.1	mg/L	195	Standard
> **Sc-1**	45	29879.4	2.7				mg/L	29647	Standard
Cl	35	471095.3	0.9				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	9509.7	3.3				ug/L	1607	Standard
P	31	23573.3	1.7				ug/L	22752	Standard
S	34	4992.5	2.6				ug/L	5049	Standard
Sr	88	646.7	10.1				ug/L	87	Standard
C	12	96.7	31.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	41.7				mg/L	0	Standard
Dy	164	15.7	76.3				mg/L	10	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	3	Standard
I	127	49629.6	4.5				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		136.166	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		94.512	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.226
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.439
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

Sample ID: L1606033702SD WG571834-05
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Method 6020 - Summary Report

Sample ID: L1606030301
Sample Date/Time: Thursday, June 16, 2016 22:49:17
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75542.9	1.1				ug/L	51024	Standard
	Be	9	35.0	14.3	**0.0070**	0.004	53.8	ug/L	7	Standard
	Al	27	29747316.4	1.2	**141.1560**	2.929	2.1	ug/L	625	Standard
	Sc	45	33087.8	1.2				ug/L	29647	Standard
	Ti	47	864.4	0.5	**2.9151**	0.077	2.6	ug/L	57	Standard
	V	51	2646.8	15.2	**0.2300**	0.062	27.0	ug/L	1142	Standard
	Cr	52	10730.1	1.6	**0.6326**	0.065	10.2	ug/L	6628	Standard
	Cr	53	13055.7	9.8	**14.6159**	1.842	12.6	ug/L	430	Standard
	Mn	55	149866.6	1.0	**26.8754**	0.469	1.7	ug/L	603	Standard
	Co	59	3157.0	1.2	**0.4841**	0.012	2.4	ug/L	237	Standard
	Ni	60	2562.6	1.9	**1.3439**	0.063	4.7	ug/L	141	Standard
	Cu	65	1783.1	4.8	**0.9478**	0.026	2.7	ug/L	109	Standard
	Zn	66	4720.1	0.9	**4.3229**	0.088	2.0	ug/L	159	Standard
>	**Ge**	72	443259.0	2.7				ug/L	474053	Standard
	As	75	1196.5	7.5	**1.1797**	0.057	4.8	ug/L	-34	Standard
	Se	82	433.0	3.3	**4.0226**	0.239	5.9	ug/L	14	Standard
	Se-1	77	945.4	12.5	**12.4569**	1.980	15.9	ug/L	55	Standard
>	**Ga**	71	90.0	14.7				mg/L	50	Standard
	Rb	85	8912.6	1.9				ug/L	20	Standard
	Y	89	372910.9	1.8				ug/L	376602	Standard
>	**Rh**	103	138.3	9.1				ug/L	17	Standard
	Mo	98	418.3	6.0	**0.1743**	0.012	6.8	ug/L	8	Standard
	Ag	107	142.7	27.1	**0.0119**	0.006	53.9	ug/L	81	Standard
	Cd	111	58.8	59.4	**0.0275**	0.018	65.5	mg/L	3	Standard
	Cd	114	163.0	53.7	**0.0306**	0.018	59.7	ug/L	7	Standard
>	**In**	115	516818.9	0.6				ug/L	524722	Standard
	Sn	118	633.3	5.7	**0.0299**	0.006	20.2	ug/L	715	Standard
	Sb	123	884.4	13.0	**0.1907**	0.026	13.4	ug/L	201	Standard
	Ba	135	210091.9	0.7	**117.6212**	0.688	0.6	ug/L	108	Standard
	Ce	140	548.3	4.6				ug/L	30	Standard
>	**Tb**	159	797833.7	0.3				ug/L	792236	Standard
	Ho	165	23.3	68.9				ug/L	7	Standard
	Tl	203	225.3	33.3	**0.0286**	0.011	36.9	ug/L	9	Standard
	Tl	205	156.7	26.6	**0.0177**	0.007	39.2	ug/L	0	Standard
	Pb	206	343.3	6.6	**0.0221**	0.005	23.5	ug/L	216	Standard
	Pb	207	295.0	6.1	**0.0203**	0.005	24.8	ug/L	180	Standard
	Pb	208	1172.7	3.5	**0.0147**	0.003	21.3	ug/L	717	Standard
	U	238	2550.2	1.4	**0.4258**	0.006	1.3	ug/L	4	Standard
>	**Bi**	209	436094.8	0.8				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.5341**	8.518	153.9	mg/L	0	Standard
Mg	24	135567.2	1.0	**164.6662**	3.386	2.1	mg/L	20	Standard
K	39	101.7	25.2	**0.4668**	0.178	38.1	mg/L	22	Standard
Ca	43	143.3	8.8	**16.8014**	2.330	13.9	mg/L	47	Standard
Fe	54	210.5	7.2	**0.0385**	0.013	33.1	mg/L	151	Standard
Fe	57	346.7	4.4	**0.3147**	0.041	13.0	mg/L	195	Standard
> **Sc-1**	45	33087.8	1.2				mg/L	29647	Standard
Cl	35	252380.3	1.6				ug/L	154152	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	100794.6	4.5				ug/L	1607	Standard
P	31	32519.9	1.3				ug/L	22752	Standard
S	34	4837.4	4.7				ug/L	5049	Standard
Sr	88	436.7	6.9				ug/L	87	Standard
C	12	223.3	5.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	28.7	92.1				mg/L	10	Standard
Ho-1	165	23.3	68.9				mg/L	7	Standard
Er	166	26.7	57.3				mg/L	3	Standard
I	127	617066.8	8.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		148.053	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.504	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.494
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.733
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606030302
Sample Date/Time: Thursday, June 16, 2016 22:52:29
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73040.7	1.9				ug/L	51024	Standard
	Be	9	40.0	45.1	**0.0120**	0.014	119.9	ug/L	7	Standard
	Al	27	29071018.9	1.5	**142.6695**	1.976	1.4	ug/L	625	Standard
	Sc	45	31137.0	3.2				ug/L	29647	Standard
	Ti	47	896.0	0.6	**3.1347**	0.013	0.4	ug/L	57	Standard
	V	51	2628.5	16.8	**0.2400**	0.066	27.6	ug/L	1142	Standard
	Cr	52	11569.4	2.8	**0.8104**	0.048	5.9	ug/L	6628	Standard
	Cr	53	14446.9	3.6	**16.7439**	0.524	3.1	ug/L	430	Standard
	Mn	55	152328.9	0.4	**28.2404**	0.204	0.7	ug/L	603	Standard
	Co	59	3172.7	3.4	**0.5045**	0.021	4.1	ug/L	237	Standard
	Ni	60	2824.9	2.2	**1.5411**	0.022	1.4	ug/L	141	Standard
	Cu	65	1634.1	4.2	**0.8948**	0.038	4.3	ug/L	109	Standard
	Zn	66	5209.6	4.4	**4.9636**	0.220	4.4	ug/L	159	Standard
>	**Ge**	72	428745.2	1.0				ug/L	474053	Standard
	As	75	1258.8	1.9	**1.2822**	0.036	2.8	ug/L	-34	Standard
	Se	82	439.1	3.6	**4.2227**	0.199	4.7	ug/L	14	Standard
	Se-1	77	1078.4	5.9	**14.7842**	0.963	6.5	ug/L	55	Standard
>	**Ga**	71	70.0	25.8				mg/L	50	Standard
	Rb	85	9496.3	1.9				ug/L	20	Standard
	Y	89	380626.7	0.4				ug/L	376602	Standard
>	**Rh**	103	98.3	11.7				ug/L	17	Standard
	Mo	98	479.8	3.7	**0.2023**	0.007	3.6	ug/L	8	Standard
	Ag	107	174.0	68.0	**0.0174**	0.020	114.9	ug/L	81	Standard
	Cd	111	83.1	60.8	**0.0404**	0.026	64.8	mg/L	3	Standard
	Cd	114	224.6	76.7	**0.0439**	0.036	82.5	ug/L	7	Standard
>	**In**	115	512708.3	1.5				ug/L	524722	Standard
	Sn	118	761.7	9.5	**0.0552**	0.012	21.8	ug/L	715	Standard
	Sb	123	807.2	10.7	**0.1743**	0.019	11.1	ug/L	201	Standard
	Ba	135	209488.0	1.0	**118.2448**	2.471	2.1	ug/L	108	Standard
	Ce	140	541.7	9.3				ug/L	30	Standard
>	**Tb**	159	775209.0	3.4				ug/L	792236	Standard
	Ho	165	25.0	20.0				ug/L	7	Standard
	Tl	203	254.0	67.1	**0.0340**	0.024	70.2	ug/L	9	Standard
	Tl	205	180.0	38.9	**0.0228**	0.011	49.8	ug/L	0	Standard
	Pb	206	477.0	17.2	**0.0581**	0.017	29.8	ug/L	216	Standard
	Pb	207	417.0	19.6	**0.0560**	0.019	34.6	ug/L	180	Standard
	Pb	208	1674.7	14.6	**0.0509**	0.014	27.2	ug/L	717	Standard
	U	238	2253.2	2.5	**0.3950**	0.010	2.6	ug/L	4	Standard
>	**Bi**	209	414870.7	2.1				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.0844**	9.297	182.9	mg/L	0	Standard
Mg	24	134474.1	0.2	**173.6638**	5.440	3.1	mg/L	20	Standard
K	39	88.3	19.9	**0.4121**	0.119	28.8	mg/L	22	Standard
Ca	43	171.7	13.8	**24.9409**	4.511	18.1	mg/L	47	Standard
Fe	54	188.7	7.0	**0.0310**	0.006	19.6	mg/L	151	Standard
Fe	57	286.7	15.2	**0.1978**	0.124	62.9	mg/L	195	Standard
Sc-1	45	31137.0	3.2				mg/L	29647	Standard
Cl	35	236218.5	0.5				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	103082.9	2.1				ug/L	1607	Standard
P	31	32710.3	0.4				ug/L	22752	Standard
S	34	4897.5	3.2				ug/L	5049	Standard
Sr	88	453.3	14.0				ug/L	87	Standard
C	12	190.0	18.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	21.9	52.8				mg/L	10	Standard
Ho-1	165	25.0	20.0				mg/L	7	Standard
Er	166	30.0	33.3				mg/L	3	Standard
I	127	617957.6	6.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		143.149	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.442	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.710
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	90.122
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606030402
Sample Date/Time: Thursday, June 16, 2016 22:55:40
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71156.7	0.3				ug/L	51024	Standard
	Be	9	20.0	50.0	**-0.0040**	0.009	211.0	ug/L	7	Standard
	Al	27	27285286.1	1.5	**137.4375**	2.316	1.7	ug/L	625	Standard
	Sc	45	31798.3	2.5				ug/L	29647	Standard
	Ti	47	833.7	1.4	**2.8012**	0.055	2.0	ug/L	57	Standard
	V	51	2537.6	8.1	**0.2132**	0.036	16.9	ug/L	1142	Standard
	Cr	52	12018.1	1.3	**0.8169**	0.043	5.3	ug/L	6628	Standard
	Cr	53	14870.6	5.1	**16.6424**	0.566	3.4	ug/L	430	Standard
	Mn	55	153406.0	0.3	**27.4780**	0.629	2.3	ug/L	603	Standard
	Co	59	3042.6	1.6	**0.4644**	0.013	2.9	ug/L	237	Standard
	Ni	60	2834.9	0.9	**1.4924**	0.050	3.3	ug/L	141	Standard
	Cu	65	1512.4	1.9	**0.7934**	0.029	3.7	ug/L	109	Standard
	Zn	66	12243.6	1.2	**11.5661**	0.178	1.5	ug/L	159	Standard
>	**Ge**	72	443839.5	2.3				ug/L	474053	Standard
	As	75	1046.3	4.7	**1.0354**	0.070	6.7	ug/L	-34	Standard
	Se	82	370.0	2.6	**3.4056**	0.089	2.6	ug/L	14	Standard
	Se-1	77	1056.7	5.5	**13.9459**	0.499	3.6	ug/L	55	Standard
>	**Ga**	71	63.3	29.9				mg/L	50	Standard
	Rb	85	8789.2	0.9				ug/L	20	Standard
	Y	89	374101.9	2.2				ug/L	376602	Standard
>	**Rh**	103	100.0	39.7				ug/L	17	Standard
	Mo	98	414.8	3.1	**0.1799**	0.005	3.0	ug/L	8	Standard
	Ag	107	91.0	19.0	**0.0038**	0.003	80.6	ug/L	81	Standard
	Cd	111	38.9	24.2	**0.0179**	0.005	27.8	mg/L	3	Standard
	Cd	114	124.8	37.3	**0.0236**	0.010	41.9	ug/L	7	Standard
>	**In**	115	496787.9	1.5				ug/L	524722	Standard
	Sn	118	751.7	3.4	**0.0580**	0.007	12.3	ug/L	715	Standard
	Sb	123	699.9	9.2	**0.1546**	0.018	11.7	ug/L	201	Standard
	Ba	135	200966.0	0.6	**117.0693**	2.247	1.9	ug/L	108	Standard
	Ce	140	703.3	2.3				ug/L	30	Standard
>	**Tb**	159	757626.8	0.4				ug/L	792236	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	132.7	7.8	**0.0167**	0.001	8.9	ug/L	9	Standard
	Tl	205	95.0	31.6	**0.0084**	0.005	62.5	ug/L	0	Standard
	Pb	206	531.7	2.2	**0.0713**	0.003	3.6	ug/L	216	Standard
	Pb	207	455.3	6.2	**0.0663**	0.009	13.1	ug/L	180	Standard
	Pb	208	1923.0	1.8	**0.0670**	0.003	4.3	ug/L	717	Standard
	U	238	1986.8	1.8	**0.3469**	0.010	2.8	ug/L	4	Standard
>	**Bi**	209	415441.7	1.2				ug/L	460343	Standard

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Na	23	5.0	0.0	**-4.8155**	0.394	8.2	mg/L	0	Standard
Mg	24	122585.6	0.8	**154.9558**	2.818	1.8	mg/L	20	Standard
K	39	68.3	27.7	**0.2568**	0.128	49.9	mg/L	22	Standard
Ca	43	118.3	20.0	**12.5323**	4.646	37.1	mg/L	47	Standard
Fe	54	188.9	8.2	**0.0283**	0.012	41.6	mg/L	151	Standard
Fe	57	303.3	9.9	**0.2303**	0.108	46.9	mg/L	195	Standard
> **Sc-1**	45	31798.3	2.5				mg/L	29647	Standard
Cl	35	229346.8	0.7				ug/L	154152	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	83539.7	2.1				ug/L	1607	Standard
P	31	32606.7	1.9				ug/L	22752	Standard
S	34	4827.4	4.1				ug/L	5049	Standard
Sr	88	453.3	10.5				ug/L	87	Standard
C	12	170.0	0.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	51.9	21.5				mg/L	10	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	30.0	33.3				mg/L	3	Standard
I	127	562279.3	5.4				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		139.457	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		93.627	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.676
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.246
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606030402PS WG572184-03
Sample Date/Time: Thursday, June 16, 2016 22:58:52
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73075.8	1.3				ug/L	51024	Standard
	Be	9	53890.7	1.6	**44.7456**	1.235	2.8	ug/L	7	Standard
	Al	27	27168938.9	0.8	**133.2737**	2.450	1.8	ug/L	625	Standard
	Sc	45	32783.8	3.0				ug/L	29647	Standard
	Ti	47	859.4	2.1	**2.8540**	0.076	2.7	ug/L	57	Standard
	V	51	356764.3	1.1	**52.7436**	0.694	1.3	ug/L	1142	Standard
	Cr	52	356493.8	0.1	**50.1744**	0.746	1.5	ug/L	6628	Standard
	Cr	53	58201.6	1.0	**65.5911**	1.486	2.3	ug/L	430	Standard
	Mn	55	450920.3	1.1	**79.9871**	1.948	2.4	ug/L	603	Standard
	Co	59	316431.5	0.7	**51.8775**	0.422	0.8	ug/L	237	Standard
	Ni	60	89734.3	1.3	**48.9891**	1.257	2.6	ug/L	141	Standard
	Cu	65	87088.6	0.9	**48.7984**	1.056	2.2	ug/L	109	Standard
	Zn	66	59430.7	0.2	**56.3137**	0.736	1.3	ug/L	159	Standard
>	**Ge**	72	449467.4	1.3				ug/L	474053	Standard
	As	75	54174.2	0.7	**51.6333**	0.928	1.8	ug/L	-34	Standard
	Se	82	5615.8	0.7	**53.3981**	0.963	1.8	ug/L	14	Standard
	Se-1	77	4643.7	1.4	**63.0355**	0.461	0.7	ug/L	55	Standard
>	**Ga**	71	86.7	6.7				mg/L	50	Standard
	Rb	85	8584.1	2.2				ug/L	20	Standard
	Y	89	362129.9	0.6				ug/L	376602	Standard
>	**Rh**	103	126.7	12.1				ug/L	17	Standard
	Mo	98	423.7	5.1	**0.1836**	0.012	6.4	ug/L	8	Standard
	Ag	107	266853.3	1.0	**47.1390**	0.674	1.4	ug/L	81	Standard
	Cd	111	91252.6	1.2	**49.5561**	0.951	1.9	mg/L	3	Standard
	Cd	114	222037.4	0.3	**48.7752**	0.696	1.4	ug/L	7	Standard
>	**In**	115	497860.4	1.7				ug/L	524722	Standard
	Sn	118	795.0	4.5	**0.0661**	0.005	7.0	ug/L	715	Standard
	Sb	123	212175.4	1.5	**51.1854**	0.593	1.2	ug/L	201	Standard
	Ba	135	282462.3	0.7	**164.2013**	1.778	1.1	ug/L	108	Standard
	Ce	140	631.7	10.3				ug/L	30	Standard
>	**Tb**	159	772720.2	0.9				ug/L	792236	Standard
	Ho	165	25.0	72.1				ug/L	7	Standard
	Tl	203	348021.0	0.8	**48.9171**	0.207	0.4	ug/L	9	Standard
	Tl	205	307292.3	1.9	**50.7847**	0.486	1.0	ug/L	0	Standard
	Pb	206	227366.6	0.7	**52.8212**	0.283	0.5	ug/L	216	Standard
	Pb	207	198570.4	0.5	**50.6733**	0.216	0.4	ug/L	180	Standard
	Pb	208	808970.2	1.0	**50.8658**	0.381	0.7	ug/L	717	Standard
	U	238	316899.9	0.9	**54.7755**	0.248	0.5	ug/L	4	Standard
>	**Bi**	209	428726.0	0.9				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.3595**	8.821	164.6	mg/L	0	Standard
Mg	24	124008.8	1.6	**152.0535**	3.346	2.2	mg/L	20	Standard
K	39	85.0	11.8	**0.3592**	0.081	22.7	mg/L	22	Standard
Ca	43	100.0	5.0	**7.9645**	1.532	19.2	mg/L	47	Standard
Fe	54	177.2	11.1	**0.0154**	0.015	95.9	mg/L	151	Standard
Fe	57	351.7	12.7	**0.3402**	0.148	43.6	mg/L	195	Standard
> **Sc-1**	45	32783.8	3.0				mg/L	29647	Standard
Cl	35	226771.8	0.7				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	82051.8	3.7				ug/L	1607	Standard
P	31	32553.3	0.7				ug/L	22752	Standard
S	34	4877.5	2.7				ug/L	5049	Standard
Sr	88	468.3	17.3				ug/L	87	Standard
C	12	143.3	17.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	28.9	106.4				mg/L	10	Standard
Ho-1	165	25.0	72.1				mg/L	7	Standard
Er	166	23.3	65.5				mg/L	3	Standard
I	127	560436.2	7.8				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		143.218	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.814	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.881
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.132
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606030402SDL WG572184-04
Sample Date/Time: Thursday, June 16, 2016 23:02:03
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70743.1	1.8				ug/L	51024	Standard
	Be	9	28.3	50.9	**0.0034**	0.013	384.2	ug/L	7	Standard
	Al	27	5919809.8	1.5	**29.9860**	0.193	0.6	ug/L	625	Standard
	Sc	45	33931.3	4.9				ug/L	29647	Standard
	Ti	47	210.3	4.5	**0.5323**	0.026	4.9	ug/L	57	Standard
	V	51	1736.1	7.7	**0.0751**	0.020	26.8	ug/L	1142	Standard
	Cr	52	8517.7	1.3	**0.2257**	0.018	7.8	ug/L	6628	Standard
	Cr	53	4512.3	4.3	**4.4067**	0.273	6.2	ug/L	430	Standard
	Mn	55	34493.9	0.5	**5.6636**	0.053	0.9	ug/L	603	Standard
	Co	59	857.0	3.0	**0.0916**	0.004	4.4	ug/L	237	Standard
	Ni	60	815.4	3.7	**0.3434**	0.013	3.8	ug/L	141	Standard
	Cu	65	609.0	2.8	**0.2567**	0.008	3.3	ug/L	109	Standard
	Zn	66	2631.2	2.5	**2.1339**	0.077	3.6	ug/L	159	Standard
>	**Ge**	72	475670.8	1.3				ug/L	474053	Standard
	As	75	259.9	19.5	**0.2591**	0.046	17.8	ug/L	-34	Standard
	Se	82	96.9	9.6	**0.7044**	0.090	12.8	ug/L	14	Standard
	Se-1	77	278.3	6.3	**2.8660**	0.190	6.6	ug/L	55	Standard
>	**Ga**	71	100.0	13.2				mg/L	50	Standard
	Rb	85	1971.8	2.2				ug/L	20	Standard
	Y	89	399368.2	0.1				ug/L	376602	Standard
>	**Rh**	103	31.7	55.5				ug/L	17	Standard
	Mo	98	97.2	8.5	**0.0330**	0.003	8.8	ug/L	8	Standard
	Ag	107	194.3	8.7	**0.0182**	0.002	12.0	ug/L	81	Standard
	Cd	111	22.8	26.6	**0.0078**	0.003	35.8	mg/L	3	Standard
	Cd	114	48.7	59.7	**0.0057**	0.006	99.0	ug/L	7	Standard
>	**In**	115	559725.5	1.9				ug/L	524722	Standard
	Sn	118	606.7	7.7	**0.0162**	0.009	56.8	ug/L	715	Standard
	Sb	123	2363.7	19.9	**0.4914**	0.092	18.7	ug/L	201	Standard
	Ba	135	43798.6	2.4	**22.5929**	0.145	0.6	ug/L	108	Standard
	Ce	140	198.3	9.5				ug/L	30	Standard
>	**Tb**	159	842868.7	1.3				ug/L	792236	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	155.3	20.7	**0.0174**	0.004	24.2	ug/L	9	Standard
	Tl	205	138.3	25.4	**0.0131**	0.005	41.5	ug/L	0	Standard
	Pb	206	331.7	5.4	**0.0143**	0.004	25.7	ug/L	216	Standard
	Pb	207	291.7	3.0	**0.0144**	0.002	12.4	ug/L	180	Standard
	Pb	208	1219.7	5.8	**0.0124**	0.004	35.2	ug/L	717	Standard
	U	238	456.0	5.1	**0.0646**	0.005	7.0	ug/L	4	Standard
>	**Bi**	209	468142.9	1.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	26463.1	2.5	**31.3785**	2.343	7.5	mg/L	20	Standard
K	39	26.7	78.1	**-0.0526**	0.134	255.5	mg/L	22	Standard
Ca	43	43.3	17.6	**-4.3735**	1.225	28.0	mg/L	47	Standard
Fe	54	169.2	3.0	**0.0053**	0.003	52.6	mg/L	151	Standard
Fe	57	196.7	11.5	**-0.1160**	0.038	32.8	mg/L	195	Standard
Sc-1	45	33931.3	4.9				mg/L	29647	Standard
Cl	35	196142.1	0.3				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	19616.0	5.5				ug/L	1607	Standard
P	31	27376.4	1.1				ug/L	22752	Standard
S	34	5225.9	4.8				ug/L	5049	Standard
Sr	88	161.7	12.5				ug/L	87	Standard
C	12	53.3	21.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	18.9	105.9				mg/L	10	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	23.3	24.7				mg/L	3	Standard
I	127	136986.5	1.1				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		138.646	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.341	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	106.671
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.694
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 23:05:16
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65141.5	3.2				ug/L	51024	Standard
	Be	9	52703.2	1.3	**49.1153**	1.764	3.6	ug/L	7	Standard
	Al	27	8228815.5	2.2	**45.2824**	0.920	2.0	ug/L	625	Standard
	Sc	45	32498.2	4.1				ug/L	29647	Standard
	Ti	47	31345.1	0.7	**103.5318**	1.343	1.3	ug/L	57	Standard
	V	51	367453.1	0.4	**51.1407**	0.777	1.5	ug/L	1142	Standard
	Cr	52	375913.5	0.3	**49.8070**	1.076	2.2	ug/L	6628	Standard
	Cr	53	47646.5	1.3	**50.4578**	1.488	2.9	ug/L	430	Standard
	Mn	55	329100.4	0.4	**54.9171**	0.971	1.8	ug/L	603	Standard
	Co	59	349269.0	1.0	**53.9203**	1.421	2.6	ug/L	237	Standard
	Ni	60	96531.2	0.8	**49.6170**	1.272	2.6	ug/L	141	Standard
	Cu	65	93924.6	0.9	**49.5504**	1.188	2.4	ug/L	109	Standard
	Zn	66	55518.9	0.1	**49.5011**	0.851	1.7	ug/L	159	Standard
>	Ge	72	477444.4	1.8				ug/L	474053	Standard
	As	75	55141.7	0.8	**49.4767**	0.656	1.3	ug/L	-34	Standard
	Se	82	5701.1	0.6	**51.0288**	1.000	2.0	ug/L	14	Standard
	Se-1	77	3881.8	1.1	**49.4608**	1.267	2.6	ug/L	55	Standard
>	Ga	71	65.0	13.3				mg/L	50	Standard
	Rb	85	788.4	3.5				ug/L	20	Standard
	Y	89	405958.4	2.3				ug/L	376602	Standard
>	Rh	103	46.7	6.2				ug/L	17	Standard
	Mo	98	255980.2	1.6	**104.9334**	3.174	3.0	ug/L	8	Standard
	Ag	107	304085.1	0.1	**49.3379**	0.777	1.6	ug/L	81	Standard
	Cd	111	100650.6	0.4	**50.2032**	0.894	1.8	mg/L	3	Standard
	Cd	114	247889.3	0.9	**50.0095**	0.397	0.8	ug/L	7	Standard
>	In	115	542056.8	1.5				ug/L	524722	Standard
	Sn	118	285272.3	0.9	**51.1841**	0.960	1.9	ug/L	715	Standard
	Sb	123	227314.1	0.8	**50.3702**	0.881	1.7	ug/L	201	Standard
	Ba	135	91208.0	0.4	**48.6598**	0.850	1.7	ug/L	108	Standard
	Ce	140	63.3	32.9				ug/L	30	Standard
>	Tb	159	789070.3	2.3				ug/L	792236	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	377602.8	0.5	**50.2279**	0.920	1.8	ug/L	9	Standard
	Tl	205	337371.9	1.4	**52.7729**	1.437	2.7	ug/L	0	Standard
	Pb	206	238042.0	0.2	**52.3320**	0.779	1.5	ug/L	216	Standard
	Pb	207	215459.6	1.1	**52.0360**	1.192	2.3	ug/L	180	Standard
	Pb	208	891326.9	0.5	**53.0399**	0.951	1.8	ug/L	717	Standard
	U	238	333407.3	1.0	**54.5375**	1.116	2.0	ug/L	4	Standard
>	Bi	209	453096.7	1.3				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.3907**	8.767	162.6	mg/L	0	Standard
Mg	24	4200.6	2.3	**5.1529**	0.111	2.2	mg/L	20	Standard
K	39	616.7	6.8	**4.0727**	0.447	11.0	mg/L	22	Standard
Ca	43	71.7	17.6	**2.1532**	3.105	144.2	mg/L	47	Standard
Fe	54	6037.6	3.3	**4.3664**	0.172	3.9	mg/L	151	Standard
Fe	57	1763.4	0.4	**4.3392**	0.195	4.5	mg/L	195	Standard
Sc-1	45	32498.2	4.1				mg/L	29647	Standard
Cl	35	179833.9	2.1				ug/L	154152	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	2146.8	4.2				ug/L	1607	Standard
P	31	26813.7	2.2				ug/L	22752	Standard
S	34	5724.4	0.6				ug/L	5049	Standard
Sr	88	70.0	14.3				ug/L	87	Standard
C	12	63.3	50.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.0	50.0				mg/L	10	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	3	Standard
I	127	9479.8	26.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	98.231		
Al	27	90.565		
Sc	45			
Ti	47	103.532		
V	51	102.281		
Cr	52	99.614		
Cr	53			
Mn	55	109.834		
Co	59	107.841		
Ni	60	99.234		
Cu	65	99.101		
Zn	66	99.002		
Ge	72		100.715	
As	75	98.953		
Se	82	102.058		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	104.933		
Ag	107	98.676		
Cd	111	100.406		
Cd	114			
In	115		103.304	
Sn	118	102.368		
Sb	123	100.740		
Ba	135	97.320		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.456		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.080		
U	238	109.075		
Bi	209		98.426	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 23:08:27
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65521.4	0.4				ug/L	51024	Standard
	Be	9	23.3	99.0	**0.0005**	0.021	4564.3	ug/L	7	Standard
	Al	27	5681.9	111.4	**0.0212**	0.034	162.2	ug/L	625	Standard
	Sc	45	34061.6	0.4				ug/L	29647	Standard
	Ti	47	31.0	31.1	**-0.0658**	0.030	46.1	ug/L	57	Standard
	V	51	1137.0	4.8	**-0.0132**	0.008	58.0	ug/L	1142	Standard
	Cr	52	6409.0	1.1	**-0.0829**	0.007	8.9	ug/L	6628	Standard
	Cr	53	666.7	9.6	**0.2639**	0.061	23.2	ug/L	430	Standard
	Mn	55	712.4	6.8	**-0.0100**	0.007	70.1	ug/L	603	Standard
	Co	59	233.0	15.5	**-0.0061**	0.005	85.2	ug/L	237	Standard
	Ni	60	159.3	10.8	**0.0024**	0.008	354.6	ug/L	141	Standard
	Cu	65	160.3	16.8	**0.0166**	0.013	81.1	ug/L	109	Standard
	Zn	66	162.7	11.7	**-0.0896**	0.016	17.5	ug/L	159	Standard
>	**Ge**	72	488521.2	0.7				ug/L	474053	Standard
	As	75	-18.2	245.0	**0.0090**	0.039	433.3	ug/L	-34	Standard
	Se	82	22.9	33.5	**0.0317**	0.066	209.0	ug/L	14	Standard
	Se-1	77	61.7	10.8	**0.0347**	0.088	253.1	ug/L	55	Standard
>	**Ga**	71	43.3	6.7				mg/L	50	Standard
	Rb	85	21.7	26.6				ug/L	20	Standard
	Y	89	392497.9	1.5				ug/L	376602	Standard
>	**Rh**	103	15.0	66.7				ug/L	17	Standard
	Mo	98	290.0	34.9	**0.1112**	0.040	35.6	ug/L	8	Standard
	Ag	107	124.3	21.0	**0.0075**	0.004	51.6	ug/L	81	Standard
	Cd	111	11.5	16.4	**0.0024**	0.001	34.9	mg/L	3	Standard
	Cd	114	37.6	64.7	**0.0036**	0.005	130.1	ug/L	7	Standard
>	**In**	115	550836.3	1.7				ug/L	524722	Standard
	Sn	118	835.0	15.5	**0.0583**	0.023	39.6	ug/L	715	Standard
	Sb	123	699.1	30.0	**0.1378**	0.046	33.4	ug/L	201	Standard
	Ba	135	132.0	3.9	**0.0117**	0.003	27.6	ug/L	108	Standard
	Ce	140	11.7	24.7				ug/L	30	Standard
>	**Tb**	159	819426.3	1.1				ug/L	792236	Standard
	Ho	165	6.7	86.6				ug/L	7	Standard
	Tl	203	74.7	34.7	**0.0068**	0.003	47.8	ug/L	9	Standard
	Tl	205	90.0	77.2	**0.0055**	0.010	186.7	ug/L	0	Standard
	Pb	206	270.7	9.3	**0.0000**	0.005	33114.8	ug/L	216	Standard
	Pb	207	219.0	11.0	**-0.0037**	0.006	150.6	ug/L	180	Standard
	Pb	208	961.7	14.2	**-0.0037**	0.008	206.3	ug/L	717	Standard
	U	238	71.3	83.4	**0.0035**	0.009	266.3	ug/L	4	Standard
>	**Bi**	209	478835.9	0.7				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.7236**	8.190	143.1	mg/L	0	Standard
Mg	24	78.3	36.3	**0.0471**	0.033	70.4	mg/L	20	Standard
K	39	20.0	50.0	**-0.0950**	0.067	70.5	mg/L	22	Standard
Ca	43	16.7	62.4	**-9.7998**	2.111	21.5	mg/L	47	Standard
Fe	54	162.8	19.9	**0.0003**	0.023	7301.8	mg/L	151	Standard
Fe	57	211.7	11.2	**-0.0764**	0.066	86.3	mg/L	195	Standard
> **Sc-1**	45	34061.6	0.4				mg/L	29647	Standard
Cl	35	176482.8	2.0				ug/L	154152	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	1700.1	5.3				ug/L	1607	Standard
P	31	27343.0	0.9				ug/L	22752	Standard
S	34	5614.4	3.8				ug/L	5049	Standard
Sr	88	68.3	27.7				ug/L	87	Standard
C	12	56.7	44.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	16.0	95.0				mg/L	10	Standard
Ho-1	165	6.7	86.6				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	4402.3	12.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.052	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
Report Date/Time: Thursday, June 16, 2016 23:10:44
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Approved: June 20, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.977
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.017
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, June 16, 2016 23:10:44
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Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, June 16, 2016 23:11:40
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62197.5	2.7				ug/L	51024	Standard
	Be	9	238.3	13.6	**0.2121**	0.037	17.6	ug/L	7	Standard
	Al	27	1466.7	24.6	**-0.0013**	0.002	173.1	ug/L	625	Standard
	Sc	45	31464.3	3.4				ug/L	29647	Standard
	Ti	47	25.0	41.8	**-0.0793**	0.036	45.5	ug/L	57	Standard
	V	51	3787.9	2.1	**0.3855**	0.011	2.8	ug/L	1142	Standard
	Cr	52	11607.4	0.4	**0.7122**	0.016	2.2	ug/L	6628	Standard
	Cr	53	1381.7	1.4	**1.1136**	0.035	3.1	ug/L	430	Standard
	Mn	55	3485.4	2.1	**0.4840**	0.015	3.1	ug/L	603	Standard
	Co	59	2688.9	0.3	**0.3937**	0.004	0.9	ug/L	237	Standard
	Ni	60	3045.6	2.3	**1.5635**	0.022	1.4	ug/L	141	Standard
	Cu	65	1580.4	3.3	**0.8079**	0.030	3.7	ug/L	109	Standard
	Zn	66	7167.0	0.7	**6.4903**	0.095	1.5	ug/L	159	Standard
>	**Ge**	72	455928.4	0.9				ug/L	474053	Standard
	As	75	370.6	7.7	**0.3732**	0.030	8.0	ug/L	-34	Standard
	Se	82	61.3	17.8	**0.4078**	0.107	26.4	ug/L	14	Standard
	Se-1	77	90.3	17.8	**0.4781**	0.216	45.1	ug/L	55	Standard
>	**Ga**	71	55.0	24.1				mg/L	50	Standard
	Rb	85	15.0	57.7				ug/L	20	Standard
	Y	89	401919.6	0.8				ug/L	376602	Standard
>	**Rh**	103	13.3	43.3				ug/L	17	Standard
	Mo	98	54.9	10.1	**0.0169**	0.002	11.0	ug/L	8	Standard
	Ag	107	2304.2	2.4	**0.3610**	0.011	3.1	ug/L	81	Standard
	Cd	111	463.2	4.6	**0.2274**	0.011	4.7	mg/L	3	Standard
	Cd	114	1100.0	5.3	**0.2180**	0.017	7.9	ug/L	7	Standard
>	**In**	115	543008.1	2.6				ug/L	524722	Standard
	Sn	118	436.7	6.3	**-0.0111**	0.004	33.6	ug/L	715	Standard
	Sb	123	1825.0	3.3	**0.3894**	0.024	6.1	ug/L	201	Standard
	Ba	135	1282.7	6.8	**0.6257**	0.032	5.1	ug/L	108	Standard
	Ce	140	18.3	41.7				ug/L	30	Standard
>	**Tb**	159	786449.8	2.4				ug/L	792236	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	625.7	5.7	**0.0805**	0.004	5.1	ug/L	9	Standard
	Tl	205	541.7	4.7	**0.0768**	0.002	3.0	ug/L	0	Standard
	Pb	206	1119.4	3.0	**0.1897**	0.004	2.2	ug/L	216	Standard
	Pb	207	980.4	3.9	**0.1828**	0.004	2.1	ug/L	180	Standard
	Pb	208	4169.9	1.1	**0.1903**	0.004	2.3	ug/L	717	Standard
	U	238	2499.2	1.6	**0.4009**	0.009	2.3	ug/L	4	Standard
>	**Bi**	209	453610.3	2.8				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	55.0	15.7	**0.0251**	0.011	43.4	mg/L	20	Standard
K	39	8.3	91.7	**-0.1668**	0.057	33.9	mg/L	22	Standard
Ca	43	21.7	66.6	**-8.4026**	3.204	38.1	mg/L	47	Standard
Fe	54	104.1	4.5	**-0.0352**	0.004	10.9	mg/L	151	Standard
Fe	57	183.3	11.0	**-0.1131**	0.042	36.8	mg/L	195	Standard
> **Sc-1**	45	31464.3	3.4				mg/L	29647	Standard
Cl	35	173373.0	1.2				ug/L	154152	Standard
Kr	83	0.7	173.2				ug/L	3	Standard
Br	81	1516.7	7.1				ug/L	1607	Standard
P	31	19057.0	2.5				ug/L	22752	Standard
S	34	5394.3	1.5				ug/L	5049	Standard
Sr	88	70.0	24.7				ug/L	87	Standard
C	12	66.7	82.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	3.2	173.2				mg/L	10	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	3055.3	5.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	106.050		
Al	27			
Sc	45			
Ti	47			
V	51	96.369		
Cr	52	89.022		
Cr	53			
Mn	55	96.796		
Co	59	98.420		
Ni	60	97.718		
Cu	65	100.991		
Zn	66	103.844		
> Ge	72		96.177	
As	75	93.302		
Se	82	101.945		
Se-1	77			
> Ga	71			

Sample ID: QC Std 8
Report Date/Time: Thursday, June 16, 2016 23:13:57
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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	90.256		
Cd	111	94.767		
Cd	114			
> In	115			103.485
Sn	118			
Sb	123	97.340		
Ba	135	83.430		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.678		
Tl	205			
Pb	206			
Pb	207			
Pb	208	95.126		
U	238	100.222		
> Bi	209			98.537
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
Report Date/Time: Thursday, June 16, 2016 23:13:57
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Approved: June 20, 2016

2.3.3 Metals CVAA Data (Mercury)

2.3.3.1 Summary Data

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-03	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	AWD4T-060716	**Prep Method:**	7470A	**Prep Date:**	06/09/2016 07:15
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/13/2016 10:16
Workgroup #:	WG572241	**Analyst:**	AMA	**Run Date:**	06/13/2016 11:06
Collect Date:	06/07/2016 15:00	**Dilution:**	1	**File ID:**	M7.061316.110655
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060411-04	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	AWD4B-060716	**Prep Method:**	7470A	**Prep Date:**	06/09/2016 07:15
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/13/2016 10:16
Workgroup #:	WG572241	**Analyst:**	AMA	**Run Date:**	06/13/2016 11:09
Collect Date:	06/07/2016 15:30	**Dilution:**	1	**File ID:**	M7.061316.110925
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060411
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.3.2 QC Summary

Example Cold Vapor Mercury Calculations
Hydra AA Mercury Analyzer / CETAC M-7600 Quick Trace Mercury Analyzer

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and five standards.

2.0 Calculating the concentration (C) of an element in water using data from run log and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to Volume (mL)	40
Vi = Aliquot Volume (mL)	40
D = Manual dilution factor, if required (10X = 10)	1
Cx = Concentration of element in ppb (ug/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Ws} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to volume (mL)	40
Ws = Aliquot weight (g)	0.6
D = Manual dilution factor	1
Cx = Concentration of element in ug/kg	6.67

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

1 Cx = Concentration calculated as received (wet basis)	6.67
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	8.33

8.33 ug/kg = 0.00833 mg/kg

Microbac Laboratories Inc.
Metals Digest Log

Workgroup: WG571962
Analyst: REK
Spike Analyst: REK
Method: 7470A
Run Date: 06/09/2016 07:15
Hotblock Start Temp: 95 @ 07:05
Hotblock End Temp: 95.5 @ 09:05
Instrument: HB7

SOP: ME404 Revison 17
Spike Solution: STD76527
Spike Witness: VC
H2SO4 Lot #: COA18359
40 & 50 ML. DIGESTION TU COA18772
HNO3 Lot #: COA18905
K2S2O8 1:1 Lot #: RGT36713
KMnO4 1:1 Lot #: RGT37006
Mercury Water ICV Lot #: STD76529
HG H2O STDS 10PPM Lot #: STD76535

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Spike Amount	Due Date
1	WG571962-03	BLANK	1	40 mL	40 mL		
2	WG571962-04	LCS	1	40 mL	40 mL	4 mL	
3	L16060002-06	ML06	2	40 mL	40 mL	.1 mL	06/15/16
4	L16060002-07	ML07	2	40 mL	40 mL	.1 mL	06/15/16
5	L16060114-01	SAMP	17	1 mL	40 mL		06/13/16
6	L16060309-01	SAMP	2	40 mL	40 mL		06/13/16
7	L16060321-01	SAMP	2	40 mL	40 mL		06/17/16
8	WG571962-01	REF	2	40 mL	40 mL		
9	L16060321-02	SAMP	2	40 mL	40 mL		06/17/16
10	L16060321-03	SAMP	2	40 mL	40 mL		06/17/16
11	L16060366-01	SAMP	2	40 mL	40 mL		06/14/16
12	L16060411-03	SAMP	1	40 mL	40 mL		06/17/16
13	WG571962-02	REF	1	40 mL	40 mL		
14	L16060411-04	SAMP	1	40 mL	40 mL		06/17/16
15	WG571962-05	DUP	1	40 mL	40 mL		
16	WG571962-06	MS	1	36 mL	40 mL	4 mL	
17	WG571962-07	MSD	1	36 mL	40 mL	4 mL	

L16060114-01	Filtered oil

Analyst: [signature]

Reviewer: [signature]

* All calibration and check standards are prepared and digested with sample batch following the procedures in section 7.0 of SOP ME404/ME405.

HB_DIG - Modified 07/26/2012
PDF ID: 4799990
Report generated: 06/09/2016 10:28

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 061316B.CSV

Analyst1: AMA Analyst2: N/A

Method: 7470A/245.1 SOP: ME404 Rev: 17

Maintenance Log ID:

Calibration Std: STD76535 ICV Std: STD76529 Post Spike: STD76535

ICSA: N/A ICSAB: N/A Int. Std:

CCV: LLCCV: Tuning Sol :

Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 572241

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	M7.061316.100331	WG572511-01	Calibration Point		1		06/13/16 10:03
2	M7.061316.100602	WG572511-02	Calibration Point		1		06/13/16 10:06
3	M7.061316.100834	WG572511-03	Calibration Point		1		06/13/16 10:08
4	M7.061316.101107	WG572511-04	Calibration Point		1		06/13/16 10:11
5	M7.061316.101340	WG572511-05	Calibration Point		1		06/13/16 10:13
6	M7.061316.101614	WG572511-06	Calibration Point		1		06/13/16 10:16
7	M7.061316.101848	WG572511-07	Initial Calibration Verification		1		06/13/16 10:18
8	M7.061316.102118	WG572511-08	Initial Calib Blank		1		06/13/16 10:21
9	M7.061316.102351	WG572511-09	CCV		1		06/13/16 10:23
10	M7.061316.102621	WG572511-10	CCB		1		06/13/16 10:26
11	M7.061316.102852	WG571962-03	Method/Prep Blank	40/40	1		06/13/16 10:28
12	M7.061316.103123	WG571962-04	Laboratory Control S	40/40	1		06/13/16 10:31
13	M7.061316.103355	L16060002-06	MDL-6	40/40	1		06/13/16 10:33
14	M7.061316.103627	L16060002-07	MDL-7	40/40	1		06/13/16 10:36
15	M7.061316.103858	L16060114-01	FPL16022	1/40	1		06/13/16 10:38
16	M7.061316.104131	WG572241-01	Post Digestion Spike		1	L16060114-01	06/13/16 10:41
17	M7.061316.104403	L16060309-01	K6F0115-01	40/40	1		06/13/16 10:44
18	M7.061316.104636	WG572241-02	Post Digestion Spike		1	L16060309-01	06/13/16 10:46
19	M7.061316.104909	L16060321-01	WEST RETENTION POND	40/40	1		06/13/16 10:49
20	M7.061316.105143	WG571962-01	Reference Sample	40/40	1	L16060321-02	06/13/16 10:51
21	M7.061316.105415	WG572511-11	CCV		1		06/13/16 10:54
22	M7.061316.105646	WG572511-12	CCB		1		06/13/16 10:56
23	M7.061316.105920	WG571962-05	Duplicate	40/40	1	L16060321-02	06/13/16 10:59
24	M7.061316.110154	L16060321-03	CATCH BASIN 29	40/40	1		06/13/16 11:01
25	M7.061316.110424	L16060366-01	K6F0188-01	40/40	1		06/13/16 11:04
26	M7.061316.110655	L16060411-03	AWD4T-060716	40/40	1		06/13/16 11:06
27	M7.061316.110925	WG571962-02	Reference Sample	40/40	1	L16060411-04	06/13/16 11:09
28	M7.061316.111157	WG571962-06	Matrix Spike	36/40	1	L16060411-04	06/13/16 11:11
29	M7.061316.111428	WG571962-07	Matrix Spike Duplica	36/40	1	L16060411-04	06/13/16 11:14
30	M7.061316.111700	WG572511-13	CCV		1		06/13/16 11:17
31	M7.061316.111931	WG572511-14	CCB		1		06/13/16 11:19

Page: 1 Approved: June 14, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 13-JUN-2016
Analyst: AMA
Analyst: NA
Method: 7470A/245.1
Instrument: CVAA1
Curve Workgroup: 572511
Runlog ID: 75659
Analytical Workgroups: 572241

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	0002, 0114, 0411
Client Forms	X
Level X	
Level 3	0114
Level 4	0002, 0411
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	AMA
Secondary Reviewer	KHR
Comments	

Primary Reviewer:
13-JUN-2016
Alexandra M. Alfred

Secondary Reviewer:
14-JUN-2016
Kym H. Rhoden

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-14-2016 08:35:42

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 7470A

AAB#: WG572241

Login Number: L16060411

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
AWD4T-060716	03	06/07/16					06/09/2016	1.7	28		06/13/16	5.8	28	
AWD4B-060716	04	06/07/16					06/09/2016	1.7	28		06/13/16	5.8	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4805396
Report generated 06/13/2016 15:05

METHOD BLANK SUMMARY

Login Number: L16060411
Blank File ID: M7.061316.102852
Prep Date: 06/09/16 07:15
Analyzed Date: 06/13/16 10:28
Analyst: AMA

Work Group: WG572241
Blank Sample ID: WG571962-03
Instrument ID: CVAA1
Method: 7470A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG571962-04	M7.061316.103123	06/13/16 10:31	01
DUP	WG571962-05	M7.061316.105920	06/13/16 10:59	01
AWD4T-060716	L16060411-03	M7.061316.110655	06/13/16 11:06	01
AWD4B-060716	L16060411-04	M7.061316.110925	06/13/16 11:09	01

Report Name: BLANK_SUMMARY
PDF File ID: 4805397
Report generated 06/13/2016 15:05

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060411 Prep Date: 06/09/16 07:15 Sample ID: WG571962-03
Instrument ID: CVAA1 Run Date: 06/13/16 10:28 Prep Method: 7470A
File ID: M7.061316.102852 Analyst: AMA Method: 7470A
Workgroup (AAB#): WG572241 Matrix: Water Units: mg/L
Contract #: Cal ID: CVAA1-13-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Mercury	0.000100	0.000400	0.000100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4805398
13-JUN-2016 15:05

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060411 Run Date: 06/13/2016 Sample ID: WG571962-04
Instrument ID: CVAA1 Run Time: 10:31 Prep Method: 7470A
File ID: M7.061316.103123 Analyst: AMA Method: 7470A
Workgroup (AAB#): WG572241 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76527 Cal ID: CVAA1-13-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Mercury	0.00400	0.00442	111	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4805399
Report generated: 06/13/2016 15:05

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060411 Cal ID: CVAA1 - Worknum: WG572241
Instrument ID: CVAA1 Contract #: Method: 7470A
Parent ID: WG571962-02 File ID: M7.061316.110925 Dil: 1 Matrix: WATER
Sample ID: WG571962-06 MS File ID: M7.061316.111157 Dil: 1 Units: mg/L
Sample ID: WG571962-07 MSD File ID: M7.061316.111428 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Mercury	ND	0.00444	0.00469	106	0.00444	0.00470	106	0.0946	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4805400
Report generated 06/13/2016 15:05

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060411 **Worknum:** WG572241
Instrument ID: CVAA1 **Method:** 7470A
Post Spike ID: WG572241-02 **File ID:** M7.061316.104636 **Dil:** 1 **Units:** ug/L
Sample ID: L16060309-01 **File ID:** M7.061316.104403 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MERCURY	1.01		0	U	1	100.9	85 - 115	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4805395
Report generated: 06/13/2016 15:05

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060411
Analytical Method: 7470A
ICAL Worknum: WG572511

Workgroup (AAB#): WG572241
Instrument ID: CVAA1
Initial Calibration Date: 06/13/2016 10:16

Analyte	WG572511-01		WG572511-02		WG572511-03		WG572511-04		WG572511-05		WG572511-06	
	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT
Mercury	0	23.14	0.200	1744	1.00	7639	2.00	15350	5.00	37000	10.0	72200

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4805401
Report generated 06/13/2016 15:05

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060411
Analytical Method: 7470A
ICAL Worknum: WG572511

Workgroup (AAB#): WG572241
Instrument ID: CVAA1
Initial Calibration Date: 06/13/2016 10:16

Analyte	R	Q
Mercury	1.000	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4805401
Report generated 06/13/2016 15:05

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060411
Instrument ID: CVAA1
File ID: M7.061316.102118
Workgroup (AAB#): WG572241
Matrix: WATER

Run Date: 06/13/2016
Run Time: 10:21
Analyst: AMA
Cal ID: CVAA1 - 13-JUN-16

Sample ID: WG572511-08
Method: 7470A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
MERCURY	.1	.4	.1	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4805403
Report generated 06/13/2016 15:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060411
Run Date: 06/13/2016
Sample ID: WG572511-10
Instrument ID: CVAA1
Run Time: 10:26
Method: 7470A
File ID: M7.061316.102621
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG572241
Cal ID: CVAA1 - 13-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4805405
Report generated 06/13/2016 15:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060411
Run Date: 06/13/2016
Sample ID: WG572511-12
Instrument ID: CVAA1
Run Time: 10:56
Method: 7470A
File ID: M7.061316.105646
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG572241
Cal ID: CVAA1 - 13-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4805405
Report generated 06/13/2016 15:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060411
Run Date: 06/13/2016
Sample ID: WG572511-14
Instrument ID: CVAA1
Run Time: 11:19
Method: 7470A
File ID: M7.061316.111931
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG572241
Cal ID: CVAA1 - 13-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4805405
Report generated 06/13/2016 15:05

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060411 Run Date: 06/13/2016 Sample ID: WG572511-07
Instrument ID: CVAA1 Run Time: 10:18 Method: 7470A
File ID: M7.061316.101848 Analyst: AMA Units: ug/L
Workgroup (AAB#): WG572241 Cal ID: CVAA1 - 13-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Mercury		2	2.03	102	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4805402
Report generated 06/13/2016 15:05

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060411
Run Date: 06/13/2016
Sample ID: WG572511-09
Instrument ID: CVAA1
Run Time: 10:23
Method: 7470A
File ID: M7.061316.102351
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG572241
Cal ID: CVAA1 - 13-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00209	mg/L	105	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4805404
Report generated 06/13/2016 15:05

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060411
Run Date: 06/13/2016
Sample ID: WG572511-11
Instrument ID: CVAA1
Run Time: 10:54
Method: 7470A
File ID: M7.061316.105415
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG572241
Cal ID: CVAA1 - 13-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00211	mg/L	106	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4805404
Report generated 06/13/2016 15:05

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060411
Run Date: 06/13/2016
Sample ID: WG572511-13
Instrument ID: CVAA1
Run Time: 11:17
Method: 7470A
File ID: M7.061316.111700
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG572241
Cal ID: CVAA1 - 13-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00213	mg/L	106	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4805404
Report generated 06/13/2016 15:05

2.3.3.3 Raw Data

PDM CVAA1 245.1/7470/7471

Report Generated By CETAC QuickTrace
Analyst: VOA
Worksheet file: C:\Program Files (x86)\QuickTrace\Worksheets\061316B.wsz
Date Started: 6/13/2016 10:00:33 AM
Comment:

Results

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
Standard #0					STD	06/13/16 10:03:31 am	0.0000	23	41.92		1.00
Replicates	11.3	26.5	34.3	20.5							
Standard #1 (0.2 ug/L)					STD	06/13/16 10:06:02 am	0.2000	1744	1.16		1.00
Replicates	1755.1	1727.1	1725.8	1766.3							
Standard #2 (1.0 ug/L)					STD	06/13/16 10:08:34 am	1.0000	7639	0.19		1.00
Replicates	7633.6	7634.3	7628.5	7660.3							
Standard #3 (2.0 ug/L)					STD	06/13/16 10:11:07 am	2.0000	15349	0.13		1.00
Replicates	15376.0	15340.7	15328.4	15351.2							
Standard #4 (5.0 ug/L)					STD	06/13/16 10:13:40 am	5.0000	36997	0.12		1.00
Replicates	37048.7	36975.5	36948.7	37015.4							
Standard #5 (10.0 ug/L)					STD	06/13/16 10:16:14 am	10.0000	72204	0.17		1.00
Replicates	72373.9	72205.8	72078.0	72157.5							

Calibration

Equation: A = 462.596 + 7207.707C
R2: 0.99979
SEE: 447.3694
Flags:

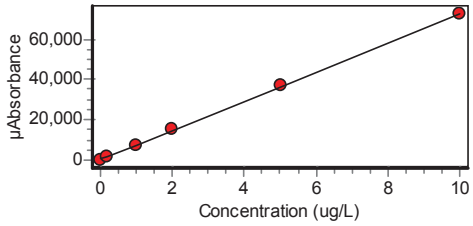

ICV					ICV	06/13/16 10:18:48 am	2.0300	15095	0.14		1.00
Replicates	15116.7	15111.2	15076.5	15076.7							
% Recovery	101.51										

Approved: June 13, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
ICB					ICB	06/13/16 10:21:18 am	-0.0665	-17	115.72		1.00
	Replicates	-19.4	-39.2	8.4	-17.4						
CCV					CCV	06/13/16 10:23:51 am	2.0910	15535	0.16		1.00
	Replicates	15522.3	15520.0	15524.1	15572.8						
	% Recovery	104.56									
CCB					CCB	06/13/16 10:26:21 am	-0.0610	23	51.81		1.00
	Replicates	6.4	22.9	33.4	30.1						
WG571962-03					MB	06/13/16 10:28:52 am	-0.0594	34	41.24		1.00
	Replicates	52.4	18.9	37.3	28.9						
WG571962-04					LCS	06/13/16 10:31:23 am	4.4220	32332	0.52		1.00
	Replicates	32154.1	32250.8	32382.5	32541.0						
	% Recovery	110.54									
L1606000206					UNK	06/13/16 10:33:55 am	0.0406	755	0.96		1.00
	Replicates	759.1	755.9	744.6	760.6						
L1606000207					UNK	06/13/16 10:36:27 am	0.0437	778	1.41		1.00
	Replicates	772.4	765.0	787.1	786.8						
L1606011401					UNK	06/13/16 10:38:58 am	-0.0595	34	45.50		1.00
	Replicates	12.9	43.3	31.8	47.1						
WG572241-01					SPK	06/13/16 10:41:31 am	1.0030	7693	0.16		1.00
	Replicates	7706.7	7696.4	7676.6	7693.4						
	% Recovery	106.27									
L1606030901					UNK	06/13/16 10:44:03 am	-0.0285	257	9.24		1.00
	Replicates	259.2	258.8	283.6	225.8						
WG572241-02					SPK	06/13/16 10:46:36 am	1.0090	7737	0.20		1.00
	Replicates	7715.7	7747.0	7736.5	7749.8						
	% Recovery	103.78									
L1606032101					UNK	06/13/16 10:49:09 am	-0.0639	2	514.55		1.00
	Replicates	13.7	-5.1	-8.7	8.4						

Approved: June 13, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1606032102					UNK	06/13/16 10:51:43 am	-0.0598	32	46.98		1.00
Replicates	20.1	18.7	38.2	49.6							
CCV					CCV	06/13/16 10:54:15 am	2.1110	15675	0.12		1.00
Replicates	15672.9	15671.8	15654.4	15700.4							
% Recovery	105.53										
CCB					CCB	06/13/16 10:56:46 am	-0.0644	-1	799.10		1.00
Replicates	-9.4	-1.6	-9.6	14.9							
WG571962-05					DUP	06/13/16 10:59:20 am	-0.0627	11	136.35		1.00
Replicates	30.0	12.3	4.5	-4.2							
		RPD 0.00									
L1606032103					UNK	06/13/16 11:01:54 am	-0.0605	27	27.52		1.00
Replicates	29.2	33.9	16.6	26.6							
L1606036601					UNK	06/13/16 11:04:24 am	-0.0613	21	100.33		1.00
Replicates	9.2	18.8	51.4	4.8							
L1606041103					UNK	06/13/16 11:06:55 am	-0.0068	414	2.92		1.00
Replicates	406.5	402.6	415.6	429.7							
L1606041104					UNK	06/13/16 11:09:25 am	-0.0216	307	2.13		1.00
Replicates	307.5	314.7	298.7	307.5							
WG571962-06					MSK	06/13/16 11:11:57 am	4.2250	30913	0.58		1.00
Replicates	30726.5	30835.9	30943.9	31146.4							
% Recovery	106.16										
WG571962-07					MSDUP	06/13/16 11:14:28 am	4.2290	30946	0.54		1.00
Replicates	30750.3	30907.6	30973.4	31151.4							
% Recovery	106.27	RPD 0.11									
CCV					CCV	06/13/16 11:17:00 am	2.1270	15791	0.29		1.00
Replicates	15730.1	15783.2	15814.7	15834.4							
% Recovery	106.33										
CCB					CCB	06/13/16 11:19:31 am	-0.0602	29	83.20		1.00
Replicates	23.7	45.2	50.2	-2.8							

Approved: June 13, 2016
Alexandra M. Alfred

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
June 23, 2016

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001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJQ - Cameron J. Quick
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
EMW - ERIC M. WILKEN
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
NPH - Natalie P. Hart
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
June 23, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
June 23, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Debra Richmann	Mail to:	Linda Raabe
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000		112 East Pecan STE. 400
	Marietta, OH 45750	Sampler (print):	Scott Beesinger		San Antonio, TX 78205
Phone:	1-800-373-4071				210-296-2000
Client:	AECOM	Signature:	Scott Beesinger	Fed Ex Airbill No:	
Address:	112 East Pecan Ste. 400				
	San Antonio, TX 78205	pH:		Program:	
Turn Around Time:	STANDARD				
Project Name/Location:	Longhorn				
Project Number:	60274185.0013BH 1824 MR10				

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Total Metals	1,4 - DIOXANE					SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 18/24	18CPTMW15T-060716			6/7/16	1315		✓	W	6	✓	✓		✓									
	18CPTMW15B-060716			6/7/16	1355		✓	W	6	✓	✓		✓									
	AWD4T-060716			6/7/16	1500		✓	W	7	✓	✓	✓	✓									
	AWD4B-060716			6/7/16	1530		✓	W	7	✓	✓	✓	✓									
	TRIP BLANK			6/7/16			✓	W	2	✓												

Comments: **STANDARD TAT**

Microbac OVD
Received: 06/08/2016 09:58
By: BRENDA GREGORY 221000086877
Brenda Gregory

Relinquished by: (Signature)	Scott Beesinger	Date 6/7/16	Time 1615	Received by: (Signature)			d by: (Signature)
Relinquished by: (Signature)		Date	Time	Received for Laboratory by: (Signature)	Date	Time	Remarks:

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060411
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 17-JUN-2016

Samplenum	Container ID	Products
L16060411-01	756382	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:02	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:02	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:02	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	

Samplenum	Container ID	Products
L16060411-01	756383	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-JUN-2016 15:02	CLS		
2	PREP	W1	EXT	09-JUN-2016 14:52	EMW	CLS	
3	ANALYZ*	EXT	SEMI	12-JUN-2016 10:23	SCB	EMW	
4	SUBBED	EXT	DISP	14-JUN-2016 10:03	BJO	BJO	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		08-JUN-2016 15:02	CLS		

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060411-01	756384	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-JUN-2016 15:02	CLS		
2	ANALYZ	W1	SEM	10-JUN-2016 08:24	WTD	BRG	
3	STORE	SEM	A1	11-JUN-2016 11:57	AZH	WTD	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060411
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 17-JUN-2016

Samplenum	Container ID	Products
L16060411-02	756385	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:02	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	
3	STORE	ORG4	A1	22-JUN-2016 07:32	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:02	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	
3	STORE	ORG4	A1	22-JUN-2016 07:32	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:02	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	
3	STORE	ORG4	A1	22-JUN-2016 07:32	CLS	AWE	

Samplenum	Container ID	Products
L16060411-02	756386	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-JUN-2016 15:02	CLS		
2	PREP	W1	EXT	09-JUN-2016 14:52	EMW	CLS	
3	ANALYZ*	EXT	SEMI	12-JUN-2016 10:23	SCB	EMW	
4	SUBBED	EXT	DISP	14-JUN-2016 10:03	BJO	BJO	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		08-JUN-2016 15:02	CLS		

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060411-02	756387	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-JUN-2016 15:02	CLS		
2	ANALYZ	W1	SEM	10-JUN-2016 08:24	WTD	BRG	
3	STORE	SEM	A1	11-JUN-2016 11:57	AZH	WTD	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060411
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 17-JUN-2016

Samplenum	Container ID	Products
L16060411-03	756388	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:02	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	
3	STORE	ORG4	A1	22-JUN-2016 07:32	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:02	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	
3	STORE	ORG4	A1	22-JUN-2016 07:32	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:02	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	
3	STORE	ORG4	A1	22-JUN-2016 07:32	CLS	AWE	

Samplenum	Container ID	Products
L16060411-03	756389	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-JUN-2016 15:02	CLS		
2	PREP	W1	EXT	09-JUN-2016 14:52	EMW	CLS	
3	ANALYZ*	EXT	SEMI	12-JUN-2016 10:23	SCB	EMW	
4	SUBBED	EXT	DISP	14-JUN-2016 10:03	BJO	BJO	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		08-JUN-2016 15:02	CLS		

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060411-03	756390	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-JUN-2016 15:02	CLS		
2	ANALYZ	W1	SEM	10-JUN-2016 08:24	WTD	BRG	
3	STORE	SEM	A1	11-JUN-2016 11:56	AZH	WTD	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060411
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 17-JUN-2016

Samplenum	Container ID	Products
L16060411-03	756391	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-JUN-2016 15:02	CLS		
2	PREP	W1	DIG	08-JUN-2016 15:21	ERP	CLS	
3	ANALYZ*	DIG	METALS	10-JUN-2016 11:05	AMA	ERP	
4	STORE	DIG	A1	13-JUN-2016 13:14	BRG	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060411-04	756392	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:02	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	
3	STORE	ORG4	A1	22-JUN-2016 07:32	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:02	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	
3	STORE	ORG4	A1	22-JUN-2016 07:32	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:02	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	
3	STORE	ORG4	A1	22-JUN-2016 07:32	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060411
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 17-JUN-2016

Samplenum	Container ID	Products
L16060411-04	756393	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-JUN-2016 15:02	CLS		
2	PREP	W1	EXT	09-JUN-2016 14:52	EMW	CLS	
3	ANALYZ*	EXT	SEMI	12-JUN-2016 10:23	SCB	EMW	
4	SUBBED	EXT	DISP	14-JUN-2016 10:03	BJO	BJO	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		08-JUN-2016 15:02	CLS		

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060411-04	756394	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-JUN-2016 15:02	CLS		
2	ANALYZ	W1	SEM	10-JUN-2016 08:24	WTD	BRG	
3	STORE	SEM	A1	11-JUN-2016 11:56	AZH	WTD	

Samplenum	Container ID	Products
L16060411-04	756395	CO-MS CR-MS CU-MS FE HG K MG MN-MS NA NI-MS PE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-JUN-2016 15:02	CLS		
2	PREP	W1	DIG	08-JUN-2016 15:21	ERP	CLS	
3	ANALYZ*	DIG	METALS	10-JUN-2016 11:05	AMA	ERP	
4	STORE	DIG	A1	13-JUN-2016 13:14	BRG	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060411
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 17-JUN-2016

Samplenum	Container ID	Products
L16060411-05	756396	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:02	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	
3	STORE	ORG4	A1	22-JUN-2016 07:32	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:02	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	
3	STORE	ORG4	A1	22-JUN-2016 07:32	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16060414

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Michelle Taylor – Client Services Specialist
(740) 373-4071
Michelle.Taylor@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on June 20 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00113511	I	5.0		J2317165090	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
AWD1T-060716	L16060414-01	06/07/2016 07:55	06/08/2016 10:01
AWD1B-060716	L16060414-02	06/07/2016 08:45	06/08/2016 10:01
MW14T-060716	L16060414-03	06/07/2016 10:30	06/08/2016 10:01
MW14B-060716	L16060414-04	06/07/2016 11:20	06/08/2016 10:01
TRIP BLANK	L16060414-05	06/07/2016 00:01	06/08/2016 10:01

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16060414
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.1 Narratives

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060414
Project Name:		**Method:**	8260
Prep Batch Number(s):	572494,572592	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-16 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2016-06-16 18:34:13

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060414
Project Name:		**Method:**	8260
Prep Batch Number(s):	572494,572592	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-16 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060414
Project Name:		**Method:**	8260
Prep Batch Number(s):	572494,572592	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-16 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060414
Project Name:		**Method:**	8260
Prep Batch Number(s):	572494,572592	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-16 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060414
Project Name:		**Method:**	8260
Prep Batch Number(s):	572494,572592	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-16 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060414
Project Name:		**Method:**	8260
Prep Batch Number(s):	572494,572592	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-16 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1)Bromomethane exceeded the UCL in the CCV analyzed 06/13/2016 on HPMS8.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060414
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG571956	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-17 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-06-17 20:56:06

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060414
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG571956	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-17 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?		X			1
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060414
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG571956	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-17 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060414
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG571956	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-17 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060414
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG571956	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-17 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060414
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG571956	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-17 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. Samples 01 and 02 yielded recoveries for the surrogate that were above the acceptance range. This was due to sample matrix interference.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060414
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572200	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-06-14 16:46:41

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060414
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572200	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060414
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572200	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060414
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572200	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060414
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572200	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060414
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572200	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

1.2 Certificate of Analysis

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060414-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	AWD1T-060716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572592	**Analyst:**	TMB	**Run Date:**	06/14/2016 19:35
Collect Date:	06/07/2016 07:55	**Dilution:**	100	**File ID:**	8M412992
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	500	U	1000	500	250
Benzene	71-43-2	25.0	U	100	25.0	12.5
Bromobenzene	108-86-1	25.0	U	100	25.0	12.5
Bromochloromethane	74-97-5	40.0	U	100	40.0	20.0
Bromodichloromethane	75-27-4	50.0	U	100	50.0	25.0
Bromoform	75-25-2	100	U	200	100	50.0
Bromomethane	74-83-9	100	U	200	100	50.0
2-Butanone	78-93-3	500	U	1000	500	250
n-Butylbenzene	104-51-8	50.0	U	100	50.0	25.0
sec-Butylbenzene	135-98-8	50.0	U	100	50.0	25.0
tert-Butylbenzene	98-06-6	50.0	U	100	50.0	25.0
Carbon disulfide	75-15-0	100	U	200	100	50.0
Carbon tetrachloride	56-23-5	50.0	U	100	50.0	25.0
Chlorobenzene	108-90-7	25.0	U	100	25.0	12.5
Chlorodibromomethane	124-48-1	50.0	U	100	50.0	25.0
Chloroethane	75-00-3	100	U	200	100	50.0
Chloroform	67-66-3	25.0	U	100	25.0	12.5
Chloromethane	74-87-3	100	U	200	100	50.0
2-Chlorotoluene	95-49-8	25.0	U	100	25.0	12.5
4-Chlorotoluene	106-43-4	50.0	U	100	50.0	25.0
1,2-Dibromo-3-chloropropane	96-12-8	200	U	500	200	100
1,2-Dibromoethane	106-93-4	50.0	U	100	50.0	25.0
Dibromomethane	74-95-3	50.0	U	100	50.0	25.0
1,2-Dichlorobenzene	95-50-1	25.0	U	100	25.0	12.5
1,3-Dichlorobenzene	541-73-1	50.0	U	100	50.0	25.0
1,4-Dichlorobenzene	106-46-7	25.0	U	100	25.0	12.5
Dichlorodifluoromethane	75-71-8	50.0	U	100	50.0	25.0
1,1-Dichloroethane	75-34-3	90.5	J	100	25.0	12.5
1,2-Dichloroethane	107-06-2	143		100	50.0	25.0
1,1-Dichloroethene	75-35-4	114	J	200	100	50.0
cis-1,2-Dichloroethene	156-59-2	12000		100	50.0	25.0
trans-1,2-Dichloroethene	156-60-5	50.0	U	100	50.0	25.0

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	40.0	U	100	40.0	20.0
1,3-Dichloropropane	142-28-9	40.0	U	100	40.0	20.0
2,2-Dichloropropane	594-20-7	50.0	U	100	50.0	25.0
cis-1,3-Dichloropropene	10061-01-5	50.0	U	100	50.0	25.0
trans-1,3-Dichloropropene	10061-02-6	100	U	200	100	50.0
1,1-Dichloropropene	563-58-6	50.0	U	100	50.0	25.0
Ethylbenzene	100-41-4	50.0	U	100	50.0	25.0
2-Hexanone	591-78-6	500	U	1000	500	250
Hexachlorobutadiene	87-68-3	50.0	U	100	50.0	25.0
Isopropylbenzene	98-82-8	50.0	U	100	50.0	25.0
p-Isopropyltoluene	99-87-6	50.0	U	100	50.0	25.0
4-Methyl-2-pentanone	108-10-1	500	U	1000	500	250
Methylene chloride	75-09-2	50.0	U	100	50.0	25.0
Naphthalene	91-20-3	40.0	U	100	40.0	20.0
n-Propylbenzene	103-65-1	25.0	U	100	25.0	12.5
Styrene	100-42-5	25.0	U	100	25.0	12.5
1,1,1,2-Tetrachloroethane	630-20-6	50.0	U	100	50.0	25.0
1,1,2,2-Tetrachloroethane	79-34-5	40.0	U	100	40.0	20.0
Tetrachloroethene	127-18-4	50.0	U	100	50.0	25.0
Toluene	108-88-3	50.0	U	100	50.0	25.0
1,2,3-Trichlorobenzene	87-61-6	30.0	U	100	30.0	15.0
1,2,4-Trichlorobenzene	120-82-1	40.0	U	100	40.0	20.0
1,1,1-Trichloroethane	71-55-6	50.0	U	100	50.0	25.0
1,1,2-Trichloroethane	79-00-5	50.0	U	100	50.0	25.0
Trichloroethene	79-01-6	6300		100	50.0	25.0
Trichlorofluoromethane	75-69-4	50.0	U	100	50.0	25.0
1,2,3-Trichloropropane	96-18-4	100	U	200	100	50.0
1,2,4-Trimethylbenzene	95-63-6	50.0	U	100	50.0	25.0
1,3,5-Trimethylbenzene	108-67-8	50.0	U	100	50.0	25.0
Vinyl chloride	75-01-4	177		100	50.0	25.0
o-Xylene	95-47-6	50.0	U	100	50.0	25.0
m-,p-Xylene	179601-23-1	100	U	200	100	50.0

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	114	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	102	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060414-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	AWD1T-060716	**Prep Method:**	3520C	**Prep Date:**	06/11/2016 13:19
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572361	**Analyst:**	MES	**Run Date:**	06/13/2016 12:35
Collect Date:	06/07/2016 07:55	**Dilution:**	1	**File ID:**	15M18373
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	5.74	J	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	1060	20	129	*

J	The reported result is an estimated value.

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060414-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	AWD1T-060716	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/10/2016 18:02
Collect Date:	06/07/2016 07:55	**Dilution:**	1	**File ID:**	1LM.LM35251
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060414-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	AWD1B-060716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572592	**Analyst:**	TMB	**Run Date:**	06/14/2016 20:05
Collect Date:	06/07/2016 08:45	**Dilution:**	100	**File ID:**	8M412993
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	500	U	1000	500	250
Benzene	71-43-2	25.0	U	100	25.0	12.5
Bromobenzene	108-86-1	25.0	U	100	25.0	12.5
Bromochloromethane	74-97-5	40.0	U	100	40.0	20.0
Bromodichloromethane	75-27-4	50.0	U	100	50.0	25.0
Bromoform	75-25-2	100	U	200	100	50.0
Bromomethane	74-83-9	100	U	200	100	50.0
2-Butanone	78-93-3	500	U	1000	500	250
n-Butylbenzene	104-51-8	50.0	U	100	50.0	25.0
sec-Butylbenzene	135-98-8	50.0	U	100	50.0	25.0
tert-Butylbenzene	98-06-6	50.0	U	100	50.0	25.0
Carbon disulfide	75-15-0	100	U	200	100	50.0
Carbon tetrachloride	56-23-5	50.0	U	100	50.0	25.0
Chlorobenzene	108-90-7	25.0	U	100	25.0	12.5
Chlorodibromomethane	124-48-1	50.0	U	100	50.0	25.0
Chloroethane	75-00-3	100	U	200	100	50.0
Chloroform	67-66-3	25.0	U	100	25.0	12.5
Chloromethane	74-87-3	100	U	200	100	50.0
2-Chlorotoluene	95-49-8	25.0	U	100	25.0	12.5
4-Chlorotoluene	106-43-4	50.0	U	100	50.0	25.0
1,2-Dibromo-3-chloropropane	96-12-8	200	U	500	200	100
1,2-Dibromoethane	106-93-4	50.0	U	100	50.0	25.0
Dibromomethane	74-95-3	50.0	U	100	50.0	25.0
1,2-Dichlorobenzene	95-50-1	25.0	U	100	25.0	12.5
1,3-Dichlorobenzene	541-73-1	50.0	U	100	50.0	25.0
1,4-Dichlorobenzene	106-46-7	25.0	U	100	25.0	12.5
Dichlorodifluoromethane	75-71-8	50.0	U	100	50.0	25.0
1,1-Dichloroethane	75-34-3	113		100	25.0	12.5
1,2-Dichloroethane	107-06-2	158		100	50.0	25.0
1,1-Dichloroethene	75-35-4	158	J	200	100	50.0
cis-1,2-Dichloroethene	156-59-2	14100		100	50.0	25.0

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	50.0	U	100	50.0	25.0
1,2-Dichloropropane	78-87-5	40.0	U	100	40.0	20.0
1,3-Dichloropropane	142-28-9	40.0	U	100	40.0	20.0
2,2-Dichloropropane	594-20-7	50.0	U	100	50.0	25.0
cis-1,3-Dichloropropene	10061-01-5	50.0	U	100	50.0	25.0
trans-1,3-Dichloropropene	10061-02-6	100	U	200	100	50.0
1,1-Dichloropropene	563-58-6	50.0	U	100	50.0	25.0
Ethylbenzene	100-41-4	50.0	U	100	50.0	25.0
2-Hexanone	591-78-6	500	U	1000	500	250
Hexachlorobutadiene	87-68-3	50.0	U	100	50.0	25.0
Isopropylbenzene	98-82-8	50.0	U	100	50.0	25.0
p-Isopropyltoluene	99-87-6	50.0	U	100	50.0	25.0
4-Methyl-2-pentanone	108-10-1	500	U	1000	500	250
Methylene chloride	75-09-2	95.1	J	100	50.0	25.0
Naphthalene	91-20-3	40.0	U	100	40.0	20.0
n-Propylbenzene	103-65-1	25.0	U	100	25.0	12.5
Styrene	100-42-5	25.0	U	100	25.0	12.5
1,1,1,2-Tetrachloroethane	630-20-6	50.0	U	100	50.0	25.0
1,1,2,2-Tetrachloroethane	79-34-5	40.0	U	100	40.0	20.0
Tetrachloroethene	127-18-4	50.0	U	100	50.0	25.0
Toluene	108-88-3	50.0	U	100	50.0	25.0
1,2,3-Trichlorobenzene	87-61-6	30.0	U	100	30.0	15.0
1,2,4-Trichlorobenzene	120-82-1	40.0	U	100	40.0	20.0
1,1,1-Trichloroethane	71-55-6	50.0	U	100	50.0	25.0
1,1,2-Trichloroethane	79-00-5	50.0	U	100	50.0	25.0
Trichloroethene	79-01-6	7120		100	50.0	25.0
Trichlorofluoromethane	75-69-4	50.0	U	100	50.0	25.0
1,2,3-Trichloropropane	96-18-4	100	U	200	100	50.0
1,2,4-Trimethylbenzene	95-63-6	50.0	U	100	50.0	25.0
1,3,5-Trimethylbenzene	108-67-8	50.0	U	100	50.0	25.0
Vinyl chloride	75-01-4	256		100	50.0	25.0
o-Xylene	95-47-6	50.0	U	100	50.0	25.0
m-,p-Xylene	179601-23-1	100	U	200	100	50.0

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	113	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	98.1	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060414-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	AWD1B-060716	**Prep Method:**	3520C	**Prep Date:**	06/11/2016 13:19
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572361	**Analyst:**	MES	**Run Date:**	06/13/2016 12:58
Collect Date:	06/07/2016 08:45	**Dilution:**	1	**File ID:**	15M18374
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	7.14	J	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	1950	20	129	*

J	The reported result is an estimated value.

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060414-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	AWD1B-060716	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/10/2016 18:21
Collect Date:	06/07/2016 08:45	**Dilution:**	1	**File ID:**	1LM.LM35252
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	4.92		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16060414-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW14T-060716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572592	**Analyst:**	TMB	**Run Date:**	06/14/2016 20:34
Collect Date:	06/07/2016 10:30	**Dilution:**	100	**File ID:**	8M412994
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	500	U	1000	500	250
Benzene	71-43-2	25.0	U	100	25.0	12.5
Bromobenzene	108-86-1	25.0	U	100	25.0	12.5
Bromochloromethane	74-97-5	40.0	U	100	40.0	20.0
Bromodichloromethane	75-27-4	50.0	U	100	50.0	25.0
Bromoform	75-25-2	100	U	200	100	50.0
Bromomethane	74-83-9	100	U	200	100	50.0
2-Butanone	78-93-3	500	U	1000	500	250
n-Butylbenzene	104-51-8	50.0	U	100	50.0	25.0
sec-Butylbenzene	135-98-8	50.0	U	100	50.0	25.0
tert-Butylbenzene	98-06-6	50.0	U	100	50.0	25.0
Carbon disulfide	75-15-0	100	U	200	100	50.0
Carbon tetrachloride	56-23-5	50.0	U	100	50.0	25.0
Chlorobenzene	108-90-7	25.0	U	100	25.0	12.5
Chlorodibromomethane	124-48-1	50.0	U	100	50.0	25.0
Chloroethane	75-00-3	100	U	200	100	50.0
Chloroform	67-66-3	25.0	U	100	25.0	12.5
Chloromethane	74-87-3	100	U	200	100	50.0
2-Chlorotoluene	95-49-8	25.0	U	100	25.0	12.5
4-Chlorotoluene	106-43-4	50.0	U	100	50.0	25.0

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	200	U	500	200	100
1,2-Dibromoethane	106-93-4	50.0	U	100	50.0	25.0
Dibromomethane	74-95-3	50.0	U	100	50.0	25.0
1,2-Dichlorobenzene	95-50-1	25.0	U	100	25.0	12.5
1,3-Dichlorobenzene	541-73-1	50.0	U	100	50.0	25.0
1,4-Dichlorobenzene	106-46-7	25.0	U	100	25.0	12.5
Dichlorodifluoromethane	75-71-8	50.0	U	100	50.0	25.0
1,1-Dichloroethane	75-34-3	34.7	J	100	25.0	12.5
1,2-Dichloroethane	107-06-2	114		100	50.0	25.0
1,1-Dichloroethene	75-35-4	154	J	200	100	50.0
cis-1,2-Dichloroethene	156-59-2	2600		100	50.0	25.0
trans-1,2-Dichloroethene	156-60-5	50.0	U	100	50.0	25.0
1,2-Dichloropropane	78-87-5	40.0	U	100	40.0	20.0
1,3-Dichloropropane	142-28-9	40.0	U	100	40.0	20.0
2,2-Dichloropropane	594-20-7	50.0	U	100	50.0	25.0
cis-1,3-Dichloropropene	10061-01-5	50.0	U	100	50.0	25.0
trans-1,3-Dichloropropene	10061-02-6	100	U	200	100	50.0
1,1-Dichloropropene	563-58-6	50.0	U	100	50.0	25.0
Ethylbenzene	100-41-4	50.0	U	100	50.0	25.0
2-Hexanone	591-78-6	500	U	1000	500	250
Hexachlorobutadiene	87-68-3	50.0	U	100	50.0	25.0
Isopropylbenzene	98-82-8	50.0	U	100	50.0	25.0
p-Isopropyltoluene	99-87-6	50.0	U	100	50.0	25.0
4-Methyl-2-pentanone	108-10-1	500	U	1000	500	250
Methylene chloride	75-09-2	50.0	U	100	50.0	25.0
Naphthalene	91-20-3	40.0	U	100	40.0	20.0
n-Propylbenzene	103-65-1	25.0	U	100	25.0	12.5
Styrene	100-42-5	25.0	U	100	25.0	12.5
1,1,1,2-Tetrachloroethane	630-20-6	50.0	U	100	50.0	25.0
1,1,2,2-Tetrachloroethane	79-34-5	40.0	U	100	40.0	20.0
Tetrachloroethene	127-18-4	50.0	U	100	50.0	25.0
Toluene	108-88-3	50.0	U	100	50.0	25.0
1,2,3-Trichlorobenzene	87-61-6	30.0	U	100	30.0	15.0
1,2,4-Trichlorobenzene	120-82-1	40.0	U	100	40.0	20.0
1,1,1-Trichloroethane	71-55-6	50.0	U	100	50.0	25.0
1,1,2-Trichloroethane	79-00-5	50.0	U	100	50.0	25.0
Trichloroethene	79-01-6	12700		100	50.0	25.0
Trichlorofluoromethane	75-69-4	50.0	U	100	50.0	25.0
1,2,3-Trichloropropane	96-18-4	100	U	200	100	50.0

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	50.0	U	100	50.0	25.0
1,3,5-Trimethylbenzene	108-67-8	50.0	U	100	50.0	25.0
Vinyl chloride	75-01-4	50.0	U	100	50.0	25.0
o-Xylene	95-47-6	50.0	U	100	50.0	25.0
m-,p-Xylene	179601-23-1	100	U	200	100	50.0

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	114	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	100	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060414-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	MW14T-060716	**Prep Method:**	3520C	**Prep Date:**	06/11/2016 13:19
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572361	**Analyst:**	MES	**Run Date:**	06/13/2016 15:14
Collect Date:	06/07/2016 10:30	**Dilution:**	50	**File ID:**	15M18380
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	390		100	50.0	25.0

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	0.000	20	129	*

Certificate of Analysis

Sample #:	L16060414-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW14T-060716	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/11/2016 14:55
Collect Date:	06/07/2016 10:30	**Dilution:**	100000	**File ID:**	1LM.LM35290
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	177000		40000	20000	10000

Certificate of Analysis

Sample #:	L16060414-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW14B-060716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572592	**Analyst:**	TMB	**Run Date:**	06/14/2016 21:03
Collect Date:	06/07/2016 11:20	**Dilution:**	100	**File ID:**	8M412995
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	500	U	1000	500	250
Benzene	71-43-2	25.0	U	100	25.0	12.5
Bromobenzene	108-86-1	25.0	U	100	25.0	12.5
Bromochloromethane	74-97-5	40.0	U	100	40.0	20.0
Bromodichloromethane	75-27-4	50.0	U	100	50.0	25.0
Bromoform	75-25-2	100	U	200	100	50.0
Bromomethane	74-83-9	100	U	200	100	50.0

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Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
2-Butanone	78-93-3	500	U	1000	500	250
n-Butylbenzene	104-51-8	50.0	U	100	50.0	25.0
sec-Butylbenzene	135-98-8	50.0	U	100	50.0	25.0
tert-Butylbenzene	98-06-6	50.0	U	100	50.0	25.0
Carbon disulfide	75-15-0	100	U	200	100	50.0
Carbon tetrachloride	56-23-5	50.0	U	100	50.0	25.0
Chlorobenzene	108-90-7	25.0	U	100	25.0	12.5
Chlorodibromomethane	124-48-1	50.0	U	100	50.0	25.0
Chloroethane	75-00-3	100	U	200	100	50.0
Chloroform	67-66-3	13.2	J	100	25.0	12.5
Chloromethane	74-87-3	100	U	200	100	50.0
2-Chlorotoluene	95-49-8	25.0	U	100	25.0	12.5
4-Chlorotoluene	106-43-4	50.0	U	100	50.0	25.0
1,2-Dibromo-3-chloropropane	96-12-8	200	U	500	200	100
1,2-Dibromoethane	106-93-4	50.0	U	100	50.0	25.0
Dibromomethane	74-95-3	50.0	U	100	50.0	25.0
1,2-Dichlorobenzene	95-50-1	25.0	U	100	25.0	12.5
1,3-Dichlorobenzene	541-73-1	50.0	U	100	50.0	25.0
1,4-Dichlorobenzene	106-46-7	25.0	U	100	25.0	12.5
Dichlorodifluoromethane	75-71-8	50.0	U	100	50.0	25.0
1,1-Dichloroethane	75-34-3	37.3	J	100	25.0	12.5
1,2-Dichloroethane	107-06-2	140		100	50.0	25.0
1,1-Dichloroethene	75-35-4	195	J	200	100	50.0
cis-1,2-Dichloroethene	156-59-2	2550		100	50.0	25.0
trans-1,2-Dichloroethene	156-60-5	50.0	U	100	50.0	25.0
1,2-Dichloropropane	78-87-5	40.0	U	100	40.0	20.0
1,3-Dichloropropane	142-28-9	40.0	U	100	40.0	20.0
2,2-Dichloropropane	594-20-7	50.0	U	100	50.0	25.0
cis-1,3-Dichloropropene	10061-01-5	50.0	U	100	50.0	25.0
trans-1,3-Dichloropropene	10061-02-6	100	U	200	100	50.0
1,1-Dichloropropene	563-58-6	50.0	U	100	50.0	25.0
Ethylbenzene	100-41-4	50.0	U	100	50.0	25.0
2-Hexanone	591-78-6	500	U	1000	500	250
Hexachlorobutadiene	87-68-3	50.0	U	100	50.0	25.0
Isopropylbenzene	98-82-8	50.0	U	100	50.0	25.0
p-Isopropyltoluene	99-87-6	50.0	U	100	50.0	25.0
4-Methyl-2-pentanone	108-10-1	500	U	1000	500	250
Methylene chloride	75-09-2	53.5	J	100	50.0	25.0
Naphthalene	91-20-3	40.0	U	100	40.0	20.0

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
n-Propylbenzene	103-65-1	25.0	U	100	25.0	12.5
Styrene	100-42-5	25.0	U	100	25.0	12.5
1,1,1,2-Tetrachloroethane	630-20-6	50.0	U	100	50.0	25.0
1,1,2,2-Tetrachloroethane	79-34-5	40.0	U	100	40.0	20.0
Tetrachloroethene	127-18-4	50.0	U	100	50.0	25.0
Toluene	108-88-3	50.0	U	100	50.0	25.0
1,2,3-Trichlorobenzene	87-61-6	30.0	U	100	30.0	15.0
1,2,4-Trichlorobenzene	120-82-1	40.0	U	100	40.0	20.0
1,1,1-Trichloroethane	71-55-6	50.0	U	100	50.0	25.0
1,1,2-Trichloroethane	79-00-5	50.0	U	100	50.0	25.0
Trichloroethene	79-01-6	15900		100	50.0	25.0
Trichlorofluoromethane	75-69-4	50.0	U	100	50.0	25.0
1,2,3-Trichloropropane	96-18-4	100	U	200	100	50.0
1,2,4-Trimethylbenzene	95-63-6	50.0	U	100	50.0	25.0
1,3,5-Trimethylbenzene	108-67-8	50.0	U	100	50.0	25.0
Vinyl chloride	75-01-4	50.0	U	100	50.0	25.0
o-Xylene	95-47-6	50.0	U	100	50.0	25.0
m-,p-Xylene	179601-23-1	100	U	200	100	50.0

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	115	70	120	
Toluene-d8	106	85	120	
4-Bromofluorobenzene	100	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060414-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	MW14B-060716	**Prep Method:**	3520C	**Prep Date:**	06/11/2016 13:19
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572361	**Analyst:**	MES	**Run Date:**	06/13/2016 15:36
Collect Date:	06/07/2016 11:20	**Dilution:**	50	**File ID:**	15M18381
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	412		110	55.0	27.5

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	0.000	20	129	*

Certificate of Analysis

Sample #:	L16060414-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW14B-060716	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/11/2016 15:15
Collect Date:	06/07/2016 11:20	**Dilution:**	100000	**File ID:**	1LM.LM35291
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	229000		40000	20000	10000

Certificate of Analysis

Sample #:	L16060414-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572494	**Analyst:**	TMB	**Run Date:**	06/13/2016 18:25
Collect Date:	06/07/2016 00:01	**Dilution:**	1	**File ID:**	8M412952
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500

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Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200

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Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	109	85	115	
1,2-Dichloroethane-d4	114	70	120	
Toluene-d8	106	85	120	
4-Bromofluorobenzene	99.6	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060414-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	AWD1T-060716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572592	**Analyst:**	TMB	**Run Date:**	06/14/2016 19:35
Collect Date:	06/07/2016 07:55	**Dilution:**	100	**File ID:**	8M412992
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	500	U	1000	500	250
Benzene	71-43-2	25.0	U	100	25.0	12.5
Bromobenzene	108-86-1	25.0	U	100	25.0	12.5
Bromochloromethane	74-97-5	40.0	U	100	40.0	20.0
Bromodichloromethane	75-27-4	50.0	U	100	50.0	25.0
Bromoform	75-25-2	100	U	200	100	50.0
Bromomethane	74-83-9	100	U	200	100	50.0
2-Butanone	78-93-3	500	U	1000	500	250
n-Butylbenzene	104-51-8	50.0	U	100	50.0	25.0
sec-Butylbenzene	135-98-8	50.0	U	100	50.0	25.0
tert-Butylbenzene	98-06-6	50.0	U	100	50.0	25.0
Carbon disulfide	75-15-0	100	U	200	100	50.0
Carbon tetrachloride	56-23-5	50.0	U	100	50.0	25.0
Chlorobenzene	108-90-7	25.0	U	100	25.0	12.5
Chlorodibromomethane	124-48-1	50.0	U	100	50.0	25.0
Chloroethane	75-00-3	100	U	200	100	50.0
Chloroform	67-66-3	25.0	U	100	25.0	12.5
Chloromethane	74-87-3	100	U	200	100	50.0
2-Chlorotoluene	95-49-8	25.0	U	100	25.0	12.5
4-Chlorotoluene	106-43-4	50.0	U	100	50.0	25.0
1,2-Dibromo-3-chloropropane	96-12-8	200	U	500	200	100
1,2-Dibromoethane	106-93-4	50.0	U	100	50.0	25.0
Dibromomethane	74-95-3	50.0	U	100	50.0	25.0
1,2-Dichlorobenzene	95-50-1	25.0	U	100	25.0	12.5
1,3-Dichlorobenzene	541-73-1	50.0	U	100	50.0	25.0
1,4-Dichlorobenzene	106-46-7	25.0	U	100	25.0	12.5
Dichlorodifluoromethane	75-71-8	50.0	U	100	50.0	25.0
1,1-Dichloroethane	75-34-3	90.5	J	100	25.0	12.5
1,2-Dichloroethane	107-06-2	143		100	50.0	25.0
1,1-Dichloroethene	75-35-4	114	J	200	100	50.0
cis-1,2-Dichloroethene	156-59-2	12000		100	50.0	25.0
trans-1,2-Dichloroethene	156-60-5	50.0	U	100	50.0	25.0

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Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	40.0	U	100	40.0	20.0
1,3-Dichloropropane	142-28-9	40.0	U	100	40.0	20.0
2,2-Dichloropropane	594-20-7	50.0	U	100	50.0	25.0
cis-1,3-Dichloropropene	10061-01-5	50.0	U	100	50.0	25.0
trans-1,3-Dichloropropene	10061-02-6	100	U	200	100	50.0
1,1-Dichloropropene	563-58-6	50.0	U	100	50.0	25.0
Ethylbenzene	100-41-4	50.0	U	100	50.0	25.0
2-Hexanone	591-78-6	500	U	1000	500	250
Hexachlorobutadiene	87-68-3	50.0	U	100	50.0	25.0
Isopropylbenzene	98-82-8	50.0	U	100	50.0	25.0
p-Isopropyltoluene	99-87-6	50.0	U	100	50.0	25.0
4-Methyl-2-pentanone	108-10-1	500	U	1000	500	250
Methylene chloride	75-09-2	50.0	U	100	50.0	25.0
Naphthalene	91-20-3	40.0	U	100	40.0	20.0
n-Propylbenzene	103-65-1	25.0	U	100	25.0	12.5
Styrene	100-42-5	25.0	U	100	25.0	12.5
1,1,1,2-Tetrachloroethane	630-20-6	50.0	U	100	50.0	25.0
1,1,2,2-Tetrachloroethane	79-34-5	40.0	U	100	40.0	20.0
Tetrachloroethene	127-18-4	50.0	U	100	50.0	25.0
Toluene	108-88-3	50.0	U	100	50.0	25.0
1,2,3-Trichlorobenzene	87-61-6	30.0	U	100	30.0	15.0
1,2,4-Trichlorobenzene	120-82-1	40.0	U	100	40.0	20.0
1,1,1-Trichloroethane	71-55-6	50.0	U	100	50.0	25.0
1,1,2-Trichloroethane	79-00-5	50.0	U	100	50.0	25.0
Trichloroethene	79-01-6	6300		100	50.0	25.0
Trichlorofluoromethane	75-69-4	50.0	U	100	50.0	25.0
1,2,3-Trichloropropane	96-18-4	100	U	200	100	50.0
1,2,4-Trimethylbenzene	95-63-6	50.0	U	100	50.0	25.0
1,3,5-Trimethylbenzene	108-67-8	50.0	U	100	50.0	25.0
Vinyl chloride	75-01-4	177		100	50.0	25.0
o-Xylene	95-47-6	50.0	U	100	50.0	25.0
m-,p-Xylene	179601-23-1	100	U	200	100	50.0

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	114	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	102	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060414-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	AWD1B-060716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572592	**Analyst:**	TMB	**Run Date:**	06/14/2016 20:05
Collect Date:	06/07/2016 08:45	**Dilution:**	100	**File ID:**	8M412993
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	500	U	1000	500	250
Benzene	71-43-2	25.0	U	100	25.0	12.5
Bromobenzene	108-86-1	25.0	U	100	25.0	12.5
Bromochloromethane	74-97-5	40.0	U	100	40.0	20.0
Bromodichloromethane	75-27-4	50.0	U	100	50.0	25.0
Bromoform	75-25-2	100	U	200	100	50.0
Bromomethane	74-83-9	100	U	200	100	50.0
2-Butanone	78-93-3	500	U	1000	500	250
n-Butylbenzene	104-51-8	50.0	U	100	50.0	25.0
sec-Butylbenzene	135-98-8	50.0	U	100	50.0	25.0
tert-Butylbenzene	98-06-6	50.0	U	100	50.0	25.0
Carbon disulfide	75-15-0	100	U	200	100	50.0
Carbon tetrachloride	56-23-5	50.0	U	100	50.0	25.0
Chlorobenzene	108-90-7	25.0	U	100	25.0	12.5
Chlorodibromomethane	124-48-1	50.0	U	100	50.0	25.0
Chloroethane	75-00-3	100	U	200	100	50.0
Chloroform	67-66-3	25.0	U	100	25.0	12.5
Chloromethane	74-87-3	100	U	200	100	50.0
2-Chlorotoluene	95-49-8	25.0	U	100	25.0	12.5
4-Chlorotoluene	106-43-4	50.0	U	100	50.0	25.0
1,2-Dibromo-3-chloropropane	96-12-8	200	U	500	200	100
1,2-Dibromoethane	106-93-4	50.0	U	100	50.0	25.0
Dibromomethane	74-95-3	50.0	U	100	50.0	25.0
1,2-Dichlorobenzene	95-50-1	25.0	U	100	25.0	12.5
1,3-Dichlorobenzene	541-73-1	50.0	U	100	50.0	25.0
1,4-Dichlorobenzene	106-46-7	25.0	U	100	25.0	12.5
Dichlorodifluoromethane	75-71-8	50.0	U	100	50.0	25.0
1,1-Dichloroethane	75-34-3	113		100	25.0	12.5
1,2-Dichloroethane	107-06-2	158		100	50.0	25.0
1,1-Dichloroethene	75-35-4	158	J	200	100	50.0
cis-1,2-Dichloroethene	156-59-2	14100		100	50.0	25.0

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	50.0	U	100	50.0	25.0
1,2-Dichloropropane	78-87-5	40.0	U	100	40.0	20.0
1,3-Dichloropropane	142-28-9	40.0	U	100	40.0	20.0
2,2-Dichloropropane	594-20-7	50.0	U	100	50.0	25.0
cis-1,3-Dichloropropene	10061-01-5	50.0	U	100	50.0	25.0
trans-1,3-Dichloropropene	10061-02-6	100	U	200	100	50.0
1,1-Dichloropropene	563-58-6	50.0	U	100	50.0	25.0
Ethylbenzene	100-41-4	50.0	U	100	50.0	25.0
2-Hexanone	591-78-6	500	U	1000	500	250
Hexachlorobutadiene	87-68-3	50.0	U	100	50.0	25.0
Isopropylbenzene	98-82-8	50.0	U	100	50.0	25.0
p-Isopropyltoluene	99-87-6	50.0	U	100	50.0	25.0
4-Methyl-2-pentanone	108-10-1	500	U	1000	500	250
Methylene chloride	75-09-2	95.1	J	100	50.0	25.0
Naphthalene	91-20-3	40.0	U	100	40.0	20.0
n-Propylbenzene	103-65-1	25.0	U	100	25.0	12.5
Styrene	100-42-5	25.0	U	100	25.0	12.5
1,1,1,2-Tetrachloroethane	630-20-6	50.0	U	100	50.0	25.0
1,1,2,2-Tetrachloroethane	79-34-5	40.0	U	100	40.0	20.0
Tetrachloroethene	127-18-4	50.0	U	100	50.0	25.0
Toluene	108-88-3	50.0	U	100	50.0	25.0
1,2,3-Trichlorobenzene	87-61-6	30.0	U	100	30.0	15.0
1,2,4-Trichlorobenzene	120-82-1	40.0	U	100	40.0	20.0
1,1,1-Trichloroethane	71-55-6	50.0	U	100	50.0	25.0
1,1,2-Trichloroethane	79-00-5	50.0	U	100	50.0	25.0
Trichloroethene	79-01-6	7120		100	50.0	25.0
Trichlorofluoromethane	75-69-4	50.0	U	100	50.0	25.0
1,2,3-Trichloropropane	96-18-4	100	U	200	100	50.0
1,2,4-Trimethylbenzene	95-63-6	50.0	U	100	50.0	25.0
1,3,5-Trimethylbenzene	108-67-8	50.0	U	100	50.0	25.0
Vinyl chloride	75-01-4	256		100	50.0	25.0
o-Xylene	95-47-6	50.0	U	100	50.0	25.0
m-,p-Xylene	179601-23-1	100	U	200	100	50.0

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	113	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	98.1	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060414-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW14T-060716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572592	**Analyst:**	TMB	**Run Date:**	06/14/2016 20:34
Collect Date:	06/07/2016 10:30	**Dilution:**	100	**File ID:**	8M412994
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	500	U	1000	500	250
Benzene	71-43-2	25.0	U	100	25.0	12.5
Bromobenzene	108-86-1	25.0	U	100	25.0	12.5
Bromochloromethane	74-97-5	40.0	U	100	40.0	20.0
Bromodichloromethane	75-27-4	50.0	U	100	50.0	25.0
Bromoform	75-25-2	100	U	200	100	50.0
Bromomethane	74-83-9	100	U	200	100	50.0
2-Butanone	78-93-3	500	U	1000	500	250
n-Butylbenzene	104-51-8	50.0	U	100	50.0	25.0
sec-Butylbenzene	135-98-8	50.0	U	100	50.0	25.0
tert-Butylbenzene	98-06-6	50.0	U	100	50.0	25.0
Carbon disulfide	75-15-0	100	U	200	100	50.0
Carbon tetrachloride	56-23-5	50.0	U	100	50.0	25.0
Chlorobenzene	108-90-7	25.0	U	100	25.0	12.5
Chlorodibromomethane	124-48-1	50.0	U	100	50.0	25.0
Chloroethane	75-00-3	100	U	200	100	50.0
Chloroform	67-66-3	25.0	U	100	25.0	12.5
Chloromethane	74-87-3	100	U	200	100	50.0
2-Chlorotoluene	95-49-8	25.0	U	100	25.0	12.5
4-Chlorotoluene	106-43-4	50.0	U	100	50.0	25.0
1,2-Dibromo-3-chloropropane	96-12-8	200	U	500	200	100
1,2-Dibromoethane	106-93-4	50.0	U	100	50.0	25.0
Dibromomethane	74-95-3	50.0	U	100	50.0	25.0
1,2-Dichlorobenzene	95-50-1	25.0	U	100	25.0	12.5
1,3-Dichlorobenzene	541-73-1	50.0	U	100	50.0	25.0
1,4-Dichlorobenzene	106-46-7	25.0	U	100	25.0	12.5
Dichlorodifluoromethane	75-71-8	50.0	U	100	50.0	25.0
1,1-Dichloroethane	75-34-3	34.7	J	100	25.0	12.5
1,2-Dichloroethane	107-06-2	114		100	50.0	25.0
1,1-Dichloroethene	75-35-4	154	J	200	100	50.0
cis-1,2-Dichloroethene	156-59-2	2600		100	50.0	25.0

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Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	50.0	U	100	50.0	25.0
1,2-Dichloropropane	78-87-5	40.0	U	100	40.0	20.0
1,3-Dichloropropane	142-28-9	40.0	U	100	40.0	20.0
2,2-Dichloropropane	594-20-7	50.0	U	100	50.0	25.0
cis-1,3-Dichloropropene	10061-01-5	50.0	U	100	50.0	25.0
trans-1,3-Dichloropropene	10061-02-6	100	U	200	100	50.0
1,1-Dichloropropene	563-58-6	50.0	U	100	50.0	25.0
Ethylbenzene	100-41-4	50.0	U	100	50.0	25.0
2-Hexanone	591-78-6	500	U	1000	500	250
Hexachlorobutadiene	87-68-3	50.0	U	100	50.0	25.0
Isopropylbenzene	98-82-8	50.0	U	100	50.0	25.0
p-Isopropyltoluene	99-87-6	50.0	U	100	50.0	25.0
4-Methyl-2-pentanone	108-10-1	500	U	1000	500	250
Methylene chloride	75-09-2	50.0	U	100	50.0	25.0
Naphthalene	91-20-3	40.0	U	100	40.0	20.0
n-Propylbenzene	103-65-1	25.0	U	100	25.0	12.5
Styrene	100-42-5	25.0	U	100	25.0	12.5
1,1,1,2-Tetrachloroethane	630-20-6	50.0	U	100	50.0	25.0
1,1,2,2-Tetrachloroethane	79-34-5	40.0	U	100	40.0	20.0
Tetrachloroethene	127-18-4	50.0	U	100	50.0	25.0
Toluene	108-88-3	50.0	U	100	50.0	25.0
1,2,3-Trichlorobenzene	87-61-6	30.0	U	100	30.0	15.0
1,2,4-Trichlorobenzene	120-82-1	40.0	U	100	40.0	20.0
1,1,1-Trichloroethane	71-55-6	50.0	U	100	50.0	25.0
1,1,2-Trichloroethane	79-00-5	50.0	U	100	50.0	25.0
Trichloroethene	79-01-6	12700		100	50.0	25.0
Trichlorofluoromethane	75-69-4	50.0	U	100	50.0	25.0
1,2,3-Trichloropropane	96-18-4	100	U	200	100	50.0
1,2,4-Trimethylbenzene	95-63-6	50.0	U	100	50.0	25.0
1,3,5-Trimethylbenzene	108-67-8	50.0	U	100	50.0	25.0
Vinyl chloride	75-01-4	50.0	U	100	50.0	25.0
o-Xylene	95-47-6	50.0	U	100	50.0	25.0
m-,p-Xylene	179601-23-1	100	U	200	100	50.0

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	114	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	100	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060414-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW14B-060716	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572592	**Analyst:**	TMB	**Run Date:**	06/14/2016 21:03
Collect Date:	06/07/2016 11:20	**Dilution:**	100	**File ID:**	8M412995
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	500	U	1000	500	250
Benzene	71-43-2	25.0	U	100	25.0	12.5
Bromobenzene	108-86-1	25.0	U	100	25.0	12.5
Bromochloromethane	74-97-5	40.0	U	100	40.0	20.0
Bromodichloromethane	75-27-4	50.0	U	100	50.0	25.0
Bromoform	75-25-2	100	U	200	100	50.0
Bromomethane	74-83-9	100	U	200	100	50.0
2-Butanone	78-93-3	500	U	1000	500	250
n-Butylbenzene	104-51-8	50.0	U	100	50.0	25.0
sec-Butylbenzene	135-98-8	50.0	U	100	50.0	25.0
tert-Butylbenzene	98-06-6	50.0	U	100	50.0	25.0
Carbon disulfide	75-15-0	100	U	200	100	50.0
Carbon tetrachloride	56-23-5	50.0	U	100	50.0	25.0
Chlorobenzene	108-90-7	25.0	U	100	25.0	12.5
Chlorodibromomethane	124-48-1	50.0	U	100	50.0	25.0
Chloroethane	75-00-3	100	U	200	100	50.0
Chloroform	67-66-3	13.2	J	100	25.0	12.5
Chloromethane	74-87-3	100	U	200	100	50.0
2-Chlorotoluene	95-49-8	25.0	U	100	25.0	12.5
4-Chlorotoluene	106-43-4	50.0	U	100	50.0	25.0
1,2-Dibromo-3-chloropropane	96-12-8	200	U	500	200	100
1,2-Dibromoethane	106-93-4	50.0	U	100	50.0	25.0
Dibromomethane	74-95-3	50.0	U	100	50.0	25.0
1,2-Dichlorobenzene	95-50-1	25.0	U	100	25.0	12.5
1,3-Dichlorobenzene	541-73-1	50.0	U	100	50.0	25.0
1,4-Dichlorobenzene	106-46-7	25.0	U	100	25.0	12.5
Dichlorodifluoromethane	75-71-8	50.0	U	100	50.0	25.0
1,1-Dichloroethane	75-34-3	37.3	J	100	25.0	12.5
1,2-Dichloroethane	107-06-2	140		100	50.0	25.0
1,1-Dichloroethene	75-35-4	195	J	200	100	50.0
cis-1,2-Dichloroethene	156-59-2	2550		100	50.0	25.0

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Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	50.0	U	100	50.0	25.0
1,2-Dichloropropane	78-87-5	40.0	U	100	40.0	20.0
1,3-Dichloropropane	142-28-9	40.0	U	100	40.0	20.0
2,2-Dichloropropane	594-20-7	50.0	U	100	50.0	25.0
cis-1,3-Dichloropropene	10061-01-5	50.0	U	100	50.0	25.0
trans-1,3-Dichloropropene	10061-02-6	100	U	200	100	50.0
1,1-Dichloropropene	563-58-6	50.0	U	100	50.0	25.0
Ethylbenzene	100-41-4	50.0	U	100	50.0	25.0
2-Hexanone	591-78-6	500	U	1000	500	250
Hexachlorobutadiene	87-68-3	50.0	U	100	50.0	25.0
Isopropylbenzene	98-82-8	50.0	U	100	50.0	25.0
p-Isopropyltoluene	99-87-6	50.0	U	100	50.0	25.0
4-Methyl-2-pentanone	108-10-1	500	U	1000	500	250
Methylene chloride	75-09-2	53.5	J	100	50.0	25.0
Naphthalene	91-20-3	40.0	U	100	40.0	20.0
n-Propylbenzene	103-65-1	25.0	U	100	25.0	12.5
Styrene	100-42-5	25.0	U	100	25.0	12.5
1,1,1,2-Tetrachloroethane	630-20-6	50.0	U	100	50.0	25.0
1,1,2,2-Tetrachloroethane	79-34-5	40.0	U	100	40.0	20.0
Tetrachloroethene	127-18-4	50.0	U	100	50.0	25.0
Toluene	108-88-3	50.0	U	100	50.0	25.0
1,2,3-Trichlorobenzene	87-61-6	30.0	U	100	30.0	15.0
1,2,4-Trichlorobenzene	120-82-1	40.0	U	100	40.0	20.0
1,1,1-Trichloroethane	71-55-6	50.0	U	100	50.0	25.0
1,1,2-Trichloroethane	79-00-5	50.0	U	100	50.0	25.0
Trichloroethene	79-01-6	15900		100	50.0	25.0
Trichlorofluoromethane	75-69-4	50.0	U	100	50.0	25.0
1,2,3-Trichloropropane	96-18-4	100	U	200	100	50.0
1,2,4-Trimethylbenzene	95-63-6	50.0	U	100	50.0	25.0
1,3,5-Trimethylbenzene	108-67-8	50.0	U	100	50.0	25.0
Vinyl chloride	75-01-4	50.0	U	100	50.0	25.0
o-Xylene	95-47-6	50.0	U	100	50.0	25.0
m-,p-Xylene	179601-23-1	100	U	200	100	50.0

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	115	70	120	
Toluene-d8	106	85	120	
4-Bromofluorobenzene	100	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060414-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572494	**Analyst:**	TMB	**Run Date:**	06/13/2016 18:25
Collect Date:	06/07/2016 00:01	**Dilution:**	1	**File ID:**	8M412952
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	109	85	115	
1,2-Dichloroethane-d4	114	70	120	
Toluene-d8	106	85	120	
4-Bromofluorobenzene	99.6	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

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Instrument Run Log

Instrument: HPMS8 Dataset: 051316
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53752

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG568561

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412209	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 08:38
8M412210	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 08:57
8M412211	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 09:29
8M412212	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 09:56
8M412213	WG568561-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/13/16 10:19
8M412214	WG568561-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/13/16 10:51
8M412215	WG568565-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76072	05/13/16 11:36
8M412216	BFB CHECK	NA	1	1	STD76034	05/13/16 12:04
8M412217	BFB CHECK	NA	1	1	STD76034	05/13/16 12:18
8M412218	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 12:36
8M412219	RINSE	NA	1	1		05/13/16 13:00
8M412220	WG568561-02 0.3ug/L STD 8260	NA	1	1	STD76127	05/13/16 13:29
8M412221	WG568561-03 0.4ug/L STD 8260	NA	1	1	STD76127	05/13/16 13:58
8M412222	WG568561-04 1ug/L STD 8260	NA	1	1	STD76127	05/13/16 14:27
8M412223	WG568561-05 2ug/L STD 8260	NA	1	1	STD76127	05/13/16 14:56
8M412224	WG568561-06 5ug/L STD 8260	NA	1	1	STD76127	05/13/16 15:25
8M412225	WG568561-07 20ug/L STD 8260	NA	1	1	STD76127	05/13/16 15:54
8M412226	WG568561-08 50ug/L STD 8260	NA	1	1	STD76127	05/13/16 16:23
8M412227	WG568561-09 100ug/L STD 8260	NA	1	1	STD76127	05/13/16 16:52
8M412228	WG568561-10 200ug/L STD 8260	NA	1	1	STD76127	05/13/16 17:21
8M412229	WG568561-11 300ug/L STD 8260	NA	1	1	STD76127	05/13/16 17:50
8M412230	RINSE	NA	1	1		05/13/16 18:19
8M412231	RINSE	NA	1	1		05/13/16 18:49
8M412232	WG568561-12 50ug/L ALT SRC STD 8260	NA	1	1	STD76109	05/13/16 19:17
8M412233	RINSE	NA	1	1		05/13/16 19:46

Comments

Seq.	Rerun	Dil.	Reason	Analytes
5	X			
File ID: 8M412213				
	Several compounds were low, DNR.			
6				
File ID: 8M412214				

Approved: May 20, 2016

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Instrument Run Log

Instrument:	HPMS8	Dataset:	051316		
Analyst1:	TMB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	23
Method:	624	SOP:	MSV10	Rev:	14
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:	53752				

Internal Standard: STD75899 Surrogate Standard: STD75899

CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG568561

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			Two C compounds failed. DNR. Run a curve.	
7 File ID: 8M412215				
			DNR.	

Approved: May 20, 2016

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Instrument Run Log

Instrument: HPMS8 Dataset: 051716
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76072; STD76127 LCS: STD76109; STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG569079; WG569083

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412319	WG569084-01 50ng BFB STD 8260	NA	1	1	STD76034	05/17/16 08:53
8M412320	WG569084-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/17/16 09:18
8M412321	WG569079-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76072	05/17/16 09:47
8M412322	WG569079-03 50ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 10:16
8M412323	WG569079-04 20ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 10:44
8M412324	WG569079-05 5ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 11:13
8M412325	WG569079-06 200ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 11:42
8M412326	WG569079-07 300ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 12:40
8M412327	WG569079-08 400ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 13:10
8M412328	WG569079-09 500ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 13:39
8M412329	RINSE	NA	1	1		05/17/16 14:08
8M412330	RINSE	NA	1	1		05/17/16 14:37
8M412331	WG569079-10 100ug/L ALT SRC STD 826	NA	1	1	STD75801	05/17/16 15:06
8M412332	WG569259-01 BFB 50ng 8260	NA	1	1	STD76034	05/17/16 18:27
8M412333	WG569259-02 50ug/L CCV 8260	NA	1	1	STD76034	05/17/16 18:53
8M412334	WG569260-01 100ug/L CCV A9	NA	1	1	STD76072	05/17/16 19:22
8M412335	WG569083-01 VBLK0517 BLANK 8260	NA	1	1		05/17/16 19:51
8M412336	WG569083-02 20ug/L LCS 8260	NA	1	1	STD76109	05/17/16 20:20
8M412337	WG569083-03 20ug/L LCS2 8260	NA	1	1	STD76109	05/17/16 20:49
8M412338	WG569083-04 100ug/L LCS A9	NA	1	1	STD75801	05/17/16 21:18
8M412339	WG569083-05 100ug/L LCS2 A9	NA	1	1	STD75801	05/17/16 21:46
8M412340	L16050844-01 TB A 826-A9-SPE	5	1	1		05/17/16 22:16
8M412341	L16050844-07 EB A 826-A9-SPE	5	1	1		05/17/16 22:45
8M412342	L16050844-11 AB A 826-A9-SPE	5	1	1		05/17/16 23:14
8M412343	L16050844-02 A 826-A9-SPE	6	1	1		05/17/16 23:43
8M412344	L16050844-05 A 826-A9-SPE	6	1	1		05/18/16 00:12
8M412345	L16050844-06 A 826-A9-SPE	6	1	1		05/18/16 00:41
8M412346	L16050844-12 A 826-A9-SPE	6	1	1		05/18/16 01:10
8M412347	L16050840-01 A 826-A9-SPE	7	1	1		05/18/16 01:38
8M412348	L16050844-08 A 826-A9-SPE	7	1	1		05/18/16 02:07
8M412349	L16050844-13 A 826-A9-SPE	7	1	1		05/18/16 02:36
8M412350	L16050844-15 A 826-A9-SPE	7	1	1		05/18/16 03:05
8M412351	L16050839-01 A 826-A9-SPE	7	1	1		05/18/16 03:33
8M412352	L16050844-03 2.5X A 826-A9-SPE	7	1	2.5		05/18/16 04:02

Approved: May 20, 2016

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Instrument Run Log

Instrument: HPMS8 Dataset: 051716
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76072; STD76127 LCS: STD76109; STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG569079; WG569083

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412353	L16050844-04 5X A 826-A9-SPE	7	1	5		05/18/16 04:31
8M412354	L16050844-09 5X A 826-A9-SPE	7	1	5		05/18/16 05:01
8M412355	L16050844-10 5X A 826-A9-SPE	7	1	5		05/18/16 05:30
8M412356	L16050844-14 50X A 826-A9-SPE	7	1	50		05/18/16 05:59
8M412357	RINSE	NA	1	1		05/18/16 06:28

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
File ID: 8M412320				
	DNR. Running an a9/foo curve.			
32	X	10	Over Calibration Range	CIS12-DCE
File ID: 8M412350				
40	X	2.5	Analyzed too dilute	
File ID: 8M412353				
	DNR.			
37	X	25	Over Calibration Range	TCE
File ID: 8M412355				
38	X	20	Analyzed too dilute	
File ID: 8M412356				
	DNR.			

Approved: May 20, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 061316
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Maintenance Log ID:

Internal Standard: STD76370 Surrogate Standard: STD76370
CCV: STD76578 LCS: STD75540 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG572494

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412943	WG572492-01 50ng BFB STD 8260	NA	1	1	STD76496	06/13/16 14:10
8M412944	WG572492-02 50ug/L CCV STD 8260	NA	1	1	STD76578	06/13/16 14:34
8M412945	WG572492-02 50ug/L CCV STD 8260	NA	1	1	STD76578	06/13/16 15:04
8M412946	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76432	06/13/16 15:33
8M412947	WG572494-01 VBLK0613 BLANK STD 826	NA	1	1		06/13/16 16:02
8M412948	WG572494-02 20ug/L LCS STD 8260	NA	1	1	STD76540	06/13/16 16:30
8M412949	WG572494-03 20ug/L LCS2 STD 8260	NA	1	1	STD76540	06/13/16 16:59
8M412950	L16060395-07 A 826-BETX	<2	1	1		06/13/16 17:27
8M412951	L16060376-06 A TB 826-SPE	<2	1	1		06/13/16 17:56
8M412952	L16060414-05 A TB 826-LOW	<2	1	1		06/13/16 18:25
8M412953	L16060669-11 A TB 826-VAP2	<2	1	1		06/13/16 18:54
8M412954	L16060669-10 A BB 826-VAP2	6	1	1		06/13/16 19:23
8M412955	L16060376-05 A 826-SPE	<2	1	1		06/13/16 19:51
8M412956	L16060176-01 B 826-VAP2	6	1	1		06/13/16 20:20
8M412957	L16060176-02 B 826-VAP2	6	1	1		06/13/16 20:49
8M412958	L16060376-02 A 826-SPE	<2	1	1		06/13/16 21:18
8M412959	L16060376-03 A 826-SPE	<2	1	1		06/13/16 21:47
8M412960	L16060376-04 A 826-SPE	<2	1	1		06/13/16 22:16
8M412961	L16060376-01 A 826-SPE	<2	1	1		06/13/16 22:45
8M412962	L16060592-01 A 826-BETX	<2	1	1		06/13/16 23:13
8M412963	L16060669-09 A 826-VAP2	7	1	1		06/13/16 23:42
8M412964	L16060414-01 A 500X 826-LOW	<2	1	500		06/14/16 00:12
8M412965	L16060414-02 A 500X 826-LOW	<2	1	500		06/14/16 00:40
8M412966	L16060414-03 A 500X 826-LOW	<2	1	500		06/14/16 01:09
8M412967	L16060414-04 A 500X 826-LOW	<2	1	500		06/14/16 01:38
8M412968	CCV	NA	1	1		06/14/16 02:07
8M412969	RINSE	NA	1	1		06/14/16 02:37
8M412970	RINSE	NA	1	1		06/14/16 03:05

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 8M412944				

Approved: June 14, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 061316
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Maintenance Log ID:

Internal Standard: STD76370 Surrogate Standard: STD76370
CCV: STD76578 LCS: STD75540 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG572494

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			Bromomethane was low, DNR.	
4				
File ID: 8M412946				
			Not needed. DNR.	
11	X	1		
File ID: 8M412953				
			Lcsdup outlier.	
12	X	1		
File ID: 8M412954				
			Lcsdup outlier.	
14	X	1		
File ID: 8M412956				
			Lcsdup outlier.	
15	X	1		
File ID: 8M412957				
			Lcsdup outlier.	
21	X	1	Carry-over contamination	
File ID: 8M412963				
22	X	100	Analyzed too dilute	
File ID: 8M412964				
23	X	100	Analyzed too dilute	
File ID: 8M412965				
24	X	100	Analyzed too dilute	
File ID: 8M412966				
25	X	100	Analyzed too dilute	
File ID: 8M412967				

Approved: June 14, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 061416
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53783

Internal Standard: STD75370 Surrogate Standard: STD76370
CCV: STD76578 LCS: STD76597 MS/MSD: STD76597

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG572592

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412971	WG572591-01 50ng BFB STD 8260	NA	1	1	STD76496	06/14/16 09:33
8M412972	WG572591-02 50ug/L CCV STD 8260	NA	1	1	STD76578	06/14/16 09:57
8M412973	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76432	06/14/16 10:25
8M412974	WG572592-01 VBLK0614 BLANK STD 826	NA	1	1		06/14/16 10:54
8M412975	L16060176-01 C 826-VAP2	7	1	1		06/14/16 11:23
8M412976	L16060176-02 C 826-VAP2	7	1	1		06/14/16 11:52
8M412977	WG572592-02 20ug/L LCS STD 8260	NA	1	1	STD76597	06/14/16 12:21
8M412978	L16060540-07 A MS 826-SPE	<2	1	1	STD76597	06/14/16 12:50
8M412979	L16060540-08 A MSD 826-SPE	<2	1	1	STD76597	06/14/16 13:20
8M412980	RINSE	NA	1	1		06/14/16 13:49
8M412981	L16060605-14 B TB 826-SPE	<2	1	1		06/14/16 14:18
8M412982	L16060605-02 B 826-SPE	<2	1	1		06/14/16 14:47
8M412983	L16060605-01 B 826-SPE	<2	1	1		06/14/16 15:16
8M412984	L16060540-06 A REF 826-SPE	<2	1	1		06/14/16 15:45
8M412985	L16060540-10 A 826-SPE	<2	1	1		06/14/16 16:14
8M412986	L16060540-11 A 826-SPE	<2	1	1		06/14/16 16:42
8M412987	L16060540-12 A 826-SPE	<2	1	1		06/14/16 17:11
8M412988	L16060540-13 A 826-SPE	<2	1	1		06/14/16 17:40
8M412989	L16060540-14 A 826-SPE	<2	1	1		06/14/16 18:09
8M412990	L16060540-15 A 826-SPE	<2	1	1		06/14/16 18:38
8M412991	L16060540-16 A 826-SPE	<2	1	1		06/14/16 19:07
8M412992	L16060414-01 B 100X 826-LOW	<2	1	100		06/14/16 19:35
8M412993	L16060414-02 B 100X 826-LOW	<2	1	100		06/14/16 20:05
8M412994	L16060414-03 B 100X 826-LOW	<2	1	100		06/14/16 20:34
8M412995	L16060414-04 B 100X 826-LOW	5	1	100		06/14/16 21:03
8M412996	L16060504-04 B 826-LOW	<2	1	1		06/14/16 21:31
8M412997	CCV	NA	1	1		06/14/16 22:00
8M412998	RINSE	NA	1	1		06/14/16 22:29
8M412999	RINSE	NA	1	1		06/14/16 22:57
8M413000	RINSE	NA	1	1		06/14/16 23:26

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Approved: June 16, 2016

Sarah Vandenberg

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 061416
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53783

Internal Standard: STD75370 Surrogate Standard: STD76370
CCV: STD76578 LCS: STD76597 MS/MSD: STD76597

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG572592

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
3				
File ID: 8M412973				
	Not needed. DNR.			
19	X	10	Over Calibration Range	CIS12-DCE
File ID: 8M412989				
20	X	1	Carry-over contamination	
File ID: 8M412990				

Approved: June 16, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Data Checklist

Date: 13-MAY-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75126
Analytical Workgroups: WG568561

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	TMB
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
17-MAY-2016
Tiffany Bailey

Secondary Reviewer:
20-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2016 11:18:36

Microbac Laboratories Inc.

Data Checklist

Date: 17-MAY-2016
Analyst: TMB
Analyst: FJB
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75174
Analytical Workgroups: WG569079; WG569083

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
19-MAY-2016
Tiffany Bailey

Secondary Reviewer:
20-MAY-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2016 11:05:37

Microbac Laboratories Inc.

Data Checklist

Date: 13-JUN-2016
Analyst: TMB
Analyst: NA
Method: 8260B
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75666
Analytical Workgroups: WG572494

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
14-JUN-2016
Tiffany Bailey

Secondary Reviewer:
14-JUN-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-14-2016 12:31:27

Microbac Laboratories Inc.

Data Checklist

Date: 14-JUN-2016
Analyst: TMB
Analyst: NA
Method: 8260B/OVAP
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75679
Analytical Workgroups: WG572592

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
14-JUN-2016
Tiffany Bailey

Secondary Reviewer:
16-JUN-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-16-2016 12:56:09

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG572494

Login Number: L16060414

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
TRIP BLANK	05	06/07/16					06/13/2016	6.8	14		06/13/16	6.8	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4805787
Report generated 06/16/2016 12:53

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG572592

Login Number: L16060414

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
AWD1T-060716	01	06/07/16					06/14/2016	7.5	14		06/14/16	7.5	14	
AWD1B-060716	02	06/07/16					06/14/2016	7.5	14		06/14/16	7.5	14	
MW14T-060716	03	06/07/16					06/14/2016	7.4	14		06/14/16	7.4	14	
MW14B-060716	04	06/07/16					06/14/2016	7.4	14		06/14/16	7.4	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4805787
Report generated 06/16/2016 12:53

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060414
Instrument Id: HPMS8
Workgroup (AAB#): WG572592

Method: 8260
CAL ID: HPMS8 - 13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16060414-01	100	DL01	114	110	102	105
L16060414-02	100	DL01	113	110	98.1	103
L16060414-03	100	DL01	114	110	100	104
L16060414-04	100	DL01	115	110	100	106
WG572592-01	1.00	01	107	107	98.8	106
WG572592-02	1.00	01	109	108	97.6	106

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4805793
Report generated: 06/16/2016 12:54

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060414
Instrument Id: HPMS8
Workgroup (AAB#): WG572494

Method: 8260
CAL ID: HPMS8-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16060414-05	1.00	01	114	109	99.6	106
WG572494-01	1.00	01	112	109	99.5	104
WG572494-02	1.00	01	110	110	98.1	106
WG572494-03	1.00	01	112	107	100	105

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4805793
Report generated: 06/16/2016 12:54

METHOD BLANK SUMMARY

Login Number: L16060414
Blank File ID: 8M412947
Prep Date: 06/13/16 16:02
Analyzed Date: 06/13/16 16:02
Analyst: TMB

Work Group: WG572494
Blank Sample ID: WG572494-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572494-02	8M412948	06/13/16 16:30	01
LCS2	WG572494-03	8M412949	06/13/16 16:59	01
TRIP BLANK	L16060414-05	8M412952	06/13/16 18:25	01

Report Name: BLANK_SUMMARY
PDF File ID: 4809969
Report generated 06/16/2016 12:53

METHOD BLANK SUMMARY

Login Number: L16060414
Blank File ID: 8M412974
Prep Date: 06/14/16 10:54
Analyzed Date: 06/14/16 10:54
Analyst: TMB

Work Group: WG572592
Blank Sample ID: WG572592-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572592-02	8M412977	06/14/16 12:21	01
AWD1T-060716	L16060414-01	8M412992	06/14/16 19:35	DL01
AWD1B-060716	L16060414-02	8M412993	06/14/16 20:05	DL01
MW14T-060716	L16060414-03	8M412994	06/14/16 20:34	DL01
MW14B-060716	L16060414-04	8M412995	06/14/16 21:03	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4809969
Report generated 06/16/2016 12:53

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16060414 Prep Date: 06/13/16 16:02 Sample ID: WG572494-01
Instrument ID: HPMS8 Run Date: 06/13/16 16:02 Prep Method: 5030B/5030C/503
File ID: 8M412947 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG572494 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 4805788
16-JUN-2016 12:54

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16060414 Prep Date: 06/13/16 16:02 Sample ID: WG572494-01
Instrument ID: HPMS8 Run Date: 06/13/16 16:02 Prep Method: 5030B/5030C/503
File ID: 8M412947 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG572494 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	109	85 - 115	PASS
1,2-Dichloroethane-d4	112	70 - 120	PASS
Toluene-d8	104	85 - 120	PASS
4-Bromofluorobenzene	99.5	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4805788
16-JUN-2016 12:54

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060414 Prep Date: 06/14/16 10:54 Sample ID: WG572592-01
Instrument ID: HPMS8 Run Date: 06/14/16 10:54 Prep Method: 5030B/5030C/503
File ID: 8M412974 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG572592 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 4805788
16-JUN-2016 12:54

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060414 Prep Date: 06/14/16 10:54 Sample ID: WG572592-01
Instrument ID: HPMS8 Run Date: 06/14/16 10:54 Prep Method: 5030B/5030C/503
File ID: 8M412974 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG572592 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	107	85 - 115	PASS
1,2-Dichloroethane-d4	107	70 - 120	PASS
Toluene-d8	106	85 - 120	PASS
4-Bromofluorobenzene	98.8	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4805788
16-JUN-2016 12:54

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060414 | Run Date: 06/14/2016 | Sample ID: WG572592-02
Instrument ID: HPMS8 | Run Time: 12:21 | Prep Method: 5030B/5030C/503
File ID: 8M412977 | Analyst: TMB | Method: 8260B
Workgroup (AAB#): WG572592 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD76597 | Cal ID: HPMS8-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	24.7	123	40 - 140	
Benzene	20.0	21.1	106	80 - 120	
Bromobenzene	20.0	19.6	97.8	75 - 125	
Bromochloromethane	20.0	21.1	105	65 - 130	
Bromodichloromethane	20.0	22.2	111	75 - 120	
Bromoform	20.0	20.2	101	70 - 130	
Bromomethane	20.0	13.6	68.2	30 - 145	
2-Butanone	20.0	20.8	104	30 - 150	
n-Butylbenzene	20.0	19.2	96.2	70 - 135	
sec-Butylbenzene	20.0	20.3	101	70 - 125	
tert-Butylbenzene	20.0	20.1	100	70 - 130	
Carbon disulfide	20.0	19.2	95.9	35 - 160	
Carbon tetrachloride	20.0	22.2	111	65 - 140	
Chlorobenzene	20.0	20.7	104	80 - 120	
Chlorodibromomethane	20.0	20.5	102	60 - 135	
Chloroethane	20.0	22.0	110	60 - 135	
Chloroform	20.0	21.5	107	65 - 135	
Chloromethane	20.0	21.2	106	40 - 125	
2-Chlorotoluene	20.0	18.4	92.0	75 - 125	
4-Chlorotoluene	20.0	22.2	111	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	19.6	97.8	50 - 130	
1,2-Dibromoethane	20.0	20.0	99.8	80 - 120	
Dibromomethane	20.0	19.8	99.1	75 - 125	
1,2-Dichlorobenzene	20.0	20.2	101	70 - 120	
1,3-Dichlorobenzene	20.0	20.3	101	75 - 125	
1,4-Dichlorobenzene	20.0	20.3	102	75 - 125	
Dichlorodifluoromethane	20.0	22.7	114	30 - 155	
1,1-Dichloroethane	20.0	20.4	102	70 - 135	
1,2-Dichloroethane	20.0	22.8	114	70 - 130	
1,1-Dichloroethene	20.0	20.3	102	70 - 130	
cis-1,2-Dichloroethene	20.0	21.1	105	70 - 125	
trans-1,2-Dichloroethene	20.0	21.1	105	60 - 140	
1,2-Dichloropropane	20.0	21.0	105	75 - 125	
1,3-Dichloropropane	20.0	21.3	107	75 - 125	
2,2-Dichloropropane	20.0	23.0	115	70 - 135	
cis-1,3-Dichloropropene	20.0	23.5	117	70 - 130	
trans-1,3-Dichloropropene	20.0	21.3	106	55 - 140	
1,1-Dichloropropene	20.0	21.1	105	75 - 130	
Ethylbenzene	20.0	19.8	98.8	75 - 125	
2-Hexanone	20.0	20.3	101	55 - 130	
Hexachlorobutadiene	20.0	20.9	104	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4808082
Report generated: 06/16/2016 12:54

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060414 Run Date: 06/14/2016 Sample ID: WG572592-02
Instrument ID: HPMS8 Run Time: 12:21 Prep Method: 5030B/5030C/503
File ID: 8M412977 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG572592 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD76597 Cal ID: HPMS8-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	21.8	109	75 - 125	
p-Isopropyltoluene	20.0	19.9	99.6	75 - 130	
4-Methyl-2-pentanone	20.0	20.4	102	60 - 135	
Methylene chloride	20.0	20.1	100	55 - 140	
Naphthalene	20.0	16.9	84.5	55 - 140	
n-Propylbenzene	20.0	20.6	103	70 - 130	
Styrene	20.0	21.3	106	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	20.9	105	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	17.7	88.7	65 - 130	
Tetrachloroethene	20.0	20.7	103	45 - 150	
Toluene	20.0	20.3	102	75 - 120	
1,2,3-Trichlorobenzene	20.0	18.7	93.3	55 - 140	
1,2,4-Trichlorobenzene	20.0	19.5	97.4	65 - 135	
1,1,1-Trichloroethane	20.0	22.8	114	65 - 130	
1,1,2-Trichloroethane	20.0	20.0	100	75 - 125	
Trichloroethene	20.0	22.7	114	70 - 125	
Trichlorofluoromethane	20.0	22.3	111	60 - 145	
1,2,3-Trichloropropane	20.0	18.8	94.1	75 - 125	
1,2,4-Trimethylbenzene	20.0	20.0	99.9	75 - 130	
1,3,5-Trimethylbenzene	20.0	20.5	103	75 - 130	
Vinyl chloride	20.0	24.6	123	50 - 145	
o-Xylene	20.0	21.5	108	80 - 120	
m-,p-Xylene	40.0	41.6	104	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	108	85 - 115	PASS
1,2-Dichloroethane-d4	109	70 - 120	PASS
Toluene-d8	106	85 - 120	PASS
4-Bromofluorobenzene	97.6	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4808082
Report generated: 06/16/2016 12:54

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060414 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG572494 Units: ug/L
QC Key: DOD4 Lot #: STD76540

Sample ID: WG572494-02 LCS File ID: 8M412948 Run Date: 06/13/2016 16:30
Sample ID: WG572494-03 LCS2 File ID: 8M412949 Run Date: 06/13/2016 16:59

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	20.3	101	20.0	19.7	98.7	2.61	80 - 130	30	
1,1,1-Trichloroethane	20.0	20.6	103	20.0	19.2	96.1	7.12	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	18.3	91.6	20.0	17.9	89.5	2.25	65 - 130	30	
1,1,2-Trichloroethane	20.0	19.3	96.7	20.0	18.8	93.8	3.03	75 - 125	30	
1,1-Dichloroethane	20.0	18.2	91.2	20.0	17.4	87.1	4.57	70 - 135	30	
1,1-Dichloroethene	20.0	16.0	80.0	20.0	14.3	71.4	11.4	70 - 130	30	
1,1-Dichloropropene	20.0	18.7	93.6	20.0	17.7	88.5	5.52	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	18.1	90.6	20.0	18.2	90.9	0.338	55 - 140	30	
1,2,3-Trichloropropane	20.0	19.8	99.1	20.0	19.5	97.7	1.40	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	19.6	97.9	20.0	19.1	95.3	2.69	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	19.4	97.0	20.0	18.7	93.3	3.93	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	19.6	97.9	20.0	19.5	97.6	0.369	50 - 130	30	
1,2-Dibromoethane	20.0	19.8	99.1	20.0	19.0	94.9	4.36	80 - 120	30	
1,2-Dichlorobenzene	20.0	19.5	97.5	20.0	19.0	95.1	2.45	70 - 120	30	
1,2-Dichloroethane	20.0	22.2	111	20.0	20.8	104	6.42	70 - 130	30	
1,2-Dichloropropane	20.0	19.5	97.7	20.0	19.2	95.8	2.00	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	19.7	98.6	20.0	19.4	97.0	1.64	75 - 130	30	
1,3-Dichlorobenzene	20.0	19.7	98.6	20.0	19.3	96.4	2.33	75 - 125	30	
1,3-Dichloropropane	20.0	21.1	106	20.0	20.2	101	4.60	75 - 125	30	
1,4-Dichlorobenzene	20.0	19.6	98.0	20.0	19.3	96.5	1.57	75 - 125	30	
2,2-Dichloropropane	20.0	21.2	106	20.0	20.2	101	4.75	70 - 135	30	
2-Butanone	20.0	19.6	98.0	20.0	21.1	105	7.38	30 - 150	30	
2-Chlorotoluene	20.0	20.7	104	20.0	17.1	85.4	19.2	75 - 125	30	
2-Hexanone	20.0	20.0	100	20.0	19.6	98.1	2.03	55 - 130	30	
4-Chlorotoluene	20.0	18.3	91.3	20.0	21.1	105	14.2	75 - 130	30	
4-Methyl-2-pentanone	20.0	19.7	98.7	20.0	20.3	102	3.02	60 - 135	30	
Acetone	20.0	24.3	122	20.0	22.5	113	7.84	40 - 140	30	
Benzene	20.0	19.3	96.6	20.0	18.3	91.3	5.74	80 - 120	30	
Bromobenzene	20.0	19.3	96.3	20.0	18.7	93.5	3.04	75 - 125	30	
Bromochloromethane	20.0	19.5	97.3	20.0	18.5	92.6	4.97	65 - 130	30	
Bromodichloromethane	20.0	21.0	105	20.0	21.0	105	0.239	75 - 120	30	
Bromoform	20.0	20.8	104	20.0	18.9	94.5	9.47	70 - 130	30	
Bromomethane	20.0	13.9	69.7	20.0	15.0	74.8	7.13	30 - 145	30	
Carbon disulfide	20.0	19.2	96.0	20.0	19.4	97.1	1.16	35 - 160	30	
Carbon tetrachloride	20.0	20.6	103	20.0	19.0	95.2	7.81	65 - 140	30	
Chlorobenzene	20.0	20.3	102	20.0	19.2	96.0	5.60	80 - 120	30	
Chloroethane	20.0	21.1	106	20.0	21.7	108	2.52	60 - 135	30	
Chloroform	20.0	20.3	101	20.0	19.6	97.8	3.66	65 - 135	30	
Chloromethane	20.0	20.7	103	20.0	21.4	107	3.39	40 - 125	30	
cis-1,2-Dichloroethene	20.0	19.8	99.2	20.0	18.5	92.7	6.76	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4805789
Report generated: 06/16/2016 12:54

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060414 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG572494 Units: ug/L
QC Key: DOD4 Lot #: STD76540

Sample ID: WG572494-02 LCS File ID: 8M412948 Run Date: 06/13/2016 16:30
Sample ID: WG572494-03 LCS2 File ID: 8M412949 Run Date: 06/13/2016 16:59

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	22.6	113	20.0	21.8	109	3.72	70 - 130	30	
Chlorodibromomethane	20.0	20.3	102	20.0	19.5	97.6	4.03	60 - 135	30	
Dibromomethane	20.0	18.4	92.1	20.0	18.4	92.0	0.0610	75 - 125	30	
Dichlorodifluoromethane	20.0	23.6	118	20.0	23.3	117	1.03	30 - 155	30	
Ethylbenzene	20.0	19.2	95.8	20.0	18.4	91.8	4.32	75 - 125	30	
Hexachlorobutadiene	20.0	19.5	97.3	20.0	19.6	98.1	0.845	50 - 140	30	
Isopropylbenzene	20.0	21.0	105	20.0	20.0	100	4.75	75 - 125	30	
m-,p-Xylene	40.0	40.3	101	40.0	38.8	97.1	3.64	75 - 130	30	
Methylene chloride	20.0	18.0	90.0	20.0	16.8	83.8	7.06	55 - 140	30	
n-Butylbenzene	20.0	18.2	91.1	20.0	18.1	90.5	0.645	70 - 135	30	
n-Propylbenzene	20.0	19.5	97.5	20.0	19.4	97.2	0.341	70 - 130	30	
Naphthalene	20.0	16.8	83.8	20.0	17.1	85.6	2.19	55 - 140	30	
o-Xylene	20.0	20.4	102	20.0	19.7	98.4	3.75	80 - 120	30	
p-Isopropyltoluene	20.0	19.0	94.8	20.0	18.7	93.3	1.57	75 - 130	30	
sec-Butylbenzene	20.0	19.1	95.6	20.0	18.9	94.6	1.06	70 - 125	30	
Styrene	20.0	20.5	103	20.0	19.5	97.5	5.09	65 - 135	30	
tert-Butylbenzene	20.0	19.2	95.8	20.0	18.8	93.9	2.09	70 - 130	30	
Tetrachloroethene	20.0	19.9	99.3	20.0	18.3	91.5	8.17	45 - 150	30	
Toluene	20.0	19.2	96.2	20.0	18.2	90.9	5.60	75 - 120	30	
trans-1,2-Dichloroethene	20.0	17.7	88.5	20.0	16.6	83.1	6.27	60 - 140	30	
trans-1,3-Dichloropropene	20.0	21.1	106	20.0	20.0	100	5.28	55 - 140	30	
Trichloroethene	20.0	20.4	102	20.0	19.4	97.2	4.86	70 - 125	30	
Trichlorofluoromethane	20.0	21.5	108	20.0	21.9	109	1.62	60 - 145	30	
Vinyl chloride	20.0	24.1	121	20.0	23.8	119	1.28	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	110	112	70 - 120	PASS
Dibromofluoromethane	110	107	85 - 115	PASS
4-Bromofluorobenzene	98.1	100	75 - 120	PASS
Toluene-d8	106	105	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4805789
Report generated: 06/16/2016 12:54

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060414
Instrument: HPMS8
Analyst: TMB
Workgroup: WG568561

Tune ID: WG568561-01
Run Date: 05/13/2016
Run Time: 12:36
File ID: 8M412218
Cal ID: HPMS8 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	16.7	6575	PASS
75.0	95.0	30.0	60.0	51.3	20171	PASS
95.0	95.0	100	100	100	39312	PASS
96.0	95.0	5.00	9.00	6.74	2649	PASS
173	174	0	2.00	0.363	122	PASS
174	95.0	50.0	100	85.5	33616	PASS
175	174	5.00	9.00	8.17	2746	PASS
176	174	95.0	101	99.2	33360	PASS
177	176	5.00	9.00	6.80	2267	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG568561-02	STD	01	05/13/2016 13:29	
WG568561-03	STD	01	05/13/2016 13:58	
WG568561-04	STD	01	05/13/2016 14:27	
WG568561-05	STD	01	05/13/2016 14:56	
WG568561-06	STD	01	05/13/2016 15:25	
WG568561-07	STD	01	05/13/2016 15:54	
WG568561-08	STD-CCV	01	05/13/2016 16:23	
WG568561-09	STD	01	05/13/2016 16:52	
WG568561-10	STD	01	05/13/2016 17:21	
WG568561-11	STD	01	05/13/2016 17:50	
WG568561-12	SSCV	01	05/13/2016 19:17	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4805791
Report generated 06/16/2016 12:54

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060414
Instrument: HPMS8
Analyst: TMB
Workgroup: WG569084

Tune ID: WG569084-01
Run Date: 05/17/2016
Run Time: 08:53
File ID: 8M412319
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.1	6316	PASS
75.0	95.0	30.0	60.0	54.7	18130	PASS
95.0	95.0	100	100	100	33138	PASS
96.0	95.0	5.00	9.00	6.76	2241	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	72.2	23934	PASS
175	174	5.00	9.00	7.88	1886	PASS
176	174	95.0	101	96.8	23159	PASS
177	176	5.00	9.00	7.15	1655	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG569079-01	STD-CCV	01	05/17/2016 09:47	
WG569079-03	STD	01	05/17/2016 10:16	
WG569079-04	STD	01	05/17/2016 10:44	
WG569079-05	STD	01	05/17/2016 11:13	
WG569079-06	STD	01	05/17/2016 11:42	
WG569079-07	STD	01	05/17/2016 12:40	
WG569079-08	STD	01	05/17/2016 13:10	
WG569079-09	STD	01	05/17/2016 13:39	
WG569079-10	SSCV	01	05/17/2016 15:06	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4805791
Report generated 06/16/2016 12:54

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060414
Instrument: HPMS8
Analyst: TMB
Workgroup: WG572492

Tune ID: WG572492-01
Run Date: 06/13/2016
Run Time: 14:10
File ID: 8M412943
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.0	7715	PASS
75.0	95.0	30.0	60.0	56.7	22963	PASS
95.0	95.0	100	100	100	40514	PASS
96.0	95.0	5.00	9.00	6.62	2683	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	77.5	31387	PASS
175	174	5.00	9.00	8.19	2572	PASS
176	174	95.0	101	95.8	30076	PASS
177	176	5.00	9.00	6.13	1845	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG572492-02	CCV	01	06/13/2016 15:04	
WG572494-01	BLANK	01	06/13/2016 16:02	
WG572494-02	LCS	01	06/13/2016 16:30	
WG572494-03	LCS2	01	06/13/2016 16:59	
L16060414-05	TRIP BLANK	01	06/13/2016 18:25	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4805791
Report generated 06/16/2016 12:54

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060414
Instrument: HPMS8
Analyst: TMB
Workgroup: WG572591

Tune ID: WG572591-01
Run Date: 06/14/2016
Run Time: 09:33
File ID: 8M412971
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	17.4	8269	PASS
75.0	95.0	30.0	60.0	53.5	25445	PASS
95.0	95.0	100	100	100	47570	PASS
96.0	95.0	5.00	9.00	6.39	3042	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	90.3	42970	PASS
175	174	5.00	9.00	7.06	3032	PASS
176	174	95.0	101	97.6	41930	PASS
177	176	5.00	9.00	6.54	2744	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG572591-02	CCV	01	06/14/2016 09:57	
WG572592-01	BLANK	01	06/14/2016 10:54	
WG572592-02	LCS	01	06/14/2016 12:21	
L16060414-01	AWD1T-060716	DL01	06/14/2016 19:35	
L16060414-02	AWD1B-060716	DL01	06/14/2016 20:05	
L16060414-03	MW14T-060716	DL01	06/14/2016 20:34	
L16060414-04	MW14B-060716	DL01	06/14/2016 21:03	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4805791
Report generated 06/16/2016 12:54

Calibration Table Report
Method: 8260WT.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Calibration: Sat May 14 18:08:06 2016
Curve: WG568561
Calibration Files

	Compound	0.3 8M412220.D	0.4 8M412221.D	1 8M412222.D	2 8M412223.D	5 8M412224.D	20 8M412225.D	50 8M412226.D	100 8M412227.D	200 8M412228.D	300 8M412229.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane		0.427	0.390	0.397	0.364	0.468	0.439	0.452	0.427	0.408	0.419	7.751		
P	Chloromethane			0.264	0.257	0.223	0.253	0.240	0.240	0.239	0.241	0.245	5.336		
C	Vinyl Chloride		0.274	0.296	0.297	0.277	0.299	0.292	0.299	0.292	0.288	0.290	3.191		
T	1,3-Butadiene				0.218	0.208	0.242	0.251	0.277	0.254	0.254	0.243	9.644		
T	Bromomethane			0.129	0.133	0.127	0.162	0.167	0.187	0.205	0.212	0.165	20.449		1.000
T	Chloroethane		0.173	0.157	0.153	0.143	0.164	0.157	0.163	0.164	0.164	0.160	5.354		
T	Trichlorofluoromethane		0.544	0.538	0.559	0.506	0.570	0.538	0.551	0.531	0.525	0.540	3.520		
T	Diethyl ether			0.130	0.138	0.123	0.132	0.125	0.128		0.127	0.129	3.866		
T	Isoprene		0.335	0.351	0.334	0.293	0.334	0.320	0.334	0.322	0.329	0.328	4.867		
T	Acrolein				0.012	0.010	0.010	0.011	0.012		0.014	0.012	12.987		
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.256	0.269	0.240	0.260	0.249	0.257	0.251	0.250	0.254	3.397		
T	Acetone					0.023	0.030	0.029	0.030	0.028	0.028	0.028	9.132		
C	1,1-Dichloroethene		0.424	0.407	0.406	0.387	0.416	0.398	0.409	0.400	0.393	0.404	2.830		
T	Tert-Butyl Alcohol				0.010	0.009	0.009	0.009	0.009		0.009	0.009	2.872		
T	Dimethyl Sulfide		0.133	0.142	0.152	0.137	0.145	0.142	0.151	0.147	0.151	0.145	4.534		
T	Iodomethane				0.019	0.024	0.066	0.101	0.129	0.135	0.131	0.087	58.244		0.998
T	Methyl acetate					0.075	0.076	0.074	0.078	0.076	0.078	0.076	2.221		
T	Methylene Chloride			0.274	0.265	0.244	0.263	0.250	0.255	0.254	0.252	0.257	3.686		
T	Carbon Disulfide			0.888	0.922	0.801	0.873	0.816	0.854	0.813	0.802	0.846	5.346		
T	Acrylonitrile			0.027	0.035	0.033	0.038	0.038	0.039		0.044	0.036	14.671		
T	Methyl Tert Butyl Ether			0.534	0.543	0.521	0.586	0.579	0.585	0.560	0.546	0.557	4.455		
T	trans-1,2-Dichloroethene		0.389	0.395	0.364	0.352	0.381	0.367	0.372	0.364	0.358	0.371	3.858		
T	n-Hexane					0.265	0.280	0.270	0.286	0.275	0.279	0.276	2.732		
T	Diisopropyl ether			0.600	0.607	0.548	0.588	0.572	0.571		0.567	0.579	3.559		
T	Vinyl Acetate				0.256	0.243	0.270	0.275	0.266	0.271	0.275	0.265	4.509		
P	1,1-Dichloroethane		0.441	0.463	0.486	0.434	0.488	0.464	0.470	0.459	0.447	0.461	4.012		
T	Ethyl-Tert-Butyl ether			0.616	0.645	0.590	0.641	0.628	0.619		0.603	0.620	3.188		
T	2-Butanone					0.035	0.042	0.043	0.045	0.041	0.043	0.041	8.268		
T	Propionitrile			0.010	0.012	0.012	0.013	0.012	0.013		0.013	0.012	8.354		
T	2,2-Dichloropropane		0.471	0.462	0.520	0.476	0.503	0.494	0.497	0.483	0.470	0.486	3.839		
T	cis-1,2-Dichloroethene		0.299	0.298	0.291	0.267	0.295	0.282	0.289	0.283	0.277	0.287	3.685		
C	Chloroform	0.563	0.567	0.581	0.536	0.509	0.566	0.543	0.546	0.529	0.506	0.545	4.619		
T	1-Bromopropane			0.034	0.040	0.040	0.043	0.041	0.043	0.043	0.044	0.041	7.649		
T	Bromochloromethane		0.131	0.164	0.147	0.137	0.154	0.148	0.151	0.148	0.145	0.147	6.598		
T	Tetrahydrofuran			0.034	0.028	0.025	0.026	0.026	0.026		0.026	0.027	11.724		
S	Dibromofluoromethane			0.249	0.261	0.257	0.280	0.271	0.284	0.271	0.275	0.269	4.465		
T	1,1,1-Trichloroethane		0.492	0.537	0.515	0.496	0.545	0.525	0.533	0.515	0.499	0.517	3.660		
T	Cyclohexane			0.373	0.369	0.335	0.359	0.344	0.366	0.356	0.364	0.358	3.619		
T	1,1-Dichloropropene			0.414	0.399	0.369	0.403	0.395	0.399	0.392	0.382	0.394	3.488		
T	Tert-Amyl-Methyl ether			0.567	0.587	0.534	0.576	0.568	0.561		0.549	0.563	3.077		
T	Carbon Tetrachloride		0.444	0.456	0.462	0.441	0.481	0.465	0.474	0.462	0.448	0.4594	2.92173		
S	1,2-Dichloroethane-d4			0.241	0.309	0.276	0.312	0.295	0.301	0.284	0.286	0.288	7.93644		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.347	0.335	0.354	0.336	0.371	0.36	0.364	0.349	0.338	0.3505	3.65503		
T	Benzene		1.128	1.084	1.071	0.977	1.085	1.033	1.019	0.963	0.883	1.0269	7.39343		
T	Trichloroethene		0.285	0.275	0.276	0.251	0.283	0.273	0.279	0.273	0.27	0.2739	3.66126		
T	Methylcyclohexane					0.396	0.426	0.408	0.429	0.416	0.422	0.4161	2.94153		
C	1,2-Dichloropropane		0.239	0.222	0.233	0.207	0.238	0.226	0.233	0.231	0.229	0.2286	4.30096		
T	Bromodichloromethane		0.369	0.382	0.412	0.385	0.426	0.421	0.417	0.41	0.395	0.4018	4.93305		
T	1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.0011	14.5817		
T	Dibromomethane		0.141	0.13	0.137	0.128	0.141	0.134	0.137	0.136	0.133	0.1353	3.26799		
T	2-Chloroethyl Vinyl Ether				0.1	0.084	0.103	0.104	0.103	0.095	0.098	0.0983	7.09792		
T	4-Methyl-2-Pentanone					0.033	0.042	0.042	0.043	0.04	0.041	0.0401	8.66859		
T	cis-1,3-Dichloropropene		0.391	0.393	0.386	0.398	0.431	0.428	0.428	0.42	0.405	0.409	4.41527		

T	Dimethyl Disulfide					0.182	0.218	0.221	0.23	0.229	0.23	0.2183	8.49419	
I	Chlorobenzene-d5	ISTD												
S	Toluene-d8			1.282	1.295	1.228	1.385	1.333	1.378	1.289	1.278	1.3084	4.07746	
C	Toluene		1.653	1.696	1.678	1.507	1.647	1.554	1.545	1.418	1.27	1.552	8.98325	
T	Ethyl Methacrylate			0.251	0.293	0.268	0.314	0.314	0.327	0.309	0.31	0.2981	8.76897	
T	Paraldehyde											0	0	
T	trans-1,3-Dichloropropene			0.472	0.51	0.466	0.561	0.552	0.553	0.533	0.515	0.5201	7.01006	
T	1,1,2-Trichloroethane		0.261	0.241	0.242	0.222	0.254	0.249	0.252	0.243	0.241	0.2449	4.54209	
T	2-Hexanone					0.042	0.053	0.053	0.056	0.051	0.053	0.0515	9.50479	
T	1,3-Dichloropropane		0.355	0.442	0.465	0.42	0.468	0.454	0.457	0.437	0.428	0.436	7.93348	
T	Tetrachloroethene		0.355	0.337	0.336	0.306	0.333	0.325	0.337	0.334	0.33	0.3325	3.83886	
T	Dibromochloromethane		0.349	0.336	0.338	0.328	0.373	0.372	0.383	0.373	0.367	0.3576	5.60043	
T	1,2-Dibromoethane		0.233	0.234	0.234	0.227	0.259	0.254	0.258	0.251	0.247	0.2441	5.04151	
T	1-Chlorohexane		0.532	0.584	0.505	0.502	0.54	0.52	0.547	0.521	0.516	0.5298	4.7826	
P	Chlorobenzene		1.029	1.173	1.09	1.007	1.099	1.037	1.043	1.002	0.939	1.0466	6.41465	
T	1,1,1,2-Tetrachloroethane		0.392	0.399	0.403	0.357	0.431	0.414	0.424	0.417	0.413	0.4055	5.39495	
C	Ethylbenzene		0.6	0.594	0.59	0.532	0.586	0.559	0.57	0.564	0.558	0.5726	3.7769	
T	m-,p-Xylene		0.744	0.696	0.691	0.643	0.713	0.67	0.673	0.634	0.581	0.6716	7.12586	
T	o-Xylene			0.691	0.651	0.614	0.692	0.658	0.667	0.65	0.63	0.6567	4.11758	
T	Styrene		1.05	1.06	1.096	1.043	1.159	1.124	1.12	1.061	0.98	1.077	4.96781	
P	Bromoform			0.177	0.21	0.181	0.226	0.221	0.232	0.227	0.223	0.2121	10.0546	
T	Isopropylbenzene		1.853	1.891	1.871	1.708	1.897	1.781	1.75	1.573	1.377	1.7444	9.92447	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.426	0.492	0.503	0.486	0.543	0.51	0.527	0.513	0.514	0.5018	6.60291	
S	p-Bromofluorobenzene				1.054	0.976	1.071	1.016	1.053	1.031	1.046	1.0352	3.05136	
T	1,2,3-Trichloropropane			0.119	0.158	0.161	0.162	0.155	0.162	0.16	0.158	0.1545	9.40789	
T	trans-1,4-Dichloro-2-Butene			0.085	0.118	0.12	0.149	0.151	0.16	0.159	0.161	0.1376	19.9543	1.000
T	n-Propylbenzene		4.139	4.239	4.243	4.051	4.241	3.953	3.882	3.419	2.935	3.9003	11.4439	
T	Bromobenzene	0.796	0.708	0.843	0.837	0.778	0.84	0.798	0.817	0.803	0.803	0.8022	4.93253	
T	1,3,5-Trimethylbenzene		2.941	2.93	2.941	2.839	3.053	2.882	2.871	2.689	2.423	2.8411	6.50391	
T	2-Chlorotoluene		2.917	2.935	2.929	2.712	2.861	2.795	2.682	2.533	2.145	2.7231	9.37022	
T	4-Chlorotoluene		2.681	2.596	2.581	2.474	2.625	2.326	2.447	2.286	2.121	2.4597	7.49558	
T	a-Methylstyrene					1.257	1.406	1.34	1.384	1.35	1.351	1.3479	3.77654	
T	tert-Butylbenzene			0.587	0.555	0.53	0.571	0.533	0.552	0.561	0.558	0.5558	3.34508	
T	1,2,4-Trimethylbenzene		2.955	3.168	3.127	2.936	3.12	2.914	2.937	2.709	2.427	2.9214	7.97314	
T	sec-Butylbenzene			3.701	3.536	3.487	3.607	3.34	3.332	3.045	2.69	3.3424	9.93324	
T	p-Isopropyltoluene			3.112	3.062	2.903	2.988	2.813	2.809	2.634	2.382	2.8379	8.45265	
T	1,3-Dichlorobenzene		1.484	1.617	1.627	1.53	1.605	1.531	1.549	1.51	1.45	1.5448	3.95774	
T	1,4-Dichlorobenzene	1.713	1.524	1.672	1.594	1.503	1.6	1.511	1.535	1.49	1.431	1.5574	5.56562	
T	n-Butylbenzene			3.143	2.96	2.895	3.002	2.791	2.792	2.571	2.292	2.8056	9.55812	
T	1,2-Dichlorobenzene	1.59	1.307	1.415	1.41	1.322	1.404	1.333	1.356	1.315	1.286	1.3739	6.4618	
T	1,2-Dibromo-3-Chloropropane				0.085	0.103	0.102	0.103	0.106	0.104	0.103	0.1007	6.86771	
T	1,2,4-Trichlorobenzene		1.074	1.01	1.028	0.982	1.069	1.013	1.036	1.029	1.002	1.0269	2.90829	
T	Hexachlorobutadiene		0.516	0.476	0.483	0.447	0.487	0.459	0.48	0.485	0.485	0.4798	4.00465	
T	Naphthalene		1.594	1.457	1.574	1.455	1.63	1.552	1.564	1.485	1.422	1.5258	4.75891	
T	1,2,3-Trichlorobenzene	0.913	0.934	0.905	0.862	0.805	0.877	0.824	0.862	0.846	0.835	0.8664	4.7474	

Tue May 17 11:49:41 2016

Calibration Table Report
Method: A9FOOWT.M
Title: A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Calibration: Thu May 19 08:54:31 2016
Curve: WG569079
Calibration Files

	Compound	5 8M412324.D	20 8M412323.D	50 8M412322.D	100 8M412321.D	200 8M412325.D	300 8M412326.D	400 8M412327.D	500 8M412328.D	Avg	%RSD
I	Fluorobenzene	ISTD									
T	Acetonitrile		0.009	0.010	0.010	0.010	0.010	0.010	0.010	0.010	2.076
T	3-Chloro-1-propene	0.306	0.330	0.335	0.331	0.324	0.307	0.304	0.304	0.318	4.307
T	2-Chloro-1,3-butadiene	0.368	0.420	0.420	0.419	0.419	0.392	0.389	0.387	0.402	5.022
T	Ethyl Acetate	0.080	0.096	0.097	0.100	0.099	0.098	0.100	0.095	0.096	6.751
T	Methacrylonitrile	0.041	0.054	0.055	0.055	0.055	0.054	0.055	0.052	0.053	9.227
T	Isobutyl Alcohol			0.003	0.003	0.003	0.003	0.003	0.003	0.003	3.599
T	1-Butanol									0.000	0.000
T	Methyl methacrylate	0.089	0.106	0.106	0.105	0.106	0.105	0.107	0.102	0.103	5.868
T	2-Nitropropane		0.041	0.042	0.043	0.046	0.047	0.048	0.046	0.045	5.992
I	Chlorobenzene-d5	ISTD									
I	1,4-Dichlorobenzene-d4	ISTD									
T	Cyclohexanone		0.011	0.010	0.010	0.009	0.010	0.011	0.010	0.010	4.971

Thu May 19 09:04:52 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060414 Run Date: 05/13/2016 Sample ID: WG568561-12
Instrument ID: HPMS8 Run Time: 19:17 Method: 8260B
File ID: 8M412232 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG568561 Cal ID: HPMS8 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.1	ug/L	0.513	5.70	20	
1,1-Dichloroethene	CCC	50.0	46.0	ug/L	0.372	8.10	20	
1,2-Dichloropropane	CCC	50.0	51.0	ug/L	0.233	1.90	20	
Ethylbenzene	CCC	50.0	48.2	ug/L	0.552	3.60	20	
Toluene	CCC	50.0	49.1	ug/L	1.52	1.80	20	
Vinyl Chloride	CCC	50.0	52.4	ug/L	0.304	4.80	20	
Bromoform	SPCC	50.0	48.2	ug/L	0.205	3.60	20	
Chlorobenzene	SPCC	50.0	50.2	ug/L	1.05	0.400	20	
Chloromethane	SPCC	50.0	50.7	ug/L	0.248	1.40	20	
1,1-Dichloroethane	SPCC	50.0	46.7	ug/L	0.431	6.60	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.6	ug/L	0.498	0.800	20	
Acetone		50.0	57.5	ug/L	0.0324	15.1	20	
Benzene		50.0	48.5	ug/L	0.997	3.00	20	
Bromobenzene		50.0	49.5	ug/L	0.794	1.10	20	
Bromochloromethane		50.0	47.5	ug/L	0.140	4.90	20	
Bromodichloromethane		50.0	48.3	ug/L	0.388	3.40	20	
Bromomethane		50.0	46.4	ug/L	0.162	7.20	20	
2-Butanone		50.0	53.0	ug/L	0.0438	6.00	20	
n-Butylbenzene		50.0	49.7	ug/L	2.79	0.700	20	
sec-Butylbenzene		50.0	51.3	ug/L	3.43	2.70	20	
tert-Butylbenzene		50.0	50.9	ug/L	0.566	1.90	20	
Carbon Disulfide		50.0	42.3	ug/L	0.716	15.4	20	
Carbon Tetrachloride		50.0	46.2	ug/L	0.425	7.50	20	
Dibromochloromethane		50.0	49.7	ug/L	0.355	0.700	20	
Chloroethane		50.0	53.3	ug/L	0.170	6.70	20	
2-Chlorotoluene		50.0	51.6	ug/L	2.81	3.10	20	
4-Chlorotoluene		50.0	48.3	ug/L	2.37	3.50	20	
1,2-Dibromo-3-Chloropropane		50.0	48.5	ug/L	0.0977	3.00	20	
1,2-Dibromoethane		50.0	51.1	ug/L	0.250	2.20	20	
Dibromomethane		50.0	45.8	ug/L	0.124	8.40	20	
1,2-Dichlorobenzene		50.0	50.5	ug/L	1.39	1.00	20	
1,3-Dichlorobenzene		50.0	50.9	ug/L	1.57	1.80	20	
1,4-Dichlorobenzene		50.0	50.5	ug/L	1.57	0.900	20	
Dichlorodifluoromethane		50.0	54.2	ug/L	0.455	8.40	20	
1,2-Dichloroethane		50.0	49.0	ug/L	0.344	2.00	20	
cis-1,2-Dichloroethene		50.0	48.9	ug/L	0.281	2.20	20	
trans-1,2-Dichloroethene		50.0	48.1	ug/L	0.357	3.90	20	
1,3-Dichloropropane		50.0	53.7	ug/L	0.468	7.30	20	
2,2-Dichloropropane		50.0	47.9	ug/L	0.466	4.20	20	
cis-1,3-Dichloropropene		50.0	53.9	ug/L	0.441	7.80	20	
trans-1,3-Dichloropropene		50.0	50.7	ug/L	0.527	1.30	20	
1,1-Dichloropropene		50.0	47.5	ug/L	0.374	5.10	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4805790
Report generated 06/16/2016 12:54

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060414 Run Date: 05/13/2016 Sample ID: WG568561-12
Instrument ID: HPMS8 Run Time: 19:17 Method: 8260B
File ID: 8M412232 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG568561 Cal ID: HPMS8 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	53.6	ug/L	0.0552	7.20	20	
Hexachlorobutadiene		50.0	52.1	ug/L	0.500	4.20	20	
Isopropylbenzene		50.0	51.1	ug/L	1.78	2.20	20	
p-Isopropyltoluene		50.0	50.1	ug/L	2.85	0.300	20	
4-Methyl-2-Pentanone		50.0	51.9	ug/L	0.0416	3.70	20	
Methylene Chloride		50.0	48.4	ug/L	0.249	3.10	20	
Naphthalene		50.0	45.8	ug/L	1.40	8.40	20	
n-Propylbenzene		50.0	51.9	ug/L	4.05	3.80	20	
Styrene		50.0	51.5	ug/L	1.11	3.00	20	
1,1,1,2-Tetrachloroethane		50.0	49.4	ug/L	0.400	1.20	20	
Tetrachloroethene		50.0	47.8	ug/L	0.318	4.40	20	
1,2,3-Trichlorobenzene		50.0	47.7	ug/L	0.827	4.50	20	
1,2,4-Trichlorobenzene		50.0	50.1	ug/L	1.03	0.200	20	
1,1,1-Trichloroethane		50.0	47.6	ug/L	0.492	4.80	20	
1,1,2-Trichloroethane		50.0	49.0	ug/L	0.240	1.90	20	
Trichloroethene		50.0	51.1	ug/L	0.280	2.10	20	
Trichlorofluoromethane		50.0	46.9	ug/L	0.507	6.10	20	
1,2,3-Trichloropropane		50.0	50.1	ug/L	0.155	0.200	20	
1,2,4-Trimethylbenzene		50.0	49.7	ug/L	2.90	0.700	20	
1,3,5-Trimethylbenzene		50.0	51.6	ug/L	2.93	3.30	20	
o-Xylene		50.0	50.6	ug/L	0.664	1.10	20	
m-,p-Xylene		100	101	ug/L	0.679	1.10	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4805790
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060414 Run Date: 06/13/2016 Sample ID: WG572492-02
Instrument ID: HPMS8 Run Time: 15:04 Method: 8260B
File ID: 8M412945 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG572494 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	51.2	ug/L	0.558	2.40	20	
1,1-Dichloroethene	CCC	50.0	50.2	ug/L	0.406	0.428	20	
1,2-Dichloropropane	CCC	50.0	47.2	ug/L	0.216	5.68	20	
Ethylbenzene	CCC	50.0	48.4	ug/L	0.554	3.24	20	
Toluene	CCC	50.0	49.5	ug/L	1.54	1.00	20	
Vinyl Chloride	CCC	50.0	52.5	ug/L	0.305	4.96	20	
Bromoform	SPCC	50.0	52.5	ug/L	0.223	4.96	20	
Chlorobenzene	SPCC	50.0	49.3	ug/L	1.03	1.49	20	
Chloromethane	SPCC	50.0	47.2	ug/L	0.231	5.56	20	
1,1-Dichloroethane	SPCC	50.0	49.6	ug/L	0.458	0.715	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	44.0	ug/L	0.442	12.0	20	
Xylenes		150	149	ug/L	0.657	0.895	20	
Acetone		50.0	51.0	ug/L	0.0287	2.07	20	
Benzene		50.0	49.6	ug/L	1.02	0.893	20	
Bromobenzene		50.0	48.8	ug/L	0.783	2.46	20	
Bromochloromethane		50.0	50.6	ug/L	0.149	1.19	20	
Bromodichloromethane		50.0	52.6	ug/L	0.422	5.11	20	
Bromomethane		50.0	35.6	ug/L	0.123	28.8	20	*
2-Butanone		50.0	43.5	ug/L	0.0360	12.9	20	
n-Butylbenzene		50.0	47.3	ug/L	2.65	5.38	20	
sec-Butylbenzene		50.0	48.0	ug/L	3.21	4.07	20	
tert-Butylbenzene		50.0	46.5	ug/L	0.517	6.96	20	
Carbon Disulfide		50.0	50.7	ug/L	0.858	1.47	20	
Carbon Tetrachloride		50.0	55.0	ug/L	0.506	10.1	20	
Dibromochloromethane		50.0	50.9	ug/L	0.364	1.86	20	
Chloroethane		50.0	48.2	ug/L	0.154	3.63	20	
2-Chlorotoluene		50.0	47.6	ug/L	2.59	4.83	20	
4-Chlorotoluene		50.0	47.1	ug/L	2.32	5.84	20	
1,2-Dibromo-3-Chloropropane		50.0	45.8	ug/L	0.0923	8.40	20	
1,2-Dibromoethane		50.0	48.4	ug/L	0.236	3.25	20	
Dibromomethane		50.0	47.5	ug/L	0.129	4.91	20	
1,2-Dichlorobenzene		50.0	47.0	ug/L	1.29	5.92	20	
1,3-Dichlorobenzene		50.0	48.5	ug/L	1.50	2.92	20	
1,4-Dichlorobenzene		50.0	47.4	ug/L	1.48	5.28	20	
Dichlorodifluoromethane		50.0	54.2	ug/L	0.454	8.31	20	
1,2-Dichloroethane		50.0	53.3	ug/L	0.374	6.62	20	
cis-1,2-Dichloroethene		50.0	49.5	ug/L	0.284	0.995	20	
trans-1,2-Dichloroethene		50.0	49.7	ug/L	0.369	0.632	20	
1,3-Dichloropropane		50.0	47.6	ug/L	0.415	4.87	20	
2,2-Dichloropropane		50.0	57.8	ug/L	0.562	15.6	20	
cis-1,3-Dichloropropene		50.0	51.3	ug/L	0.420	2.59	20	
trans-1,3-Dichloropropene		50.0	51.2	ug/L	0.533	2.42	20	

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060414 Run Date: 06/13/2016 Sample ID: WG572492-02
Instrument ID: HPMS8 Run Time: 15:04 Method: 8260B
File ID: 8M412945 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG572494 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	50.2	ug/L	0.396	0.303	20	
2-Hexanone		50.0	44.7	ug/L	0.0460	10.5	20	
Hexachlorobutadiene		50.0	49.2	ug/L	0.472	1.67	20	
Isopropylbenzene		50.0	50.9	ug/L	1.78	1.79	20	
p-Isopropyltoluene		50.0	48.3	ug/L	2.74	3.44	20	
4-Methyl-2-Pentanone		50.0	45.4	ug/L	0.0365	9.17	20	
Methylene Chloride		50.0	48.0	ug/L	0.247	4.10	20	
Naphthalene		50.0	45.5	ug/L	1.39	9.06	20	
n-Propylbenzene		50.0	48.1	ug/L	3.76	3.72	20	
Styrene		50.0	51.2	ug/L	1.10	2.41	20	
1,1,1,2-Tetrachloroethane		50.0	51.6	ug/L	0.418	3.11	20	
Tetrachloroethene		50.0	51.9	ug/L	0.345	3.81	20	
1,2,3-Trichlorobenzene		50.0	46.1	ug/L	0.798	7.87	20	
1,2,4-Trichlorobenzene		50.0	48.1	ug/L	0.987	3.86	20	
1,1,1-Trichloroethane		50.0	54.5	ug/L	0.564	9.02	20	
1,1,2-Trichloroethane		50.0	46.8	ug/L	0.229	6.43	20	
Trichloroethene		50.0	51.1	ug/L	0.280	2.13	20	
Trichlorofluoromethane		50.0	54.1	ug/L	0.585	8.27	20	
1,2,3-Trichloropropane		50.0	45.9	ug/L	0.142	8.20	20	
1,2,4-Trimethylbenzene		50.0	48.5	ug/L	2.83	3.06	20	
1,3,5-Trimethylbenzene		50.0	49.0	ug/L	2.78	2.07	20	
o-Xylene		50.0	49.0	ug/L	0.644	1.92	20	
m-,p-Xylene		100	99.6	ug/L	0.669	0.381	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060414 Run Date: 06/14/2016 Sample ID: WG572591-02
Instrument ID: HPMS8 Run Time: 09:57 Method: 8260B
File ID: 8M412972 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG572592 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	52.7	ug/L	0.574	5.32	20	
1,1-Dichloroethene	CCC	50.0	52.8	ug/L	0.427	5.65	20	
1,2-Dichloropropane	CCC	50.0	48.2	ug/L	0.221	3.50	20	
Ethylbenzene	CCC	50.0	49.5	ug/L	0.567	1.04	20	
Toluene	CCC	50.0	50.4	ug/L	1.57	0.889	20	
Vinyl Chloride	CCC	50.0	55.8	ug/L	0.324	11.6	20	
Bromoform	SPCC	50.0	49.3	ug/L	0.209	1.31	20	
Chlorobenzene	SPCC	50.0	50.1	ug/L	1.05	0.118	20	
Chloromethane	SPCC	50.0	50.8	ug/L	0.248	1.51	20	
1,1-Dichloroethane	SPCC	50.0	51.9	ug/L	0.479	3.87	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	41.8	ug/L	0.419	16.5	20	
Xylenes		150	152	ug/L	0.670	1.10	20	
Acetone		50.0	48.9	ug/L	0.0275	2.30	20	
Benzene		50.0	51.6	ug/L	1.06	3.12	20	
Bromobenzene		50.0	48.3	ug/L	0.775	3.44	20	
Bromochloromethane		50.0	50.5	ug/L	0.149	1.05	20	
Bromodichloromethane		50.0	52.0	ug/L	0.418	4.06	20	
Bromomethane		50.0	40.9	ug/L	0.142	18.2	20	
2-Butanone		50.0	44.9	ug/L	0.0371	10.2	20	
n-Butylbenzene		50.0	48.7	ug/L	2.73	2.58	20	
sec-Butylbenzene		50.0	49.3	ug/L	3.30	1.41	20	
tert-Butylbenzene		50.0	48.9	ug/L	0.544	2.20	20	
Carbon Disulfide		50.0	53.2	ug/L	0.899	6.31	20	
Carbon Tetrachloride		50.0	55.2	ug/L	0.507	10.3	20	
Dibromochloromethane		50.0	49.2	ug/L	0.352	1.69	20	
Chloroethane		50.0	51.5	ug/L	0.164	2.93	20	
2-Chlorotoluene		50.0	44.6	ug/L	2.43	10.8	20	
4-Chlorotoluene		50.0	53.0	ug/L	2.61	6.05	20	
1,2-Dibromo-3-Chloropropane		50.0	41.1	ug/L	0.0829	17.7	20	
1,2-Dibromoethane		50.0	46.1	ug/L	0.225	7.71	20	
Dibromomethane		50.0	46.8	ug/L	0.127	6.47	20	
1,2-Dichlorobenzene		50.0	46.7	ug/L	1.28	6.63	20	
1,3-Dichlorobenzene		50.0	49.2	ug/L	1.52	1.53	20	
1,4-Dichlorobenzene		50.0	47.7	ug/L	1.49	4.51	20	
Dichlorodifluoromethane		50.0	55.3	ug/L	0.463	10.5	20	
1,2-Dichloroethane		50.0	51.2	ug/L	0.359	2.38	20	
cis-1,2-Dichloroethene		50.0	51.3	ug/L	0.294	2.59	20	
trans-1,2-Dichloroethene		50.0	52.1	ug/L	0.387	4.25	20	
1,3-Dichloropropane		50.0	46.0	ug/L	0.401	8.04	20	
2,2-Dichloropropane		50.0	58.5	ug/L	0.569	17.0	20	
cis-1,3-Dichloropropene		50.0	51.6	ug/L	0.422	3.26	20	
trans-1,3-Dichloropropene		50.0	49.1	ug/L	0.511	1.76	20	

CCV - Modified 03/05/2008
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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060414 Run Date: 06/14/2016 Sample ID: WG572591-02
Instrument ID: HPMS8 Run Time: 09:57 Method: 8260B
File ID: 8M412972 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG572592 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	52.9	ug/L	0.417	5.84	20	
2-Hexanone		50.0	42.8	ug/L	0.0441	14.3	20	
Hexachlorobutadiene		50.0	51.9	ug/L	0.498	3.75	20	
Isopropylbenzene		50.0	51.5	ug/L	1.80	2.92	20	
p-Isopropyltoluene		50.0	49.3	ug/L	2.80	1.43	20	
4-Methyl-2-Pentanone		50.0	42.3	ug/L	0.0340	15.4	20	
Methylene Chloride		50.0	49.3	ug/L	0.254	1.44	20	
Naphthalene		50.0	42.6	ug/L	1.30	14.8	20	
n-Propylbenzene		50.0	49.2	ug/L	3.84	1.56	20	
Styrene		50.0	51.2	ug/L	1.10	2.41	20	
1,1,1,2-Tetrachloroethane		50.0	50.7	ug/L	0.411	1.48	20	
Tetrachloroethene		50.0	52.9	ug/L	0.352	5.89	20	
1,2,3-Trichlorobenzene		50.0	44.9	ug/L	0.777	10.3	20	
1,2,4-Trichlorobenzene		50.0	48.1	ug/L	0.988	3.84	20	
1,1,1-Trichloroethane		50.0	55.1	ug/L	0.570	10.1	20	
1,1,2-Trichloroethane		50.0	45.1	ug/L	0.221	9.88	20	
Trichloroethene		50.0	52.7	ug/L	0.289	5.45	20	
Trichlorofluoromethane		50.0	55.1	ug/L	0.595	10.2	20	
1,2,3-Trichloropropane		50.0	43.2	ug/L	0.134	13.5	20	
1,2,4-Trimethylbenzene		50.0	49.6	ug/L	2.90	0.789	20	
1,3,5-Trimethylbenzene		50.0	50.3	ug/L	2.86	0.509	20	
o-Xylene		50.0	50.0	ug/L	0.657	0.0780	20	
m-,p-Xylene		100	102	ug/L	0.683	1.61	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4805792
Report generated 06/16/2016 12:54

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060414
Instrument ID: HPMS8
Workgroup (AAB#): WG572494

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	288225	539116	778260
Upper Limit	NA	NA	576450	1078232	1556520
Lower Limit	NA	NA	144113	269558	389130
L16060414-05	1.00	01	307310	556979	752636
WG572494-01	1.00	01	308188	570919	749860
WG572494-02	1.00	01	321769	563003	773259
WG572494-03	1.00	01	317199	564940	764855

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4809970
Report generated 06/16/2016 12:54

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060414
Instrument ID: HPMS8
Workgroup (AAB#): WG572592

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	288225	539116	778260
Upper Limit	NA	NA	576450	1078232	1556520
Lower Limit	NA	NA	144113	269558	389130
L16060414-01	100	DL01	308907	561343	750113
L16060414-02	100	DL01	307269	563608	748707
L16060414-03	100	DL01	306527	553493	741315
L16060414-04	100	DL01	305612	547033	740343
WG572592-01	1.00	01	333089	597833	818923
WG572592-02	1.00	01	328956	583790	789634

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4809970
Report generated 06/16/2016 12:54

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060414
Instrument ID: HPMS8
Workgroup (AAB#): WG572494

ICAL CCV Number: WG568561-08
CAL ID: HPMS8-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	17.6	14.58	10.71
Upper Limit	NA	NA	18.1	15.08	11.21
Lower Limit	NA	NA	17.1	14.08	10.21
L16060414-05	1.00	01	17.6	14.57	10.71
WG572494-01	1.00	01	17.6	14.57	10.71
WG572494-02	1.00	01	17.6	14.58	10.71
WG572494-03	1.00	01	17.6	14.57	10.71

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4809971
Report generated: 06/16/2016 12:54

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060414
Instrument ID: HPMS8
Workgroup (AAB#): WG572592

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	17.6	14.58	10.71
Upper Limit	NA	NA	18.1	15.08	11.21
Lower Limit	NA	NA	17.1	14.08	10.21
L16060414-01	100	DL01	17.6	14.57	10.71
L16060414-02	100	DL01	17.6	14.57	10.71
L16060414-03	100	DL01	17.6	14.57	10.71
L16060414-04	100	DL01	17.6	14.57	10.71
WG572592-01	1.00	01	17.6	14.57	10.71
WG572592-02	1.00	01	17.6	14.57	10.71

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4809971
Report generated: 06/16/2016 12:54

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412992.D Vial: 22
Acq On : 14 Jun 2016 19:35 Operator: TMB
Sample : L16060414-01 B 100X 826-LOW Inst : HPMS8
Misc : 1,100 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 08:27:21 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	750113	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	561343	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	308907	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	221126	27.4373 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.76%		
43) 1,2-Dichloroethane-d4	10.30	65	247306	28.6181 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 114.48%		
58) Toluene-d8	12.68	98	773605	26.3327 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.32%		
80) p-Bromofluorobenzene	16.08	95	326708	25.5421 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.16%		

Target Compounds					Qvalue
4) Vinyl Chloride	3.84	62	15380	1.7658 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	212069	27.8381 ug/L	94
13) Acetone	6.16	43	1358	1.6091 ug/L #	50
14) 1,1-Dichloroethene	6.47	61	13843	1.1413 ug/L	94
27) 1,1-Dichloroethane	8.32	63	12523	0.9049 ug/L	94
32) cis-1,2-Dichloroethene	9.17	96	1029674	119.5859 ug/L	83
45) 1,2-Dichloroethane	10.42	62	15087	1.4345 ug/L	92
47) Trichloroethene	11.21	130	517551	62.9771 ug/L	99
48) Methylcyclohexane	11.21	83	6343	0.5081 ug/L #	1

(#) = qualifier out of range (m) = manual integration
8M412992.D 8260WT.M Wed Jun 15 08:27:24 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412992.D Vial: 22
Acq On : 14 Jun 2016 19:35 Operator: TMB
Sample : L16060414-01 B 100X 826-LOW Inst : HPMS8
Misc : 1,100 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 8:27 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

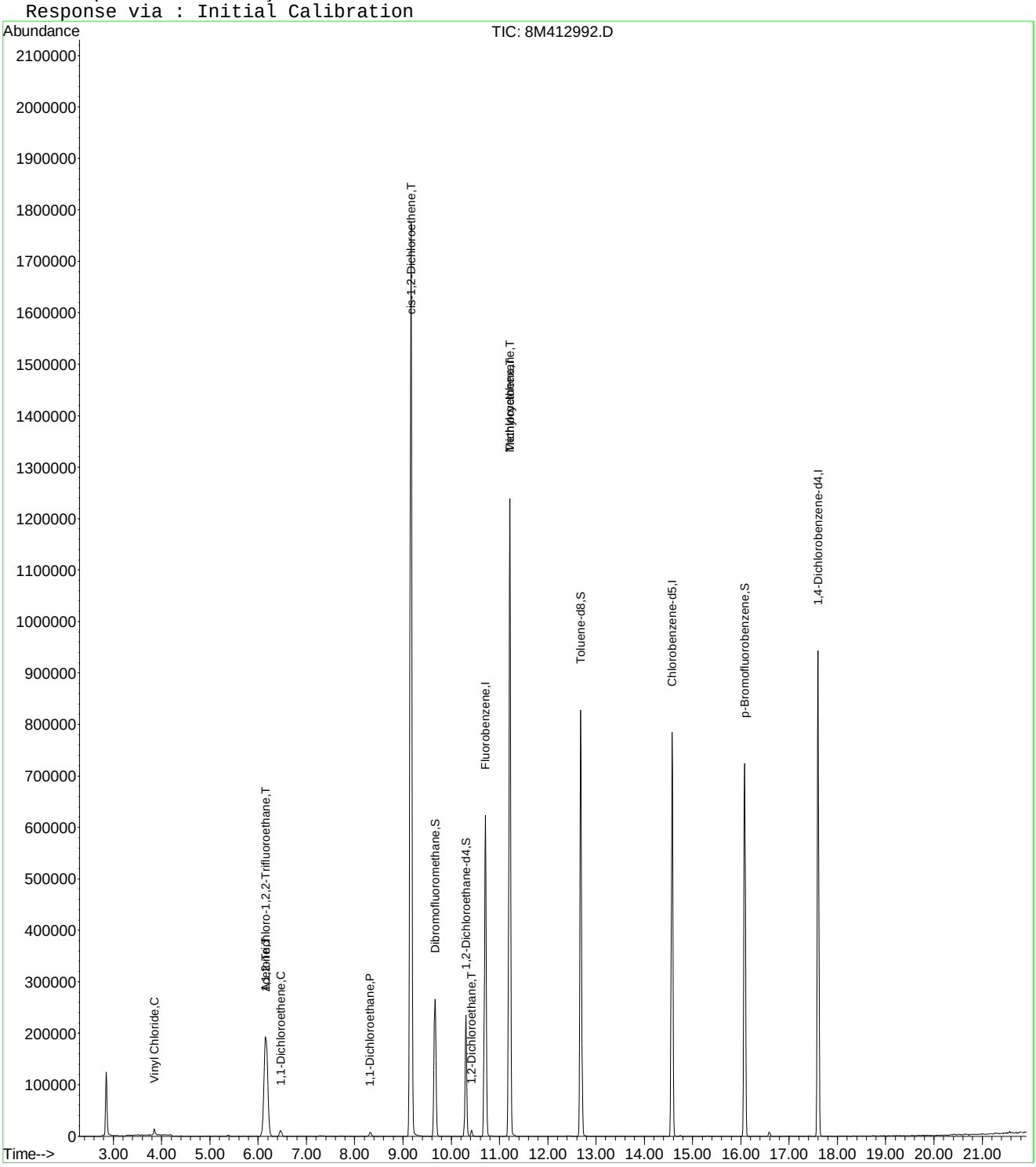

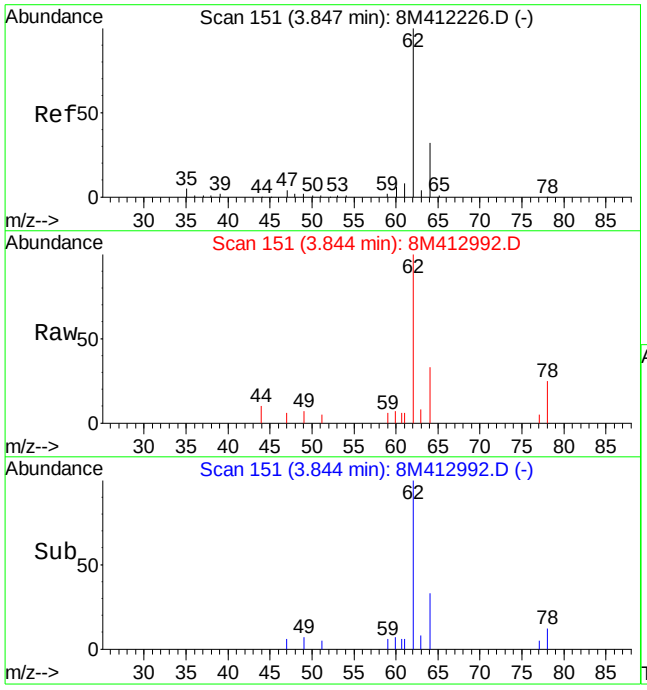

#4
Vinyl Chloride
Concen: 1.77 ug/L
RT: 3.84 min Scan# 151
Delta R.T. -0.00 min
Lab File: 8M412992.D
Acq: 14 Jun 2016 19:35

Tgt Ion: 62 Resp: 15380

Ion	Ratio	Lower	Upper
62	100		
64	30.5	19.3	45.1

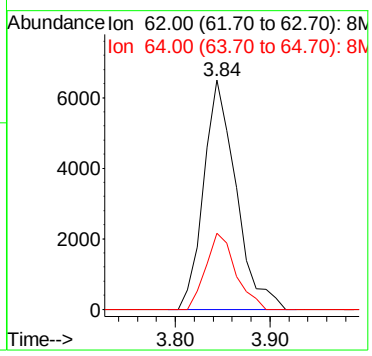

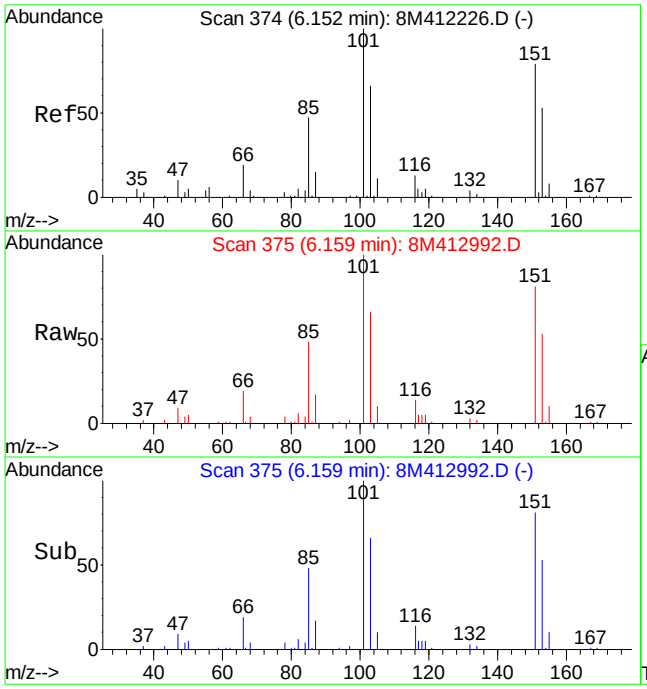

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 27.84 ug/L
RT: 6.16 min Scan# 375
Delta R.T. 0.01 min
Lab File: 8M412992.D
Acq: 14 Jun 2016 19:35

Tgt Ion:101 Resp: 212069

Ion	Ratio	Lower	Upper
101	100		
151	85.2	40.2	120.2

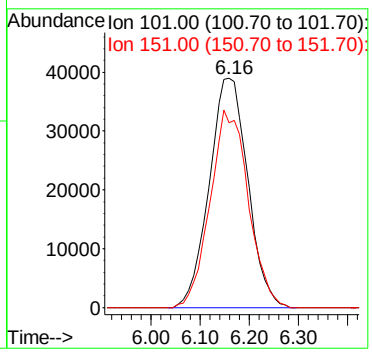

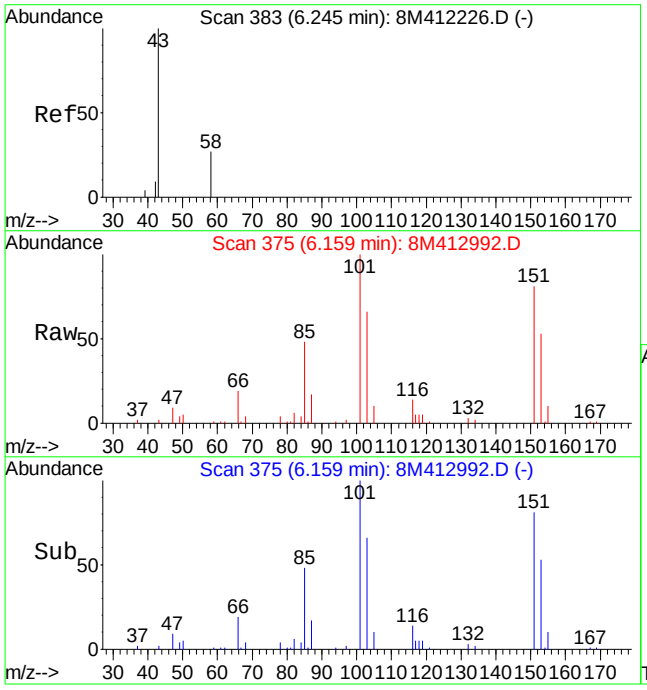

#13
Acetone
Concen: 1.61 ug/L
RT: 6.16 min Scan# 375
Delta R.T. -0.09 min
Lab File: 8M412992.D
Acq: 14 Jun 2016 19:35

Tgt Ion: 43 Resp: 1358

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.2	35.4#

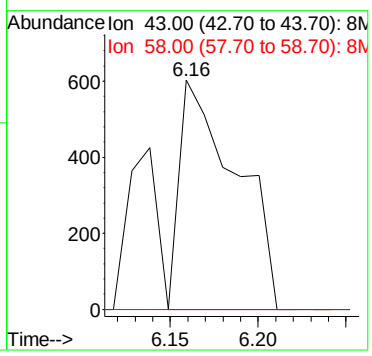

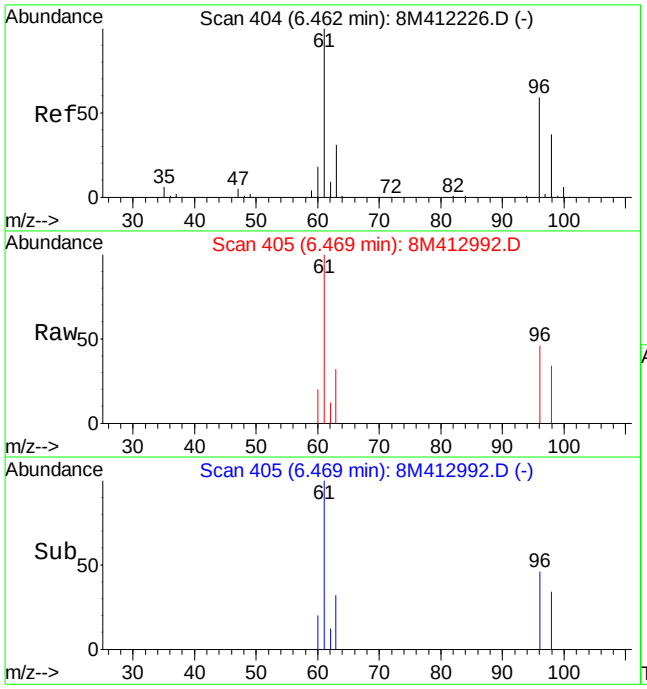

#14
1,1-Dichloroethene
Concen: 1.14 ug/L
RT: 6.47 min Scan# 405
Delta R.T. 0.01 min
Lab File: 8M412992.D
Acq: 14 Jun 2016 19:35

Tgt Ion: 61 Resp: 13843

Ion	Ratio	Lower	Upper
61	100		
96	53.3	34.6	80.8

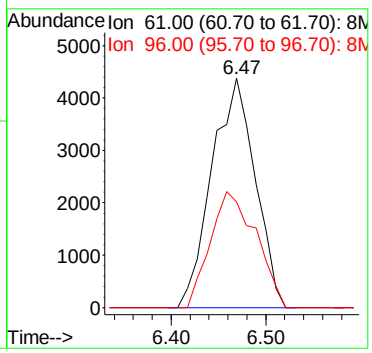

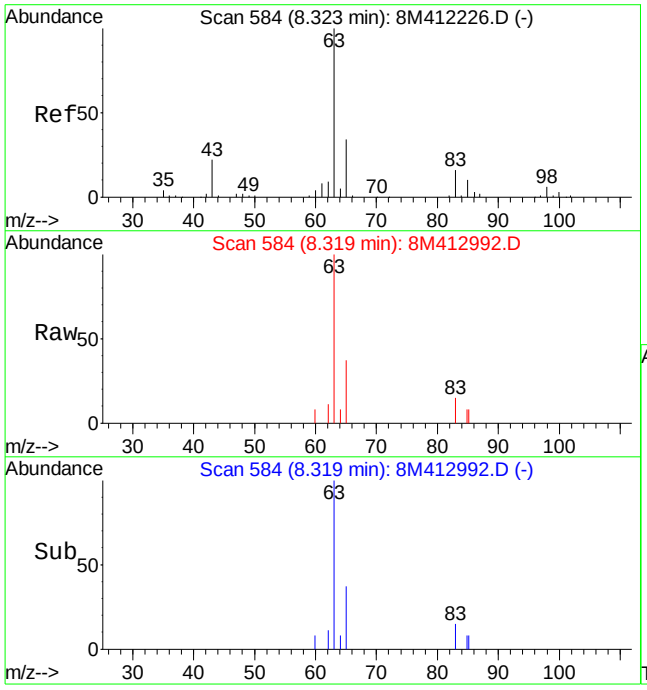

#27
1,1-Dichloroethane
Concen: 0.90 ug/L
RT: 8.32 min Scan# 584
Delta R.T. -0.00 min
Lab File: 8M412992.D
Acq: 14 Jun 2016 19:35

Tgt Ion: 63 Resp: 12523

Ion	Ratio	Lower	Upper
63	100		
65	30.1	20.2	47.0
83	17.2	9.1	21.1

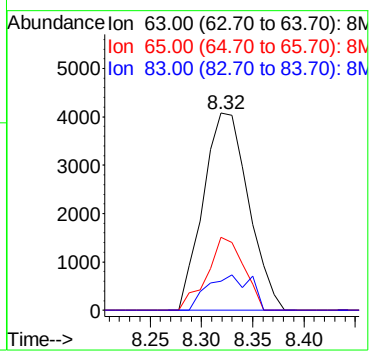

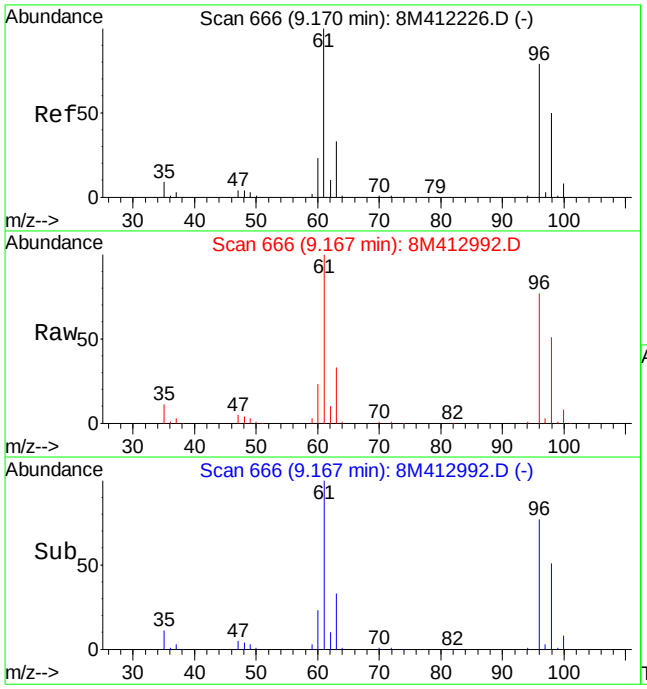

#32
cis-1,2-Dichloroethene
Concen: 119.59 ug/L
RT: 9.17 min Scan# 666
Delta R.T. -0.00 min
Lab File: 8M412992.D
Acq: 14 Jun 2016 19:35

Tgt Ion: 96 Resp: 1029674

Ion	Ratio	Lower	Upper
96	100		
61	130.5	91.5	213.5

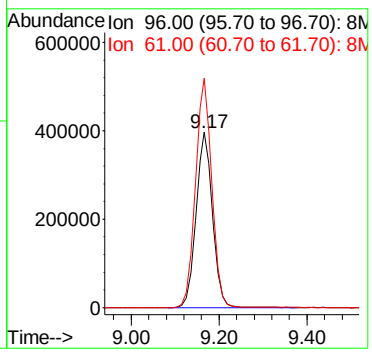

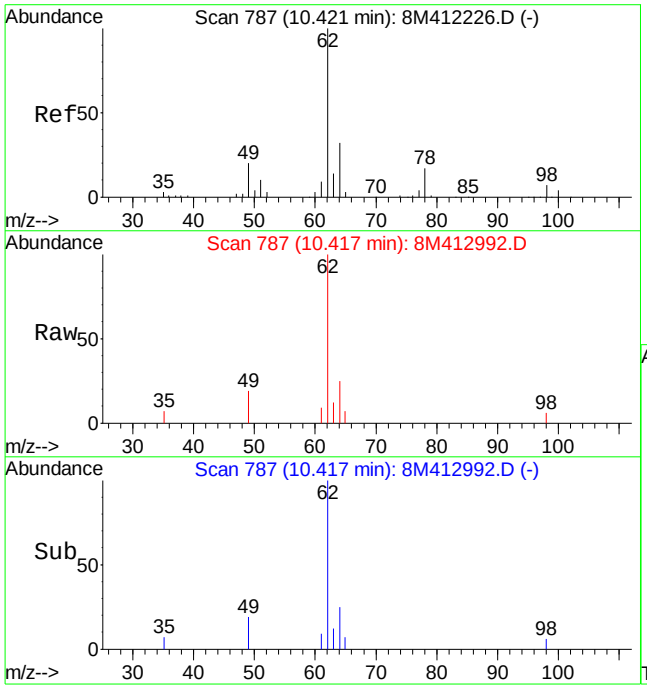

#45
1,2-Dichloroethane
Concen: 1.43 ug/L
RT: 10.42 min Scan# 787
Delta R.T. -0.00 min
Lab File: 8M412992.D
Acq: 14 Jun 2016 19:35

Tgt Ion: 62 Resp: 15087

Ion	Ratio	Lower	Upper
62	100		
64	30.9	19.6	45.6
49	18.3	15.5	36.1

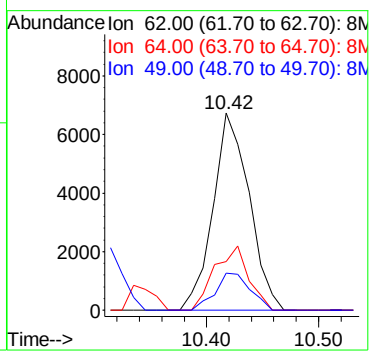

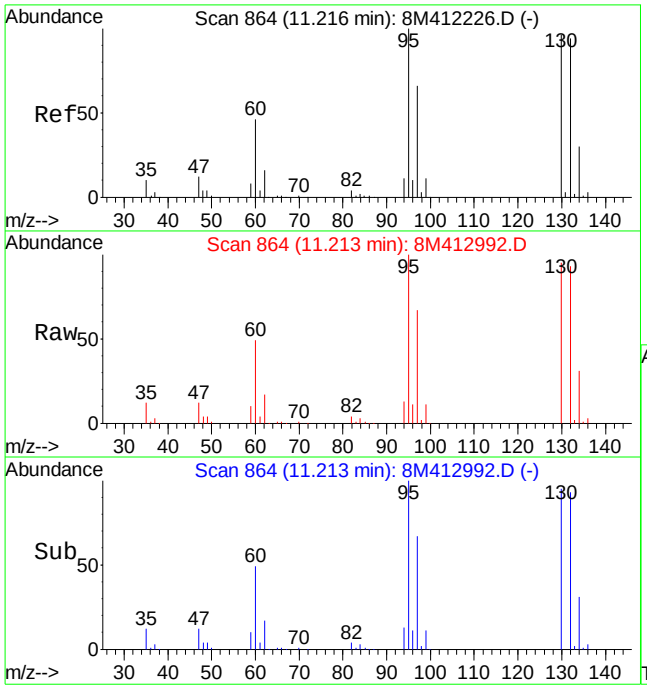

#47
Trichloroethene
Concen: 62.98 ug/L
RT: 11.21 min Scan# 864
Delta R.T. -0.00 min
Lab File: 8M412992.D
Acq: 14 Jun 2016 19:35

Tgt Ion:130 Resp: 517551

Ion	Ratio	Lower	Upper
130	100		
132	97.5	58.0	135.2
95	106.1	64.9	151.5

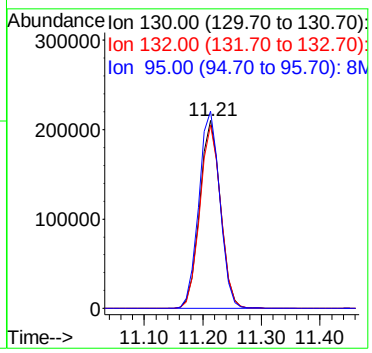

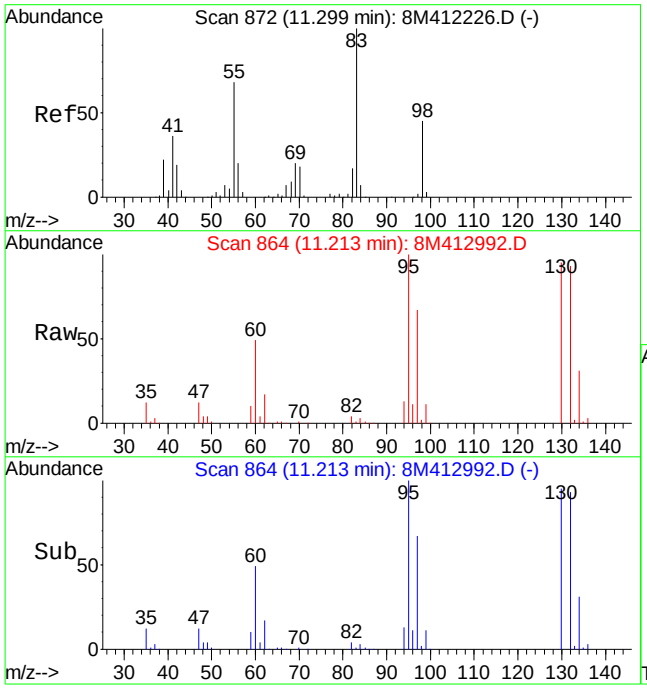

#48
Methylcyclohexane
Concen: 0.51 ug/L
RT: 11.21 min Scan# 864
Delta R.T. -0.09 min
Lab File: 8M412992.D
Acq: 14 Jun 2016 19:35

Tgt Ion: 83 Resp: 6343

Ion	Ratio	Lower	Upper
83	100		
55	0.0	40.9	95.3#
98	230.2	28.1	65.7#

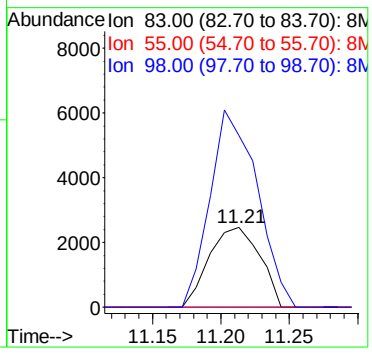

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412993.D Vial: 23
Acq On : 14 Jun 2016 20:05 Operator: TMB
Sample : L16060414-02 B 100X 826-LOW Inst : HPMS8
Misc : 1,100 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 08:27:27 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	748707	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	563608	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	307269	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	221558	27.5425 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.16%		
43) 1,2-Dichloroethane-d4	10.30	65	244371	28.3315 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 113.32%		
58) Toluene-d8	12.68	98	761543	25.8180 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.28%		
80) p-Bromofluorobenzene	16.08	95	312101	24.5302 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.12%		

Target Compounds

					Qvalue
4) Vinyl Chloride	3.84	62	22278	2.5626 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	261753	34.4246 ug/L	97
13) Acetone	6.14	43	2063	2.4491 ug/L #	69
14) 1,1-Dichloroethene	6.47	61	19099	1.5776 ug/L	92
19) Methylene Chloride	7.26	84	7328	0.9511 ug/L	92
20) Carbon Disulfide	7.29	76	3964	0.1565 ug/L #	74
27) 1,1-Dichloroethane	8.32	63	15585	1.1283 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	1213673	141.2202 ug/L	83
45) 1,2-Dichloroethane	10.43	62	16602	1.5815 ug/L	92
47) Trichloroethene	11.21	130	584085	71.2067 ug/L	98
48) Methylcyclohexane	11.21	83	7231	0.5803 ug/L #	1

(#) = qualifier out of range (m) = manual integration
8M412993.D 8260WT.M Wed Jun 15 08:27:30 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412993.D Vial: 23
Acq On : 14 Jun 2016 20:05 Operator: TMB
Sample : L16060414-02 B 100X 826-LOW Inst : HPMS8
Misc : 1,100 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 8:27 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

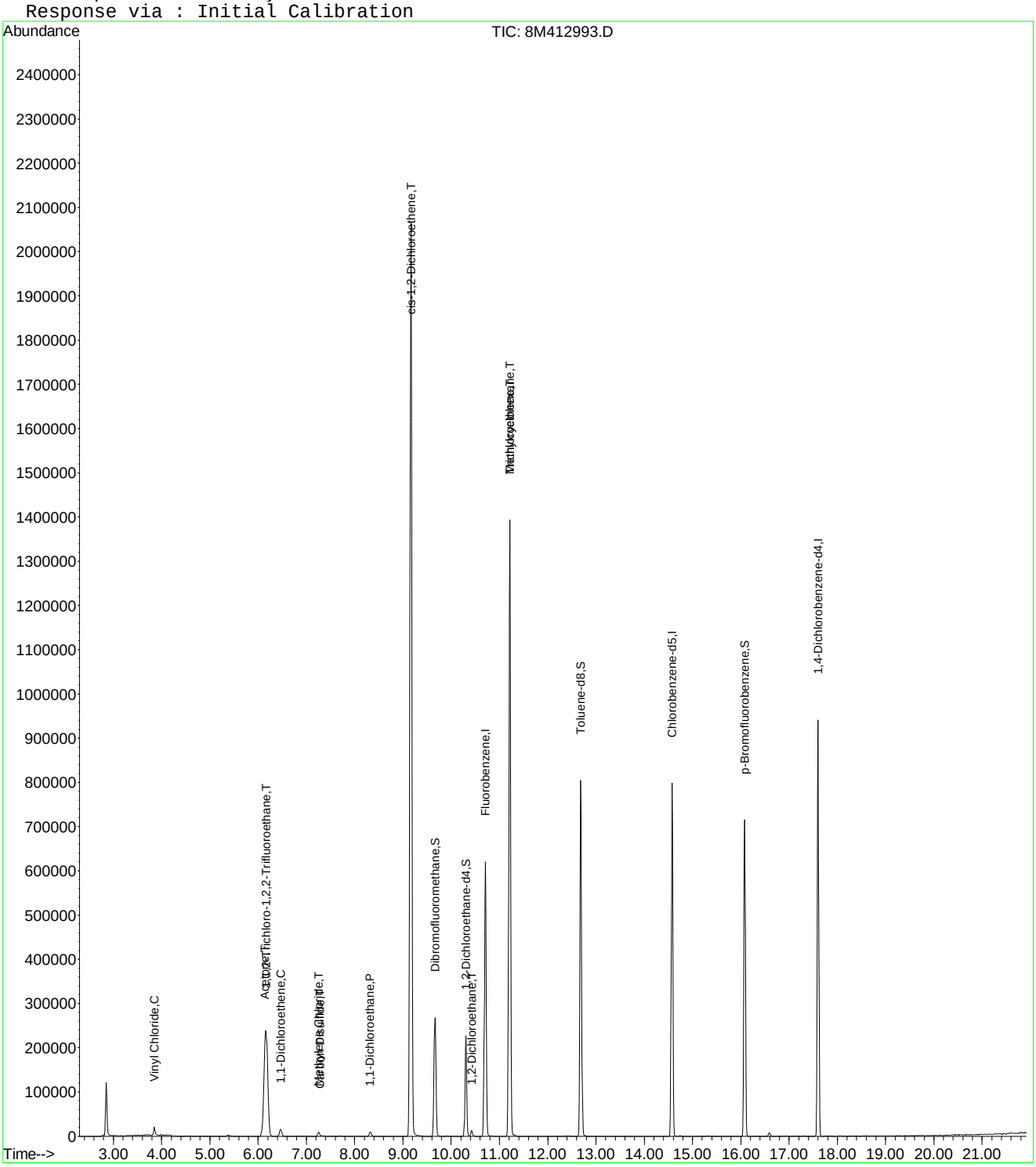

8M412993.D 8260WT.M Wed Jun 15 08:27:31 2016 Page 2

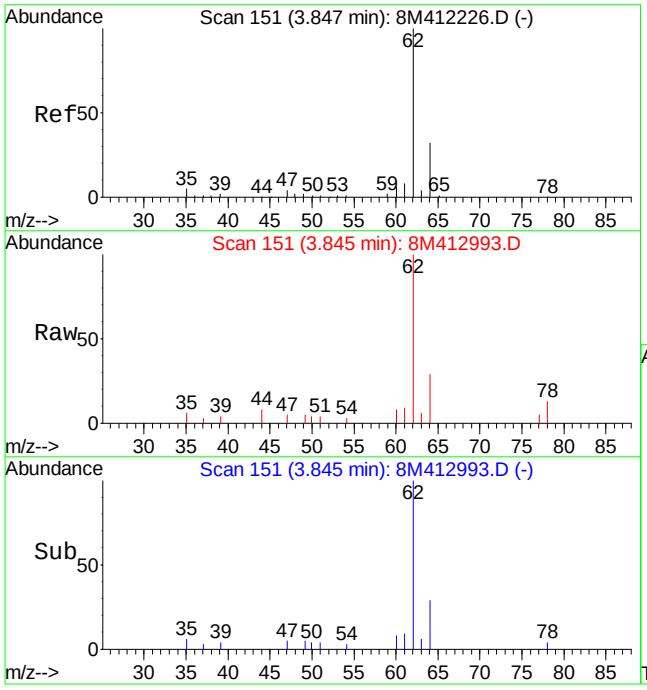

#4
Vinyl Chloride
Concen: 2.56 ug/L
RT: 3.84 min Scan# 151
Delta R.T. -0.00 min
Lab File: 8M412993.D
Acq: 14 Jun 2016 20:05

Tgt Ion: 62 Resp: 22278

Ion	Ratio	Lower	Upper
62	100		
64	32.3	19.3	45.1

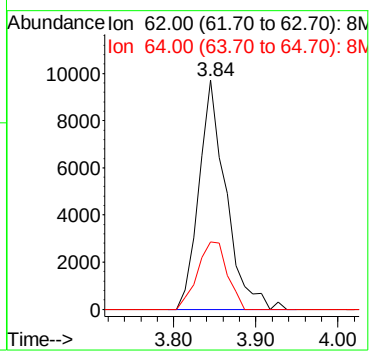

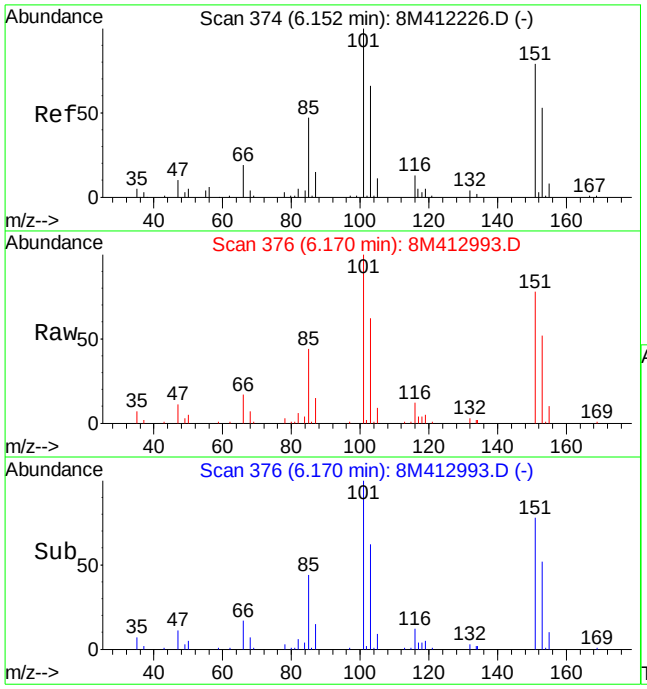

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 34.42 ug/L
RT: 6.17 min Scan# 376
Delta R.T. 0.02 min
Lab File: 8M412993.D
Acq: 14 Jun 2016 20:05

Tgt Ion:101 Resp: 261753

Ion	Ratio	Lower	Upper
101	100		
151	82.5	40.2	120.2

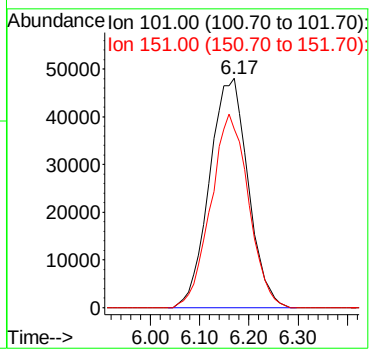

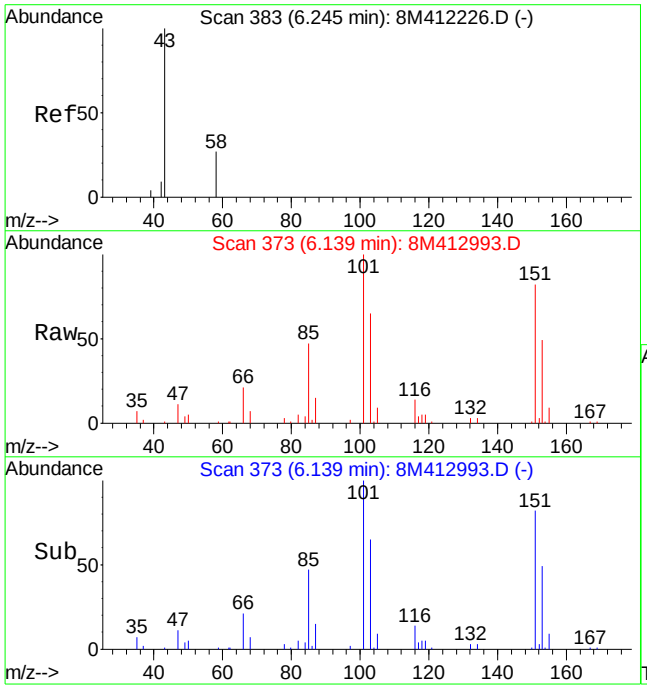

#13
Acetone
Concen: 2.45 ug/L
RT: 6.14 min Scan# 373
Delta R.T. -0.11 min
Lab File: 8M412993.D
Acq: 14 Jun 2016 20:05

Tgt Ion: 43 Resp: 2063

Ion	Ratio	Lower	Upper
43	100		
58	9.9	15.2	35.4#

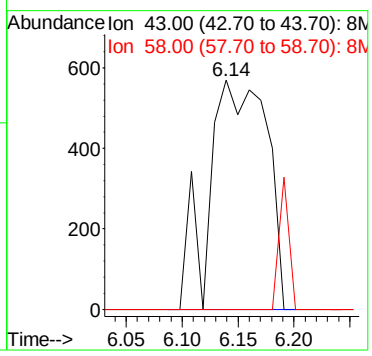

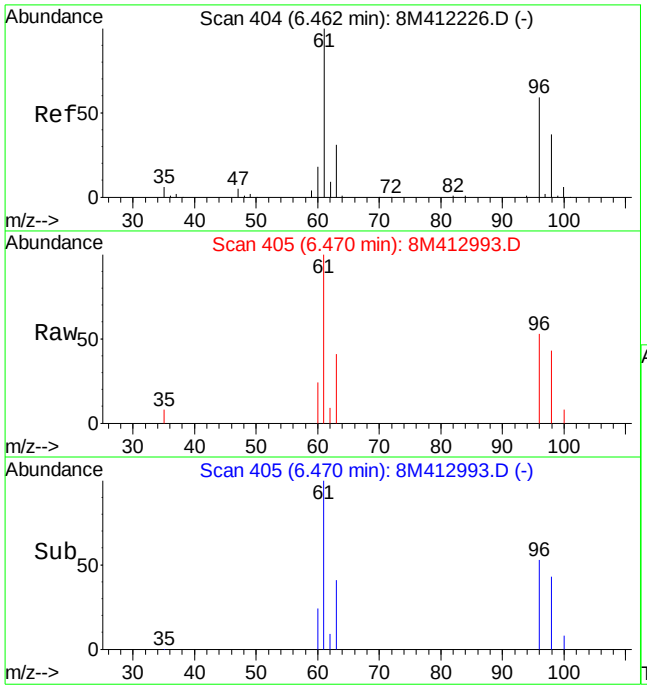

#14
1,1-Dichloroethene
Concen: 1.58 ug/L
RT: 6.47 min Scan# 405
Delta R.T. 0.01 min
Lab File: 8M412993.D
Acq: 14 Jun 2016 20:05

Tgt Ion: 61 Resp: 19099

Ion	Ratio	Lower	Upper
61	100		
96	52.1	34.6	80.8

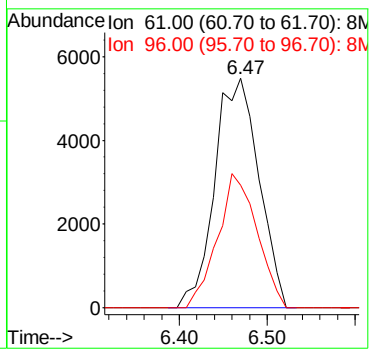

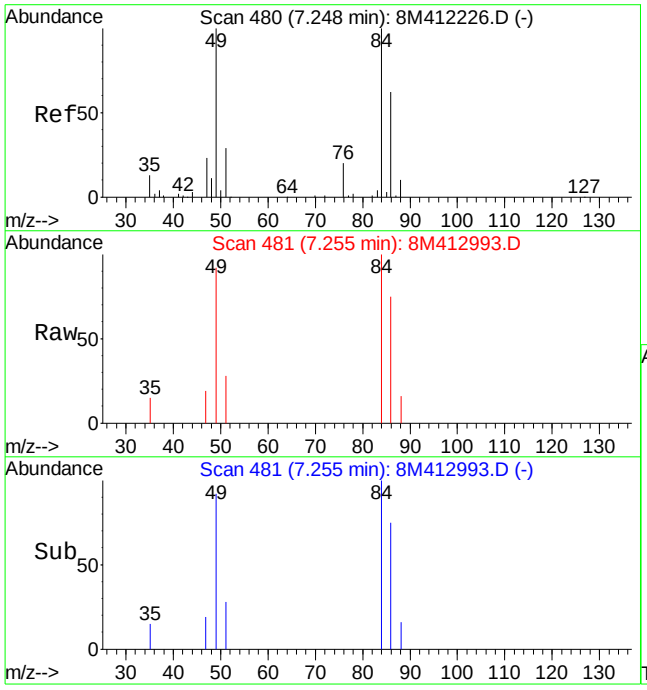

#19
Methylene Chloride
Concen: 0.95 ug/L
RT: 7.26 min Scan# 481
Delta R.T. 0.01 min
Lab File: 8M412993.D
Acq: 14 Jun 2016 20:05

Tgt Ion: 84 Resp: 7328

Ion	Ratio	Lower	Upper
84	100		
49	92.8	60.5	141.3

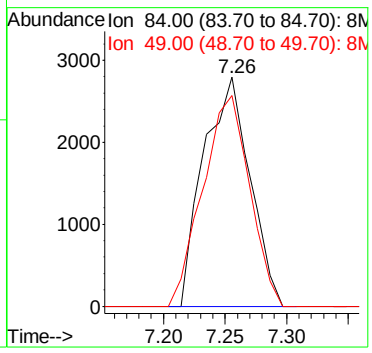

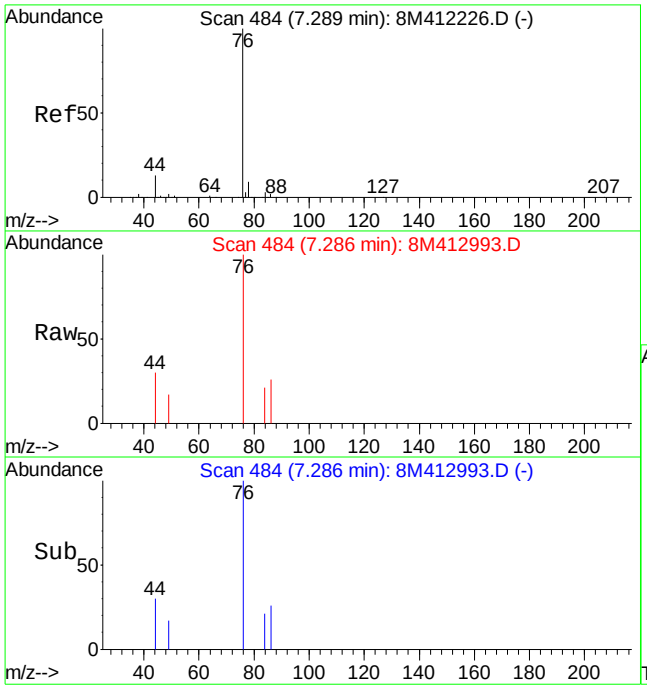

#20
Carbon Disulfide
Concen: 0.16 ug/L
RT: 7.29 min Scan# 484
Delta R.T. -0.00 min
Lab File: 8M412993.D
Acq: 14 Jun 2016 20:05

Tgt Ion: 76 Resp: 3964

Ion	Ratio	Lower	Upper
76	100		
78	0.0	5.6	13.0#

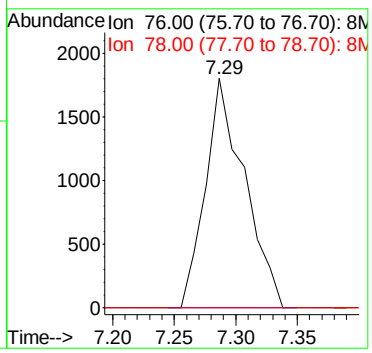

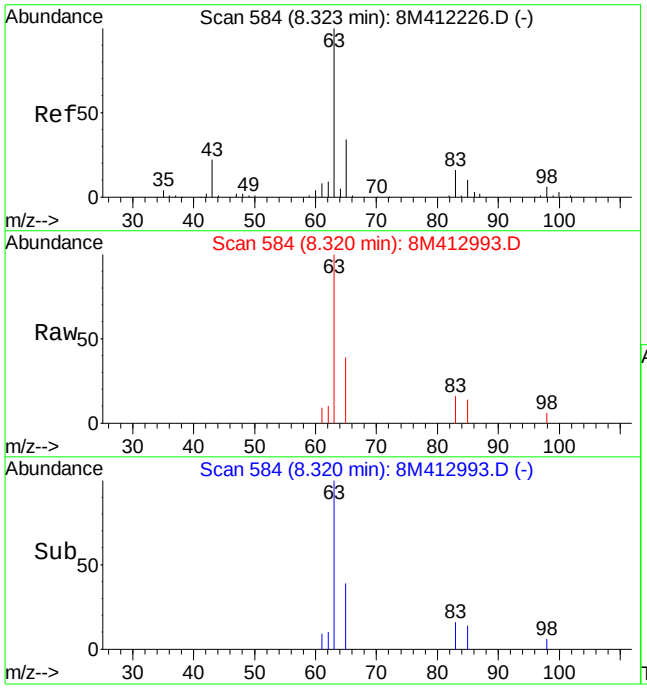

#27
1,1-Dichloroethane
Concen: 1.13 ug/L
RT: 8.32 min Scan# 584
Delta R.T. -0.00 min
Lab File: 8M412993.D
Acq: 14 Jun 2016 20:05

Tgt Ion: 63 Resp: 15585

Ion	Ratio	Lower	Upper
63	100		
65	34.4	20.2	47.0
83	17.1	9.1	21.1

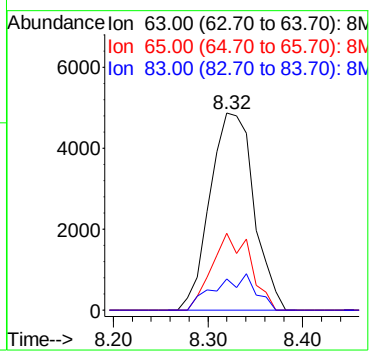

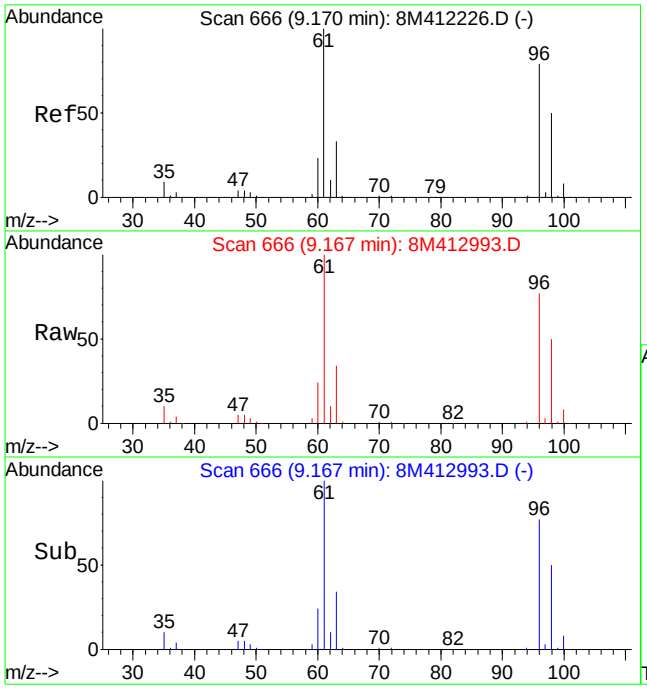

#32
cis-1,2-Dichloroethene
Concen: 141.22 ug/L
RT: 9.17 min Scan# 666
Delta R.T. -0.00 min
Lab File: 8M412993.D
Acq: 14 Jun 2016 20:05

Tgt Ion: 96 Resp: 1213673

Ion	Ratio	Lower	Upper
96	100		
61	130.8	91.5	213.5

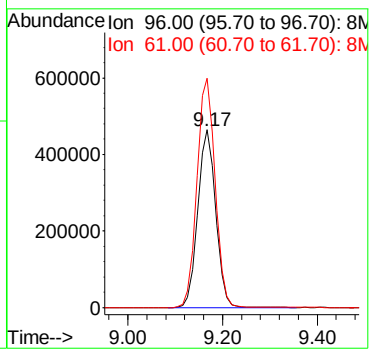

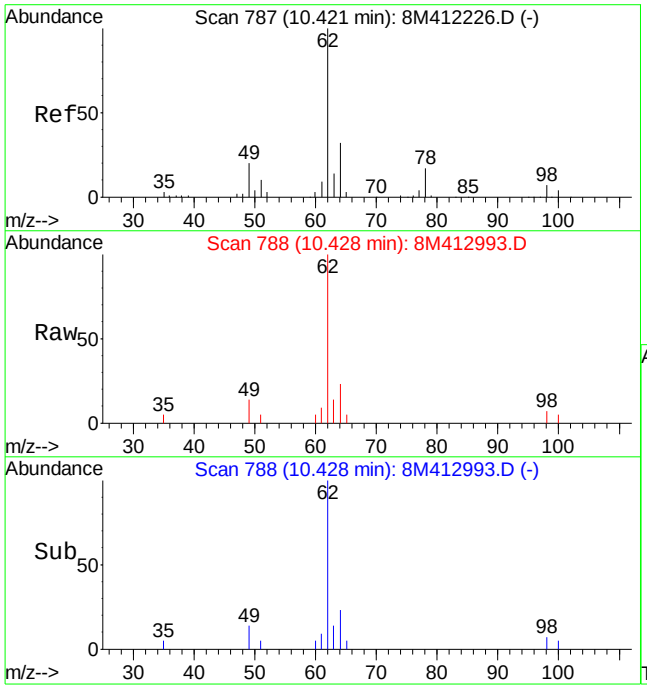

#45
1,2-Dichloroethane
Concen: 1.58 ug/L
RT: 10.43 min Scan# 788
Delta R.T. 0.01 min
Lab File: 8M412993.D
Acq: 14 Jun 2016 20:05

Tgt Ion: 62 Resp: 16602

Ion	Ratio	Lower	Upper
62	100		
64	30.8	19.6	45.6
49	18.4	15.5	36.1

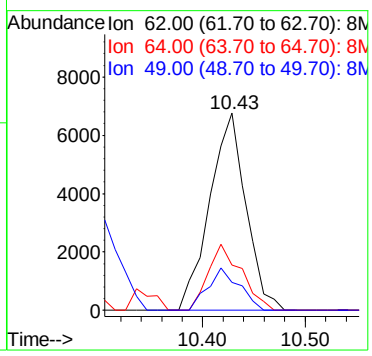

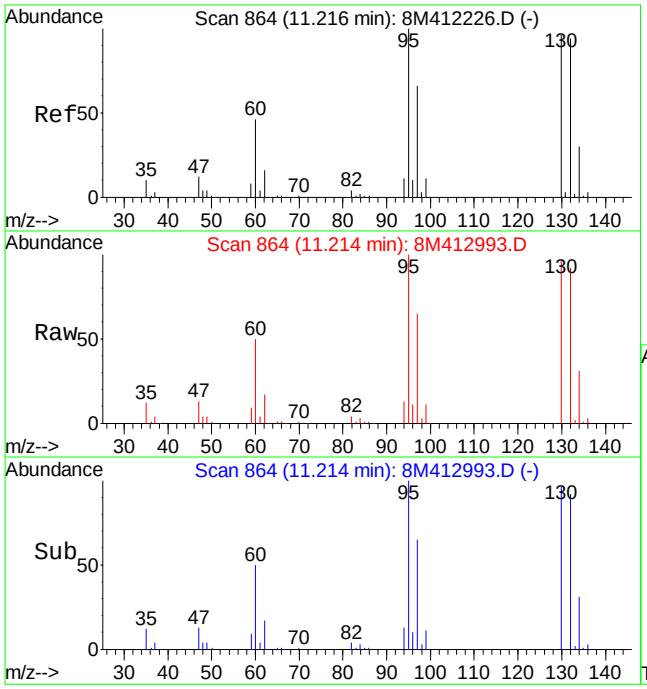

#47
Trichloroethene
Concen: 71.21 ug/L
RT: 11.21 min Scan# 864
Delta R.T. -0.00 min
Lab File: 8M412993.D
Acq: 14 Jun 2016 20:05

Tgt Ion:130 Resp: 584085

Ion	Ratio	Lower	Upper
130	100		
132	96.4	58.0	135.2
95	105.1	64.9	151.5

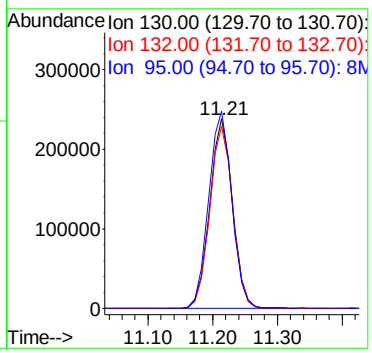

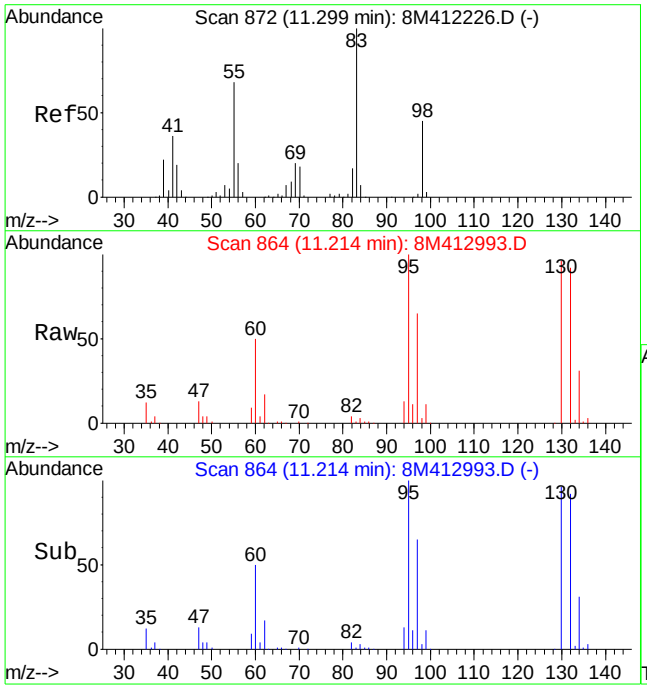

#48
Methylcyclohexane
Concen: 0.58 ug/L
RT: 11.21 min Scan# 864
Delta R.T. -0.09 min
Lab File: 8M412993.D
Acq: 14 Jun 2016 20:05

Tgt Ion: 83 Resp: 7231

Ion	Ratio	Lower	Upper
83	100		
55	0.0	40.9	95.3#
98	238.6	28.1	65.7#

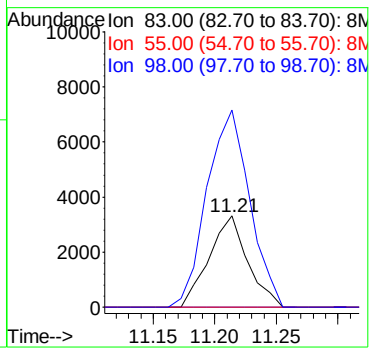

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412994.D Vial: 24
Acq On : 14 Jun 2016 20:34 Operator: TMB
Sample : L16060414-03 B 100X 826-LOW Inst : HPMS8
Misc : 1,100 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 08:27:34 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	741315	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	553493	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	306527	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	219195	27.5205 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.08%		
43) 1,2-Dichloroethane-d4	10.31	65	242676	28.4156 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 113.68%		
58) Toluene-d8	12.68	98	751962	25.9590 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.84%		
80) p-Bromofluorobenzene	16.07	95	317682	25.0293 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.12%		

Target Compounds					Qvalue
14) 1,1-Dichloroethene	6.46	61	18404	1.5353 ug/L	95
23) trans-1,2-Dichloroethene	7.70	61	2316	0.2103 ug/L	68
27) 1,1-Dichloroethane	8.31	63	4747	0.3471 ug/L #	86
32) cis-1,2-Dichloroethene	9.17	96	221633	26.0459 ug/L	82
45) 1,2-Dichloroethane	10.43	62	11798	1.1351 ug/L	91
47) Trichloroethene	11.22	130	1028745	126.6664 ug/L	99
48) Methylcyclohexane	11.21	83	13982	1.1332 ug/L #	1

(#) = qualifier out of range (m) = manual integration
8M412994.D 8260WT.M Wed Jun 15 08:27:37 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412994.D Vial: 24
Acq On : 14 Jun 2016 20:34 Operator: TMB
Sample : L16060414-03 B 100X 826-LOW Inst : HPMS8
Misc : 1,100 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 8:27 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

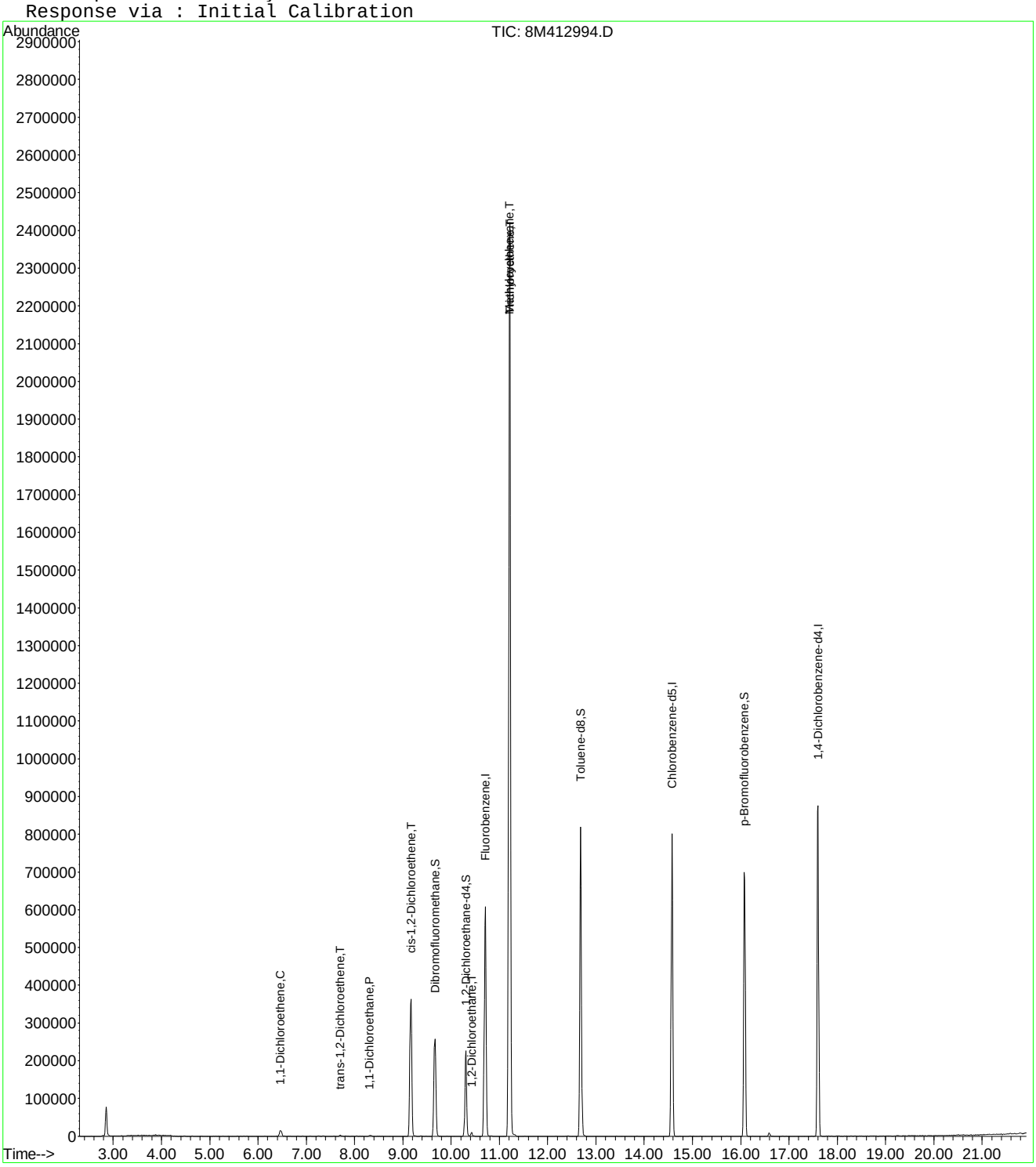

8M412994.D 8260WT.M Wed Jun 15 08:27:37 2016 Page 2

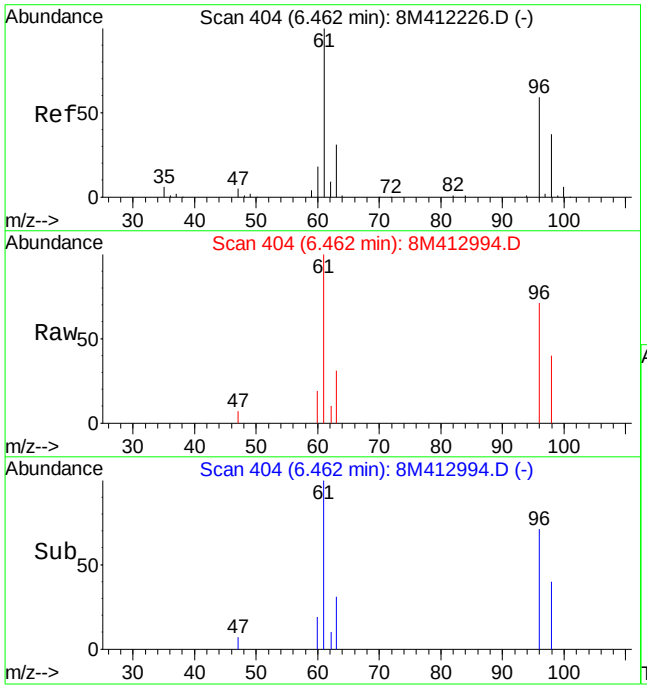

#14
1,1-Dichloroethene
Concen: 1.54 ug/L
RT: 6.46 min Scan# 404
Delta R.T. -0.00 min
Lab File: 8M412994.D
Acq: 14 Jun 2016 20:34

Tgt Ion: 61 Resp: 18404

Ion	Ratio	Lower	Upper
61	100		
96	61.3	34.6	80.8

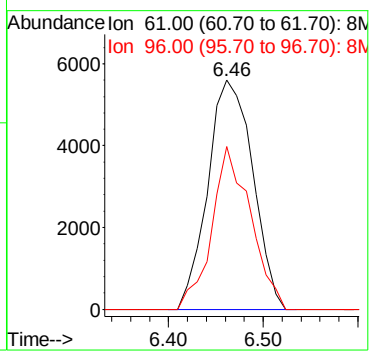

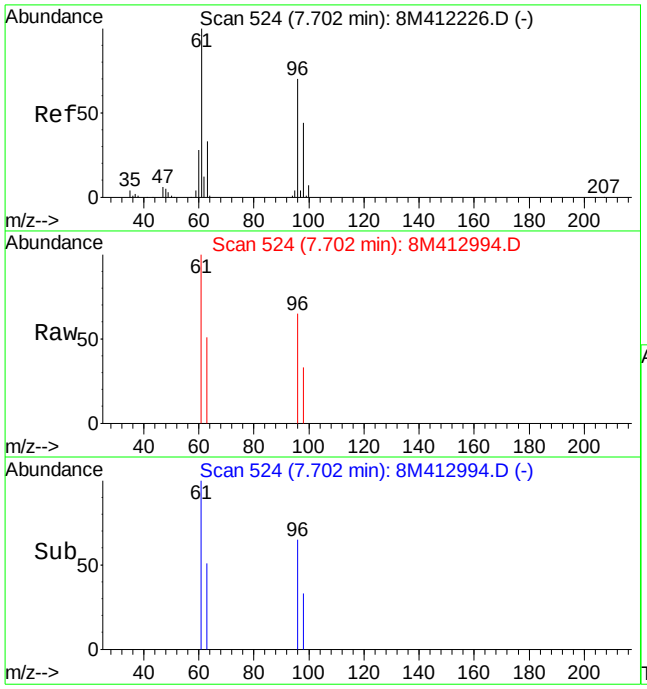

#23
trans-1,2-Dichloroethene
Concen: 0.21 ug/L
RT: 7.70 min Scan# 524
Delta R.T. -0.00 min
Lab File: 8M412994.D
Acq: 14 Jun 2016 20:34

Tgt Ion: 61 Resp: 2316

Ion	Ratio	Lower	Upper
61	100		
96	43.2	41.8	97.4

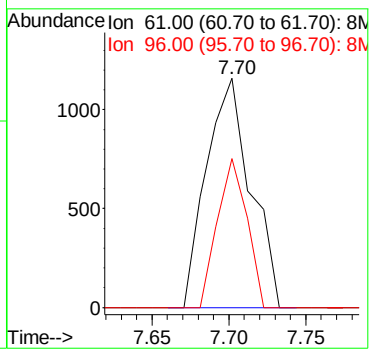

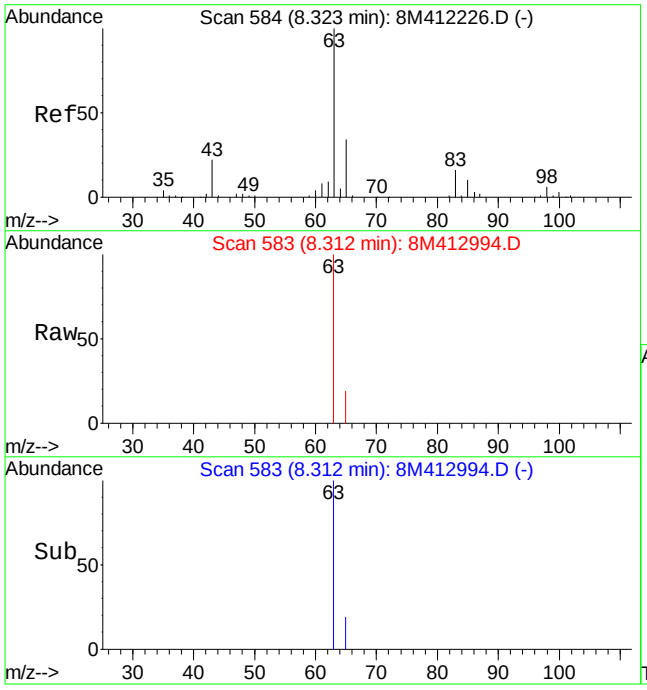

#27
1,1-Dichloroethane
Concen: 0.35 ug/L
RT: 8.31 min Scan# 583
Delta R.T. -0.01 min
Lab File: 8M412994.D
Acq: 14 Jun 2016 20:34

Tgt Ion: 63 Resp: 4747

Ion	Ratio	Lower	Upper
63	100		
65	31.0	20.2	47.0
83	0.0	9.1	21.1#

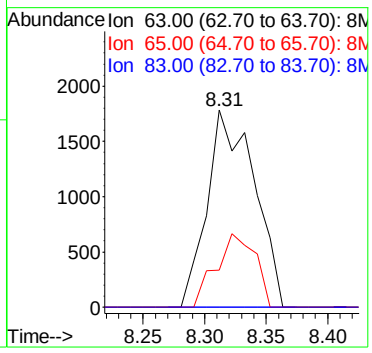

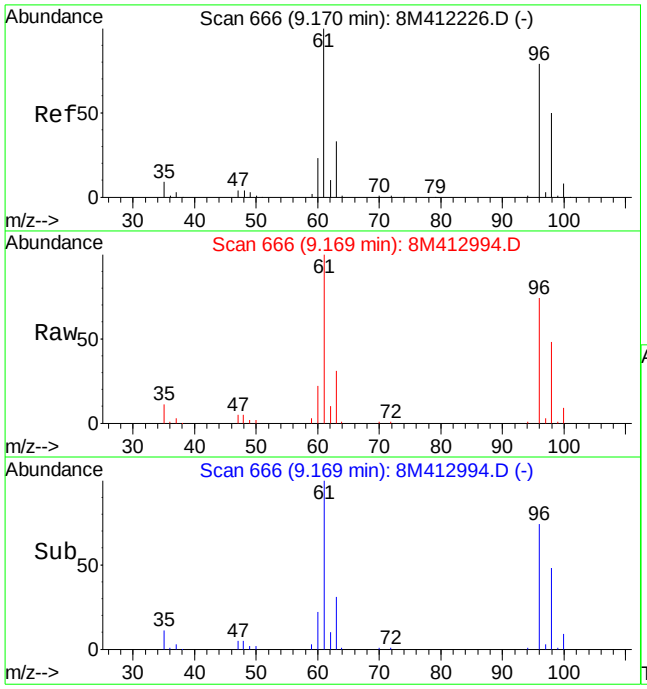

#32
cis-1,2-Dichloroethene
Concen: 26.05 ug/L
RT: 9.17 min Scan# 666
Delta R.T. -0.00 min
Lab File: 8M412994.D
Acq: 14 Jun 2016 20:34

Tgt Ion: 96 Resp: 221633

Ion	Ratio	Lower	Upper
96	100		
61	129.9	91.5	213.5

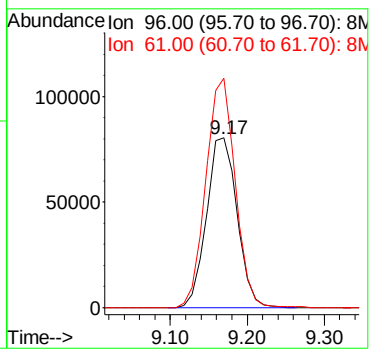

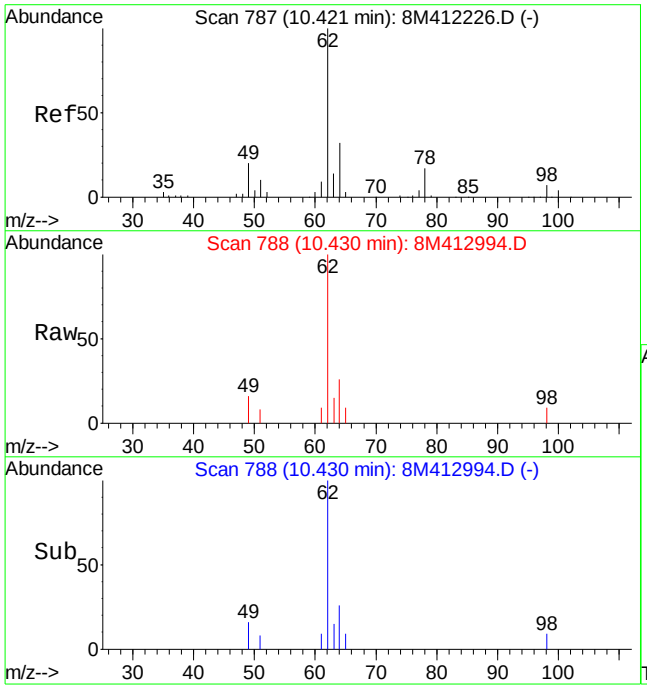

#45
1,2-Dichloroethane
Concen: 1.14 ug/L
RT: 10.43 min Scan# 788
Delta R.T. 0.01 min
Lab File: 8M412994.D
Acq: 14 Jun 2016 20:34

Tgt Ion: 62 Resp: 11798

Ion	Ratio	Lower	Upper
62	100		
64	31.5	19.6	45.6
49	16.9	15.5	36.1

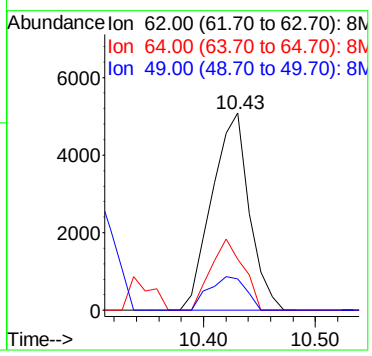

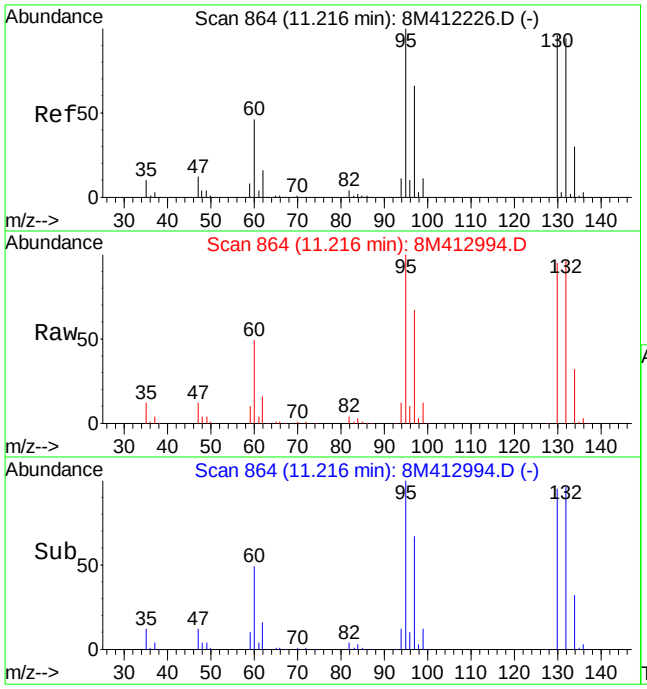

#47
Trichloroethene
Concen: 126.67 ug/L
RT: 11.22 min Scan# 864
Delta R.T. -0.00 min
Lab File: 8M412994.D
Acq: 14 Jun 2016 20:34

Tgt Ion:130 Resp: 1028745

Ion	Ratio	Lower	Upper
130	100		
132	97.9	58.0	135.2
95	107.0	64.9	151.5

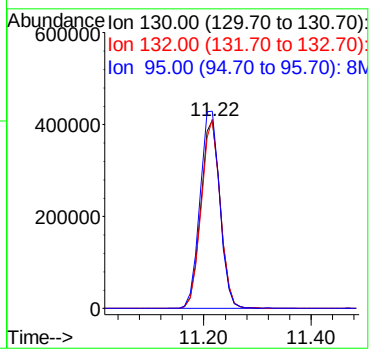

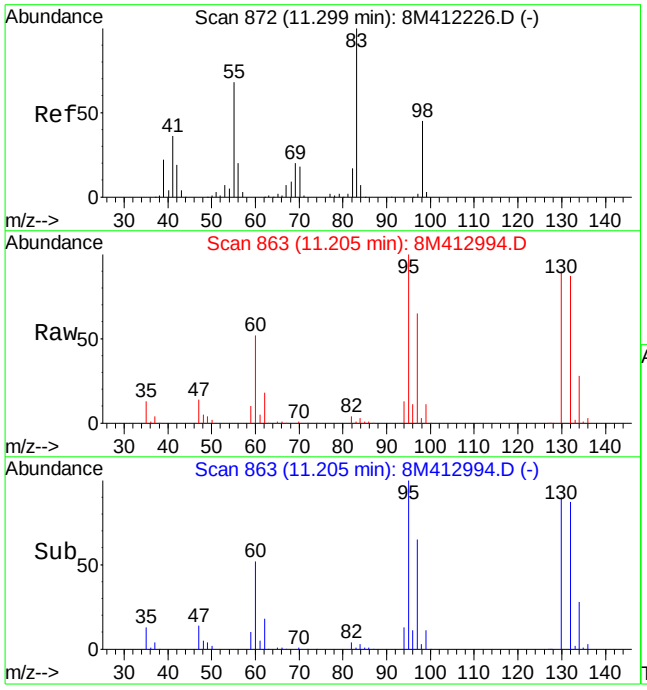

#48
Methylcyclohexane
Concen: 1.13 ug/L
RT: 11.21 min Scan# 863
Delta R.T. -0.09 min
Lab File: 8M412994.D
Acq: 14 Jun 2016 20:34

Tgt Ion: 83 Resp: 13982

Ion	Ratio	Lower	Upper
83	100		
55	0.0	40.9	95.3#
98	219.3	28.1	65.7#

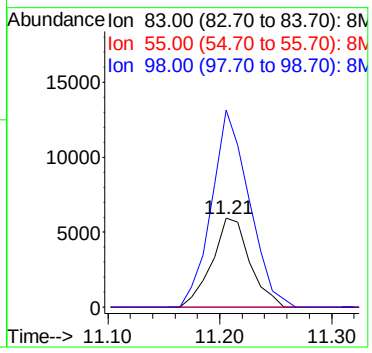

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412995.D Vial: 25
Acq On : 14 Jun 2016 21:03 Operator: TMB
Sample : L16060414-04 B 100X 826-LOW Inst : HPMS8
Misc : 1,100 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 08:27:40 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	740343	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	547033	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	305612	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	218693	27.4935 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.96%		
43) 1,2-Dichloroethane-d4	10.31	65	244998	28.7251 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 114.92%		
58) Toluene-d8	12.68	98	756468	26.4230 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.68%		
80) p-Bromofluorobenzene	16.07	95	316661	25.0236 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.08%		

Target Compounds					Qvalue
4) Vinyl Chloride	3.85	62	1342	0.1561 ug/L #	42
14) 1,1-Dichloroethene	6.46	61	23393	1.9541 ug/L	95
19) Methylene Chloride	7.26	84	4073	0.5346 ug/L	85
23) trans-1,2-Dichloroethene	7.71	61	2537	0.2307 ug/L	93
27) 1,1-Dichloroethane	8.33	63	5092	0.3728 ug/L #	91
32) cis-1,2-Dichloroethene	9.17	96	216946	25.5285 ug/L	81
33) Chloroform	9.39	83	2134	0.1323 ug/L #	67
45) 1,2-Dichloroethane	10.42	62	14490	1.3959 ug/L	93
47) Trichloroethene	11.21	130	1291935	159.2811 ug/L	99
48) Methylcyclohexane	11.21	83	17324	1.4059 ug/L #	1

(#) = qualifier out of range (m) = manual integration
8M412995.D 8260WT.M Wed Jun 15 08:27:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412995.D Vial: 25
Acq On : 14 Jun 2016 21:03 Operator: TMB
Sample : L16060414-04 B 100X 826-LOW Inst : HPMS8
Misc : 1,100 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 8:28 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

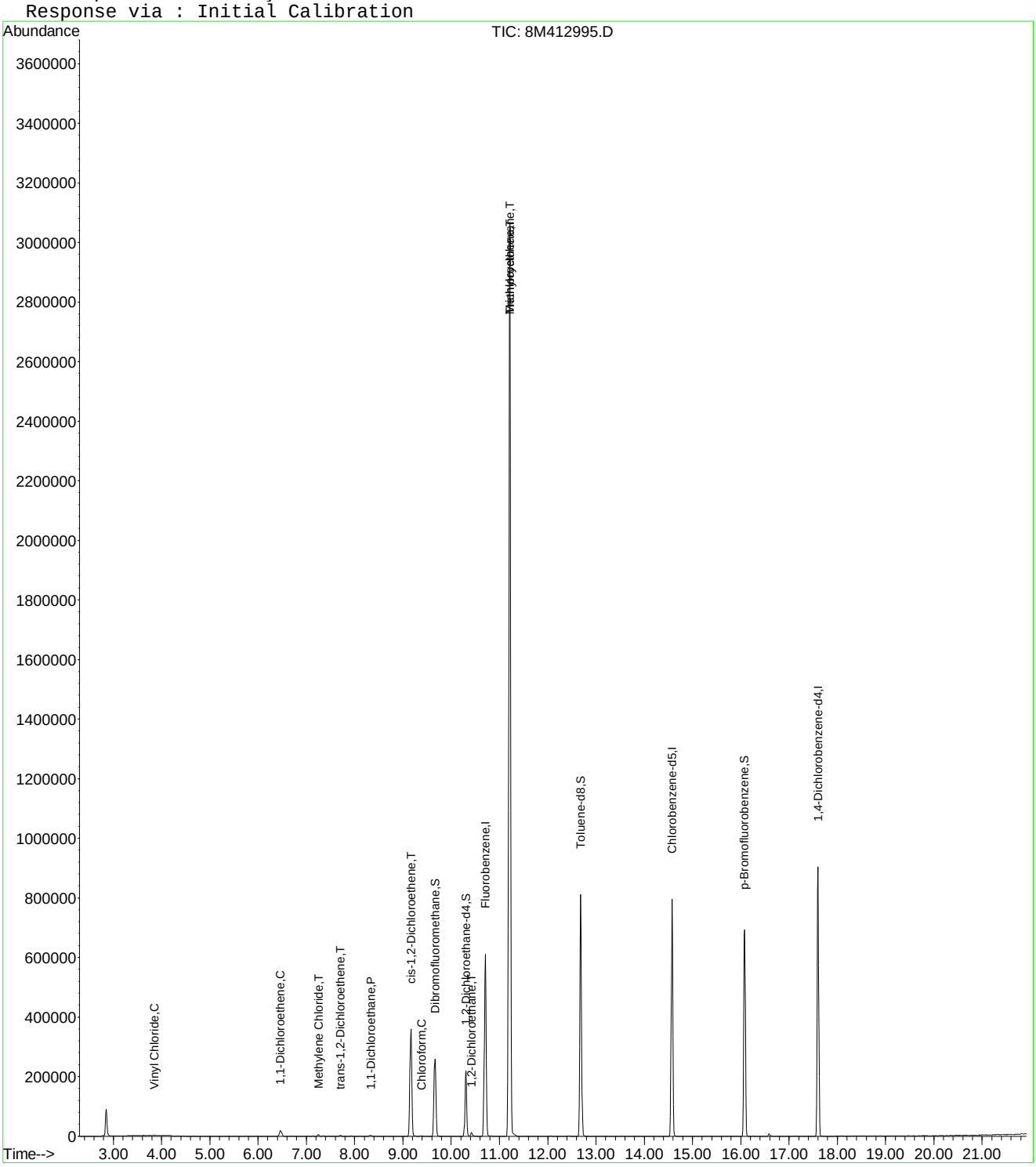

8M412995.D 8260WT.M Wed Jun 15 08:27:43 2016 Page 2

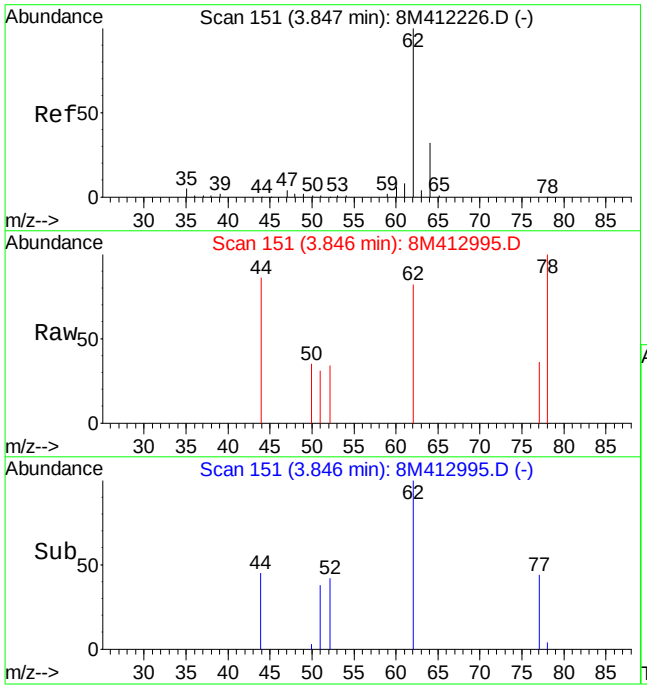

#4
Vinyl Chloride
Concen: 0.16 ug/L
RT: 3.85 min Scan# 151
Delta R.T. -0.00 min
Lab File: 8M412995.D
Acq: 14 Jun 2016 21:03

Tgt Ion: 62 Resp: 1342

Ion	Ratio	Lower	Upper
62	100		
64	0.0	19.3	45.1#

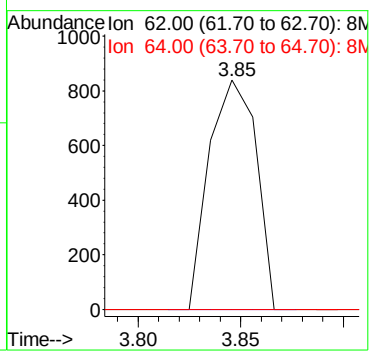

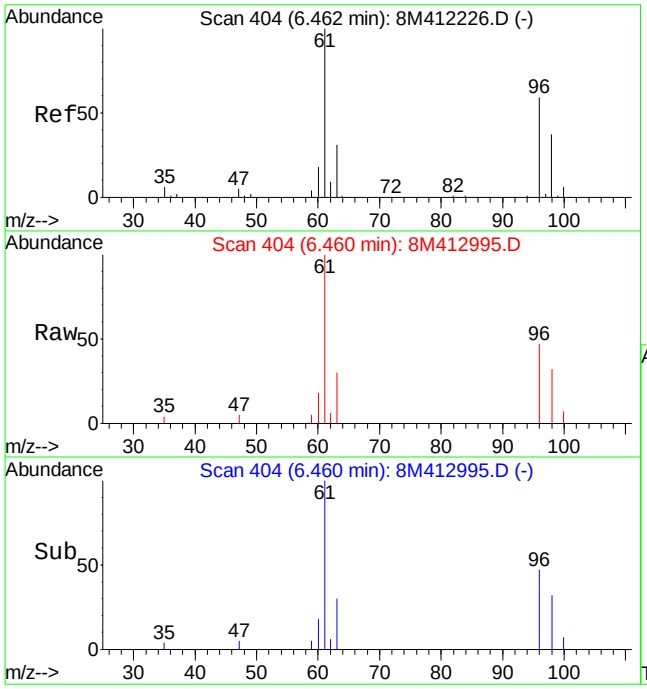

#14
1,1-Dichloroethene
Concen: 1.95 ug/L
RT: 6.46 min Scan# 404
Delta R.T. -0.00 min
Lab File: 8M412995.D
Acq: 14 Jun 2016 21:03

Tgt Ion: 61 Resp: 23393

Ion	Ratio	Lower	Upper
61	100		
96	53.6	34.6	80.8

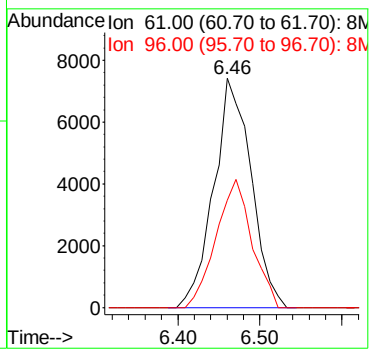

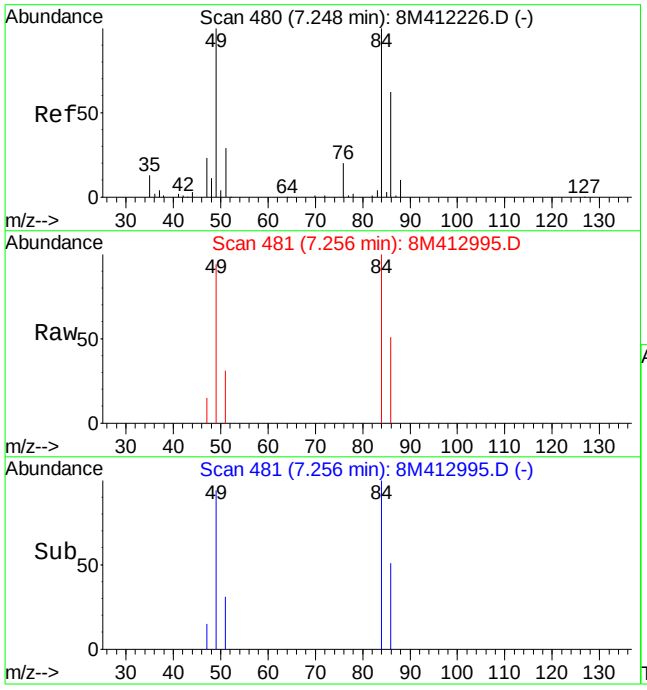

#19
Methylene Chloride
Concen: 0.53 ug/L
RT: 7.26 min Scan# 481
Delta R.T. 0.01 min
Lab File: 8M412995.D
Acq: 14 Jun 2016 21:03

Tgt Ion: 84 Resp: 4073

Ion	Ratio	Lower	Upper
84	100		
49	115.9	60.5	141.3

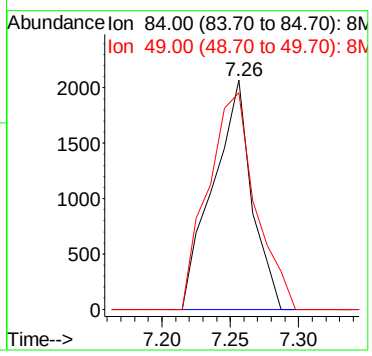

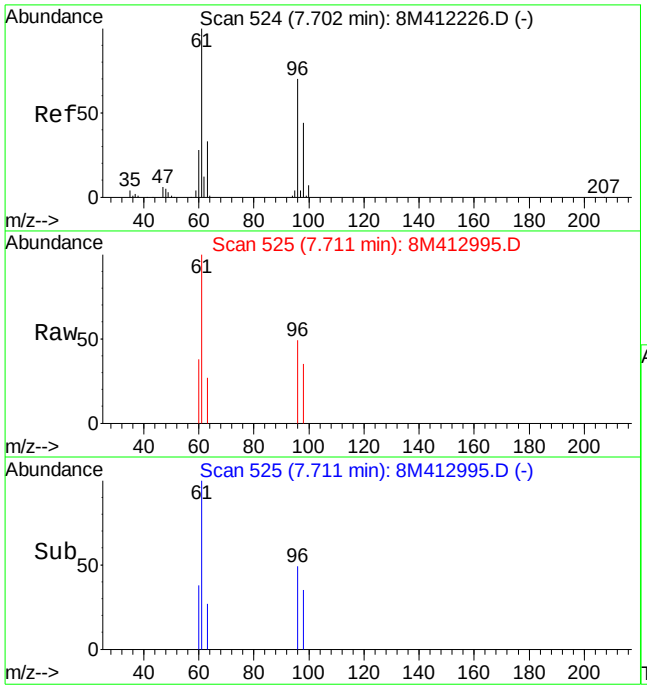

#23
trans-1,2-Dichloroethene
Concen: 0.23 ug/L
RT: 7.71 min Scan# 525
Delta R.T. 0.01 min
Lab File: 8M412995.D
Acq: 14 Jun 2016 21:03

Tgt Ion: 61 Resp: 2537

Ion	Ratio	Lower	Upper
61	100		
96	63.5	41.8	97.4

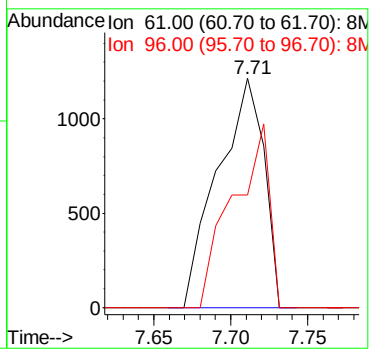

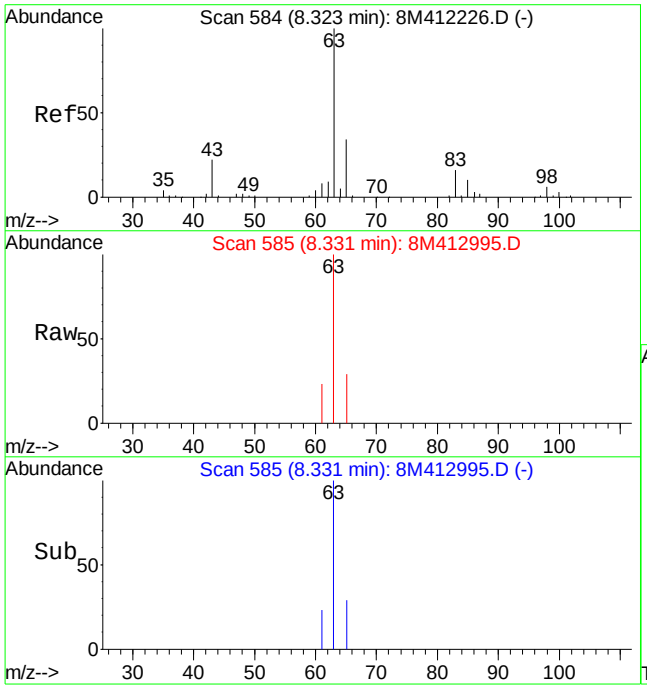

#27
1,1-Dichloroethane
Concen: 0.37 ug/L
RT: 8.33 min Scan# 585
Delta R.T. 0.01 min
Lab File: 8M412995.D
Acq: 14 Jun 2016 21:03

Tgt Ion: 63 Resp: 5092

Ion	Ratio	Lower	Upper
63	100		
65	34.5	20.2	47.0
83	4.0	9.1	21.1#

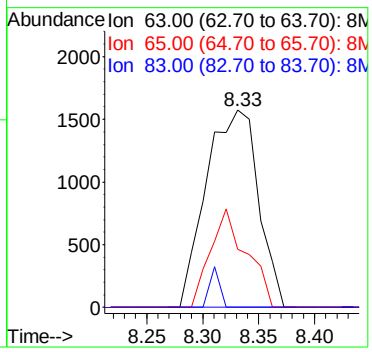

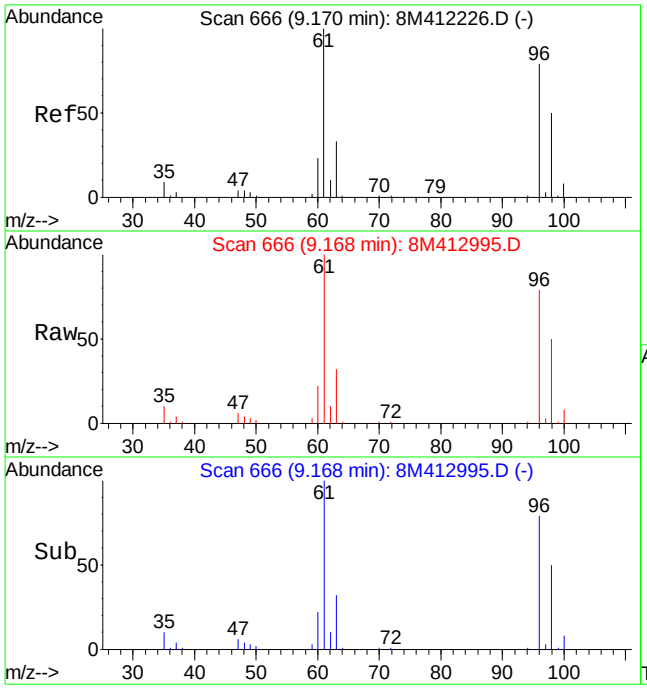

#32
cis-1,2-Dichloroethene
Concen: 25.53 ug/L
RT: 9.17 min Scan# 666
Delta R.T. -0.00 min
Lab File: 8M412995.D
Acq: 14 Jun 2016 21:03

Tgt Ion: 96 Resp: 216946

Ion	Ratio	Lower	Upper
96	100		
61	128.6	91.5	213.5

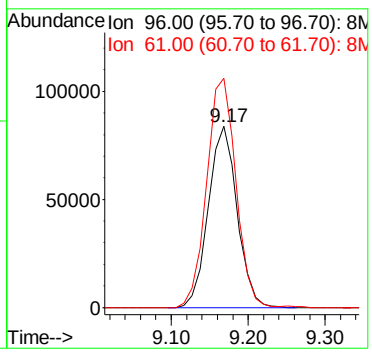

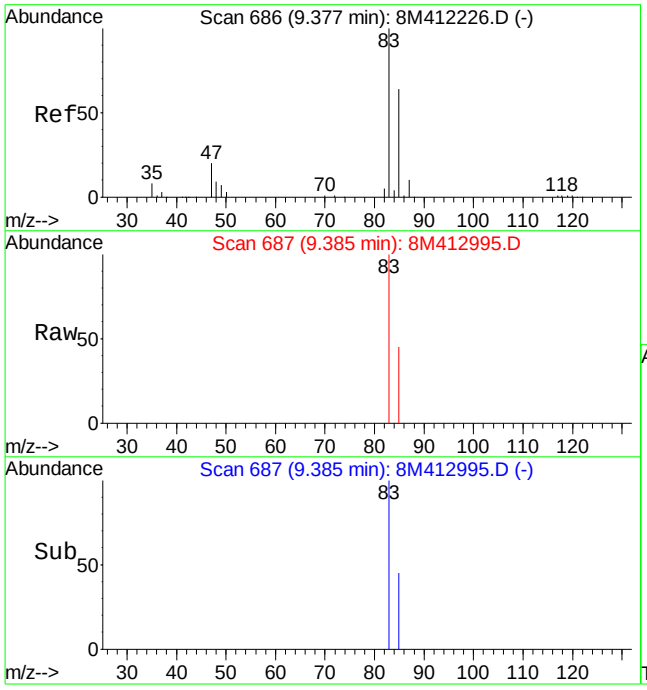

#33
Chloroform
Concen: 0.13 ug/L
RT: 9.39 min Scan# 687
Delta R.T. 0.01 min
Lab File: 8M412995.D
Acq: 14 Jun 2016 21:03

Tgt Ion: 83 Resp: 2134

Ion	Ratio	Lower	Upper
83	100		
85	36.6	37.5	87.5#

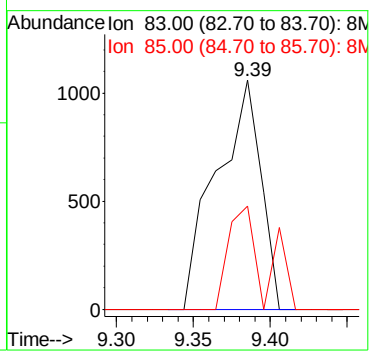

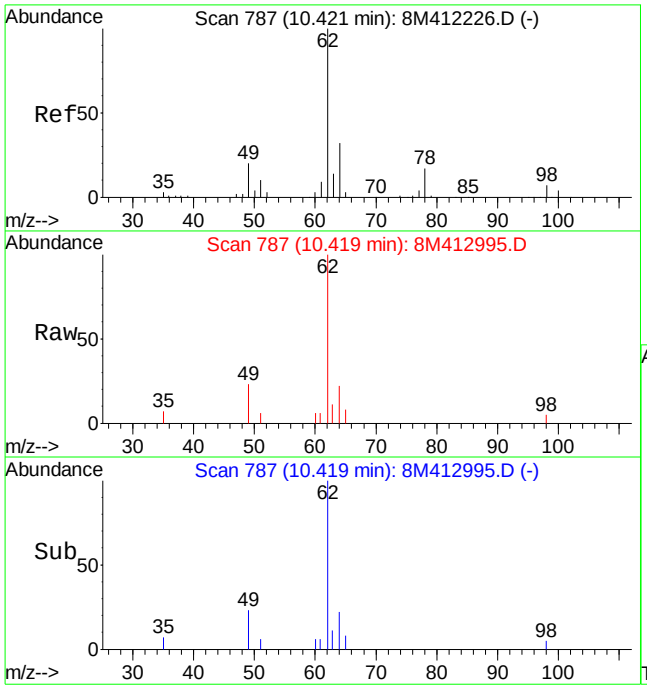

#45
1,2-Dichloroethane
Concen: 1.40 ug/L
RT: 10.42 min Scan# 787
Delta R.T. -0.00 min
Lab File: 8M412995.D
Acq: 14 Jun 2016 21:03

Tgt Ion: 62 Resp: 14490

Ion	Ratio	Lower	Upper
62	100		
64	30.2	19.6	45.6
49	20.1	15.5	36.1

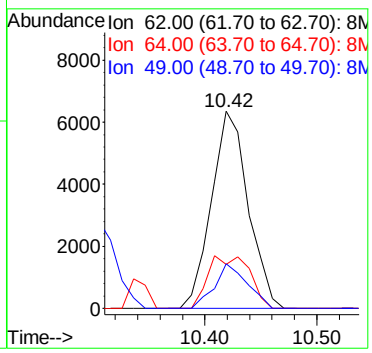

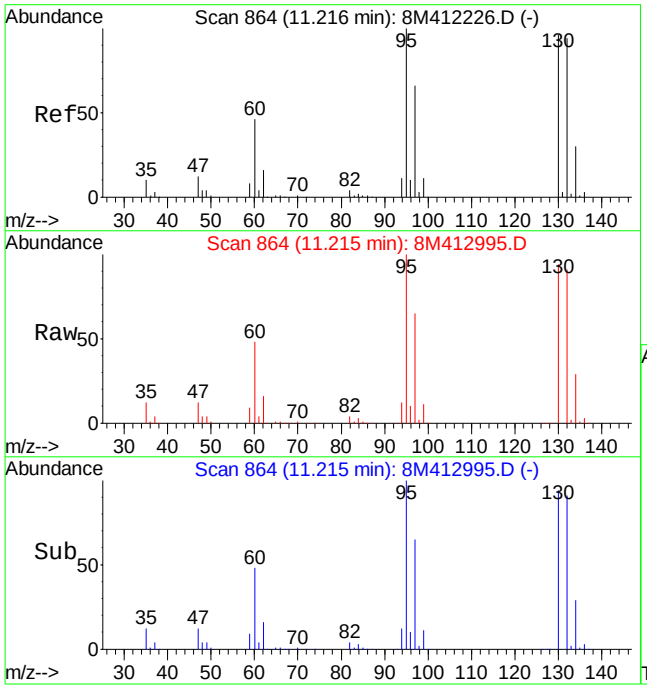

#47
Trichloroethene
Concen: 159.28 ug/L
RT: 11.21 min Scan# 864
Delta R.T. -0.00 min
Lab File: 8M412995.D
Acq: 14 Jun 2016 21:03

Tgt Ion:130 Resp: 1291935

Ion	Ratio	Lower	Upper
130	100		
132	96.8	58.0	135.2
95	106.9	64.9	151.5

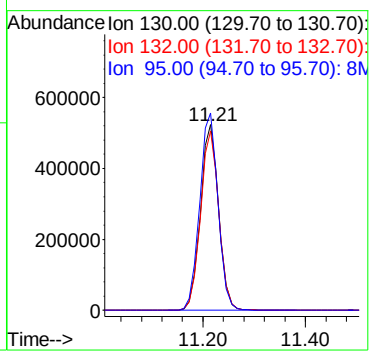

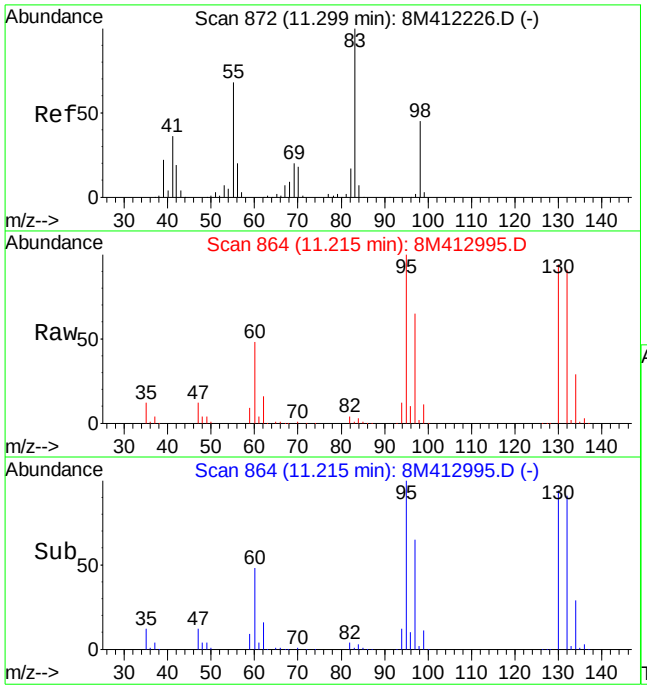

#48
Methylcyclohexane
Concen: 1.41 ug/L
RT: 11.21 min Scan# 864
Delta R.T. -0.08 min
Lab File: 8M412995.D
Acq: 14 Jun 2016 21:03

Tgt Ion: 83 Resp: 17324

Ion	Ratio	Lower	Upper
83	100		
55	0.0	40.9	95.3#
98	212.7	28.1	65.7#

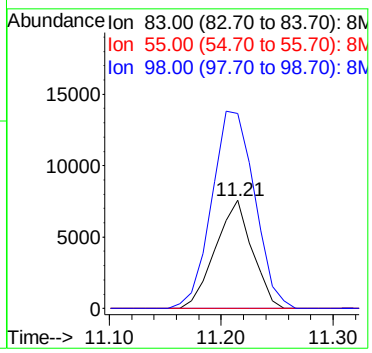

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061316\8M412952.D Vial: 10
Acq On : 13 Jun 2016 18:25 Operator: TMB
Sample : L16060414-05 A TB 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 08:21:12 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	752636	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	556979	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	307310	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	221082	27.3399 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.36%		
43) 1,2-Dichloroethane-d4	10.30	65	247829	28.5824 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 114.32%		
58) Toluene-d8	12.68	98	775467	26.6029 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 106.40%		
80) p-Bromofluorobenzene	16.08	95	316971	24.9097 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.64%		

Target Compounds					Qvalue
13) Acetone	6.25	43	275	0.3248 ug/L #	50
36) Tetrahydrofuran	9.65	42	1086	1.3253 ug/L #	24

(#) = qualifier out of range (m) = manual integration
8M412952.D 8260WT.M Tue Jun 14 08:21:15 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061316\8M412952.D Vial: 10
Acq On : 13 Jun 2016 18:25 Operator: TMB
Sample : L16060414-05 A TB 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 8:21 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

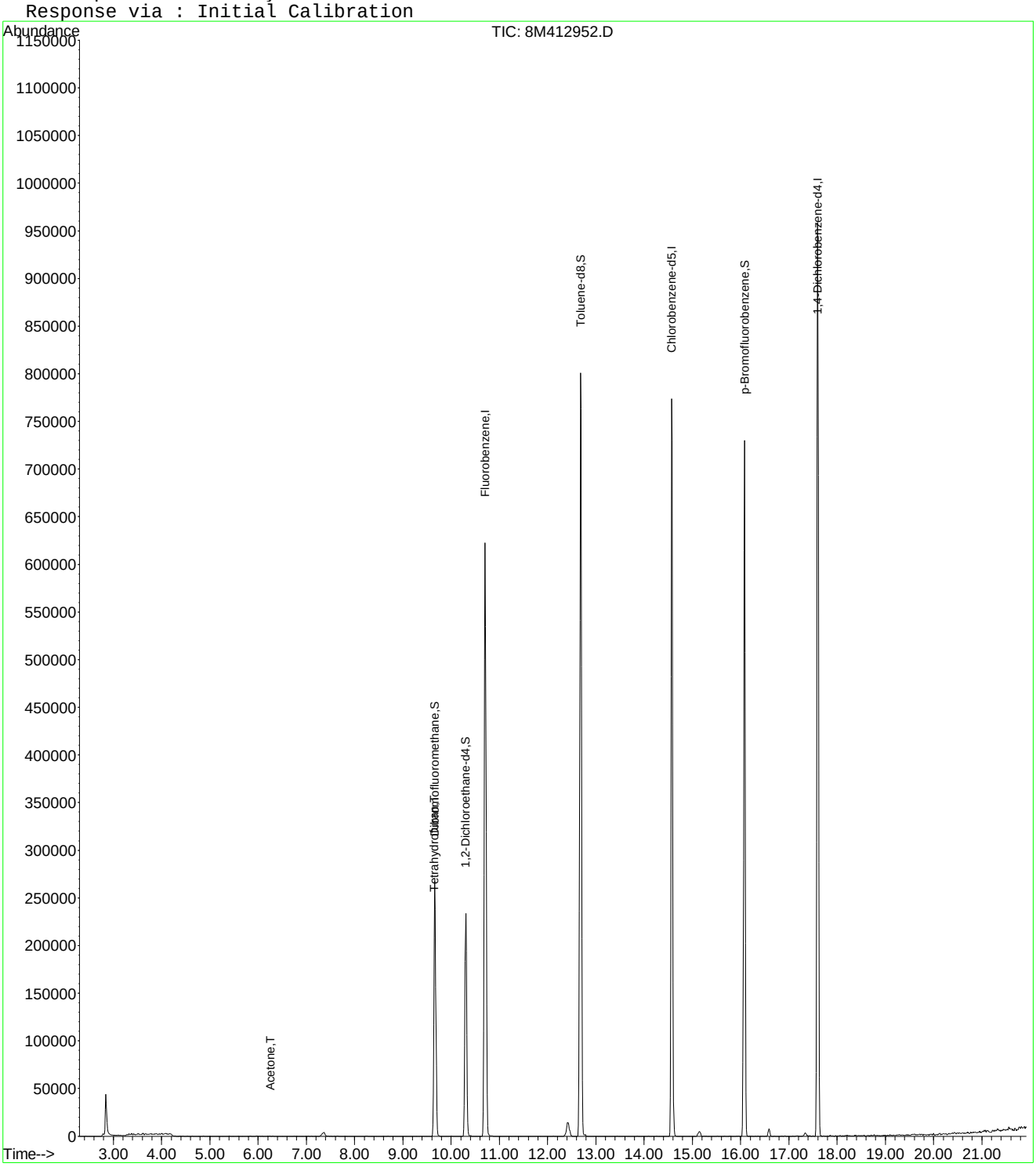

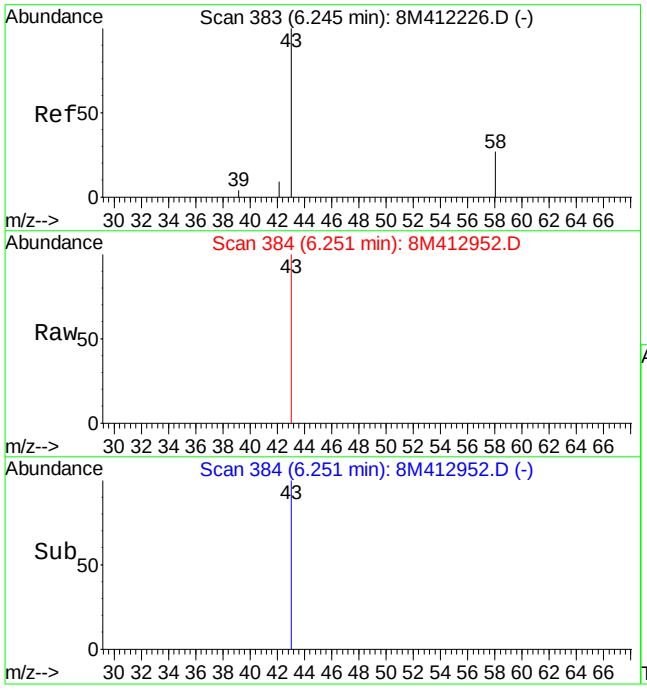

#13
Acetone
Concen: 0.32 ug/L
RT: 6.25 min Scan# 384
Delta R.T. 0.01 min
Lab File: 8M412952.D
Acq: 13 Jun 2016 18:25

Tgt Ion: 43 Resp: 275

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.2	35.4#

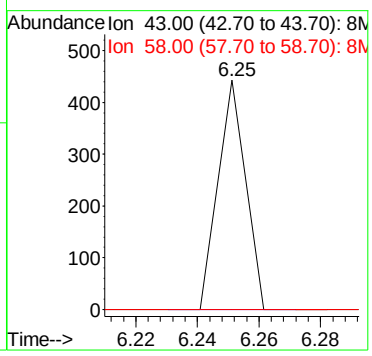

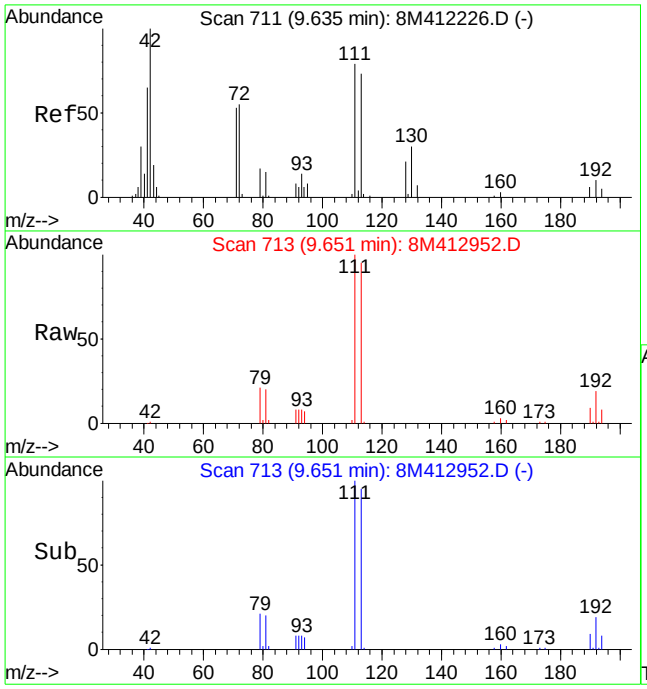

#36
Tetrahydrofuran
Concen: 1.33 ug/L
RT: 9.65 min Scan# 713
Delta R.T. 0.02 min
Lab File: 8M412952.D
Acq: 13 Jun 2016 18:25

Tgt Ion: 42 Resp: 1086

Ion	Ratio	Lower	Upper
42	100		
72	0.0	33.8	78.8#
71	0.0	32.0	74.8#

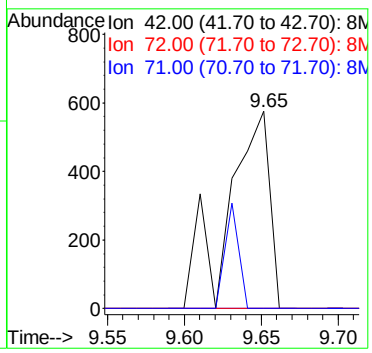

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:40:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	823748	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	571926	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	299321	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	12.68	98	567	0.0189 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.08%#	
80) p-Bromofluorobenzene	16.08	95	313	0.0253 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	3836	0.2778 ug/L	91
3) Chloromethane	3.62	50	3658	0.4537 ug/L	95
4) Vinyl Chloride	3.85	62	2516	0.2630 ug/L #	58
5) 1,3-Butadiene	3.91	54	2079	0.2592 ug/L	71
6) Bromomethane	4.73	94	1152	0.6530 ug/L #	55
7) Chloroethane	4.90	64	1112	0.2113 ug/L #	72
8) Trichlorofluoromethane	5.35	101	2706	0.1520 ug/L #	53
10) Isoprene	5.93	67	2147	0.1987 ug/L	85
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1746	0.2087 ug/L	97
14) 1,1-Dichloroethene	6.48	61	3332	0.2501 ug/L	75
16) Dimethyl Sulfide	6.73	62	1099	0.2308 ug/L	95
19) Methylene Chloride	7.26	84	3414	0.4028 ug/L	88
20) Carbon Disulfide	7.30	76	10739	0.3853 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	4927	0.2686 ug/L #	60
23) trans-1,2-Dichloroethene	7.70	61	3879	0.3170 ug/L	98
24) n-Hexane	7.78	57	2794	0.3075 ug/L	85
26) Vinyl Acetate	8.30	43	1973	0.2259 ug/L #	70
27) 1,1-Dichloroethane	8.33	63	4881	0.3212 ug/L #	88
31) 2,2-Dichloropropane	9.11	77	4966	0.3101 ug/L	89
32) cis-1,2-Dichloroethene	9.17	96	2958	0.3128 ug/L	87
33) Chloroform	9.37	83	5564	0.3101 ug/L	95
34) 1-Bromopropane	9.52	122	210	0.1551 ug/L #	1
35) Bromochloromethane	9.60	130	1386	0.2858 ug/L	76
36) Tetrahydrofuran	9.62	42	1849	2.0617 ug/L #	60
38) 1,1,1-Trichloroethane	9.91	97	4978	0.2921 ug/L	95
39) Cyclohexane	9.93	56	3120	0.2644 ug/L #	85
40) 1,1-Dichloropropene	10.11	75	3779	0.2909 ug/L	97
42) Carbon Tetrachloride	10.24	117	4835	0.3194 ug/L #	74
45) 1,2-Dichloroethane	10.43	62	3295	0.2853 ug/L #	81
46) Benzene	10.46	78	11279	0.3333 ug/L	93
47) Trichloroethene	11.20	130	2410	0.2670 ug/L	97
48) Methylcyclohexane	11.31	83	3936	0.2871 ug/L	84
49) 1,2-Dichloropropane	11.42	63	2136	0.2836 ug/L	88
50) Bromodichloromethane	11.73	83	3767	0.2845 ug/L #	91
52) Dibromomethane	11.82	93	700	0.1570 ug/L #	59
53) 2-Chloroethyl Vinyl Ether	12.02	63	847	0.2616 ug/L #	47
55) cis-1,3-Dichloropropene	12.36	75	4763	0.3535 ug/L	84
56) Dimethyl Disulfide	12.63	79	1647	0.2290 ug/L	82
59) Toluene	12.78	91	11513	0.3243 ug/L	92
60) Ethyl Methacrylate	12.89	69	1631	0.2392 ug/L #	64

(#) = qualifier out of range (m) = manual integration
8M412220.D 8260WT.M Tue May 17 11:40:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:40:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
62)	trans-1,3-Dichloropropene	12.96	75	3626	0.3047 ug/L		82
63)	1,1,2-Trichloroethane	13.18	97	1409	0.2515 ug/L		98
65)	1,3-Dichloropropane	13.49	76	2584	0.2590 ug/L		93
66)	Tetrachloroethene	13.61	164	2678	0.3520 ug/L	#	75
67)	Dibromochloromethane	13.87	129	2126	0.2599 ug/L		79
68)	1,2-Dibromoethane	14.12	107	1895	0.3394 ug/L		91
69)	1-Chlorohexane	14.21	91	3835	0.3164 ug/L		99
70)	Chlorobenzene	14.62	112	7968	0.3328 ug/L		88
71)	1,1,1,2-Tetrachloroethane	14.67	131	2872	0.3096 ug/L		87
72)	Ethylbenzene	14.64	106	3844	0.2934 ug/L		81
73)	m-,p-Xylene	14.75	106	10447	0.6799 ug/L		96
74)	o-Xylene	15.31	106	4577	0.3047 ug/L		97
75)	Styrene	15.35	104	7545	0.3062 ug/L		95
76)	Bromoform	15.84	173	1301	0.2681 ug/L	#	51
77)	Isopropylbenzene	15.74	105	13119	0.3287 ug/L		90
79)	1,1,2,2-Tetrachloroethane	15.96	83	1714	0.2853 ug/L	#	85
83)	n-Propylbenzene	16.24	91	15676	0.3357 ug/L		92
84)	Bromobenzene	16.38	156	2859	0.2977 ug/L		90
85)	1,3,5-Trimethylbenzene	16.43	105	10873	0.3196 ug/L		99
86)	2-Chlorotoluene	16.52	91	11133	0.3415 ug/L		96
87)	4-Chlorotoluene	16.56	91	10305	0.3499 ug/L		97
88)	a-Methylstyrene	16.83	118	4090	0.2534 ug/L		86
89)	tert-Butylbenzene	16.90	134	1734	0.2606 ug/L		72
90)	1,2,4-Trimethylbenzene	16.95	105	10734	0.3069 ug/L		89
91)	sec-Butylbenzene	17.16	105	13749	0.3436 ug/L		97
92)	p-Isopropyltoluene	17.32	119	10847	0.3192 ug/L		95
93)	1,3-Dichlorobenzene	17.52	146	6023	0.3257 ug/L		99
94)	1,4-Dichlorobenzene	17.65	146	6152	0.3299 ug/L	#	60
95)	n-Butylbenzene	17.85	91	11161	0.3323 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	5711	0.3472 ug/L		92
98)	1,2,4-Trichlorobenzene	20.29	180	4203	0.3418 ug/L		91
99)	Hexachlorobutadiene	20.43	225	1894	0.3297 ug/L		84
100)	Naphthalene	20.65	128	6039	0.3306 ug/L		91
101)	1,2,3-Trichlorobenzene	20.96	180	3279	0.3161 ug/L		86

(#) = qualifier out of range (m) = manual integration

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2778	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.4537	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.2630	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	0.2592	0.0	100	0.03
6	T	Bromomethane	-1.0000	0.9911	0.0	100	0.00
7	T	Chloroethane	-1.0000	0.2113	0.0	100	0.00
8	T	Trichlorofluoromethane	-1.0000	0.1520	0.0	100	-0.02
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.90#
10	T	Isoprene	-1.0000	0.1987	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.13#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2087	0.0	100	0.00
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	-1.0000	0.2501	0.0	100	0.02
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.58#
16	T	Dimethyl Sulfide	-1.0000	0.2308	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.0000	0.0	0	-7.00#
19	T	Methylene Chloride	-1.0000	0.4028	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.3853	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.43#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2686	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	-1.0000	0.3170	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.3075	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.2259	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.3212	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.98#
31	T	2,2-Dichloropropane	-1.0000	0.3101	0.0	100	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.3128	0.0	100	0.00
33	C	Chloroform	0.3000	0.3101	-3.4	100	0.00
34		1-Bromopropane	-1.0000	0.1551	0.0	100	0.00
35	T	Bromochloromethane	-1.0000	0.2858	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	2.0617	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	-1.0000	0.2921	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.2644	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.2909	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	-1.0000	0.3194	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	-1.0000	0.2853	0.0	100	0.00
46	T	Benzene	-1.0000	0.3333	0.0	100	0.00
47	T	Trichloroethene	-1.0000	0.2670	0.0	100	-0.01
48	T	Methylcyclohexane	-1.0000	0.2871	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2836	0.0	100	0.00
50	T	Bromodichloromethane	-1.0000	0.2845	0.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	-1.0000	0.1570	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2616	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.05#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.3535	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2290	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0189	0.0	100	0.00
59	C	Toluene	-1.0000	0.3243	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2392	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3047	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.2515	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	-1.0000	0.2590	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.3520	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.2599	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.3394	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.3164	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.3328	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.3096	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.2934	0.0	100	-0.01
73	T	m-,p-Xylene	-1.0000	0.6799	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.3047	0.0	100	0.00
75	T	Styrene	-1.0000	0.3062	0.0	100	0.00
76	P	Bromoform	-1.0000	0.2681	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.3287	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2853	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0253	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.1103	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	-1.0000	0.3357	0.0	100	0.00
84	T	Bromobenzene	0.3000	0.2977	0.8	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.3196	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.3415	0.0	100	0.00
87	T	4-Chlorotoluene	-1.0000	0.3499	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2534	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.2606	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.3069	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3436	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.3192	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.3257	0.0	100	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.3299	-10.0	100	0.00
95	T	n-Butylbenzene	-1.0000	0.3323	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.3472	-15.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.3418	0.0	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.3297	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.3306	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.3161	-5.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412220.D 8260WT.M Sat May 14 18:03:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	801173	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	557498	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	293108	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.00%#	
80) p-Bromofluorobenzene	16.08	95	343	0.0286 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	5478	0.3262 ug/L	79
3) Chloromethane	3.63	50	3930	0.2484 ug/L	85
4) Vinyl Chloride	3.84	62	3512	0.3288 ug/L	97
5) 1,3-Butadiene	3.90	54	2479	0.2375 ug/L #	75
6) Bromomethane	4.73	94	1343	0.9497 ug/L	85
7) Chloroethane	4.90	64	2219	0.3174 ug/L #	43
8) Trichlorofluoromethane	5.36	101	6974	0.3289 ug/L #	93
10) Isoprene	5.94	67	4288	0.3952 ug/L #	62
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	3168	0.3263 ug/L #	40
14) 1,1-Dichloroethene	6.47	61	5431	0.2882 ug/L	92
16) Dimethyl Sulfide	6.74	62	1708	0.2453 ug/L	64
19) Methylene Chloride	7.24	84	3785	0.4239 ug/L #	43
20) Carbon Disulfide	7.29	76	12437	0.4565 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	6580	0.3336 ug/L #	76
23) trans-1,2-Dichloroethene	7.71	61	4990	0.2928 ug/L	96
24) n-Hexane	7.79	57	3110	0.2011 ug/L	99
26) Vinyl Acetate	8.31	43	2753	0.1566 ug/L	100
27) 1,1-Dichloroethane	8.32	63	5655	0.2774 ug/L #	92
31) 2,2-Dichloropropane	9.10	77	6035	0.3360 ug/L	82
32) cis-1,2-Dichloroethene	9.16	96	3837	0.3762 ug/L	74
33) Chloroform	9.37	83	7267	0.3842 ug/L	100
34) 1-Bromopropane	9.50	122	234	0.1456 ug/L #	1
35) Bromochloromethane	9.60	130	1674	0.3137 ug/L	62
36) Tetrahydrofuran	9.62	42	447	0.2146 ug/L #	41
38) 1,1,1-Trichloroethane	9.91	97	6304	0.3305 ug/L	90
39) Cyclohexane	9.94	56	4658	0.2238 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	5172	0.3768 ug/L	80
42) Carbon Tetrachloride	10.25	117	5692	0.3172 ug/L	95
45) 1,2-Dichloroethane	10.43	62	4443	0.2796 ug/L #	63
46) Benzene	10.46	78	14456	0.4134 ug/L #	77
47) Trichloroethene	11.21	130	3659	0.3626 ug/L	98
48) Methylcyclohexane	11.29	83	5025	0.3562 ug/L	84
49) 1,2-Dichloropropane	11.42	63	3060	0.3007 ug/L	98
50) Bromodichloromethane	11.73	83	4734	0.3343 ug/L #	93
52) Dibromomethane	11.82	93	1805	0.3767 ug/L	84
55) cis-1,3-Dichloropropene	12.36	75	5008	0.3514 ug/L	90
56) Dimethyl Disulfide	12.63	79	1921	0.2573 ug/L	85
59) Toluene	12.78	91	14742	0.4416 ug/L	98
60) Ethyl Methacrylate	12.90	69	2062	0.3292 ug/L	66
62) trans-1,3-Dichloropropene	12.96	75	3693	0.3171 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M412221.D 8260WT.M Fri May 13 14:20:38 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
63)	1,1,2-Trichloroethane	13.18	97	2326	0.4391 ug/L		70
65)	1,3-Dichloropropane	13.49	76	3163	0.3219 ug/L		88
66)	Tetrachloroethene	13.61	164	3164	0.4185 ug/L		93
67)	Dibromochloromethane	13.87	129	3113	0.3727 ug/L		86
68)	1,2-Dibromoethane	14.12	107	2076	0.3760 ug/L		90
69)	1-Chlorohexane	14.21	91	4746	0.4174 ug/L		80
70)	Chlorobenzene	14.62	112	9180	0.3960 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.66	131	3501	0.3876 ug/L		95
72)	Ethylbenzene	14.65	106	5348	0.4066 ug/L		84
73)	m-,p-Xylene	14.75	106	13269	0.8757 ug/L		89
74)	o-Xylene	15.31	106	6019	0.3943 ug/L		97
75)	Styrene	15.35	104	9370	0.3849 ug/L		95
76)	Bromoform	15.83	173	1198	0.2500 ug/L	#	76
77)	Isopropylbenzene	15.73	105	16528	0.4270 ug/L		92
79)	1,1,2,2-Tetrachloroethane	15.96	83	1999	0.3419 ug/L	#	83
83)	n-Propylbenzene	16.25	91	19410	0.4297 ug/L		95
84)	Bromobenzene	16.37	156	3319	0.3524 ug/L		75
85)	1,3,5-Trimethylbenzene	16.42	105	13794	0.4127 ug/L		95
86)	2-Chlorotoluene	16.51	91	13678	0.4729 ug/L		90
87)	4-Chlorotoluene	16.56	91	12572	0.4219 ug/L		98
88)	a-Methylstyrene	16.84	118	5739	0.3485 ug/L		96
89)	tert-Butylbenzene	16.90	134	2254	0.3403 ug/L		55
90)	1,2,4-Trimethylbenzene	16.95	105	13859	0.4051 ug/L		90
91)	sec-Butylbenzene	17.17	105	17612	0.4382 ug/L		90
92)	p-Isopropyltoluene	17.32	119	13616	0.3968 ug/L		90
93)	1,3-Dichlorobenzene	17.52	146	6961	0.3724 ug/L		86
94)	1,4-Dichlorobenzene	17.64	146	7149	0.3832 ug/L	#	1
95)	n-Butylbenzene	17.85	91	15223	0.4664 ug/L		91
96)	1,2-Dichlorobenzene	18.14	146	6129	0.3742 ug/L		92
98)	1,2,4-Trichlorobenzene	20.28	180	5035	0.3969 ug/L		97
99)	Hexachlorobutadiene	20.44	225	2420	0.4122 ug/L		83
100)	Naphthalene	20.65	128	7474	0.3874 ug/L	#	84
101)	1,2,3-Trichlorobenzene	20.96	180	4378	0.4056 ug/L	#	78

(#) = qualifier out of range (m) = manual integration
8M412221.D 8260WT.M Fri May 13 14:20:39 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

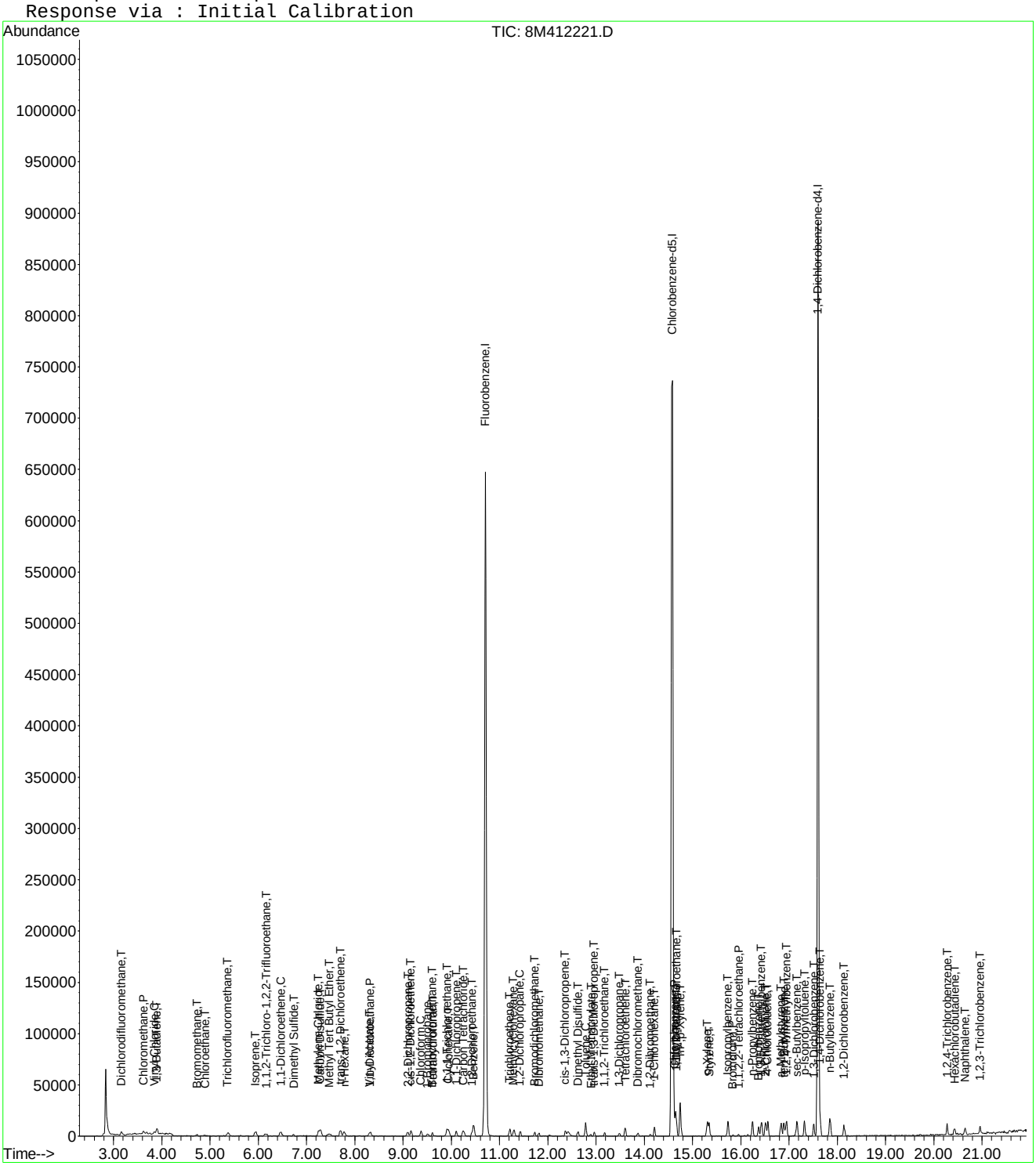

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	0.4000	0.4078	-2.0	100	0.00
3	P	Chloromethane	-1.0000	0.5012	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.3775	5.6	100	0.00
5	T	1,3-Butadiene	-1.0000	0.3178	0.0	100	0.02
6	T	Bromomethane	-1.0000	1.0253	0.0	100	0.00
7	T	Chloroethane	0.4000	0.4335	-8.4	100	0.00
8	T	Trichlorofluoromethane	0.4000	0.4029	-0.7	100	-0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.90#
10	T	Isoprene	0.4000	0.4079	-2.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.13#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3894	0.0	100	0.02
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	0.4000	0.4192	-4.8	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.58#
16	T	Dimethyl Sulfide	0.4000	0.3687	7.8	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.2179	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4591	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4587	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.43#
22	T	Methyl Tert Butyl Ether	-1.0000	0.3688	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.4193	-4.8	100	0.00
24	T	n-Hexane	-1.0000	0.3519	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.3241	0.0	100	0.02
27	P	1,1-Dichloroethane	0.4000	0.3826	4.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.98#
31	T	2,2-Dichloropropane	0.4000	0.3874	3.1	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.4172	-4.3	100	-0.01
33	C	Chloroform	0.4000	0.4164	-4.1	100	0.00
34		1-Bromopropane	-1.0000	0.1776	0.0	100	-0.01
35	T	Bromochloromethane	0.4000	0.3550	11.3	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.5125	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	0.4000	0.3803	4.9	100	0.00
39	T	Cyclohexane	-1.0000	0.4058	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4093	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	0.4000	0.3867	3.3	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	0.4000	0.3955	1.1	100	0.00
46	T	Benzene	0.4000	0.4393	-9.8	100	0.00
47	T	Trichloroethene	0.4000	0.4169	-4.2	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3768	0.0	100	-0.01
49	C	1,2-Dichloropropane	0.4000	0.4177	-4.4	100	0.00
50	T	Bromodichloromethane	0.4000	0.3676	8.1	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	0.4000	0.4162	-4.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1401	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.05#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3821	4.5	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2746	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0000	0.0	0	-12.68#
59	C	Toluene	0.4000	0.4259	-6.5	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3102	0.0	100	0.02
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3184	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.4259	-6.5	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	0.4000	0.3253	18.7	100	0.00
66	T	Tetrachloroethene	0.4000	0.4267	-6.7	100	0.00
67	T	Dibromochloromethane	0.4000	0.3904	2.4	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.3814	4.6	100	0.00
69	T	1-Chlorohexane	0.4000	0.4017	-0.4	100	0.00
70	P	Chlorobenzene	0.4000	0.3933	1.7	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3872	3.2	100	0.00
72	C	Ethylbenzene	0.4000	0.4188	-4.7	100	0.00
73	T	m-,p-Xylene	0.8000	0.8859	-10.7	100	0.00
74	T	o-Xylene	-1.0000	0.4110	0.0	100	0.00
75	T	Styrene	0.4000	0.3901	2.5	100	0.00
76	P	Bromoform	-1.0000	0.2533	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.4249	-6.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.3398	15.1	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0283	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.14#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	0.4000	0.4245	-6.1	100	0.00
84	T	Bromobenzene	0.4000	0.3529	11.8	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.4141	-3.5	100	0.00
86	T	2-Chlorotoluene	0.4000	0.4284	-7.1	100	0.00
87	T	4-Chlorotoluene	0.4000	0.4359	-9.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.3631	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3459	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	0.4000	0.4046	-1.2	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.4494	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4092	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.3844	3.9	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.3915	2.1	100	0.00
95	T	n-Butylbenzene	-1.0000	0.4628	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.3805	4.9	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	0.4000	0.4182	-4.5	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.4302	-7.5	100	0.00
100	T	Naphthalene	0.4000	0.4178	-4.5	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.4310	-7.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412221.D 8260WT.M Sat May 14 18:03:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	795577	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	547129	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	284579	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.65	111	3962	0.3966 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery	= 1.60%#	
43) 1,2-Dichloroethane-d4	10.31	65	3835	0.3356 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery	= 1.36%#	
58) Toluene-d8	12.68	98	14023	0.4957 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 2.00%#	
80) p-Bromofluorobenzene	16.08	95	6483	0.5565 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery	= 2.24%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	12402	0.7438 ug/L	97
3) Chloromethane	3.62	50	8415	0.5357 ug/L #	75
4) Vinyl Chloride	3.84	62	9412	0.8873 ug/L	89
5) 1,3-Butadiene	3.90	54	6974	0.6729 ug/L	81
6) Bromomethane	4.73	94	4114	1.3123 ug/L	92
7) Chloroethane	4.90	64	4983	0.7178 ug/L #	80
8) Trichlorofluoromethane	5.38	101	17133	0.8136 ug/L #	96
9) Diethyl ether	5.90	59	20707	3.2140 ug/L	84
10) Isoprene	5.94	67	11176	1.0373 ug/L	76
11) Acrolein	6.14	56	246	0.4300 ug/L #	15
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	8135	0.8438 ug/L	96
13) Acetone	6.24	43	413	0.2115 ug/L #	48
14) 1,1-Dichloroethene	6.46	61	12947	0.6919 ug/L	91
15) Tert-Butyl Alcohol	6.59	59	3316	7.3747 ug/L #	55
16) Dimethyl Sulfide	6.72	62	4505	0.6515 ug/L	79
18) Methyl acetate	7.00	43	2119	0.3630 ug/L #	66
19) Methylene Chloride	7.24	84	8723	0.9837 ug/L #	43
20) Carbon Disulfide	7.29	76	28246	1.0441 ug/L	100
21) Acrylonitrile	7.43	53	2164	0.8620 ug/L	76
22) Methyl Tert Butyl Ether	7.47	73	16998	0.8678 ug/L	84
23) trans-1,2-Dichloroethene	7.70	61	12571	0.7427 ug/L	100
24) n-Hexane	7.78	57	9382	0.6109 ug/L	82
25) Diisopropyl ether	8.12	45	95400	2.1939 ug/L #	91
26) Vinyl Acetate	8.30	43	6750	0.3867 ug/L #	89
27) 1,1-Dichloroethane	8.32	63	14721	0.7271 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	97972	3.2102 ug/L	88
29) 2-Butanone	8.88	43	380	0.1215 ug/L #	57
30) Propionitrile	8.99	54	1593	2.0138 ug/L #	56
31) 2,2-Dichloropropane	9.09	77	14691	0.8236 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	9482	0.9362 ug/L	72
33) Chloroform	9.37	83	18494	0.9845 ug/L	94
34) 1-Bromopropane	9.50	122	1092	0.6844 ug/L	80
35) Bromochloromethane	9.61	130	5234	0.9877 ug/L #	55
36) Tetrahydrofuran	9.63	42	5415	2.6185 ug/L #	68
38) 1,1,1-Trichloroethane	9.91	97	17074	0.9016 ug/L	92
39) Cyclohexane	9.94	56	11865	0.5740 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	13172	0.9663 ug/L	87
41) Tert-Amyl-Methyl ether	10.21	73	90255	4.6173 ug/L #	88
42) Carbon Tetrachloride	10.25	117	14515	0.8146 ug/L	95
45) 1,2-Dichloroethane	10.42	62	10675	0.6766 ug/L	85

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	10.47	78	34504	0.9938 ug/L		84
47)	Trichloroethene	11.21	130	8752	0.8735 ug/L		93
48)	Methylcyclohexane	11.30	83	13513	0.9646 ug/L		79
49)	1,2-Dichloropropane	11.43	63	7057	0.6982 ug/L	#	67
50)	Bromodichloromethane	11.73	83	12147	0.8638 ug/L		96
52)	Dibromomethane	11.81	93	4130	0.8681 ug/L		95
53)	2-Chloroethyl Vinyl Ether	12.03	63	2694	0.6366 ug/L		86
54)	4-Methyl-2-Pentanone	12.06	58	848	0.3671 ug/L	#	41
55)	cis-1,3-Dichloropropene	12.36	75	12521	0.8847 ug/L		97
56)	Dimethyl Disulfide	12.63	79	5799	0.7821 ug/L		96
59)	Toluene	12.79	91	37114	1.1328 ug/L		95
60)	Ethyl Methacrylate	12.88	69	5490	0.8930 ug/L		69
62)	trans-1,3-Dichloropropene	12.96	75	10328	0.9035 ug/L		92
63)	1,1,2-Trichloroethane	13.18	97	5274	1.0144 ug/L		93
64)	2-Hexanone	13.10	58	397	0.2127 ug/L	#	1
65)	1,3-Dichloropropane	13.49	76	9673	1.0032 ug/L		73
66)	Tetrachloroethene	13.61	164	7373	0.9937 ug/L		95
67)	Dibromochloromethane	13.87	129	7358	0.8977 ug/L		95
68)	1,2-Dibromoethane	14.13	107	5123	0.9454 ug/L		95
69)	1-Chlorohexane	14.21	91	12790	1.1461 ug/L		79
70)	Chlorobenzene	14.62	112	25662	1.1281 ug/L		89
71)	1,1,1,2-Tetrachloroethane	14.66	131	8722	0.9838 ug/L		94
72)	Ethylbenzene	14.65	106	13009	1.0078 ug/L		87
73)	m-,p-Xylene	14.75	106	30465	2.0486 ug/L		84
74)	o-Xylene	15.31	106	15133	1.0101 ug/L		84
75)	Styrene	15.35	104	23191	0.9707 ug/L		91
76)	Bromoform	15.84	173	3875	0.8240 ug/L		96
77)	Isopropylbenzene	15.74	105	41382	1.0895 ug/L		95
79)	1,1,2,2-Tetrachloroethane	15.95	83	5604	0.9873 ug/L	#	93
81)	1,2,3-Trichloropropane	16.15	110	1355	0.7428 ug/L	#	1
82)	trans-1,4-Dichloro-2-Buten	16.19	53	962	0.3479 ug/L	#	1
83)	n-Propylbenzene	16.25	91	48249	1.1002 ug/L		99
84)	Bromobenzene	16.37	156	9598	1.0497 ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	33355	1.0278 ug/L		96
86)	2-Chlorotoluene	16.51	91	33408	1.1895 ug/L		94
87)	4-Chlorotoluene	16.56	91	29548	1.0213 ug/L		95
88)	a-Methylstyrene	16.84	118	14414	0.9014 ug/L		91
89)	tert-Butylbenzene	16.89	134	6686	1.0398 ug/L		86
90)	1,2,4-Trimethylbenzene	16.95	105	36066	1.0857 ug/L		96
91)	sec-Butylbenzene	17.16	105	42128	1.0796 ug/L		96
92)	p-Isopropyltoluene	17.32	119	35424	1.0633 ug/L		94
93)	1,3-Dichlorobenzene	17.52	146	18409	1.0144 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	19031	1.0506 ug/L	#	62
95)	n-Butylbenzene	17.85	91	35772	1.1288 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	16104	1.0126 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.14	75	1262	1.0152 ug/L	#	53
98)	1,2,4-Trichlorobenzene	20.28	180	11494	0.9331 ug/L		98
99)	Hexachlorobutadiene	20.43	225	5421	0.9510 ug/L		98
100)	Naphthalene	20.65	128	16581	0.8853 ug/L		100
101)	1,2,3-Trichlorobenzene	20.96	180	10306	0.9835 ug/L		94

(#) = qualifier out of range (m) = manual integration
8M412222.D 8260WT.M Fri May 13 14:49:48 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

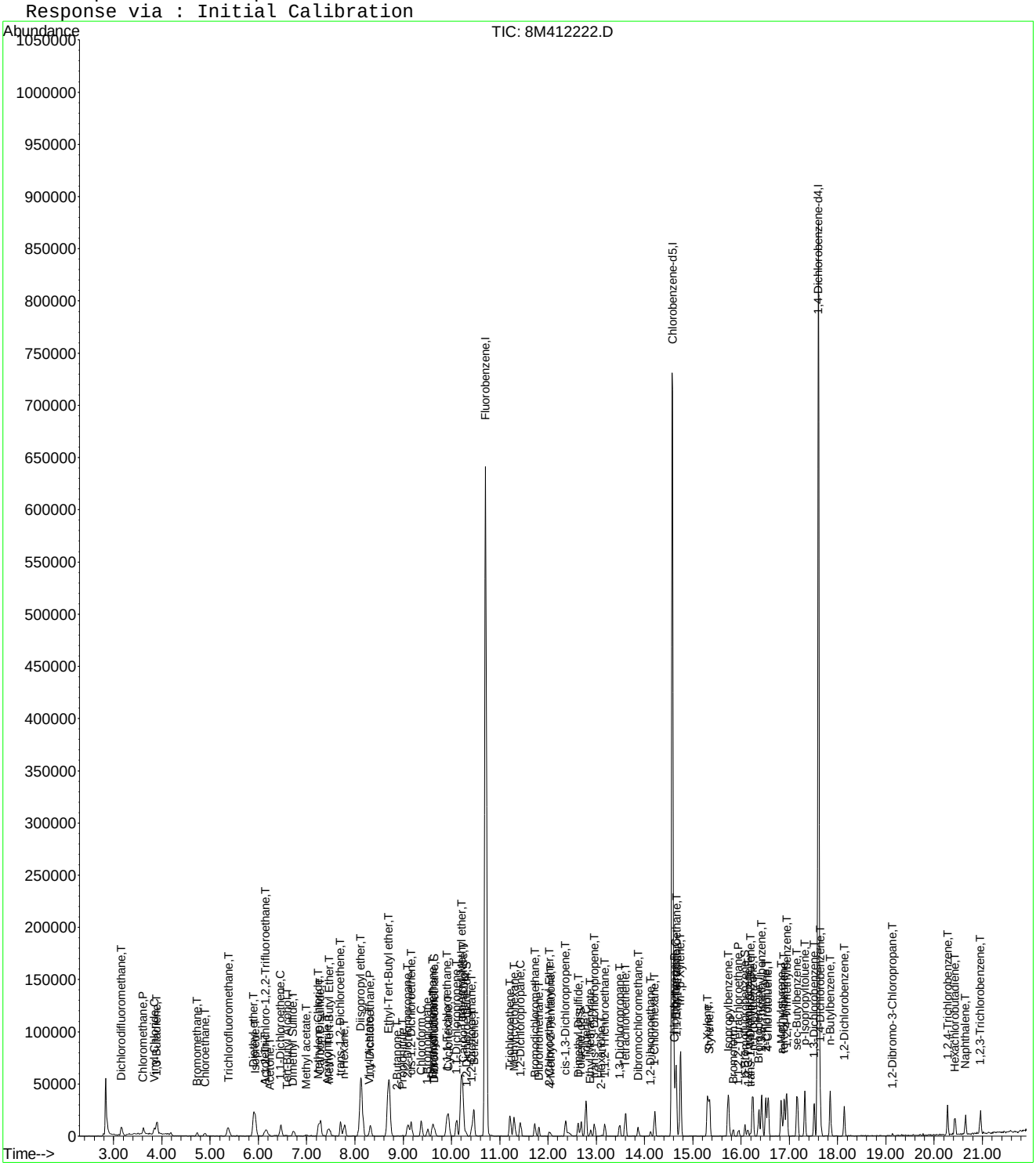

8M412222.D 8260WT.M Fri May 13 14:49:48 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:05:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9298	7.0	100	0.00
3	P	Chloromethane	1.0000	1.0808	-8.1	100	0.00
4	C	Vinyl Chloride	1.0000	1.0189	-1.9	100	0.00
5	T	1,3-Butadiene	-1.0000	0.9002	0.0	100	0.02
6	T	Bromomethane	1.0000	1.2082	-20.8	100	0.00
7	T	Chloroethane	1.0000	0.9803	2.0	100	0.00
8	T	Trichlorofluoromethane	1.0000	0.9968	0.3	100	0.00
9	T	Diethyl ether	5.0000	5.0462	-0.9	100	0.00
10	T	Isoprene	1.0000	1.0707	-7.1	100	0.00
11	T	Acrolein	-1.0000	0.6696	0.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0069	-0.7	100	0.00
13	T	Acetone	-1.0000	0.4614	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	1.0064	-0.6	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	11.5604	0.0	0	0.02
16	T	Dimethyl Sulfide	1.0000	0.9794	2.1	100	-0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.8758	0.0	100	0.00
19	T	Methylene Chloride	1.0000	1.0655	-6.5	100	0.00
20	T	Carbon Disulfide	1.0000	1.0492	-4.9	100	0.00
21	T	Acrylonitrile	2.5000	1.8633	25.5#	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9593	4.1	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	1.0636	-6.4	100	0.00
24	T	n-Hexane	-1.0000	1.0690	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	5.1784	-3.6	100	0.00
26	T	Vinyl Acetate	-1.0000	0.8002	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0029	-0.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.9635	0.7	100	0.00
29	T	2-Butanone	-1.0000	0.2889	0.0	100	0.00
30	T	Propionitrile	5.0000	4.1566	16.9	100	0.00
31	T	2,2-Dichloropropane	1.0000	0.9498	5.0	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	1.0383	-3.8	100	0.00
33	C	Chloroform	1.0000	1.0671	-6.7	100	0.00
34		1-Bromopropane	1.0000	0.8348	16.5	100	-0.01
35	T	Bromochloromethane	1.0000	1.1177	-11.8	100	0.00
36	T	Tetrahydrofuran	5.0000	6.2516	-25.0#	100	0.00
37	S	Dibromofluoromethane	0.5000	0.4635	7.3	100	-0.01
38	T	1,1,1-Trichloroethane	1.0000	1.0372	-3.7	100	0.00
39	T	Cyclohexane	1.0000	1.0411	-4.1	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0498	-5.0	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	5.0344	-0.7	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.9930	0.7	100	0.00
43	S	1,2-Dichloroethane-d4	0.5000	0.4184	16.3	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	1.0000	0.9570	4.3	100	0.00
46	T	Benzene	1.0000	1.0558	-5.6	100	0.00
47	T	Trichloroethene	1.0000	1.0041	-0.4	100	0.00
48	T	Methylcyclohexane	-1.0000	1.0205	0.0	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.9700	3.0	100	0.00
50	T	Bromodichloromethane	1.0000	0.9500	5.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	1.0000	0.9590	4.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.8616	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.6639	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:05:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9621	3.8	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.8348	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	0.5000	0.4897	2.1	100	0.00
59	C	Toluene	1.0000	1.0927	-9.3	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.8416	15.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	1.0000	0.9073	9.3	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.9840	1.6	100	0.00
64	T	2-Hexanone	-1.0000	0.3525	0.0	100	-0.01
65	T	1,3-Dichloropropane	1.0000	1.0137	-1.4	100	0.00
66	T	Tetrachloroethene	1.0000	1.0132	-1.3	100	0.00
67	T	Dibromochloromethane	1.0000	0.9402	6.0	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.9590	4.1	100	0.00
69	T	1-Chlorohexane	1.0000	1.1031	-10.3	100	0.00
70	P	Chlorobenzene	1.0000	1.1204	-12.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.9829	1.7	100	0.00
72	C	Ethylbenzene	1.0000	1.0381	-3.8	100	0.00
73	T	m-,p-Xylene	2.0000	2.0726	-3.6	100	0.00
74	T	o-Xylene	1.0000	1.0530	-5.3	100	0.00
75	T	Styrene	1.0000	0.9839	1.6	100	0.00
76	P	Bromoform	1.0000	0.8348	16.5	100	0.00
77	T	Isopropylbenzene	1.0000	1.0840	-8.4	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	0.9810	1.9	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5502	0.0	100	0.00
81	T	1,2,3-Trichloropropane	1.0000	0.7703	23.0	100	0.02
82	T	trans-1,4-Dichloro-2-Butene	1.0000	1.1443	-14.4	100	0.00
83	T	n-Propylbenzene	1.0000	1.0868	-8.7	100	0.00
84	T	Bromobenzene	1.0000	1.0510	-5.1	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	1.0314	-3.1	100	0.00
86	T	2-Chlorotoluene	1.0000	1.0778	-7.8	100	0.00
87	T	4-Chlorotoluene	1.0000	1.0553	-5.5	100	0.00
88	T	a-Methylstyrene	-1.0000	0.9394	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	1.0567	-5.7	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	1.0845	-8.5	100	0.00
91	T	sec-Butylbenzene	1.0000	1.1073	-10.7	100	0.00
92	T	p-Isopropyltoluene	1.0000	1.0966	-9.7	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0469	-4.7	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	1.0735	-7.3	100	0.00
95	T	n-Butylbenzene	1.0000	1.1201	-12.0	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0297	-3.0	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.1006	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	1.0000	0.9832	1.7	100	0.00
99	T	Hexachlorobutadiene	1.0000	0.9925	0.7	100	0.00
100	T	Naphthalene	1.0000	0.9547	4.5	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	1.0450	-4.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412222.D 8260WT.M Sat May 14 18:05:50 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	782460	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.57	117	543252	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	286450	25.00	ug/L	0.01

System Monitoring Compounds						
37) Dibromofluoromethane	9.66	111	8161	0.8307	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.32%#		
43) 1,2-Dichloroethane-d4	10.30	65	9681	0.8613	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.44%#		
58) Toluene-d8	12.68	98	28135	1.0016	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.00%#		
80) p-Bromofluorobenzene	16.08	95	12079	1.0302	ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.12%#		

Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.16	85	24870	1.5166	ug/L	98
3) Chloromethane	3.62	50	16106	1.0425	ug/L	93
4) Vinyl Chloride	3.85	62	18562	1.7792	ug/L	94
5) 1,3-Butadiene	3.90	54	13617	1.3360	ug/L	92
6) Bromomethane	4.73	94	8329	1.8804	ug/L	94
7) Chloroethane	4.90	64	9562	1.4006	ug/L	86
8) Trichlorofluoromethane	5.39	101	34970	1.6885	ug/L	97
9) Diethyl ether	5.90	59	107986	17.0420	ug/L	79
10) Isoprene	5.93	67	20936	1.9757	ug/L	73
11) Acrolein	6.14	56	4864	8.6444	ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	16832	1.7751	ug/L	99
13) Acetone	6.23	43	1519	0.7908	ug/L #	48
14) 1,1-Dichloroethene	6.47	61	25394	1.3798	ug/L	89
15) Tert-Butyl Alcohol	6.58	59	14891	33.6725	ug/L	85
16) Dimethyl Sulfide	6.73	62	9489	1.3953	ug/L	79
17) Iodomethane	6.98	142	1211	1.3472	ug/L #	60
18) Methyl acetate	7.01	43	5064	0.8821	ug/L #	79
19) Methylene Chloride	7.25	84	16579	1.9010	ug/L	52
20) Carbon Disulfide	7.29	76	57693	2.1683	ug/L	98
21) Acrylonitrile	7.43	53	13848	5.6089	ug/L	93
22) Methyl Tert Butyl Ether	7.47	73	33991	1.7644	ug/L	84
23) trans-1,2-Dichloroethene	7.70	61	22786	1.3688	ug/L	88
24) n-Hexane	7.79	57	18282	1.2105	ug/L	84
25) Diisopropyl ether	8.12	45	475271	11.1128	ug/L #	92
26) Vinyl Acetate	8.29	43	15998	0.9318	ug/L	93
27) 1,1-Dichloroethane	8.32	63	30419	1.5277	ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	505010	16.8250	ug/L	89
29) 2-Butanone	8.90	43	2250	0.7313	ug/L #	57
30) Propionitrile	8.99	54	9373	12.0479	ug/L	86
31) 2,2-Dichloropropane	9.10	77	32521	1.8538	ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	18238	1.8309	ug/L	91
33) Chloroform	9.37	83	33543	1.8156	ug/L	99
34) 1-Bromopropane	9.52	122	2513	1.6014	ug/L	88
35) Bromochloromethane	9.60	130	9189	1.7632	ug/L	67
36) Tetrahydrofuran	9.63	42	22074	10.8529	ug/L #	66
38) 1,1,1-Trichloroethane	9.90	97	32268	1.7324	ug/L	96
39) Cyclohexane	9.93	56	23097	1.1362	ug/L #	65
40) 1,1-Dichloropropene	10.10	75	24988	1.8639	ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	459535	23.9029	ug/L	87
42) Carbon Tetrachloride	10.24	117	28935	1.6512	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412223.D 8260WT.M Fri May 13 15:18:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.42	62	22142	1.4270 ug/L #	83
46)	Benzene	10.46	78	67028	1.9629 ug/L	83
47)	Trichloroethene	11.21	130	17287	1.7543 ug/L	96
48)	Methylcyclohexane	11.30	83	26050	1.8907 ug/L	84
49)	1,2-Dichloropropane	11.42	63	14582	1.4670 ug/L	77
50)	Bromodichloromethane	11.73	83	25794	1.8651 ug/L	93
51)	1,4-Dioxane	11.73	88	1282	32.3515 ug/L	74
52)	Dibromomethane	11.81	93	8575	1.8325 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.02	63	6234	1.4979 ug/L	100
54)	4-Methyl-2-Pentanone	12.06	58	2139	0.9416 ug/L	84
55)	cis-1,3-Dichloropropene	12.37	75	24153	1.7353 ug/L	98
56)	Dimethyl Disulfide	12.62	79	12288	1.6851 ug/L	99
59)	Toluene	12.79	91	72944	2.2423 ug/L	95
60)	Ethyl Methacrylate	12.88	69	12716	2.0832 ug/L	71
62)	trans-1,3-Dichloropropene	12.96	75	22163	1.9527 ug/L	100
63)	1,1,2-Trichloroethane	13.18	97	10537	2.0412 ug/L	99
64)	2-Hexanone	13.13	58	2200	1.1873 ug/L #	65
65)	1,3-Dichloropropane	13.49	76	20212	2.1112 ug/L	72
66)	Tetrachloroethene	13.60	164	14595	1.9811 ug/L	90
67)	Dibromochloromethane	13.87	129	14698	1.8061 ug/L	98
68)	1,2-Dibromoethane	14.12	107	10152	1.8869 ug/L	95
69)	1-Chlorohexane	14.21	91	21960	1.9818 ug/L	89
70)	Chlorobenzene	14.62	112	47376	2.0974 ug/L	81
71)	1,1,1,2-Tetrachloroethane	14.66	131	17526	1.9910 ug/L	97
72)	Ethylbenzene	14.66	106	25628	1.9996 ug/L	92
73)	m-,p-Xylene	14.74	106	60087	4.0693 ug/L	84
74)	o-Xylene	15.31	106	28289	1.9017 ug/L	79
75)	Styrene	15.35	104	47644	2.0086 ug/L	92
76)	Bromoform	15.84	173	9145	1.9585 ug/L	95
77)	Isopropylbenzene	15.73	105	81301	2.1557 ug/L	97
79)	1,1,2,2-Tetrachloroethane	15.95	83	11538	2.0194 ug/L	95
81)	1,2,3-Trichloropropane	16.13	110	3630	1.9770 ug/L	94
82)	trans-1,4-Dichloro-2-Buten	16.19	53	2699	0.9698 ug/L #	36
83)	n-Propylbenzene	16.24	91	97233	2.2026 ug/L	96
84)	Bromobenzene	16.37	156	19174	2.0834 ug/L	92
85)	1,3,5-Trimethylbenzene	16.42	105	67395	2.0631 ug/L	97
86)	2-Chlorotoluene	16.51	91	67110	2.3739 ug/L	94
87)	4-Chlorotoluene	16.56	91	59154	2.0313 ug/L	92
88)	a-Methylstyrene	16.84	118	29415	1.8275 ug/L	86
89)	tert-Butylbenzene	16.89	134	12716	1.9647 ug/L	67
90)	1,2,4-Trimethylbenzene	16.95	105	71669	2.1435 ug/L	94
91)	sec-Butylbenzene	17.17	105	81038	2.0632 ug/L	98
92)	p-Isopropyltoluene	17.32	119	70170	2.0924 ug/L	92
93)	1,3-Dichlorobenzene	17.52	146	37289	2.0413 ug/L	93
94)	1,4-Dichlorobenzene	17.64	146	36528	2.0034 ug/L #	73
95)	n-Butylbenzene	17.85	91	67823	2.1262 ug/L	96
96)	1,2-Dichlorobenzene	18.14	146	32322	2.0190 ug/L	92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	1955	1.5624 ug/L	94
98)	1,2,4-Trichlorobenzene	20.28	180	23558	1.9000 ug/L	98
99)	Hexachlorobutadiene	20.43	225	11066	1.9286 ug/L	99
100)	Naphthalene	20.65	128	36066	1.9130 ug/L	99
101)	1,2,3-Trichlorobenzene	20.96	180	19765	1.8738 ug/L	95

(#) = qualifier out of range (m) = manual integration
8M412223.D 8260WT.M Fri May 13 15:18:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

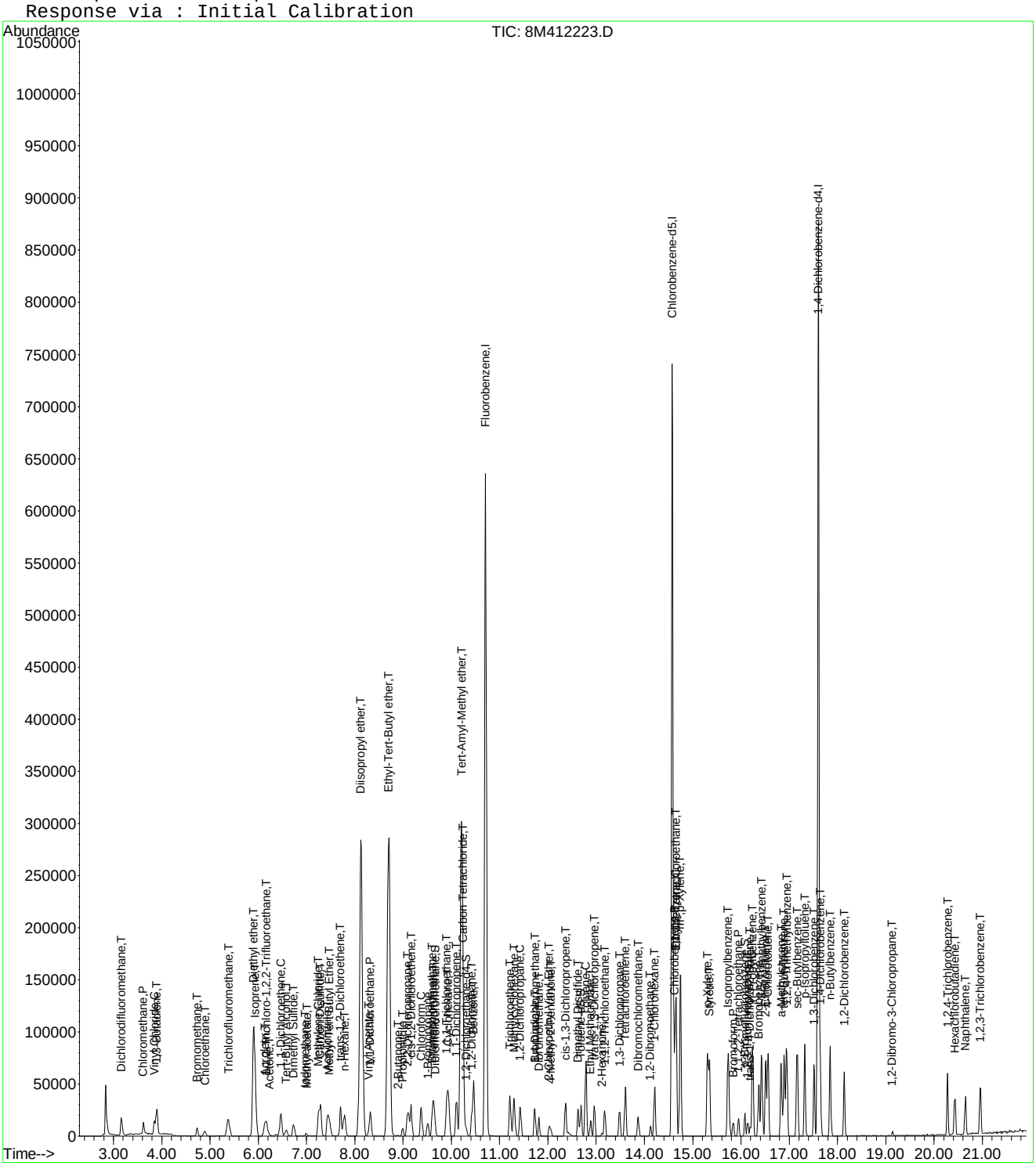

8M412223.D 8260WT.M Fri May 13 15:18:37 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.8958	5.2	100	0.00
3	P	Chloromethane	2.0000	2.1033	-5.2	100	0.00
4	C	Vinyl Chloride	2.0000	2.0431	-2.2	100	0.00
5	T	1,3-Butadiene	2.0000	1.7872	10.6	100	0.02
6	T	Bromomethane	2.0000	2.0126	-0.6	100	0.00
7	T	Chloroethane	2.0000	1.9127	4.4	100	0.00
8	T	Trichlorofluoromethane	2.0000	2.0686	-3.4	100	0.00
9	T	Diethyl ether	25.0000	26.7567	-7.0	100	0.00
10	T	Isoprene	2.0000	2.0394	-2.0	100	0.00
11	T	Acrolein	12.5000	13.4606	-7.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	2.1182	-5.9	100	0.02
13	T	Acetone	-1.0000	1.7255	0.0	100	-0.01
14	C	1,1-Dichloroethene	2.0000	2.0070	-0.4	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	52.7840	-5.6	100	0.00
16	T	Dimethyl Sulfide	2.0000	2.0975	-4.9	100	0.00
17	T	Iodomethane	2.0000	3.0680	-53.4#	100	0.00
18	T	Methyl acetate	-1.0000	2.1281	0.0	100	0.00
19	T	Methylene Chloride	2.0000	2.0590	-3.0	100	0.00
20	T	Carbon Disulfide	2.0000	2.1789	-8.9	100	0.00
21	T	Acrylonitrile	12.5000	12.1237	3.0	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.9505	2.5	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.9603	2.0	100	0.00
24	T	n-Hexane	-1.0000	2.1181	0.0	100	0.00
25	T	Diisopropyl ether	25.0000	26.2305	-4.9	100	0.00
26	T	Vinyl Acetate	2.0000	1.9284	3.6	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.1072	-5.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	26.0139	-4.1	100	0.00
29	T	2-Butanone	-1.0000	1.7396	0.0	100	0.02
30	T	Propionitrile	25.0000	24.8668	0.5	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1378	-6.9	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0306	-1.5	100	0.00
33	C	Chloroform	2.0000	1.9679	1.6	100	0.00
34		1-Bromopropane	2.0000	1.9533	2.3	100	0.00
35	T	Bromochloromethane	2.0000	1.9951	0.2	100	0.00
36	T	Tetrahydrofuran	25.0000	25.9117	-3.6	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9708	2.9	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.9930	0.3	100	0.00
39	T	Cyclohexane	2.0000	2.0605	-3.0	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0248	-1.2	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	26.0627	-4.3	100	0.00
42	T	Carbon Tetrachloride	2.0000	2.0126	-0.6	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0740	-7.4	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	2.0000	2.0183	-0.9	100	0.00
46	T	Benzene	2.0000	2.0854	-4.3	100	0.00
47	T	Trichloroethene	2.0000	2.0166	-0.8	100	0.00
48	T	Methylcyclohexane	-1.0000	2.0003	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0380	-1.9	100	0.00
50	T	Bromodichloromethane	2.0000	2.0511	-2.6	100	0.00
51	T	1,4-Dioxane	-1.0000	35.6688	0.0	100	0.02
52	T	Dibromomethane	2.0000	2.0246	-1.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	2.0271	-1.4	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.7027	0.0	100	0.00

(#) = Out of Range

8M412223.D 8260WT.M Sat May 14 18:08:13 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.8869	5.7	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.7986	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	0.9896	1.0	100	0.00
59	C	Toluene	2.0000	2.1628	-8.1	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.9633	1.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	2.0000	1.9609	2.0	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.9800	1.0	100	0.00
64	T	2-Hexanone	-1.0000	1.9672	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.1332	-6.7	100	0.00
66	T	Tetrachloroethene	2.0000	2.0198	-1.0	100	0.00
67	T	Dibromochloromethane	2.0000	1.8915	5.4	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.9141	4.3	100	0.00
69	T	1-Chlorohexane	2.0000	1.9075	4.6	100	0.00
70	P	Chlorobenzene	2.0000	2.0831	-4.2	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.9892	0.5	100	0.00
72	C	Ethylbenzene	2.0000	2.0596	-3.0	100	0.00
73	T	m-,p-Xylene	4.0000	4.1170	-2.9	100	0.00
74	T	o-Xylene	2.0000	1.9825	0.9	100	0.00
75	T	Styrene	2.0000	2.0358	-1.8	100	0.00
76	P	Bromoform	2.0000	1.9841	0.8	100	0.00
77	T	Isopropylbenzene	2.0000	2.1448	-7.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	2.0066	-0.3	100	0.00
80	S	p-Bromofluorobenzene	1.0000	1.0184	-1.8	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	2.0501	-2.5	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	2.0915	-4.6	100	0.00
83	T	n-Propylbenzene	2.0000	2.1757	-8.8	100	0.00
84	T	Bromobenzene	2.0000	2.0859	-4.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.0703	-3.5	100	0.00
86	T	2-Chlorotoluene	2.0000	2.1509	-7.5	100	0.00
87	T	4-Chlorotoluene	2.0000	2.0989	-4.9	100	0.00
88	T	a-Methylstyrene	-1.0000	1.9045	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	1.9967	0.2	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.1411	-7.1	100	0.00
91	T	sec-Butylbenzene	2.0000	2.1161	-5.8	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.1579	-7.9	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.1067	-5.3	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.0470	-2.4	100	0.00
95	T	n-Butylbenzene	2.0000	2.1098	-5.5	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0532	-2.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.6938	15.3	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	2.0021	-0.1	100	0.00
99	T	Hexachlorobutadiene	2.0000	2.0128	-0.6	100	0.00
100	T	Naphthalene	2.0000	2.0630	-3.2	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9910	0.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	768397	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.58	117	534372	25.00	ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	274234	25.00	ug/L	0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	19775	2.0496	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery	=	8.20%#	
43) 1,2-Dichloroethane-d4	10.30	65	21200	1.9207	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery	=	7.68%#	
58) Toluene-d8	12.68	98	65647	2.3758	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	=	9.52%#	
80) p-Bromofluorobenzene	16.08	95	26759	2.3838	ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery	=	9.52%#	

Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.16	85	55961	3.4750	ug/L	99
3) Chloromethane	3.62	50	34194	2.2538	ug/L	100
4) Vinyl Chloride	3.84	62	42506	4.1488	ug/L	99
5) 1,3-Butadiene	3.89	54	32006	3.1976	ug/L	93
6) Bromomethane	4.72	94	19582	3.4204	ug/L	94
7) Chloroethane	4.90	64	22000	3.2814	ug/L	84
8) Trichlorofluoromethane	5.37	101	77715	3.8212	ug/L	96
9) Diethyl ether	5.90	59	188516	30.2955	ug/L	79
10) Isoprene	5.94	67	44975	4.3218	ug/L	78
11) Acrolein	6.15	56	7712	13.9568	ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	36867	3.9591	ug/L	99
13) Acetone	6.24	43	3578	1.8967	ug/L	85
14) 1,1-Dichloroethene	6.47	61	59405	3.2870	ug/L	95
15) Tert-Butyl Alcohol	6.58	59	27833	64.0897	ug/L #	82
16) Dimethyl Sulfide	6.73	62	21102	3.1597	ug/L	77
17) Iodomethane	6.99	142	3667	1.8964	ug/L	95
18) Methyl acetate	7.00	43	11500	2.0398	ug/L #	86
19) Methylene Chloride	7.24	84	37533	4.3823	ug/L	52
20) Carbon Disulfide	7.29	76	123060	4.7097	ug/L	100
21) Acrylonitrile	7.43	53	25653	10.5804	ug/L	99
22) Methyl Tert Butyl Ether	7.47	73	80005	4.2289	ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	54124	3.3108	ug/L	94
24) n-Hexane	7.78	57	40758	2.7480	ug/L	82
25) Diisopropyl ether	8.12	45	841400	20.0337	ug/L #	91
26) Vinyl Acetate	8.30	43	37284	2.2113	ug/L #	90
27) 1,1-Dichloroethane	8.32	63	66711	3.4116	ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	907423	30.7852	ug/L	89
29) 2-Butanone	8.89	43	5359	1.7738	ug/L #	82
30) Propionitrile	8.99	54	17933	23.4726	ug/L	100
31) 2,2-Dichloropropane	9.10	77	73150	4.2462	ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	41036	4.1950	ug/L	89
33) Chloroform	9.37	83	78227	4.3116	ug/L	99
34) 1-Bromopropane	9.52	122	6162	3.9986	ug/L	99
35) Bromochloromethane	9.60	130	20988	4.1009	ug/L #	62
36) Tetrahydrofuran	9.62	42	38098	19.0742	ug/L #	62
38) 1,1,1-Trichloroethane	9.91	97	76152	4.1633	ug/L	97
39) Cyclohexane	9.94	56	51439	2.5767	ug/L #	66
40) 1,1-Dichloropropene	10.11	75	56645	4.3027	ug/L	93
41) Tert-Amyl-Methyl ether	10.21	73	821180	43.4958	ug/L	87
42) Carbon Tetrachloride	10.25	117	67831	3.9416	ug/L	96

(#) = qualifier out of range (m) = manual integration
8M412224.D 8260WT.M Fri May 13 15:47:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	51708	3.3934 ug/L		85
46)	Benzene	10.46	78	150204	4.4792 ug/L		86
47)	Trichloroethene	11.21	130	38500	3.9784 ug/L		94
48)	Methylcyclohexane	11.30	83	60897	4.5008 ug/L		81
49)	1,2-Dichloropropane	11.43	63	31773	3.2549 ug/L		77
50)	Bromodichloromethane	11.73	83	59127	4.3535 ug/L		94
51)	1,4-Dioxane	11.71	88	2719	69.8702 ug/L	#	62
52)	Dibromomethane	11.81	93	19711	4.2894 ug/L		96
53)	2-Chloroethyl Vinyl Ether	12.03	63	12946	3.1676 ug/L		98
54)	4-Methyl-2-Pentanone	12.05	58	5129	2.2991 ug/L	#	78
55)	cis-1,3-Dichloropropene	12.36	75	61169	4.4752 ug/L		94
56)	Dimethyl Disulfide	12.62	79	27966	3.9053 ug/L		98
59)	Toluene	12.78	91	161007	5.0316 ug/L		97
60)	Ethyl Methacrylate	12.88	69	28595	4.7624 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	49791	4.4599 ug/L		97
63)	1,1,2-Trichloroethane	13.18	97	23678	4.6631 ug/L		99
64)	2-Hexanone	13.11	58	4499	2.4685 ug/L	#	97
65)	1,3-Dichloropropane	13.49	76	44838	4.7614 ug/L		73
66)	Tetrachloroethene	13.60	164	32715	4.5144 ug/L		97
67)	Dibromochloromethane	13.87	129	35009	4.3734 ug/L		98
68)	1,2-Dibromoethane	14.13	107	24247	4.5815 ug/L		99
69)	1-Chlorohexane	14.21	91	53599	4.9176 ug/L		84
70)	Chlorobenzene	14.62	112	107618	4.8437 ug/L		95
71)	1,1,1,2-Tetrachloroethane	14.65	131	38120	4.4025 ug/L		96
72)	Ethylbenzene	14.65	106	56905	4.5138 ug/L		91
73)	m-,p-Xylene	14.75	106	137390	9.4592 ug/L		86
74)	o-Xylene	15.31	106	65650	4.4866 ug/L		85
75)	Styrene	15.35	104	111433	4.7758 ug/L		91
76)	Bromoform	15.84	173	19346	4.2121 ug/L		97
77)	Isopropylbenzene	15.73	105	182523	4.9200 ug/L		96
79)	1,1,2,2-Tetrachloroethane	15.95	83	26655	4.8730 ug/L		99
81)	1,2,3-Trichloropropane	16.13	110	8840	5.0289 ug/L		81
82)	trans-1,4-Dichloro-2-Buten	16.19	53	6584	2.4712 ug/L	#	51
83)	n-Propylbenzene	16.24	91	222196	5.2576 ug/L		96
84)	Bromobenzene	16.37	156	42665	4.8423 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	155714	4.9790 ug/L		93
86)	2-Chlorotoluene	16.52	91	148764	5.4968 ug/L		94
87)	4-Chlorotoluene	16.56	91	135679	4.8666 ug/L		94
88)	a-Methylstyrene	16.84	118	68945	4.4743 ug/L		91
89)	tert-Butylbenzene	16.89	134	29069	4.6914 ug/L		77
90)	1,2,4-Trimethylbenzene	16.95	105	161016	5.0301 ug/L		94
91)	sec-Butylbenzene	17.17	105	191273	5.0866 ug/L		94
92)	p-Isopropyltoluene	17.32	119	159232	4.9597 ug/L		93
93)	1,3-Dichlorobenzene	17.52	146	83896	4.7972 ug/L		95
94)	1,4-Dichlorobenzene	17.64	146	82462	4.7242 ug/L		86
95)	n-Butylbenzene	17.85	91	158787	5.1996 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	72524	4.7321 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	5629	4.6990 ug/L		76
98)	1,2,4-Trichlorobenzene	20.28	180	53855	4.5369 ug/L		98
99)	Hexachlorobutadiene	20.43	225	24504	4.4608 ug/L		93
100)	Naphthalene	20.65	128	79806	4.4217 ug/L		98
101)	1,2,3-Trichlorobenzene	20.96	180	44150	4.3720 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412224.D 8260WT.M Fri May 13 15:47:44 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

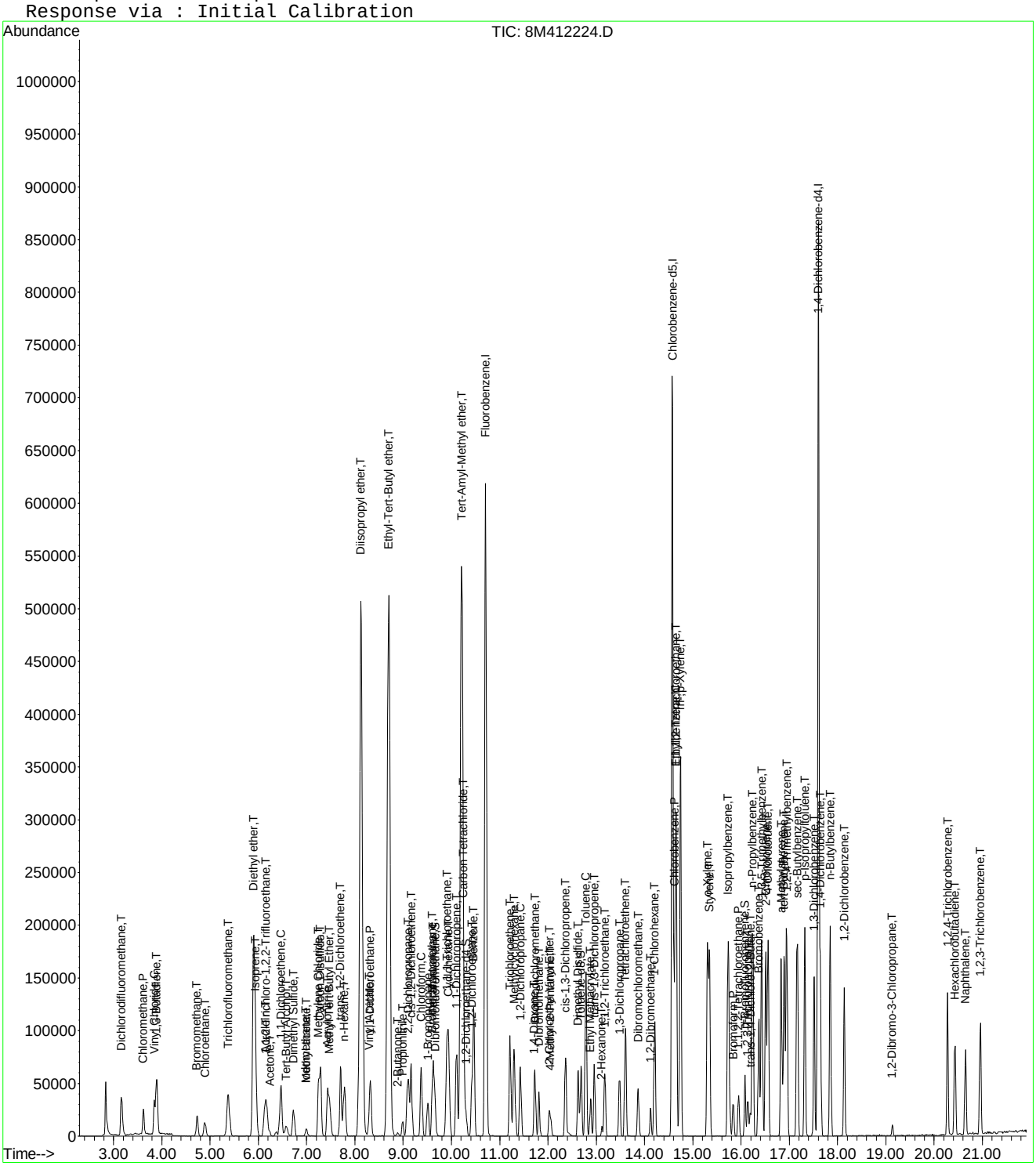

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.3438	13.1	100	0.00
3	P	Chloromethane	5.0000	4.5471	9.1	100	0.00
4	C	Vinyl Chloride	5.0000	4.7641	4.7	100	0.00
5	T	1,3-Butadiene	5.0000	4.2777	14.4	100	0.00
6	T	Bromomethane	5.0000	4.1880	16.2	100	-0.01
7	T	Chloroethane	5.0000	4.4813	10.4	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.6812	6.4	100	0.00
9	T	Diethyl ether	50.0000	47.5652	4.9	100	0.00
10	T	Isoprene	5.0000	4.4611	10.8	100	0.00
11	T	Acrolein	25.0000	21.7328	13.1	100	0.02
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.7244	5.5	100	0.00
13	T	Acetone	5.0000	4.1387	17.2	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.7810	4.4	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	100.4650	-0.5	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.7499	5.0	100	0.00
17	T	Iodomethane	5.0000	3.7634	24.7	100	0.00
18	T	Methyl acetate	5.0000	4.9211	1.6	100	0.00
19	T	Methylene Chloride	5.0000	4.7467	5.1	100	0.00
20	T	Carbon Disulfide	5.0000	4.7328	5.3	100	0.00
21	T	Acrylonitrile	25.0000	22.8698	8.5	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.6750	6.5	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.7415	5.2	100	0.00
24	T	n-Hexane	5.0000	4.8084	3.8	100	0.00
25	T	Diisopropyl ether	50.0000	47.2872	5.4	100	0.00
26	T	Vinyl Acetate	5.0000	4.5766	8.5	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.7058	5.9	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	47.5984	4.8	100	0.00
29	T	2-Butanone	5.0000	4.2191	15.6	100	0.00
30	T	Propionitrile	50.0000	48.4475	3.1	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.8965	2.1	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.6525	7.0	100	0.00
33	C	Chloroform	5.0000	4.6735	6.5	100	0.00
34		1-Bromopropane	5.0000	4.8774	2.5	100	0.00
35	T	Bromochloromethane	5.0000	4.6403	7.2	100	0.00
36	T	Tetrahydrofuran	50.0000	45.5400	8.9	100	-0.01
37	S	Dibromofluoromethane	2.5000	2.3953	4.2	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.7896	4.2	100	0.00
39	T	Cyclohexane	5.0000	4.6730	6.5	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.6741	6.5	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	47.6211	4.8	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.8044	3.9	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.3949	4.2	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	5.0000	4.7996	4.0	100	0.00
46	T	Benzene	5.0000	4.7588	4.8	100	0.00
47	T	Trichloroethene	5.0000	4.5733	8.5	100	0.00
48	T	Methylcyclohexane	5.0000	4.7616	4.8	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.5219	9.6	100	0.00
50	T	Bromodichloromethane	5.0000	4.7878	4.2	100	0.00
51	T	1,4-Dioxane	100.0000	77.0346	23.0	100	0.00
52	T	Dibromomethane	5.0000	4.7390	5.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.2867	14.3	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.1576	16.8	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.8662	2.7	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.1683	16.6	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.3473	6.1	100	0.00
59	C	Toluene	5.0000	4.8533	2.9	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.4883	10.2	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	5.0000	4.4786	10.4	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.5231	9.5	100	0.00
64	T	2-Hexanone	5.0000	4.0898	18.2	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.8109	3.8	100	0.00
66	T	Tetrachloroethene	5.0000	4.6028	7.9	100	0.00
67	T	Dibromochloromethane	5.0000	4.5802	8.4	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.6475	7.1	100	0.00
69	T	1-Chlorohexane	5.0000	4.7331	5.3	100	0.00
70	P	Chlorobenzene	5.0000	4.8107	3.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.3984	12.0	100	0.00
72	C	Ethylbenzene	5.0000	4.6492	7.0	100	0.00
73	T	m-,p-Xylene	10.0000	9.5700	4.3	100	0.00
74	T	o-Xylene	5.0000	4.6773	6.5	100	0.00
75	T	Styrene	5.0000	4.8405	3.2	100	0.00
76	P	Bromoform	5.0000	4.2672	14.7	100	0.00
77	T	Isopropylbenzene	5.0000	4.8951	2.1	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	4.8422	3.2	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.3565	5.7	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.2150	-4.3	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.3781	12.4	100	0.00
83	T	n-Propylbenzene	5.0000	5.1935	-3.9	100	0.00
84	T	Bromobenzene	5.0000	4.8483	3.0	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	4.9964	0.1	100	0.00
86	T	2-Chlorotoluene	5.0000	4.9803	0.4	100	0.00
87	T	4-Chlorotoluene	5.0000	5.0286	-0.6	100	0.00
88	T	a-Methylstyrene	5.0000	4.6629	6.7	100	0.00
89	T	tert-Butylbenzene	5.0000	4.7677	4.6	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.0245	-0.5	100	0.00
91	T	sec-Butylbenzene	5.0000	5.2170	-4.3	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.1150	-2.3	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	4.9511	1.0	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	4.8270	3.5	100	0.00
95	T	n-Butylbenzene	5.0000	5.1595	-3.2	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	4.8122	3.8	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	5.0942	-1.9	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.7808	4.4	100	0.00
99	T	Hexachlorobutadiene	5.0000	4.6555	6.9	100	0.00
100	T	Naphthalene	5.0000	4.7684	4.6	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.6455	7.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412224.D 8260WT.M Sat May 14 18:08:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	770027	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	531490	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	283594	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	86295	10.9569 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 43.84%#		
43) 1,2-Dichloroethane-d4	10.30	65	96239	11.3450 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 45.36%#		
58) Toluene-d8	12.68	98	294491	10.9223 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 43.68%#		
80) p-Bromofluorobenzene	16.08	95	121459	10.5490 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 42.20%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	288235	23.7135 ug/L	99
3) Chloromethane	3.62	50	155712	20.3784 ug/L	98
4) Vinyl Chloride	3.84	62	184250	20.9368 ug/L	95
5) 1,3-Butadiene	3.89	54	149348	22.7750 ug/L	96
6) Bromomethane	4.73	94	100098	25.0143 ug/L	99
7) Chloroethane	4.89	64	100876	20.9404 ug/L	91
8) Trichlorofluoromethane	5.37	101	351299	21.2512 ug/L	98
9) Diethyl ether	5.90	59	324317	80.8265 ug/L	78
10) Isoprene	5.94	67	205842	20.3622 ug/L	77
11) Acrolein	6.14	56	12049	34.8201 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	159996	20.3859 ug/L	97
13) Acetone	6.25	43	18459	25.7405 ug/L	98
14) 1,1-Dichloroethene	6.47	61	256241	20.5065 ug/L	92
15) Tert-Butyl Alcohol	6.57	59	43922	153.5712 ug/L	93
16) Dimethyl Sulfide	6.73	62	89456	20.6087 ug/L	83
17) Iodomethane	6.99	142	40622	61.0474 ug/L	93
18) Methyl acetate	7.00	43	46598	20.2171 ug/L #	85
19) Methylene Chloride	7.25	84	161897	20.1338 ug/L	52
20) Carbon Disulfide	7.30	76	538090	20.0802 ug/L	98
21) Acrylonitrile	7.43	53	46305	46.9889 ug/L	100
22) Methyl Tert Butyl Ether	7.47	73	361116	22.0137 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	234754	20.3175 ug/L	90
24) n-Hexane	7.78	57	172498	21.1165 ug/L	84
25) Diisopropyl ether	8.12	45	1447822	80.3755 ug/L #	91
26) Vinyl Acetate	8.30	43	166501	21.7017 ug/L #	88
27) 1,1-Dichloroethane	8.33	63	300321	21.3849 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	1579265	83.0733 ug/L	89
29) 2-Butanone	8.88	43	25681	23.9099 ug/L	87
30) Propionitrile	8.98	54	30953	89.5673 ug/L	94
31) 2,2-Dichloropropane	9.10	77	309575	20.8527 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	181973	20.4488 ug/L	89
33) Chloroform	9.37	83	348925	20.5535 ug/L	96
34) 1-Bromopropane	9.52	122	26723	22.7206 ug/L	96
35) Bromochloromethane	9.61	130	94952	21.3181 ug/L	65
36) Tetrahydrofuran	9.63	42	63066	70.5772 ug/L #	57
38) 1,1,1-Trichloroethane	9.91	97	335486	21.3640 ug/L	99
39) Cyclohexane	9.94	56	221040	19.9984 ug/L #	64
40) 1,1-Dichloropropene	10.11	75	248373	20.4717 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1418183	81.7883 ug/L	88
42) Carbon Tetrachloride	10.25	117	296471	21.3449 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412225.D 8260WT.M Fri May 13 16:16:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	228665	21.6403	ug/L		85
46)	Benzene	10.46	78	668449	20.3769	ug/L		86
47)	Trichloroethene	11.21	130	174107	20.7980	ug/L		96
48)	Methylcyclohexane	11.29	83	262275	21.4887	ug/L		82
49)	1,2-Dichloropropane	11.43	63	146868	21.1883	ug/L	#	72
50)	Bromodichloromethane	11.73	83	262192	21.9986	ug/L		98
51)	1,4-Dioxane	11.71	88	5351	196.3837	ug/L		76
52)	Dibromomethane	11.81	93	86951	21.0734	ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	63586	22.4600	ug/L		91
54)	4-Methyl-2-Pentanone	12.05	58	25754	25.0531	ug/L	#	73
55)	cis-1,3-Dichloropropene	12.36	75	265439	21.9841	ug/L		99
56)	Dimethyl Disulfide	12.63	79	134192	23.9412	ug/L		100
59)	Toluene	12.78	91	700473	20.1722	ug/L		99
60)	Ethyl Methacrylate	12.88	69	133361	23.2046	ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	238585	23.2548	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	107901	21.0216	ug/L		99
64)	2-Hexanone	13.11	58	22561	25.2093	ug/L	#	85
65)	1,3-Dichloropropane	13.49	76	198804	22.2491	ug/L		74
66)	Tetrachloroethene	13.60	164	141791	20.0055	ug/L		94
67)	Dibromochloromethane	13.87	129	158465	22.0695	ug/L		99
68)	1,2-Dibromoethane	14.13	107	110085	22.3366	ug/L		100
69)	1-Chlorohexane	14.21	91	229753	20.3591	ug/L		83
70)	Chlorobenzene	14.62	112	467492	20.4613	ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.65	131	183079	22.2095	ug/L		96
72)	Ethylbenzene	14.65	106	249016	20.2289	ug/L		90
73)	m-,p-Xylene	14.75	106	606381	41.1308	ug/L		88
74)	o-Xylene	15.30	106	294106	21.2106	ug/L		90
75)	Styrene	15.35	104	492781	21.8207	ug/L		89
76)	Bromoform	15.83	173	95911	23.8070	ug/L		99
77)	Isopropylbenzene	15.73	105	806678	20.7280	ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	123253	22.7779	ug/L		95
81)	1,2,3-Trichloropropane	16.14	110	36712	22.1354	ug/L		94
82)	trans-1,4-Dichloro-2-Buten	16.18	53	33702	27.6513	ug/L	#	56
83)	n-Propylbenzene	16.24	91	962196	20.3511	ug/L		97
84)	Bromobenzene	16.37	156	190566	21.2033	ug/L		94
85)	1,3,5-Trimethylbenzene	16.43	105	692633	20.9615	ug/L		94
86)	2-Chlorotoluene	16.51	91	649077	19.9155	ug/L		96
87)	4-Chlorotoluene	16.56	91	595446	20.3225	ug/L		95
88)	a-Methylstyrene	16.83	118	318960	22.3680	ug/L		92
89)	tert-Butylbenzene	16.90	134	129440	20.4705	ug/L		83
90)	1,2,4-Trimethylbenzene	16.95	105	707749	20.4783	ug/L		94
91)	sec-Butylbenzene	17.17	105	818359	20.1802	ug/L		97
92)	p-Isopropyltoluene	17.32	119	677859	19.7492	ug/L		96
93)	1,3-Dichlorobenzene	17.52	146	364065	20.5126	ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	363066	19.9874	ug/L		92
95)	n-Butylbenzene	17.85	91	681055	20.0187	ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	318612	19.9358	ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	23070	21.6419	ug/L		93
98)	1,2,4-Trichlorobenzene	20.28	180	242455	20.8863	ug/L		98
99)	Hexachlorobutadiene	20.43	225	110384	20.2523	ug/L		96
100)	Naphthalene	20.65	128	369849	21.4526	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	198876	19.8356	ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration

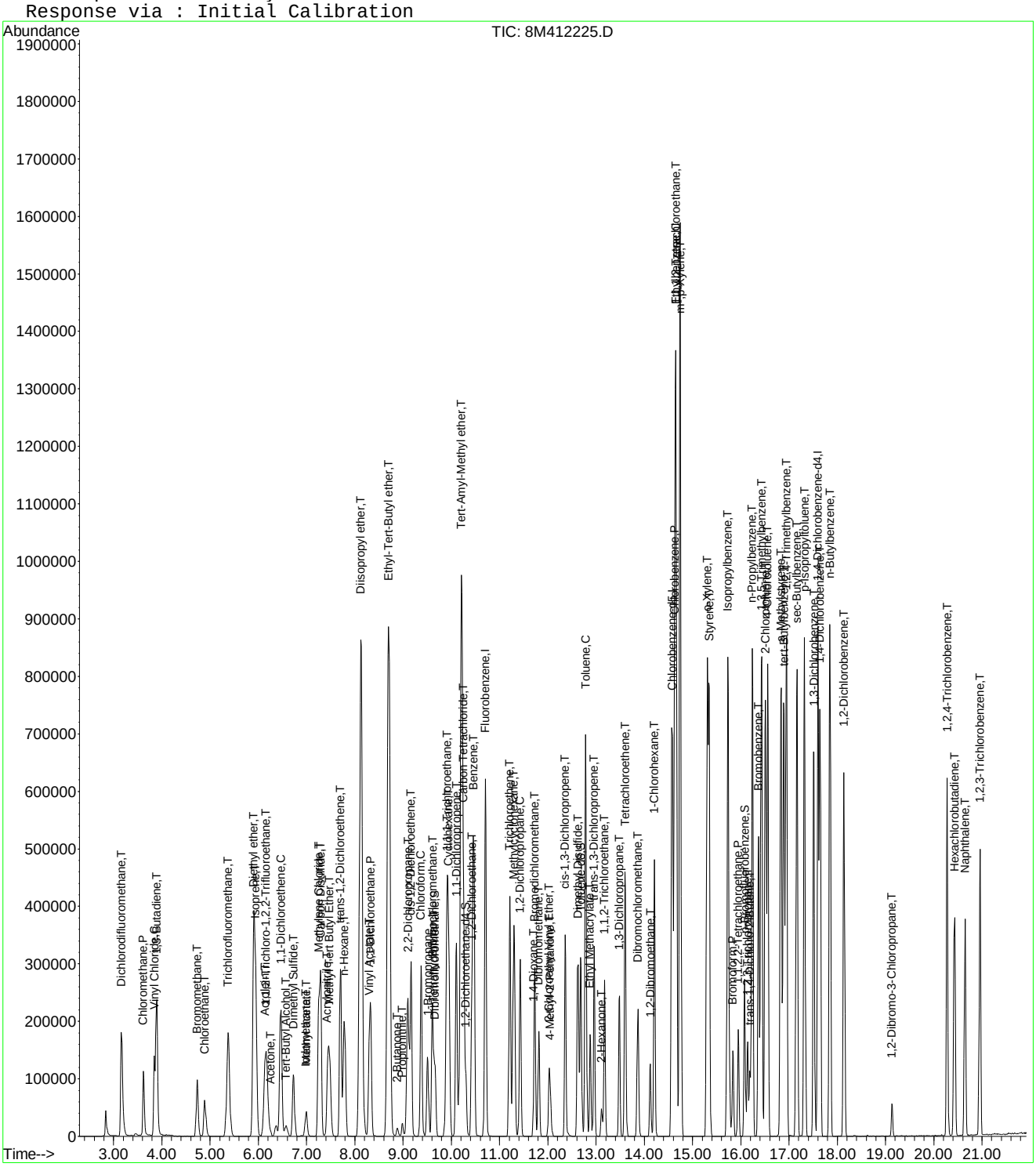

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45:30 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	778260	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	539116	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	288225	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	211053	26.5139 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.04%		
43) 1,2-Dichloroethane-d4	10.31	65	229348	26.7504 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.00%		
58) Toluene-d8	12.68	98	718491	26.2709 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.08%		
80) p-Bromofluorobenzene	16.07	95	292755	25.0180 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.08%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	682745	55.5761 ug/L	100
3) Chloromethane	3.62	50	372858	48.2806 ug/L	98
4) Vinyl Chloride	3.85	62	453905	51.0328 ug/L	96
5) 1,3-Butadiene	3.88	54	390501	58.9199 ug/L	99
6) Bromomethane	4.74	94	260493	64.4080 ug/L	97
7) Chloroethane	4.89	64	244336	50.1840 ug/L	91
8) Trichlorofluoromethane	5.38	101	837676	50.1376 ug/L	99
9) Diethyl ether	5.90	59	389327	96.0019 ug/L	79
10) Isoprene	5.94	67	498060	48.7477 ug/L	76
11) Acrolein	6.13	56	17644	50.4496 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	387643	48.8691 ug/L	97
13) Acetone	6.25	43	45901	63.3305 ug/L	97
14) 1,1-Dichloroethene	6.46	61	619744	49.0724 ug/L	94
15) Tert-Butyl Alcohol	6.58	59	53656	185.6211 ug/L	91
16) Dimethyl Sulfide	6.73	62	221107	50.3993 ug/L	82
17) Iodomethane	6.98	142	157872	234.7428 ug/L	94
18) Methyl acetate	7.00	43	114759	49.2629 ug/L #	81
19) Methylene Chloride	7.25	84	389653	47.9453 ug/L	52
20) Carbon Disulfide	7.29	76	1269941	46.8897 ug/L	99
21) Acrylonitrile	7.43	53	59882	60.1236 ug/L	97
22) Methyl Tert Butyl Ether	7.46	73	901668	54.3843 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	571507	48.9396 ug/L	93
24) n-Hexane	7.79	57	419656	50.8290 ug/L	83
25) Diisopropyl ether	8.13	45	1781012	97.8265 ug/L #	90
26) Vinyl Acetate	8.29	43	428708	55.2866 ug/L #	89
27) 1,1-Dichloroethane	8.32	63	722574	50.9078 ug/L	96
28) Ethyl-Tert-Butyl ether	8.71	59	1955100	101.7552 ug/L	89
29) 2-Butanone	8.88	43	66579	61.3316 ug/L #	82
30) Propionitrile	8.98	54	38235	109.4684 ug/L	95
31) 2,2-Dichloropropane	9.10	77	768496	51.2175 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	439590	48.8754 ug/L	91
33) Chloroform	9.38	83	844564	49.2230 ug/L	97
34) 1-Bromopropane	9.51	122	63442	53.3693 ug/L	99
35) Bromochloromethane	9.60	130	230119	51.1185 ug/L	66
36) Tetrahydrofuran	9.64	42	79437	87.9575 ug/L #	62
38) 1,1,1-Trichloroethane	9.90	97	817606	51.5150 ug/L	99
39) Cyclohexane	9.93	56	535882	47.9707 ug/L #	65
40) 1,1-Dichloropropene	10.10	75	615439	50.1899 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1769381	100.9628 ug/L	88
42) Carbon Tetrachloride	10.24	117	724058	51.5782 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412226.D 8260WT.M Fri May 13 16:45:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45:30 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	561107	52.5401 ug/L		85
46)	Benzene	10.46	78	1607407	48.4816 ug/L		86
47)	Trichloroethene	11.22	130	424998	50.2312 ug/L		96
48)	Methylcyclohexane	11.30	83	635339	51.5040 ug/L		83
49)	1,2-Dichloropropane	11.42	63	351908	50.2320 ug/L	#	71
50)	Bromodichloromethane	11.72	83	654943	54.3701 ug/L		97
51)	1,4-Dioxane	11.71	88	7573	274.9918 ug/L		73
52)	Dibromomethane	11.82	93	209167	50.1574 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	162319	56.7281 ug/L		93
54)	4-Methyl-2-Pentanone	12.05	58	64928	62.4928 ug/L		80
55)	cis-1,3-Dichloropropene	12.36	75	666861	54.6463 ug/L		98
56)	Dimethyl Disulfide	12.62	79	343446	60.6260 ug/L		96
59)	Toluene	12.79	91	1676069	47.5846 ug/L		100
60)	Ethyl Methacrylate	12.88	69	338996	58.1503 ug/L		69
62)	trans-1,3-Dichloropropene	12.96	75	594749	57.1499 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	268432	51.5570 ug/L		98
64)	2-Hexanone	13.12	58	56859	62.6347 ug/L	#	83
65)	1,3-Dichloropropane	13.48	76	489226	53.9770 ug/L		75
66)	Tetrachloroethene	13.60	164	350332	48.7296 ug/L		95
67)	Dibromochloromethane	13.86	129	401149	55.0780 ug/L		100
68)	1,2-Dibromoethane	14.12	107	273580	54.7252 ug/L		99
69)	1-Chlorohexane	14.21	91	560883	48.9984 ug/L		82
70)	Chlorobenzene	14.63	112	1117812	48.2326 ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	446892	53.4462 ug/L		99
72)	Ethylbenzene	14.66	106	603074	48.2980 ug/L		91
73)	m-,p-Xylene	14.74	106	1443780	96.5463 ug/L		90
74)	o-Xylene	15.31	106	709244	50.4265 ug/L		90
75)	Styrene	15.34	104	1212099	52.9133 ug/L		91
76)	Bromoform	15.84	173	238354	58.3272 ug/L		100
77)	Isopropylbenzene	15.73	105	1919993	48.6372 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	294266	53.5083 ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	89279	52.9656 ug/L		93
82)	trans-1,4-Dichloro-2-Buten	16.19	53	86829	70.0956 ug/L	#	53
83)	n-Propylbenzene	16.24	91	2278994	47.4277 ug/L		98
84)	Bromobenzene	16.37	156	459959	50.3549 ug/L		93
85)	1,3,5-Trimethylbenzene	16.43	105	1661486	49.4745 ug/L		95
86)	2-Chlorotoluene	16.51	91	1611031	48.6367 ug/L		97
87)	4-Chlorotoluene	16.56	91	1341051	45.0344 ug/L		95
88)	a-Methylstyrene	16.83	118	772611	53.3111 ug/L		90
89)	tert-Butylbenzene	16.89	134	307503	47.8493 ug/L		81
90)	1,2,4-Trimethylbenzene	16.94	105	1679809	47.8234 ug/L		95
91)	sec-Butylbenzene	17.16	105	1925411	46.7166 ug/L		97
92)	p-Isopropyltoluene	17.32	119	1621383	46.4795 ug/L		95
93)	1,3-Dichlorobenzene	17.51	146	882656	48.9327 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	871210	47.1909 ug/L		92
95)	n-Butylbenzene	17.85	91	1608832	46.5296 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	768548	47.3159 ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	59586	54.9992 ug/L		86
98)	1,2,4-Trichlorobenzene	20.28	180	583880	49.4902 ug/L		100
99)	Hexachlorobutadiene	20.44	225	264699	47.7844 ug/L		98
100)	Naphthalene	20.65	128	894629	51.0579 ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	475246	46.6387 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412226.D 8260WT.M Fri May 13 16:45:33 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration

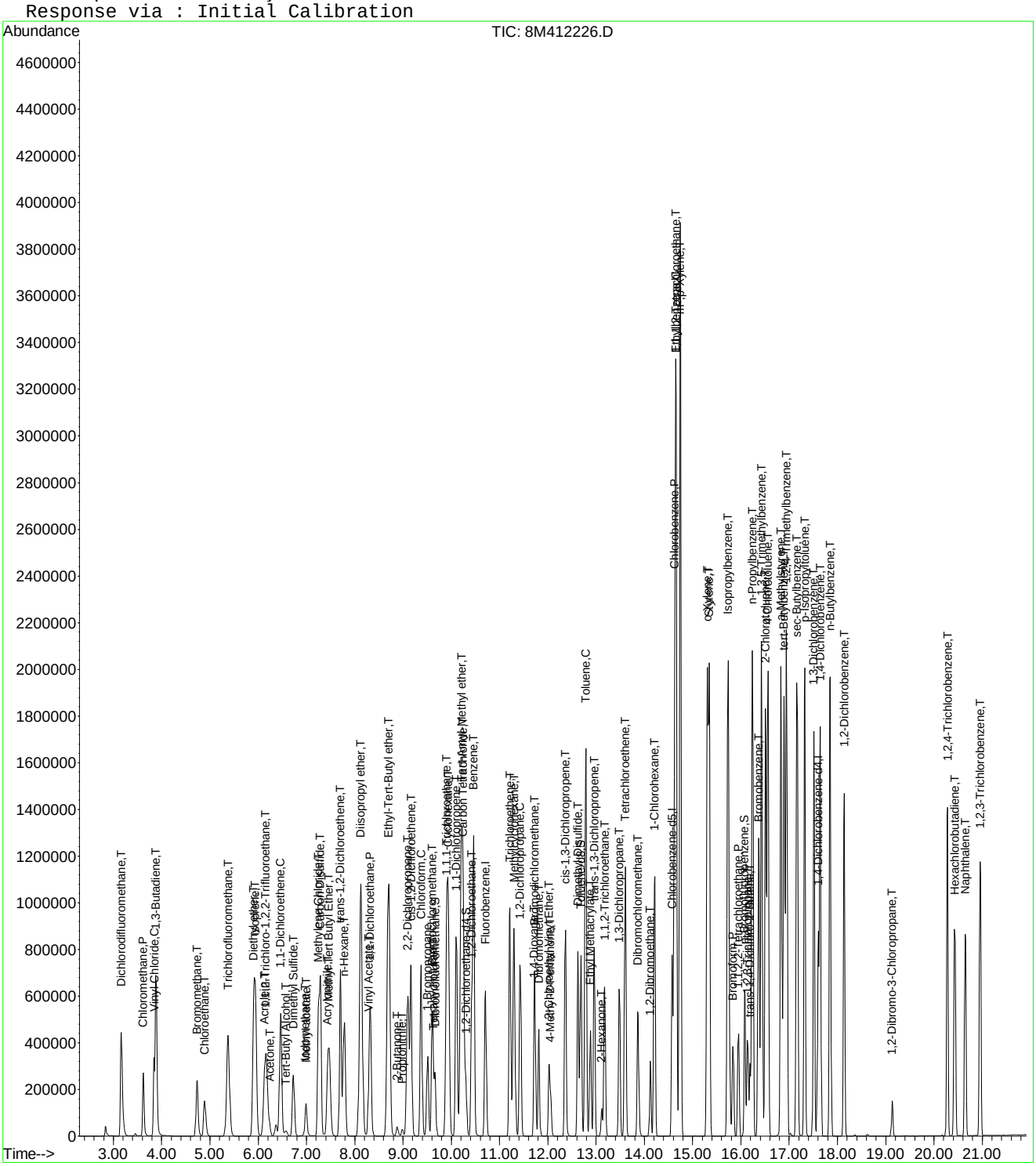

8M412226.D 8260WT.M Fri May 13 16:45:33 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	809533	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	559075	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	296193	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	460283	53.9056 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 215.64%#		
43) 1,2-Dichloroethane-d4	10.30	65	488116	52.5821 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 210.32%#		
58) Toluene-d8	12.68	98	1540572	52.8075 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 211.24%#		
80) p-Bromofluorobenzene	16.08	95	623735	51.1573 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 204.64%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	1463283	109.1068 ug/L	100
3) Chloromethane	3.62	50	778702	97.2380 ug/L	98
4) Vinyl Chloride	3.84	62	968312	103.4979 ug/L	95
5) 1,3-Butadiene	3.88	54	896569	120.4972 ug/L	95
6) Bromomethane	4.73	94	605228	129.8677 ug/L	99
7) Chloroethane	4.89	64	528153	103.4126 ug/L	90
8) Trichlorofluoromethane	5.37	101	1782726	101.4754 ug/L	99
9) Diethyl ether	5.90	59	828091	197.4770 ug/L	79
10) Isoprene	5.94	67	1080684	101.8037 ug/L	78
11) Acrolein	6.14	56	38655	109.5572 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	833546	101.0906 ug/L	97
13) Acetone	6.24	43	97515	109.1944 ug/L	100
14) 1,1-Dichloroethene	6.46	61	1323999	100.6729 ug/L	93
15) Tert-Butyl Alcohol	6.57	59	114220	387.5328 ug/L	91
16) Dimethyl Sulfide	6.73	62	489571	106.5996 ug/L	82
17) Iodomethane	6.99	142	416890	244.5557 ug/L	97
18) Methyl acetate	7.00	43	252444	104.3161 ug/L #	81
19) Methylene Chloride	7.24	84	827241	98.5346 ug/L	53
20) Carbon Disulfide	7.29	76	2766110	99.3432 ug/L	100
21) Acrylonitrile	7.43	53	126153	113.2272 ug/L	98
22) Methyl Tert Butyl Ether	7.46	73	1894494	105.8643 ug/L	87
23) trans-1,2-Dichloroethene	7.70	61	1203701	99.1822 ug/L	93
24) n-Hexane	7.78	57	926226	105.3097 ug/L	84
25) Diisopropyl ether	8.12	45	3699807	196.0386 ug/L #	90
26) Vinyl Acetate	8.29	43	860820	101.8643 ug/L #	88
27) 1,1-Dichloroethane	8.32	63	1521237	101.5567 ug/L	96
28) Ethyl-Tert-Butyl ether	8.70	59	4005676	198.2271 ug/L	89
29) 2-Butanone	8.88	43	145126	112.6698 ug/L #	81
30) Propionitrile	8.98	54	83038	219.1648 ug/L	97
31) 2,2-Dichloropropane	9.11	77	1610615	102.0557 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	935490	99.9944 ug/L	89
33) Chloroform	9.37	83	1766988	98.8341 ug/L	98
34) 1-Bromopropane	9.51	122	139657	108.5299 ug/L	100
35) Bromochloromethane	9.61	130	488678	102.8480 ug/L	66
36) Tetrahydrofuran	9.63	42	167812	187.5699 ug/L #	61
38) 1,1,1-Trichloroethane	9.91	97	1724504	102.7713 ug/L	100
39) Cyclohexane	9.94	56	1185537	102.8628 ug/L #	66
40) 1,1-Dichloropropene	10.11	75	1293224	100.8377 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	3634806	198.1264 ug/L	88
42) Carbon Tetrachloride	10.25	117	1534696	103.3979 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412227.D 8260WT.M Fri May 13 17:14:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	1177876	103.7352	ug/L		85
46)	Benzene	10.46	78	3298928	95.8405	ug/L		87
47)	Trichloroethene	11.21	130	903490	101.9036	ug/L		97
48)	Methylcyclohexane	11.30	83	1389528	104.6454	ug/L		83
49)	1,2-Dichloropropane	11.43	63	755128	102.5297	ug/L		73
50)	Bromodichloromethane	11.73	83	1351612	104.6036	ug/L		99
51)	1,4-Dioxane	11.72	88	16303	473.9624	ug/L		68
52)	Dibromomethane	11.81	93	445130	101.6543	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.02	63	333977	105.4228	ug/L		92
54)	4-Methyl-2-Pentanone	12.05	58	138980	110.1494	ug/L	#	77
55)	cis-1,3-Dichloropropene	12.36	75	1387475	105.9136	ug/L		100
56)	Dimethyl Disulfide	12.62	79	745504	111.3169	ug/L		97
59)	Toluene	12.78	91	3455614	95.2346	ug/L		99
60)	Ethyl Methacrylate	12.88	69	731009	113.5760	ug/L		70
62)	trans-1,3-Dichloropropene	12.96	75	1236182	107.9445	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	564076	103.0604	ug/L		99
64)	2-Hexanone	13.12	58	126268	114.5366	ug/L	#	79
65)	1,3-Dichloropropane	13.48	76	1021082	105.2672	ug/L		74
66)	Tetrachloroethene	13.60	164	752835	101.4023	ug/L		95
67)	Dibromochloromethane	13.87	129	856499	109.6525	ug/L		100
68)	1,2-Dibromoethane	14.12	107	577701	107.6426	ug/L		98
69)	1-Chlorohexane	14.21	91	1222720	103.0385	ug/L		82
70)	Chlorobenzene	14.62	112	2332247	97.2408	ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	947925	106.1463	ug/L		99
72)	Ethylbenzene	14.66	106	1275519	98.8771	ug/L		97
73)	m-,p-Xylene	14.75	106	3009424	194.2602	ug/L		98
74)	o-Xylene	15.31	106	1490638	100.8068	ug/L		93
75)	Styrene	15.35	104	2503721	102.8373	ug/L		88
76)	Bromoform	15.83	173	517827	114.0520	ug/L		100
77)	Isopropylbenzene	15.73	105	3913141	95.4433	ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	624965	106.8610	ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	192087	107.3268	ug/L		97
82)	trans-1,4-Dichloro-2-Buten	16.18	53	189214	128.4818	ug/L	#	59
83)	n-Propylbenzene	16.24	91	4599057	93.6644	ug/L		100
84)	Bromobenzene	16.37	156	968011	102.1426	ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	3401719	97.9556	ug/L		97
86)	2-Chlorotoluene	16.52	91	3177047	93.8267	ug/L		98
87)	4-Chlorotoluene	16.56	91	2899171	96.0712	ug/L		96
88)	a-Methylstyrene	16.84	118	1639166	103.6811	ug/L		90
89)	tert-Butylbenzene	16.90	134	654025	99.4199	ug/L		85
90)	1,2,4-Trimethylbenzene	16.95	105	3479295	96.7054	ug/L		97
91)	sec-Butylbenzene	17.17	105	3947832	94.2785	ug/L		98
92)	p-Isopropyltoluene	17.32	119	3328450	94.4148	ug/L		97
93)	1,3-Dichlorobenzene	17.52	146	1834740	98.9074	ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	1818309	96.6271	ug/L		92
95)	n-Butylbenzene	17.85	91	3308330	94.4002	ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	1606254	97.0179	ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	125368	107.7020	ug/L		87
98)	1,2,4-Trichlorobenzene	20.28	180	1227926	100.7076	ug/L		99
99)	Hexachlorobutadiene	20.43	225	569213	100.5231	ug/L		97
100)	Naphthalene	20.65	128	1852486	101.2968	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	1021163	98.5794	ug/L		100

(#) = qualifier out of range (m) = manual integration
8M412227.D 8260WT.M Fri May 13 17:14:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration

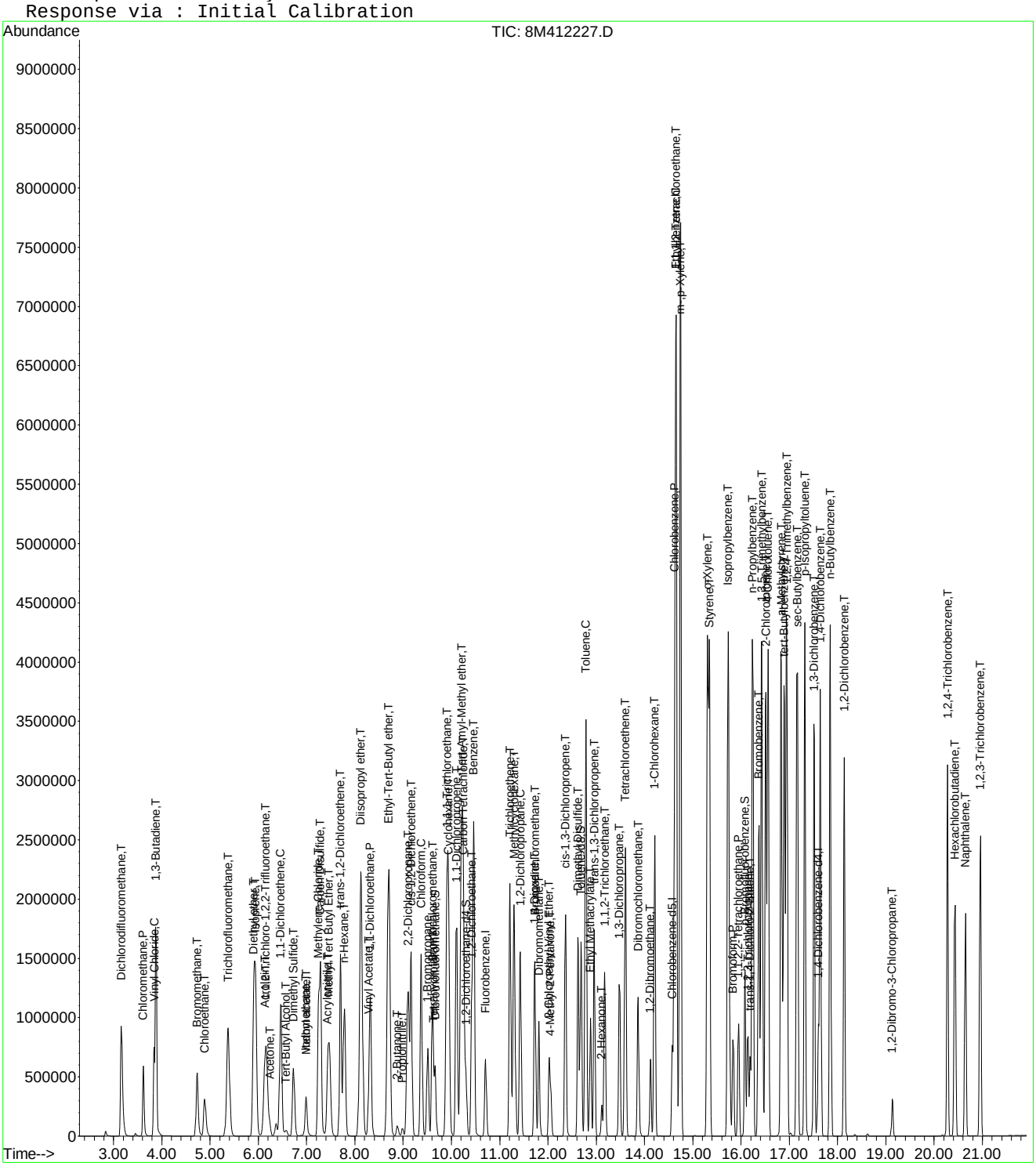

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	828540	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	578848	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	301401	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	898145	101.4517 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 405.80%#		
43) 1,2-Dichloroethane-d4	10.30	65	939848	98.0779 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 392.32%#		
58) Toluene-d8	12.68	98	2984162	97.8805 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 391.52%#		
80) p-Bromofluorobenzene	16.08	95	1242720	99.7023 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 398.80%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	2830517	203.5621 ug/L	98
3) Chloromethane	3.62	50	1586058	194.4056 ug/L	97
4) Vinyl Chloride	3.83	62	1935009	201.0738 ug/L	94
5) 1,3-Butadiene	3.88	54	1684964	212.5477 ug/L	94
6) Bromomethane	4.72	94	1358068	271.2231 ug/L	99
7) Chloroethane	4.89	64	1084803	206.5255 ug/L	90
8) Trichlorofluoromethane	5.37	101	3516760	195.1756 ug/L	99
10) Isoprene	5.94	67	2136665	196.1573 ug/L	78
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1662142	196.5993 ug/L	95
13) Acetone	6.24	43	187748	200.7963 ug/L	97
14) 1,1-Dichloroethene	6.46	61	2649821	196.6732 ug/L	92
15) Tert-Butyl Alcohol	6.58	59	6024	20.0950 ug/L #	87
16) Dimethyl Sulfide	6.73	62	976862	205.8822 ug/L	82
17) Iodomethane	6.99	142	896947	398.7987 ug/L	100
18) Methyl acetate	7.00	43	504293	201.4324 ug/L #	81
19) Methylene Chloride	7.25	84	1684780	196.5546 ug/L	52
20) Carbon Disulfide	7.29	76	5386210	189.2120 ug/L	99
21) Acrylonitrile	7.45	53	30354	26.0447 ug/L #	32
22) Methyl Tert Butyl Ether	7.46	73	3711011	200.6529 ug/L	87
23) trans-1,2-Dichloroethene	7.70	61	2410498	194.2902 ug/L	92
24) n-Hexane	7.78	57	1821777	199.7288 ug/L	84
26) Vinyl Acetate	8.29	43	1796217	206.9060 ug/L #	88
27) 1,1-Dichloroethane	8.32	63	3042055	197.9863 ug/L	95
29) 2-Butanone	8.88	43	271767	199.8193 ug/L #	77
30) Propionitrile	8.90	54	208	0.5280 ug/L #	1
31) 2,2-Dichloropropane	9.11	77	3202633	197.6970 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	1875631	195.8883 ug/L	89
33) Chloroform	9.37	83	3506648	191.9199 ug/L	99
34) 1-Bromopropane	9.51	122	286158	214.2313 ug/L	99
35) Bromochloromethane	9.60	130	980373	200.7807 ug/L	66
36) Tetrahydrofuran	9.62	42	2381	2.6275 ug/L	87
38) 1,1,1-Trichloroethane	9.91	97	3410306	197.7909 ug/L	99
39) Cyclohexane	9.94	56	2357393	198.8974 ug/L #	66
40) 1,1-Dichloropropene	10.10	75	2601175	197.8946 ug/L	96
42) Carbon Tetrachloride	10.25	117	3062767	200.6417 ug/L	99
45) 1,2-Dichloroethane	10.42	62	2313662	198.0324 ug/L	85
46) Benzene	10.46	78	6379817	182.1771 ug/L	89
47) Trichloroethene	11.21	130	1810459	198.9741 ug/L	97
48) Methylcyclohexane	11.30	83	2755373	200.4193 ug/L	83
49) 1,2-Dichloropropane	11.43	63	1528407	202.0331 ug/L	74

(#) = qualifier out of range (m) = manual integration
8M412228.D 8260WT.M Fri May 13 17:43:34 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
50)	Bromodichloromethane	11.73	83	2716764	204.0895 ug/L		99
51)	1,4-Dioxane	11.73	88	3865	104.9352 ug/L	#	18
52)	Dibromomethane	11.81	93	898971	200.1154 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.02	63	631656	192.7236 ug/L		90
54)	4-Methyl-2-Pentanone	12.05	58	262702	198.3957 ug/L	#	75
55)	cis-1,3-Dichloropropene	12.36	75	2784162	205.9153 ug/L		99
56)	Dimethyl Disulfide	12.62	79	1518705	215.4711 ug/L		95
59)	Toluene	12.78	91	6564353	175.9274 ug/L		96
60)	Ethyl Methacrylate	12.88	69	1429837	209.8161 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	2468609	205.4771 ug/L		98
63)	1,1,2-Trichloroethane	13.18	97	1124672	197.6019 ug/L		100
64)	2-Hexanone	13.12	58	237678	200.9290 ug/L	#	81
65)	1,3-Dichloropropane	13.48	76	2023247	199.9545 ug/L		76
66)	Tetrachloroethene	13.60	164	1546618	200.8018 ug/L		97
67)	Dibromochloromethane	13.87	129	1726523	210.5823 ug/L		100
68)	1,2-Dibromoethane	14.12	107	1163160	207.0667 ug/L		99
69)	1-Chlorohexane	14.21	91	2414147	195.6413 ug/L		83
70)	Chlorobenzene	14.62	112	4641169	187.6386 ug/L		94
71)	1,1,1,2-Tetrachloroethane	14.66	131	1929251	206.8372 ug/L		99
72)	Ethylbenzene	14.66	106	2611321	195.8267 ug/L		88
73)	m-,p-Xylene	14.75	106	5876234	367.8657 ug/L		83
74)	o-Xylene	15.31	106	3012318	196.4899 ug/L		98
75)	Styrene	15.35	104	4913204	194.1235 ug/L		86
76)	Bromoform	15.83	173	1052629	218.7989 ug/L		100
77)	Isopropylbenzene	15.73	105	7284624	172.7305 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	1237171	205.8673 ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	386738	209.7906 ug/L	#	54
82)	trans-1,4-Dichloro-2-Buten	16.19	53	382467	243.6526 ug/L		76
83)	n-Propylbenzene	16.24	91	8244387	166.5110 ug/L		93
84)	Bromobenzene	16.37	156	1935166	200.1305 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	6482975	183.9948 ug/L		98
86)	2-Chlorotoluene	16.52	91	6108308	178.8549 ug/L		99
87)	4-Chlorotoluene	16.56	91	5513221	180.5508 ug/L		99
88)	a-Methylstyrene	16.84	118	3255254	200.4995 ug/L		89
89)	tert-Butylbenzene	16.90	134	1351569	202.1005 ug/L		92
90)	1,2,4-Trimethylbenzene	16.95	105	6531416	179.2445 ug/L		97
91)	sec-Butylbenzene	17.17	105	7342730	173.9814 ug/L		97
92)	p-Isopropyltoluene	17.32	119	6352010	178.7315 ug/L		99
93)	1,3-Dichlorobenzene	17.52	146	3640547	193.1654 ug/L		90
94)	1,4-Dichlorobenzene	17.64	146	3593548	188.4603 ug/L		91
95)	n-Butylbenzene	17.85	91	6198060	175.4375 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	3171699	188.9651 ug/L		89
97)	1,2-Dibromo-3-Chloropropan	19.13	75	249646	207.5645 ug/L		88
98)	1,2,4-Trichlorobenzene	20.28	180	2480626	199.7296 ug/L		99
99)	Hexachlorobutadiene	20.43	225	1169411	202.7981 ug/L		98
100)	Naphthalene	20.65	128	3580198	192.0323 ug/L		97
101)	1,2,3-Trichlorobenzene	20.96	180	2040570	193.9298 ug/L		100

(#) = qualifier out of range (m) = manual integration
8M412228.D 8260WT.M Fri May 13 17:43:35 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration

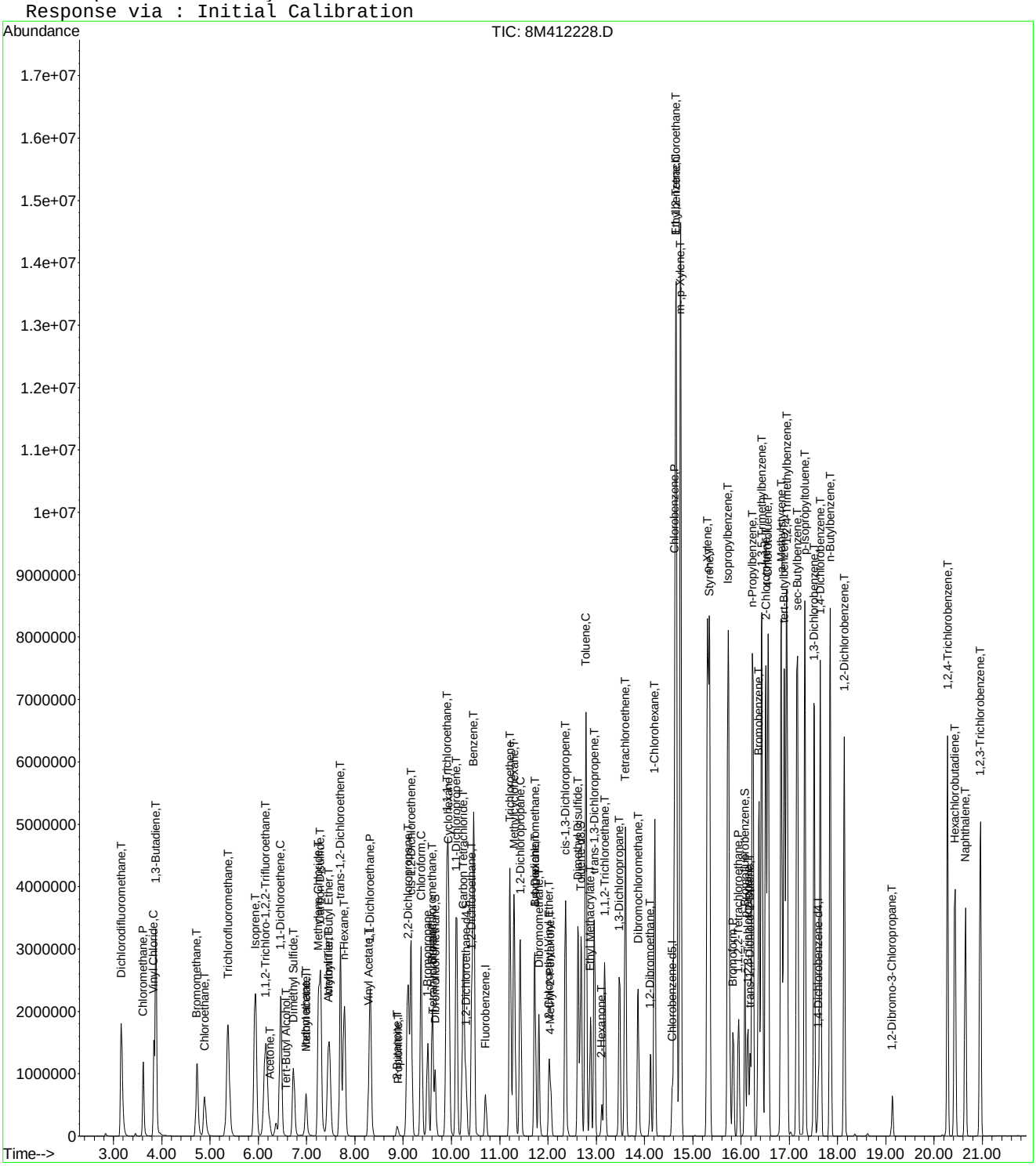

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	855409	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	599314	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	305726	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	1411837	154.4674 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 617.88%#		
43) 1,2-Dichloroethane-d4	10.30	65	1466019	148.1811 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 592.72%#		
58) Toluene-d8	12.69	98	4594713	145.5601 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 582.24%#		
80) p-Bromofluorobenzene	16.08	95	1918996	151.7813 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 607.12%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	4191932	292.0014 ug/L	97
3) Chloromethane	3.62	50	2474035	293.7212 ug/L	97
4) Vinyl Chloride	3.83	62	2956347	297.5552 ug/L	94
5) 1,3-Butadiene	3.87	54	2605506	318.3447 ug/L	94
6) Bromomethane	4.72	94	2177550	421.2239 ug/L	98
7) Chloroethane	4.89	64	1688005	311.2693 ug/L	90
8) Trichlorofluoromethane	5.37	101	5387662	289.6161 ug/L	99
9) Diethyl ether	5.90	59	1306432	295.4610 ug/L	80
10) Isoprene	5.93	67	3377164	300.3032 ug/L	78
11) Acrolein	6.14	56	70572	185.7401 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	2563878	293.7317 ug/L	94
13) Acetone	6.24	43	283185	293.3529 ug/L	90
14) 1,1-Dichloroethene	6.46	61	4031745	289.8421 ug/L	91
15) Tert-Butyl Alcohol	6.58	59	181796	587.3907 ug/L	90
16) Dimethyl Sulfide	6.73	62	1553493	317.1280 ug/L	81
17) Iodomethane	6.99	142	1347307	580.2206 ug/L	98
18) Methyl acetate	7.00	43	800046	309.5287 ug/L #	80
19) Methylene Chloride	7.24	84	2587731	292.4144 ug/L	52
20) Carbon Disulfide	7.29	76	8228181	279.9683 ug/L	98
21) Acrylonitrile	7.43	53	228227	189.6753 ug/L	94
22) Methyl Tert Butyl Ether	7.46	73	5605924	293.5892 ug/L	88
23) trans-1,2-Dichloroethene	7.70	61	3678699	287.1957 ug/L	92
24) n-Hexane	7.78	57	2863434	304.0691 ug/L	86
25) Diisopropyl ether	8.12	45	5819647	292.7898 ug/L #	89
26) Vinyl Acetate	8.30	43	2819503	314.5767 ug/L #	87
27) 1,1-Dichloroethane	8.32	63	4586531	289.1293 ug/L	94
28) Ethyl-Tert-Butyl ether	8.70	59	6190206	290.3321 ug/L	89
29) 2-Butanone	8.88	43	439359	312.8959 ug/L #	76
30) Propionitrile	8.99	54	133197	327.4673 ug/L	95
31) 2,2-Dichloropropane	9.10	77	4821388	288.2735 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	2847005	287.9976 ug/L	89
33) Chloroform	9.37	83	5197860	275.5447 ug/L	100
34) 1-Bromopropane	9.51	122	450012	326.3179 ug/L	100
35) Bromochloromethane	9.61	130	1490221	295.6112 ug/L	66
36) Tetrahydrofuran	9.63	42	271736	290.4491 ug/L #	62
38) 1,1,1-Trichloroethane	9.91	97	5126354	287.9792 ug/L	98
39) Cyclohexane	9.94	56	3733392	305.0987 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	3923871	289.1471 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	5639573	291.3713 ug/L	88
42) Carbon Tetrachloride	10.25	117	4598150	291.7629 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412229.D 8260WT.M Fri May 13 18:12:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.43	62	3468738	287.5726 ug/L	86
46)	Benzene	10.46	78	9065861	250.7462 ug/L	93
47)	Trichloroethene	11.21	130	2772282	295.1106 ug/L	97
48)	Methylcyclohexane	11.30	83	4327357	304.8748 ug/L	84
49)	1,2-Dichloropropane	11.43	63	2350729	300.9718 ug/L	74
50)	Bromodichloromethane	11.73	83	4051493	294.7973 ug/L	99
51)	1,4-Dioxane	11.72	88	26614	699.8767 ug/L	67
52)	Dibromomethane	11.81	93	1369945	295.3776 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.03	63	1006317	297.3917 ug/L	90
54)	4-Methyl-2-Pentanone	12.06	58	424684	310.6522 ug/L #	76
55)	cis-1,3-Dichloropropene	12.36	75	4156310	297.7431 ug/L	97
56)	Dimethyl Disulfide	12.63	79	2359825	324.2911 ug/L	94
59)	Toluene	12.78	91	9135213	236.4669 ug/L	90
60)	Ethyl Methacrylate	12.88	69	2228037	315.7801 ug/L	71
62)	trans-1,3-Dichloropropene	12.96	75	3700845	297.5240 ug/L	96
63)	1,1,2-Trichloroethane	13.18	97	1730199	293.6104 ug/L	100
64)	2-Hexanone	13.11	58	381967	311.8816 ug/L #	78
65)	1,3-Dichloropropane	13.49	76	3080177	294.0141 ug/L	76
66)	Tetrachloroethene	13.60	164	2374435	297.7522 ug/L	96
67)	Dibromochloromethane	13.87	129	2638145	310.7838 ug/L	100
68)	1,2-Dibromoethane	14.13	107	1778561	305.8085 ug/L	99
69)	1-Chlorohexane	14.21	91	3712592	290.5924 ug/L	84
70)	Chlorobenzene	14.63	112	6754240	263.7433 ug/L	90
71)	1,1,1,2-Tetrachloroethane	14.65	131	2967650	307.3001 ug/L	100
72)	Ethylbenzene	14.65	106	4014412	290.7661 ug/L	70
73)	m-,p-Xylene	14.75	106	8357822	505.3514 ug/L	70
74)	o-Xylene	15.31	106	4530840	285.4488 ug/L	88
75)	Styrene	15.35	104	7050702	269.0641 ug/L	82
76)	Bromoform	15.84	173	1602587	321.7373 ug/L	99
77)	Isopropylbenzene	15.73	105	9900817	226.7477 ug/L	90
79)	1,1,2,2-Tetrachloroethane	15.95	83	1885953	309.3861 ug/L	98
81)	1,2,3-Trichloropropane	16.14	110	581198	310.8176 ug/L	61
82)	trans-1,4-Dichloro-2-Buten	16.18	53	589705	370.3601 ug/L	82
83)	n-Propylbenzene	16.25	91	10768378	214.4110 ug/L	86
84)	Bromobenzene	16.37	156	2947671	300.5290 ug/L	99
85)	1,3,5-Trimethylbenzene	16.43	105	8890651	248.7580 ug/L	92
86)	2-Chlorotoluene	16.51	91	7868844	227.1449 ug/L	92
87)	4-Chlorotoluene	16.57	91	7782731	251.2687 ug/L	93
88)	a-Methylstyrene	16.84	118	4955768	300.9205 ug/L	86
89)	tert-Butylbenzene	16.90	134	2046401	301.6701 ug/L	95
90)	1,2,4-Trimethylbenzene	16.95	105	8903769	240.8932 ug/L	89
91)	sec-Butylbenzene	17.17	105	9867862	230.5051 ug/L	91
92)	p-Isopropyltoluene	17.32	119	8738927	242.4155 ug/L	94
93)	1,3-Dichlorobenzene	17.52	146	5319954	278.2806 ug/L	87
94)	1,4-Dichlorobenzene	17.64	146	5248511	271.3593 ug/L	88
95)	n-Butylbenzene	17.85	91	8408157	234.6279 ug/L	92
96)	1,2-Dichlorobenzene	18.14	146	4717385	277.0787 ug/L	87
97)	1,2-Dibromo-3-Chloropropan	19.13	75	377070	309.0741 ug/L	91
98)	1,2,4-Trichlorobenzene	20.28	180	3677657	291.9206 ug/L	98
99)	Hexachlorobutadiene	20.43	225	1780695	304.4378 ug/L	96
100)	Naphthalene	20.65	128	5216751	275.8542 ug/L	95
101)	1,2,3-Trichlorobenzene	20.96	180	3064908	287.1593 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412229.D 8260WT.M Fri May 13 18:12:36 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration

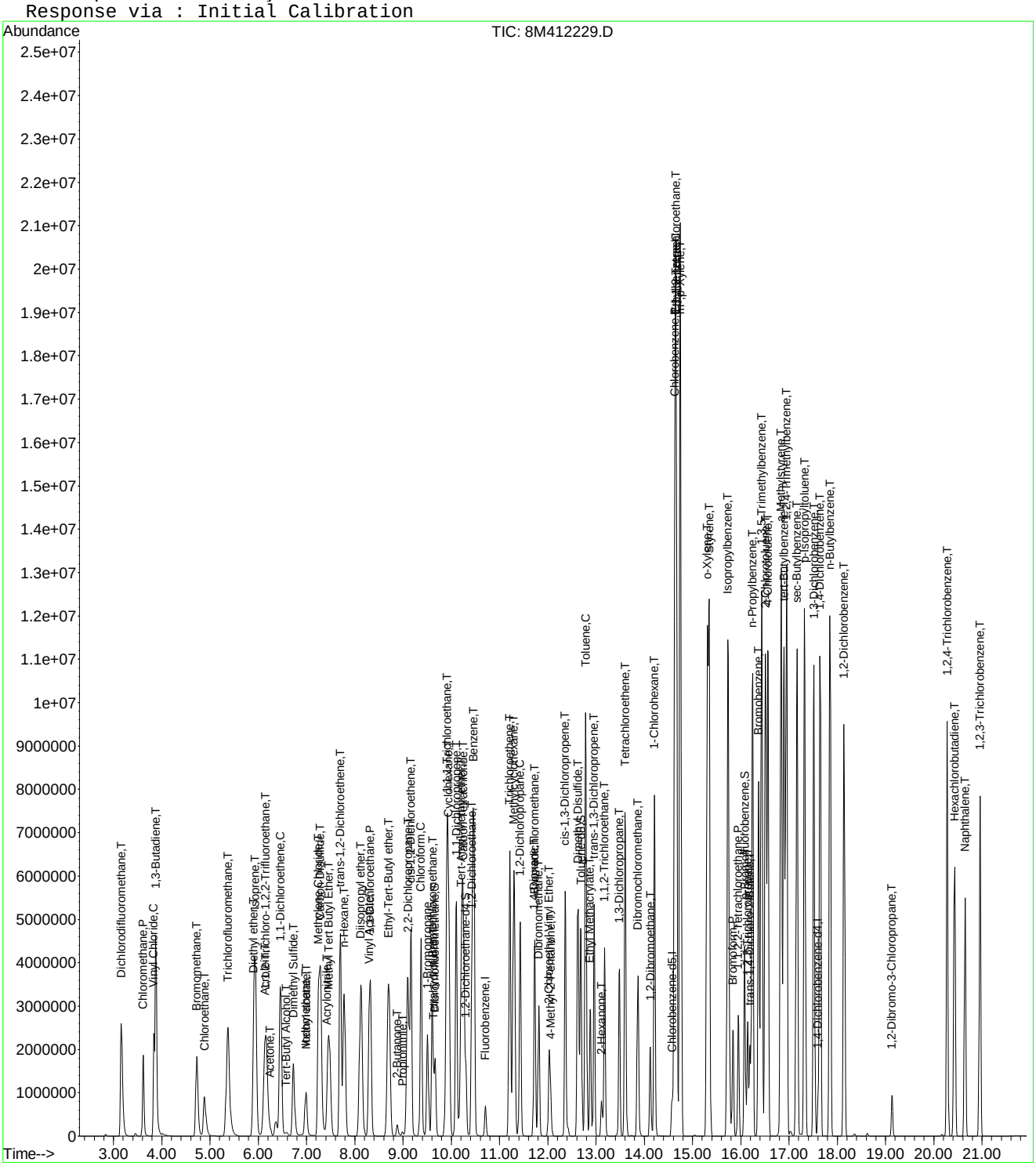

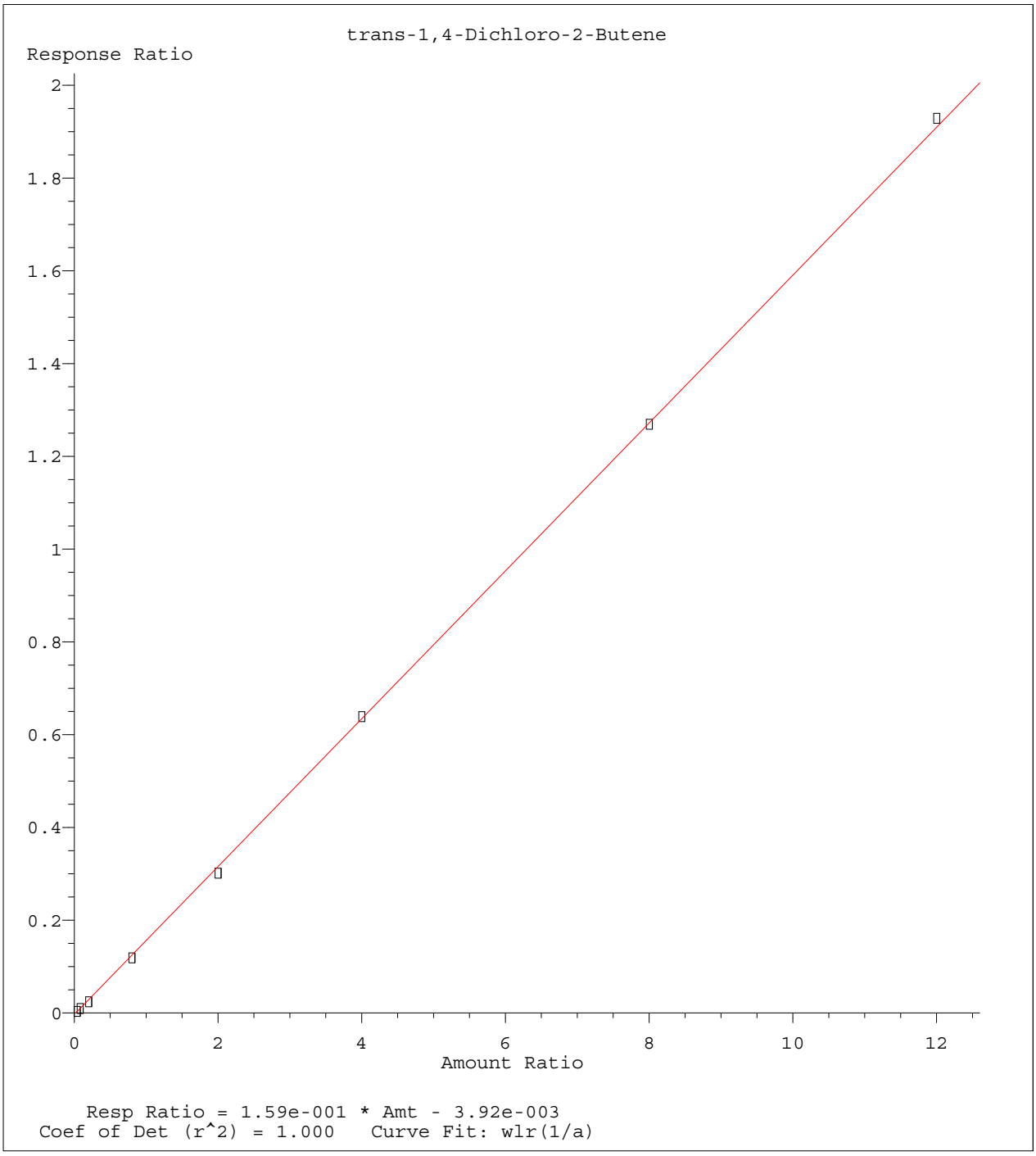

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

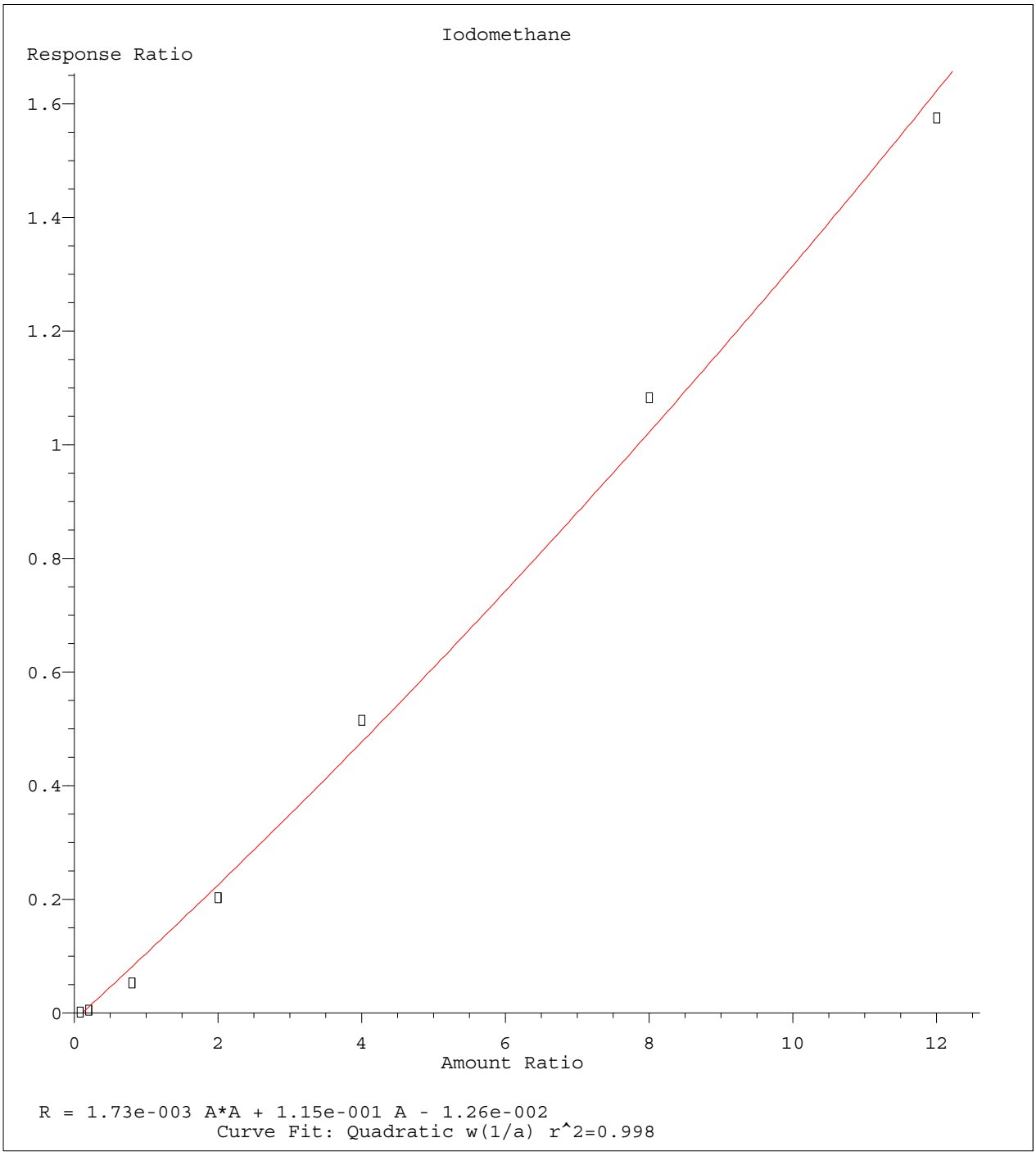

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

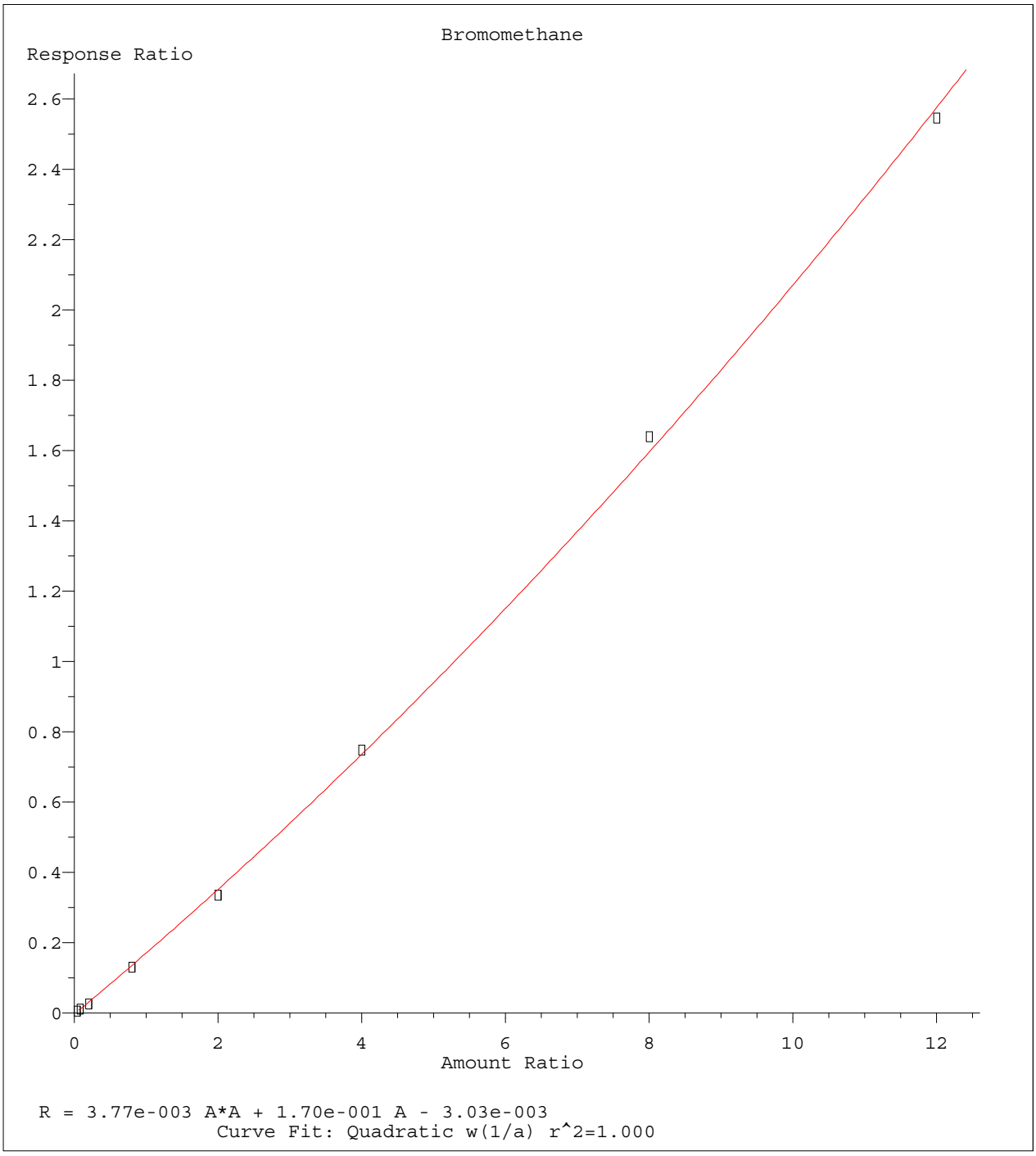

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:44:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Tue May 17 11:43:20 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	837879	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	574720	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	304324	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	229742	25.5204 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.08%		
43) 1,2-Dichloroethane-d4	10.31	65	238672	24.7259 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.92%		
58) Toluene-d8	12.68	98	776362	25.8115 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.24%		
80) p-Bromofluorobenzene	16.07	95	315683	25.0519 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.20%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	761591	54.2141 ug/L	99
3) Chloromethane	3.62	50	415589	50.6814 ug/L	100
4) Vinyl Chloride	3.84	62	509607	52.3810 ug/L	100
5) 1,3-Butadiene	3.88	54	347562	42.6002 ug/L	97
6) Bromomethane	4.73	94	272060	46.3924 ug/L	99
7) Chloroethane	4.88	64	285509	53.3336 ug/L	98
8) Trichlorofluoromethane	5.37	101	849580	46.9313 ug/L	100
9) Diethyl ether	5.90	59	451307	104.4282 ug/L	99
10) Isoprene	5.93	67	582863	53.0208 ug/L	99
11) Acrolein	6.13	56	38877	100.4722 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	419584	49.3091 ug/L	97
13) Acetone	6.23	43	54234	57.5310 ug/L	94
14) 1,1-Dichloroethene	6.46	61	622831	45.9700 ug/L	99
15) Tert-Butyl Alcohol	6.59	59	59797	197.9422 ug/L	97
16) Dimethyl Sulfide	6.73	62	351814	72.6234 ug/L	98
17) Iodomethane	6.99	142	92716	26.2832 ug/L	99
18) Methyl acetate	7.00	43	127540	50.0514 ug/L	98
19) Methylene Chloride	7.25	84	417642	48.4385 ug/L	99
20) Carbon Disulfide	7.29	76	1199899	42.3200 ug/L	100
21) Acrylonitrile	7.43	53	65324	53.4074 ug/L	93
22) Methyl Tert Butyl Ether	7.46	73	949572	50.8859 ug/L	97
23) trans-1,2-Dichloroethene	7.70	61	598296	48.0666 ug/L	99
24) n-Hexane	7.77	57	425106	45.9930 ug/L	99
25) Diisopropyl ether	8.13	45	2040382	105.1615 ug/L	98
26) Vinyl Acetate	8.29	43	415568	46.7802 ug/L	99
27) 1,1-Dichloroethane	8.32	63	721661	46.6846 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	2040020	98.1343 ug/L	99
29) 2-Butanone	8.88	43	73394	52.9905 ug/L	99
30) Propionitrile	8.98	54	42290	104.7756 ug/L	100
31) 2,2-Dichloropropane	9.10	77	780073	47.8861 ug/L	99
32) cis-1,2-Dichloroethene	9.16	96	470465	48.9162 ug/L	98
33) Chloroform	9.38	83	860252	47.1317 ug/L	100
34) 1-Bromopropane	9.51	122	98585	71.5615 ug/L	98
35) Bromochloromethane	9.60	130	234493	47.5456 ug/L	99
36) Tetrahydrofuran	9.62	42	86049	94.3281 ug/L	99
38) 1,1,1-Trichloroethane	9.90	97	825167	47.5949 ug/L	100
39) Cyclohexane	9.93	56	586721	48.8808 ug/L	97
40) 1,1-Dichloropropene	10.10	75	627217	47.4632 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1962875	103.9618 ug/L	99
42) Carbon Tetrachloride	10.24	117	711823	46.2363 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M412232.D 8260WT.M Tue May 17 11:44:38 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	108	0.00
2	T	Dichlorodifluoromethane	50.0000	54.2141	-8.4	112	0.00
3	P	Chloromethane	50.0000	50.6814	-1.4	111	0.00
4	C	Vinyl Chloride	50.0000	52.3811	-4.8	112	-0.01
5	T	1,3-Butadiene	50.0000	42.6002	14.8	89	0.00
6	T	Bromomethane	50.0000	46.3924	7.2	104	-0.01
7	T	Chloroethane	50.0000	53.3336	-6.7	117	-0.01
8	T	Trichlorofluoromethane	50.0000	46.9313	6.1	101	-0.01
9	T	Diethyl ether	100.0000	104.4282	-4.4	116	0.00
10	T	Isoprene	50.0000	53.0208	-6.0	117	0.00
11	T	Acrolein	50.0000	100.4722	-100.9#	220	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	49.3091	1.4	108	0.00
13	T	Acetone	50.0000	57.5310	-15.1	118	-0.01
14	C	1,1-Dichloroethene	50.0000	45.9700	8.1	100	0.00
15	T	Tert-Butyl Alcohol	200.0000	197.9423	1.0	108	0.01
16	T	Dimethyl Sulfide	50.0000	72.6234	-45.2#	159	0.00
17	T	Iodomethane	50.0000	26.2832	47.4#	59	0.01
18	T	Methyl acetate	50.0000	50.0514	-0.1	111	0.00
19	T	Methylene Chloride	50.0000	48.4385	3.1	107	0.00
20	T	Carbon Disulfide	50.0000	42.3200	15.4	94	0.00
21	T	Acrylonitrile	50.0000	53.4074	-6.8	109	0.00
22	T	Methyl Tert Butyl Ether	50.0000	50.8859	-1.8	105	0.00
23	T	trans-1,2-Dichloroethene	50.0000	48.0666	3.9	105	0.00
24	T	n-Hexane	50.0000	45.9930	8.0	101	-0.01
25	T	Diisopropyl ether	100.0000	105.1615	-5.2	115	0.00
26	T	Vinyl Acetate	50.0000	46.7802	6.4	97	0.00
27	P	1,1-Dichloroethane	50.0000	46.6846	6.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.1343	1.9	104	0.00
29	T	2-Butanone	50.0000	52.9905	-6.0	110	0.00
30	T	Propionitrile	100.0000	104.7756	-4.8	111	0.00
31	T	2,2-Dichloropropane	50.0000	47.8861	4.2	102	0.00
32	T	cis-1,2-Dichloroethene	50.0000	48.9162	2.2	107	-0.01
33	C	Chloroform	50.0000	47.1317	5.7	102	0.00
34		1-Bromopropane	50.0000	71.5615	-43.1#	155	0.00
35	T	Bromochloromethane	50.0000	47.5456	4.9	102	0.00
36	T	Tetrahydrofuran	100.0000	94.3281	5.7	108	-0.01
37	S	Dibromofluoromethane	25.0000	25.5204	-2.1	109	0.00
38	T	1,1,1-Trichloroethane	50.0000	47.5949	4.8	101	0.00
39	T	Cyclohexane	50.0000	48.8808	2.2	109	0.00
40	T	1,1-Dichloropropene	50.0000	47.4632	5.1	102	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	103.9618	-4.0	111	0.00
42	T	Carbon Tetrachloride	50.0000	46.2363	7.5	98	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.7259	1.1	104	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	49.0148	2.0	103	0.00
46	T	Benzene	50.0000	48.5232	3.0	104	0.00
47	T	Trichloroethene	50.0000	51.0658	-2.1	110	0.00
48	T	Methylcyclohexane	50.0000	49.8573	0.3	109	0.00
49	C	1,2-Dichloropropane	50.0000	50.9747	-1.9	111	0.00
50	T	Bromodichloromethane	50.0000	48.3053	3.4	99	0.00
51	T	1,4-Dioxane	200.0000	216.9538	-8.5	110	0.01
52	T	Dibromomethane	50.0000	45.8126	8.4	99	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	51.2623	-2.5	104	0.00
54	T	4-Methyl-2-Pentanone	50.0000	51.8715	-3.7	107	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.8979	-7.8	111	0.00
56	T	Dimethyl Disulfide	50.0000	52.2714	-4.5	111	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	107	0.00
58	S	Toluene-d8	25.0000	25.8115	-3.2	108	0.00
59	C	Toluene	50.0000	49.0912	1.8	105	0.00
60	T	Ethyl Methacrylate	50.0000	55.9509	-11.9	113	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	50.6740	-1.3	102	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.0377	1.9	103	0.00
64	T	2-Hexanone	50.0000	53.6057	-7.2	112	0.00
65	T	1,3-Dichloropropane	50.0000	53.6720	-7.3	110	0.00
66	T	Tetrachloroethene	50.0000	47.8053	4.4	104	0.00
67	T	Dibromochloromethane	50.0000	49.6585	0.7	102	0.00
68	T	1,2-Dibromoethane	50.0000	51.1121	-2.2	105	0.00
69	T	1-Chlorohexane	50.0000	51.0611	-2.1	111	0.00
70	P	Chlorobenzene	50.0000	50.1844	-0.4	108	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	49.3793	1.2	103	0.00
72	C	Ethylbenzene	50.0000	48.2013	3.6	105	0.00
73	T	m-,p-Xylene	100.0000	101.1341	-1.1	108	0.00
74	T	o-Xylene	50.0000	50.5675	-1.1	108	0.00
75	T	Styrene	50.0000	51.5086	-3.0	105	0.00
76	P	Bromoform	50.0000	48.2227	3.6	99	0.00
77	T	Isopropylbenzene	50.0000	51.1140	-2.2	107	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	106	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	49.6172	0.8	103	0.00
80	S	p-Bromofluorobenzene	25.0000	25.0519	-0.2	108	0.00
81	T	1,2,3-Trichloropropane	50.0000	50.0849	-0.2	106	0.01
82	T	trans-1,4-Dichloro-2-Butene	50.0000	39.2043	21.6	86	0.00
83	T	n-Propylbenzene	50.0000	51.9237	-3.8	108	0.00
84	T	Bromobenzene	50.0000	49.4648	1.1	105	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	51.6344	-3.3	107	0.00
86	T	2-Chlorotoluene	50.0000	51.5639	-3.1	106	0.00
87	T	4-Chlorotoluene	50.0000	48.2650	3.5	108	0.00
88	T	a-Methylstyrene	50.0000	56.4132	-12.8	120	0.00
89	T	tert-Butylbenzene	50.0000	50.9494	-1.9	112	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	49.6617	0.7	105	0.00
91	T	sec-Butylbenzene	50.0000	51.3386	-2.7	108	0.00
92	T	p-Isopropyltoluene	50.0000	50.1261	-0.3	107	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.8943	-1.8	108	0.00
94	T	1,4-Dichlorobenzene	50.0000	50.4742	-0.9	110	0.00
95	T	n-Butylbenzene	50.0000	49.6520	0.7	105	0.00
96	T	1,2-Dichlorobenzene	50.0000	50.4907	-1.0	110	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	48.4851	3.0	100	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	50.1129	-0.2	107	0.00
99	T	Hexachlorobutadiene	50.0000	52.0919	-4.2	115	0.00
100	T	Naphthalene	50.0000	45.8047	8.4	95	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	47.7353	4.5	106	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412232.D 8260WT.M Sat May 14 18:09:03 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:21 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	709364	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	505399	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	272922	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	27428	100.2132 ug/L	99
3) 3-Chloro-1-propene	7.07	41	940418	104.3259 ug/L	82
4) 2-Chloro-1,3-butadiene	8.45	53	1188994	104.3183 ug/L	86
5) Ethyl Acetate	9.10	43	283167	104.3264 ug/L	95
6) Methacrylonitrile	9.25	67	155775	104.5365 ug/L #	63
7) Isobutyl Alcohol	9.25	43	17893	197.3629 ug/L #	96
9) Methyl methacrylate	11.42	41	298802	102.0346 ug/L	70
10) 2-Nitropropane	11.75	43	121321	95.8263 ug/L	97
13) Cyclohexanone	15.84	55	11401	102.1363 ug/L #	70

(#) = qualifier out of range (m) = manual integration
8M412321.D A9FOOWT.M Thu May 19 09:01:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

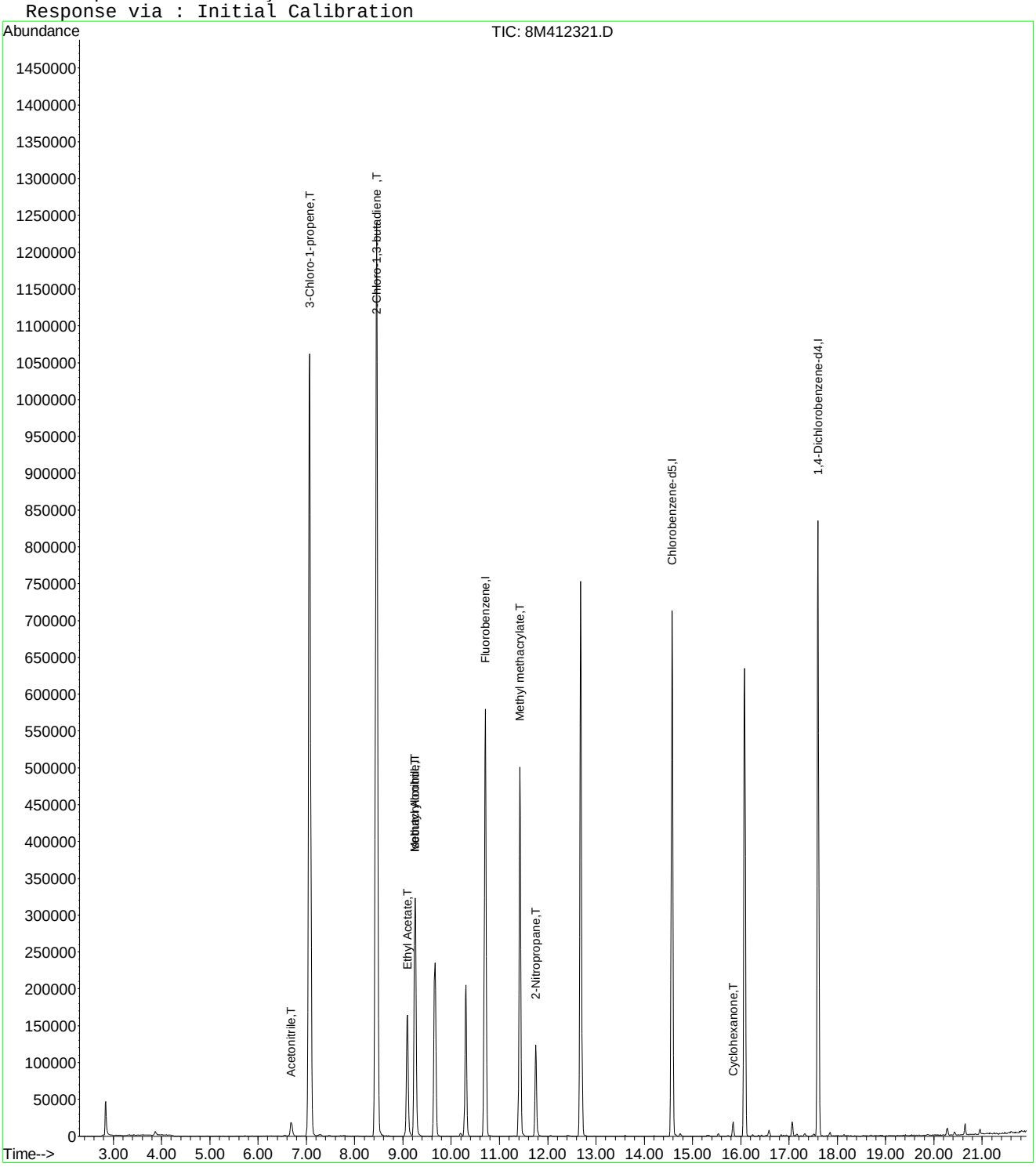

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	100.2132	-0.2	100	0.00
3	T	3-Chloro-1-propene	100.0000	104.3259	-4.3	100	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	104.3183	-4.3	100	0.00
5	T	Ethyl Acetate	100.0000	104.3264	-4.3	100	0.00
6	T	Methacrylonitrile	100.0000	104.5365	-4.5	100	0.00
7	T	Isobutyl Alcohol	200.0000	197.3629	1.3	100	-0.01
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.02
9	T	Methyl methacrylate	100.0000	102.0346	-2.0	100	0.00
10	T	2-Nitropropane	100.0000	95.8263	4.2	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	100.0000	102.1363	-2.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412321.D A9FOOWT.M Thu May 19 09:02:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:20:35 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	677339	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	488377	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	260939	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	13323	50.9795 ug/L	98
3) 3-Chloro-1-propene	7.07	41	453655	52.7060 ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	568765	52.2609 ug/L	87
5) Ethyl Acetate	9.09	43	131636	50.7913 ug/L	97
6) Methacrylonitrile	9.25	67	74064	52.0523 ug/L #	62
7) Isobutyl Alcohol	9.26	43	8483	97.9930 ug/L	95
9) Methyl methacrylate	11.42	41	143892	51.4593 ug/L	70
10) 2-Nitropropane	11.75	43	56559	46.7858 ug/L	95
13) Cyclohexanone	15.84	55	5225	48.9579 ug/L	83

(#) = qualifier out of range (m) = manual integration
8M412322.D A9FOOWT.M Thu May 19 09:20:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:19 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

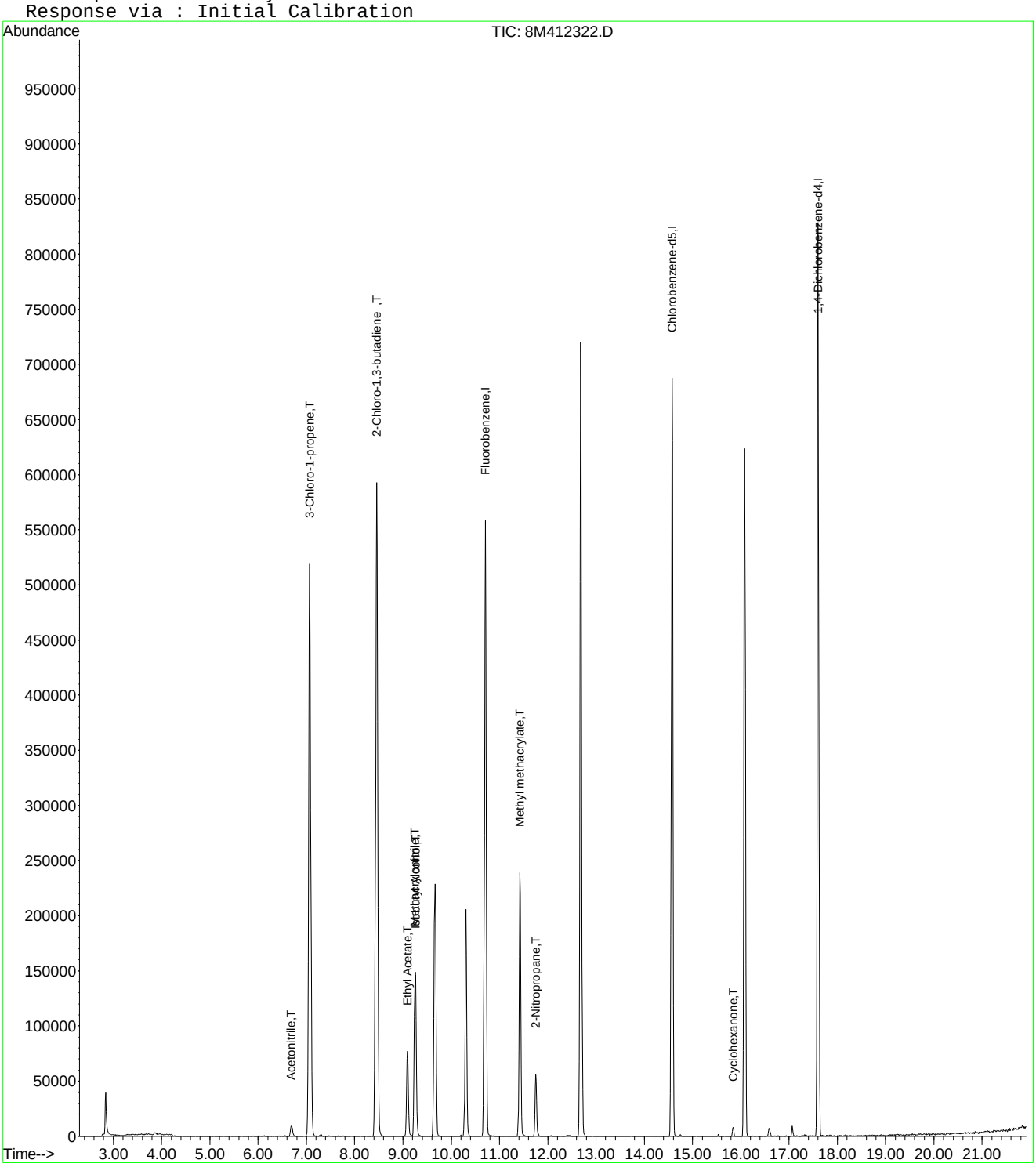

8M412322.D A9FOOWT.M Thu May 19 09:20:36 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	50.9795	-2.0	100	0.00
3	T	3-Chloro-1-propene	50.0000	52.7060	-5.4	100	0.00
4	T	2-Chloro-1,3-butadiene	50.0000	52.2609	-4.5	100	0.00
5	T	Ethyl Acetate	50.0000	50.7913	-1.6	100	0.00
6	T	Methacrylonitrile	50.0000	52.0523	-4.1	100	0.00
7	T	Isobutyl Alcohol	100.0000	97.9929	2.0	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.02
9	T	Methyl methacrylate	50.0000	51.4592	-2.9	100	0.00
10	T	2-Nitropropane	50.0000	46.7858	6.4	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	50.0000	48.9579	2.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412322.D A9FOOWT.M Thu May 19 09:02:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:22:33 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	652985	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	476539	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	256082	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	4873	19.3416 ug/L	80
3) 3-Chloro-1-propene	7.07	41	172467	20.7847 ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	219296	20.9015 ug/L	87
5) Ethyl Acetate	9.09	43	50385	20.1659 ug/L	100
6) Methacrylonitrile	9.26	67	28119	20.4992 ug/L #	63
7) Isobutyl Alcohol	9.27	43	2774	33.2395 ug/L #	8
9) Methyl methacrylate	11.42	41	55309	20.5176 ug/L	73
10) 2-Nitropropane	11.75	43	21584	18.5202 ug/L	99
13) Cyclohexanone	15.84	55	2230	21.2913 ug/L	87

(#) = qualifier out of range (m) = manual integration
8M412323.D A9FOOWT.M Thu May 19 09:22:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:21 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

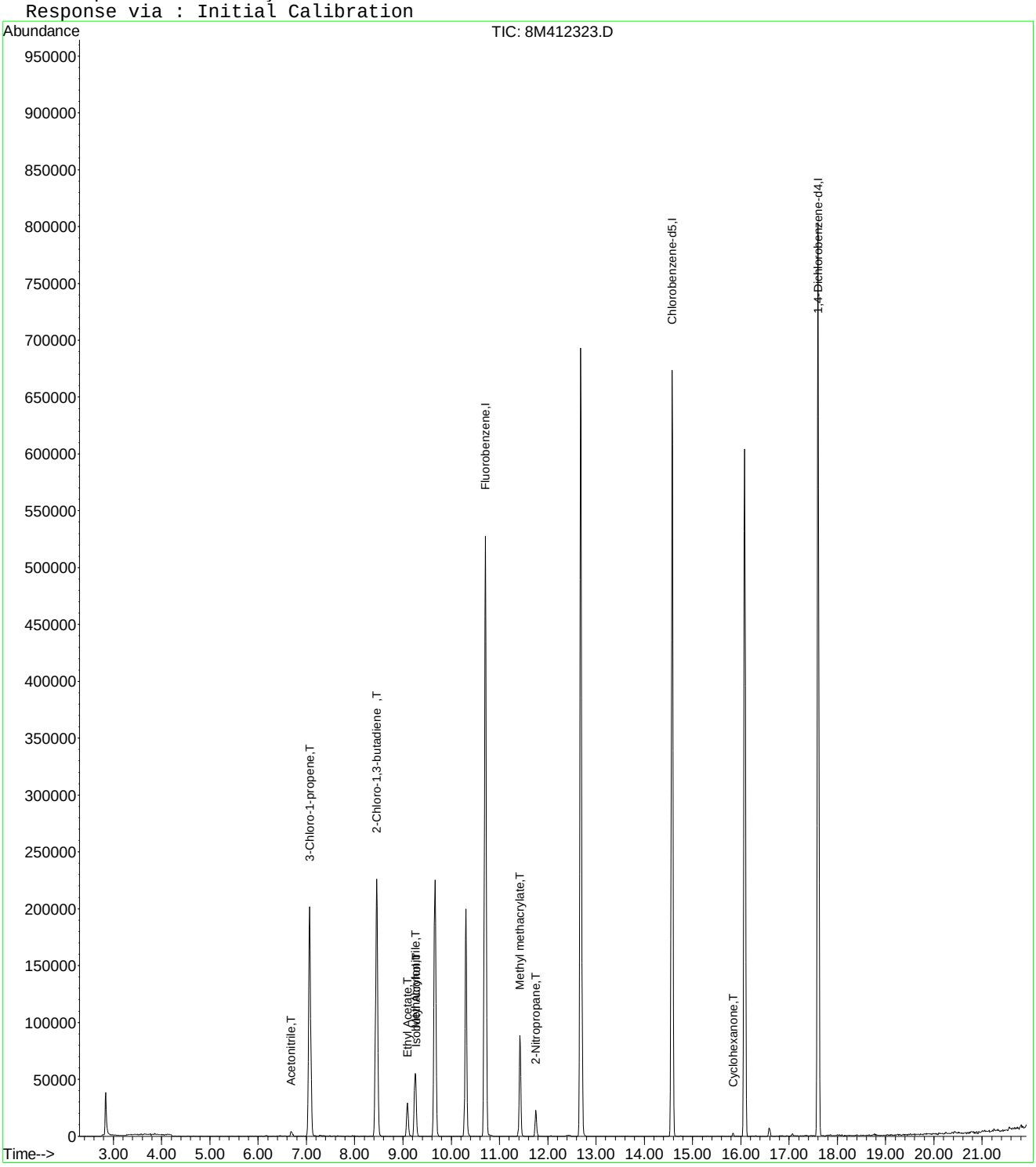

8M412323.D A9FOOWT.M Thu May 19 09:22:34 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	19.3416	3.3	100	0.00
3	T	3-Chloro-1-propene	20.0000	20.7847	-3.9	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	20.9015	-4.5	100	0.00
5	T	Ethyl Acetate	20.0000	20.1659	-0.8	100	0.00
6	T	Methacrylonitrile	20.0000	20.4992	-2.5	100	0.00
7	T	Isobutyl Alcohol	-1.0000	33.2395	0.0	0	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.18#
9	T	Methyl methacrylate	20.0000	20.5176	-2.6	100	0.00
10	T	2-Nitropropane	20.0000	18.5203	7.4	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	20.0000	21.2913	-6.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412323.D A9FOOWT.M Thu May 19 09:02:17 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:22:43 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	665645	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	483812	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	257678	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	405	1.5769 ug/L #	23
3) 3-Chloro-1-propene	7.07	41	40699	4.8115 ug/L	84
4) 2-Chloro-1,3-butadiene	8.45	53	48973	4.5789 ug/L	81
5) Ethyl Acetate	9.09	43	10675	4.1913 ug/L	95
6) Methacrylonitrile	9.26	67	5417	3.8740 ug/L #	72
7) Isobutyl Alcohol	9.27	43	441	5.1838 ug/L #	8
9) Methyl methacrylate	11.43	41	11811	4.2981 ug/L	65
10) 2-Nitropropane	11.76	43	4170	3.5100 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412324.D A9FOOWT.M Thu May 19 09:22:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:21 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

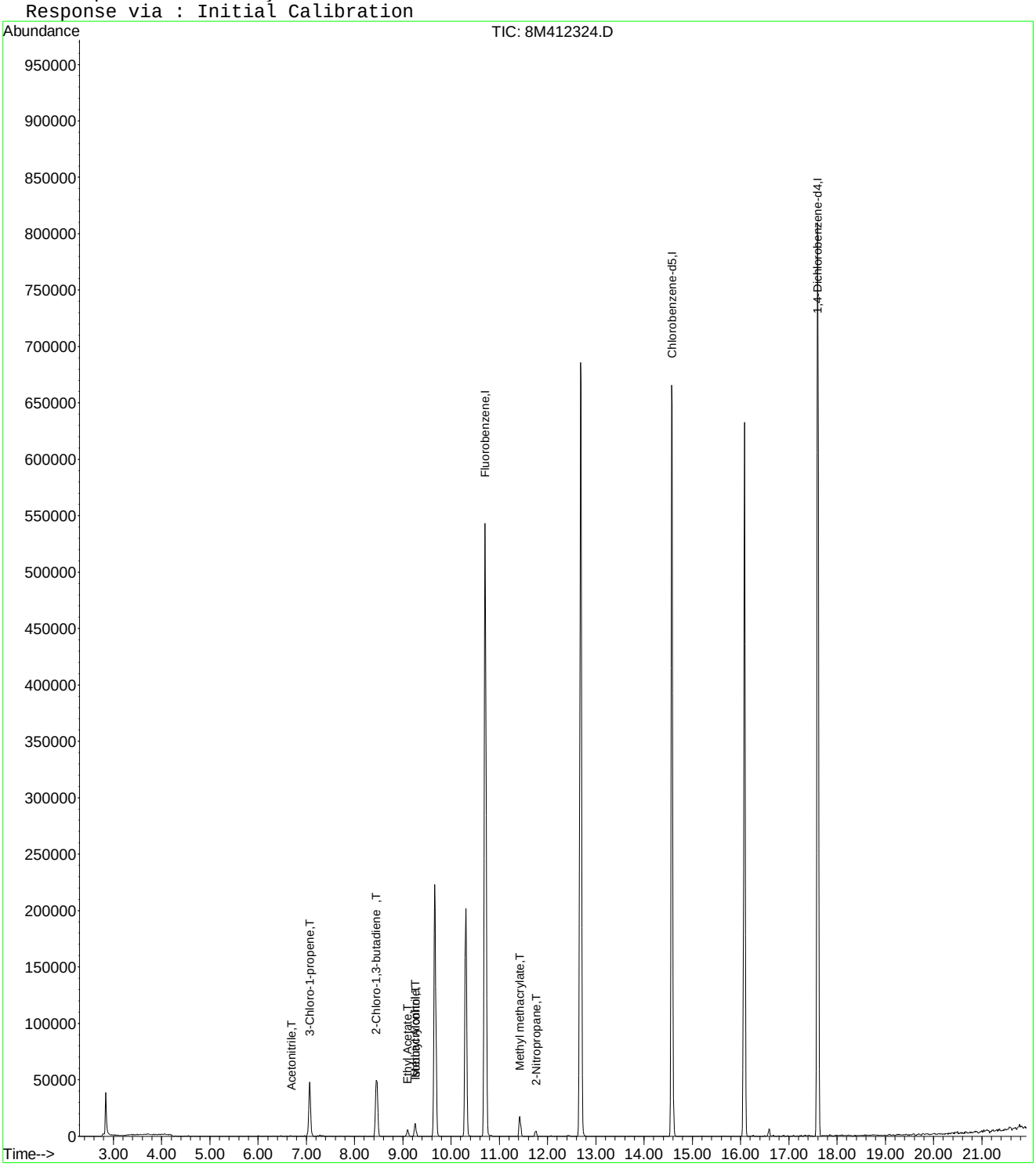

8M412324.D A9FOOWT.M Thu May 19 09:22:43 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	-1.0000	1.5769	0.0	0	0.00
3	T	3-Chloro-1-propene	5.0000	4.8115	3.8	100	0.00
4	T	2-Chloro-1,3-butadiene	5.0000	4.5789	8.4	100	0.00
5	T	Ethyl Acetate	5.0000	4.1913	16.2	100	0.00
6	T	Methacrylonitrile	5.0000	3.8740	22.5	100	0.00
7	T	Isobutyl Alcohol	-1.0000	5.1838	0.0	0	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.18#
9	T	Methyl methacrylate	5.0000	4.2981	14.0	100	0.00
10	T	2-Nitropropane	-1.0000	3.5100	0.0	0	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	0.0000	0.0	0	-15.84#

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412324.D A9FOOWT.M Thu May 19 09:02:03 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412325.D Vial: 7
Acq On : 17 May 2016 11:42 Operator: TMB
Sample : WG569079-06 200ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:27 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	682012	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	491515	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	261877	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.68	41	52022	197.6946 ug/L	97
3) 3-Chloro-1-propene	7.06	41	1768403	204.0468 ug/L	83
4) 2-Chloro-1,3-butadiene	8.46	53	2283706	208.4003 ug/L	87
5) Ethyl Acetate	9.09	43	537585	206.0040 ug/L	94
6) Methacrylonitrile	9.25	67	297408	207.5869 ug/L #	63
7) Isobutyl Alcohol	9.26	43	34441	395.1256 ug/L	95
9) Methyl methacrylate	11.42	41	577612	205.1526 ug/L	72
10) 2-Nitropropane	11.75	43	248395	204.0652 ug/L	95
13) Cyclohexanone	15.85	55	19752	184.4122 ug/L #	59

(#) = qualifier out of range (m) = manual integration
8M412325.D A9FOOWT.M Thu May 19 09:01:28 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412325.D Vial: 7
Acq On : 17 May 2016 11:42 Operator: TMB
Sample : WG569079-06 200ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

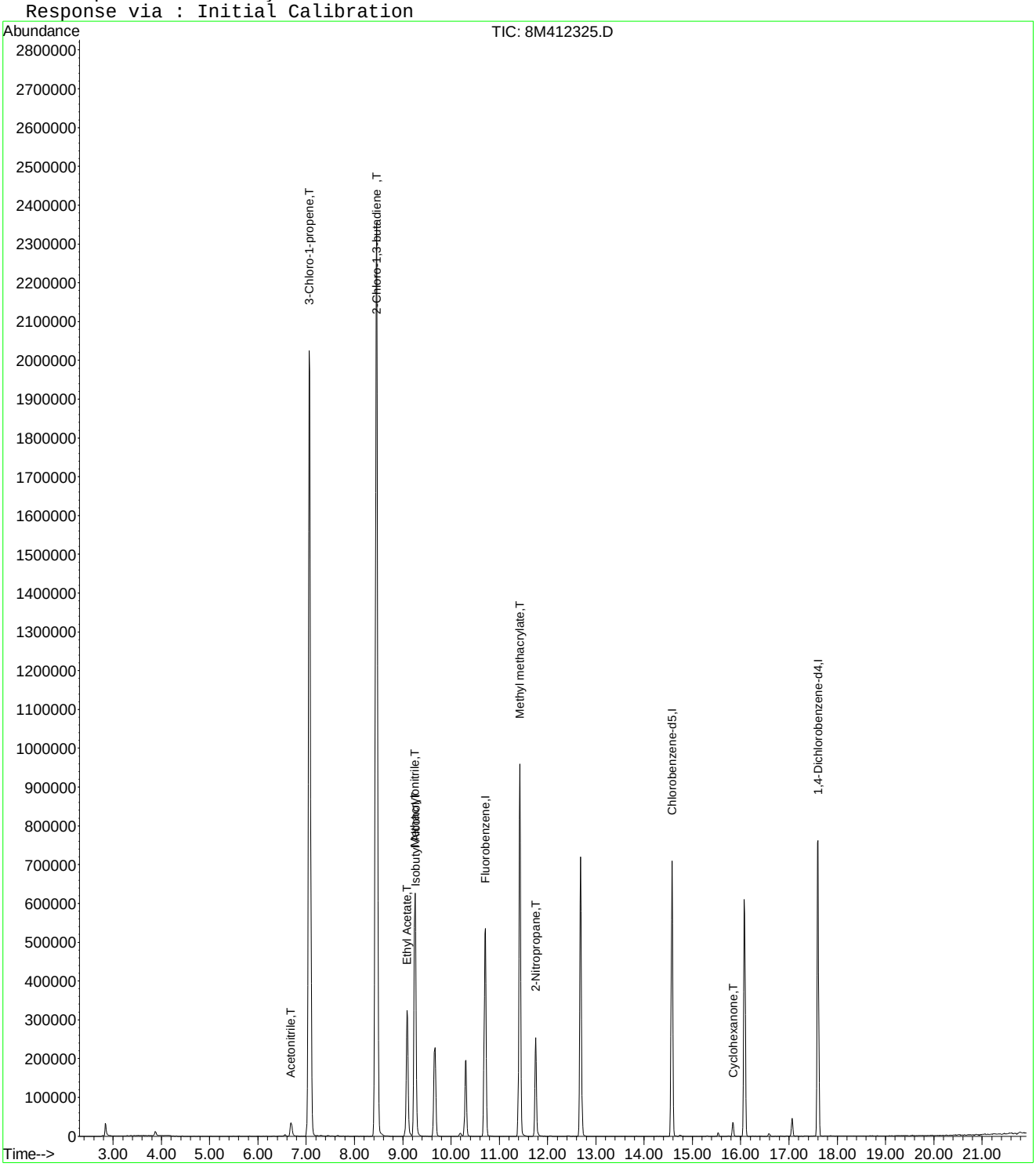

8M412325.D A9FOOWT.M Thu May 19 09:01:28 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412326.D Vial: 8
Acq On : 17 May 2016 12:40 Operator: TMB
Sample : WG569079-07 300ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:29 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	694903	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	496643	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	267309	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.69	41	81471	303.8636	ug/L	98
3) 3-Chloro-1-propene	7.06	41	2563559	290.3084	ug/L	83
4) 2-Chloro-1,3-butadiene	8.46	53	3270971	292.9562	ug/L	86
5) Ethyl Acetate	9.09	43	821184	308.8424	ug/L	95
6) Methacrylonitrile	9.25	67	451708	309.4374	ug/L #	62
7) Isobutyl Alcohol	9.26	43	55071	620.0836	ug/L	94
9) Methyl methacrylate	11.42	41	874430	304.8132	ug/L	70
10) 2-Nitropropane	11.75	43	392965	316.8456	ug/L	94
13) Cyclohexanone	15.84	55	33523	306.6233	ug/L #	61

(#) = qualifier out of range (m) = manual integration
8M412326.D A9FOOWT.M Thu May 19 09:01:29 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412326.D Vial: 8
Acq On : 17 May 2016 12:40 Operator: TMB
Sample : WG569079-07 300ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

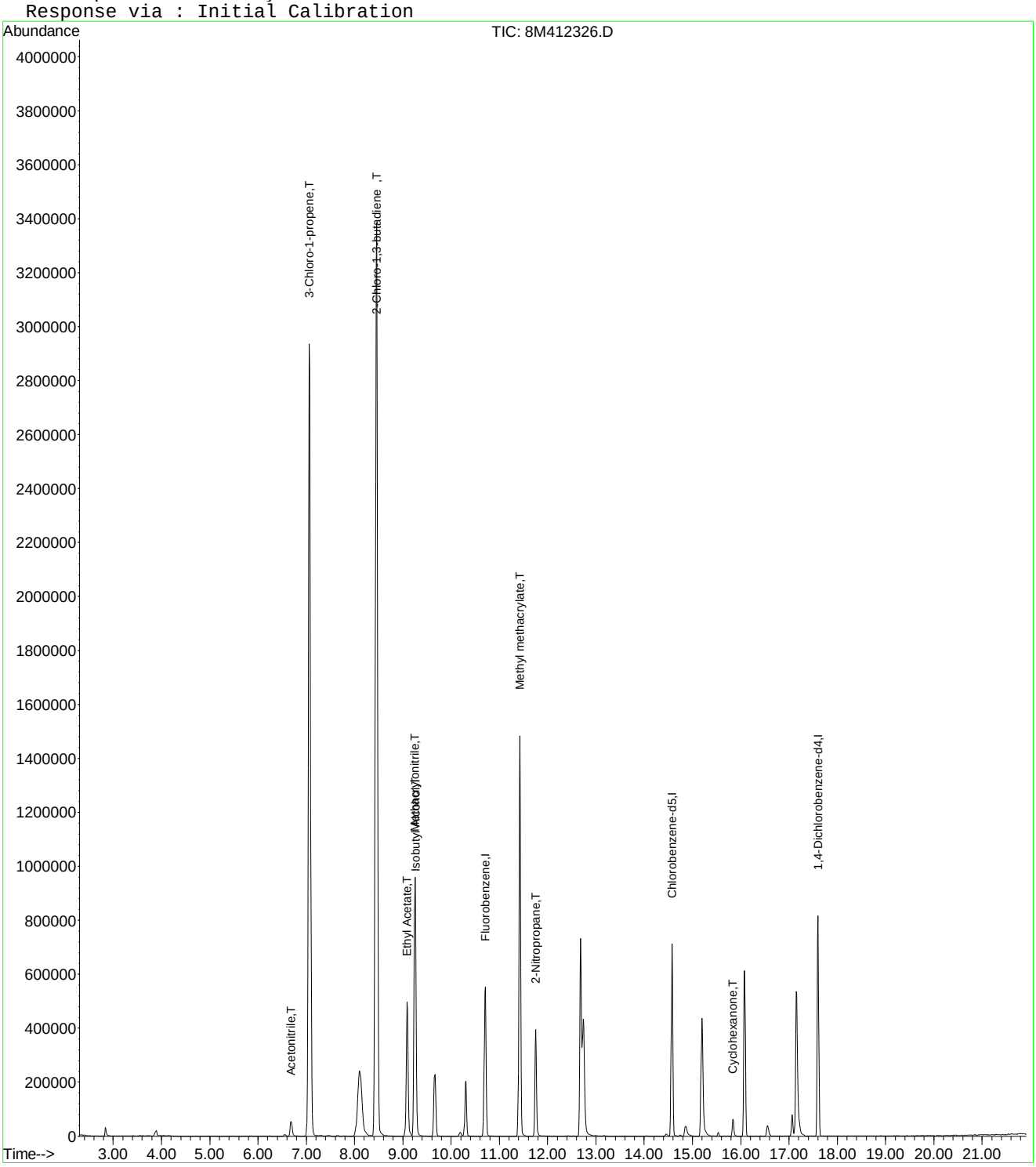

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412327.D Vial: 9
Acq On : 17 May 2016 13:10 Operator: TMB
Sample : WG569079-08 400ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:30 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	700514	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	502552	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	270883	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	110761	409.7980 ug/L	97
3) 3-Chloro-1-propene	7.07	41	3406131	382.6353 ug/L	82
4) 2-Chloro-1,3-butadiene	8.45	53	4356691	387.0705 ug/L	85
5) Ethyl Acetate	9.09	43	1116818	416.6642 ug/L	94
6) Methacrylonitrile	9.25	67	615482	418.2517 ug/L #	62
7) Isobutyl Alcohol	9.26	43	75472	842.9862 ug/L	97
9) Methyl methacrylate	11.42	41	1199317	414.7153 ug/L	71
10) 2-Nitropropane	11.75	43	538580	430.7760 ug/L	94
13) Cyclohexanone	15.84	55	45874	414.0575 ug/L #	55

(#) = qualifier out of range (m) = manual integration
8M412327.D A9FOOWT.M Thu May 19 09:01:31 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412327.D Vial: 9
Acq On : 17 May 2016 13:10 Operator: TMB
Sample : WG569079-08 400ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

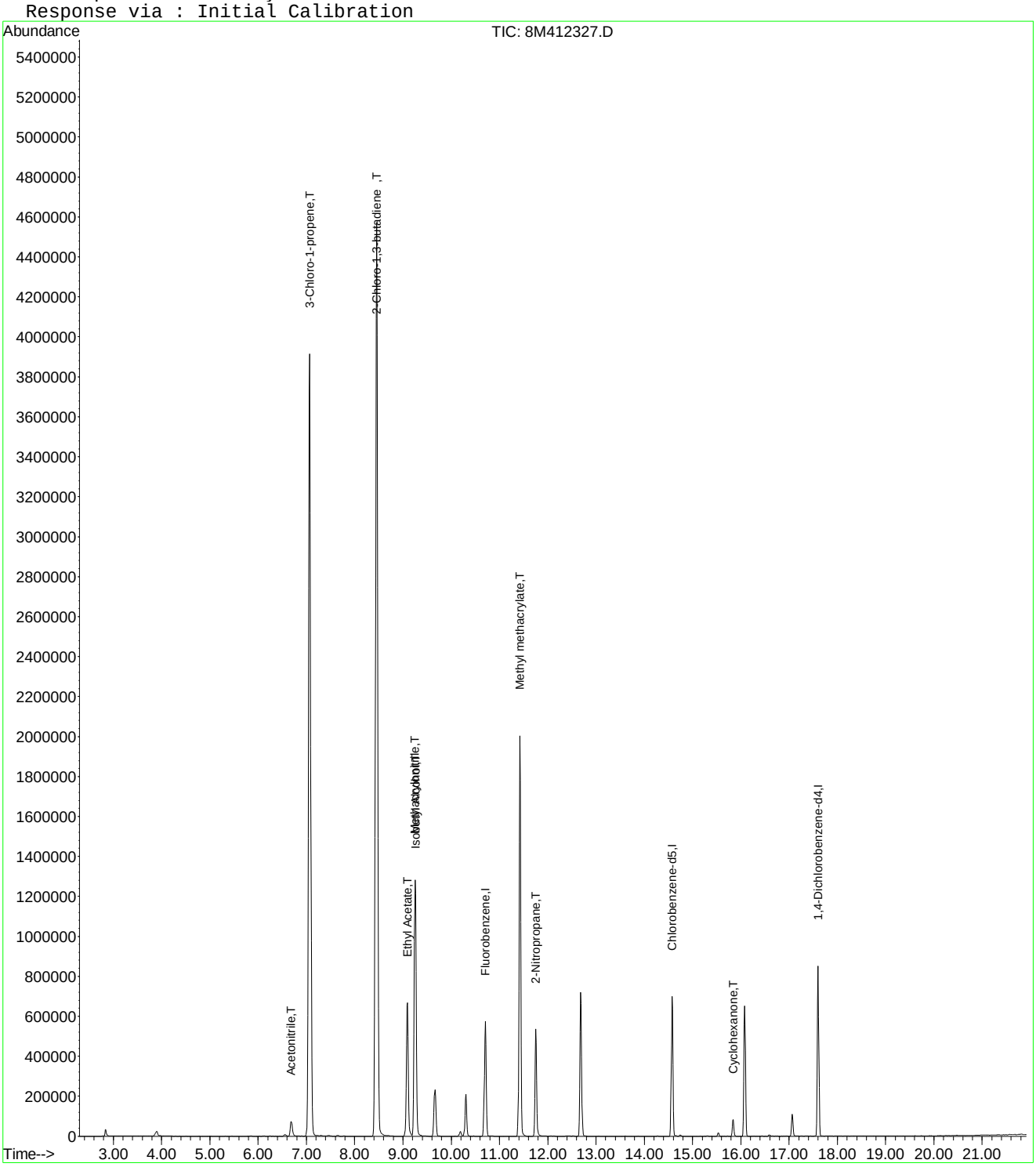

8M412327.D A9FOOWT.M Thu May 19 09:01:31 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412328.D Vial: 10
Acq On : 17 May 2016 13:39 Operator: TMB
Sample : WG569079-09 500ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:31 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	695694	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	495257	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	266442	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	132245	492.6753 ug/L	99
3) 3-Chloro-1-propene	7.06	41	4228273	478.2834 ug/L	82
4) 2-Chloro-1,3-butadiene	8.46	53	5390856	482.2693 ug/L	85
5) Ethyl Acetate	9.09	43	1321922	496.6017 ug/L	95
6) Methacrylonitrile	9.25	67	729852	499.4083 ug/L #	61
7) Isobutyl Alcohol	9.26	43	85200	958.2367 ug/L	96
9) Methyl methacrylate	11.42	41	1416438	493.1877 ug/L	72
10) 2-Nitropropane	11.75	43	637335	513.2956 ug/L	93
13) Cyclohexanone	15.84	55	52070	477.8160 ug/L #	61

(#) = qualifier out of range (m) = manual integration
8M412328.D A9FOOWT.M Thu May 19 09:01:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412328.D Vial: 10
Acq On : 17 May 2016 13:39 Operator: TMB
Sample : WG569079-09 500ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

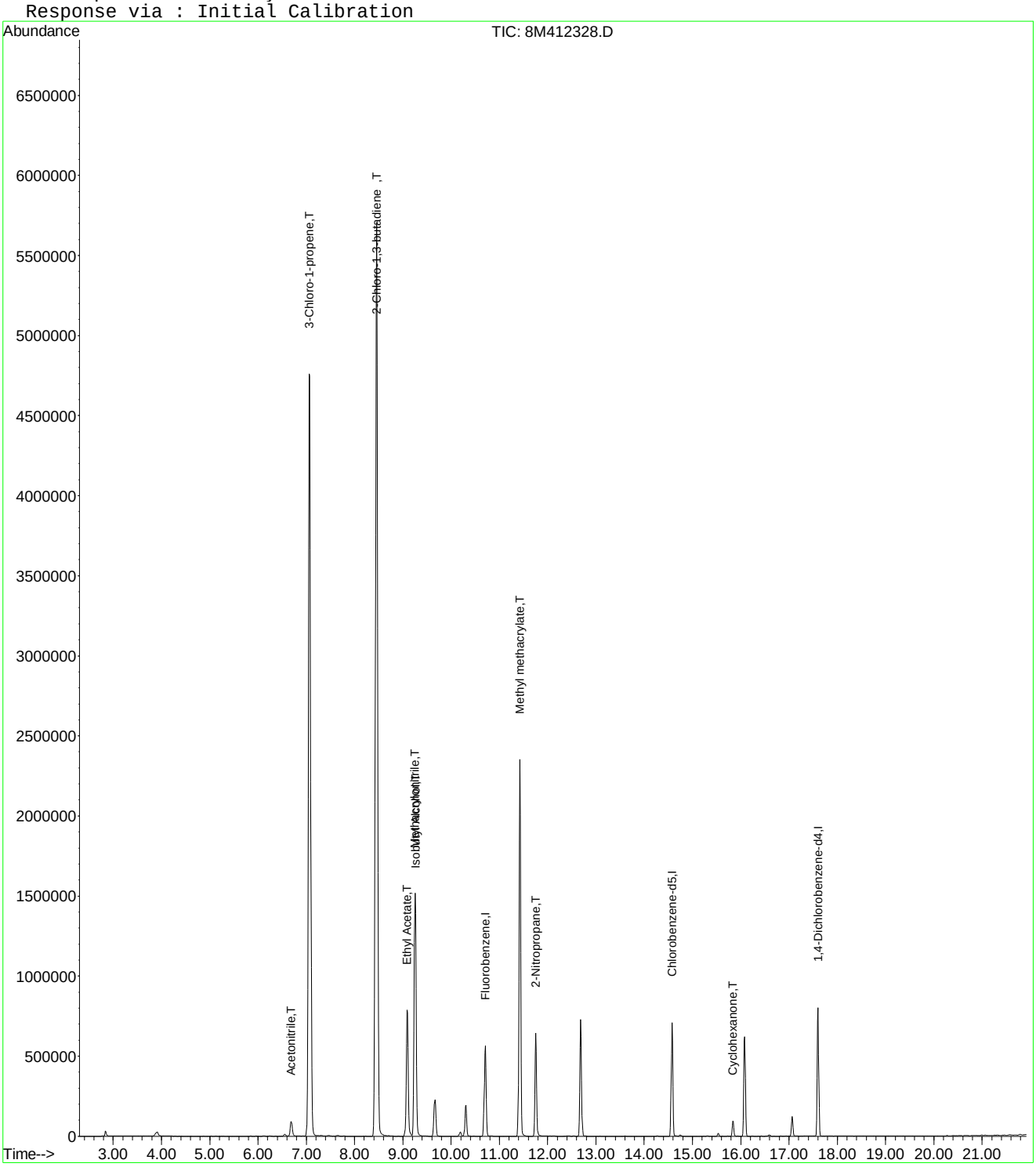

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:32 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	676765	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	486447	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	263036	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.69	41	29876	114.4154	ug/L	97
3) 3-Chloro-1-propene	7.07	41	858035	99.7718	ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	1224194	112.5803	ug/L	87
5) Ethyl Acetate	9.09	43	295545	114.1317	ug/L	96
6) Methacrylonitrile	9.25	67	161574	113.6509	ug/L #	63
7) Isobutyl Alcohol	9.26	43	19948	230.6285	ug/L	94
9) Methyl methacrylate	11.42	41	326465	116.8508	ug/L	72
10) 2-Nitropropane	11.75	43	131261	108.6716	ug/L	94
13) Cyclohexanone	15.83	55	10459	97.2189	ug/L #	74

(#) = qualifier out of range (m) = manual integration
8M412331.D A9FOOWT.M Thu May 19 09:01:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

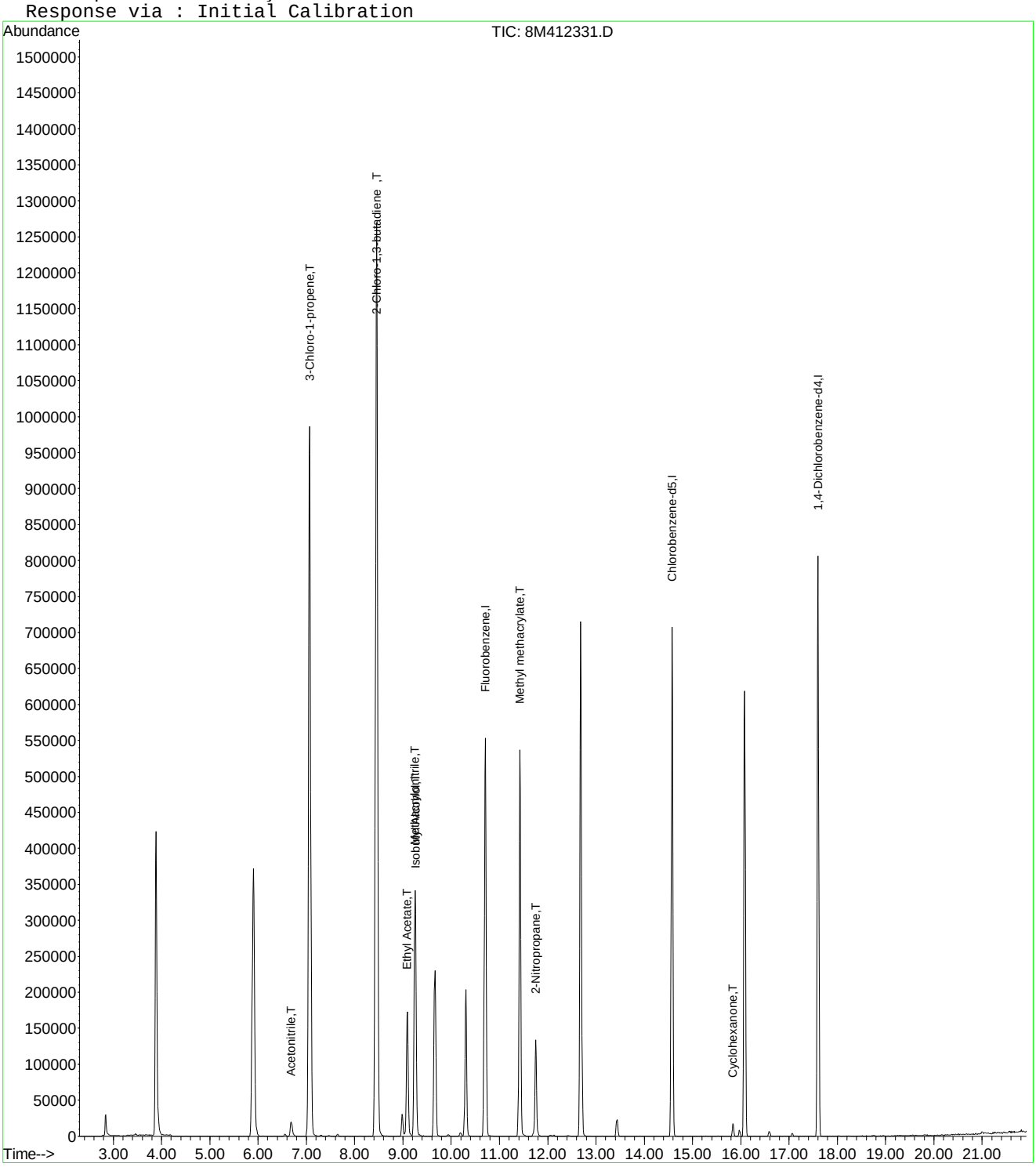

8M412331.D A9FOOWT.M Thu May 19 09:01:33 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	95	0.00
2	T	Acetonitrile	100.0000	114.4154	-14.4	109	0.00
3	T	3-Chloro-1-propene	100.0000	99.7718	0.2	91	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	112.5803	-12.6	103	0.00
5	T	Ethyl Acetate	100.0000	114.1317	-14.1	104	0.00
6	T	Methacrylonitrile	100.0000	113.6509	-13.7	104	0.00
7	T	Isobutyl Alcohol	200.0000	230.6285	-15.3	111	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.01
9	T	Methyl methacrylate	100.0000	116.8508	-16.9	109	0.00
10	T	2-Nitropropane	100.0000	108.6716	-8.7	108	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	96	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	96	0.00
13	T	Cyclohexanone	100.0000	97.2189	2.8	92	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412331.D A9FOOWT.M Thu May 19 09:03:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061316\8M412945.D Vial: 3
Acq On : 13 Jun 2016 15:04 Operator: TMB
Sample : WG572492-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 15:50:12 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	813859	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	577329	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	324259	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	230393	26.3480 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 105.40%		
43) 1,2-Dichloroethane-d4	10.30	65	254557	27.1499 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 108.60%		
58) Toluene-d8	12.68	98	799916	26.4744 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.88%		
80) p-Bromofluorobenzene	16.08	95	331649	24.7008 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.80%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	738944	54.1545 ug/L	99
3) Chloromethane	3.62	50	376123	47.2223 ug/L	100
4) Vinyl Chloride	3.84	62	495950	52.4818 ug/L	99
5) 1,3-Butadiene	3.89	54	458601	57.8690 ug/L	96
6) Bromomethane	4.73	94	200387	35.6110 ug/L	100
7) Chloroethane	4.89	64	250557	48.1859 ug/L	99
8) Trichlorofluoromethane	5.37	101	951861	54.1333 ug/L	100
9) Diethyl ether	5.90	59	405285	96.5469 ug/L	98
10) Isoprene	5.94	67	515762	48.3015 ug/L	98
11) Acrolein	6.14	56	18085	48.1176 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	415383	50.2561 ug/L	97
13) Acetone	6.24	43	46731	51.0349 ug/L	99
14) 1,1-Dichloroethene	6.46	61	660831	50.2142 ug/L	99
15) Tert-Butyl Alcohol	6.57	59	59327	202.1825 ug/L	97
16) Dimethyl Sulfide	6.73	62	216052	45.9149 ug/L	99
17) Iodomethane	6.99	142	122090	34.5051 ug/L	99
18) Methyl acetate	7.00	43	106944	43.2075 ug/L	98
19) Methylene Chloride	7.24	84	401589	47.9513 ug/L	99
20) Carbon Disulfide	7.29	76	1397245	50.7347 ug/L	99
21) Acrylonitrile	7.43	53	57977	48.7996 ug/L	97
22) Methyl Tert Butyl Ether	7.46	73	917787	50.6341 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	600701	49.6841 ug/L	100
24) n-Hexane	7.78	57	457022	50.9054 ug/L	99
25) Diisopropyl ether	8.12	45	1811481	96.1195 ug/L	97
26) Vinyl Acetate	8.30	43	449852	52.1341 ug/L	99
27) 1,1-Dichloroethane	8.32	63	745382	49.6423 ug/L	100
28) Ethyl-Tert-Butyl ether	8.70	59	2060245	102.0323 ug/L	98
29) 2-Butanone	8.88	43	58558	43.5267 ug/L	93
30) Propionitrile	8.98	54	36357	92.7348 ug/L	93
31) 2,2-Dichloropropane	9.09	77	914928	57.8220 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	462453	49.5023 ug/L	99
33) Chloroform	9.37	83	907709	51.1995 ug/L	100
34) 1-Bromopropane	9.51	122	73464	54.9004 ug/L	100
35) Bromochloromethane	9.60	130	242390	50.5973 ug/L	95
36) Tetrahydrofuran	9.63	42	75234	84.9066 ug/L	93
38) 1,1,1-Trichloroethane	9.91	97	917945	54.5089 ug/L	99
39) Cyclohexane	9.94	56	564861	48.4485 ug/L	97
40) 1,1-Dichloropropene	10.10	75	643742	50.1514 ug/L	100
41) Tert-Amyl-Methyl ether	10.21	73	1879717	102.4957 ug/L	99
42) Carbon Tetrachloride	10.24	117	822957	55.0326 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061316\8M412945.D Vial: 3
Acq On : 13 Jun 2016 15:04 Operator: TMB
Sample : WG572492-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 15:50:12 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	608324	53.3109	ug/L		99
46)	Benzene	10.46	78	1656626	49.5533	ug/L		99
47)	Trichloroethene	11.21	130	455316	51.0646	ug/L		99
48)	Methylcyclohexane	11.30	83	684650	50.5436	ug/L		100
49)	1,2-Dichloropropane	11.43	63	350964	47.1589	ug/L		92
50)	Bromodichloromethane	11.73	83	687414	52.5535	ug/L		99
51)	1,4-Dioxane	11.72	88	7252	193.9861	ug/L		95
52)	Dibromomethane	11.81	93	209464	47.5472	ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.02	63	137961	43.1301	ug/L		95
54)	4-Methyl-2-Pentanone	12.05	58	59341	45.4154	ug/L		94
55)	cis-1,3-Dichloropropene	12.36	75	682942	51.2955	ug/L		99
56)	Dimethyl Disulfide	12.62	79	366491	51.5741	ug/L		100
59)	Toluene	12.78	91	1774131	49.4993	ug/L		99
60)	Ethyl Methacrylate	12.88	69	343985	49.9744	ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	615120	51.2123	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	264614	46.7874	ug/L		99
64)	2-Hexanone	13.12	58	53163	44.7315	ug/L	#	100
65)	1,3-Dichloropropane	13.48	76	478932	47.5633	ug/L		97
66)	Tetrachloroethene	13.60	164	398580	51.9050	ug/L		96
67)	Dibromochloromethane	13.87	129	420570	50.9287	ug/L		100
68)	1,2-Dibromoethane	14.12	107	272675	48.3755	ug/L		100
69)	1-Chlorohexane	14.21	91	609314	49.8026	ug/L		98
70)	Chlorobenzene	14.62	112	1190464	49.2558	ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.66	131	482708	51.5526	ug/L		100
72)	Ethylbenzene	14.66	106	639751	48.3797	ug/L		100
73)	m-,p-Xylene	14.75	106	1545134	99.6187	ug/L		99
74)	o-Xylene	15.31	106	743634	49.0389	ug/L		97
75)	Styrene	15.35	104	1273543	51.2047	ug/L		97
76)	Bromoform	15.83	173	257044	52.4777	ug/L		98
77)	Isopropylbenzene	15.73	105	2050179	50.8928	ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	286359	43.9952	ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	91994	45.8977	ug/L		87
82)	trans-1,4-Dichloro-2-Buten	16.18	53	94929	46.5088	ug/L		81
83)	n-Propylbenzene	16.24	91	2435384	48.1416	ug/L		99
84)	Bromobenzene	16.37	156	507466	48.7697	ug/L		94
85)	1,3,5-Trimethylbenzene	16.42	105	1804455	48.9672	ug/L		100
86)	2-Chlorotoluene	16.52	91	1680722	47.5864	ug/L		100
87)	4-Chlorotoluene	16.56	91	1501939	47.0776	ug/L		100
88)	a-Methylstyrene	16.83	118	832733	47.6304	ug/L		100
89)	tert-Butylbenzene	16.89	134	335359	46.5179	ug/L		99
90)	1,2,4-Trimethylbenzene	16.94	105	1836549	48.4682	ug/L		99
91)	sec-Butylbenzene	17.16	105	2079405	47.9659	ug/L		99
92)	p-Isopropyltoluene	17.32	119	1777220	48.2822	ug/L		98
93)	1,3-Dichlorobenzene	17.51	146	972506	48.5379	ug/L		100
94)	1,4-Dichlorobenzene	17.64	146	956693	47.3615	ug/L		98
95)	n-Butylbenzene	17.85	91	1721561	47.3090	ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	838237	47.0394	ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.13	75	59842	45.8020	ug/L		97
98)	1,2,4-Trichlorobenzene	20.28	180	640257	48.0679	ug/L		99
99)	Hexachlorobutadiene	20.43	225	305983	49.1654	ug/L		98
100)	Naphthalene	20.65	128	899824	45.4698	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	517648	46.0648	ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061316\8M412945.D Vial: 3
Acq On : 13 Jun 2016 15:04 Operator: TMB
Sample : WG572492-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 13 15:50 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

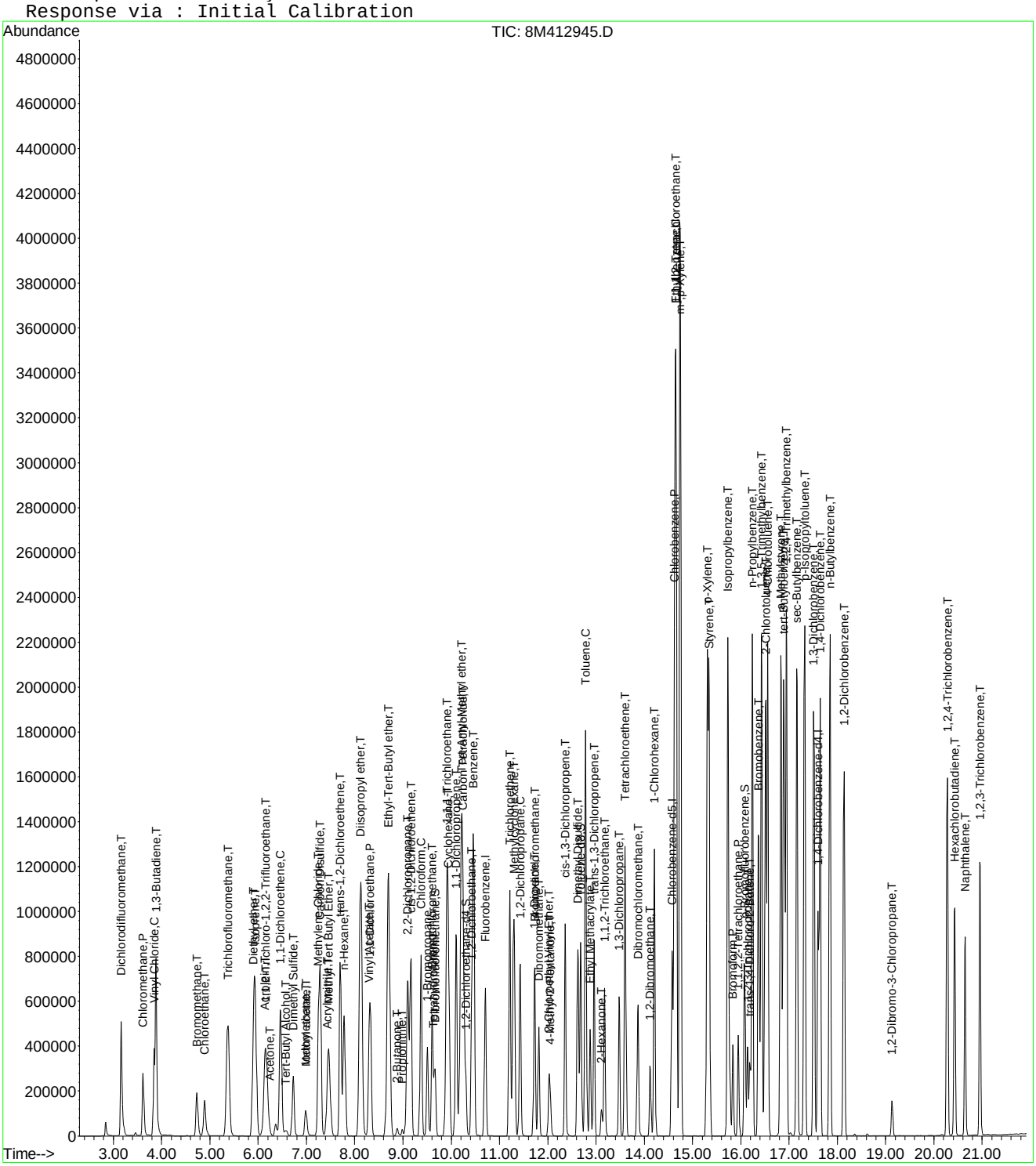

8M412945.D 8260WT.M Mon Jun 13 15:50:16 2016 Page 3

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061316\8M412945.D Vial: 3
Acq On : 13 Jun 2016 15:04 Operator: TMB
Sample : WG572492-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	105	0.00
2	T	Dichlorodifluoromethane	0.4192	0.4540	-8.3	108	0.00
3	P	Chloromethane	0.2447	0.2311	5.6	101	0.00
4	C	Vinyl Chloride	0.2903	0.3047	-5.0	109	0.00
5	T	1,3-Butadiene	0.2434	0.2817	-15.7	117	0.00
6	T	Bromomethane	0.1654	0.1231	25.6#	77	0.00
7	T	Chloroethane	0.1597	0.1539	3.6	103	0.00
8	T	Trichlorofluoromethane	0.5401	0.5848	-8.3	114	0.00
9	T	Diethyl ether	0.1290	0.1245	3.5	104	0.00
10	T	Isoprene	0.3280	0.3169	3.4	104	0.00
11	T	Acrolein	0.0116	0.0111	3.8	102	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2539	0.2552	-0.5	107	0.00
13	T	Acetone	0.0281	0.0287	-2.1	102	0.00
14	C	1,1-Dichloroethene	0.4043	0.4060	-0.4	107	0.00
15	T	Tert-Butyl Alcohol	0.0090	0.0091	-1.1	107	0.00
16	T	Dimethyl Sulfide	0.1445	0.1327	8.2	98	0.00
17	T	Iodomethane	0.0866	0.0750	13.3	77	0.00
18	T	Methyl acetate	0.0760	0.0657	13.6	93	0.00
19	T	Methylene Chloride	0.2573	0.2467	4.1	103	0.00
20	T	Carbon Disulfide	0.8460	0.8584	-1.5	110	0.00
21	T	Acrylonitrile	0.0365	0.0356	2.4	97	0.00
22	T	Methyl Tert Butyl Ether	0.5568	0.5638	-1.3	102	0.00
23	T	trans-1,2-Dichloroethene	0.3714	0.3690	0.6	105	0.00
24	T	n-Hexane	0.2758	0.2808	-1.8	109	0.00
25	T	Diisopropyl ether	0.5789	0.5565	3.9	102	0.00
26	T	Vinyl Acetate	0.2651	0.2764	-4.3	105	0.00
27	P	1,1-Dichloroethane	0.4612	0.4579	0.7	103	0.00
28	T	Ethyl-Tert-Butyl ether	0.6203	0.6329	-2.0	105	0.00
29	T	2-Butanone	0.0413	0.0360	12.9	88	0.00
30	T	Propionitrile	0.0120	0.0112	7.2	95	0.00
31	T	2,2-Dichloropropane	0.4860	0.5621	-15.6	119	0.00
32	T	cis-1,2-Dichloroethene	0.2870	0.2841	1.0	105	0.00
33	C	Chloroform	0.5446	0.5577	-2.4	107	0.00
34		1-Bromopropane	0.0411	0.0451	-9.8	116	0.00
35	T	Bromochloromethane	0.1472	0.1489	-1.2	105	0.00
36	T	Tetrahydrofuran	0.0272	0.0231	15.1	95	0.00
37	S	Dibromofluoromethane	0.2686	0.2831	-5.4	109	0.00
38	T	1,1,1-Trichloroethane	0.5173	0.5639	-9.0	112	0.00
39	T	Cyclohexane	0.3581	0.3470	3.1	105	0.00
40	T	1,1-Dichloropropene	0.3943	0.3955	-0.3	105	0.00
41	T	Tert-Amyl-Methyl ether	0.5634	0.5774	-2.5	106	0.00
42	T	Carbon Tetrachloride	0.4593	0.5056	-10.1	114	0.00
43	S	1,2-Dichloroethane-d4	0.2880	0.3128	-8.6	111	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.3505	0.3737	-6.6	108	0.00
46	T	Benzene	1.0269	1.0178	0.9	103	0.00
47	T	Trichloroethene	0.2739	0.2797	-2.1	107	0.00
48	T	Methylcyclohexane	0.4161	0.4206	-1.1	108	0.00
49	C	1,2-Dichloropropane	0.2286	0.2156	5.7	100	0.00
50	T	Bromodichloromethane	0.4018	0.4223	-5.1	105	0.00
51	T	1,4-Dioxane	0.0012	0.0011	3.5	96	0.00
52	T	Dibromomethane	0.1353	0.1287	4.9	100	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0983	0.0848	13.7	85	0.00
54	T	4-Methyl-2-Pentanone	0.0401	0.0365	9.2	91	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061316\8M412945.D Vial: 3
Acq On : 13 Jun 2016 15:04 Operator: TMB
Sample : WG572492-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4090	0.4196	-2.6	102	0.00
56	T	Dimethyl Disulfide	0.2183	0.2252	-3.2	107	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	107	0.00
58	S	Toluene-d8	1.3084	1.3856	-5.9	111	0.00
59	C	Toluene	1.5520	1.5365	1.0	106	0.00
60	T	Ethyl Methacrylate	0.2981	0.2979	0.1	101	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.5201	0.5327	-2.4	103	0.00
63	T	1,1,2-Trichloroethane	0.2449	0.2292	6.4	99	0.00
64	T	2-Hexanone	0.0515	0.0460	10.5	93	0.00
65	T	1,3-Dichloropropane	0.4360	0.4148	4.9	98	0.00
66	T	Tetrachloroethene	0.3325	0.3452	-3.8	114	0.00
67	T	Dibromochloromethane	0.3576	0.3642	-1.9	105	0.00
68	T	1,2-Dibromoethane	0.2441	0.2362	3.2	100	0.00
69	T	1-Chlorohexane	0.5298	0.5277	0.4	109	0.00
70	P	Chlorobenzene	1.0466	1.0310	1.5	106	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4055	0.4180	-3.1	108	0.00
72	C	Ethylbenzene	0.5726	0.5541	3.2	106	0.00
73	T	m-,p-Xylene	0.6716	0.6691	0.4	107	0.00
74	T	o-Xylene	0.6566	0.6440	1.9	105	0.00
75	T	Styrene	1.0770	1.1030	-2.4	105	0.00
76	P	Bromoform	0.2121	0.2226	-5.0	108	0.00
77	T	Isopropylbenzene	1.7444	1.7756	-1.8	107	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	113	0.00
79	P	1,1,2,2-Tetrachloroethane	0.5018	0.4416	12.0	97	0.00
80	S	p-Bromofluorobenzene	1.0352	1.0228	1.2	113	0.00
81	T	1,2,3-Trichloropropane	0.1545	0.1419	8.2	103	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1376	0.1464	-6.4	109	0.00
83	T	n-Propylbenzene	3.9003	3.7553	3.7	107	0.00
84	T	Bromobenzene	0.8022	0.7825	2.5	110	0.00
85	T	1,3,5-Trimethylbenzene	2.8411	2.7824	2.1	109	0.00
86	T	2-Chlorotoluene	2.7231	2.5916	4.8	104	0.00
87	T	4-Chlorotoluene	2.4597	2.3160	5.8	112	0.00
88	T	a-Methylstyrene	1.3479	1.2841	4.7	108	0.00
89	T	tert-Butylbenzene	0.5558	0.5171	7.0	109	0.00
90	T	1,2,4-Trimethylbenzene	2.9214	2.8319	3.1	109	0.00
91	T	sec-Butylbenzene	3.3424	3.2064	4.1	108	0.00
92	T	p-Isopropyltoluene	2.8379	2.7404	3.4	110	0.00
93	T	1,3-Dichlorobenzene	1.5448	1.4996	2.9	110	0.00
94	T	1,4-Dichlorobenzene	1.5574	1.4752	5.3	110	0.00
95	T	n-Butylbenzene	2.8056	2.6546	5.4	107	0.00
96	T	1,2-Dichlorobenzene	1.3739	1.2925	5.9	109	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1007	0.0923	8.4	100	0.00
98	T	1,2,4-Trichlorobenzene	1.0269	0.9873	3.9	110	0.00
99	T	Hexachlorobutadiene	0.4798	0.4718	1.7	116	0.00
100	T	Naphthalene	1.5257	1.3875	9.1	101	0.00
101	T	1,2,3-Trichlorobenzene	0.8664	0.7982	7.9	109	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412945.D 8260WT.M Mon Jun 13 15:50:26 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061316\8M412945.D Vial: 3
Acq On : 13 Jun 2016 15:04 Operator: TMB
Sample : WG572492-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	105	0.00
2	T	Dichlorodifluoromethane	50.0000	54.1545	-8.3	108	0.00
3	P	Chloromethane	50.0000	47.2223	5.6	101	0.00
4	C	Vinyl Chloride	50.0000	52.4818	-5.0	109	0.00
5	T	1,3-Butadiene	50.0000	57.8690	-15.7	117	0.00
6	T	Bromomethane	50.0000	35.6110	28.8#	77	0.00
7	T	Chloroethane	50.0000	48.1859	3.6	103	0.00
8	T	Trichlorofluoromethane	50.0000	54.1332	-8.3	114	0.00
9	T	Diethyl ether	100.0000	96.5469	3.5	104	0.00
10	T	Isoprene	50.0000	48.3015	3.4	104	0.00
11	T	Acrolein	50.0000	48.1176	3.8	102	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	50.2561	-0.5	107	0.00
13	T	Acetone	50.0000	51.0349	-2.1	102	0.00
14	C	1,1-Dichloroethene	50.0000	50.2142	-0.4	107	0.00
15	T	Tert-Butyl Alcohol	200.0000	202.1825	-1.1	107	0.00
16	T	Dimethyl Sulfide	50.0000	45.9149	8.2	98	0.00
17	T	Iodomethane	50.0000	34.5051	31.0#	77	0.00
18	T	Methyl acetate	50.0000	43.2075	13.6	93	0.00
19	T	Methylene Chloride	50.0000	47.9513	4.1	103	0.00
20	T	Carbon Disulfide	50.0000	50.7347	-1.5	110	0.00
21	T	Acrylonitrile	50.0000	48.7996	2.4	97	0.00
22	T	Methyl Tert Butyl Ether	50.0000	50.6341	-1.3	102	0.00
23	T	trans-1,2-Dichloroethene	50.0000	49.6841	0.6	105	0.00
24	T	n-Hexane	50.0000	50.9054	-1.8	109	0.00
25	T	Diisopropyl ether	100.0000	96.1195	3.9	102	0.00
26	T	Vinyl Acetate	50.0000	52.1341	-4.3	105	0.00
27	P	1,1-Dichloroethane	50.0000	49.6423	0.7	103	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	102.0323	-2.0	105	0.00
29	T	2-Butanone	50.0000	43.5267	12.9	88	0.00
30	T	Propionitrile	100.0000	92.7348	7.3	95	0.00
31	T	2,2-Dichloropropane	50.0000	57.8220	-15.6	119	0.00
32	T	cis-1,2-Dichloroethene	50.0000	49.5023	1.0	105	0.00
33	C	Chloroform	50.0000	51.1996	-2.4	107	0.00
34		1-Bromopropane	50.0000	54.9004	-9.8	116	0.00
35	T	Bromochloromethane	50.0000	50.5973	-1.2	105	0.00
36	T	Tetrahydrofuran	100.0000	84.9066	15.1	95	0.00
37	S	Dibromofluoromethane	25.0000	26.3480	-5.4	109	0.00
38	T	1,1,1-Trichloroethane	50.0000	54.5089	-9.0	112	0.00
39	T	Cyclohexane	50.0000	48.4485	3.1	105	0.00
40	T	1,1-Dichloropropene	50.0000	50.1514	-0.3	105	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	102.4957	-2.5	106	0.00
42	T	Carbon Tetrachloride	50.0000	55.0326	-10.1	114	0.00
43	S	1,2-Dichloroethane-d4	25.0000	27.1499	-8.6	111	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	53.3109	-6.6	108	0.00
46	T	Benzene	50.0000	49.5533	0.9	103	0.00
47	T	Trichloroethene	50.0000	51.0646	-2.1	107	0.00
48	T	Methylcyclohexane	50.0000	50.5436	-1.1	108	0.00
49	C	1,2-Dichloropropane	50.0000	47.1589	5.7	100	0.00
50	T	Bromodichloromethane	50.0000	52.5535	-5.1	105	0.00
51	T	1,4-Dioxane	200.0000	193.9861	3.0	96	0.00
52	T	Dibromomethane	50.0000	47.5472	4.9	100	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	43.1301	13.7	85	0.00
54	T	4-Methyl-2-Pentanone	50.0000	45.4154	9.2	91	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061316\8M412945.D Vial: 3
Acq On : 13 Jun 2016 15:04 Operator: TMB
Sample : WG572492-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	51.2955	-2.6	102	0.00
56	T	Dimethyl Disulfide	50.0000	51.5741	-3.1	107	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	107	0.00
58	S	Toluene-d8	25.0000	26.4744	-5.9	111	0.00
59	C	Toluene	50.0000	49.4993	1.0	106	0.00
60	T	Ethyl Methacrylate	50.0000	49.9744	0.1	101	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	51.2124	-2.4	103	0.00
63	T	1,1,2-Trichloroethane	50.0000	46.7874	6.4	99	0.00
64	T	2-Hexanone	50.0000	44.7315	10.5	93	0.00
65	T	1,3-Dichloropropane	50.0000	47.5633	4.9	98	0.00
66	T	Tetrachloroethene	50.0000	51.9050	-3.8	114	0.00
67	T	Dibromochloromethane	50.0000	50.9286	-1.9	105	0.00
68	T	1,2-Dibromoethane	50.0000	48.3755	3.2	100	0.00
69	T	1-Chlorohexane	50.0000	49.8026	0.4	109	0.00
70	P	Chlorobenzene	50.0000	49.2558	1.5	106	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	51.5526	-3.1	108	0.00
72	C	Ethylbenzene	50.0000	48.3797	3.2	106	0.00
73	T	m-,p-Xylene	100.0000	99.6187	0.4	107	0.00
74	T	o-Xylene	50.0000	49.0389	1.9	105	0.00
75	T	Styrene	50.0000	51.2047	-2.4	105	0.00
76	P	Bromoform	50.0000	52.4777	-5.0	108	0.00
77	T	Isopropylbenzene	50.0000	50.8928	-1.8	107	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	113	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	43.9952	12.0	97	0.00
80	S	p-Bromofluorobenzene	25.0000	24.7008	1.2	113	0.00
81	T	1,2,3-Trichloropropane	50.0000	45.8977	8.2	103	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	46.5088	7.0	109	0.00
83	T	n-Propylbenzene	50.0000	48.1416	3.7	107	0.00
84	T	Bromobenzene	50.0000	48.7697	2.5	110	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	48.9672	2.1	109	0.00
86	T	2-Chlorotoluene	50.0000	47.5864	4.8	104	0.00
87	T	4-Chlorotoluene	50.0000	47.0776	5.8	112	0.00
88	T	a-Methylstyrene	50.0000	47.6304	4.7	108	0.00
89	T	tert-Butylbenzene	50.0000	46.5179	7.0	109	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	48.4682	3.1	109	0.00
91	T	sec-Butylbenzene	50.0000	47.9659	4.1	108	0.00
92	T	p-Isopropyltoluene	50.0000	48.2822	3.4	110	0.00
93	T	1,3-Dichlorobenzene	50.0000	48.5379	2.9	110	0.00
94	T	1,4-Dichlorobenzene	50.0000	47.3614	5.3	110	0.00
95	T	n-Butylbenzene	50.0000	47.3090	5.4	107	0.00
96	T	1,2-Dichlorobenzene	50.0000	47.0393	5.9	109	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	45.8020	8.4	100	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	48.0679	3.9	110	0.00
99	T	Hexachlorobutadiene	50.0000	49.1654	1.7	116	0.00
100	T	Naphthalene	50.0000	45.4698	9.1	101	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	46.0648	7.9	109	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412945.D 8260WT.M Mon Jun 13 15:50:29 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412972.D Vial: 2
Acq On : 14 Jun 2016 9:57 Operator: TMB
Sample : WG572591-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 10:26:09 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	861783	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	616369	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	340859	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	242870	26.2303 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.92%		
43) 1,2-Dichloroethane-d4	10.31	65	251186	25.3005 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.20%		
58) Toluene-d8	12.68	98	847007	26.2574 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.04%		
80) p-Bromofluorobenzene	16.07	95	350285	24.8183 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.28%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	798613	55.2727 ug/L	100
3) Chloromethane	3.62	50	428071	50.7556 ug/L	99
4) Vinyl Chloride	3.84	62	558202	55.7845 ug/L	98
5) 1,3-Butadiene	3.88	54	505989	60.2981 ug/L	98
6) Bromomethane	4.74	94	245244	40.9046 ug/L	98
7) Chloroethane	4.89	64	283366	51.4650 ug/L	98
8) Trichlorofluoromethane	5.38	101	1026292	55.1205 ug/L	100
9) Diethyl ether	5.90	59	414376	93.2231 ug/L	98
10) Isoprene	5.95	67	577409	51.0677 ug/L	97
11) Acrolein	6.14	56	18807	47.2559 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	458778	52.4197 ug/L	97
13) Acetone	6.23	43	47365	48.8507 ug/L	99
14) 1,1-Dichloroethene	6.46	61	736122	52.8248 ug/L	99
15) Tert-Butyl Alcohol	6.57	59	58103	186.9998 ug/L	97
16) Dimethyl Sulfide	6.73	62	239775	48.1228 ug/L	99
17) Iodomethane	6.98	142	145756	38.4711 ug/L	99
18) Methyl acetate	6.99	43	111199	42.4282 ug/L	98
19) Methylene Chloride	7.25	84	437021	49.2801 ug/L	99
20) Carbon Disulfide	7.29	76	1550127	53.1559 ug/L	99
21) Acrylonitrile	7.43	53	58565	46.5533 ug/L	98
22) Methyl Tert Butyl Ether	7.45	73	912498	47.5428 ug/L	100
23) trans-1,2-Dichloroethene	7.70	61	667300	52.1233 ug/L	99
24) n-Hexane	7.79	57	514876	54.1603 ug/L	100
25) Diisopropyl ether	8.13	45	1924583	96.4418 ug/L	98
26) Vinyl Acetate	8.29	43	443221	48.5092 ug/L	99
27) 1,1-Dichloroethane	8.32	63	825688	51.9326 ug/L	100
28) Ethyl-Tert-Butyl ether	8.71	59	2092484	97.8660 ug/L	99
29) 2-Butanone	8.88	43	63966	44.9025 ug/L	94
30) Propionitrile	8.98	54	38422	92.5520 ug/L	97
31) 2,2-Dichloropropane	9.10	77	980311	58.5088 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	507409	51.2941 ug/L	99
33) Chloroform	9.38	83	988608	52.6617 ug/L	100
34) 1-Bromopropane	9.51	122	79530	56.1284 ug/L	99
35) Bromochloromethane	9.60	130	256291	50.5240 ug/L	95
36) Tetrahydrofuran	9.64	42	86242	91.9173 ug/L	98
38) 1,1,1-Trichloroethane	9.90	97	981797	55.0584 ug/L	99
39) Cyclohexane	9.93	56	636037	51.5196 ug/L	99
40) 1,1-Dichloropropene	10.10	75	719276	52.9198 ug/L	100
41) Tert-Amyl-Methyl ether	10.21	73	1851012	95.3177 ug/L	100
42) Carbon Tetrachloride	10.25	117	873387	55.1571 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412972.D 8260WT.M Tue Jun 14 10:26:11 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412972.D Vial: 2
Acq On : 14 Jun 2016 9:57 Operator: TMB
Sample : WG572591-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 10:26:09 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	618514	51.1897	ug/L		100
46)	Benzene	10.46	78	1825183	51.5591	ug/L		100
47)	Trichloroethene	11.22	130	497804	52.7250	ug/L		99
48)	Methylcyclohexane	11.30	83	761741	53.1075	ug/L		100
49)	1,2-Dichloropropane	11.42	63	380220	48.2489	ug/L		94
50)	Bromodichloromethane	11.72	83	720670	52.0320	ug/L		99
51)	1,4-Dioxane	11.71	88	8814	222.6574	ug/L		95
52)	Dibromomethane	11.81	93	218153	46.7657	ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	144000	42.5146	ug/L		99
54)	4-Methyl-2-Pentanone	12.05	58	58549	42.3174	ug/L		90
55)	cis-1,3-Dichloropropene	12.36	75	727888	51.6311	ug/L		99
56)	Dimethyl Disulfide	12.62	79	378256	50.2696	ug/L		98
59)	Toluene	12.79	91	1930265	50.4444	ug/L		100
60)	Ethyl Methacrylate	12.88	69	340395	46.3206	ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	629873	49.1191	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	272077	45.0599	ug/L		98
64)	2-Hexanone	13.11	58	54357	42.8392	ug/L	#	99
65)	1,3-Dichloropropane	13.48	76	494316	45.9818	ug/L		97
66)	Tetrachloroethene	13.60	164	434076	52.9471	ug/L		96
67)	Dibromochloromethane	13.86	129	433382	49.1561	ug/L		99
68)	1,2-Dibromoethane	14.12	107	277686	46.1442	ug/L		99
69)	1-Chlorohexane	14.21	91	680020	52.0613	ug/L		99
70)	Chlorobenzene	14.63	112	1291687	50.0589	ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.66	131	507206	50.7380	ug/L		99
72)	Ethylbenzene	14.66	106	698553	49.4805	ug/L		100
73)	m-,p-Xylene	14.74	106	1682573	101.6088	ug/L		99
74)	o-Xylene	15.31	106	810112	50.0390	ug/L		99
75)	Styrene	15.34	104	1359728	51.2071	ug/L		98
76)	Bromoform	15.84	173	258049	49.3460	ug/L		98
77)	Isopropylbenzene	15.73	105	2213293	51.4619	ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	285787	41.7690	ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	91103	43.2395	ug/L		91
82)	trans-1,4-Dichloro-2-Buten	16.19	53	94527	44.0888	ug/L		84
83)	n-Propylbenzene	16.24	91	2617527	49.2222	ug/L		99
84)	Bromobenzene	16.36	156	528110	48.2819	ug/L		96
85)	1,3,5-Trimethylbenzene	16.43	105	1946688	50.2543	ug/L		100
86)	2-Chlorotoluene	16.51	91	1655446	44.5882	ug/L		91
87)	4-Chlorotoluene	16.56	91	1778320	53.0260	ug/L		93
88)	a-Methylstyrene	16.83	118	891593	48.5135	ug/L		100
89)	tert-Butylbenzene	16.89	134	370571	48.8989	ug/L		97
90)	1,2,4-Trimethylbenzene	16.94	105	1975877	49.6057	ug/L		100
91)	sec-Butylbenzene	17.16	105	2246426	49.2950	ug/L		99
92)	p-Isopropyltoluene	17.32	119	1907014	49.2852	ug/L		98
93)	1,3-Dichlorobenzene	17.51	146	1036948	49.2337	ug/L		98
94)	1,4-Dichlorobenzene	17.65	146	1013800	47.7443	ug/L		98
95)	n-Butylbenzene	17.84	91	1863249	48.7090	ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	874543	46.6867	ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.13	75	56505	41.1417	ug/L		96
98)	1,2,4-Trichlorobenzene	20.28	180	673192	48.0792	ug/L		100
99)	Hexachlorobutadiene	20.43	225	339363	51.8734	ug/L		99
100)	Naphthalene	20.64	128	885979	42.5898	ug/L		99
101)	1,2,3-Trichlorobenzene	20.95	180	529902	44.8588	ug/L		98

(#) = qualifier out of range (m) = manual integration
8M412972.D 8260WT.M Tue Jun 14 10:26:12 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412972.D Vial: 2
Acq On : 14 Jun 2016 9:57 Operator: TMB
Sample : WG572591-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 10:26 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

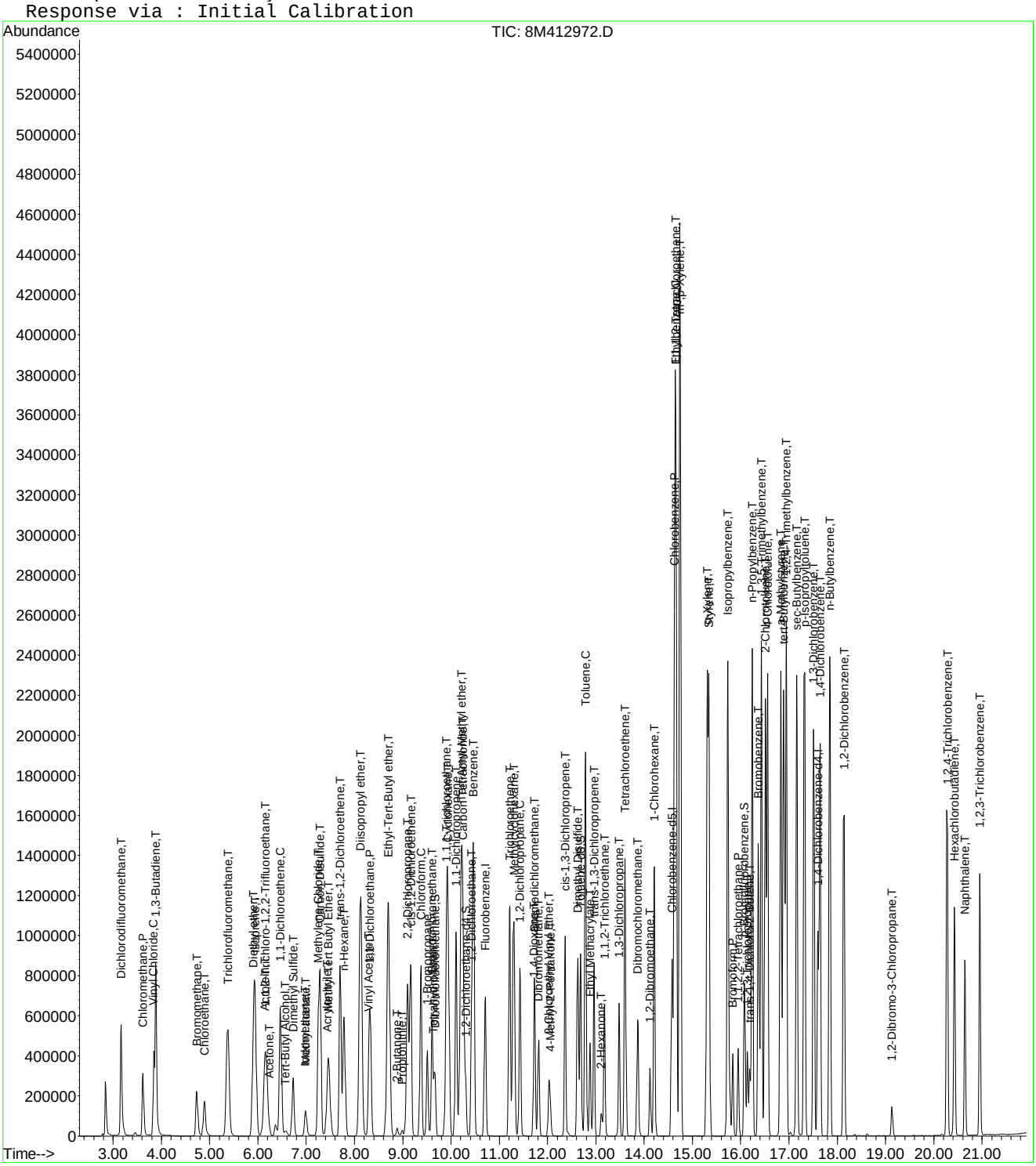

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412972.D Vial: 2
Acq On : 14 Jun 2016 9:57 Operator: TMB
Sample : WG572591-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	111	0.00
2	T	Dichlorodifluoromethane	0.4192	0.4633	-10.5	117	0.00
3	P	Chloromethane	0.2447	0.2484	-1.5	115	0.00
4	C	Vinyl Chloride	0.2903	0.3239	-11.6	123	-0.01
5	T	1,3-Butadiene	0.2434	0.2936	-20.6	130	0.00
6	T	Bromomethane	0.1654	0.1423	14.0	94	0.00
7	T	Chloroethane	0.1597	0.1644	-2.9	116	0.00
8	T	Trichlorofluoromethane	0.5401	0.5955	-10.2	123	0.00
9	T	Diethyl ether	0.1290	0.1202	6.8	106	0.00
10	T	Isoprene	0.3280	0.3350	-2.1	116	0.01
11	T	Acrolein	0.0116	0.0109	5.5	107	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2539	0.2662	-4.8	118	0.00
13	T	Acetone	0.0281	0.0275	2.3	103	-0.01
14	C	1,1-Dichloroethene	0.4043	0.4271	-5.6	119	0.00
15	T	Tert-Butyl Alcohol	0.0090	0.0084	6.4	105	-0.01
16	T	Dimethyl Sulfide	0.1445	0.1391	3.7	108	0.00
17	T	Iodomethane	0.0866	0.0846	2.3	92	0.00
18	T	Methyl acetate	0.0760	0.0645	15.1	97	-0.01
19	T	Methylene Chloride	0.2573	0.2536	1.4	112	0.00
20	T	Carbon Disulfide	0.8460	0.8994	-6.3	122	0.00
21	T	Acrylonitrile	0.0365	0.0340	6.9	98	0.00
22	T	Methyl Tert Butyl Ether	0.5568	0.5294	4.9	101	-0.01
23	T	trans-1,2-Dichloroethene	0.3714	0.3872	-4.2	117	0.00
24	T	n-Hexane	0.2758	0.2987	-8.3	123	0.00
25	T	Diisopropyl ether	0.5789	0.5583	3.6	108	0.00
26	T	Vinyl Acetate	0.2651	0.2571	3.0	103	0.00
27	P	1,1-Dichloroethane	0.4612	0.4791	-3.9	114	0.00
28	T	Ethyl-Tert-Butyl ether	0.6203	0.6070	2.1	107	0.00
29	T	2-Butanone	0.0413	0.0371	10.2	96	0.00
30	T	Propionitrile	0.0120	0.0112	7.4	100	0.00
31	T	2,2-Dichloropropane	0.4860	0.5688	-17.0	128	0.00
32	T	cis-1,2-Dichloroethene	0.2870	0.2944	-2.6	115	0.00
33	C	Chloroform	0.5446	0.5736	-5.3	117	0.00
34		1-Bromopropane	0.0411	0.0461	-12.3	125	0.00
35	T	Bromochloromethane	0.1472	0.1487	-1.0	111	0.00
36	T	Tetrahydrofuran	0.0272	0.0250	8.1	109	0.00
37	S	Dibromofluoromethane	0.2686	0.2818	-4.9	115	0.00
38	T	1,1,1-Trichloroethane	0.5173	0.5696	-10.1	120	0.00
39	T	Cyclohexane	0.3581	0.3690	-3.0	119	0.00
40	T	1,1-Dichloropropene	0.3943	0.4173	-5.8	117	0.00
41	T	Tert-Amyl-Methyl ether	0.5634	0.5370	4.7	105	0.00
42	T	Carbon Tetrachloride	0.4593	0.5067	-10.3	121	0.00
43	S	1,2-Dichloroethane-d4	0.2880	0.2915	-1.2	110	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.3505	0.3589	-2.4	110	0.00
46	T	Benzene	1.0269	1.0590	-3.1	114	0.00
47	T	Trichloroethene	0.2739	0.2888	-5.5	117	0.00
48	T	Methylcyclohexane	0.4161	0.4420	-6.2	120	0.00
49	C	1,2-Dichloropropane	0.2286	0.2206	3.5	108	0.00
50	T	Bromodichloromethane	0.4018	0.4181	-4.1	110	0.00
51	T	1,4-Dioxane	0.0012	0.0013	-11.3	116	0.00
52	T	Dibromomethane	0.1353	0.1266	6.5	104	-0.01
53	T	2-Chloroethyl Vinyl Ether	0.0983	0.0835	15.0	89	0.00
54	T	4-Methyl-2-Pentanone	0.0401	0.0340	15.4	90	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412972.D Vial: 2
Acq On : 14 Jun 2016 9:57 Operator: TMB
Sample : WG572591-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4090	0.4223	-3.3	109	0.00
56	T	Dimethyl Disulfide	0.2183	0.2195	-0.5	110	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	114	0.00
58	S	Toluene-d8	1.3084	1.3742	-5.0	118	0.00
59	C	Toluene	1.5520	1.5658	-0.9	115	0.00
60	T	Ethyl Methacrylate	0.2981	0.2761	7.4	100	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.5201	0.5110	1.8	106	0.00
63	T	1,1,2-Trichloroethane	0.2449	0.2207	9.9	101	0.00
64	T	2-Hexanone	0.0515	0.0441	14.3	96	-0.01
65	T	1,3-Dichloropropane	0.4360	0.4010	8.0	101	0.00
66	T	Tetrachloroethene	0.3325	0.3521	-5.9	124	0.00
67	T	Dibromochloromethane	0.3576	0.3516	1.7	108	0.00
68	T	1,2-Dibromoethane	0.2441	0.2253	7.7	102	0.00
69	T	1-Chlorohexane	0.5298	0.5516	-4.1	121	0.00
70	P	Chlorobenzene	1.0466	1.0478	-0.1	116	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4055	0.4114	-1.5	113	0.00
72	C	Ethylbenzene	0.5726	0.5667	1.0	116	0.00
73	T	m-,p-Xylene	0.6716	0.6825	-1.6	117	0.00
74	T	o-Xylene	0.6566	0.6572	-0.1	114	0.00
75	T	Styrene	1.0770	1.1030	-2.4	112	0.00
76	P	Bromoform	0.2121	0.2093	1.3	108	0.00
77	T	Isopropylbenzene	1.7444	1.7954	-2.9	115	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	118	0.00
79	P	1,1,2,2-Tetrachloroethane	0.5018	0.4192	16.5	97	0.00
80	S	p-Bromofluorobenzene	1.0352	1.0277	0.7	120	0.00
81	T	1,2,3-Trichloropropane	0.1545	0.1336	13.5	102	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1376	0.1387	-0.8	109	0.00
83	T	n-Propylbenzene	3.9003	3.8396	1.6	115	0.00
84	T	Bromobenzene	0.8022	0.7747	3.4	115	-0.01
85	T	1,3,5-Trimethylbenzene	2.8411	2.8556	-0.5	117	0.00
86	T	2-Chlorotoluene	2.7231	2.4283	10.8	103	0.00
87	T	4-Chlorotoluene	2.4597	2.6086	-6.1	133	0.00
88	T	a-Methylstyrene	1.3479	1.3079	3.0	115	0.00
89	T	tert-Butylbenzene	0.5558	0.5436	2.2	121	0.00
90	T	1,2,4-Trimethylbenzene	2.9214	2.8984	0.8	118	0.00
91	T	sec-Butylbenzene	3.3424	3.2952	1.4	117	0.00
92	T	p-Isopropyltoluene	2.8379	2.7974	1.4	118	0.00
93	T	1,3-Dichlorobenzene	1.5448	1.5211	1.5	117	0.00
94	T	1,4-Dichlorobenzene	1.5574	1.4871	4.5	116	0.00
95	T	n-Butylbenzene	2.8056	2.7332	2.6	116	-0.01
96	T	1,2-Dichlorobenzene	1.3739	1.2829	6.6	114	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1007	0.0829	17.7	95	0.00
98	T	1,2,4-Trichlorobenzene	1.0269	0.9875	3.8	115	0.00
99	T	Hexachlorobutadiene	0.4798	0.4978	-3.7	128	-0.01
100	T	Naphthalene	1.5257	1.2996	14.8	99	-0.01
101	T	1,2,3-Trichlorobenzene	0.8664	0.7773	10.3	112	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412972.D 8260WT.M Tue Jun 14 10:26:19 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412972.D Vial: 2
Acq On : 14 Jun 2016 9:57 Operator: TMB
Sample : WG572591-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	111	0.00
2	T	Dichlorodifluoromethane	50.0000	55.2727	-10.5	117	0.00
3	P	Chloromethane	50.0000	50.7556	-1.5	115	0.00
4	C	Vinyl Chloride	50.0000	55.7845	-11.6	123	-0.01
5	T	1,3-Butadiene	50.0000	60.2981	-20.6	130	0.00
6	T	Bromomethane	50.0000	40.9046	18.2	94	0.00
7	T	Chloroethane	50.0000	51.4650	-2.9	116	0.00
8	T	Trichlorofluoromethane	50.0000	55.1205	-10.2	123	0.00
9	T	Diethyl ether	100.0000	93.2231	6.8	106	0.00
10	T	Isoprene	50.0000	51.0677	-2.1	116	0.01
11	T	Acrolein	50.0000	47.2559	5.5	107	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	52.4196	-4.8	118	0.00
13	T	Acetone	50.0000	48.8507	2.3	103	-0.01
14	C	1,1-Dichloroethene	50.0000	52.8248	-5.6	119	0.00
15	T	Tert-Butyl Alcohol	200.0000	186.9998	6.5	105	-0.01
16	T	Dimethyl Sulfide	50.0000	48.1228	3.8	108	0.00
17	T	Iodomethane	50.0000	38.4711	23.1	92	0.00
18	T	Methyl acetate	50.0000	42.4282	15.1	97	-0.01
19	T	Methylene Chloride	50.0000	49.2801	1.4	112	0.00
20	T	Carbon Disulfide	50.0000	53.1559	-6.3	122	0.00
21	T	Acrylonitrile	50.0000	46.5532	6.9	98	0.00
22	T	Methyl Tert Butyl Ether	50.0000	47.5428	4.9	101	-0.01
23	T	trans-1,2-Dichloroethene	50.0000	52.1233	-4.2	117	0.00
24	T	n-Hexane	50.0000	54.1603	-8.3	123	0.00
25	T	Diisopropyl ether	100.0000	96.4418	3.6	108	0.00
26	T	Vinyl Acetate	50.0000	48.5092	3.0	103	0.00
27	P	1,1-Dichloroethane	50.0000	51.9326	-3.9	114	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	97.8660	2.1	107	0.00
29	T	2-Butanone	50.0000	44.9025	10.2	96	0.00
30	T	Propionitrile	100.0000	92.5520	7.4	100	0.00
31	T	2,2-Dichloropropane	50.0000	58.5088	-17.0	128	0.00
32	T	cis-1,2-Dichloroethene	50.0000	51.2941	-2.6	115	0.00
33	C	Chloroform	50.0000	52.6617	-5.3	117	0.00
34		1-Bromopropane	50.0000	56.1284	-12.3	125	0.00
35	T	Bromochloromethane	50.0000	50.5240	-1.0	111	0.00
36	T	Tetrahydrofuran	100.0000	91.9173	8.1	109	0.00
37	S	Dibromofluoromethane	25.0000	26.2303	-4.9	115	0.00
38	T	1,1,1-Trichloroethane	50.0000	55.0584	-10.1	120	0.00
39	T	Cyclohexane	50.0000	51.5196	-3.0	119	0.00
40	T	1,1-Dichloropropene	50.0000	52.9198	-5.8	117	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	95.3178	4.7	105	0.00
42	T	Carbon Tetrachloride	50.0000	55.1571	-10.3	121	0.00
43	S	1,2-Dichloroethane-d4	25.0000	25.3005	-1.2	110	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	51.1897	-2.4	110	0.00
46	T	Benzene	50.0000	51.5591	-3.1	114	0.00
47	T	Trichloroethene	50.0000	52.7250	-5.5	117	0.00
48	T	Methylcyclohexane	50.0000	53.1075	-6.2	120	0.00
49	C	1,2-Dichloropropane	50.0000	48.2489	3.5	108	0.00
50	T	Bromodichloromethane	50.0000	52.0320	-4.1	110	0.00
51	T	1,4-Dioxane	200.0000	222.6574	-11.3	116	0.00
52	T	Dibromomethane	50.0000	46.7657	6.5	104	-0.01
53	T	2-Chloroethyl Vinyl Ether	50.0000	42.5146	15.0	89	0.00
54	T	4-Methyl-2-Pentanone	50.0000	42.3174	15.4	90	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412972.D Vial: 2
Acq On : 14 Jun 2016 9:57 Operator: TMB
Sample : WG572591-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	51.6311	-3.3	109	0.00
56	T	Dimethyl Disulfide	50.0000	50.2696	-0.5	110	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	114	0.00
58	S	Toluene-d8	25.0000	26.2573	-5.0	118	0.00
59	C	Toluene	50.0000	50.4444	-0.9	115	0.00
60	T	Ethyl Methacrylate	50.0000	46.3206	7.4	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	49.1191	1.8	106	0.00
63	T	1,1,2-Trichloroethane	50.0000	45.0599	9.9	101	0.00
64	T	2-Hexanone	50.0000	42.8392	14.3	96	-0.01
65	T	1,3-Dichloropropane	50.0000	45.9818	8.0	101	0.00
66	T	Tetrachloroethene	50.0000	52.9471	-5.9	124	0.00
67	T	Dibromochloromethane	50.0000	49.1561	1.7	108	0.00
68	T	1,2-Dibromoethane	50.0000	46.1442	7.7	102	0.00
69	T	1-Chlorohexane	50.0000	52.0613	-4.1	121	0.00
70	P	Chlorobenzene	50.0000	50.0589	-0.1	116	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	50.7380	-1.5	113	0.00
72	C	Ethylbenzene	50.0000	49.4805	1.0	116	0.00
73	T	m-,p-Xylene	100.0000	101.6088	-1.6	117	0.00
74	T	o-Xylene	50.0000	50.0391	-0.1	114	0.00
75	T	Styrene	50.0000	51.2071	-2.4	112	0.00
76	P	Bromoform	50.0000	49.3460	1.3	108	0.00
77	T	Isopropylbenzene	50.0000	51.4619	-2.9	115	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	118	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	41.7690	16.5	97	0.00
80	S	p-Bromofluorobenzene	25.0000	24.8183	0.7	120	0.00
81	T	1,2,3-Trichloropropane	50.0000	43.2396	13.5	102	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	44.0888	11.8	109	0.00
83	T	n-Propylbenzene	50.0000	49.2222	1.6	115	0.00
84	T	Bromobenzene	50.0000	48.2819	3.4	115	-0.01
85	T	1,3,5-Trimethylbenzene	50.0000	50.2543	-0.5	117	0.00
86	T	2-Chlorotoluene	50.0000	44.5882	10.8	103	0.00
87	T	4-Chlorotoluene	50.0000	53.0260	-6.1	133	0.00
88	T	a-Methylstyrene	50.0000	48.5135	3.0	115	0.00
89	T	tert-Butylbenzene	50.0000	48.8989	2.2	121	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	49.6057	0.8	118	0.00
91	T	sec-Butylbenzene	50.0000	49.2950	1.4	117	0.00
92	T	p-Isopropyltoluene	50.0000	49.2852	1.4	118	0.00
93	T	1,3-Dichlorobenzene	50.0000	49.2338	1.5	117	0.00
94	T	1,4-Dichlorobenzene	50.0000	47.7443	4.5	116	0.00
95	T	n-Butylbenzene	50.0000	48.7090	2.6	116	-0.01
96	T	1,2-Dichlorobenzene	50.0000	46.6867	6.6	114	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	41.1417	17.7	95	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	48.0792	3.8	115	0.00
99	T	Hexachlorobutadiene	50.0000	51.8734	-3.7	128	-0.01
100	T	Naphthalene	50.0000	42.5898	14.8	99	-0.01
101	T	1,2,3-Trichlorobenzene	50.0000	44.8588	10.3	112	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412972.D 8260WT.M Tue Jun 14 10:26:22 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\2\DATA\051316\8M412218.D          Vial: 3
Acq On    : 13 May 2016  12:36                       Operator: TMB
Sample    : WG568561-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD76034                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
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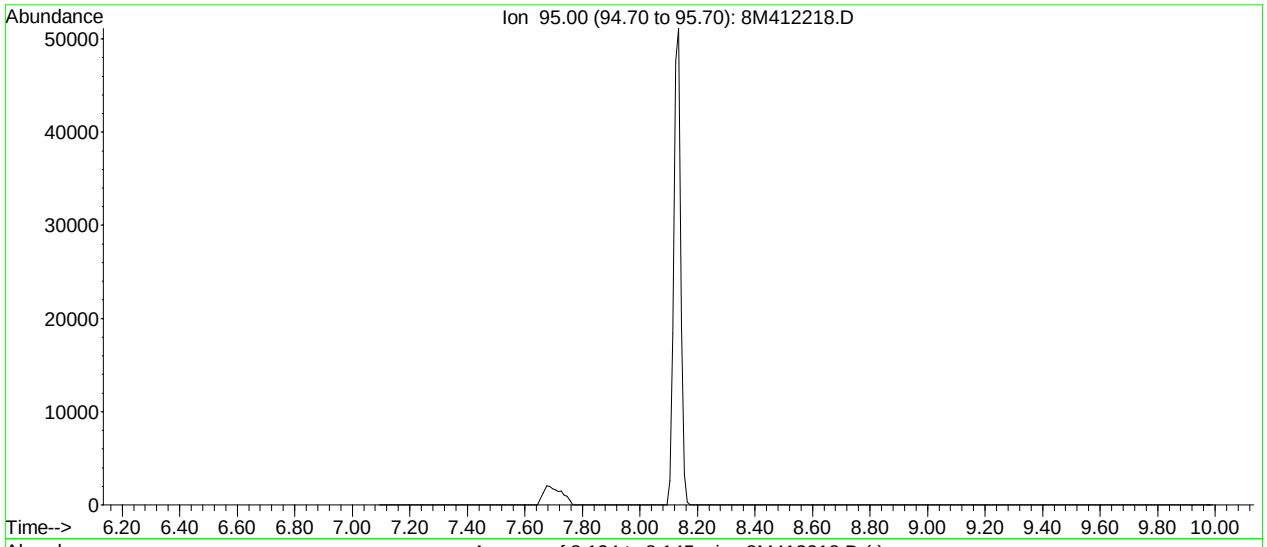

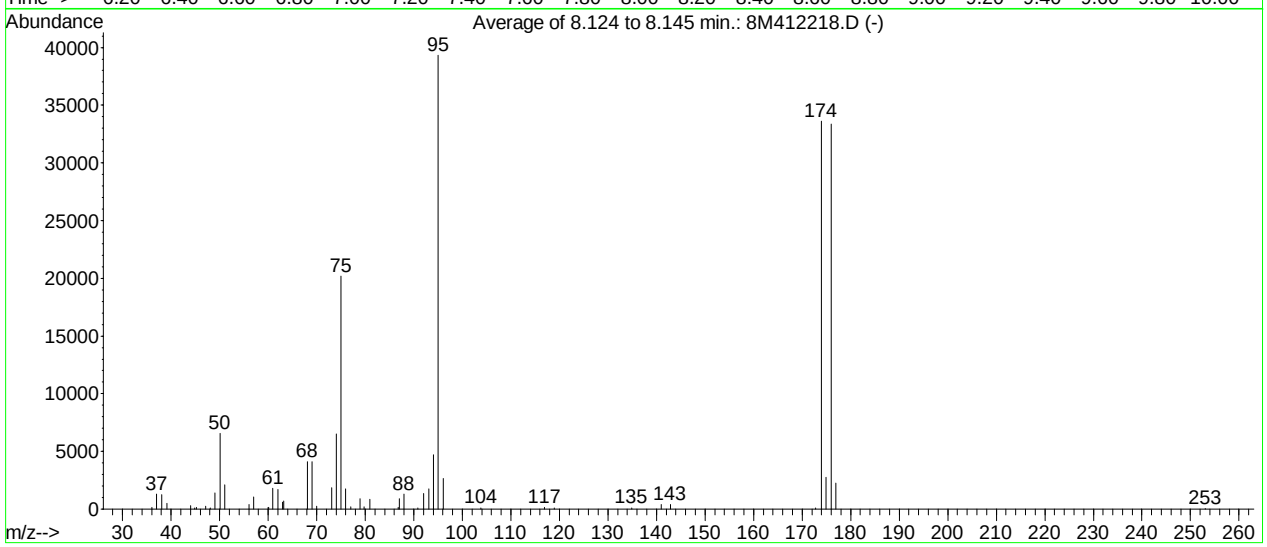

AutoFind: Scans 102, 103, 104; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.7	6575	PASS
75	95	30	60	51.3	20171	PASS
95	95	100	100	100.0	39312	PASS
96	95	5	9	6.7	2649	PASS
173	174	0.00	2	0.4	122	PASS
174	95	50	100	85.5	33616	PASS
175	174	5	9	8.2	2746	PASS
176	174	95	101	99.2	33360	PASS
177	176	5	9	6.8	2267	PASS

8M412218.D BFB.M Fri May 13 12:47:24 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061316\8M412943.D Vial: 1
Acq On    : 13 Jun 2016  14:10                        Operator: TMB
Sample    : WG572492-01 50ng BFB STD 8260             Inst    : HPMS8
Misc      : 1,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title     : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
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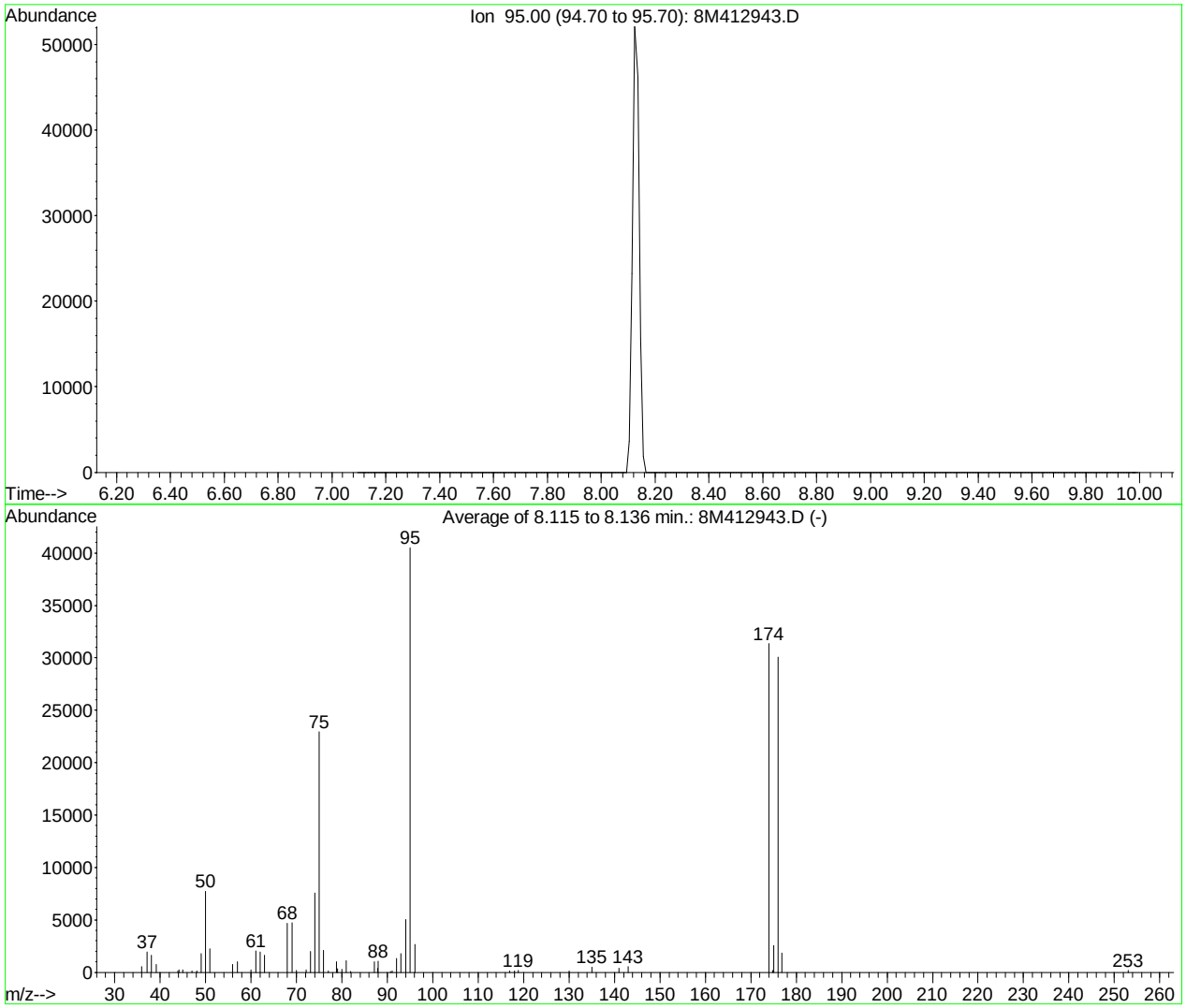

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.0	7715	PASS
75	95	30	60	56.7	22963	PASS
95	95	100	100	100.0	40514	PASS
96	95	5	9	6.6	2683	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	77.5	31387	PASS
175	174	5	9	8.2	2572	PASS
176	174	95	101	95.8	30076	PASS
177	176	5	9	6.1	1845	PASS

8M412943.D 8260WT.M Mon Jun 13 15:49:51 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412971.D Vial: 1
Acq On    : 14 Jun 2016   9:33                        Operator: TMB
Sample    : WG572591-01 50ng BFB STD 8260             Inst    : HPMS8
Misc      : 1,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title     : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
```

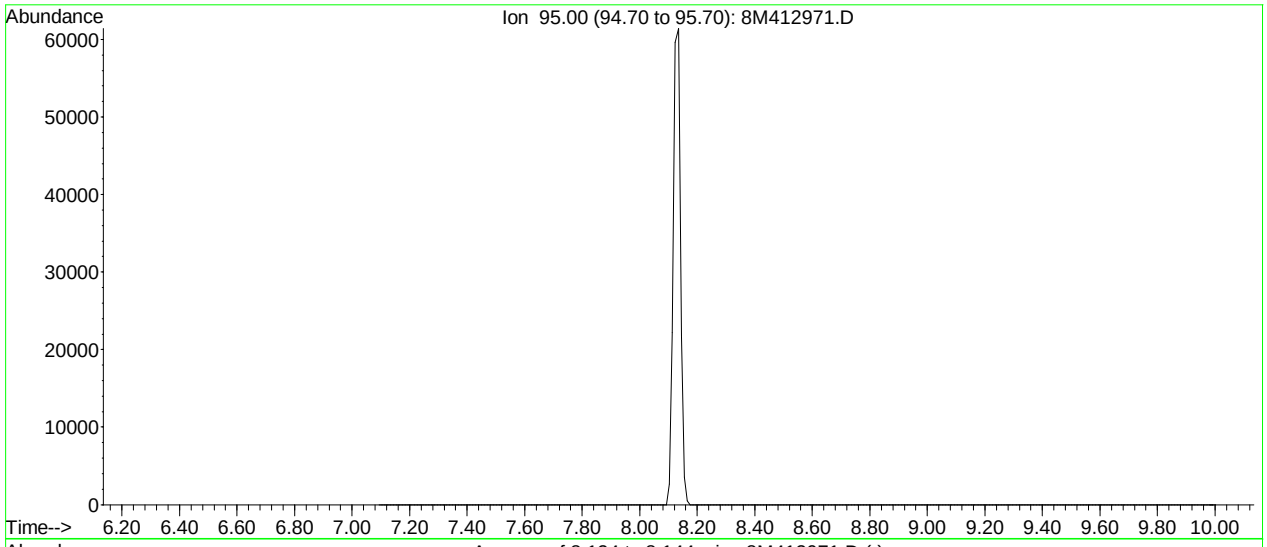

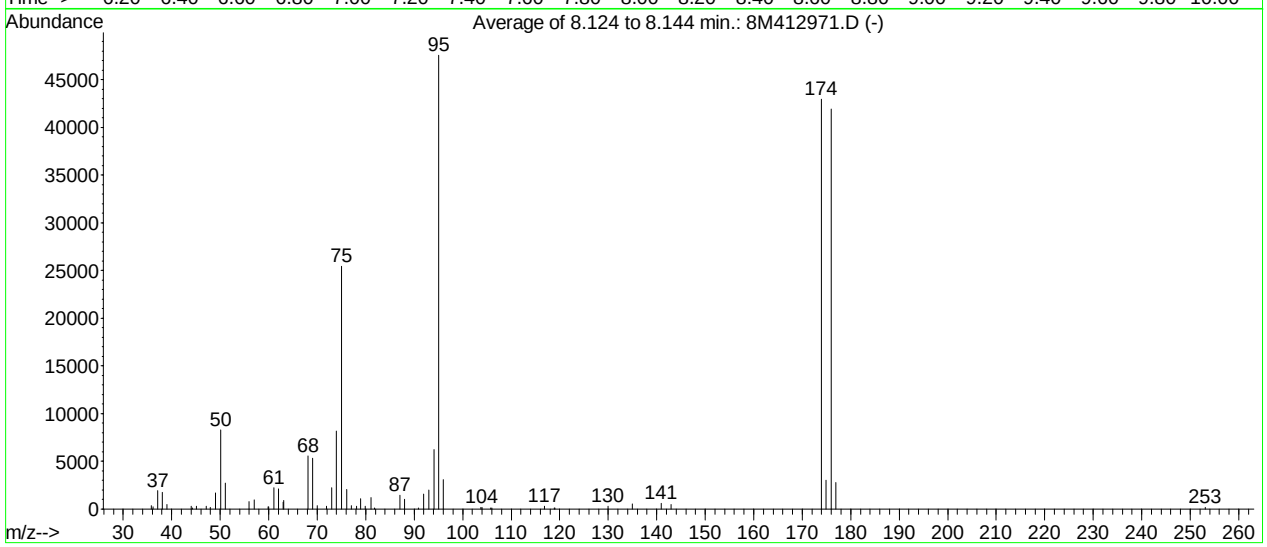

AutoFind: Scans 102, 103, 104; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.4	8269	PASS
75	95	30	60	53.5	25445	PASS
95	95	100	100	100.0	47570	PASS
96	95	5	9	6.4	3042	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	90.3	42970	PASS
175	174	5	9	7.1	3032	PASS
176	174	95	101	97.6	41930	PASS
177	176	5	9	6.5	2744	PASS

8M412971.D 8260WT.M Tue Jun 14 10:25:59 2016

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061316\8M412947.D Vial: 5
Acq On : 13 Jun 2016 16:02 Operator: TMB
Sample : WG572494-01 VBLK0613 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 08:20:56 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	749860	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	570919	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	308188	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	218773	27.1545 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 108.60%		
43) 1,2-Dichloroethane-d4	10.30	65	241856	27.9968 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.00%		
58) Toluene-d8	12.68	98	776943	26.0028 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.00%		
80) p-Bromofluorobenzene	16.08	95	317573	24.8859 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.56%		

Target Compounds					Qvalue
36) Tetrahydrofuran	9.63	42	566	0.6933 ug/L #	39

(#) = qualifier out of range (m) = manual integration
8M412947.D 8260WT.M Tue Jun 14 08:20:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061316\8M412947.D Vial: 5
Acq On : 13 Jun 2016 16:02 Operator: TMB
Sample : WG572494-01 VBLK0613 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 8:21 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

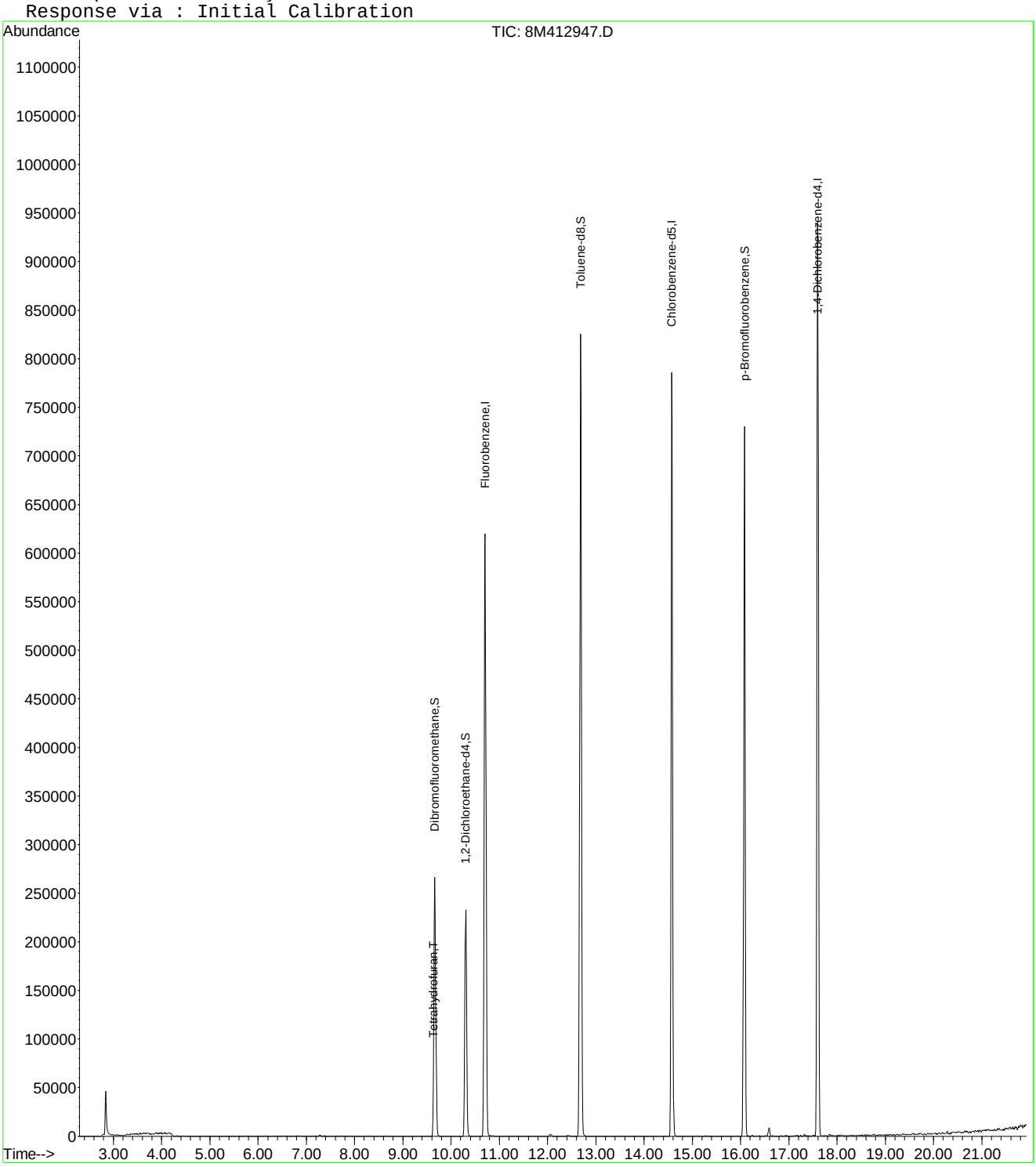

8M412947.D 8260WT.M Tue Jun 14 08:20:59 2016 Page 2

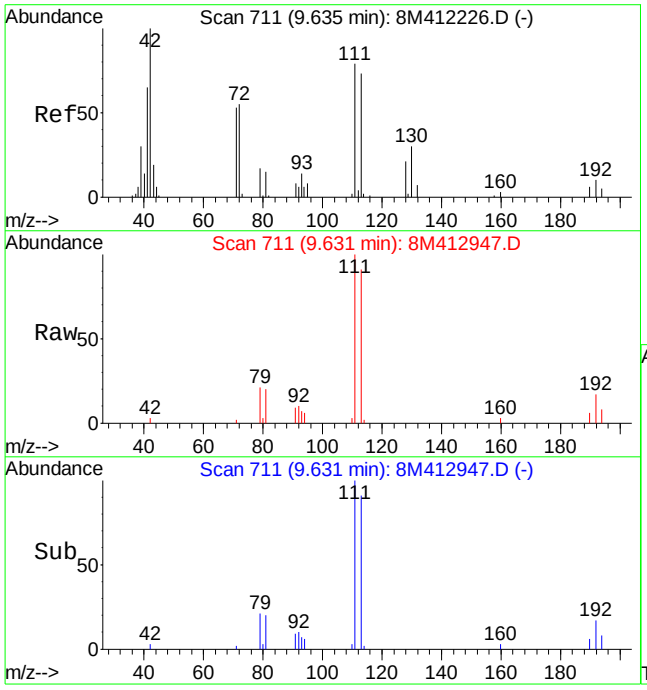

#36
Tetrahydrofuran
Concen: 0.69 ug/L
RT: 9.63 min Scan# 711
Delta R.T. -0.00 min
Lab File: 8M412947.D
Acq: 13 Jun 2016 16:02

Tgt Ion: 42 Resp: 566

Ion	Ratio	Lower	Upper
42	100		
72	37.5	33.8	78.8
71	123.3	32.0	74.8#

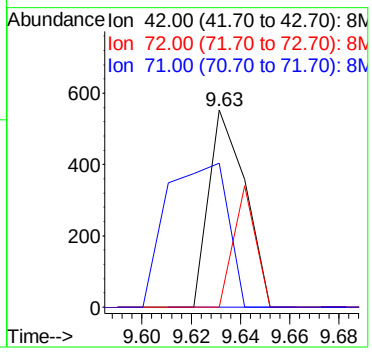

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412974.D Vial: 4
Acq On : 14 Jun 2016 10:54 Operator: TMB
Sample : WG572592-01 VBLK0614 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 12:48:03 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	818923	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	597833	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	333089	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	235191	26.7304 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.92%		
43) 1,2-Dichloroethane-d4	10.30	65	251220	26.6283 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 106.52%		
58) Toluene-d8	12.68	98	827015	26.4325 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.72%		
80) p-Bromofluorobenzene	16.08	95	340654	24.6989 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.80%		

Target Compounds					Qvalue
36) Tetrahydrofuran	9.63	42	238	0.2669 ug/L #	28

(#) = qualifier out of range (m) = manual integration
8M412974.D 8260WT.M Tue Jun 14 12:48:06 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412974.D Vial: 4
Acq On : 14 Jun 2016 10:54 Operator: TMB
Sample : WG572592-01 VBLK0614 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 12:48 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

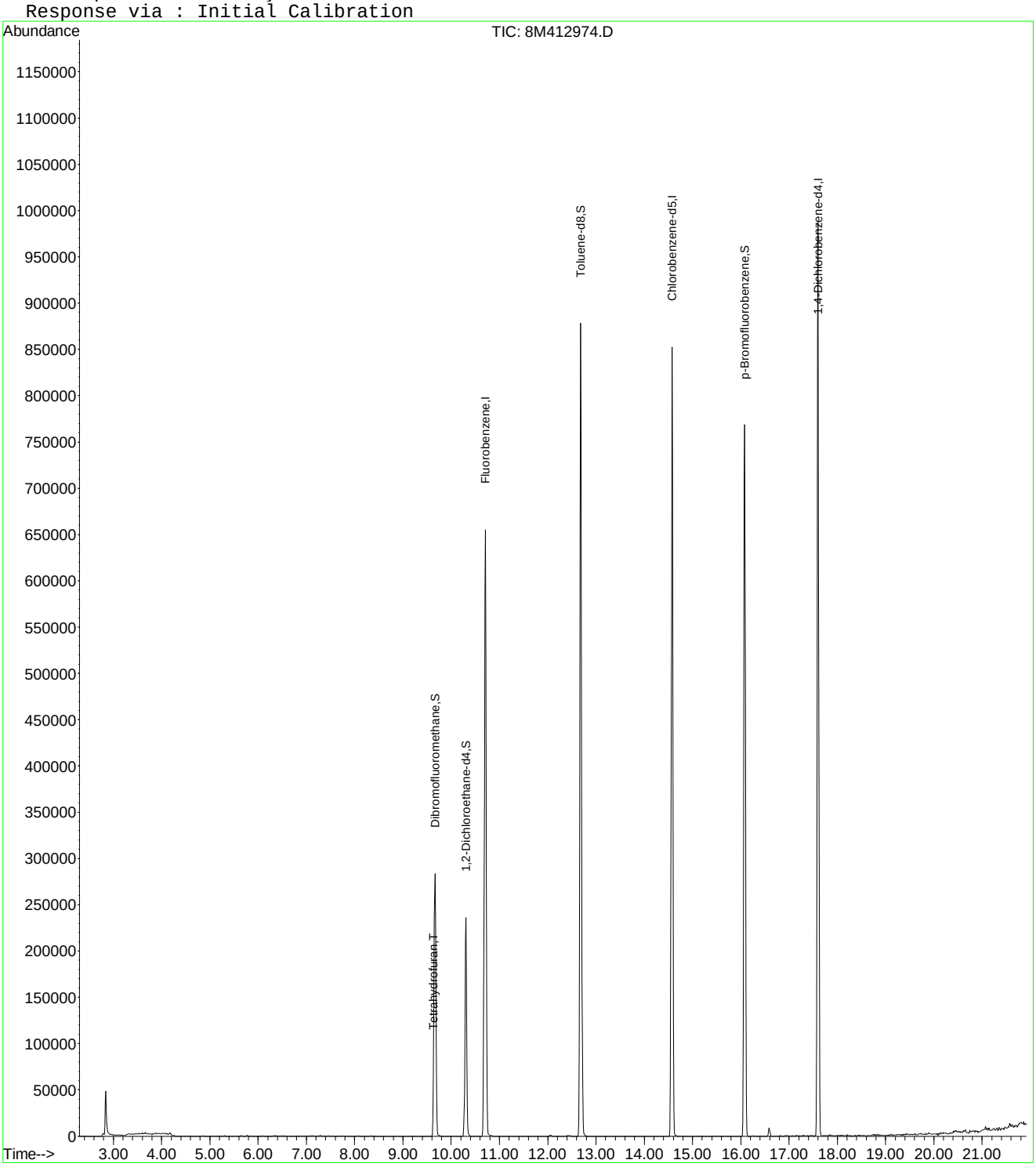

8M412974.D 8260WT.M Tue Jun 14 12:48:07 2016 Page 2

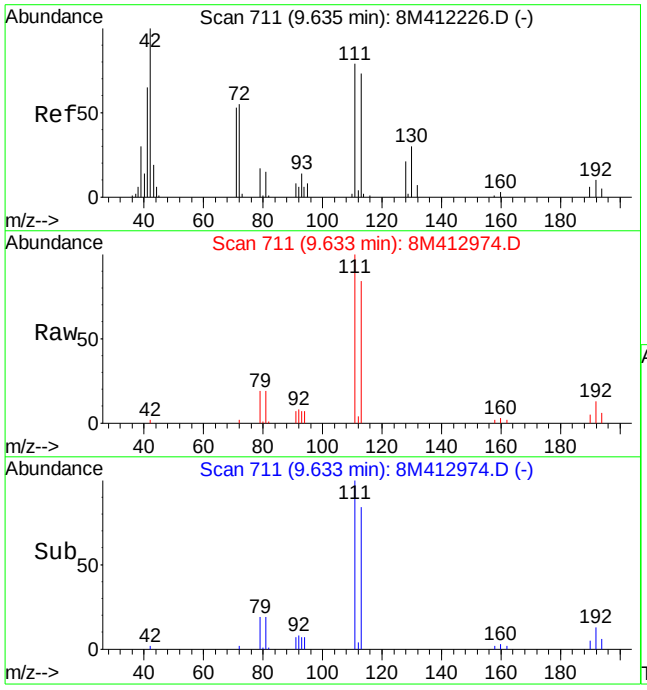

#36
Tetrahydrofuran
Concen: 0.27 ug/L
RT: 9.63 min Scan# 711
Delta R.T. -0.00 min
Lab File: 8M412974.D
Acq: 14 Jun 2016 10:54

Tgt Ion: 42 Resp: 238

Ion	Ratio	Lower	Upper
42	100		
72	127.7	33.8	78.8#
71	86.1	32.0	74.8#

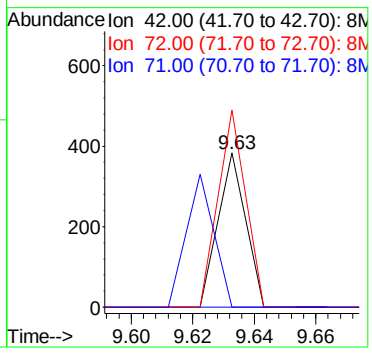

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061316\8M412948.D Vial: 6
Acq On : 13 Jun 2016 16:30 Operator: TMB
Sample : WG572494-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 08:09:42 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	773259	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	563003	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	321769	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	228427	27.4948 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.96%		
43) 1,2-Dichloroethane-d4	10.30	65	245644	27.5749 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 110.28%		
58) Toluene-d8	12.68	98	783046	26.5755 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 106.32%		
80) p-Bromofluorobenzene	16.07	95	326681	24.5191 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.08%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	305490	23.5637 ug/L	97
3) Chloromethane	3.62	50	156585	20.6915 ug/L	99
4) Vinyl Chloride	3.84	62	216401	24.1021 ug/L	99
5) 1,3-Butadiene	3.88	54	46559	6.1836 ug/L	97
6) Bromomethane	4.73	94	71675	13.9371 ug/L	96
7) Chloroethane	4.89	64	104331	21.1179 ug/L	98
8) Trichlorofluoromethane	5.37	101	359455	21.5159 ug/L	100
9) Diethyl ether	5.90	59	418245	104.8655 ug/L	97
10) Isoprene	5.93	67	221290	21.8121 ug/L	96
11) Acrolein	6.13	56	38105	106.7066 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.14	101	158836	20.2262 ug/L	93
13) Acetone	6.25	43	21176	24.3406 ug/L	95
14) 1,1-Dichloroethene	6.46	61	200165	16.0084 ug/L	100
15) Tert-Butyl Alcohol	6.58	59	64035	229.6851 ug/L	97
16) Dimethyl Sulfide	6.73	62	165044	36.9164 ug/L	97
17) Iodomethane	6.98	142	39795	13.7679 ug/L	97
18) Methyl acetate	6.99	43	46514	19.7793 ug/L	97
19) Methylene Chloride	7.25	84	143198	17.9961 ug/L	98
20) Carbon Disulfide	7.29	76	502246	19.1943 ug/L	99
21) Acrylonitrile	7.43	53	23727	21.0198 ug/L	93
22) Methyl Tert Butyl Ether	7.46	73	386866	22.4640 ug/L	98
23) trans-1,2-Dichloroethene	7.70	61	203385	17.7053 ug/L	96
24) n-Hexane	7.79	57	159332	18.6790 ug/L	98
25) Diisopropyl ether	8.13	45	1861115	103.9382 ug/L	96
26) Vinyl Acetate	8.29	43	141042	17.2038 ug/L	100
27) 1,1-Dichloroethane	8.32	63	260085	18.2311 ug/L	98
28) Ethyl-Tert-Butyl ether	8.69	59	2030350	105.8312 ug/L	98
29) 2-Butanone	8.88	43	25042	19.5913 ug/L	95
30) Propionitrile	8.98	54	39796	106.8361 ug/L	98
31) 2,2-Dichloropropane	9.10	77	319157	21.2292 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	176087	19.8385 ug/L	99
33) Chloroform	9.38	83	341742	20.2881 ug/L	99
34) 1-Bromopropane	9.51	122	33611	26.4366 ug/L	97
35) Bromochloromethane	9.60	130	88551	19.4550 ug/L	96
36) Tetrahydrofuran	9.62	42	76815	91.2426 ug/L	94
38) 1,1,1-Trichloroethane	9.90	97	330147	20.6339 ug/L	97
39) Cyclohexane	9.93	56	208687	18.8390 ug/L	96
40) 1,1-Dichloropropene	10.10	75	228200	18.7116 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1962473	112.6267 ug/L	99
42) Carbon Tetrachloride	10.24	117	292540	20.5898 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412948.D 8260WT.M Tue Jun 14 08:09:45 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061316\8M412948.D Vial: 6
Acq On : 13 Jun 2016 16:30 Operator: TMB
Sample : WG572494-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 08:09:42 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	240578	22.1902 ug/L		97
46)	Benzene	10.46	78	613956	19.3290 ug/L		99
47)	Trichloroethene	11.22	130	172963	20.4167 ug/L		99
48)	Methylcyclohexane	11.30	83	257375	19.9981 ug/L		100
49)	1,2-Dichloropropane	11.42	63	138208	19.5460 ug/L		92
50)	Bromodichloromethane	11.72	83	261407	21.0341 ug/L		99
51)	1,4-Dioxane	11.72	88	6838	192.5157 ug/L		92
52)	Dibromomethane	11.81	93	77059	18.4104 ug/L		94
53)	2-Chloroethyl Vinyl Ether	12.02	63	60712	19.9767 ug/L		100
54)	4-Methyl-2-Pentanone	12.05	58	24509	19.7423 ug/L		94
55)	cis-1,3-Dichloropropene	12.36	75	285583	22.5763 ug/L		99
56)	Dimethyl Disulfide	12.62	79	145585	21.5630 ug/L		95
59)	Toluene	12.79	91	672318	19.2354 ug/L		100
60)	Ethyl Methacrylate	12.88	69	142123	21.1731 ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	247434	21.1245 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	106641	19.3354 ug/L		96
64)	2-Hexanone	13.12	58	23201	20.0181 ug/L	#	96
65)	1,3-Dichloropropane	13.48	76	207470	21.1284 ug/L		97
66)	Tetrachloroethene	13.60	164	148774	19.8671 ug/L		97
67)	Dibromochloromethane	13.86	129	163670	20.3238 ug/L		98
68)	1,2-Dibromoethane	14.12	107	108952	19.8211 ug/L		99
69)	1-Chlorohexane	14.21	91	227659	19.0813 ug/L		97
70)	Chlorobenzene	14.63	112	478727	20.3115 ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.66	131	184951	20.2552 ug/L		97
72)	Ethylbenzene	14.66	106	247188	19.1687 ug/L		98
73)	m-,p-Xylene	14.74	106	609033	40.2651 ug/L		96
74)	o-Xylene	15.31	106	302250	20.4390 ug/L		98
75)	Styrene	15.34	104	497708	20.5203 ug/L		97
76)	Bromoform	15.84	173	99247	20.7777 ug/L		98
77)	Isopropylbenzene	15.73	105	825666	21.0175 ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	118307	18.3169 ug/L		100
81)	1,2,3-Trichloropropane	16.14	110	39417	19.8181 ug/L		68
82)	trans-1,4-Dichloro-2-Buten	16.19	53	32636	16.5147 ug/L		84
83)	n-Propylbenzene	16.24	91	979153	19.5052 ug/L		100
84)	Bromobenzene	16.37	156	198971	19.2699 ug/L		97
85)	1,3,5-Trimethylbenzene	16.43	105	721269	19.7244 ug/L		99
86)	2-Chlorotoluene	16.51	91	725722	20.7064 ug/L		98
87)	4-Chlorotoluene	16.56	91	578312	18.2672 ug/L		100
88)	a-Methylstyrene	16.83	118	349952	20.1713 ug/L		98
89)	tert-Butylbenzene	16.89	134	137121	19.1674 ug/L		99
90)	1,2,4-Trimethylbenzene	16.94	105	729341	19.3969 ug/L		99
91)	sec-Butylbenzene	17.16	105	822248	19.1137 ug/L		99
92)	p-Isopropyltoluene	17.32	119	692305	18.9536 ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	392177	19.7251 ug/L		98
94)	1,4-Dichlorobenzene	17.64	146	392868	19.5996 ug/L		100
95)	n-Butylbenzene	17.84	91	658179	18.2269 ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	344739	19.4954 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	25398	19.5896 ug/L		96
98)	1,2,4-Trichlorobenzene	20.28	180	258831	19.5824 ug/L		98
99)	Hexachlorobutadiene	20.44	225	120138	19.4532 ug/L		98
100)	Naphthalene	20.65	128	328941	16.7506 ug/L		99
101)	1,2,3-Trichlorobenzene	20.95	180	202099	18.1237 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412948.D 8260WT.M Tue Jun 14 08:09:45 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061316\8M412948.D Vial: 6
Acq On : 13 Jun 2016 16:30 Operator: TMB
Sample : WG572494-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 8:10 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

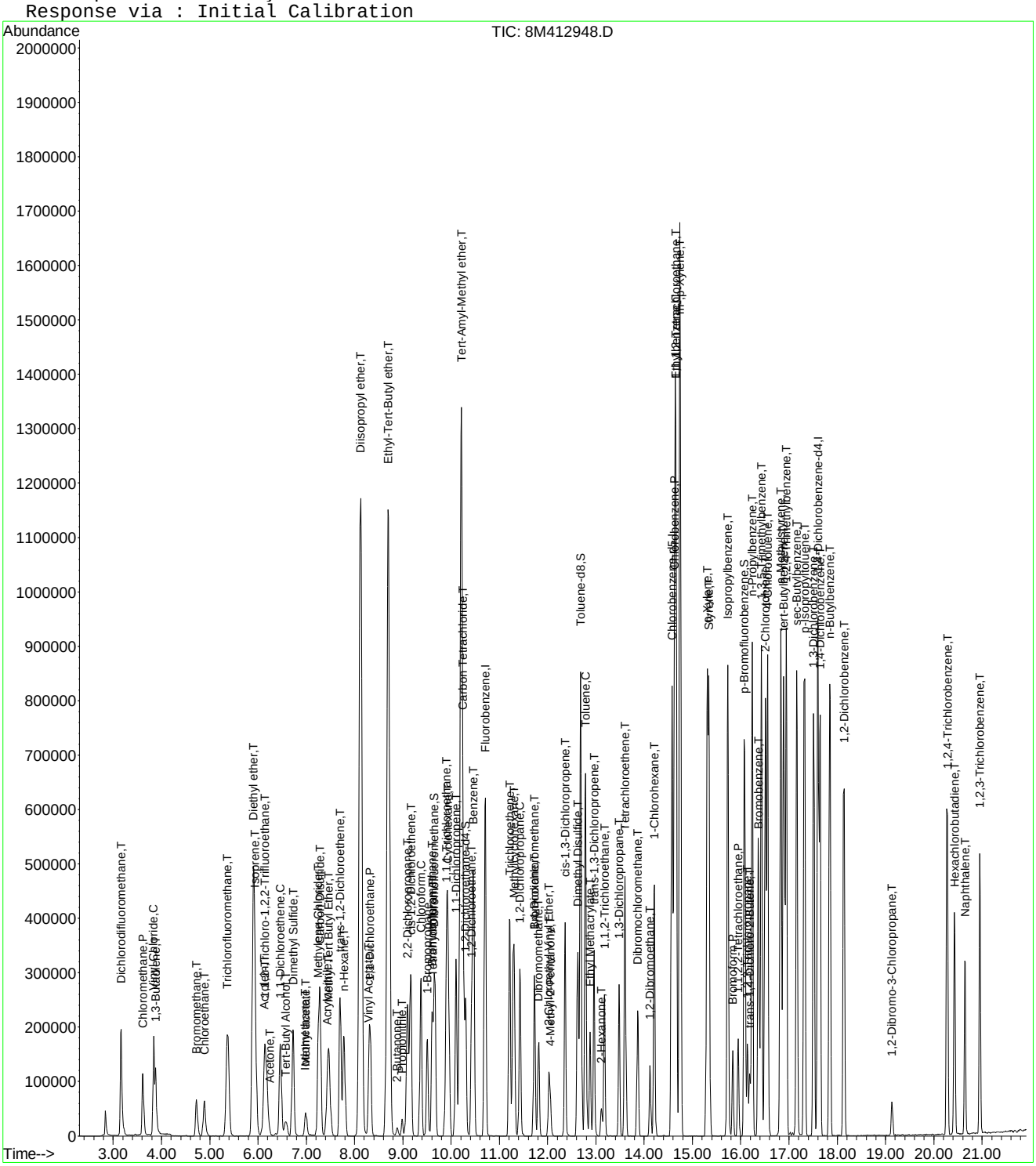

8M412948.D 8260WT.M Tue Jun 14 08:09:46 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412977.D Vial: 7
Acq On : 14 Jun 2016 12:21 Operator: TMB
Sample : WG572592-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 12:48:43 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	789634	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	583790	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	328956	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	228147	26.8916 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.56%		
43) 1,2-Dichloroethane-d4	10.31	65	248944	27.3658 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 109.48%		
58) Toluene-d8	12.68	98	808917	26.4760 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.92%		
80) p-Bromofluorobenzene	16.07	95	332263	24.3932 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.56%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	300808	22.7214 ug/L	99
3) Chloromethane	3.61	50	164125	21.2381 ug/L	99
4) Vinyl Chloride	3.84	62	225832	24.6309 ug/L	99
5) 1,3-Butadiene	3.88	54	43045	5.5983 ug/L	97
6) Bromomethane	4.73	94	71561	13.6397 ug/L	96
7) Chloroethane	4.88	64	111225	22.0465 ug/L	99
8) Trichlorofluoromethane	5.37	101	379953	22.2712 ug/L	99
9) Diethyl ether	5.90	59	425634	104.5051 ug/L	98
10) Isoprene	5.93	67	233154	22.5049 ug/L	98
11) Acrolein	6.13	56	37981	104.1537 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.14	101	175380	21.8697 ug/L	92
13) Acetone	6.23	43	21940	24.6958 ug/L	91
14) 1,1-Dichloroethene	6.46	61	259784	20.3457 ug/L	98
15) Tert-Butyl Alcohol	6.58	59	59624	209.4284 ug/L	97
16) Dimethyl Sulfide	6.72	62	174226	38.1621 ug/L	99
17) Iodomethane	6.98	142	65943	20.5666 ug/L	100
18) Methyl acetate	7.00	43	48265	20.0982 ug/L	98
19) Methylene Chloride	7.25	84	163093	20.0714 ug/L	99
20) Carbon Disulfide	7.29	76	512380	19.1756 ug/L	100
21) Acrylonitrile	7.43	53	23781	20.6307 ug/L	94
22) Methyl Tert Butyl Ether	7.46	73	397722	22.6154 ug/L	100
23) trans-1,2-Dichloroethene	7.70	61	246939	21.0510 ug/L	99
24) n-Hexane	7.78	57	169650	19.4762 ug/L	97
25) Diisopropyl ether	8.13	45	1927712	105.4249 ug/L	97
26) Vinyl Acetate	8.29	43	133626	15.9612 ug/L	100
27) 1,1-Dichloroethane	8.32	63	296874	20.3783 ug/L	100
28) Ethyl-Tert-Butyl ether	8.69	59	2048889	104.5828 ug/L	98
29) 2-Butanone	8.88	43	27097	20.7594 ug/L	100
30) Propionitrile	8.99	54	41312	108.6061 ug/L	100
31) 2,2-Dichloropropane	9.10	77	352699	22.9738 ug/L	99
32) cis-1,2-Dichloroethene	9.16	96	191196	21.0941 ug/L	100
33) Chloroform	9.38	83	369726	21.4943 ug/L	100
34) 1-Bromopropane	9.51	122	40738	31.3779 ug/L	97
35) Bromochloromethane	9.60	130	97863	21.0550 ug/L	95
36) Tetrahydrofuran	9.62	42	79612	92.6039 ug/L	98
38) 1,1,1-Trichloroethane	9.91	97	371800	22.7553 ug/L	100
39) Cyclohexane	9.93	56	229989	20.3315 ug/L	96
40) 1,1-Dichloropropene	10.10	75	262245	21.0573 ug/L	99
41) Tert-Amyl-Methyl ether	10.20	73	1956280	109.9430 ug/L	99
42) Carbon Tetrachloride	10.24	117	322240	22.2099 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412977.D Vial: 7
Acq On : 14 Jun 2016 12:21 Operator: TMB
Sample : WG572592-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 12:48:43 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.42	62	252836	22.8372 ug/L	97
46)	Benzene	10.46	78	684839	21.1135 ug/L	100
47)	Trichloroethene	11.22	130	196590	22.7244 ug/L	98
48)	Methylcyclohexane	11.30	83	281836	21.4446 ug/L	99
49)	1,2-Dichloropropane	11.42	63	151922	21.0400 ug/L	93
50)	Bromodichloromethane	11.72	83	282235	22.2391 ug/L	100
51)	1,4-Dioxane	11.72	88	7558	208.3738 ug/L	94
52)	Dibromomethane	11.81	93	84703	19.8170 ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.02	63	64236	20.6979 ug/L	94
54)	4-Methyl-2-Pentanone	12.05	58	25847	20.3883 ug/L	91
55)	cis-1,3-Dichloropropene	12.36	75	303145	23.4676 ug/L	98
56)	Dimethyl Disulfide	12.62	79	153043	22.1976 ug/L	91
59)	Toluene	12.79	91	737048	20.3365 ug/L	100
60)	Ethyl Methacrylate	12.88	69	148536	21.3406 ug/L	99
62)	trans-1,3-Dichloropropene	12.96	75	258189	21.2578 ug/L	99
63)	1,1,2-Trichloroethane	13.17	97	114373	19.9989 ug/L	98
64)	2-Hexanone	13.12	58	24370	20.2780 ug/L #	95
65)	1,3-Dichloropropane	13.48	76	217003	21.3123 ug/L	99
66)	Tetrachloroethene	13.60	164	160734	20.6999 ug/L	96
67)	Dibromochloromethane	13.86	129	171176	20.4990 ug/L	100
68)	1,2-Dibromoethane	14.12	107	113723	19.9524 ug/L	98
69)	1-Chlorohexane	14.21	91	256011	20.6936 ug/L	99
70)	Chlorobenzene	14.63	112	506153	20.7105 ug/L	99
71)	1,1,1,2-Tetrachloroethane	14.66	131	198120	20.9248 ug/L	100
72)	Ethylbenzene	14.66	106	264089	19.7501 ug/L	96
73)	m-,p-Xylene	14.74	106	653046	41.6376 ug/L	96
74)	o-Xylene	15.31	106	330056	21.5246 ug/L	100
75)	Styrene	15.34	104	535687	21.2997 ug/L	98
76)	Bromoform	15.84	173	100112	20.2125 ug/L	98
77)	Isopropylbenzene	15.73	105	887039	21.7758 ug/L	99
79)	1,1,2,2-Tetrachloroethane	15.95	83	117162	17.7434 ug/L	100
81)	1,2,3-Trichloropropane	16.15	110	38260	18.8161 ug/L	82
82)	trans-1,4-Dichloro-2-Buten	16.19	53	34037	16.8349 ug/L	92
83)	n-Propylbenzene	16.24	91	1056135	20.5791 ug/L	100
84)	Bromobenzene	16.36	156	206447	19.5572 ug/L	97
85)	1,3,5-Trimethylbenzene	16.42	105	767927	20.5416 ug/L	100
86)	2-Chlorotoluene	16.51	91	659331	18.4012 ug/L	92
87)	4-Chlorotoluene	16.56	91	717563	22.1705 ug/L	91
88)	a-Methylstyrene	16.83	118	386327	21.7815 ug/L	99
89)	tert-Butylbenzene	16.89	134	146756	20.0660 ug/L	99
90)	1,2,4-Trimethylbenzene	16.94	105	768345	19.9878 ug/L	100
91)	sec-Butylbenzene	17.16	105	891437	20.2693 ug/L	99
92)	p-Isopropyltoluene	17.32	119	743909	19.9214 ug/L	100
93)	1,3-Dichlorobenzene	17.51	146	412440	20.2910 ug/L	99
94)	1,4-Dichlorobenzene	17.64	146	416220	20.3109 ug/L	100
95)	n-Butylbenzene	17.84	91	710572	19.2479 ug/L	98
96)	1,2-Dichlorobenzene	18.14	146	365176	20.2000 ug/L	98
97)	1,2-Dibromo-3-Chloropropan	19.13	75	25929	19.5622 ug/L	100
98)	1,2,4-Trichlorobenzene	20.28	180	263147	19.4739 ug/L	99
99)	Hexachlorobutadiene	20.42	225	131850	20.8832 ug/L	98
100)	Naphthalene	20.64	128	339159	16.8936 ug/L	100
101)	1,2,3-Trichlorobenzene	20.95	180	212625	18.6510 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412977.D Vial: 7
Acq On : 14 Jun 2016 12:21 Operator: TMB
Sample : WG572592-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 12:48 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

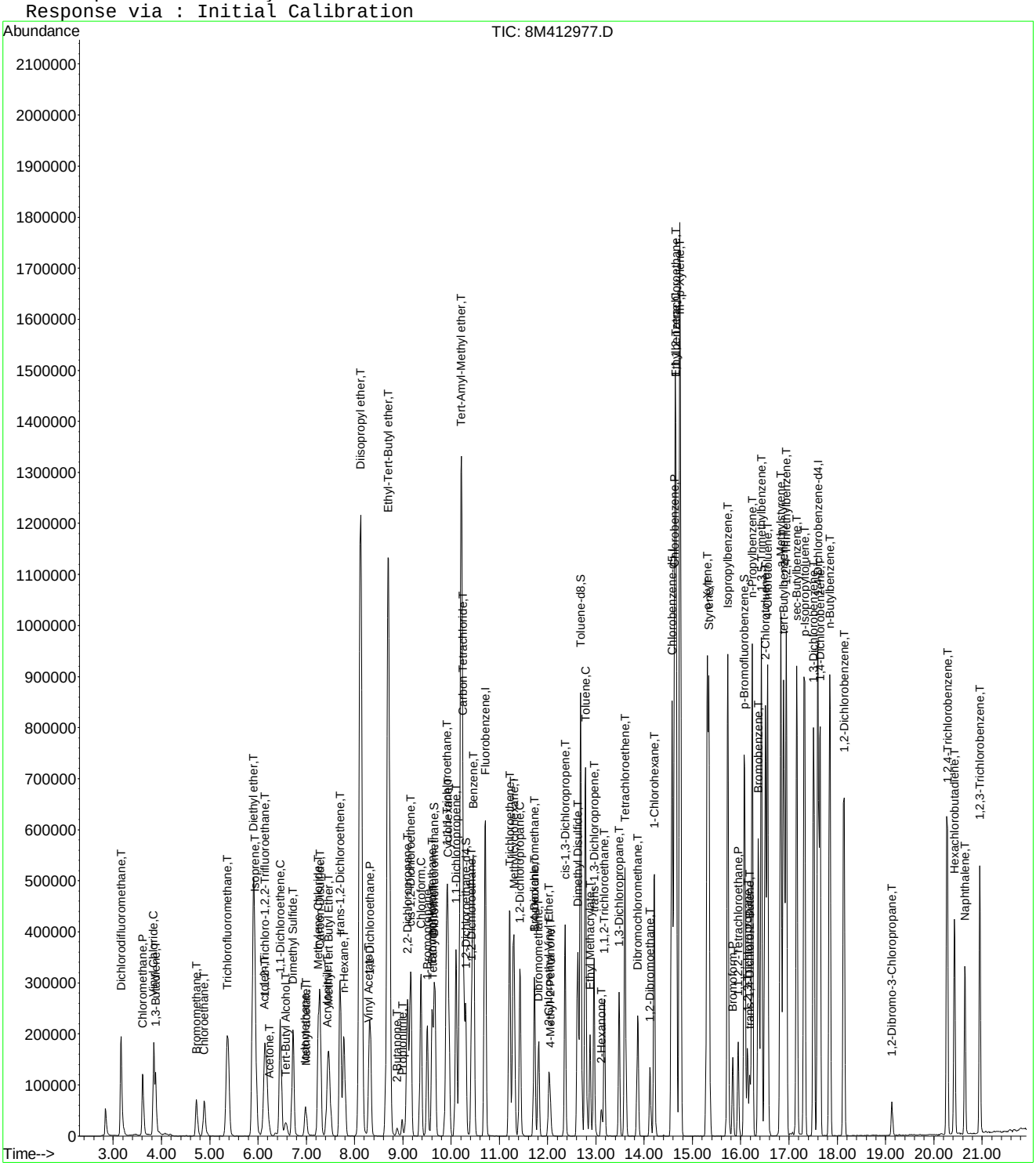

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061316\8M412949.D Vial: 7
Acq On : 13 Jun 2016 16:59 Operator: TMB
Sample : WG572494-03 20ug/L LCS2 STD 8260 Inst : HPMS8
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 08:09:48 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	764855	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	564940	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	317199	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	220681	26.8543 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.40%		
43) 1,2-Dichloroethane-d4	10.31	65	246631	27.9899 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.96%		
58) Toluene-d8	12.68	98	773078	26.1472 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.60%		
80) p-Bromofluorobenzene	16.07	95	329257	25.0685 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.28%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	299074	23.3223 ug/L	99
3) Chloromethane	3.62	50	160225	21.4051 ug/L	99
4) Vinyl Chloride	3.84	62	211321	23.7949 ug/L	100
5) 1,3-Butadiene	3.88	54	47553	6.3850 ug/L	98
6) Bromomethane	4.73	94	76378	14.9670 ug/L	97
7) Chloroethane	4.89	64	105828	21.6563 ug/L	99
8) Trichlorofluoromethane	5.38	101	361352	21.8671 ug/L	100
9) Diethyl ether	5.90	59	417429	105.8109 ug/L	97
10) Isoprene	5.93	67	222735	22.1958 ug/L	97
11) Acrolein	6.14	56	38776	109.7787 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	162758	20.9533 ug/L	94
13) Acetone	6.24	43	19365	22.5035 ug/L	96
14) 1,1-Dichloroethene	6.46	61	176670	14.2846 ug/L	96
15) Tert-Butyl Alcohol	6.58	59	65557	237.7280 ug/L	98
16) Dimethyl Sulfide	6.73	62	167021	37.7691 ug/L	99
17) Iodomethane	6.98	142	56601	18.5550 ug/L	99
18) Methyl acetate	7.00	43	47794	20.5469 ug/L	98
19) Methylene Chloride	7.25	84	131988	16.7696 ug/L	100
20) Carbon Disulfide	7.29	76	502573	19.4179 ug/L	100
21) Acrylonitrile	7.43	53	22427	20.0864 ug/L	98
22) Methyl Tert Butyl Ether	7.45	73	385274	22.6173 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	188952	16.6296 ug/L	99
24) n-Hexane	7.77	57	166245	19.7036 ug/L	100
25) Diisopropyl ether	8.13	45	1866184	105.3664 ug/L	97
26) Vinyl Acetate	8.29	43	146735	18.0949 ug/L	98
27) 1,1-Dichloroethane	8.32	63	245771	17.4170 ug/L	100
28) Ethyl-Tert-Butyl ether	8.69	59	2030657	107.0102 ug/L	98
29) 2-Butanone	8.88	43	26667	21.0918 ug/L	99
30) Propionitrile	8.98	54	38877	105.5158 ug/L	99
31) 2,2-Dichloropropane	9.10	77	301044	20.2445 ug/L	99
32) cis-1,2-Dichloroethene	9.16	96	162791	18.5421 ug/L	99
33) Chloroform	9.38	83	325885	19.5593 ug/L	99
34) 1-Bromopropane	9.51	122	31019	24.6660 ug/L	94
35) Bromochloromethane	9.60	130	83340	18.5113 ug/L	95
36) Tetrahydrofuran	9.62	42	77198	92.7050 ug/L	95
38) 1,1,1-Trichloroethane	9.90	97	304117	19.2159 ug/L	99
39) Cyclohexane	9.94	56	217525	19.8526 ug/L	97
40) 1,1-Dichloropropene	10.10	75	213586	17.7058 ug/L	98
41) Tert-Amyl-Methyl ether	10.20	73	1951067	113.2024 ug/L	99
42) Carbon Tetrachloride	10.24	117	267619	19.0428 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412949.D 8260WT.M Tue Jun 14 08:09:50 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061316\8M412949.D Vial: 7
Acq On : 13 Jun 2016 16:59 Operator: TMB
Sample : WG572494-03 20ug/L LCS2 STD 8260 Inst : HPMS8
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 08:09:48 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	223152	20.8090 ug/L		99
46)	Benzene	10.46	78	573410	18.2509 ug/L		99
47)	Trichloroethene	11.22	130	162965	19.4479 ug/L		99
48)	Methylcyclohexane	11.30	83	261894	20.5728 ug/L		100
49)	1,2-Dichloropropane	11.42	63	133998	19.1589 ug/L		94
50)	Bromodichloromethane	11.72	83	257948	20.9839 ug/L		98
51)	1,4-Dioxane	11.71	88	7448	211.9935 ug/L		99
52)	Dibromomethane	11.82	93	76175	18.3992 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.02	63	60184	20.0205 ug/L		94
54)	4-Methyl-2-Pentanone	12.05	58	24985	20.3469 ug/L		88
55)	cis-1,3-Dichloropropene	12.36	75	272170	21.7523 ug/L		98
56)	Dimethyl Disulfide	12.62	79	144091	21.5762 ug/L		91
59)	Toluene	12.79	91	637852	18.1867 ug/L		100
60)	Ethyl Methacrylate	12.88	69	142753	21.1941 ug/L		100
62)	trans-1,3-Dichloropropene	12.96	75	235524	20.0388 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	103814	18.7583 ug/L		100
64)	2-Hexanone	13.12	58	22814	19.6167 ug/L	#	96
65)	1,3-Dichloropropane	13.48	76	198821	20.1782 ug/L		97
66)	Tetrachloroethene	13.60	164	137566	18.3074 ug/L		98
67)	Dibromochloromethane	13.87	129	157740	19.5203 ug/L		98
68)	1,2-Dibromoethane	14.12	107	104665	18.9759 ug/L		99
69)	1-Chlorohexane	14.21	91	238204	19.8967 ug/L		99
70)	Chlorobenzene	14.63	112	454194	19.2045 ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.66	131	180808	19.7335 ug/L		100
72)	Ethylbenzene	14.66	106	237538	18.3572 ug/L		98
73)	m-,p-Xylene	14.74	106	589255	38.8239 ug/L		97
74)	o-Xylene	15.31	106	292123	19.6865 ug/L		99
75)	Styrene	15.34	104	474654	19.5027 ug/L		98
76)	Bromoform	15.84	173	90585	18.8993 ug/L		97
77)	Isopropylbenzene	15.73	105	790044	20.0418 ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	114028	17.9088 ug/L		96
81)	1,2,3-Trichloropropane	16.14	110	38316	19.5421 ug/L		73
82)	trans-1,4-Dichloro-2-Buten	16.19	53	33212	17.0284 ug/L		86
83)	n-Propylbenzene	16.24	91	961959	19.4388 ug/L		100
84)	Bromobenzene	16.36	156	190274	18.6931 ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	699443	19.4031 ug/L		98
86)	2-Chlorotoluene	16.51	91	589923	17.0743 ug/L		91
87)	4-Chlorotoluene	16.56	91	656990	21.0514 ug/L		91
88)	a-Methylstyrene	16.83	118	358081	20.9373 ug/L		100
89)	tert-Butylbenzene	16.89	134	132381	18.7714 ug/L		99
90)	1,2,4-Trimethylbenzene	16.94	105	691303	18.6502 ug/L		99
91)	sec-Butylbenzene	17.16	105	801998	18.9115 ug/L		99
92)	p-Isopropyltoluene	17.32	119	671825	18.6579 ug/L		100
93)	1,3-Dichlorobenzene	17.51	146	377702	19.2707 ug/L		99
94)	1,4-Dichlorobenzene	17.64	146	381254	19.2942 ug/L		97
95)	n-Butylbenzene	17.84	91	644659	18.1097 ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	331623	19.0239 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	24945	19.5174 ug/L		99
98)	1,2,4-Trichlorobenzene	20.28	180	248383	19.0626 ug/L		99
99)	Hexachlorobutadiene	20.43	225	119437	19.6183 ug/L		99
100)	Naphthalene	20.64	128	331455	17.1218 ug/L		100
101)	1,2,3-Trichlorobenzene	20.95	180	199903	18.1850 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M412949.D 8260WT.M Tue Jun 14 08:09:51 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061316\8M412949.D Vial: 7
Acq On : 13 Jun 2016 16:59 Operator: TMB
Sample : WG572494-03 20ug/L LCS2 STD 8260 Inst : HPMS8
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 8:10 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

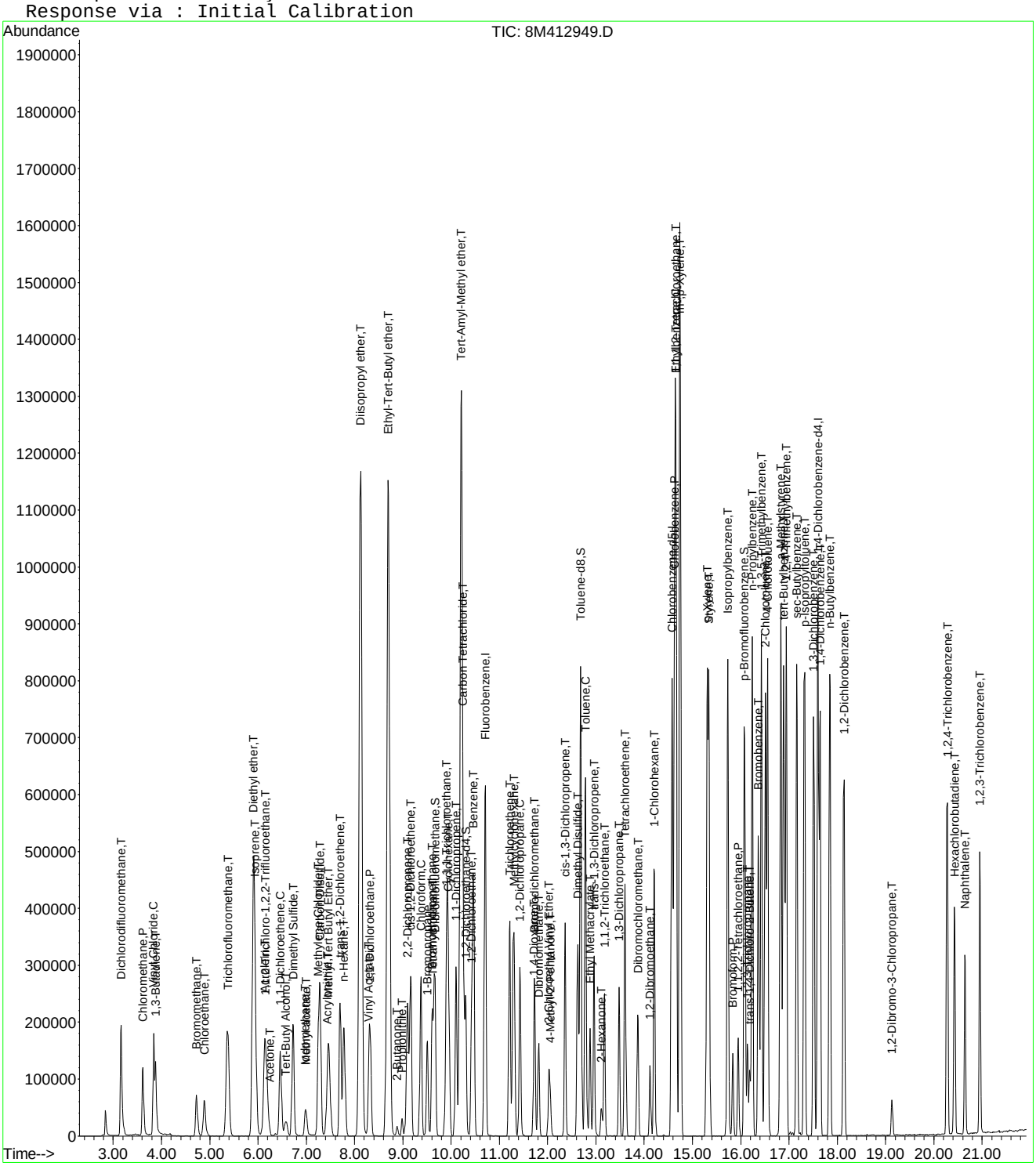

2.2 Semivolatiles Data

2.2.1 Semivolatiles GC/MS Data (Dioxane)

2.2.1.1 Summary Data

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060414-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	AWD1T-060716	**Prep Method:**	3520C	**Prep Date:**	06/11/2016 13:19
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572361	**Analyst:**	MES	**Run Date:**	06/13/2016 12:35
Collect Date:	06/07/2016 07:55	**Dilution:**	1	**File ID:**	15M18373
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	5.74	J	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	1060	20	129	*

J	The reported result is an estimated value.

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060414-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	AWD1B-060716	**Prep Method:**	3520C	**Prep Date:**	06/11/2016 13:19
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572361	**Analyst:**	MES	**Run Date:**	06/13/2016 12:58
Collect Date:	06/07/2016 08:45	**Dilution:**	1	**File ID:**	15M18374
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	7.14	J	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	1950	20	129	*

J	The reported result is an estimated value.

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060414-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	MW14T-060716	**Prep Method:**	3520C	**Prep Date:**	06/11/2016 13:19
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572361	**Analyst:**	MES	**Run Date:**	06/13/2016 15:14
Collect Date:	06/07/2016 10:30	**Dilution:**	50	**File ID:**	15M18380
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	390		100	50.0	25.0

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	0.000	20	129	*

Certificate of Analysis

Sample #:	L16060414-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	MW14B-060716	**Prep Method:**	3520C	**Prep Date:**	06/11/2016 13:19
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572361	**Analyst:**	MES	**Run Date:**	06/13/2016 15:36
Collect Date:	06/07/2016 11:20	**Dilution:**	50	**File ID:**	15M18381
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	412		110	55.0	27.5

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	0.000	20	129	*

2.2.1.2 QC Summary Data

Example 8270 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	1261197
Cis = Concentration of the specific internal standard (ug/mL)	40
Ais = Area of the characteristic ion of the specific internal standard	608044
Cx = Concentration of the compound in the standard being measured (ug/mL)	50
RF = Calculated Response Factor	**1.65935**

2.0 Calculating the concentration (C) of a compound in water using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Vi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Vi = Initial volume of sample extracted from prep log (mL)	1021
Cx = Concentration of the compound in the sample being measured (ug/mL)	0.016947
Cx = Concentration of the compound in the sample being measured (ug/L)	**16.947**

3.0 Calculating the concentration (C) of a compound in soil using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Wi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Wi = Initial weight of sample extracted (g) from prep log	30
Cx = Concentration of the compound in the sample being measured (ug/g)	0.576763
Cx = Concentration of the compound in the sample being measured (ug/kg)	**576.7627**

Dry weight correction:

Percent solids (PCT_S)	50
Cd = (Cx) (100)/PCT_S	**1153.525** ug/kg

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve plot

b = intercept from curve plot

Step 2: Calculate y from Quantitation Report

y = 16790/784838 = 0.02139

Step 3: Solve for x

x = (y - b)/m = [(0.02139 -(- 0.0435)]/ 0.0783 = 0.829

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.829) = 20.72 ug/L

Example Spreadsheet Calculation:

Slope from curve, m:	0.0783	
Intercept from curve, b:	-0.0435	
Area of analyte, Ax:	16790	
Area of Internal Standard , Ais:	784484	
Concentration of IS, Cis	25.00	ug/L
Response Ratio (y) :	0.021403	
Amount Ratio:	0.828897	
Concentration (Cx):	20.72241	ug/L

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**0.0259**	
Value of B from plot:	**0.0596**	
Value of C from plot:	**-0.0165**	
Area of analyte from quantitation report:	**203233**	
Area of IS from quantiation report:	**1425653**	
Response ratio, y:	**0.142554**	
C - y:	**-0.15905**	
Root 1 - Computed amount ratio , X1:	**-3.88278**	
Root 2 - Computed amount ratio , X2:	**1.581623**	use this solution
Concentration of IS, Cis:	**40.00**	
Concentration of analyte, Cx:	**63.26**	ug/L

Microbac Laboratories Inc.
Continuous Sample Extract Log

Workgroup: WG571956
Analyst: CPD
Spike Analyst: CPD
Method: 3520C
Run Date: 06/11/2016 13:19
SOP: EXB01 Revison 20
Spike Witness: EMW
Surr Solution: STD74051

TIME ON: 16:35 OFF: 10:50 ON: _____ OFF: _____

CH2CL2 Lot #: COA18968
sodium sulfate Lot #: COA18814
1:1 H2SO4 Lot #: RGT36755

	SAMPLE #	Type	Reference	Prod	pH	Init Amnt	Surr Amnt	Spike Amnt	Spike Sol	Final Vol	Color
1	L16051582-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
2	L16060302-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
3	L16060411-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
4	L16060411-02	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
5	L16060411-03	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
6	L16060411-04	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
7	L16060414-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Colored
8	L16060414-02	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Colored
9	L16060414-03	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
10	L16060414-04	SAMP		827-DIOXANE	<2	910 mL	.05 mL			1 mL	Transparent
11	WG571956-01	BLANK		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
12	WG571956-02	LCS		827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD66388	1 mL	Transparent
13	WG571956-03	LCS2		827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD66388	1 mL	Transparent

L16051582-01	RE-EXT OUT OF HOLD

Analyst: Chelsick Davis

Reviewer: Chris Hill

EXTRACT - Modified 01/23/2009
PDF ID: 4803798
Report generated: 06/11/2016 13:21

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 061016
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG571947

Internal STD: STD75471 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: STD74214 MS/MSD STD:

Comments: L16051582-01, and L16060024-01,03,05 were already sent for re-extract due to QC contamination. L16060024s are being re-extracted as 827-SPE-DIOX only.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18332	BAKEOUT-IS CHECK	1	1		06/10/16 08:27
2	15M18333	BAKEOUT-IS CHECK	1	1		06/10/16 08:53
3	15M18334	WG571981-01 5PPM DFTPP STD	1	1	STD75016	06/10/16 09:13
4	15M18335	BAKEOUT-IS CHECK	1	1		06/10/16 09:31
5	15M18336	BAKEOUT-IS CHECK	1	1		06/10/16 09:53
6	15M18337	WG572230-01 5PPM DFTPP STD	1	1	STD75016	06/10/16 10:18
7	15M18338	WG572230-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 10:36
8	15M18339	WG572230-03 10 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 11:00
9	15M18340	WG572230-04 7.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 11:22
10	15M18341	WG572230-05 2.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 11:45
11	15M18342	WG572230-06 1 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 12:08
12	15M18343	WG572230-07 0.4 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 12:30
13	15M18344	WG572230-08 5PPM 1,4-DIOXANE ALT SRC	1	1	STD74214	06/10/16 12:52
14	15M18345	WG571410-01 BLANK 6/6	1	1		06/10/16 13:15
15	15M18346	WG571410-02 LCS 6/6	1	1		06/10/16 13:38
16	15M18347	WG571410-03 LCSDUP 6/6	1	1		06/10/16 14:01
17	15M18348	WG571404-01 BLANK 6/2	1	1		06/10/16 14:24
18	15M18349	WG571404-02 LCS 6/2	1	1		06/10/16 14:47
19	15M18350	WG571404-03 LCSDUP 6/2	1	1		06/10/16 15:09
20	15M18351	L16060067-01 827-DIOX	1	1		06/10/16 15:32
21	15M18352	L16051582-01 5X 827-DIOX	1	5		06/10/16 15:55
22	15M18353	L16060024-05 20X 827-DIOX	1	20		06/10/16 16:18
23	15M18354	L16060024-03 20X 827-DIOX	1	20		06/10/16 16:40
24	15M18355	L16060024-01 20,000X 827-DIOX	1	20000		06/10/16 17:03
25	15M18356	L16060067-01 2X 827-DIOX	1	2		06/10/16 17:26
26	15M18357	L16060024-03 100X 827-DIOX	1	100		06/10/16 17:49

Comments

Seq.	Rerun	Dil.	Reason	Analytes
3				
	DFTPP check after installing new source and retuning.			
17				
	WG571404-01 BLANK 6/2 dioxane hit above the RL.			

Page: 1 Approved: 13-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 061016

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG571947

Internal STD: STD75471 Surrogate STD: NA

CCV STD: STD74784 LCS STD: STD74214

Comments

Seq.	Rerun	Dil.	Reason	Analytes
18				
	WG571404-02 LCS 6/2 fails high.			
19				
	WG571404-03 LCSDUP 6/2 fails high.			
20	X	2	Over Calibration Range	
	L16060067-01			
23	X	100	Over Calibration Range	
	L16060024-03 20X DNR			

Page: 2 Approved: 13-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 061316

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG572361

Internal STD: STD75471 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18361	BAKEOUT	1	1		06/13/16 08:10
2	15M18362	WG572383-01 5PPM DFTPP STD	1	1	STD75016	06/13/16 08:30
3	15M18363	WG572383-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/13/16 08:48
4	15M18364	WG571956-01 BLANK 6/11	1	1		06/13/16 09:11
5	15M18365	WG571956-02 LCS 6/11	1	1		06/13/16 09:34
6	15M18366	WG571956-03 LCSDUP 6/11	1	1		06/13/16 09:56
7	15M18367	L16051582-01 RE	1	1		06/13/16 10:19
8	15M18368	L16060302-01	1	1		06/13/16 10:42
9	15M18369	L16060411-01	1	1		06/13/16 11:04
10	15M18370	L16060411-02	1	1		06/13/16 11:27
11	15M18371	L16060411-03	1	1		06/13/16 11:50
12	15M18372	L16060411-04	1	1		06/13/16 12:12
13	15M18373	L16060414-01	1	1		06/13/16 12:35
14	15M18374	L16060414-02	1	1		06/13/16 12:58
15	15M18375	L16060414-03	1	1		06/13/16 13:20
16	15M18376	L16060414-04	1	1		06/13/16 13:43
17	15M18377	BAKEOUT	1	1		06/13/16 14:05
18	15M18378	L16051582-01 5X RE	1	5		06/13/16 14:28
19	15M18379	L16060302-01 5X	1	5		06/13/16 14:51
20	15M18380	L16060414-03 50X	1	50		06/13/16 15:14
21	15M18381	L16060414-04 50X	1	50		06/13/16 15:36
22	15M18382	L16060414-01 10X	1	10		06/13/16 15:59
23	15M18383	L16060414-02 10X	1	10		06/13/16 16:22
24	15M18384	L16060414-03 10X	1	10		06/13/16 16:44
25	15M18385	L16060414-04 10X	1	10		06/13/16 17:07
26	15M18386	BAKEOUT	1	1		06/13/16 17:29

Comments

Seq.	Rerun	Dil.	Reason	Analytes
7	X	5	Over Calibration Range	
	L16051582-01 RE			
8	X	5	Over Calibration Range	
	L16060302-01			

Page: 1 Approved: 16-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 061316

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG572361

Internal STD: STD75471 Surrogate STD: NA

CCV STD: STD74784 LCS STD:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
13				
	L16060414-01 surrogate recovery is high due to SMI.			
14				
	L16060414-02 surrogate recovery is high due to SMI.			
15	X	50	Over Calibration Range	
	L16060414-03			
16	X	50	Over Calibration Range	
	L16060414-04			
22				
	L16060414-01 10X DNR			
23				
	L16060414-02 10X DNR			
24				
	L16060414-03 10X DNR			
25				
	L16060414-04 10X DNR			

Page: 2 Approved: 16-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 10-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75640
Analytical Workgroups: L16051582, L16060024, L16060067

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 12-JUN-2016

Secondary Reviewer: 13-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-13-2016 08:34:44

Microbac Laboratories Inc.

Data Checklist

Date: 13-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75685
Analytical Workgroups: L160601582, L16060302, L16060411, L16060414

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 14-JUN-2016

Secondary Reviewer: 16-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-16-2016 09:47:19

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8270D

AAB#: WG572361

Login Number: L16060414

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
AWD1T-060716	01	06/07/16					06/11/2016	4.2	7		06/13/16	2	40	
AWD1B-060716	02	06/07/16					06/11/2016	4.2	7		06/13/16	2	40	
MW14T-060716	03	06/07/16					06/11/2016	4.1	7		06/13/16	2.1	40	
MW14B-060716	04	06/07/16					06/11/2016	4.1	7		06/13/16	2.1	40	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4807645
Report generated 06/14/2016 15:29

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060414
Instrument Id: HPMS15
Workgroup (AAB#): WG572361

Method: 827-DIOXANE
CAL ID: HPMS15-10-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1
L16060414-01	1.00	01	1060
L16060414-02	1.00	01	1950
L16060414-03	50.0	DL01	DL
L16060414-04	50.0	DL01	DL
WG571956-01	1.00	01	55.6
WG571956-02	1.00	01	54.8
WG571956-03	1.00	01	61.1

Surrogates	Surrogate Limits
1 - 1,4-Dioxane-d8	20 - 129

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4807653
Report generated: 06/14/2016 15:29

METHOD BLANK SUMMARY

Login Number: L16060414
Blank File ID: 15M18364
Prep Date: 06/11/16 13:19
Analyzed Date: 06/13/16 09:11
Analyst: MES

Work Group: WG572361
Blank Sample ID: WG571956-01
Instrument ID: HPMS15
Method: 8270D

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG571956-02	15M18365	06/13/16 09:34	01
LCS2	WG571956-03	15M18366	06/13/16 09:56	01
AWD1T-060716	L16060414-01	15M18373	06/13/16 12:35	01
AWD1B-060716	L16060414-02	15M18374	06/13/16 12:58	01
MW14T-060716	L16060414-03	15M18380	06/13/16 15:14	DL01
MW14B-060716	L16060414-04	15M18381	06/13/16 15:36	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4811269
Report generated 06/17/2016 08:52

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060414 Prep Date: 06/11/16 13:19 Sample ID: WG571956-01
Instrument ID: HPMS15 Run Date: 06/13/16 09:11 Prep Method: 3520C
File ID: 15M18364 Analyst: MES Method: 8270D
Workgroup (AAB#): WG572361 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS15-10-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
1,4-Dioxane	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	55.6	20 - 129	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4807646
14-JUN-2016 15:29

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060414 Analyst: MES Prep Method: 3520C
Instrument ID: HPMS15 Matrix: Water Method: 8270D
Workgroup (AAB#): WG572361 Units: ug/L
QC Key: DOD4 Lot #: STD66388

Sample ID: WG571956-02 LCS File ID: 15M18365 Run Date: 06/13/2016 09:34
Sample ID: WG571956-03 LCS2 File ID: 15M18366 Run Date: 06/13/2016 09:56

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,4-Dioxane	5.00	2.63	52.6	5.00	2.97	59.4	12.0	30 - 104	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,4-Dioxane-d8	54.8	61.1	20 - 129	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4807647
Report generated: 06/14/2016 15:29

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16060414
Instrument: HPMS15
Analyst: MES
Workgroup: WG572230

Tune ID: WG572230-01
Run Date: 06/10/2016
Run Time: 10:18
File ID: 15M18337
Cal ID: HPMS15 - 10-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	39.5	52157	PASS
68.0	69.0	0	2.00	1.91	1026	PASS
69.0	198	0	100	40.8	53844	PASS
70.0	69.0	0	2.00	0.223	120	PASS
127	198	40.0	60.0	51.4	67853	PASS
197	198	0	1.00	0.383	505	PASS
198	198	100	100	100	131981	PASS
199	198	5.00	9.00	6.72	8869	PASS
275	198	10.0	30.0	26.4	34853	PASS
365	198	1.00	100	3.17	4186	PASS
441	443	0.0100	100	73.9	15632	PASS
442	198	40.0	100	83.4	110112	PASS
443	442	17.0	23.0	19.2	21163	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG572230-02	STD-CCV	01	06/10/2016 10:36	
WG572230-03	STD	01	06/10/2016 11:00	
WG572230-04	STD	01	06/10/2016 11:22	
WG572230-05	STD	01	06/10/2016 11:45	
WG572230-06	STD	01	06/10/2016 12:08	
WG572230-07	STD	01	06/10/2016 12:30	
WG572230-08	SSCV	01	06/10/2016 12:52	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4807650
Report generated 06/14/2016 15:29

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16060414
Instrument: HPMS15
Analyst: MES
Workgroup: WG572383

Tune ID: WG572383-01
Run Date: 06/13/2016
Run Time: 08:30
File ID: 15M18362
Cal ID: HPMS15 - 10-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	41.7	58608	PASS
68.0	69.0	0	2.00	1.47	891	PASS
69.0	198	0	100	43.0	60438	PASS
70.0	69.0	0	2.00	0	0	PASS
127	198	40.0	60.0	52.6	73908	PASS
197	198	0	1.00	0.289	406	PASS
198	198	100	100	100	140616	PASS
199	198	5.00	9.00	6.82	9594	PASS
275	198	10.0	30.0	24.7	34747	PASS
365	198	1.00	100	2.69	3776	PASS
441	443	0.0100	100	72.0	14703	PASS
442	198	40.0	100	75.2	105688	PASS
443	442	17.0	23.0	19.3	20429	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG572383-02	CCV	01	06/13/2016 08:48	
WG571956-01	BLANK	01	06/13/2016 09:11	
WG571956-02	LCS	01	06/13/2016 09:34	
WG571956-03	LCS2	01	06/13/2016 09:56	
L16060414-01	AWD1T-060716	01	06/13/2016 12:35	
L16060414-02	AWD1B-060716	01	06/13/2016 12:58	
L16060414-03	MW14T-060716	DL01	06/13/2016 15:14	
L16060414-04	MW14B-060716	DL01	06/13/2016 15:36	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4807650
Report generated 06/14/2016 15:29

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060414
Analytical Method: 8270D
ICAL Workgroup: WG572230

Instrument ID: HPMS15
Initial Calibration Date: 10-JUN-16 12:30
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
1,4-Dioxane		0.3253	2.74		

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4807648
Report generated 06/14/2016 15:29

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060414

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 10-JUN-16 12:30

Column ID: F

Analyte	WG572230-02			WG572230-03			WG572230-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	5.00	107215.000	0.3234	10.0	192761.000	0.3420	7.50	146003.000	0.3236

INT_CAL - Modified 03/06/2008
PDF File ID: 4807648
Report generated 06/14/2016 15:29

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060414

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 10-JUN-16 12:30

Column ID: F

Analyte	WG572230-05			WG572230-06			WG572230-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	2.50	36488.0000	0.3190	1.00	18621.0000	0.3169	0.400	6733.00000	0.3266

INT_CAL - Modified 03/06/2008
PDF File ID: 4807648
Report generated 06/14/2016 15:29

Calibration Table Report
Method: DIOXANE_D8.M
Title: OVD MSS01 SIM 1,4-dioxane ICAL 061016
Last Calibration: Fri Jun 10 12:46:00 2016
Curve:WG572230
Calibration Files

Compound	10 15M18339.D	7.5 15M18340.D	5 15M18338.D	2.5 15M18341.D	1 15M18342.D	0.4 15M18343.D	Avg	%RSD	Linear
1,4-Dichlorobenzene-d4	ISTD								
1,4-Dioxane	0.342	0.324	0.324	0.319	0.317	0.327	0.325	2.735	
1,4-Dioxane-d8	0.440	0.415	0.417	0.411	0.409		0.419	2.988	
Nitrobenzene-d5	1.115	1.034	0.970	0.852	0.755	0.697	0.904	18.064	0.994
2-Fluorobiphenyl	2.685	2.595	2.549	2.638	2.570	2.639	2.613	1.934	
p-Terphenyl-d14	2.815	2.671	2.579	2.506	2.382	2.421	2.562	6.338	

Sun Jun 12 19:13:55 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060414 Run Date: 06/10/2016 Sample ID: WG572230-08
Instrument ID: HPMS15 Run Time: 12:52 Method: 8270D
File ID: 15M18344 Analyst: MES QC Key: DOD4
ICal Workgroup: WG572230 Cal ID: HPMS15 - 10-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
1,4-Dioxane		5000	5110	ug/L	0.333	2.30	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4807649
Report generated 06/14/2016 15:29

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060414
Run Date: 06/13/2016
Sample ID: WG572383-02
Instrument ID: HPMS15
Run Time: 08:48
Method: 8270D
File ID: 15M18363
Analyst: MES
QC Key: DOD4
Workgroup (AAB#): WG572361
Cal ID: HPMS15 - 10-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,4-Dioxane		5000	4970	ug/L	0.323	0.622	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4807651
Report generated 06/14/2016 15:29

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060414
Instrument ID: HPMS15
Workgroup (AAB#): WG572361

ICAL CCV Number: WG572230-02
CAL ID: HPMS15-10-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG572230-02	NA	NA	66625
Upper Limit	NA	NA	133250
Lower Limit	NA	NA	33313
L16060414-01	1.00	01	51516
L16060414-02	1.00	01	50069
L16060414-03	50.0	DL01	38368
L16060414-04	50.0	DL01	45572
WG571956-01	1.00	01	51747
WG571956-02	1.00	01	51838
WG571956-03	1.00	01	51677

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4807652
Report generated 06/14/2016 15:29

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060414
Instrument ID: HPMS15
Workgroup (AAB#): WG572361

ICAL CCV Number: WG572230-02
CAL ID: HPMS15-10-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG572230-02	NA	NA	6.94
Upper Limit	NA	NA	7.44
Lower Limit	NA	NA	6.44
L16060414-01	1.00	01	6.94
L16060414-02	1.00	01	6.94
L16060414-03	50.0	DL01	6.944
L16060414-04	50.0	DL01	6.944
WG571956-01	1.00	01	6.94
WG571956-02	1.00	01	6.94
WG571956-03	1.00	01	6.94

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4811270
Report generated: 06/17/2016 08:52

2.2.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18373.D
Acq On : 13 Jun 2016 12:35
Operator : MES
Sample : L16060414-01
Misc : 1,1
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jun 13 12:54:34 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	51516	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.771	96	1145450	53.1240	ug/L	-0.09
Spiked Amount 5.000			Recovery	= 1062.40%		
4) Nitrobenzene-d5	7.442	82	6236	0.3308	ug/L	0.00
Spiked Amount 5.000			Recovery	= 6.60%		
5) 2-Fluorobiphenyl	8.930	172	44	0.0003	ug/L	0.00
Spiked Amount 5.000			Recovery	= 0.00%		
6) p-Terphenyl-d14	12.188	244	1313	0.0099	ug/L	0.00
Spiked Amount 5.000			Recovery	= 0.20%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	96147	5.7365	ug/L	89

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18373.D
Acq On : 13 Jun 2016 12:35
Operator : MES
Sample : L16060414-01
Misc : 1,1
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jun 13 12:54:34 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

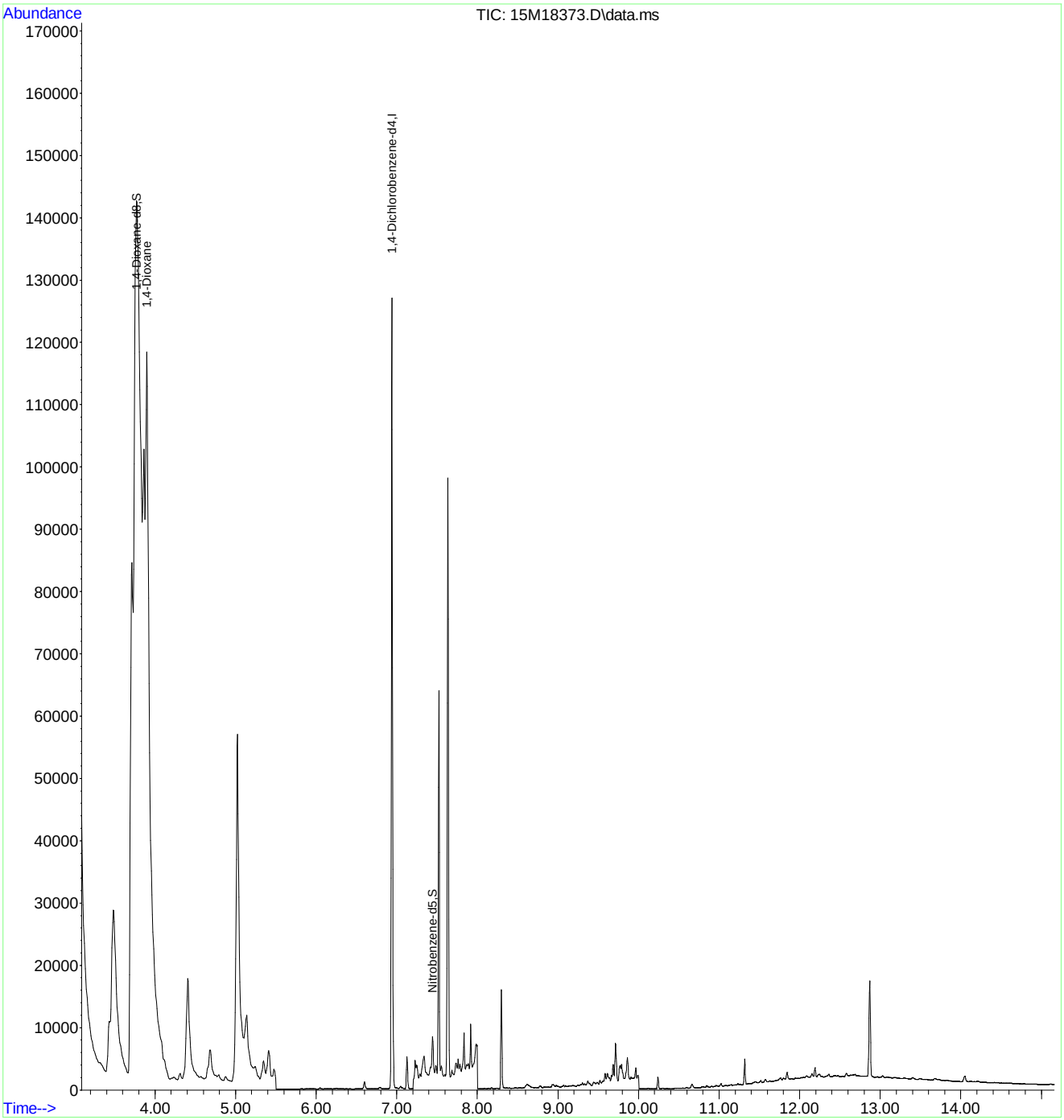

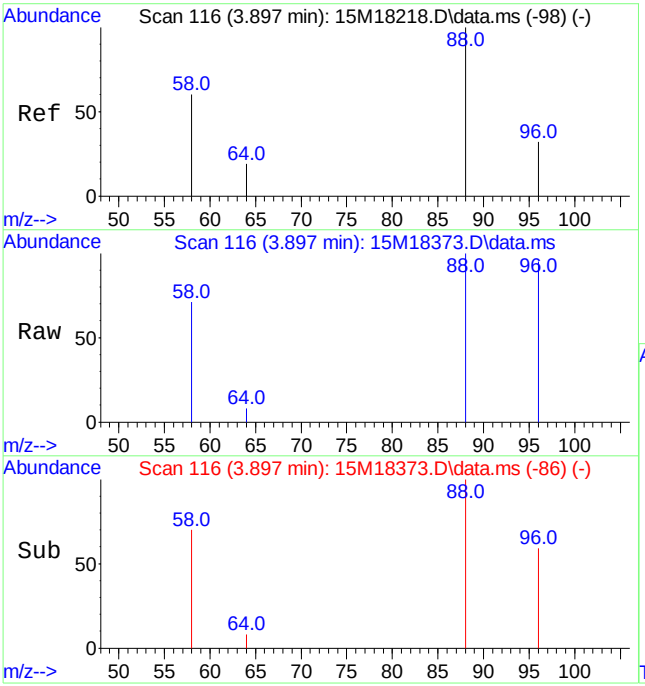

#2
1,4-Dioxane
Concen: 5.74 ug/L
RT: 3.897 min Scan# 116
Delta R.T. 0.000 min
Lab File: 15M18373.D
Acq: 13 Jun 2016 12:35

Tgt Ion: 58 Resp: 96147

Ion	Ratio	Lower	Upper
58	100		
88	157.4	103.1	240.7

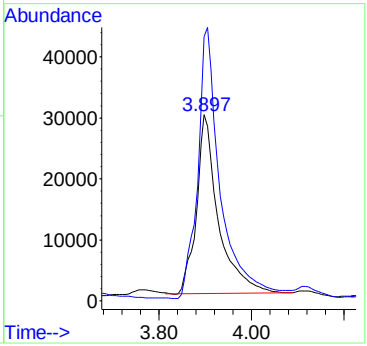

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18374.D
Acq On : 13 Jun 2016 12:58
Operator : MES
Sample : L16060414-02
Misc : 1,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jun 13 13:36:56 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	50069	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.770	96	2044817	97.5759	ug/L	-0.09
Spiked Amount 5.000			Recovery	= 1951.60%		
4) Nitrobenzene-d5	7.442	82	7828	0.3637	ug/L	0.00
Spiked Amount 5.000			Recovery	= 7.20%		
5) 2-Fluorobiphenyl	8.948	172	232	0.0018	ug/L	0.02
Spiked Amount 5.000			Recovery	= 0.00%		
6) p-Terphenyl-d14	11.952	244	266	0.0021	ug/L	-0.23
Spiked Amount 5.000			Recovery	= 0.00%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	116349	7.1424	ug/L	95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18374.D
Acq On : 13 Jun 2016 12:58
Operator : MES
Sample : L16060414-02
Misc : 1,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jun 13 13:36:56 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

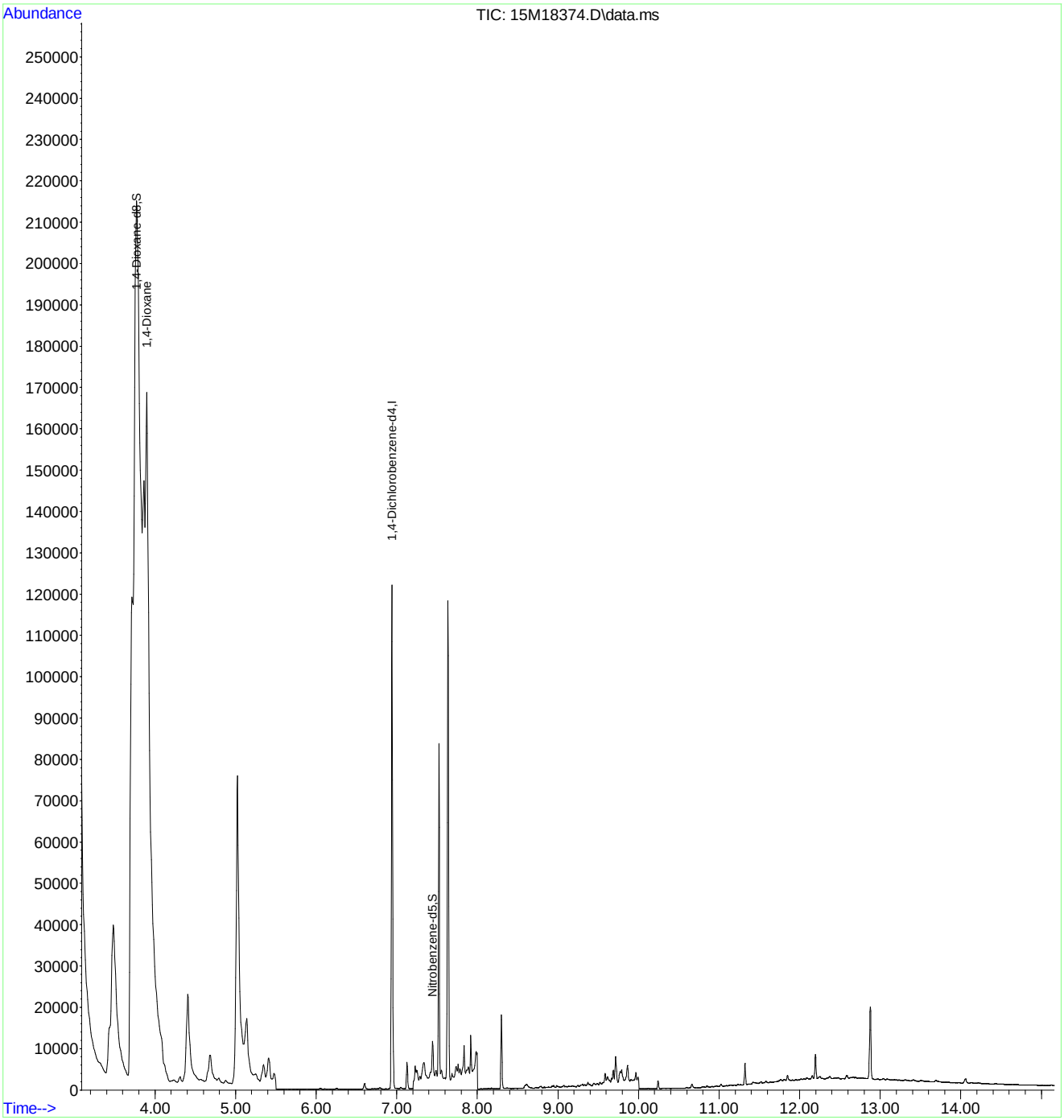

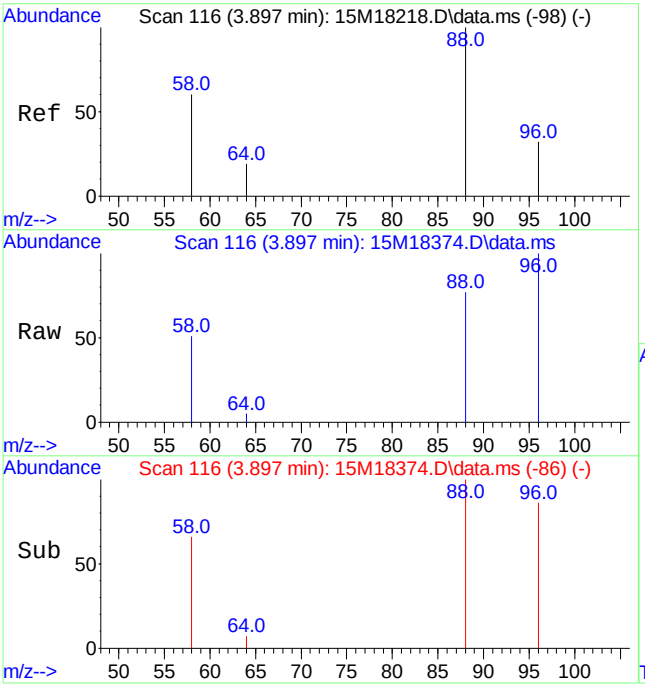

#2
1,4-Dioxane
Concen: 7.14 ug/L
RT: 3.897 min Scan# 116
Delta R.T. 0.000 min
Lab File: 15M18374.D
Acq: 13 Jun 2016 12:58

Tgt Ion: 58 Resp: 116349

Ion	Ratio	Lower	Upper
58	100		
88	164.7	103.1	240.7

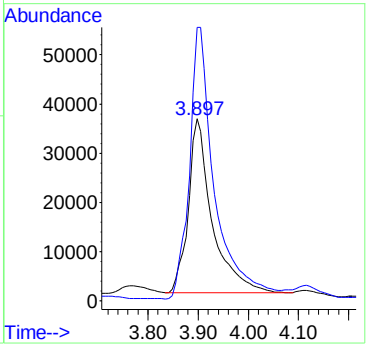

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18380.D
Acq On : 13 Jun 2016 15:14
Operator : MES
Sample : L16060414-03 50X
Misc : 1,50
ALS Vial : 18 Sample Multiplier: 50

Quant Time: Jun 13 15:31:14 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.944	152	38368	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.763	96	64333	200.3049	ug/L	-0.10
Spiked Amount 5.000			Recovery	= 4006.00%		
4) Nitrobenzene-d5	7.442	82	99	11.0164	ug/L	0.00
Spiked Amount 5.000			Recovery	= 220.40%		
5) 2-Fluorobiphenyl	8.934	172	19	0.0095	ug/L	0.00
Spiked Amount 5.000			Recovery	= 0.20%		
6) p-Terphenyl-d14	12.199	244	43	0.0219	ug/L	0.02
Spiked Amount 5.000			Recovery	= 0.40%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.890	58	97426	7.8047	ug/L	81

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18380.D
Acq On : 13 Jun 2016 15:14
Operator : MES
Sample : L16060414-03 50X
Misc : 1,50
ALS Vial : 18 Sample Multiplier: 50

Quant Time: Jun 13 15:31:14 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

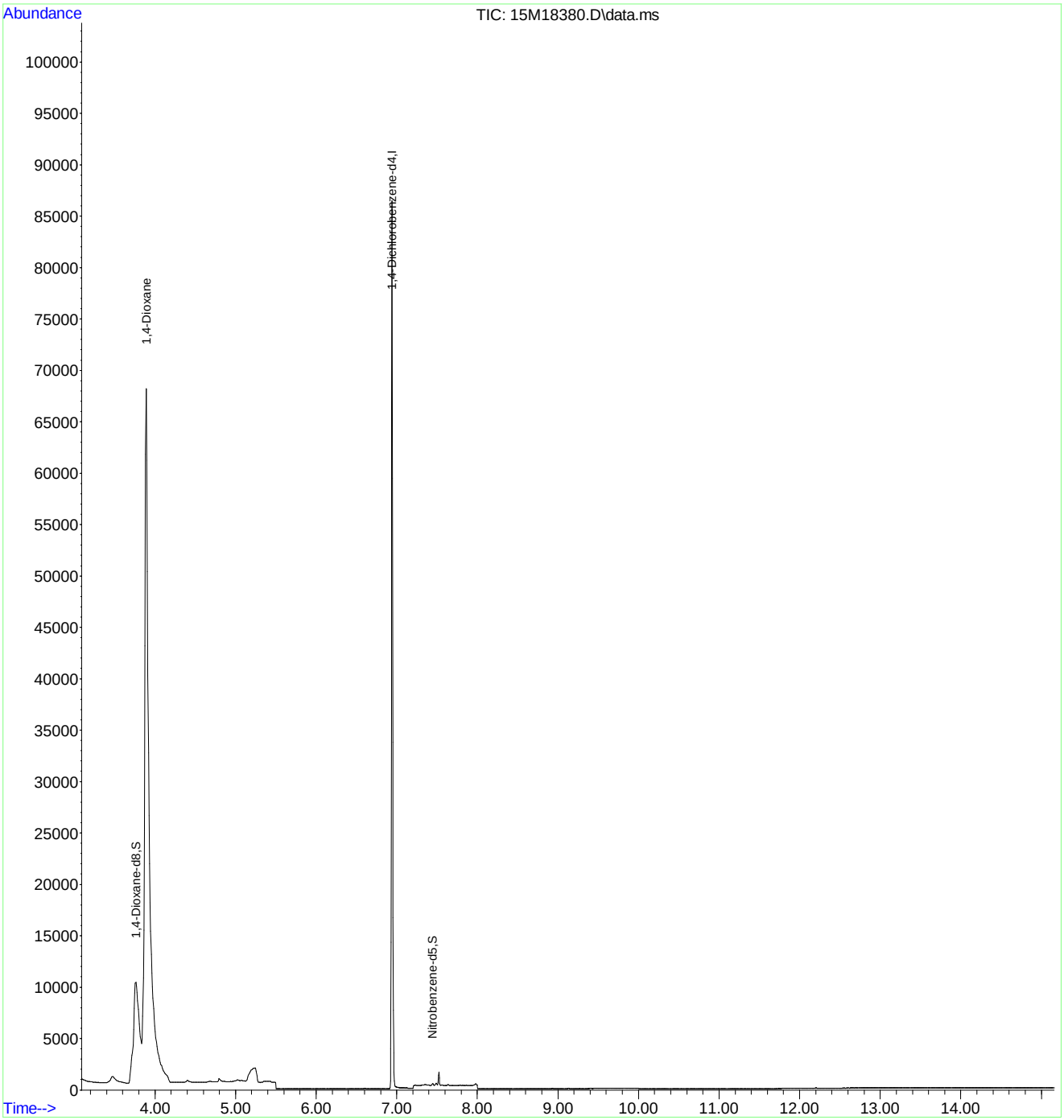

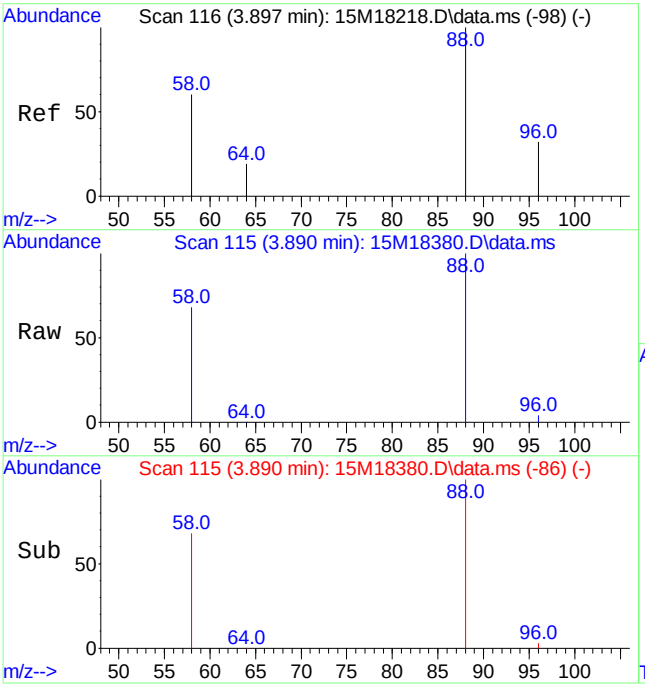

#2
1,4-Dioxane
Concen: 7.80 ug/L
RT: 3.890 min Scan# 115
Delta R.T. -0.007 min
Lab File: 15M18380.D
Acq: 13 Jun 2016 15:14

Tgt Ion: 58 Resp: 97426

Ion	Ratio	Lower	Upper
58	100		
88	146.0	103.1	240.7

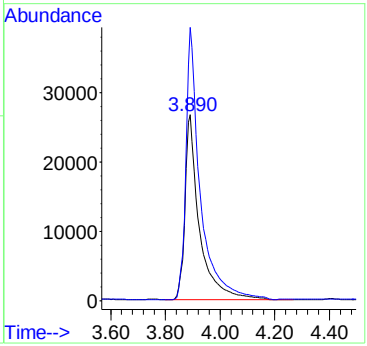

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18381.D
Acq On : 13 Jun 2016 15:36
Operator : MES
Sample : L16060414-04 50X
Misc : 1,50
ALS Vial : 19 Sample Multiplier: 50

Quant Time: Jun 13 15:53:05 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.944	152	45572	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.785	96	68589	179.7974	ug/L	-0.08
Spiked Amount 5.000			Recovery	= 3596.00%		
4) Nitrobenzene-d5	7.447	82	115	11.0138	ug/L	0.01
Spiked Amount 5.000			Recovery	= 220.20%		
5) 2-Fluorobiphenyl	8.930	172	15	0.0063	ug/L	0.00
Spiked Amount 5.000			Recovery	= 0.20%		
6) p-Terphenyl-d14	12.199	244	68	0.0291	ug/L	0.02
Spiked Amount 5.000			Recovery	= 0.60%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.904	58	111175	7.4983	ug/L	81

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18381.D
Acq On : 13 Jun 2016 15:36
Operator : MES
Sample : L16060414-04 50X
Misc : 1,50
ALS Vial : 19 Sample Multiplier: 50

Quant Time: Jun 13 15:53:05 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

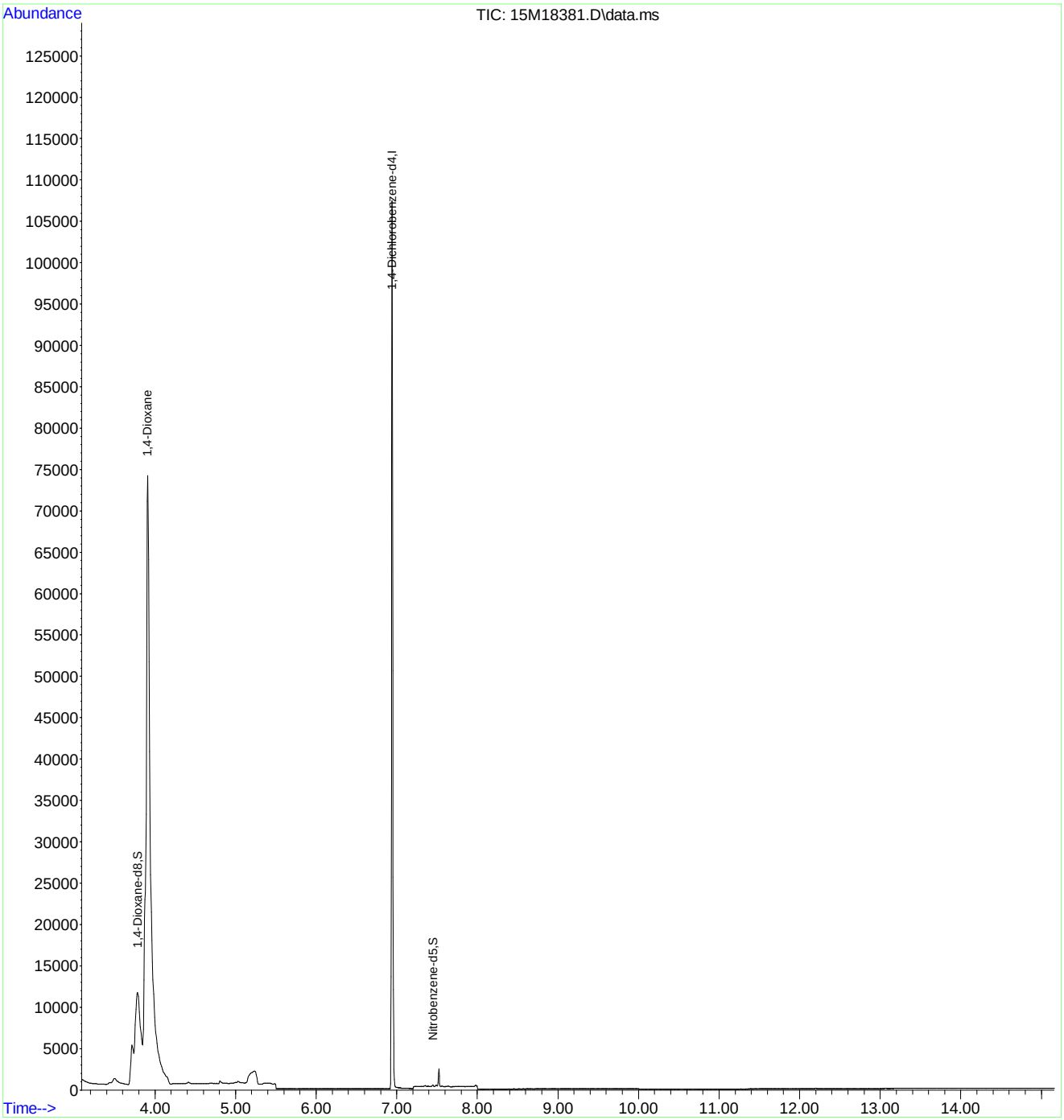

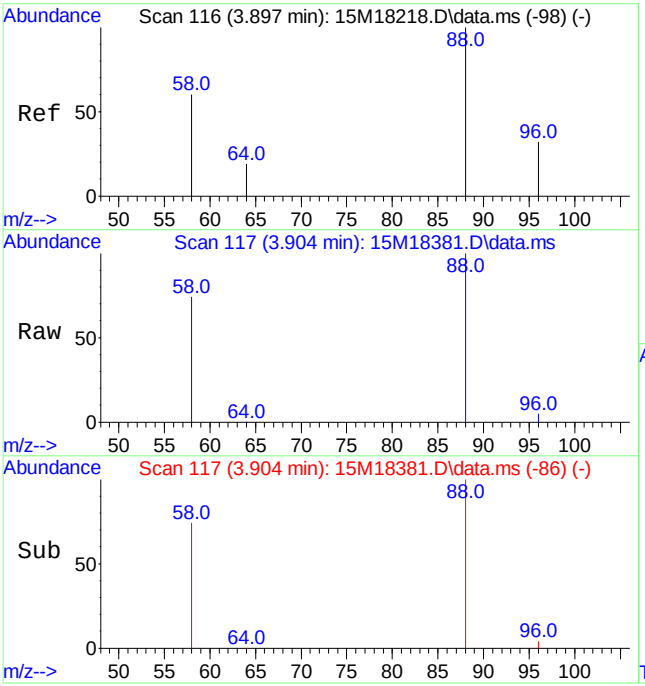

#2
1,4-Dioxane
Concen: 7.50 ug/L
RT: 3.904 min Scan# 117
Delta R.T. 0.007 min
Lab File: 15M18381.D
Acq: 13 Jun 2016 15:36

Tgt Ion: 58 Resp: 111175

Ion	Ratio	Lower	Upper
58	100		
88	145.6	103.1	240.7

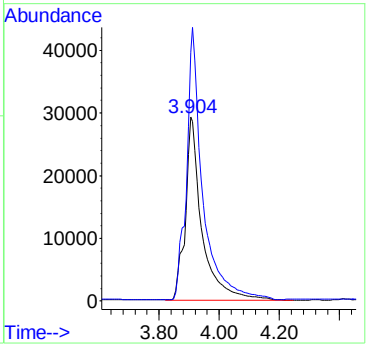

2.2.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18338.D
Acq On : 10 Jun 2016 10:36
Operator : MES
Sample : WG572230-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 10 18:15:30 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.940	152	66625	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.862	96	138302	4.9596 ug/L	0.00
Spiked Amount 5.000			Recovery	= 99.20%	
4) Nitrobenzene-d5	7.436	82	321639	4.7189 ug/L	0.00
Spiked Amount 5.000			Recovery	= 94.40%	
5) 2-Fluorobiphenyl	8.926	172	845013	4.8542 ug/L	0.00
Spiked Amount 5.000			Recovery	= 97.00%	
6) p-Terphenyl-d14	12.181	244	855352	5.0103 ug/L	0.00
Spiked Amount 5.000			Recovery	= 100.20%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.897	58	107215	4.9462 ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18338.D
Acq On : 10 Jun 2016 10:36
Operator : MES
Sample : WG572230-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 10 18:15:30 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

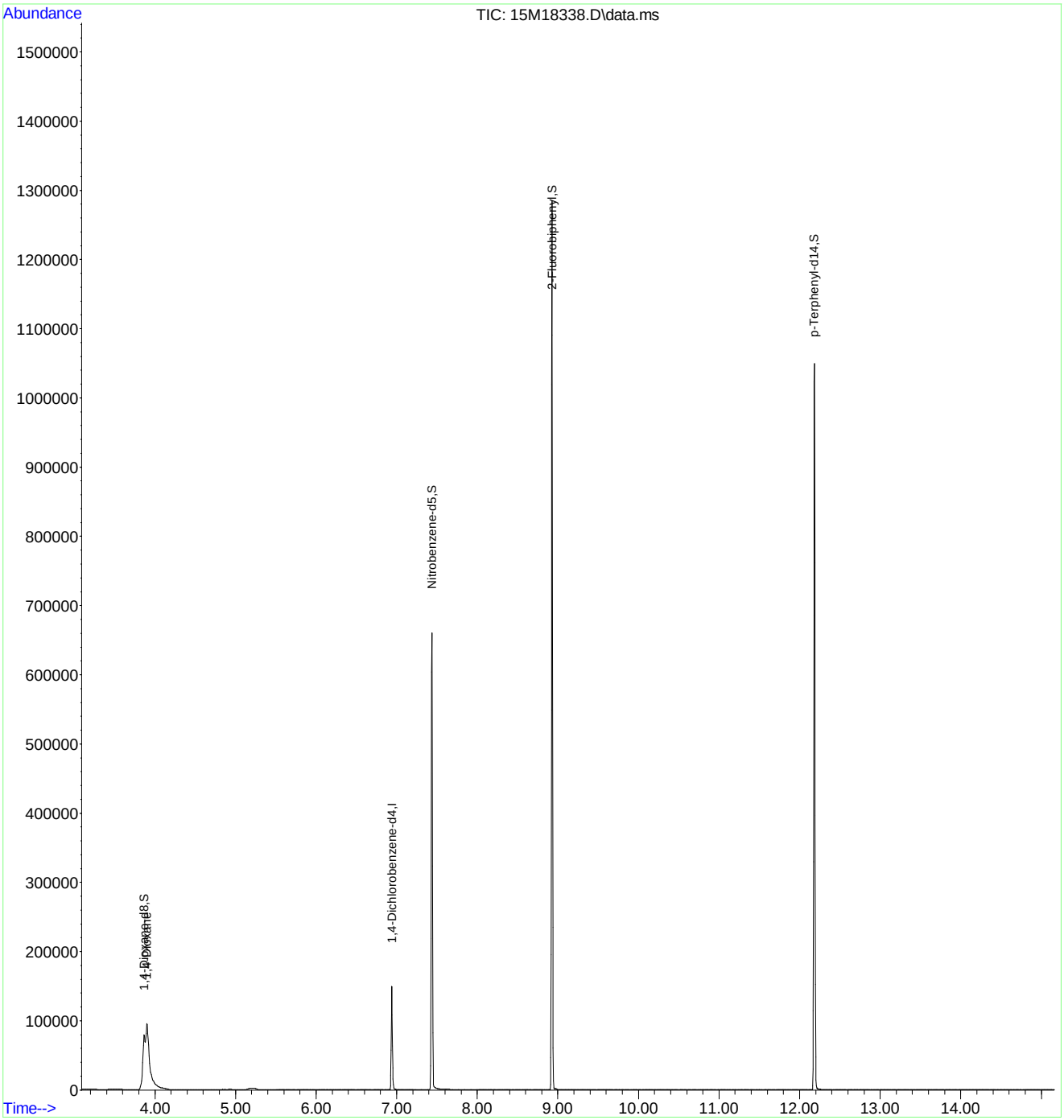

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18339.D
Acq On : 10 Jun 2016 11:00
Operator : MES
Sample : WG572230-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 10 18:15:34 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	56194	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	248072	10.5474	ug/L	0.00
Spiked Amount 5.000			Recovery = 211.00%			
4) Nitrobenzene-d5	7.436	82	628184	10.6403	ug/L	0.00
Spiked Amount 5.000			Recovery = 212.80%			
5) 2-Fluorobiphenyl	8.926	172	1513331	10.3070	ug/L	0.00
Spiked Amount 5.000			Recovery = 206.20%			
6) p-Terphenyl-d14	12.184	244	1587021	11.0217	ug/L	0.00
Spiked Amount 5.000			Recovery = 220.40%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	192761	10.5434	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18339.D
Acq On : 10 Jun 2016 11:00
Operator : MES
Sample : WG572230-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 10 18:15:34 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

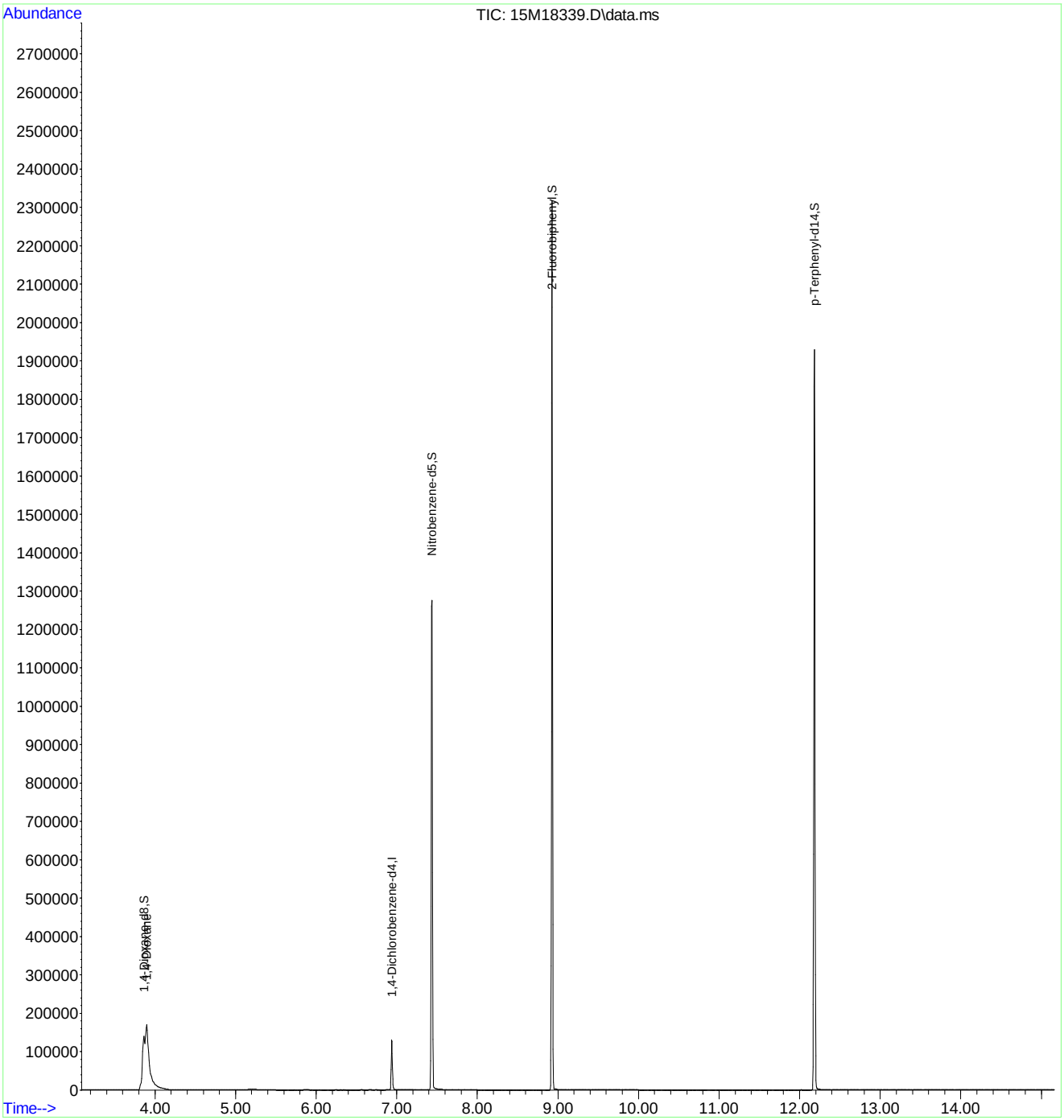

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18340.D
Acq On : 10 Jun 2016 11:22
Operator : MES
Sample : WG572230-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 10 18:15:37 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	60457	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	187351	7.4040	ug/L	0.00
Spiked Amount 5.000			Recovery	= 148.00%		
4) Nitrobenzene-d5	7.431	82	466388	7.4103	ug/L	0.00
Spiked Amount 5.000			Recovery	= 148.20%		
5) 2-Fluorobiphenyl	8.926	172	1170859	7.4122	ug/L	0.00
Spiked Amount 5.000			Recovery	= 148.20%		
6) p-Terphenyl-d14	12.192	244	1205938	7.7846	ug/L	0.01
Spiked Amount 5.000			Recovery	= 155.60%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	146003	7.4228	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18340.D
Acq On : 10 Jun 2016 11:22
Operator : MES
Sample : WG572230-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 10 18:15:37 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

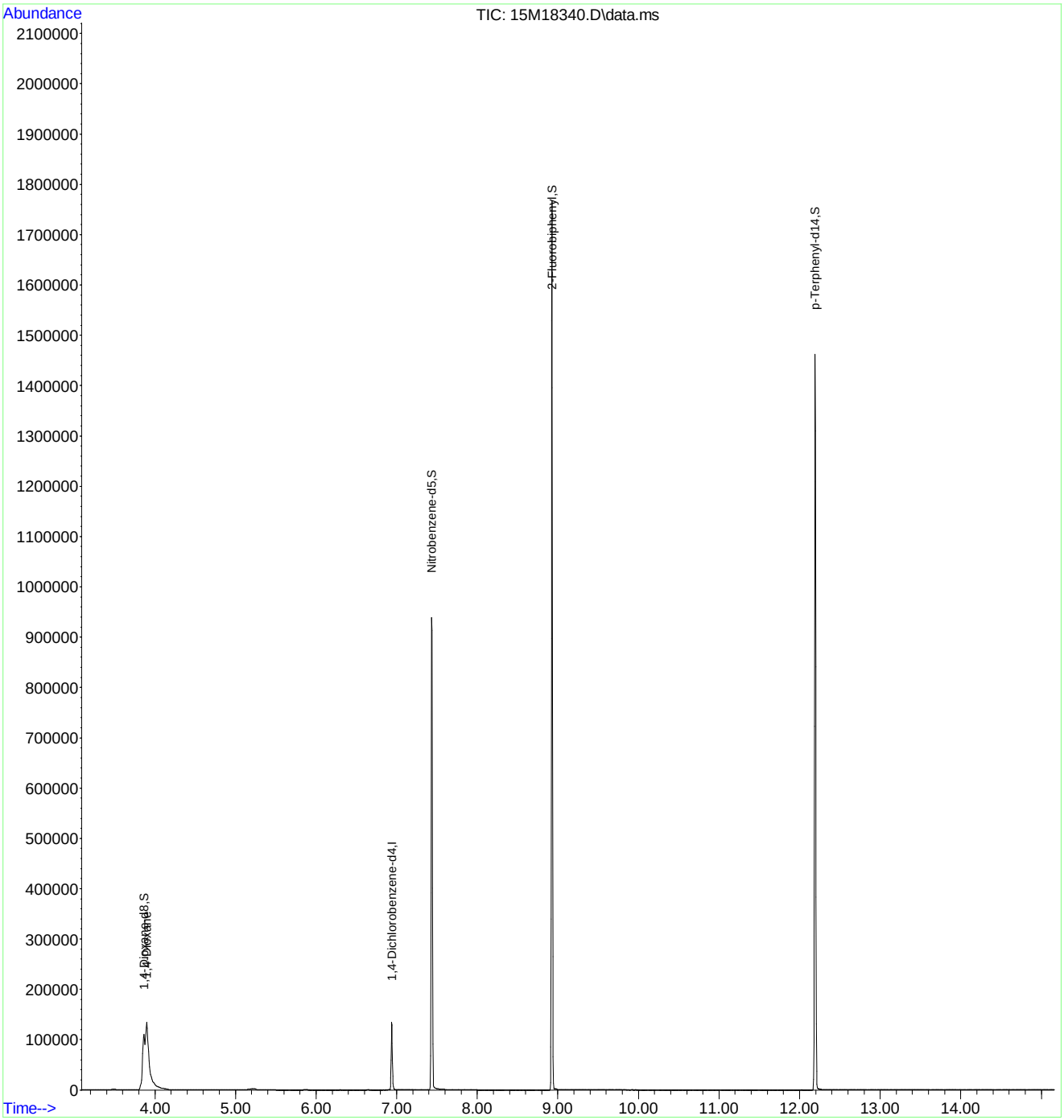

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18341.D
Acq On : 10 Jun 2016 11:45
Operator : MES
Sample : WG572230-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 10 18:15:40 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	45954	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.848	96	46972	2.4422	ug/L	-0.01
Spiked Amount 5.000			Recovery	=	48.80%	
4) Nitrobenzene-d5	7.436	82	97423	2.1945	ug/L	0.00
Spiked Amount 5.000			Recovery	=	43.80%	
5) 2-Fluorobiphenyl	8.926	172	301696	2.5127	ug/L	0.00
Spiked Amount 5.000			Recovery	=	50.20%	
6) p-Terphenyl-d14	12.188	244	286720	2.4350	ug/L	0.00
Spiked Amount 5.000			Recovery	=	48.60%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.883	58	36488	2.4405	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18341.D
Acq On : 10 Jun 2016 11:45
Operator : MES
Sample : WG572230-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 10 18:15:40 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

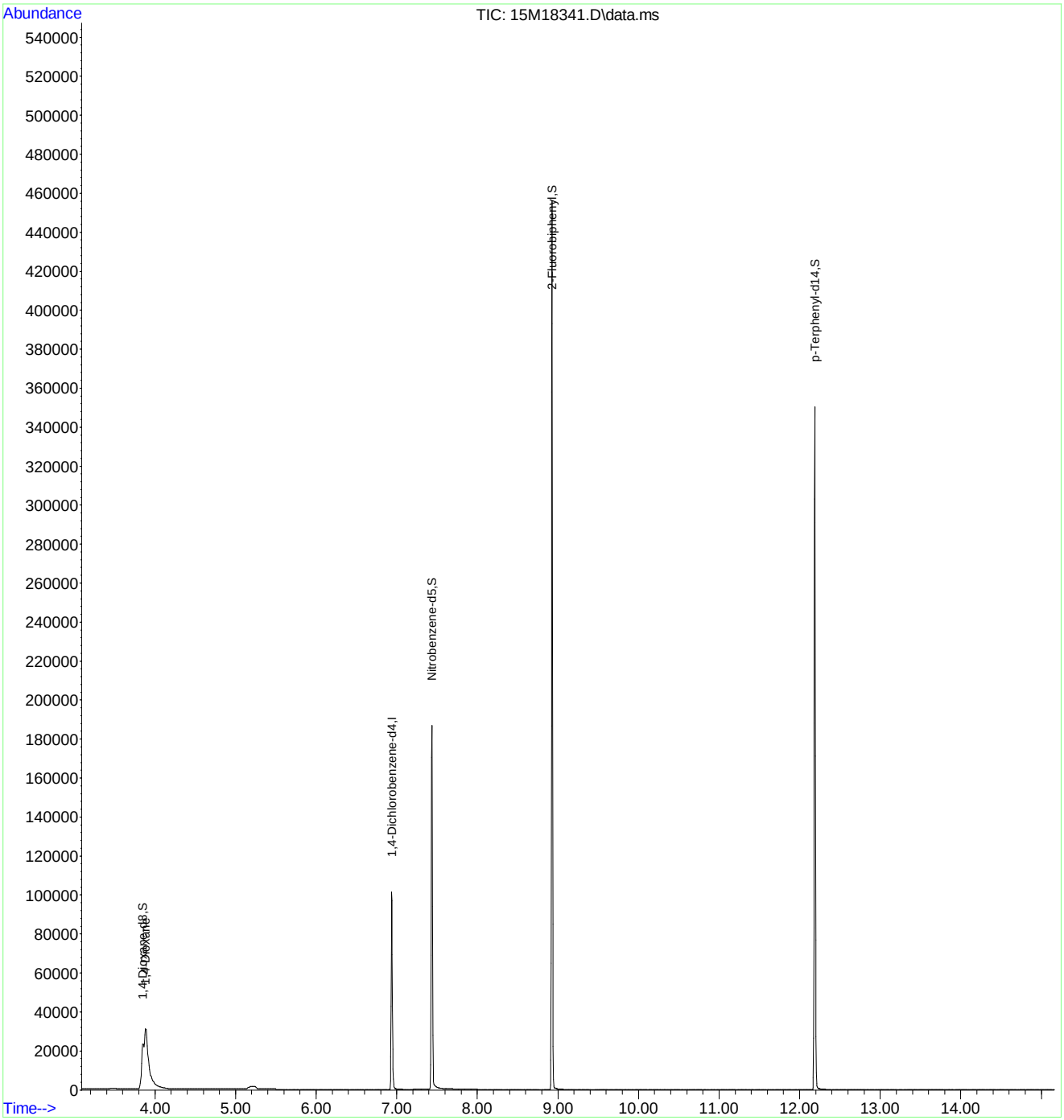

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18342.D
Acq On : 10 Jun 2016 12:08
Operator : MES
Sample : WG572230-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 10 18:15:43 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	59037	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	24054	0.9735	ug/L	0.00
Spiked Amount 5.000			Recovery = 19.40%			
4) Nitrobenzene-d5	7.436	82	44358	0.9184	ug/L	0.00
Spiked Amount 5.000			Recovery = 18.40%			
5) 2-Fluorobiphenyl	8.926	172	151018	0.9790	ug/L	0.00
Spiked Amount 5.000			Recovery = 19.60%			
6) p-Terphenyl-d14	12.199	244	140040	0.9257	ug/L	0.02
Spiked Amount 5.000			Recovery = 18.60%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.904	58	18621	0.9695	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18342.D
Acq On : 10 Jun 2016 12:08
Operator : MES
Sample : WG572230-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 10 18:15:43 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

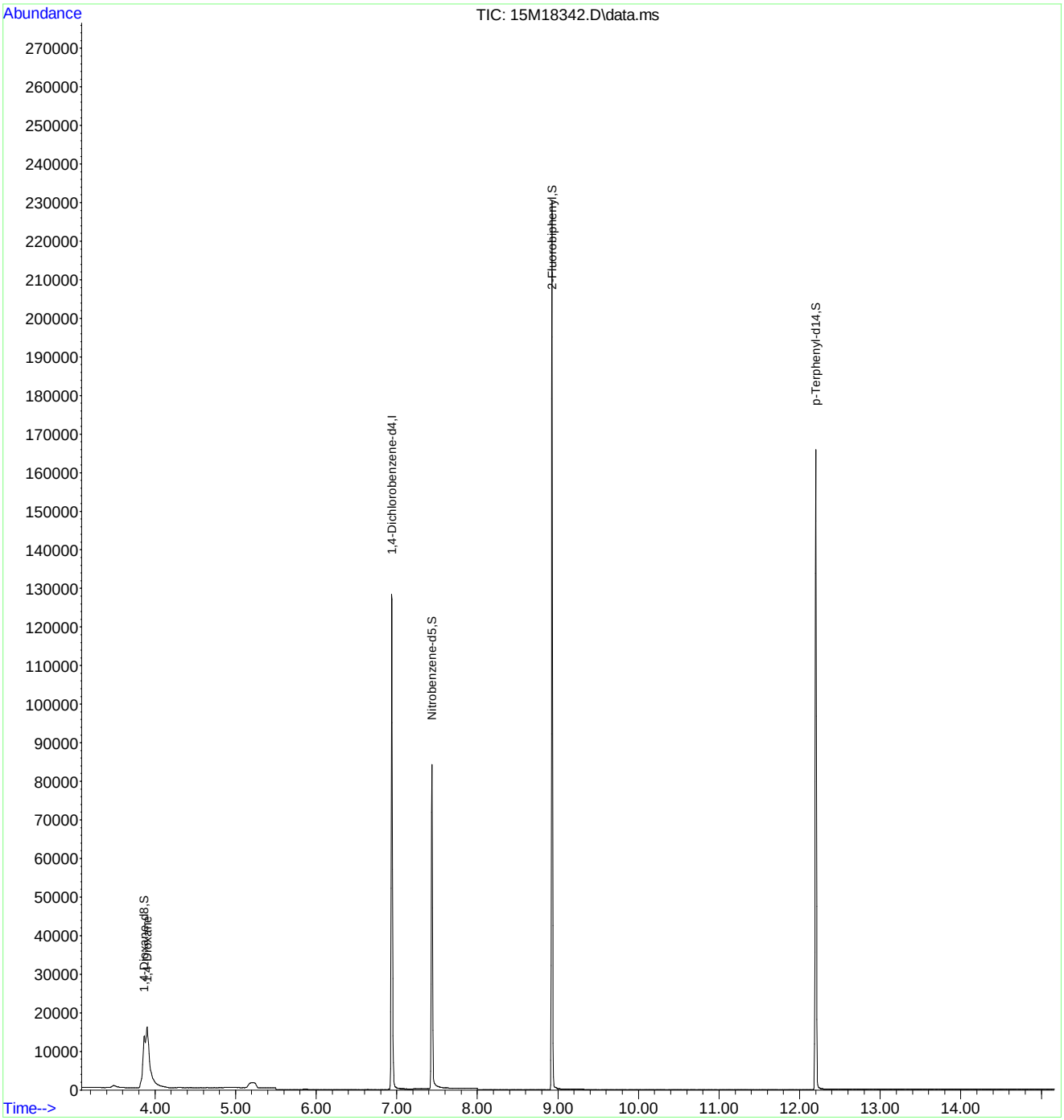

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18343.D
Acq On : 10 Jun 2016 12:30
Operator : MES
Sample : WG572230-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 10 18:15:46 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	51531	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	8760	0.4062	ug/L	0.00
Spiked Amount 5.000			Recovery	=	8.20%	
4) Nitrobenzene-d5	7.436	82	14371	0.4779	ug/L	0.00
Spiked Amount 5.000			Recovery	=	9.60%	
5) 2-Fluorobiphenyl	8.926	172	54404	0.4041	ug/L	0.00
Spiked Amount 5.000			Recovery	=	8.00%	
6) p-Terphenyl-d14	12.203	244	49910	0.3780	ug/L	0.02
Spiked Amount 5.000			Recovery	=	7.60%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	6733	0.4016	ug/L	79

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18343.D
Acq On : 10 Jun 2016 12:30
Operator : MES
Sample : WG572230-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 10 18:15:46 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

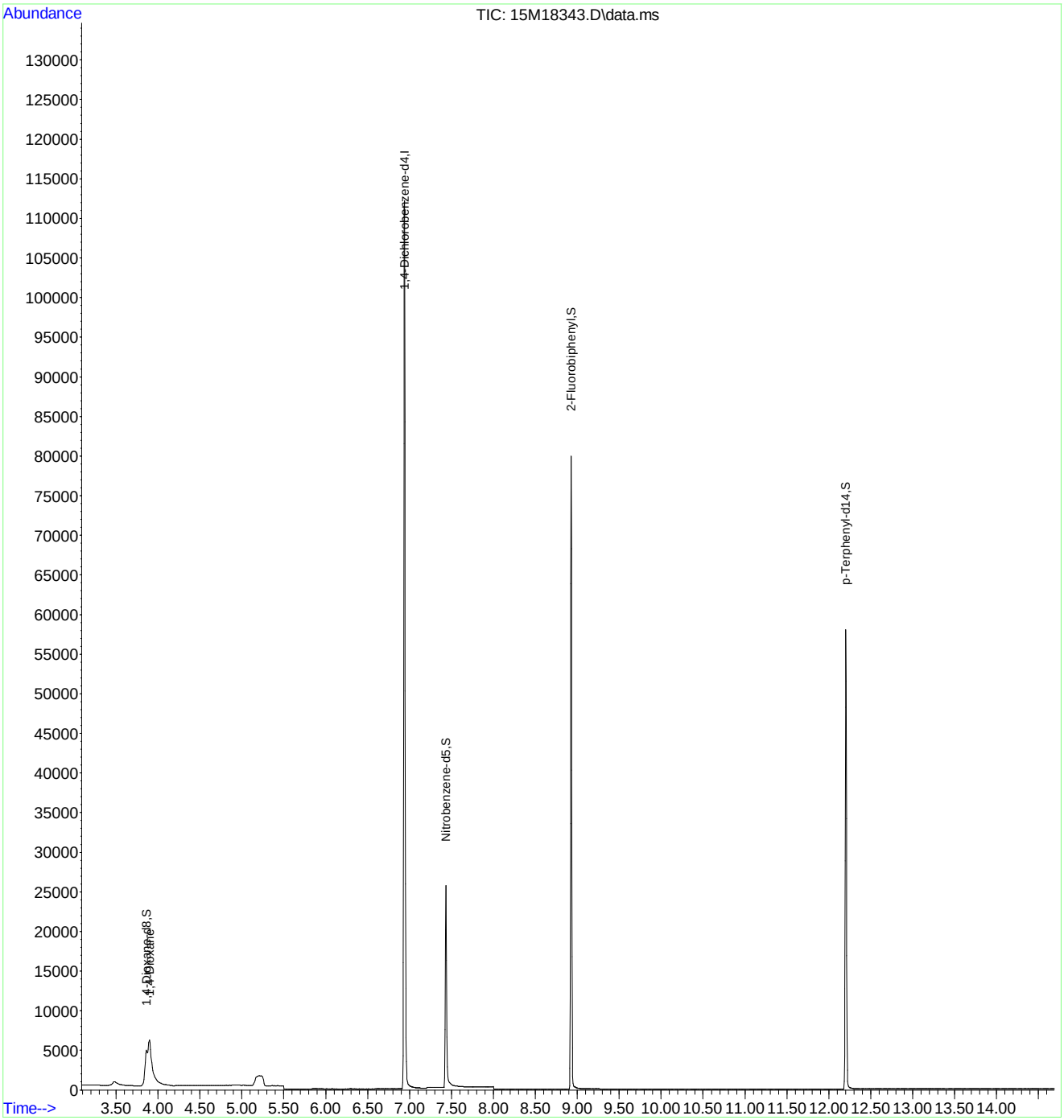

Nitrobenzene-d5

00701841

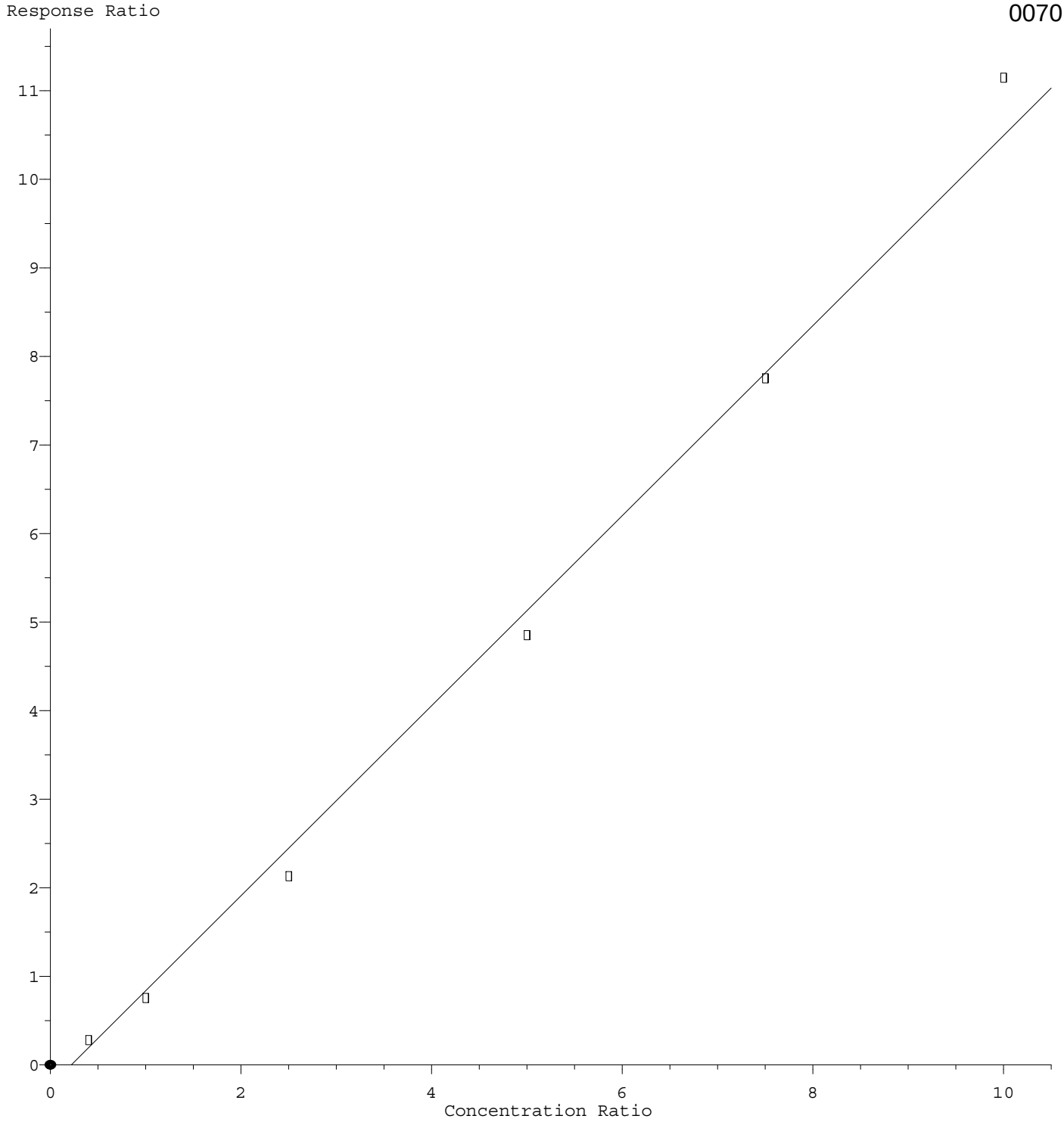

Response = 1.07e+000 * Amt - 2.34e-001
Coef of Det (r^2) = 0.994 Curve Fit: wlr(1/a)
Method Name: C:\msdchem\1\methods\DIOXANE_D8.M
Calibration Table Last Updated: Fri Jun 10 12:46:00 2016

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18344.D
Acq On : 10 Jun 2016 12:52
Operator : MES
Sample : WG572230-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 10 18:15:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	51498	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.897	96	61	0.0028	ug/L	0.04
Spiked Amount 5.000			Recovery	=	0.00%	
4) Nitrobenzene-d5	7.442	82	61	0.2190	ug/L	0.00
Spiked Amount 5.000			Recovery	=	4.40%	
5) 2-Fluorobiphenyl	8.926	172	23	0.0002	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.214	244	150	0.0011	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	85662	5.1127	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18344.D
Acq On : 10 Jun 2016 12:52
Operator : MES
Sample : WG572230-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 10 18:15:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

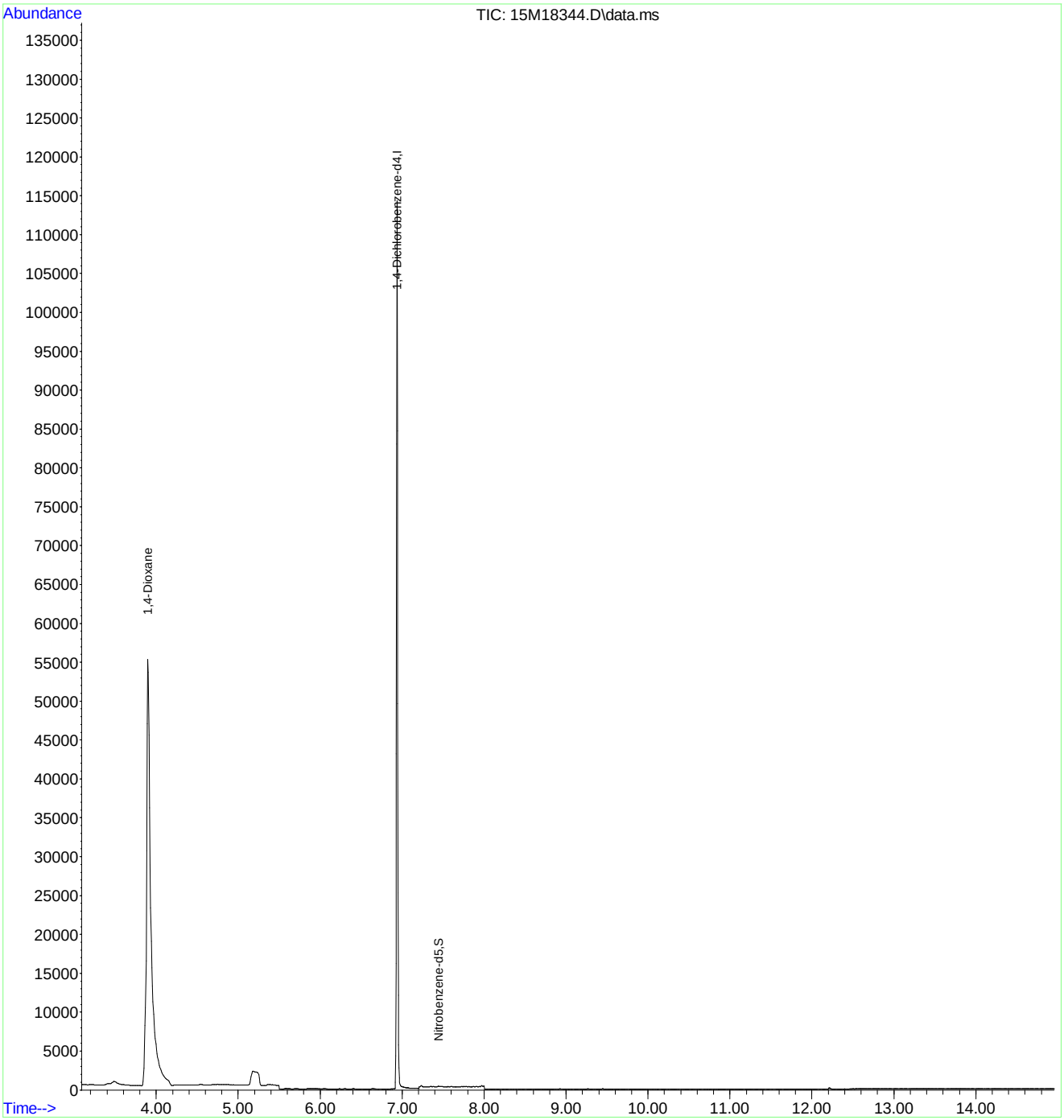

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18344.D
Acq On : 10 Jun 2016 12:52
Operator : MES
Sample : WG572230-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 10 18:15:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	78	0.00
2	1,4-Dioxane	5.000	5.113	-2.3	80	0.00
3 S	1,4-Dioxane-d8	5.000	0.003	99.9#	0	0.04
4 S	Nitrobenzene-d5	5.000	0.219	95.6#	0	0.00
5 S	2-Fluorobiphenyl	5.000	0.000	100.0#	0	0.00
6 S	p-Terphenyl-d14	5.000	0.001	100.0#	0	0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18363.D
Acq On : 13 Jun 2016 8:48
Operator : MES
Sample : WG572383-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 13 09:03:10 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	61399	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.855	96	130273	5.0693	ug/L	0.00
Spiked Amount 5.000			Recovery	= 101.40%		
4) Nitrobenzene-d5	7.436	82	233410	3.7622	ug/L	0.00
Spiked Amount 5.000			Recovery	= 75.20%		
5) 2-Fluorobiphenyl	8.926	172	816071	5.0869	ug/L	0.00
Spiked Amount 5.000			Recovery	= 101.80%		
6) p-Terphenyl-d14	12.162	244	817726	5.1976	ug/L	-0.02
Spiked Amount 5.000			Recovery	= 104.00%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.890	58	99259	4.9689	ug/L	81

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18363.D
Acq On : 13 Jun 2016 8:48
Operator : MES
Sample : WG572383-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 13 09:03:10 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

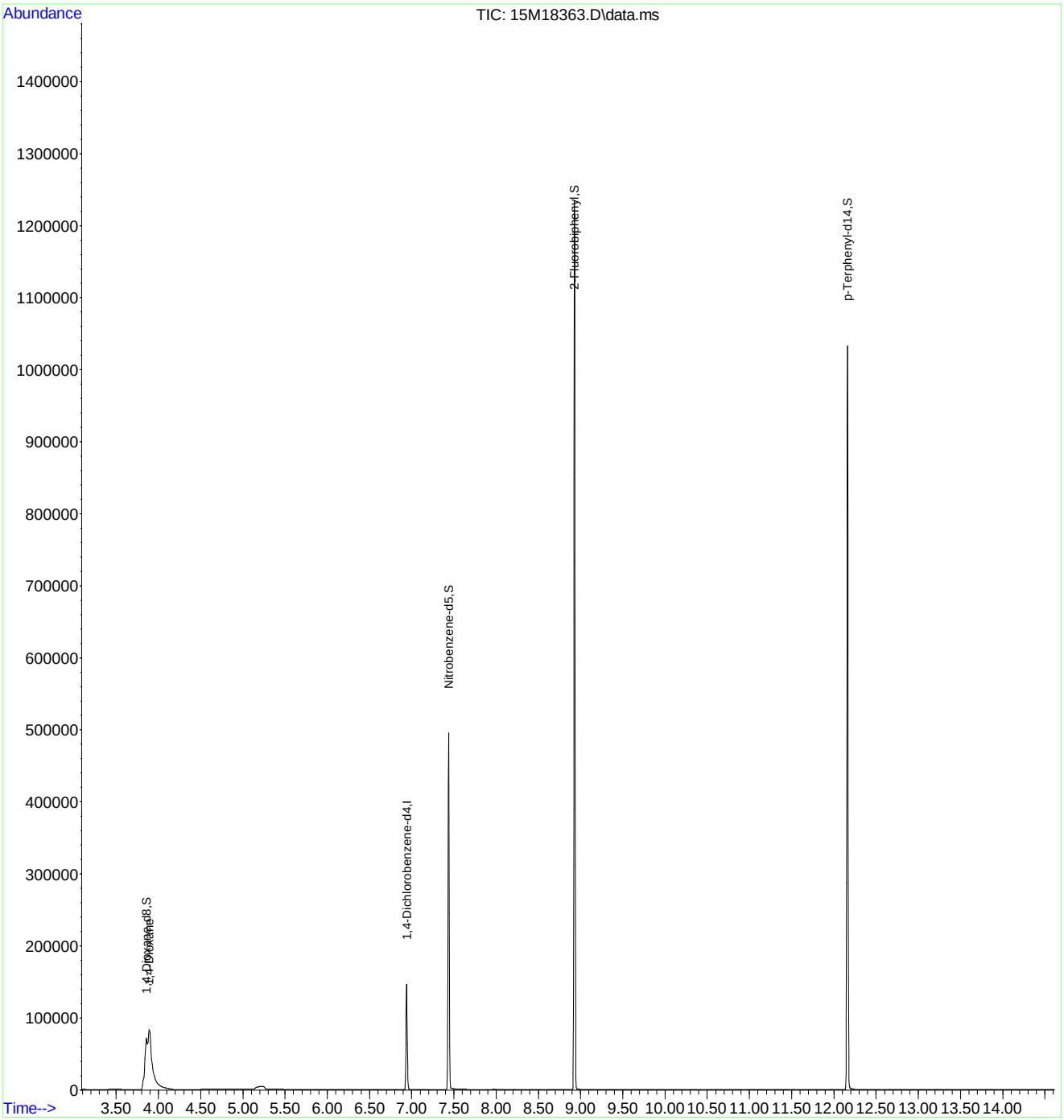

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18363.D
Acq On : 13 Jun 2016 8:48
Operator : MES
Sample : WG572383-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 13 09:03:10 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	93	0.00
2	1,4-Dioxane	0.325	0.323	0.6	93	0.00
3 S	1,4-Dioxane-d8	0.419	0.424	-1.2	94	0.00
4 S	Nitrobenzene-d5	0.904	0.760	15.9	73	0.00
5 S	2-Fluorobiphenyl	2.613	2.658	-1.7	97	0.00
6 S	p-Terphenyl-d14	2.562	2.664	-4.0	96	-0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18363.D
Acq On : 13 Jun 2016 8:48
Operator : MES
Sample : WG572383-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 13 09:03:10 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	93	0.00
2	1,4-Dioxane	5.000	4.969	0.6	93	0.00
3 S	1,4-Dioxane-d8	5.000	5.069	-1.4	94	0.00
4 S	Nitrobenzene-d5	5.000	3.762	24.8	73	0.00
5 S	2-Fluorobiphenyl	5.000	5.087	-1.7	97	0.00
6 S	p-Terphenyl-d14	5.000	5.198	-4.0	96	-0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 0

2.2.1.5 Raw QC Data

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18337.D
Acq On : 10 Jun 2016 10:18
Operator : MES
Sample : WG572230-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

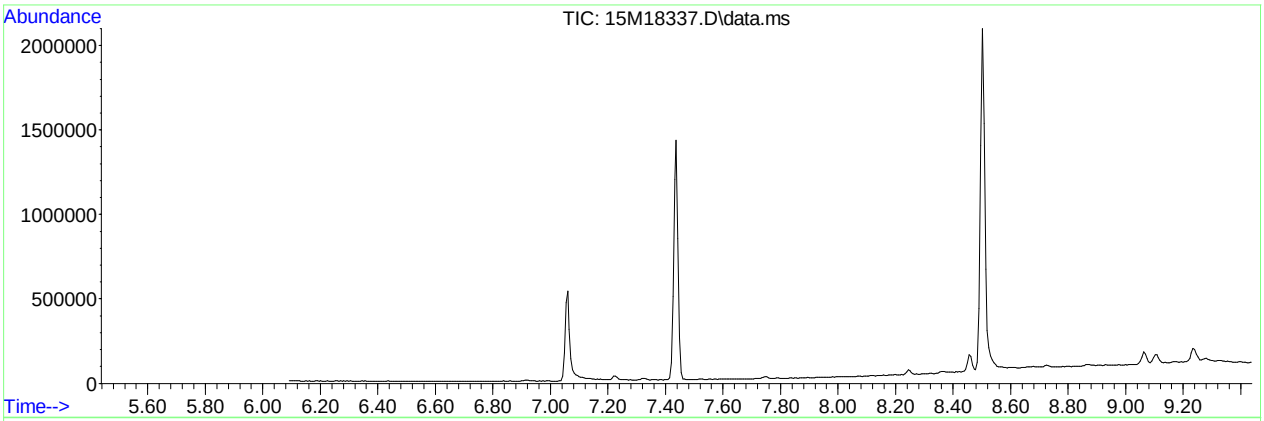

AutoFind: Scans 235, 236, 237; Background Corrected with Scan 229

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	39.5	52157	PASS
68	69	0.00	2	1.9	1026	PASS
69	198	0.00	100	40.8	53844	PASS
70	69	0.00	2	0.2	120	PASS
127	198	40	60	51.4	67853	PASS
197	198	0.00	1	0.4	505	PASS
198	198	100	100	100.0	131981	PASS
199	198	5	9	6.7	8869	PASS
275	198	10	30	26.4	34853	PASS
365	198	1	100	3.2	4186	PASS
441	443	0.01	100	73.9	15632	PASS
442	198	40	100	83.4	110112	PASS
443	442	17	23	19.2	21163	PASS

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18337.D
Acq On : 10 Jun 2016 10:18
Operator : MES
Sample : WG572230-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 10 10:29:37 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

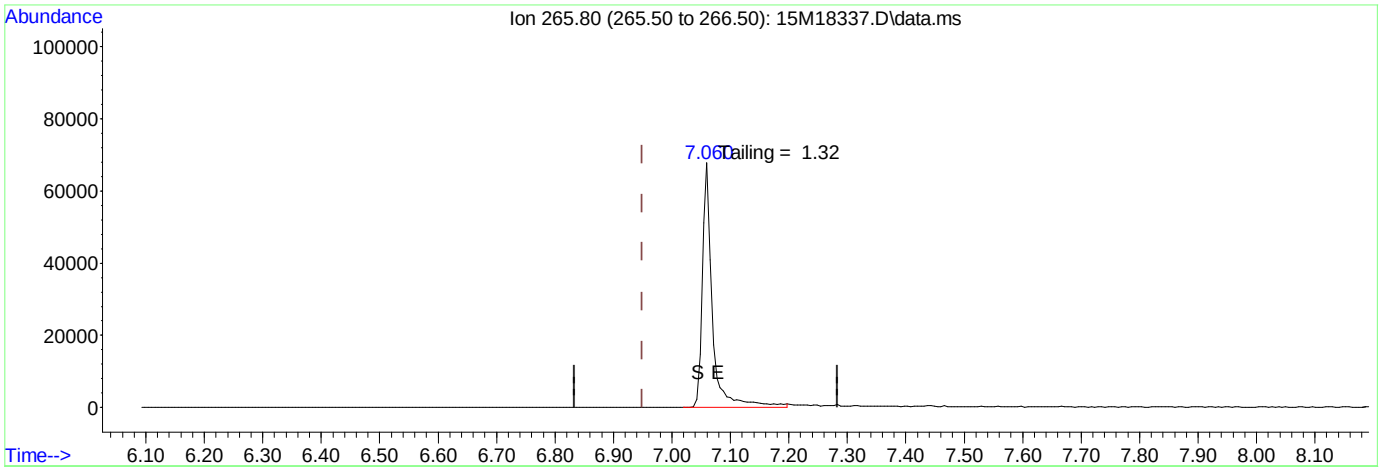

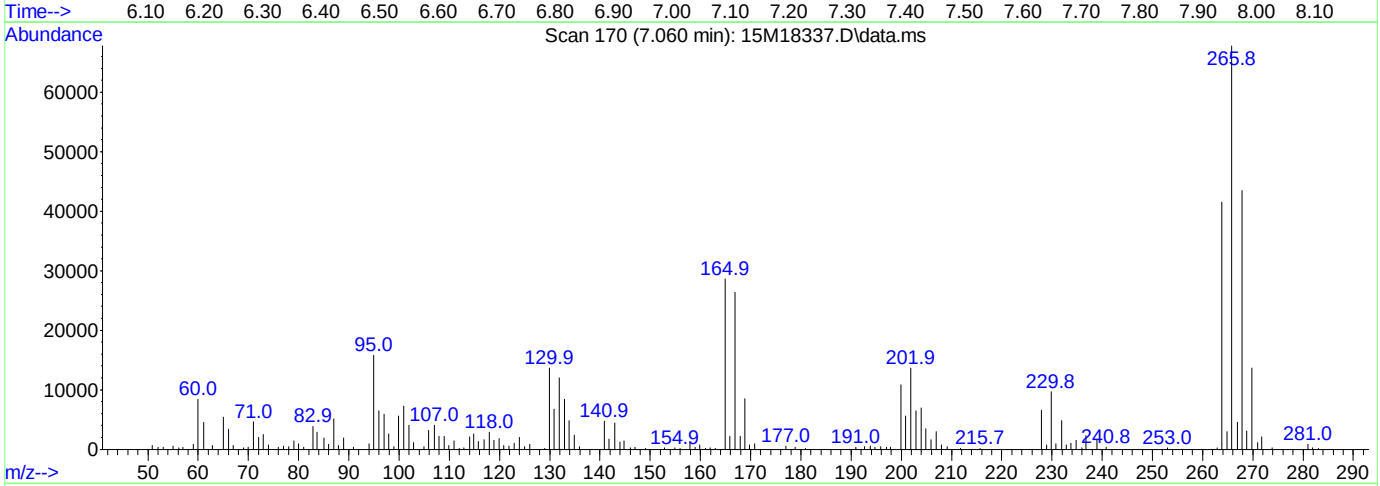

(1) Pentachlorophenol

7.060min (+ 0.111) 0.00 ug/ml

response 82111

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18337.D
Acq On : 10 Jun 2016 10:18
Operator : MES
Sample : WG572230-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 10 10:29:37 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

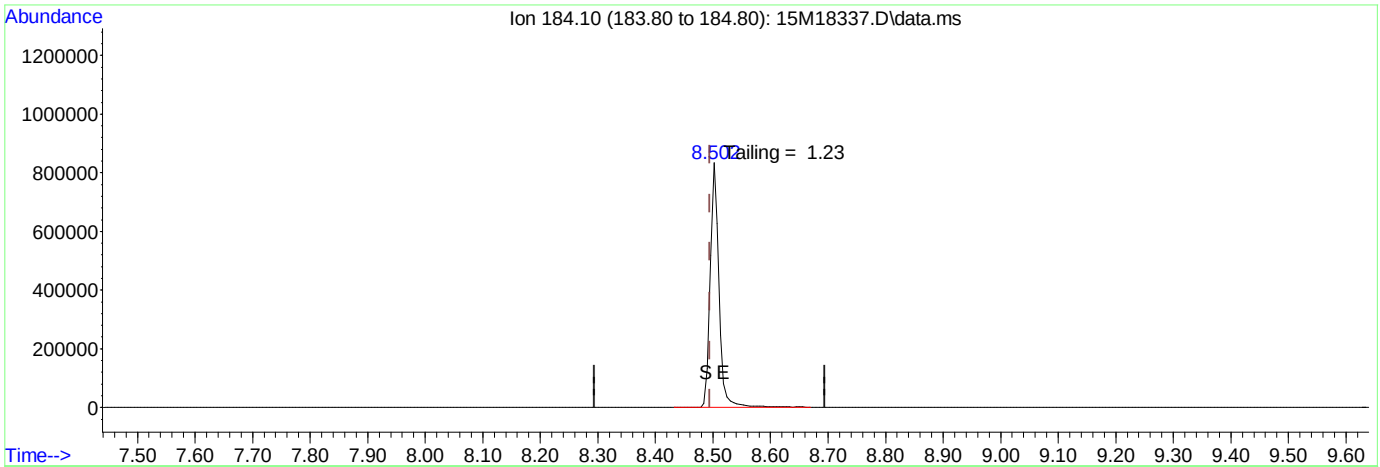

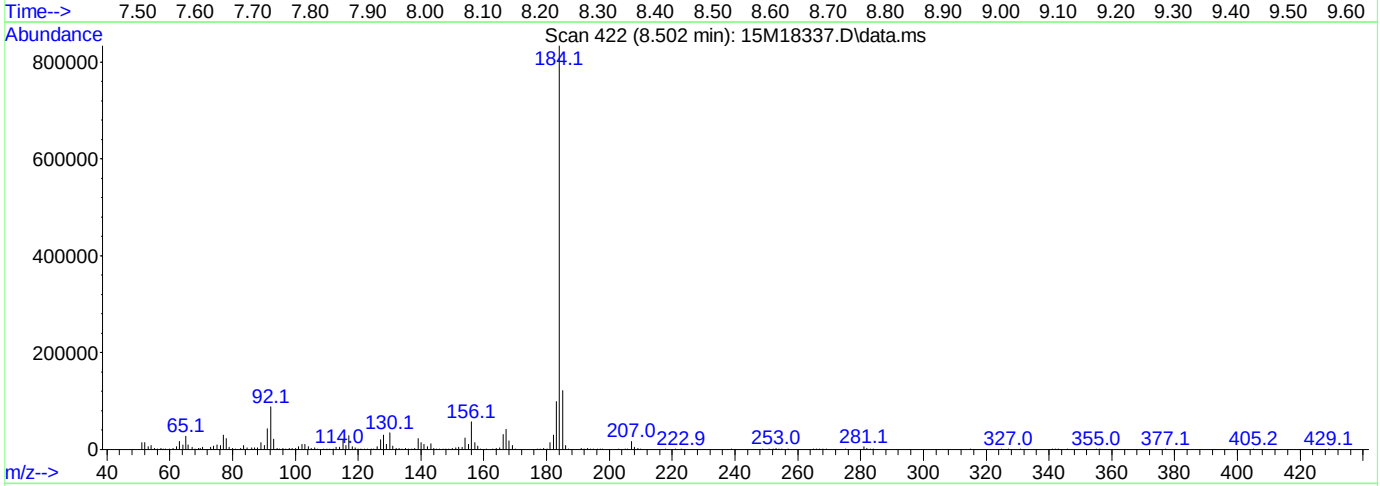

TIC: 15M18337.D\data.ms

(2) Benzidine

8.502min (+ 0.008) 0.00 ug/ml

response 896980

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18337.D
Acq On : 10 Jun 2016 10:18
Operator : MES
Sample : WG572230-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 10 10:29:37 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

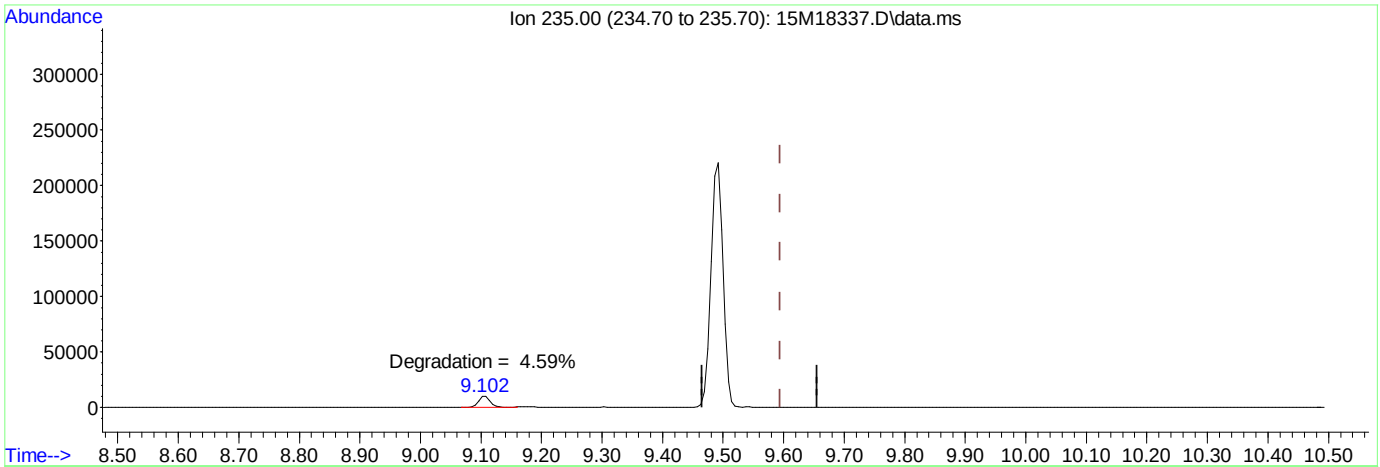

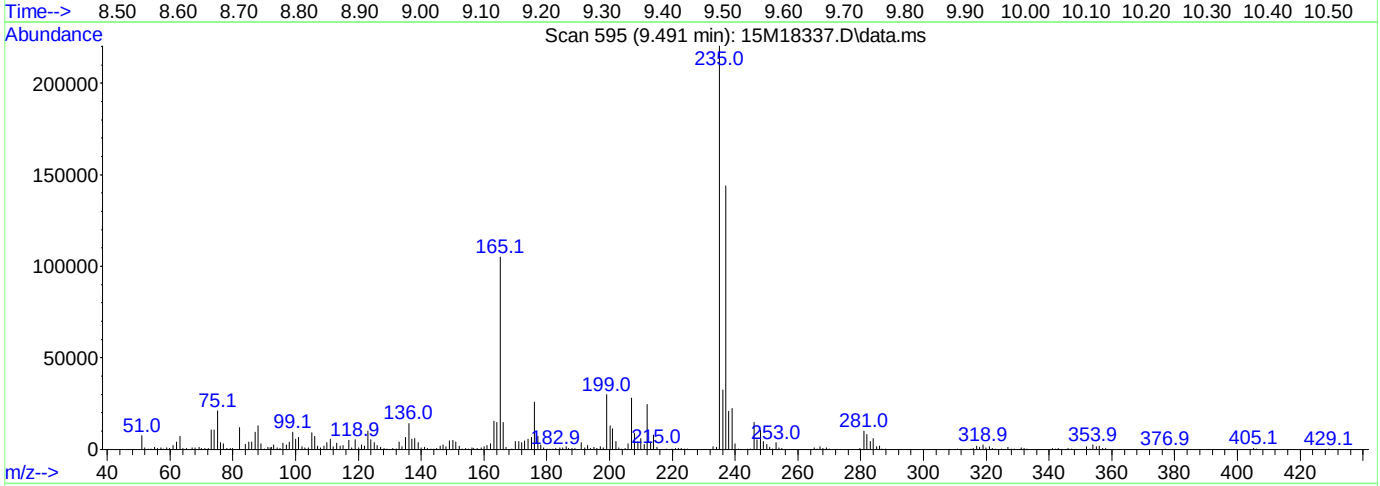

TIC: 15M18337.D\data.ms

(3) DDT

9.491min (-0.103) 0.00 ug/ml

response 283319

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18362.D
Acq On : 13 Jun 2016 8:30
Operator : MES
Sample : WG572383-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

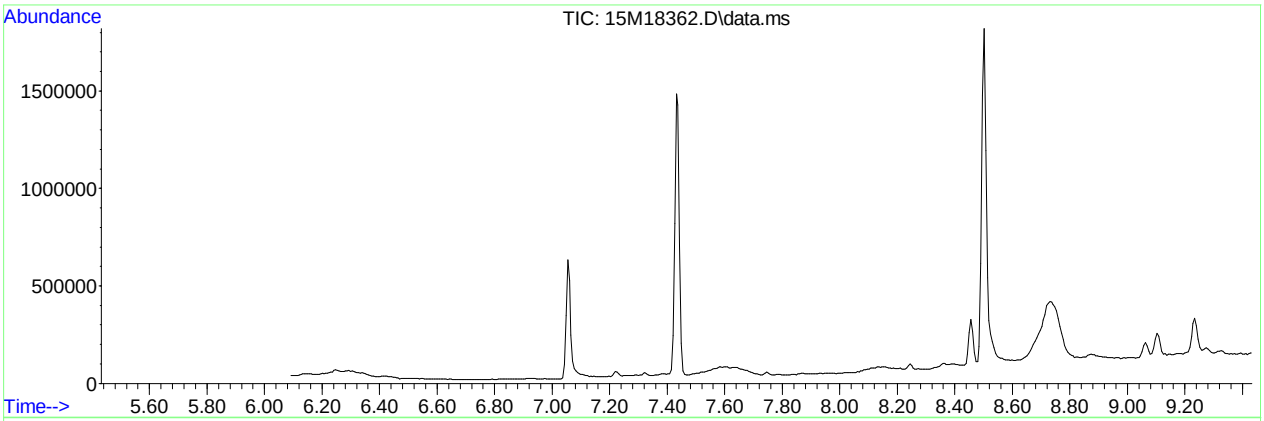

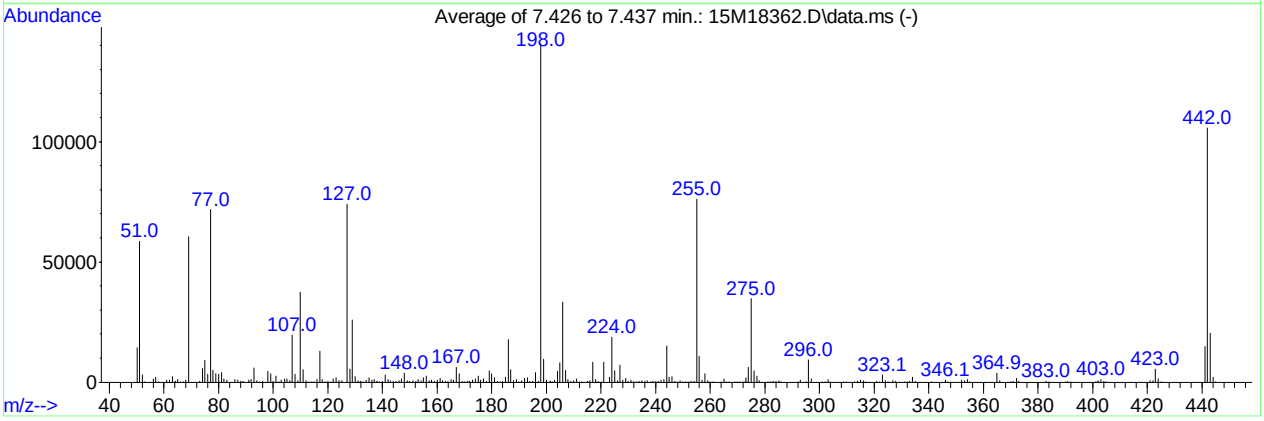

AutoFind: Scans 234, 235, 236; Background Corrected with Scan 228

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	41.7	58608	PASS
68	69	0.00	2	1.5	891	PASS
69	198	0.00	100	43.0	60438	PASS
70	69	0.00	2	0.0	0	PASS
127	198	40	60	52.6	73908	PASS
197	198	0.00	1	0.3	406	PASS
198	198	100	100	100.0	140616	PASS
199	198	5	9	6.8	9594	PASS
275	198	10	30	24.7	34747	PASS
365	198	1	100	2.7	3776	PASS
441	443	0.01	100	72.0	14703	PASS
442	198	40	100	75.2	105688	PASS
443	442	17	23	19.3	20429	PASS

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18362.D
Acq On : 13 Jun 2016 8:30
Operator : MES
Sample : WG572383-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 13 08:43:56 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

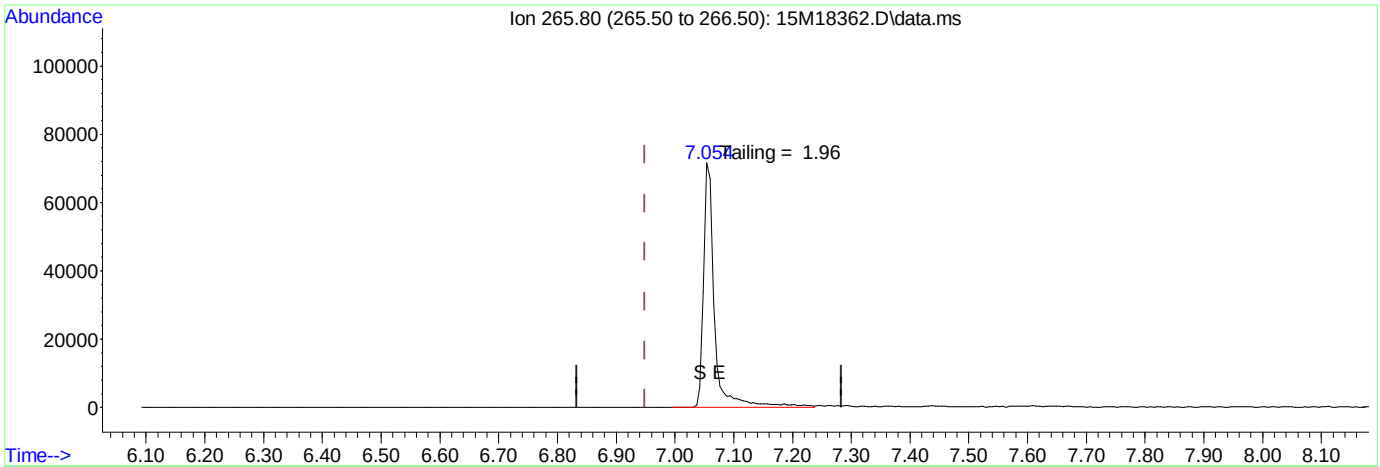

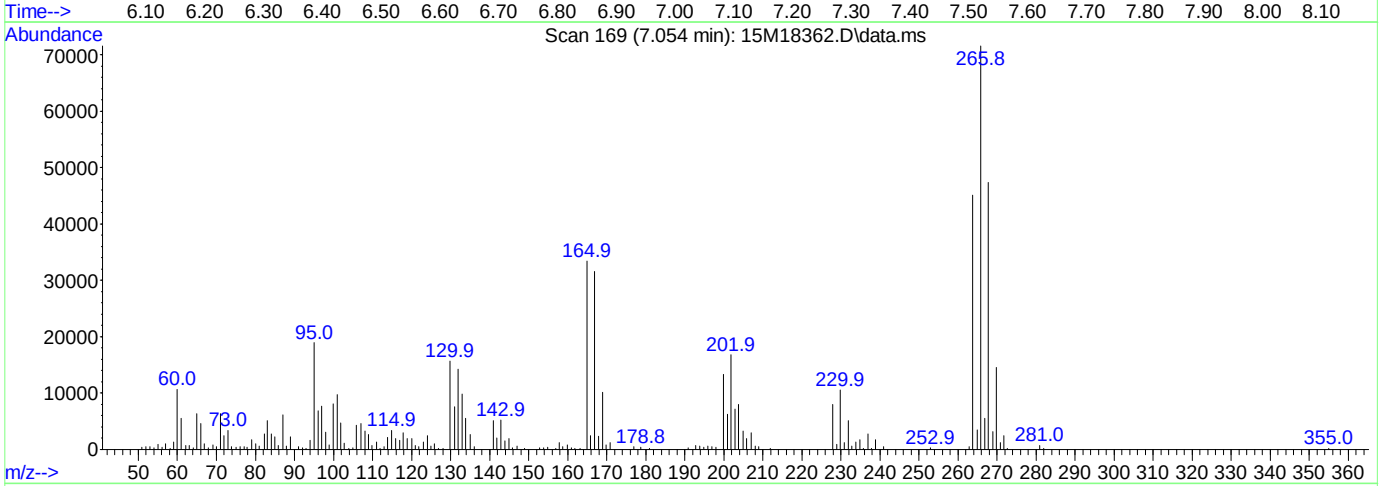

TIC: 15M18362.D\data.ms

(1) Pentachlorophenol

7.054min (+ 0.105) 0.00 ug/ml

response 89487

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18362.D
Acq On : 13 Jun 2016 8:30
Operator : MES
Sample : WG572383-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 13 08:43:56 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

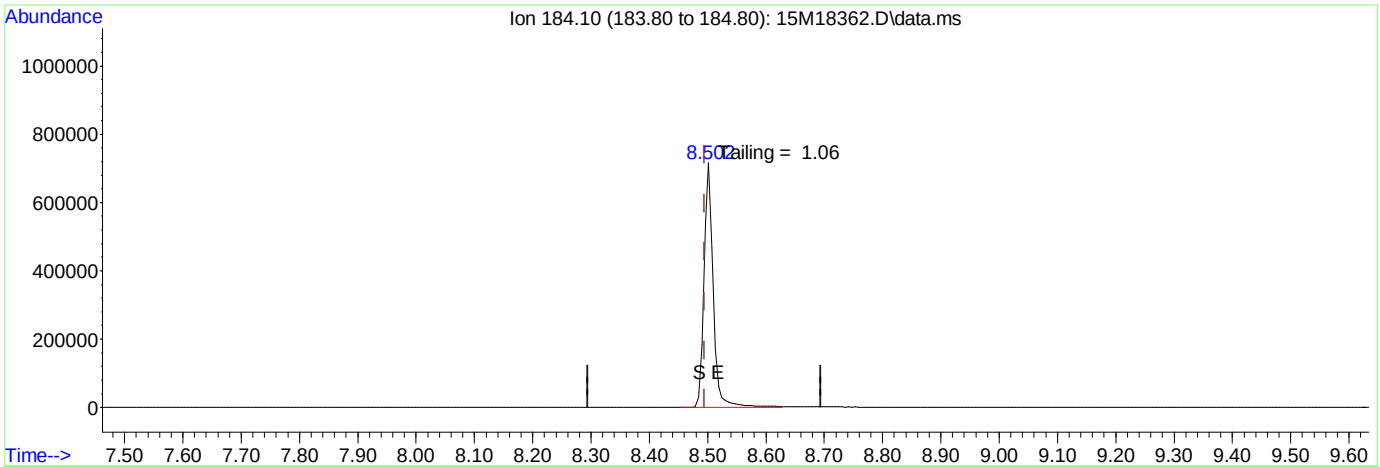

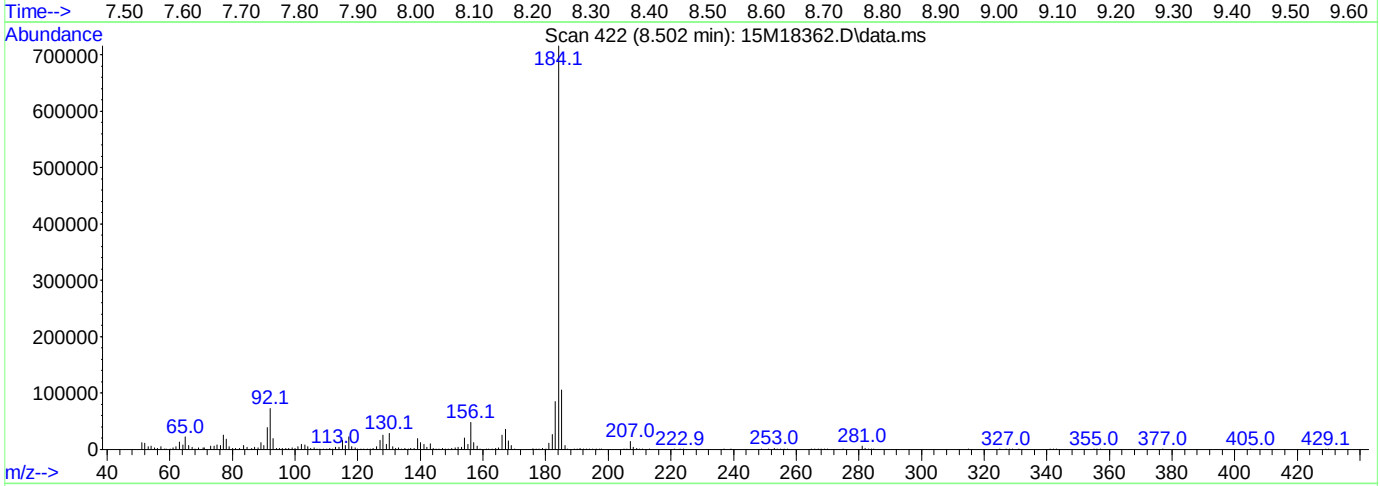

TIC: 15M18362.D\data.ms

(2) Benzidine

8.502min (+ 0.008) 0.00 ug/ml

response 797115

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18362.D
Acq On : 13 Jun 2016 8:30
Operator : MES
Sample : WG572383-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 13 08:43:56 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

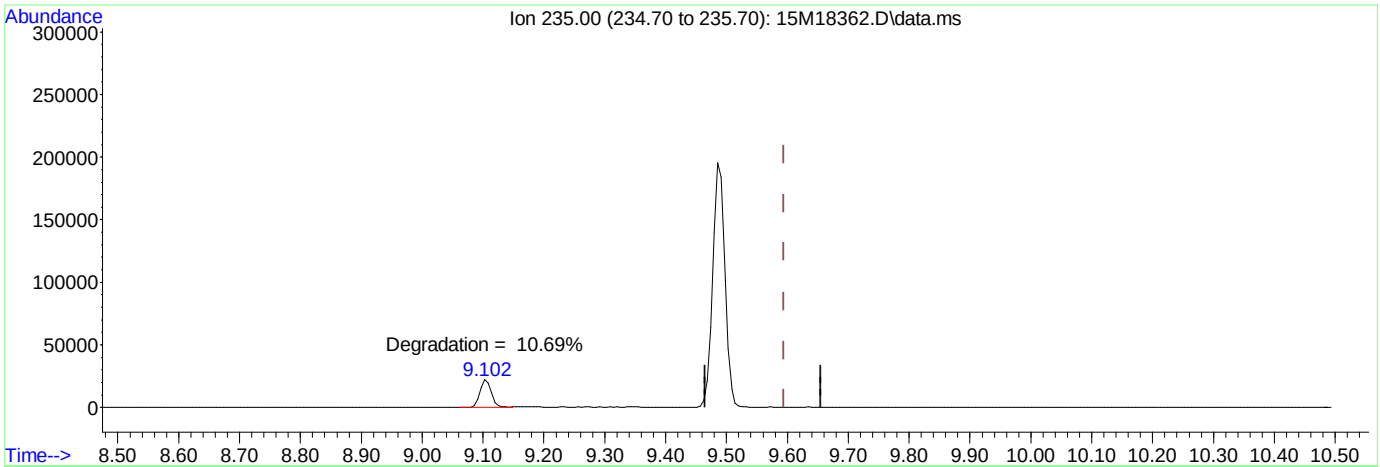

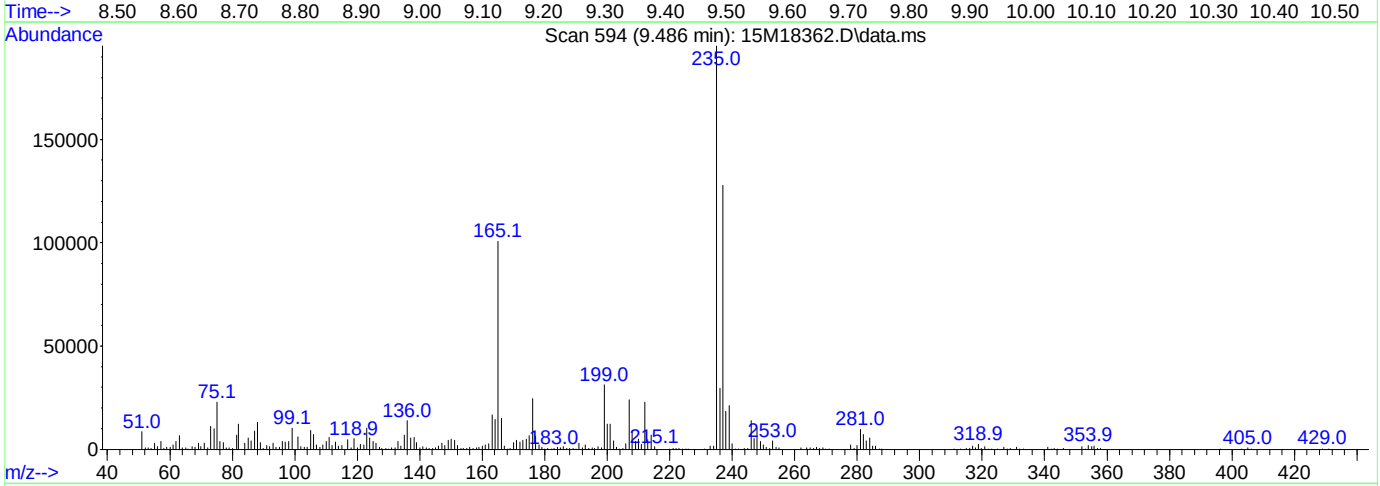

(3) DDT

9.486min (-0.108) 0.00 ug/ml

response 240504

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18364.D
Acq On : 13 Jun 2016 9:11
Operator : MES
Sample : WG571956-01 BLANK 6/11
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 13 12:05:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	51747	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	60207	2.7798	ug/L	0.00
Spiked Amount 5.000			Recovery	=	55.60%	
4) Nitrobenzene-d5	7.442	82	3682	0.2843	ug/L	0.00
Spiked Amount 5.000			Recovery	=	5.60%	
5) 2-Fluorobiphenyl	8.930	172	149	0.0011	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.166	244	553	0.0042	ug/L	-0.02
Spiked Amount 5.000			Recovery	=	0.00%	

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18364.D
Acq On : 13 Jun 2016 9:11
Operator : MES
Sample : WG571956-01 BLANK 6/11
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 13 12:05:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

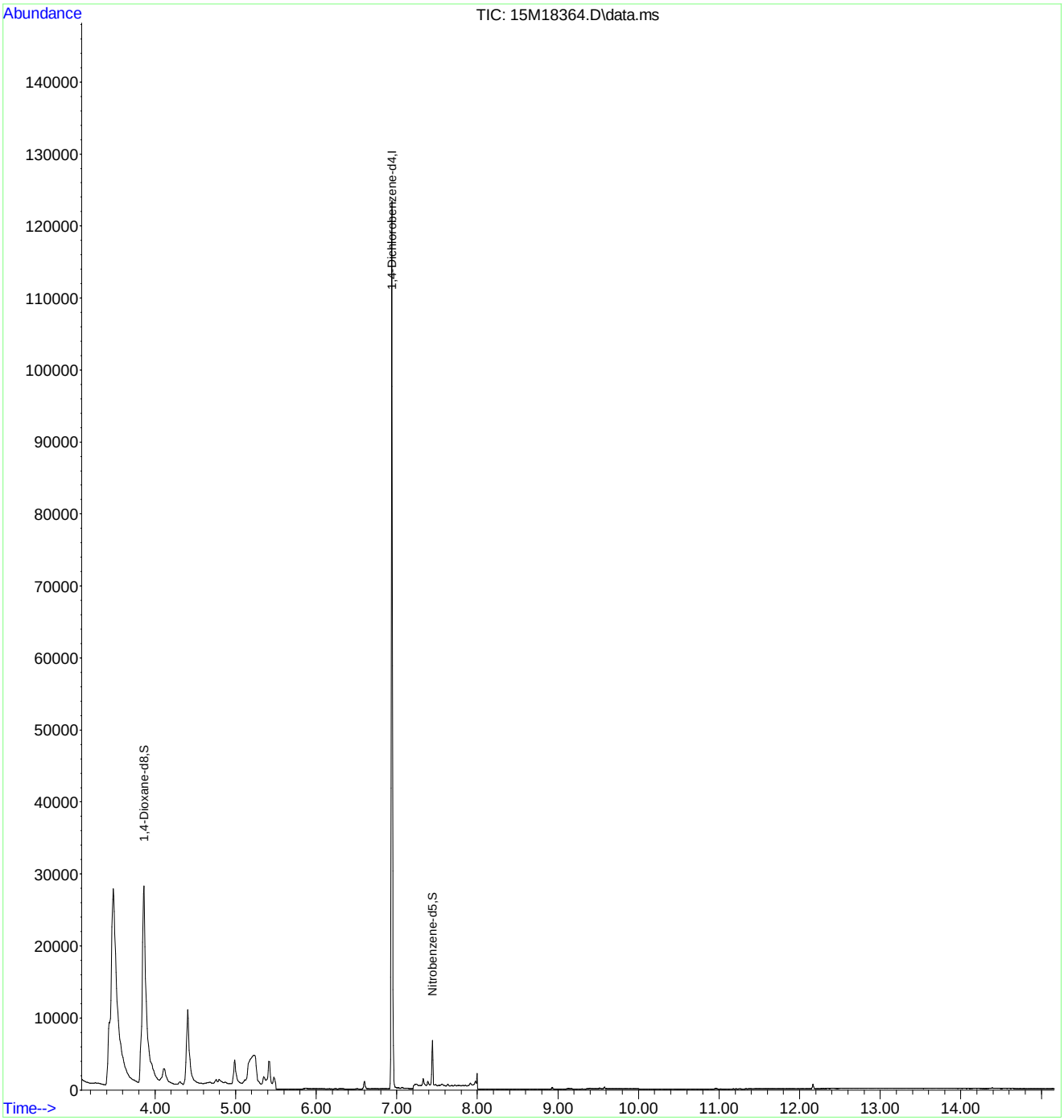

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18365.D
Acq On : 13 Jun 2016 9:34
Operator : MES
Sample : WG571956-02 LCS 6/11
Misc : 1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 13 12:06:05 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	51838	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	59406	2.7380	ug/L	0.00
Spiked Amount 5.000			Recovery	=	54.80%	
4) Nitrobenzene-d5	7.442	82	1957	0.2531	ug/L	0.00
Spiked Amount 5.000			Recovery	=	5.00%	
5) 2-Fluorobiphenyl	8.930	172	134	0.0010	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.162	244	564	0.0042	ug/L	-0.02
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	44373	2.6310	ug/L	75

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18365.D
Acq On : 13 Jun 2016 9:34
Operator : MES
Sample : WG571956-02 LCS 6/11
Misc : 1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 13 12:06:05 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

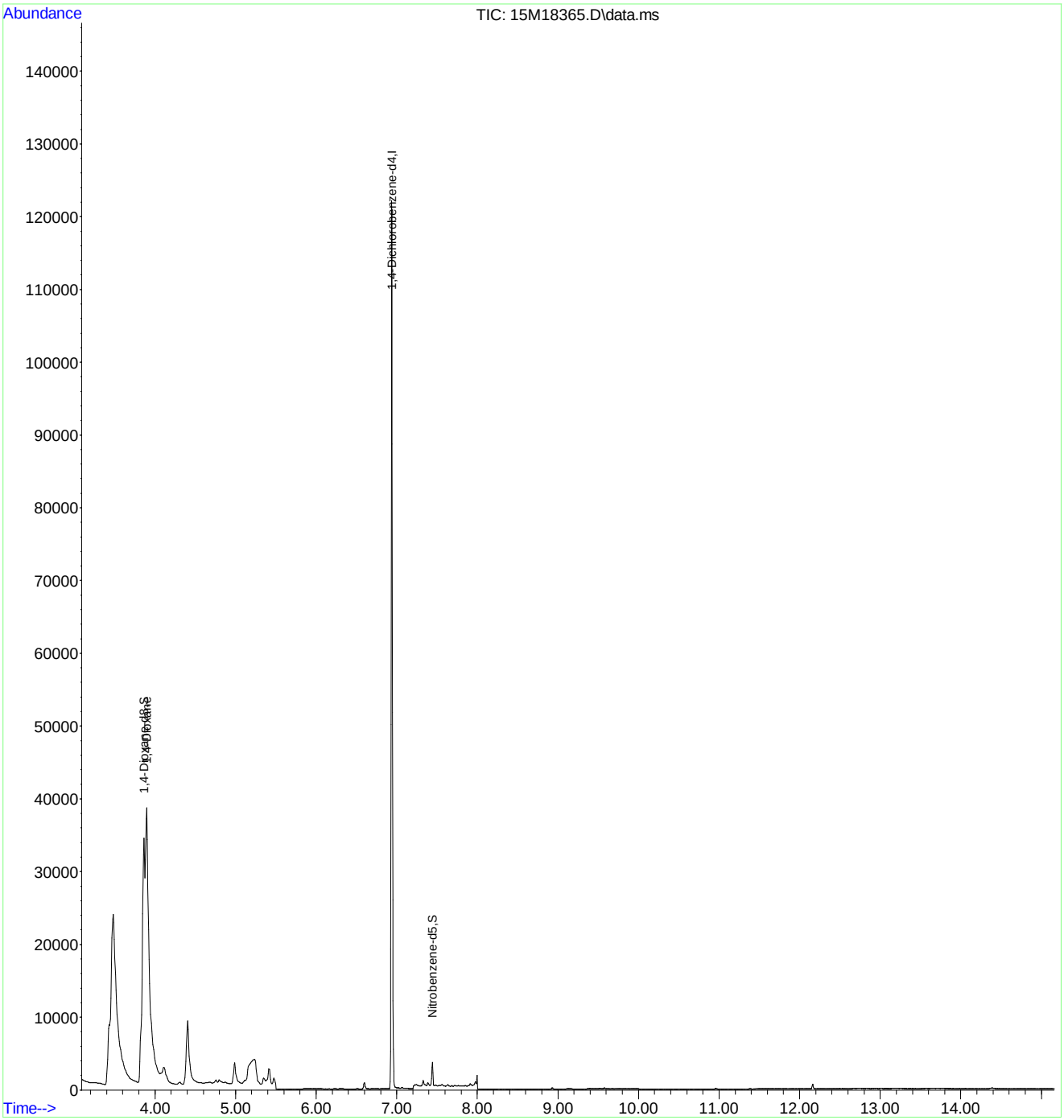

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18366.D
Acq On : 13 Jun 2016 9:56
Operator : MES
Sample : WG571956-03 LCSDUP 6/11
Misc : 1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 13 12:06:08 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	51677	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	66123	3.0571	ug/L	0.00
Spiked Amount 5.000			Recovery	=	61.20%	
4) Nitrobenzene-d5	7.442	82	2977	0.2716	ug/L	0.00
Spiked Amount 5.000			Recovery	=	5.40%	
5) 2-Fluorobiphenyl	8.926	172	132	0.0010	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.162	244	1175	0.0089	ug/L	-0.02
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	49897	2.9678	ug/L	76

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061316\
Data File : 15M18366.D
Acq On : 13 Jun 2016 9:56
Operator : MES
Sample : WG571956-03 LCSDUP 6/11
Misc : 1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 13 12:06:08 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

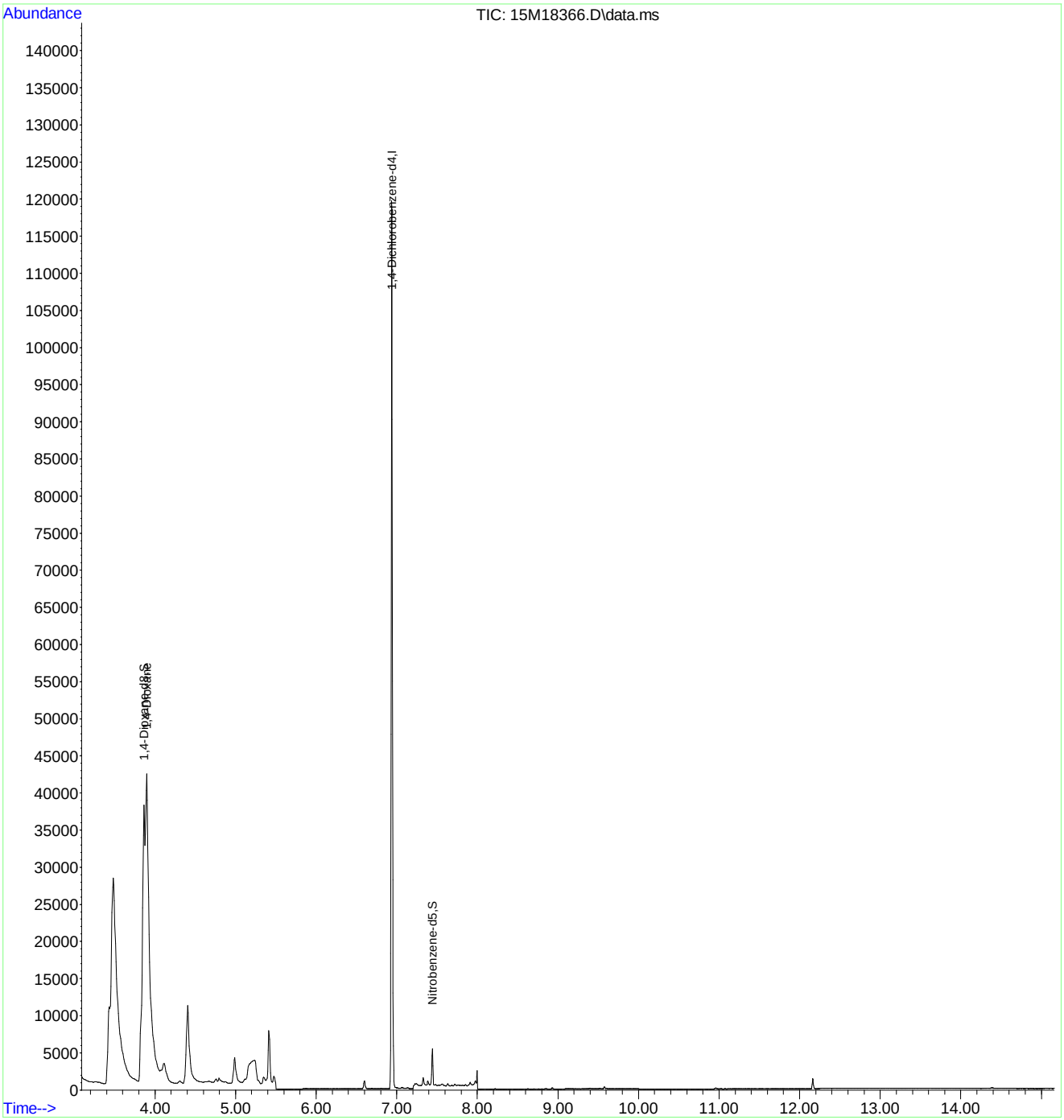

2.2 General Chromatography Data

2.2.2 6850 LC/MS Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060414-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	AWD1T-060716	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/10/2016 18:02
Collect Date:	06/07/2016 07:55	**Dilution:**	1	**File ID:**	1LM.LM35251
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060414
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060414-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	AWD1B-060716	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/10/2016 18:21
Collect Date:	06/07/2016 08:45	**Dilution:**	1	**File ID:**	1LM.LM35252
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	4.92		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16060414-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW14T-060716	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/11/2016 14:55
Collect Date:	06/07/2016 10:30	**Dilution:**	100000	**File ID:**	1LM.LM35290
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	177000		40000	20000	10000

Certificate of Analysis

Sample #:	L16060414-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW14B-060716	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/11/2016 15:15
Collect Date:	06/07/2016 11:20	**Dilution:**	100000	**File ID:**	1LM.LM35291
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	229000		40000	20000	10000

2.2.2.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1402 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG572200-01 MCT	9,990	
-02 BLK	0.93	
-03 LCS	1.04	
L16060411-01	1433	
-02	1475	
-03	349	
-04	356	
L16060414-01	327	
-02	319	
-03	3510	
-04	4180	
L16060497-01	1546	
-02	1445	
-03	1450	
-04	2560	
L16060504-01	1254	
-02	853	
-03	938	
-04	2350	
L16060575-01	595	
-02	583	
-03	505	

Analyst: Wade T. Dey

Date/Time: 6-10-16 / 1354

DCN#119023

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061016_WTD.TXT
Analyst1: WTD Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)
CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35225	WG572198-01 CCB	1	1		06/10/16 09:49
2	1LM.LM35226	WG572198-02 CCV (1.0ug/L)	1	1	STD75510	06/10/16 10:08
3	1LM.LM35227	WG572200-07 MRL (0.2ug/L)	1	1	STD75510	06/10/16 10:27
4	1LM.LM35228	WG572200-01 MCT (0.2ug/L)	1	1	STD75512	06/10/16 10:46
5	1LM.LM35229	WG572200-02 BLANK	1	1		06/10/16 11:05
6	1LM.LM35230	WG572200-03 LCS (0.2ug/L)	1	1	STD75512	06/10/16 11:24
22	1LM.LM35231	L16060497-01	1	1		06/10/16 11:43
23	1LM.LM35232	L16060497-02 MS (0.2ug/L)	1	1	STD75512	06/10/16 12:02
24	1LM.LM35233	L16060497-03 MSD (0.2ug/L)	1	1	STD75512	06/10/16 12:21
10	1LM.LM35234	L16060497-04 50X	1	50		06/10/16 12:40
11	1LM.LM35235	L16060575-01	1	1		06/10/16 12:59
12	1LM.LM35236	L16060575-02	1	1		06/10/16 13:18
13	1LM.LM35237	L16060575-03	1	1		06/10/16 13:37
14	1LM.LM35238	WG572198-03 CCV (1.0ug/L)	1	1	STD75510	06/10/16 13:55
15	1LM.LM35239	WG572200-08 MRL (0.2ug/L)	1	1	STD75510	06/10/16 14:14
16	1LM.LM35240	WG572198-04 CCB	1	1		06/10/16 14:33
17	1LM.LM35241	L16060575-01 100X	1	100		06/10/16 14:52
18	1LM.LM35242	L16060575-02	1	1		06/10/16 15:11
19	1LM.LM35243	L16060575-03	1	1		06/10/16 15:30
20	1LM.LM35244	WG572198-05 CCV (1.0ug/L)	1	1	STD75510	06/10/16 15:49
21	1LM.LM35245	WG572200-09 MRL (0.2ug/L)	1	1	STD75510	06/10/16 16:08
25	1LM.LM35246	WG572198-06 CCB	1	1		06/10/16 16:27
26	1LM.LM35247	L16060411-01 50X	1	50		06/10/16 16:46
27	1LM.LM35248	L16060411-02 50X	1	50		06/10/16 17:05
28	1LM.LM35249	L16060411-03 200X	1	200		06/10/16 17:24
29	1LM.LM35250	L16060411-04 200X	1	200		06/10/16 17:43
30	1LM.LM35251	L16060414-01	1	1		06/10/16 18:02
31	1LM.LM35252	L16060414-02	1	1		06/10/16 18:21
32	1LM.LM35253	L16060414-03 20X	1	20		06/10/16 18:40
33	1LM.LM35254	L16060414-04 20X	1	20		06/10/16 18:59
58	1LM.LM35255	L16060497-01 10X	1	10		06/10/16 19:18
35	1LM.LM35256	L16060497-04 500X	1	500		06/10/16 19:37
36	1LM.LM35257	WG572198-07 CCV (1.0ug/L)	1	1	STD75510	06/10/16 19:56

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061016_WTD.TXT

Analyst1: WTD Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 NA

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
37	1LM.LM35258	WG572200-10 MRL (0.2ug/L)	1	1	STD75510	06/10/16 20:15
38	1LM.LM35259	WG572198-08 CCB	1	1		06/10/16 20:34
39	1LM.LM35260	L16060504-01 1000X	1	1000		06/10/16 20:53
40	1LM.LM35261	L16060504-02 1000X	1	1000		06/10/16 21:12
41	1LM.LM35262	L16060504-03 1000X	1	1000		06/10/16 21:31
42	1LM.LM35263	L16060504-04 10000X	1	10000		06/10/16 21:50
43	1LM.LM35264	WG572198-09 CCV (1.0ug/L)	1	1	STD75510	06/10/16 22:09
44	1LM.LM35265	WG572200-11 MRL (0.2ug/L)	1	1	STD75510	06/10/16 22:27
45	1LM.LM35266	WG572198-10 CCB	1	1		06/10/16 22:46
46	1LM.LM35267	WG572289-07 MRL (0.2ug/L)	1	1	STD75510	06/10/16 23:05
47	1LM.LM35268	WG572289-01 MCT (0.2ug/l)	1	1	STD75512	06/10/16 23:24
48	1LM.LM35269	WG572289-02 BLANK	1	1		06/10/16 23:43
49	1LM.LM35270	WG572289-03 LCS (0.2ug/L)	1	1	STD75512	06/11/16 00:02
50	1LM.LM35271	L16060582-01 100X	1	100		06/11/16 00:21
51	1LM.LM35272	L16060582-02	1	1		06/11/16 00:40
59	1LM.LM35273	L16060582-03	1	1		06/11/16 00:59
53	1LM.LM35274	L16060582-03 MS (0.2ug/L)	1	1	STD75512	06/11/16 01:18
54	1LM.LM35275	L16060582-03 MSD (0.2ug/L)	1	1	STD75512	06/11/16 01:37
55	1LM.LM35276	WG572198-11 CCV (1.0ug/L)	1	1	STD75510	06/11/16 01:56
56	1LM.LM35277	WG572289-08 MRL (0.2ug/L)	1	1	STD75510	06/11/16 02:15
57	1LM.LM35278	WG572198-12 CCB	1	1		06/11/16 02:34

Comments

Seq.	Rerun	Dil.	Reason	Analytes
22	X	10	Over Calibration Range	
	L16060497-01			
23				
	WG572200-05 - Sample does not appear to be homogenous with Sample 01, the reference and Sample 03, the MSD.			
24				
	WG572200-06 - Sample does not appear to be homogenous with Sample 01, the reference and Sample 02, the MS.			
10	X	500	Over Calibration Range	
	L16060497-04			
11	X	100	Over Calibration Range	
	L16060575-01			
12	X	1	Carry-over contamination	
	L16060575-02			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061016_WTD.TXT

Analyst1: WTD Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 NA

Comments

Seq.	Rerun	Dil.	Reason	Analytes
13	X	1	Carry-over contamination	
	L16060575-03			
26	X	500	Over Calibration Range	
	L16060411-01			
27	X	100	Over Calibration Range	
	L16060411-02			
32	X	10000	Over Calibration Range	
	L16060414-03			
33	X	10000	Over Calibration Range	
	L16060414-04			
39	X	10000	Over Calibration Range	
	L16060504-01			
40	X		Internal standard failure	
	L16060504-02 - No Internal Standard added.			
41	X	10000	Over Calibration Range	
	L16060504-03 - No Internal Standard added.			
42	X	1000	Analyzed too dilute	
	L16060504-04 - No Internal Standard added.			
50				
	L16060582-01 - Analyzed at a dilution based on information from the client.			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061116_WTD.TXT
Analyst1: WTD Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)
CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35279	WG572339-01 CCB	1	1		06/11/16 11:27
2	1LM.LM35280	WG572339-02 CCV (1.0ug/L)	1	1	STD75510	06/11/16 11:46
3	1LM.LM35281	WG572200-12 MRL (0.2ug/L)	1	1	STD75510	06/11/16 12:05
4	1LM.LM35282	L16060411-01 500X	1	500		06/11/16 12:24
5	1LM.LM35283	L16060411-02 100X	1	100		06/11/16 12:43
6	1LM.LM35284	L16060414-03 10000X	1	10000		06/11/16 13:02
7	1LM.LM35285	L16060414-04 10000X	1	10000		06/11/16 13:21
8	1LM.LM35286	L16060504-01 10000X	1	10000		06/11/16 13:40
9	1LM.LM35287	L16060504-02 1000X	1	1000		06/11/16 13:58
10	1LM.LM35288	L16060504-03 10000X	1	10000		06/11/16 14:17
11	1LM.LM35289	L16060504-04 1000X	1	1000		06/11/16 14:36
12	1LM.LM35290	L16060414-03 100000X	1	100000		06/11/16 14:55
13	1LM.LM35291	L16060414-04 100000X	1	100000		06/11/16 15:15
14	1LM.LM35292	WG572339-03 CCV (1.0ug/L)	1	1	STD75510	06/11/16 15:34
15	1LM.LM35293	WG572200-13 MRL (0.2ug/L)	1	1	STD75510	06/11/16 16:41
16	1LM.LM35294	WG572339-04 CCB	1	1		06/11/16 17:00
17	1LM.LM35295	L16060504-04 100X	1	100		06/11/16 17:19
18	1LM.LM35296	WG572339-05 CCV (1.0ug/L)	1	1	STD75510	06/11/16 17:38
19	1LM.LM35297	WG572200-14 MRL (0.2ug/L)	1	1	STD75510	06/11/16 17:57
20	1LM.LM35298	WG572339-06 CCB	1	1		06/11/16 18:16
21	1LM.LM35299	WG572350-05 MRL (0.2ug/L)	1	1	STD75510	06/11/16 18:35
22	1LM.LM35300	WG572350-01 MCT (0.2ug/l)	1	1	STD75512	06/11/16 18:54
23	1LM.LM35301	WG572350-02 BLANK	1	1		06/11/16 19:13
24	1LM.LM35302	WG572350-03 LCS (0.2ug/L)	1	1	STD75512	06/11/16 19:32
25	1LM.LM35303	WG572350-03 LCSD (0.2ug/L)	1	1	STD75512	06/11/16 19:51
26	1LM.LM35304	L16060632-01 100X	1	100		06/11/16 20:10
27	1LM.LM35305	L16060632-02 100X	1	100		06/11/16 20:29
28	1LM.LM35306	L16060632-03 100X	1	100		06/11/16 20:48
29	1LM.LM35307	L16060632-04 100X	1	100		06/11/16 21:07
30	1LM.LM35308	L16060615-01 10000X	1	10000		06/11/16 21:26
31	1LM.LM35309	L16060615-02 100X	1	100		06/11/16 21:44
43	1LM.LM35310	WG572339-07 CCV (1.0ug/L)	1	1	STD75510	06/11/16 22:03
33	1LM.LM35311	WG572350-06 MRL (0.2ug/L)	1	1	STD75510	06/11/16 22:22

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061116_WTD.TXT

Analyst1: WTD Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 NA

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
44	1LM.LM35312	WG572339-08 CCB	1	1		06/11/16 22:41
35	1LM.LM35313	L16060615-03 100X	1	100		06/11/16 23:00
36	1LM.LM35314	L16060615-04 100X	1	100		06/11/16 23:19
37	1LM.LM35315	L16060616-01 10000X	1	10000		06/11/16 23:38
38	1LM.LM35316	L16060616-02 10000X	1	10000		06/11/16 23:57
39	1LM.LM35317	L16060616-03	1	1		06/12/16 00:16
45	1LM.LM35318	WG572339-09 CCV (1.0ug/L)	1	1	STD75510	06/12/16 00:35
41	1LM.LM35319	WG572350-07 MRL (0.2ug/L)	1	1	STD75510	06/12/16 00:54
46	1LM.LM35320	WG572339-10 CCB	1	1		06/12/16 01:13

Comments

Seq.	Rerun	Dil.	Reason	Analytes
6	X	100000	Over Calibration Range	
	L16060414-03			
7	X	100000	Over Calibration Range	
	L16060414-04			
11	X	100	Analyzed too dilute	
	L16060504-04			
26	X	1	Analyzed too dilute	
	L16060632-01			
27	X	1	Analyzed too dilute	
	L16060632-02			
28	X	1	Analyzed too dilute	
	L16060632-03			
29	X	1	Analyzed too dilute	
	L16060632-04			
30	X	1	Analyzed too dilute	
	L16060615-01			
31	X	1	Analyzed too dilute	
	L16060615-02			
35	X	1	Analyzed too dilute	
	L16060615-03			
36	X	10000	Over Calibration Range	
	L16060615-04			
37				
	L16060616-01 Analyzed at a dilution based on historical data			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061116_WTD.TXT

Analyst1: WTD Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups:

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 NA

Comments

Seq.	Rerun	Dil.	Reason	Analytes
38	X	100	Analyzed too dilute	
	L16060616-02			

Page: 3 Approved: 13-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
04-MAY-2016
John Richards

Secondary Reviewer:
05-MAY-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 10-JUN-2016
Analyst: WTD
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 75634
Analytical Workgroups: WG572200, WG572289

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	WTD
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MES

Primary Reviewer: 11-JUN-2016

Secondary Reviewer: 13-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-13-2016 11:53:25

Microbac Laboratories Inc.

Data Checklist

Date: 11-JUN-2016
Analyst: WTD
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 75641
Analytical Workgroups: L16060411, L16060414, L16060504, L16060616

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	WTD
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 12-JUN-2016

Secondary Reviewer: 13-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-14-2016 08:50:47

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG572200

Login Number: L16060414

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
AWD1T-060716	01	06/07/16					06/10/2016	3	28		06/10/16	.4	28	
AWD1B-060716	02	06/07/16					06/10/2016	3	28		06/10/16	.4	28	
MW14T-060716	03	06/07/16					06/10/2016	2.9	28		06/11/16	1.2	28	
MW14B-060716	04	06/07/16					06/10/2016	2.9	28		06/11/16	1.3	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4803811
Report generated 06/14/2016 08:33

METHOD BLANK SUMMARY

Login Number: L16060414
Blank File ID: 1LM.LM35229
Prep Date: 06/10/16 09:00
Analyzed Date: 06/10/16 11:05
Analyst: WTD

Work Group: WG572200
Blank Sample ID: WG572200-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG572200-07	1LM.LM35227	06/10/16 10:27	01
MCT	WG572200-01	1LM.LM35228	06/10/16 10:46	01
LCS	WG572200-03	1LM.LM35230	06/10/16 11:24	01
QCMRL	WG572200-08	1LM.LM35239	06/10/16 14:14	01
QCMRL	WG572200-09	1LM.LM35245	06/10/16 16:08	01
AWD1T-060716	L16060414-01	1LM.LM35251	06/10/16 18:02	01
AWD1B-060716	L16060414-02	1LM.LM35252	06/10/16 18:21	01
QCMRL	WG572200-10	1LM.LM35258	06/10/16 20:15	01
QCMRL	WG572200-11	1LM.LM35265	06/10/16 22:27	01
QCMRL	WG572200-12	1LM.LM35281	06/11/16 12:05	01
MW14T-060716	L16060414-03	1LM.LM35290	06/11/16 14:55	DL01
MW14B-060716	L16060414-04	1LM.LM35291	06/11/16 15:15	DL01
QCMRL	WG572200-13	1LM.LM35293	06/11/16 16:41	01
QCMRL	WG572200-14	1LM.LM35297	06/11/16 17:57	01

Report Name: BLANK_SUMMARY
PDF File ID: 4803812
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060414 Prep Date: 06/10/16 09:00 Sample ID: WG572200-02
Instrument ID: LCMS1 Run Date: 06/10/16 11:05 Prep Method: 6850
File ID: 1LM.LM35229 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4803813
14-JUN-2016 08:33

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060414 Run Date: 06/10/2016 Sample ID: WG572200-03
Instrument ID: LCMS1 Run Time: 11:24 Prep Method: 6850
File ID: 1LM.LM35230 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD75512 Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	0.200	0.201	101	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4803814
Report generated: 06/14/2016 08:33

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060414
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4803816
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060414

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4803816
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060414

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4803816
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060414

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008

PDF File ID: 4803816

Report generated 06/14/2016 08:33

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060414 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4803817
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060414
Run Date: 06/10/2016
Sample ID: WG572198-01
Instrument ID: LCMS1
Run Time: 09:49
Method: 6850
File ID: 1LM.LM35225
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4803819
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060414
Run Date: 06/10/2016
Sample ID: WG572198-04
Instrument ID: LCMS1
Run Time: 14:33
Method: 6850
File ID: 1LM.LM35240
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4803819
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060414
Run Date: 06/10/2016
Sample ID: WG572198-06
Instrument ID: LCMS1
Run Time: 16:27
Method: 6850
File ID: 1LM.LM35246
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4803819
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060414
Run Date: 06/10/2016
Sample ID: WG572198-08
Instrument ID: LCMS1
Run Time: 20:34
Method: 6850
File ID: 1LM.LM35259
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4803819
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060414
Run Date: 06/10/2016
Sample ID: WG572198-10
Instrument ID: LCMS1
Run Time: 22:46
Method: 6850
File ID: 1LM.LM35266
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4803819
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060414
Run Date: 06/11/2016
Sample ID: WG572339-01
Instrument ID: LCMS1
Run Time: 11:27
Method: 6850
File ID: 1LM.LM35279
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4803819
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060414
Run Date: 06/11/2016
Sample ID: WG572339-04
Instrument ID: LCMS1
Run Time: 17:00
Method: 6850
File ID: 1LM.LM35294
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4803819
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060414
Run Date: 06/11/2016
Sample ID: WG572339-06
Instrument ID: LCMS1
Run Time: 18:16
Method: 6850
File ID: 1LM.LM35298
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4803819
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060414
Run Date: 06/10/2016
Sample ID: WG572198-02
Instrument ID: LCMS1
Run Time: 10:08
Method: 6850
File ID: 1LM.LM35226
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.70	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4803818
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060414
Run Date: 06/10/2016
Sample ID: WG572198-03
Instrument ID: LCMS1
Run Time: 13:55
Method: 6850
File ID: 1LM.LM35238
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.71	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4803818
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060414
Run Date: 06/10/2016
Sample ID: WG572198-05
Instrument ID: LCMS1
Run Time: 15:49
Method: 6850
File ID: 1LM.LM35244
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.05	ug/L	1.77	5.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4803818
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060414 Run Date: 06/10/2016 Sample ID: WG572198-07
Instrument ID: LCMS1 Run Time: 19:56 Method: 6850
File ID: 1LM.LM35257 Analyst: WTD QC Key: DOD4
Workgroup (AAB#): WG572200 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.08	ug/L	1.82	8.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4803818
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060414
Run Date: 06/10/2016
Sample ID: WG572198-09
Instrument ID: LCMS1
Run Time: 22:09
Method: 6850
File ID: 1LM.LM35264
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.74	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4803818
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060414 Run Date: 06/11/2016 Sample ID: WG572198-11
Instrument ID: LCMS1 Run Time: 01:56 Method: 6850
File ID: 1LM.LM35276 Analyst: WTD QC Key: DOD4
Workgroup (AAB#): WG572200 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.74	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4803818
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060414
Run Date: 06/11/2016
Sample ID: WG572339-02
Instrument ID: LCMS1
Run Time: 11:46
Method: 6850
File ID: 1LM.LM35280
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.75	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4803818
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060414
Run Date: 06/11/2016
Sample ID: WG572339-03
Instrument ID: LCMS1
Run Time: 15:34
Method: 6850
File ID: 1LM.LM35292
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.05	ug/L	1.78	5.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4803818
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060414
Run Date: 06/11/2016
Sample ID: WG572339-05
Instrument ID: LCMS1
Run Time: 17:38
Method: 6850
File ID: 1LM.LM35296
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.73	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4803818
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060414
Run Date: 06/11/2016
Sample ID: WG572339-07
Instrument ID: LCMS1
Run Time: 22:03
Method: 6850
File ID: 1LM.LM35310
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.06	ug/L	1.79	6.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4803818
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060414 Run Date: 06/10/2016 Sample ID: WG572200-07
Instrument ID: LCMS1 Run Time: 10:27 Prep Method: 6850
File ID: 1LM.LM35227 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.202	101	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4803815
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060414 Run Date: 06/10/2016 Sample ID: WG572200-08
Instrument ID: LCMS1 Run Time: 14:14 Prep Method: 6850
File ID: 1LM.LM35239 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.215	108	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4803815
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060414 Run Date: 06/10/2016 Sample ID: WG572200-09
Instrument ID: LCMS1 Run Time: 16:08 Prep Method: 6850
File ID: 1LM.LM35245 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.210	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4803815
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060414 Run Date: 06/10/2016 Sample ID: WG572200-10
Instrument ID: LCMS1 Run Time: 20:15 Prep Method: 6850
File ID: 1LM.LM35258 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.222	111	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4803815
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060414 Run Date: 06/10/2016 Sample ID: WG572200-11
Instrument ID: LCMS1 Run Time: 22:27 Prep Method: 6850
File ID: 1LM.LM35265 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.216	108	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4803815
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060414 Run Date: 06/11/2016 Sample ID: WG572200-12
Instrument ID: LCMS1 Run Time: 12:05 Prep Method: 6850
File ID: 1LM.LM35281 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4803815
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060414 Run Date: 06/11/2016 Sample ID: WG572200-13
Instrument ID: LCMS1 Run Time: 16:41 Prep Method: 6850
File ID: 1LM.LM35293 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4803815
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060414 Run Date: 06/11/2016 Sample ID: WG572200-14
Instrument ID: LCMS1 Run Time: 17:57 Prep Method: 6850
File ID: 1LM.LM35297 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.215	108	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4803815
Report generated 06/14/2016 08:33

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16060414
Instrument ID: LCMS1
Workgroup (AAB#): WG572200

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16060414-01	1.00	01	469000
L16060414-02	1.00	01	449000
L16060414-03	100000	DL01	464000
L16060414-04	100000	DL01	463000
WG572200-02	1.00	01	441000
WG572200-03	1.00	01	434000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4803820
Report generated 06/14/2016 08:33

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**	6850	**Samplenum:**	L16060414-01
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35251
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 18:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	8900	5750	1.55	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**	6850	**Samplenum:**	L16060414-02
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35252
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 18:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	743000	256000	2.90	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**	6850	**Samplenum:**	L16060414-03
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35290
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 14:55	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	277000	95400	2.90	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**	6850	**Samplenum:**	L16060414-04
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35291
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 15:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	358000	123000	2.91	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG572198-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35225
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 09:49	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG572198-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35226
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 10:08	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	151000	53700	2.81	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG572198-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35238
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 13:55	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	172000	59600	2.89	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG572198-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35240
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 14:33	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	3660	1770	2.07	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG572198-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35244
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 15:49	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	179000	63400	2.82	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG572198-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35246
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 16:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	377	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG572198-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35257
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 19:56	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	175000	58000	3.02	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG572198-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35259
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 20:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG572198-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35264
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 22:09	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	57800	2.92	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG572198-10
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35266
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 22:46	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	971	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG572198-11
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35276
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 01:56	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	183000	61800	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**	6850	**Samplenum:**	WG572200-01
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35228
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 10:46	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35200	10400	3.38	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**	6850	**Samplenum:**	WG572200-02
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35229
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 11:05	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	309	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**	6850	**Samplenum:**	WG572200-03
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35230
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 11:24	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	30000	11800	2.54	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**	6850	**Samplenum:**	WG572200-07
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35227
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 10:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	30600	11100	2.76	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**	6850	**Samplenum:**	WG572200-08
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35239
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 14:14	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36500	13800	2.64	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**	6850	**Samplenum:**	WG572200-09
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35245
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 16:08	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36700	12600	2.91	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**	6850	**Samplenum:**	WG572200-10
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35258
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 20:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36200	12400	2.92	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**	6850	**Samplenum:**	WG572200-11
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35265
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 22:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35800	11700	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**	6850	**Samplenum:**	WG572200-12
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35281
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 12:05	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	33000	11900	2.77	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**	6850	**Samplenum:**	WG572200-13
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35293
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 16:41	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	33900	12200	2.78	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**	6850	**Samplenum:**	WG572200-14
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35297
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 17:57	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36500	12700	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG572339-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35279
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 11:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	7310	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG572339-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35280
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 11:46	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	160000	54700	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG572339-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35292
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 15:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	171000	56800	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG572339-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35294
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 17:00	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG572339-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35296
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 17:38	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	172000	59300	2.90	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG572339-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35298
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 18:16	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060414	**Prep Method:**		**Samplenum:**	WG572339-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35310
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 22:03	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	180000	60500	2.98	2.3	3.8	

2.2.2.3 Sample Data

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Printed: 6/11/2016 1:08 PM

Data File	LM35251.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 6:02:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060414-01	**Injection Vial**	18.00
Data File	LM35251.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 6:02:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	L16060414-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.690e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.900e+03	9.67	N/A	0.0527
Perchlorate conf	5.750e+03	9.65	N/A	0.0895

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

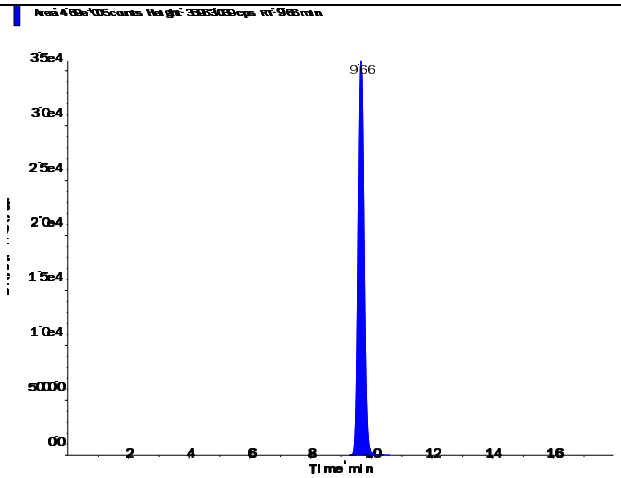

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.67 (9.84) min
Calculated conc:	0.0527 ng/ml
Area Ratio:	0.019
Sample Type:	(Unknown)

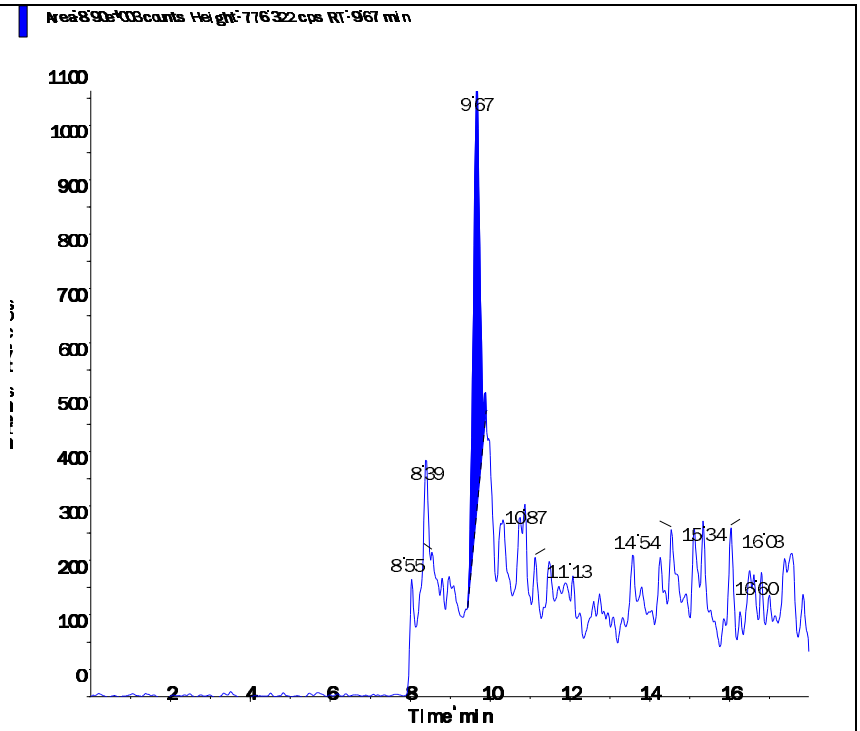

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.65 (9.84) min
Calculated conc:	0.0895 ng/ml
Area Ratio:	0.012
Sample Type:	(Unknown)

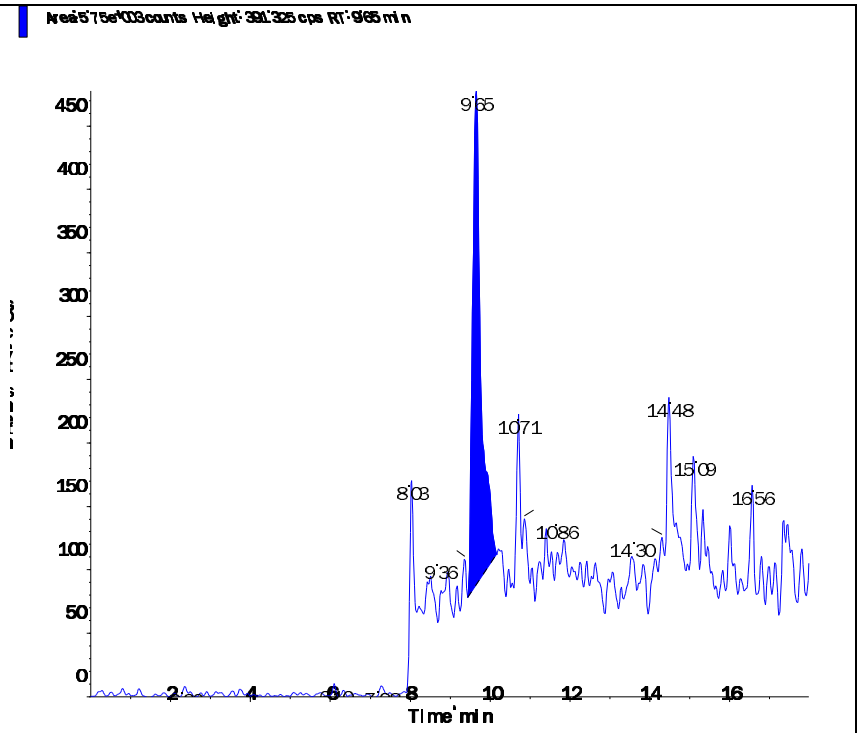

s.dataFile Page 2 of 2

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Data File	LM35252.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 6:21:41 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060414-02	**Injection Vial**	19.00
Data File	LM35252.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 6:21:41 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	L16060414-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.490e+05	9.65	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.430e+05	9.67	N/A	4.92
Perchlorate conf	2.560e+05	9.65	N/A	5.09

O18LP (Internal Standard)

RT (Exp. RT): 9.65(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

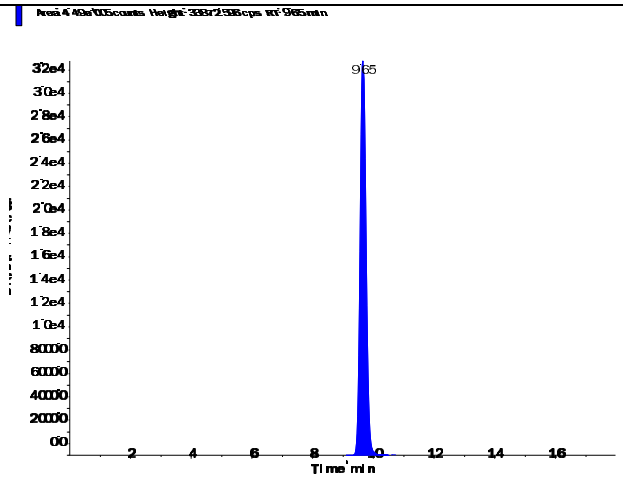

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.67 (9.84) min Calculated conc: 4.92 ng/ml Area Ratio: 1.655 Sample Type: (Unknown)	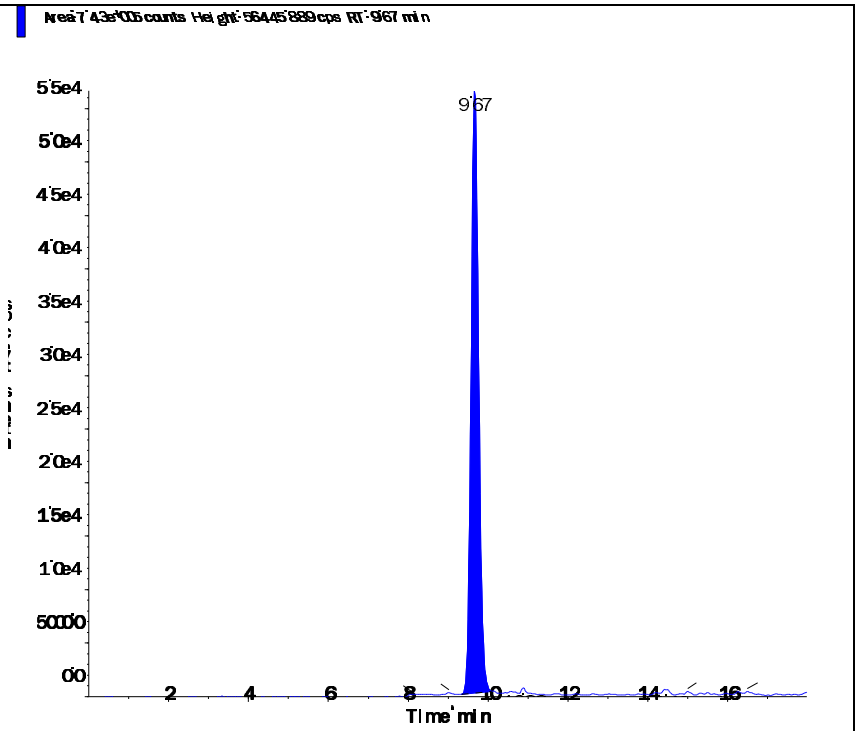
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.65 (9.84) min Calculated conc: 5.09 ng/ml Area Ratio: 0.571 Sample Type: (Unknown)	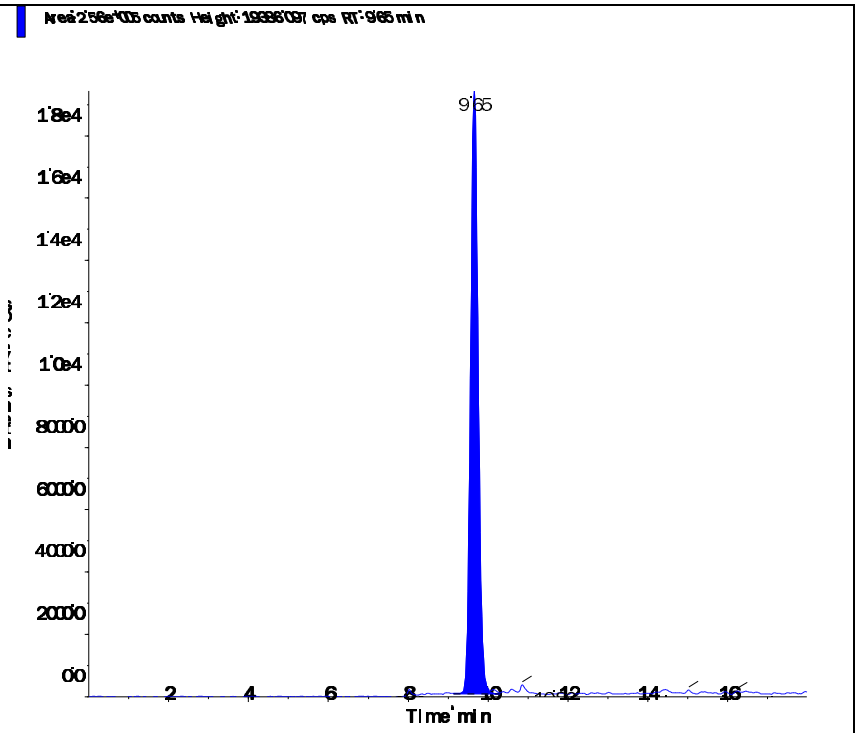

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Printed: 6/12/2016 9:39 PM

Data File	LM35290.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 2:55:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060414-03 100000X	**Injection Vial**	20.00
Data File	LM35290.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 2:55:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	L16060414-03	**Dilution Factor**	1.00
Sample Comment	1,100,000.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.640e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.770e+05	9.84	N/A	1.77
Perchlorate conf	9.540e+04	9.83	N/A	1.82

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

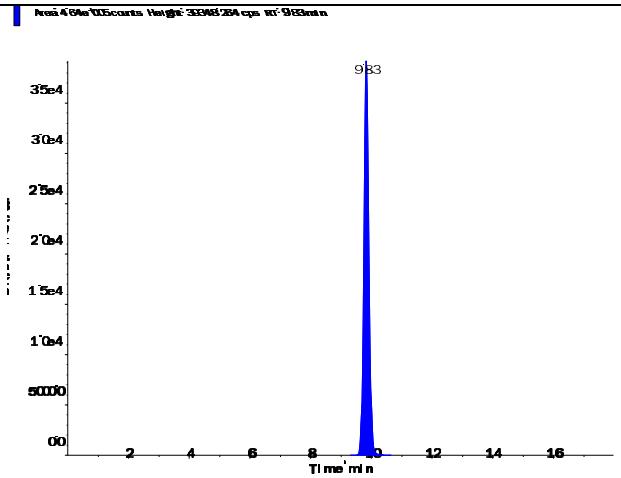

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.77 ng/ml
Area Ratio:	0.598
Sample Type:	(Unknown)

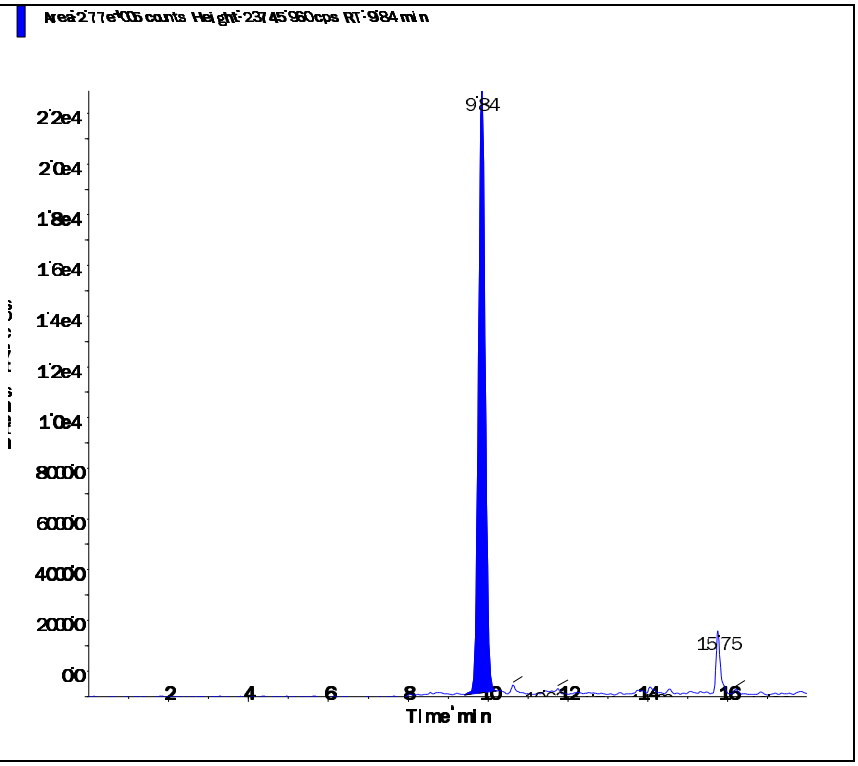

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.82 ng/ml
Area Ratio:	0.206
Sample Type:	(Unknown)

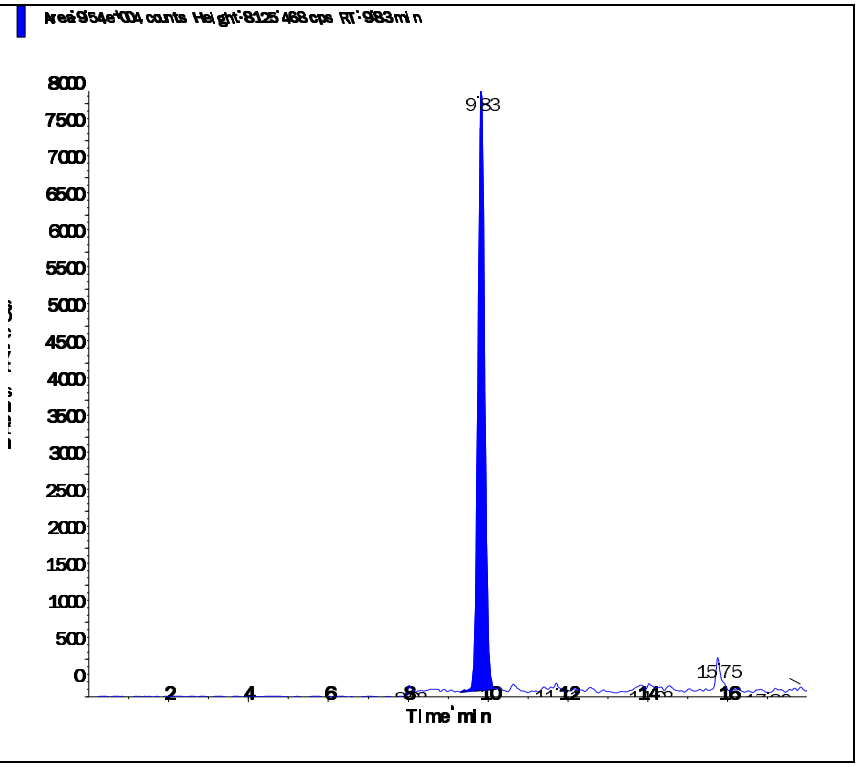

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Data File	LM35291.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 3:15:44 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060414-04 100000X	**Injection Vial**	21.00
Data File	LM35291.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 3:15:44 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	L16060414-04	**Dilution Factor**	1.00
Sample Comment	1,100,000.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.630e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.580e+05	9.84	N/A	2.29
Perchlorate conf	1.230e+05	9.83	N/A	2.36

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

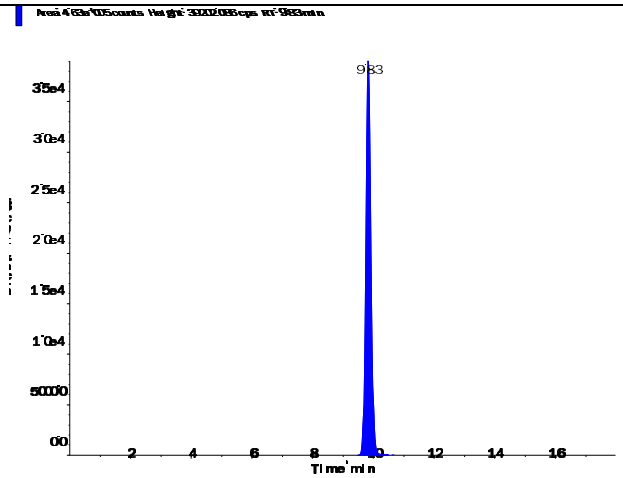

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	2.29 ng/ml
Area Ratio:	0.773
Sample Type:	(Unknown)

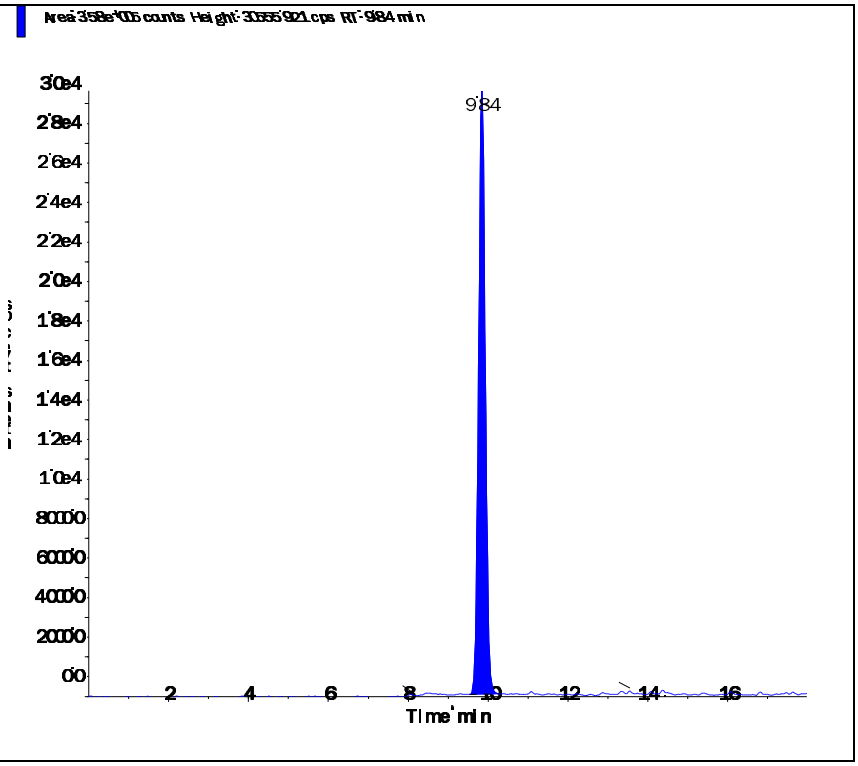

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	2.36 ng/ml
Area Ratio:	0.265
Sample Type:	(Unknown)

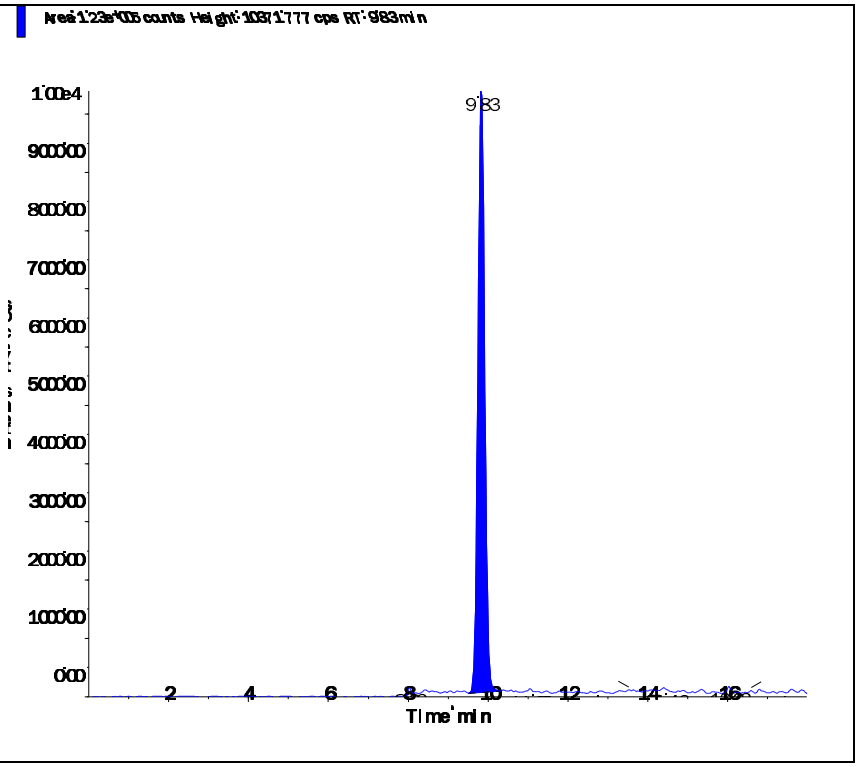

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2.2.2.4 Standards Data

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Data File	LM34686.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

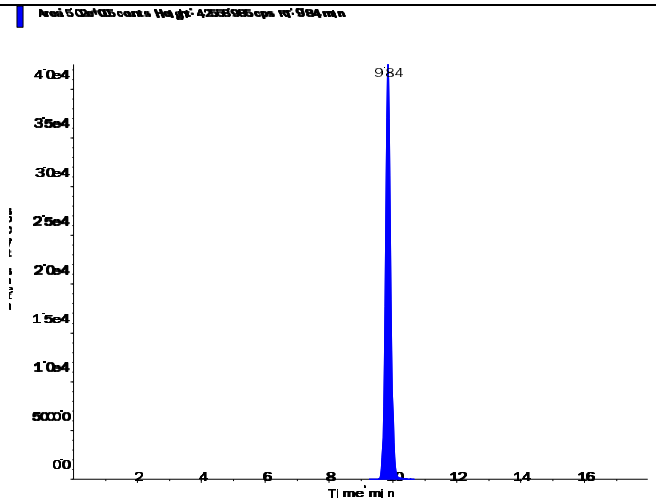

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

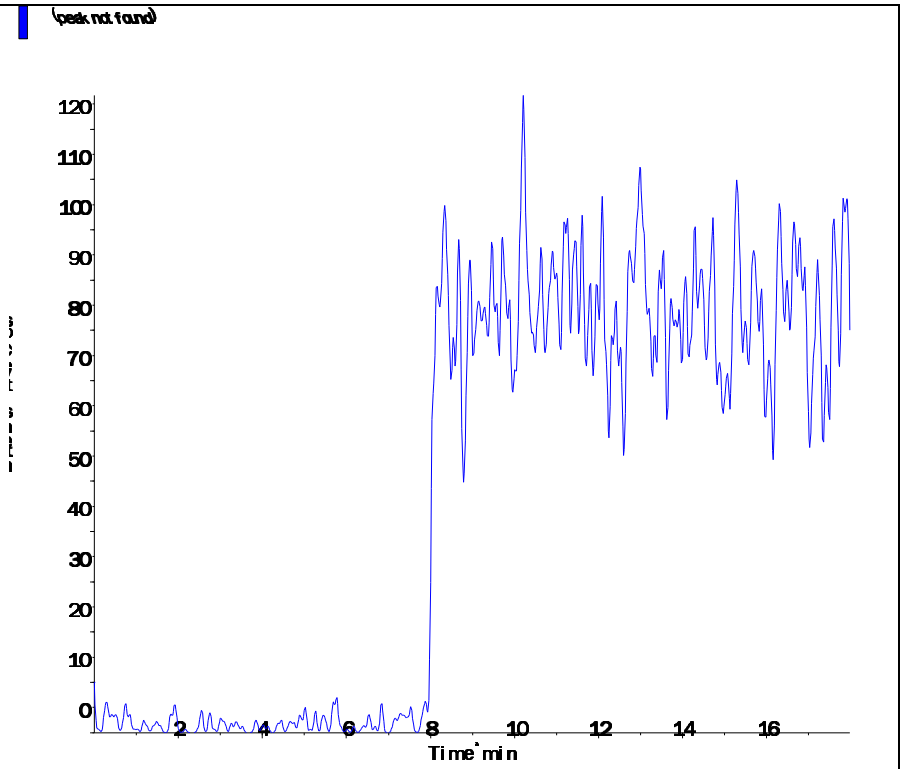

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

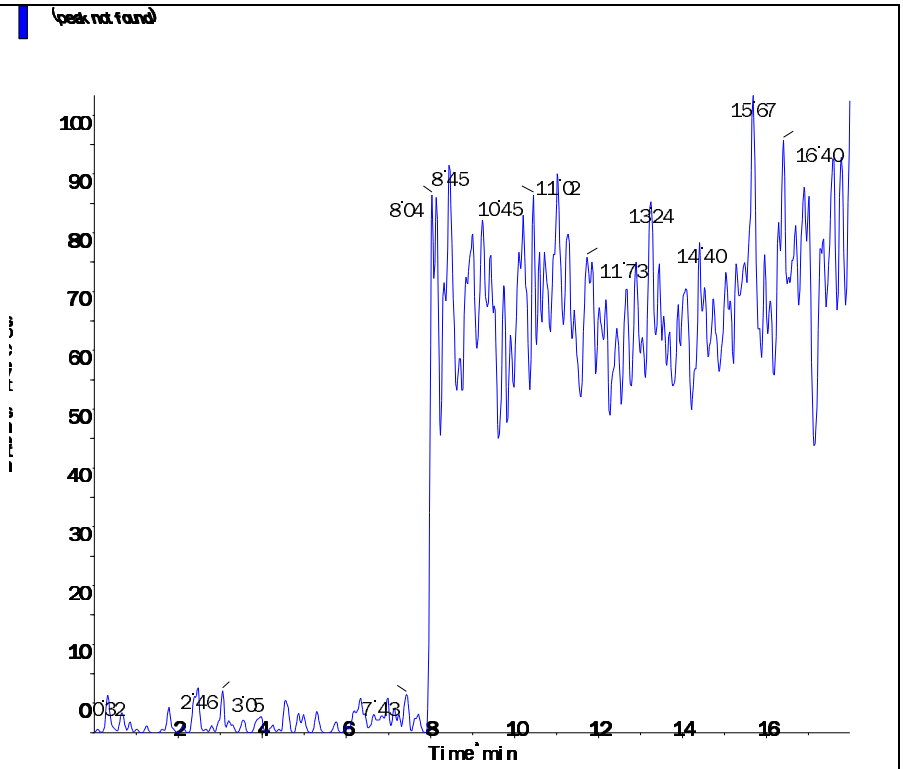

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Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

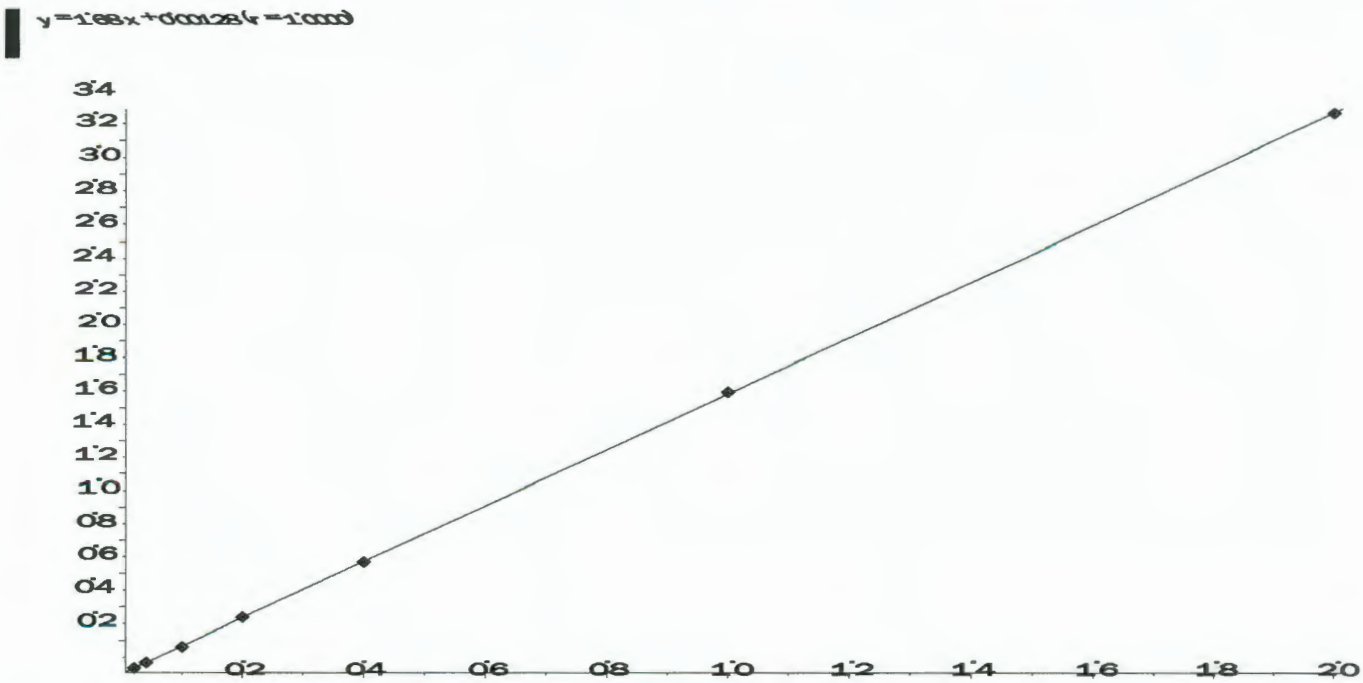

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Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

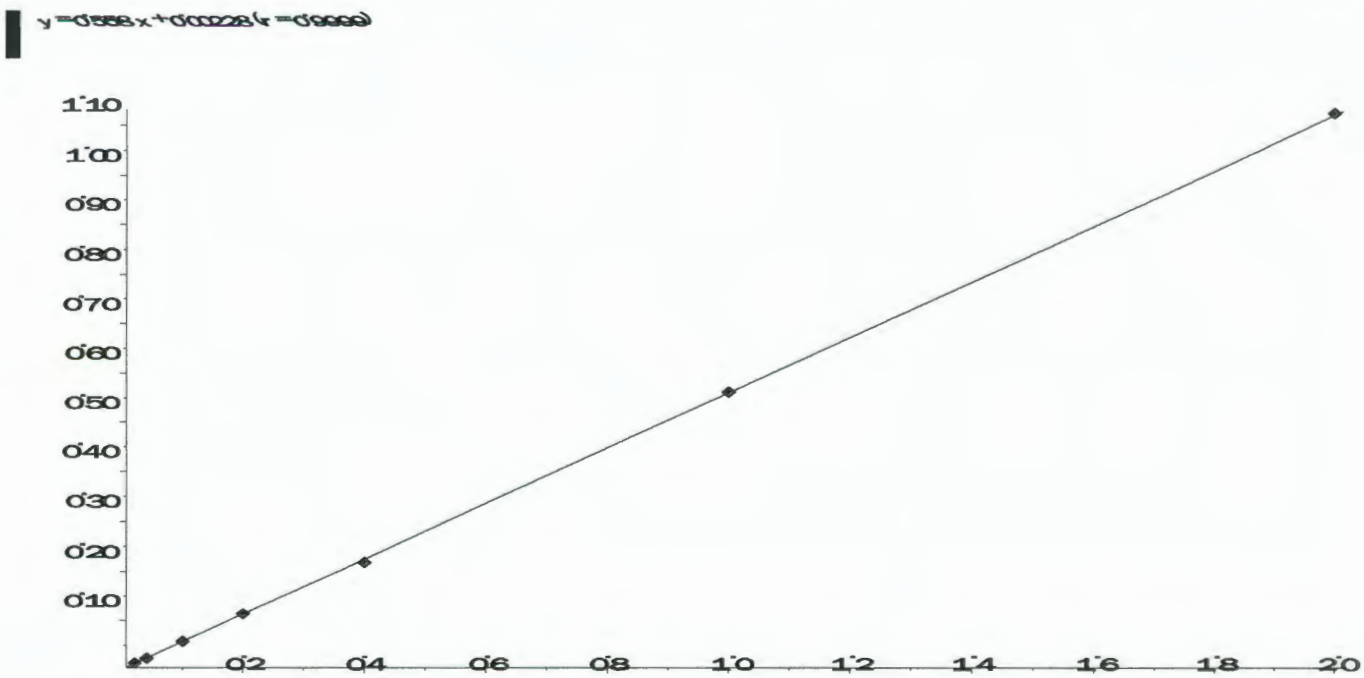

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Data File	LM34687.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

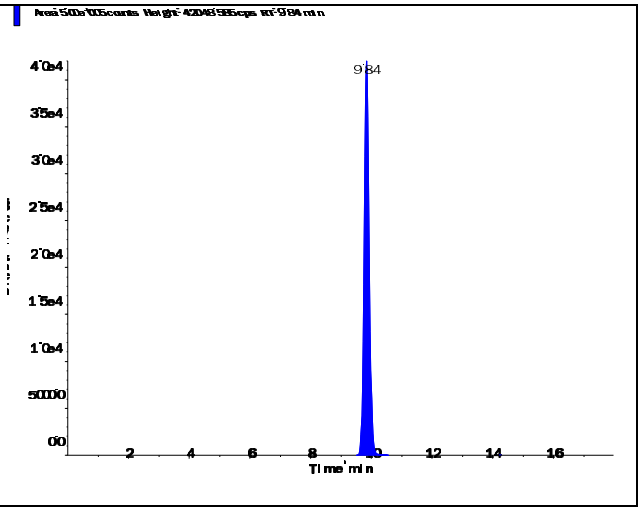

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.103 ng/ml
Area Ratio:	0.036
Sample Type:	(Standard)

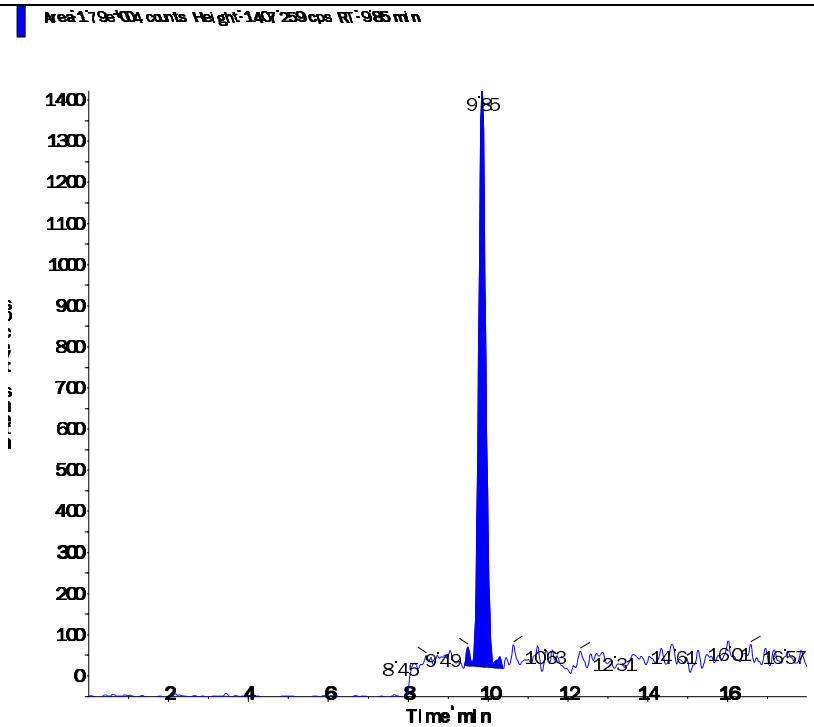

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.104 ng/ml
Area Ratio:	0.014
Sample Type:	(Standard)

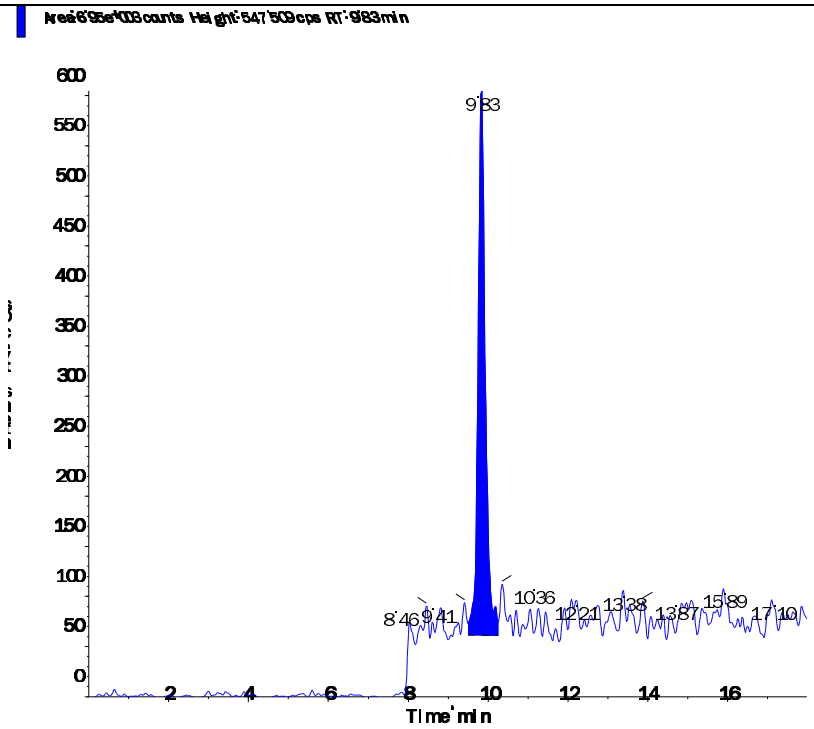

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Data File	LM34688.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

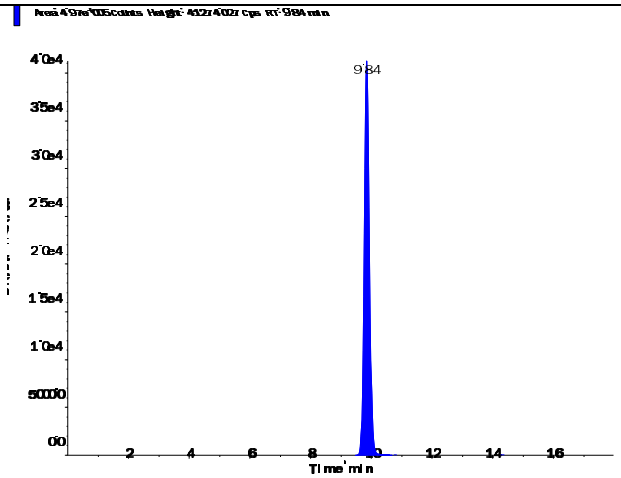

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

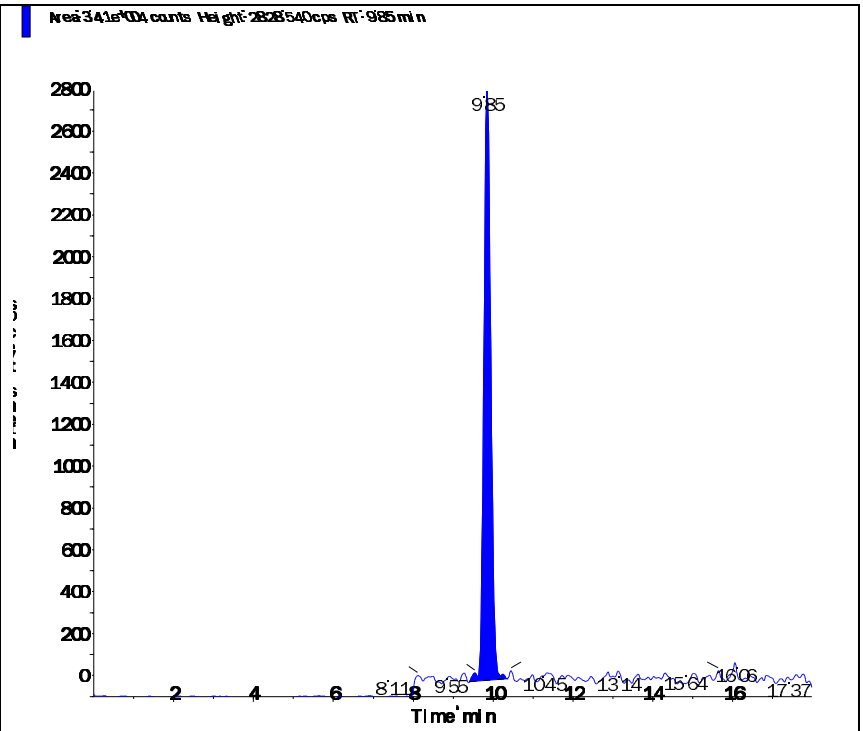

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

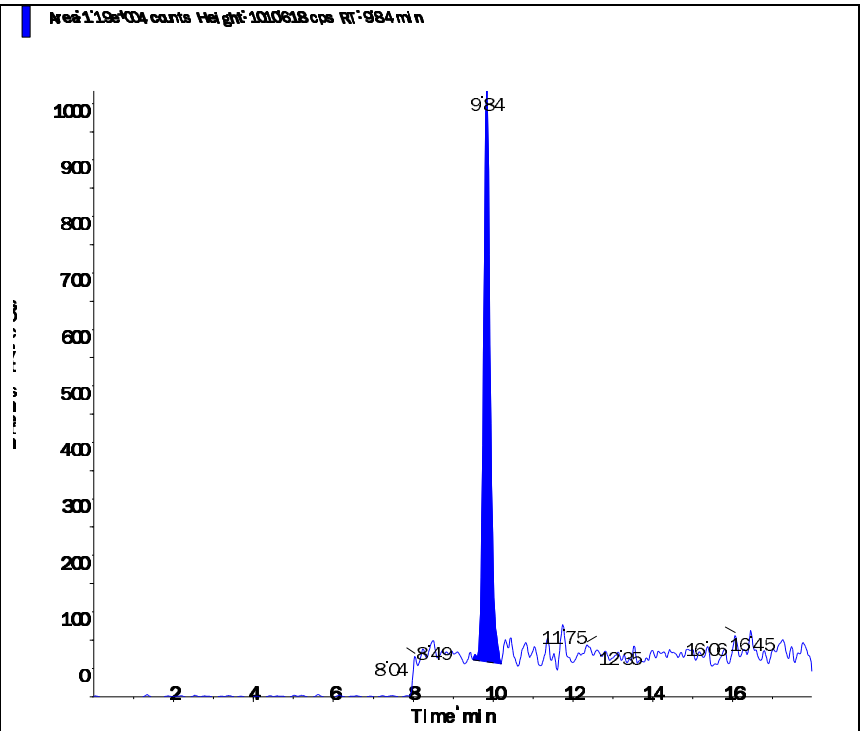

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Data File	LM34689.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

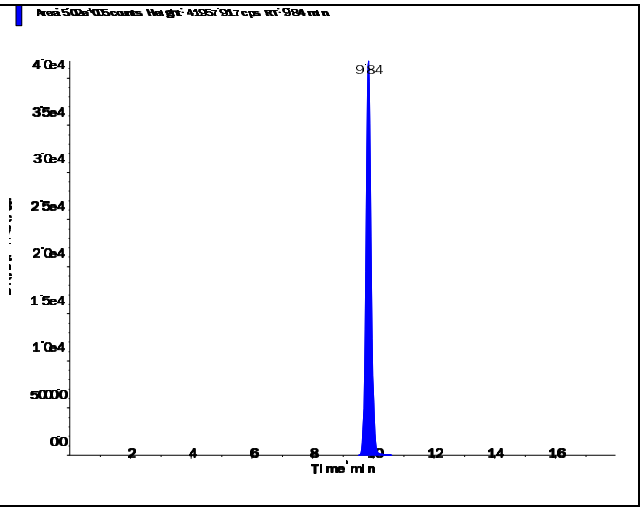

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.483 ng/ml
Area Ratio:	0.164
Sample Type:	(Standard)

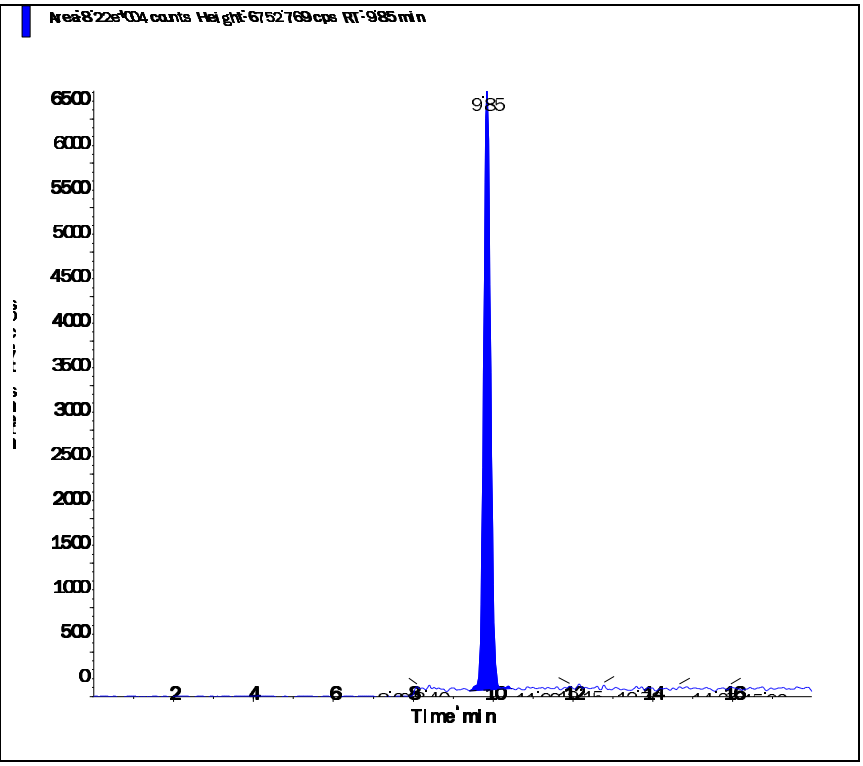

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.503 ng/ml
Area Ratio:	0.058
Sample Type:	(Standard)

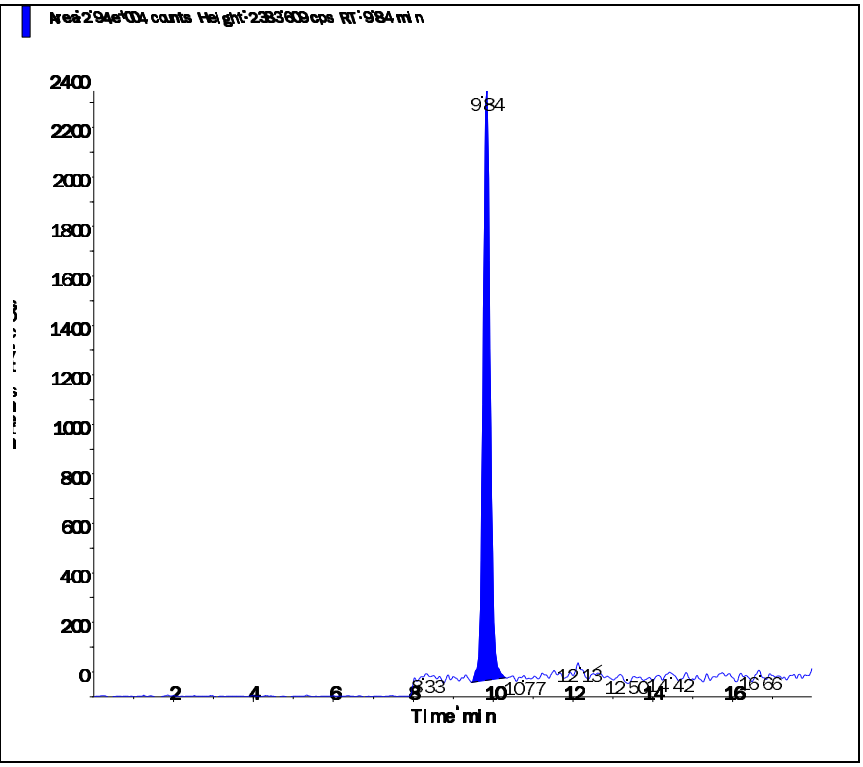

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Data File	LM34690.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

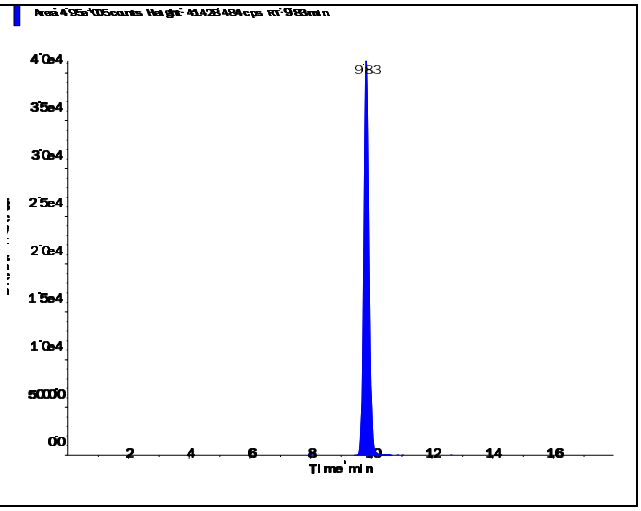

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

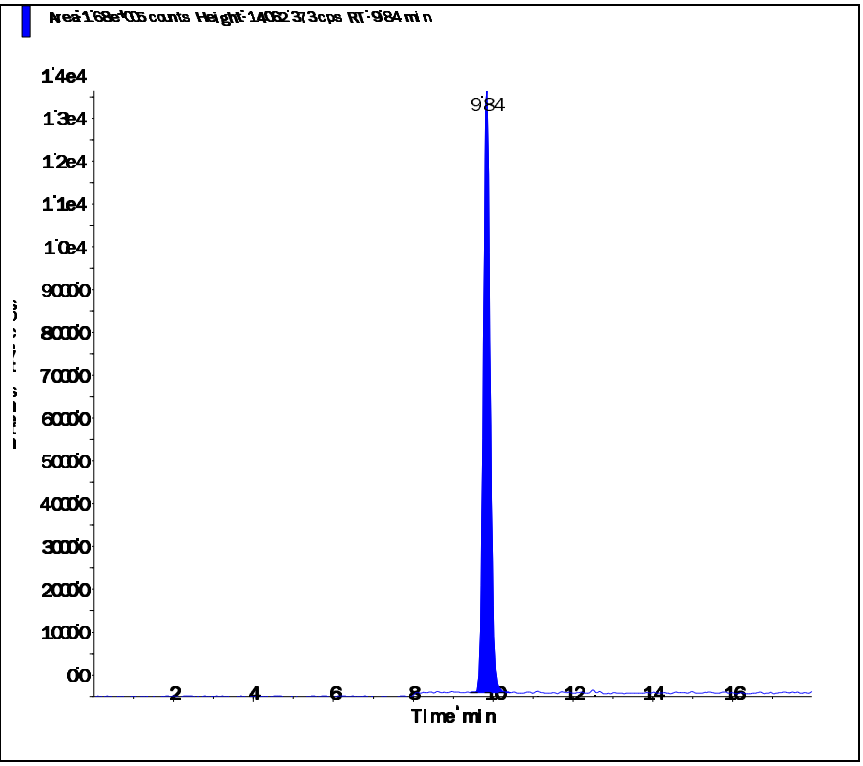

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

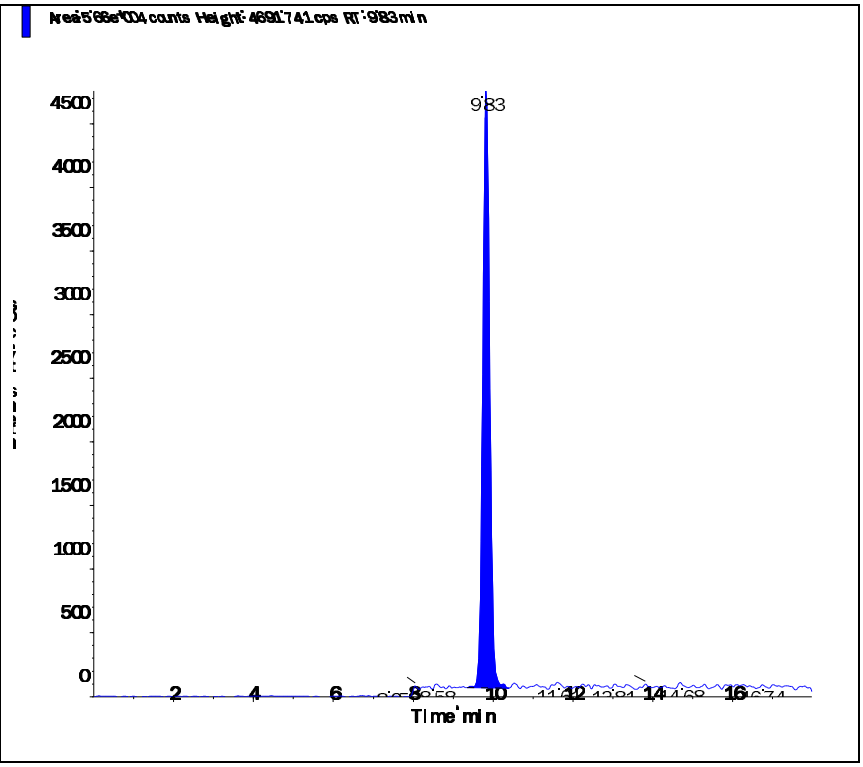

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Data File	LM34691.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

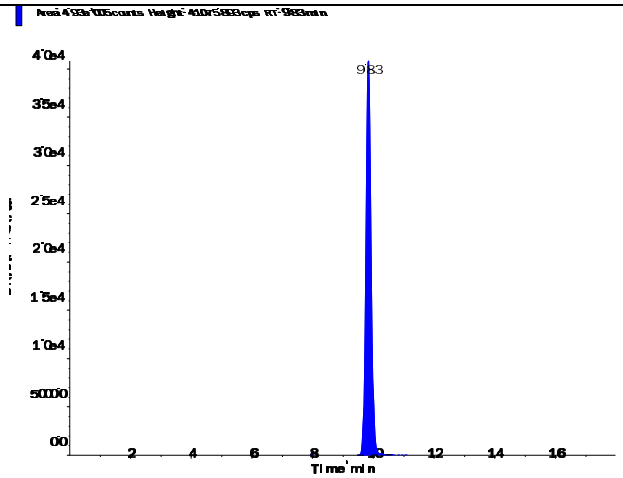

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 1.99 ng/ml Area Ratio: 0.669 Sample Type: (Standard)	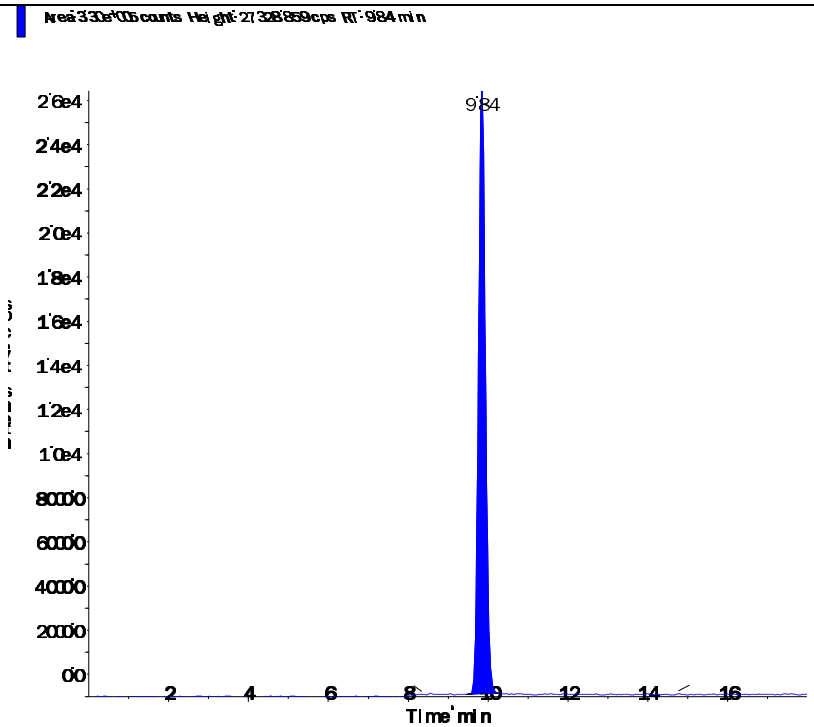
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 1.94 ng/ml Area Ratio: 0.219 Sample Type: (Standard)	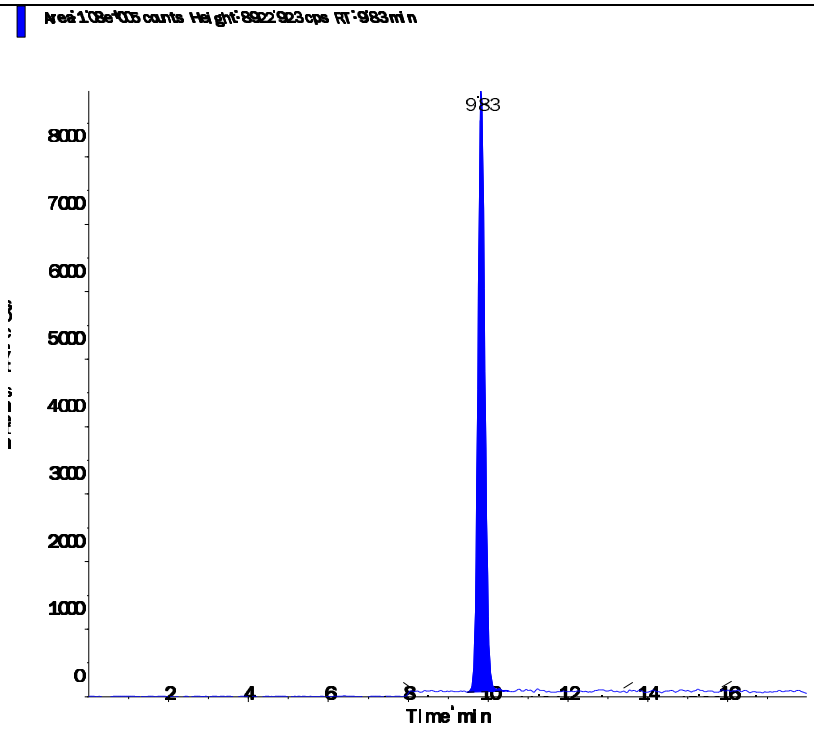

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Data File	LM34692.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

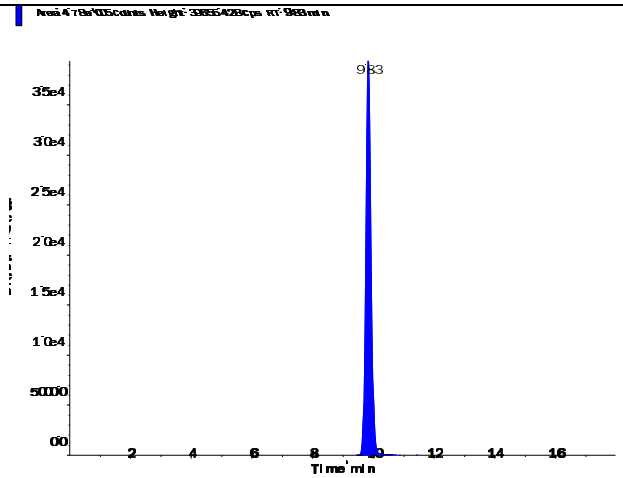

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

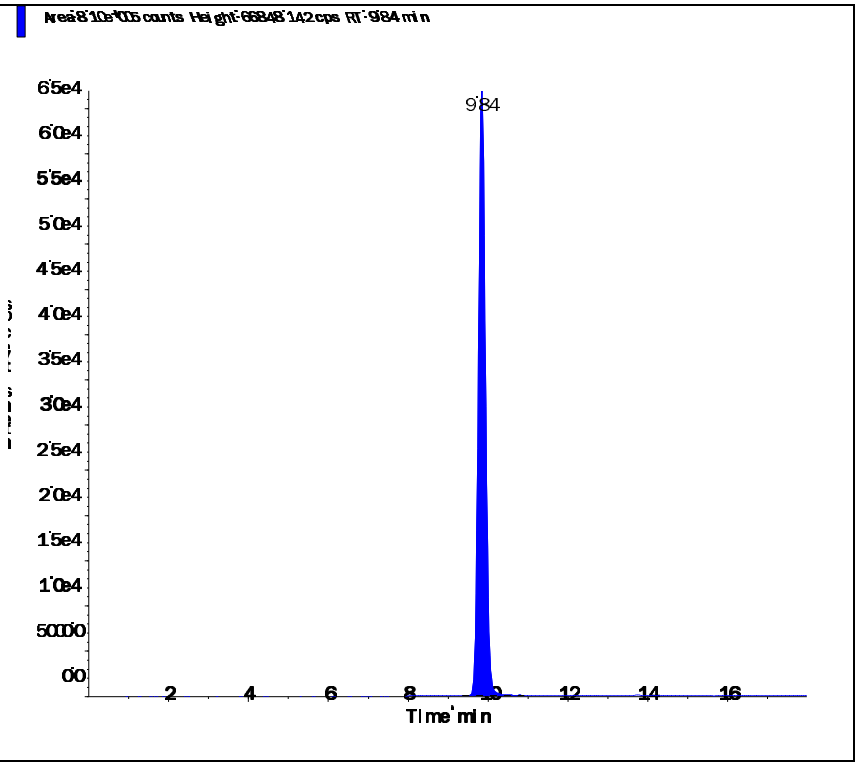

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

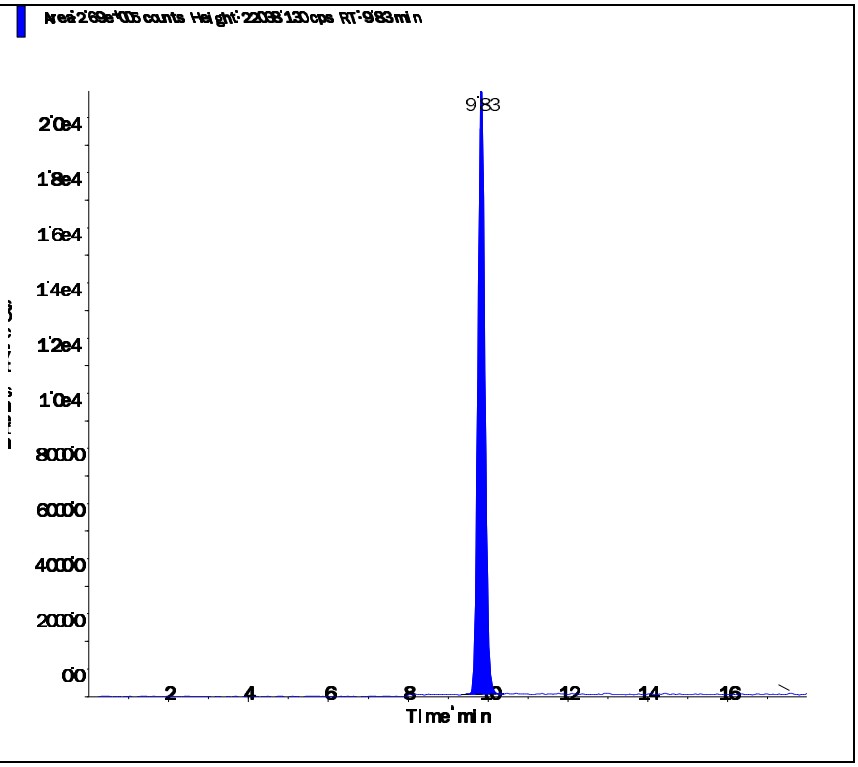

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Printed: 6/13/2016 10:30 AM

Data File	LM34693.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

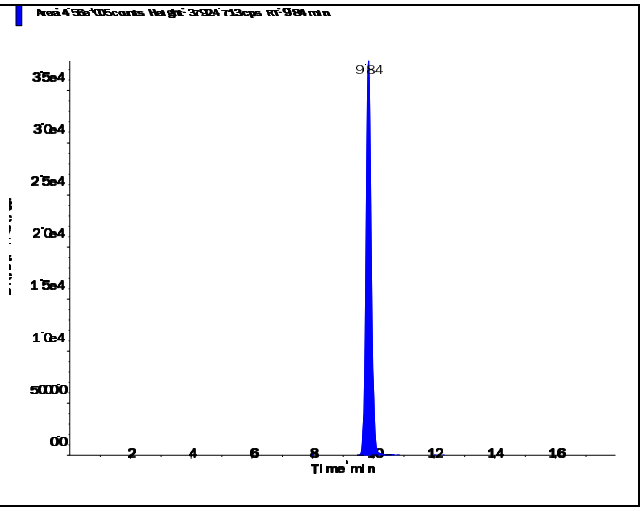

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 9.99 ng/ml Area Ratio: 3.36 Sample Type: (Standard)	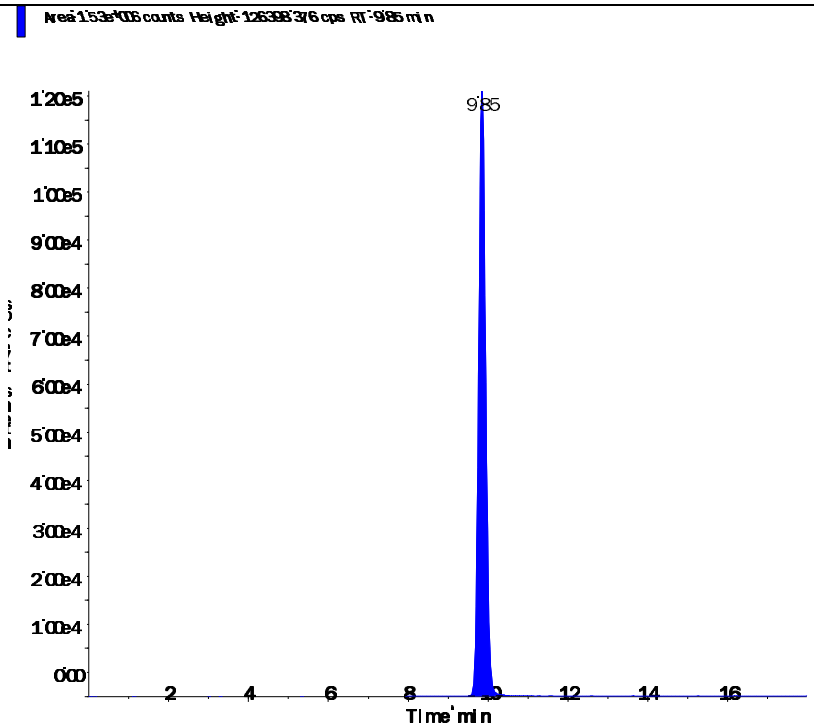
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 10.00 ng/ml Area Ratio: 1.122 Sample Type: (Standard)	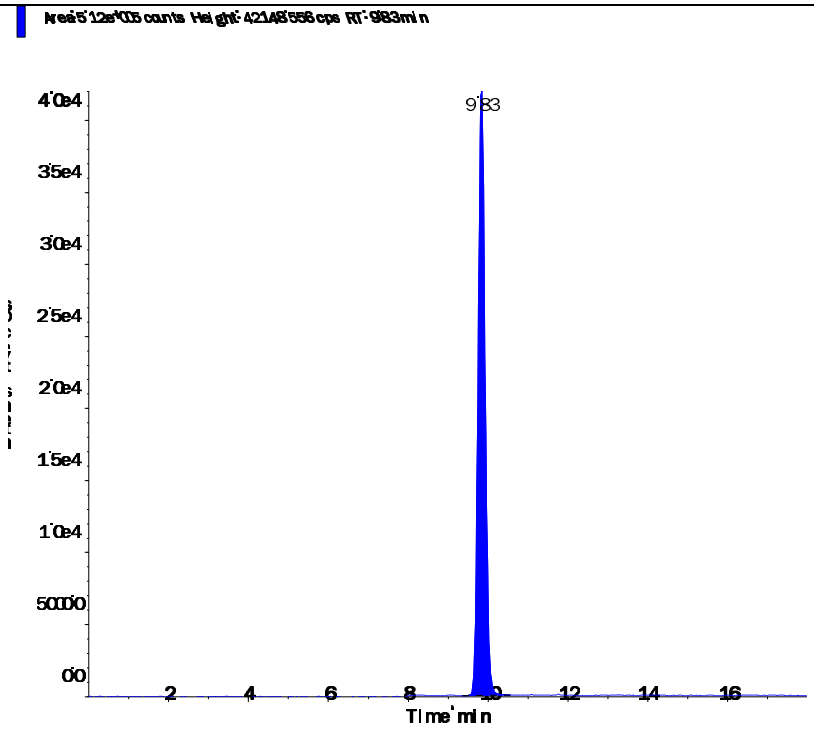

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Printed: 5/4/2016 1:23 PM

Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

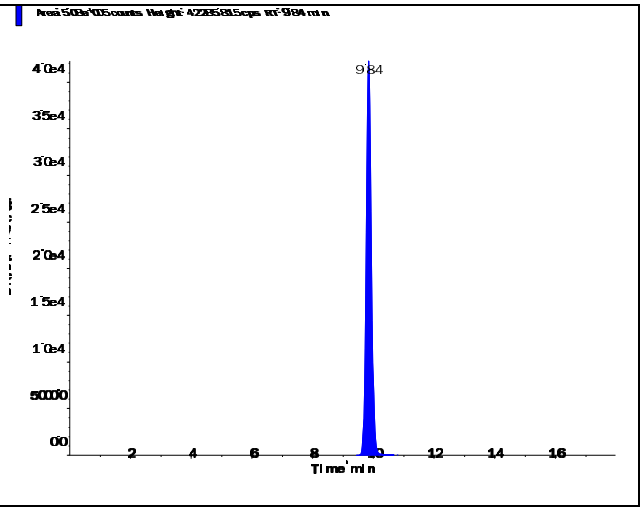

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Printed: 5/4/2016 1:23 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.332
Sample Type:	(Quality Control)

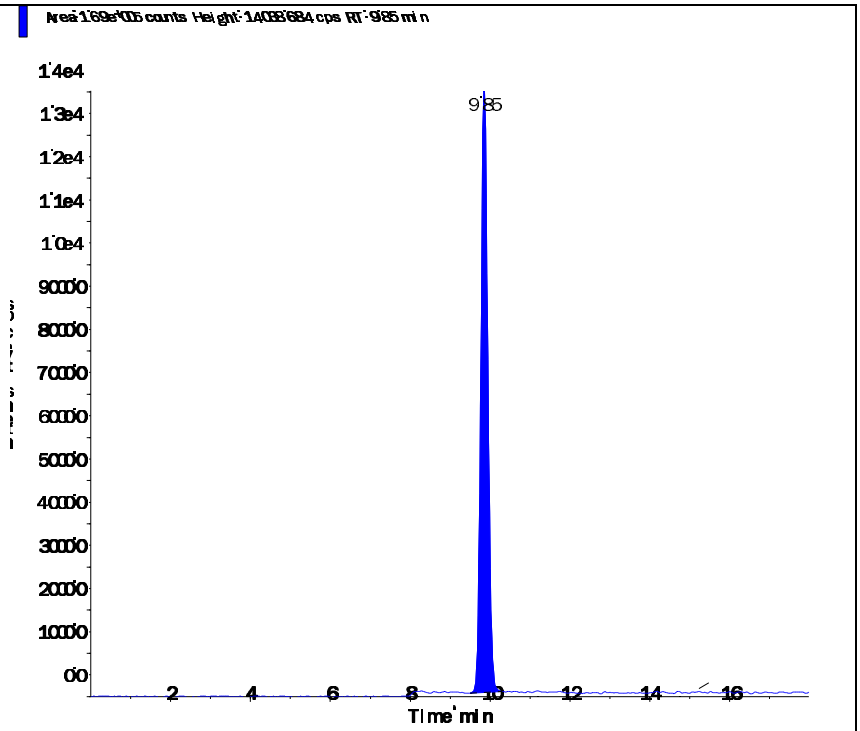

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

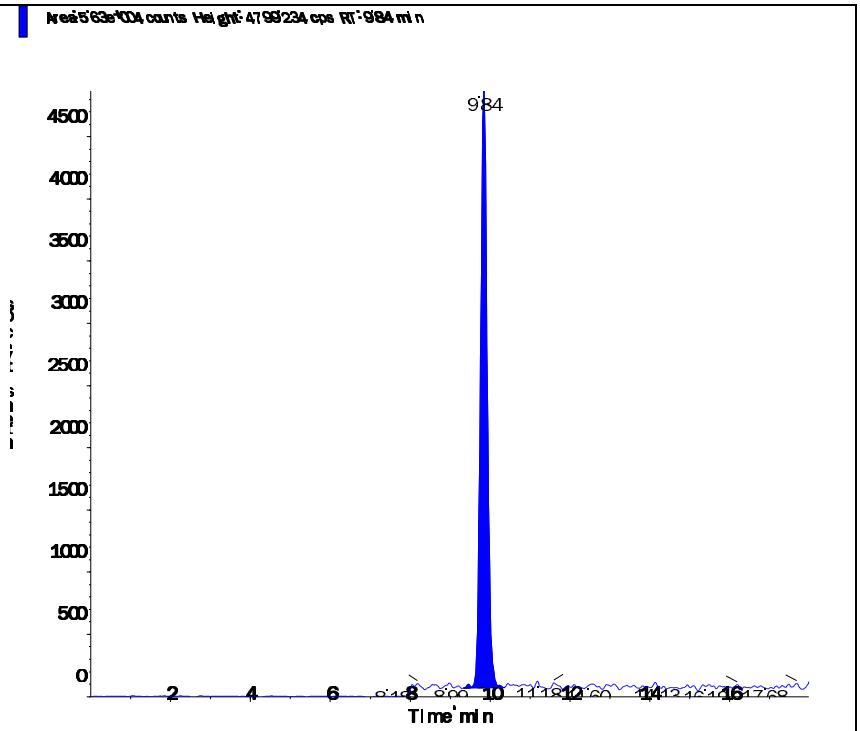

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Data File	LM35226.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 10:08:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35226.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 10:08:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.430e+05	9.64	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.510e+05	9.65	1.00	1.01
Perchlorate conf	5.370e+04	9.63	1.00	1.06

O18LP (Internal Standard)

RT (Exp. RT): 9.64(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

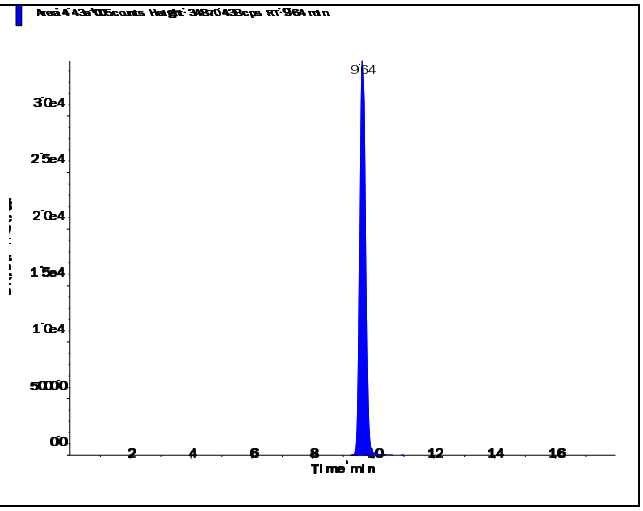

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Printed: 6/11/2016 12:59 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.65 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.34
Sample Type:	(Quality Control)

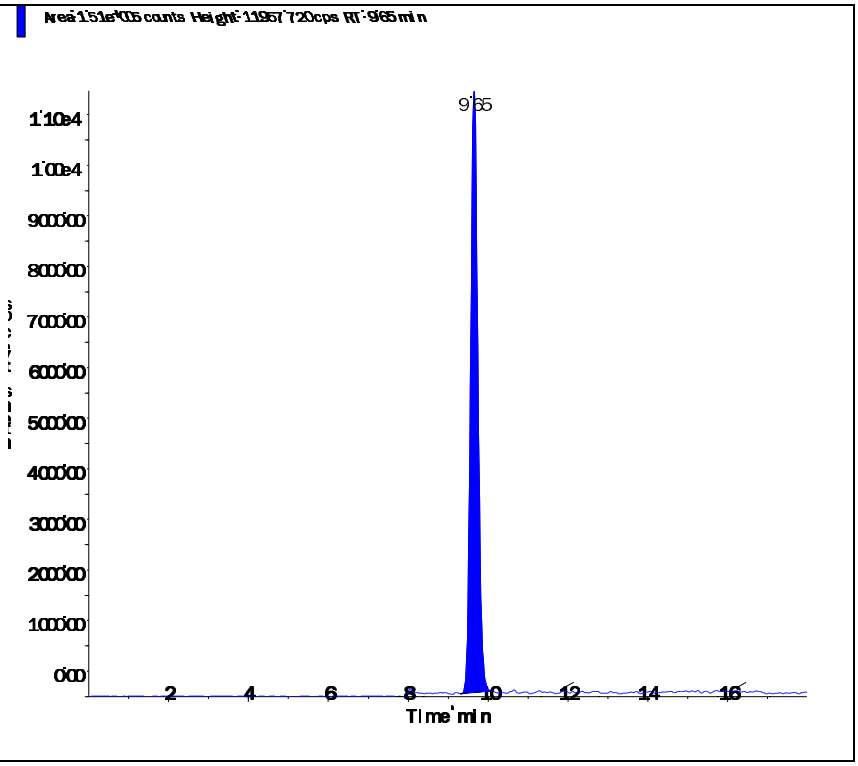

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

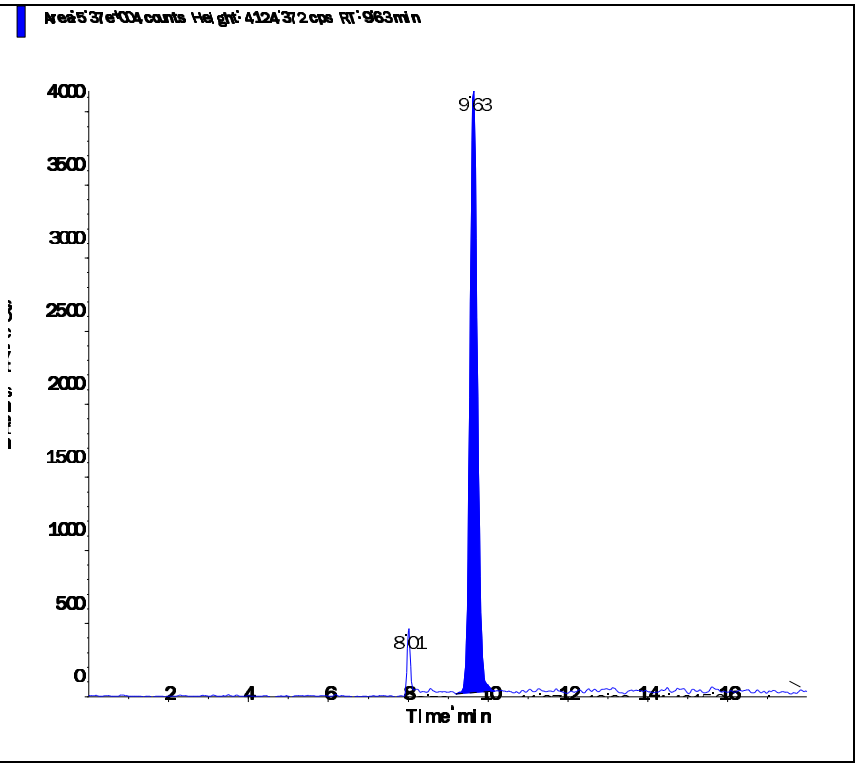

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Created with Analyst Reporter
Printed: 6/11/2016 1:03 PM

Data File	LM35238.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 1:55:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35238.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 1:55:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.720e+05	9.64	1.00	1.01
Perchlorate conf	5.960e+04	9.63	1.00	1.04

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

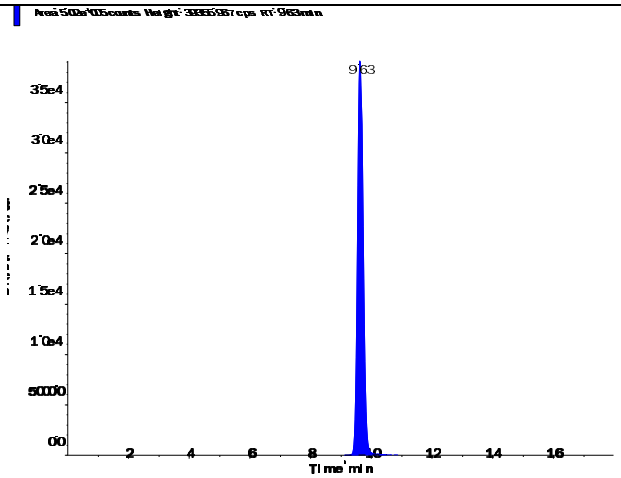

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Printed: 6/11/2016 1:03 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.342
Sample Type:	(Quality Control)

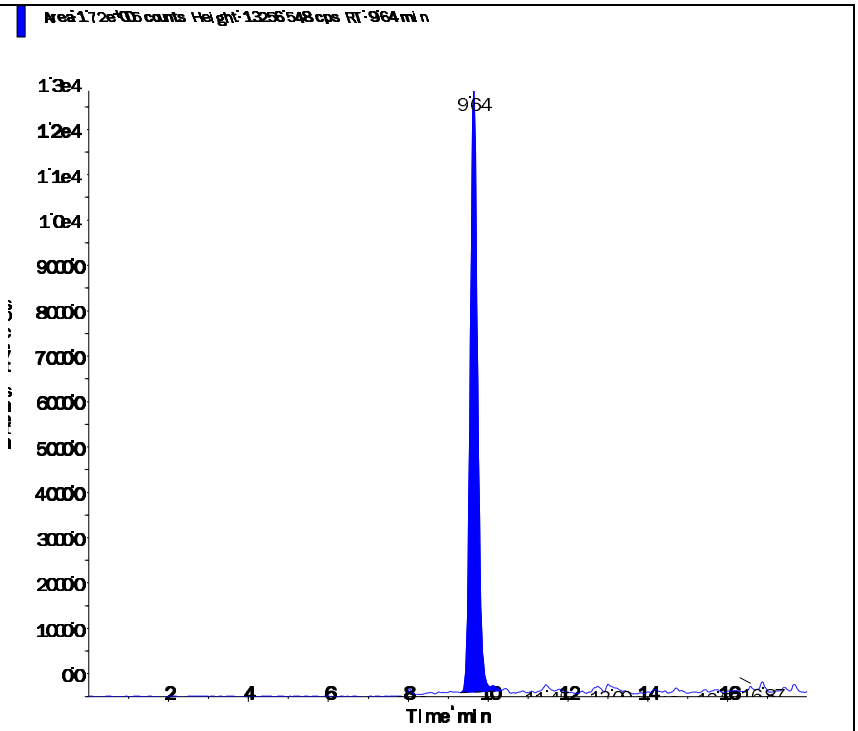

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

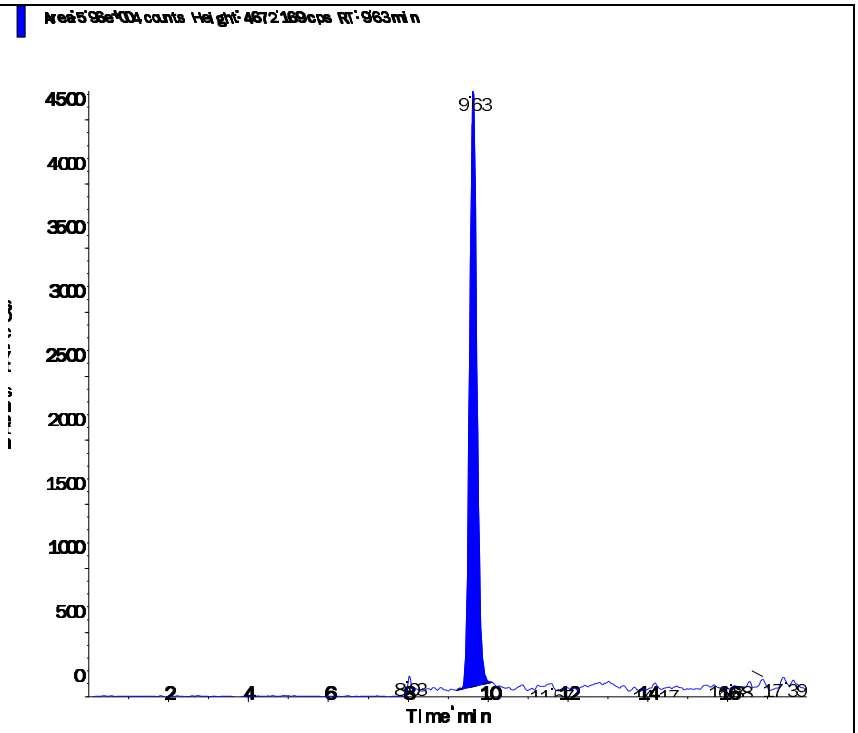

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Created with Analyst Reporter
Printed: 6/11/2016 1:05 PM

Data File	LM35244.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 3:49:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35244.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 3:49:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+05	9.64	1.00	1.05
Perchlorate conf	6.340e+04	9.64	1.00	1.10

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

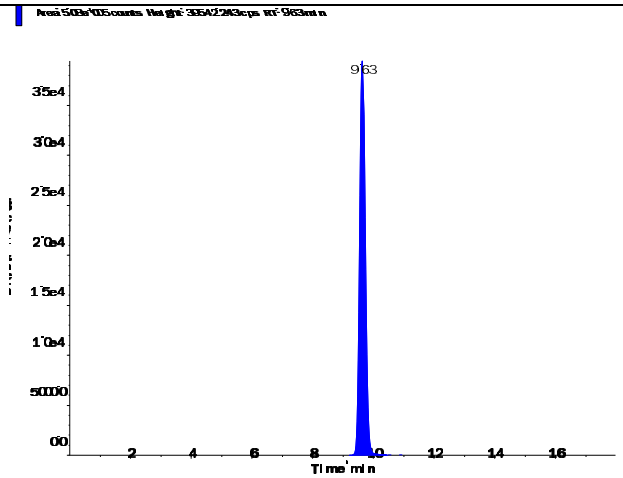

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.353
Sample Type:	(Quality Control)

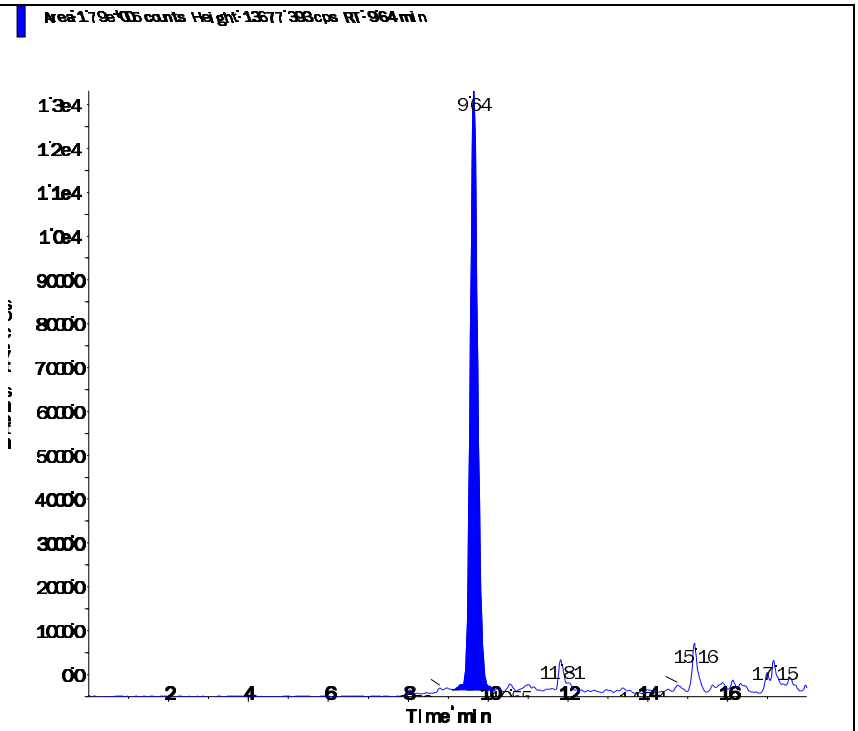

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.10 ng/ml
Area Ratio:	0.125
Sample Type:	(Quality Control)

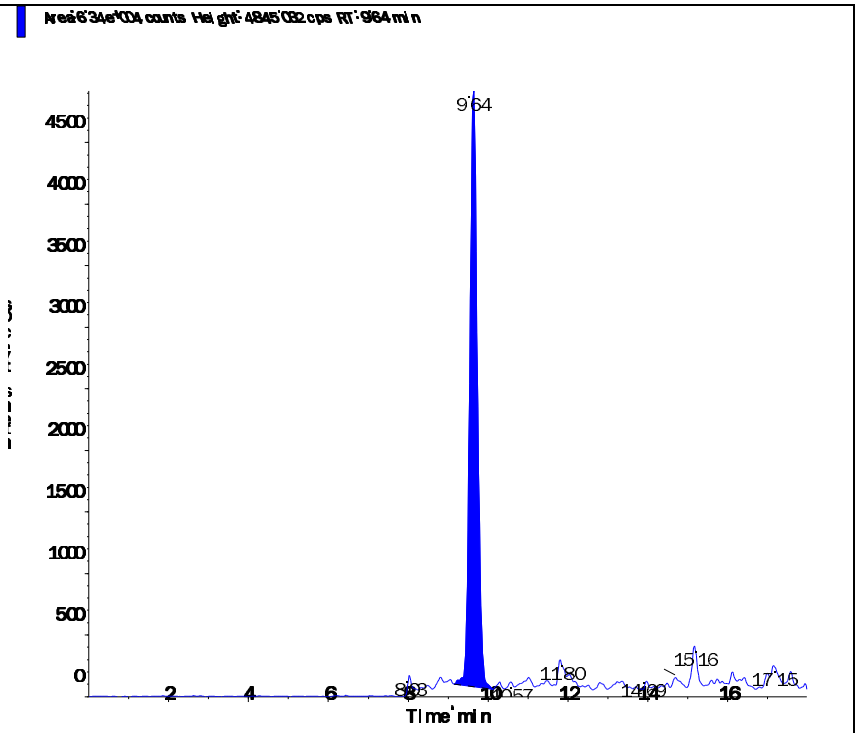

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Data File	LM35257.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 7:56:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35257.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 7:56:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.810e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.750e+05	9.64	1.00	1.08
Perchlorate conf	5.800e+04	9.62	1.00	1.06

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

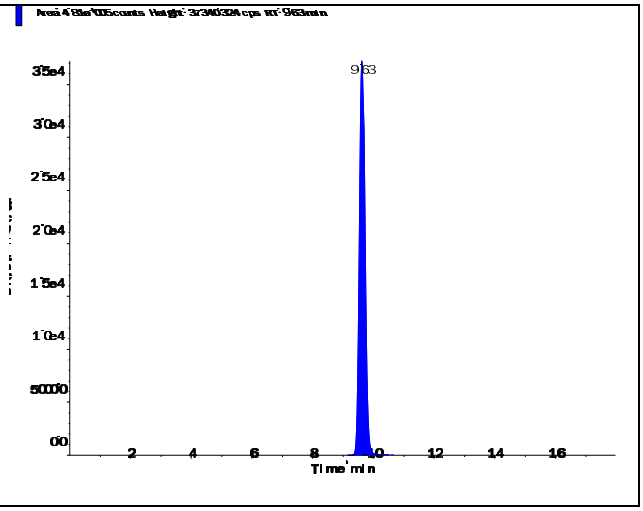

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.08 ng/ml
Area Ratio:	0.363
Sample Type:	(Quality Control)

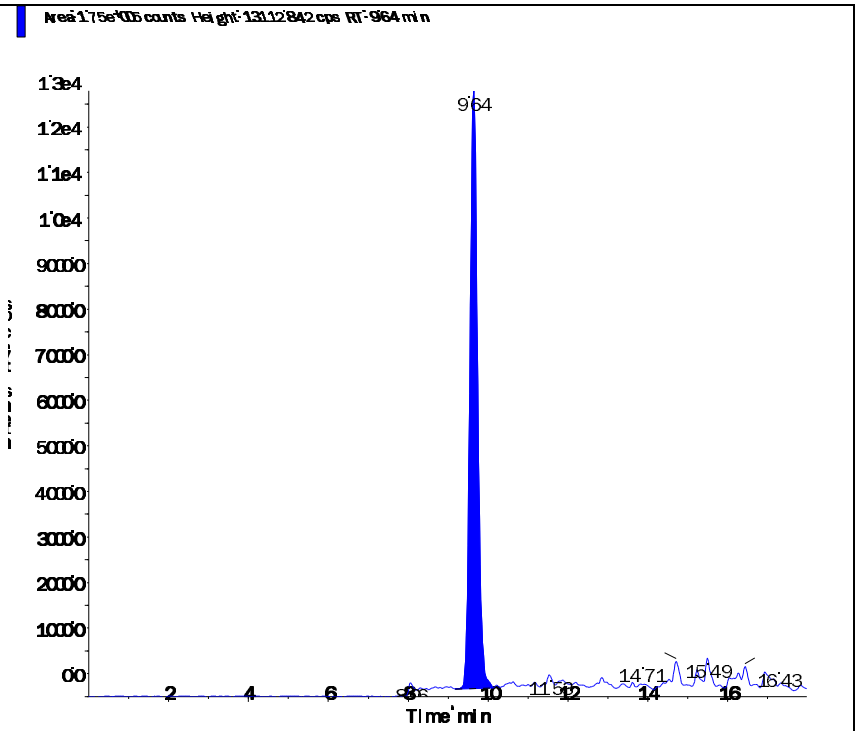

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.62 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

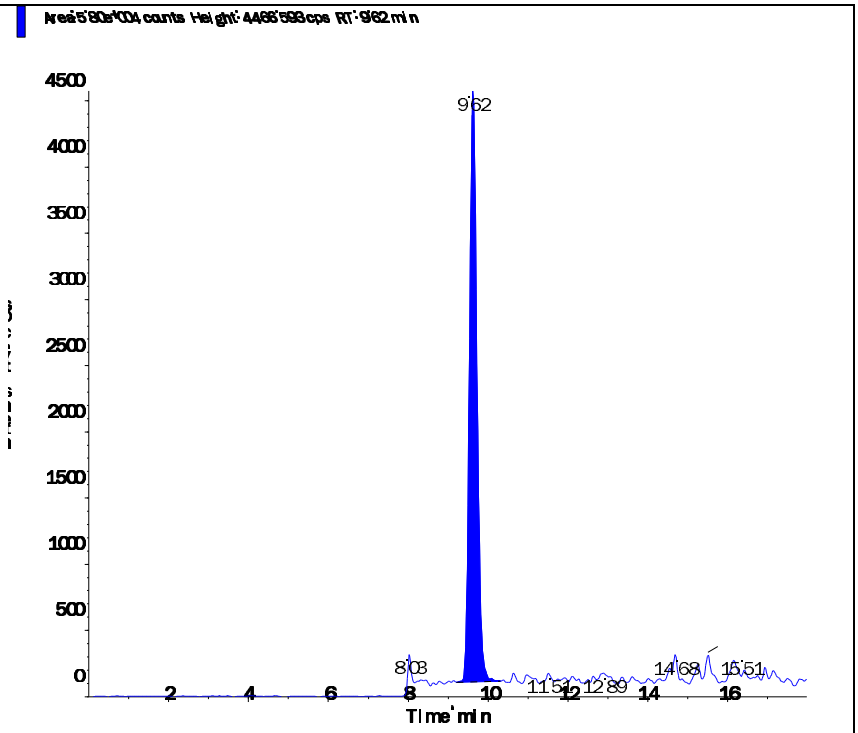

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Printed: 6/11/2016 1:12 PM

Data File	LM35264.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 10:09:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35264.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 10:09:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.860e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.64	1.00	1.03
Perchlorate conf	5.780e+04	9.63	1.00	1.04

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

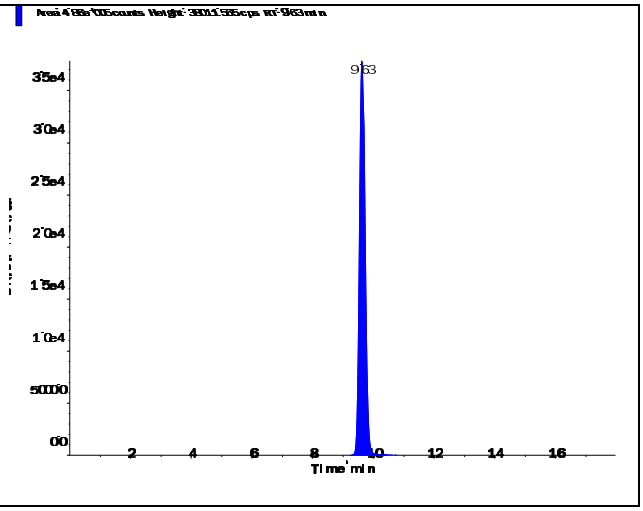

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.348
Sample Type:	(Quality Control)

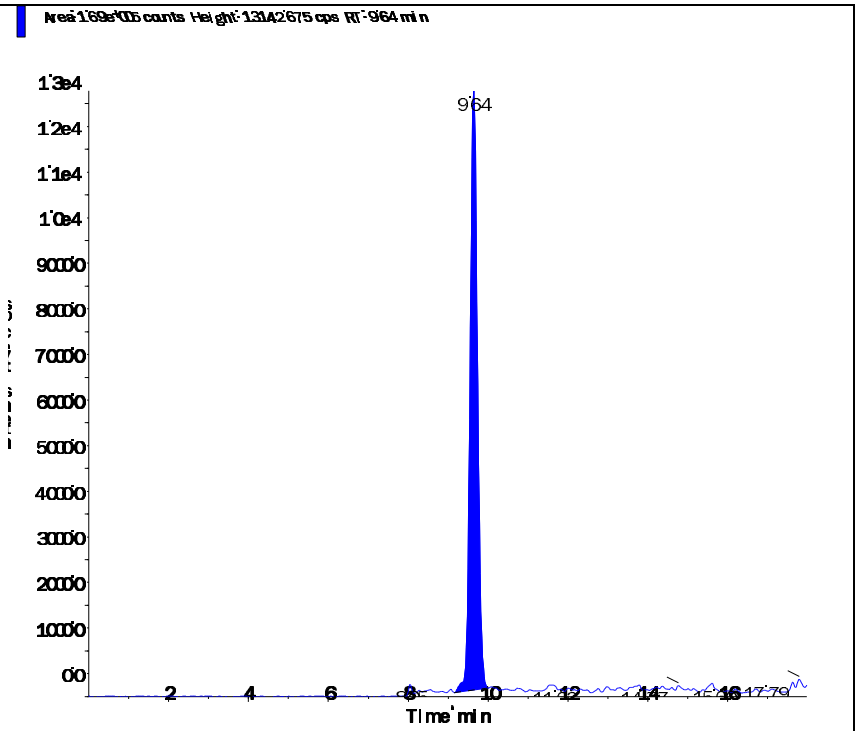

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

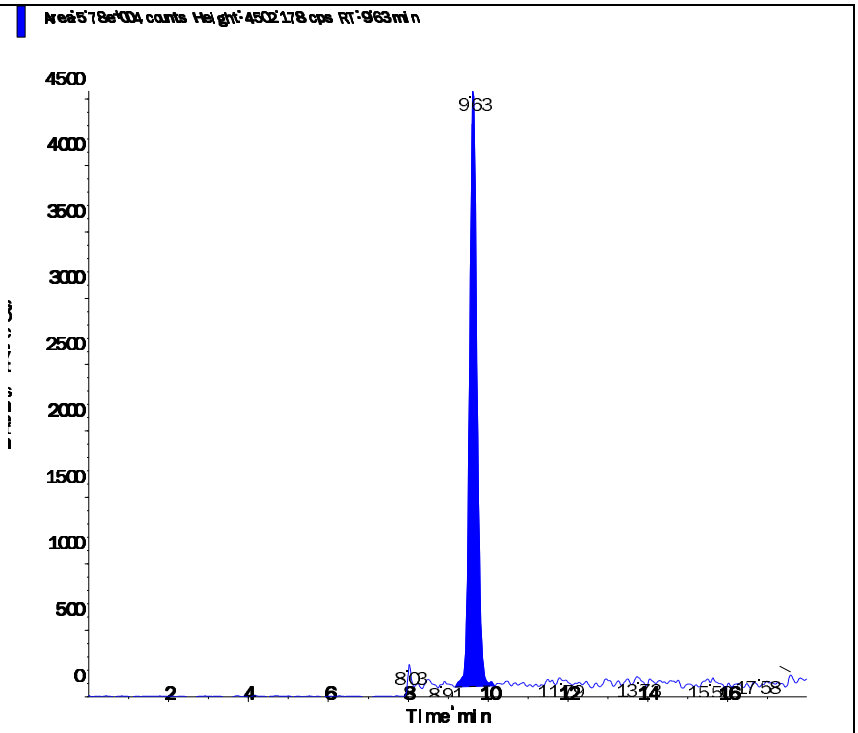

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Printed: 6/11/2016 1:16 PM

Data File	LM35276.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/11/2016 1:56:12 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-11 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35276.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 1:56:12 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.260e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.830e+05	9.64	1.00	1.03
Perchlorate conf	6.180e+04	9.62	1.00	1.03

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

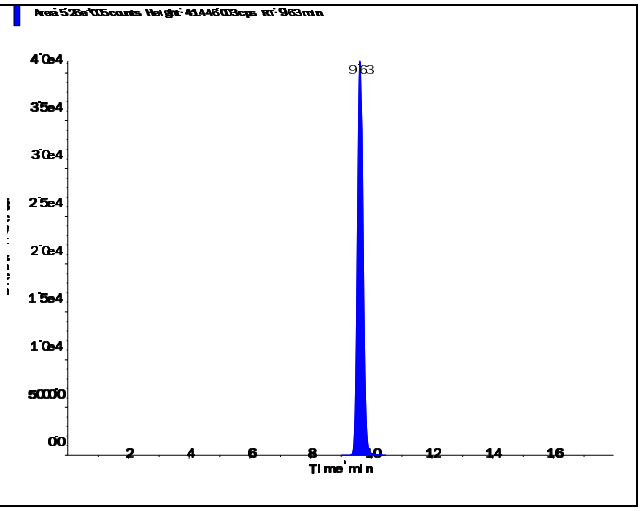

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Printed: 6/11/2016 1:16 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.349
Sample Type:	(Quality Control)

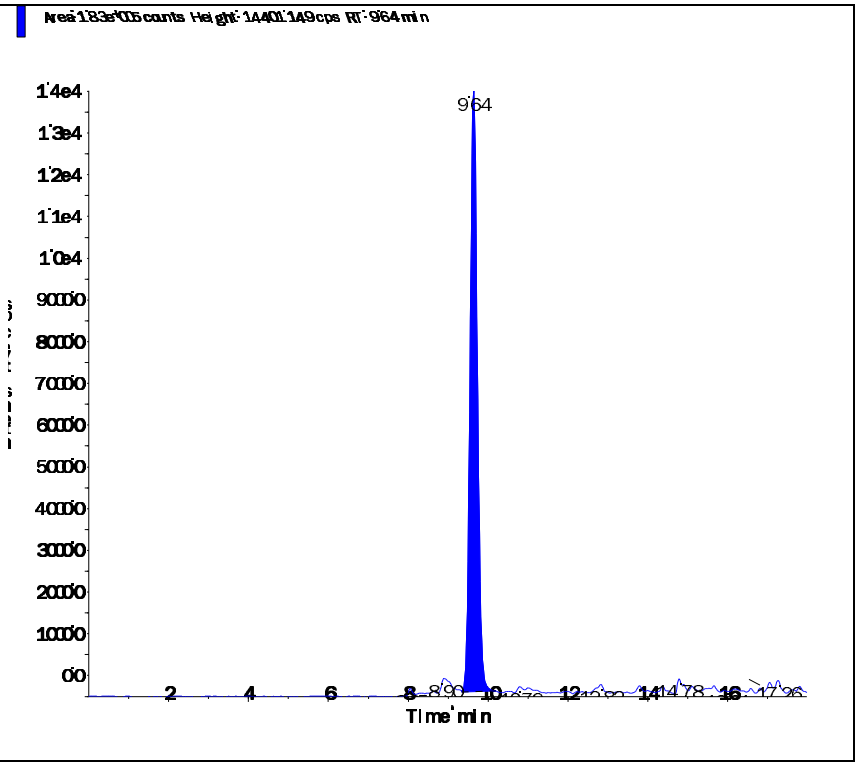

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.62 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.117
Sample Type:	(Quality Control)

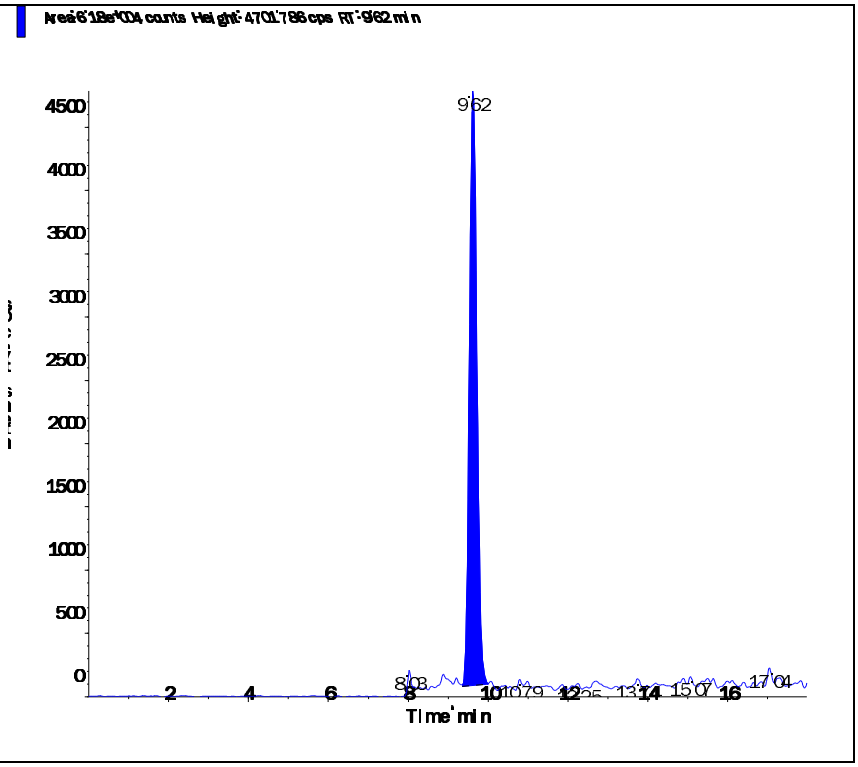

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Created with Analyst Reporter
Printed: 6/12/2016 9:37 PM

Data File	LM35280.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 11:46:23 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35280.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 11:46:23 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.580e+05	9.62	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.600e+05	9.63	1.00	1.04
Perchlorate conf	5.470e+04	9.61	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.62(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

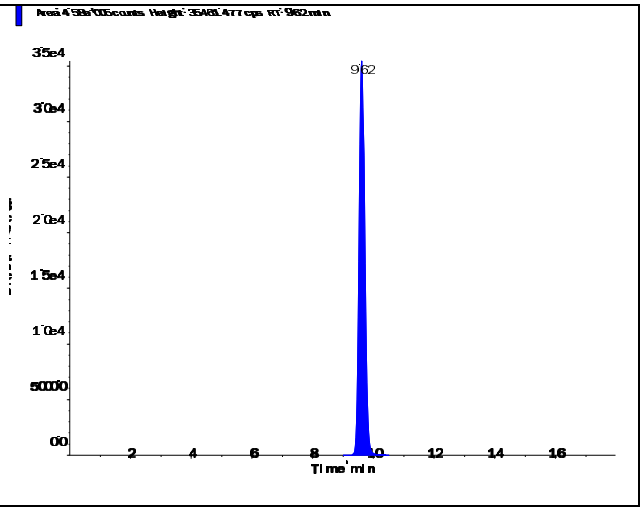

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Printed: 6/12/2016 9:37 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.35
Sample Type:	(Quality Control)

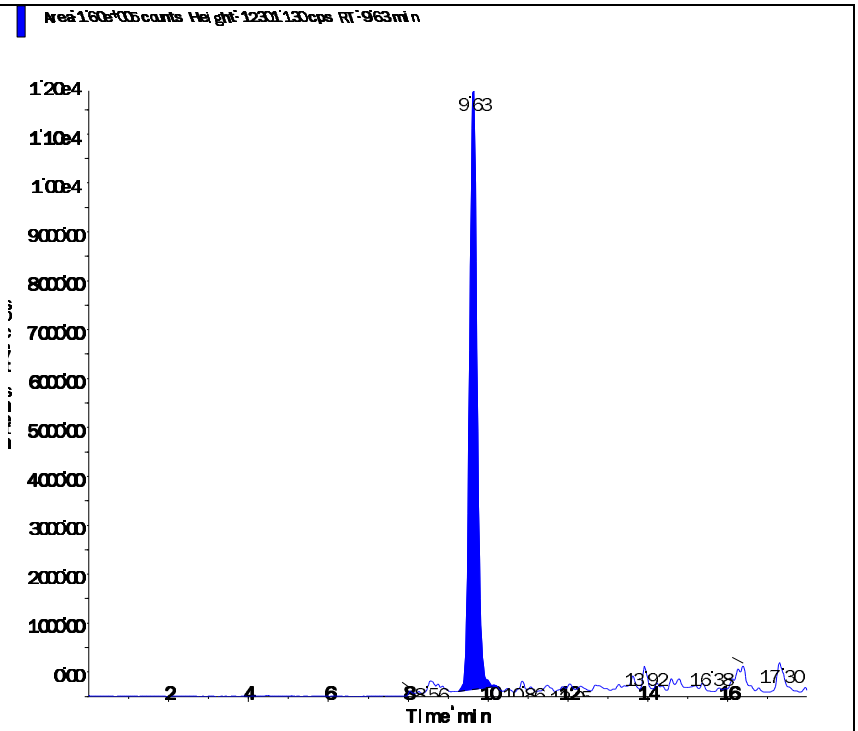

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.61 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

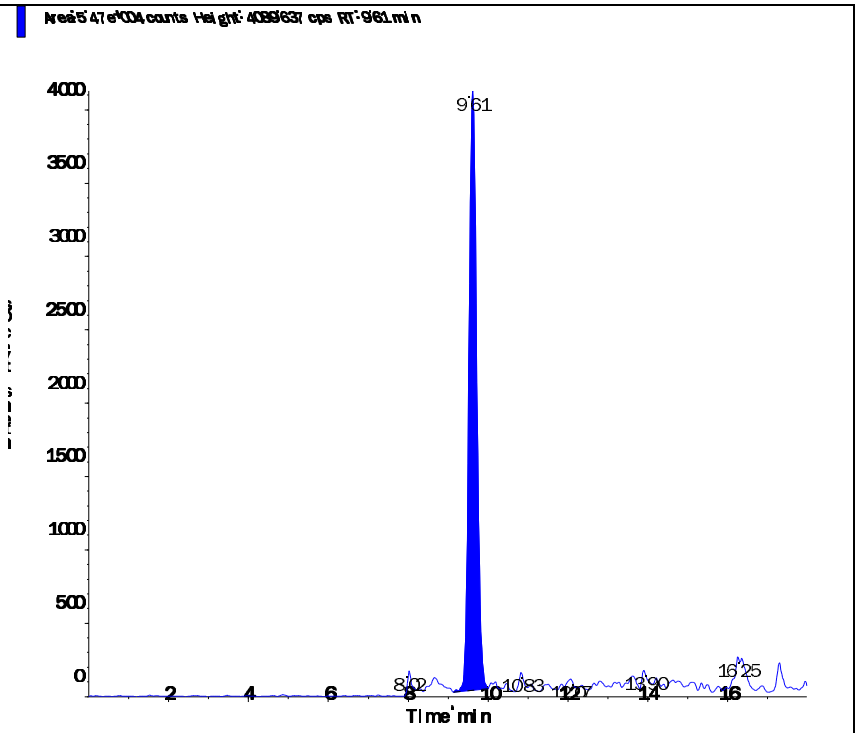

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Printed: 6/12/2016 9:40 PM

Data File	LM35292.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 3:34:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35292.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 3:34:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.800e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.710e+05	9.64	1.00	1.05
Perchlorate conf	5.680e+04	9.63	1.00	1.04

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

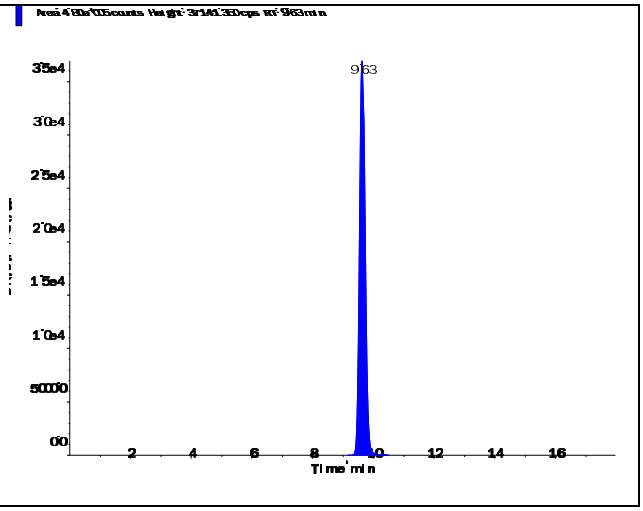

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Printed: 6/12/2016 9:40 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.355
Sample Type:	(Quality Control)

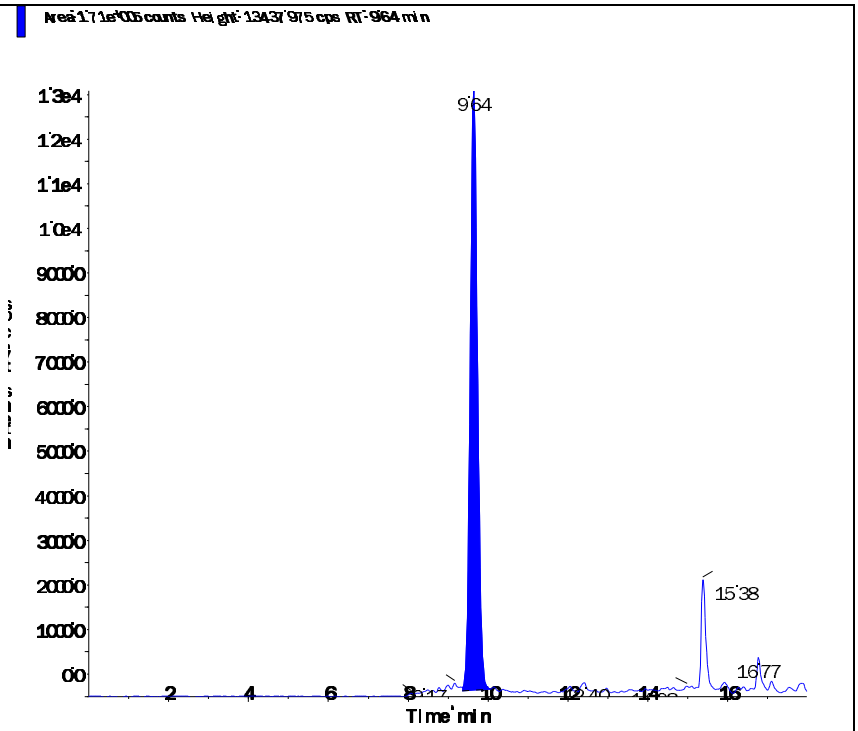

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.118
Sample Type:	(Quality Control)

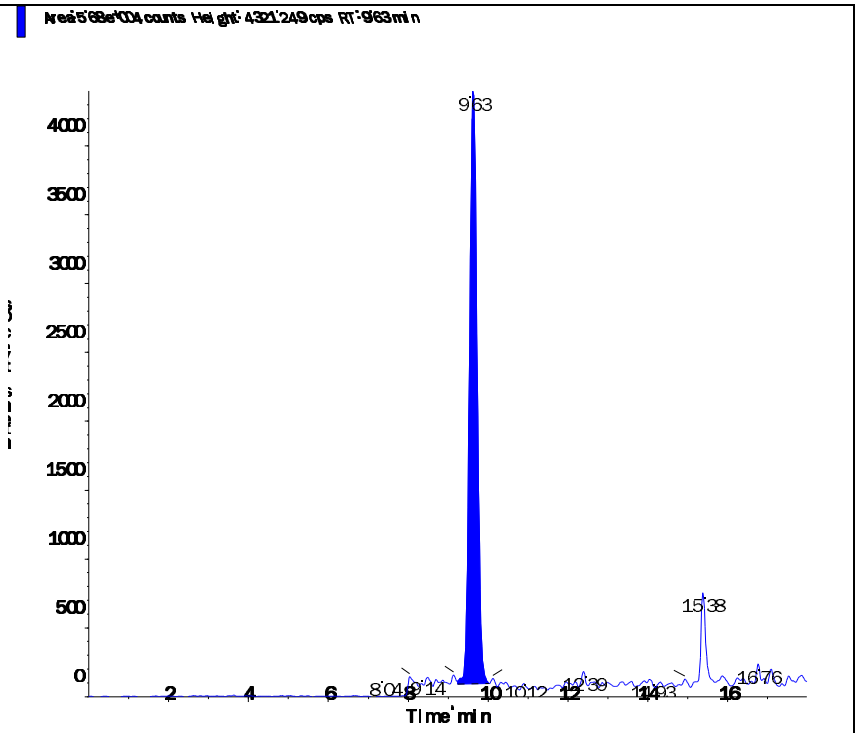

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Printed: 6/12/2016 9:42 PM

Data File	LM35296.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 5:38:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35296.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 5:38:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.960e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.720e+05	9.65	1.00	1.03
Perchlorate conf	5.930e+04	9.64	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

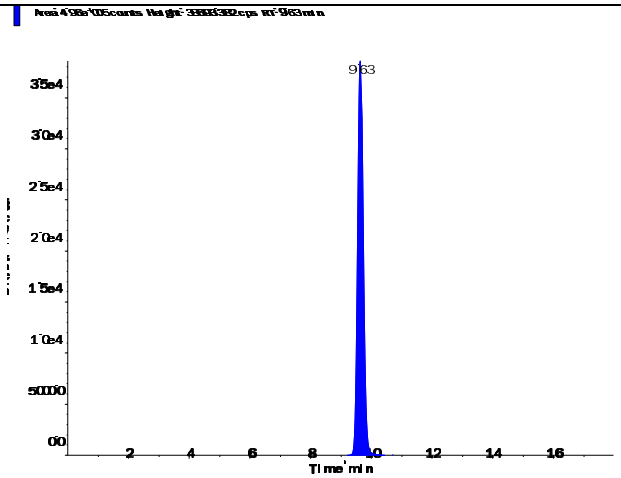

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.65 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.346
Sample Type:	(Quality Control)

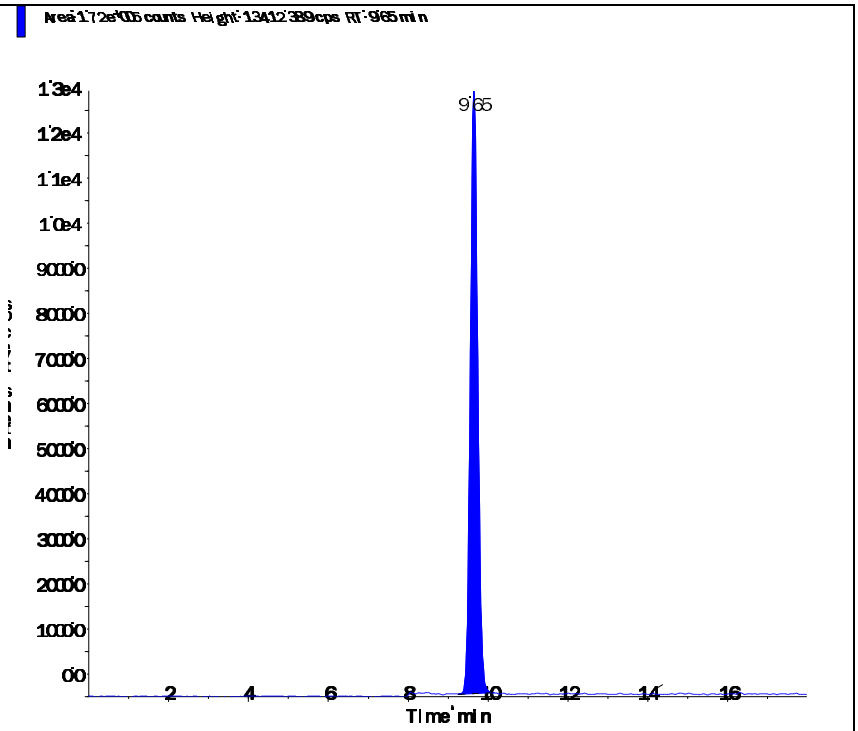

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

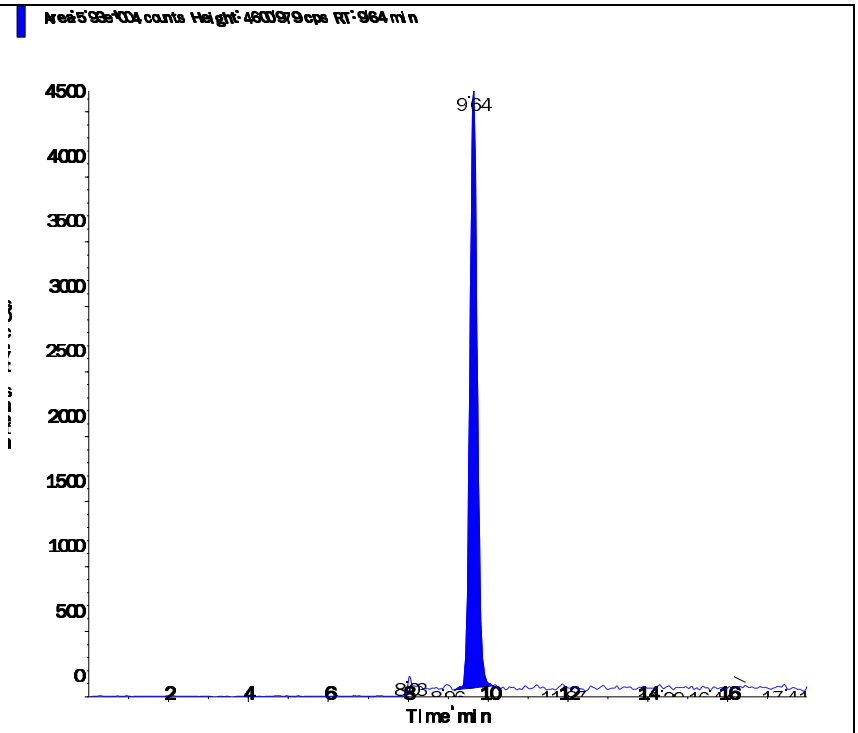

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Data File	LM35310.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 10:03:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35310.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 10:03:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.050e+05	9.62	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.800e+05	9.63	1.00	1.06
Perchlorate conf	6.050e+04	9.62	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.62(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

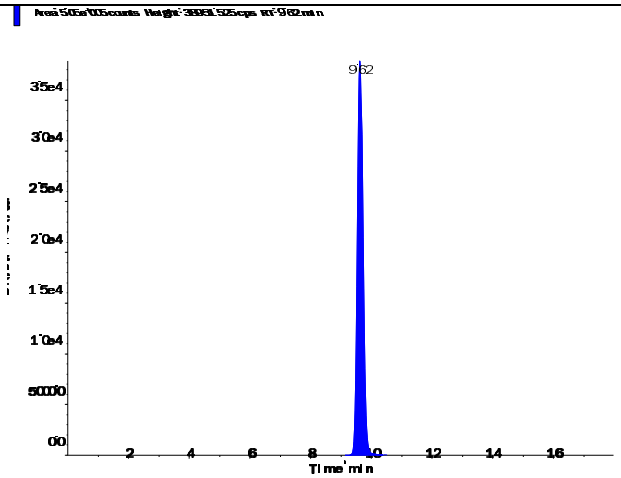

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.63 (9.84) min Calculated conc: 1.06 ng/ml Area Ratio: 0.357 Sample Type: (Quality Control)	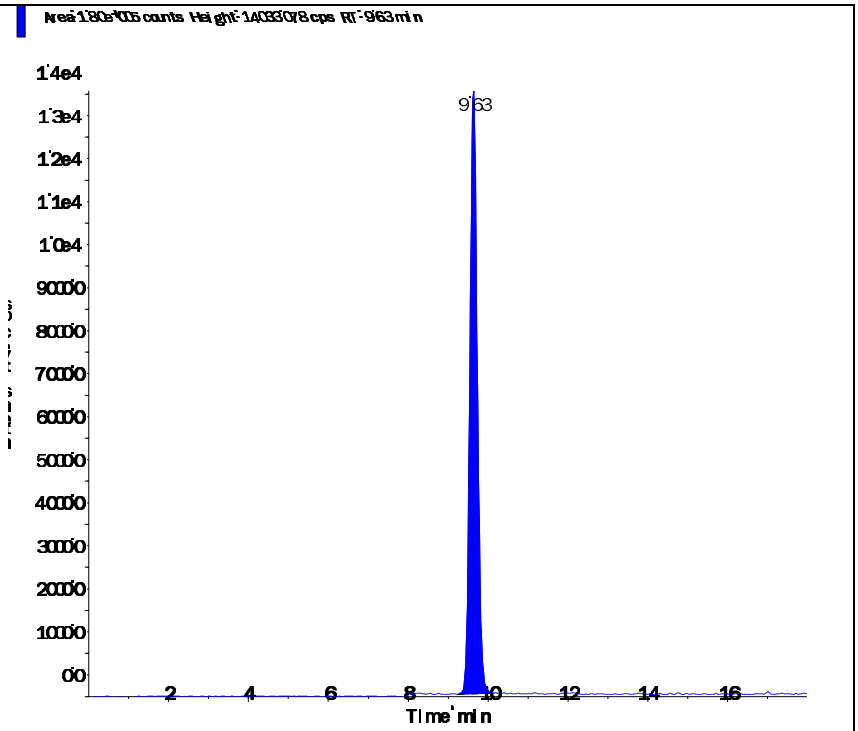
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.62 (9.84) min Calculated conc: 1.05 ng/ml Area Ratio: 0.12 Sample Type: (Quality Control)	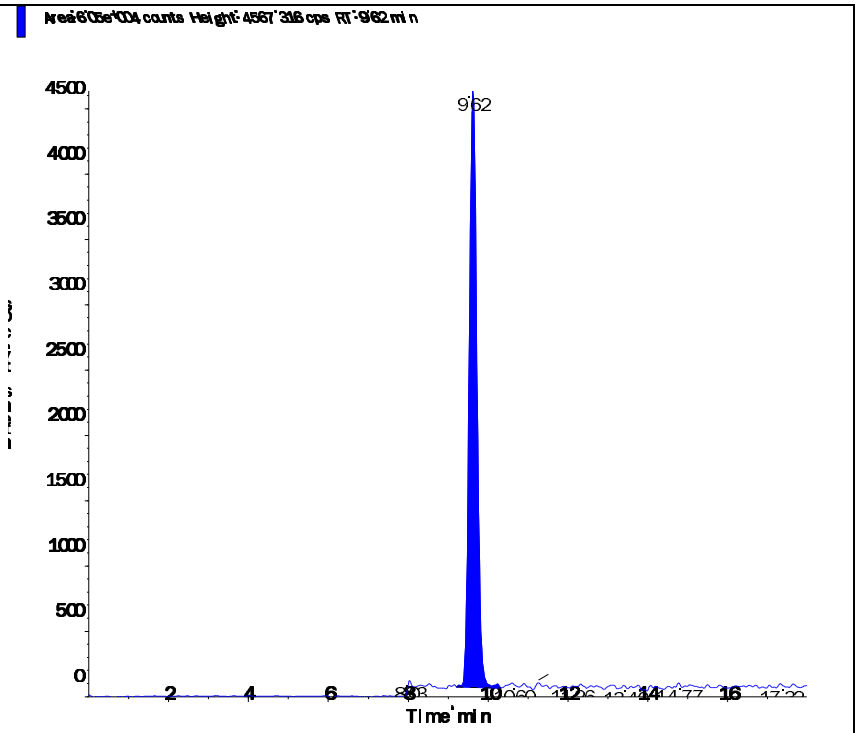

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Printed: 6/11/2016 12:59 PM

Data File	LM35227.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 10:27:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35227.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 10:27:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.430e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.060e+04	9.68	N/A	0.202
Perchlorate conf	1.110e+04	9.67	N/A	0.204

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

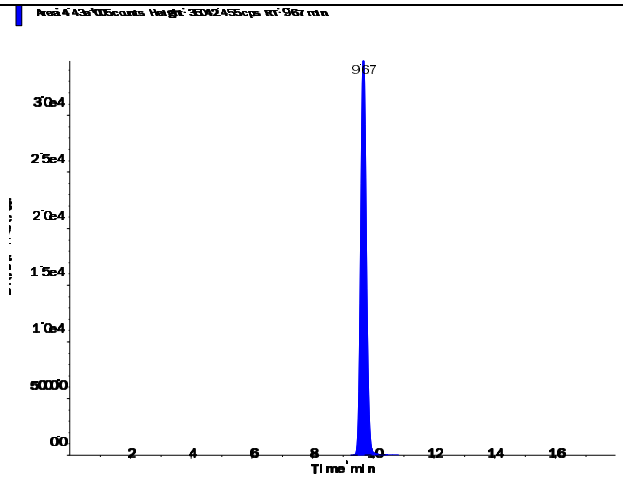

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.68 (9.84) min
Calculated conc:	0.202 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

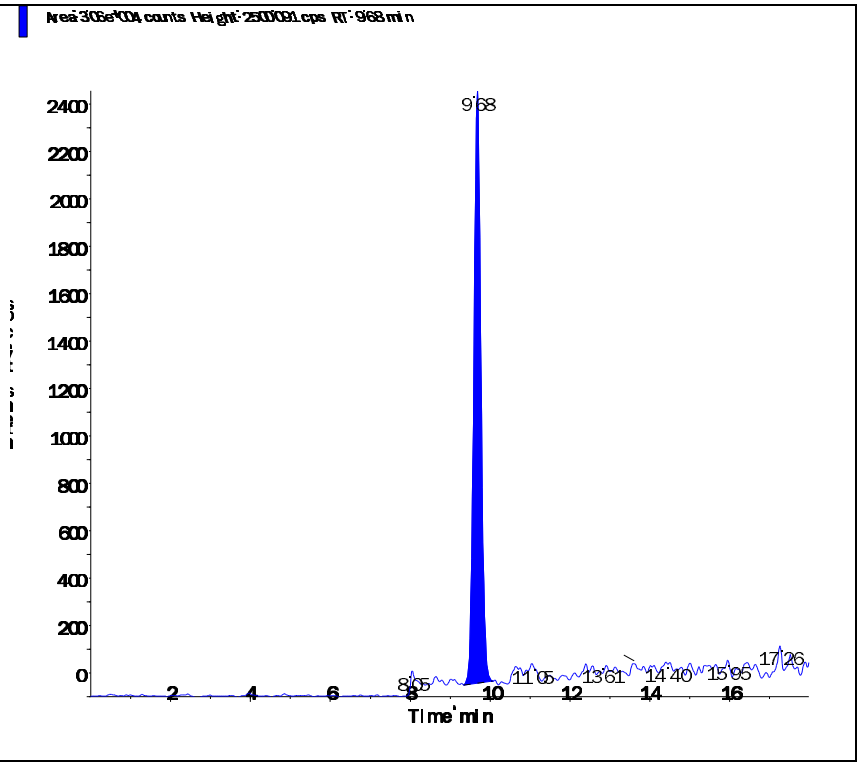

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.67 (9.84) min
Calculated conc:	0.204 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

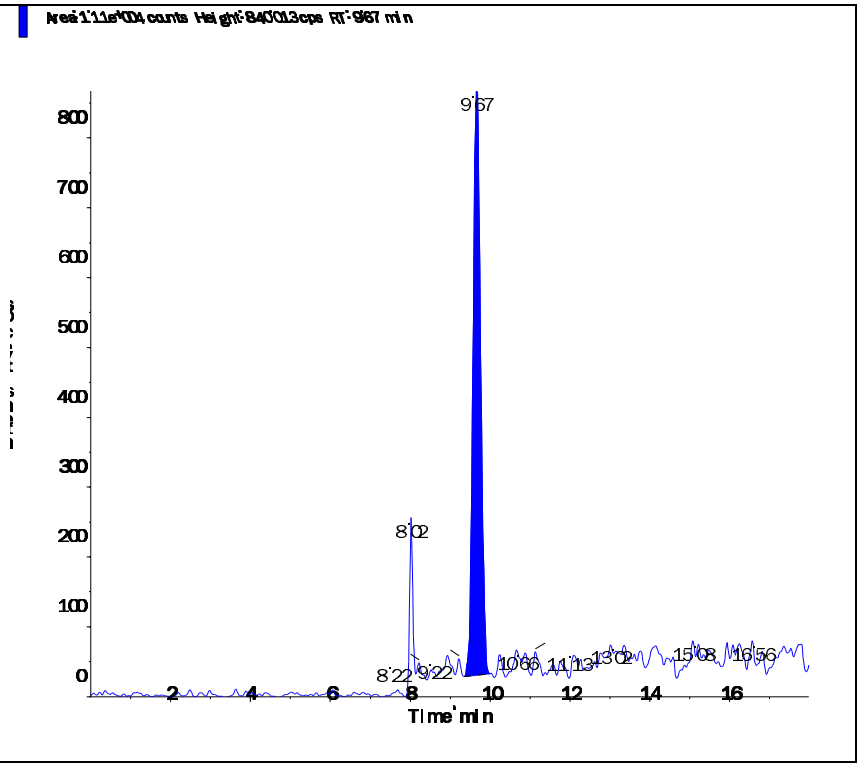

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Data File	LM35239.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 2:14:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-08 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35239.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 2:14:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.960e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.650e+04	9.68	N/A	0.215
Perchlorate conf	1.380e+04	9.66	N/A	0.228

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

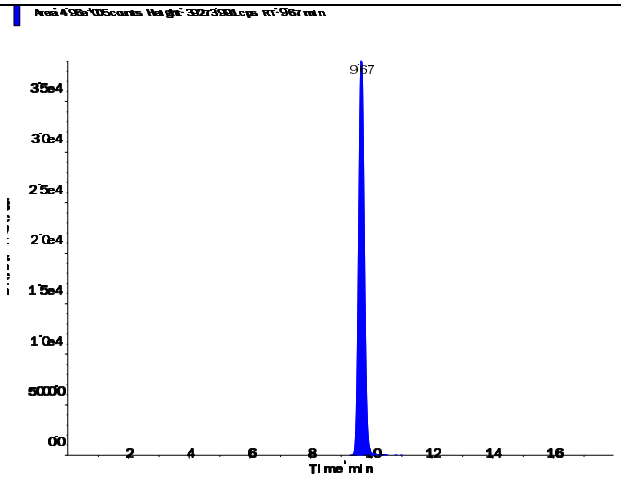

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.68 (9.84) min
Calculated conc:	0.215 ng/ml
Area Ratio:	0.074
Sample Type:	(Unknown)

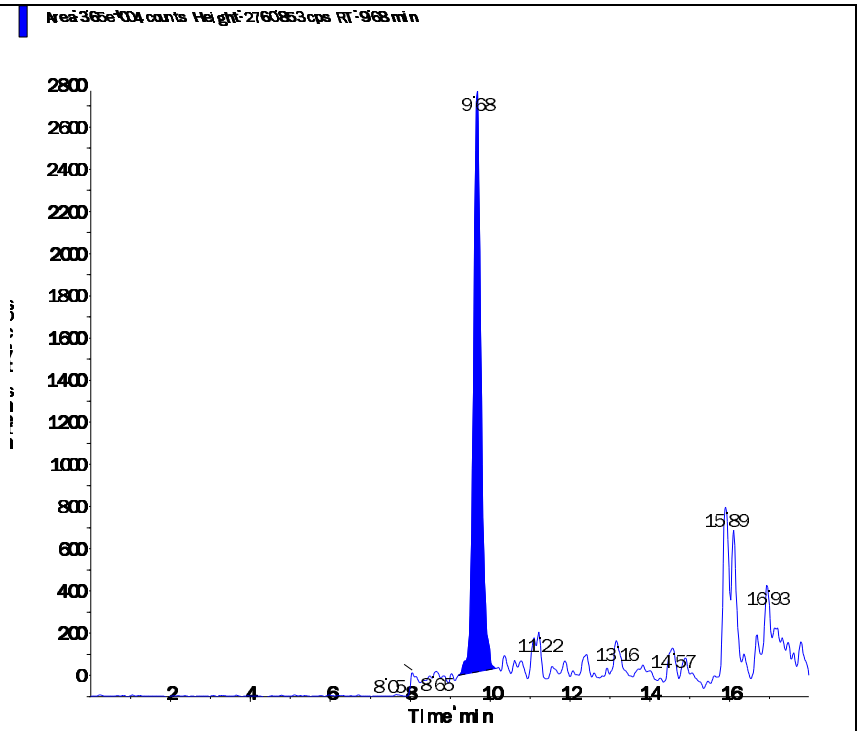

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.228 ng/ml
Area Ratio:	0.028
Sample Type:	(Unknown)

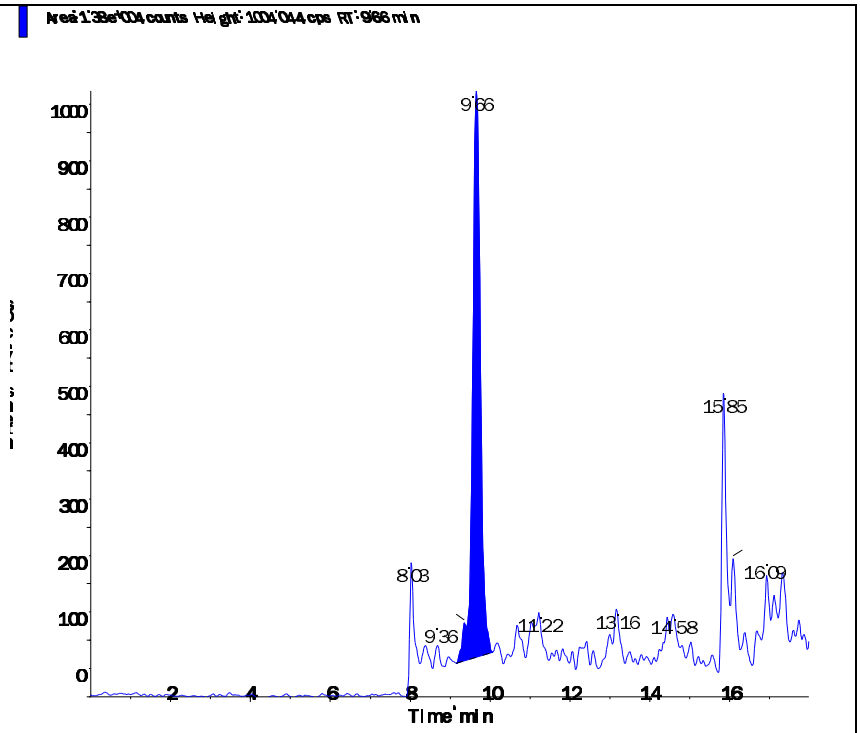

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Data File	LM35245.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 4:08:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-09 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35245.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 4:08:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.670e+04	9.69	N/A	0.21
Perchlorate conf	1.260e+04	9.66	N/A	0.201

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

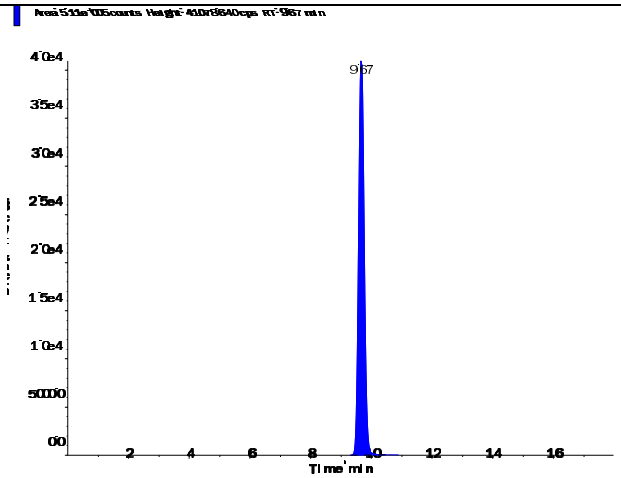

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.69 (9.84) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

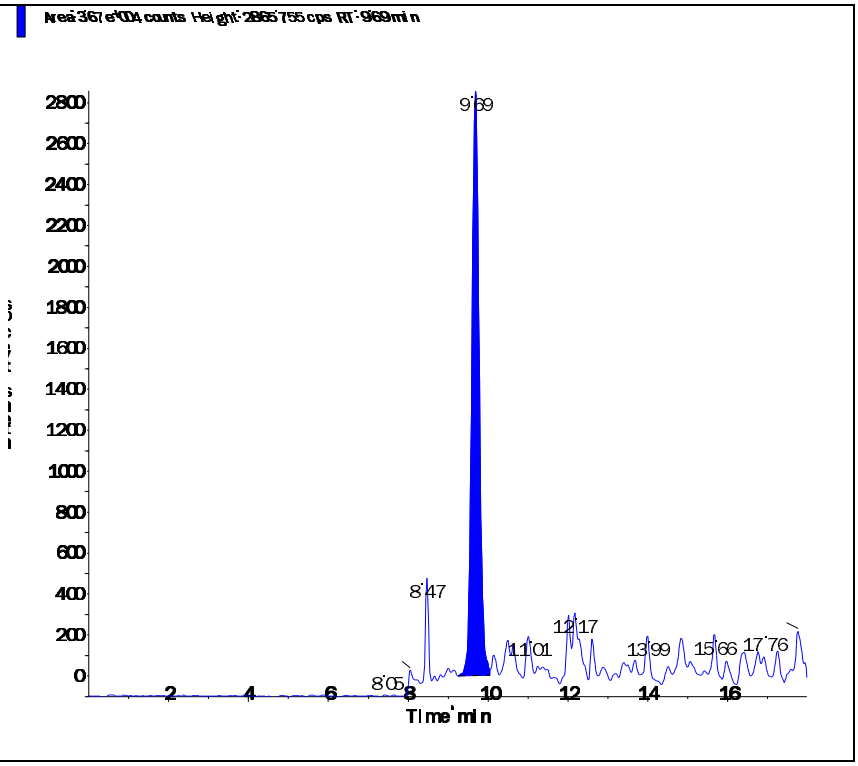

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

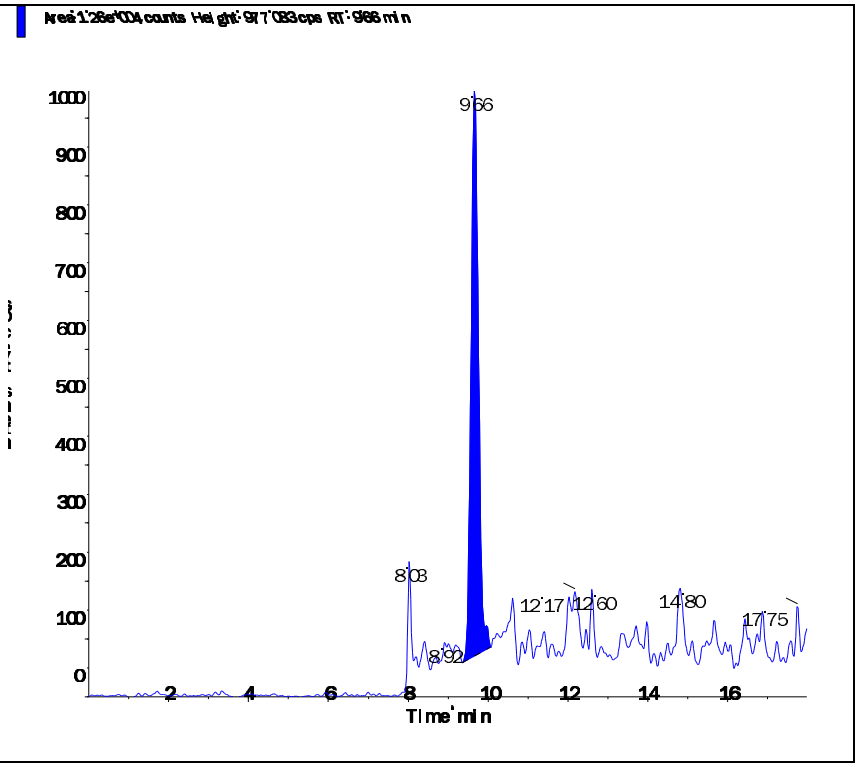

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Data File	LM35258.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 8:15:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-10 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35258.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 8:15:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-10	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.620e+04	9.68	N/A	0.222
Perchlorate conf	1.240e+04	9.66	N/A	0.212

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

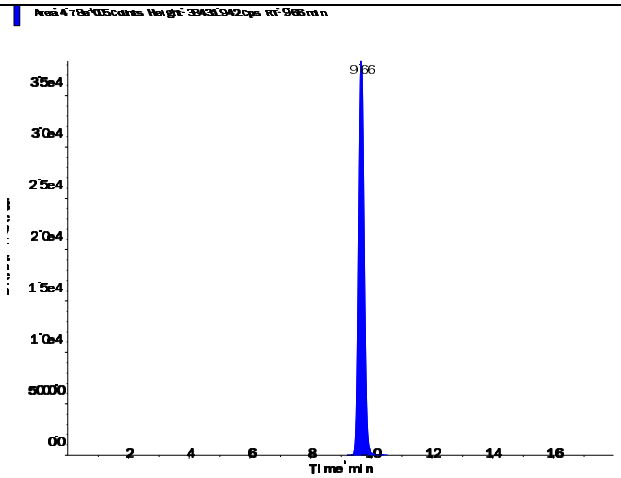

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.68 (9.84) min
Calculated conc:	0.222 ng/ml
Area Ratio:	0.076
Sample Type:	(Unknown)

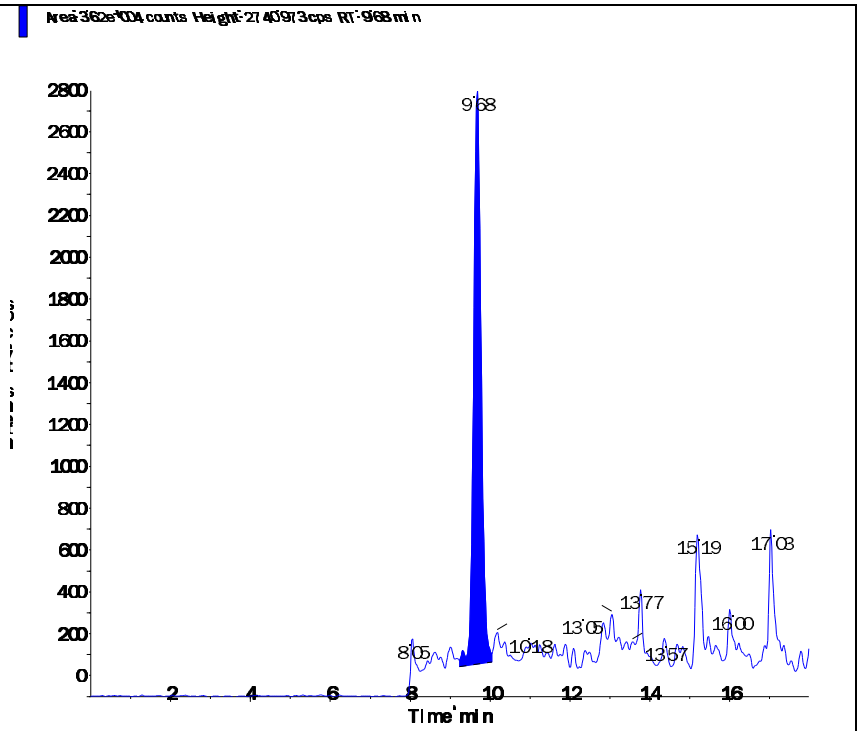

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.212 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

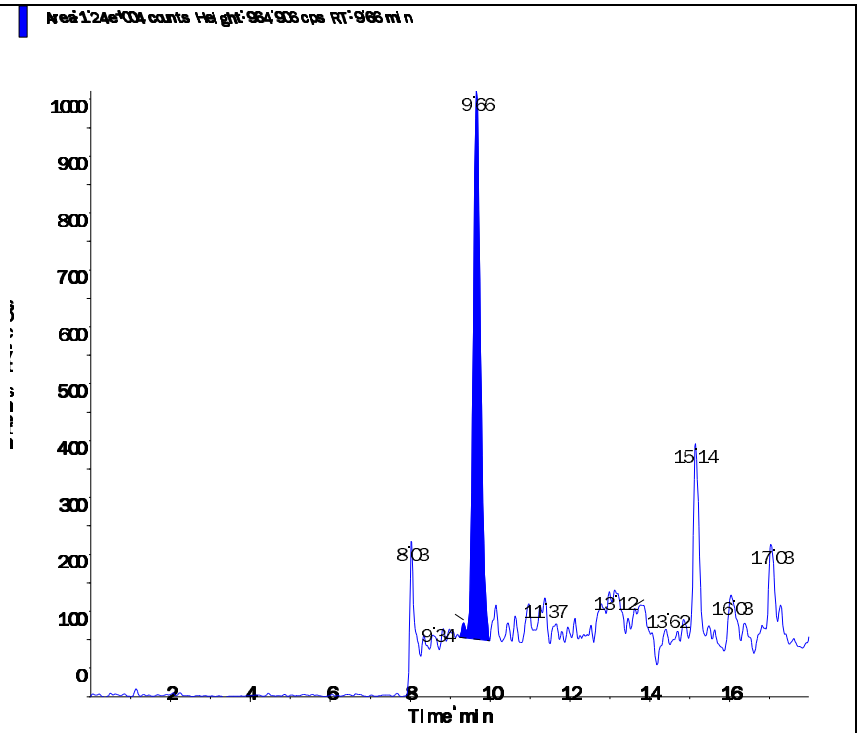

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Data File	LM35265.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 10:27:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-11 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35265.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 10:27:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.850e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.580e+04	9.67	N/A	0.216
Perchlorate conf	1.170e+04	9.66	N/A	0.197

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

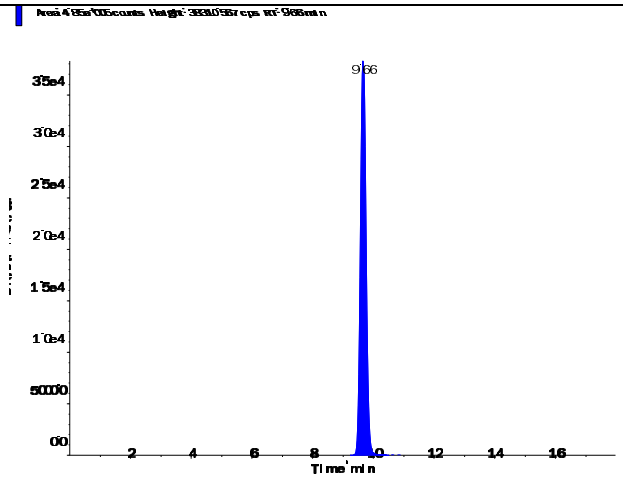

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.67 (9.84) min
Calculated conc:	0.216 ng/ml
Area Ratio:	0.074
Sample Type:	(Unknown)

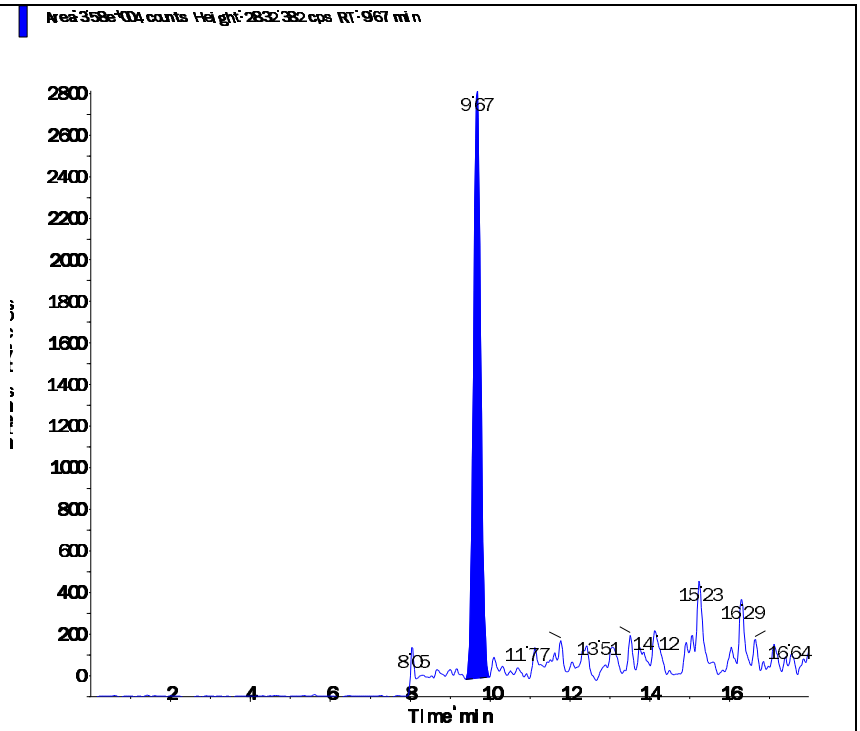

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

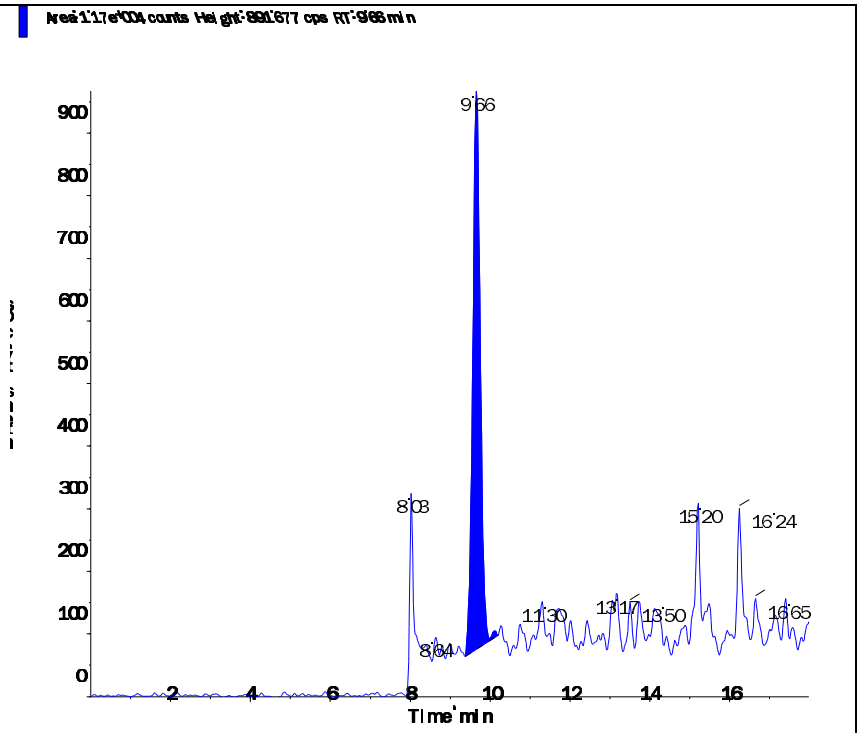

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Data File	LM35281.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 12:05:19 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-12 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35281.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 12:05:19 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572200-12	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.660e+05	9.65	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+04	9.66	N/A	0.206
Perchlorate conf	1.190e+04	9.65	N/A	0.209

O18LP (Internal Standard)

RT (Exp. RT): 9.65(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

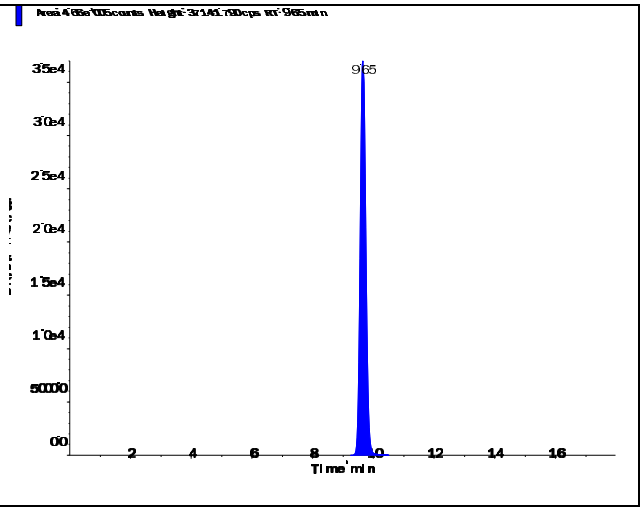

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

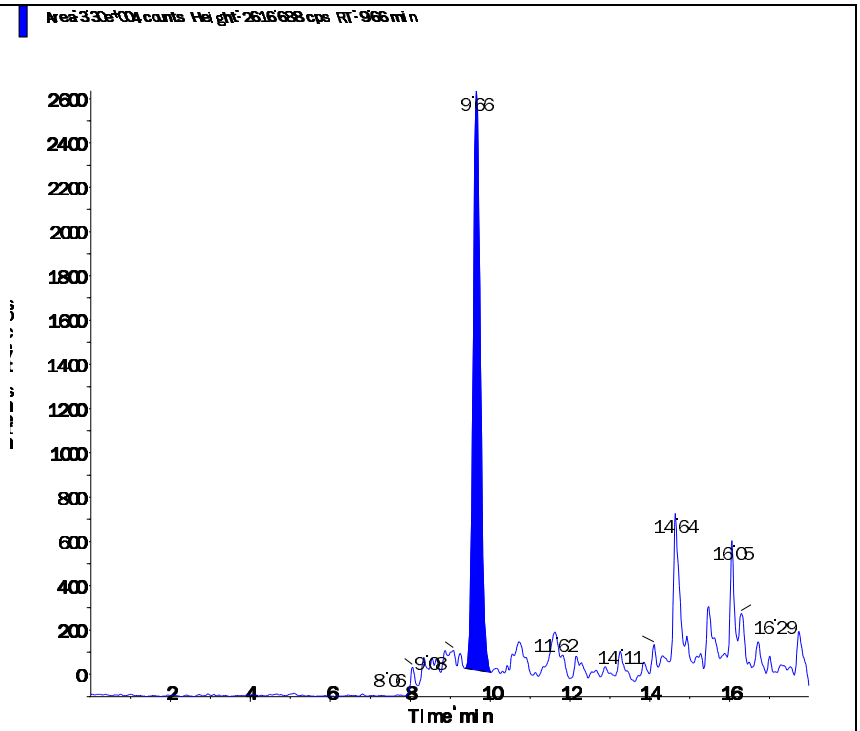

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.65 (9.84) min
Calculated conc:	0.209 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

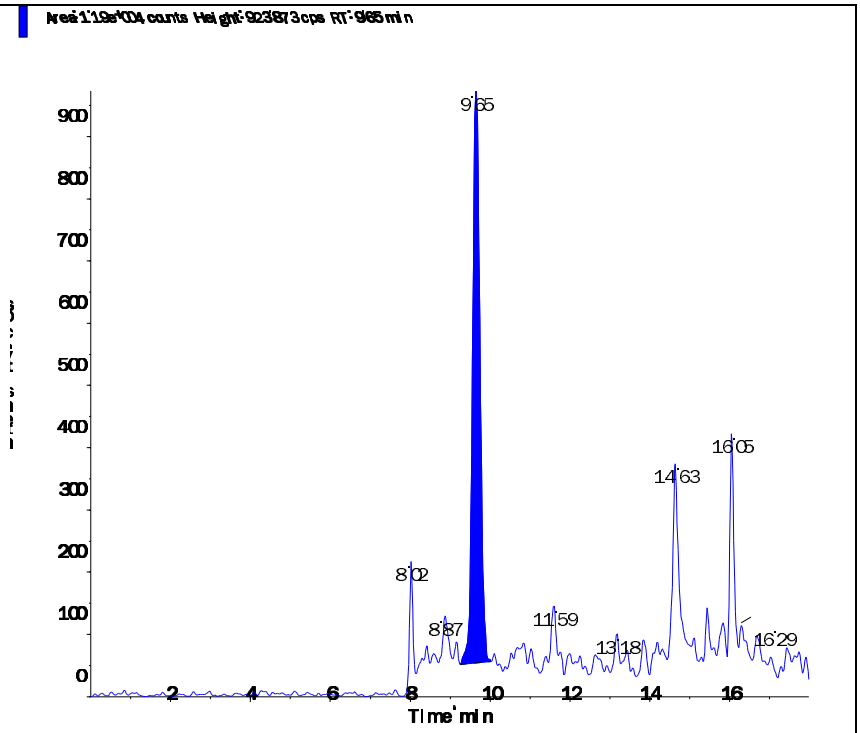

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Data File	LM35293.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 4:41:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-13 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35293.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 4:41:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572200-13	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.800e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.390e+04	9.68	N/A	0.206
Perchlorate conf	1.220e+04	9.66	N/A	0.207

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

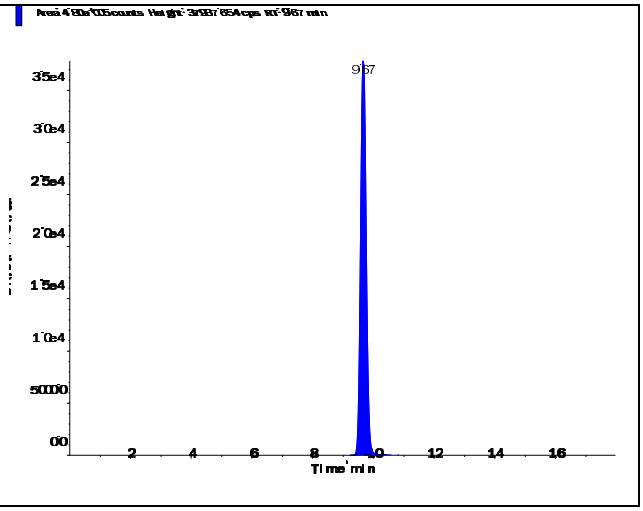

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.68 (9.84) min Calculated conc: 0.206 ng/ml Area Ratio: 0.071 Sample Type: (Unknown)	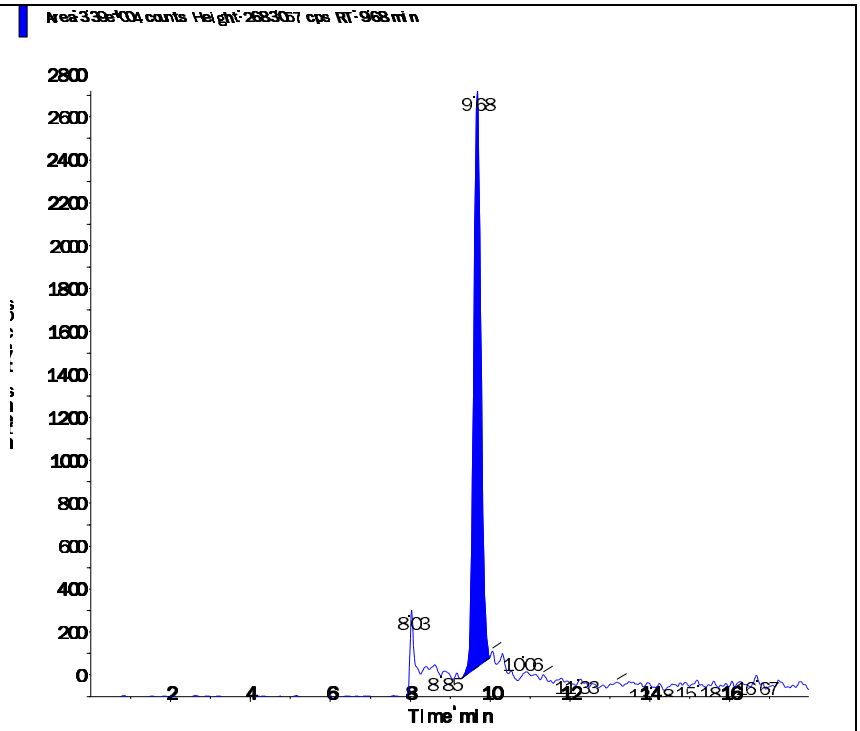
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.66 (9.84) min Calculated conc: 0.207 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	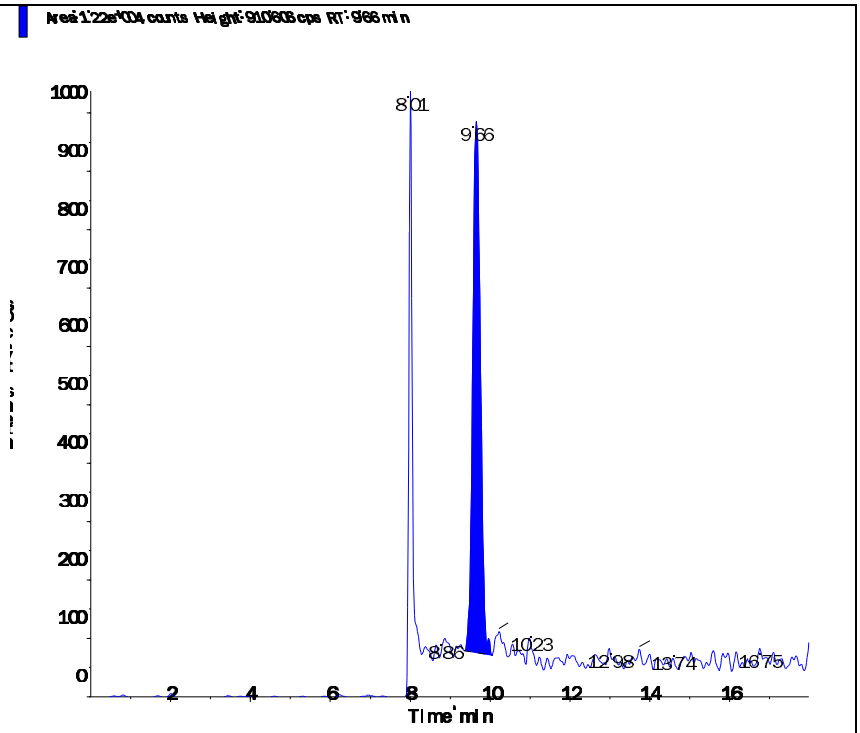

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Printed: 6/12/2016 9:42 PM

Data File	LM35297.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 5:57:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-14 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35297.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 5:57:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572200-14	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.980e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.650e+04	9.67	N/A	0.215
Perchlorate conf	1.270e+04	9.66	N/A	0.208

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

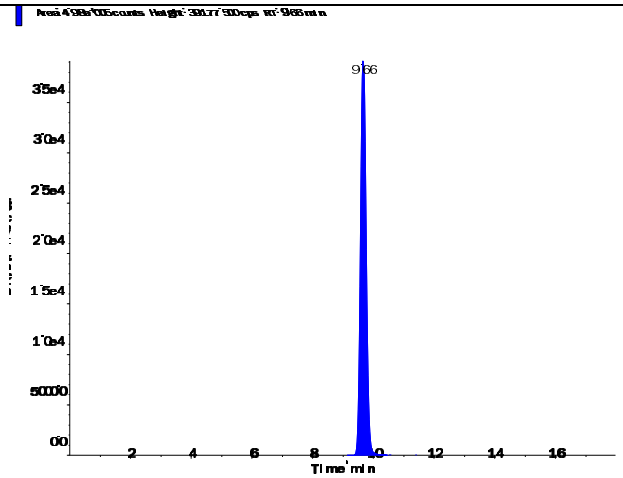

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Printed: 6/12/2016 9:42 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.67 (9.84) min Calculated conc: 0.215 ng/ml Area Ratio: 0.073 Sample Type: (Unknown)	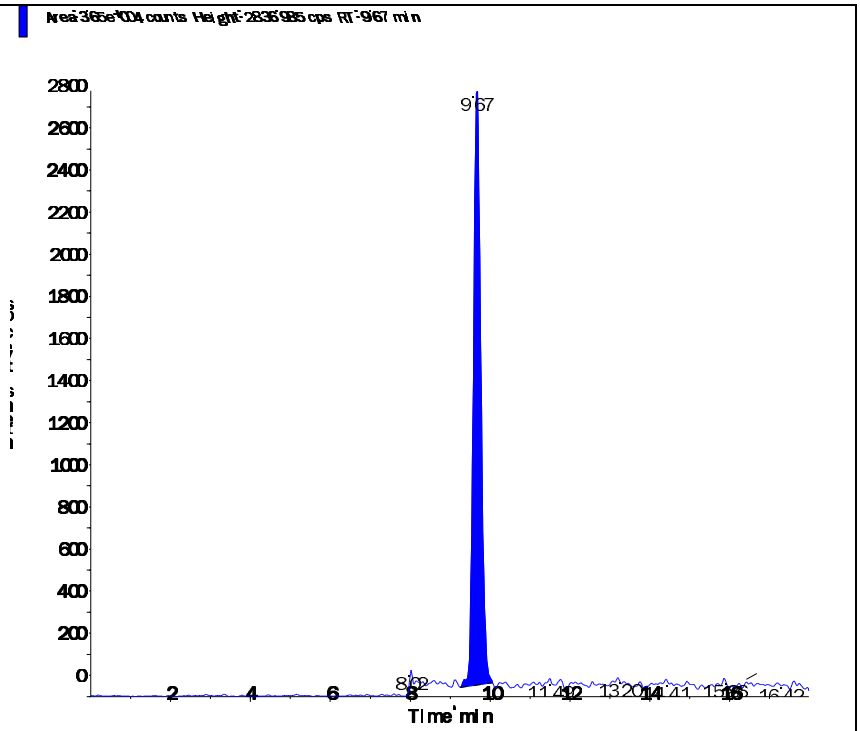
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.66 (9.84) min Calculated conc: 0.208 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	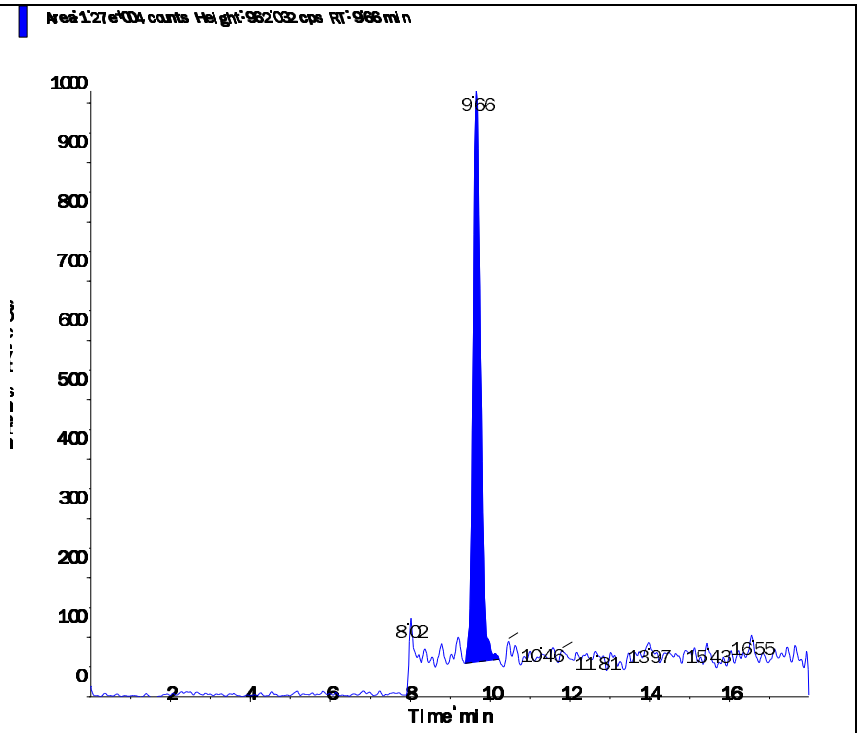

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Printed: 6/11/2016 12:59 PM

Data File	LM35225.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 9:49:48 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-01 CCB	**Injection Vial**	1.00
Data File	LM35225.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 9:49:48 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.710e+05	9.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.80(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

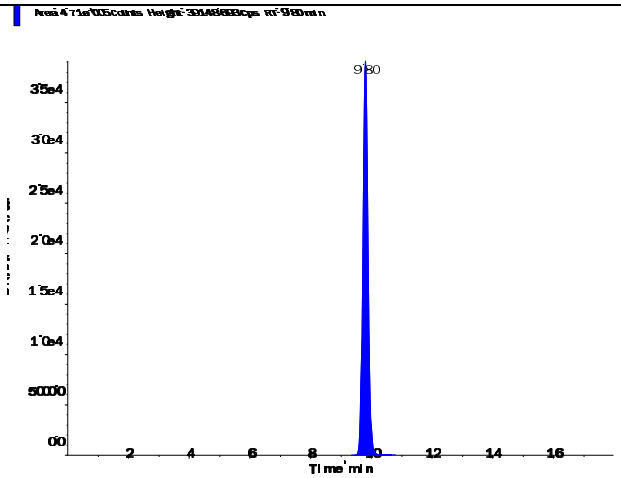

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

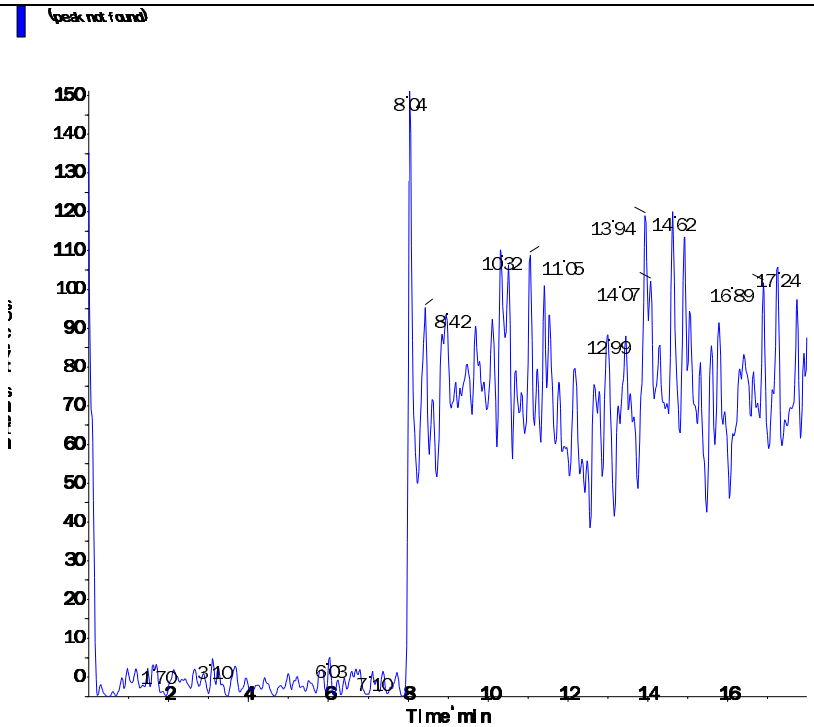

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

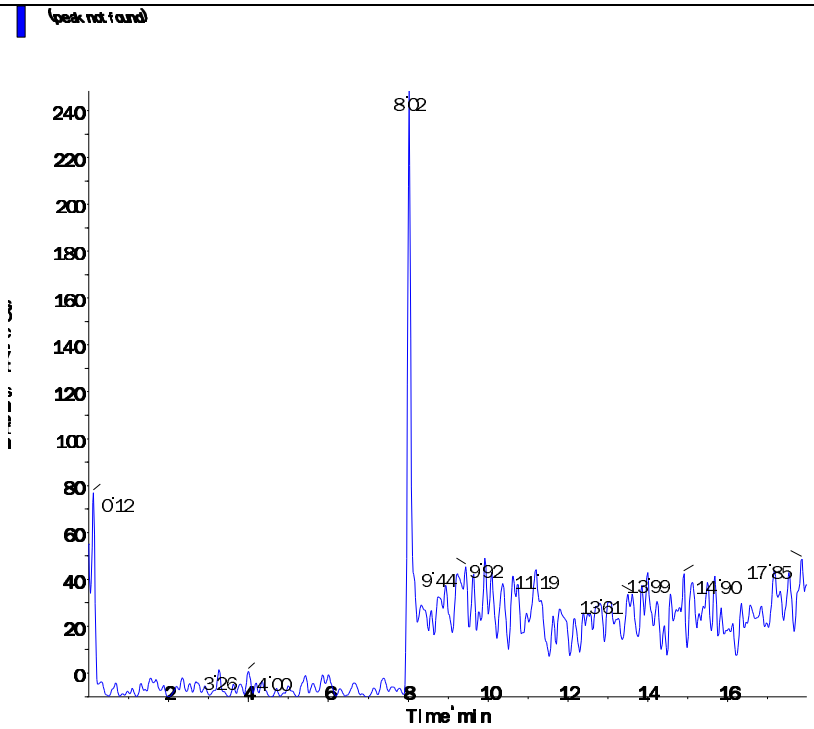

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Printed: 6/11/2016 1:04 PM

Data File	LM35240.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 2:33:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-04 CCB	**Injection Vial**	1.00
Data File	LM35240.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 2:33:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.660e+03	10.00	N/A	0.018
Perchlorate conf	1.770e+03	10.00	N/A	0.0114

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

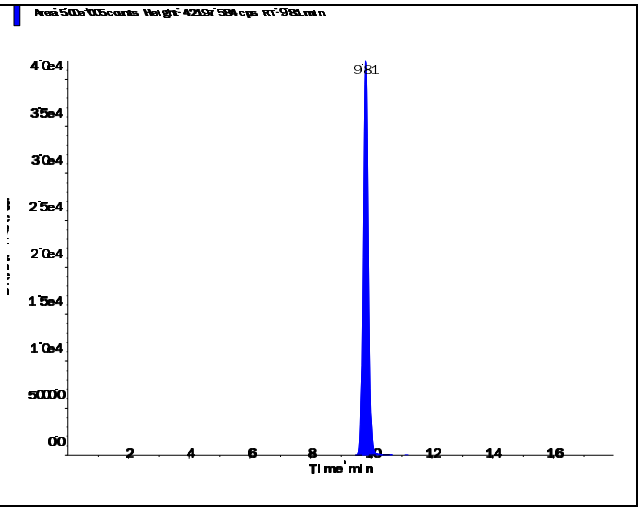

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.00 (9.84) min
Calculated conc:	0.018 ng/ml
Area Ratio:	0.007
Sample Type:	(Unknown)

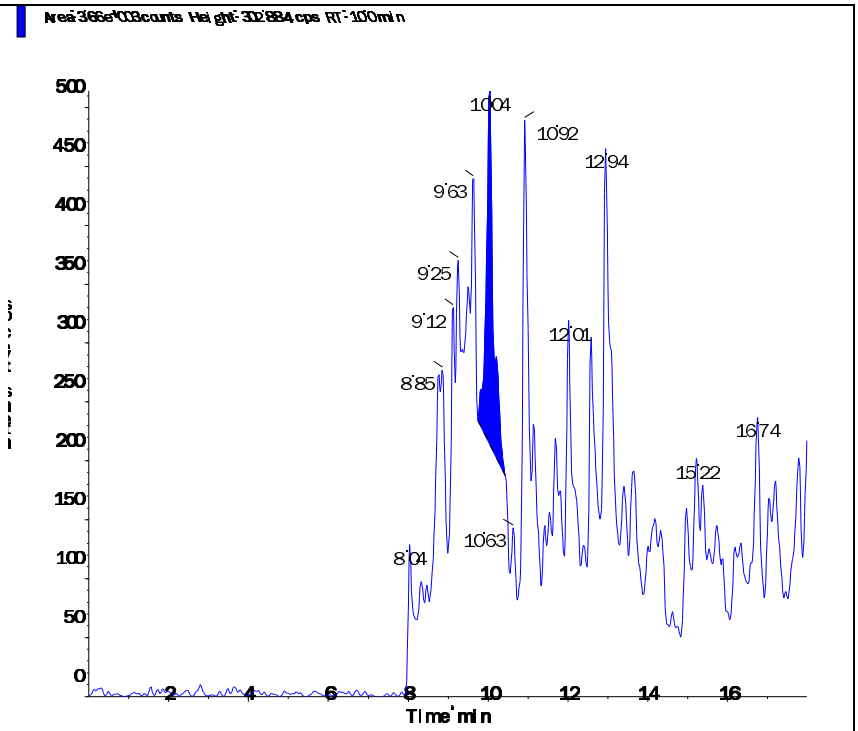

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.00 (9.84) min
Calculated conc:	0.0114 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)

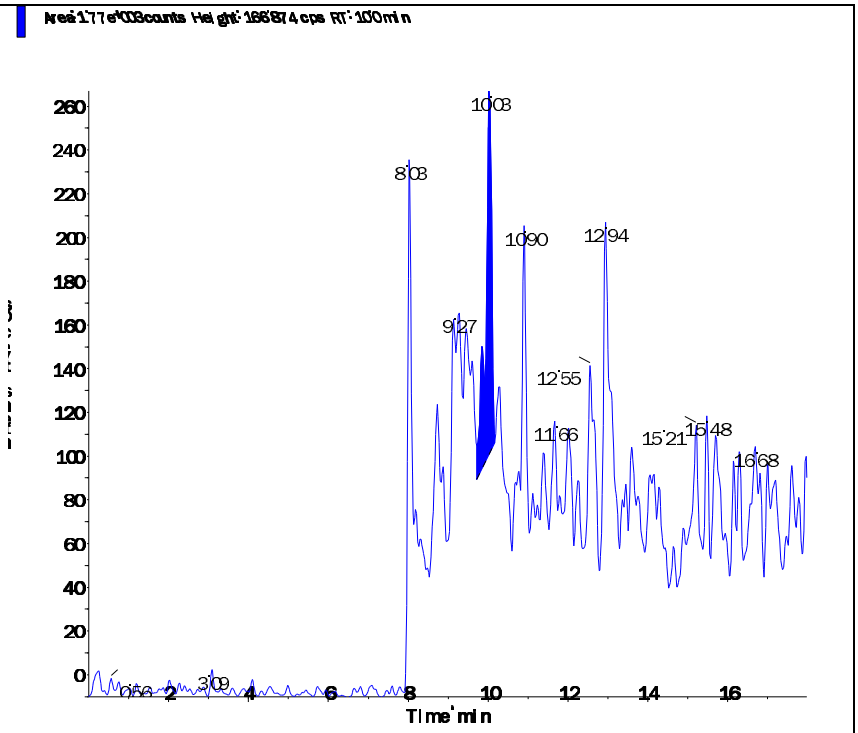

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Data File	LM35246.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 4:27:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-06 CCB	**Injection Vial**	1.00
Data File	LM35246.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 4:27:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.160e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	3.770e+02	9.80	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

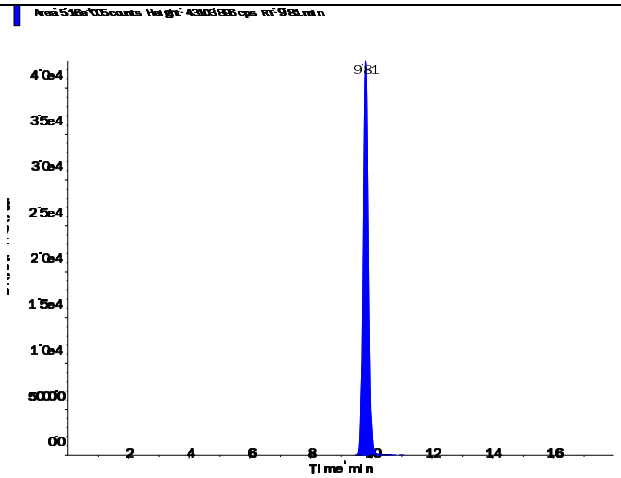

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

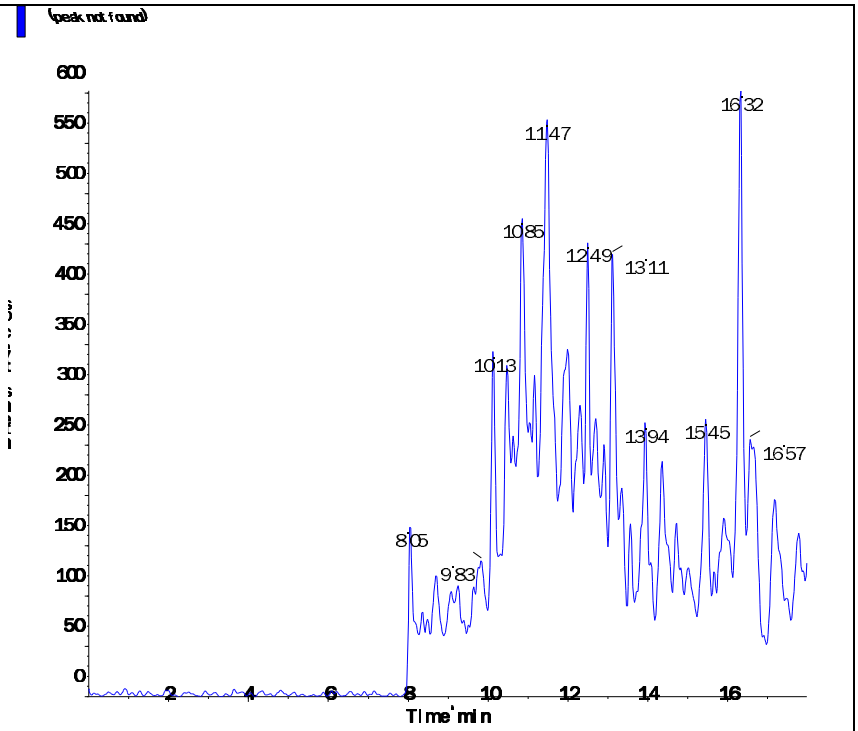

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.80 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

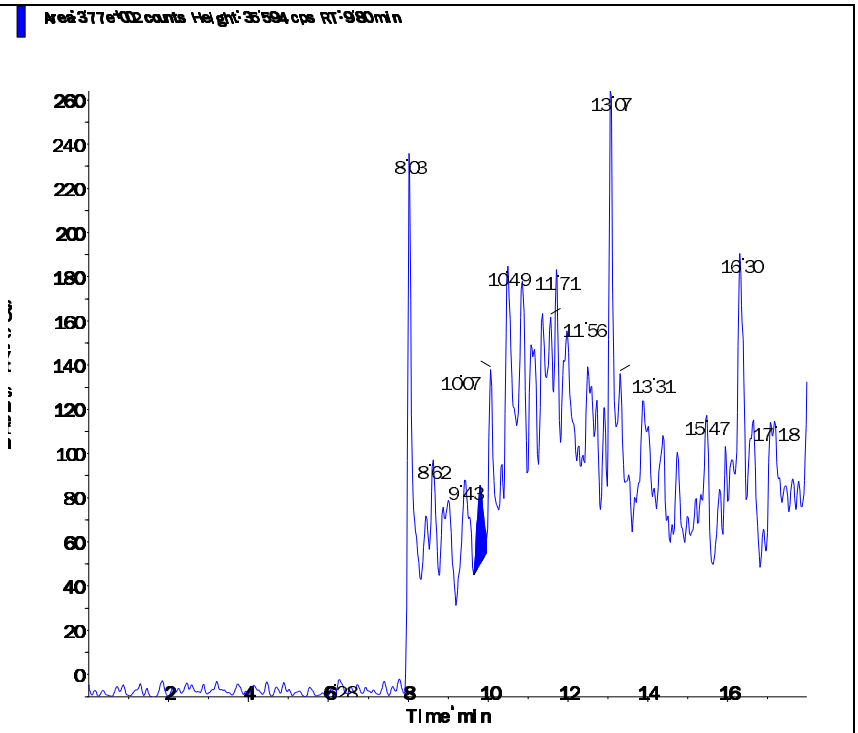

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Printed: 6/11/2016 1:11 PM

Data File	LM35259.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 8:34:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-08 CCB	**Injection Vial**	1.00
Data File	LM35259.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 8:34:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.920e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

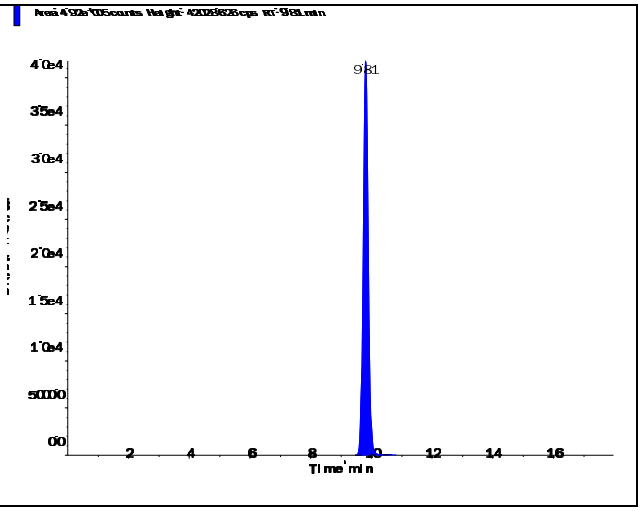

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

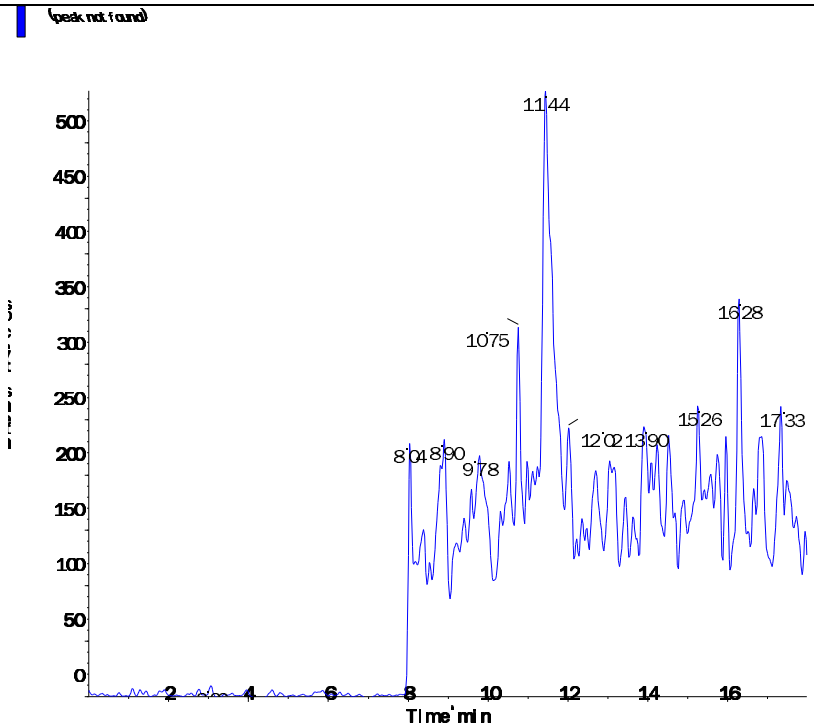

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

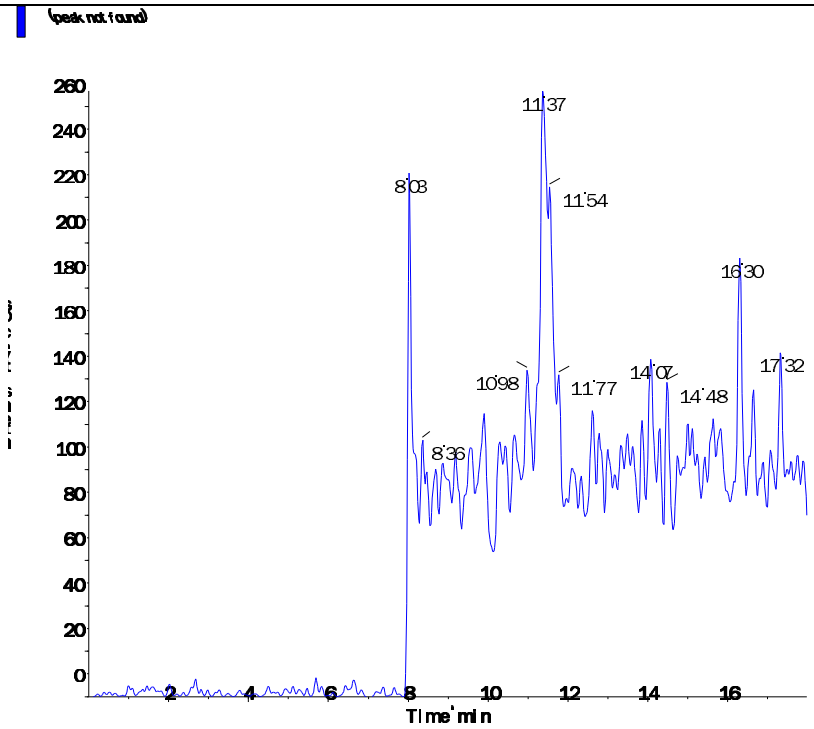

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Data File	LM35266.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 10:46:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-10 CCB	**Injection Vial**	1.00
Data File	LM35266.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 10:46:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.990e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	9.710e+02	9.90	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

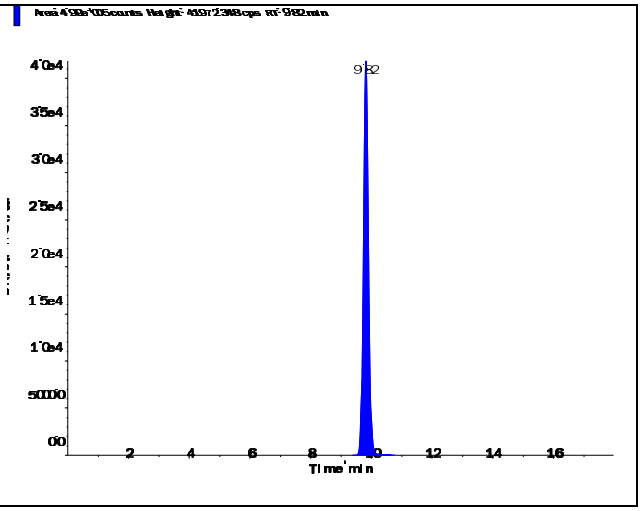

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	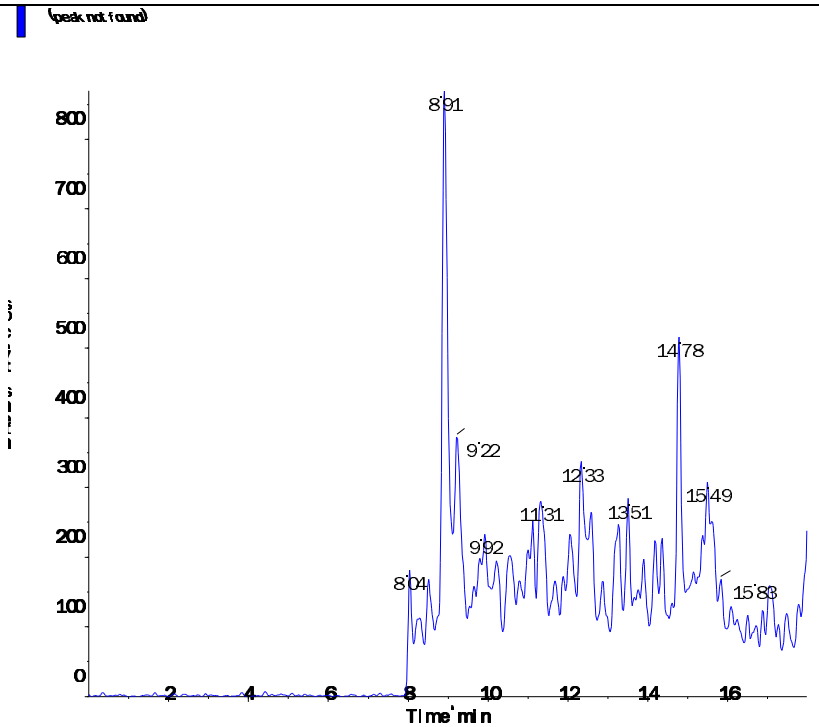
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.90 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	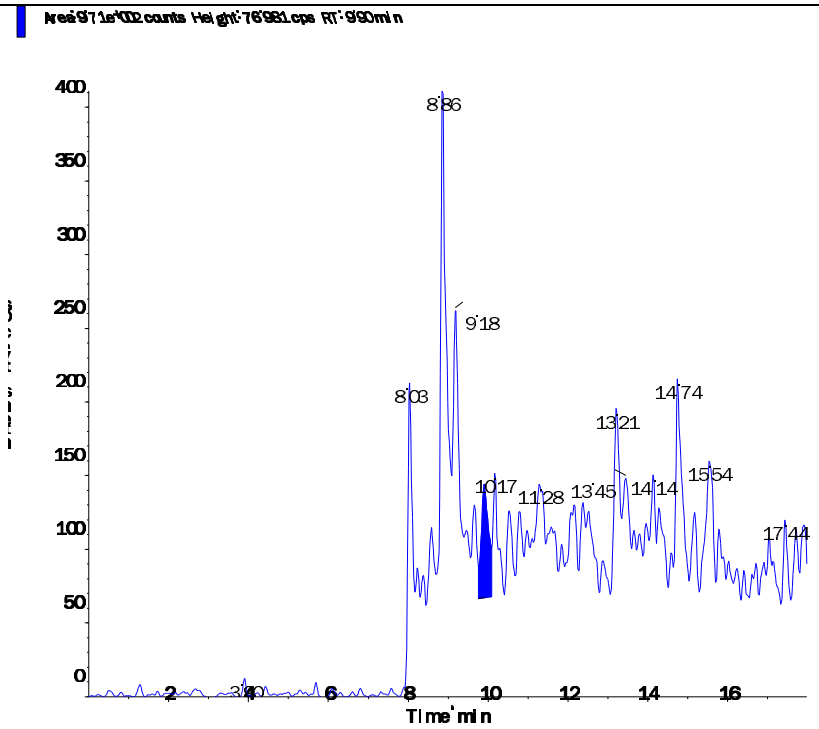

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Data File	LM35279.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 11:27:29 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-01 CCB	**Injection Vial**	1.00
Data File	LM35279.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 11:27:29 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.540e+05	9.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.310e+03	9.56	N/A	0.0441
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.80(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

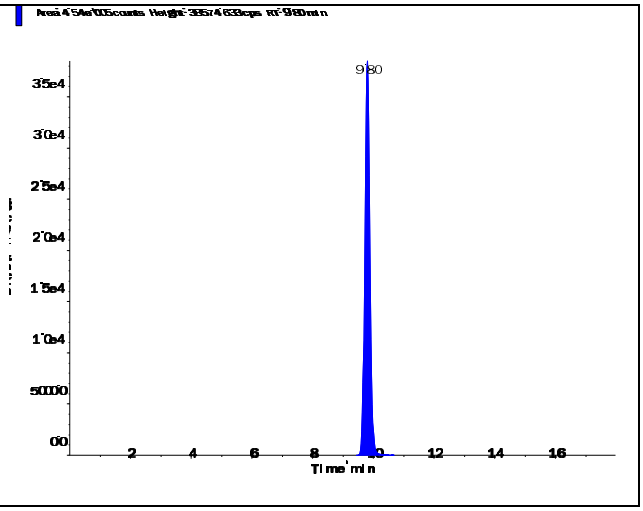

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.56 (9.84) min
Calculated conc:	0.0441 ng/ml
Area Ratio:	0.016
Sample Type:	(Unknown)

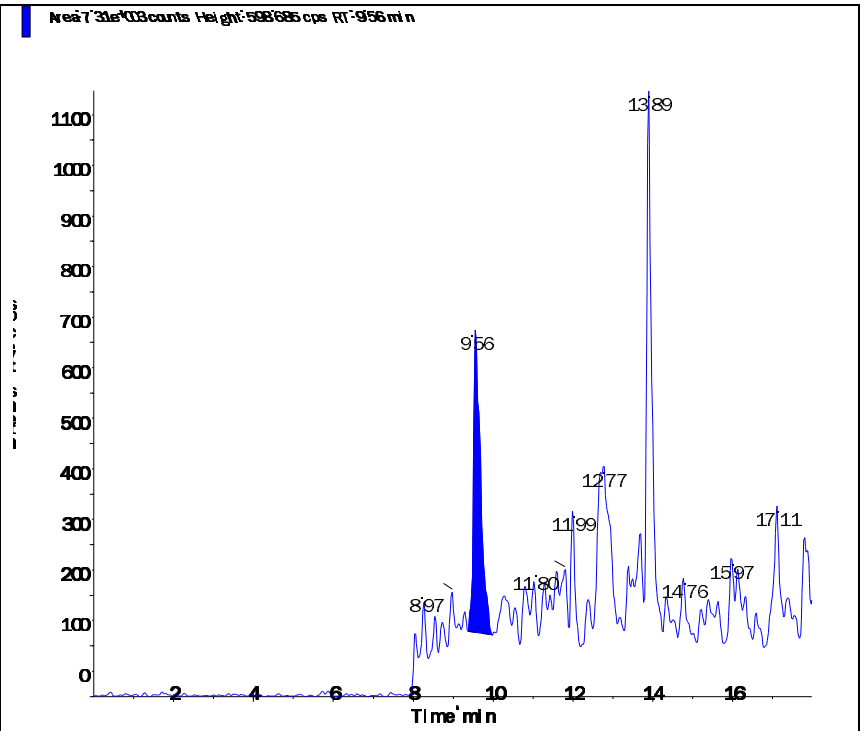

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

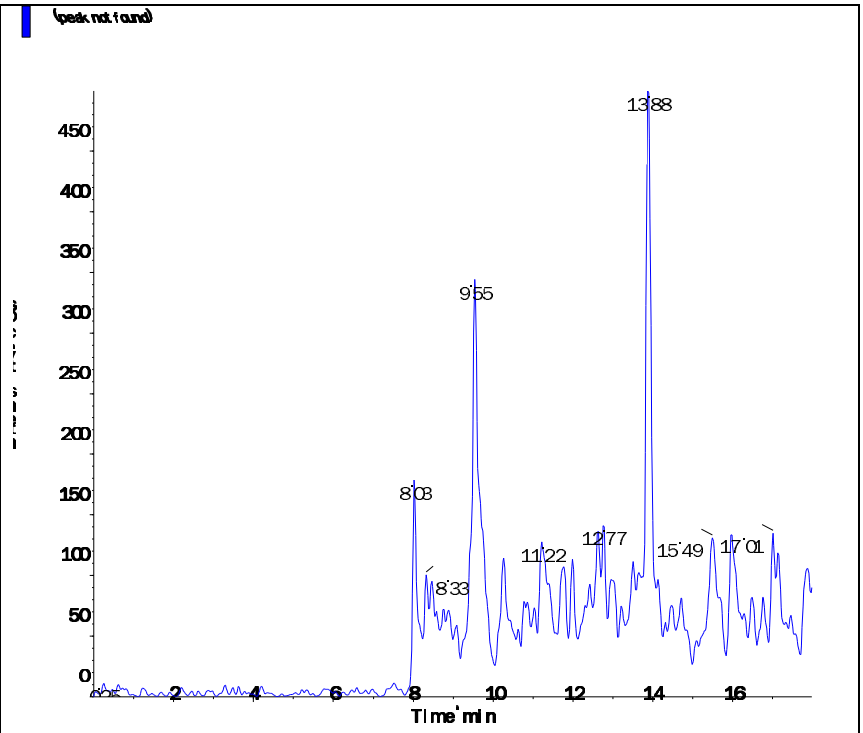

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/12/2016 9:41 PM

Data File	LM35294.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 5:00:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-04 CCB	**Injection Vial**	1.00
Data File	LM35294.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 5:00:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.960e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

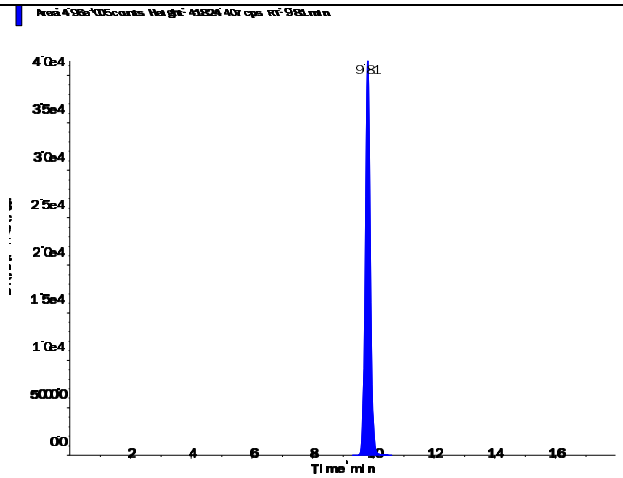

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Applied Biosystems | MDS SCIEX

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Printed: 6/12/2016 9:41 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

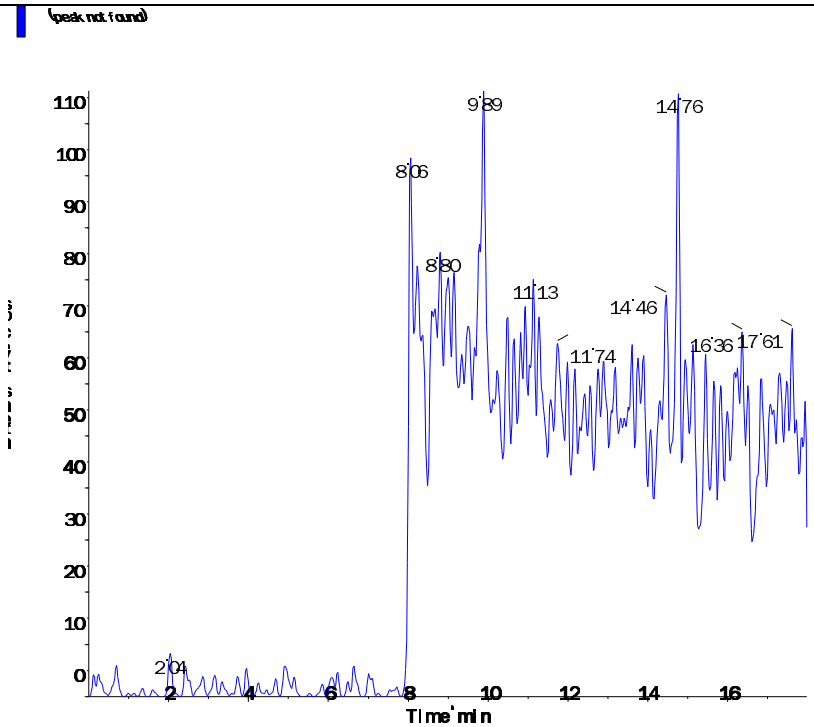

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

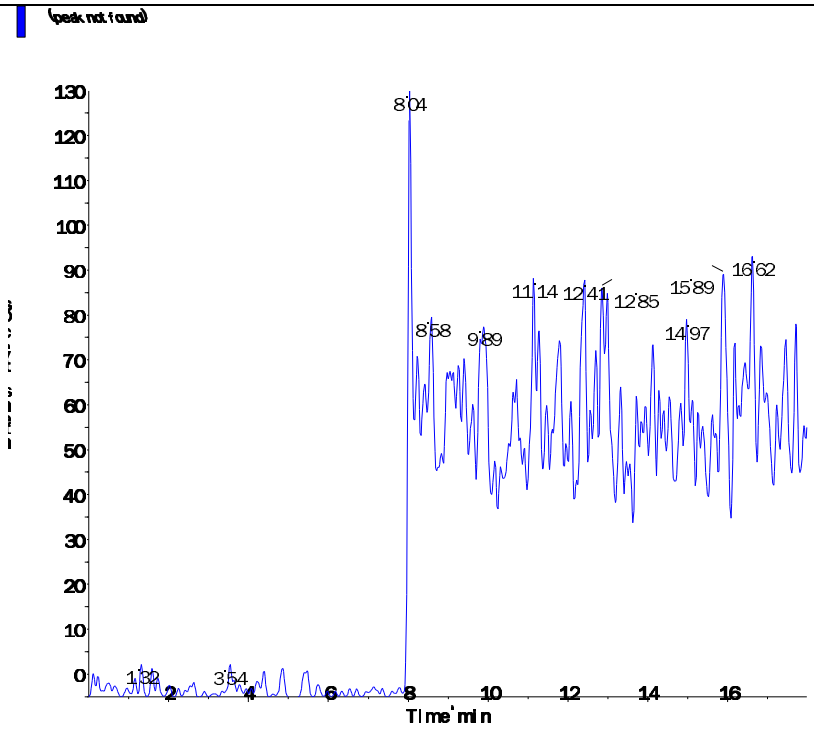

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/12/2016 9:42 PM

Data File	LM35298.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 6:16:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-06 CCB	**Injection Vial**	1.00
Data File	LM35298.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 6:16:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.040e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

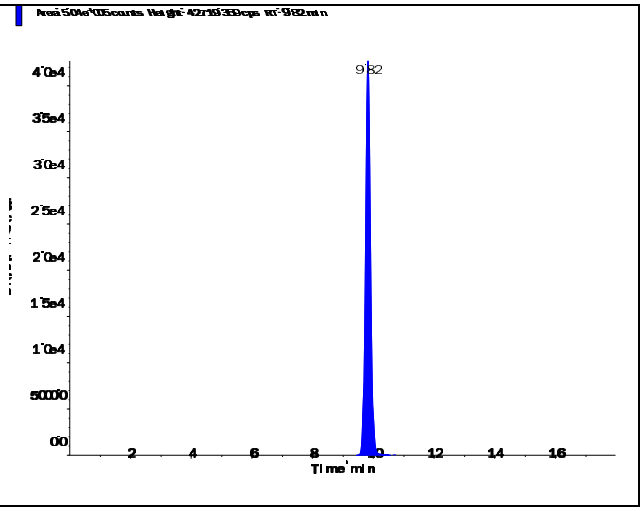

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/12/2016 9:42 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

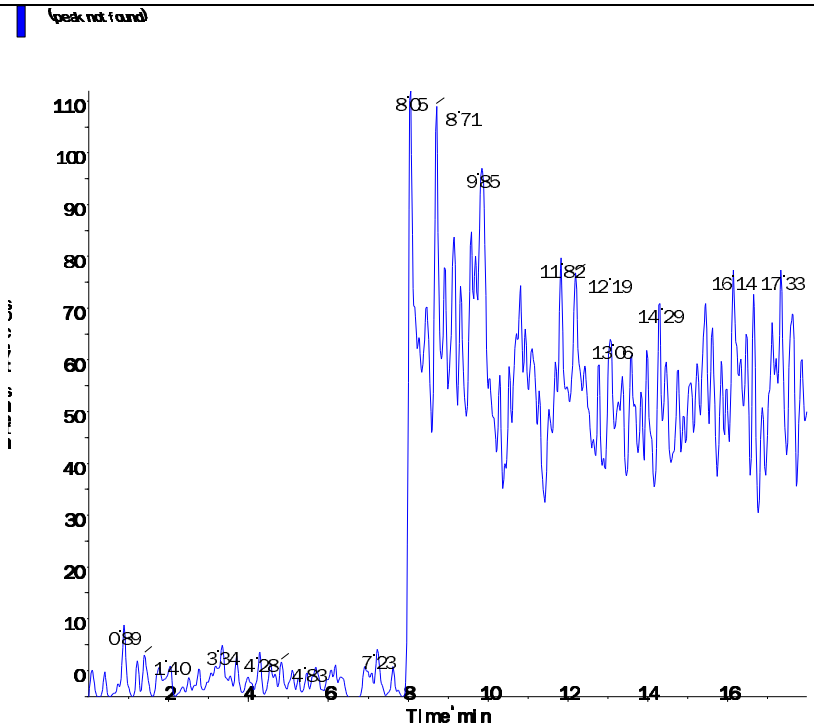

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

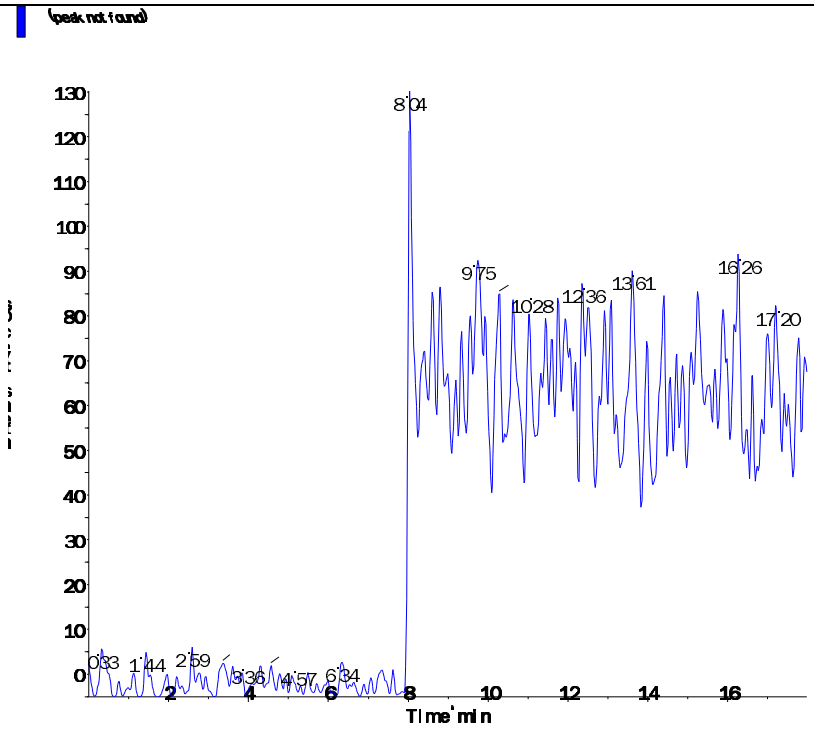

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/11/2016 1:00 PM

Data File	LM35228.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 10:46:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM35228.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 10:46:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.550e+05	9.16	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.520e+04	9.17	N/A	0.226
Perchlorate conf	1.040e+04	9.17	N/A	0.184

O18LP (Internal Standard)

RT (Exp. RT): 9.16(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

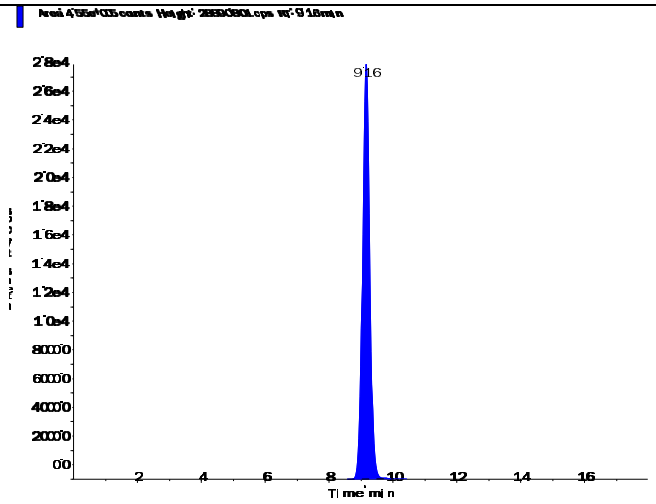

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/11/2016 1:00 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.17 (9.84) min
Calculated conc:	0.226 ng/ml
Area Ratio:	0.077
Sample Type:	(Unknown)

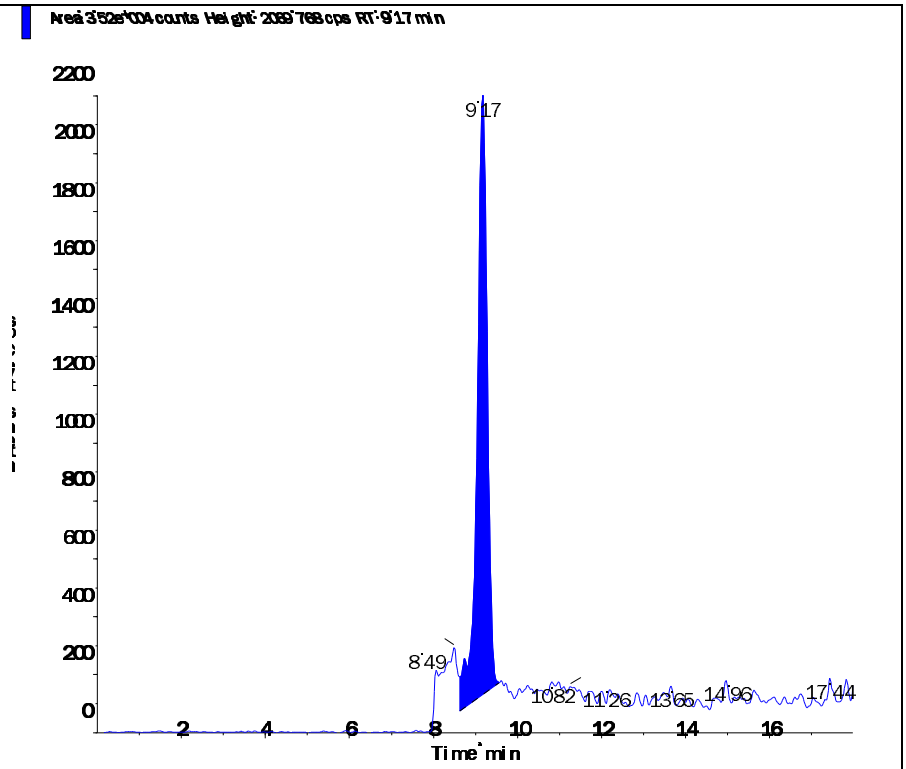

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.17 (9.84) min
Calculated conc:	0.184 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

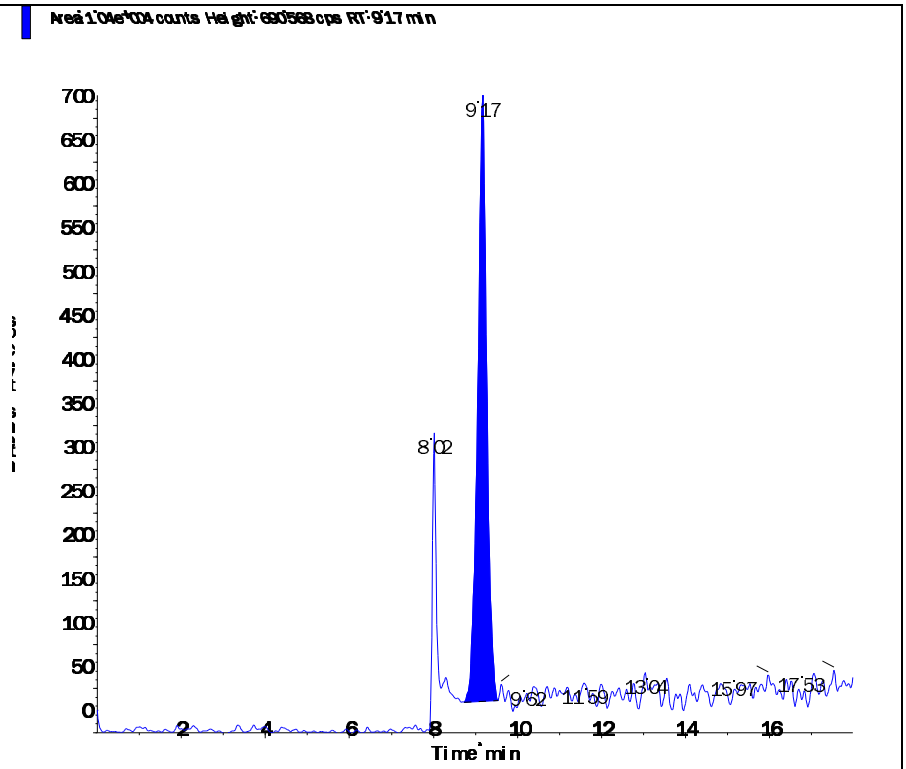

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2.2.2.5 Raw QC Data

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Created with Analyst Reporter
Printed: 6/11/2016 1:00 PM

Data File	LM35229.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 11:05:30 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-02 BLANK	**Injection Vial**	5.00
Data File	LM35229.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 11:05:30 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.410e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	3.090e+02	9.81	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

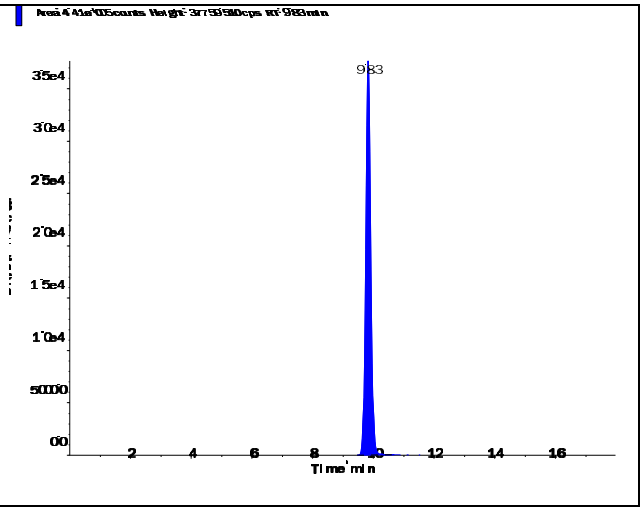

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/11/2016 1:00 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	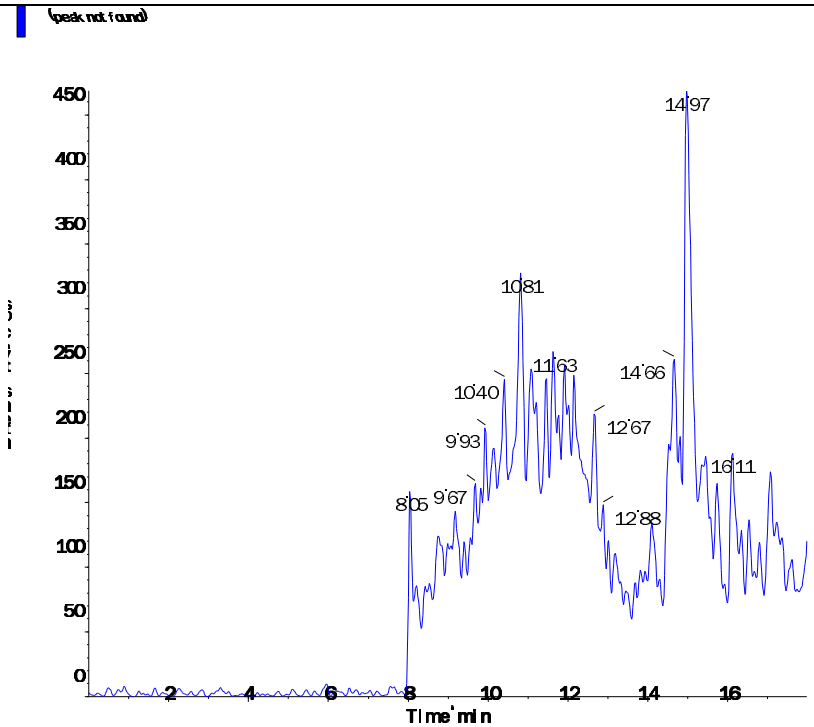
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.81 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	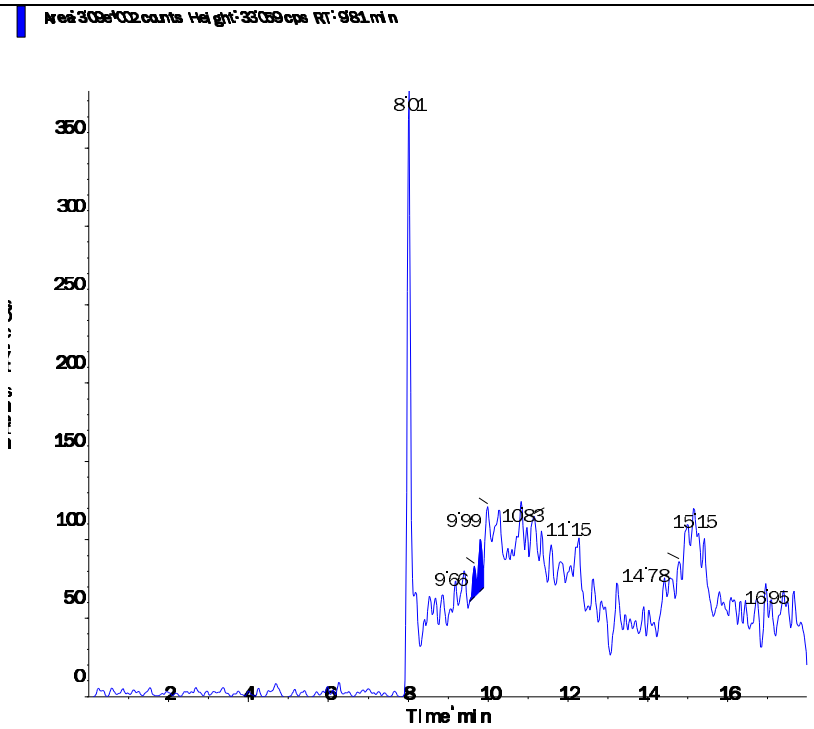

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/11/2016 1:01 PM

Data File	LM35230.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 11:24:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM35230.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 11:24:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.340e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.000e+04	9.83	N/A	0.201
Perchlorate conf	1.180e+04	9.83	N/A	0.223

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

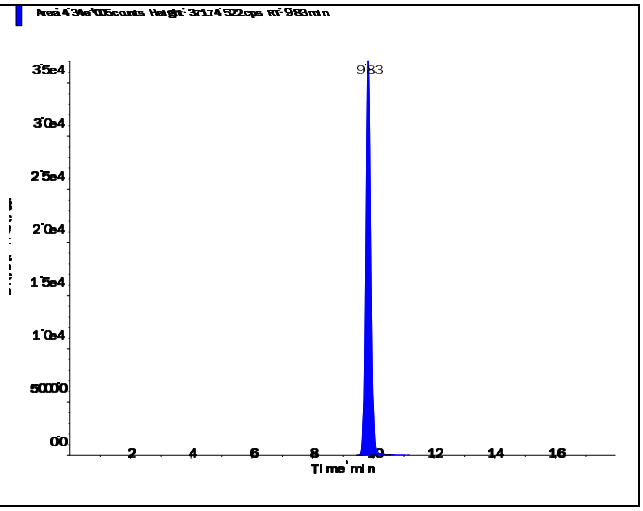

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

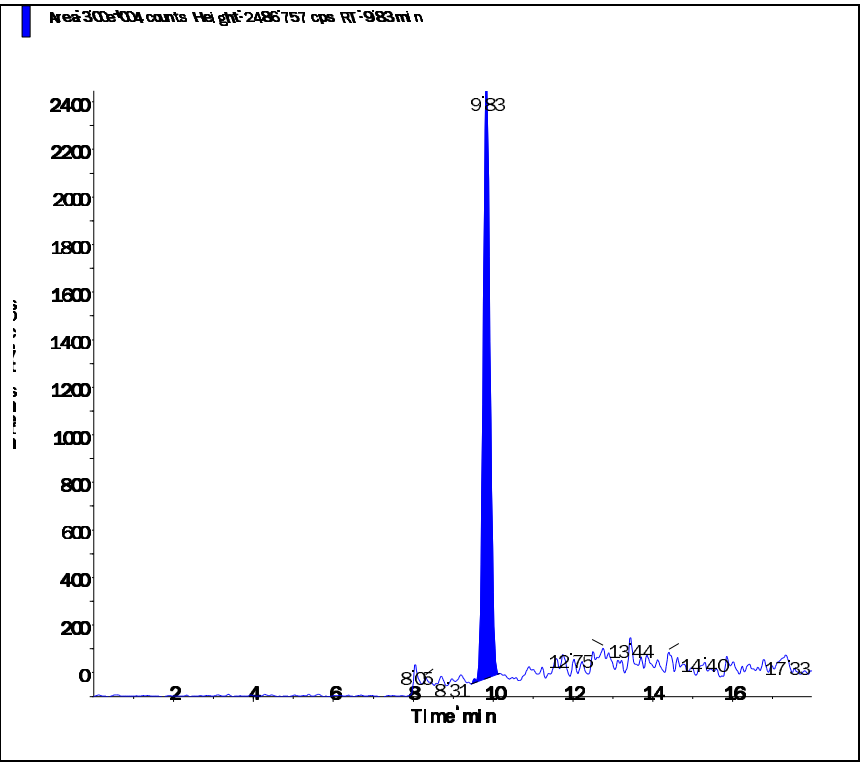

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.223 ng/ml
Area Ratio:	0.027
Sample Type:	(Unknown)

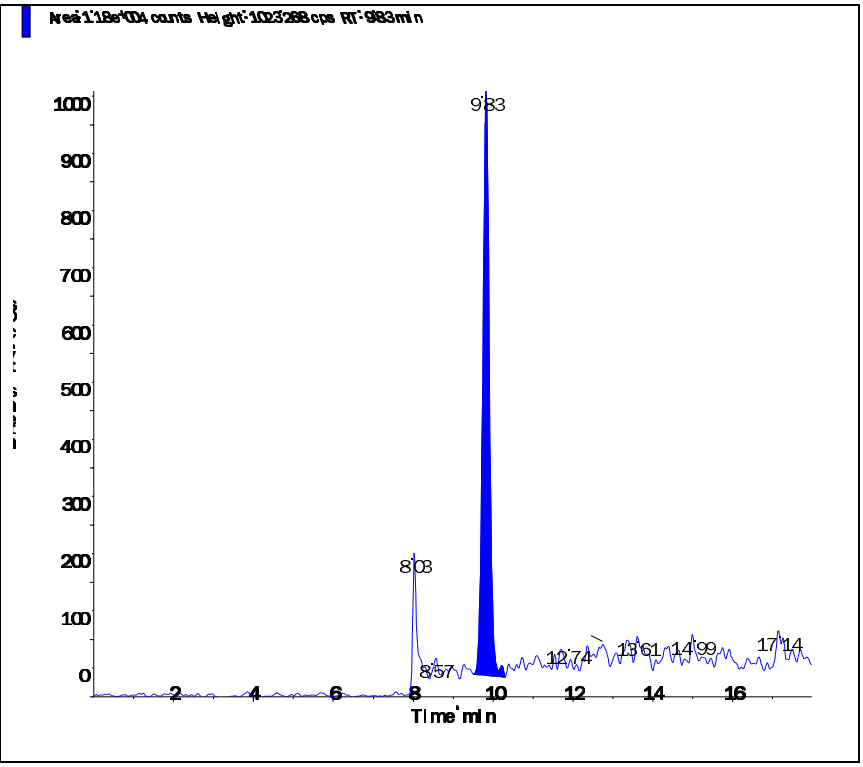

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3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
June 20, 2016

001 - BIO-CHEM TESTING WVDEP 220	002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental	004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES	006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES	008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND	AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER	ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS	ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED	AWE - ANDREW W. ESSIG
AZH - AFTER HOURS	BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE	BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY	CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS	CEB - CHAD E. BARNES
CJQ - Cameron J. Quick	CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD	CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS	CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL	DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE	DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON	DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE	DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR	ECL - ERIC C. LAWSON
EMW - ERIC M. WILKEN	ENY - EMILY N. YOAK
ERP - ERIN R. PORTER	FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY	JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH	JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS	JLD - JESSICA L. DELONG
JLL - JOHN L. LENT	JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON	JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES	JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON	KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH	KEB - KATIE E. BARNES
KHR - KIM H. RHODES	KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON	KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS	LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF	LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA	MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON	MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN	MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE	MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR	MSW - MATT S. WILSON
NPH - Natalie P. Hart	PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE	PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB	QX - QIN XU
RAH - ROY A. HALSTEAD	REK - BOB E. KYER
RLB - BOB BUCHANAN	RM - RAYMOND MALEKE
RNP - RICK N. PETTY	RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG	SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY	SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF	TB - TODD BOYLE
TGF - TIM G. FELTON	TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS	VC - VICKI COLLIER
WJB - WILL J. BEASLEY	WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG	XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
June 20, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
June 20, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Debra Richmann	Mail to:	Linda Raabe
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000		112 East Pecan STE. 400
	Marietta, OH 45750	Sampler (print):	Scott Beesinger		San Antonio, TX 78205
Phone:	1-800-373-4071				210-296-2000
Client:	AECOM	Signature:	Scott Beesinger	Fed Ex Airbill No:	
Address:	112 East Pecan Ste. 400				
	San Antonio, TX 78205	pH:		Program:	
Turn Around Time:	STANDARD				
Project Name/Location:	Longhorn				
Project Number:	60274185.0013BH 1824 MR10				

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Total Metals	1,4 - DIOXANE					ERPIMS REQUIRED FIELDS: SA CODE	Cooler ID	LOT CONTROL NUMBERS: ABLOT	EBLOT	TBLOT
SITE 18/24	AWD1T-060716			6/7/16	0755		✓	W	6	✓	✓		✓									
	AWD1B-060716			6/7/16	0845		✓	W	6	✓	✓		✓									
	MW14T-060716			6/7/16	1030		✓	W	6	✓	✓		✓									
	MW14B-060716			6/7/16	1120		✓	W	6	✓	✓		✓									
	TRIP BLANK			6/7/16			✓	W	2	✓												

Comments: **STANDARD TAT**

Microbac OVD
Received: 06/08/2016 10:01
By: BRENDA GREGORY 221000086878
Brenda Gregory

Relinquished by: (Signature) Scott Beesinger	Date 6/7/16	Time 1615	Received by: (Signature)			by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time	Remarks:

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060414
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 17-JUN-2016

Samplenum	Container ID	Products
L16060414-01	756402	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:06	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:06	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:06	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	

Samplenum	Container ID	Products
L16060414-01	756403	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-JUN-2016 15:06	CLS		
2	PREP	W1	EXT	09-JUN-2016 14:52	EMW	CLS	
3	ANALYZ*	EXT	SEMI	12-JUN-2016 10:23	SCB	EMW	
4	SUBBED	EXT	DISP	14-JUN-2016 10:03	BJO	BJO	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		08-JUN-2016 15:06	CLS		

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060414-01	756404	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-JUN-2016 15:06	CLS		
2	ANALYZ	W1	SEM	10-JUN-2016 08:23	WTD	BRG	
3	STORE	SEM	A1	11-JUN-2016 11:57	AZH	WTD	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060414
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 17-JUN-2016

Samplenum	Container ID	Products
L16060414-02	756405	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:06	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:06	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:06	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	

Samplenum	Container ID	Products
L16060414-02	756406	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-JUN-2016 15:06	CLS		
2	PREP	W1	EXT	09-JUN-2016 14:52	EMW	CLS	
3	ANALYZ*	EXT	SEMI	12-JUN-2016 10:23	SCB	EMW	
4	SUBBED	EXT	DISP	14-JUN-2016 10:03	BJO	BJO	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		08-JUN-2016 15:06	CLS		

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060414-02	756407	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-JUN-2016 15:06	CLS		
2	ANALYZ	W1	SEM	10-JUN-2016 08:23	WTD	BRG	
3	STORE	SEM	A1	11-JUN-2016 11:56	AZH	WTD	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060414
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 17-JUN-2016

Samplenum	Container ID	Products
L16060414-03	756408	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:06	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:06	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:06	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	

Samplenum	Container ID	Products
L16060414-03	756409	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-JUN-2016 15:06	CLS		
2	PREP	W1	EXT	09-JUN-2016 14:52	EMW	CLS	
3	ANALYZ*	EXT	SEMI	12-JUN-2016 10:23	SCB	EMW	
4	SUBBED	EXT	DISP	14-JUN-2016 10:01	BJO	BJO	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		08-JUN-2016 15:06	CLS		

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060414-03	756410	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-JUN-2016 15:06	CLS		
2	ANALYZ	W1	SEM	10-JUN-2016 08:23	WTD	BRG	
3	STORE	SEM	A1	11-JUN-2016 11:56	AZH	WTD	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060414
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 17-JUN-2016

Samplenum	Container ID	Products
L16060414-04	756411	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:06	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:06	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:06	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	

Samplenum	Container ID	Products
L16060414-04	756412	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-JUN-2016 15:06	CLS		
2	PREP	W1	EXT	09-JUN-2016 14:52	EMW	CLS	
3	ANALYZ*	EXT	SEMI	12-JUN-2016 10:23	SCB	EMW	
4	SUBBED	EXT	DISP	14-JUN-2016 10:02	BJO	BJO	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		08-JUN-2016 15:06	CLS		

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060414-04	756413	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	08-JUN-2016 15:06	CLS		
2	ANALYZ	W1	SEM	10-JUN-2016 08:23	WTD	BRG	
3	STORE	SEM	A1	11-JUN-2016 11:56	AZH	WTD	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060414
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 17-JUN-2016

Samplenum	Container ID	Products
L16060414-05	756414	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:06	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	08-JUN-2016 15:06	CLS		
2	ANALYZ	V1	ORG4	08-JUN-2016 16:10	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
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W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16060497

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Michelle Taylor – Client Services Specialist
(740) 373-4071
Michelle.Taylor@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on June 22 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00113762	I	3.0		J2317165072	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18CPTMW06-060816	L16060497-01	06/08/2016 13:30	06/09/2016 10:34
18CPTMW06MS-060816	L16060497-02	06/08/2016 13:30	06/09/2016 10:34
18CPTMW06MSD-060816	L16060497-03	06/08/2016 13:30	06/09/2016 10:34
MW22-060816	L16060497-04	06/08/2016 14:55	06/09/2016 10:34
TRIP BLANK	L16060497-05	06/08/2016 00:01	06/09/2016 10:34

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16060497
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.0 Summary Data

1.1 Narratives

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060497
Project Name:		**Method:**	8260
Prep Batch Number(s):	572625	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-16 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2016-06-16 18:39:39

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060497
Project Name:		**Method:**	8260
Prep Batch Number(s):	572625	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-16 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060497
Project Name:		**Method:**	8260
Prep Batch Number(s):	572625	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-16 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?	X				
Were analytical duplicates analyzed at the appropriate frequency?	X				
Were RPDs or relative standard deviations within the laboratory QC limits?	X				
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060497
Project Name:		**Method:**	8260
Prep Batch Number(s):	572625	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-16 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060497
Project Name:		**Method:**	8260
Prep Batch Number(s):	572625	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-16 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060497
Project Name:		**Method:**	8260
Prep Batch Number(s):	572625	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-16 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060497
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572341	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-21 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-06-21 18:29:38

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060497
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572341	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-21 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060497
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572341	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-21 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	X				
Were MS/MSD RPDs within laboratory QC limits?	X				
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060497
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572341	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-21 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060497
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572341	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-21 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

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Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060497
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572341	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-21 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060497
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572200	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-13 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-06-13 18:53:31

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060497
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572200	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-13 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060497
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572200	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-13 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?	X				
Were MS/MSD analyzed at the appropriate frequency?	X				
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			1
Were MS/MSD RPDs within laboratory QC limits?		X			1
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060497
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572200	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-13 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060497
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572200	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-13 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060497
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572200	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-13 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. The MS/MSD recoveries and RPD were out of the acceptance limits due to the presence of a large amount of perchlorate in the reference sample.

1.2 Certificate of Analysis

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060497-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW06-060816	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/01/2016 17:19
Workgroup #:	WG572625	**Analyst:**	TMB	**Run Date:**	06/14/2016 20:06
Collect Date:	06/08/2016 13:30	**Dilution:**	1	**File ID:**	6M140065
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	2.04		1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	1.02		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	105	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060497-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW06-060816	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 11:08
Collect Date:	06/08/2016 13:30	**Dilution:**	1	**File ID:**	15M18403
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	62.4	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060497-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW06-060816	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/10/2016 19:18
Collect Date:	06/08/2016 13:30	**Dilution:**	10	**File ID:**	1LM.LM35255
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	30.3		4.00	2.00	1.00

Certificate of Analysis

Sample #:	L16060497-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW06MS-060816	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/01/2016 17:19
Workgroup #:	WG572625	**Analyst:**	TMB	**Run Date:**	06/14/2016 16:53
Collect Date:	06/08/2016 13:30	**Dilution:**	1	**File ID:**	6M140059
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	18.9		10.0	5.00	2.50
Benzene	71-43-2	20.6		1.00	0.250	0.125
Bromobenzene	108-86-1	20.1		1.00	0.250	0.125
Bromochloromethane	74-97-5	20.3		1.00	0.400	0.200
Bromodichloromethane	75-27-4	21.4		1.00	0.500	0.250
Bromoform	75-25-2	19.3		2.00	1.00	0.500
Bromomethane	74-83-9	16.8		2.00	1.00	0.500
2-Butanone	78-93-3	20.7		10.0	5.00	2.50
n-Butylbenzene	104-51-8	21.9		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	22.0		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	21.3		1.00	0.500	0.250
Carbon disulfide	75-15-0	18.8		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	20.9		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.7		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	21.0		1.00	0.500	0.250
Chloroethane	75-00-3	18.2		2.00	1.00	0.500
Chloroform	67-66-3	20.7		1.00	0.250	0.125
Chloromethane	74-87-3	17.0		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	21.4		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	21.9		1.00	0.500	0.250

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Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	22.7		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	21.0		1.00	0.500	0.250
Dibromomethane	74-95-3	20.1		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	21.3		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	20.7		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	22.2		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	19.4		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	19.7		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	21.3		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	19.8		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	21.1		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	20.1		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	22.0		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	22.2		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	22.1		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	24.0		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	21.5		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	20.3		1.00	0.500	0.250
Ethylbenzene	100-41-4	20.4		1.00	0.500	0.250
2-Hexanone	591-78-6	20.4		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	22.3		1.00	0.500	0.250
Isopropylbenzene	98-82-8	21.8		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	22.1		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	20.0		10.0	5.00	2.50
Methylene chloride	75-09-2	21.8		1.00	0.500	0.250
Naphthalene	91-20-3	20.4		1.00	0.400	0.200
n-Propylbenzene	103-65-1	22.6		1.00	0.250	0.125
Styrene	100-42-5	21.9		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	20.9		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	21.4		1.00	0.400	0.200
Tetrachloroethene	127-18-4	19.4		1.00	0.500	0.250
Toluene	108-88-3	20.6		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	21.0		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	21.9		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	20.7		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	21.2		1.00	0.500	0.250
Trichloroethene	79-01-6	21.4		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	20.9		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	21.4		2.00	1.00	0.500

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Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	21.5		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	22.0		1.00	0.500	0.250
Vinyl chloride	75-01-4	18.7		1.00	0.500	0.250
o-Xylene	95-47-6	21.7		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	42.4		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	102	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	104	75	120	

Certificate of Analysis

Sample #:	L16060497-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW06MS-060816	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 11:31
Collect Date:	06/08/2016 13:30	**Dilution:**	1	**File ID:**	15M18404
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	2.46		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	49.8	20	129	

Certificate of Analysis

Sample #:	L16060497-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW06MS-060816	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/10/2016 12:02
Collect Date:	06/08/2016 13:30	**Dilution:**	1	**File ID:**	1LM.LM35232
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	7.05		0.400	0.200	0.100

Certificate of Analysis

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Sample #:	L16060497-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW06MSD-060816	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/01/2016 17:19
Workgroup #:	WG572625	**Analyst:**	TMB	**Run Date:**	06/14/2016 17:25
Collect Date:	06/08/2016 13:30	**Dilution:**	1	**File ID:**	6M140060
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	21.3		10.0	5.00	2.50
Benzene	71-43-2	20.3		1.00	0.250	0.125
Bromobenzene	108-86-1	20.0		1.00	0.250	0.125
Bromochloromethane	74-97-5	20.5		1.00	0.400	0.200
Bromodichloromethane	75-27-4	21.5		1.00	0.500	0.250
Bromoform	75-25-2	19.4		2.00	1.00	0.500
Bromomethane	74-83-9	16.3		2.00	1.00	0.500
2-Butanone	78-93-3	21.2		10.0	5.00	2.50
n-Butylbenzene	104-51-8	21.4		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	21.5		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	20.9		1.00	0.500	0.250
Carbon disulfide	75-15-0	18.8		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	20.5		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.5		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	20.8		1.00	0.500	0.250
Chloroethane	75-00-3	18.2		2.00	1.00	0.500
Chloroform	67-66-3	20.7		1.00	0.250	0.125
Chloromethane	74-87-3	17.2		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	21.8		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	20.9		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	22.6		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	21.0		1.00	0.500	0.250
Dibromomethane	74-95-3	20.4		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	21.1		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	20.5		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	22.0		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	19.2		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	19.9		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	21.4		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	19.6		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	21.2		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	20.4		1.00	0.500	0.250

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	21.8		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	22.2		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	21.8		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	24.1		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	21.7		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	20.1		1.00	0.500	0.250
Ethylbenzene	100-41-4	20.5		1.00	0.500	0.250
2-Hexanone	591-78-6	20.4		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	22.0		1.00	0.500	0.250
Isopropylbenzene	98-82-8	21.5		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	21.4		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	20.7		10.0	5.00	2.50
Methylene chloride	75-09-2	22.2		1.00	0.500	0.250
Naphthalene	91-20-3	20.2		1.00	0.400	0.200
n-Propylbenzene	103-65-1	22.3		1.00	0.250	0.125
Styrene	100-42-5	21.6		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	21.1		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	21.2		1.00	0.400	0.200
Tetrachloroethene	127-18-4	19.2		1.00	0.500	0.250
Toluene	108-88-3	20.5		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	20.5		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	21.3		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	20.6		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	21.1		1.00	0.500	0.250
Trichloroethene	79-01-6	21.2		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	20.9		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	21.3		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	21.2		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	21.6		1.00	0.500	0.250
Vinyl chloride	75-01-4	19.0		1.00	0.500	0.250
o-Xylene	95-47-6	21.6		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	42.2		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	103	75	120	

Certificate of Analysis

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Sample #:	L16060497-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW06MSD-060816	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 11:54
Collect Date:	06/08/2016 13:30	**Dilution:**	1	**File ID:**	15M18405
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	2.35		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	47.3	20	129	

Certificate of Analysis

Sample #:	L16060497-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW06MSD-060816	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/10/2016 12:21
Collect Date:	06/08/2016 13:30	**Dilution:**	1	**File ID:**	1LM.LM35233
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.39		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16060497-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	MW22-060816	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/01/2016 17:19
Workgroup #:	WG572625	**Analyst:**	TMB	**Run Date:**	06/14/2016 20:38
Collect Date:	06/08/2016 14:55	**Dilution:**	2.5	**File ID:**	6M140066
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	25.0	12.5	6.25
Benzene	71-43-2	2.51		2.50	0.626	0.313
Bromobenzene	108-86-1	0.626	U	2.50	0.626	0.313
Bromochloromethane	74-97-5	1.00	U	2.50	1.00	0.500
Bromodichloromethane	75-27-4	1.25	U	2.50	1.25	0.625
Bromoform	75-25-2	2.50	U	5.00	2.50	1.25
Bromomethane	74-83-9	2.50	U	5.00	2.50	1.25
2-Butanone	78-93-3	12.5	U	25.0	12.5	6.25
n-Butylbenzene	104-51-8	1.25	U	2.50	1.25	0.625

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Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
sec-Butylbenzene	135-98-8	1.25	U	2.50	1.25	0.625
tert-Butylbenzene	98-06-6	1.25	U	2.50	1.25	0.625
Carbon disulfide	75-15-0	2.50	U	5.00	2.50	1.25
Carbon tetrachloride	56-23-5	1.25	U	2.50	1.25	0.625
Chlorobenzene	108-90-7	0.626	U	2.50	0.626	0.313
Chlorodibromomethane	124-48-1	1.25	U	2.50	1.25	0.625
Chloroethane	75-00-3	2.50	U	5.00	2.50	1.25
Chloroform	67-66-3	4.77		2.50	0.626	0.313
Chloromethane	74-87-3	2.50	U	5.00	2.50	1.25
2-Chlorotoluene	95-49-8	0.626	U	2.50	0.626	0.313
4-Chlorotoluene	106-43-4	1.25	U	2.50	1.25	0.625
1,2-Dibromo-3-chloropropane	96-12-8	5.00	U	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	2.50	1.25	0.625
Dibromomethane	74-95-3	1.25	U	2.50	1.25	0.625
1,2-Dichlorobenzene	95-50-1	0.626	U	2.50	0.626	0.313
1,3-Dichlorobenzene	541-73-1	1.25	U	2.50	1.25	0.625
1,4-Dichlorobenzene	106-46-7	0.626	U	2.50	0.626	0.313
Dichlorodifluoromethane	75-71-8	1.25	U	2.50	1.25	0.625
1,1-Dichloroethane	75-34-3	0.626	U	2.50	0.626	0.313
1,2-Dichloroethane	107-06-2	5.50		2.50	1.25	0.625
1,1-Dichloroethene	75-35-4	1.37	J	5.00	2.50	1.25
cis-1,2-Dichloroethene	156-59-2	5.70		2.50	1.25	0.625
trans-1,2-Dichloroethene	156-60-5	1.25	U	2.50	1.25	0.625
1,2-Dichloropropane	78-87-5	1.00	U	2.50	1.00	0.500
1,3-Dichloropropane	142-28-9	1.00	U	2.50	1.00	0.500
2,2-Dichloropropane	594-20-7	1.25	U	2.50	1.25	0.625
cis-1,3-Dichloropropene	10061-01-5	1.25	U	2.50	1.25	0.625
trans-1,3-Dichloropropene	10061-02-6	2.50	U	5.00	2.50	1.25
1,1-Dichloropropene	563-58-6	1.25	U	2.50	1.25	0.625
Ethylbenzene	100-41-4	1.25	U	2.50	1.25	0.625
2-Hexanone	591-78-6	12.5	U	25.0	12.5	6.25
Hexachlorobutadiene	87-68-3	1.25	U	2.50	1.25	0.625
Isopropylbenzene	98-82-8	1.25	U	2.50	1.25	0.625
p-Isopropyltoluene	99-87-6	1.25	U	2.50	1.25	0.625
4-Methyl-2-pentanone	108-10-1	12.5	U	25.0	12.5	6.25
Methylene chloride	75-09-2	1.25	U	2.50	1.25	0.625
Naphthalene	91-20-3	1.00	U	2.50	1.00	0.500
n-Propylbenzene	103-65-1	0.626	U	2.50	0.626	0.313
Styrene	100-42-5	0.626	U	2.50	0.626	0.313

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Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	2.50	1.25	0.625
1,1,2,2-Tetrachloroethane	79-34-5	1.00	U	2.50	1.00	0.500
Tetrachloroethene	127-18-4	1.25	U	2.50	1.25	0.625
Toluene	108-88-3	1.25	U	2.50	1.25	0.625
1,2,3-Trichlorobenzene	87-61-6	0.750	U	2.50	0.750	0.375
1,2,4-Trichlorobenzene	120-82-1	1.00	U	2.50	1.00	0.500
1,1,1-Trichloroethane	71-55-6	1.25	U	2.50	1.25	0.625
1,1,2-Trichloroethane	79-00-5	1.25	U	2.50	1.25	0.625
Trichloroethene	79-01-6	488		2.50	1.25	0.625
Trichlorofluoromethane	75-69-4	1.25	U	2.50	1.25	0.625
1,2,3-Trichloropropane	96-18-4	2.50	U	5.00	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	2.50	1.25	0.625
1,3,5-Trimethylbenzene	108-67-8	1.25	U	2.50	1.25	0.625
Vinyl chloride	75-01-4	1.25	U	2.50	1.25	0.625
o-Xylene	95-47-6	1.25	U	2.50	1.25	0.625
m-,p-Xylene	179601-23-1	2.50	U	5.00	2.50	1.25

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	105	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060497-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW22-060816	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/10/2016 19:37
Collect Date:	06/08/2016 14:55	**Dilution:**	500	**File ID:**	1LM.LM35256
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	615		200	100	50.0

Certificate of Analysis

Sample #:	L16060497-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/01/2016 17:19
Workgroup #:	WG572625	**Analyst:**	TMB	**Run Date:**	06/14/2016 19:34
Collect Date:	06/08/2016 00:01	**Dilution:**	1	**File ID:**	6M140064
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

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Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

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Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	102	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	106	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060497-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW06-060816	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/01/2016 17:19
Workgroup #:	WG572625	**Analyst:**	TMB	**Run Date:**	06/14/2016 20:06
Collect Date:	06/08/2016 13:30	**Dilution:**	1	**File ID:**	6M140065
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

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Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	2.04		1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	1.02		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	105	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060497-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW06MS-060816	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/01/2016 17:19
Workgroup #:	WG572625	**Analyst:**	TMB	**Run Date:**	06/14/2016 16:53
Collect Date:	06/08/2016 13:30	**Dilution:**	1	**File ID:**	6M140059
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	18.9		10.0	5.00	2.50
Benzene	71-43-2	20.6		1.00	0.250	0.125
Bromobenzene	108-86-1	20.1		1.00	0.250	0.125
Bromochloromethane	74-97-5	20.3		1.00	0.400	0.200
Bromodichloromethane	75-27-4	21.4		1.00	0.500	0.250
Bromoform	75-25-2	19.3		2.00	1.00	0.500
Bromomethane	74-83-9	16.8		2.00	1.00	0.500
2-Butanone	78-93-3	20.7		10.0	5.00	2.50
n-Butylbenzene	104-51-8	21.9		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	22.0		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	21.3		1.00	0.500	0.250
Carbon disulfide	75-15-0	18.8		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	20.9		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.7		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	21.0		1.00	0.500	0.250
Chloroethane	75-00-3	18.2		2.00	1.00	0.500
Chloroform	67-66-3	20.7		1.00	0.250	0.125
Chloromethane	74-87-3	17.0		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	21.4		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	21.9		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	22.7		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	21.0		1.00	0.500	0.250
Dibromomethane	74-95-3	20.1		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	21.3		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	20.7		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	22.2		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	19.4		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	19.7		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	21.3		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	19.8		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	21.1		1.00	0.500	0.250

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	20.1		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	22.0		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	22.2		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	22.1		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	24.0		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	21.5		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	20.3		1.00	0.500	0.250
Ethylbenzene	100-41-4	20.4		1.00	0.500	0.250
2-Hexanone	591-78-6	20.4		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	22.3		1.00	0.500	0.250
Isopropylbenzene	98-82-8	21.8		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	22.1		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	20.0		10.0	5.00	2.50
Methylene chloride	75-09-2	21.8		1.00	0.500	0.250
Naphthalene	91-20-3	20.4		1.00	0.400	0.200
n-Propylbenzene	103-65-1	22.6		1.00	0.250	0.125
Styrene	100-42-5	21.9		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	20.9		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	21.4		1.00	0.400	0.200
Tetrachloroethene	127-18-4	19.4		1.00	0.500	0.250
Toluene	108-88-3	20.6		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	21.0		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	21.9		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	20.7		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	21.2		1.00	0.500	0.250
Trichloroethene	79-01-6	21.4		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	20.9		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	21.4		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	21.5		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	22.0		1.00	0.500	0.250
Vinyl chloride	75-01-4	18.7		1.00	0.500	0.250
o-Xylene	95-47-6	21.7		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	42.4		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	102	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	104	75	120	

Certificate of Analysis

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Sample #:	L16060497-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW06MSD-060816	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/01/2016 17:19
Workgroup #:	WG572625	**Analyst:**	TMB	**Run Date:**	06/14/2016 17:25
Collect Date:	06/08/2016 13:30	**Dilution:**	1	**File ID:**	6M140060
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	21.3		10.0	5.00	2.50
Benzene	71-43-2	20.3		1.00	0.250	0.125
Bromobenzene	108-86-1	20.0		1.00	0.250	0.125
Bromochloromethane	74-97-5	20.5		1.00	0.400	0.200
Bromodichloromethane	75-27-4	21.5		1.00	0.500	0.250
Bromoform	75-25-2	19.4		2.00	1.00	0.500
Bromomethane	74-83-9	16.3		2.00	1.00	0.500
2-Butanone	78-93-3	21.2		10.0	5.00	2.50
n-Butylbenzene	104-51-8	21.4		1.00	0.500	0.250
sec-Butylbenzene	135-98-8	21.5		1.00	0.500	0.250
tert-Butylbenzene	98-06-6	20.9		1.00	0.500	0.250
Carbon disulfide	75-15-0	18.8		2.00	1.00	0.500
Carbon tetrachloride	56-23-5	20.5		1.00	0.500	0.250
Chlorobenzene	108-90-7	20.5		1.00	0.250	0.125
Chlorodibromomethane	124-48-1	20.8		1.00	0.500	0.250
Chloroethane	75-00-3	18.2		2.00	1.00	0.500
Chloroform	67-66-3	20.7		1.00	0.250	0.125
Chloromethane	74-87-3	17.2		2.00	1.00	0.500
2-Chlorotoluene	95-49-8	21.8		1.00	0.250	0.125
4-Chlorotoluene	106-43-4	20.9		1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	22.6		5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	21.0		1.00	0.500	0.250
Dibromomethane	74-95-3	20.4		1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	21.1		1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	20.5		1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	22.0		1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	19.2		1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	19.9		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	21.4		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	19.6		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	21.2		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	20.4		1.00	0.500	0.250

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	21.8		1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	22.2		1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	21.8		1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	24.1		1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	21.7		2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	20.1		1.00	0.500	0.250
Ethylbenzene	100-41-4	20.5		1.00	0.500	0.250
2-Hexanone	591-78-6	20.4		10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	22.0		1.00	0.500	0.250
Isopropylbenzene	98-82-8	21.5		1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	21.4		1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	20.7		10.0	5.00	2.50
Methylene chloride	75-09-2	22.2		1.00	0.500	0.250
Naphthalene	91-20-3	20.2		1.00	0.400	0.200
n-Propylbenzene	103-65-1	22.3		1.00	0.250	0.125
Styrene	100-42-5	21.6		1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	21.1		1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	21.2		1.00	0.400	0.200
Tetrachloroethene	127-18-4	19.2		1.00	0.500	0.250
Toluene	108-88-3	20.5		1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	20.5		1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	21.3		1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	20.6		1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	21.1		1.00	0.500	0.250
Trichloroethene	79-01-6	21.2		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	20.9		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	21.3		2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	21.2		1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	21.6		1.00	0.500	0.250
Vinyl chloride	75-01-4	19.0		1.00	0.500	0.250
o-Xylene	95-47-6	21.6		1.00	0.500	0.250
m-,p-Xylene	179601-23-1	42.2		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	103	75	120	

Certificate of Analysis

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Sample #:	L16060497-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	MW22-060816	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/01/2016 17:19
Workgroup #:	WG572625	**Analyst:**	TMB	**Run Date:**	06/14/2016 20:38
Collect Date:	06/08/2016 14:55	**Dilution:**	2.5	**File ID:**	6M140066
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	12.5	U	25.0	12.5	6.25
Benzene	71-43-2	2.51		2.50	0.626	0.313
Bromobenzene	108-86-1	0.626	U	2.50	0.626	0.313
Bromochloromethane	74-97-5	1.00	U	2.50	1.00	0.500
Bromodichloromethane	75-27-4	1.25	U	2.50	1.25	0.625
Bromoform	75-25-2	2.50	U	5.00	2.50	1.25
Bromomethane	74-83-9	2.50	U	5.00	2.50	1.25
2-Butanone	78-93-3	12.5	U	25.0	12.5	6.25
n-Butylbenzene	104-51-8	1.25	U	2.50	1.25	0.625
sec-Butylbenzene	135-98-8	1.25	U	2.50	1.25	0.625
tert-Butylbenzene	98-06-6	1.25	U	2.50	1.25	0.625
Carbon disulfide	75-15-0	2.50	U	5.00	2.50	1.25
Carbon tetrachloride	56-23-5	1.25	U	2.50	1.25	0.625
Chlorobenzene	108-90-7	0.626	U	2.50	0.626	0.313
Chlorodibromomethane	124-48-1	1.25	U	2.50	1.25	0.625
Chloroethane	75-00-3	2.50	U	5.00	2.50	1.25
Chloroform	67-66-3	4.77		2.50	0.626	0.313
Chloromethane	74-87-3	2.50	U	5.00	2.50	1.25
2-Chlorotoluene	95-49-8	0.626	U	2.50	0.626	0.313
4-Chlorotoluene	106-43-4	1.25	U	2.50	1.25	0.625
1,2-Dibromo-3-chloropropane	96-12-8	5.00	U	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	2.50	1.25	0.625
Dibromomethane	74-95-3	1.25	U	2.50	1.25	0.625
1,2-Dichlorobenzene	95-50-1	0.626	U	2.50	0.626	0.313
1,3-Dichlorobenzene	541-73-1	1.25	U	2.50	1.25	0.625
1,4-Dichlorobenzene	106-46-7	0.626	U	2.50	0.626	0.313
Dichlorodifluoromethane	75-71-8	1.25	U	2.50	1.25	0.625
1,1-Dichloroethane	75-34-3	0.626	U	2.50	0.626	0.313
1,2-Dichloroethane	107-06-2	5.50		2.50	1.25	0.625
1,1-Dichloroethene	75-35-4	1.37	J	5.00	2.50	1.25
cis-1,2-Dichloroethene	156-59-2	5.70		2.50	1.25	0.625
trans-1,2-Dichloroethene	156-60-5	1.25	U	2.50	1.25	0.625

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Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	1.00	U	2.50	1.00	0.500
1,3-Dichloropropane	142-28-9	1.00	U	2.50	1.00	0.500
2,2-Dichloropropane	594-20-7	1.25	U	2.50	1.25	0.625
cis-1,3-Dichloropropene	10061-01-5	1.25	U	2.50	1.25	0.625
trans-1,3-Dichloropropene	10061-02-6	2.50	U	5.00	2.50	1.25
1,1-Dichloropropene	563-58-6	1.25	U	2.50	1.25	0.625
Ethylbenzene	100-41-4	1.25	U	2.50	1.25	0.625
2-Hexanone	591-78-6	12.5	U	25.0	12.5	6.25
Hexachlorobutadiene	87-68-3	1.25	U	2.50	1.25	0.625
Isopropylbenzene	98-82-8	1.25	U	2.50	1.25	0.625
p-Isopropyltoluene	99-87-6	1.25	U	2.50	1.25	0.625
4-Methyl-2-pentanone	108-10-1	12.5	U	25.0	12.5	6.25
Methylene chloride	75-09-2	1.25	U	2.50	1.25	0.625
Naphthalene	91-20-3	1.00	U	2.50	1.00	0.500
n-Propylbenzene	103-65-1	0.626	U	2.50	0.626	0.313
Styrene	100-42-5	0.626	U	2.50	0.626	0.313
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	2.50	1.25	0.625
1,1,2,2-Tetrachloroethane	79-34-5	1.00	U	2.50	1.00	0.500
Tetrachloroethene	127-18-4	1.25	U	2.50	1.25	0.625
Toluene	108-88-3	1.25	U	2.50	1.25	0.625
1,2,3-Trichlorobenzene	87-61-6	0.750	U	2.50	0.750	0.375
1,2,4-Trichlorobenzene	120-82-1	1.00	U	2.50	1.00	0.500
1,1,1-Trichloroethane	71-55-6	1.25	U	2.50	1.25	0.625
1,1,2-Trichloroethane	79-00-5	1.25	U	2.50	1.25	0.625
Trichloroethene	79-01-6	488		2.50	1.25	0.625
Trichlorofluoromethane	75-69-4	1.25	U	2.50	1.25	0.625
1,2,3-Trichloropropane	96-18-4	2.50	U	5.00	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	2.50	1.25	0.625
1,3,5-Trimethylbenzene	108-67-8	1.25	U	2.50	1.25	0.625
Vinyl chloride	75-01-4	1.25	U	2.50	1.25	0.625
o-Xylene	95-47-6	1.25	U	2.50	1.25	0.625
m-,p-Xylene	179601-23-1	2.50	U	5.00	2.50	1.25

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	105	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060497-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/01/2016 17:19
Workgroup #:	WG572625	**Analyst:**	TMB	**Run Date:**	06/14/2016 19:34
Collect Date:	06/08/2016 00:01	**Dilution:**	1	**File ID:**	6M140064
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	101	85	115	
1,2-Dichloroethane-d4	102	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	106	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

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Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

MICROBAC®

TCLP Volatile

Analyst(s): AMA
Date: 06/13/2016
Filter Lot #: 96976007

Agitator Speed 30 ± 2 rpm ☑

Analyst / Date		Analyst / Date	
AMA	6/13/16	CPD	6/14/16
Time On	Temp On °C	Time Off	Temp Off °C
1430	23.2	0817	21.9

ZHE	Sample #	Pressure √	PSI ON	PSI OFF	Method	Fluid #	Matrix*	%Solid	Size Reduction Yes	Size Reduction No	Int. Wt. (g)	Fluid Vol. (mL)
A												
B												
C												
D												
E												
F												
G												
H												
✓ I	06-0550-01	✓	10	10	1311	FI-180	S	100		✓	25.01	500
J												
K												
L												
M												
✓ N	06-0620-01	✓	10	10	1311	FI-180	S	100		✓	25.00	500
✓ O	06-0620-02	✓	10	10	1311	FI-180	S	100		✓	25.01	500
P												
Q												
R												
S												
NA	06-0535-01	NA	NA	NA	1311	FIL	W	<0.5	NA	NA	40	40
NA	06-0537-01	NA	1	1	1	1	O	<0.5	1	1	1	1
NA	FBIH1	NA	NA	NA	1311	FI-180	NA	NA	NA	NA	40	40

CPD 6/13/16

*Matrix Code = (S-solid) (SS-sand, soil or sludge) (P-paint) (O-organic) (W-water or waste)

Comments: Sx 06-0537-01 strong volatile odor, and 06-0535-01 soap odor.

Peer Review By: [signature]

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 042416
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75498 Surrogate Standard: STD75498
CCV: STD75791 LCS: STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG566155

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M138749	RINSE	NA	1	1		04/24/16 16:05
6M138750	WG566155-01 50ng BFB 826-A9	NA	1	1	STD75485	04/24/16 16:33
6M138751	WG566155-02 5ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 16:59
6M138752	WG566155-03 20ug/L STD 826-A	NA	1	1	STD75791	04/24/16 17:31
6M138753	WG566155-04 50ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 18:03
6M138754	WG566155-05 100ug/L STD 826-A	NA	1	1	STD75791	04/24/16 18:36
6M138755	WG566155-06 200ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 19:08
6M138756	WG566155-07 300ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 19:40
6M138757	WG566155-08 400ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 20:12
6M138758	WG566155-09 500ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 20:44
6M138759	RINSE	NA	1	1		04/24/16 21:16
6M138760	RINSE	NA	1	1		04/24/16 21:49
6M138761	WG566155-10 100ug/L ALT SRC	NA	1	1	STD75801	04/24/16 22:21
6M138762	RINSE	NA	1	1		04/24/16 22:53
6M138763	RINSE	NA	1	1		04/24/16 23:25

Approved: April 29, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 060116
Analyst1: TMB Analyst2: NA
Method: 8260B/OVAP SOP: MSV01 Rev: 23/0
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A/OVAP SOP: PAT01 Rev: 18/0
Maintenance Log ID: 53768

Internal Standard: STD76146 Surrogate Standard: STD76146
CCV: STD76405 LCS: STD76401 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG570915; WG570966

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M139735	WG570915-01 50ng BFB STD 8260	NA	1	1	STD76034	06/01/16 12:04
6M139736	WG570915-02 0.3ug/L STD 8260	NA	1	1	STD76405	06/01/16 12:30
6M139737	WG570915-03 0.4ug/L STD 8260	NA	1	1	STD76405	06/01/16 13:01
6M139738	WG570915-04 1ug/L STD 8260	NA	1	1	STD76405	06/01/16 13:33
6M139739	WG570915-05 2ug/L STD 8260	NA	1	1	STD76405	06/01/16 14:06
6M139740	WG570915-06 5ug/L STD 8260	NA	1	1	STD76405	06/01/16 14:38
6M139741	WG570915-07 20ug/L STD 8260	NA	1	1	STD76405	06/01/16 15:10
6M139742	WG570915-08 50ug/L STD 8260	NA	1	1	STD76405	06/01/16 15:43
6M139743	WG570915-09 100ug/L STD 8260	NA	1	1	STD76405	06/01/16 16:15
6M139744	WG570915-10 200ug/L STD 8260	NA	1	1	STD76405	06/01/16 16:47
6M139745	WG570915-11 300ug/L STD 8260	NA	1	1	STD76405	06/01/16 17:19
6M139746	RINSE	NA	1	1		06/01/16 17:52
6M139747	RINSE	NA	1	1		06/01/16 18:24
6M139748	WG570915-12 50ug/L ALT SRC STD 8260	NA	1	1	STD76401	06/01/16 18:56
6M139749	WG570966-01 VBLK0601 BLANK STD 826	NA	1	1		06/01/16 19:28
6M139750	L16010006-01 MDL-A 826-SPE	NA	1	1	STD76411	06/01/16 20:00
6M139751	L16010006-02 MDL-A 826-SPE	NA	1	1	STD76411	06/01/16 20:33
6M139752	L16010006-03 MDL-A 826-SPE	NA	1	1	STD76411	06/01/16 21:05
6M139753	L16010006-04 MDL-A 826-SPE	NA	1	1	STD76411	06/01/16 21:37
6M139754	L16010006-05 MDL-A 826-SPE	NA	1	1	STD76411	06/01/16 22:09
6M139755	L16010006-06 MDL-A 826-SPE	NA	1	1	STD76411	06/01/16 22:41
6M139756	L16010006-07 MDL-A 826-SPE	NA	1	1	STD76411	06/01/16 23:13

Approved: June 02, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 061416
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 16
Method: 5030B/5030X/5035A SOP: MSV10 Rev: 141

Maintenance Log ID:

Internal Standard: STD76454 Surrogate Standard: STD76454
CCV: STD76405 LCS: STD76597 MS/MSD: STD76597

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG572925

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M140053	WG572624-01 50ng BFB STD 8260	NA	1	1	STD76496	06/14/16 13:47
6M140054	WG572624-02 50ug/L CCV STD 8260	NA	1	1	STD76405	06/14/16 14:11
6M140055	WG572624-02 50ug/L CCV STD 8260	NA	1	1	STD76405	06/14/16 14:44
6M140056	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76432	06/14/16 15:16
6M140057	WG572625-01 VBLK0614 BLANK STD 826	NA	1	1		06/14/16 15:48
6M140058	WG572625-02 20ug/L LCS STD 8260	NA	1	1	STD76597	06/14/16 16:21
6M140059	L16060497-02 A MS 826-LOW	<2	1	1	STD76597	06/14/16 16:53
6M140060	L16060497-03 A MSD 826-LOW	<2	1	1	STD76597	06/14/16 17:25
6M140061	L16060620-01 A 10X 826-TC	<2	17	10		06/14/16 17:57
6M140062	L16060620-02 A 10X 826-TC	<2	17	10		06/14/16 18:29
6M140063	L16060415-01 A TB 826-LOW	<2	1	1		06/14/16 19:01
6M140064	L16060497-05 A TB 826-LOW	<2	1	1		06/14/16 19:34
6M140065	L16060497-01 A REF 826-LOW	<2	1	1		06/14/16 20:06
6M140066	L16060497-04 A 2.5X 826-LOW	<2	1	2.5		06/14/16 20:38
6M140067	L16060415-09 A 826-LOW	<2	1	1		06/14/16 21:10
6M140068	L16060415-10 A 826-LOW	<2	1	1		06/14/16 21:42
6M140069	L16060415-03 A 826-LOW	<2	1	1		06/14/16 22:14
6M140070	L16060415-07 A 826-LOW	<2	1	1		06/14/16 22:46
6M140071	L16060415-06 A 826-LOW	<2	1	1		06/14/16 23:18
6M140072	L16060415-05 A 826-LOW	<2	1	1		06/14/16 23:50
6M140073	L16060415-04 A 826-LOW	<2	1	1		06/15/16 00:22
6M140074	L16060415-02 A 826-LOW	<2	1	1		06/15/16 00:54
6M140075	L16060415-08 A 826-LOW	<2	1	1		06/15/16 01:26
6M140076	RINSE	NA	1	1		06/15/16 01:59
6M140077	WG572625-06 VBLK0614 BLANK STD 624	NA	2	1		06/15/16 02:31
6M140078	L16060625-05 B 5X 624-SPE1 D1	<2	2	5		06/15/16 03:03
6M140079	CCV	NA	1	1		06/15/16 03:35
6M140080	RINSE	NA	1	1		06/15/16 04:07
6M140081	RINSE	NA	1	1		06/15/16 04:39
6M140082	WG572425-01 A 10X 826-TC	NA	17	10		06/15/16 05:11

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Approved: June 16, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 061416
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 16
Method: 5030B/5030X/5035A SOP: MSV10 Rev: 141

Maintenance Log ID:

Internal Standard: STD76454 Surrogate Standard: STD76454
CCV: STD76405 LCS: STD76597 MS/MSD: STD76597

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG572925

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 6M140054				
	A few of the gases were low. DNR.			
4				
File ID: 6M140056				
	Not needed. DNR.			

Approved: June 16, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Data Checklist

Date: 24-APR-2016
Analyst: JDS
Analyst: NA
Method: 8260B/624
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 74754
Analytical Workgroups: WG566155

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
27-APR-2016
Tiffany Bailey

Secondary Reviewer:
29-APR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: APR-29-2016 12:29:57

Microbac Laboratories Inc.

Data Checklist

Date: 01-JUN-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 75441
Analytical Workgroups: WG570915; WG570966

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
02-JUN-2016
Tiffany Bailey

Secondary Reviewer:
02-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-02-2016 17:16:55

Microbac Laboratories Inc.

Data Checklist

Date: 14-JUN-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 75703
Analytical Workgroups: WG572625

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
15-JUN-2016
Tiffany Bailey

Secondary Reviewer:
16-JUN-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-16-2016 13:23:10

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG572625

Login Number: L16060497

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW06-060816	01	06/08/16					06/14/2016	6.3	14		06/14/16	6.3	14	
18CPTMW06MS-060816	02	06/08/16					06/14/2016	6.1	14		06/14/16	6.1	14	
18CPTMW06MSD-060816	03	06/08/16					06/14/2016	6.2	14		06/14/16	6.2	14	
MW22-060816	04	06/08/16					06/14/2016	6.2	14		06/14/16	6.2	14	
TRIP BLANK	05	06/08/16					06/14/2016	6.8	14		06/14/16	6.8	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4808689
Report generated 06/16/2016 13:20

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060497
Instrument Id: HPMS6
Workgroup (AAB#): WG572625

Method: 8260
CAL ID: HPMS6-01-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16060497-01	1.00	01	103	101	105	100
L16060497-02	1.00	01	102	101	104	101
L16060497-03	1.00	01	103	101	103	100
L16060497-04	2.50	DL01	103	101	105	100
L16060497-05	1.00	01	102	101	106	100
WG572625-01	1.00	01	103	100	106	99.8
WG572625-02	1.00	01	103	101	103	99.7
WG572625-06	1.00	01	105	102	105	100

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4808696
Report generated: 06/16/2016 13:21

METHOD BLANK SUMMARY

Login Number: L16060497
Blank File ID: 6M140057
Prep Date: 06/14/16 15:48
Analyzed Date: 06/14/16 15:48
Analyst: TMB

Work Group: WG572625
Blank Sample ID: WG572625-01
Instrument ID: HPMS6
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572625-02	6M140058	06/14/16 16:21	01
18CPTMW06MS-060816	L16060497-02	6M140059	06/14/16 16:53	01
18CPTMW06MSD-060816	L16060497-03	6M140060	06/14/16 17:25	01
TRIP BLANK	L16060497-05	6M140064	06/14/16 19:34	01
18CPTMW06-060816	L16060497-01	6M140065	06/14/16 20:06	01
MW22-060816	L16060497-04	6M140066	06/14/16 20:38	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4810058
Report generated 06/16/2016 13:20

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16060497 Prep Date: 06/14/16 15:48 Sample ID: WG572625-01
Instrument ID: HPMS6 Run Date: 06/14/16 15:48 Prep Method: 5030B/5030C/503
File ID: 6M140057 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG572625 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS6-01-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 4808690
16-JUN-2016 13:20

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060497 Prep Date: 06/14/16 15:48 Sample ID: WG572625-01
Instrument ID: HPMS6 Run Date: 06/14/16 15:48 Prep Method: 5030B/5030C/503
File ID: 6M140057 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG572625 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS6-01-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	100	85 - 115	PASS
1,2-Dichloroethane-d4	103	70 - 120	PASS
Toluene-d8	99.8	85 - 120	PASS
4-Bromofluorobenzene	106	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4808690
16-JUN-2016 13:20

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060497 Run Date: 06/14/2016 Sample ID: WG572625-02
Instrument ID: HPMS6 Run Time: 16:21 Prep Method: 5030B/5030C/503
File ID: 6M140058 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG572625 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD76597 Cal ID: HPMS6-01-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	21.4	107	40 - 140	
Benzene	20.0	20.9	105	80 - 120	
Bromobenzene	20.0	20.4	102	75 - 125	
Bromochloromethane	20.0	21.2	106	65 - 130	
Bromodichloromethane	20.0	21.6	108	75 - 120	
Bromoform	20.0	20.1	100	70 - 130	
Bromomethane	20.0	17.5	87.3	30 - 145	
2-Butanone	20.0	21.7	109	30 - 150	
n-Butylbenzene	20.0	21.8	109	70 - 135	
sec-Butylbenzene	20.0	22.0	110	70 - 125	
tert-Butylbenzene	20.0	21.8	109	70 - 130	
Carbon disulfide	20.0	19.3	96.7	35 - 160	
Carbon tetrachloride	20.0	21.4	107	65 - 140	
Chlorobenzene	20.0	21.4	107	80 - 120	
Chlorodibromomethane	20.0	21.5	107	60 - 135	
Chloroethane	20.0	18.9	94.4	60 - 135	
Chloroform	20.0	21.2	106	65 - 135	
Chloromethane	20.0	17.5	87.3	40 - 125	
2-Chlorotoluene	20.0	21.7	108	75 - 125	
4-Chlorotoluene	20.0	22.0	110	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	23.0	115	50 - 130	
1,2-Dibromoethane	20.0	21.5	107	80 - 120	
Dibromomethane	20.0	20.6	103	75 - 125	
1,2-Dichlorobenzene	20.0	21.4	107	70 - 120	
1,3-Dichlorobenzene	20.0	21.0	105	75 - 125	
1,4-Dichlorobenzene	20.0	22.3	112	75 - 125	
Dichlorodifluoromethane	20.0	19.9	99.6	30 - 155	
1,1-Dichloroethane	20.0	20.5	103	70 - 135	
1,2-Dichloroethane	20.0	22.0	110	70 - 130	
1,1-Dichloroethene	20.0	20.6	103	70 - 130	
cis-1,2-Dichloroethene	20.0	21.5	108	70 - 125	
trans-1,2-Dichloroethene	20.0	21.2	106	60 - 140	
1,2-Dichloropropane	20.0	22.4	112	75 - 125	
1,3-Dichloropropane	20.0	22.8	114	75 - 125	
2,2-Dichloropropane	20.0	21.6	108	70 - 135	
cis-1,3-Dichloropropene	20.0	24.2	121	70 - 130	
trans-1,3-Dichloropropene	20.0	22.1	110	55 - 140	
1,1-Dichloropropene	20.0	20.8	104	75 - 130	
Ethylbenzene	20.0	20.9	104	75 - 125	
2-Hexanone	20.0	20.7	104	55 - 130	
Hexachlorobutadiene	20.0	22.1	111	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4808691
Report generated: 06/16/2016 13:21

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060497 Run Date: 06/14/2016 Sample ID: WG572625-02
Instrument ID: HPMS6 Run Time: 16:21 Prep Method: 5030B/5030C/503
File ID: 6M140058 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG572625 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD76597 Cal ID: HPMS6-01-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	22.4	112	75 - 125	
p-Isopropyltoluene	20.0	21.9	110	75 - 130	
4-Methyl-2-pentanone	20.0	20.8	104	60 - 135	
Methylene chloride	20.0	20.6	103	55 - 140	
Naphthalene	20.0	20.5	103	55 - 140	
n-Propylbenzene	20.0	22.8	114	70 - 130	
Styrene	20.0	22.4	112	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	21.3	107	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	20.9	105	65 - 130	
Tetrachloroethene	20.0	19.9	99.7	45 - 150	
Toluene	20.0	21.2	106	75 - 120	
1,2,3-Trichlorobenzene	20.0	21.2	106	55 - 140	
1,2,4-Trichlorobenzene	20.0	21.9	110	65 - 135	
1,1,1-Trichloroethane	20.0	21.1	106	65 - 130	
1,1,2-Trichloroethane	20.0	21.3	107	75 - 125	
Trichloroethene	20.0	21.5	107	70 - 125	
Trichlorofluoromethane	20.0	21.3	106	60 - 145	
1,2,3-Trichloropropane	20.0	21.8	109	75 - 125	
1,2,4-Trimethylbenzene	20.0	21.5	108	75 - 130	
1,3,5-Trimethylbenzene	20.0	22.2	111	75 - 130	
Vinyl chloride	20.0	19.7	98.3	50 - 145	
o-Xylene	20.0	22.3	111	80 - 120	
m-,p-Xylene	40.0	43.6	109	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	101	85 - 115	PASS
1,2-Dichloroethane-d4	103	70 - 120	PASS
Toluene-d8	99.7	85 - 120	PASS
4-Bromofluorobenzene	103	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4808691
Report generated: 06/16/2016 13:21

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16060497 Cal ID: HPMS6- 01-JUN-16 Worknum: WG572625

Instrument ID: HPMS6 Contract #: Prep Method: 5030B/5030C/

Parent ID: L16060497-01 File ID: 6M140065 Dil: 1 Method: 5035A

Sample ID: L16060497-02 MS File ID: 6M140059 Dil: 1 Matrix: 8260B

Sample ID: L16060497-03 MSD File ID: 6M140060 Dil: 1 Units: Water ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,1,1,2-Tetrachloroethane	U	20.0	20.9	105	20.0	21.1	105	0.708	80 - 130	30	
1,1,1-Trichloroethane	U	20.0	20.7	103	20.0	20.6	103	0.247	65 - 130	30	
1,1,2,2-Tetrachloroethane	U	20.0	21.4	107	20.0	21.2	106	1.22	65 - 130	30	
1,1,2-Trichloroethane	U	20.0	21.2	106	20.0	21.1	106	0.430	75 - 125	30	
1,1-Dichloroethane	U	20.0	19.7	98.6	20.0	19.9	99.3	0.691	70 - 135	30	
1,1-Dichloroethene	U	20.0	19.8	99.1	20.0	19.6	97.9	1.26	70 - 130	30	
1,1-Dichloropropene	U	20.0	20.3	101	20.0	20.1	100	1.01	75 - 130	30	
1,2,3-Trichlorobenzene	U	20.0	21.0	105	20.0	20.5	102	2.78	55 - 140	30	
1,2,3-Trichloropropane	U	20.0	21.4	107	20.0	21.3	107	0.227	75 - 125	30	
1,2,4-Trichlorobenzene	U	20.0	21.9	109	20.0	21.3	106	2.78	65 - 135	30	
1,2,4-Trimethylbenzene	U	20.0	21.5	107	20.0	21.2	106	1.25	75 - 130	30	
1,2-Dibromo-3-chloropropane	U	20.0	22.7	114	20.0	22.6	113	0.583	50 - 130	30	
1,2-Dibromoethane	U	20.0	21.0	105	20.0	21.0	105	0.0108	80 - 120	30	
1,2-Dichlorobenzene	U	20.0	21.3	107	20.0	21.1	106	0.931	70 - 120	30	
1,2-Dichloroethane	U	20.0	21.3	107	20.0	21.4	107	0.553	70 - 130	30	
1,2-Dichloropropane	U	20.0	22.0	110	20.0	21.8	109	0.635	75 - 125	30	
1,3,5-Trimethylbenzene	U	20.0	22.0	110	20.0	21.6	108	1.63	75 - 130	30	
1,3-Dichlorobenzene	U	20.0	20.7	104	20.0	20.5	103	1.05	75 - 125	30	
1,3-Dichloropropane	U	20.0	22.2	111	20.0	22.2	111	0.207	75 - 125	30	
1,4-Dichlorobenzene	U	20.0	22.2	111	20.0	22.0	110	0.966	75 - 125	30	
2,2-Dichloropropane	U	20.0	22.1	111	20.0	21.8	109	1.33	70 - 135	30	
2-Butanone	U	20.0	20.7	103	20.0	21.2	106	2.44	30 - 150	30	
2-Chlorotoluene	U	20.0	21.4	107	20.0	21.8	109	1.93	75 - 125	30	
2-Hexanone	U	20.0	20.4	102	20.0	20.4	102	0.0737	55 - 130	30	
4-Chlorotoluene	U	20.0	21.9	110	20.0	20.9	104	5.06	75 - 130	30	
4-Methyl-2-pentanone	U	20.0	20.0	99.8	20.0	20.7	103	3.42	60 - 135	30	
Acetone	U	20.0	18.9	94.3	20.0	21.3	107	12.4	40 - 140	30	
Benzene	U	20.0	20.6	103	20.0	20.3	102	1.25	80 - 120	30	
Bromobenzene	U	20.0	20.1	100	20.0	20.0	100	0.428	75 - 125	30	
Bromochloromethane	U	20.0	20.3	101	20.0	20.5	102	0.872	65 - 130	30	
Bromodichloromethane	U	20.0	21.4	107	20.0	21.5	107	0.441	75 - 120	30	
Bromoform	U	20.0	19.3	96.5	20.0	19.4	96.9	0.388	70 - 130	30	
Bromomethane	U	20.0	16.8	84.2	20.0	16.3	81.6	3.13	30 - 145	30	
Carbon disulfide	U	20.0	18.8	94.1	20.0	18.8	93.9	0.152	35 - 160	30	
Carbon tetrachloride	U	20.0	20.9	104	20.0	20.5	103	1.57	65 - 140	30	
Chlorobenzene	U	20.0	20.7	103	20.0	20.5	103	0.579	80 - 120	30	
Chloroethane	U	20.0	18.2	91	20.0	18.2	91	0.0524	60 - 135	30	
Chloroform	U	20.0	20.7	103	20.0	20.7	104	0.267	65 - 135	30	
Chloromethane	U	20.0	17.0	85.1	20.0	17.2	86.1	1.17	40 - 125	30	
cis-1,2-Dichloroethene	U	20.0	21.1	105	20.0	21.2	106	0.382	70 - 125	30	
cis-1,3-Dichloropropene	U	20.0	24.0	120	20.0	24.1	120	0.247	70 - 130	30	

MS_MSD - Modified 03/06/2008
PDF File ID: 4808692
Report generated 06/16/2016 13:21

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16060497 Cal ID: HPMS6 01-JUN-16 Worknum: WG572625

Instrument ID: HPMS6 Contract #: Prep Method: 5030B/5030C/

Parent ID: L16060497-01 File ID: 6M140065 Dil: 1 Method: 5035A

Sample ID: L16060497-02 MS File ID: 6M140059 Dil: 1 Matrix: 8260B

Sample ID: L16060497-03 MSD File ID: 6M140060 Dil: 1 Units: Water ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Chlorodibromomethane	U	20.0	21.0	105	20.0	20.8	104	1.08	60 - 135	30	
Dibromomethane	U	20.0	20.1	101	20.0	20.4	102	1.29	75 - 125	30	
Dichlorodifluoromethane	U	20.0	19.4	96.8	20.0	19.2	95.8	1.07	30 - 155	30	
Ethylbenzene	U	20.0	20.4	102	20.0	20.5	102	0.282	75 - 125	30	
Hexachlorobutadiene	U	20.0	22.3	112	20.0	22.0	110	1.44	50 - 140	30	
Isopropylbenzene	U	20.0	21.8	109	20.0	21.5	108	1.26	75 - 125	30	
m-,p-Xylene	U	40.0	42.4	106	40.0	42.2	106	0.486	75 - 130	30	
Methylene chloride	2.04	20.0	21.8	99	20.0	22.2	101	1.75	55 - 140	30	
n-Butylbenzene	U	20.0	21.9	110	20.0	21.4	107	2.43	70 - 135	30	
n-Propylbenzene	U	20.0	22.6	113	20.0	22.3	111	1.29	70 - 130	30	
Naphthalene	U	20.0	20.4	102	20.0	20.2	101	0.806	55 - 140	30	
o-Xylene	U	20.0	21.7	108	20.0	21.6	108	0.484	80 - 120	30	
p-Isopropyltoluene	U	20.0	22.1	110	20.0	21.4	107	3.26	75 - 130	30	
sec-Butylbenzene	U	20.0	22.0	110	20.0	21.5	107	2.30	70 - 125	30	
Styrene	U	20.0	21.9	109	20.0	21.6	108	1.21	65 - 135	30	
tert-Butylbenzene	U	20.0	21.3	106	20.0	20.9	104	2.05	70 - 130	30	
Tetrachloroethene	U	20.0	19.4	97.2	20.0	19.2	95.9	1.37	45 - 150	30	
Toluene	U	20.0	20.6	103	20.0	20.5	102	0.545	75 - 120	30	
trans-1,2-Dichloroethene	U	20.0	20.1	100	20.0	20.4	102	1.45	60 - 140	30	
trans-1,3-Dichloropropene	U	20.0	21.5	107	20.0	21.7	108	0.799	55 - 140	30	
Trichloroethene	1.02	20.0	21.4	102	20.0	21.2	101	0.787	70 - 125	30	
Trichlorofluoromethane	U	20.0	20.9	105	20.0	20.9	105	0.167	60 - 145	30	
Vinyl chloride	U	20.0	18.7	93.6	20.0	19.0	95.1	1.54	50 - 145	30	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4808692
Report generated 06/16/2016 13:21

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060497
Instrument: HPMS6
Analyst: JDS
Workgroup: WG566155

Tune ID: WG566155-01
Run Date: 04/24/2016
Run Time: 16:33
File ID: 6M138750
Cal ID: HPMS6 - 24-APR-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.5	10010	PASS
75.0	95.0	30.0	60.0	52.0	23152	PASS
95.0	95.0	100	100	100	44552	PASS
96.0	95.0	5.00	9.00	6.92	3085	PASS
173	174	0	2.00	0.346	113	PASS
174	95.0	50.0	100	73.2	32632	PASS
175	174	5.00	9.00	7.16	2336	PASS
176	174	95.0	101	99.2	32384	PASS
177	176	5.00	9.00	6.95	2251	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG566155-02	STD	01	04/24/2016 16:59	
WG566155-03	STD	01	04/24/2016 17:31	
WG566155-04	STD	01	04/24/2016 18:03	
WG566155-05	STD-CCV	01	04/24/2016 18:36	
WG566155-06	STD	01	04/24/2016 19:08	
WG566155-07	STD	01	04/24/2016 19:40	
WG566155-08	STD	01	04/24/2016 20:12	
WG566155-09	STD	01	04/24/2016 20:44	
WG566155-10	SSCV	01	04/24/2016 22:21	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4808694
Report generated 06/16/2016 13:21

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060497
Instrument: HPMS6
Analyst: TMB
Workgroup: WG570915

Tune ID: WG570915-01
Run Date: 06/01/2016
Run Time: 12:04
File ID: 6M139735
Cal ID: HPMS6 - 01-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.0	10283	PASS
75.0	95.0	30.0	60.0	48.7	22744	PASS
95.0	95.0	100	100	100	46704	PASS
96.0	95.0	5.00	9.00	7.26	3392	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	79.6	37192	PASS
175	174	5.00	9.00	7.41	2756	PASS
176	174	95.0	101	97.2	36149	PASS
177	176	5.00	9.00	6.58	2378	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG570915-02	STD	01	06/01/2016 12:30	
WG570915-03	STD	01	06/01/2016 13:01	
WG570915-04	STD	01	06/01/2016 13:33	
WG570915-05	STD	01	06/01/2016 14:06	
WG570915-06	STD	01	06/01/2016 14:38	
WG570915-07	STD	01	06/01/2016 15:10	
WG570915-08	STD-CCV	01	06/01/2016 15:43	
WG570915-09	STD	01	06/01/2016 16:15	
WG570915-10	STD	01	06/01/2016 16:47	
WG570915-11	STD	01	06/01/2016 17:19	
WG570915-12	SSCV	01	06/01/2016 18:56	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4808694
Report generated 06/16/2016 13:21

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060497
Instrument: HPMS6
Analyst: TMB
Workgroup: WG572624

Tune ID: WG572624-01
Run Date: 06/14/2016
Run Time: 13:47
File ID: 6M140053
Cal ID: HPMS6 - 01-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.7	9633	PASS
75.0	95.0	30.0	60.0	50.0	22220	PASS
95.0	95.0	100	100	100	44434	PASS
96.0	95.0	5.00	9.00	6.85	3044	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	76.8	34120	PASS
175	174	5.00	9.00	7.54	2571	PASS
176	174	95.0	101	98.6	33634	PASS
177	176	5.00	9.00	7.32	2461	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG572624-02	CCV	01	06/14/2016 14:44	
WG572625-01	BLANK	01	06/14/2016 15:48	
WG572625-02	LCS	01	06/14/2016 16:21	
L16060497-02	18CPTMW06MS-060816	01	06/14/2016 16:53	
L16060497-03	18CPTMW06MSD-060816	01	06/14/2016 17:25	
L16060497-05	TRIP BLANK	01	06/14/2016 19:34	
L16060497-01	18CPTMW06-060816	01	06/14/2016 20:06	
L16060497-04	MW22-060816	DL01	06/14/2016 20:38	
WG572625-06	BLANK2	01	06/15/2016 02:31	*
WG572425-01	FBLK1	DL01	06/15/2016 05:11	*

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4808694
Report generated 06/16/2016 13:21

Calibration Table Report
Method: A9FOOWT.M
Title: A9-FOO Water - IC: 042416 - HPMS6
Last Calibration: Wed Apr 27 16:03:33 2016
Curve: WG566155
Calibration Files

	Compound	5 6M138751.D	20 6M138752.D	50 6M138753.D	100 6M138754.D	200 6M138755.D	300 6M138756.D	400 6M138757.D	500 6M138758.D	Avg	%RSD
I	Fluorobenzene	ISTD									
T	Acetonitrile	0.036	0.037	0.039	0.038	0.038	0.038	0.038	0.036	0.037	2.606
T	3-Chloro-1-propene	0.567	0.621	0.656	0.672	0.635	0.622	0.617	0.603	0.624	5.157
T	2-Chloro-1,3-butadiene	0.415	0.507	0.558	0.590	0.558	0.553	0.556	0.548	0.535	10.001
T	Ethyl Acetate	0.229	0.259	0.279	0.281	0.277	0.272	0.279	0.268	0.268	6.419
T	Methacrylonitrile	0.071	0.089	0.099	0.099	0.097	0.095	0.096	0.093	0.092	9.852
T	Isobutyl Alcohol		0.008	0.008	0.007	0.007	0.008	0.010	0.010	0.009	13.654
T	1-Butanol									0.000	0.000
T	Methyl methacrylate	0.159	0.200	0.231	0.244	0.244	0.241	0.246	0.236	0.225	13.591
T	2-Nitropropane			0.079	0.082	0.085	0.085	0.088	0.084	0.084	3.643
I	Chlorobenzene-d5	ISTD									
I	1,4-Dichlorobenzene-d4	ISTD									
T	Cyclohexanone			0.026	0.027	0.032	0.034	0.035	0.033	0.031	12.127

Wed Apr 27 16:05:59 2016

Calibration Table Report
Method: 8260WT.M
Title: 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Calibration: Thu Jun 02 12:19:33 2016
Curve: WG570915
Calibration Files

	Compound	0.3 6M139736.D	0.4 6M139737.D	1 6M139738.D	2 6M139739.D	5 6M139740.D	20 6M139741.D	50 6M139742.D	100 6M139743.D	200 6M139744.D	300 6M139745.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.368	0.389	0.360	0.417	0.428	0.427	0.416	0.361	0.396	7.472		
P	Chloromethane			0.508	0.532	0.486	0.500	0.497	0.488	0.465	0.385	0.482	9.076		
C	Vinyl Chloride		0.401	0.350	0.343	0.312	0.323	0.317	0.315	0.304	0.262	0.325	11.731		
T	1,3-Butadiene					0.284	0.265	0.185	0.182	0.173	0.159	0.208	25.270	0.993	
T	Bromomethane			0.159	0.168	0.144	0.137	0.153	0.170	0.184	0.167	0.160	9.429		
T	Chloroethane			0.212	0.219	0.210	0.206	0.204	0.204	0.204	0.186	0.206	4.708		
T	Trichlorofluoromethane		0.437	0.445	0.470	0.433	0.436	0.435	0.434	0.431	0.399	0.436	4.163		
T	Diethyl ether			0.220	0.247	0.237	0.230	0.236	0.237		0.232	0.234	3.554		
T	Isoprene					0.355	0.373	0.369	0.380	0.375	0.368	0.370	2.297		
T	Acrolein				0.038	0.040	0.038	0.039	0.041		0.040	0.040	2.934		
T	1,1,2-Trichloro-1,2,2-Trifluoroe			0.237	0.269	0.247	0.245	0.249	0.250	0.252	0.241	0.249	3.880		
T	Acetone					0.103	0.074	0.075	0.074	0.072	0.067	0.078	16.625	0.999	
C	1,1-Dichloroethene		0.464	0.431	0.455	0.435	0.429	0.438	0.440	0.447	0.425	0.441	2.860		
T	Tert-Butyl Alcohol			0.019	0.021	0.022	0.022	0.023	0.024		0.021	0.022	7.217		
T	Dimethyl Sulfide					0.191	0.206	0.203	0.205	0.206	0.203	0.202	2.776		
T	Iodomethane				0.048	0.105	0.188	0.192	0.194	0.191	0.176	0.156	36.677	0.997	
T	Methyl acetate					0.225	0.218	0.215	0.216	0.212	0.208	0.216	2.557		
T	Methylene Chloride			0.290	0.301	0.275	0.263	0.262	0.260	0.267	0.256	0.272	5.900		
T	Carbon Disulfide			0.869	0.917	0.858	0.877	0.860	0.869	0.852	0.792	0.862	3.999		
T	Acrylonitrile			0.088	0.092	0.090	0.093	0.101	0.100		0.102	0.095	5.996		
T	Methyl Tert Butyl Ether			0.638	0.686	0.655	0.655	0.669	0.668	0.678	0.655	0.663	2.281		
T	trans-1,2-Dichloroethene		0.254	0.252	0.269	0.253	0.255	0.257	0.257	0.262	0.253	0.257	2.039		
T	n-Hexane					0.407	0.403	0.398	0.405	0.399	0.387	0.400	1.831		
T	Diisopropyl ether			1.043	1.114	1.089	1.056	1.078	1.065		1.007	1.064	3.213		
T	Vinyl Acetate					0.421	0.424	0.454	0.438	0.497	0.478	0.452	6.758		
P	1,1-Dichloroethane		0.527	0.521	0.544	0.508	0.506	0.505	0.507	0.516	0.499	0.515	2.718		
T	Ethyl-Tert-Butyl ether			0.841	0.896	0.884	0.864	0.890	0.881		0.843	0.871	2.557		
T	2-Butanone					0.121	0.109	0.114	0.115	0.113	0.104	0.113	5.044		
T	Propionitrile			0.028	0.032	0.031	0.032	0.033	0.033		0.029	0.031	6.795		
T	2,2-Dichloropropane		0.374	0.389	0.411	0.378	0.356	0.362	0.369	0.376	0.361	0.375	4.479		
T	cis-1,2-Dichloroethene		0.263	0.280	0.292	0.281	0.276	0.282	0.280	0.288	0.277	0.280	2.886		
C	Chloroform	0.482	0.449	0.447	0.491	0.459	0.450	0.452	0.451	0.460	0.442	0.458	3.416		
T	1-Bromopropane			0.026	0.043	0.048	0.046	0.046	0.047	0.047	0.046	0.044	16.515	1.000	
T	Bromochloromethane		0.151	0.151	0.167	0.159	0.160	0.161	0.161	0.164	0.157	0.159	3.527		
T	Tetrahydrofuran			0.095	0.078	0.075	0.074	0.077	0.076		0.070	0.078	10.111		
S	Dibromofluoromethane				0.257	0.255	0.269	0.262	0.256	0.260	0.253	0.259	2.029		
T	1,1,1-Trichloroethane		0.436	0.383	0.433	0.400	0.393	0.404	0.408	0.419	0.403	0.409	4.334		
T	Cyclohexane			0.487	0.535	0.494	0.516	0.511	0.523	0.524	0.509	0.512	3.081		
T	1,1-Dichloropropene			0.340	0.358	0.349	0.344	0.350	0.355	0.361	0.346	0.350	2.036		
T	Tert-Amyl-Methyl ether			0.641	0.688	0.677	0.666	0.686	0.691		0.671	0.674	2.592		
T	Carbon Tetrachloride		0.358	0.347	0.378	0.35	0.356	0.37	0.377	0.379	0.367	0.36473	3.3573		
S	1,2-Dichloroethane-d4				0.29	0.283	0.299	0.288	0.282	0.282	0.272	0.28519	2.87577		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.365	0.344	0.373	0.347	0.343	0.35	0.349	0.356	0.342	0.35222	3.02016		
T	Benzene		1.124	1.064	1.107	1.037	1.005	1.01	1.002	0.995	0.9	1.02701	6.51675		
T	Trichloroethene		0.258	0.271	0.275	0.256	0.259	0.262	0.264	0.265	0.251	0.2623	2.78541		
T	Methylcyclohexane					0.394	0.401	0.396	0.405	0.402	0.388	0.39768	1.59426		
C	1,2-Dichloropropane		0.277	0.281	0.294	0.283	0.278	0.284	0.285	0.292	0.28	0.28367	2.04718		
T	1,4-Dioxane					0.002	0.002	0.002	0.002		0.002	0.00202	8.64372		
T	Bromodichloromethane		0.332	0.346	0.359	0.34	0.343	0.355	0.355	0.363	0.346	0.34886	2.85717		
T	Dibromomethane		0.14	0.142	0.148	0.145	0.146	0.15	0.149	0.153	0.145	0.14638	2.73027		
T	2-Chloroethyl Vinyl Ether				0.12	0.118	0.133	0.141	0.138	0.134	0.122	0.12947	7.05634		
T	4-Methyl-2-Pentanone					0.077	0.085	0.091	0.091	0.091	0.083	0.08617	6.68181		
T	cis-1,3-Dichloropropene		0.354	0.356	0.398	0.395	0.399	0.413	0.415	0.425	0.4	0.39484	6.23009		
T	Dimethyl Disulfide					0.183	0.218	0.231	0.241	0.249	0.243	0.22747	10.8008		
I	Chlorobenzene-d5	ISTD													
S	Toluene-d8				1.251	1.228	1.225	1.176	1.161	1.169	1.189	1.19981	2.90775		
C	Toluene		1.473	1.426	1.524	1.458	1.418	1.408	1.402	1.382	1.285	1.41964	4.6754		
T	Ethyl Methacrylate			0.306	0.362	0.365	0.398	0.411	0.421	0.426	0.424	0.38902	10.8195		
T	Paraldehyde											0	0		
T	trans-1,3-Dichloropropene			0.421	0.476	0.468	0.478	0.498	0.501	0.517	0.51	0.4835	6.35458		
T	1,1,2-Trichloroethane		0.272	0.252	0.282	0.268	0.269	0.273	0.271	0.276	0.269	0.27029	3.02397		
T	2-Hexanone					0.221	0.217	0.233	0.237	0.24	0.227	0.22936	3.87639		
T	1,3-Dichloropropane		0.467	0.467	0.498	0.469	0.473	0.479	0.475	0.481	0.466	0.47522	2.15067		
T	Tetrachloroethene		0.377	0.386	0.393	0.377	0.362	0.364	0.362	0.366	0.364	0.37239	3.0474		
T	Dibromochloromethane		0.334	0.328	0.341	0.335	0.34	0.354	0.356	0.362	0.349	0.3444	3.3424		
T	1,2-Dibromoethane		0.256	0.24	0.267	0.254	0.263	0.268	0.269	0.271	0.262	0.26125	3.70682		
T	1-Chlorohexane		0.42	0.416	0.457	0.451	0.472	0.482	0.487	0.486	0.478	0.46097	5.97256		
P	Chlorobenzene		0.984	0.972	1.04	0.972	0.93	0.933	0.926	0.927	0.865	0.9499	5.17962		
T	1,1,1,2-Tetrachloroethane		0.333	0.322	0.341	0.342	0.344	0.353	0.356	0.365	0.346	0.34453	3.65039		
C	Ethylbenzene		0.485	0.495	0.519	0.505	0.492	0.508	0.508	0.524	0.498	0.50384	2.47296		
T	m-,p-Xylene		0.627	0.587	0.625	0.612	0.603	0.606	0.606	0.592	0.53	0.59856	4.81039		
T	o-Xylene			0.554	0.6	0.592	0.595	0.603	0.604	0.613	0.571	0.59151	3.29999		
T	Styrene		0.817	0.867	0.983	0.988	1.024	1.054	1.069	1.071	0.967	0.98236	9.03093		
P	Bromoform			0.191	0.199	0.198	0.213	0.228	0.239	0.248	0.233	0.21851	9.8506		
T	Isopropylbenzene		1.479	1.461	1.525	1.509	1.513	1.549	1.55	1.495	1.282	1.48477	5.4827		
I	1,4-Dichlorobenzene-d4	ISTD													
P	1,1,2,2-Tetrachloroethane		0.587	0.595	0.639	0.592	0.581	0.6	0.6	0.623	0.608	0.60275	3.02728		
S	p-Bromofluorobenzene				0.883	0.881	0.916	0.873	0.863	0.883	0.881	0.88281	1.83022		

T	1,2,3-Trichloropropane			0.168	0.192	0.163	0.17	0.176	0.176	0.178	0.175	0.17451	4.94444	
T	trans-1,4-Dichloro-2-Butene			0.107	0.15	0.163	0.191	0.205	0.217	0.219	0.221	0.18403	22.2298	0.999
T	n-Propylbenzene		3.439	3.272	3.551	3.406	3.322	3.313	3.215	3.027	2.616	3.2401	8.53408	
T	Bromobenzene	0.84	0.754	0.764	0.805	0.762	0.737	0.736	0.727	0.748	0.73	0.76031	4.726	
T	1,3,5-Trimethylbenzene		2.174	2.282	2.426	2.351	2.342	2.342	2.317	2.311	2.086	2.29253	4.46771	
T	2-Chlorotoluene		2.453	2.255	2.502	2.26	2.177	2.144	2.165	2.112	1.907	2.21937	8.06439	
T	4-Chlorotoluene		1.999	2.118	2.186	2.154	2.046	2.063	1.99	2.054	1.936	2.06065	3.92778	
T	a-Methylstyrene					1.193	1.289	1.293	1.32	1.315	1.279	1.28165	3.60789	
T	tert-Butylbenzene			0.467	0.527	0.516	0.503	0.508	0.509	0.518	0.496	0.50542	3.60353	
T	1,2,4-Trimethylbenzene			2.289	2.555	2.468	2.45	2.451	2.435	2.403	2.149	2.39988	5.22721	
T	sec-Butylbenzene			2.845	3.007	2.916	2.875	2.877	2.866	2.757	2.424	2.82101	6.19277	
T	p-Isopropyltoluene			2.3	2.503	2.467	2.445	2.488	2.483	2.404	2.142	2.404	5.1767	
T	1,3-Dichlorobenzene		1.665	1.484	1.562	1.493	1.45	1.441	1.447	1.439	1.363	1.48259	5.84022	
T	1,4-Dichlorobenzene	2.703	1.755	1.595	1.633	1.463	1.435	1.445	1.445	1.434	1.353	1.62614	24.4079	0.999
T	n-Butylbenzene			2.15	2.352	2.307	2.306	2.359	2.37	2.304	2.055	2.27543	4.95243	
T	1,2-Dichlorobenzene	1.542	1.39	1.334	1.501	1.383	1.346	1.359	1.355	1.342	1.264	1.3816	5.91958	
T	1,2-Dibromo-3-Chloropropane				0.09	0.105	0.102	0.115	0.116	0.117	0.112	0.10824	9.10771	
T	1,2,4-Trichlorobenzene		0.991	0.897	0.97	0.944	0.955	0.967	0.967	0.977	0.928	0.95524	2.96669	
T	Hexachlorobutadiene		0.41	0.42	0.407	0.413	0.385	0.389	0.387	0.384	0.372	0.39643	4.16165	
T	Naphthalene		1.837	1.729	1.844	1.857	1.956	2.027	2.008	1.956	1.781	1.88827	5.46689	
T	1,2,3-Trichlorobenzene	0.981	0.939	0.873	0.921	0.896	0.892	0.903	0.895	0.893	0.847	0.90398	4.0381	

Thu Jun 02 14:04:26 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060497 Run Date: 06/01/2016 Sample ID: WG570915-12
Instrument ID: HPMS6 Run Time: 18:56 Method: 8260B
File ID: 6M139748 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG570915 Cal ID: HPMS6 - 01-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	49.5	ug/L	0.453	1.10	20	
1,1-Dichloroethene	CCC	50.0	48.1	ug/L	0.424	3.80	20	
1,2-Dichloropropane	CCC	50.0	52.4	ug/L	0.297	4.80	20	
Ethylbenzene	CCC	50.0	51.3	ug/L	0.517	2.60	20	
Toluene	CCC	50.0	51.7	ug/L	1.47	3.40	20	
Vinyl Chloride	CCC	50.0	48.8	ug/L	0.317	2.50	20	
Bromoform	SPCC	50.0	48.3	ug/L	0.211	3.50	20	
Chlorobenzene	SPCC	50.0	51.3	ug/L	0.974	2.50	20	
Chloromethane	SPCC	50.0	47.6	ug/L	0.460	4.70	20	
1,1-Dichloroethane	SPCC	50.0	48.0	ug/L	0.494	3.90	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	51.7	ug/L	0.623	3.40	20	
Acetone		50.0	50.0	ug/L	0.0727	0.100	20	
Benzene		50.0	50.0	ug/L	1.03	0	20	
Bromobenzene		50.0	50.0	ug/L	0.760	0	20	
Bromochloromethane		50.0	50.2	ug/L	0.160	0.400	20	
Bromodichloromethane		50.0	51.1	ug/L	0.356	2.10	20	
Bromomethane		50.0	45.5	ug/L	0.146	9.00	20	
2-Butanone		50.0	48.8	ug/L	0.110	2.40	20	
n-Butylbenzene		50.0	52.4	ug/L	2.39	4.80	20	
sec-Butylbenzene		50.0	53.8	ug/L	3.03	7.60	20	
tert-Butylbenzene		50.0	53.4	ug/L	0.540	6.80	20	
Carbon Disulfide		50.0	48.3	ug/L	0.833	3.40	20	
Carbon Tetrachloride		50.0	50.4	ug/L	0.367	0.700	20	
Dibromochloromethane		50.0	51.4	ug/L	0.354	2.80	20	
Chloroethane		50.0	51.4	ug/L	0.211	2.70	20	
2-Chlorotoluene		50.0	52.0	ug/L	2.31	4.00	20	
4-Chlorotoluene		50.0	53.6	ug/L	2.21	7.30	20	
1,2-Dibromo-3-Chloropropane		50.0	53.9	ug/L	0.117	7.80	20	
1,2-Dibromoethane		50.0	52.4	ug/L	0.274	4.80	20	
Dibromomethane		50.0	49.4	ug/L	0.145	1.20	20	
1,2-Dichlorobenzene		50.0	51.9	ug/L	1.43	3.80	20	
1,3-Dichlorobenzene		50.0	50.4	ug/L	1.49	0.800	20	
1,4-Dichlorobenzene		50.0	54.3	ug/L	1.52	8.50	20	
Dichlorodifluoromethane		50.0	54.6	ug/L	0.432	9.20	20	
1,2-Dichloroethane		50.0	50.5	ug/L	0.356	1.00	20	
cis-1,2-Dichloroethene		50.0	51.7	ug/L	0.289	3.50	20	
trans-1,2-Dichloroethene		50.0	50.9	ug/L	0.262	1.90	20	
1,3-Dichloropropane		50.0	54.6	ug/L	0.519	9.30	20	
2,2-Dichloropropane		50.0	48.0	ug/L	0.360	4.00	20	
cis-1,3-Dichloropropene		50.0	57.2	ug/L	0.452	14.4	20	
trans-1,3-Dichloropropene		50.0	52.9	ug/L	0.511	5.70	20	
1,1-Dichloropropene		50.0	49.7	ug/L	0.348	0.600	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4808693
Report generated 06/16/2016 13:21

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060497 Run Date: 06/01/2016 Sample ID: WG570915-12
Instrument ID: HPMS6 Run Time: 18:56 Method: 8260B
File ID: 6M139748 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG570915 Cal ID: HPMS6 - 01-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	48.5	ug/L	0.223	3.00	20	
Hexachlorobutadiene		50.0	53.5	ug/L	0.424	6.90	20	
Isopropylbenzene		50.0	53.4	ug/L	1.58	6.70	20	
p-Isopropyltoluene		50.0	53.2	ug/L	2.56	6.30	20	
4-Methyl-2-Pentanone		50.0	50.1	ug/L	0.0863	0.200	20	
Methylene Chloride		50.0	49.1	ug/L	0.267	1.90	20	
Naphthalene		50.0	48.9	ug/L	1.85	2.20	20	
n-Propylbenzene		50.0	55.1	ug/L	3.57	10.2	20	
Styrene		50.0	54.2	ug/L	1.07	8.40	20	
1,1,1,2-Tetrachloroethane		50.0	52.5	ug/L	0.362	5.10	20	
Tetrachloroethene		50.0	49.1	ug/L	0.365	1.90	20	
1,2,3-Trichlorobenzene		50.0	50.0	ug/L	0.905	0.100	20	
1,2,4-Trichlorobenzene		50.0	52.1	ug/L	0.996	4.30	20	
1,1,1-Trichloroethane		50.0	49.8	ug/L	0.407	0.400	20	
1,1,2-Trichloroethane		50.0	51.8	ug/L	0.280	3.50	20	
Trichloroethene		50.0	51.8	ug/L	0.272	3.60	20	
Trichlorofluoromethane		50.0	47.5	ug/L	0.414	5.00	20	
1,2,3-Trichloropropane		50.0	52.7	ug/L	0.184	5.50	20	
1,2,4-Trimethylbenzene		50.0	52.0	ug/L	2.50	4.10	20	
1,3,5-Trimethylbenzene		50.0	54.2	ug/L	2.48	8.40	20	
o-Xylene		50.0	53.6	ug/L	0.634	7.20	20	
m-,p-Xylene		100	106	ug/L	0.632	5.60	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4808693
Report generated 06/16/2016 13:21

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060497 Run Date: 06/14/2016 Sample ID: WG572624-02
Instrument ID: HPMS6 Run Time: 14:44 Method: 8260B
File ID: 6M140055 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG572625 Cal ID: HPMS6 - 01-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	51.5	ug/L	0.473	3.10	20	
1,1-Dichloroethene	CCC	50.0	51.9	ug/L	0.458	3.86	20	
1,2-Dichloropropane	CCC	50.0	51.7	ug/L	0.293	3.41	20	
Ethylbenzene	CCC	50.0	49.1	ug/L	0.495	1.80	20	
Toluene	CCC	50.0	49.9	ug/L	1.42	0.189	20	
Vinyl Chloride	CCC	50.0	44.6	ug/L	0.290	10.7	20	
Bromoform	SPCC	50.0	50.8	ug/L	0.222	1.69	20	
Chlorobenzene	SPCC	50.0	48.6	ug/L	0.923	2.88	20	
Chloromethane	SPCC	50.0	41.4	ug/L	0.400	17.2	20	
1,1-Dichloroethane	SPCC	50.0	51.0	ug/L	0.525	2.10	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.8	ug/L	0.600	0.429	20	
Xylenes		150	150	ug/L	0.595	0.0994	20	
Acetone		50.0	49.2	ug/L	0.0715	1.65	20	
Benzene		50.0	50.4	ug/L	1.04	0.822	20	
Bromobenzene		50.0	48.6	ug/L	0.740	2.71	20	
Bromochloromethane		50.0	51.1	ug/L	0.163	2.27	20	
Bromodichloromethane		50.0	52.5	ug/L	0.366	5.00	20	
Bromomethane		50.0	41.6	ug/L	0.133	16.7	20	
2-Butanone		50.0	50.4	ug/L	0.114	0.758	20	
n-Butylbenzene		50.0	51.9	ug/L	2.36	3.71	20	
sec-Butylbenzene		50.0	50.0	ug/L	2.82	0.00400	20	
tert-Butylbenzene		50.0	48.6	ug/L	0.491	2.86	20	
Carbon Disulfide		50.0	51.6	ug/L	0.890	3.24	20	
Carbon Tetrachloride		50.0	52.9	ug/L	0.386	5.76	20	
Dibromochloromethane		50.0	51.4	ug/L	0.354	2.79	20	
Chloroethane		50.0	42.3	ug/L	0.174	15.4	20	
2-Chlorotoluene		50.0	49.4	ug/L	2.19	1.18	20	
4-Chlorotoluene		50.0	50.4	ug/L	2.08	0.765	20	
1,2-Dibromo-3-Chloropropane		50.0	52.5	ug/L	0.114	4.93	20	
1,2-Dibromoethane		50.0	50.4	ug/L	0.263	0.808	20	
Dibromomethane		50.0	51.3	ug/L	0.150	2.68	20	
1,2-Dichlorobenzene		50.0	48.6	ug/L	1.34	2.76	20	
1,3-Dichlorobenzene		50.0	48.5	ug/L	1.44	3.04	20	
1,4-Dichlorobenzene		50.0	51.2	ug/L	1.44	2.33	20	
Dichlorodifluoromethane		50.0	49.0	ug/L	0.388	1.96	20	
1,2-Dichloroethane		50.0	51.2	ug/L	0.361	2.44	20	
cis-1,2-Dichloroethene		50.0	50.9	ug/L	0.285	1.82	20	
trans-1,2-Dichloroethene		50.0	51.1	ug/L	0.262	2.13	20	
1,3-Dichloropropane		50.0	50.2	ug/L	0.477	0.385	20	
2,2-Dichloropropane		50.0	55.4	ug/L	0.416	10.9	20	
cis-1,3-Dichloropropene		50.0	54.5	ug/L	0.431	9.07	20	
trans-1,3-Dichloropropene		50.0	53.0	ug/L	0.513	6.09	20	

CCV - Modified 03/05/2008
PDF File ID: 4808695
Report generated 06/16/2016 13:21

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060497 Run Date: 06/14/2016 Sample ID: WG572624-02
Instrument ID: HPMS6 Run Time: 14:44 Method: 8260B
File ID: 6M140055 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG572625 Cal ID: HPMS6 - 01-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	52.0	ug/L	0.364	3.92	20	
2-Hexanone		50.0	49.1	ug/L	0.225	1.78	20	
Hexachlorobutadiene		50.0	51.7	ug/L	0.410	3.34	20	
Isopropylbenzene		50.0	50.9	ug/L	1.51	1.73	20	
p-Isopropyltoluene		50.0	50.9	ug/L	2.45	1.81	20	
4-Methyl-2-Pentanone		50.0	51.0	ug/L	0.0879	1.96	20	
Methylene Chloride		50.0	49.0	ug/L	0.266	2.02	20	
Naphthalene		50.0	52.8	ug/L	1.99	5.50	20	
n-Propylbenzene		50.0	51.4	ug/L	3.33	2.71	20	
Styrene		50.0	52.4	ug/L	1.03	4.71	20	
1,1,1,2-Tetrachloroethane		50.0	50.7	ug/L	0.350	1.48	20	
Tetrachloroethene		50.0	47.7	ug/L	0.355	4.67	20	
1,2,3-Trichlorobenzene		50.0	48.6	ug/L	0.878	2.87	20	
1,2,4-Trichlorobenzene		50.0	50.3	ug/L	0.962	0.669	20	
1,1,1-Trichloroethane		50.0	51.8	ug/L	0.423	3.55	20	
1,1,2-Trichloroethane		50.0	49.8	ug/L	0.269	0.453	20	
Trichloroethene		50.0	50.0	ug/L	0.263	0.0606	20	
Trichlorofluoromethane		50.0	53.8	ug/L	0.469	7.62	20	
1,2,3-Trichloropropane		50.0	49.5	ug/L	0.173	1.08	20	
1,2,4-Trimethylbenzene		50.0	50.5	ug/L	2.42	0.967	20	
1,3,5-Trimethylbenzene		50.0	51.2	ug/L	2.35	2.31	20	
o-Xylene		50.0	50.1	ug/L	0.593	0.228	20	
m-,p-Xylene		100	99.7	ug/L	0.597	0.263	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4808695
Report generated 06/16/2016 13:21

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060497
Instrument ID: HPMS6
Workgroup (AAB#): WG572625

ICAL CCV Number: WG570915-08
CAL ID: HPMS6 - 01-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG570915-08	NA	NA	314779	551471	743292
Upper Limit	NA	NA	629558	1102942	1486584
Lower Limit	NA	NA	157390	275736	371646
L16060497-01	1.00	01	237696	447494	609930
L16060497-02	1.00	01	260112	472703	634384
L16060497-03	1.00	01	262401	473094	632876
L16060497-04	2.50	DL01	235659	441336	598584
L16060497-05	1.00	01	236035	449953	606851
WG572625-01	1.00	01	241553	461734	624517
WG572625-02	1.00	01	259174	461241	620315

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4810059
Report generated 06/16/2016 13:21

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060497
Instrument ID: HPMS6
Workgroup (AAB#): WG572625

ICAL CCV Number: WG570915-08
CAL ID: HPMS6 - 01-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG570915-08	NA	NA	19.65	16.06	11.57
Upper Limit	NA	NA	20.15	16.56	12.07
Lower Limit	NA	NA	19.15	15.56	11.07
L16060497-01	1.00	01	19.65	16.06	11.57
L16060497-02	1.00	01	19.65	16.06	11.56
L16060497-03	1.00	01	19.64	16.07	11.56
L16060497-04	2.50	DL01	19.65	16.06	11.57
L16060497-05	1.00	01	19.65	16.06	11.57
WG572625-01	1.00	01	19.65	16.06	11.57
WG572625-02	1.00	01	19.65	16.06	11.56

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4810060
Report generated: 06/16/2016 13:21

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140065.D Vial: 13
Acq On : 14 Jun 2016 20:06 Operator: TMB
Sample : L16060497-01 A REF 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 08:15:47 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	609930	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.06	117	447494	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	19.65	152	237696	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.38	111	159254	25.2286 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.92%		
43) 1,2-Dichloroethane-d4	11.11	65	179023	25.7302 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.92%		
58) Toluene-d8	13.85	98	538994	25.0972 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.40%		
80) p-Bromofluorobenzene	17.84	95	220078	26.2196 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.88%		

Target Compounds					Qvalue
3) Chloromethane	3.92	50	1578	0.1341 ug/L #	42
4) Vinyl Chloride	4.17	62	2337	0.2945 ug/L #	42
12) 1,1,2-Trichloro-1,2,2-Trif	6.55	101	12950	2.1335 ug/L	98
13) Acetone	6.66	43	2209	Below Cal #	48
16) Dimethyl Sulfide	7.30	62	1791	0.3630 ug/L #	1
19) Methylene Chloride	7.72	84	13509	2.0379 ug/L	96
26) Vinyl Acetate	9.03	43	1612	0.1462 ug/L #	78
47) Trichloroethene	12.15	130	6554	1.0242 ug/L	89
55) cis-1,3-Dichloropropene	13.55	75	1937	0.2011 ug/L #	46
60) Ethyl Methacrylate	13.86	69	1168	0.1677 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M140065.D 8260WT.M Wed Jun 15 08:15:50 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140065.D Vial: 13
Acq On : 14 Jun 2016 20:06 Operator: TMB
Sample : L16060497-01 A REF 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 8:16 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration

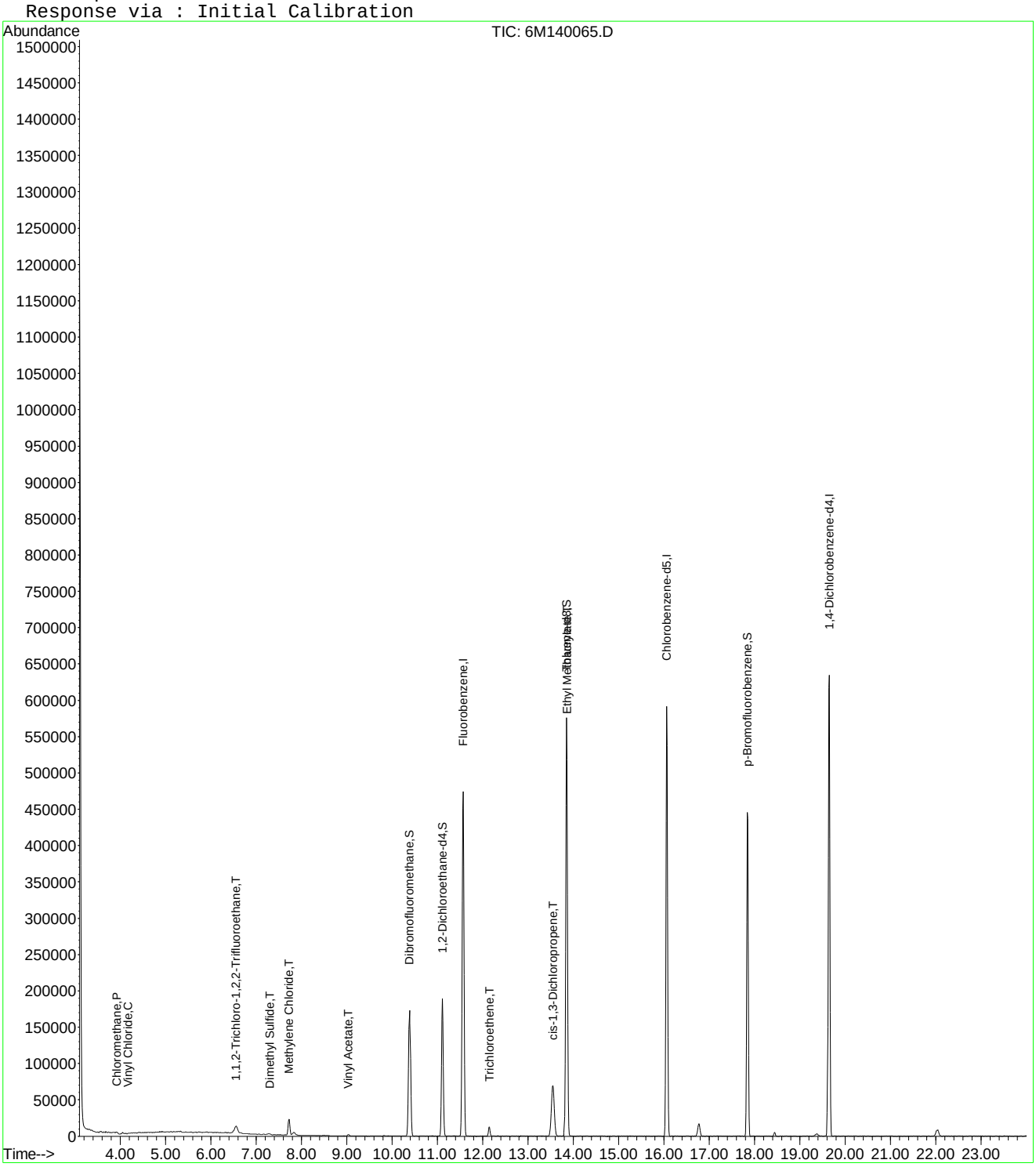

6M140065.D 8260WT.M Wed Jun 15 08:15:50 2016 Page 2

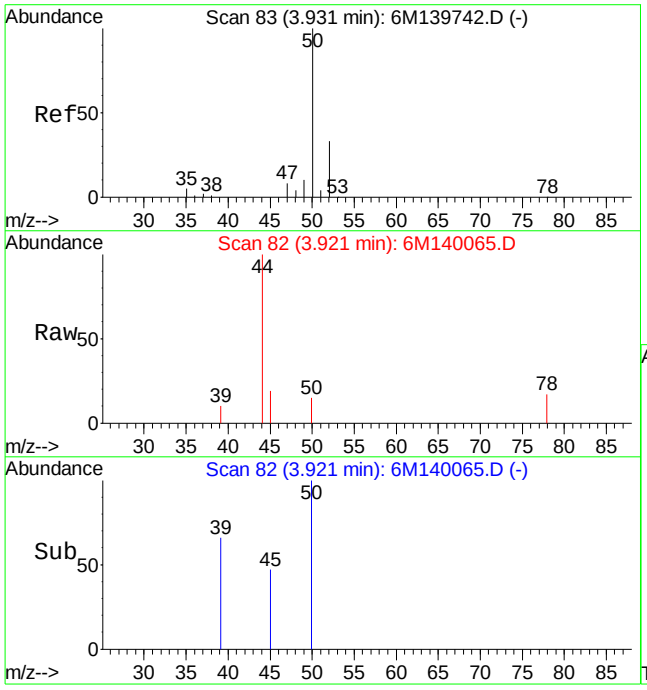

#3
Chloromethane
Concen: 0.13 ug/L
RT: 3.92 min Scan# 82
Delta R.T. -0.01 min
Lab File: 6M140065.D
Acq: 14 Jun 2016 20:06

Tgt Ion: 50 Resp: 1578

Ion	Ratio	Lower	Upper
50	100		
52	0.0	19.8	46.2#

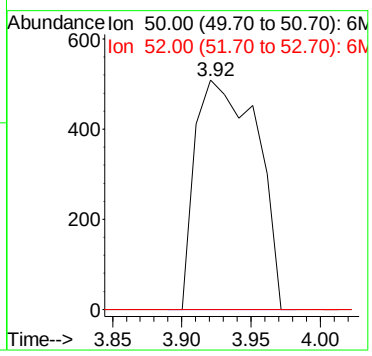

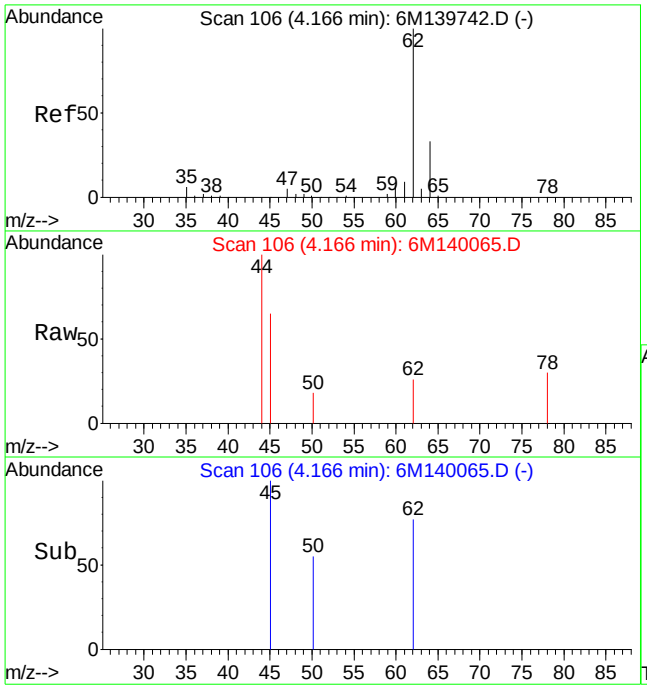

#4
Vinyl Chloride
Concen: 0.29 ug/L
RT: 4.17 min Scan# 106
Delta R.T. 0.01 min
Lab File: 6M140065.D
Acq: 14 Jun 2016 20:06

Tgt Ion: 62 Resp: 2337

Ion	Ratio	Lower	Upper
62	100		
64	0.0	19.3	45.1#

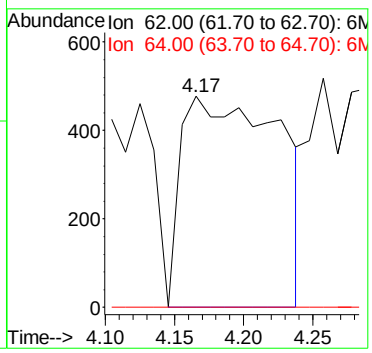

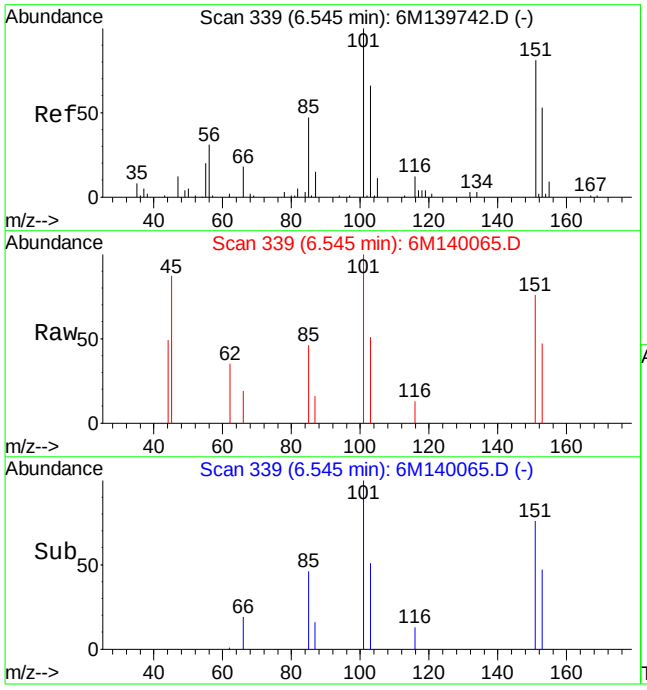

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 2.13 ug/L
RT: 6.55 min Scan# 339
Delta R.T. 0.00 min
Lab File: 6M140065.D
Acq: 14 Jun 2016 20:06

Tgt Ion:101 Resp: 12950

Ion	Ratio	Lower	Upper
101	100		
151	82.3	49.4	115.2
103	60.4	38.8	90.4

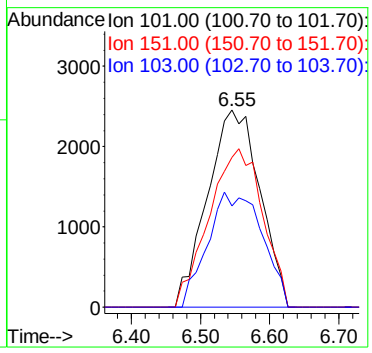

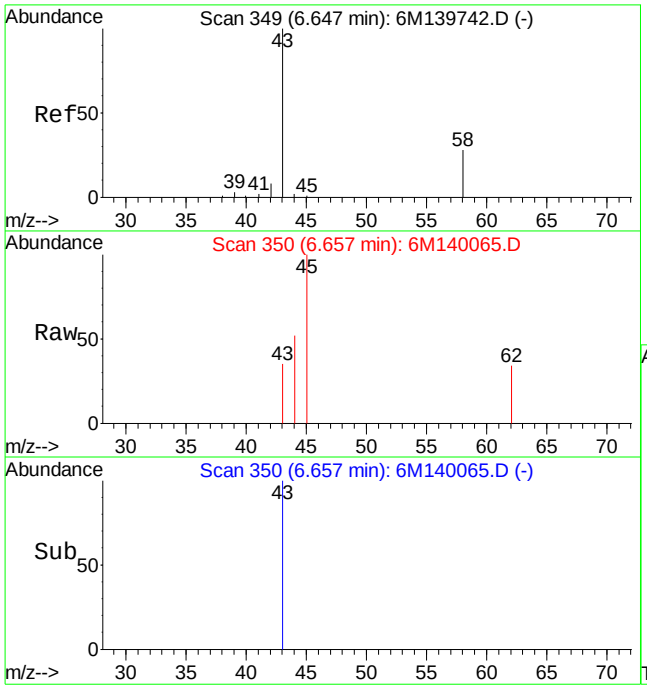

#13
Acetone
Concen: Below Cal
RT: 6.66 min Scan# 350
Delta R.T. 0.00 min
Lab File: 6M140065.D
Acq: 14 Jun 2016 20:06

Tgt Ion: 43 Resp: 2209

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

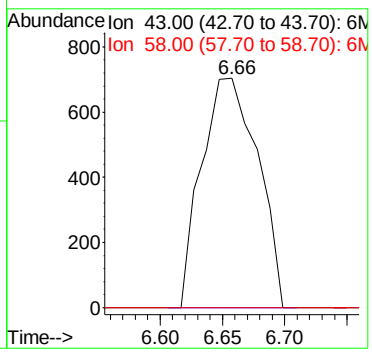

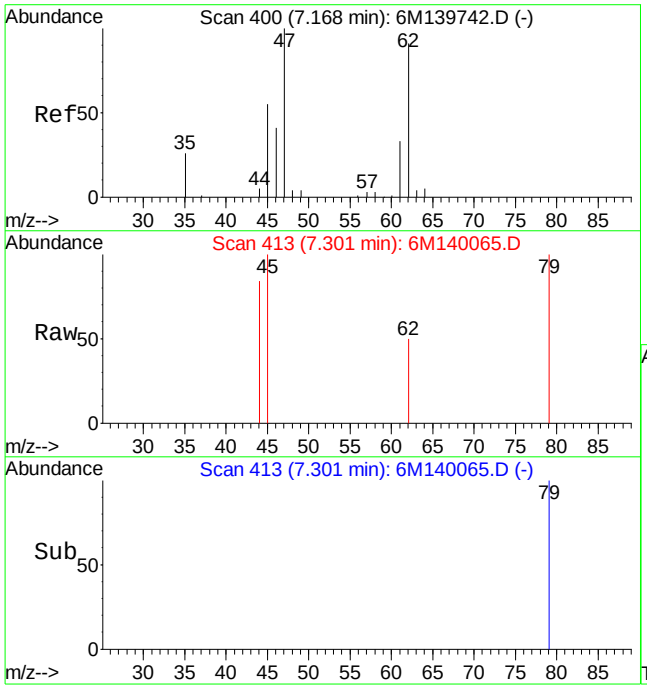

#16
Dimethyl Sulfide
Concen: 0.36 ug/L
RT: 7.30 min Scan# 413
Delta R.T. 0.14 min
Lab File: 6M140065.D
Acq: 14 Jun 2016 20:06

Tgt Ion: 62 Resp: 1791

Ion	Ratio	Lower	Upper
62	100		
47	0.0	64.7	151.1#

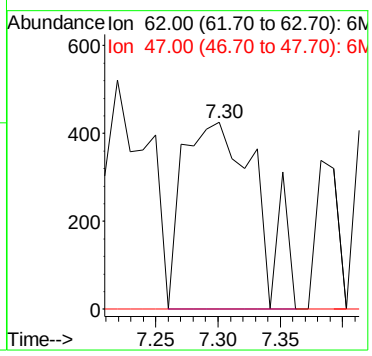

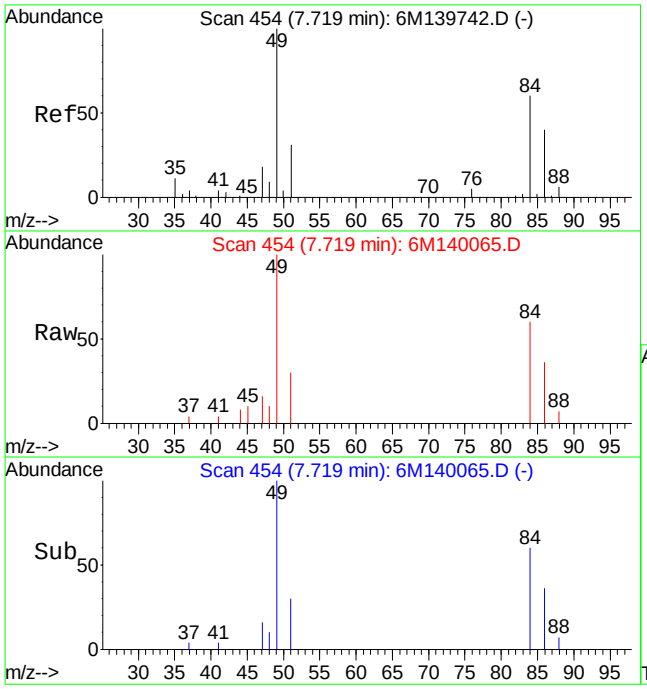

#19
Methylene Chloride
Concen: 2.04 ug/L
RT: 7.72 min Scan# 454
Delta R.T. 0.00 min
Lab File: 6M140065.D
Acq: 14 Jun 2016 20:06

Tgt Ion: 84 Resp: 13509

Ion	Ratio	Lower	Upper
84	100		
49	171.2	99.3	231.7

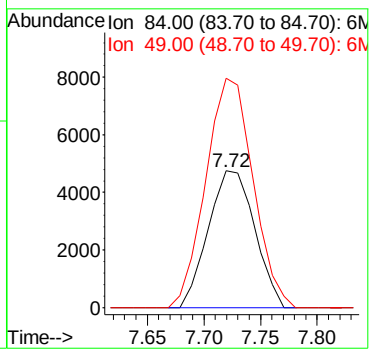

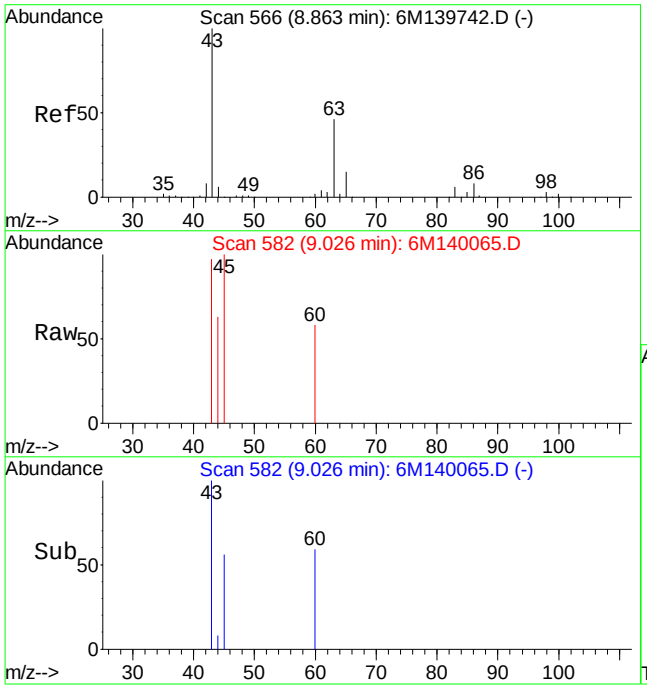

#26
Vinyl Acetate
Concen: 0.15 ug/L
RT: 9.03 min Scan# 582
Delta R.T. 0.16 min
Lab File: 6M140065.D
Acq: 14 Jun 2016 20:06

Tgt Ion: 43 Resp: 1612

Ion	Ratio	Lower	Upper
43	100		
86	0.0	4.5	10.5#

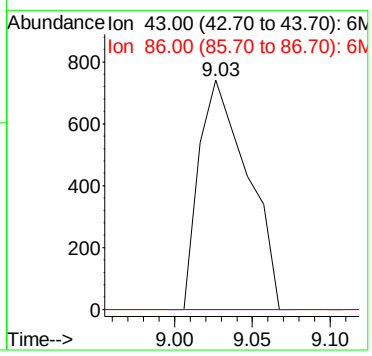

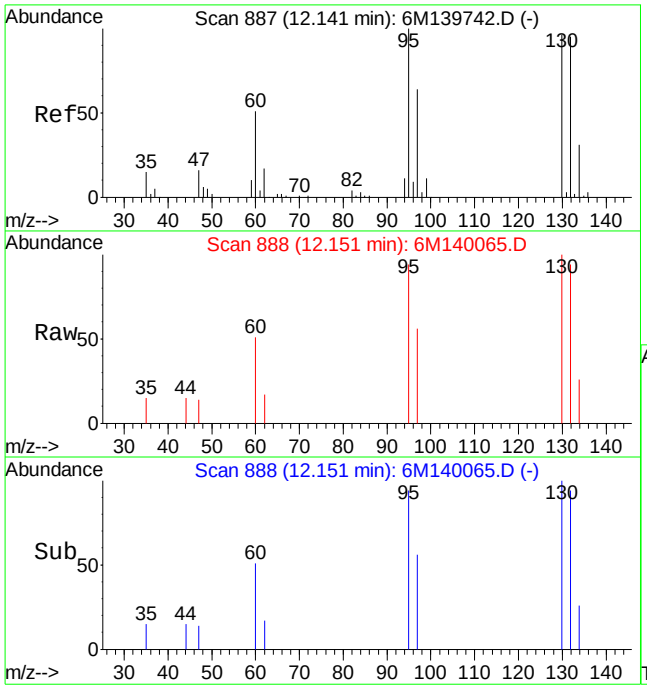

#47
Trichloroethene
Concen: 1.02 ug/L
RT: 12.15 min Scan# 888
Delta R.T. 0.00 min
Lab File: 6M140065.D
Acq: 14 Jun 2016 20:06

Tgt Ion:130 Resp: 6554

Ion	Ratio	Lower	Upper
130	100		
60	45.7	32.0	74.6

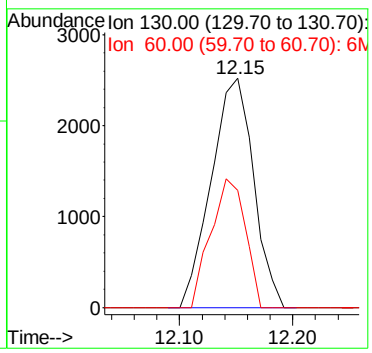

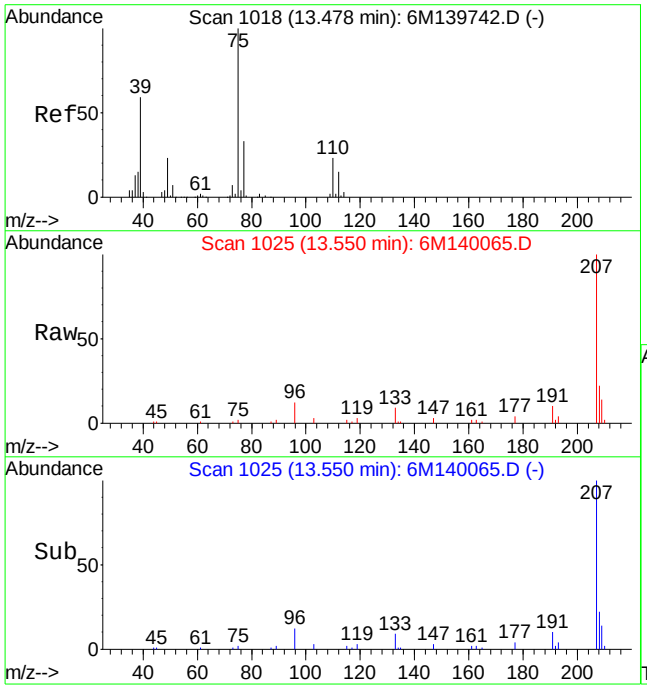

#55
cis-1,3-Dichloropropene
Concen: 0.20 ug/L
RT: 13.55 min Scan# 1025
Delta R.T. 0.07 min
Lab File: 6M140065.D
Acq: 14 Jun 2016 20:06

Tgt Ion: 75 Resp: 1937

Ion	Ratio	Lower	Upper
75	100		
77	0.0	19.5	45.5#
49	0.0	14.1	32.9#

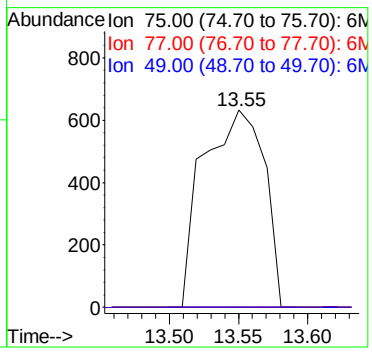

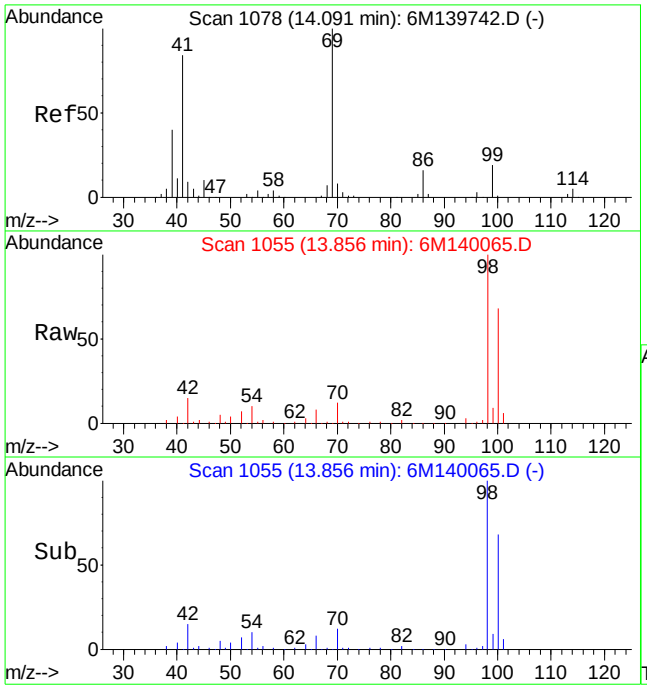

#60
Ethyl Methacrylate
Concen: 0.17 ug/L
RT: 13.86 min Scan# 1055
Delta R.T. -0.23 min
Lab File: 6M140065.D
Acq: 14 Jun 2016 20:06

Tgt Ion: 69 Resp: 1168

Ion	Ratio	Lower	Upper
69	100		
41	83.6	51.4	120.0

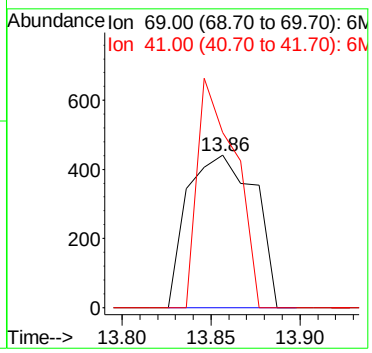

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140059.D Vial: 7
Acq On : 14 Jun 2016 16:53 Operator: TMB
Sample : L16060497-02 A MS 826-LOW Inst : HPMS6
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 07:50:32 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.56	96	634384	25.00 ug/L	-0.01
57) Chlorobenzene-d5	16.06	117	472703	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	19.65	152	260112	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.38	111	166393	25.3434 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.36%		
43) 1,2-Dichloroethane-d4	11.11	65	184900	25.5504 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.20%		
58) Toluene-d8	13.85	98	570867	25.1637 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.64%		
80) p-Bromofluorobenzene	17.84	95	237964	25.9073 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.64%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.44	85	194454	19.3648 ug/L	99
3) Chloromethane	3.93	50	208274	17.0123 ug/L	99
4) Vinyl Chloride	4.16	62	154505	18.7227 ug/L	100
5) 1,3-Butadiene	4.20	54	974	Below Cal #	1
6) Bromomethane	5.06	94	68439	16.8359 ug/L	98
7) Chloroethane	5.23	64	94904	18.1944 ug/L	96
8) Trichlorofluoromethane	5.73	101	230992	20.9016 ug/L	99
9) Diethyl ether	6.29	59	3304	0.5560 ug/L	82
10) Isoprene	6.32	67	203704	21.6806 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.53	101	143560	22.7395 ug/L	98
13) Acetone	6.66	43	37569	18.8612 ug/L	82
14) 1,1-Dichloroethene	6.87	61	221622	19.8223 ug/L	98
15) Tert-Butyl Alcohol	7.00	59	5428	9.8922 ug/L #	57
16) Dimethyl Sulfide	7.16	62	193716	37.7534 ug/L	96
17) Iodomethane	7.43	142	108243	24.2952 ug/L	96
18) Methyl acetate	7.45	43	125628	22.9596 ug/L	98
19) Methylene Chloride	7.72	84	150542	21.8348 ug/L	95
20) Carbon Disulfide	7.77	76	411517	18.8125 ug/L	100
21) Acrylonitrile	7.92	53	51032	21.1618 ug/L	99
22) Methyl Tert Butyl Ether	7.95	73	372569	22.1470 ug/L	99
23) trans-1,2-Dichloroethene	8.21	96	130928	20.0901 ug/L	94
24) n-Hexane	8.28	57	213329	21.0219 ug/L	98
25) Diisopropyl ether	8.65	45	4953	0.1834 ug/L #	38
26) Vinyl Acetate	8.85	43	193278	16.8521 ug/L	98
27) 1,1-Dichloroethane	8.88	63	257616	19.7286 ug/L	99
29) 2-Butanone	9.51	43	59251	20.6824 ug/L	98
31) 2,2-Dichloropropane	9.75	77	210664	22.1293 ug/L	98
32) cis-1,2-Dichloroethene	9.82	96	149704	21.0856 ug/L	81
33) Chloroform	10.06	83	240441	20.6748 ug/L	99
34) 1-Bromopropane	10.21	122	32626	27.8857 ug/L	100
35) Bromochloromethane	10.32	130	81789	20.2859 ug/L	100
36) Tetrahydrofuran	10.21	42	29871	15.1461 ug/L #	41
38) 1,1,1-Trichloroethane	10.65	97	214391	20.6654 ug/L	99
39) Cyclohexane	10.69	56	271398	20.8713 ug/L	98
40) 1,1-Dichloropropene	10.87	75	180385	20.2880 ug/L	97
41) Tert-Amyl-Methyl ether	10.87	73	26027	1.5207 ug/L #	54
42) Carbon Tetrachloride	11.04	117	193179	20.8728 ug/L	100
45) 1,2-Dichloroethane	11.24	62	190517	21.3160 ug/L	100
46) Benzene	11.28	78	536530	20.5877 ug/L	100
47) Trichloroethene	12.14	130	142126	21.3531 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140059.D 8260WT.M Wed Jun 15 07:50:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140059.D Vial: 7
Acq On : 14 Jun 2016 16:53 Operator: TMB
Sample : L16060497-02 A MS 826-LOW Inst : HPMS6
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 07:50:32 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
48)	Methylcyclohexane	12.23	83	211890	20.9975 ug/L	98
49)	1,2-Dichloropropane	12.40	63	158020	21.9523 ug/L	99
50)	1,4-Dioxane	12.72	88	1094	21.3325 ug/L	75
51)	Bromodichloromethane	12.74	83	189147	21.3669 ug/L	99
52)	Dibromomethane	12.84	93	74682	20.1055 ug/L	100
53)	2-Chloroethyl Vinyl Ether	13.09	63	1286	0.3914 ug/L #	41
54)	4-Methyl-2-Pentanone	13.12	58	43645	19.9610 ug/L	99
55)	cis-1,3-Dichloropropene	13.48	75	240390	23.9927 ug/L	99
56)	Dimethyl Disulfide	13.77	79	121621	21.0704 ug/L	100
59)	Toluene	13.96	91	552098	20.5679 ug/L	100
60)	Ethyl Methacrylate	14.09	69	164174	22.3193 ug/L	100
62)	trans-1,3-Dichloropropene	14.17	75	196354	21.4779 ug/L	99
63)	1,1,2-Trichloroethane	14.43	97	108514	21.2327 ug/L	99
64)	2-Hexanone	14.36	43	88680	20.4487 ug/L	97
65)	1,3-Dichloropropane	14.79	76	199881	22.2447 ug/L	99
66)	Tetrachloroethene	14.92	166	136888	19.4413 ug/L	98
67)	Dibromochloromethane	15.23	129	136812	21.0091 ug/L	99
68)	1,2-Dibromoethane	15.53	107	103705	20.9942 ug/L	100
69)	1-Chlorohexane	15.64	91	186828	21.4350 ug/L	95
70)	Chlorobenzene	16.12	112	371097	20.6615 ug/L	97
71)	1,1,1,2-Tetrachloroethane	16.16	131	136451	20.9458 ug/L	100
72)	Ethylbenzene	16.15	106	194283	20.3937 ug/L	97
73)	m-,p-Xylene	16.27	106	480325	42.4402 ug/L	99
74)	o-Xylene	16.93	106	242451	21.6777 ug/L	98
75)	Styrene	16.97	104	406178	21.8675 ug/L	98
76)	Bromoform	17.55	173	79756	19.3040 ug/L	99
77)	Isopropylbenzene	17.43	105	611958	21.7979 ug/L	99
79)	1,1,2,2-Tetrachloroethane	17.70	83	134367	21.4259 ug/L	99
81)	1,2,3-Trichloropropane	17.92	110	38829	21.3860 ug/L	82
82)	trans-1,4-Dichloro-2-Buten	17.98	53	41148	18.7814 ug/L	95
83)	n-Propylbenzene	18.03	91	760350	22.5546 ug/L	99
84)	Bromobenzene	18.18	156	158995	20.0989 ug/L	96
85)	1,3,5-Trimethylbenzene	18.26	105	523657	21.9539 ug/L	99
86)	2-Chlorotoluene	18.35	91	494075	21.3965 ug/L	98
87)	4-Chlorotoluene	18.41	91	470442	21.9423 ug/L	99
88)	a-Methylstyrene	18.74	118	297911	22.3408 ug/L	99
89)	tert-Butylbenzene	18.81	134	112008	21.2997 ug/L	75
90)	1,2,4-Trimethylbenzene	18.87	105	535919	21.4629 ug/L	99
91)	sec-Butylbenzene	19.13	105	645454	21.9907 ug/L	99
92)	p-Isopropyltoluene	19.32	119	551999	22.0690 ug/L	98
93)	1,3-Dichlorobenzene	19.53	146	319994	20.7444 ug/L	99
94)	1,4-Dichlorobenzene	19.70	146	325548	22.1672 ug/L	97
95)	n-Butylbenzene	19.94	91	518619	21.9061 ug/L	98
96)	1,2-Dichlorobenzene	20.28	146	306864	21.3473 ug/L	98
97)	1,2-Dibromo-3-Chloropropan	21.46	75	25579	22.7134 ug/L	94
98)	1,2,4-Trichlorobenzene	22.82	180	217369	21.8709 ug/L	99
99)	Hexachlorobutadiene	23.02	225	92045	22.3157 ug/L	99
100)	Naphthalene	23.28	128	400909	20.4062 ug/L	100
101)	1,2,3-Trichlorobenzene	23.69	180	197917	21.0429 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140059.D Vial: 7
Acq On : 14 Jun 2016 16:53 Operator: TMB
Sample : L16060497-02 A MS 826-LOW Inst : HPMS6
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 7:50 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration

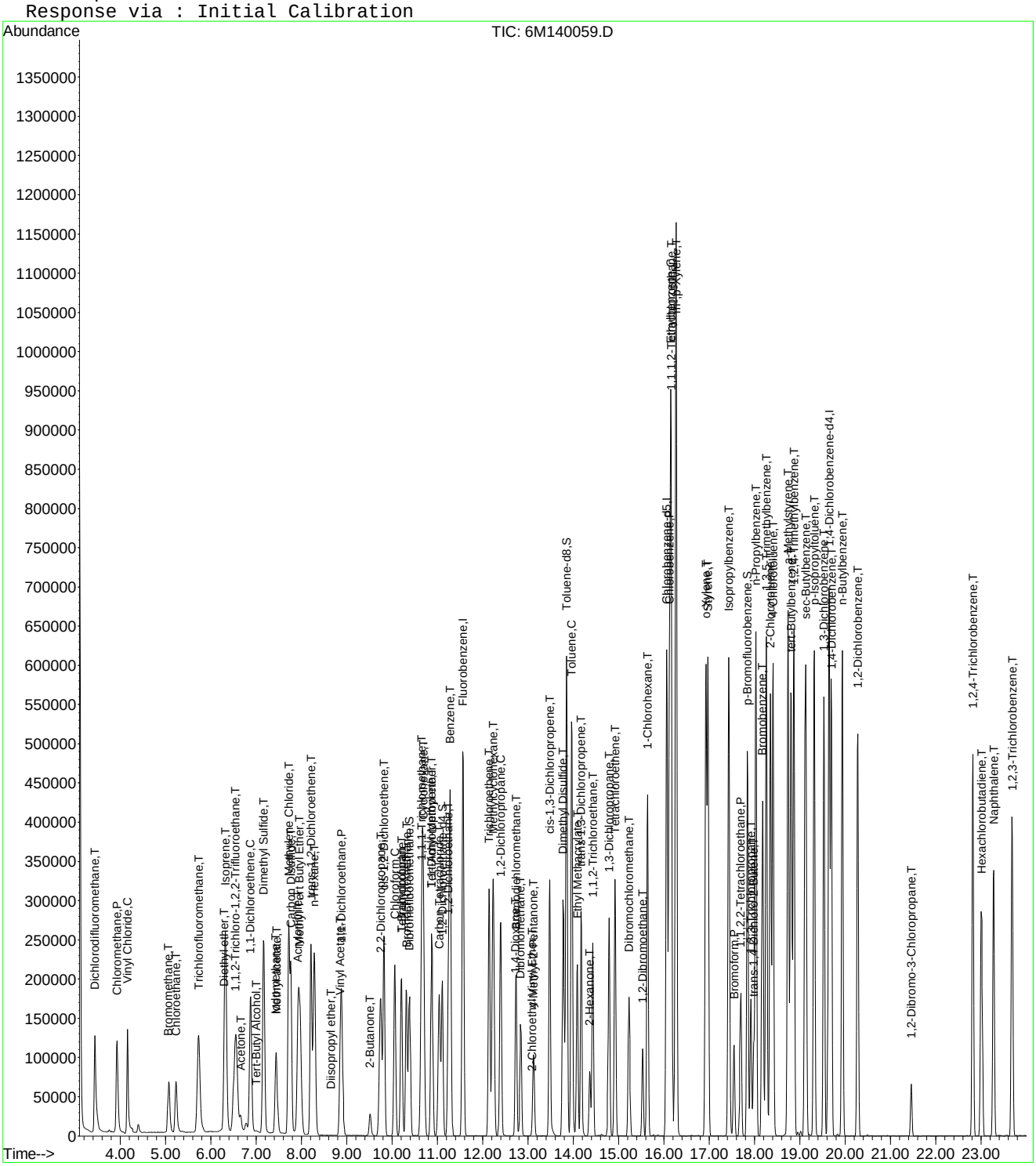

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140060.D Vial: 8
Acq On : 14 Jun 2016 17:25 Operator: TMB
Sample : L16060497-03 A MSD 826-LOW Inst : HPMS6
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 07:50:37 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.56	96	632876	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	473094	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.64	152	262401	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.39	111	165546	25.2745 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.08%		
43) 1,2-Dichloroethane-d4	11.10	65	185015	25.6273 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.52%		
58) Toluene-d8	13.85	98	568952	25.0586 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.24%		
80) p-Bromofluorobenzene	17.84	95	238468	25.7357 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.96%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	191932	19.1592 ug/L	98
3) Chloromethane	3.92	50	210233	17.2132 ug/L	98
4) Vinyl Chloride	4.16	62	156527	19.0129 ug/L	100
5) 1,3-Butadiene	4.20	54	1131	Below Cal #	43
6) Bromomethane	5.07	94	66174	16.3175 ug/L	99
7) Chloroethane	5.23	64	94728	18.2039 ug/L	96
8) Trichlorofluoromethane	5.73	101	230829	20.9366 ug/L	100
9) Diethyl ether	6.30	59	2842	0.4794 ug/L #	37
10) Isoprene	6.32	67	201518	21.4991 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.54	101	142304	22.5943 ug/L	99
13) Acetone	6.66	43	41830	21.3499 ug/L	81
14) 1,1-Dichloroethene	6.88	61	218332	19.5745 ug/L	99
15) Tert-Butyl Alcohol	7.03	59	1230	2.2469 ug/L #	57
16) Dimethyl Sulfide	7.16	62	197540	38.5904 ug/L	98
17) Iodomethane	7.44	142	132188	29.4176 ug/L	96
18) Methyl acetate	7.45	43	126169	23.1134 ug/L	98
19) Methylene Chloride	7.72	84	152836	22.2203 ug/L	97
20) Carbon Disulfide	7.76	76	409917	18.7840 ug/L	99
21) Acrylonitrile	7.93	53	51268	21.3103 ug/L	98
22) Methyl Tert Butyl Ether	7.96	73	377911	22.5181 ug/L	99
23) trans-1,2-Dichloroethene	8.21	96	132518	20.3825 ug/L	96
24) n-Hexane	8.28	57	207295	20.4760 ug/L	97
26) Vinyl Acetate	8.86	43	192087	16.7882 ug/L	99
27) 1,1-Dichloroethane	8.89	63	258785	19.8654 ug/L	100
29) 2-Butanone	9.51	43	60573	21.1942 ug/L	97
31) 2,2-Dichloropropane	9.74	77	207382	21.8364 ug/L	97
32) cis-1,2-Dichloroethene	9.83	96	149919	21.1662 ug/L	98
33) Chloroform	10.06	83	240510	20.7300 ug/L	99
34) 1-Bromopropane	10.21	122	32228	27.6140 ug/L	99
35) Bromochloromethane	10.32	130	82309	20.4636 ug/L	98
36) Tetrahydrofuran	10.20	42	29506	14.9967 ug/L #	41
38) 1,1,1-Trichloroethane	10.65	97	213353	20.6144 ug/L	99
39) Cyclohexane	10.68	56	268610	20.7061 ug/L	98
40) 1,1-Dichloropropene	10.88	75	178143	20.0835 ug/L	98
41) Tert-Amyl-Methyl ether	10.88	73	26692	1.5633 ug/L #	53
42) Carbon Tetrachloride	11.04	117	189721	20.5480 ug/L	99
45) 1,2-Dichloroethane	11.25	62	191118	21.4342 ug/L	100
46) Benzene	11.29	78	528631	20.3329 ug/L	99
47) Trichloroethene	12.14	130	140676	21.1856 ug/L	99
48) Methylcyclohexane	12.24	83	209344	20.7947 ug/L	98

(#) = qualifier out of range (m) = manual integration

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140060.D Vial: 8
Acq On : 14 Jun 2016 17:25 Operator: TMB
Sample : L16060497-03 A MSD 826-LOW Inst : HPMS6
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 07:50:37 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
49)	1,2-Dichloropropane	12.39	63	156646	21.8133	ug/L	100
51)	Bromodichloromethane	12.74	83	189532	21.4614	ug/L	99
52)	Dibromomethane	12.84	93	75471	20.3663	ug/L	100
54)	4-Methyl-2-Pentanone	13.12	58	45055	20.6550	ug/L	98
55)	cis-1,3-Dichloropropene	13.48	75	240412	24.0520	ug/L	99
56)	Dimethyl Disulfide	13.78	79	123347	21.4203	ug/L	100
59)	Toluene	13.96	91	549550	20.4561	ug/L	100
60)	Ethyl Methacrylate	14.08	69	166118	22.5649	ug/L	100
62)	trans-1,3-Dichloropropene	14.18	75	198093	21.6502	ug/L	98
63)	1,1,2-Trichloroethane	14.43	97	108138	21.1416	ug/L	99
64)	2-Hexanone	14.36	43	88688	20.4336	ug/L	100
65)	1,3-Dichloropropane	14.79	76	199633	22.1987	ug/L	98
66)	Tetrachloroethene	14.92	166	135140	19.1771	ug/L	98
67)	Dibromochloromethane	15.23	129	135454	20.7834	ug/L	100
68)	1,2-Dibromoethane	15.53	107	103802	20.9964	ug/L	99
69)	1-Chlorohexane	15.65	91	186824	21.4168	ug/L	96
70)	Chlorobenzene	16.13	112	369259	20.5422	ug/L	97
71)	1,1,1,2-Tetrachloroethane	16.17	131	137534	21.0946	ug/L	98
72)	Ethylbenzene	16.16	106	194993	20.4513	ug/L	98
73)	m-,p-Xylene	16.27	106	478390	42.2343	ug/L	99
74)	o-Xylene	16.92	106	241480	21.5730	ug/L	98
75)	Styrene	16.97	104	401630	21.6048	ug/L	97
76)	Bromoform	17.55	173	80132	19.3790	ug/L	98
77)	Isopropylbenzene	17.43	105	604781	21.5244	ug/L	100
79)	1,1,2,2-Tetrachloroethane	17.69	83	133907	21.1663	ug/L	99
81)	1,2,3-Trichloropropane	17.92	110	39082	21.3376	ug/L	92
82)	trans-1,4-Dichloro-2-Buten	17.99	53	40611	18.3900	ug/L	96
83)	n-Propylbenzene	18.04	91	757228	22.2661	ug/L	99
84)	Bromobenzene	18.18	156	159709	20.0130	ug/L	97
85)	1,3,5-Trimethylbenzene	18.26	105	519715	21.5986	ug/L	99
86)	2-Chlorotoluene	18.35	91	508130	21.8132	ug/L	99
87)	4-Chlorotoluene	18.40	91	451139	20.8584	ug/L	98
88)	a-Methylstyrene	18.74	118	297963	22.1498	ug/L	99
89)	tert-Butylbenzene	18.80	134	110697	20.8668	ug/L	93
90)	1,2,4-Trimethylbenzene	18.86	105	533922	21.1964	ug/L	100
91)	sec-Butylbenzene	19.13	105	636346	21.4913	ug/L	99
92)	p-Isopropyltoluene	19.31	119	539006	21.3616	ug/L	99
93)	1,3-Dichlorobenzene	19.54	146	319451	20.5285	ug/L	98
94)	1,4-Dichlorobenzene	19.69	146	325287	21.9542	ug/L	98
95)	n-Butylbenzene	19.94	91	510605	21.3795	ug/L	99
96)	1,2-Dichlorobenzene	20.27	146	306695	21.1494	ug/L	98
97)	1,2-Dibromo-3-Chloropropan	21.46	75	25654	22.5813	ug/L	91
98)	1,2,4-Trichlorobenzene	22.83	180	213268	21.2711	ug/L	99
99)	Hexachlorobutadiene	23.01	225	91530	21.9973	ug/L	99
100)	Naphthalene	23.27	128	401189	20.2423	ug/L	100
101)	1,2,3-Trichlorobenzene	23.68	180	194178	20.4653	ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140060.D 8260WT.M Wed Jun 15 07:50:40 2016 Page 2

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140060.D Vial: 8
Acq On : 14 Jun 2016 17:25 Operator: TMB
Sample : L16060497-03 A MSD 826-LOW Inst : HPMS6
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 7:50 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration

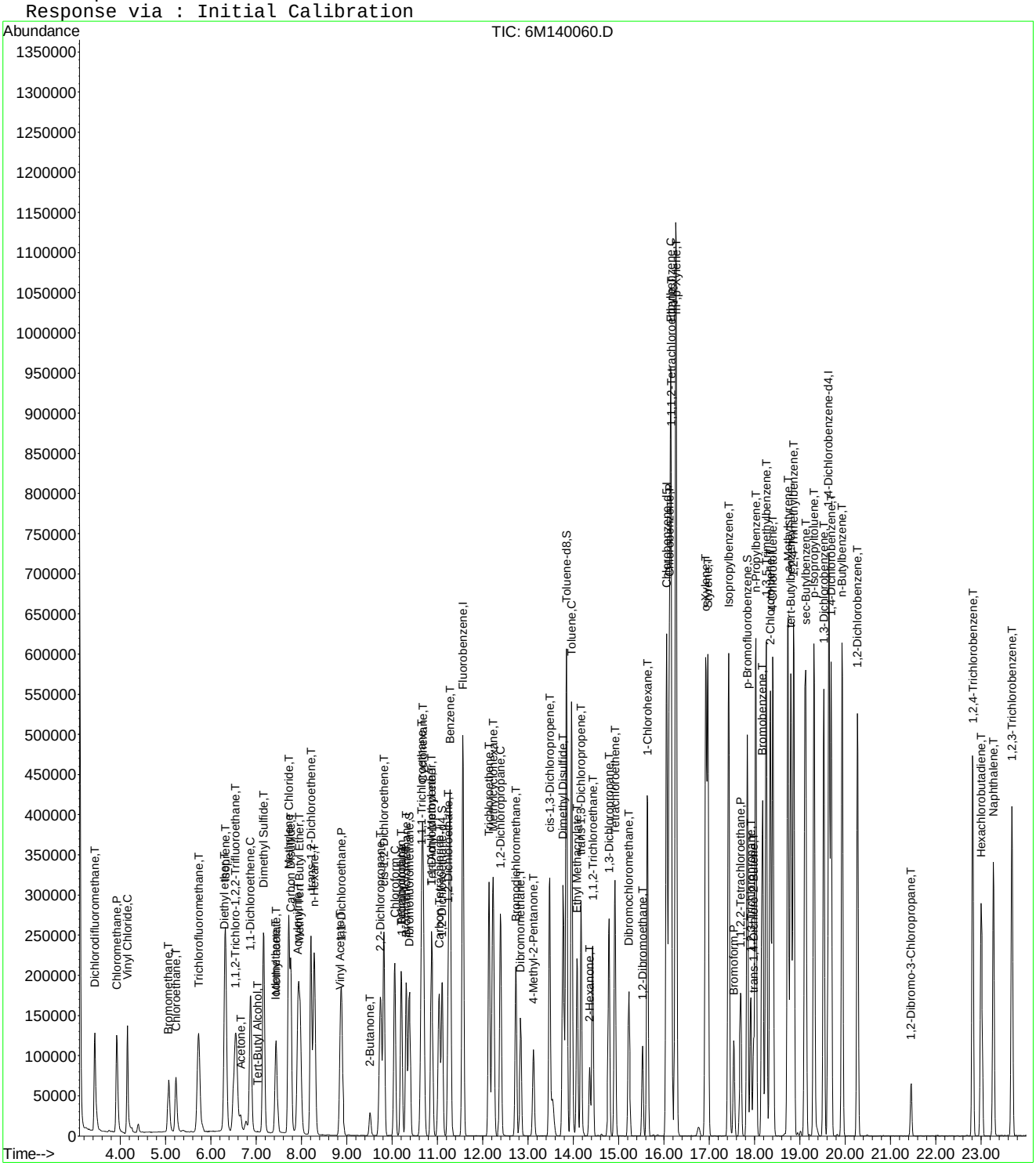

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140066.D Vial: 14
Acq On : 14 Jun 2016 20:38 Operator: TMB
Sample : L16060497-04 A 2.5X 826-LOW Inst : HPMS6
Misc : 1,2.5 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 08:15:53 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	598584	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.06	117	441336	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	235659	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	156977	25.3392 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.36%		
43) 1,2-Dichloroethane-d4	11.11	65	176151	25.7973 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.20%		
58) Toluene-d8	13.85	98	532037	25.1189 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.48%		
80) p-Bromofluorobenzene	17.84	95	218498	26.2563 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.04%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.36	85	2173	0.2293 ug/L #	78
4) Vinyl Chloride	4.17	62	3777	0.4851 ug/L #	42
9) Diethyl ether	6.55	59	26654	4.7533 ug/L #	15
10) Isoprene	6.55	67	15775	1.7794 ug/L #	10
12) 1,1,2-Trichloro-1,2,2-Trif	6.55	101	2686520	450.9879 ug/L	98
13) Acetone	6.55	43	36420	19.4486 ug/L	89
14) 1,1-Dichloroethene	6.88	61	5769	0.5468 ug/L	83
19) Methylene Chloride	7.72	84	1130	0.1737 ug/L	59
32) cis-1,2-Dichloroethene	9.82	96	15263	2.2783 ug/L	98
33) Chloroform	10.06	83	20952	1.9093 ug/L	98
36) Tetrahydrofuran	10.35	42	1983	1.0656 ug/L #	41
45) 1,2-Dichloroethane	11.24	62	18564	2.2013 ug/L	91
46) Benzene	11.28	78	24715	1.0051 ug/L	99
47) Trichloroethene	12.14	130	1226170	195.2382 ug/L	95
48) Methylcyclohexane	12.14	83	16776	1.7619 ug/L #	1
49) 1,2-Dichloropropane	12.14	63	3792	0.5583 ug/L #	35
55) cis-1,3-Dichloropropene	13.53	75	1248	0.1320 ug/L #	46
66) Tetrachloroethene	14.92	166	1602	0.2437 ug/L #	71

(#) = qualifier out of range (m) = manual integration
6M140066.D 8260WT.M Wed Jun 15 08:15:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140066.D Vial: 14
Acq On : 14 Jun 2016 20:38 Operator: TMB
Sample : L16060497-04 A 2.5X 826-LOW Inst : HPMS6
Misc : 1,2.5 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 8:16 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration

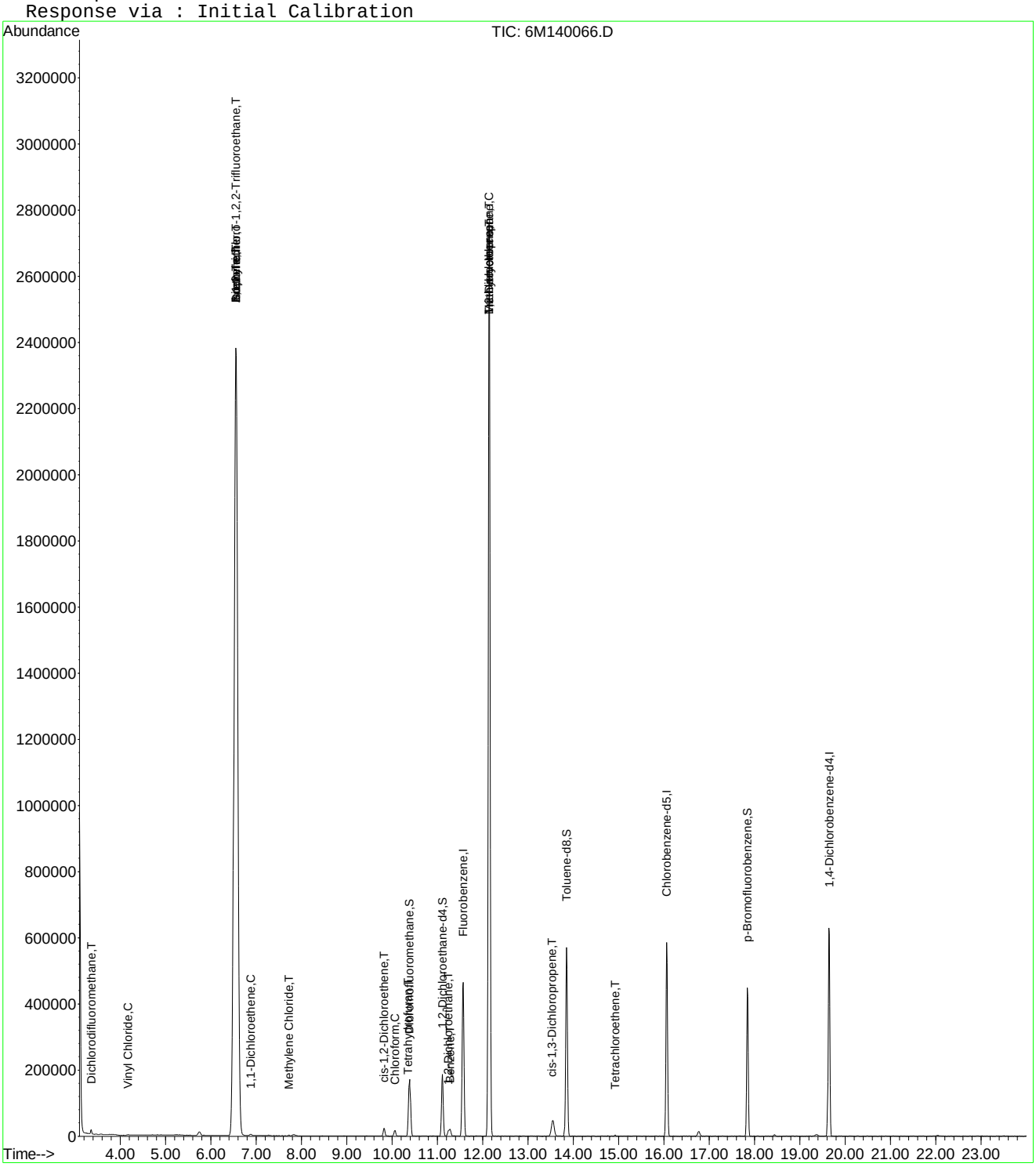

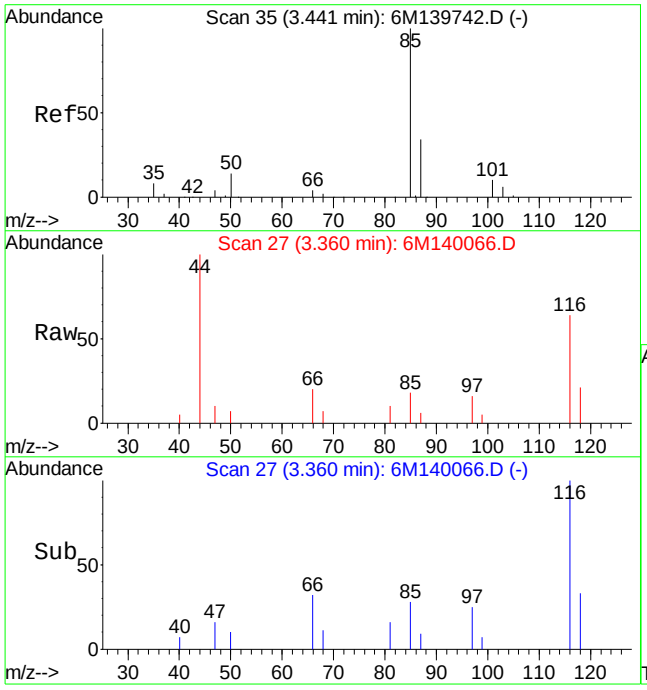

#2
Dichlorodifluoromethane
Concen: 0.23 ug/L
RT: 3.36 min Scan# 27
Delta R.T. -0.08 min
Lab File: 6M140066.D
Acq: 14 Jun 2016 20:38

Tgt Ion: 85 Resp: 2173

Ion	Ratio	Lower	Upper
85	100		
50	24.4	9.1	21.1#

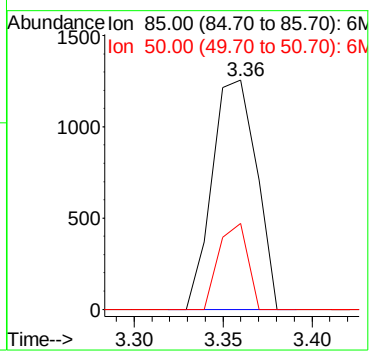

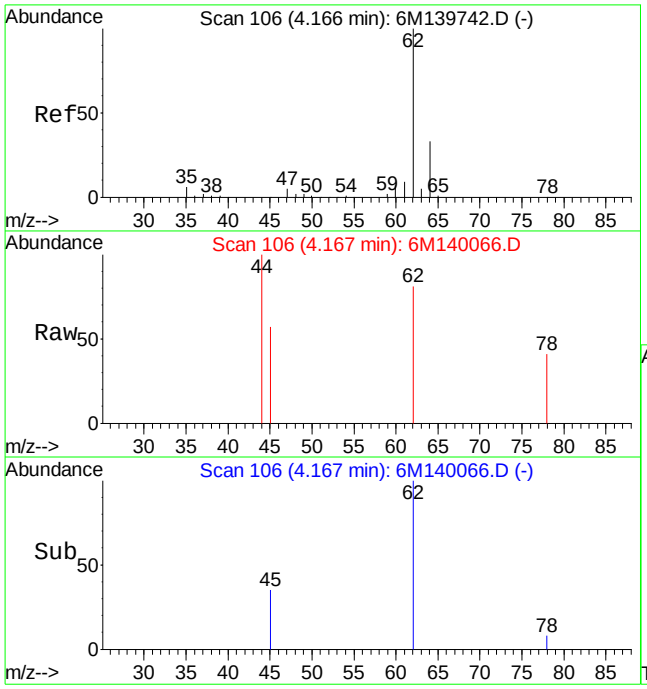

#4
Vinyl Chloride
Concen: 0.49 ug/L
RT: 4.17 min Scan# 106
Delta R.T. 0.01 min
Lab File: 6M140066.D
Acq: 14 Jun 2016 20:38

Tgt Ion: 62 Resp: 3777

Ion	Ratio	Lower	Upper
62	100		
64	0.0	19.3	45.1#

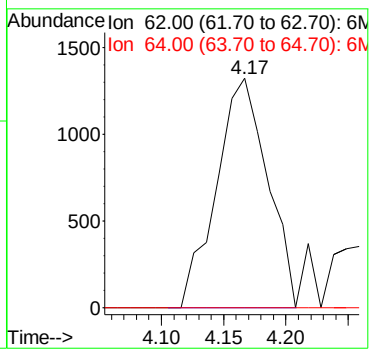

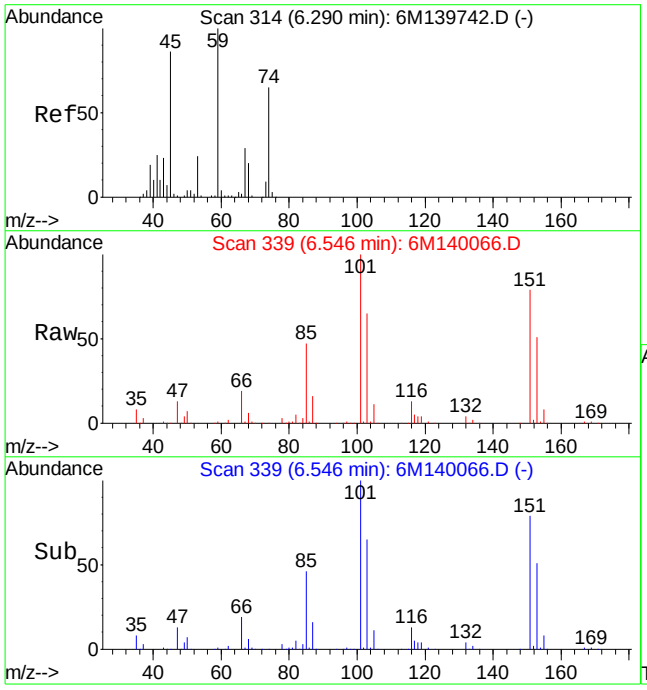

#9
Diethyl ether
Concen: 4.75 ug/L
RT: 6.55 min Scan# 339
Delta R.T. 0.26 min
Lab File: 6M140066.D
Acq: 14 Jun 2016 20:38

Tgt Ion: 59 Resp: 26654

Ion	Ratio	Lower	Upper
59	100		
45	2.4	51.5	120.3#
74	4.6	38.5	89.7#

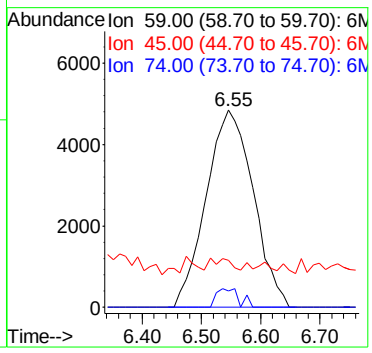

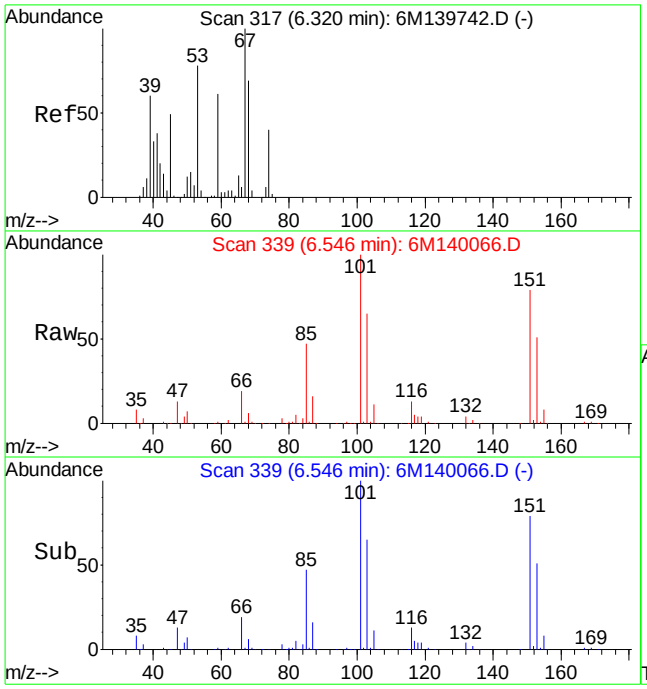

#10
Isoprene
Concen: 1.78 ug/L
RT: 6.55 min Scan# 339
Delta R.T. 0.23 min
Lab File: 6M140066.D
Acq: 14 Jun 2016 20:38

Tgt Ion: 67 Resp: 15775

Ion	Ratio	Lower	Upper
67	100		
53	0.0	47.4	110.6#

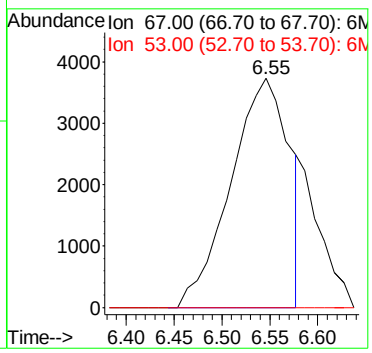

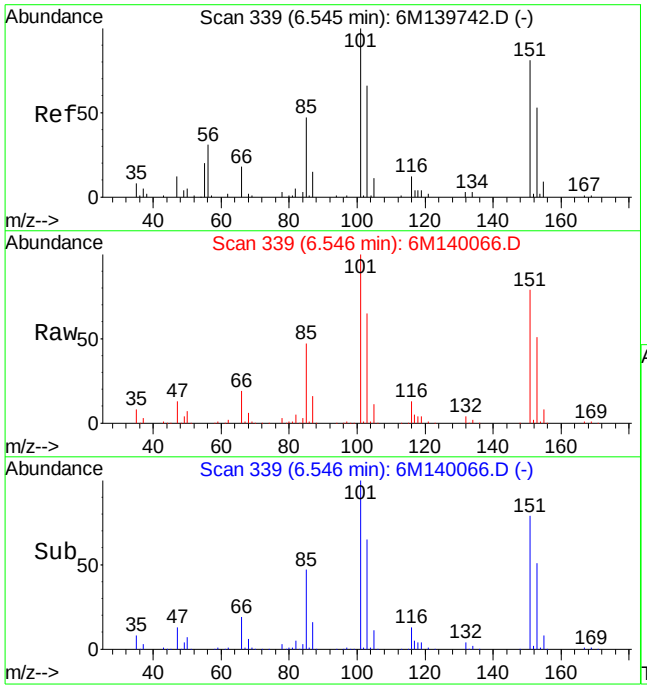

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 450.99 ug/L
RT: 6.55 min Scan# 339
Delta R.T. 0.00 min
Lab File: 6M140066.D
Acq: 14 Jun 2016 20:38

Tgt Ion:101 Resp: 2686520

Ion	Ratio	Lower	Upper
101	100		
151	79.9	49.4	115.2
103	65.0	38.8	90.4

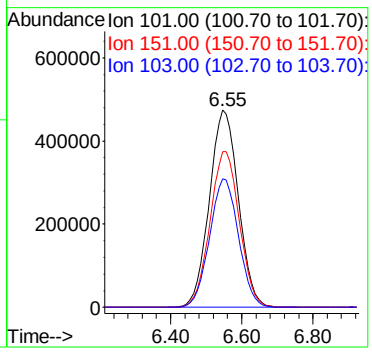

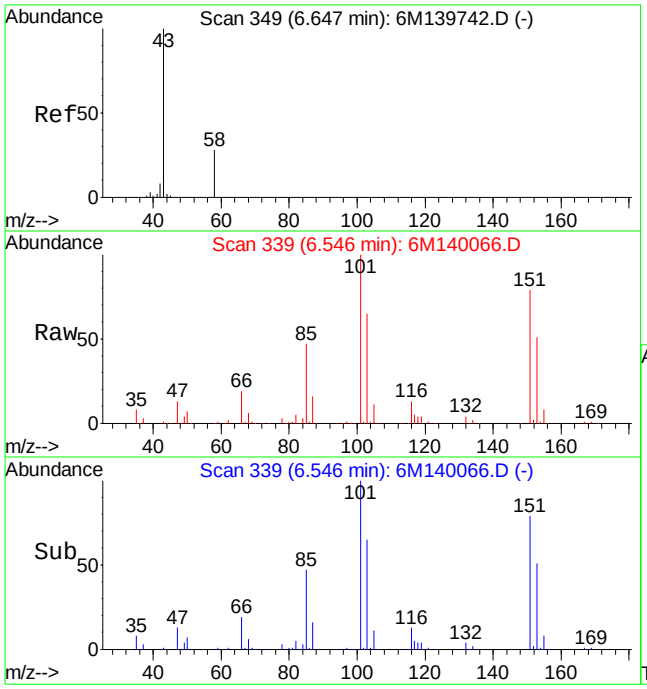

#13
Acetone
Concen: 19.45 ug/L
RT: 6.55 min Scan# 339
Delta R.T. -0.11 min
Lab File: 6M140066.D
Acq: 14 Jun 2016 20:38

Tgt Ion: 43 Resp: 36420

Ion	Ratio	Lower	Upper
43	100		
58	21.7	16.4	38.2

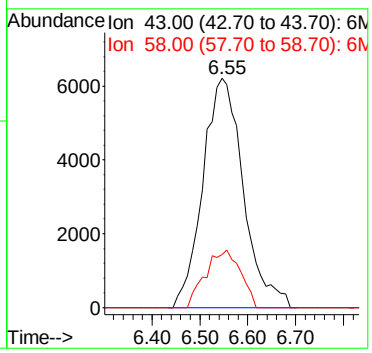

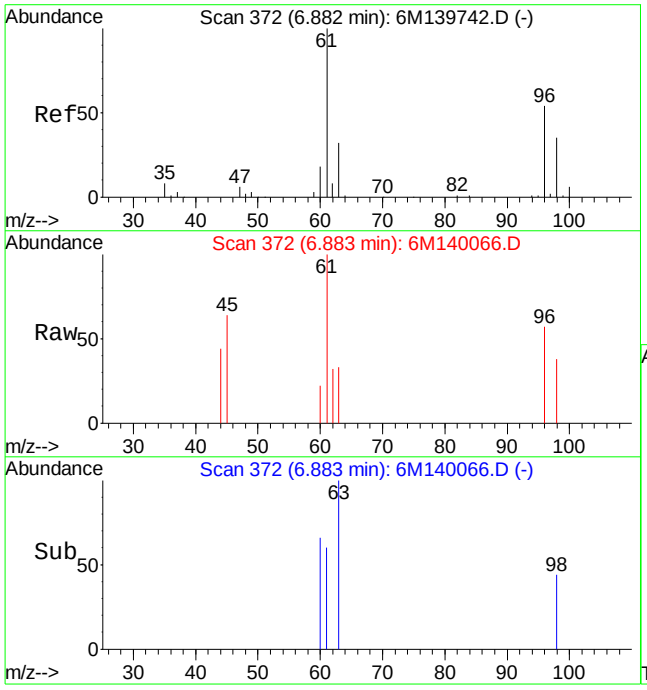

#14
1,1-Dichloroethene
Concen: 0.55 ug/L
RT: 6.88 min Scan# 372
Delta R.T. 0.01 min
Lab File: 6M140066.D
Acq: 14 Jun 2016 20:38

Tgt Ion: 61 Resp: 5769

Ion	Ratio	Lower	Upper
61	100		
96	41.0	32.0	74.6

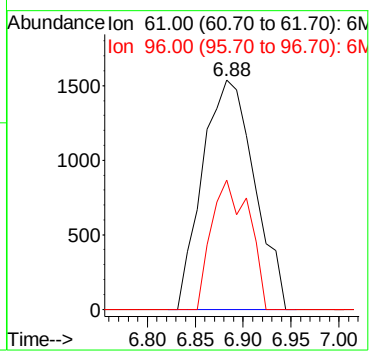

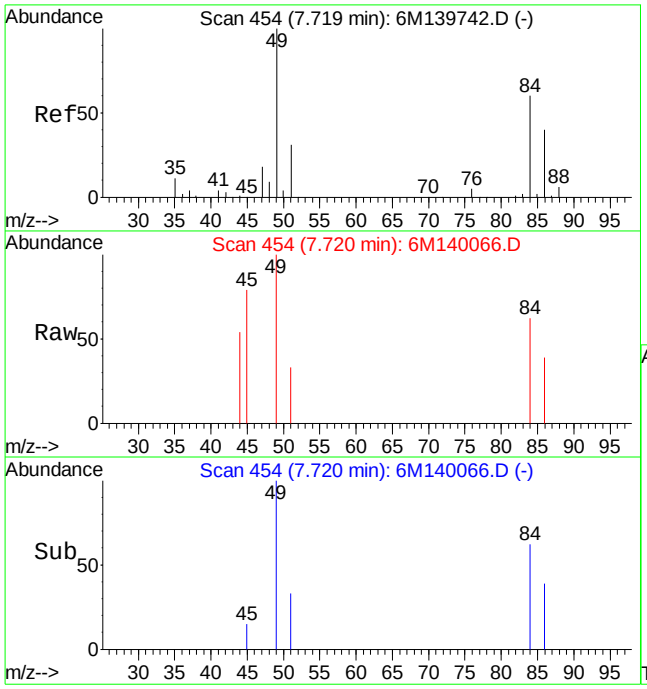

#19
Methylene Chloride
Concen: 0.17 ug/L
RT: 7.72 min Scan# 454
Delta R.T. 0.00 min
Lab File: 6M140066.D
Acq: 14 Jun 2016 20:38

Tgt Ion: 84 Resp: 1130

Ion	Ratio	Lower	Upper
84	100		
49	220.8	99.3	231.7

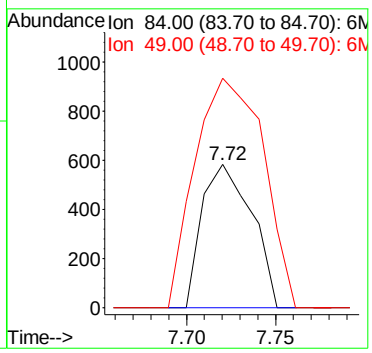

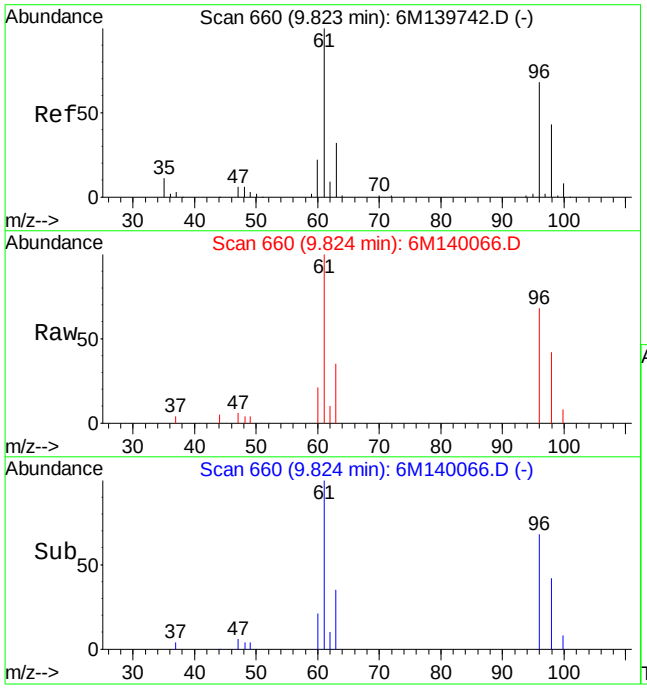

#32
cis-1,2-Dichloroethene
Concen: 2.28 ug/L
RT: 9.82 min Scan# 660
Delta R.T. 0.00 min
Lab File: 6M140066.D
Acq: 14 Jun 2016 20:38

Tgt Ion: 96 Resp: 15263

Ion	Ratio	Lower	Upper
96	100		
61	146.2	89.2	208.2

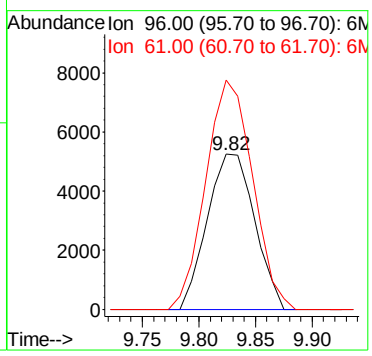

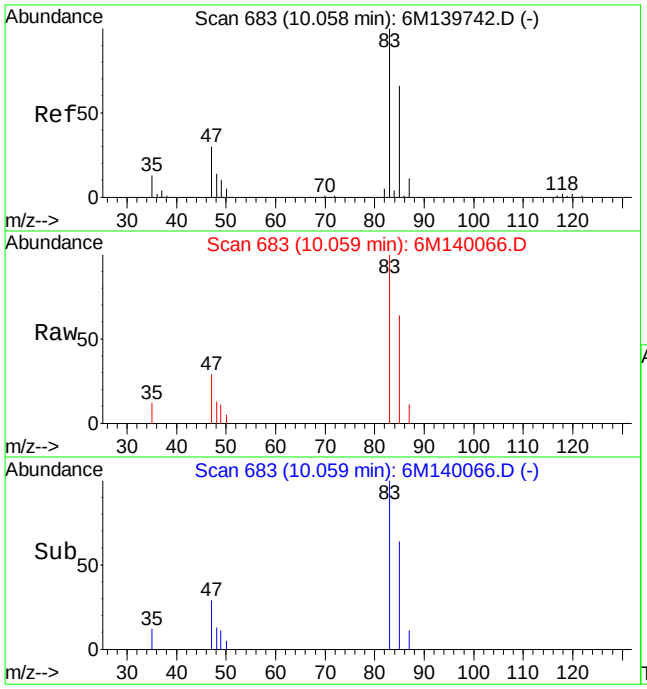

#33
Chloroform
Concen: 1.91 ug/L
RT: 10.06 min Scan# 683
Delta R.T. 0.00 min
Lab File: 6M140066.D
Acq: 14 Jun 2016 20:38

Tgt Ion: 83 Resp: 20952

Ion	Ratio	Lower	Upper
83	100		
85	63.5	39.0	91.0
47	29.3	18.5	43.1

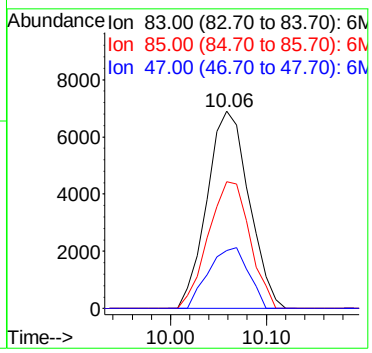

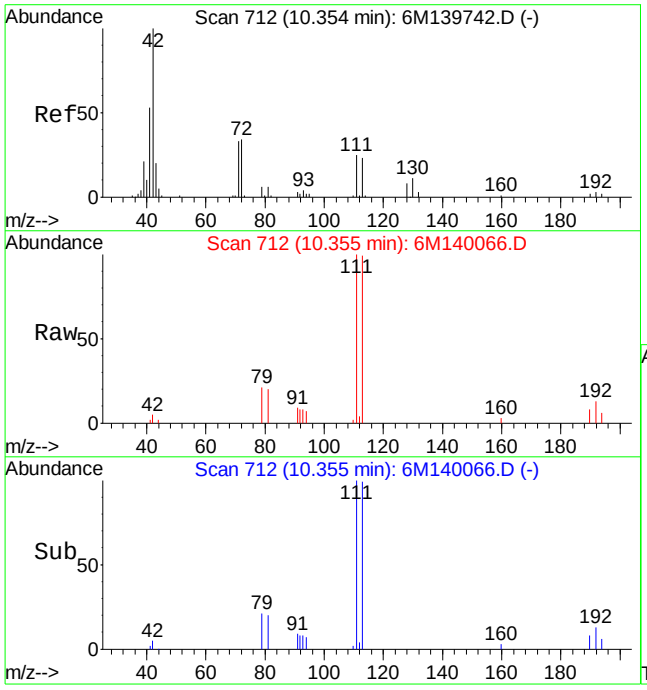

#36
Tetrahydrofuran
Concen: 1.07 ug/L
RT: 10.35 min Scan# 712
Delta R.T. 0.00 min
Lab File: 6M140066.D
Acq: 14 Jun 2016 20:38

Tgt Ion: 42 Resp: 1983

Ion	Ratio	Lower	Upper
42	100		
72	0.0	20.8	48.4#
71	0.0	19.9	46.5#

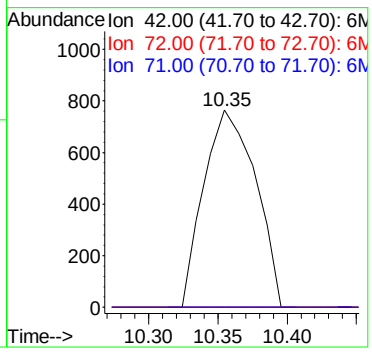

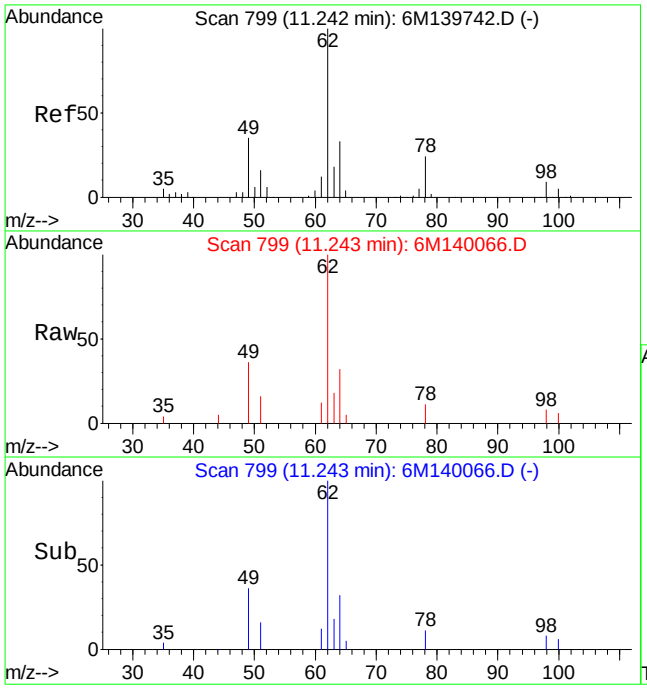

#45
1,2-Dichloroethane
Concen: 2.20 ug/L
RT: 11.24 min Scan# 799
Delta R.T. 0.00 min
Lab File: 6M140066.D
Acq: 14 Jun 2016 20:38

Tgt Ion: 62 Resp: 18564

Ion	Ratio	Lower	Upper
62	100		
49	35.6	25.1	58.5
98	7.2	5.2	12.0

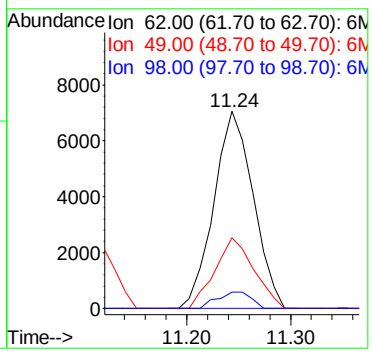

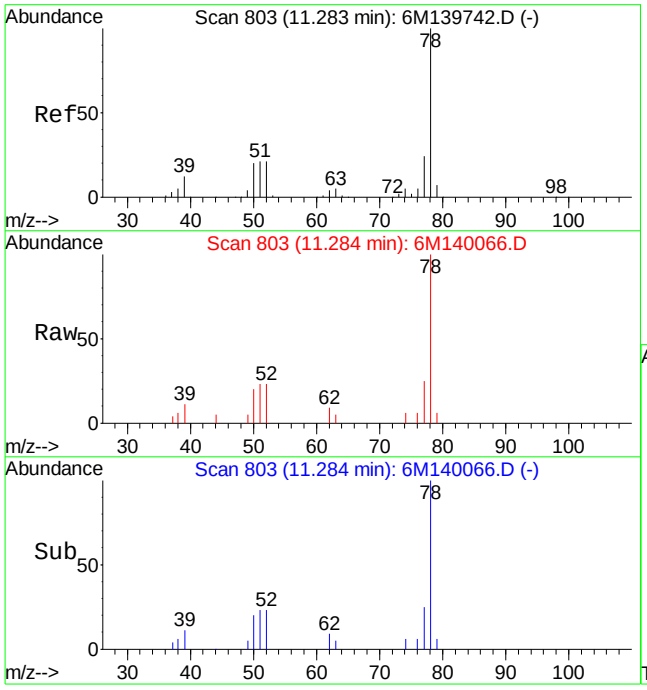

#46
Benzene
Concen: 1.01 ug/L
RT: 11.28 min Scan# 803
Delta R.T. 0.00 min
Lab File: 6M140066.D
Acq: 14 Jun 2016 20:38

Tgt Ion: 78 Resp: 24715

Ion	Ratio	Lower	Upper
78	100		
52	20.4	12.4	29.0

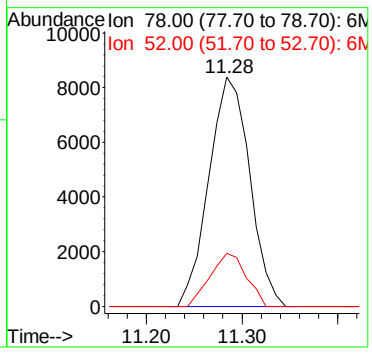

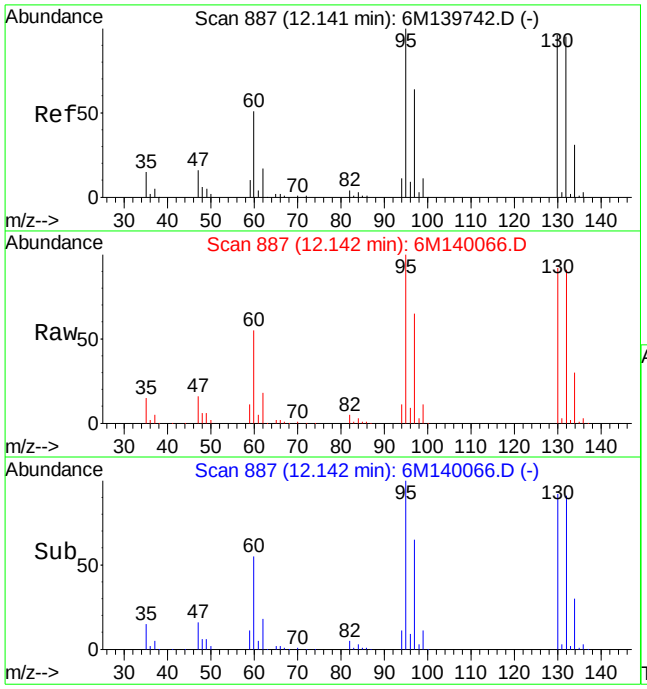

#47
Trichloroethene
Concen: 195.24 ug/L
RT: 12.14 min Scan# 887
Delta R.T. -0.01 min
Lab File: 6M140066.D
Acq: 14 Jun 2016 20:38

Tgt Ion:130 Resp: 1226170

Ion	Ratio	Lower	Upper
130	100		
60	56.6	32.0	74.6

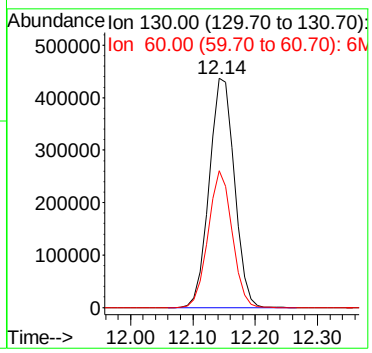

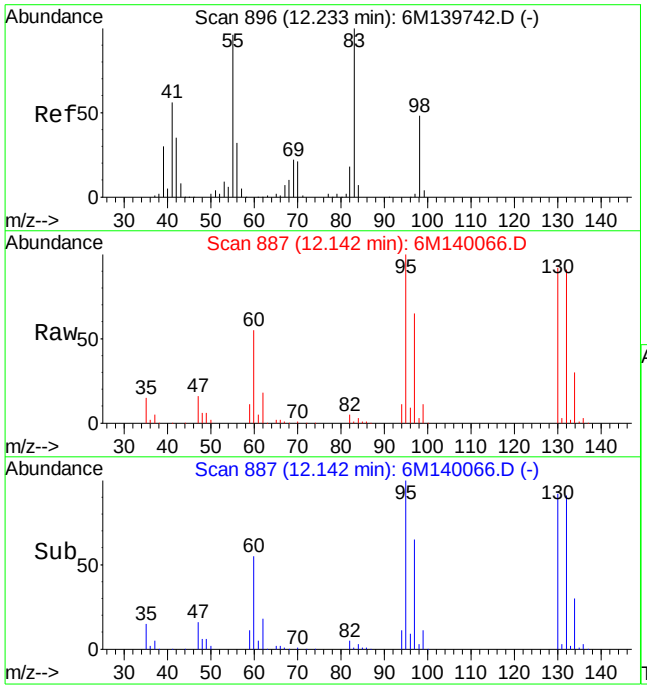

#48
Methylcyclohexane
Concen: 1.76 ug/L
RT: 12.14 min Scan# 887
Delta R.T. -0.09 min
Lab File: 6M140066.D
Acq: 14 Jun 2016 20:38

Tgt Ion: 83 Resp: 16776

Ion	Ratio	Lower	Upper
83	100		
55	0.0	56.3	131.3#
98	205.6	28.4	66.4#

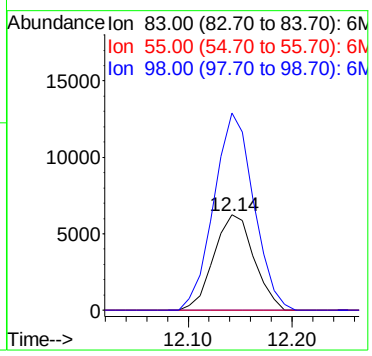

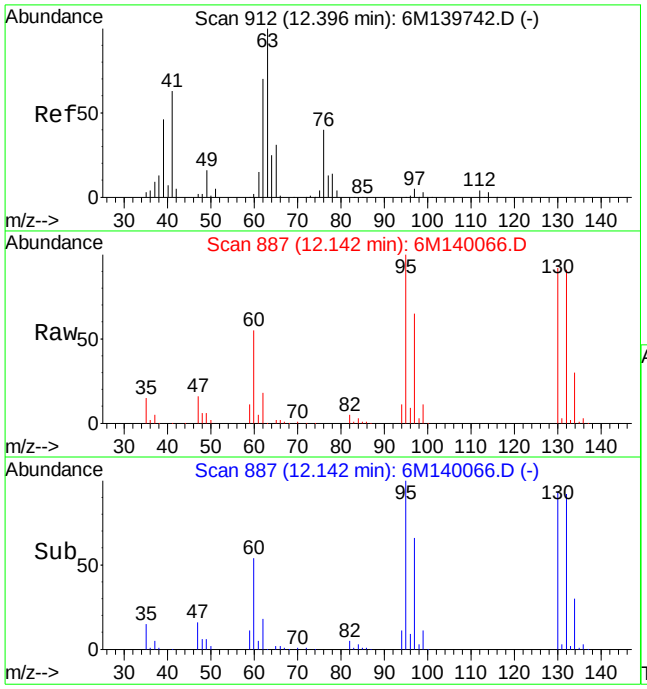

#49
1,2-Dichloropropane
Concen: 0.56 ug/L
RT: 12.14 min Scan# 887
Delta R.T. -0.25 min
Lab File: 6M140066.D
Acq: 14 Jun 2016 20:38

Tgt Ion: 63 Resp: 3792

Ion	Ratio	Lower	Upper
63	100		
76	0.0	24.2	56.4#

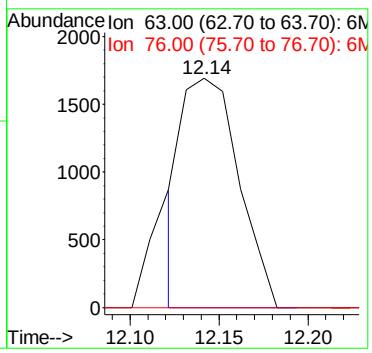

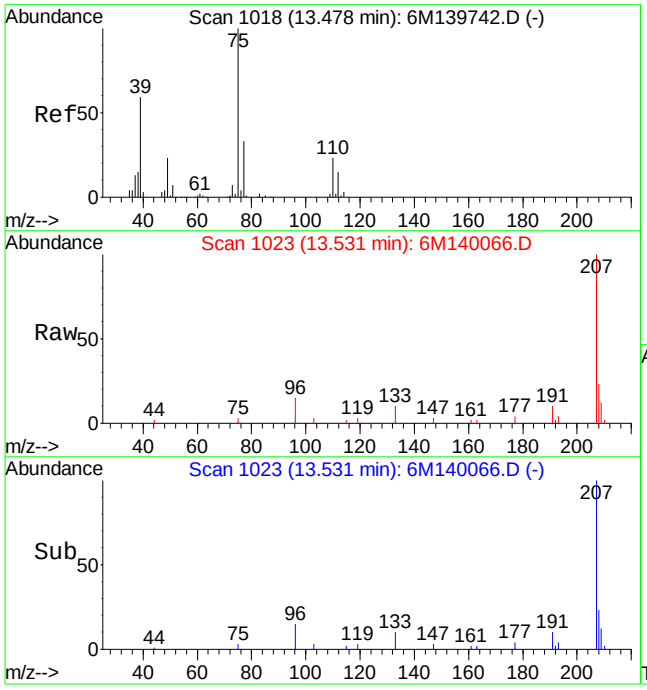

#55
cis-1,3-Dichloropropene
Concen: 0.13 ug/L
RT: 13.53 min Scan# 1023
Delta R.T. 0.05 min
Lab File: 6M140066.D
Acq: 14 Jun 2016 20:38

Tgt Ion: 75 Resp: 1248

Ion	Ratio	Lower	Upper
75	100		
77	0.0	19.5	45.5#
49	0.0	14.1	32.9#

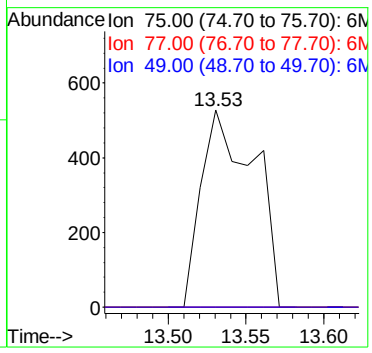

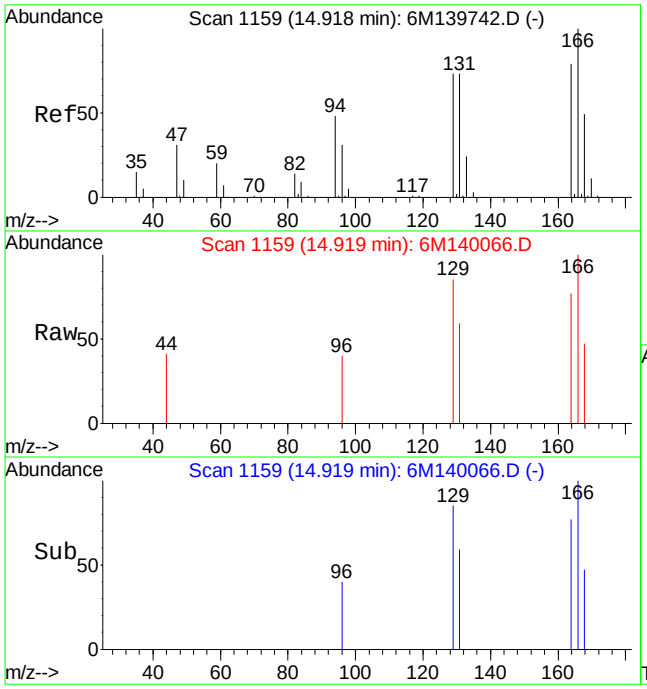

#66
Tetrachloroethene
Concen: 0.24 ug/L
RT: 14.92 min Scan# 1159
Delta R.T. -0.01 min
Lab File: 6M140066.D
Acq: 14 Jun 2016 20:38

Tgt Ion:166 Resp: 1602

Ion	Ratio	Lower	Upper
166	100		
129	70.6	43.5	101.5
94	0.0	27.8	64.8#

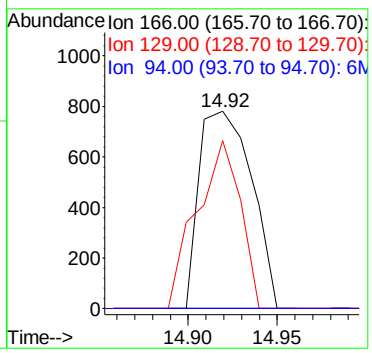

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140064.D Vial: 12
Acq On : 14 Jun 2016 19:34 Operator: TMB
Sample : L16060497-05 A TB 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 08:15:41 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	606851	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.06	117	449953	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	236035	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	158913	25.3023 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.20%		
43) 1,2-Dichloroethane-d4	11.11	65	177335	25.6169 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.48%		
58) Toluene-d8	13.85	98	539641	24.9900 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.96%		
80) p-Bromofluorobenzene	17.84	95	221328	26.5540 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 106.20%		

Target Compounds

					Qvalue
13) Acetone	6.66	43	2300	Below Cal	# 48
26) Vinyl Acetate	9.03	43	4676	0.4262 ug/L	# 78
36) Tetrahydrofuran	10.36	42	3650	1.9347 ug/L	# 72
60) Ethyl Methacrylate	13.85	69	1006	0.1437 ug/L	# 48

(#) = qualifier out of range (m) = manual integration
6M140064.D 8260WT.M Wed Jun 15 08:15:44 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140064.D Vial: 12
Acq On : 14 Jun 2016 19:34 Operator: TMB
Sample : L16060497-05 A TB 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 8:16 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration

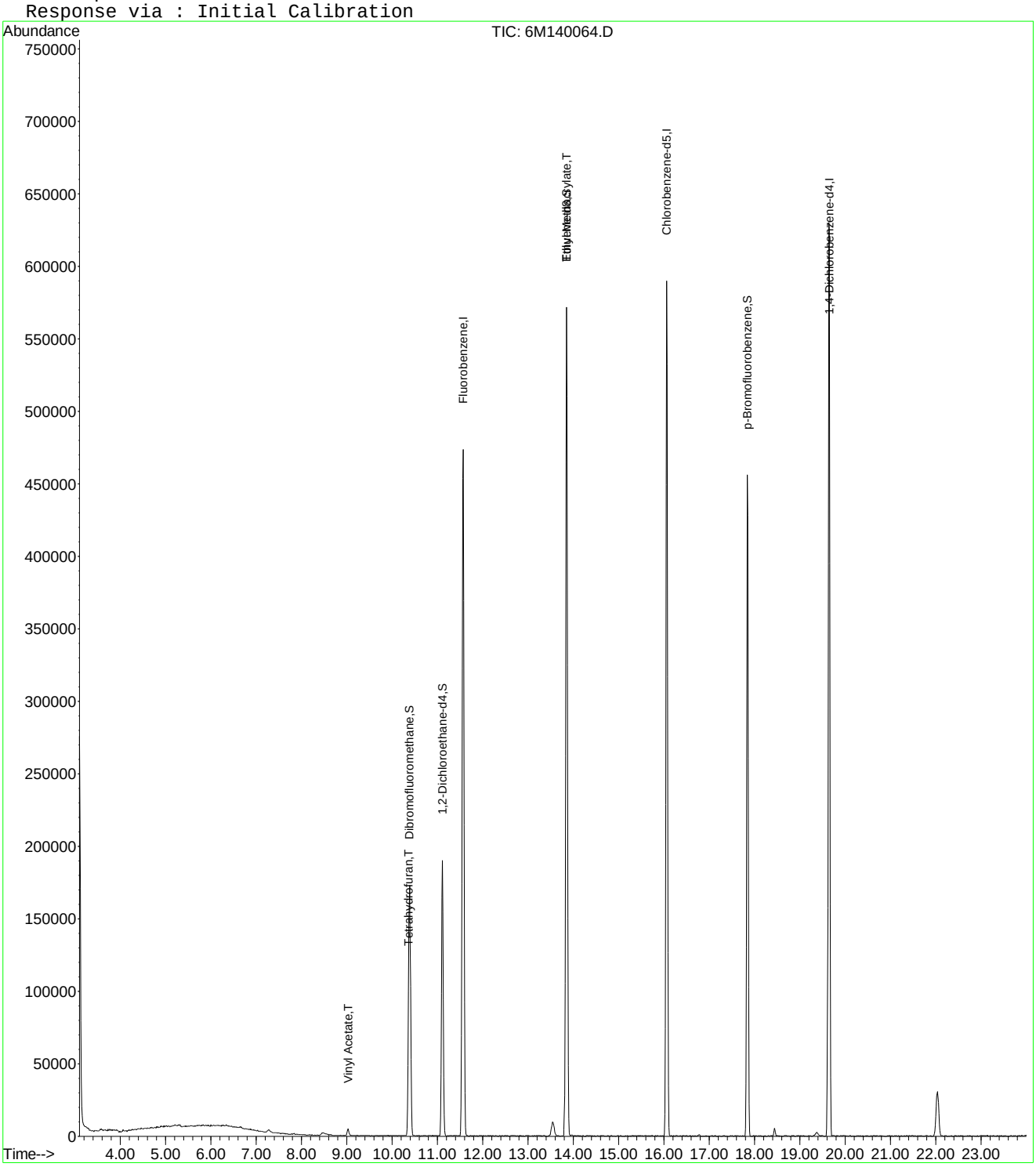

6M140064.D 8260WT.M Wed Jun 15 08:15:45 2016 Page 2

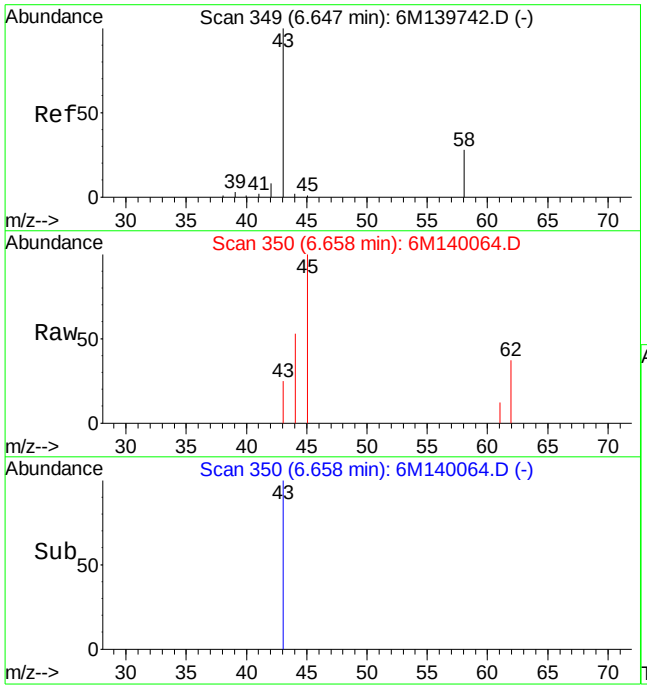

#13
Acetone
Concen: Below Cal
RT: 6.66 min Scan# 350
Delta R.T. 0.00 min
Lab File: 6M140064.D
Acq: 14 Jun 2016 19:34

Tgt Ion: 43 Resp: 2300

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

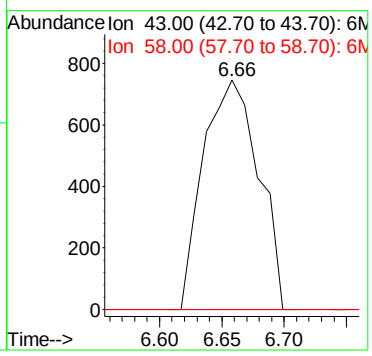

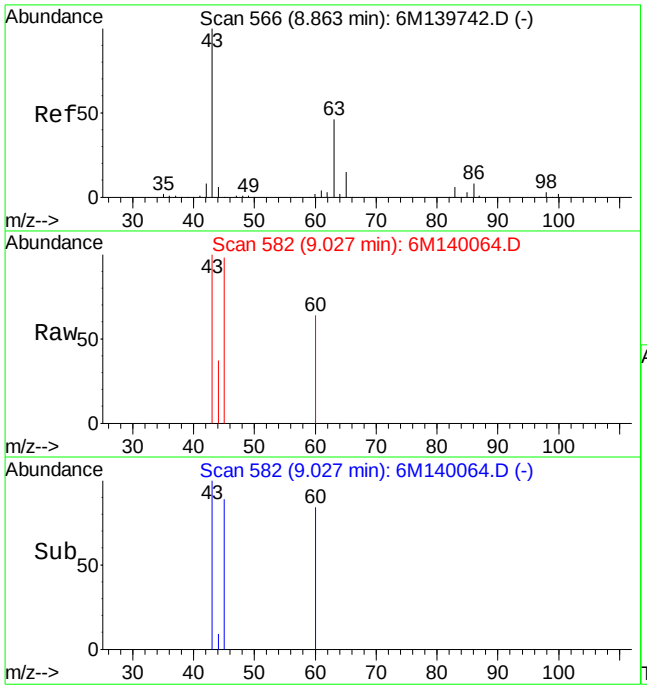

#26
Vinyl Acetate
Concen: 0.43 ug/L
RT: 9.03 min Scan# 582
Delta R.T. 0.16 min
Lab File: 6M140064.D
Acq: 14 Jun 2016 19:34

Tgt Ion: 43 Resp: 4676

Ion	Ratio	Lower	Upper
43	100		
86	0.0	4.5	10.5#

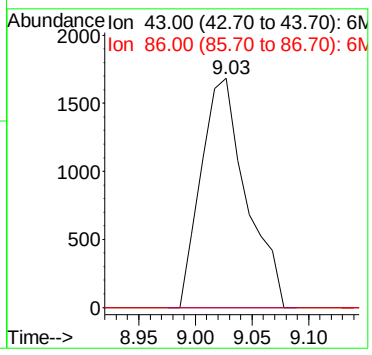

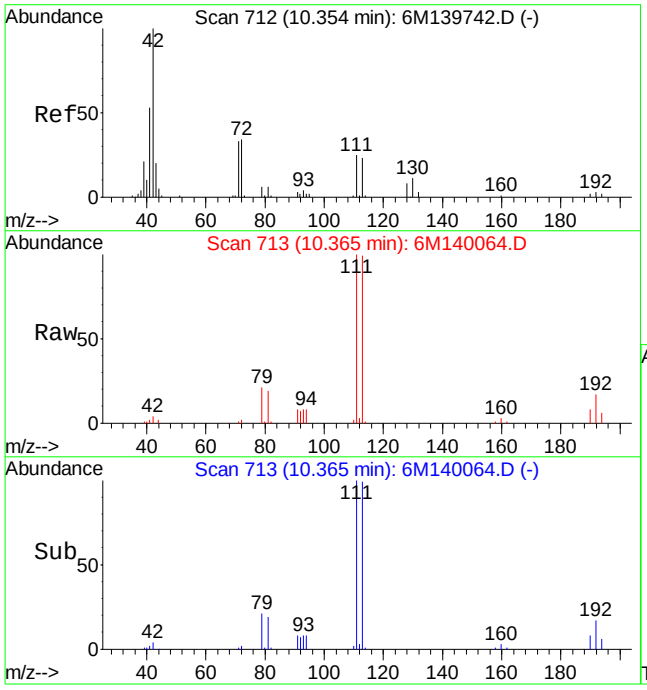

#36
Tetrahydrofuran
Concen: 1.93 ug/L
RT: 10.36 min Scan# 713
Delta R.T. 0.01 min
Lab File: 6M140064.D
Acq: 14 Jun 2016 19:34

Tgt Ion: 42 Resp: 3650

Ion	Ratio	Lower	Upper
42	100		
72	14.3	20.8	48.4#
71	22.1	19.9	46.5

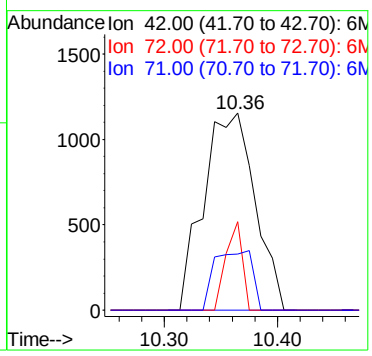

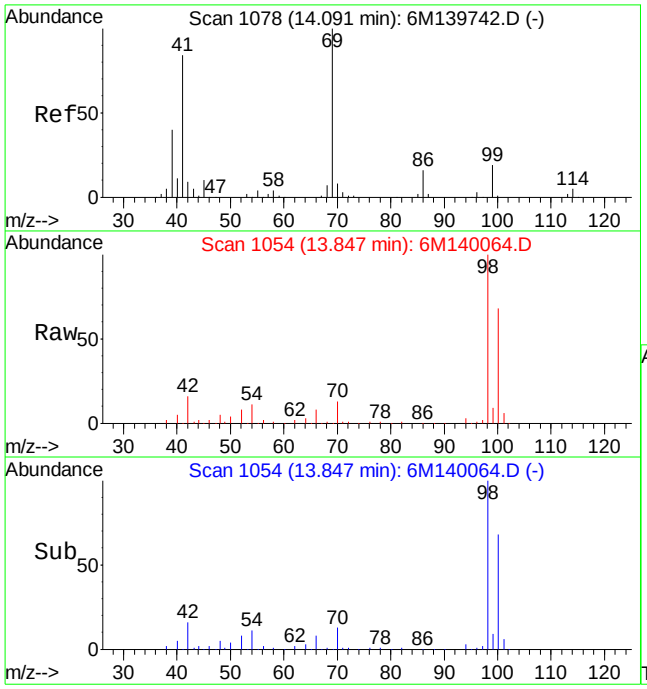

#60
Ethyl Methacrylate
Concen: 0.14 ug/L
RT: 13.85 min Scan# 1054
Delta R.T. -0.24 min
Lab File: 6M140064.D
Acq: 14 Jun 2016 19:34

Tgt Ion: 69 Resp: 1006

Ion	Ratio	Lower	Upper
69	100		
41	133.3	51.4	120.0#

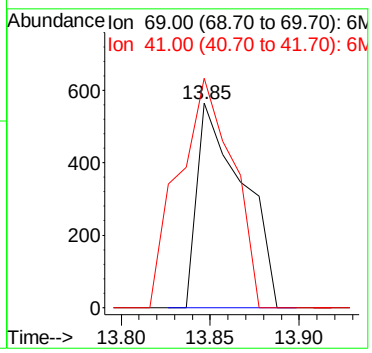

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:46 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	611118	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	473080	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	253718	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.40	111	173671	27.7488 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.00%		
43) 1,2-Dichloroethane-d4	11.12	65	203570	26.8000 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.20%		
58) Toluene-d8	13.86	98	554047	26.0139 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.04%		
80) p-Bromofluorobenzene	17.85	95	229998	27.1525 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 108.60%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	1325	0.6992 ug/L #	46
20) Carbon Disulfide	7.54	76	18747	0.9622 ug/L #	39
29) 2-Butanone	9.31	43	1188	0.4247 ug/L #	1
36) Tetrahydrofuran	10.36	42	2769	1.5196 ug/L #	58
60) Ethyl Methacrylate	13.87	69	899	0.1270 ug/L #	1

(#) = qualifier out of range (m) = manual integration
6M138751.D 8260WTR.M Mon Apr 25 09:22:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

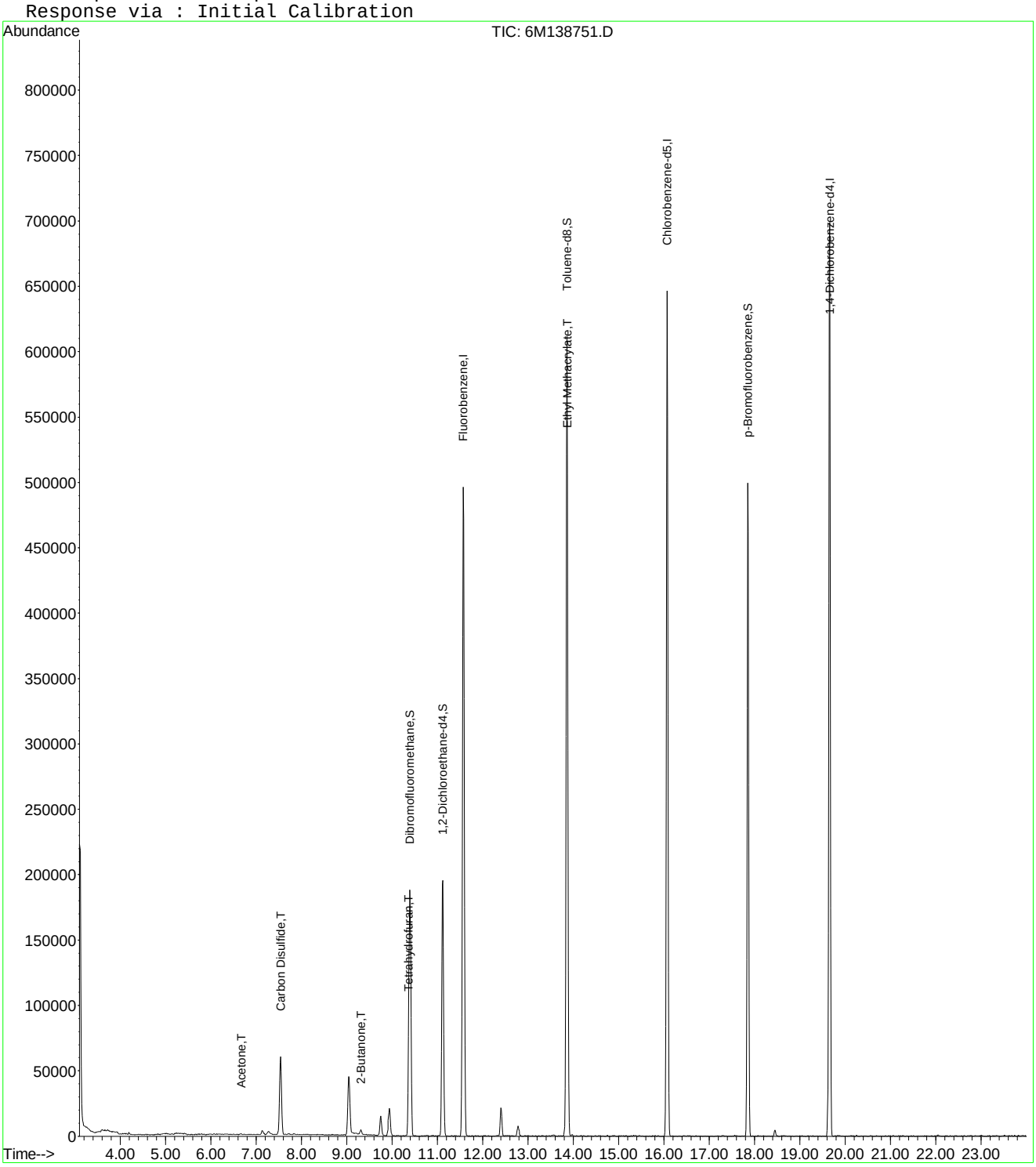

6M138751.D 8260WTR.M Mon Apr 25 09:22:46 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:52 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	611118	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	473080	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	253718	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.13	41	4366	3.7209 ug/L	76
3) 3-Chloro-1-propene	7.54	41	69268	4.2301 ug/L	92
4) 2-Chloro-1,3-butadiene	9.04	53	50753	3.6002 ug/L	85
5) Ethyl Acetate	9.75	43	28042	4.3499 ug/L #	90
6) Methacrylonitrile	9.94	67	8721	3.5173 ug/L #	55
7) Isobutyl Alcohol	9.94	43	1233	3.4767 ug/L #	85
9) Methyl methacrylate	12.40	41	19474	3.0338 ug/L	79
10) 2-Nitropropane	12.78	43	7076	3.7392 ug/L	93
13) Cyclohexanone	17.57	55	447	0.5159 ug/L #	25

(#) = qualifier out of range (m) = manual integration
6M138751.D A9FOOWT.M Mon Apr 25 15:45:52 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

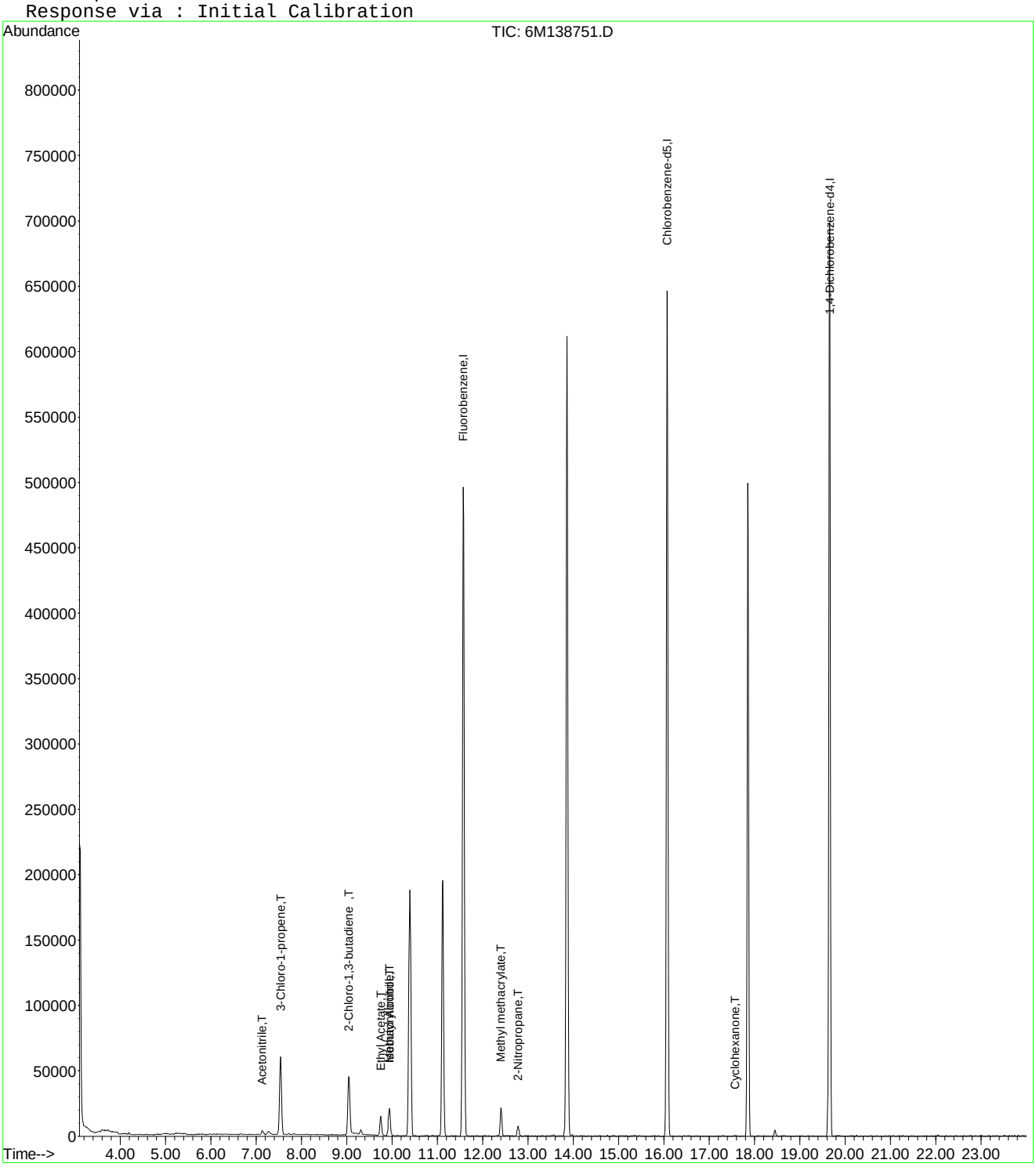

6M138751.D A9FOOWT.M Mon Apr 25 15:45:53 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:56 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	611118	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	473080	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	253718	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.13	41	4366	4.7698 ug/L	76
3) 3-Chloro-1-propene	7.54	41	69268	4.5408 ug/L	92
4) 2-Chloro-1,3-butadiene	9.04	53	50753	3.8775 ug/L	85
5) Ethyl Acetate	9.75	43	28042	4.2792 ug/L #	90
6) Methacrylonitrile	9.94	67	8721	3.8601 ug/L #	55
7) Isobutyl Alcohol	9.94	43	1233	5.9076 ug/L #	85
9) Methyl methacrylate	12.40	41	19474	3.5356 ug/L	79
10) 2-Nitropropane	12.78	43	7076	3.4543 ug/L	93
13) Cyclohexanone	17.57	55	447	1.4133 ug/L #	25

(#) = qualifier out of range (m) = manual integration
6M138751.D A9FOOWT.M Wed Apr 27 16:04:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

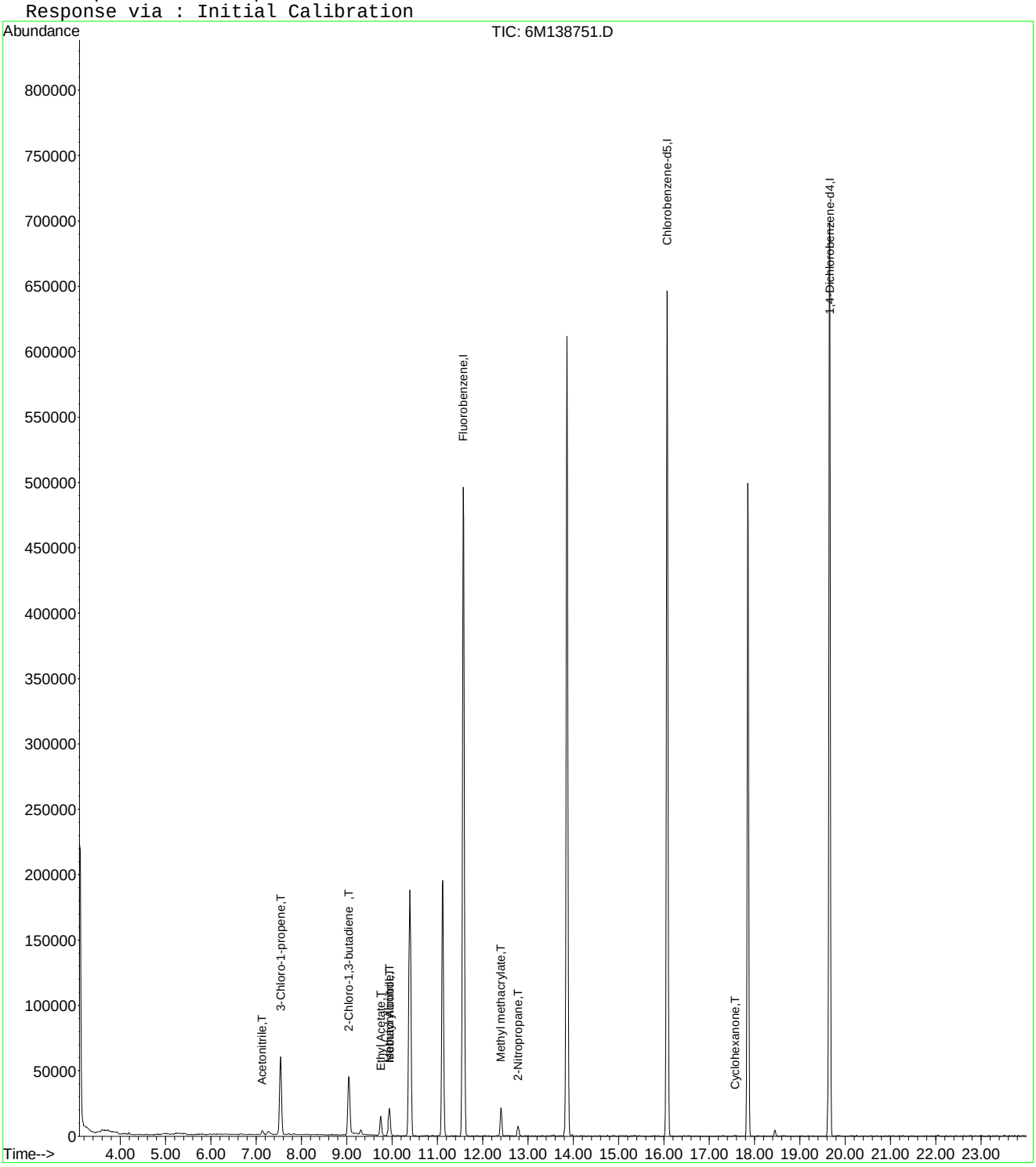

6M138751.D A9FOOWT.M Wed Apr 27 16:04:56 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	5.0000	4.7698	4.6	100	0.00
3	T	3-Chloro-1-propene	5.0000	4.5408	9.2	100	0.00
4	T	2-Chloro-1,3-butadiene	5.0000	3.8775	22.5	100	0.00
5	T	Ethyl Acetate	5.0000	4.2792	14.4	100	0.00
6	T	Methacrylonitrile	5.0000	3.8601	22.8	100	0.00
7	T	Isobutyl Alcohol	-1.0000	5.9076	0.0	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.99#
9	T	Methyl methacrylate	5.0000	3.5356	29.3	100	0.00
10	T	2-Nitropropane	-1.0000	3.4543	0.0	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	1.4133	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138751.D A9FOOWT.M Wed Apr 27 16:04:12 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:48 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	599043	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	463005	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	248475	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	171577	27.9669 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.88%		
43) 1,2-Dichloroethane-d4	11.12	65	207390	27.8532 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.40%		
58) Toluene-d8	13.86	98	547786	26.2796 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.12%		
80) p-Bromofluorobenzene	17.85	95	228171	27.5052 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 110.04%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	2739	1.4745 ug/L #	59
20) Carbon Disulfide	7.54	76	81493	4.2668 ug/L #	36
27) 1,1-Dichloroethane	9.05	63	3411	0.2688 ug/L #	42
29) 2-Butanone	9.31	43	3879	1.4148 ug/L #	1
36) Tetrahydrofuran	10.37	42	3350	1.8754 ug/L #	62
60) Ethyl Methacrylate	13.86	69	1183	0.1708 ug/L #	27

(#) = qualifier out of range (m) = manual integration
6M138752.D 8260WTR.M Mon Apr 25 09:22:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

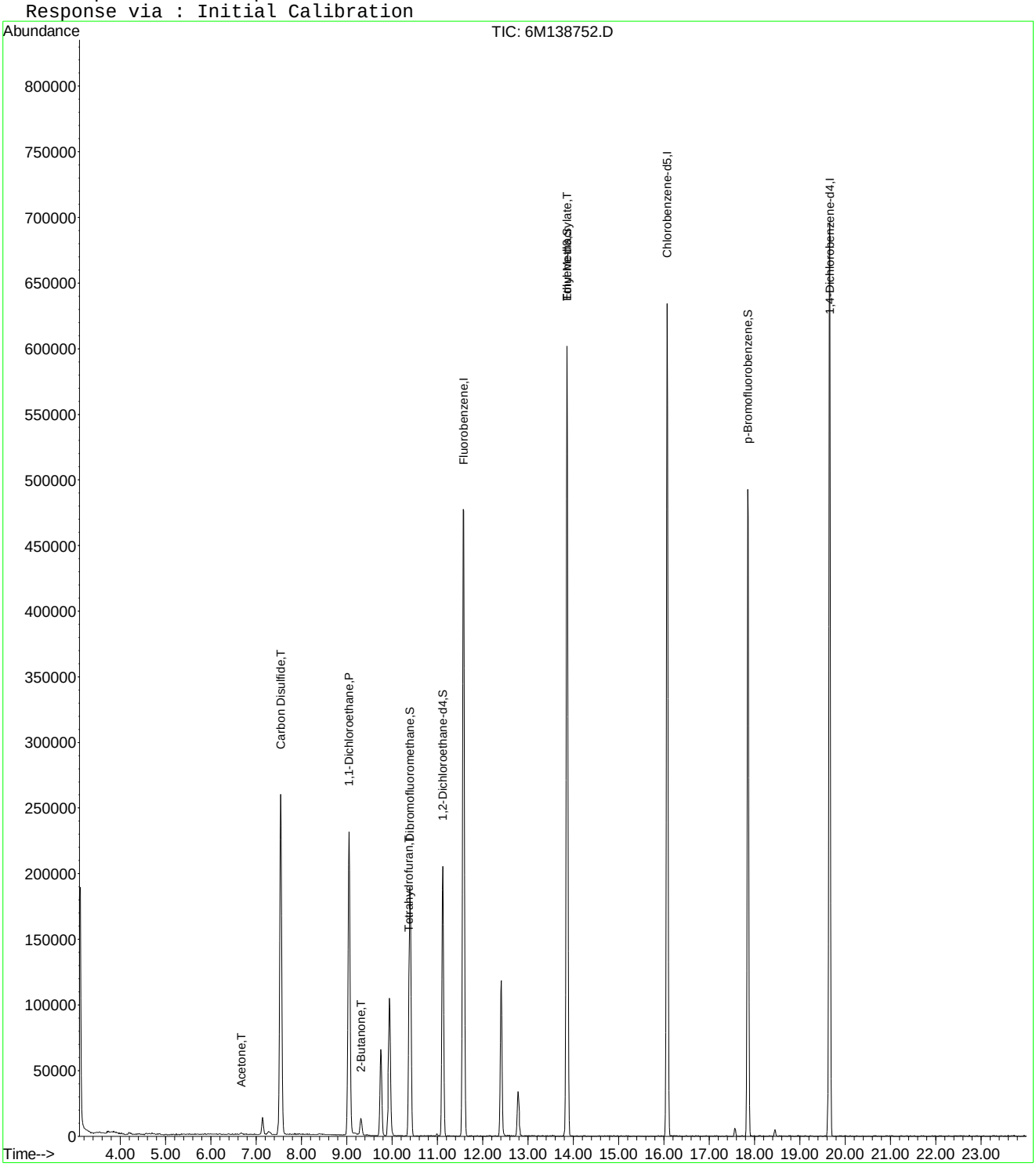

6M138752.D 8260WTR.M Mon Apr 25 09:22:48 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:54 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	599043	25.00 ug/L	-0.02
11) Chlorobenzene-d5	16.07	117	463005	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	248475	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	17741	15.4242 ug/L	95
3) 3-Chloro-1-propene	7.54	41	297686	18.5457 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	242962	17.5823 ug/L	84
5) Ethyl Acetate	9.75	43	124111	19.6403 ug/L	93
6) Methacrylonitrile	9.93	67	42708	17.5719 ug/L #	59
7) Isobutyl Alcohol	9.95	43	7968	22.9203 ug/L #	85
8) 1-Butanol	10.98	41	982	6.5662 ug/L #	52
9) Methyl methacrylate	12.41	41	95824	15.2291 ug/L	81
10) 2-Nitropropane	12.78	43	34207	18.4403 ug/L	92
13) Cyclohexanone	17.57	55	4053	4.7763 ug/L	81

(#) = qualifier out of range (m) = manual integration
6M138752.D A9FOOWT.M Mon Apr 25 15:45:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

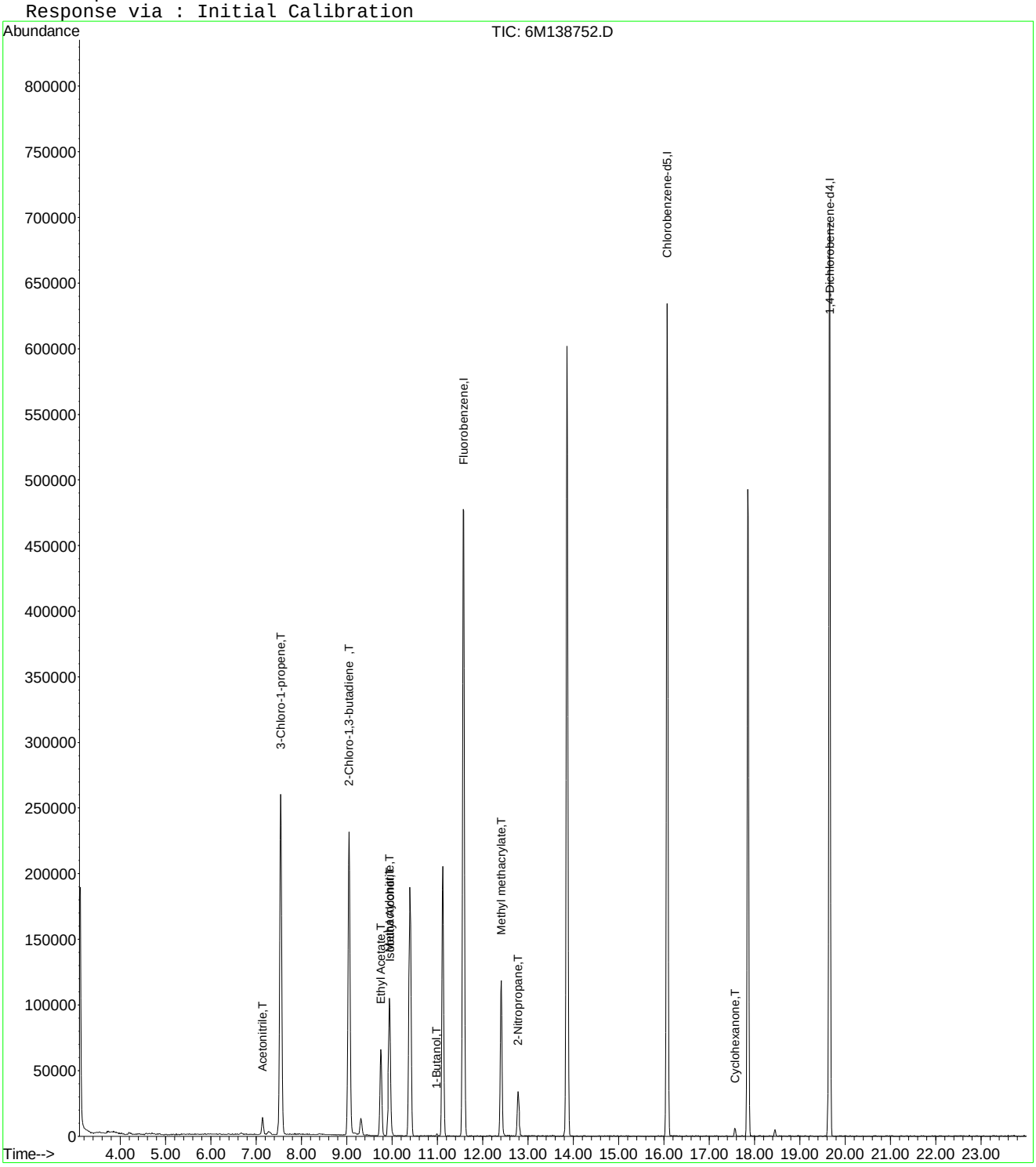

6M138752.D A9FOOWT.M Mon Apr 25 15:45:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:58 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	599043	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	463005	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	248475	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	17741	19.7725 ug/L	95
3) 3-Chloro-1-propene	7.54	41	297686	19.9080 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	242962	18.9362 ug/L	84
5) Ethyl Acetate	9.75	43	124111	19.3209 ug/L	93
6) Methacrylonitrile	9.93	67	42708	19.2846 ug/L #	59
7) Isobutyl Alcohol	9.95	43	7968	38.9462 ug/L #	85
9) Methyl methacrylate	12.41	41	95824	17.7480 ug/L	81
10) 2-Nitropropane	12.78	43	34207	17.0355 ug/L	92
13) Cyclohexanone	17.57	55	4053	13.0852 ug/L	81

(#) = qualifier out of range (m) = manual integration
6M138752.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

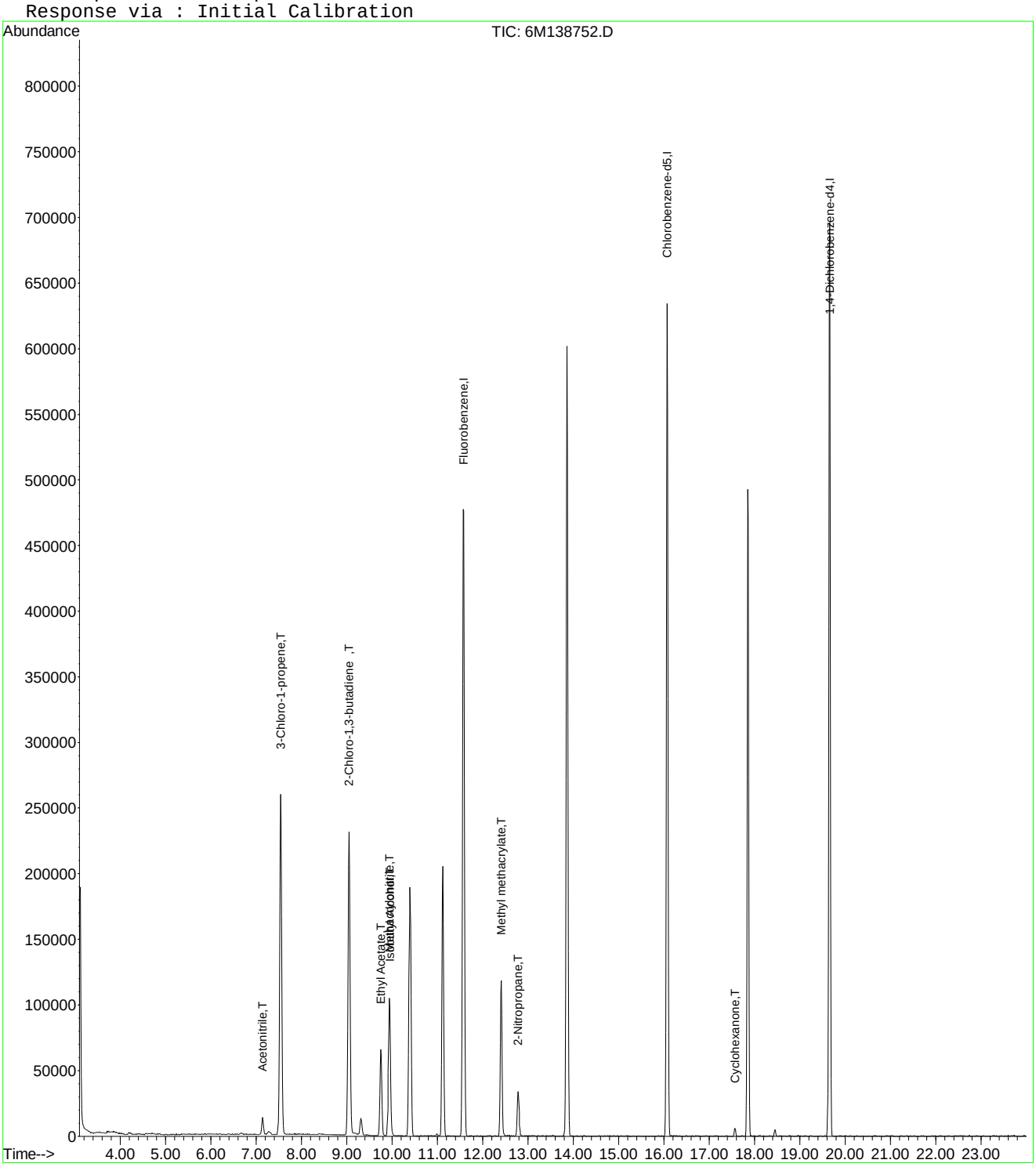

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	19.7724	1.1	100	0.00
3	T	3-Chloro-1-propene	20.0000	19.9080	0.5	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	18.9362	5.3	100	0.00
5	T	Ethyl Acetate	20.0000	19.3209	3.4	100	0.00
6	T	Methacrylonitrile	20.0000	19.2846	3.6	100	0.00
7	T	Isobutyl Alcohol	40.0000	38.9462	2.6	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	20.0000	17.7480	11.3	100	0.00
10	T	2-Nitropropane	-1.0000	17.0355	0.0	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	13.0852	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138752.D A9FOOWT.M Wed Apr 27 16:04:26 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:48 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	604736	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	468574	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	254472	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.40	111	172256	27.8132 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.24%		
43) 1,2-Dichloroethane-d4	11.12	65	208744	27.7711 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.08%		
58) Toluene-d8	13.86	98	553191	26.2235 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.88%		
80) p-Bromofluorobenzene	17.85	95	239542	28.1954 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 112.80%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	3732	1.9901 ug/L #	57
20) Carbon Disulfide	7.54	76	220780	11.4508 ug/L #	36
26) Vinyl Acetate	9.04	43	2704	0.2791 ug/L #	8
27) 1,1-Dichloroethane	9.05	63	9803	0.7652 ug/L #	42
28) Ethyl-Tert-Butyl ether	9.31	59	152978	7.3579 ug/L #	39
29) 2-Butanone	9.53	43	660	0.2385 ug/L #	52
36) Tetrahydrofuran	10.37	42	3746	2.0774 ug/L #	62
60) Ethyl Methacrylate	13.86	69	1423	0.2030 ug/L #	9

(#) = qualifier out of range (m) = manual integration
6M138753.D 8260WTR.M Mon Apr 25 09:22:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

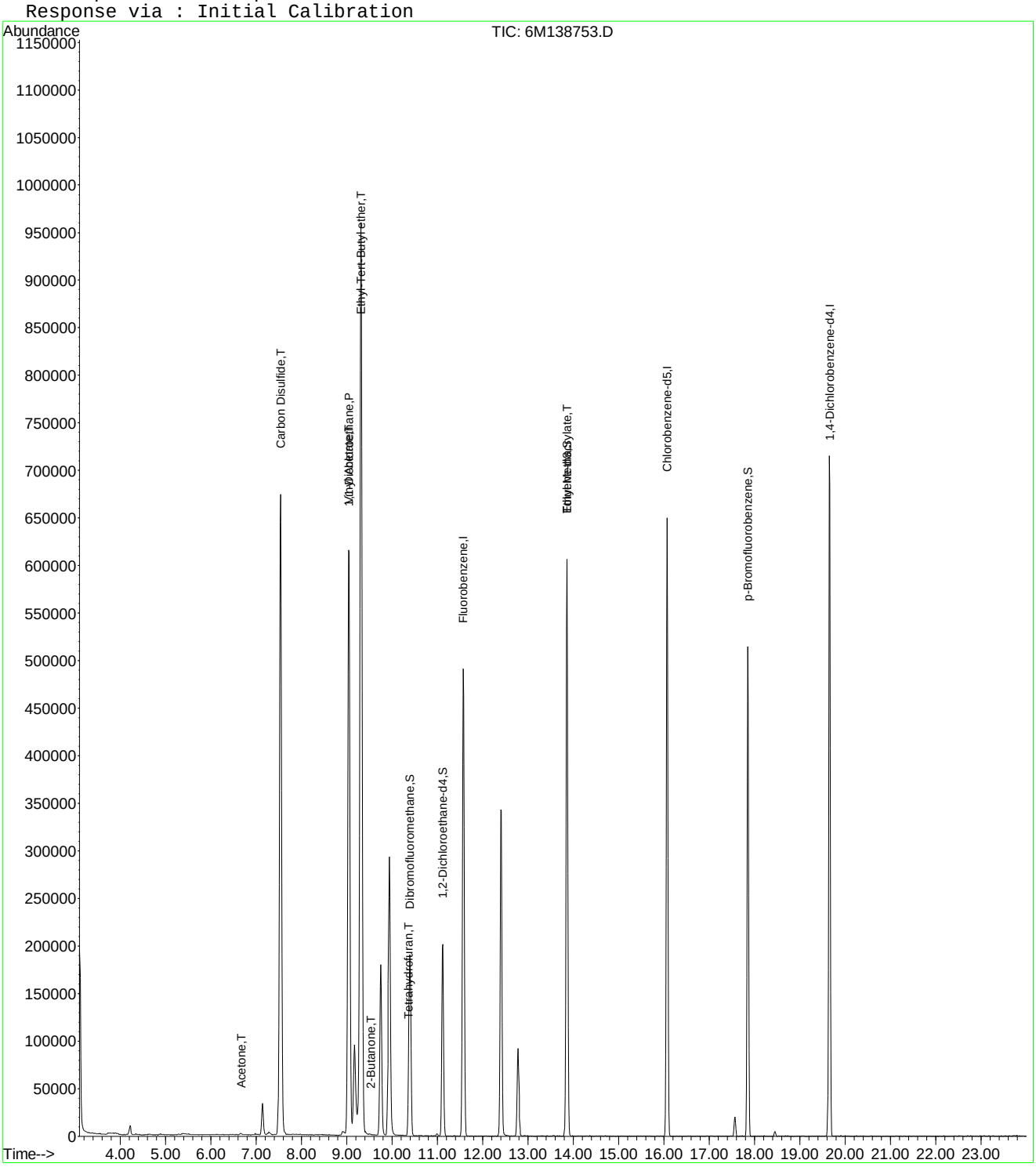

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:55 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	604736	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	468574	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	254472	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	46802	40.3072 ug/L	94
3) 3-Chloro-1-propene	7.54	41	793114	48.9454 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	674471	48.3496 ug/L	83
5) Ethyl Acetate	9.75	43	336975	52.8234 ug/L	93
6) Methacrylonitrile	9.94	67	119267	48.6097 ug/L #	62
7) Isobutyl Alcohol	9.95	43	20135	57.3741 ug/L #	99
8) 1-Butanol	10.98	41	1474	9.7632 ug/L	77
9) Methyl methacrylate	12.40	41	279157	43.9482 ug/L	81
10) 2-Nitropropane	12.79	43	95327	50.9052 ug/L	94
13) Cyclohexanone	17.56	55	13241	15.2363 ug/L	91

(#) = qualifier out of range (m) = manual integration
6M138753.D A9FOOWT.M Mon Apr 25 15:45:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

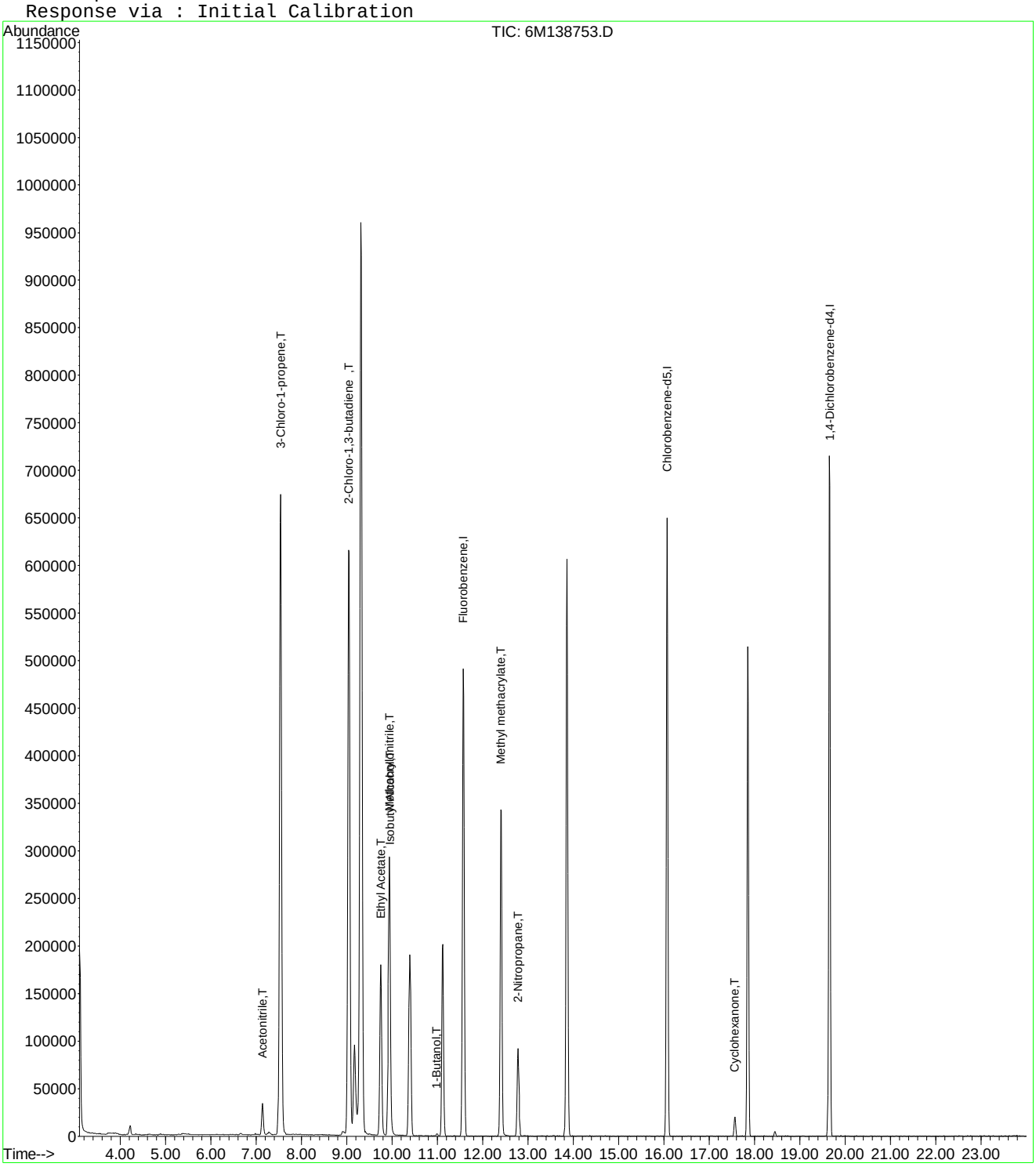

6M138753.D A9FOOWT.M Mon Apr 25 15:45:57 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:59 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	604736	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	468574	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	254472	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	46802	51.6701 ug/L	94
3) 3-Chloro-1-propene	7.54	41	793114	52.5409 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	674471	52.0726 ug/L	83
5) Ethyl Acetate	9.75	43	336975	51.9646 ug/L	93
6) Methacrylonitrile	9.94	67	119267	53.3476 ug/L #	62
7) Isobutyl Alcohol	9.95	43	20135	97.4900 ug/L #	99
9) Methyl methacrylate	12.40	41	279157	51.2171 ug/L	81
10) 2-Nitropropane	12.79	43	95327	47.0270 ug/L	94
13) Cyclohexanone	17.56	55	13241	41.7415 ug/L	91

(#) = qualifier out of range (m) = manual integration
6M138753.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

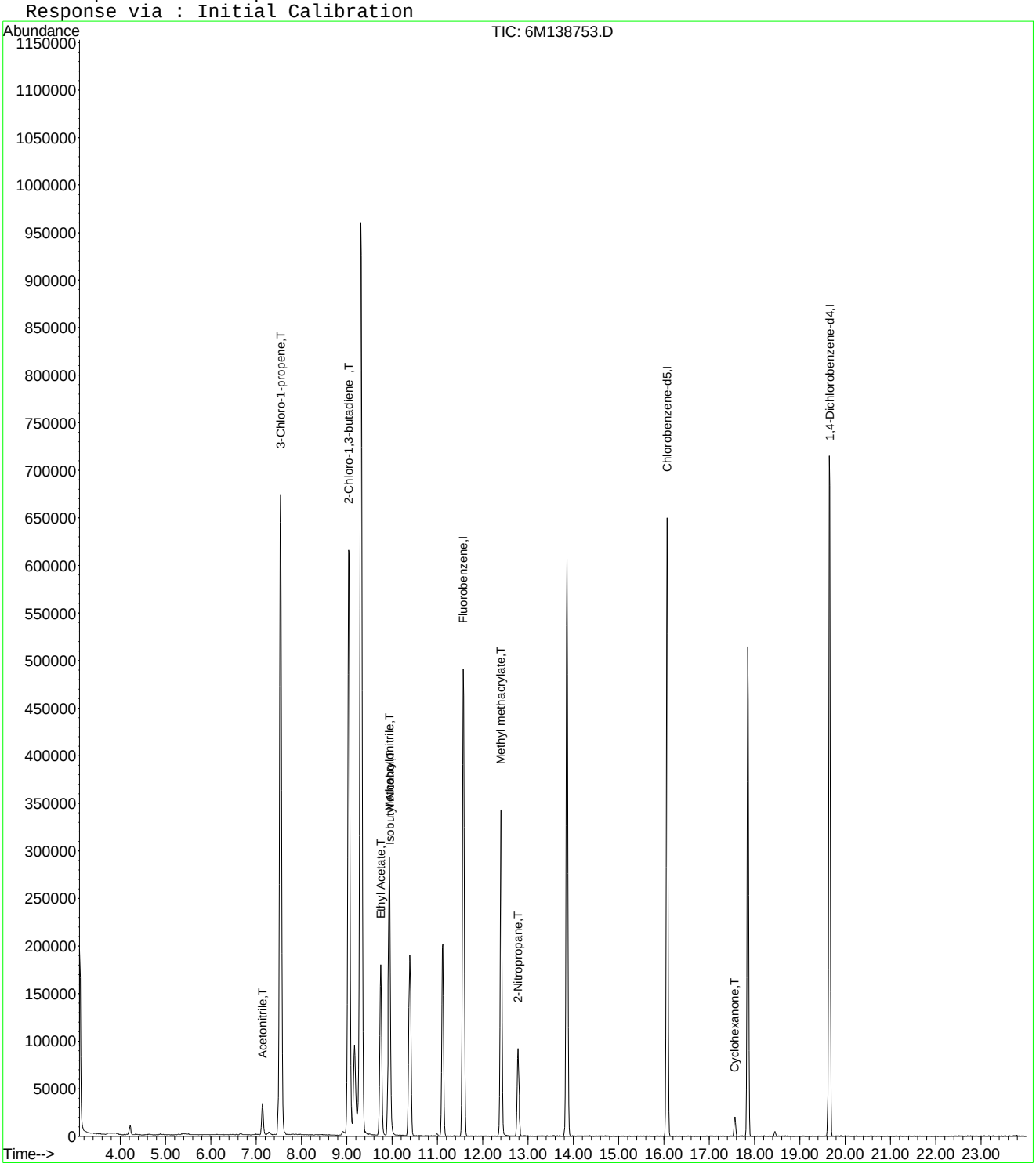

6M138753.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	51.6701	-3.3	100	0.00
3	T	3-Chloro-1-propene	50.0000	52.5409	-5.1	100	0.00
4	T	2-Chloro-1,3-butadiene	50.0000	52.0726	-4.1	100	0.00
5	T	Ethyl Acetate	50.0000	51.9646	-3.9	100	0.00
6	T	Methacrylonitrile	50.0000	53.3476	-6.7	100	0.00
7	T	Isobutyl Alcohol	100.0000	97.4900	2.5	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	50.0000	51.2171	-2.4	100	0.00
10	T	2-Nitropropane	50.0000	47.0270	5.9	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	50.0000	41.7415	16.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138753.D A9FOOWT.M Wed Apr 27 16:04:38 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:49 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	599121	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	467316	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	255798	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	169577	27.6373 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.56%		
43) 1,2-Dichloroethane-d4	11.12	65	210119	28.2161 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.88%		
58) Toluene-d8	13.86	98	550953	26.1877 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.76%		
80) p-Bromofluorobenzene	17.85	95	239480	28.0420 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 112.16%		

Target Compounds

					Qvalue
13) Acetone	6.66	43	6960	3.7463 ug/L	82
16) Dimethyl Sulfide	7.15	62	732	0.1448 ug/L #	1
18) Methyl acetate	7.53	43	1419	0.2750 ug/L #	1
22) Methyl Tert Butyl Ether	7.96	73	2141	0.1320 ug/L #	72
27) 1,1-Dichloroethane	9.05	63	20725	1.6328 ug/L #	42
28) Ethyl-Tert-Butyl ether	9.31	59	76666	3.7220 ug/L #	39
29) 2-Butanone	9.53	43	1176	0.4289 ug/L #	52
34) 1-Bromopropane	10.00	122	702	0.6817 ug/L #	1
36) Tetrahydrofuran	10.35	42	4425	2.4769 ug/L #	60
48) Methylcyclohexane	12.41	83	1461	0.1681 ug/L #	1
60) Ethyl Methacrylate	13.87	69	1083	0.1549 ug/L #	1
79) 1,1,2,2-Tetrachloroethane	17.57	83	1910	0.3066 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138754.D 8260WTR.M Mon Apr 25 09:22:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

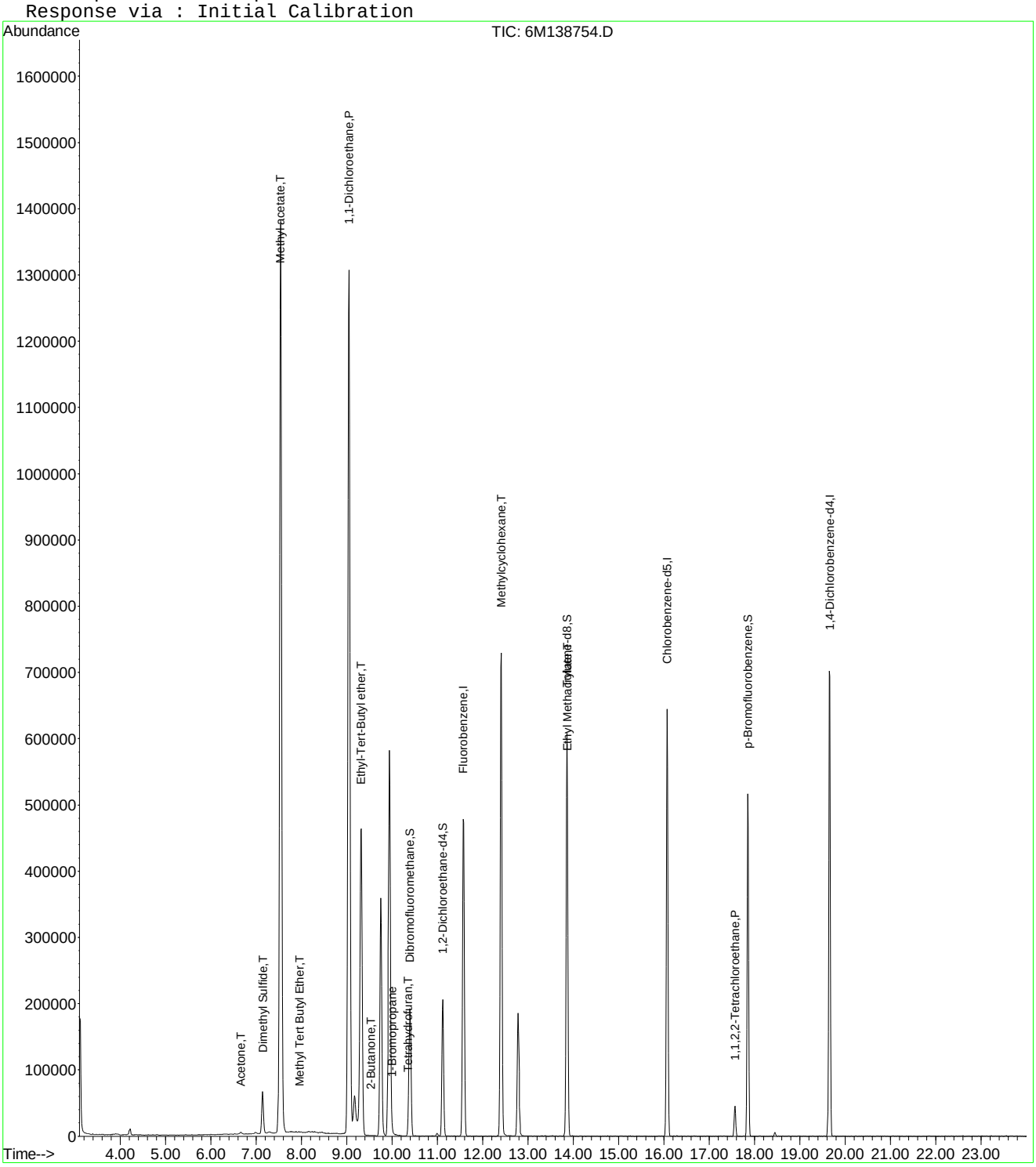

6M138754.D 8260WTR.M Mon Apr 25 09:22:50 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:57 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	599121	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	467316	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	255798	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	90880	79.0019 ug/L	95
3) 3-Chloro-1-propene	7.54	41	1610716	100.3335 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	1413663	102.2884 ug/L	83
5) Ethyl Acetate	9.75	43	673221	106.5217 ug/L	93
6) Methacrylonitrile	9.94	67	237219	97.5895 ug/L #	62
7) Isobutyl Alcohol	9.95	43	33897	97.4937 ug/L #	85
8) 1-Butanol	11.00	41	2978	19.9099 ug/L #	64
9) Methyl methacrylate	12.41	41	585839	93.0942 ug/L	80
10) 2-Nitropropane	12.78	43	197598	106.5074 ug/L	97
13) Cyclohexanone	17.57	55	27547	31.5338 ug/L	88

(#) = qualifier out of range (m) = manual integration
6M138754.D A9FOOWT.M Mon Apr 25 15:45:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

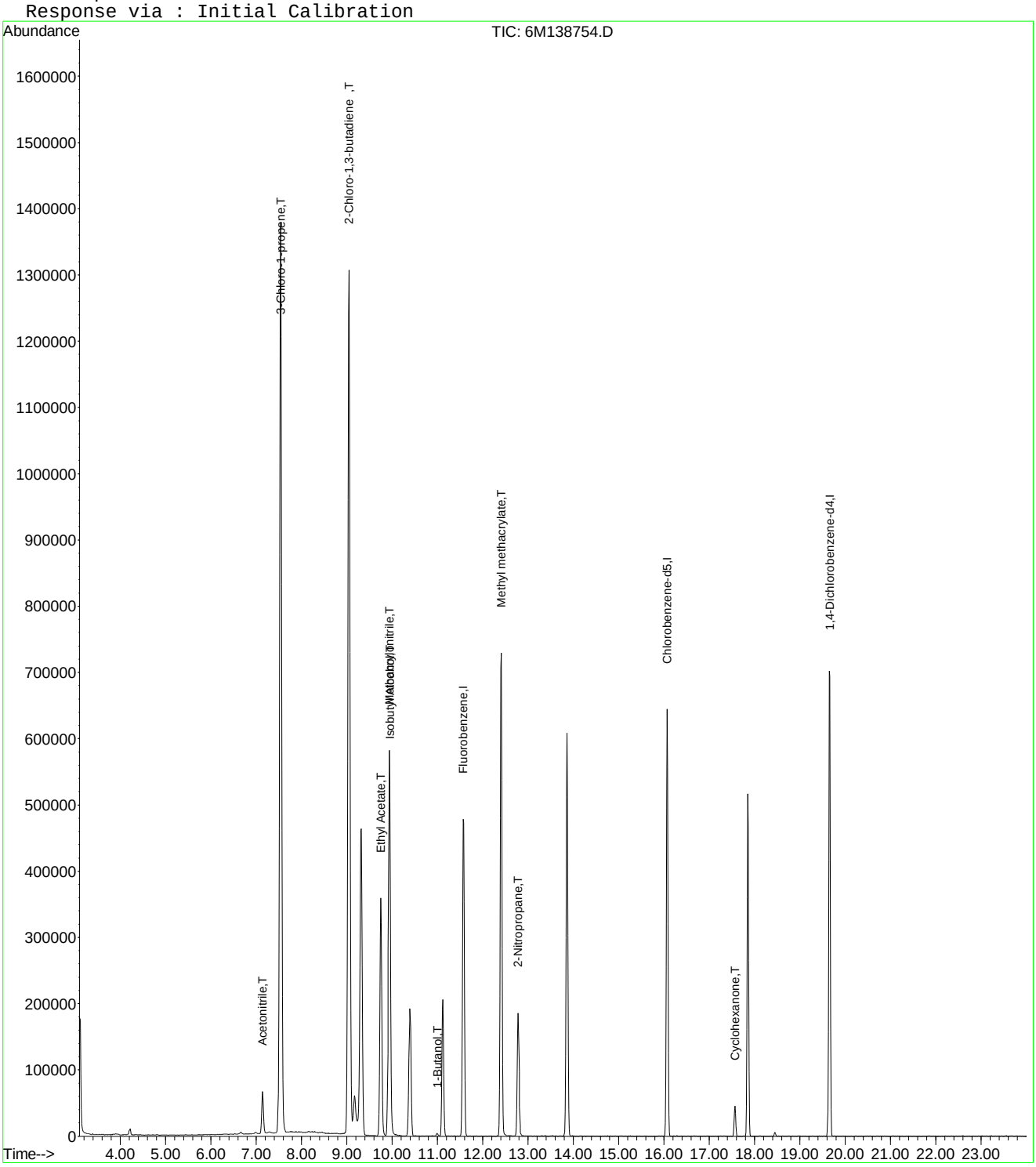

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:59 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	599121	25.00	ug/L	0.00
11) Chlorobenzene-d5	16.07	117	467316	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	255798	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	90880	101.2731	ug/L	95
3) 3-Chloro-1-propene	7.54	41	1610716	107.7041	ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	1413663	110.1648	ug/L	83
5) Ethyl Acetate	9.75	43	673221	104.7898	ug/L	93
6) Methacrylonitrile	9.94	67	237219	107.1014	ug/L #	62
7) Isobutyl Alcohol	9.95	43	33897	165.6613	ug/L #	85
9) Methyl methacrylate	12.41	41	585839	108.4917	ug/L	80
10) 2-Nitropropane	12.78	43	197598	98.3932	ug/L	97
13) Cyclohexanone	17.57	55	27547	86.3902	ug/L	88

(#) = qualifier out of range (m) = manual integration
6M138754.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

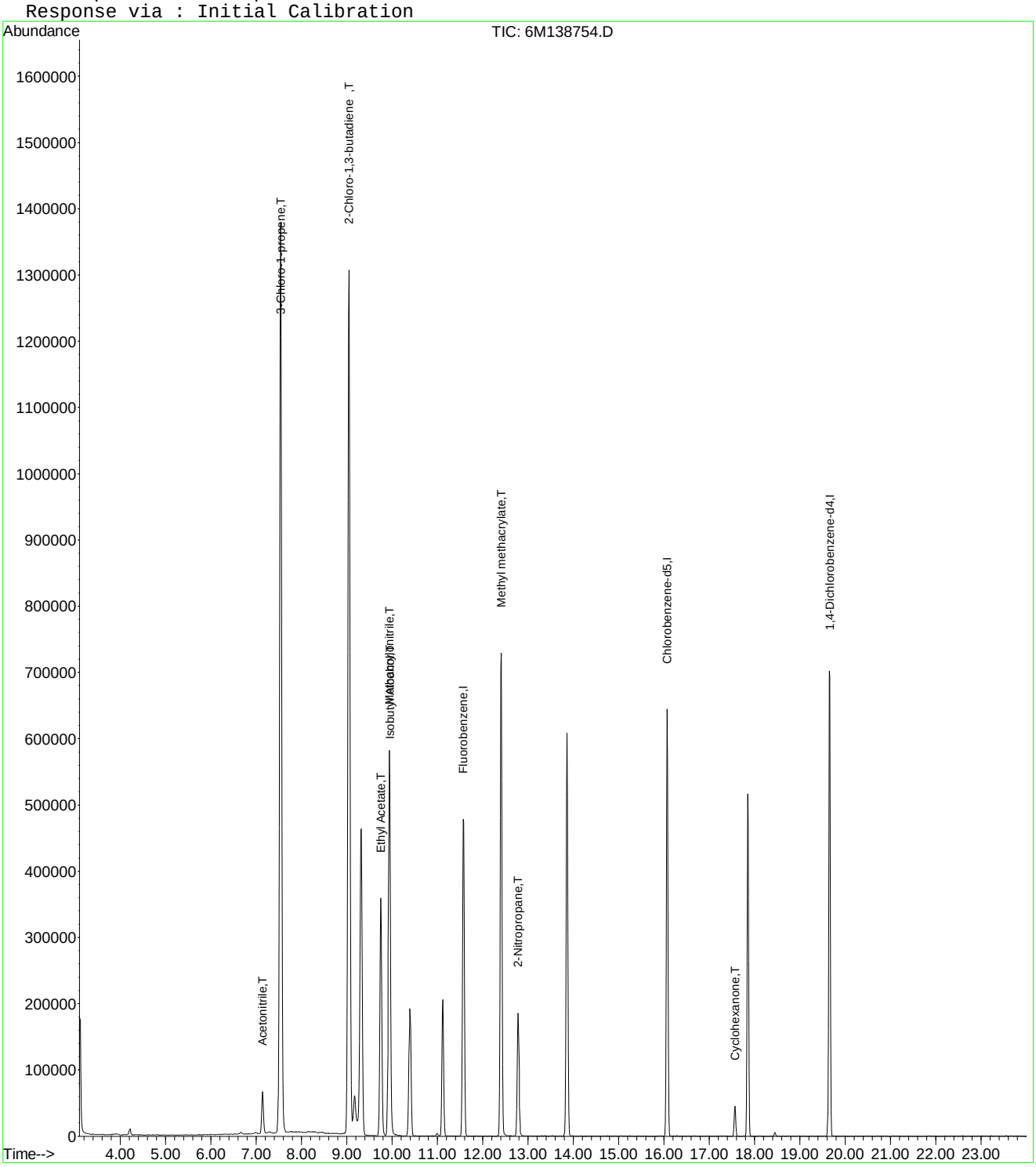

6M138754.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:50 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	607157	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	473187	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	259046	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.40	111	172341	27.7160 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.88%		
43) 1,2-Dichloroethane-d4	11.12	65	211249	27.9923 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.96%		
58) Toluene-d8	13.86	98	552831	25.9510 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.80%		
80) p-Bromofluorobenzene	17.85	95	247709	28.6419 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 114.56%		

Target Compounds

					Qvalue
9) Diethyl ether	6.31	59	653	0.1225 ug/L #	12
13) Acetone	6.66	43	9406	4.9959 ug/L #	64
15) Tert-Butyl Alcohol	6.98	59	449	0.8301 ug/L #	1
16) Dimethyl Sulfide	7.16	62	680	0.1328 ug/L #	1
22) Methyl Tert Butyl Ether	7.96	73	3926	0.2388 ug/L	83
24) n-Hexane	8.30	57	1777	0.2040 ug/L	87
27) 1,1-Dichloroethane	9.05	63	41640	3.2372 ug/L #	47
28) Ethyl-Tert-Butyl ether	9.31	59	272648	13.0615 ug/L #	38
29) 2-Butanone	9.51	43	2992	1.0767 ug/L #	67
30) Propionitrile	9.93	54	258	0.3232 ug/L #	57
34) 1-Bromopropane	9.99	122	1417	1.3579 ug/L #	1
36) Tetrahydrofuran	10.37	42	4839	2.6728 ug/L #	62
48) Methylcyclohexane	12.40	83	2976	0.3378 ug/L #	1
60) Ethyl Methacrylate	13.87	69	1202	0.1698 ug/L #	1
79) 1,1,2,2-Tetrachloroethane	17.57	83	5192	0.8231 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138755.D 8260WTR.M Mon Apr 25 09:22:50 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

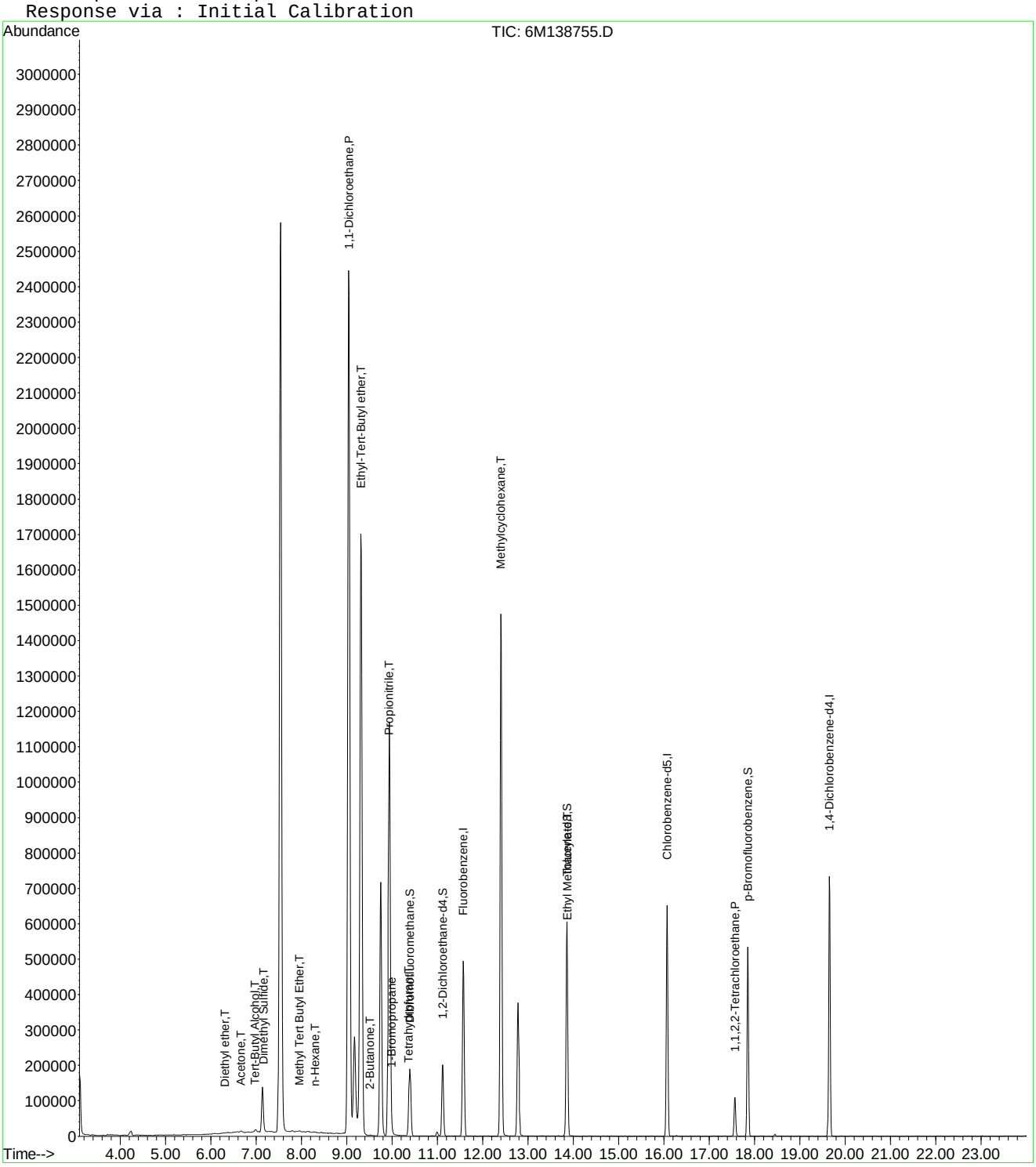

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:58 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	607157	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	473187	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.65	152	259046	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	183628	157.5150 ug/L	93
3) 3-Chloro-1-propene	7.54	41	3085939	189.6828 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	2709180	193.4336 ug/L	83
5) Ethyl Acetate	9.75	43	1346541	210.2391 ug/L	94
6) Methacrylonitrile	9.94	67	471538	191.4186 ug/L #	64
7) Isobutyl Alcohol	9.95	43	72755	206.4864 ug/L #	92
8) 1-Butanol	10.99	41	8815	58.1542 ug/L #	64
9) Methyl methacrylate	12.40	41	1186381	186.0295 ug/L	80
10) 2-Nitropropane	12.79	43	410702	218.4428 ug/L	99
13) Cyclohexanone	17.57	55	67080	75.8254 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138755.D A9FOOWT.M Mon Apr 25 15:45:58 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

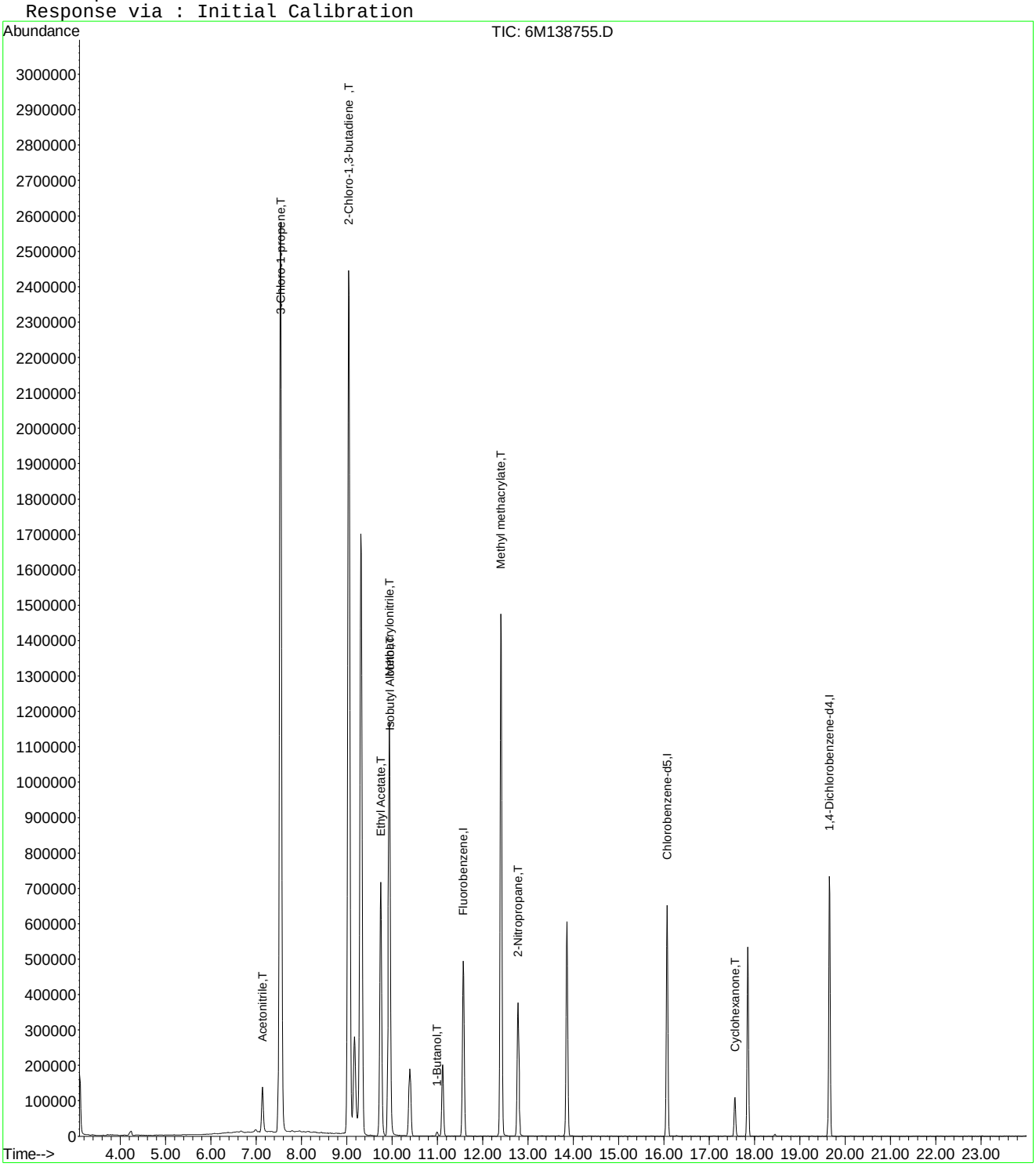

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	607157	25.00	ug/L	0.00
11) Chlorobenzene-d5	16.07	117	473187	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.65	152	259046	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	183628	201.9195	ug/L	93
3) 3-Chloro-1-propene	7.54	41	3085939	203.6170	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	2709180	208.3284	ug/L	83
5) Ethyl Acetate	9.75	43	1346541	206.8209	ug/L	94
6) Methacrylonitrile	9.94	67	471538	210.0757	ug/L #	64
7) Isobutyl Alcohol	9.95	43	72755	350.8618	ug/L #	92
9) Methyl methacrylate	12.40	41	1186381	216.7982	ug/L	80
10) 2-Nitropropane	12.79	43	410702	201.8008	ug/L	99
13) Cyclohexanone	17.57	55	67080	207.7320	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138755.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

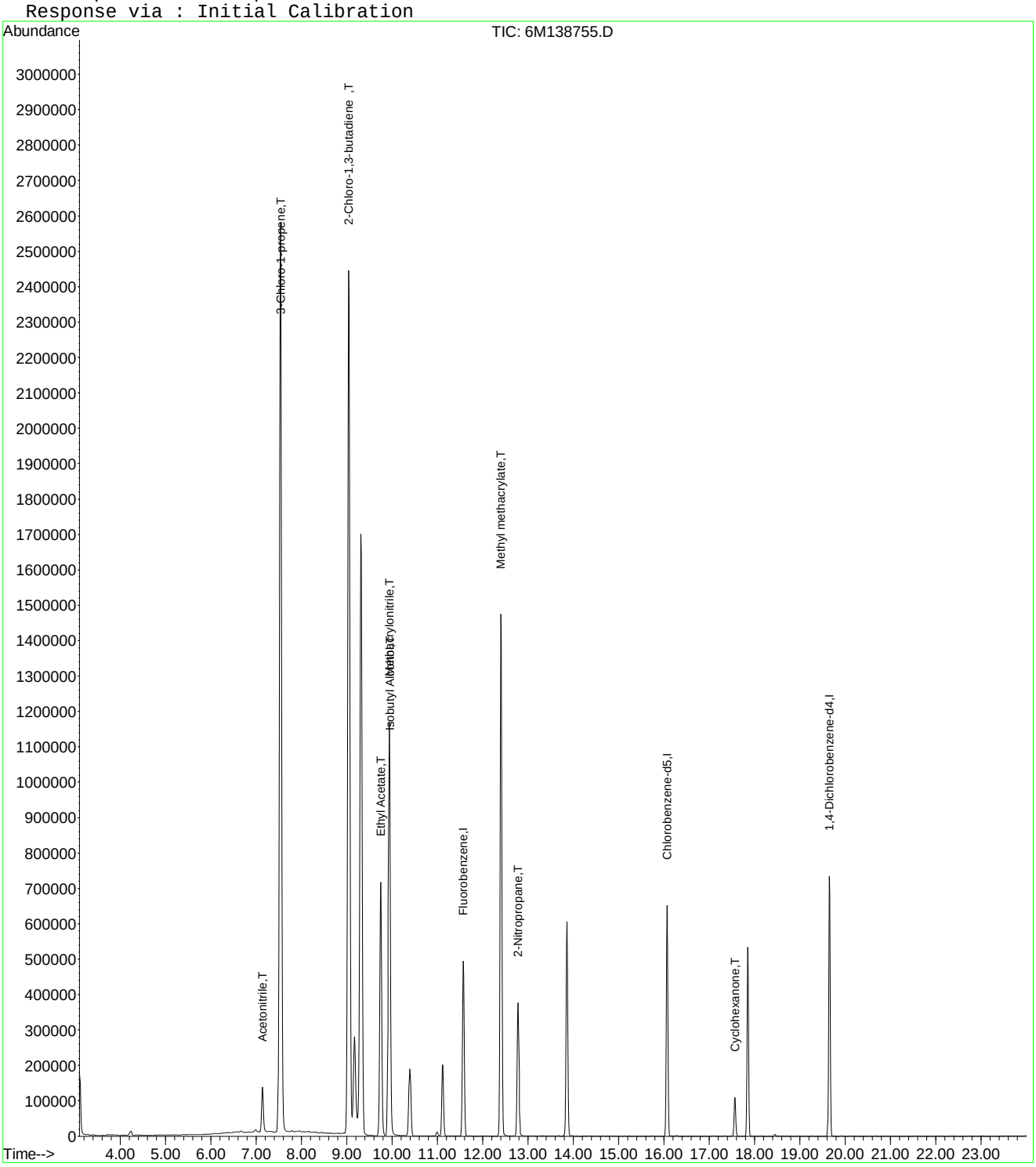

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:50 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	602356	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	472685	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	264650	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	169983	27.5546 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.20%		
43) 1,2-Dichloroethane-d4	11.12	65	207199	27.6745 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 110.68%		
58) Toluene-d8	13.86	98	553023	25.9875 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.96%		
80) p-Bromofluorobenzene	17.85	95	247939	28.0615 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 112.24%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	13666	7.3164 ug/L #	77
15) Tert-Butyl Alcohol	7.06	59	467	0.8703 ug/L #	59
16) Dimethyl Sulfide	7.14	62	668	0.1315 ug/L #	1
18) Methyl acetate	7.54	43	3262	0.6289 ug/L #	1
22) Methyl Tert Butyl Ether	7.97	73	10591	0.6492 ug/L #	53
24) n-Hexane	8.28	57	3576	0.4138 ug/L #	56
27) 1,1-Dichloroethane	9.04	63	60743	4.7600 ug/L #	48
28) Ethyl-Tert-Butyl ether	9.31	59	155796	7.5231 ug/L #	39
29) 2-Butanone	9.52	43	4002	1.4516 ug/L	97
30) Propionitrile	9.95	54	1113	1.4052 ug/L #	1
34) 1-Bromopropane	9.99	122	1450	1.4006 ug/L #	1
36) Tetrahydrofuran	10.36	42	4902	2.7292 ug/L #	61
48) Methylcyclohexane	12.41	83	4626	0.5293 ug/L #	1
60) Ethyl Methacrylate	13.88	69	1599	0.2261 ug/L #	1
72) Ethylbenzene	16.28	106	1349	0.1427 ug/L	56
73) m-,p-Xylene	16.28	106	1349	0.1203 ug/L	81
79) 1,1,2,2-Tetrachloroethane	17.57	83	8744	1.3569 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138756.D 8260WTR.M Mon Apr 25 09:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

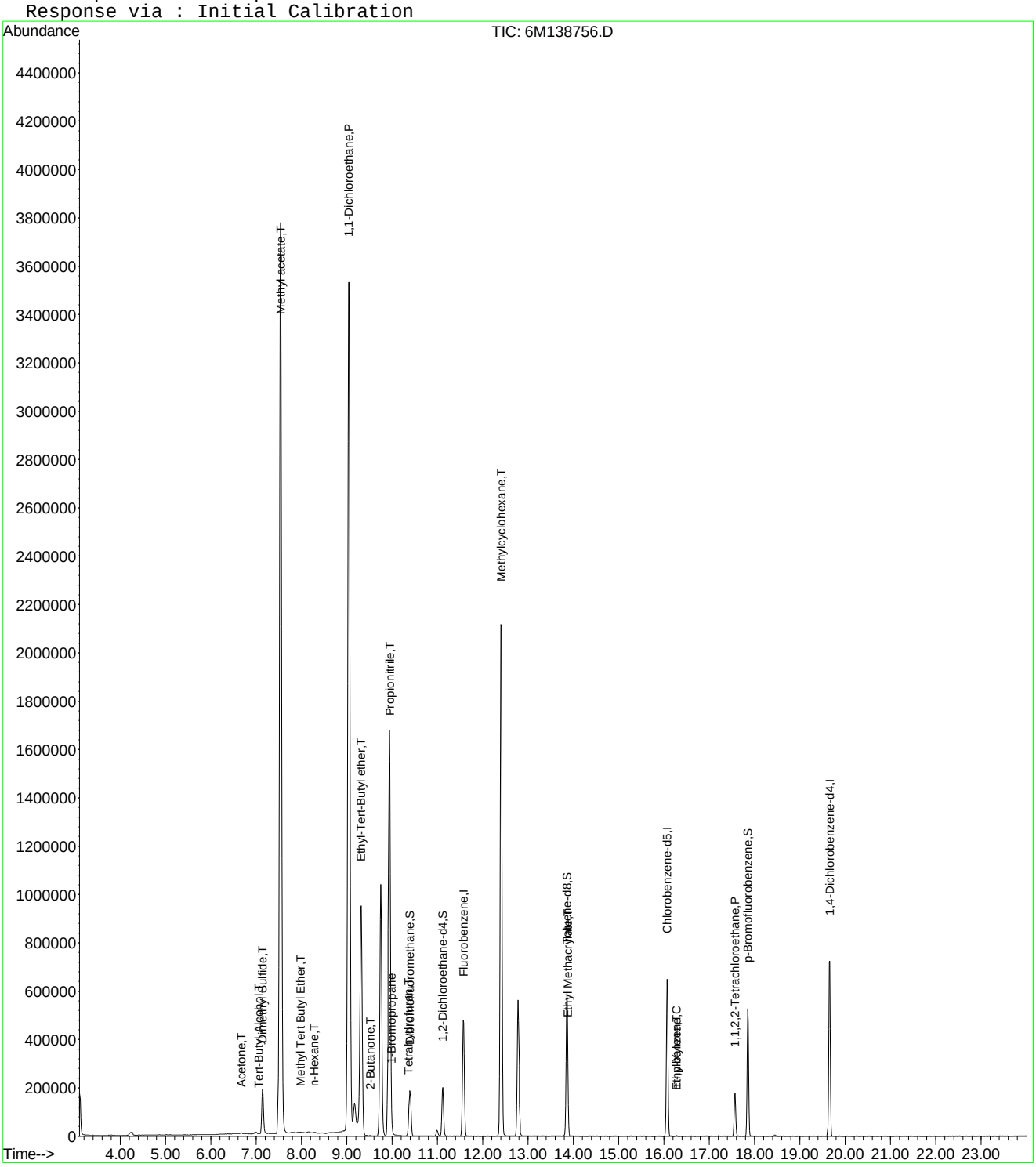

6M138756.D 8260WTR.M Mon Apr 25 09:22:51 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:59 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.58	96	602356	25.00	ug/L	-0.02
11) Chlorobenzene-d5	16.07	117	472685	25.00	ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	264650	25.00	ug/L	-0.02

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	273003	236.0468	ug/L	93
3) 3-Chloro-1-propene	7.54	41	4493022	278.3729	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	3994938	287.5093	ug/L	83
5) Ethyl Acetate	9.75	43	1967613	309.6573	ug/L	94
6) Methacrylonitrile	9.94	67	686612	280.9484	ug/L #	63
7) Isobutyl Alcohol	9.95	43	121480	347.5212	ug/L #	90
8) 1-Butanol	10.99	41	18116	120.4672	ug/L	69
9) Methyl methacrylate	12.40	41	1742413	275.3954	ug/L	81
10) 2-Nitropropane	12.78	43	613081	328.6824	ug/L	99
13) Cyclohexanone	17.57	55	106618	117.9661	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138756.D A9FOOWT.M Mon Apr 25 15:45:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

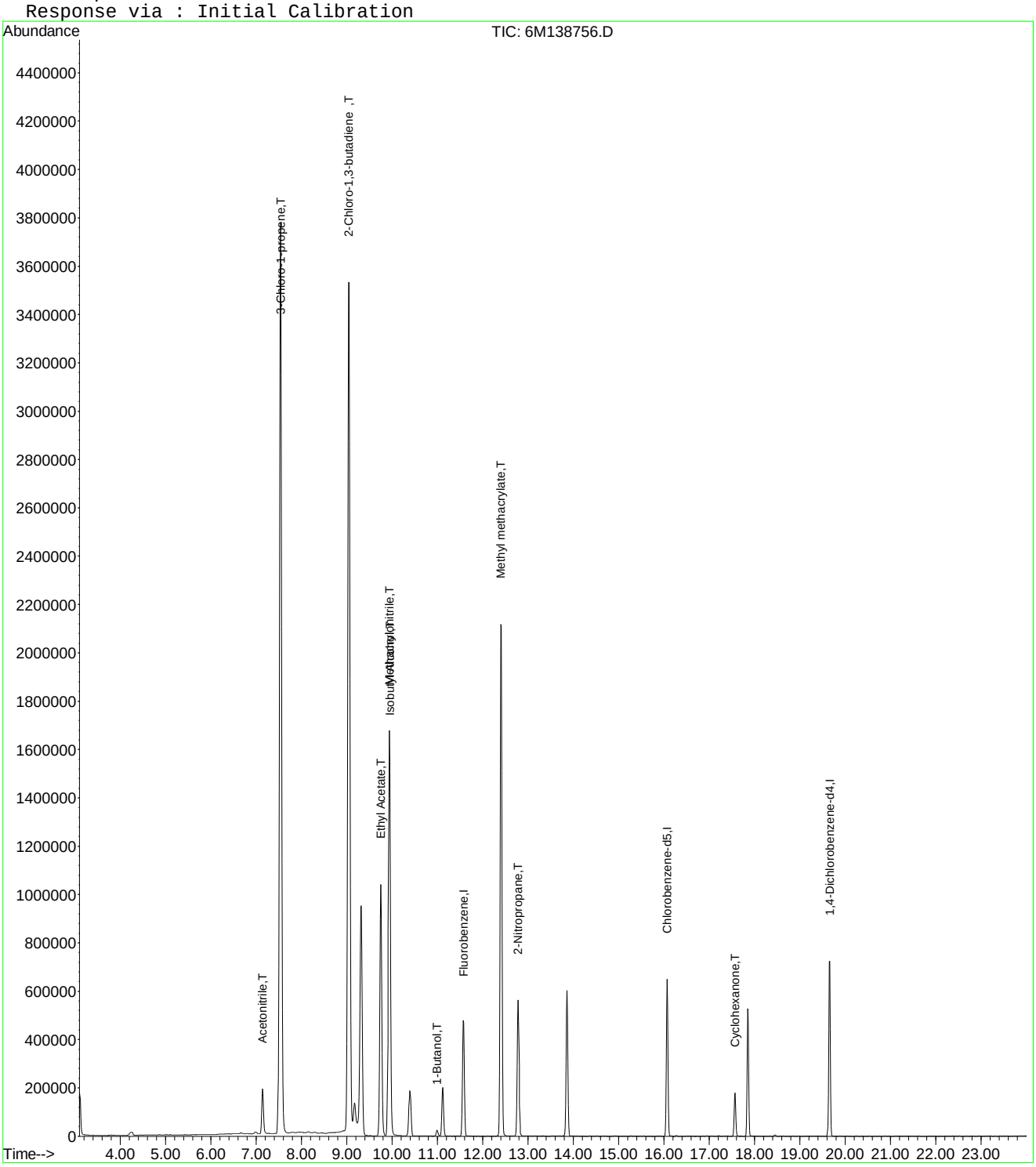

6M138756.D A9FOOWT.M Mon Apr 25 15:45:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.58	96	602356	25.00	ug/L	0.01
11) Chlorobenzene-d5	16.07	117	472685	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	264650	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	273003	302.5900	ug/L	93
3) 3-Chloro-1-propene	7.54	41	4493022	298.8224	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	3994938	309.6481	ug/L	83
5) Ethyl Acetate	9.75	43	1967613	304.6228	ug/L	94
6) Methacrylonitrile	9.94	67	686612	308.3318	ug/L #	63
7) Isobutyl Alcohol	9.95	43	121480	590.5081	ug/L #	90
9) Methyl methacrylate	12.40	41	1742413	320.9449	ug/L	81
10) 2-Nitropropane	12.78	43	613081	303.6419	ug/L	99
13) Cyclohexanone	17.57	55	106618	323.1811	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138756.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

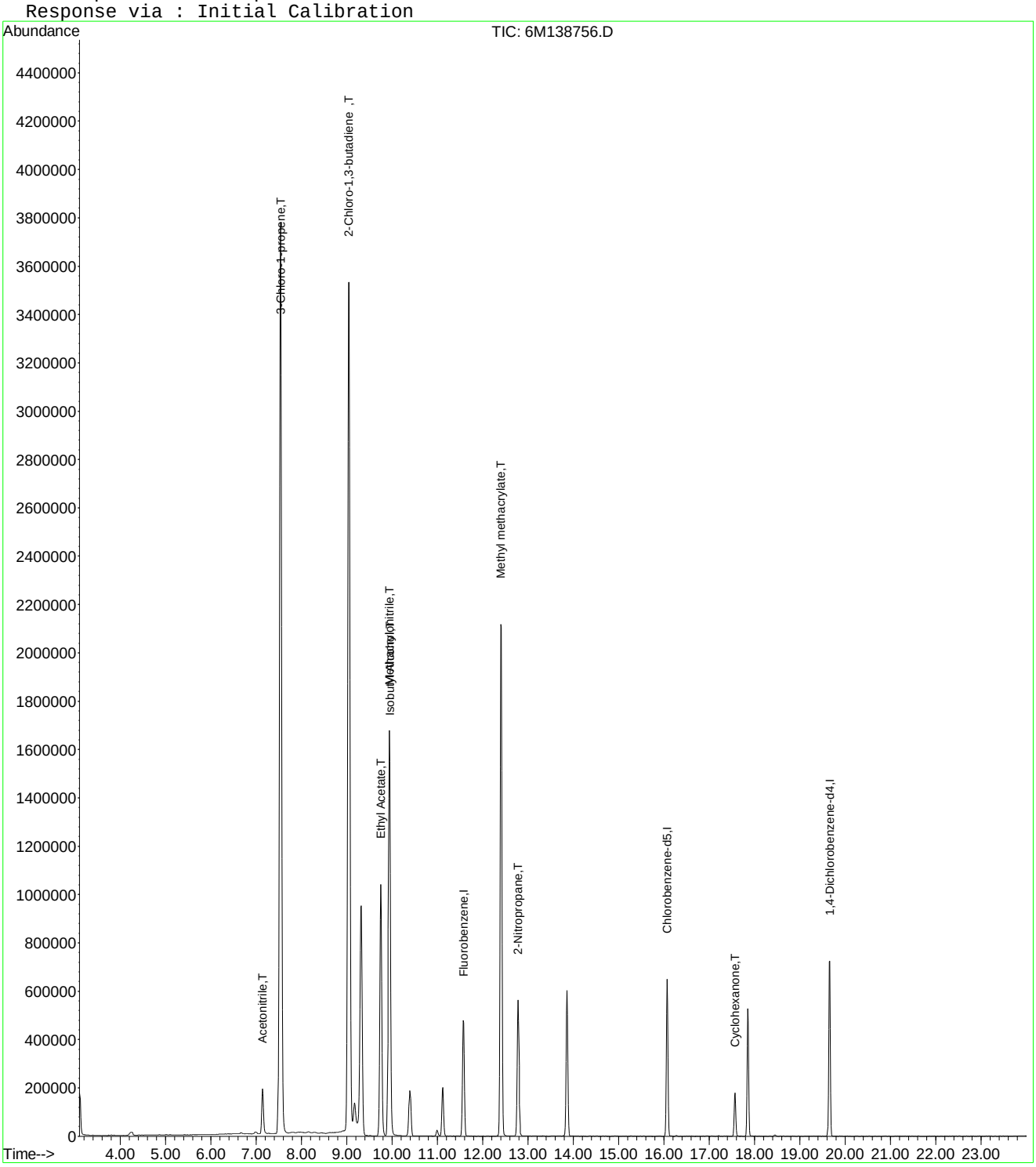

6M138756.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:51 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602625	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.08	117	475117	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	264739	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	170708	27.6598 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.64%		
43) 1,2-Dichloroethane-d4	11.11	65	208757	27.8702 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.48%		
58) Toluene-d8	13.86	98	554316	25.9150 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.64%		
80) p-Bromofluorobenzene	17.85	95	246698	27.9116 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 111.64%		

Target Compounds					Qvalue
13) Acetone	6.66	43	14063	7.5256 ug/L	99
15) Tert-Butyl Alcohol	7.05	59	807	1.5033 ug/L #	59
16) Dimethyl Sulfide	7.16	62	1034	0.2034 ug/L #	1
18) Methyl acetate	7.48	43	1103	0.2125 ug/L #	60
19) Methylene Chloride	7.73	84	1123	0.1699 ug/L #	40
22) Methyl Tert Butyl Ether	7.97	73	18318	1.1224 ug/L #	53
24) n-Hexane	8.28	57	5609	0.6488 ug/L	75
27) 1,1-Dichloroethane	9.04	63	82912	6.4943 ug/L #	48
28) Ethyl-Tert-Butyl ether	9.32	59	139043	6.7111 ug/L #	38
29) 2-Butanone	9.53	43	4129	1.4970 ug/L	86
30) Propionitrile	9.72	54	202	0.2549 ug/L #	1
34) 1-Bromopropane	9.99	122	1978	1.9098 ug/L #	1
36) Tetrahydrofuran	10.37	42	5444	3.0296 ug/L #	63
48) Methylcyclohexane	12.40	83	6593	0.7540 ug/L #	1
60) Ethyl Methacrylate	13.85	69	1165	0.1639 ug/L #	1
73) m-,p-Xylene	16.28	106	1795	0.1593 ug/L	72
79) 1,1,2,2-Tetrachloroethane	17.57	83	12875	1.9973 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138757.D 8260WTR.M Mon Apr 25 09:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

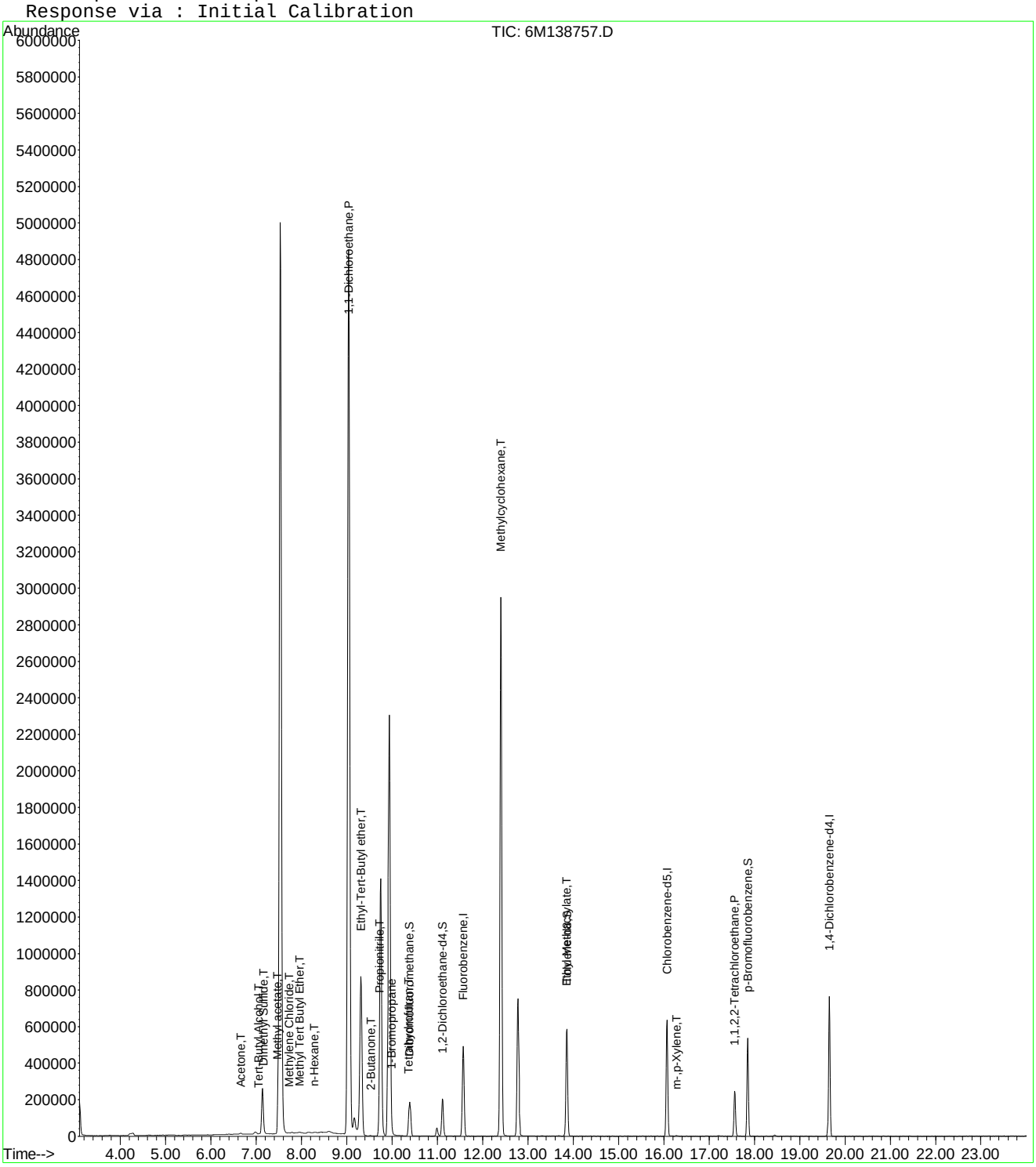

6M138757.D 8260WTR.M Mon Apr 25 09:22:52 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	602625	25.00	ug/L	-0.03
11) Chlorobenzene-d5	16.08	117	475117	25.00	ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.65	152	264739	25.00	ug/L	-0.03

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	368012	318.0524	ug/L	93
3) 3-Chloro-1-propene	7.53	41	5948883	368.4088	ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	5359203	385.5211	ug/L	83
5) Ethyl Acetate	9.76	43	2690267	423.1975	ug/L	94
6) Methacrylonitrile	9.94	67	929265	380.0675	ug/L #	62
7) Isobutyl Alcohol	9.95	43	192560	550.6158	ug/L #	89
8) 1-Butanol	10.99	41	29815	198.1744	ug/L	75
9) Methyl methacrylate	12.40	41	2375132	375.2316	ug/L	81
10) 2-Nitropropane	12.79	43	849210	455.0717	ug/L	98
13) Cyclohexanone	17.57	55	149420	165.2683	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138757.D A9FOOWT.M Mon Apr 25 15:46:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

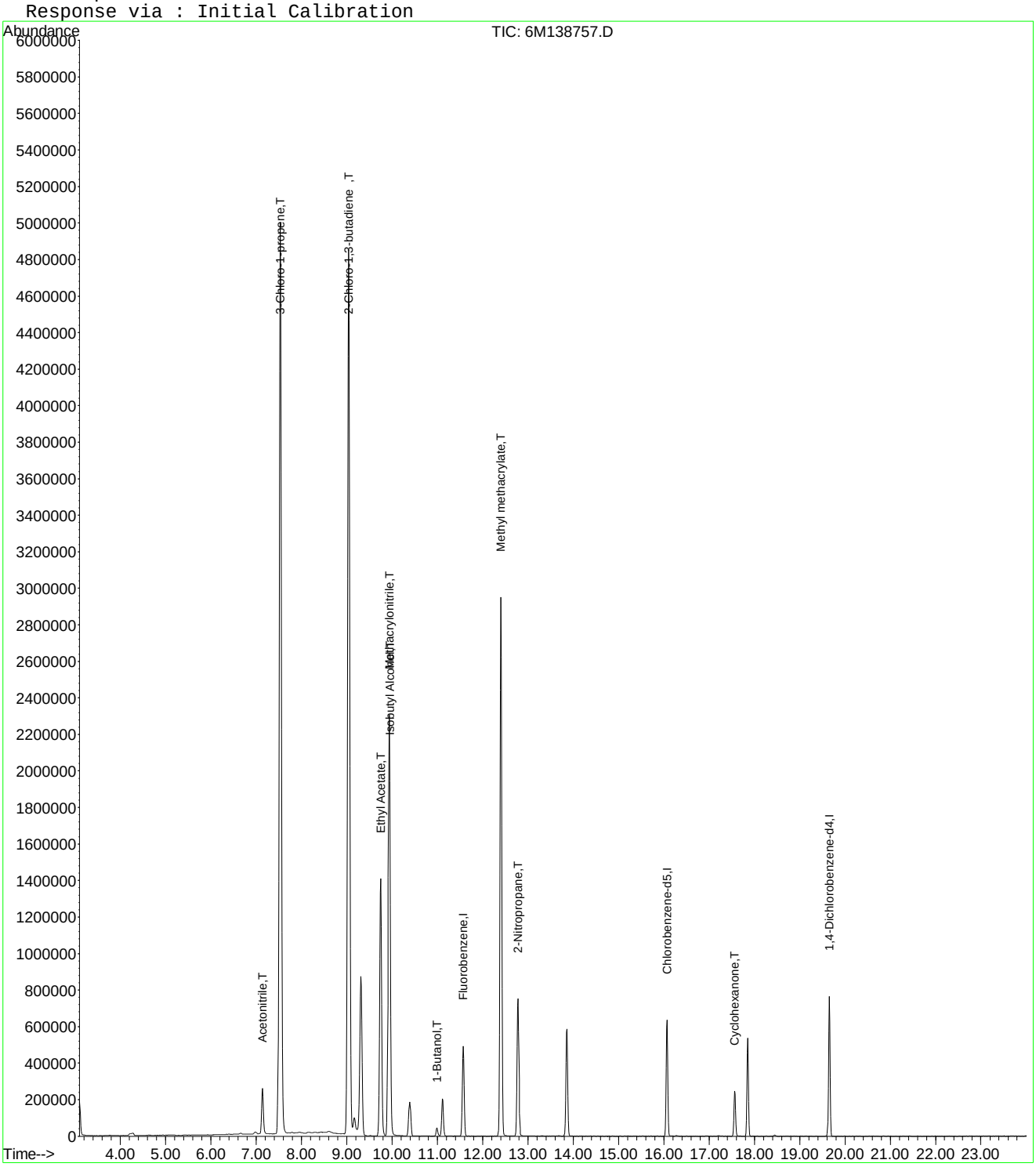

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:01 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602625	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.08	117	475117	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.65	152	264739	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	368012	407.7137 ug/L	93
3) 3-Chloro-1-propene	7.53	41	5948883	395.4723 ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	5359203	415.2070 ug/L	83
5) Ethyl Acetate	9.76	43	2690267	416.3170 ug/L	94
6) Methacrylonitrile	9.94	67	929265	417.1119 ug/L #	62
7) Isobutyl Alcohol	9.95	43	192560	935.6065 ug/L #	89
9) Methyl methacrylate	12.40	41	2375132	437.2937 ug/L	81
10) 2-Nitropropane	12.79	43	849210	420.4022 ug/L	98
13) Cyclohexanone	17.57	55	149420	452.7705 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138757.D A9FOOWT.M Wed Apr 27 16:05:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

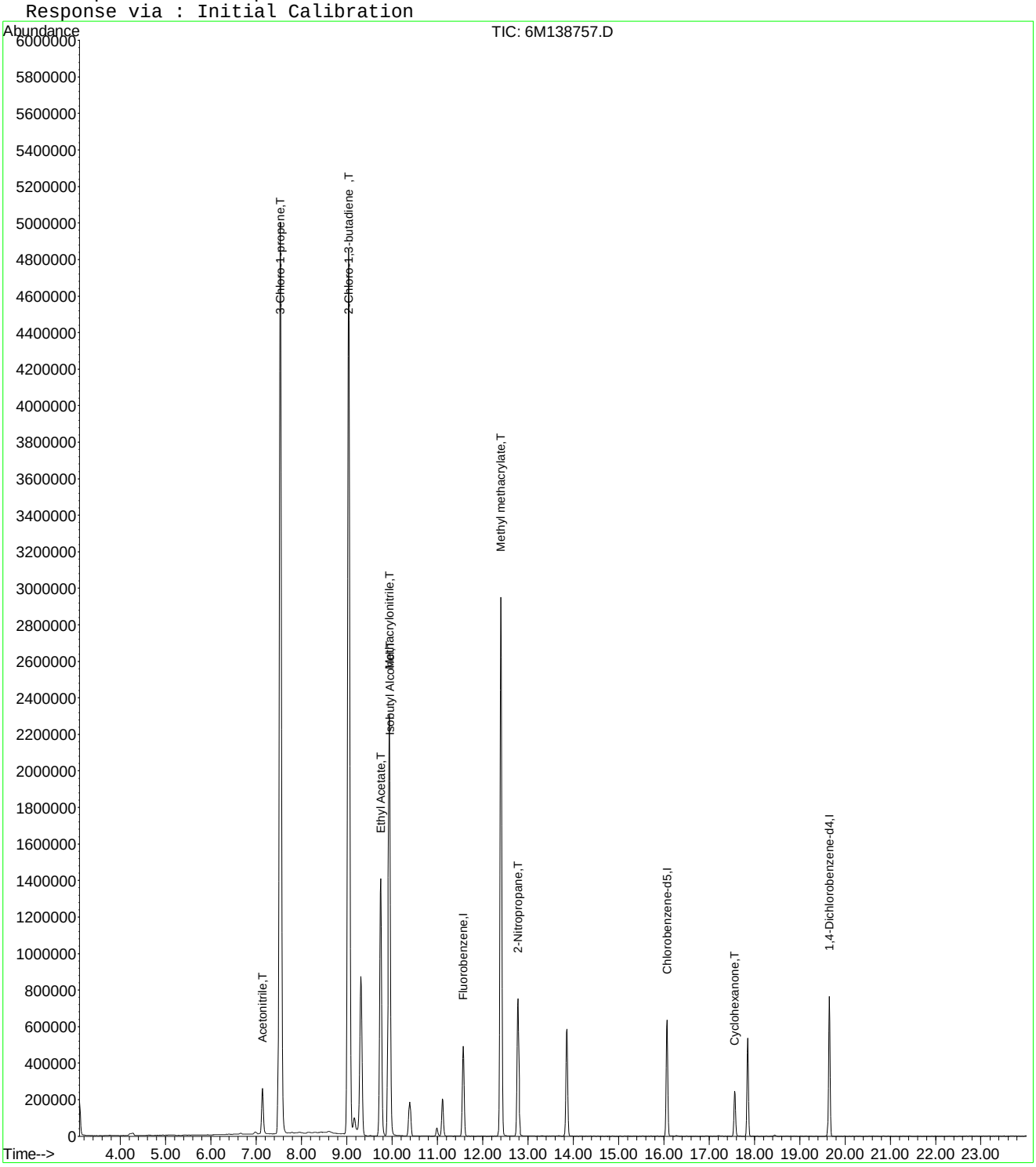

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:52 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	616486	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	485048	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	268890	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	175239	27.7556 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.04%		
43) 1,2-Dichloroethane-d4	11.12	65	210644	27.4898 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 109.96%		
58) Toluene-d8	13.86	98	563297	25.7957 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.20%		
80) p-Bromofluorobenzene	17.85	95	249406	27.7824 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 111.12%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	15233	7.9684 ug/L	89
15) Tert-Butyl Alcohol	7.06	59	370	0.6737 ug/L #	59
18) Methyl acetate	7.46	43	1079	0.2032 ug/L #	34
19) Methylene Chloride	7.73	84	1471	0.2176 ug/L	66
20) Carbon Disulfide	7.78	76	2765	0.1407 ug/L #	74
22) Methyl Tert Butyl Ether	7.96	73	25284	1.5144 ug/L #	53
24) n-Hexane	8.28	57	5266	0.5954 ug/L	97
27) 1,1-Dichloroethane	9.05	63	105121	8.0488 ug/L #	48
28) Ethyl-Tert-Butyl ether	9.31	59	124099	5.8551 ug/L #	39
29) 2-Butanone	9.52	43	4475	1.5860 ug/L #	72
30) Propionitrile	9.71	54	473	0.5835 ug/L #	1
34) 1-Bromopropane	10.00	122	2117	1.9980 ug/L #	1
36) Tetrahydrofuran	10.36	42	5652	3.0747 ug/L #	54
48) Methylcyclohexane	12.40	83	8011	0.8956 ug/L #	1
59) Toluene	13.98	91	3373	0.1249 ug/L	84
60) Ethyl Methacrylate	13.87	69	1585	0.2184 ug/L #	1
73) m-,p-Xylene	16.28	106	2521	0.2191 ug/L	79
79) 1,1,2,2-Tetrachloroethane	17.57	83	14350	2.1917 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138758.D 8260WTR.M Mon Apr 25 09:22:52 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

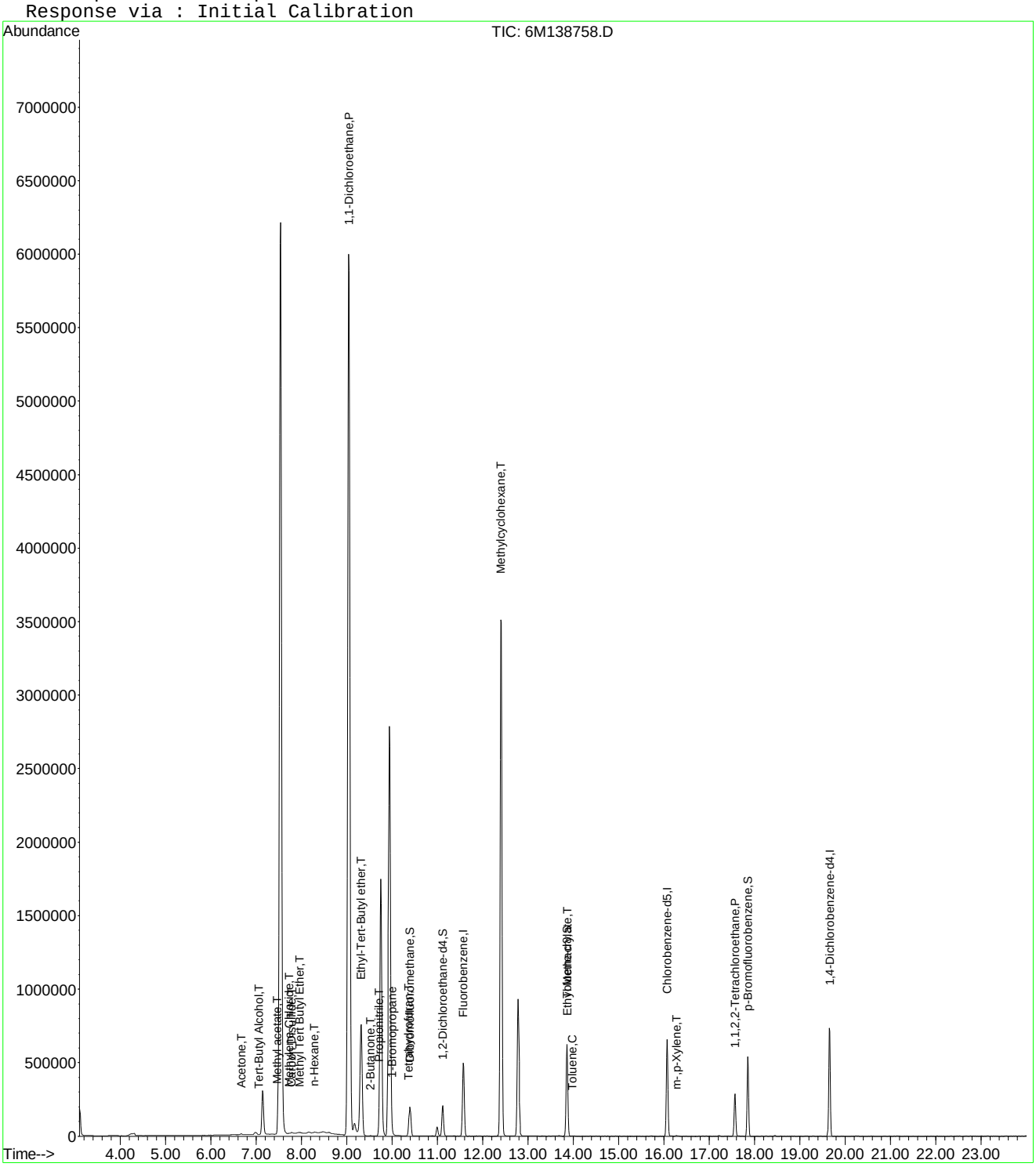

6M138758.D 8260WTR.M Mon Apr 25 09:22:52 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	616486	25.00	ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	485048	25.00	ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	268890	25.00	ug/L	-0.02

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	449583	379.8136	ug/L	92
3) 3-Chloro-1-propene	7.54	41	7430577	449.8223	ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	6752476	474.8265	ug/L	84
5) Ethyl Acetate	9.75	43	3307403	508.5794	ug/L	94
6) Methacrylonitrile	9.94	67	1145073	457.8027	ug/L #	63
7) Isobutyl Alcohol	9.95	43	251034	701.6799	ug/L #	90
8) 1-Butanol	10.99	41	42236	274.4224	ug/L	75
9) Methyl methacrylate	12.40	41	2914815	450.1389	ug/L	81
10) 2-Nitropropane	12.78	43	1036720	543.0629	ug/L	99
13) Cyclohexanone	17.57	55	176545	192.2558	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138758.D A9FOOWT.M Mon Apr 25 15:46:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

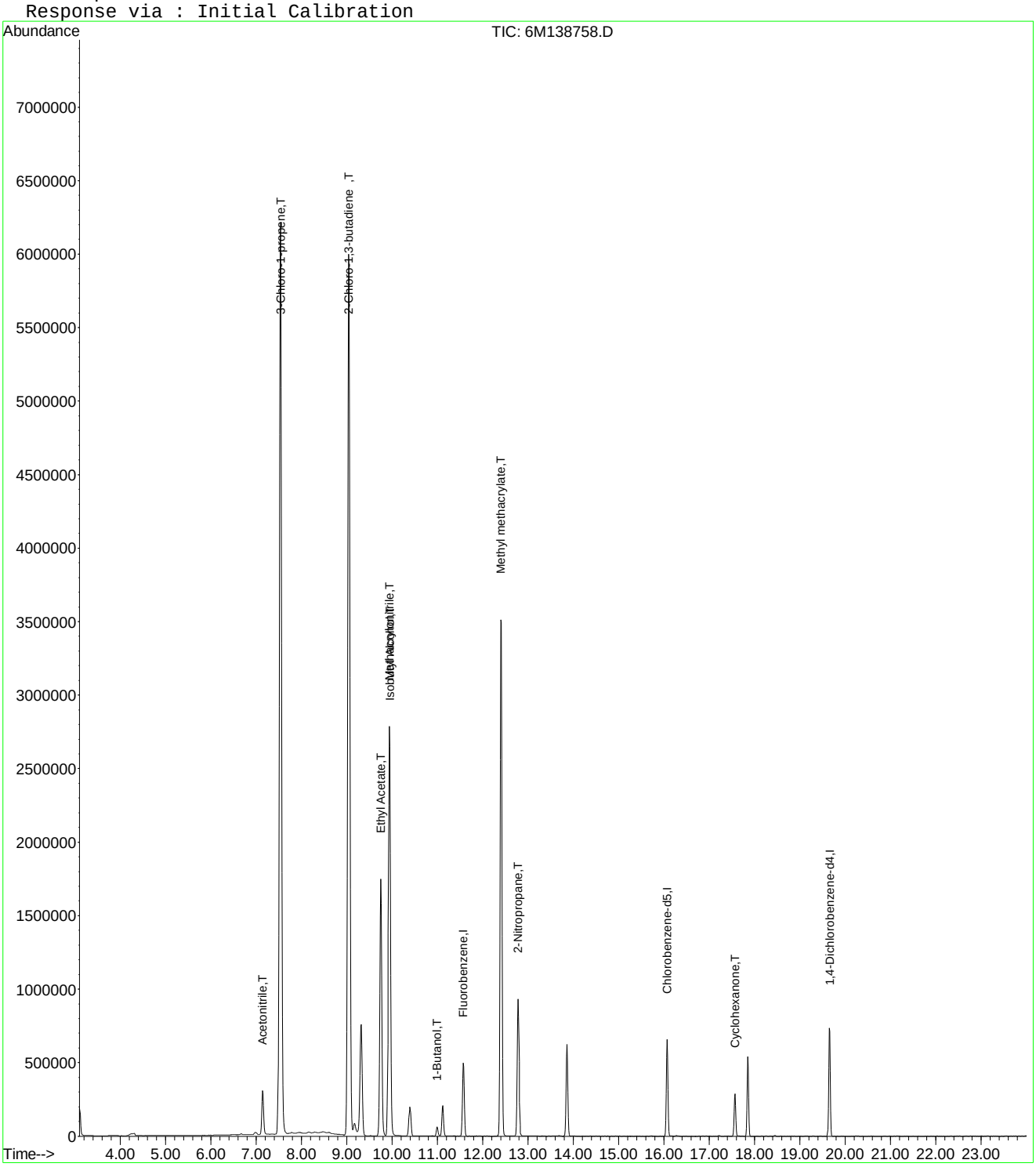

6M138758.D A9FOOWT.M Mon Apr 25 15:46:01 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:01 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	616486	25.00	ug/L	0.00
11) Chlorobenzene-d5	16.07	117	485048	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	268890	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	449583	486.8858	ug/L	92
3) 3-Chloro-1-propene	7.54	41	7430577	482.8665	ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	6752476	511.3891	ug/L	84
5) Ethyl Acetate	9.75	43	3307403	500.3107	ug/L	94
6) Methacrylonitrile	9.94	67	1145073	502.4237	ug/L #	63
7) Isobutyl Alcohol	9.95	43	251034	1192.2947	ug/L #	90
9) Methyl methacrylate	12.40	41	2914815	524.5904	ug/L	81
10) 2-Nitropropane	12.78	43	1036720	501.6898	ug/L	99
13) Cyclohexanone	17.57	55	176545	526.7057	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138758.D A9FOOWT.M Wed Apr 27 16:05:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

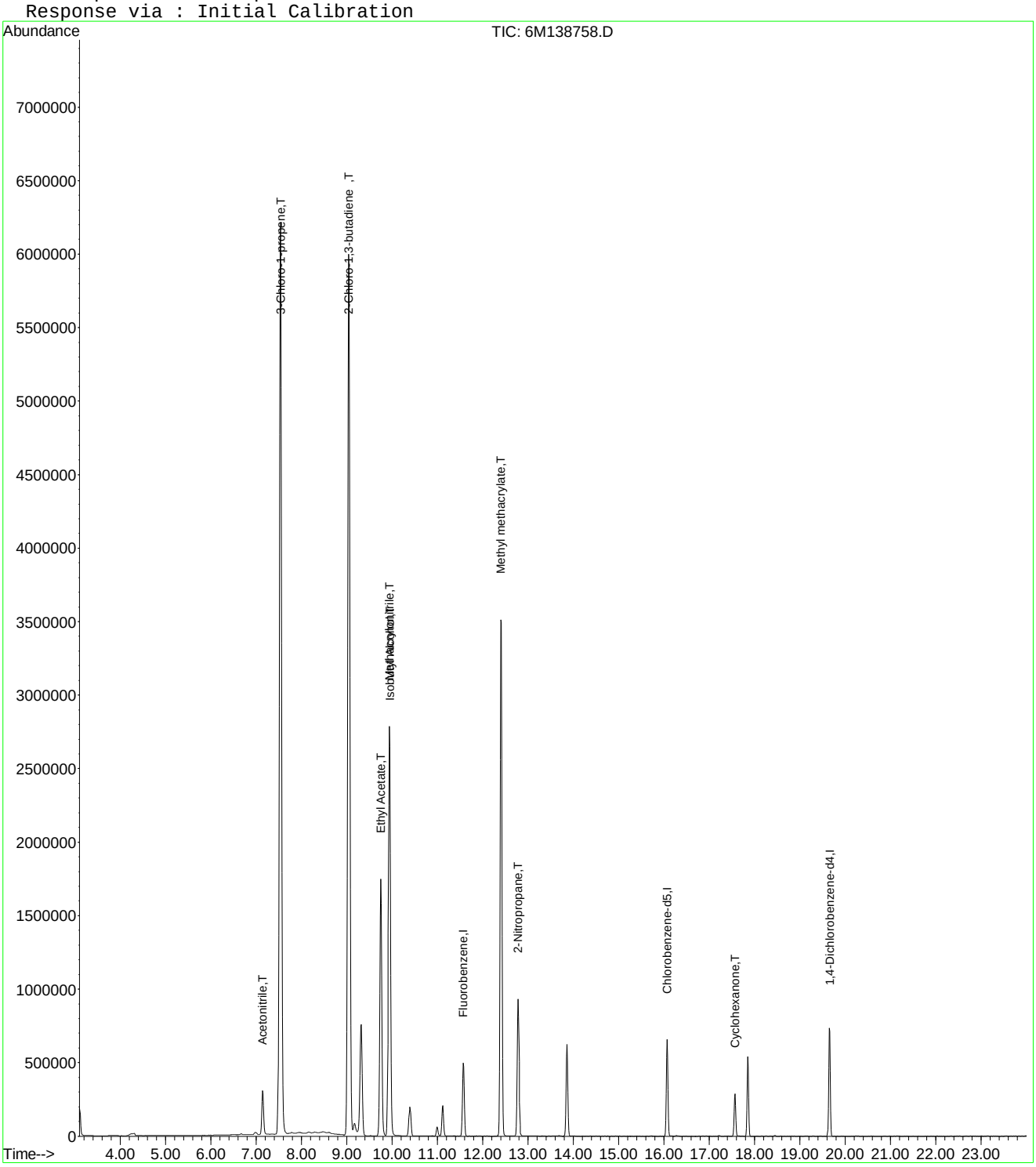

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:54 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602884	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	471639	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	256885	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.40	111	171708	27.8099 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.24%		
43) 1,2-Dichloroethane-d4	11.12	65	210067	28.0330 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.12%		
58) Toluene-d8	13.86	98	553825	26.0829 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.32%		
80) p-Bromofluorobenzene	17.85	95	243088	28.3441 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 113.36%		

Target Compounds					Qvalue
5) 1,3-Butadiene	4.21	54	367749	92.2302 ug/L	88
9) Diethyl ether	6.30	59	700386	132.3612 ug/L	92
13) Acetone	6.67	43	6570	3.5143 ug/L	81
16) Dimethyl Sulfide	7.14	62	2726	0.5361 ug/L #	1
20) Carbon Disulfide	7.54	76	432674	22.5096 ug/L #	36
22) Methyl Tert Butyl Ether	7.97	73	2916	0.1786 ug/L #	53
26) Vinyl Acetate	9.05	43	5230	0.5414 ug/L #	1
27) 1,1-Dichloroethane	9.04	63	22472	1.7594 ug/L #	42
28) Ethyl-Tert-Butyl ether	9.32	59	4063	0.1960 ug/L #	35
29) 2-Butanone	9.52	43	6076	2.2019 ug/L #	66
30) Propionitrile	9.64	54	91341	115.2239 ug/L	96
36) Tetrahydrofuran	10.36	42	4030	2.2418 ug/L #	52
39) Cyclohexane	10.69	56	2387	0.2138 ug/L	79
48) Methylcyclohexane	12.40	83	1353	0.1547 ug/L #	1
50) 1,4-Dioxane	12.73	88	9231	177.0935 ug/L	71
60) Ethyl Methacrylate	13.86	69	1222	0.1732 ug/L #	1
79) 1,1,2,2-Tetrachloroethane	17.57	83	1146	0.1832 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138761.D 8260WTR.M Mon Apr 25 09:22:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

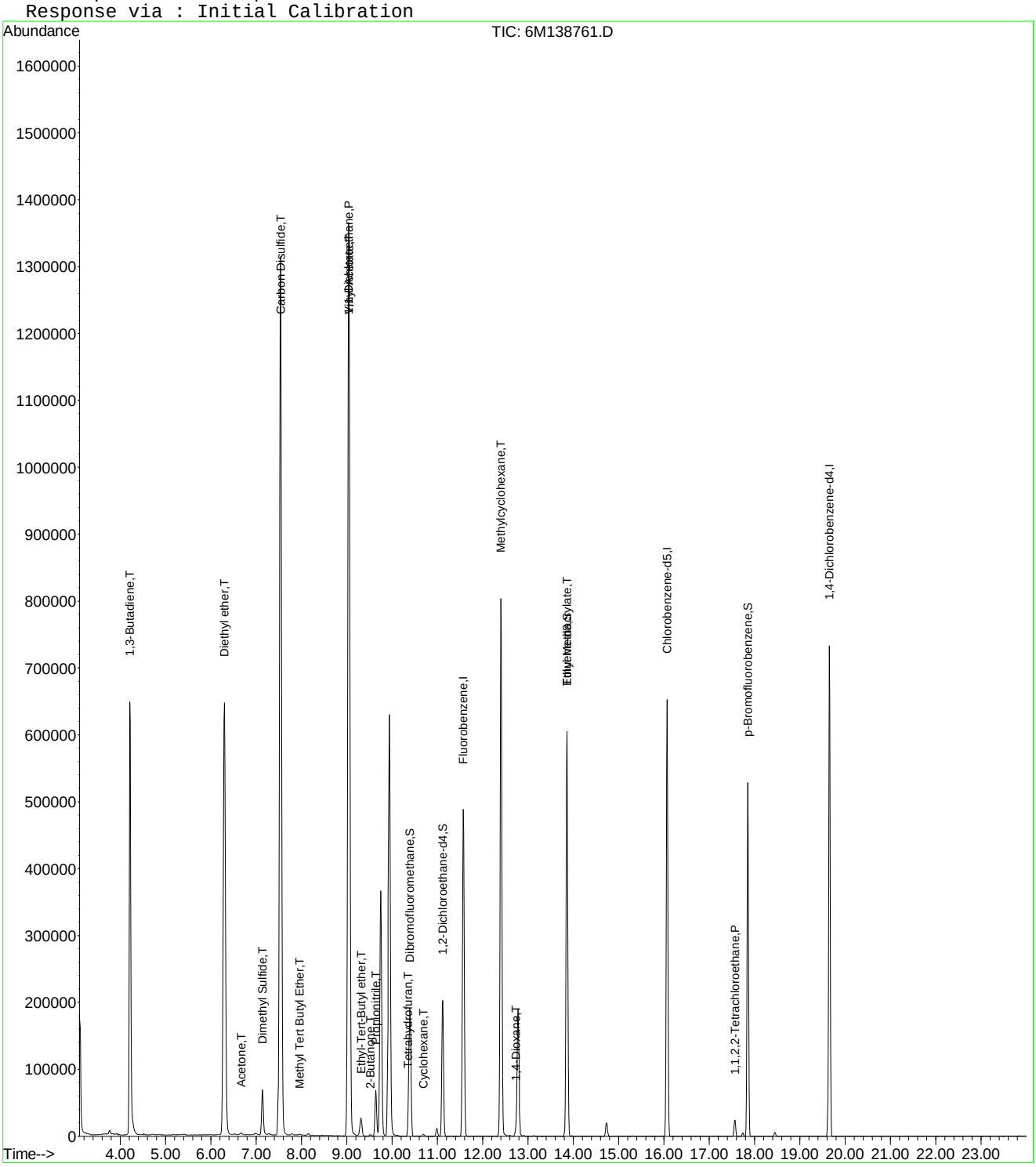

6M138761.D 8260WTR.M Mon Apr 25 09:22:54 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46:01 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	602884	25.00	ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	471639	25.00	ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.65	152	256885	25.00	ug/L	-0.03

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	96564	83.4191	ug/L	96
3) 3-Chloro-1-propene	7.54	41	1552115	96.0797	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	1512761	108.7756	ug/L	83
5) Ethyl Acetate	9.75	43	691566	108.7414	ug/L	93
6) Methacrylonitrile	9.94	67	252030	103.0355	ug/L #	63
7) Isobutyl Alcohol	9.95	43	51165	146.2409	ug/L #	93
8) 1-Butanol	10.99	41	7584	50.3877	ug/L	72
9) Methyl methacrylate	12.40	41	635574	100.3670	ug/L	81
10) 2-Nitropropane	12.79	43	211020	113.0321	ug/L	98
13) Cyclohexanone	17.57	55	15491	17.6579	ug/L	85

(#) = qualifier out of range (m) = manual integration
6M138761.D A9FOOWT.M Mon Apr 25 15:46:02 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

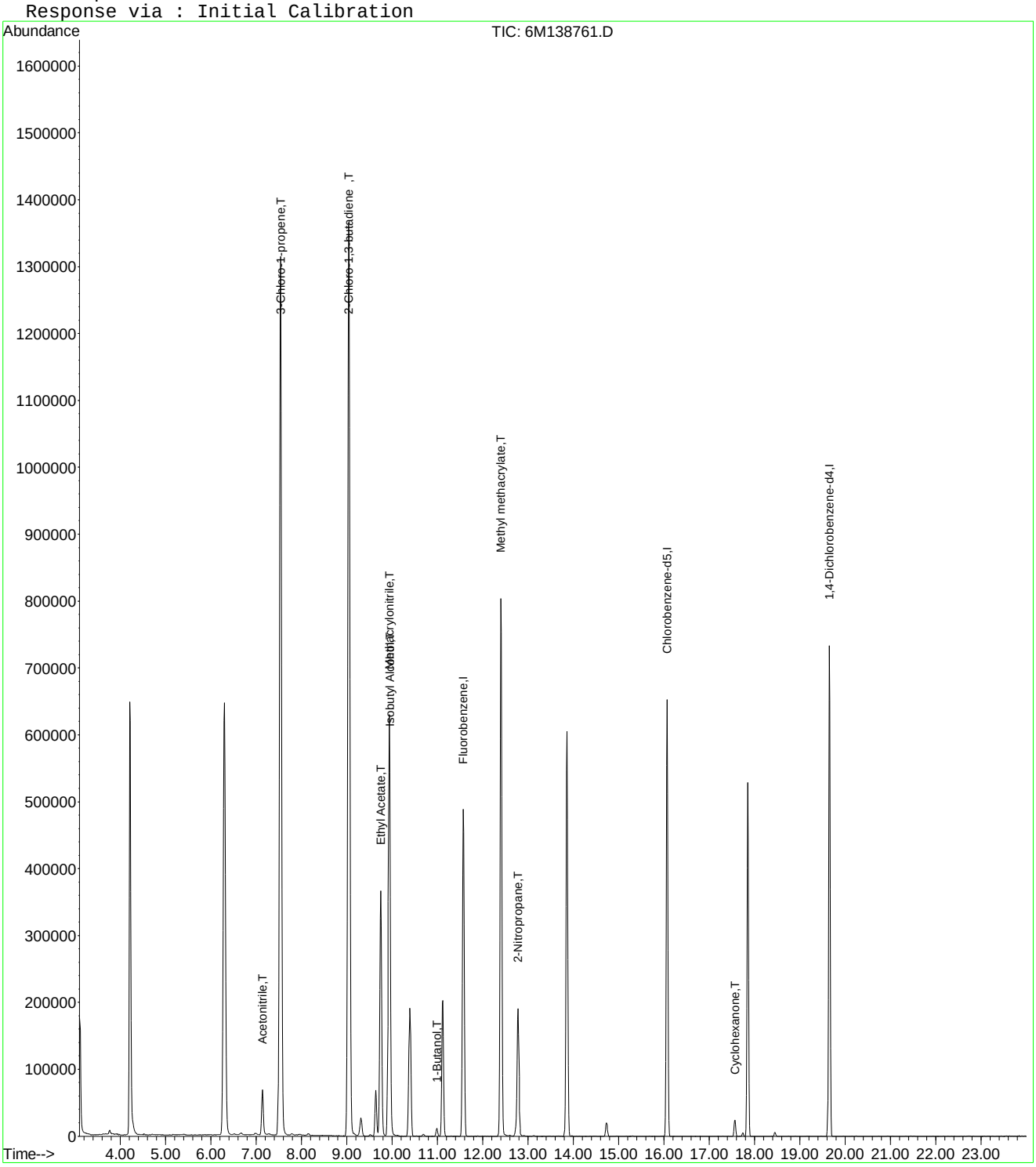

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:02 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	602884	25.00	ug/L	0.00
11) Chlorobenzene-d5	16.07	117	471639	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.65	152	256885	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	96564	106.9355	ug/L	96
3) 3-Chloro-1-propene	7.54	41	1552115	103.1378	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	1512761	117.1516	ug/L	83
5) Ethyl Acetate	9.75	43	691566	106.9734	ug/L	93
6) Methacrylonitrile	9.94	67	252030	113.0781	ug/L #	63
7) Isobutyl Alcohol	9.95	43	51165	248.4926	ug/L #	93
9) Methyl methacrylate	12.40	41	635574	116.9674	ug/L	81
10) 2-Nitropropane	12.79	43	211020	104.4208	ug/L	98
13) Cyclohexanone	17.57	55	15491	48.3758	ug/L	85

(#) = qualifier out of range (m) = manual integration
6M138761.D A9FOOWT.M Wed Apr 27 16:05:02 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

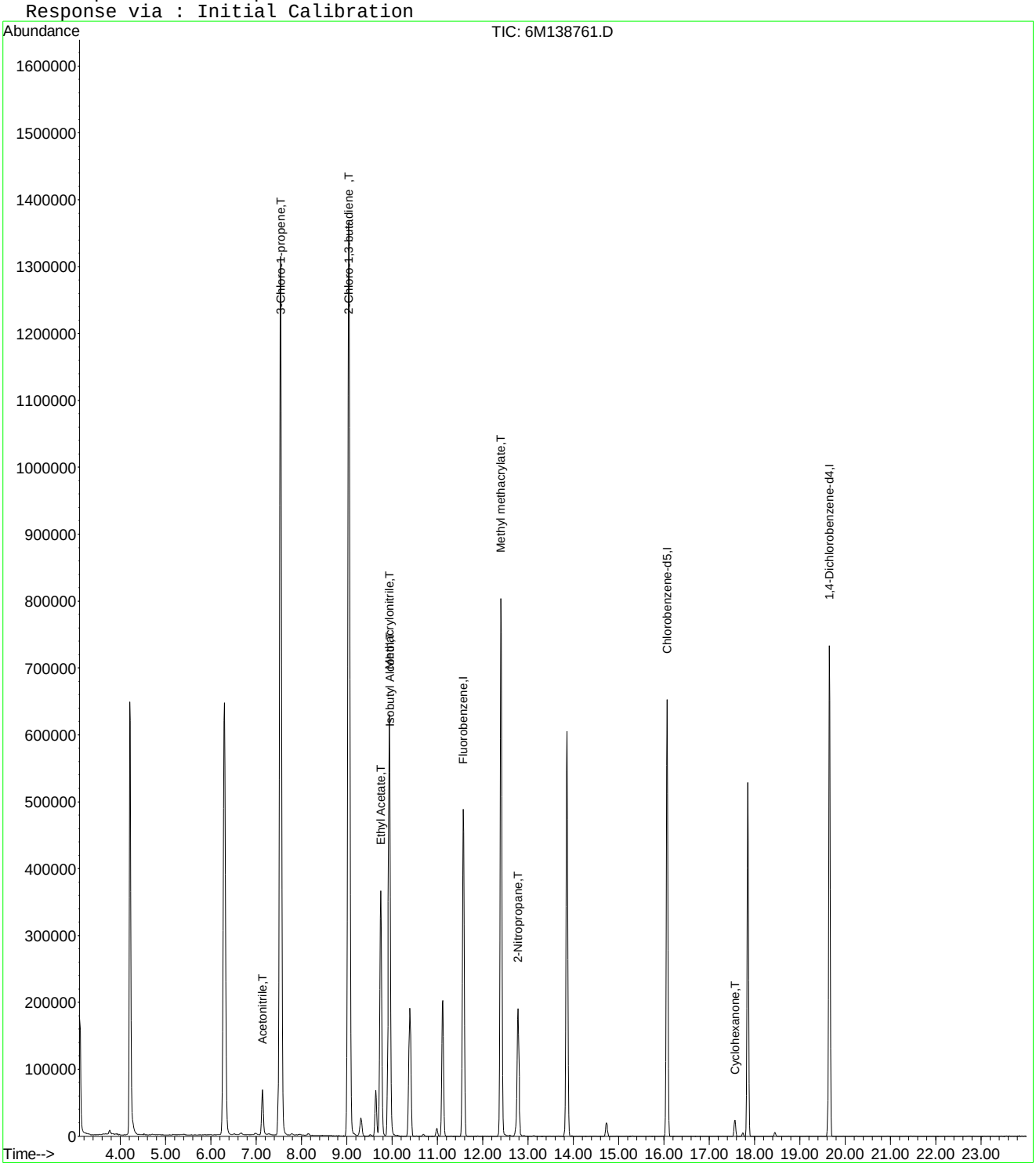

6M138761.D A9FOOWT.M Wed Apr 27 16:05:02 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	101	0.00
2	T	Acetonitrile	100.0000	106.9355	-6.9	106	0.00
3	T	3-Chloro-1-propene	100.0000	103.1378	-3.1	96	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	117.1516	-17.2	107	0.00
5	T	Ethyl Acetate	100.0000	106.9734	-7.0	103	0.00
6	T	Methacrylonitrile	100.0000	113.0781	-13.1	106	0.00
7	T	Isobutyl Alcohol	200.0000	248.4926	-24.2	151	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	100.0000	116.9674	-17.0	108	0.00
10	T	2-Nitropropane	100.0000	104.4208	-4.4	107	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	101	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	100.0000	48.3758	51.6	56	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138761.D A9FOOWT.M Wed Apr 27 16:05:40 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139736.D Vial: 2
Acq On : 1 Jun 2016 12:30 Operator: TMB
Sample : WG570915-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:16 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.56	96	813215	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.06	117	577965	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.64	152	301716	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.38	111	4283	0.5089 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	2.04%#	
43) 1,2-Dichloroethane-d4	11.10	65	4854	0.5232 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	2.08%#	
58) Toluene-d8	13.85	98	12480	0.4499 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	1.80%#	
80) p-Bromofluorobenzene	17.84	95	4709	0.4420 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	1.76%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	4144	0.3219 ug/L #	64
3) Chloromethane	3.94	50	8154	0.5196 ug/L	89
4) Vinyl Chloride	4.17	62	4049	0.3828 ug/L	83
5) 1,3-Butadiene	4.23	54	3789	Below Cal	82
6) Bromomethane	5.09	94	2017	0.3871 ug/L	67
7) Chloroethane	5.24	64	1907	0.2852 ug/L	78
8) Trichlorofluoromethane	5.74	101	5609	0.3959 ug/L #	90
10) Isoprene	6.32	67	4333	0.3598 ug/L	85
12) 1,1,2-Trichloro-1,2,2-Trif	6.53	101	2492	0.3079 ug/L #	51
13) Acetone	6.65	43	8781	1.3297 ug/L	95
14) 1,1-Dichloroethene	6.88	61	5302	0.3699 ug/L	94
16) Dimethyl Sulfide	7.16	62	1556	0.2366 ug/L	90
18) Methyl acetate	7.45	43	2371	0.3380 ug/L #	66
19) Methylene Chloride	7.72	84	3850	0.4356 ug/L	96
20) Carbon Disulfide	7.76	76	13710	0.4889 ug/L	97
22) Methyl Tert Butyl Ether	7.96	73	5876	0.2725 ug/L #	57
23) trans-1,2-Dichloroethene	8.21	96	2912	0.3486 ug/L	79
24) n-Hexane	8.27	57	6111	0.4698 ug/L	95
26) Vinyl Acetate	8.85	43	3338	0.2270 ug/L #	78
27) 1,1-Dichloroethane	8.90	63	5337	0.3188 ug/L	90
29) 2-Butanone	9.52	43	1477	0.4022 ug/L #	57
31) 2,2-Dichloropropane	9.75	77	3421	0.2803 ug/L	93
32) cis-1,2-Dichloroethene	9.82	96	3404	0.3740 ug/L	96
33) Chloroform	10.06	83	4699	0.3152 ug/L	89
35) Bromochloromethane	10.33	130	1415	0.2738 ug/L	97
36) Tetrahydrofuran	10.35	42	3272	1.2942 ug/L #	65
38) 1,1,1-Trichloroethane	10.65	97	3984	0.2996 ug/L	88
39) Cyclohexane	10.69	56	5836	0.3501 ug/L	89
40) 1,1-Dichloropropene	10.89	75	3675	0.3224 ug/L	88
42) Carbon Tetrachloride	11.04	117	3635	0.3064 ug/L #	88
45) 1,2-Dichloroethane	11.24	62	3851	0.3361 ug/L #	84
46) Benzene	11.29	78	13082	0.3916 ug/L	94
47) Trichloroethene	12.15	130	3379	0.3960 ug/L	90
48) Methylcyclohexane	12.23	83	4088	0.3160 ug/L	89
49) 1,2-Dichloropropane	12.39	63	2852	0.3091 ug/L	92
51) Bromodichloromethane	12.74	83	3241	0.2856 ug/L	93
52) Dibromomethane	12.84	93	1404	0.2949 ug/L	85
53) 2-Chloroethyl Vinyl Ether	13.09	63	565	0.1342 ug/L #	41
54) 4-Methyl-2-Pentanone	13.13	58	397	0.1416 ug/L #	38
55) cis-1,3-Dichloropropene	13.48	75	4146	0.3228 ug/L #	86

(#) = qualifier out of range (m) = manual integration
6M139736.D 8260WT.M Thu Jun 02 12:18:18 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139736.D Vial: 2
Acq On : 1 Jun 2016 12:30 Operator: TMB
Sample : WG570915-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:16 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
56)	Dimethyl Disulfide	13.79	79	1395	0.1885 ug/L #	47
59)	Toluene	13.96	91	12731	0.3879 ug/L	97
60)	Ethyl Methacrylate	14.08	69	2174	0.2417 ug/L	85
62)	trans-1,3-Dichloropropene	14.17	75	3169	0.2835 ug/L #	66
63)	1,1,2-Trichloroethane	14.43	97	1621	0.2594 ug/L	96
64)	2-Hexanone	14.36	43	1082	0.2041 ug/L #	28
65)	1,3-Dichloropropane	14.79	76	3110	0.2831 ug/L	83
66)	Tetrachloroethene	14.92	166	3177	0.3690 ug/L	86
67)	Dibromochloromethane	15.23	129	2098	0.2635 ug/L	96
68)	1,2-Dibromoethane	15.53	107	1937	0.3207 ug/L	77
69)	1-Chlorohexane	15.65	91	3354	0.3147 ug/L	92
70)	Chlorobenzene	16.13	112	8026	0.3655 ug/L	95
71)	1,1,1,2-Tetrachloroethane	16.17	131	2302	0.2890 ug/L	94
72)	Ethylbenzene	16.16	106	3722	0.3195 ug/L	74
73)	m-,p-Xylene	16.27	106	10149	0.7334 ug/L	99
74)	o-Xylene	16.92	106	4124	0.3016 ug/L	92
75)	Styrene	16.97	104	6703	0.2951 ug/L	96
76)	Bromoform	17.55	173	1095	0.2168 ug/L #	52
77)	Isopropylbenzene	17.43	105	10818	0.3152 ug/L	99
79)	1,1,2,2-Tetrachloroethane	17.70	83	1648	0.2266 ug/L	89
83)	n-Propylbenzene	18.03	91	15389	0.3935 ug/L #	95
84)	Bromobenzene	18.18	156	3040	0.3313 ug/L	88
85)	1,3,5-Trimethylbenzene	18.26	105	8430	0.3047 ug/L	95
86)	2-Chlorotoluene	18.35	91	9550	0.3565 ug/L	89
87)	4-Chlorotoluene	18.41	91	8247	0.3316 ug/L	98
88)	a-Methylstyrene	18.74	118	3516	0.2273 ug/L	85
89)	tert-Butylbenzene	18.80	134	1775	0.2910 ug/L	94
90)	1,2,4-Trimethylbenzene	18.86	105	8937	0.3086 ug/L	99
91)	sec-Butylbenzene	19.12	105	10994	0.3229 ug/L	94
92)	p-Isopropyltoluene	19.32	119	9119	0.3143 ug/L	92
93)	1,3-Dichlorobenzene	19.54	146	7014	0.3920 ug/L	92
94)	1,4-Dichlorobenzene	19.69	146	9787	0.3660 ug/L	92
95)	n-Butylbenzene	19.94	91	9532	0.3471 ug/L	97
96)	1,2-Dichlorobenzene	20.27	146	5584	0.3349 ug/L	92
98)	1,2,4-Trichlorobenzene	22.82	180	4377	0.3797 ug/L	96
99)	Hexachlorobutadiene	23.01	225	1664	0.3478 ug/L #	77
100)	Naphthalene	23.27	128	8470	0.3717 ug/L #	86
101)	1,2,3-Trichlorobenzene	23.69	180	3552	0.3256 ug/L	89

(#) = qualifier out of range (m) = manual integration
6M139736.D 8260WT.M Thu Jun 02 12:18:18 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139736.D Vial: 2
Acq On : 1 Jun 2016 12:30 Operator: TMB
Sample : WG570915-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 2 12:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration

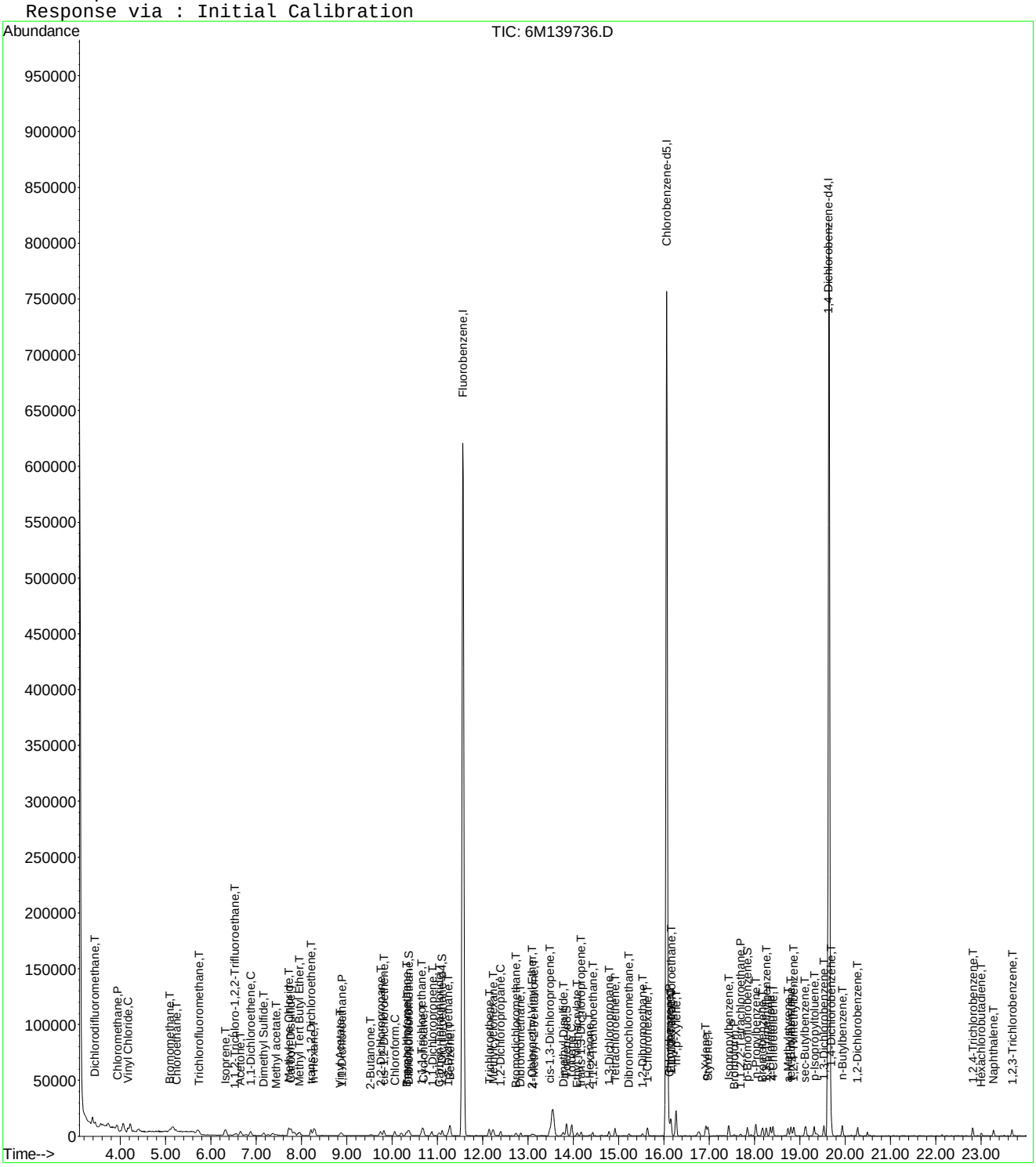

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\060116\6M139736.D Vial: 2
Acq On : 1 Jun 2016 12:30 Operator: TMB
Sample : WG570915-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.3219	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.5196	0.0	100	0.01
4	C	Vinyl Chloride	-1.0000	0.3828	0.0	100	0.01
5	T	1,3-Butadiene	-1.0000	-4.7832	0.0	0	0.03
6	T	Bromomethane	-1.0000	0.3871	0.0	100	0.02
7	T	Chloroethane	-1.0000	0.2852	0.0	100	0.01
8	T	Trichlorofluoromethane	-1.0000	0.3959	0.0	100	0.02
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.29#
10	T	Isoprene	-1.0000	0.3598	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.54#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3079	0.0	100	-0.02
13	T	Acetone	-1.0000	1.3297	0.0	0	0.00
14	C	1,1-Dichloroethene	-1.0000	0.3699	0.0	100	0.01
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-7.05#
16	T	Dimethyl Sulfide	-1.0000	0.2366	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.43#
18	T	Methyl acetate	-1.0000	0.3380	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4356	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4889	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.92#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2725	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	-1.0000	0.3486	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.4698	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.67#
26	T	Vinyl Acetate	-1.0000	0.2270	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.3188	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-9.30#
29	T	2-Butanone	-1.0000	0.4022	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.64#
31	T	2,2-Dichloropropane	-1.0000	0.2803	0.0	100	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.3740	0.0	100	0.00
33	C	Chloroform	0.3000	0.3152	-5.1	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-10.21#
35	T	Bromochloromethane	-1.0000	0.2738	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	1.2942	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.5089	0.0	100	0.00
38	T	1,1,1-Trichloroethane	-1.0000	0.2996	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.3501	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.3224	0.0	100	0.01
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-11.01#
42	T	Carbon Tetrachloride	-1.0000	0.3064	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.5232	0.0	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-11.01#
45	T	1,2-Dichloroethane	-1.0000	0.3361	0.0	100	0.00
46	T	Benzene	-1.0000	0.3916	0.0	100	0.00
47	T	Trichloroethene	-1.0000	0.3960	0.0	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3160	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.3091	0.0	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-12.74#
51	T	Bromodichloromethane	-1.0000	0.2856	0.0	100	0.00
52	T	Dibromomethane	-1.0000	0.2949	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1342	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.1416	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\060116\6M139736.D Vial: 2
Acq On : 1 Jun 2016 12:30 Operator: TMB
Sample : WG570915-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.3228	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.1885	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.4499	0.0	100	0.00
59	C	Toluene	-1.0000	0.3879	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2417	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.97#
62	T	trans-1,3-Dichloropropene	-1.0000	0.2835	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.2594	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.2041	0.0	100	0.00
65	T	1,3-Dichloropropane	-1.0000	0.2831	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.3690	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.2635	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.3207	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.3147	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.3655	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.2890	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.3195	0.0	100	0.00
73	T	m-,p-Xylene	-1.0000	0.7334	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.3016	0.0	100	0.00
75	T	Styrene	-1.0000	0.2951	0.0	100	0.00
76	P	Bromoform	-1.0000	0.2168	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.3152	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2266	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.4420	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-17.92#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-17.98#
83	T	n-Propylbenzene	-1.0000	0.3935	0.0	100	0.00
84	T	Bromobenzene	0.3000	0.3313	-10.4	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.3047	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.3565	0.0	100	0.00
87	T	4-Chlorotoluene	-1.0000	0.3316	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2273	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.2910	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.3086	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3229	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.3143	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.3920	0.0	100	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.3660	-22.0#	100	0.00
95	T	n-Butylbenzene	-1.0000	0.3471	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.3349	-11.6	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-21.46#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.3797	0.0	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.3478	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.3717	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.3256	-8.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M139736.D 8260WT.M Thu Jun 02 12:18:44 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139737.D Vial: 3
Acq On : 1 Jun 2016 13:01 Operator: TMB
Sample : WG570915-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:19 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.56	96	762881	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	549597	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.64	152	286787	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	13.85	98	1770	0.0671 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.28%#	
80) p-Bromofluorobenzene	17.83	95	697	0.0688 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	4460	0.3693 ug/L #	75
3) Chloromethane	3.93	50	7549	0.5128 ug/L	89
4) Vinyl Chloride	4.17	62	4900	0.4938 ug/L	79
5) 1,3-Butadiene	4.23	54	5430	Below Cal #	74
6) Bromomethane	5.08	94	1638	0.3351 ug/L	89
7) Chloroethane	5.24	64	2312	0.3686 ug/L #	72
8) Trichlorofluoromethane	5.73	101	5332	0.4012 ug/L #	89
10) Isoprene	6.33	67	4504	0.3986 ug/L	91
12) 1,1,2-Trichloro-1,2,2-Trif	6.55	101	2583	0.3402 ug/L	86
13) Acetone	6.66	43	2630	Below Cal #	48
14) 1,1-Dichloroethene	6.89	61	5658	0.4208 ug/L	91
16) Dimethyl Sulfide	7.17	62	2447	0.3966 ug/L	84
18) Methyl acetate	7.46	43	2637	0.4008 ug/L #	66
19) Methylene Chloride	7.72	84	3896	0.4699 ug/L	95
20) Carbon Disulfide	7.77	76	11879	0.4516 ug/L	90
22) Methyl Tert Butyl Ether	7.96	73	7778	0.3845 ug/L	88
23) trans-1,2-Dichloroethene	8.21	96	3104	0.3961 ug/L	95
24) n-Hexane	8.29	57	5504	0.4510 ug/L	100
26) Vinyl Acetate	8.86	43	4070	0.2951 ug/L #	78
27) 1,1-Dichloroethane	8.90	63	6427	0.4093 ug/L	93
29) 2-Butanone	9.51	43	1191	0.3457 ug/L #	57
31) 2,2-Dichloropropane	9.76	77	4571	0.3993 ug/L	92
32) cis-1,2-Dichloroethene	9.83	96	3207	0.3756 ug/L	85
33) Chloroform	10.06	83	5486	0.3923 ug/L	94
35) Bromochloromethane	10.33	130	1840	0.3795 ug/L	81
36) Tetrahydrofuran	10.36	42	3761	1.5858 ug/L	79
38) 1,1,1-Trichloroethane	10.65	97	5324	0.4267 ug/L	82
39) Cyclohexane	10.68	56	6403	0.4095 ug/L	90
40) 1,1-Dichloropropene	10.88	75	4176	0.3906 ug/L	95
42) Carbon Tetrachloride	11.04	117	4371	0.3927 ug/L #	92
45) 1,2-Dichloroethane	11.25	62	4453	0.4143 ug/L #	79
46) Benzene	11.29	78	13721	0.4378 ug/L	96
47) Trichloroethene	12.14	130	3152	0.3938 ug/L	99
48) Methylcyclohexane	12.23	83	4741	0.3907 ug/L	91
49) 1,2-Dichloropropane	12.39	63	3378	0.3902 ug/L	91
51) Bromodichloromethane	12.74	83	4050	0.3804 ug/L	98
52) Dibromomethane	12.84	93	1706	0.3819 ug/L	85
53) 2-Chloroethyl Vinyl Ether	13.08	63	1091	0.2761 ug/L #	41
55) cis-1,3-Dichloropropene	13.48	75	4324	0.3589 ug/L	91
56) Dimethyl Disulfide	13.78	79	1868	0.2691 ug/L #	47

(#) = qualifier out of range (m) = manual integration
6M139737.D 8260WT.M Thu Jun 02 12:18:19 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139737.D Vial: 3
Acq On : 1 Jun 2016 13:01 Operator: TMB
Sample : WG570915-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:19 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
59)	Toluene	13.96	91	12953	0.4150 ug/L		98
60)	Ethyl Methacrylate	14.10	69	2921	0.3415 ug/L		94
62)	trans-1,3-Dichloropropene	14.18	75	3597	0.3384 ug/L		88
63)	1,1,2-Trichloroethane	14.43	97	2395	0.4031 ug/L		98
64)	2-Hexanone	14.36	43	1748	0.3467 ug/L	#	68
65)	1,3-Dichloropropane	14.79	76	4110	0.3934 ug/L		93
66)	Tetrachloroethene	14.92	166	3316	0.4051 ug/L		95
67)	Dibromochloromethane	15.23	129	2940	0.3883 ug/L		88
68)	1,2-Dibromoethane	15.53	107	2255	0.3926 ug/L		97
69)	1-Chlorohexane	15.64	91	3691	0.3642 ug/L		89
70)	Chlorobenzene	16.13	112	8656	0.4145 ug/L		90
71)	1,1,1,2-Tetrachloroethane	16.16	131	2926	0.3863 ug/L		91
72)	Ethylbenzene	16.16	106	4269	0.3854 ug/L		86
73)	m-,p-Xylene	16.26	106	11025	0.8378 ug/L		99
74)	o-Xylene	16.93	106	4600	0.3537 ug/L		86
75)	Styrene	16.97	104	7188	0.3328 ug/L		90
76)	Bromoform	17.55	173	1259	0.2621 ug/L	#	68
77)	Isopropylbenzene	17.43	105	13008	0.3985 ug/L		93
79)	1,1,2,2-Tetrachloroethane	17.70	83	2694	0.3896 ug/L		90
81)	1,2,3-Trichloropropane	17.91	110	393	0.1963 ug/L	#	1
83)	n-Propylbenzene	18.04	91	15780	0.4246 ug/L	#	92
84)	Bromobenzene	18.18	156	3461	0.3968 ug/L		93
85)	1,3,5-Trimethylbenzene	18.26	105	9975	0.3793 ug/L		99
86)	2-Chlorotoluene	18.35	91	11254	0.4420 ug/L		95
87)	4-Chlorotoluene	18.41	91	9173	0.3881 ug/L		93
88)	a-Methylstyrene	18.74	118	4377	0.2977 ug/L		97
89)	tert-Butylbenzene	18.80	134	2203	0.3800 ug/L		87
90)	1,2,4-Trimethylbenzene	18.86	105	10590	0.3847 ug/L		99
91)	sec-Butylbenzene	19.13	105	12756	0.3942 ug/L		90
92)	p-Isopropyltoluene	19.32	119	10579	0.3836 ug/L		93
93)	1,3-Dichlorobenzene	19.54	146	7639	0.4492 ug/L		93
94)	1,4-Dichlorobenzene	19.69	146	8053	0.2880 ug/L		91
95)	n-Butylbenzene	19.94	91	10201	0.3908 ug/L		97
96)	1,2-Dichlorobenzene	20.28	146	6377	0.4024 ug/L		98
98)	1,2,4-Trichlorobenzene	22.83	180	4547	0.4149 ug/L		97
99)	Hexachlorobutadiene	23.01	225	1883	0.4141 ug/L		86
100)	Naphthalene	23.28	128	8429	0.3891 ug/L	#	82
101)	1,2,3-Trichlorobenzene	23.67	180	4307	0.4153 ug/L		94

(#) = qualifier out of range (m) = manual integration
6M139737.D 8260WT.M Thu Jun 02 12:18:19 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139737.D Vial: 3
Acq On : 1 Jun 2016 13:01 Operator: TMB
Sample : WG570915-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 2 12:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration

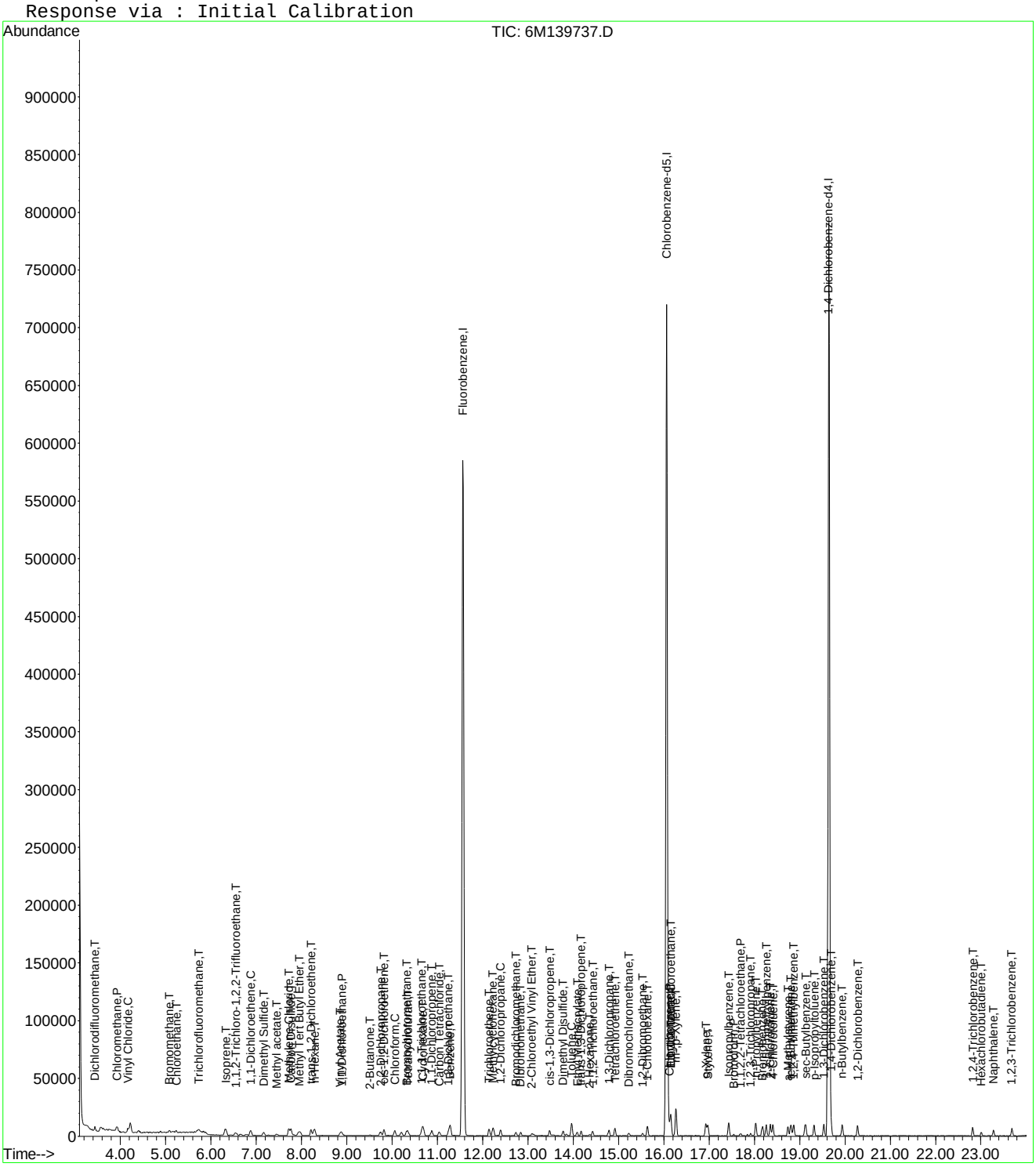

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\060116\6M139737.D Vial: 3
Acq On : 1 Jun 2016 13:01 Operator: TMB
Sample : WG570915-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.3693	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.5128	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.4938	-23.4#	100	0.01
5	T	1,3-Butadiene	-1.0000	-4.4099	0.0	0	0.03
6	T	Bromomethane	-1.0000	0.3351	0.0	100	0.01
7	T	Chloroethane	-1.0000	0.3686	0.0	100	0.01
8	T	Trichlorofluoromethane	0.4000	0.4012	-0.3	100	0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.29#
10	T	Isoprene	-1.0000	0.3986	0.0	100	0.01
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.54#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3402	0.0	100	0.00
13	T	Acetone	-1.0000	-1.3315	0.0	0	0.00
14	C	1,1-Dichloroethene	0.4000	0.4208	-5.2	100	0.01
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-7.05#
16	T	Dimethyl Sulfide	-1.0000	0.3966	0.0	100	0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.43#
18	T	Methyl acetate	-1.0000	0.4008	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4699	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4516	0.0	100	0.01
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.92#
22	T	Methyl Tert Butyl Ether	-1.0000	0.3845	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.3961	1.0	100	0.00
24	T	n-Hexane	-1.0000	0.4510	0.0	100	0.01
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.67#
26	T	Vinyl Acetate	-1.0000	0.2951	0.0	100	0.00
27	P	1,1-Dichloroethane	0.4000	0.4093	-2.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-9.30#
29	T	2-Butanone	-1.0000	0.3457	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.64#
31	T	2,2-Dichloropropane	0.4000	0.3993	0.2	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.3756	6.1	100	0.00
33	C	Chloroform	0.4000	0.3923	1.9	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-10.21#
35	T	Bromochloromethane	0.4000	0.3795	5.1	100	0.00
36	T	Tetrahydrofuran	-1.0000	1.5858	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-10.38#
38	T	1,1,1-Trichloroethane	0.4000	0.4268	-6.7	100	0.00
39	T	Cyclohexane	-1.0000	0.4095	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.3906	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-11.01#
42	T	Carbon Tetrachloride	0.4000	0.3927	1.8	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-11.11#
44		Heptane	-1.0000	0.0000	0.0	0	-11.01#
45	T	1,2-Dichloroethane	0.4000	0.4143	-3.6	100	0.00
46	T	Benzene	0.4000	0.4378	-9.5	100	0.00
47	T	Trichloroethene	0.4000	0.3938	1.6	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3907	0.0	100	0.00
49	C	1,2-Dichloropropane	0.4000	0.3902	2.4	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-12.74#
51	T	Bromodichloromethane	0.4000	0.3804	4.9	100	0.00
52	T	Dibromomethane	0.4000	0.3819	4.5	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2761	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0913	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\060116\6M139737.D Vial: 3
Acq On : 1 Jun 2016 13:01 Operator: TMB
Sample : WG570915-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3589	10.3	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2691	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0671	0.0	100	0.00
59	C	Toluene	0.4000	0.4150	-3.8	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3415	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.97#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3384	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.4031	-0.8	100	0.00
64	T	2-Hexanone	-1.0000	0.3467	0.0	100	0.00
65	T	1,3-Dichloropropane	0.4000	0.3934	1.6	100	0.00
66	T	Tetrachloroethene	0.4000	0.4051	-1.3	100	0.00
67	T	Dibromochloromethane	0.4000	0.3883	2.9	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.3926	1.8	100	0.00
69	T	1-Chlorohexane	0.4000	0.3642	8.9	100	0.00
70	P	Chlorobenzene	0.4000	0.4145	-3.6	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3863	3.4	100	0.00
72	C	Ethylbenzene	0.4000	0.3854	3.6	100	0.00
73	T	m-,p-Xylene	0.8000	0.8378	-4.7	100	0.00
74	T	o-Xylene	-1.0000	0.3537	0.0	100	0.00
75	T	Styrene	0.4000	0.3328	16.8	100	0.00
76	P	Bromoform	-1.0000	0.2621	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.3985	0.4	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.3896	2.6	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0688	0.0	100	-0.02
81	T	1,2,3-Trichloropropane	-1.0000	0.1963	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-17.98#
83	T	n-Propylbenzene	0.4000	0.4245	-6.1	100	0.00
84	T	Bromobenzene	0.4000	0.3968	0.8	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.3793	5.2	100	0.00
86	T	2-Chlorotoluene	0.4000	0.4420	-10.5	100	0.00
87	T	4-Chlorotoluene	0.4000	0.3881	3.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2977	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3800	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.3847	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3942	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.3836	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.4491	-12.3	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.2880	28.0#	100	0.00
95	T	n-Butylbenzene	-1.0000	0.3908	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.4024	-0.6	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-21.46#
98	T	1,2,4-Trichlorobenzene	0.4000	0.4149	-3.7	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.4141	-3.5	100	0.00
100	T	Naphthalene	0.4000	0.3891	2.7	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.4153	-3.8	100	-0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 1
6M139737.D 8260WT.M Thu Jun 02 12:18:53 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139738.D Vial: 4
Acq On : 1 Jun 2016 13:33 Operator: TMB
Sample : WG570915-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:19 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	735945	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.06	117	535564	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	279249	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.38	111	4107	0.5392 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	2.16%#	
43) 1,2-Dichloroethane-d4	11.11	65	4822	0.5744 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	2.28%#	
58) Toluene-d8	13.85	98	13936	0.5422 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.16%#	
80) p-Bromofluorobenzene	17.84	95	5325	0.5400 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.16%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	10837	0.9303 ug/L	94
3) Chloromethane	3.93	50	14951	1.0527 ug/L	95
4) Vinyl Chloride	4.17	62	10315	1.0775 ug/L	98
5) 1,3-Butadiene	4.23	54	11501	Below Cal #	71
6) Bromomethane	5.09	94	4678	0.9920 ug/L	91
7) Chloroethane	5.24	64	6242	1.0315 ug/L	93
8) Trichlorofluoromethane	5.74	101	13112	1.0227 ug/L	98
9) Diethyl ether	6.29	59	32367	4.6948 ug/L	95
10) Isoprene	6.32	67	10603	0.9728 ug/L	96
11) Acrolein	6.55	56	2886	2.4811 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.55	101	6983	0.9534 ug/L	99
13) Acetone	6.65	43	4248	Below Cal	88
14) 1,1-Dichloroethene	6.88	61	12693	0.9786 ug/L	95
15) Tert-Butyl Alcohol	7.01	59	5638	8.8569 ug/L #	91
16) Dimethyl Sulfide	7.16	62	5494	0.9230 ug/L	95
17) Iodomethane	7.44	142	206	1.4776 ug/L #	32
18) Methyl acetate	7.45	43	6108	0.9622 ug/L #	84
19) Methylene Chloride	7.72	84	8543	1.0681 ug/L	99
20) Carbon Disulfide	7.77	76	25589	1.0084 ug/L	97
21) Acrylonitrile	7.92	53	6481	2.3166 ug/L	99
22) Methyl Tert Butyl Ether	7.96	73	18778	0.9622 ug/L	98
23) trans-1,2-Dichloroethene	8.21	96	7417	0.9810 ug/L	94
24) n-Hexane	8.29	57	11426	0.9706 ug/L	99
25) Diisopropyl ether	8.67	45	153480	4.8980 ug/L	98
26) Vinyl Acetate	8.85	43	9400	0.7065 ug/L #	84
27) 1,1-Dichloroethane	8.89	63	15342	1.0128 ug/L	97
28) Ethyl-Tert-Butyl ether	9.30	59	123806	4.8277 ug/L	99
29) 2-Butanone	9.52	43	3323	0.9999 ug/L #	57
30) Propionitrile	9.63	54	4078	4.4461 ug/L #	67
31) 2,2-Dichloropropane	9.75	77	11462	1.0379 ug/L	97
32) cis-1,2-Dichloroethene	9.82	96	8252	1.0019 ug/L	100
33) Chloroform	10.06	83	13163	0.9757 ug/L	96
34) 1-Bromopropane	10.22	122	767	0.8504 ug/L	95
35) Bromochloromethane	10.32	130	4431	0.9473 ug/L	98
36) Tetrahydrofuran	10.35	42	13920	6.0841 ug/L	96
38) 1,1,1-Trichloroethane	10.66	97	11268	0.9363 ug/L	97
39) Cyclohexane	10.68	56	14333	0.9501 ug/L	97
40) 1,1-Dichloropropene	10.87	75	10019	0.9713 ug/L	98
41) Tert-Amyl-Methyl ether	11.00	73	94333	4.7510 ug/L	95
42) Carbon Tetrachloride	11.05	117	10227	0.9525 ug/L	96

(#) = qualifier out of range (m) = manual integration
6M139738.D 8260WT.M Thu Jun 02 12:18:20 2016 Page 1

Data File : C:\MSDCHEM\1\DATA\060116\6M139738.D Vial: 4
Acq On : 1 Jun 2016 13:33 Operator: TMB
Sample : WG570915-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:19 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.24	62	10141	0.9780 ug/L	97
46)	Benzene	11.28	78	31309	1.0356 ug/L	97
47)	Trichloroethene	12.14	130	7967	1.0318 ug/L	92
48)	Methylcyclohexane	12.24	83	11289	0.9643 ug/L	96
49)	1,2-Dichloropropane	12.40	63	8268	0.9901 ug/L	94
51)	Bromodichloromethane	12.73	83	10186	0.9919 ug/L	93
52)	Dibromomethane	12.84	93	4177	0.9693 ug/L	96
53)	2-Chloroethyl Vinyl Ether	13.09	63	3010	0.7897 ug/L	83
54)	4-Methyl-2-Pentanone	13.12	58	1877	0.7400 ug/L #	55
55)	cis-1,3-Dichloropropene	13.48	75	10469	0.9007 ug/L	96
56)	Dimethyl Disulfide	13.79	79	4425	0.6608 ug/L	95
59)	Toluene	13.97	91	30558	1.0048 ug/L	98
60)	Ethyl Methacrylate	14.09	69	6558	0.7869 ug/L	93
62)	trans-1,3-Dichloropropene	14.18	75	9010	0.8699 ug/L	96
63)	1,1,2-Trichloroethane	14.43	97	5393	0.9314 ug/L	94
64)	2-Hexanone	14.36	43	4275	0.8701 ug/L	96
65)	1,3-Dichloropropane	14.79	76	10006	0.9829 ug/L	98
66)	Tetrachloroethene	14.92	166	8268	1.0364 ug/L	93
67)	Dibromochloromethane	15.24	129	7033	0.9532 ug/L	94
68)	1,2-Dibromoethane	15.53	107	5148	0.9198 ug/L	98
69)	1-Chlorohexane	15.64	91	8904	0.9017 ug/L	90
70)	Chlorobenzene	16.12	112	20831	1.0237 ug/L	95
71)	1,1,1,2-Tetrachloroethane	16.16	131	6905	0.9355 ug/L	97
72)	Ethylbenzene	16.15	106	10603	0.9824 ug/L	97
73)	m-,p-Xylene	16.27	106	25147	1.9611 ug/L	97
74)	o-Xylene	16.93	106	11865	0.9363 ug/L	96
75)	Styrene	16.97	104	18579	0.8828 ug/L	99
76)	Bromoform	17.55	173	4082	0.8720 ug/L	84
77)	Isopropylbenzene	17.43	105	31300	0.9840 ug/L	98
79)	1,1,2,2-Tetrachloroethane	17.70	83	6643	0.9867 ug/L	93
81)	1,2,3-Trichloropropane	17.92	110	1876	0.9624 ug/L	74
82)	trans-1,4-Dichloro-2-Buten	17.99	53	1194	1.2005 ug/L	94
83)	n-Propylbenzene	18.03	91	36550	1.0099 ug/L	97
84)	Bromobenzene	18.18	156	8529	1.0043 ug/L	98
85)	1,3,5-Trimethylbenzene	18.26	105	25491	0.9955 ug/L	96
86)	2-Chlorotoluene	18.35	91	25187	1.0160 ug/L	97
87)	4-Chlorotoluene	18.41	91	23659	1.0279 ug/L	98
88)	a-Methylstyrene	18.74	118	11586	0.8093 ug/L	95
89)	tert-Butylbenzene	18.81	134	5217	0.9241 ug/L	78
90)	1,2,4-Trimethylbenzene	18.87	105	25567	0.9538 ug/L	98
91)	sec-Butylbenzene	19.13	105	31783	1.0086 ug/L	97
92)	p-Isopropyltoluene	19.32	119	25687	0.9566 ug/L	98
93)	1,3-Dichlorobenzene	19.53	146	16574	1.0008 ug/L	100
94)	1,4-Dichlorobenzene	19.69	146	17812	0.9265 ug/L	92
95)	n-Butylbenzene	19.94	91	24011	0.9447 ug/L	95
96)	1,2-Dichlorobenzene	20.28	146	14898	0.9654 ug/L	99
97)	1,2-Dibromo-3-Chloropropan	21.46	75	675	0.5583 ug/L	92
98)	1,2,4-Trichlorobenzene	22.82	180	10025	0.9396 ug/L	98
99)	Hexachlorobutadiene	23.01	225	4690	1.0591 ug/L	94
100)	Naphthalene	23.28	128	19311	0.9156 ug/L	98
101)	1,2,3-Trichlorobenzene	23.68	180	9754	0.9660 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139738.D Vial: 4
Acq On : 1 Jun 2016 13:33 Operator: TMB
Sample : WG570915-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 2 12:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration

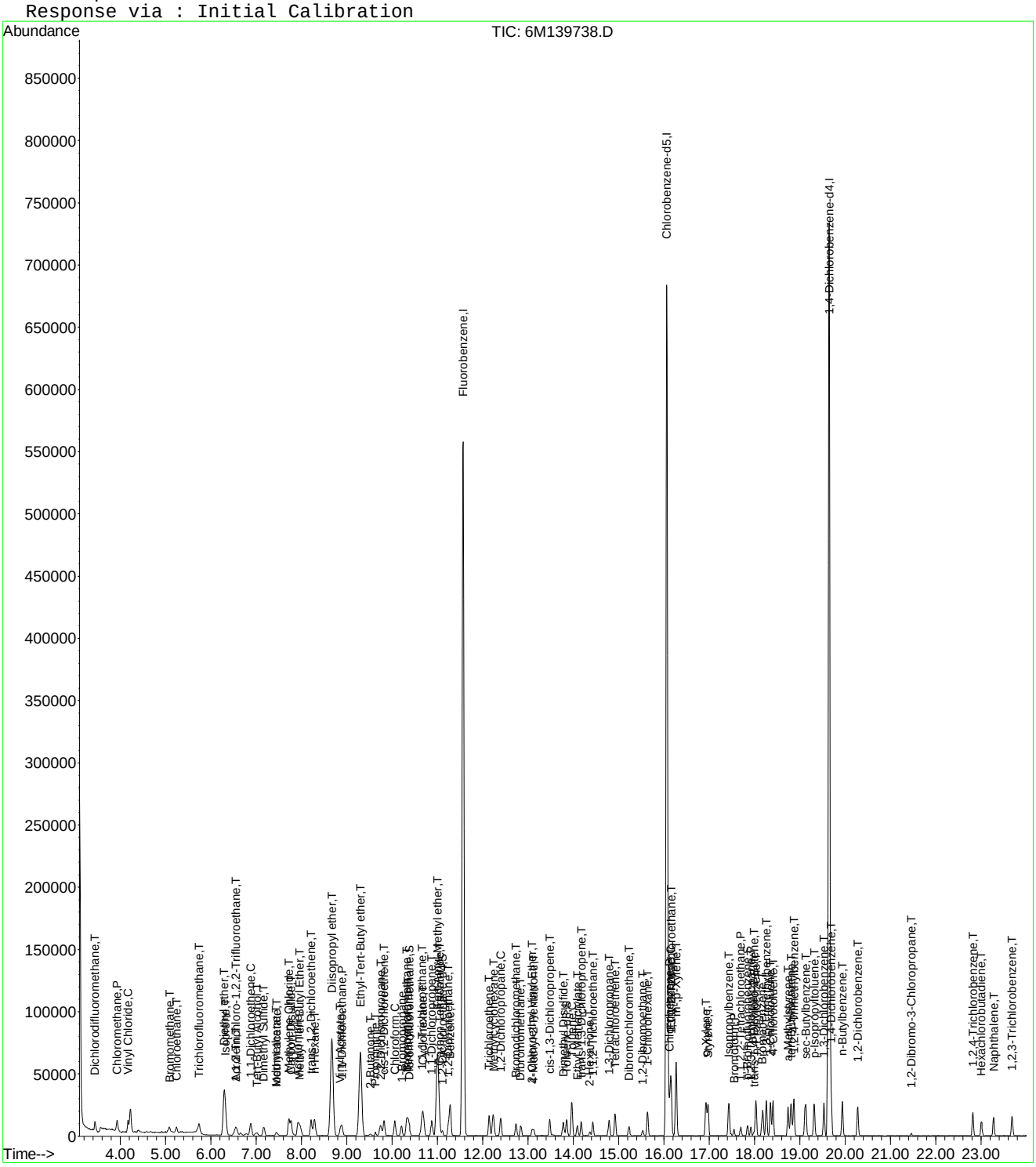

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\060116\6M139738.D Vial: 4
Acq On : 1 Jun 2016 13:33 Operator: TMB
Sample : WG570915-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9303	7.0	100	0.00
3	P	Chloromethane	1.0000	1.0527	-5.3	100	0.00
4	C	Vinyl Chloride	1.0000	1.0775	-7.7	100	0.01
5	T	1,3-Butadiene	-1.0000	-3.1177	0.0	0	0.03
6	T	Bromomethane	1.0000	0.9920	0.8	100	0.02
7	T	Chloroethane	1.0000	1.0315	-3.2	100	0.01
8	T	Trichlorofluoromethane	1.0000	1.0227	-2.3	100	0.02
9	T	Diethyl ether	5.0000	4.6948	6.1	100	0.00
10	T	Isoprene	-1.0000	0.9728	0.0	100	0.00
11	T	Acrolein	-1.0000	2.4811	0.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	0.9535	4.7	100	0.00
13	T	Acetone	-1.0000	-0.4899	0.0	0	0.00
14	C	1,1-Dichloroethene	1.0000	0.9786	2.1	100	0.01
15	T	Tert-Butyl Alcohol	10.0000	8.8569	11.4	100	-0.03
16	T	Dimethyl Sulfide	-1.0000	0.9230	0.0	100	0.00
17	T	Iodomethane	-1.0000	1.4776	0.0	0	0.01
18	T	Methyl acetate	-1.0000	0.9622	0.0	100	0.00
19	T	Methylene Chloride	1.0000	1.0681	-6.8	100	0.00
20	T	Carbon Disulfide	1.0000	1.0084	-0.8	100	0.01
21	T	Acrylonitrile	2.5000	2.3166	7.3	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9622	3.8	100	0.01
23	T	trans-1,2-Dichloroethene	1.0000	0.9810	1.9	100	0.00
24	T	n-Hexane	-1.0000	0.9706	0.0	100	0.01
25	T	Diisopropyl ether	5.0000	4.8979	2.0	100	0.00
26	T	Vinyl Acetate	-1.0000	0.7065	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0128	-1.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.8277	3.4	100	0.00
29	T	2-Butanone	-1.0000	0.9999	0.0	100	0.00
30	T	Propionitrile	5.0000	4.4461	11.1	100	0.00
31	T	2,2-Dichloropropane	1.0000	1.0379	-3.8	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	1.0019	-0.2	100	0.00
33	C	Chloroform	1.0000	0.9757	2.4	100	0.00
34		1-Bromopropane	1.0000	0.8504	15.0	100	0.01
35	T	Bromochloromethane	1.0000	0.9474	5.3	100	0.00
36	T	Tetrahydrofuran	5.0000	6.0841	-21.7#	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.5392	0.0	100	0.00
38	T	1,1,1-Trichloroethane	1.0000	0.9363	6.4	100	0.00
39	T	Cyclohexane	1.0000	0.9501	5.0	100	0.00
40	T	1,1-Dichloropropene	1.0000	0.9713	2.9	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	4.7510	5.0	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.9525	4.7	100	0.01
43	S	1,2-Dichloroethane-d4	-1.0000	0.5744	0.0	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	T	1,2-Dichloroethane	1.0000	0.9780	2.2	100	0.00
46	T	Benzene	1.0000	1.0356	-3.6	100	0.00
47	T	Trichloroethene	1.0000	1.0318	-3.2	100	0.00
48	T	Methylcyclohexane	-1.0000	0.9643	0.0	100	0.01
49	C	1,2-Dichloropropane	1.0000	0.9901	1.0	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-12.74#
51	T	Bromodichloromethane	1.0000	0.9919	0.8	100	0.00
52	T	Dibromomethane	1.0000	0.9693	3.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.7897	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.7400	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\060116\6M139738.D Vial: 4
Acq On : 1 Jun 2016 13:33 Operator: TMB
Sample : WG570915-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9007	9.9	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.6608	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.5422	0.0	100	0.00
59	C	Toluene	1.0000	1.0048	-0.5	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.7869	21.3#	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	1.0000	0.8699	13.0	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.9314	6.9	100	0.00
64	T	2-Hexanone	-1.0000	0.8701	0.0	100	0.00
65	T	1,3-Dichloropropane	1.0000	0.9829	1.7	100	0.00
66	T	Tetrachloroethene	1.0000	1.0364	-3.6	100	0.00
67	T	Dibromochloromethane	1.0000	0.9532	4.7	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.9198	8.0	100	0.00
69	T	1-Chlorohexane	1.0000	0.9017	9.8	100	0.00
70	P	Chlorobenzene	1.0000	1.0237	-2.4	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.9355	6.4	100	0.00
72	C	Ethylbenzene	1.0000	0.9823	1.8	100	0.00
73	T	m-,p-Xylene	2.0000	1.9611	1.9	100	0.00
74	T	o-Xylene	1.0000	0.9363	6.4	100	0.00
75	T	Styrene	1.0000	0.8828	11.7	100	0.00
76	P	Bromoform	1.0000	0.8720	12.8	100	0.00
77	T	Isopropylbenzene	1.0000	0.9840	1.6	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	0.9867	1.3	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5400	0.0	100	0.00
81	T	1,2,3-Trichloropropane	1.0000	0.9624	3.8	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	1.0000	1.2005	-20.1#	100	0.01
83	T	n-Propylbenzene	1.0000	1.0099	-1.0	100	0.00
84	T	Bromobenzene	1.0000	1.0043	-0.4	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	0.9954	0.5	100	0.00
86	T	2-Chlorotoluene	1.0000	1.0160	-1.6	100	0.00
87	T	4-Chlorotoluene	1.0000	1.0279	-2.8	100	0.00
88	T	a-Methylstyrene	-1.0000	0.8093	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	0.9241	7.6	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	0.9538	4.6	100	0.00
91	T	sec-Butylbenzene	1.0000	1.0086	-0.9	100	0.00
92	T	p-Isopropyltoluene	1.0000	0.9566	4.3	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0008	-0.1	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	0.9265	7.3	100	0.00
95	T	n-Butylbenzene	1.0000	0.9447	5.5	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	0.9654	3.5	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.5583	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	1.0000	0.9396	6.0	100	0.00
99	T	Hexachlorobutadiene	1.0000	1.0591	-5.9	100	0.00
100	T	Naphthalene	1.0000	0.9156	8.4	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	0.9660	3.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M139738.D 8260WT.M Thu Jun 02 12:19:02 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139739.D Vial: 5
Acq On : 1 Jun 2016 14:06 Operator: TMB
Sample : WG570915-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:20 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.56	96	742943	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	538524	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.64	152	285481	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.39	111	7626	0.9918 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.96%#	
43) 1,2-Dichloroethane-d4	11.11	65	8619	1.0170 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	4.08%#	
58) Toluene-d8	13.85	98	26951	1.0428 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.16%#	
80) p-Bromofluorobenzene	17.84	95	10079	0.9998 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	23119	1.9659 ug/L	97
3) Chloromethane	3.93	50	31601	2.2041 ug/L	99
4) Vinyl Chloride	4.17	62	20397	2.1105 ug/L	99
5) 1,3-Butadiene	4.22	54	23740	Below Cal	95
6) Bromomethane	5.09	94	9969	2.0940 ug/L	95
7) Chloroethane	5.24	64	13031	2.1332 ug/L	97
8) Trichlorofluoromethane	5.74	101	27906	2.1561 ug/L	100
9) Diethyl ether	6.29	59	183827	26.4128 ug/L	99
10) Isoprene	6.32	67	22261	2.0231 ug/L	100
11) Acrolein	6.55	56	14289	12.1687 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.54	101	16014	2.1659 ug/L	99
13) Acetone	6.65	43	7448	1.0499 ug/L	98
14) 1,1-Dichloroethene	6.88	61	27057	2.0664 ug/L	98
15) Tert-Butyl Alcohol	7.01	59	31691	49.3156 ug/L	95
16) Dimethyl Sulfide	7.16	62	11867	1.9748 ug/L	97
17) Iodomethane	7.43	142	2857	1.9552 ug/L	84
18) Methyl acetate	7.45	43	14589	2.2767 ug/L #	88
19) Methylene Chloride	7.72	84	17881	2.2145 ug/L	97
20) Carbon Disulfide	7.77	76	54515	2.1280 ug/L	99
21) Acrylonitrile	7.93	53	34183	12.1037 ug/L	95
22) Methyl Tert Butyl Ether	7.96	73	40745	2.0681 ug/L	98
23) trans-1,2-Dichloroethene	8.21	96	15961	2.0912 ug/L	98
24) n-Hexane	8.28	57	25065	2.1090 ug/L	97
25) Diisopropyl ether	8.67	45	827327	26.1535 ug/L	99
26) Vinyl Acetate	8.86	43	23762	1.7691 ug/L	96
27) 1,1-Dichloroethane	8.89	63	32311	2.1129 ug/L	99
28) Ethyl-Tert-Butyl ether	9.31	59	665309	25.6988 ug/L	100
29) 2-Butanone	9.51	43	7490	2.2325 ug/L	86
30) Propionitrile	9.63	54	24032	25.9544 ug/L	98
31) 2,2-Dichloropropane	9.75	77	24405	2.1890 ug/L	98
32) cis-1,2-Dichloroethene	9.83	96	17351	2.0868 ug/L	95
33) Chloroform	10.06	83	29158	2.1409 ug/L	99
34) 1-Bromopropane	10.21	122	2575	2.1509 ug/L	86
35) Bromochloromethane	10.32	130	9943	2.1058 ug/L	98
36) Tetrahydrofuran	10.36	42	57713	24.9874 ug/L	97
38) 1,1,1-Trichloroethane	10.65	97	25747	2.1191 ug/L	96
39) Cyclohexane	10.68	56	31781	2.0869 ug/L	97
40) 1,1-Dichloropropene	10.88	75	21286	2.0442 ug/L	99
41) Tert-Amyl-Methyl ether	11.00	73	511503	25.5189 ug/L	97
42) Carbon Tetrachloride	11.03	117	22465	2.0726 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M139739.D 8260WT.M Thu Jun 02 12:18:20 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139739.D Vial: 5
Acq On : 1 Jun 2016 14:06 Operator: TMB
Sample : WG570915-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:20 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.25	62	22181	2.1191 ug/L	95
46)	Benzene	11.29	78	65773	2.1550 ug/L	99
47)	Trichloroethene	12.14	130	16332	2.0952 ug/L	97
48)	Methylcyclohexane	12.24	83	23681	2.0038 ug/L	98
49)	1,2-Dichloropropane	12.40	63	17445	2.0694 ug/L	98
50)	1,4-Dioxane	12.74	88	2396	39.8941 ug/L	93
51)	Bromodichloromethane	12.74	83	21332	2.0576 ug/L	100
52)	Dibromomethane	12.84	93	8776	2.0174 ug/L	97
53)	2-Chloroethyl Vinyl Ether	13.08	63	7129	1.8528 ug/L	92
54)	4-Methyl-2-Pentanone	13.12	58	4367	1.7054 ug/L	90
55)	cis-1,3-Dichloropropene	13.48	75	23627	2.0136 ug/L	97
56)	Dimethyl Disulfide	13.78	79	10612	1.5698 ug/L	92
59)	Toluene	13.96	91	65655	2.1470 ug/L	100
60)	Ethyl Methacrylate	14.08	69	15579	1.8591 ug/L	100
62)	trans-1,3-Dichloropropene	14.18	75	20491	1.9674 ug/L	100
63)	1,1,2-Trichloroethane	14.43	97	12151	2.0870 ug/L	98
64)	2-Hexanone	14.36	43	9676	1.9585 ug/L	91
65)	1,3-Dichloropropane	14.79	76	21467	2.0971 ug/L	97
66)	Tetrachloroethene	14.92	166	16914	2.1086 ug/L	97
67)	Dibromochloromethane	15.23	129	14673	1.9778 ug/L	97
68)	1,2-Dibromoethane	15.53	107	11510	2.0453 ug/L	97
69)	1-Chlorohexane	15.65	91	19668	1.9807 ug/L	95
70)	Chlorobenzene	16.13	112	44821	2.1905 ug/L	99
71)	1,1,1,2-Tetrachloroethane	16.16	131	14676	1.9775 ug/L	98
72)	Ethylbenzene	16.16	106	22360	2.0602 ug/L	99
73)	m-,p-Xylene	16.27	106	53821	4.1742 ug/L	96
74)	o-Xylene	16.93	106	25852	2.0289 ug/L	99
75)	Styrene	16.97	104	42355	2.0016 ug/L	99
76)	Bromoform	17.55	173	8554	1.8173 ug/L	98
77)	Isopropylbenzene	17.43	105	65691	2.0539 ug/L	99
79)	1,1,2,2-Tetrachloroethane	17.69	83	14598	2.1209 ug/L	98
81)	1,2,3-Trichloropropane	17.92	110	4381	2.1985 ug/L	91
82)	trans-1,4-Dichloro-2-Buten	17.98	53	3430	2.0845 ug/L	81
83)	n-Propylbenzene	18.04	91	81094	2.1918 ug/L	98
84)	Bromobenzene	18.18	156	18389	2.1180 ug/L	97
85)	1,3,5-Trimethylbenzene	18.26	105	55405	2.1164 ug/L	97
86)	2-Chlorotoluene	18.35	91	57133	2.2543 ug/L	98
87)	4-Chlorotoluene	18.40	91	49926	2.1217 ug/L	99
88)	a-Methylstyrene	18.74	118	25561	1.7465 ug/L	95
89)	tert-Butylbenzene	18.80	134	12038	2.0858 ug/L	71
90)	1,2,4-Trimethylbenzene	18.87	105	58343	2.1289 ug/L	100
91)	sec-Butylbenzene	19.13	105	68680	2.1320 ug/L	99
92)	p-Isopropyltoluene	19.31	119	57167	2.0824 ug/L	98
93)	1,3-Dichlorobenzene	19.54	146	35679	2.1074 ug/L	99
94)	1,4-Dichlorobenzene	19.69	146	37305	2.1227 ug/L	89
95)	n-Butylbenzene	19.94	91	53712	2.0671 ug/L	99
96)	1,2-Dichlorobenzene	20.27	146	34278	2.1727 ug/L	98
97)	1,2-Dibromo-3-Chloropropan	21.46	75	2052	1.6602 ug/L	93
98)	1,2,4-Trichlorobenzene	22.82	180	22161	2.0316 ug/L	100
99)	Hexachlorobutadiene	23.02	225	9292	2.0526 ug/L	97
100)	Naphthalene	23.27	128	42114	1.9531 ug/L	97
101)	1,2,3-Trichlorobenzene	23.68	180	21030	2.0373 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M139739.D 8260WT.M Thu Jun 02 12:18:20 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139739.D Vial: 5
Acq On : 1 Jun 2016 14:06 Operator: TMB
Sample : WG570915-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 2 12:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration

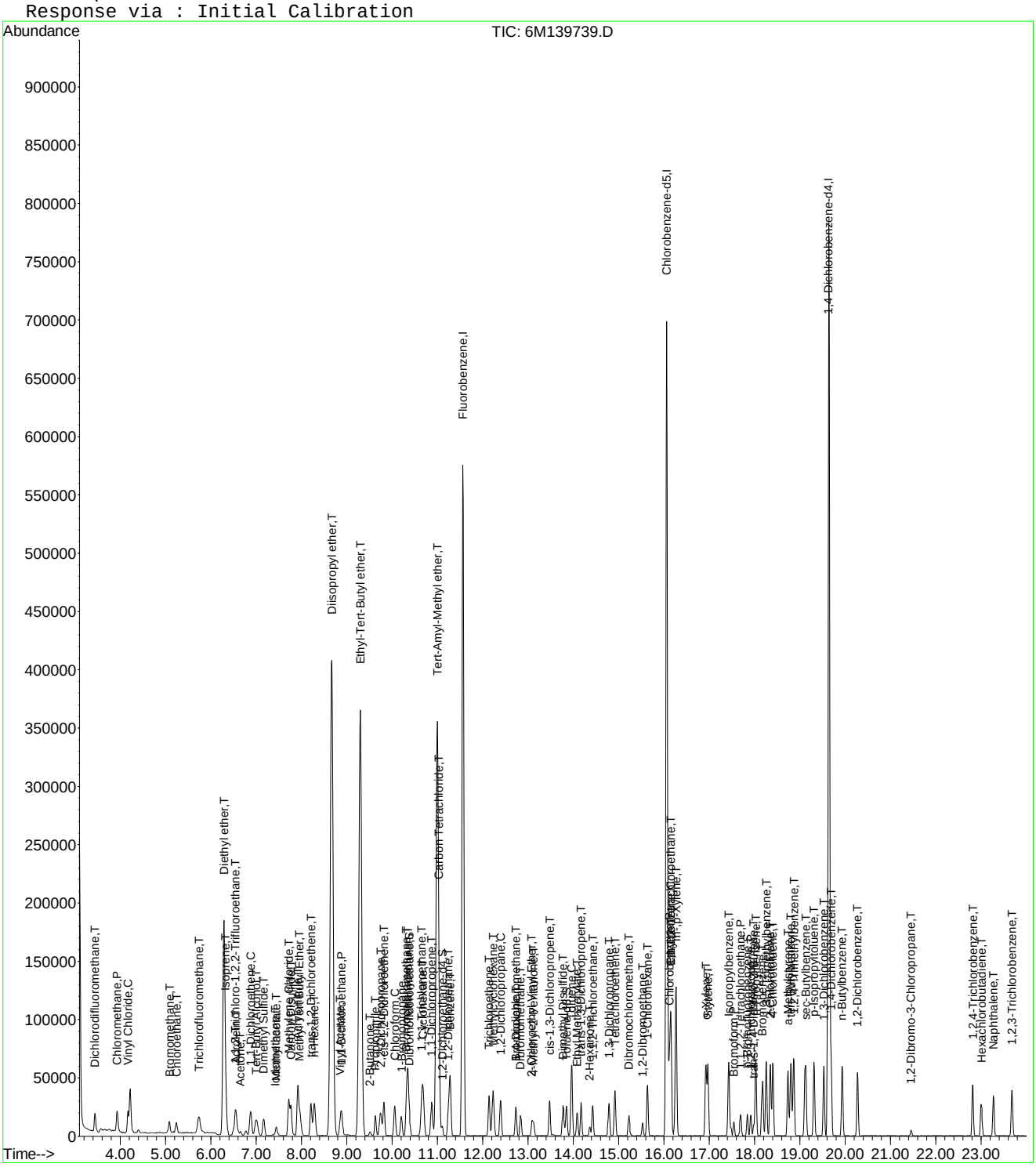

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\060116\6M139739.D Vial: 5
Acq On : 1 Jun 2016 14:06 Operator: TMB
Sample : WG570915-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.9659	1.7	100	0.00
3	P	Chloromethane	2.0000	2.2041	-10.2	100	0.00
4	C	Vinyl Chloride	2.0000	2.1105	-5.5	100	0.01
5	T	1,3-Butadiene	-1.0000	-0.6386	0.0	0	0.02
6	T	Bromomethane	2.0000	2.0940	-4.7	100	0.02
7	T	Chloroethane	2.0000	2.1332	-6.7	100	0.01
8	T	Trichlorofluoromethane	2.0000	2.1561	-7.8	100	0.02
9	T	Diethyl ether	25.0000	26.4128	-5.7	100	0.00
10	T	Isoprene	-1.0000	2.0231	0.0	100	0.00
11	T	Acrolein	12.5000	12.1687	2.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	2.1659	-8.3	100	0.00
13	T	Acetone	-1.0000	1.0499	0.0	0	0.00
14	C	1,1-Dichloroethene	2.0000	2.0664	-3.3	100	0.01
15	T	Tert-Butyl Alcohol	50.0000	49.3156	1.4	100	-0.04
16	T	Dimethyl Sulfide	-1.0000	1.9748	0.0	100	0.00
17	T	Iodomethane	2.0000	1.9552	2.2	100	0.00
18	T	Methyl acetate	-1.0000	2.2767	0.0	100	0.00
19	T	Methylene Chloride	2.0000	2.2145	-10.7	100	0.00
20	T	Carbon Disulfide	2.0000	2.1280	-6.4	100	0.01
21	T	Acrylonitrile	12.5000	12.1037	3.2	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	2.0681	-3.4	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	2.0913	-4.6	100	0.00
24	T	n-Hexane	-1.0000	2.1090	0.0	100	0.00
25	T	Diisopropyl ether	25.0000	26.1535	-4.6	100	0.00
26	T	Vinyl Acetate	-1.0000	1.7691	0.0	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.1129	-5.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	25.6988	-2.8	100	0.00
29	T	2-Butanone	-1.0000	2.2325	0.0	100	0.00
30	T	Propionitrile	25.0000	25.9544	-3.8	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1890	-9.5	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0868	-4.3	100	0.00
33	C	Chloroform	2.0000	2.1408	-7.0	100	0.00
34		1-Bromopropane	2.0000	2.1509	-7.5	100	0.00
35	T	Bromochloromethane	2.0000	2.1058	-5.3	100	0.00
36	T	Tetrahydrofuran	25.0000	24.9874	0.1	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9918	0.8	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	2.1191	-6.0	100	0.00
39	T	Cyclohexane	2.0000	2.0869	-4.3	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0442	-2.2	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	25.5189	-2.1	100	0.00
42	T	Carbon Tetrachloride	2.0000	2.0726	-3.6	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0170	-1.7	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	T	1,2-Dichloroethane	2.0000	2.1191	-6.0	100	0.00
46	T	Benzene	2.0000	2.1551	-7.8	100	0.00
47	T	Trichloroethene	2.0000	2.0952	-4.8	100	0.00
48	T	Methylcyclohexane	-1.0000	2.0038	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0694	-3.5	100	0.00
50	T	1,4-Dioxane	-1.0000	39.8941	0.0	100	0.00
51	T	Bromodichloromethane	2.0000	2.0576	-2.9	100	0.00
52	T	Dibromomethane	2.0000	2.0174	-0.9	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	1.8528	7.4	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.7054	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\060116\6M139739.D Vial: 5
Acq On : 1 Jun 2016 14:06 Operator: TMB
Sample : WG570915-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	2.0136	-0.7	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.5698	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	1.0428	-4.3	100	0.00
59	C	Toluene	2.0000	2.1470	-7.3	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.8591	7.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	2.0000	1.9674	1.6	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	2.0870	-4.3	100	0.00
64	T	2-Hexanone	-1.0000	1.9585	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.0970	-4.9	100	0.00
66	T	Tetrachloroethene	2.0000	2.1086	-5.4	100	0.00
67	T	Dibromochloromethane	2.0000	1.9778	1.1	100	0.00
68	T	1,2-Dibromoethane	2.0000	2.0453	-2.3	100	0.00
69	T	1-Chlorohexane	2.0000	1.9807	1.0	100	0.00
70	P	Chlorobenzene	2.0000	2.1905	-9.5	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.9775	1.1	100	0.00
72	C	Ethylbenzene	2.0000	2.0602	-3.0	100	0.00
73	T	m-,p-Xylene	4.0000	4.1742	-4.4	100	0.00
74	T	o-Xylene	2.0000	2.0289	-1.4	100	0.00
75	T	Styrene	2.0000	2.0016	-0.1	100	0.00
76	P	Bromoform	2.0000	1.8173	9.1	100	0.00
77	T	Isopropylbenzene	2.0000	2.0539	-2.7	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	2.1209	-6.0	100	0.00
80	S	p-Bromofluorobenzene	1.0000	0.9998	0.0	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	2.1985	-9.9	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	2.0845	-4.2	100	0.00
83	T	n-Propylbenzene	2.0000	2.1918	-9.6	100	0.00
84	T	Bromobenzene	2.0000	2.1180	-5.9	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.1164	-5.8	100	0.00
86	T	2-Chlorotoluene	2.0000	2.2543	-12.7	100	0.00
87	T	4-Chlorotoluene	2.0000	2.1217	-6.1	100	0.00
88	T	a-Methylstyrene	-1.0000	1.7465	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	2.0858	-4.3	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.1289	-6.4	100	0.00
91	T	sec-Butylbenzene	2.0000	2.1320	-6.6	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.0825	-4.1	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.1074	-5.4	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.1227	-6.1	100	0.00
95	T	n-Butylbenzene	2.0000	2.0671	-3.4	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.1727	-8.6	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.6602	17.0	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	2.0316	-1.6	100	0.00
99	T	Hexachlorobutadiene	2.0000	2.0526	-2.6	100	0.00
100	T	Naphthalene	2.0000	1.9531	2.3	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	2.0372	-1.9	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M139739.D 8260WT.M Thu Jun 02 12:19:13 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139740.D Vial: 6
Acq On : 1 Jun 2016 14:38 Operator: TMB
Sample : WG570915-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:21 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	739555	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.06	117	536758	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	19.65	152	288515	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.38	111	18845	2.4621 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	9.84%#	
43) 1,2-Dichloroethane-d4	11.11	65	20951	2.4834 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	9.92%#	
58) Toluene-d8	13.85	98	65932	2.5594 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	10.24%#	
80) p-Bromofluorobenzene	17.84	95	25405	2.4936 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	9.96%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	53233	4.5473 ug/L	97
3) Chloromethane	3.93	50	71846	5.0340 ug/L	100
4) Vinyl Chloride	4.17	62	46089	4.7908 ug/L	99
5) 1,3-Butadiene	4.21	54	42049	3.1429 ug/L	91
6) Bromomethane	5.08	94	21334	4.5018 ug/L	98
7) Chloroethane	5.24	64	31006	5.0990 ug/L	98
8) Trichlorofluoromethane	5.74	101	64044	4.9710 ug/L	100
9) Diethyl ether	6.29	59	349877	50.5016 ug/L	100
10) Isoprene	6.32	67	52571	4.7995 ug/L	99
11) Acrolein	6.54	56	29717	25.4233 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.55	101	36494	4.9585 ug/L	98
13) Acetone	6.65	43	15281	4.9011 ug/L	98
14) 1,1-Dichloroethene	6.88	61	64405	4.9413 ug/L	100
15) Tert-Butyl Alcohol	7.00	59	63946	99.9648 ug/L	98
16) Dimethyl Sulfide	7.17	62	28254	4.7234 ug/L	98
17) Iodomethane	7.43	142	15471	4.2422 ug/L	97
18) Methyl acetate	7.45	43	33236	5.2104 ug/L	95
19) Methylene Chloride	7.72	84	40736	5.0682 ug/L	99
20) Carbon Disulfide	7.77	76	126979	4.9794 ug/L	100
21) Acrylonitrile	7.92	53	66289	23.5794 ug/L	94
22) Methyl Tert Butyl Ether	7.95	73	96916	4.9418 ug/L	99
23) trans-1,2-Dichloroethene	8.21	96	37460	4.9306 ug/L	97
24) n-Hexane	8.29	57	60246	5.0925 ug/L	99
25) Diisopropyl ether	8.67	45	1610342	51.1394 ug/L	100
26) Vinyl Acetate	8.85	43	62309	4.6602 ug/L	97
27) 1,1-Dichloroethane	8.89	63	75144	4.9363 ug/L	99
28) Ethyl-Tert-Butyl ether	9.30	59	1306947	50.7146 ug/L	99
29) 2-Butanone	9.52	43	17941	5.3720 ug/L	96
30) Propionitrile	9.63	54	46508	50.4584 ug/L	100
31) 2,2-Dichloropropane	9.75	77	55908	5.0377 ug/L	98
32) cis-1,2-Dichloroethene	9.83	96	41514	5.0157 ug/L	100
33) Chloroform	10.06	83	67873	5.0062 ug/L	98
34) 1-Bromopropane	10.20	122	7077	5.4256 ug/L	95
35) Bromochloromethane	10.32	130	23487	4.9970 ug/L	97
36) Tetrahydrofuran	10.35	42	111625	48.5506 ug/L	97
38) 1,1,1-Trichloroethane	10.66	97	59147	4.8905 ug/L	100
39) Cyclohexane	10.69	56	73130	4.8241 ug/L	99
40) 1,1-Dichloropropene	10.87	75	51586	4.9768 ug/L	98
41) Tert-Amyl-Methyl ether	11.00	73	1001616	50.1996 ug/L	98
42) Carbon Tetrachloride	11.04	117	51776	4.7988 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M139740.D 8260WT.M Thu Jun 02 12:18:21 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139740.D Vial: 6
Acq On : 1 Jun 2016 14:38 Operator: TMB
Sample : WG570915-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:21 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	11.24	62	51329	4.9263	ug/L	99
46)	Benzene	11.28	78	153403	5.0493	ug/L	99
47)	Trichloroethene	12.14	130	37892	4.8833	ug/L	100
48)	Methylcyclohexane	12.23	83	58249	4.9514	ug/L	99
49)	1,2-Dichloropropane	12.40	63	41911	4.9943	ug/L	99
50)	1,4-Dioxane	12.73	88	5253	87.8647	ug/L	94
51)	Bromodichloromethane	12.74	83	50357	4.8796	ug/L	100
52)	Dibromomethane	12.83	93	21481	4.9606	ug/L	99
53)	2-Chloroethyl Vinyl Ether	13.09	63	17503	4.5699	ug/L	99
54)	4-Methyl-2-Pentanone	13.13	58	11365	4.4586	ug/L	94
55)	cis-1,3-Dichloropropene	13.48	75	58485	5.0071	ug/L	97
56)	Dimethyl Disulfide	13.78	79	27006	4.0133	ug/L	98
59)	Toluene	13.97	91	156506	5.1347	ug/L	100
60)	Ethyl Methacrylate	14.09	69	39144	4.6865	ug/L	98
62)	trans-1,3-Dichloropropene	14.17	75	50230	4.8387	ug/L	98
63)	1,1,2-Trichloroethane	14.43	97	28765	4.9567	ug/L	99
64)	2-Hexanone	14.36	43	23751	4.8232	ug/L	98
65)	1,3-Dichloropropane	14.79	76	50356	4.9353	ug/L	97
66)	Tetrachloroethene	14.92	166	40511	5.0669	ug/L	99
67)	Dibromochloromethane	15.23	129	35926	4.8585	ug/L	97
68)	1,2-Dibromoethane	15.53	107	27314	4.8696	ug/L	98
69)	1-Chlorohexane	15.64	91	48413	4.8916	ug/L	97
70)	Chlorobenzene	16.12	112	104312	5.1147	ug/L	97
71)	1,1,1,2-Tetrachloroethane	16.16	131	36730	4.9654	ug/L	99
72)	Ethylbenzene	16.16	106	54248	5.0148	ug/L	98
73)	m-,p-Xylene	16.27	106	131323	10.2186	ug/L	100
74)	o-Xylene	16.93	106	63554	5.0043	ug/L	100
75)	Styrene	16.97	104	106058	5.0285	ug/L	100
76)	Bromoform	17.55	173	21214	4.5219	ug/L	98
77)	Isopropylbenzene	17.43	105	162047	5.0833	ug/L	99
79)	1,1,2,2-Tetrachloroethane	17.70	83	34171	4.9124	ug/L	99
81)	1,2,3-Trichloropropane	17.92	110	9377	4.6562	ug/L	72
82)	trans-1,4-Dichloro-2-Buten	17.98	53	9378	4.4249	ug/L	93
83)	n-Propylbenzene	18.03	91	196536	5.2560	ug/L	98
84)	Bromobenzene	18.18	156	43947	5.0085	ug/L	98
85)	1,3,5-Trimethylbenzene	18.26	105	135685	5.1285	ug/L	99
86)	2-Chlorotoluene	18.35	91	130402	5.0913	ug/L	99
87)	4-Chlorotoluene	18.41	91	124301	5.2269	ug/L	98
88)	a-Methylstyrene	18.74	118	68837	4.6540	ug/L	97
89)	tert-Butylbenzene	18.81	134	29765	5.1030	ug/L	98
90)	1,2,4-Trimethylbenzene	18.87	105	142438	5.1429	ug/L	100
91)	sec-Butylbenzene	19.13	105	168272	5.1687	ug/L	100
92)	p-Isopropyltoluene	19.32	119	142353	5.1310	ug/L	98
93)	1,3-Dichlorobenzene	19.53	146	86160	5.0357	ug/L	99
94)	1,4-Dichlorobenzene	19.70	146	84427	5.0188	ug/L	93
95)	n-Butylbenzene	19.94	91	133112	5.0690	ug/L	98
96)	1,2-Dichlorobenzene	20.28	146	79776	5.0034	ug/L	99
97)	1,2-Dibromo-3-Chloropropan	21.46	75	6079	4.8666	ug/L	92
98)	1,2,4-Trichlorobenzene	22.82	180	54492	4.9430	ug/L	100
99)	Hexachlorobutadiene	23.01	225	23856	5.2144	ug/L	97
100)	Naphthalene	23.28	128	107168	4.9178	ug/L	98
101)	1,2,3-Trichlorobenzene	23.69	180	51676	4.9534	ug/L	99

(#) = qualifier out of range (m) = manual integration
6M139740.D 8260WT.M Thu Jun 02 12:18:21 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139740.D Vial: 6
Acq On : 1 Jun 2016 14:38 Operator: TMB
Sample : WG570915-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 2 12:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration

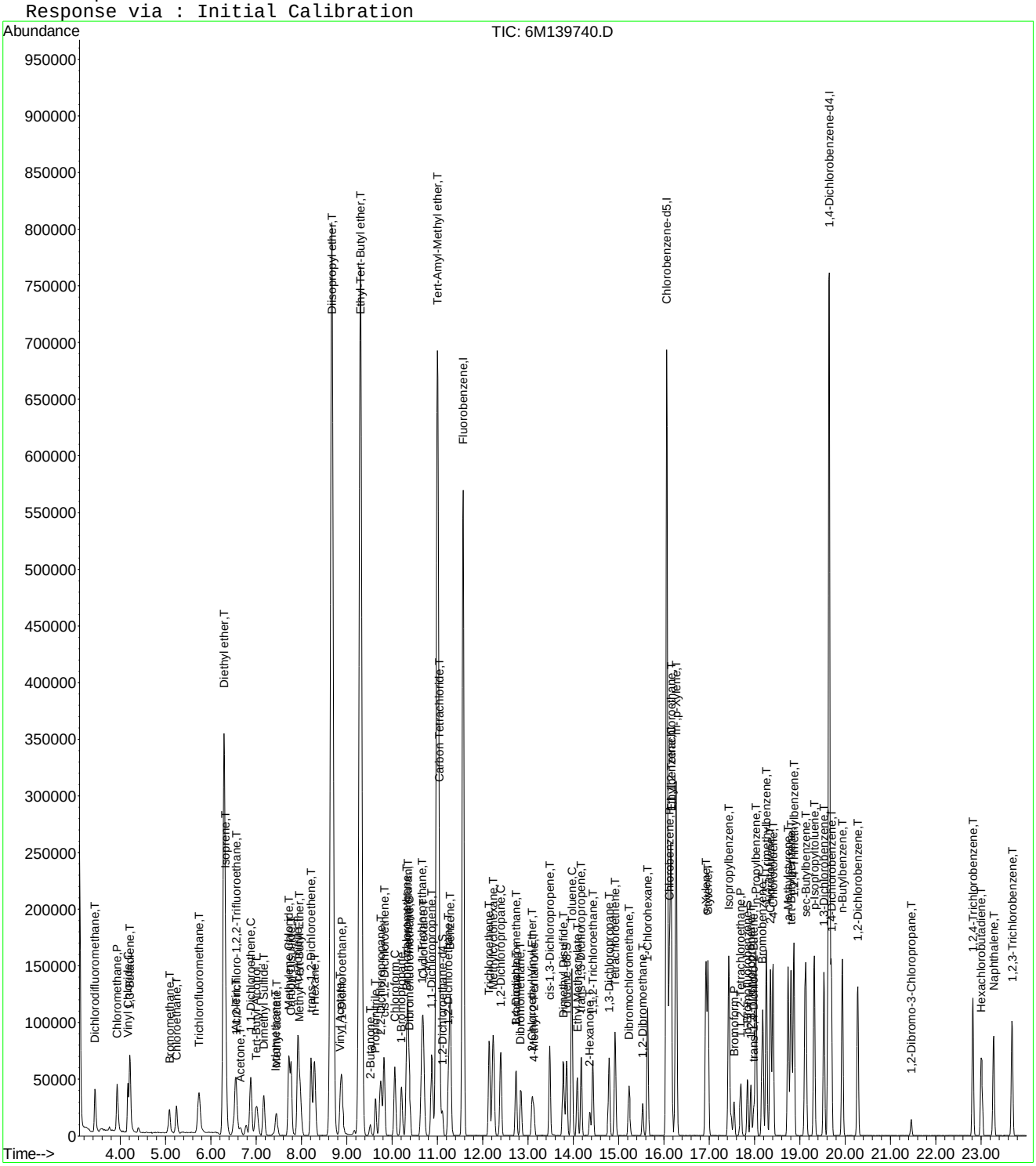

6M139740.D 8260WT.M Thu Jun 02 12:18:21 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\060116\6M139740.D Vial: 6
Acq On : 1 Jun 2016 14:38 Operator: TMB
Sample : WG570915-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.5473	9.1	100	0.00
3	P	Chloromethane	5.0000	5.0340	-0.7	100	0.00
4	C	Vinyl Chloride	5.0000	4.7908	4.2	100	0.00
5	T	1,3-Butadiene	5.0000	3.1429	37.1#	100	0.01
6	T	Bromomethane	5.0000	4.5018	10.0	100	0.02
7	T	Chloroethane	5.0000	5.0990	-2.0	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.9710	0.6	100	0.02
9	T	Diethyl ether	50.0000	50.5016	-1.0	100	0.00
10	T	Isoprene	5.0000	4.7995	4.0	100	0.00
11	T	Acrolein	25.0000	25.4233	-1.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.9585	0.8	100	0.00
13	T	Acetone	5.0000	4.9011	2.0	100	-0.01
14	C	1,1-Dichloroethene	5.0000	4.9413	1.2	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	99.9648	0.0	100	-0.04
16	T	Dimethyl Sulfide	5.0000	4.7234	5.5	100	0.00
17	T	Iodomethane	5.0000	4.2422	15.2	100	0.00
18	T	Methyl acetate	5.0000	5.2104	-4.2	100	0.00
19	T	Methylene Chloride	5.0000	5.0682	-1.4	100	0.00
20	T	Carbon Disulfide	5.0000	4.9794	0.4	100	0.00
21	T	Acrylonitrile	25.0000	23.5794	5.7	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.9418	1.2	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.9306	1.4	100	0.00
24	T	n-Hexane	5.0000	5.0925	-1.9	100	0.00
25	T	Diisopropyl ether	50.0000	51.1394	-2.3	100	0.00
26	T	Vinyl Acetate	5.0000	4.6602	6.8	100	-0.01
27	P	1,1-Dichloroethane	5.0000	4.9363	1.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	50.7146	-1.4	100	0.00
29	T	2-Butanone	5.0000	5.3720	-7.4	100	0.00
30	T	Propionitrile	50.0000	50.4584	-0.9	100	-0.01
31	T	2,2-Dichloropropane	5.0000	5.0377	-0.8	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	5.0157	-0.3	100	0.00
33	C	Chloroform	5.0000	5.0062	-0.1	100	0.00
34		1-Bromopropane	5.0000	5.4256	-8.5	100	0.00
35	T	Bromochloromethane	5.0000	4.9970	0.1	100	0.00
36	T	Tetrahydrofuran	50.0000	48.5506	2.9	100	0.00
37	S	Dibromofluoromethane	2.5000	2.4621	1.5	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.8905	2.2	100	0.00
39	T	Cyclohexane	5.0000	4.8242	3.5	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.9768	0.5	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	50.1996	-0.4	100	-0.01
42	T	Carbon Tetrachloride	5.0000	4.7988	4.0	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.4834	0.7	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	-0.01
45	T	1,2-Dichloroethane	5.0000	4.9262	1.5	100	0.00
46	T	Benzene	5.0000	5.0493	-1.0	100	0.00
47	T	Trichloroethene	5.0000	4.8833	2.3	100	-0.01
48	T	Methylcyclohexane	5.0000	4.9514	1.0	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.9943	0.1	100	0.00
50	T	1,4-Dioxane	100.0000	87.8647	12.1	100	-0.01
51	T	Bromodichloromethane	5.0000	4.8796	2.4	100	0.00
52	T	Dibromomethane	5.0000	4.9606	0.8	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.5699	8.6	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.4586	10.8	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\060116\6M139740.D Vial: 6
Acq On : 1 Jun 2016 14:38 Operator: TMB
Sample : WG570915-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	5.0071	-0.1	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.0133	19.7	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	-0.01
58	S	Toluene-d8	2.5000	2.5594	-2.4	100	0.00
59	C	Toluene	5.0000	5.1347	-2.7	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.6865	6.3	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	5.0000	4.8387	3.2	100	-0.01
63	T	1,1,2-Trichloroethane	5.0000	4.9567	0.9	100	0.00
64	T	2-Hexanone	5.0000	4.8232	3.5	100	-0.01
65	T	1,3-Dichloropropane	5.0000	4.9353	1.3	100	0.00
66	T	Tetrachloroethene	5.0000	5.0669	-1.3	100	-0.01
67	T	Dibromochloromethane	5.0000	4.8585	2.8	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.8696	2.6	100	0.00
69	T	1-Chlorohexane	5.0000	4.8916	2.2	100	0.00
70	P	Chlorobenzene	5.0000	5.1147	-2.3	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.9654	0.7	100	0.00
72	C	Ethylbenzene	5.0000	5.0148	-0.3	100	0.00
73	T	m-,p-Xylene	10.0000	10.2186	-2.2	100	0.00
74	T	o-Xylene	5.0000	5.0043	-0.1	100	0.00
75	T	Styrene	5.0000	5.0285	-0.6	100	-0.01
76	P	Bromoform	5.0000	4.5218	9.6	100	0.00
77	T	Isopropylbenzene	5.0000	5.0833	-1.7	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	4.9124	1.8	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.4936	0.3	100	-0.01
81	T	1,2,3-Trichloropropane	5.0000	4.6562	6.9	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.4249	11.5	100	0.00
83	T	n-Propylbenzene	5.0000	5.2560	-5.1	100	0.00
84	T	Bromobenzene	5.0000	5.0085	-0.2	100	-0.01
85	T	1,3,5-Trimethylbenzene	5.0000	5.1285	-2.6	100	-0.01
86	T	2-Chlorotoluene	5.0000	5.0913	-1.8	100	0.00
87	T	4-Chlorotoluene	5.0000	5.2269	-4.5	100	0.00
88	T	a-Methylstyrene	5.0000	4.6540	6.9	100	0.00
89	T	tert-Butylbenzene	5.0000	5.1030	-2.1	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.1429	-2.9	100	0.00
91	T	sec-Butylbenzene	5.0000	5.1687	-3.4	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.1310	-2.6	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	5.0357	-0.7	100	-0.01
94	T	1,4-Dichlorobenzene	5.0000	5.0188	-0.4	100	0.00
95	T	n-Butylbenzene	5.0000	5.0690	-1.4	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	5.0034	-0.1	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	4.8666	2.7	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.9430	1.1	100	0.00
99	T	Hexachlorobutadiene	5.0000	5.2143	-4.3	100	-0.01
100	T	Naphthalene	5.0000	4.9178	1.6	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.9534	0.9	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M139740.D 8260WT.M Thu Jun 02 12:19:24 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139741.D Vial: 7
Acq On : 1 Jun 2016 15:10 Operator: TMB
Sample : WG570915-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:22 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	741749	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.06	117	542308	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	300008	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.38	111	79708	10.3831 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 41.52%#		
43) 1,2-Dichloroethane-d4	11.11	65	88573	10.4679 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 41.88%#		
58) Toluene-d8	13.85	98	265815	10.2132 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 40.84%#		
80) p-Bromofluorobenzene	17.84	95	109890	10.3728 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 41.48%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	247381	21.0696 ug/L	98
3) Chloromethane	3.93	50	296797	20.7339 ug/L	99
4) Vinyl Chloride	4.17	62	191392	19.8356 ug/L	99
5) 1,3-Butadiene	4.21	54	157053	26.6603 ug/L	98
6) Bromomethane	5.09	94	81508	17.1486 ug/L	97
7) Chloroethane	5.24	64	122316	20.0554 ug/L	99
8) Trichlorofluoromethane	5.74	101	258878	20.0342 ug/L	99
9) Diethyl ether	6.29	59	547075	78.7318 ug/L	99
10) Isoprene	6.32	67	221464	20.1591 ug/L	99
11) Acrolein	6.55	56	44949	38.3408 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.55	101	145375	19.6939 ug/L	99
13) Acetone	6.65	43	44156	18.9729 ug/L	99
14) 1,1-Dichloroethene	6.88	61	254854	19.4952 ug/L	99
15) Tert-Butyl Alcohol	7.00	59	102719	160.1025 ug/L	98
16) Dimethyl Sulfide	7.17	62	122102	20.3521 ug/L	99
17) Iodomethane	7.43	142	111720	21.6149 ug/L	99
18) Methyl acetate	7.45	43	129311	20.2119 ug/L	99
19) Methylene Chloride	7.72	84	155771	19.3229 ug/L	100
20) Carbon Disulfide	7.77	76	520481	20.3498 ug/L	100
21) Acrylonitrile	7.92	53	110335	39.1307 ug/L	96
22) Methyl Tert Butyl Ether	7.95	73	388723	19.7626 ug/L	100
23) trans-1,2-Dichloroethene	8.21	96	151236	19.8472 ug/L	99
24) n-Hexane	8.29	57	239236	20.1625 ug/L	100
25) Diisopropyl ether	8.67	45	2507424	79.3924 ug/L	100
26) Vinyl Acetate	8.85	43	251396	18.7467 ug/L	99
27) 1,1-Dichloroethane	8.89	63	300042	19.6518 ug/L	100
28) Ethyl-Tert-Butyl ether	9.30	59	2050757	79.3419 ug/L	99
29) 2-Butanone	9.51	43	64868	19.3656 ug/L	99
30) Propionitrile	9.63	54	74857	80.9752 ug/L	100
31) 2,2-Dichloropropane	9.75	77	211176	18.9721 ug/L	99
32) cis-1,2-Dichloroethene	9.82	96	163903	19.7440 ug/L	100
33) Chloroform	10.06	83	267226	19.6520 ug/L	99
34) 1-Bromopropane	10.21	122	27047	19.8559 ug/L	99
35) Bromochloromethane	10.32	130	94683	20.0848 ug/L	99
36) Tetrahydrofuran	10.35	42	174854	75.8267 ug/L	98
38) 1,1,1-Trichloroethane	10.65	97	233161	19.2216 ug/L	100
39) Cyclohexane	10.69	56	306471	20.1571 ug/L	99
40) 1,1-Dichloropropene	10.88	75	204304	19.6521 ug/L	98
41) Tert-Amyl-Methyl ether	11.00	73	1581113	79.0088 ug/L	98
42) Carbon Tetrachloride	11.04	117	211271	19.5234 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139741.D Vial: 7
Acq On : 1 Jun 2016 15:10 Operator: TMB
Sample : WG570915-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:22 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.24	62	203687	19.4909 ug/L	99
46)	Benzene	11.28	78	596288	19.5688 ug/L	100
47)	Trichloroethene	12.14	130	153787	19.7607 ug/L	99
48)	Methylcyclohexane	12.23	83	238202	20.1882 ug/L	99
49)	1,2-Dichloropropane	12.40	63	164832	19.5842 ug/L	99
50)	1,4-Dioxane	12.73	88	9239	154.0797 ug/L	96
51)	Bromodichloromethane	12.74	83	203755	19.6854 ug/L	99
52)	Dibromomethane	12.84	93	86662	19.9537 ug/L	100
53)	2-Chloroethyl Vinyl Ether	13.09	63	78877	20.5333 ug/L	98
54)	4-Methyl-2-Pentanone	13.12	58	50584	19.7859 ug/L	99
55)	cis-1,3-Dichloropropene	13.48	75	236552	20.1922 ug/L	100
56)	Dimethyl Disulfide	13.78	79	129245	19.1502 ug/L	99
59)	Toluene	13.97	91	615093	19.9736 ug/L	99
60)	Ethyl Methacrylate	14.09	69	172598	20.4528 ug/L	100
62)	trans-1,3-Dichloropropene	14.17	75	207562	19.7898 ug/L	100
63)	1,1,2-Trichloroethane	14.43	97	116786	19.9183 ug/L	99
64)	2-Hexanone	14.36	43	94360	18.9657 ug/L	98
65)	1,3-Dichloropropane	14.79	76	205188	19.9044 ug/L	98
66)	Tetrachloroethene	14.92	166	156971	19.4321 ug/L	100
67)	Dibromochloromethane	15.24	129	147629	19.7605 ug/L	100
68)	1,2-Dibromoethane	15.53	107	114125	20.1383 ug/L	99
69)	1-Chlorohexane	15.64	91	204931	20.4942 ug/L	98
70)	Chlorobenzene	16.12	112	403304	19.5727 ug/L	98
71)	1,1,1,2-Tetrachloroethane	16.16	131	149046	19.9427 ug/L	99
72)	Ethylbenzene	16.16	106	213615	19.5450 ug/L	97
73)	m-,p-Xylene	16.27	106	522902	40.2721 ug/L	99
74)	o-Xylene	16.93	106	258312	20.1315 ug/L	99
75)	Styrene	16.97	104	444118	20.8412 ug/L	100
76)	Bromoform	17.55	173	92368	19.4871 ug/L	99
77)	Isopropylbenzene	17.43	105	656228	20.3746 ug/L	100
79)	1,1,2,2-Tetrachloroethane	17.70	83	139457	19.2803 ug/L	99
81)	1,2,3-Trichloropropane	17.92	110	40786	19.4765 ug/L	80
82)	trans-1,4-Dichloro-2-Buten	17.98	53	45829	18.1607 ug/L	96
83)	n-Propylbenzene	18.03	91	797340	20.5066 ug/L	100
84)	Bromobenzene	18.18	156	176971	19.3962 ug/L	98
85)	1,3,5-Trimethylbenzene	18.26	105	562167	20.4342 ug/L	100
86)	2-Chlorotoluene	18.35	91	522498	19.6183 ug/L	99
87)	4-Chlorotoluene	18.41	91	491019	19.8565 ug/L	99
88)	a-Methylstyrene	18.74	118	309473	20.1216 ug/L	99
89)	tert-Butylbenzene	18.81	134	120609	19.8853 ug/L	97
90)	1,2,4-Trimethylbenzene	18.87	105	587977	20.4163 ug/L	100
91)	sec-Butylbenzene	19.13	105	690021	20.3828 ug/L	99
92)	p-Isopropyltoluene	19.32	119	586819	20.3412 ug/L	100
93)	1,3-Dichlorobenzene	19.53	146	347927	19.5557 ug/L	100
94)	1,4-Dichlorobenzene	19.69	146	344416	20.3156 ug/L	98
95)	n-Butylbenzene	19.94	91	553574	20.2731 ug/L	99
96)	1,2-Dichlorobenzene	20.28	146	323149	19.4907 ug/L	99
97)	1,2-Dibromo-3-Chloropropan	21.46	75	24521	18.8784 ug/L	100
98)	1,2,4-Trichlorobenzene	22.82	180	229322	20.0052 ug/L	99
99)	Hexachlorobutadiene	23.02	225	92359	19.4141 ug/L	99
100)	Naphthalene	23.28	128	469355	20.7131 ug/L	99
101)	1,2,3-Trichlorobenzene	23.68	180	214161	19.7420 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M139741.D 8260WT.M Thu Jun 02 12:18:22 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139741.D Vial: 7
Acq On : 1 Jun 2016 15:10 Operator: TMB
Sample : WG570915-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 2 12:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration

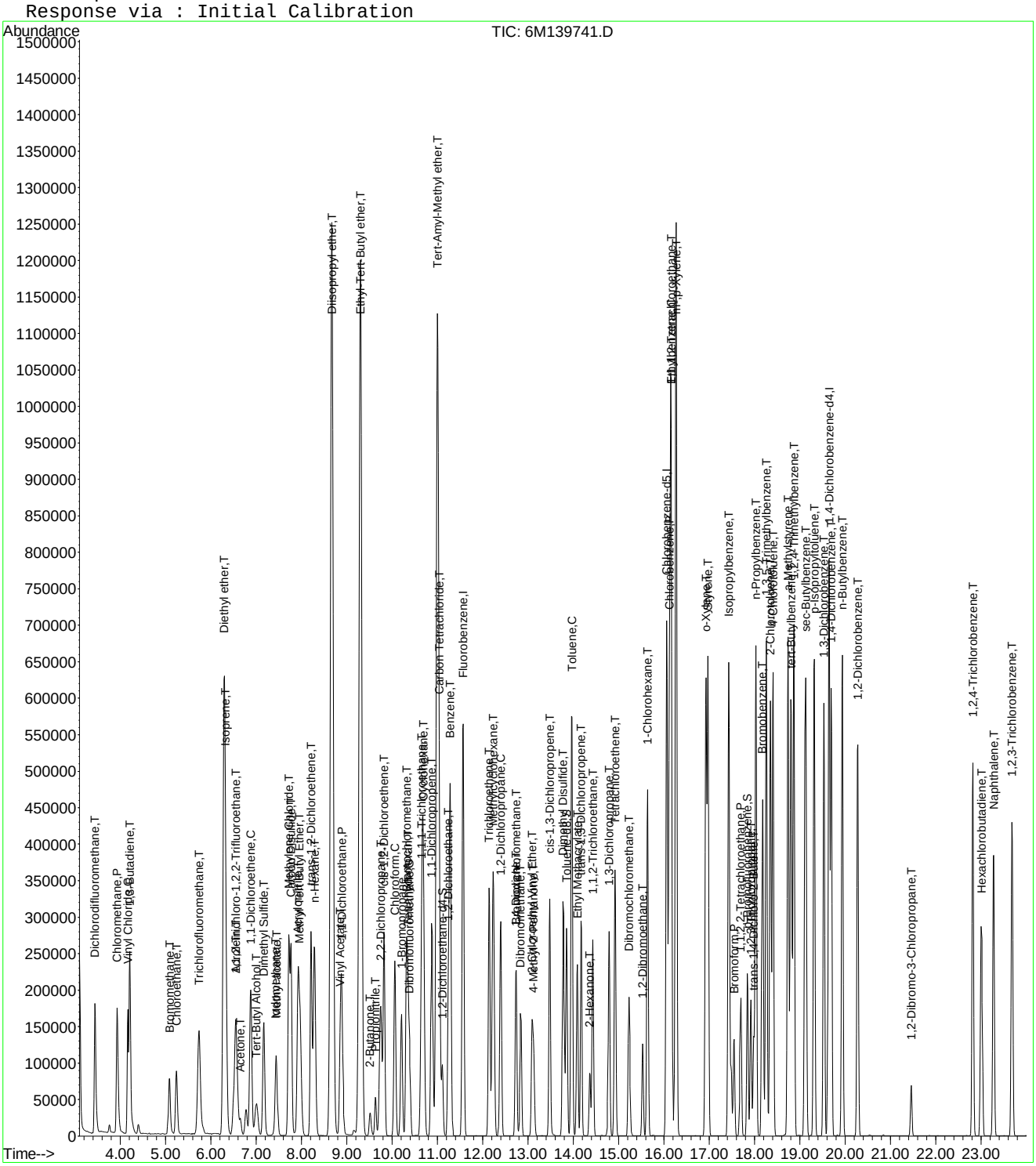

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139742.D Vial: 8
Acq On : 1 Jun 2016 15:43 Operator: TMB
Sample : WG570915-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:22 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	743292	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.06	117	551471	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	19.65	152	314779	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.38	111	194703	25.3102 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.24%		
43) 1,2-Dichloroethane-d4	11.11	65	214016	25.2407 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.96%		
58) Toluene-d8	13.85	98	648440	24.5005 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.00%		
80) p-Bromofluorobenzene	17.84	95	274770	24.7192 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.88%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	636760	54.1207 ug/L	98
3) Chloromethane	3.93	50	738547	51.4870 ug/L	100
4) Vinyl Chloride	4.17	62	471300	48.7435 ug/L	100
5) 1,3-Butadiene	4.21	54	275105	50.7103 ug/L	99
6) Bromomethane	5.07	94	226755	47.6082 ug/L	100
7) Chloroethane	5.24	64	303648	49.6840 ug/L	99
8) Trichlorofluoromethane	5.74	101	645944	49.8850 ug/L	100
9) Diethyl ether	6.29	59	702021	100.8209 ug/L	99
10) Isoprene	6.32	67	548707	49.8431 ug/L	100
11) Acrolein	6.54	56	58598	49.8794 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.54	101	369548	49.9587 ug/L	99
13) Acetone	6.65	43	111738	51.8463 ug/L	99
14) 1,1-Dichloroethene	6.88	61	651451	49.7296 ug/L	99
15) Tert-Butyl Alcohol	7.00	59	138578	215.5456 ug/L	99
16) Dimethyl Sulfide	7.17	62	302459	50.3095 ug/L	99
17) Iodomethane	7.43	142	285920	52.9654 ug/L	98
18) Methyl acetate	7.45	43	319270	49.7999 ug/L	100
19) Methylene Chloride	7.72	84	389825	48.2562 ug/L	100
20) Carbon Disulfide	7.77	76	1278901	49.8987 ug/L	100
21) Acrylonitrile	7.92	53	149508	52.9135 ug/L	99
22) Methyl Tert Butyl Ether	7.95	73	994073	50.4335 ug/L	100
23) trans-1,2-Dichloroethene	8.21	96	381485	49.9596 ug/L	99
24) n-Hexane	8.29	57	591079	49.7119 ug/L	99
25) Diisopropyl ether	8.67	45	3204444	101.2514 ug/L	99
26) Vinyl Acetate	8.86	43	674502	50.1936 ug/L	100
27) 1,1-Dichloroethane	8.89	63	750842	49.0756 ug/L	100
28) Ethyl-Tert-Butyl ether	9.30	59	2645854	102.1531 ug/L	99
29) 2-Butanone	9.51	43	169396	50.4663 ug/L	100
30) Propionitrile	9.63	54	99277	107.1681 ug/L	99
31) 2,2-Dichloropropane	9.75	77	537506	48.1895 ug/L	98
32) cis-1,2-Dichloroethene	9.82	96	418745	50.3378 ug/L	98
33) Chloroform	10.06	83	671266	49.2629 ug/L	99
34) 1-Bromopropane	10.21	122	68097	49.4474 ug/L	100
35) Bromochloromethane	10.32	130	239411	50.6801 ug/L	100
36) Tetrahydrofuran	10.35	42	229400	99.2745 ug/L	98
38) 1,1,1-Trichloroethane	10.65	97	600672	49.4161 ug/L	99
39) Cyclohexane	10.69	56	759332	49.8388 ug/L	98
40) 1,1-Dichloropropene	10.87	75	519993	49.9147 ug/L	98
41) Tert-Amyl-Methyl ether	11.00	73	2040976	101.7767 ug/L	99
42) Carbon Tetrachloride	11.04	117	549979	50.7176 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139742.D Vial: 8
Acq On : 1 Jun 2016 15:43 Operator: TMB
Sample : WG570915-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:22 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45) 1,2-Dichloroethane	11.24	62	520403	49.6941 ug/L	100
46) Benzene	11.28	78	1501660	49.1787 ug/L	100
47) Trichloroethene	12.14	130	389158	49.9006 ug/L	100
48) Methylcyclohexane	12.23	83	588750	49.7945 ug/L	100
49) 1,2-Dichloropropane	12.40	63	421731	50.0030 ug/L	99
50) 1,4-Dioxane	12.73	88	13033	216.9015 ug/L	96
51) Bromodichloromethane	12.74	83	527662	50.8733 ug/L	100
52) Dibromomethane	12.84	93	222406	51.1020 ug/L	100
53) 2-Chloroethyl Vinyl Ether	13.09	63	209173	54.3390 ug/L	100
54) 4-Methyl-2-Pentanone	13.12	58	135553	52.9115 ug/L	100
55) cis-1,3-Dichloropropene	13.48	75	613925	52.2962 ug/L	100
56) Dimethyl Disulfide	13.77	79	343367	50.7709 ug/L	99
59) Toluene	13.97	91	1553020	49.5926 ug/L	99
60) Ethyl Methacrylate	14.09	69	453009	52.7895 ug/L	99
62) trans-1,3-Dichloropropene	14.18	75	548907	51.4655 ug/L	100
63) 1,1,2-Trichloroethane	14.43	97	301382	50.5477 ug/L	100
64) 2-Hexanone	14.36	43	257451	50.8862 ug/L	100
65) 1,3-Dichloropropane	14.79	76	528668	50.4317 ug/L	98
66) Tetrachloroethene	14.92	166	401722	48.9046 ug/L	99
67) Dibromochloromethane	15.23	129	390196	51.3609 ug/L	100
68) 1,2-Dibromoethane	15.53	107	295388	51.2575 ug/L	99
69) 1-Chlorohexane	15.64	91	531557	52.2752 ug/L	100
70) Chlorobenzene	16.12	112	1028906	49.1040 ug/L	99
71) 1,1,1,2-Tetrachloroethane	16.16	131	389576	51.2600 ug/L	99
72) Ethylbenzene	16.16	106	560484	50.4301 ug/L	100
73) m-,p-Xylene	16.27	106	1337468	101.2957 ug/L	100
74) o-Xylene	16.93	106	664993	50.9649 ug/L	100
75) Styrene	16.97	104	1162477	53.6454 ug/L	99
76) Bromoform	17.55	173	251758	52.2316 ug/L	99
77) Isopropylbenzene	17.43	105	1708173	52.1543 ug/L	100
79) 1,1,2,2-Tetrachloroethane	17.70	83	377511	49.7428 ug/L	100
81) 1,2,3-Trichloropropane	17.92	110	110787	50.4216 ug/L	85
82) trans-1,4-Dichloro-2-Buten	17.98	53	128776	47.4405 ug/L	99
83) n-Propylbenzene	18.03	91	2085439	51.1180 ug/L	99
84) Bromobenzene	18.18	156	463664	48.4335 ug/L	99
85) 1,3,5-Trimethylbenzene	18.26	105	1474739	51.0898 ug/L	100
86) 2-Chlorotoluene	18.35	91	1349618	48.2965 ug/L	99
87) 4-Chlorotoluene	18.41	91	1298591	50.0499 ug/L	100
88) a-Methylstyrene	18.74	118	813708	50.4237 ug/L	100
89) tert-Butylbenzene	18.81	134	320084	50.2972 ug/L	81
90) 1,2,4-Trimethylbenzene	18.87	105	1542733	51.0547 ug/L	100
91) sec-Butylbenzene	19.13	105	1811256	50.9928 ug/L	100
92) p-Isopropyltoluene	19.32	119	1566478	51.7517 ug/L	100
93) 1,3-Dichlorobenzene	19.53	146	907226	48.5991 ug/L	98
94) 1,4-Dichlorobenzene	19.70	146	909939	51.4796 ug/L	99
95) n-Butylbenzene	19.94	91	1484817	51.8256 ug/L	99
96) 1,2-Dichlorobenzene	20.28	146	855774	49.1938 ug/L	99
97) 1,2-Dibromo-3-Chloropropan	21.46	75	72400	53.1242 ug/L	97
98) 1,2,4-Trichlorobenzene	22.82	180	608734	50.6118 ug/L	99
99) Hexachlorobutadiene	23.02	225	245206	49.1243 ug/L	100
100) Naphthalene	23.28	128	1276187	53.6766 ug/L	100
101) 1,2,3-Trichlorobenzene	23.69	180	568536	49.9499 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M139742.D 8260WT.M Thu Jun 02 12:18:23 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139742.D Vial: 8
Acq On : 1 Jun 2016 15:43 Operator: TMB
Sample : WG570915-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 2 12:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration

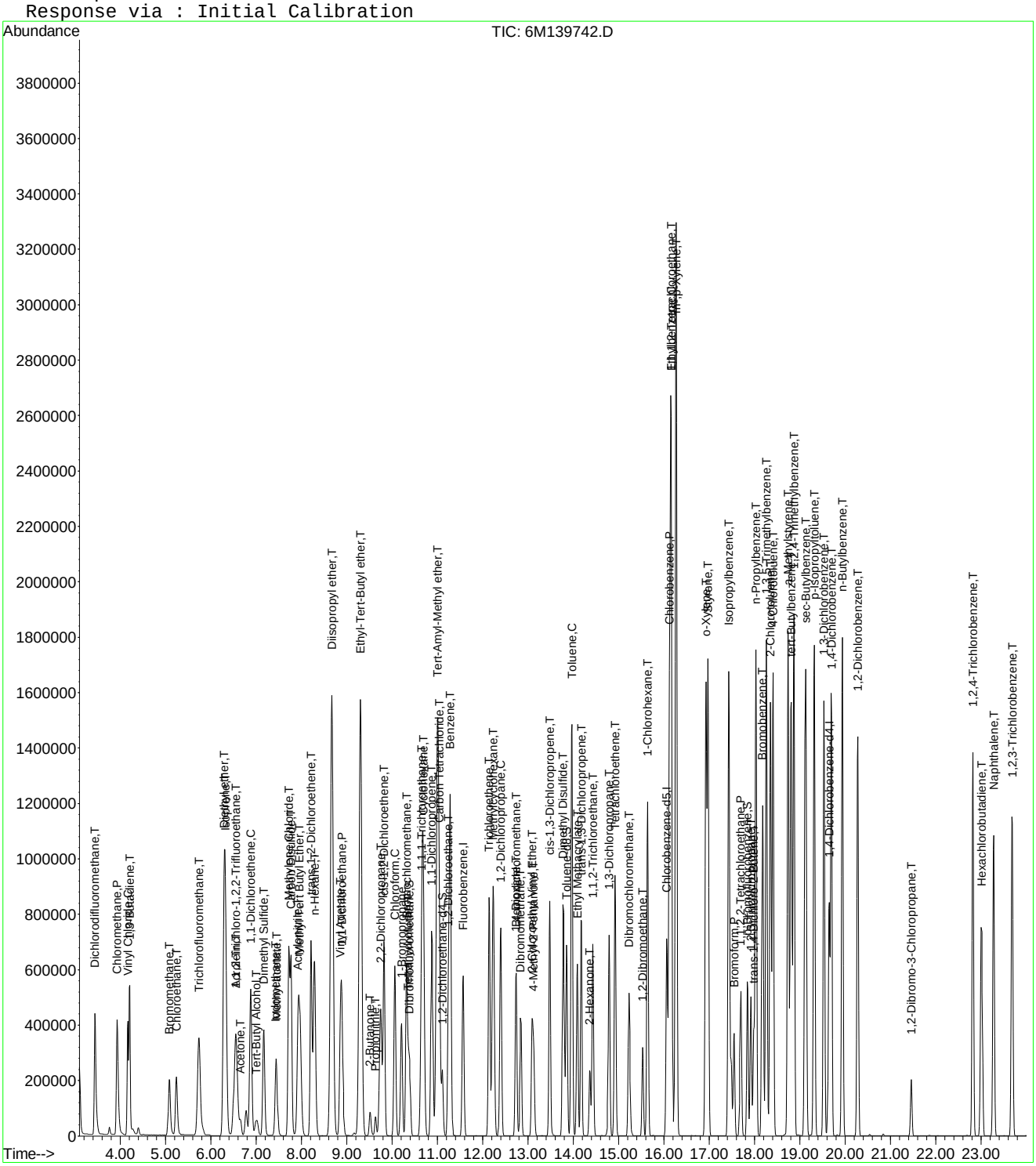

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139743.D Vial: 9
Acq On : 1 Jun 2016 16:15 Operator: TMB
Sample : WG570915-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:23 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.56	96	745219	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	553231	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.64	152	324979	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	381593	49.4765 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 197.92%#		
43) 1,2-Dichloroethane-d4	11.11	65	420324	49.4441 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 197.76%#		
58) Toluene-d8	13.85	98	1284388	48.3746 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 193.48%#		
80) p-Bromofluorobenzene	17.84	95	561184	48.9013 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 195.60%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	1271545	107.7942 ug/L	99
3) Chloromethane	3.93	50	1453604	101.0744 ug/L	99
4) Vinyl Chloride	4.16	62	940309	96.9986 ug/L	100
5) 1,3-Butadiene	4.20	54	543605	105.2748 ug/L	98
6) Bromomethane	5.08	94	507202	106.2139 ug/L	100
7) Chloroethane	5.23	64	607096	99.0784 ug/L	98
8) Trichlorofluoromethane	5.73	101	1293807	99.6599 ug/L	100
9) Diethyl ether	6.29	59	1412947	202.3960 ug/L	100
10) Isoprene	6.32	67	1134177	102.7593 ug/L	100
11) Acrolein	6.54	56	121987	103.5684 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.54	101	746025	100.5934 ug/L	99
13) Acetone	6.65	43	219673	104.1433 ug/L	97
14) 1,1-Dichloroethene	6.88	61	1312919	99.9646 ug/L	99
15) Tert-Butyl Alcohol	7.02	59	283142	439.2630 ug/L	100
16) Dimethyl Sulfide	7.16	62	610247	101.2429 ug/L	99
17) Iodomethane	7.44	142	578425	105.4079 ug/L	99
18) Methyl acetate	7.45	43	643020	100.0391 ug/L	99
19) Methylene Chloride	7.72	84	774654	95.6460 ug/L	100
20) Carbon Disulfide	7.76	76	2590427	100.8089 ug/L	100
21) Acrylonitrile	7.93	53	297985	105.1894 ug/L	99
22) Methyl Tert Butyl Ether	7.95	73	1991839	100.7930 ug/L	99
23) trans-1,2-Dichloroethene	8.21	96	766532	100.1262 ug/L	99
24) n-Hexane	8.28	57	1207948	101.3301 ug/L	99
25) Diisopropyl ether	8.67	45	6349652	200.1124 ug/L	100
26) Vinyl Acetate	8.86	43	1305411	96.8920 ug/L	100
27) 1,1-Dichloroethane	8.89	63	1510299	98.4590 ug/L	99
28) Ethyl-Tert-Butyl ether	9.31	59	5254811	202.3571 ug/L	99
29) 2-Butanone	9.51	43	343748	102.1442 ug/L	99
30) Propionitrile	9.63	54	195891	210.9148 ug/L	99
31) 2,2-Dichloropropane	9.74	77	1100861	98.4413 ug/L	97
32) cis-1,2-Dichloroethene	9.83	96	833939	99.9895 ug/L	98
33) Chloroform	10.06	83	1345458	98.4852 ug/L	99
34) 1-Bromopropane	10.20	122	139415	100.6685 ug/L	99
35) Bromochloromethane	10.32	130	481146	101.5887 ug/L	100
36) Tetrahydrofuran	10.35	42	450185	194.3170 ug/L	99
38) 1,1,1-Trichloroethane	10.65	97	1216226	99.7977 ug/L	99
39) Cyclohexane	10.68	56	1560090	102.1318 ug/L	98
40) 1,1-Dichloropropene	10.88	75	1059287	101.4191 ug/L	97
41) Tert-Amyl-Methyl ether	11.00	73	4120411	204.9398 ug/L	99
42) Carbon Tetrachloride	11.04	117	1123233	103.3138 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M139743.D 8260WT.M Thu Jun 02 12:18:24 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139743.D Vial: 9
Acq On : 1 Jun 2016 16:15 Operator: TMB
Sample : WG570915-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:23 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	11.25	62	1041653	99.2119	ug/L	99
46)	Benzene	11.29	78	2987728	97.5938	ug/L	100
47)	Trichloroethene	12.14	130	787643	100.7360	ug/L	100
48)	Methylcyclohexane	12.24	83	1207654	101.8752	ug/L	100
49)	1,2-Dichloropropane	12.39	63	848936	100.3948	ug/L	99
50)	1,4-Dioxane	12.73	88	26054	432.4820	ug/L	91
51)	Bromodichloromethane	12.74	83	1058042	101.7449	ug/L	99
52)	Dibromomethane	12.84	93	445604	102.1212	ug/L	100
53)	2-Chloroethyl Vinyl Ether	13.08	63	410765	106.4326	ug/L	100
54)	4-Methyl-2-Pentanone	13.12	58	270288	105.2308	ug/L	99
55)	cis-1,3-Dichloropropene	13.48	75	1235593	104.9798	ug/L	100
56)	Dimethyl Disulfide	13.78	79	719355	106.0902	ug/L	100
59)	Toluene	13.96	91	3103522	98.7895	ug/L	99
60)	Ethyl Methacrylate	14.08	69	931022	108.1477	ug/L	99
62)	trans-1,3-Dichloropropene	14.18	75	1108920	103.6415	ug/L	100
63)	1,1,2-Trichloroethane	14.43	97	600453	100.3874	ug/L	100
64)	2-Hexanone	14.36	43	525162	103.4700	ug/L	100
65)	1,3-Dichloropropane	14.79	76	1051661	100.0029	ug/L	98
66)	Tetrachloroethene	14.92	166	801128	97.2171	ug/L	99
67)	Dibromochloromethane	15.23	129	788751	103.4917	ug/L	100
68)	1,2-Dibromoethane	15.53	107	594770	102.8797	ug/L	100
69)	1-Chlorohexane	15.65	91	1078462	105.7225	ug/L	100
70)	Chlorobenzene	16.13	112	2048564	97.4556	ug/L	98
71)	1,1,1,2-Tetrachloroethane	16.17	131	787668	103.3109	ug/L	99
72)	Ethylbenzene	16.16	106	1123449	100.7619	ug/L	100
73)	m-,p-Xylene	16.27	106	2682669	202.5308	ug/L	98
74)	o-Xylene	16.93	106	1337407	102.1724	ug/L	100
75)	Styrene	16.97	104	2366159	108.8450	ug/L	98
76)	Bromoform	17.55	173	529470	109.4983	ug/L	99
77)	Isopropylbenzene	17.43	105	3429724	104.3838	ug/L	100
79)	1,1,2,2-Tetrachloroethane	17.70	83	780189	99.5752	ug/L	100
81)	1,2,3-Trichloropropane	17.92	110	228360	100.6695	ug/L	89
82)	trans-1,4-Dichloro-2-Buten	17.99	53	281575	99.6791	ug/L	90
83)	n-Propylbenzene	18.04	91	4178754	99.2142	ug/L	100
84)	Bromobenzene	18.18	156	945550	95.6704	ug/L	98
85)	1,3,5-Trimethylbenzene	18.26	105	3012486	101.0869	ug/L	100
86)	2-Chlorotoluene	18.35	91	2814456	97.5550	ug/L	100
87)	4-Chlorotoluene	18.41	91	2586619	96.5636	ug/L	100
88)	a-Methylstyrene	18.74	118	1716308	103.0177	ug/L	100
89)	tert-Butylbenzene	18.81	134	661932	100.7497	ug/L	99
90)	1,2,4-Trimethylbenzene	18.87	105	3165014	101.4544	ug/L	100
91)	sec-Butylbenzene	19.13	105	3724940	101.5778	ug/L	100
92)	p-Isopropyltoluene	19.31	119	3227971	103.2952	ug/L	100
93)	1,3-Dichlorobenzene	19.54	146	1880510	97.5751	ug/L	98
94)	1,4-Dichlorobenzene	19.69	146	1878131	103.1339	ug/L	98
95)	n-Butylbenzene	19.95	91	3081384	104.1760	ug/L	100
96)	1,2-Dichlorobenzene	20.27	146	1761523	98.0823	ug/L	98
97)	1,2-Dibromo-3-Chloropropan	21.46	75	150529	106.9853	ug/L	99
98)	1,2,4-Trichlorobenzene	22.83	180	1257020	101.2317	ug/L	99
99)	Hexachlorobutadiene	23.01	225	503637	97.7313	ug/L	100
100)	Naphthalene	23.27	128	2610257	106.3420	ug/L	100
101)	1,2,3-Trichlorobenzene	23.68	180	1163258	98.9927	ug/L	99

(#) = qualifier out of range (m) = manual integration
6M139743.D 8260WT.M Thu Jun 02 12:18:24 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139743.D Vial: 9
Acq On : 1 Jun 2016 16:15 Operator: TMB
Sample : WG570915-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 2 12:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration

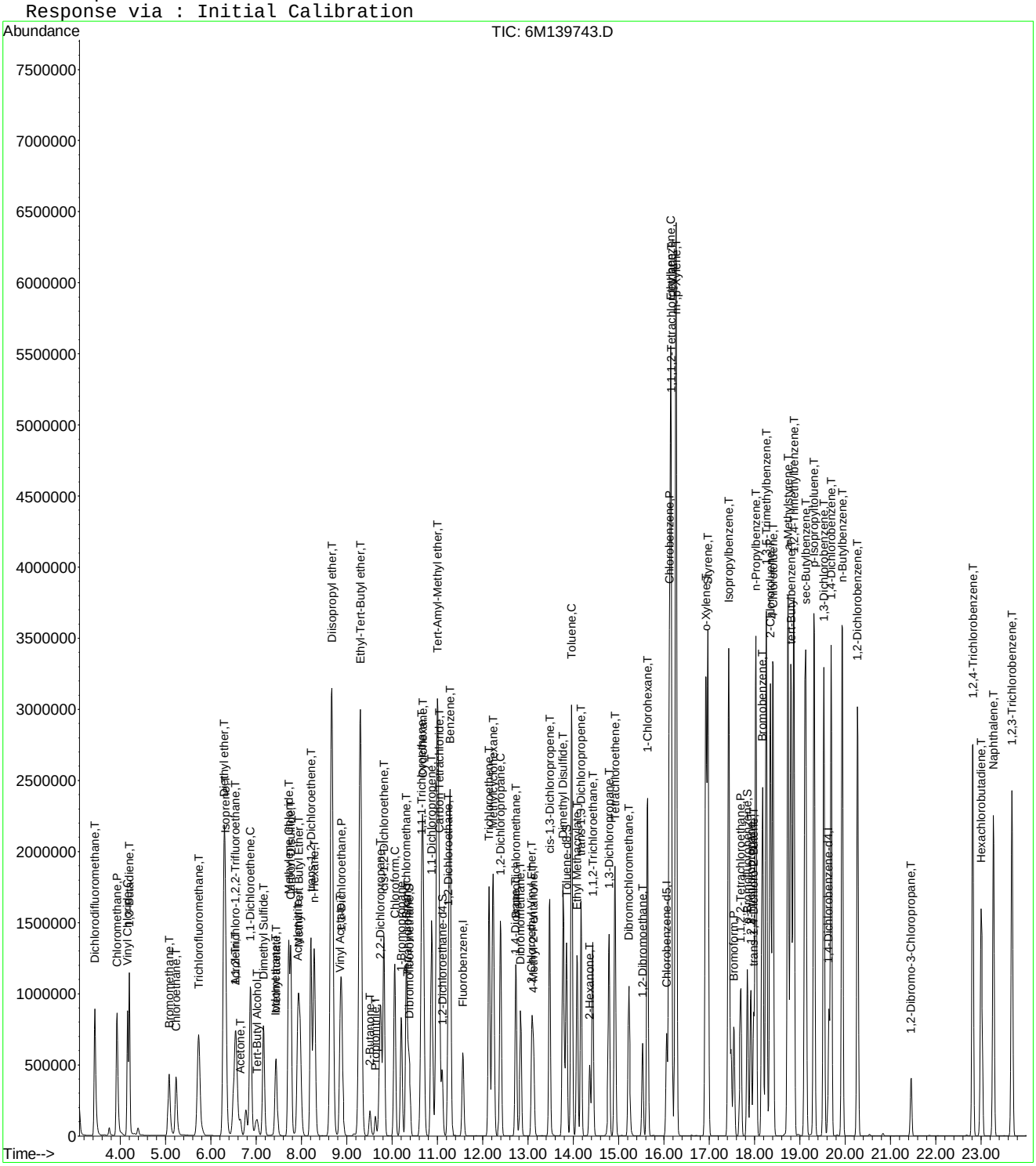

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139744.D Vial: 10
Acq On : 1 Jun 2016 16:47 Operator: TMB
Sample : WG570915-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:24 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	776064	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.06	117	573619	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	333724	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.39	111	806214	100.3772 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 401.52%#		
43) 1,2-Dichloroethane-d4	11.11	65	876933	99.0564 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 396.24%#		
58) Toluene-d8	13.85	98	2681218	97.3950 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 389.56%#		
80) p-Bromofluorobenzene	17.84	95	1179267	100.0680 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 400.28%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	2579822	210.0099 ug/L	99
3) Chloromethane	3.93	50	2884749	192.6148 ug/L	100
4) Vinyl Chloride	4.16	62	1885735	186.7936 ug/L	99
5) 1,3-Butadiene	4.20	54	1072988	204.4528 ug/L	98
6) Bromomethane	5.08	94	1138500	228.9390 ug/L	100
7) Chloroethane	5.23	64	1266416	198.4652 ug/L	99
8) Trichlorofluoromethane	5.73	101	2677396	198.0386 ug/L	100
9) Diethyl ether	6.30	59	2847	0.3916 ug/L #	47
10) Isoprene	6.32	67	2328586	202.5904 ug/L	100
11) Acrolein	6.55	56	4274	3.4845 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.55	101	1565121	202.6517 ug/L	99
13) Acetone	6.66	43	445796	205.3917 ug/L	97
14) 1,1-Dichloroethene	6.87	61	2774888	202.8805 ug/L	99
15) Tert-Butyl Alcohol	7.04	59	15311	22.8092 ug/L #	58
16) Dimethyl Sulfide	7.16	62	1276573	203.3718 ug/L	100
17) Iodomethane	7.43	142	1184276	205.8450 ug/L	97
18) Methyl acetate	7.46	43	1318166	196.9255 ug/L	98
19) Methylene Chloride	7.72	84	1656713	196.4233 ug/L	98
20) Carbon Disulfide	7.77	76	5292625	197.7812 ug/L	99
21) Acrylonitrile	7.95	53	52128	17.6699 ug/L #	39
22) Methyl Tert Butyl Ether	7.96	73	4208038	204.4759 ug/L	99
23) trans-1,2-Dichloroethene	8.21	96	1623775	203.6712 ug/L	100
24) n-Hexane	8.28	57	2478699	199.6643 ug/L	100
25) Diisopropyl ether	8.66	45	5024	0.1520 ug/L #	53
26) Vinyl Acetate	8.85	43	3085472	219.9118 ug/L	99
27) 1,1-Dichloroethane	8.88	63	3203758	200.5574 ug/L	99
28) Ethyl-Tert-Butyl ether	9.31	59	31362	1.1597 ug/L #	45
29) 2-Butanone	9.51	43	702047	200.3209 ug/L	100
30) Propionitrile	9.64	54	5995	6.1982 ug/L	92
31) 2,2-Dichloropropane	9.75	77	2335468	200.5419 ug/L	96
32) cis-1,2-Dichloroethene	9.82	96	1785062	205.5228 ug/L	99
33) Chloroform	10.06	83	2856444	200.7766 ug/L	99
34) 1-Bromopropane	10.21	122	290511	201.1427 ug/L	100
35) Bromochloromethane	10.32	130	1018815	206.5620 ug/L	100
36) Tetrahydrofuran	10.36	42	13533	5.6092 ug/L	97
38) 1,1,1-Trichloroethane	10.65	97	2601990	205.0210 ug/L	99
39) Cyclohexane	10.68	56	3250515	204.3384 ug/L	98
40) 1,1-Dichloropropene	10.88	75	2239923	205.9328 ug/L	97
41) Tert-Amyl-Methyl ether	11.01	73	4521	0.2159 ug/L	95
42) Carbon Tetrachloride	11.04	117	2354561	207.9624 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M139744.D 8260WT.M Thu Jun 02 12:18:24 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139744.D Vial: 10
Acq On : 1 Jun 2016 16:47 Operator: TMB
Sample : WG570915-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:24 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.24	62	2210694	202.1881 ug/L	99
46)	Benzene	11.28	78	6174905	193.6858 ug/L	98
47)	Trichloroethene	12.14	130	1643481	201.8396 ug/L	99
48)	Methylcyclohexane	12.23	83	2494638	202.0783 ug/L	100
49)	1,2-Dichloropropane	12.40	63	1813017	205.8849 ug/L	99
50)	1,4-Dioxane	12.73	88	4051	64.5717 ug/L #	42
51)	Bromodichloromethane	12.73	83	2256070	208.3284 ug/L	99
52)	Dibromomethane	12.84	93	947659	208.5476 ug/L	100
53)	2-Chloroethyl Vinyl Ether	13.09	63	834725	207.6879 ug/L	100
54)	4-Methyl-2-Pentanone	13.12	58	562095	210.1417 ug/L	99
55)	cis-1,3-Dichloropropene	13.48	75	2636809	215.1272 ug/L	100
56)	Dimethyl Disulfide	13.78	79	1544098	218.6720 ug/L	100
59)	Toluene	13.97	91	6343599	194.7487 ug/L	97
60)	Ethyl Methacrylate	14.09	69	1956368	219.1749 ug/L	99
62)	trans-1,3-Dichloropropene	14.17	75	2372003	213.8118 ug/L	100
63)	1,1,2-Trichloroethane	14.43	97	1265411	204.0398 ug/L	99
64)	2-Hexanone	14.36	43	1099274	208.8865 ug/L	99
65)	1,3-Dichloropropane	14.79	76	2208806	202.5711 ug/L	98
66)	Tetrachloroethene	14.92	166	1679955	196.6171 ug/L	97
67)	Dibromochloromethane	15.24	129	1662430	210.3740 ug/L	99
68)	1,2-Dibromoethane	15.53	107	1245613	207.8007 ug/L	100
69)	1-Chlorohexane	15.64	91	2230493	210.8853 ug/L	99
70)	Chlorobenzene	16.12	112	4254241	195.1921 ug/L	94
71)	1,1,1,2-Tetrachloroethane	16.17	131	1673381	211.6804 ug/L	98
72)	Ethylbenzene	16.17	106	2403044	207.8680 ug/L	91
73)	m-,p-Xylene	16.27	106	5429587	395.3427 ug/L	84
74)	o-Xylene	16.93	106	2810875	207.1070 ug/L	97
75)	Styrene	16.97	104	4915148	218.0641 ug/L	95
76)	Bromoform	17.55	173	1136738	226.7302 ug/L	99
77)	Isopropylbenzene	17.43	105	6859790	201.3575 ug/L	97
79)	1,1,2,2-Tetrachloroethane	17.70	83	1662819	206.6637 ug/L	99
81)	1,2,3-Trichloropropane	17.92	110	474236	203.5824 ug/L	82
82)	trans-1,4-Dichloro-2-Buten	17.98	53	585581	201.1368 ug/L	96
83)	n-Propylbenzene	18.03	91	8082495	186.8702 ug/L	96
84)	Bromobenzene	18.18	156	1996554	196.7170 ug/L	97
85)	1,3,5-Trimethylbenzene	18.26	105	6169530	201.5996 ug/L	98
86)	2-Chlorotoluene	18.35	91	5638837	190.3323 ug/L	99
87)	4-Chlorotoluene	18.41	91	5484270	199.3736 ug/L	98
88)	a-Methylstyrene	18.74	118	3512028	205.2781 ug/L	100
89)	tert-Butylbenzene	18.81	134	1381654	204.7847 ug/L	83
90)	1,2,4-Trimethylbenzene	18.87	105	6415254	200.2520 ug/L	97
91)	sec-Butylbenzene	19.13	105	7361358	195.4813 ug/L	97
92)	p-Isopropyltoluene	19.32	119	6417848	199.9897 ug/L	97
93)	1,3-Dichlorobenzene	19.54	146	3842248	194.1406 ug/L	96
94)	1,4-Dichlorobenzene	19.70	146	3828208	204.9208 ug/L	96
95)	n-Butylbenzene	19.94	91	6152441	202.5523 ug/L	98
96)	1,2-Dichlorobenzene	20.28	146	3581931	194.2170 ug/L	96
97)	1,2-Dibromo-3-Chloropropan	21.47	75	312895	216.5561 ug/L	99
98)	1,2,4-Trichlorobenzene	22.82	180	2607210	204.4647 ug/L	98
99)	Hexachlorobutadiene	23.02	225	1025399	193.7656 ug/L	99
100)	Naphthalene	23.28	128	5221771	207.1606 ug/L	98
101)	1,2,3-Trichlorobenzene	23.69	180	2383834	197.5473 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M139744.D 8260WT.M Thu Jun 02 12:18:24 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139744.D Vial: 10
Acq On : 1 Jun 2016 16:47 Operator: TMB
Sample : WG570915-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 2 12:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration

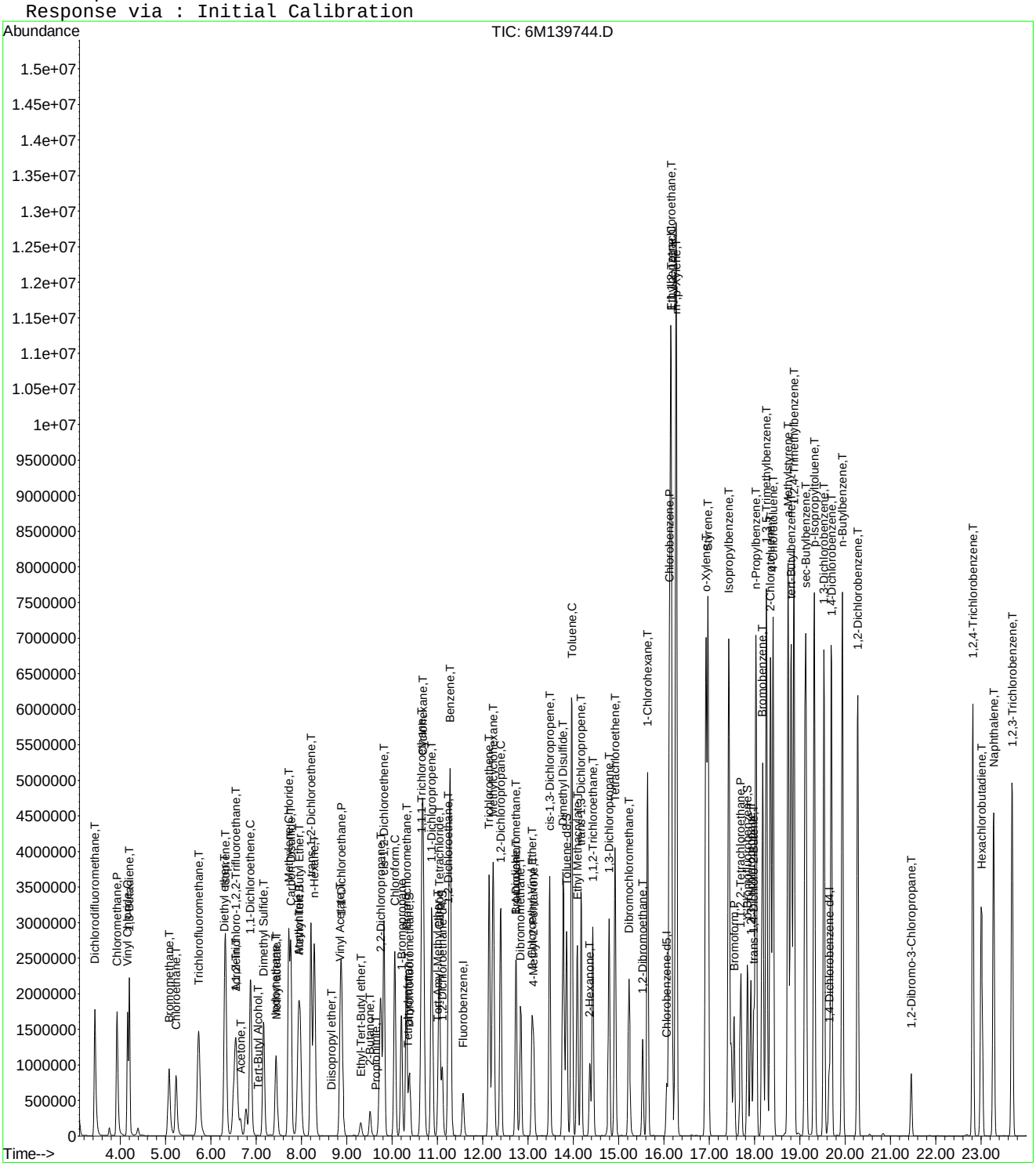

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139745.D Vial: 11
Acq On : 1 Jun 2016 17:19 Operator: TMB
Sample : WG570915-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:25 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	874785	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	603118	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	334735	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.38	111	1329975	146.9008 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 587.60%#		
43) 1,2-Dichloroethane-d4	11.11	65	1427686	143.0689 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 572.28%#		
58) Toluene-d8	13.85	98	4301159	148.5974 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 594.40%#		
80) p-Bromofluorobenzene	17.85	95	1769546	149.7033 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 598.80%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	3794421	274.0259 ug/L	99
3) Chloromethane	3.93	50	4042633	239.4651 ug/L	100
4) Vinyl Chloride	4.16	62	2745108	241.2331 ug/L	98
5) 1,3-Butadiene	4.20	54	1672121	284.7589 ug/L	99
6) Bromomethane	5.06	94	1745686	311.4219 ug/L	100
7) Chloroethane	5.23	64	1947490	270.7569 ug/L	99
8) Trichlorofluoromethane	5.72	101	4186804	274.7363 ug/L	100
9) Diethyl ether	6.29	59	2434269	297.0484 ug/L	99
10) Isoprene	6.32	67	3866380	298.4196 ug/L	100
11) Acrolein	6.54	56	211081	152.6671 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.54	101	2530270	290.6468 ug/L	99
13) Acetone	6.66	43	706320	289.7447 ug/L	95
14) 1,1-Dichloroethene	6.87	61	4460855	289.3404 ug/L	98
15) Tert-Butyl Alcohol	7.05	59	432972	572.2196 ug/L	99
16) Dimethyl Sulfide	7.16	62	2127423	300.6735 ug/L	99
17) Iodomethane	7.43	142	1850962	284.8611 ug/L	98
18) Methyl acetate	7.45	43	2187319	289.8946 ug/L	98
19) Methylene Chloride	7.72	84	2684397	282.3505 ug/L	98
20) Carbon Disulfide	7.76	76	8318935	275.7895 ug/L	97
21) Acrylonitrile	7.92	53	535439	161.0165 ug/L	97
22) Methyl Tert Butyl Ether	7.95	73	6877613	296.4807 ug/L	99
23) trans-1,2-Dichloroethene	8.21	96	2657970	295.7672 ug/L	100
24) n-Hexane	8.28	57	4061677	290.2540 ug/L	100
25) Diisopropyl ether	8.67	45	10570767	283.8005 ug/L	98
26) Vinyl Acetate	8.86	43	5021055	317.4813 ug/L	99
27) 1,1-Dichloroethane	8.89	63	5233579	290.6524 ug/L	98
28) Ethyl-Tert-Butyl ether	9.30	59	8844197	290.1365 ug/L	98
29) 2-Butanone	9.52	43	1096187	277.4859 ug/L	99
30) Propionitrile	9.64	54	302541	277.4977 ug/L	99
31) 2,2-Dichloropropane	9.75	77	3789844	288.7014 ug/L	96
32) cis-1,2-Dichloroethene	9.82	96	2910936	297.3278 ug/L	99
33) Chloroform	10.06	83	4641408	289.4232 ug/L	99
34) 1-Bromopropane	10.21	122	486129	298.4586 ug/L	99
35) Bromochloromethane	10.32	130	1642991	295.5197 ug/L	99
36) Tetrahydrofuran	10.35	42	734691	270.1512 ug/L	100
38) 1,1,1-Trichloroethane	10.66	97	4234747	296.0169 ug/L	100
39) Cyclohexane	10.69	56	5346656	298.1784 ug/L	98
40) 1,1-Dichloropropene	10.87	75	3628282	295.9305 ug/L	96
41) Tert-Amyl-Methyl ether	11.01	73	7044691	298.4904 ug/L	99
42) Carbon Tetrachloride	11.04	117	3852044	301.8300 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M139745.D 8260WT.M Thu Jun 02 12:18:25 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139745.D Vial: 11
Acq On : 1 Jun 2016 17:19 Operator: TMB
Sample : WG570915-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:25 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.24	62	3586153	290.9725 ug/L	98
46)	Benzene	11.28	78	9445205	262.8302 ug/L	94
47)	Trichloroethene	12.15	130	2634728	287.0606 ug/L	98
48)	Methylcyclohexane	12.23	83	4071369	292.5829 ug/L	99
49)	1,2-Dichloropropane	12.40	63	2942534	296.4424 ug/L	100
50)	1,4-Dioxane	12.74	88	42118	595.5853 ug/L	96
51)	Bromodichloromethane	12.74	83	3630814	297.4378 ug/L	99
52)	Dibromomethane	12.84	93	1523394	297.4141 ug/L	99
53)	2-Chloroethyl Vinyl Ether	13.09	63	1282176	283.0164 ug/L	100
54)	4-Methyl-2-Pentanone	13.13	58	866300	287.3208 ug/L	99
55)	cis-1,3-Dichloropropene	13.48	75	4198516	303.8845 ug/L	99
56)	Dimethyl Disulfide	13.78	79	2555342	321.0433 ug/L	99
59)	Toluene	13.97	91	9298621	271.5055 ug/L	92
60)	Ethyl Methacrylate	14.09	69	3070235	327.1395 ug/L	98
62)	trans-1,3-Dichloropropene	14.18	75	3689732	316.3243 ug/L	100
63)	1,1,2-Trichloroethane	14.43	97	1946854	298.5644 ug/L	99
64)	2-Hexanone	14.37	43	1643728	297.0678 ug/L	98
65)	1,3-Dichloropropane	14.79	76	3375035	294.3875 ug/L	98
66)	Tetrachloroethene	14.93	166	2636661	293.4940 ug/L	96
67)	Dibromochloromethane	15.23	129	2525879	304.0063 ug/L	98
68)	1,2-Dibromoethane	15.53	107	1894786	300.6389 ug/L	100
69)	1-Chlorohexane	15.64	91	3460425	311.1688 ug/L	98
70)	Chlorobenzene	16.12	112	6260439	273.1908 ug/L	89
71)	1,1,1,2-Tetrachloroethane	16.16	131	2501054	300.9055 ug/L	97
72)	Ethylbenzene	16.16	106	3603522	296.4656 ug/L	77
73)	m-,p-Xylene	16.27	106	7675830	531.5614 ug/L	72
74)	o-Xylene	16.93	106	4132097	289.5642 ug/L	91
75)	Styrene	16.98	104	7001942	295.4523 ug/L	90
76)	Bromoform	17.55	173	1687864	320.1900 ug/L	98
77)	Isopropylbenzene	17.43	105	9280334	259.0848 ug/L	93
79)	1,1,2,2-Tetrachloroethane	17.70	83	2441380	302.5109 ug/L	100
81)	1,2,3-Trichloropropane	17.92	110	701095	300.0606 ug/L	84
82)	trans-1,4-Dichloro-2-Buten	17.98	53	888429	303.8730 ug/L	92
83)	n-Propylbenzene	18.03	91	10509002	242.2381 ug/L	91
84)	Bromobenzene	18.19	156	2931431	287.9565 ug/L	97
85)	1,3,5-Trimethylbenzene	18.27	105	8380264	273.0120 ug/L	94
86)	2-Chlorotoluene	18.35	91	7661586	257.8267 ug/L	96
87)	4-Chlorotoluene	18.41	91	7776019	281.8333 ug/L	94
88)	a-Methylstyrene	18.74	118	5138258	299.4242 ug/L	98
89)	tert-Butylbenzene	18.81	134	1991224	294.2420 ug/L	95
90)	1,2,4-Trimethylbenzene	18.87	105	8632335	268.6443 ug/L	93
91)	sec-Butylbenzene	19.13	105	9738776	257.8326 ug/L	93
92)	p-Isopropyltoluene	19.32	119	8603731	267.2953 ug/L	93
93)	1,3-Dichlorobenzene	19.54	146	5474292	275.7689 ug/L	93
94)	1,4-Dichlorobenzene	19.70	146	5434751	290.1280 ug/L	93
95)	n-Butylbenzene	19.94	91	8255399	270.9656 ug/L	95
96)	1,2-Dichlorobenzene	20.28	146	5078448	274.5284 ug/L	93
97)	1,2-Dibromo-3-Chloropropan	21.46	75	451100	311.2655 ug/L	99
98)	1,2,4-Trichlorobenzene	22.82	180	3727725	291.4556 ug/L	97
99)	Hexachlorobutadiene	23.02	225	1492415	281.1640 ug/L	99
100)	Naphthalene	23.28	128	7153107	282.9244 ug/L	96
101)	1,2,3-Trichlorobenzene	23.69	180	3403591	281.2023 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M139745.D 8260WT.M Thu Jun 02 12:18:25 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139745.D Vial: 11
Acq On : 1 Jun 2016 17:19 Operator: TMB
Sample : WG570915-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 2 12:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration

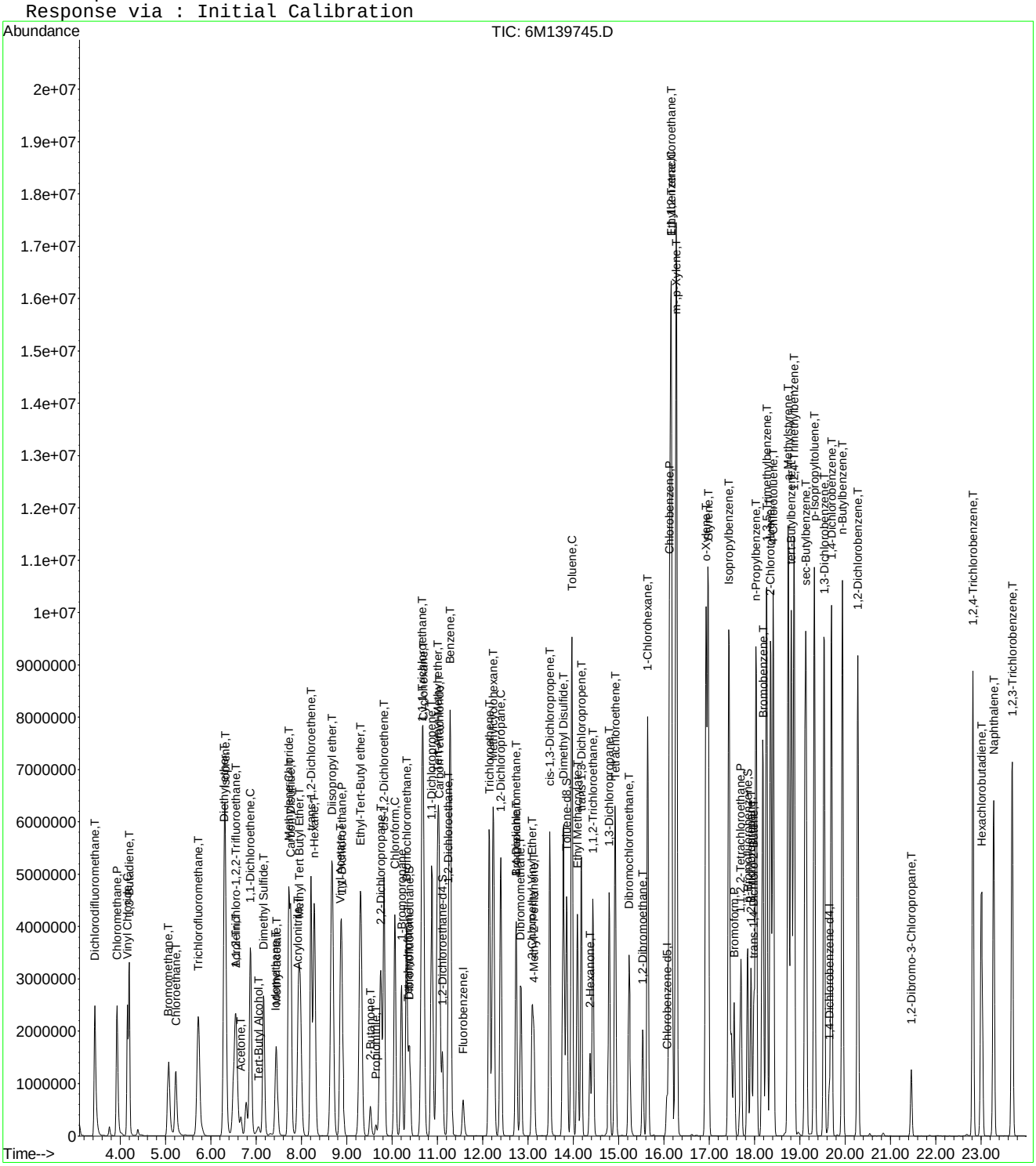

6M139745.D 8260WT.M Thu Jun 02 12:18:25 2016 Page 3

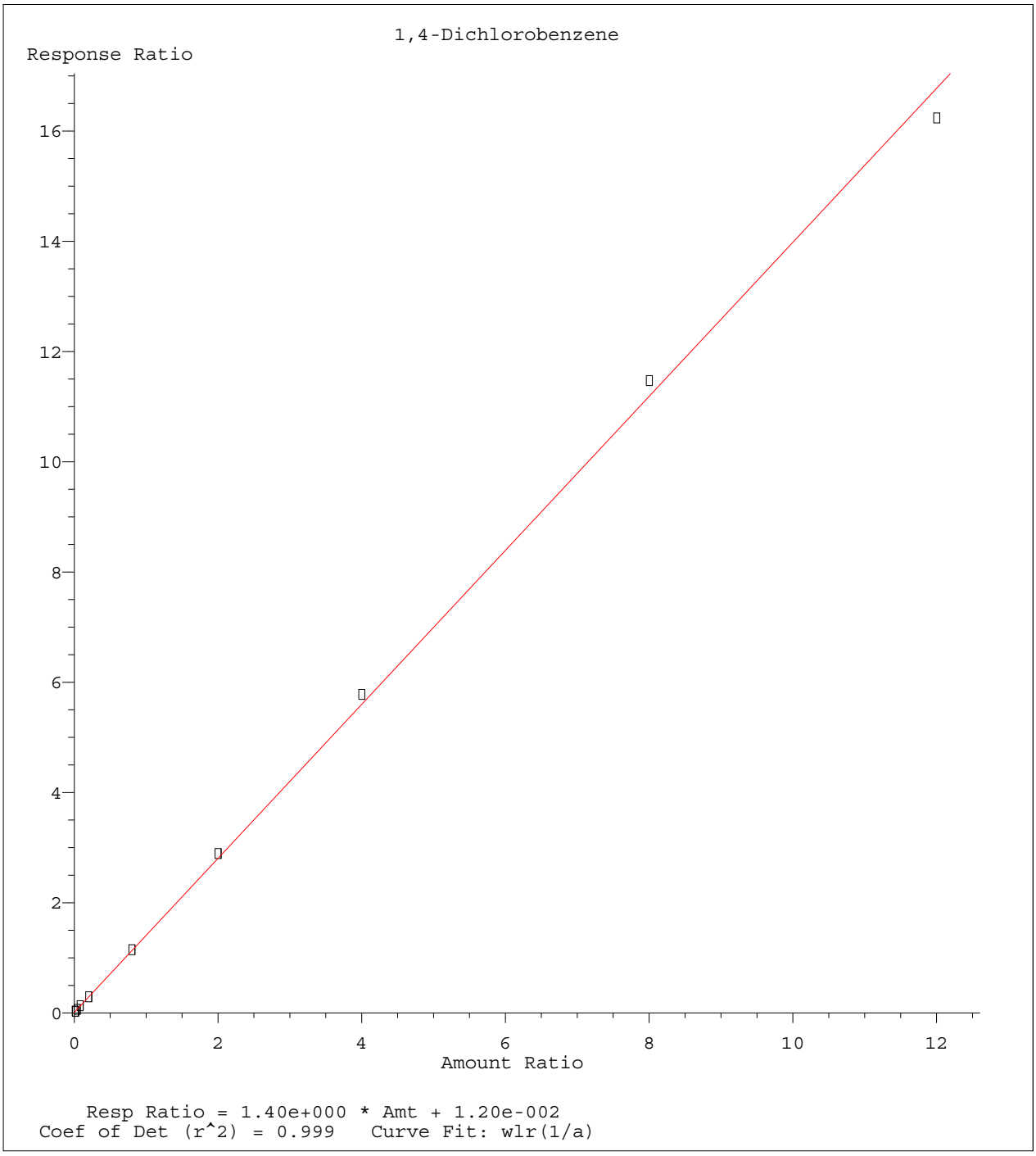

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Thu Jun 02 12:19:33 2016

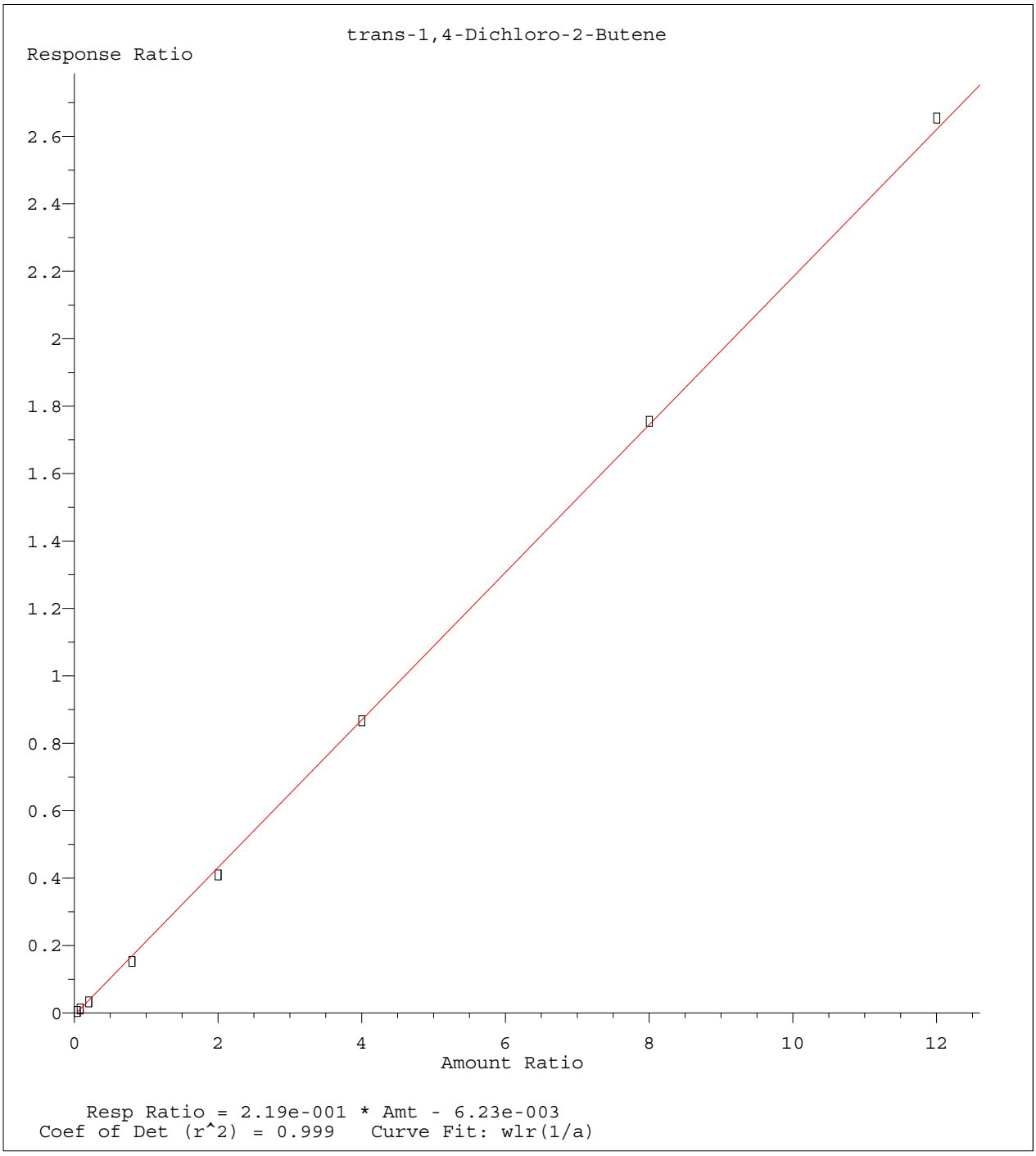

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Thu Jun 02 12:19:33 2016

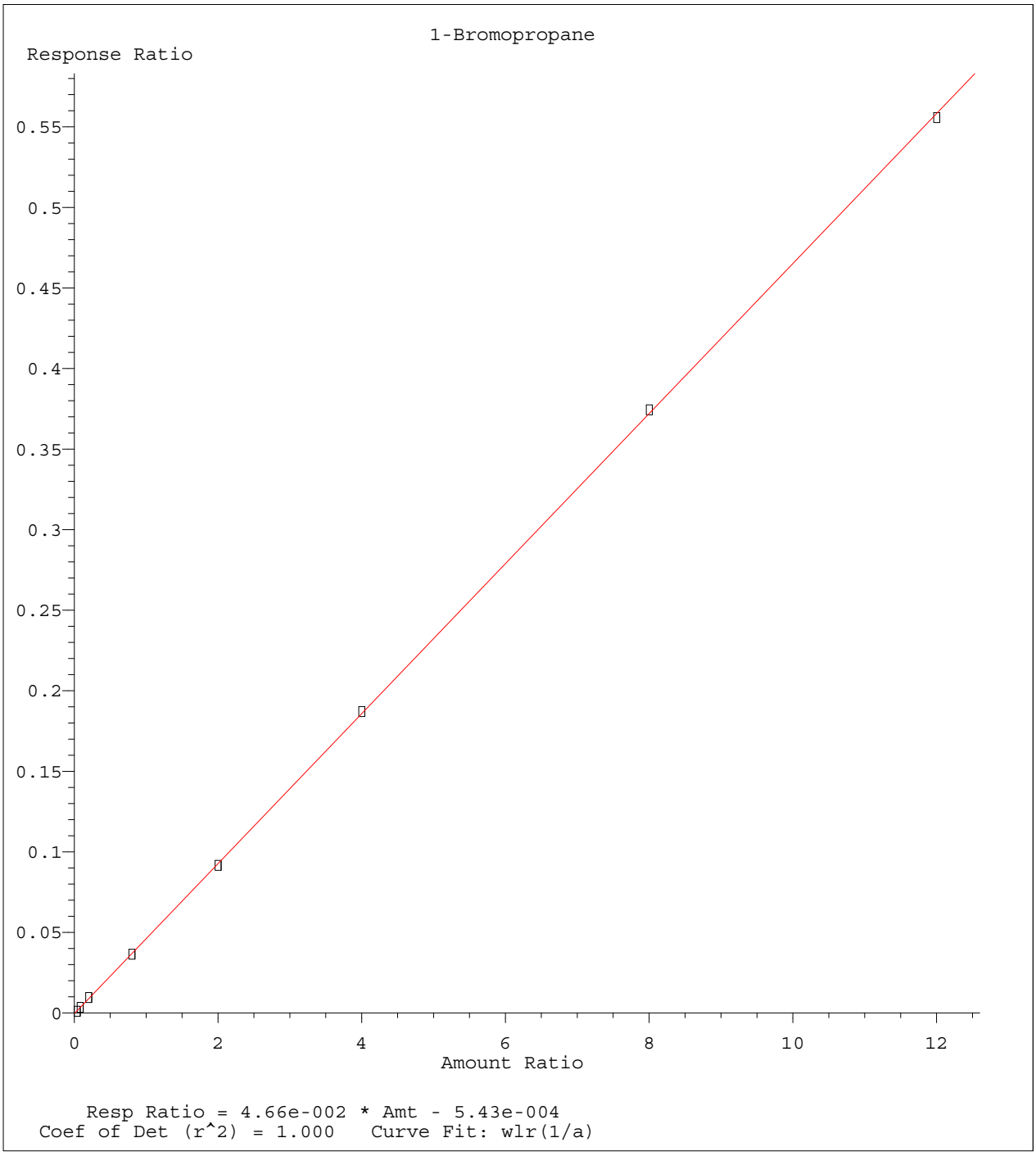

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Thu Jun 02 12:19:33 2016

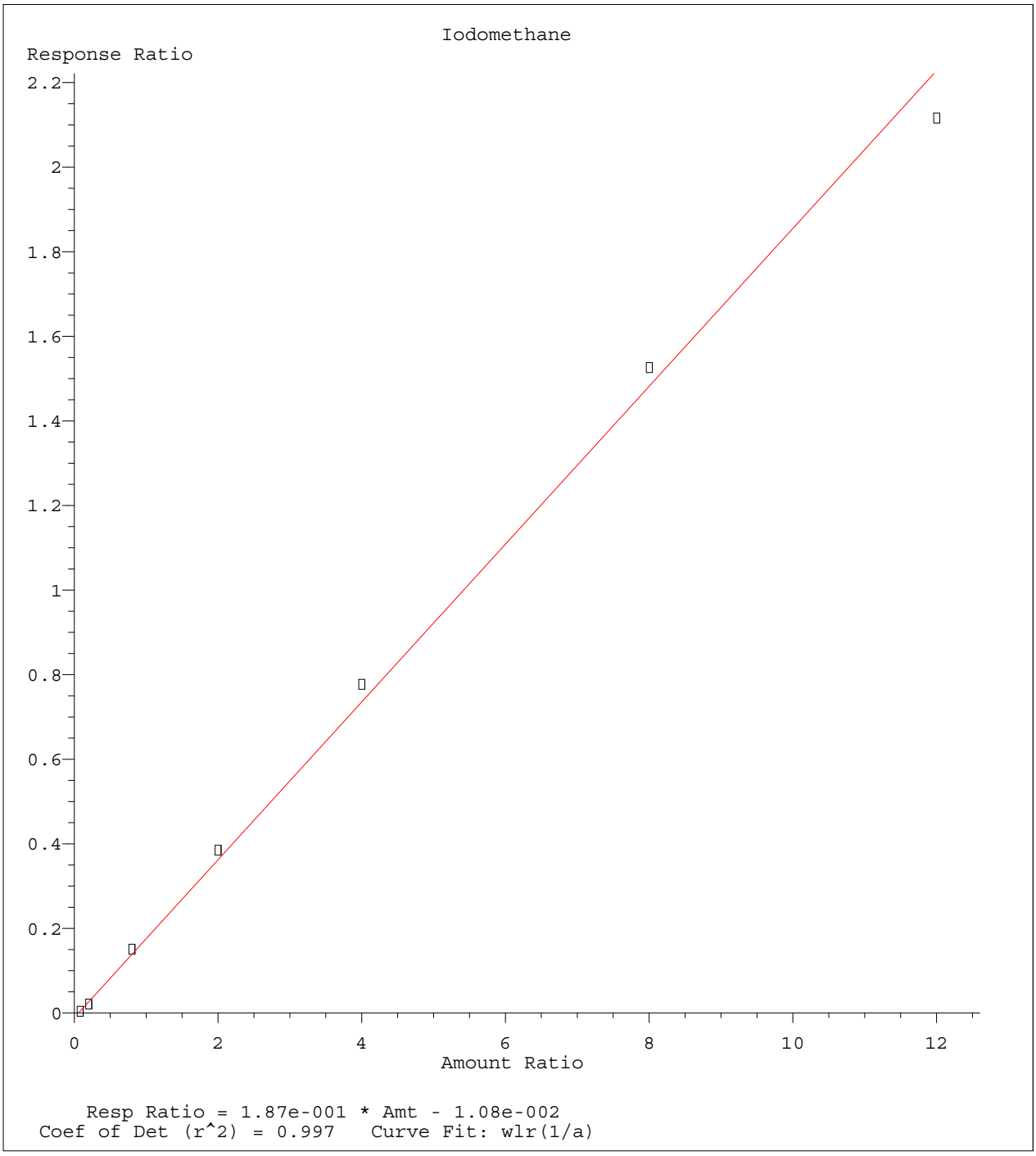

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Thu Jun 02 12:19:33 2016

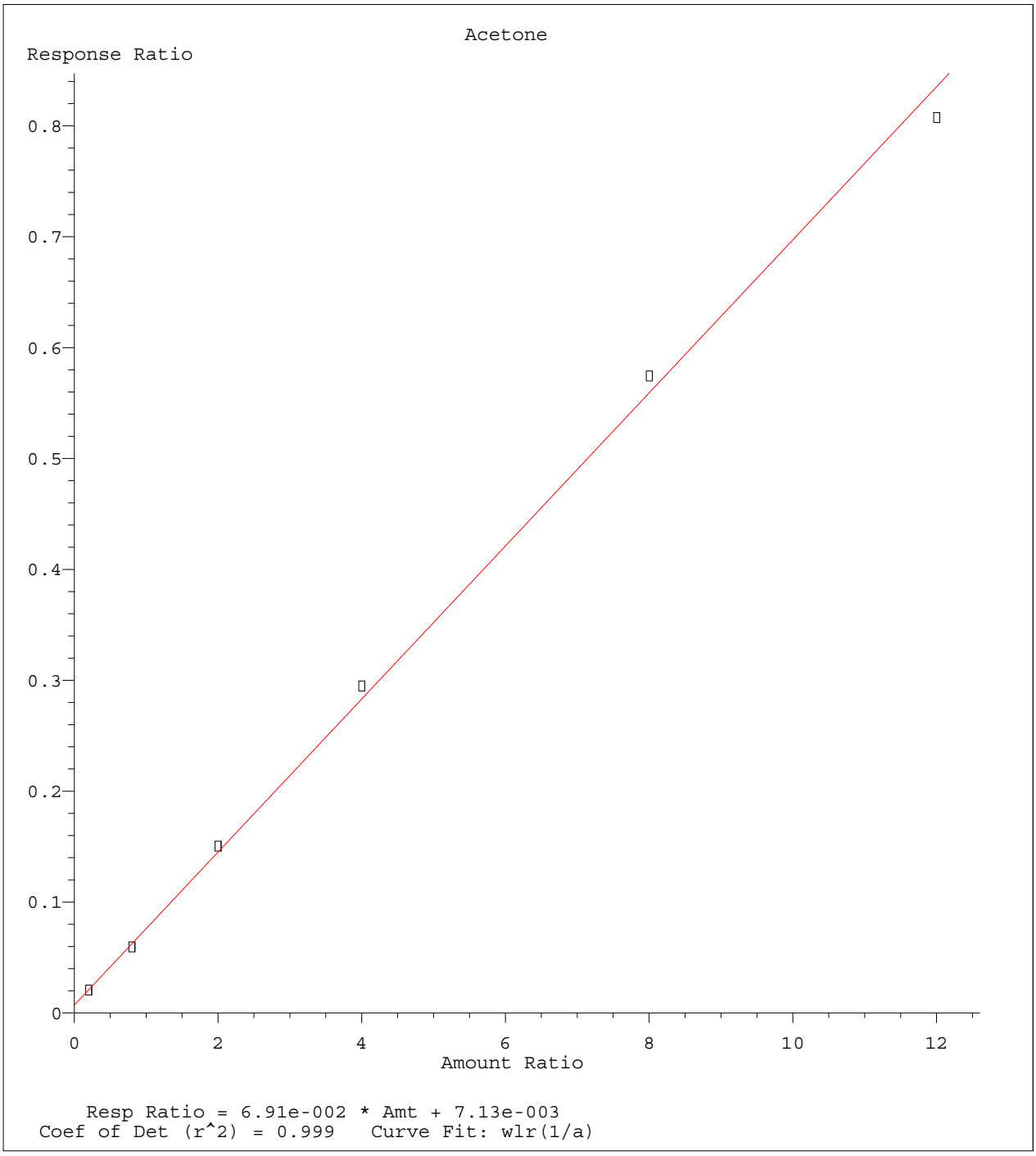

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Thu Jun 02 12:19:33 2016

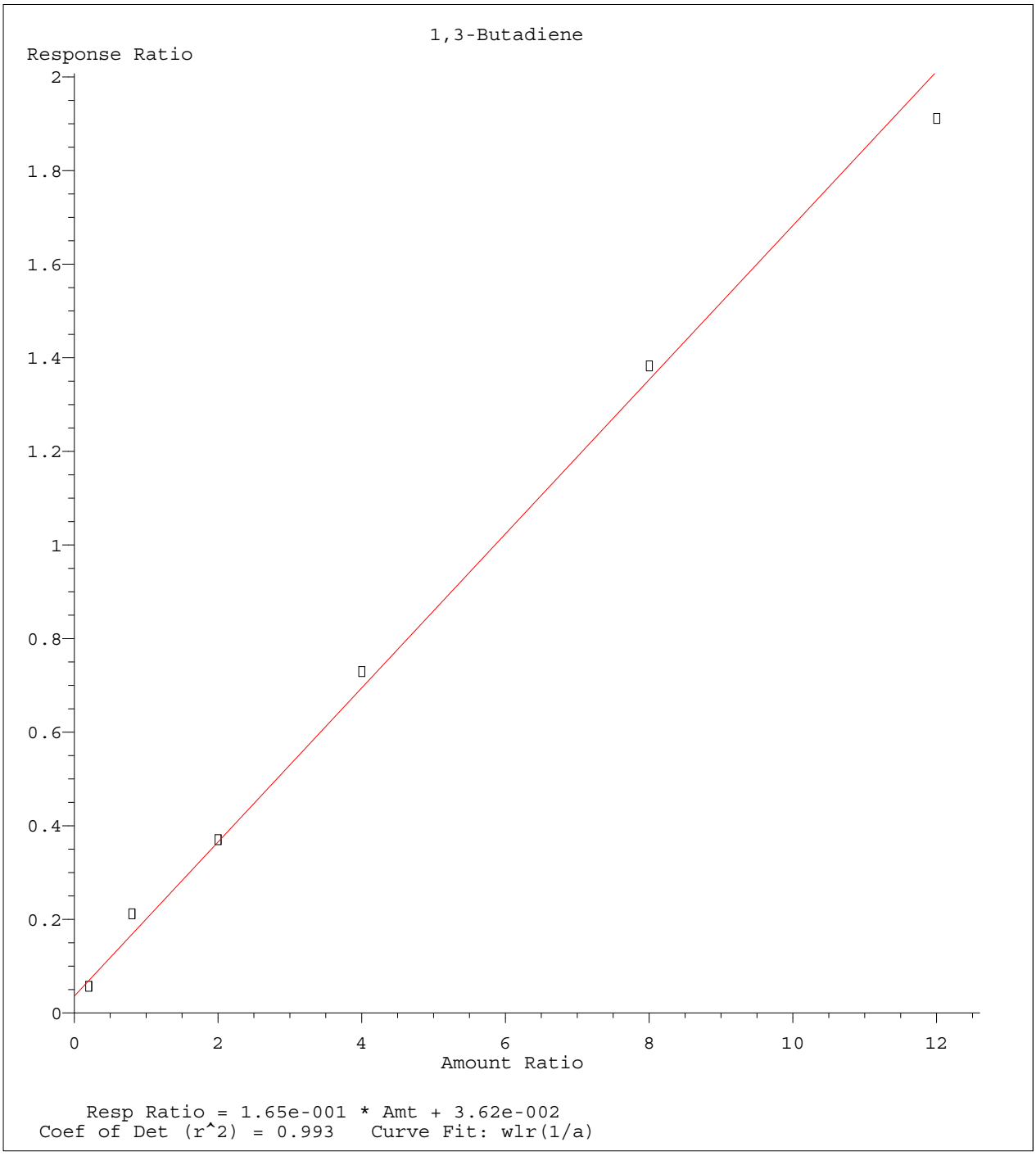

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Thu Jun 02 12:19:33 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139748.D Vial: 14
Acq On : 1 Jun 2016 18:56 Operator: TMB
Sample : WG570915-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76401 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:26 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	813057	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.06	117	589773	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	316393	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.39	111	199426	23.6997 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.80%		
43) 1,2-Dichloroethane-d4	11.11	65	218159	23.5215 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.08%		
58) Toluene-d8	13.85	98	670292	23.6814 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 94.72%		
80) p-Bromofluorobenzene	17.84	95	273340	24.4651 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.88%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	702608	54.5933 ug/L	98
3) Chloromethane	3.93	50	747480	47.6385 ug/L	99
4) Vinyl Chloride	4.16	62	515858	48.7740 ug/L	100
5) 1,3-Butadiene	4.20	54	214643	34.5960 ug/L	98
6) Bromomethane	5.07	94	237144	45.5172 ug/L	98
7) Chloroethane	5.23	64	343302	51.3524 ug/L	100
8) Trichlorofluoromethane	5.72	101	672942	47.5107 ug/L	100
9) Diethyl ether	6.29	59	786242	103.2275 ug/L	99
10) Isoprene	6.31	67	678234	56.3226 ug/L	100
11) Acrolein	6.55	56	140853	109.6081 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.54	101	414439	51.2200 ug/L	100
13) Acetone	6.66	43	118151	50.0319 ug/L	97
14) 1,1-Dichloroethene	6.87	61	689534	48.1202 ug/L	99
15) Tert-Butyl Alcohol	7.03	59	143024	203.3725 ug/L	99
16) Dimethyl Sulfide	7.16	62	615770	93.6354 ug/L	99
17) Iodomethane	7.43	142	452025	75.9094 ug/L	98
18) Methyl acetate	7.45	43	332389	47.3975 ug/L	98
19) Methylene Chloride	7.72	84	433555	49.0644 ug/L	99
20) Carbon Disulfide	7.76	76	1354672	48.3197 ug/L	100
21) Acrylonitrile	7.92	53	153905	49.7959 ug/L	99
22) Methyl Tert Butyl Ether	7.95	73	1128767	52.3532 ug/L	100
23) trans-1,2-Dichloroethene	8.21	96	425561	50.9498 ug/L	100
24) n-Hexane	8.28	57	642177	49.3751 ug/L	99
25) Diisopropyl ether	8.67	45	3642506	105.2173 ug/L	99
26) Vinyl Acetate	8.85	43	788393	53.6348 ug/L	99
27) 1,1-Dichloroethane	8.88	63	804025	48.0424 ug/L	100
28) Ethyl-Tert-Butyl ether	9.30	59	2815001	99.3580 ug/L	100
29) 2-Butanone	9.52	43	179165	48.7966 ug/L	100
30) Propionitrile	9.64	54	100730	99.4064 ug/L	99
31) 2,2-Dichloropropane	9.75	77	585369	47.9775 ug/L	97
32) cis-1,2-Dichloroethene	9.82	96	470672	51.7251 ug/L	99
33) Chloroform	10.06	83	737298	49.4660 ug/L	99
34) 1-Bromopropane	10.21	122	102822	68.1452 ug/L	100
35) Bromochloromethane	10.32	130	259428	50.2052 ug/L	100
36) Tetrahydrofuran	10.35	42	229614	90.8408 ug/L	99
38) 1,1,1-Trichloroethane	10.65	97	662124	49.7976 ug/L	99
39) Cyclohexane	10.68	56	844891	50.6962 ug/L	98
40) 1,1-Dichloropropene	10.88	75	566607	49.7223 ug/L	97
41) Tert-Amyl-Methyl ether	11.00	73	2310471	105.3293 ug/L	99
42) Carbon Tetrachloride	11.04	117	597488	50.3710 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M139748.D 8260WT.M Thu Jun 02 12:18:26 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139748.D Vial: 14
Acq On : 1 Jun 2016 18:56 Operator: TMB
Sample : WG570915-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76401 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:26 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	11.24	62	578724	50.5214	ug/L	100
46)	Benzene	11.28	78	1669568	49.9860	ug/L	100
47)	Trichloroethene	12.14	130	441901	51.8016	ug/L	100
48)	Methylcyclohexane	12.23	83	663944	51.3358	ug/L	99
49)	1,2-Dichloropropane	12.39	63	483336	52.3900	ug/L	100
50)	1,4-Dioxane	12.73	88	13070	198.8530	ug/L	92
51)	Bromodichloromethane	12.73	83	579293	51.0588	ug/L	99
52)	Dibromomethane	12.84	93	235154	49.3949	ug/L	100
53)	2-Chloroethyl Vinyl Ether	13.09	63	227071	53.9270	ug/L	99
54)	4-Methyl-2-Pentanone	13.12	58	140404	50.1024	ug/L	99
55)	cis-1,3-Dichloropropene	13.48	75	734218	57.1766	ug/L	100
56)	Dimethyl Disulfide	13.78	79	393408	53.1787	ug/L	99
59)	Toluene	13.96	91	1732060	51.7178	ug/L	100
60)	Ethyl Methacrylate	14.09	69	507926	55.3451	ug/L	96
62)	trans-1,3-Dichloropropene	14.17	75	602953	52.8614	ug/L	99
63)	1,1,2-Trichloroethane	14.43	97	330025	51.7570	ug/L	99
64)	2-Hexanone	14.36	43	262407	48.4974	ug/L	100
65)	1,3-Dichloropropane	14.79	76	612537	54.6375	ug/L	98
66)	Tetrachloroethene	14.92	166	430915	49.0517	ug/L	99
67)	Dibromochloromethane	15.24	129	417665	51.4062	ug/L	100
68)	1,2-Dibromoethane	15.53	107	322862	52.3865	ug/L	100
69)	1-Chlorohexane	15.64	91	575164	52.8903	ug/L	100
70)	Chlorobenzene	16.12	112	1148834	51.2668	ug/L	99
71)	1,1,1,2-Tetrachloroethane	16.16	131	427082	52.5455	ug/L	100
72)	Ethylbenzene	16.15	106	609992	51.3202	ug/L	99
73)	m-,p-Xylene	16.27	106	1491756	105.6436	ug/L	100
74)	o-Xylene	16.93	106	747716	53.5832	ug/L	100
75)	Styrene	16.97	104	1256580	54.2221	ug/L	99
76)	Bromoform	17.55	173	248794	48.2645	ug/L	99
77)	Isopropylbenzene	17.43	105	1869415	53.3705	ug/L	100
79)	1,1,2,2-Tetrachloroethane	17.70	83	394192	51.6759	ug/L	99
81)	1,2,3-Trichloropropane	17.92	110	116497	52.7498	ug/L	82
82)	trans-1,4-Dichloro-2-Buten	17.98	53	119870	43.9870	ug/L	99
83)	n-Propylbenzene	18.03	91	2259617	55.1049	ug/L	100
84)	Bromobenzene	18.18	156	480958	49.9837	ug/L	97
85)	1,3,5-Trimethylbenzene	18.26	105	1571815	54.1751	ug/L	100
86)	2-Chlorotoluene	18.35	91	1460482	51.9972	ug/L	99
87)	4-Chlorotoluene	18.41	91	1398653	53.6314	ug/L	100
88)	a-Methylstyrene	18.74	118	896576	55.2755	ug/L	100
89)	tert-Butylbenzene	18.81	134	341672	53.4156	ug/L	80
90)	1,2,4-Trimethylbenzene	18.87	105	1580583	52.0404	ug/L	100
91)	sec-Butylbenzene	19.13	105	1920297	53.7869	ug/L	99
92)	p-Isopropyltoluene	19.32	119	1617808	53.1748	ug/L	100
93)	1,3-Dichlorobenzene	19.53	146	945910	50.4129	ug/L	99
94)	1,4-Dichlorobenzene	19.70	146	963948	54.2685	ug/L	99
95)	n-Butylbenzene	19.94	91	1509669	52.4242	ug/L	99
96)	1,2-Dichlorobenzene	20.28	146	907052	51.8756	ug/L	98
97)	1,2-Dibromo-3-Chloropropan	21.46	75	73844	53.9073	ug/L	98
98)	1,2,4-Trichlorobenzene	22.82	180	630356	52.1421	ug/L	99
99)	Hexachlorobutadiene	23.02	225	268285	53.4738	ug/L	100
100)	Naphthalene	23.28	128	1168133	48.8812	ug/L	100
101)	1,2,3-Trichlorobenzene	23.69	180	572367	50.0300	ug/L	99

(#) = qualifier out of range (m) = manual integration
6M139748.D 8260WT.M Thu Jun 02 12:18:26 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139748.D Vial: 14
Acq On : 1 Jun 2016 18:56 Operator: TMB
Sample : WG570915-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76401 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 2 12:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration

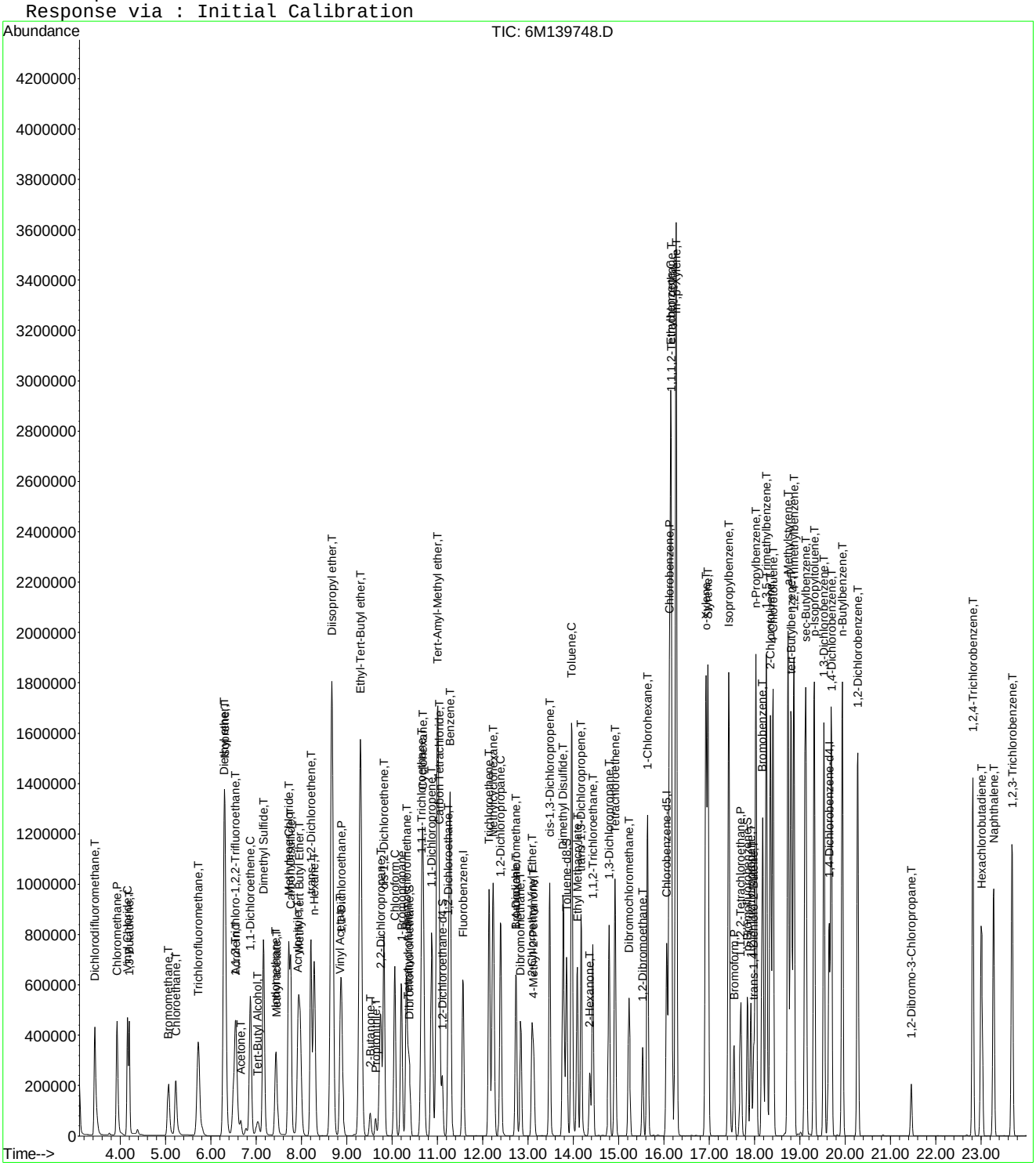

6M139748.D 8260WT.M Thu Jun 02 12:18:26 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\060116\6M139748.D Vial: 14
Acq On : 1 Jun 2016 18:56 Operator: TMB
Sample : WG570915-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76401 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	109	0.00
2	T	Dichlorodifluoromethane	50.0000	54.5933	-9.2	110	0.00
3	P	Chloromethane	50.0000	47.6385	4.7	101	0.00
4	C	Vinyl Chloride	50.0000	48.7740	2.5	109	0.00
5	T	1,3-Butadiene	50.0000	34.5960	30.8#	78	0.00
6	T	Bromomethane	50.0000	45.5172	9.0	105	0.00
7	T	Chloroethane	50.0000	51.3524	-2.7	113	0.00
8	T	Trichlorofluoromethane	50.0000	47.5107	5.0	104	0.00
9	T	Diethyl ether	100.0000	103.2275	-3.2	112	0.00
10	T	Isoprene	50.0000	56.3226	-12.6	124	0.00
11	T	Acrolein	50.0000	109.6081	-119.2#	240	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	51.2200	-2.4	112	0.00
13	T	Acetone	50.0000	50.0319	-0.1	106	0.00
14	C	1,1-Dichloroethene	50.0000	48.1202	3.8	106	0.00
15	T	Tert-Butyl Alcohol	200.0000	203.3725	-1.7	103	-0.02
16	T	Dimethyl Sulfide	50.0000	93.6354	-87.3#	204	0.00
17	T	Iodomethane	50.0000	75.9094	-51.8#	158	0.00
18	T	Methyl acetate	50.0000	47.3975	5.2	104	0.00
19	T	Methylene Chloride	50.0000	49.0644	1.9	111	0.00
20	T	Carbon Disulfide	50.0000	48.3197	3.4	106	0.00
21	T	Acrylonitrile	50.0000	49.7959	0.4	103	0.00
22	T	Methyl Tert Butyl Ether	50.0000	52.3532	-4.7	114	0.00
23	T	trans-1,2-Dichloroethene	50.0000	50.9498	-1.9	112	0.00
24	T	n-Hexane	50.0000	49.3751	1.2	109	0.00
25	T	Diisopropyl ether	100.0000	105.2173	-5.2	114	0.00
26	T	Vinyl Acetate	50.0000	53.6347	-7.3	117	0.00
27	P	1,1-Dichloroethane	50.0000	48.0424	3.9	107	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	99.3580	0.6	106	0.00
29	T	2-Butanone	50.0000	48.7966	2.4	106	0.00
30	T	Propionitrile	100.0000	99.4064	0.6	101	0.00
31	T	2,2-Dichloropropane	50.0000	47.9775	4.0	109	0.00
32	T	cis-1,2-Dichloroethene	50.0000	51.7251	-3.5	112	0.00
33	C	Chloroform	50.0000	49.4660	1.1	110	0.00
34		1-Bromopropane	50.0000	68.1452	-36.3#	151	0.00
35	T	Bromochloromethane	50.0000	50.2052	-0.4	108	0.00
36	T	Tetrahydrofuran	100.0000	90.8408	9.2	100	0.00
37	S	Dibromofluoromethane	25.0000	23.6997	5.2	102	0.00
38	T	1,1,1-Trichloroethane	50.0000	49.7976	0.4	110	0.00
39	T	Cyclohexane	50.0000	50.6962	-1.4	111	0.00
40	T	1,1-Dichloropropene	50.0000	49.7223	0.6	109	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	105.3293	-5.3	113	0.00
42	T	Carbon Tetrachloride	50.0000	50.3710	-0.7	109	0.00
43	S	1,2-Dichloroethane-d4	25.0000	23.5216	5.9	102	0.00
44		Heptane	-1.0000	0.0000	0.0	115	0.00
45	T	1,2-Dichloroethane	50.0000	50.5213	-1.0	111	0.00
46	T	Benzene	50.0000	49.9860	0.0	111	0.00
47	T	Trichloroethene	50.0000	51.8016	-3.6	114	0.00
48	T	Methylcyclohexane	50.0000	51.3358	-2.7	113	0.00
49	C	1,2-Dichloropropane	50.0000	52.3900	-4.8	115	0.00
50	T	1,4-Dioxane	200.0000	198.8530	0.6	100	0.00
51	T	Bromodichloromethane	50.0000	51.0588	-2.1	110	0.00
52	T	Dibromomethane	50.0000	49.3949	1.2	106	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	53.9270	-7.9	109	0.00
54	T	4-Methyl-2-Pentanone	50.0000	50.1024	-0.2	104	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\060116\6M139748.D Vial: 14
Acq On : 1 Jun 2016 18:56 Operator: TMB
Sample : WG570915-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76401 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	57.1766	-14.4	120	0.00
56	T	Dimethyl Disulfide	50.0000	53.1787	-6.4	115	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	107	0.00
58	S	Toluene-d8	25.0000	23.6814	5.3	103	0.00
59	C	Toluene	50.0000	51.7178	-3.4	112	0.00
60	T	Ethyl Methacrylate	50.0000	55.3451	-10.7	112	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	112	0.00
62	T	trans-1,3-Dichloropropene	50.0000	52.8614	-5.7	110	0.00
63	T	1,1,2-Trichloroethane	50.0000	51.7570	-3.5	110	0.00
64	T	2-Hexanone	50.0000	48.4974	3.0	102	0.00
65	T	1,3-Dichloropropane	50.0000	54.6375	-9.3	116	0.00
66	T	Tetrachloroethene	50.0000	49.0517	1.9	107	0.00
67	T	Dibromochloromethane	50.0000	51.4062	-2.8	107	0.00
68	T	1,2-Dibromoethane	50.0000	52.3865	-4.8	109	0.00
69	T	1-Chlorohexane	50.0000	52.8903	-5.8	108	0.00
70	P	Chlorobenzene	50.0000	51.2668	-2.5	112	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	52.5455	-5.1	110	0.00
72	C	Ethylbenzene	50.0000	51.3202	-2.6	109	0.00
73	T	m-,p-Xylene	100.0000	105.6436	-5.6	112	0.00
74	T	o-Xylene	50.0000	53.5832	-7.2	112	0.00
75	T	Styrene	50.0000	54.2221	-8.4	108	0.00
76	P	Bromoform	50.0000	48.2645	3.5	99	0.00
77	T	Isopropylbenzene	50.0000	53.3705	-6.7	109	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	101	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	51.6759	-3.4	104	0.00
80	S	p-Bromofluorobenzene	25.0000	24.4651	2.1	99	0.00
81	T	1,2,3-Trichloropropane	50.0000	52.7498	-5.5	105	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	43.9870	12.0	93	0.00
83	T	n-Propylbenzene	50.0000	55.1049	-10.2	108	0.00
84	T	Bromobenzene	50.0000	49.9837	0.0	104	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	54.1751	-8.4	107	0.00
86	T	2-Chlorotoluene	50.0000	51.9972	-4.0	108	0.00
87	T	4-Chlorotoluene	50.0000	53.6314	-7.3	108	0.00
88	T	a-Methylstyrene	50.0000	55.2754	-10.6	110	0.00
89	T	tert-Butylbenzene	50.0000	53.4156	-6.8	107	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	52.0404	-4.1	102	0.00
91	T	sec-Butylbenzene	50.0000	53.7869	-7.6	106	0.00
92	T	p-Isopropyltoluene	50.0000	53.1748	-6.3	103	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.4129	-0.8	104	0.00
94	T	1,4-Dichlorobenzene	50.0000	54.2685	-8.5	106	0.00
95	T	n-Butylbenzene	50.0000	52.4242	-4.8	102	0.00
96	T	1,2-Dichlorobenzene	50.0000	51.8756	-3.8	106	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	53.9073	-7.8	102	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	52.1421	-4.3	104	0.00
99	T	Hexachlorobutadiene	50.0000	53.4738	-6.9	109	0.00
100	T	Naphthalene	50.0000	48.8812	2.2	92	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	50.0300	-0.1	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M139748.D 8260WT.M Thu Jun 02 12:20:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140055.D Vial: 3
Acq On : 14 Jun 2016 14:44 Operator: TMB
Sample : WG572624-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 15:44:48 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	656171	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.06	117	493313	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	274239	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.38	111	172382	25.3838 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.52%		
43) 1,2-Dichloroethane-d4	11.11	65	188252	25.1499 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.60%		
58) Toluene-d8	13.85	98	589134	24.8840 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.52%		
80) p-Bromofluorobenzene	17.84	95	250819	25.9001 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.60%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	509144	49.0197 ug/L	99
3) Chloromethane	3.93	50	524408	41.4125 ug/L	100
4) Vinyl Chloride	4.16	62	380918	44.6265 ug/L	99
5) 1,3-Butadiene	4.20	54	274992	58.1461 ug/L	98
6) Bromomethane	5.08	94	175064	41.6355 ug/L	99
7) Chloroethane	5.23	64	228122	42.2820 ug/L	96
8) Trichlorofluoromethane	5.73	101	615071	53.8075 ug/L	99
9) Diethyl ether	6.29	59	612607	99.6609 ug/L	98
10) Isoprene	6.32	67	479679	49.3580 ug/L	98
11) Acrolein	6.55	56	47207	45.5184 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.55	101	326615	50.0172 ug/L	99
13) Acetone	6.66	43	93804	49.1774 ug/L	98
14) 1,1-Dichloroethene	6.88	61	600531	51.9291 ug/L	99
15) Tert-Butyl Alcohol	7.02	59	107840	190.0059 ug/L	99
16) Dimethyl Sulfide	7.17	62	258614	48.7279 ug/L	98
17) Iodomethane	7.43	142	240670	50.5694 ug/L	98
18) Methyl acetate	7.45	43	316369	55.8993 ug/L	99
19) Methylene Chloride	7.72	84	349353	48.9881 ug/L	97
20) Carbon Disulfide	7.77	76	1167926	51.6190 ug/L	100
21) Acrylonitrile	7.92	53	129667	51.9845 ug/L	99
22) Methyl Tert Butyl Ether	7.95	73	889627	51.1271 ug/L	100
23) trans-1,2-Dichloroethene	8.21	96	344207	51.0627 ug/L	97
24) n-Hexane	8.29	57	551977	52.5870 ug/L	99
25) Diisopropyl ether	8.67	45	2907988	104.0839 ug/L	98
26) Vinyl Acetate	8.85	43	585946	49.3930 ug/L	99
27) 1,1-Dichloroethane	8.89	63	689488	51.0489 ug/L	99
28) Ethyl-Tert-Butyl ether	9.30	59	2315595	101.2724 ug/L	100
29) 2-Butanone	9.51	43	149283	50.3792 ug/L	97
30) Propionitrile	9.63	54	82688	101.1118 ug/L	100
31) 2,2-Dichloropropane	9.75	77	545751	55.4251 ug/L	97
32) cis-1,2-Dichloroethene	9.82	96	373882	50.9122 ug/L	99
33) Chloroform	10.06	83	620090	51.5493 ug/L	99
34) 1-Bromopropane	10.21	122	61737	50.7734 ug/L	99
35) Bromochloromethane	10.32	130	213248	51.1353 ug/L	100
36) Tetrahydrofuran	10.35	42	195203	95.6914 ug/L	98
38) 1,1,1-Trichloroethane	10.65	97	555574	51.7744 ug/L	100
39) Cyclohexane	10.69	56	696775	51.8049 ug/L	97
40) 1,1-Dichloropropene	10.88	75	477859	51.9604 ug/L	97
41) Tert-Amyl-Methyl ether	11.00	73	1774884	100.2588 ug/L	98
42) Carbon Tetrachloride	11.04	117	506232	52.8817 ug/L	99

(#) = qualifier out of range (m) = manual integration

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140055.D Vial: 3
Acq On : 14 Jun 2016 14:44 Operator: TMB
Sample : WG572624-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 15:44:48 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.24	62	473514	51.2201 ug/L	99
46)	Benzene	11.28	78	1358872	50.4112 ug/L	99
47)	Trichloroethene	12.14	130	344438	50.0303 ug/L	99
48)	Methylcyclohexane	12.23	83	524127	50.2145 ug/L	98
49)	1,2-Dichloropropane	12.40	63	384970	51.7047 ug/L	100
50)	1,4-Dioxane	12.72	88	9789	184.5435 ug/L	96
51)	Bromodichloromethane	12.73	83	480692	52.4981 ug/L	99
52)	Dibromomethane	12.84	93	197249	51.3391 ug/L	99
53)	2-Chloroethyl Vinyl Ether	13.09	63	185902	54.7057 ug/L	99
54)	4-Methyl-2-Pentanone	13.12	58	115293	50.9784 ug/L	99
55)	cis-1,3-Dichloropropene	13.48	75	565168	54.5349 ug/L	100
56)	Dimethyl Disulfide	13.78	79	305906	51.2374 ug/L	100
59)	Toluene	13.97	91	1398009	49.9057 ug/L	100
60)	Ethyl Methacrylate	14.09	69	403741	52.5949 ug/L	99
62)	trans-1,3-Dichloropropene	14.17	75	506088	53.0449 ug/L	99
63)	1,1,2-Trichloroethane	14.43	97	265470	49.7737 ug/L	99
64)	2-Hexanone	14.36	43	222271	49.1121 ug/L	98
65)	1,3-Dichloropropane	14.79	76	470671	50.1924 ug/L	99
66)	Tetrachloroethene	14.92	166	350260	47.6667 ug/L	98
67)	Dibromochloromethane	15.24	129	349286	51.3962 ug/L	100
68)	1,2-Dibromoethane	15.53	107	259837	50.4041 ug/L	99
69)	1-Chlorohexane	15.64	91	474896	52.2089 ug/L	97
70)	Chlorobenzene	16.12	112	910239	48.5620 ug/L	98
71)	1,1,1,2-Tetrachloroethane	16.16	131	344940	50.7377 ug/L	99
72)	Ethylbenzene	16.16	106	488152	49.1000 ug/L	97
73)	m-,p-Xylene	16.27	106	1178009	99.7370 ug/L	99
74)	o-Xylene	16.93	106	584930	50.1139 ug/L	98
75)	Styrene	16.97	104	1014907	52.3570 ug/L	97
76)	Bromoform	17.55	173	219219	50.8426 ug/L	100
77)	Isopropylbenzene	17.43	105	1490231	50.8641 ug/L	100
79)	1,1,2,2-Tetrachloroethane	17.70	83	329173	49.7854 ug/L	100
81)	1,2,3-Trichloropropane	17.92	110	94682	49.4620 ug/L	87
82)	trans-1,4-Dichloro-2-Buten	17.98	53	116720	49.3268 ug/L	92
83)	n-Propylbenzene	18.03	91	1825328	51.3563 ug/L	99
84)	Bromobenzene	18.18	156	405700	48.6434 ug/L	97
85)	1,3,5-Trimethylbenzene	18.26	105	1286394	51.1529 ug/L	99
86)	2-Chlorotoluene	18.35	91	1202852	49.4076 ug/L	99
87)	4-Chlorotoluene	18.41	91	1138861	50.3823 ug/L	99
88)	a-Methylstyrene	18.74	118	690466	49.1117 ug/L	99
89)	tert-Butylbenzene	18.81	134	269272	48.5677 ug/L	78
90)	1,2,4-Trimethylbenzene	18.87	105	1329011	50.4835 ug/L	99
91)	sec-Butylbenzene	19.13	105	1547204	49.9980 ug/L	99
92)	p-Isopropyltoluene	19.32	119	1342344	50.9026 ug/L	99
93)	1,3-Dichlorobenzene	19.53	146	788443	48.4797 ug/L	98
94)	1,4-Dichlorobenzene	19.70	146	787910	51.1641 ug/L	98
95)	n-Butylbenzene	19.94	91	1294336	51.8555 ug/L	99
96)	1,2-Dichlorobenzene	20.28	146	736896	48.6222 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	21.46	75	62293	52.4650 ug/L	95
98)	1,2,4-Trichlorobenzene	22.82	180	527429	50.3344 ug/L	99
99)	Hexachlorobutadiene	23.02	225	224697	51.6701 ug/L	99
100)	Naphthalene	23.28	128	1092678	52.7521 ug/L	100
101)	1,2,3-Trichlorobenzene	23.69	180	481586	48.5654 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140055.D 8260WT.M Tue Jun 14 15:44:52 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140055.D Vial: 3
Acq On : 14 Jun 2016 14:44 Operator: TMB
Sample : WG572624-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 15:44 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration

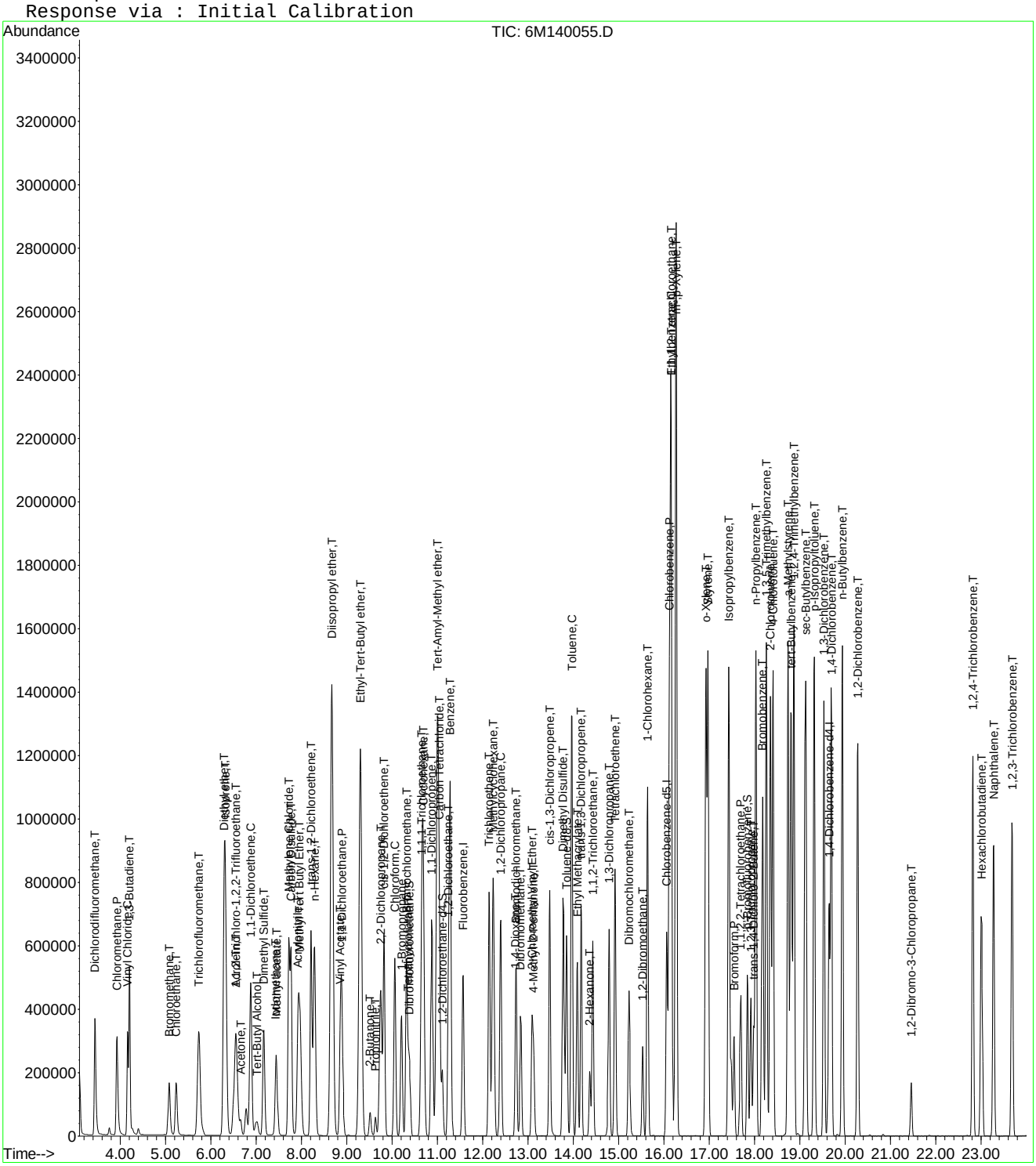

6M140055.D 8260WT.M Tue Jun 14 15:44:53 2016 Page 3

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140055.D Vial: 3
Acq On : 14 Jun 2016 14:44 Operator: TMB
Sample : WG572624-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	88	0.00
2	T	Dichlorodifluoromethane	0.3957	0.3880	2.0	80	0.00
3	P	Chloromethane	0.4825	0.3996	17.2	71	0.00
4	C	Vinyl Chloride	0.3252	0.2903	10.7	81	0.00
5	T	1,3-Butadiene	0.2081	0.2095	-0.7	100	0.00
6	T	Bromomethane	0.1602	0.1334	16.7	77	0.01
7	T	Chloroethane	0.2056	0.1738	15.4	75	0.00
8	T	Trichlorofluoromethane	0.4355	0.4687	-7.6	95	0.01
9	T	Diethyl ether	0.2342	0.2334	0.3	87	0.00
10	T	Isoprene	0.3703	0.3655	1.3	87	0.00
11	T	Acrolein	0.0395	0.0360	9.0	81	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2488	0.2489	-0.0	88	0.00
13	T	Acetone	0.0776	0.0715	7.9	84	0.00
14	C	1,1-Dichloroethene	0.4406	0.4576	-3.9	92	0.01
15	T	Tert-Butyl Alcohol	0.0216	0.0205	5.0	78	-0.03
16	T	Dimethyl Sulfide	0.2022	0.1971	2.5	86	0.01
17	T	Iodomethane	0.1564	0.1834	-17.3	84	0.00
18	T	Methyl acetate	0.2156	0.2411	-11.8	99	0.00
19	T	Methylene Chloride	0.2717	0.2662	2.0	90	0.00
20	T	Carbon Disulfide	0.8620	0.8900	-3.2	91	0.01
21	T	Acrylonitrile	0.0950	0.0988	-4.0	87	0.00
22	T	Methyl Tert Butyl Ether	0.6630	0.6779	-2.3	89	0.00
23	T	trans-1,2-Dichloroethene	0.2568	0.2623	-2.1	90	0.00
24	T	n-Hexane	0.3999	0.4206	-5.2	93	0.01
25	T	Diisopropyl ether	1.0645	1.1079	-4.1	91	0.00
26	T	Vinyl Acetate	0.4520	0.4465	1.2	87	0.00
27	P	1,1-Dichloroethane	0.5146	0.5254	-2.1	92	0.00
28	T	Ethyl-Tert-Butyl ether	0.8711	0.8822	-1.3	88	0.00
29	T	2-Butanone	0.1129	0.1138	-0.8	88	0.00
30	T	Propionitrile	0.0312	0.0315	-1.1	83	0.00
31	T	2,2-Dichloropropane	0.3752	0.4159	-10.8	102	0.00
32	T	cis-1,2-Dichloroethene	0.2798	0.2849	-1.8	89	0.00
33	C	Chloroform	0.4583	0.4725	-3.1	92	0.00
34		1-Bromopropane	0.0436	0.0470	-8.0	91	0.00
35	T	Bromochloromethane	0.1589	0.1625	-2.3	89	0.00
36	T	Tetrahydrofuran	0.0777	0.0744	4.3	85	0.00
37	S	Dibromofluoromethane	0.2587	0.2627	-1.5	89	0.00
38	T	1,1,1-Trichloroethane	0.4088	0.4234	-3.5	92	0.00
39	T	Cyclohexane	0.5124	0.5309	-3.6	92	0.00
40	T	1,1-Dichloropropene	0.3504	0.3641	-3.9	92	0.00
41	T	Tert-Amyl-Methyl ether	0.6745	0.6762	-0.3	87	0.00
42	T	Carbon Tetrachloride	0.3647	0.3857	-5.8	92	0.00
43	S	1,2-Dichloroethane-d4	0.2852	0.2869	-0.6	88	0.00
44		Heptane	0.0000	0.0000	0.0	87	0.00
45	T	1,2-Dichloroethane	0.3522	0.3608	-2.4	91	0.00
46	T	Benzene	1.0270	1.0355	-0.8	90	0.00
47	T	Trichloroethene	0.2623	0.2625	-0.1	89	0.00
48	T	Methylcyclohexane	0.3977	0.3994	-0.4	89	0.00
49	C	1,2-Dichloropropane	0.2837	0.2934	-3.4	91	0.00
50	T	1,4-Dioxane	0.0020	0.0019	7.9	75	-0.02
51	T	Bromodichloromethane	0.3489	0.3663	-5.0	91	0.00
52	T	Dibromomethane	0.1464	0.1503	-2.7	89	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1295	0.1417	-9.4	89	0.00
54	T	4-Methyl-2-Pentanone	0.0862	0.0878	-1.9	85	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140055.D Vial: 3
Acq On : 14 Jun 2016 14:44 Operator: TMB
Sample : WG572624-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.3948	0.4307	-9.1	92	0.00
56	T	Dimethyl Disulfide	0.2275	0.2331	-2.5	89	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	89	0.00
58	S	Toluene-d8	1.1998	1.1942	0.5	91	0.00
59	C	Toluene	1.4196	1.4170	0.2	90	0.00
60	T	Ethyl Methacrylate	0.3890	0.4092	-5.2	89	0.00
61		Paraldehyde	0.0000	0.0000	0.0	90	0.00
62	T	trans-1,3-Dichloropropene	0.4835	0.5130	-6.1	92	0.00
63	T	1,1,2-Trichloroethane	0.2703	0.2691	0.5	88	0.00
64	T	2-Hexanone	0.2294	0.2253	1.8	86	0.00
65	T	1,3-Dichloropropane	0.4752	0.4770	-0.4	89	0.00
66	T	Tetrachloroethene	0.3724	0.3550	4.7	87	0.00
67	T	Dibromochloromethane	0.3444	0.3540	-2.8	90	0.00
68	T	1,2-Dibromoethane	0.2612	0.2634	-0.8	88	0.00
69	T	1-Chlorohexane	0.4610	0.4813	-4.4	89	0.00
70	P	Chlorobenzene	0.9499	0.9226	2.9	88	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3445	0.3496	-1.5	89	0.00
72	C	Ethylbenzene	0.5038	0.4948	1.8	87	0.00
73	T	m-,p-Xylene	0.5986	0.5970	0.3	88	0.00
74	T	o-Xylene	0.5915	0.5929	-0.2	88	0.00
75	T	Styrene	0.9824	1.0287	-4.7	87	0.00
76	P	Bromoform	0.2185	0.2222	-1.7	87	0.00
77	T	Isopropylbenzene	1.4848	1.5104	-1.7	87	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	87	0.00
79	P	1,1,2,2-Tetrachloroethane	0.6027	0.6002	0.4	87	0.00
80	S	p-Bromofluorobenzene	0.8828	0.9146	-3.6	91	0.00
81	T	1,2,3-Trichloropropane	0.1745	0.1726	1.1	85	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1840	0.2128	-15.6	91	0.00
83	T	n-Propylbenzene	3.2401	3.3280	-2.7	88	0.00
84	T	Bromobenzene	0.7603	0.7397	2.7	87	0.00
85	T	1,3,5-Trimethylbenzene	2.2925	2.3454	-2.3	87	0.00
86	T	2-Chlorotoluene	2.2194	2.1931	1.2	89	0.00
87	T	4-Chlorotoluene	2.0606	2.0764	-0.8	88	0.00
88	T	a-Methylstyrene	1.2817	1.2589	1.8	85	0.00
89	T	tert-Butylbenzene	0.5054	0.4909	2.9	84	0.00
90	T	1,2,4-Trimethylbenzene	2.3999	2.4231	-1.0	86	0.00
91	T	sec-Butylbenzene	2.8210	2.8209	0.0	85	0.00
92	T	p-Isopropyltoluene	2.4040	2.4474	-1.8	86	0.00
93	T	1,3-Dichlorobenzene	1.4826	1.4375	3.0	87	0.00
94	T	1,4-Dichlorobenzene	1.6261	1.4365	11.7	87	0.00
95	T	n-Butylbenzene	2.2754	2.3599	-3.7	87	0.00
96	T	1,2-Dichlorobenzene	1.3816	1.3435	2.8	86	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1082	0.1136	-4.9	86	0.00
98	T	1,2,4-Trichlorobenzene	0.9552	0.9616	-0.7	87	0.00
99	T	Hexachlorobutadiene	0.3964	0.4097	-3.3	92	0.00
100	T	Naphthalene	1.8883	1.9922	-5.5	86	0.00
101	T	1,2,3-Trichlorobenzene	0.9040	0.8780	2.9	85	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140055.D 8260WT.M Tue Jun 14 15:44:59 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140055.D Vial: 3
Acq On : 14 Jun 2016 14:44 Operator: TMB
Sample : WG572624-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	88	0.00
2	T	Dichlorodifluoromethane	50.0000	49.0198	2.0	80	0.00
3	P	Chloromethane	50.0000	41.4125	17.2	71	0.00
4	C	Vinyl Chloride	50.0000	44.6266	10.7	81	0.00
5	T	1,3-Butadiene	50.0000	58.1461	-16.3	100	0.00
6	T	Bromomethane	50.0000	41.6355	16.7	77	0.01
7	T	Chloroethane	50.0000	42.2820	15.4	75	0.00
8	T	Trichlorofluoromethane	50.0000	53.8075	-7.6	95	0.01
9	T	Diethyl ether	100.0000	99.6609	0.3	87	0.00
10	T	Isoprene	50.0000	49.3580	1.3	87	0.00
11	T	Acrolein	50.0000	45.5184	9.0	81	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	50.0172	-0.0	88	0.00
13	T	Acetone	50.0000	49.1774	1.6	84	0.00
14	C	1,1-Dichloroethene	50.0000	51.9291	-3.9	92	0.01
15	T	Tert-Butyl Alcohol	200.0000	190.0059	5.0	78	-0.03
16	T	Dimethyl Sulfide	50.0000	48.7279	2.5	86	0.01
17	T	Iodomethane	50.0000	50.5694	-1.1	84	0.00
18	T	Methyl acetate	50.0000	55.8993	-11.8	99	0.00
19	T	Methylene Chloride	50.0000	48.9881	2.0	90	0.00
20	T	Carbon Disulfide	50.0000	51.6190	-3.2	91	0.01
21	T	Acrylonitrile	50.0000	51.9845	-4.0	87	0.00
22	T	Methyl Tert Butyl Ether	50.0000	51.1271	-2.3	89	0.00
23	T	trans-1,2-Dichloroethene	50.0000	51.0627	-2.1	90	0.00
24	T	n-Hexane	50.0000	52.5870	-5.2	93	0.01
25	T	Diisopropyl ether	100.0000	104.0839	-4.1	91	0.00
26	T	Vinyl Acetate	50.0000	49.3930	1.2	87	0.00
27	P	1,1-Dichloroethane	50.0000	51.0489	-2.1	92	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	101.2724	-1.3	88	0.00
29	T	2-Butanone	50.0000	50.3792	-0.8	88	0.00
30	T	Propionitrile	100.0000	101.1118	-1.1	83	0.00
31	T	2,2-Dichloropropane	50.0000	55.4251	-10.9	102	0.00
32	T	cis-1,2-Dichloroethene	50.0000	50.9122	-1.8	89	0.00
33	C	Chloroform	50.0000	51.5493	-3.1	92	0.00
34		1-Bromopropane	50.0000	50.7734	-1.5	91	0.00
35	T	Bromochloromethane	50.0000	51.1353	-2.3	89	0.00
36	T	Tetrahydrofuran	100.0000	95.6914	4.3	85	0.00
37	S	Dibromofluoromethane	25.0000	25.3838	-1.5	89	0.00
38	T	1,1,1-Trichloroethane	50.0000	51.7744	-3.5	92	0.00
39	T	Cyclohexane	50.0000	51.8049	-3.6	92	0.00
40	T	1,1-Dichloropropene	50.0000	51.9604	-3.9	92	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	100.2588	-0.3	87	0.00
42	T	Carbon Tetrachloride	50.0000	52.8817	-5.8	92	0.00
43	S	1,2-Dichloroethane-d4	25.0000	25.1499	-0.6	88	0.00
44		Heptane	-1.0000	0.0000	0.0	87	0.00
45	T	1,2-Dichloroethane	50.0000	51.2201	-2.4	91	0.00
46	T	Benzene	50.0000	50.4112	-0.8	90	0.00
47	T	Trichloroethene	50.0000	50.0303	-0.1	89	0.00
48	T	Methylcyclohexane	50.0000	50.2145	-0.4	89	0.00
49	C	1,2-Dichloropropane	50.0000	51.7047	-3.4	91	0.00
50	T	1,4-Dioxane	200.0000	184.5435	7.7	75	-0.02
51	T	Bromodichloromethane	50.0000	52.4981	-5.0	91	0.00
52	T	Dibromomethane	50.0000	51.3391	-2.7	89	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	54.7057	-9.4	89	0.00
54	T	4-Methyl-2-Pentanone	50.0000	50.9784	-2.0	85	0.00

(#) = Out of Range
6M140055.D 8260WT.M Tue Jun 14 15:45:01 2016 Page 1

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140055.D Vial: 3
Acq On : 14 Jun 2016 14:44 Operator: TMB
Sample : WG572624-02 50ug/L CCV STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	54.5349	-9.1	92	0.00
56	T	Dimethyl Disulfide	50.0000	51.2374	-2.5	89	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	89	0.00
58	S	Toluene-d8	25.0000	24.8840	0.5	91	0.00
59	C	Toluene	50.0000	49.9057	0.2	90	0.00
60	T	Ethyl Methacrylate	50.0000	52.5949	-5.2	89	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	90	0.00
62	T	trans-1,3-Dichloropropene	50.0000	53.0449	-6.1	92	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.7737	0.5	88	0.00
64	T	2-Hexanone	50.0000	49.1121	1.8	86	0.00
65	T	1,3-Dichloropropane	50.0000	50.1924	-0.4	89	0.00
66	T	Tetrachloroethene	50.0000	47.6667	4.7	87	0.00
67	T	Dibromochloromethane	50.0000	51.3962	-2.8	90	0.00
68	T	1,2-Dibromoethane	50.0000	50.4041	-0.8	88	0.00
69	T	1-Chlorohexane	50.0000	52.2089	-4.4	89	0.00
70	P	Chlorobenzene	50.0000	48.5620	2.9	88	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	50.7377	-1.5	89	0.00
72	C	Ethylbenzene	50.0000	49.1000	1.8	87	0.00
73	T	m-,p-Xylene	100.0000	99.7370	0.3	88	0.00
74	T	o-Xylene	50.0000	50.1139	-0.2	88	0.00
75	T	Styrene	50.0000	52.3570	-4.7	87	0.00
76	P	Bromoform	50.0000	50.8426	-1.7	87	0.00
77	T	Isopropylbenzene	50.0000	50.8641	-1.7	87	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	87	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	49.7854	0.4	87	0.00
80	S	p-Bromofluorobenzene	25.0000	25.9001	-3.6	91	0.00
81	T	1,2,3-Trichloropropane	50.0000	49.4620	1.1	85	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	49.3268	1.3	91	0.00
83	T	n-Propylbenzene	50.0000	51.3563	-2.7	88	0.00
84	T	Bromobenzene	50.0000	48.6434	2.7	87	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	51.1529	-2.3	87	0.00
86	T	2-Chlorotoluene	50.0000	49.4076	1.2	89	0.00
87	T	4-Chlorotoluene	50.0000	50.3823	-0.8	88	0.00
88	T	a-Methylstyrene	50.0000	49.1117	1.8	85	0.00
89	T	tert-Butylbenzene	50.0000	48.5677	2.9	84	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	50.4835	-1.0	86	0.00
91	T	sec-Butylbenzene	50.0000	49.9980	0.0	85	0.00
92	T	p-Isopropyltoluene	50.0000	50.9026	-1.8	86	0.00
93	T	1,3-Dichlorobenzene	50.0000	48.4797	3.0	87	0.00
94	T	1,4-Dichlorobenzene	50.0000	51.1641	-2.3	87	0.00
95	T	n-Butylbenzene	50.0000	51.8555	-3.7	87	0.00
96	T	1,2-Dichlorobenzene	50.0000	48.6222	2.8	86	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	52.4650	-4.9	86	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	50.3344	-0.7	87	0.00
99	T	Hexachlorobutadiene	50.0000	51.6701	-3.3	92	0.00
100	T	Naphthalene	50.0000	52.7521	-5.5	86	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	48.5654	2.9	85	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140055.D 8260WT.M Tue Jun 14 15:45:02 2016 Page 2

2.1.1.5 Raw QC Data

BFB

Data File : C:\MSDCHEM\1\DATA\042416\6M138750.D Vial: 1
Acq On : 24 Apr 2016 16:33 Operator: JDS
Sample : WG566155-01 50ng BFB 826-A9 Inst : HPMS6
Misc : 1,1 STD75485 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title : SOP: OVL MSV01

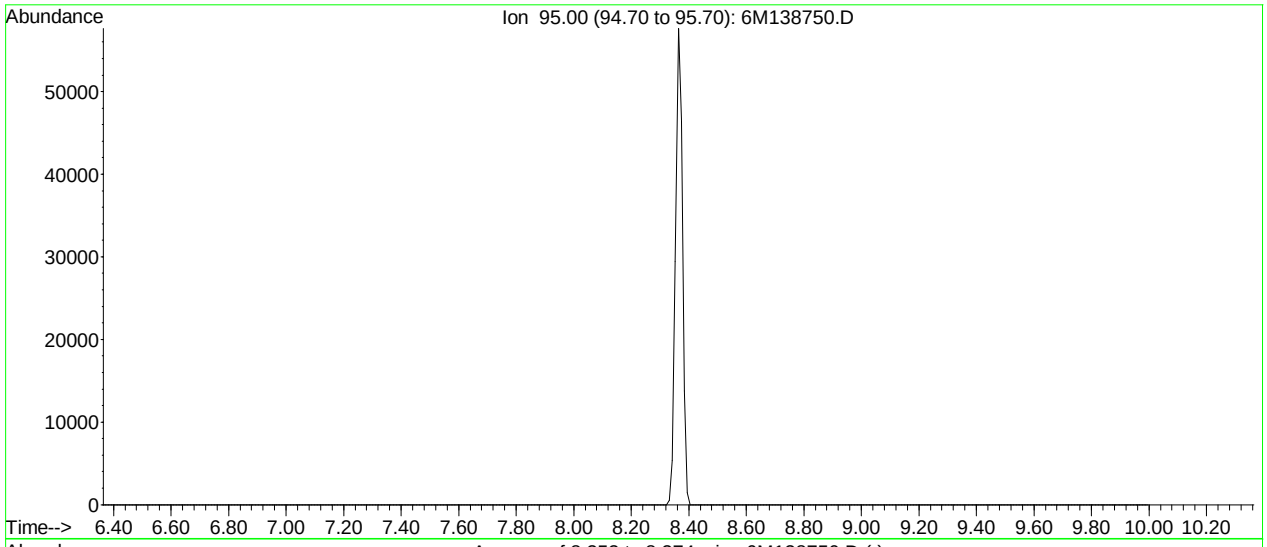

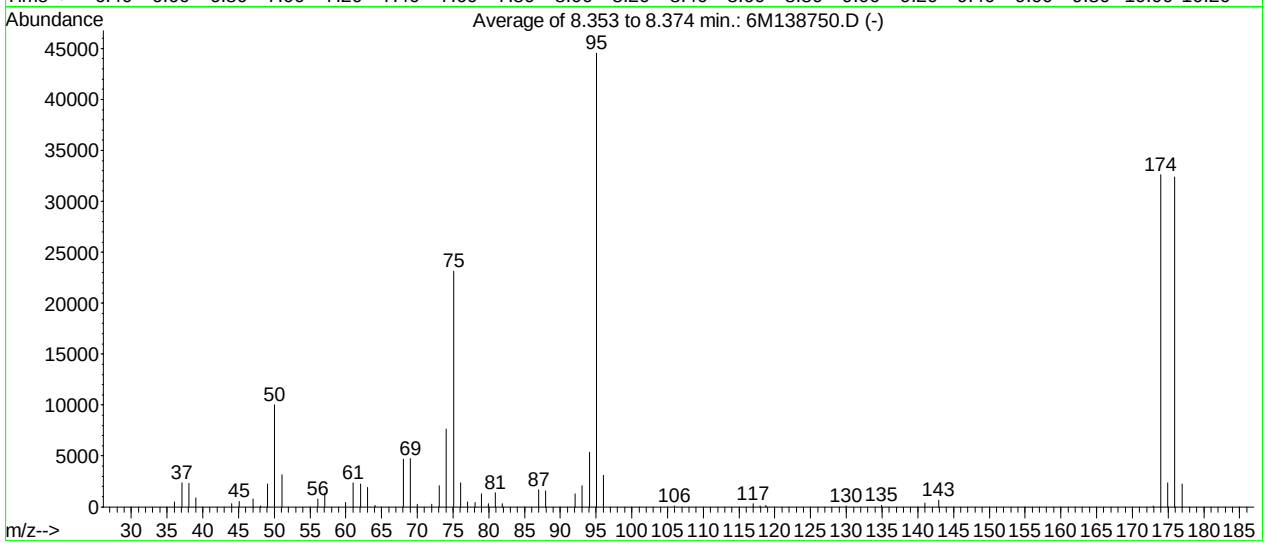

AutoFind: Scans 320, 321, 322; Background Corrected with Scan 315

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.5	10010	PASS
75	95	30	60	52.0	23152	PASS
95	95	100	100	100.0	44552	PASS
96	95	5	9	6.9	3085	PASS
173	174	0.00	2	0.3	113	PASS
174	95	50	100	73.2	32632	PASS
175	174	5	9	7.2	2336	PASS
176	174	95	101	99.2	32384	PASS
177	176	5	9	7.0	2251	PASS

6M138750.D BFB.M Mon Apr 25 09:21:54 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\060116\6M139735.D          Vial: 1
Acq On    :  1 Jun 2016  12:04                       Operator: TMB
Sample    : WG570915-01 50ng BFB STD 8260            Inst    : HPMS6
Misc      : 1,1 STD76034                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP: OVL MSV01
```

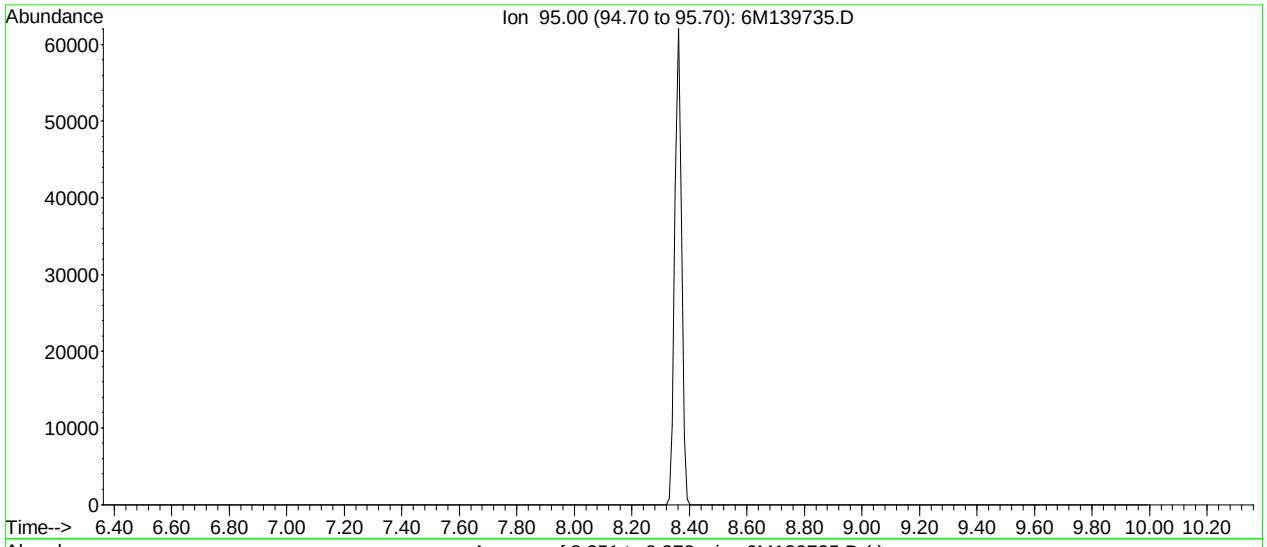

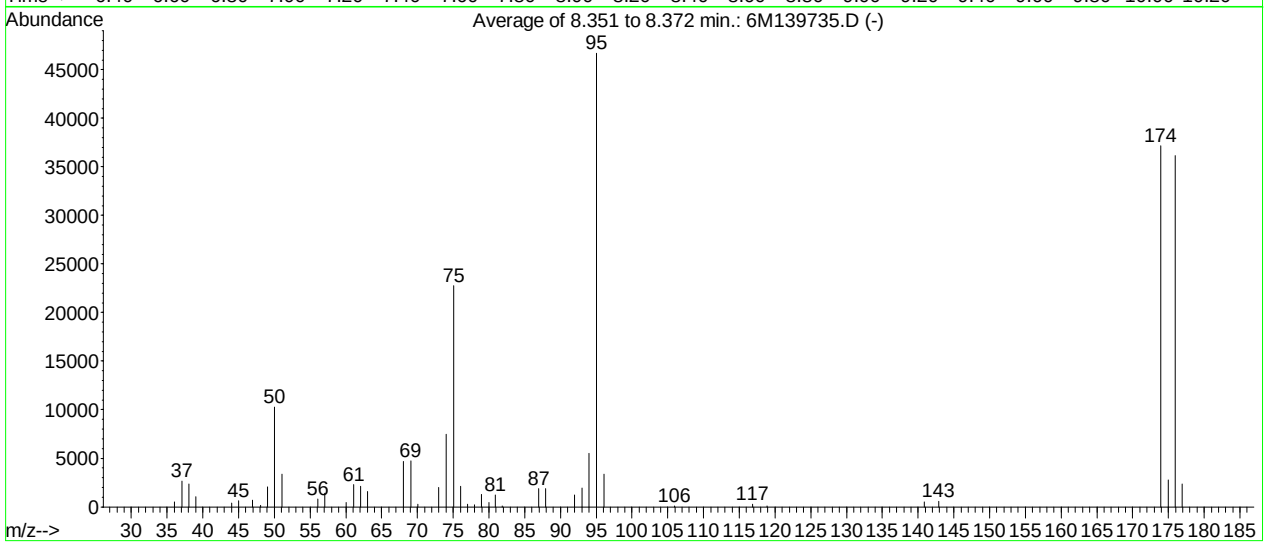

AutoFind: Scans 320, 321, 322; Background Corrected with Scan 315

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.0	10283	PASS
75	95	30	60	48.7	22744	PASS
95	95	100	100	100.0	46704	PASS
96	95	5	9	7.3	3392	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	79.6	37192	PASS
175	174	5	9	7.4	2756	PASS
176	174	95	101	97.2	36149	PASS
177	176	5	9	6.6	2378	PASS

6M139735.D BFB.M Wed Jun 01 12:15:03 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140053.D Vial: 1
Acq On    : 14 Jun 2016  13:47                        Operator: TMB
Sample    : WG572624-01 50ng BFB STD 8260             Inst    : HPMS6
Misc      : 1,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title     : 8260B/624_WATER SOP:MSV01  06-01-16 - HPMS6
```

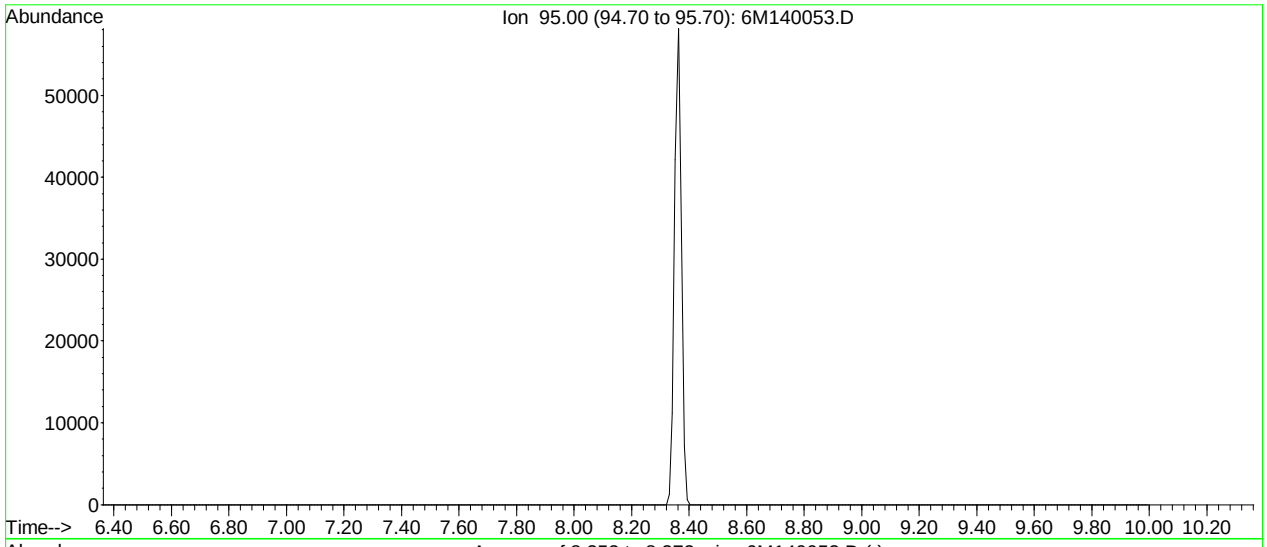

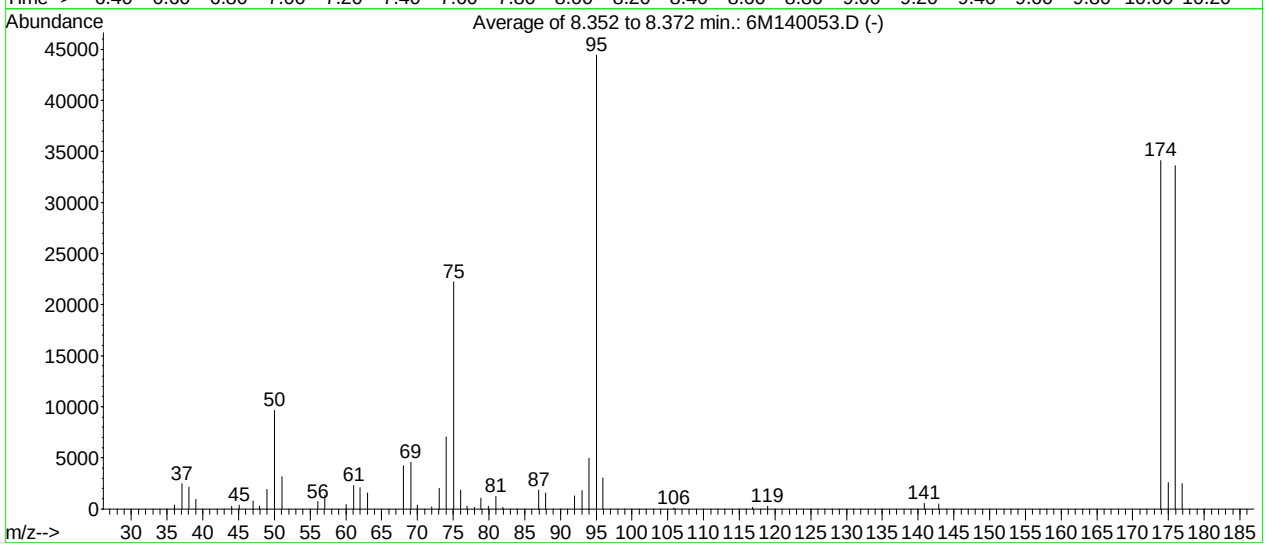

AutoFind: Scans 320, 321, 322; Background Corrected with Scan 315

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.7	9633	PASS
75	95	30	60	50.0	22220	PASS
95	95	100	100	100.0	44434	PASS
96	95	5	9	6.9	3044	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	76.8	34120	PASS
175	174	5	9	7.5	2571	PASS
176	174	95	101	98.6	33634	PASS
177	176	5	9	7.3	2461	PASS

6M140053.D 8260WT.M Tue Jun 14 15:01:54 2016

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140057.D Vial: 5
Acq On : 14 Jun 2016 15:48 Operator: TMB
Sample : WG572625-01 VBLK0614 BLANK STD 8260 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 08:15:16 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	624517	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.06	117	461734	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	241553	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	161558	24.9958 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.00%		
43) 1,2-Dichloroethane-d4	11.11	65	183617	25.7740 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.08%		
58) Toluene-d8	13.85	98	552988	24.9547 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.80%		
80) p-Bromofluorobenzene	17.84	95	226025	26.4981 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 106.00%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	723	Below Cal	# 48
36) Tetrahydrofuran	10.36	42	2636	1.3577 ug/L	# 69
94) 1,4-Dichlorobenzene	19.70	146	502	Below Cal	# 36

(#) = qualifier out of range (m) = manual integration
6M140057.D 8260WT.M Wed Jun 15 08:15:18 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140057.D Vial: 5
Acq On : 14 Jun 2016 15:48 Operator: TMB
Sample : WG572625-01 VBLK0614 BLANK STD 8260 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 8:15 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration

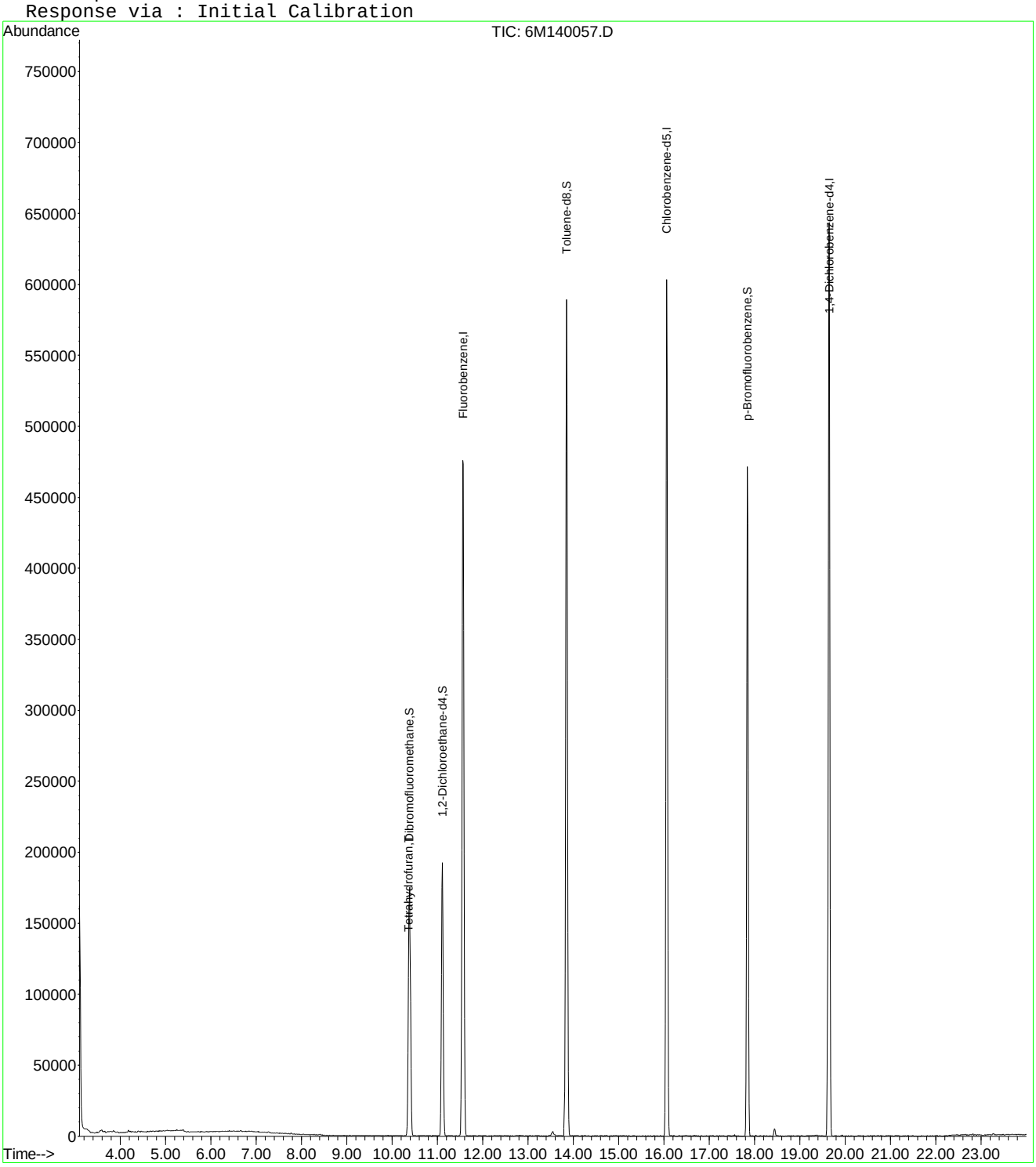

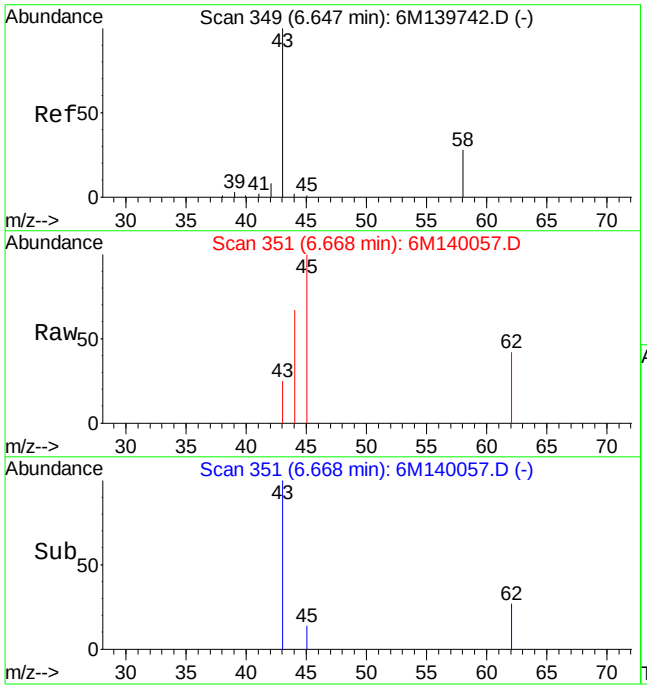

#13
Acetone
Concen: Below Cal
RT: 6.67 min Scan# 351
Delta R.T. 0.01 min
Lab File: 6M140057.D
Acq: 14 Jun 2016 15:48

Tgt Ion: 43 Resp: 723

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

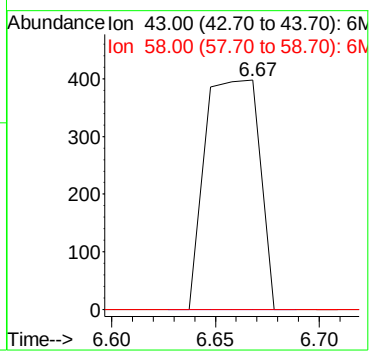

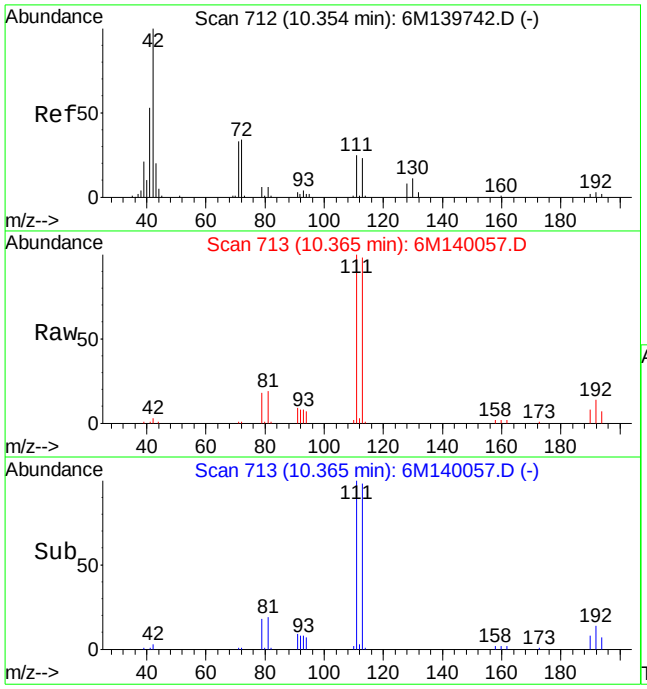

#36
Tetrahydrofuran
Concen: 1.36 ug/L
RT: 10.36 min Scan# 713
Delta R.T. 0.01 min
Lab File: 6M140057.D
Acq: 14 Jun 2016 15:48

Tgt Ion: 42 Resp: 2636

Ion	Ratio	Lower	Upper
42	100		
72	23.3	20.8	48.4
71	8.9	19.9	46.5#

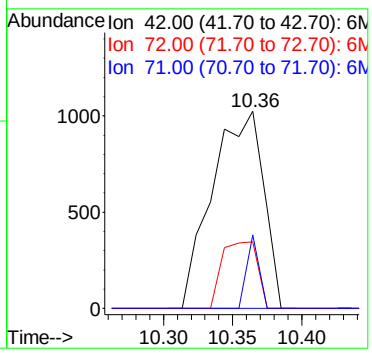

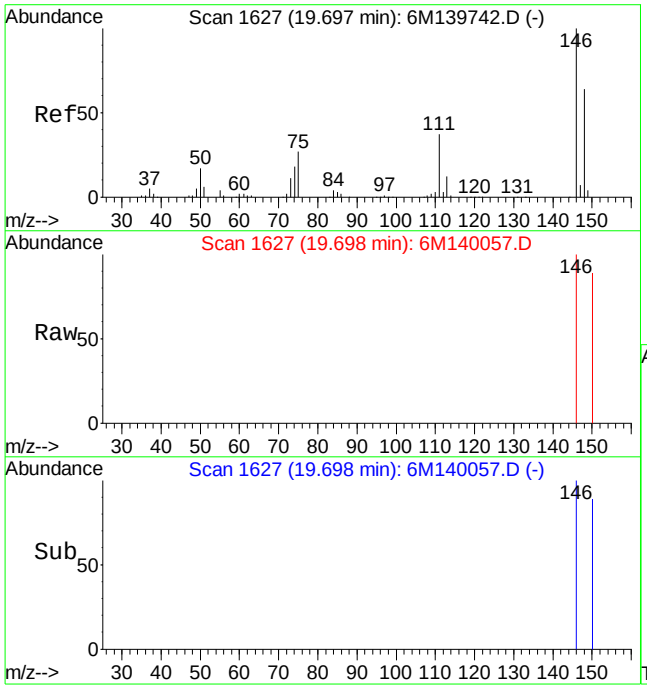

#94
1,4-Dichlorobenzene
Concen: Below Cal
RT: 19.70 min Scan# 1627
Delta R.T. 0.00 min
Lab File: 6M140057.D
Acq: 14 Jun 2016 15:48

Tgt Ion:146 Resp: 502

Ion	Ratio	Lower	Upper
146	100		
111	0.0	23.5	54.9#

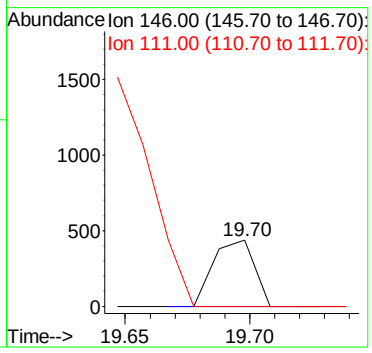

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140077.D Vial: 25
Acq On : 15 Jun 2016 2:31 Operator: TMB
Sample : WG572624-06 VBLK0614 BLANK STD 624 Inst : HPMS6
Misc : 2,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 08:17:04 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	558067	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.06	117	412531	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	19.65	152	219752	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.38	111	147262	25.4968 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.00%		
43) 1,2-Dichloroethane-d4	11.11	65	166978	26.2293 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 104.92%		
58) Toluene-d8	13.85	98	495254	25.0149 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.04%		
80) p-Bromofluorobenzene	17.84	95	203027	26.1632 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.64%		

Target Compounds					Qvalue
36) Tetrahydrofuran	10.35	42	2506	1.4444 ug/L #	41
60) Ethyl Methacrylate	13.86	69	951	0.1481 ug/L	64

(#) = qualifier out of range (m) = manual integration
6M140077.D 8260WT.M Wed Jun 15 08:17:07 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140077.D Vial: 25
Acq On : 15 Jun 2016 2:31 Operator: TMB
Sample : WG572624-06 VBLK0614 BLANK STD 624 Inst : HPMS6
Misc : 2,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 8:17 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration

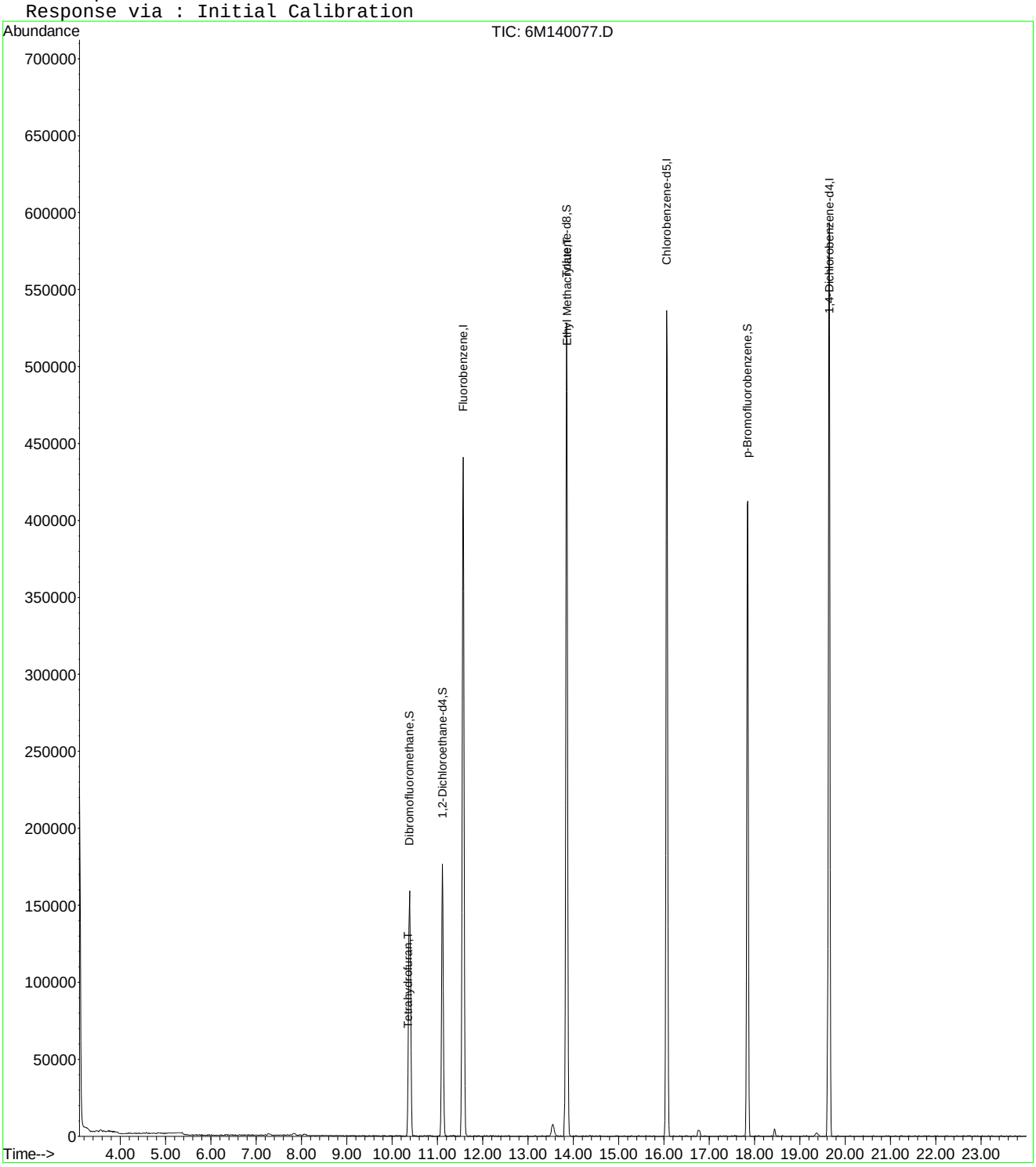

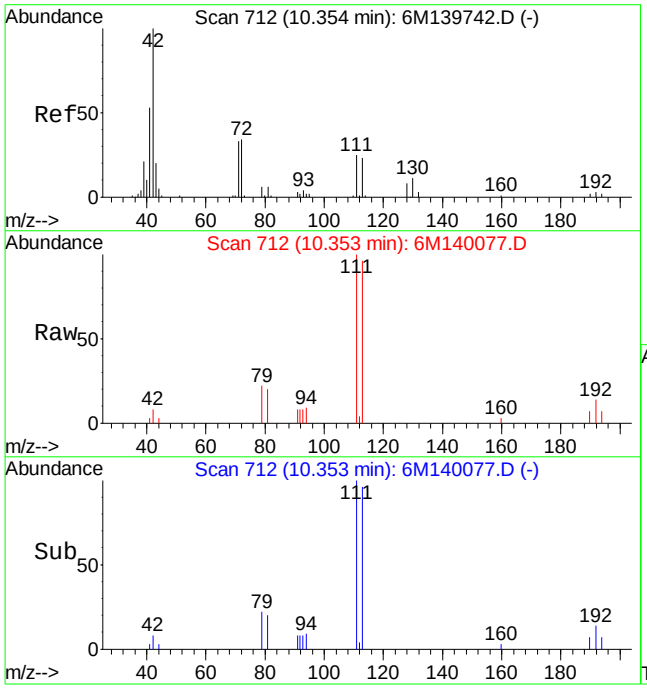

#36
Tetrahydrofuran
Concen: 1.44 ug/L
RT: 10.35 min Scan# 712
Delta R.T. -0.00 min
Lab File: 6M140077.D
Acq: 15 Jun 2016 2:31

Tgt Ion: 42 Resp: 2506

Ion	Ratio	Lower	Upper
42	100		
72	0.0	20.8	48.4#
71	0.0	19.9	46.5#

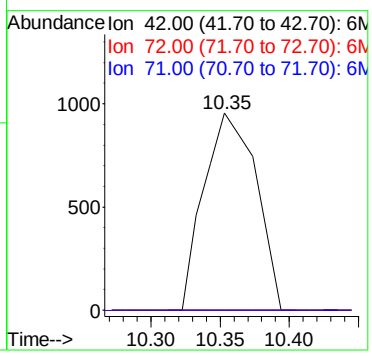

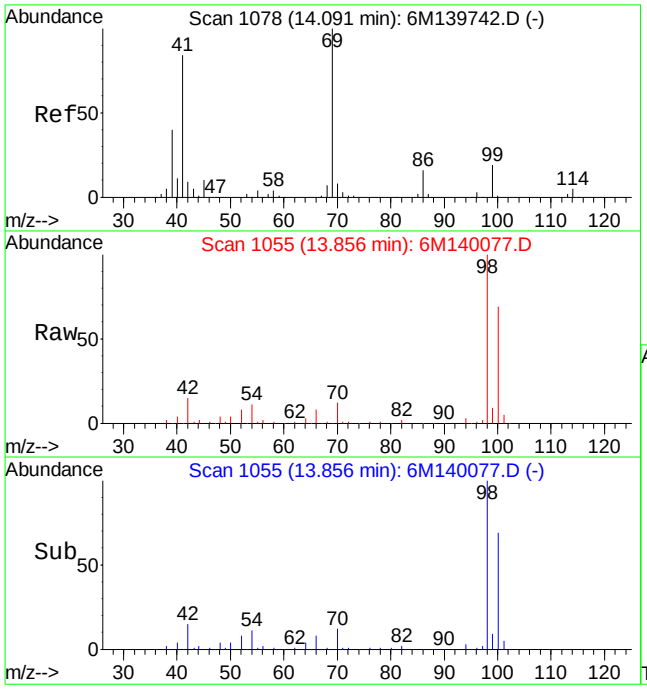

#60
Ethyl Methacrylate
Concen: 0.15 ug/L
RT: 13.86 min Scan# 1055
Delta R.T. -0.24 min
Lab File: 6M140077.D
Acq: 15 Jun 2016 2:31

Tgt Ion: 69 Resp: 951

Ion	Ratio	Lower	Upper
69	100		
41	118.9	51.4	120.0

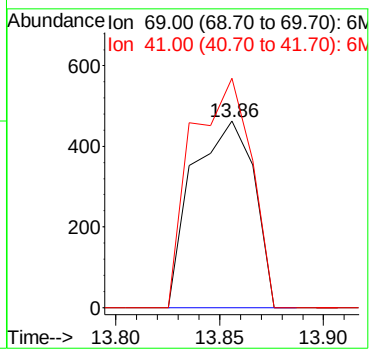

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140058.D Vial: 6
Acq On : 14 Jun 2016 16:21 Operator: TMB
Sample : WG572625-02 20ug/L LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 07:50:10 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.56	96	620315	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.06	117	461241	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	259174	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.39	111	161577	25.1680 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 100.68%		
43) 1,2-Dichloroethane-d4	11.11	65	181413	25.6372 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.56%		
58) Toluene-d8	13.85	98	551846	24.9297 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.72%		
80) p-Bromofluorobenzene	17.84	95	235081	25.6860 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.76%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	195659	19.9267 ug/L	98
3) Chloromethane	3.92	50	209116	17.4684 ug/L	99
4) Vinyl Chloride	4.16	62	158579	19.6522 ug/L	99
5) 1,3-Butadiene	4.20	54	21633	Below Cal	92
6) Bromomethane	5.06	94	69396	17.4585 ug/L	100
7) Chloroethane	5.23	64	96343	18.8892 ug/L	96
8) Trichlorofluoromethane	5.73	101	230092	21.2924 ug/L	99
9) Diethyl ether	6.29	59	608341	104.6875 ug/L	98
10) Isoprene	6.32	67	205606	22.3794 ug/L	99
11) Acrolein	6.55	56	96097	98.0156 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.54	101	128115	20.7533 ug/L	100
13) Acetone	6.66	43	41101	21.4090 ug/L	94
14) 1,1-Dichloroethene	6.87	61	225619	20.6374 ug/L	98
15) Tert-Butyl Alcohol	7.02	59	106418	198.3385 ug/L	99
16) Dimethyl Sulfide	7.16	62	194612	38.7882 ug/L	97
17) Iodomethane	7.43	142	115495	26.3795 ug/L	97
18) Methyl acetate	7.44	43	122998	22.9887 ug/L	99
19) Methylene Chloride	7.72	84	138729	20.5778 ug/L	95
20) Carbon Disulfide	7.76	76	413522	19.3329 ug/L	99
21) Acrylonitrile	7.92	53	51732	21.9386 ug/L	100
22) Methyl Tert Butyl Ether	7.95	73	370968	22.5520 ug/L	100
23) trans-1,2-Dichloroethene	8.21	96	134940	21.1753 ug/L	97
24) n-Hexane	8.28	57	198627	20.0171 ug/L	99
25) Diisopropyl ether	8.67	45	2905123	109.9918 ug/L	98
26) Vinyl Acetate	8.85	43	220654	19.6754 ug/L	98
27) 1,1-Dichloroethane	8.88	63	261917	20.5129 ug/L	99
28) Ethyl-Tert-Butyl ether	9.30	59	2166242	100.2167 ug/L	99
29) 2-Butanone	9.51	43	60859	21.7255 ug/L	97
30) Propionitrile	9.63	54	81970	106.0277 ug/L	99
31) 2,2-Dichloropropane	9.75	77	201521	21.6490 ug/L	97
32) cis-1,2-Dichloroethene	9.82	96	149442	21.5261 ug/L	96
33) Chloroform	10.06	83	241554	21.2416 ug/L	99
34) 1-Bromopropane	10.21	122	32959	28.7996 ug/L	99
35) Bromochloromethane	10.32	130	83515	21.1838 ug/L	98
36) Tetrahydrofuran	10.35	42	185496	96.1891 ug/L	96
38) 1,1,1-Trichloroethane	10.65	97	214515	21.1464 ug/L	99
39) Cyclohexane	10.68	56	264472	20.8000 ug/L	98
40) 1,1-Dichloropropene	10.88	75	180669	20.7808 ug/L	97
41) Tert-Amyl-Methyl ether	11.00	73	1748469	104.4757 ug/L	98
42) Carbon Tetrachloride	11.04	117	193223	21.3510 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140058.D 8260WT.M Wed Jun 15 07:50:19 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140058.D Vial: 6
Acq On : 14 Jun 2016 16:21 Operator: TMB
Sample : WG572625-02 20ug/L LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 07:50:10 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.24	62	192262	21.9991 ug/L	100
46)	Benzene	11.28	78	533846	20.9493 ug/L	99
47)	Trichloroethene	12.14	130	139763	21.4743 ug/L	98
48)	Methylcyclohexane	12.23	83	203703	20.6440 ug/L	98
49)	1,2-Dichloropropane	12.39	63	157641	22.3963 ug/L	98
50)	1,4-Dioxane	12.72	88	8082	161.1700 ug/L	93
51)	Bromodichloromethane	12.73	83	187043	21.6084 ug/L	98
52)	Dibromomethane	12.84	93	74961	20.6383 ug/L	99
53)	2-Chloroethyl Vinyl Ether	13.09	63	71534	22.2672 ug/L	100
54)	4-Methyl-2-Pentanone	13.12	58	44546	20.8351 ug/L	100
55)	cis-1,3-Dichloropropene	13.48	75	237052	24.1961 ug/L	99
56)	Dimethyl Disulfide	13.78	79	122976	21.7883 ug/L	99
59)	Toluene	13.96	91	555996	21.2279 ug/L	100
60)	Ethyl Methacrylate	14.09	69	161287	22.4717 ug/L	99
62)	trans-1,3-Dichloropropene	14.17	75	196865	22.0689 ug/L	98
63)	1,1,2-Trichloroethane	14.43	97	106462	21.3488 ug/L	99
64)	2-Hexanone	14.36	43	87754	20.7380 ug/L	98
65)	1,3-Dichloropropane	14.79	76	200202	22.8341 ug/L	99
66)	Tetrachloroethene	14.92	166	137039	19.9464 ug/L	99
67)	Dibromochloromethane	15.24	129	136589	21.4961 ug/L	100
68)	1,2-Dibromoethane	15.53	107	103624	21.4991 ug/L	99
69)	1-Chlorohexane	15.64	91	184736	21.7216 ug/L	96
70)	Chlorobenzene	16.12	112	374901	21.3920 ug/L	99
71)	1,1,1,2-Tetrachloroethane	16.16	131	135666	21.3429 ug/L	99
72)	Ethylbenzene	16.15	106	193891	20.8583 ug/L	97
73)	m-,p-Xylene	16.27	106	481295	43.5827 ug/L	98
74)	o-Xylene	16.93	106	242968	22.2637 ug/L	98
75)	Styrene	16.97	104	406288	22.4170 ug/L	97
76)	Bromoform	17.55	173	80995	20.0911 ug/L	100
77)	Isopropylbenzene	17.43	105	613580	22.3988 ug/L	99
79)	1,1,2,2-Tetrachloroethane	17.70	83	130872	20.9441 ug/L	99
81)	1,2,3-Trichloropropane	17.92	110	39462	21.8133 ug/L	88
82)	trans-1,4-Dichloro-2-Buten	17.98	53	39617	18.1720 ug/L	94
83)	n-Propylbenzene	18.03	91	764228	22.7517 ug/L	99
84)	Bromobenzene	18.18	156	160638	20.3800 ug/L	97
85)	1,3,5-Trimethylbenzene	18.26	105	528035	22.2176 ug/L	98
86)	2-Chlorotoluene	18.35	91	498288	21.6571 ug/L	99
87)	4-Chlorotoluene	18.41	91	470596	22.0289 ug/L	98
88)	a-Methylstyrene	18.74	118	301092	22.6610 ug/L	98
89)	tert-Butylbenzene	18.81	134	113978	21.7528 ug/L	79
90)	1,2,4-Trimethylbenzene	18.87	105	535782	21.5351 ug/L	99
91)	sec-Butylbenzene	19.13	105	642809	21.9799 ug/L	99
92)	p-Isopropyltoluene	19.32	119	546266	21.9189 ug/L	99
93)	1,3-Dichlorobenzene	19.53	146	322822	21.0034 ug/L	99
94)	1,4-Dichlorobenzene	19.70	146	326534	22.3163 ug/L	98
95)	n-Butylbenzene	19.94	91	515042	21.8338 ug/L	99
96)	1,2-Dichlorobenzene	20.28	146	306564	21.4036 ug/L	97
97)	1,2-Dibromo-3-Chloropropan	21.46	75	25828	23.0175 ug/L	94
98)	1,2,4-Trichlorobenzene	22.82	180	216957	21.9085 ug/L	99
99)	Hexachlorobutadiene	23.02	225	91029	22.1493 ug/L	99
100)	Naphthalene	23.28	128	401329	20.5015 ug/L	99
101)	1,2,3-Trichlorobenzene	23.69	180	198640	21.1962 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140058.D 8260WT.M Wed Jun 15 07:50:24 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061416\6M140058.D Vial: 6
Acq On : 14 Jun 2016 16:21 Operator: TMB
Sample : WG572625-02 20ug/L LCS STD 8260 Inst : HPMS6
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 7:50 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration

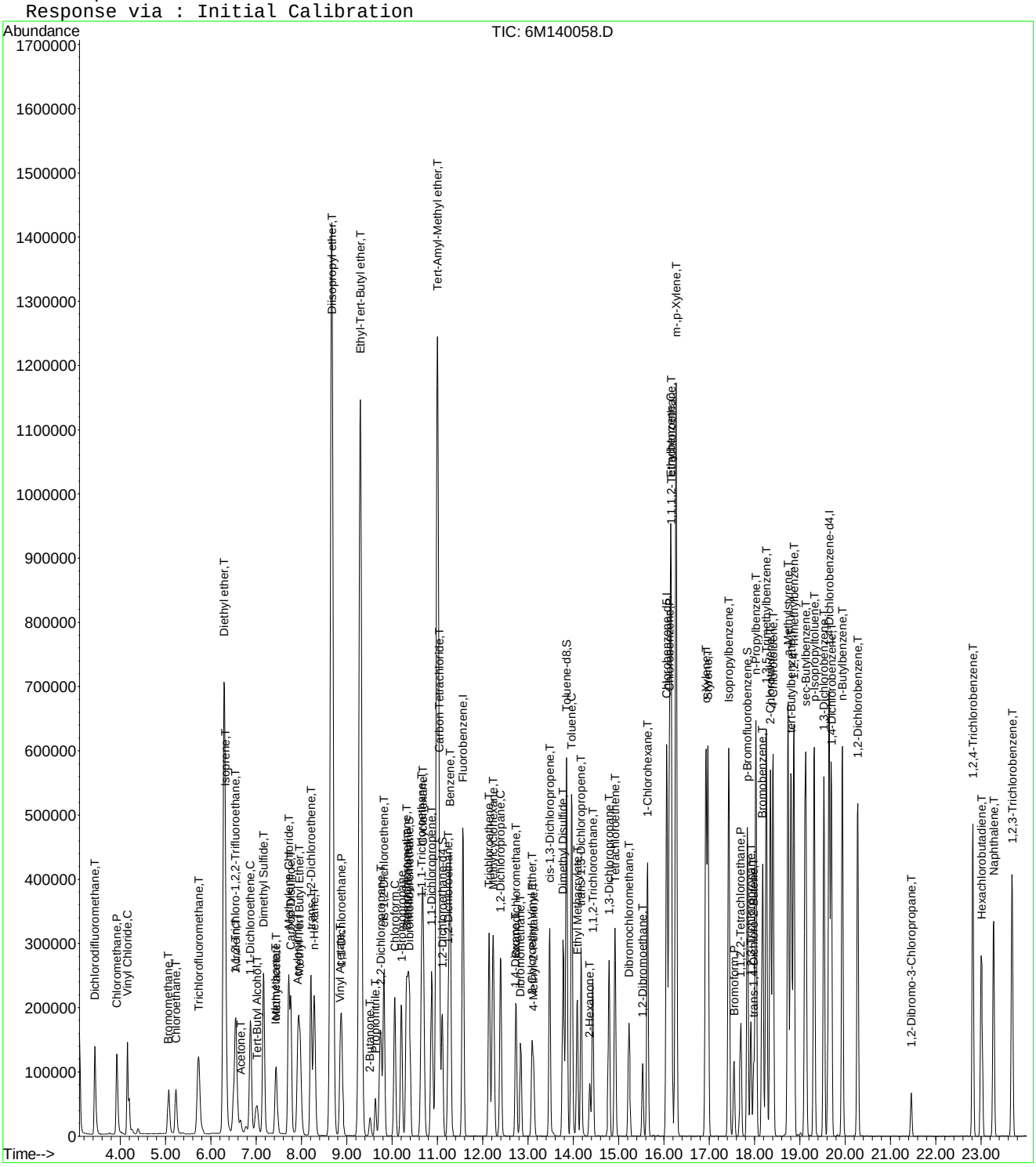

6M140058.D 8260WT.M Wed Jun 15 07:50:30 2016 Page 3

2.2 Semivolatiles Data

2.2.1 Semivolatiles GC/MS Data (Dioxane)

2.2.1.1 Summary Data

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060497-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW06-060816	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 11:08
Collect Date:	06/08/2016 13:30	**Dilution:**	1	**File ID:**	15M18403
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	62.4	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060497-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW06MS-060816	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 11:31
Collect Date:	06/08/2016 13:30	**Dilution:**	1	**File ID:**	15M18404
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	2.46		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	49.8	20	129	

Certificate of Analysis

Sample #:	L16060497-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW06MSD-060816	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 11:54
Collect Date:	06/08/2016 13:30	**Dilution:**	1	**File ID:**	15M18405
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	2.35		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	47.3	20	129	

2.2.1.2 QC Summary Data

Example 8270 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	1261197
Cis = Concentration of the specific internal standard (ug/mL)	40
Ais = Area of the characteristic ion of the specific internal standard	608044
Cx = Concentration of the compound in the standard being measured (ug/mL)	50
RF = Calculated Response Factor	**1.65935**

2.0 Calculating the concentration (C) of a compound in water using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Vi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Vi = Initial volume of sample extracted from prep log (mL)	1021
Cx = Concentration of the compound in the sample being measured (ug/mL)	0.016947
Cx = Concentration of the compound in the sample being measured (ug/L)	**16.947**

3.0 Calculating the concentration (C) of a compound in soil using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Wi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Wi = Initial weight of sample extracted (g) from prep log	30
Cx = Concentration of the compound in the sample being measured (ug/g)	0.576763
Cx = Concentration of the compound in the sample being measured (ug/kg)	**576.7627**

Dry weight correction:

Percent solids (PCT_S)	50
Cd = (Cx) (100)/PCT_S	**1153.525** ug/kg

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve plot

b = intercept from curve plot

Step 2: Calculate y from Quantitation Report

y = 16790/784838 = 0.02139

Step 3: Solve for x

x = (y - b)/m = [(0.02139 -(- 0.0435)]/ 0.0783 = 0.829

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.829) = 20.72 ug/L

Example Spreadsheet Calculation:

Slope from curve, m:	0.0783	
Intercept from curve, b:	-0.0435	
Area of analyte, Ax:	16790	
Area of Internal Standard , Ais:	784484	
Concentration of IS, Cis	25.00	ug/L
Response Ratio (y) :	0.021403	
Amount Ratio:	0.828897	
Concentration (Cx):	20.72241	ug/L

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**0.0259**	
Value of B from plot:	**0.0596**	
Value of C from plot:	**-0.0165**	
Area of analyte from quantitation report:	**203233**	
Area of IS from quantiation report:	**1425653**	
Response ratio, y:	**0.142554**	
C - y:	**-0.15905**	
Root 1 - Computed amount ratio , X1:	**-3.88278**	
Root 2 - Computed amount ratio , X2:	**1.581623**	use this solution
Concentration of IS, Cis:	**40.00**	
Concentration of analyte, Cx:	**63.26**	ug/L

Microbac Laboratories Inc.
Continuous Sample Extract Log

Workgroup: WG572341
Analyst: CPD
Spike Analyst: CPD
Method: 3520C
Run Date: 06/13/2016 16:16
SOP: EXB01 Revison 20
Spike Witness: AED
Surr Solution: STD74051

TIME ON: 16:55 OFF: 12:40 ON: 15:20 OFF: 11:00

CH2CL2 Lot #: COA18982
sodium sulfate Lot #: COA18814
1:1 H2SO4 Lot #: RGT36755

	SAMPLE #	Type	Reference	Prod	pH	Init Amnt	Surr Amnt	Spike Amnt	Spike Sol	Final Vol	Color
1	L16060497-01	RS01		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
2	L16060497-02	MS01	L16060497-01	827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD66388	1 mL	Transparent
3	L16060497-03	SD01	L16060497-01	827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD66388	1 mL	Transparent
4	L16060504-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
5	L16060504-02	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
6	L16060504-03	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
7	L16060504-04	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
8	L16060615-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
9	L16060615-02	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
10	L16060615-03	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
11	L16060615-04	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
12	L16060616-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
13	L16060616-02	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
14	L16060616-03	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
15	L16060637-03	SAMP		827-DIOX	<2	1000 mL	.05 mL			1 mL	Transparent
16	WG572341-01	BLANK		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
17	WG572341-02	LCS		827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD66388	1 mL	Transparent
18	WG572341-03	REF	L16060497-01	827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
19	WG572341-04	MS	L16060497-01	827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD66388	1 mL	Transparent
20	WG572341-05	MSD	L16060497-01	827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD66388	1 mL	Transparent

Analyst: Chelsie Davis

Reviewer: Justin Hesson

EXTRACT - Modified 01/23/2009
PDF ID: 4809357
Report generated: 06/16/2016 08:25

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 061016
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG571947

Internal STD: STD75471 Surrogate STD: NA Calibration STD
CCV STD: STD74784 LCS STD: STD74214 MS/MSD STD:

Comments: L16051582-01, and L16060024-01,03,05 were already sent for re-extract due to QC contamination. L16060024s are being re-extracted as 827-SPE-DIOX only.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18332	BAKEOUT-IS CHECK	1	1		06/10/16 08:27
2	15M18333	BAKEOUT-IS CHECK	1	1		06/10/16 08:53
3	15M18334	WG571981-01 5PPM DFTPP STD	1	1	STD75016	06/10/16 09:13
4	15M18335	BAKEOUT-IS CHECK	1	1		06/10/16 09:31
5	15M18336	BAKEOUT-IS CHECK	1	1		06/10/16 09:53
6	15M18337	WG572230-01 5PPM DFTPP STD	1	1	STD75016	06/10/16 10:18
7	15M18338	WG572230-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 10:36
8	15M18339	WG572230-03 10 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 11:00
9	15M18340	WG572230-04 7.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 11:22
10	15M18341	WG572230-05 2.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 11:45
11	15M18342	WG572230-06 1 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 12:08
12	15M18343	WG572230-07 0.4 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 12:30
13	15M18344	WG572230-08 5PPM 1,4-DIOXANE ALT SRC	1	1	STD74214	06/10/16 12:52
14	15M18345	WG571410-01 BLANK 6/6	1	1		06/10/16 13:15
15	15M18346	WG571410-02 LCS 6/6	1	1		06/10/16 13:38
16	15M18347	WG571410-03 LCSDUP 6/6	1	1		06/10/16 14:01
17	15M18348	WG571404-01 BLANK 6/2	1	1		06/10/16 14:24
18	15M18349	WG571404-02 LCS 6/2	1	1		06/10/16 14:47
19	15M18350	WG571404-03 LCSDUP 6/2	1	1		06/10/16 15:09
20	15M18351	L16060067-01 827-DIOX	1	1		06/10/16 15:32
21	15M18352	L16051582-01 5X 827-DIOX	1	5		06/10/16 15:55
22	15M18353	L16060024-05 20X 827-DIOX	1	20		06/10/16 16:18
23	15M18354	L16060024-03 20X 827-DIOX	1	20		06/10/16 16:40
24	15M18355	L16060024-01 20,000X 827-DIOX	1	20000		06/10/16 17:03
25	15M18356	L16060067-01 2X 827-DIOX	1	2		06/10/16 17:26
26	15M18357	L16060024-03 100X 827-DIOX	1	100		06/10/16 17:49

Comments

Seq.	Rerun	Dil.	Reason	Analytes
3				
	DFTPP check after installing new source and retuning.			
17				
	WG571404-01 BLANK 6/2 dioxane hit above the RL.			

Page: 1 Approved: 13-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 061016

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG571947

Internal STD: STD75471 Surrogate STD: NA

CCV STD: STD74784 LCS STD: STD74214

Comments

Seq.	Rerun	Dil.	Reason	Analytes
18				
	WG571404-02 LCS 6/2 fails high.			
19				
	WG571404-03 LCSDUP 6/2 fails high.			
20	X	2	Over Calibration Range	
	L16060067-01			
23	X	100	Over Calibration Range	
	L16060024-03 20X DNR			

Page: 2 Approved: 13-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 061616
Analyst1: SCB Analyst2: MES
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG572971

Internal STD: STD75471, 76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18399	WG572958-01 5PPM DFTPP STD	1	1	STD75016	06/16/16 09:38
2	15M18400	WG572958-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/16/16 10:00
3	15M18401	WG572341-01 BLANK 6/13	1	1		06/16/16 10:23
4	15M18402	WG572341-02 LCS 6/13	1	1		06/16/16 10:46
5	15M18403	L16060497-01 REF 827-DIOX	1	1		06/16/16 11:08
6	15M18404	L16060497-02 MS 827-DIOX	1	1		06/16/16 11:31
7	15M18405	L16060497-03 MSD 827-DIOX	1	1		06/16/16 11:54
8	15M18406	L16060504-01 827-DIOX	1	1		06/16/16 12:17
9	15M18407	L16060504-02 827-DIOX	1	1		06/16/16 12:39
10	15M18408	L16060504-03 827-DIOX	1	1		06/16/16 13:02
11	15M18409	L16060504-04 827-DIOX	1	1		06/16/16 13:25
12	15M18410	L16060615-01 827-DIOX	1	1		06/16/16 13:48
13	15M18411	L16060615-02 827-DIOX	1	1		06/16/16 14:11
14	15M18412	L16060615-03 827-DIOX	1	1		06/16/16 14:33
15	15M18413	L16060615-04 827-DIOX	1	1		06/16/16 14:56
16	15M18414	L16060616-01 827-DIOX	1	1		06/16/16 15:19
17	15M18415	L16060616-02 827-DIOX	1	1		06/16/16 15:42
18	15M18416	L16060616-03 827-DIOX	1	1		06/16/16 16:04
19	15M18417	L16060637-03 827-DIOX	1	1		06/16/16 16:27

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 20-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 10-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75640
Analytical Workgroups: L16051582, L16060024, L16060067

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 12-JUN-2016

Secondary Reviewer: 13-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-13-2016 08:34:44

Microbac Laboratories Inc.

Data Checklist

Date: 16-JUN-2016
Analyst: SCB
Analyst: MES
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75783
Analytical Workgroups: L16060497, L16060504, L16060615, L16060616, L16060637

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	SCB
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 20-JUN-2016 Sarah Bogolin

Secondary Reviewer: 20-JUN-2016 Eric C. Zum

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-20-2016 16:55:27

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8270D

AAB#: WG572971

Login Number: L16060497

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW06-060816	01	06/08/16					06/13/2016	5.1	7		06/16/16	2.8	40	
18CPTMW06MS-060816	02	06/08/16					06/13/2016	5.1	7		06/16/16	2.8	40	
18CPTMW06MSD-060816	03	06/08/16					06/13/2016	5.1	7		06/16/16	2.8	40	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4814442
Report generated 06/21/2016 08:50

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060497
Instrument Id: HPMS15
Workgroup (AAB#): WG572971

Method: 827-DIOXANE
CAL ID: HPMS15-10-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1
L16060497-01	1.00	01	62.4
L16060497-02	1.00	01	49.8
L16060497-03	1.00	01	47.3
WG572341-01	1.00	01	29.4
WG572341-02	1.00	01	35.7

Surrogates	Surrogate Limits		
1 - 1,4-Dioxane-d8	20	-	129

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4814452
Report generated: 06/21/2016 08:50

METHOD BLANK SUMMARY

Login Number: L16060497
Blank File ID: 15M18401
Prep Date: 06/13/16 16:16
Analyzed Date: 06/16/16 10:23
Analyst: MES

Work Group: WG572971
Blank Sample ID: WG572341-01
Instrument ID: HPMS15
Method: 8270D

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572341-02	15M18402	06/16/16 10:46	01
18CPTMW06-060816	L16060497-01	15M18403	06/16/16 11:08	01
18CPTMW06MS-060816	L16060497-02	15M18404	06/16/16 11:31	01
18CPTMW06MSD-060816	L16060497-03	15M18405	06/16/16 11:54	01

Report Name: BLANK_SUMMARY
PDF File ID: 4814443
Report generated 06/21/2016 08:50

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060497 Prep Date: 06/13/16 16:16 Sample ID: WG572341-01
Instrument ID: HPMS15 Run Date: 06/16/16 10:23 Prep Method: 3520C
File ID: 15M18401 Analyst: MES Method: 8270D
Workgroup (AAB#): WG572971 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS15-10-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
1,4-Dioxane	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	29.4	20 - 129	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4814444
21-JUN-2016 08:50

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060497 Run Date: 06/16/2016 Sample ID: WG572341-02
Instrument ID: HPMS15 Run Time: 10:46 Prep Method: 3520C
File ID: 15M18402 Analyst: MES Method: 8270D
Workgroup (AAB#): WG572971 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD66388 Cal ID: HPMS15-10-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
1,4-Dioxane	5.00	1.67	33.3	30 - 104	

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	35.7	20 - 129	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4814445
Report generated: 06/21/2016 08:50

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16060497 Cal ID: HPMS15- 10-JUN-16 Worknum: WG572971
Instrument ID: HPMS15 Contract #: Prep Method: 3520C
Parent ID: L16060497-01 File ID: 15M18403 Dil: 1 Method: 8270C
Sample ID: L16060497-02 MS File ID: 15M18404 Dil: 1 Matrix: Water
Sample ID: L16060497-03 MSD File ID: 15M18405 Dil: 1 Units: ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
1,4-Dioxane	U	5.00	2.46	49.1	5.00	2.35	47.1	4.25	30 - 104	30	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4814446
Report generated 06/21/2016 08:50

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16060497
Instrument: HPMS15
Analyst: MES
Workgroup: WG572230

Tune ID: WG572230-01
Run Date: 06/10/2016
Run Time: 10:18
File ID: 15M18337
Cal ID: HPMS15 - 10-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	39.5	52157	PASS
68.0	69.0	0	2.00	1.91	1026	PASS
69.0	198	0	100	40.8	53844	PASS
70.0	69.0	0	2.00	0.223	120	PASS
127	198	40.0	60.0	51.4	67853	PASS
197	198	0	1.00	0.383	505	PASS
198	198	100	100	100	131981	PASS
199	198	5.00	9.00	6.72	8869	PASS
275	198	10.0	30.0	26.4	34853	PASS
365	198	1.00	100	3.17	4186	PASS
441	443	0.0100	100	73.9	15632	PASS
442	198	40.0	100	83.4	110112	PASS
443	442	17.0	23.0	19.2	21163	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG572230-02	STD-CCV	01	06/10/2016 10:36	
WG572230-03	STD	01	06/10/2016 11:00	
WG572230-04	STD	01	06/10/2016 11:22	
WG572230-05	STD	01	06/10/2016 11:45	
WG572230-06	STD	01	06/10/2016 12:08	
WG572230-07	STD	01	06/10/2016 12:30	
WG572230-08	SSCV	01	06/10/2016 12:52	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4814449
Report generated 06/21/2016 08:50

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16060497
Instrument: HPMS15
Analyst: MES
Workgroup: WG572958

Tune ID: WG572958-01
Run Date: 06/16/2016
Run Time: 09:38
File ID: 15M18399
Cal ID: HPMS15 - 10-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	39.7	42335	PASS
68.0	69.0	0	2.00	1.65	714	PASS
69.0	198	0	100	40.7	43391	PASS
70.0	69.0	0	2.00	0.643	279	PASS
127	198	40.0	60.0	52.1	55592	PASS
197	198	0	1.00	0.0637	68	PASS
198	198	100	100	100	106736	PASS
199	198	5.00	9.00	6.72	7172	PASS
275	198	10.0	30.0	25.9	27632	PASS
365	198	1.00	100	3.04	3241	PASS
441	443	0.0100	100	76.2	12912	PASS
442	198	40.0	100	81.0	86427	PASS
443	442	17.0	23.0	19.6	16937	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG572958-02	CCV	01	06/16/2016 10:00	
WG572341-01	BLANK	01	06/16/2016 10:23	
WG572341-02	LCS	01	06/16/2016 10:46	
L16060497-01	18CPTMW06-060816	01	06/16/2016 11:08	
L16060497-02	18CPTMW06MS-060816	01	06/16/2016 11:31	
L16060497-03	18CPTMW06MSD-060816	01	06/16/2016 11:54	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4814449
Report generated 06/21/2016 08:50

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060497
Analytical Method: 8270D
ICAL Workgroup: WG572230

Instrument ID: HPMS15
Initial Calibration Date: 10-JUN-16 12:30
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
1,4-Dioxane		0.3253	2.74		

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4814447
Report generated 06/21/2016 08:50

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060497

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 10-JUN-16 12:30

Column ID: F

Analyte	WG572230-02			WG572230-03			WG572230-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	5.00	107215.000	0.3234	10.0	192761.000	0.3420	7.50	146003.000	0.3236

INT_CAL - Modified 03/06/2008
PDF File ID: 4814447
Report generated 06/21/2016 08:50

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060497

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 10-JUN-16 12:30

Column ID: F

Analyte	WG572230-05			WG572230-06			WG572230-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	2.50	36488.0000	0.3190	1.00	18621.0000	0.3169	0.400	6733.00000	0.3266

INT_CAL - Modified 03/06/2008
PDF File ID: 4814447
Report generated 06/21/2016 08:50

Calibration Table Report
Method: DIOXANE_D8.M
Title: OVD MSS01 SIM 1,4-dioxane ICAL 061016
Last Calibration: Fri Jun 10 12:46:00 2016
Curve:WG572230
Calibration Files

Compound	10 15M18339.D	7.5 15M18340.D	5 15M18338.D	2.5 15M18341.D	1 15M18342.D	0.4 15M18343.D	Avg	%RSD	Linear
1,4-Dichlorobenzene-d4	ISTD								
1,4-Dioxane	0.342	0.324	0.324	0.319	0.317	0.327	0.325	2.735	
1,4-Dioxane-d8	0.440	0.415	0.417	0.411	0.409		0.419	2.988	
Nitrobenzene-d5	1.115	1.034	0.970	0.852	0.755	0.697	0.904	18.064	0.994
2-Fluorobiphenyl	2.685	2.595	2.549	2.638	2.570	2.639	2.613	1.934	
p-Terphenyl-d14	2.815	2.671	2.579	2.506	2.382	2.421	2.562	6.338	

Sun Jun 12 19:13:55 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060497 Run Date: 06/10/2016 Sample ID: WG572230-08
Instrument ID: HPMS15 Run Time: 12:52 Method: 8270D
File ID: 15M18344 Analyst: MES QC Key: DOD4
ICal Workgroup: WG572230 Cal ID: HPMS15 - 10-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
1,4-Dioxane		5000	5110	ug/L	0.333	2.30	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4814448
Report generated 06/21/2016 08:50

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060497
Run Date: 06/16/2016
Sample ID: WG572958-02
Instrument ID: HPMS15
Run Time: 10:00
Method: 8270D
File ID: 15M18400
Analyst: MES
QC Key: DOD4
Workgroup (AAB#): WG572971
Cal ID: HPMS15 - 10-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,4-Dioxane		5000	5080	ug/L	0.331	1.65	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4814450
Report generated 06/21/2016 08:50

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060497
Instrument ID: HPMS15
Workgroup (AAB#): WG572971

ICAL CCV Number: WG572230-02
CAL ID: HPMS15-10-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG572230-02	NA	NA	66625
Upper Limit	NA	NA	133250
Lower Limit	NA	NA	33313
L16060497-01	1.00	01	54062
L16060497-02	1.00	01	43274
L16060497-03	1.00	01	51528
WG572341-01	1.00	01	57712
WG572341-02	1.00	01	54087

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4814451
Report generated 06/21/2016 08:50

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060497
Instrument ID: HPMS15
Workgroup (AAB#): WG572971

ICAL CCV Number: WG572230-02
CAL ID: HPMS15-10-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG572230-02	NA	NA	6.94
Upper Limit	NA	NA	7.44
Lower Limit	NA	NA	6.44
L16060497-01	1.00	01	6.951
L16060497-02	1.00	01	6.951
L16060497-03	1.00	01	6.951
WG572341-01	1.00	01	6.948
WG572341-02	1.00	01	6.951

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4814453
Report generated: 06/21/2016 08:50

2.2.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18403.D
Acq On : 16 Jun 2016 11:08
Operator : MES
Sample : L16060497-01 REF 827-DIOX
Misc : 1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 16 12:53:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.951	152	54062	1.0000	ug/mL	# 0.01
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.876	96	70571	3.1188	ug/L	0.01
Spiked Amount 5.000			Recovery	=	62.40%	
4) Nitrobenzene-d5	7.447	82	9009	0.3733	ug/L	0.01
Spiked Amount 5.000			Recovery	=	7.40%	
5) 2-Fluorobiphenyl	8.937	172	3874	0.0274	ug/L	0.01
Spiked Amount 5.000			Recovery	=	0.60%	
6) p-Terphenyl-d14	12.240	244	4065	0.0293	ug/L	0.06
Spiked Amount 5.000			Recovery	=	0.60%	

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18403.D
Acq On : 16 Jun 2016 11:08
Operator : MES
Sample : L16060497-01 REF 827-DIOX
Misc : 1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 16 12:53:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

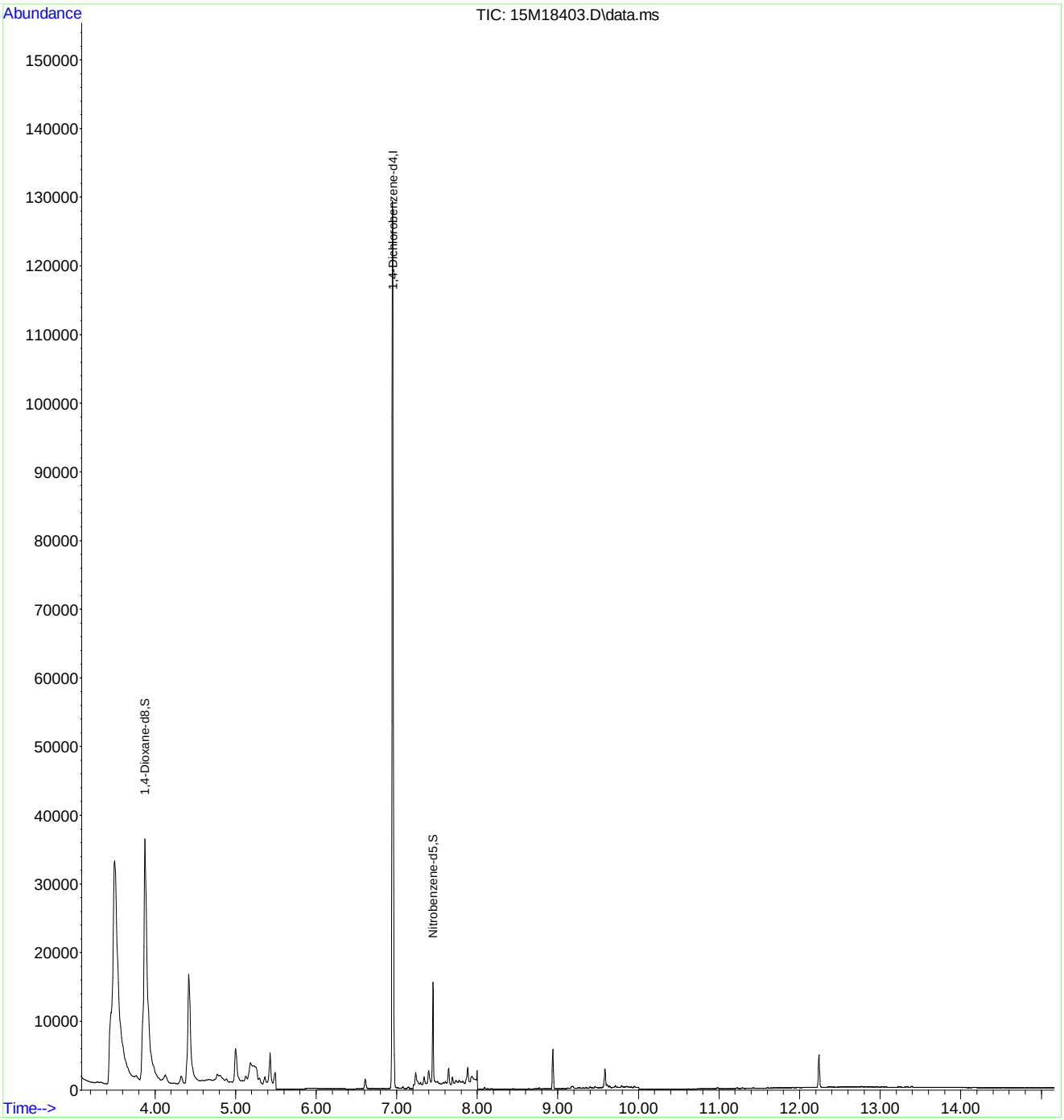

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18404.D
Acq On : 16 Jun 2016 11:31
Operator : MES
Sample : L16060497-02 MS 827-DIOX
Misc : 1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 16 12:54:08 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.951	152	43274	1.0000	ug/mL	# 0.01
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.869	96	45064	2.4881	ug/L	0.00
Spiked Amount 5.000			Recovery = 49.80%			
4) Nitrobenzene-d5	7.452	82	3805	0.2999	ug/L	0.02
Spiked Amount 5.000			Recovery = 6.00%			
5) 2-Fluorobiphenyl	8.937	172	1909	0.0169	ug/L	0.01
Spiked Amount 5.000			Recovery = 0.40%			
6) p-Terphenyl-d14	12.225	244	2831	0.0255	ug/L	0.04
Spiked Amount 5.000			Recovery = 0.60%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.904	58	34569	2.4553	ug/L	73

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18404.D
Acq On : 16 Jun 2016 11:31
Operator : MES
Sample : L16060497-02 MS 827-DIOX
Misc : 1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 16 12:54:08 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

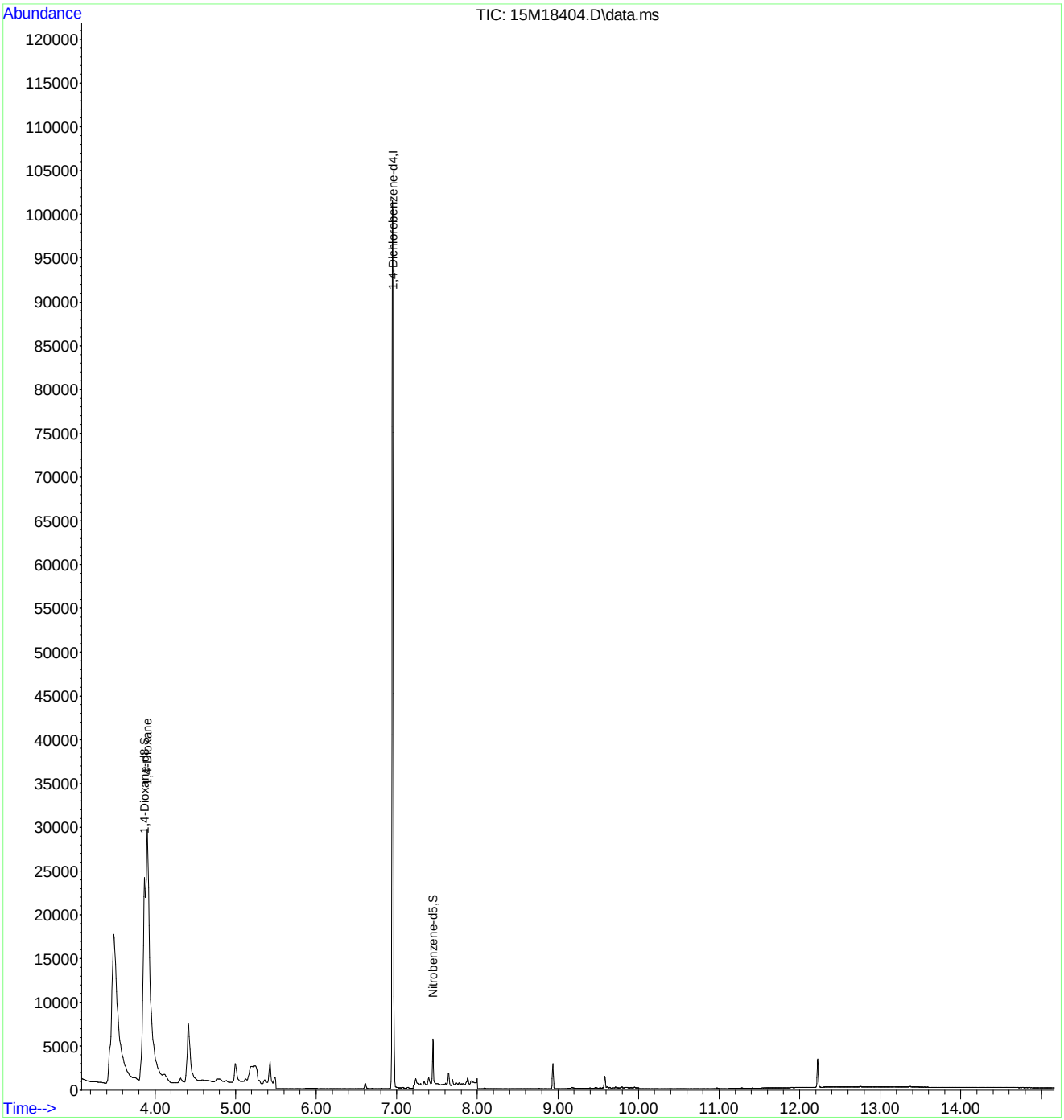

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18405.D
Acq On : 16 Jun 2016 11:54
Operator : MES
Sample : L16060497-03 MSD 827-DIOX
Misc : 1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 16 12:54:11 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.951	152	51528	1.0000	ug/mL	# 0.01
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.876	96	50953	2.3626	ug/L	0.01
Spiked Amount 5.000			Recovery	=	47.20%	
4) Nitrobenzene-d5	7.452	82	3755	0.2859	ug/L	0.02
Spiked Amount 5.000			Recovery	=	5.80%	
5) 2-Fluorobiphenyl	8.937	172	443	0.0033	ug/L	0.01
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.243	244	1635	0.0124	ug/L	0.06
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.911	58	39448	2.3531	ug/L	74

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18405.D
Acq On : 16 Jun 2016 11:54
Operator : MES
Sample : L16060497-03 MSD 827-DIOX
Misc : 1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 16 12:54:11 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

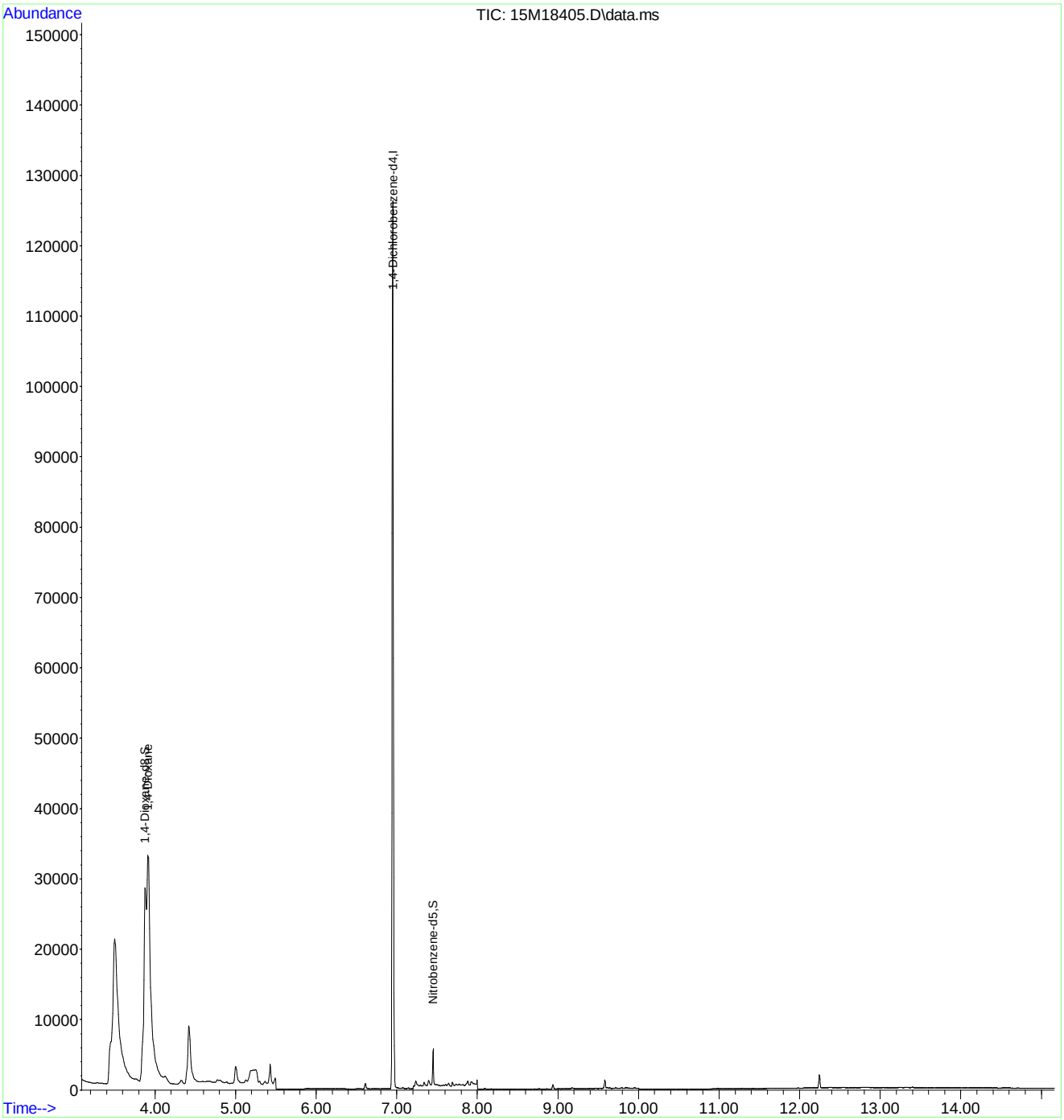

2.2.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18338.D
Acq On : 10 Jun 2016 10:36
Operator : MES
Sample : WG572230-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 10 18:15:30 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.940	152	66625	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.862	96	138302	4.9596 ug/L	0.00
Spiked Amount 5.000			Recovery	= 99.20%	
4) Nitrobenzene-d5	7.436	82	321639	4.7189 ug/L	0.00
Spiked Amount 5.000			Recovery	= 94.40%	
5) 2-Fluorobiphenyl	8.926	172	845013	4.8542 ug/L	0.00
Spiked Amount 5.000			Recovery	= 97.00%	
6) p-Terphenyl-d14	12.181	244	855352	5.0103 ug/L	0.00
Spiked Amount 5.000			Recovery	= 100.20%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.897	58	107215	4.9462 ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18338.D
Acq On : 10 Jun 2016 10:36
Operator : MES
Sample : WG572230-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 10 18:15:30 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

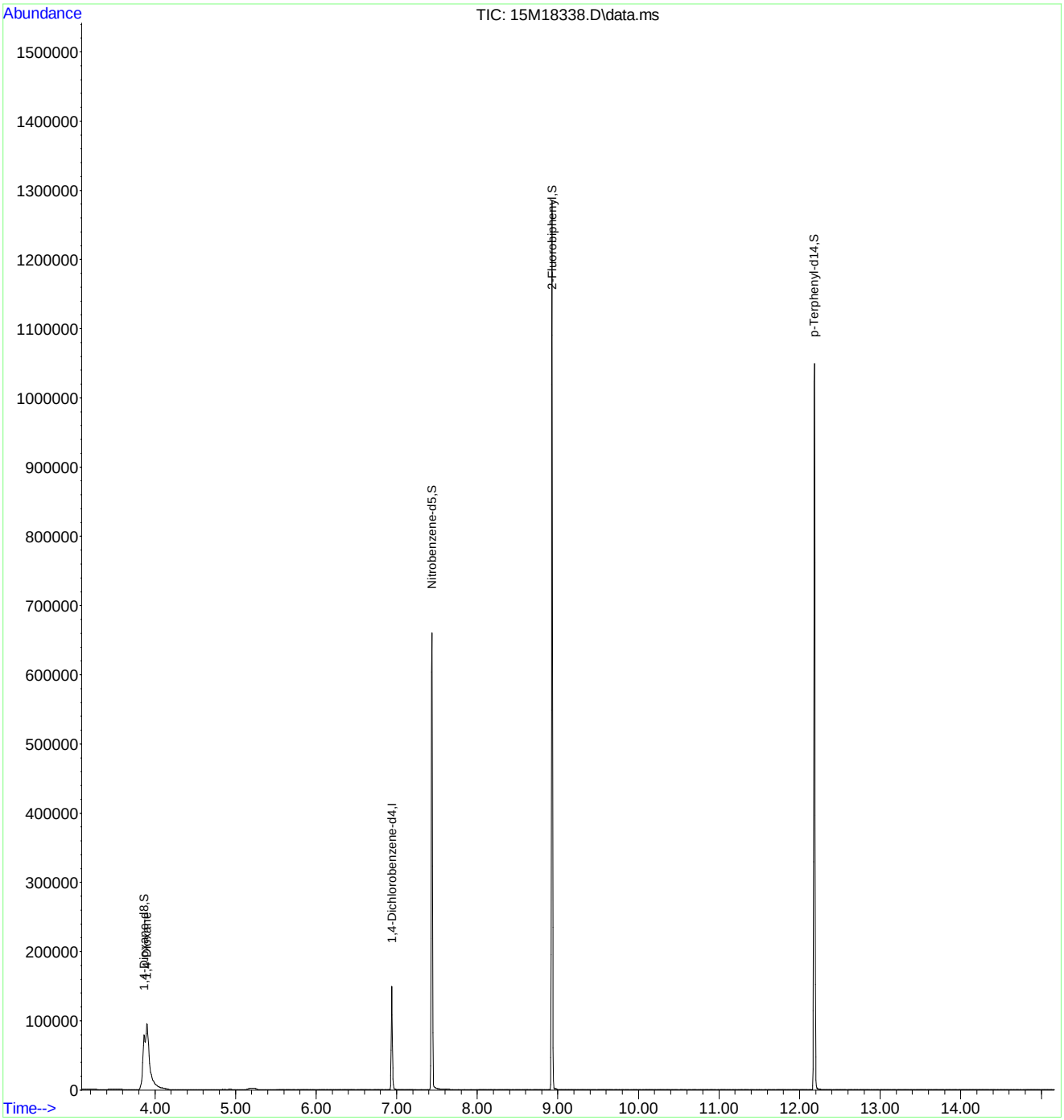

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18339.D
Acq On : 10 Jun 2016 11:00
Operator : MES
Sample : WG572230-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 10 18:15:34 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	56194	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	248072	10.5474	ug/L	0.00
Spiked Amount 5.000			Recovery = 211.00%			
4) Nitrobenzene-d5	7.436	82	628184	10.6403	ug/L	0.00
Spiked Amount 5.000			Recovery = 212.80%			
5) 2-Fluorobiphenyl	8.926	172	1513331	10.3070	ug/L	0.00
Spiked Amount 5.000			Recovery = 206.20%			
6) p-Terphenyl-d14	12.184	244	1587021	11.0217	ug/L	0.00
Spiked Amount 5.000			Recovery = 220.40%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	192761	10.5434	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18339.D
Acq On : 10 Jun 2016 11:00
Operator : MES
Sample : WG572230-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 10 18:15:34 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

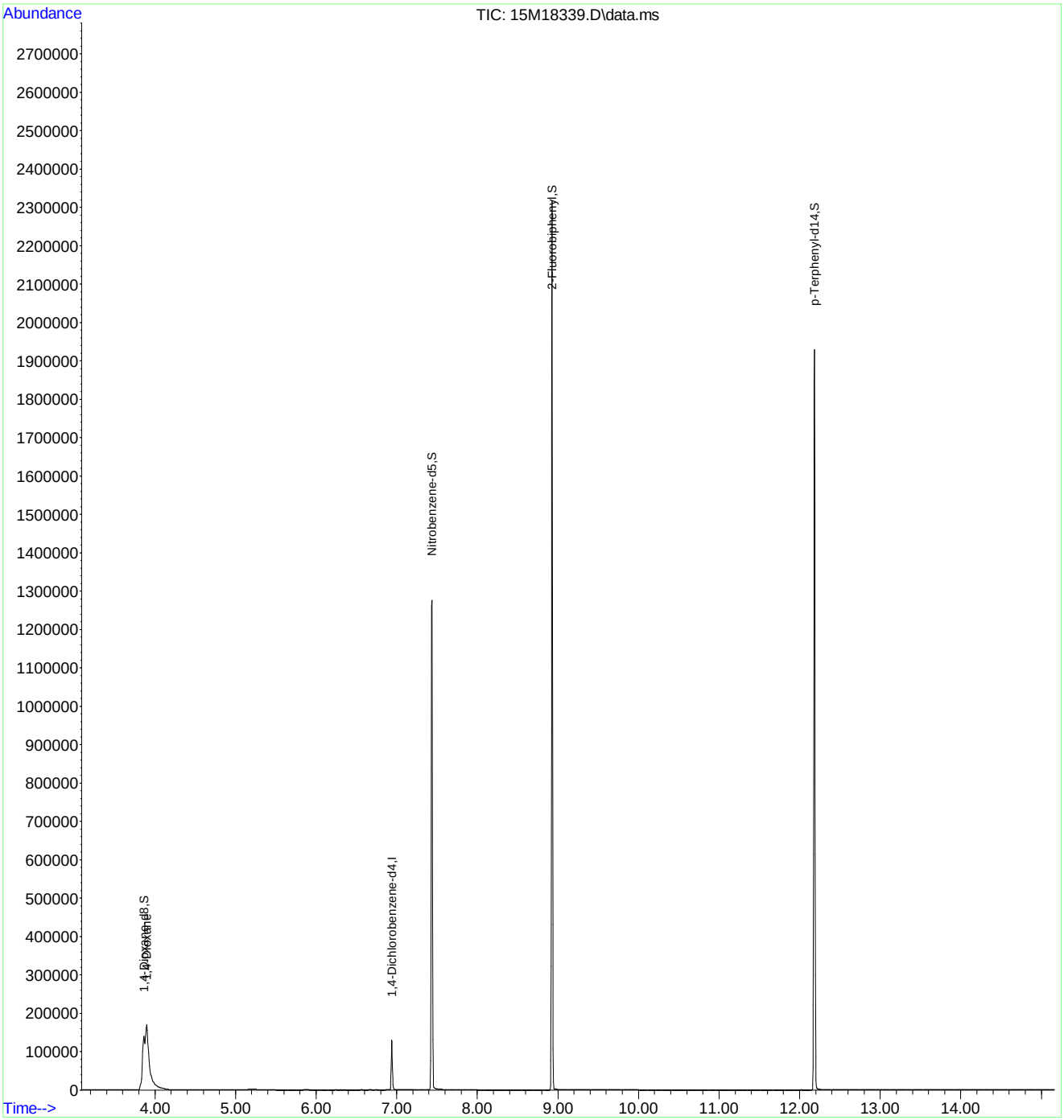

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18340.D
Acq On : 10 Jun 2016 11:22
Operator : MES
Sample : WG572230-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 10 18:15:37 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.940	152	60457	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.862	96	187351	7.4040 ug/L	0.00
Spiked Amount 5.000			Recovery	= 148.00%	
4) Nitrobenzene-d5	7.431	82	466388	7.4103 ug/L	0.00
Spiked Amount 5.000			Recovery	= 148.20%	
5) 2-Fluorobiphenyl	8.926	172	1170859	7.4122 ug/L	0.00
Spiked Amount 5.000			Recovery	= 148.20%	
6) p-Terphenyl-d14	12.192	244	1205938	7.7846 ug/L	0.01
Spiked Amount 5.000			Recovery	= 155.60%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.897	58	146003	7.4228 ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18340.D
Acq On : 10 Jun 2016 11:22
Operator : MES
Sample : WG572230-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 10 18:15:37 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

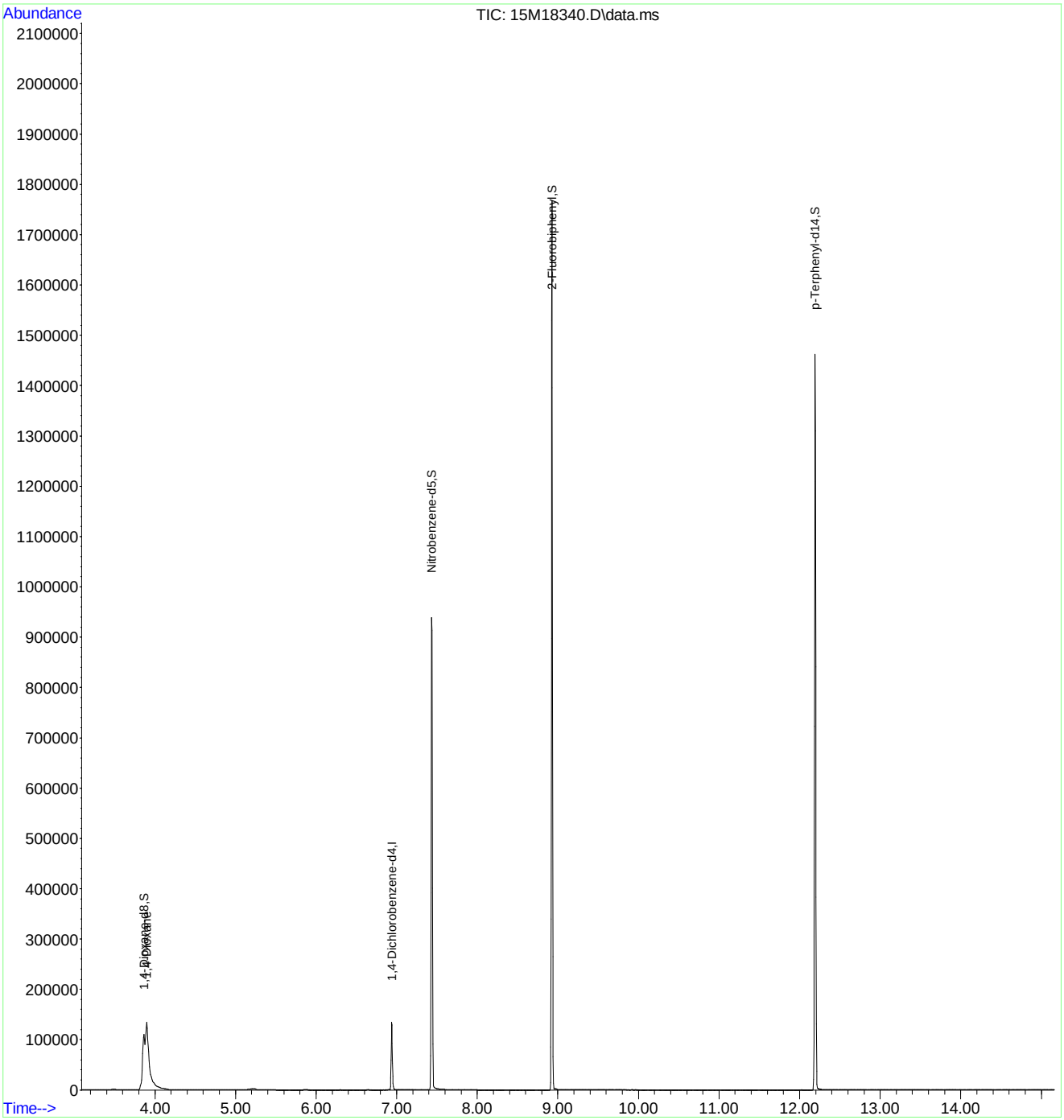

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18341.D
Acq On : 10 Jun 2016 11:45
Operator : MES
Sample : WG572230-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 10 18:15:40 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.940	152	45954	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.848	96	46972	2.4422 ug/L	-0.01
Spiked Amount 5.000			Recovery	= 48.80%	
4) Nitrobenzene-d5	7.436	82	97423	2.1945 ug/L	0.00
Spiked Amount 5.000			Recovery	= 43.80%	
5) 2-Fluorobiphenyl	8.926	172	301696	2.5127 ug/L	0.00
Spiked Amount 5.000			Recovery	= 50.20%	
6) p-Terphenyl-d14	12.188	244	286720	2.4350 ug/L	0.00
Spiked Amount 5.000			Recovery	= 48.60%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.883	58	36488	2.4405 ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18341.D
Acq On : 10 Jun 2016 11:45
Operator : MES
Sample : WG572230-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 10 18:15:40 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

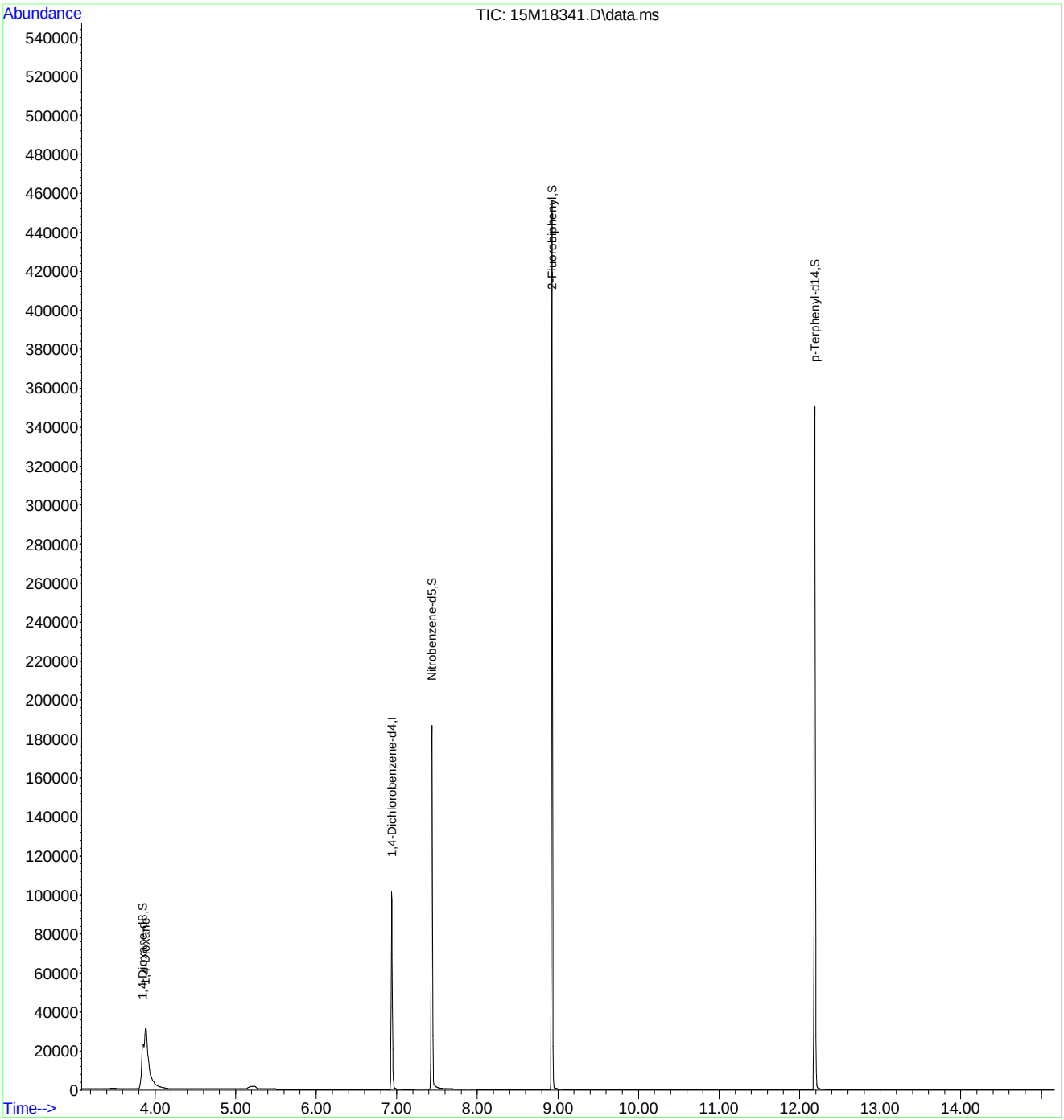

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18342.D
Acq On : 10 Jun 2016 12:08
Operator : MES
Sample : WG572230-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 10 18:15:43 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	59037	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	24054	0.9735	ug/L	0.00
Spiked Amount 5.000			Recovery = 19.40%			
4) Nitrobenzene-d5	7.436	82	44358	0.9184	ug/L	0.00
Spiked Amount 5.000			Recovery = 18.40%			
5) 2-Fluorobiphenyl	8.926	172	151018	0.9790	ug/L	0.00
Spiked Amount 5.000			Recovery = 19.60%			
6) p-Terphenyl-d14	12.199	244	140040	0.9257	ug/L	0.02
Spiked Amount 5.000			Recovery = 18.60%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.904	58	18621	0.9695	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18342.D
Acq On : 10 Jun 2016 12:08
Operator : MES
Sample : WG572230-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 10 18:15:43 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

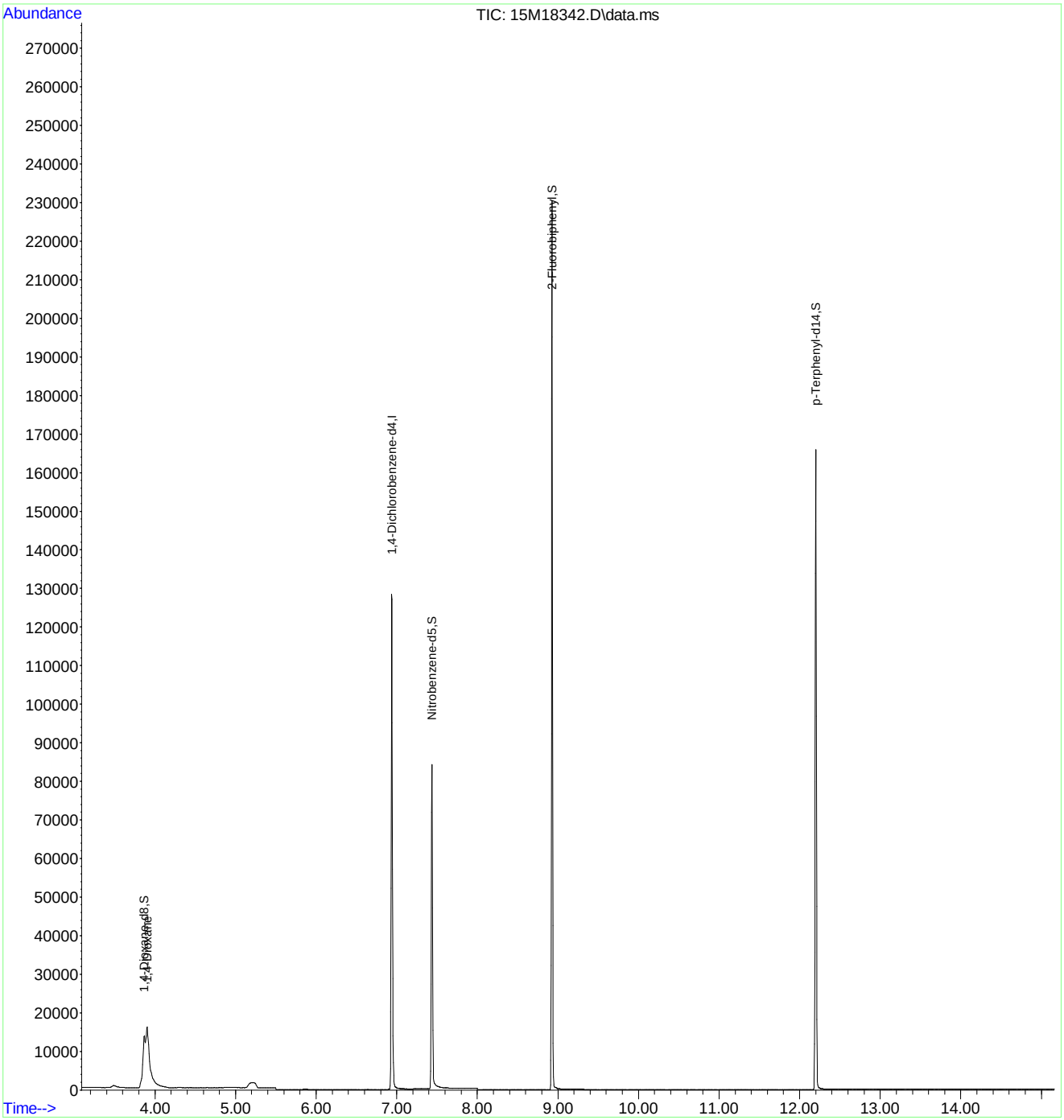

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18343.D
Acq On : 10 Jun 2016 12:30
Operator : MES
Sample : WG572230-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 10 18:15:46 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	51531	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	8760	0.4062	ug/L	0.00
Spiked Amount 5.000			Recovery	=	8.20%	
4) Nitrobenzene-d5	7.436	82	14371	0.4779	ug/L	0.00
Spiked Amount 5.000			Recovery	=	9.60%	
5) 2-Fluorobiphenyl	8.926	172	54404	0.4041	ug/L	0.00
Spiked Amount 5.000			Recovery	=	8.00%	
6) p-Terphenyl-d14	12.203	244	49910	0.3780	ug/L	0.02
Spiked Amount 5.000			Recovery	=	7.60%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	6733	0.4016	ug/L	79

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18343.D
Acq On : 10 Jun 2016 12:30
Operator : MES
Sample : WG572230-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 10 18:15:46 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

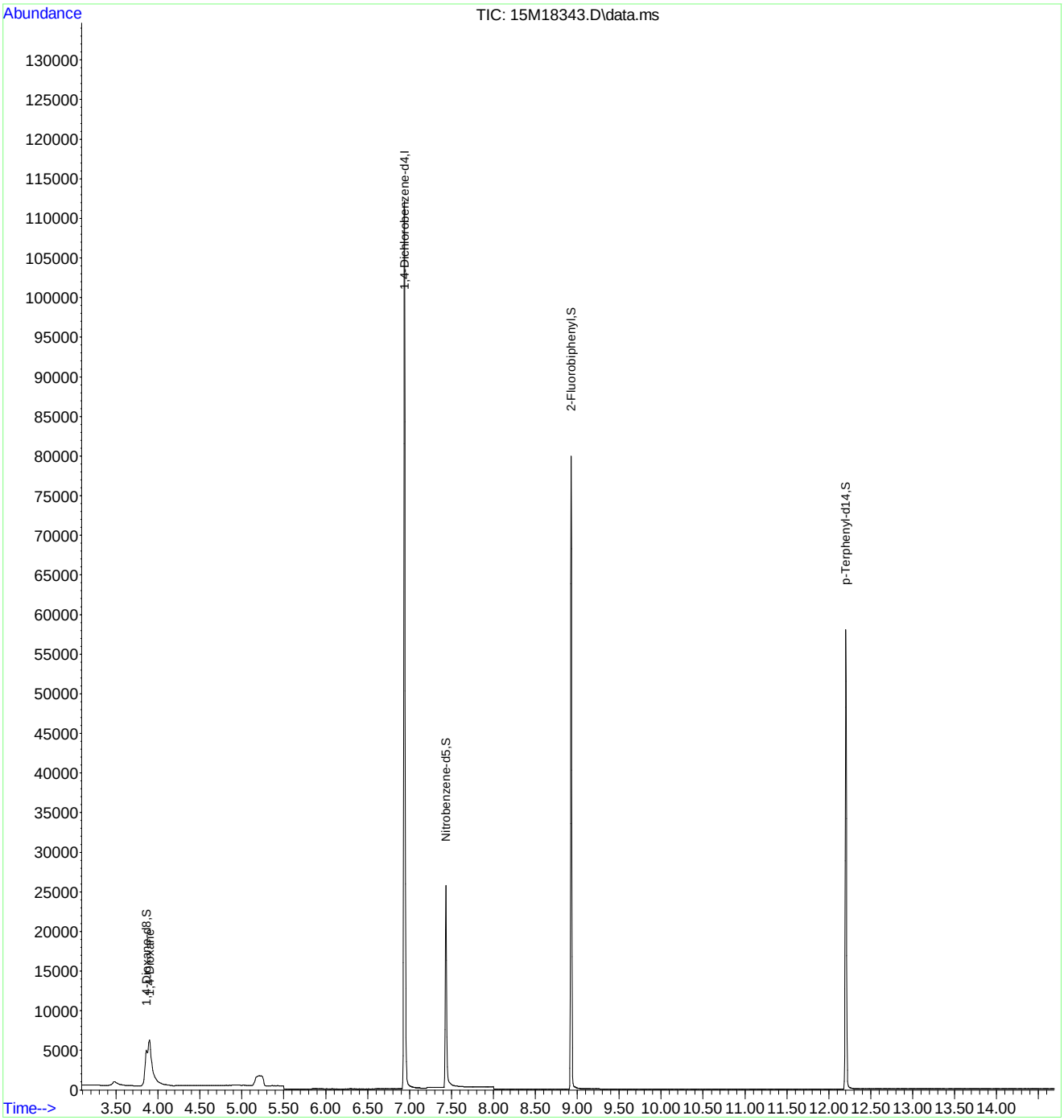

Nitrobenzene-d5

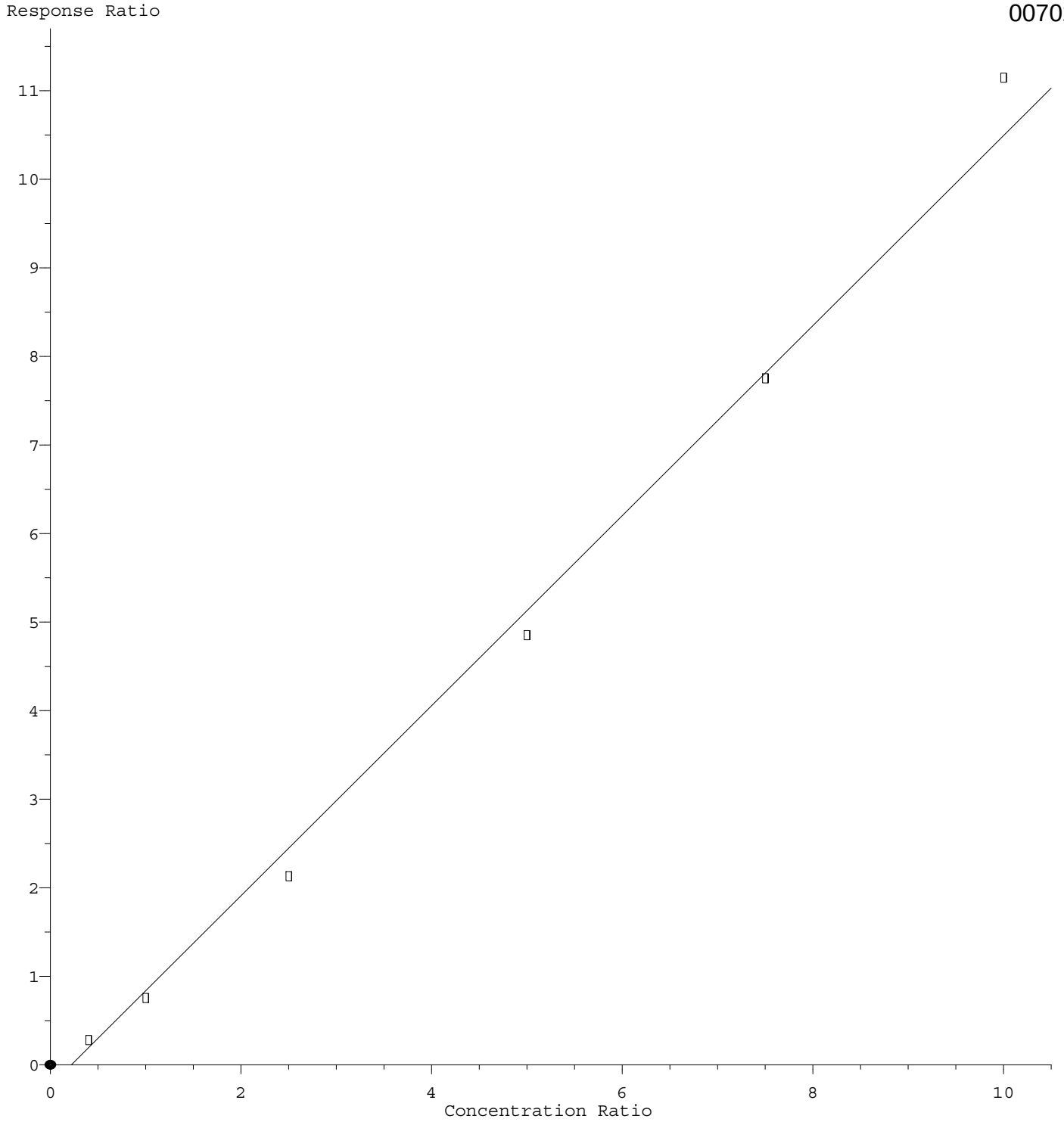

Response = 1.07e+000 * Amt - 2.34e-001
Coef of Det (r^2) = 0.994 Curve Fit: wlr(1/a)
Method Name: C:\msdchem\1\methods\DIOXANE_D8.M
Calibration Table Last Updated: Fri Jun 10 12:46:00 2016

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18344.D
Acq On : 10 Jun 2016 12:52
Operator : MES
Sample : WG572230-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 10 18:15:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	51498	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.897	96	61	0.0028	ug/L	0.04
Spiked Amount 5.000			Recovery	=	0.00%	
4) Nitrobenzene-d5	7.442	82	61	0.2190	ug/L	0.00
Spiked Amount 5.000			Recovery	=	4.40%	
5) 2-Fluorobiphenyl	8.926	172	23	0.0002	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.214	244	150	0.0011	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	85662	5.1127	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18344.D
Acq On : 10 Jun 2016 12:52
Operator : MES
Sample : WG572230-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 10 18:15:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

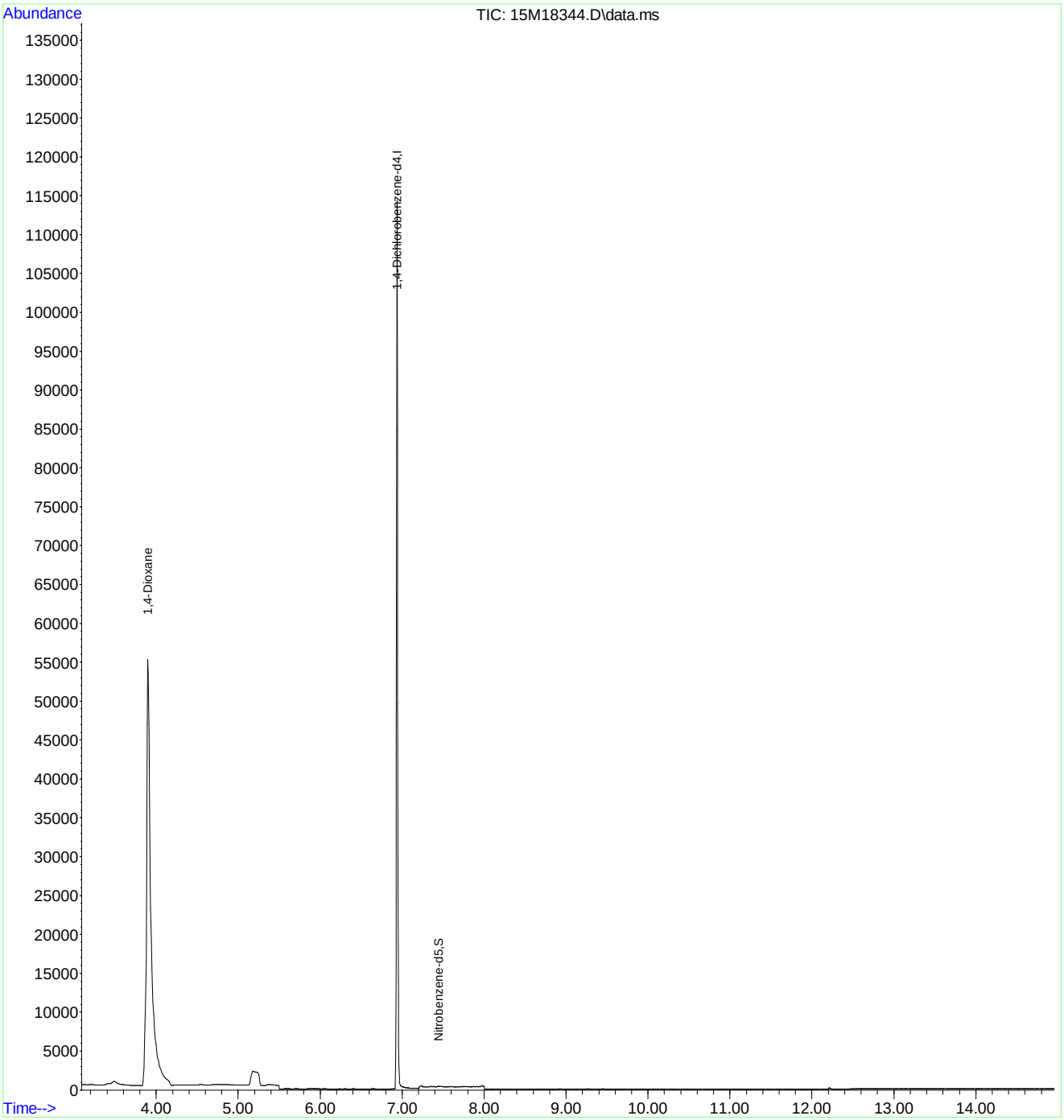

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18344.D
Acq On : 10 Jun 2016 12:52
Operator : MES
Sample : WG572230-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 10 18:15:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	78	0.00
2	1,4-Dioxane	5.000	5.113	-2.3	80	0.00
3 S	1,4-Dioxane-d8	5.000	0.003	99.9#	0	0.04
4 S	Nitrobenzene-d5	5.000	0.219	95.6#	0	0.00
5 S	2-Fluorobiphenyl	5.000	0.000	100.0#	0	0.00
6 S	p-Terphenyl-d14	5.000	0.001	100.0#	0	0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18400.D
Acq On : 16 Jun 2016 10:00
Operator : MES
Sample : WG572958-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 16 10:16:14 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.951	152	63702	1.0000	ug/mL	# 0.01
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.876	96	138261	5.1857	ug/L	0.01
Spiked Amount 5.000			Recovery	= 103.80%		
4) Nitrobenzene-d5	7.447	82	239213	3.7190	ug/L	0.01
Spiked Amount 5.000			Recovery	= 74.40%		
5) 2-Fluorobiphenyl	8.937	172	842255	5.0603	ug/L	0.01
Spiked Amount 5.000			Recovery	= 101.20%		
6) p-Terphenyl-d14	12.228	244	851642	5.2175	ug/L	0.05
Spiked Amount 5.000			Recovery	= 104.40%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.918	58	105339	5.0826	ug/L	81

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18400.D
Acq On : 16 Jun 2016 10:00
Operator : MES
Sample : WG572958-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 16 10:16:14 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

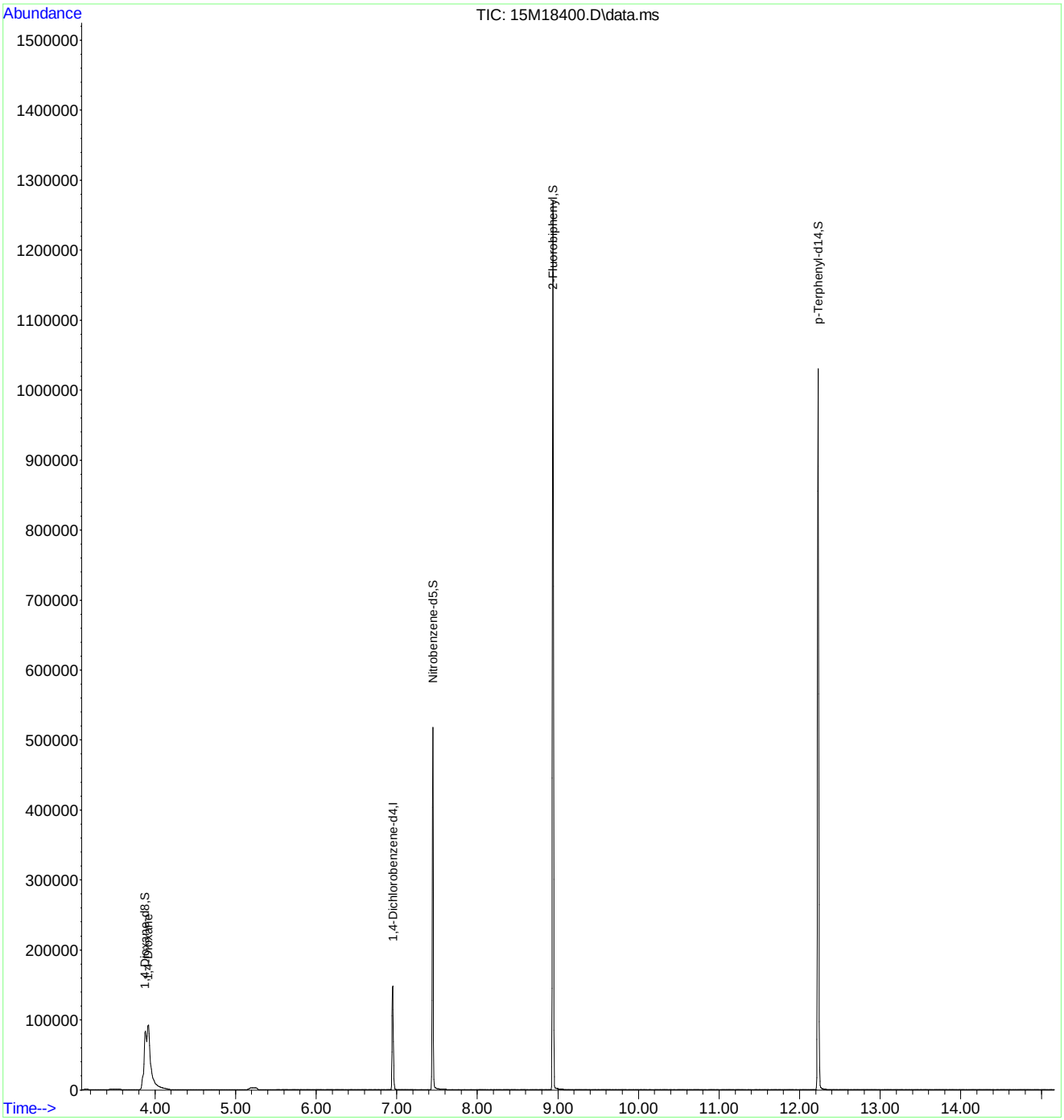

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18400.D
Acq On : 16 Jun 2016 10:00
Operator : MES
Sample : WG572958-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 16 10:16:14 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	96	0.01
2	1,4-Dioxane	5.000	5.083	-1.7	98	0.02
3 S	1,4-Dioxane-d8	5.000	5.186	-3.7	100	0.01
4 S	Nitrobenzene-d5	5.000	3.719	25.6#	74	0.01
5 S	2-Fluorobiphenyl	5.000	5.060	-1.2	100	0.01
6 S	p-Terphenyl-d14	5.000	5.217	-4.3	100	0.05

(#) = Out of Range SPCC's out = 0 CCC's out = 0

2.2.1.5 Raw QC Data

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18337.D
Acq On : 10 Jun 2016 10:18
Operator : MES
Sample : WG572230-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

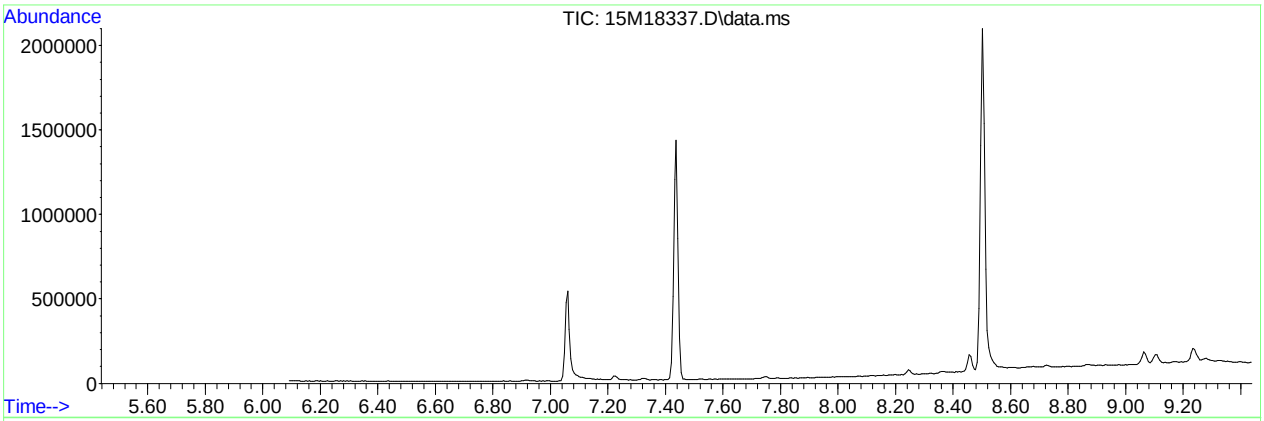

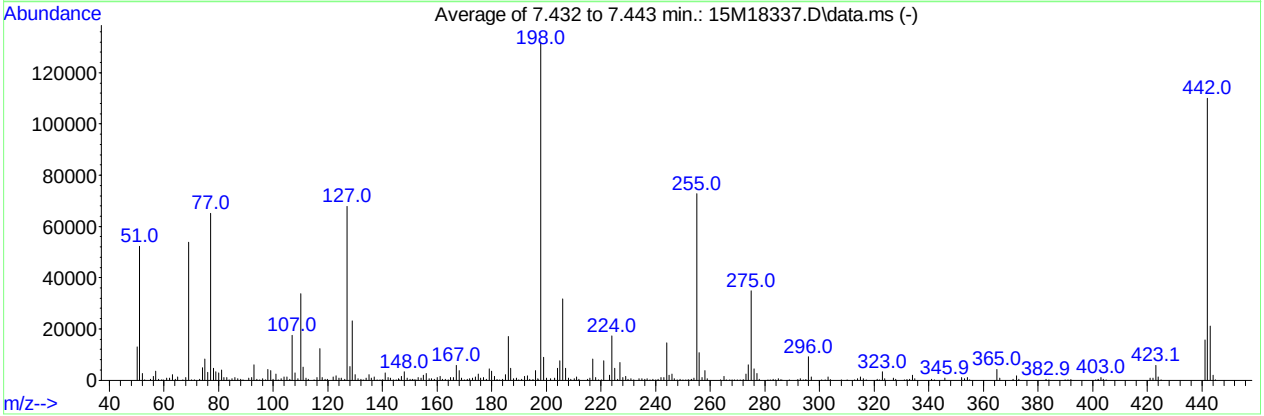

AutoFind: Scans 235, 236, 237; Background Corrected with Scan 229

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	39.5	52157	PASS
68	69	0.00	2	1.9	1026	PASS
69	198	0.00	100	40.8	53844	PASS
70	69	0.00	2	0.2	120	PASS
127	198	40	60	51.4	67853	PASS
197	198	0.00	1	0.4	505	PASS
198	198	100	100	100.0	131981	PASS
199	198	5	9	6.7	8869	PASS
275	198	10	30	26.4	34853	PASS
365	198	1	100	3.2	4186	PASS
441	443	0.01	100	73.9	15632	PASS
442	198	40	100	83.4	110112	PASS
443	442	17	23	19.2	21163	PASS

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18337.D
Acq On : 10 Jun 2016 10:18
Operator : MES
Sample : WG572230-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 10 10:29:37 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

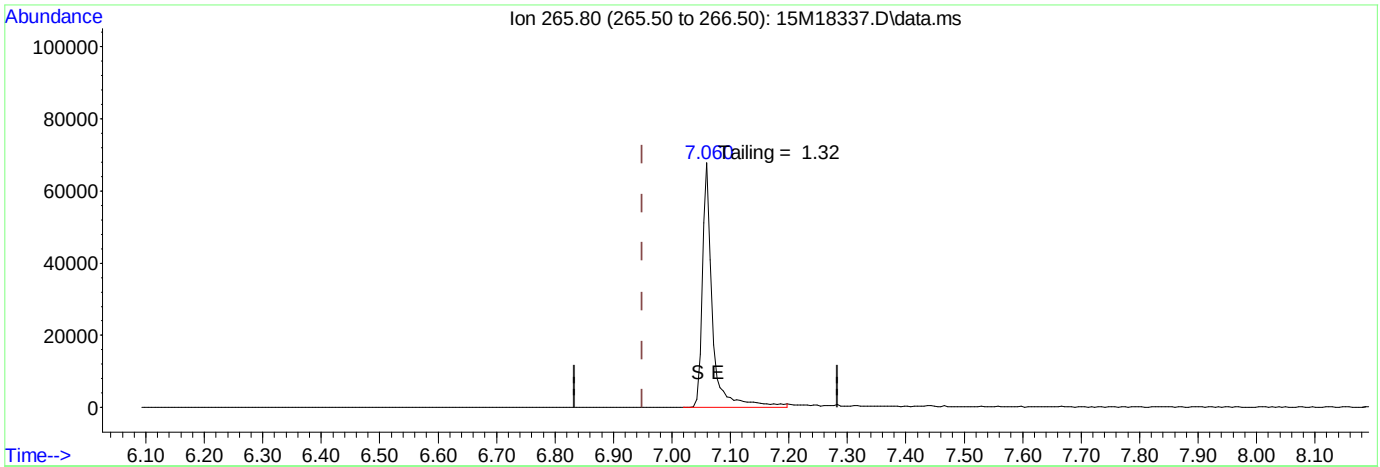

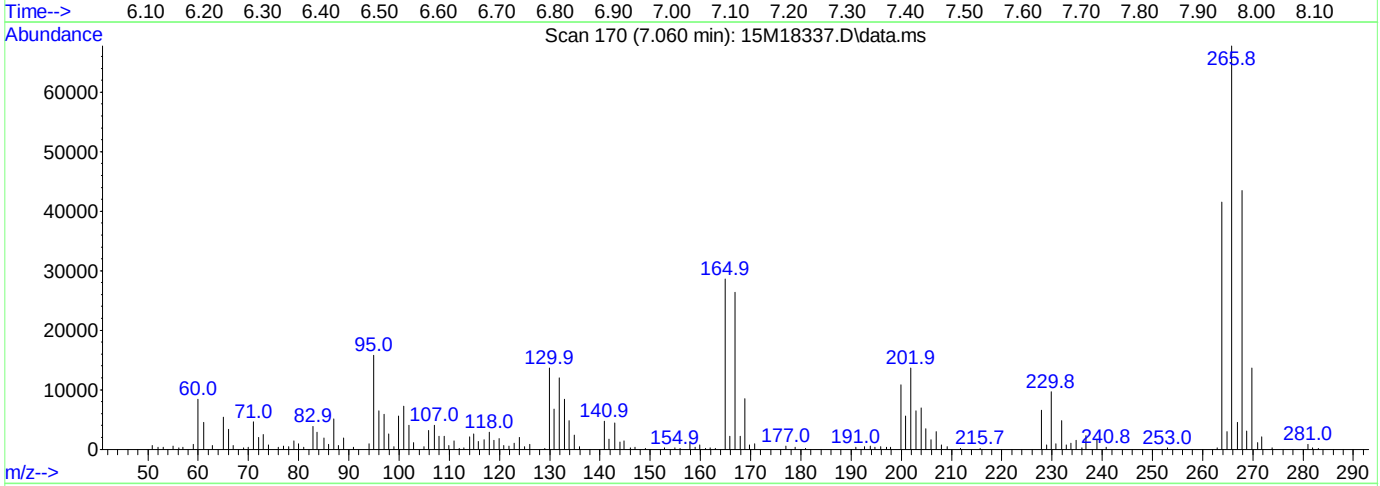

TIC: 15M18337.D\data.ms

(1) Pentachlorophenol

7.060min (+ 0.111) 0.00 ug/ml

response 82111

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18337.D
Acq On : 10 Jun 2016 10:18
Operator : MES
Sample : WG572230-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 10 10:29:37 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

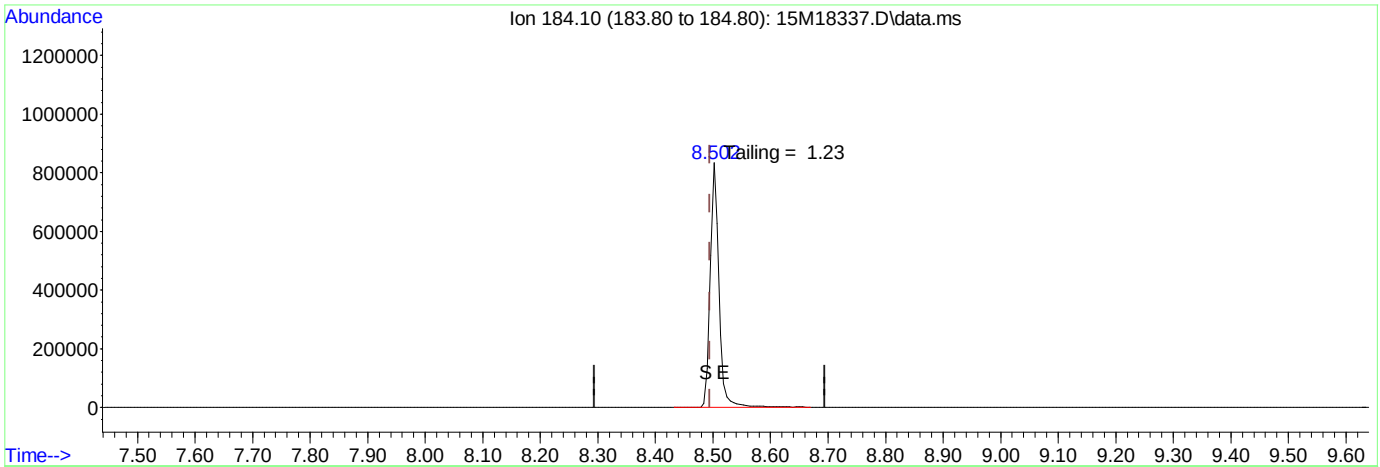

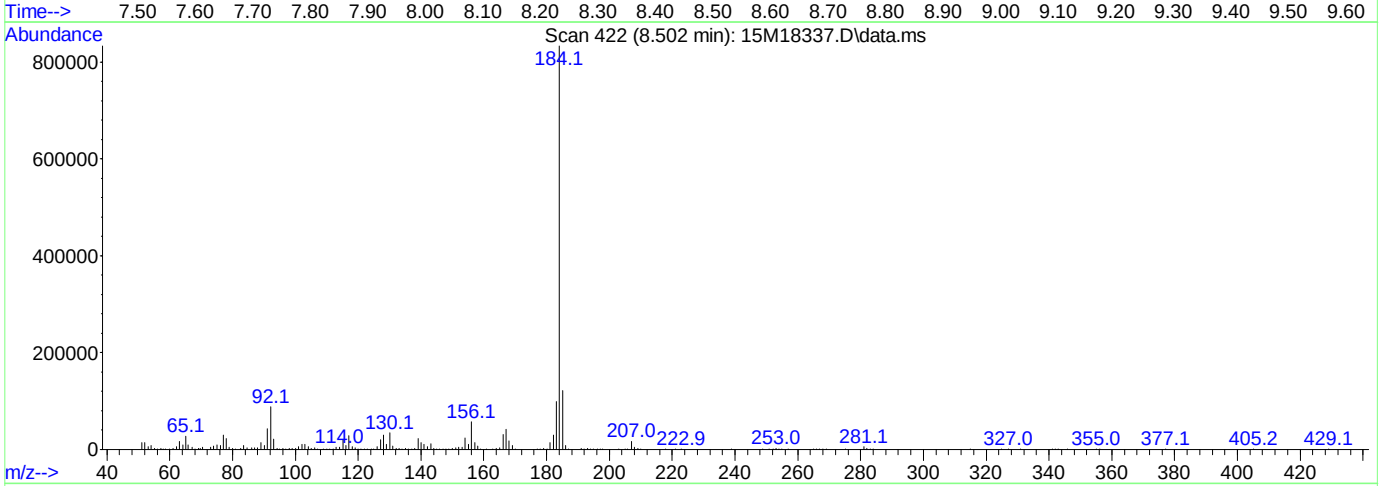

TIC: 15M18337.D\data.ms

(2) Benzidine

8.502min (+ 0.008) 0.00 ug/ml

response 896980

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18337.D
Acq On : 10 Jun 2016 10:18
Operator : MES
Sample : WG572230-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 10 10:29:37 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

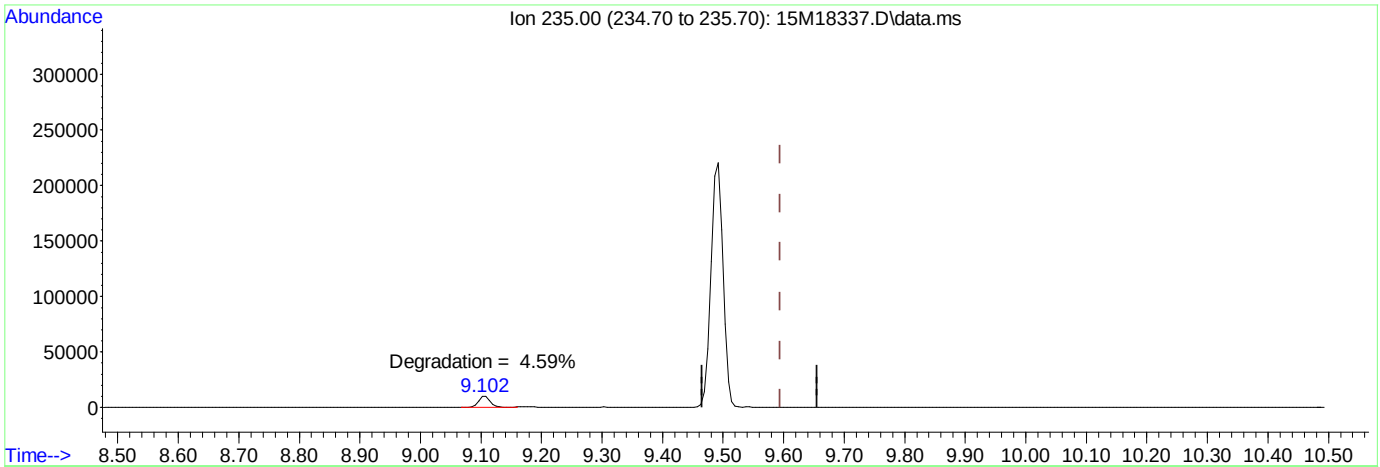

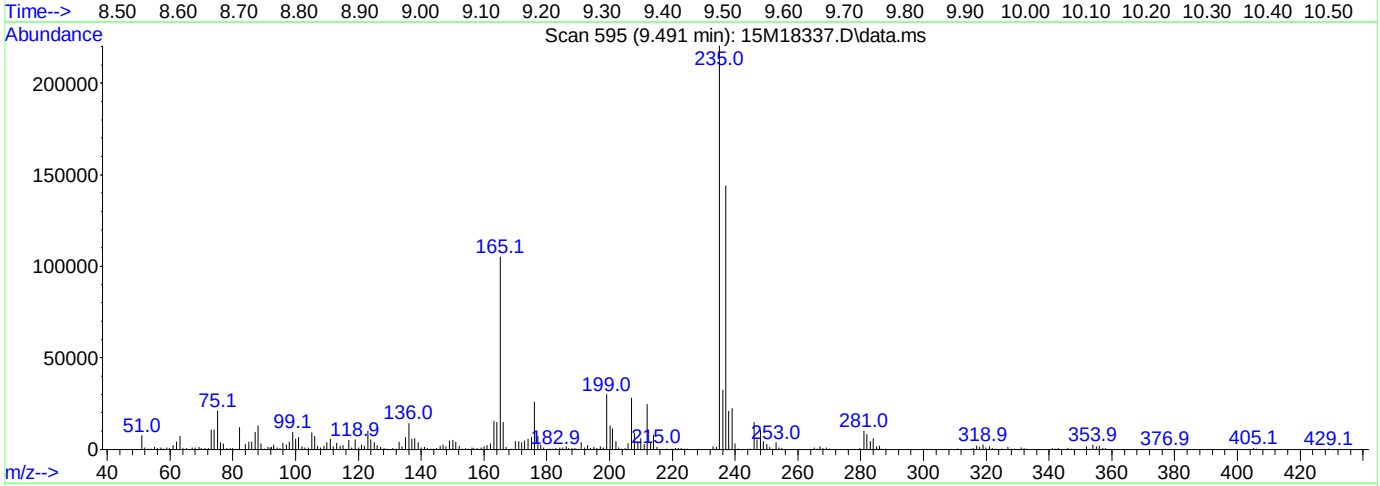

TIC: 15M18337.D\data.ms

(3) DDT

9.491min (-0.103) 0.00 ug/ml

response 283319

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18399.D
Acq On : 16 Jun 2016 9:38
Operator : MES
Sample : WG572958-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

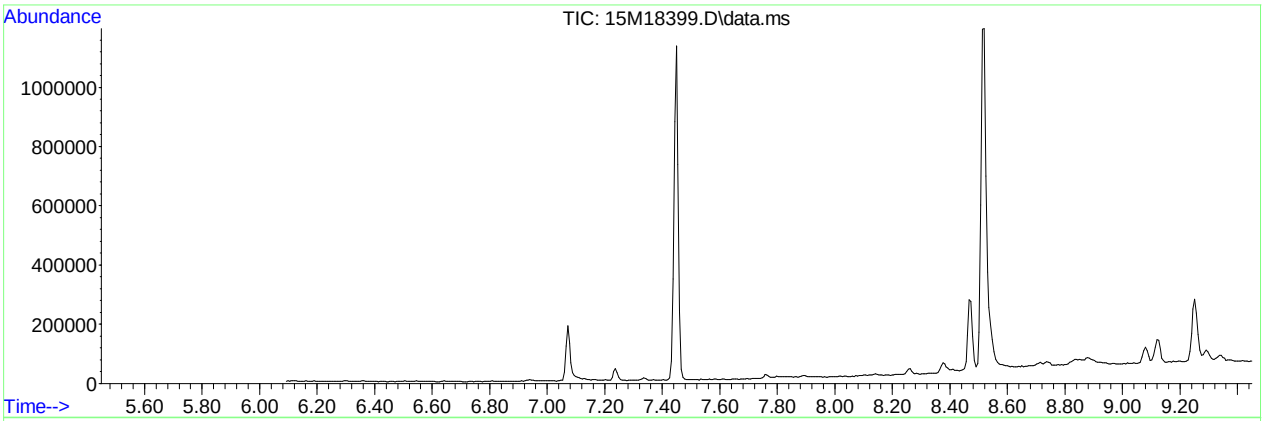

AutoFind: Scans 237, 238, 239; Background Corrected with Scan 231

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	39.7	42335	PASS
68	69	0.00	2	1.6	714	PASS
69	198	0.00	100	40.7	43391	PASS
70	69	0.00	2	0.6	279	PASS
127	198	40	60	52.1	55592	PASS
197	198	0.00	1	0.1	68	PASS
198	198	100	100	100.0	106736	PASS
199	198	5	9	6.7	7172	PASS
275	198	10	30	25.9	27632	PASS
365	198	1	100	3.0	3241	PASS
441	443	0.01	100	76.2	12912	PASS
442	198	40	100	81.0	86427	PASS
443	442	17	23	19.6	16937	PASS

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18399.D
Acq On : 16 Jun 2016 9:38
Operator : MES
Sample : WG572958-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 16 09:56:45 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

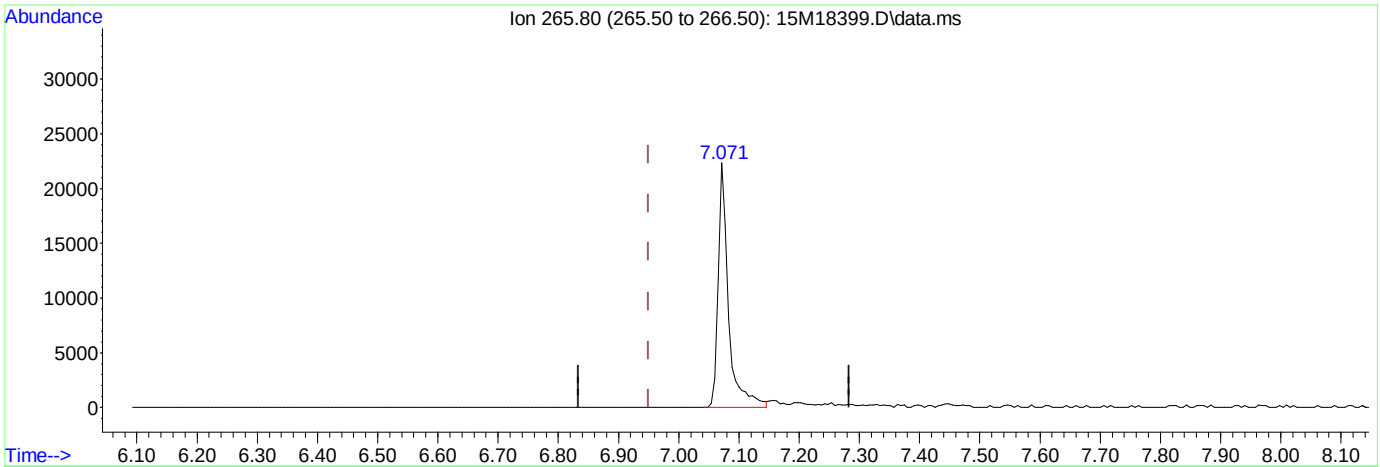

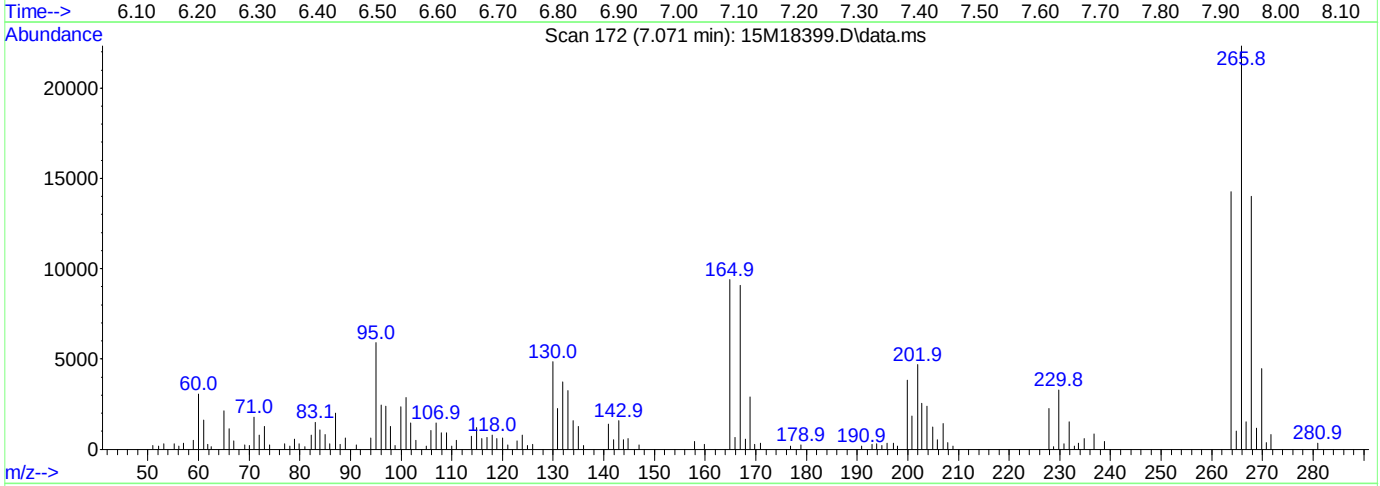

TIC: 15M18399.D\data.ms

(1) Pentachlorophenol

7.071min (+ 0.122) 0.00 ug/ml

response 26601

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18399.D
Acq On : 16 Jun 2016 9:38
Operator : MES
Sample : WG572958-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 16 09:56:45 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

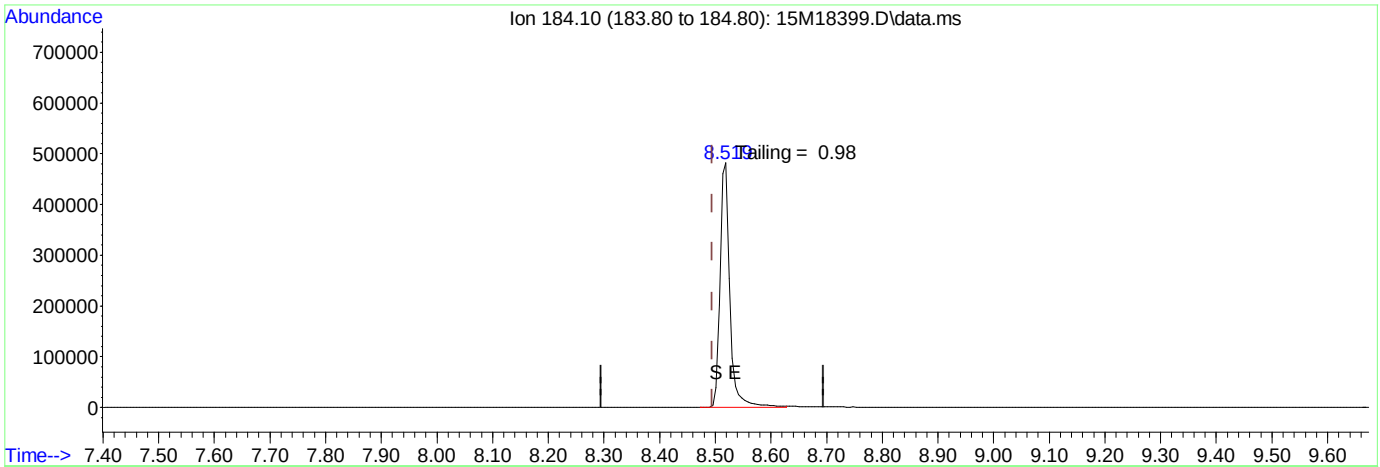

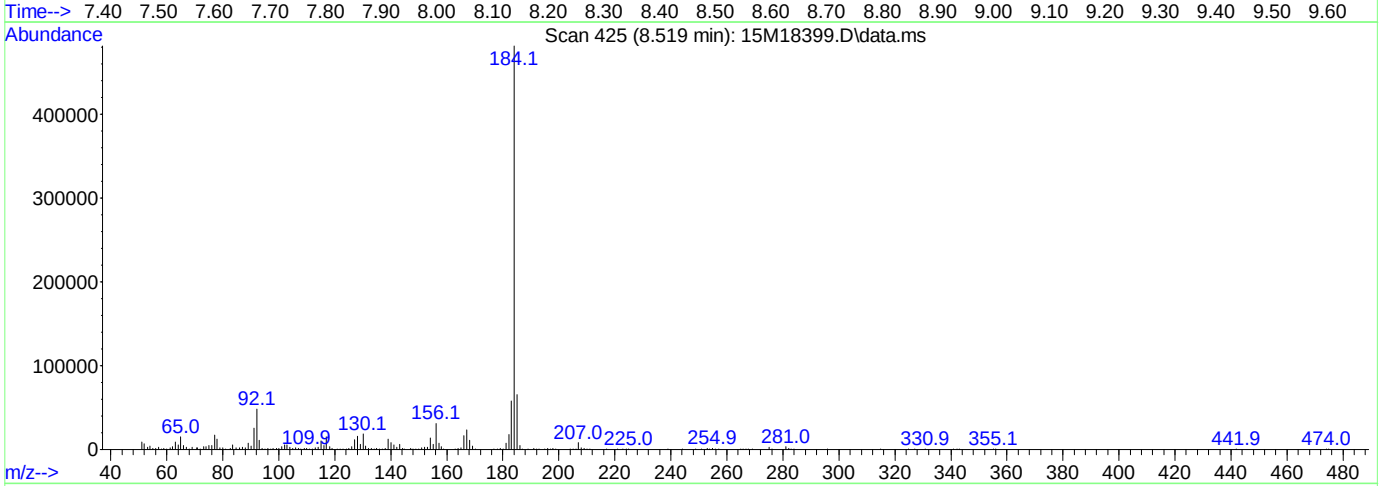

(2) Benzidine

8.519min (+ 0.025) 0.00 ug/ml

response 591309

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18399.D
Acq On : 16 Jun 2016 9:38
Operator : MES
Sample : WG572958-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 16 09:56:45 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

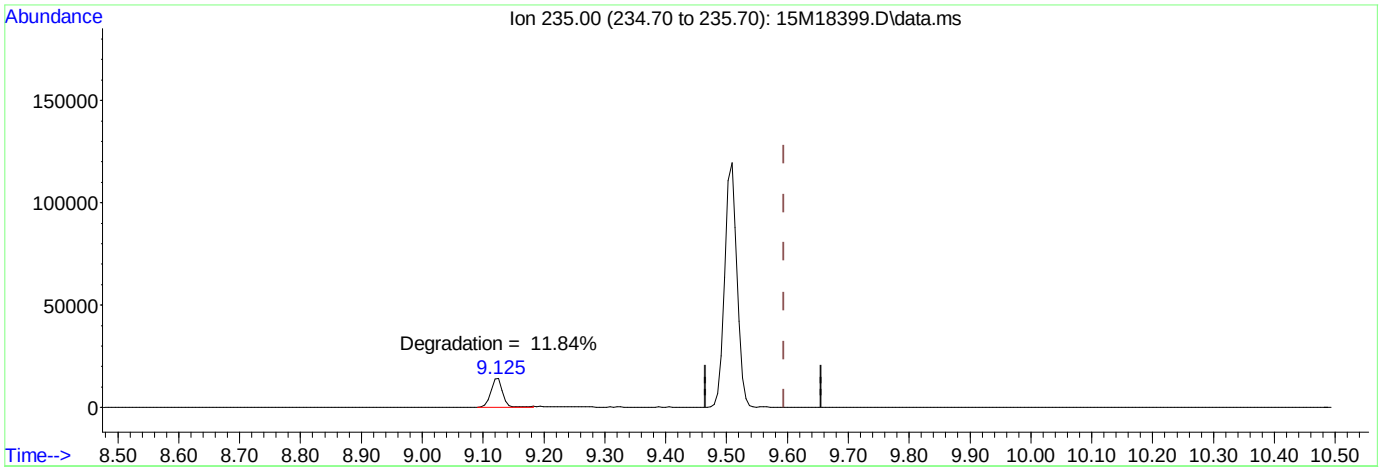

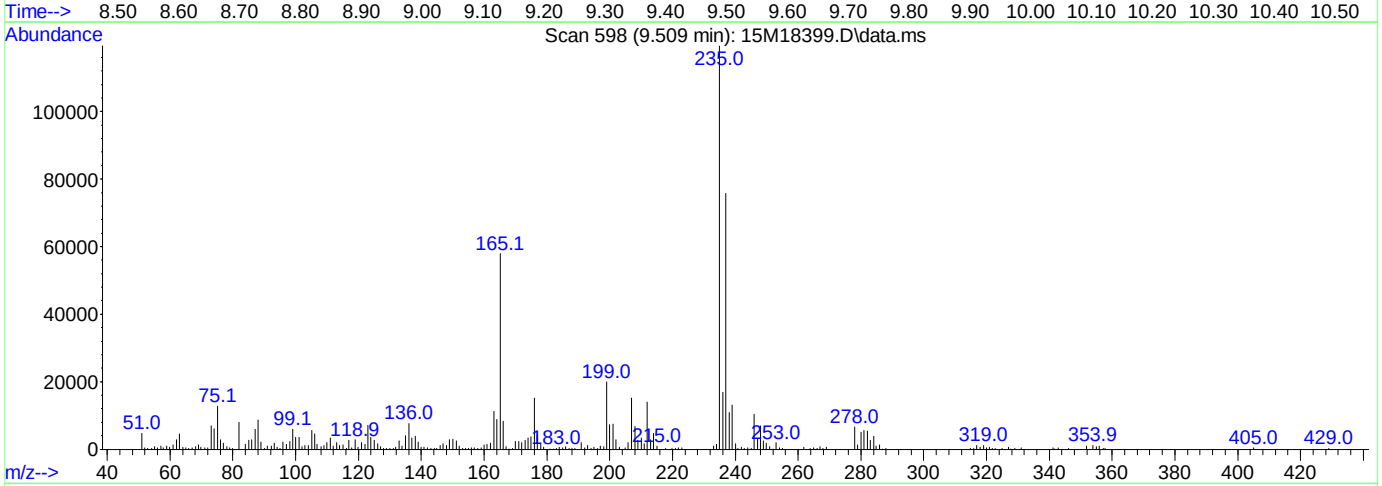

TIC: 15M18399.D\data.ms

(3) DDT

9.509min (-0.085) 0.00 ug/ml

response 162825

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18401.D
Acq On : 16 Jun 2016 10:23
Operator : MES
Sample : WG572341-01 BLANK 6/13
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 16 12:53:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.948	152	57712	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.876	96	35450	1.4676	ug/L	0.01
Spiked Amount 5.000			Recovery = 29.40%			
4) Nitrobenzene-d5	7.442	82	935690	15.3339	ug/L	0.00
Spiked Amount 5.000			Recovery = 306.60%			
5) 2-Fluorobiphenyl	8.937	172	2176930	14.4366	ug/L	0.01
Spiked Amount 5.000			Recovery = 288.80%			
6) p-Terphenyl-d14	12.221	244	5289384	35.7680	ug/L	0.04
Spiked Amount 5.000			Recovery = 715.40%			

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18401.D
Acq On : 16 Jun 2016 10:23
Operator : MES
Sample : WG572341-01 BLANK 6/13
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 16 12:53:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

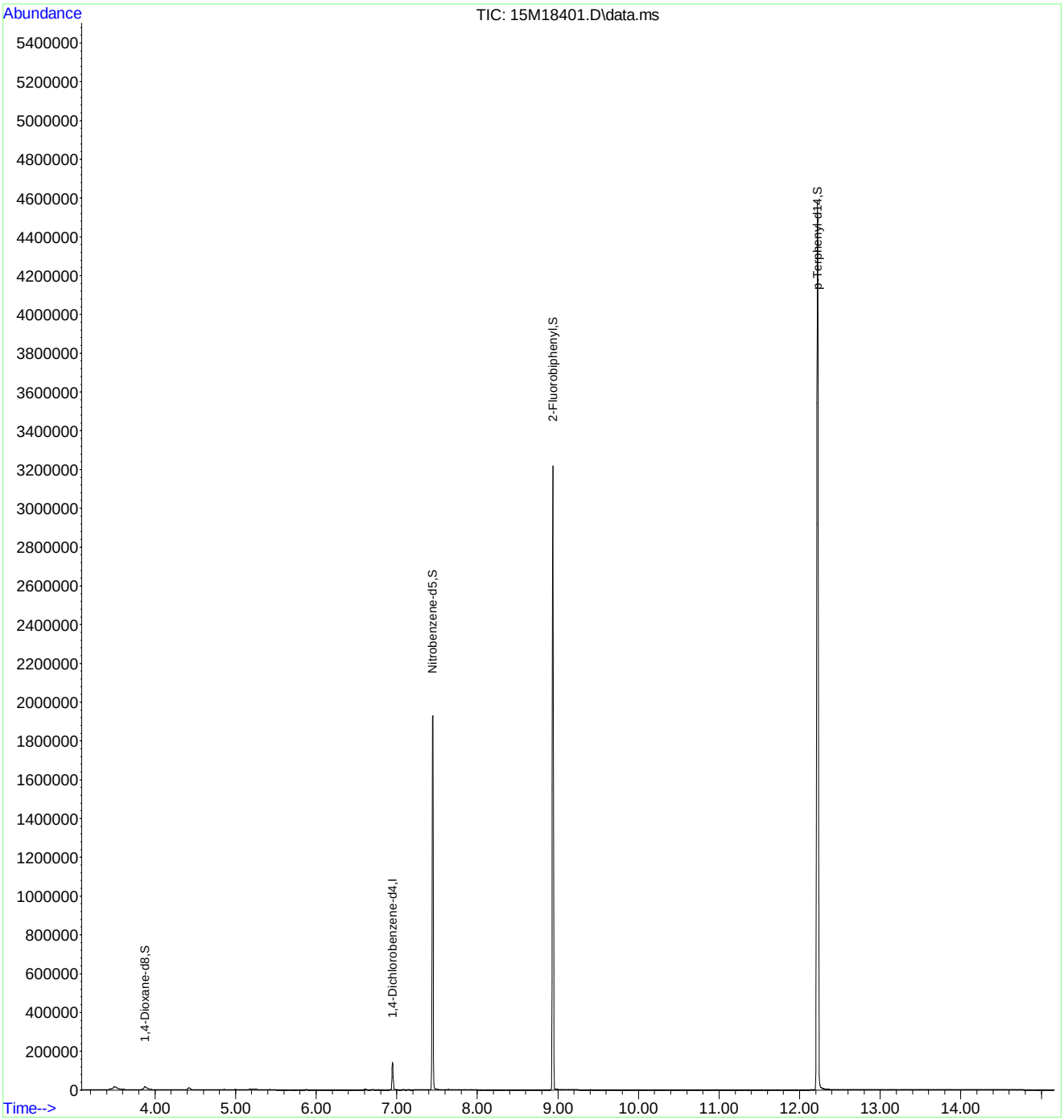

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18402.D
Acq On : 16 Jun 2016 10:46
Operator : MES
Sample : WG572341-02 LCS 6/13
Misc : 1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 16 12:54:04 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.951	152	54087	1.0000	ug/mL	# 0.01
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.883	96	40383	1.7839	ug/L	0.02
Spiked Amount 5.000			Recovery	=	35.60%	
4) Nitrobenzene-d5	7.447	82	8192	0.3591	ug/L	0.01
Spiked Amount 5.000			Recovery	=	7.20%	
5) 2-Fluorobiphenyl	8.937	172	5120	0.0362	ug/L	0.01
Spiked Amount 5.000			Recovery	=	0.80%	
6) p-Terphenyl-d14	12.228	244	1871	0.0135	ug/L	0.05
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.918	58	29330	1.6668	ug/L	82

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18402.D
Acq On : 16 Jun 2016 10:46
Operator : MES
Sample : WG572341-02 LCS 6/13
Misc : 1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 16 12:54:04 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

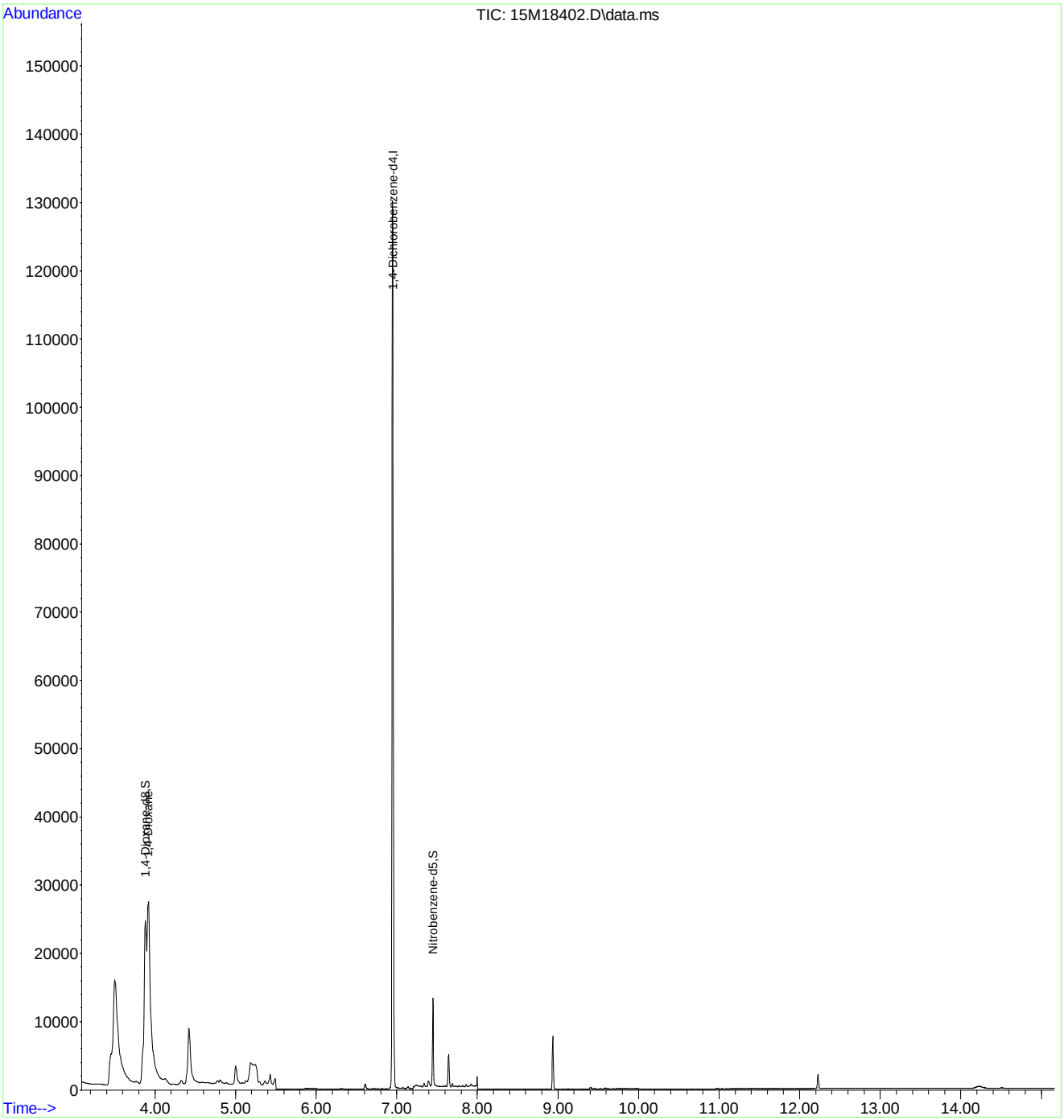

2.2 General Chromatography Data

2.2.2 6850 LC/MS Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060497-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW06-060816	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/10/2016 19:18
Collect Date:	06/08/2016 13:30	**Dilution:**	10	**File ID:**	1LM.LM35255
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	30.3		4.00	2.00	1.00

Certificate of Analysis

Sample #:	L16060497-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW06MS-060816	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/10/2016 12:02
Collect Date:	06/08/2016 13:30	**Dilution:**	1	**File ID:**	1LM.LM35232
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	7.05		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16060497-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW06MSD-060816	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/10/2016 12:21
Collect Date:	06/08/2016 13:30	**Dilution:**	1	**File ID:**	1LM.LM35233
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2.39		0.400	0.200	0.100

Certificate of Analysis

Microbac

Lab Report #: L16060497
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Sample #:	L16060497-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW22-060816	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/10/2016 19:37
Collect Date:	06/08/2016 14:55	**Dilution:**	500	**File ID:**	1LM.LM35256
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	615		200	100	50.0

2.2.2.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1402 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG572200-01 MCT	9,990	
-02 BLK	0.93	
-03 LCS	1.04	
L16060411-01	1433	
-02	1475	
-03	349	
-04	356	
L16060414-01	327	
-02	319	
-03	3510	
-04	4180	
L16060497-01	1546	
-02	1445	
-03	1450	
-04	2560	
L16060504-01	1254	
-02	853	
-03	938	
-04	2350	
L16060575-01	595	
-02	583	
-03	505	

Analyst: Wade T. Dey

Date/Time: 6-10-16 / 1354

DCN#119023

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

Page: 1 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

Page: 2 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061016_WTD.TXT
Analyst1: WTD Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)
CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35225	WG572198-01 CCB	1	1		06/10/16 09:49
2	1LM.LM35226	WG572198-02 CCV (1.0ug/L)	1	1	STD75510	06/10/16 10:08
3	1LM.LM35227	WG572200-07 MRL (0.2ug/L)	1	1	STD75510	06/10/16 10:27
4	1LM.LM35228	WG572200-01 MCT (0.2ug/L)	1	1	STD75512	06/10/16 10:46
5	1LM.LM35229	WG572200-02 BLANK	1	1		06/10/16 11:05
6	1LM.LM35230	WG572200-03 LCS (0.2ug/L)	1	1	STD75512	06/10/16 11:24
22	1LM.LM35231	L16060497-01	1	1		06/10/16 11:43
23	1LM.LM35232	L16060497-02 MS (0.2ug/L)	1	1	STD75512	06/10/16 12:02
24	1LM.LM35233	L16060497-03 MSD (0.2ug/L)	1	1	STD75512	06/10/16 12:21
10	1LM.LM35234	L16060497-04 50X	1	50		06/10/16 12:40
11	1LM.LM35235	L16060575-01	1	1		06/10/16 12:59
12	1LM.LM35236	L16060575-02	1	1		06/10/16 13:18
13	1LM.LM35237	L16060575-03	1	1		06/10/16 13:37
14	1LM.LM35238	WG572198-03 CCV (1.0ug/L)	1	1	STD75510	06/10/16 13:55
15	1LM.LM35239	WG572200-08 MRL (0.2ug/L)	1	1	STD75510	06/10/16 14:14
16	1LM.LM35240	WG572198-04 CCB	1	1		06/10/16 14:33
17	1LM.LM35241	L16060575-01 100X	1	100		06/10/16 14:52
18	1LM.LM35242	L16060575-02	1	1		06/10/16 15:11
19	1LM.LM35243	L16060575-03	1	1		06/10/16 15:30
20	1LM.LM35244	WG572198-05 CCV (1.0ug/L)	1	1	STD75510	06/10/16 15:49
21	1LM.LM35245	WG572200-09 MRL (0.2ug/L)	1	1	STD75510	06/10/16 16:08
25	1LM.LM35246	WG572198-06 CCB	1	1		06/10/16 16:27
26	1LM.LM35247	L16060411-01 50X	1	50		06/10/16 16:46
27	1LM.LM35248	L16060411-02 50X	1	50		06/10/16 17:05
28	1LM.LM35249	L16060411-03 200X	1	200		06/10/16 17:24
29	1LM.LM35250	L16060411-04 200X	1	200		06/10/16 17:43
30	1LM.LM35251	L16060414-01	1	1		06/10/16 18:02
31	1LM.LM35252	L16060414-02	1	1		06/10/16 18:21
32	1LM.LM35253	L16060414-03 20X	1	20		06/10/16 18:40
33	1LM.LM35254	L16060414-04 20X	1	20		06/10/16 18:59
58	1LM.LM35255	L16060497-01 10X	1	10		06/10/16 19:18
35	1LM.LM35256	L16060497-04 500X	1	500		06/10/16 19:37
36	1LM.LM35257	WG572198-07 CCV (1.0ug/L)	1	1	STD75510	06/10/16 19:56

Page: 1 Approved: 13-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061016_WTD.TXT
Analyst1: WTD Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:
Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)
CCV STD: STD75510 LCS STD: STD75512 NA

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
37	1LM.LM35258	WG572200-10 MRL (0.2ug/L)	1	1	STD75510	06/10/16 20:15
38	1LM.LM35259	WG572198-08 CCB	1	1		06/10/16 20:34
39	1LM.LM35260	L16060504-01 1000X	1	1000		06/10/16 20:53
40	1LM.LM35261	L16060504-02 1000X	1	1000		06/10/16 21:12
41	1LM.LM35262	L16060504-03 1000X	1	1000		06/10/16 21:31
42	1LM.LM35263	L16060504-04 10000X	1	10000		06/10/16 21:50
43	1LM.LM35264	WG572198-09 CCV (1.0ug/L)	1	1	STD75510	06/10/16 22:09
44	1LM.LM35265	WG572200-11 MRL (0.2ug/L)	1	1	STD75510	06/10/16 22:27
45	1LM.LM35266	WG572198-10 CCB	1	1		06/10/16 22:46
46	1LM.LM35267	WG572289-07 MRL (0.2ug/L)	1	1	STD75510	06/10/16 23:05
47	1LM.LM35268	WG572289-01 MCT (0.2ug/l)	1	1	STD75512	06/10/16 23:24
48	1LM.LM35269	WG572289-02 BLANK	1	1		06/10/16 23:43
49	1LM.LM35270	WG572289-03 LCS (0.2ug/L)	1	1	STD75512	06/11/16 00:02
50	1LM.LM35271	L16060582-01 100X	1	100		06/11/16 00:21
51	1LM.LM35272	L16060582-02	1	1		06/11/16 00:40
59	1LM.LM35273	L16060582-03	1	1		06/11/16 00:59
53	1LM.LM35274	L16060582-03 MS (0.2ug/L)	1	1	STD75512	06/11/16 01:18
54	1LM.LM35275	L16060582-03 MSD (0.2ug/L)	1	1	STD75512	06/11/16 01:37
55	1LM.LM35276	WG572198-11 CCV (1.0ug/L)	1	1	STD75510	06/11/16 01:56
56	1LM.LM35277	WG572289-08 MRL (0.2ug/L)	1	1	STD75510	06/11/16 02:15
57	1LM.LM35278	WG572198-12 CCB	1	1		06/11/16 02:34

Comments

Seq.	Rerun	Dil.	Reason	Analytes
22	X	10	Over Calibration Range	
	L16060497-01			
23				
	WG572200-05 - Sample does not appear to be homogenous with Sample 01, the reference and Sample 03, the MSD.			
24				
	WG572200-06 - Sample does not appear to be homogenous with Sample 01, the reference and Sample 02, the MS.			
10	X	500	Over Calibration Range	
	L16060497-04			
11	X	100	Over Calibration Range	
	L16060575-01			
12	X	1	Carry-over contamination	
	L16060575-02			

Page: 2 Approved: 13-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061016_WTD.TXT

Analyst1: WTD Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 NA

Comments

Seq.	Rerun	Dil.	Reason	Analytes
13	X	1	Carry-over contamination	
	L16060575-03			
26	X	500	Over Calibration Range	
	L16060411-01			
27	X	100	Over Calibration Range	
	L16060411-02			
32	X	10000	Over Calibration Range	
	L16060414-03			
33	X	10000	Over Calibration Range	
	L16060414-04			
39	X	10000	Over Calibration Range	
	L16060504-01			
40	X		Internal standard failure	
	L16060504-02 - No Internal Standard added.			
41	X	10000	Over Calibration Range	
	L16060504-03 - No Internal Standard added.			
42	X	1000	Analyzed too dilute	
	L16060504-04 - No Internal Standard added.			
50				
	L16060582-01 - Analyzed at a dilution based on information from the client.			

Page: 3 Approved: 13-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
04-MAY-2016
John Richards

Secondary Reviewer:
05-MAY-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 10-JUN-2016
Analyst: WTD
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 75634
Analytical Workgroups: WG572200, WG572289

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	WTD
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MES

Primary Reviewer: 11-JUN-2016

Secondary Reviewer: 13-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-13-2016 11:53:25

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG572200

Login Number: L16060497

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW06-060816	01	06/08/16					06/10/2016	1.8	28		06/10/16	.4	28	
18CPTMW06MS-060816	02	06/08/16					06/10/2016	1.8	28		06/10/16	.1	28	
18CPTMW06MSD-060816	03	06/08/16					06/10/2016	1.8	28		06/10/16	.1	28	
MW22-060816	04	06/08/16					06/10/2016	1.8	28		06/10/16	.4	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4803821
Report generated 06/13/2016 13:25

METHOD BLANK SUMMARY

Login Number: L16060497
Blank File ID: 1LM.LM35229
Prep Date: 06/10/16 09:00
Analyzed Date: 06/10/16 11:05
Analyst: WTD

Work Group: WG572200
Blank Sample ID: WG572200-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG572200-07	1LM.LM35227	06/10/16 10:27	01
MCT	WG572200-01	1LM.LM35228	06/10/16 10:46	01
LCS	WG572200-03	1LM.LM35230	06/10/16 11:24	01
18CPTMW06MS-060816	L16060497-02	1LM.LM35232	06/10/16 12:02	01
18CPTMW06MSD-060816	L16060497-03	1LM.LM35233	06/10/16 12:21	01
QCMRL	WG572200-08	1LM.LM35239	06/10/16 14:14	01
QCMRL	WG572200-09	1LM.LM35245	06/10/16 16:08	01
18CPTMW06-060816	L16060497-01	1LM.LM35255	06/10/16 19:18	DL01
MW22-060816	L16060497-04	1LM.LM35256	06/10/16 19:37	DL01
QCMRL	WG572200-10	1LM.LM35258	06/10/16 20:15	01
QCMRL	WG572200-11	1LM.LM35265	06/10/16 22:27	01
QCMRL	WG572200-12	1LM.LM35281	06/11/16 12:05	01
QCMRL	WG572200-13	1LM.LM35293	06/11/16 16:41	01
QCMRL	WG572200-14	1LM.LM35297	06/11/16 17:57	01

Report Name: BLANK_SUMMARY
PDF File ID: 4803822
Report generated 06/13/2016 13:25

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060497 Prep Date: 06/10/16 09:00 Sample ID: WG572200-02
Instrument ID: LCMS1 Run Date: 06/10/16 11:05 Prep Method: 6850
File ID: 1LM.LM35229 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4803823
13-JUN-2016 13:25

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060497 Run Date: 06/10/2016 Sample ID: WG572200-03
Instrument ID: LCMS1 Run Time: 11:24 Prep Method: 6850
File ID: 1LM.LM35230 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD75512 Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	0.200	0.201	101	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4803824
Report generated: 06/13/2016 13:25

Microbac Laboratories Inc.

MS/MSD REPORT

Loginnum: L16060497 Cal ID: LCMS1- 03-MAY-16 Worknum: WG572200
Instrument ID: LCMS1 Contract #: Prep Method: 6850
Parent ID: L16060497-01 File ID: 1LM.LM35231 Dil: 1 Method: 6850
Sample ID: L16060497-02 MS File ID: 1LM.LM35232 Dil: 1 Matrix: Water
Sample ID: L16060497-03 MSD File ID: 1LM.LM35233 Dil: 1 Units: ug/L

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Perchlorate	30.2	0.200	7.05	-11600	0.200	2.39	-13900	98.7	80 - 120	15	*#

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

MS_MSD - Modified 03/06/2008
PDF File ID: 4803825
Report generated 06/13/2016 13:25

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060497
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4803827
Report generated 06/13/2016 13:25

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060497

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4803827
Report generated 06/13/2016 13:25

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060497

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4803827
Report generated 06/13/2016 13:25

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060497

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008

PDF File ID: 4803827

Report generated 06/13/2016 13:25

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060497 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4803828
Report generated 06/13/2016 13:25

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060497
Run Date: 06/10/2016
Sample ID: WG572198-01
Instrument ID: LCMS1
Run Time: 09:49
Method: 6850
File ID: 1LM.LM35225
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4803830
Report generated 06/13/2016 13:25

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060497
Run Date: 06/10/2016
Sample ID: WG572198-04
Instrument ID: LCMS1
Run Time: 14:33
Method: 6850
File ID: 1LM.LM35240
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4803830
Report generated 06/13/2016 13:25

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060497
Run Date: 06/10/2016
Sample ID: WG572198-06
Instrument ID: LCMS1
Run Time: 16:27
Method: 6850
File ID: 1LM.LM35246
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4803830
Report generated 06/13/2016 13:25

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060497
Run Date: 06/10/2016
Sample ID: WG572198-08
Instrument ID: LCMS1
Run Time: 20:34
Method: 6850
File ID: 1LM.LM35259
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4803830
Report generated 06/13/2016 13:25

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060497
Run Date: 06/10/2016
Sample ID: WG572198-02
Instrument ID: LCMS1
Run Time: 10:08
Method: 6850
File ID: 1LM.LM35226
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.70	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4803829
Report generated 06/13/2016 13:25

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060497
Run Date: 06/10/2016
Sample ID: WG572198-03
Instrument ID: LCMS1
Run Time: 13:55
Method: 6850
File ID: 1LM.LM35238
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.71	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4803829
Report generated 06/13/2016 13:25

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060497
Run Date: 06/10/2016
Sample ID: WG572198-05
Instrument ID: LCMS1
Run Time: 15:49
Method: 6850
File ID: 1LM.LM35244
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.05	ug/L	1.77	5.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4803829
Report generated 06/13/2016 13:25

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060497
Run Date: 06/10/2016
Sample ID: WG572198-07
Instrument ID: LCMS1
Run Time: 19:56
Method: 6850
File ID: 1LM.LM35257
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.08	ug/L	1.82	8.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4803829
Report generated 06/13/2016 13:25

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060497 Run Date: 06/10/2016 Sample ID: WG572200-07
Instrument ID: LCMS1 Run Time: 10:27 Prep Method: 6850
File ID: 1LM.LM35227 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.202	101	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4803826
Report generated 06/13/2016 13:25

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060497 Run Date: 06/10/2016 Sample ID: WG572200-08
Instrument ID: LCMS1 Run Time: 14:14 Prep Method: 6850
File ID: 1LM.LM35239 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.215	108	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4803826
Report generated 06/13/2016 13:25

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060497 Run Date: 06/10/2016 Sample ID: WG572200-09
Instrument ID: LCMS1 Run Time: 16:08 Prep Method: 6850
File ID: 1LM.LM35245 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.210	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4803826
Report generated 06/13/2016 13:25

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060497 Run Date: 06/10/2016 Sample ID: WG572200-10
Instrument ID: LCMS1 Run Time: 20:15 Prep Method: 6850
File ID: 1LM.LM35258 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.222	111	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4803826
Report generated 06/13/2016 13:25

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16060497
Instrument ID: LCMS1
Workgroup (AAB#): WG572200

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16060497-01	10.0	DL01	450000
L16060497-02	1.00	01	357000
L16060497-03	1.00	01	422000
L16060497-04	500	DL01	464000
WG572200-02	1.00	01	441000
WG572200-03	1.00	01	434000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4803831
Report generated 06/13/2016 13:25

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**	6850	**Samplenum:**	L16060497-01
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35255
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 19:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	460000	158000	2.91	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**	6850	**Samplenum:**	L16060497-02
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35232
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 12:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	847000	297000	2.85	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**	6850	**Samplenum:**	L16060497-03
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35233
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 12:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	339000	116000	2.92	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**	6850	**Samplenum:**	L16060497-04
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35256
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 19:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	193000	66500	2.90	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**		**Samplenum:**	WG572198-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35225
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 09:49	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**		**Samplenum:**	WG572198-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35226
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 10:08	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	151000	53700	2.81	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**		**Samplenum:**	WG572198-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35238
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 13:55	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	172000	59600	2.89	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**		**Samplenum:**	WG572198-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35240
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 14:33	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	3660	1770	2.07	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**		**Samplenum:**	WG572198-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35244
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 15:49	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	179000	63400	2.82	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**		**Samplenum:**	WG572198-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35246
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 16:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	377	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**		**Samplenum:**	WG572198-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35257
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 19:56	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	175000	58000	3.02	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**		**Samplenum:**	WG572198-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35259
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 20:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**	6850	**Samplenum:**	WG572200-01
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35228
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 10:46	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35200	10400	3.38	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**	6850	**Samplenum:**	WG572200-02
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35229
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 11:05	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	309	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**	6850	**Samplenum:**	WG572200-03
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35230
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 11:24	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	30000	11800	2.54	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**	6850	**Samplenum:**	WG572200-07
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35227
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 10:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	30600	11100	2.76	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**	6850	**Samplenum:**	WG572200-08
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35239
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 14:14	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36500	13800	2.64	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**	6850	**Samplenum:**	WG572200-09
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35245
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 16:08	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36700	12600	2.91	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060497	**Prep Method:**	6850	**Samplenum:**	WG572200-10
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35258
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 20:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36200	12400	2.92	2.3	3.8	

2.2.2.3 Sample Data

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Data File	LM35255.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 7:18:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060497-01 10X	**Injection Vial**	22.00
Data File	LM35255.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 7:18:32 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	L16060497-01	**Dilution Factor**	1.00
Sample Comment	110.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.500e+05	9.75	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.600e+05	9.76	N/A	3.03
Perchlorate conf	1.580e+05	9.75	N/A	3.12

O18LP (Internal Standard)

RT (Exp. RT): 9.75(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

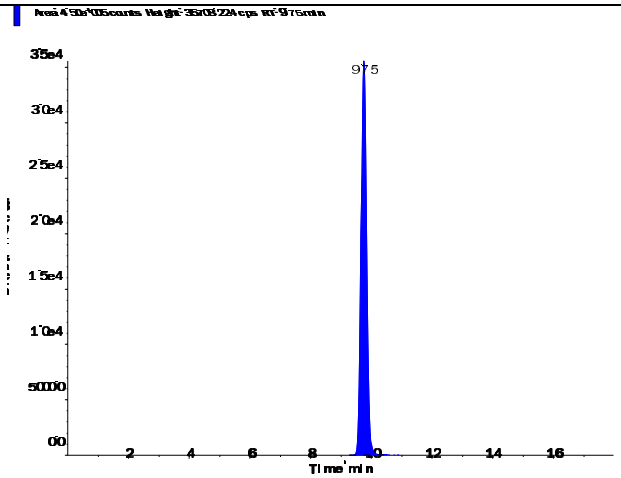

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.76 (9.84) min Calculated conc: 3.03 ng/ml Area Ratio: 1.02 Sample Type: (Unknown)	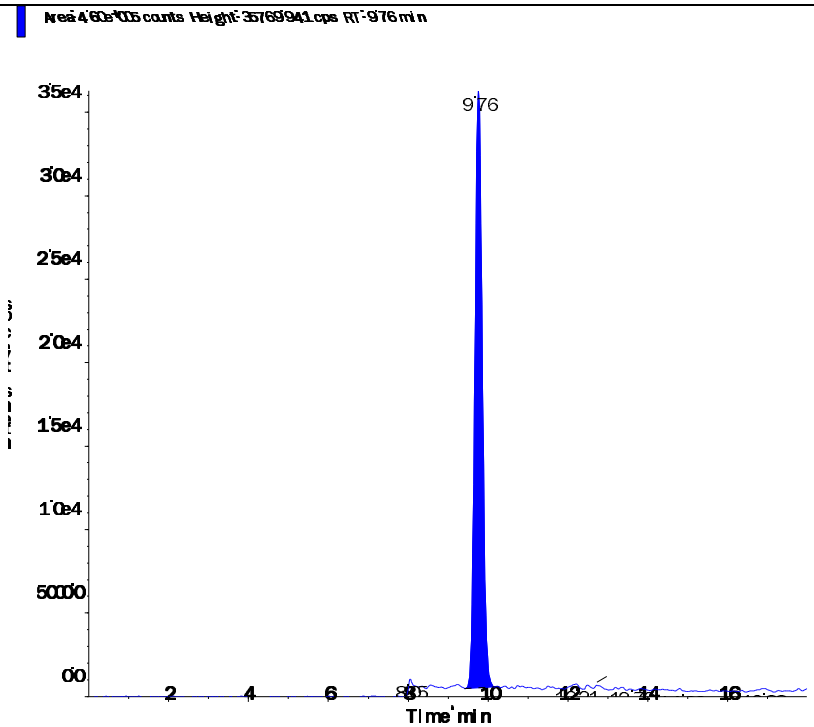
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.75 (9.84) min Calculated conc: 3.12 ng/ml Area Ratio: 0.35 Sample Type: (Unknown)	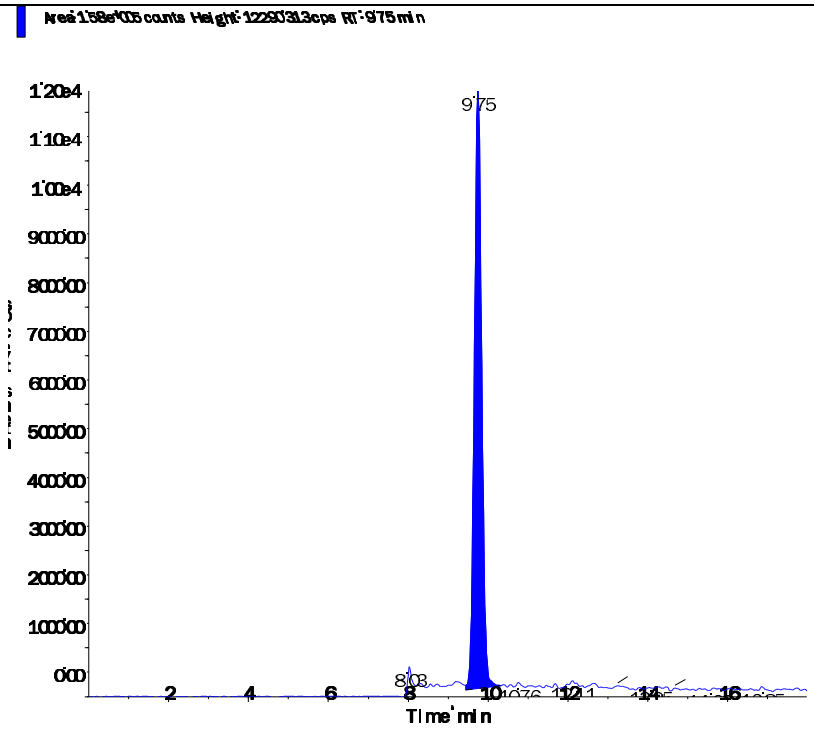

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Printed: 6/11/2016 1:01 PM

Data File	LM35232.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 12:02:19 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060497-02 MS (0.2ug/L)	**Injection Vial**	8.00
Data File	LM35232.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 12:02:19 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.570e+05	9.45	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.470e+05	9.46	N/A	7.05
Perchlorate conf	2.970e+05	9.45	N/A	7.42

O18LP (Internal Standard)

RT (Exp. RT): 9.45(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

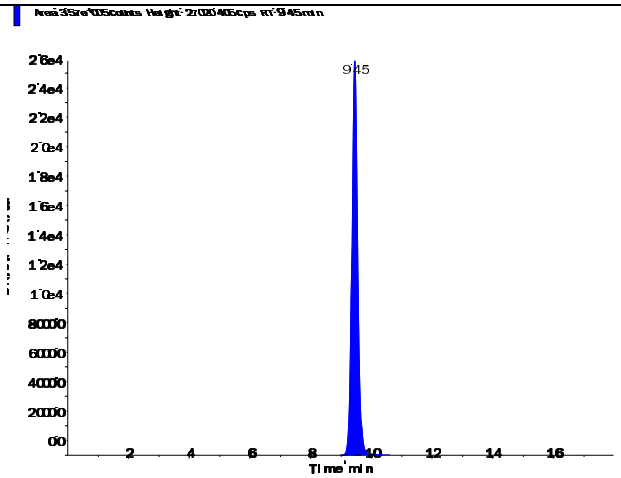

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.46 (9.84) min
Calculated conc:	7.05 ng/ml
Area Ratio:	2.374
Sample Type:	(Unknown)

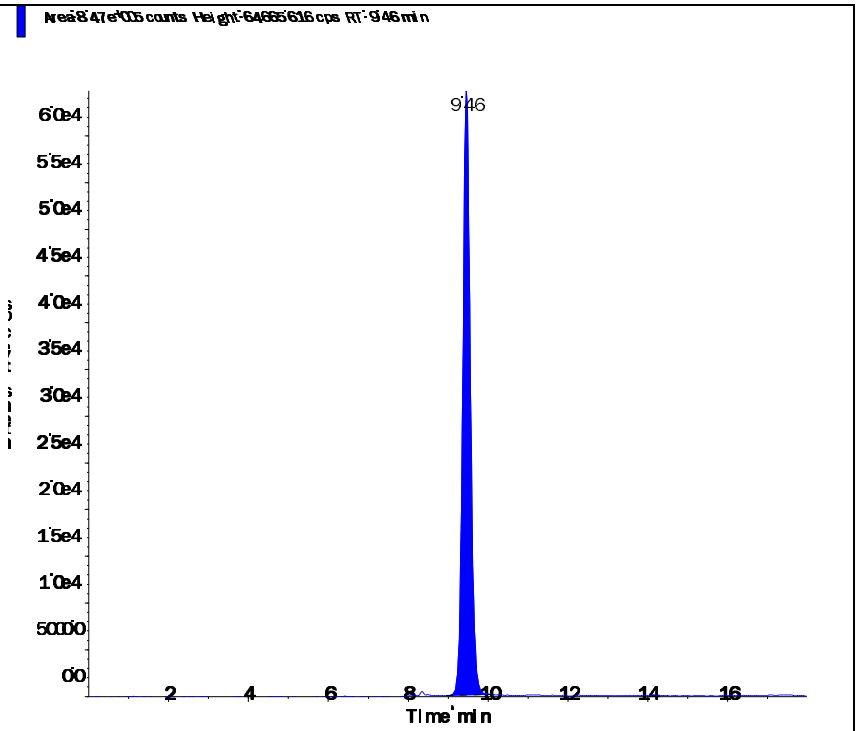

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.45 (9.84) min
Calculated conc:	7.42 ng/ml
Area Ratio:	0.831
Sample Type:	(Unknown)

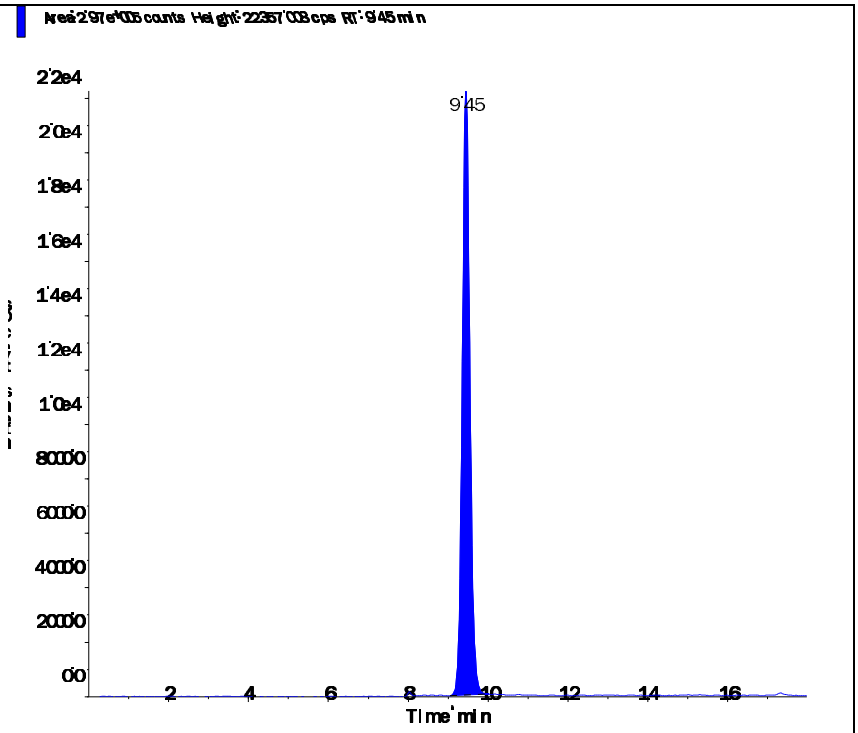

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Data File	LM35233.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 12:21:15 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060497-03 MSD (0.2ug/L)	**Injection Vial**	9.00
Data File	LM35233.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 12:21:15 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.220e+05	9.44	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.390e+05	9.46	N/A	2.39
Perchlorate conf	1.160e+05	9.44	N/A	2.46

O18LP (Internal Standard)

RT (Exp. RT): 9.44(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

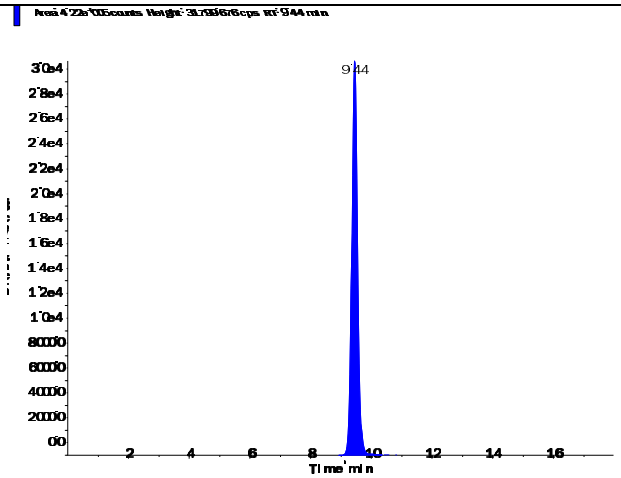

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.46 (9.84) min Calculated conc: 2.39 ng/ml Area Ratio: 0.804 Sample Type: (Unknown)	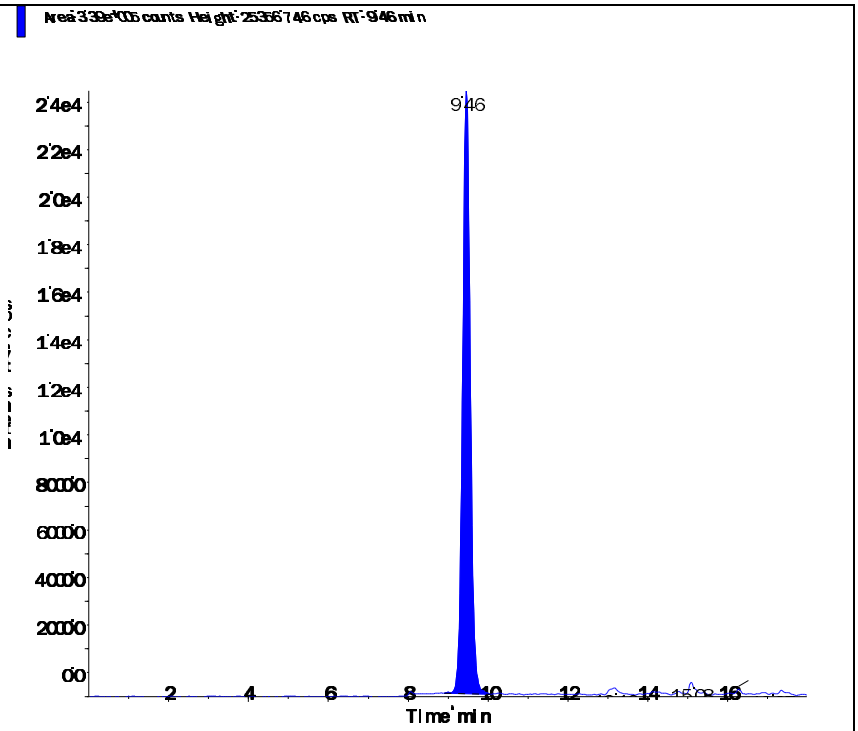
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.44 (9.84) min Calculated conc: 2.46 ng/ml Area Ratio: 0.276 Sample Type: (Unknown)	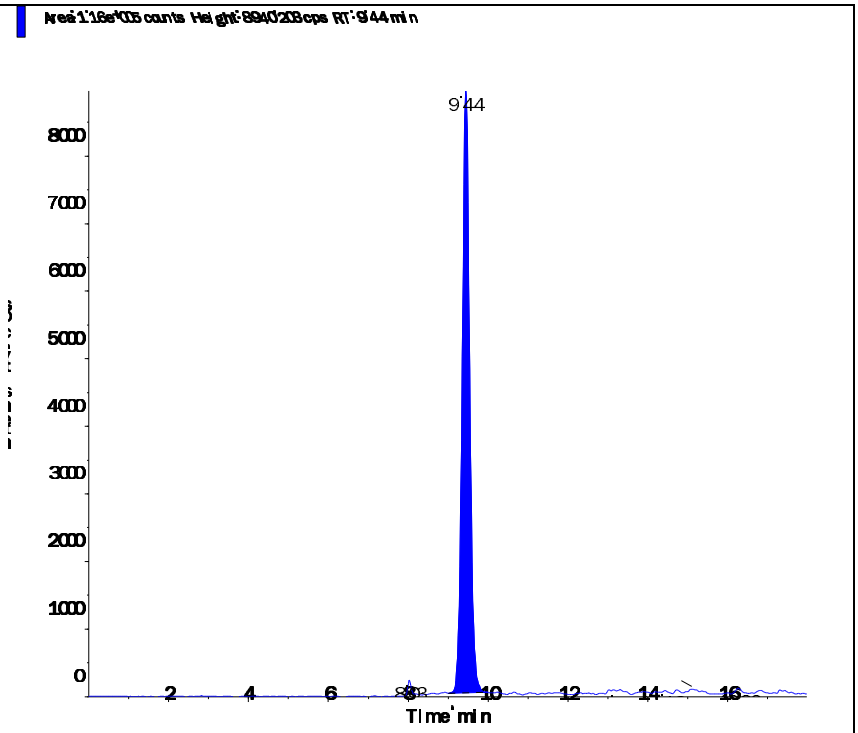

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Data File	LM35256.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 7:37:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060497-04 500X	**Injection Vial**	23.00
Data File	LM35256.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 7:37:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	L16060497-04	**Dilution Factor**	1.00
Sample Comment	1,500.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.640e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.930e+05	9.84	N/A	1.23
Perchlorate conf	6.650e+04	9.82	N/A	1.26

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

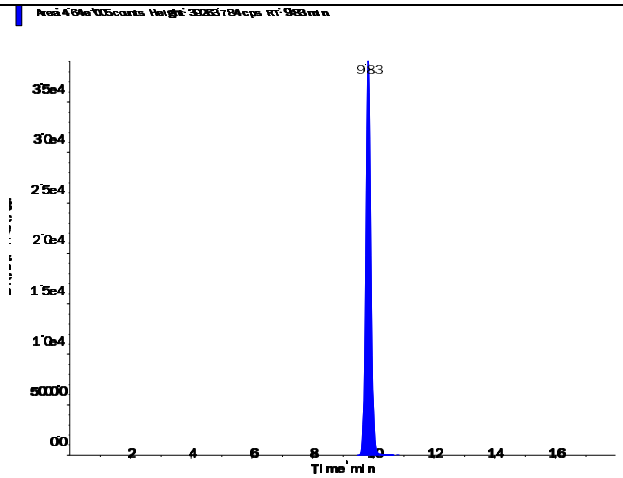

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 1.23 ng/ml Area Ratio: 0.415 Sample Type: (Unknown)	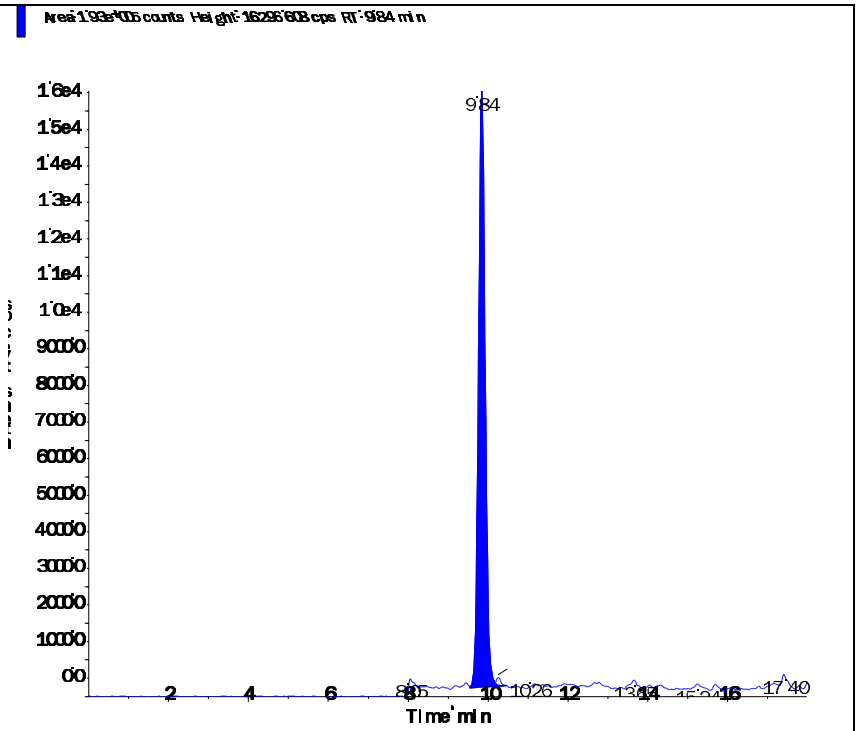
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.82 (9.84) min Calculated conc: 1.26 ng/ml Area Ratio: 0.143 Sample Type: (Unknown)	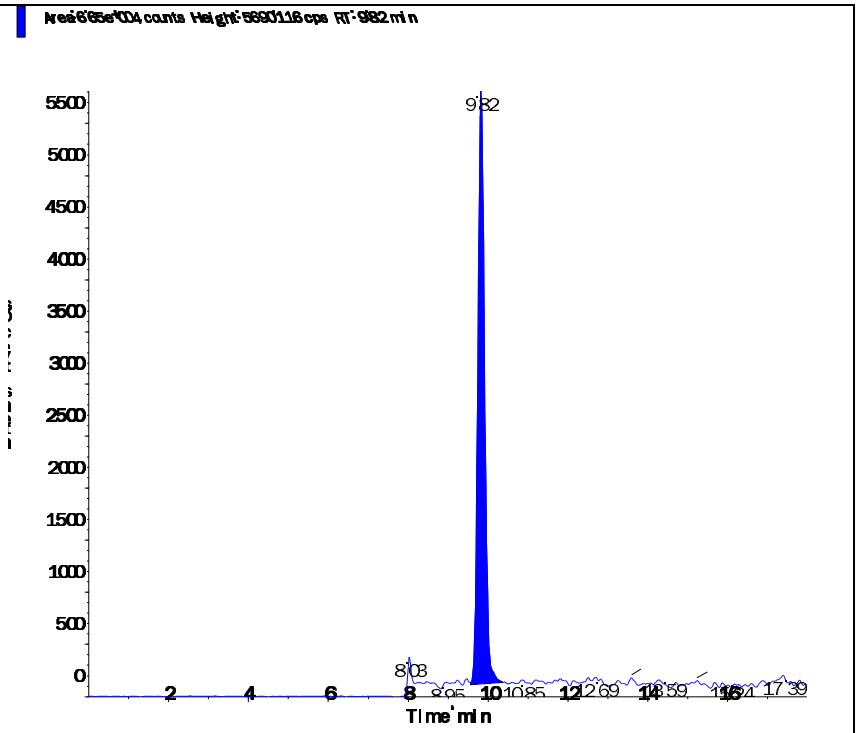

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2.2.2.4 Standards Data

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Data File	LM34686.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

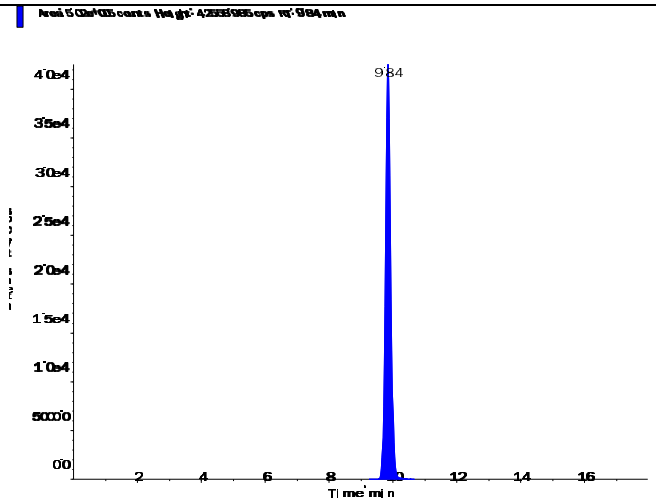

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

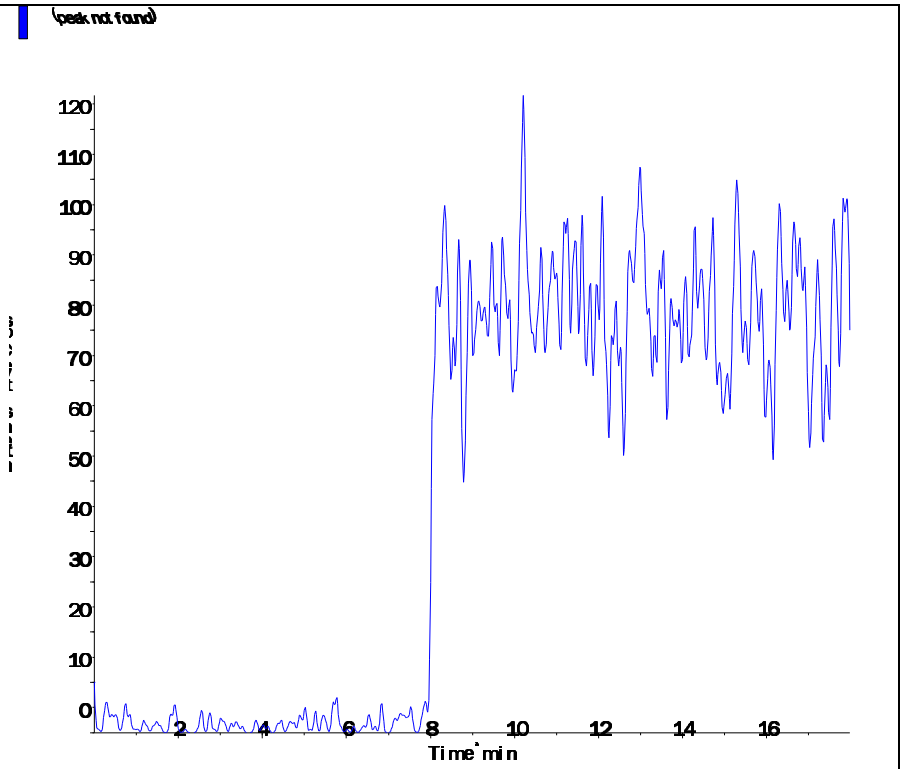

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

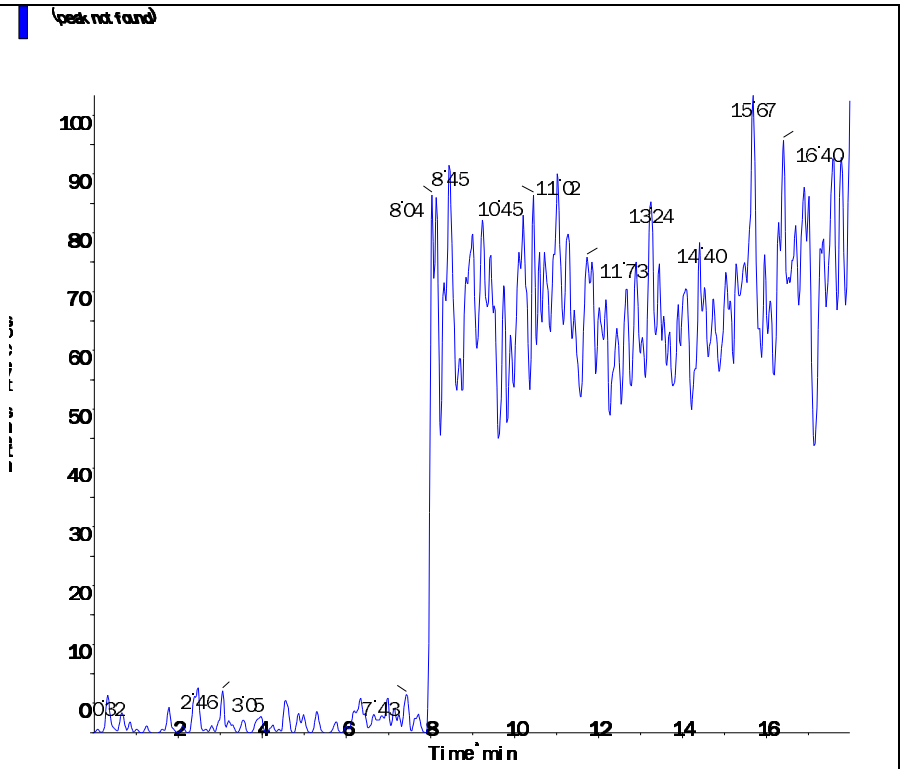

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Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

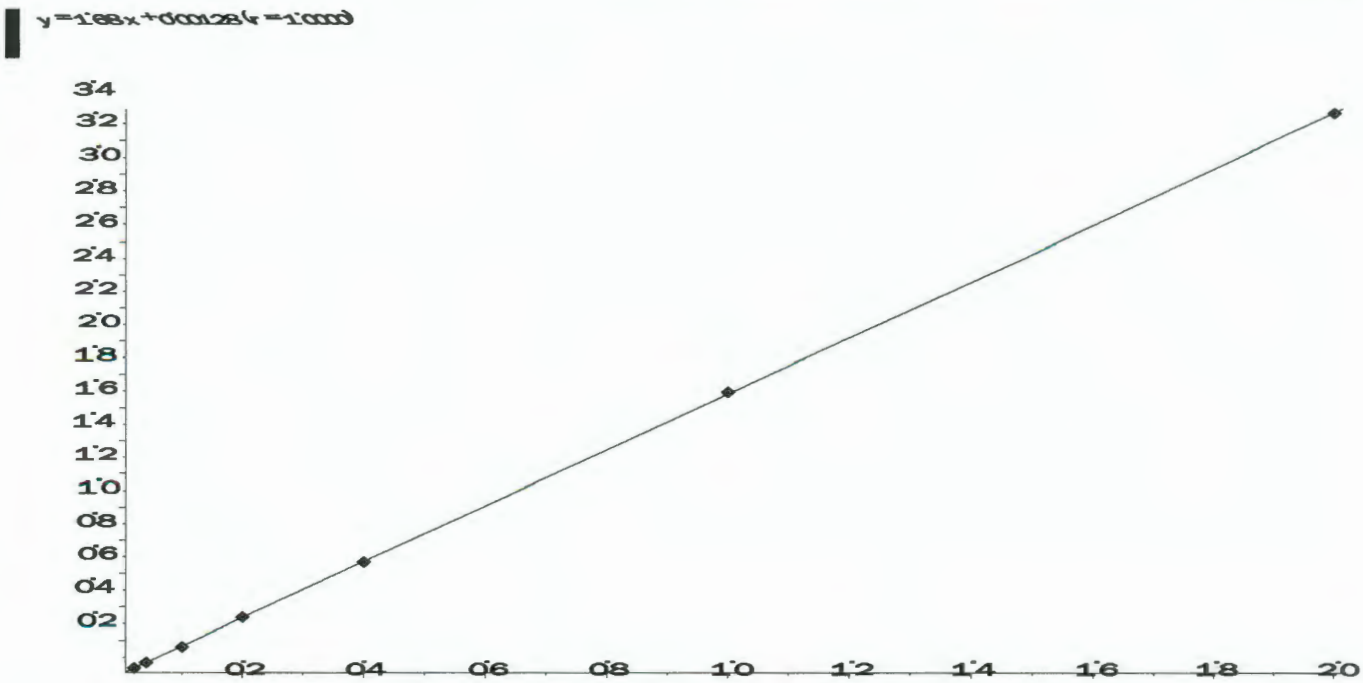

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Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

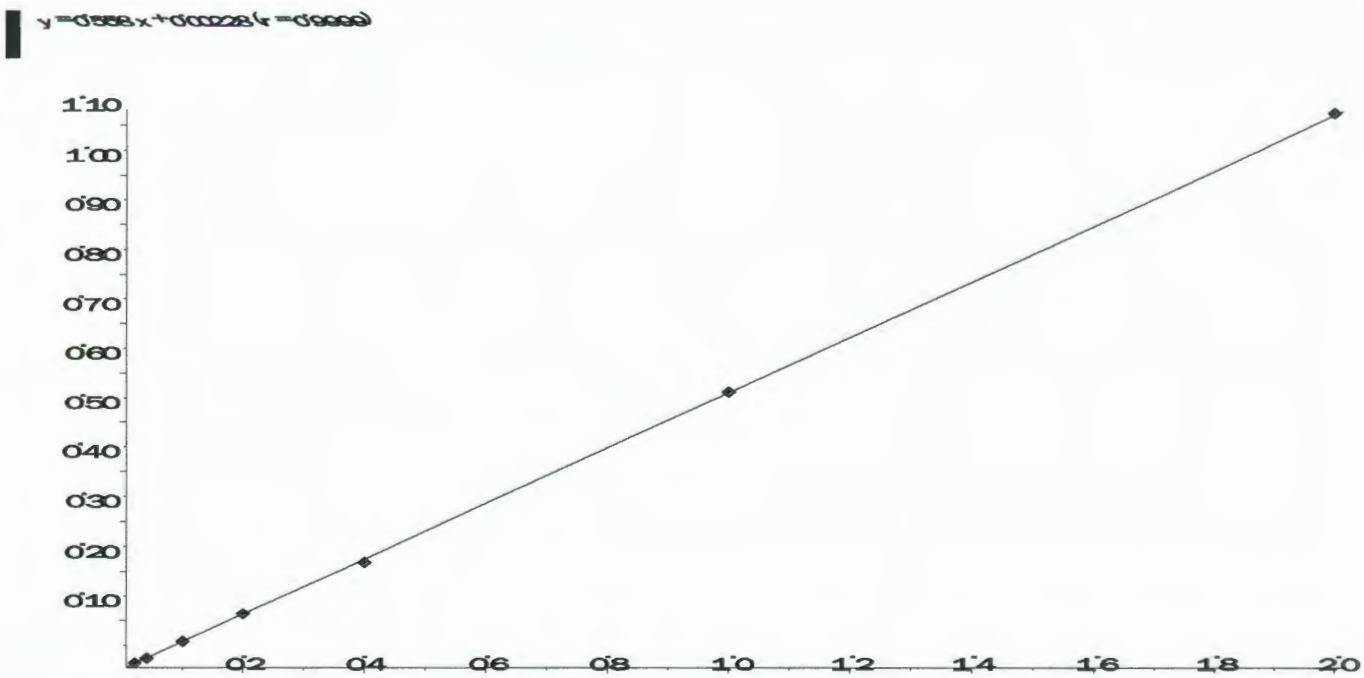

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Data File	LM34687.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

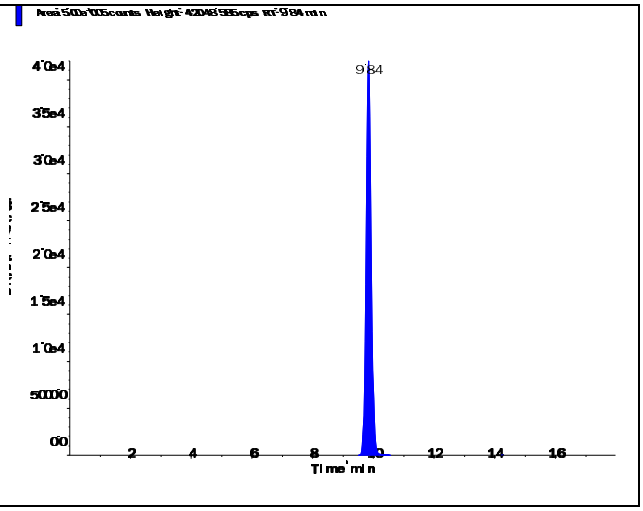

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 0.103 ng/ml Area Ratio: 0.036 Sample Type: (Standard)	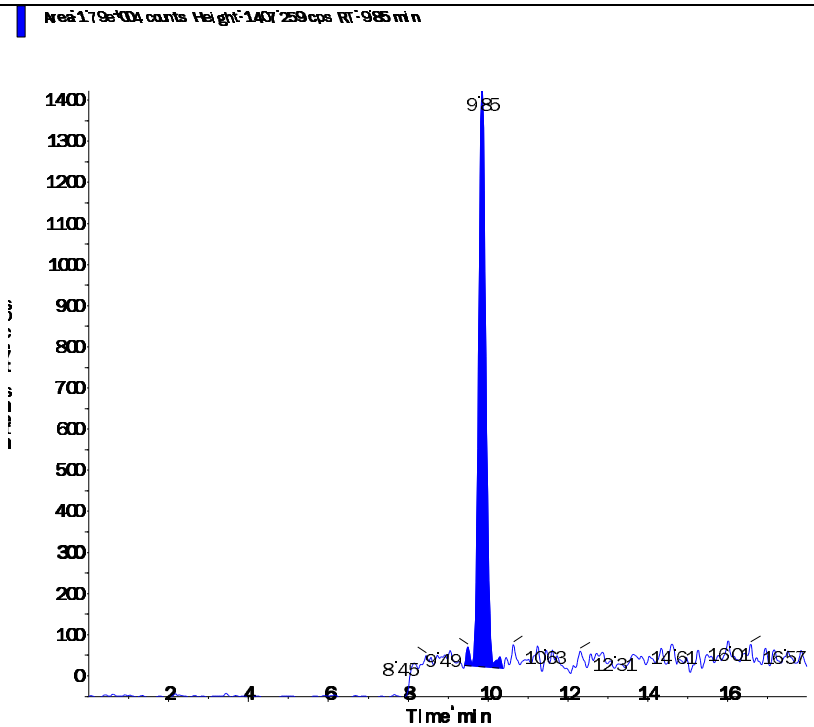
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 0.104 ng/ml Area Ratio: 0.014 Sample Type: (Standard)	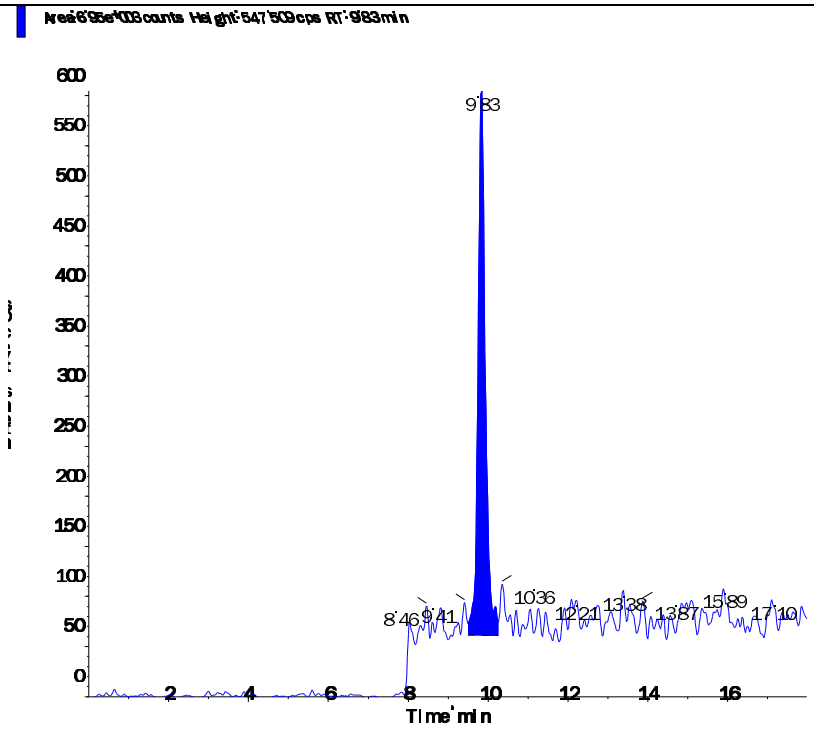

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Data File	LM34688.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

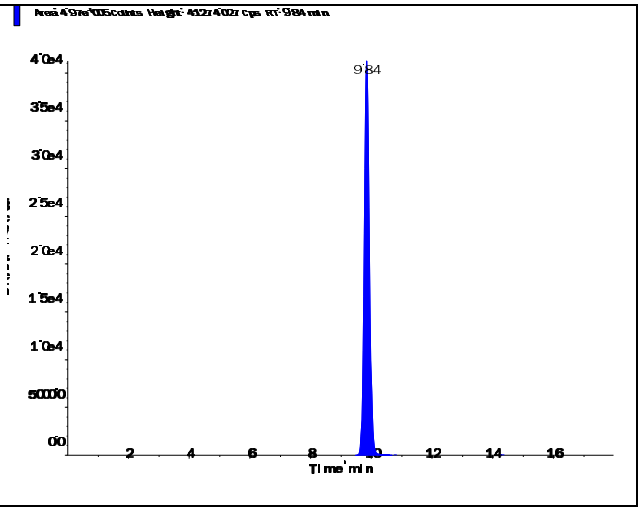

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

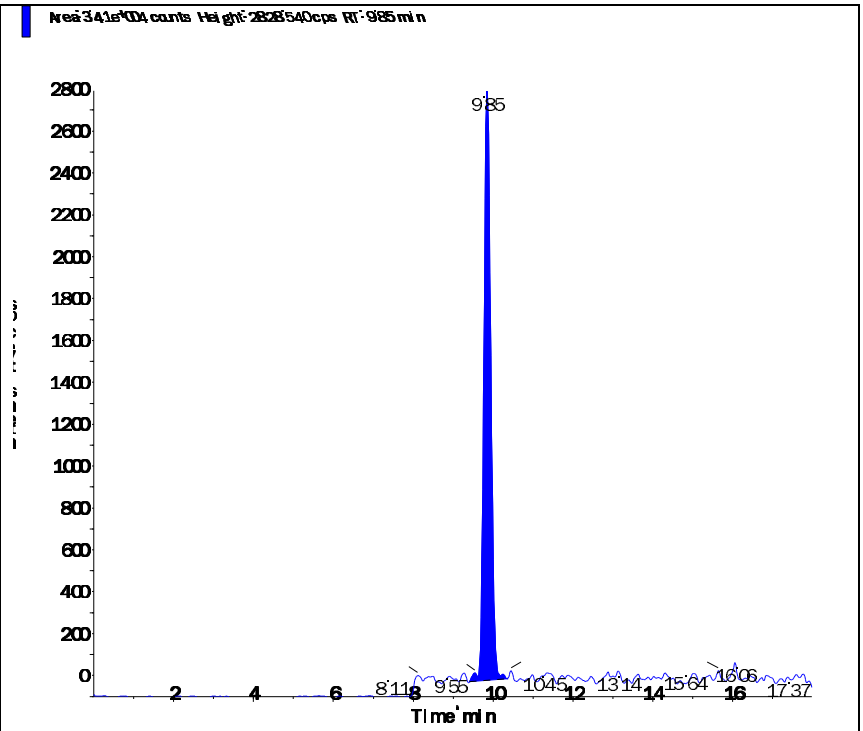

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

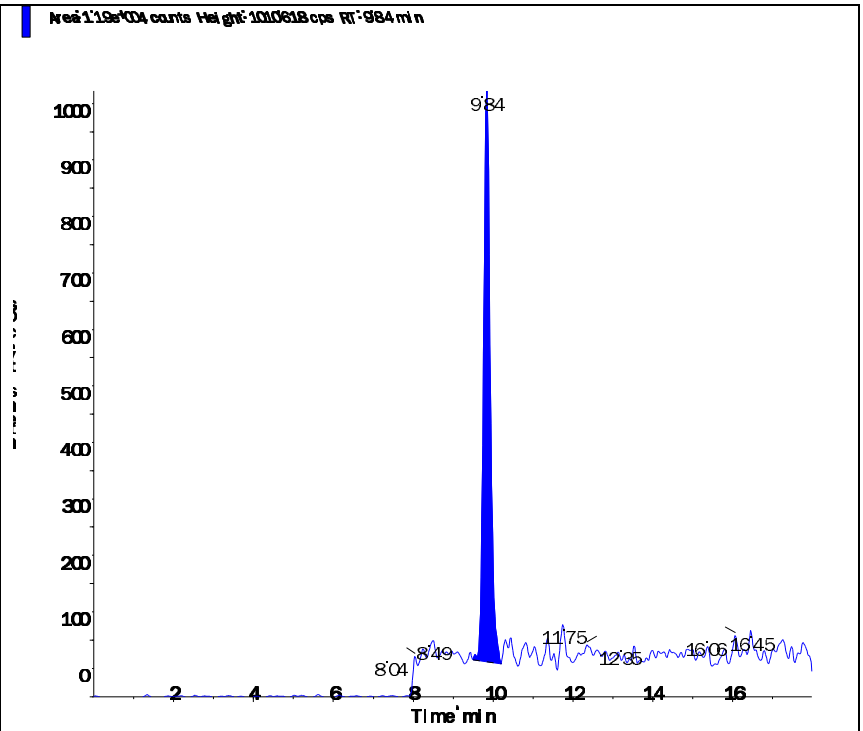

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Data File	LM34689.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

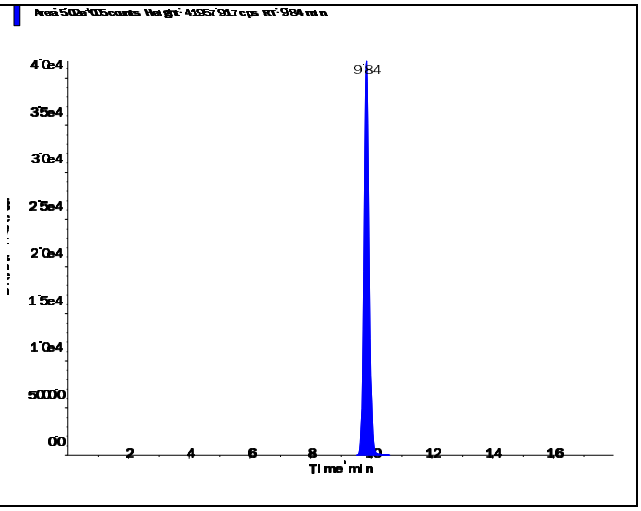

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.483 ng/ml
Area Ratio:	0.164
Sample Type:	(Standard)

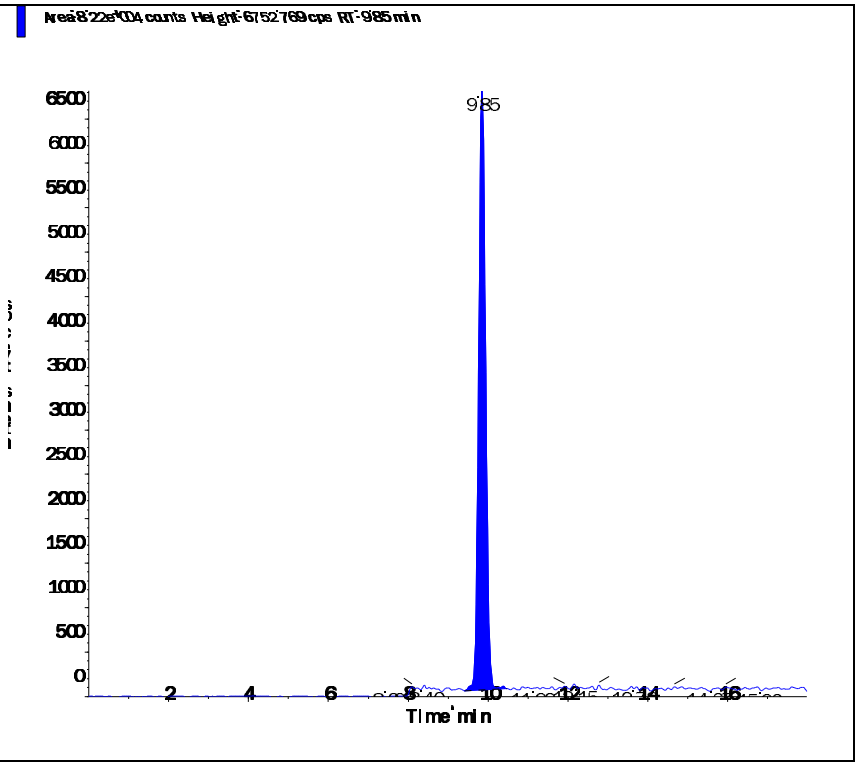

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.503 ng/ml
Area Ratio:	0.058
Sample Type:	(Standard)

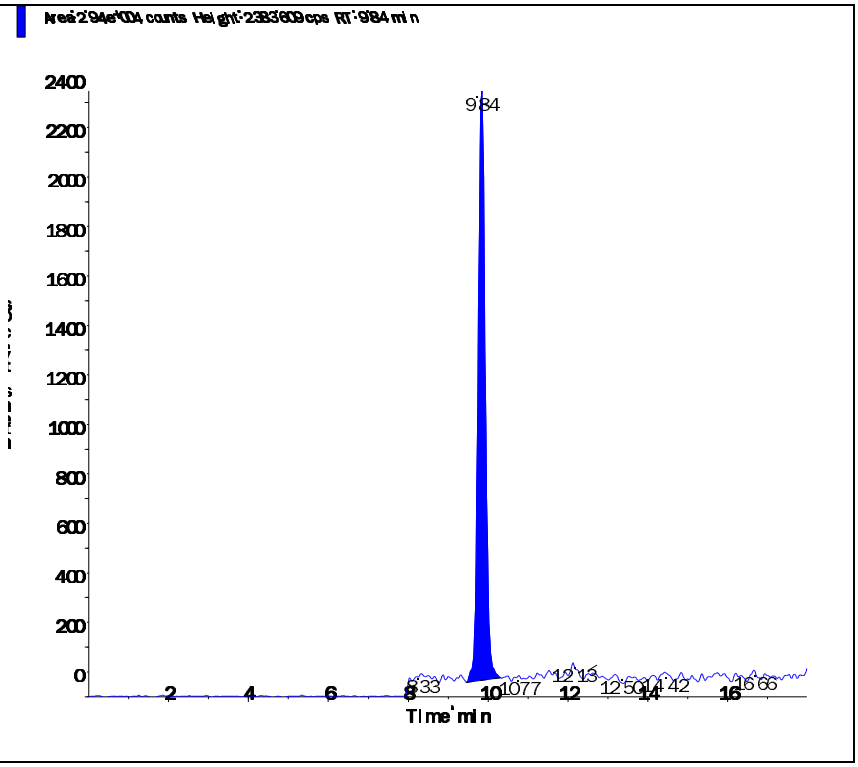

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Data File	LM34690.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

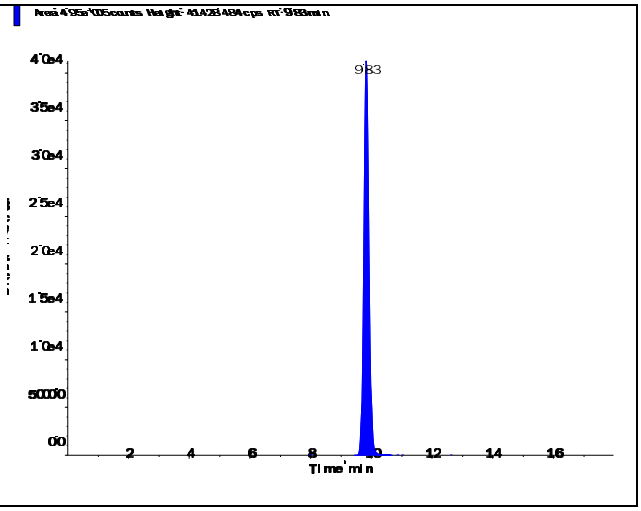

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

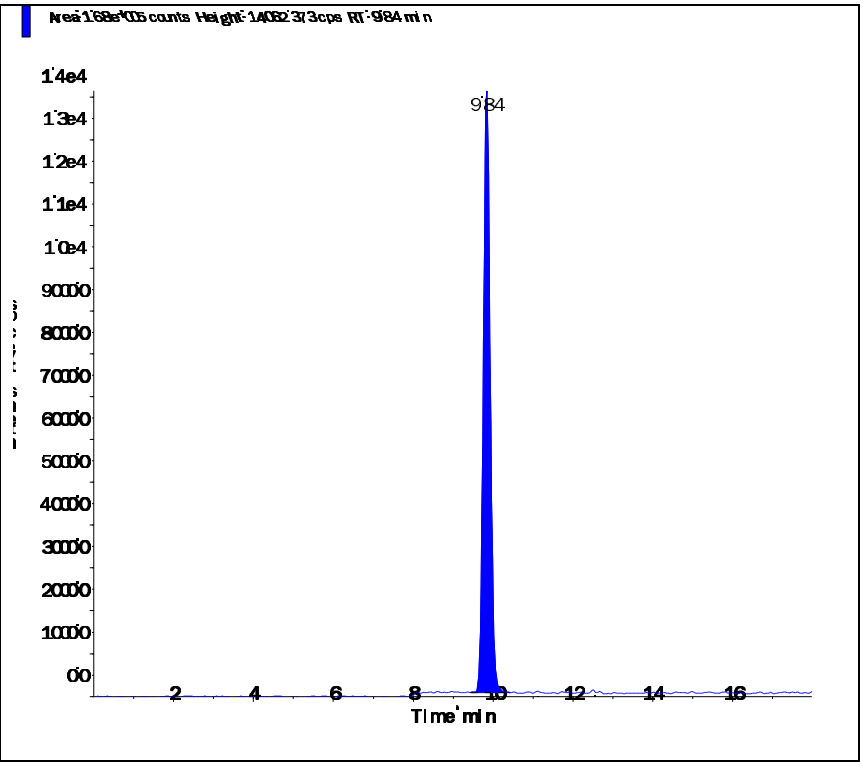

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

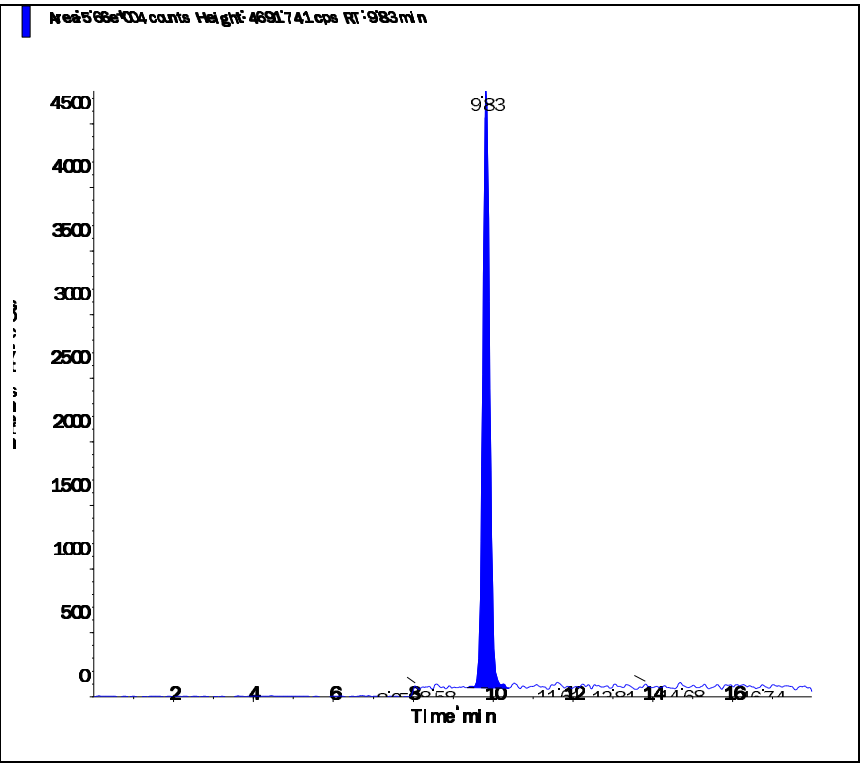

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Data File	LM34691.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

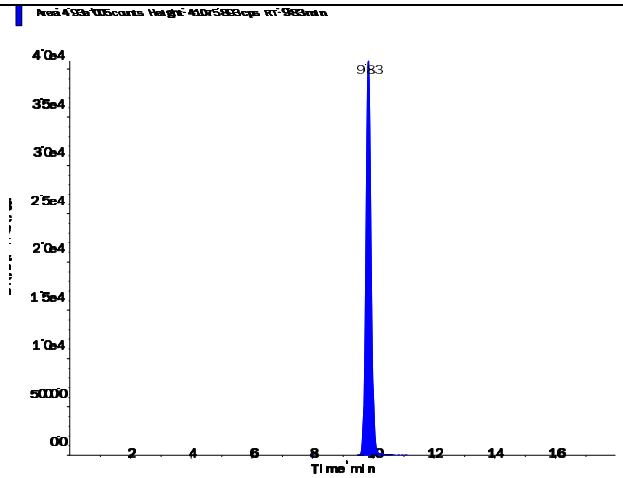

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 1.99 ng/ml Area Ratio: 0.669 Sample Type: (Standard)	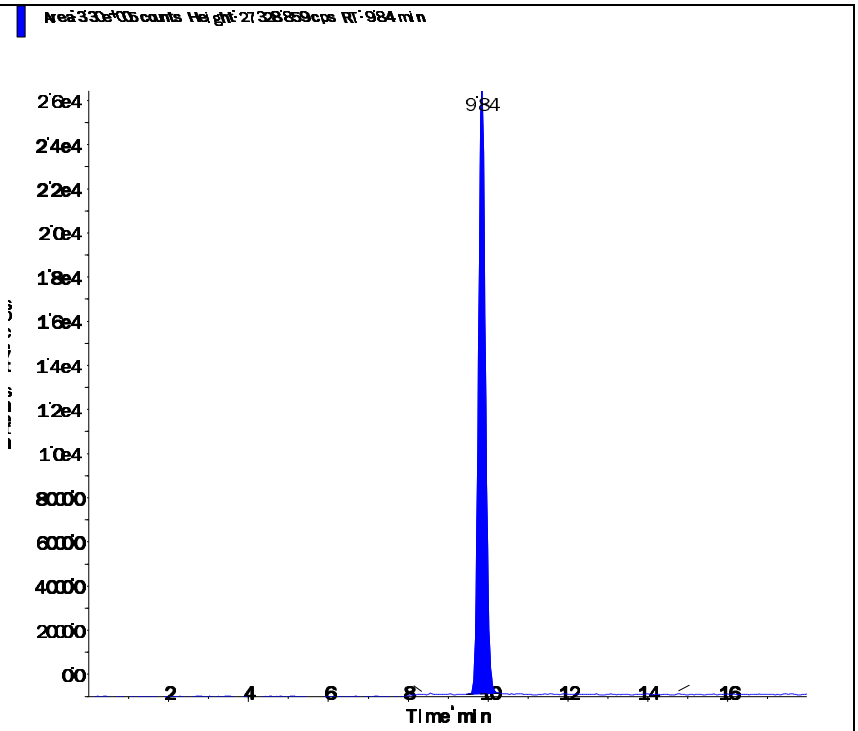
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 1.94 ng/ml Area Ratio: 0.219 Sample Type: (Standard)	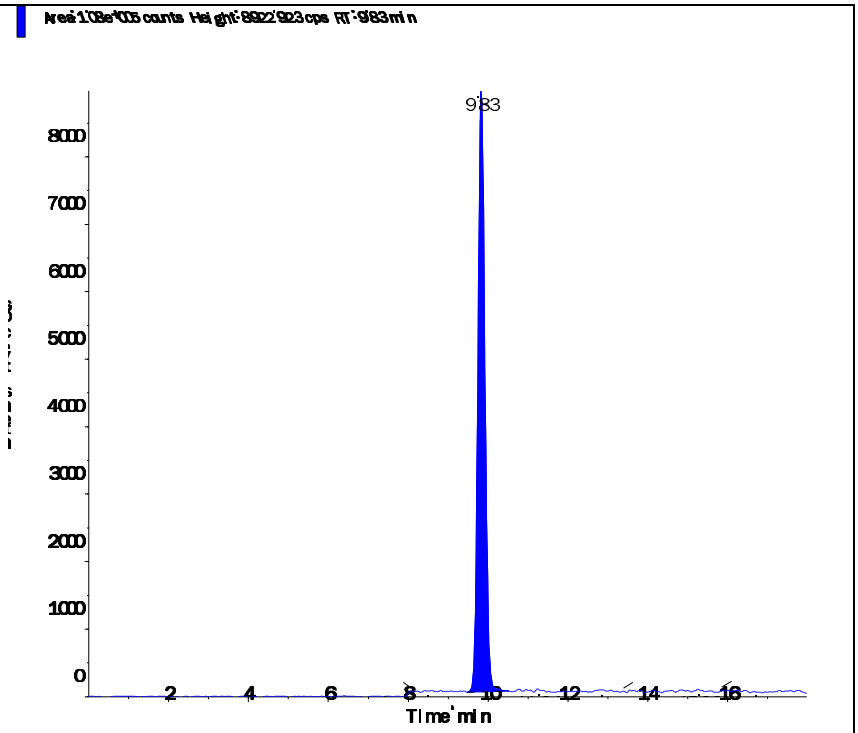

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Data File	LM34692.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

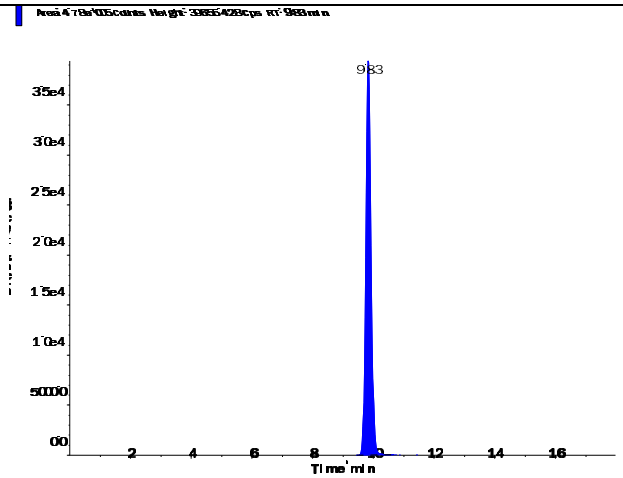

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

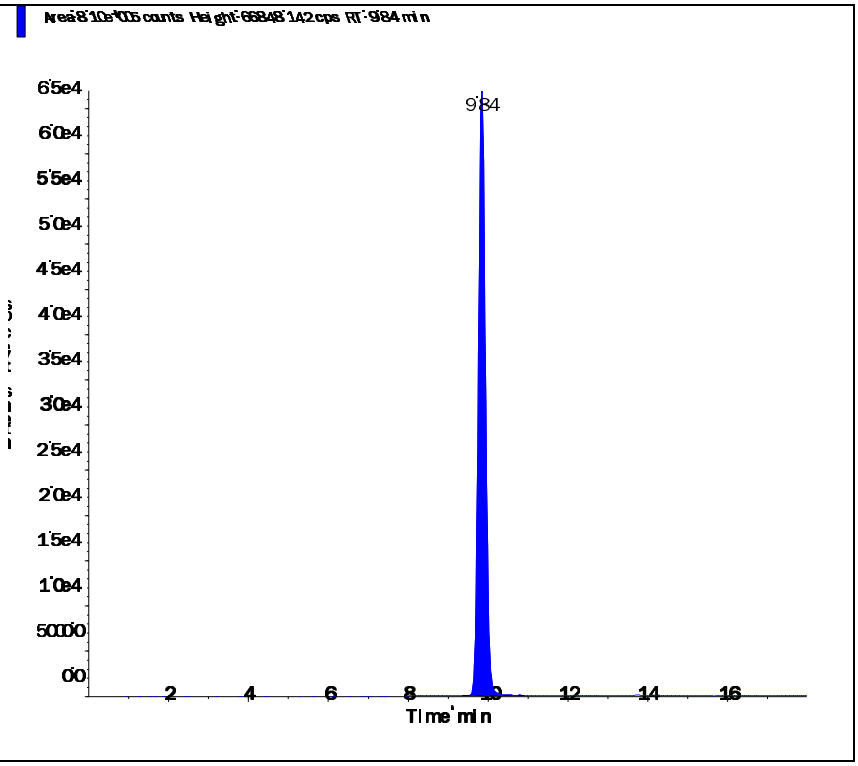

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

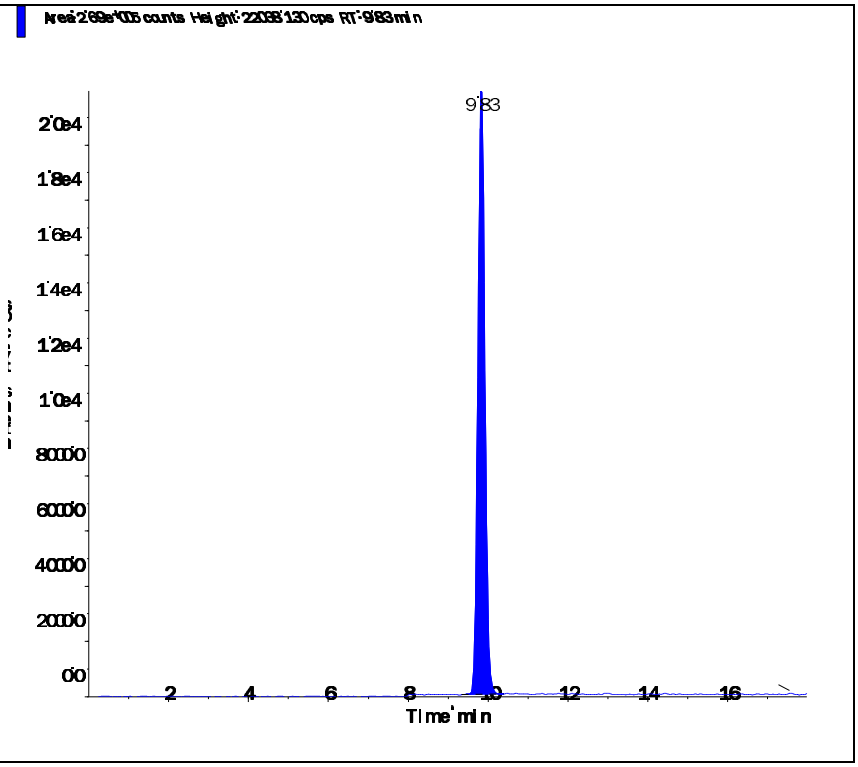

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Printed: 6/13/2016 10:30 AM

Data File	LM34693.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

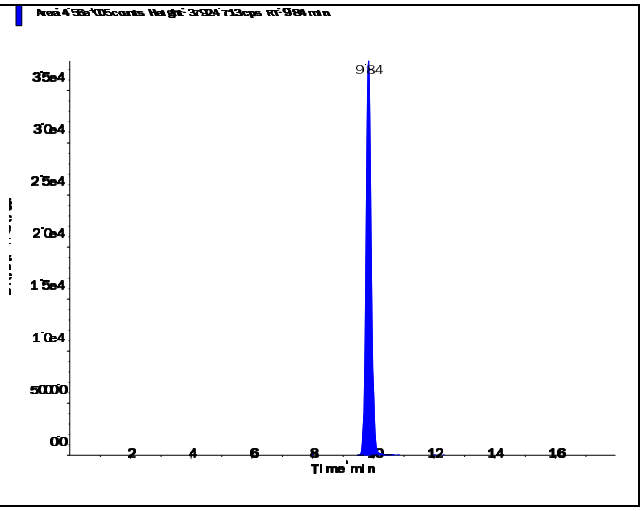

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Printed: 6/13/2016 10:30 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 9.99 ng/ml Area Ratio: 3.36 Sample Type: (Standard)	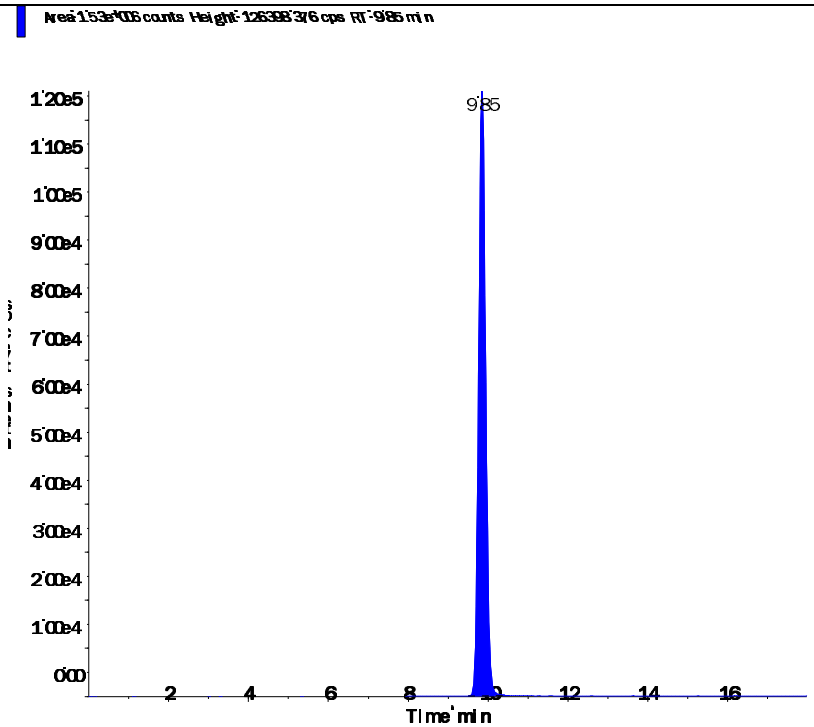
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 10.00 ng/ml Area Ratio: 1.122 Sample Type: (Standard)	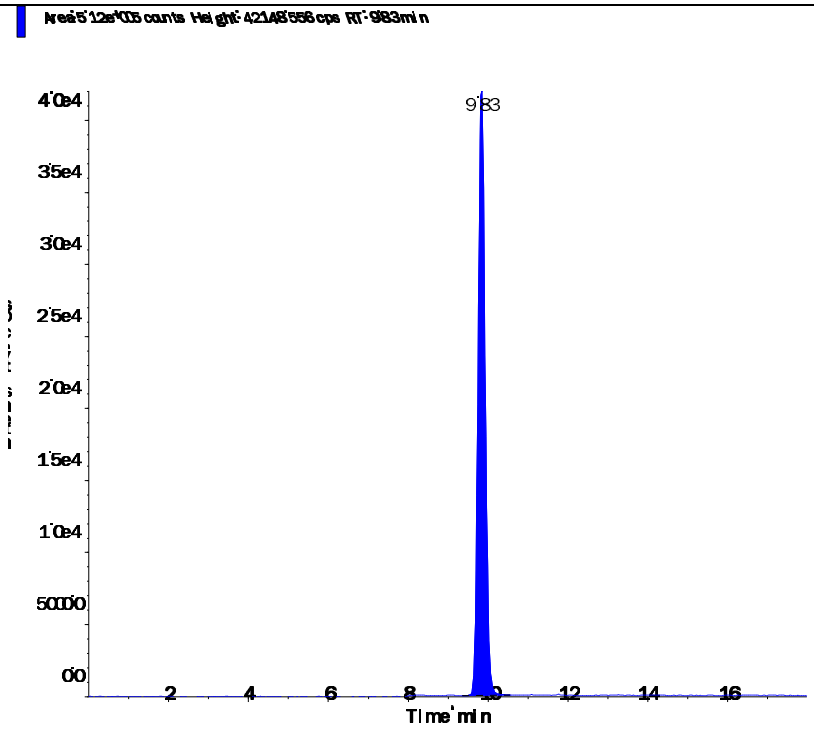

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Printed: 5/4/2016 1:23 PM

Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

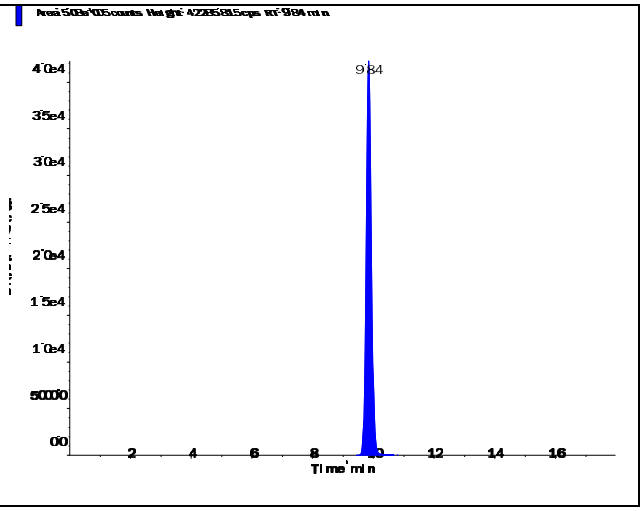

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Printed: 5/4/2016 1:23 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.332
Sample Type:	(Quality Control)

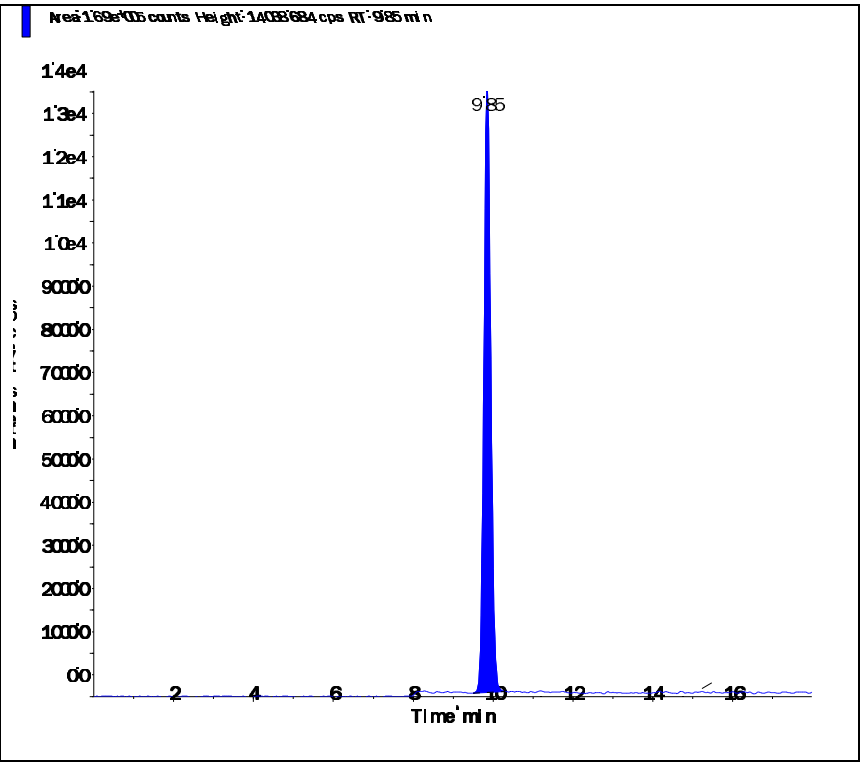

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

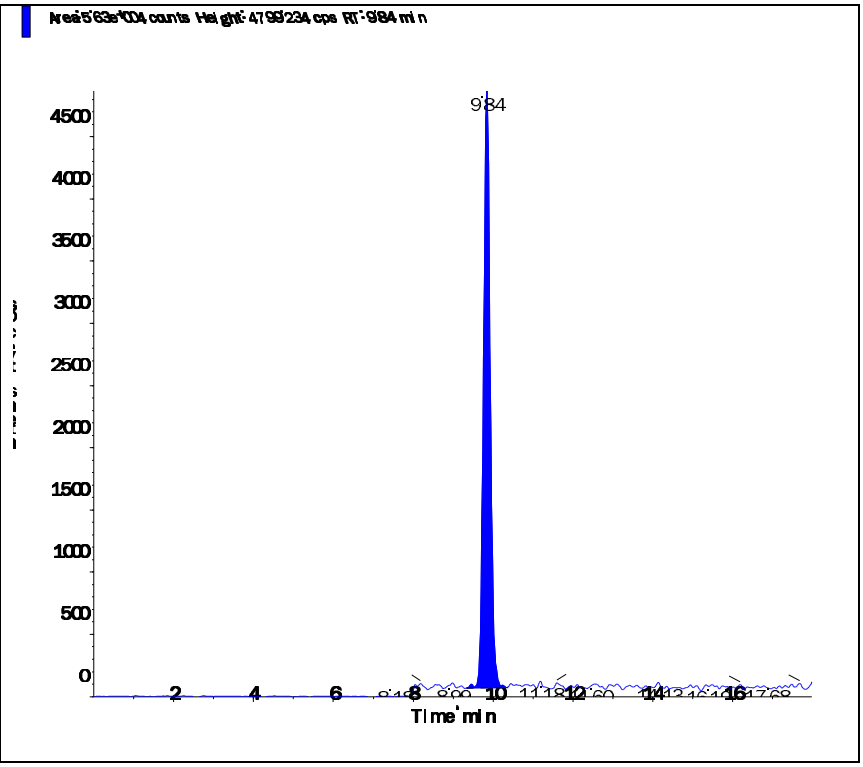

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Created with Analyst Reporter
Printed: 6/11/2016 12:59 PM

Data File	LM35226.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 10:08:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35226.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 10:08:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.430e+05	9.64	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.510e+05	9.65	1.00	1.01
Perchlorate conf	5.370e+04	9.63	1.00	1.06

O18LP (Internal Standard)

RT (Exp. RT): 9.64(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

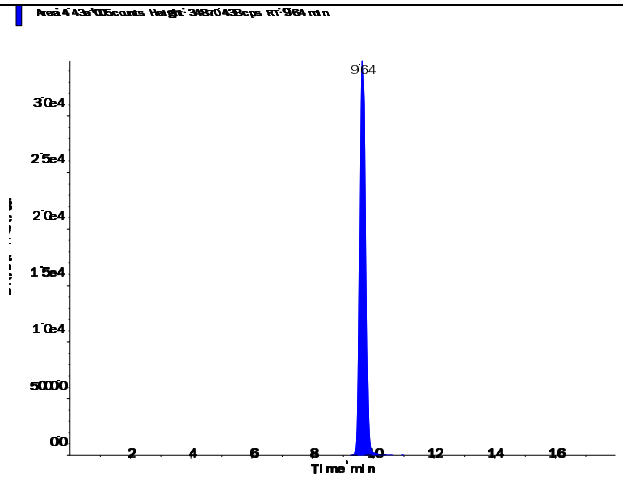

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.65 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.34
Sample Type:	(Quality Control)

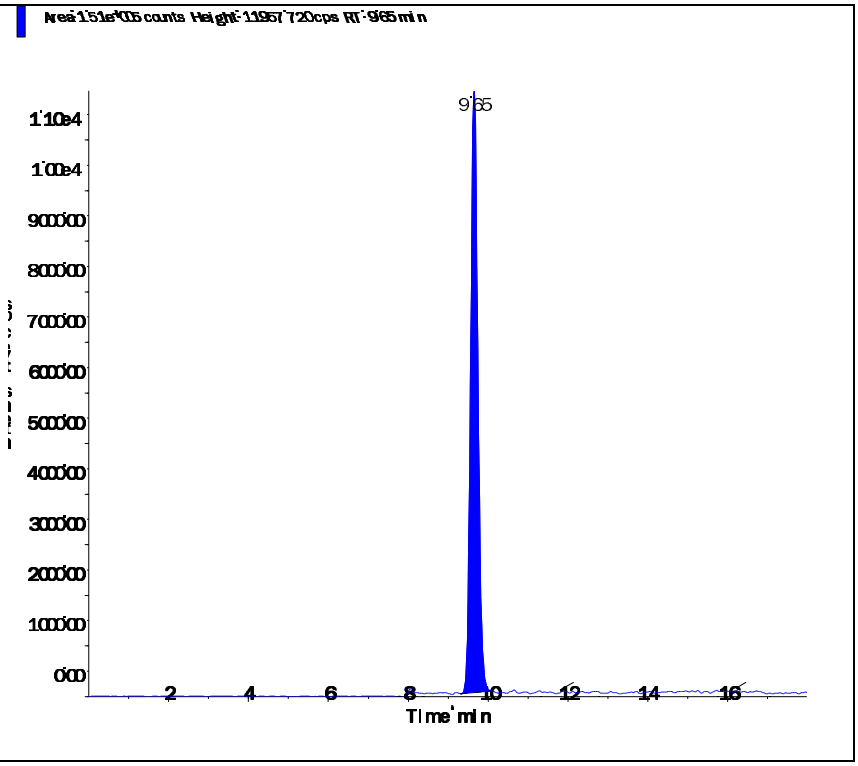

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

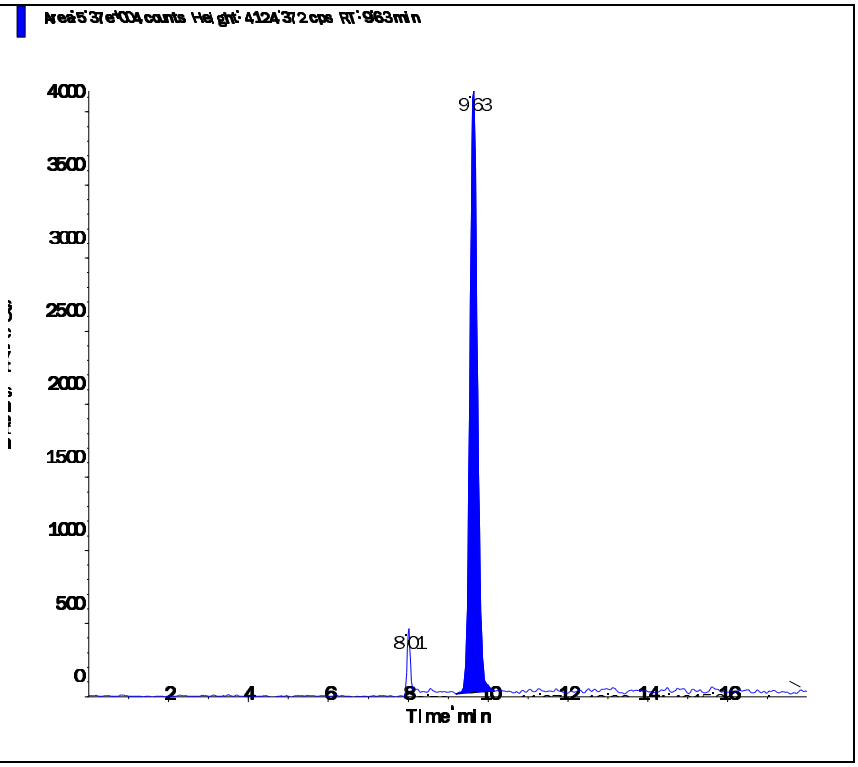

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Data File	LM35238.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 1:55:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35238.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 1:55:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.720e+05	9.64	1.00	1.01
Perchlorate conf	5.960e+04	9.63	1.00	1.04

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

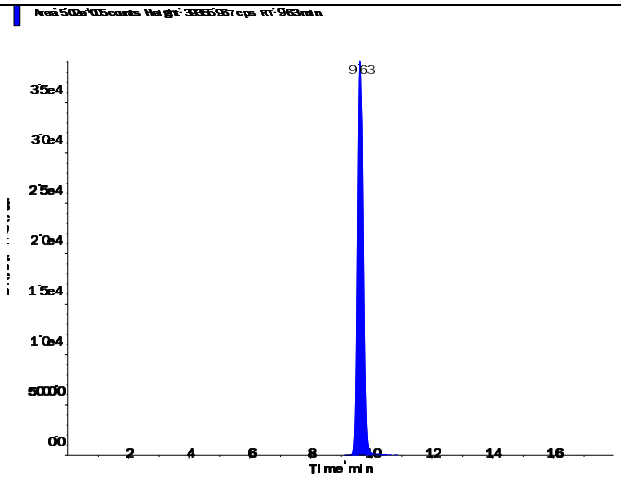

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.342
Sample Type:	(Quality Control)

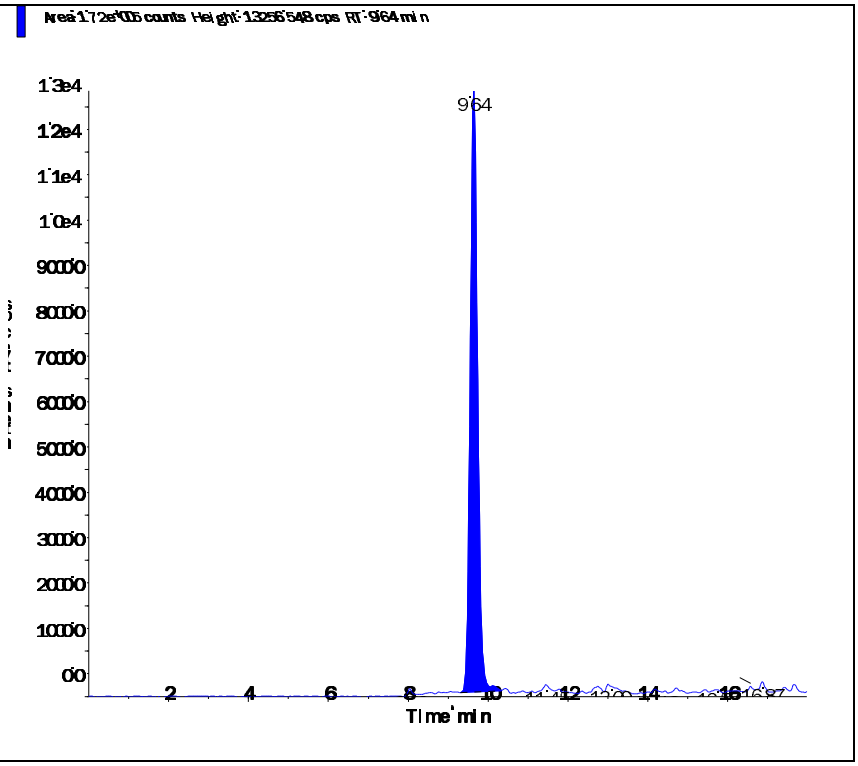

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

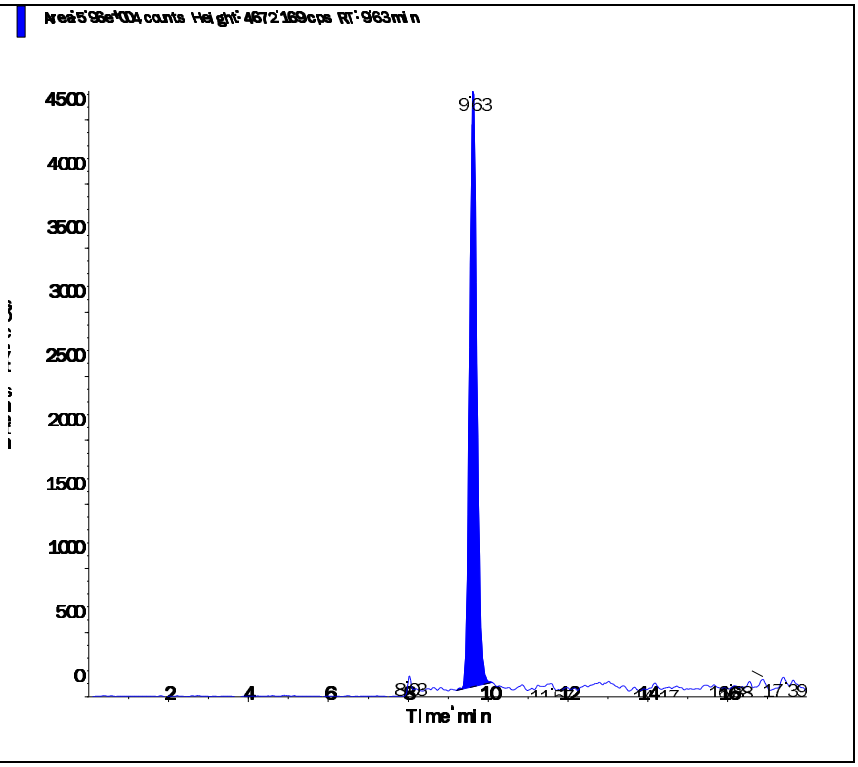

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Data File	LM35244.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 3:49:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35244.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 3:49:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+05	9.64	1.00	1.05
Perchlorate conf	6.340e+04	9.64	1.00	1.10

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

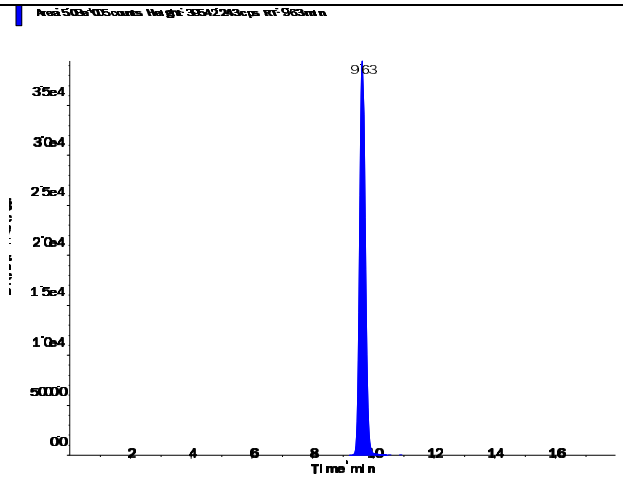

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.353
Sample Type:	(Quality Control)

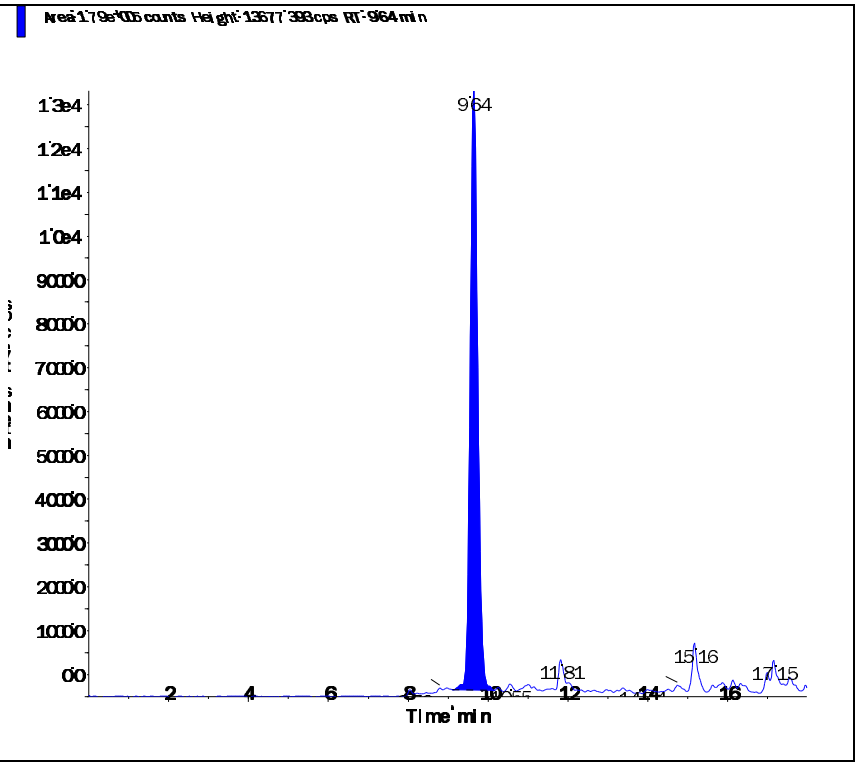

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.10 ng/ml
Area Ratio:	0.125
Sample Type:	(Quality Control)

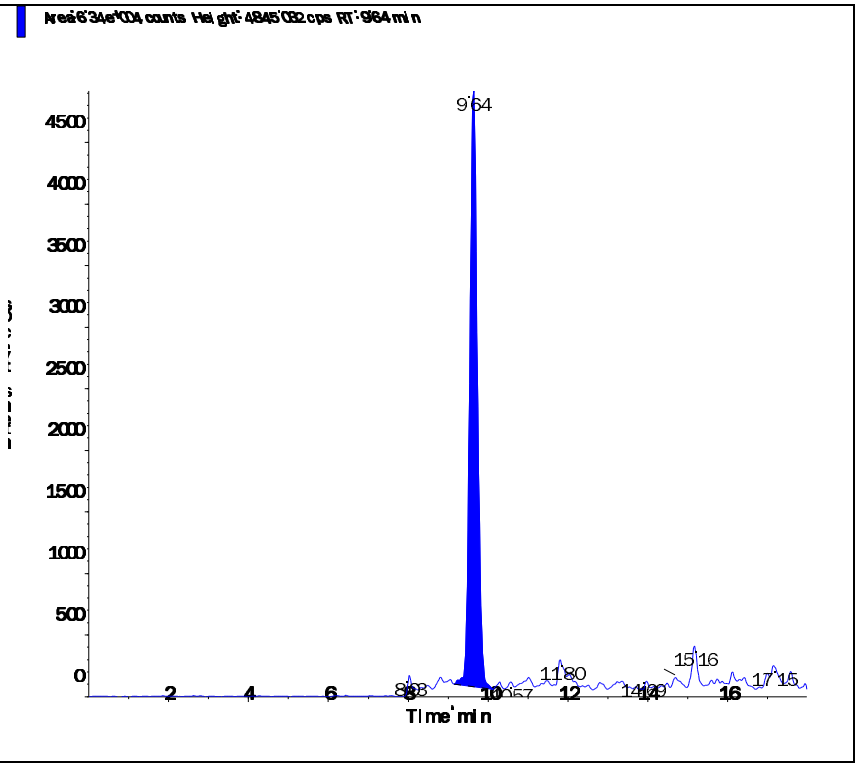

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Data File	LM35257.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 7:56:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35257.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 7:56:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.810e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.750e+05	9.64	1.00	1.08
Perchlorate conf	5.800e+04	9.62	1.00	1.06

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

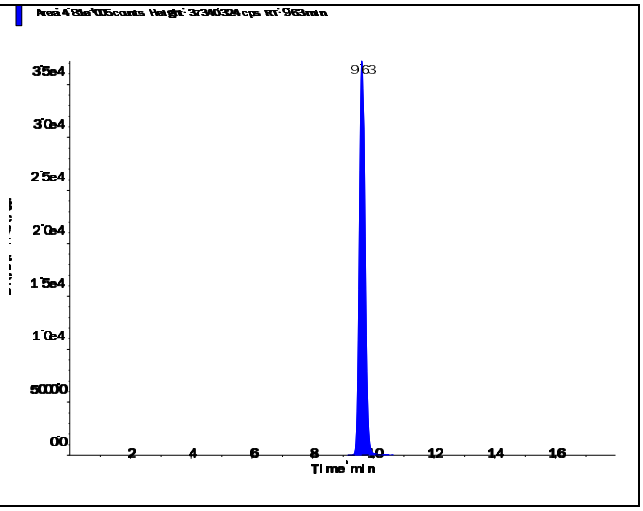

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.08 ng/ml
Area Ratio:	0.363
Sample Type:	(Quality Control)

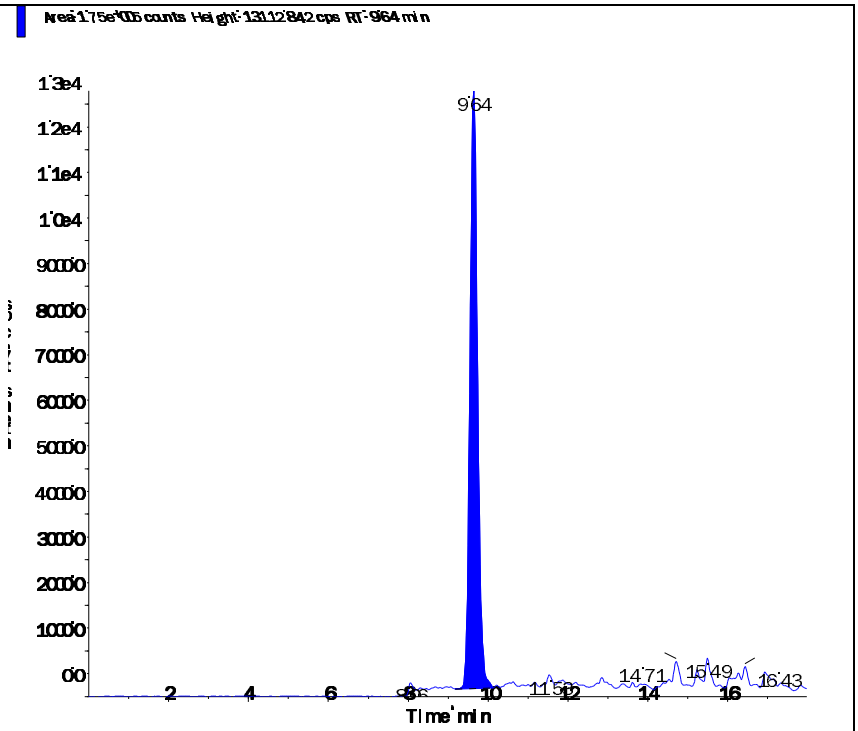

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.62 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

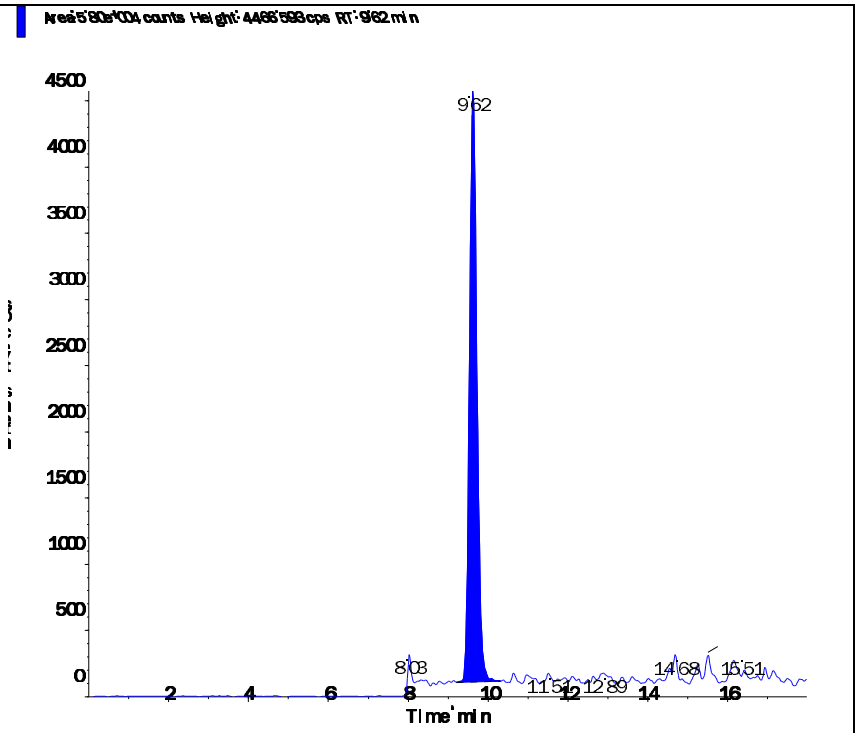

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Data File	LM35227.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 10:27:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35227.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 10:27:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.430e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.060e+04	9.68	N/A	0.202
Perchlorate conf	1.110e+04	9.67	N/A	0.204

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

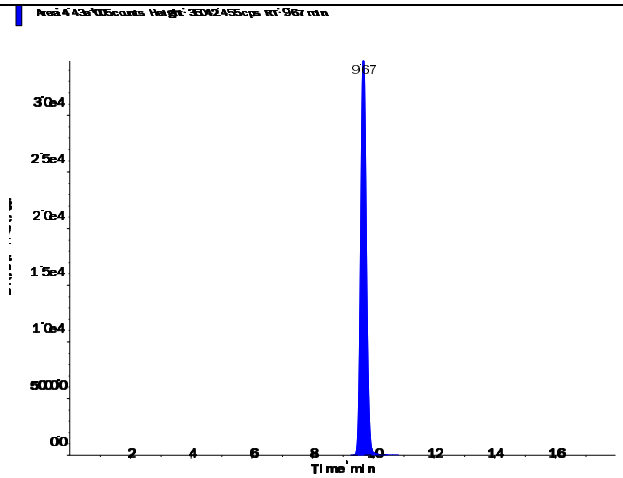

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.68 (9.84) min
Calculated conc:	0.202 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

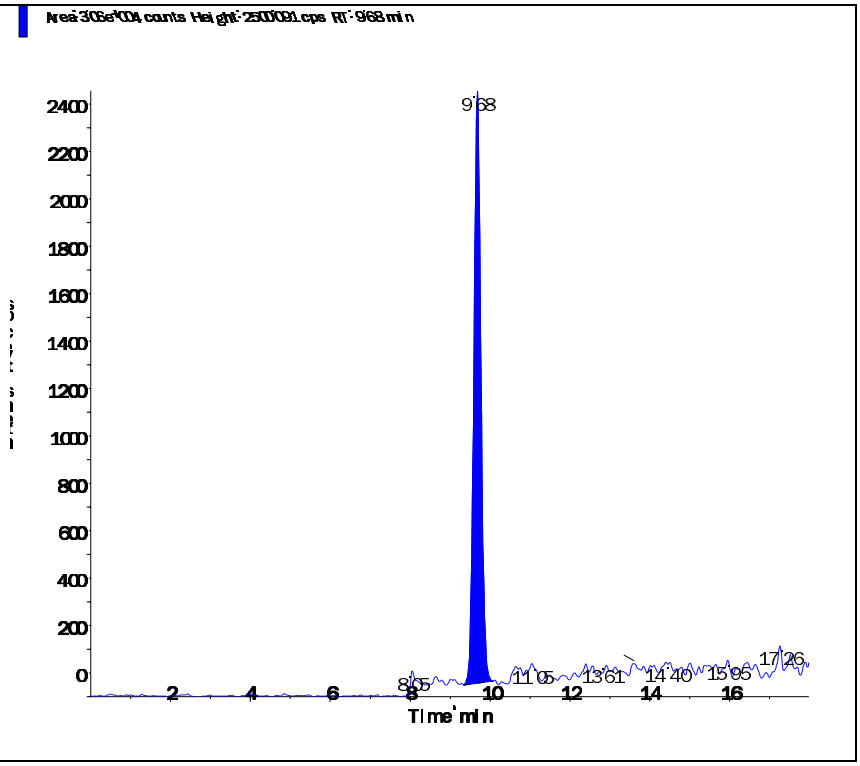

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.67 (9.84) min
Calculated conc:	0.204 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

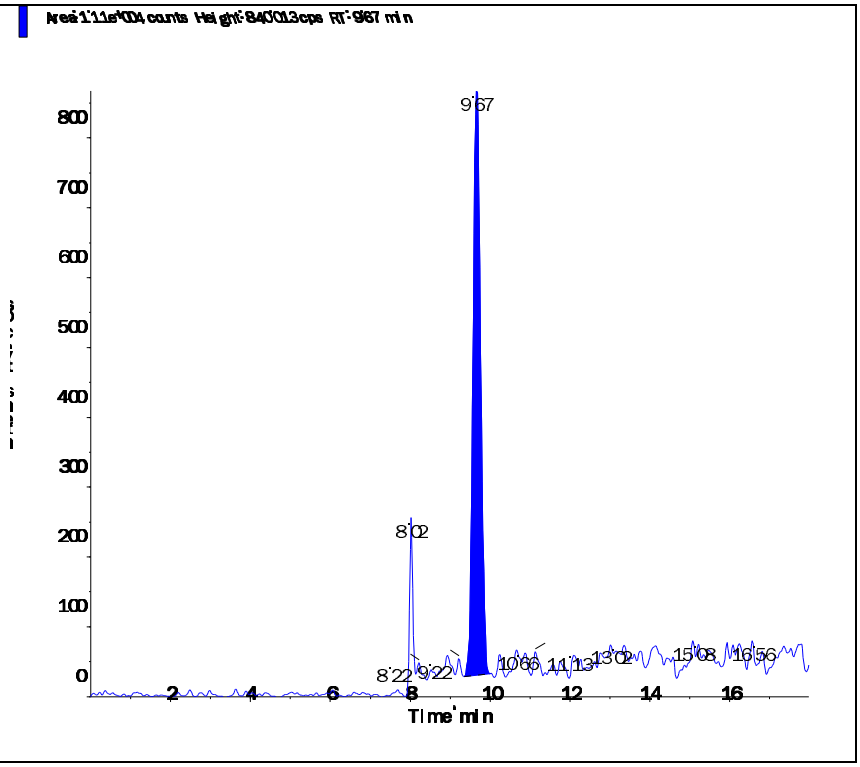

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Data File	LM35239.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 2:14:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-08 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35239.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 2:14:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.960e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.650e+04	9.68	N/A	0.215
Perchlorate conf	1.380e+04	9.66	N/A	0.228

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

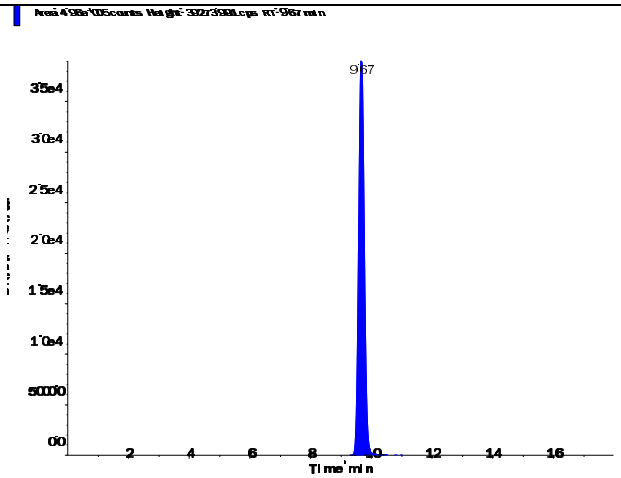

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.68 (9.84) min
Calculated conc:	0.215 ng/ml
Area Ratio:	0.074
Sample Type:	(Unknown)

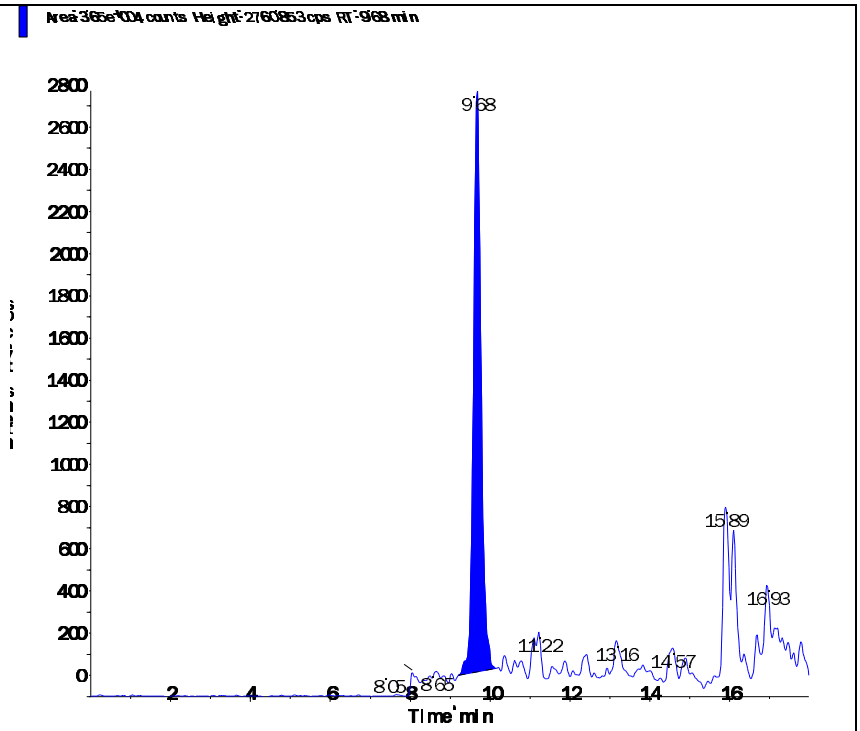

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.228 ng/ml
Area Ratio:	0.028
Sample Type:	(Unknown)

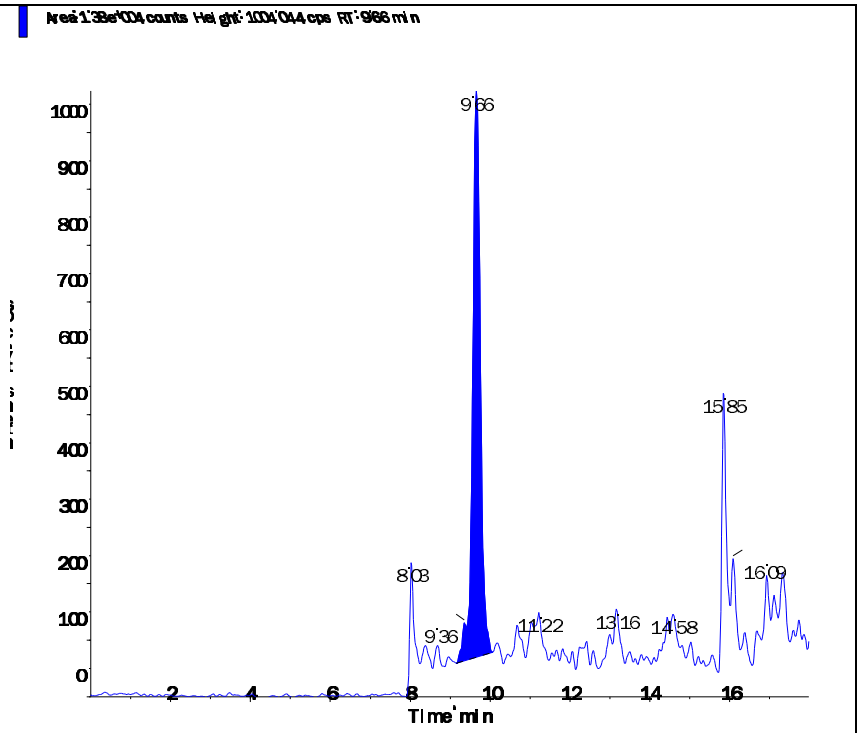

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Data File	LM35245.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 4:08:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-09 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35245.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 4:08:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.670e+04	9.69	N/A	0.21
Perchlorate conf	1.260e+04	9.66	N/A	0.201

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

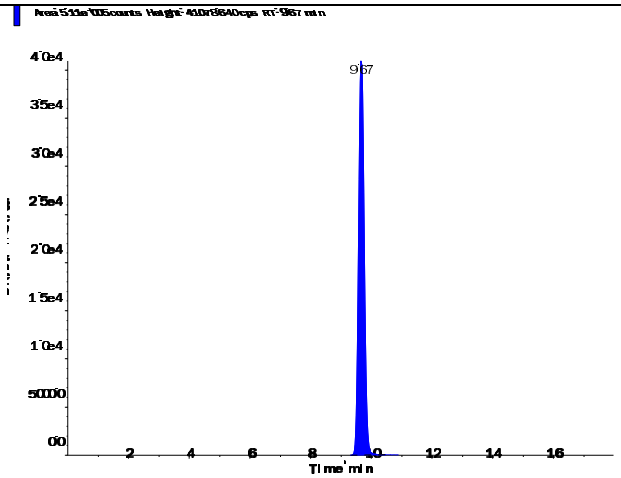

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.69 (9.84) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

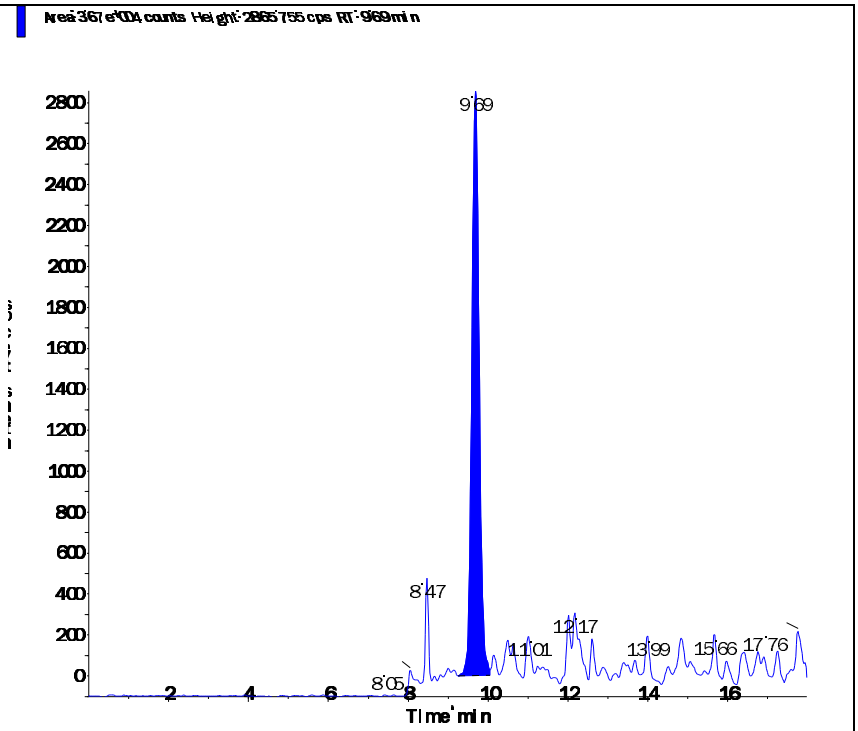

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

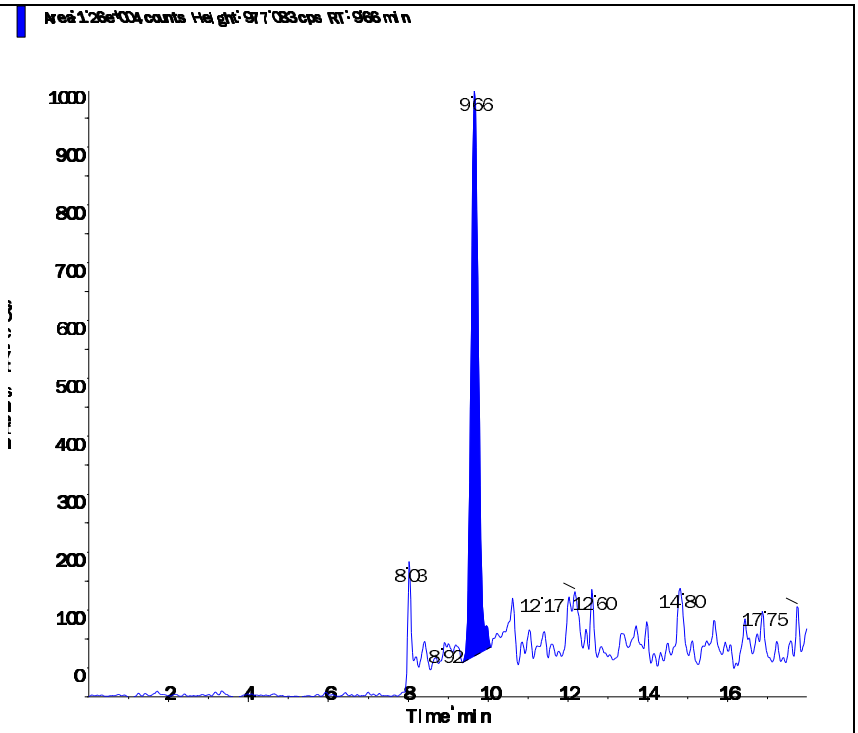

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Data File	LM35258.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 8:15:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-10 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35258.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 8:15:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-10	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.620e+04	9.68	N/A	0.222
Perchlorate conf	1.240e+04	9.66	N/A	0.212

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

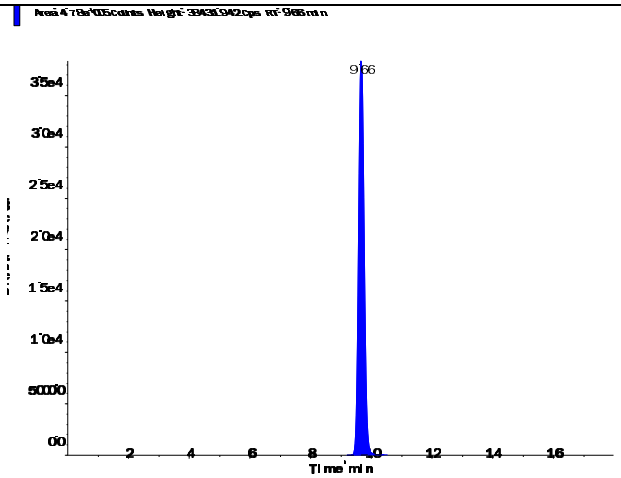

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.68 (9.84) min
Calculated conc:	0.222 ng/ml
Area Ratio:	0.076
Sample Type:	(Unknown)

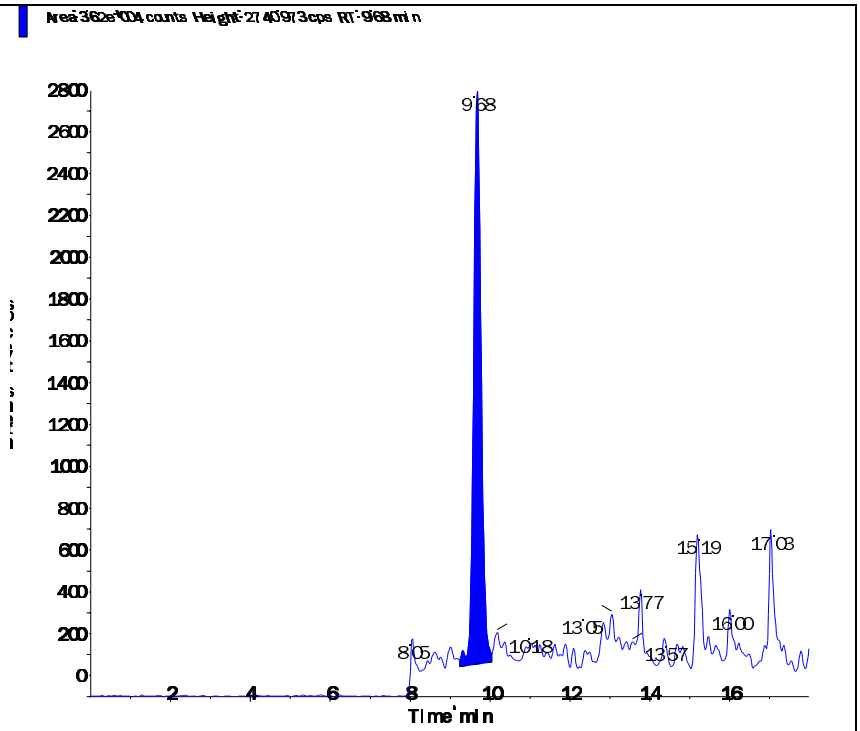

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.212 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

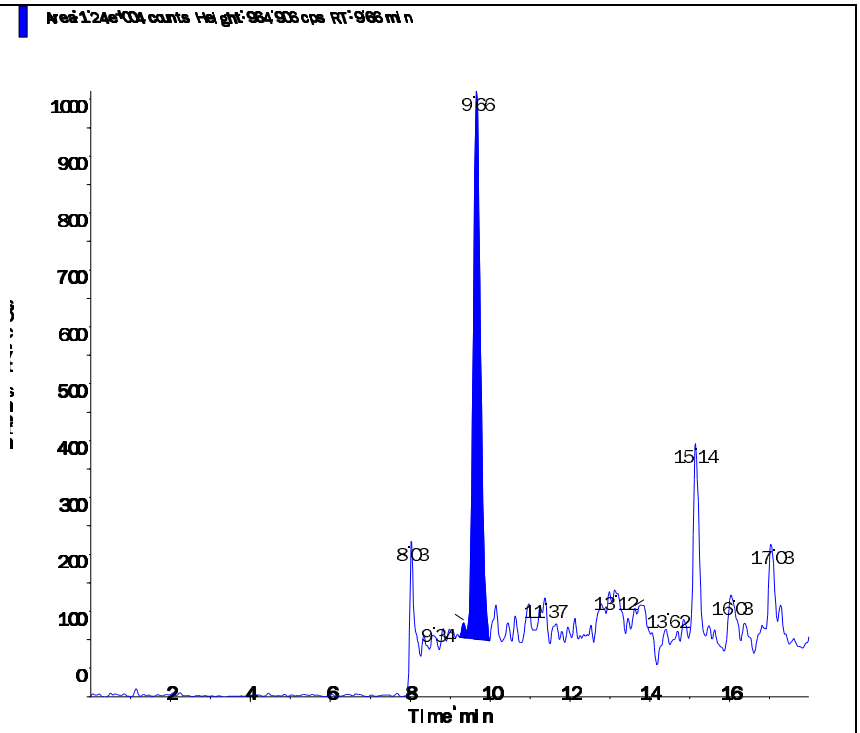

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Created with Analyst Reporter
Printed: 6/11/2016 12:59 PM

Data File	LM35225.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 9:49:48 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-01 CCB	**Injection Vial**	1.00
Data File	LM35225.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 9:49:48 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.710e+05	9.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.80(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

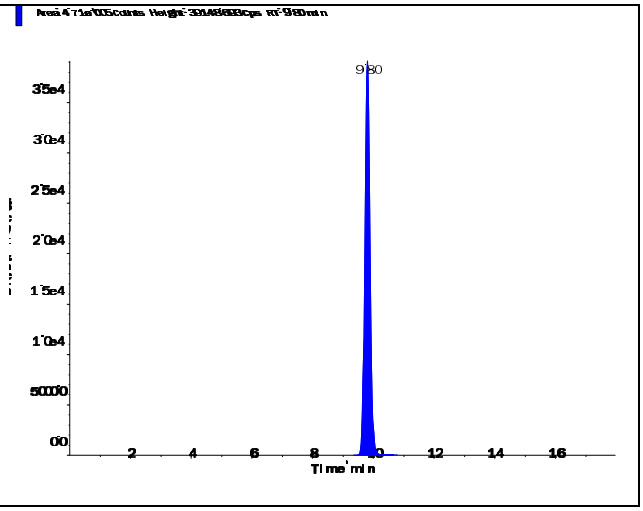

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/11/2016 12:59 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

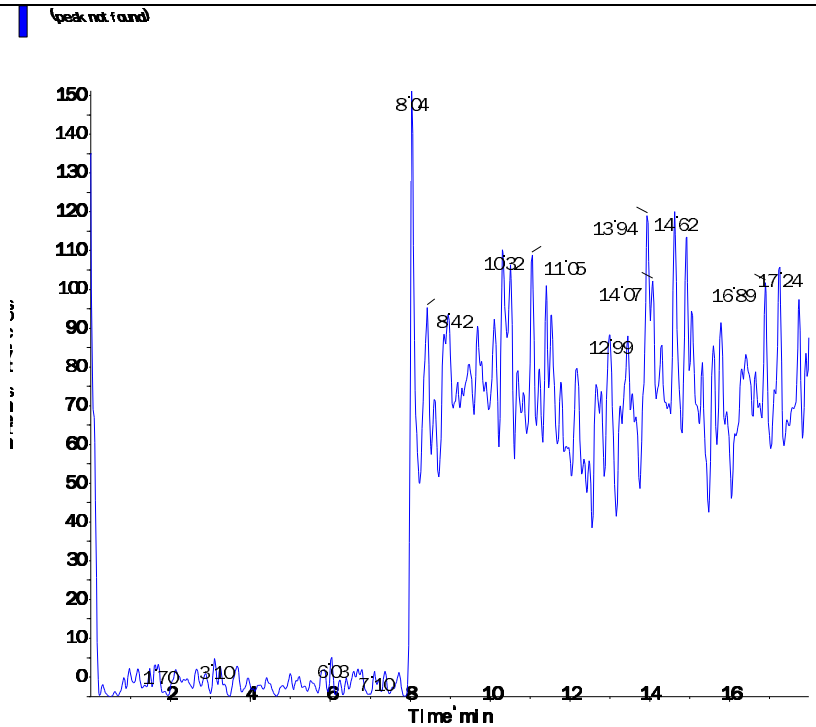

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

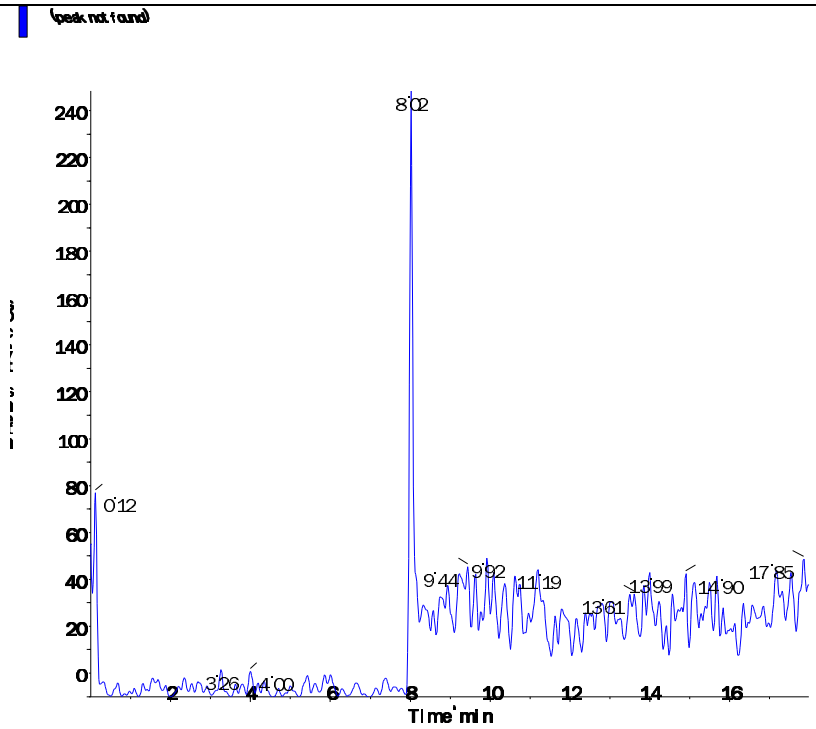

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/11/2016 1:04 PM

Data File	LM35240.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 2:33:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-04 CCB	**Injection Vial**	1.00
Data File	LM35240.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 2:33:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.660e+03	10.00	N/A	0.018
Perchlorate conf	1.770e+03	10.00	N/A	0.0114

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

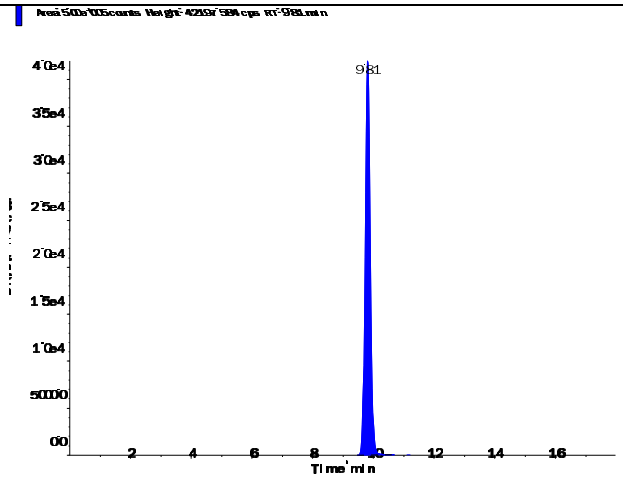

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Printed: 6/11/2016 1:04 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.00 (9.84) min
Calculated conc:	0.018 ng/ml
Area Ratio:	0.007
Sample Type:	(Unknown)

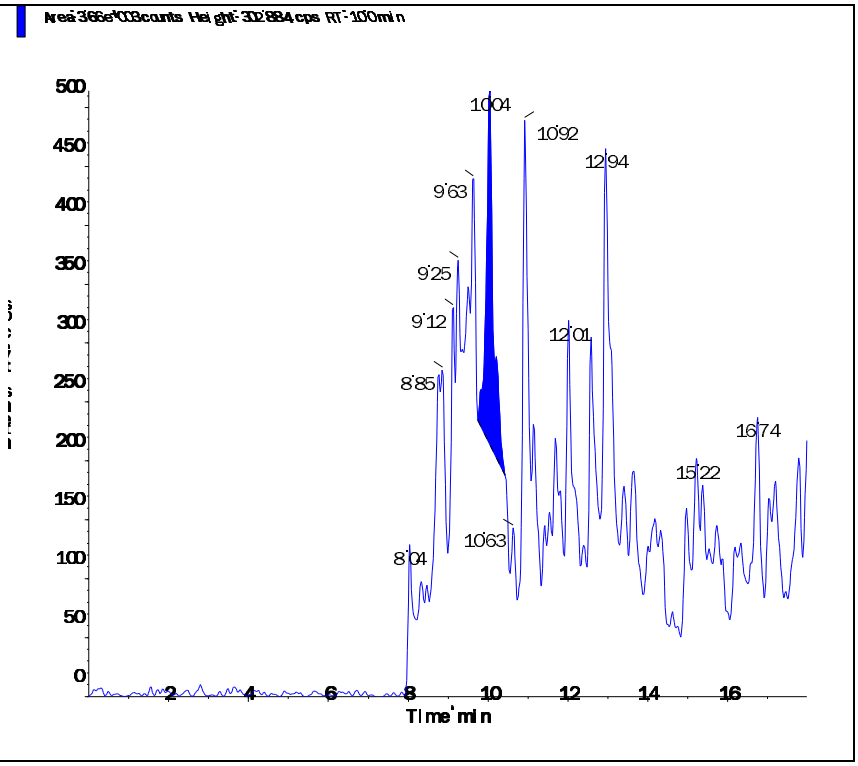

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.00 (9.84) min
Calculated conc:	0.0114 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)

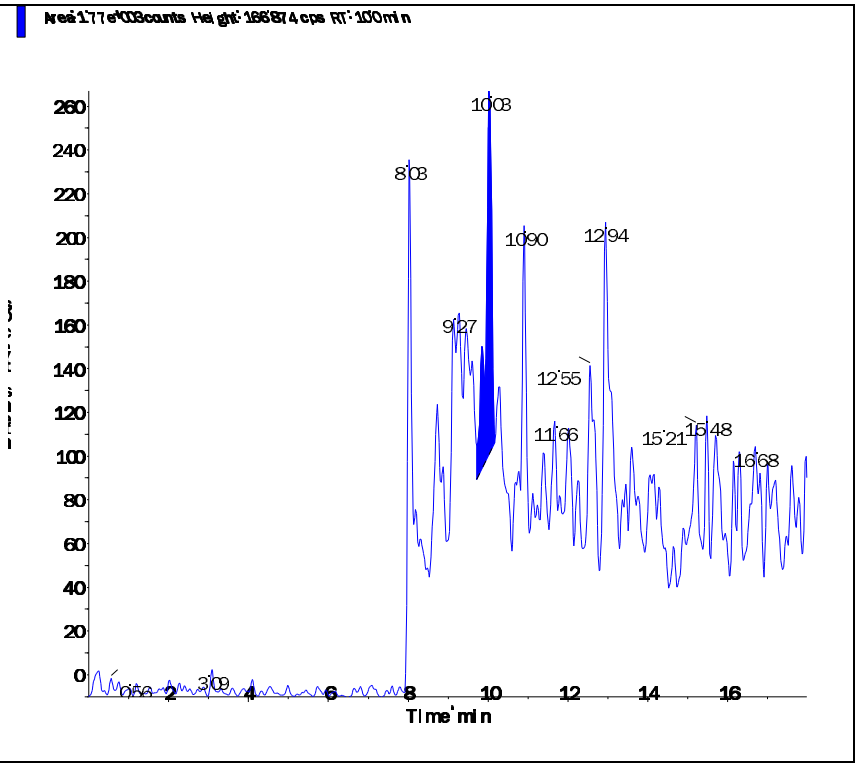

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Created with Analyst Reporter
Printed: 6/11/2016 1:06 PM

Data File	LM35246.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 4:27:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-06 CCB	**Injection Vial**	1.00
Data File	LM35246.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 4:27:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.160e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	3.770e+02	9.80	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

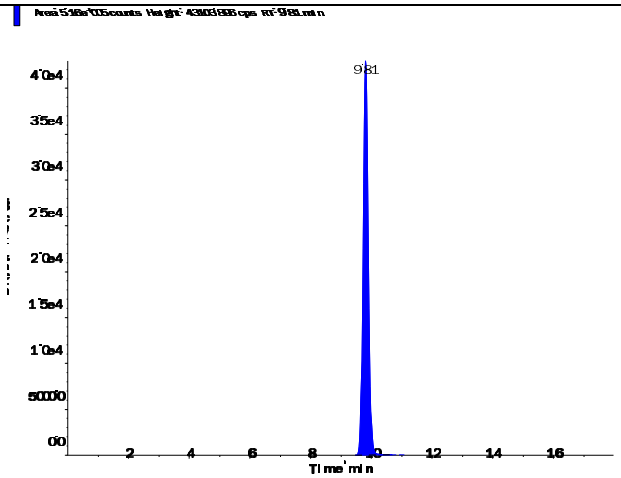

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

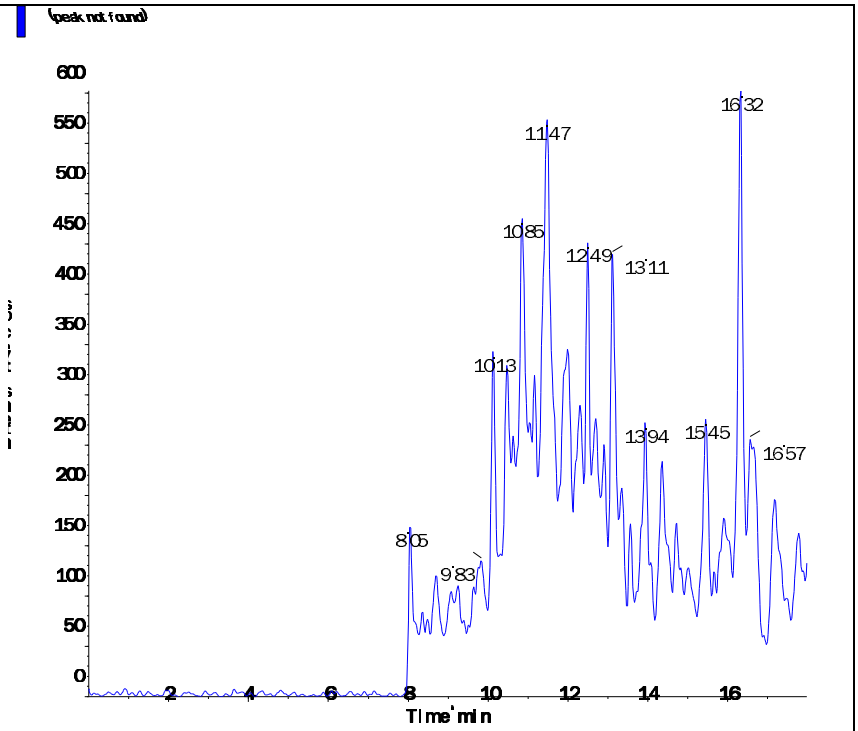

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.80 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

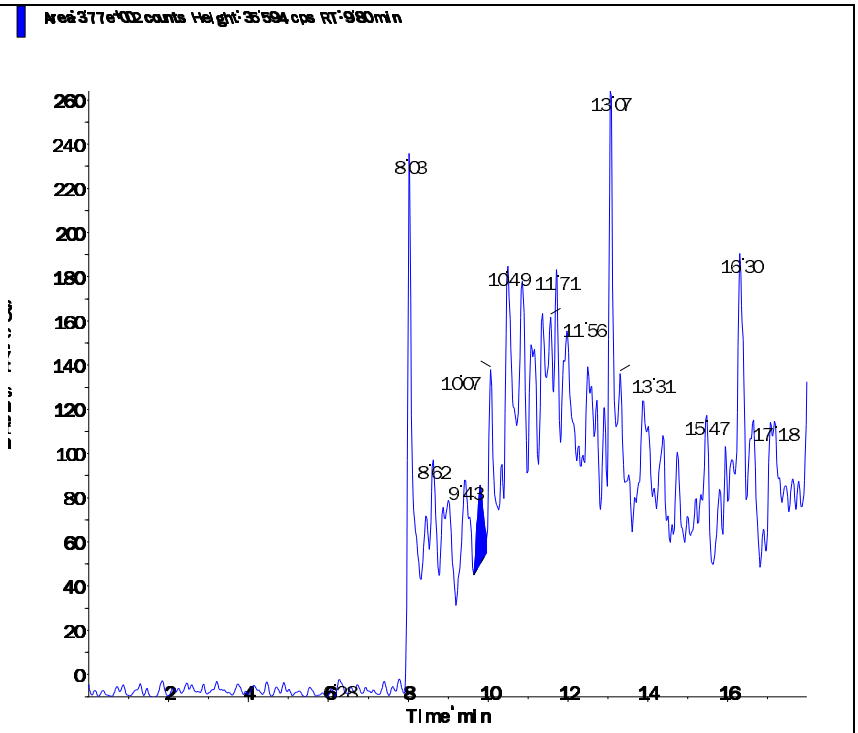

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Created with Analyst Reporter
Printed: 6/11/2016 1:11 PM

Data File	LM35259.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 8:34:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-08 CCB	**Injection Vial**	1.00
Data File	LM35259.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 8:34:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.920e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

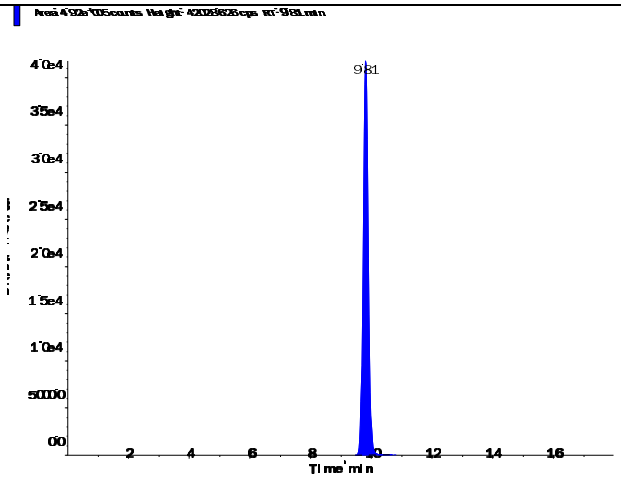

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

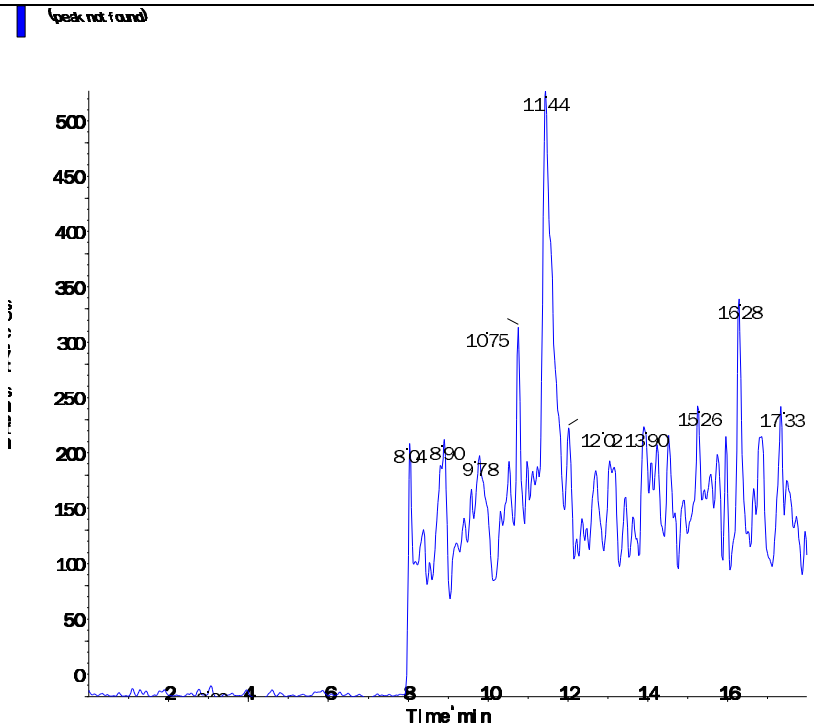

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

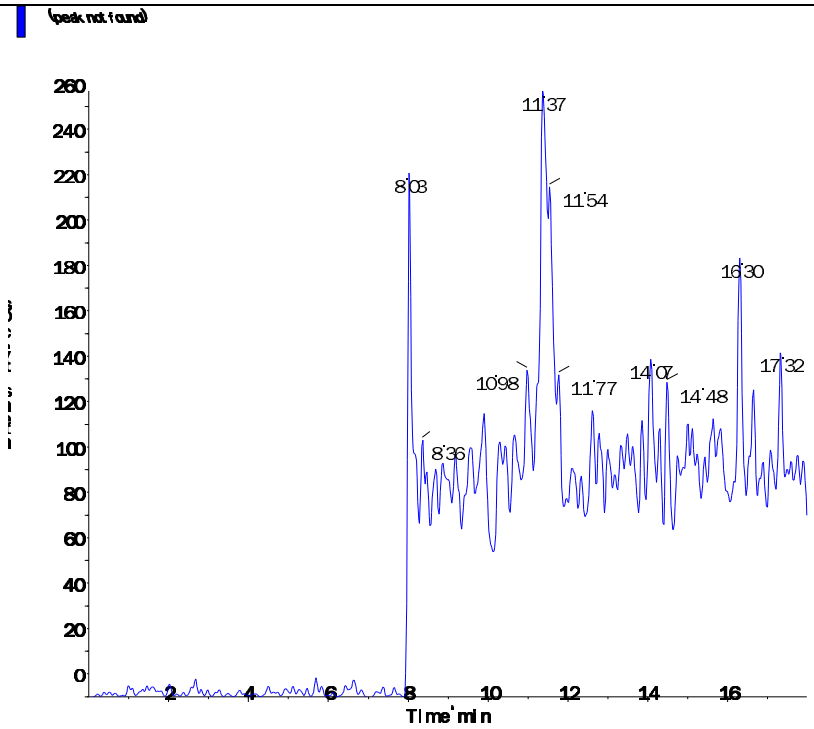

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Created with Analyst Reporter
Printed: 6/11/2016 1:00 PM

Data File	LM35228.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 10:46:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM35228.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 10:46:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.550e+05	9.16	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.520e+04	9.17	N/A	0.226
Perchlorate conf	1.040e+04	9.17	N/A	0.184

O18LP (Internal Standard)

RT (Exp. RT): 9.16(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

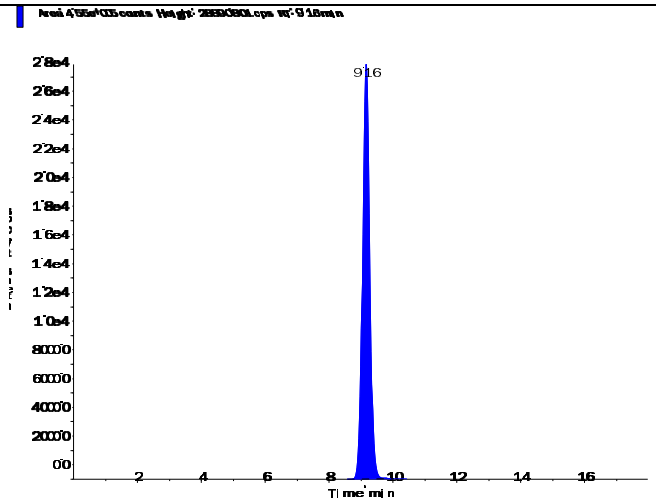

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/11/2016 1:00 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.17 (9.84) min
Calculated conc:	0.226 ng/ml
Area Ratio:	0.077
Sample Type:	(Unknown)

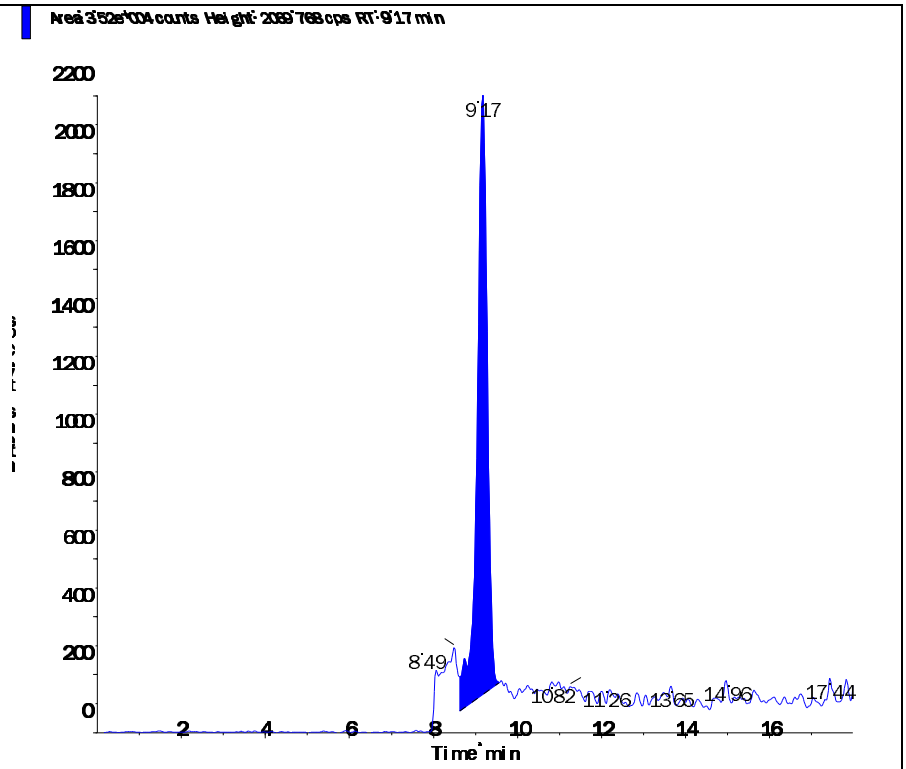

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.17 (9.84) min
Calculated conc:	0.184 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

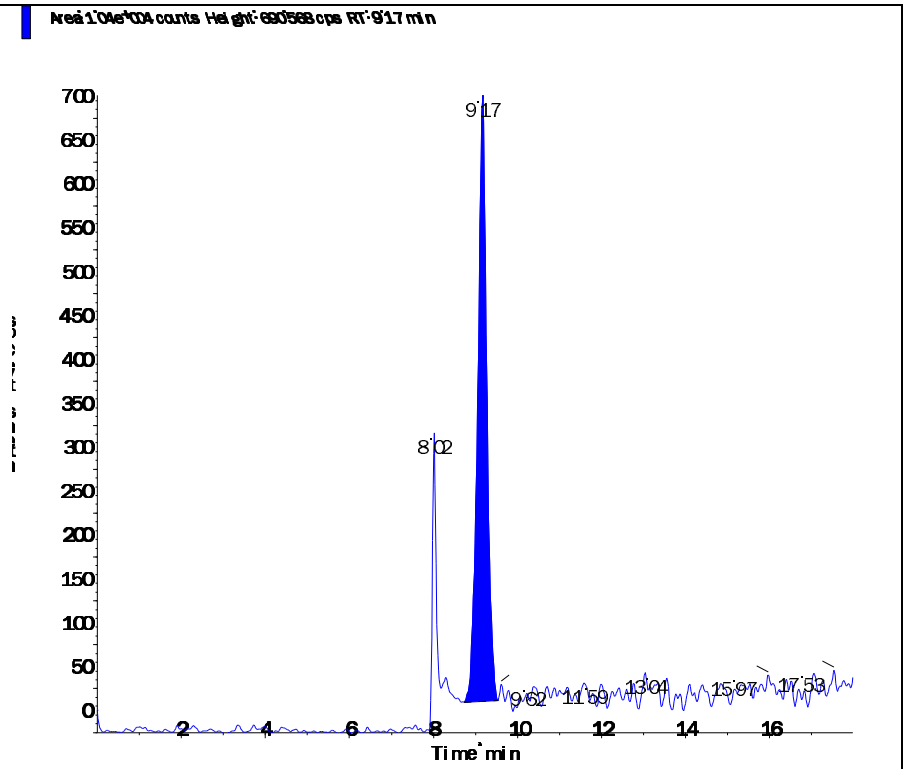

2.2.2.5 Raw QC Data

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Created with Analyst Reporter
Printed: 6/11/2016 1:00 PM

Data File	LM35229.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 11:05:30 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-02 BLANK	**Injection Vial**	5.00
Data File	LM35229.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 11:05:30 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.410e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	3.090e+02	9.81	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

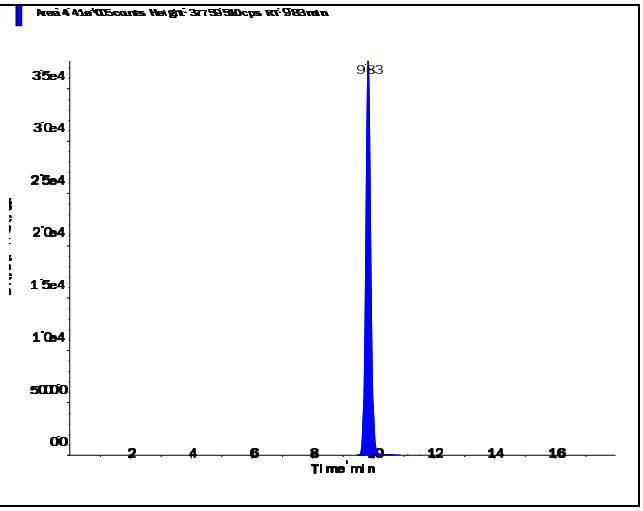

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	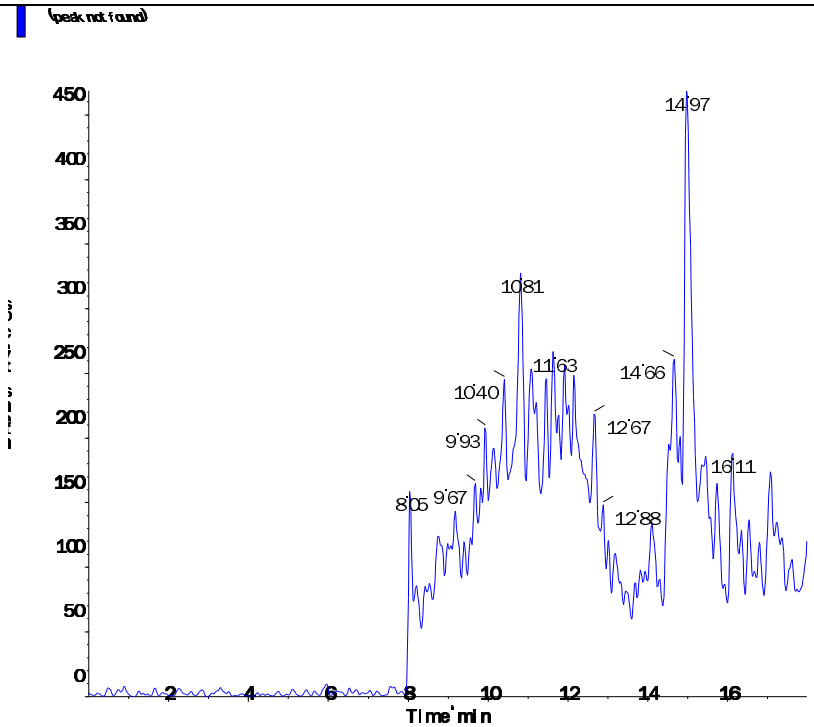
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.81 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	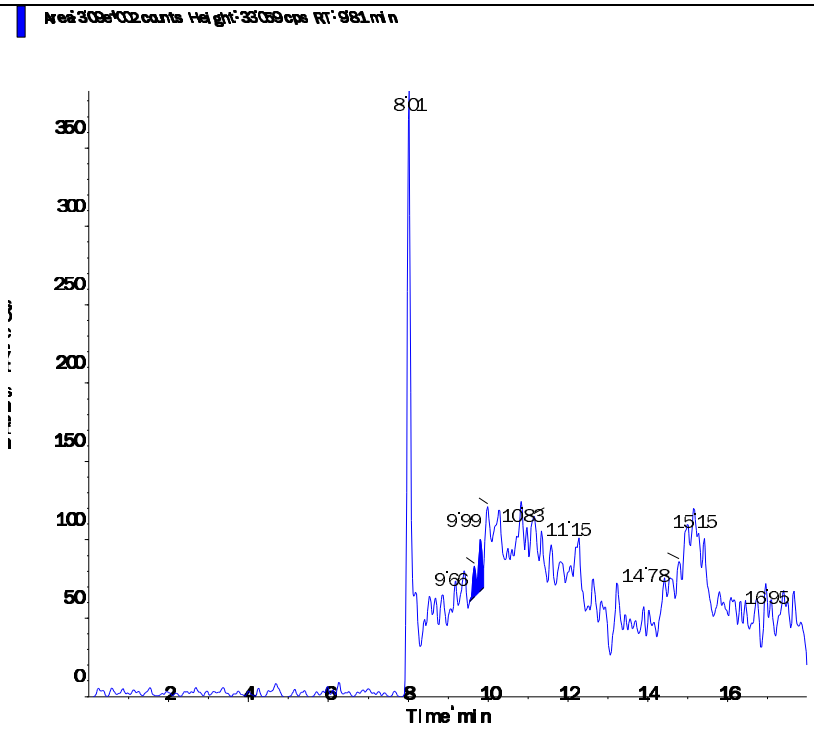

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Data File	LM35230.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 11:24:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM35230.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 11:24:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.340e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.000e+04	9.83	N/A	0.201
Perchlorate conf	1.180e+04	9.83	N/A	0.223

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

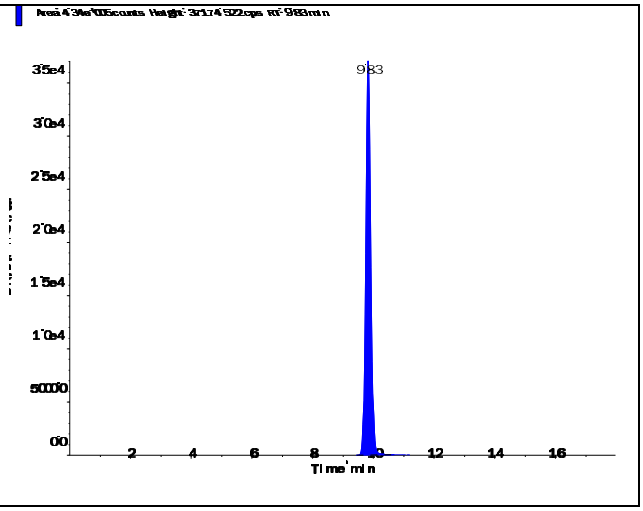

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

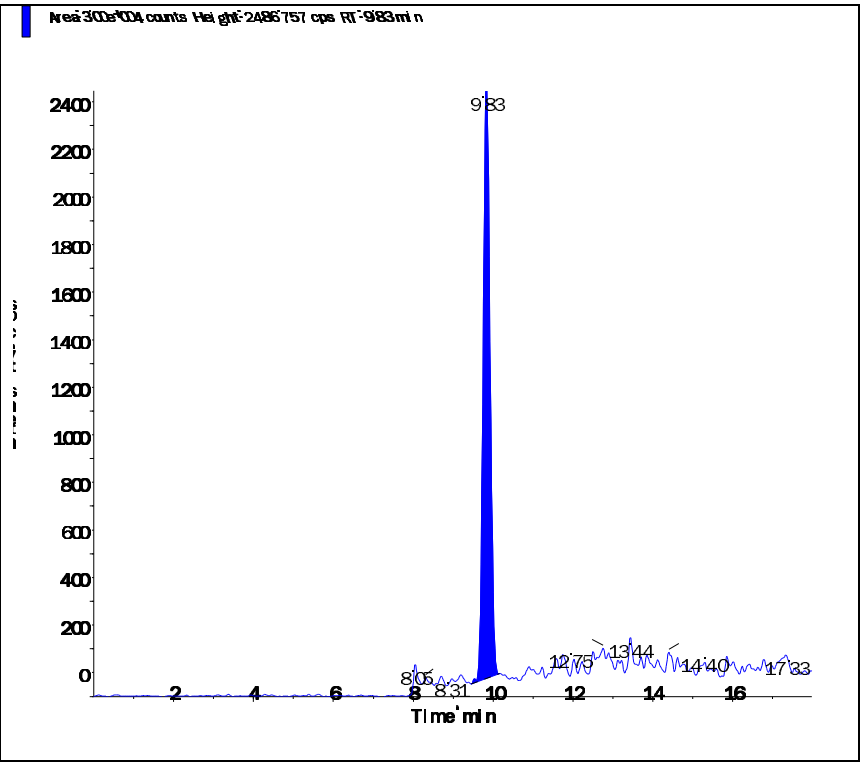

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.223 ng/ml
Area Ratio:	0.027
Sample Type:	(Unknown)

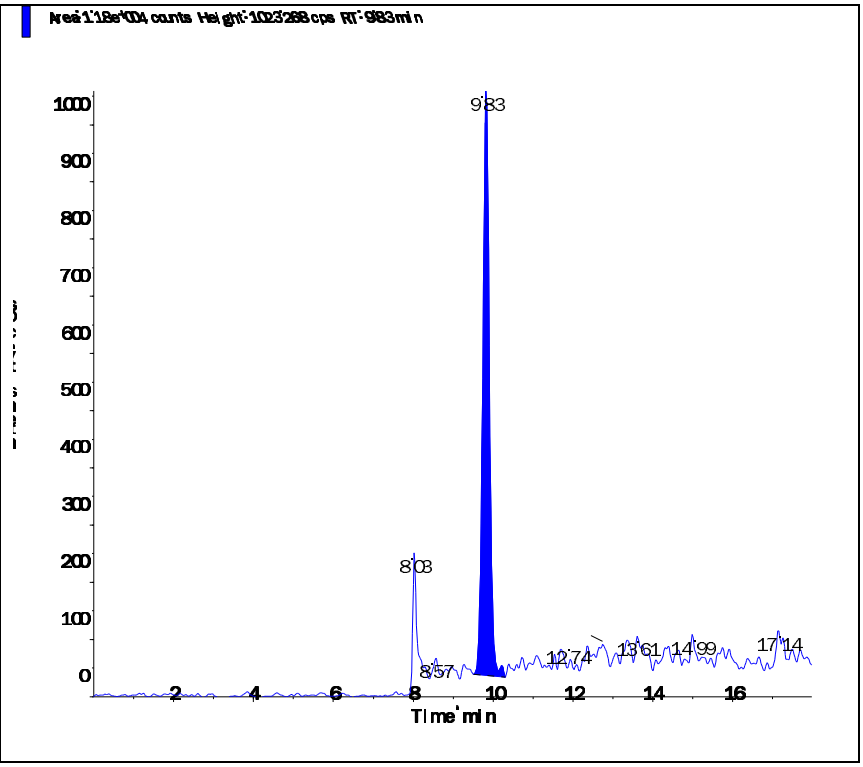

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3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
June 22, 2016

001 - BIO-CHEM TESTING WVDEP 220	002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental	004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES	006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES	008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND	AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER	ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS	ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED	AWE - ANDREW W. ESSIG
AZH - AFTER HOURS	BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE	BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY	CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS	CEB - CHAD E. BARNES
CJQ - Cameron J. Quick	CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD	CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS	CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL	DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE	DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON	DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE	DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR	ECL - ERIC C. LAWSON
EMW - ERIC M. WILKEN	ENY - EMILY N. YOAK
ERP - ERIN R. PORTER	FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY	JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH	JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS	JLD - JESSICA L. DELONG
JLL - JOHN L. LENT	JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON	JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES	JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON	KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH	KEB - KATIE E. BARNES
KHR - KIM H. RHODES	KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON	KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS	LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF	LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA	MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON	MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN	MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE	MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR	MSW - MATT S. WILSON
NPH - Natalie P. Hart	PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE	PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB	QX - QIN XU
RAH - ROY A. HALSTEAD	REK - BOB E. KYER
RLB - BOB BUCHANAN	RM - RAYMOND MALEKE
RNP - RICK N. PETTY	RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG	SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY	SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF	TB - TODD BOYLE
TGF - TIM G. FELTON	TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS	VC - VICKI COLLIER
WJB - WILL J. BEASLEY	WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG	XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
June 22, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
June 22, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Stephanie Mossburg	Project Manager: Debra Richmann	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): Scott Beesinger	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205			
Turn Around Time: STANDARD	pH:	Program:	
Project Name/Location: Longhorn			
Project Number: 60274185.0013BH 1824 MR10		ERPIMS REQUIRED FIELDS	

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp-	Grab	Matrix	Number of Containers	VOC	Perchlorate	Total Metals	1,4 - DIOXANE					SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 18/24	18CPTMW06-060816			6/8/16	1330		✓	W	6	✓	✓		✓									
	18CPTMW06MS-060816			6/8/16	1330		✓	W	6	✓	✓		✓									
	18CPTMW06MSD-060816			6/8/16	1330		✓	W	6	✓	✓		✓									
	MW22-060816			6/8/16	1455		✓	W	4	✓	✓											
	TRIP BLANK			6/8/16			✓	W	2	✓												

Comments: **STANDARD TAT**

Relinquished by: (Signature) Scott Beesinger	Date 6/8/16	Time 1545	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory (Signature)				arks:

Microbac OVD
Received: 06/09/2016 10:34
By: BRENDA GREGORY
221000086978

Brenda Gregory

*Homogenize all composite samples prior to analysis

Dis

C Manager

00702511

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060497
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 20-JUN-2016

Samplenum	Container ID	Products
L16060497-01	757164	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:25	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:46	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:25	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:46	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:25	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:46	AWE	CLS	

Samplenum	Container ID	Products
L16060497-01	757165	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	09-JUN-2016 14:25	CLS		
2	PREP	W1	EXT	13-JUN-2016 15:30	CPD	BRG	
3	SUBBED	EXT	DISP	14-JUN-2016 10:04	BJO	BJO	
4	ANALYZ*	EXT	SEMI	20-JUN-2016 12:17	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		09-JUN-2016 14:25	CLS		

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060497-01	757166	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	09-JUN-2016 14:25	CLS		
2	ANALYZ	W1	SEM	10-JUN-2016 08:23	WTD	BRG	
3	STORE	SEM	A1	11-JUN-2016 11:57	AZH	WTD	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060497
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 20-JUN-2016

Samplenum	Container ID	Products
L16060497-02	757167	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:25	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:46	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:25	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:46	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:25	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:46	AWE	CLS	

Samplenum	Container ID	Products
L16060497-02	757168	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	09-JUN-2016 14:25	CLS		
2	PREP	W1	EXT	13-JUN-2016 15:30	CPD	BRG	
3	SUBBED	EXT	DISP	14-JUN-2016 10:04	BJO	BJO	
4	ANALYZ*	EXT	SEMI	20-JUN-2016 12:17	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		09-JUN-2016 14:25	CLS		

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060497-02	757169	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	09-JUN-2016 14:25	CLS		
2	ANALYZ	W1	SEM	10-JUN-2016 08:23	WTD	BRG	
3	STORE	SEM	A1	11-JUN-2016 11:56	AZH	WTD	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060497
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 20-JUN-2016

Samplenum	Container ID	Products
L16060497-03	757170	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:25	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:46	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:25	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:46	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:25	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:46	AWE	CLS	

Samplenum	Container ID	Products
L16060497-03	757171	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	09-JUN-2016 14:25	CLS		
2	PREP	W1	EXT	13-JUN-2016 15:30	CPD	BRG	
3	SUBBED	EXT	DISP	14-JUN-2016 10:04	BJO	BJO	
4	ANALYZ*	EXT	SEMI	20-JUN-2016 12:17	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		09-JUN-2016 14:25	CLS		

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060497-03	757172	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	09-JUN-2016 14:25	CLS		
2	ANALYZ	W1	SEM	10-JUN-2016 08:24	WTD	BRG	
3	STORE	SEM	A1	11-JUN-2016 11:56	AZH	WTD	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060497
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 20-JUN-2016

Samplenum	Container ID	Products
L16060497-04	757173	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:25	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:46	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:25	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:45	AWE	CLS	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:25	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:45	AWE	CLS	

Samplenum	Container ID	Products
L16060497-04	757174	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		09-JUN-2016 14:25	CLS		

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		09-JUN-2016 14:25	CLS		

Samplenum	Container ID	Products
L16060497-04	757175	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	09-JUN-2016 14:25	CLS		
2	ANALYZ	W1	SEM	10-JUN-2016 08:24	WTD	BRG	
3	STORE	SEM	A1	11-JUN-2016 11:56	AZH	WTD	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060497
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 20-JUN-2016

Samplenum	Container ID	Products
L16060497-05	757176	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:25	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:46	AWE	CLS	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:25	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:46	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16060504

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Michelle Taylor – Client Services Specialist
(740) 373-4071
Michelle.Taylor@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on July 01 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00113323	I	5.0		J2317165081	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18CPTMW08SW-060816	L16060504-01	06/08/2016 08:00	06/09/2016 10:30
18CPTMW08DW-060816	L16060504-02	06/08/2016 09:05	06/09/2016 10:30
MW5-060816	L16060504-03	06/08/2016 10:10	06/09/2016 10:30
18CPTMW03SW-060816	L16060504-04	06/08/2016 11:20	06/09/2016 10:30
TRIP BLANK	L16060504-05	06/08/2016 00:01	06/09/2016 10:30

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16060504
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

1.0 Summary Data ..... ??
1.1 Narratives ..... ??
1.2 Certificate of Analysis ..... ??
2.0 Full Sample Data Package ..... ??
2.1 Volatiles Data ..... ??
2.1.1 Volatiles GCMS Data (8260) ..... ??
2.1.1.1 Summary Data ..... ??
2.1.1.2 QC Summary Data ..... ??
2.1.1.3 Sample Data ..... ??
2.1.1.4 Standards Data ..... ??
2.1.1.5 Raw QC Data ..... ??
2.2 Semivolatiles Data ..... ??
2.2.1 Semivolatiles GC/MS Data (Dioxane) ..... ??
2.2.1.1 Summary Data ..... ??
2.2.1.2 QC Summary Data ..... ??
2.2.1.3 Sample Data ..... ??
2.2.1.4 Standards Data ..... ??
2.2.1.5 Raw QC Data ..... ??
2.2 General Chromatography Data ..... ??
2.2.2 6850 LC/MS Data ..... ??
2.2.2.1 Summary Data ..... ??
2.2.2.2 QC Summary Data ..... ??
2.2.2.3 Sample Data ..... ??
2.2.2.4 Standards Data ..... ??
2.2.2.5 Raw QC Data ..... ??
2.3 Metals Data ..... ??
2.3.1 Metals I C P Data ..... ??
2.3.1.1 Summary Data ..... ??
2.3.1.2 QC Summary Data ..... ??
2.3.1.3 Raw Data ..... ??
2.3.2 Metals ICP-MS Data ..... ??
2.3.2.1 Summary Data ..... ??
2.3.2.2 QC Summary Data ..... ??
2.3.2.3 Raw Data ..... ??
2.3.3 Metals CVAA Data (Mercury) ..... ??
2.3.3.1 Summary Data ..... ??
2.3.3.2 QC Summary ..... ??
2.3.3.3 Raw Data ..... ??
3.0 Attachments ..... ??

1.0 Summary Data

1.1 Narratives

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	8260
Prep Batch Number(s):	572509,572592	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-29 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2016-06-29 17:48:43

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	8260
Prep Batch Number(s):	572509,572592	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-29 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	8260
Prep Batch Number(s):	572509,572592	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-29 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	8260
Prep Batch Number(s):	572509,572592	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-29 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	8260
Prep Batch Number(s):	572509,572592	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-29 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	8260
Prep Batch Number(s):	572509,572592	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-29 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1)Acetone, 2-Butanone, 1,2-Dibromo-3-Chloropropane and 2-Hexanone exceeded the UCL in the CCV analyzed 06/13/2016 om HPMS11.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572341	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-21 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-06-21 18:31:30

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572341	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-21 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572341	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-21 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572341	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-21 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572341	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-21 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572341	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-21 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572200	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-06-14 16:48:12

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572200	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572200	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572200	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572200	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572200	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572544	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-07-01 00:00:54

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572544	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?		X			ER#1
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572544	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572544	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572544	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572544	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - Client sample 03 required dilution analysis in order to obtain results for magnesium and sodium within the calibration range.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG572187	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-30 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-06-30 23:55:58

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG572187	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-30 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?		X			ER#3
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?		X			ER#1
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG572187	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-30 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG572187	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-30 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			ER#2
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG572187	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-30 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG572187	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-30 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - The initial calibration blank on 13-JUN-2016 at 12:02 yielded a result for antimony that was greater than the LOD and less than the LOQ. However, client sample 03 was nondetect for antimony. Antimony was reported and no further action was taken. The continuing calibration blank on 13-JUN-2016 at 14:20 yielded a result for manganese that was greater than the LOD and less than the LOQ. However, client sample 03 had a result for manganese greater than ten times that of the CCB. Manganese was reported and no further action was taken.

ER#2 - Due to continuing calibration verification failure for cobalt on 13-JUN-2016 at 14:17, client sample 03 was reanalyzed on a later calibration for cobalt.

ER#3 - Client sample 03 required dilution analysis in order to obtain a result for barium within the calibration range.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572231	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-30 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-06-30 23:54:01

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572231	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-30 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572231	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-30 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572231	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-30 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572231	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-30 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060504
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572231	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-30 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	18CPTMW08SW-060816	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG572509	**Analyst:**	JDS	**Run Date:**	06/14/2016 02:36
Collect Date:	06/08/2016 08:00	**Dilution:**	1	**File ID:**	11M12611
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.173	J	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.508	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.491	J	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	4.43		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	0.989	J	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	17.4		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.347	J	1.00	0.500	0.250

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.290	J	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	74.2		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	8.97		1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.4	85	115	
1,2-Dichloroethane-d4	89.1	70	120	
Toluene-d8	97.5	85	120	
4-Bromofluorobenzene	100	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW08SW-060816	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 12:17
Collect Date:	06/08/2016 08:00	**Dilution:**	1	**File ID:**	15M18406
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.39	J	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	50.1	20	129	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW08SW-060816	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/11/2016 13:40
Collect Date:	06/08/2016 08:00	**Dilution:**	10000	**File ID:**	1LM.LM35286
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	35000		4000	2000	1000

Certificate of Analysis

Sample #:	L16060504-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW08DW-060816	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 12:39
Collect Date:	06/08/2016 09:05	**Dilution:**	1	**File ID:**	15M18407
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	69.6	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW08DW-060816	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/11/2016 13:58
Collect Date:	06/08/2016 09:05	**Dilution:**	1000	**File ID:**	1LM.LM35287
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	672		400	200	100

Certificate of Analysis

Sample #:	L16060504-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	MW5-060816	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG572509	**Analyst:**	JDS	**Run Date:**	06/14/2016 03:08
Collect Date:	06/08/2016 10:10	**Dilution:**	1	**File ID:**	11M12612
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.430	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.565	J	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	3.44		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.01	J	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	13.4		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.254	J	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	53.7		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	4.91		1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.8	85	115	
1,2-Dichloroethane-d4	87.3	70	120	
Toluene-d8	98.3	85	120	
4-Bromofluorobenzene	103	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	MW5-060816	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 13:02
Collect Date:	06/08/2016 10:10	**Dilution:**	1	**File ID:**	15M18408
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	0.819	J	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	38.5	20	129	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW5-060816	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/11/2016 14:17
Collect Date:	06/08/2016 10:10	**Dilution:**	10000	**File ID:**	1LM.LM35288
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	31300		4000	2000	1000

Certificate of Analysis

Sample #:	L16060504-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW5-060816	**Prep Method:**	3015	**Prep Date:**	06/10/2016 11:21
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/14/2016 12:52
Workgroup #:	WG572544	**Analyst:**	JYH	**Run Date:**	06/14/2016 14:24
Collect Date:	06/08/2016 10:10	**Dilution:**	1	**File ID:**	T3.061416.142427
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.0635	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	24.9		0.500	0.250	0.125
Iron, Total	7439-89-6	1.00		0.200	0.100	0.0500
Potassium, Total	7440-09-7	2.42		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW5-060816	**Prep Method:**	3015	**Prep Date:**	06/10/2016 11:21
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/14/2016 12:52
Workgroup #:	WG572544	**Analyst:**	JYH	**Run Date:**	06/14/2016 14:32
Collect Date:	06/08/2016 10:10	**Dilution:**	5	**File ID:**	T3.061416.143214
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Magnesium, Total	7439-95-4	26.1		5.00	2.50	1.25
Sodium, Total	7440-23-5	124		5.00	2.50	1.25

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW5-060816	**Prep Method:**	3015	**Prep Date:**	06/10/2016 07:51
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/13/2016 11:56
Workgroup #:	WG572444	**Analyst:**	BKT	**Run Date:**	06/13/2016 14:36
Collect Date:	06/08/2016 10:10	**Dilution:**	1	**File ID:**	NI.061316.143618
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00122	J	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000758	J	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.126		0.00400	0.00200	0.00100
Copper, Total	7440-50-8	0.00218	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.102		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.0777		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00158	J	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0231	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW5-060816	**Prep Method:**	3015	**Prep Date:**	06/10/2016 07:51
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/15/2016 12:43
Workgroup #:	WG572444	**Analyst:**	BKT	**Run Date:**	06/15/2016 14:46
Collect Date:	06/08/2016 10:10	**Dilution:**	1	**File ID:**	NI.061516.144612
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Cobalt, Total	7440-48-4	0.00267		0.00200	0.00100	0.000500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW5-060816	**Prep Method:**	3015	**Prep Date:**	06/10/2016 07:51
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/15/2016 12:43
Workgroup #:	WG572444	**Analyst:**	BKT	**Run Date:**	06/15/2016 14:49
Collect Date:	06/08/2016 10:10	**Dilution:**	10	**File ID:**	NI.061516.144923
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.960		0.0600	0.0300	0.0150

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-03	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW5-060816	**Prep Method:**	7470A	**Prep Date:**	06/10/2016 10:23
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/13/2016 15:11
Workgroup #:	WG572285	**Analyst:**	AMA	**Run Date:**	06/13/2016 16:05
Collect Date:	06/08/2016 10:10	**Dilution:**	1	**File ID:**	M7.061316.160504
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW03SW-060816	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572592	**Analyst:**	TMB	**Run Date:**	06/14/2016 21:31
Collect Date:	06/08/2016 11:20	**Dilution:**	1	**File ID:**	8M412996
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	7.30	J	10.0	5.00	2.50
Benzene	71-43-2	6.13		1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.304	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	13.0		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	19.4		1.00	0.500	0.250

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	4.50		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	1.83		1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.457	J	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	153		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	1.12		1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	114	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	100	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW03SW-060816	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 13:25
Collect Date:	06/08/2016 11:20	**Dilution:**	1	**File ID:**	15M18409
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.15	J	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	48.1	20	129	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW03SW-060816	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/11/2016 17:19
Collect Date:	06/08/2016 11:20	**Dilution:**	100	**File ID:**	1LM.LM35295
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	260		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L16060504-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG572509	**Analyst:**	JDS	**Run Date:**	06/13/2016 22:53
Collect Date:	06/08/2016 00:01	**Dilution:**	1	**File ID:**	11M12604
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	89.7	85	115	
1,2-Dichloroethane-d4	86.5	70	120	
Toluene-d8	99.3	85	120	
4-Bromofluorobenzene	104	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	18CPTMW08SW-060816	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG572509	**Analyst:**	JDS	**Run Date:**	06/14/2016 02:36
Collect Date:	06/08/2016 08:00	**Dilution:**	1	**File ID:**	11M12611
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.173	J	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.508	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.491	J	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	4.43		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	0.989	J	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	17.4		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.347	J	1.00	0.500	0.250

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.290	J	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	74.2		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	8.97		1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.4	85	115	
1,2-Dichloroethane-d4	89.1	70	120	
Toluene-d8	97.5	85	120	
4-Bromofluorobenzene	100	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	MW5-060816	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG572509	**Analyst:**	JDS	**Run Date:**	06/14/2016 03:08
Collect Date:	06/08/2016 10:10	**Dilution:**	1	**File ID:**	11M12612
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.430	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.565	J	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	3.44		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.01	J	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	13.4		1.00	0.500	0.250

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.254	J	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	53.7		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	4.91		1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	91.8	85	115	
1,2-Dichloroethane-d4	87.3	70	120	
Toluene-d8	98.3	85	120	
4-Bromofluorobenzene	103	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW03SW-060816	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572592	**Analyst:**	TMB	**Run Date:**	06/14/2016 21:31
Collect Date:	06/08/2016 11:20	**Dilution:**	1	**File ID:**	8M412996
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	7.30	J	10.0	5.00	2.50
Benzene	71-43-2	6.13		1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.304	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	13.0		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	19.4		1.00	0.500	0.250

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	4.50		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	1.83		1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.457	J	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	153		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	1.12		1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	114	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	100	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG572509	**Analyst:**	JDS	**Run Date:**	06/13/2016 22:53
Collect Date:	06/08/2016 00:01	**Dilution:**	1	**File ID:**	11M12604
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	89.7	85	115	
1,2-Dichloroethane-d4	86.5	70	120	
Toluene-d8	99.3	85	120	
4-Bromofluorobenzene	104	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

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Instrument Run Log

Instrument: HPMS11 Dataset: 061415
Analyst1: TMB Analyst2: DLW
Method: 8260B SOP: MSV01 Rev: 22
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD70890 Surrogate Standard: STD70872
CCV: STD70883 LCS: STD70514 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG527475

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M08234	WG527475-01 50ng BFB STD	NA	1	1	STD70707	06/14/15 09:34
11M08235	WG527475-02 5ug/L STD8260	NA	1	1	STD70883	06/14/15 09:58
11M08236	WG527475-03 20ug/L STD8260	NA	1	1	STD70883	06/14/15 10:30
11M08237	WG527475-04 50ug/L STD8260	NA	1	1	STD70883	06/14/15 11:02
11M08238	WG527475-05 100ug/L STD8260	NA	1	1	STD70883	06/14/15 11:34
11M08239	WG527475-06 200ug/L STD8260	NA	1	1	STD70883	06/14/15 12:06
11M08240	WG527475-07 300ug/L STD8260	NA	1	1	STD70883	06/14/15 12:38
11M08241	WG527475-08 400ug/L STD8260	NA	1	1	STD70883	06/14/15 13:10
11M08242	WG527475-09 500ug/L STD8260	NA	1	1	STD70883	06/14/15 13:42
11M08243	RINSE	NA	1	1		06/14/15 14:14
11M08244	RINSE	NA	1	1		06/14/15 14:46
11M08245	WG527475-10 100ug/L ALT STD8260	NA	1	1	STD70514	06/14/15 15:18

Approved: September 15, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051316
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53752

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG568561

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412209	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 08:38
8M412210	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 08:57
8M412211	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 09:29
8M412212	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 09:56
8M412213	WG568561-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/13/16 10:19
8M412214	WG568561-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/13/16 10:51
8M412215	WG568565-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76072	05/13/16 11:36
8M412216	BFB CHECK	NA	1	1	STD76034	05/13/16 12:04
8M412217	BFB CHECK	NA	1	1	STD76034	05/13/16 12:18
8M412218	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 12:36
8M412219	RINSE	NA	1	1		05/13/16 13:00
8M412220	WG568561-02 0.3ug/L STD 8260	NA	1	1	STD76127	05/13/16 13:29
8M412221	WG568561-03 0.4ug/L STD 8260	NA	1	1	STD76127	05/13/16 13:58
8M412222	WG568561-04 1ug/L STD 8260	NA	1	1	STD76127	05/13/16 14:27
8M412223	WG568561-05 2ug/L STD 8260	NA	1	1	STD76127	05/13/16 14:56
8M412224	WG568561-06 5ug/L STD 8260	NA	1	1	STD76127	05/13/16 15:25
8M412225	WG568561-07 20ug/L STD 8260	NA	1	1	STD76127	05/13/16 15:54
8M412226	WG568561-08 50ug/L STD 8260	NA	1	1	STD76127	05/13/16 16:23
8M412227	WG568561-09 100ug/L STD 8260	NA	1	1	STD76127	05/13/16 16:52
8M412228	WG568561-10 200ug/L STD 8260	NA	1	1	STD76127	05/13/16 17:21
8M412229	WG568561-11 300ug/L STD 8260	NA	1	1	STD76127	05/13/16 17:50
8M412230	RINSE	NA	1	1		05/13/16 18:19
8M412231	RINSE	NA	1	1		05/13/16 18:49
8M412232	WG568561-12 50ug/L ALT SRC STD 8260	NA	1	1	STD76109	05/13/16 19:17
8M412233	RINSE	NA	1	1		05/13/16 19:46

Comments

Seq.	Rerun	Dil.	Reason	Analytes
5	X			
File ID: 8M412213				
	Several compounds were low, DNR.			
6				
File ID: 8M412214				

Approved: May 20, 2016

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Instrument Run Log

Instrument:	HPMS8	Dataset:	051316		
Analyst1:	TMB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	23
Method:	624	SOP:	MSV10	Rev:	14
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:	53752				

Internal Standard: STD75899 Surrogate Standard: STD75899

CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG568561

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			Two C compounds failed. DNR. Run a curve.	
7 File ID: 8M412215				
			DNR.	

Approved: May 20, 2016

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Instrument Run Log

Instrument: HPMS11 Dataset: 051316
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 / OVAP MSV01 Rev: 23 / 0
Method: 5030B/5030C/5035A SOP: PAT01 / OVAP PAT01 Rev: 18 / 0
Method: 624 SOP: MSV10 Rev: 14
Maintenance Log ID:

Internal Standard: STD76110 Surrogate Standard: STD75929
CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG568769

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M11835	RINSE	NA	1	1		05/13/16 11:59
11M11836	WG568769-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 14:15
11M11837	WG568769-02 0.3ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 14:40
11M11838	WG568769-03 0.4ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 15:12
11M11839	WG568769-04 1.0ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 15:43
11M11840	WG568769-05 2.0ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 16:15
11M11841	WG568769-06 5.0ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 16:47
11M11842	WG568769-07 20ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 17:19
11M11843	WG568769-08 50ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 17:51
11M11844	WG568769-09 100ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 18:22
11M11845	WG568769-10 200ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 18:54
11M11846	WG568769-11 300ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 19:26
11M11847	RINSE	NA	1	1		05/13/16 19:58
11M11848	WG568769-12 50ug/L ALT SRC STD 8260	NA	1	1	STD76109	05/13/16 20:30
11M11849	RINSE	NA	1	1		05/13/16 21:02
11M11850	RINSE	NA	1	1		05/13/16 21:34

Approved: May 23, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051716
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76072; STD76127 LCS: STD76109; STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG569079; WG569083

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412319	WG569084-01 50ng BFB STD 8260	NA	1	1	STD76034	05/17/16 08:53
8M412320	WG569084-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/17/16 09:18
8M412321	WG569079-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76072	05/17/16 09:47
8M412322	WG569079-03 50ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 10:16
8M412323	WG569079-04 20ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 10:44
8M412324	WG569079-05 5ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 11:13
8M412325	WG569079-06 200ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 11:42
8M412326	WG569079-07 300ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 12:40
8M412327	WG569079-08 400ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 13:10
8M412328	WG569079-09 500ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 13:39
8M412329	RINSE	NA	1	1		05/17/16 14:08
8M412330	RINSE	NA	1	1		05/17/16 14:37
8M412331	WG569079-10 100ug/L ALT SRC STD 826	NA	1	1	STD75801	05/17/16 15:06
8M412332	WG569259-01 BFB 50ng 8260	NA	1	1	STD76034	05/17/16 18:27
8M412333	WG569259-02 50ug/L CCV 8260	NA	1	1	STD76034	05/17/16 18:53
8M412334	WG569260-01 100ug/L CCV A9	NA	1	1	STD76072	05/17/16 19:22
8M412335	WG569083-01 VBLK0517 BLANK 8260	NA	1	1		05/17/16 19:51
8M412336	WG569083-02 20ug/L LCS 8260	NA	1	1	STD76109	05/17/16 20:20
8M412337	WG569083-03 20ug/L LCS2 8260	NA	1	1	STD76109	05/17/16 20:49
8M412338	WG569083-04 100ug/L LCS A9	NA	1	1	STD75801	05/17/16 21:18
8M412339	WG569083-05 100ug/L LCS2 A9	NA	1	1	STD75801	05/17/16 21:46
8M412340	L16050844-01 TB A 826-A9-SPE	5	1	1		05/17/16 22:16
8M412341	L16050844-07 EB A 826-A9-SPE	5	1	1		05/17/16 22:45
8M412342	L16050844-11 AB A 826-A9-SPE	5	1	1		05/17/16 23:14
8M412343	L16050844-02 A 826-A9-SPE	6	1	1		05/17/16 23:43
8M412344	L16050844-05 A 826-A9-SPE	6	1	1		05/18/16 00:12
8M412345	L16050844-06 A 826-A9-SPE	6	1	1		05/18/16 00:41
8M412346	L16050844-12 A 826-A9-SPE	6	1	1		05/18/16 01:10
8M412347	L16050840-01 A 826-A9-SPE	7	1	1		05/18/16 01:38
8M412348	L16050844-08 A 826-A9-SPE	7	1	1		05/18/16 02:07
8M412349	L16050844-13 A 826-A9-SPE	7	1	1		05/18/16 02:36
8M412350	L16050844-15 A 826-A9-SPE	7	1	1		05/18/16 03:05
8M412351	L16050839-01 A 826-A9-SPE	7	1	1		05/18/16 03:33
8M412352	L16050844-03 2.5X A 826-A9-SPE	7	1	2.5		05/18/16 04:02

Approved: May 20, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051716
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76072; STD76127 LCS: STD76109; STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG569079; WG569083

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412353	L16050844-04 5X A 826-A9-SPE	7	1	5		05/18/16 04:31
8M412354	L16050844-09 5X A 826-A9-SPE	7	1	5		05/18/16 05:01
8M412355	L16050844-10 5X A 826-A9-SPE	7	1	5		05/18/16 05:30
8M412356	L16050844-14 50X A 826-A9-SPE	7	1	50		05/18/16 05:59
8M412357	RINSE	NA	1	1		05/18/16 06:28

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
File ID: 8M412320				
	DNR. Running an a9/foo curve.			
32	X	10	Over Calibration Range	CIS12-DCE
File ID: 8M412350				
40	X	2.5	Analyzed too dilute	
File ID: 8M412353				
	DNR.			
37	X	25	Over Calibration Range	TCE
File ID: 8M412355				
38	X	20	Analyzed too dilute	
File ID: 8M412356				
	DNR.			

Approved: May 20, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 061316
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 24
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID: 53781

Internal Standard: STD76580 Surrogate Standard: STD76383
CCV: STD76405 LCS: STD76540 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG572509

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M12590	WG572507-02 50ug/L CCV STD 8260	NA	1	1	STD76405	06/13/16 15:27
11M12591	WG572507-02 50ug/L CCV STD 8260	NA	1	1	STD76405	06/13/16 15:59
11M12592	WG572507-01 50ng BFB STD 8260	NA	1	1	STD76496	06/13/16 16:33
11M12593	WG572507-02 50ug/L CCV STD 8260	NA	1	1	STD76405	06/13/16 17:01
11M12594	WGXXXXXX-01 100ug/L A9-CCV STD 826	NA	1	1	STDXXXXX	06/13/16 17:33
11M12595	WG572509-01 BLANK STD 8260	NA	1	1		06/13/16 18:05
11M12596	WG572509-02 20ug/L LCS STD 8260	NA	1	1	STD76540	06/13/16 18:37
11M12597	WG572509-03 20ug/L LCS2 STD 8260	NA	1	1	STD76540	06/13/16 19:09
11M12598	L16060611-01 A 826-BETX	<2	1	1		06/13/16 19:41
11M12599	L16060611-02 A 826-BETX	<2	1	1		06/13/16 20:13
11M12600	L16060611-21 A 826-BETX	<2	1	1		06/13/16 20:45
11M12601	L16060611-22 A 826-BETX	<2	1	1		06/13/16 21:17
11M12602	L16060485-01 A 826-SPE	<2	1	1		06/13/16 21:49
11M12603	L16060485-02 A 826-SPE	<2	1	1		06/13/16 22:21
11M12604	L16060504-05 A 826-LOW	<2	1	1		06/13/16 22:53
11M12605	L16060661-23 A 826-SPE	<2	1	1		06/13/16 23:25
11M12606	L16060661-24 A 826-SPE	<2	1	1		06/13/16 23:56
11M12607	L16060485-03 A 826-SPE	<2	1	1		06/14/16 00:28
11M12608	L16060485-04 A 826-SPE	<2	1	1		06/14/16 01:00
11M12609	L16060485-05 A 826-SPE	<2	1	1		06/14/16 01:32
11M12610	L16060485-06 A 826-SPE	<2	1	1		06/14/16 02:04
11M12611	L16060504-01 A 826-SPE	<2	1	1		06/14/16 02:36
11M12612	L16060504-03 A 826-SPE	<2	1	1		06/14/16 03:08
11M12613	L16060513-01 A 826-SPE1	<2	1	1		06/14/16 03:39
11M12614	L16060504-04 2.5X A 826-SPE	<2	1	2.5		06/14/16 04:11
11M12615	CCV	NA	1	1		06/14/16 04:43
11M12616	RINSE	NA	1	1		06/14/16 05:15
11M12617	RINSE	NA	1	1		06/14/16 05:46

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 11M12591				

Approved: June 20, 2016

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Microbac

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 061316
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 24
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID: 53781

Internal Standard: STD76580 Surrogate Standard: STD76383
CCV: STD76405 LCS: STD76540 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG572509

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			L16060504-04 first internal response over 200\% higher than internal response in ICAL mid-point. Decrease voltage and RR tune.	
25	X	1	Analyzed too dilute	
File ID: 11M12614				
	L16060504-04			

Approved: June 20, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 061416
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53783

Internal Standard: STD75370 Surrogate Standard: STD76370
CCV: STD76578 LCS: STD76597 MS/MSD: STD76597

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG572592

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412971	WG572591-01 50ng BFB STD 8260	NA	1	1	STD76496	06/14/16 09:33
8M412972	WG572591-02 50ug/L CCV STD 8260	NA	1	1	STD76578	06/14/16 09:57
8M412973	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76432	06/14/16 10:25
8M412974	WG572592-01 VBLK0614 BLANK STD 826	NA	1	1		06/14/16 10:54
8M412975	L16060176-01 C 826-VAP2	7	1	1		06/14/16 11:23
8M412976	L16060176-02 C 826-VAP2	7	1	1		06/14/16 11:52
8M412977	WG572592-02 20ug/L LCS STD 8260	NA	1	1	STD76597	06/14/16 12:21
8M412978	L16060540-07 A MS 826-SPE	<2	1	1	STD76597	06/14/16 12:50
8M412979	L16060540-08 A MSD 826-SPE	<2	1	1	STD76597	06/14/16 13:20
8M412980	RINSE	NA	1	1		06/14/16 13:49
8M412981	L16060605-14 B TB 826-SPE	<2	1	1		06/14/16 14:18
8M412982	L16060605-02 B 826-SPE	<2	1	1		06/14/16 14:47
8M412983	L16060605-01 B 826-SPE	<2	1	1		06/14/16 15:16
8M412984	L16060540-06 A REF 826-SPE	<2	1	1		06/14/16 15:45
8M412985	L16060540-10 A 826-SPE	<2	1	1		06/14/16 16:14
8M412986	L16060540-11 A 826-SPE	<2	1	1		06/14/16 16:42
8M412987	L16060540-12 A 826-SPE	<2	1	1		06/14/16 17:11
8M412988	L16060540-13 A 826-SPE	<2	1	1		06/14/16 17:40
8M412989	L16060540-14 A 826-SPE	<2	1	1		06/14/16 18:09
8M412990	L16060540-15 A 826-SPE	<2	1	1		06/14/16 18:38
8M412991	L16060540-16 A 826-SPE	<2	1	1		06/14/16 19:07
8M412992	L16060414-01 B 100X 826-LOW	<2	1	100		06/14/16 19:35
8M412993	L16060414-02 B 100X 826-LOW	<2	1	100		06/14/16 20:05
8M412994	L16060414-03 B 100X 826-LOW	<2	1	100		06/14/16 20:34
8M412995	L16060414-04 B 100X 826-LOW	5	1	100		06/14/16 21:03
8M412996	L16060504-04 B 826-LOW	<2	1	1		06/14/16 21:31
8M412997	CCV	NA	1	1		06/14/16 22:00
8M412998	RINSE	NA	1	1		06/14/16 22:29
8M412999	RINSE	NA	1	1		06/14/16 22:57
8M413000	RINSE	NA	1	1		06/14/16 23:26

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Approved: June 16, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS8	Dataset:	061416		
Analyst1:	TMB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	23
Method:	OVAP	SOP:	MSV01/PAT01	Rev:	0
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:	53783				

Internal Standard: STD75370 Surrogate Standard: STD76370

CCV: STD76578 LCS: STD76597 MS/MSD: STD76597

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG572592

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
3				
File ID: 8M412973				
	Not needed. DNR.			
19	X	10	Over Calibration Range	CIS12-DCE
File ID: 8M412989				
20	X	1	Carry-over contamination	
File ID: 8M412990				

Approved: June 16, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Data Checklist

Date: 14-JUN-2015
Analyst: TMB
Analyst: DLW
Method: 8260B/624
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 69930
Analytical Workgroups: WG527475

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer: 20-AUG-2015 Tiffany Bailey

Secondary Reviewer: 15-SEP-2015

CHECKLIST1 - Modified 03/05/2008
Generated: SEP-15-2015 14:33:53

Microbac Laboratories Inc.

Data Checklist

Date: 13-MAY-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75126
Analytical Workgroups: WG568561

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	TMB
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
17-MAY-2016
Tiffany Bailey

Secondary Reviewer:
20-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2016 11:18:36

Microbac Laboratories Inc.

Data Checklist

Date: 13-MAY-2016
Analyst: JDS
Analyst: NA
Method: 8260B
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 75133
Analytical Workgroups: WG568769

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	X
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
23-MAY-2016

Secondary Reviewer:
23-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-23-2016 15:39:32

Microbac Laboratories Inc.

Data Checklist

Date: 17-MAY-2016
Analyst: TMB
Analyst: FJB
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75174
Analytical Workgroups: WG569079; WG569083

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
19-MAY-2016
Tiffany Bailey

Secondary Reviewer:
20-MAY-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2016 11:05:37

Microbac Laboratories Inc.

Data Checklist

Date: 13-JUN-2016
Analyst: JDS
Analyst: NA
Method: 8260B
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 75758
Analytical Workgroups: WG572509

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	JDS
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
20-JUN-2016

Secondary Reviewer:
20-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-20-2016 15:00:38

Microbac Laboratories Inc.

Data Checklist

Date: 14-JUN-2016
Analyst: TMB
Analyst: NA
Method: 8260B/OVAP
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75679
Analytical Workgroups: WG572592

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
14-JUN-2016
Tiffany Bailey

Secondary Reviewer:
16-JUN-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-16-2016 12:56:09

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG572509

Login Number: L16060504

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW08SW-060816	01	06/08/16					06/14/2016	5.8	14		06/14/16	5.8	14	
MW5-060816	03	06/08/16					06/14/2016	5.7	14		06/14/16	5.7	14	
TRIP BLANK	05	06/08/16					06/13/2016	6	14		06/13/16	6	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4808084
Report generated 06/29/2016 13:45

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG572592

Login Number: L16060504

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW03SW-060816	04	06/08/16					06/14/2016	6.4	14		06/14/16	6.4	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4808084
Report generated 06/29/2016 13:45

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060504
Instrument Id: HPMS8
Workgroup (AAB#): WG572592

Method: 8260
CAL ID: HPMS8-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16060504-04	1.00	01	114	110	100	105
WG572592-01	1.00	01	107	107	98.8	106
WG572592-02	1.00	01	109	108	97.6	106

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4808090
Report generated: 06/29/2016 13:45

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060504
Instrument Id: HPMS11
Workgroup (AAB#): WG572509

Method: 8260
CAL ID: HPMS11-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16060504-01	1.00	01	89.1	93.4	100	97.5
L16060504-03	1.00	01	87.3	91.8	103	98.3
L16060504-05	1.00	01	86.5	89.7	104	99.3
WG572509-01	1.00	01	80.5	88.1	105	99.9
WG572509-02	1.00	01	81.0	90.7	105	98.8
WG572509-03	1.00	01	81.4	91.6	103	99.0

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4808090
Report generated: 06/29/2016 13:45

METHOD BLANK SUMMARY

Login Number: L16060504
Blank File ID: 11M12595
Prep Date: 06/13/16 18:05
Analyzed Date: 06/13/16 18:05
Analyst: JDS

Work Group: WG572509
Blank Sample ID: WG572509-01
Instrument ID: HPMS11
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572509-02	11M12596	06/13/16 18:37	01
LCS2	WG572509-03	11M12597	06/13/16 19:09	01
TRIP BLANK	L16060504-05	11M12604	06/13/16 22:53	01
18CPTMW08SW-060816	L16060504-01	11M12611	06/14/16 02:36	01
MW5-060816	L16060504-03	11M12612	06/14/16 03:08	01

Report Name: BLANK_SUMMARY
PDF File ID: 4809972
Report generated 06/29/2016 13:45

METHOD BLANK SUMMARY

Login Number: L16060504
Blank File ID: 8M412974
Prep Date: 06/14/16 10:54
Analyzed Date: 06/14/16 10:54
Analyst: TMB

Work Group: WG572592
Blank Sample ID: WG572592-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572592-02	8M412977	06/14/16 12:21	01
18CPTMW03SW-060816	L16060504-04	8M412996	06/14/16 21:31	01

Report Name: BLANK_SUMMARY
PDF File ID: 4809972
Report generated 06/29/2016 13:45

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16060504 Prep Date: 06/13/16 18:05 Sample ID: WG572509-01
Instrument ID: HPMS11 Run Date: 06/13/16 18:05 Prep Method: 5030B/5030C/503
File ID: 11M12595 Analyst: JDS Method: 8260B
Workgroup (AAB#): WG572509 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.289	1	J
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4808085
29-JUN-2016 13:45

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060504 Prep Date: 06/13/16 18:05 Sample ID: WG572509-01
Instrument ID: HPMS11 Run Date: 06/13/16 18:05 Prep Method: 5030B/5030C/503
File ID: 11M12595 Analyst: JDS Method: 8260B
Workgroup (AAB#): WG572509 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	88.1	85 - 115	PASS
1,2-Dichloroethane-d4	80.5	70 - 120	PASS
Toluene-d8	99.9	85 - 120	PASS
4-Bromofluorobenzene	105	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4808085
29-JUN-2016 13:45

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16060504 Prep Date: 06/14/16 10:54 Sample ID: WG572592-01
Instrument ID: HPMS8 Run Date: 06/14/16 10:54 Prep Method: 5030B/5030C/503
File ID: 8M412974 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG572592 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 4808085
29-JUN-2016 13:45

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060504 Prep Date: 06/14/16 10:54 Sample ID: WG572592-01
Instrument ID: HPMS8 Run Date: 06/14/16 10:54 Prep Method: 5030B/5030C/503
File ID: 8M412974 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG572592 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	107	85 - 115	PASS
1,2-Dichloroethane-d4	107	70 - 120	PASS
Toluene-d8	106	85 - 120	PASS
4-Bromofluorobenzene	98.8	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4808085
29-JUN-2016 13:45

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060504 Run Date: 06/14/2016 Sample ID: WG572592-02
Instrument ID: HPMS8 Run Time: 12:21 Prep Method: 5030B/5030C/503
File ID: 8M412977 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG572592 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD76597 Cal ID: HPMS8-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	24.7	123	40 - 140	
Benzene	20.0	21.1	106	80 - 120	
Bromobenzene	20.0	19.6	97.8	75 - 125	
Bromochloromethane	20.0	21.1	105	65 - 130	
Bromodichloromethane	20.0	22.2	111	75 - 120	
Bromoform	20.0	20.2	101	70 - 130	
Bromomethane	20.0	13.6	68.2	30 - 145	
2-Butanone	20.0	20.8	104	30 - 150	
n-Butylbenzene	20.0	19.2	96.2	70 - 135	
sec-Butylbenzene	20.0	20.3	101	70 - 125	
tert-Butylbenzene	20.0	20.1	100	70 - 130	
Carbon disulfide	20.0	19.2	95.9	35 - 160	
Carbon tetrachloride	20.0	22.2	111	65 - 140	
Chlorobenzene	20.0	20.7	104	80 - 120	
Chlorodibromomethane	20.0	20.5	102	60 - 135	
Chloroethane	20.0	22.0	110	60 - 135	
Chloroform	20.0	21.5	107	65 - 135	
Chloromethane	20.0	21.2	106	40 - 125	
2-Chlorotoluene	20.0	18.4	92.0	75 - 125	
4-Chlorotoluene	20.0	22.2	111	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	19.6	97.8	50 - 130	
1,2-Dibromoethane	20.0	20.0	99.8	80 - 120	
Dibromomethane	20.0	19.8	99.1	75 - 125	
1,2-Dichlorobenzene	20.0	20.2	101	70 - 120	
1,3-Dichlorobenzene	20.0	20.3	101	75 - 125	
1,4-Dichlorobenzene	20.0	20.3	102	75 - 125	
Dichlorodifluoromethane	20.0	22.7	114	30 - 155	
1,1-Dichloroethane	20.0	20.4	102	70 - 135	
1,2-Dichloroethane	20.0	22.8	114	70 - 130	
1,1-Dichloroethene	20.0	20.3	102	70 - 130	
cis-1,2-Dichloroethene	20.0	21.1	105	70 - 125	
trans-1,2-Dichloroethene	20.0	21.1	105	60 - 140	
1,2-Dichloropropane	20.0	21.0	105	75 - 125	
1,3-Dichloropropane	20.0	21.3	107	75 - 125	
2,2-Dichloropropane	20.0	23.0	115	70 - 135	
cis-1,3-Dichloropropene	20.0	23.5	117	70 - 130	
trans-1,3-Dichloropropene	20.0	21.3	106	55 - 140	
1,1-Dichloropropene	20.0	21.1	105	75 - 130	
Ethylbenzene	20.0	19.8	98.8	75 - 125	
2-Hexanone	20.0	20.3	101	55 - 130	
Hexachlorobutadiene	20.0	20.9	104	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4808086
Report generated: 06/29/2016 13:45

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060504 Run Date: 06/14/2016 Sample ID: WG572592-02
Instrument ID: HPMS8 Run Time: 12:21 Prep Method: 5030B/5030C/503
File ID: 8M412977 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG572592 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD76597 Cal ID: HPMS8-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	21.8	109	75 - 125	
p-Isopropyltoluene	20.0	19.9	99.6	75 - 130	
4-Methyl-2-pentanone	20.0	20.4	102	60 - 135	
Methylene chloride	20.0	20.1	100	55 - 140	
Naphthalene	20.0	16.9	84.5	55 - 140	
n-Propylbenzene	20.0	20.6	103	70 - 130	
Styrene	20.0	21.3	106	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	20.9	105	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	17.7	88.7	65 - 130	
Tetrachloroethene	20.0	20.7	103	45 - 150	
Toluene	20.0	20.3	102	75 - 120	
1,2,3-Trichlorobenzene	20.0	18.7	93.3	55 - 140	
1,2,4-Trichlorobenzene	20.0	19.5	97.4	65 - 135	
1,1,1-Trichloroethane	20.0	22.8	114	65 - 130	
1,1,2-Trichloroethane	20.0	20.0	100	75 - 125	
Trichloroethene	20.0	22.7	114	70 - 125	
Trichlorofluoromethane	20.0	22.3	111	60 - 145	
1,2,3-Trichloropropane	20.0	18.8	94.1	75 - 125	
1,2,4-Trimethylbenzene	20.0	20.0	99.9	75 - 130	
1,3,5-Trimethylbenzene	20.0	20.5	103	75 - 130	
Vinyl chloride	20.0	24.6	123	50 - 145	
o-Xylene	20.0	21.5	108	80 - 120	
m-,p-Xylene	40.0	41.6	104	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	108	85 - 115	PASS
1,2-Dichloroethane-d4	109	70 - 120	PASS
Toluene-d8	106	85 - 120	PASS
4-Bromofluorobenzene	97.6	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4808086
Report generated: 06/29/2016 13:45

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060504 Analyst: JDS Prep Method: 5030B/5030C/503
Instrument ID: HPMS11 Matrix: Water Method: 8260B
Workgroup (AAB#): WG572509 Units: ug/L
QC Key: DOD4 Lot #: STD76540

Sample ID: WG572509-02 LCS File ID: 11M12596 Run Date: 06/13/2016 18:37
Sample ID: WG572509-03 LCS2 File ID: 11M12597 Run Date: 06/13/2016 19:09

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	20.1	100	20.0	19.8	98.8	1.57	80 - 130	30	
1,1,1-Trichloroethane	20.0	18.7	93.4	20.0	18.7	93.4	0.0331	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	18.0	90.2	20.0	17.5	87.4	3.18	65 - 130	30	
1,1,2-Trichloroethane	20.0	20.3	102	20.0	20.3	102	0.0282	75 - 125	30	
1,1-Dichloroethane	20.0	17.7	88.4	20.0	17.6	88.0	0.496	70 - 135	30	
1,1-Dichloroethene	20.0	17.1	85.5	20.0	17.4	86.9	1.73	70 - 130	30	
1,1-Dichloropropene	20.0	18.9	94.7	20.0	19.1	95.3	0.645	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	19.0	94.9	20.0	18.8	93.8	1.20	55 - 140	30	
1,2,3-Trichloropropane	20.0	19.7	98.6	20.0	19.6	98.0	0.611	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	20.2	101	20.0	19.7	98.4	2.83	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	21.0	105	20.0	20.7	103	1.79	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	13.6	68.0	20.0	14.2	70.9	4.22	50 - 130	30	
1,2-Dibromoethane	20.0	20.7	103	20.0	20.6	103	0.556	80 - 120	30	
1,2-Dichlorobenzene	20.0	21.3	106	20.0	20.9	105	1.85	70 - 120	30	
1,2-Dichloroethane	20.0	17.9	89.4	20.0	18.0	90.1	0.692	70 - 130	30	
1,2-Dichloropropane	20.0	19.1	95.4	20.0	19.4	96.9	1.56	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	21.5	107	20.0	21.0	105	2.05	75 - 130	30	
1,3-Dichlorobenzene	20.0	21.2	106	20.0	20.9	105	1.17	75 - 125	30	
1,3-Dichloropropane	20.0	22.2	111	20.0	21.5	107	3.27	75 - 125	30	
1,4-Dichlorobenzene	20.0	21.5	108	20.0	20.8	104	3.24	75 - 125	30	
2,2-Dichloropropane	20.0	18.2	90.8	20.0	18.5	92.7	2.13	70 - 135	30	
2-Butanone	20.0	14.3	71.6	20.0	14.9	74.4	3.76	30 - 150	30	
2-Chlorotoluene	20.0	21.2	106	20.0	20.9	105	1.31	75 - 125	30	
2-Hexanone	20.0	14.2	71.2	20.0	14.6	72.8	2.16	55 - 130	30	
4-Chlorotoluene	20.0	20.9	104	20.0	20.5	102	1.95	75 - 130	30	
4-Methyl-2-pentanone	20.0	16.7	83.5	20.0	17.0	84.9	1.70	60 - 135	30	
Acetone	20.0	14.0	70.2	20.0	14.1	70.7	0.732	40 - 140	30	
Benzene	20.0	19.4	96.9	20.0	19.5	97.5	0.616	80 - 120	30	
Bromobenzene	20.0	21.2	106	20.0	20.9	104	1.68	75 - 125	30	
Bromochloromethane	20.0	20.5	103	20.0	20.9	104	1.93	65 - 130	30	
Bromodichloromethane	20.0	18.9	94.3	20.0	19.3	96.3	2.07	75 - 120	30	
Bromoform	20.0	19.2	96.2	20.0	19.3	96.3	0.0792	70 - 130	30	
Bromomethane	20.0	19.2	96.0	20.0	19.3	96.4	0.432	30 - 145	30	
Carbon disulfide	20.0	17.6	88.0	20.0	17.9	89.6	1.71	35 - 160	30	
Carbon tetrachloride	20.0	18.2	91.1	20.0	18.5	92.7	1.63	65 - 140	30	
Chlorobenzene	20.0	21.3	106	20.0	21.2	106	0.440	80 - 120	30	
Chloroethane	20.0	20.7	104	20.0	19.9	99.4	4.17	60 - 135	30	
Chloroform	20.0	18.2	91.2	20.0	18.1	90.5	0.814	65 - 135	30	
Chloromethane	20.0	17.9	89.3	20.0	17.8	89.2	0.146	40 - 125	30	
cis-1,2-Dichloroethene	20.0	20.4	102	20.0	20.2	101	0.807	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4814711
Report generated: 06/29/2016 13:45

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060504 Analyst: JDS Prep Method: 5030B/5030C/503
Instrument ID: HPMS11 Matrix: Water Method: 8260B
Workgroup (AAB#): WG572509 Units: ug/L
QC Key: DOD4 Lot #: STD76540

Sample ID: WG572509-02 LCS File ID: 11M12596 Run Date: 06/13/2016 18:37
Sample ID: WG572509-03 LCS2 File ID: 11M12597 Run Date: 06/13/2016 19:09

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	21.5	107	20.0	21.9	109	1.91	70 - 130	30	
Chlorodibromomethane	20.0	20.2	101	20.0	20.4	102	0.806	60 - 135	30	
Dibromomethane	20.0	18.6	93.1	20.0	18.8	93.8	0.770	75 - 125	30	
Dichlorodifluoromethane	20.0	18.3	91.3	20.0	18.6	92.8	1.60	30 - 155	30	
Ethylbenzene	20.0	20.8	104	20.0	20.9	105	0.509	75 - 125	30	
Hexachlorobutadiene	20.0	18.5	92.4	20.0	18.3	91.4	1.07	50 - 140	30	
Isopropylbenzene	20.0	21.1	106	20.0	21.0	105	0.386	75 - 125	30	
m-,p-Xylene	40.0	42.5	106	40.0	42.3	106	0.541	75 - 130	30	
Methylene chloride	20.0	19.5	97.6	20.0	19.7	98.7	1.19	55 - 140	30	
n-Butylbenzene	20.0	19.1	95.7	20.0	18.7	93.6	2.28	70 - 135	30	
n-Propylbenzene	20.0	21.7	109	20.0	21.2	106	2.67	70 - 130	30	
Naphthalene	20.0	17.6	88.0	20.0	17.4	86.9	1.30	55 - 140	30	
o-Xylene	20.0	21.2	106	20.0	21.4	107	0.902	80 - 120	30	
p-Isopropyltoluene	20.0	20.9	104	20.0	20.4	102	2.50	75 - 130	30	
sec-Butylbenzene	20.0	20.9	105	20.0	20.8	104	0.579	70 - 125	30	
Styrene	20.0	21.4	107	20.0	21.5	108	0.587	65 - 135	30	
tert-Butylbenzene	20.0	21.8	109	20.0	21.9	109	0.245	70 - 130	30	
Tetrachloroethene	20.0	21.2	106	20.0	21.2	106	0.287	45 - 150	30	
Toluene	20.0	20.9	104	20.0	20.7	104	0.704	75 - 120	30	
trans-1,2-Dichloroethene	20.0	19.8	98.9	20.0	19.8	99.1	0.146	60 - 140	30	
trans-1,3-Dichloropropene	20.0	19.9	99.3	20.0	19.6	98.0	1.35	55 - 140	30	
Trichloroethene	20.0	21.6	108	20.0	21.7	109	0.742	70 - 125	30	
Trichlorofluoromethane	20.0	17.7	88.3	20.0	17.7	88.6	0.372	60 - 145	30	
Vinyl chloride	20.0	20.1	100	20.0	20.4	102	1.50	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	81.0	81.4	70 - 120	PASS
Dibromofluoromethane	90.7	91.6	85 - 115	PASS
4-Bromofluorobenzene	105	103	75 - 120	PASS
Toluene-d8	98.8	99.0	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4814711
Report generated: 06/29/2016 13:45

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060504
Instrument: HPMS11
Analyst: TMB /DLW
Workgroup: WG527475

Tune ID: WG527475-01
Run Date: 06/14/2015
Run Time: 09:34
File ID: 11M08234
Cal ID: HPMS11 - 14-JUN-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.9	7754	PASS
75.0	95.0	30.0	60.0	49.9	19472	PASS
95.0	95.0	100	100	100	38997	PASS
96.0	95.0	5.00	9.00	7.00	2731	PASS
173	174	0	2.00	0.338	111	PASS
174	95.0	50.0	100	84.2	32837	PASS
175	174	5.00	9.00	7.18	2357	PASS
176	174	95.0	101	97.9	32146	PASS
177	176	5.00	9.00	7.11	2284	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG527475-02	STD	01	06/14/2015 09:58	
WG527475-03	STD	01	06/14/2015 10:30	
WG527475-04	STD	01	06/14/2015 11:02	
WG527475-05	STD-CCV	01	06/14/2015 11:34	
WG527475-06	STD	01	06/14/2015 12:06	
WG527475-07	STD	01	06/14/2015 12:38	
WG527475-08	STD	01	06/14/2015 13:10	
WG527475-09	STD	01	06/14/2015 13:42	
WG527475-10	SSCV	01	06/14/2015 15:18	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4808088
Report generated 06/29/2016 13:45

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060504
Instrument: HPMS11
Analyst: JDS
Workgroup: WG568769

Tune ID: WG568769-01
Run Date: 05/13/2016
Run Time: 14:15
File ID: 11M11836
Cal ID: HPMS11 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	24.2	11638	PASS
75.0	95.0	30.0	60.0	50.2	24088	PASS
95.0	95.0	100	100	100	48016	PASS
96.0	95.0	5.00	9.00	6.26	3008	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	86.2	41402	PASS
175	174	5.00	9.00	8.26	3421	PASS
176	174	95.0	101	97.3	40288	PASS
177	176	5.00	9.00	6.92	2789	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG568769-02	STD	01	05/13/2016 14:40	
WG568769-03	STD	01	05/13/2016 15:12	
WG568769-04	STD	01	05/13/2016 15:43	
WG568769-05	STD	01	05/13/2016 16:15	
WG568769-06	STD	01	05/13/2016 16:47	
WG568769-07	STD	01	05/13/2016 17:19	
WG568769-08	STD-CCV	01	05/13/2016 17:51	
WG568769-09	STD	01	05/13/2016 18:22	
WG568769-10	STD	01	05/13/2016 18:54	
WG568769-11	STD	01	05/13/2016 19:26	
WG568769-12	SSCV	01	05/13/2016 20:30	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4808088
Report generated 06/29/2016 13:45

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060504
Instrument: HPMS11
Analyst: JDS
Workgroup: WG572507

Tune ID: WG572507-01
Run Date: 06/13/2016
Run Time: 16:33
File ID: 11M12592
Cal ID: HPMS11 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.6	12399	PASS
75.0	95.0	30.0	60.0	48.5	29232	PASS
95.0	95.0	100	100	100	60272	PASS
96.0	95.0	5.00	9.00	7.11	4288	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	90.9	54805	PASS
175	174	5.00	9.00	7.74	4241	PASS
176	174	95.0	101	96.1	52656	PASS
177	176	5.00	9.00	6.07	3194	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG572507-02	CCV	01	06/13/2016 17:01	
WG572509-01	BLANK	01	06/13/2016 18:05	
WG572509-02	LCS	01	06/13/2016 18:37	
WG572509-03	LCS2	01	06/13/2016 19:09	
L16060504-05	TRIP BLANK	01	06/13/2016 22:53	
L16060504-01	18CPTMW08SW-060816	01	06/14/2016 02:36	
L16060504-03	MW5-060816	01	06/14/2016 03:08	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4808088
Report generated 06/29/2016 13:45

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060504
Instrument: HPMS8
Analyst: TMB
Workgroup: WG568561

Tune ID: WG568561-01
Run Date: 05/13/2016
Run Time: 12:36
File ID: 8M412218
Cal ID: HPMS8 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	16.7	6575	PASS
75.0	95.0	30.0	60.0	51.3	20171	PASS
95.0	95.0	100	100	100	39312	PASS
96.0	95.0	5.00	9.00	6.74	2649	PASS
173	174	0	2.00	0.363	122	PASS
174	95.0	50.0	100	85.5	33616	PASS
175	174	5.00	9.00	8.17	2746	PASS
176	174	95.0	101	99.2	33360	PASS
177	176	5.00	9.00	6.80	2267	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG568561-02	STD	01	05/13/2016 13:29	
WG568561-03	STD	01	05/13/2016 13:58	
WG568561-04	STD	01	05/13/2016 14:27	
WG568561-05	STD	01	05/13/2016 14:56	
WG568561-06	STD	01	05/13/2016 15:25	
WG568561-07	STD	01	05/13/2016 15:54	
WG568561-08	STD-CCV	01	05/13/2016 16:23	
WG568561-09	STD	01	05/13/2016 16:52	
WG568561-10	STD	01	05/13/2016 17:21	
WG568561-11	STD	01	05/13/2016 17:50	
WG568561-12	SSCV	01	05/13/2016 19:17	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4808088
Report generated 06/29/2016 13:45

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060504
Instrument: HPMS8
Analyst: TMB
Workgroup: WG569084

Tune ID: WG569084-01
Run Date: 05/17/2016
Run Time: 08:53
File ID: 8M412319
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.1	6316	PASS
75.0	95.0	30.0	60.0	54.7	18130	PASS
95.0	95.0	100	100	100	33138	PASS
96.0	95.0	5.00	9.00	6.76	2241	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	72.2	23934	PASS
175	174	5.00	9.00	7.88	1886	PASS
176	174	95.0	101	96.8	23159	PASS
177	176	5.00	9.00	7.15	1655	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG569079-01	STD-CCV	01	05/17/2016 09:47	
WG569079-03	STD	01	05/17/2016 10:16	
WG569079-04	STD	01	05/17/2016 10:44	
WG569079-05	STD	01	05/17/2016 11:13	
WG569079-06	STD	01	05/17/2016 11:42	
WG569079-07	STD	01	05/17/2016 12:40	
WG569079-08	STD	01	05/17/2016 13:10	
WG569079-09	STD	01	05/17/2016 13:39	
WG569079-10	SSCV	01	05/17/2016 15:06	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4808088
Report generated 06/29/2016 13:45

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060504
Instrument: HPMS8
Analyst: TMB
Workgroup: WG572591

Tune ID: WG572591-01
Run Date: 06/14/2016
Run Time: 09:33
File ID: 8M412971
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	17.4	8269	PASS
75.0	95.0	30.0	60.0	53.5	25445	PASS
95.0	95.0	100	100	100	47570	PASS
96.0	95.0	5.00	9.00	6.39	3042	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	90.3	42970	PASS
175	174	5.00	9.00	7.06	3032	PASS
176	174	95.0	101	97.6	41930	PASS
177	176	5.00	9.00	6.54	2744	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG572591-02	CCV	01	06/14/2016 09:57	
WG572592-01	BLANK	01	06/14/2016 10:54	
WG572592-02	LCS	01	06/14/2016 12:21	
L16060504-04	18CPTMW03SW-060816	01	06/14/2016 21:31	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4808088
Report generated 06/29/2016 13:45

Calibration Table Report
Method: A9FOOWT.M
Title: Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Calibration: Thu Aug 20 11:41:47 2015
Curve: WG527475
Calibration Files

	Compound	5 (11M08235.D)	20 (11M08236.D)	50 (11M08237.D)	100 (11M08238.D)	200 (11M08239.D)	300 (11M08240.D)	400 (11M08241.D)	500 (11M08242.D)	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD											
T	Acetonitrile	0.024	0.022	0.018	0.018	0.018	0.018	0.018	0.018	0.019	13.425		
T	3-Chloro-1-propene	0.380	0.372	0.371	0.380	0.375	0.379	0.368	0.385	0.376	1.470		
T	2-Chloro-1,3-butadiene	0.421	0.418	0.426	0.444	0.450	0.482	0.477	0.496	0.452	6.648		
T	Methacrylonitrile	0.124	0.115	0.112	0.114	0.112	0.114	0.120	0.119	0.116	3.530		
T	Isobutyl Alcohol		0.006	0.006	0.006	0.005	0.006	0.006	0.006	0.006	5.929		
T	1-Butanol			0.003	0.003	0.003	0.003	0.003	0.003	0.003	5.214		
T	Cyclohexanone		0.031	0.028	0.031	0.030	0.027	0.028	0.026	0.029	6.768		
T	2-Nitropropane			0.028	0.032	0.035	0.039	0.042	0.044	0.037	16.955	0.996	
T	Ethyl Acetate	0.133	0.145	0.133	0.140	0.137	0.136	0.141	0.139	0.138	3.039		
T	Methyl methacrylate	0.151	0.161	0.151	0.158	0.158	0.161	0.170	0.172	0.160	4.681		
I	Chlorobenzene-d5	ISTD											
I	1,4-Dichlorobenzene-d4	ISTD											

Thu Aug 20 11:49:17 2015

Calibration Table Report
Method: 8260WT.M
Title: 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Calibration: Sat May 14 18:45:57 2016
Curve: WG568769
Calibration Files

	Compound	0.3 11M11837.D	0.4 11M11838.D	1 11M11839.D	2 11M11840.D	5 11M11841.D	20 11M11842.D	50 11M11843.D	100 11M11844.D	200 11M11845.D	300 11M11846.D	Avg	%RSD	Linear	Quadratic
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.345	0.368	0.326	0.431	0.400	0.424	0.417	0.424	0.392	10.308		
P	Chloromethane			0.348	0.363	0.289	0.310	0.276	0.296	0.305	0.324	0.314	9.474		
C	Vinyl Chloride		0.275	0.241	0.249	0.244	0.268	0.250	0.271	0.271	0.276	0.261	5.458		
T	1,3-Butadiene					0.242	0.284	0.269	0.264	0.256	0.240	0.259	6.530		
T	Bromomethane			0.167	0.174	0.164	0.180	0.165	0.182	0.194	0.206	0.179	8.292		
T	Chloroethane			0.164	0.165	0.151	0.174	0.161	0.171	0.173	0.181	0.167	5.524		
T	Trichlorofluoromethane		0.514	0.523	0.537	0.496	0.552	0.498	0.524	0.514	0.514	0.519	3.376		
T	Diethyl ether			0.189	0.191	0.195	0.196	0.188	0.193		0.192	0.192	1.552		
T	Isoprene					0.299	0.331	0.317	0.323	0.325	0.325	0.320	3.522		
T	Acrolein			0.013	0.022	0.024	0.024	0.024	0.025		0.027	0.023	19.436	0.999	
T	1,1,2-Trichloro-1,2,2-Trifluor			0.261	0.245	0.234	0.268	0.245	0.252	0.254	0.257	0.252	4.225		
T	Acetone					0.063	0.067	0.058	0.057	0.057	0.054	0.059	7.931		
C	1,1-Dichloroethene		0.459	0.452	0.460	0.429	0.492	0.441	0.464	0.461	0.461	0.458	3.810		
T	Tert-Butyl Alcohol			0.014	0.015	0.017	0.018	0.017	0.017		0.017	0.016	9.673		
T	Dimethyl Sulfide					0.169	0.185	0.186	0.185	0.188	0.184	0.183	3.765		
T	Iodomethane				0.043	0.072	0.164	0.206	0.217	0.219	0.208	0.162	45.603		0.999
T	Methyl acetate				0.182	0.317	0.215	0.178	0.176	0.169	0.168	0.201	26.745		1.000
T	Methylene Chloride			0.239	0.256	0.230	0.243	0.224	0.232	0.234	0.238	0.237	4.076		
T	Carbon Disulfide			0.737	0.762	0.714	0.798	0.783	0.783	0.782	0.770	0.766	3.624		
T	Acrylonitrile			0.072	0.069	0.075	0.085	0.081	0.085		0.090	0.080	9.576		
T	Methyl Tert Butyl Ether			0.568	0.546	0.564	0.650	0.585	0.606	0.612	0.595	0.591	5.543		
T	trans-1,2-Dichloroethene		0.288	0.230	0.264	0.229	0.263	0.242	0.251	0.254	0.260	0.253	7.263		
T	n-Hexane				0.424	0.377	0.450	0.431	0.426	0.424	0.422	0.422	5.186		
T	Diisopropyl ether			1.034	1.075	1.083	1.055	1.046	1.062		1.015	1.053	2.218		
T	Vinyl Acetate					0.235	0.391	0.393	0.395	0.430	0.431	0.379	19.260	0.999	
P	1,1-Dichloroethane		0.463	0.517	0.527	0.505	0.535	0.495	0.513	0.511	0.508	0.508	4.023		
T	Ethyl-Tert-Butyl ether			0.815	0.854	0.881	0.876	0.855	0.873		0.844	0.857	2.667		
T	2-Butanone					0.079	0.097	0.087	0.092	0.092	0.091	0.090	6.720		
T	Propionitrile			0.023	0.025	0.026	0.029	0.027	0.027		0.027	0.026	7.381		
T	2,2-Dichloropropane		0.325	0.372	0.435	0.395	0.406	0.386	0.422	0.418	0.419	0.398	8.479		
T	cis-1,2-Dichloroethene		0.276	0.266	0.289	0.269	0.294	0.271	0.280	0.284	0.285	0.279	3.456		
C	Chloroform	0.587	0.483	0.491	0.514	0.480	0.509	0.470	0.486	0.489	0.482	0.499	6.767		
T	1-Bromopropane			0.014	0.041	0.045	0.047	0.048	0.049	0.050	0.050	0.043	28.190	1.000	
T	Bromochloromethane		0.115	0.140	0.169	0.167	0.188	0.172	0.179	0.180	0.181	0.166	14.065		
T	Tetrahydrofuran			0.074	0.061	0.058	0.067	0.061	0.062		0.059	0.063	8.769		
S	Dibromofluoromethane				0.251	0.266	0.284	0.268	0.284	0.285	0.278	0.274	4.605		
T	1,1,1-Trichloroethane		0.475	0.478	0.508	0.471	0.515	0.477	0.502	0.499	0.495	0.491	3.293		
T	Cyclohexane		0.477	0.485	0.547	0.509	0.574	0.551	0.560	0.558	0.556	0.535	6.606		
T	1,1-Dichloropropene		0.342	0.350	0.346	0.332	0.370	0.339	0.358	0.359	0.362	0.351	3.562		
T	Carbon Tetrachloride		0.409	0.457	0.522	0.465	0.518	0.473	0.496	0.492	0.486	0.480	7.177		
T	Tert-Amyl-Methyl ether			0.565	0.596	0.603	0.611	0.588	0.605		0.6	0.59537	2.5818		
S	1,2-Dichloroethane-d4			0.315	0.304	0.32	0.326	0.303	0.319	0.31	0.298	0.31197	3.15125		
T	1,2-Dichloroethane		0.388	0.391	0.419	0.395	0.441	0.402	0.413	0.409	0.391	0.40536	4.2274		
T	Benzene		1.058	0.952	1.016	0.923	0.996	0.908	0.943	0.931	0.914	0.96002	5.38884		
T	Trichloroethene		0.308	0.317	0.329	0.306	0.322	0.294	0.313	0.309	0.311	0.31204	3.21019		
T	Methylcyclohexane		0.332	0.37	0.389	0.35	0.411	0.401	0.4	0.405	0.407	0.3851	7.28708		
C	1,2-Dichloropropane		0.259	0.262	0.273	0.254	0.276	0.257	0.268	0.27	0.273	0.26575	2.95636		
T	1,4-Dioxane				0.001	0.001	0.002	0.001	0.002		0.002	0.0014	19.4617	0.999	
T	Bromodichloromethane		0.346	0.346	0.373	0.362	0.4	0.369	0.387	0.389	0.385	0.37307	5.09783		
T	Dibromomethane		0.118	0.136	0.135	0.137	0.149	0.137	0.146	0.145	0.144	0.13848	6.69192		
T	2-Chloroethyl Vinyl Ether					0.112	0.138	0.128	0.136	0.138	0.135	0.13098	7.7176		
T	4-Methyl-2-Pentanone					0.06	0.08	0.073	0.076	0.077	0.077	0.07387	9.67651		
T	cis-1,3-Dichloropropene		0.326	0.338	0.358	0.357	0.406	0.379	0.395	0.401	0.399	0.37315	7.91395		
T	Dimethyl Disulfide					0.185	0.229	0.227	0.233	0.238	0.235	0.22454	8.74309		

I	Chlorobenzene-d5	ISTD												
S	Toluene-d8				1.101	1.093	1.115	1.056	1.103	1.092	1.044	1.08625	2.42896	
C	Toluene		1.309	1.253	1.287	1.269	1.347	1.249	1.287	1.241	1.149	1.2656	4.33323	
T	Ethyl Methacrylate			0.234	0.233	0.25	0.299	0.285	0.289	0.291	0.281	0.27024	9.93745	
T	trans-1,3-Dichloropropene			0.335	0.388	0.387	0.448	0.418	0.432	0.43	0.412	0.40623	8.82781	
T	1,1,2-Trichloroethane		0.222	0.201	0.243	0.21	0.246	0.221	0.228	0.227	0.221	0.22442	6.30977	
T	2-Hexanone					0.137	0.179	0.165	0.172	0.172	0.165	0.16482	8.91224	
T	1,3-Dichloropropane		0.337	0.338	0.351	0.355	0.396	0.361	0.374	0.373	0.358	0.36039	5.16222	
T	Tetrachloroethene		0.274	0.287	0.317	0.286	0.306	0.286	0.3	0.299	0.294	0.29431	4.41886	
T	Dibromochloromethane		0.283	0.297	0.336	0.33	0.378	0.354	0.372	0.372	0.359	0.3423	9.88235	
T	1,2-Dibromoethane		0.232	0.182	0.228	0.214	0.243	0.224	0.233	0.235	0.232	0.22485	7.92714	
T	1-Chlorohexane		0.37	0.399	0.414	0.391	0.442	0.429	0.44	0.438	0.432	0.41726	6.09034	
P	Chlorobenzene		0.927	0.917	0.998	0.932	0.976	0.909	0.93	0.902	0.853	0.92715	4.48215	
T	1,1,1,2-Tetrachloroethane		0.341	0.361	0.405	0.366	0.388	0.371	0.384	0.385	0.376	0.37515	4.87731	
C	Ethylbenzene		0.453	0.457	0.512	0.463	0.495	0.466	0.482	0.479	0.472	0.47542	3.94078	
T	m-,p-Xylene		0.619	0.583	0.605	0.564	0.604	0.568	0.579	0.559	0.522	0.57798	5.08853	
T	o-Xylene		0.539	0.549	0.574	0.539	0.6	0.561	0.574	0.57	0.557	0.56249	3.43829	
T	Styrene		0.865	0.848	0.897	0.918	1.018	0.955	0.985	0.959	0.917	0.92933	5.96246	
P	Bromoform			0.172	0.189	0.185	0.226	0.21	0.225	0.226	0.228	0.20747	10.9157	
T	Isopropylbenzene		1.515	1.456	1.567	1.46	1.592	1.493	1.534	1.449	1.323	1.48754	5.34769	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.288	0.357	0.369	0.371	0.441	0.396	0.412	0.428	0.442	0.38931	12.6902	
S	p-Bromofluorobenzene				0.772	0.784	0.794	0.716	0.767	0.789	0.773	0.77065	3.38935	
T	1,2,3-Trichloropropane			0.087	0.129	0.138	0.151	0.137	0.142	0.148	0.148	0.13515	15.3522	0.999
T	trans-1,4-Dichloro-2-Butene			0.105	0.117	0.124	0.177	0.178	0.184	0.192	0.193	0.15883	23.0996	0.999
T	n-Propylbenzene		2.87	2.8	3.077	2.949	3.134	2.886	2.979	2.836	2.526	2.89527	6.10377	
T	Bromobenzene	0.663	0.778	0.81	0.798	0.765	0.784	0.718	0.752	0.769	0.76	0.75973	5.57443	
T	1,3,5-Trimethylbenzene		2.338	2.056	2.263	2.172	2.357	2.166	2.252	2.223	2.059	2.20939	4.86261	
T	2-Chlorotoluene		2.158	2.096	2.122	2.033	2.128	1.936	2.002	1.954	1.82	2.0279	5.4704	
T	4-Chlorotoluene		1.782	1.755	1.937	1.808	1.916	1.763	1.832	1.838	1.717	1.8165	4.03452	
T	a-Methylstyrene			1	1.066	1.101	1.241	1.231	1.235	1.242	1.208	1.16555	8.18507	
T	tert-Butylbenzene		0.378	0.44	0.48	0.489	0.498	0.458	0.483	0.49	0.497	0.46809	8.31778	
T	1,2,4-Trimethylbenzene		2.159	2.195	2.274	2.295	2.472	2.234	2.309	2.244	2.067	2.24981	4.97706	
T	sec-Butylbenzene			2.593	2.734	2.647	2.87	2.634	2.723	2.617	2.404	2.65291	5.05975	
T	p-Isopropyltoluene			2.247	2.592	2.45	2.641	2.43	2.506	2.404	2.226	2.43674	6.05243	
T	1,3-Dichlorobenzene		1.487	1.488	1.538	1.46	1.53	1.398	1.451	1.446	1.406	1.46732	3.33475	
T	1,4-Dichlorobenzene	1.482	1.601	1.511	1.569	1.484	1.538	1.404	1.456	1.434	1.395	1.4873	4.59741	
T	n-Butylbenzene		2.048	2.099	2.295	2.049	2.32	2.134	2.224	2.136	2.021	2.14721	5.09289	
T	1,2-Dichlorobenzene	1.33	1.26	1.333	1.432	1.33	1.406	1.296	1.343	1.326	1.31	1.33665	3.71841	
T	1,2-Dibromo-3-Chloropropane				0.057	0.079	0.096	0.081	0.086	0.087	0.091	0.08248	15.3444	0.999
T	1,2,4-Trichlorobenzene		0.927	0.903	0.957	0.956	1.042	0.972	0.998	1.002	1.047	0.97808	4.96993	
T	Hexachlorobutadiene		0.393	0.381	0.451	0.418	0.447	0.415	0.441	0.442	0.49	0.43089	7.64497	
T	Naphthalene		1.885	1.633	1.765	1.712	2.026	1.824	1.878	1.821	1.794	1.81543	6.15168	
T	1,2,3-Trichlorobenzene	0.854	0.957	0.865	0.918	0.834	0.946	0.86	0.889	0.912	0.943	0.89764	4.8559	

Tue May 17 13:57:02 2016

Calibration Table Report
Method: 8260WT.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Calibration: Sat May 14 18:08:06 2016
Curve: WG568561
Calibration Files

	Compound	0.3 8M412220.D	0.4 8M412221.D	1 8M412222.D	2 8M412223.D	5 8M412224.D	20 8M412225.D	50 8M412226.D	100 8M412227.D	200 8M412228.D	300 8M412229.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane		0.427	0.390	0.397	0.364	0.468	0.439	0.452	0.427	0.408	0.419	7.751		
P	Chloromethane			0.264	0.257	0.223	0.253	0.240	0.240	0.239	0.241	0.245	5.336		
C	Vinyl Chloride		0.274	0.296	0.297	0.277	0.299	0.292	0.299	0.292	0.288	0.290	3.191		
T	1,3-Butadiene				0.218	0.208	0.242	0.251	0.277	0.254	0.254	0.243	9.644		
T	Bromomethane			0.129	0.133	0.127	0.162	0.167	0.187	0.205	0.212	0.165	20.449		1.000
T	Chloroethane		0.173	0.157	0.153	0.143	0.164	0.157	0.163	0.164	0.164	0.160	5.354		
T	Trichlorofluoromethane		0.544	0.538	0.559	0.506	0.570	0.538	0.551	0.531	0.525	0.540	3.520		
T	Diethyl ether			0.130	0.138	0.123	0.132	0.125	0.128		0.127	0.129	3.866		
T	Isoprene		0.335	0.351	0.334	0.293	0.334	0.320	0.334	0.322	0.329	0.328	4.867		
T	Acrolein				0.012	0.010	0.010	0.011	0.012		0.014	0.012	12.987		
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.256	0.269	0.240	0.260	0.249	0.257	0.251	0.250	0.254	3.397		
T	Acetone					0.023	0.030	0.029	0.030	0.028	0.028	0.028	9.132		
C	1,1-Dichloroethene		0.424	0.407	0.406	0.387	0.416	0.398	0.409	0.400	0.393	0.404	2.830		
T	Tert-Butyl Alcohol				0.010	0.009	0.009	0.009	0.009		0.009	0.009	2.872		
T	Dimethyl Sulfide		0.133	0.142	0.152	0.137	0.145	0.142	0.151	0.147	0.151	0.145	4.534		
T	Iodomethane				0.019	0.024	0.066	0.101	0.129	0.135	0.131	0.087	58.244		0.998
T	Methyl acetate					0.075	0.076	0.074	0.078	0.076	0.078	0.076	2.221		
T	Methylene Chloride			0.274	0.265	0.244	0.263	0.250	0.255	0.254	0.252	0.257	3.686		
T	Carbon Disulfide			0.888	0.922	0.801	0.873	0.816	0.854	0.813	0.802	0.846	5.346		
T	Acrylonitrile			0.027	0.035	0.033	0.038	0.038	0.039		0.044	0.036	14.671		
T	Methyl Tert Butyl Ether			0.534	0.543	0.521	0.586	0.579	0.585	0.560	0.546	0.557	4.455		
T	trans-1,2-Dichloroethene		0.389	0.395	0.364	0.352	0.381	0.367	0.372	0.364	0.358	0.371	3.858		
T	n-Hexane					0.265	0.280	0.270	0.286	0.275	0.279	0.276	2.732		
T	Diisopropyl ether			0.600	0.607	0.548	0.588	0.572	0.571		0.567	0.579	3.559		
T	Vinyl Acetate				0.256	0.243	0.270	0.275	0.266	0.271	0.275	0.265	4.509		
P	1,1-Dichloroethane		0.441	0.463	0.486	0.434	0.488	0.464	0.470	0.459	0.447	0.461	4.012		
T	Ethyl-Tert-Butyl ether			0.616	0.645	0.590	0.641	0.628	0.619		0.603	0.620	3.188		
T	2-Butanone					0.035	0.042	0.043	0.045	0.041	0.043	0.041	8.268		
T	Propionitrile			0.010	0.012	0.012	0.013	0.012	0.013		0.013	0.012	8.354		
T	2,2-Dichloropropane		0.471	0.462	0.520	0.476	0.503	0.494	0.497	0.483	0.470	0.486	3.839		
T	cis-1,2-Dichloroethene		0.299	0.298	0.291	0.267	0.295	0.282	0.289	0.283	0.277	0.287	3.685		
C	Chloroform	0.563	0.567	0.581	0.536	0.509	0.566	0.543	0.546	0.529	0.506	0.545	4.619		
T	1-Bromopropane			0.034	0.040	0.040	0.043	0.041	0.043	0.043	0.044	0.041	7.649		
T	Bromochloromethane		0.131	0.164	0.147	0.137	0.154	0.148	0.151	0.148	0.145	0.147	6.598		
T	Tetrahydrofuran			0.034	0.028	0.025	0.026	0.026	0.026		0.026	0.027	11.724		
S	Dibromofluoromethane			0.249	0.261	0.257	0.280	0.271	0.284	0.271	0.275	0.269	4.465		
T	1,1,1-Trichloroethane		0.492	0.537	0.515	0.496	0.545	0.525	0.533	0.515	0.499	0.517	3.660		
T	Cyclohexane			0.373	0.369	0.335	0.359	0.344	0.366	0.356	0.364	0.358	3.619		
T	1,1-Dichloropropene			0.414	0.399	0.369	0.403	0.395	0.399	0.392	0.382	0.394	3.488		
T	Tert-Amyl-Methyl ether			0.567	0.587	0.534	0.576	0.568	0.561		0.549	0.563	3.077		
T	Carbon Tetrachloride		0.444	0.456	0.462	0.441	0.481	0.465	0.474	0.462	0.448	0.4594	2.92173		
S	1,2-Dichloroethane-d4			0.241	0.309	0.276	0.312	0.295	0.301	0.284	0.286	0.288	7.93644		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.347	0.335	0.354	0.336	0.371	0.36	0.364	0.349	0.338	0.3505	3.65503		
T	Benzene		1.128	1.084	1.071	0.977	1.085	1.033	1.019	0.963	0.883	1.0269	7.39343		
T	Trichloroethene		0.285	0.275	0.276	0.251	0.283	0.273	0.279	0.273	0.27	0.2739	3.66126		
T	Methylcyclohexane					0.396	0.426	0.408	0.429	0.416	0.422	0.4161	2.94153		
C	1,2-Dichloropropane		0.239	0.222	0.233	0.207	0.238	0.226	0.233	0.231	0.229	0.2286	4.30096		
T	Bromodichloromethane		0.369	0.382	0.412	0.385	0.426	0.421	0.417	0.41	0.395	0.4018	4.93305		
T	1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.0011	14.5817		
T	Dibromomethane		0.141	0.13	0.137	0.128	0.141	0.134	0.137	0.136	0.133	0.1353	3.26799		
T	2-Chloroethyl Vinyl Ether				0.1	0.084	0.103	0.104	0.103	0.095	0.098	0.0983	7.09792		
T	4-Methyl-2-Pentanone					0.033	0.042	0.042	0.043	0.04	0.041	0.0401	8.66859		
T	cis-1,3-Dichloropropene		0.391	0.393	0.386	0.398	0.431	0.428	0.428	0.42	0.405	0.409	4.41527		

T	Dimethyl Disulfide					0.182	0.218	0.221	0.23	0.229	0.23	0.2183	8.49419	
I	Chlorobenzene-d5	ISTD												
S	Toluene-d8			1.282	1.295	1.228	1.385	1.333	1.378	1.289	1.278	1.3084	4.07746	
C	Toluene		1.653	1.696	1.678	1.507	1.647	1.554	1.545	1.418	1.27	1.552	8.98325	
T	Ethyl Methacrylate			0.251	0.293	0.268	0.314	0.314	0.327	0.309	0.31	0.2981	8.76897	
T	Paraldehyde											0	0	
T	trans-1,3-Dichloropropene			0.472	0.51	0.466	0.561	0.552	0.553	0.533	0.515	0.5201	7.01006	
T	1,1,2-Trichloroethane		0.261	0.241	0.242	0.222	0.254	0.249	0.252	0.243	0.241	0.2449	4.54209	
T	2-Hexanone					0.042	0.053	0.053	0.056	0.051	0.053	0.0515	9.50479	
T	1,3-Dichloropropane		0.355	0.442	0.465	0.42	0.468	0.454	0.457	0.437	0.428	0.436	7.93348	
T	Tetrachloroethene		0.355	0.337	0.336	0.306	0.333	0.325	0.337	0.334	0.33	0.3325	3.83886	
T	Dibromochloromethane		0.349	0.336	0.338	0.328	0.373	0.372	0.383	0.373	0.367	0.3576	5.60043	
T	1,2-Dibromoethane		0.233	0.234	0.234	0.227	0.259	0.254	0.258	0.251	0.247	0.2441	5.04151	
T	1-Chlorohexane		0.532	0.584	0.505	0.502	0.54	0.52	0.547	0.521	0.516	0.5298	4.7826	
P	Chlorobenzene		1.029	1.173	1.09	1.007	1.099	1.037	1.043	1.002	0.939	1.0466	6.41465	
T	1,1,1,2-Tetrachloroethane		0.392	0.399	0.403	0.357	0.431	0.414	0.424	0.417	0.413	0.4055	5.39495	
C	Ethylbenzene		0.6	0.594	0.59	0.532	0.586	0.559	0.57	0.564	0.558	0.5726	3.7769	
T	m-,p-Xylene		0.744	0.696	0.691	0.643	0.713	0.67	0.673	0.634	0.581	0.6716	7.12586	
T	o-Xylene			0.691	0.651	0.614	0.692	0.658	0.667	0.65	0.63	0.6567	4.11758	
T	Styrene		1.05	1.06	1.096	1.043	1.159	1.124	1.12	1.061	0.98	1.077	4.96781	
P	Bromoform			0.177	0.21	0.181	0.226	0.221	0.232	0.227	0.223	0.2121	10.0546	
T	Isopropylbenzene		1.853	1.891	1.871	1.708	1.897	1.781	1.75	1.573	1.377	1.7444	9.92447	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.426	0.492	0.503	0.486	0.543	0.51	0.527	0.513	0.514	0.5018	6.60291	
S	p-Bromofluorobenzene				1.054	0.976	1.071	1.016	1.053	1.031	1.046	1.0352	3.05136	
T	1,2,3-Trichloropropane			0.119	0.158	0.161	0.162	0.155	0.162	0.16	0.158	0.1545	9.40789	
T	trans-1,4-Dichloro-2-Butene			0.085	0.118	0.12	0.149	0.151	0.16	0.159	0.161	0.1376	19.9543	1.000
T	n-Propylbenzene		4.139	4.239	4.243	4.051	4.241	3.953	3.882	3.419	2.935	3.9003	11.4439	
T	Bromobenzene	0.796	0.708	0.843	0.837	0.778	0.84	0.798	0.817	0.803	0.803	0.8022	4.93253	
T	1,3,5-Trimethylbenzene		2.941	2.93	2.941	2.839	3.053	2.882	2.871	2.689	2.423	2.8411	6.50391	
T	2-Chlorotoluene		2.917	2.935	2.929	2.712	2.861	2.795	2.682	2.533	2.145	2.7231	9.37022	
T	4-Chlorotoluene		2.681	2.596	2.581	2.474	2.625	2.326	2.447	2.286	2.121	2.4597	7.49558	
T	a-Methylstyrene					1.257	1.406	1.34	1.384	1.35	1.351	1.3479	3.77654	
T	tert-Butylbenzene			0.587	0.555	0.53	0.571	0.533	0.552	0.561	0.558	0.5558	3.34508	
T	1,2,4-Trimethylbenzene		2.955	3.168	3.127	2.936	3.12	2.914	2.937	2.709	2.427	2.9214	7.97314	
T	sec-Butylbenzene			3.701	3.536	3.487	3.607	3.34	3.332	3.045	2.69	3.3424	9.93324	
T	p-Isopropyltoluene			3.112	3.062	2.903	2.988	2.813	2.809	2.634	2.382	2.8379	8.45265	
T	1,3-Dichlorobenzene		1.484	1.617	1.627	1.53	1.605	1.531	1.549	1.51	1.45	1.5448	3.95774	
T	1,4-Dichlorobenzene	1.713	1.524	1.672	1.594	1.503	1.6	1.511	1.535	1.49	1.431	1.5574	5.56562	
T	n-Butylbenzene			3.143	2.96	2.895	3.002	2.791	2.792	2.571	2.292	2.8056	9.55812	
T	1,2-Dichlorobenzene	1.59	1.307	1.415	1.41	1.322	1.404	1.333	1.356	1.315	1.286	1.3739	6.4618	
T	1,2-Dibromo-3-Chloropropane				0.085	0.103	0.102	0.103	0.106	0.104	0.103	0.1007	6.86771	
T	1,2,4-Trichlorobenzene		1.074	1.01	1.028	0.982	1.069	1.013	1.036	1.029	1.002	1.0269	2.90829	
T	Hexachlorobutadiene		0.516	0.476	0.483	0.447	0.487	0.459	0.48	0.485	0.485	0.4798	4.00465	
T	Naphthalene		1.594	1.457	1.574	1.455	1.63	1.552	1.564	1.485	1.422	1.5258	4.75891	
T	1,2,3-Trichlorobenzene	0.913	0.934	0.905	0.862	0.805	0.877	0.824	0.862	0.846	0.835	0.8664	4.7474	

Tue May 17 11:49:41 2016

Calibration Table Report
Method: A9FOOWT.M
Title: A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Calibration: Thu May 19 08:54:31 2016
Curve: WG569079
Calibration Files

	Compound	5 8M412324.D	20 8M412323.D	50 8M412322.D	100 8M412321.D	200 8M412325.D	300 8M412326.D	400 8M412327.D	500 8M412328.D	Avg	%RSD
I	Fluorobenzene	ISTD									
T	Acetonitrile		0.009	0.010	0.010	0.010	0.010	0.010	0.010	0.010	2.076
T	3-Chloro-1-propene	0.306	0.330	0.335	0.331	0.324	0.307	0.304	0.304	0.318	4.307
T	2-Chloro-1,3-butadiene	0.368	0.420	0.420	0.419	0.419	0.392	0.389	0.387	0.402	5.022
T	Ethyl Acetate	0.080	0.096	0.097	0.100	0.099	0.098	0.100	0.095	0.096	6.751
T	Methacrylonitrile	0.041	0.054	0.055	0.055	0.055	0.054	0.055	0.052	0.053	9.227
T	Isobutyl Alcohol			0.003	0.003	0.003	0.003	0.003	0.003	0.003	3.599
T	1-Butanol									0.000	0.000
T	Methyl methacrylate	0.089	0.106	0.106	0.105	0.106	0.105	0.107	0.102	0.103	5.868
T	2-Nitropropane		0.041	0.042	0.043	0.046	0.047	0.048	0.046	0.045	5.992
I	Chlorobenzene-d5	ISTD									
I	1,4-Dichlorobenzene-d4	ISTD									
T	Cyclohexanone		0.011	0.010	0.010	0.009	0.010	0.011	0.010	0.010	4.971

Thu May 19 09:04:52 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060504 Run Date: 05/13/2016 Sample ID: WG568769-12
Instrument ID: HPMS11 Run Time: 20:30 Method: 8260B
File ID: 11M11848 Analyst: JDS QC Key: DOD4
ICal Workgroup: WG568769 Cal ID: HPMS11 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.6	ug/L	0.475	4.80	20	
1,1-Dichloroethene	CCC	50.0	47.5	ug/L	0.435	4.90	20	
1,2-Dichloropropane	CCC	50.0	52.8	ug/L	0.281	5.60	20	
Ethylbenzene	CCC	50.0	52.4	ug/L	0.498	4.80	20	
Toluene	CCC	50.0	53.8	ug/L	1.36	7.50	20	
Vinyl Chloride	CCC	50.0	56.1	ug/L	0.292	12.2	20	
Bromoform	SPCC	50.0	49.8	ug/L	0.207	0.300	20	
Chlorobenzene	SPCC	50.0	53.3	ug/L	0.988	6.60	20	
Chloromethane	SPCC	50.0	55.1	ug/L	0.346	10.2	20	
1,1-Dichloroethane	SPCC	50.0	48.5	ug/L	0.493	3.00	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	54.9	ug/L	0.428	9.90	20	
Acetone		50.0	49.7	ug/L	0.0590	0.700	20	
Benzene		50.0	51.2	ug/L	0.983	2.40	20	
Bromobenzene		50.0	51.6	ug/L	0.785	3.30	20	
Bromochloromethane		50.0	53.9	ug/L	0.179	7.80	20	
Bromodichloromethane		50.0	49.5	ug/L	0.370	0.900	20	
Bromomethane		50.0	50.5	ug/L	0.181	1.00	20	
2-Butanone		50.0	50.3	ug/L	0.0904	0.700	20	
n-Butylbenzene		50.0	53.9	ug/L	2.31	7.80	20	
sec-Butylbenzene		50.0	55.9	ug/L	2.97	11.8	20	
tert-Butylbenzene		50.0	56.5	ug/L	0.529	13.1	20	
Carbon Disulfide		50.0	44.7	ug/L	0.685	10.6	20	
Carbon Tetrachloride		50.0	47.3	ug/L	0.454	5.30	20	
Dibromochloromethane		50.0	52.5	ug/L	0.360	5.10	20	
Chloroethane		50.0	58.9	ug/L	0.197	17.7	20	
2-Chlorotoluene		50.0	52.8	ug/L	2.14	5.50	20	
4-Chlorotoluene		50.0	55.4	ug/L	2.01	10.8	20	
1,2-Dibromo-3-Chloropropane		50.0	48.1	ug/L	0.0844	3.80	20	
1,2-Dibromoethane		50.0	52.6	ug/L	0.237	5.30	20	
Dibromomethane		50.0	48.0	ug/L	0.133	3.90	20	
1,2-Dichlorobenzene		50.0	53.6	ug/L	1.43	7.20	20	
1,3-Dichlorobenzene		50.0	52.7	ug/L	1.55	5.40	20	
1,4-Dichlorobenzene		50.0	53.0	ug/L	1.58	6.10	20	
Dichlorodifluoromethane		50.0	56.6	ug/L	0.443	13.2	20	
1,2-Dichloroethane		50.0	47.9	ug/L	0.388	4.20	20	
cis-1,2-Dichloroethene		50.0	53.2	ug/L	0.297	6.30	20	
trans-1,2-Dichloroethene		50.0	52.1	ug/L	0.264	4.30	20	
1,3-Dichloropropane		50.0	56.3	ug/L	0.406	12.6	20	
2,2-Dichloropropane		50.0	45.6	ug/L	0.362	8.90	20	
cis-1,3-Dichloropropene		50.0	57.6	ug/L	0.430	15.2	20	
trans-1,3-Dichloropropene		50.0	52.1	ug/L	0.423	4.20	20	
1,1-Dichloropropene		50.0	50.1	ug/L	0.352	0.200	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4808087
Report generated 06/29/2016 13:45

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060504 Run Date: 05/13/2016 Sample ID: WG568769-12
Instrument ID: HPMS11 Run Time: 20:30 Method: 8260B
File ID: 11M11848 Analyst: JDS QC Key: DOD4
ICal Workgroup: WG568769 Cal ID: HPMS11 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	52.2	ug/L	0.172	4.40	20	
Hexachlorobutadiene		50.0	55.9	ug/L	0.482	11.8	20	
Isopropylbenzene		50.0	54.2	ug/L	1.61	8.50	20	
p-Isopropyltoluene		50.0	54.7	ug/L	2.67	9.40	20	
4-Methyl-2-Pentanone		50.0	52.6	ug/L	0.0777	5.10	20	
Methylene Chloride		50.0	52.0	ug/L	0.246	4.00	20	
Naphthalene		50.0	51.1	ug/L	1.86	2.30	20	
n-Propylbenzene		50.0	56.6	ug/L	3.28	13.2	20	
Styrene		50.0	55.0	ug/L	1.02	9.90	20	
1,1,1,2-Tetrachloroethane		50.0	51.0	ug/L	0.383	2.10	20	
Tetrachloroethene		50.0	52.2	ug/L	0.307	4.40	20	
1,2,3-Trichlorobenzene		50.0	54.1	ug/L	0.971	8.10	20	
1,2,4-Trichlorobenzene		50.0	55.4	ug/L	1.08	10.9	20	
1,1,1-Trichloroethane		50.0	48.1	ug/L	0.472	3.90	20	
1,1,2-Trichloroethane		50.0	52.8	ug/L	0.237	5.50	20	
Trichloroethene		50.0	52.3	ug/L	0.327	4.60	20	
Trichlorofluoromethane		50.0	47.5	ug/L	0.494	4.90	20	
1,2,3-Trichloropropane		50.0	50.1	ug/L	0.147	0.300	20	
1,2,4-Trimethylbenzene		50.0	53.8	ug/L	2.42	7.70	20	
1,3,5-Trimethylbenzene		50.0	55.1	ug/L	2.44	10.3	20	
o-Xylene		50.0	54.7	ug/L	0.615	9.40	20	
m-,p-Xylene		100	107	ug/L	0.620	7.20	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4808087
Report generated 06/29/2016 13:45

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060504 Run Date: 05/13/2016 Sample ID: WG568561-12
Instrument ID: HPMS8 Run Time: 19:17 Method: 8260B
File ID: 8M412232 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG568561 Cal ID: HPMS8 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.1	ug/L	0.513	5.70	20	
1,1-Dichloroethene	CCC	50.0	46.0	ug/L	0.372	8.10	20	
1,2-Dichloropropane	CCC	50.0	51.0	ug/L	0.233	1.90	20	
Ethylbenzene	CCC	50.0	48.2	ug/L	0.552	3.60	20	
Toluene	CCC	50.0	49.1	ug/L	1.52	1.80	20	
Vinyl Chloride	CCC	50.0	52.4	ug/L	0.304	4.80	20	
Bromoform	SPCC	50.0	48.2	ug/L	0.205	3.60	20	
Chlorobenzene	SPCC	50.0	50.2	ug/L	1.05	0.400	20	
Chloromethane	SPCC	50.0	50.7	ug/L	0.248	1.40	20	
1,1-Dichloroethane	SPCC	50.0	46.7	ug/L	0.431	6.60	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.6	ug/L	0.498	0.800	20	
Acetone		50.0	57.5	ug/L	0.0324	15.1	20	
Benzene		50.0	48.5	ug/L	0.997	3.00	20	
Bromobenzene		50.0	49.5	ug/L	0.794	1.10	20	
Bromochloromethane		50.0	47.5	ug/L	0.140	4.90	20	
Bromodichloromethane		50.0	48.3	ug/L	0.388	3.40	20	
Bromomethane		50.0	46.4	ug/L	0.162	7.20	20	
2-Butanone		50.0	53.0	ug/L	0.0438	6.00	20	
n-Butylbenzene		50.0	49.7	ug/L	2.79	0.700	20	
sec-Butylbenzene		50.0	51.3	ug/L	3.43	2.70	20	
tert-Butylbenzene		50.0	50.9	ug/L	0.566	1.90	20	
Carbon Disulfide		50.0	42.3	ug/L	0.716	15.4	20	
Carbon Tetrachloride		50.0	46.2	ug/L	0.425	7.50	20	
Dibromochloromethane		50.0	49.7	ug/L	0.355	0.700	20	
Chloroethane		50.0	53.3	ug/L	0.170	6.70	20	
2-Chlorotoluene		50.0	51.6	ug/L	2.81	3.10	20	
4-Chlorotoluene		50.0	48.3	ug/L	2.37	3.50	20	
1,2-Dibromo-3-Chloropropane		50.0	48.5	ug/L	0.0977	3.00	20	
1,2-Dibromoethane		50.0	51.1	ug/L	0.250	2.20	20	
Dibromomethane		50.0	45.8	ug/L	0.124	8.40	20	
1,2-Dichlorobenzene		50.0	50.5	ug/L	1.39	1.00	20	
1,3-Dichlorobenzene		50.0	50.9	ug/L	1.57	1.80	20	
1,4-Dichlorobenzene		50.0	50.5	ug/L	1.57	0.900	20	
Dichlorodifluoromethane		50.0	54.2	ug/L	0.455	8.40	20	
1,2-Dichloroethane		50.0	49.0	ug/L	0.344	2.00	20	
cis-1,2-Dichloroethene		50.0	48.9	ug/L	0.281	2.20	20	
trans-1,2-Dichloroethene		50.0	48.1	ug/L	0.357	3.90	20	
1,3-Dichloropropane		50.0	53.7	ug/L	0.468	7.30	20	
2,2-Dichloropropane		50.0	47.9	ug/L	0.466	4.20	20	
cis-1,3-Dichloropropene		50.0	53.9	ug/L	0.441	7.80	20	
trans-1,3-Dichloropropene		50.0	50.7	ug/L	0.527	1.30	20	
1,1-Dichloropropene		50.0	47.5	ug/L	0.374	5.10	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4808087
Report generated 06/29/2016 13:45

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060504 Run Date: 05/13/2016 Sample ID: WG568561-12
Instrument ID: HPMS8 Run Time: 19:17 Method: 8260B
File ID: 8M412232 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG568561 Cal ID: HPMS8 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	53.6	ug/L	0.0552	7.20	20	
Hexachlorobutadiene		50.0	52.1	ug/L	0.500	4.20	20	
Isopropylbenzene		50.0	51.1	ug/L	1.78	2.20	20	
p-Isopropyltoluene		50.0	50.1	ug/L	2.85	0.300	20	
4-Methyl-2-Pentanone		50.0	51.9	ug/L	0.0416	3.70	20	
Methylene Chloride		50.0	48.4	ug/L	0.249	3.10	20	
Naphthalene		50.0	45.8	ug/L	1.40	8.40	20	
n-Propylbenzene		50.0	51.9	ug/L	4.05	3.80	20	
Styrene		50.0	51.5	ug/L	1.11	3.00	20	
1,1,1,2-Tetrachloroethane		50.0	49.4	ug/L	0.400	1.20	20	
Tetrachloroethene		50.0	47.8	ug/L	0.318	4.40	20	
1,2,3-Trichlorobenzene		50.0	47.7	ug/L	0.827	4.50	20	
1,2,4-Trichlorobenzene		50.0	50.1	ug/L	1.03	0.200	20	
1,1,1-Trichloroethane		50.0	47.6	ug/L	0.492	4.80	20	
1,1,2-Trichloroethane		50.0	49.0	ug/L	0.240	1.90	20	
Trichloroethene		50.0	51.1	ug/L	0.280	2.10	20	
Trichlorofluoromethane		50.0	46.9	ug/L	0.507	6.10	20	
1,2,3-Trichloropropane		50.0	50.1	ug/L	0.155	0.200	20	
1,2,4-Trimethylbenzene		50.0	49.7	ug/L	2.90	0.700	20	
1,3,5-Trimethylbenzene		50.0	51.6	ug/L	2.93	3.30	20	
o-Xylene		50.0	50.6	ug/L	0.664	1.10	20	
m-,p-Xylene		100	101	ug/L	0.679	1.10	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4808087
Report generated 06/29/2016 13:45

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504 Run Date: 06/13/2016 Sample ID: WG572507-02
Instrument ID: HPMS11 Run Time: 17:01 Method: 8260B
File ID: 11M12593 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG572509 Cal ID: HPMS11 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	43.8	ug/L	0.437	12.4	20	
1,1-Dichloroethene	CCC	50.0	43.6	ug/L	0.399	12.9	20	
1,2-Dichloropropane	CCC	50.0	45.2	ug/L	0.240	9.58	20	
Ethylbenzene	CCC	50.0	50.9	ug/L	0.484	1.86	20	
Toluene	CCC	50.0	51.2	ug/L	1.29	2.30	20	
Vinyl Chloride	CCC	50.0	45.9	ug/L	0.239	8.16	20	
Bromoform	SPCC	50.0	50.4	ug/L	0.209	0.841	20	
Chlorobenzene	SPCC	50.0	50.2	ug/L	0.931	0.434	20	
Chloromethane	SPCC	50.0	40.9	ug/L	0.257	18.2	20	
1,1-Dichloroethane	SPCC	50.0	44.6	ug/L	0.453	10.8	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	47.1	ug/L	0.367	5.80	20	
Xylenes		150	153	ug/L	0.581	1.85	20	
Acetone		50.0	32.7	ug/L	0.0388	34.6	20	*
Benzene		50.0	46.8	ug/L	0.898	6.45	20	
Bromobenzene		50.0	52.0	ug/L	0.790	3.95	20	
Bromochloromethane		50.0	50.9	ug/L	0.169	1.83	20	
Bromodichloromethane		50.0	45.7	ug/L	0.341	8.64	20	
Bromomethane		50.0	48.0	ug/L	0.172	4.02	20	
2-Butanone		50.0	35.4	ug/L	0.0636	29.1	20	*
n-Butylbenzene		50.0	45.7	ug/L	1.96	8.53	20	
sec-Butylbenzene		50.0	48.3	ug/L	2.56	3.33	20	
tert-Butylbenzene		50.0	51.1	ug/L	0.479	2.30	20	
Carbon Disulfide		50.0	48.6	ug/L	0.745	2.80	20	
Carbon Tetrachloride		50.0	44.6	ug/L	0.428	10.8	20	
Dibromochloromethane		50.0	50.7	ug/L	0.347	1.38	20	
Chloroethane		50.0	47.9	ug/L	0.160	4.17	20	
2-Chlorotoluene		50.0	49.5	ug/L	2.01	1.01	20	
4-Chlorotoluene		50.0	50.5	ug/L	1.83	0.930	20	
1,2-Dibromo-3-Chloropropane		50.0	34.8	ug/L	0.0607	30.4	20	*
1,2-Dibromoethane		50.0	50.3	ug/L	0.226	0.623	20	
Dibromomethane		50.0	45.6	ug/L	0.126	8.83	20	
1,2-Dichlorobenzene		50.0	49.9	ug/L	1.33	0.226	20	
1,3-Dichlorobenzene		50.0	50.2	ug/L	1.47	0.476	20	
1,4-Dichlorobenzene		50.0	49.9	ug/L	1.48	0.195	20	
Dichlorodifluoromethane		50.0	42.9	ug/L	0.336	14.1	20	
1,2-Dichloroethane		50.0	41.6	ug/L	0.338	16.7	20	
cis-1,2-Dichloroethene		50.0	48.2	ug/L	0.269	3.58	20	
trans-1,2-Dichloroethene		50.0	48.0	ug/L	0.243	3.97	20	
1,3-Dichloropropane		50.0	49.0	ug/L	0.353	2.07	20	
2,2-Dichloropropane		50.0	46.4	ug/L	0.369	7.15	20	
cis-1,3-Dichloropropene		50.0	48.7	ug/L	0.363	2.63	20	
trans-1,3-Dichloropropene		50.0	50.0	ug/L	0.406	0.0794	20	

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504 Run Date: 06/13/2016 Sample ID: WG572507-02
Instrument ID: HPMS11 Run Time: 17:01 Method: 8260B
File ID: 11M12593 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG572509 Cal ID: HPMS11 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	46.7	ug/L	0.328	6.50	20	
2-Hexanone		50.0	37.7	ug/L	0.124	24.5	20	*
Hexachlorobutadiene		50.0	42.6	ug/L	0.367	14.8	20	
Isopropylbenzene		50.0	49.6	ug/L	1.47	0.872	20	
p-Isopropyltoluene		50.0	49.0	ug/L	2.39	2.05	20	
4-Methyl-2-Pentanone		50.0	41.1	ug/L	0.0608	17.7	20	
Methylene Chloride		50.0	46.7	ug/L	0.221	6.58	20	
Naphthalene		50.0	46.5	ug/L	1.69	6.94	20	
n-Propylbenzene		50.0	50.5	ug/L	2.92	0.918	20	
Styrene		50.0	52.5	ug/L	0.975	4.95	20	
1,1,1,2-Tetrachloroethane		50.0	49.7	ug/L	0.373	0.665	20	
Tetrachloroethene		50.0	52.2	ug/L	0.307	4.42	20	
1,2,3-Trichlorobenzene		50.0	45.6	ug/L	0.819	8.77	20	
1,2,4-Trichlorobenzene		50.0	48.4	ug/L	0.947	3.21	20	
1,1,1-Trichloroethane		50.0	44.4	ug/L	0.436	11.2	20	
1,1,2-Trichloroethane		50.0	49.5	ug/L	0.222	0.981	20	
Trichloroethene		50.0	48.8	ug/L	0.304	2.48	20	
Trichlorofluoromethane		50.0	44.3	ug/L	0.460	11.4	20	
1,2,3-Trichloropropane		50.0	46.6	ug/L	0.136	6.70	20	
1,2,4-Trimethylbenzene		50.0	50.6	ug/L	2.28	1.14	20	
1,3,5-Trimethylbenzene		50.0	50.8	ug/L	2.24	1.59	20	
o-Xylene		50.0	51.0	ug/L	0.574	1.96	20	
m-,p-Xylene		100	102	ug/L	0.588	1.80	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4808089
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504 Run Date: 06/14/2016 Sample ID: WG572591-02
Instrument ID: HPMS8 Run Time: 09:57 Method: 8260B
File ID: 8M412972 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG572592 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	52.7	ug/L	0.574	5.32	20	
1,1-Dichloroethene	CCC	50.0	52.8	ug/L	0.427	5.65	20	
1,2-Dichloropropane	CCC	50.0	48.2	ug/L	0.221	3.50	20	
Ethylbenzene	CCC	50.0	49.5	ug/L	0.567	1.04	20	
Toluene	CCC	50.0	50.4	ug/L	1.57	0.889	20	
Vinyl Chloride	CCC	50.0	55.8	ug/L	0.324	11.6	20	
Bromoform	SPCC	50.0	49.3	ug/L	0.209	1.31	20	
Chlorobenzene	SPCC	50.0	50.1	ug/L	1.05	0.118	20	
Chloromethane	SPCC	50.0	50.8	ug/L	0.248	1.51	20	
1,1-Dichloroethane	SPCC	50.0	51.9	ug/L	0.479	3.87	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	41.8	ug/L	0.419	16.5	20	
Xylenes		150	152	ug/L	0.670	1.10	20	
Acetone		50.0	48.9	ug/L	0.0275	2.30	20	
Benzene		50.0	51.6	ug/L	1.06	3.12	20	
Bromobenzene		50.0	48.3	ug/L	0.775	3.44	20	
Bromochloromethane		50.0	50.5	ug/L	0.149	1.05	20	
Bromodichloromethane		50.0	52.0	ug/L	0.418	4.06	20	
Bromomethane		50.0	40.9	ug/L	0.142	18.2	20	
2-Butanone		50.0	44.9	ug/L	0.0371	10.2	20	
n-Butylbenzene		50.0	48.7	ug/L	2.73	2.58	20	
sec-Butylbenzene		50.0	49.3	ug/L	3.30	1.41	20	
tert-Butylbenzene		50.0	48.9	ug/L	0.544	2.20	20	
Carbon Disulfide		50.0	53.2	ug/L	0.899	6.31	20	
Carbon Tetrachloride		50.0	55.2	ug/L	0.507	10.3	20	
Dibromochloromethane		50.0	49.2	ug/L	0.352	1.69	20	
Chloroethane		50.0	51.5	ug/L	0.164	2.93	20	
2-Chlorotoluene		50.0	44.6	ug/L	2.43	10.8	20	
4-Chlorotoluene		50.0	53.0	ug/L	2.61	6.05	20	
1,2-Dibromo-3-Chloropropane		50.0	41.1	ug/L	0.0829	17.7	20	
1,2-Dibromoethane		50.0	46.1	ug/L	0.225	7.71	20	
Dibromomethane		50.0	46.8	ug/L	0.127	6.47	20	
1,2-Dichlorobenzene		50.0	46.7	ug/L	1.28	6.63	20	
1,3-Dichlorobenzene		50.0	49.2	ug/L	1.52	1.53	20	
1,4-Dichlorobenzene		50.0	47.7	ug/L	1.49	4.51	20	
Dichlorodifluoromethane		50.0	55.3	ug/L	0.463	10.5	20	
1,2-Dichloroethane		50.0	51.2	ug/L	0.359	2.38	20	
cis-1,2-Dichloroethene		50.0	51.3	ug/L	0.294	2.59	20	
trans-1,2-Dichloroethene		50.0	52.1	ug/L	0.387	4.25	20	
1,3-Dichloropropane		50.0	46.0	ug/L	0.401	8.04	20	
2,2-Dichloropropane		50.0	58.5	ug/L	0.569	17.0	20	
cis-1,3-Dichloropropene		50.0	51.6	ug/L	0.422	3.26	20	
trans-1,3-Dichloropropene		50.0	49.1	ug/L	0.511	1.76	20	

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504 Run Date: 06/14/2016 Sample ID: WG572591-02
Instrument ID: HPMS8 Run Time: 09:57 Method: 8260B
File ID: 8M412972 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG572592 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	52.9	ug/L	0.417	5.84	20	
2-Hexanone		50.0	42.8	ug/L	0.0441	14.3	20	
Hexachlorobutadiene		50.0	51.9	ug/L	0.498	3.75	20	
Isopropylbenzene		50.0	51.5	ug/L	1.80	2.92	20	
p-Isopropyltoluene		50.0	49.3	ug/L	2.80	1.43	20	
4-Methyl-2-Pentanone		50.0	42.3	ug/L	0.0340	15.4	20	
Methylene Chloride		50.0	49.3	ug/L	0.254	1.44	20	
Naphthalene		50.0	42.6	ug/L	1.30	14.8	20	
n-Propylbenzene		50.0	49.2	ug/L	3.84	1.56	20	
Styrene		50.0	51.2	ug/L	1.10	2.41	20	
1,1,1,2-Tetrachloroethane		50.0	50.7	ug/L	0.411	1.48	20	
Tetrachloroethene		50.0	52.9	ug/L	0.352	5.89	20	
1,2,3-Trichlorobenzene		50.0	44.9	ug/L	0.777	10.3	20	
1,2,4-Trichlorobenzene		50.0	48.1	ug/L	0.988	3.84	20	
1,1,1-Trichloroethane		50.0	55.1	ug/L	0.570	10.1	20	
1,1,2-Trichloroethane		50.0	45.1	ug/L	0.221	9.88	20	
Trichloroethene		50.0	52.7	ug/L	0.289	5.45	20	
Trichlorofluoromethane		50.0	55.1	ug/L	0.595	10.2	20	
1,2,3-Trichloropropane		50.0	43.2	ug/L	0.134	13.5	20	
1,2,4-Trimethylbenzene		50.0	49.6	ug/L	2.90	0.789	20	
1,3,5-Trimethylbenzene		50.0	50.3	ug/L	2.86	0.509	20	
o-Xylene		50.0	50.0	ug/L	0.657	0.0780	20	
m-,p-Xylene		100	102	ug/L	0.683	1.61	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4808089
Report generated 06/29/2016 13:45

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060504
Instrument ID: HPMS11
Workgroup (AAB#): WG572509

ICAL CCV Number: WG568769-08
CAL ID: HPMS11-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568769-08	NA	NA	263885	438582	521583
Upper Limit	NA	NA	527770	877164	1043166
Lower Limit	NA	NA	131943	219291	260792
L16060504-01	1.00	01	336868	579411	688668
L16060504-03	1.00	01	333082	583003	703760
L16060504-05	1.00	01	345024	604613	735062
WG572509-01	1.00	01	389978	677255	831276
WG572509-02	1.00	01	392010	686435	835829
WG572509-03	1.00	01	393247	675005	811546

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4809973
Report generated 06/29/2016 13:45

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060504
Instrument ID: HPMS8
Workgroup (AAB#): WG572592

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	288225	539116	778260
Upper Limit	NA	NA	576450	1078232	1556520
Lower Limit	NA	NA	144113	269558	389130
L16060504-04	1.00	01	303479	548941	736400
WG572592-01	1.00	01	333089	597833	818923
WG572592-02	1.00	01	328956	583790	789634

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4809973
Report generated 06/29/2016 13:45

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060504
Instrument ID: HPMS8
Workgroup (AAB#): WG572592

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	17.6	14.58	10.71
Upper Limit	NA	NA	18.1	15.08	11.21
Lower Limit	NA	NA	17.1	14.08	10.21
L16060504-04	1.00	01	17.6	14.57	10.71
WG572592-01	1.00	01	17.6	14.57	10.71
WG572592-02	1.00	01	17.6	14.57	10.71

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4809974
Report generated: 06/29/2016 13:45

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060504
Instrument ID: HPMS11
Workgroup (AAB#): WG572509

ICAL CCV Number: WG568769-08
CAL ID: HPMS11-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568769-08	NA	NA	17.06	14.25	10.61
Upper Limit	NA	NA	17.56	14.75	11.11
Lower Limit	NA	NA	16.56	13.75	10.11
L16060504-01	1.00	01	17.06	14.25	10.61
L16060504-03	1.00	01	17.06	14.25	10.61
L16060504-05	1.00	01	17.06	14.25	10.61
WG572509-01	1.00	01	17.06	14.25	10.61
WG572509-02	1.00	01	17.06	14.25	10.61
WG572509-03	1.00	01	17.06	14.25	10.61

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4809974
Report generated: 06/29/2016 13:45

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061316\11M12611.D Vial: 20
Acq On : 14 Jun 2016 2:36 Operator: JDS
Sample : L16060504-01 A 826-SPE Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 09:26:14 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	688668	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	579411	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	336868	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	175983	23.3495 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.40%		
43) 1,2-Dichloroethane-d4	10.23	65	191451	22.2779 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 89.12%		
57) Toluene-d8	12.47	98	613927	24.3860 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.56%		
78) p-Bromofluorobenzene	15.64	95	260005	25.0383 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.16%		

Target Compounds					Qvalue
3) Chloromethane	3.71	50	1604	0.1856 ug/L	86
4) Vinyl Chloride	3.96	62	64345	8.9660 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	322265	46.4303 ug/L	95
14) 1,1-Dichloroethene	6.56	61	12472	0.9893 ug/L	95
23) trans-1,2-Dichloroethene	7.75	96	2423	0.3473 ug/L	75
27) 1,1-Dichloroethane	8.34	63	62023	4.4301 ug/L	99
32) cis-1,2-Dichloroethene	9.15	96	133525	17.3559 ug/L	78
33) Chloroform	9.35	83	6989	0.5083 ug/L	94
45) Benzene	10.38	78	4578	0.1731 ug/L #	61
46) Trichloroethene	11.08	130	638074	74.2313 ug/L	99
47) Methylcyclohexane	11.08	83	6241	0.5883 ug/L #	1
64) Tetrachloroethene	13.34	164	1980	0.2903 ug/L	94
91) 1,3-Dichlorobenzene	16.98	146	9711	0.4912 ug/L	93

(#) = qualifier out of range (m) = manual integration
11M12611.D 8260WT.M Tue Jun 14 09:26:15 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061316\11M12611.D Vial: 20
Acq On : 14 Jun 2016 2:36 Operator: JDS
Sample : L16060504-01 A 826-SPE Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 9:26 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

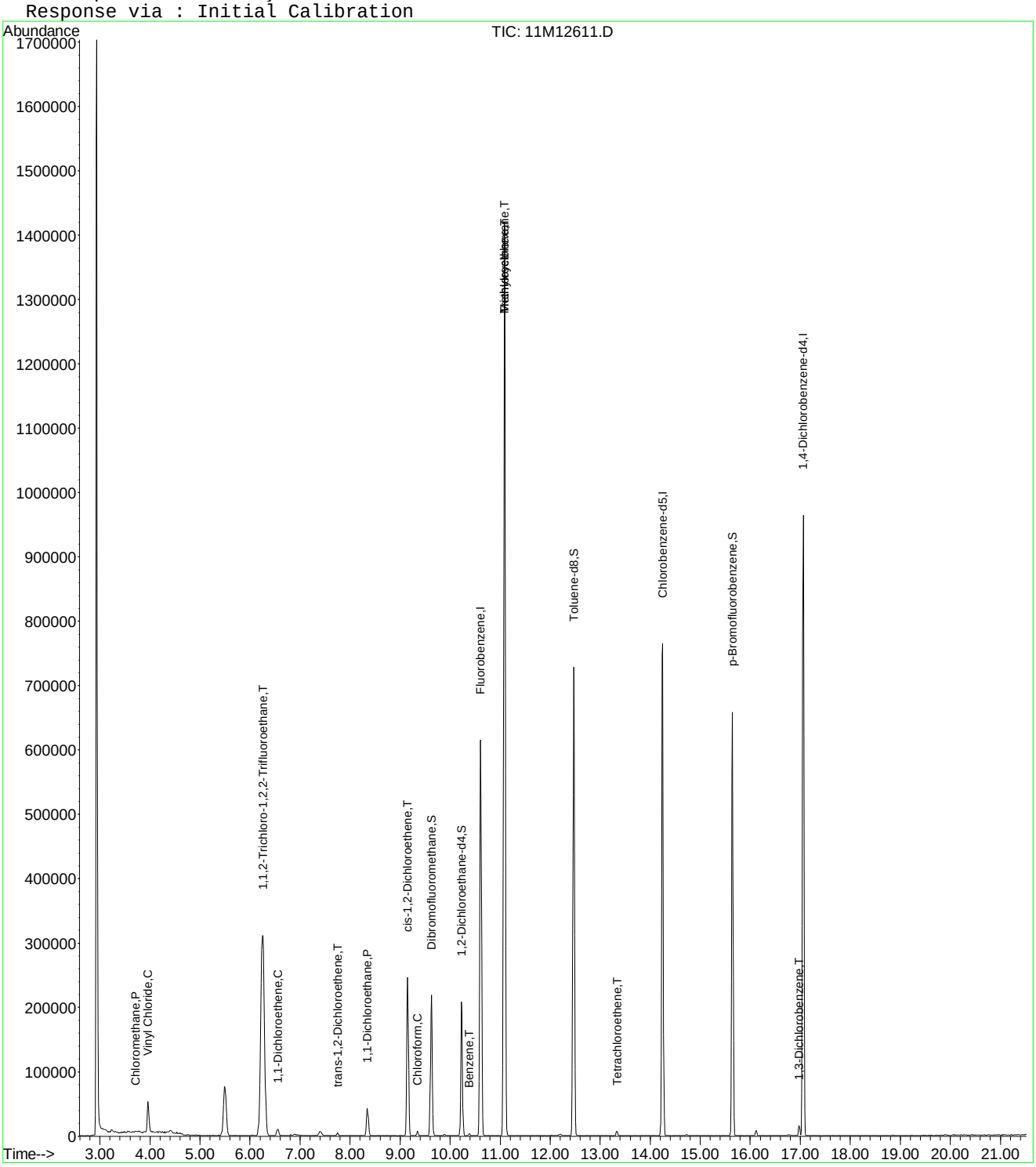

11M12611.D 8260WT.M Tue Jun 14 09:26:15 2016 Page 2

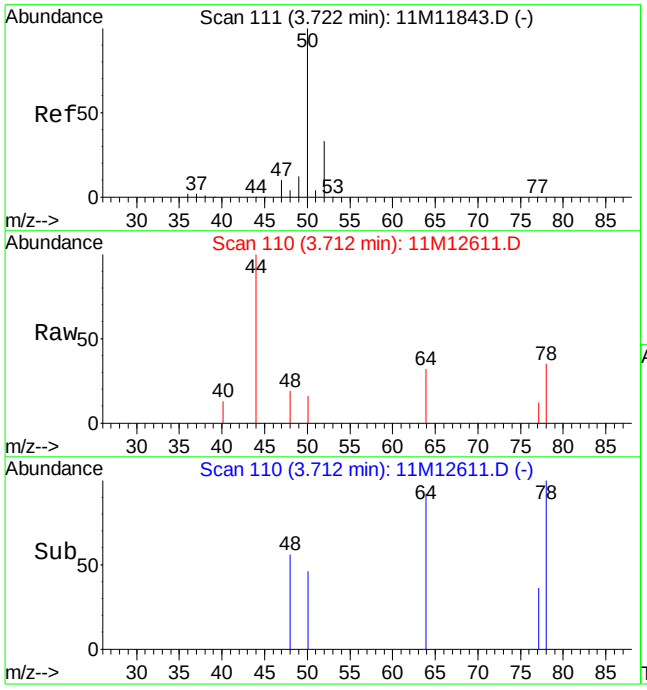

#3
Chloromethane
Concen: 0.19 ug/L
RT: 3.71 min Scan# 110
Delta R.T. -0.01 min
Lab File: 11M12611.D
Acq: 14 Jun 2016 2:36

Tgt Ion: 50 Resp: 1604

Ion	Ratio	Lower	Upper
50	100		
52	25.1	20.0	46.6

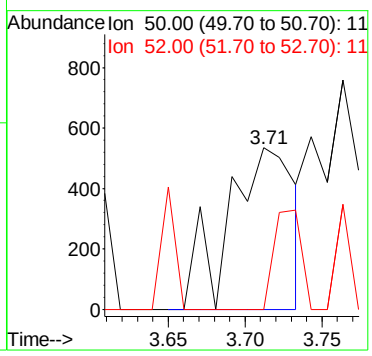

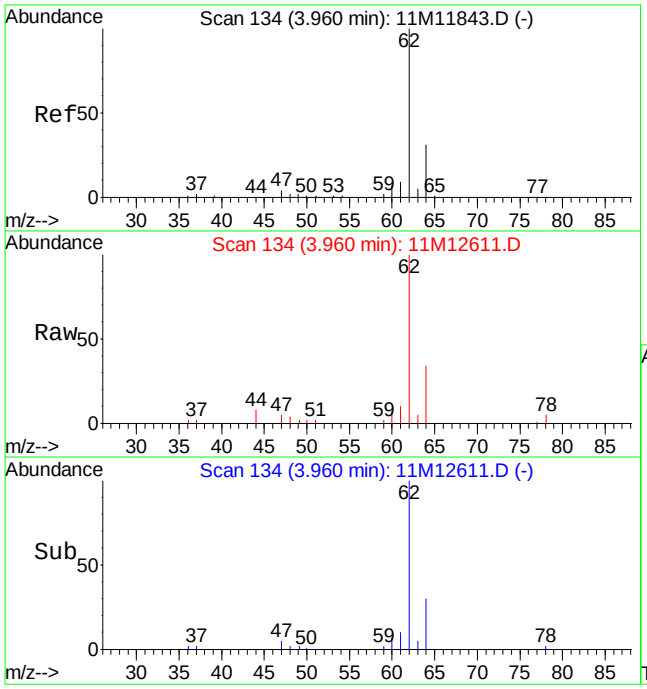

#4
Vinyl Chloride
Concen: 8.97 ug/L
RT: 3.96 min Scan# 134
Delta R.T. -0.00 min
Lab File: 11M12611.D
Acq: 14 Jun 2016 2:36

Tgt Ion: 62 Resp: 64345

Ion	Ratio	Lower	Upper
62	100		
64	34.6	18.4	43.0

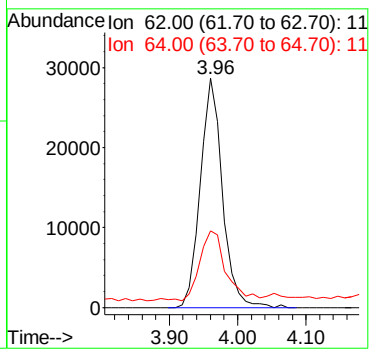

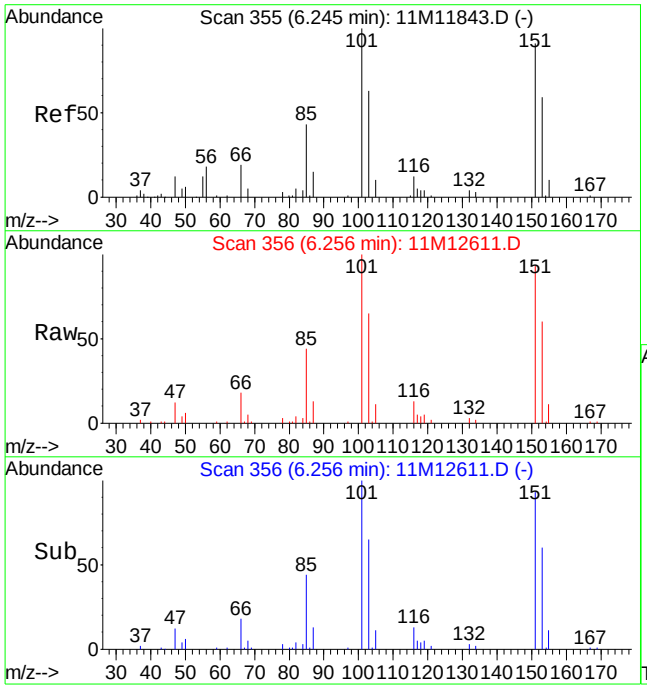

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 46.43 ug/L
RT: 6.26 min Scan# 356
Delta R.T. 0.01 min
Lab File: 11M12611.D
Acq: 14 Jun 2016 2:36

Tgt Ion:101 Resp: 322265

Ion	Ratio	Lower	Upper
101	100		
151	95.1	50.7	130.7

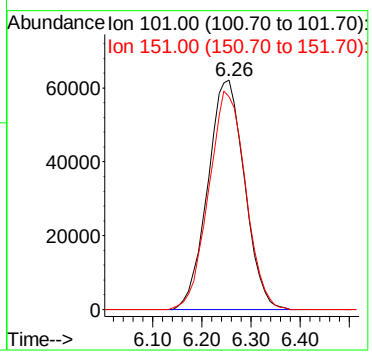

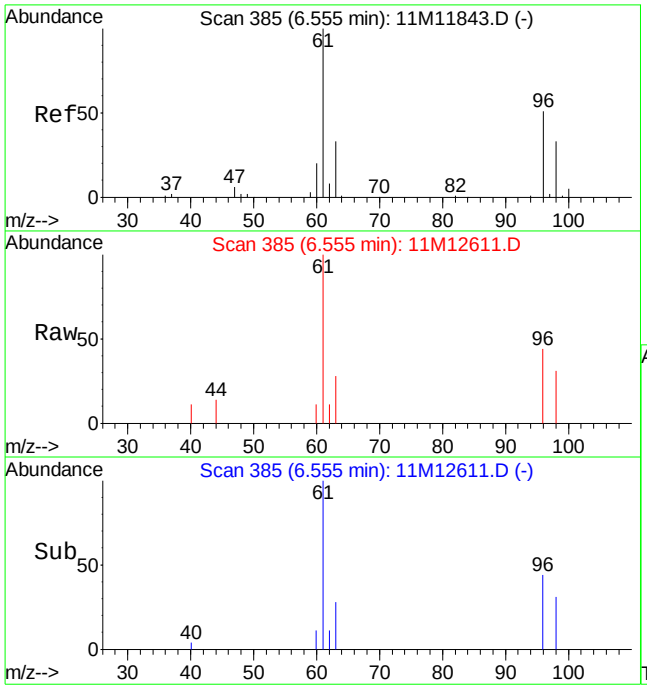

#14
1,1-Dichloroethene
Concen: 0.99 ug/L
RT: 6.56 min Scan# 385
Delta R.T. -0.00 min
Lab File: 11M12611.D
Acq: 14 Jun 2016 2:36

Tgt Ion: 61 Resp: 12472

Ion	Ratio	Lower	Upper
61	100		
96	46.6	30.1	70.3

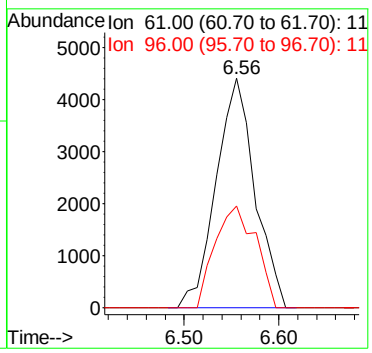

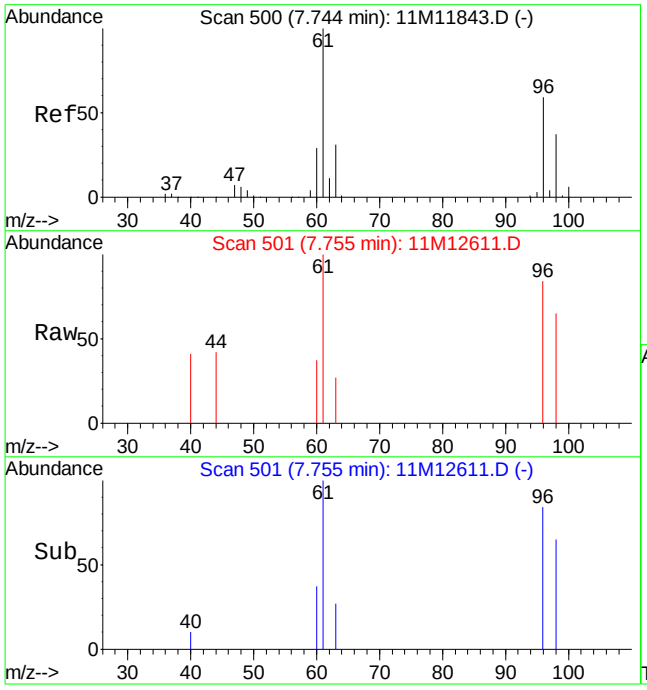

#23
trans-1,2-Dichloroethene
Concen: 0.35 ug/L
RT: 7.75 min Scan# 501
Delta R.T. 0.01 min
Lab File: 11M12611.D
Acq: 14 Jun 2016 2:36

Tgt Ion: 96 Resp: 2423

Ion	Ratio	Lower	Upper
96	100		
61	133.5	100.6	234.6

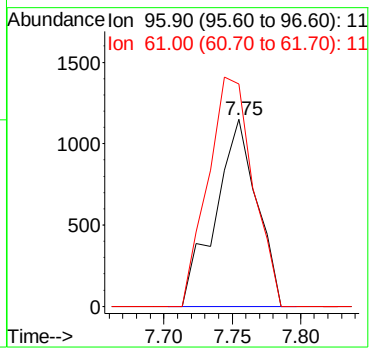

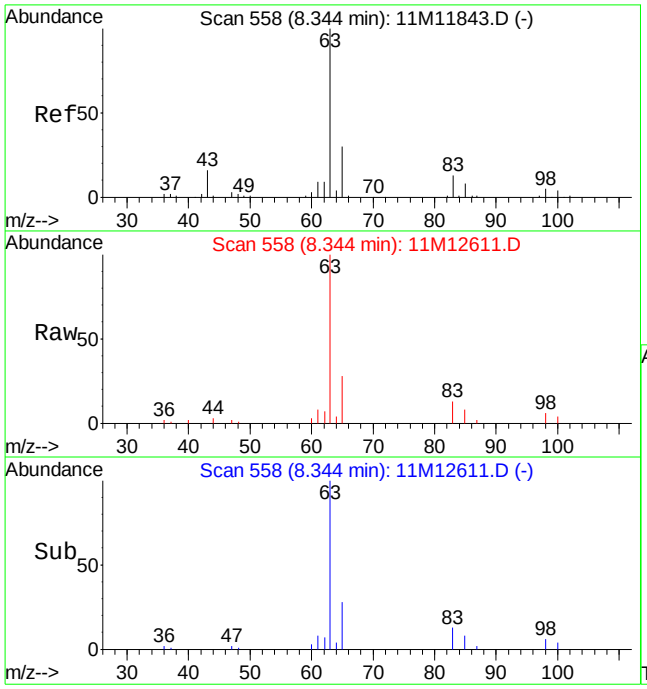

#27
1,1-Dichloroethane
Concen: 4.43 ug/L
RT: 8.34 min Scan# 558
Delta R.T. -0.00 min
Lab File: 11M12611.D
Acq: 14 Jun 2016 2:36

Tgt Ion: 63 Resp: 62023

Ion	Ratio	Lower	Upper
63	100		
65	30.0	17.8	41.6
83	13.0	7.4	17.4

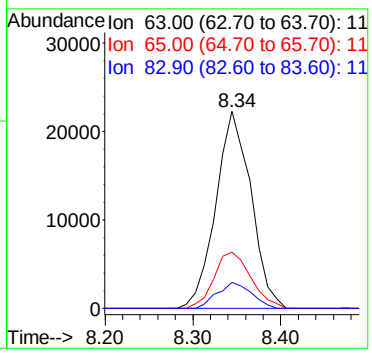

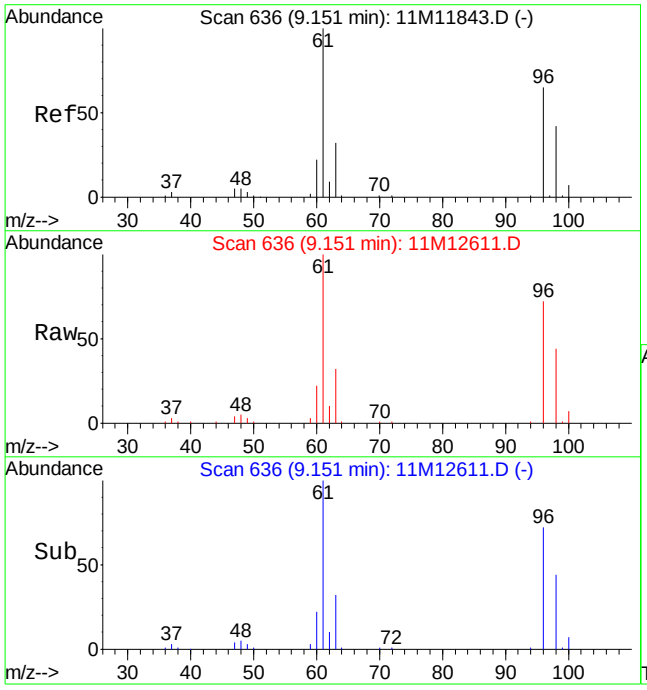

#32
cis-1,2-Dichloroethene
Concen: 17.36 ug/L
RT: 9.15 min Scan# 636
Delta R.T. -0.00 min
Lab File: 11M12611.D
Acq: 14 Jun 2016 2:36

Tgt Ion: 96 Resp: 133525

Ion	Ratio	Lower	Upper
96	100		
61	144.5	105.2	245.6

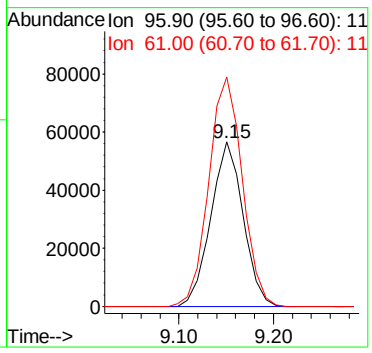

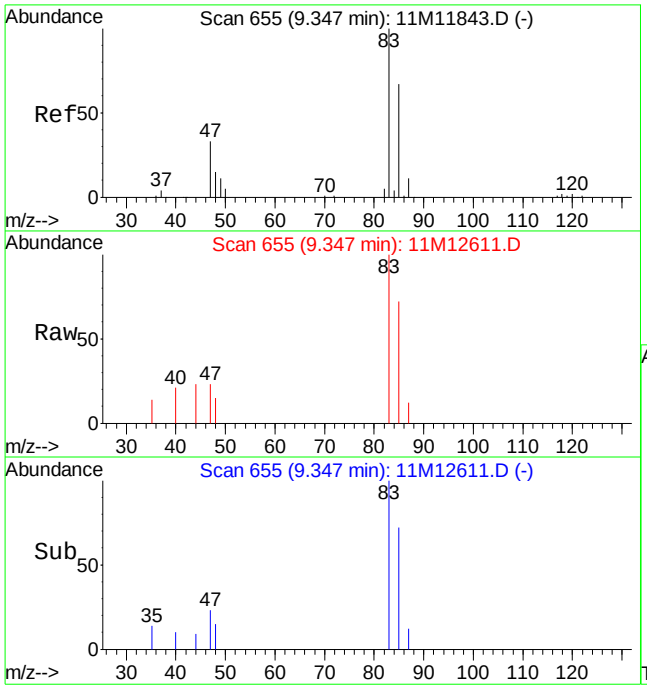

#33
Chloroform
Concen: 0.51 ug/L
RT: 9.35 min Scan# 655
Delta R.T. -0.00 min
Lab File: 11M12611.D
Acq: 14 Jun 2016 2:36

Tgt Ion: 83 Resp: 6989

Ion	Ratio	Lower	Upper
83	100		
85	69.8	39.2	91.4

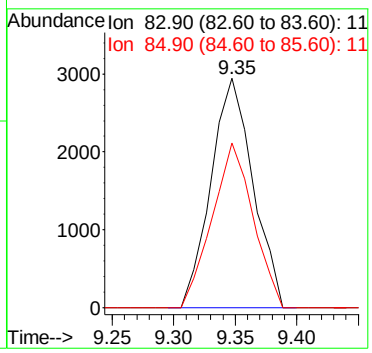

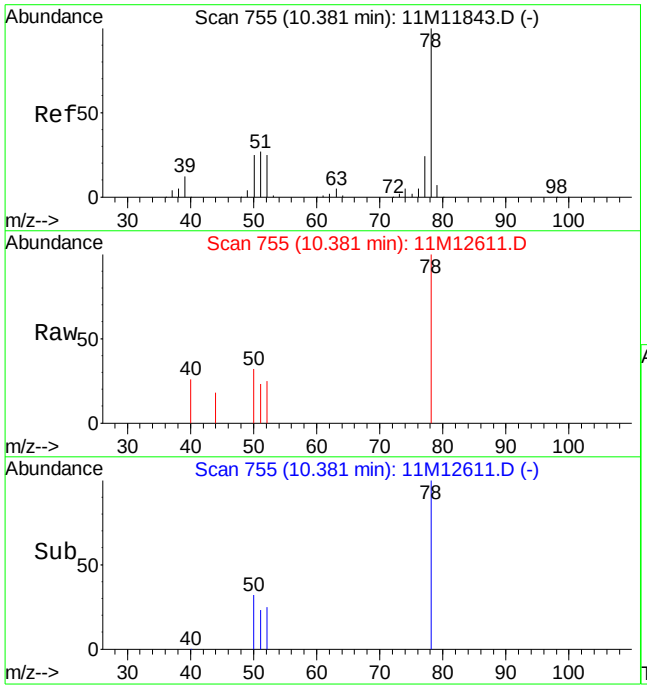

#45
Benzene
Concen: 0.17 ug/L
RT: 10.38 min Scan# 755
Delta R.T. -0.00 min
Lab File: 11M12611.D
Acq: 14 Jun 2016 2:36

Tgt Ion: 78 Resp: 4578

Ion	Ratio	Lower	Upper
78	100		
77	4.9	14.3	33.5#

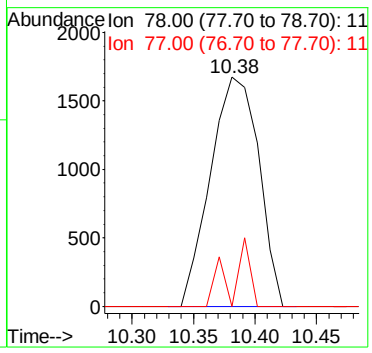

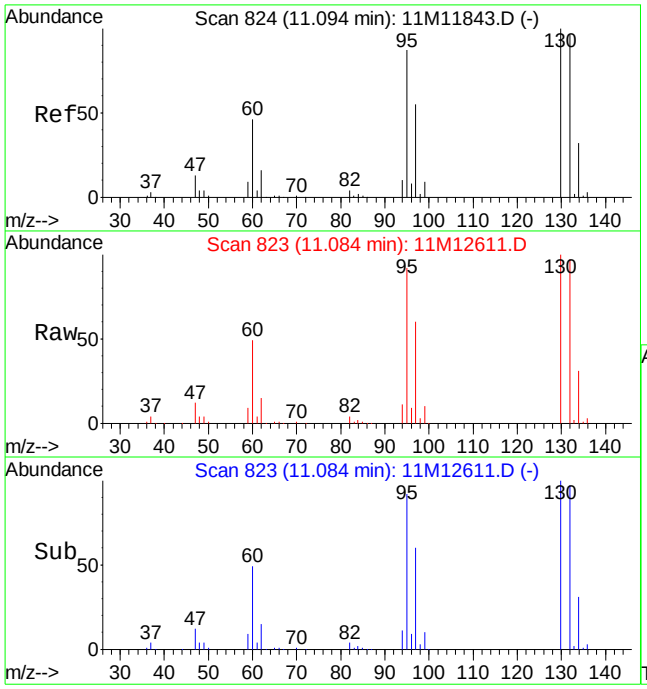

#46
Trichloroethene
Concen: 74.23 ug/L
RT: 11.08 min Scan# 823
Delta R.T. -0.01 min
Lab File: 11M12611.D
Acq: 14 Jun 2016 2:36

Tgt Ion:130 Resp: 638074

Ion	Ratio	Lower	Upper
130	100		
132	97.2	58.3	136.1
95	90.5	55.6	129.8

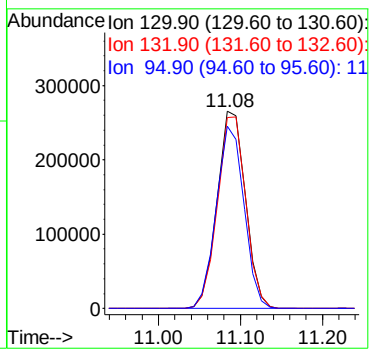

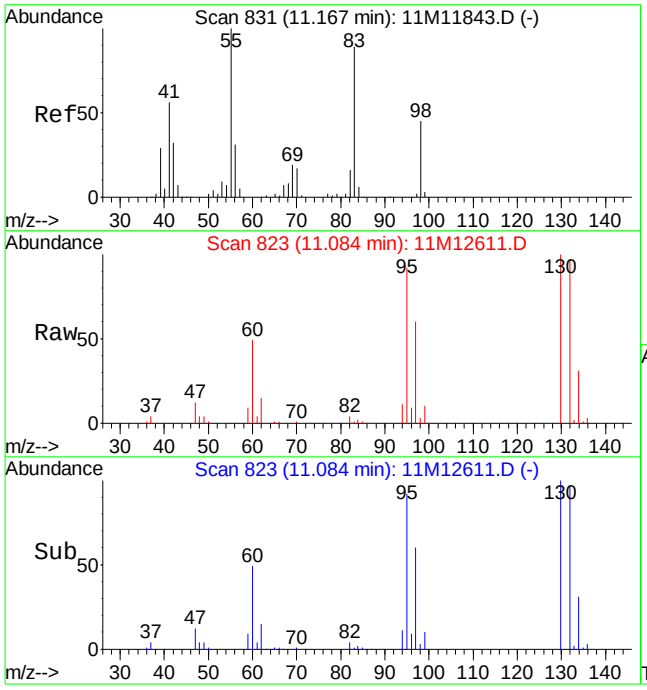

#47
Methylcyclohexane
Concen: 0.59 ug/L
RT: 11.08 min Scan# 823
Delta R.T. -0.08 min
Lab File: 11M12611.D
Acq: 14 Jun 2016 2:36

Tgt Ion: 83 Resp: 6241

Ion	Ratio	Lower	Upper
83	100		
55	0.0	66.5	155.1#
98	250.0	29.9	69.7#

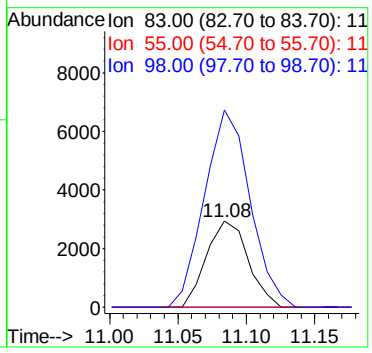

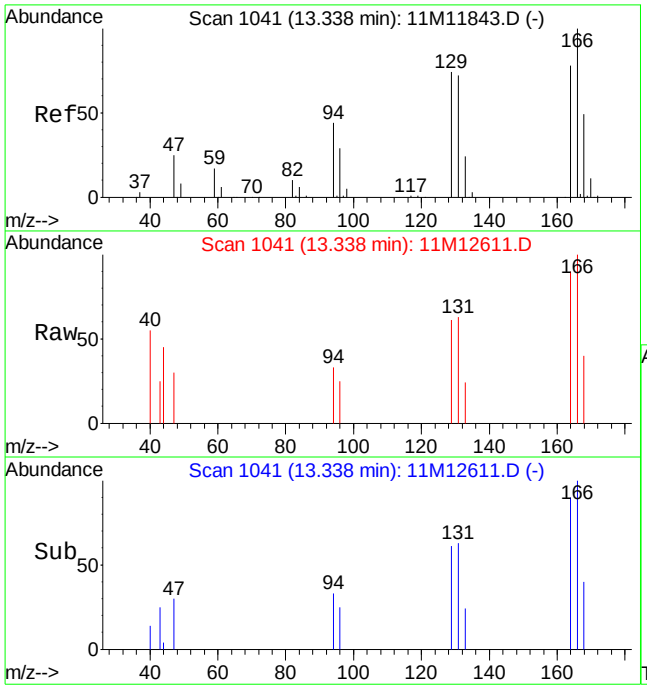

#64
Tetrachloroethene
Concen: 0.29 ug/L
RT: 13.34 min Scan# 1041
Delta R.T. -0.00 min
Lab File: 11M12611.D
Acq: 14 Jun 2016 2:36

Tgt Ion:164 Resp: 1980

Ion	Ratio	Lower	Upper
164	100		
129	90.7	57.9	135.1

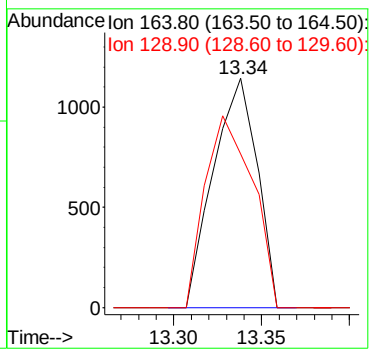

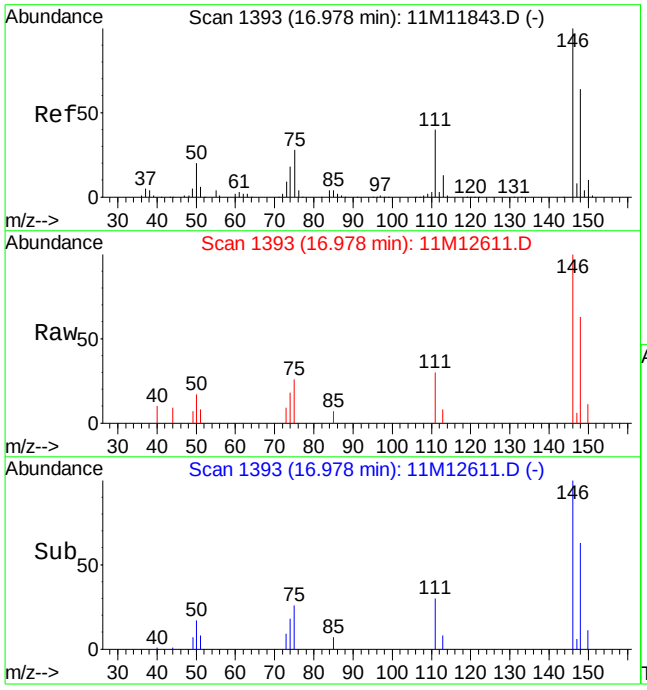

#91
1,3-Dichlorobenzene
Concen: 0.49 ug/L
RT: 16.98 min Scan# 1393
Delta R.T. -0.00 min
Lab File: 11M12611.D
Acq: 14 Jun 2016 2:36

Tgt Ion:146 Resp: 9711

Ion	Ratio	Lower	Upper
146	100		
111	35.0	23.8	55.4

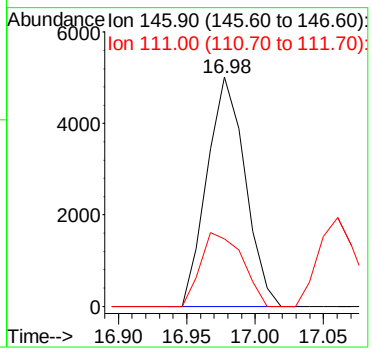

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061316\11M12612.D Vial: 21
Acq On : 14 Jun 2016 3:08 Operator: JDS
Sample : L16060504-03 A 826-SPE Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 09:26:18 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	703760	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	583003	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	333082	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	176822	22.9577 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 91.84%		
43) 1,2-Dichloroethane-d4	10.23	65	191638	21.8215 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 87.28%		
57) Toluene-d8	12.47	98	622456	24.5724 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.28%		
78) p-Bromofluorobenzene	15.64	95	263833	25.6957 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.80%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.17	85	1502	0.1362 ug/L	96
3) Chloromethane	3.73	50	1651	0.1870 ug/L #	62
4) Vinyl Chloride	3.96	62	36015	4.9108 ug/L	86
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	537078	75.7200 ug/L	96
13) Acetone	6.33	43	1073	0.6421 ug/L #	49
14) 1,1-Dichloroethene	6.56	61	13019	1.0105 ug/L	97
23) trans-1,2-Dichloroethene	7.75	96	1810	0.2538 ug/L	89
27) 1,1-Dichloroethane	8.34	63	49154	3.4356 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	105291	13.3925 ug/L	79
33) Chloroform	9.35	83	6040	0.4299 ug/L	100
39) Cyclohexane	9.88	56	4960	0.3292 ug/L #	92
46) Trichloroethene	11.09	130	472017	53.7352 ug/L	98
47) Methylcyclohexane	11.09	83	4530	0.4179 ug/L #	1
64) Tetrachloroethene	13.34	164	1488	0.2168 ug/L	99
91) 1,3-Dichlorobenzene	16.98	146	11037	0.5646 ug/L	93

(#) = qualifier out of range (m) = manual integration
11M12612.D 8260WT.M Tue Jun 14 09:26:19 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061316\11M12612.D Vial: 21
Acq On : 14 Jun 2016 3:08 Operator: JDS
Sample : L16060504-03 A 826-SPE Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 9:26 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

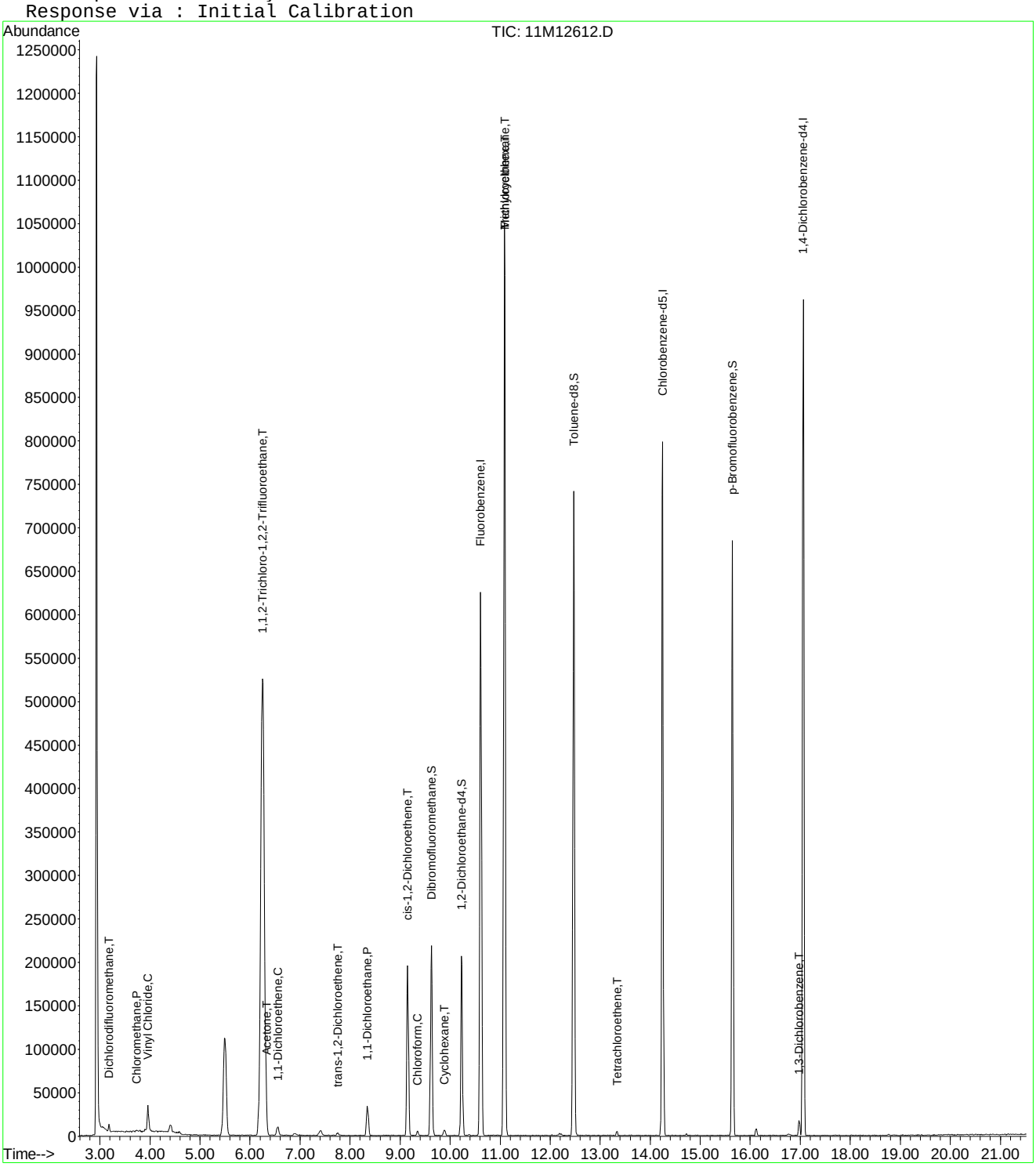

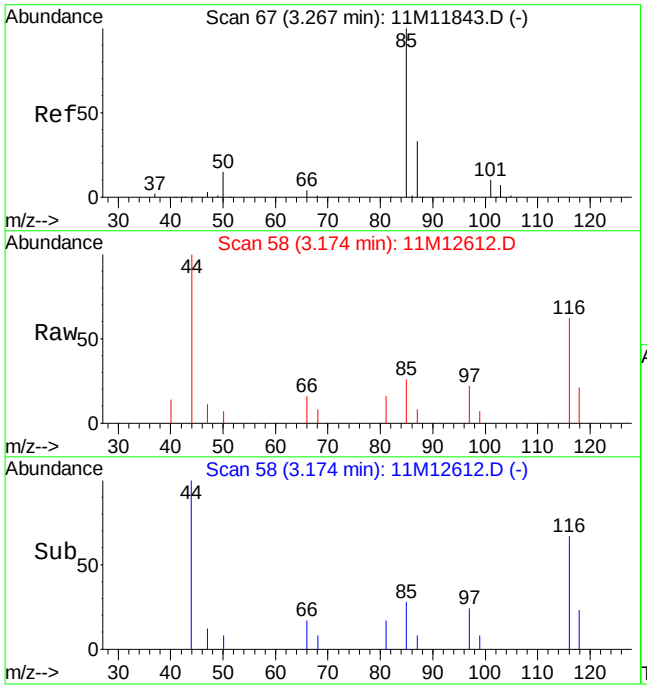

#2
Dichlorodifluoromethane
Concen: 0.14 ug/L
RT: 3.17 min Scan# 58
Delta R.T. -0.09 min
Lab File: 11M12612.D
Acq: 14 Jun 2016 3:08

Tgt Ion: 85 Resp: 1502

Ion	Ratio	Lower	Upper
85	100		
50	12.6	8.5	19.7

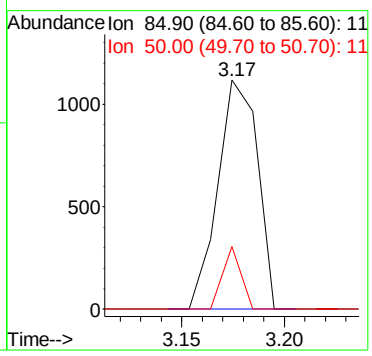

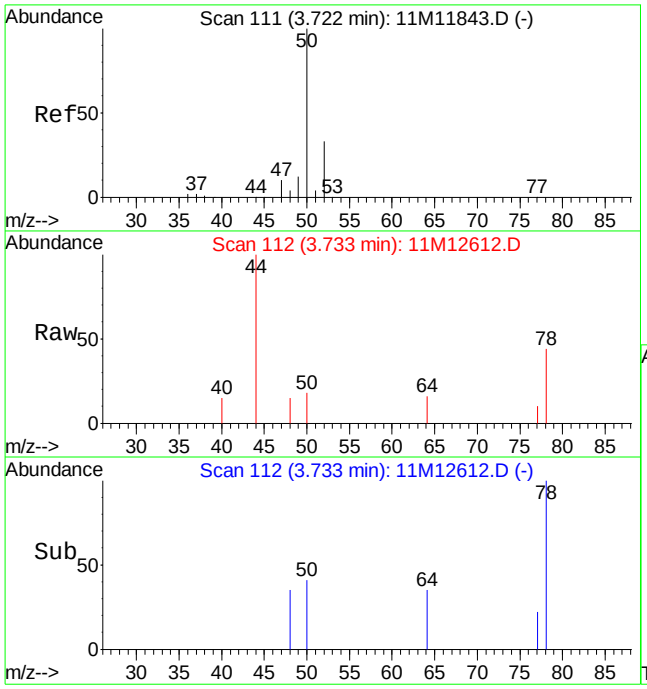

#3
Chloromethane
Concen: 0.19 ug/L
RT: 3.73 min Scan# 112
Delta R.T. 0.01 min
Lab File: 11M12612.D
Acq: 14 Jun 2016 3:08

Tgt Ion: 50 Resp: 1651

Ion	Ratio	Lower	Upper
50	100		
52	11.6	20.0	46.6#

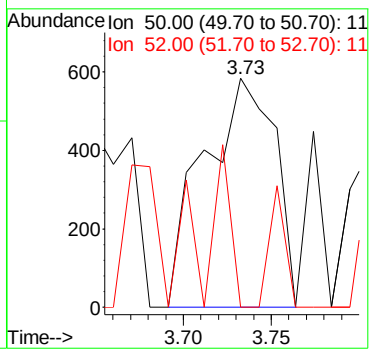

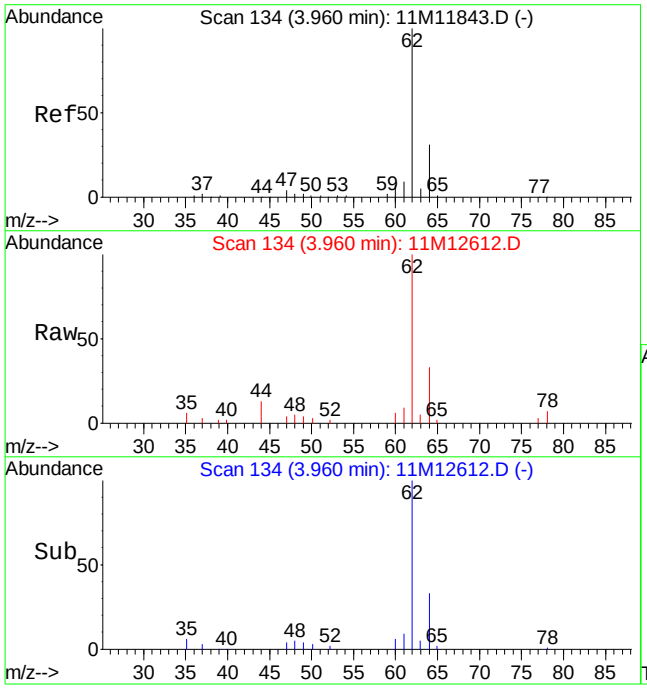

#4
Vinyl Chloride
Concen: 4.91 ug/L
RT: 3.96 min Scan# 134
Delta R.T. -0.00 min
Lab File: 11M12612.D
Acq: 14 Jun 2016 3:08

Tgt Ion: 62 Resp: 36015

Ion	Ratio	Lower	Upper
62	100		
64	38.6	18.4	43.0

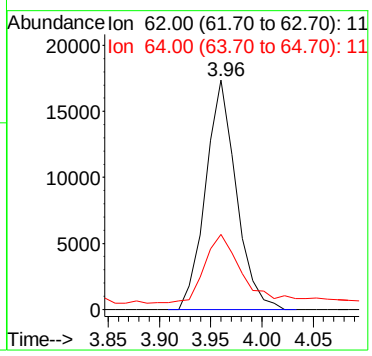

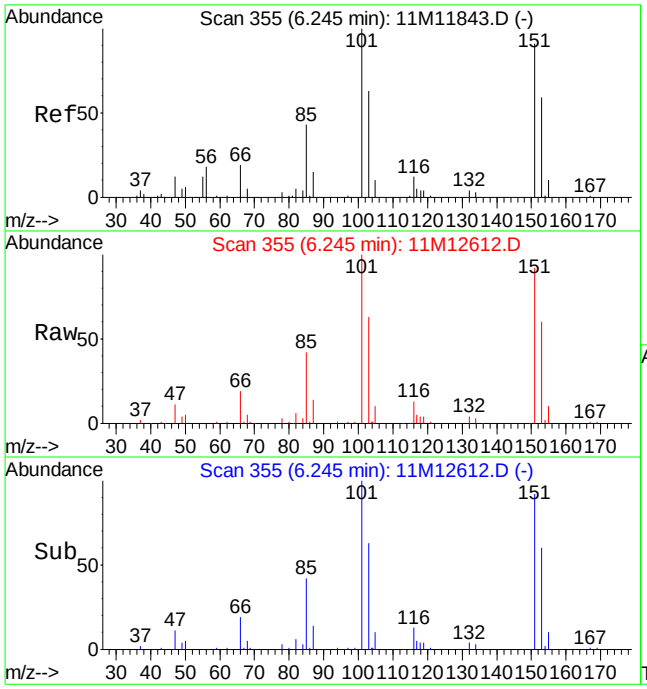

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 75.72 ug/L
RT: 6.25 min Scan# 355
Delta R.T. -0.00 min
Lab File: 11M12612.D
Acq: 14 Jun 2016 3:08

Tgt Ion:101 Resp: 537078

Ion	Ratio	Lower	Upper
101	100		
151	94.7	50.7	130.7

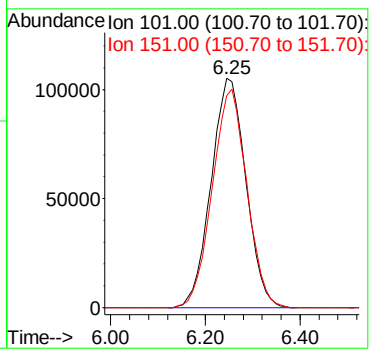

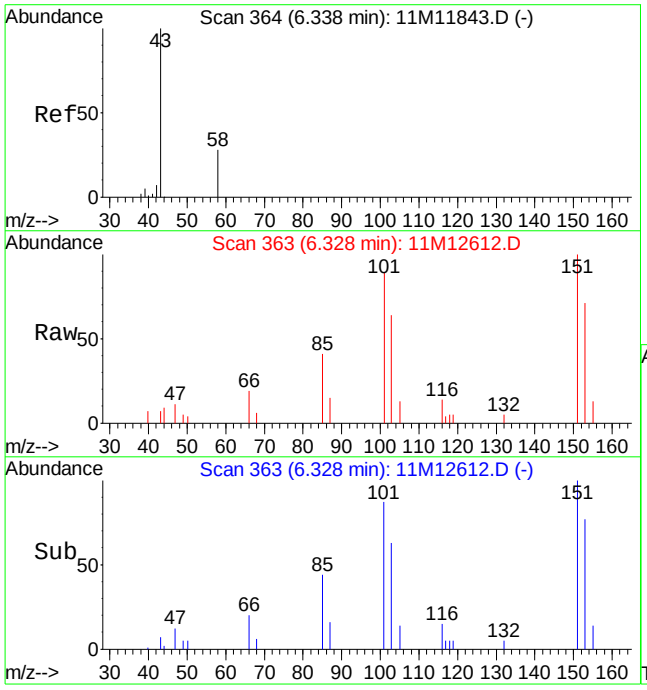

#13
Acetone
Concen: 0.64 ug/L
RT: 6.33 min Scan# 363
Delta R.T. -0.01 min
Lab File: 11M12612.D
Acq: 14 Jun 2016 3:08

Tgt Ion: 43 Resp: 1073

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

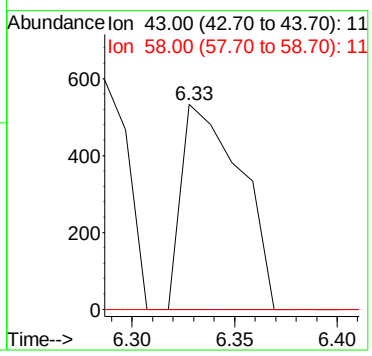

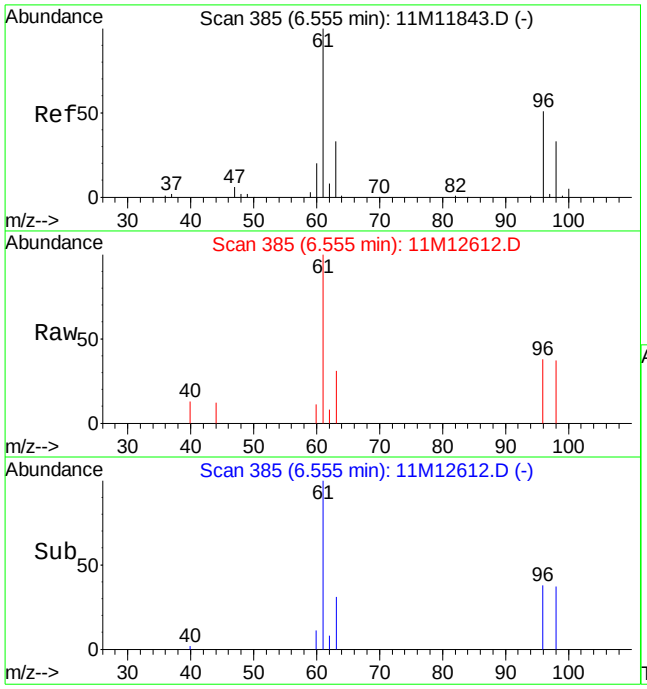

#14
1,1-Dichloroethene
Concen: 1.01 ug/L
RT: 6.56 min Scan# 385
Delta R.T. -0.00 min
Lab File: 11M12612.D
Acq: 14 Jun 2016 3:08

Tgt Ion: 61 Resp: 13019

Ion	Ratio	Lower	Upper
61	100		
96	48.3	30.1	70.3

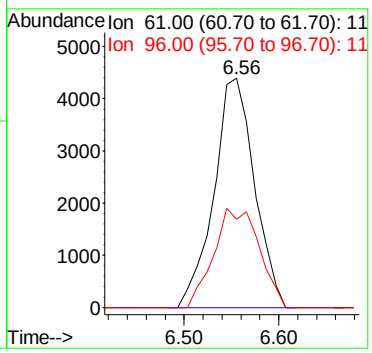

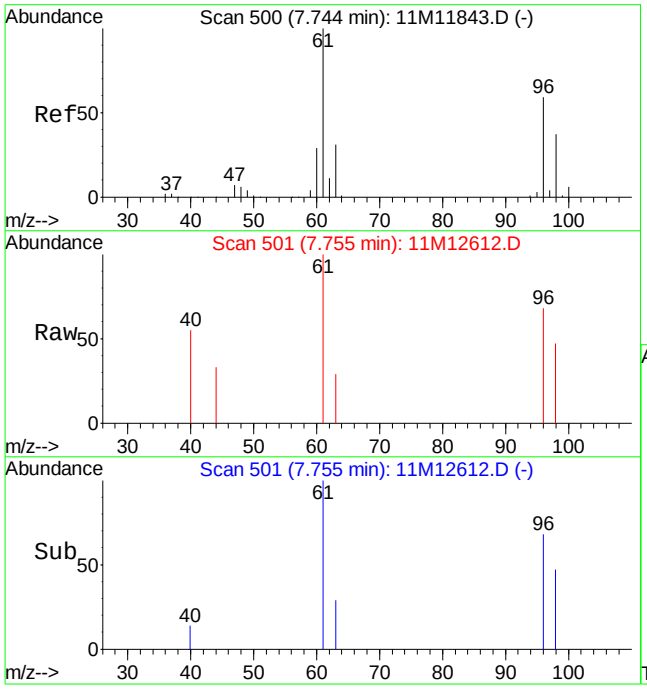

#23
trans-1,2-Dichloroethene
Concen: 0.25 ug/L
RT: 7.75 min Scan# 501
Delta R.T. 0.01 min
Lab File: 11M12612.D
Acq: 14 Jun 2016 3:08

Tgt Ion: 96 Resp: 1810

Ion	Ratio	Lower	Upper
96	100		
61	182.5	100.6	234.6

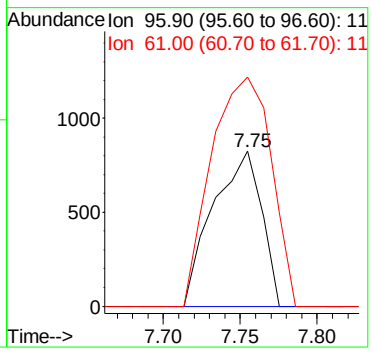

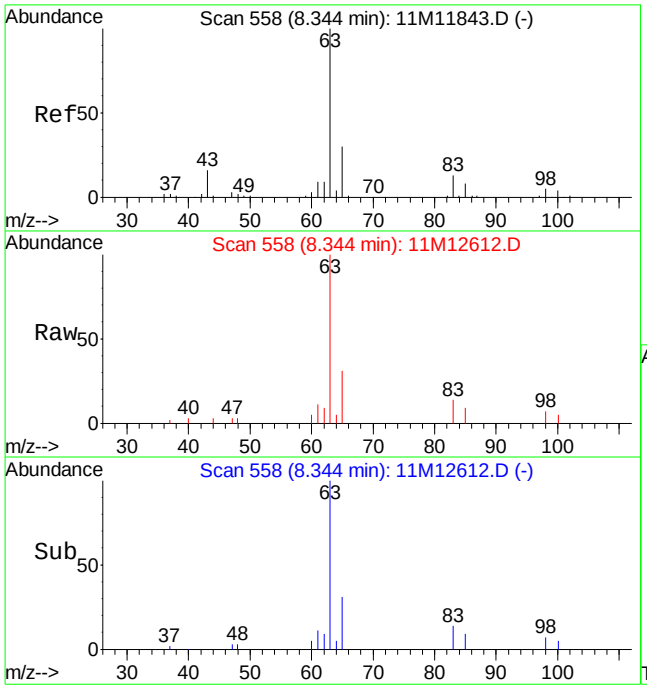

#27
1,1-Dichloroethane
Concen: 3.44 ug/L
RT: 8.34 min Scan# 558
Delta R.T. -0.00 min
Lab File: 11M12612.D
Acq: 14 Jun 2016 3:08

Tgt Ion: 63 Resp: 49154

Ion	Ratio	Lower	Upper
63	100		
65	29.8	17.8	41.6
83	12.4	7.4	17.4

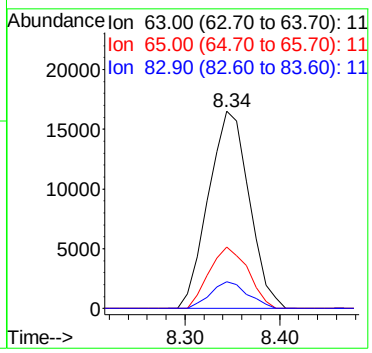

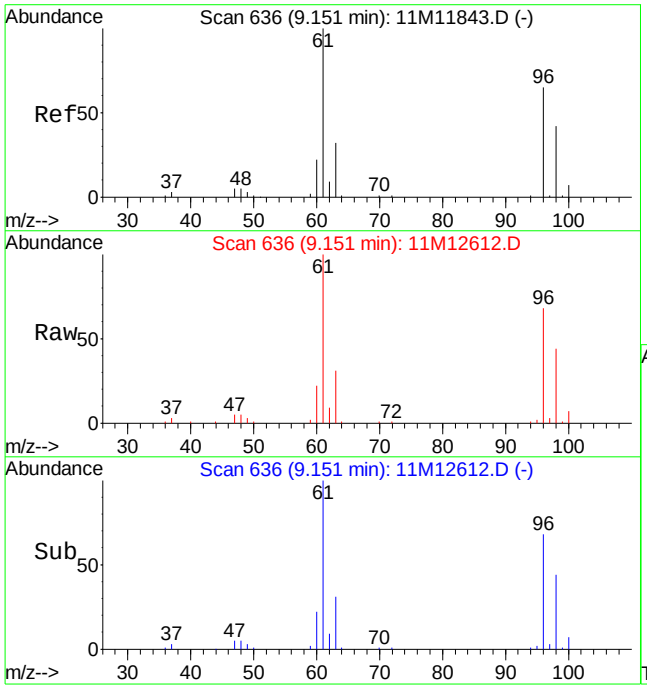

#32
cis-1,2-Dichloroethene
Concen: 13.39 ug/L
RT: 9.15 min Scan# 636
Delta R.T. -0.00 min
Lab File: 11M12612.D
Acq: 14 Jun 2016 3:08

Tgt Ion: 96 Resp: 105291

Ion	Ratio	Lower	Upper
96	100		
61	145.5	105.2	245.6

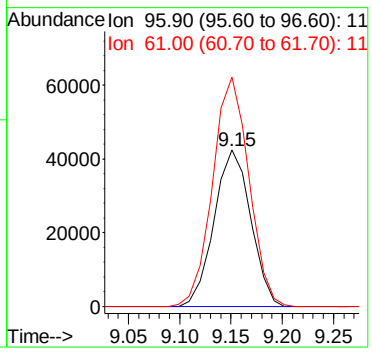

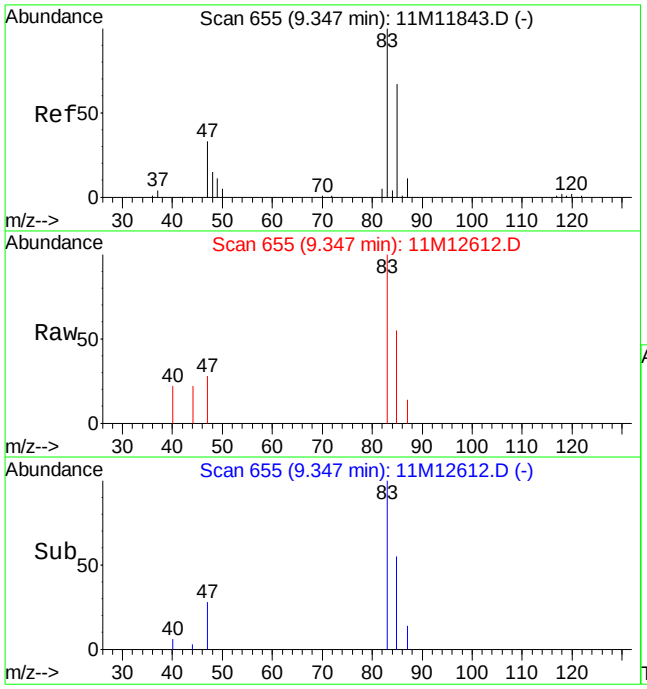

#33
Chloroform
Concen: 0.43 ug/L
RT: 9.35 min Scan# 655
Delta R.T. -0.00 min
Lab File: 11M12612.D
Acq: 14 Jun 2016 3:08

Tgt Ion: 83 Resp: 6040

Ion	Ratio	Lower	Upper
83	100		
85	65.1	39.2	91.4

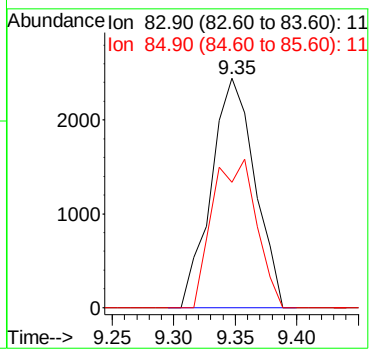

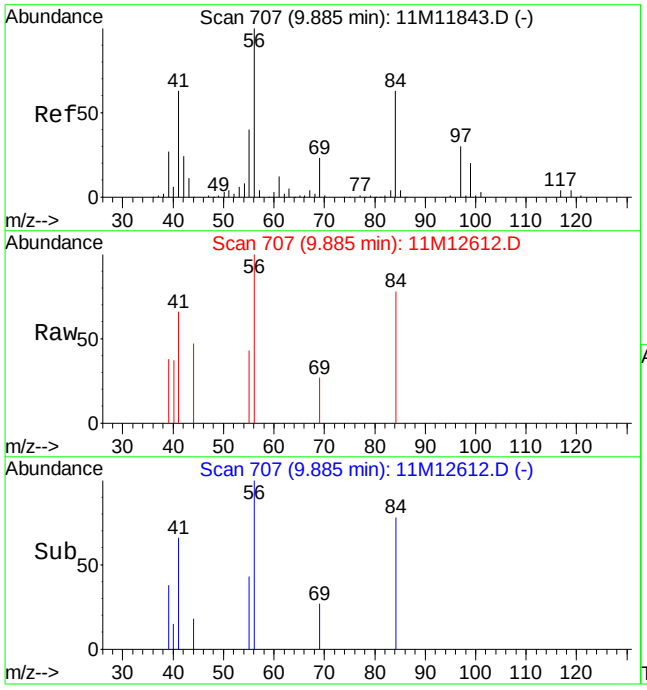

#39
Cyclohexane
Concen: 0.33 ug/L
RT: 9.88 min Scan# 707
Delta R.T. -0.00 min
Lab File: 11M12612.D
Acq: 14 Jun 2016 3:08

Tgt Ion: 56 Resp: 4960

Ion	Ratio	Lower	Upper
56	100		
69	10.4	13.7	31.9#
84	63.1	38.5	89.7

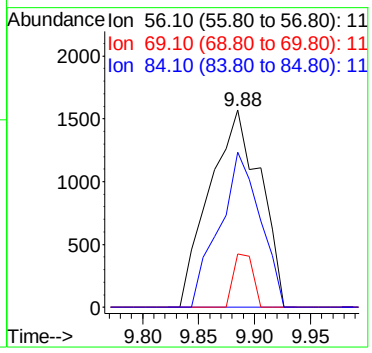

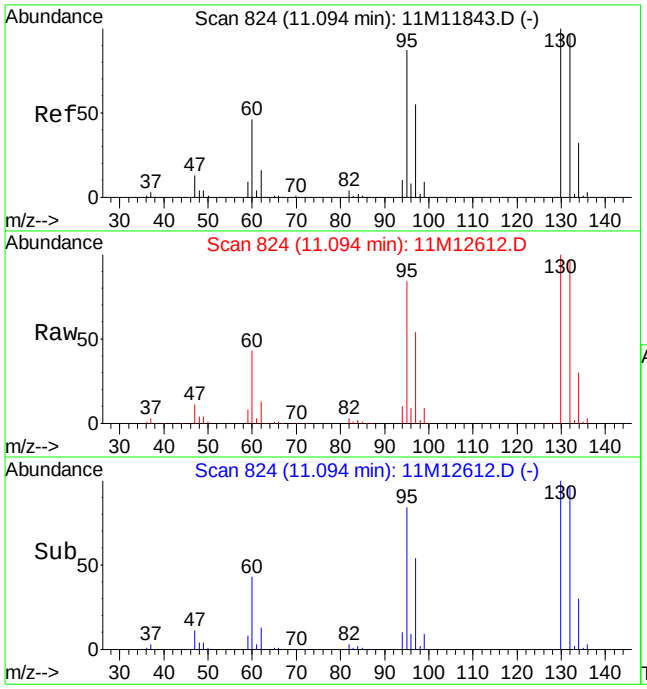

#46
Trichloroethene
Concen: 53.74 ug/L
RT: 11.09 min Scan# 824
Delta R.T. -0.00 min
Lab File: 11M12612.D
Acq: 14 Jun 2016 3:08

Tgt Ion:130 Resp: 472017

Ion	Ratio	Lower	Upper
130	100		
132	96.8	58.3	136.1
95	88.8	55.6	129.8

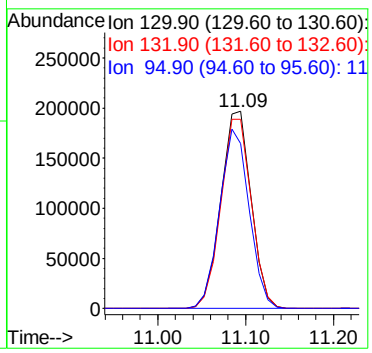

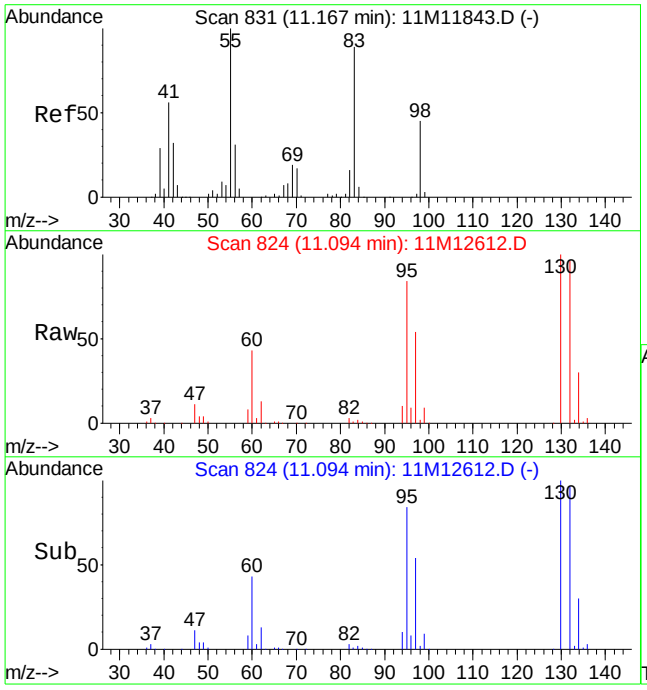

#47
Methylcyclohexane
Concen: 0.42 ug/L
RT: 11.09 min Scan# 824
Delta R.T. -0.07 min
Lab File: 11M12612.D
Acq: 14 Jun 2016 3:08

Tgt Ion: 83 Resp: 4530

Ion	Ratio	Lower	Upper
83	100		
55	0.0	66.5	155.1#
98	248.4	29.9	69.7#

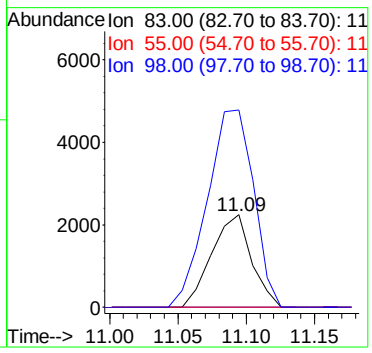

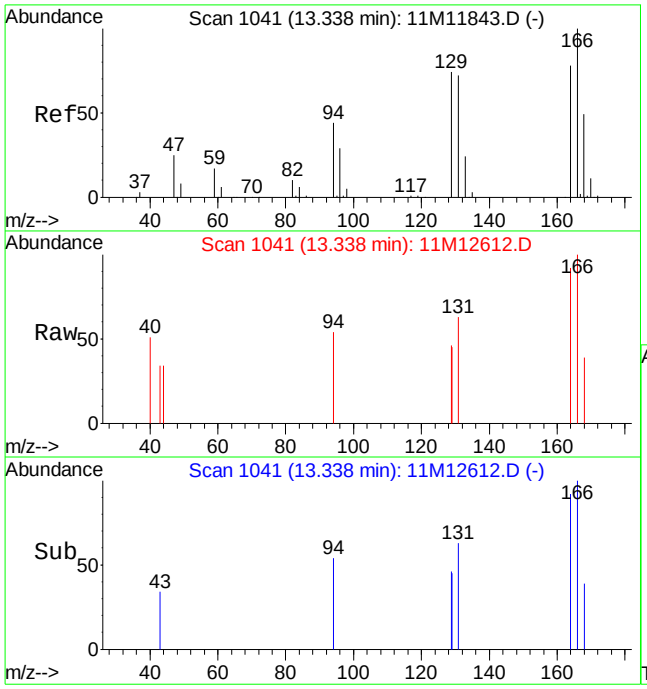

#64
Tetrachloroethene
Concen: 0.22 ug/L
RT: 13.34 min Scan# 1041
Delta R.T. -0.00 min
Lab File: 11M12612.D
Acq: 14 Jun 2016 3:08

Tgt Ion:164 Resp: 1488

Ion	Ratio	Lower	Upper
164	100		
129	95.6	57.9	135.1

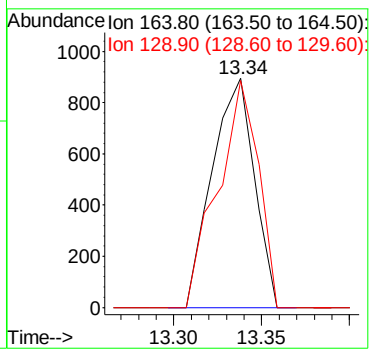

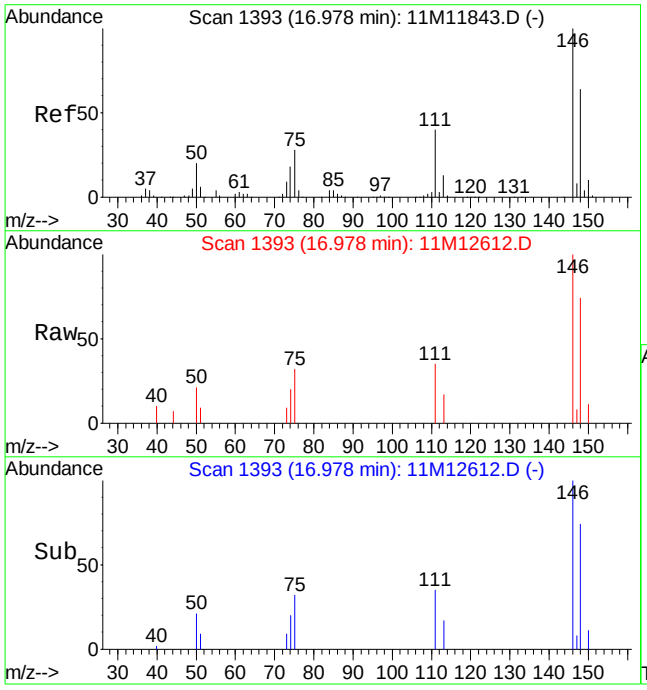

#91
1,3-Dichlorobenzene
Concen: 0.56 ug/L
RT: 16.98 min Scan# 1393
Delta R.T. -0.00 min
Lab File: 11M12612.D
Acq: 14 Jun 2016 3:08

Tgt Ion:146 Resp: 11037

Ion	Ratio	Lower	Upper
146	100		
111	35.2	23.8	55.4

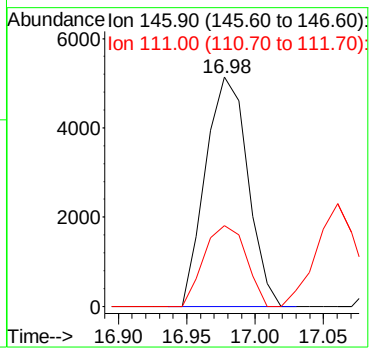

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412996.D Vial: 26
Acq On : 14 Jun 2016 21:31 Operator: TMB
Sample : L16060504-04 B 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 08:27:46 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	736400	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	548941	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	303479	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	218202	27.5786 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.32%		
43) 1,2-Dichloroethane-d4	10.30	65	241028	28.4110 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 113.64%		
58) Toluene-d8	12.68	98	751676	26.1643 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.64%		
80) p-Bromofluorobenzene	16.08	95	314344	25.0151 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.08%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.08	85	11648	0.9434 ug/L	98
3) Chloromethane	3.64	50	1622	0.2251 ug/L #	42
4) Vinyl Chloride	3.84	62	9590	1.1216 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	91739	12.2668 ug/L	91
13) Acetone	6.25	43	6049	7.3010 ug/L #	80
14) 1,1-Dichloroethene	6.48	61	2950	0.2477 ug/L #	62
19) Methylene Chloride	7.26	84	13857	1.8286 ug/L	94
20) Carbon Disulfide	7.30	76	3896	0.1563 ug/L #	74
23) trans-1,2-Dichloroethene	7.70	61	49277	4.5044 ug/L	97
27) 1,1-Dichloroethane	8.33	63	4126	0.3037 ug/L #	75
28) Ethyl-Tert-Butyl ether	8.62	59	2533	0.1386 ug/L #	37
32) cis-1,2-Dichloroethene	9.17	96	164298	19.4368 ug/L	82
45) 1,2-Dichloroethane	10.43	62	133902	12.9689 ug/L	95
46) Benzene	10.46	78	185384	6.1285 ug/L	97
47) Trichloroethene	11.21	130	1236359	153.2453 ug/L	99
48) Methylcyclohexane	11.20	83	16271	1.3275 ug/L #	1
59) Toluene	12.78	91	15574	0.4570 ug/L	93

(#) = qualifier out of range (m) = manual integration
8M412996.D 8260WT.M Wed Jun 15 08:27:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412996.D Vial: 26
Acq On : 14 Jun 2016 21:31 Operator: TMB
Sample : L16060504-04 B 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 8:28 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

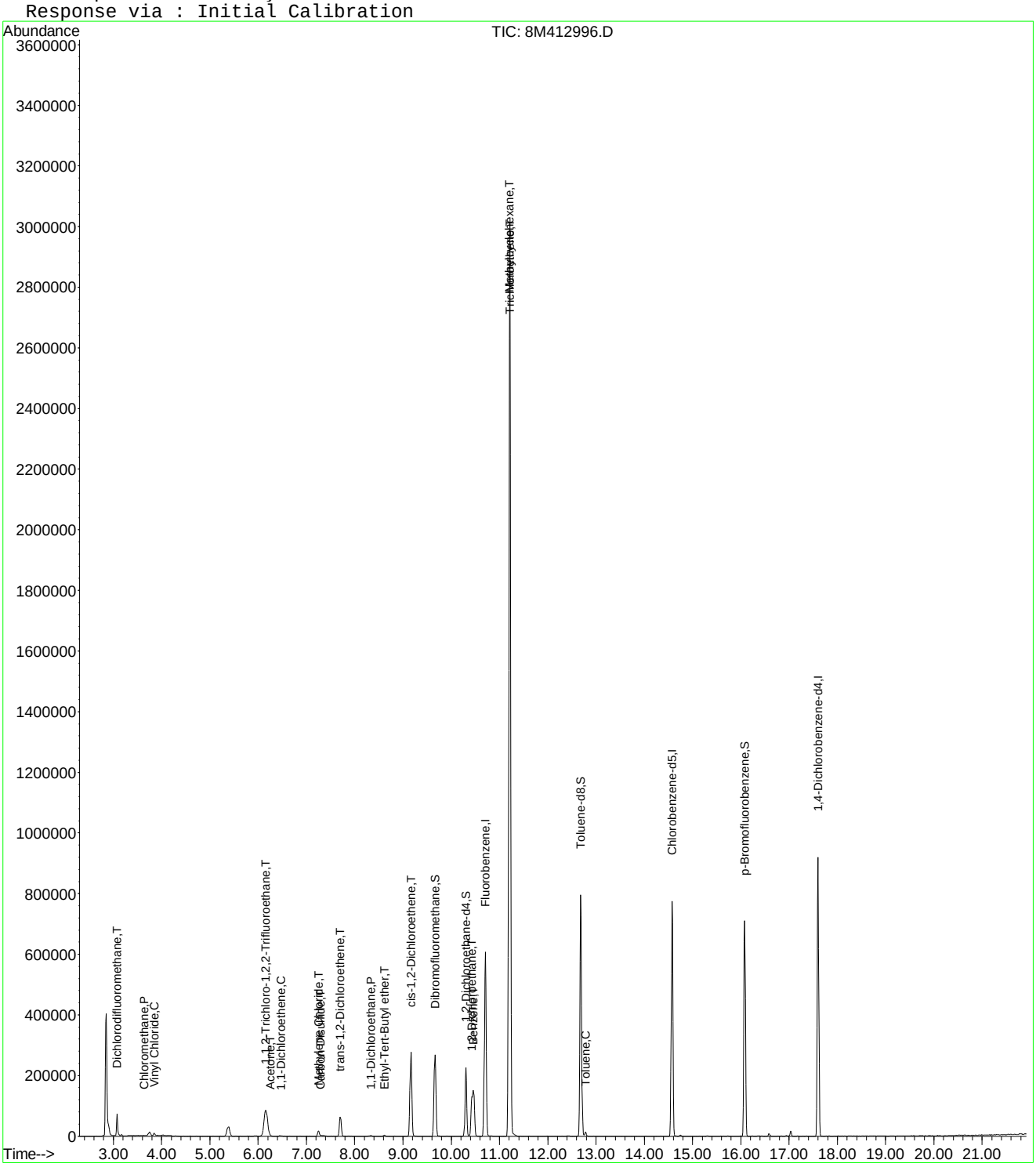

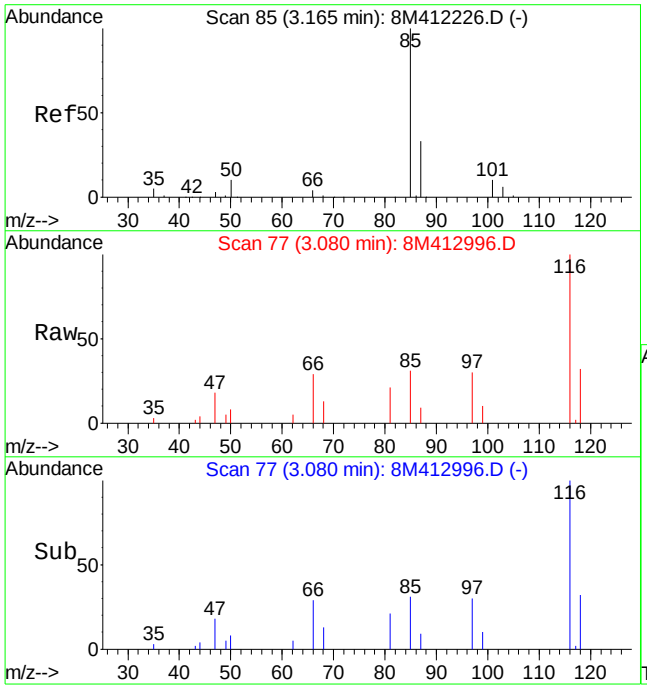

#2
Dichlorodifluoromethane
Concen: 0.94 ug/L
RT: 3.08 min Scan# 77
Delta R.T. -0.09 min
Lab File: 8M412996.D
Acq: 14 Jun 2016 21:31

Tgt Ion: 85 Resp: 11648

Ion	Ratio	Lower	Upper
85	100		
87	33.9	19.6	45.8

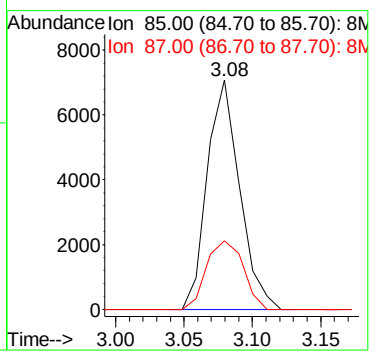

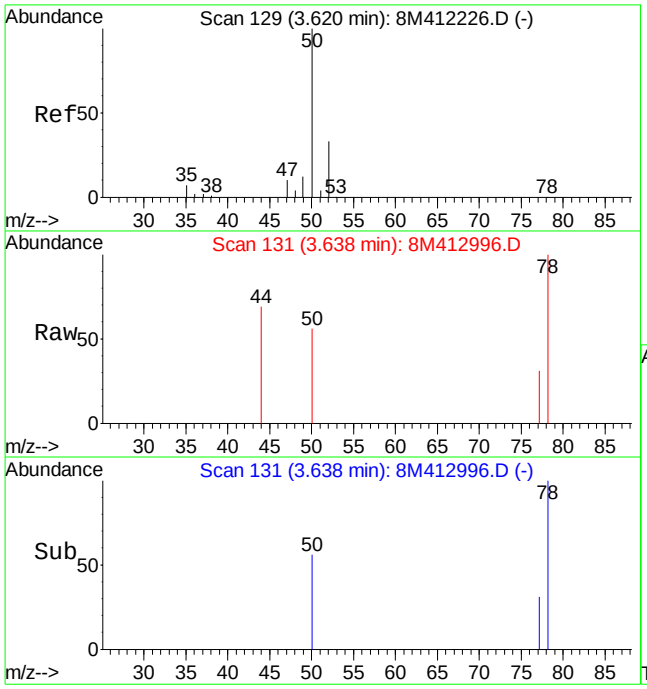

#3
Chloromethane
Concen: 0.23 ug/L
RT: 3.64 min Scan# 131
Delta R.T. 0.02 min
Lab File: 8M412996.D
Acq: 14 Jun 2016 21:31

Tgt Ion: 50 Resp: 1622

Ion	Ratio	Lower	Upper
50	100		
52	0.0	19.9	46.3#

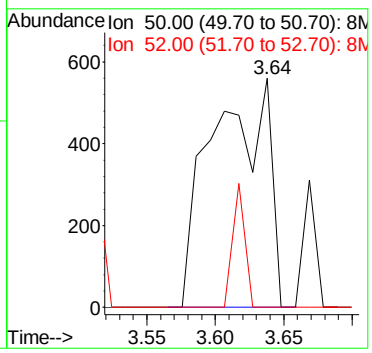

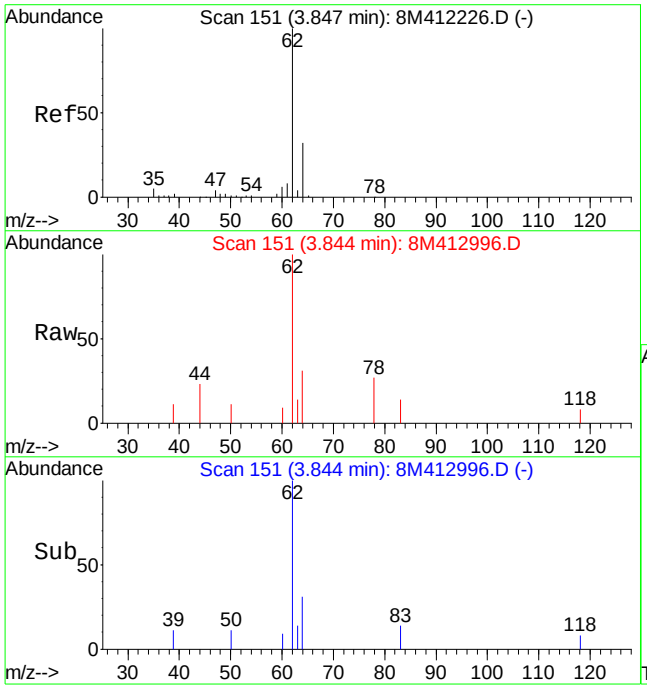

#4
Vinyl Chloride
Concen: 1.12 ug/L
RT: 3.84 min Scan# 151
Delta R.T. -0.00 min
Lab File: 8M412996.D
Acq: 14 Jun 2016 21:31

Tgt Ion: 62 Resp: 9590

Ion	Ratio	Lower	Upper
62	100		
64	31.9	19.3	45.1

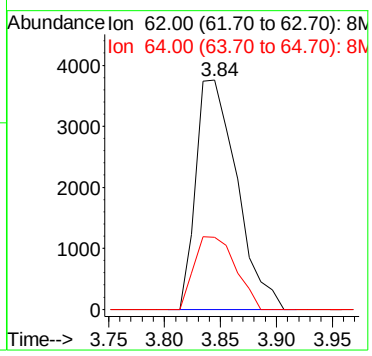

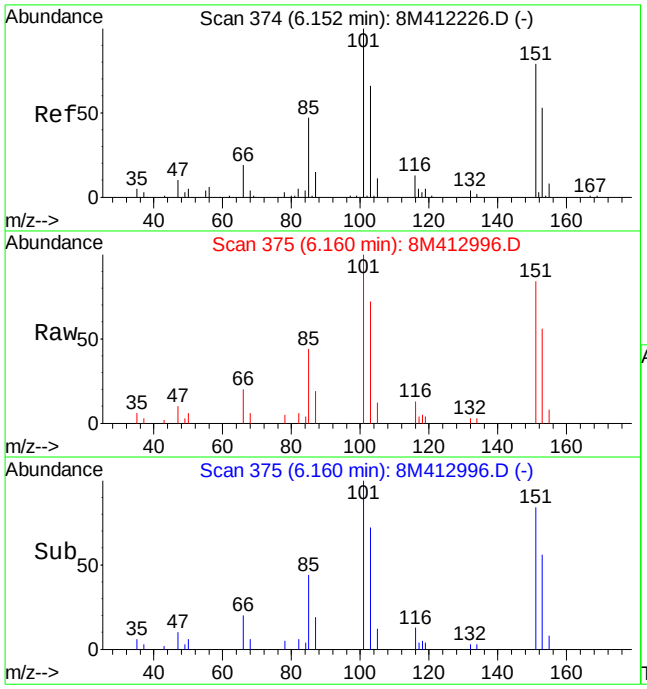

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 12.27 ug/L
RT: 6.16 min Scan# 375
Delta R.T. 0.01 min
Lab File: 8M412996.D
Acq: 14 Jun 2016 21:31

Tgt Ion:101 Resp: 91739

Ion	Ratio	Lower	Upper
101	100		
151	88.0	40.2	120.2

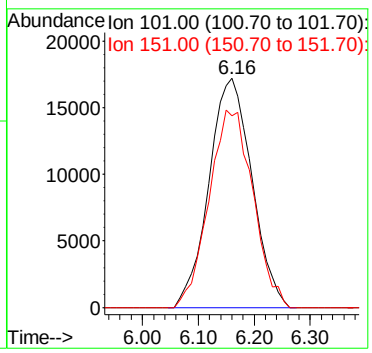

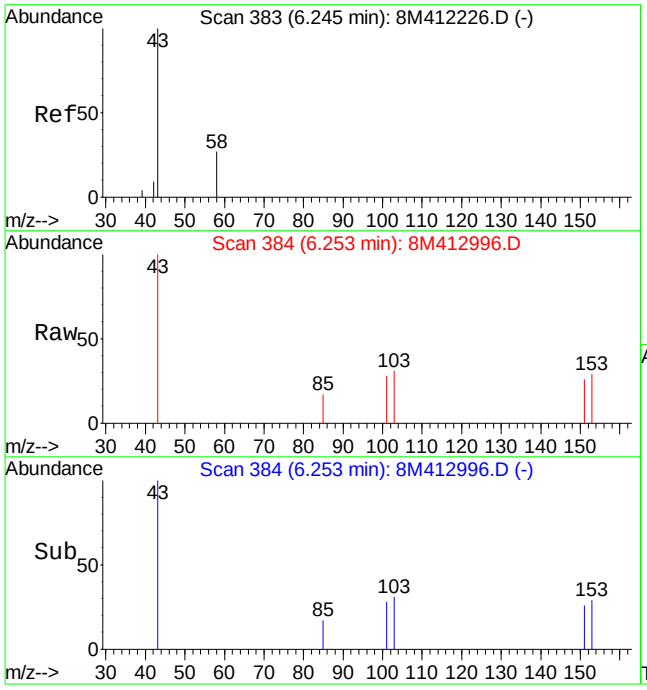

#13
Acetone
Concen: 7.30 ug/L
RT: 6.25 min Scan# 384
Delta R.T. 0.01 min
Lab File: 8M412996.D
Acq: 14 Jun 2016 21:31

Tgt Ion: 43 Resp: 6049

Ion	Ratio	Lower	Upper
43	100		
58	15.1	15.2	35.4#

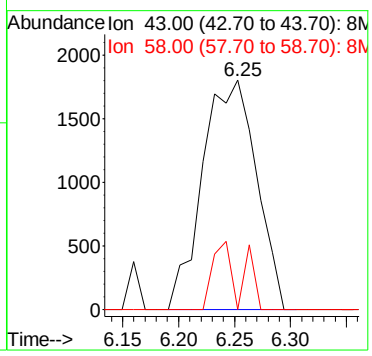

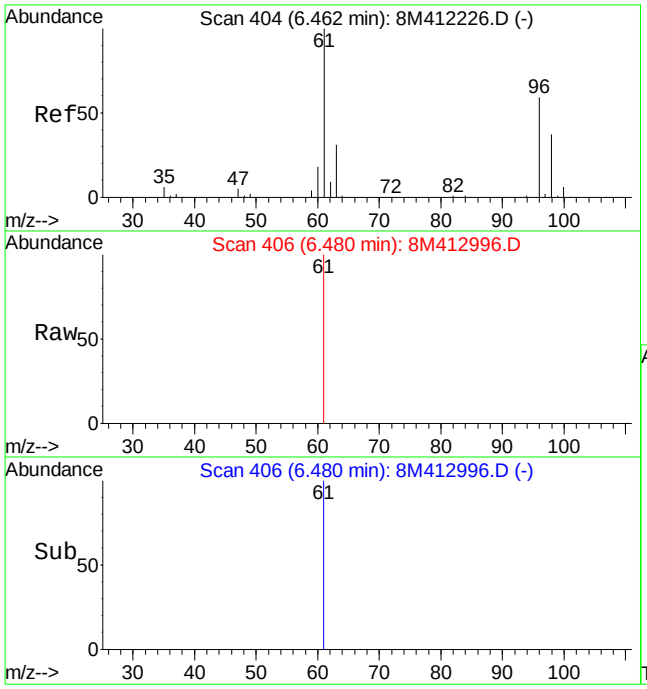

#14
1,1-Dichloroethene
Concen: 0.25 ug/L
RT: 6.48 min Scan# 406
Delta R.T. 0.02 min
Lab File: 8M412996.D
Acq: 14 Jun 2016 21:31

Tgt Ion: 61 Resp: 2950

Ion	Ratio	Lower	Upper
61	100		
96	29.2	34.6	80.8#

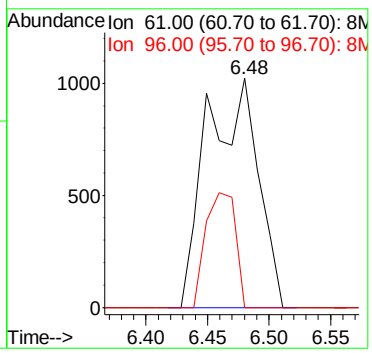

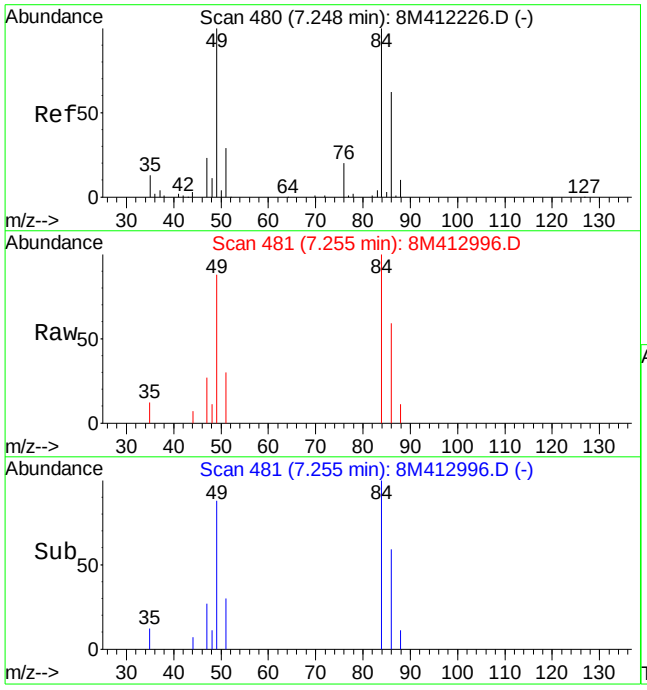

#19
Methylene Chloride
Concen: 1.83 ug/L
RT: 7.26 min Scan# 481
Delta R.T. 0.01 min
Lab File: 8M412996.D
Acq: 14 Jun 2016 21:31

Tgt Ion: 84 Resp: 13857

Ion	Ratio	Lower	Upper
84	100		
49	95.1	60.5	141.3

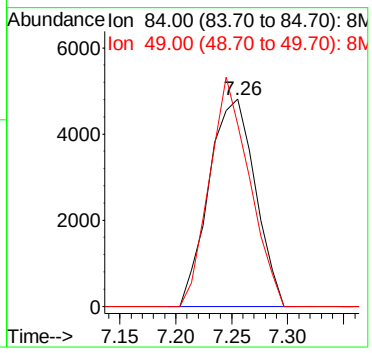

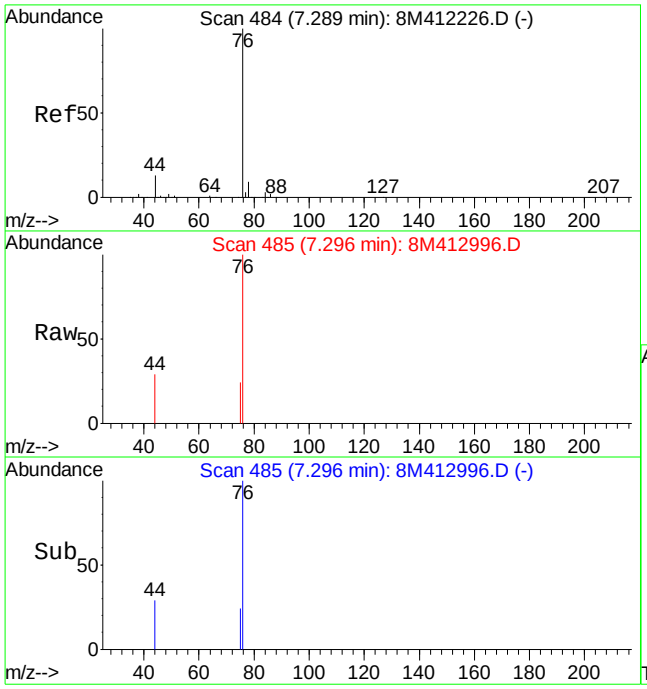

#20
Carbon Disulfide
Concen: 0.16 ug/L
RT: 7.30 min Scan# 485
Delta R.T. 0.01 min
Lab File: 8M412996.D
Acq: 14 Jun 2016 21:31

Tgt Ion: 76 Resp: 3896

Ion	Ratio	Lower	Upper
76	100		
78	0.0	5.6	13.0#

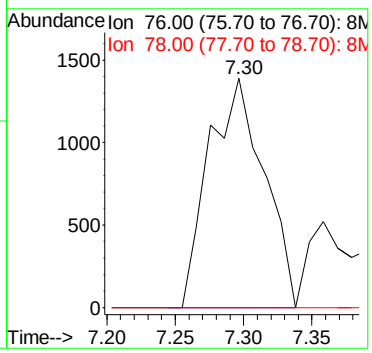

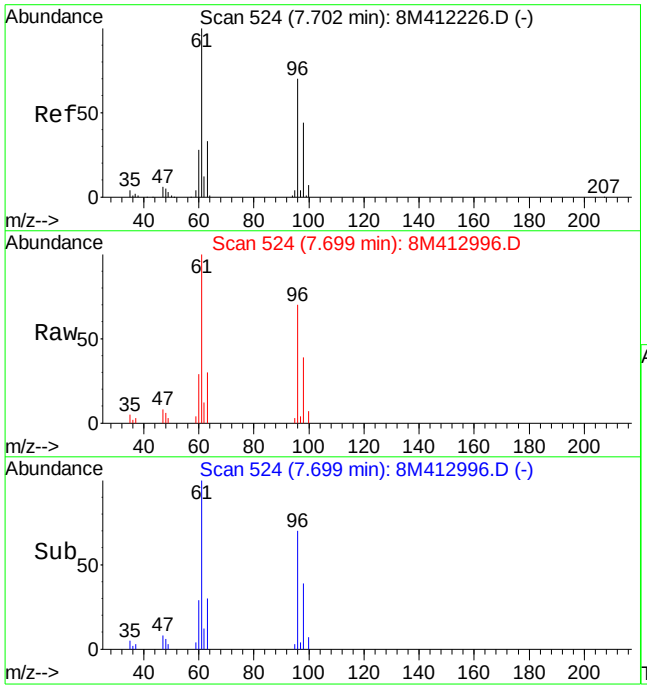

#23
trans-1,2-Dichloroethene
Concen: 4.50 ug/L
RT: 7.70 min Scan# 524
Delta R.T. -0.00 min
Lab File: 8M412996.D
Acq: 14 Jun 2016 21:31

Tgt Ion: 61 Resp: 49277

Ion	Ratio	Lower	Upper
61	100		
96	72.4	41.8	97.4

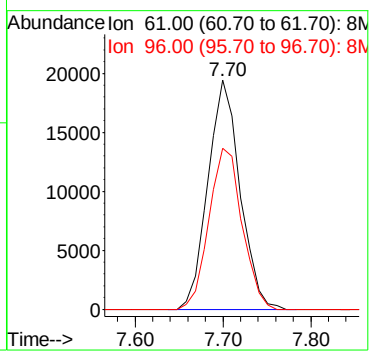

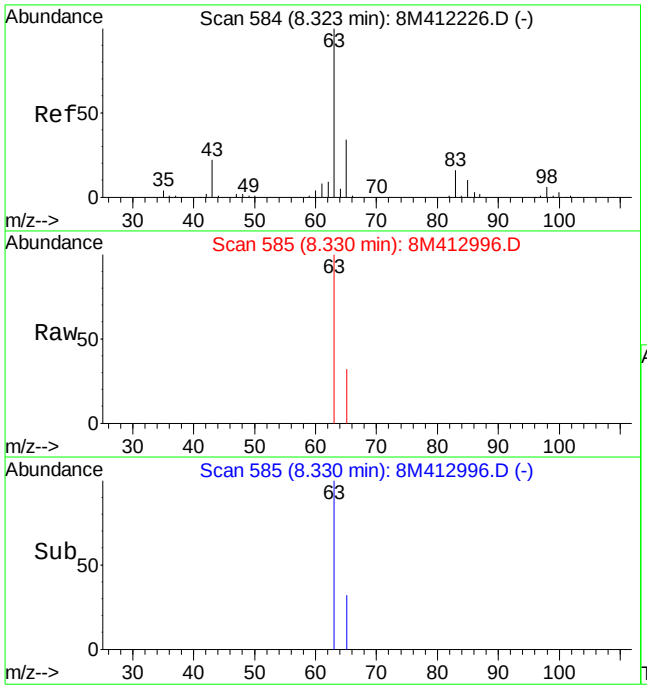

#27
1,1-Dichloroethane
Concen: 0.30 ug/L
RT: 8.33 min Scan# 585
Delta R.T. 0.01 min
Lab File: 8M412996.D
Acq: 14 Jun 2016 21:31

Tgt Ion: 63 Resp: 4126

Ion	Ratio	Lower	Upper
63	100		
65	22.3	20.2	47.0
83	0.0	9.1	21.1#

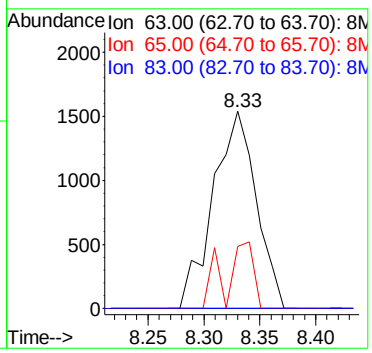

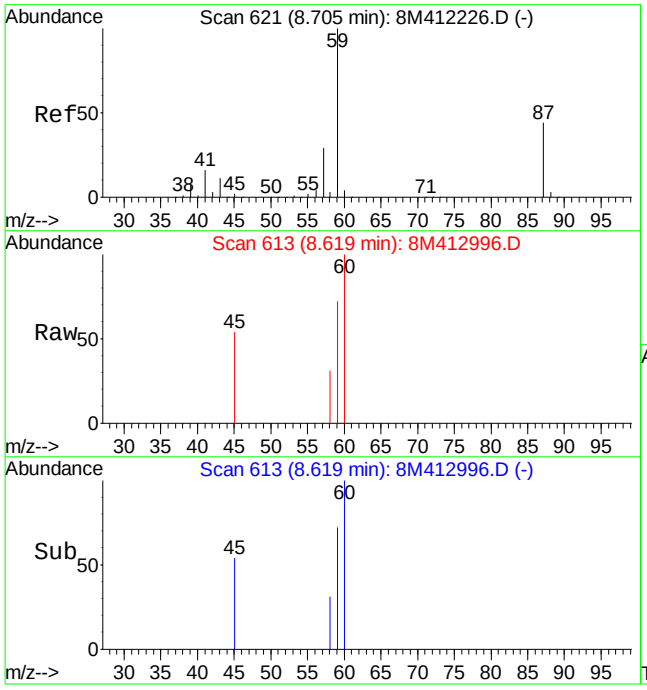

#28
Ethyl-Tert-Butyl ether
Concen: 0.14 ug/L
RT: 8.62 min Scan# 613
Delta R.T. -0.09 min
Lab File: 8M412996.D
Acq: 14 Jun 2016 21:31

Tgt Ion: 59 Resp: 2533

Ion	Ratio	Lower	Upper
59	100		
87	0.0	26.8	62.4#
57	0.0	17.4	40.6#

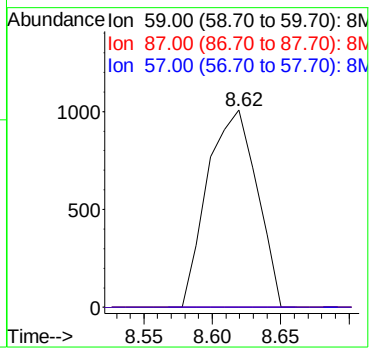

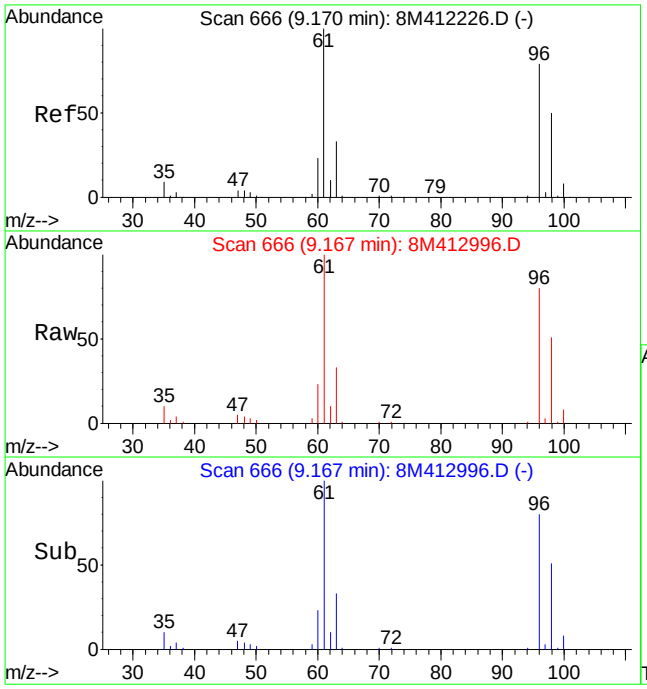

#32
cis-1,2-Dichloroethene
Concen: 19.44 ug/L
RT: 9.17 min Scan# 666
Delta R.T. -0.00 min
Lab File: 8M412996.D
Acq: 14 Jun 2016 21:31

Tgt Ion: 96 Resp: 164298

Ion	Ratio	Lower	Upper
96	100		
61	129.7	91.5	213.5

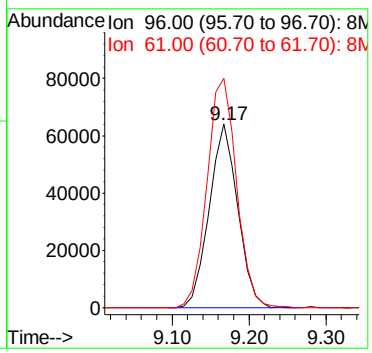

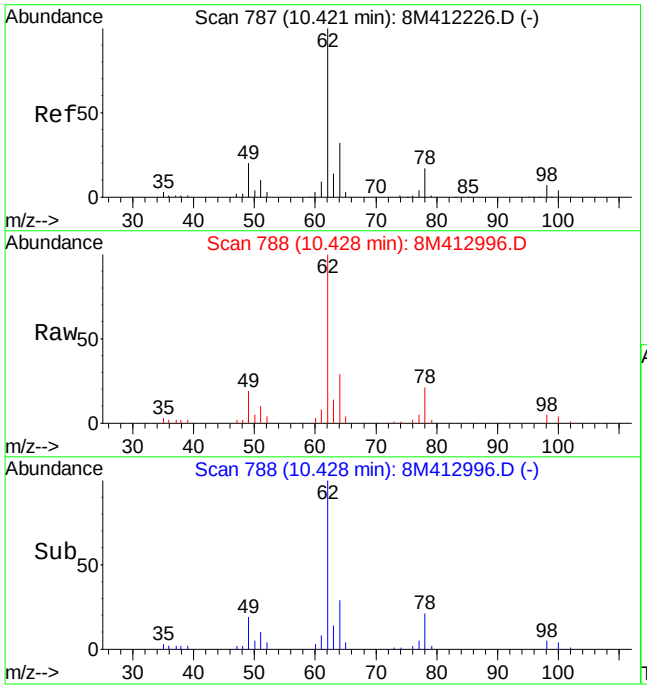

#45
1,2-Dichloroethane
Concen: 12.97 ug/L
RT: 10.43 min Scan# 788
Delta R.T. 0.01 min
Lab File: 8M412996.D
Acq: 14 Jun 2016 21:31

Tgt Ion: 62 Resp: 133902

Ion	Ratio	Lower	Upper
62	100		
64	31.7	19.6	45.6
49	20.9	15.5	36.1

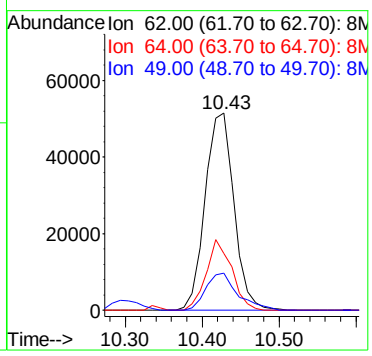

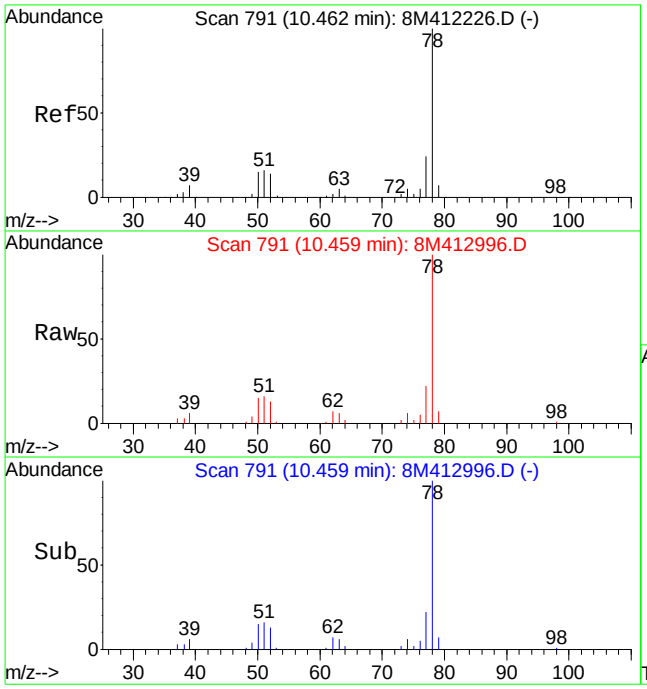

#46
Benzene
Concen: 6.13 ug/L
RT: 10.46 min Scan# 791
Delta R.T. -0.00 min
Lab File: 8M412996.D
Acq: 14 Jun 2016 21:31

Tgt Ion: 78 Resp: 185384

Ion	Ratio	Lower	Upper
78	100		
52	13.6	8.4	19.6
51	20.0	10.9	25.5

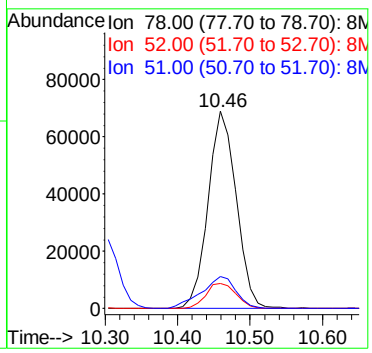

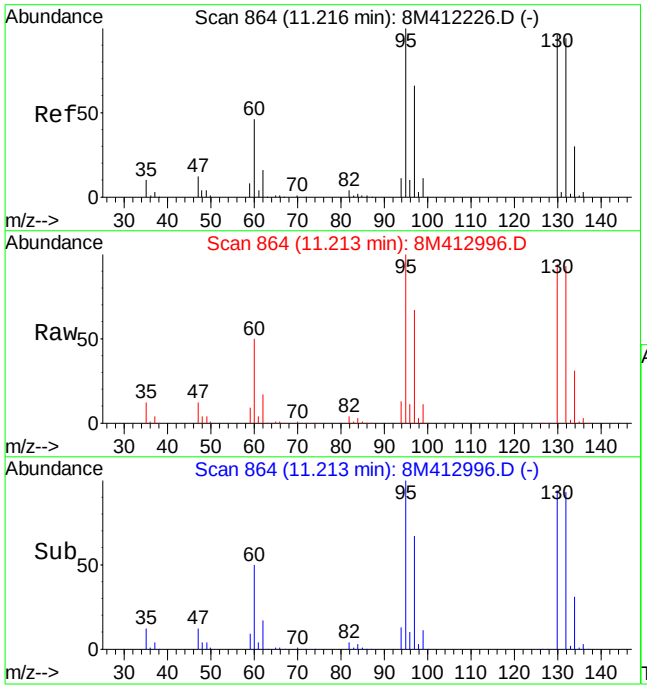

#47
Trichloroethene
Concen: 153.25 ug/L
RT: 11.21 min Scan# 864
Delta R.T. -0.00 min
Lab File: 8M412996.D
Acq: 14 Jun 2016 21:31

Tgt Ion:130 Resp: 1236359

Ion	Ratio	Lower	Upper
130	100		
132	98.4	58.0	135.2
95	107.1	64.9	151.5

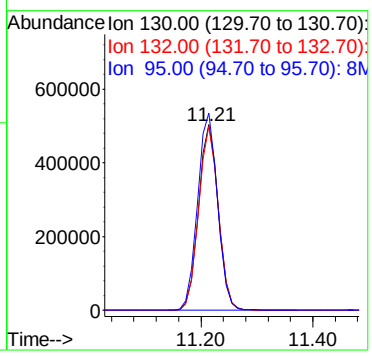

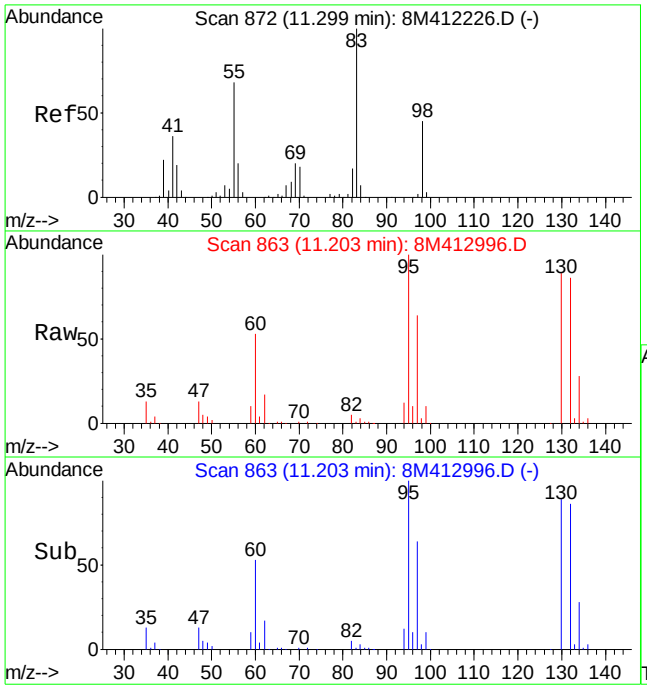

#48
Methylcyclohexane
Concen: 1.33 ug/L
RT: 11.20 min Scan# 863
Delta R.T. -0.10 min
Lab File: 8M412996.D
Acq: 14 Jun 2016 21:31

Tgt Ion: 83 Resp: 16271

Ion	Ratio	Lower	Upper
83	100		
55	0.0	40.9	95.3#
98	229.6	28.1	65.7#

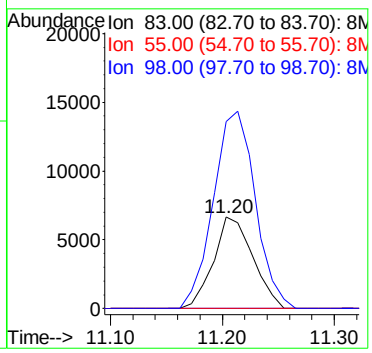

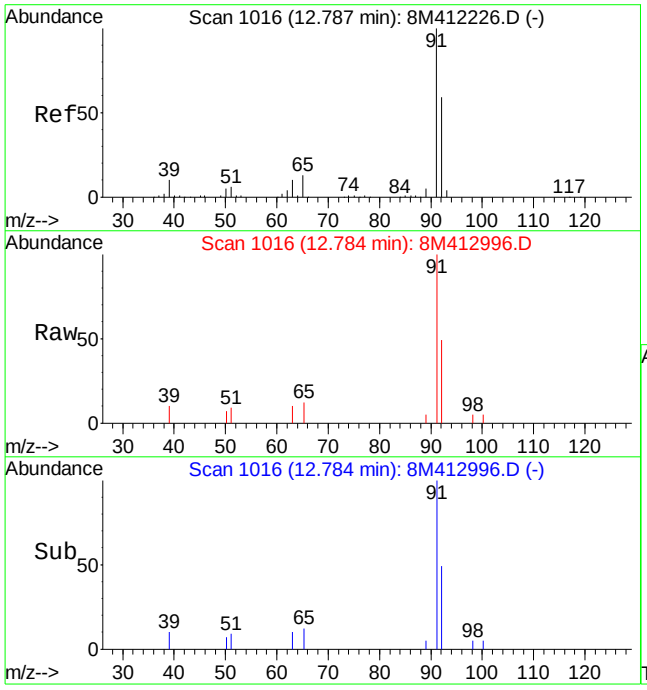

#59
Toluene
Concen: 0.46 ug/L
RT: 12.78 min Scan# 1016
Delta R.T. -0.00 min
Lab File: 8M412996.D
Acq: 14 Jun 2016 21:31

Tgt Ion: 91 Resp: 15574

Ion	Ratio	Lower	Upper
91	100		
92	54.1	35.5	82.7

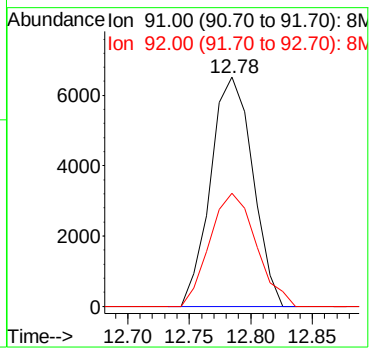

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061316\11M12604.D Vial: 13
Acq On : 13 Jun 2016 22:53 Operator: JDS
Sample : L16060504-05 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 09:25:57 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	735062	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	604613	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	345024	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	180431	22.4287 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 89.72%		
43) 1,2-Dichloroethane-d4	10.23	65	198272	21.6155 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 86.48%		
57) Toluene-d8	12.47	98	652040	24.8203 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.28%		
78) p-Bromofluorobenzene	15.64	95	276042	25.9543 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.80%		

Target Compounds					Qvalue
3) Chloromethane	3.72	50	1597	0.1731 ug/L #	62
13) Acetone	6.33	43	1064	0.6096 ug/L #	49
36) Tetrahydrofuran	9.60	42	2982	1.6003 ug/L	88

(#) = qualifier out of range (m) = manual integration
11M12604.D 8260WT.M Tue Jun 14 09:25:58 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061316\11M12604.D Vial: 13
Acq On : 13 Jun 2016 22:53 Operator: JDS
Sample : L16060504-05 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 9:25 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

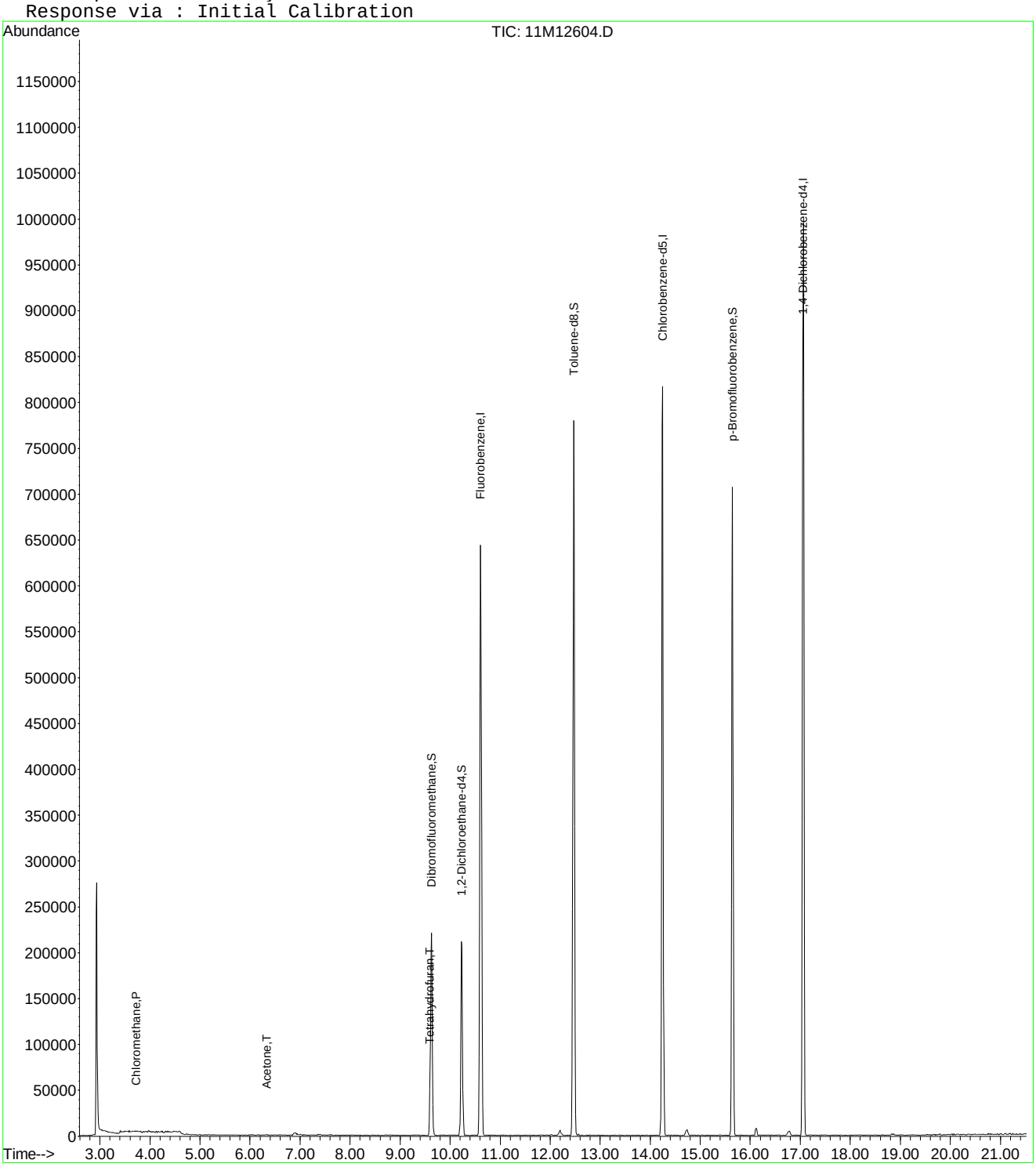

11M12604.D 8260WT.M Tue Jun 14 09:25:58 2016 Page 2

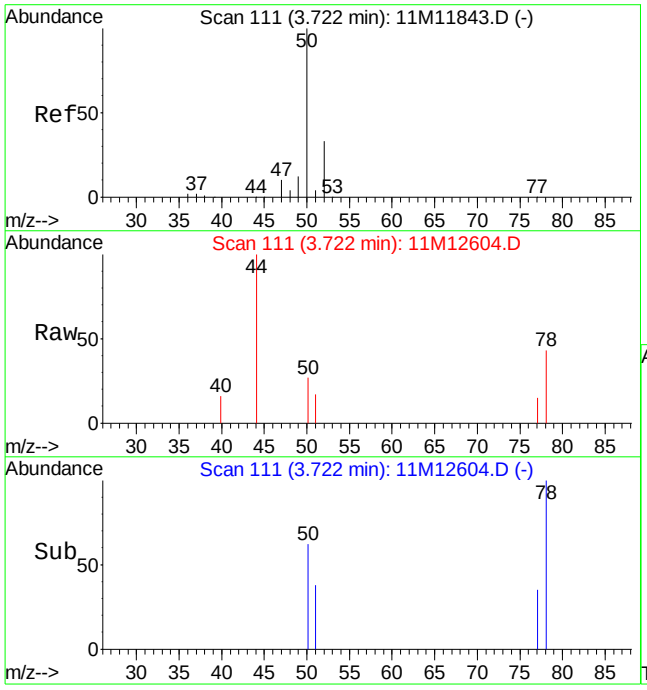

#3
Chloromethane
Concen: 0.17 ug/L
RT: 3.72 min Scan# 111
Delta R.T. -0.00 min
Lab File: 11M12604.D
Acq: 13 Jun 2016 22:53

Tgt Ion: 50 Resp: 1597

Ion	Ratio	Lower	Upper
50	100		
52	11.7	20.0	46.6#

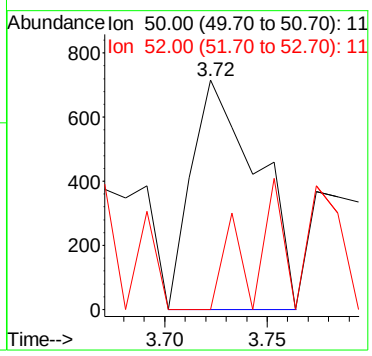

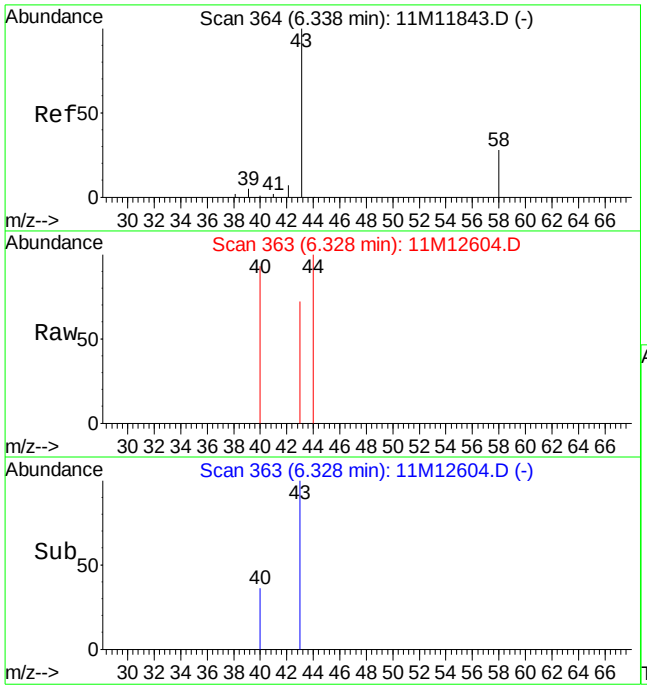

#13
Acetone
Concen: 0.61 ug/L
RT: 6.33 min Scan# 363
Delta R.T. -0.01 min
Lab File: 11M12604.D
Acq: 13 Jun 2016 22:53

Tgt Ion: 43 Resp: 1064

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

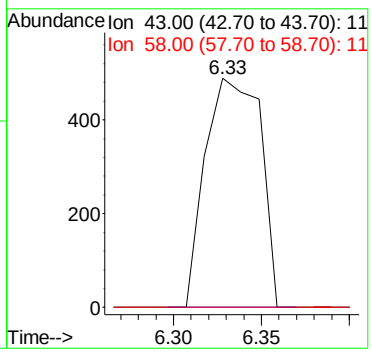

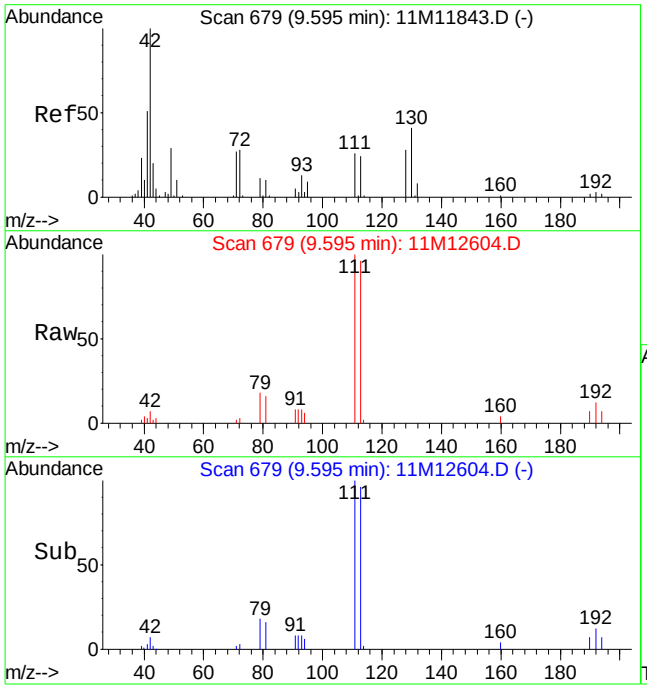

#36
Tetrahydrofuran
Concen: 1.60 ug/L
RT: 9.60 min Scan# 679
Delta R.T. -0.00 min
Lab File: 11M12604.D
Acq: 13 Jun 2016 22:53

Tgt Ion: 42 Resp: 2982

Ion	Ratio	Lower	Upper
42	100		
71	31.4	16.4	38.2
72	19.5	16.6	38.8

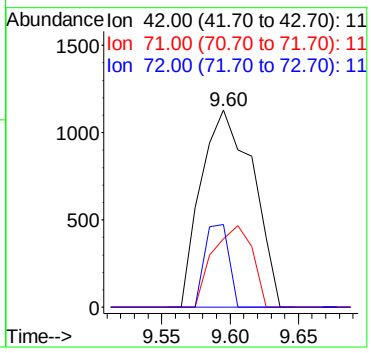

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 10:20:26 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	665958	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.19	117	486224	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.01	152	252862	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	169215	22.8906 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 91.56%		
43) 1,2-Dichloroethane-d4	10.17	65	154962	19.2999 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 77.20%#		
57) Toluene-d8	12.42	98	584744	28.4742 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 113.88%#		
78) p-Bromofluorobenzene	15.58	95	202664	25.0472 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.20%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.23	85	8067	0.8041 ug/L #	81
3) Chloromethane	3.68	50	5797	0.5011 ug/L	91
4) Vinyl Chloride	3.91	62	15554	1.9132 ug/L	97
5) 1,3-Butadiene	3.96	54	11402	1.8745 ug/L	83
6) Bromomethane	4.80	94	1566	0.4085 ug/L	98
7) Chloroethane	4.96	64	1797	0.3015 ug/L #	43
8) Trichlorofluoromethane	5.43	101	4457	0.3306 ug/L	92
10) Isoprene	5.99	67	2109	0.2044 ug/L #	51
12) 1,1,2-Trichloro-1,2,2-Trif	6.23	101	1597	0.2057 ug/L	98
13) Acetone	6.30	43	3590	1.8309 ug/L #	60
14) 1,1-Dichloroethene	6.50	61	4933	0.3633 ug/L	96
19) Methylene Chloride	7.28	84	2287	0.2902 ug/L	89
20) Carbon Disulfide	7.31	76	24059	1.0619 ug/L	98
23) trans-1,2-Dichloroethene	7.69	96	3973	0.5072 ug/L	81
24) n-Hexane	7.78	57	5925	0.4871 ug/L #	85
32) cis-1,2-Dichloroethene	9.10	96	2970	0.3509 ug/L	71
33) Chloroform	9.30	83	1689	0.1200 ug/L	78
35) Bromochloromethane	9.51	130	597	0.1244 ug/L #	66
36) Tetrahydrofuran	9.56	42	405	0.1826 ug/L #	44
39) Cyclohexane	9.83	56	2167	0.1307 ug/L	90
40) 1,1-Dichloropropene	9.99	75	3207	0.2986 ug/L	86
45) Benzene	10.32	78	3922	0.1286 ug/L	88
46) Trichloroethene	11.03	130	3473	0.3872 ug/L	90
47) Methylcyclohexane	11.10	83	2708	0.2333 ug/L #	77
51) Dibromomethane	11.60	93	782	0.1870 ug/L	62
54) cis-1,3-Dichloropropene	12.11	75	1452	0.1277 ug/L #	41
58) Toluene	12.51	91	4350	0.1662 ug/L	83
60) trans-1,3-Dichloropropene	12.68	75	1450	0.1811 ug/L #	47
64) Tetrachloroethene	13.28	164	1514	0.2507 ug/L	75
66) 1,2-Dibromoethane	13.77	107	783	0.1520 ug/L	82
67) 1-Chlorohexane	13.83	91	2267	0.2766 ug/L	67
68) Chlorobenzene	14.24	112	4044	0.2287 ug/L	88
70) Ethylbenzene	14.25	106	1461	0.1464 ug/L	62
71) m-,p-Xylene	14.34	106	3596	0.3050 ug/L #	47
73) Styrene	14.90	104	2784	0.1479 ug/L	80
75) Isopropylbenzene	15.25	105	4163	0.1408 ug/L #	74
81) n-Propylbenzene	15.73	91	6395	0.2079 ug/L #	73
82) Bromobenzene	15.86	156	1681	0.2112 ug/L	100
83) 1,3,5-Trimethylbenzene	15.90	105	3253	0.1356 ug/L	100
84) 2-Chlorotoluene	16.00	91	3395	0.1597 ug/L	86

(#) = qualifier out of range (m) = manual integration
11M08235.D 8260WTR.M Sun Jun 14 10:20:27 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 10:20:26 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
85)	4-Chlorotoluene	16.03	91	4746	0.2598 ug/L	84
86)	a-Methylstyrene	16.27	118	1776	0.1452 ug/L	76
88)	1,2,4-Trimethylbenzene	16.39	105	3776	0.1571 ug/L	77
89)	sec-Butylbenzene	16.58	105	5834	0.2044 ug/L #	77
90)	p-Isopropyltoluene	16.73	119	5149	0.2137 ug/L	87
91)	1,3-Dichlorobenzene	16.93	146	3649	0.2531 ug/L	97
92)	1,4-Dichlorobenzene	17.04	146	5213	0.3507 ug/L #	7
93)	n-Butylbenzene	17.23	91	5778	0.3036 ug/L #	78
94)	1,2-Dichlorobenzene	17.51	146	2232	0.1581 ug/L	92
96)	1,2,4-Trichlorobenzene	19.49	180	1750	0.2281 ug/L #	64
97)	Hexachlorobutadiene	19.62	225	1771	0.4493 ug/L	86
98)	Naphthalene	19.84	128	2058	0.1572 ug/L #	63
99)	1,2,3-Trichlorobenzene	20.13	180	1072	0.1483 ug/L #	40

(#) = qualifier out of range (m) = manual integration
11M08235.D 8260WTR.M Sun Jun 14 10:20:27 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 10:20 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration

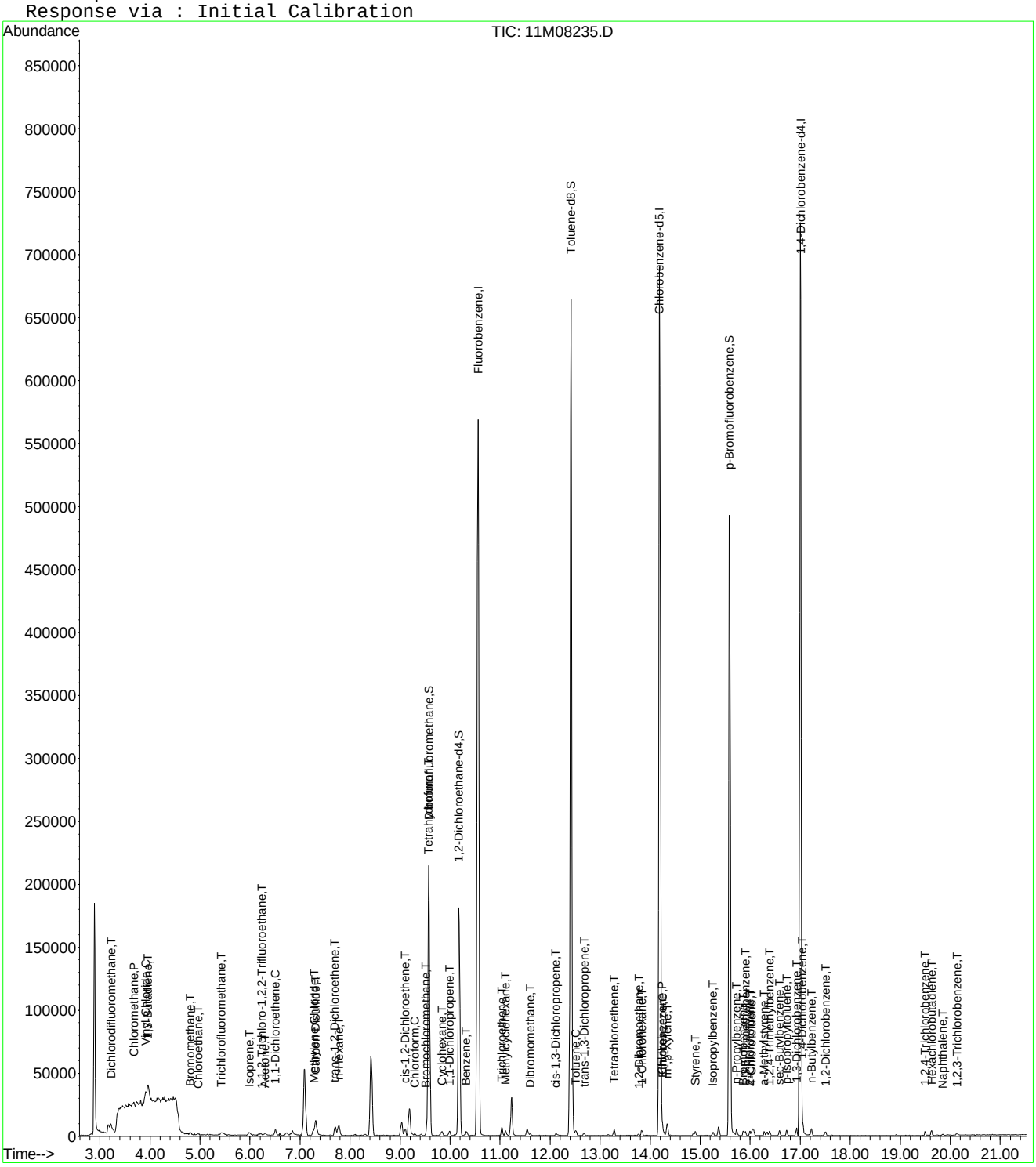

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 09:43:53 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	665958	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	486224	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.01	152	252862	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	6.73	41	3211	6.0366 ug/L	70
3) 3-Chloro-1-propene	7.08	41	50601	4.3748 ug/L	86
4) 2-Chloro-1,3-butadiene	8.42	53	56035	4.7289 ug/L	97
5) Methacrylonitrile	9.18	41	16495	5.1749 ug/L	91
6) Isobutyl Alcohol	9.21	43	2014	16.4797 ug/L #	1
8) Cyclohexanone	15.36	55	3979	4.5232 ug/L	98
9) 2-Nitropropane	11.54	43	3915	3.2057 ug/L #	72
10) Ethyl Acetate	9.03	43	17657	4.5044 ug/L	95
11) Methyl methacrylate	11.22	41	20122	4.7597 ug/L	95

(#) = qualifier out of range (m) = manual integration
11M08235.D A9FOOWT.M Tue Jun 16 09:43:53 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 9:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration

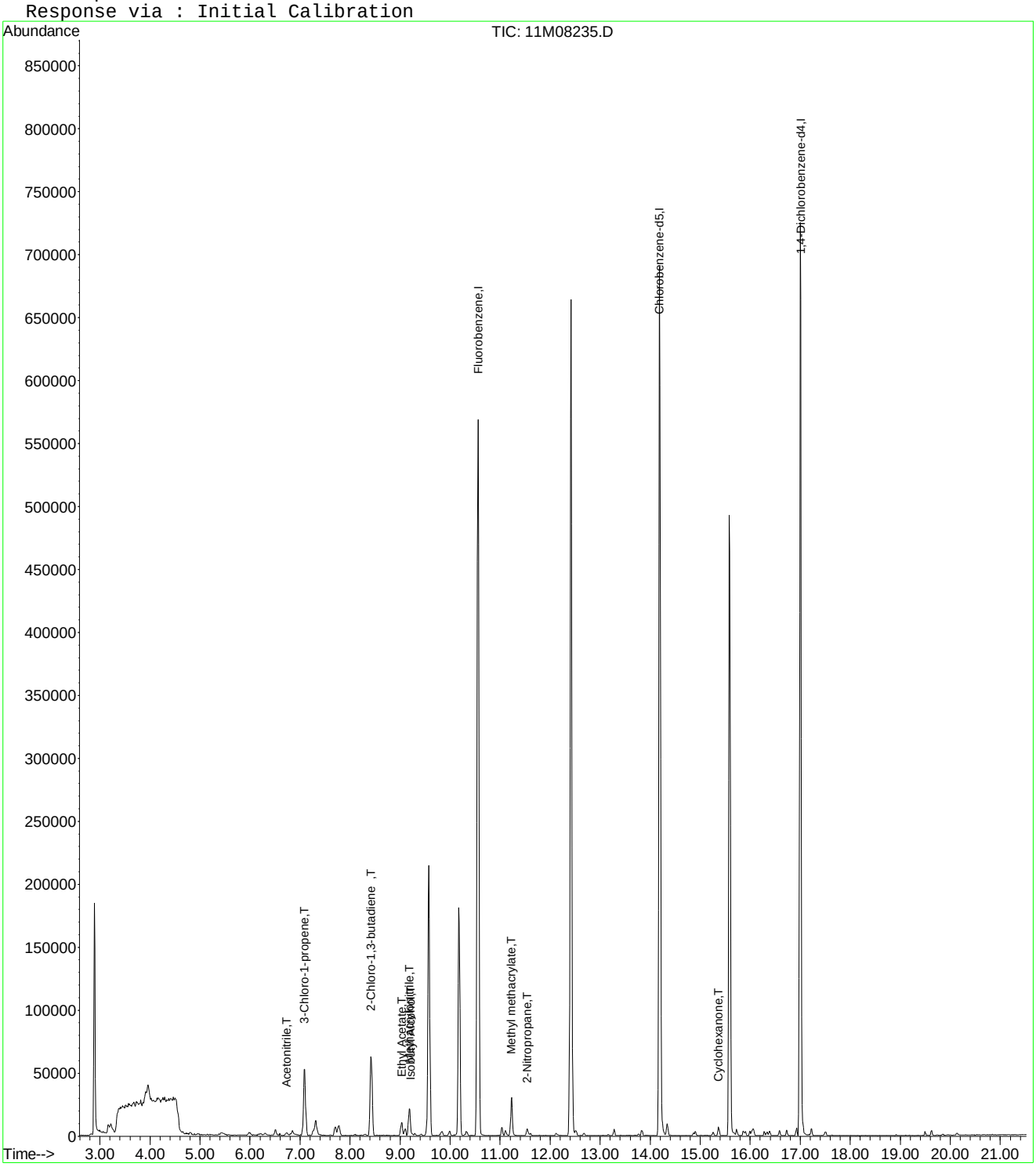

11M08235.D A9FOOWT.M Tue Jun 16 09:43:53 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28:04 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	665958	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	486224	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.01	152	252862	25.00 ug/L	-0.02

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M08235.D A9FOOWT.M Thu Aug 20 11:28:04 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration

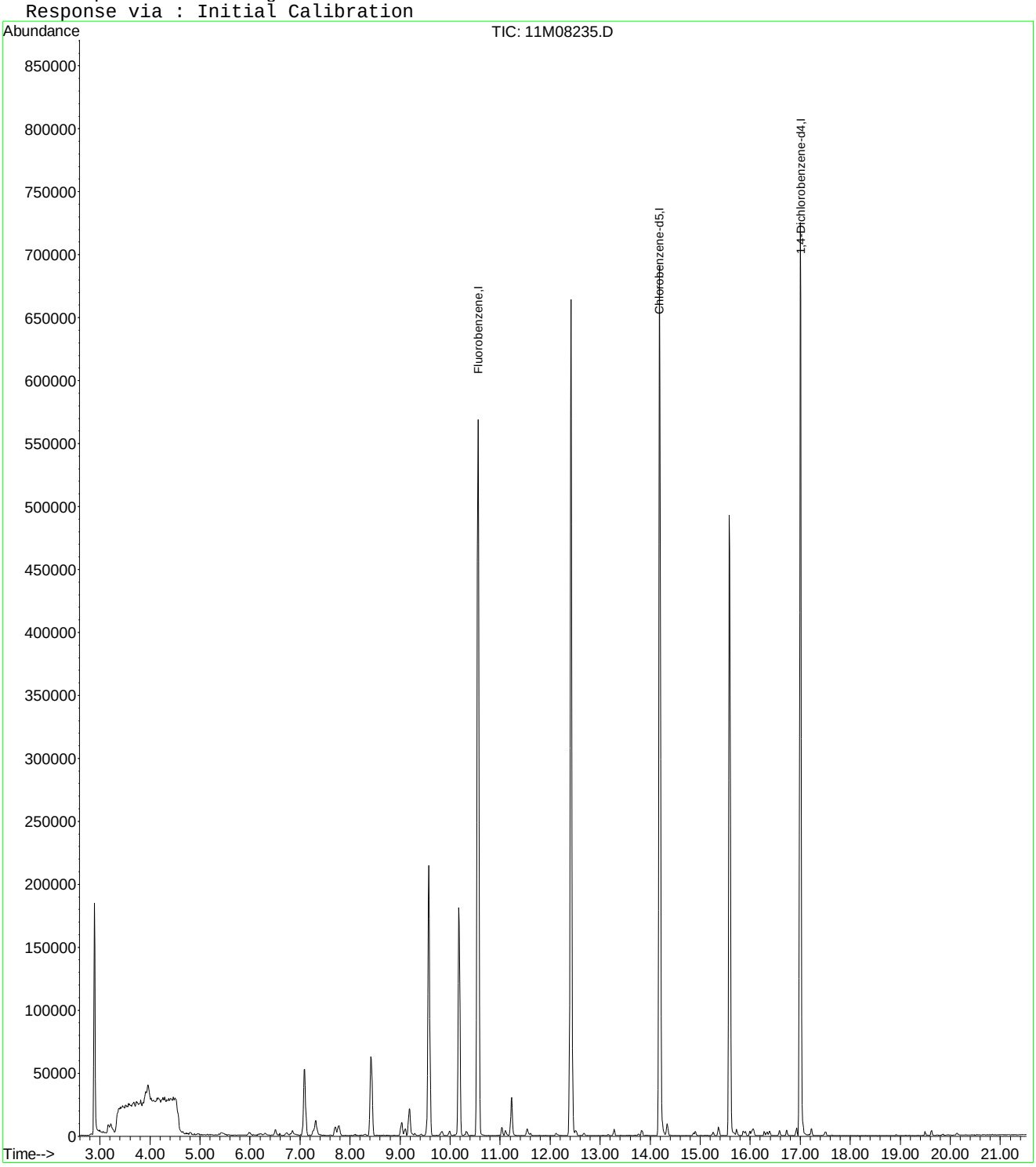

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43:46 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	665958	25.00 ug/L	0.00
12) Chlorobenzene-d5	14.19	117	486224	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.01	152	252862	25.00 ug/L	0.01

Target Compounds					Qvalue
2) Acetonitrile	6.73	41	3211	6.2865 ug/L	70
3) 3-Chloro-1-propene	7.08	41	50601	5.0485 ug/L	86
4) 2-Chloro-1,3-butadiene	8.42	53	56035	4.6571 ug/L	97
5) Methacrylonitrile	9.18	41	16495	5.3246 ug/L	91
6) Isobutyl Alcohol	9.21	43	2014	12.6338 ug/L #	1
7) 1-Butanol	9.83	56	2167	25.6978 ug/L #	47
8) Cyclohexanone	15.36	55	3979	5.1947 ug/L	98
9) 2-Nitropropane	11.54	43	3915	35.7530 ug/L #	72
10) Ethyl Acetate	9.03	43	17657	4.8057 ug/L	95
11) Methyl methacrylate	11.22	41	20122	4.7099 ug/L	95

(#) = qualifier out of range (m) = manual integration
11M08235.D A9FOOWT.M Thu Aug 20 11:43:47 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration

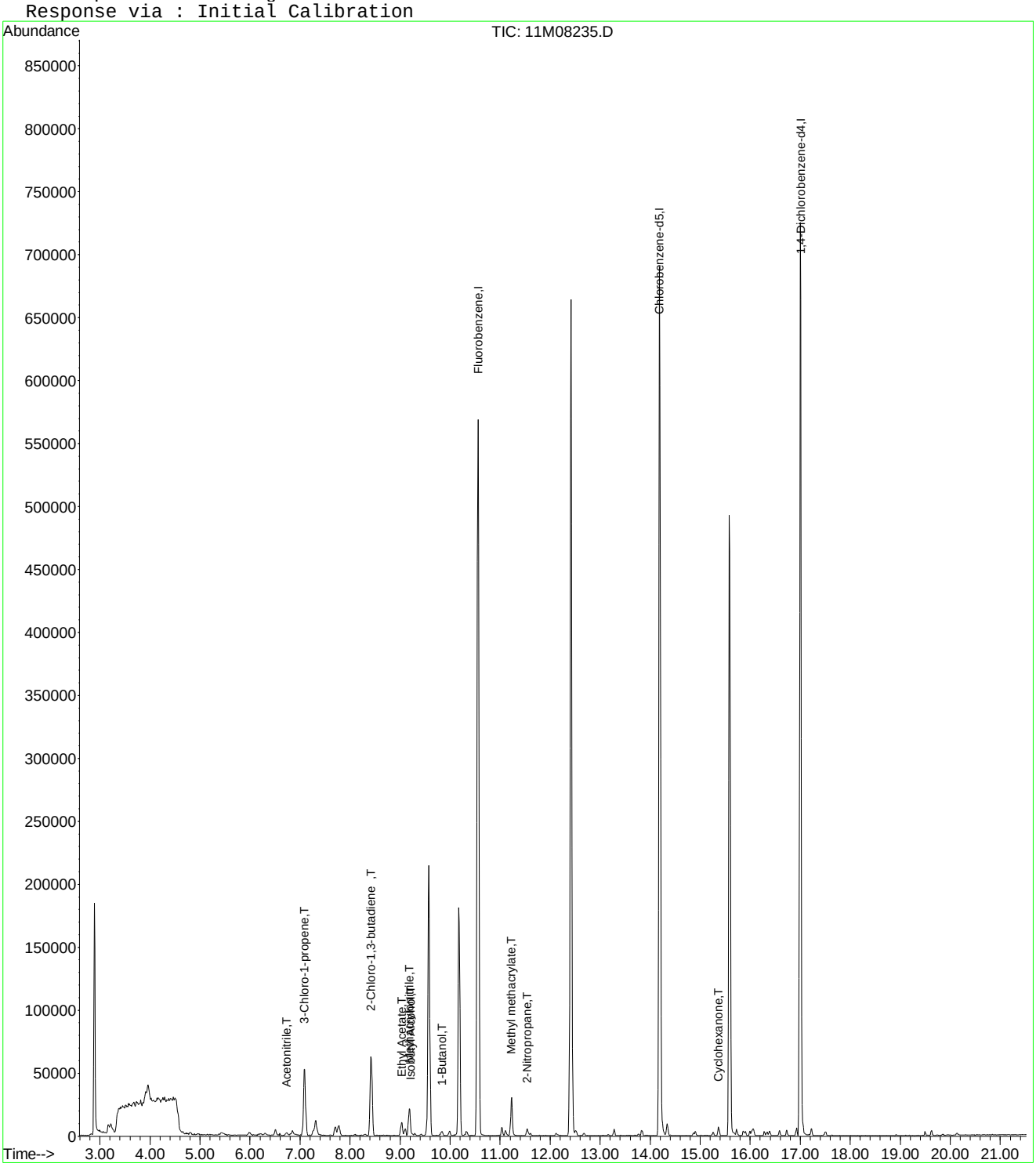

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	5.0000	6.2866	-25.7	100	0.01
3	T	3-Chloro-1-propene	5.0000	5.0485	-1.0	100	-0.01
4	T	2-Chloro-1,3-butadiene	5.0000	4.6571	6.9	100	0.00
5	T	Methacrylonitrile	5.0000	5.3246	-6.5	100	0.00
6	T	Isobutyl Alcohol	-1.0000	12.6338	0.0	100	0.02
7	T	1-Butanol	-1.0000	25.6978	0.0	0	-0.24
8	T	Cyclohexanone	-1.0000	5.1947	0.0	100	0.00
9	T	2-Nitropropane	-1.0000	35.7530	0.0	0	0.00
10	T	Ethyl Acetate	5.0000	4.8057	3.9	100	0.00
11	T	Methyl methacrylate	5.0000	4.7099	5.8	100	0.00
12	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
13	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M08235.D A9FOOWT.M Thu Aug 20 11:44:19 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08236.D Vial: 3
Acq On : 14 Jun 2015 10:30 Operator: TMB /DLW
Sample : WG527475-03 20ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 10:52:27 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	610715	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.19	117	451165	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.00	152	232233	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	159209	23.4852 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.96%		
43) 1,2-Dichloroethane-d4	10.17	65	149549	20.3105 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 81.24%		
57) Toluene-d8	12.42	98	551790	28.9575 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 115.84%#		
78) p-Bromofluorobenzene	15.58	95	193663	26.0609 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.24%		

Target Compounds					Qvalue
3) Chloromethane	3.68	50	2560	0.2413 ug/L	85
5) 1,3-Butadiene	3.94	54	1485	0.2662 ug/L #	60
13) Acetone	6.30	43	3499	1.9459 ug/L #	49

(#) = qualifier out of range (m) = manual integration
11M08236.D 8260WTR.M Sun Jun 14 10:52:28 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08236.D Vial: 3
Acq On : 14 Jun 2015 10:30 Operator: TMB /DLW
Sample : WG527475-03 20ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 10:52 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration

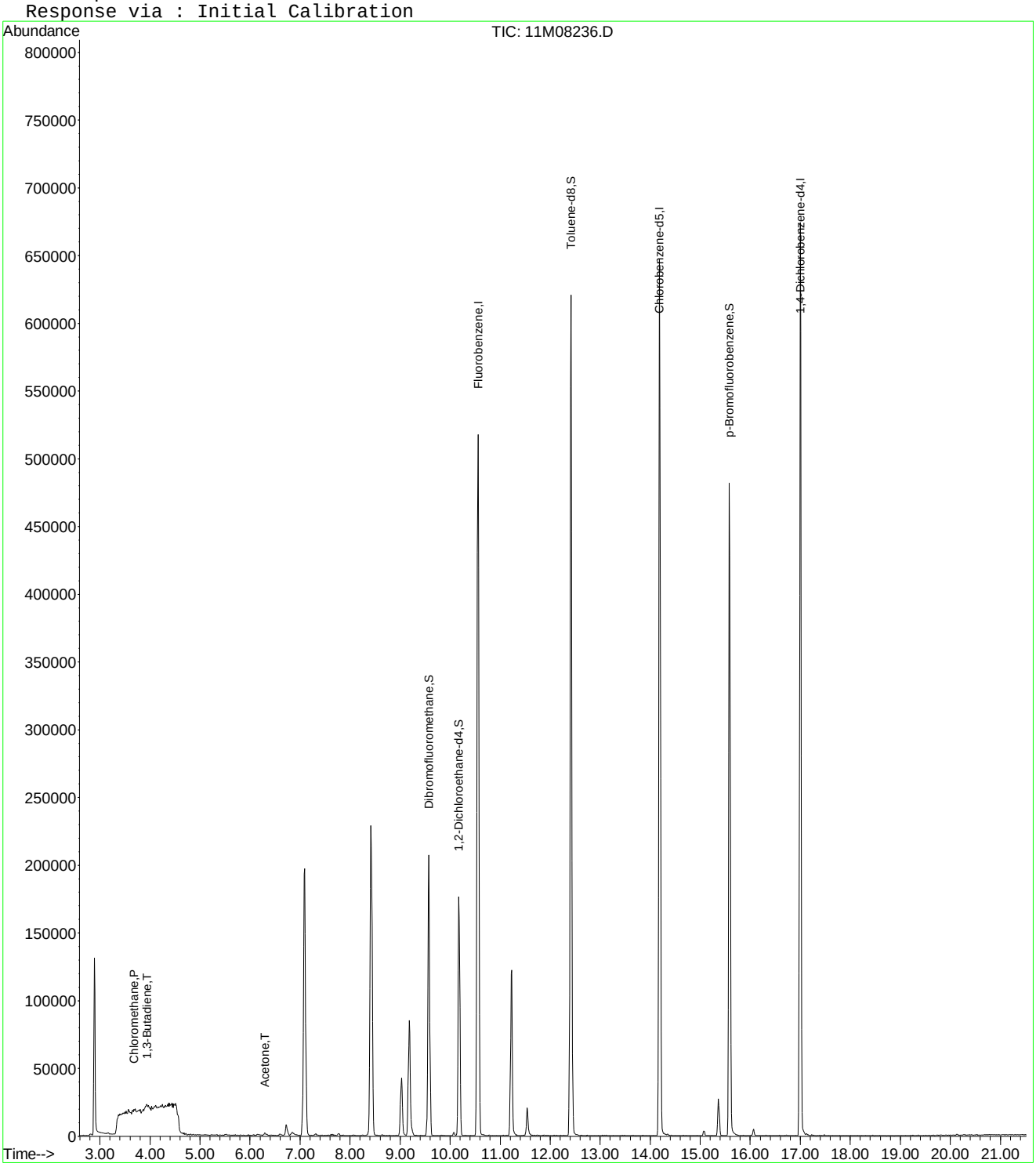

11M08236.D 8260WTR.M Sun Jun 14 10:52:28 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08236.D Vial: 3
Acq On : 14 Jun 2015 10:30 Operator: TMB /DLW
Sample : WG527475-03 20ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 09:43:55 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	610715	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	451165	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	232233	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	10965	22.4787 ug/L	99
3) 3-Chloro-1-propene	7.09	41	181745	17.1344 ug/L	86
4) 2-Chloro-1,3-butadiene	8.42	53	204133	18.7856 ug/L	96
5) Methacrylonitrile	9.18	41	56411	19.2984 ug/L	84
6) Isobutyl Alcohol	9.19	43	6275	55.9901 ug/L	85
7) 1-Butanol	10.07	56	1474	31.3751 ug/L	93
8) Cyclohexanone	15.36	55	15226	18.8740 ug/L	98
9) 2-Nitropropane	11.54	43	14015	12.5138 ug/L #	72
10) Ethyl Acetate	9.03	43	70834	19.7046 ug/L	96
11) Methyl methacrylate	11.22	41	78843	20.3367 ug/L	93

(#) = qualifier out of range (m) = manual integration
11M08236.D A9FOOWT.M Tue Jun 16 09:43:55 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08236.D Vial: 3
Acq On : 14 Jun 2015 10:30 Operator: TMB /DLW
Sample : WG527475-03 20ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 9:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration

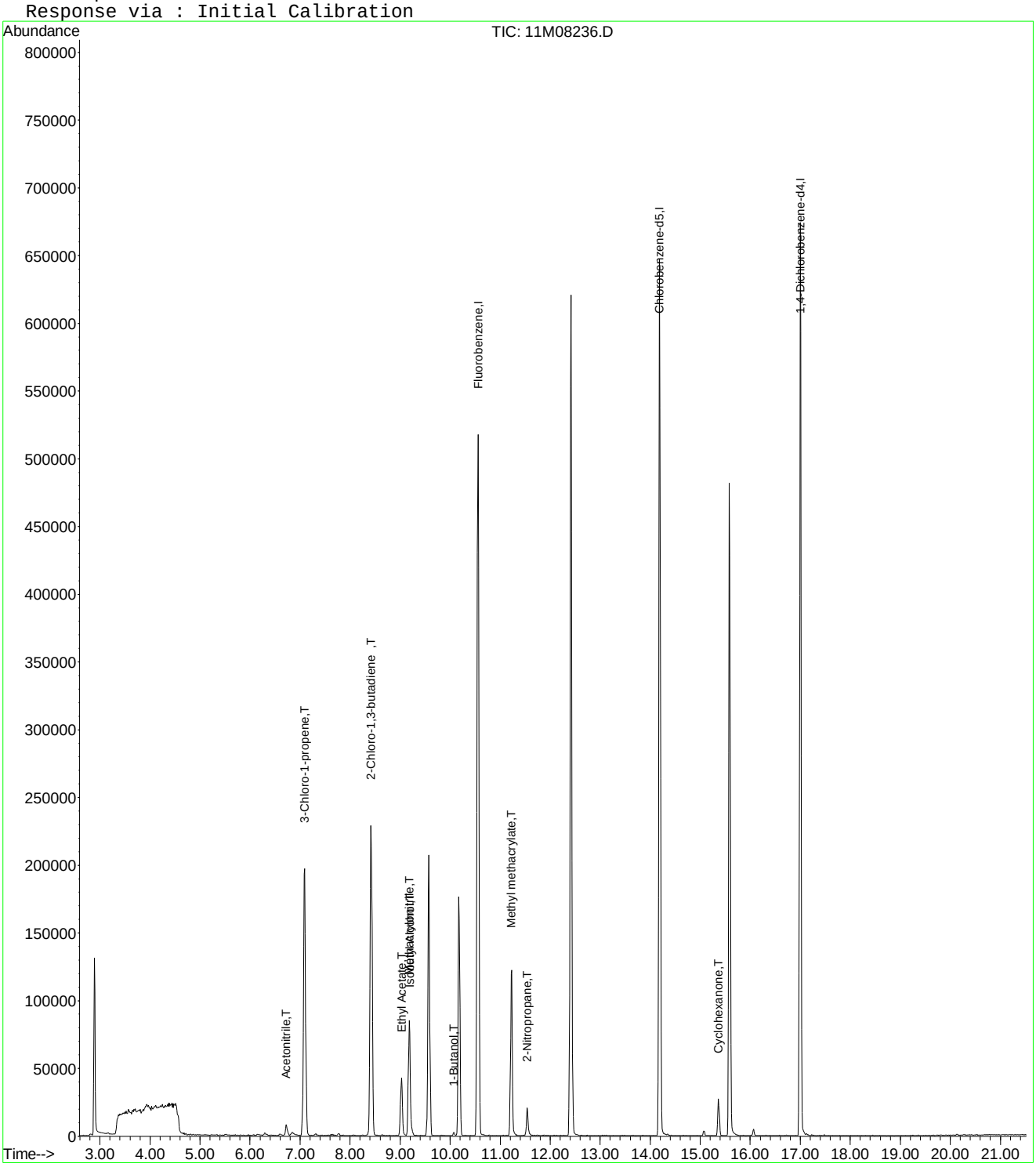

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08236.D Vial: 3
Acq On : 14 Jun 2015 10:30 Operator: TMB /DLW
Sample : WG527475-03 20ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28:06 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	610715	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	451165	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	232233	25.00 ug/L	-0.03

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M08236.D A9FOOWT.M Thu Aug 20 11:28:07 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08236.D Vial: 3
Acq On : 14 Jun 2015 10:30 Operator: TMB /DLW
Sample : WG527475-03 20ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration

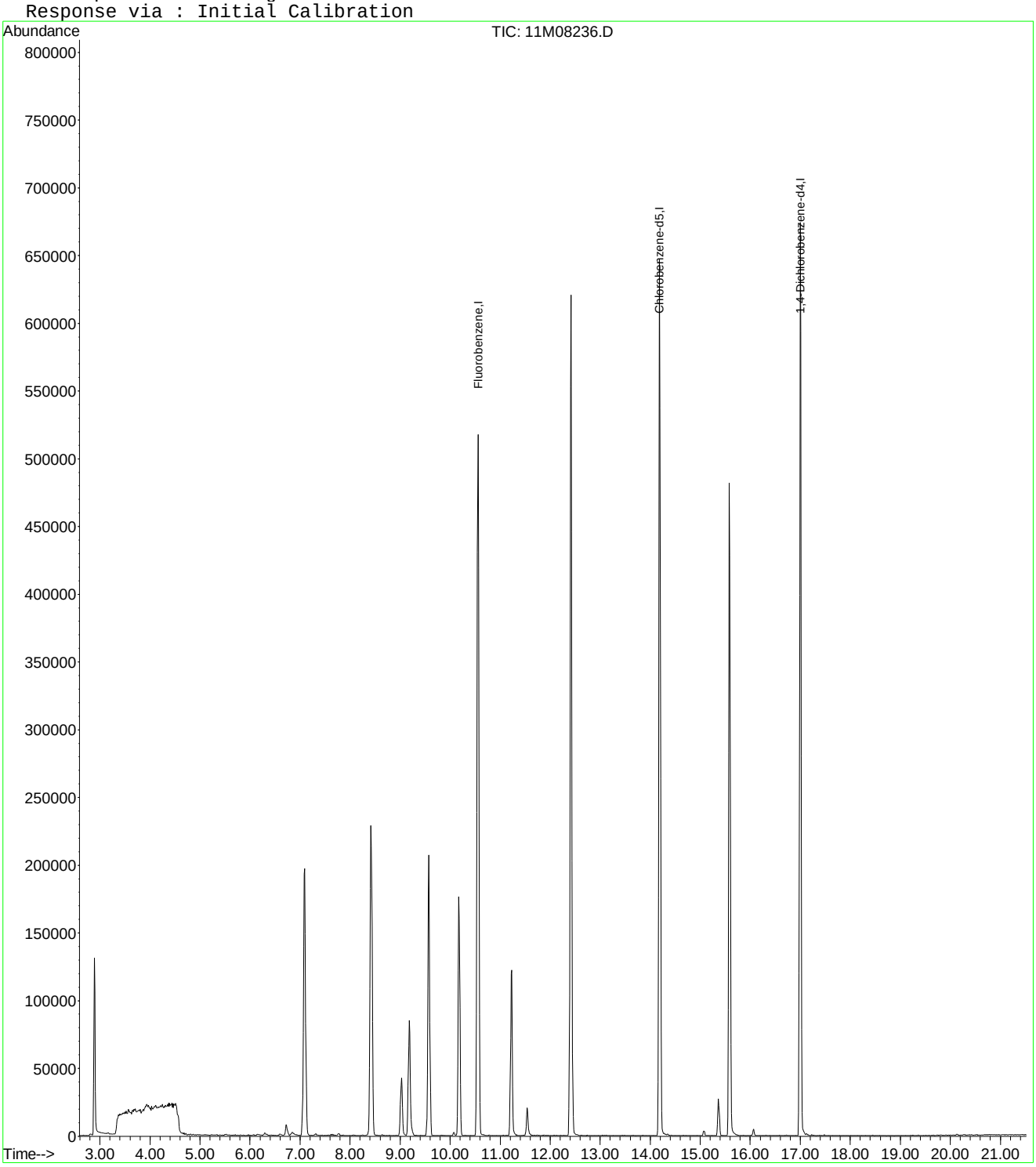

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08236.D Vial: 3
Acq On : 14 Jun 2015 10:30 Operator: TMB /DLW
Sample : WG527475-03 20ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43:48 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	610715	25.00 ug/L	0.00
12) Chlorobenzene-d5	14.19	117	451165	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.00	152	232233	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	10965	23.4093 ug/L	99
3) 3-Chloro-1-propene	7.09	41	181745	19.7730 ug/L	86
4) 2-Chloro-1,3-butadiene	8.42	53	204133	18.5003 ug/L	96
5) Methacrylonitrile	9.18	41	56411	19.8567 ug/L	84
6) Isobutyl Alcohol	9.19	43	6275	42.9238 ug/L	85
7) 1-Butanol	10.07	56	1474	19.0608 ug/L	93
8) Cyclohexanone	15.36	55	15226	21.6762 ug/L	98
9) 2-Nitropropane	11.54	43	14015	45.0214 ug/L #	72
10) Ethyl Acetate	9.03	43	70834	21.0227 ug/L	96
11) Methyl methacrylate	11.22	41	78843	20.1239 ug/L	93

(#) = qualifier out of range (m) = manual integration
11M08236.D A9FOOWT.M Thu Aug 20 11:43:48 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08236.D Vial: 3
Acq On : 14 Jun 2015 10:30 Operator: TMB /DLW
Sample : WG527475-03 20ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration

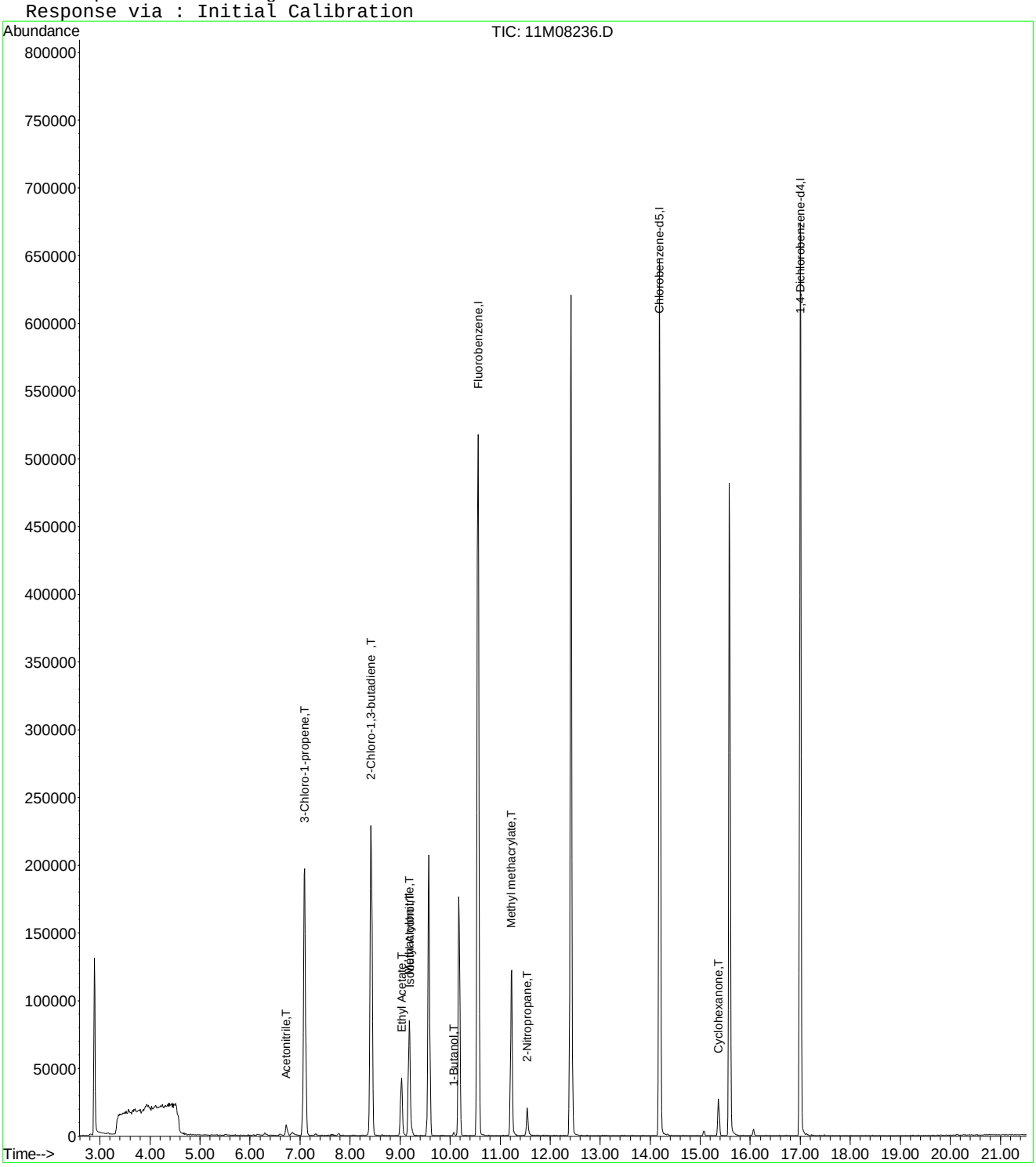

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061415\11M08236.D Vial: 3
Acq On : 14 Jun 2015 10:30 Operator: TMB /DLW
Sample : WG527475-03 20ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	23.4093	-17.0	100	0.00
3	T	3-Chloro-1-propene	20.0000	19.7730	1.1	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	18.5003	7.5	100	0.00
5	T	Methacrylonitrile	20.0000	19.8567	0.7	100	0.00
6	T	Isobutyl Alcohol	40.0000	42.9238	-7.3	100	0.00
7	T	1-Butanol	-1.0000	19.0608	0.0	100	0.00
8	T	Cyclohexanone	20.0000	21.6762	-8.4	100	0.00
9	T	2-Nitropropane	-1.0000	45.0214	0.0	0	0.00
10	T	Ethyl Acetate	20.0000	21.0227	-5.1	100	0.00
11	T	Methyl methacrylate	20.0000	20.1239	-0.6	100	0.00
12	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
13	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M08236.D A9FOOWT.M Thu Aug 20 11:44:30 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08237.D Vial: 4
Acq On : 14 Jun 2015 11:02 Operator: TMB /DLW
Sample : WG527475-04 50ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 11:24:26 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	593911	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.19	117	439398	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.00	152	227606	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	153812	23.3311 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.32%		
43) 1,2-Dichloroethane-d4	10.17	65	141347	19.7397 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 78.96%#		
57) Toluene-d8	12.42	98	530398	28.5803 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 114.32%#		
78) p-Bromofluorobenzene	15.58	95	184116	25.2799 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.12%		

Target Compounds					Qvalue
3) Chloromethane	3.68	50	1722	0.1669 ug/L #	66
13) Acetone	6.30	43	6340	3.6256 ug/L	95

(#) = qualifier out of range (m) = manual integration
11M08237.D 8260WTR.M Sun Jun 14 11:24:27 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08237.D Vial: 4
Acq On : 14 Jun 2015 11:02 Operator: TMB /DLW
Sample : WG527475-04 50ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 11:24 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration

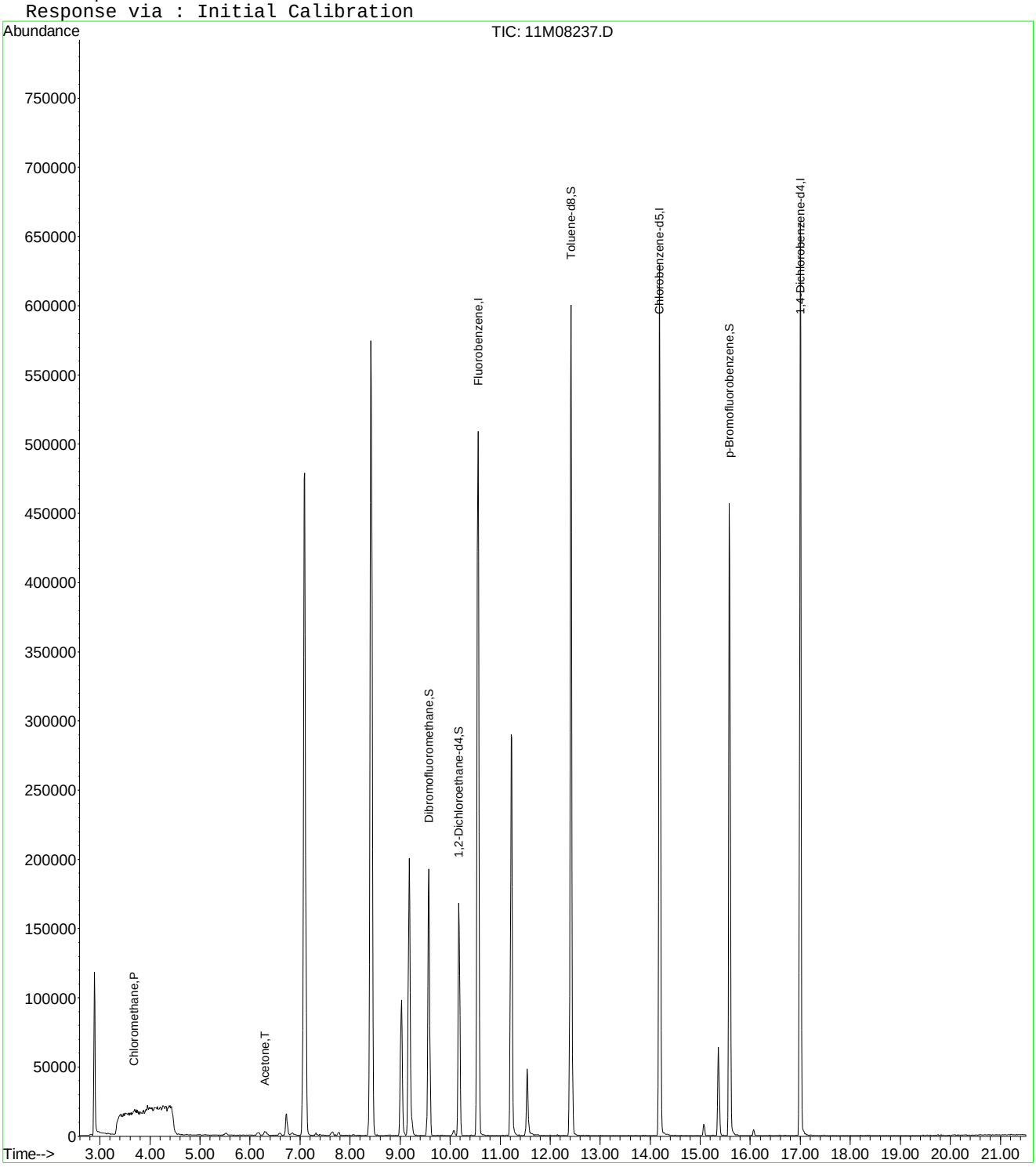

11M08237.D 8260WTR.M Sun Jun 14 11:24:27 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08237.D Vial: 4
Acq On : 14 Jun 2015 11:02 Operator: TMB /DLW
Sample : WG527475-04 50ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 09:43:56 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	593911	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	439398	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	227606	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	6.73	41	21370	45.0489 ug/L	93
3) 3-Chloro-1-propene	7.08	41	441208	42.7727 ug/L	85
4) 2-Chloro-1,3-butadiene	8.42	53	506427	47.9232 ug/L	96
5) Methacrylonitrile	9.18	41	133439	46.9416 ug/L	86
6) Isobutyl Alcohol	9.19	43	13722	125.9019 ug/L	88
7) 1-Butanol	10.06	56	3449	75.4914 ug/L #	8
8) Cyclohexanone	15.36	55	33575	42.7968 ug/L	96
9) 2-Nitropropane	11.54	43	32837	30.1492 ug/L #	75
10) Ethyl Acetate	9.03	43	158260	45.2705 ug/L	95
11) Methyl methacrylate	11.22	41	179947	47.7287 ug/L	89

(#) = qualifier out of range (m) = manual integration
11M08237.D A9FOOWT.M Tue Jun 16 09:43:57 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08237.D Vial: 4
Acq On : 14 Jun 2015 11:02 Operator: TMB /DLW
Sample : WG527475-04 50ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 9:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration

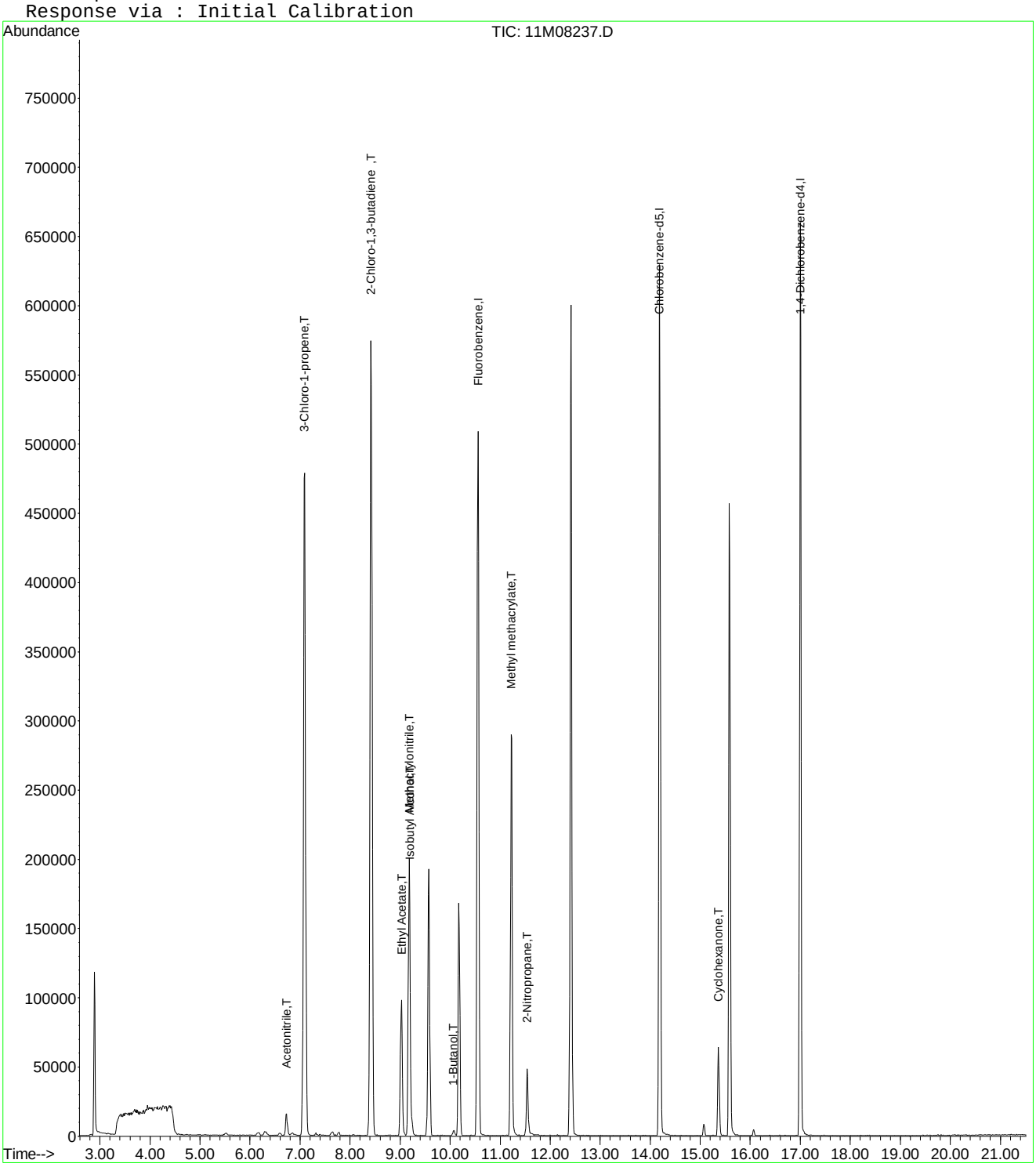

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08237.D Vial: 4
Acq On : 14 Jun 2015 11:02 Operator: TMB /DLW
Sample : WG527475-04 50ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28:07 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	593911	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	439398	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	227606	25.00 ug/L	-0.03

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M08237.D A9FOOWT.M Thu Aug 20 11:28:08 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08237.D Vial: 4
Acq On : 14 Jun 2015 11:02 Operator: TMB /DLW
Sample : WG527475-04 50ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration

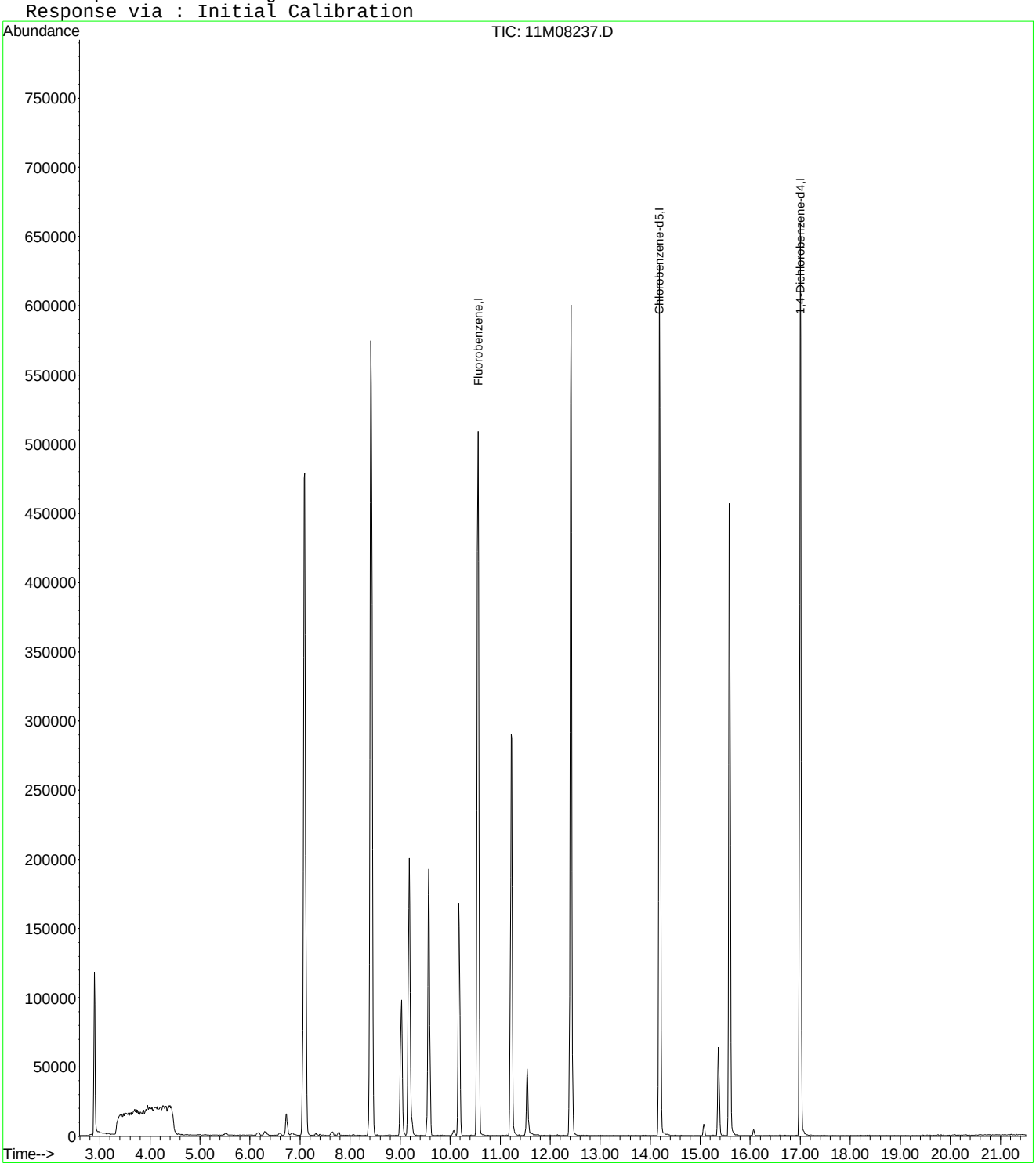

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08237.D Vial: 4
Acq On : 14 Jun 2015 11:02 Operator: TMB /DLW
Sample : WG527475-04 50ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43:49 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	593911	25.00 ug/L	0.00
12) Chlorobenzene-d5	14.19	117	439398	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.00	152	227606	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.73	41	21370	46.9139 ug/L	93
3) 3-Chloro-1-propene	7.08	41	441208	49.3594 ug/L	85
4) 2-Chloro-1,3-butadiene	8.42	53	506427	47.1955 ug/L	96
5) Methacrylonitrile	9.18	41	133439	48.2996 ug/L	86
6) Isobutyl Alcohol	9.19	43	13722	96.5203 ug/L	88
7) 1-Butanol	10.06	56	3449	45.8622 ug/L #	8
8) Cyclohexanone	15.36	55	33575	49.1507 ug/L	96
9) 2-Nitropropane	11.54	43	32837	62.5818 ug/L #	75
10) Ethyl Acetate	9.03	43	158260	48.2986 ug/L	95
11) Methyl methacrylate	11.22	41	179947	47.2293 ug/L	89

(#) = qualifier out of range (m) = manual integration
11M08237.D A9FOOWT.M Thu Aug 20 11:43:49 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08237.D Vial: 4
Acq On : 14 Jun 2015 11:02 Operator: TMB /DLW
Sample : WG527475-04 50ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration

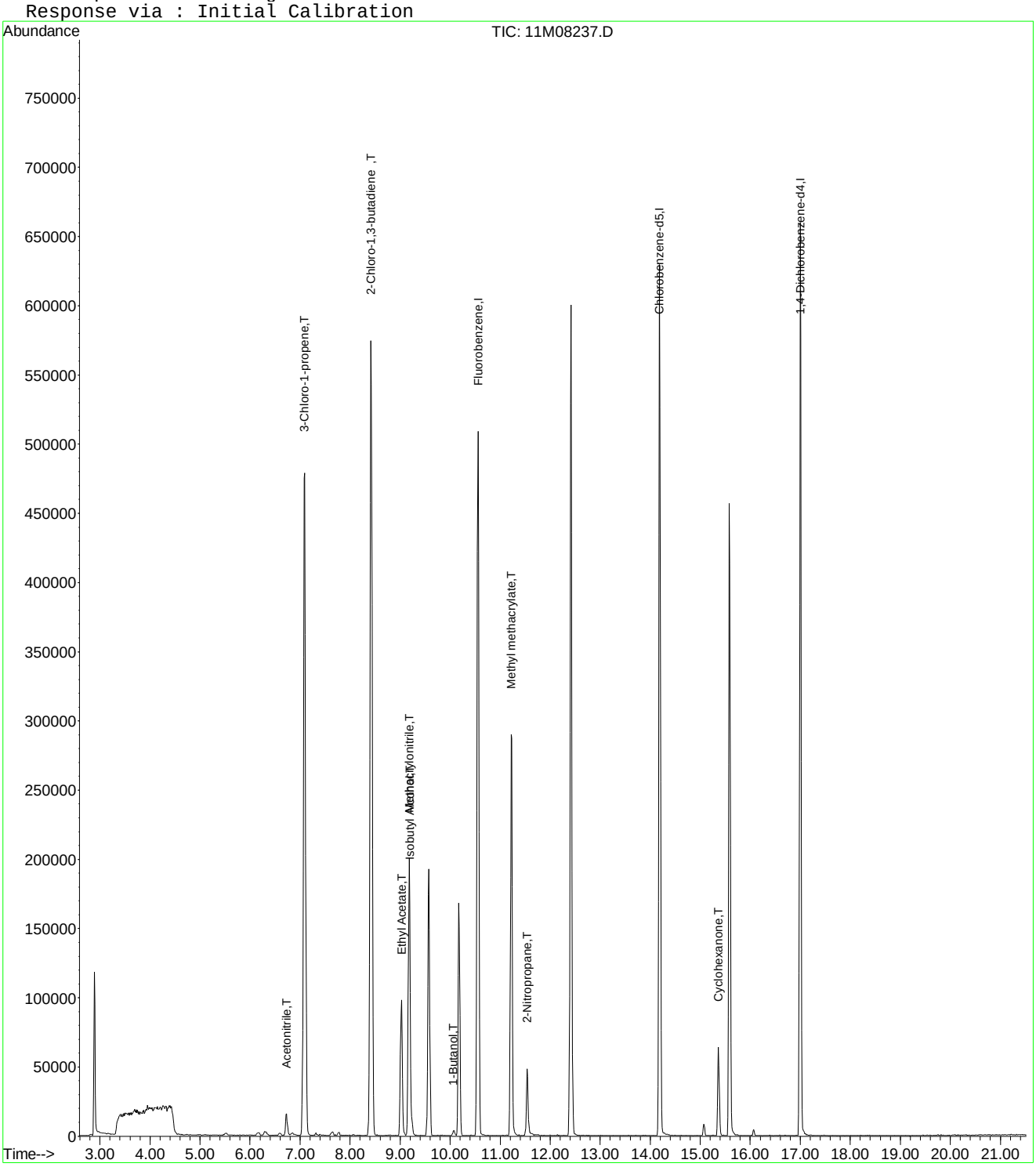

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061415\11M08237.D Vial: 4
Acq On : 14 Jun 2015 11:02 Operator: TMB /DLW
Sample : WG527475-04 50ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	46.9140	6.2	100	0.01
3	T	3-Chloro-1-propene	50.0000	49.3594	1.3	100	-0.01
4	T	2-Chloro-1,3-butadiene	50.0000	47.1955	5.6	100	0.00
5	T	Methacrylonitrile	50.0000	48.2996	3.4	100	0.00
6	T	Isobutyl Alcohol	100.0000	96.5203	3.5	100	0.00
7	T	1-Butanol	50.0000	45.8622	8.3	100	-0.01
8	T	Cyclohexanone	50.0000	49.1508	1.7	100	0.00
9	T	2-Nitropropane	50.0000	62.5818	-25.2	100	0.00
10	T	Ethyl Acetate	50.0000	48.2986	3.4	100	0.00
11	T	Methyl methacrylate	50.0000	47.2293	5.5	100	0.00
12	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
13	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M08237.D A9FOOWT.M Thu Aug 20 11:44:41 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08238.D Vial: 5
Acq On : 14 Jun 2015 11:34 Operator: TMB /DLW
Sample : WG527475-05 100ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 11:56:24 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	593660	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.19	117	435951	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.00	152	224898	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	154015	23.3717 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.48%		
43) 1,2-Dichloroethane-d4	10.17	65	141727	19.8012 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 79.20%#		
57) Toluene-d8	12.42	98	525710	28.5517 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 114.20%#		
78) p-Bromofluorobenzene	15.58	95	182017	25.2926 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.16%		

Target Compounds

					Qvalue
3) Chloromethane	3.68	50	2521	0.2445 ug/L	100
13) Acetone	6.30	43	8631	4.9378 ug/L	80
24) n-Hexane	7.78	57	2688	0.2479 ug/L #	72
29) 2-Butanone	8.85	43	412	0.1450 ug/L #	77

(#) = qualifier out of range (m) = manual integration
11M08238.D 8260WTR.M Sun Jun 14 11:56:26 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08238.D Vial: 5
Acq On : 14 Jun 2015 11:34 Operator: TMB /DLW
Sample : WG527475-05 100ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 11:56 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration

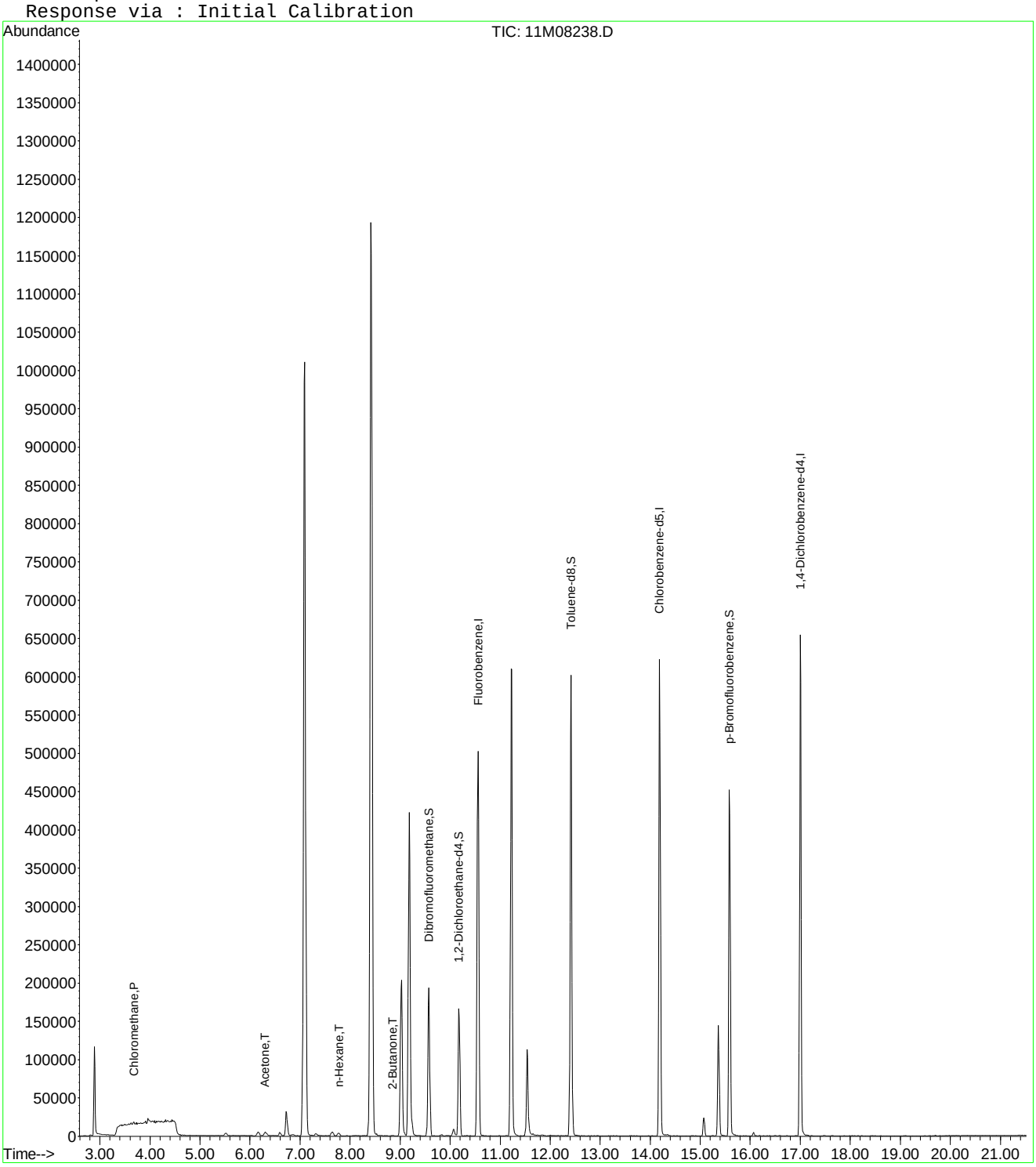

11M08238.D 8260WTR.M Sun Jun 14 11:56:26 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08238.D Vial: 5
Acq On : 14 Jun 2015 11:34 Operator: TMB /DLW
Sample : WG527475-05 100ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 09:43:58 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	593660	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	435951	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	224898	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	41783	88.1177 ug/L	97
3) 3-Chloro-1-propene	7.09	41	901667	87.4486 ug/L	84
4) 2-Chloro-1,3-butadiene	8.42	53	1055196	99.8955 ug/L	96
5) Methacrylonitrile	9.18	41	269812	94.9555 ug/L	83
6) Isobutyl Alcohol	9.19	43	28965	265.8717 ug/L	87
7) 1-Butanol	10.07	56	7719	169.0243 ug/L	87
8) Cyclohexanone	15.36	55	72878	92.9342 ug/L	95
9) 2-Nitropropane	11.54	43	76568	70.3304 ug/L	82
10) Ethyl Acetate	9.03	43	331707	94.9253 ug/L	95
11) Methyl methacrylate	11.22	41	375863	99.7350 ug/L	89

(#) = qualifier out of range (m) = manual integration
11M08238.D A9FOOWT.M Tue Jun 16 09:43:58 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08238.D Vial: 5
Acq On : 14 Jun 2015 11:34 Operator: TMB /DLW
Sample : WG527475-05 100ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 9:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration

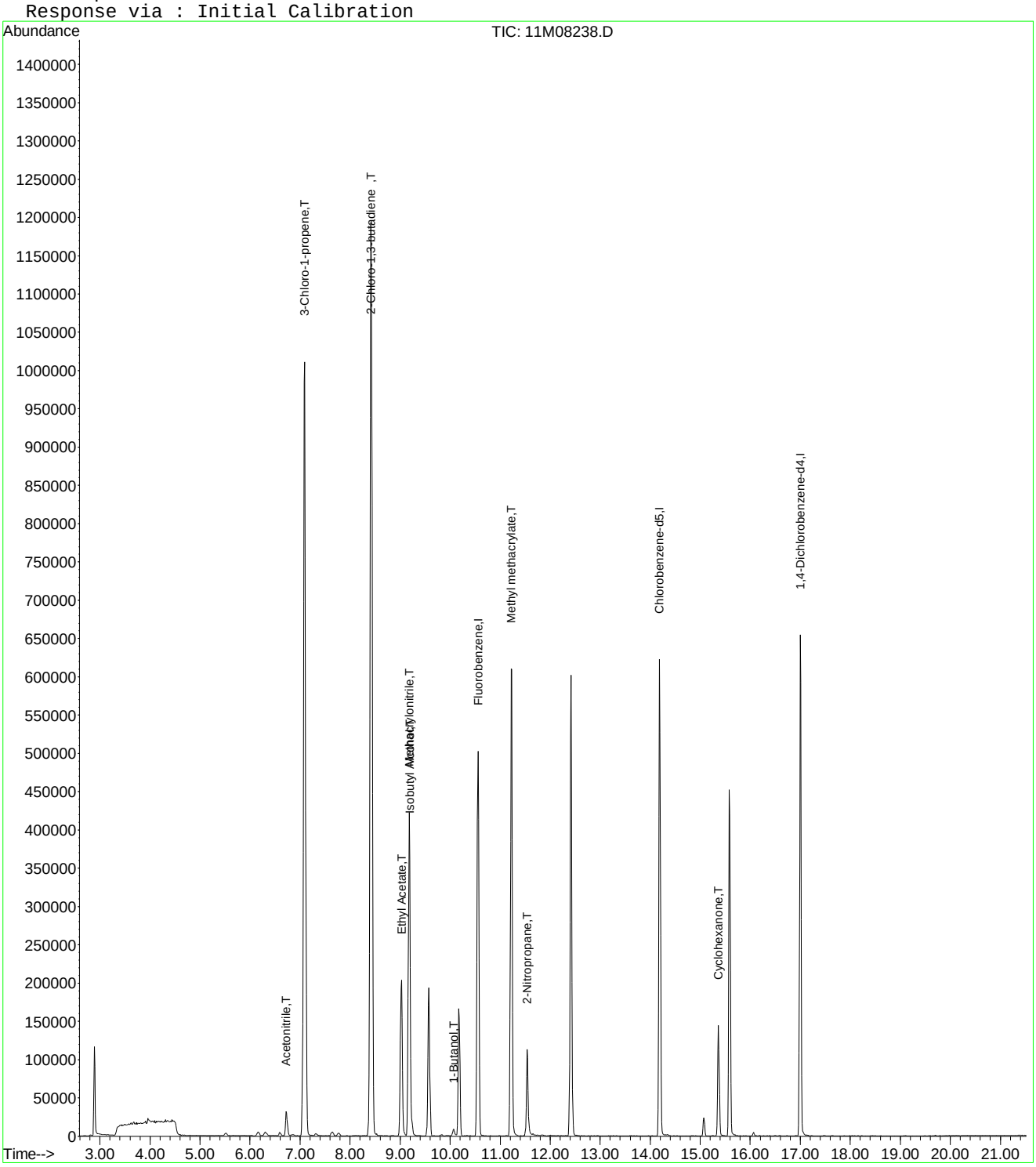

11M08238.D A9FOOWT.M Tue Jun 16 09:43:58 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08238.D Vial: 5
Acq On : 14 Jun 2015 11:34 Operator: TMB /DLW
Sample : WG527475-05 100ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28:09 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	593660	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	435951	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	224898	25.00 ug/L	-0.03

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M08238.D A9FOOWT.M Thu Aug 20 11:28:10 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08238.D Vial: 5
Acq On : 14 Jun 2015 11:34 Operator: TMB /DLW
Sample : WG527475-05 100ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration

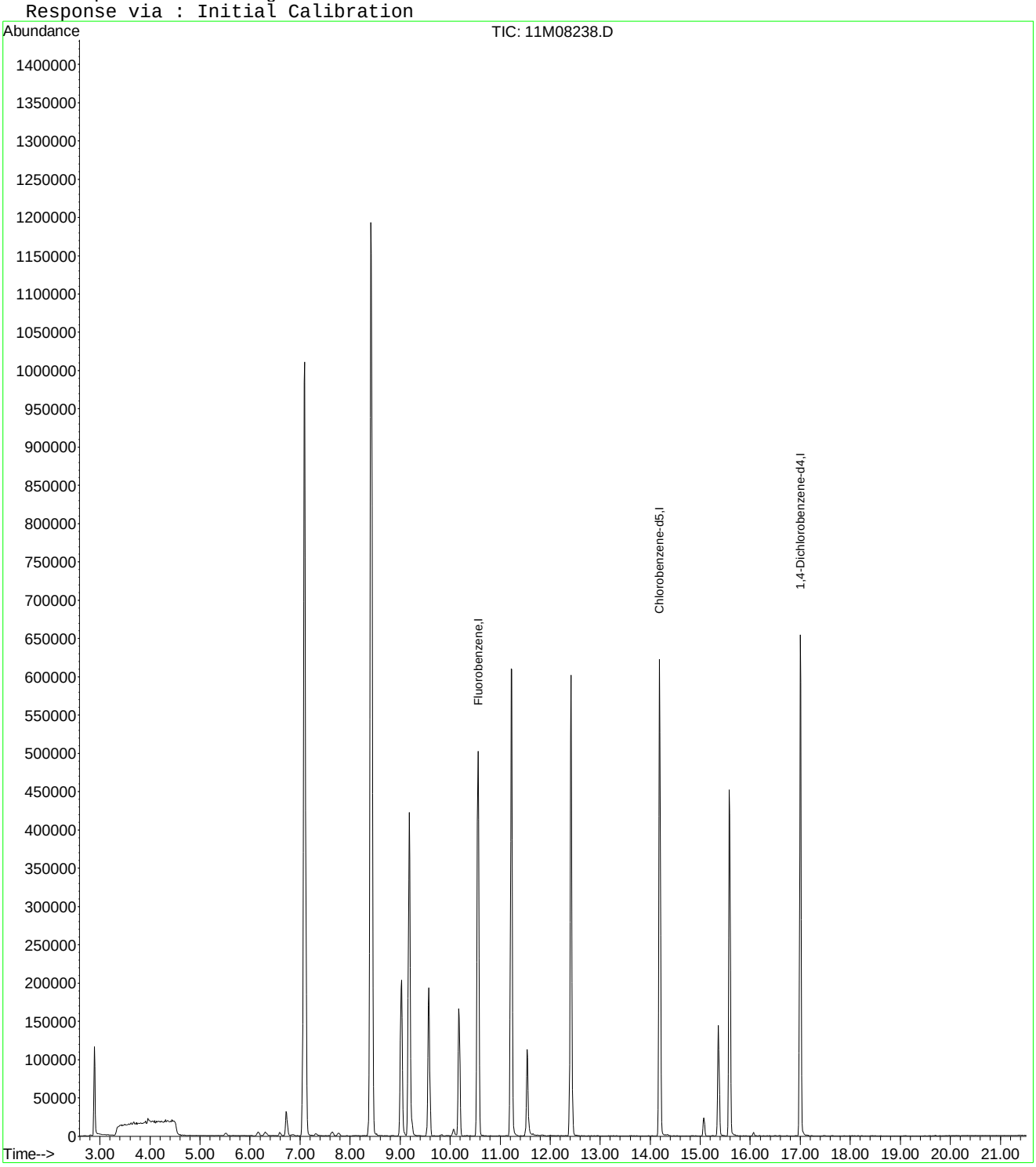

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08238.D Vial: 5
Acq On : 14 Jun 2015 11:34 Operator: TMB /DLW
Sample : WG527475-05 100ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43:50 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	593660	25.00 ug/L	0.00
12) Chlorobenzene-d5	14.19	117	435951	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.00	152	224898	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	41783	91.7658 ug/L	97
3) 3-Chloro-1-propene	7.09	41	901667	100.9151 ug/L	84
4) 2-Chloro-1,3-butadiene	8.42	53	1055196	98.3785 ug/L	96
5) Methacrylonitrile	9.18	41	269812	97.7026 ug/L	83
6) Isobutyl Alcohol	9.19	43	28965	203.8255 ug/L	87
7) 1-Butanol	10.07	56	7719	102.6849 ug/L	87
8) Cyclohexanone	15.36	55	72878	106.7319 ug/L	95
9) 2-Nitropropane	11.54	43	76568	102.5921 ug/L	82
10) Ethyl Acetate	9.03	43	331707	101.2749 ug/L	95
11) Methyl methacrylate	11.22	41	375863	98.6916 ug/L	89

(#) = qualifier out of range (m) = manual integration
11M08238.D A9FOOWT.M Thu Aug 20 11:43:50 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08238.D Vial: 5
Acq On : 14 Jun 2015 11:34 Operator: TMB /DLW
Sample : WG527475-05 100ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration

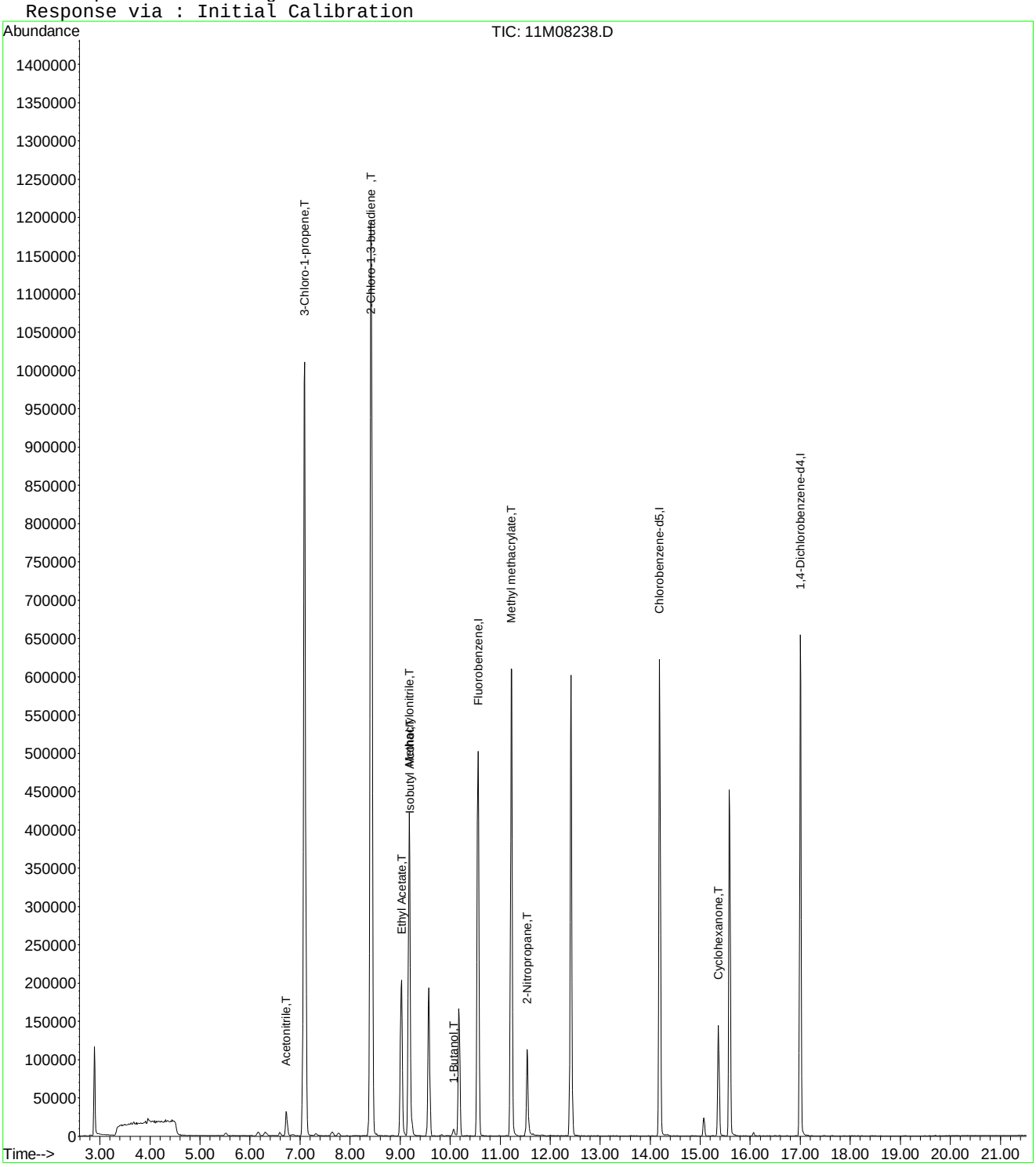

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061415\11M08238.D Vial: 5
Acq On : 14 Jun 2015 11:34 Operator: TMB /DLW
Sample : WG527475-05 100ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	91.7658	8.2	100	0.00
3	T	3-Chloro-1-propene	100.0000	100.9152	-0.9	100	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	98.3785	1.6	100	0.00
5	T	Methacrylonitrile	100.0000	97.7026	2.3	100	0.00
6	T	Isobutyl Alcohol	200.0000	203.8255	-1.9	100	0.00
7	T	1-Butanol	100.0000	102.6849	-2.7	100	0.00
8	T	Cyclohexanone	100.0000	106.7319	-6.7	100	0.00
9	T	2-Nitropropane	100.0000	102.5921	-2.6	100	0.00
10	T	Ethyl Acetate	100.0000	101.2749	-1.3	100	0.00
11	T	Methyl methacrylate	100.0000	98.6916	1.3	100	0.00
12	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
13	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M08238.D A9FOOWT.M Thu Aug 20 11:44:51 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08239.D Vial: 6
Acq On : 14 Jun 2015 12:06 Operator: TMB /DLW
Sample : WG527475-06 200ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 12:28:24 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	594644	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.19	117	435974	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.00	152	229058	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	154998	23.4820 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.92%		
43) 1,2-Dichloroethane-d4	10.17	65	140981	19.6644 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 78.64%#		
57) Toluene-d8	12.42	98	523704	28.4412 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 113.76%#		
78) p-Bromofluorobenzene	15.58	95	185106	25.2547 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.00%		

Target Compounds

					Qvalue
3) Chloromethane	3.68	50	2432	0.2354 ug/L #	41
6) Bromomethane	4.80	94	741	0.2165 ug/L	88
13) Acetone	6.30	43	14437	8.2458 ug/L	88
24) n-Hexane	7.78	57	4836	0.4453 ug/L #	80
29) 2-Butanone	8.84	43	1521	0.5342 ug/L #	77
39) Cyclohexane	9.83	56	2702	0.1826 ug/L #	90
47) Methylcyclohexane	11.23	83	2411	0.2326 ug/L #	1
70) Ethylbenzene	14.34	106	1287	0.1439 ug/L	84
71) m-,p-Xylene	14.34	106	1287	0.1218 ug/L #	4

(#) = qualifier out of range (m) = manual integration
11M08239.D 8260WTR.M Sun Jun 14 12:28:25 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08239.D Vial: 6
Acq On : 14 Jun 2015 12:06 Operator: TMB /DLW
Sample : WG527475-06 200ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 12:28 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration

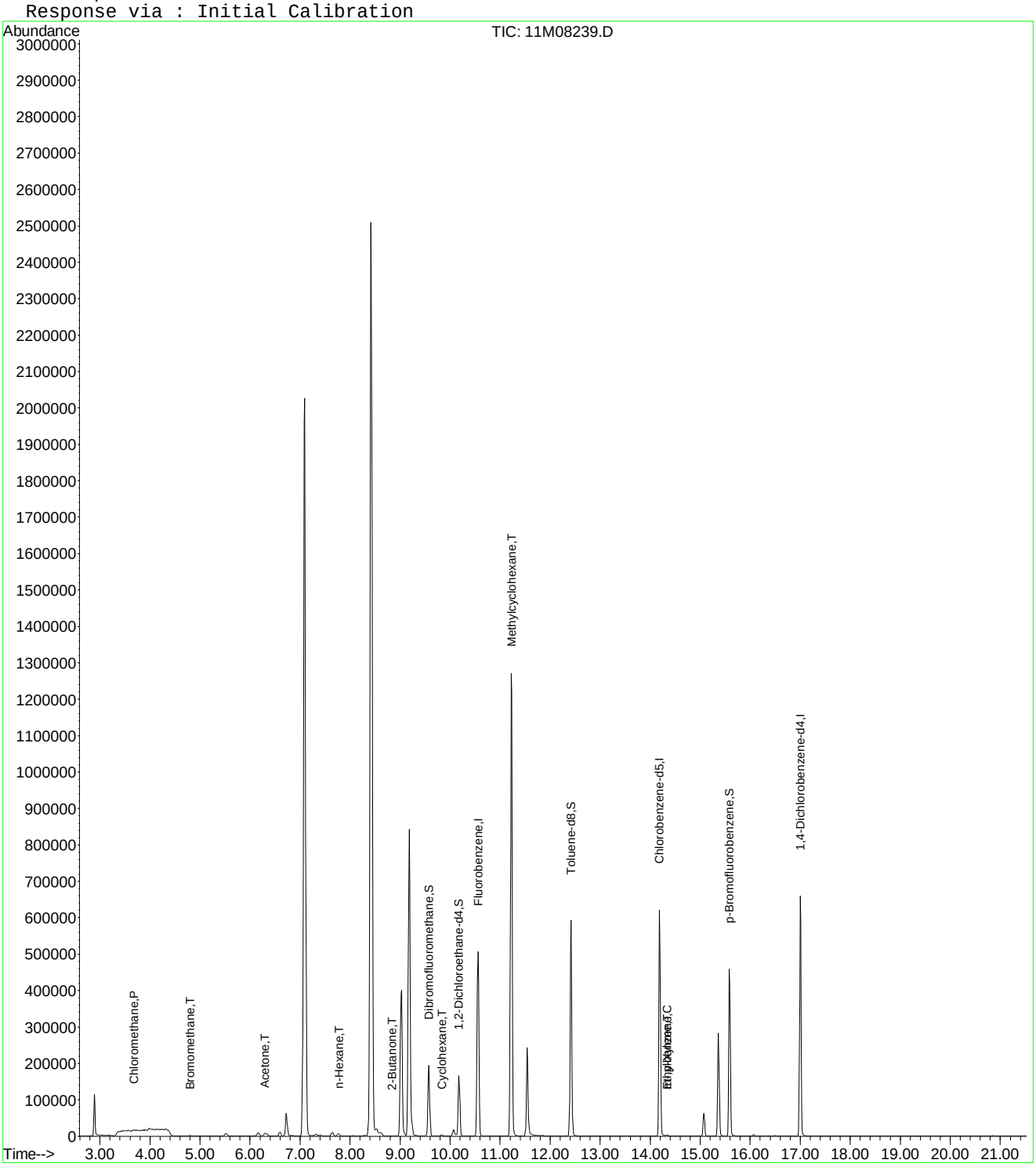

11M08239.D 8260WTR.M Sun Jun 14 12:28:25 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08239.D Vial: 6
Acq On : 14 Jun 2015 12:06 Operator: TMB /DLW
Sample : WG527475-06 200ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 09:43:59 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.56	96	594644	25.00	ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	435974	25.00	ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	229058	25.00	ug/L	-0.03

Target Compounds						Qvalue
2) Acetonitrile	6.72	41	84573	178.0639	ug/L	99
3) 3-Chloro-1-propene	7.09	41	1784664	172.8000	ug/L	83
4) 2-Chloro-1,3-butadiene	8.42	53	2139008	202.1651	ug/L	95
5) Methacrylonitrile	9.18	41	534300	187.7261	ug/L	82
6) Isobutyl Alcohol	9.19	43	51366	470.7117	ug/L	98
7) 1-Butanol	10.07	56	15596	340.9432	ug/L #	87
8) Cyclohexanone	15.36	55	142194	181.0260	ug/L	95
9) 2-Nitropropane	11.54	43	168554	154.5666	ug/L	84
10) Ethyl Acetate	9.03	43	649446	185.5458	ug/L	94
11) Methyl methacrylate	11.22	41	751654	199.1209	ug/L	88

(#) = qualifier out of range (m) = manual integration
11M08239.D A9FOOWT.M Tue Jun 16 09:43:59 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08239.D Vial: 6
Acq On : 14 Jun 2015 12:06 Operator: TMB /DLW
Sample : WG527475-06 200ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 9:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration

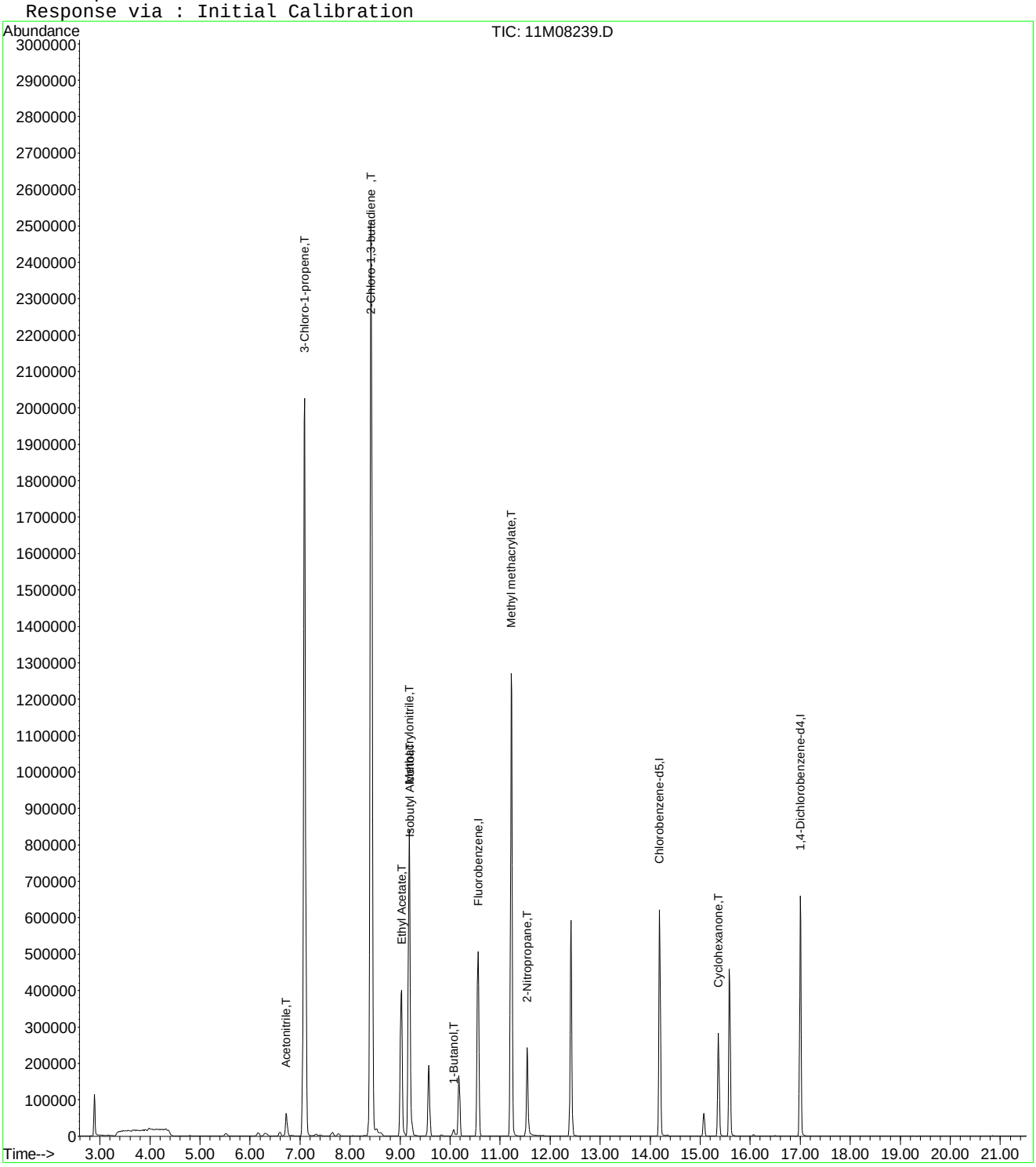

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08239.D Vial: 6
Acq On : 14 Jun 2015 12:06 Operator: TMB /DLW
Sample : WG527475-06 200ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28:11 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	594644	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	435974	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	229058	25.00 ug/L	-0.03

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M08239.D A9FOOWT.M Thu Aug 20 11:28:11 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08239.D Vial: 6
Acq On : 14 Jun 2015 12:06 Operator: TMB /DLW
Sample : WG527475-06 200ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration

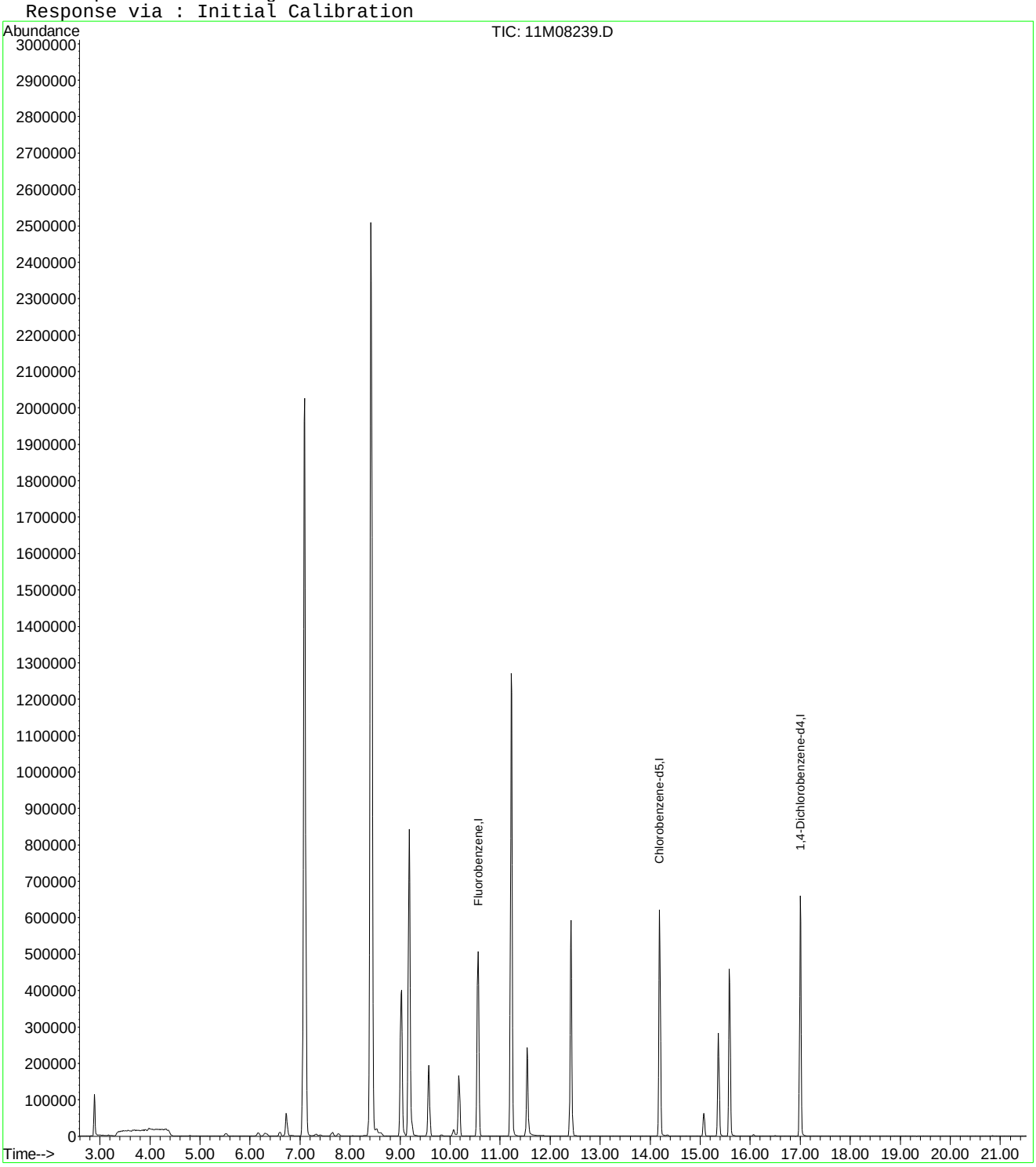

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08239.D Vial: 6
Acq On : 14 Jun 2015 12:06 Operator: TMB /DLW
Sample : WG527475-06 200ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43:51 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	594644	25.00 ug/L	0.00
12) Chlorobenzene-d5	14.19	117	435974	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.00	152	229058	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	84573	185.4358 ug/L	99
3) 3-Chloro-1-propene	7.09	41	1784664	199.4102 ug/L	83
4) 2-Chloro-1,3-butadiene	8.42	53	2139008	199.0949 ug/L	95
5) Methacrylonitrile	9.18	41	534300	193.1571 ug/L	82
6) Isobutyl Alcohol	9.19	43	51337	360.6585 ug/L	98
7) 1-Butanol	10.07	56	15596	207.1283 ug/L #	87
8) Cyclohexanone	15.36	55	142194	207.9025 ug/L	95
9) 2-Nitropropane	11.54	43	168554	186.4698 ug/L	84
10) Ethyl Acetate	9.03	43	649446	197.9570 ug/L	94
11) Methyl methacrylate	11.22	41	751654	197.0377 ug/L	88

(#) = qualifier out of range (m) = manual integration
11M08239.D A9FOOWT.M Thu Aug 20 11:43:51 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08239.D Vial: 6
Acq On : 14 Jun 2015 12:06 Operator: TMB /DLW
Sample : WG527475-06 200ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration

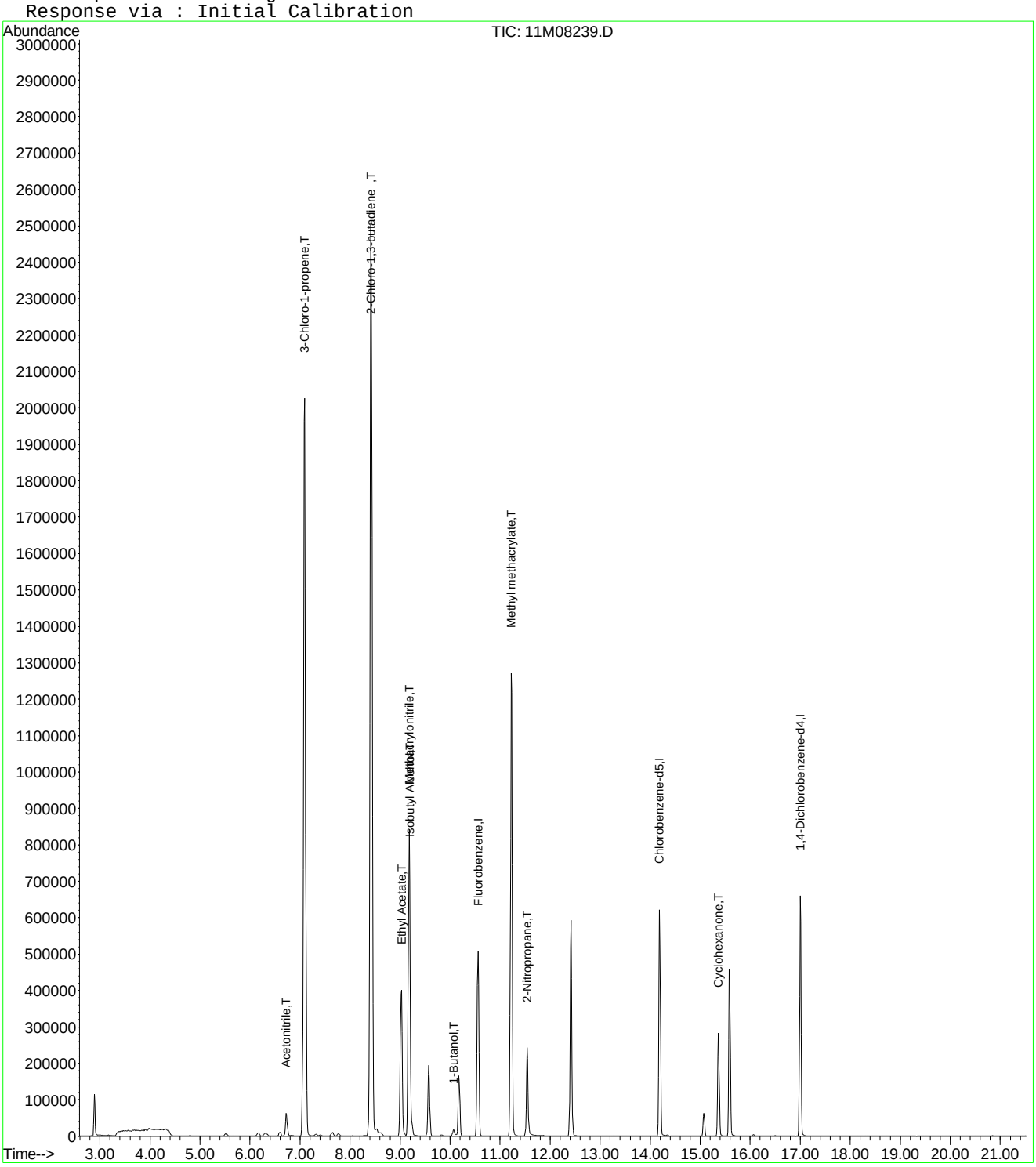

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08240.D Vial: 7
Acq On : 14 Jun 2015 12:38 Operator: TMB /DLW
Sample : WG527475-07 300ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 13:00:23 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	590021	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.19	117	427539	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.00	152	226251	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	154989	23.6646 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.64%		
43) 1,2-Dichloroethane-d4	10.17	65	137616	19.3454 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 77.40%#		
57) Toluene-d8	12.42	98	526940	29.1815 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 116.72%#		
78) p-Bromofluorobenzene	15.58	95	183651	25.3670 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.48%		

Target Compounds

					Qvalue
3) Chloromethane	3.68	50	4067	0.3968 ug/L	98
6) Bromomethane	4.81	94	1456	0.4286 ug/L	94
11) Acrolein	6.23	56	2665	2.6647 ug/L #	63
13) Acetone	6.30	43	17405	10.0188 ug/L	87
18) Methyl acetate	7.03	43	1109	0.1829 ug/L #	67
20) Carbon Disulfide	7.31	76	3126	0.1557 ug/L #	88
24) n-Hexane	7.78	57	7639	0.7089 ug/L #	89
29) 2-Butanone	8.84	43	1699	0.6014 ug/L #	77
30) Propionitrile	9.00	54	221	0.2481 ug/L #	1
39) Cyclohexane	9.84	56	3351	0.2282 ug/L #	68
71) m-,p-Xylene	14.34	106	1591	0.1535 ug/L #	17

(#) = qualifier out of range (m) = manual integration
11M08240.D 8260WTR.M Sun Jun 14 13:00:23 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08240.D Vial: 7
Acq On : 14 Jun 2015 12:38 Operator: TMB /DLW
Sample : WG527475-07 300ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 13:00 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration

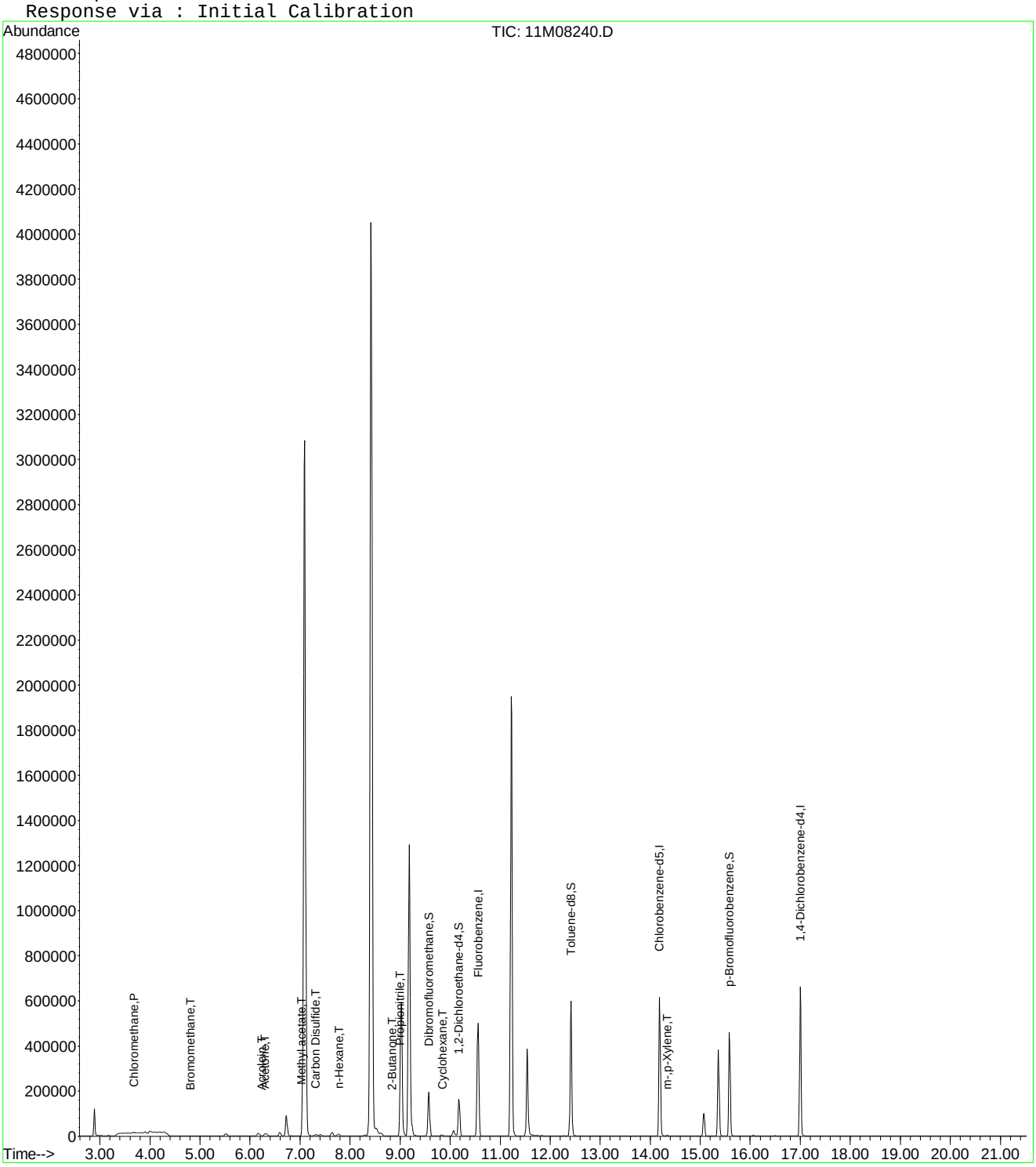

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08240.D Vial: 7
Acq On : 14 Jun 2015 12:38 Operator: TMB /DLW
Sample : WG527475-07 300ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 09:44:00 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	590021	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	427539	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	226251	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	124797	264.8121 ug/L	99
3) 3-Chloro-1-propene	7.09	41	2683921	261.9067 ug/L	83
4) 2-Chloro-1,3-butadiene	8.42	53	3409409	324.7599 ug/L	95
5) Methacrylonitrile	9.18	41	809195	286.5380 ug/L	82
6) Isobutyl Alcohol	9.19	43	83440	770.6251 ug/L	88
7) 1-Butanol	10.07	56	21640	476.7773 ug/L	91
8) Cyclohexanone	15.36	55	191378	245.5507 ug/L	95
9) 2-Nitropropane	11.54	43	277273	256.2558 ug/L	85
10) Ethyl Acetate	9.03	43	962378	277.1043 ug/L #	93
11) Methyl methacrylate	11.22	41	1142167	304.9426 ug/L	88

(#) = qualifier out of range (m) = manual integration
11M08240.D A9FOOWT.M Tue Jun 16 09:44:01 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08240.D Vial: 7
Acq On : 14 Jun 2015 12:38 Operator: TMB /DLW
Sample : WG527475-07 300ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 9:44 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration

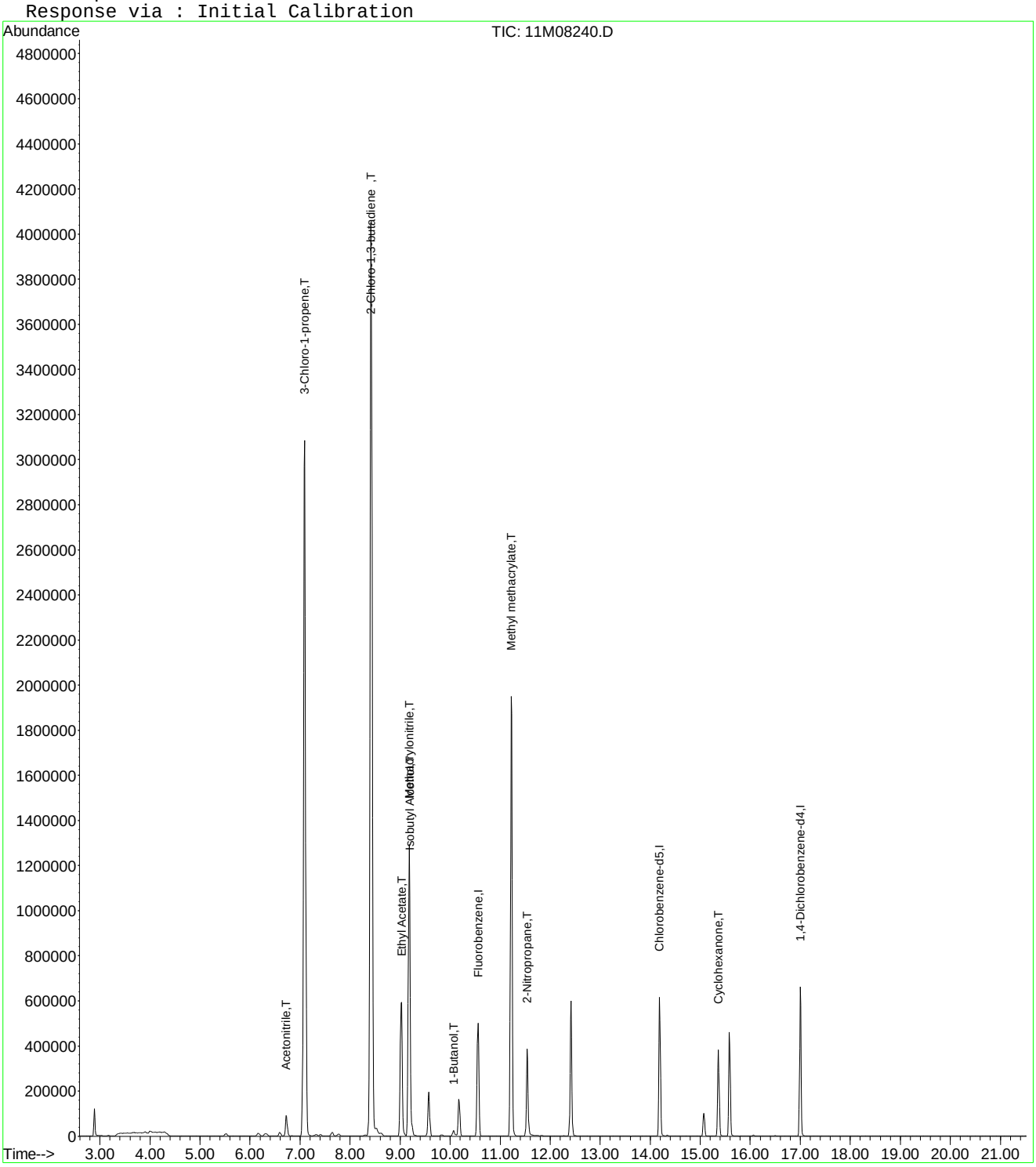

11M08240.D A9FOOWT.M Tue Jun 16 09:44:01 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08240.D Vial: 7
Acq On : 14 Jun 2015 12:38 Operator: TMB /DLW
Sample : WG527475-07 300ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28:12 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	590021	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	427539	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	226251	25.00 ug/L	-0.03

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M08240.D A9FOOWT.M Thu Aug 20 11:28:12 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08240.D Vial: 7
Acq On : 14 Jun 2015 12:38 Operator: TMB /DLW
Sample : WG527475-07 300ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration

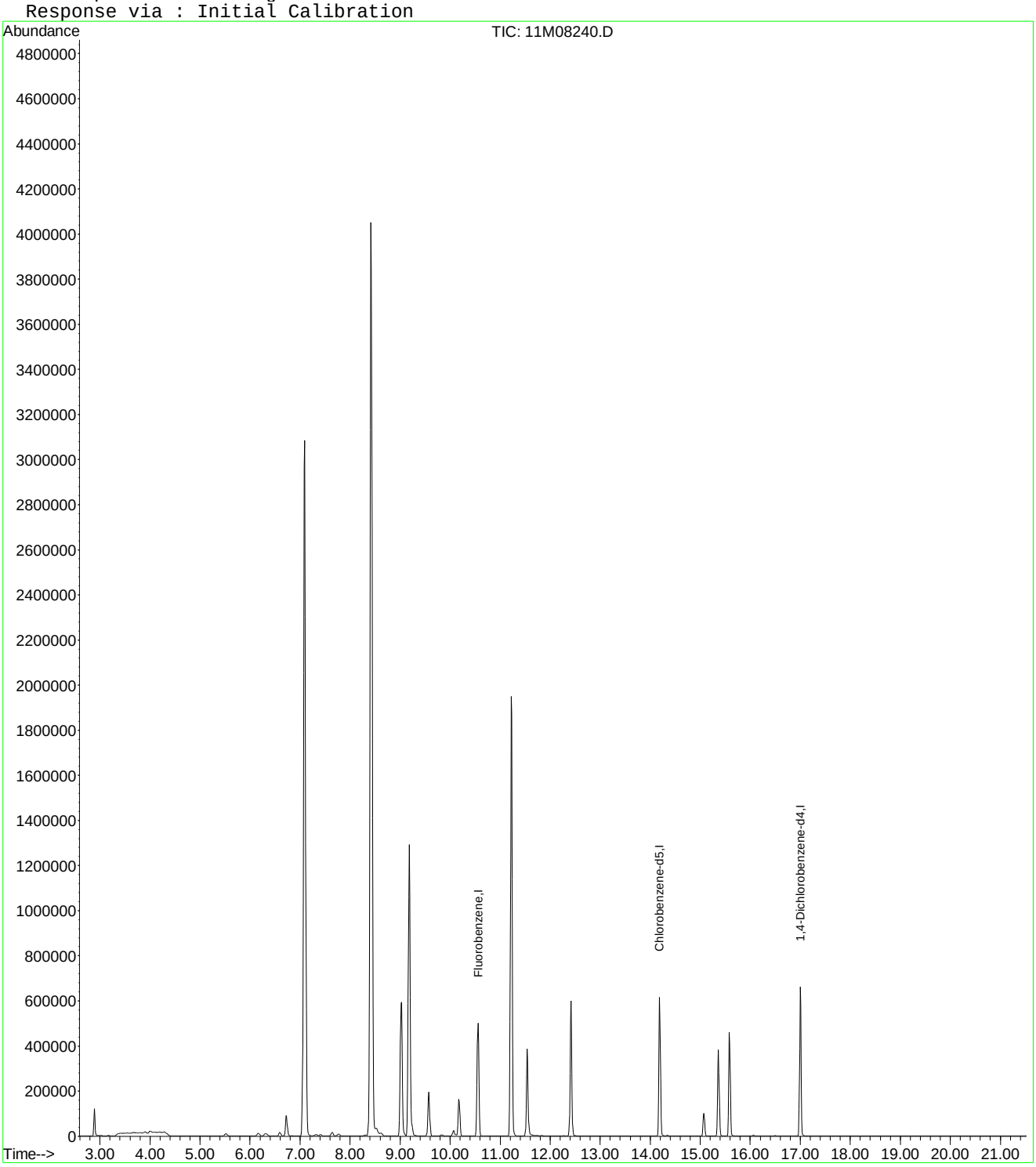

11M08240.D A9FOOWT.M Thu Aug 20 11:28:13 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08240.D Vial: 7
Acq On : 14 Jun 2015 12:38 Operator: TMB /DLW
Sample : WG527475-07 300ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43:52 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	590021	25.00 ug/L	0.00
12) Chlorobenzene-d5	14.19	117	427539	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.00	152	226251	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	124797	275.7754 ug/L	99
3) 3-Chloro-1-propene	7.09	41	2683921	302.2388 ug/L	83
4) 2-Chloro-1,3-butadiene	8.42	53	3409409	319.8280 ug/L	95
5) Methacrylonitrile	9.18	41	809195	294.8276 ug/L	82
6) Isobutyl Alcohol	9.19	43	83440	590.7851 ug/L	88
7) 1-Butanol	10.07	56	21640	289.6496 ug/L	91
8) Cyclohexanone	15.36	55	191378	282.0071 ug/L	95
9) 2-Nitropropane	11.54	43	277273	287.7263 ug/L	85
10) Ethyl Acetate	9.03	43	962378	295.6400 ug/L #	93
11) Methyl methacrylate	11.22	41	1142167	301.7522 ug/L	88

(#) = qualifier out of range (m) = manual integration
11M08240.D A9FOOWT.M Thu Aug 20 11:43:53 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08240.D Vial: 7
Acq On : 14 Jun 2015 12:38 Operator: TMB /DLW
Sample : WG527475-07 300ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration

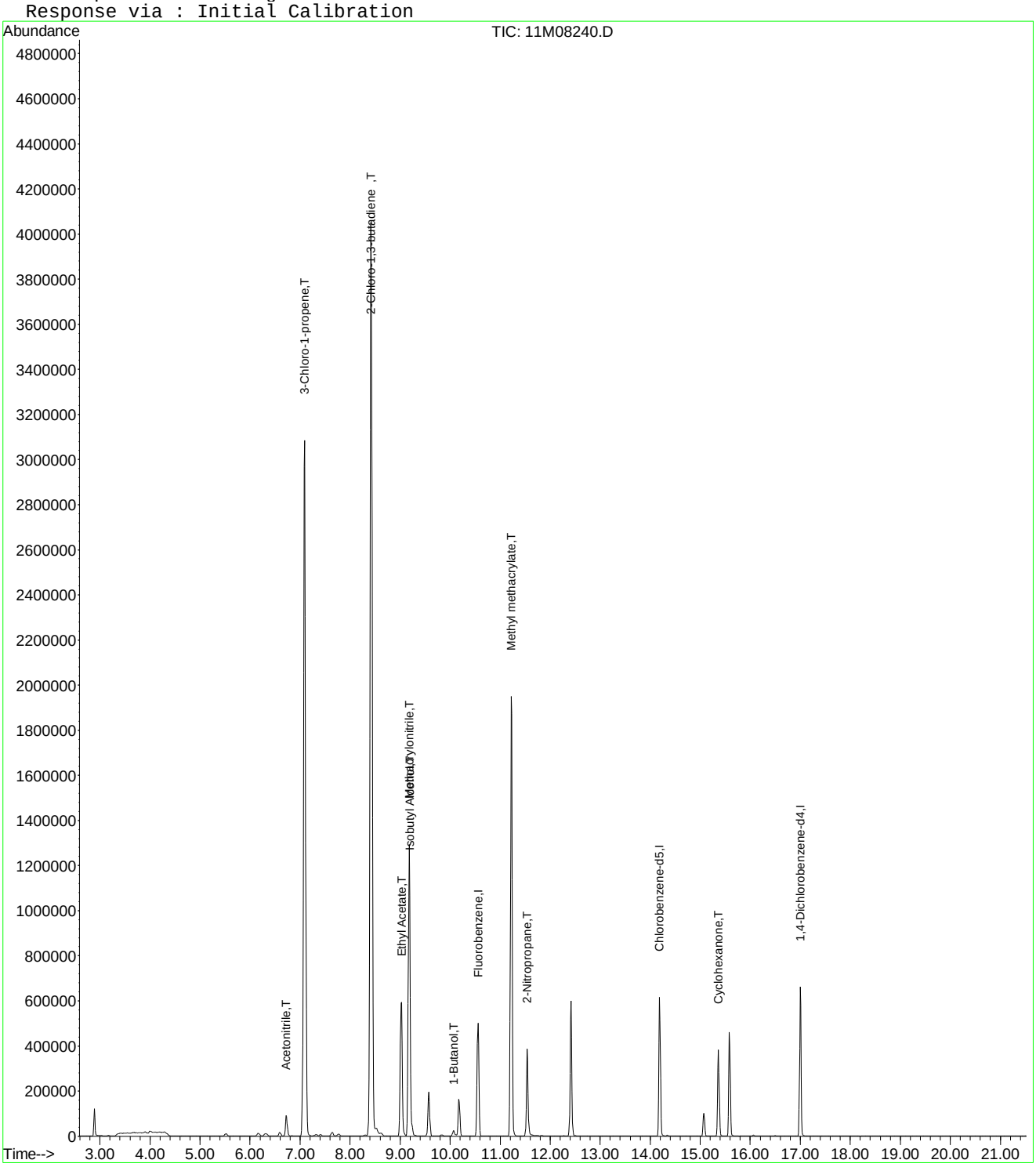

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08241.D Vial: 8
Acq On : 14 Jun 2015 13:10 Operator: TMB /DLW
Sample : WG527475-08 400ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 13:32:12 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	602921	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.19	117	438769	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.00	152	234608	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	157490	23.5320 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.12%		
43) 1,2-Dichloroethane-d4	10.17	65	142445	19.5958 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 78.40%#		
57) Toluene-d8	12.42	98	529319	28.5630 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 114.24%#		
78) p-Bromofluorobenzene	15.58	95	184124	24.5264 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.12%		

Target Compounds

					Qvalue
3) Chloromethane	3.67	50	5951	0.5682 ug/L	86
4) Vinyl Chloride	3.90	62	1145	0.1556 ug/L #	42
6) Bromomethane	4.81	94	1631	0.4699 ug/L #	56
11) Acrolein	6.25	56	3616	3.5382 ug/L #	49
13) Acetone	6.30	43	20681	11.6499 ug/L	94
18) Methyl acetate	7.02	43	2450	0.3954 ug/L #	67
19) Methylene Chloride	7.28	84	869	0.1218 ug/L #	49
20) Carbon Disulfide	7.31	76	4210	0.2052 ug/L	97
24) n-Hexane	7.77	57	9223	0.8376 ug/L #	93
29) 2-Butanone	8.83	43	2572	0.8910 ug/L #	77
31) 2,2-Dichloropropane	9.03	77	1535	0.1632 ug/L #	41
39) Cyclohexane	9.83	56	5053	0.3367 ug/L	91
71) m-,p-Xylene	14.34	106	2254	0.2119 ug/L #	36

(#) = qualifier out of range (m) = manual integration
11M08241.D 8260WTR.M Sun Jun 14 13:32:14 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08241.D Vial: 8
Acq On : 14 Jun 2015 13:10 Operator: TMB /DLW
Sample : WG527475-08 400ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 13:32 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration

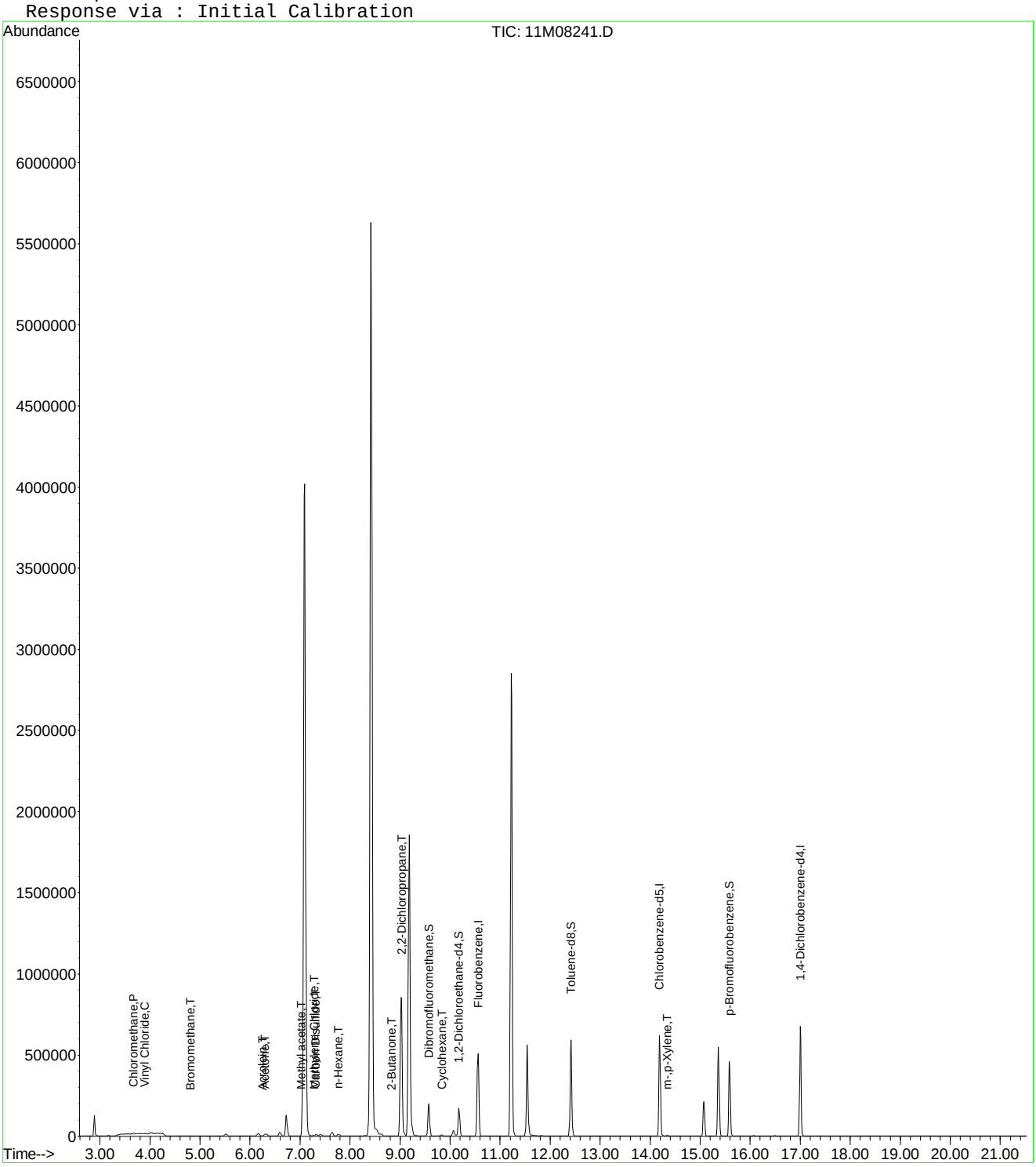

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08241.D Vial: 8
Acq On : 14 Jun 2015 13:10 Operator: TMB /DLW
Sample : WG527475-08 400ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 09:44:01 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	602921	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	438769	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	234608	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	173440	360.1555 ug/L	100
3) 3-Chloro-1-propene	7.09	41	3550959	339.1014 ug/L	82
4) 2-Chloro-1,3-butadiene	8.42	53	4600620	428.8513 ug/L	94
5) Methacrylonitrile	9.18	41	1153886	399.8518 ug/L	82
6) Isobutyl Alcohol	9.19	43	123004	1111.7192 ug/L	89
7) 1-Butanol	10.07	56	32355	697.6005 ug/L #	86
8) Cyclohexanone	15.36	55	274055	344.1074 ug/L	95
9) 2-Nitropropane	11.54	43	405951	367.1528 ug/L	87
10) Ethyl Acetate	9.02	43	1363919	384.3202 ug/L #	93
11) Methyl methacrylate	11.22	41	1637406	427.8110 ug/L	87

(#) = qualifier out of range (m) = manual integration
11M08241.D A9FOOWT.M Tue Jun 16 09:44:02 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08241.D Vial: 8
Acq On : 14 Jun 2015 13:10 Operator: TMB /DLW
Sample : WG527475-08 400ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 9:44 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration

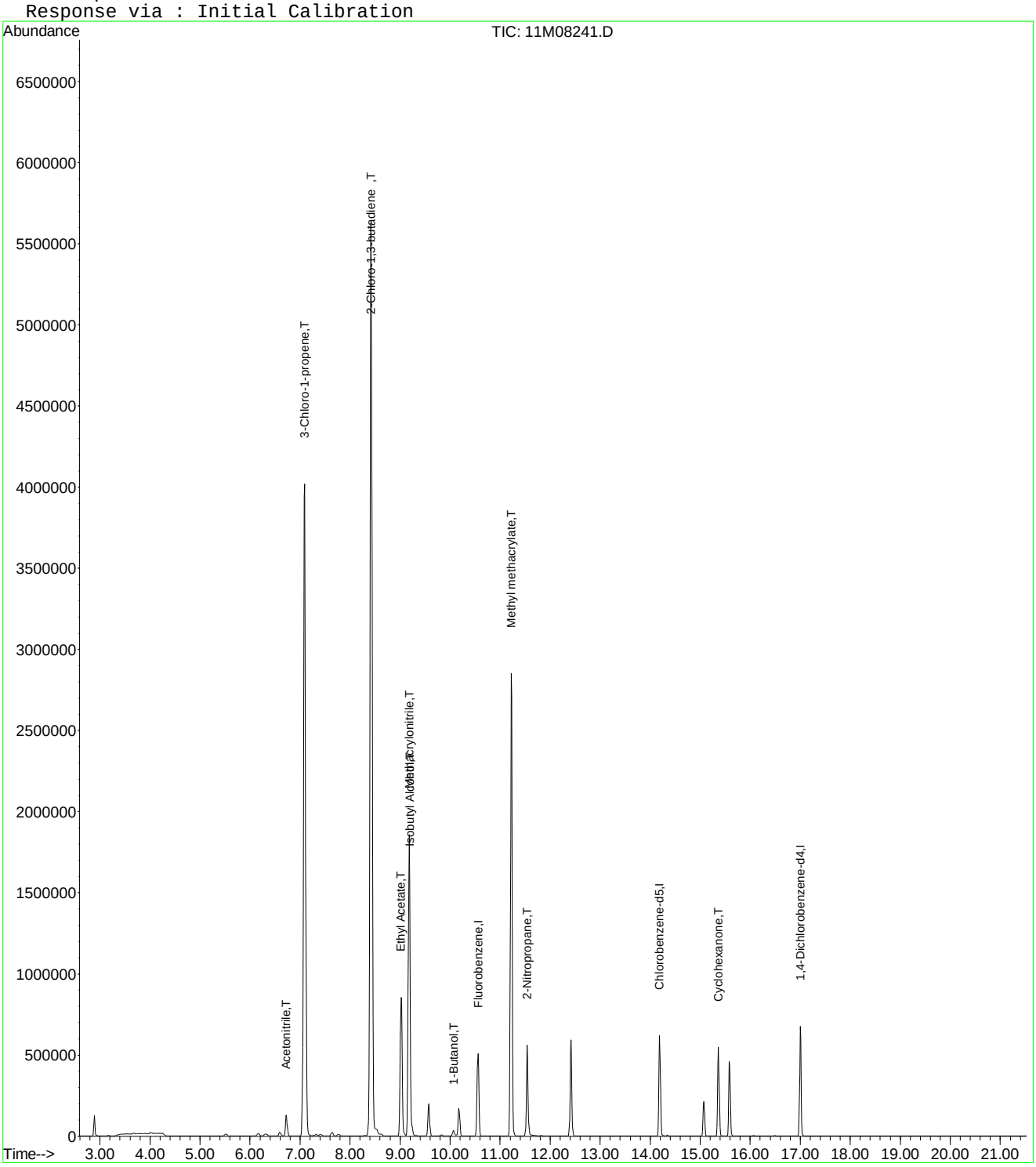

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08241.D Vial: 8
Acq On : 14 Jun 2015 13:10 Operator: TMB /DLW
Sample : WG527475-08 400ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28:13 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	602921	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	438769	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	234608	25.00 ug/L	-0.03

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M08241.D A9FOOWT.M Thu Aug 20 11:28:14 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08241.D Vial: 8
Acq On : 14 Jun 2015 13:10 Operator: TMB /DLW
Sample : WG527475-08 400ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration

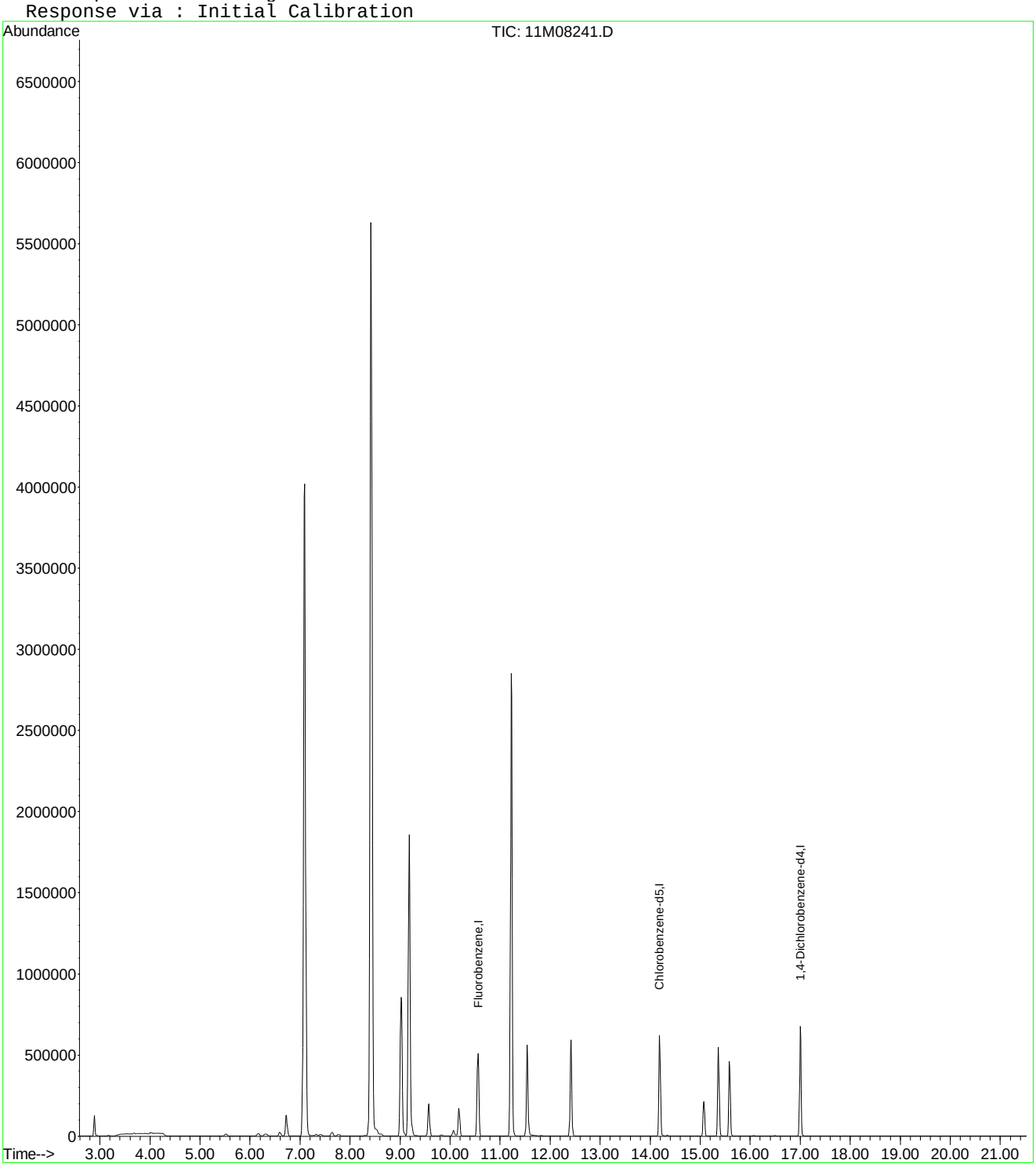

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08241.D Vial: 8
Acq On : 14 Jun 2015 13:10 Operator: TMB /DLW
Sample : WG527475-08 400ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43:53 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	602921	25.00 ug/L	0.00
12) Chlorobenzene-d5	14.19	117	438769	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.00	152	234608	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	173440	375.0660 ug/L	100
3) 3-Chloro-1-propene	7.09	41	3550959	391.3211 ug/L	82
4) 2-Chloro-1,3-butadiene	8.42	53	4600620	422.3386 ug/L	94
5) Methacrylonitrile	9.18	41	1153886	411.4196 ug/L	82
6) Isobutyl Alcohol	9.19	43	123004	852.2785 ug/L	89
7) 1-Butanol	10.07	56	32355	423.8032 ug/L #	86
8) Cyclohexanone	15.36	55	274055	395.1962 ug/L	95
9) 2-Nitropropane	11.54	43	405951	398.1514 ug/L	87
10) Ethyl Acetate	9.02	43	1363919	410.0276 ug/L #	93
11) Methyl methacrylate	11.22	41	1637406	423.3352 ug/L	87

(#) = qualifier out of range (m) = manual integration
11M08241.D A9FOOWT.M Thu Aug 20 11:43:54 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08241.D Vial: 8
Acq On : 14 Jun 2015 13:10 Operator: TMB /DLW
Sample : WG527475-08 400ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration

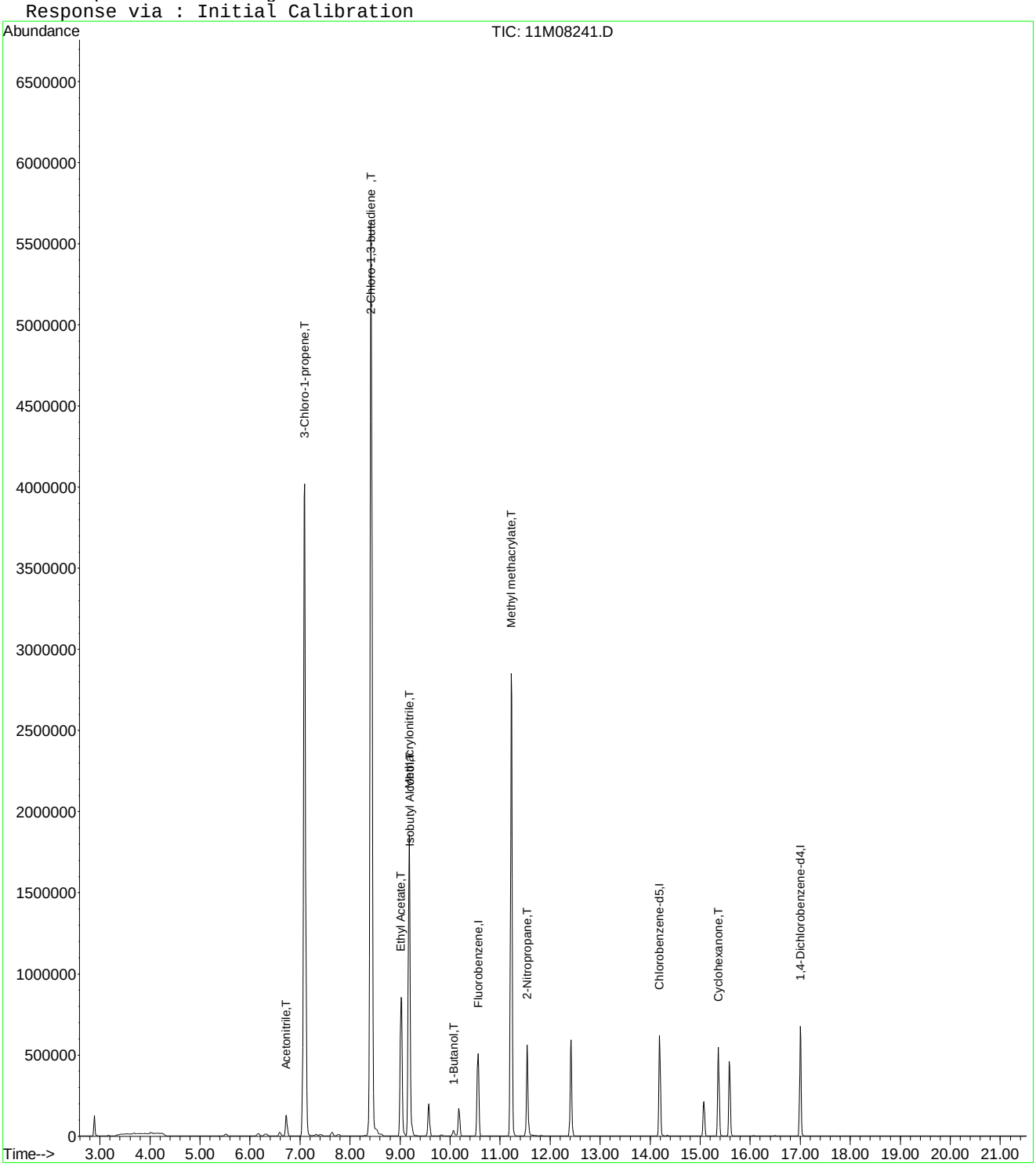

11M08241.D A9FOOWT.M Thu Aug 20 11:43:54 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08242.D Vial: 9
Acq On : 14 Jun 2015 13:42 Operator: TMB /DLW
Sample : WG527475-09 500ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 14:04:11 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	597347	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.19	117	436979	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.00	152	232858	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	155779	23.4935 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.96%		
43) 1,2-Dichloroethane-d4	10.17	65	141894	19.7022 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 78.80%#		
57) Toluene-d8	12.42	98	528602	28.6412 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 114.56%#		
78) p-Bromofluorobenzene	15.58	95	185769	24.9315 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.72%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.22	85	1211	0.1346 ug/L #	65
3) Chloromethane	3.68	50	8612	0.8299 ug/L	97
4) Vinyl Chloride	3.90	62	1110	0.1522 ug/L #	42
6) Bromomethane	4.80	94	872	0.2536 ug/L	68
11) Acrolein	6.25	56	4513	4.4571 ug/L	75
13) Acetone	6.30	43	20816	11.8354 ug/L	98
18) Methyl acetate	7.02	43	2826	0.4604 ug/L #	67
19) Methylene Chloride	7.26	84	1446	0.2045 ug/L	95
20) Carbon Disulfide	7.31	76	5502	0.2707 ug/L #	81
24) n-Hexane	7.77	57	12135	1.1123 ug/L #	96
29) 2-Butanone	8.83	43	2711	0.9479 ug/L #	77
30) Propionitrile	9.00	54	625	0.6931 ug/L #	1
31) 2,2-Dichloropropane	9.03	77	1917	0.2057 ug/L #	41
39) Cyclohexane	9.84	56	6427	0.4323 ug/L	96
71) m-,p-Xylene	14.34	106	3239	0.3057 ug/L	58

(#) = qualifier out of range (m) = manual integration
11M08242.D 8260WTR.M Sun Jun 14 14:04:12 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08242.D Vial: 9
Acq On : 14 Jun 2015 13:42 Operator: TMB /DLW
Sample : WG527475-09 500ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 14:04 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration

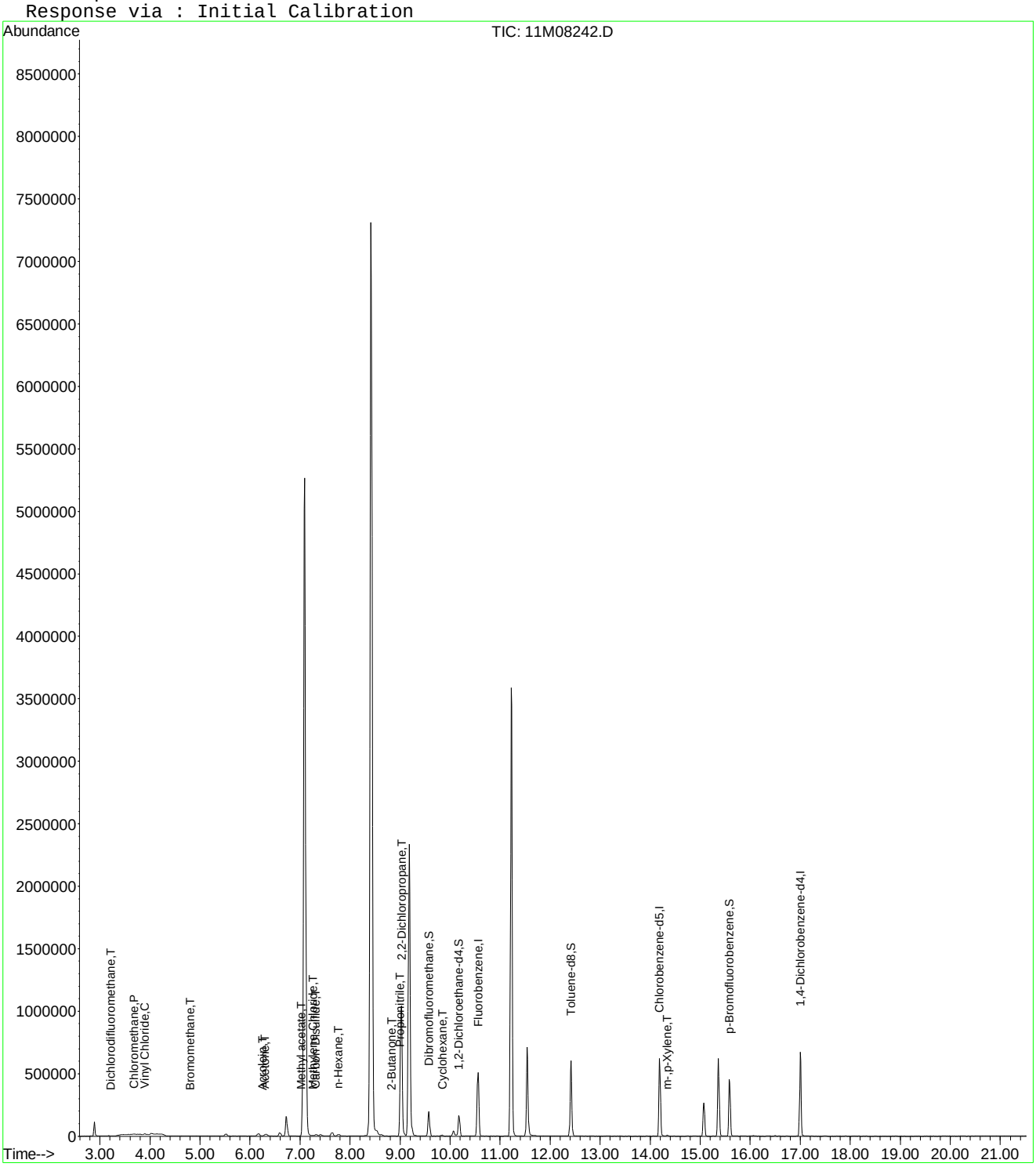

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08242.D Vial: 9
Acq On : 14 Jun 2015 13:42 Operator: TMB /DLW
Sample : WG527475-09 500ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 09:44:02 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.56	96	597347	25.00	ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	436979	25.00	ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	232858	25.00	ug/L	-0.03

Target Compounds						Qvalue
2) Acetonitrile	6.72	41	213542	447.5667	ug/L	100
3) 3-Chloro-1-propene	7.09	41	4596340	443.0265	ug/L	80
4) 2-Chloro-1,3-butadiene	8.42	53	5927514	557.6949	ug/L	92
5) Methacrylonitrile	9.18	41	1420105	496.6956	ug/L	79
6) Isobutyl Alcohol	9.19	43	141621	1291.9249	ug/L	95
7) 1-Butanol	10.07	56	37640	819.1222	ug/L	86
8) Cyclohexanone	15.36	55	308601	391.0996	ug/L	95
9) 2-Nitropropane	11.54	43	527973	481.9685	ug/L	88
10) Ethyl Acetate	9.03	43	1662142	472.7227	ug/L #	93
11) Methyl methacrylate	11.22	41	2052004	541.1374	ug/L	86

(#) = qualifier out of range (m) = manual integration
11M08242.D A9FOOWT.M Tue Jun 16 09:44:03 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08242.D Vial: 9
Acq On : 14 Jun 2015 13:42 Operator: TMB /DLW
Sample : WG527475-09 500ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 9:44 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration

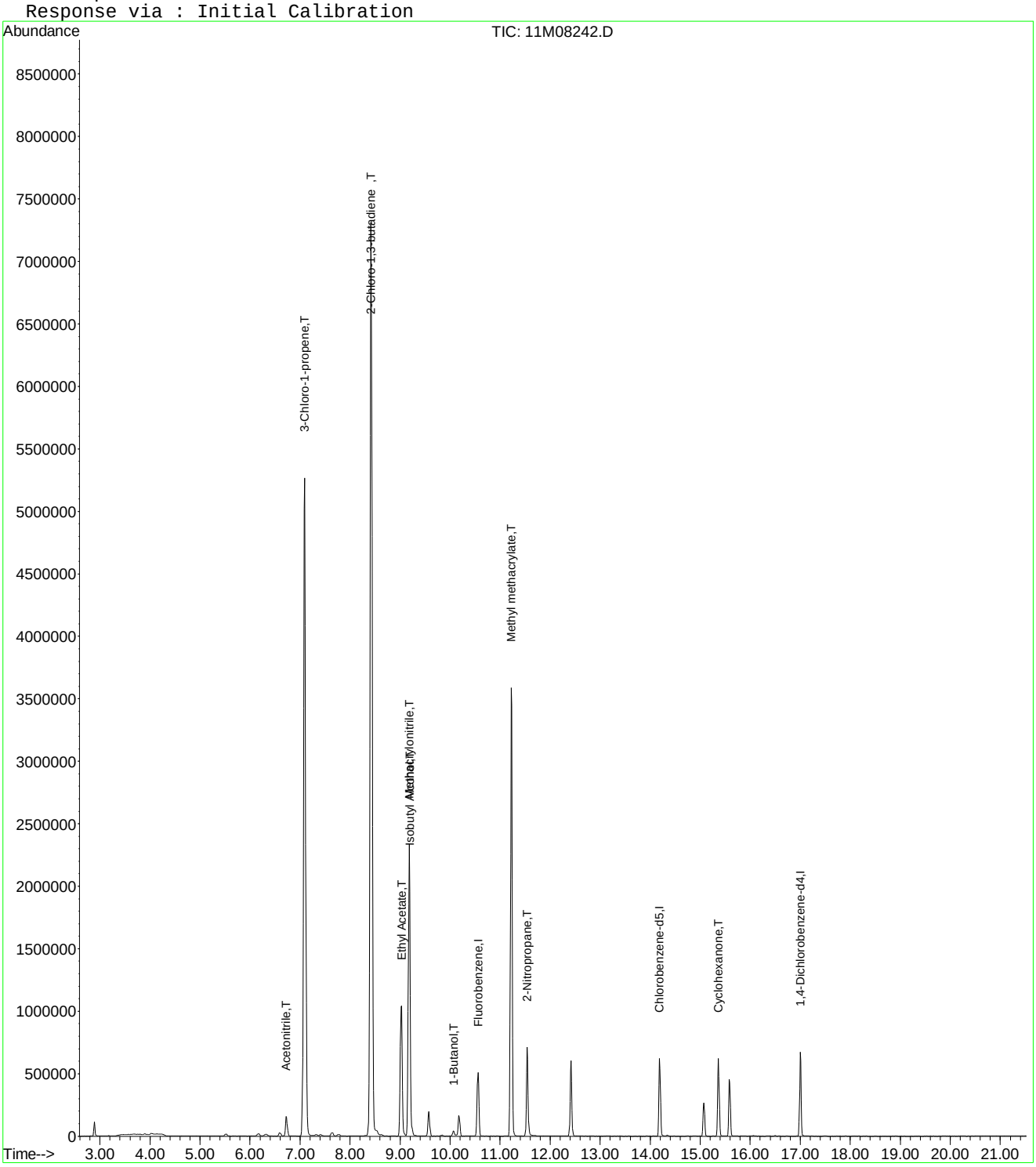

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08242.D Vial: 9
Acq On : 14 Jun 2015 13:42 Operator: TMB /DLW
Sample : WG527475-09 500ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28:15 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.56	96	597347	25.00	ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	436979	25.00	ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	232858	25.00	ug/L	-0.03

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M08242.D A9FOOWT.M Thu Aug 20 11:28:15 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08242.D Vial: 9
Acq On : 14 Jun 2015 13:42 Operator: TMB /DLW
Sample : WG527475-09 500ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration

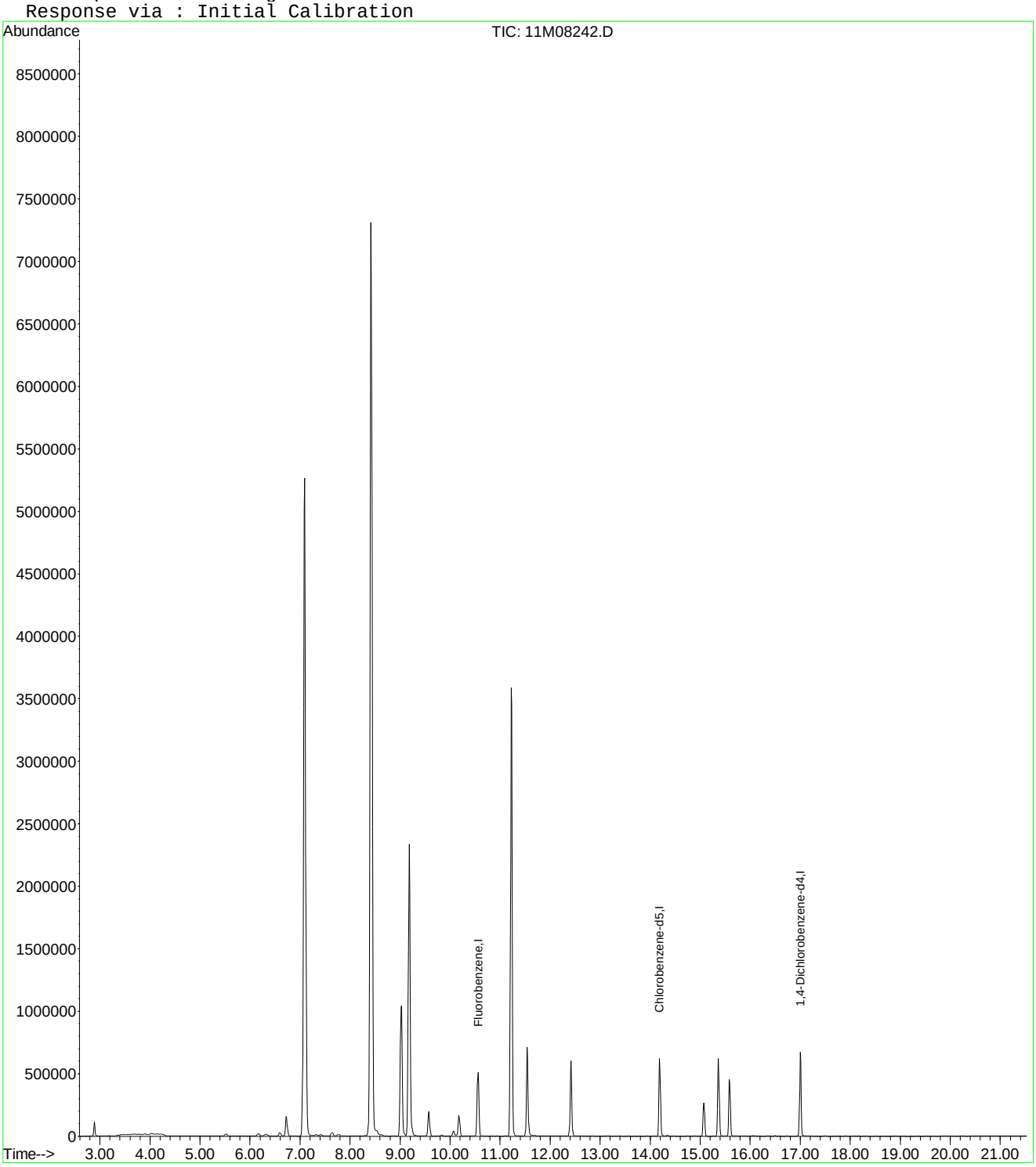

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08242.D Vial: 9
Acq On : 14 Jun 2015 13:42 Operator: TMB /DLW
Sample : WG527475-09 500ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43:54 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.56	96	597347	25.00	ug/L	0.00
12) Chlorobenzene-d5	14.19	117	436979	25.00	ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.00	152	232858	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.72	41	213542	466.0961	ug/L	100
3) 3-Chloro-1-propene	7.09	41	4596340	511.2501	ug/L	80
4) 2-Chloro-1,3-butadiene	8.42	53	5927514	549.2255	ug/L	92
5) Methacrylonitrile	9.18	41	1420105	511.0651	ug/L	79
6) Isobutyl Alcohol	9.19	43	141574	990.1011	ug/L	95
7) 1-Butanol	10.07	56	37640	497.6295	ug/L	86
8) Cyclohexanone	15.36	55	308601	449.1652	ug/L	95
9) 2-Nitropropane	11.54	43	527973	512.4786	ug/L	88
10) Ethyl Acetate	9.03	43	1662142	504.3435	ug/L #	93
11) Methyl methacrylate	11.22	41	2052004	535.4759	ug/L	86

(#) = qualifier out of range (m) = manual integration
11M08242.D A9FOOWT.M Thu Aug 20 11:43:55 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08242.D Vial: 9
Acq On : 14 Jun 2015 13:42 Operator: TMB /DLW
Sample : WG527475-09 500ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration

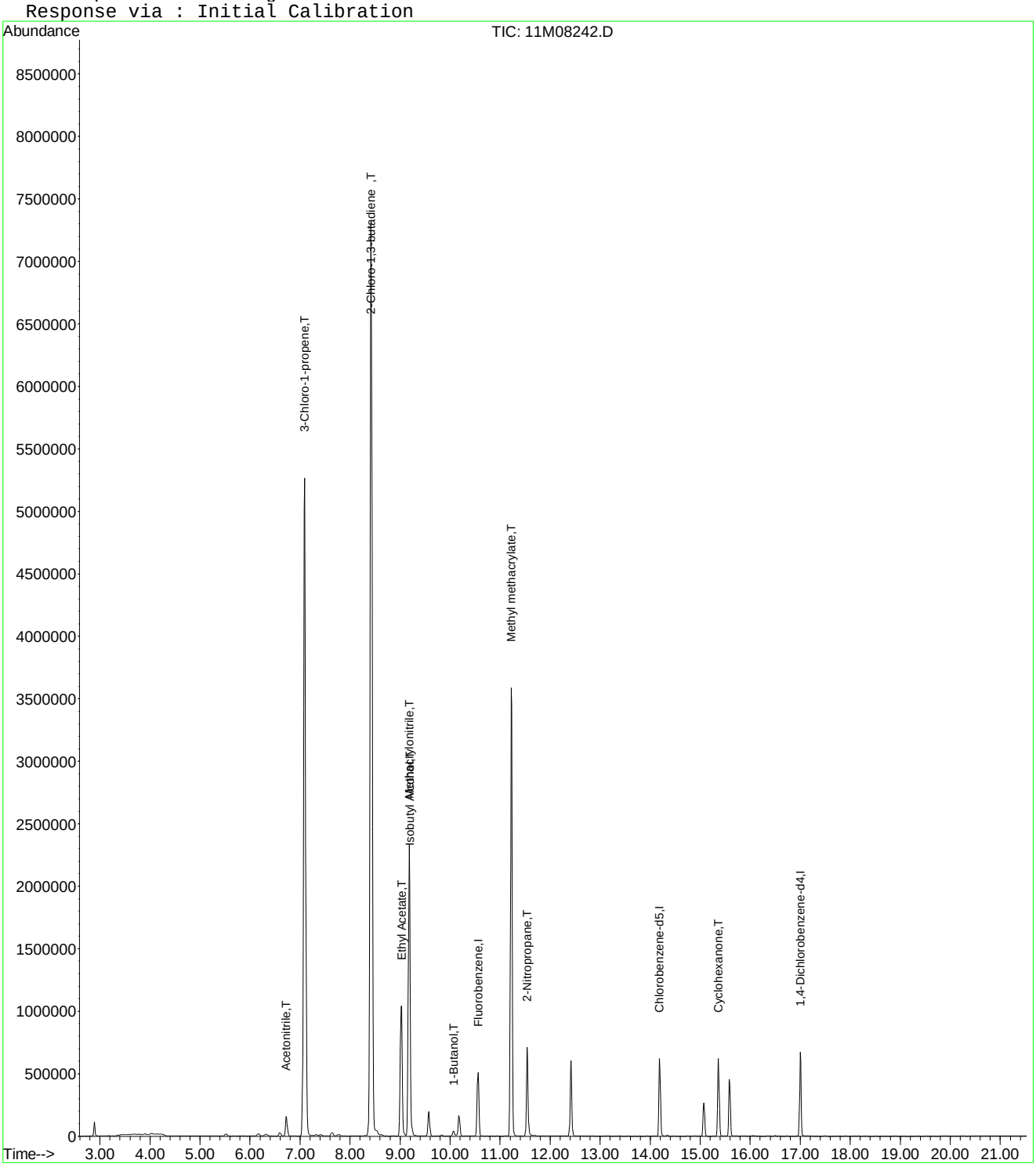

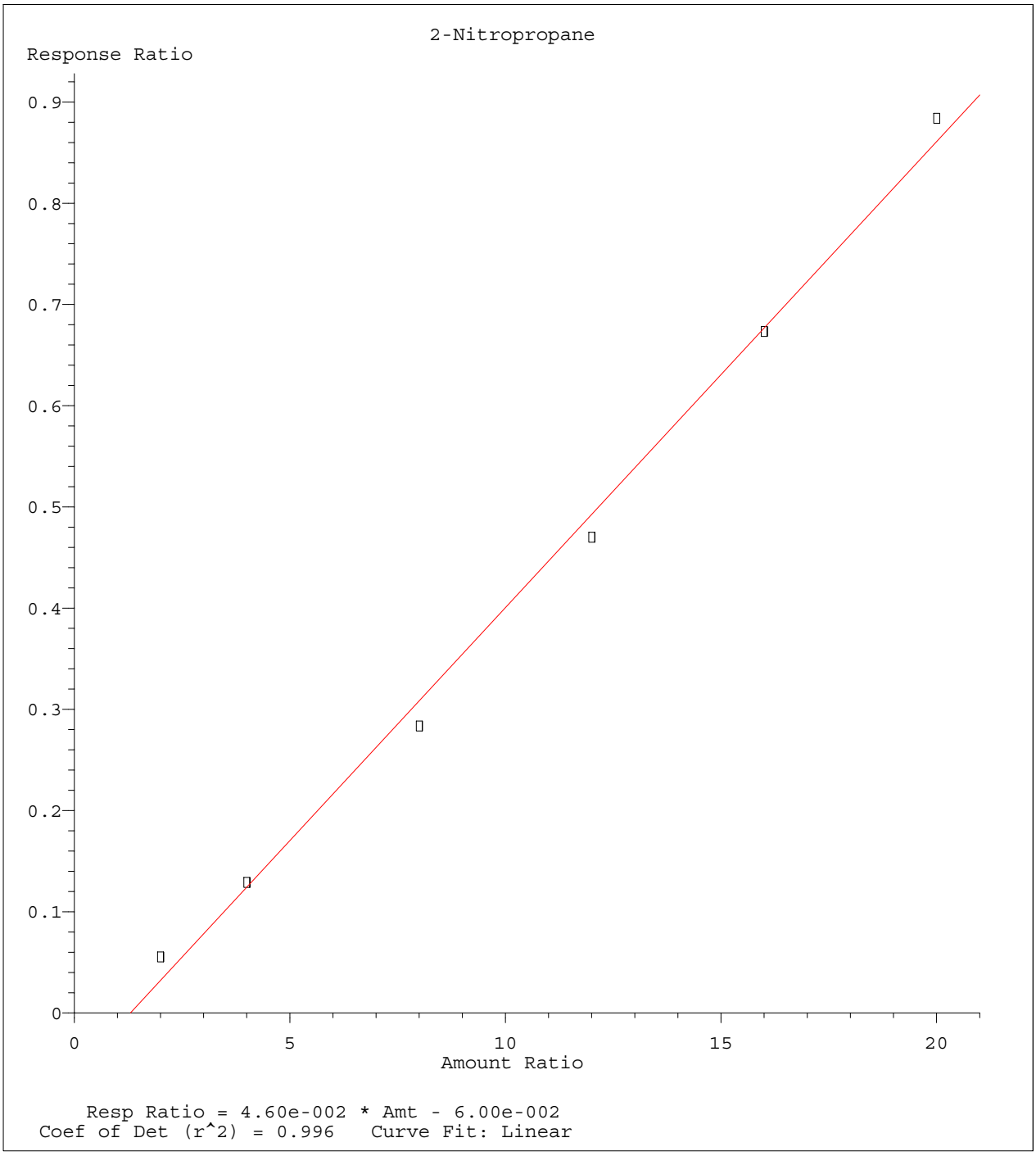

Method Name: C:\MSDCHEM\1\METHODS\A9FOOWT.M
Calibration Table Last Updated: Thu Aug 20 11:44:55 2015

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08245.D Vial: 12
Acq On : 14 Jun 2015 15:18 Operator: TMB /DLW
Sample : WG527475-10 100ug/L ALT STD8260 Inst : hpms11
Misc : 1,1 STD70514 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 15:40:10 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	543635	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.19	117	396503	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.01	152	206025	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	140300	23.2496 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.00%		
43) 1,2-Dichloroethane-d4	10.17	65	129308	19.7285 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 78.92%#		
57) Toluene-d8	12.42	98	479748	28.6477 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 114.60%#		
78) p-Bromofluorobenzene	15.58	95	164471	24.9480 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.80%		

Target Compounds					Qvalue
3) Chloromethane	3.67	50	1708	0.1809 ug/L #	64
5) 1,3-Butadiene	3.96	54	337713	68.0129 ug/L	95
9) Diethyl ether	5.96	59	421860	68.0021 ug/L	82
13) Acetone	6.30	43	8473	5.2935 ug/L	79
29) 2-Butanone	8.83	43	2399	0.9217 ug/L #	77
30) Propionitrile	8.93	54	45537	55.4849 ug/L	96
49) 1,4-Dioxane	11.51	88	6417	143.4316 ug/L	93
77) 1,1,2,2-Tetrachloroethane	15.38	83	1792	0.4132 ug/L #	17

(#) = qualifier out of range (m) = manual integration
11M08245.D 8260WTR.M Sun Jun 14 15:40:11 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08245.D Vial: 12
Acq On : 14 Jun 2015 15:18 Operator: TMB /DLW
Sample : WG527475-10 100ug/L ALT STD8260 Inst : hpms11
Misc : 1,1 STD70514 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 15:40 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration

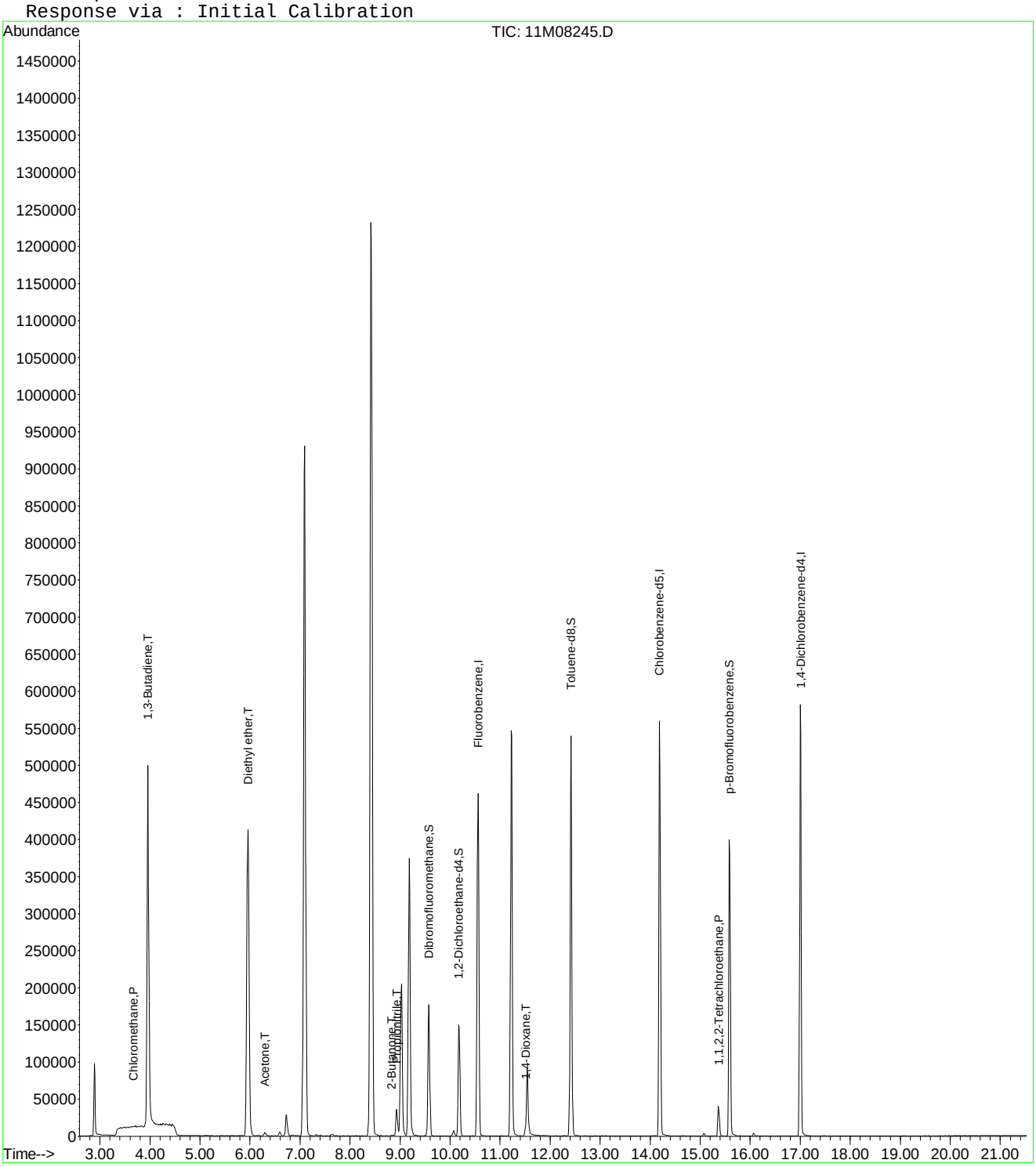

11M08245.D 8260WTR.M Sun Jun 14 15:40:11 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08245.D Vial: 12
Acq On : 14 Jun 2015 15:18 Operator: TMB /DLW
Sample : WG527475-10 100ug/L ALT STD8260 Inst : hpms11
Misc : 1,1 STD70514 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28:16 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.56	96	543635	25.00	ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	396503	25.00	ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.01	152	206025	25.00	ug/L	-0.02

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M08245.D A9FOOWT.M Thu Aug 20 11:28:17 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08245.D Vial: 12
Acq On : 14 Jun 2015 15:18 Operator: TMB /DLW
Sample : WG527475-10 100ug/L ALT STD8260 Inst : hpms11
Misc : 1,1 STD70514 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration

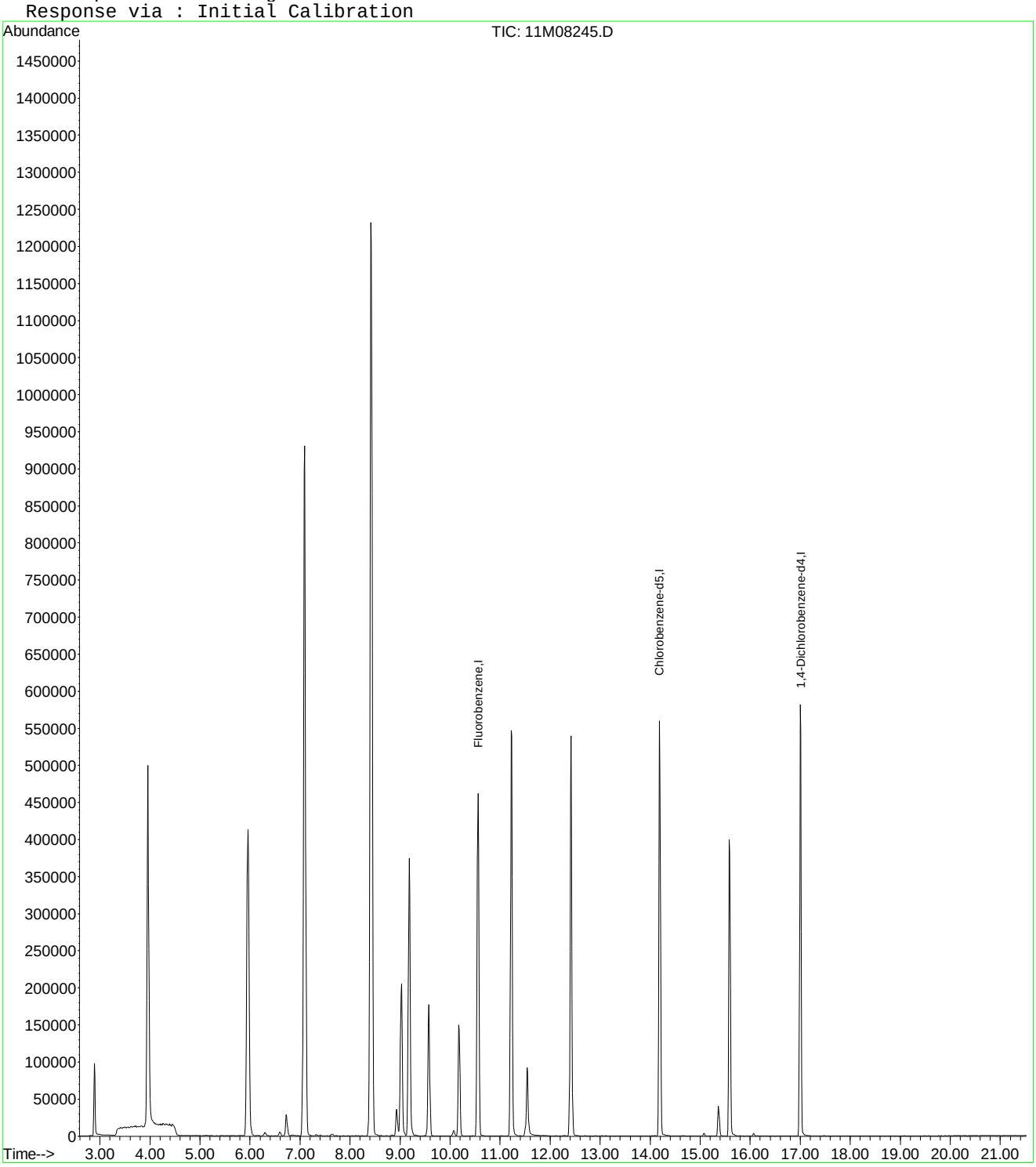

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08245.D Vial: 12
Acq On : 14 Jun 2015 15:18 Operator: TMB /DLW
Sample : WG527475-10 100ug/L ALT STD8260 Inst : hpms11
Misc : 1,1 STD70514 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43:56 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	543635	25.00 ug/L	0.00
12) Chlorobenzene-d5	14.19	117	396503	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.01	152	206025	25.00 ug/L	0.01

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	38243	91.7199 ug/L	100
3) 3-Chloro-1-propene	7.09	41	808581	98.8244 ug/L	82
4) 2-Chloro-1,3-butadiene	8.42	53	1078924	109.8470 ug/L	94
5) Methacrylonitrile	9.18	41	233249	92.2348 ug/L	79
6) Isobutyl Alcohol	9.19	43	24110	185.2732 ug/L	90
7) 1-Butanol	10.07	56	6038	87.7140 ug/L #	79
8) Cyclohexanone	15.36	55	22693	36.2928 ug/L	98
9) 2-Nitropropane	11.54	43	62961	95.4458 ug/L	82
10) Ethyl Acetate	9.03	43	328836	109.6369 ug/L #	93
11) Methyl methacrylate	11.22	41	327033	93.7719 ug/L	87

(#) = qualifier out of range (m) = manual integration
11M08245.D A9FOOWT.M Thu Aug 20 11:43:56 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08245.D Vial: 12
Acq On : 14 Jun 2015 15:18 Operator: TMB /DLW
Sample : WG527475-10 100ug/L ALT STD8260 Inst : hpms11
Misc : 1,1 STD70514 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration

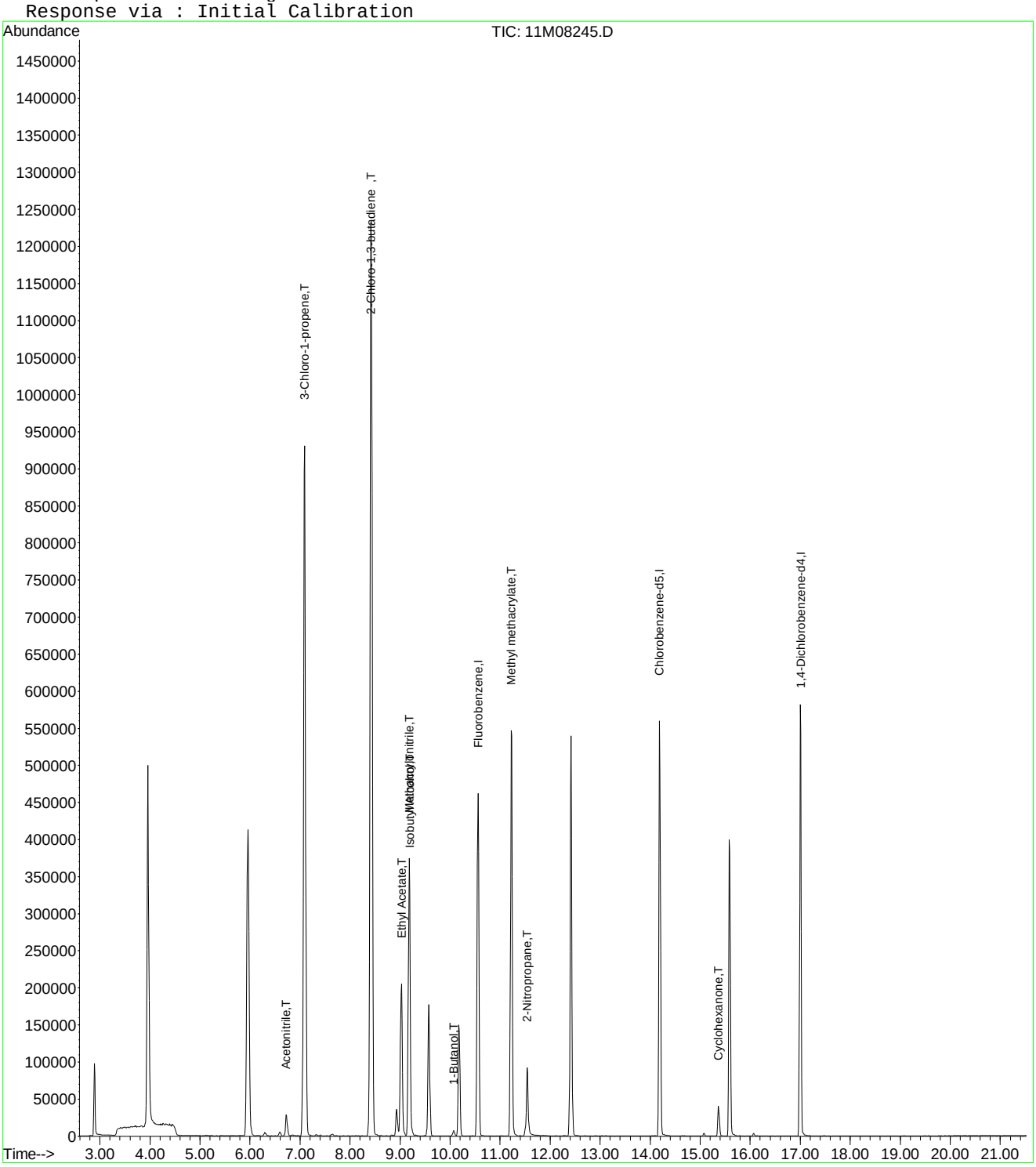

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061415\11M08245.D Vial: 12
Acq On : 14 Jun 2015 15:18 Operator: TMB /DLW
Sample : WG527475-10 100ug/L ALT STD8260 Inst : hpms11
Misc : 1,1 STD70514 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	92	0.00
2	T	Acetonitrile	100.0000	91.7199	8.3	92	0.00
3	T	3-Chloro-1-propene	100.0000	98.8244	1.2	90	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	109.8470	-9.8	102	0.00
5	T	Methacrylonitrile	100.0000	92.2348	7.8	86	0.00
6	T	Isobutyl Alcohol	200.0000	185.2732	7.4	83	0.00
7	T	1-Butanol	100.0000	87.7140	12.3	78	0.00
8	T	Cyclohexanone	100.0000	36.2928	63.7	31	0.00
9	T	2-Nitropropane	100.0000	95.4458	4.6	82	0.00
10	T	Ethyl Acetate	100.0000	109.6369	-9.6	99	0.00
11	T	Methyl methacrylate	100.0000	93.7719	6.2	87	0.00
12	I	Chlorobenzene-d5	25.0000	25.0000	0.0	91	0.00
13	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	92	0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M08245.D A9FOOWT.M Thu Aug 20 11:45:26 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:20 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	538041	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	450050	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	251600	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
57) Toluene-d8	12.47	98	210	0.0099 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.04%#	
78) p-Bromofluorobenzene	15.64	95	566	0.0689 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	2475	0.3135 ug/L #	66
3) Chloromethane	3.72	50	4639	0.6471 ug/L	91
4) Vinyl Chloride	3.96	62	1882	0.3288 ug/L #	44
5) 1,3-Butadiene	4.01	54	1564	0.2900 ug/L #	19
6) Bromomethane	4.84	94	1717	0.4723 ug/L	83
7) Chloroethane	5.00	64	616	0.1589 ug/L #	45
8) Trichlorofluoromethane	5.49	101	3531	0.3330 ug/L	97
10) Isoprene	6.04	67	1746	0.2381 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	1344	0.2515 ug/L	96
13) Acetone	6.34	43	2389	1.4850 ug/L #	45
14) 1,1-Dichloroethene	6.56	61	3780	0.3817 ug/L	78
16) Dimethyl Sulfide	6.80	62	762	0.1697 ug/L	78
18) Methyl acetate	7.02	43	24685	4.4975 ug/L #	70
19) Methylene Chloride	7.31	84	1766	0.3184 ug/L	74
20) Carbon Disulfide	7.36	76	5848	0.3373 ug/L	92
22) Methyl Tert Butyl Ether	7.54	73	3068	0.2131 ug/L #	48
23) trans-1,2-Dichloroethene	7.75	96	1449	0.2556 ug/L	91
24) n-Hexane	7.82	57	3745	0.4031 ug/L #	73
26) Vinyl Acetate	8.30	43	2410	0.6995 ug/L #	78
27) 1,1-Dichloroethane	8.35	63	3312	0.2969 ug/L #	76
31) 2,2-Dichloropropane	9.10	77	2449	0.3040 ug/L #	42
32) cis-1,2-Dichloroethene	9.15	96	1729	0.2748 ug/L	96
33) Chloroform	9.35	83	3792	0.3639 ug/L	92
35) Bromochloromethane	9.56	130	948	0.2355 ug/L #	68
38) 1,1,1-Trichloroethane	9.85	97	3449	0.3423 ug/L #	79
39) Cyclohexane	9.88	56	3639	0.2986 ug/L #	84
40) 1,1-Dichloropropene	10.04	75	2365	0.3106 ug/L #	53
41) Carbon Tetrachloride	10.17	117	2613	0.2748 ug/L	87
44) 1,2-Dichloroethane	10.35	62	2493	0.2788 ug/L #	73
45) Benzene	10.38	78	7133	0.3275 ug/L	99
46) Trichloroethene	11.09	130	1973	0.2780 ug/L	93
47) Methylcyclohexane	11.17	83	2570	0.2986 ug/L	84
48) 1,2-Dichloropropane	11.29	63	1665	0.2692 ug/L	87
50) Bromodichloromethane	11.57	83	2418	0.2950 ug/L #	82
51) Dibromomethane	11.65	93	756	0.2331 ug/L	88
54) cis-1,3-Dichloropropene	12.17	75	1869	0.2166 ug/L #	82
55) Dimethyl Disulfide	12.42	79	1028	0.1910 ug/L	95
58) Toluene	12.57	91	7355	0.3156 ug/L	91
59) Ethyl Methacrylate	12.64	69	1041	0.1887 ug/L	88
60) trans-1,3-Dichloropropene	12.72	75	1951	0.2556 ug/L #	51

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:20 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
61)	1,1,2-Trichloroethane	12.92	97	1087	0.2492 ug/L		87
62)	2-Hexanone	12.86	43	687	0.1910 ug/L	#	29
63)	1,3-Dichloropropane	13.21	76	1673	0.2309 ug/L		94
64)	Tetrachloroethene	13.34	164	1703	0.3238 ug/L		94
65)	Dibromochloromethane	13.59	129	1515	0.2406 ug/L		92
66)	1,2-Dibromoethane	13.82	107	966	0.2181 ug/L		98
67)	1-Chlorohexane	13.89	91	2128	0.2784 ug/L		97
68)	Chlorobenzene	14.29	112	5248	0.3062 ug/L		99
69)	1,1,1,2-Tetrachloroethane	14.32	131	2025	0.3082 ug/L		98
70)	Ethylbenzene	14.31	106	2602	0.2992 ug/L		88
71)	m-,p-Xylene	14.40	106	6296	0.6083 ug/L		82
72)	o-Xylene	14.92	106	3032	0.2937 ug/L		95
73)	Styrene	14.95	104	4953	0.2828 ug/L		95
75)	Isopropylbenzene	15.31	105	7848	0.3006 ug/L		93
77)	1,1,2,2-Tetrachloroethane	15.52	83	1145	0.2759 ug/L		68
81)	n-Propylbenzene	15.79	91	9421	0.3332 ug/L		94
82)	Bromobenzene	15.92	156	2002	0.2551 ug/L		66
83)	1,3,5-Trimethylbenzene	15.95	105	6742	0.3138 ug/L		91
84)	2-Chlorotoluene	16.05	91	6735	0.3228 ug/L		96
85)	4-Chlorotoluene	16.09	91	6023	0.3518 ug/L		99
86)	a-Methylstyrene	16.34	118	2850	0.2387 ug/L		95
87)	tert-Butylbenzene	16.39	134	1197	0.2539 ug/L		64
88)	1,2,4-Trimethylbenzene	16.44	105	6992	0.3180 ug/L		88
89)	sec-Butylbenzene	16.65	105	8335	0.3278 ug/L		97
90)	p-Isopropyltoluene	16.79	119	7094	0.3065 ug/L		96
91)	1,3-Dichlorobenzene	16.98	146	4505	0.3090 ug/L		96
92)	1,4-Dichlorobenzene	17.10	146	4475	0.3006 ug/L	#	1
93)	n-Butylbenzene	17.28	91	7076	0.3396 ug/L	#	93
94)	1,2-Dichlorobenzene	17.56	146	4016	0.2922 ug/L		100
96)	1,2,4-Trichlorobenzene	19.55	180	2964	0.2902 ug/L		99
97)	Hexachlorobutadiene	19.69	225	1160	0.2796 ug/L	#	71
98)	Naphthalene	19.90	128	4679	0.2394 ug/L	#	93
99)	1,2,3-Trichlorobenzene	20.19	180	2578	0.2696 ug/L		87

(#) = qualifier out of range (m) = manual integration
11M11837.D 8260WT.M Fri May 13 17:04:21 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration

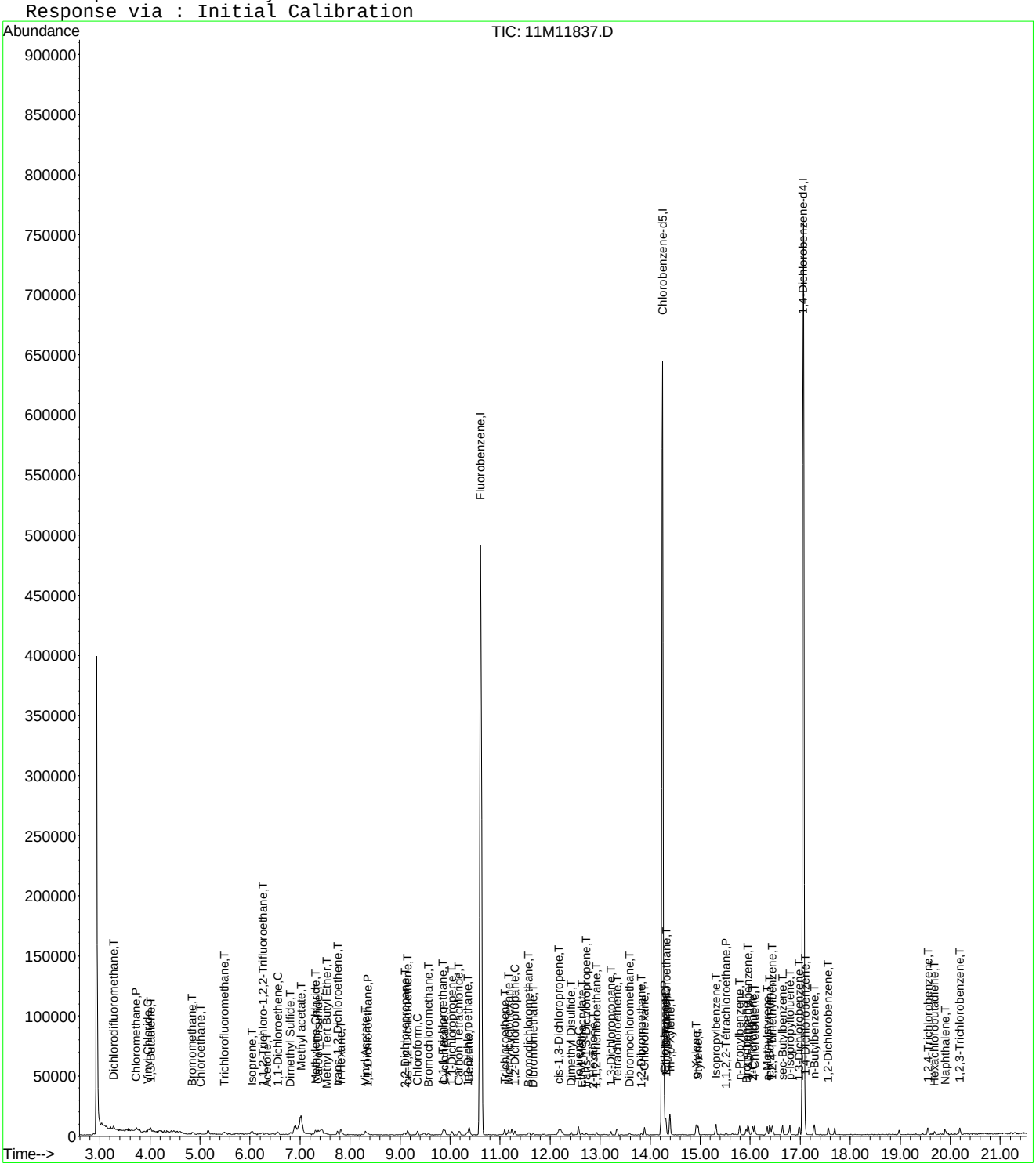

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:40:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2936	0.0	0	0.00
3	P	Chloromethane	-1.0000	0.6871	0.0	0	0.00
4	C	Vinyl Chloride	-1.0000	0.3357	0.0	0	0.00
5	T	1,3-Butadiene	-1.0000	0.2805	0.0	0	0.01
6	T	Bromomethane	-1.0000	0.4454	0.0	0	-0.01
7	T	Chloroethane	-1.0000	0.1710	0.0	0	0.00
8	T	Trichlorofluoromethane	-1.0000	0.3160	0.0	0	0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.01#
10	T	Isoprene	-1.0000	0.2535	0.0	0	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.23#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2478	0.0	0	0.01
13	T	Acetone	-1.0000	1.8699	0.0	0	0.00
14	C	1,1-Dichloroethene	-1.0000	0.3838	0.0	0	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.66#
16	T	Dimethyl Sulfide	-1.0000	0.1937	0.0	0	-0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.06#
18	T	Methyl acetate	-1.0000	5.1442	0.0	0	-0.04
19	T	Methylene Chloride	-1.0000	0.3464	0.0	0	0.00
20	T	Carbon Disulfide	-1.0000	0.3546	0.0	0	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.49#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2413	0.0	0	0.02
23	T	trans-1,2-Dichloroethene	-1.0000	0.2658	0.0	0	0.01
24	T	n-Hexane	-1.0000	0.4125	0.0	0	0.00
25	T	Diisopropyl ether	-1.0000	0.0083	0.0	0	0.08
26	T	Vinyl Acetate	-1.0000	2.6933	0.0	0	-0.01
27	P	1,1-Dichloroethane	-1.0000	0.3028	0.0	0	0.01
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.70#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.87#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.97#
31	T	2,2-Dichloropropane	-1.0000	0.2862	0.0	0	0.01
32	T	cis-1,2-Dichloroethene	-1.0000	0.2877	0.0	0	0.00
33	C	Chloroform	0.3000	0.3530	-17.7	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.48#
35	T	Bromochloromethane	-1.0000	0.2656	0.0	0	-0.01
36	T	Tetrahydrofuran	-1.0000	0.0000	0.0	0	-9.60#
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.63#
38	T	1,1,1-Trichloroethane	-1.0000	0.3263	0.0	0	0.00
39	T	Cyclohexane	-1.0000	0.3159	0.0	0	0.00
40	T	1,1-Dichloropropene	-1.0000	0.3134	0.0	0	0.00
41	T	Carbon Tetrachloride	-1.0000	0.2532	0.0	0	-0.01
42	T	Tert-Amyl-Methyl ether	-1.0000	0.0152	0.0	0	-0.09
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.23#
44	T	1,2-Dichloroethane	-1.0000	0.2858	0.0	0	0.01
45	T	Benzene	-1.0000	0.3452	0.0	0	0.00
46	T	Trichloroethene	-1.0000	0.2938	0.0	0	0.00
47	T	Methylcyclohexane	-1.0000	0.3101	0.0	0	0.00
48	C	1,2-Dichloropropane	-1.0000	0.2911	0.0	0	0.00
49	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.55#
50	T	Bromodichloromethane	-1.0000	0.3012	0.0	0	0.00
51	T	Dibromomethane	-1.0000	0.2537	0.0	0	0.00
52	T	2-Chloroethyl Vinyl Ether	-1.0000	0.0000	0.0	0	-11.84#
53	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-11.87#
54	T	cis-1,3-Dichloropropene	-1.0000	0.2327	0.0	0	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:40:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	-1.0000	0.2127	0.0	0	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	-1.0000	0.0107	0.0	0	0.00
58	C	Toluene	-1.0000	0.3228	0.0	0	0.01
59	T	Ethyl Methacrylate	-1.0000	0.2140	0.0	0	-0.01
60	T	trans-1,3-Dichloropropene	-1.0000	0.2668	0.0	0	-0.01
61	T	1,1,2-Trichloroethane	-1.0000	0.2691	0.0	0	-0.01
62	T	2-Hexanone	-1.0000	0.2315	0.0	0	0.00
63	T	1,3-Dichloropropane	-1.0000	0.2579	0.0	0	0.00
64	T	Tetrachloroethene	-1.0000	0.3214	0.0	0	0.00
65	T	Dibromochloromethane	-1.0000	0.2459	0.0	0	0.00
66	T	1,2-Dibromoethane	-1.0000	0.2387	0.0	0	0.00
67	T	1-Chlorohexane	-1.0000	0.2833	0.0	0	0.00
68	P	Chlorobenzene	-1.0000	0.3144	0.0	0	0.00
69	T	1,1,1,2-Tetrachloroethane	-1.0000	0.2998	0.0	0	0.00
70	C	Ethylbenzene	-1.0000	0.3040	0.0	0	0.00
71	T	m-,p-Xylene	-1.0000	0.6051	0.0	0	0.01
72	T	o-Xylene	-1.0000	0.2994	0.0	0	0.00
73	T	Styrene	-1.0000	0.2961	0.0	0	0.00
74	P	Bromoform	-1.0000	0.0798	0.0	0	-0.01
75	T	Isopropylbenzene	-1.0000	0.2931	0.0	0	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2922	0.0	0	0.00
78	S	p-Bromofluorobenzene	-1.0000	0.0730	0.0	0	0.00
79	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-15.70#
80	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-15.74#
81	T	n-Propylbenzene	-1.0000	0.3233	0.0	0	0.00
82	T	Bromobenzene	0.3000	0.2618	12.7	100	0.00
83	T	1,3,5-Trimethylbenzene	-1.0000	0.3032	0.0	0	-0.01
84	T	2-Chlorotoluene	-1.0000	0.3300	0.0	0	0.00
85	T	4-Chlorotoluene	-1.0000	0.3295	0.0	0	0.00
86	T	a-Methylstyrene	-1.0000	0.2430	0.0	0	0.00
87	T	tert-Butylbenzene	-1.0000	0.2541	0.0	0	-0.01
88	T	1,2,4-Trimethylbenzene	-1.0000	0.3088	0.0	0	0.00
89	T	sec-Butylbenzene	-1.0000	0.3122	0.0	0	0.00
90	T	p-Isopropyltoluene	-1.0000	0.2893	0.0	0	0.00
91	T	1,3-Dichlorobenzene	-1.0000	0.3051	0.0	0	0.00
92	T	1,4-Dichlorobenzene	0.3000	0.2990	0.3	100	0.00
93	T	n-Butylbenzene	-1.0000	0.3274	0.0	0	0.00
94	T	1,2-Dichlorobenzene	0.3000	0.2985	0.5	100	-0.01
95	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-18.49#
96	T	1,2,4-Trichlorobenzene	-1.0000	0.3011	0.0	0	0.00
97	T	Hexachlorobutadiene	-1.0000	0.2675	0.0	0	0.00
98	T	Naphthalene	-1.0000	0.2561	0.0	0	0.00
99	T	1,2,3-Trichlorobenzene	0.3000	0.2854	4.9	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11837.D 8260WT.M Sat May 14 18:41:07 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11838.D Vial: 4
Acq On : 13 May 2016 15:12 Operator: JDS
Sample : WG568769-03 0.4ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:23 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	515473	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	435266	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	244818	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
57) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
78) p-Bromofluorobenzene	15.64	95	236	0.0295 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	2765	0.3656 ug/L #	66
3) Chloromethane	3.72	50	4021	0.5854 ug/L #	77
4) Vinyl Chloride	3.96	62	2267	0.4134 ug/L #	64
5) 1,3-Butadiene	4.01	54	2044	0.3956 ug/L #	18
6) Bromomethane	4.85	94	1571	0.4511 ug/L	89
7) Chloroethane	5.01	64	1496	0.4029 ug/L #	45
8) Trichlorofluoromethane	5.49	101	4241	0.4175 ug/L	96
10) Isoprene	6.03	67	2394	0.3408 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	1439	0.2811 ug/L #	23
13) Acetone	6.33	43	1125	0.7299 ug/L #	45
14) 1,1-Dichloroethene	6.56	61	3786	0.3990 ug/L	77
16) Dimethyl Sulfide	6.80	62	1622	0.3769 ug/L	59
18) Methyl acetate	7.01	43	21364	4.0629 ug/L #	70
19) Methylene Chloride	7.32	84	2266	0.4265 ug/L	97
20) Carbon Disulfide	7.35	76	6628	0.3991 ug/L #	82
22) Methyl Tert Butyl Ether	7.52	73	4808	0.3486 ug/L #	74
23) trans-1,2-Dichloroethene	7.74	96	2372	0.4368 ug/L	93
24) n-Hexane	7.83	57	4212	0.4732 ug/L #	73
26) Vinyl Acetate	8.34	43	434	0.1315 ug/L #	78
27) 1,1-Dichloroethane	8.34	63	3822	0.3576 ug/L #	89
29) 2-Butanone	8.88	43	484	0.2099 ug/L #	60
31) 2,2-Dichloropropane	9.09	77	2680	0.3472 ug/L #	55
32) cis-1,2-Dichloroethene	9.15	96	2277	0.3777 ug/L	91
33) Chloroform	9.35	83	3981	0.3988 ug/L	89
35) Bromochloromethane	9.57	130	952	0.2468 ug/L	57
36) Tetrahydrofuran	9.59	42	212	0.1340 ug/L #	46
38) 1,1,1-Trichloroethane	9.85	97	3917	0.4058 ug/L #	84
39) Cyclohexane	9.88	56	3935	0.3371 ug/L #	80
40) 1,1-Dichloropropene	10.04	75	2817	0.3862 ug/L	82
41) Carbon Tetrachloride	10.18	117	3373	0.3702 ug/L #	88
44) 1,2-Dichloroethane	10.35	62	3201	0.3737 ug/L #	78
45) Benzene	10.39	78	8729	0.4184 ug/L	90
46) Trichloroethene	11.08	130	2537	0.3731 ug/L	93
47) Methylcyclohexane	11.17	83	2742	0.3325 ug/L	90
48) 1,2-Dichloropropane	11.29	63	2133	0.3600 ug/L	84
50) Bromodichloromethane	11.58	83	2857	0.3638 ug/L #	84
51) Dibromomethane	11.65	93	972	0.3128 ug/L	81
52) 2-Chloroethyl Vinyl Ether	11.85	63	791	0.2560 ug/L #	50
54) cis-1,3-Dichloropropene	12.17	75	2689	0.3253 ug/L	99
55) Dimethyl Disulfide	12.42	79	1113	0.2158 ug/L	74

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11838.D Vial: 4
Acq On : 13 May 2016 15:12 Operator: JDS
Sample : WG568769-03 0.4ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:23 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
58)	Toluene	12.56	91	9113	0.4043 ug/L		99
59)	Ethyl Methacrylate	12.65	69	1556	0.2916 ug/L		96
60)	trans-1,3-Dichloropropene	12.73	75	2303	0.3119 ug/L		86
61)	1,1,2-Trichloroethane	12.94	97	1549	0.3672 ug/L		85
62)	2-Hexanone	12.86	43	840	0.2415 ug/L	#	11
63)	1,3-Dichloropropane	13.21	76	2345	0.3346 ug/L		82
64)	Tetrachloroethene	13.34	164	1905	0.3745 ug/L		88
65)	Dibromochloromethane	13.59	129	1972	0.3238 ug/L		89
66)	1,2-Dibromoethane	13.82	107	1617	0.3776 ug/L		69
67)	1-Chlorohexane	13.89	91	2578	0.3487 ug/L		77
68)	Chlorobenzene	14.29	112	6458	0.3896 ug/L		93
69)	1,1,1,2-Tetrachloroethane	14.31	131	2374	0.3736 ug/L		98
70)	Ethylbenzene	14.31	106	3158	0.3754 ug/L		79
71)	m-,p-Xylene	14.39	106	8621	0.8613 ug/L		93
72)	o-Xylene	14.93	106	3752	0.3758 ug/L		96
73)	Styrene	14.95	104	6027	0.3558 ug/L		90
74)	Bromoform	15.44	173	931	0.2454 ug/L		87
75)	Isopropylbenzene	15.31	105	10551	0.4179 ug/L		95
77)	1,1,2,2-Tetrachloroethane	15.52	83	1129	0.2796 ug/L		84
79)	1,2,3-Trichloropropane	15.71	110	200	0.1341 ug/L	#	28
81)	n-Propylbenzene	15.79	91	11244	0.4087 ug/L		98
82)	Bromobenzene	15.91	156	3048	0.3991 ug/L		95
83)	1,3,5-Trimethylbenzene	15.96	105	9158	0.4381 ug/L		92
84)	2-Chlorotoluene	16.05	91	8455	0.4164 ug/L		96
85)	4-Chlorotoluene	16.09	91	6979	0.4189 ug/L		92
86)	a-Methylstyrene	16.34	118	4052	0.3488 ug/L		74
87)	tert-Butylbenzene	16.40	134	1479	0.3224 ug/L		63
88)	1,2,4-Trimethylbenzene	16.45	105	8457	0.3953 ug/L		95
89)	sec-Butylbenzene	16.65	105	10479	0.4236 ug/L		93
90)	p-Isopropyltoluene	16.79	119	9613	0.4269 ug/L		93
91)	1,3-Dichlorobenzene	16.98	146	5826	0.4107 ug/L		93
92)	1,4-Dichlorobenzene	17.10	146	6273	0.4331 ug/L	#	74
93)	n-Butylbenzene	17.28	91	8021	0.3956 ug/L	#	91
94)	1,2-Dichlorobenzene	17.57	146	4937	0.3691 ug/L		97
96)	1,2,4-Trichlorobenzene	19.55	180	3632	0.3655 ug/L		95
97)	Hexachlorobutadiene	19.69	225	1539	0.3812 ug/L		96
98)	Naphthalene	19.90	128	7383	0.3882 ug/L		97
99)	1,2,3-Trichlorobenzene	20.19	180	3748	0.4028 ug/L		84

(#) = qualifier out of range (m) = manual integration
11M11838.D 8260WT.M Fri May 13 17:04:24 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11838.D Vial: 4
Acq On : 13 May 2016 15:12 Operator: JDS
Sample : WG568769-03 0.4ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration

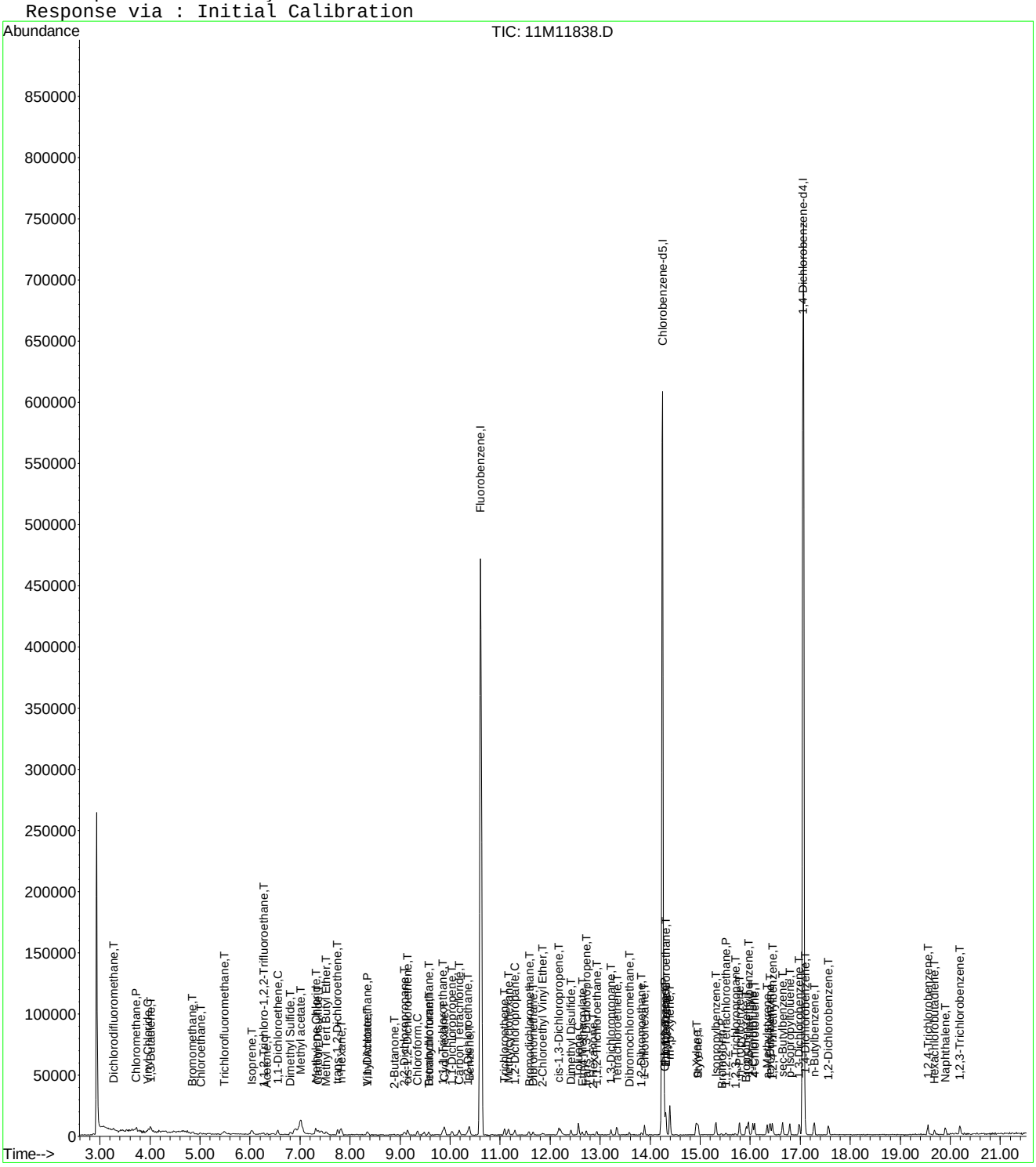

11M11838.D 8260WT.M Fri May 13 17:04:24 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:25 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	523425	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	440574	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	249989	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	1729	0.2910 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.16%#	
43) 1,2-Dichloroethane-d4	10.23	65	3301	0.4585 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	1.84%#	
57) Toluene-d8	12.47	98	9307	0.4494 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	1.80%#	
78) p-Bromofluorobenzene	15.64	95	4047	0.4956 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	7215	0.9394 ug/L	98
3) Chloromethane	3.72	50	7292	1.0455 ug/L	80
4) Vinyl Chloride	3.96	62	5040	0.9051 ug/L	92
5) 1,3-Butadiene	4.02	54	5876	1.1198 ug/L #	76
6) Bromomethane	4.85	94	3488	0.9862 ug/L	94
7) Chloroethane	4.99	64	3425	0.9083 ug/L #	57
8) Trichlorofluoromethane	5.49	101	10960	1.0625 ug/L	95
9) Diethyl ether	6.01	59	19830	4.2253 ug/L	90
10) Isoprene	6.04	67	6121	0.8582 ug/L	94
11) Acrolein	6.25	56	697	1.2730 ug/L	65
12) 1,1,2-Trichloro-1,2,2-Trif	6.27	101	5456	1.0497 ug/L	90
13) Acetone	6.34	43	1782	1.1386 ug/L #	45
14) 1,1-Dichloroethene	6.55	61	9456	0.9814 ug/L	91
15) Tert-Butyl Alcohol	6.67	59	2848	6.8484 ug/L #	67
16) Dimethyl Sulfide	6.80	62	3631	0.8310 ug/L	93
18) Methyl acetate	7.01	43	20953	3.9242 ug/L #	70
19) Methylene Chloride	7.31	84	5001	0.9270 ug/L	97
20) Carbon Disulfide	7.36	76	15438	0.9154 ug/L	99
21) Acrylonitrile	7.50	53	3780	1.8795 ug/L	89
22) Methyl Tert Butyl Ether	7.53	73	11891	0.8490 ug/L	90
23) trans-1,2-Dichloroethene	7.75	96	4815	0.8732 ug/L	95
24) n-Hexane	7.82	57	9213	1.0194 ug/L #	81
25) Diisopropyl ether	8.15	45	108233	4.5267 ug/L	99
26) Vinyl Acetate	8.31	43	1723	0.5141 ug/L #	78
27) 1,1-Dichloroethane	8.34	63	10818	0.9968 ug/L	95
28) Ethyl-Tert-Butyl ether	8.70	59	85288	4.3548 ug/L	99
29) 2-Butanone	8.88	43	1368	0.5844 ug/L #	60
30) Propionitrile	8.99	54	2406	3.5185 ug/L #	60
31) 2,2-Dichloropropane	9.09	77	7787	0.9935 ug/L	90
32) cis-1,2-Dichloroethene	9.15	96	5567	0.9095 ug/L	94
33) Chloroform	9.35	83	10278	1.0139 ug/L	96
34) 1-Bromopropane	9.48	122	295	0.2934 ug/L	49
35) Bromochloromethane	9.57	130	2941	0.7509 ug/L	88
36) Tetrahydrofuran	9.60	42	7790	4.8493 ug/L	92
38) 1,1,1-Trichloroethane	9.85	97	10000	1.0202 ug/L #	90
39) Cyclohexane	9.88	56	10164	0.8574 ug/L	98
40) 1,1-Dichloropropene	10.04	75	7321	0.9884 ug/L	92
41) Carbon Tetrachloride	10.18	117	9558	1.0331 ug/L	98
42) Tert-Amyl-Methyl ether	10.13	73	59107	4.2417 ug/L	97
44) 1,2-Dichloroethane	10.34	62	8181	0.9406 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:25 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	Benzene	10.38	78	19924	0.9404 ug/L		95
46)	Trichloroethene	11.08	130	6636	0.9611 ug/L		92
47)	Methylcyclohexane	11.18	83	7740	0.9243 ug/L		94
48)	1,2-Dichloropropane	11.29	63	5477	0.9103 ug/L		99
49)	1,4-Dioxane	11.55	88	187	5.1264 ug/L	#	10
50)	Bromodichloromethane	11.57	83	7238	0.9076 ug/L		94
51)	Dibromomethane	11.65	93	2839	0.8997 ug/L		97
52)	2-Chloroethyl Vinyl Ether	11.84	63	1934	0.6164 ug/L	#	72
53)	4-Methyl-2-Pentanone	11.87	58	1016	0.5282 ug/L	#	42
54)	cis-1,3-Dichloropropene	12.17	75	7078	0.8432 ug/L		99
55)	Dimethyl Disulfide	12.42	79	3514	0.6710 ug/L		93
58)	Toluene	12.56	91	22074	0.9676 ug/L		96
59)	Ethyl Methacrylate	12.64	69	4130	0.7646 ug/L		88
60)	trans-1,3-Dichloropropene	12.73	75	5897	0.7891 ug/L		90
61)	1,1,2-Trichloroethane	12.94	97	3547	0.8307 ug/L		96
62)	2-Hexanone	12.87	43	2461	0.6990 ug/L	#	63
63)	1,3-Dichloropropane	13.21	76	5965	0.8410 ug/L		87
64)	Tetrachloroethene	13.34	164	5050	0.9809 ug/L		94
65)	Dibromochloromethane	13.59	129	5237	0.8497 ug/L		90
66)	1,2-Dibromoethane	13.82	107	3214	0.7414 ug/L		91
67)	1-Chlorohexane	13.89	91	7025	0.9387 ug/L		91
68)	Chlorobenzene	14.29	112	16160	0.9630 ug/L		95
69)	1,1,1,2-Tetrachloroethane	14.32	131	6361	0.9889 ug/L		97
70)	Ethylbenzene	14.31	106	8050	0.9455 ug/L		93
71)	m-,p-Xylene	14.39	106	20545	2.0278 ug/L		95
72)	o-Xylene	14.92	106	9683	0.9581 ug/L		96
73)	Styrene	14.96	104	14946	0.8716 ug/L		98
74)	Bromoform	15.43	173	3024	0.7876 ug/L		97
75)	Isopropylbenzene	15.31	105	25656	1.0039 ug/L		92
77)	1,1,2,2-Tetrachloroethane	15.52	83	3569	0.8655 ug/L		89
79)	1,2,3-Trichloropropane	15.71	110	872	0.5724 ug/L		84
80)	trans-1,4-Dichloro-2-Buten	15.74	53	1048	0.6163 ug/L	#	44
81)	n-Propylbenzene	15.79	91	27998	0.9967 ug/L		98
82)	Bromobenzene	15.92	156	8101	1.0388 ug/L		89
83)	1,3,5-Trimethylbenzene	15.96	105	20563	0.9633 ug/L		98
84)	2-Chlorotoluene	16.05	91	20962	1.0111 ug/L		96
85)	4-Chlorotoluene	16.09	91	17553	1.0318 ug/L		100
86)	a-Methylstyrene	16.34	118	10002	0.8431 ug/L		97
87)	tert-Butylbenzene	16.40	134	4396	0.9384 ug/L		84
88)	1,2,4-Trimethylbenzene	16.44	105	21945	1.0045 ug/L		96
89)	sec-Butylbenzene	16.65	105	25927	1.0263 ug/L		100
90)	p-Isopropyltoluene	16.79	119	22467	0.9771 ug/L		96
91)	1,3-Dichlorobenzene	16.98	146	14883	1.0274 ug/L		96
92)	1,4-Dichlorobenzene	17.10	146	15106	1.0213 ug/L	#	67
93)	n-Butylbenzene	17.28	91	20991	1.0139 ug/L		98
94)	1,2-Dichlorobenzene	17.57	146	13331	0.9762 ug/L		99
95)	1,2-Dibromo-3-Chloropropan	18.49	75	493	0.5750 ug/L		75
96)	1,2,4-Trichlorobenzene	19.55	180	9030	0.8899 ug/L		96
97)	Hexachlorobutadiene	19.69	225	3810	0.9242 ug/L		95
98)	Naphthalene	19.90	128	16333	0.8410 ug/L		99
99)	1,2,3-Trichlorobenzene	20.19	180	8645	0.9098 ug/L		88

(#) = qualifier out of range (m) = manual integration
11M11839.D 8260WT.M Fri May 13 17:04:25 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration

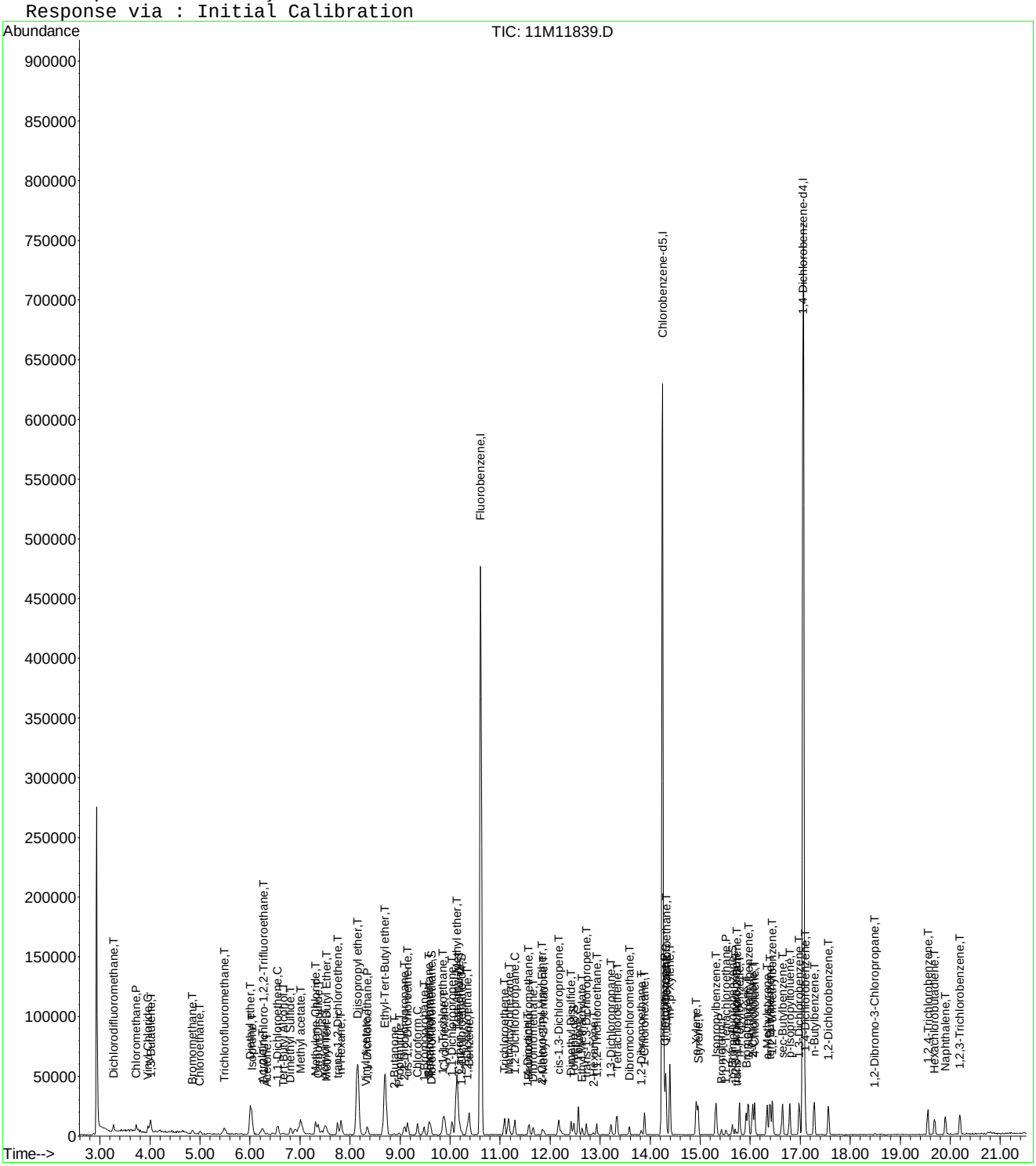

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:40:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.8798	12.0	100	0.00
3	P	Chloromethane	1.0000	1.1102	-11.0	100	0.00
4	C	Vinyl Chloride	1.0000	0.9240	7.6	100	0.00
5	T	1,3-Butadiene	-1.0000	1.0834	0.0	100	0.02
6	T	Bromomethane	1.0000	0.9301	7.0	100	0.00
7	T	Chloroethane	1.0000	0.9773	2.3	100	-0.01
8	T	Trichlorofluoromethane	1.0000	1.0081	-0.8	100	0.01
9	T	Diethyl ether	5.0000	4.9318	1.4	100	0.00
10	T	Isoprene	-1.0000	0.9134	0.0	100	0.00
11	T	Acrolein	2.5000	2.7854	-11.4	100	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0342	-3.4	100	0.02
13	T	Acetone	-1.0000	1.4337	0.0	0	0.00
14	C	1,1-Dichloroethene	1.0000	0.9868	1.3	100	-0.01
15	T	Tert-Butyl Alcohol	10.0000	8.2841	17.2	100	0.01
16	T	Dimethyl Sulfide	-1.0000	0.9488	0.0	100	-0.01
17	T	Iodomethane	-1.0000	2.2962	0.0	0	0.01
18	T	Methyl acetate	-1.0000	4.2835	0.0	0	-0.05
19	T	Methylene Chloride	1.0000	1.0084	-0.8	100	0.00
20	T	Carbon Disulfide	1.0000	0.9624	3.8	100	0.00
21	T	Acrylonitrile	2.5000	2.2683	9.3	100	0.01
22	T	Methyl Tert Butyl Ether	1.0000	0.9614	3.9	100	0.01
23	T	trans-1,2-Dichloroethene	1.0000	0.9079	9.2	100	0.01
24	T	n-Hexane	-1.0000	1.0430	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	4.9106	1.8	100	0.00
26	T	Vinyl Acetate	-1.0000	2.6242	0.0	0	0.00
27	P	1,1-Dichloroethane	1.0000	1.0166	-1.7	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.7543	4.9	100	0.00
29	T	2-Butanone	-1.0000	0.7280	0.0	0	0.01
30	T	Propionitrile	5.0000	4.3718	12.6	100	0.01
31	T	2,2-Dichloropropane	1.0000	0.9353	6.5	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	0.9520	4.8	100	0.00
33	C	Chloroform	1.0000	0.9836	1.6	100	0.00
34	T	1-Bromopropane	1.0000	0.9106	8.9	100	0.00
35	T	Bromochloromethane	1.0000	0.8469	15.3	100	0.00
36	T	Tetrahydrofuran	5.0000	5.8710	-17.4	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.3018	0.0	100	0.00
38	T	1,1,1-Trichloroethane	1.0000	0.9725	2.8	100	0.00
39	T	Cyclohexane	1.0000	0.9069	9.3	100	0.00
40	T	1,1-Dichloropropene	1.0000	0.9971	0.3	100	0.00
41	T	Carbon Tetrachloride	1.0000	0.9518	4.8	100	0.00
42	T	Tert-Amyl-Methyl ether	5.0000	4.7417	5.2	100	0.00
43	S	1,2-Dichloroethane-d4	0.5000	0.5054	-1.1	100	0.00
44	T	1,2-Dichloroethane	1.0000	0.9639	3.6	100	0.00
45	T	Benzene	1.0000	0.9912	0.9	100	0.00
46	T	Trichloroethene	1.0000	1.0157	-1.6	100	-0.01
47	T	Methylcyclohexane	1.0000	0.9600	4.0	100	0.01
48	C	1,2-Dichloropropane	1.0000	0.9844	1.6	100	0.00
49	T	1,4-Dioxane	-1.0000	28.5532	0.0	0	0.00
50	T	Bromodichloromethane	1.0000	0.9266	7.3	100	0.00
51	T	Dibromomethane	1.0000	0.9792	2.1	100	0.00
52	T	2-Chloroethyl Vinyl Ether	-1.0000	0.7053	0.0	100	0.00
53	T	4-Methyl-2-Pentanone	-1.0000	0.6569	0.0	0	0.00
54	T	cis-1,3-Dichloropropene	1.0000	0.9060	9.4	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:40:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	-1.0000	0.7475	0.0	100	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	-1.0000	0.4862	0.0	100	0.00
58	C	Toluene	1.0000	0.9897	1.0	100	0.00
59	T	Ethyl Methacrylate	1.0000	0.8672	13.3	100	-0.01
60	T	trans-1,3-Dichloropropene	1.0000	0.8237	17.6	100	0.00
61	T	1,1,2-Trichloroethane	1.0000	0.8969	10.3	100	0.00
62	T	2-Hexanone	-1.0000	0.8473	0.0	100	0.01
63	T	1,3-Dichloropropane	1.0000	0.9392	6.1	100	0.00
64	T	Tetrachloroethene	1.0000	0.9737	2.6	100	0.00
65	T	Dibromochloromethane	1.0000	0.8681	13.2	100	0.00
66	T	1,2-Dibromoethane	1.0000	0.8111	18.9	100	0.00
67	T	1-Chlorohexane	1.0000	0.9554	4.5	100	0.00
68	P	Chlorobenzene	1.0000	0.9890	1.1	100	0.00
69	T	1,1,1,2-Tetrachloroethane	1.0000	0.9621	3.8	100	0.00
70	C	Ethylbenzene	1.0000	0.9608	3.9	100	0.00
71	T	m-,p-Xylene	2.0000	2.0170	-0.9	100	0.00
72	T	o-Xylene	1.0000	0.9768	2.3	100	0.00
73	T	Styrene	1.0000	0.9126	8.7	100	0.01
74	P	Bromoform	1.0000	0.8271	17.3	100	0.00
75	T	Isopropylbenzene	1.0000	0.9787	2.1	100	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	1.0000	0.9168	8.3	100	0.00
78	S	p-Bromofluorobenzene	-1.0000	0.5252	0.0	100	0.00
79	T	1,2,3-Trichloropropane	1.0000	0.9573	4.3	100	0.01
80	T	trans-1,4-Dichloro-2-Butene	1.0000	1.2934	-29.3#	100	0.00
81	T	n-Propylbenzene	1.0000	0.9671	3.3	100	0.00
82	T	Bromobenzene	1.0000	1.0663	-6.6	100	0.00
83	T	1,3,5-Trimethylbenzene	1.0000	0.9307	6.9	100	0.00
84	T	2-Chlorotoluene	1.0000	1.0337	-3.4	100	0.00
85	T	4-Chlorotoluene	1.0000	0.9664	3.4	100	0.00
86	T	a-Methylstyrene	1.0000	0.8582	14.2	100	0.00
87	T	tert-Butylbenzene	1.0000	0.9392	6.1	100	0.00
88	T	1,2,4-Trimethylbenzene	1.0000	0.9755	2.5	100	0.00
89	T	sec-Butylbenzene	1.0000	0.9774	2.3	100	0.00
90	T	p-Isopropyltoluene	1.0000	0.9221	7.8	100	0.00
91	T	1,3-Dichlorobenzene	1.0000	1.0144	-1.4	100	0.00
92	T	1,4-Dichlorobenzene	1.0000	1.0157	-1.6	100	0.00
93	T	n-Butylbenzene	1.0000	0.9776	2.2	100	0.00
94	T	1,2-Dichlorobenzene	1.0000	0.9974	0.3	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.1961	0.0	100	0.00
96	T	1,2,4-Trichlorobenzene	1.0000	0.9233	7.7	100	0.00
97	T	Hexachlorobutadiene	1.0000	0.8843	11.6	100	0.00
98	T	Naphthalene	1.0000	0.8997	10.0	100	0.00
99	T	1,2,3-Trichlorobenzene	1.0000	0.9631	3.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11839.D 8260WT.M Sat May 14 18:41:49 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:26 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	504626	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	418265	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	241104	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	5067	0.8846 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.52%#	
43) 1,2-Dichloroethane-d4	10.23	65	6143	0.8851 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.56%#	
57) Toluene-d8	12.47	98	18425	0.9371 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	3.76%#	
78) p-Bromofluorobenzene	15.64	95	7442	0.9449 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	3.76%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	14866	2.0077 ug/L	98
3) Chloromethane	3.72	50	14641	2.1775 ug/L	94
4) Vinyl Chloride	3.96	62	10045	1.8711 ug/L	99
5) 1,3-Butadiene	4.01	54	10590	2.0934 ug/L	82
6) Bromomethane	4.85	94	7024	2.0600 ug/L	94
7) Chloroethane	4.99	64	6661	1.8324 ug/L	97
8) Trichlorofluoromethane	5.49	101	21690	2.1811 ug/L	99
9) Diethyl ether	6.01	59	96350	21.2945 ug/L	97
10) Isoprene	6.04	67	12682	1.8443 ug/L	94
11) Acrolein	6.23	56	5531	10.4784 ug/L	91
12) 1,1,2-Trichloro-1,2,2-Trif	6.23	101	9909	1.9774 ug/L	96
13) Acetone	6.35	43	3346	2.2176 ug/L #	68
14) 1,1-Dichloroethene	6.56	61	18584	2.0007 ug/L	98
15) Tert-Butyl Alcohol	6.66	59	15203	37.9194 ug/L #	93
16) Dimethyl Sulfide	6.81	62	7308	1.7348 ug/L	98
17) Iodomethane	7.06	142	1747	0.4335 ug/L #	49
18) Methyl acetate	7.01	43	17794	3.4567 ug/L #	75
19) Methylene Chloride	7.31	84	10330	1.9861 ug/L	99
20) Carbon Disulfide	7.36	76	30745	1.8910 ug/L	99
21) Acrylonitrile	7.49	53	17499	9.0252 ug/L	91
22) Methyl Tert Butyl Ether	7.52	73	22031	1.6315 ug/L	97
23) trans-1,2-Dichloroethene	7.74	96	10660	2.0051 ug/L	95
24) n-Hexane	7.82	57	17125	1.9654 ug/L #	94
25) Diisopropyl ether	8.15	45	542272	23.5246 ug/L	99
26) Vinyl Acetate	8.31	43	6813	2.1084 ug/L #	84
27) 1,1-Dichloroethane	8.34	63	21278	2.0336 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	431080	22.8311 ug/L	100
29) 2-Butanone	8.87	43	3175	1.4068 ug/L #	60
30) Propionitrile	8.99	54	12529	19.0049 ug/L	98
31) 2,2-Dichloropropane	9.09	77	17576	2.3259 ug/L	94
32) cis-1,2-Dichloroethene	9.15	96	11652	1.9746 ug/L	96
33) Chloroform	9.35	83	20769	2.1252 ug/L	96
34) 1-Bromopropane	9.48	122	1648	1.7003 ug/L	70
35) Bromochloromethane	9.57	130	6812	1.8040 ug/L	100
36) Tetrahydrofuran	9.60	42	30834	19.9093 ug/L	96
38) 1,1,1-Trichloroethane	9.84	97	20518	2.1713 ug/L #	94
39) Cyclohexane	9.88	56	22087	1.9325 ug/L	98
40) 1,1-Dichloropropene	10.04	75	13954	1.9542 ug/L	98
41) Carbon Tetrachloride	10.18	117	21054	2.3604 ug/L	98
42) Tert-Amyl-Methyl ether	10.13	73	300593	22.3753 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:26 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
44)	1,2-Dichloroethane	10.34	62	16928	2.0188 ug/L		98
45)	Benzene	10.38	78	41004	2.0075 ug/L		97
46)	Trichloroethene	11.08	130	13283	1.9954 ug/L		96
47)	Methylcyclohexane	11.17	83	15711	1.9461 ug/L		95
48)	1,2-Dichloropropane	11.29	63	11010	1.8980 ug/L		91
49)	1,4-Dioxane	11.55	88	898	25.5347 ug/L		88
50)	Bromodichloromethane	11.57	83	15058	1.9584 ug/L		100
51)	Dibromomethane	11.66	93	5461	1.7952 ug/L		97
52)	2-Chloroethyl Vinyl Ether	11.84	63	4894	1.6180 ug/L		83
53)	4-Methyl-2-Pentanone	11.87	58	2173	1.1717 ug/L	#	65
54)	cis-1,3-Dichloropropene	12.17	75	14440	1.7842 ug/L		91
55)	Dimethyl Disulfide	12.42	79	7378	1.4613 ug/L		97
58)	Toluene	12.56	91	43051	1.9877 ug/L		98
59)	Ethyl Methacrylate	12.64	69	7792	1.5195 ug/L		95
60)	trans-1,3-Dichloropropene	12.73	75	12991	1.8310 ug/L		98
61)	1,1,2-Trichloroethane	12.93	97	8138	2.0075 ug/L		91
62)	2-Hexanone	12.86	43	4715	1.4106 ug/L	#	61
63)	1,3-Dichloropropane	13.21	76	11740	1.7434 ug/L		95
64)	Tetrachloroethene	13.34	164	10610	2.1708 ug/L		90
65)	Dibromochloromethane	13.59	129	11236	1.9202 ug/L		96
66)	1,2-Dibromoethane	13.82	107	7613	1.8499 ug/L		99
67)	1-Chlorohexane	13.89	91	13853	1.9499 ug/L		96
68)	Chlorobenzene	14.29	112	33381	2.0954 ug/L		99
69)	1,1,1,2-Tetrachloroethane	14.32	131	13541	2.2175 ug/L		97
70)	Ethylbenzene	14.31	106	17116	2.1175 ug/L		98
71)	m-,p-Xylene	14.39	106	40469	4.2073 ug/L		95
72)	o-Xylene	14.92	106	19196	2.0006 ug/L		99
73)	Styrene	14.96	104	30019	1.8440 ug/L		92
74)	Bromoform	15.43	173	6309	1.7308 ug/L		96
75)	Isopropylbenzene	15.31	105	52419	2.1605 ug/L		98
77)	1,1,2,2-Tetrachloroethane	15.51	83	7118	1.7898 ug/L		100
79)	1,2,3-Trichloropropane	15.70	110	2487	1.6927 ug/L		98
80)	trans-1,4-Dichloro-2-Buten	15.74	53	2265	1.3810 ug/L		68
81)	n-Propylbenzene	15.79	91	59353	2.1908 ug/L		100
82)	Bromobenzene	15.91	156	15393	2.0465 ug/L		97
83)	1,3,5-Trimethylbenzene	15.95	105	43641	2.1197 ug/L		98
84)	2-Chlorotoluene	16.05	91	40923	2.0467 ug/L		96
85)	4-Chlorotoluene	16.09	91	37360	2.2771 ug/L		97
86)	a-Methylstyrene	16.34	118	20567	1.7976 ug/L		92
87)	tert-Butylbenzene	16.40	134	9253	2.0481 ug/L		89
88)	1,2,4-Trimethylbenzene	16.44	105	43857	2.0815 ug/L		99
89)	sec-Butylbenzene	16.65	105	52733	2.1643 ug/L		99
90)	p-Isopropyltoluene	16.79	119	49990	2.2541 ug/L		98
91)	1,3-Dichlorobenzene	16.98	146	29674	2.1240 ug/L		99
92)	1,4-Dichlorobenzene	17.10	146	30258	2.1211 ug/L		87
93)	n-Butylbenzene	17.28	91	44260	2.2167 ug/L		98
94)	1,2-Dichlorobenzene	17.57	146	27619	2.0969 ug/L		95
95)	1,2-Dibromo-3-Chloropropan	18.49	75	1094	1.3229 ug/L		60
96)	1,2,4-Trichlorobenzene	19.55	180	18455	1.8857 ug/L		98
97)	Hexachlorobutadiene	19.69	225	8691	2.1858 ug/L		89
98)	Naphthalene	19.90	128	34041	1.8174 ug/L	#	95
99)	1,2,3-Trichlorobenzene	20.19	180	17703	1.9318 ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration

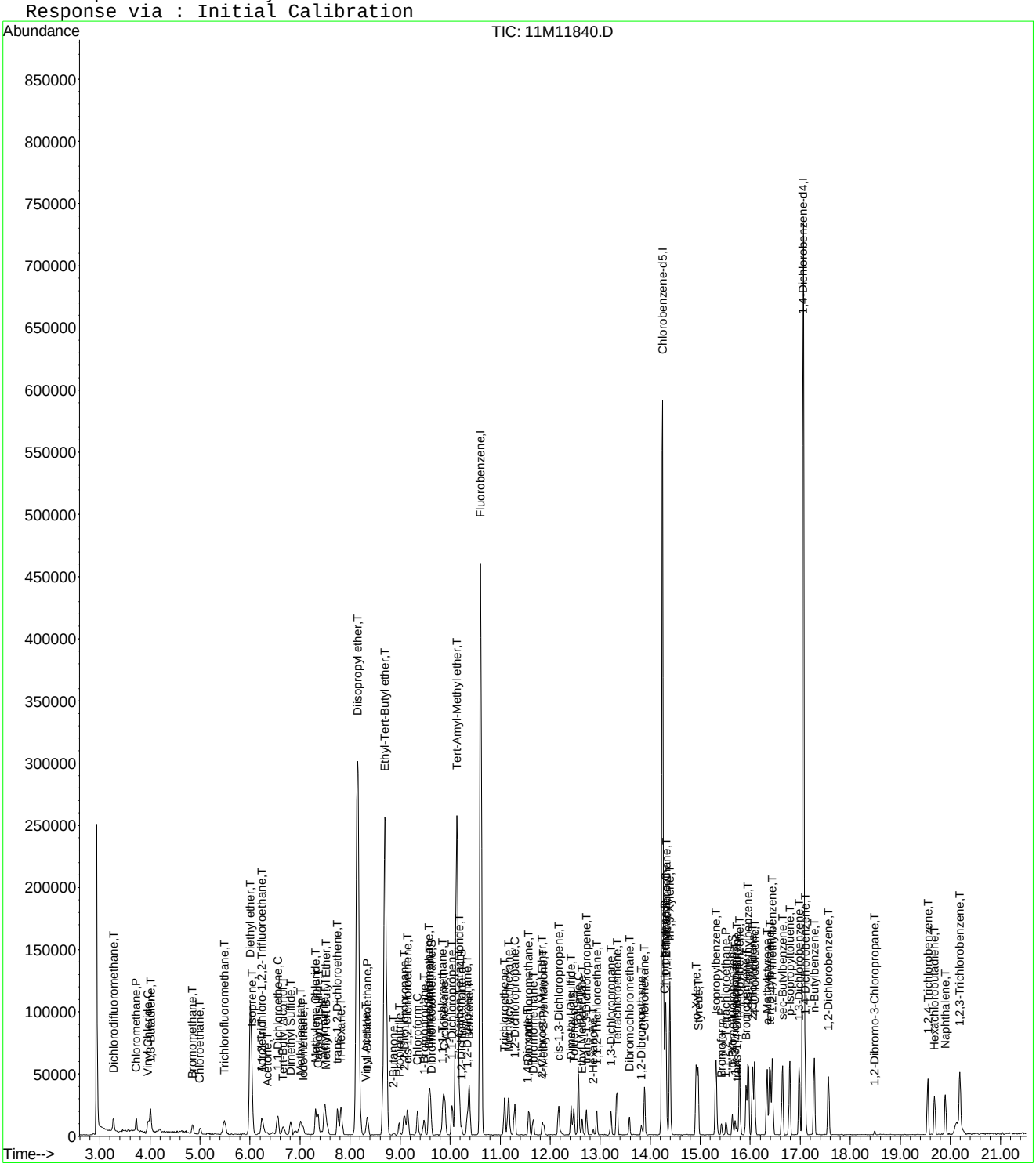

11M11840.D 8260WT.M Fri May 13 17:04:28 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.8802	6.0	100	0.00
3	P	Chloromethane	2.0000	2.3121	-15.6	100	0.00
4	C	Vinyl Chloride	2.0000	1.9102	4.5	100	0.00
5	T	1,3-Butadiene	-1.0000	2.0253	0.0	100	0.01
6	T	Bromomethane	2.0000	1.9427	2.9	100	0.00
7	T	Chloroethane	2.0000	1.9714	1.4	100	-0.01
8	T	Trichlorofluoromethane	2.0000	2.0694	-3.5	100	0.01
9	T	Diethyl ether	25.0000	24.8555	0.6	100	0.00
10	T	Isoprene	-1.0000	1.9630	0.0	100	0.00
11	T	Acrolein	12.5000	12.0322	3.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.9483	2.6	100	-0.01
13	T	Acetone	-1.0000	2.7924	0.0	100	0.01
14	C	1,1-Dichloroethene	2.0000	2.0117	-0.6	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	45.8688	8.3	100	0.00
16	T	Dimethyl Sulfide	-1.0000	1.9809	0.0	100	0.00
17	T	Iodomethane	2.0000	2.6580	-32.9#	100	0.00
18	T	Methyl acetate	2.0000	0.8555	57.2#	100	0.00
19	T	Methylene Chloride	2.0000	2.1606	-8.0	100	0.00
20	T	Carbon Disulfide	2.0000	1.9879	0.6	100	0.00
21	T	Acrylonitrile	12.5000	10.8919	12.9	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.8475	7.6	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	2.0850	-4.2	100	0.00
24	T	n-Hexane	2.0000	2.0110	-0.6	100	0.00
25	T	Diisopropyl ether	25.0000	25.5200	-2.1	100	0.00
26	T	Vinyl Acetate	-1.0000	3.2184	0.0	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.0741	-3.7	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	24.9254	0.3	100	0.00
29	T	2-Butanone	-1.0000	1.7527	0.0	0	0.00
30	T	Propionitrile	25.0000	23.6140	5.5	100	0.01
31	T	2,2-Dichloropropane	2.0000	2.1897	-9.5	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0669	-3.3	100	0.00
33	C	Chloroform	2.0000	2.0616	-3.1	100	0.00
34	T	1-Bromopropane	2.0000	2.2551	-12.8	100	0.00
35	T	Bromochloromethane	2.0000	2.0347	-1.7	100	0.00
36	T	Tetrahydrofuran	25.0000	24.1040	3.6	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9175	8.3	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	2.0696	-3.5	100	-0.01
39	T	Cyclohexane	2.0000	2.0442	-2.2	100	0.00
40	T	1,1-Dichloropropene	2.0000	1.9713	1.4	100	0.00
41	T	Carbon Tetrachloride	2.0000	2.1748	-8.7	100	0.00
42	T	Tert-Amyl-Methyl ether	25.0000	25.0128	-0.1	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	0.9755	2.4	100	0.00
44	T	1,2-Dichloroethane	2.0000	2.0689	-3.4	100	0.00
45	T	Benzene	2.0000	2.1160	-5.8	100	0.00
46	T	Trichloroethene	2.0000	2.1089	-5.4	100	-0.01
47	T	Methylcyclohexane	2.0000	2.0212	-1.1	100	0.00
48	C	1,2-Dichloropropane	2.0000	2.0525	-2.6	100	0.00
49	T	1,4-Dioxane	50.0000	49.5313	0.9	100	0.00
50	T	Bromodichloromethane	2.0000	1.9996	0.0	100	0.00
51	T	Dibromomethane	2.0000	1.9537	2.3	100	0.01
52	T	2-Chloroethyl Vinyl Ether	-1.0000	1.8512	0.0	100	0.00
53	T	4-Methyl-2-Pentanone	-1.0000	1.4573	0.0	100	0.00
54	T	cis-1,3-Dichloropropene	2.0000	1.9172	4.1	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	-1.0000	1.6278	0.0	100	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	1.0000	1.0138	-1.4	100	0.00
58	C	Toluene	2.0000	2.0332	-1.7	100	0.00
59	T	Ethyl Methacrylate	2.0000	1.7234	13.8	100	-0.01
60	T	trans-1,3-Dichloropropene	2.0000	1.9114	4.4	100	0.00
61	T	1,1,2-Trichloroethane	2.0000	2.1674	-8.4	100	0.00
62	T	2-Hexanone	-1.0000	1.7098	0.0	100	0.00
63	T	1,3-Dichloropropane	2.0000	1.9471	2.6	100	0.00
64	T	Tetrachloroethene	2.0000	2.1547	-7.7	100	0.00
65	T	Dibromochloromethane	2.0000	1.9620	1.9	100	0.00
66	T	1,2-Dibromoethane	2.0000	2.0238	-1.2	100	0.00
67	T	1-Chlorohexane	2.0000	1.9844	0.8	100	0.00
68	P	Chlorobenzene	2.0000	2.1520	-7.6	100	0.00
69	T	1,1,1,2-Tetrachloroethane	2.0000	2.1574	-7.9	100	0.00
70	C	Ethylbenzene	2.0000	2.1518	-7.6	100	0.00
71	T	m-,p-Xylene	4.0000	4.1851	-4.6	100	0.00
72	T	o-Xylene	2.0000	2.0398	-2.0	100	0.00
73	T	Styrene	2.0000	1.9307	3.5	100	0.01
74	P	Bromoform	2.0000	1.8176	9.1	100	0.00
75	T	Isopropylbenzene	2.0000	2.1063	-5.3	100	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	2.0000	1.8958	5.2	100	-0.01
78	S	p-Bromofluorobenzene	1.0000	1.0013	-0.1	100	0.00
79	T	1,2,3-Trichloropropane	2.0000	2.1172	-5.9	100	0.00
80	T	trans-1,4-Dichloro-2-Butene	2.0000	1.9762	1.2	100	0.00
81	T	n-Propylbenzene	2.0000	2.1256	-6.3	100	0.00
82	T	Bromobenzene	2.0000	2.1009	-5.0	100	-0.01
83	T	1,3,5-Trimethylbenzene	2.0000	2.0481	-2.4	100	-0.01
84	T	2-Chlorotoluene	2.0000	2.0925	-4.6	100	0.00
85	T	4-Chlorotoluene	2.0000	2.1326	-6.6	100	0.00
86	T	a-Methylstyrene	2.0000	1.8297	8.5	100	0.00
87	T	tert-Butylbenzene	2.0000	2.0497	-2.5	100	0.00
88	T	1,2,4-Trimethylbenzene	2.0000	2.0213	-1.1	100	0.00
89	T	sec-Butylbenzene	2.0000	2.0611	-3.1	100	0.00
90	T	p-Isopropyltoluene	2.0000	2.1272	-6.4	100	0.00
91	T	1,3-Dichlorobenzene	2.0000	2.0970	-4.8	100	0.00
92	T	1,4-Dichlorobenzene	2.0000	2.1095	-5.5	100	0.00
93	T	n-Butylbenzene	2.0000	2.1373	-6.9	100	0.00
94	T	1,2-Dichlorobenzene	2.0000	2.1425	-7.1	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	2.0000	1.9175	4.1	100	0.00
96	T	1,2,4-Trichlorobenzene	2.0000	1.9565	2.2	100	0.00
97	T	Hexachlorobutadiene	2.0000	2.0914	-4.6	100	0.00
98	T	Naphthalene	2.0000	1.9443	2.8	100	0.00
99	T	1,2,3-Trichlorobenzene	2.0000	2.0449	-2.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11840.D 8260WT.M Sat May 14 18:46:53 2016 Page 2

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:46 2016 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Single Level Calibration

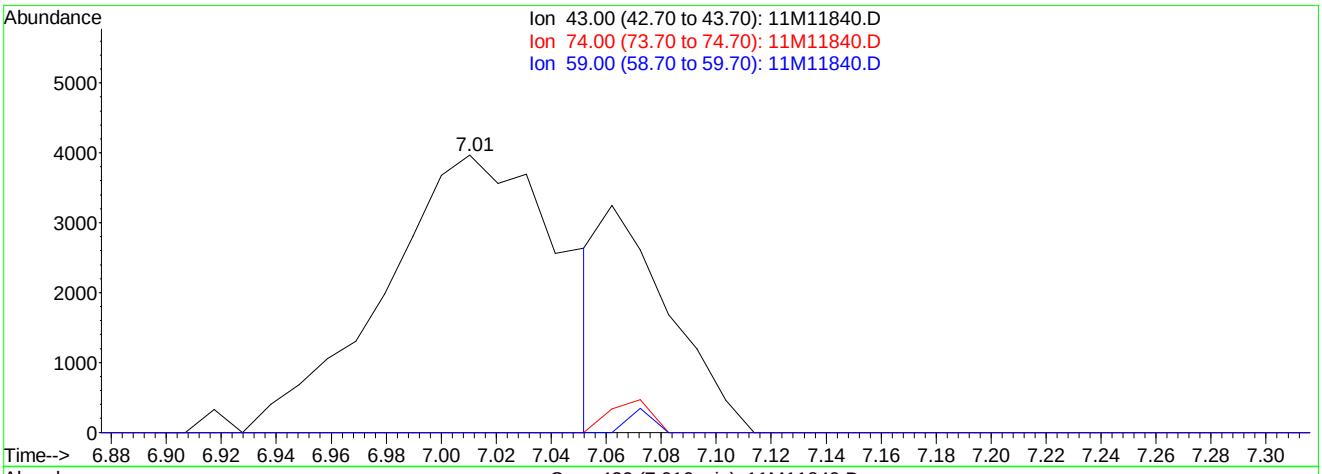

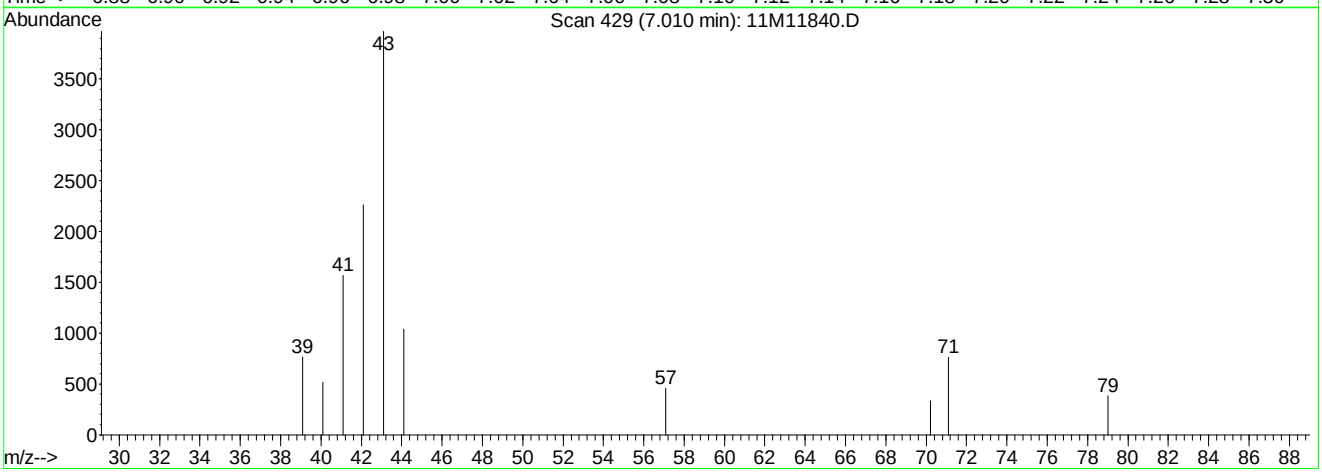

TIC: 11M11840.D

(18) Methyl acetate (T)

7.01min 3.69ug/L

response 17794

Ion	Exp%	Act%
43.00	100	100
74.00	13.60	2.82#
59.00	6.50	1.21#
0.00	0.00	0.00

11M11840.D 8260WT.M Sat May 14 18:46:34 2016

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:46 2016 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Single Level Calibration

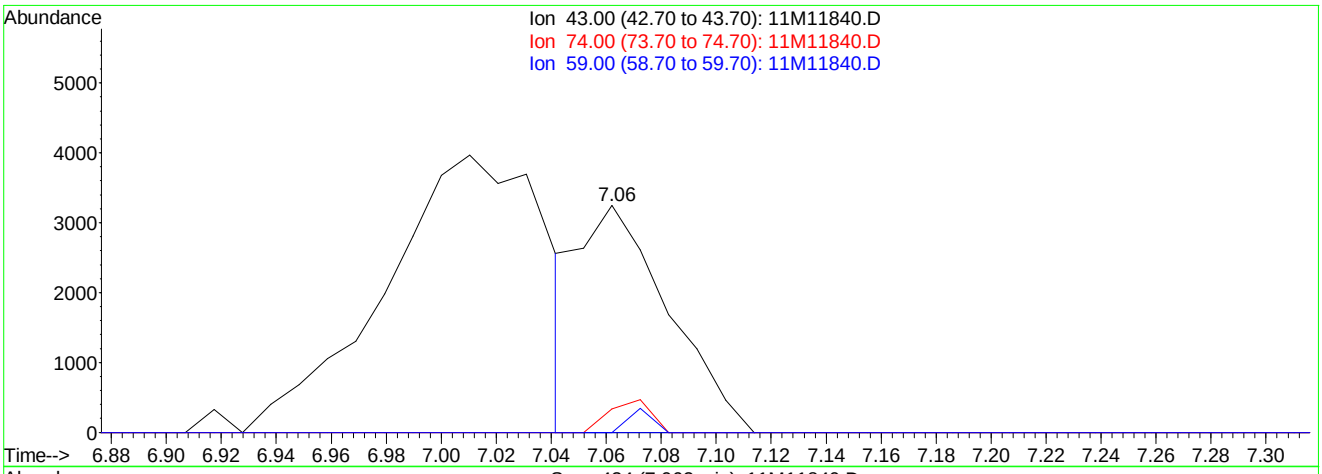

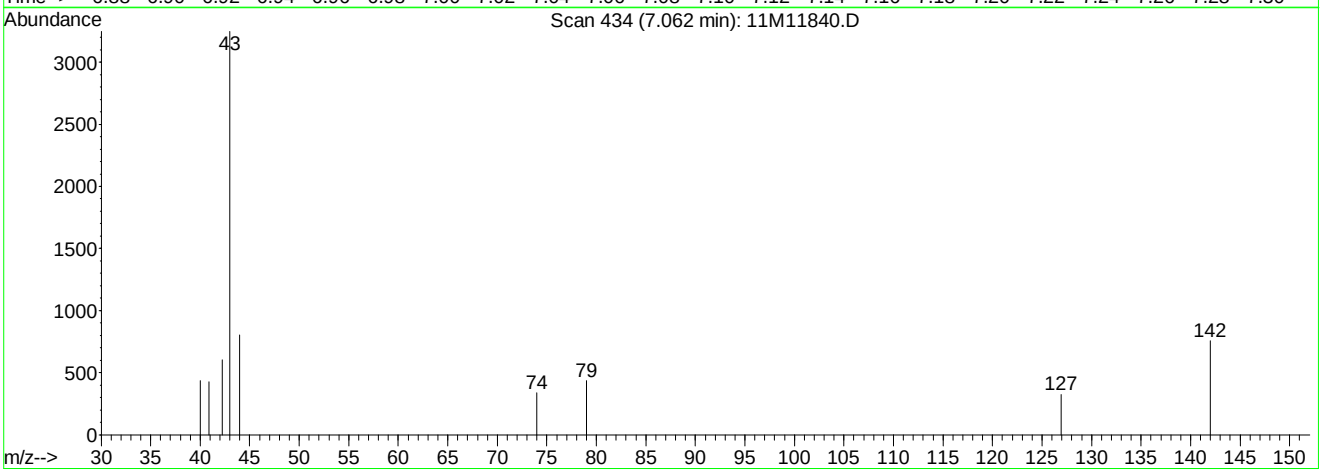

TIC: 11M11840.D

(18) Methyl acetate (T)

7.06min 0.86ug/L mint

response 7344

Ion	Exp%	Act%
43.00	100	100
74.00	13.60	6.84#
59.00	6.50	2.93#
0.00	0.00	0.00

11M11840.D 8260WT.M Sat May 14 18:46:39 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:12:58 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 17:07:56 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	510485	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	424113	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	244127	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	13577	2.3093 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	9.24%#	
43) 1,2-Dichloroethane-d4	10.23	65	16340	2.3640 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	9.44%#	
57) Toluene-d8	12.47	98	46369	2.3570 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	9.44%#	
78) p-Bromofluorobenzene	15.64	95	19139	2.4218 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	9.68%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	33260	4.2909 ug/L	97
3) Chloromethane	3.72	50	29484	4.2588 ug/L	100
4) Vinyl Chloride	3.96	62	24947	4.6446 ug/L	98
5) 1,3-Butadiene	4.00	54	24704	4.8274 ug/L	87
6) Bromomethane	4.85	94	16794	4.7876 ug/L	96
7) Chloroethane	5.00	64	15417	4.1982 ug/L	96
8) Trichlorofluoromethane	5.48	101	50663	4.8750 ug/L	98
9) Diethyl ether	6.01	59	199353	45.0064 ug/L	100
10) Isoprene	6.04	67	30513	4.3864 ug/L	99
11) Acrolein	6.25	56	12345	23.3877 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	23865	4.5585 ug/L	97
13) Acetone	6.35	43	6439	4.2186 ug/L	86
14) 1,1-Dichloroethene	6.56	61	43769	4.6158 ug/L	96
15) Tert-Butyl Alcohol	6.66	59	34212	87.4805 ug/L	100
16) Dimethyl Sulfide	6.81	62	17251	4.0482 ug/L	99
17) Iodomethane	7.06	142	7385	2.0684 ug/L	94
18) Methyl acetate	7.06	43	32363	5.4250 ug/L #	83
19) Methylene Chloride	7.31	84	23476	4.4707 ug/L	98
20) Carbon Disulfide	7.36	76	72931	4.4715 ug/L	98
21) Acrylonitrile	7.49	53	38039	20.0847 ug/L	96
22) Methyl Tert Butyl Ether	7.52	73	57597	4.3071 ug/L	98
23) trans-1,2-Dichloroethene	7.74	96	23369	4.3390 ug/L	99
24) n-Hexane	7.82	57	38507	4.3615 ug/L	99
25) Diisopropyl ether	8.15	45	1105208	48.2180 ug/L	99
26) Vinyl Acetate	8.31	43	24007	7.3442 ug/L	97
27) 1,1-Dichloroethane	8.34	63	51535	4.8316 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	899266	48.1312 ug/L	99
29) 2-Butanone	8.88	43	8098	3.5469 ug/L	98
30) Propionitrile	8.98	54	26204	41.2561 ug/L	97
31) 2,2-Dichloropropane	9.09	77	40285	5.2526 ug/L	97
32) cis-1,2-Dichloroethene	9.15	96	27456	4.6081 ug/L	91
33) Chloroform	9.35	83	48958	4.7306 ug/L	97
34) 1-Bromopropane	9.47	122	4632	4.9482 ug/L	88
35) Bromochloromethane	9.57	130	17073	4.6807 ug/L	99
36) Tetrahydrofuran	9.60	42	59638	39.6839 ug/L	99
38) 1,1,1-Trichloroethane	9.85	97	48123	4.8983 ug/L	100
39) Cyclohexane	9.88	56	51945	4.5931 ug/L	98
40) 1,1-Dichloropropene	10.04	75	33867	4.6344 ug/L	99
41) Carbon Tetrachloride	10.17	117	47434	5.0851 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	615710	46.3601 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M11841.D 8260WT.M Fri May 13 17:12:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:12:58 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 17:07:56 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	40281	4.6727 ug/L	99
45)	Benzene	10.38	78	94223	4.6151 ug/L	99
46)	Trichloroethene	11.08	130	31195	4.7740 ug/L	96
47)	Methylcyclohexane	11.17	83	35731	4.4100 ug/L	96
48)	1,2-Dichloropropane	11.29	63	25973	4.4921 ug/L	93
49)	1,4-Dioxane	11.56	88	2747	80.2363 ug/L	93
50)	Bromodichloromethane	11.57	83	36997	4.7467 ug/L	99
51)	Dibromomethane	11.65	93	13963	4.5774 ug/L	97
52)	2-Chloroethyl Vinyl Ether	11.84	63	11417	3.7313 ug/L	95
53)	4-Methyl-2-Pentanone	11.87	58	6133	3.2690 ug/L	90
54)	cis-1,3-Dichloropropene	12.17	75	36461	4.5343 ug/L	100
55)	Dimethyl Disulfide	12.42	79	18914	3.7032 ug/L	99
58)	Toluene	12.56	91	107617	4.9467 ug/L	100
59)	Ethyl Methacrylate	12.65	69	21187	4.1021 ug/L	99
60)	trans-1,3-Dichloropropene	12.73	75	32824	4.5778 ug/L	99
61)	1,1,2-Trichloroethane	12.94	97	17791	4.3060 ug/L	98
62)	2-Hexanone	12.86	43	11606	3.4244 ug/L	99
63)	1,3-Dichloropropane	13.21	76	30121	4.5460 ug/L	97
64)	Tetrachloroethene	13.33	164	24241	4.8819 ug/L	95
65)	Dibromochloromethane	13.59	129	27989	4.7024 ug/L	95
66)	1,2-Dibromoethane	13.82	107	18147	4.4382 ug/L	96
67)	1-Chlorohexane	13.89	91	33195	4.6591 ug/L	97
68)	Chlorobenzene	14.29	112	79059	4.9583 ug/L	98
69)	1,1,1,2-Tetrachloroethane	14.32	131	31047	4.8956 ug/L	97
70)	Ethylbenzene	14.31	106	39304	4.8168 ug/L	95
71)	m-,p-Xylene	14.39	106	95751	9.7273 ug/L	95
72)	o-Xylene	14.92	106	45759	4.7228 ug/L	96
73)	Styrene	14.95	104	77900	4.8227 ug/L	98
74)	Bromoform	15.43	173	15663	4.1856 ug/L	97
75)	Isopropylbenzene	15.31	105	123883	4.9827 ug/L	99
77)	1,1,2,2-Tetrachloroethane	15.51	83	18105	4.4049 ug/L	100
79)	1,2,3-Trichloropropane	15.70	110	6717	4.7266 ug/L	85
80)	trans-1,4-Dichloro-2-Buten	15.74	53	6067	3.6507 ug/L	69
81)	n-Propylbenzene	15.79	91	143972	5.2435 ug/L	99
82)	Bromobenzene	15.92	156	37345	4.9800 ug/L	93
83)	1,3,5-Trimethylbenzene	15.95	105	106030	5.0309 ug/L	100
84)	2-Chlorotoluene	16.05	91	99279	4.9734 ug/L	100
85)	4-Chlorotoluene	16.09	91	88275	5.1992 ug/L	98
86)	a-Methylstyrene	16.34	118	53766	4.7153 ug/L	98
87)	tert-Butylbenzene	16.39	134	23868	5.2956 ug/L	97
88)	1,2,4-Trimethylbenzene	16.44	105	112072	5.2401 ug/L	99
89)	sec-Butylbenzene	16.65	105	129249	5.1810 ug/L	99
90)	p-Isopropyltoluene	16.79	119	119605	5.2524 ug/L	98
91)	1,3-Dichlorobenzene	16.98	146	71265	5.0271 ug/L	99
92)	1,4-Dichlorobenzene	17.10	146	72437	5.0122 ug/L	96
93)	n-Butylbenzene	17.28	91	100062	4.9277 ug/L	99
94)	1,2-Dichlorobenzene	17.57	146	64925	4.9520 ug/L	98
95)	1,2-Dibromo-3-Chloropropan	18.49	75	3875	4.6567 ug/L	87
96)	1,2,4-Trichlorobenzene	19.55	180	46664	4.8629 ug/L	97
97)	Hexachlorobutadiene	19.69	225	20419	5.1319 ug/L	96
98)	Naphthalene	19.90	128	83612	4.4869 ug/L	99
99)	1,2,3-Trichlorobenzene	20.19	180	40714	4.5323 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M11841.D 8260WT.M Fri May 13 17:12:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:12 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 17:07:56 2016
Response via : Initial Calibration

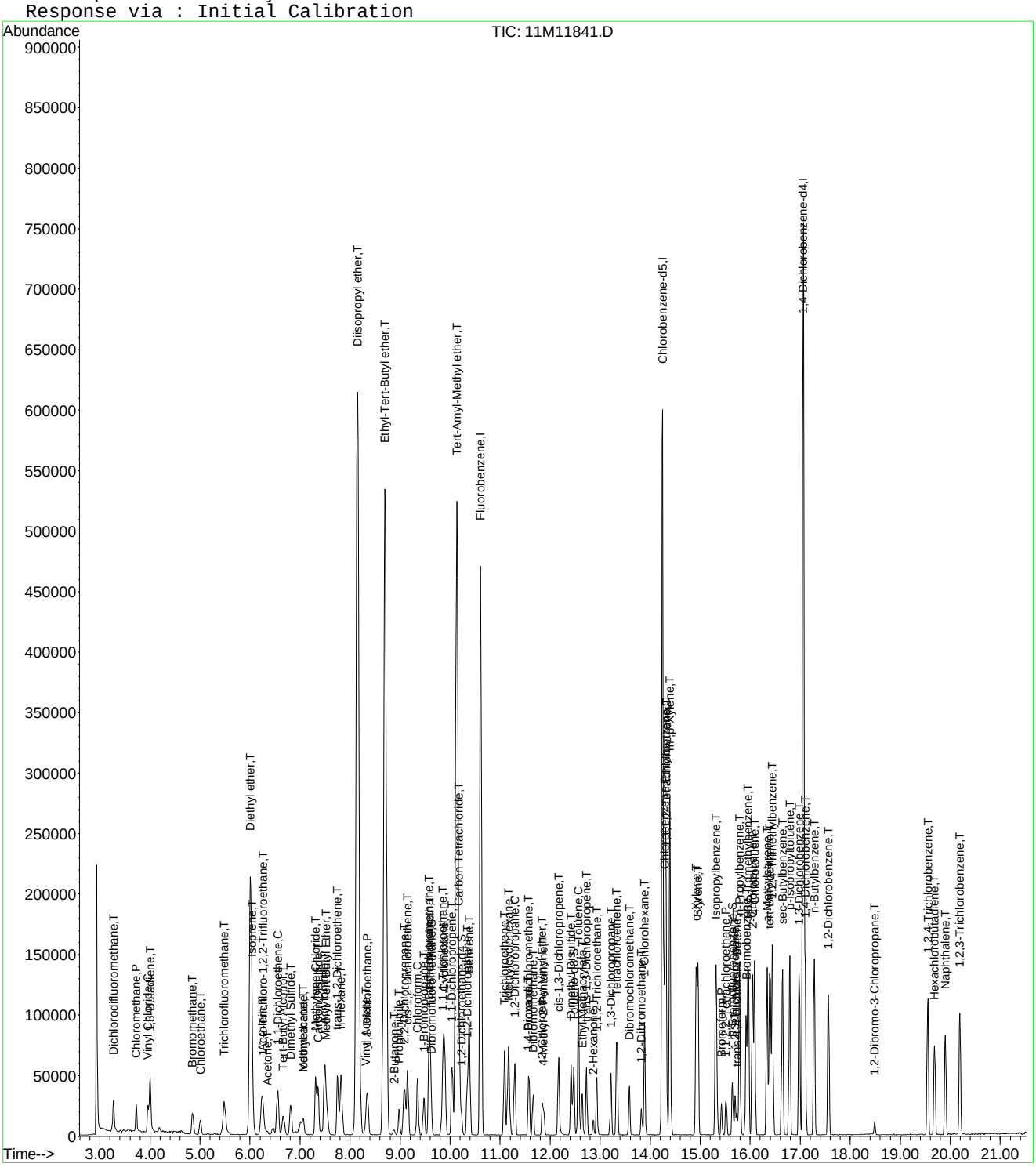

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.1584	16.8	100	0.00
3	P	Chloromethane	5.0000	4.6027	7.9	100	0.00
4	C	Vinyl Chloride	5.0000	4.6895	6.2	100	0.00
5	T	1,3-Butadiene	5.0000	4.6702	6.6	100	0.00
6	T	Bromomethane	5.0000	4.5915	8.2	100	0.00
7	T	Chloroethane	5.0000	4.5105	9.8	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.7781	4.4	100	0.00
9	T	Diethyl ether	50.0000	50.8371	-1.7	100	0.00
10	T	Isoprene	5.0000	4.6688	6.6	100	0.00
11	T	Acrolein	25.0000	24.7297	1.1	100	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.6385	7.2	100	0.01
13	T	Acetone	5.0000	5.3120	-6.2	100	0.01
14	C	1,1-Dichloroethene	5.0000	4.6835	6.3	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	102.0360	-2.0	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.6223	7.6	100	0.00
17	T	Iodomethane	5.0000	3.9124	21.8	100	0.00
18	T	Methyl acetate	5.0000	7.5474	-50.9#	100	0.00
19	T	Methylene Chloride	5.0000	4.8539	2.9	100	0.00
20	T	Carbon Disulfide	5.0000	4.6615	6.8	100	0.00
21	T	Acrylonitrile	25.0000	23.4049	6.4	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.7747	4.5	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.5182	9.6	100	0.00
24	T	n-Hexane	5.0000	4.4700	10.6	100	0.00
25	T	Diisopropyl ether	50.0000	51.4154	-2.8	100	0.00
26	T	Vinyl Acetate	5.0000	5.1698	-3.4	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.9658	0.7	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	51.3996	-2.8	100	0.00
29	T	2-Butanone	5.0000	4.4190	11.6	100	0.01
30	T	Propionitrile	50.0000	48.8210	2.4	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.9614	0.8	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.8145	3.7	100	0.00
33	C	Chloroform	5.0000	4.8039	3.9	100	0.00
34	T	1-Bromopropane	5.0000	5.1449	-2.9	100	0.00
35	T	Bromochloromethane	5.0000	5.0410	-0.8	100	0.00
36	T	Tetrahydrofuran	50.0000	46.0861	7.8	100	0.00
37	S	Dibromofluoromethane	2.5000	2.4302	2.8	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.7984	4.0	100	0.00
39	T	Cyclohexane	5.0000	4.7526	4.9	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.7295	5.4	100	0.00
41	T	Carbon Tetrachloride	5.0000	4.8435	3.1	100	-0.01
42	T	Tert-Amyl-Methyl ether	50.0000	50.6462	-1.3	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.5650	-2.6	100	0.00
44	T	1,2-Dichloroethane	5.0000	4.8665	2.7	100	0.00
45	T	Benzene	5.0000	4.8065	3.9	100	0.00
46	T	Trichloroethene	5.0000	4.8959	2.1	100	-0.01
47	T	Methylcyclohexane	5.0000	4.5439	9.1	100	0.00
48	C	1,2-Dichloropropane	5.0000	4.7864	4.3	100	0.00
49	T	1,4-Dioxane	100.0000	102.6541	-2.7	100	0.01
50	T	Bromodichloromethane	5.0000	4.8566	2.9	100	0.00
51	T	Dibromomethane	5.0000	4.9379	1.2	100	0.00
52	T	2-Chloroethyl Vinyl Ether	5.0000	4.2689	14.6	100	0.00
53	T	4-Methyl-2-Pentanone	5.0000	4.0658	18.7	100	0.00
54	T	cis-1,3-Dichloropropene	5.0000	4.7853	4.3	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	5.0000	4.1252	17.5	100	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	2.5000	2.5163	-0.7	100	0.00
58	C	Toluene	5.0000	5.0124	-0.2	100	0.00
59	T	Ethyl Methacrylate	5.0000	4.6214	7.6	100	0.00
60	T	trans-1,3-Dichloropropene	5.0000	4.7629	4.7	100	0.00
61	T	1,1,2-Trichloroethane	5.0000	4.6730	6.5	100	0.00
62	T	2-Hexanone	5.0000	4.1507	17.0	100	0.00
63	T	1,3-Dichloropropane	5.0000	4.9267	1.5	100	0.00
64	T	Tetrachloroethene	5.0000	4.8551	2.9	100	-0.01
65	T	Dibromochloromethane	5.0000	4.8199	3.6	100	0.00
66	T	1,2-Dibromoethane	5.0000	4.7575	4.8	100	0.00
67	T	1-Chlorohexane	5.0000	4.6895	6.2	100	0.00
68	P	Chlorobenzene	5.0000	5.0264	-0.5	100	0.00
69	T	1,1,1,2-Tetrachloroethane	5.0000	4.8783	2.4	100	0.00
70	C	Ethylbenzene	5.0000	4.8732	2.5	100	0.00
71	T	m-,p-Xylene	10.0000	9.7654	2.3	100	0.00
72	T	o-Xylene	5.0000	4.7954	4.1	100	0.00
73	T	Styrene	5.0000	4.9411	1.2	100	0.00
74	P	Bromoform	5.0000	4.4503	11.0	100	0.00
75	T	Isopropylbenzene	5.0000	4.9091	1.8	100	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	5.0000	4.7624	4.8	100	-0.01
78	S	p-Bromofluorobenzene	2.5000	2.5432	-1.7	100	0.00
79	T	1,2,3-Trichloropropane	5.0000	5.0393	-0.8	100	0.00
80	T	trans-1,4-Dichloro-2-Butene	5.0000	4.0050	19.9	100	0.00
81	T	n-Propylbenzene	5.0000	5.0923	-1.8	100	0.00
82	T	Bromobenzene	5.0000	5.0338	-0.7	100	0.00
83	T	1,3,5-Trimethylbenzene	5.0000	4.9145	1.7	100	-0.01
84	T	2-Chlorotoluene	5.0000	5.0134	-0.3	100	0.00
85	T	4-Chlorotoluene	5.0000	4.9765	0.5	100	0.00
86	T	a-Methylstyrene	5.0000	4.7239	5.5	100	0.00
87	T	tert-Butylbenzene	5.0000	5.2217	-4.4	100	-0.01
88	T	1,2,4-Trimethylbenzene	5.0000	5.1012	-2.0	100	0.00
89	T	sec-Butylbenzene	5.0000	4.9892	0.2	100	0.00
90	T	p-Isopropyltoluene	5.0000	5.0265	-0.5	100	0.00
91	T	1,3-Dichlorobenzene	5.0000	4.9737	0.5	100	0.00
92	T	1,4-Dichlorobenzene	5.0000	4.9875	0.2	100	0.00
93	T	n-Butylbenzene	5.0000	4.7722	4.6	100	0.00
94	T	1,2-Dichlorobenzene	5.0000	4.9741	0.5	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	5.0000	5.1051	-2.1	100	0.00
96	T	1,2,4-Trichlorobenzene	5.0000	4.8858	2.3	100	0.00
97	T	Hexachlorobutadiene	5.0000	4.8528	2.9	100	0.00
98	T	Naphthalene	5.0000	4.7164	5.7	100	0.00
99	T	1,2,3-Trichlorobenzene	5.0000	4.6448	7.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11841.D 8260WT.M Sat May 14 18:48:20 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11842.D Vial: 7
Acq On : 13 May 2016 17:19 Operator: JDS
Sample : WG568769-07 20ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:53 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	512017	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	433937	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	255524	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	58089	10.3664 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 41.48%#		
43) 1,2-Dichloroethane-d4	10.23	65	66804	10.4555 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 41.84%#		
57) Toluene-d8	12.47	98	193532	10.2645 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 41.04%#		
78) p-Bromofluorobenzene	15.64	95	81186	10.3070 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 41.24%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	176636	22.0179 ug/L	99
3) Chloromethane	3.72	50	126901	19.7510 ug/L	98
4) Vinyl Chloride	3.96	62	109592	20.5394 ug/L	98
5) 1,3-Butadiene	4.00	54	116317	21.9237 ug/L	96
6) Bromomethane	4.85	94	73878	20.1380 ug/L	93
7) Chloroethane	5.00	64	71103	20.7401 ug/L	100
8) Trichlorofluoromethane	5.49	101	225913	21.2425 ug/L	99
9) Diethyl ether	6.01	59	321203	81.6650 ug/L	99
10) Isoprene	6.04	67	135641	20.6925 ug/L	98
11) Acrolein	6.24	56	19366	37.8284 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	109792	21.2757 ug/L	99
13) Acetone	6.34	43	27399	22.5356 ug/L	96
14) 1,1-Dichloroethene	6.56	61	201658	21.5139 ug/L	98
15) Tert-Butyl Alcohol	6.67	59	60081	178.6532 ug/L	99
16) Dimethyl Sulfide	6.81	62	75759	20.2383 ug/L	97
17) Iodomethane	7.06	142	67280	17.2594 ug/L	97
18) Methyl acetate	7.07	43	87945	22.4983 ug/L	96
19) Methylene Chloride	7.31	84	99453	20.5013 ug/L	100
20) Carbon Disulfide	7.36	76	327043	20.8410 ug/L	100
21) Acrylonitrile	7.49	53	69618	42.7070 ug/L	95
22) Methyl Tert Butyl Ether	7.52	73	266288	22.0086 ug/L	99
23) trans-1,2-Dichloroethene	7.75	96	107858	20.7912 ug/L	99
24) n-Hexane	7.82	57	184135	21.3111 ug/L	99
25) Diisopropyl ether	8.15	45	1729257	80.2062 ug/L	99
26) Vinyl Acetate	8.31	43	160029	20.6235 ug/L	99
27) 1,1-Dichloroethane	8.34	63	218994	21.0387 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1435318	81.7933 ug/L	100
29) 2-Butanone	8.87	43	39878	21.6958 ug/L	99
30) Propionitrile	8.97	54	47221	87.7149 ug/L	99
31) 2,2-Dichloropropane	9.09	77	166427	20.4352 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	120620	21.0877 ug/L	99
33) Chloroform	9.35	83	208615	20.4085 ug/L	99
34) 1-Bromopropane	9.48	122	19153	19.2424 ug/L	96
35) Bromochloromethane	9.57	130	77189	22.7226 ug/L	99
36) Tetrahydrofuran	9.60	42	109362	84.2581 ug/L	100
38) 1,1,1-Trichloroethane	9.85	97	210871	20.9631 ug/L	98
39) Cyclohexane	9.88	56	235071	21.4428 ug/L	99
40) 1,1-Dichloropropene	10.04	75	151682	21.1188 ug/L	99
41) Carbon Tetrachloride	10.17	117	212111	21.5941 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	1001790	82.1572 ug/L	100

(#) = qualifier out of range (m) = manual integration
11M11842.D 8260WT.M Sat May 14 18:50:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11842.D Vial: 7
Acq On : 13 May 2016 17:19 Operator: JDS
Sample : WG568769-07 20ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:53 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	180438	21.7339	ug/L	99
45)	Benzene	10.38	78	407777	20.7394	ug/L	100
46)	Trichloroethene	11.08	130	132094	20.6692	ug/L	99
47)	Methylcyclohexane	11.17	83	168355	21.3455	ug/L	98
48)	1,2-Dichloropropane	11.29	63	112875	20.7388	ug/L	99
49)	1,4-Dioxane	11.56	88	4948	165.8209	ug/L	99
50)	Bromodichloromethane	11.57	83	163762	21.4329	ug/L	98
51)	Dibromomethane	11.65	93	61028	21.5174	ug/L	98
52)	2-Chloroethyl Vinyl Ether	11.84	63	56664	21.1238	ug/L	99
53)	4-Methyl-2-Pentanone	11.87	58	32621	21.5609	ug/L	99
54)	cis-1,3-Dichloropropene	12.17	75	166399	21.7735	ug/L	100
55)	Dimethyl Disulfide	12.42	79	93808	20.3984	ug/L	99
58)	Toluene	12.56	91	467769	21.2936	ug/L	99
59)	Ethyl Methacrylate	12.64	69	103892	22.1484	ug/L	98
60)	trans-1,3-Dichloropropene	12.73	75	155661	22.0759	ug/L	100
61)	1,1,2-Trichloroethane	12.94	97	85297	21.8971	ug/L	100
62)	2-Hexanone	12.86	43	62113	21.7109	ug/L	99
63)	1,3-Dichloropropane	13.21	76	137448	21.9726	ug/L	98
64)	Tetrachloroethene	13.34	164	106368	20.8217	ug/L	99
65)	Dibromochloromethane	13.59	129	131143	22.0723	ug/L	99
66)	1,2-Dibromoethane	13.82	107	84381	21.6209	ug/L	99
67)	1-Chlorohexane	13.89	91	153420	21.1830	ug/L	100
68)	Chlorobenzene	14.29	112	338669	21.0446	ug/L	99
69)	1,1,1,2-Tetrachloroethane	14.32	131	134571	20.6660	ug/L	98
70)	Ethylbenzene	14.31	106	171752	20.8130	ug/L	97
71)	m-,p-Xylene	14.39	106	419228	41.7882	ug/L	99
72)	o-Xylene	14.92	106	208125	21.3170	ug/L	99
73)	Styrene	14.95	104	353452	21.9116	ug/L	98
74)	Bromoform	15.43	173	78592	21.8247	ug/L	100
75)	Isopropylbenzene	15.31	105	552747	21.4078	ug/L	99
77)	1,1,2,2-Tetrachloroethane	15.52	83	90122	22.6486	ug/L	98
79)	1,2,3-Trichloropropane	15.70	110	30969	20.9562	ug/L	97
80)	trans-1,4-Dichloro-2-Buten	15.74	53	36190	19.3325	ug/L	86
81)	n-Propylbenzene	15.79	91	640711	21.6512	ug/L	100
82)	Bromobenzene	15.92	156	160227	20.6340	ug/L	100
83)	1,3,5-Trimethylbenzene	15.95	105	481759	21.3337	ug/L	100
84)	2-Chlorotoluene	16.05	91	435100	20.9919	ug/L	99
85)	4-Chlorotoluene	16.09	91	391759	21.1004	ug/L	100
86)	a-Methylstyrene	16.34	118	253642	21.2911	ug/L	99
87)	tert-Butylbenzene	16.39	134	101859	21.2903	ug/L	99
88)	1,2,4-Trimethylbenzene	16.44	105	505239	21.9714	ug/L	98
89)	sec-Butylbenzene	16.65	105	586770	21.6398	ug/L	100
90)	p-Isopropyltoluene	16.79	119	539795	21.6735	ug/L	100
91)	1,3-Dichlorobenzene	16.98	146	312832	20.8591	ug/L	99
92)	1,4-Dichlorobenzene	17.10	146	314339	20.6779	ug/L	99
93)	n-Butylbenzene	17.28	91	474312	21.6121	ug/L	99
94)	1,2-Dichlorobenzene	17.57	146	287316	21.0305	ug/L	100
95)	1,2-Dibromo-3-Chloropropan	18.49	75	19607	22.2193	ug/L	89
96)	1,2,4-Trichlorobenzene	19.55	180	212916	21.2982	ug/L	100
97)	Hexachlorobutadiene	19.69	225	91388	20.7507	ug/L	99
98)	Naphthalene	19.90	128	414073	22.3154	ug/L	99
99)	1,2,3-Trichlorobenzene	20.19	180	193437	21.0836	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11842.D Vial: 7
Acq On : 13 May 2016 17:19 Operator: JDS
Sample : WG568769-07 20ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

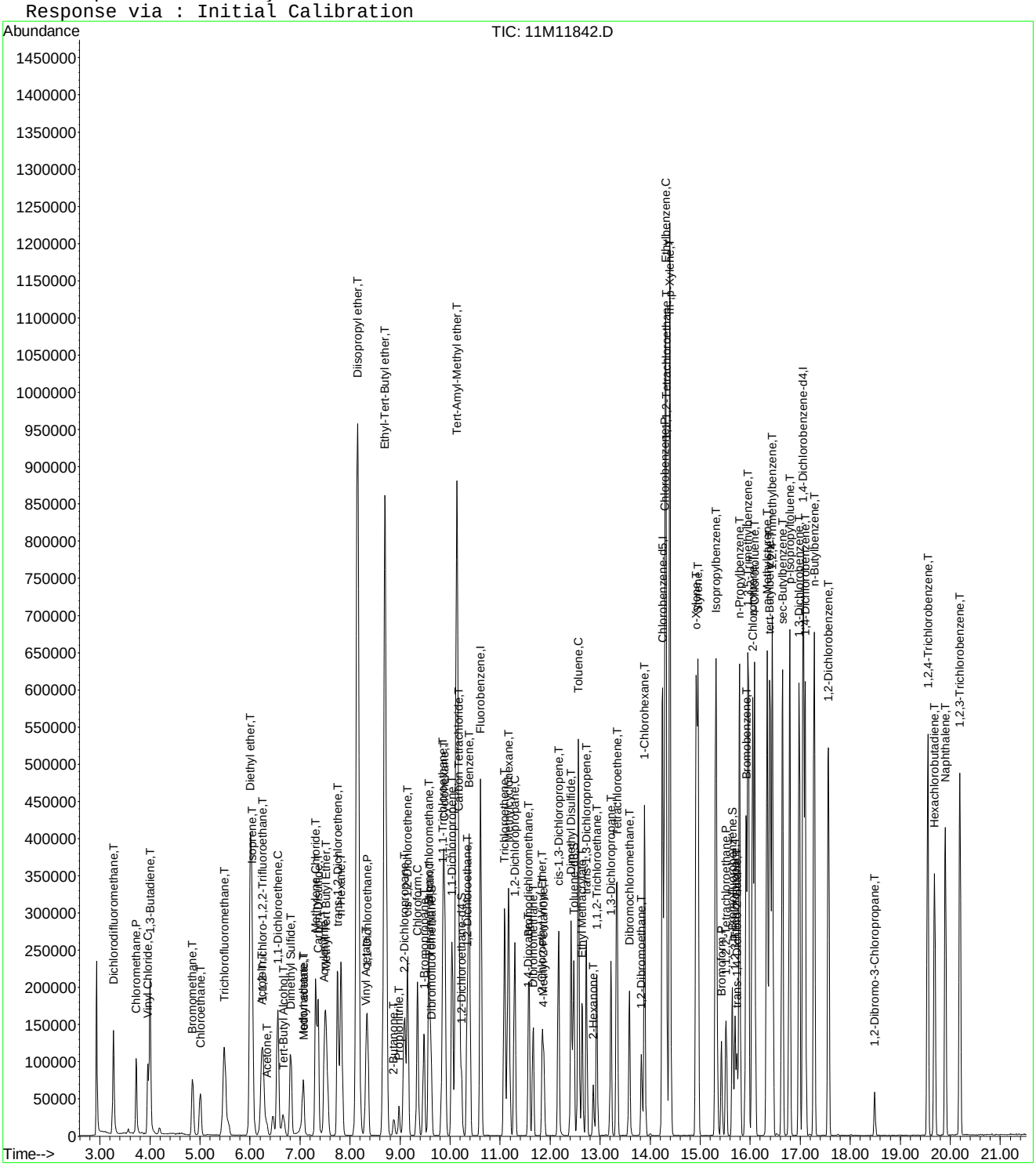

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11843.D Vial: 8
Acq On : 13 May 2016 17:51 Operator: JDS
Sample : WG568769-08 50ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:56 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	521583	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	438582	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	263885	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	139784	24.4879 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.96%		
43) 1,2-Dichloroethane-d4	10.23	65	158200	24.3058 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.24%		
57) Toluene-d8	12.47	98	462969	24.2947 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.16%		
78) p-Bromofluorobenzene	15.64	95	188875	23.2189 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.88%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	416971	51.0228 ug/L	100
3) Chloromethane	3.72	50	287508	43.9273 ug/L	100
4) Vinyl Chloride	3.96	62	261024	48.0232 ug/L	100
5) 1,3-Butadiene	4.00	54	280913	51.9760 ug/L	100
6) Bromomethane	4.85	94	172294	46.1032 ug/L	100
7) Chloroethane	5.00	64	167978	48.0991 ug/L	100
8) Trichlorofluoromethane	5.48	101	519806	47.9806 ug/L	100
9) Diethyl ether	6.01	59	391891	97.8098 ug/L	100
10) Isoprene	6.04	67	331169	49.5943 ug/L	100
11) Acrolein	6.23	56	25228	47.9550 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	255341	48.5730 ug/L	100
13) Acetone	6.34	43	57896	46.7459 ug/L	98
14) 1,1-Dichloroethene	6.56	61	459793	48.1534 ug/L	100
15) Tert-Butyl Alcohol	6.66	59	69395	202.5643 ug/L	100
16) Dimethyl Sulfide	6.81	62	193959	50.8640 ug/L	100
17) Iodomethane	7.06	142	214554	49.3519 ug/L	100
18) Methyl acetate	7.06	43	185465	48.1983 ug/L	100
19) Methylene Chloride	7.31	84	233601	47.2715 ug/L	100
20) Carbon Disulfide	7.36	76	816514	51.0786 ug/L	100
21) Acrylonitrile	7.49	53	84821	51.0789 ug/L	100
22) Methyl Tert Butyl Ether	7.52	73	610666	49.5457 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	252405	47.7624 ug/L	100
24) n-Hexane	7.82	57	449694	51.0913 ug/L	100
25) Diisopropyl ether	8.15	45	2181723	99.3365 ug/L	100
26) Vinyl Acetate	8.31	43	410275	48.2141 ug/L	100
27) 1,1-Dichloroethane	8.34	63	516691	48.7281 ug/L	100
28) Ethyl-Tert-Butyl ether	8.70	59	1783350	99.7625 ug/L	100
29) 2-Butanone	8.87	43	91238	48.7281 ug/L	100
30) Propionitrile	8.97	54	56538	103.0954 ug/L	100
31) 2,2-Dichloropropane	9.09	77	402511	48.5170 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	282222	48.4353 ug/L	100
33) Chloroform	9.35	83	489993	47.0562 ug/L	100
34) 1-Bromopropane	9.48	122	50180	48.4991 ug/L	100
35) Bromochloromethane	9.57	130	179921	51.9932 ug/L	100
36) Tetrahydrofuran	9.60	42	127999	96.8083 ug/L	100
38) 1,1,1-Trichloroethane	9.85	97	497667	48.5667 ug/L	100
39) Cyclohexane	9.88	56	575045	51.4928 ug/L	100
40) 1,1-Dichloropropene	10.04	75	353148	48.2674 ug/L	100
41) Carbon Tetrachloride	10.18	117	493225	49.2921 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	1227500	98.8215 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11843.D Vial: 8
Acq On : 13 May 2016 17:51 Operator: JDS
Sample : WG568769-08 50ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:56 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.34	62	419000	49.5434 ug/L	100
45) Benzene	10.38	78	947514	47.3064 ug/L	100
46) Trichloroethene	11.09	130	307211	47.1888 ug/L	100
47) Methylcyclohexane	11.17	83	418631	52.1043 ug/L	100
48) 1,2-Dichloropropane	11.29	63	268423	48.4136 ug/L	100
49) 1,4-Dioxane	11.55	88	5866	189.1665 ug/L	100
50) Bromodichloromethane	11.57	83	385292	49.5015 ug/L	100
51) Dibromomethane	11.65	93	142910	49.4635 ug/L	100
52) 2-Chloroethyl Vinyl Ether	11.84	63	133225	48.7541 ug/L	100
53) 4-Methyl-2-Pentanone	11.87	58	75720	49.1295 ug/L	100
54) cis-1,3-Dichloropropene	12.17	75	394857	50.7199 ug/L	100
55) Dimethyl Disulfide	12.42	79	236984	50.5867 ug/L	100
58) Toluene	12.56	91	1095397	49.3360 ug/L	100
59) Ethyl Methacrylate	12.65	69	249821	52.6944 ug/L	100
60) trans-1,3-Dichloropropene	12.73	75	366443	51.4187 ug/L	100
61) 1,1,2-Trichloroethane	12.93	97	194150	49.3135 ug/L	100
62) 2-Hexanone	12.86	43	144364	49.9264 ug/L	100
63) 1,3-Dichloropropane	13.21	76	316783	50.1049 ug/L	100
64) Tetrachloroethene	13.34	164	251037	48.6205 ug/L	100
65) Dibromochloromethane	13.59	129	310662	51.7330 ug/L	100
66) 1,2-Dibromoethane	13.82	107	196704	49.8676 ug/L	100
67) 1-Chlorohexane	13.89	91	376690	51.4596 ug/L	100
68) Chlorobenzene	14.29	112	797442	49.0276 ug/L	100
69) 1,1,1,2-Tetrachloroethane	14.32	131	325801	49.5033 ug/L	100
70) Ethylbenzene	14.31	106	408749	49.0078 ug/L	100
71) m-,p-Xylene	14.39	106	996141	98.2427 ug/L	100
72) o-Xylene	14.92	106	492043	49.8632 ug/L	100
73) Styrene	14.95	104	838125	51.4077 ug/L	100
74) Bromoform	15.43	173	184100	50.5823 ug/L	100
75) Isopropylbenzene	15.31	105	1309383	50.1751 ug/L	100
77) 1,1,2,2-Tetrachloroethane	15.52	83	208930	50.8426 ug/L	100
79) 1,2,3-Trichloropropane	15.70	110	72411	46.9859 ug/L	100
80) trans-1,4-Dichloro-2-Buten	15.74	53	94075	47.5347 ug/L	100
81) n-Propylbenzene	15.79	91	1522917	49.8325 ug/L	100
82) Bromobenzene	15.92	156	379178	47.2834 ug/L	100
83) 1,3,5-Trimethylbenzene	15.96	105	1143246	49.0221 ug/L	100
84) 2-Chlorotoluene	16.05	91	1021921	47.7415 ug/L	100
85) 4-Chlorotoluene	16.09	91	930690	48.5394 ug/L	100
86) a-Methylstyrene	16.34	118	649847	52.8208 ug/L	100
87) tert-Butylbenzene	16.40	134	241955	48.9705 ug/L	100
88) 1,2,4-Trimethylbenzene	16.44	105	1178963	49.6454 ug/L	100
89) sec-Butylbenzene	16.65	105	1390388	49.6522 ug/L	100
90) p-Isopropyltoluene	16.79	119	1282252	49.8529 ug/L	100
91) 1,3-Dichlorobenzene	16.98	146	737967	47.6473 ug/L	100
92) 1,4-Dichlorobenzene	17.10	146	740977	47.1987 ug/L	100
93) n-Butylbenzene	17.28	91	1126170	49.6883 ug/L	100
94) 1,2-Dichlorobenzene	17.57	146	684016	48.4812 ug/L	100
95) 1,2-Dibromo-3-Chloropropan	18.49	75	42848	46.3023 ug/L	100
96) 1,2,4-Trichlorobenzene	19.55	180	512927	49.6830 ug/L	100
97) Hexachlorobutadiene	19.69	225	219129	48.1793 ug/L	100
98) Naphthalene	19.90	128	962852	50.2463 ug/L	100
99) 1,2,3-Trichlorobenzene	20.19	180	453828	47.8975 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11843.D Vial: 8
Acq On : 13 May 2016 17:51 Operator: JDS
Sample : WG568769-08 50ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

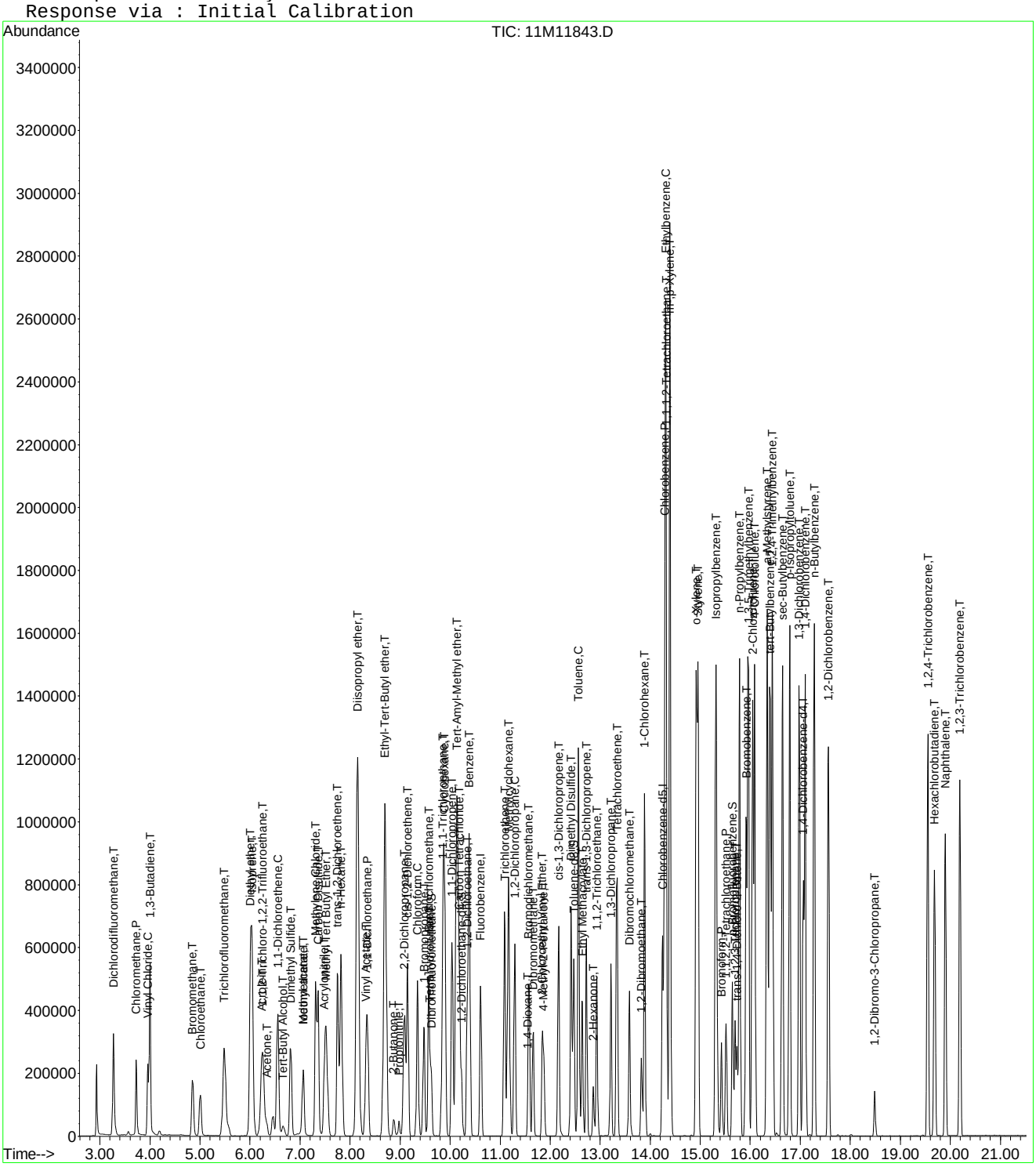

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11844.D Vial: 9
Acq On : 13 May 2016 18:22 Operator: JDS
Sample : WG568769-09 100ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:57 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	541540	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	458522	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	275719	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	307700	51.9175 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 207.68%#		
43) 1,2-Dichloroethane-d4	10.23	65	345779	51.1676 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 204.68%#		
57) Toluene-d8	12.47	98	1011334	50.7627 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 203.04%#		
78) p-Bromofluorobenzene	15.64	95	423157	49.7872 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 199.16%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	918088	108.2020 ug/L	100
3) Chloromethane	3.72	50	641242	94.3625 ug/L	99
4) Vinyl Chloride	3.95	62	586615	103.9481 ug/L	100
5) 1,3-Butadiene	3.99	54	571156	101.7838 ug/L	99
6) Bromomethane	4.85	94	394826	101.7560 ug/L	99
7) Chloroethane	5.00	64	370541	102.1913 ug/L	99
8) Trichlorofluoromethane	5.48	101	1135647	100.9627 ug/L	98
9) Diethyl ether	6.01	59	836495	201.0821 ug/L	99
10) Isoprene	6.04	67	699724	100.9257 ug/L	100
11) Acrolein	6.24	56	55228	99.4421 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	545013	99.8560 ug/L	100
13) Acetone	6.34	43	123799	96.2731 ug/L	95
14) 1,1-Dichloroethene	6.56	61	1004294	101.3022 ug/L	100
15) Tert-Butyl Alcohol	6.66	59	148134	416.4687 ug/L	98
16) Dimethyl Sulfide	6.81	62	401237	101.3432 ug/L	100
17) Iodomethane	7.06	142	471112	102.3553 ug/L	100
18) Methyl acetate	7.07	43	381031	98.0957 ug/L	99
19) Methylene Chloride	7.31	84	501609	97.7649 ug/L	99
20) Carbon Disulfide	7.36	76	1695322	102.1458 ug/L	100
21) Acrylonitrile	7.49	53	184461	106.9881 ug/L	99
22) Methyl Tert Butyl Ether	7.52	73	1312901	102.5951 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	542907	98.9478 ug/L	98
24) n-Hexane	7.82	57	921942	100.8849 ug/L	99
25) Diisopropyl ether	8.15	45	4599625	201.7086 ug/L	99
26) Vinyl Acetate	8.31	43	855488	94.3763 ug/L	99
27) 1,1-Dichloroethane	8.34	63	1111115	100.9254 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	3780769	203.7060 ug/L	100
29) 2-Butanone	8.87	43	198511	102.1130 ug/L	100
30) Propionitrile	8.98	54	118699	208.4678 ug/L	97
31) 2,2-Dichloropropane	9.09	77	914695	106.1904 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	606774	100.2977 ug/L	99
33) Chloroform	9.35	83	1053766	97.4685 ug/L	100
34) 1-Bromopropane	9.48	122	106914	98.8615 ug/L	100
35) Bromochloromethane	9.57	130	387239	107.7795 ug/L	100
36) Tetrahydrofuran	9.60	42	270148	196.7890 ug/L	99
38) 1,1,1-Trichloroethane	9.85	97	1088263	102.2884 ug/L	99
39) Cyclohexane	9.88	56	1213186	104.6320 ug/L	100
40) 1,1-Dichloropropene	10.04	75	775674	102.1101 ug/L	98
41) Carbon Tetrachloride	10.18	117	1074698	103.4456 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	2619501	203.1147 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11844.D Vial: 9
Acq On : 13 May 2016 18:22 Operator: JDS
Sample : WG568769-09 100ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:57 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	895394	101.9714 ug/L	100
45)	Benzene	10.38	78	2041856	98.1867 ug/L	100
46)	Trichloroethene	11.08	130	677193	100.1861 ug/L	99
47)	Methylcyclohexane	11.17	83	867487	103.9915 ug/L	100
48)	1,2-Dichloropropane	11.29	63	580562	100.8530 ug/L	98
49)	1,4-Dioxane	11.56	88	13651	395.0901 ug/L	100
50)	Bromodichloromethane	11.57	83	837797	103.6717 ug/L	99
51)	Dibromomethane	11.65	93	315786	105.2707 ug/L	99
52)	2-Chloroethyl Vinyl Ether	11.84	63	293822	103.5626 ug/L	100
53)	4-Methyl-2-Pentanone	11.87	58	164890	103.0430 ug/L	98
54)	cis-1,3-Dichloropropene	12.17	75	854611	105.7305 ug/L	99
55)	Dimethyl Disulfide	12.42	79	505463	103.9202 ug/L	99
58)	Toluene	12.56	91	2361378	101.7300 ug/L	100
59)	Ethyl Methacrylate	12.65	69	529740	106.8782 ug/L	98
60)	trans-1,3-Dichloropropene	12.73	75	793063	106.4420 ug/L	99
61)	1,1,2-Trichloroethane	12.94	97	418327	101.6330 ug/L	99
62)	2-Hexanone	12.86	43	314588	104.0648 ug/L	99
63)	1,3-Dichloropropane	13.21	76	685844	103.7610 ug/L	100
64)	Tetrachloroethene	13.34	164	550335	101.9528 ug/L	99
65)	Dibromochloromethane	13.59	129	681591	108.5659 ug/L	100
66)	1,2-Dibromoethane	13.82	107	427945	103.7729 ug/L	99
67)	1-Chlorohexane	13.89	91	807177	105.4730 ug/L	98
68)	Chlorobenzene	14.29	112	1705646	100.3046 ug/L	99
69)	1,1,1,2-Tetrachloroethane	14.32	131	704959	102.4557 ug/L	100
70)	Ethylbenzene	14.31	106	883839	101.3614 ug/L	99
71)	m-,p-Xylene	14.39	106	2123651	200.3333 ug/L	98
72)	o-Xylene	14.92	106	1053682	102.1356 ug/L	100
73)	Styrene	14.95	104	1807222	106.0282 ug/L	99
74)	Bromoform	15.43	173	412378	108.3755 ug/L	100
75)	Isopropylbenzene	15.31	105	2813193	103.1127 ug/L	99
77)	1,1,2,2-Tetrachloroethane	15.52	83	454052	105.7501 ug/L	99
79)	1,2,3-Trichloropropane	15.70	110	156532	96.8210 ug/L	100
80)	trans-1,4-Dichloro-2-Buten	15.74	53	203327	97.5343 ug/L	96
81)	n-Propylbenzene	15.79	91	3285915	102.9061 ug/L	99
82)	Bromobenzene	15.92	156	828973	98.9359 ug/L	99
83)	1,3,5-Trimethylbenzene	15.96	105	2483230	101.9102 ug/L	100
84)	2-Chlorotoluene	16.05	91	2208423	98.7437 ug/L	100
85)	4-Chlorotoluene	16.09	91	2020827	100.8710 ug/L	100
86)	a-Methylstyrene	16.34	118	1361545	105.9190 ug/L	99
87)	tert-Butylbenzene	16.40	134	532522	103.1540 ug/L	98
88)	1,2,4-Trimethylbenzene	16.44	105	2546912	102.6457 ug/L	100
89)	sec-Butylbenzene	16.65	105	3003570	102.6569 ug/L	99
90)	p-Isopropyltoluene	16.79	119	2763313	102.8241 ug/L	99
91)	1,3-Dichlorobenzene	16.98	146	1600684	98.9134 ug/L	100
92)	1,4-Dichlorobenzene	17.10	146	1605475	97.8762 ug/L	100
93)	n-Butylbenzene	17.28	91	2452438	103.5609 ug/L	100
94)	1,2-Dichlorobenzene	17.57	146	1481276	100.4827 ug/L	100
95)	1,2-Dibromo-3-Chloropropan	18.49	75	95062	97.5959 ug/L	99
96)	1,2,4-Trichlorobenzene	19.55	180	1100416	102.0133 ug/L	100
97)	Hexachlorobutadiene	19.69	225	486893	102.4572 ug/L	100
98)	Naphthalene	19.90	128	2071229	103.4477 ug/L	100
99)	1,2,3-Trichlorobenzene	20.19	180	980181	99.0092 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M11844.D 8260WT.M Sat May 14 18:50:58 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11844.D Vial: 9
Acq On : 13 May 2016 18:22 Operator: JDS
Sample : WG568769-09 100ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

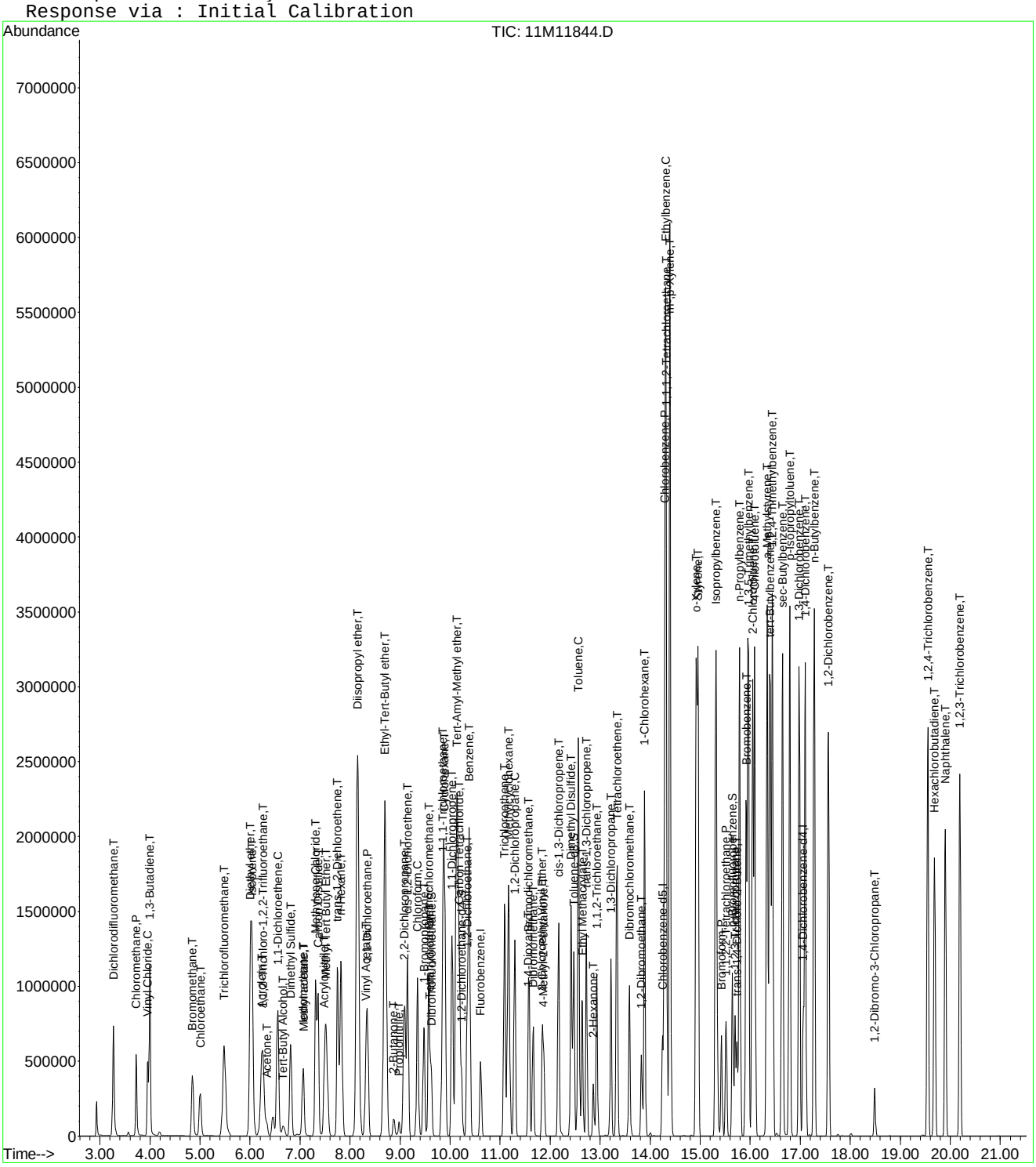

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11845.D Vial: 10
Acq On : 13 May 2016 18:54 Operator: JDS
Sample : WG568769-10 200ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:59 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	552905	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	473364	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	274188	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	629894	104.0960 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 416.40%#		
43) 1,2-Dichloroethane-d4	10.23	65	684792	99.2511 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 397.00%#		
57) Toluene-d8	12.47	98	2068111	100.5516 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 402.20%#		
78) p-Bromofluorobenzene	15.64	95	864999	102.3411 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 409.36%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	1843265	212.7741 ug/L	99
3) Chloromethane	3.72	50	1346993	194.1434 ug/L	100
4) Vinyl Chloride	3.95	62	1199147	208.1209 ug/L	100
5) 1,3-Butadiene	3.99	54	1131910	197.5677 ug/L	97
6) Bromomethane	4.85	94	859963	217.0771 ug/L	100
7) Chloroethane	5.00	64	764060	206.3883 ug/L	100
8) Trichlorofluoromethane	5.48	101	2275404	198.1327 ug/L	100
9) Diethyl ether	6.03	59	2592	0.6103 ug/L #	21
10) Isoprene	6.04	67	1435794	202.8369 ug/L	97
11) Acrolein	6.25	56	3061	6.8231 ug/L	88
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	1123889	201.6837 ug/L	99
13) Acetone	6.34	43	254053	193.5049 ug/L	96
14) 1,1-Dichloroethene	6.56	61	2040432	201.5858 ug/L	99
15) Tert-Butyl Alcohol	6.67	59	7729	21.2829 ug/L #	82
16) Dimethyl Sulfide	6.81	62	830179	205.3739 ug/L	99
17) Iodomethane	7.06	142	969857	206.1133 ug/L	99
18) Methyl acetate	7.07	43	749575	196.5068 ug/L	97
19) Methylene Chloride	7.31	84	1035656	197.7029 ug/L	97
20) Carbon Disulfide	7.36	76	3459748	204.1704 ug/L	99
21) Acrylonitrile	7.52	53	35662	20.2589 ug/L #	39
22) Methyl Tert Butyl Ether	7.52	73	2706665	207.1616 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	1121963	200.2808 ug/L	99
24) n-Hexane	7.82	57	1873652	200.8128 ug/L	99
25) Diisopropyl ether	8.16	45	16567	0.7116 ug/L #	87
26) Vinyl Acetate	8.31	43	1904053	202.8645 ug/L	100
27) 1,1-Dichloroethane	8.34	63	2261904	201.2314 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	9063	0.4783 ug/L	90
29) 2-Butanone	8.87	43	407543	205.3288 ug/L	99
30) Propionitrile	8.97	54	4182	7.1938 ug/L #	60
31) 2,2-Dichloropropane	9.09	77	1850091	210.3692 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	1257477	203.5843 ug/L	100
33) Chloroform	9.35	83	2160999	195.7739 ug/L	100
34) 1-Bromopropane	9.48	122	222798	201.1267 ug/L	98
35) Bromochloromethane	9.57	130	798076	217.5612 ug/L	99
36) Tetrahydrofuran	9.60	42	9110	6.4998 ug/L	97
38) 1,1,1-Trichloroethane	9.85	97	2208198	203.2875 ug/L	99
39) Cyclohexane	9.88	56	2467804	208.4625 ug/L	100
40) 1,1-Dichloropropene	10.04	75	1587009	204.6205 ug/L	99
41) Carbon Tetrachloride	10.18	117	2174730	205.0269 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	6538	0.4965 ug/L #	83

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11845.D Vial: 10
Acq On : 13 May 2016 18:54 Operator: JDS
Sample : WG568769-10 200ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:59 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
44)	1,2-Dichloroethane	10.34	62	1808450	201.7209 ug/L		99
45)	Benzene	10.38	78	4119227	194.0096 ug/L		99
46)	Trichloroethene	11.09	130	1367103	198.0963 ug/L		100
47)	Methylcyclohexane	11.17	83	1789256	210.0812 ug/L		99
48)	1,2-Dichloropropane	11.29	63	1196100	203.5109 ug/L		99
49)	1,4-Dioxane	11.57	88	2656	94.1370 ug/L	#	31
50)	Bromodichloromethane	11.58	83	1721733	208.6734 ug/L		99
51)	Dibromomethane	11.66	93	641583	209.4825 ug/L		100
52)	2-Chloroethyl Vinyl Ether	11.84	63	608231	209.9748 ug/L		99
53)	4-Methyl-2-Pentanone	11.87	58	342251	209.4831 ug/L		99
54)	cis-1,3-Dichloropropene	12.17	75	1772737	214.8108 ug/L		100
55)	Dimethyl Disulfide	12.42	79	1052498	211.9395 ug/L		98
58)	Toluene	12.56	91	4699240	196.0993 ug/L		98
59)	Ethyl Methacrylate	12.65	69	1101451	215.2567 ug/L		97
60)	trans-1,3-Dichloropropene	12.73	75	1627488	211.5866 ug/L		99
61)	1,1,2-Trichloroethane	12.93	97	860113	202.4133 ug/L		99
62)	2-Hexanone	12.86	43	651287	208.6888 ug/L		99
63)	1,3-Dichloropropane	13.21	76	1412360	206.9756 ug/L		99
64)	Tetrachloroethene	13.34	164	1133410	203.3874 ug/L		99
65)	Dibromochloromethane	13.59	129	1409248	217.4313 ug/L		99
66)	1,2-Dibromoethane	13.82	107	889951	209.0389 ug/L		99
67)	1-Chlorohexane	13.89	91	1659272	210.0173 ug/L		97
68)	Chlorobenzene	14.29	112	3416597	194.6214 ug/L		98
69)	1,1,1,2-Tetrachloroethane	14.32	131	1457008	205.1158 ug/L		100
70)	Ethylbenzene	14.31	106	1814385	201.5551 ug/L		91
71)	m-,p-Xylene	14.39	106	4230307	386.5510 ug/L		85
72)	o-Xylene	14.92	106	2156790	202.5071 ug/L		96
73)	Styrene	14.96	104	3630570	206.3240 ug/L		98
74)	Bromoform	15.43	173	854308	217.4778 ug/L		100
75)	Isopropylbenzene	15.31	105	5485636	194.7621 ug/L		97
77)	1,1,2,2-Tetrachloroethane	15.52	83	939708	220.0830 ug/L		98
79)	1,2,3-Trichloropropane	15.70	110	325518	202.0716 ug/L		99
80)	trans-1,4-Dichloro-2-Buten	15.74	53	421012	202.2796 ug/L		97
81)	n-Propylbenzene	15.79	91	6220435	195.8952 ug/L		95
82)	Bromobenzene	15.92	156	1685980	202.3412 ug/L		99
83)	1,3,5-Trimethylbenzene	15.96	105	4875063	201.1866 ug/L		97
84)	2-Chlorotoluene	16.05	91	4287026	192.7532 ug/L		98
85)	4-Chlorotoluene	16.09	91	4030756	202.3214 ug/L		98
86)	a-Methylstyrene	16.34	118	2724122	213.1015 ug/L		98
87)	tert-Butylbenzene	16.40	134	1075661	209.5280 ug/L		96
88)	1,2,4-Trimethylbenzene	16.44	105	4921395	199.4496 ug/L		97
89)	sec-Butylbenzene	16.65	105	5740919	197.3104 ug/L		97
90)	p-Isopropyltoluene	16.79	119	5274037	197.3451 ug/L		95
91)	1,3-Dichlorobenzene	16.98	146	3171808	197.0945 ug/L		99
92)	1,4-Dichlorobenzene	17.10	146	3145357	192.8244 ug/L		99
93)	n-Butylbenzene	17.28	91	4684496	198.9203 ug/L		97
94)	1,2-Dichlorobenzene	17.57	146	2909224	198.4498 ug/L		99
95)	1,2-Dibromo-3-Chloropropan	18.49	75	191088	196.6217 ug/L		99
96)	1,2,4-Trichlorobenzene	19.55	180	2198003	204.9021 ug/L		99
97)	Hexachlorobutadiene	19.69	225	969160	205.0797 ug/L		99
98)	Naphthalene	19.90	128	3994903	200.6399 ug/L		98
99)	1,2,3-Trichlorobenzene	20.19	180	1999949	203.1452 ug/L		99

(#) = qualifier out of range (m) = manual integration
11M11845.D 8260WT.M Sat May 14 18:51:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11845.D Vial: 10
Acq On : 13 May 2016 18:54 Operator: JDS
Sample : WG568769-10 200ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

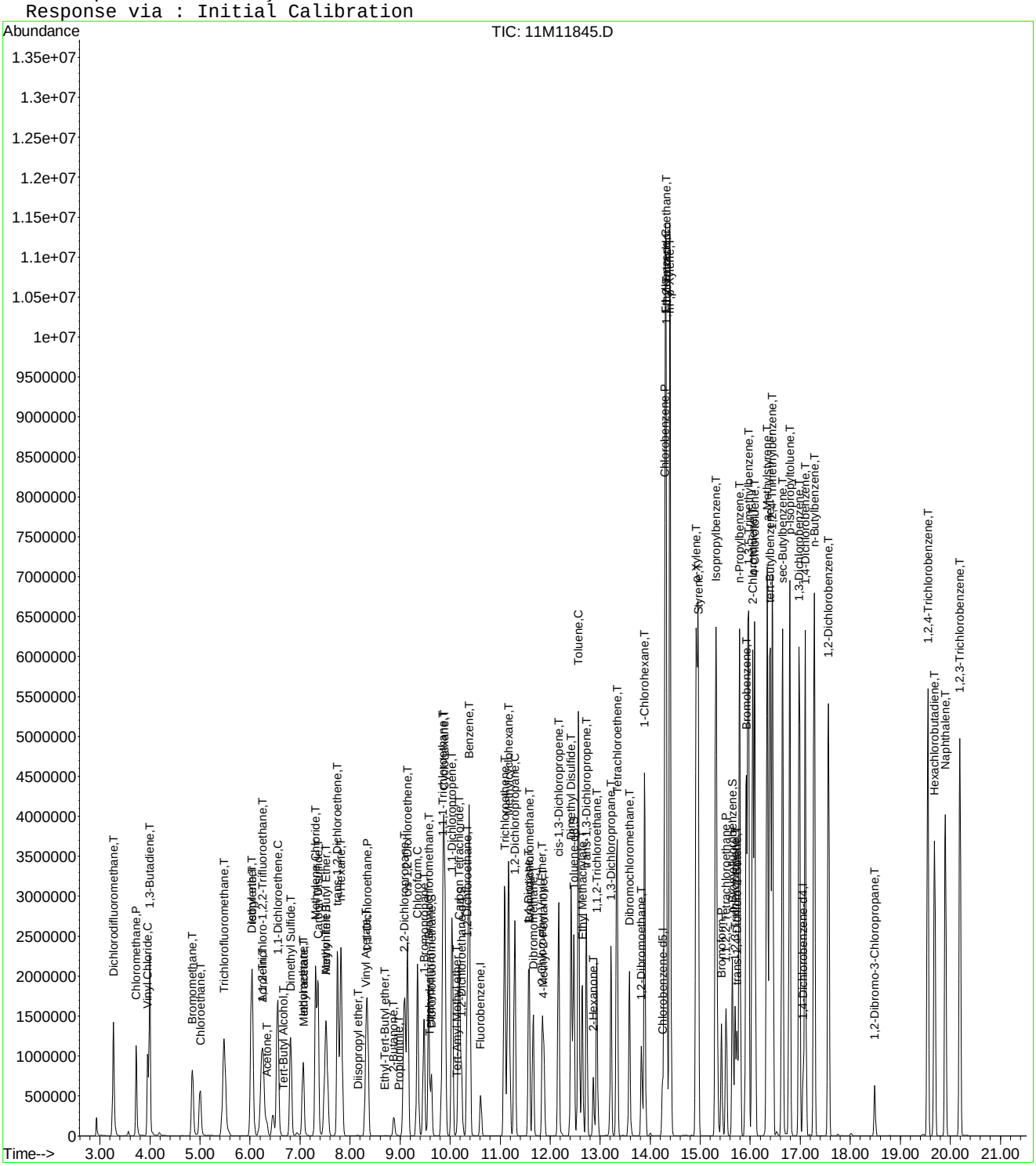

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11846.D Vial: 11
Acq On : 13 May 2016 19:26 Operator: JDS
Sample : WG568769-11 300ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:51:01 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	543599	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	479542	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	277309	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	905755	152.2472 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 609.00%#		
43) 1,2-Dichloroethane-d4	10.23	65	970758	143.1066 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 572.44%#		
57) Toluene-d8	12.47	98	3002456	144.0987 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 576.40%#		
78) p-Bromofluorobenzene	15.64	95	1285822	150.4179 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 601.68%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	2762707	324.3678 ug/L	99
3) Chloromethane	3.72	50	2113477	309.8323 ug/L	100
4) Vinyl Chloride	3.95	62	1802126	318.1269 ug/L	100
5) 1,3-Butadiene	3.99	54	1562377	277.3715 ug/L	98
6) Bromomethane	4.85	94	1341865	344.5204 ug/L	100
7) Chloroethane	5.00	64	1181546	324.6236 ug/L	100
8) Trichlorofluoromethane	5.48	101	3351045	296.7904 ug/L	99
9) Diethyl ether	6.01	59	1250668	299.5049 ug/L	97
10) Isoprene	6.04	67	2121830	304.8859 ug/L	97
11) Acrolein	6.23	56	87016	155.2272 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	1679276	306.5076 ug/L	99
13) Acetone	6.34	43	352141	272.8074 ug/L	95
14) 1,1-Dichloroethene	6.56	61	3009080	302.3733 ug/L	98
15) Tert-Butyl Alcohol	6.67	59	227782	637.9680 ug/L	97
16) Dimethyl Sulfide	6.81	62	1199487	301.8151 ug/L	96
17) Iodomethane	7.06	142	1359092	295.3515 ug/L	96
18) Methyl acetate	7.07	43	1093862	303.3719 ug/L	97
19) Methylene Chloride	7.31	84	1550974	301.1438 ug/L	91
20) Carbon Disulfide	7.36	76	5025219	301.6304 ug/L	99
21) Acrylonitrile	7.49	53	292311	168.8994 ug/L	94
22) Methyl Tert Butyl Ether	7.52	73	3880019	302.0512 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	1693308	307.4459 ug/L	98
24) n-Hexane	7.82	57	2752540	300.0599 ug/L	99
25) Diisopropyl ether	8.15	45	6621718	289.2841 ug/L	99
26) Vinyl Acetate	8.31	43	2814279	303.7518 ug/L	99
27) 1,1-Dichloroethane	8.34	63	3313473	299.8312 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	5508427	295.6672 ug/L	99
29) 2-Butanone	8.87	43	590742	302.7235 ug/L	97
30) Propionitrile	8.99	54	177454	310.4771 ug/L	98
31) 2,2-Dichloropropane	9.09	77	2735421	316.3626 ug/L	99
32) cis-1,2-Dichloroethene	9.15	96	1856543	305.7181 ug/L	98
33) Chloroform	9.35	83	3144758	289.7739 ug/L	100
34) 1-Bromopropane	9.48	122	329211	301.9597 ug/L	98
35) Bromochloromethane	9.57	130	1179409	327.0194 ug/L	97
36) Tetrahydrofuran	9.60	42	386389	280.3985 ug/L	96
38) 1,1,1-Trichloroethane	9.85	97	3227247	302.1877 ug/L	99
39) Cyclohexane	9.88	56	3625895	311.5332 ug/L	99
40) 1,1-Dichloropropene	10.04	75	2360605	309.5743 ug/L	100
41) Carbon Tetrachloride	10.18	117	3172921	304.2542 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	3912691	302.2388 ug/L	97

(#) = qualifier out of range (m) = manual integration
11M11846.D 8260WT.M Sat May 14 18:51:02 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11846.D Vial: 11
Acq On : 13 May 2016 19:26 Operator: JDS
Sample : WG568769-11 300ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:51:01 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
44)	1,2-Dichloroethane	10.34	62	2551762	289.5052 ug/L		98
45)	Benzene	10.38	78	5961793	285.5987 ug/L		97
46)	Trichloroethene	11.09	130	2025948	298.5901 ug/L		99
47)	Methylcyclohexane	11.17	83	2657028	317.3092 ug/L		98
48)	1,2-Dichloropropane	11.29	63	1781372	308.2809 ug/L		96
49)	1,4-Dioxane	11.56	88	21540	607.7372 ug/L		100
50)	Bromodichloromethane	11.57	83	2511276	309.5762 ug/L		100
51)	Dibromomethane	11.65	93	939605	312.0413 ug/L		99
52)	2-Chloroethyl Vinyl Ether	11.84	63	879534	308.8327 ug/L		100
53)	4-Methyl-2-Pentanone	11.87	58	505191	314.5081 ug/L		99
54)	cis-1,3-Dichloropropene	12.17	75	2604960	321.0589 ug/L		99
55)	Dimethyl Disulfide	12.42	79	1529785	313.3234 ug/L		99
58)	Toluene	12.56	91	6613670	272.4329 ug/L		95
59)	Ethyl Methacrylate	12.65	69	1618015	312.1351 ug/L		94
60)	trans-1,3-Dichloropropene	12.73	75	2369133	304.0383 ug/L		98
61)	1,1,2-Trichloroethane	12.93	97	1271039	295.2644 ug/L		98
62)	2-Hexanone	12.86	43	950079	300.5074 ug/L		97
63)	1,3-Dichloropropane	13.21	76	2062188	298.3119 ug/L		97
64)	Tetrachloroethene	13.34	164	1691190	299.5697 ug/L		98
65)	Dibromochloromethane	13.59	129	2065480	314.5750 ug/L		100
66)	1,2-Dibromoethane	13.82	107	1334668	309.4588 ug/L		99
67)	1-Chlorohexane	13.89	91	2483371	310.2757 ug/L		95
68)	Chlorobenzene	14.29	112	4911463	276.1698 ug/L		96
69)	1,1,1,2-Tetrachloroethane	14.32	131	2161701	300.4009 ug/L		100
70)	Ethylbenzene	14.31	106	2715675	297.7904 ug/L		79
71)	m-,p-Xylene	14.39	106	6004062	541.5626 ug/L		73
72)	o-Xylene	14.92	106	3202500	296.8179 ug/L		90
73)	Styrene	14.96	104	5278134	296.0902 ug/L		96
74)	Bromoform	15.43	173	1313245	330.0007 ug/L		100
75)	Isopropylbenzene	15.31	105	7610374	266.7178 ug/L		92
77)	1,1,2,2-Tetrachloroethane	15.52	83	1470787	340.5868 ug/L		97
79)	1,2,3-Trichloropropane	15.70	110	494041	303.0514 ug/L		98
80)	trans-1,4-Dichloro-2-Buten	15.74	53	640812	304.0444 ug/L		94
81)	n-Propylbenzene	15.79	91	8405785	261.7374 ug/L		88
82)	Bromobenzene	15.92	156	2530711	300.3025 ug/L		98
83)	1,3,5-Trimethylbenzene	15.96	105	6851753	279.5793 ug/L		93
84)	2-Chlorotoluene	16.05	91	6055423	269.1996 ug/L		95
85)	4-Chlorotoluene	16.09	91	5712933	283.5299 ug/L		94
86)	a-Methylstyrene	16.34	118	4020347	310.9625 ug/L		96
87)	tert-Butylbenzene	16.40	134	1654009	318.5583 ug/L		89
88)	1,2,4-Trimethylbenzene	16.44	105	6879061	275.6504 ug/L		91
89)	sec-Butylbenzene	16.65	105	7999374	271.8373 ug/L		92
90)	p-Isopropyltoluene	16.79	119	7406083	274.0036 ug/L		90
91)	1,3-Dichlorobenzene	16.98	146	4679194	287.4903 ug/L		97
92)	1,4-Dichlorobenzene	17.10	146	4642399	281.3967 ug/L		96
93)	n-Butylbenzene	17.28	91	6723928	282.3084 ug/L		93
94)	1,2-Dichlorobenzene	17.57	146	4360022	294.0672 ug/L		96
95)	1,2-Dibromo-3-Chloropropan	18.49	75	302346	307.2381 ug/L		100
96)	1,2,4-Trichlorobenzene	19.55	180	3482946	321.0328 ug/L		97
97)	Hexachlorobutadiene	19.69	225	1629665	340.9652 ug/L		98
98)	Naphthalene	19.90	128	5970381	296.4815 ug/L	#	96
99)	1,2,3-Trichlorobenzene	20.19	180	3137470	315.1025 ug/L		98

(#) = qualifier out of range (m) = manual integration
11M11846.D 8260WT.M Sat May 14 18:51:02 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11846.D Vial: 11
Acq On : 13 May 2016 19:26 Operator: JDS
Sample : WG568769-11 300ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:51 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

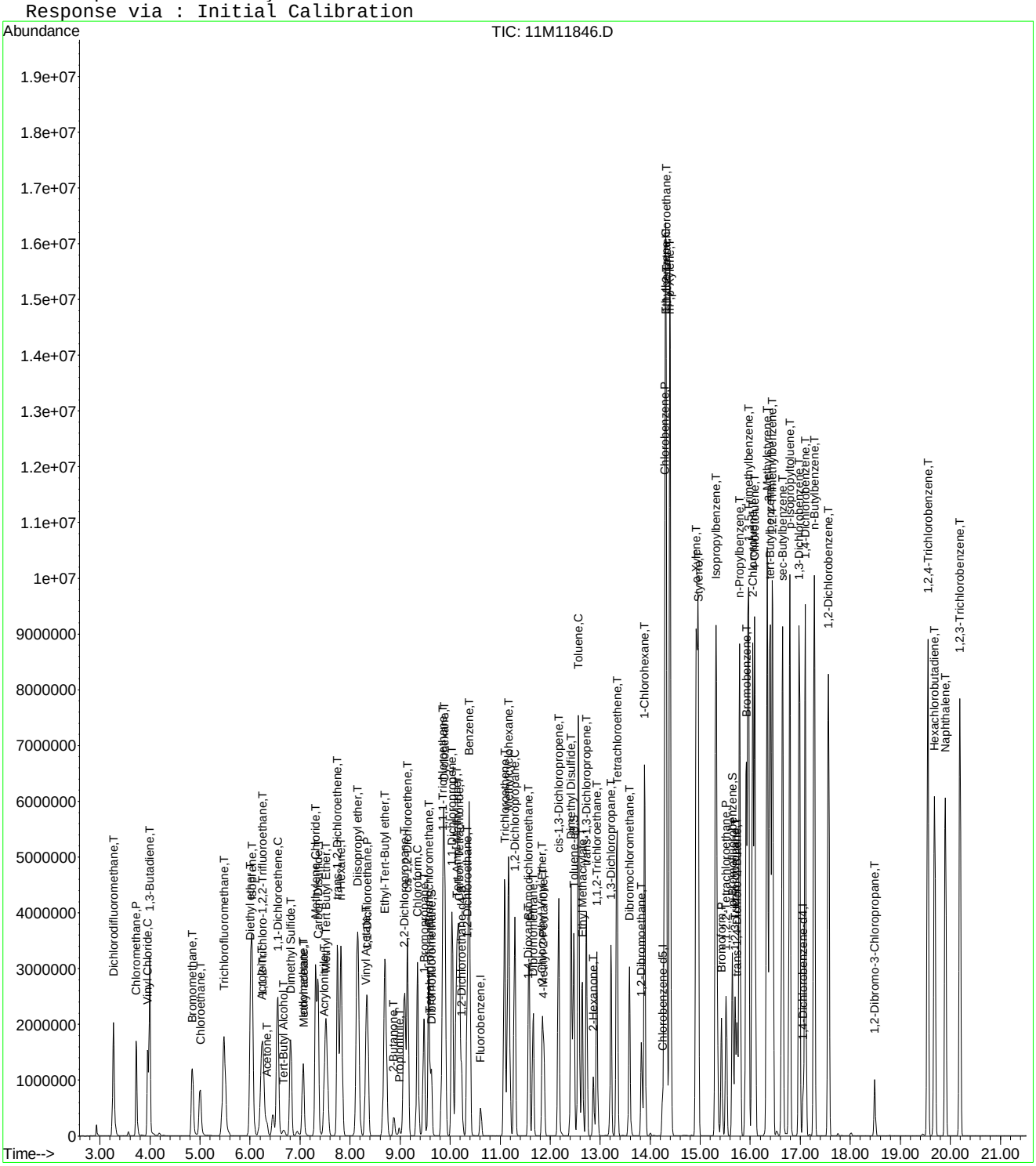

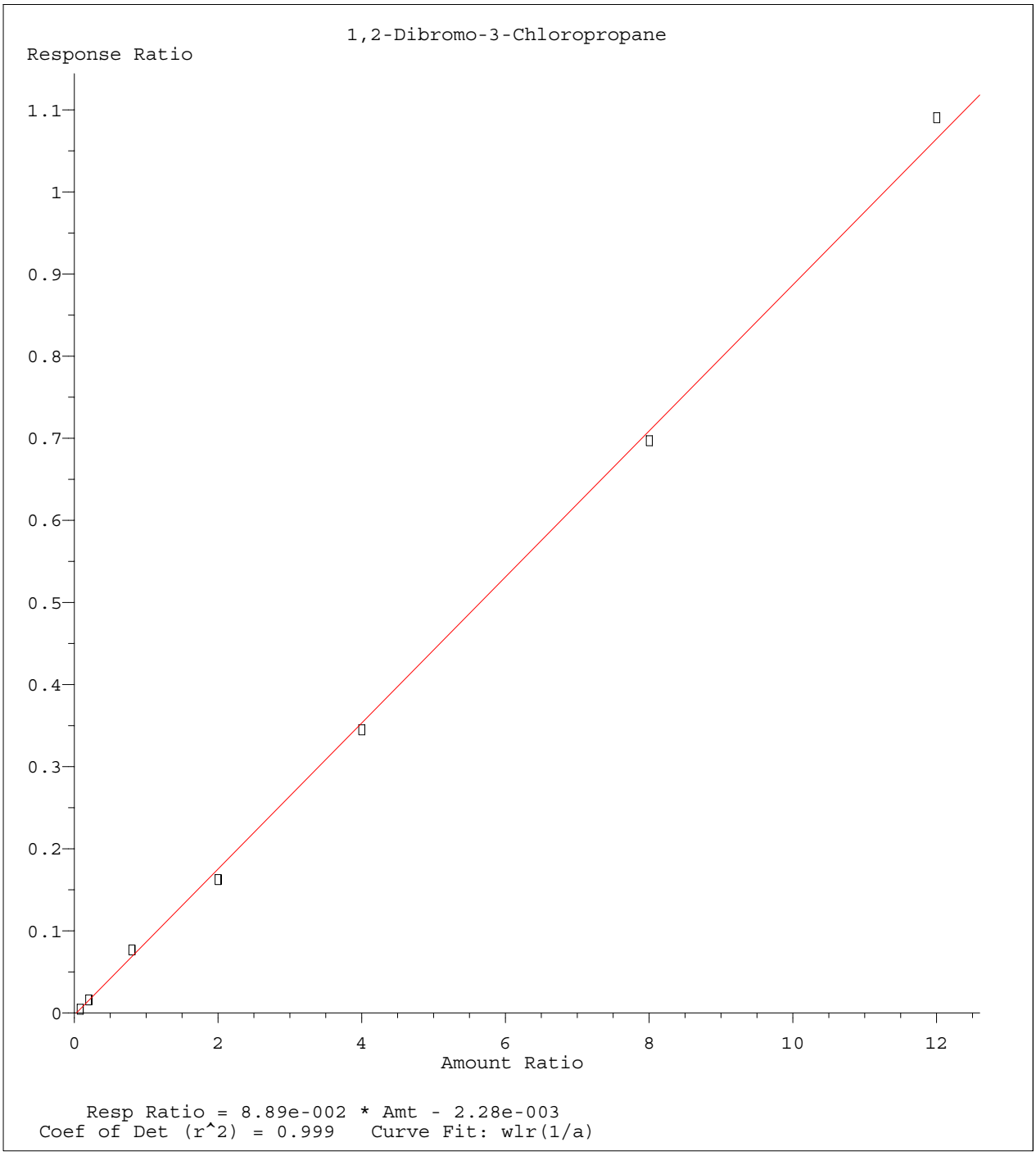

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

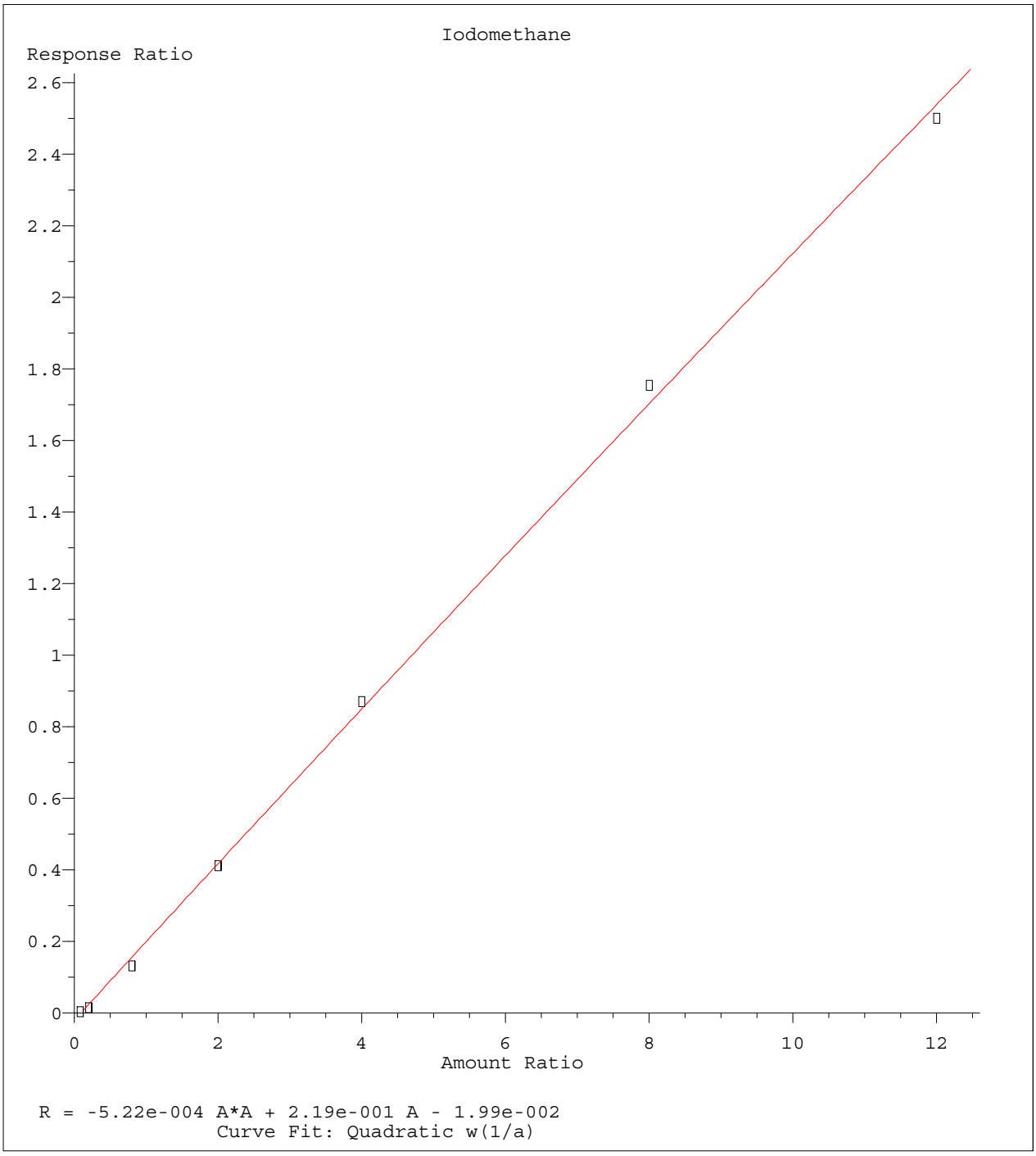

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

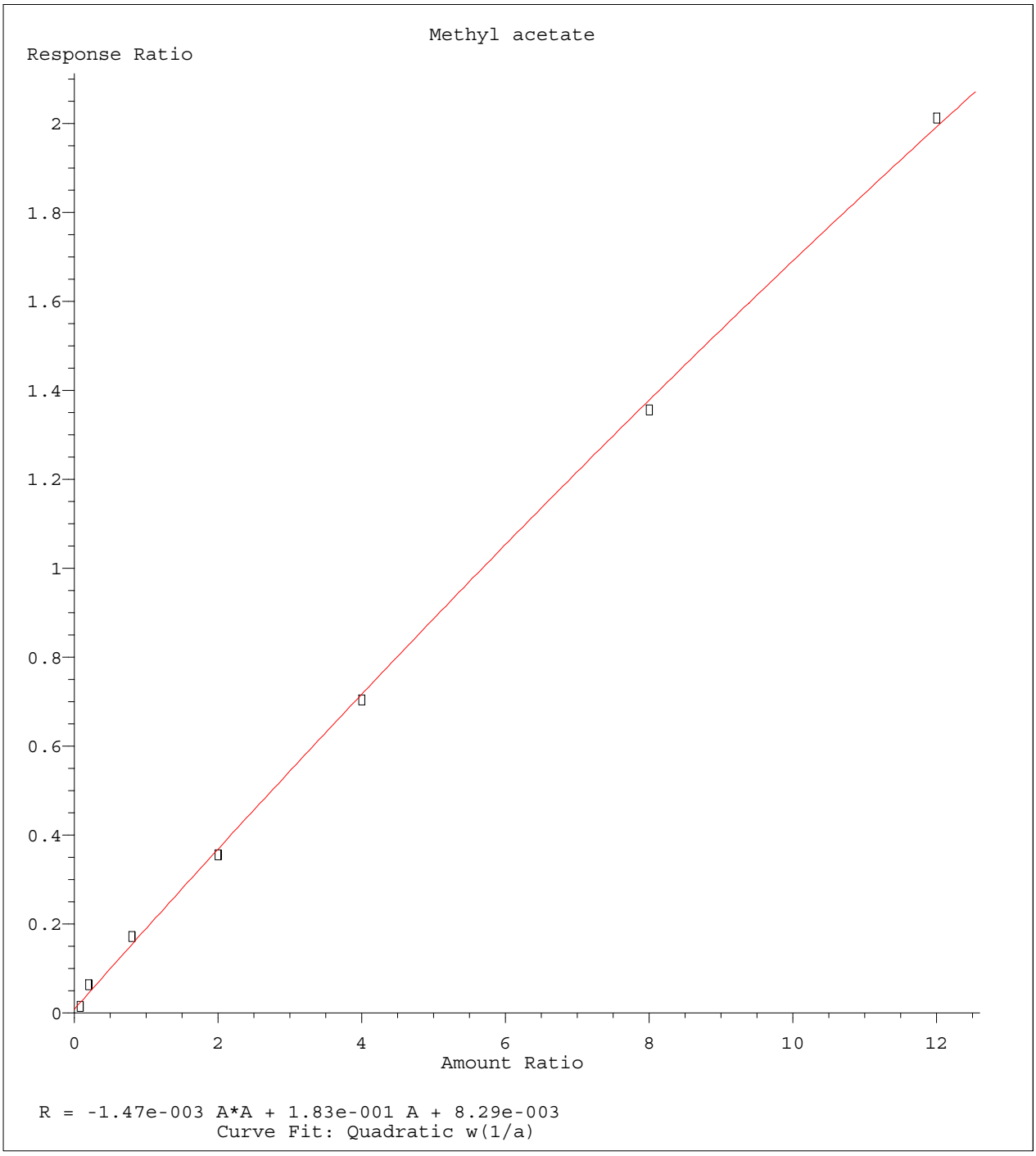

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

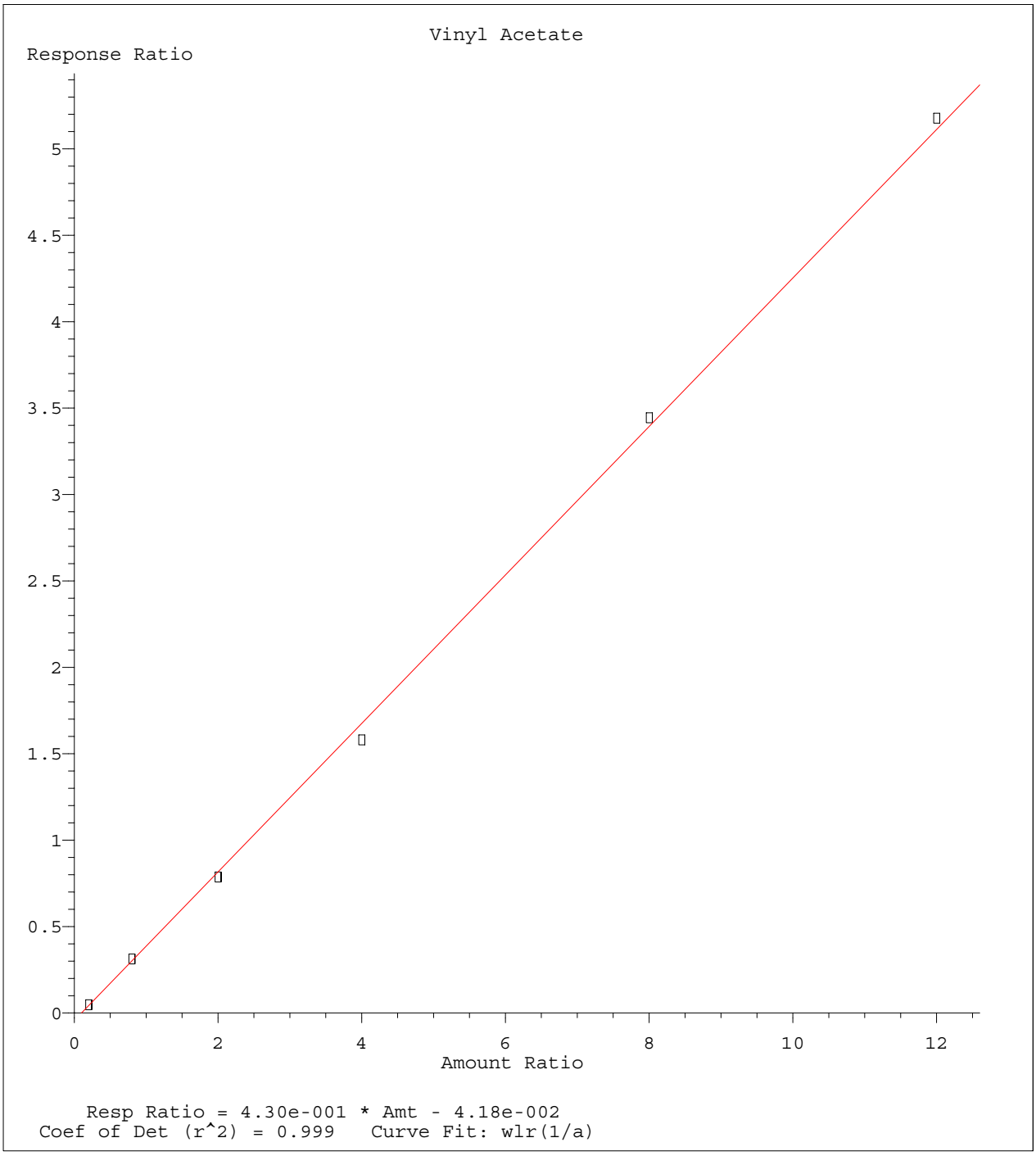

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

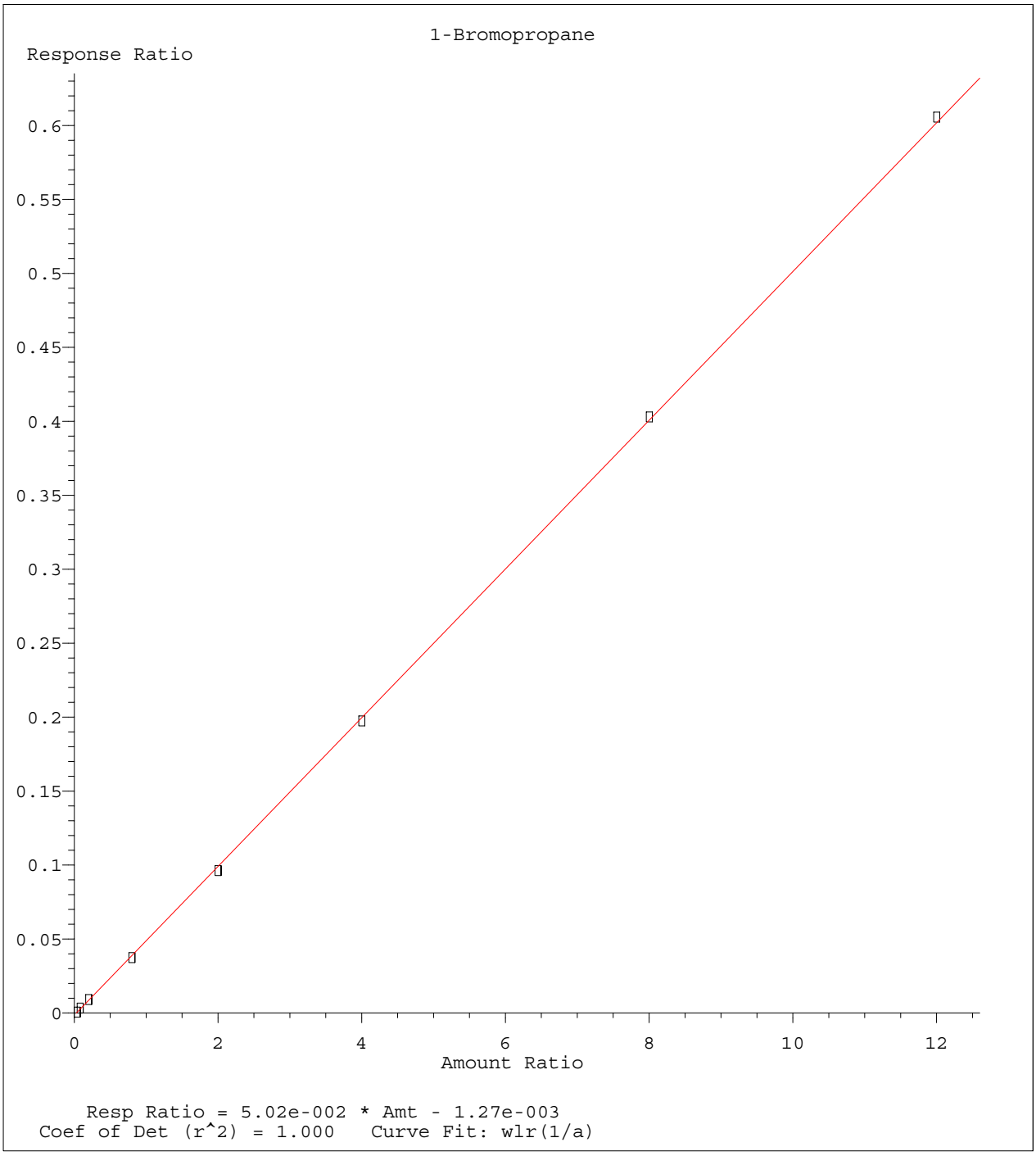

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

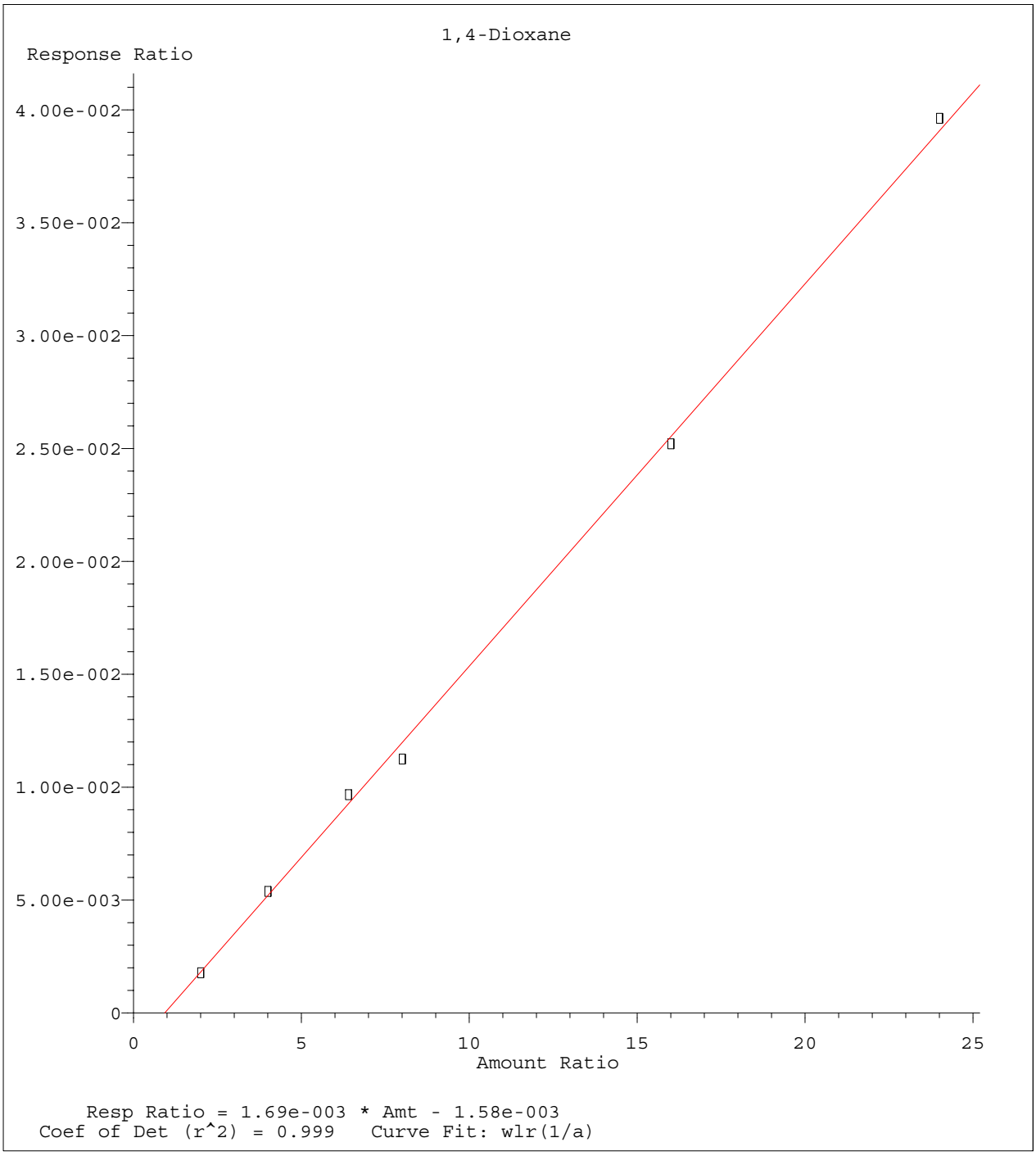

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

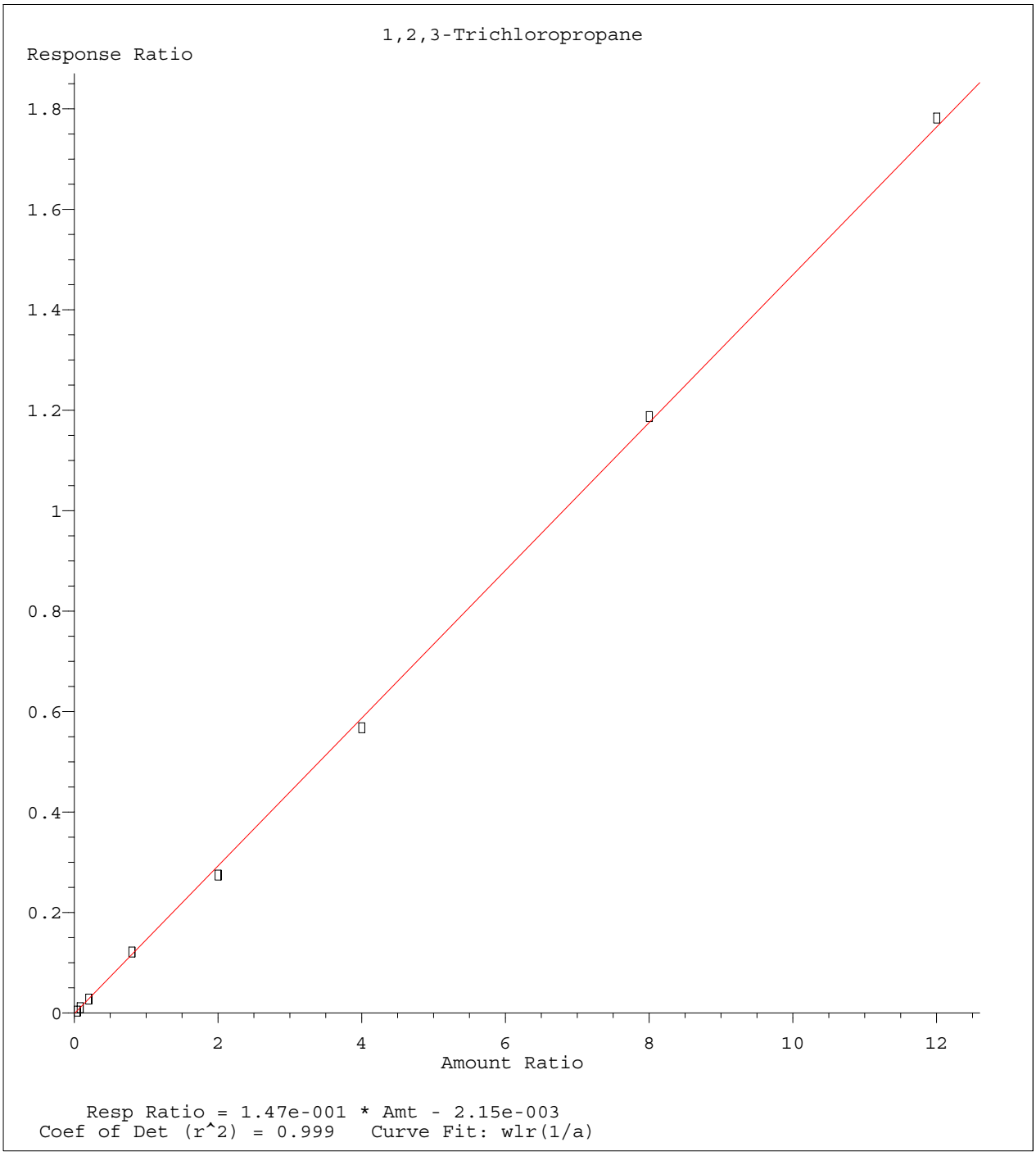

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

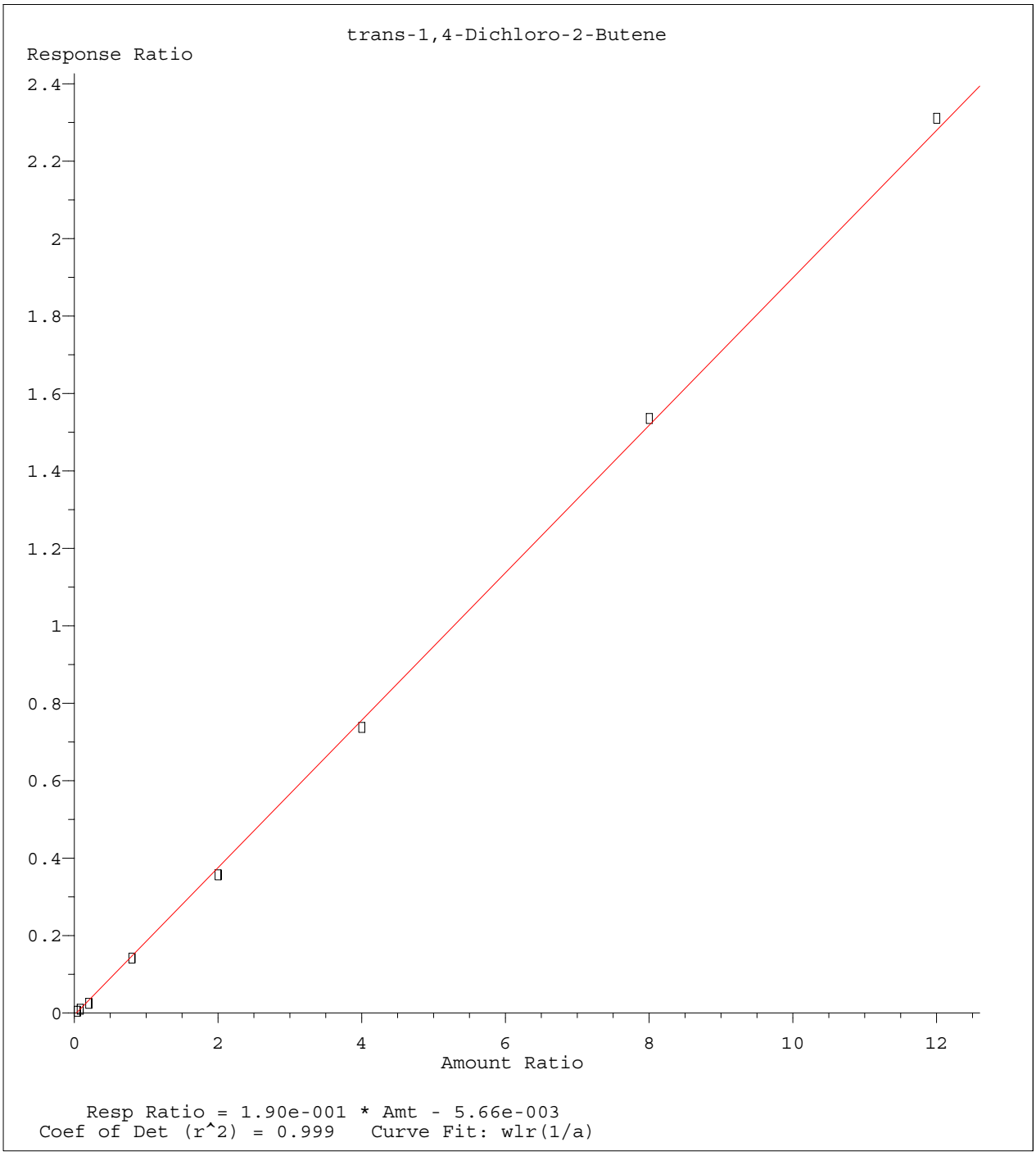

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

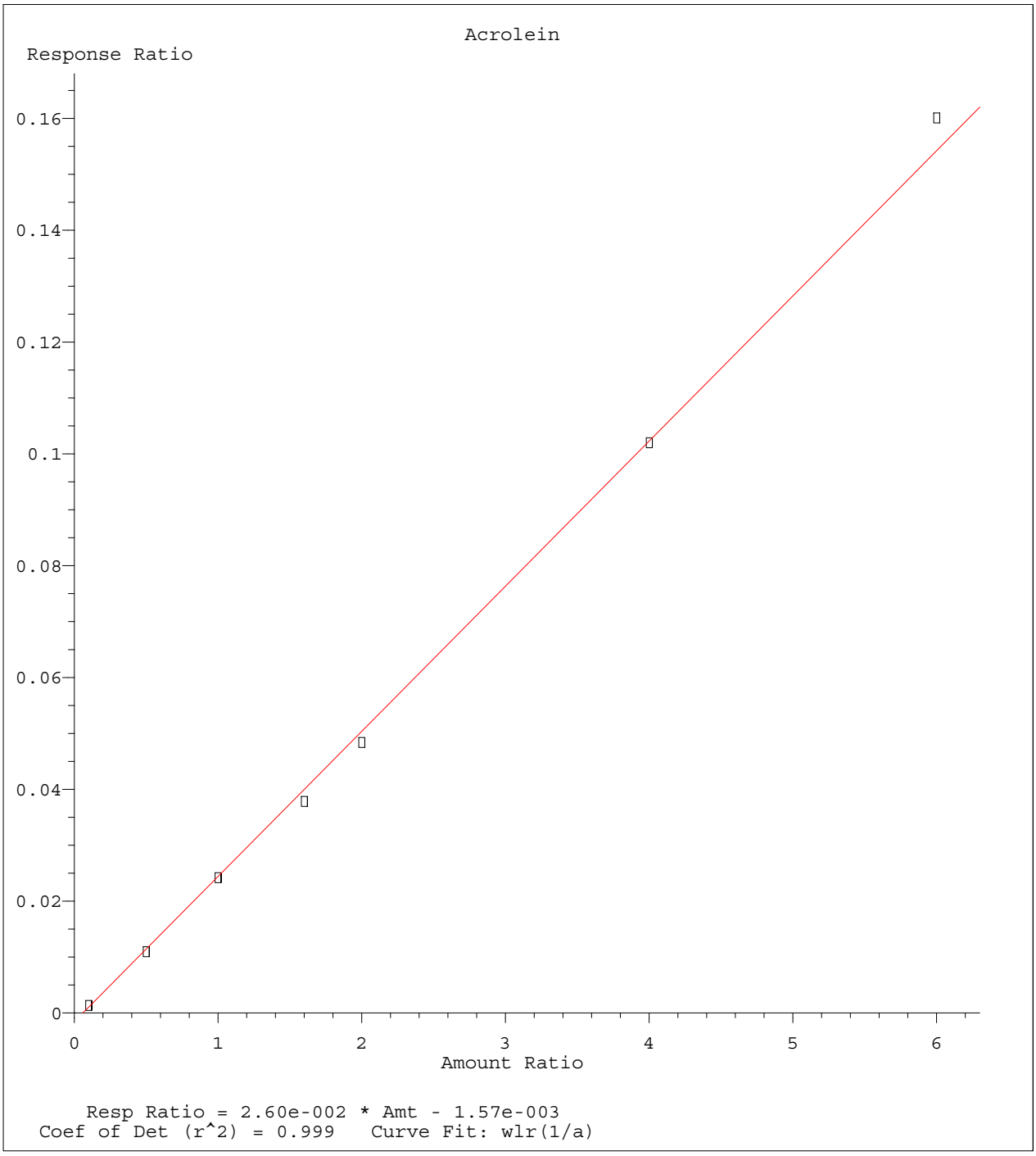

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:47:09 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	559172	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	461765	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	267551	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	155853	25.4675 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.88%		
43) 1,2-Dichloroethane-d4	10.23	65	160000	22.9299 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 91.72%		
57) Toluene-d8	12.47	98	531547	26.4930 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.96%		
78) p-Bromofluorobenzene	15.64	95	203747	24.7040 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.80%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	495777	56.5878 ug/L	98
3) Chloromethane	3.72	50	386673	55.1069 ug/L	100
4) Vinyl Chloride	3.95	62	326996	56.1165 ug/L	100
5) 1,3-Butadiene	3.99	54	212443	36.6650 ug/L	98
6) Bromomethane	4.84	94	202280	50.4885 ug/L	99
7) Chloroethane	5.00	64	220373	58.8601 ug/L	99
8) Trichlorofluoromethane	5.48	101	552017	47.5286 ug/L	99
9) Diethyl ether	6.01	59	453011	105.4639 ug/L	97
10) Isoprene	6.04	67	388108	54.2141 ug/L	93
11) Acrolein	6.23	56	56029	97.7296 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	292836	51.9609 ug/L	99
13) Acetone	6.35	43	65954	49.6723 ug/L	97
14) 1,1-Dichloroethene	6.55	61	486567	47.5319 ug/L	96
15) Tert-Butyl Alcohol	6.67	59	79387	216.1534 ug/L	96
16) Dimethyl Sulfide	6.81	62	290204	70.9875 ug/L	94
17) Iodomethane	7.06	142	176766	38.4128 ug/L	92
18) Methyl acetate	7.07	43	200985	48.7416 ug/L	98
19) Methylene Chloride	7.31	84	275442	51.9916 ug/L	91
20) Carbon Disulfide	7.35	76	765803	44.6859 ug/L	99
21) Acrylonitrile	7.49	53	93674	52.6181 ug/L	100
22) Methyl Tert Butyl Ether	7.52	73	687029	51.9942 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	295337	52.1295 ug/L	97
24) n-Hexane	7.82	57	420811	44.5959 ug/L	99
25) Diisopropyl ether	8.15	45	2449232	104.0201 ug/L	98
26) Vinyl Acetate	8.31	43	395913	43.6417 ug/L	99
27) 1,1-Dichloroethane	8.34	63	551372	48.5033 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1884917	98.3560 ug/L	99
29) 2-Butanone	8.87	43	101045	50.3380 ug/L	98
30) Propionitrile	8.99	54	62190	105.7785 ug/L	98
31) 2,2-Dichloropropane	9.09	77	405332	45.5727 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	332086	53.1618 ug/L	94
33) Chloroform	9.35	83	531122	47.5773 ug/L	100
34) 1-Bromopropane	9.48	122	76460	68.6656 ug/L	96
35) Bromochloromethane	9.57	130	199933	53.8923 ug/L	96
36) Tetrahydrofuran	9.60	42	131835	93.0068 ug/L	96
38) 1,1,1-Trichloroethane	9.85	97	527857	48.0501 ug/L	99
39) Cyclohexane	9.88	56	601180	50.2142 ug/L	99
40) 1,1-Dichloropropene	10.04	75	393057	50.1107 ug/L	100
41) Carbon Tetrachloride	10.18	117	507914	47.3479 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	1406419	105.6143 ug/L	97

(#) = qualifier out of range (m) = manual integration
11M11848.D 8260WT.M Sat May 14 18:47:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:47:09 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	434117	47.8802	ug/L	99
45)	Benzene	10.38	78	1098993	51.1808	ug/L	100
46)	Trichloroethene	11.08	130	365193	52.3242	ug/L	99
47)	Methylcyclohexane	11.17	83	450581	52.3110	ug/L	97
48)	1,2-Dichloropropane	11.29	63	313901	52.8102	ug/L	94
49)	1,4-Dioxane	11.56	88	6366	191.2043	ug/L	95
50)	Bromodichloromethane	11.57	83	413329	49.5339	ug/L	99
51)	Dibromomethane	11.65	93	148822	48.0471	ug/L	97
52)	2-Chloroethyl Vinyl Ether	11.84	63	152083	51.9140	ug/L	99
53)	4-Methyl-2-Pentanone	11.87	58	86849	52.5623	ug/L	99
54)	cis-1,3-Dichloropropene	12.17	75	480729	57.5993	ug/L	99
55)	Dimethyl Disulfide	12.42	79	261188	52.0055	ug/L	96
58)	Toluene	12.56	91	1256481	53.7500	ug/L	100
59)	Ethyl Methacrylate	12.65	69	284944	57.0854	ug/L	90
60)	trans-1,3-Dichloropropene	12.73	75	391013	52.1118	ug/L	97
61)	1,1,2-Trichloroethane	12.93	97	218717	52.7643	ug/L	99
62)	2-Hexanone	12.86	43	158873	52.1857	ug/L	98
63)	1,3-Dichloropropane	13.21	76	374611	56.2767	ug/L	95
64)	Tetrachloroethene	13.34	164	283714	52.1906	ug/L	97
65)	Dibromochloromethane	13.59	129	332092	52.5252	ug/L	99
66)	1,2-Dibromoethane	13.82	107	218604	52.6373	ug/L	99
67)	1-Chlorohexane	13.89	91	420217	54.5237	ug/L	92
68)	Chlorobenzene	14.29	112	912650	53.2936	ug/L	100
69)	1,1,1,2-Tetrachloroethane	14.32	131	353663	51.0389	ug/L	98
70)	Ethylbenzene	14.31	106	460093	52.3943	ug/L	99
71)	m-,p-Xylene	14.39	106	1144896	107.2445	ug/L	98
72)	o-Xylene	14.92	106	568307	54.7003	ug/L	100
73)	Styrene	14.95	104	943635	54.9735	ug/L	98
74)	Bromoform	15.43	173	190959	49.8328	ug/L	99
75)	Isopropylbenzene	15.31	105	1490416	54.2449	ug/L	100
77)	1,1,2,2-Tetrachloroethane	15.52	83	228913	54.9422	ug/L	100
79)	1,2,3-Trichloropropane	15.70	110	78385	50.1407	ug/L	92
80)	trans-1,4-Dichloro-2-Buten	15.74	53	73730	36.9129	ug/L	62
81)	n-Propylbenzene	15.79	91	1753049	56.5769	ug/L	99
82)	Bromobenzene	15.92	156	419932	51.6479	ug/L	99
83)	1,3,5-Trimethylbenzene	15.95	105	1303495	55.1277	ug/L	99
84)	2-Chlorotoluene	16.05	91	1145029	52.7599	ug/L	99
85)	4-Chlorotoluene	16.09	91	1077116	55.4064	ug/L	99
86)	a-Methylstyrene	16.34	118	741671	59.4584	ug/L	99
87)	tert-Butylbenzene	16.40	134	283244	56.5417	ug/L	95
88)	1,2,4-Trimethylbenzene	16.44	105	1296091	53.8297	ug/L	99
89)	sec-Butylbenzene	16.65	105	1586978	55.8961	ug/L	100
90)	p-Isopropyltoluene	16.79	119	1426648	54.7069	ug/L	99
91)	1,3-Dichlorobenzene	16.98	146	827515	52.6969	ug/L	98
92)	1,4-Dichlorobenzene	17.10	146	844174	53.0354	ug/L	98
93)	n-Butylbenzene	17.28	91	1238500	53.8957	ug/L	99
94)	1,2-Dichlorobenzene	17.57	146	766416	53.5772	ug/L	98
95)	1,2-Dibromo-3-Chloropropan	18.49	75	45158	48.1046	ug/L	97
96)	1,2,4-Trichlorobenzene	19.55	180	580278	55.4365	ug/L	99
97)	Hexachlorobutadiene	19.69	225	257859	55.9180	ug/L	98
98)	Naphthalene	19.90	128	993390	51.1296	ug/L	100
99)	1,2,3-Trichlorobenzene	20.19	180	519374	54.0642	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:47 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

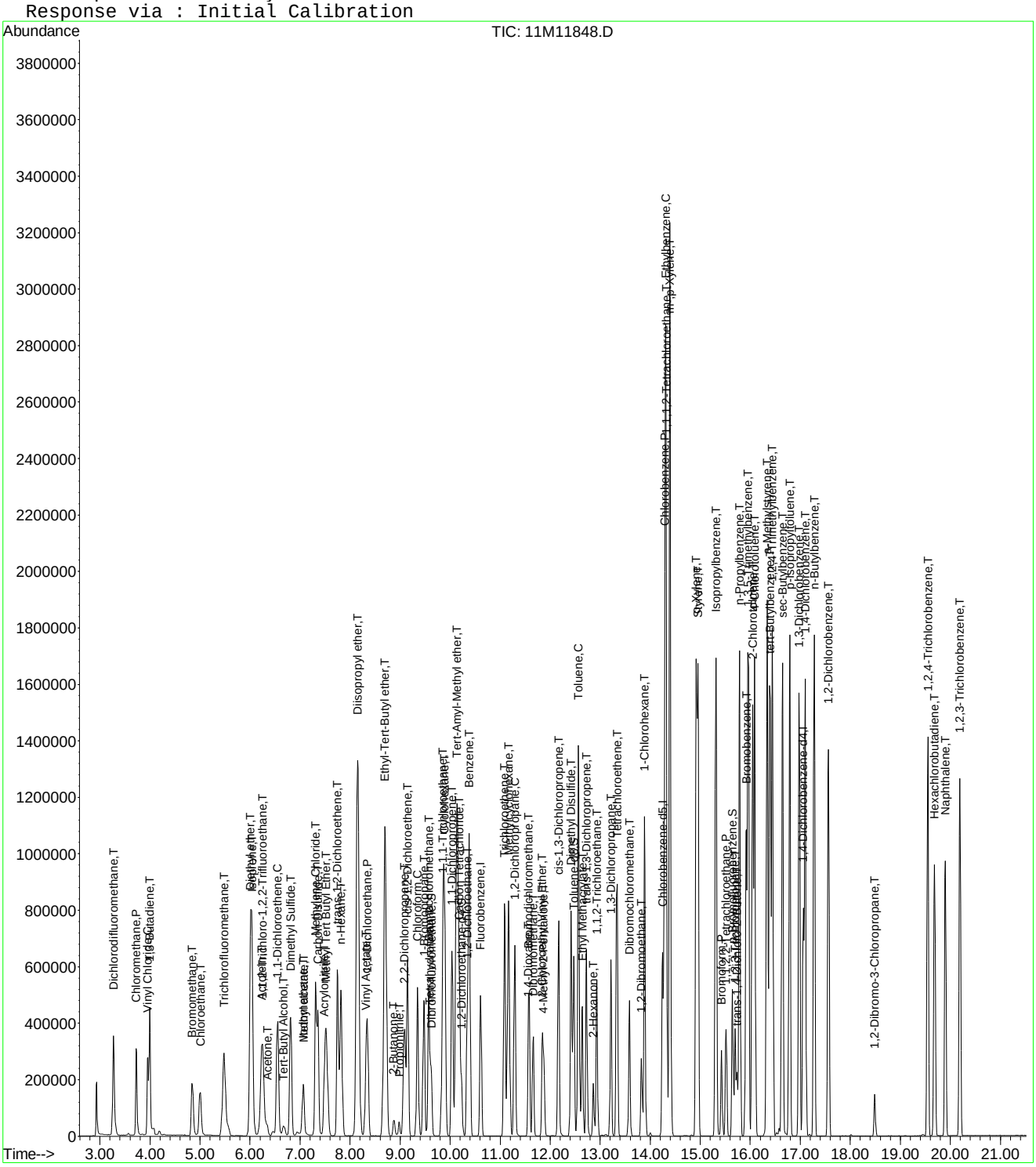

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	107	0.00
2	T	Dichlorodifluoromethane	50.0000	56.5878	-13.2	119	0.00
3	P	Chloromethane	50.0000	55.1069	-10.2	134	0.00
4	C	Vinyl Chloride	50.0000	56.1165	-12.2	125	-0.01
5	T	1,3-Butadiene	50.0000	36.6650	26.7#	76	-0.01
6	T	Bromomethane	50.0000	50.4885	-1.0	117	-0.01
7	T	Chloroethane	50.0000	58.8601	-17.7	131	0.00
8	T	Trichlorofluoromethane	50.0000	47.5286	4.9	106	0.00
9	T	Diethyl ether	100.0000	105.4639	-5.5	116	0.00
10	T	Isoprene	50.0000	54.2141	-8.4	117	0.00
11	T	Acrolein	50.0000	97.7296	-95.5#	222	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	51.9609	-3.9	115	0.00
13	T	Acetone	50.0000	49.6723	0.7	110	0.01
14	C	1,1-Dichloroethene	50.0000	47.5320	4.9	106	-0.01
15	T	Tert-Butyl Alcohol	200.0000	216.1534	-8.1	114	0.01
16	T	Dimethyl Sulfide	50.0000	70.9875	-42.0#	150	0.00
17	T	Iodomethane	50.0000	38.4128	23.2	82	0.00
18	T	Methyl acetate	50.0000	48.7416	2.5	108	0.01
19	T	Methylene Chloride	50.0000	51.9916	-4.0	118	0.00
20	T	Carbon Disulfide	50.0000	44.6859	10.6	94	-0.01
21	T	Acrylonitrile	50.0000	52.6181	-5.2	110	0.00
22	T	Methyl Tert Butyl Ether	50.0000	51.9942	-4.0	113	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.1295	-4.3	117	0.00
24	T	n-Hexane	50.0000	44.5959	10.8	94	0.00
25	T	Diisopropyl ether	100.0000	104.0201	-4.0	112	0.00
26	T	Vinyl Acetate	50.0000	43.6417	12.7	96	0.00
27	P	1,1-Dichloroethane	50.0000	48.5033	3.0	107	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.3560	1.6	106	0.00
29	T	2-Butanone	50.0000	50.3381	-0.7	111	0.00
30	T	Propionitrile	100.0000	105.7786	-5.8	110	0.01
31	T	2,2-Dichloropropane	50.0000	45.5727	8.9	101	0.00
32	T	cis-1,2-Dichloroethene	50.0000	53.1618	-6.3	118	0.00
33	C	Chloroform	50.0000	47.5773	4.8	108	0.00
34	T	1-Bromopropane	50.0000	68.6656	-37.3#	152	0.00
35	T	Bromochloromethane	50.0000	53.8923	-7.8	111	0.00
36	T	Tetrahydrofuran	100.0000	93.0068	7.0	103	0.00
37	S	Dibromofluoromethane	25.0000	25.4675	-1.9	111	0.00
38	T	1,1,1-Trichloroethane	50.0000	48.0501	3.9	106	0.00
39	T	Cyclohexane	50.0000	50.2142	-0.4	105	0.00
40	T	1,1-Dichloropropene	50.0000	50.1107	-0.2	111	0.00
41	T	Carbon Tetrachloride	50.0000	47.3479	5.3	103	0.00
42	T	Tert-Amyl-Methyl ether	100.0000	105.6143	-5.6	115	0.00
43	S	1,2-Dichloroethane-d4	25.0000	22.9299	8.3	101	0.00
44	T	1,2-Dichloroethane	50.0000	47.8802	4.2	104	0.00
45	T	Benzene	50.0000	51.1809	-2.4	116	0.00
46	T	Trichloroethene	50.0000	52.3242	-4.6	119	-0.01
47	T	Methylcyclohexane	50.0000	52.3110	-4.6	108	0.00
48	C	1,2-Dichloropropane	50.0000	52.8102	-5.6	117	0.00
49	T	1,4-Dioxane	200.0000	191.2043	4.4	109	0.01
50	T	Bromodichloromethane	50.0000	49.5339	0.9	107	0.00
51	T	Dibromomethane	50.0000	48.0471	3.9	104	0.00
52	T	2-Chloroethyl Vinyl Ether	50.0000	51.9140	-3.8	114	0.00
53	T	4-Methyl-2-Pentanone	50.0000	52.5623	-5.1	115	0.00
54	T	cis-1,3-Dichloropropene	50.0000	57.5993	-15.2	122	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	50.0000	52.0055	-4.0	110	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	105	0.00
57	S	Toluene-d8	25.0000	26.4930	-6.0	115	0.00
58	C	Toluene	50.0000	53.7500	-7.5	115	0.00
59	T	Ethyl Methacrylate	50.0000	57.0854	-14.2	114	0.00
60	T	trans-1,3-Dichloropropene	50.0000	52.1118	-4.2	107	0.00
61	T	1,1,2-Trichloroethane	50.0000	52.7643	-5.5	113	0.00
62	T	2-Hexanone	50.0000	52.1857	-4.4	110	0.00
63	T	1,3-Dichloropropane	50.0000	56.2767	-12.6	118	0.00
64	T	Tetrachloroethene	50.0000	52.1906	-4.4	113	0.00
65	T	Dibromochloromethane	50.0000	52.5251	-5.1	107	0.00
66	T	1,2-Dibromoethane	50.0000	52.6373	-5.3	111	0.00
67	T	1-Chlorohexane	50.0000	54.5237	-9.0	112	0.00
68	P	Chlorobenzene	50.0000	53.2936	-6.6	114	0.00
69	T	1,1,1,2-Tetrachloroethane	50.0000	51.0388	-2.1	109	0.00
70	C	Ethylbenzene	50.0000	52.3943	-4.8	113	0.00
71	T	m-,p-Xylene	100.0000	107.2445	-7.2	115	0.00
72	T	o-Xylene	50.0000	54.7003	-9.4	115	0.00
73	T	Styrene	50.0000	54.9735	-9.9	113	0.00
74	P	Bromoform	50.0000	49.8327	0.3	104	0.00
75	T	Isopropylbenzene	50.0000	54.2449	-8.5	114	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	101	0.00
77	P	1,1,2,2-Tetrachloroethane	50.0000	54.9422	-9.9	110	0.00
78	S	p-Bromofluorobenzene	25.0000	24.7040	1.2	108	0.00
79	T	1,2,3-Trichloropropane	50.0000	50.1407	-0.3	108	0.00
80	T	trans-1,4-Dichloro-2-Butene	50.0000	36.9129	26.2#	78	0.00
81	T	n-Propylbenzene	50.0000	56.5769	-13.2	115	0.00
82	T	Bromobenzene	50.0000	51.6479	-3.3	111	0.00
83	T	1,3,5-Trimethylbenzene	50.0000	55.1277	-10.3	114	-0.01
84	T	2-Chlorotoluene	50.0000	52.7599	-5.5	112	0.00
85	T	4-Chlorotoluene	50.0000	55.4064	-10.8	116	0.00
86	T	a-Methylstyrene	50.0000	59.4584	-18.9	114	0.00
87	T	tert-Butylbenzene	50.0000	56.5417	-13.1	117	0.00
88	T	1,2,4-Trimethylbenzene	50.0000	53.8297	-7.7	110	0.00
89	T	sec-Butylbenzene	50.0000	55.8961	-11.8	114	0.00
90	T	p-Isopropyltoluene	50.0000	54.7069	-9.4	111	0.00
91	T	1,3-Dichlorobenzene	50.0000	52.6969	-5.4	112	0.00
92	T	1,4-Dichlorobenzene	50.0000	53.0354	-6.1	114	0.00
93	T	n-Butylbenzene	50.0000	53.8957	-7.8	110	0.00
94	T	1,2-Dichlorobenzene	50.0000	53.5772	-7.2	112	0.00
95	T	1,2-Dibromo-3-Chloropropane	50.0000	48.1046	3.8	105	0.00
96	T	1,2,4-Trichlorobenzene	50.0000	55.4365	-10.9	113	0.00
97	T	Hexachlorobutadiene	50.0000	55.9180	-11.8	118	0.00
98	T	Naphthalene	50.0000	51.1296	-2.3	103	0.00
99	T	1,2,3-Trichlorobenzene	50.0000	54.0642	-8.1	114	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11848.D 8260WT.M Sat May 14 18:47:20 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:40:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	823748	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	571926	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	299321	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	12.68	98	567	0.0189 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.08%#	
80) p-Bromofluorobenzene	16.08	95	313	0.0253 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	3836	0.2778 ug/L	91
3) Chloromethane	3.62	50	3658	0.4537 ug/L	95
4) Vinyl Chloride	3.85	62	2516	0.2630 ug/L #	58
5) 1,3-Butadiene	3.91	54	2079	0.2592 ug/L	71
6) Bromomethane	4.73	94	1152	0.6530 ug/L #	55
7) Chloroethane	4.90	64	1112	0.2113 ug/L #	72
8) Trichlorofluoromethane	5.35	101	2706	0.1520 ug/L #	53
10) Isoprene	5.93	67	2147	0.1987 ug/L	85
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1746	0.2087 ug/L	97
14) 1,1-Dichloroethene	6.48	61	3332	0.2501 ug/L	75
16) Dimethyl Sulfide	6.73	62	1099	0.2308 ug/L	95
19) Methylene Chloride	7.26	84	3414	0.4028 ug/L	88
20) Carbon Disulfide	7.30	76	10739	0.3853 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	4927	0.2686 ug/L #	60
23) trans-1,2-Dichloroethene	7.70	61	3879	0.3170 ug/L	98
24) n-Hexane	7.78	57	2794	0.3075 ug/L	85
26) Vinyl Acetate	8.30	43	1973	0.2259 ug/L #	70
27) 1,1-Dichloroethane	8.33	63	4881	0.3212 ug/L #	88
31) 2,2-Dichloropropane	9.11	77	4966	0.3101 ug/L	89
32) cis-1,2-Dichloroethene	9.17	96	2958	0.3128 ug/L	87
33) Chloroform	9.37	83	5564	0.3101 ug/L	95
34) 1-Bromopropane	9.52	122	210	0.1551 ug/L #	1
35) Bromochloromethane	9.60	130	1386	0.2858 ug/L	76
36) Tetrahydrofuran	9.62	42	1849	2.0617 ug/L #	60
38) 1,1,1-Trichloroethane	9.91	97	4978	0.2921 ug/L	95
39) Cyclohexane	9.93	56	3120	0.2644 ug/L #	85
40) 1,1-Dichloropropene	10.11	75	3779	0.2909 ug/L	97
42) Carbon Tetrachloride	10.24	117	4835	0.3194 ug/L #	74
45) 1,2-Dichloroethane	10.43	62	3295	0.2853 ug/L #	81
46) Benzene	10.46	78	11279	0.3333 ug/L	93
47) Trichloroethene	11.20	130	2410	0.2670 ug/L	97
48) Methylcyclohexane	11.31	83	3936	0.2871 ug/L	84
49) 1,2-Dichloropropane	11.42	63	2136	0.2836 ug/L	88
50) Bromodichloromethane	11.73	83	3767	0.2845 ug/L #	91
52) Dibromomethane	11.82	93	700	0.1570 ug/L #	59
53) 2-Chloroethyl Vinyl Ether	12.02	63	847	0.2616 ug/L #	47
55) cis-1,3-Dichloropropene	12.36	75	4763	0.3535 ug/L	84
56) Dimethyl Disulfide	12.63	79	1647	0.2290 ug/L	82
59) Toluene	12.78	91	11513	0.3243 ug/L	92
60) Ethyl Methacrylate	12.89	69	1631	0.2392 ug/L #	64

(#) = qualifier out of range (m) = manual integration
8M412220.D 8260WT.M Tue May 17 11:40:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:40:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
62)	trans-1,3-Dichloropropene	12.96	75	3626	0.3047 ug/L		82
63)	1,1,2-Trichloroethane	13.18	97	1409	0.2515 ug/L		98
65)	1,3-Dichloropropane	13.49	76	2584	0.2590 ug/L		93
66)	Tetrachloroethene	13.61	164	2678	0.3520 ug/L	#	75
67)	Dibromochloromethane	13.87	129	2126	0.2599 ug/L		79
68)	1,2-Dibromoethane	14.12	107	1895	0.3394 ug/L		91
69)	1-Chlorohexane	14.21	91	3835	0.3164 ug/L		99
70)	Chlorobenzene	14.62	112	7968	0.3328 ug/L		88
71)	1,1,1,2-Tetrachloroethane	14.67	131	2872	0.3096 ug/L		87
72)	Ethylbenzene	14.64	106	3844	0.2934 ug/L		81
73)	m-,p-Xylene	14.75	106	10447	0.6799 ug/L		96
74)	o-Xylene	15.31	106	4577	0.3047 ug/L		97
75)	Styrene	15.35	104	7545	0.3062 ug/L		95
76)	Bromoform	15.84	173	1301	0.2681 ug/L	#	51
77)	Isopropylbenzene	15.74	105	13119	0.3287 ug/L		90
79)	1,1,2,2-Tetrachloroethane	15.96	83	1714	0.2853 ug/L	#	85
83)	n-Propylbenzene	16.24	91	15676	0.3357 ug/L		92
84)	Bromobenzene	16.38	156	2859	0.2977 ug/L		90
85)	1,3,5-Trimethylbenzene	16.43	105	10873	0.3196 ug/L		99
86)	2-Chlorotoluene	16.52	91	11133	0.3415 ug/L		96
87)	4-Chlorotoluene	16.56	91	10305	0.3499 ug/L		97
88)	a-Methylstyrene	16.83	118	4090	0.2534 ug/L		86
89)	tert-Butylbenzene	16.90	134	1734	0.2606 ug/L		72
90)	1,2,4-Trimethylbenzene	16.95	105	10734	0.3069 ug/L		89
91)	sec-Butylbenzene	17.16	105	13749	0.3436 ug/L		97
92)	p-Isopropyltoluene	17.32	119	10847	0.3192 ug/L		95
93)	1,3-Dichlorobenzene	17.52	146	6023	0.3257 ug/L		99
94)	1,4-Dichlorobenzene	17.65	146	6152	0.3299 ug/L	#	60
95)	n-Butylbenzene	17.85	91	11161	0.3323 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	5711	0.3472 ug/L		92
98)	1,2,4-Trichlorobenzene	20.29	180	4203	0.3418 ug/L		91
99)	Hexachlorobutadiene	20.43	225	1894	0.3297 ug/L		84
100)	Naphthalene	20.65	128	6039	0.3306 ug/L		91
101)	1,2,3-Trichlorobenzene	20.96	180	3279	0.3161 ug/L		86

(#) = qualifier out of range (m) = manual integration
8M412220.D 8260WT.M Tue May 17 11:40:55 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2778	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.4537	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.2630	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	0.2592	0.0	100	0.03
6	T	Bromomethane	-1.0000	0.9911	0.0	100	0.00
7	T	Chloroethane	-1.0000	0.2113	0.0	100	0.00
8	T	Trichlorofluoromethane	-1.0000	0.1520	0.0	100	-0.02
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.90#
10	T	Isoprene	-1.0000	0.1987	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.13#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2087	0.0	100	0.00
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	-1.0000	0.2501	0.0	100	0.02
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.58#
16	T	Dimethyl Sulfide	-1.0000	0.2308	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.0000	0.0	0	-7.00#
19	T	Methylene Chloride	-1.0000	0.4028	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.3853	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.43#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2686	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	-1.0000	0.3170	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.3075	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.2259	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.3212	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.98#
31	T	2,2-Dichloropropane	-1.0000	0.3101	0.0	100	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.3128	0.0	100	0.00
33	C	Chloroform	0.3000	0.3101	-3.4	100	0.00
34		1-Bromopropane	-1.0000	0.1551	0.0	100	0.00
35	T	Bromochloromethane	-1.0000	0.2858	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	2.0617	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	-1.0000	0.2921	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.2644	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.2909	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	-1.0000	0.3194	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	-1.0000	0.2853	0.0	100	0.00
46	T	Benzene	-1.0000	0.3333	0.0	100	0.00
47	T	Trichloroethene	-1.0000	0.2670	0.0	100	-0.01
48	T	Methylcyclohexane	-1.0000	0.2871	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2836	0.0	100	0.00
50	T	Bromodichloromethane	-1.0000	0.2845	0.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	-1.0000	0.1570	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2616	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.05#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.3535	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2290	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0189	0.0	100	0.00
59	C	Toluene	-1.0000	0.3243	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2392	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3047	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.2515	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	-1.0000	0.2590	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.3520	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.2599	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.3394	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.3164	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.3328	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.3096	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.2934	0.0	100	-0.01
73	T	m-,p-Xylene	-1.0000	0.6799	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.3047	0.0	100	0.00
75	T	Styrene	-1.0000	0.3062	0.0	100	0.00
76	P	Bromoform	-1.0000	0.2681	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.3287	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2853	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0253	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.1103	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	-1.0000	0.3357	0.0	100	0.00
84	T	Bromobenzene	0.3000	0.2977	0.8	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.3196	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.3415	0.0	100	0.00
87	T	4-Chlorotoluene	-1.0000	0.3499	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2534	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.2606	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.3069	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3436	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.3192	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.3257	0.0	100	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.3299	-10.0	100	0.00
95	T	n-Butylbenzene	-1.0000	0.3323	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.3472	-15.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.3418	0.0	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.3297	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.3306	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.3161	-5.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412220.D 8260WT.M Sat May 14 18:03:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	801173	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	557498	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	293108	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
80) p-Bromofluorobenzene	16.08	95	343	0.0286 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	5478	0.3262 ug/L	79
3) Chloromethane	3.63	50	3930	0.2484 ug/L	85
4) Vinyl Chloride	3.84	62	3512	0.3288 ug/L	97
5) 1,3-Butadiene	3.90	54	2479	0.2375 ug/L #	75
6) Bromomethane	4.73	94	1343	0.9497 ug/L	85
7) Chloroethane	4.90	64	2219	0.3174 ug/L #	43
8) Trichlorofluoromethane	5.36	101	6974	0.3289 ug/L #	93
10) Isoprene	5.94	67	4288	0.3952 ug/L #	62
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	3168	0.3263 ug/L #	40
14) 1,1-Dichloroethene	6.47	61	5431	0.2882 ug/L	92
16) Dimethyl Sulfide	6.74	62	1708	0.2453 ug/L	64
19) Methylene Chloride	7.24	84	3785	0.4239 ug/L #	43
20) Carbon Disulfide	7.29	76	12437	0.4565 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	6580	0.3336 ug/L #	76
23) trans-1,2-Dichloroethene	7.71	61	4990	0.2928 ug/L	96
24) n-Hexane	7.79	57	3110	0.2011 ug/L	99
26) Vinyl Acetate	8.31	43	2753	0.1566 ug/L	100
27) 1,1-Dichloroethane	8.32	63	5655	0.2774 ug/L #	92
31) 2,2-Dichloropropane	9.10	77	6035	0.3360 ug/L	82
32) cis-1,2-Dichloroethene	9.16	96	3837	0.3762 ug/L	74
33) Chloroform	9.37	83	7267	0.3842 ug/L	100
34) 1-Bromopropane	9.50	122	234	0.1456 ug/L #	1
35) Bromochloromethane	9.60	130	1674	0.3137 ug/L	62
36) Tetrahydrofuran	9.62	42	447	0.2146 ug/L #	41
38) 1,1,1-Trichloroethane	9.91	97	6304	0.3305 ug/L	90
39) Cyclohexane	9.94	56	4658	0.2238 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	5172	0.3768 ug/L	80
42) Carbon Tetrachloride	10.25	117	5692	0.3172 ug/L	95
45) 1,2-Dichloroethane	10.43	62	4443	0.2796 ug/L #	63
46) Benzene	10.46	78	14456	0.4134 ug/L #	77
47) Trichloroethene	11.21	130	3659	0.3626 ug/L	98
48) Methylcyclohexane	11.29	83	5025	0.3562 ug/L	84
49) 1,2-Dichloropropane	11.42	63	3060	0.3007 ug/L	98
50) Bromodichloromethane	11.73	83	4734	0.3343 ug/L #	93
52) Dibromomethane	11.82	93	1805	0.3767 ug/L	84
55) cis-1,3-Dichloropropene	12.36	75	5008	0.3514 ug/L	90
56) Dimethyl Disulfide	12.63	79	1921	0.2573 ug/L	85
59) Toluene	12.78	91	14742	0.4416 ug/L	98
60) Ethyl Methacrylate	12.90	69	2062	0.3292 ug/L	66
62) trans-1,3-Dichloropropene	12.96	75	3693	0.3171 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M412221.D 8260WT.M Fri May 13 14:20:38 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
63)	1,1,2-Trichloroethane	13.18	97	2326	0.4391 ug/L		70
65)	1,3-Dichloropropane	13.49	76	3163	0.3219 ug/L		88
66)	Tetrachloroethene	13.61	164	3164	0.4185 ug/L		93
67)	Dibromochloromethane	13.87	129	3113	0.3727 ug/L		86
68)	1,2-Dibromoethane	14.12	107	2076	0.3760 ug/L		90
69)	1-Chlorohexane	14.21	91	4746	0.4174 ug/L		80
70)	Chlorobenzene	14.62	112	9180	0.3960 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.66	131	3501	0.3876 ug/L		95
72)	Ethylbenzene	14.65	106	5348	0.4066 ug/L		84
73)	m-,p-Xylene	14.75	106	13269	0.8757 ug/L		89
74)	o-Xylene	15.31	106	6019	0.3943 ug/L		97
75)	Styrene	15.35	104	9370	0.3849 ug/L		95
76)	Bromoform	15.83	173	1198	0.2500 ug/L	#	76
77)	Isopropylbenzene	15.73	105	16528	0.4270 ug/L		92
79)	1,1,2,2-Tetrachloroethane	15.96	83	1999	0.3419 ug/L	#	83
83)	n-Propylbenzene	16.25	91	19410	0.4297 ug/L		95
84)	Bromobenzene	16.37	156	3319	0.3524 ug/L		75
85)	1,3,5-Trimethylbenzene	16.42	105	13794	0.4127 ug/L		95
86)	2-Chlorotoluene	16.51	91	13678	0.4729 ug/L		90
87)	4-Chlorotoluene	16.56	91	12572	0.4219 ug/L		98
88)	a-Methylstyrene	16.84	118	5739	0.3485 ug/L		96
89)	tert-Butylbenzene	16.90	134	2254	0.3403 ug/L		55
90)	1,2,4-Trimethylbenzene	16.95	105	13859	0.4051 ug/L		90
91)	sec-Butylbenzene	17.17	105	17612	0.4382 ug/L		90
92)	p-Isopropyltoluene	17.32	119	13616	0.3968 ug/L		90
93)	1,3-Dichlorobenzene	17.52	146	6961	0.3724 ug/L		86
94)	1,4-Dichlorobenzene	17.64	146	7149	0.3832 ug/L	#	1
95)	n-Butylbenzene	17.85	91	15223	0.4664 ug/L		91
96)	1,2-Dichlorobenzene	18.14	146	6129	0.3742 ug/L		92
98)	1,2,4-Trichlorobenzene	20.28	180	5035	0.3969 ug/L		97
99)	Hexachlorobutadiene	20.44	225	2420	0.4122 ug/L		83
100)	Naphthalene	20.65	128	7474	0.3874 ug/L	#	84
101)	1,2,3-Trichlorobenzene	20.96	180	4378	0.4056 ug/L	#	78

(#) = qualifier out of range (m) = manual integration
8M412221.D 8260WT.M Fri May 13 14:20:39 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

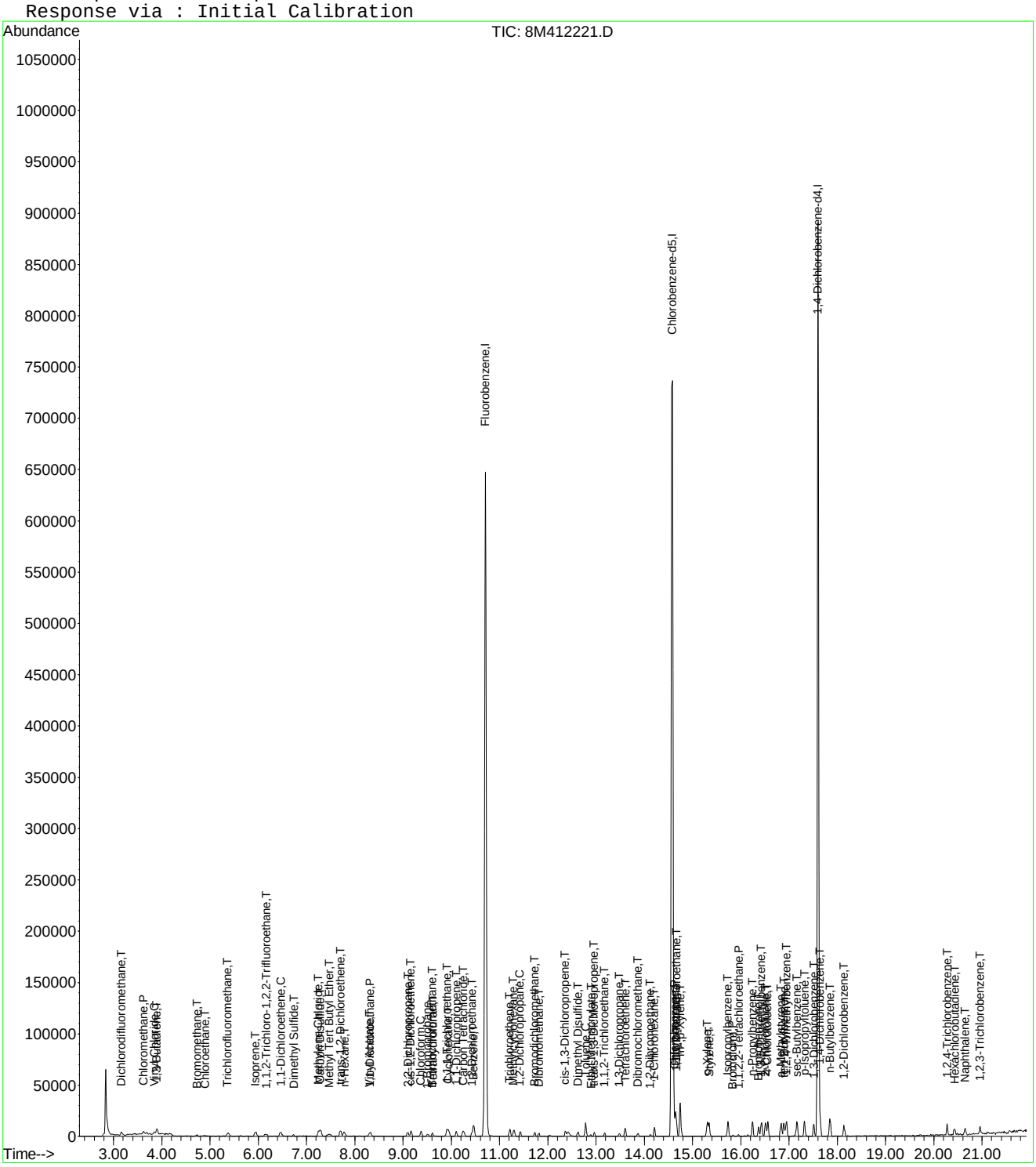

8M412221.D 8260WT.M Fri May 13 14:20:40 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	0.4000	0.4078	-2.0	100	0.00
3	P	Chloromethane	-1.0000	0.5012	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.3775	5.6	100	0.00
5	T	1,3-Butadiene	-1.0000	0.3178	0.0	100	0.02
6	T	Bromomethane	-1.0000	1.0253	0.0	100	0.00
7	T	Chloroethane	0.4000	0.4335	-8.4	100	0.00
8	T	Trichlorofluoromethane	0.4000	0.4029	-0.7	100	-0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.90#
10	T	Isoprene	0.4000	0.4079	-2.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.13#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3894	0.0	100	0.02
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	0.4000	0.4192	-4.8	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.58#
16	T	Dimethyl Sulfide	0.4000	0.3687	7.8	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.2179	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4591	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4587	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.43#
22	T	Methyl Tert Butyl Ether	-1.0000	0.3688	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.4193	-4.8	100	0.00
24	T	n-Hexane	-1.0000	0.3519	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.3241	0.0	100	0.02
27	P	1,1-Dichloroethane	0.4000	0.3826	4.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.98#
31	T	2,2-Dichloropropane	0.4000	0.3874	3.1	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.4172	-4.3	100	-0.01
33	C	Chloroform	0.4000	0.4164	-4.1	100	0.00
34		1-Bromopropane	-1.0000	0.1776	0.0	100	-0.01
35	T	Bromochloromethane	0.4000	0.3550	11.3	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.5125	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	0.4000	0.3803	4.9	100	0.00
39	T	Cyclohexane	-1.0000	0.4058	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4093	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	0.4000	0.3867	3.3	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	0.4000	0.3955	1.1	100	0.00
46	T	Benzene	0.4000	0.4393	-9.8	100	0.00
47	T	Trichloroethene	0.4000	0.4169	-4.2	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3768	0.0	100	-0.01
49	C	1,2-Dichloropropane	0.4000	0.4177	-4.4	100	0.00
50	T	Bromodichloromethane	0.4000	0.3676	8.1	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	0.4000	0.4162	-4.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1401	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.05#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3821	4.5	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2746	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0000	0.0	0	-12.68#
59	C	Toluene	0.4000	0.4259	-6.5	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3102	0.0	100	0.02
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3184	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.4259	-6.5	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	0.4000	0.3253	18.7	100	0.00
66	T	Tetrachloroethene	0.4000	0.4267	-6.7	100	0.00
67	T	Dibromochloromethane	0.4000	0.3904	2.4	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.3814	4.6	100	0.00
69	T	1-Chlorohexane	0.4000	0.4017	-0.4	100	0.00
70	P	Chlorobenzene	0.4000	0.3933	1.7	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3872	3.2	100	0.00
72	C	Ethylbenzene	0.4000	0.4188	-4.7	100	0.00
73	T	m-,p-Xylene	0.8000	0.8859	-10.7	100	0.00
74	T	o-Xylene	-1.0000	0.4110	0.0	100	0.00
75	T	Styrene	0.4000	0.3901	2.5	100	0.00
76	P	Bromoform	-1.0000	0.2533	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.4249	-6.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.3398	15.1	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0283	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.14#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	0.4000	0.4245	-6.1	100	0.00
84	T	Bromobenzene	0.4000	0.3529	11.8	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.4141	-3.5	100	0.00
86	T	2-Chlorotoluene	0.4000	0.4284	-7.1	100	0.00
87	T	4-Chlorotoluene	0.4000	0.4359	-9.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.3631	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3459	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	0.4000	0.4046	-1.2	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.4494	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4092	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.3844	3.9	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.3915	2.1	100	0.00
95	T	n-Butylbenzene	-1.0000	0.4628	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.3805	4.9	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	0.4000	0.4182	-4.5	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.4302	-7.5	100	0.00
100	T	Naphthalene	0.4000	0.4178	-4.5	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.4310	-7.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412221.D 8260WT.M Sat May 14 18:03:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	795577	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	547129	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	284579	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.65	111	3962	0.3966 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery	= 1.60%#	
43) 1,2-Dichloroethane-d4	10.31	65	3835	0.3356 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery	= 1.36%#	
58) Toluene-d8	12.68	98	14023	0.4957 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 2.00%#	
80) p-Bromofluorobenzene	16.08	95	6483	0.5565 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery	= 2.24%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	12402	0.7438 ug/L	97
3) Chloromethane	3.62	50	8415	0.5357 ug/L #	75
4) Vinyl Chloride	3.84	62	9412	0.8873 ug/L	89
5) 1,3-Butadiene	3.90	54	6974	0.6729 ug/L	81
6) Bromomethane	4.73	94	4114	1.3123 ug/L	92
7) Chloroethane	4.90	64	4983	0.7178 ug/L #	80
8) Trichlorofluoromethane	5.38	101	17133	0.8136 ug/L #	96
9) Diethyl ether	5.90	59	20707	3.2140 ug/L	84
10) Isoprene	5.94	67	11176	1.0373 ug/L	76
11) Acrolein	6.14	56	246	0.4300 ug/L #	15
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	8135	0.8438 ug/L	96
13) Acetone	6.24	43	413	0.2115 ug/L #	48
14) 1,1-Dichloroethene	6.46	61	12947	0.6919 ug/L	91
15) Tert-Butyl Alcohol	6.59	59	3316	7.3747 ug/L #	55
16) Dimethyl Sulfide	6.72	62	4505	0.6515 ug/L	79
18) Methyl acetate	7.00	43	2119	0.3630 ug/L #	66
19) Methylene Chloride	7.24	84	8723	0.9837 ug/L #	43
20) Carbon Disulfide	7.29	76	28246	1.0441 ug/L	100
21) Acrylonitrile	7.43	53	2164	0.8620 ug/L	76
22) Methyl Tert Butyl Ether	7.47	73	16998	0.8678 ug/L	84
23) trans-1,2-Dichloroethene	7.70	61	12571	0.7427 ug/L	100
24) n-Hexane	7.78	57	9382	0.6109 ug/L	82
25) Diisopropyl ether	8.12	45	95400	2.1939 ug/L #	91
26) Vinyl Acetate	8.30	43	6750	0.3867 ug/L #	89
27) 1,1-Dichloroethane	8.32	63	14721	0.7271 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	97972	3.2102 ug/L	88
29) 2-Butanone	8.88	43	380	0.1215 ug/L #	57
30) Propionitrile	8.99	54	1593	2.0138 ug/L #	56
31) 2,2-Dichloropropane	9.09	77	14691	0.8236 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	9482	0.9362 ug/L	72
33) Chloroform	9.37	83	18494	0.9845 ug/L	94
34) 1-Bromopropane	9.50	122	1092	0.6844 ug/L	80
35) Bromochloromethane	9.61	130	5234	0.9877 ug/L #	55
36) Tetrahydrofuran	9.63	42	5415	2.6185 ug/L #	68
38) 1,1,1-Trichloroethane	9.91	97	17074	0.9016 ug/L	92
39) Cyclohexane	9.94	56	11865	0.5740 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	13172	0.9663 ug/L	87
41) Tert-Amyl-Methyl ether	10.21	73	90255	4.6173 ug/L #	88
42) Carbon Tetrachloride	10.25	117	14515	0.8146 ug/L	95
45) 1,2-Dichloroethane	10.42	62	10675	0.6766 ug/L	85

(#) = qualifier out of range (m) = manual integration
8M412222.D 8260WT.M Fri May 13 14:49:47 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	10.47	78	34504	0.9938 ug/L		84
47)	Trichloroethene	11.21	130	8752	0.8735 ug/L		93
48)	Methylcyclohexane	11.30	83	13513	0.9646 ug/L		79
49)	1,2-Dichloropropane	11.43	63	7057	0.6982 ug/L	#	67
50)	Bromodichloromethane	11.73	83	12147	0.8638 ug/L		96
52)	Dibromomethane	11.81	93	4130	0.8681 ug/L		95
53)	2-Chloroethyl Vinyl Ether	12.03	63	2694	0.6366 ug/L		86
54)	4-Methyl-2-Pentanone	12.06	58	848	0.3671 ug/L	#	41
55)	cis-1,3-Dichloropropene	12.36	75	12521	0.8847 ug/L		97
56)	Dimethyl Disulfide	12.63	79	5799	0.7821 ug/L		96
59)	Toluene	12.79	91	37114	1.1328 ug/L		95
60)	Ethyl Methacrylate	12.88	69	5490	0.8930 ug/L		69
62)	trans-1,3-Dichloropropene	12.96	75	10328	0.9035 ug/L		92
63)	1,1,2-Trichloroethane	13.18	97	5274	1.0144 ug/L		93
64)	2-Hexanone	13.10	58	397	0.2127 ug/L	#	1
65)	1,3-Dichloropropane	13.49	76	9673	1.0032 ug/L		73
66)	Tetrachloroethene	13.61	164	7373	0.9937 ug/L		95
67)	Dibromochloromethane	13.87	129	7358	0.8977 ug/L		95
68)	1,2-Dibromoethane	14.13	107	5123	0.9454 ug/L		95
69)	1-Chlorohexane	14.21	91	12790	1.1461 ug/L		79
70)	Chlorobenzene	14.62	112	25662	1.1281 ug/L		89
71)	1,1,1,2-Tetrachloroethane	14.66	131	8722	0.9838 ug/L		94
72)	Ethylbenzene	14.65	106	13009	1.0078 ug/L		87
73)	m-,p-Xylene	14.75	106	30465	2.0486 ug/L		84
74)	o-Xylene	15.31	106	15133	1.0101 ug/L		84
75)	Styrene	15.35	104	23191	0.9707 ug/L		91
76)	Bromoform	15.84	173	3875	0.8240 ug/L		96
77)	Isopropylbenzene	15.74	105	41382	1.0895 ug/L		95
79)	1,1,2,2-Tetrachloroethane	15.95	83	5604	0.9873 ug/L	#	93
81)	1,2,3-Trichloropropane	16.15	110	1355	0.7428 ug/L	#	1
82)	trans-1,4-Dichloro-2-Buten	16.19	53	962	0.3479 ug/L	#	1
83)	n-Propylbenzene	16.25	91	48249	1.1002 ug/L		99
84)	Bromobenzene	16.37	156	9598	1.0497 ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	33355	1.0278 ug/L		96
86)	2-Chlorotoluene	16.51	91	33408	1.1895 ug/L		94
87)	4-Chlorotoluene	16.56	91	29548	1.0213 ug/L		95
88)	a-Methylstyrene	16.84	118	14414	0.9014 ug/L		91
89)	tert-Butylbenzene	16.89	134	6686	1.0398 ug/L		86
90)	1,2,4-Trimethylbenzene	16.95	105	36066	1.0857 ug/L		96
91)	sec-Butylbenzene	17.16	105	42128	1.0796 ug/L		96
92)	p-Isopropyltoluene	17.32	119	35424	1.0633 ug/L		94
93)	1,3-Dichlorobenzene	17.52	146	18409	1.0144 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	19031	1.0506 ug/L	#	62
95)	n-Butylbenzene	17.85	91	35772	1.1288 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	16104	1.0126 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.14	75	1262	1.0152 ug/L	#	53
98)	1,2,4-Trichlorobenzene	20.28	180	11494	0.9331 ug/L		98
99)	Hexachlorobutadiene	20.43	225	5421	0.9510 ug/L		98
100)	Naphthalene	20.65	128	16581	0.8853 ug/L		100
101)	1,2,3-Trichlorobenzene	20.96	180	10306	0.9835 ug/L		94

(#) = qualifier out of range (m) = manual integration
8M412222.D 8260WT.M Fri May 13 14:49:48 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

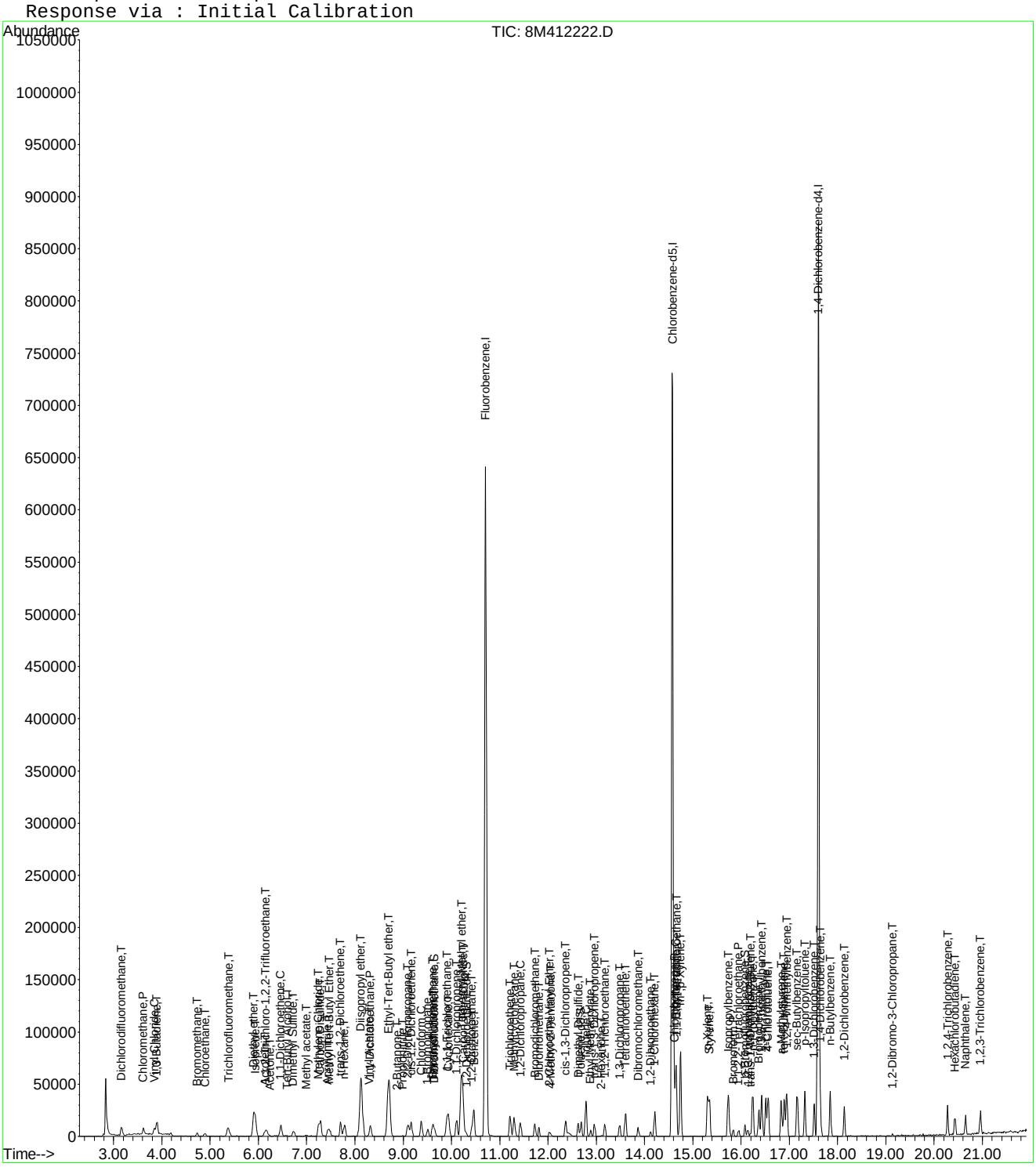

8M412222.D 8260WT.M Fri May 13 14:49:48 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:05:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9298	7.0	100	0.00
3	P	Chloromethane	1.0000	1.0808	-8.1	100	0.00
4	C	Vinyl Chloride	1.0000	1.0189	-1.9	100	0.00
5	T	1,3-Butadiene	-1.0000	0.9002	0.0	100	0.02
6	T	Bromomethane	1.0000	1.2082	-20.8	100	0.00
7	T	Chloroethane	1.0000	0.9803	2.0	100	0.00
8	T	Trichlorofluoromethane	1.0000	0.9968	0.3	100	0.00
9	T	Diethyl ether	5.0000	5.0462	-0.9	100	0.00
10	T	Isoprene	1.0000	1.0707	-7.1	100	0.00
11	T	Acrolein	-1.0000	0.6696	0.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0069	-0.7	100	0.00
13	T	Acetone	-1.0000	0.4614	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	1.0064	-0.6	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	11.5604	0.0	0	0.02
16	T	Dimethyl Sulfide	1.0000	0.9794	2.1	100	-0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.8758	0.0	100	0.00
19	T	Methylene Chloride	1.0000	1.0655	-6.5	100	0.00
20	T	Carbon Disulfide	1.0000	1.0492	-4.9	100	0.00
21	T	Acrylonitrile	2.5000	1.8633	25.5#	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9593	4.1	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	1.0636	-6.4	100	0.00
24	T	n-Hexane	-1.0000	1.0690	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	5.1784	-3.6	100	0.00
26	T	Vinyl Acetate	-1.0000	0.8002	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0029	-0.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.9635	0.7	100	0.00
29	T	2-Butanone	-1.0000	0.2889	0.0	100	0.00
30	T	Propionitrile	5.0000	4.1566	16.9	100	0.00
31	T	2,2-Dichloropropane	1.0000	0.9498	5.0	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	1.0383	-3.8	100	0.00
33	C	Chloroform	1.0000	1.0671	-6.7	100	0.00
34		1-Bromopropane	1.0000	0.8348	16.5	100	-0.01
35	T	Bromochloromethane	1.0000	1.1177	-11.8	100	0.00
36	T	Tetrahydrofuran	5.0000	6.2516	-25.0#	100	0.00
37	S	Dibromofluoromethane	0.5000	0.4635	7.3	100	-0.01
38	T	1,1,1-Trichloroethane	1.0000	1.0372	-3.7	100	0.00
39	T	Cyclohexane	1.0000	1.0411	-4.1	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0498	-5.0	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	5.0344	-0.7	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.9930	0.7	100	0.00
43	S	1,2-Dichloroethane-d4	0.5000	0.4184	16.3	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	1.0000	0.9570	4.3	100	0.00
46	T	Benzene	1.0000	1.0558	-5.6	100	0.00
47	T	Trichloroethene	1.0000	1.0041	-0.4	100	0.00
48	T	Methylcyclohexane	-1.0000	1.0205	0.0	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.9700	3.0	100	0.00
50	T	Bromodichloromethane	1.0000	0.9500	5.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	1.0000	0.9590	4.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.8616	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.6639	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:05:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9621	3.8	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.8348	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	0.5000	0.4897	2.1	100	0.00
59	C	Toluene	1.0000	1.0927	-9.3	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.8416	15.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	1.0000	0.9073	9.3	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.9840	1.6	100	0.00
64	T	2-Hexanone	-1.0000	0.3525	0.0	100	-0.01
65	T	1,3-Dichloropropane	1.0000	1.0137	-1.4	100	0.00
66	T	Tetrachloroethene	1.0000	1.0132	-1.3	100	0.00
67	T	Dibromochloromethane	1.0000	0.9402	6.0	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.9590	4.1	100	0.00
69	T	1-Chlorohexane	1.0000	1.1031	-10.3	100	0.00
70	P	Chlorobenzene	1.0000	1.1204	-12.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.9829	1.7	100	0.00
72	C	Ethylbenzene	1.0000	1.0381	-3.8	100	0.00
73	T	m-,p-Xylene	2.0000	2.0726	-3.6	100	0.00
74	T	o-Xylene	1.0000	1.0530	-5.3	100	0.00
75	T	Styrene	1.0000	0.9839	1.6	100	0.00
76	P	Bromoform	1.0000	0.8348	16.5	100	0.00
77	T	Isopropylbenzene	1.0000	1.0840	-8.4	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	0.9810	1.9	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5502	0.0	100	0.00
81	T	1,2,3-Trichloropropane	1.0000	0.7703	23.0	100	0.02
82	T	trans-1,4-Dichloro-2-Butene	1.0000	1.1443	-14.4	100	0.00
83	T	n-Propylbenzene	1.0000	1.0868	-8.7	100	0.00
84	T	Bromobenzene	1.0000	1.0510	-5.1	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	1.0314	-3.1	100	0.00
86	T	2-Chlorotoluene	1.0000	1.0778	-7.8	100	0.00
87	T	4-Chlorotoluene	1.0000	1.0553	-5.5	100	0.00
88	T	a-Methylstyrene	-1.0000	0.9394	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	1.0567	-5.7	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	1.0845	-8.5	100	0.00
91	T	sec-Butylbenzene	1.0000	1.1073	-10.7	100	0.00
92	T	p-Isopropyltoluene	1.0000	1.0966	-9.7	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0469	-4.7	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	1.0735	-7.3	100	0.00
95	T	n-Butylbenzene	1.0000	1.1201	-12.0	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0297	-3.0	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.1006	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	1.0000	0.9832	1.7	100	0.00
99	T	Hexachlorobutadiene	1.0000	0.9925	0.7	100	0.00
100	T	Naphthalene	1.0000	0.9547	4.5	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	1.0450	-4.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412222.D 8260WT.M Sat May 14 18:05:50 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	782460	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	543252	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	286450	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	8161	0.8307 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.32%#	
43) 1,2-Dichloroethane-d4	10.30	65	9681	0.8613 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.44%#	
58) Toluene-d8	12.68	98	28135	1.0016 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.00%#	
80) p-Bromofluorobenzene	16.08	95	12079	1.0302 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	24870	1.5166 ug/L	98
3) Chloromethane	3.62	50	16106	1.0425 ug/L	93
4) Vinyl Chloride	3.85	62	18562	1.7792 ug/L	94
5) 1,3-Butadiene	3.90	54	13617	1.3360 ug/L	92
6) Bromomethane	4.73	94	8329	1.8804 ug/L	94
7) Chloroethane	4.90	64	9562	1.4006 ug/L	86
8) Trichlorofluoromethane	5.39	101	34970	1.6885 ug/L	97
9) Diethyl ether	5.90	59	107986	17.0420 ug/L	79
10) Isoprene	5.93	67	20936	1.9757 ug/L	73
11) Acrolein	6.14	56	4864	8.6444 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	16832	1.7751 ug/L	99
13) Acetone	6.23	43	1519	0.7908 ug/L #	48
14) 1,1-Dichloroethene	6.47	61	25394	1.3798 ug/L	89
15) Tert-Butyl Alcohol	6.58	59	14891	33.6725 ug/L	85
16) Dimethyl Sulfide	6.73	62	9489	1.3953 ug/L	79
17) Iodomethane	6.98	142	1211	1.3472 ug/L #	60
18) Methyl acetate	7.01	43	5064	0.8821 ug/L #	79
19) Methylene Chloride	7.25	84	16579	1.9010 ug/L	52
20) Carbon Disulfide	7.29	76	57693	2.1683 ug/L	98
21) Acrylonitrile	7.43	53	13848	5.6089 ug/L	93
22) Methyl Tert Butyl Ether	7.47	73	33991	1.7644 ug/L	84
23) trans-1,2-Dichloroethene	7.70	61	22786	1.3688 ug/L	88
24) n-Hexane	7.79	57	18282	1.2105 ug/L	84
25) Diisopropyl ether	8.12	45	475271	11.1128 ug/L #	92
26) Vinyl Acetate	8.29	43	15998	0.9318 ug/L	93
27) 1,1-Dichloroethane	8.32	63	30419	1.5277 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	505010	16.8250 ug/L	89
29) 2-Butanone	8.90	43	2250	0.7313 ug/L #	57
30) Propionitrile	8.99	54	9373	12.0479 ug/L	86
31) 2,2-Dichloropropane	9.10	77	32521	1.8538 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	18238	1.8309 ug/L	91
33) Chloroform	9.37	83	33543	1.8156 ug/L	99
34) 1-Bromopropane	9.52	122	2513	1.6014 ug/L	88
35) Bromochloromethane	9.60	130	9189	1.7632 ug/L	67
36) Tetrahydrofuran	9.63	42	22074	10.8529 ug/L #	66
38) 1,1,1-Trichloroethane	9.90	97	32268	1.7324 ug/L	96
39) Cyclohexane	9.93	56	23097	1.1362 ug/L #	65
40) 1,1-Dichloropropene	10.10	75	24988	1.8639 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	459535	23.9029 ug/L	87
42) Carbon Tetrachloride	10.24	117	28935	1.6512 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412223.D 8260WT.M Fri May 13 15:18:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.42	62	22142	1.4270 ug/L #	83
46)	Benzene	10.46	78	67028	1.9629 ug/L	83
47)	Trichloroethene	11.21	130	17287	1.7543 ug/L	96
48)	Methylcyclohexane	11.30	83	26050	1.8907 ug/L	84
49)	1,2-Dichloropropane	11.42	63	14582	1.4670 ug/L	77
50)	Bromodichloromethane	11.73	83	25794	1.8651 ug/L	93
51)	1,4-Dioxane	11.73	88	1282	32.3515 ug/L	74
52)	Dibromomethane	11.81	93	8575	1.8325 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.02	63	6234	1.4979 ug/L	100
54)	4-Methyl-2-Pentanone	12.06	58	2139	0.9416 ug/L	84
55)	cis-1,3-Dichloropropene	12.37	75	24153	1.7353 ug/L	98
56)	Dimethyl Disulfide	12.62	79	12288	1.6851 ug/L	99
59)	Toluene	12.79	91	72944	2.2423 ug/L	95
60)	Ethyl Methacrylate	12.88	69	12716	2.0832 ug/L	71
62)	trans-1,3-Dichloropropene	12.96	75	22163	1.9527 ug/L	100
63)	1,1,2-Trichloroethane	13.18	97	10537	2.0412 ug/L	99
64)	2-Hexanone	13.13	58	2200	1.1873 ug/L #	65
65)	1,3-Dichloropropane	13.49	76	20212	2.1112 ug/L	72
66)	Tetrachloroethene	13.60	164	14595	1.9811 ug/L	90
67)	Dibromochloromethane	13.87	129	14698	1.8061 ug/L	98
68)	1,2-Dibromoethane	14.12	107	10152	1.8869 ug/L	95
69)	1-Chlorohexane	14.21	91	21960	1.9818 ug/L	89
70)	Chlorobenzene	14.62	112	47376	2.0974 ug/L	81
71)	1,1,1,2-Tetrachloroethane	14.66	131	17526	1.9910 ug/L	97
72)	Ethylbenzene	14.66	106	25628	1.9996 ug/L	92
73)	m-,p-Xylene	14.74	106	60087	4.0693 ug/L	84
74)	o-Xylene	15.31	106	28289	1.9017 ug/L	79
75)	Styrene	15.35	104	47644	2.0086 ug/L	92
76)	Bromoform	15.84	173	9145	1.9585 ug/L	95
77)	Isopropylbenzene	15.73	105	81301	2.1557 ug/L	97
79)	1,1,2,2-Tetrachloroethane	15.95	83	11538	2.0194 ug/L	95
81)	1,2,3-Trichloropropane	16.13	110	3630	1.9770 ug/L	94
82)	trans-1,4-Dichloro-2-Buten	16.19	53	2699	0.9698 ug/L #	36
83)	n-Propylbenzene	16.24	91	97233	2.2026 ug/L	96
84)	Bromobenzene	16.37	156	19174	2.0834 ug/L	92
85)	1,3,5-Trimethylbenzene	16.42	105	67395	2.0631 ug/L	97
86)	2-Chlorotoluene	16.51	91	67110	2.3739 ug/L	94
87)	4-Chlorotoluene	16.56	91	59154	2.0313 ug/L	92
88)	a-Methylstyrene	16.84	118	29415	1.8275 ug/L	86
89)	tert-Butylbenzene	16.89	134	12716	1.9647 ug/L	67
90)	1,2,4-Trimethylbenzene	16.95	105	71669	2.1435 ug/L	94
91)	sec-Butylbenzene	17.17	105	81038	2.0632 ug/L	98
92)	p-Isopropyltoluene	17.32	119	70170	2.0924 ug/L	92
93)	1,3-Dichlorobenzene	17.52	146	37289	2.0413 ug/L	93
94)	1,4-Dichlorobenzene	17.64	146	36528	2.0034 ug/L #	73
95)	n-Butylbenzene	17.85	91	67823	2.1262 ug/L	96
96)	1,2-Dichlorobenzene	18.14	146	32322	2.0190 ug/L	92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	1955	1.5624 ug/L	94
98)	1,2,4-Trichlorobenzene	20.28	180	23558	1.9000 ug/L	98
99)	Hexachlorobutadiene	20.43	225	11066	1.9286 ug/L	99
100)	Naphthalene	20.65	128	36066	1.9130 ug/L	99
101)	1,2,3-Trichlorobenzene	20.96	180	19765	1.8738 ug/L	95

(#) = qualifier out of range (m) = manual integration
8M412223.D 8260WT.M Fri May 13 15:18:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

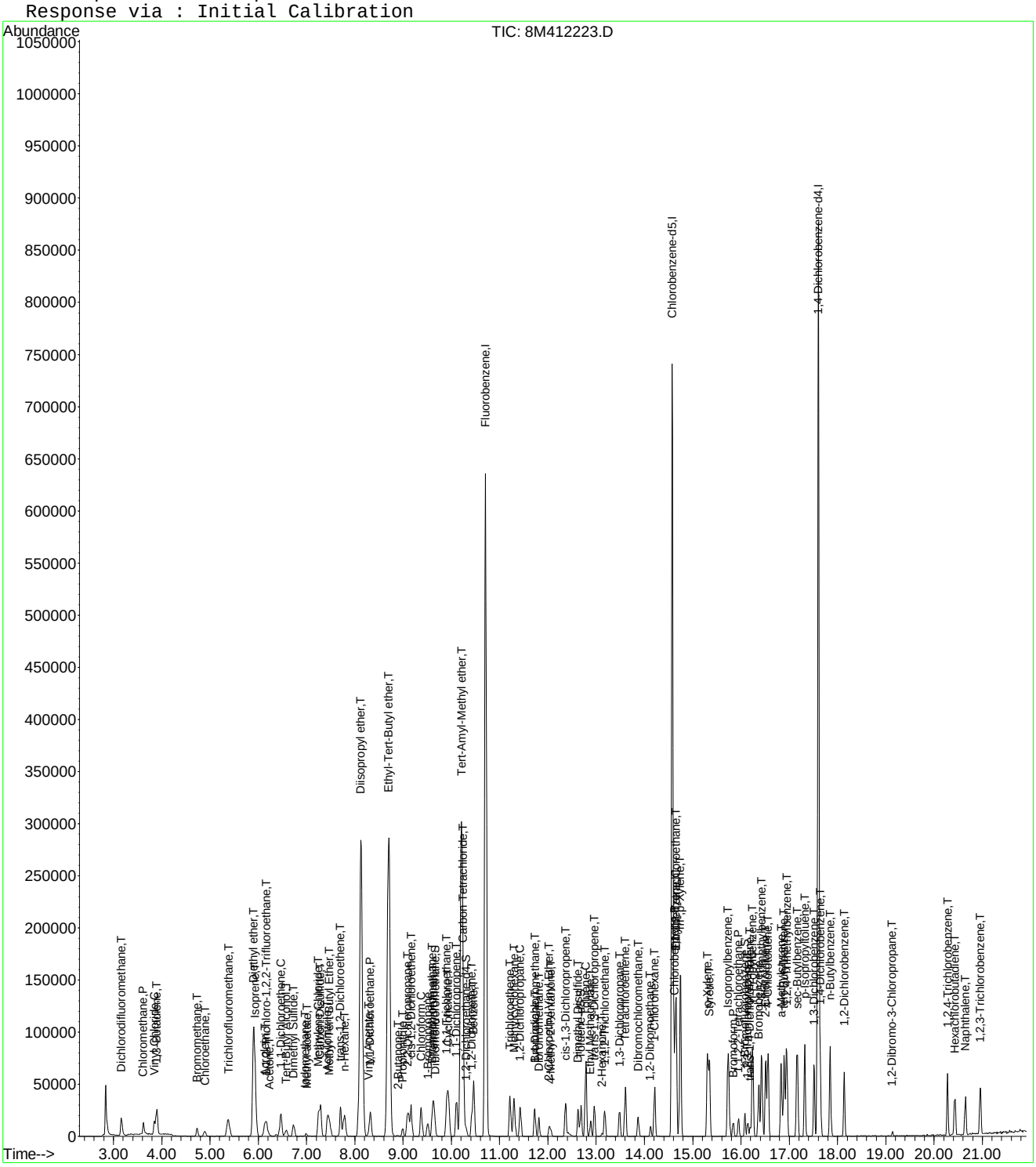

8M412223.D 8260WT.M Fri May 13 15:18:37 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.8958	5.2	100	0.00
3	P	Chloromethane	2.0000	2.1033	-5.2	100	0.00
4	C	Vinyl Chloride	2.0000	2.0431	-2.2	100	0.00
5	T	1,3-Butadiene	2.0000	1.7872	10.6	100	0.02
6	T	Bromomethane	2.0000	2.0126	-0.6	100	0.00
7	T	Chloroethane	2.0000	1.9127	4.4	100	0.00
8	T	Trichlorofluoromethane	2.0000	2.0686	-3.4	100	0.00
9	T	Diethyl ether	25.0000	26.7567	-7.0	100	0.00
10	T	Isoprene	2.0000	2.0394	-2.0	100	0.00
11	T	Acrolein	12.5000	13.4606	-7.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	2.1182	-5.9	100	0.02
13	T	Acetone	-1.0000	1.7255	0.0	100	-0.01
14	C	1,1-Dichloroethene	2.0000	2.0070	-0.4	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	52.7840	-5.6	100	0.00
16	T	Dimethyl Sulfide	2.0000	2.0975	-4.9	100	0.00
17	T	Iodomethane	2.0000	3.0680	-53.4#	100	0.00
18	T	Methyl acetate	-1.0000	2.1281	0.0	100	0.00
19	T	Methylene Chloride	2.0000	2.0590	-3.0	100	0.00
20	T	Carbon Disulfide	2.0000	2.1789	-8.9	100	0.00
21	T	Acrylonitrile	12.5000	12.1237	3.0	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.9505	2.5	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.9603	2.0	100	0.00
24	T	n-Hexane	-1.0000	2.1181	0.0	100	0.00
25	T	Diisopropyl ether	25.0000	26.2305	-4.9	100	0.00
26	T	Vinyl Acetate	2.0000	1.9284	3.6	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.1072	-5.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	26.0139	-4.1	100	0.00
29	T	2-Butanone	-1.0000	1.7396	0.0	100	0.02
30	T	Propionitrile	25.0000	24.8668	0.5	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1378	-6.9	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0306	-1.5	100	0.00
33	C	Chloroform	2.0000	1.9679	1.6	100	0.00
34		1-Bromopropane	2.0000	1.9533	2.3	100	0.00
35	T	Bromochloromethane	2.0000	1.9951	0.2	100	0.00
36	T	Tetrahydrofuran	25.0000	25.9117	-3.6	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9708	2.9	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.9930	0.3	100	0.00
39	T	Cyclohexane	2.0000	2.0605	-3.0	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0248	-1.2	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	26.0627	-4.3	100	0.00
42	T	Carbon Tetrachloride	2.0000	2.0126	-0.6	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0740	-7.4	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	2.0000	2.0183	-0.9	100	0.00
46	T	Benzene	2.0000	2.0854	-4.3	100	0.00
47	T	Trichloroethene	2.0000	2.0166	-0.8	100	0.00
48	T	Methylcyclohexane	-1.0000	2.0003	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0380	-1.9	100	0.00
50	T	Bromodichloromethane	2.0000	2.0511	-2.6	100	0.00
51	T	1,4-Dioxane	-1.0000	35.6688	0.0	100	0.02
52	T	Dibromomethane	2.0000	2.0246	-1.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	2.0271	-1.4	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.7027	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.8869	5.7	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.7986	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	0.9896	1.0	100	0.00
59	C	Toluene	2.0000	2.1628	-8.1	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.9633	1.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	2.0000	1.9609	2.0	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.9800	1.0	100	0.00
64	T	2-Hexanone	-1.0000	1.9672	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.1332	-6.7	100	0.00
66	T	Tetrachloroethene	2.0000	2.0198	-1.0	100	0.00
67	T	Dibromochloromethane	2.0000	1.8915	5.4	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.9141	4.3	100	0.00
69	T	1-Chlorohexane	2.0000	1.9075	4.6	100	0.00
70	P	Chlorobenzene	2.0000	2.0831	-4.2	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.9892	0.5	100	0.00
72	C	Ethylbenzene	2.0000	2.0596	-3.0	100	0.00
73	T	m-,p-Xylene	4.0000	4.1170	-2.9	100	0.00
74	T	o-Xylene	2.0000	1.9825	0.9	100	0.00
75	T	Styrene	2.0000	2.0358	-1.8	100	0.00
76	P	Bromoform	2.0000	1.9841	0.8	100	0.00
77	T	Isopropylbenzene	2.0000	2.1448	-7.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	2.0066	-0.3	100	0.00
80	S	p-Bromofluorobenzene	1.0000	1.0184	-1.8	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	2.0501	-2.5	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	2.0915	-4.6	100	0.00
83	T	n-Propylbenzene	2.0000	2.1757	-8.8	100	0.00
84	T	Bromobenzene	2.0000	2.0859	-4.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.0703	-3.5	100	0.00
86	T	2-Chlorotoluene	2.0000	2.1509	-7.5	100	0.00
87	T	4-Chlorotoluene	2.0000	2.0989	-4.9	100	0.00
88	T	a-Methylstyrene	-1.0000	1.9045	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	1.9967	0.2	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.1411	-7.1	100	0.00
91	T	sec-Butylbenzene	2.0000	2.1161	-5.8	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.1579	-7.9	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.1067	-5.3	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.0470	-2.4	100	0.00
95	T	n-Butylbenzene	2.0000	2.1098	-5.5	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0532	-2.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.6938	15.3	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	2.0021	-0.1	100	0.00
99	T	Hexachlorobutadiene	2.0000	2.0128	-0.6	100	0.00
100	T	Naphthalene	2.0000	2.0630	-3.2	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9910	0.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412223.D 8260WT.M Sat May 14 18:08:14 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	768397	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	534372	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	274234	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	19775	2.0496 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	8.20%#	
43) 1,2-Dichloroethane-d4	10.30	65	21200	1.9207 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	7.68%#	
58) Toluene-d8	12.68	98	65647	2.3758 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	9.52%#	
80) p-Bromofluorobenzene	16.08	95	26759	2.3838 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	9.52%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	55961	3.4750 ug/L	99
3) Chloromethane	3.62	50	34194	2.2538 ug/L	100
4) Vinyl Chloride	3.84	62	42506	4.1488 ug/L	99
5) 1,3-Butadiene	3.89	54	32006	3.1976 ug/L	93
6) Bromomethane	4.72	94	19582	3.4204 ug/L	94
7) Chloroethane	4.90	64	22000	3.2814 ug/L	84
8) Trichlorofluoromethane	5.37	101	77715	3.8212 ug/L	96
9) Diethyl ether	5.90	59	188516	30.2955 ug/L	79
10) Isoprene	5.94	67	44975	4.3218 ug/L	78
11) Acrolein	6.15	56	7712	13.9568 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	36867	3.9591 ug/L	99
13) Acetone	6.24	43	3578	1.8967 ug/L	85
14) 1,1-Dichloroethene	6.47	61	59405	3.2870 ug/L	95
15) Tert-Butyl Alcohol	6.58	59	27833	64.0897 ug/L #	82
16) Dimethyl Sulfide	6.73	62	21102	3.1597 ug/L	77
17) Iodomethane	6.99	142	3667	1.8964 ug/L	95
18) Methyl acetate	7.00	43	11500	2.0398 ug/L #	86
19) Methylene Chloride	7.24	84	37533	4.3823 ug/L	52
20) Carbon Disulfide	7.29	76	123060	4.7097 ug/L	100
21) Acrylonitrile	7.43	53	25653	10.5804 ug/L	99
22) Methyl Tert Butyl Ether	7.47	73	80005	4.2289 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	54124	3.3108 ug/L	94
24) n-Hexane	7.78	57	40758	2.7480 ug/L	82
25) Diisopropyl ether	8.12	45	841400	20.0337 ug/L #	91
26) Vinyl Acetate	8.30	43	37284	2.2113 ug/L #	90
27) 1,1-Dichloroethane	8.32	63	66711	3.4116 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	907423	30.7852 ug/L	89
29) 2-Butanone	8.89	43	5359	1.7738 ug/L #	82
30) Propionitrile	8.99	54	17933	23.4726 ug/L	100
31) 2,2-Dichloropropane	9.10	77	73150	4.2462 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	41036	4.1950 ug/L	89
33) Chloroform	9.37	83	78227	4.3116 ug/L	99
34) 1-Bromopropane	9.52	122	6162	3.9986 ug/L	99
35) Bromochloromethane	9.60	130	20988	4.1009 ug/L #	62
36) Tetrahydrofuran	9.62	42	38098	19.0742 ug/L #	62
38) 1,1,1-Trichloroethane	9.91	97	76152	4.1633 ug/L	97
39) Cyclohexane	9.94	56	51439	2.5767 ug/L #	66
40) 1,1-Dichloropropene	10.11	75	56645	4.3027 ug/L	93
41) Tert-Amyl-Methyl ether	10.21	73	821180	43.4958 ug/L	87
42) Carbon Tetrachloride	10.25	117	67831	3.9416 ug/L	96

(#) = qualifier out of range (m) = manual integration
8M412224.D 8260WT.M Fri May 13 15:47:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	51708	3.3934 ug/L		85
46)	Benzene	10.46	78	150204	4.4792 ug/L		86
47)	Trichloroethene	11.21	130	38500	3.9784 ug/L		94
48)	Methylcyclohexane	11.30	83	60897	4.5008 ug/L		81
49)	1,2-Dichloropropane	11.43	63	31773	3.2549 ug/L		77
50)	Bromodichloromethane	11.73	83	59127	4.3535 ug/L		94
51)	1,4-Dioxane	11.71	88	2719	69.8702 ug/L	#	62
52)	Dibromomethane	11.81	93	19711	4.2894 ug/L		96
53)	2-Chloroethyl Vinyl Ether	12.03	63	12946	3.1676 ug/L		98
54)	4-Methyl-2-Pentanone	12.05	58	5129	2.2991 ug/L	#	78
55)	cis-1,3-Dichloropropene	12.36	75	61169	4.4752 ug/L		94
56)	Dimethyl Disulfide	12.62	79	27966	3.9053 ug/L		98
59)	Toluene	12.78	91	161007	5.0316 ug/L		97
60)	Ethyl Methacrylate	12.88	69	28595	4.7624 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	49791	4.4599 ug/L		97
63)	1,1,2-Trichloroethane	13.18	97	23678	4.6631 ug/L		99
64)	2-Hexanone	13.11	58	4499	2.4685 ug/L	#	97
65)	1,3-Dichloropropane	13.49	76	44838	4.7614 ug/L		73
66)	Tetrachloroethene	13.60	164	32715	4.5144 ug/L		97
67)	Dibromochloromethane	13.87	129	35009	4.3734 ug/L		98
68)	1,2-Dibromoethane	14.13	107	24247	4.5815 ug/L		99
69)	1-Chlorohexane	14.21	91	53599	4.9176 ug/L		84
70)	Chlorobenzene	14.62	112	107618	4.8437 ug/L		95
71)	1,1,1,2-Tetrachloroethane	14.65	131	38120	4.4025 ug/L		96
72)	Ethylbenzene	14.65	106	56905	4.5138 ug/L		91
73)	m-,p-Xylene	14.75	106	137390	9.4592 ug/L		86
74)	o-Xylene	15.31	106	65650	4.4866 ug/L		85
75)	Styrene	15.35	104	111433	4.7758 ug/L		91
76)	Bromoform	15.84	173	19346	4.2121 ug/L		97
77)	Isopropylbenzene	15.73	105	182523	4.9200 ug/L		96
79)	1,1,2,2-Tetrachloroethane	15.95	83	26655	4.8730 ug/L		99
81)	1,2,3-Trichloropropane	16.13	110	8840	5.0289 ug/L		81
82)	trans-1,4-Dichloro-2-Buten	16.19	53	6584	2.4712 ug/L	#	51
83)	n-Propylbenzene	16.24	91	222196	5.2576 ug/L		96
84)	Bromobenzene	16.37	156	42665	4.8423 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	155714	4.9790 ug/L		93
86)	2-Chlorotoluene	16.52	91	148764	5.4968 ug/L		94
87)	4-Chlorotoluene	16.56	91	135679	4.8666 ug/L		94
88)	a-Methylstyrene	16.84	118	68945	4.4743 ug/L		91
89)	tert-Butylbenzene	16.89	134	29069	4.6914 ug/L		77
90)	1,2,4-Trimethylbenzene	16.95	105	161016	5.0301 ug/L		94
91)	sec-Butylbenzene	17.17	105	191273	5.0866 ug/L		94
92)	p-Isopropyltoluene	17.32	119	159232	4.9597 ug/L		93
93)	1,3-Dichlorobenzene	17.52	146	83896	4.7972 ug/L		95
94)	1,4-Dichlorobenzene	17.64	146	82462	4.7242 ug/L		86
95)	n-Butylbenzene	17.85	91	158787	5.1996 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	72524	4.7321 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	5629	4.6990 ug/L		76
98)	1,2,4-Trichlorobenzene	20.28	180	53855	4.5369 ug/L		98
99)	Hexachlorobutadiene	20.43	225	24504	4.4608 ug/L		93
100)	Naphthalene	20.65	128	79806	4.4217 ug/L		98
101)	1,2,3-Trichlorobenzene	20.96	180	44150	4.3720 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412224.D 8260WT.M Fri May 13 15:47:44 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

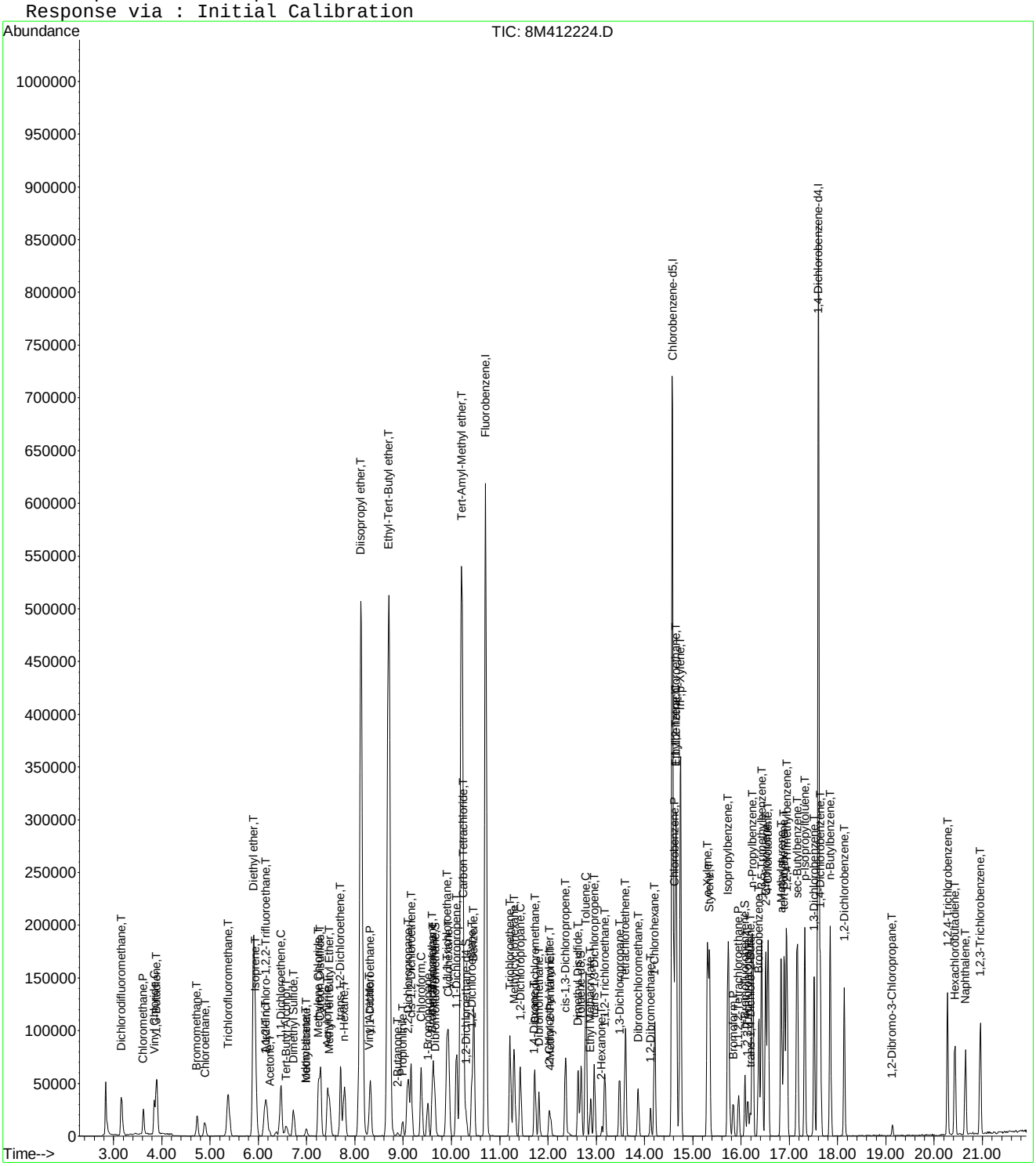

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.3438	13.1	100	0.00
3	P	Chloromethane	5.0000	4.5471	9.1	100	0.00
4	C	Vinyl Chloride	5.0000	4.7641	4.7	100	0.00
5	T	1,3-Butadiene	5.0000	4.2777	14.4	100	0.00
6	T	Bromomethane	5.0000	4.1880	16.2	100	-0.01
7	T	Chloroethane	5.0000	4.4813	10.4	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.6812	6.4	100	0.00
9	T	Diethyl ether	50.0000	47.5652	4.9	100	0.00
10	T	Isoprene	5.0000	4.4611	10.8	100	0.00
11	T	Acrolein	25.0000	21.7328	13.1	100	0.02
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.7244	5.5	100	0.00
13	T	Acetone	5.0000	4.1387	17.2	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.7810	4.4	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	100.4650	-0.5	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.7499	5.0	100	0.00
17	T	Iodomethane	5.0000	3.7634	24.7	100	0.00
18	T	Methyl acetate	5.0000	4.9211	1.6	100	0.00
19	T	Methylene Chloride	5.0000	4.7467	5.1	100	0.00
20	T	Carbon Disulfide	5.0000	4.7328	5.3	100	0.00
21	T	Acrylonitrile	25.0000	22.8698	8.5	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.6750	6.5	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.7415	5.2	100	0.00
24	T	n-Hexane	5.0000	4.8084	3.8	100	0.00
25	T	Diisopropyl ether	50.0000	47.2872	5.4	100	0.00
26	T	Vinyl Acetate	5.0000	4.5766	8.5	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.7058	5.9	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	47.5984	4.8	100	0.00
29	T	2-Butanone	5.0000	4.2191	15.6	100	0.00
30	T	Propionitrile	50.0000	48.4475	3.1	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.8965	2.1	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.6525	7.0	100	0.00
33	C	Chloroform	5.0000	4.6735	6.5	100	0.00
34		1-Bromopropane	5.0000	4.8774	2.5	100	0.00
35	T	Bromochloromethane	5.0000	4.6403	7.2	100	0.00
36	T	Tetrahydrofuran	50.0000	45.5400	8.9	100	-0.01
37	S	Dibromofluoromethane	2.5000	2.3953	4.2	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.7896	4.2	100	0.00
39	T	Cyclohexane	5.0000	4.6730	6.5	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.6741	6.5	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	47.6211	4.8	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.8044	3.9	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.3949	4.2	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	5.0000	4.7996	4.0	100	0.00
46	T	Benzene	5.0000	4.7588	4.8	100	0.00
47	T	Trichloroethene	5.0000	4.5733	8.5	100	0.00
48	T	Methylcyclohexane	5.0000	4.7616	4.8	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.5219	9.6	100	0.00
50	T	Bromodichloromethane	5.0000	4.7878	4.2	100	0.00
51	T	1,4-Dioxane	100.0000	77.0346	23.0	100	0.00
52	T	Dibromomethane	5.0000	4.7390	5.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.2867	14.3	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.1576	16.8	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.8662	2.7	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.1683	16.6	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.3473	6.1	100	0.00
59	C	Toluene	5.0000	4.8533	2.9	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.4883	10.2	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	5.0000	4.4786	10.4	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.5231	9.5	100	0.00
64	T	2-Hexanone	5.0000	4.0898	18.2	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.8109	3.8	100	0.00
66	T	Tetrachloroethene	5.0000	4.6028	7.9	100	0.00
67	T	Dibromochloromethane	5.0000	4.5802	8.4	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.6475	7.1	100	0.00
69	T	1-Chlorohexane	5.0000	4.7331	5.3	100	0.00
70	P	Chlorobenzene	5.0000	4.8107	3.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.3984	12.0	100	0.00
72	C	Ethylbenzene	5.0000	4.6492	7.0	100	0.00
73	T	m-,p-Xylene	10.0000	9.5700	4.3	100	0.00
74	T	o-Xylene	5.0000	4.6773	6.5	100	0.00
75	T	Styrene	5.0000	4.8405	3.2	100	0.00
76	P	Bromoform	5.0000	4.2672	14.7	100	0.00
77	T	Isopropylbenzene	5.0000	4.8951	2.1	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	4.8422	3.2	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.3565	5.7	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.2150	-4.3	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.3781	12.4	100	0.00
83	T	n-Propylbenzene	5.0000	5.1935	-3.9	100	0.00
84	T	Bromobenzene	5.0000	4.8483	3.0	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	4.9964	0.1	100	0.00
86	T	2-Chlorotoluene	5.0000	4.9803	0.4	100	0.00
87	T	4-Chlorotoluene	5.0000	5.0286	-0.6	100	0.00
88	T	a-Methylstyrene	5.0000	4.6629	6.7	100	0.00
89	T	tert-Butylbenzene	5.0000	4.7677	4.6	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.0245	-0.5	100	0.00
91	T	sec-Butylbenzene	5.0000	5.2170	-4.3	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.1150	-2.3	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	4.9511	1.0	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	4.8270	3.5	100	0.00
95	T	n-Butylbenzene	5.0000	5.1595	-3.2	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	4.8122	3.8	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	5.0942	-1.9	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.7808	4.4	100	0.00
99	T	Hexachlorobutadiene	5.0000	4.6555	6.9	100	0.00
100	T	Naphthalene	5.0000	4.7684	4.6	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.6455	7.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412224.D 8260WT.M Sat May 14 18:08:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	770027	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	531490	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	283594	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	86295	10.9569 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 43.84%#		
43) 1,2-Dichloroethane-d4	10.30	65	96239	11.3450 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 45.36%#		
58) Toluene-d8	12.68	98	294491	10.9223 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 43.68%#		
80) p-Bromofluorobenzene	16.08	95	121459	10.5490 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 42.20%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	288235	23.7135 ug/L	99
3) Chloromethane	3.62	50	155712	20.3784 ug/L	98
4) Vinyl Chloride	3.84	62	184250	20.9368 ug/L	95
5) 1,3-Butadiene	3.89	54	149348	22.7750 ug/L	96
6) Bromomethane	4.73	94	100098	25.0143 ug/L	99
7) Chloroethane	4.89	64	100876	20.9404 ug/L	91
8) Trichlorofluoromethane	5.37	101	351299	21.2512 ug/L	98
9) Diethyl ether	5.90	59	324317	80.8265 ug/L	78
10) Isoprene	5.94	67	205842	20.3622 ug/L	77
11) Acrolein	6.14	56	12049	34.8201 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	159996	20.3859 ug/L	97
13) Acetone	6.25	43	18459	25.7405 ug/L	98
14) 1,1-Dichloroethene	6.47	61	256241	20.5065 ug/L	92
15) Tert-Butyl Alcohol	6.57	59	43922	153.5712 ug/L	93
16) Dimethyl Sulfide	6.73	62	89456	20.6087 ug/L	83
17) Iodomethane	6.99	142	40622	61.0474 ug/L	93
18) Methyl acetate	7.00	43	46598	20.2171 ug/L #	85
19) Methylene Chloride	7.25	84	161897	20.1338 ug/L	52
20) Carbon Disulfide	7.30	76	538090	20.0802 ug/L	98
21) Acrylonitrile	7.43	53	46305	46.9889 ug/L	100
22) Methyl Tert Butyl Ether	7.47	73	361116	22.0137 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	234754	20.3175 ug/L	90
24) n-Hexane	7.78	57	172498	21.1165 ug/L	84
25) Diisopropyl ether	8.12	45	1447822	80.3755 ug/L #	91
26) Vinyl Acetate	8.30	43	166501	21.7017 ug/L #	88
27) 1,1-Dichloroethane	8.33	63	300321	21.3849 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	1579265	83.0733 ug/L	89
29) 2-Butanone	8.88	43	25681	23.9099 ug/L	87
30) Propionitrile	8.98	54	30953	89.5673 ug/L	94
31) 2,2-Dichloropropane	9.10	77	309575	20.8527 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	181973	20.4488 ug/L	89
33) Chloroform	9.37	83	348925	20.5535 ug/L	96
34) 1-Bromopropane	9.52	122	26723	22.7206 ug/L	96
35) Bromochloromethane	9.61	130	94952	21.3181 ug/L	65
36) Tetrahydrofuran	9.63	42	63066	70.5772 ug/L #	57
38) 1,1,1-Trichloroethane	9.91	97	335486	21.3640 ug/L	99
39) Cyclohexane	9.94	56	221040	19.9984 ug/L #	64
40) 1,1-Dichloropropene	10.11	75	248373	20.4717 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1418183	81.7883 ug/L	88
42) Carbon Tetrachloride	10.25	117	296471	21.3449 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412225.D 8260WT.M Fri May 13 16:16:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	228665	21.6403	ug/L		85
46)	Benzene	10.46	78	668449	20.3769	ug/L		86
47)	Trichloroethene	11.21	130	174107	20.7980	ug/L		96
48)	Methylcyclohexane	11.29	83	262275	21.4887	ug/L		82
49)	1,2-Dichloropropane	11.43	63	146868	21.1883	ug/L	#	72
50)	Bromodichloromethane	11.73	83	262192	21.9986	ug/L		98
51)	1,4-Dioxane	11.71	88	5351	196.3837	ug/L		76
52)	Dibromomethane	11.81	93	86951	21.0734	ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	63586	22.4600	ug/L		91
54)	4-Methyl-2-Pentanone	12.05	58	25754	25.0531	ug/L	#	73
55)	cis-1,3-Dichloropropene	12.36	75	265439	21.9841	ug/L		99
56)	Dimethyl Disulfide	12.63	79	134192	23.9412	ug/L		100
59)	Toluene	12.78	91	700473	20.1722	ug/L		99
60)	Ethyl Methacrylate	12.88	69	133361	23.2046	ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	238585	23.2548	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	107901	21.0216	ug/L		99
64)	2-Hexanone	13.11	58	22561	25.2093	ug/L	#	85
65)	1,3-Dichloropropane	13.49	76	198804	22.2491	ug/L		74
66)	Tetrachloroethene	13.60	164	141791	20.0055	ug/L		94
67)	Dibromochloromethane	13.87	129	158465	22.0695	ug/L		99
68)	1,2-Dibromoethane	14.13	107	110085	22.3366	ug/L		100
69)	1-Chlorohexane	14.21	91	229753	20.3591	ug/L		83
70)	Chlorobenzene	14.62	112	467492	20.4613	ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.65	131	183079	22.2095	ug/L		96
72)	Ethylbenzene	14.65	106	249016	20.2289	ug/L		90
73)	m-,p-Xylene	14.75	106	606381	41.1308	ug/L		88
74)	o-Xylene	15.30	106	294106	21.2106	ug/L		90
75)	Styrene	15.35	104	492781	21.8207	ug/L		89
76)	Bromoform	15.83	173	95911	23.8070	ug/L		99
77)	Isopropylbenzene	15.73	105	806678	20.7280	ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	123253	22.7779	ug/L		95
81)	1,2,3-Trichloropropane	16.14	110	36712	22.1354	ug/L		94
82)	trans-1,4-Dichloro-2-Buten	16.18	53	33702	27.6513	ug/L	#	56
83)	n-Propylbenzene	16.24	91	962196	20.3511	ug/L		97
84)	Bromobenzene	16.37	156	190566	21.2033	ug/L		94
85)	1,3,5-Trimethylbenzene	16.43	105	692633	20.9615	ug/L		94
86)	2-Chlorotoluene	16.51	91	649077	19.9155	ug/L		96
87)	4-Chlorotoluene	16.56	91	595446	20.3225	ug/L		95
88)	a-Methylstyrene	16.83	118	318960	22.3680	ug/L		92
89)	tert-Butylbenzene	16.90	134	129440	20.4705	ug/L		83
90)	1,2,4-Trimethylbenzene	16.95	105	707749	20.4783	ug/L		94
91)	sec-Butylbenzene	17.17	105	818359	20.1802	ug/L		97
92)	p-Isopropyltoluene	17.32	119	677859	19.7492	ug/L		96
93)	1,3-Dichlorobenzene	17.52	146	364065	20.5126	ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	363066	19.9874	ug/L		92
95)	n-Butylbenzene	17.85	91	681055	20.0187	ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	318612	19.9358	ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	23070	21.6419	ug/L		93
98)	1,2,4-Trichlorobenzene	20.28	180	242455	20.8863	ug/L		98
99)	Hexachlorobutadiene	20.43	225	110384	20.2523	ug/L		96
100)	Naphthalene	20.65	128	369849	21.4526	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	198876	19.8356	ug/L		98

(#) = qualifier out of range (m) = manual integration
8M412225.D 8260WT.M Fri May 13 16:16:35 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration

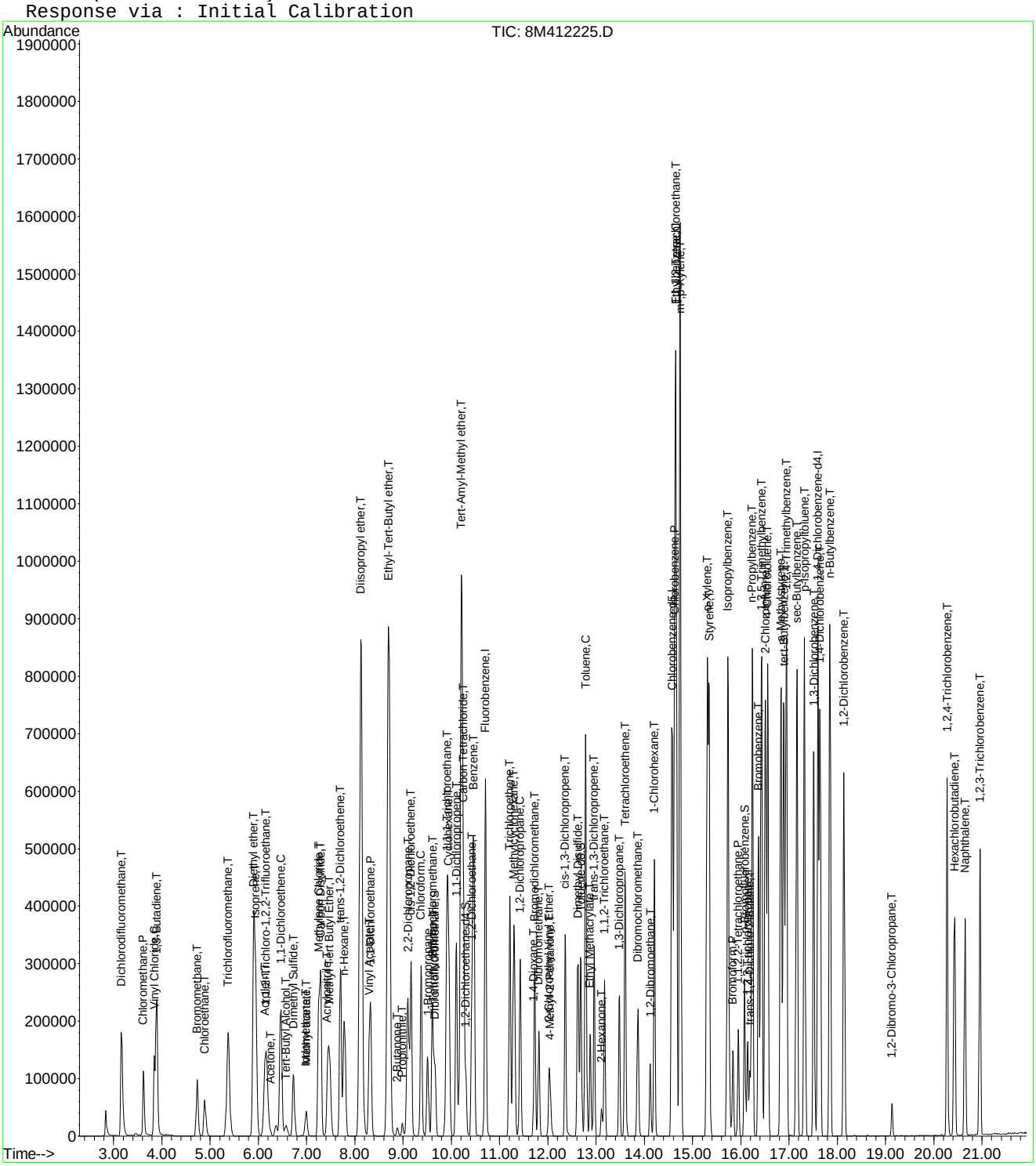

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45:30 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	778260	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	539116	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	288225	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	211053	26.5139 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.04%		
43) 1,2-Dichloroethane-d4	10.31	65	229348	26.7504 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.00%		
58) Toluene-d8	12.68	98	718491	26.2709 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.08%		
80) p-Bromofluorobenzene	16.07	95	292755	25.0180 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.08%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	682745	55.5761 ug/L	100
3) Chloromethane	3.62	50	372858	48.2806 ug/L	98
4) Vinyl Chloride	3.85	62	453905	51.0328 ug/L	96
5) 1,3-Butadiene	3.88	54	390501	58.9199 ug/L	99
6) Bromomethane	4.74	94	260493	64.4080 ug/L	97
7) Chloroethane	4.89	64	244336	50.1840 ug/L	91
8) Trichlorofluoromethane	5.38	101	837676	50.1376 ug/L	99
9) Diethyl ether	5.90	59	389327	96.0019 ug/L	79
10) Isoprene	5.94	67	498060	48.7477 ug/L	76
11) Acrolein	6.13	56	17644	50.4496 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	387643	48.8691 ug/L	97
13) Acetone	6.25	43	45901	63.3305 ug/L	97
14) 1,1-Dichloroethene	6.46	61	619744	49.0724 ug/L	94
15) Tert-Butyl Alcohol	6.58	59	53656	185.6211 ug/L	91
16) Dimethyl Sulfide	6.73	62	221107	50.3993 ug/L	82
17) Iodomethane	6.98	142	157872	234.7428 ug/L	94
18) Methyl acetate	7.00	43	114759	49.2629 ug/L #	81
19) Methylene Chloride	7.25	84	389653	47.9453 ug/L	52
20) Carbon Disulfide	7.29	76	1269941	46.8897 ug/L	99
21) Acrylonitrile	7.43	53	59882	60.1236 ug/L	97
22) Methyl Tert Butyl Ether	7.46	73	901668	54.3843 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	571507	48.9396 ug/L	93
24) n-Hexane	7.79	57	419656	50.8290 ug/L	83
25) Diisopropyl ether	8.13	45	1781012	97.8265 ug/L #	90
26) Vinyl Acetate	8.29	43	428708	55.2866 ug/L #	89
27) 1,1-Dichloroethane	8.32	63	722574	50.9078 ug/L	96
28) Ethyl-Tert-Butyl ether	8.71	59	1955100	101.7552 ug/L	89
29) 2-Butanone	8.88	43	66579	61.3316 ug/L #	82
30) Propionitrile	8.98	54	38235	109.4684 ug/L	95
31) 2,2-Dichloropropane	9.10	77	768496	51.2175 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	439590	48.8754 ug/L	91
33) Chloroform	9.38	83	844564	49.2230 ug/L	97
34) 1-Bromopropane	9.51	122	63442	53.3693 ug/L	99
35) Bromochloromethane	9.60	130	230119	51.1185 ug/L	66
36) Tetrahydrofuran	9.64	42	79437	87.9575 ug/L #	62
38) 1,1,1-Trichloroethane	9.90	97	817606	51.5150 ug/L	99
39) Cyclohexane	9.93	56	535882	47.9707 ug/L #	65
40) 1,1-Dichloropropene	10.10	75	615439	50.1899 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1769381	100.9628 ug/L	88
42) Carbon Tetrachloride	10.24	117	724058	51.5782 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412226.D 8260WT.M Fri May 13 16:45:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45:30 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	561107	52.5401 ug/L		85
46)	Benzene	10.46	78	1607407	48.4816 ug/L		86
47)	Trichloroethene	11.22	130	424998	50.2312 ug/L		96
48)	Methylcyclohexane	11.30	83	635339	51.5040 ug/L		83
49)	1,2-Dichloropropane	11.42	63	351908	50.2320 ug/L	#	71
50)	Bromodichloromethane	11.72	83	654943	54.3701 ug/L		97
51)	1,4-Dioxane	11.71	88	7573	274.9918 ug/L		73
52)	Dibromomethane	11.82	93	209167	50.1574 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	162319	56.7281 ug/L		93
54)	4-Methyl-2-Pentanone	12.05	58	64928	62.4928 ug/L		80
55)	cis-1,3-Dichloropropene	12.36	75	666861	54.6463 ug/L		98
56)	Dimethyl Disulfide	12.62	79	343446	60.6260 ug/L		96
59)	Toluene	12.79	91	1676069	47.5846 ug/L		100
60)	Ethyl Methacrylate	12.88	69	338996	58.1503 ug/L		69
62)	trans-1,3-Dichloropropene	12.96	75	594749	57.1499 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	268432	51.5570 ug/L		98
64)	2-Hexanone	13.12	58	56859	62.6347 ug/L	#	83
65)	1,3-Dichloropropane	13.48	76	489226	53.9770 ug/L		75
66)	Tetrachloroethene	13.60	164	350332	48.7296 ug/L		95
67)	Dibromochloromethane	13.86	129	401149	55.0780 ug/L		100
68)	1,2-Dibromoethane	14.12	107	273580	54.7252 ug/L		99
69)	1-Chlorohexane	14.21	91	560883	48.9984 ug/L		82
70)	Chlorobenzene	14.63	112	1117812	48.2326 ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	446892	53.4462 ug/L		99
72)	Ethylbenzene	14.66	106	603074	48.2980 ug/L		91
73)	m-,p-Xylene	14.74	106	1443780	96.5463 ug/L		90
74)	o-Xylene	15.31	106	709244	50.4265 ug/L		90
75)	Styrene	15.34	104	1212099	52.9133 ug/L		91
76)	Bromoform	15.84	173	238354	58.3272 ug/L		100
77)	Isopropylbenzene	15.73	105	1919993	48.6372 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	294266	53.5083 ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	89279	52.9656 ug/L		93
82)	trans-1,4-Dichloro-2-Buten	16.19	53	86829	70.0956 ug/L	#	53
83)	n-Propylbenzene	16.24	91	2278994	47.4277 ug/L		98
84)	Bromobenzene	16.37	156	459959	50.3549 ug/L		93
85)	1,3,5-Trimethylbenzene	16.43	105	1661486	49.4745 ug/L		95
86)	2-Chlorotoluene	16.51	91	1611031	48.6367 ug/L		97
87)	4-Chlorotoluene	16.56	91	1341051	45.0344 ug/L		95
88)	a-Methylstyrene	16.83	118	772611	53.3111 ug/L		90
89)	tert-Butylbenzene	16.89	134	307503	47.8493 ug/L		81
90)	1,2,4-Trimethylbenzene	16.94	105	1679809	47.8234 ug/L		95
91)	sec-Butylbenzene	17.16	105	1925411	46.7166 ug/L		97
92)	p-Isopropyltoluene	17.32	119	1621383	46.4795 ug/L		95
93)	1,3-Dichlorobenzene	17.51	146	882656	48.9327 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	871210	47.1909 ug/L		92
95)	n-Butylbenzene	17.85	91	1608832	46.5296 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	768548	47.3159 ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	59586	54.9992 ug/L		86
98)	1,2,4-Trichlorobenzene	20.28	180	583880	49.4902 ug/L		100
99)	Hexachlorobutadiene	20.44	225	264699	47.7844 ug/L		98
100)	Naphthalene	20.65	128	894629	51.0579 ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	475246	46.6387 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412226.D 8260WT.M Fri May 13 16:45:33 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration

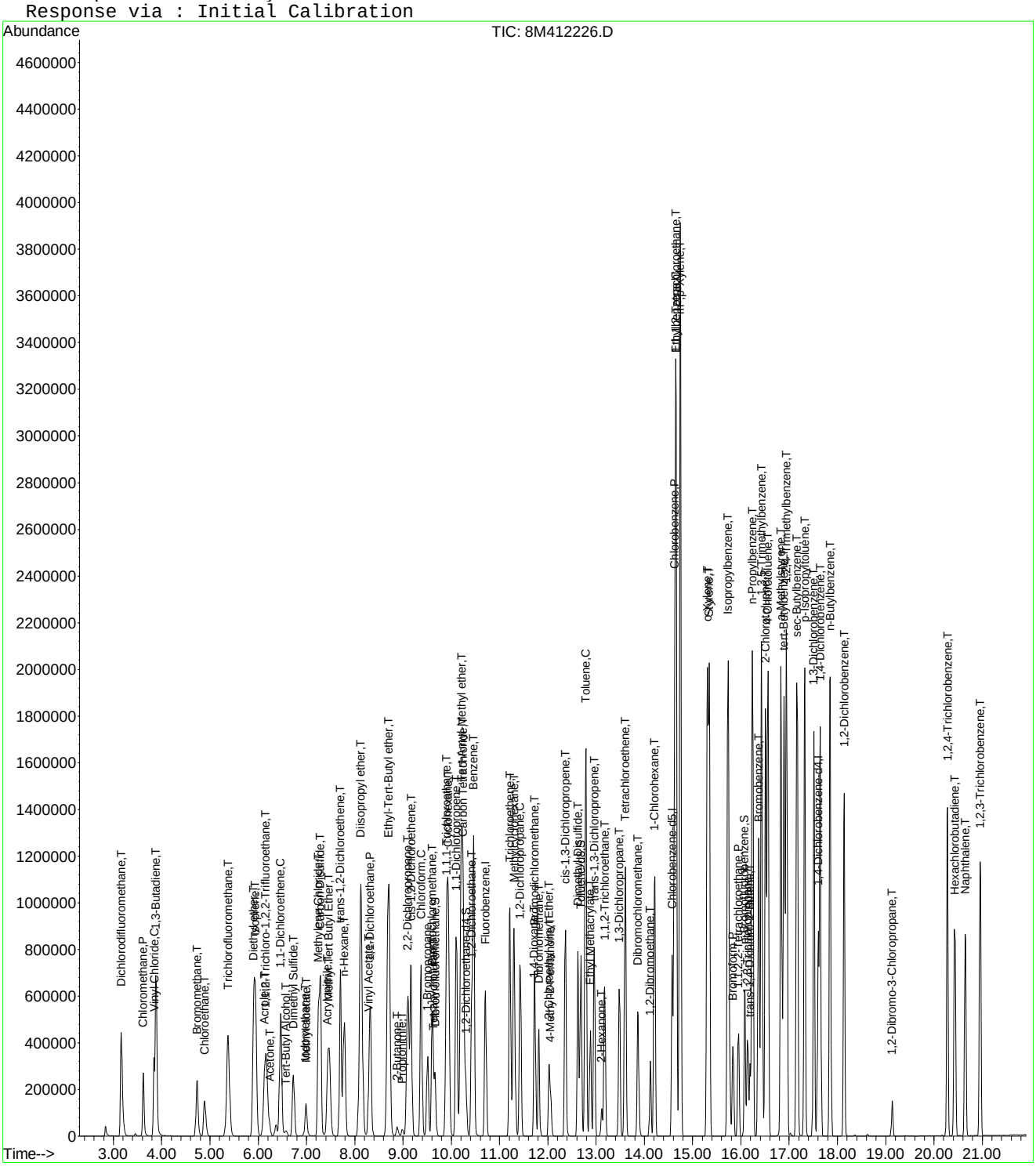

8M412226.D 8260WT.M Fri May 13 16:45:33 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	809533	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	559075	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	296193	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	460283	53.9056 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 215.64%#		
43) 1,2-Dichloroethane-d4	10.30	65	488116	52.5821 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 210.32%#		
58) Toluene-d8	12.68	98	1540572	52.8075 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 211.24%#		
80) p-Bromofluorobenzene	16.08	95	623735	51.1573 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 204.64%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	1463283	109.1068 ug/L	100
3) Chloromethane	3.62	50	778702	97.2380 ug/L	98
4) Vinyl Chloride	3.84	62	968312	103.4979 ug/L	95
5) 1,3-Butadiene	3.88	54	896569	120.4972 ug/L	95
6) Bromomethane	4.73	94	605228	129.8677 ug/L	99
7) Chloroethane	4.89	64	528153	103.4126 ug/L	90
8) Trichlorofluoromethane	5.37	101	1782726	101.4754 ug/L	99
9) Diethyl ether	5.90	59	828091	197.4770 ug/L	79
10) Isoprene	5.94	67	1080684	101.8037 ug/L	78
11) Acrolein	6.14	56	38655	109.5572 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	833546	101.0906 ug/L	97
13) Acetone	6.24	43	97515	109.1944 ug/L	100
14) 1,1-Dichloroethene	6.46	61	1323999	100.6729 ug/L	93
15) Tert-Butyl Alcohol	6.57	59	114220	387.5328 ug/L	91
16) Dimethyl Sulfide	6.73	62	489571	106.5996 ug/L	82
17) Iodomethane	6.99	142	416890	244.5557 ug/L	97
18) Methyl acetate	7.00	43	252444	104.3161 ug/L #	81
19) Methylene Chloride	7.24	84	827241	98.5346 ug/L	53
20) Carbon Disulfide	7.29	76	2766110	99.3432 ug/L	100
21) Acrylonitrile	7.43	53	126153	113.2272 ug/L	98
22) Methyl Tert Butyl Ether	7.46	73	1894494	105.8643 ug/L	87
23) trans-1,2-Dichloroethene	7.70	61	1203701	99.1822 ug/L	93
24) n-Hexane	7.78	57	926226	105.3097 ug/L	84
25) Diisopropyl ether	8.12	45	3699807	196.0386 ug/L #	90
26) Vinyl Acetate	8.29	43	860820	101.8643 ug/L #	88
27) 1,1-Dichloroethane	8.32	63	1521237	101.5567 ug/L	96
28) Ethyl-Tert-Butyl ether	8.70	59	4005676	198.2271 ug/L	89
29) 2-Butanone	8.88	43	145126	112.6698 ug/L #	81
30) Propionitrile	8.98	54	83038	219.1648 ug/L	97
31) 2,2-Dichloropropane	9.11	77	1610615	102.0557 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	935490	99.9944 ug/L	89
33) Chloroform	9.37	83	1766988	98.8341 ug/L	98
34) 1-Bromopropane	9.51	122	139657	108.5299 ug/L	100
35) Bromochloromethane	9.61	130	488678	102.8480 ug/L	66
36) Tetrahydrofuran	9.63	42	167812	187.5699 ug/L #	61
38) 1,1,1-Trichloroethane	9.91	97	1724504	102.7713 ug/L	100
39) Cyclohexane	9.94	56	1185537	102.8628 ug/L #	66
40) 1,1-Dichloropropene	10.11	75	1293224	100.8377 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	3634806	198.1264 ug/L	88
42) Carbon Tetrachloride	10.25	117	1534696	103.3979 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412227.D 8260WT.M Fri May 13 17:14:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	1177876	103.7352 ug/L		85
46)	Benzene	10.46	78	3298928	95.8405 ug/L		87
47)	Trichloroethene	11.21	130	903490	101.9036 ug/L		97
48)	Methylcyclohexane	11.30	83	1389528	104.6454 ug/L		83
49)	1,2-Dichloropropane	11.43	63	755128	102.5297 ug/L		73
50)	Bromodichloromethane	11.73	83	1351612	104.6036 ug/L		99
51)	1,4-Dioxane	11.72	88	16303	473.9624 ug/L		68
52)	Dibromomethane	11.81	93	445130	101.6543 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.02	63	333977	105.4228 ug/L		92
54)	4-Methyl-2-Pentanone	12.05	58	138980	110.1494 ug/L	#	77
55)	cis-1,3-Dichloropropene	12.36	75	1387475	105.9136 ug/L		100
56)	Dimethyl Disulfide	12.62	79	745504	111.3169 ug/L		97
59)	Toluene	12.78	91	3455614	95.2346 ug/L		99
60)	Ethyl Methacrylate	12.88	69	731009	113.5760 ug/L		70
62)	trans-1,3-Dichloropropene	12.96	75	1236182	107.9445 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	564076	103.0604 ug/L		99
64)	2-Hexanone	13.12	58	126268	114.5366 ug/L	#	79
65)	1,3-Dichloropropane	13.48	76	1021082	105.2672 ug/L		74
66)	Tetrachloroethene	13.60	164	752835	101.4023 ug/L		95
67)	Dibromochloromethane	13.87	129	856499	109.6525 ug/L		100
68)	1,2-Dibromoethane	14.12	107	577701	107.6426 ug/L		98
69)	1-Chlorohexane	14.21	91	1222720	103.0385 ug/L		82
70)	Chlorobenzene	14.62	112	2332247	97.2408 ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	947925	106.1463 ug/L		99
72)	Ethylbenzene	14.66	106	1275519	98.8771 ug/L		97
73)	m-,p-Xylene	14.75	106	3009424	194.2602 ug/L		98
74)	o-Xylene	15.31	106	1490638	100.8068 ug/L		93
75)	Styrene	15.35	104	2503721	102.8373 ug/L		88
76)	Bromoform	15.83	173	517827	114.0520 ug/L		100
77)	Isopropylbenzene	15.73	105	3913141	95.4433 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	624965	106.8610 ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	192087	107.3268 ug/L		97
82)	trans-1,4-Dichloro-2-Buten	16.18	53	189214	128.4818 ug/L	#	59
83)	n-Propylbenzene	16.24	91	4599057	93.6644 ug/L		100
84)	Bromobenzene	16.37	156	968011	102.1426 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	3401719	97.9556 ug/L		97
86)	2-Chlorotoluene	16.52	91	3177047	93.8267 ug/L		98
87)	4-Chlorotoluene	16.56	91	2899171	96.0712 ug/L		96
88)	a-Methylstyrene	16.84	118	1639166	103.6811 ug/L		90
89)	tert-Butylbenzene	16.90	134	654025	99.4199 ug/L		85
90)	1,2,4-Trimethylbenzene	16.95	105	3479295	96.7054 ug/L		97
91)	sec-Butylbenzene	17.17	105	3947832	94.2785 ug/L		98
92)	p-Isopropyltoluene	17.32	119	3328450	94.4148 ug/L		97
93)	1,3-Dichlorobenzene	17.52	146	1834740	98.9074 ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	1818309	96.6271 ug/L		92
95)	n-Butylbenzene	17.85	91	3308330	94.4002 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	1606254	97.0179 ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	125368	107.7020 ug/L		87
98)	1,2,4-Trichlorobenzene	20.28	180	1227926	100.7076 ug/L		99
99)	Hexachlorobutadiene	20.43	225	569213	100.5231 ug/L		97
100)	Naphthalene	20.65	128	1852486	101.2968 ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	1021163	98.5794 ug/L		100

(#) = qualifier out of range (m) = manual integration
8M412227.D 8260WT.M Fri May 13 17:14:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration

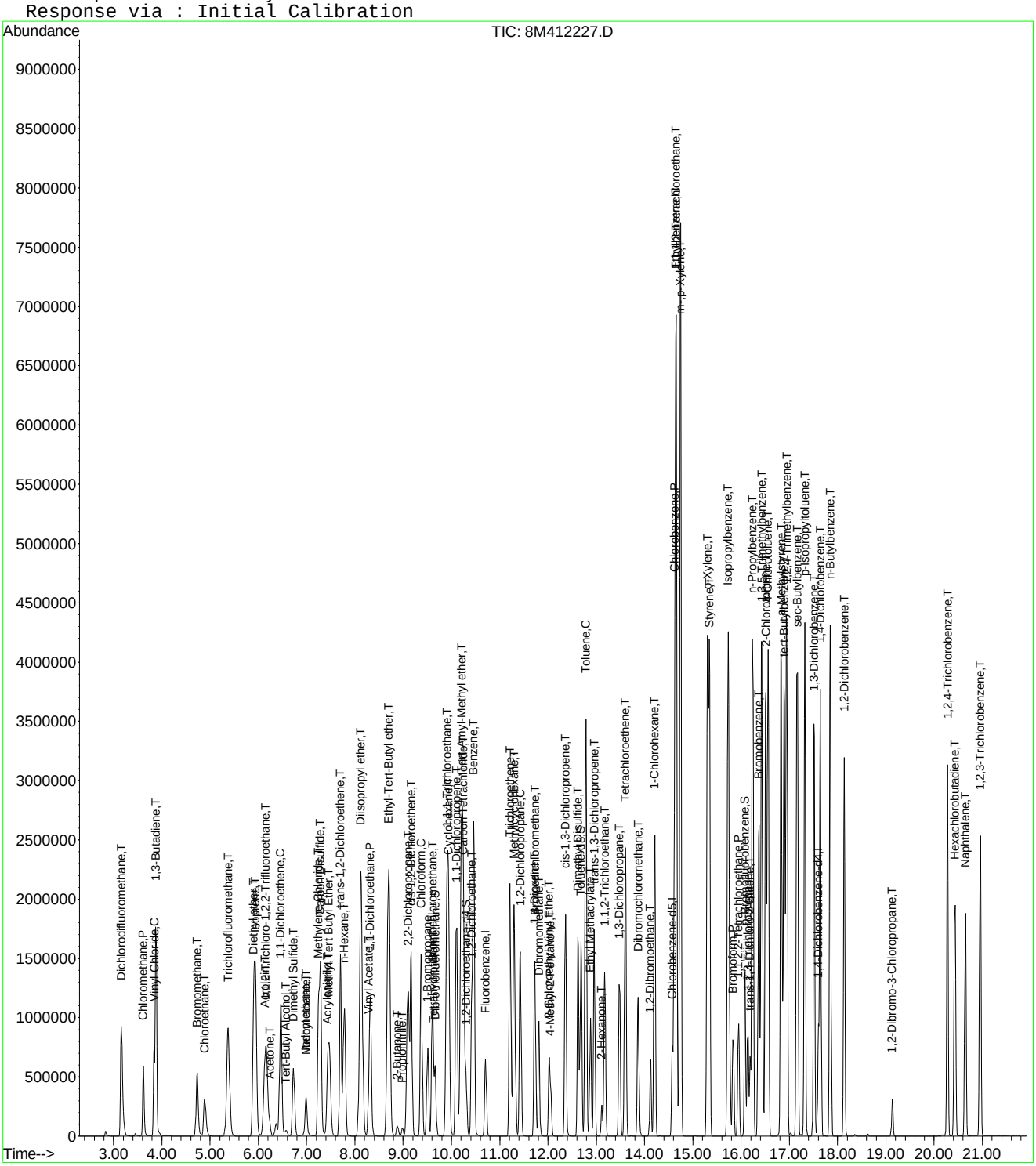

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	828540	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	578848	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	301401	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	898145	101.4517 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 405.80%#		
43) 1,2-Dichloroethane-d4	10.30	65	939848	98.0779 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 392.32%#		
58) Toluene-d8	12.68	98	2984162	97.8805 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 391.52%#		
80) p-Bromofluorobenzene	16.08	95	1242720	99.7023 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 398.80%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	2830517	203.5621 ug/L	98
3) Chloromethane	3.62	50	1586058	194.4056 ug/L	97
4) Vinyl Chloride	3.83	62	1935009	201.0738 ug/L	94
5) 1,3-Butadiene	3.88	54	1684964	212.5477 ug/L	94
6) Bromomethane	4.72	94	1358068	271.2231 ug/L	99
7) Chloroethane	4.89	64	1084803	206.5255 ug/L	90
8) Trichlorofluoromethane	5.37	101	3516760	195.1756 ug/L	99
10) Isoprene	5.94	67	2136665	196.1573 ug/L	78
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1662142	196.5993 ug/L	95
13) Acetone	6.24	43	187748	200.7963 ug/L	97
14) 1,1-Dichloroethene	6.46	61	2649821	196.6732 ug/L	92
15) Tert-Butyl Alcohol	6.58	59	6024	20.0950 ug/L #	87
16) Dimethyl Sulfide	6.73	62	976862	205.8822 ug/L	82
17) Iodomethane	6.99	142	896947	398.7987 ug/L	100
18) Methyl acetate	7.00	43	504293	201.4324 ug/L #	81
19) Methylene Chloride	7.25	84	1684780	196.5546 ug/L	52
20) Carbon Disulfide	7.29	76	5386210	189.2120 ug/L	99
21) Acrylonitrile	7.45	53	30354	26.0447 ug/L #	32
22) Methyl Tert Butyl Ether	7.46	73	3711011	200.6529 ug/L	87
23) trans-1,2-Dichloroethene	7.70	61	2410498	194.2902 ug/L	92
24) n-Hexane	7.78	57	1821777	199.7288 ug/L	84
26) Vinyl Acetate	8.29	43	1796217	206.9060 ug/L #	88
27) 1,1-Dichloroethane	8.32	63	3042055	197.9863 ug/L	95
29) 2-Butanone	8.88	43	271767	199.8193 ug/L #	77
30) Propionitrile	8.90	54	208	0.5280 ug/L #	1
31) 2,2-Dichloropropane	9.11	77	3202633	197.6970 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	1875631	195.8883 ug/L	89
33) Chloroform	9.37	83	3506648	191.9199 ug/L	99
34) 1-Bromopropane	9.51	122	286158	214.2313 ug/L	99
35) Bromochloromethane	9.60	130	980373	200.7807 ug/L	66
36) Tetrahydrofuran	9.62	42	2381	2.6275 ug/L	87
38) 1,1,1-Trichloroethane	9.91	97	3410306	197.7909 ug/L	99
39) Cyclohexane	9.94	56	2357393	198.8974 ug/L #	66
40) 1,1-Dichloropropene	10.10	75	2601175	197.8946 ug/L	96
42) Carbon Tetrachloride	10.25	117	3062767	200.6417 ug/L	99
45) 1,2-Dichloroethane	10.42	62	2313662	198.0324 ug/L	85
46) Benzene	10.46	78	6379817	182.1771 ug/L	89
47) Trichloroethene	11.21	130	1810459	198.9741 ug/L	97
48) Methylcyclohexane	11.30	83	2755373	200.4193 ug/L	83
49) 1,2-Dichloropropane	11.43	63	1528407	202.0331 ug/L	74

(#) = qualifier out of range (m) = manual integration
8M412228.D 8260WT.M Fri May 13 17:43:34 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
50)	Bromodichloromethane	11.73	83	2716764	204.0895 ug/L		99
51)	1,4-Dioxane	11.73	88	3865	104.9352 ug/L	#	18
52)	Dibromomethane	11.81	93	898971	200.1154 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.02	63	631656	192.7236 ug/L		90
54)	4-Methyl-2-Pentanone	12.05	58	262702	198.3957 ug/L	#	75
55)	cis-1,3-Dichloropropene	12.36	75	2784162	205.9153 ug/L		99
56)	Dimethyl Disulfide	12.62	79	1518705	215.4711 ug/L		95
59)	Toluene	12.78	91	6564353	175.9274 ug/L		96
60)	Ethyl Methacrylate	12.88	69	1429837	209.8161 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	2468609	205.4771 ug/L		98
63)	1,1,2-Trichloroethane	13.18	97	1124672	197.6019 ug/L		100
64)	2-Hexanone	13.12	58	237678	200.9290 ug/L	#	81
65)	1,3-Dichloropropane	13.48	76	2023247	199.9545 ug/L		76
66)	Tetrachloroethene	13.60	164	1546618	200.8018 ug/L		97
67)	Dibromochloromethane	13.87	129	1726523	210.5823 ug/L		100
68)	1,2-Dibromoethane	14.12	107	1163160	207.0667 ug/L		99
69)	1-Chlorohexane	14.21	91	2414147	195.6413 ug/L		83
70)	Chlorobenzene	14.62	112	4641169	187.6386 ug/L		94
71)	1,1,1,2-Tetrachloroethane	14.66	131	1929251	206.8372 ug/L		99
72)	Ethylbenzene	14.66	106	2611321	195.8267 ug/L		88
73)	m-,p-Xylene	14.75	106	5876234	367.8657 ug/L		83
74)	o-Xylene	15.31	106	3012318	196.4899 ug/L		98
75)	Styrene	15.35	104	4913204	194.1235 ug/L		86
76)	Bromoform	15.83	173	1052629	218.7989 ug/L		100
77)	Isopropylbenzene	15.73	105	7284624	172.7305 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	1237171	205.8673 ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	386738	209.7906 ug/L	#	54
82)	trans-1,4-Dichloro-2-Buten	16.19	53	382467	243.6526 ug/L		76
83)	n-Propylbenzene	16.24	91	8244387	166.5110 ug/L		93
84)	Bromobenzene	16.37	156	1935166	200.1305 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	6482975	183.9948 ug/L		98
86)	2-Chlorotoluene	16.52	91	6108308	178.8549 ug/L		99
87)	4-Chlorotoluene	16.56	91	5513221	180.5508 ug/L		99
88)	a-Methylstyrene	16.84	118	3255254	200.4995 ug/L		89
89)	tert-Butylbenzene	16.90	134	1351569	202.1005 ug/L		92
90)	1,2,4-Trimethylbenzene	16.95	105	6531416	179.2445 ug/L		97
91)	sec-Butylbenzene	17.17	105	7342730	173.9814 ug/L		97
92)	p-Isopropyltoluene	17.32	119	6352010	178.7315 ug/L		99
93)	1,3-Dichlorobenzene	17.52	146	3640547	193.1654 ug/L		90
94)	1,4-Dichlorobenzene	17.64	146	3593548	188.4603 ug/L		91
95)	n-Butylbenzene	17.85	91	6198060	175.4375 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	3171699	188.9651 ug/L		89
97)	1,2-Dibromo-3-Chloropropan	19.13	75	249646	207.5645 ug/L		88
98)	1,2,4-Trichlorobenzene	20.28	180	2480626	199.7296 ug/L		99
99)	Hexachlorobutadiene	20.43	225	1169411	202.7981 ug/L		98
100)	Naphthalene	20.65	128	3580198	192.0323 ug/L		97
101)	1,2,3-Trichlorobenzene	20.96	180	2040570	193.9298 ug/L		100

(#) = qualifier out of range (m) = manual integration
8M412228.D 8260WT.M Fri May 13 17:43:35 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration

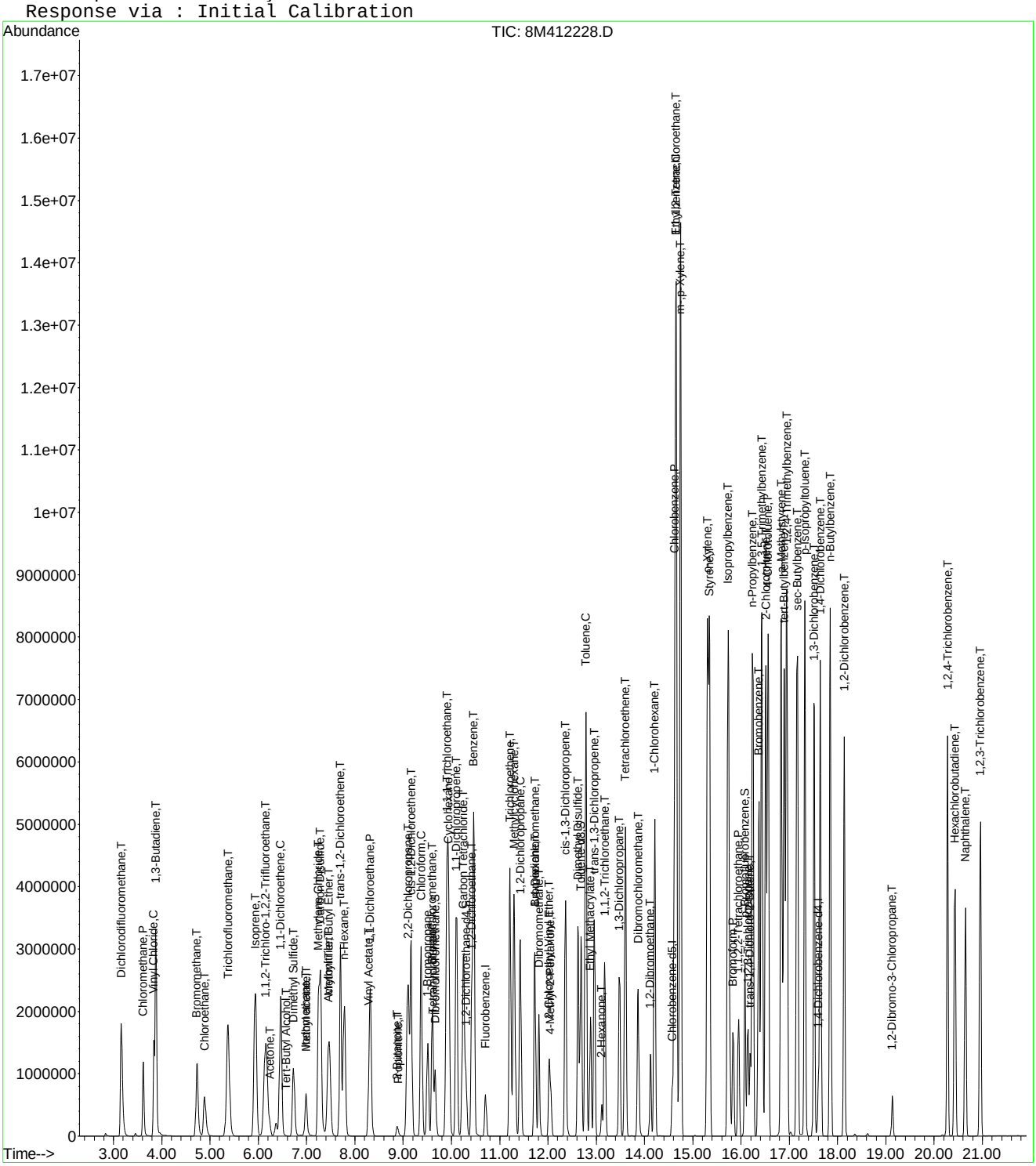

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	855409	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	599314	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	305726	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	1411837	154.4674 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 617.88%#		
43) 1,2-Dichloroethane-d4	10.30	65	1466019	148.1811 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 592.72%#		
58) Toluene-d8	12.69	98	4594713	145.5601 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 582.24%#		
80) p-Bromofluorobenzene	16.08	95	1918996	151.7813 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 607.12%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	4191932	292.0014 ug/L	97
3) Chloromethane	3.62	50	2474035	293.7212 ug/L	97
4) Vinyl Chloride	3.83	62	2956347	297.5552 ug/L	94
5) 1,3-Butadiene	3.87	54	2605506	318.3447 ug/L	94
6) Bromomethane	4.72	94	2177550	421.2239 ug/L	98
7) Chloroethane	4.89	64	1688005	311.2693 ug/L	90
8) Trichlorofluoromethane	5.37	101	5387662	289.6161 ug/L	99
9) Diethyl ether	5.90	59	1306432	295.4610 ug/L	80
10) Isoprene	5.93	67	3377164	300.3032 ug/L	78
11) Acrolein	6.14	56	70572	185.7401 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	2563878	293.7317 ug/L	94
13) Acetone	6.24	43	283185	293.3529 ug/L	90
14) 1,1-Dichloroethene	6.46	61	4031745	289.8421 ug/L	91
15) Tert-Butyl Alcohol	6.58	59	181796	587.3907 ug/L	90
16) Dimethyl Sulfide	6.73	62	1553493	317.1280 ug/L	81
17) Iodomethane	6.99	142	1347307	580.2206 ug/L	98
18) Methyl acetate	7.00	43	800046	309.5287 ug/L #	80
19) Methylene Chloride	7.24	84	2587731	292.4144 ug/L	52
20) Carbon Disulfide	7.29	76	8228181	279.9683 ug/L	98
21) Acrylonitrile	7.43	53	228227	189.6753 ug/L	94
22) Methyl Tert Butyl Ether	7.46	73	5605924	293.5892 ug/L	88
23) trans-1,2-Dichloroethene	7.70	61	3678699	287.1957 ug/L	92
24) n-Hexane	7.78	57	2863434	304.0691 ug/L	86
25) Diisopropyl ether	8.12	45	5819647	292.7898 ug/L #	89
26) Vinyl Acetate	8.30	43	2819503	314.5767 ug/L #	87
27) 1,1-Dichloroethane	8.32	63	4586531	289.1293 ug/L	94
28) Ethyl-Tert-Butyl ether	8.70	59	6190206	290.3321 ug/L	89
29) 2-Butanone	8.88	43	439359	312.8959 ug/L #	76
30) Propionitrile	8.99	54	133197	327.4673 ug/L	95
31) 2,2-Dichloropropane	9.10	77	4821388	288.2735 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	2847005	287.9976 ug/L	89
33) Chloroform	9.37	83	5197860	275.5447 ug/L	100
34) 1-Bromopropane	9.51	122	450012	326.3179 ug/L	100
35) Bromochloromethane	9.61	130	1490221	295.6112 ug/L	66
36) Tetrahydrofuran	9.63	42	271736	290.4491 ug/L #	62
38) 1,1,1-Trichloroethane	9.91	97	5126354	287.9792 ug/L	98
39) Cyclohexane	9.94	56	3733392	305.0987 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	3923871	289.1471 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	5639573	291.3713 ug/L	88
42) Carbon Tetrachloride	10.25	117	4598150	291.7629 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412229.D 8260WT.M Fri May 13 18:12:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	3468738	287.5726 ug/L		86
46)	Benzene	10.46	78	9065861	250.7462 ug/L		93
47)	Trichloroethene	11.21	130	2772282	295.1106 ug/L		97
48)	Methylcyclohexane	11.30	83	4327357	304.8748 ug/L		84
49)	1,2-Dichloropropane	11.43	63	2350729	300.9718 ug/L		74
50)	Bromodichloromethane	11.73	83	4051493	294.7973 ug/L		99
51)	1,4-Dioxane	11.72	88	26614	699.8767 ug/L		67
52)	Dibromomethane	11.81	93	1369945	295.3776 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.03	63	1006317	297.3917 ug/L		90
54)	4-Methyl-2-Pentanone	12.06	58	424684	310.6522 ug/L	#	76
55)	cis-1,3-Dichloropropene	12.36	75	4156310	297.7431 ug/L		97
56)	Dimethyl Disulfide	12.63	79	2359825	324.2911 ug/L		94
59)	Toluene	12.78	91	9135213	236.4669 ug/L		90
60)	Ethyl Methacrylate	12.88	69	2228037	315.7801 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	3700845	297.5240 ug/L		96
63)	1,1,2-Trichloroethane	13.18	97	1730199	293.6104 ug/L		100
64)	2-Hexanone	13.11	58	381967	311.8816 ug/L	#	78
65)	1,3-Dichloropropane	13.49	76	3080177	294.0141 ug/L		76
66)	Tetrachloroethene	13.60	164	2374435	297.7522 ug/L		96
67)	Dibromochloromethane	13.87	129	2638145	310.7838 ug/L		100
68)	1,2-Dibromoethane	14.13	107	1778561	305.8085 ug/L		99
69)	1-Chlorohexane	14.21	91	3712592	290.5924 ug/L		84
70)	Chlorobenzene	14.63	112	6754240	263.7433 ug/L		90
71)	1,1,1,2-Tetrachloroethane	14.65	131	2967650	307.3001 ug/L		100
72)	Ethylbenzene	14.65	106	4014412	290.7661 ug/L		70
73)	m-,p-Xylene	14.75	106	8357822	505.3514 ug/L		70
74)	o-Xylene	15.31	106	4530840	285.4488 ug/L		88
75)	Styrene	15.35	104	7050702	269.0641 ug/L		82
76)	Bromoform	15.84	173	1602587	321.7373 ug/L		99
77)	Isopropylbenzene	15.73	105	9900817	226.7477 ug/L		90
79)	1,1,2,2-Tetrachloroethane	15.95	83	1885953	309.3861 ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	581198	310.8176 ug/L		61
82)	trans-1,4-Dichloro-2-Buten	16.18	53	589705	370.3601 ug/L		82
83)	n-Propylbenzene	16.25	91	10768378	214.4110 ug/L		86
84)	Bromobenzene	16.37	156	2947671	300.5290 ug/L		99
85)	1,3,5-Trimethylbenzene	16.43	105	8890651	248.7580 ug/L		92
86)	2-Chlorotoluene	16.51	91	7868844	227.1449 ug/L		92
87)	4-Chlorotoluene	16.57	91	7782731	251.2687 ug/L		93
88)	a-Methylstyrene	16.84	118	4955768	300.9205 ug/L		86
89)	tert-Butylbenzene	16.90	134	2046401	301.6701 ug/L		95
90)	1,2,4-Trimethylbenzene	16.95	105	8903769	240.8932 ug/L		89
91)	sec-Butylbenzene	17.17	105	9867862	230.5051 ug/L		91
92)	p-Isopropyltoluene	17.32	119	8738927	242.4155 ug/L		94
93)	1,3-Dichlorobenzene	17.52	146	5319954	278.2806 ug/L		87
94)	1,4-Dichlorobenzene	17.64	146	5248511	271.3593 ug/L		88
95)	n-Butylbenzene	17.85	91	8408157	234.6279 ug/L		92
96)	1,2-Dichlorobenzene	18.14	146	4717385	277.0787 ug/L		87
97)	1,2-Dibromo-3-Chloropropan	19.13	75	377070	309.0741 ug/L		91
98)	1,2,4-Trichlorobenzene	20.28	180	3677657	291.9206 ug/L		98
99)	Hexachlorobutadiene	20.43	225	1780695	304.4378 ug/L		96
100)	Naphthalene	20.65	128	5216751	275.8542 ug/L		95
101)	1,2,3-Trichlorobenzene	20.96	180	3064908	287.1593 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412229.D 8260WT.M Fri May 13 18:12:36 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration

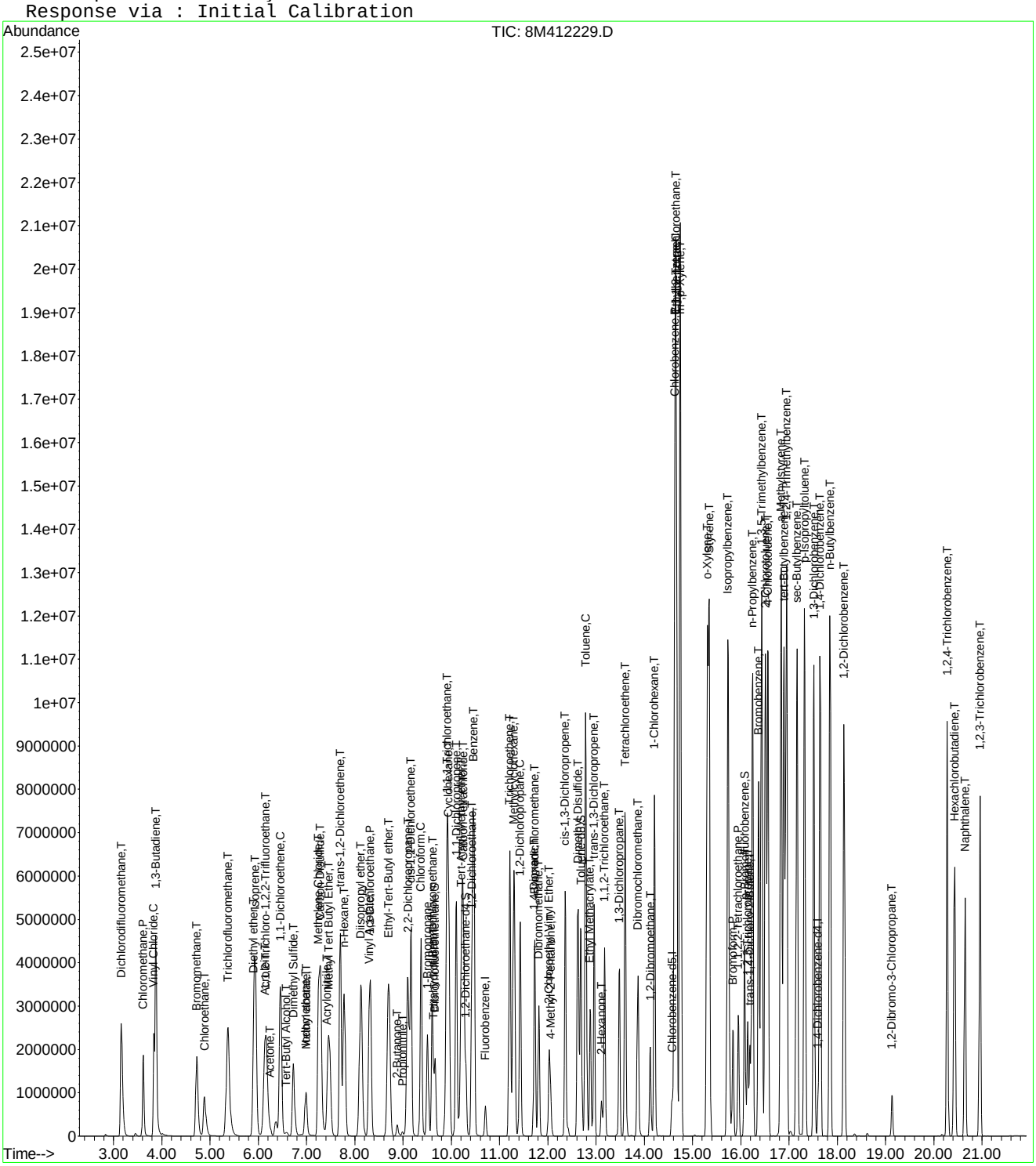

8M412229.D 8260WT.M Fri May 13 18:12:36 2016 Page 3

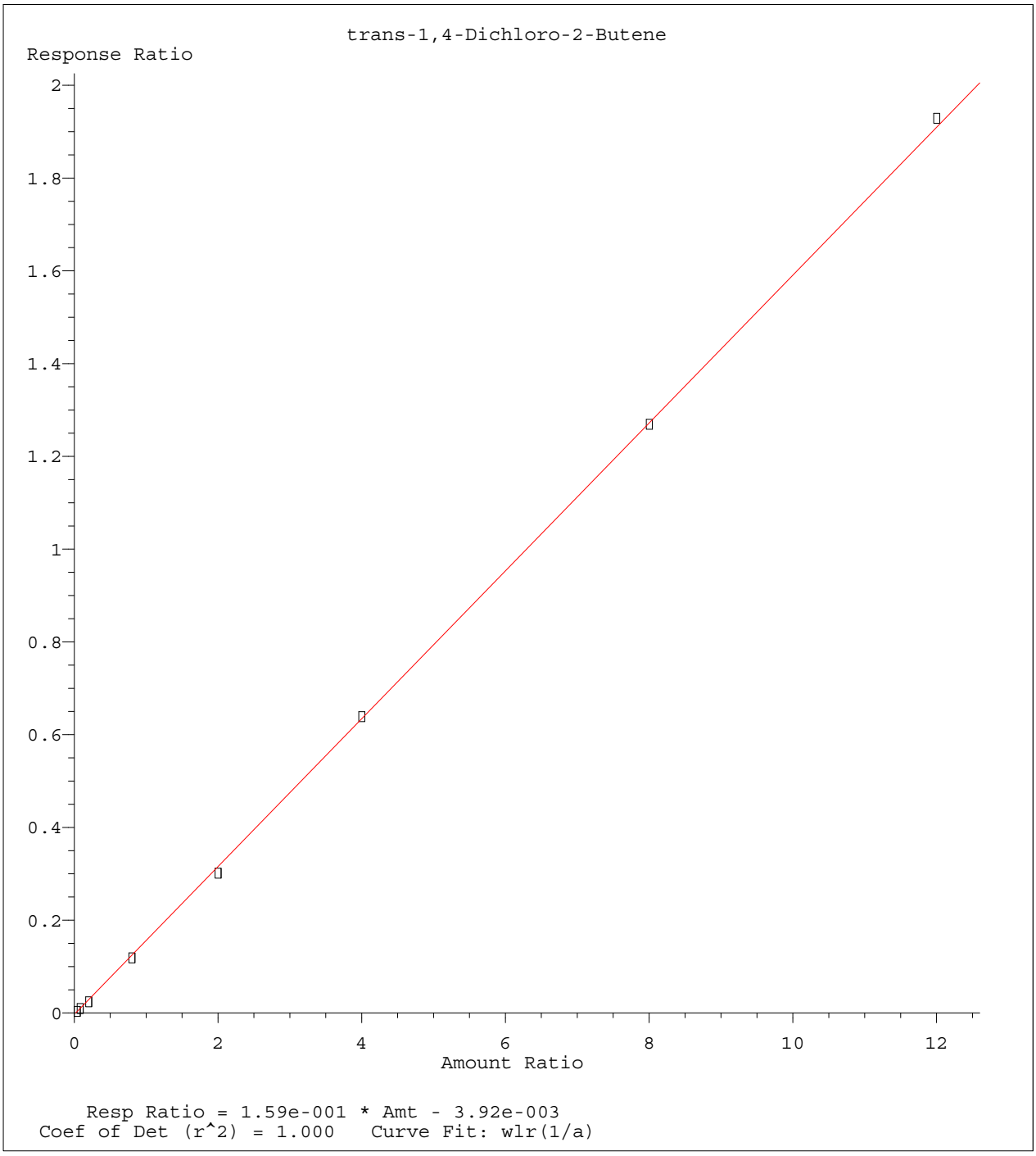

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

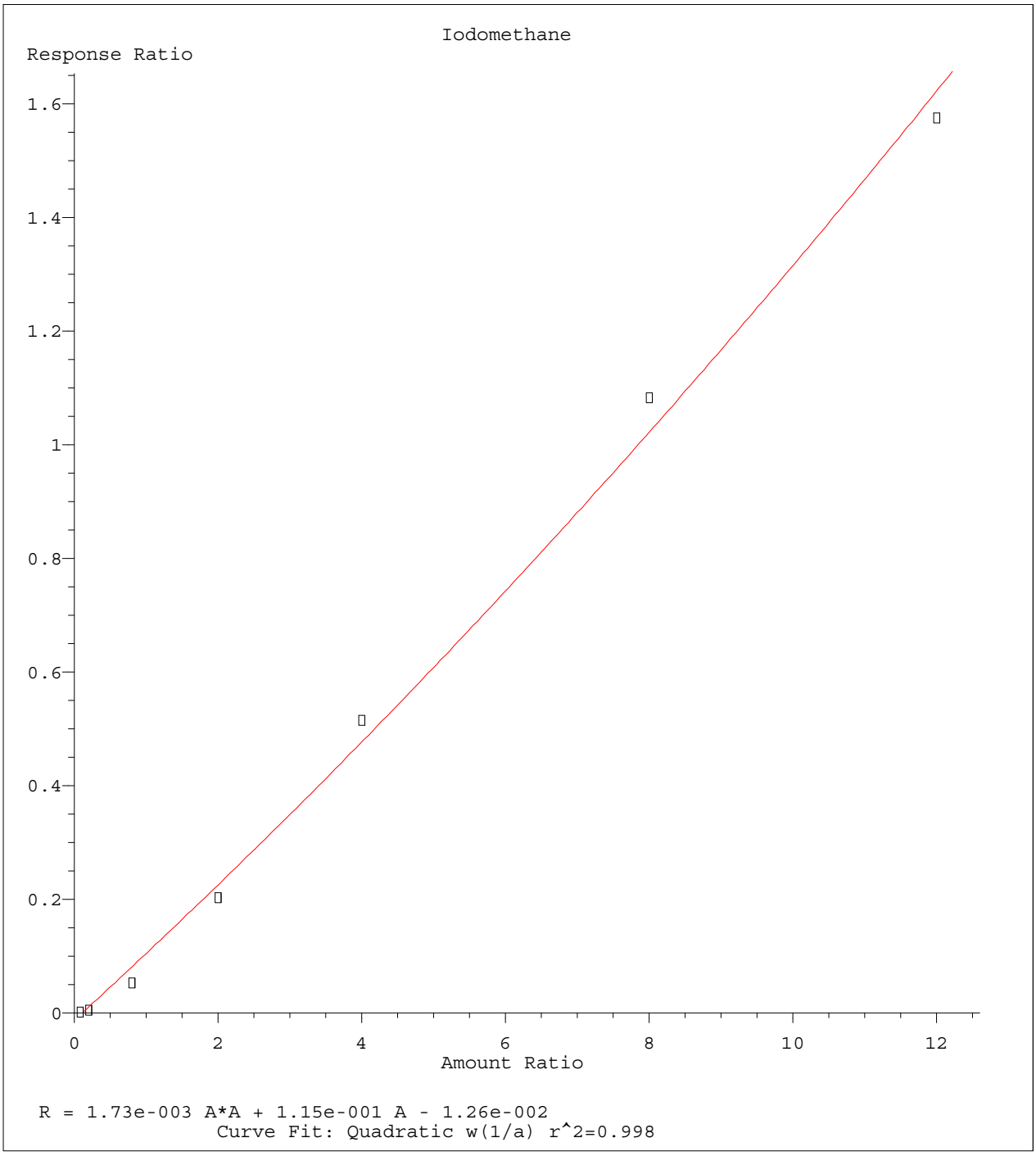

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

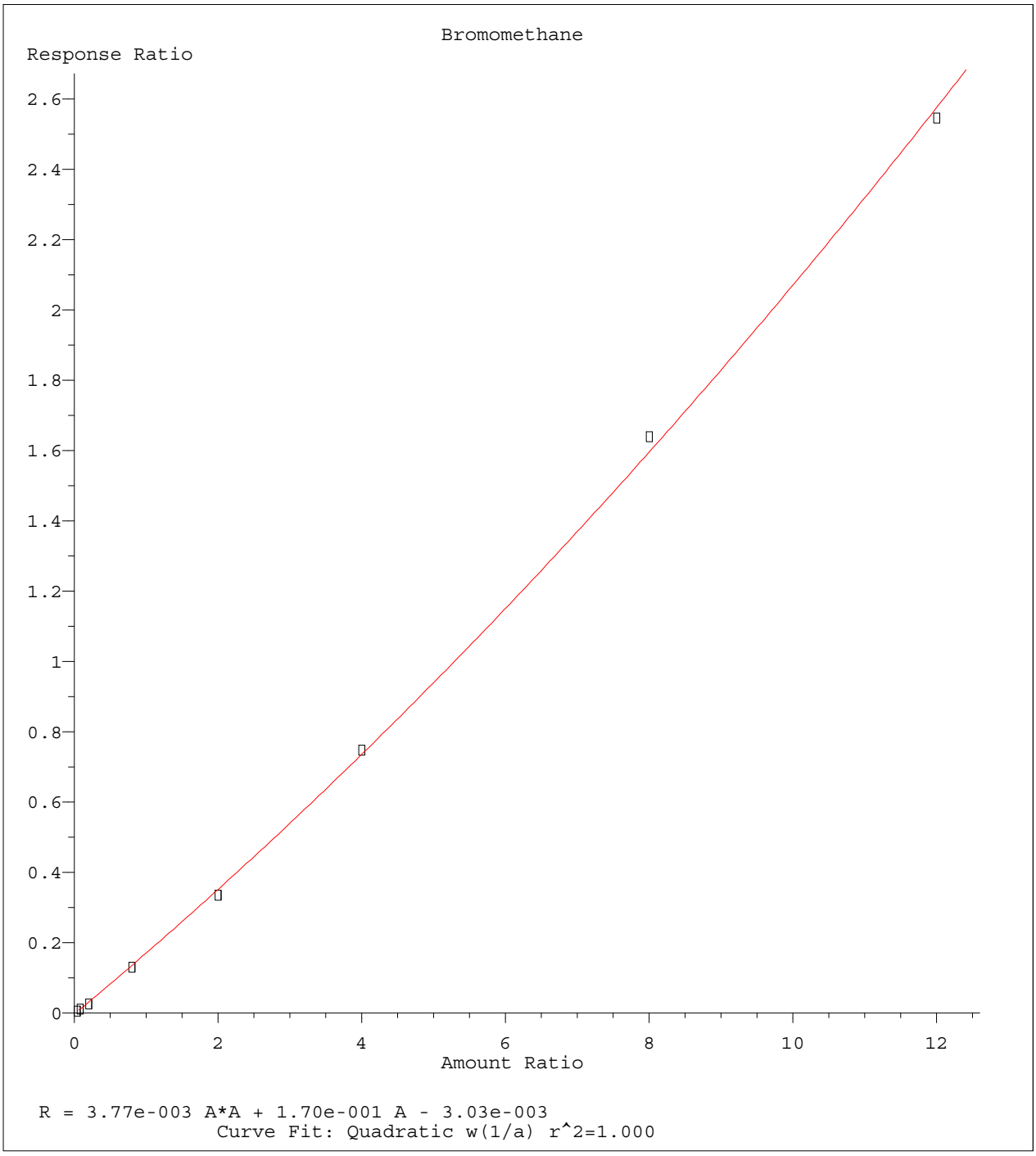

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:44:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Tue May 17 11:43:20 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	837879	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	574720	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	304324	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	229742	25.5204 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.08%		
43) 1,2-Dichloroethane-d4	10.31	65	238672	24.7259 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.92%		
58) Toluene-d8	12.68	98	776362	25.8115 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.24%		
80) p-Bromofluorobenzene	16.07	95	315683	25.0519 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.20%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	761591	54.2141 ug/L	99
3) Chloromethane	3.62	50	415589	50.6814 ug/L	100
4) Vinyl Chloride	3.84	62	509607	52.3810 ug/L	100
5) 1,3-Butadiene	3.88	54	347562	42.6002 ug/L	97
6) Bromomethane	4.73	94	272060	46.3924 ug/L	99
7) Chloroethane	4.88	64	285509	53.3336 ug/L	98
8) Trichlorofluoromethane	5.37	101	849580	46.9313 ug/L	100
9) Diethyl ether	5.90	59	451307	104.4282 ug/L	99
10) Isoprene	5.93	67	582863	53.0208 ug/L	99
11) Acrolein	6.13	56	38877	100.4722 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	419584	49.3091 ug/L	97
13) Acetone	6.23	43	54234	57.5310 ug/L	94
14) 1,1-Dichloroethene	6.46	61	622831	45.9700 ug/L	99
15) Tert-Butyl Alcohol	6.59	59	59797	197.9422 ug/L	97
16) Dimethyl Sulfide	6.73	62	351814	72.6234 ug/L	98
17) Iodomethane	6.99	142	92716	26.2832 ug/L	99
18) Methyl acetate	7.00	43	127540	50.0514 ug/L	98
19) Methylene Chloride	7.25	84	417642	48.4385 ug/L	99
20) Carbon Disulfide	7.29	76	1199899	42.3200 ug/L	100
21) Acrylonitrile	7.43	53	65324	53.4074 ug/L	93
22) Methyl Tert Butyl Ether	7.46	73	949572	50.8859 ug/L	97
23) trans-1,2-Dichloroethene	7.70	61	598296	48.0666 ug/L	99
24) n-Hexane	7.77	57	425106	45.9930 ug/L	99
25) Diisopropyl ether	8.13	45	2040382	105.1615 ug/L	98
26) Vinyl Acetate	8.29	43	415568	46.7802 ug/L	99
27) 1,1-Dichloroethane	8.32	63	721661	46.6846 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	2040020	98.1343 ug/L	99
29) 2-Butanone	8.88	43	73394	52.9905 ug/L	99
30) Propionitrile	8.98	54	42290	104.7756 ug/L	100
31) 2,2-Dichloropropane	9.10	77	780073	47.8861 ug/L	99
32) cis-1,2-Dichloroethene	9.16	96	470465	48.9162 ug/L	98
33) Chloroform	9.38	83	860252	47.1317 ug/L	100
34) 1-Bromopropane	9.51	122	98585	71.5615 ug/L	98
35) Bromochloromethane	9.60	130	234493	47.5456 ug/L	99
36) Tetrahydrofuran	9.62	42	86049	94.3281 ug/L	99
38) 1,1,1-Trichloroethane	9.90	97	825167	47.5949 ug/L	100
39) Cyclohexane	9.93	56	586721	48.8808 ug/L	97
40) 1,1-Dichloropropene	10.10	75	627217	47.4632 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1962875	103.9618 ug/L	99
42) Carbon Tetrachloride	10.24	117	711823	46.2363 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M412232.D 8260WT.M Tue May 17 11:44:38 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	108	0.00
2	T	Dichlorodifluoromethane	50.0000	54.2141	-8.4	112	0.00
3	P	Chloromethane	50.0000	50.6814	-1.4	111	0.00
4	C	Vinyl Chloride	50.0000	52.3811	-4.8	112	-0.01
5	T	1,3-Butadiene	50.0000	42.6002	14.8	89	0.00
6	T	Bromomethane	50.0000	46.3924	7.2	104	-0.01
7	T	Chloroethane	50.0000	53.3336	-6.7	117	-0.01
8	T	Trichlorofluoromethane	50.0000	46.9313	6.1	101	-0.01
9	T	Diethyl ether	100.0000	104.4282	-4.4	116	0.00
10	T	Isoprene	50.0000	53.0208	-6.0	117	0.00
11	T	Acrolein	50.0000	100.4722	-100.9#	220	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	49.3091	1.4	108	0.00
13	T	Acetone	50.0000	57.5310	-15.1	118	-0.01
14	C	1,1-Dichloroethene	50.0000	45.9700	8.1	100	0.00
15	T	Tert-Butyl Alcohol	200.0000	197.9423	1.0	108	0.01
16	T	Dimethyl Sulfide	50.0000	72.6234	-45.2#	159	0.00
17	T	Iodomethane	50.0000	26.2832	47.4#	59	0.01
18	T	Methyl acetate	50.0000	50.0514	-0.1	111	0.00
19	T	Methylene Chloride	50.0000	48.4385	3.1	107	0.00
20	T	Carbon Disulfide	50.0000	42.3200	15.4	94	0.00
21	T	Acrylonitrile	50.0000	53.4074	-6.8	109	0.00
22	T	Methyl Tert Butyl Ether	50.0000	50.8859	-1.8	105	0.00
23	T	trans-1,2-Dichloroethene	50.0000	48.0666	3.9	105	0.00
24	T	n-Hexane	50.0000	45.9930	8.0	101	-0.01
25	T	Diisopropyl ether	100.0000	105.1615	-5.2	115	0.00
26	T	Vinyl Acetate	50.0000	46.7802	6.4	97	0.00
27	P	1,1-Dichloroethane	50.0000	46.6846	6.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.1343	1.9	104	0.00
29	T	2-Butanone	50.0000	52.9905	-6.0	110	0.00
30	T	Propionitrile	100.0000	104.7756	-4.8	111	0.00
31	T	2,2-Dichloropropane	50.0000	47.8861	4.2	102	0.00
32	T	cis-1,2-Dichloroethene	50.0000	48.9162	2.2	107	-0.01
33	C	Chloroform	50.0000	47.1317	5.7	102	0.00
34		1-Bromopropane	50.0000	71.5615	-43.1#	155	0.00
35	T	Bromochloromethane	50.0000	47.5456	4.9	102	0.00
36	T	Tetrahydrofuran	100.0000	94.3281	5.7	108	-0.01
37	S	Dibromofluoromethane	25.0000	25.5204	-2.1	109	0.00
38	T	1,1,1-Trichloroethane	50.0000	47.5949	4.8	101	0.00
39	T	Cyclohexane	50.0000	48.8808	2.2	109	0.00
40	T	1,1-Dichloropropene	50.0000	47.4632	5.1	102	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	103.9618	-4.0	111	0.00
42	T	Carbon Tetrachloride	50.0000	46.2363	7.5	98	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.7259	1.1	104	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	49.0148	2.0	103	0.00
46	T	Benzene	50.0000	48.5232	3.0	104	0.00
47	T	Trichloroethene	50.0000	51.0658	-2.1	110	0.00
48	T	Methylcyclohexane	50.0000	49.8573	0.3	109	0.00
49	C	1,2-Dichloropropane	50.0000	50.9747	-1.9	111	0.00
50	T	Bromodichloromethane	50.0000	48.3053	3.4	99	0.00
51	T	1,4-Dioxane	200.0000	216.9538	-8.5	110	0.01
52	T	Dibromomethane	50.0000	45.8126	8.4	99	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	51.2623	-2.5	104	0.00
54	T	4-Methyl-2-Pentanone	50.0000	51.8715	-3.7	107	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.8979	-7.8	111	0.00
56	T	Dimethyl Disulfide	50.0000	52.2714	-4.5	111	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	107	0.00
58	S	Toluene-d8	25.0000	25.8115	-3.2	108	0.00
59	C	Toluene	50.0000	49.0912	1.8	105	0.00
60	T	Ethyl Methacrylate	50.0000	55.9509	-11.9	113	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	50.6740	-1.3	102	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.0377	1.9	103	0.00
64	T	2-Hexanone	50.0000	53.6057	-7.2	112	0.00
65	T	1,3-Dichloropropane	50.0000	53.6720	-7.3	110	0.00
66	T	Tetrachloroethene	50.0000	47.8053	4.4	104	0.00
67	T	Dibromochloromethane	50.0000	49.6585	0.7	102	0.00
68	T	1,2-Dibromoethane	50.0000	51.1121	-2.2	105	0.00
69	T	1-Chlorohexane	50.0000	51.0611	-2.1	111	0.00
70	P	Chlorobenzene	50.0000	50.1844	-0.4	108	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	49.3793	1.2	103	0.00
72	C	Ethylbenzene	50.0000	48.2013	3.6	105	0.00
73	T	m-,p-Xylene	100.0000	101.1341	-1.1	108	0.00
74	T	o-Xylene	50.0000	50.5675	-1.1	108	0.00
75	T	Styrene	50.0000	51.5086	-3.0	105	0.00
76	P	Bromoform	50.0000	48.2227	3.6	99	0.00
77	T	Isopropylbenzene	50.0000	51.1140	-2.2	107	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	106	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	49.6172	0.8	103	0.00
80	S	p-Bromofluorobenzene	25.0000	25.0519	-0.2	108	0.00
81	T	1,2,3-Trichloropropane	50.0000	50.0849	-0.2	106	0.01
82	T	trans-1,4-Dichloro-2-Butene	50.0000	39.2043	21.6	86	0.00
83	T	n-Propylbenzene	50.0000	51.9237	-3.8	108	0.00
84	T	Bromobenzene	50.0000	49.4648	1.1	105	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	51.6344	-3.3	107	0.00
86	T	2-Chlorotoluene	50.0000	51.5639	-3.1	106	0.00
87	T	4-Chlorotoluene	50.0000	48.2650	3.5	108	0.00
88	T	a-Methylstyrene	50.0000	56.4132	-12.8	120	0.00
89	T	tert-Butylbenzene	50.0000	50.9494	-1.9	112	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	49.6617	0.7	105	0.00
91	T	sec-Butylbenzene	50.0000	51.3386	-2.7	108	0.00
92	T	p-Isopropyltoluene	50.0000	50.1261	-0.3	107	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.8943	-1.8	108	0.00
94	T	1,4-Dichlorobenzene	50.0000	50.4742	-0.9	110	0.00
95	T	n-Butylbenzene	50.0000	49.6520	0.7	105	0.00
96	T	1,2-Dichlorobenzene	50.0000	50.4907	-1.0	110	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	48.4851	3.0	100	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	50.1129	-0.2	107	0.00
99	T	Hexachlorobutadiene	50.0000	52.0919	-4.2	115	0.00
100	T	Naphthalene	50.0000	45.8047	8.4	95	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	47.7353	4.5	106	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412232.D 8260WT.M Sat May 14 18:09:03 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:21 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	709364	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	505399	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	272922	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	27428	100.2132 ug/L	99
3) 3-Chloro-1-propene	7.07	41	940418	104.3259 ug/L	82
4) 2-Chloro-1,3-butadiene	8.45	53	1188994	104.3183 ug/L	86
5) Ethyl Acetate	9.10	43	283167	104.3264 ug/L	95
6) Methacrylonitrile	9.25	67	155775	104.5365 ug/L #	63
7) Isobutyl Alcohol	9.25	43	17893	197.3629 ug/L #	96
9) Methyl methacrylate	11.42	41	298802	102.0346 ug/L	70
10) 2-Nitropropane	11.75	43	121321	95.8263 ug/L	97
13) Cyclohexanone	15.84	55	11401	102.1363 ug/L #	70

(#) = qualifier out of range (m) = manual integration
8M412321.D A9FOOWT.M Thu May 19 09:01:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

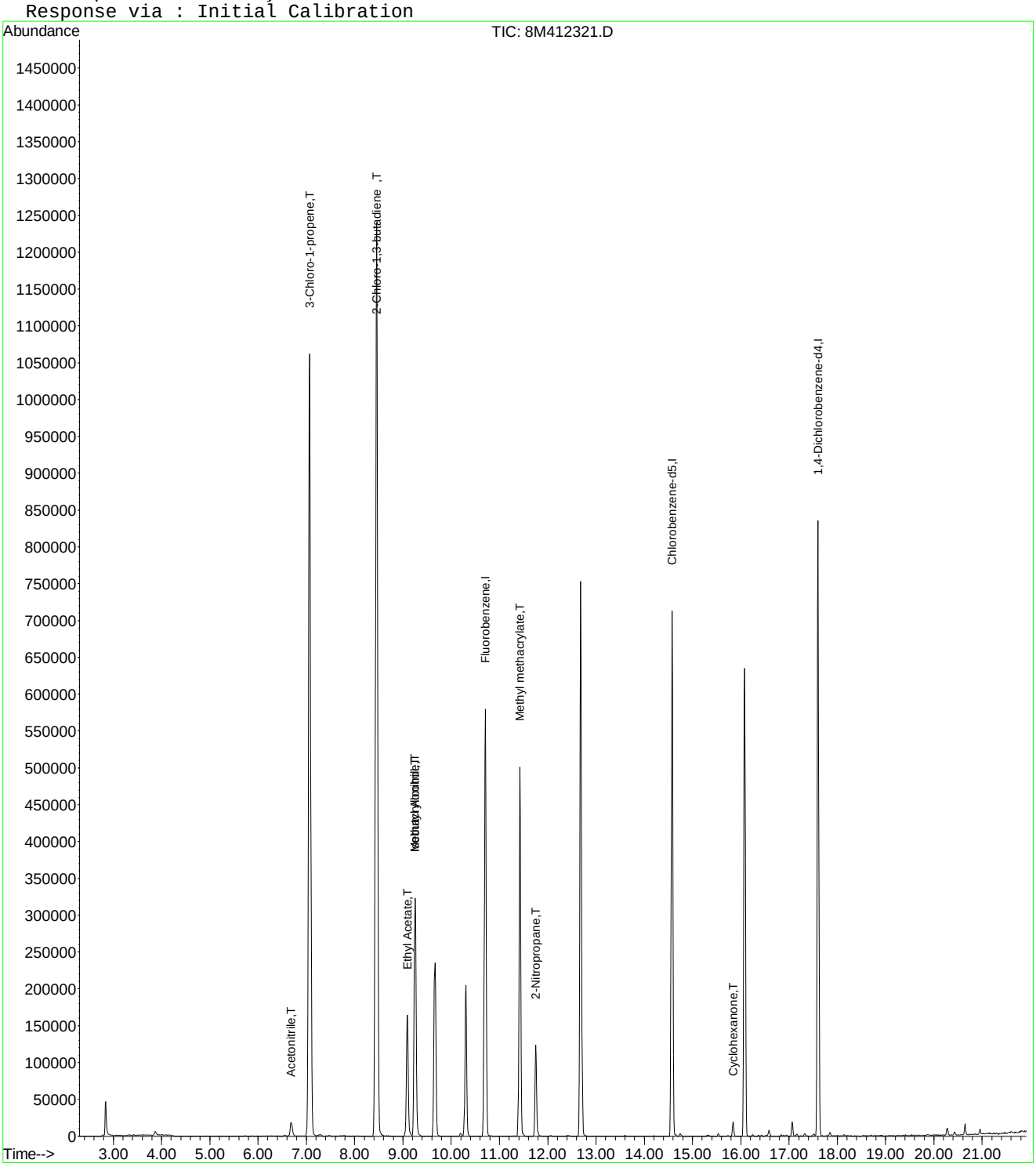

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	100.2132	-0.2	100	0.00
3	T	3-Chloro-1-propene	100.0000	104.3259	-4.3	100	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	104.3183	-4.3	100	0.00
5	T	Ethyl Acetate	100.0000	104.3264	-4.3	100	0.00
6	T	Methacrylonitrile	100.0000	104.5365	-4.5	100	0.00
7	T	Isobutyl Alcohol	200.0000	197.3629	1.3	100	-0.01
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.02
9	T	Methyl methacrylate	100.0000	102.0346	-2.0	100	0.00
10	T	2-Nitropropane	100.0000	95.8263	4.2	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	100.0000	102.1363	-2.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412321.D A9FOOWT.M Thu May 19 09:02:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:20:35 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	677339	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	488377	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	260939	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	13323	50.9795 ug/L	98
3) 3-Chloro-1-propene	7.07	41	453655	52.7060 ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	568765	52.2609 ug/L	87
5) Ethyl Acetate	9.09	43	131636	50.7913 ug/L	97
6) Methacrylonitrile	9.25	67	74064	52.0523 ug/L #	62
7) Isobutyl Alcohol	9.26	43	8483	97.9930 ug/L	95
9) Methyl methacrylate	11.42	41	143892	51.4593 ug/L	70
10) 2-Nitropropane	11.75	43	56559	46.7858 ug/L	95
13) Cyclohexanone	15.84	55	5225	48.9579 ug/L	83

(#) = qualifier out of range (m) = manual integration
8M412322.D A9FOOWT.M Thu May 19 09:20:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:19 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

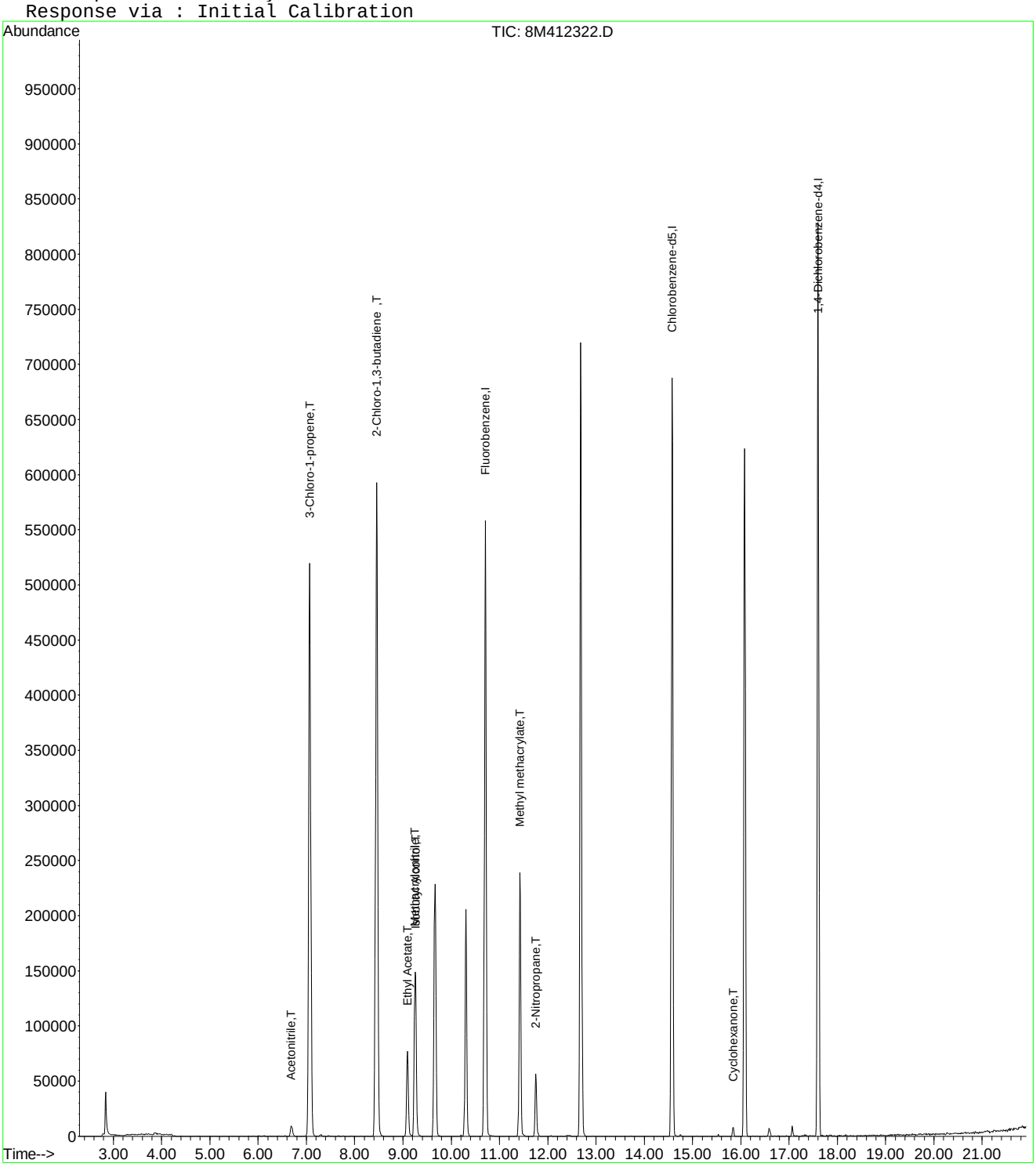

8M412322.D A9FOOWT.M Thu May 19 09:20:36 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	50.9795	-2.0	100	0.00
3	T	3-Chloro-1-propene	50.0000	52.7060	-5.4	100	0.00
4	T	2-Chloro-1,3-butadiene	50.0000	52.2609	-4.5	100	0.00
5	T	Ethyl Acetate	50.0000	50.7913	-1.6	100	0.00
6	T	Methacrylonitrile	50.0000	52.0523	-4.1	100	0.00
7	T	Isobutyl Alcohol	100.0000	97.9929	2.0	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.02
9	T	Methyl methacrylate	50.0000	51.4592	-2.9	100	0.00
10	T	2-Nitropropane	50.0000	46.7858	6.4	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	50.0000	48.9579	2.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412322.D A9FOOWT.M Thu May 19 09:02:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:22:33 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	652985	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	476539	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	256082	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	4873	19.3416 ug/L	80
3) 3-Chloro-1-propene	7.07	41	172467	20.7847 ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	219296	20.9015 ug/L	87
5) Ethyl Acetate	9.09	43	50385	20.1659 ug/L	100
6) Methacrylonitrile	9.26	67	28119	20.4992 ug/L #	63
7) Isobutyl Alcohol	9.27	43	2774	33.2395 ug/L #	8
9) Methyl methacrylate	11.42	41	55309	20.5176 ug/L	73
10) 2-Nitropropane	11.75	43	21584	18.5202 ug/L	99
13) Cyclohexanone	15.84	55	2230	21.2913 ug/L	87

(#) = qualifier out of range (m) = manual integration
8M412323.D A9FOOWT.M Thu May 19 09:22:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:21 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

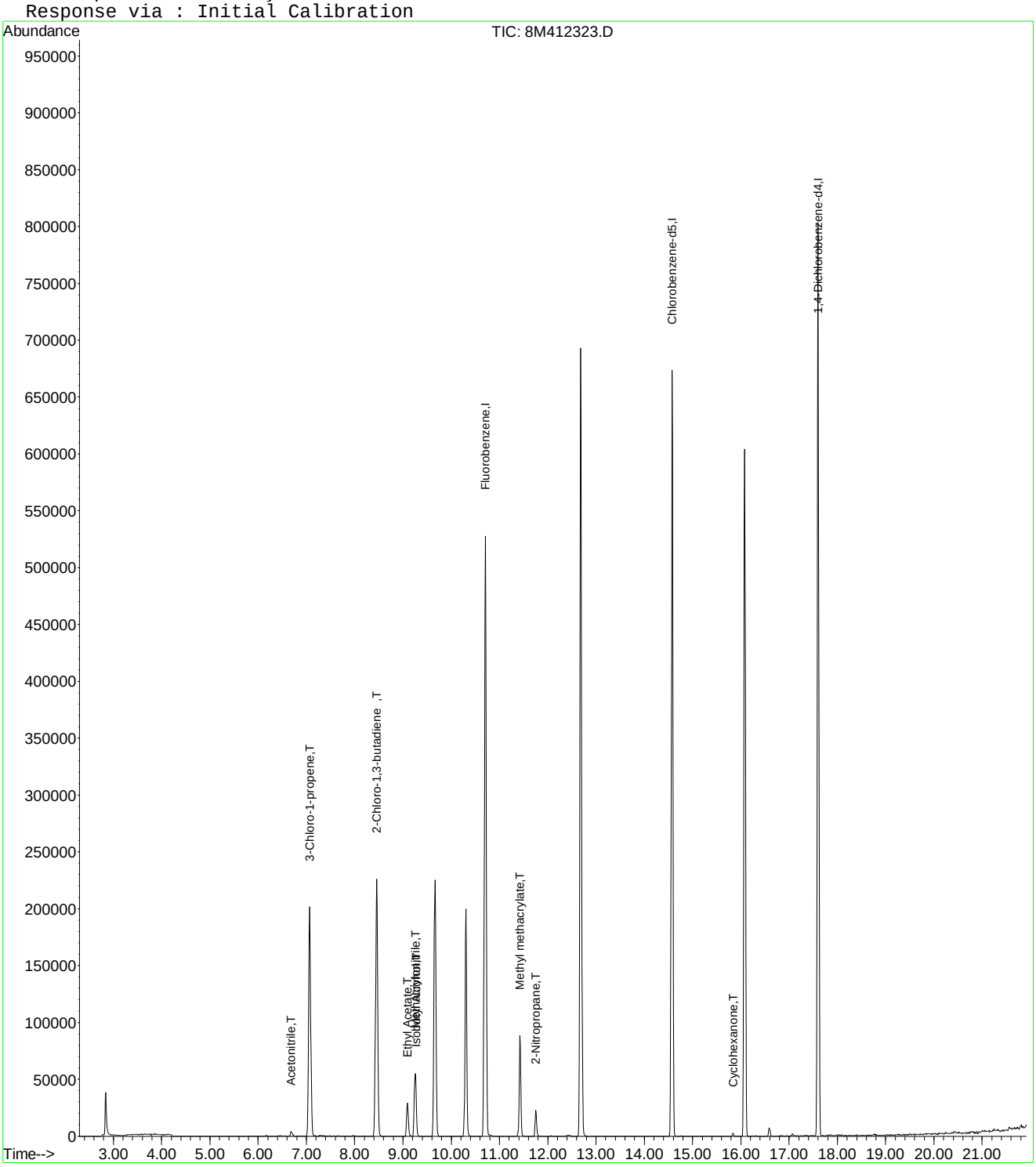

8M412323.D A9FOOWT.M Thu May 19 09:22:34 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	19.3416	3.3	100	0.00
3	T	3-Chloro-1-propene	20.0000	20.7847	-3.9	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	20.9015	-4.5	100	0.00
5	T	Ethyl Acetate	20.0000	20.1659	-0.8	100	0.00
6	T	Methacrylonitrile	20.0000	20.4992	-2.5	100	0.00
7	T	Isobutyl Alcohol	-1.0000	33.2395	0.0	0	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.18#
9	T	Methyl methacrylate	20.0000	20.5176	-2.6	100	0.00
10	T	2-Nitropropane	20.0000	18.5203	7.4	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	20.0000	21.2913	-6.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412323.D A9FOOWT.M Thu May 19 09:02:17 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:22:43 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	665645	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	483812	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	257678	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	405	1.5769 ug/L #	23
3) 3-Chloro-1-propene	7.07	41	40699	4.8115 ug/L	84
4) 2-Chloro-1,3-butadiene	8.45	53	48973	4.5789 ug/L	81
5) Ethyl Acetate	9.09	43	10675	4.1913 ug/L	95
6) Methacrylonitrile	9.26	67	5417	3.8740 ug/L #	72
7) Isobutyl Alcohol	9.27	43	441	5.1838 ug/L #	8
9) Methyl methacrylate	11.43	41	11811	4.2981 ug/L	65
10) 2-Nitropropane	11.76	43	4170	3.5100 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412324.D A9FOOWT.M Thu May 19 09:22:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:21 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

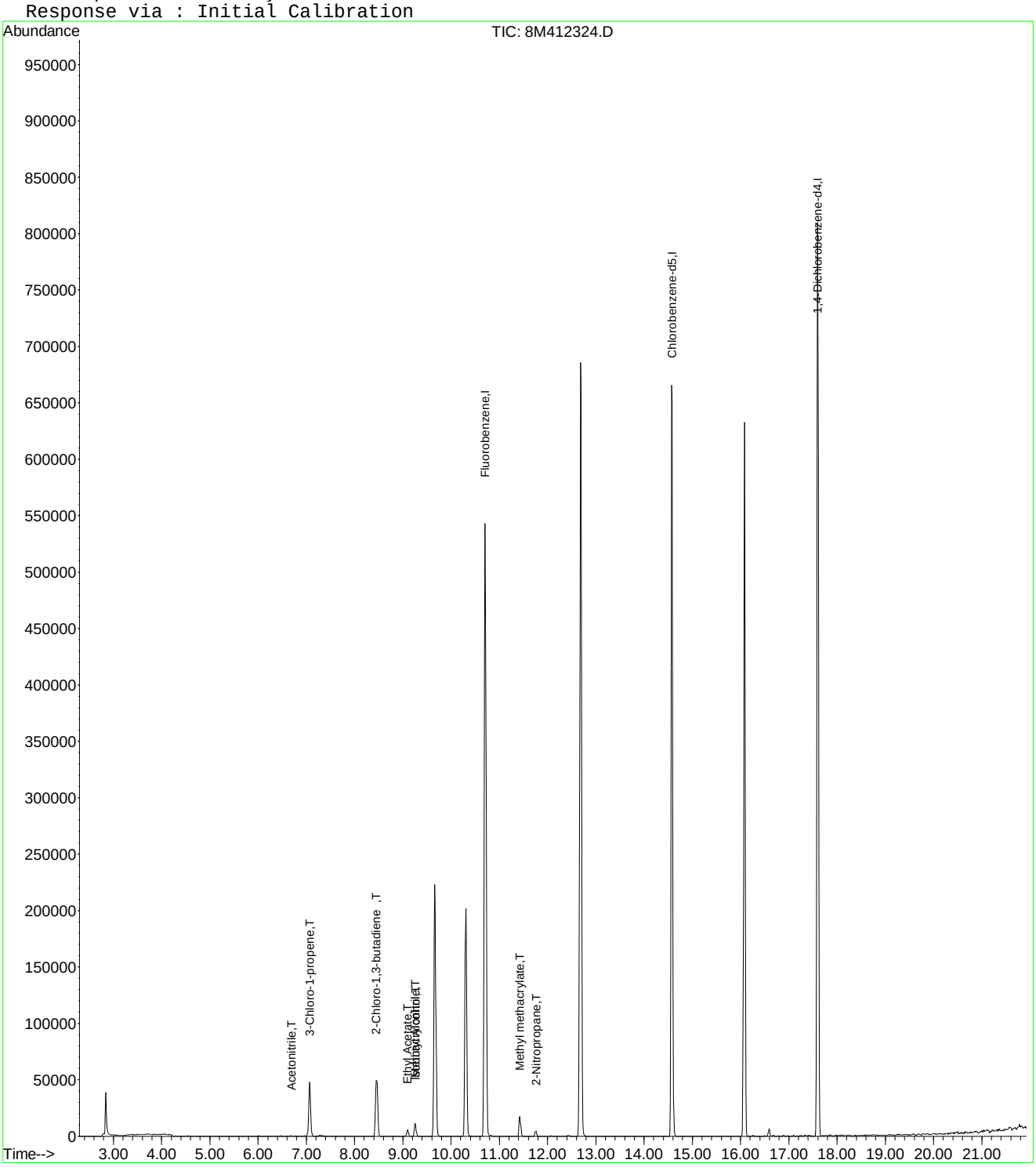

8M412324.D A9FOOWT.M Thu May 19 09:22:43 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	-1.0000	1.5769	0.0	0	0.00
3	T	3-Chloro-1-propene	5.0000	4.8115	3.8	100	0.00
4	T	2-Chloro-1,3-butadiene	5.0000	4.5789	8.4	100	0.00
5	T	Ethyl Acetate	5.0000	4.1913	16.2	100	0.00
6	T	Methacrylonitrile	5.0000	3.8740	22.5	100	0.00
7	T	Isobutyl Alcohol	-1.0000	5.1838	0.0	0	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.18#
9	T	Methyl methacrylate	5.0000	4.2981	14.0	100	0.00
10	T	2-Nitropropane	-1.0000	3.5100	0.0	0	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	0.0000	0.0	0	-15.84#

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412324.D A9FOOWT.M Thu May 19 09:02:03 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412325.D Vial: 7
Acq On : 17 May 2016 11:42 Operator: TMB
Sample : WG569079-06 200ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:27 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	682012	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	491515	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	261877	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.68	41	52022	197.6946 ug/L	97
3) 3-Chloro-1-propene	7.06	41	1768403	204.0468 ug/L	83
4) 2-Chloro-1,3-butadiene	8.46	53	2283706	208.4003 ug/L	87
5) Ethyl Acetate	9.09	43	537585	206.0040 ug/L	94
6) Methacrylonitrile	9.25	67	297408	207.5869 ug/L #	63
7) Isobutyl Alcohol	9.26	43	34441	395.1256 ug/L	95
9) Methyl methacrylate	11.42	41	577612	205.1526 ug/L	72
10) 2-Nitropropane	11.75	43	248395	204.0652 ug/L	95
13) Cyclohexanone	15.85	55	19752	184.4122 ug/L #	59

(#) = qualifier out of range (m) = manual integration
8M412325.D A9FOOWT.M Thu May 19 09:01:28 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412325.D Vial: 7
Acq On : 17 May 2016 11:42 Operator: TMB
Sample : WG569079-06 200ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

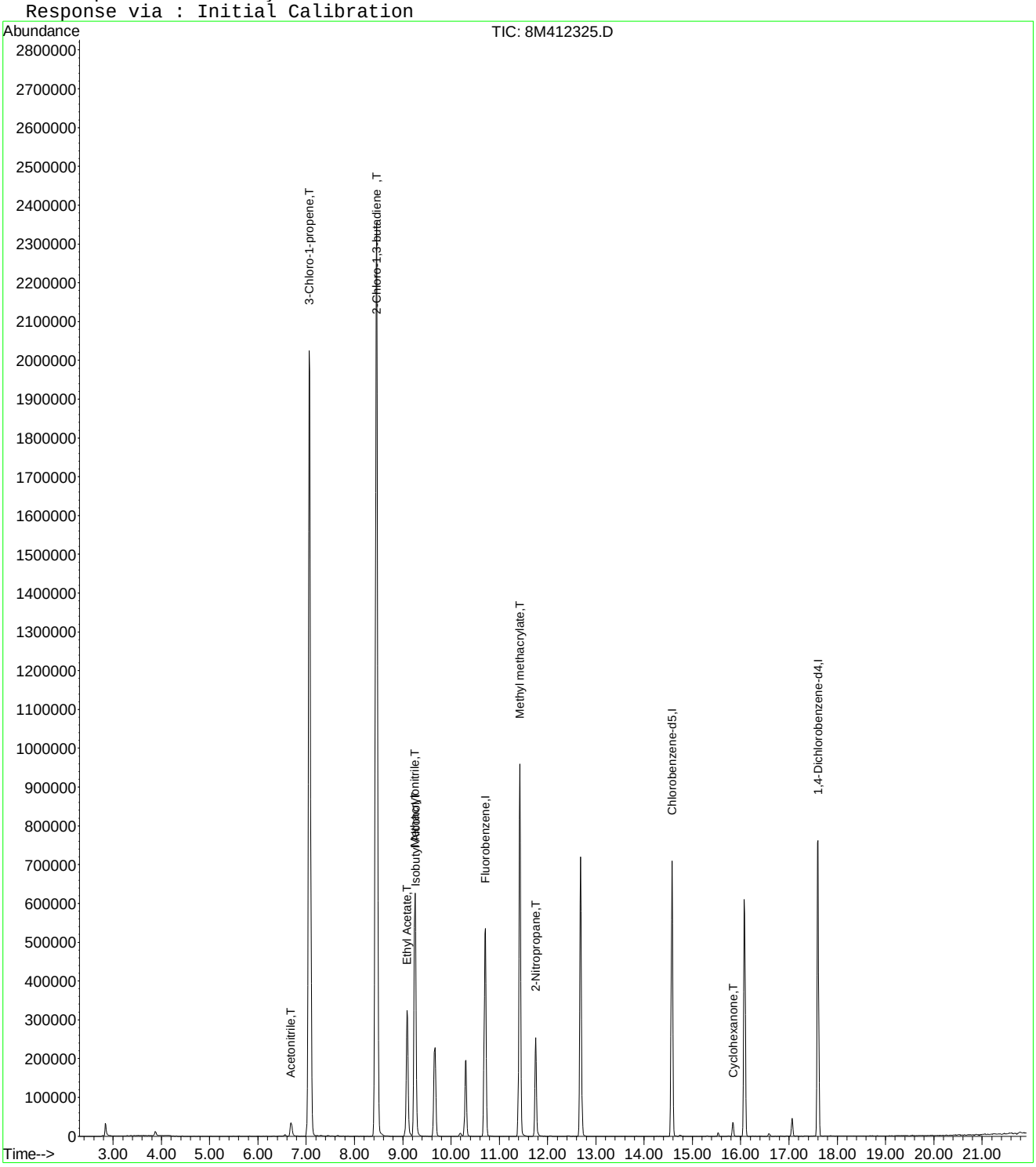

8M412325.D A9FOOWT.M Thu May 19 09:01:28 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412326.D Vial: 8
Acq On : 17 May 2016 12:40 Operator: TMB
Sample : WG569079-07 300ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:29 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	694903	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	496643	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	267309	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.69	41	81471	303.8636	ug/L	98
3) 3-Chloro-1-propene	7.06	41	2563559	290.3084	ug/L	83
4) 2-Chloro-1,3-butadiene	8.46	53	3270971	292.9562	ug/L	86
5) Ethyl Acetate	9.09	43	821184	308.8424	ug/L	95
6) Methacrylonitrile	9.25	67	451708	309.4374	ug/L #	62
7) Isobutyl Alcohol	9.26	43	55071	620.0836	ug/L	94
9) Methyl methacrylate	11.42	41	874430	304.8132	ug/L	70
10) 2-Nitropropane	11.75	43	392965	316.8456	ug/L	94
13) Cyclohexanone	15.84	55	33523	306.6233	ug/L #	61

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412326.D Vial: 8
Acq On : 17 May 2016 12:40 Operator: TMB
Sample : WG569079-07 300ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

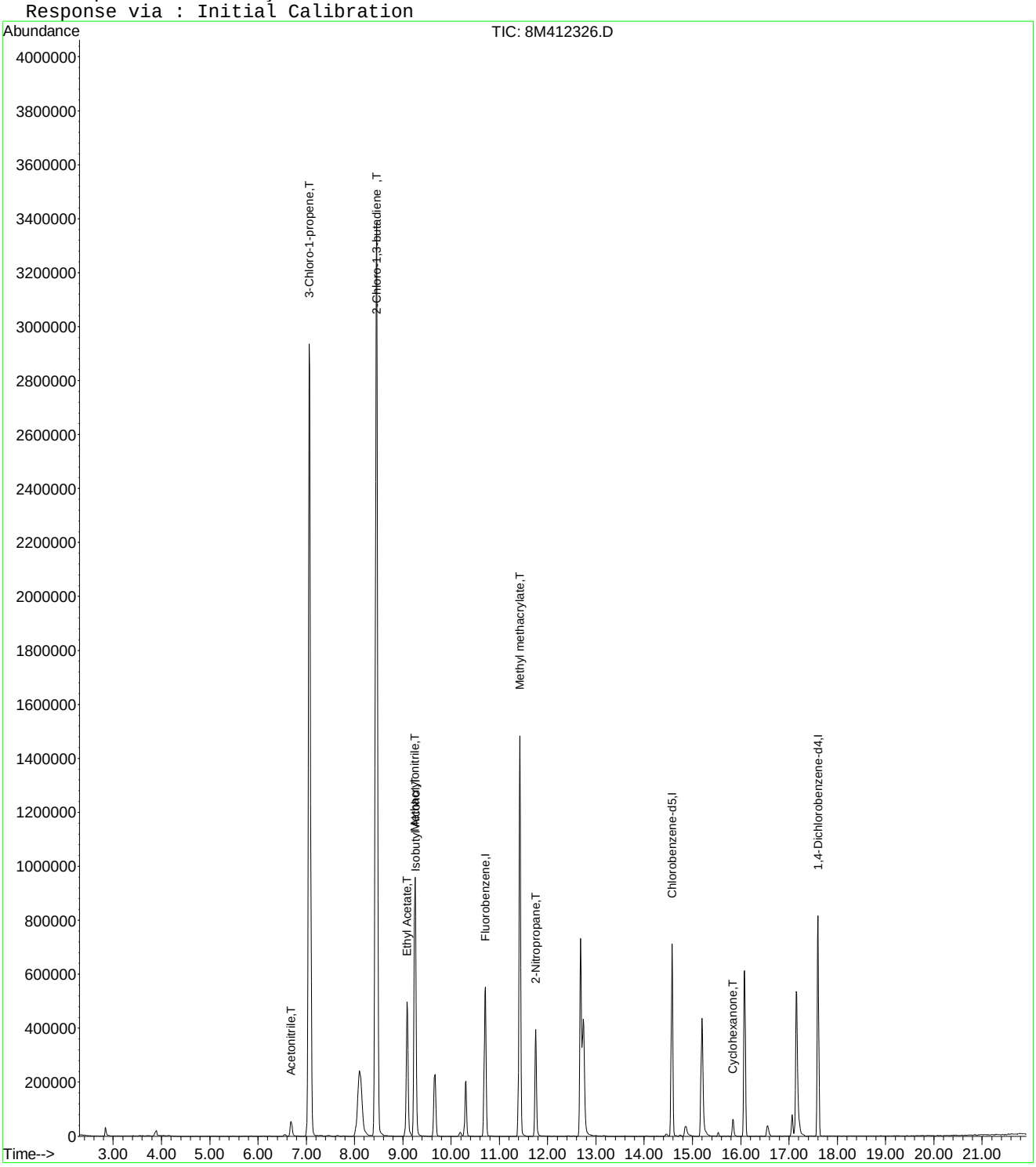

8M412326.D A9FOOWT.M Thu May 19 09:01:29 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412327.D Vial: 9
Acq On : 17 May 2016 13:10 Operator: TMB
Sample : WG569079-08 400ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:30 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	700514	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	502552	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	270883	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	110761	409.7980 ug/L	97
3) 3-Chloro-1-propene	7.07	41	3406131	382.6353 ug/L	82
4) 2-Chloro-1,3-butadiene	8.45	53	4356691	387.0705 ug/L	85
5) Ethyl Acetate	9.09	43	1116818	416.6642 ug/L	94
6) Methacrylonitrile	9.25	67	615482	418.2517 ug/L #	62
7) Isobutyl Alcohol	9.26	43	75472	842.9862 ug/L	97
9) Methyl methacrylate	11.42	41	1199317	414.7153 ug/L	71
10) 2-Nitropropane	11.75	43	538580	430.7760 ug/L	94
13) Cyclohexanone	15.84	55	45874	414.0575 ug/L #	55

(#) = qualifier out of range (m) = manual integration
8M412327.D A9FOOWT.M Thu May 19 09:01:31 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412327.D Vial: 9
Acq On : 17 May 2016 13:10 Operator: TMB
Sample : WG569079-08 400ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

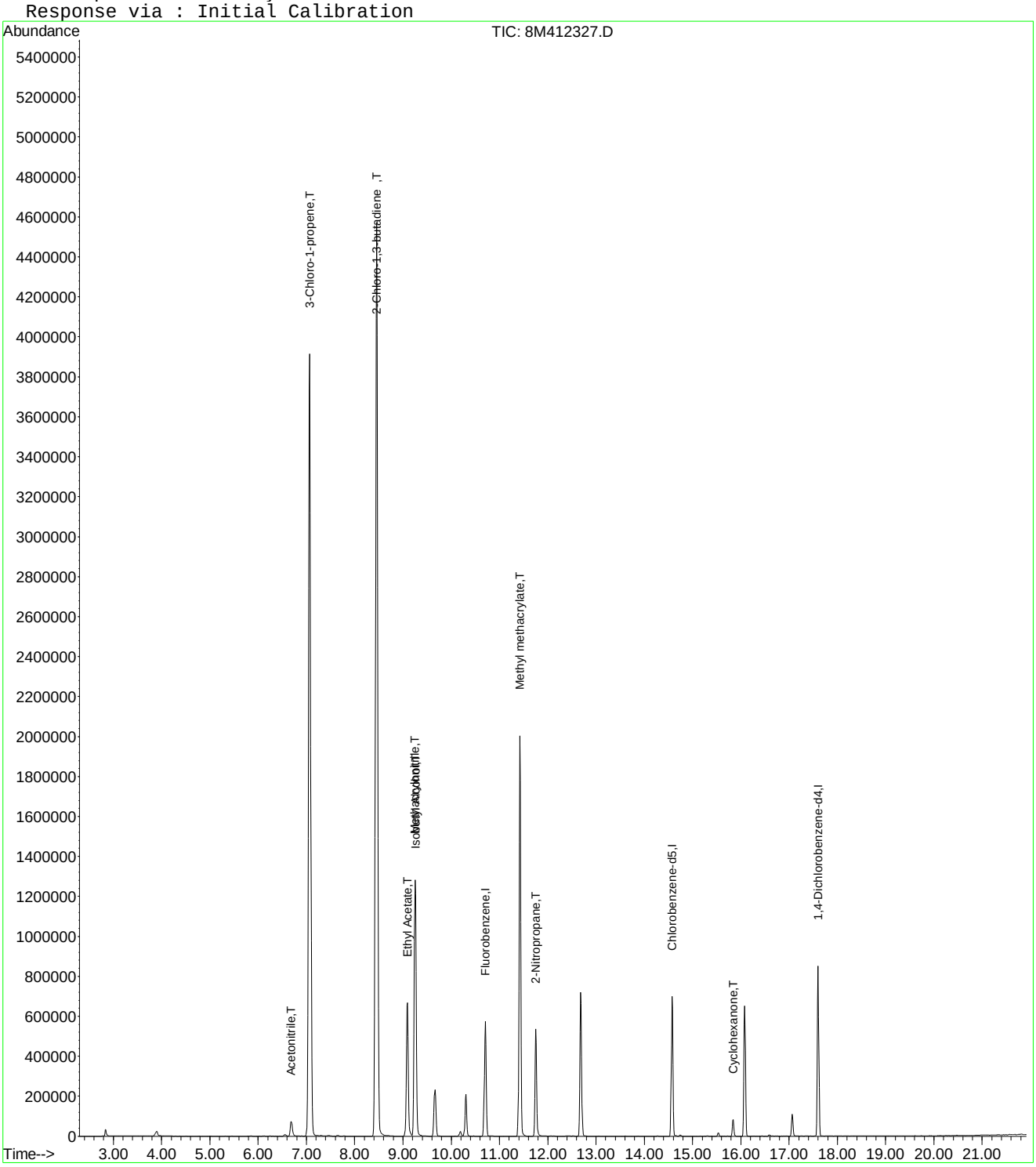

8M412327.D A9FOOWT.M Thu May 19 09:01:31 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412328.D Vial: 10
Acq On : 17 May 2016 13:39 Operator: TMB
Sample : WG569079-09 500ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:31 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	695694	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	495257	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	266442	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.69	41	132245	492.6753	ug/L	99
3) 3-Chloro-1-propene	7.06	41	4228273	478.2834	ug/L	82
4) 2-Chloro-1,3-butadiene	8.46	53	5390856	482.2693	ug/L	85
5) Ethyl Acetate	9.09	43	1321922	496.6017	ug/L	95
6) Methacrylonitrile	9.25	67	729852	499.4083	ug/L #	61
7) Isobutyl Alcohol	9.26	43	85200	958.2367	ug/L	96
9) Methyl methacrylate	11.42	41	1416438	493.1877	ug/L	72
10) 2-Nitropropane	11.75	43	637335	513.2956	ug/L	93
13) Cyclohexanone	15.84	55	52070	477.8160	ug/L #	61

(#) = qualifier out of range (m) = manual integration
8M412328.D A9FOOWT.M Thu May 19 09:01:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412328.D Vial: 10
Acq On : 17 May 2016 13:39 Operator: TMB
Sample : WG569079-09 500ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

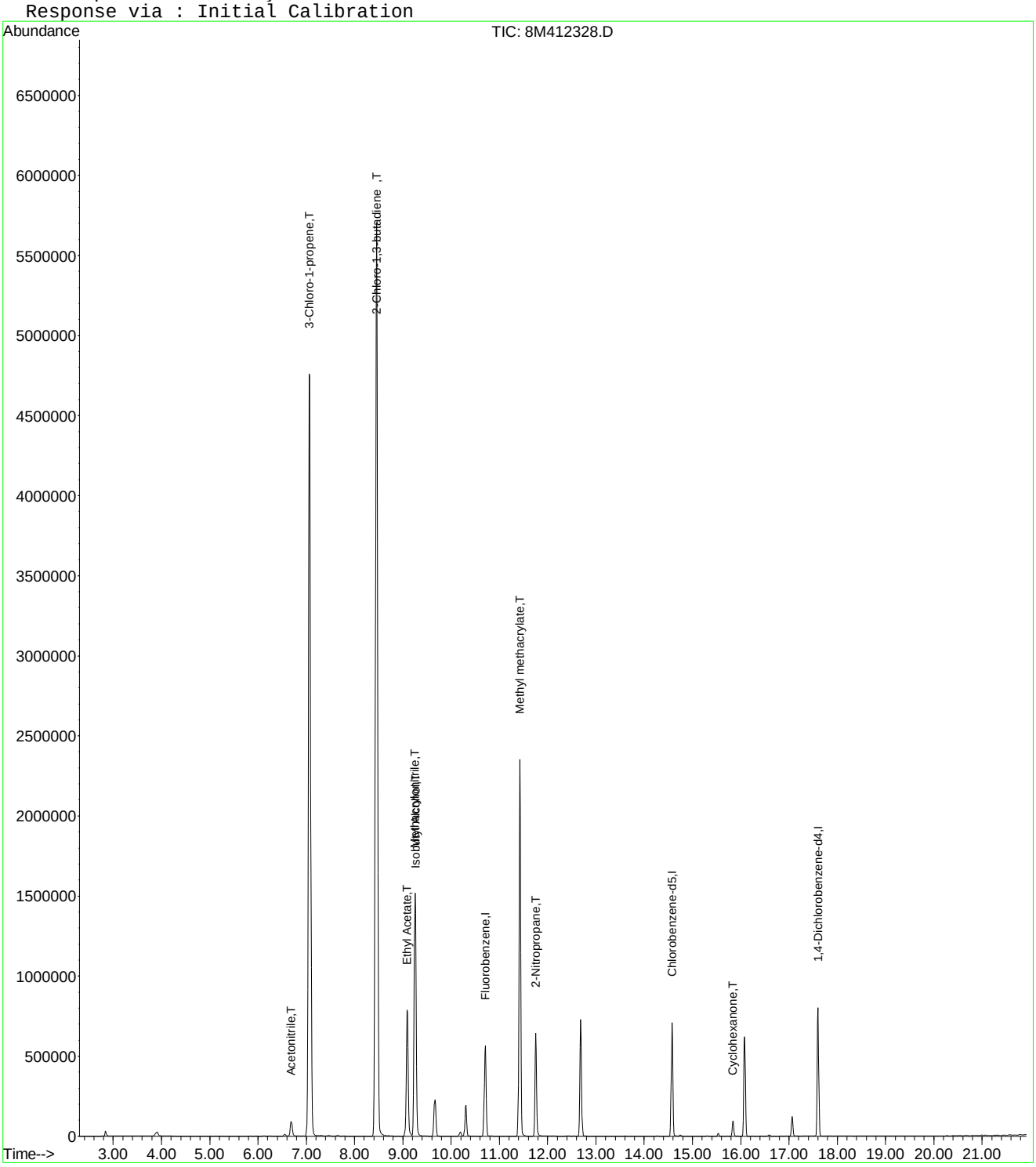

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:32 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	676765	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	486447	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	263036	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	29876	114.4154 ug/L	97
3) 3-Chloro-1-propene	7.07	41	858035	99.7718 ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	1224194	112.5803 ug/L	87
5) Ethyl Acetate	9.09	43	295545	114.1317 ug/L	96
6) Methacrylonitrile	9.25	67	161574	113.6509 ug/L #	63
7) Isobutyl Alcohol	9.26	43	19948	230.6285 ug/L	94
9) Methyl methacrylate	11.42	41	326465	116.8508 ug/L	72
10) 2-Nitropropane	11.75	43	131261	108.6716 ug/L	94
13) Cyclohexanone	15.83	55	10459	97.2189 ug/L #	74

(#) = qualifier out of range (m) = manual integration
8M412331.D A9FOOWT.M Thu May 19 09:01:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

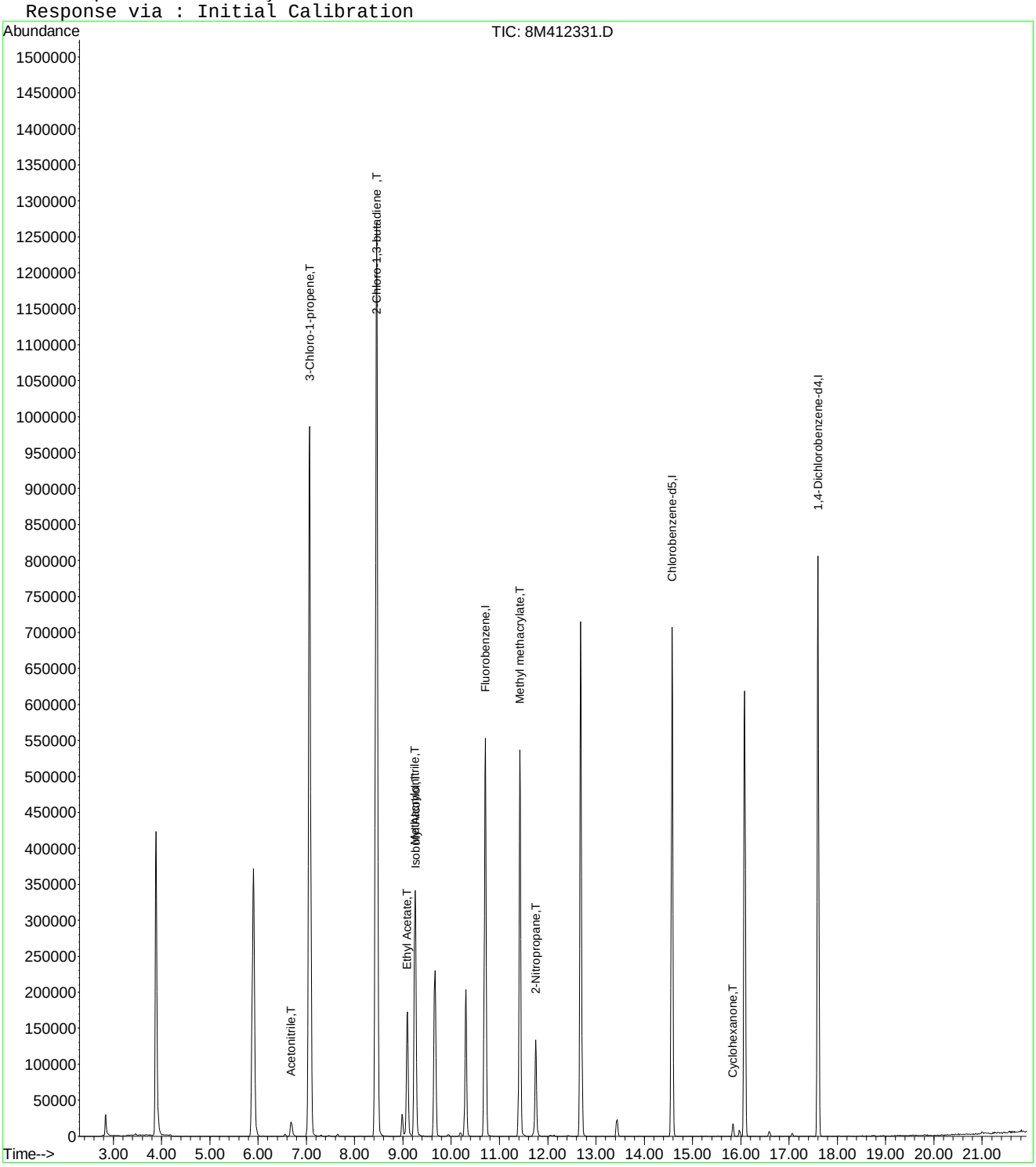

8M412331.D A9FOOWT.M Thu May 19 09:01:33 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	95	0.00
2	T	Acetonitrile	100.0000	114.4154	-14.4	109	0.00
3	T	3-Chloro-1-propene	100.0000	99.7718	0.2	91	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	112.5803	-12.6	103	0.00
5	T	Ethyl Acetate	100.0000	114.1317	-14.1	104	0.00
6	T	Methacrylonitrile	100.0000	113.6509	-13.7	104	0.00
7	T	Isobutyl Alcohol	200.0000	230.6285	-15.3	111	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.01
9	T	Methyl methacrylate	100.0000	116.8508	-16.9	109	0.00
10	T	2-Nitropropane	100.0000	108.6716	-8.7	108	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	96	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	96	0.00
13	T	Cyclohexanone	100.0000	97.2189	2.8	92	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412331.D A9FOOWT.M Thu May 19 09:03:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061316\11M12593.D Vial: 2
Acq On : 13 Jun 2016 17:01 Operator: JDS
Sample : WG572507-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 09:21:50 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	911776	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	727635	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	413608	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	225551	22.6034 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 90.40%		
43) 1,2-Dichloroethane-d4	10.23	65	224590	19.7392 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 78.96%#		
57) Toluene-d8	12.47	98	803914	25.4276 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.72%		
78) p-Bromofluorobenzene	15.64	95	340201	26.6827 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 106.72%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	613503	42.9447 ug/L	95
3) Chloromethane	3.72	50	468110	40.9136 ug/L	100
4) Vinyl Chloride	3.96	62	436323	45.9213 ug/L	99
5) 1,3-Butadiene	4.00	54	423316	44.8055 ug/L	98
6) Bromomethane	4.85	94	313504	47.9888 ug/L	99
7) Chloroethane	5.00	64	292515	47.9146 ug/L	100
8) Trichlorofluoromethane	5.48	101	838764	44.2894 ug/L	100
9) Diethyl ether	6.01	59	642877	91.7868 ug/L	90
10) Isoprene	6.04	67	534562	45.7947 ug/L	87
11) Acrolein	6.23	56	43182	46.9872 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	418387	45.5290 ug/L	95
13) Acetone	6.34	43	70784	32.6938 ug/L	87
14) 1,1-Dichloroethene	6.56	61	726993	43.5542 ug/L	93
15) Tert-Butyl Alcohol	6.66	59	84766	141.5441 ug/L	91
16) Dimethyl Sulfide	6.81	62	294957	44.2481 ug/L	85
17) Iodomethane	7.06	142	339571	44.8780 ug/L	91
18) Methyl acetate	7.06	43	211338	30.8430 ug/L	92
19) Methylene Chloride	7.31	84	403507	46.7101 ug/L	74
20) Carbon Disulfide	7.36	76	1358026	48.5980 ug/L	100
21) Acrylonitrile	7.49	53	122018	42.0337 ug/L	98
22) Methyl Tert Butyl Ether	7.52	73	989628	45.9313 ug/L	97
23) trans-1,2-Dichloroethene	7.75	96	443558	48.0146 ug/L	89
24) n-Hexane	7.82	57	635081	41.2757 ug/L	97
25) Diisopropyl ether	8.15	45	3100949	80.7679 ug/L	97
26) Vinyl Acetate	8.31	43	609483	41.3382 ug/L	98
27) 1,1-Dichloroethane	8.34	63	826314	44.5789 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	2791770	89.3400 ug/L	97
29) 2-Butanone	8.87	43	115979	35.4338 ug/L	92
30) Propionitrile	8.97	54	75426	78.6784 ug/L	98
31) 2,2-Dichloropropane	9.09	77	673280	46.4245 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	491056	48.2101 ug/L	88
33) Chloroform	9.35	83	797047	43.7871 ug/L	100
34) 1-Bromopropane	9.48	122	86953	48.0809 ug/L	97
35) Bromochloromethane	9.57	130	308000	50.9155 ug/L	84
36) Tetrahydrofuran	9.60	42	158486	68.5697 ug/L	86
38) 1,1,1-Trichloroethane	9.85	97	795482	44.4084 ug/L	96
39) Cyclohexane	9.88	56	842996	43.1822 ug/L	92
40) 1,1-Dichloropropene	10.04	75	597913	46.7488 ug/L	99
41) Carbon Tetrachloride	10.18	117	780216	44.6049 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	2019523	93.0066 ug/L	94

(#) = qualifier out of range (m) = manual integration
11M12593.D 8260WT.M Tue Jun 14 09:21:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061316\11M12593.D Vial: 2
Acq On : 13 Jun 2016 17:01 Operator: JDS
Sample : WG572507-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 09:21:50 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	615489	41.6320 ug/L	98
45)	Benzene	10.38	78	1637661	46.7728 ug/L	100
46)	Trichloroethene	11.09	130	554931	48.7614 ug/L	98
47)	Methylcyclohexane	11.17	83	645871	45.9857 ug/L	91
48)	1,2-Dichloropropane	11.29	63	438204	45.2125 ug/L	96
49)	1,4-Dioxane	11.56	88	8787	165.4299 ug/L	87
50)	Bromodichloromethane	11.57	83	621548	45.6813 ug/L	99
51)	Dibromomethane	11.66	93	230239	45.5865 ug/L	93
52)	2-Chloroethyl Vinyl Ether	11.84	63	184080	38.5361 ug/L	96
53)	4-Methyl-2-Pentanone	11.87	58	110815	41.1306 ug/L	92
54)	cis-1,3-Dichloropropene	12.17	75	662530	48.6833 ug/L	98
55)	Dimethyl Disulfide	12.42	79	377663	46.1166 ug/L	95
58)	Toluene	12.56	91	1884225	51.1520 ug/L	99
59)	Ethyl Methacrylate	12.65	69	394456	50.1501 ug/L	80
60)	trans-1,3-Dichloropropene	12.73	75	590708	49.9603 ug/L	96
61)	1,1,2-Trichloroethane	12.93	97	323387	49.5094 ug/L	100
62)	2-Hexanone	12.86	43	180985	37.7269 ug/L #	90
63)	1,3-Dichloropropane	13.21	76	513623	48.9666 ug/L	85
64)	Tetrachloroethene	13.34	164	447235	52.2101 ug/L	95
65)	Dibromochloromethane	13.59	129	505026	50.6909 ug/L	99
66)	1,2-Dibromoethane	13.82	107	329249	50.3115 ug/L	99
67)	1-Chlorohexane	13.89	91	603649	49.7054 ug/L	87
68)	Chlorobenzene	14.29	112	1355097	50.2168 ug/L	100
69)	1,1,1,2-Tetrachloroethane	14.32	131	542316	49.6674 ug/L	100
70)	Ethylbenzene	14.31	106	704719	50.9286 ug/L	96
71)	m-,p-Xylene	14.39	106	1712536	101.8020 ug/L	94
72)	o-Xylene	14.92	106	834617	50.9802 ug/L	96
73)	Styrene	14.95	104	1419388	52.4756 ug/L	96
74)	Bromoform	15.43	173	304457	50.4206 ug/L	100
75)	Isopropylbenzene	15.31	105	2145896	49.5642 ug/L	99
77)	1,1,2,2-Tetrachloroethane	15.52	83	303367	47.1001 ug/L	99
79)	1,2,3-Trichloropropane	15.70	110	112673	46.6480 ug/L	92
80)	trans-1,4-Dichloro-2-Buten	15.74	53	103688	33.6470 ug/L	55
81)	n-Propylbenzene	15.79	91	2416988	50.4588 ug/L	97
82)	Bromobenzene	15.92	156	653263	51.9732 ug/L	92
83)	1,3,5-Trimethylbenzene	15.96	105	1856785	50.7972 ug/L	99
84)	2-Chlorotoluene	16.05	91	1660546	49.4944 ug/L	98
85)	4-Chlorotoluene	16.09	91	1516620	50.4652 ug/L	98
86)	a-Methylstyrene	16.34	118	1010397	52.3976 ug/L	98
87)	tert-Butylbenzene	16.40	134	396105	51.1489 ug/L	91
88)	1,2,4-Trimethylbenzene	16.44	105	1882353	50.5715 ug/L	98
89)	sec-Butylbenzene	16.65	105	2121415	48.3341 ug/L	99
90)	p-Isopropyltoluene	16.79	119	1974311	48.9732 ug/L	99
91)	1,3-Dichlorobenzene	16.98	146	1219562	50.2379 ug/L	96
92)	1,4-Dichlorobenzene	17.10	146	1227923	49.9025 ug/L	98
93)	n-Butylbenzene	17.28	91	1624645	45.7335 ug/L	98
94)	1,2-Dichlorobenzene	17.57	146	1103195	49.8868 ug/L	98
95)	1,2-Dibromo-3-Chloropropan	18.49	75	50235	34.7958 ug/L	92
96)	1,2,4-Trichlorobenzene	19.55	180	783096	48.3941 ug/L	98
97)	Hexachlorobutadiene	19.69	225	303556	42.5819 ug/L	95
98)	Naphthalene	19.90	128	1397514	46.5293 ug/L	99
99)	1,2,3-Trichlorobenzene	20.19	180	677460	45.6174 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M12593.D 8260WT.M Tue Jun 14 09:21:51 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061316\11M12593.D Vial: 2
Acq On : 13 Jun 2016 17:01 Operator: JDS
Sample : WG572507-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 9:21 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

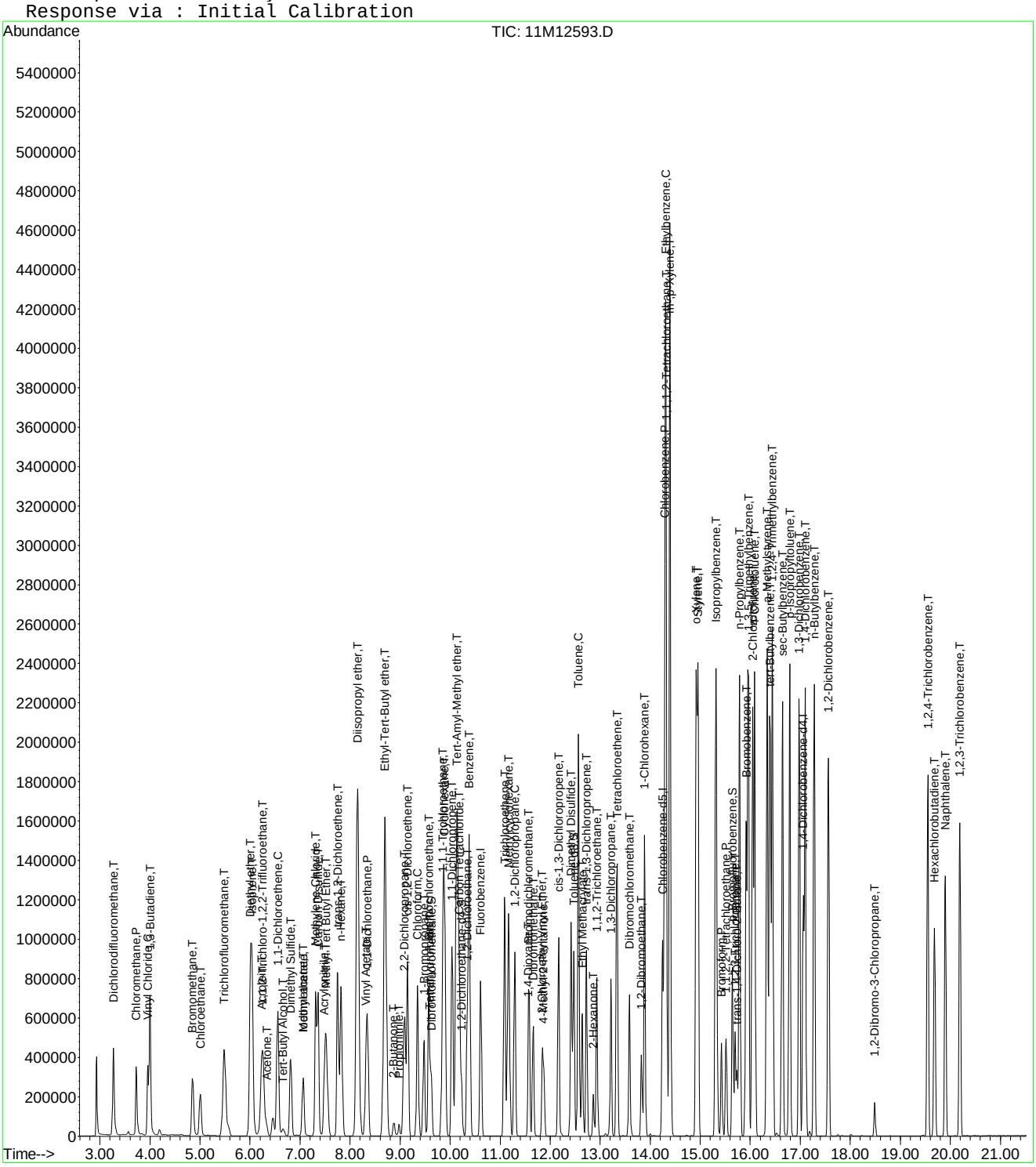

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061316\11M12593.D Vial: 2
Acq On : 13 Jun 2016 17:01 Operator: JDS
Sample : WG572507-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	175#	0.00
2	T	Dichlorodifluoromethane	0.3917	0.3364	14.1	147	0.00
3	P	Chloromethane	0.3137	0.2567	18.2	163#	0.00
4	C	Vinyl Chloride	0.2605	0.2393	8.2	167#	0.00
5	T	1,3-Butadiene	0.2591	0.2321	10.4	151#	0.00
6	T	Bromomethane	0.1791	0.1719	4.0	182#	0.00
7	T	Chloroethane	0.1674	0.1604	4.2	174#	0.00
8	T	Trichlorofluoromethane	0.5193	0.4600	11.4	161#	0.00
9	T	Diethyl ether	0.1920	0.1763	8.2	164#	0.00
10	T	Isoprene	0.3201	0.2931	8.4	161#	0.00
11	T	Acrolein	0.0228	0.0237	-4.0	171#	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2520	0.2294	8.9	164#	0.00
13	T	Acetone	0.0594	0.0388	34.6#	118	0.00
14	C	1,1-Dichloroethene	0.4577	0.3987	12.9	158#	0.00
15	T	Tert-Butyl Alcohol	0.0164	0.0116	29.2#	122	0.00
16	T	Dimethyl Sulfide	0.1828	0.1618	11.5	152#	0.00
17	T	Iodomethane	0.1615	0.1862	-15.3	158#	0.00
18	T	Methyl acetate	0.2006	0.1159	42.2#	114	0.00
19	T	Methylene Chloride	0.2369	0.2213	6.6	173#	0.00
20	T	Carbon Disulfide	0.7662	0.7447	2.8	166#	0.00
21	T	Acrylonitrile	0.0796	0.0669	15.9	144	0.00
22	T	Methyl Tert Butyl Ether	0.5908	0.5427	8.1	162#	0.00
23	T	trans-1,2-Dichloroethene	0.2533	0.2432	4.0	176#	0.01
24	T	n-Hexane	0.4219	0.3483	17.4	141	0.00
25	T	Diisopropyl ether	1.0527	0.8502	19.2	142	0.00
26	T	Vinyl Acetate	0.3793	0.3342	11.9	149	0.00
27	P	1,1-Dichloroethane	0.5082	0.4531	10.8	160#	0.00
28	T	Ethyl-Tert-Butyl ether	0.8568	0.7655	10.7	157#	0.00
29	T	2-Butanone	0.0897	0.0636	29.1#	127	0.00
30	T	Propionitrile	0.0263	0.0207	21.3	133	0.00
31	T	2,2-Dichloropropane	0.3977	0.3692	7.2	167#	0.00
32	T	cis-1,2-Dichloroethene	0.2793	0.2693	3.6	174#	0.00
33	C	Chloroform	0.4991	0.4371	12.4	163#	0.00
34	T	1-Bromopropane	0.0432	0.0477	-10.4	173#	0.00
35	T	Bromochloromethane	0.1659	0.1689	-1.8	171#	0.00
36	T	Tetrahydrofuran	0.0634	0.0435	31.4#	124	0.00
37	S	Dibromofluoromethane	0.2736	0.2474	9.6	161#	0.00
38	T	1,1,1-Trichloroethane	0.4911	0.4362	11.2	160#	0.00
39	T	Cyclohexane	0.5353	0.4623	13.6	147	0.00
40	T	1,1-Dichloropropene	0.3507	0.3279	6.5	169#	0.00
41	T	Carbon Tetrachloride	0.4796	0.4279	10.8	158#	0.00
42	T	Tert-Amyl-Methyl ether	0.5954	0.5537	7.0	165#	0.00
43	S	1,2-Dichloroethane-d4	0.3120	0.2463	21.0	142	0.00
44	T	1,2-Dichloroethane	0.4054	0.3375	16.7	147	0.00
45	T	Benzene	0.9600	0.8981	6.5	173#	0.00
46	T	Trichloroethene	0.3120	0.3043	2.5	181#	0.00
47	T	Methylcyclohexane	0.3851	0.3542	8.0	154#	0.00
48	C	1,2-Dichloropropane	0.2657	0.2403	9.6	163#	0.00
49	T	1,4-Dioxane	0.0014	0.0012	14.3	150	0.01
50	T	Bromodichloromethane	0.3731	0.3408	8.6	161#	0.00
51	T	Dibromomethane	0.1385	0.1263	8.8	161#	0.01
52	T	2-Chloroethyl Vinyl Ether	0.1310	0.1010	22.9	138	0.00
53	T	4-Methyl-2-Pentanone	0.0739	0.0608	17.7	146	0.00
54	T	cis-1,3-Dichloropropene	0.3731	0.3633	2.6	168#	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061316\11M12593.D Vial: 2
Acq On : 13 Jun 2016 17:01 Operator: JDS
Sample : WG572507-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	0.2245	0.2071	7.8	159#	0.00
56	I	Chlorobenzene-d5	1.0000	1.0000	0.0	166#	0.00
57	S	Toluene-d8	1.0862	1.1048	-1.7	174#	0.00
58	C	Toluene	1.2656	1.2948	-2.3	172#	0.00
59	T	Ethyl Methacrylate	0.2702	0.2711	-0.3	158#	0.00
60	T	trans-1,3-Dichloropropene	0.4062	0.4059	0.1	161#	0.00
61	T	1,1,2-Trichloroethane	0.2244	0.2222	1.0	167#	0.00
62	T	2-Hexanone	0.1648	0.1244	24.5	125	0.00
63	T	1,3-Dichloropropane	0.3604	0.3529	2.1	162#	0.00
64	T	Tetrachloroethene	0.2943	0.3073	-4.4	178#	0.00
65	T	Dibromochloromethane	0.3423	0.3470	-1.4	163#	0.00
66	T	1,2-Dibromoethane	0.2248	0.2263	-0.6	167#	0.00
67	T	1-Chlorohexane	0.4173	0.4148	0.6	160#	0.00
68	P	Chlorobenzene	0.9272	0.9312	-0.4	170#	0.00
69	T	1,1,1,2-Tetrachloroethane	0.3751	0.3727	0.7	166#	0.00
70	C	Ethylbenzene	0.4754	0.4843	-1.9	172#	0.00
71	T	m-,p-Xylene	0.5780	0.5884	-1.8	172#	0.00
72	T	o-Xylene	0.5625	0.5735	-2.0	170#	0.00
73	T	Styrene	0.9293	0.9753	-5.0	169#	0.00
74	P	Bromoform	0.2075	0.2092	-0.8	165#	0.00
75	T	Isopropylbenzene	1.4875	1.4746	0.9	164#	0.00
76	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	157#	0.00
77	P	1,1,2,2-Tetrachloroethane	0.3893	0.3667	5.8	145	0.00
78	S	p-Bromofluorobenzene	0.7706	0.8225	-6.7	180#	0.00
79	T	1,2,3-Trichloropropane	0.1351	0.1362	-0.8	156#	0.00
80	T	trans-1,4-Dichloro-2-Butene	0.1588	0.1253	21.1	110	0.00
81	T	n-Propylbenzene	2.8953	2.9218	-0.9	159#	0.00
82	T	Bromobenzene	0.7597	0.7897	-3.9	172#	0.00
83	T	1,3,5-Trimethylbenzene	2.2094	2.2446	-1.6	162#	0.00
84	T	2-Chlorotoluene	2.0279	2.0074	1.0	162#	0.00
85	T	4-Chlorotoluene	1.8165	1.8334	-0.9	163#	0.00
86	T	a-Methylstyrene	1.1656	1.2214	-4.8	155#	0.00
87	T	tert-Butylbenzene	0.4681	0.4788	-2.3	164#	0.00
88	T	1,2,4-Trimethylbenzene	2.2498	2.2755	-1.1	160#	0.00
89	T	sec-Butylbenzene	2.6529	2.5645	3.3	153#	0.00
90	T	p-Isopropyltoluene	2.4367	2.3867	2.1	154#	0.00
91	T	1,3-Dichlorobenzene	1.4673	1.4743	-0.5	165#	0.00
92	T	1,4-Dichlorobenzene	1.4873	1.4844	0.2	166#	0.00
93	T	n-Butylbenzene	2.1472	1.9640	8.5	144	0.00
94	T	1,2-Dichlorobenzene	1.3366	1.3336	0.2	161#	0.00
95	T	1,2-Dibromo-3-Chloropropane	0.0825	0.0607	26.4#	117	0.00
96	T	1,2,4-Trichlorobenzene	0.9781	0.9467	3.2	153#	0.00
97	T	Hexachlorobutadiene	0.4309	0.3670	14.8	139	0.00
98	T	Naphthalene	1.8154	1.6894	6.9	145	0.00
99	T	1,2,3-Trichlorobenzene	0.8976	0.8190	8.8	149	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M12593.D 8260WT.M Tue Jun 14 09:25:14 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061316\11M12593.D Vial: 2
Acq On : 13 Jun 2016 17:01 Operator: JDS
Sample : WG572507-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	175	0.00
2	T	Dichlorodifluoromethane	50.0000	42.9447	14.1	147	0.00
3	P	Chloromethane	50.0000	40.9136	18.2	163	0.00
4	C	Vinyl Chloride	50.0000	45.9213	8.2	167	0.00
5	T	1,3-Butadiene	50.0000	44.8055	10.4	151	0.00
6	T	Bromomethane	50.0000	47.9888	4.0	182	0.00
7	T	Chloroethane	50.0000	47.9146	4.2	174	0.00
8	T	Trichlorofluoromethane	50.0000	44.2894	11.4	161	0.00
9	T	Diethyl ether	100.0000	91.7868	8.2	164	0.00
10	T	Isoprene	50.0000	45.7947	8.4	161	0.00
11	T	Acrolein	50.0000	46.9872	6.0	171	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	45.5290	8.9	164	0.00
13	T	Acetone	50.0000	32.6938	34.6#	118	0.00
14	C	1,1-Dichloroethene	50.0000	43.5542	12.9	158	0.00
15	T	Tert-Butyl Alcohol	200.0000	141.5441	29.2#	122	0.00
16	T	Dimethyl Sulfide	50.0000	44.2481	11.5	152	0.00
17	T	Iodomethane	50.0000	44.8780	10.2	158	0.00
18	T	Methyl acetate	50.0000	30.8430	38.3#	114	0.00
19	T	Methylene Chloride	50.0000	46.7101	6.6	173	0.00
20	T	Carbon Disulfide	50.0000	48.5980	2.8	166	0.00
21	T	Acrylonitrile	50.0000	42.0337	15.9	144	0.00
22	T	Methyl Tert Butyl Ether	50.0000	45.9313	8.1	162	0.00
23	T	trans-1,2-Dichloroethene	50.0000	48.0146	4.0	176	0.01
24	T	n-Hexane	50.0000	41.2757	17.4	141	0.00
25	T	Diisopropyl ether	100.0000	80.7679	19.2	142	0.00
26	T	Vinyl Acetate	50.0000	41.3382	17.3	149	0.00
27	P	1,1-Dichloroethane	50.0000	44.5789	10.8	160	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	89.3400	10.7	157	0.00
29	T	2-Butanone	50.0000	35.4338	29.1#	127	0.00
30	T	Propionitrile	100.0000	78.6784	21.3	133	0.00
31	T	2,2-Dichloropropane	50.0000	46.4245	7.2	167	0.00
32	T	cis-1,2-Dichloroethene	50.0000	48.2101	3.6	174	0.00
33	C	Chloroform	50.0000	43.7871	12.4	163	0.00
34	T	1-Bromopropane	50.0000	48.0808	3.8	173	0.00
35	T	Bromochloromethane	50.0000	50.9155	-1.8	171	0.00
36	T	Tetrahydrofuran	100.0000	68.5697	31.4#	124	0.00
37	S	Dibromofluoromethane	25.0000	22.6034	9.6	161	0.00
38	T	1,1,1-Trichloroethane	50.0000	44.4084	11.2	160	0.00
39	T	Cyclohexane	50.0000	43.1822	13.6	147	0.00
40	T	1,1-Dichloropropene	50.0000	46.7488	6.5	169	0.00
41	T	Carbon Tetrachloride	50.0000	44.6049	10.8	158	0.00
42	T	Tert-Amyl-Methyl ether	100.0000	93.0066	7.0	165	0.00
43	S	1,2-Dichloroethane-d4	25.0000	19.7392	21.0	142	0.00
44	T	1,2-Dichloroethane	50.0000	41.6320	16.7	147	0.00
45	T	Benzene	50.0000	46.7728	6.5	173	0.00
46	T	Trichloroethene	50.0000	48.7614	2.5	181	0.00
47	T	Methylcyclohexane	50.0000	45.9857	8.0	154	0.00
48	C	1,2-Dichloropropane	50.0000	45.2125	9.6	163	0.00
49	T	1,4-Dioxane	200.0000	165.4299	17.3	150	0.01
50	T	Bromodichloromethane	50.0000	45.6813	8.6	161	0.00
51	T	Dibromomethane	50.0000	45.5865	8.8	161	0.01
52	T	2-Chloroethyl Vinyl Ether	50.0000	38.5361	22.9	138	0.00
53	T	4-Methyl-2-Pentanone	50.0000	41.1306	17.7	146	0.00
54	T	cis-1,3-Dichloropropene	50.0000	48.6833	2.6	168	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061316\11M12593.D Vial: 2
Acq On : 13 Jun 2016 17:01 Operator: JDS
Sample : WG572507-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	50.0000	46.1166	7.8	159	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	166	0.00
57	S	Toluene-d8	25.0000	25.4277	-1.7	174	0.00
58	C	Toluene	50.0000	51.1520	-2.3	172	0.00
59	T	Ethyl Methacrylate	50.0000	50.1501	-0.3	158	0.00
60	T	trans-1,3-Dichloropropene	50.0000	49.9603	0.1	161	0.00
61	T	1,1,2-Trichloroethane	50.0000	49.5094	1.0	167	0.00
62	T	2-Hexanone	50.0000	37.7269	24.5	125	0.00
63	T	1,3-Dichloropropane	50.0000	48.9666	2.1	162	0.00
64	T	Tetrachloroethene	50.0000	52.2101	-4.4	178	0.00
65	T	Dibromochloromethane	50.0000	50.6909	-1.4	163	0.00
66	T	1,2-Dibromoethane	50.0000	50.3115	-0.6	167	0.00
67	T	1-Chlorohexane	50.0000	49.7054	0.6	160	0.00
68	P	Chlorobenzene	50.0000	50.2168	-0.4	170	0.00
69	T	1,1,1,2-Tetrachloroethane	50.0000	49.6674	0.7	166	0.00
70	C	Ethylbenzene	50.0000	50.9286	-1.9	172	0.00
71	T	m-,p-Xylene	100.0000	101.8020	-1.8	172	0.00
72	T	o-Xylene	50.0000	50.9802	-2.0	170	0.00
73	T	Styrene	50.0000	52.4756	-5.0	169	0.00
74	P	Bromoform	50.0000	50.4206	-0.8	165	0.00
75	T	Isopropylbenzene	50.0000	49.5642	0.9	164	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	157	0.00
77	P	1,1,2,2-Tetrachloroethane	50.0000	47.1001	5.8	145	0.00
78	S	p-Bromofluorobenzene	25.0000	26.6827	-6.7	180	0.00
79	T	1,2,3-Trichloropropane	50.0000	46.6480	6.7	156	0.00
80	T	trans-1,4-Dichloro-2-Butene	50.0000	33.6470	32.7#	110	0.00
81	T	n-Propylbenzene	50.0000	50.4588	-0.9	159	0.00
82	T	Bromobenzene	50.0000	51.9732	-3.9	172	0.00
83	T	1,3,5-Trimethylbenzene	50.0000	50.7972	-1.6	162	0.00
84	T	2-Chlorotoluene	50.0000	49.4944	1.0	162	0.00
85	T	4-Chlorotoluene	50.0000	50.4652	-0.9	163	0.00
86	T	a-Methylstyrene	50.0000	52.3976	-4.8	155	0.00
87	T	tert-Butylbenzene	50.0000	51.1489	-2.3	164	0.00
88	T	1,2,4-Trimethylbenzene	50.0000	50.5715	-1.1	160	0.00
89	T	sec-Butylbenzene	50.0000	48.3341	3.3	153	0.00
90	T	p-Isopropyltoluene	50.0000	48.9732	2.1	154	0.00
91	T	1,3-Dichlorobenzene	50.0000	50.2379	-0.5	165	0.00
92	T	1,4-Dichlorobenzene	50.0000	49.9025	0.2	166	0.00
93	T	n-Butylbenzene	50.0000	45.7335	8.5	144	0.00
94	T	1,2-Dichlorobenzene	50.0000	49.8867	0.2	161	0.00
95	T	1,2-Dibromo-3-Chloropropane	50.0000	34.7958	30.4#	117	0.00
96	T	1,2,4-Trichlorobenzene	50.0000	48.3941	3.2	153	0.00
97	T	Hexachlorobutadiene	50.0000	42.5819	14.8	139	0.00
98	T	Naphthalene	50.0000	46.5293	6.9	145	0.00
99	T	1,2,3-Trichlorobenzene	50.0000	45.6174	8.8	149	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M12593.D 8260WT.M Tue Jun 14 09:25:16 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412972.D Vial: 2
Acq On : 14 Jun 2016 9:57 Operator: TMB
Sample : WG572591-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 10:26:09 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	861783	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	616369	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	340859	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	242870	26.2303 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.92%		
43) 1,2-Dichloroethane-d4	10.31	65	251186	25.3005 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 101.20%		
58) Toluene-d8	12.68	98	847007	26.2574 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.04%		
80) p-Bromofluorobenzene	16.07	95	350285	24.8183 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.28%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	798613	55.2727 ug/L	100
3) Chloromethane	3.62	50	428071	50.7556 ug/L	99
4) Vinyl Chloride	3.84	62	558202	55.7845 ug/L	98
5) 1,3-Butadiene	3.88	54	505989	60.2981 ug/L	98
6) Bromomethane	4.74	94	245244	40.9046 ug/L	98
7) Chloroethane	4.89	64	283366	51.4650 ug/L	98
8) Trichlorofluoromethane	5.38	101	1026292	55.1205 ug/L	100
9) Diethyl ether	5.90	59	414376	93.2231 ug/L	98
10) Isoprene	5.95	67	577409	51.0677 ug/L	97
11) Acrolein	6.14	56	18807	47.2559 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	458778	52.4197 ug/L	97
13) Acetone	6.23	43	47365	48.8507 ug/L	99
14) 1,1-Dichloroethene	6.46	61	736122	52.8248 ug/L	99
15) Tert-Butyl Alcohol	6.57	59	58103	186.9998 ug/L	97
16) Dimethyl Sulfide	6.73	62	239775	48.1228 ug/L	99
17) Iodomethane	6.98	142	145756	38.4711 ug/L	99
18) Methyl acetate	6.99	43	111199	42.4282 ug/L	98
19) Methylene Chloride	7.25	84	437021	49.2801 ug/L	99
20) Carbon Disulfide	7.29	76	1550127	53.1559 ug/L	99
21) Acrylonitrile	7.43	53	58565	46.5533 ug/L	98
22) Methyl Tert Butyl Ether	7.45	73	912498	47.5428 ug/L	100
23) trans-1,2-Dichloroethene	7.70	61	667300	52.1233 ug/L	99
24) n-Hexane	7.79	57	514876	54.1603 ug/L	100
25) Diisopropyl ether	8.13	45	1924583	96.4418 ug/L	98
26) Vinyl Acetate	8.29	43	443221	48.5092 ug/L	99
27) 1,1-Dichloroethane	8.32	63	825688	51.9326 ug/L	100
28) Ethyl-Tert-Butyl ether	8.71	59	2092484	97.8660 ug/L	99
29) 2-Butanone	8.88	43	63966	44.9025 ug/L	94
30) Propionitrile	8.98	54	38422	92.5520 ug/L	97
31) 2,2-Dichloropropane	9.10	77	980311	58.5088 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	507409	51.2941 ug/L	99
33) Chloroform	9.38	83	988608	52.6617 ug/L	100
34) 1-Bromopropane	9.51	122	79530	56.1284 ug/L	99
35) Bromochloromethane	9.60	130	256291	50.5240 ug/L	95
36) Tetrahydrofuran	9.64	42	86242	91.9173 ug/L	98
38) 1,1,1-Trichloroethane	9.90	97	981797	55.0584 ug/L	99
39) Cyclohexane	9.93	56	636037	51.5196 ug/L	99
40) 1,1-Dichloropropene	10.10	75	719276	52.9198 ug/L	100
41) Tert-Amyl-Methyl ether	10.21	73	1851012	95.3177 ug/L	100
42) Carbon Tetrachloride	10.25	117	873387	55.1571 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412972.D Vial: 2
Acq On : 14 Jun 2016 9:57 Operator: TMB
Sample : WG572591-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 10:26:09 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	618514	51.1897	ug/L		100
46)	Benzene	10.46	78	1825183	51.5591	ug/L		100
47)	Trichloroethene	11.22	130	497804	52.7250	ug/L		99
48)	Methylcyclohexane	11.30	83	761741	53.1075	ug/L		100
49)	1,2-Dichloropropane	11.42	63	380220	48.2489	ug/L		94
50)	Bromodichloromethane	11.72	83	720670	52.0320	ug/L		99
51)	1,4-Dioxane	11.71	88	8814	222.6574	ug/L		95
52)	Dibromomethane	11.81	93	218153	46.7657	ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	144000	42.5146	ug/L		99
54)	4-Methyl-2-Pentanone	12.05	58	58549	42.3174	ug/L		90
55)	cis-1,3-Dichloropropene	12.36	75	727888	51.6311	ug/L		99
56)	Dimethyl Disulfide	12.62	79	378256	50.2696	ug/L		98
59)	Toluene	12.79	91	1930265	50.4444	ug/L		100
60)	Ethyl Methacrylate	12.88	69	340395	46.3206	ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	629873	49.1191	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	272077	45.0599	ug/L		98
64)	2-Hexanone	13.11	58	54357	42.8392	ug/L	#	99
65)	1,3-Dichloropropane	13.48	76	494316	45.9818	ug/L		97
66)	Tetrachloroethene	13.60	164	434076	52.9471	ug/L		96
67)	Dibromochloromethane	13.86	129	433382	49.1561	ug/L		99
68)	1,2-Dibromoethane	14.12	107	277686	46.1442	ug/L		99
69)	1-Chlorohexane	14.21	91	680020	52.0613	ug/L		99
70)	Chlorobenzene	14.63	112	1291687	50.0589	ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.66	131	507206	50.7380	ug/L		99
72)	Ethylbenzene	14.66	106	698553	49.4805	ug/L		100
73)	m-,p-Xylene	14.74	106	1682573	101.6088	ug/L		99
74)	o-Xylene	15.31	106	810112	50.0390	ug/L		99
75)	Styrene	15.34	104	1359728	51.2071	ug/L		98
76)	Bromoform	15.84	173	258049	49.3460	ug/L		98
77)	Isopropylbenzene	15.73	105	2213293	51.4619	ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	285787	41.7690	ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	91103	43.2395	ug/L		91
82)	trans-1,4-Dichloro-2-Buten	16.19	53	94527	44.0888	ug/L		84
83)	n-Propylbenzene	16.24	91	2617527	49.2222	ug/L		99
84)	Bromobenzene	16.36	156	528110	48.2819	ug/L		96
85)	1,3,5-Trimethylbenzene	16.43	105	1946688	50.2543	ug/L		100
86)	2-Chlorotoluene	16.51	91	1655446	44.5882	ug/L		91
87)	4-Chlorotoluene	16.56	91	1778320	53.0260	ug/L		93
88)	a-Methylstyrene	16.83	118	891593	48.5135	ug/L		100
89)	tert-Butylbenzene	16.89	134	370571	48.8989	ug/L		97
90)	1,2,4-Trimethylbenzene	16.94	105	1975877	49.6057	ug/L		100
91)	sec-Butylbenzene	17.16	105	2246426	49.2950	ug/L		99
92)	p-Isopropyltoluene	17.32	119	1907014	49.2852	ug/L		98
93)	1,3-Dichlorobenzene	17.51	146	1036948	49.2337	ug/L		98
94)	1,4-Dichlorobenzene	17.65	146	1013800	47.7443	ug/L		98
95)	n-Butylbenzene	17.84	91	1863249	48.7090	ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	874543	46.6867	ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.13	75	56505	41.1417	ug/L		96
98)	1,2,4-Trichlorobenzene	20.28	180	673192	48.0792	ug/L		100
99)	Hexachlorobutadiene	20.43	225	339363	51.8734	ug/L		99
100)	Naphthalene	20.64	128	885979	42.5898	ug/L		99
101)	1,2,3-Trichlorobenzene	20.95	180	529902	44.8588	ug/L		98

(#) = qualifier out of range (m) = manual integration
8M412972.D 8260WT.M Tue Jun 14 10:26:12 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412972.D Vial: 2
Acq On : 14 Jun 2016 9:57 Operator: TMB
Sample : WG572591-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 10:26 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

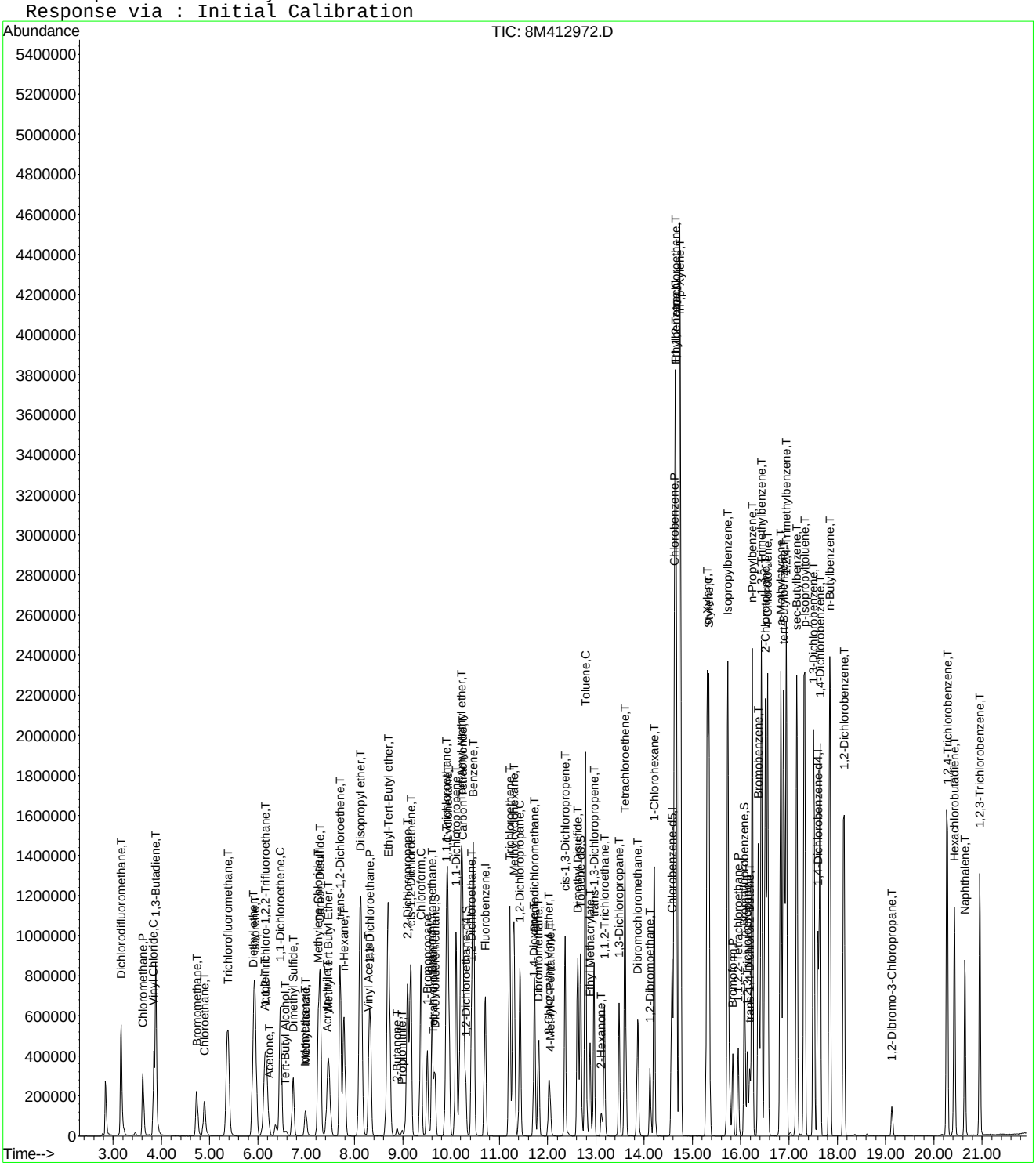

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412972.D Vial: 2
Acq On : 14 Jun 2016 9:57 Operator: TMB
Sample : WG572591-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	111	0.00
2	T	Dichlorodifluoromethane	0.4192	0.4633	-10.5	117	0.00
3	P	Chloromethane	0.2447	0.2484	-1.5	115	0.00
4	C	Vinyl Chloride	0.2903	0.3239	-11.6	123	-0.01
5	T	1,3-Butadiene	0.2434	0.2936	-20.6	130	0.00
6	T	Bromomethane	0.1654	0.1423	14.0	94	0.00
7	T	Chloroethane	0.1597	0.1644	-2.9	116	0.00
8	T	Trichlorofluoromethane	0.5401	0.5955	-10.2	123	0.00
9	T	Diethyl ether	0.1290	0.1202	6.8	106	0.00
10	T	Isoprene	0.3280	0.3350	-2.1	116	0.01
11	T	Acrolein	0.0116	0.0109	5.5	107	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2539	0.2662	-4.8	118	0.00
13	T	Acetone	0.0281	0.0275	2.3	103	-0.01
14	C	1,1-Dichloroethene	0.4043	0.4271	-5.6	119	0.00
15	T	Tert-Butyl Alcohol	0.0090	0.0084	6.4	105	-0.01
16	T	Dimethyl Sulfide	0.1445	0.1391	3.7	108	0.00
17	T	Iodomethane	0.0866	0.0846	2.3	92	0.00
18	T	Methyl acetate	0.0760	0.0645	15.1	97	-0.01
19	T	Methylene Chloride	0.2573	0.2536	1.4	112	0.00
20	T	Carbon Disulfide	0.8460	0.8994	-6.3	122	0.00
21	T	Acrylonitrile	0.0365	0.0340	6.9	98	0.00
22	T	Methyl Tert Butyl Ether	0.5568	0.5294	4.9	101	-0.01
23	T	trans-1,2-Dichloroethene	0.3714	0.3872	-4.2	117	0.00
24	T	n-Hexane	0.2758	0.2987	-8.3	123	0.00
25	T	Diisopropyl ether	0.5789	0.5583	3.6	108	0.00
26	T	Vinyl Acetate	0.2651	0.2571	3.0	103	0.00
27	P	1,1-Dichloroethane	0.4612	0.4791	-3.9	114	0.00
28	T	Ethyl-Tert-Butyl ether	0.6203	0.6070	2.1	107	0.00
29	T	2-Butanone	0.0413	0.0371	10.2	96	0.00
30	T	Propionitrile	0.0120	0.0112	7.4	100	0.00
31	T	2,2-Dichloropropane	0.4860	0.5688	-17.0	128	0.00
32	T	cis-1,2-Dichloroethene	0.2870	0.2944	-2.6	115	0.00
33	C	Chloroform	0.5446	0.5736	-5.3	117	0.00
34		1-Bromopropane	0.0411	0.0461	-12.3	125	0.00
35	T	Bromochloromethane	0.1472	0.1487	-1.0	111	0.00
36	T	Tetrahydrofuran	0.0272	0.0250	8.1	109	0.00
37	S	Dibromofluoromethane	0.2686	0.2818	-4.9	115	0.00
38	T	1,1,1-Trichloroethane	0.5173	0.5696	-10.1	120	0.00
39	T	Cyclohexane	0.3581	0.3690	-3.0	119	0.00
40	T	1,1-Dichloropropene	0.3943	0.4173	-5.8	117	0.00
41	T	Tert-Amyl-Methyl ether	0.5634	0.5370	4.7	105	0.00
42	T	Carbon Tetrachloride	0.4593	0.5067	-10.3	121	0.00
43	S	1,2-Dichloroethane-d4	0.2880	0.2915	-1.2	110	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.3505	0.3589	-2.4	110	0.00
46	T	Benzene	1.0269	1.0590	-3.1	114	0.00
47	T	Trichloroethene	0.2739	0.2888	-5.5	117	0.00
48	T	Methylcyclohexane	0.4161	0.4420	-6.2	120	0.00
49	C	1,2-Dichloropropane	0.2286	0.2206	3.5	108	0.00
50	T	Bromodichloromethane	0.4018	0.4181	-4.1	110	0.00
51	T	1,4-Dioxane	0.0012	0.0013	-11.3	116	0.00
52	T	Dibromomethane	0.1353	0.1266	6.5	104	-0.01
53	T	2-Chloroethyl Vinyl Ether	0.0983	0.0835	15.0	89	0.00
54	T	4-Methyl-2-Pentanone	0.0401	0.0340	15.4	90	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412972.D Vial: 2
Acq On : 14 Jun 2016 9:57 Operator: TMB
Sample : WG572591-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4090	0.4223	-3.3	109	0.00
56	T	Dimethyl Disulfide	0.2183	0.2195	-0.5	110	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	114	0.00
58	S	Toluene-d8	1.3084	1.3742	-5.0	118	0.00
59	C	Toluene	1.5520	1.5658	-0.9	115	0.00
60	T	Ethyl Methacrylate	0.2981	0.2761	7.4	100	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.5201	0.5110	1.8	106	0.00
63	T	1,1,2-Trichloroethane	0.2449	0.2207	9.9	101	0.00
64	T	2-Hexanone	0.0515	0.0441	14.3	96	-0.01
65	T	1,3-Dichloropropane	0.4360	0.4010	8.0	101	0.00
66	T	Tetrachloroethene	0.3325	0.3521	-5.9	124	0.00
67	T	Dibromochloromethane	0.3576	0.3516	1.7	108	0.00
68	T	1,2-Dibromoethane	0.2441	0.2253	7.7	102	0.00
69	T	1-Chlorohexane	0.5298	0.5516	-4.1	121	0.00
70	P	Chlorobenzene	1.0466	1.0478	-0.1	116	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4055	0.4114	-1.5	113	0.00
72	C	Ethylbenzene	0.5726	0.5667	1.0	116	0.00
73	T	m-,p-Xylene	0.6716	0.6825	-1.6	117	0.00
74	T	o-Xylene	0.6566	0.6572	-0.1	114	0.00
75	T	Styrene	1.0770	1.1030	-2.4	112	0.00
76	P	Bromoform	0.2121	0.2093	1.3	108	0.00
77	T	Isopropylbenzene	1.7444	1.7954	-2.9	115	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	118	0.00
79	P	1,1,2,2-Tetrachloroethane	0.5018	0.4192	16.5	97	0.00
80	S	p-Bromofluorobenzene	1.0352	1.0277	0.7	120	0.00
81	T	1,2,3-Trichloropropane	0.1545	0.1336	13.5	102	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1376	0.1387	-0.8	109	0.00
83	T	n-Propylbenzene	3.9003	3.8396	1.6	115	0.00
84	T	Bromobenzene	0.8022	0.7747	3.4	115	-0.01
85	T	1,3,5-Trimethylbenzene	2.8411	2.8556	-0.5	117	0.00
86	T	2-Chlorotoluene	2.7231	2.4283	10.8	103	0.00
87	T	4-Chlorotoluene	2.4597	2.6086	-6.1	133	0.00
88	T	a-Methylstyrene	1.3479	1.3079	3.0	115	0.00
89	T	tert-Butylbenzene	0.5558	0.5436	2.2	121	0.00
90	T	1,2,4-Trimethylbenzene	2.9214	2.8984	0.8	118	0.00
91	T	sec-Butylbenzene	3.3424	3.2952	1.4	117	0.00
92	T	p-Isopropyltoluene	2.8379	2.7974	1.4	118	0.00
93	T	1,3-Dichlorobenzene	1.5448	1.5211	1.5	117	0.00
94	T	1,4-Dichlorobenzene	1.5574	1.4871	4.5	116	0.00
95	T	n-Butylbenzene	2.8056	2.7332	2.6	116	-0.01
96	T	1,2-Dichlorobenzene	1.3739	1.2829	6.6	114	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1007	0.0829	17.7	95	0.00
98	T	1,2,4-Trichlorobenzene	1.0269	0.9875	3.8	115	0.00
99	T	Hexachlorobutadiene	0.4798	0.4978	-3.7	128	-0.01
100	T	Naphthalene	1.5257	1.2996	14.8	99	-0.01
101	T	1,2,3-Trichlorobenzene	0.8664	0.7773	10.3	112	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412972.D 8260WT.M Tue Jun 14 10:26:19 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412972.D Vial: 2
Acq On : 14 Jun 2016 9:57 Operator: TMB
Sample : WG572591-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	111	0.00
2	T	Dichlorodifluoromethane	50.0000	55.2727	-10.5	117	0.00
3	P	Chloromethane	50.0000	50.7556	-1.5	115	0.00
4	C	Vinyl Chloride	50.0000	55.7845	-11.6	123	-0.01
5	T	1,3-Butadiene	50.0000	60.2981	-20.6	130	0.00
6	T	Bromomethane	50.0000	40.9046	18.2	94	0.00
7	T	Chloroethane	50.0000	51.4650	-2.9	116	0.00
8	T	Trichlorofluoromethane	50.0000	55.1205	-10.2	123	0.00
9	T	Diethyl ether	100.0000	93.2231	6.8	106	0.00
10	T	Isoprene	50.0000	51.0677	-2.1	116	0.01
11	T	Acrolein	50.0000	47.2559	5.5	107	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	52.4196	-4.8	118	0.00
13	T	Acetone	50.0000	48.8507	2.3	103	-0.01
14	C	1,1-Dichloroethene	50.0000	52.8248	-5.6	119	0.00
15	T	Tert-Butyl Alcohol	200.0000	186.9998	6.5	105	-0.01
16	T	Dimethyl Sulfide	50.0000	48.1228	3.8	108	0.00
17	T	Iodomethane	50.0000	38.4711	23.1	92	0.00
18	T	Methyl acetate	50.0000	42.4282	15.1	97	-0.01
19	T	Methylene Chloride	50.0000	49.2801	1.4	112	0.00
20	T	Carbon Disulfide	50.0000	53.1559	-6.3	122	0.00
21	T	Acrylonitrile	50.0000	46.5532	6.9	98	0.00
22	T	Methyl Tert Butyl Ether	50.0000	47.5428	4.9	101	-0.01
23	T	trans-1,2-Dichloroethene	50.0000	52.1233	-4.2	117	0.00
24	T	n-Hexane	50.0000	54.1603	-8.3	123	0.00
25	T	Diisopropyl ether	100.0000	96.4418	3.6	108	0.00
26	T	Vinyl Acetate	50.0000	48.5092	3.0	103	0.00
27	P	1,1-Dichloroethane	50.0000	51.9326	-3.9	114	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	97.8660	2.1	107	0.00
29	T	2-Butanone	50.0000	44.9025	10.2	96	0.00
30	T	Propionitrile	100.0000	92.5520	7.4	100	0.00
31	T	2,2-Dichloropropane	50.0000	58.5088	-17.0	128	0.00
32	T	cis-1,2-Dichloroethene	50.0000	51.2941	-2.6	115	0.00
33	C	Chloroform	50.0000	52.6617	-5.3	117	0.00
34		1-Bromopropane	50.0000	56.1284	-12.3	125	0.00
35	T	Bromochloromethane	50.0000	50.5240	-1.0	111	0.00
36	T	Tetrahydrofuran	100.0000	91.9173	8.1	109	0.00
37	S	Dibromofluoromethane	25.0000	26.2303	-4.9	115	0.00
38	T	1,1,1-Trichloroethane	50.0000	55.0584	-10.1	120	0.00
39	T	Cyclohexane	50.0000	51.5196	-3.0	119	0.00
40	T	1,1-Dichloropropene	50.0000	52.9198	-5.8	117	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	95.3178	4.7	105	0.00
42	T	Carbon Tetrachloride	50.0000	55.1571	-10.3	121	0.00
43	S	1,2-Dichloroethane-d4	25.0000	25.3005	-1.2	110	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	51.1897	-2.4	110	0.00
46	T	Benzene	50.0000	51.5591	-3.1	114	0.00
47	T	Trichloroethene	50.0000	52.7250	-5.5	117	0.00
48	T	Methylcyclohexane	50.0000	53.1075	-6.2	120	0.00
49	C	1,2-Dichloropropane	50.0000	48.2489	3.5	108	0.00
50	T	Bromodichloromethane	50.0000	52.0320	-4.1	110	0.00
51	T	1,4-Dioxane	200.0000	222.6574	-11.3	116	0.00
52	T	Dibromomethane	50.0000	46.7657	6.5	104	-0.01
53	T	2-Chloroethyl Vinyl Ether	50.0000	42.5146	15.0	89	0.00
54	T	4-Methyl-2-Pentanone	50.0000	42.3174	15.4	90	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412972.D Vial: 2
Acq On : 14 Jun 2016 9:57 Operator: TMB
Sample : WG572591-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	51.6311	-3.3	109	0.00
56	T	Dimethyl Disulfide	50.0000	50.2696	-0.5	110	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	114	0.00
58	S	Toluene-d8	25.0000	26.2573	-5.0	118	0.00
59	C	Toluene	50.0000	50.4444	-0.9	115	0.00
60	T	Ethyl Methacrylate	50.0000	46.3206	7.4	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	49.1191	1.8	106	0.00
63	T	1,1,2-Trichloroethane	50.0000	45.0599	9.9	101	0.00
64	T	2-Hexanone	50.0000	42.8392	14.3	96	-0.01
65	T	1,3-Dichloropropane	50.0000	45.9818	8.0	101	0.00
66	T	Tetrachloroethene	50.0000	52.9471	-5.9	124	0.00
67	T	Dibromochloromethane	50.0000	49.1561	1.7	108	0.00
68	T	1,2-Dibromoethane	50.0000	46.1442	7.7	102	0.00
69	T	1-Chlorohexane	50.0000	52.0613	-4.1	121	0.00
70	P	Chlorobenzene	50.0000	50.0589	-0.1	116	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	50.7380	-1.5	113	0.00
72	C	Ethylbenzene	50.0000	49.4805	1.0	116	0.00
73	T	m-,p-Xylene	100.0000	101.6088	-1.6	117	0.00
74	T	o-Xylene	50.0000	50.0391	-0.1	114	0.00
75	T	Styrene	50.0000	51.2071	-2.4	112	0.00
76	P	Bromoform	50.0000	49.3460	1.3	108	0.00
77	T	Isopropylbenzene	50.0000	51.4619	-2.9	115	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	118	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	41.7690	16.5	97	0.00
80	S	p-Bromofluorobenzene	25.0000	24.8183	0.7	120	0.00
81	T	1,2,3-Trichloropropane	50.0000	43.2396	13.5	102	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	44.0888	11.8	109	0.00
83	T	n-Propylbenzene	50.0000	49.2222	1.6	115	0.00
84	T	Bromobenzene	50.0000	48.2819	3.4	115	-0.01
85	T	1,3,5-Trimethylbenzene	50.0000	50.2543	-0.5	117	0.00
86	T	2-Chlorotoluene	50.0000	44.5882	10.8	103	0.00
87	T	4-Chlorotoluene	50.0000	53.0260	-6.1	133	0.00
88	T	a-Methylstyrene	50.0000	48.5135	3.0	115	0.00
89	T	tert-Butylbenzene	50.0000	48.8989	2.2	121	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	49.6057	0.8	118	0.00
91	T	sec-Butylbenzene	50.0000	49.2950	1.4	117	0.00
92	T	p-Isopropyltoluene	50.0000	49.2852	1.4	118	0.00
93	T	1,3-Dichlorobenzene	50.0000	49.2338	1.5	117	0.00
94	T	1,4-Dichlorobenzene	50.0000	47.7443	4.5	116	0.00
95	T	n-Butylbenzene	50.0000	48.7090	2.6	116	-0.01
96	T	1,2-Dichlorobenzene	50.0000	46.6867	6.6	114	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	41.1417	17.7	95	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	48.0792	3.8	115	0.00
99	T	Hexachlorobutadiene	50.0000	51.8734	-3.7	128	-0.01
100	T	Naphthalene	50.0000	42.5898	14.8	99	-0.01
101	T	1,2,3-Trichlorobenzene	50.0000	44.8588	10.3	112	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412972.D 8260WT.M Tue Jun 14 10:26:22 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\1\DATA\061415\11M08234.D          Vial: 1
Acq On    : 14 Jun 2015   9:34                        Operator: TMB /DLW
Sample    : WG527475-01 50ng BFB STD                  Inst    : hpms11
Misc      : 1,1 STD70707                              Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title     : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
```

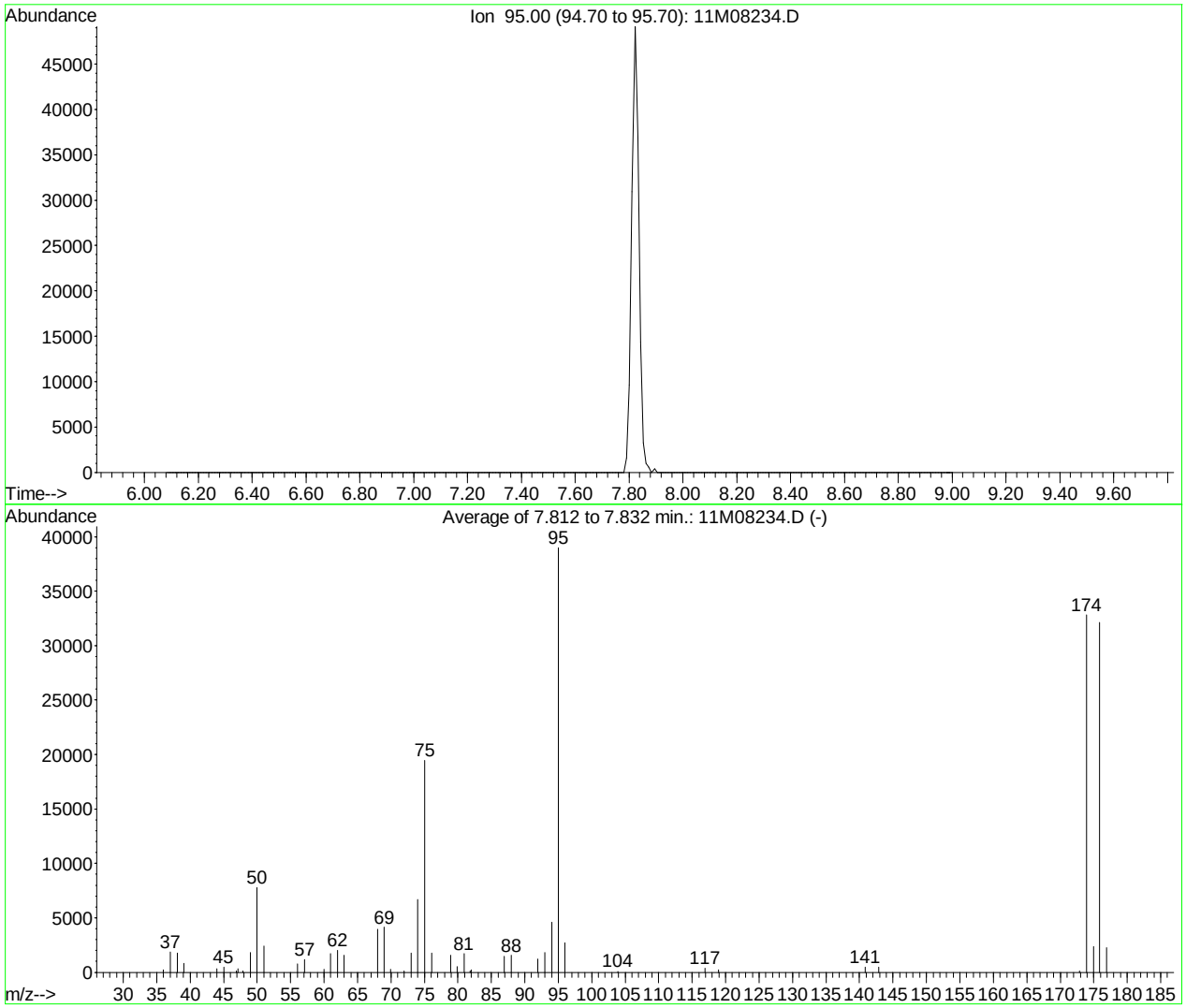

AutoFind: Scans 168, 169, 170; Background Corrected with Scan 163

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.9	7754	PASS
75	95	30	60	49.9	19472	PASS
95	95	100	100	100.0	38997	PASS
96	95	5	9	7.0	2731	PASS
173	174	0.00	2	0.3	111	PASS
174	95	50	100	84.2	32837	PASS
175	174	5	9	7.2	2357	PASS
176	174	95	101	97.9	32146	PASS
177	176	5	9	7.1	2284	PASS

11M08234.D 8260WTR.M Sun Jun 14 09:44:09 2015

BFB

```
Data File : C:\MSDCHEM\2\DATA\051316\8M412218.D          Vial: 3
Acq On    : 13 May 2016  12:36                       Operator: TMB
Sample    : WG568561-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD76034                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

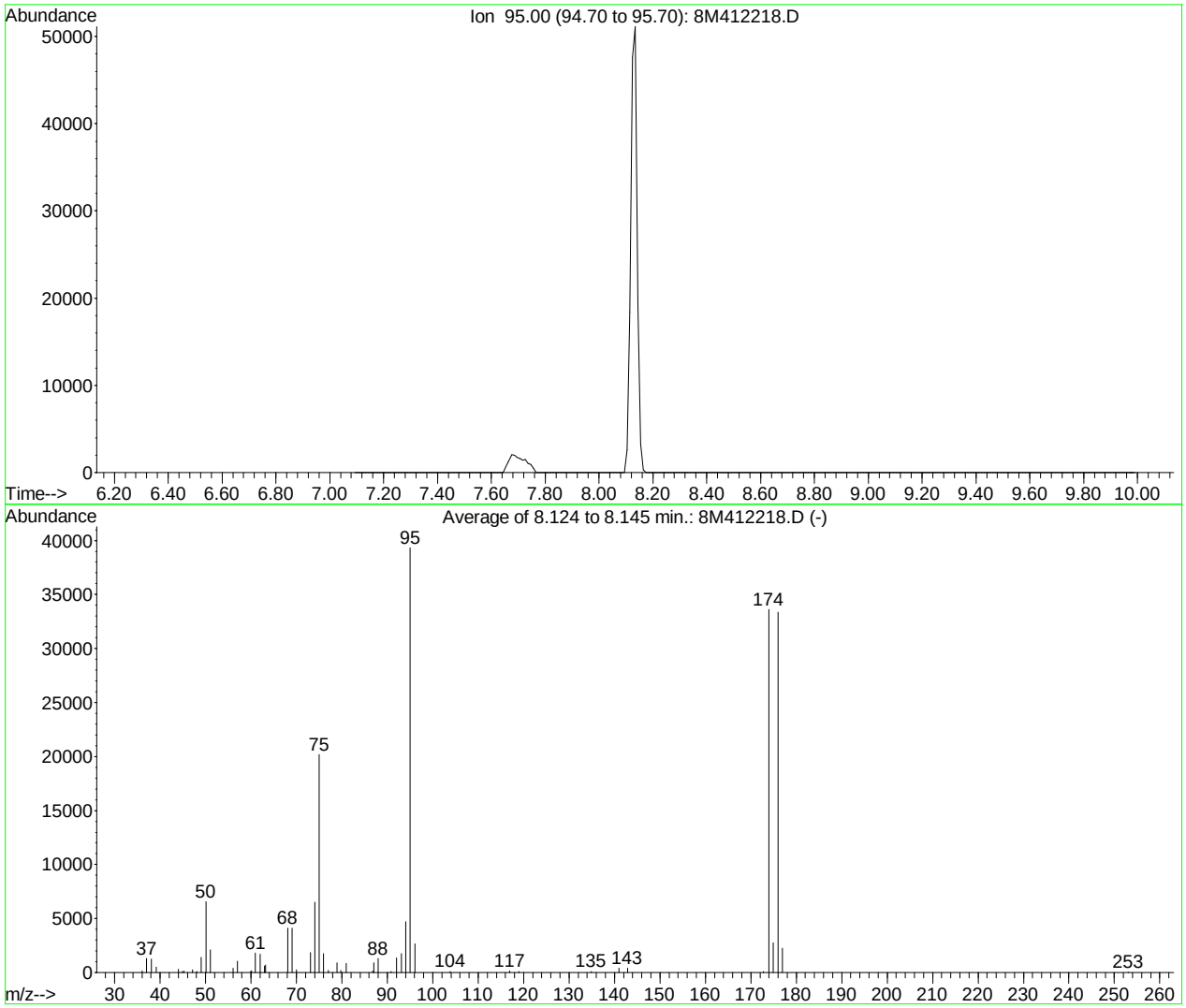

AutoFind: Scans 102, 103, 104; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.7	6575	PASS
75	95	30	60	51.3	20171	PASS
95	95	100	100	100.0	39312	PASS
96	95	5	9	6.7	2649	PASS
173	174	0.00	2	0.4	122	PASS
174	95	50	100	85.5	33616	PASS
175	174	5	9	8.2	2746	PASS
176	174	95	101	99.2	33360	PASS
177	176	5	9	6.8	2267	PASS

8M412218.D BFB.M Fri May 13 12:47:24 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\051316\11M11836.D          Vial: 2
Acq On    : 13 May 2016  14:15                        Operator: JDS
Sample    : WG568769-01 50ng BFB STD 8260             Inst    : hpms11
Misc      : 1,1 STD76034                              Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title     : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
```

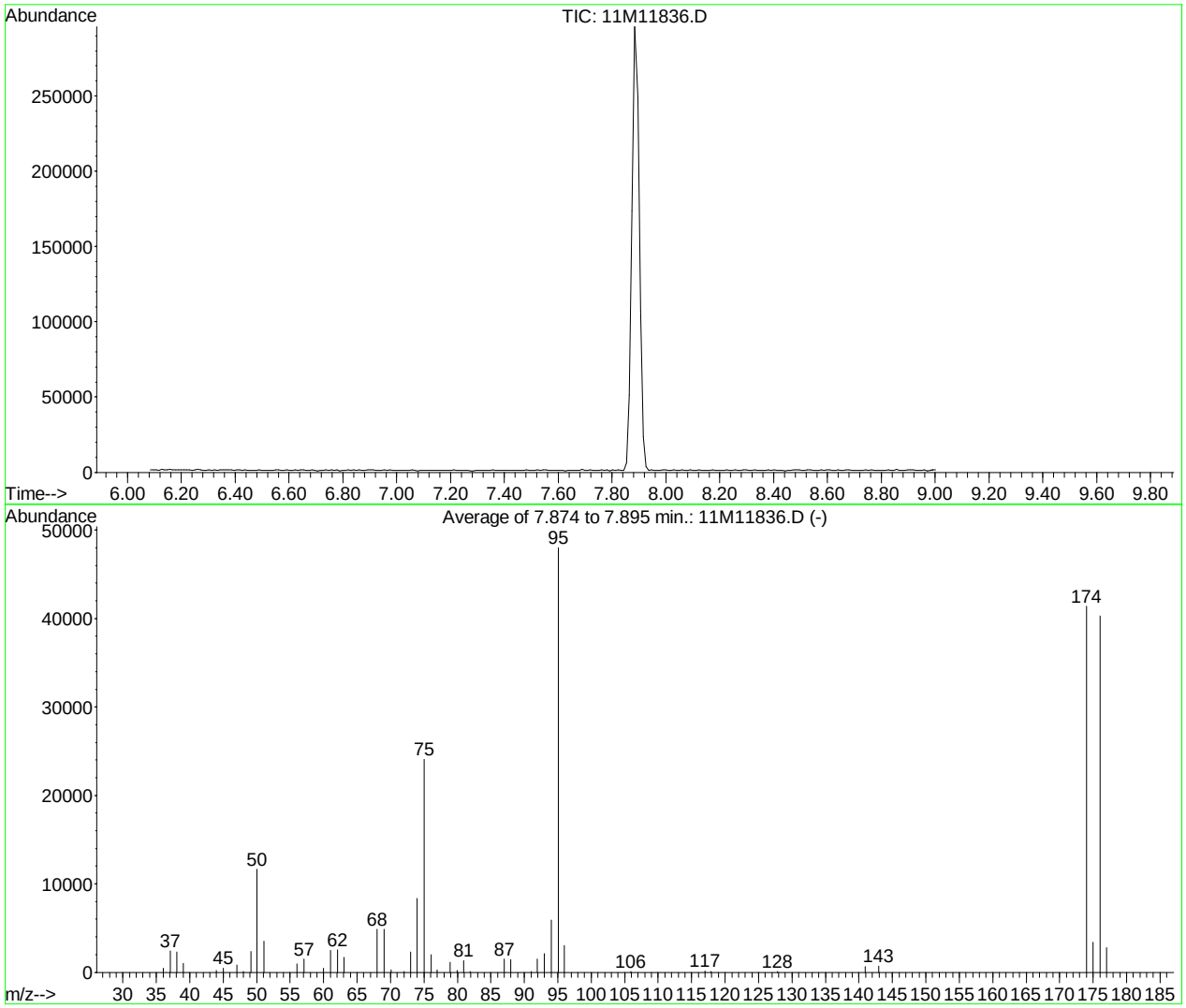

AutoFind: Scans 174, 175, 176; Background Corrected with Scan 169

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	24.2	11638	PASS
75	95	30	60	50.2	24088	PASS
95	95	100	100	100.0	48016	PASS
96	95	5	9	6.3	3008	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	86.2	41402	PASS
175	174	5	9	8.3	3421	PASS
176	174	95	101	97.3	40288	PASS
177	176	5	9	6.9	2789	PASS

11M11836.D 8260WT.M Tue May 17 14:18:03 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\061316\11M12592.D          Vial: 1
Acq On    : 13 Jun 2016  16:33                       Operator: JDS
Sample    : WG572507-01 50ng BFB STD 8260            Inst    : hpms11
Misc      : 1,1 STD76496                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title     : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
```

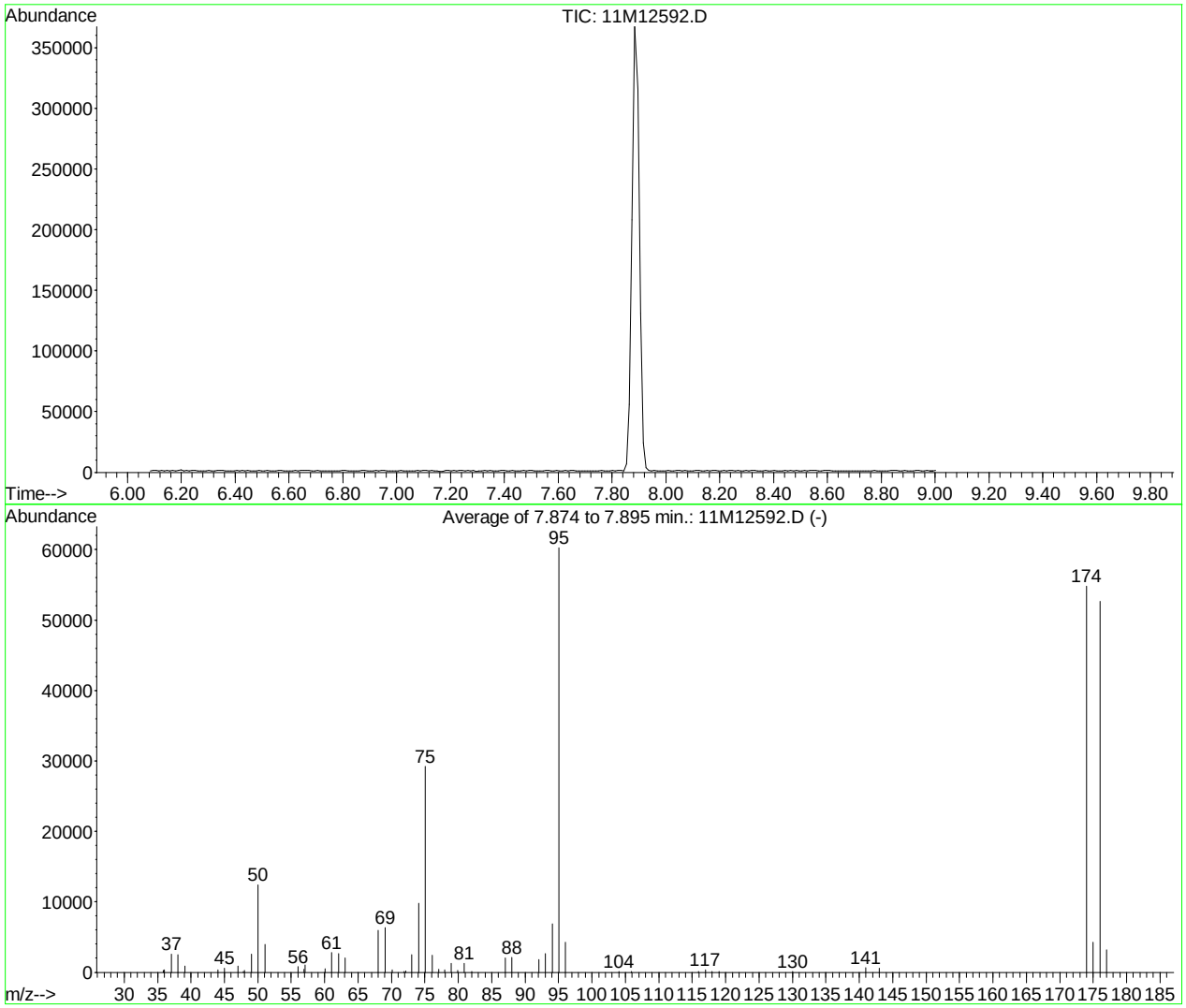

AutoFind: Scans 174, 175, 176; Background Corrected with Scan 169

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.6	12399	PASS
75	95	30	60	48.5	29232	PASS
95	95	100	100	100.0	60272	PASS
96	95	5	9	7.1	4288	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	90.9	54805	PASS
175	174	5	9	7.7	4241	PASS
176	174	95	101	96.1	52656	PASS
177	176	5	9	6.1	3194	PASS

11M12592.D 8260WT.M Mon Jun 13 17:13:00 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412971.D Vial: 1
Acq On    : 14 Jun 2016   9:33                        Operator: TMB
Sample    : WG572591-01 50ng BFB STD 8260             Inst    : HPMS8
Misc      : 1,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title     : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
```

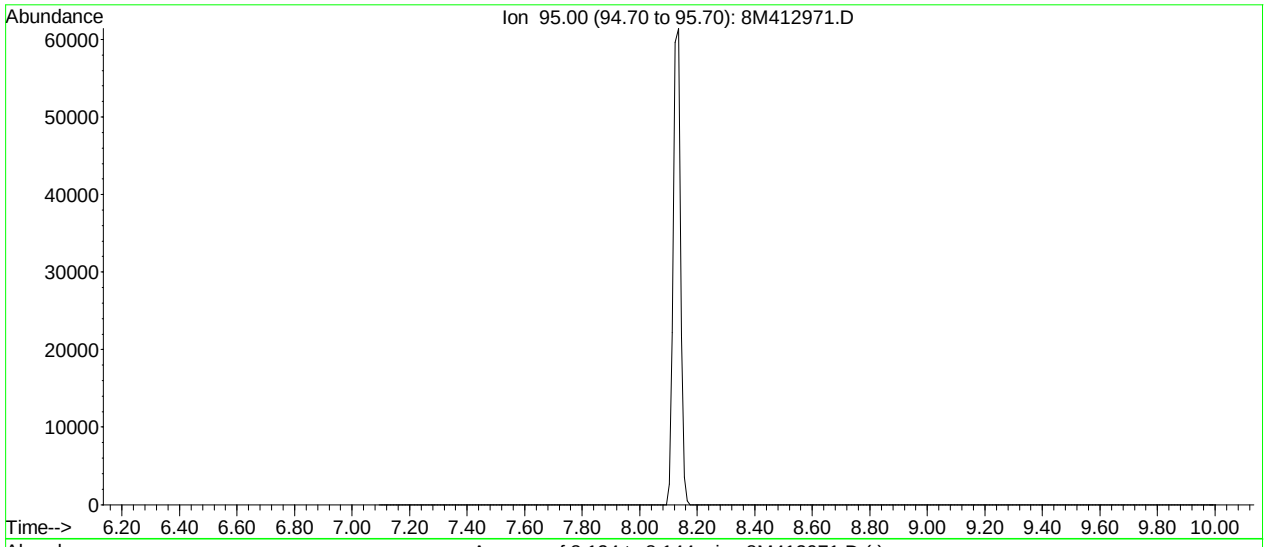

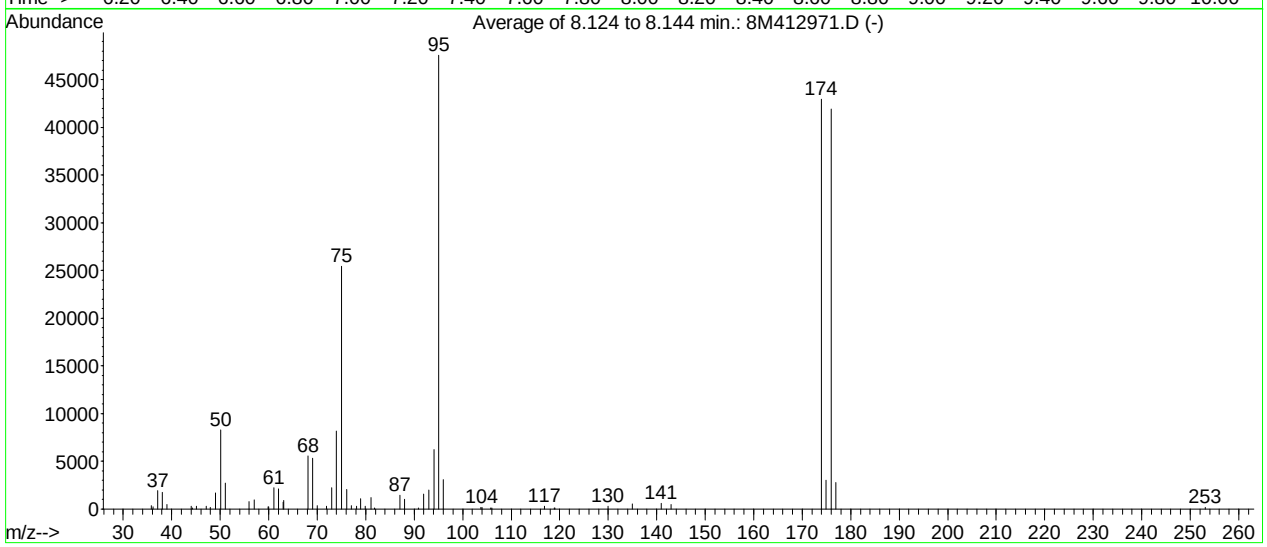

AutoFind: Scans 102, 103, 104; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.4	8269	PASS
75	95	30	60	53.5	25445	PASS
95	95	100	100	100.0	47570	PASS
96	95	5	9	6.4	3042	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	90.3	42970	PASS
175	174	5	9	7.1	3032	PASS
176	174	95	101	97.6	41930	PASS
177	176	5	9	6.5	2744	PASS

8M412971.D 8260WT.M Tue Jun 14 10:25:59 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061316\11M12595.D Vial: 4
Acq On : 13 Jun 2016 18:05 Operator: JDS
Sample : WG572509-01 BLANK STD 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 09:25:39 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	831276	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	677255	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	389978	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	200410	22.0288 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 88.12%		
43) 1,2-Dichloroethane-d4	10.23	65	208787	20.1273 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 80.52%		
57) Toluene-d8	12.47	98	735244	24.9856 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.96%		
78) p-Bromofluorobenzene	15.64	95	314986	26.2020 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.80%		

Target Compounds

					Qvalue
3) Chloromethane	3.72	50	3356	0.3217 ug/L	83
13) Acetone	6.34	43	1201	0.6084 ug/L #	49
18) Methyl acetate	6.99	43	194	Below Cal #	71
36) Tetrahydrofuran	9.60	42	2417	1.1470 ug/L #	67
97) Hexachlorobutadiene	19.68	225	1945	0.2894 ug/L	90

(#) = qualifier out of range (m) = manual integration
11M12595.D 8260WT.M Tue Jun 14 09:25:40 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061316\11M12595.D Vial: 4
Acq On : 13 Jun 2016 18:05 Operator: JDS
Sample : WG572509-01 BLANK STD 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 9:25 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

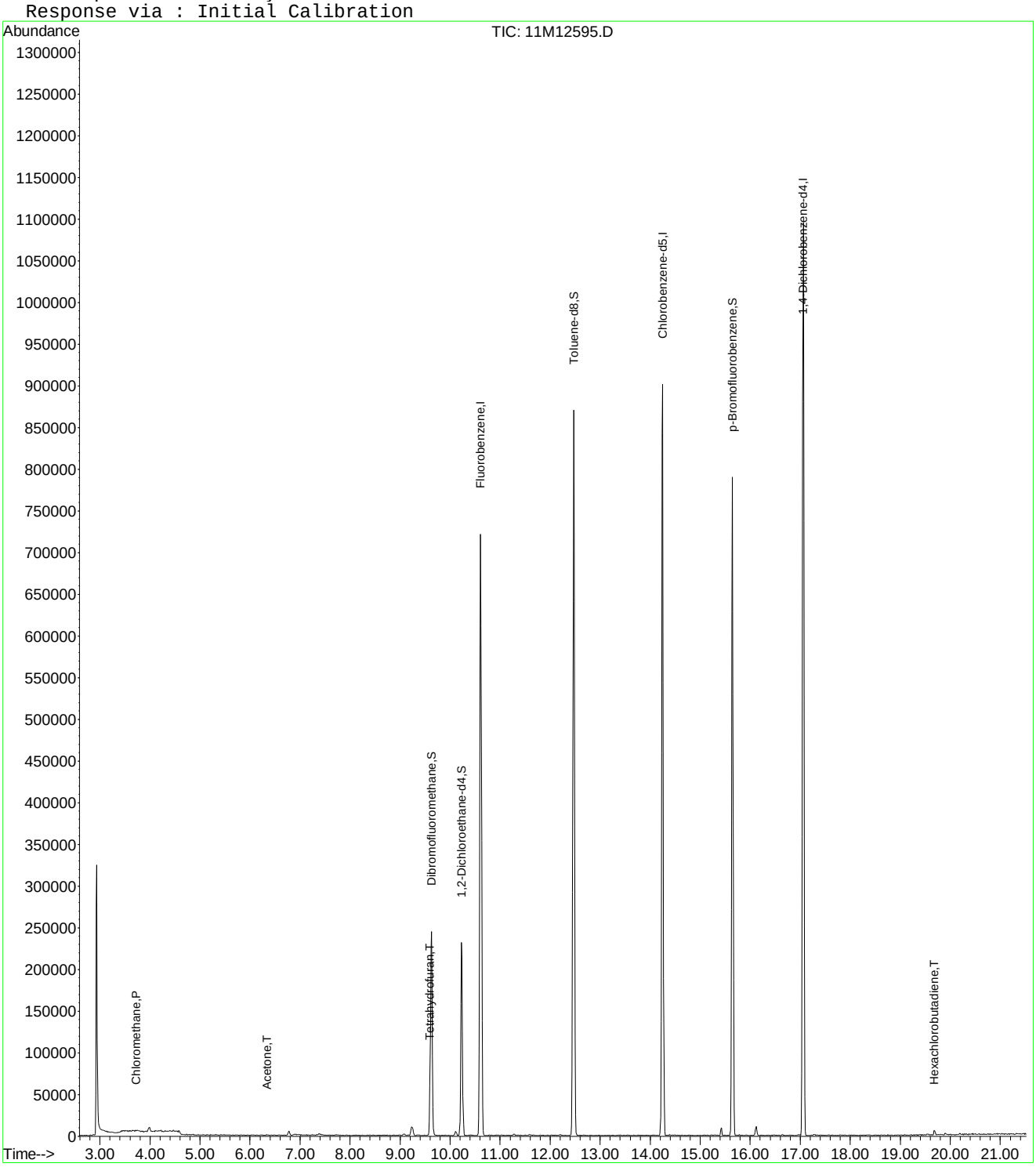

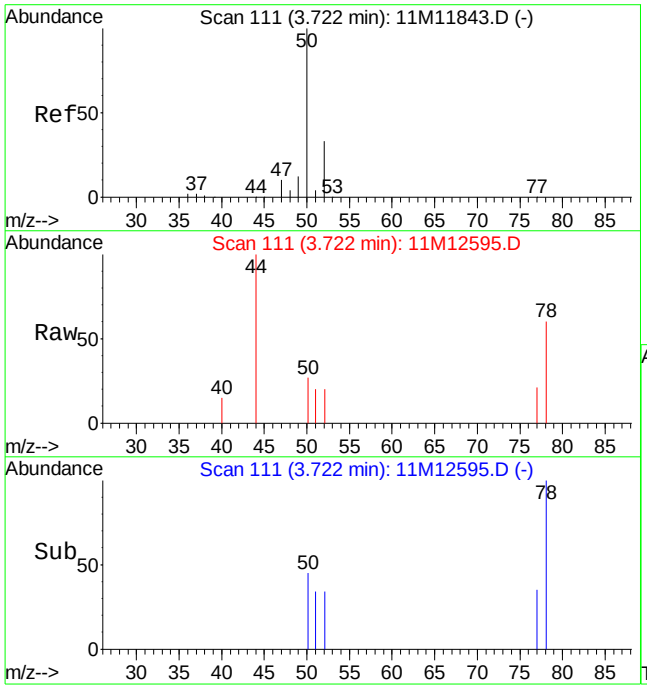

#3
Chloromethane
Concen: 0.32 ug/L
RT: 3.72 min Scan# 111
Delta R.T. 0.00 min
Lab File: 11M12595.D
Acq: 13 Jun 2016 18:05

Tgt Ion: 50 Resp: 3356

Ion	Ratio	Lower	Upper
50	100		
52	23.5	20.0	46.6

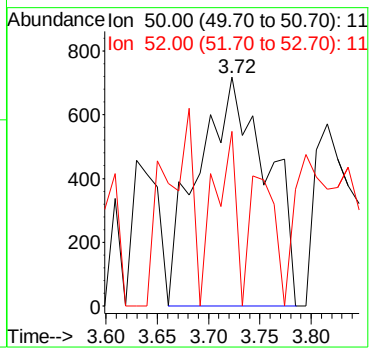

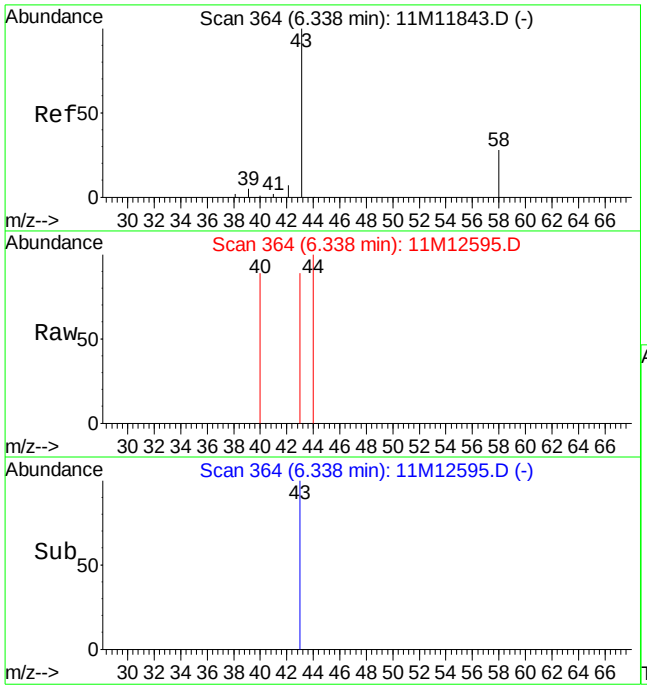

#13
Acetone
Concen: 0.61 ug/L
RT: 6.34 min Scan# 364
Delta R.T. 0.00 min
Lab File: 11M12595.D
Acq: 13 Jun 2016 18:05

Tgt Ion: 43 Resp: 1201

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

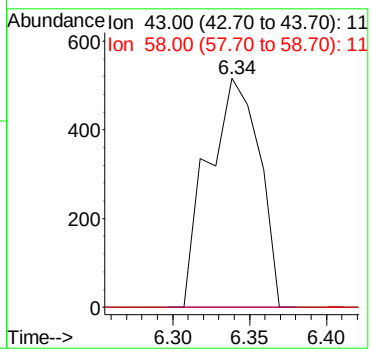

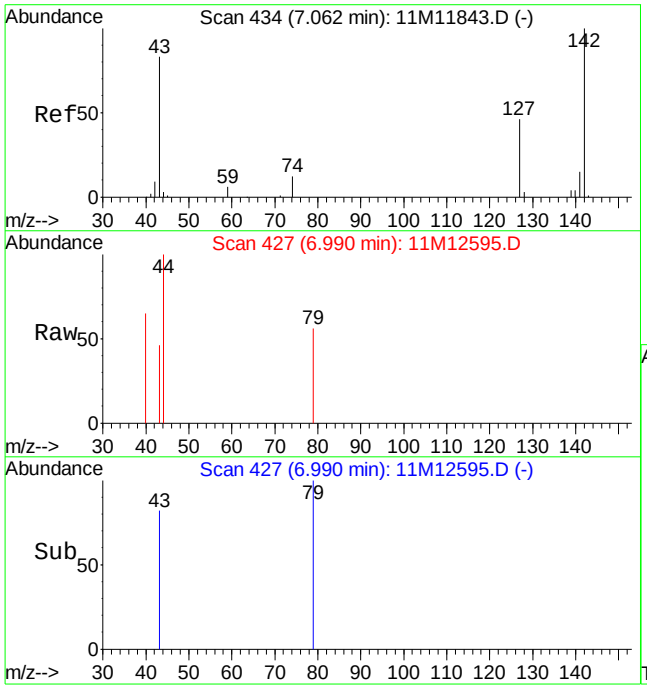

#18
Methyl acetate
Concen: Below Cal
RT: 6.99 min Scan# 427
Delta R.T. -0.07 min
Lab File: 11M12595.D
Acq: 13 Jun 2016 18:05

Tgt Ion: 43 Resp: 194

Ion	Ratio	Lower	Upper
43	100		
74	0.0	8.2	19.0#
59	0.0	3.9	9.1#

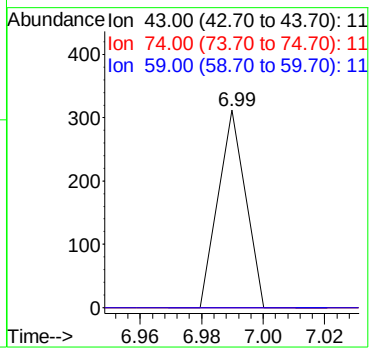

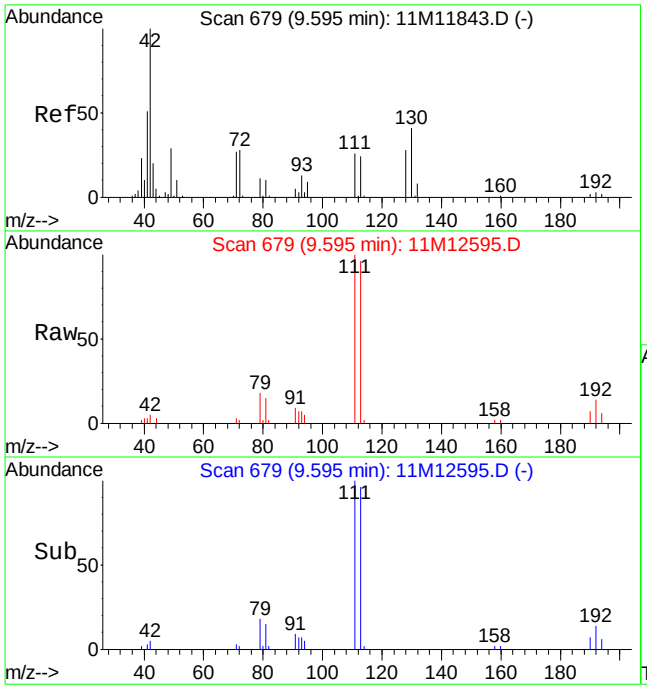

#36
Tetrahydrofuran
Concen: 1.15 ug/L
RT: 9.60 min Scan# 679
Delta R.T. 0.00 min
Lab File: 11M12595.D
Acq: 13 Jun 2016 18:05

Tgt Ion: 42 Resp: 2417

Ion	Ratio	Lower	Upper
42	100		
71	42.4	16.4	38.2#
72	8.2	16.6	38.8#

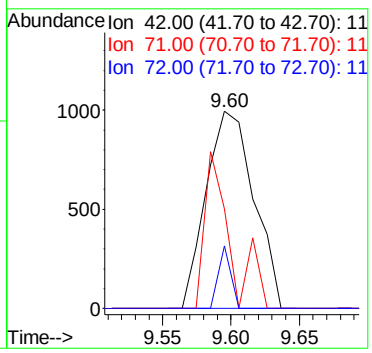

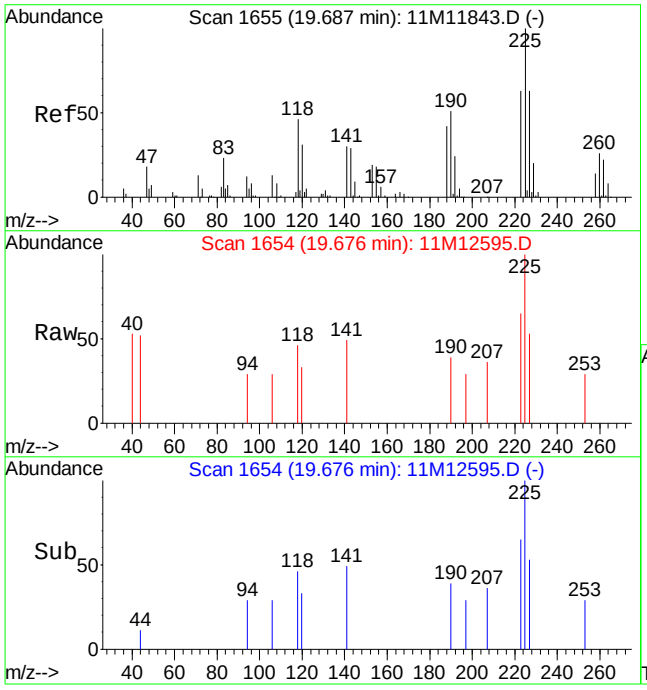

#97
Hexachlorobutadiene
Concen: 0.29 ug/L
RT: 19.68 min Scan# 1654
Delta R.T. -0.01 min
Lab File: 11M12595.D
Acq: 13 Jun 2016 18:05

Tgt Ion:225 Resp: 1945

Ion	Ratio	Lower	Upper
225	100		
227	57.4	38.3	89.3
118	38.8	28.7	66.9

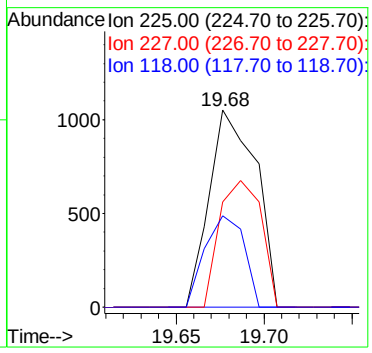

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412974.D Vial: 4
Acq On : 14 Jun 2016 10:54 Operator: TMB
Sample : WG572592-01 VBLK0614 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 12:48:03 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	818923	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	597833	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	333089	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	235191	26.7304 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.92%		
43) 1,2-Dichloroethane-d4	10.30	65	251220	26.6283 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 106.52%		
58) Toluene-d8	12.68	98	827015	26.4325 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.72%		
80) p-Bromofluorobenzene	16.08	95	340654	24.6989 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.80%		

Target Compounds					Qvalue
36) Tetrahydrofuran	9.63	42	238	0.2669 ug/L #	28

(#) = qualifier out of range (m) = manual integration
8M412974.D 8260WT.M Tue Jun 14 12:48:06 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412974.D Vial: 4
Acq On : 14 Jun 2016 10:54 Operator: TMB
Sample : WG572592-01 VBLK0614 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 12:48 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

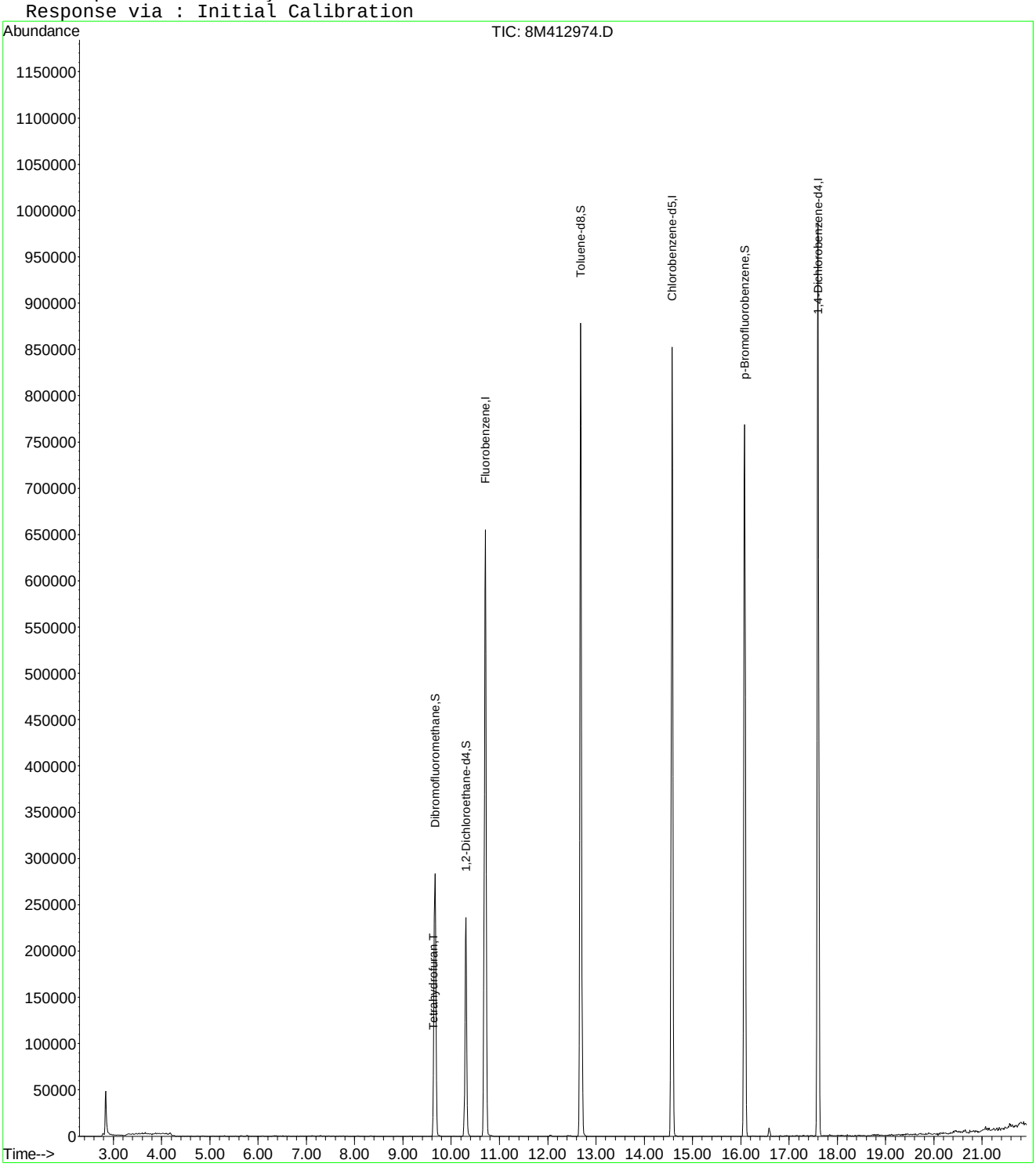

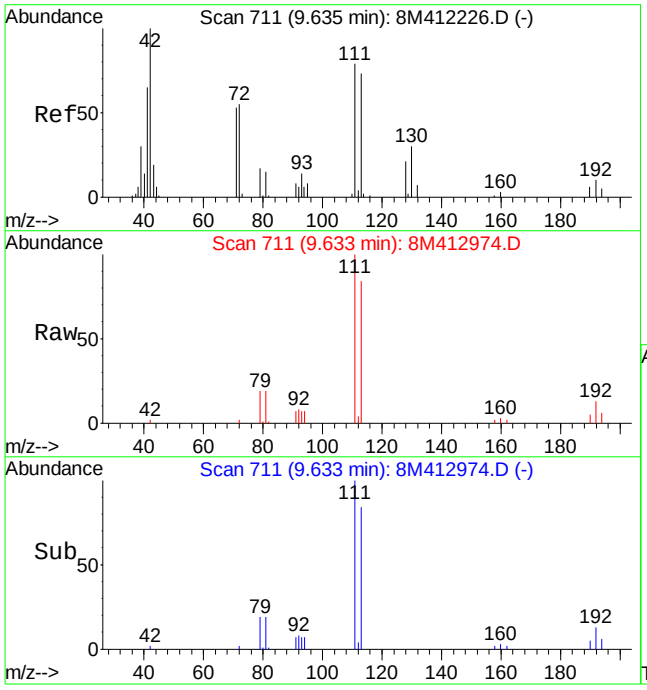

#36
Tetrahydrofuran
Concen: 0.27 ug/L
RT: 9.63 min Scan# 711
Delta R.T. -0.00 min
Lab File: 8M412974.D
Acq: 14 Jun 2016 10:54

Tgt Ion: 42 Resp: 238

Ion	Ratio	Lower	Upper
42	100		
72	127.7	33.8	78.8#
71	86.1	32.0	74.8#

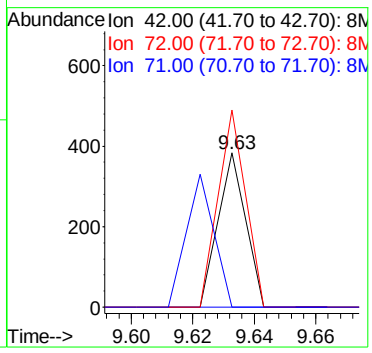

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061316\11M12596.D Vial: 5
Acq On : 13 Jun 2016 18:37 Operator: JDS
Sample : WG572509-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 09:21:56 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	835829	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	686435	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	392010	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	207450	22.6784 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 90.72%		
43) 1,2-Dichloroethane-d4	10.23	65	211303	20.2589 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 81.04%		
57) Toluene-d8	12.47	98	736565	24.6957 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.80%		
78) p-Bromofluorobenzene	15.64	95	316159	26.1632 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.64%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	239148	18.2613 ug/L	94
3) Chloromethane	3.72	50	187391	17.8665 ug/L	98
4) Vinyl Chloride	3.96	62	174685	20.0554 ug/L	99
5) 1,3-Butadiene	4.00	54	40351	4.6590 ug/L	95
6) Bromomethane	4.85	94	115015	19.2053 ug/L	100
7) Chloroethane	5.00	64	116028	20.7326 ug/L	100
8) Trichlorofluoromethane	5.48	101	306533	17.6566 ug/L	100
9) Diethyl ether	6.01	59	216342	33.6949 ug/L	92
10) Isoprene	6.04	67	220473	20.6036 ug/L	89
11) Acrolein	6.23	56	46927	55.4225 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	157531	18.7002 ug/L	93
13) Acetone	6.34	43	27877	14.0458 ug/L	95
14) 1,1-Dichloroethene	6.56	61	261530	17.0920 ug/L	92
15) Tert-Butyl Alcohol	6.66	59	58970	107.4167 ug/L	92
16) Dimethyl Sulfide	6.81	62	201208	32.9270 ug/L	82
17) Iodomethane	7.06	142	186828	27.7982 ug/L	91
18) Methyl acetate	7.07	43	85509	12.8988 ug/L	91
19) Methylene Chloride	7.31	84	154534	19.5144 ug/L	76
20) Carbon Disulfide	7.36	76	451072	17.6087 ug/L	100
21) Acrylonitrile	7.49	53	43758	16.4438 ug/L	100
22) Methyl Tert Butyl Ether	7.52	73	382330	19.3574 ug/L	95
23) trans-1,2-Dichloroethene	7.74	96	167565	19.7869 ug/L	90
24) n-Hexane	7.82	57	225746	16.0050 ug/L	98
25) Diisopropyl ether	8.15	45	2295572	65.2238 ug/L	97
26) Vinyl Acetate	8.31	43	155535	13.2632 ug/L	98
27) 1,1-Dichloroethane	8.34	63	300505	17.6851 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	2021596	70.5718 ug/L	97
29) 2-Butanone	8.87	43	42975	14.3227 ug/L	91
30) Propionitrile	8.97	54	61798	70.3201 ug/L	99
31) 2,2-Dichloropropane	9.09	77	241344	18.1534 ug/L	99
32) cis-1,2-Dichloroethene	9.15	96	190376	20.3887 ug/L	87
33) Chloroform	9.35	83	304488	18.2475 ug/L	98
34) 1-Bromopropane	9.48	122	45441	27.6807 ug/L	95
35) Bromochloromethane	9.57	130	113685	20.5009 ug/L	86
36) Tetrahydrofuran	9.60	42	120064	56.6663 ug/L	87
38) 1,1,1-Trichloroethane	9.85	97	306740	18.6800 ug/L	96
39) Cyclohexane	9.88	56	311462	17.4043 ug/L	93
40) 1,1-Dichloropropene	10.04	75	222040	18.9380 ug/L	98
41) Carbon Tetrachloride	10.18	117	292309	18.2298 ug/L	98
42) Tert-Amyl-Methyl ether	10.13	73	1776469	89.2470 ug/L	94

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061316\11M12596.D Vial: 5
Acq On : 13 Jun 2016 18:37 Operator: JDS
Sample : WG572509-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 09:21:56 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.34	62	242409	17.8865 ug/L	97
45) Benzene	10.38	78	621900	19.3759 ug/L	99
46) Trichloroethene	11.08	130	225058	21.5726 ug/L	97
47) Methylcyclohexane	11.17	83	241732	18.7751 ug/L	92
48) 1,2-Dichloropropane	11.29	63	169447	19.0716 ug/L	98
49) 1,4-Dioxane	11.56	88	2870	73.9299 ug/L	89
50) Bromodichloromethane	11.57	83	235291	18.8643 ug/L	98
51) Dibromomethane	11.65	93	86209	18.6200 ug/L	93
52) 2-Chloroethyl Vinyl Ether	11.84	63	67247	15.3569 ug/L	94
53) 4-Methyl-2-Pentanone	11.87	58	41241	16.6981 ug/L	93
54) cis-1,3-Dichloropropene	12.17	75	267968	21.4797 ug/L	100
55) Dimethyl Disulfide	12.42	79	139941	18.6410 ug/L	90
58) Toluene	12.56	91	724851	20.8590 ug/L	100
59) Ethyl Methacrylate	12.64	69	145473	19.6051 ug/L	81
60) trans-1,3-Dichloropropene	12.73	75	221528	19.8607 ug/L	97
61) 1,1,2-Trichloroethane	12.93	97	125290	20.3327 ug/L	99
62) 2-Hexanone	12.86	43	64451	14.2414 ug/L	88
63) 1,3-Dichloropropane	13.21	76	219533	22.1855 ug/L	85
64) Tetrachloroethene	13.34	164	171175	21.1823 ug/L	95
65) Dibromochloromethane	13.59	129	190311	20.2486 ug/L	100
66) 1,2-Dibromoethane	13.82	107	127648	20.6762 ug/L	100
67) 1-Chlorohexane	13.89	91	221841	19.3631 ug/L	87
68) Chlorobenzene	14.29	112	541159	21.2578 ug/L	100
69) 1,1,1,2-Tetrachloroethane	14.32	131	206849	20.0810 ug/L	99
70) Ethylbenzene	14.31	106	271834	20.8240 ug/L	97
71) m-,p-Xylene	14.39	106	674382	42.4949 ug/L	97
72) o-Xylene	14.92	106	327389	21.1979 ug/L	98
73) Styrene	14.95	104	546109	21.4018 ug/L	96
74) Bromoform	15.43	173	109625	19.2445 ug/L	100
75) Isopropylbenzene	15.31	105	862019	21.1052 ug/L	100
77) 1,1,2,2-Tetrachloroethane	15.52	83	110136	18.0416 ug/L	98
79) 1,2,3-Trichloropropane	15.70	110	44640	19.7120 ug/L	86
80) trans-1,4-Dichloro-2-Buten	15.74	53	26384	9.5770 ug/L #	3
81) n-Propylbenzene	15.79	91	986632	21.7325 ug/L	98
82) Bromobenzene	15.91	156	252798	21.2206 ug/L	91
83) 1,3,5-Trimethylbenzene	15.95	105	743687	21.4665 ug/L	98
84) 2-Chlorotoluene	16.05	91	674090	21.1990 ug/L	98
85) 4-Chlorotoluene	16.09	91	595089	20.8924 ug/L	97
86) a-Methylstyrene	16.34	118	403726	22.0901 ug/L	98
87) tert-Butylbenzene	16.39	134	160294	21.8391 ug/L	94
88) 1,2,4-Trimethylbenzene	16.44	105	741694	21.0243 ug/L	98
89) sec-Butylbenzene	16.65	105	869789	20.9090 ug/L	99
90) p-Isopropyltoluene	16.79	119	798138	20.8887 ug/L	99
91) 1,3-Dichlorobenzene	16.98	146	487491	21.1878 ug/L	97
92) 1,4-Dichlorobenzene	17.10	146	502186	21.5332 ug/L	98
93) n-Butylbenzene	17.28	91	644690	19.1478 ug/L	97
94) 1,2-Dichlorobenzene	17.57	146	446258	21.2917 ug/L	98
95) 1,2-Dibromo-3-Chloropropan	18.49	75	18068	13.6026 ug/L	93
96) 1,2,4-Trichlorobenzene	19.55	180	310468	20.2435 ug/L	99
97) Hexachlorobutadiene	19.69	225	124882	18.4832 ug/L	94
98) Naphthalene	19.90	128	500960	17.5981 ug/L	100
99) 1,2,3-Trichlorobenzene	20.19	180	267207	18.9840 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M12596.D 8260WT.M Tue Jun 14 09:21:57 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061316\11M12596.D Vial: 5
Acq On : 13 Jun 2016 18:37 Operator: JDS
Sample : WG572509-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 9:21 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

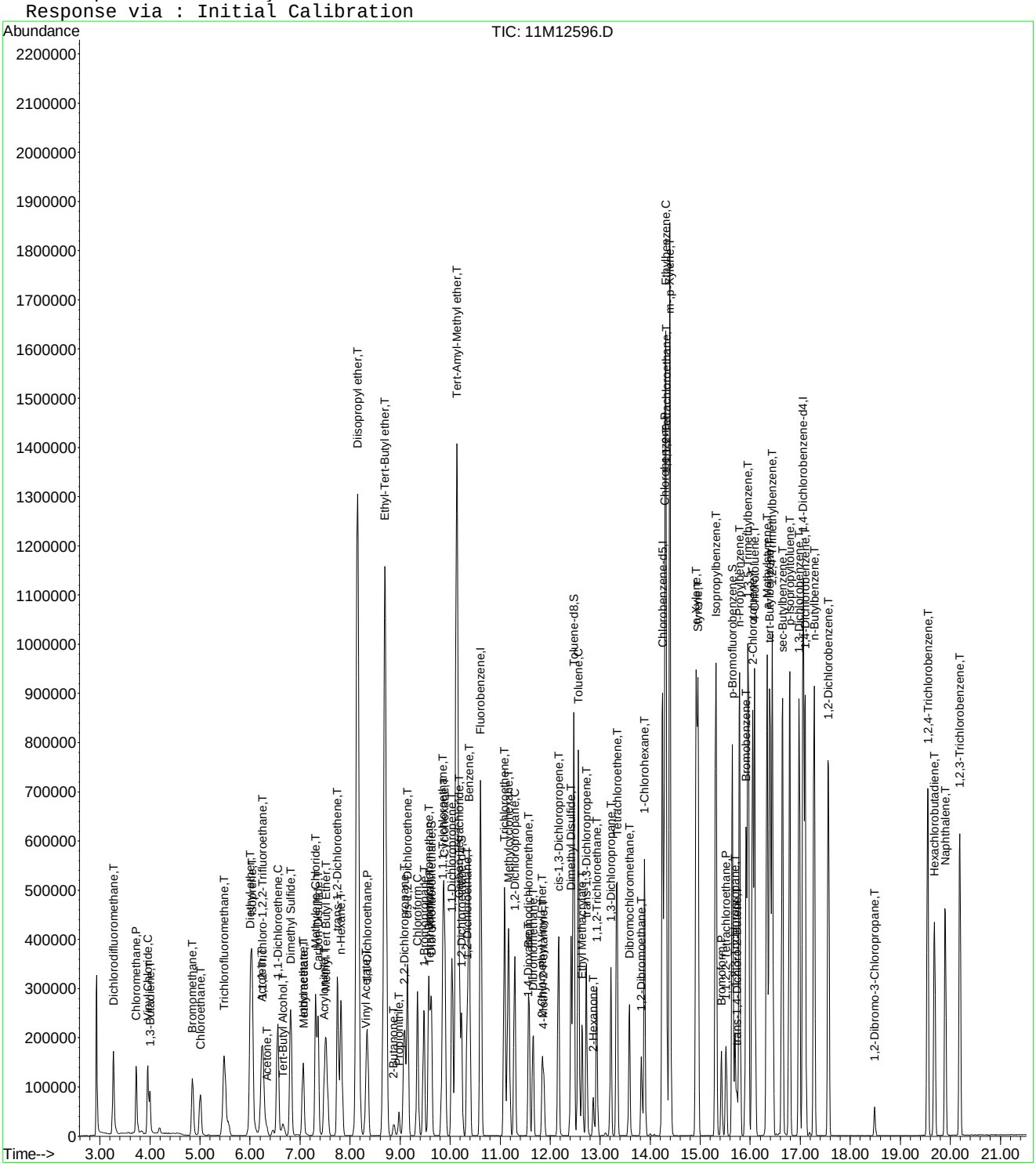

11M12596.D 8260WT.M Tue Jun 14 09:21:57 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412977.D Vial: 7
Acq On : 14 Jun 2016 12:21 Operator: TMB
Sample : WG572592-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 12:48:43 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	789634	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	583790	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	328956	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	228147	26.8916 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.56%		
43) 1,2-Dichloroethane-d4	10.31	65	248944	27.3658 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 109.48%		
58) Toluene-d8	12.68	98	808917	26.4760 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.92%		
80) p-Bromofluorobenzene	16.07	95	332263	24.3932 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.56%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	300808	22.7214 ug/L	99
3) Chloromethane	3.61	50	164125	21.2381 ug/L	99
4) Vinyl Chloride	3.84	62	225832	24.6309 ug/L	99
5) 1,3-Butadiene	3.88	54	43045	5.5983 ug/L	97
6) Bromomethane	4.73	94	71561	13.6397 ug/L	96
7) Chloroethane	4.88	64	111225	22.0465 ug/L	99
8) Trichlorofluoromethane	5.37	101	379953	22.2712 ug/L	99
9) Diethyl ether	5.90	59	425634	104.5051 ug/L	98
10) Isoprene	5.93	67	233154	22.5049 ug/L	98
11) Acrolein	6.13	56	37981	104.1537 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.14	101	175380	21.8697 ug/L	92
13) Acetone	6.23	43	21940	24.6958 ug/L	91
14) 1,1-Dichloroethene	6.46	61	259784	20.3457 ug/L	98
15) Tert-Butyl Alcohol	6.58	59	59624	209.4284 ug/L	97
16) Dimethyl Sulfide	6.72	62	174226	38.1621 ug/L	99
17) Iodomethane	6.98	142	65943	20.5666 ug/L	100
18) Methyl acetate	7.00	43	48265	20.0982 ug/L	98
19) Methylene Chloride	7.25	84	163093	20.0714 ug/L	99
20) Carbon Disulfide	7.29	76	512380	19.1756 ug/L	100
21) Acrylonitrile	7.43	53	23781	20.6307 ug/L	94
22) Methyl Tert Butyl Ether	7.46	73	397722	22.6154 ug/L	100
23) trans-1,2-Dichloroethene	7.70	61	246939	21.0510 ug/L	99
24) n-Hexane	7.78	57	169650	19.4762 ug/L	97
25) Diisopropyl ether	8.13	45	1927712	105.4249 ug/L	97
26) Vinyl Acetate	8.29	43	133626	15.9612 ug/L	100
27) 1,1-Dichloroethane	8.32	63	296874	20.3783 ug/L	100
28) Ethyl-Tert-Butyl ether	8.69	59	2048889	104.5828 ug/L	98
29) 2-Butanone	8.88	43	27097	20.7594 ug/L	100
30) Propionitrile	8.99	54	41312	108.6061 ug/L	100
31) 2,2-Dichloropropane	9.10	77	352699	22.9738 ug/L	99
32) cis-1,2-Dichloroethene	9.16	96	191196	21.0941 ug/L	100
33) Chloroform	9.38	83	369726	21.4943 ug/L	100
34) 1-Bromopropane	9.51	122	40738	31.3779 ug/L	97
35) Bromochloromethane	9.60	130	97863	21.0550 ug/L	95
36) Tetrahydrofuran	9.62	42	79612	92.6039 ug/L	98
38) 1,1,1-Trichloroethane	9.91	97	371800	22.7553 ug/L	100
39) Cyclohexane	9.93	56	229989	20.3315 ug/L	96
40) 1,1-Dichloropropene	10.10	75	262245	21.0573 ug/L	99
41) Tert-Amyl-Methyl ether	10.20	73	1956280	109.9430 ug/L	99
42) Carbon Tetrachloride	10.24	117	322240	22.2099 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M412977.D 8260WT.M Tue Jun 14 12:48:45 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412977.D Vial: 7
Acq On : 14 Jun 2016 12:21 Operator: TMB
Sample : WG572592-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 12:48:43 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.42	62	252836	22.8372 ug/L	97
46)	Benzene	10.46	78	684839	21.1135 ug/L	100
47)	Trichloroethene	11.22	130	196590	22.7244 ug/L	98
48)	Methylcyclohexane	11.30	83	281836	21.4446 ug/L	99
49)	1,2-Dichloropropane	11.42	63	151922	21.0400 ug/L	93
50)	Bromodichloromethane	11.72	83	282235	22.2391 ug/L	100
51)	1,4-Dioxane	11.72	88	7558	208.3738 ug/L	94
52)	Dibromomethane	11.81	93	84703	19.8170 ug/L	98
53)	2-Chloroethyl Vinyl Ether	12.02	63	64236	20.6979 ug/L	94
54)	4-Methyl-2-Pentanone	12.05	58	25847	20.3883 ug/L	91
55)	cis-1,3-Dichloropropene	12.36	75	303145	23.4676 ug/L	98
56)	Dimethyl Disulfide	12.62	79	153043	22.1976 ug/L	91
59)	Toluene	12.79	91	737048	20.3365 ug/L	100
60)	Ethyl Methacrylate	12.88	69	148536	21.3406 ug/L	99
62)	trans-1,3-Dichloropropene	12.96	75	258189	21.2578 ug/L	99
63)	1,1,2-Trichloroethane	13.17	97	114373	19.9989 ug/L	98
64)	2-Hexanone	13.12	58	24370	20.2780 ug/L #	95
65)	1,3-Dichloropropane	13.48	76	217003	21.3123 ug/L	99
66)	Tetrachloroethene	13.60	164	160734	20.6999 ug/L	96
67)	Dibromochloromethane	13.86	129	171176	20.4990 ug/L	100
68)	1,2-Dibromoethane	14.12	107	113723	19.9524 ug/L	98
69)	1-Chlorohexane	14.21	91	256011	20.6936 ug/L	99
70)	Chlorobenzene	14.63	112	506153	20.7105 ug/L	99
71)	1,1,1,2-Tetrachloroethane	14.66	131	198120	20.9248 ug/L	100
72)	Ethylbenzene	14.66	106	264089	19.7501 ug/L	96
73)	m-,p-Xylene	14.74	106	653046	41.6376 ug/L	96
74)	o-Xylene	15.31	106	330056	21.5246 ug/L	100
75)	Styrene	15.34	104	535687	21.2997 ug/L	98
76)	Bromoform	15.84	173	100112	20.2125 ug/L	98
77)	Isopropylbenzene	15.73	105	887039	21.7758 ug/L	99
79)	1,1,2,2-Tetrachloroethane	15.95	83	117162	17.7434 ug/L	100
81)	1,2,3-Trichloropropane	16.15	110	38260	18.8161 ug/L	82
82)	trans-1,4-Dichloro-2-Buten	16.19	53	34037	16.8349 ug/L	92
83)	n-Propylbenzene	16.24	91	1056135	20.5791 ug/L	100
84)	Bromobenzene	16.36	156	206447	19.5572 ug/L	97
85)	1,3,5-Trimethylbenzene	16.42	105	767927	20.5416 ug/L	100
86)	2-Chlorotoluene	16.51	91	659331	18.4012 ug/L	92
87)	4-Chlorotoluene	16.56	91	717563	22.1705 ug/L	91
88)	a-Methylstyrene	16.83	118	386327	21.7815 ug/L	99
89)	tert-Butylbenzene	16.89	134	146756	20.0660 ug/L	99
90)	1,2,4-Trimethylbenzene	16.94	105	768345	19.9878 ug/L	100
91)	sec-Butylbenzene	17.16	105	891437	20.2693 ug/L	99
92)	p-Isopropyltoluene	17.32	119	743909	19.9214 ug/L	100
93)	1,3-Dichlorobenzene	17.51	146	412440	20.2910 ug/L	99
94)	1,4-Dichlorobenzene	17.64	146	416220	20.3109 ug/L	100
95)	n-Butylbenzene	17.84	91	710572	19.2479 ug/L	98
96)	1,2-Dichlorobenzene	18.14	146	365176	20.2000 ug/L	98
97)	1,2-Dibromo-3-Chloropropan	19.13	75	25929	19.5622 ug/L	100
98)	1,2,4-Trichlorobenzene	20.28	180	263147	19.4739 ug/L	99
99)	Hexachlorobutadiene	20.42	225	131850	20.8832 ug/L	98
100)	Naphthalene	20.64	128	339159	16.8936 ug/L	100
101)	1,2,3-Trichlorobenzene	20.95	180	212625	18.6510 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061416\8M412977.D Vial: 7
Acq On : 14 Jun 2016 12:21 Operator: TMB
Sample : WG572592-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 14 12:48 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

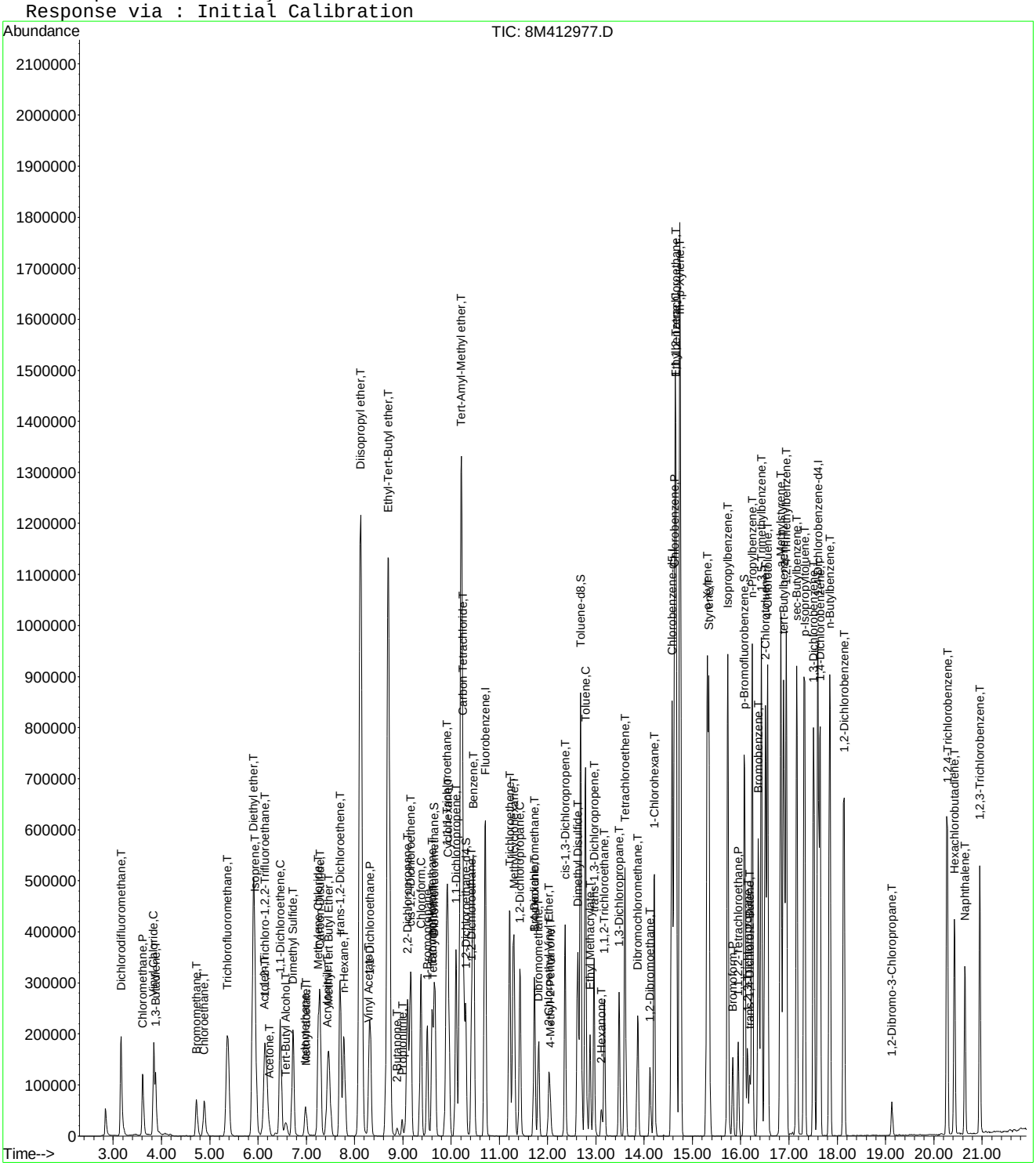

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061316\11M12597.D Vial: 6
Acq On : 13 Jun 2016 19:09 Operator: JDS
Sample : WG572509-03 20ug/L LCS2 STD 8260 Inst : hpms11
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 09:21:58 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	811546	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	675005	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	393247	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	203369	22.8975 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 91.60%		
43) 1,2-Dichloroethane-d4	10.23	65	206050	20.3464 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 81.40%		
57) Toluene-d8	12.47	98	725967	24.7526 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.00%		
78) p-Bromofluorobenzene	15.64	95	311277	25.6782 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.72%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	235956	18.5566 ug/L	94
3) Chloromethane	3.72	50	181682	17.8405 ug/L	98
4) Vinyl Chloride	3.95	62	172170	20.3581 ug/L	99
5) 1,3-Butadiene	3.99	54	38124	4.5336 ug/L	97
6) Bromomethane	4.85	94	112157	19.2885 ug/L	99
7) Chloroethane	5.00	64	108058	19.8862 ug/L	97
8) Trichlorofluoromethane	5.48	101	298738	17.7225 ug/L	99
9) Diethyl ether	6.01	59	212447	34.0783 ug/L	92
10) Isoprene	6.04	67	215996	20.7892 ug/L	88
11) Acrolein	6.23	56	47938	58.2321 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	156369	19.1177 ug/L	93
13) Acetone	6.34	43	27266	14.1490 ug/L	95
14) 1,1-Dichloroethene	6.56	61	258353	17.3896 ug/L	92
15) Tert-Butyl Alcohol	6.66	59	99278	186.2507 ug/L	92
16) Dimethyl Sulfide	6.81	62	193984	32.6947 ug/L	86
17) Iodomethane	7.06	142	200008	30.4246 ug/L	93
18) Methyl acetate	7.06	43	88158	13.7705 ug/L	91
19) Methylene Chloride	7.31	84	151846	19.7487 ug/L	77
20) Carbon Disulfide	7.36	76	445510	17.9120 ug/L	100
21) Acrylonitrile	7.49	53	43064	16.6672 ug/L	98
22) Methyl Tert Butyl Ether	7.52	73	373193	19.4601 ug/L	96
23) trans-1,2-Dichloroethene	7.74	96	162935	19.8158 ug/L	91
24) n-Hexane	7.82	57	218519	15.9562 ug/L	97
25) Diisopropyl ether	8.15	45	2248080	65.7857 ug/L	97
26) Vinyl Acetate	8.31	43	142888	12.6802 ug/L	97
27) 1,1-Dichloroethane	8.34	63	290331	17.5976 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	1974847	71.0026 ug/L	98
29) 2-Butanone	8.87	43	43327	14.8721 ug/L	89
30) Propionitrile	8.97	54	67653	79.2860 ug/L	97
31) 2,2-Dichloropropane	9.09	77	239385	18.5449 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	183360	20.2249 ug/L	89
33) Chloroform	9.35	83	293245	18.0996 ug/L	100
34) 1-Bromopropane	9.48	122	44836	28.1192 ug/L	100
35) Bromochloromethane	9.57	130	112530	20.8998 ug/L	85
36) Tetrahydrofuran	9.60	42	123327	59.9480 ug/L	89
38) 1,1,1-Trichloroethane	9.85	97	297927	18.6862 ug/L	95
39) Cyclohexane	9.88	56	308995	17.7830 ug/L	94
40) 1,1-Dichloropropene	10.04	75	216984	19.0605 ug/L	98
41) Carbon Tetrachloride	10.18	117	288494	18.5302 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	1713965	88.6834 ug/L	95

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061316\11M12597.D Vial: 6
Acq On : 13 Jun 2016 19:09 Operator: JDS
Sample : WG572509-03 20ug/L LCS2 STD 8260 Inst : hpms11
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 09:21:58 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.34	62	237001	18.0108 ug/L	97
45) Benzene	10.38	78	607564	19.4956 ug/L	99
46) Trichloroethene	11.08	130	220147	21.7333 ug/L	97
47) Methylcyclohexane	11.17	83	234566	18.7636 ug/L	92
48) 1,2-Dichloropropane	11.29	63	167105	19.3708 ug/L	97
49) 1,4-Dioxane	11.56	88	7810	165.2289 ug/L	98
50) Bromodichloromethane	11.57	83	233234	19.2589 ug/L	98
51) Dibromomethane	11.65	93	84351	18.7639 ug/L	93
52) 2-Chloroethyl Vinyl Ether	11.84	63	64281	15.1188 ug/L	98
53) 4-Methyl-2-Pentanone	11.87	58	40731	16.9850 ug/L	92
54) cis-1,3-Dichloropropene	12.17	75	265193	21.8933 ug/L	98
55) Dimethyl Disulfide	12.42	79	137059	18.8034 ug/L	89
58) Toluene	12.56	91	707778	20.7126 ug/L	100
59) Ethyl Methacrylate	12.64	69	140323	19.2313 ug/L	81
60) trans-1,3-Dichloropropene	12.73	75	214918	19.5944 ug/L	97
61) 1,1,2-Trichloroethane	12.93	97	123169	20.3270 ug/L	98
62) 2-Hexanone	12.86	43	64762	14.5524 ug/L #	91
63) 1,3-Dichloropropane	13.21	76	208929	21.4714 ug/L	86
64) Tetrachloroethene	13.34	164	168809	21.2432 ug/L	95
65) Dibromochloromethane	13.59	129	188657	20.4125 ug/L	98
66) 1,2-Dibromoethane	13.82	107	124827	20.5616 ug/L	100
67) 1-Chlorohexane	13.89	91	213591	18.9587 ug/L	89
68) Chlorobenzene	14.29	112	529813	21.1645 ug/L	100
69) 1,1,1,2-Tetrachloroethane	14.32	131	200235	19.7681 ug/L	100
70) Ethylbenzene	14.31	106	268671	20.9302 ug/L	96
71) m-,p-Xylene	14.39	106	659578	42.2658 ug/L	97
72) o-Xylene	14.92	106	324855	21.3900 ug/L	97
73) Styrene	14.95	104	540178	21.5278 ug/L	96
74) Bromoform	15.43	173	107885	19.2597 ug/L	100
75) Isopropylbenzene	15.31	105	844403	21.0240 ug/L	100
77) 1,1,2,2-Tetrachloroethane	15.52	83	107026	17.4770 ug/L	97
79) 1,2,3-Trichloropropane	15.70	110	44503	19.5919 ug/L	79
80) trans-1,4-Dichloro-2-Buten	15.74	53	24425	8.8954 ug/L #	1
81) n-Propylbenzene	15.79	91	963686	21.1603 ug/L	98
82) Bromobenzene	15.92	156	249380	20.8678 ug/L	90
83) 1,3,5-Trimethylbenzene	15.95	105	730923	21.0317 ug/L	98
84) 2-Chlorotoluene	16.05	91	667399	20.9225 ug/L	98
85) 4-Chlorotoluene	16.09	91	585424	20.4884 ug/L	99
86) a-Methylstyrene	16.34	118	390910	21.3216 ug/L	96
87) tert-Butylbenzene	16.39	134	161194	21.8927 ug/L	90
88) 1,2,4-Trimethylbenzene	16.44	105	730811	20.6506 ug/L	98
89) sec-Butylbenzene	16.65	105	867497	20.7883 ug/L	99
90) p-Isopropyltoluene	16.79	119	780882	20.3728 ug/L	99
91) 1,3-Dichlorobenzene	16.98	146	483328	20.9408 ug/L	97
92) 1,4-Dichlorobenzene	17.10	146	487700	20.8462 ug/L	98
93) n-Butylbenzene	17.28	91	632131	18.7157 ug/L	97
94) 1,2-Dichlorobenzene	17.57	146	439440	20.9005 ug/L	98
95) 1,2-Dibromo-3-Chloropropan	18.49	75	18945	14.1890 ug/L	100
96) 1,2,4-Trichlorobenzene	19.55	180	302766	19.6792 ug/L	98
97) Hexachlorobutadiene	19.69	225	123943	18.2866 ug/L	96
98) Naphthalene	19.90	128	496037	17.3703 ug/L	99
99) 1,2,3-Trichlorobenzene	20.19	180	264849	18.7572 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M12597.D 8260WT.M Tue Jun 14 09:21:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061316\11M12597.D Vial: 6
Acq On : 13 Jun 2016 19:09 Operator: JDS
Sample : WG572509-03 20ug/L LCS2 STD 8260 Inst : hpms11
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 9:21 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

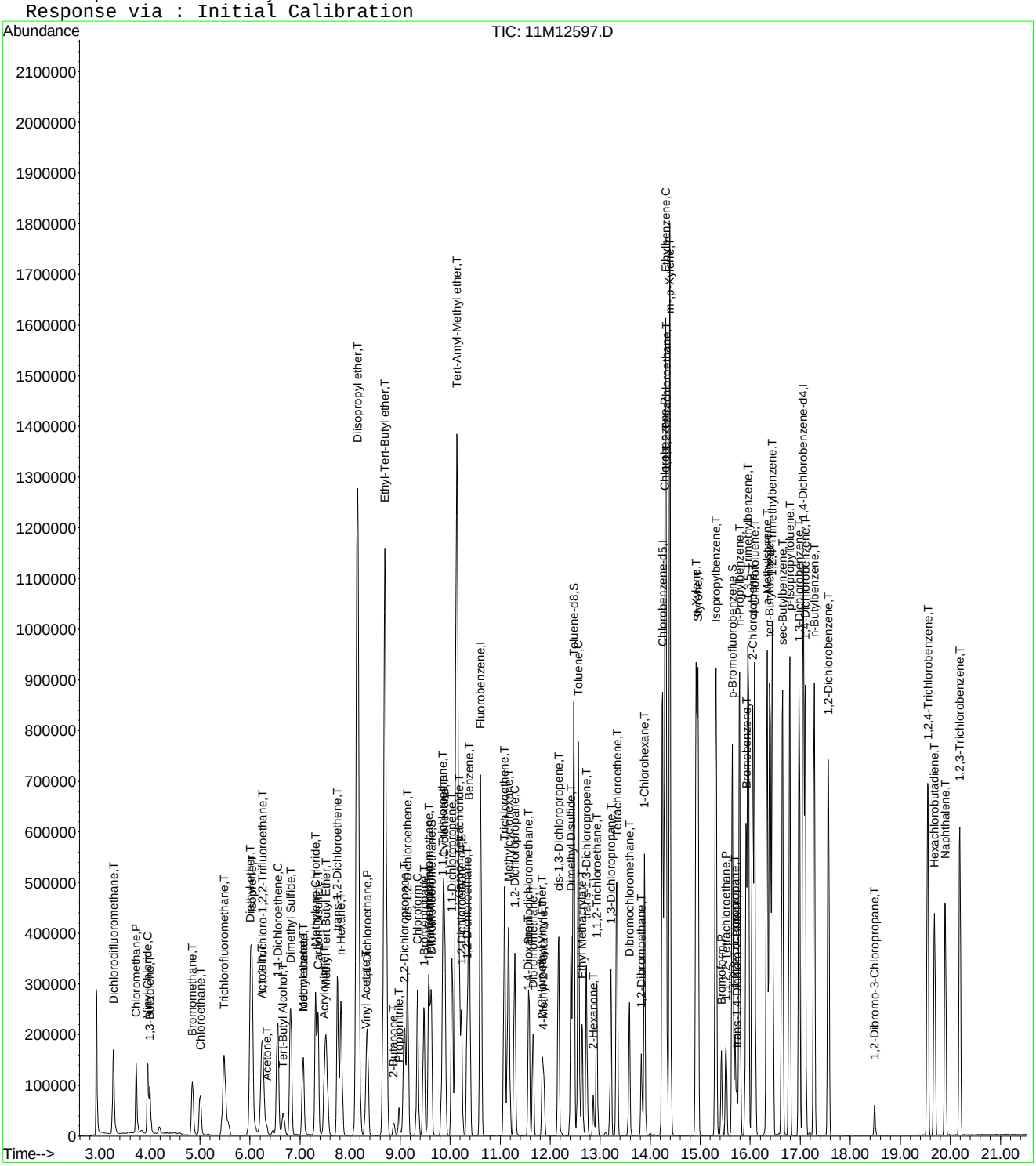

2.2 Semivolatiles Data

2.2.1 Semivolatiles GC/MS Data (Dioxane)

2.2.1.1 Summary Data

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW08SW-060816	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 12:17
Collect Date:	06/08/2016 08:00	**Dilution:**	1	**File ID:**	15M18406
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.39	J	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	50.1	20	129	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW08DW-060816	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 12:39
Collect Date:	06/08/2016 09:05	**Dilution:**	1	**File ID:**	15M18407
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	69.6	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	MW5-060816	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 13:02
Collect Date:	06/08/2016 10:10	**Dilution:**	1	**File ID:**	15M18408
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	0.819	J	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	38.5	20	129	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW03SW-060816	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 13:25
Collect Date:	06/08/2016 11:20	**Dilution:**	1	**File ID:**	15M18409
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.15	J	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	48.1	20	129	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.2.1.2 QC Summary Data

Example 8270 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:

	Example
Ax = Area of the characteristic ion for the compound being measured:	1261197
Cis = Concentration of the specific internal standard (ug/mL)	40
Ais = Area of the characteristic ion of the specific internal standard	608044
Cx = Concentration of the compound in the standard being measured (ug/mL)	50
RF = Calculated Response Factor	**1.65935**

2.0 Calculating the concentration (C) of a compound in water using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Vi)]

where:

	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Vi = Initial volume of sample extracted from prep log (mL)	1021
Cx = Concentration of the compound in the sample being measured (ug/mL)	0.016947
Cx = Concentration of the compound in the sample being measured (ug/L)	**16.947**

3.0 Calculating the concentration (C) of a compound in soil using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Wi)]

where:

	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Wi = Initial weight of sample extracted (g) from prep log	30
Cx = Concentration of the compound in the sample being measured (ug/g)	0.576763
Cx = Concentration of the compound in the sample being measured (ug/kg)	**576.7627**

Dry weight correction:

Percent solids (PCT_S)	50
Cd = (Cx) (100)/PCT_S	**1153.525** ug/kg

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve plot

b = intercept from curve plot

Step 2: Calculate y from Quantitation Report

y = 16790/784838 = 0.02139

Step 3: Solve for x

x = (y - b)/m = [(0.02139 -(- 0.0435)]/ 0.0783 = 0.829

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.829) = 20.72 ug/L

Example Spreadsheet Calculation:

Slope from curve, m:	0.0783	
Intercept from curve, b:	-0.0435	
Area of analyte, Ax:	16790	
Area of Internal Standard , Ais:	784484	
Concentration of IS, Cis	25.00	ug/L
Response Ratio (y) :	0.021403	
Amount Ratio:	0.828897	
Concentration (Cx):	20.72241	ug/L

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**0.0259**	
Value of B from plot:	**0.0596**	
Value of C from plot:	**-0.0165**	
Area of analyte from quantitation report:	**203233**	
Area of IS from quantiation report:	**1425653**	
Response ratio, y:	**0.142554**	
C - y:	**-0.15905**	
Root 1 - Computed amount ratio , X1:	**-3.88278**	
Root 2 - Computed amount ratio , X2:	**1.581623**	use this solution
Concentration of IS, Cis:	**40.00**	
Concentration of analyte, Cx:	**63.26**	ug/L

Microbac Laboratories Inc.
Continuous Sample Extract Log

Workgroup: WG572341
Analyst: CPD
Spike Analyst: CPD
Method: 3520C
Run Date: 06/13/2016 16:16
SOP: EXB01 Revison 20
Spike Witness: AED
Surr Solution: STD74051

TIME ON: 16:55 OFF: 12:40 ON: 15:20 OFF: 11:00

CH2CL2 Lot #: COA18982
sodium sulfate Lot #: COA18814
1:1 H2SO4 Lot #: RGT36755

	SAMPLE #	Type	Reference	Prod	pH	Init Amnt	Surr Amnt	Spike Amnt	Spike Sol	Final Vol	Color
1	L16060497-01	RS01		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
2	L16060497-02	MS01	L16060497-01	827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD66388	1 mL	Transparent
3	L16060497-03	SD01	L16060497-01	827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD66388	1 mL	Transparent
4	L16060504-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
5	L16060504-02	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
6	L16060504-03	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
7	L16060504-04	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
8	L16060615-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
9	L16060615-02	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
10	L16060615-03	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
11	L16060615-04	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
12	L16060616-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
13	L16060616-02	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
14	L16060616-03	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
15	L16060637-03	SAMP		827-DIOX	<2	1000 mL	.05 mL			1 mL	Transparent
16	WG572341-01	BLANK		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
17	WG572341-02	LCS		827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD66388	1 mL	Transparent
18	WG572341-03	REF	L16060497-01	827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
19	WG572341-04	MS	L16060497-01	827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD66388	1 mL	Transparent
20	WG572341-05	MSD	L16060497-01	827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD66388	1 mL	Transparent

Analyst: Charlie Davis

Reviewer: Justin Hesson

EXTRACT - Modified 01/23/2009
PDF ID: 4809358
Report generated: 06/16/2016 08:25

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 061016
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG571947

Internal STD: STD75471 Surrogate STD: NA Calibration STD
CCV STD: STD74784 LCS STD: STD74214 MS/MSD STD:

Comments: L16051582-01, and L16060024-01,03,05 were already sent for re-extract due to QC contamination. L16060024s are being re-extracted as 827-SPE-DIOX only.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18332	BAKEOUT-IS CHECK	1	1		06/10/16 08:27
2	15M18333	BAKEOUT-IS CHECK	1	1		06/10/16 08:53
3	15M18334	WG571981-01 5PPM DFTPP STD	1	1	STD75016	06/10/16 09:13
4	15M18335	BAKEOUT-IS CHECK	1	1		06/10/16 09:31
5	15M18336	BAKEOUT-IS CHECK	1	1		06/10/16 09:53
6	15M18337	WG572230-01 5PPM DFTPP STD	1	1	STD75016	06/10/16 10:18
7	15M18338	WG572230-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 10:36
8	15M18339	WG572230-03 10 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 11:00
9	15M18340	WG572230-04 7.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 11:22
10	15M18341	WG572230-05 2.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 11:45
11	15M18342	WG572230-06 1 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 12:08
12	15M18343	WG572230-07 0.4 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 12:30
13	15M18344	WG572230-08 5PPM 1,4-DIOXANE ALT SRC	1	1	STD74214	06/10/16 12:52
14	15M18345	WG571410-01 BLANK 6/6	1	1		06/10/16 13:15
15	15M18346	WG571410-02 LCS 6/6	1	1		06/10/16 13:38
16	15M18347	WG571410-03 LCSDUP 6/6	1	1		06/10/16 14:01
17	15M18348	WG571404-01 BLANK 6/2	1	1		06/10/16 14:24
18	15M18349	WG571404-02 LCS 6/2	1	1		06/10/16 14:47
19	15M18350	WG571404-03 LCSDUP 6/2	1	1		06/10/16 15:09
20	15M18351	L16060067-01 827-DIOX	1	1		06/10/16 15:32
21	15M18352	L16051582-01 5X 827-DIOX	1	5		06/10/16 15:55
22	15M18353	L16060024-05 20X 827-DIOX	1	20		06/10/16 16:18
23	15M18354	L16060024-03 20X 827-DIOX	1	20		06/10/16 16:40
24	15M18355	L16060024-01 20,000X 827-DIOX	1	20000		06/10/16 17:03
25	15M18356	L16060067-01 2X 827-DIOX	1	2		06/10/16 17:26
26	15M18357	L16060024-03 100X 827-DIOX	1	100		06/10/16 17:49

Comments

Seq.	Rerun	Dil.	Reason	Analytes
3				
	DFTPP check after installing new source and retuning.			
17				
	WG571404-01 BLANK 6/2 dioxane hit above the RL.			

Page: 1 Approved: 13-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 061016

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG571947

Internal STD: STD75471 Surrogate STD: NA

CCV STD: STD74784 LCS STD: STD74214

Comments

Seq.	Rerun	Dil.	Reason	Analytes
18				
	WG571404-02 LCS 6/2 fails high.			
19				
	WG571404-03 LCSDUP 6/2 fails high.			
20	X	2	Over Calibration Range	
	L16060067-01			
23	X	100	Over Calibration Range	
	L16060024-03 20X DNR			

Page: 2 Approved: 13-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 061616

Analyst1: SCB Analyst2: MES

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG572971

Internal STD: STD75471, 76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18399	WG572958-01 5PPM DFTPP STD	1	1	STD75016	06/16/16 09:38
2	15M18400	WG572958-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/16/16 10:00
3	15M18401	WG572341-01 BLANK 6/13	1	1		06/16/16 10:23
4	15M18402	WG572341-02 LCS 6/13	1	1		06/16/16 10:46
5	15M18403	L16060497-01 REF 827-DIOX	1	1		06/16/16 11:08
6	15M18404	L16060497-02 MS 827-DIOX	1	1		06/16/16 11:31
7	15M18405	L16060497-03 MSD 827-DIOX	1	1		06/16/16 11:54
8	15M18406	L16060504-01 827-DIOX	1	1		06/16/16 12:17
9	15M18407	L16060504-02 827-DIOX	1	1		06/16/16 12:39
10	15M18408	L16060504-03 827-DIOX	1	1		06/16/16 13:02
11	15M18409	L16060504-04 827-DIOX	1	1		06/16/16 13:25
12	15M18410	L16060615-01 827-DIOX	1	1		06/16/16 13:48
13	15M18411	L16060615-02 827-DIOX	1	1		06/16/16 14:11
14	15M18412	L16060615-03 827-DIOX	1	1		06/16/16 14:33
15	15M18413	L16060615-04 827-DIOX	1	1		06/16/16 14:56
16	15M18414	L16060616-01 827-DIOX	1	1		06/16/16 15:19
17	15M18415	L16060616-02 827-DIOX	1	1		06/16/16 15:42
18	15M18416	L16060616-03 827-DIOX	1	1		06/16/16 16:04
19	15M18417	L16060637-03 827-DIOX	1	1		06/16/16 16:27

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 20-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 10-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75640
Analytical Workgroups: L16051582, L16060024, L16060067

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 12-JUN-2016

Secondary Reviewer: 13-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-13-2016 08:34:44

Microbac Laboratories Inc.

Data Checklist

Date: 16-JUN-2016
Analyst: SCB
Analyst: MES
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75783
Analytical Workgroups: L16060497, L16060504, L16060615, L16060616, L16060637

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	SCB
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 20-JUN-2016 Sarah Bogolin

Secondary Reviewer: 20-JUN-2016 Eric C. Zum

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-20-2016 16:55:27

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8270D

AAB#: WG572971

Login Number: L16060504

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW08SW-060816	01	06/08/16					06/13/2016	5.3	7		06/16/16	2.8	40	
18CPTMW08DW-060816	02	06/08/16					06/13/2016	5.3	7		06/16/16	2.8	40	
MW5-060816	03	06/08/16					06/13/2016	5.3	7		06/16/16	2.9	40	
18CPTMW03SW-060816	04	06/08/16					06/13/2016	5.2	7		06/16/16	2.9	40	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4814654
Report generated 06/21/2016 08:51

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060504
Instrument Id: HPMS15
Workgroup (AAB#): WG572971

Method: 827-DIOXANE
CAL ID: HPMS15-10-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1
L16060504-01	1.00	01	50.1
L16060504-02	1.00	01	69.6
L16060504-03	1.00	01	38.5
L16060504-04	1.00	01	48.1
WG572341-01	1.00	01	29.4
WG572341-02	1.00	01	35.7

Surrogates	Surrogate Limits		
1 - 1,4-Dioxane-d8	20	-	129

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4814666
Report generated: 06/21/2016 08:51

METHOD BLANK SUMMARY

Login Number: L16060504
Blank File ID: 15M18401
Prep Date: 06/13/16 16:16
Analyzed Date: 06/16/16 10:23
Analyst: MES

Work Group: WG572971
Blank Sample ID: WG572341-01
Instrument ID: HPMS15
Method: 8270D

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572341-02	15M18402	06/16/16 10:46	01
18CPTMW08SW-060816	L16060504-01	15M18406	06/16/16 12:17	01
18CPTMW08DW-060816	L16060504-02	15M18407	06/16/16 12:39	01
MW5-060816	L16060504-03	15M18408	06/16/16 13:02	01
18CPTMW03SW-060816	L16060504-04	15M18409	06/16/16 13:25	01

Report Name: BLANK_SUMMARY
PDF File ID: 4814656
Report generated 06/21/2016 08:51

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060504 Prep Date: 06/13/16 16:16 Sample ID: WG572341-01
Instrument ID: HPMS15 Run Date: 06/16/16 10:23 Prep Method: 3520C
File ID: 15M18401 Analyst: MES Method: 8270D
Workgroup (AAB#): WG572971 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS15-10-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
1,4-Dioxane	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	29.4	20 - 129	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4814657
21-JUN-2016 08:51

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060504 Run Date: 06/16/2016 Sample ID: WG572341-02
Instrument ID: HPMS15 Run Time: 10:46 Prep Method: 3520C
File ID: 15M18402 Analyst: MES Method: 8270D
Workgroup (AAB#): WG572971 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD66388 Cal ID: HPMS15-10-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
1,4-Dioxane	5.00	1.67	33.3	30 - 104	

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	35.7	20 - 129	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4814658
Report generated: 06/21/2016 08:51

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16060504
Instrument: HPMS15
Analyst: MES
Workgroup: WG572230

Tune ID: WG572230-01
Run Date: 06/10/2016
Run Time: 10:18
File ID: 15M18337
Cal ID: HPMS15 - 10-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	39.5	52157	PASS
68.0	69.0	0	2.00	1.91	1026	PASS
69.0	198	0	100	40.8	53844	PASS
70.0	69.0	0	2.00	0.223	120	PASS
127	198	40.0	60.0	51.4	67853	PASS
197	198	0	1.00	0.383	505	PASS
198	198	100	100	100	131981	PASS
199	198	5.00	9.00	6.72	8869	PASS
275	198	10.0	30.0	26.4	34853	PASS
365	198	1.00	100	3.17	4186	PASS
441	443	0.0100	100	73.9	15632	PASS
442	198	40.0	100	83.4	110112	PASS
443	442	17.0	23.0	19.2	21163	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG572230-02	STD-CCV	01	06/10/2016 10:36	
WG572230-03	STD	01	06/10/2016 11:00	
WG572230-04	STD	01	06/10/2016 11:22	
WG572230-05	STD	01	06/10/2016 11:45	
WG572230-06	STD	01	06/10/2016 12:08	
WG572230-07	STD	01	06/10/2016 12:30	
WG572230-08	SSCV	01	06/10/2016 12:52	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4814663
Report generated 06/21/2016 08:51

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16060504
Instrument: HPMS15
Analyst: MES
Workgroup: WG572958

Tune ID: WG572958-01
Run Date: 06/16/2016
Run Time: 09:38
File ID: 15M18399
Cal ID: HPMS15 - 10-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	39.7	42335	PASS
68.0	69.0	0	2.00	1.65	714	PASS
69.0	198	0	100	40.7	43391	PASS
70.0	69.0	0	2.00	0.643	279	PASS
127	198	40.0	60.0	52.1	55592	PASS
197	198	0	1.00	0.0637	68	PASS
198	198	100	100	100	106736	PASS
199	198	5.00	9.00	6.72	7172	PASS
275	198	10.0	30.0	25.9	27632	PASS
365	198	1.00	100	3.04	3241	PASS
441	443	0.0100	100	76.2	12912	PASS
442	198	40.0	100	81.0	86427	PASS
443	442	17.0	23.0	19.6	16937	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG572958-02	CCV	01	06/16/2016 10:00	
WG572341-01	BLANK	01	06/16/2016 10:23	
WG572341-02	LCS	01	06/16/2016 10:46	
L16060504-01	18CPTMW08SW-060816	01	06/16/2016 12:17	
L16060504-02	18CPTMW08DW-060816	01	06/16/2016 12:39	
L16060504-03	MW5-060816	01	06/16/2016 13:02	
L16060504-04	18CPTMW03SW-060816	01	06/16/2016 13:25	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4814663
Report generated 06/21/2016 08:51

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060504
Analytical Method: 8270D
ICAL Workgroup: WG572230

Instrument ID: HPMS15
Initial Calibration Date: 10-JUN-16 12:30
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
1,4-Dioxane		0.3253	2.74		

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4814659
Report generated 06/21/2016 08:51

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060504

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 10-JUN-16 12:30

Column ID: F

Analyte	WG572230-02			WG572230-03			WG572230-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	5.00	107215.000	0.3234	10.0	192761.000	0.3420	7.50	146003.000	0.3236

INT_CAL - Modified 03/06/2008
PDF File ID: 4814659
Report generated 06/21/2016 08:51

Login Number: L16060504
Analytical Method: 8270D

Instrument ID: HPMS15
Initial Calibration Date: 10-JUN-16 12:30
Column ID: F

Analyte	WG572230-05			WG572230-06			WG572230-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	2.50	36488.0000	0.3190	1.00	18621.0000	0.3169	0.400	6733.00000	0.3266

INT_CAL - Modified 03/06/2008
PDF File ID: 4814659
Report generated 06/21/2016 08:51

Calibration Table Report
Method: DIOXANE_D8.M
Title: OVD MSS01 SIM 1,4-dioxane ICAL 061016
Last Calibration: Fri Jun 10 12:46:00 2016
Curve:WG572230
Calibration Files

Compound	10 15M18339.D	7.5 15M18340.D	5 15M18338.D	2.5 15M18341.D	1 15M18342.D	0.4 15M18343.D	Avg	%RSD	Linear
1,4-Dichlorobenzene-d4	ISTD								
1,4-Dioxane	0.342	0.324	0.324	0.319	0.317	0.327	0.325	2.735	
1,4-Dioxane-d8	0.440	0.415	0.417	0.411	0.409		0.419	2.988	
Nitrobenzene-d5	1.115	1.034	0.970	0.852	0.755	0.697	0.904	18.064	0.994
2-Fluorobiphenyl	2.685	2.595	2.549	2.638	2.570	2.639	2.613	1.934	
p-Terphenyl-d14	2.815	2.671	2.579	2.506	2.382	2.421	2.562	6.338	

Sun Jun 12 19:13:55 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060504 Run Date: 06/10/2016 Sample ID: WG572230-08
Instrument ID: HPMS15 Run Time: 12:52 Method: 8270D
File ID: 15M18344 Analyst: MES QC Key: DOD4
ICal Workgroup: WG572230 Cal ID: HPMS15 - 10-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
1,4-Dioxane		5000	5110	ug/L	0.333	2.30	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4814662
Report generated 06/21/2016 08:51

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504
Run Date: 06/16/2016
Sample ID: WG572958-02
Instrument ID: HPMS15
Run Time: 10:00
Method: 8270D
File ID: 15M18400
Analyst: MES
QC Key: DOD4
Workgroup (AAB#): WG572971
Cal ID: HPMS15 - 10-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,4-Dioxane		5000	5080	ug/L	0.331	1.65	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4814664
Report generated 06/21/2016 08:51

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060504
Instrument ID: HPMS15
Workgroup (AAB#): WG572971

ICAL CCV Number: WG572230-02
CAL ID: HPMS15-10-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG572230-02	NA	NA	66625
Upper Limit	NA	NA	133250
Lower Limit	NA	NA	33313
L16060504-01	1.00	01	54223
L16060504-02	1.00	01	55371
L16060504-03	1.00	01	51940
L16060504-04	1.00	01	56328
WG572341-01	1.00	01	57712
WG572341-02	1.00	01	54087

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4814665
Report generated 06/21/2016 08:51

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060504
Instrument ID: HPMS15
Workgroup (AAB#): WG572971

ICAL CCV Number: WG572230-02
CAL ID: HPMS15-10-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG572230-02	NA	NA	6.94
Upper Limit	NA	NA	7.44
Lower Limit	NA	NA	6.44
L16060504-01	1.00	01	6.951
L16060504-02	1.00	01	6.951
L16060504-03	1.00	01	6.951
L16060504-04	1.00	01	6.951
WG572341-01	1.00	01	6.948
WG572341-02	1.00	01	6.951

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4814667
Report generated: 06/21/2016 08:51

2.2.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18406.D
Acq On : 16 Jun 2016 12:17
Operator : MES
Sample : L16060504-01 827-DIOX
Misc : 1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 16 14:00:50 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.951	152	54223	1.0000	ug/mL	# 0.01
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.876	96	56903	2.5073	ug/L	0.01
Spiked Amount 5.000			Recovery	=	50.20%	
4) Nitrobenzene-d5	7.452	82	3625	0.2803	ug/L	0.02
Spiked Amount 5.000			Recovery	=	5.60%	
5) 2-Fluorobiphenyl	8.937	172	205	0.0014	ug/L	0.01
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.221	244	1194	0.0086	ug/L	0.04
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.912	58	24573	1.3929	ug/L	82

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18406.D
Acq On : 16 Jun 2016 12:17
Operator : MES
Sample : L16060504-01 827-DIOX
Misc : 1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 16 14:00:50 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

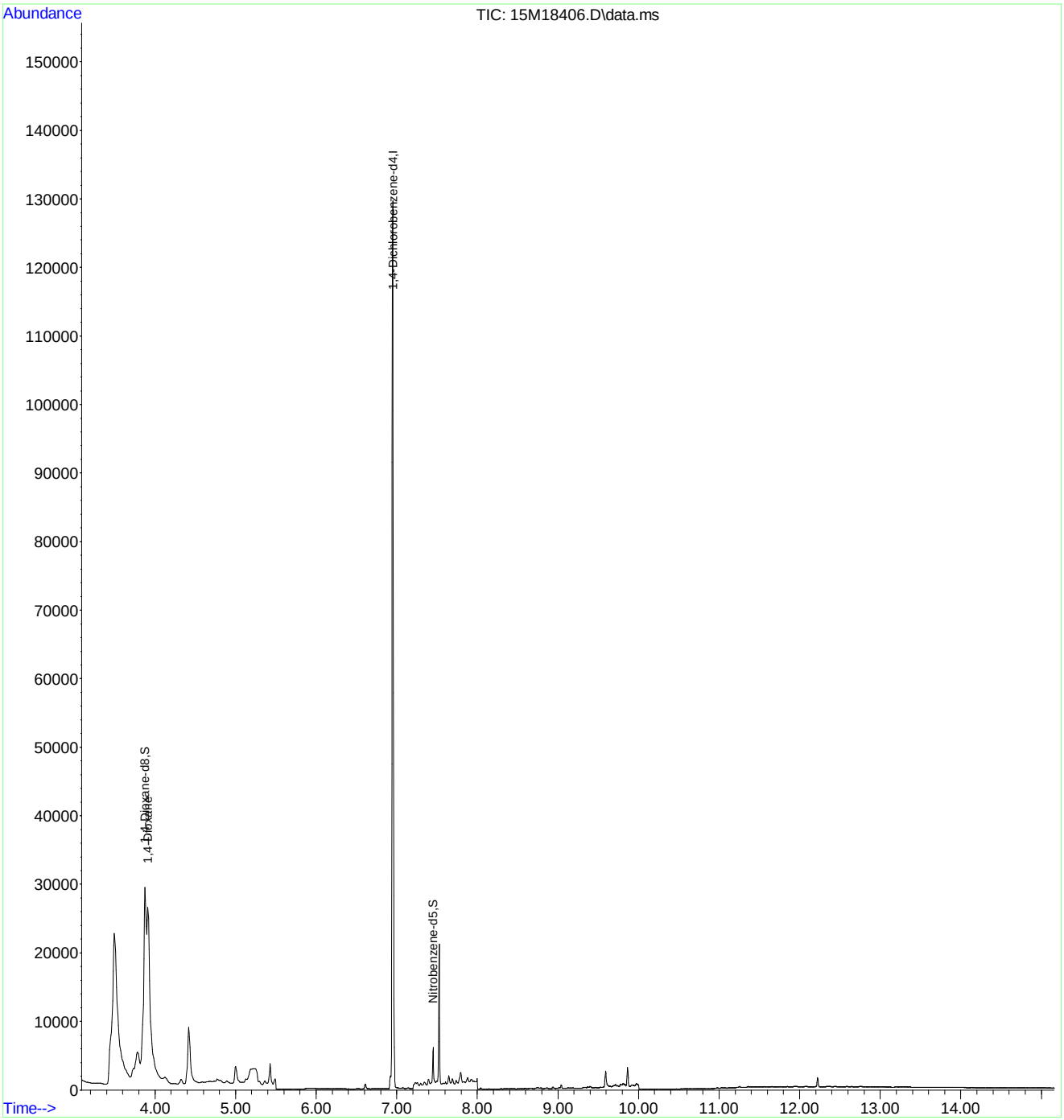

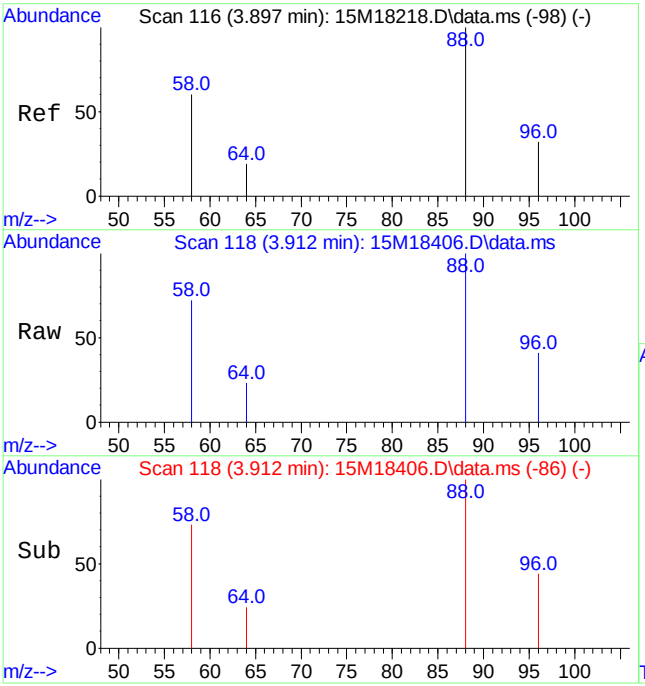

#2
1,4-Dioxane
Concen: 1.39 ug/L
RT: 3.912 min Scan# 118
Delta R.T. 0.015 min
Lab File: 15M18406.D
Acq: 16 Jun 2016 12:17

Tgt Ion: 58 Resp: 24573

Ion	Ratio	Lower	Upper
58	100		
88	147.0	103.1	240.7

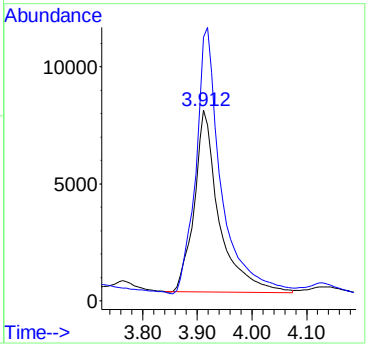

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18407.D
Acq On : 16 Jun 2016 12:39
Operator : MES
Sample : L16060504-02 827-DIOX
Misc : 1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 16 14:00:56 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.951	152	55371	1.0000	ug/mL	# 0.01
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.883	96	80688	3.4816	ug/L	0.02
Spiked Amount 5.000			Recovery	=	69.60%	
4) Nitrobenzene-d5	7.452	82	6747	0.3315	ug/L	0.02
Spiked Amount 5.000			Recovery	=	6.60%	
5) 2-Fluorobiphenyl	8.941	172	190	0.0013	ug/L	0.01
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.229	244	889	0.0063	ug/L	0.05
Spiked Amount 5.000			Recovery	=	0.20%	

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18407.D
Acq On : 16 Jun 2016 12:39
Operator : MES
Sample : L16060504-02 827-DIOX
Misc : 1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 16 14:00:56 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

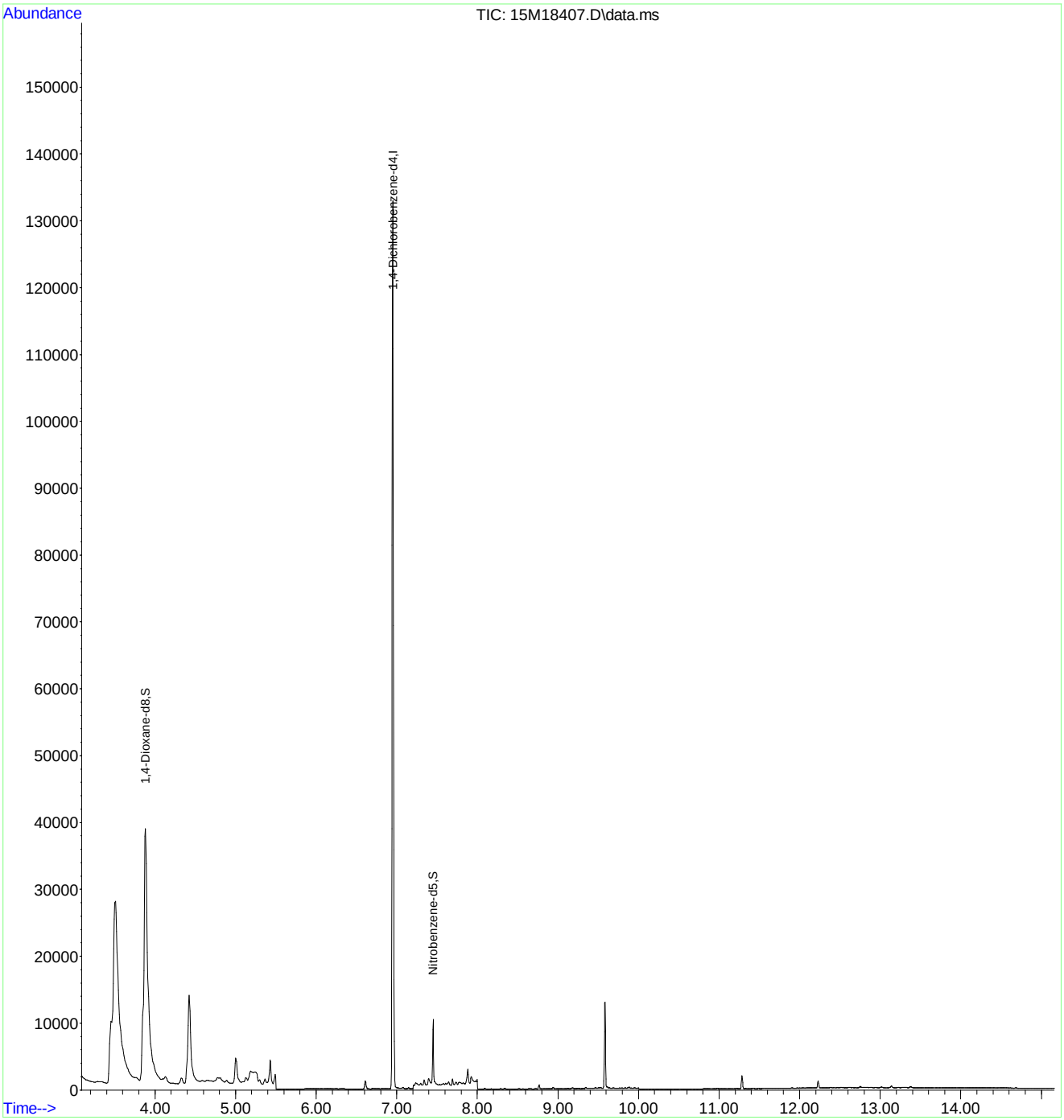

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18408.D
Acq On : 16 Jun 2016 13:02
Operator : MES
Sample : L16060504-03 827-DIOX
Misc : 1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 16 14:00:59 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.951	152	51940	1.0000	ug/mL	# 0.01
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.876	96	41899	1.9273	ug/L	0.01
Spiked Amount 5.000			Recovery	=	38.60%	
4) Nitrobenzene-d5	7.452	82	2114	0.2559	ug/L	0.02
Spiked Amount 5.000			Recovery	=	5.20%	
5) 2-Fluorobiphenyl	8.941	172	137	0.0010	ug/L	0.01
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.232	244	437	0.0033	ug/L	0.05
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.918	58	13841	0.8191	ug/L	82

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18408.D
Acq On : 16 Jun 2016 13:02
Operator : MES
Sample : L16060504-03 827-DIOX
Misc : 1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 16 14:00:59 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

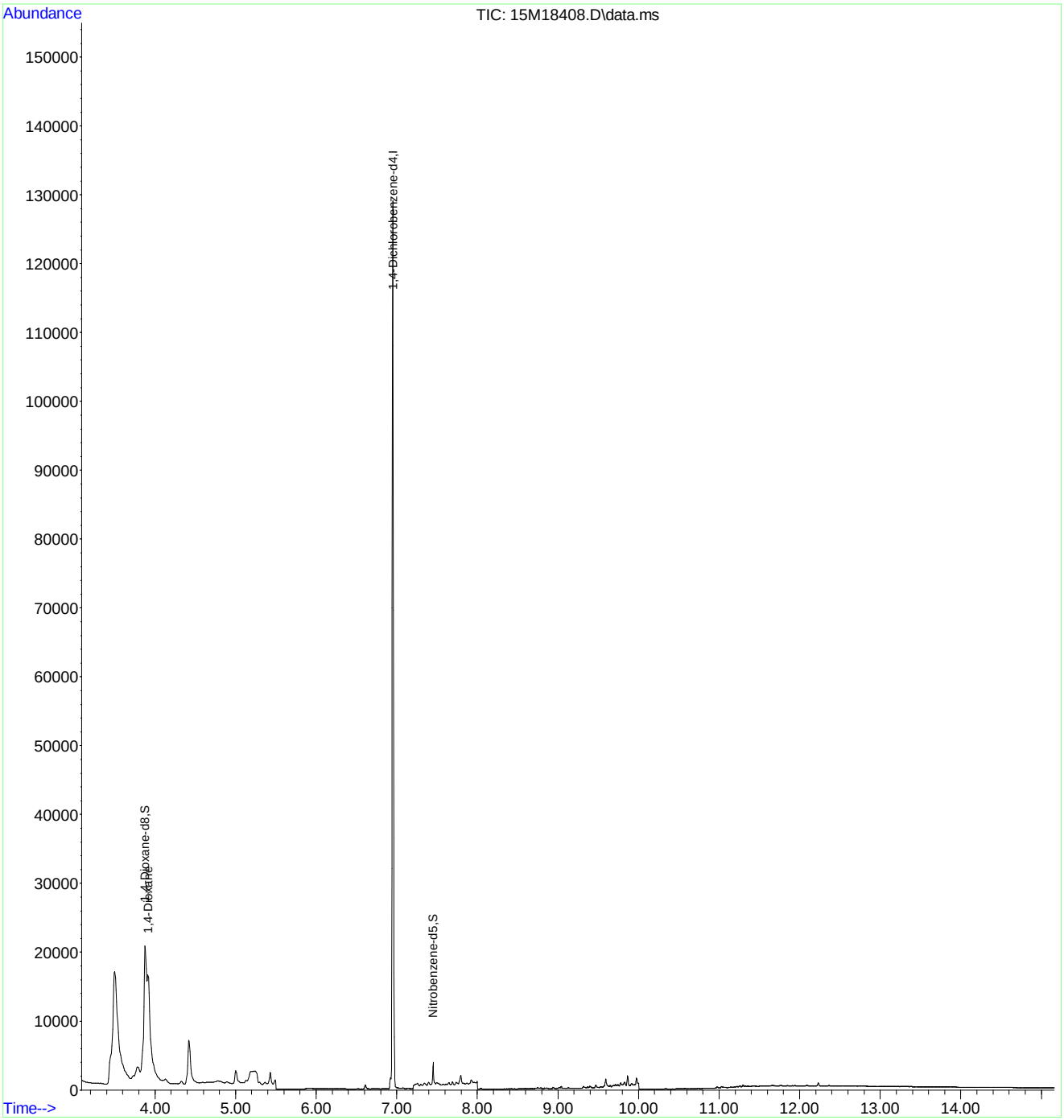

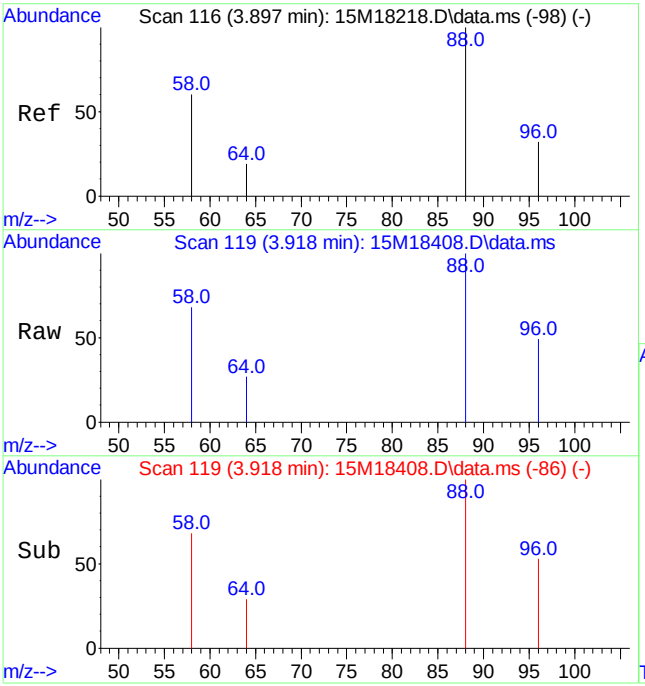

#2
1,4-Dioxane
Concen: 0.82 ug/L
RT: 3.918 min Scan# 119
Delta R.T. 0.021 min
Lab File: 15M18408.D
Acq: 16 Jun 2016 13:02

Tgt Ion: 58 Resp: 13841

Ion	Ratio	Lower	Upper
58	100		
88	146.6	103.1	240.7

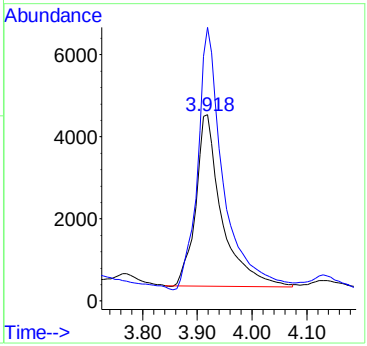

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18409.D
Acq On : 16 Jun 2016 13:25
Operator : MES
Sample : L16060504-04 827-DIOX
Misc : 1,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jun 16 14:01:02 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.951	152	56328	1.0000	ug/mL	# 0.01
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.876	96	56747	2.4070	ug/L	0.01
Spiked Amount 5.000			Recovery	=	48.20%	
4) Nitrobenzene-d5	7.452	82	4539	0.2931	ug/L	0.02
Spiked Amount 5.000			Recovery	=	5.80%	
5) 2-Fluorobiphenyl	8.941	172	105	0.0007	ug/L	0.02
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.236	244	1247	0.0086	ug/L	0.05
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.919	58	21147	1.1539	ug/L	87

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18409.D
Acq On : 16 Jun 2016 13:25
Operator : MES
Sample : L16060504-04 827-DIOX
Misc : 1,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jun 16 14:01:02 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

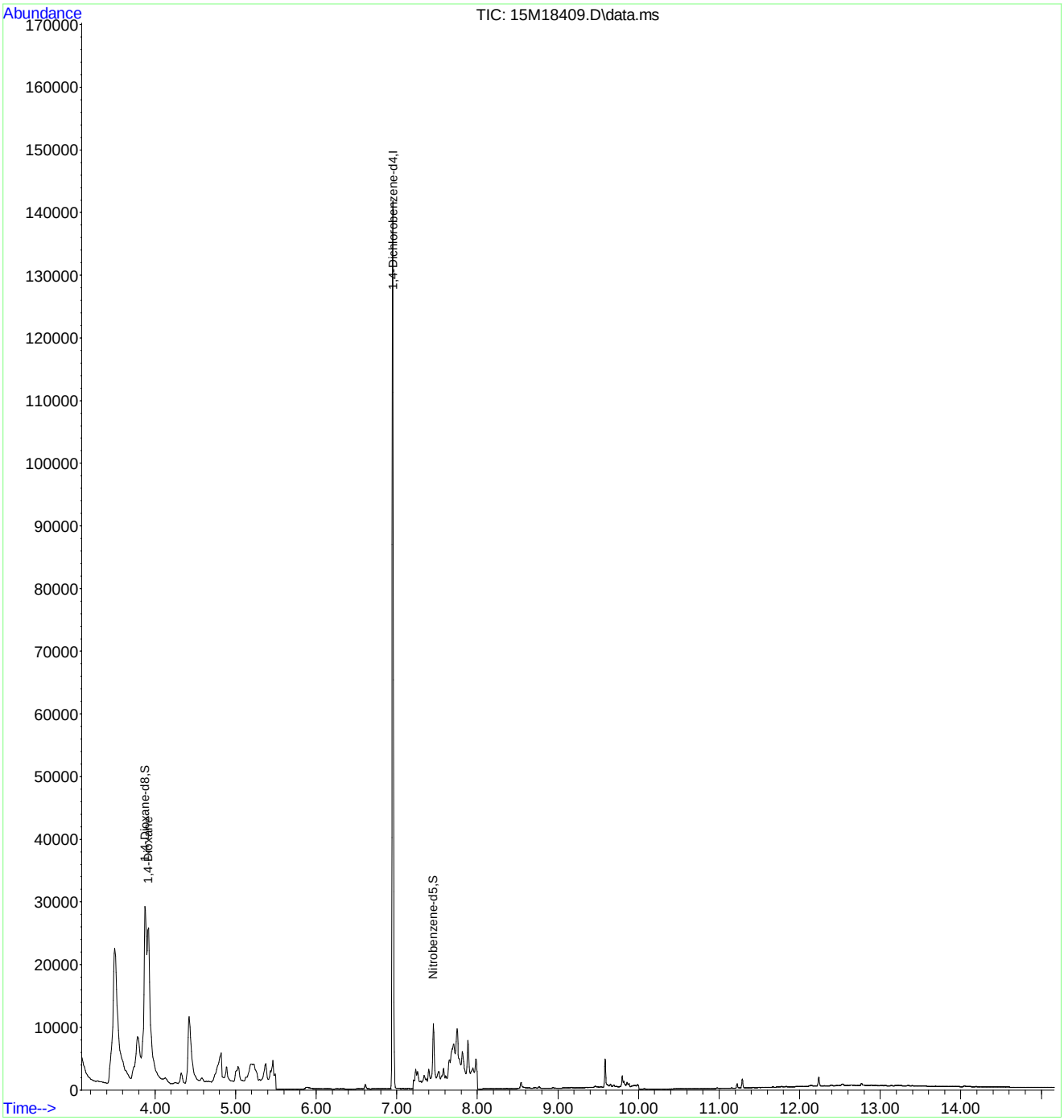

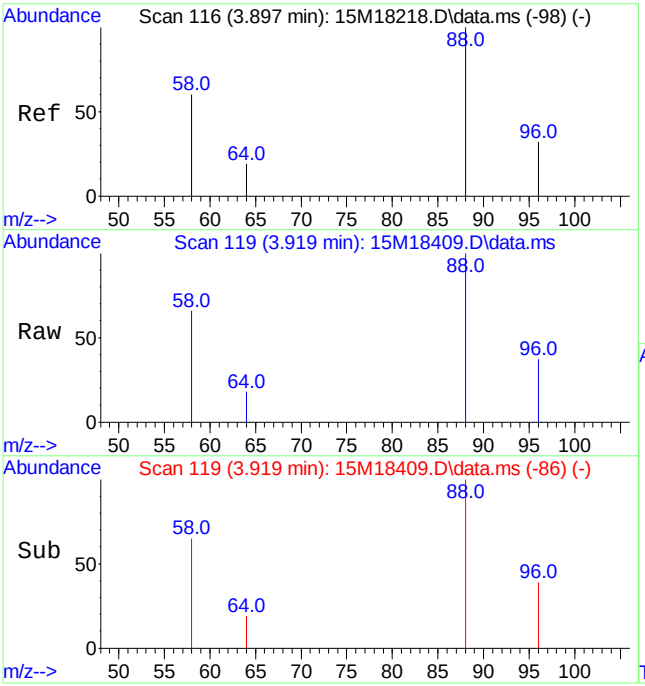

#2
1,4-Dioxane
Concen: 1.15 ug/L
RT: 3.919 min Scan# 119
Delta R.T. 0.022 min
Lab File: 15M18409.D
Acq: 16 Jun 2016 13:25

Tgt Ion: 58 Resp: 21147

Ion	Ratio	Lower	Upper
58	100		
88	154.2	103.1	240.7

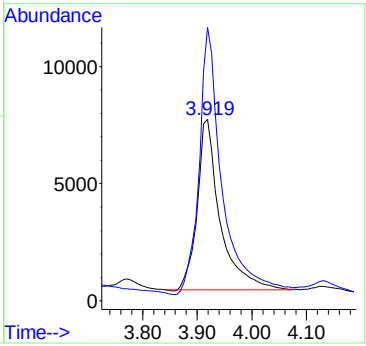

2.2.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18338.D
Acq On : 10 Jun 2016 10:36
Operator : MES
Sample : WG572230-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 10 18:15:30 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.940	152	66625	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.862	96	138302	4.9596 ug/L	0.00
Spiked Amount 5.000			Recovery	= 99.20%	
4) Nitrobenzene-d5	7.436	82	321639	4.7189 ug/L	0.00
Spiked Amount 5.000			Recovery	= 94.40%	
5) 2-Fluorobiphenyl	8.926	172	845013	4.8542 ug/L	0.00
Spiked Amount 5.000			Recovery	= 97.00%	
6) p-Terphenyl-d14	12.181	244	855352	5.0103 ug/L	0.00
Spiked Amount 5.000			Recovery	= 100.20%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.897	58	107215	4.9462 ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18338.D
Acq On : 10 Jun 2016 10:36
Operator : MES
Sample : WG572230-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 10 18:15:30 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

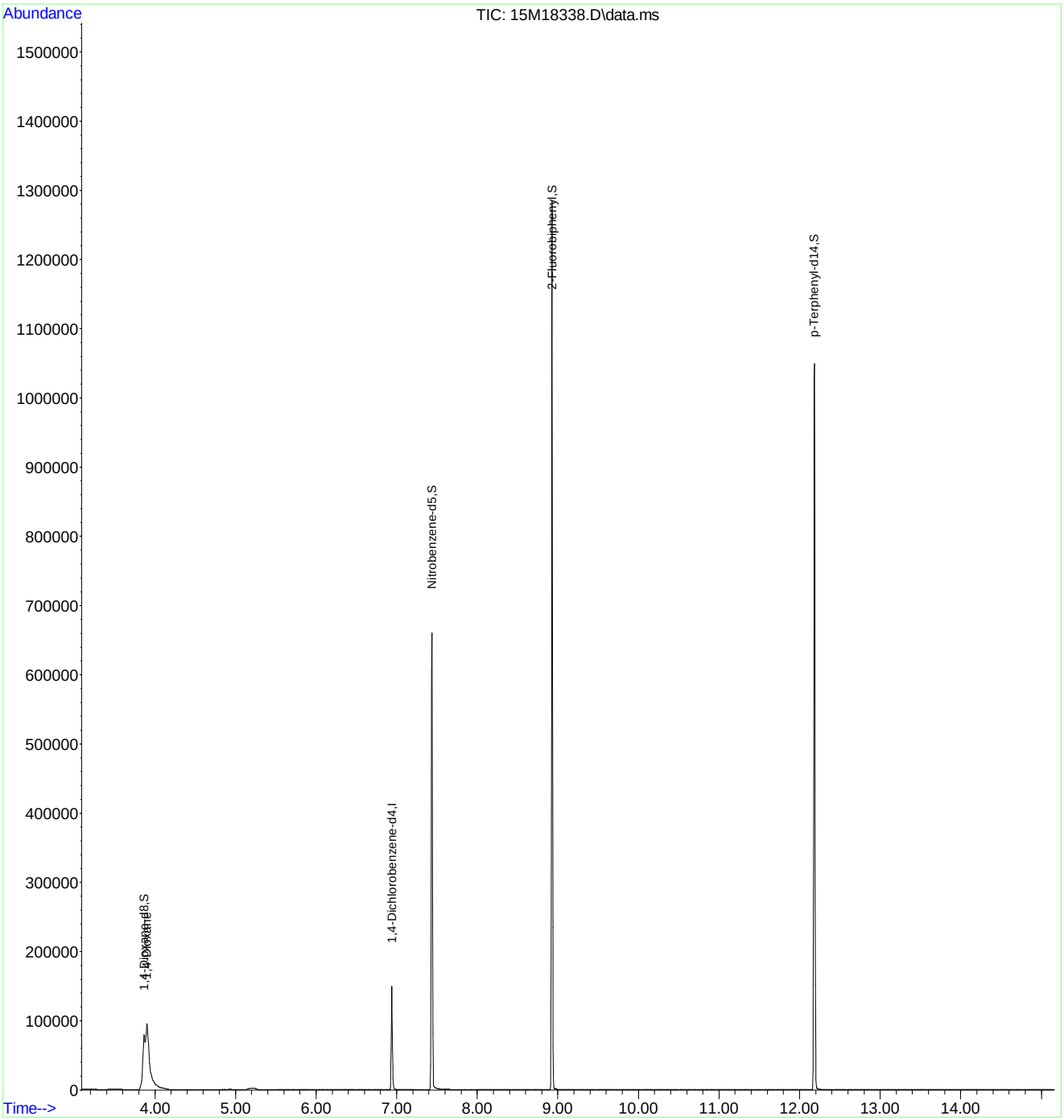

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18339.D
Acq On : 10 Jun 2016 11:00
Operator : MES
Sample : WG572230-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 10 18:15:34 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	56194	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	248072	10.5474	ug/L	0.00
Spiked Amount 5.000			Recovery = 211.00%			
4) Nitrobenzene-d5	7.436	82	628184	10.6403	ug/L	0.00
Spiked Amount 5.000			Recovery = 212.80%			
5) 2-Fluorobiphenyl	8.926	172	1513331	10.3070	ug/L	0.00
Spiked Amount 5.000			Recovery = 206.20%			
6) p-Terphenyl-d14	12.184	244	1587021	11.0217	ug/L	0.00
Spiked Amount 5.000			Recovery = 220.40%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	192761	10.5434	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18339.D
Acq On : 10 Jun 2016 11:00
Operator : MES
Sample : WG572230-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 10 18:15:34 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

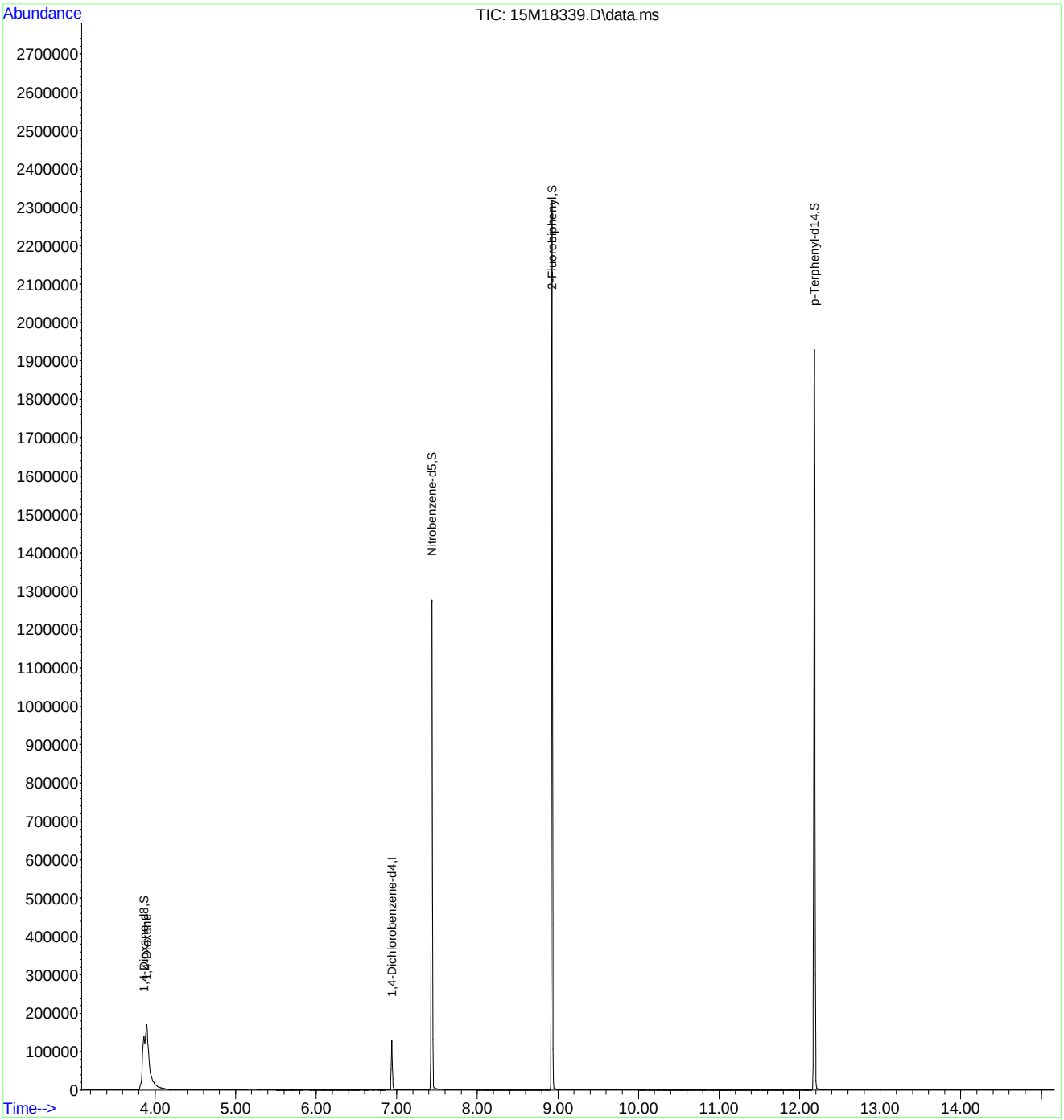

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18340.D
Acq On : 10 Jun 2016 11:22
Operator : MES
Sample : WG572230-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 10 18:15:37 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	60457	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	187351	7.4040	ug/L	0.00
Spiked Amount 5.000			Recovery	= 148.00%		
4) Nitrobenzene-d5	7.431	82	466388	7.4103	ug/L	0.00
Spiked Amount 5.000			Recovery	= 148.20%		
5) 2-Fluorobiphenyl	8.926	172	1170859	7.4122	ug/L	0.00
Spiked Amount 5.000			Recovery	= 148.20%		
6) p-Terphenyl-d14	12.192	244	1205938	7.7846	ug/L	0.01
Spiked Amount 5.000			Recovery	= 155.60%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	146003	7.4228	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18340.D
Acq On : 10 Jun 2016 11:22
Operator : MES
Sample : WG572230-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 10 18:15:37 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

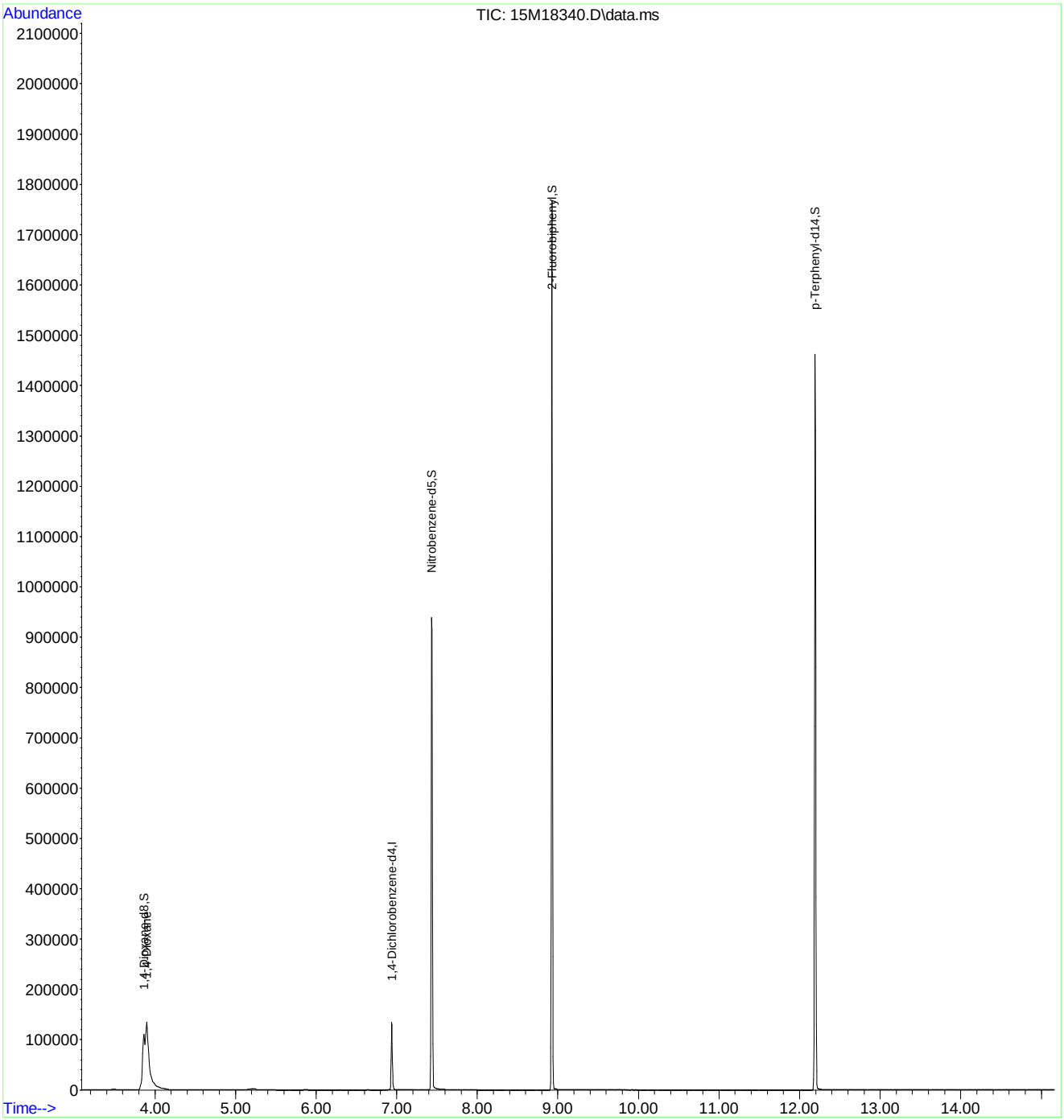

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18341.D
Acq On : 10 Jun 2016 11:45
Operator : MES
Sample : WG572230-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 10 18:15:40 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.940	152	45954	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.848	96	46972	2.4422 ug/L	-0.01
Spiked Amount 5.000			Recovery	= 48.80%	
4) Nitrobenzene-d5	7.436	82	97423	2.1945 ug/L	0.00
Spiked Amount 5.000			Recovery	= 43.80%	
5) 2-Fluorobiphenyl	8.926	172	301696	2.5127 ug/L	0.00
Spiked Amount 5.000			Recovery	= 50.20%	
6) p-Terphenyl-d14	12.188	244	286720	2.4350 ug/L	0.00
Spiked Amount 5.000			Recovery	= 48.60%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.883	58	36488	2.4405 ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18341.D
Acq On : 10 Jun 2016 11:45
Operator : MES
Sample : WG572230-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 10 18:15:40 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

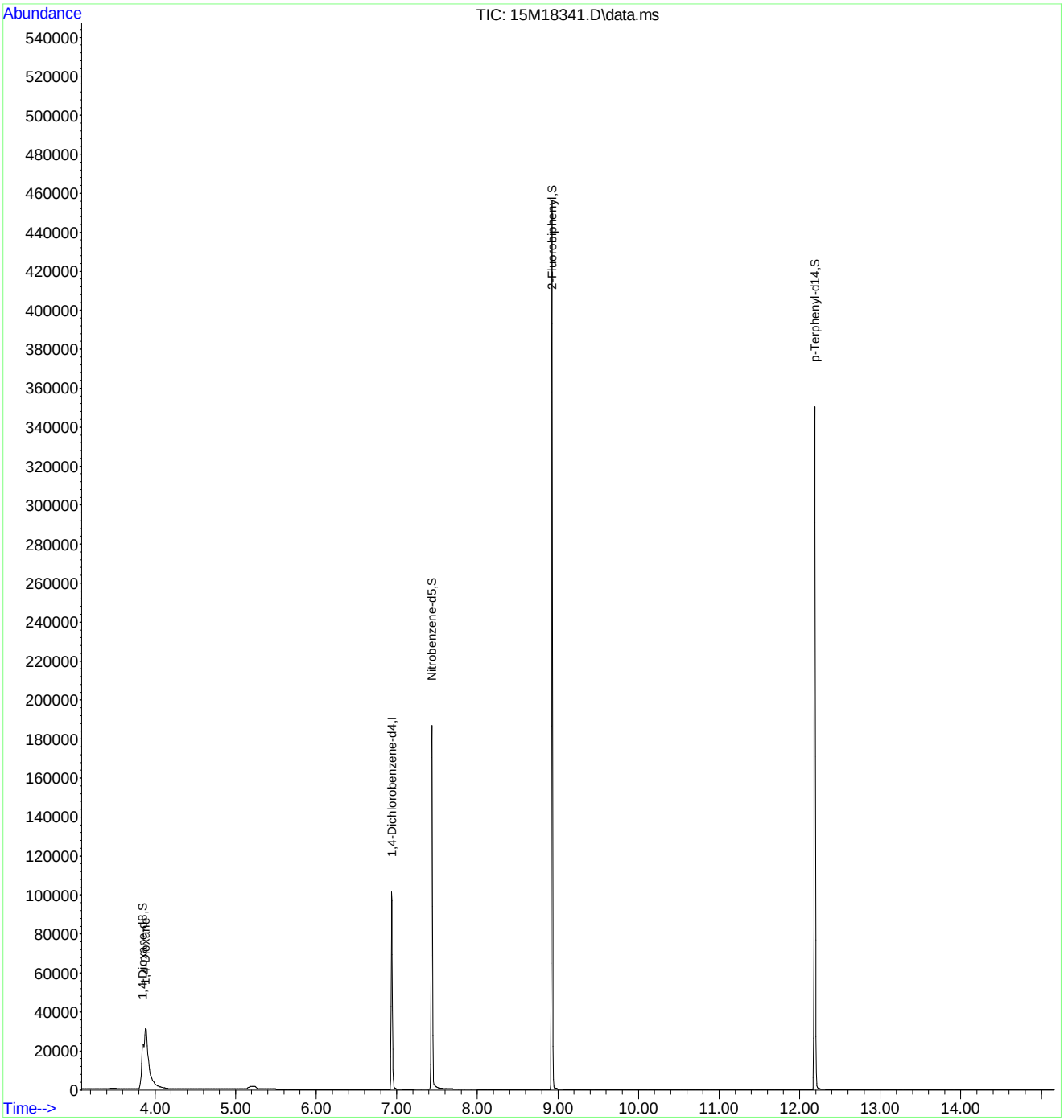

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18342.D
Acq On : 10 Jun 2016 12:08
Operator : MES
Sample : WG572230-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 10 18:15:43 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	59037	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	24054	0.9735	ug/L	0.00
Spiked Amount 5.000			Recovery = 19.40%			
4) Nitrobenzene-d5	7.436	82	44358	0.9184	ug/L	0.00
Spiked Amount 5.000			Recovery = 18.40%			
5) 2-Fluorobiphenyl	8.926	172	151018	0.9790	ug/L	0.00
Spiked Amount 5.000			Recovery = 19.60%			
6) p-Terphenyl-d14	12.199	244	140040	0.9257	ug/L	0.02
Spiked Amount 5.000			Recovery = 18.60%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.904	58	18621	0.9695	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18342.D
Acq On : 10 Jun 2016 12:08
Operator : MES
Sample : WG572230-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 10 18:15:43 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

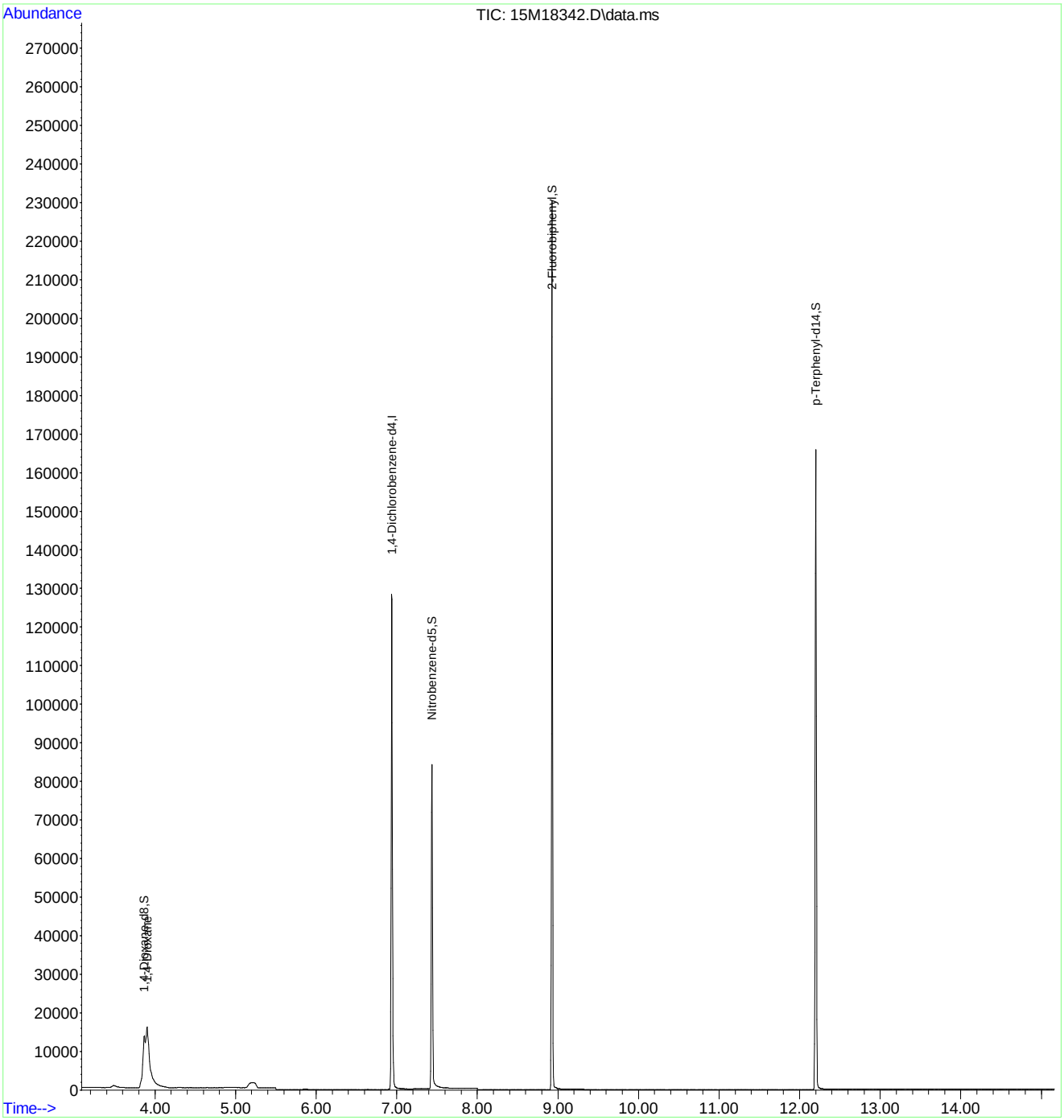

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18343.D
Acq On : 10 Jun 2016 12:30
Operator : MES
Sample : WG572230-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 10 18:15:46 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	51531	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	8760	0.4062	ug/L	0.00
Spiked Amount 5.000			Recovery	=	8.20%	
4) Nitrobenzene-d5	7.436	82	14371	0.4779	ug/L	0.00
Spiked Amount 5.000			Recovery	=	9.60%	
5) 2-Fluorobiphenyl	8.926	172	54404	0.4041	ug/L	0.00
Spiked Amount 5.000			Recovery	=	8.00%	
6) p-Terphenyl-d14	12.203	244	49910	0.3780	ug/L	0.02
Spiked Amount 5.000			Recovery	=	7.60%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	6733	0.4016	ug/L	79

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18343.D
Acq On : 10 Jun 2016 12:30
Operator : MES
Sample : WG572230-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 10 18:15:46 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

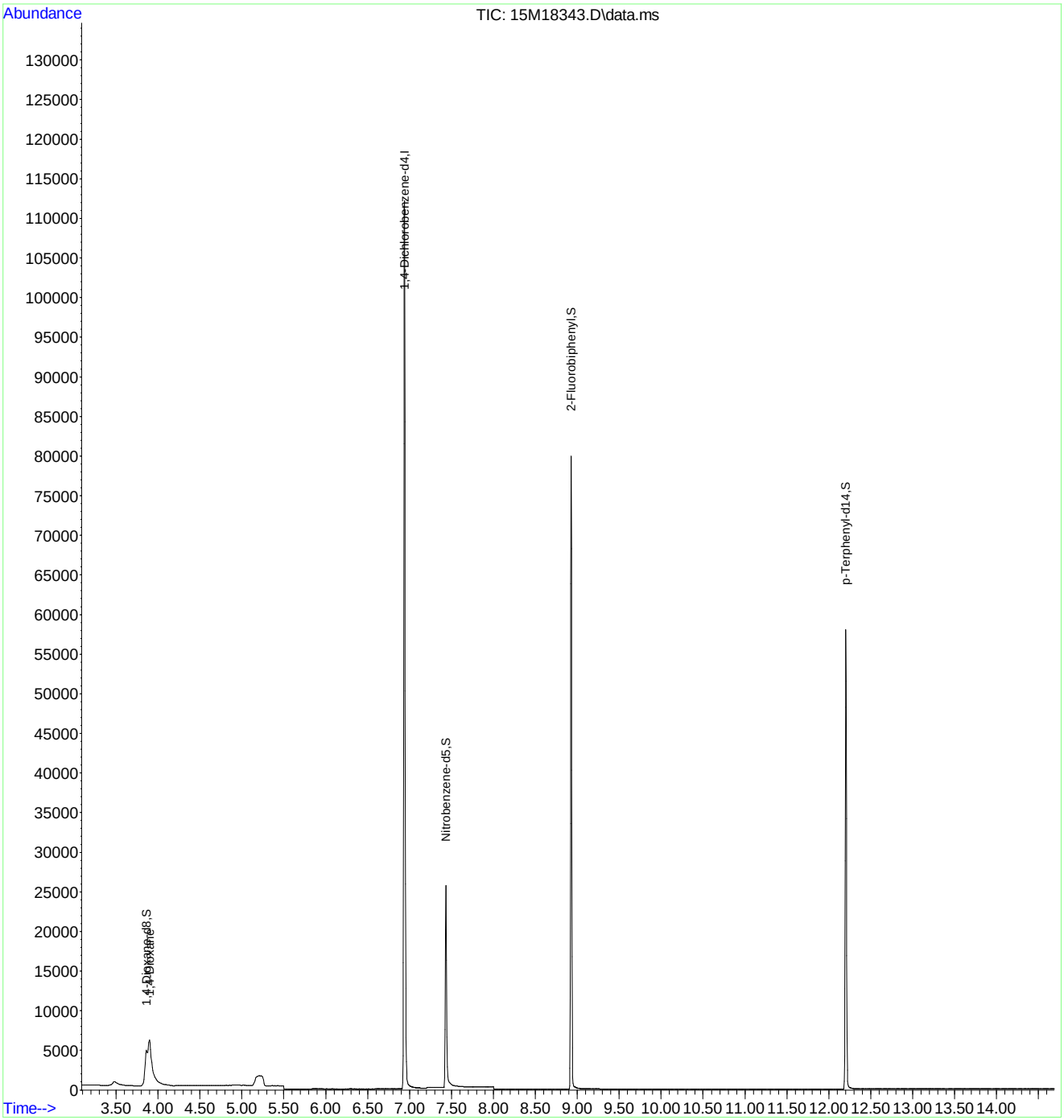

Nitrobenzene-d5

00702990

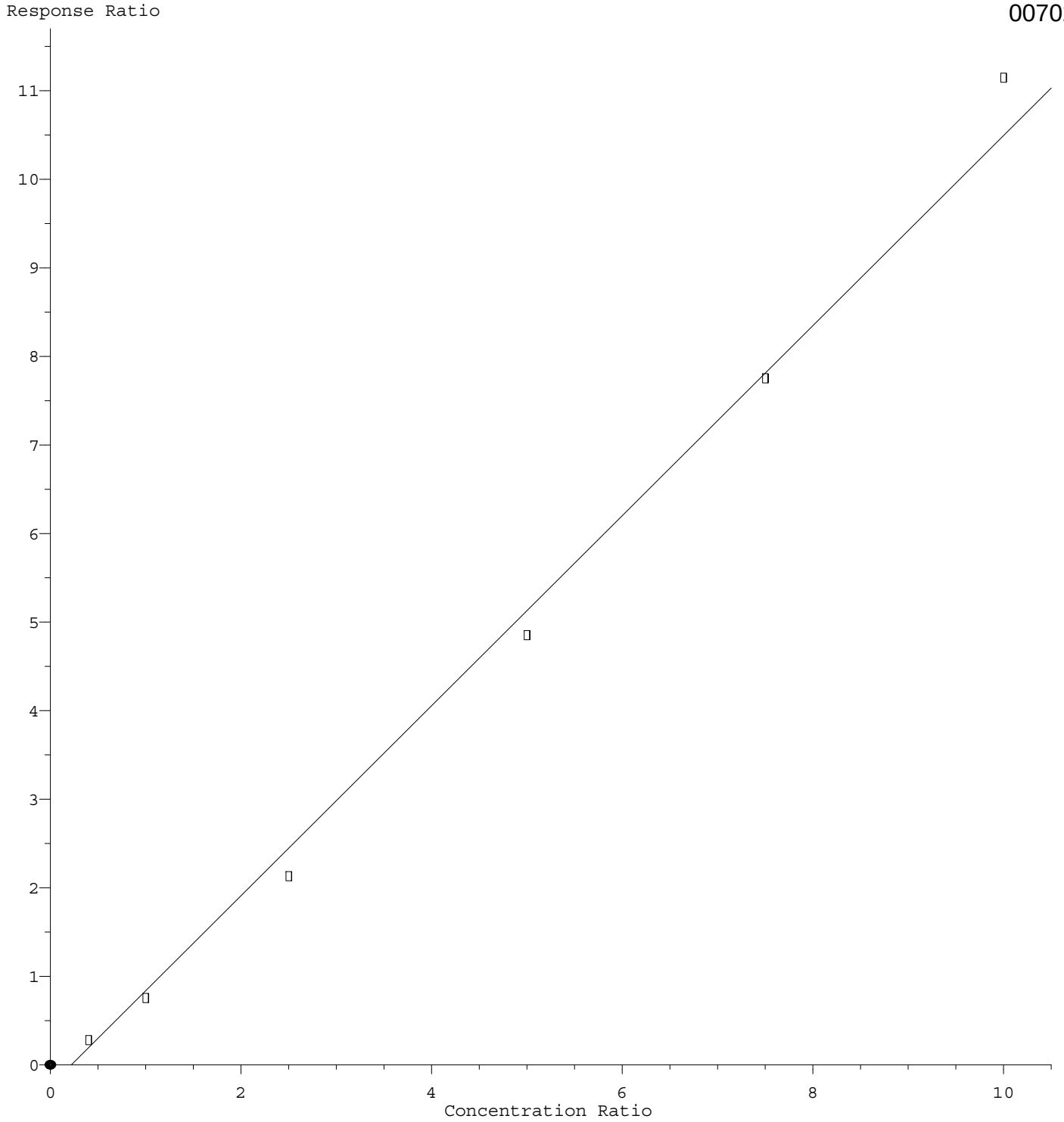

Response = 1.07e+000 * Amt - 2.34e-001
Coef of Det (r^2) = 0.994 Curve Fit: wlr(1/a)
Method Name: C:\msdchem\1\methods\DIOXANE_D8.M
Calibration Table Last Updated: Fri Jun 10 12:46:00 2016

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18344.D
Acq On : 10 Jun 2016 12:52
Operator : MES
Sample : WG572230-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 10 18:15:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	51498	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.897	96	61	0.0028	ug/L	0.04
Spiked Amount 5.000			Recovery	=	0.00%	
4) Nitrobenzene-d5	7.442	82	61	0.2190	ug/L	0.00
Spiked Amount 5.000			Recovery	=	4.40%	
5) 2-Fluorobiphenyl	8.926	172	23	0.0002	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.214	244	150	0.0011	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	85662	5.1127	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18344.D
Acq On : 10 Jun 2016 12:52
Operator : MES
Sample : WG572230-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 10 18:15:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

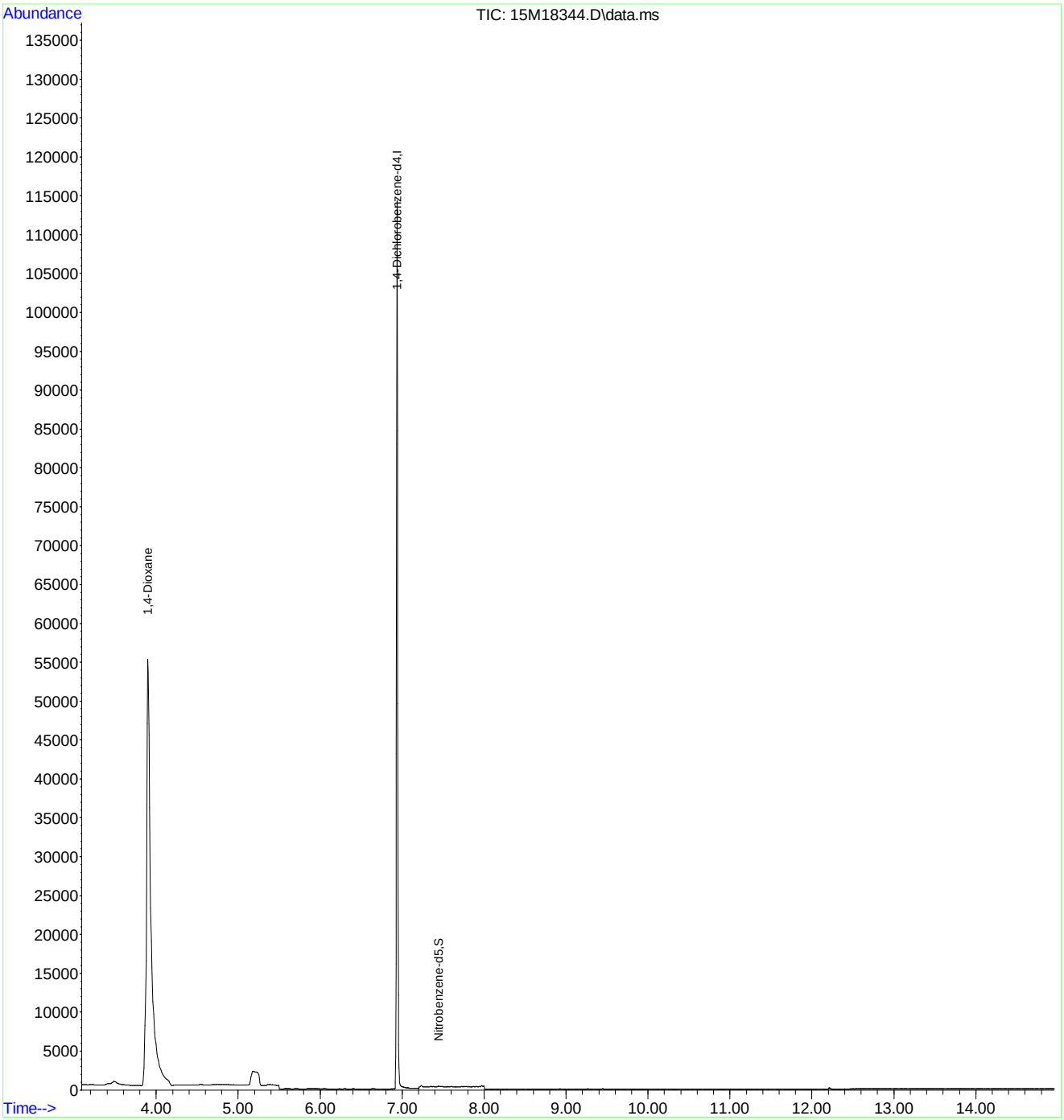

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18344.D
Acq On : 10 Jun 2016 12:52
Operator : MES
Sample : WG572230-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 10 18:15:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	78	0.00
2	1,4-Dioxane	5.000	5.113	-2.3	80	0.00
3 S	1,4-Dioxane-d8	5.000	0.003	99.9#	0	0.04
4 S	Nitrobenzene-d5	5.000	0.219	95.6#	0	0.00
5 S	2-Fluorobiphenyl	5.000	0.000	100.0#	0	0.00
6 S	p-Terphenyl-d14	5.000	0.001	100.0#	0	0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18400.D
Acq On : 16 Jun 2016 10:00
Operator : MES
Sample : WG572958-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 16 10:16:14 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.951	152	63702	1.0000 ug/mL	# 0.01
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.876	96	138261	5.1857 ug/L	0.01
Spiked Amount 5.000			Recovery	= 103.80%	
4) Nitrobenzene-d5	7.447	82	239213	3.7190 ug/L	0.01
Spiked Amount 5.000			Recovery	= 74.40%	
5) 2-Fluorobiphenyl	8.937	172	842255	5.0603 ug/L	0.01
Spiked Amount 5.000			Recovery	= 101.20%	
6) p-Terphenyl-d14	12.228	244	851642	5.2175 ug/L	0.05
Spiked Amount 5.000			Recovery	= 104.40%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.918	58	105339	5.0826 ug/L	81

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18400.D
Acq On : 16 Jun 2016 10:00
Operator : MES
Sample : WG572958-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 16 10:16:14 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

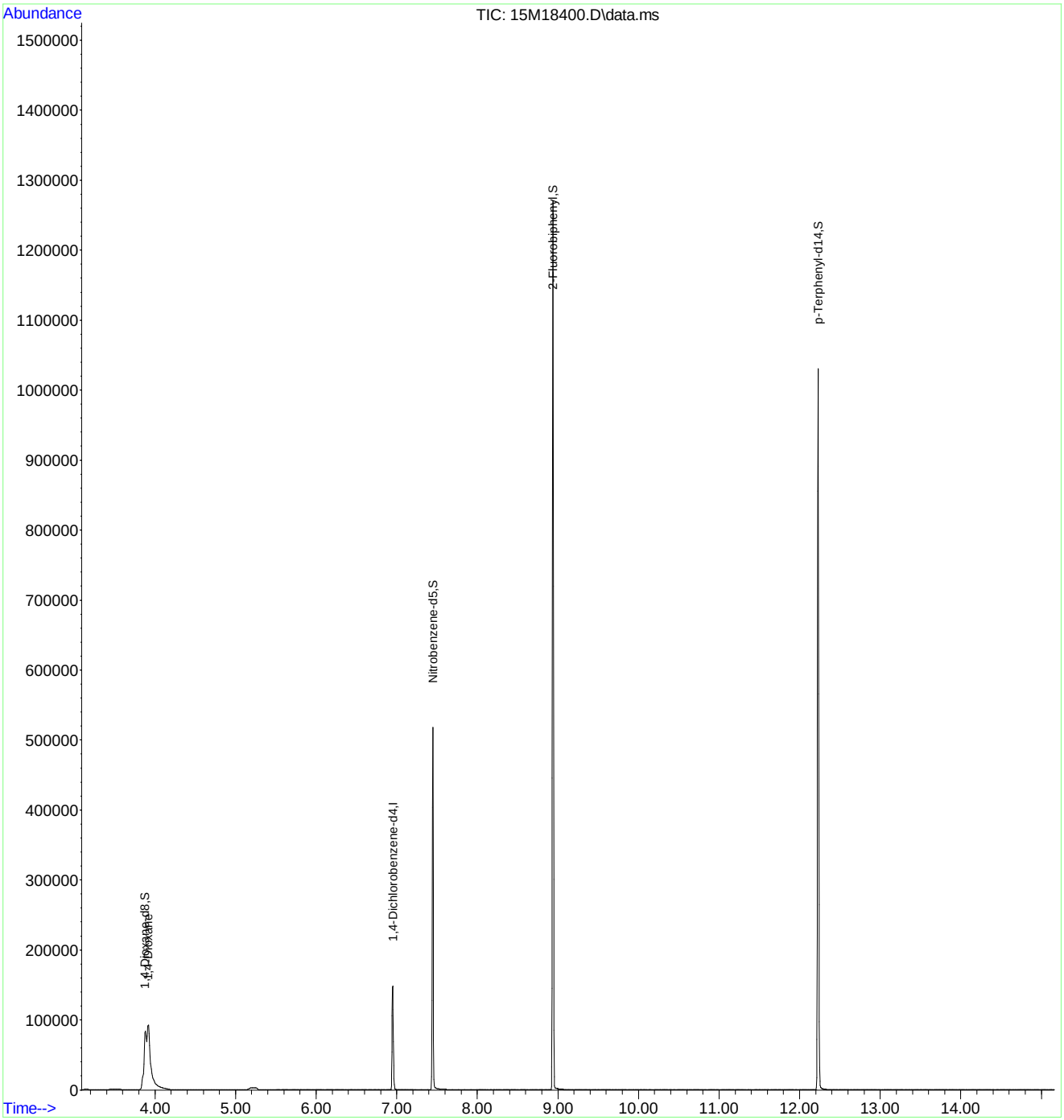

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18400.D
Acq On : 16 Jun 2016 10:00
Operator : MES
Sample : WG572958-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 16 10:16:14 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	96	0.01
2	1,4-Dioxane	5.000	5.083	-1.7	98	0.02
3 S	1,4-Dioxane-d8	5.000	5.186	-3.7	100	0.01
4 S	Nitrobenzene-d5	5.000	3.719	25.6#	74	0.01
5 S	2-Fluorobiphenyl	5.000	5.060	-1.2	100	0.01
6 S	p-Terphenyl-d14	5.000	5.217	-4.3	100	0.05

(#) = Out of Range SPCC's out = 0 CCC's out = 0

2.2.1.5 Raw QC Data

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18337.D
Acq On : 10 Jun 2016 10:18
Operator : MES
Sample : WG572230-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

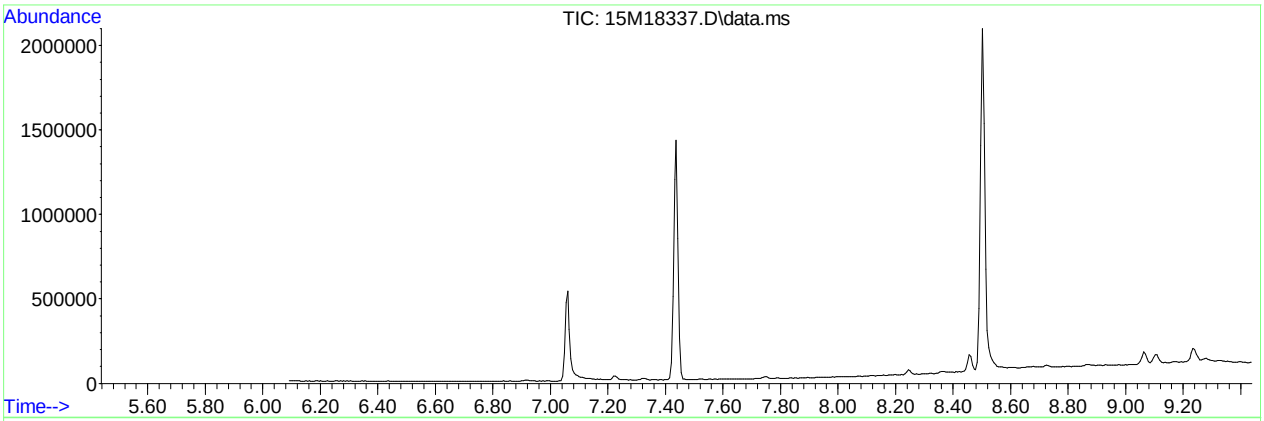

AutoFind: Scans 235, 236, 237; Background Corrected with Scan 229

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	39.5	52157	PASS
68	69	0.00	2	1.9	1026	PASS
69	198	0.00	100	40.8	53844	PASS
70	69	0.00	2	0.2	120	PASS
127	198	40	60	51.4	67853	PASS
197	198	0.00	1	0.4	505	PASS
198	198	100	100	100.0	131981	PASS
199	198	5	9	6.7	8869	PASS
275	198	10	30	26.4	34853	PASS
365	198	1	100	3.2	4186	PASS
441	443	0.01	100	73.9	15632	PASS
442	198	40	100	83.4	110112	PASS
443	442	17	23	19.2	21163	PASS

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18337.D
Acq On : 10 Jun 2016 10:18
Operator : MES
Sample : WG572230-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 10 10:29:37 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

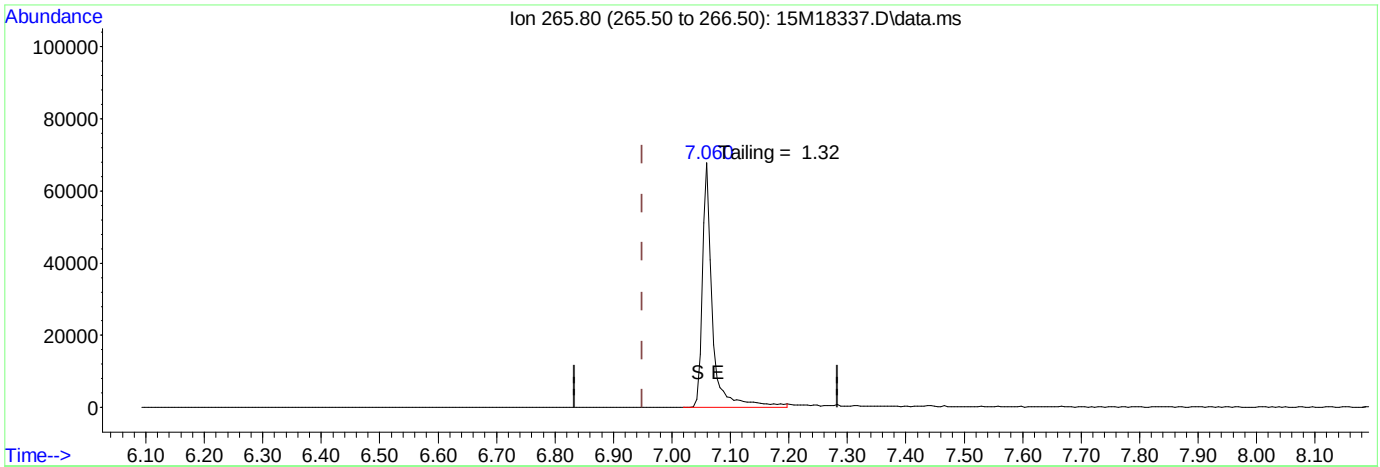

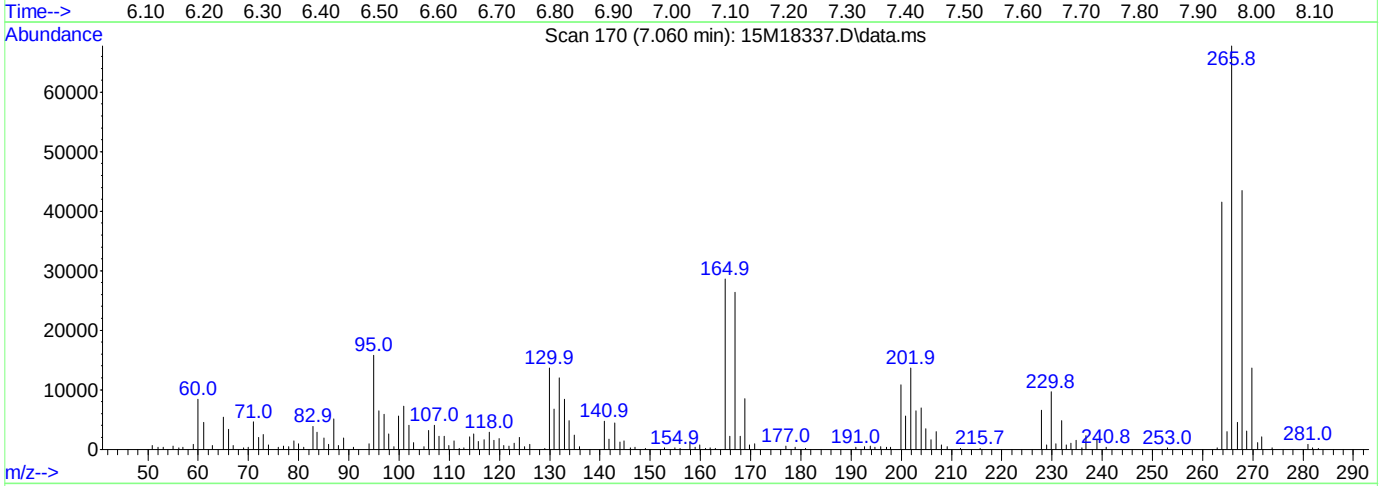

TIC: 15M18337.D\data.ms

(1) Pentachlorophenol

7.060min (+ 0.111) 0.00 ug/ml

response 82111

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18337.D
Acq On : 10 Jun 2016 10:18
Operator : MES
Sample : WG572230-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 10 10:29:37 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

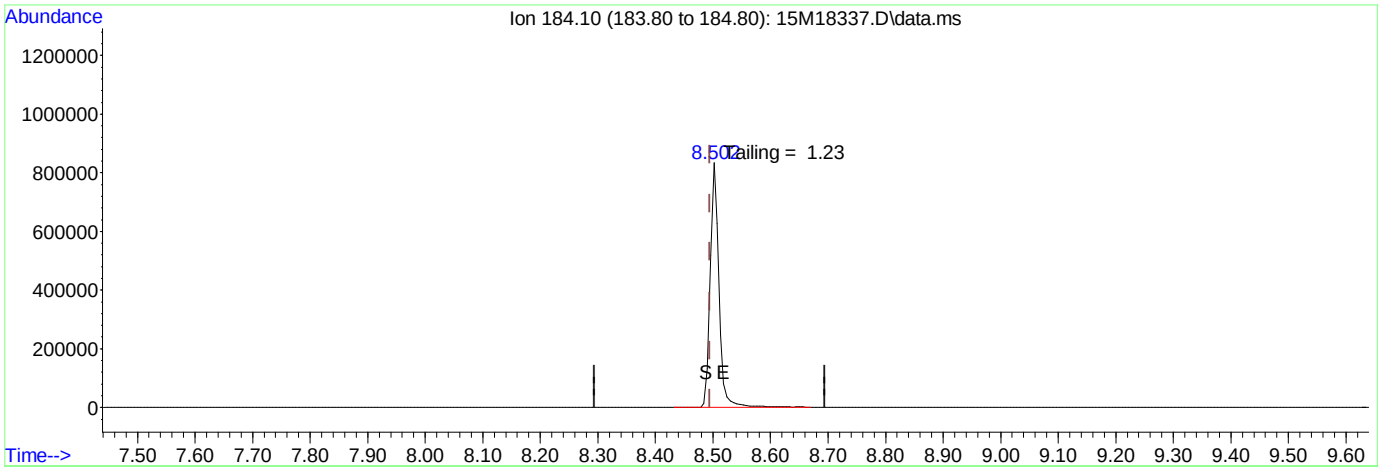

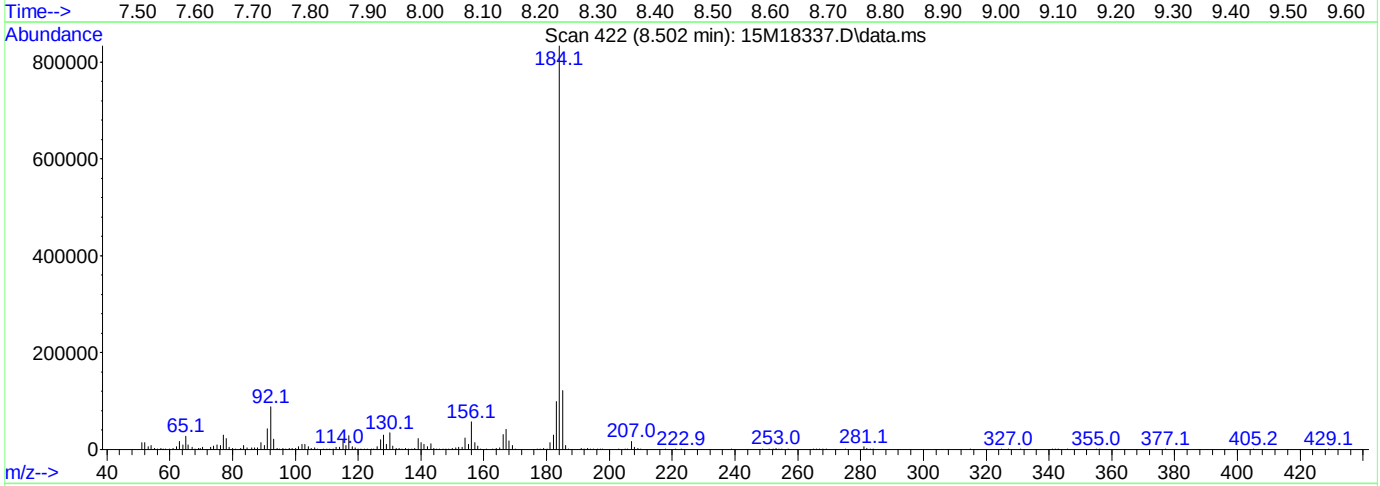

TIC: 15M18337.D\data.ms

(2) Benzidine

8.502min (+ 0.008) 0.00 ug/ml

response 896980

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18337.D
Acq On : 10 Jun 2016 10:18
Operator : MES
Sample : WG572230-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 10 10:29:37 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

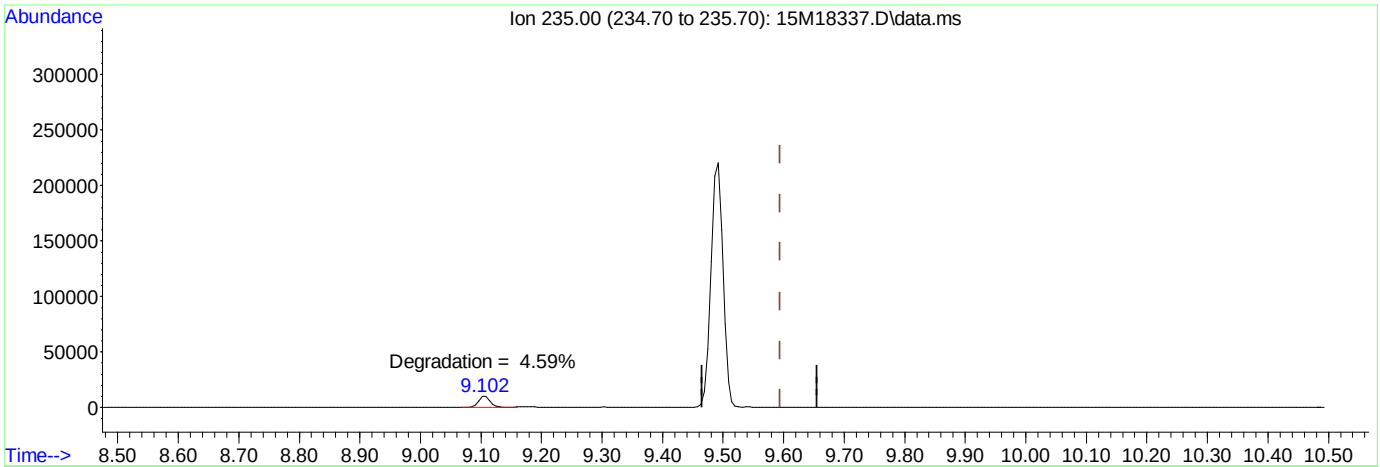

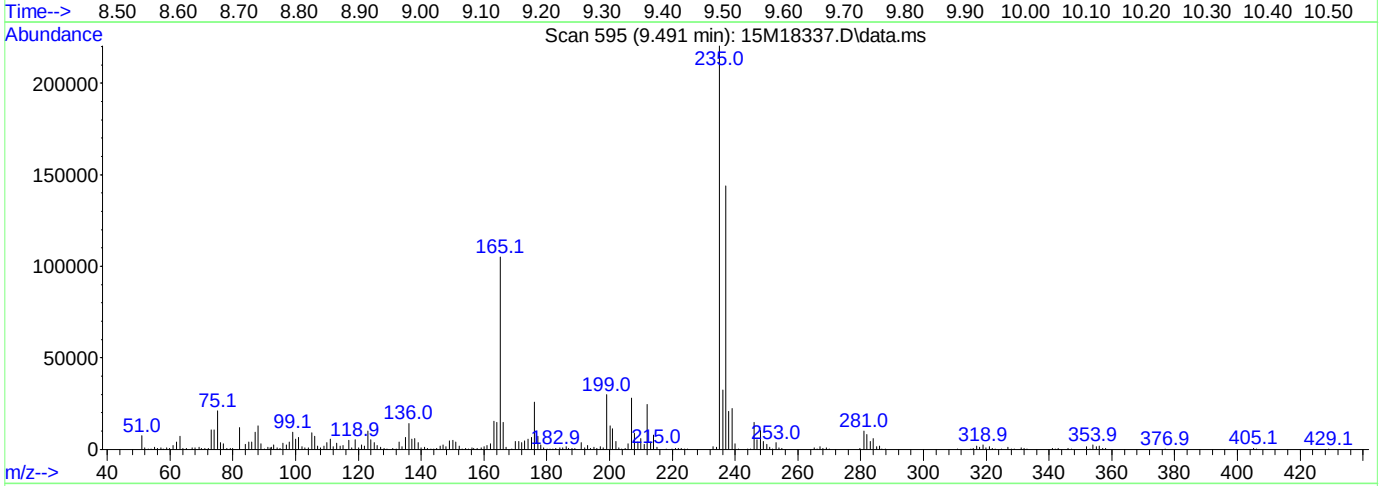

TIC: 15M18337.D\data.ms

(3) DDT

9.491min (-0.103) 0.00 ug/ml

response 283319

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18399.D
Acq On : 16 Jun 2016 9:38
Operator : MES
Sample : WG572958-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

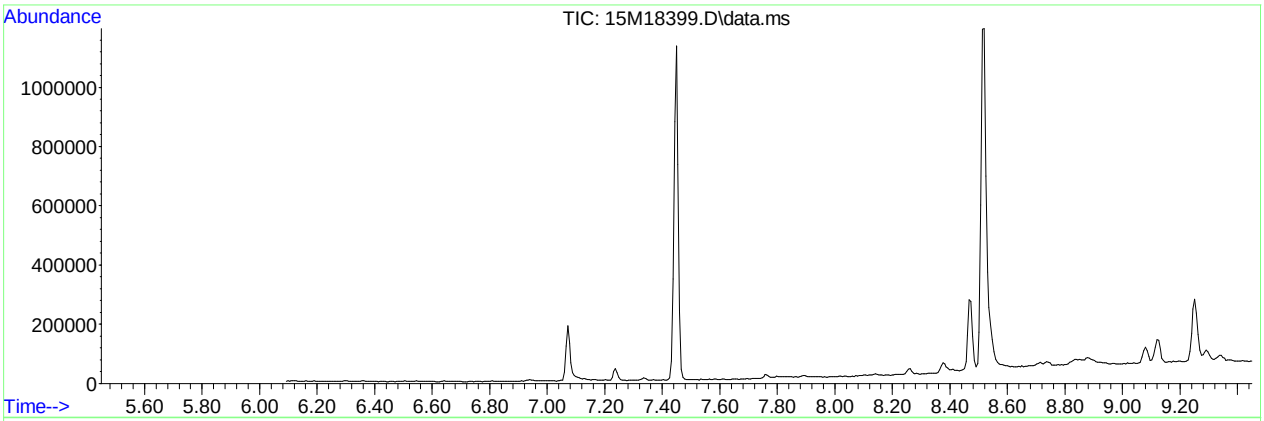

AutoFind: Scans 237, 238, 239; Background Corrected with Scan 231

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	39.7	42335	PASS
68	69	0.00	2	1.6	714	PASS
69	198	0.00	100	40.7	43391	PASS
70	69	0.00	2	0.6	279	PASS
127	198	40	60	52.1	55592	PASS
197	198	0.00	1	0.1	68	PASS
198	198	100	100	100.0	106736	PASS
199	198	5	9	6.7	7172	PASS
275	198	10	30	25.9	27632	PASS
365	198	1	100	3.0	3241	PASS
441	443	0.01	100	76.2	12912	PASS
442	198	40	100	81.0	86427	PASS
443	442	17	23	19.6	16937	PASS

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18399.D
Acq On : 16 Jun 2016 9:38
Operator : MES
Sample : WG572958-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 16 09:56:45 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

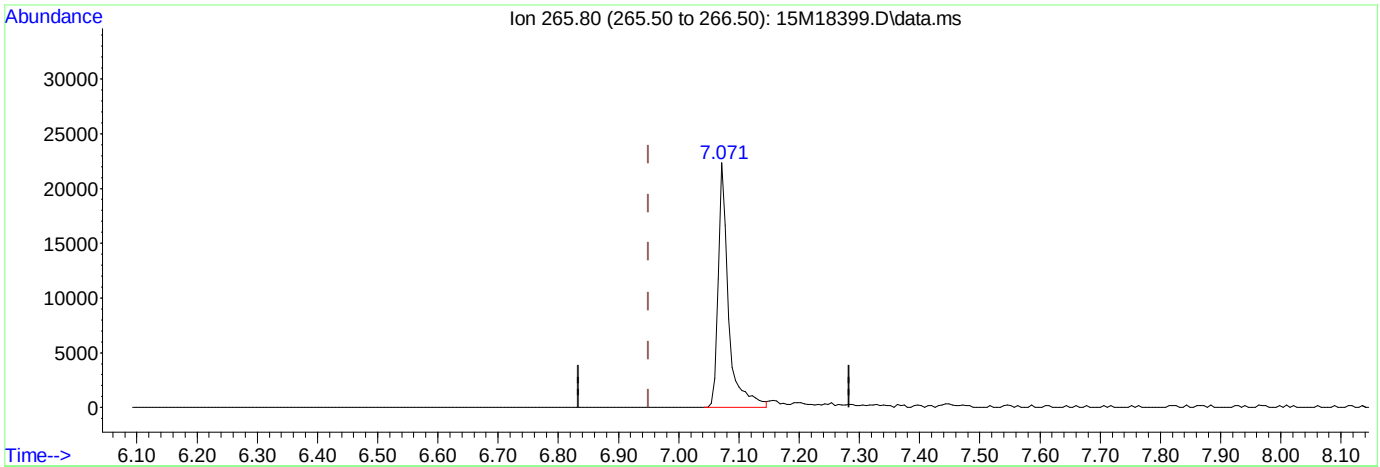

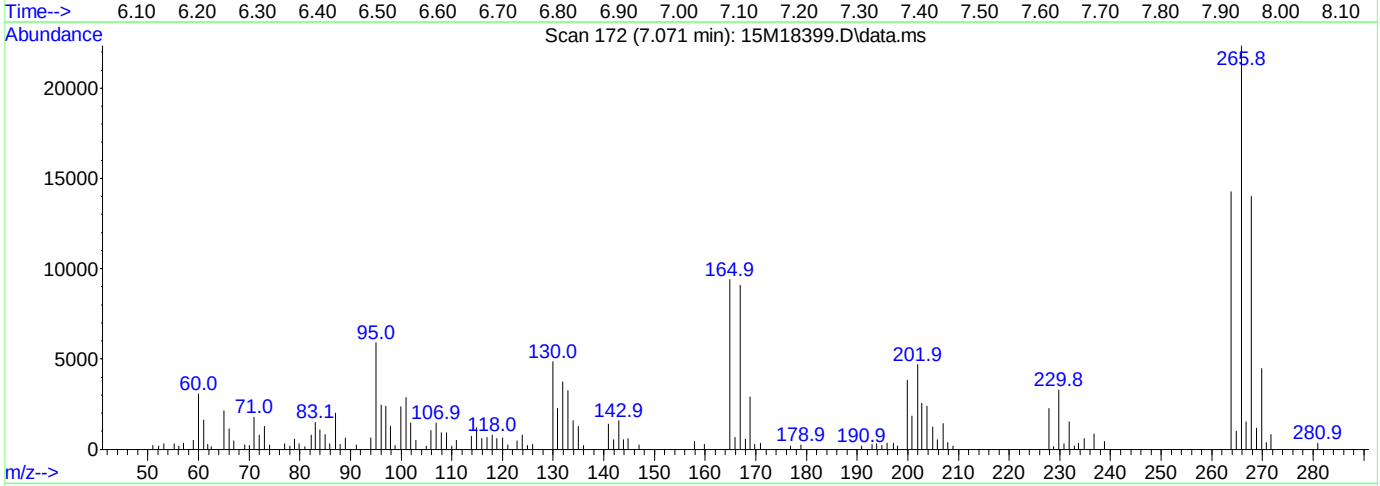

TIC: 15M18399.D\data.ms

(1) Pentachlorophenol

7.071min (+ 0.122) 0.00 ug/ml

response 26601

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18399.D
Acq On : 16 Jun 2016 9:38
Operator : MES
Sample : WG572958-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 16 09:56:45 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

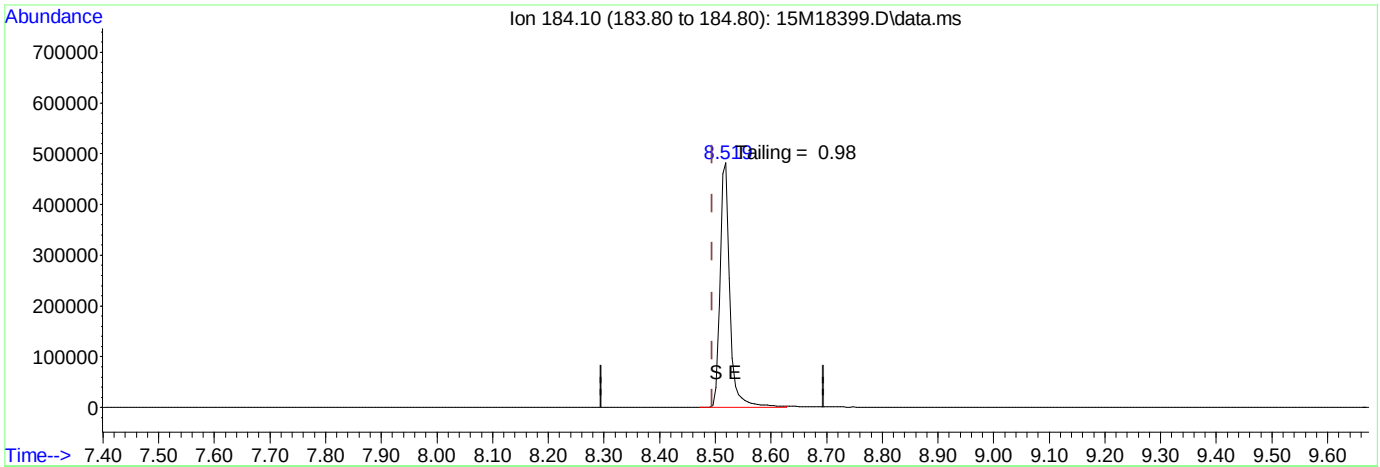

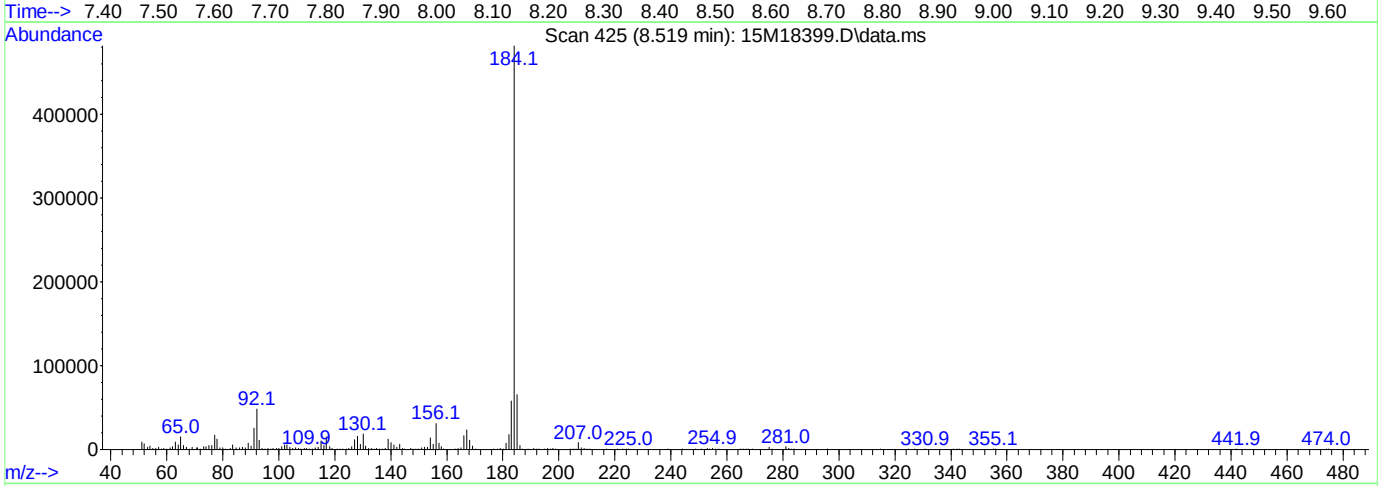

(2) Benzidine

8.519min (+ 0.025) 0.00 ug/ml

response 591309

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18399.D
Acq On : 16 Jun 2016 9:38
Operator : MES
Sample : WG572958-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 16 09:56:45 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

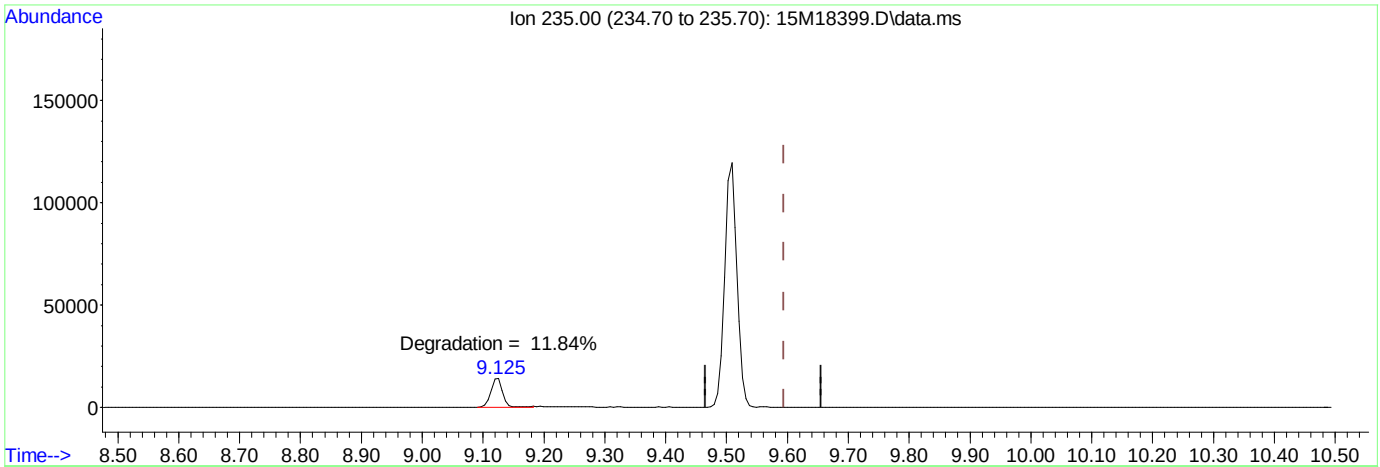

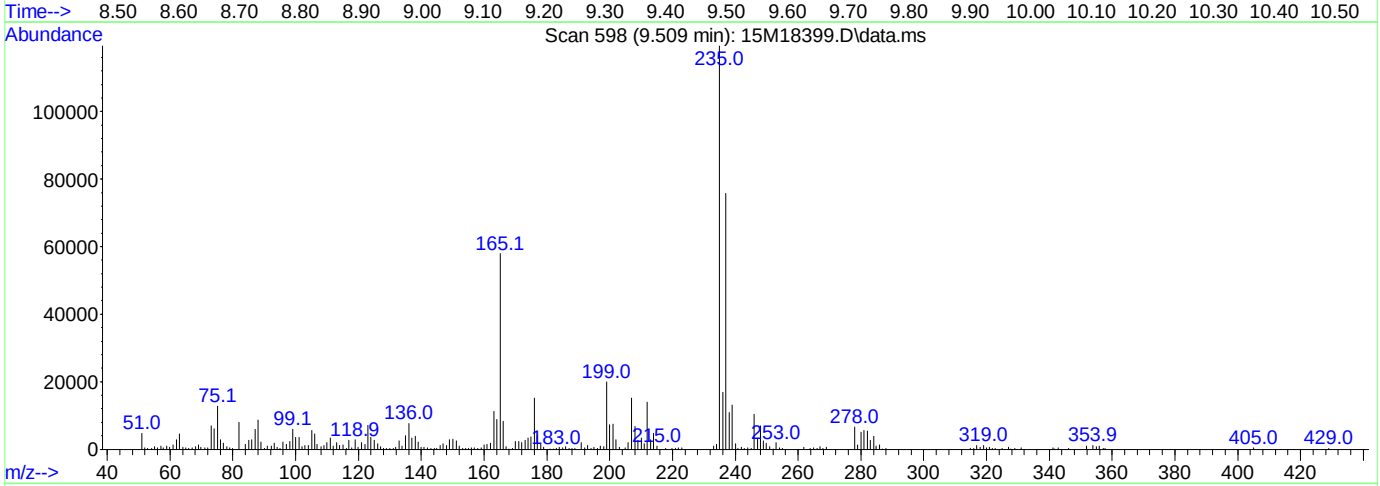

(3) DDT

9.509min (-0.085) 0.00 ug/ml

response 162825

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18401.D
Acq On : 16 Jun 2016 10:23
Operator : MES
Sample : WG572341-01 BLANK 6/13
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 16 12:53:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.948	152	57712	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.876	96	35450	1.4676	ug/L	0.01
Spiked Amount 5.000			Recovery = 29.40%			
4) Nitrobenzene-d5	7.442	82	935690	15.3339	ug/L	0.00
Spiked Amount 5.000			Recovery = 306.60%			
5) 2-Fluorobiphenyl	8.937	172	2176930	14.4366	ug/L	0.01
Spiked Amount 5.000			Recovery = 288.80%			
6) p-Terphenyl-d14	12.221	244	5289384	35.7680	ug/L	0.04
Spiked Amount 5.000			Recovery = 715.40%			

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18401.D
Acq On : 16 Jun 2016 10:23
Operator : MES
Sample : WG572341-01 BLANK 6/13
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 16 12:53:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

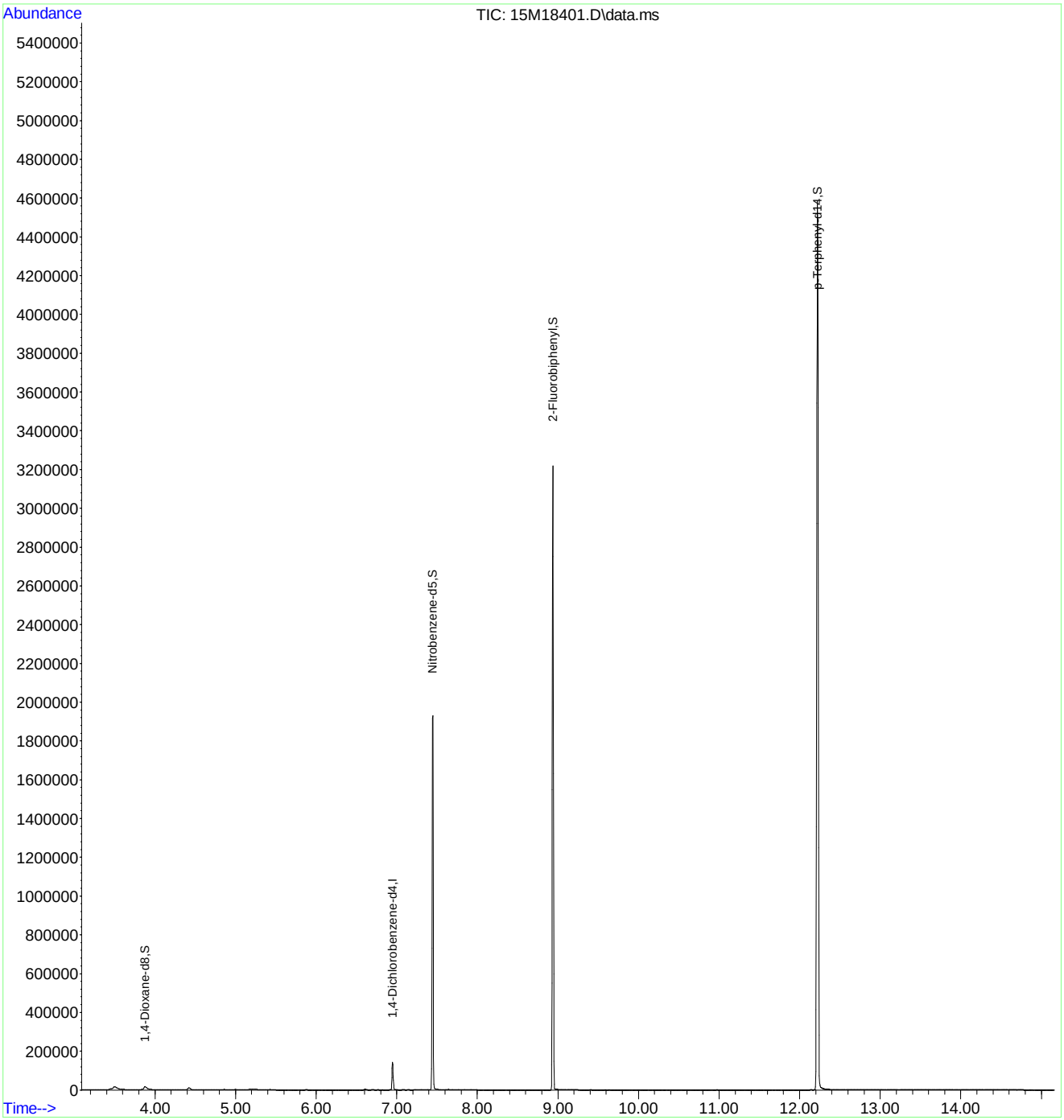

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18402.D
Acq On : 16 Jun 2016 10:46
Operator : MES
Sample : WG572341-02 LCS 6/13
Misc : 1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 16 12:54:04 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.951	152	54087	1.0000	ug/mL	# 0.01
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.883	96	40383	1.7839	ug/L	0.02
Spiked Amount 5.000			Recovery	=	35.60%	
4) Nitrobenzene-d5	7.447	82	8192	0.3591	ug/L	0.01
Spiked Amount 5.000			Recovery	=	7.20%	
5) 2-Fluorobiphenyl	8.937	172	5120	0.0362	ug/L	0.01
Spiked Amount 5.000			Recovery	=	0.80%	
6) p-Terphenyl-d14	12.228	244	1871	0.0135	ug/L	0.05
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.918	58	29330	1.6668	ug/L	82

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18402.D
Acq On : 16 Jun 2016 10:46
Operator : MES
Sample : WG572341-02 LCS 6/13
Misc : 1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 16 12:54:04 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

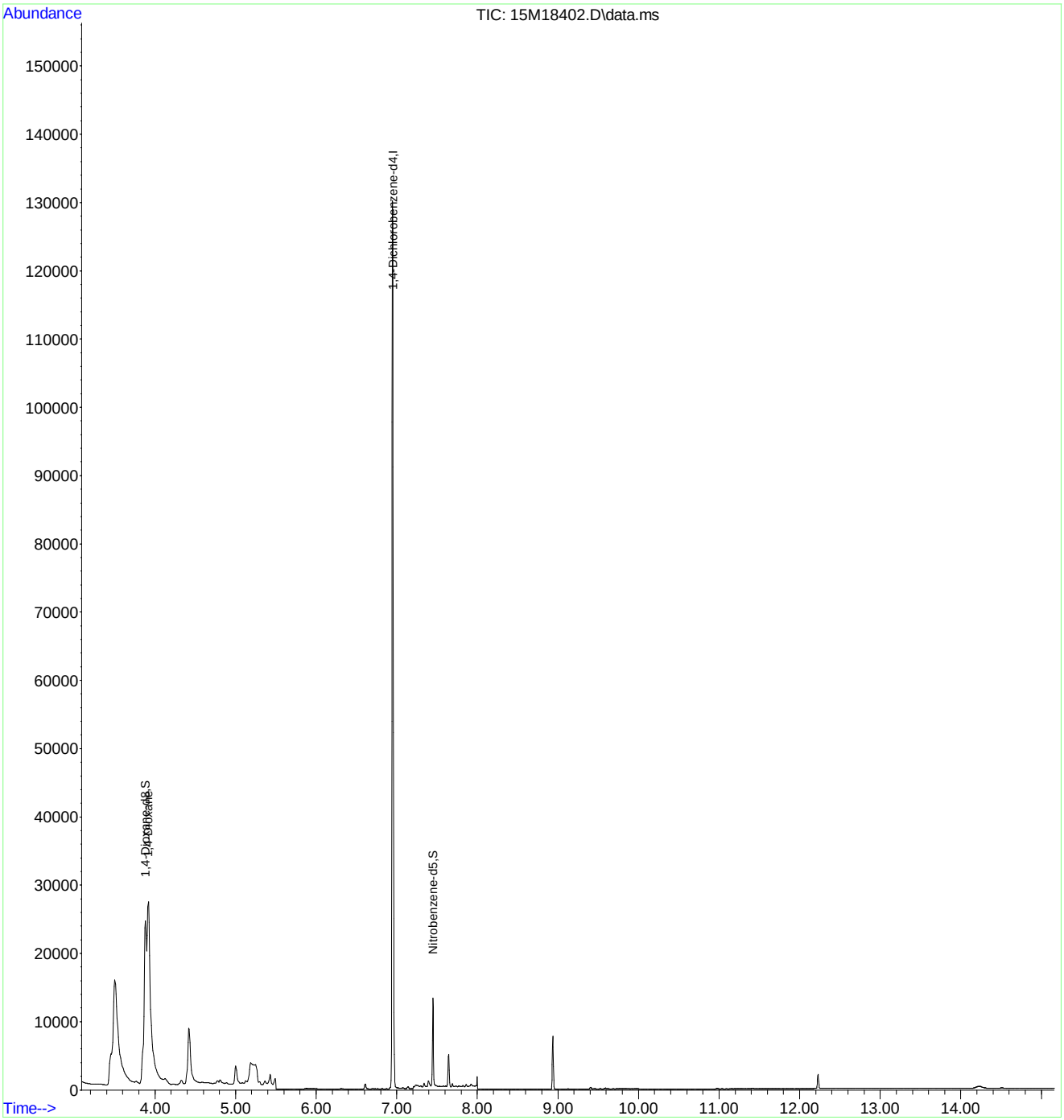

2.2 General Chromatography Data

2.2.2 6850 LC/MS Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW08SW-060816	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/11/2016 13:40
Collect Date:	06/08/2016 08:00	**Dilution:**	10000	**File ID:**	1LM.LM35286
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	35000		4000	2000	1000

Certificate of Analysis

Sample #:	L16060504-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW08DW-060816	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/11/2016 13:58
Collect Date:	06/08/2016 09:05	**Dilution:**	1000	**File ID:**	1LM.LM35287
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	672		400	200	100

Certificate of Analysis

Sample #:	L16060504-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW5-060816	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/11/2016 14:17
Collect Date:	06/08/2016 10:10	**Dilution:**	10000	**File ID:**	1LM.LM35288
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	31300		4000	2000	1000

Certificate of Analysis

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Sample #:	L16060504-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW03SW-060816	**Prep Method:**	6850	**Prep Date:**	06/10/2016 09:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572200	**Analyst:**	WTD	**Run Date:**	06/11/2016 17:19
Collect Date:	06/08/2016 11:20	**Dilution:**	100	**File ID:**	1LM.LM35295
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	260		40.0	20.0	10.0

2.2.2.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1402 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG572200-01 MCT	9,990	
-02 BLK	0.93	
-03 LCS	1.04	
L16060411-01	1433	
-02	1475	
-03	349	
-04	356	
L16060414-01	327	
-02	319	
-03	3510	
-04	4180	
L16060497-01	1546	
-02	1445	
-03	1450	
-04	2560	
L16060504-01	1254	
-02	853	
-03	938	
-04	2350	
L16060575-01	595	
-02	583	
-03	505	

Analyst: Wade T. Dey

Date/Time: 6-10-16 / 1354

DCN#119023

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061016_WTD.TXT
Analyst1: WTD Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)
CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35225	WG572198-01 CCB	1	1		06/10/16 09:49
2	1LM.LM35226	WG572198-02 CCV (1.0ug/L)	1	1	STD75510	06/10/16 10:08
3	1LM.LM35227	WG572200-07 MRL (0.2ug/L)	1	1	STD75510	06/10/16 10:27
4	1LM.LM35228	WG572200-01 MCT (0.2ug/L)	1	1	STD75512	06/10/16 10:46
5	1LM.LM35229	WG572200-02 BLANK	1	1		06/10/16 11:05
6	1LM.LM35230	WG572200-03 LCS (0.2ug/L)	1	1	STD75512	06/10/16 11:24
22	1LM.LM35231	L16060497-01	1	1		06/10/16 11:43
23	1LM.LM35232	L16060497-02 MS (0.2ug/L)	1	1	STD75512	06/10/16 12:02
24	1LM.LM35233	L16060497-03 MSD (0.2ug/L)	1	1	STD75512	06/10/16 12:21
10	1LM.LM35234	L16060497-04 50X	1	50		06/10/16 12:40
11	1LM.LM35235	L16060575-01	1	1		06/10/16 12:59
12	1LM.LM35236	L16060575-02	1	1		06/10/16 13:18
13	1LM.LM35237	L16060575-03	1	1		06/10/16 13:37
14	1LM.LM35238	WG572198-03 CCV (1.0ug/L)	1	1	STD75510	06/10/16 13:55
15	1LM.LM35239	WG572200-08 MRL (0.2ug/L)	1	1	STD75510	06/10/16 14:14
16	1LM.LM35240	WG572198-04 CCB	1	1		06/10/16 14:33
17	1LM.LM35241	L16060575-01 100X	1	100		06/10/16 14:52
18	1LM.LM35242	L16060575-02	1	1		06/10/16 15:11
19	1LM.LM35243	L16060575-03	1	1		06/10/16 15:30
20	1LM.LM35244	WG572198-05 CCV (1.0ug/L)	1	1	STD75510	06/10/16 15:49
21	1LM.LM35245	WG572200-09 MRL (0.2ug/L)	1	1	STD75510	06/10/16 16:08
25	1LM.LM35246	WG572198-06 CCB	1	1		06/10/16 16:27
26	1LM.LM35247	L16060411-01 50X	1	50		06/10/16 16:46
27	1LM.LM35248	L16060411-02 50X	1	50		06/10/16 17:05
28	1LM.LM35249	L16060411-03 200X	1	200		06/10/16 17:24
29	1LM.LM35250	L16060411-04 200X	1	200		06/10/16 17:43
30	1LM.LM35251	L16060414-01	1	1		06/10/16 18:02
31	1LM.LM35252	L16060414-02	1	1		06/10/16 18:21
32	1LM.LM35253	L16060414-03 20X	1	20		06/10/16 18:40
33	1LM.LM35254	L16060414-04 20X	1	20		06/10/16 18:59
58	1LM.LM35255	L16060497-01 10X	1	10		06/10/16 19:18
35	1LM.LM35256	L16060497-04 500X	1	500		06/10/16 19:37
36	1LM.LM35257	WG572198-07 CCV (1.0ug/L)	1	1	STD75510	06/10/16 19:56

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061016_WTD.TXT
Analyst1: WTD Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)
CCV STD: STD75510 LCS STD: STD75512 NA

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
37	1LM.LM35258	WG572200-10 MRL (0.2ug/L)	1	1	STD75510	06/10/16 20:15
38	1LM.LM35259	WG572198-08 CCB	1	1		06/10/16 20:34
39	1LM.LM35260	L16060504-01 1000X	1	1000		06/10/16 20:53
40	1LM.LM35261	L16060504-02 1000X	1	1000		06/10/16 21:12
41	1LM.LM35262	L16060504-03 1000X	1	1000		06/10/16 21:31
42	1LM.LM35263	L16060504-04 10000X	1	10000		06/10/16 21:50
43	1LM.LM35264	WG572198-09 CCV (1.0ug/L)	1	1	STD75510	06/10/16 22:09
44	1LM.LM35265	WG572200-11 MRL (0.2ug/L)	1	1	STD75510	06/10/16 22:27
45	1LM.LM35266	WG572198-10 CCB	1	1		06/10/16 22:46
46	1LM.LM35267	WG572289-07 MRL (0.2ug/L)	1	1	STD75510	06/10/16 23:05
47	1LM.LM35268	WG572289-01 MCT (0.2ug/l)	1	1	STD75512	06/10/16 23:24
48	1LM.LM35269	WG572289-02 BLANK	1	1		06/10/16 23:43
49	1LM.LM35270	WG572289-03 LCS (0.2ug/L)	1	1	STD75512	06/11/16 00:02
50	1LM.LM35271	L16060582-01 100X	1	100		06/11/16 00:21
51	1LM.LM35272	L16060582-02	1	1		06/11/16 00:40
59	1LM.LM35273	L16060582-03	1	1		06/11/16 00:59
53	1LM.LM35274	L16060582-03 MS (0.2ug/L)	1	1	STD75512	06/11/16 01:18
54	1LM.LM35275	L16060582-03 MSD (0.2ug/L)	1	1	STD75512	06/11/16 01:37
55	1LM.LM35276	WG572198-11 CCV (1.0ug/L)	1	1	STD75510	06/11/16 01:56
56	1LM.LM35277	WG572289-08 MRL (0.2ug/L)	1	1	STD75510	06/11/16 02:15
57	1LM.LM35278	WG572198-12 CCB	1	1		06/11/16 02:34

Comments

Seq.	Rerun	Dil.	Reason	Analytes
22	X	10	Over Calibration Range	
	L16060497-01			
23				
	WG572200-05 - Sample does not appear to be homogenous with Sample 01, the reference and Sample 03, the MSD.			
24				
	WG572200-06 - Sample does not appear to be homogenous with Sample 01, the reference and Sample 02, the MS.			
10	X	500	Over Calibration Range	
	L16060497-04			
11	X	100	Over Calibration Range	
	L16060575-01			
12	X	1	Carry-over contamination	
	L16060575-02			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061016_WTD.TXT

Analyst1: WTD Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 NA

Comments

Seq.	Rerun	Dil.	Reason	Analytes
13	X	1	Carry-over contamination	
	L16060575-03			
26	X	500	Over Calibration Range	
	L16060411-01			
27	X	100	Over Calibration Range	
	L16060411-02			
32	X	10000	Over Calibration Range	
	L16060414-03			
33	X	10000	Over Calibration Range	
	L16060414-04			
39	X	10000	Over Calibration Range	
	L16060504-01			
40	X		Internal standard failure	
	L16060504-02 - No Internal Standard added.			
41	X	10000	Over Calibration Range	
	L16060504-03 - No Internal Standard added.			
42	X	1000	Analyzed too dilute	
	L16060504-04 - No Internal Standard added.			
50				
	L16060582-01 - Analyzed at a dilution based on information from the client.			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061116_WTD.TXT
Analyst1: WTD Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)
CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35279	WG572339-01 CCB	1	1		06/11/16 11:27
2	1LM.LM35280	WG572339-02 CCV (1.0ug/L)	1	1	STD75510	06/11/16 11:46
3	1LM.LM35281	WG572200-12 MRL (0.2ug/L)	1	1	STD75510	06/11/16 12:05
4	1LM.LM35282	L16060411-01 500X	1	500		06/11/16 12:24
5	1LM.LM35283	L16060411-02 100X	1	100		06/11/16 12:43
6	1LM.LM35284	L16060414-03 10000X	1	10000		06/11/16 13:02
7	1LM.LM35285	L16060414-04 10000X	1	10000		06/11/16 13:21
8	1LM.LM35286	L16060504-01 10000X	1	10000		06/11/16 13:40
9	1LM.LM35287	L16060504-02 1000X	1	1000		06/11/16 13:58
10	1LM.LM35288	L16060504-03 10000X	1	10000		06/11/16 14:17
11	1LM.LM35289	L16060504-04 1000X	1	1000		06/11/16 14:36
12	1LM.LM35290	L16060414-03 100000X	1	100000		06/11/16 14:55
13	1LM.LM35291	L16060414-04 100000X	1	100000		06/11/16 15:15
14	1LM.LM35292	WG572339-03 CCV (1.0ug/L)	1	1	STD75510	06/11/16 15:34
15	1LM.LM35293	WG572200-13 MRL (0.2ug/L)	1	1	STD75510	06/11/16 16:41
16	1LM.LM35294	WG572339-04 CCB	1	1		06/11/16 17:00
17	1LM.LM35295	L16060504-04 100X	1	100		06/11/16 17:19
18	1LM.LM35296	WG572339-05 CCV (1.0ug/L)	1	1	STD75510	06/11/16 17:38
19	1LM.LM35297	WG572200-14 MRL (0.2ug/L)	1	1	STD75510	06/11/16 17:57
20	1LM.LM35298	WG572339-06 CCB	1	1		06/11/16 18:16
21	1LM.LM35299	WG572350-05 MRL (0.2ug/L)	1	1	STD75510	06/11/16 18:35
22	1LM.LM35300	WG572350-01 MCT (0.2ug/l)	1	1	STD75512	06/11/16 18:54
23	1LM.LM35301	WG572350-02 BLANK	1	1		06/11/16 19:13
24	1LM.LM35302	WG572350-03 LCS (0.2ug/L)	1	1	STD75512	06/11/16 19:32
25	1LM.LM35303	WG572350-03 LCSD (0.2ug/L)	1	1	STD75512	06/11/16 19:51
26	1LM.LM35304	L16060632-01 100X	1	100		06/11/16 20:10
27	1LM.LM35305	L16060632-02 100X	1	100		06/11/16 20:29
28	1LM.LM35306	L16060632-03 100X	1	100		06/11/16 20:48
29	1LM.LM35307	L16060632-04 100X	1	100		06/11/16 21:07
30	1LM.LM35308	L16060615-01 10000X	1	10000		06/11/16 21:26
31	1LM.LM35309	L16060615-02 100X	1	100		06/11/16 21:44
43	1LM.LM35310	WG572339-07 CCV (1.0ug/L)	1	1	STD75510	06/11/16 22:03
33	1LM.LM35311	WG572350-06 MRL (0.2ug/L)	1	1	STD75510	06/11/16 22:22

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061116_WTD.TXT
Analyst1: WTD Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:
Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)
CCV STD: STD75510 LCS STD: STD75512 NA

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
44	1LM.LM35312	WG572339-08 CCB	1	1		06/11/16 22:41
35	1LM.LM35313	L16060615-03 100X	1	100		06/11/16 23:00
36	1LM.LM35314	L16060615-04 100X	1	100		06/11/16 23:19
37	1LM.LM35315	L16060616-01 10000X	1	10000		06/11/16 23:38
38	1LM.LM35316	L16060616-02 10000X	1	10000		06/11/16 23:57
39	1LM.LM35317	L16060616-03	1	1		06/12/16 00:16
45	1LM.LM35318	WG572339-09 CCV (1.0ug/L)	1	1	STD75510	06/12/16 00:35
41	1LM.LM35319	WG572350-07 MRL (0.2ug/L)	1	1	STD75510	06/12/16 00:54
46	1LM.LM35320	WG572339-10 CCB	1	1		06/12/16 01:13

Comments

Seq.	Rerun	Dil.	Reason	Analytes
6	X	100000	Over Calibration Range	
	L16060414-03			
7	X	100000	Over Calibration Range	
	L16060414-04			
11	X	100	Analyzed too dilute	
	L16060504-04			
26	X	1	Analyzed too dilute	
	L16060632-01			
27	X	1	Analyzed too dilute	
	L16060632-02			
28	X	1	Analyzed too dilute	
	L16060632-03			
29	X	1	Analyzed too dilute	
	L16060632-04			
30	X	1	Analyzed too dilute	
	L16060615-01			
31	X	1	Analyzed too dilute	
	L16060615-02			
35	X	1	Analyzed too dilute	
	L16060615-03			
36	X	10000	Over Calibration Range	
	L16060615-04			
37				
	L16060616-01 Analyzed at a dilution based on historical data			

Page: 2 Approved: 13-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061116_WTD.TXT

Analyst1: WTD Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups:

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 NA

Comments

Seq.	Rerun	Dil.	Reason	Analytes
38	X	100	Analyzed too dilute	
	L16060616-02			

Page: 3 Approved: 13-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 04-MAY-2016 John Richards

Secondary Reviewer: 05-MAY-2016 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 10-JUN-2016
Analyst: WTD
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 75634
Analytical Workgroups: WG572200, WG572289

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	WTD
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	MES

Primary Reviewer: 11-JUN-2016

Secondary Reviewer: 13-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-13-2016 11:53:25

Microbac Laboratories Inc.

Data Checklist

Date: 11-JUN-2016
Analyst: WTD
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 75641
Analytical Workgroups: L16060411, L16060414, L16060504, L16060616

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	WTD
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 12-JUN-2016

Secondary Reviewer: 13-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-14-2016 08:50:47

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG572200

Login Number: L16060504

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW08SW-060816	01	06/08/16					06/10/2016	2	28		06/11/16	1.2	28	
18CPTMW08DW-060816	02	06/08/16					06/10/2016	2	28		06/11/16	1.2	28	
MW5-060816	03	06/08/16					06/10/2016	2	28		06/11/16	1.2	28	
18CPTMW03SW-060816	04	06/08/16					06/10/2016	1.9	28		06/11/16	1.3	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4805762
Report generated 06/14/2016 08:40

METHOD BLANK SUMMARY

Login Number: L16060504
Blank File ID: 1LM.LM35229
Prep Date: 06/10/16 09:00
Analyzed Date: 06/10/16 11:05
Analyst: WTD

Work Group: WG572200
Blank Sample ID: WG572200-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG572200-07	1LM.LM35227	06/10/16 10:27	01
MCT	WG572200-01	1LM.LM35228	06/10/16 10:46	01
LCS	WG572200-03	1LM.LM35230	06/10/16 11:24	01
QCMRL	WG572200-08	1LM.LM35239	06/10/16 14:14	01
QCMRL	WG572200-09	1LM.LM35245	06/10/16 16:08	01
QCMRL	WG572200-10	1LM.LM35258	06/10/16 20:15	01
QCMRL	WG572200-11	1LM.LM35265	06/10/16 22:27	01
QCMRL	WG572200-12	1LM.LM35281	06/11/16 12:05	01
18CPTMW08SW-060816	L16060504-01	1LM.LM35286	06/11/16 13:40	DL01
18CPTMW08DW-060816	L16060504-02	1LM.LM35287	06/11/16 13:58	DL01
MW5-060816	L16060504-03	1LM.LM35288	06/11/16 14:17	DL01
QCMRL	WG572200-13	1LM.LM35293	06/11/16 16:41	01
18CPTMW03SW-060816	L16060504-04	1LM.LM35295	06/11/16 17:19	DL01
QCMRL	WG572200-14	1LM.LM35297	06/11/16 17:57	01

Report Name: BLANK_SUMMARY
PDF File ID: 4805763
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060504 Prep Date: 06/10/16 09:00 Sample ID: WG572200-02
Instrument ID: LCMS1 Run Date: 06/10/16 11:05 Prep Method: 6850
File ID: 1LM.LM35229 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4805764
14-JUN-2016 08:40

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060504 Run Date: 06/10/2016 Sample ID: WG572200-03
Instrument ID: LCMS1 Run Time: 11:24 Prep Method: 6850
File ID: 1LM.LM35230 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD75512 Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Perchlorate	0.200	0.201	101	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4805765
Report generated: 06/14/2016 08:40

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060504
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4805767
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060504

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4805767
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060504

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4805767
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060504

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008
PDF File ID: 4805767
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060504 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4805768
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060504
Run Date: 06/10/2016
Sample ID: WG572198-01
Instrument ID: LCMS1
Run Time: 09:49
Method: 6850
File ID: 1LM.LM35225
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4805770
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060504
Run Date: 06/10/2016
Sample ID: WG572198-04
Instrument ID: LCMS1
Run Time: 14:33
Method: 6850
File ID: 1LM.LM35240
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4805770
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060504
Run Date: 06/10/2016
Sample ID: WG572198-06
Instrument ID: LCMS1
Run Time: 16:27
Method: 6850
File ID: 1LM.LM35246
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4805770
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060504
Run Date: 06/10/2016
Sample ID: WG572198-08
Instrument ID: LCMS1
Run Time: 20:34
Method: 6850
File ID: 1LM.LM35259
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4805770
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060504
Run Date: 06/10/2016
Sample ID: WG572198-10
Instrument ID: LCMS1
Run Time: 22:46
Method: 6850
File ID: 1LM.LM35266
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4805770
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060504
Run Date: 06/11/2016
Sample ID: WG572339-01
Instrument ID: LCMS1
Run Time: 11:27
Method: 6850
File ID: 1LM.LM35279
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4805770
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060504
Run Date: 06/11/2016
Sample ID: WG572339-04
Instrument ID: LCMS1
Run Time: 17:00
Method: 6850
File ID: 1LM.LM35294
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4805770
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060504
Run Date: 06/11/2016
Sample ID: WG572339-06
Instrument ID: LCMS1
Run Time: 18:16
Method: 6850
File ID: 1LM.LM35298
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4805770
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504
Run Date: 06/10/2016
Sample ID: WG572198-02
Instrument ID: LCMS1
Run Time: 10:08
Method: 6850
File ID: 1LM.LM35226
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.70	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4805769
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504
Run Date: 06/10/2016
Sample ID: WG572198-03
Instrument ID: LCMS1
Run Time: 13:55
Method: 6850
File ID: 1LM.LM35238
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.71	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4805769
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504
Run Date: 06/10/2016
Sample ID: WG572198-05
Instrument ID: LCMS1
Run Time: 15:49
Method: 6850
File ID: 1LM.LM35244
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.05	ug/L	1.77	5.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4805769
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504 Run Date: 06/10/2016 Sample ID: WG572198-07
Instrument ID: LCMS1 Run Time: 19:56 Method: 6850
File ID: 1LM.LM35257 Analyst: WTD QC Key: DOD4
Workgroup (AAB#): WG572200 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.08	ug/L	1.82	8.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4805769
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504
Run Date: 06/10/2016
Sample ID: WG572198-09
Instrument ID: LCMS1
Run Time: 22:09
Method: 6850
File ID: 1LM.LM35264
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.74	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4805769
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504
Run Date: 06/11/2016
Sample ID: WG572198-11
Instrument ID: LCMS1
Run Time: 01:56
Method: 6850
File ID: 1LM.LM35276
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.74	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4805769
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504
Run Date: 06/11/2016
Sample ID: WG572339-02
Instrument ID: LCMS1
Run Time: 11:46
Method: 6850
File ID: 1LM.LM35280
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.75	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4805769
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504
Run Date: 06/11/2016
Sample ID: WG572339-03
Instrument ID: LCMS1
Run Time: 15:34
Method: 6850
File ID: 1LM.LM35292
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.05	ug/L	1.78	5.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4805769
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504
Run Date: 06/11/2016
Sample ID: WG572339-05
Instrument ID: LCMS1
Run Time: 17:38
Method: 6850
File ID: 1LM.LM35296
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.73	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4805769
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504
Run Date: 06/11/2016
Sample ID: WG572339-07
Instrument ID: LCMS1
Run Time: 22:03
Method: 6850
File ID: 1LM.LM35310
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572200
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.06	ug/L	1.79	6.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4805769
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060504 Run Date: 06/10/2016 Sample ID: WG572200-07
Instrument ID: LCMS1 Run Time: 10:27 Prep Method: 6850
File ID: 1LM.LM35227 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.202	101	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4805766
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060504 Run Date: 06/10/2016 Sample ID: WG572200-08
Instrument ID: LCMS1 Run Time: 14:14 Prep Method: 6850
File ID: 1LM.LM35239 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.215	108	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4805766
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060504 Run Date: 06/10/2016 Sample ID: WG572200-09
Instrument ID: LCMS1 Run Time: 16:08 Prep Method: 6850
File ID: 1LM.LM35245 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.210	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4805766
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060504 Run Date: 06/10/2016 Sample ID: WG572200-10
Instrument ID: LCMS1 Run Time: 20:15 Prep Method: 6850
File ID: 1LM.LM35258 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.222	111	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4805766
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060504 Run Date: 06/10/2016 Sample ID: WG572200-11
Instrument ID: LCMS1 Run Time: 22:27 Prep Method: 6850
File ID: 1LM.LM35265 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.216	108	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4805766
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060504 Run Date: 06/11/2016 Sample ID: WG572200-12
Instrument ID: LCMS1 Run Time: 12:05 Prep Method: 6850
File ID: 1LM.LM35281 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4805766
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060504 Run Date: 06/11/2016 Sample ID: WG572200-13
Instrument ID: LCMS1 Run Time: 16:41 Prep Method: 6850
File ID: 1LM.LM35293 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4805766
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060504 Run Date: 06/11/2016 Sample ID: WG572200-14
Instrument ID: LCMS1 Run Time: 17:57 Prep Method: 6850
File ID: 1LM.LM35297 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572200 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.215	108	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4805766
Report generated 06/14/2016 08:40

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16060504
Instrument ID: LCMS1
Workgroup (AAB#): WG572200

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16060504-01	10000	DL01	444000
L16060504-02	1000	DL01	471000
L16060504-03	10000	DL01	451000
L16060504-04	100	DL01	420000
WG572200-02	1.00	01	441000
WG572200-03	1.00	01	434000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4805771
Report generated 06/14/2016 08:40

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**	6850	**Samplenum:**	L16060504-01
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35286
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 13:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	523000	180000	2.91	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**	6850	**Samplenum:**	L16060504-02
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35287
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 13:58	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	107000	36200	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**	6850	**Samplenum:**	L16060504-03
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35288
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 14:17	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	476000	164000	2.90	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**	6850	**Samplenum:**	L16060504-04
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35295
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 17:19	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	367000	124000	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG572198-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35225
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 09:49	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG572198-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35226
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 10:08	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	151000	53700	2.81	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG572198-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35238
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 13:55	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	172000	59600	2.89	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG572198-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35240
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 14:33	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	3660	1770	2.07	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG572198-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35244
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 15:49	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	179000	63400	2.82	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG572198-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35246
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 16:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	377	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG572198-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35257
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 19:56	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	175000	58000	3.02	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG572198-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35259
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 20:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG572198-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35264
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 22:09	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	57800	2.92	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG572198-10
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35266
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 22:46	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	971	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG572198-11
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35276
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 01:56	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	183000	61800	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**	6850	**Samplenum:**	WG572200-01
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35228
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 10:46	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35200	10400	3.38	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**	6850	**Samplenum:**	WG572200-02
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35229
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 11:05	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	309	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**	6850	**Samplenum:**	WG572200-03
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35230
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 11:24	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	30000	11800	2.54	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**	6850	**Samplenum:**	WG572200-07
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35227
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 10:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	30600	11100	2.76	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**	6850	**Samplenum:**	WG572200-08
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35239
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 14:14	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36500	13800	2.64	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**	6850	**Samplenum:**	WG572200-09
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35245
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 16:08	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36700	12600	2.91	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**	6850	**Samplenum:**	WG572200-10
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35258
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 20:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36200	12400	2.92	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**	6850	**Samplenum:**	WG572200-11
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35265
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/10/2016 22:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35800	11700	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**	6850	**Samplenum:**	WG572200-12
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35281
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 12:05	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	33000	11900	2.77	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**	6850	**Samplenum:**	WG572200-13
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35293
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 16:41	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	33900	12200	2.78	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**	6850	**Samplenum:**	WG572200-14
Instrument:	LCMS1	**Prep Date:**	06/10/2016 09:00	**File ID:**	1LM.LM35297
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 17:57	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36500	12700	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG572339-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35279
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 11:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	7310	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG572339-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35280
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 11:46	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	160000	54700	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG572339-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35292
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 15:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	171000	56800	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG572339-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35294
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 17:00	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG572339-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35296
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 17:38	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	172000	59300	2.90	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG572339-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35298
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 18:16	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060504	**Prep Method:**		**Samplenum:**	WG572339-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35310
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572200	**Analysis Date:**	06/11/2016 22:03	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	180000	60500	2.98	2.3	3.8	

2.2.2.3 Sample Data

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Printed: 6/12/2016 9:38 PM

Data File	LM35286.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 1:40:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060504-01 10000X	**Injection Vial**	24.00
Data File	LM35286.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 1:40:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	L16060504-01	**Dilution Factor**	1.00
Sample Comment	110,000.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.440e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.230e+05	9.84	N/A	3.50
Perchlorate conf	1.800e+05	9.83	N/A	3.61

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

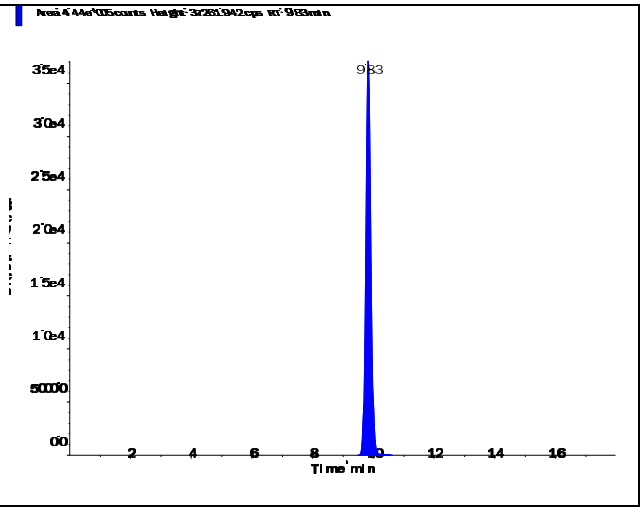

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	3.50 ng/ml
Area Ratio:	1.178
Sample Type:	(Unknown)

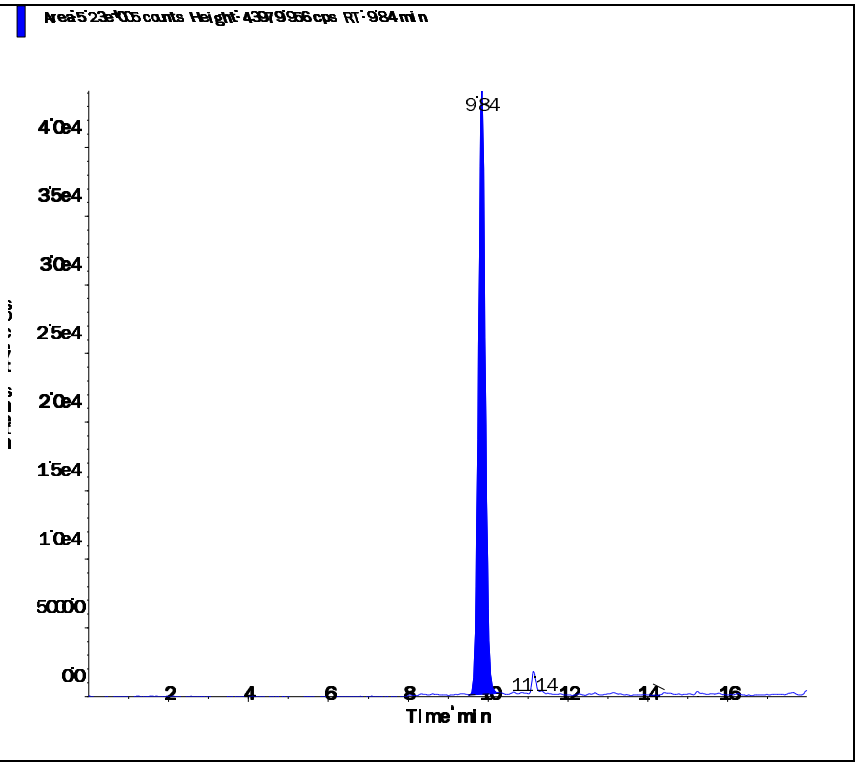

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	3.61 ng/ml
Area Ratio:	0.405
Sample Type:	(Unknown)

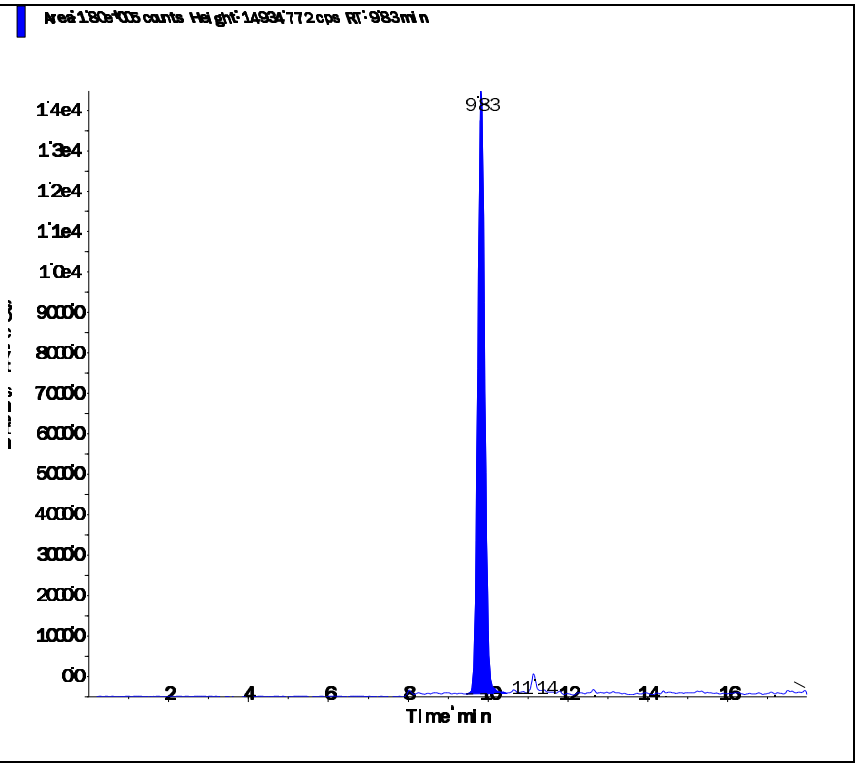

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Data File	LM35287.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 1:58:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060504-02 1000X	**Injection Vial**	25.00
Data File	LM35287.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 1:58:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	L16060504-02	**Dilution Factor**	1.00
Sample Comment	11,000.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.710e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.070e+05	9.84	N/A	0.672
Perchlorate conf	3.620e+04	9.83	N/A	0.67

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

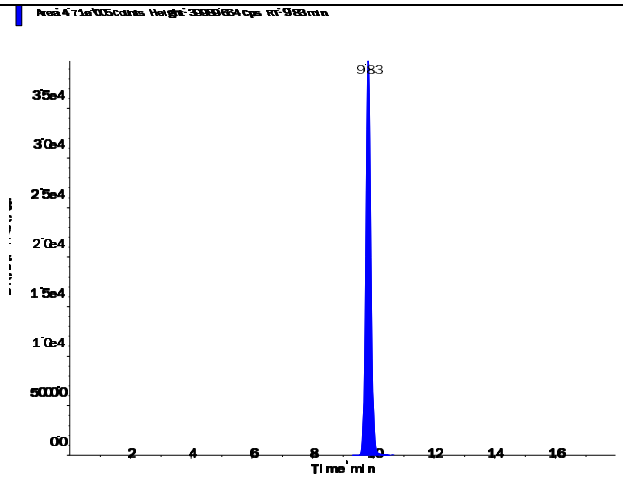

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.672 ng/ml
Area Ratio:	0.227
Sample Type:	(Unknown)

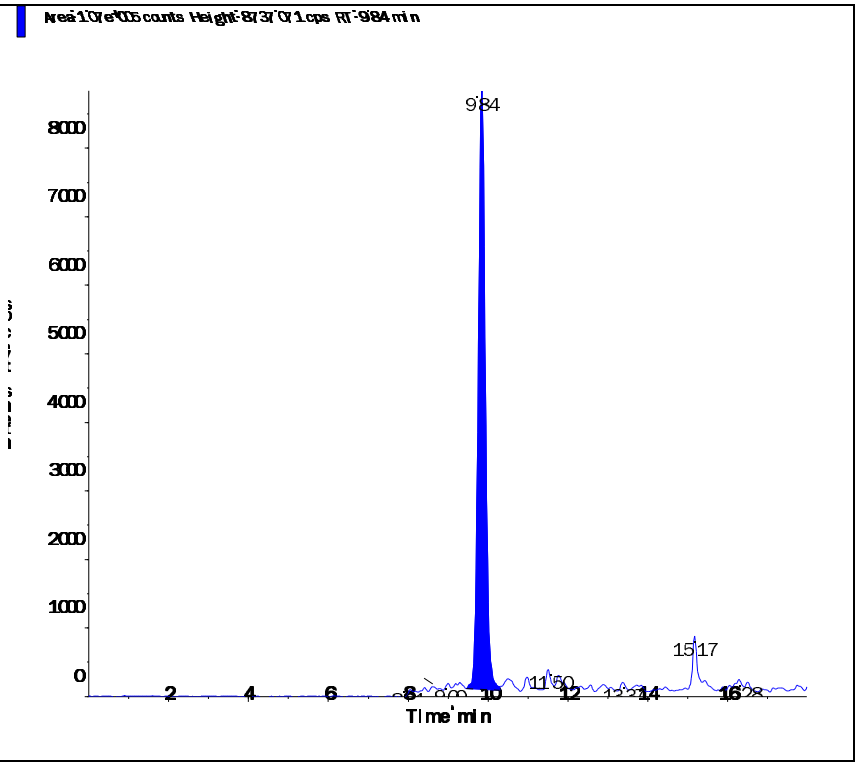

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.67 ng/ml
Area Ratio:	0.077
Sample Type:	(Unknown)

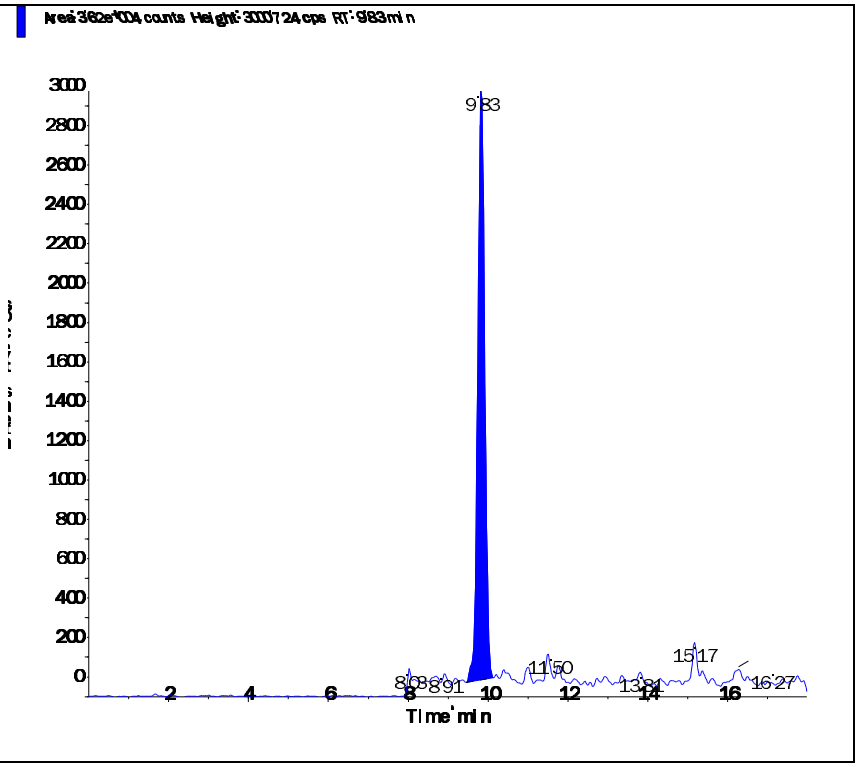

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Data File	LM35288.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 2:17:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060504-03 10000X	**Injection Vial**	26.00
Data File	LM35288.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 2:17:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	L16060504-03	**Dilution Factor**	1.00
Sample Comment	110,000.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.510e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.760e+05	9.84	N/A	3.13
Perchlorate conf	1.640e+05	9.83	N/A	3.24

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

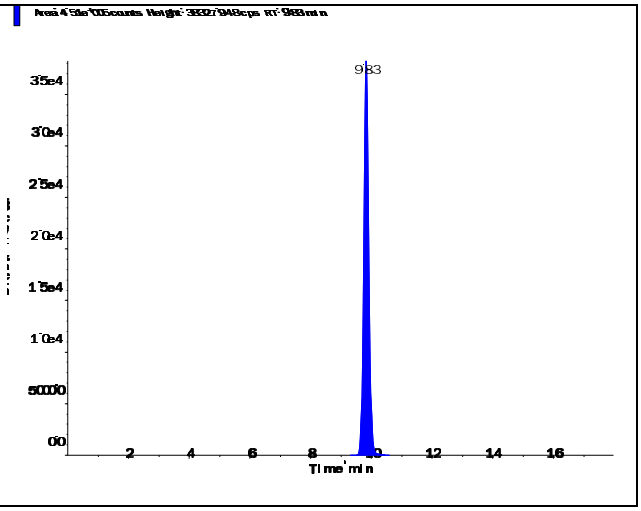

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	3.13 ng/ml
Area Ratio:	1.055
Sample Type:	(Unknown)

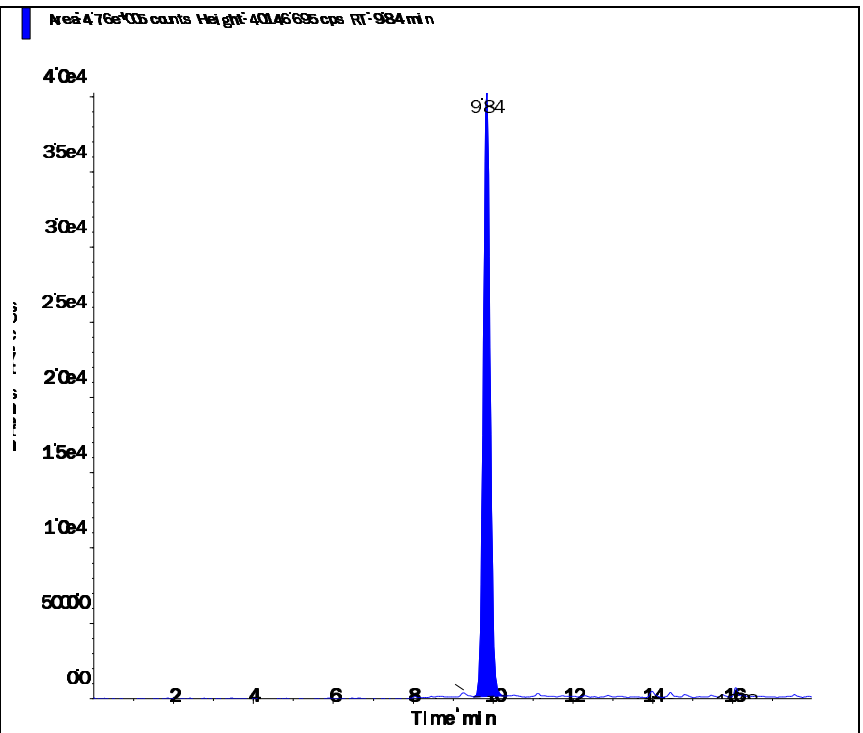

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	3.24 ng/ml
Area Ratio:	0.363
Sample Type:	(Unknown)

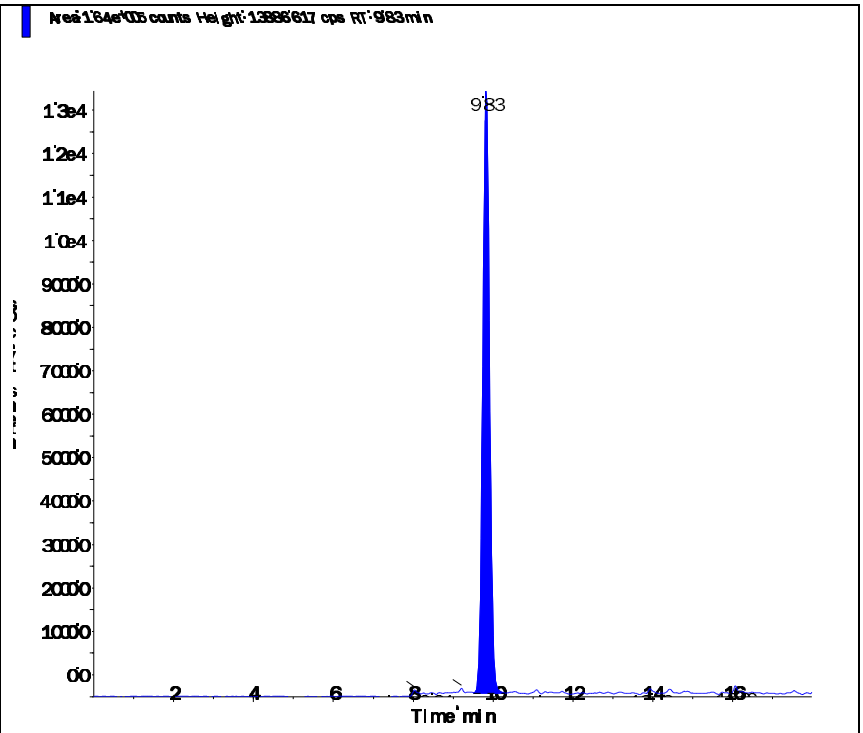

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Data File	LM35295.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 5:19:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060504-04 100X	**Injection Vial**	27.00
Data File	LM35295.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 5:19:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	L16060504-04	**Dilution Factor**	1.00
Sample Comment	1,100.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.200e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.670e+05	9.82	N/A	2.60
Perchlorate conf	1.240e+05	9.81	N/A	2.62

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

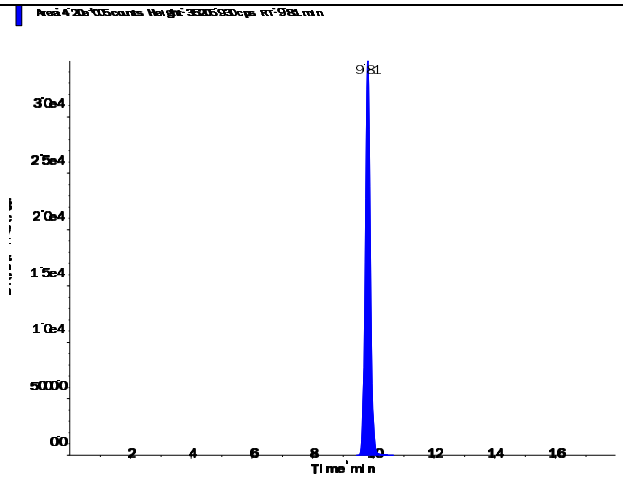

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.82 (9.84) min
Calculated conc:	2.60 ng/ml
Area Ratio:	0.874
Sample Type:	(Unknown)

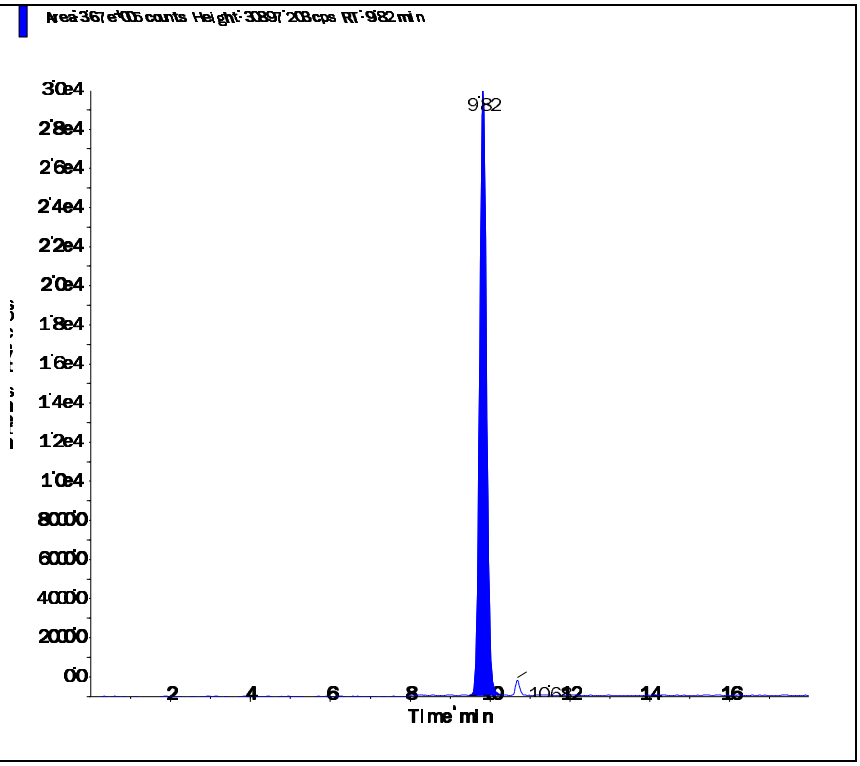

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.81 (9.84) min
Calculated conc:	2.62 ng/ml
Area Ratio:	0.294
Sample Type:	(Unknown)

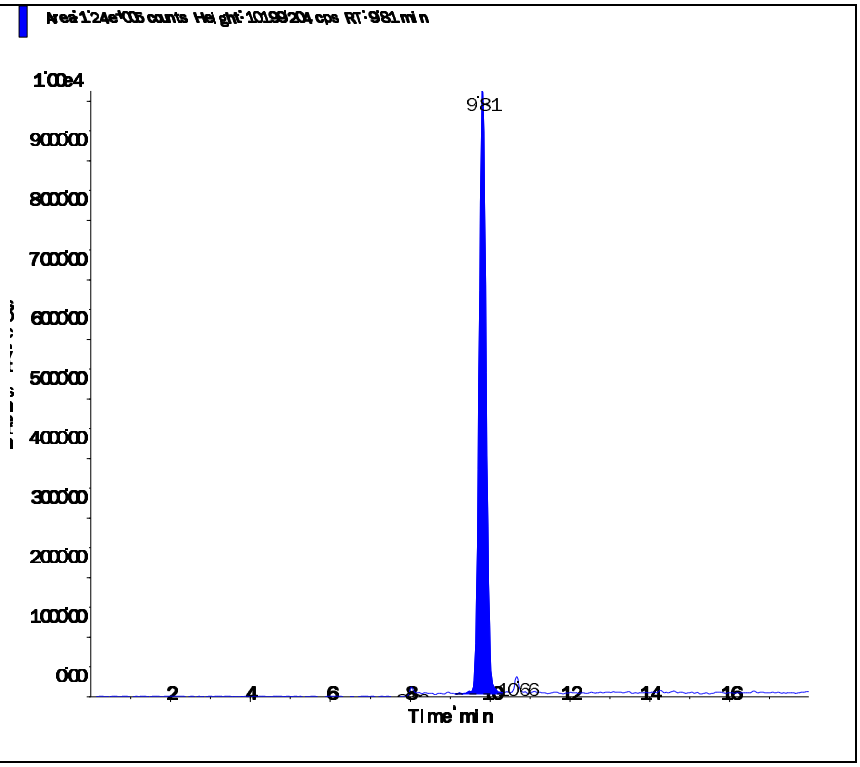

2.2.2.4 Standards Data

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Printed: 6/13/2016 10:27 AM

Data File	LM34686.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

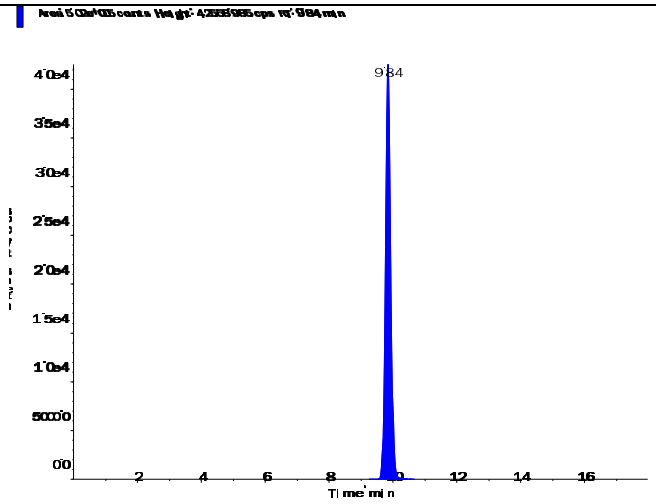

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Created with Analyst Reporter
Printed: 6/13/2016 10:27 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

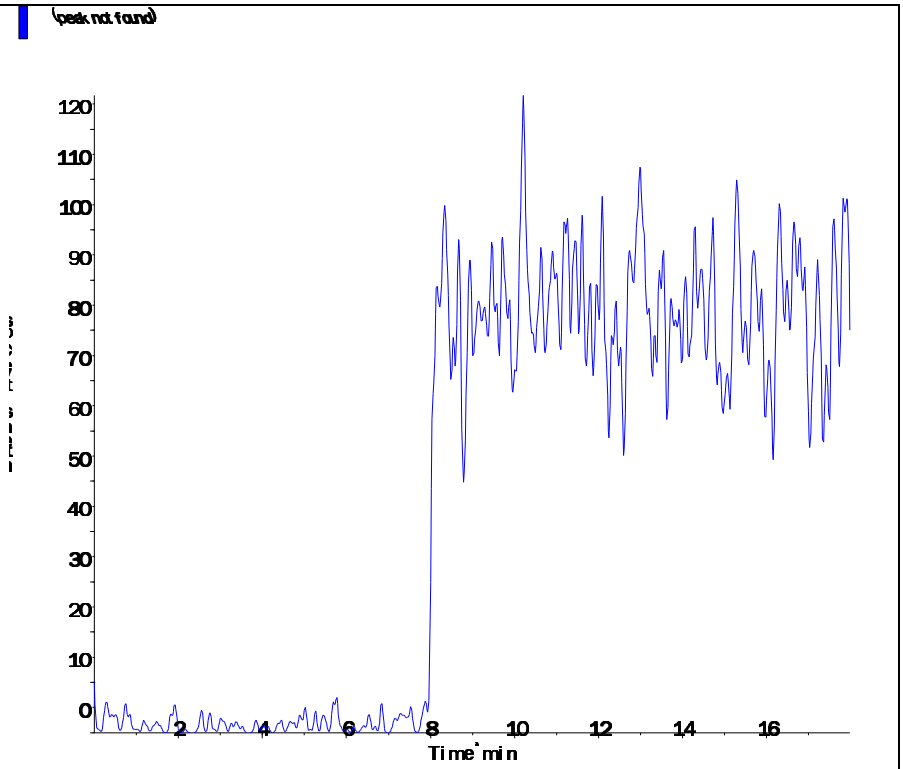

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

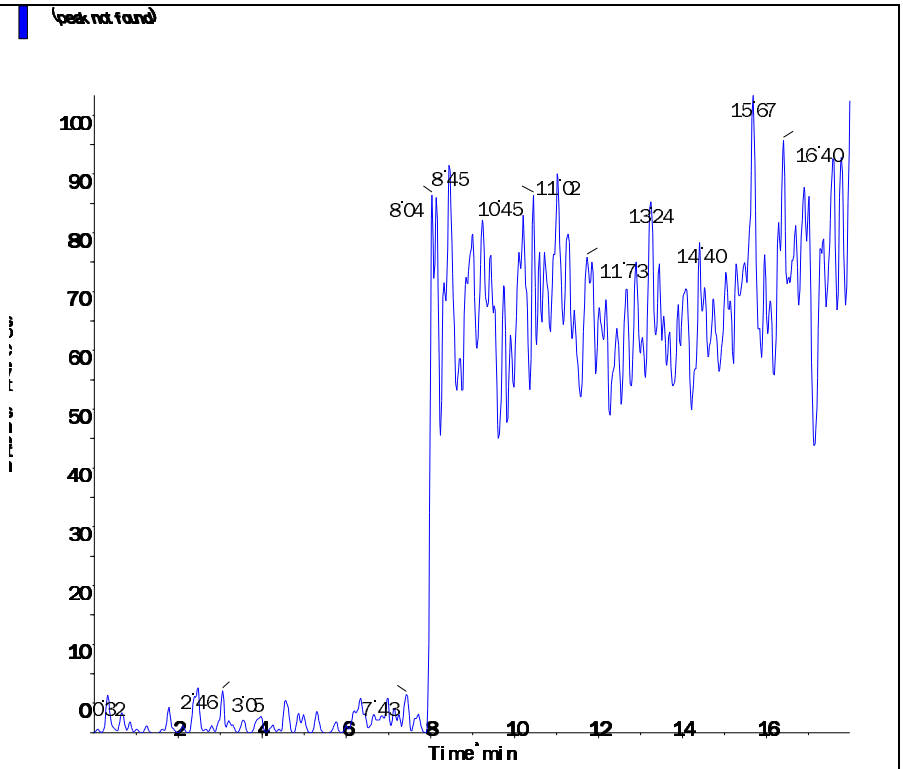

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Created with Analyst Reporter
Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

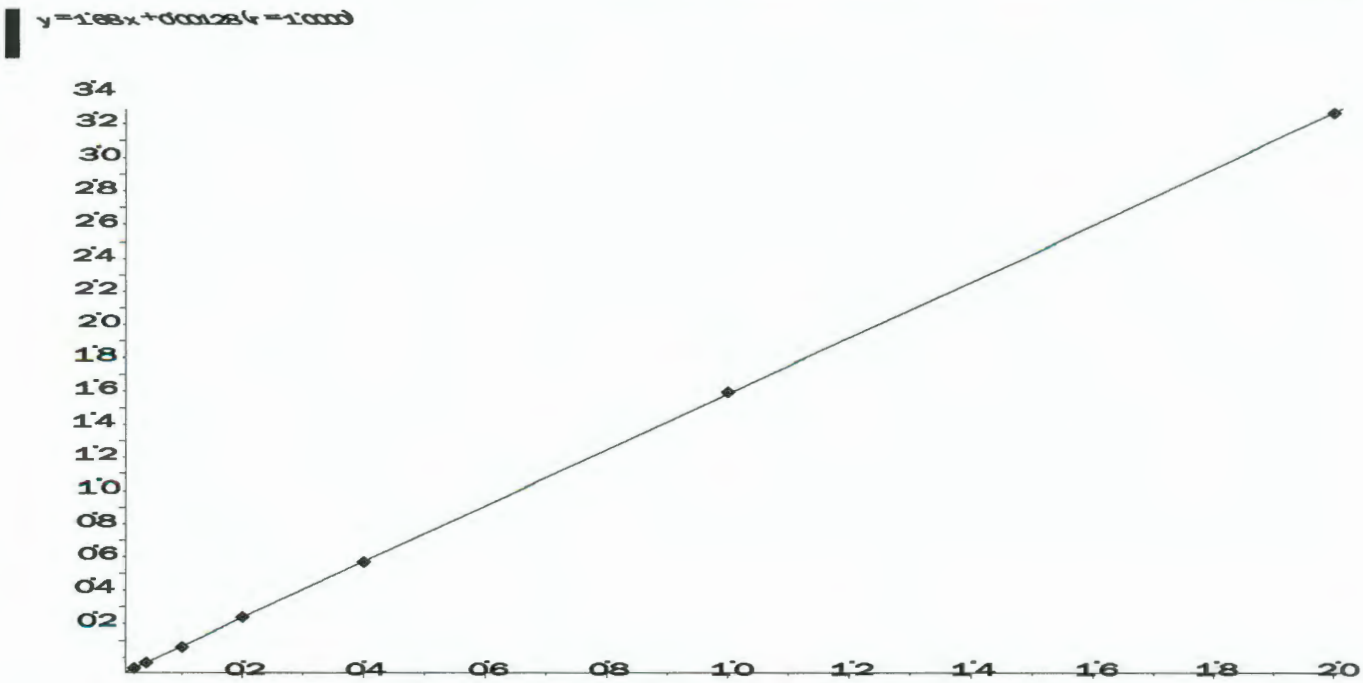

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Created with Analyst Reporter
Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

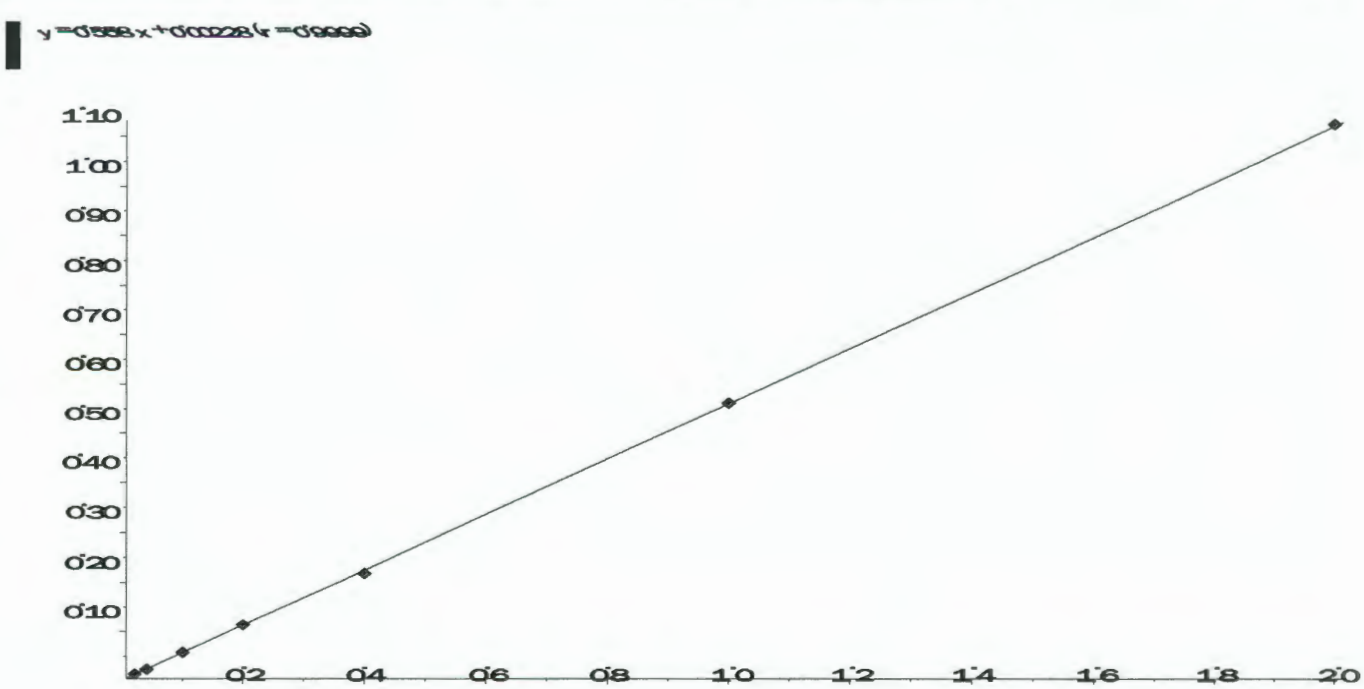

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Data File	LM34687.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

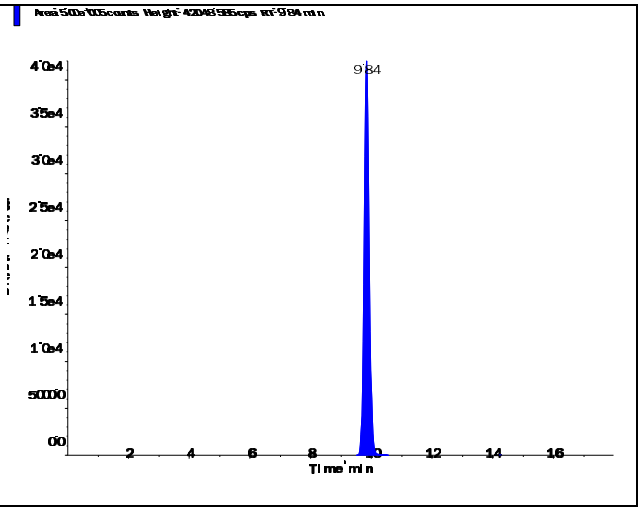

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.103 ng/ml
Area Ratio:	0.036
Sample Type:	(Standard)

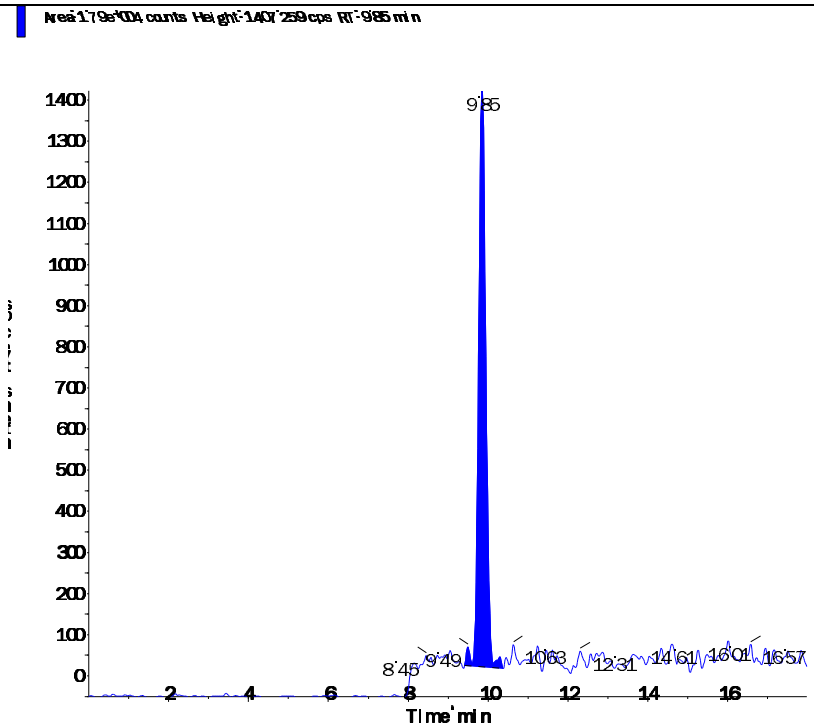

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.104 ng/ml
Area Ratio:	0.014
Sample Type:	(Standard)

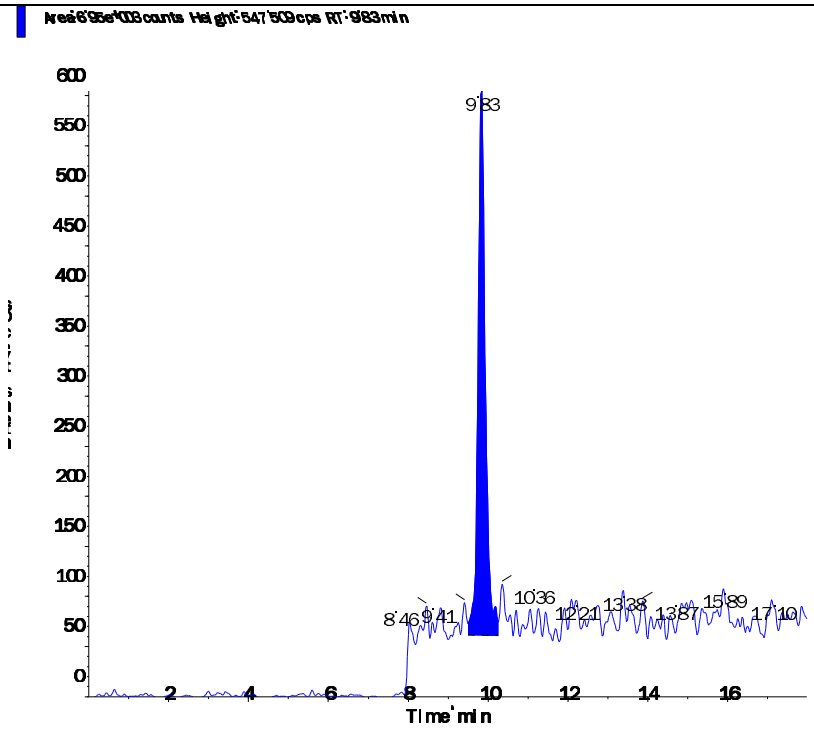

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Data File	LM34688.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

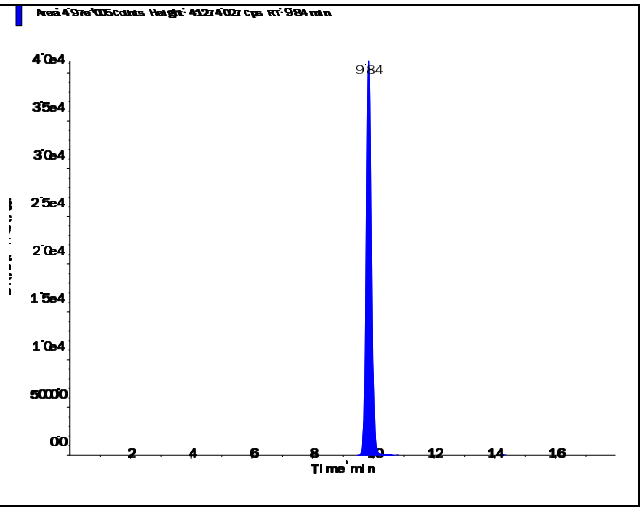

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

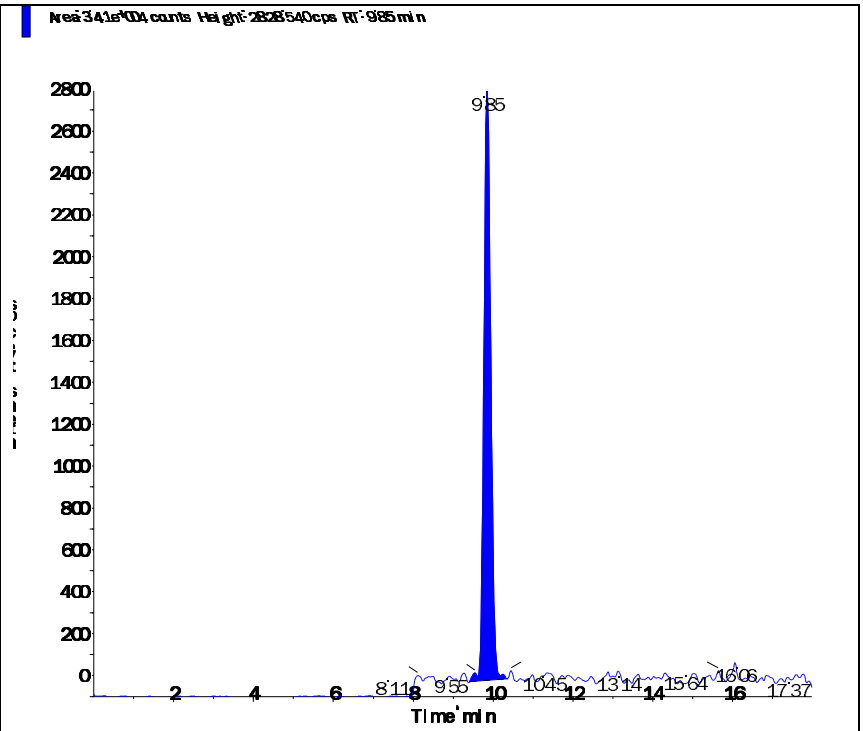

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

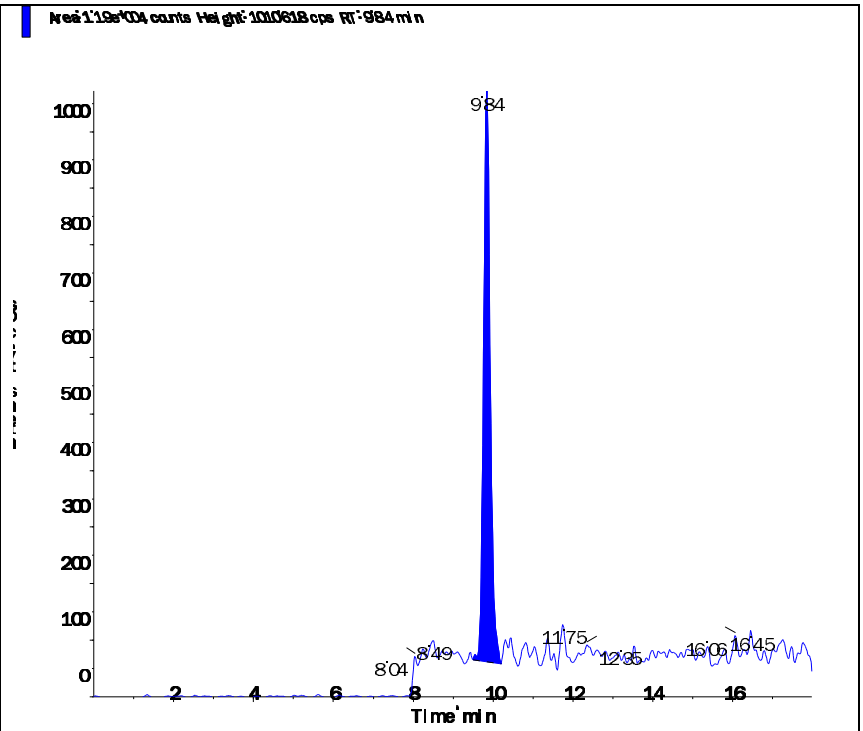

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Data File	LM34689.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

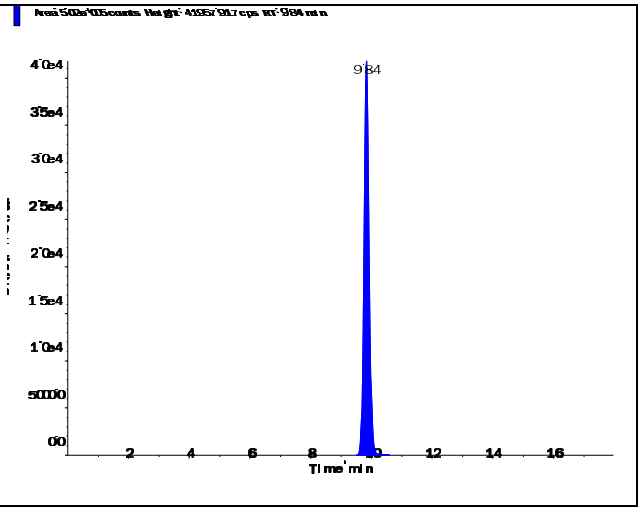

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 0.483 ng/ml Area Ratio: 0.164 Sample Type: (Standard)	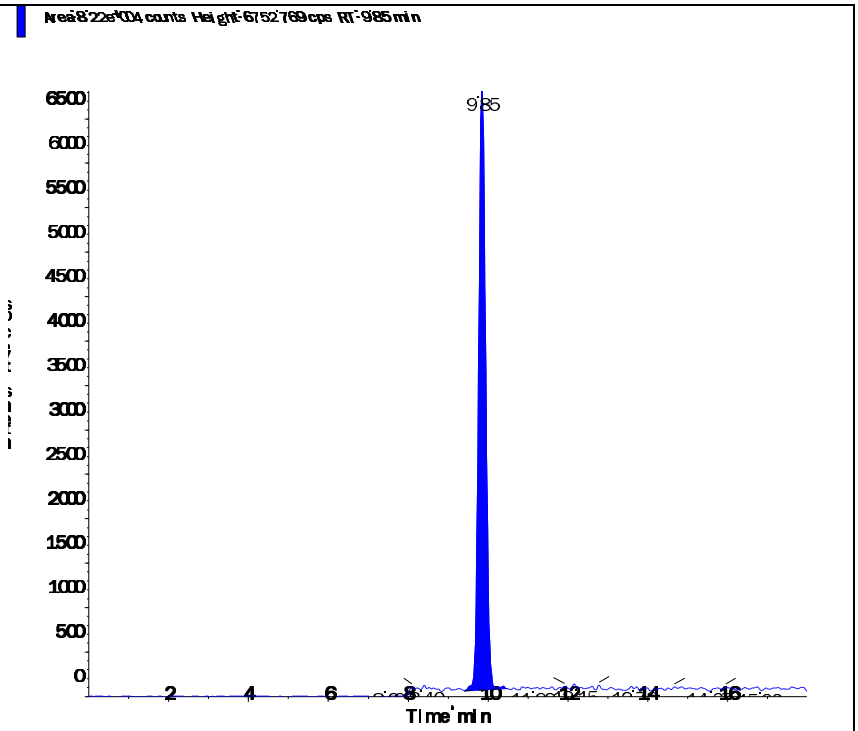
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 0.503 ng/ml Area Ratio: 0.058 Sample Type: (Standard)	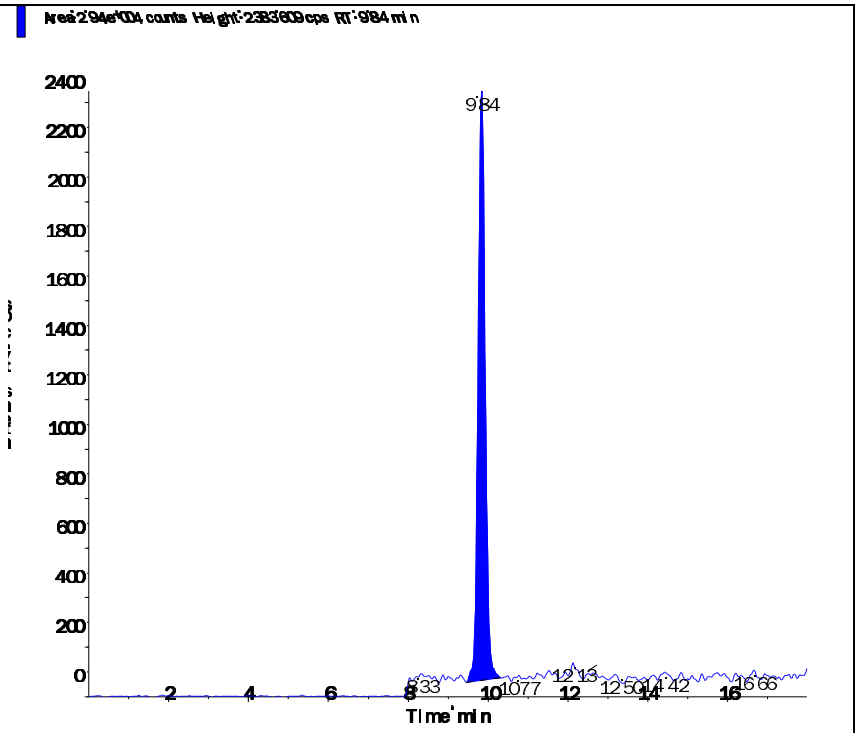

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Data File	LM34690.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

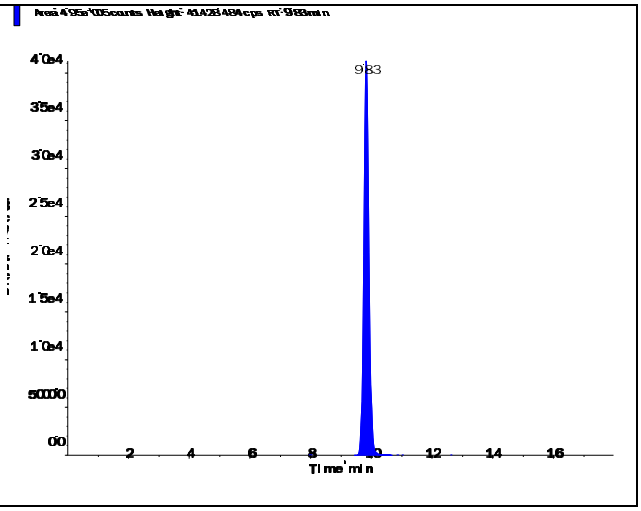

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

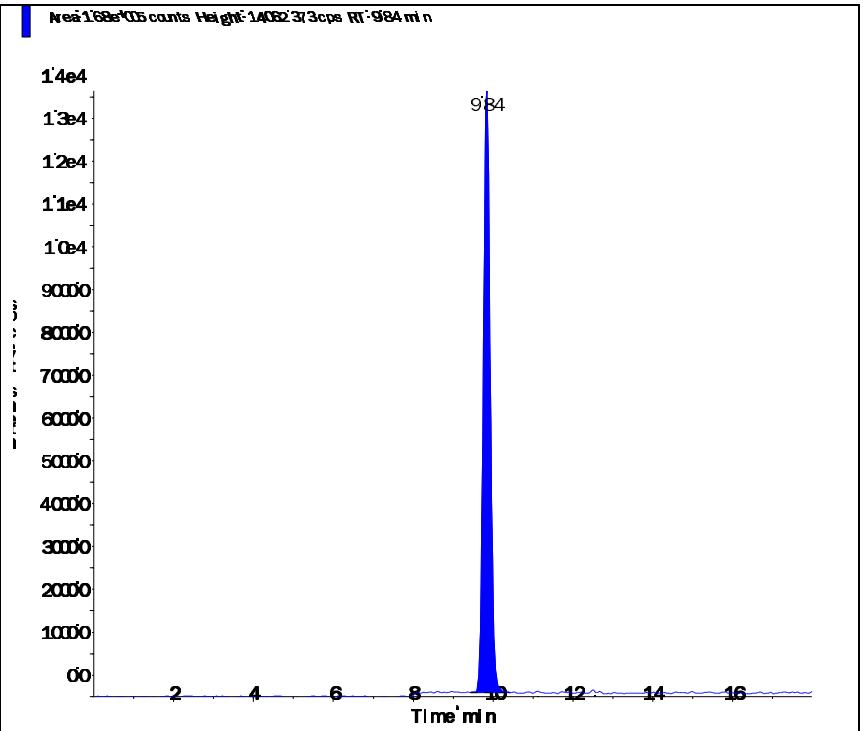

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

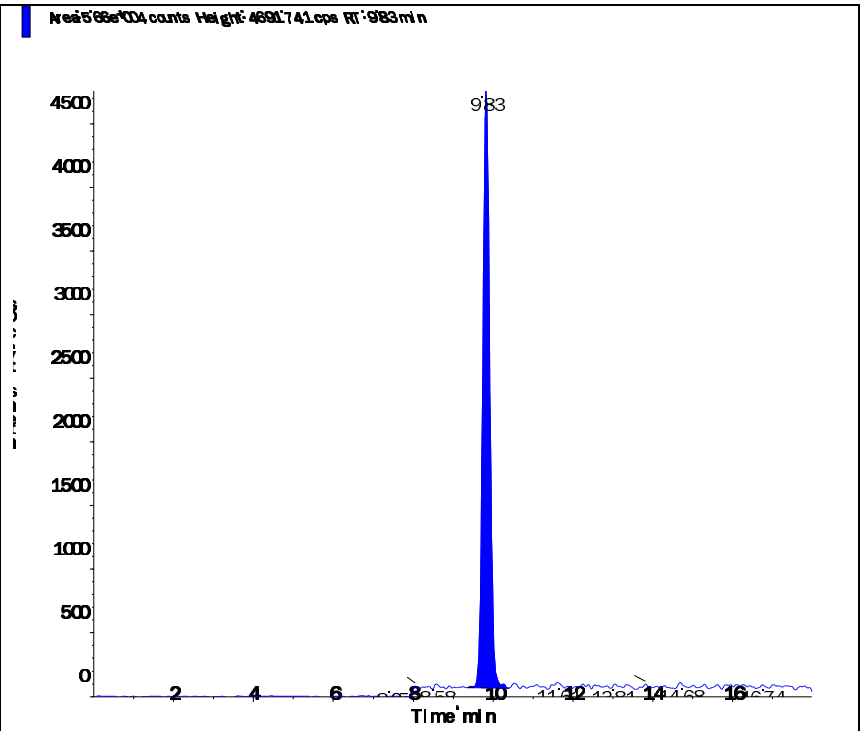

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Data File	LM34691.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

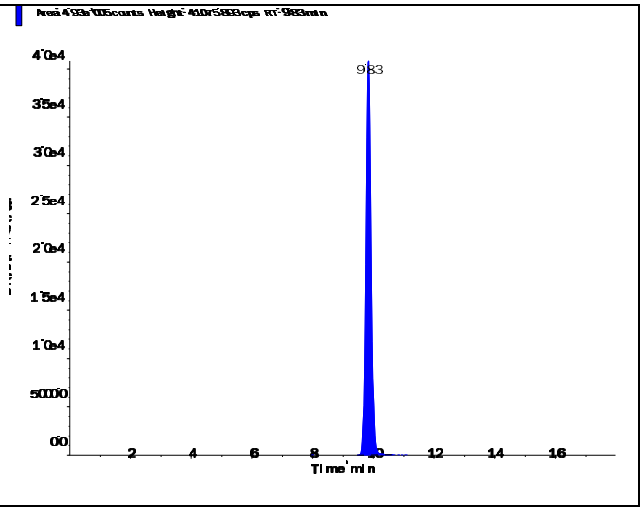

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.99 ng/ml
Area Ratio:	0.669
Sample Type:	(Standard)

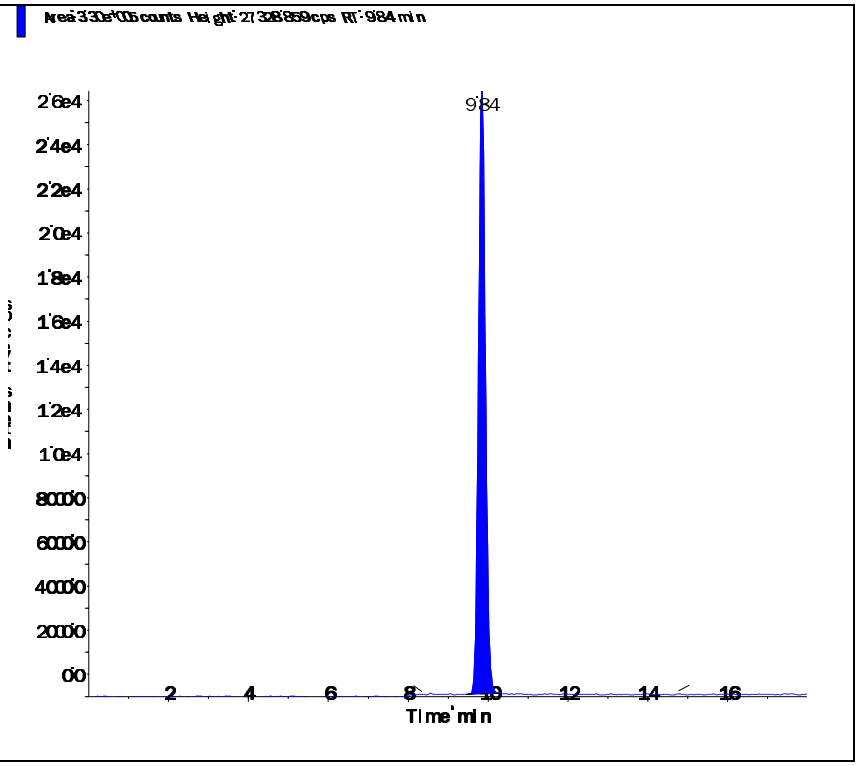

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.94 ng/ml
Area Ratio:	0.219
Sample Type:	(Standard)

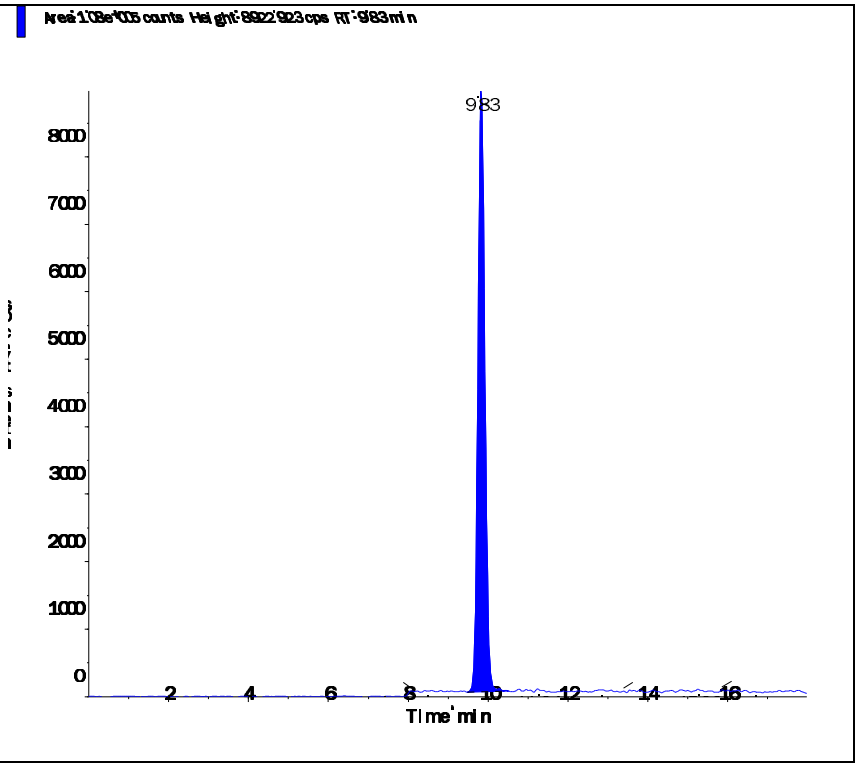

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Data File	LM34692.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

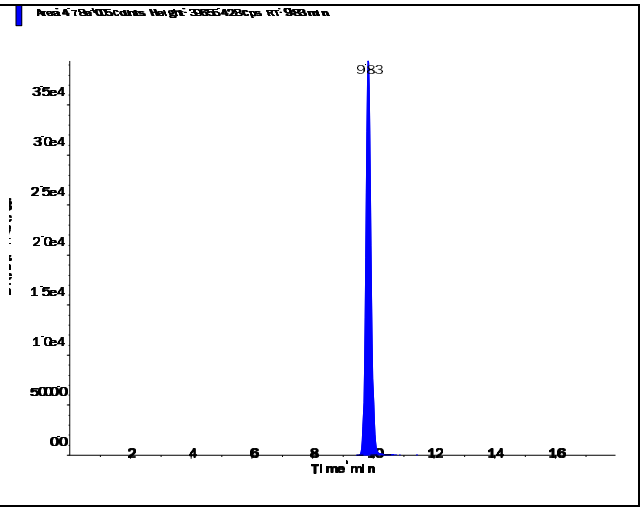

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

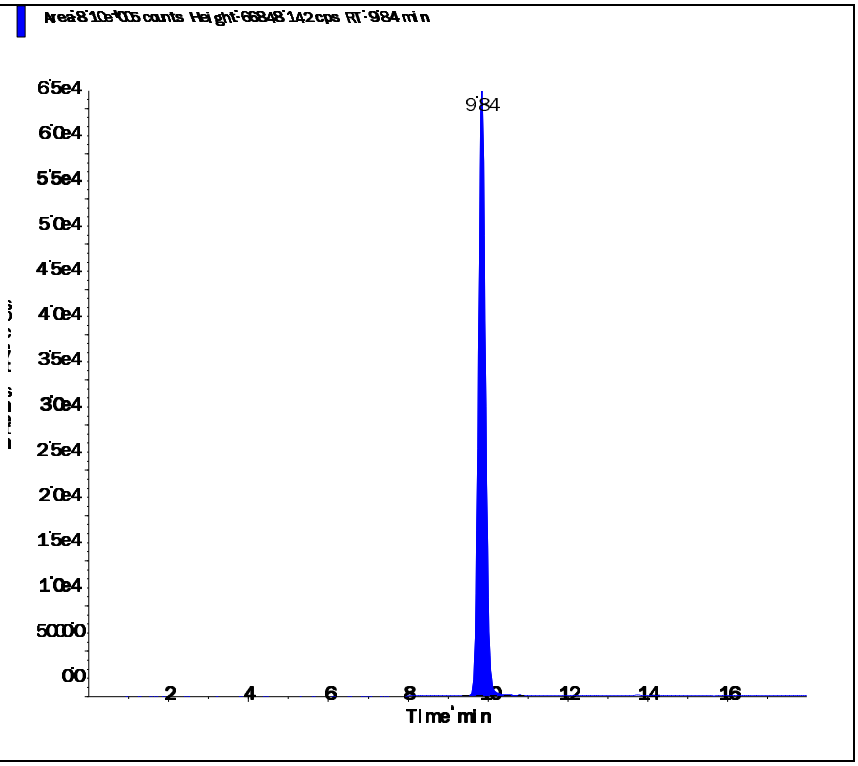

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

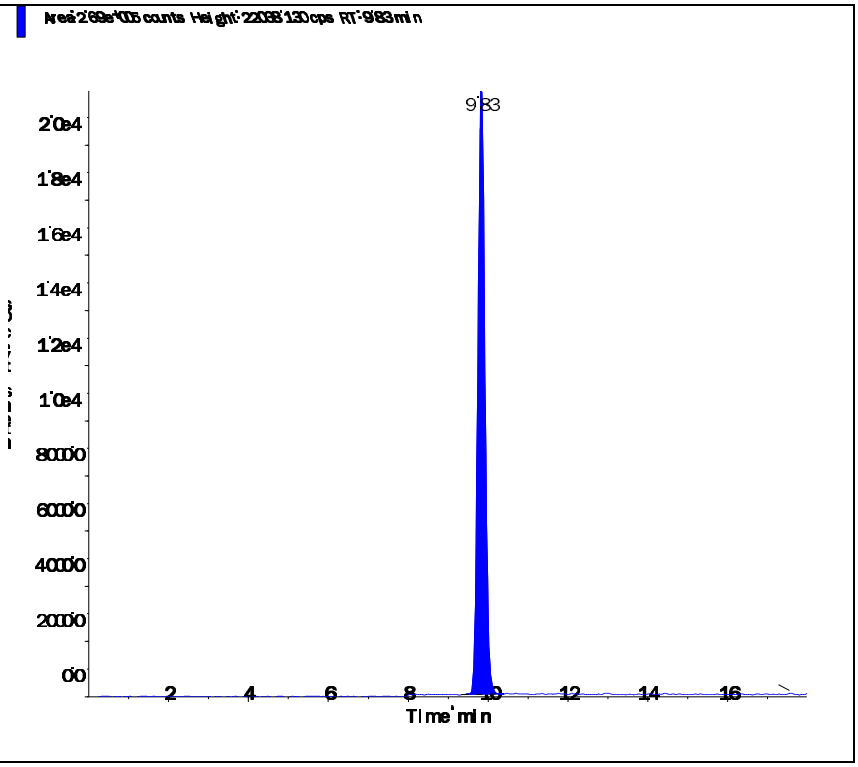

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Data File	LM34693.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

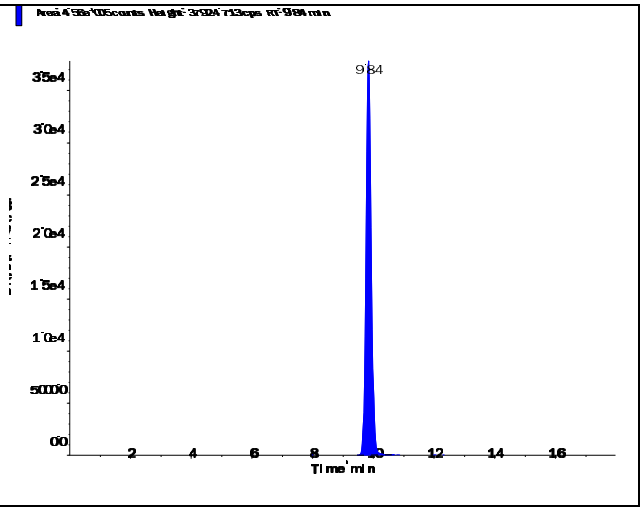

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	9.99 ng/ml
Area Ratio:	3.36
Sample Type:	(Standard)

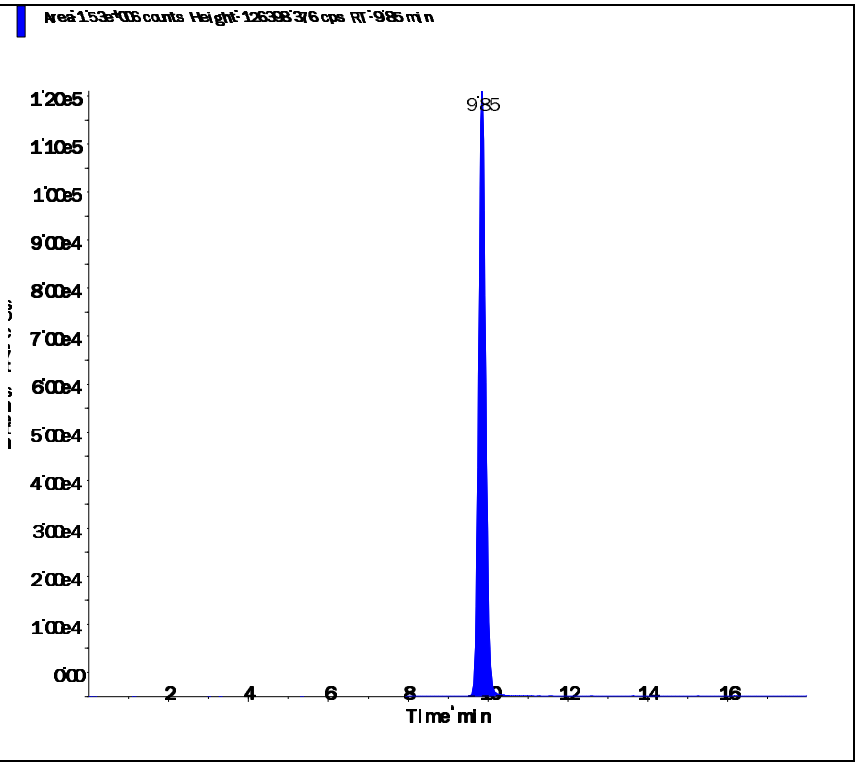

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	10.00 ng/ml
Area Ratio:	1.122
Sample Type:	(Standard)

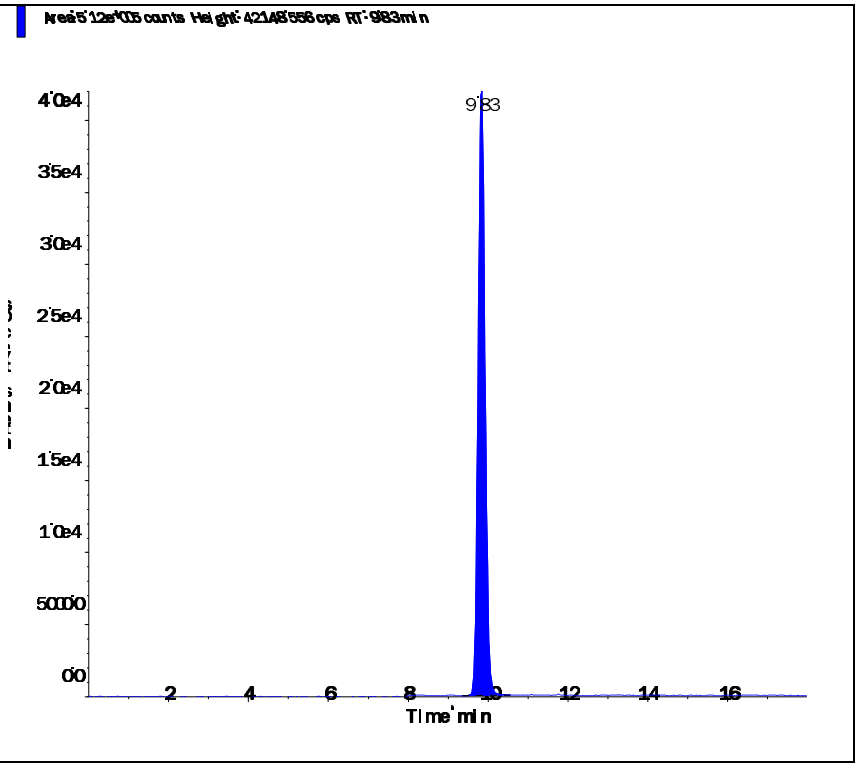

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Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

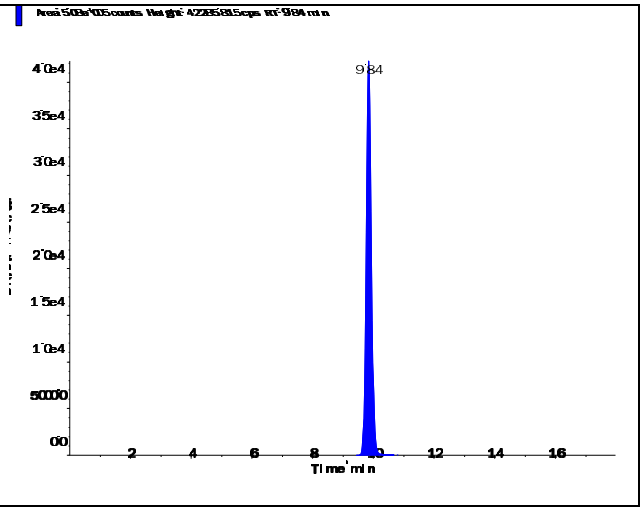

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Printed: 5/4/2016 1:23 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 0.985 ng/ml Area Ratio: 0.332 Sample Type: (Quality Control)	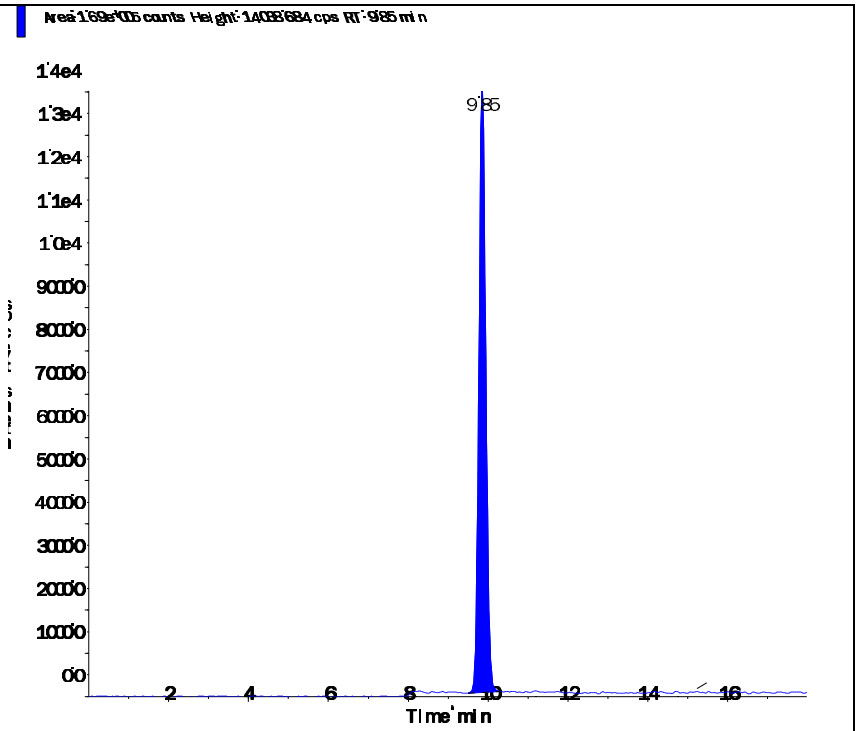
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 0.973 ng/ml Area Ratio: 0.111 Sample Type: (Quality Control)	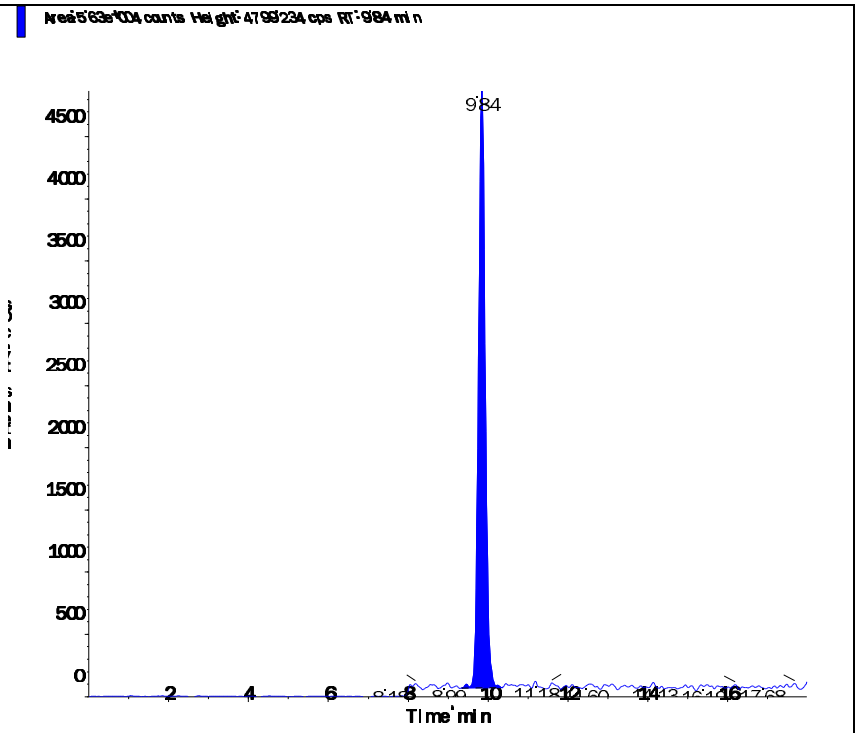

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Printed: 6/11/2016 12:59 PM

Data File	LM35226.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 10:08:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35226.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 10:08:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.430e+05	9.64	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.510e+05	9.65	1.00	1.01
Perchlorate conf	5.370e+04	9.63	1.00	1.06

O18LP (Internal Standard)

RT (Exp. RT): 9.64(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

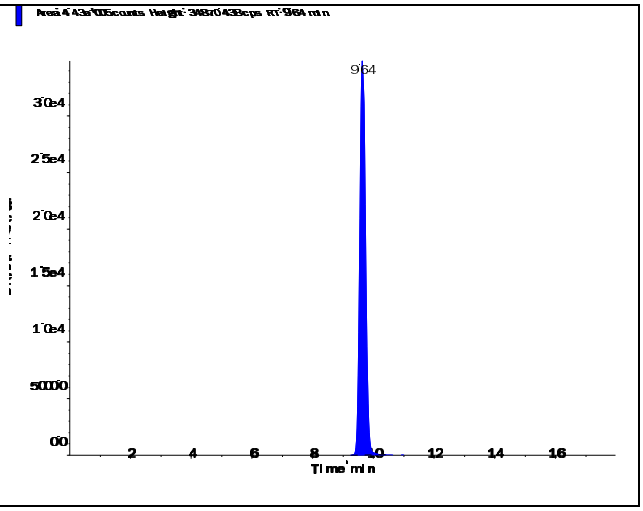

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.65 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.34
Sample Type:	(Quality Control)

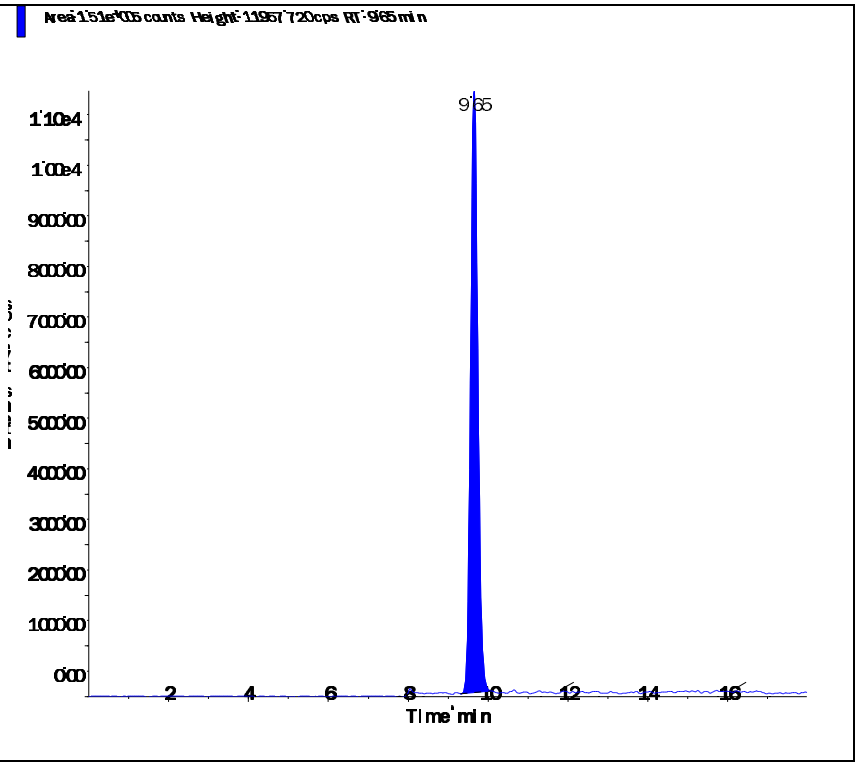

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

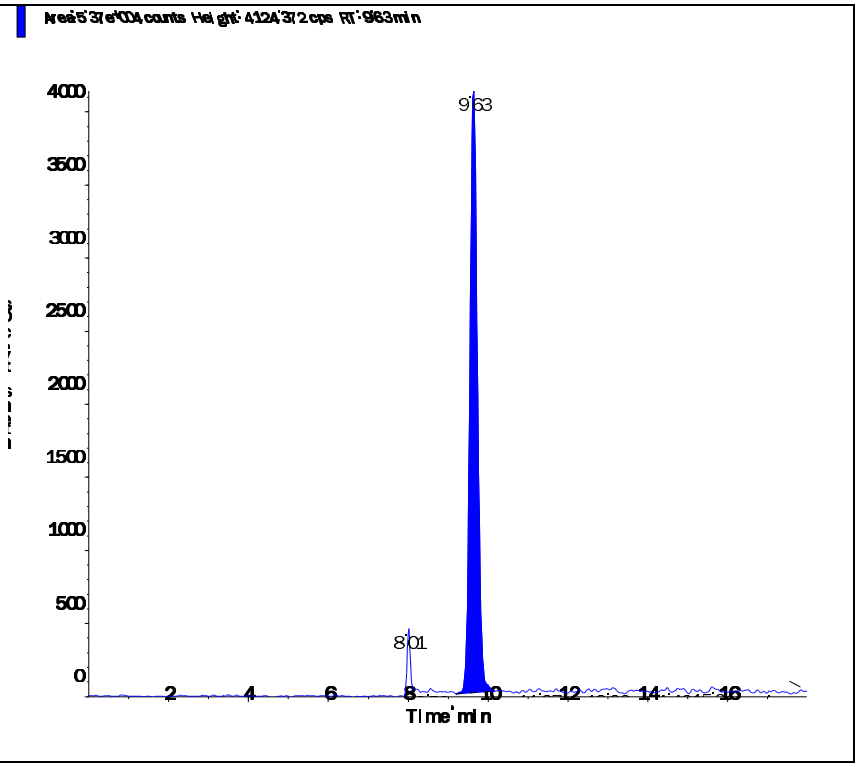

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Printed: 6/11/2016 1:03 PM

Data File	LM35238.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 1:55:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35238.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 1:55:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.720e+05	9.64	1.00	1.01
Perchlorate conf	5.960e+04	9.63	1.00	1.04

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

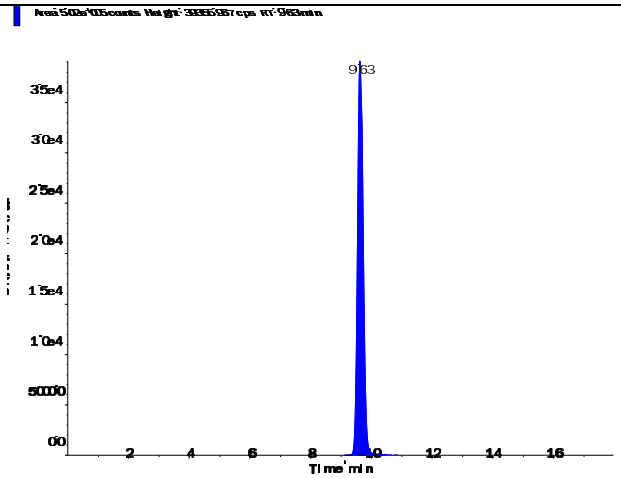

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.342
Sample Type:	(Quality Control)

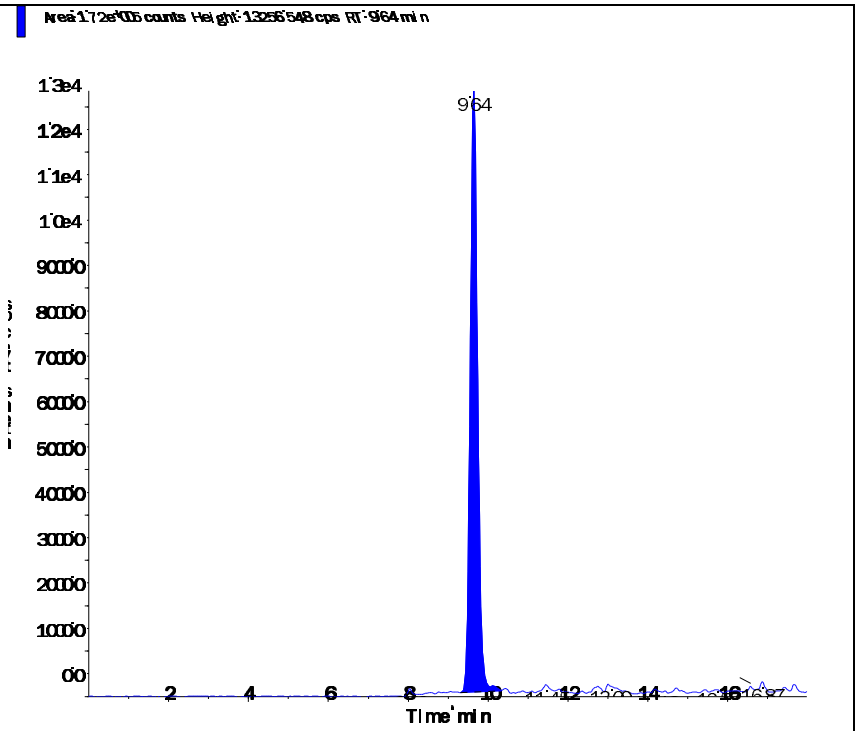

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

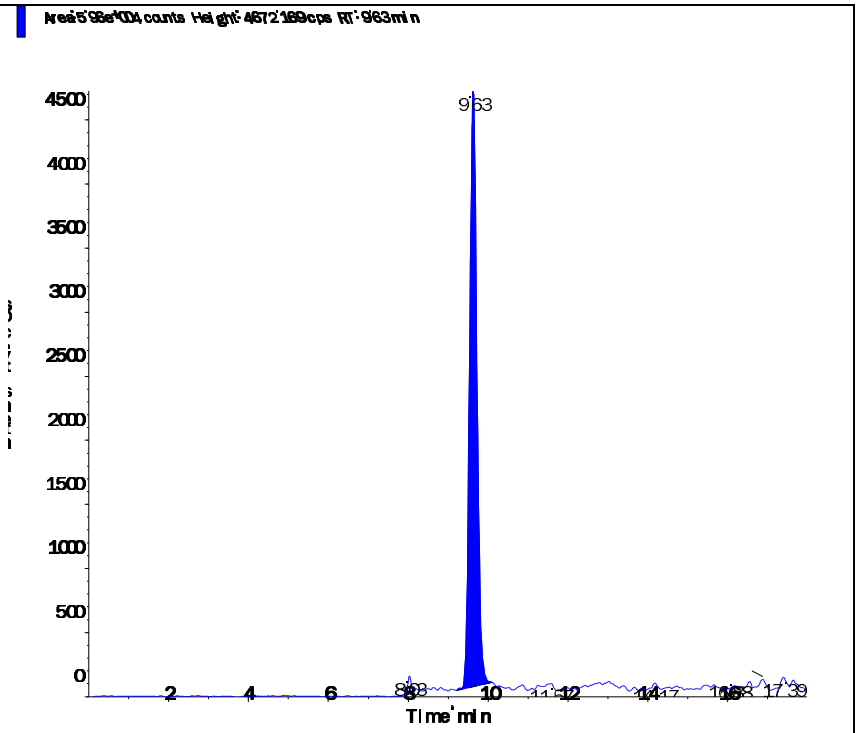

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Printed: 6/11/2016 1:05 PM

Data File	LM35244.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 3:49:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35244.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 3:49:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+05	9.64	1.00	1.05
Perchlorate conf	6.340e+04	9.64	1.00	1.10

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

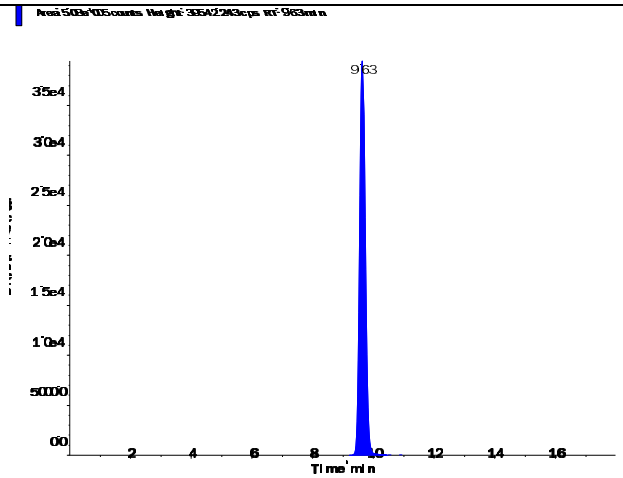

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.353
Sample Type:	(Quality Control)

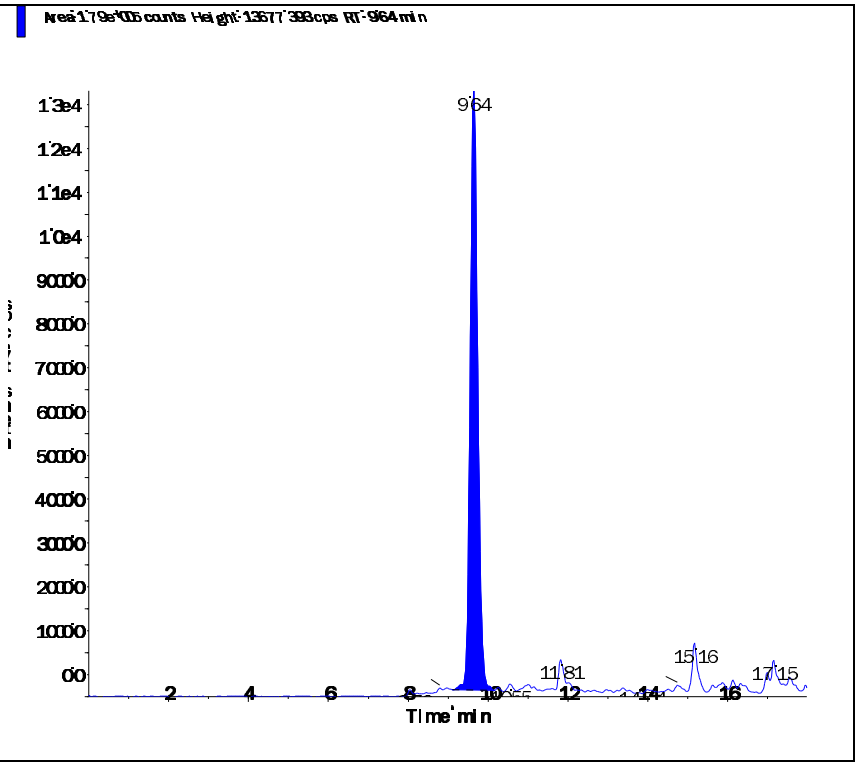

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.10 ng/ml
Area Ratio:	0.125
Sample Type:	(Quality Control)

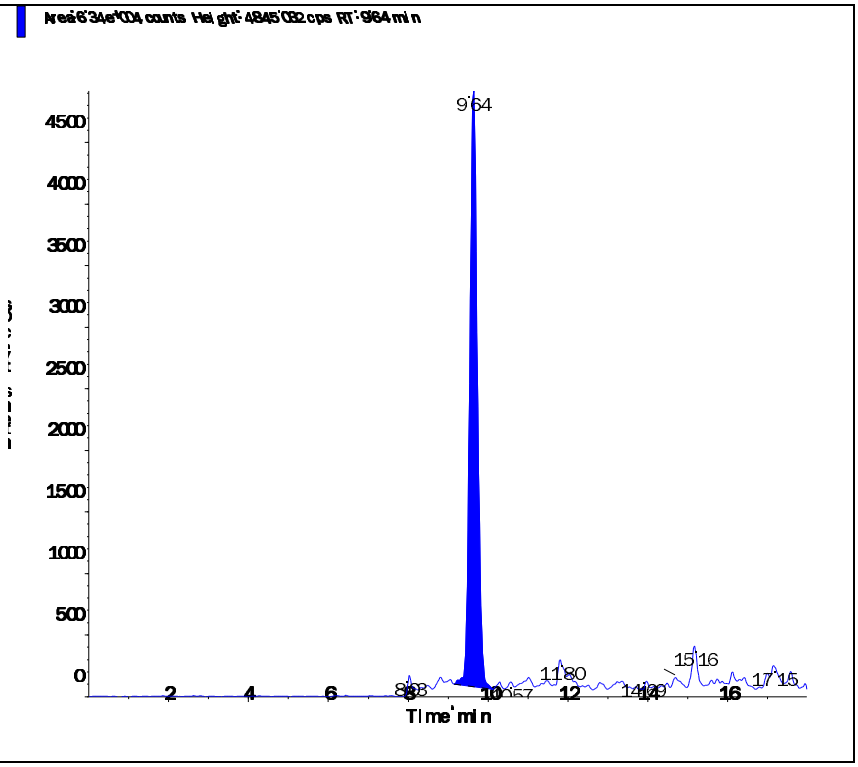

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Data File	LM35257.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 7:56:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35257.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 7:56:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.810e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.750e+05	9.64	1.00	1.08
Perchlorate conf	5.800e+04	9.62	1.00	1.06

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

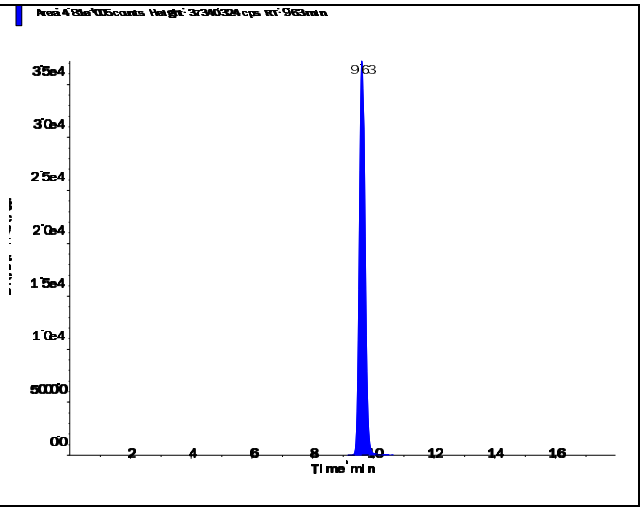

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.08 ng/ml
Area Ratio:	0.363
Sample Type:	(Quality Control)

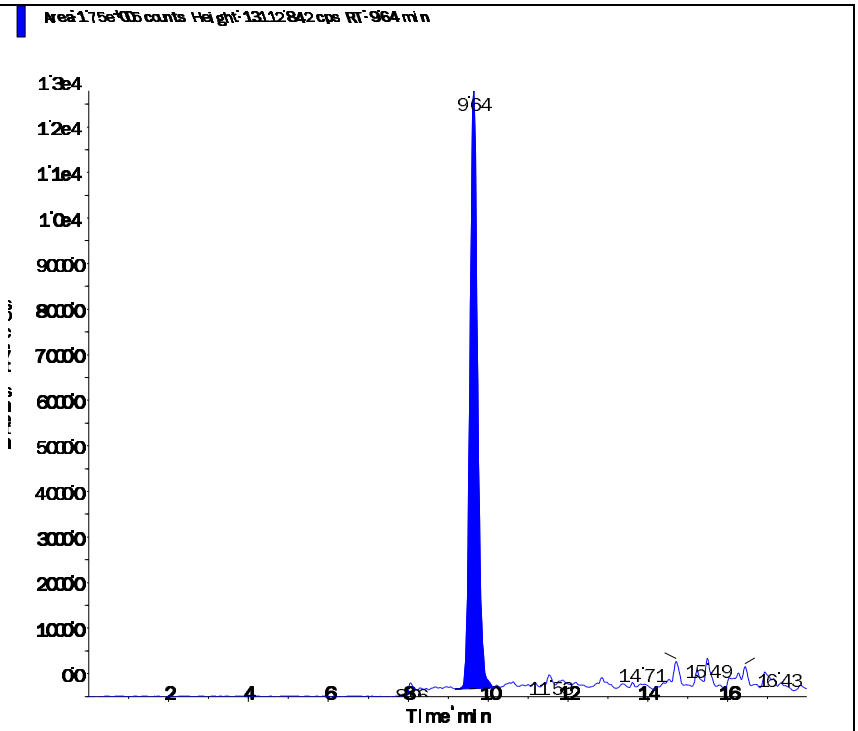

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.62 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

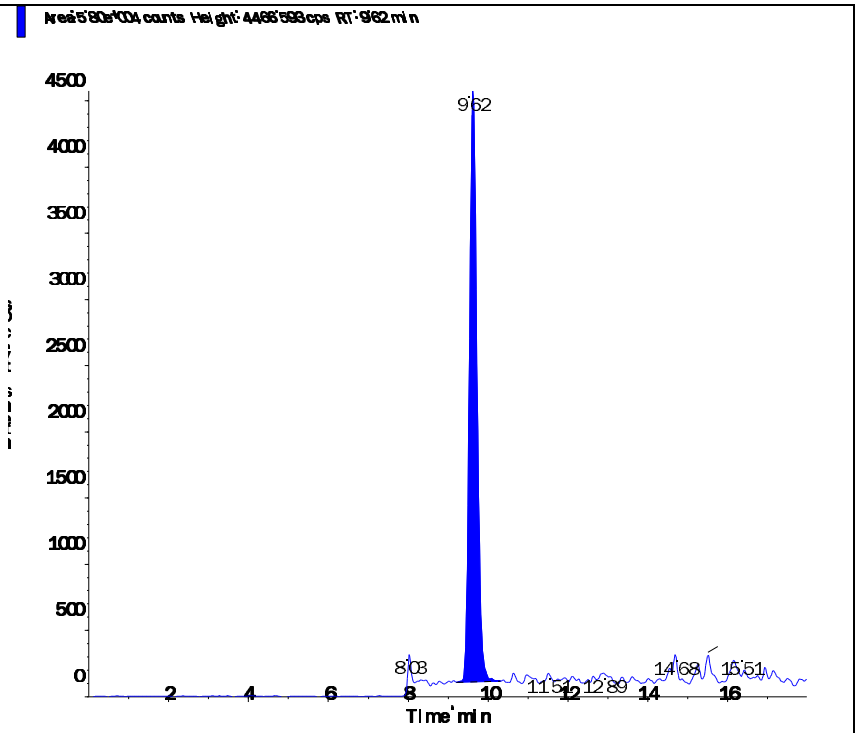

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Data File	LM35264.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 10:09:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35264.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 10:09:01 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.860e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.64	1.00	1.03
Perchlorate conf	5.780e+04	9.63	1.00	1.04

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

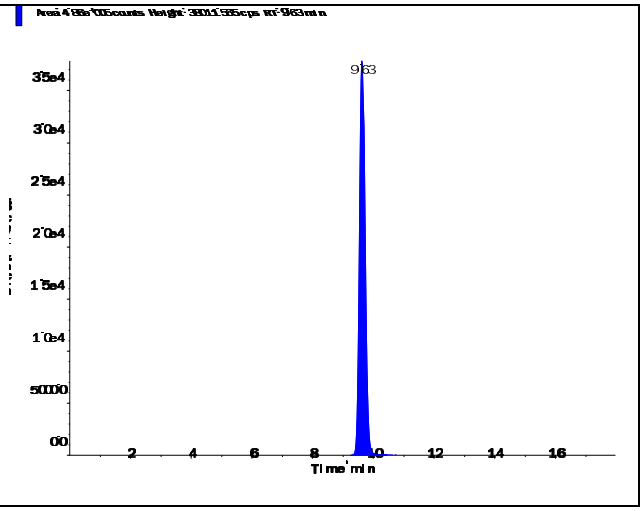

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.348
Sample Type:	(Quality Control)

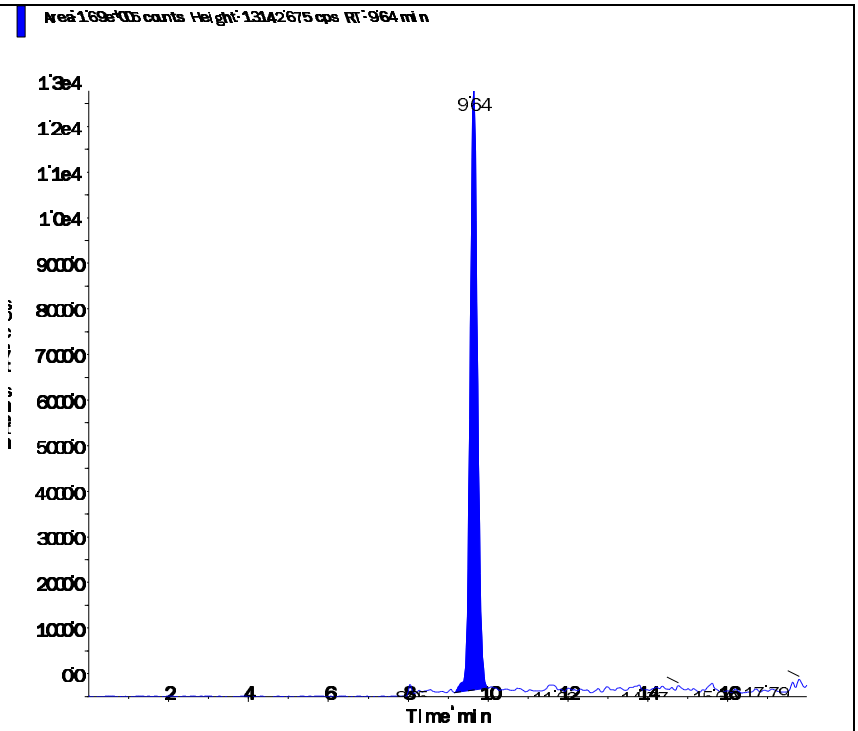

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

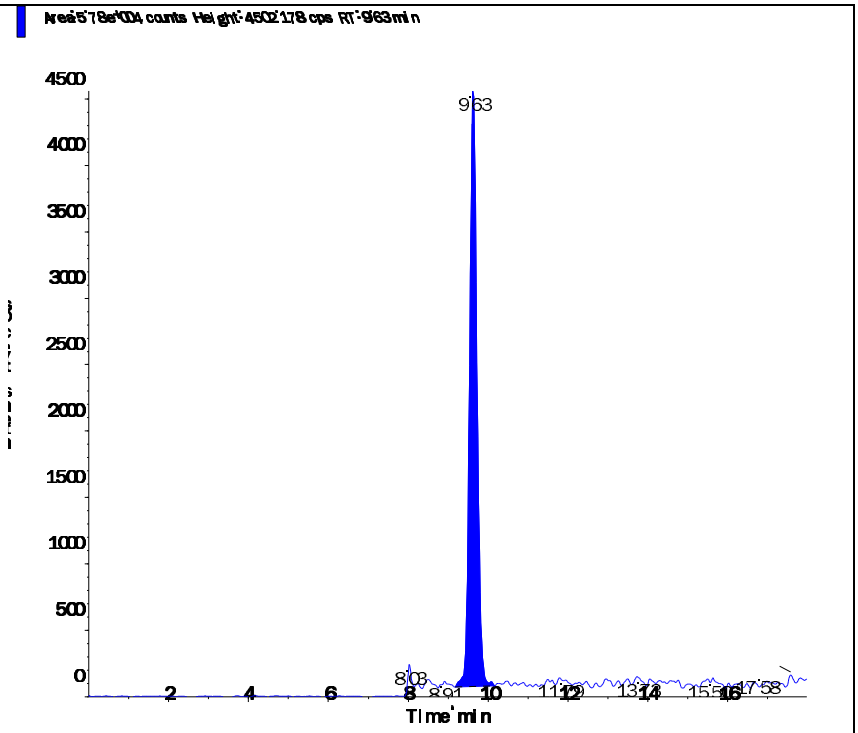

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Data File	LM35276.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/11/2016 1:56:12 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-11 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35276.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 1:56:12 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.260e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.830e+05	9.64	1.00	1.03
Perchlorate conf	6.180e+04	9.62	1.00	1.03

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

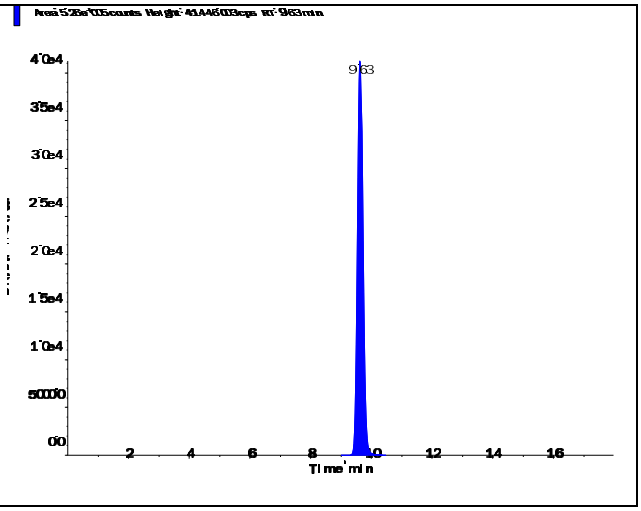

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Printed: 6/11/2016 1:16 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.349
Sample Type:	(Quality Control)

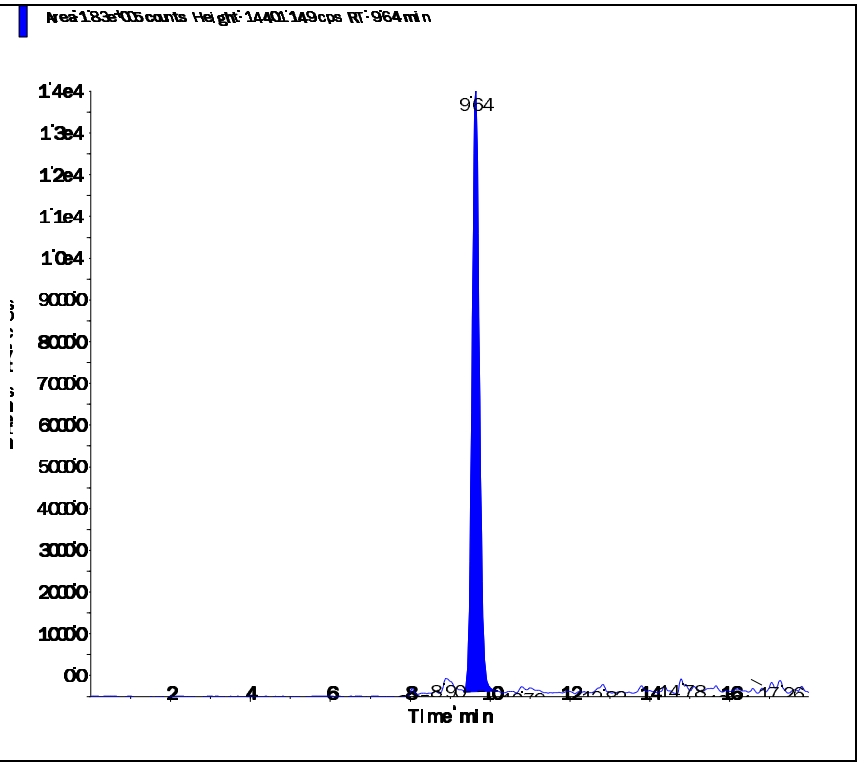

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.62 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.117
Sample Type:	(Quality Control)

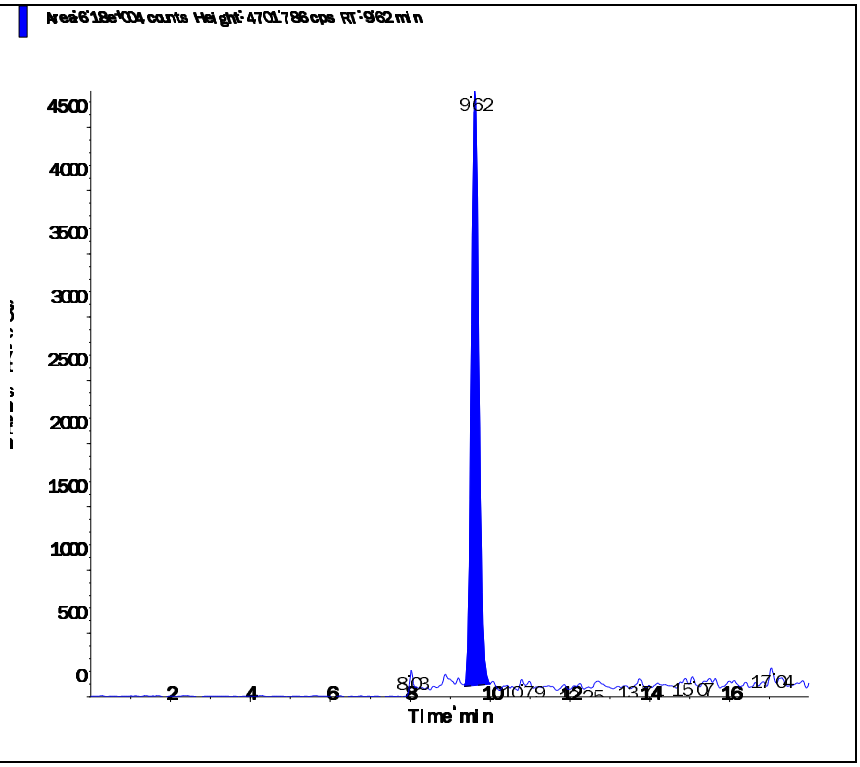

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Data File	LM35280.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 11:46:23 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35280.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 11:46:23 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.580e+05	9.62	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.600e+05	9.63	1.00	1.04
Perchlorate conf	5.470e+04	9.61	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.62(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

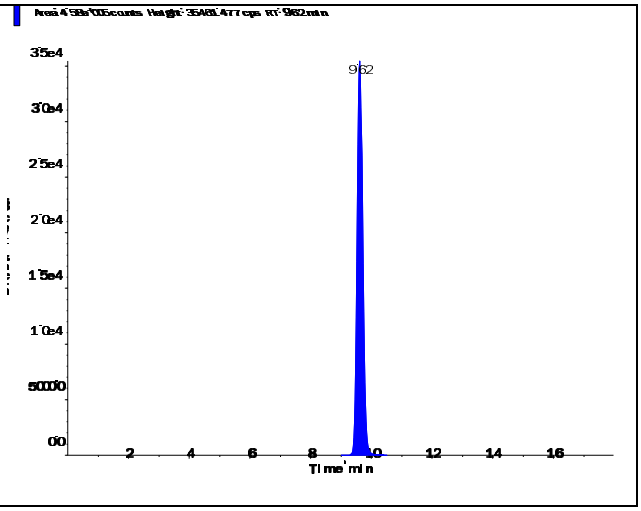

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.35
Sample Type:	(Quality Control)

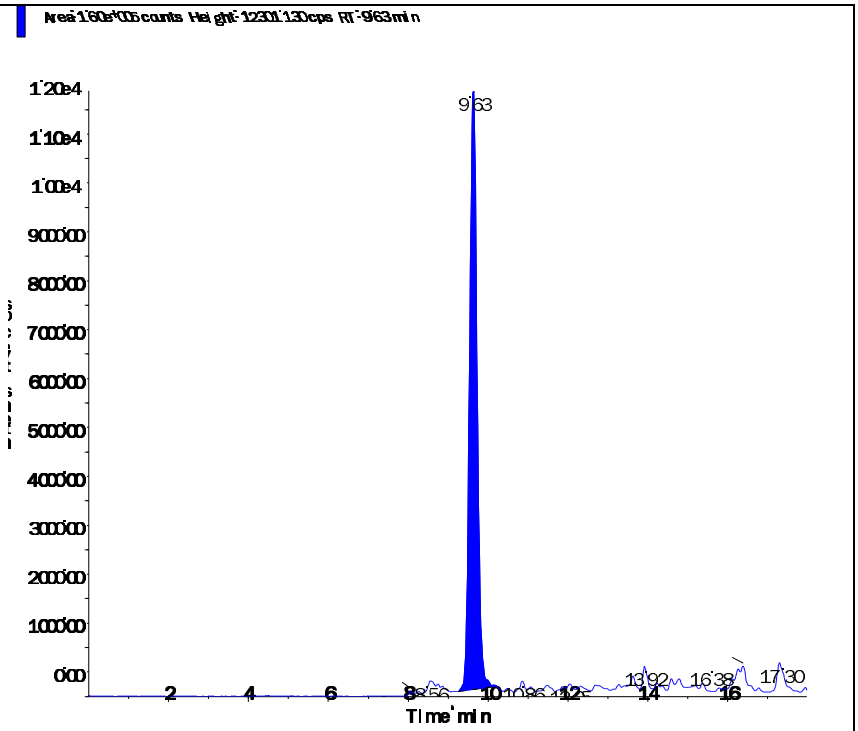

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.61 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

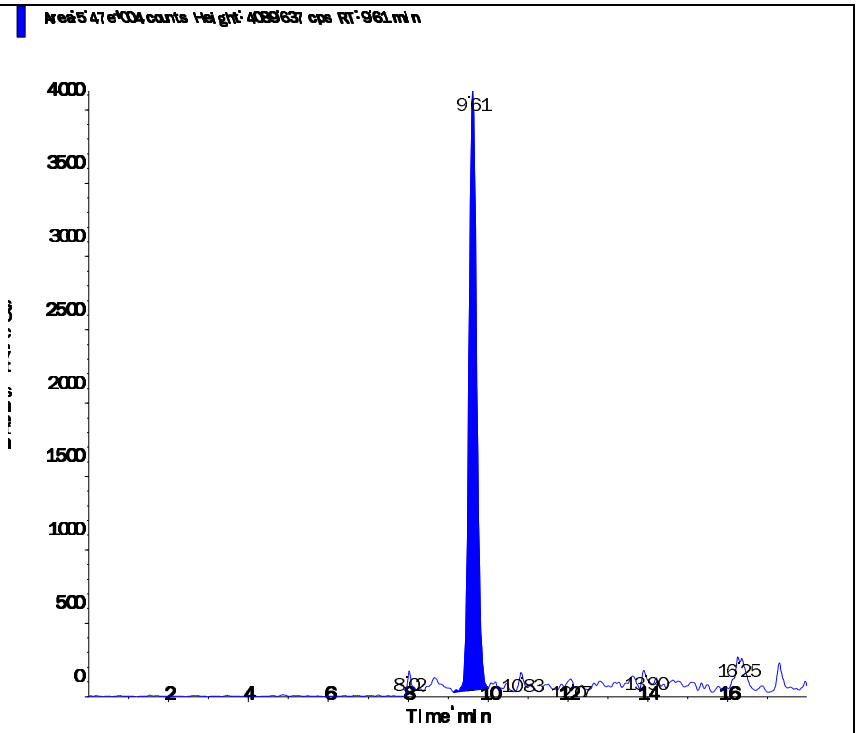

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Created with Analyst Reporter
Printed: 6/12/2016 9:40 PM

Data File	LM35292.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 3:34:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35292.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 3:34:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.800e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.710e+05	9.64	1.00	1.05
Perchlorate conf	5.680e+04	9.63	1.00	1.04

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

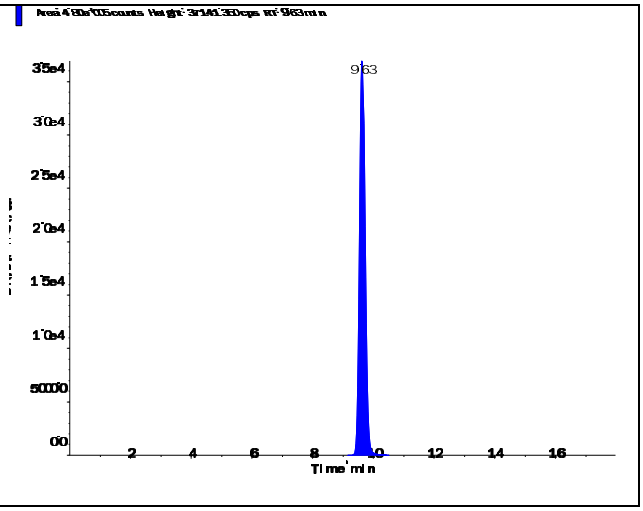

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.355
Sample Type:	(Quality Control)

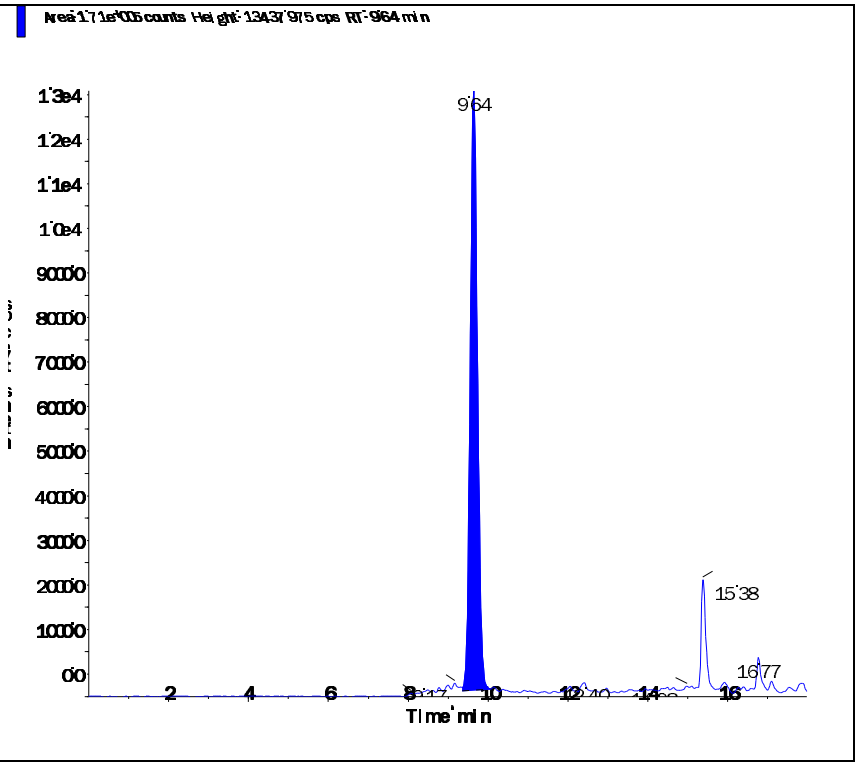

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.118
Sample Type:	(Quality Control)

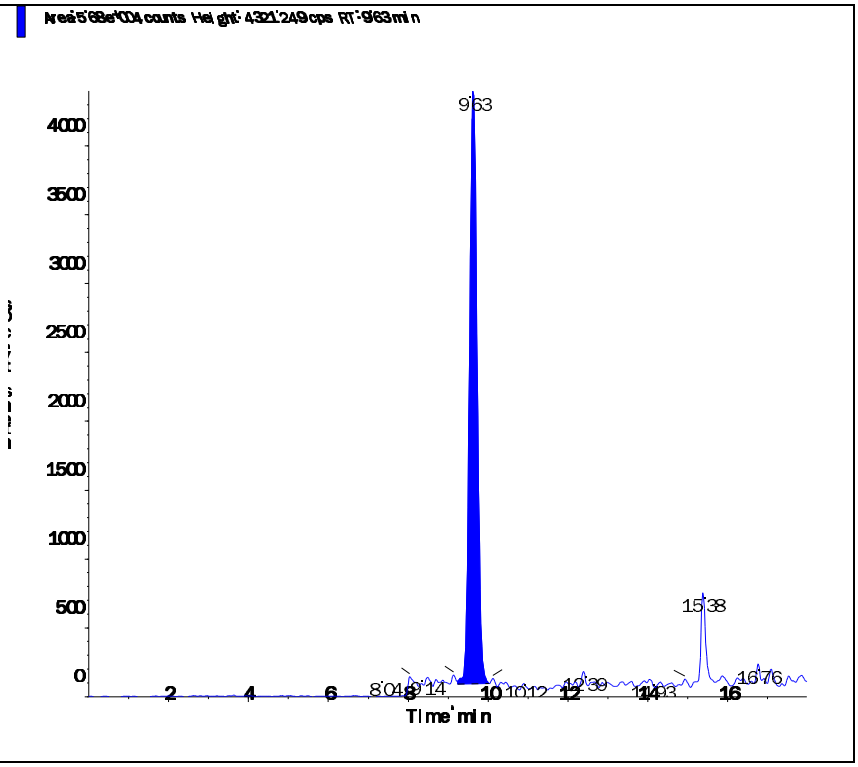

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Data File	LM35296.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 5:38:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35296.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 5:38:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.960e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.720e+05	9.65	1.00	1.03
Perchlorate conf	5.930e+04	9.64	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

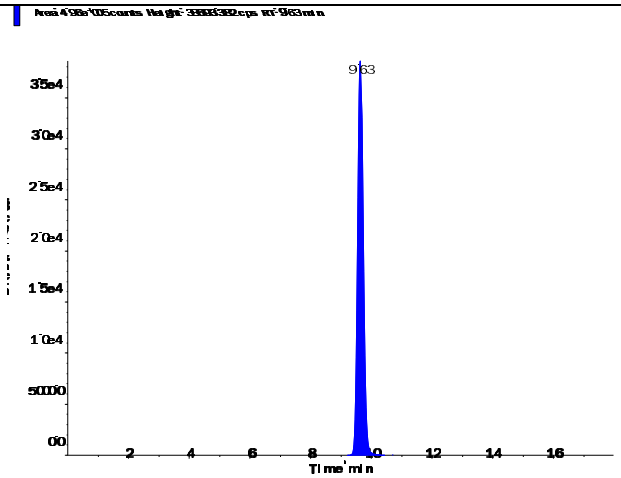

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.65 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.346
Sample Type:	(Quality Control)

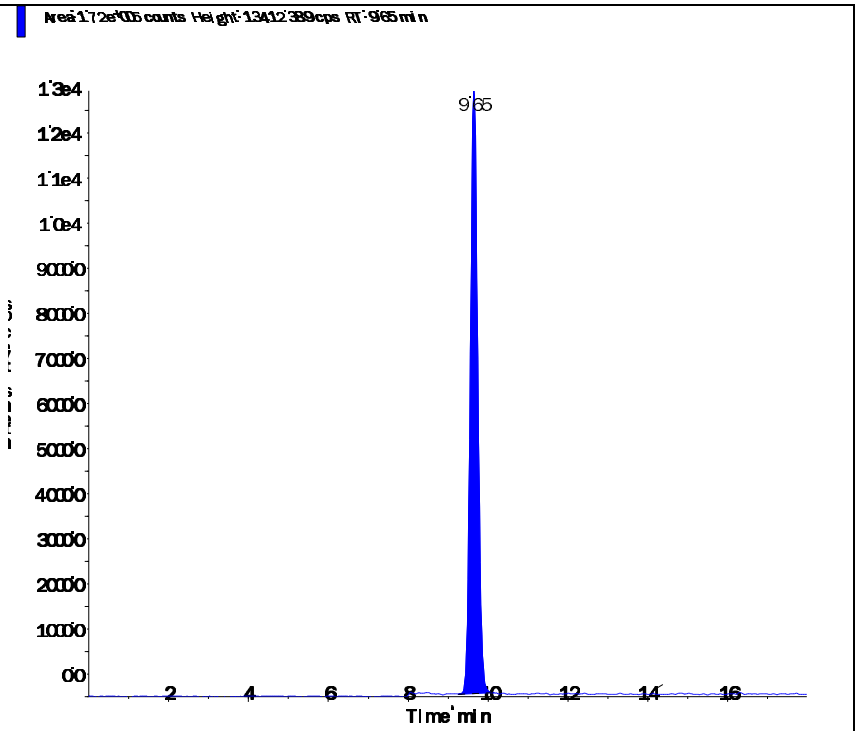

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

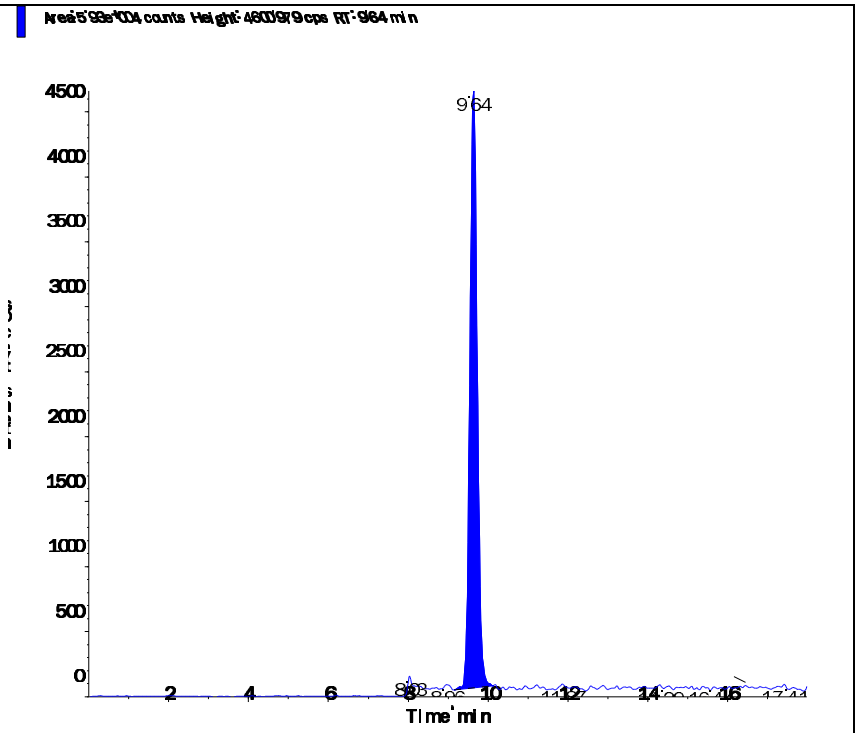

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Data File	LM35310.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 10:03:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35310.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 10:03:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.050e+05	9.62	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.800e+05	9.63	1.00	1.06
Perchlorate conf	6.050e+04	9.62	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.62(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

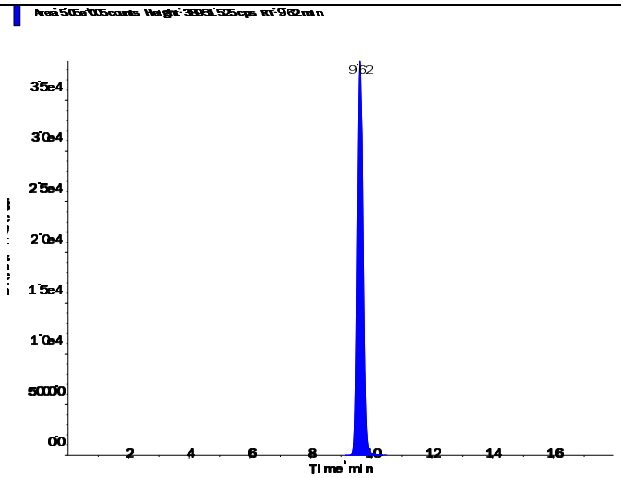

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.357
Sample Type:	(Quality Control)

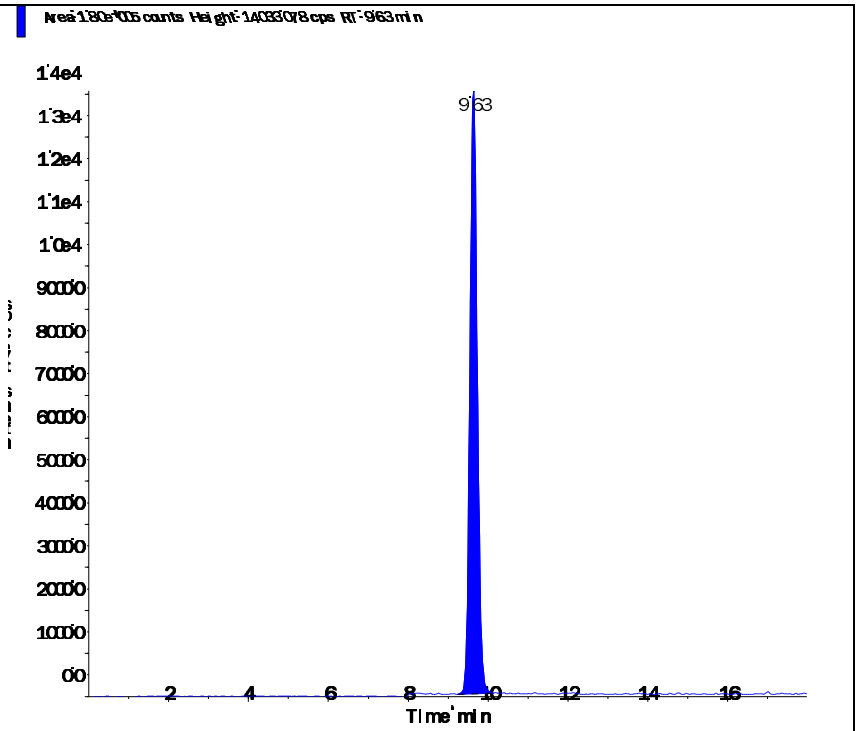

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.62 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.12
Sample Type:	(Quality Control)

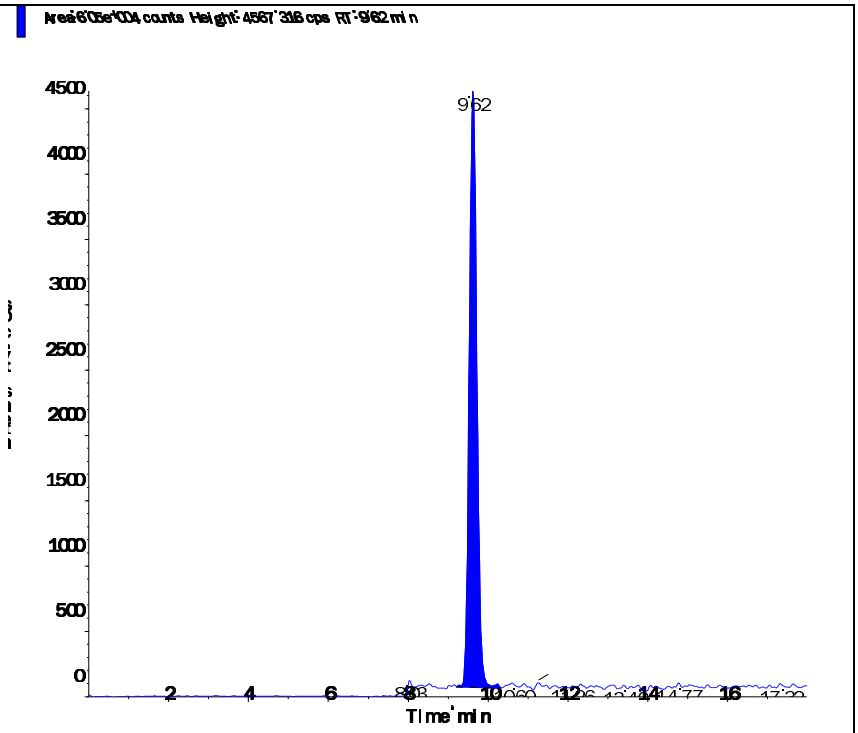

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Data File	LM35227.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 10:27:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35227.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 10:27:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.430e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.060e+04	9.68	N/A	0.202
Perchlorate conf	1.110e+04	9.67	N/A	0.204

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

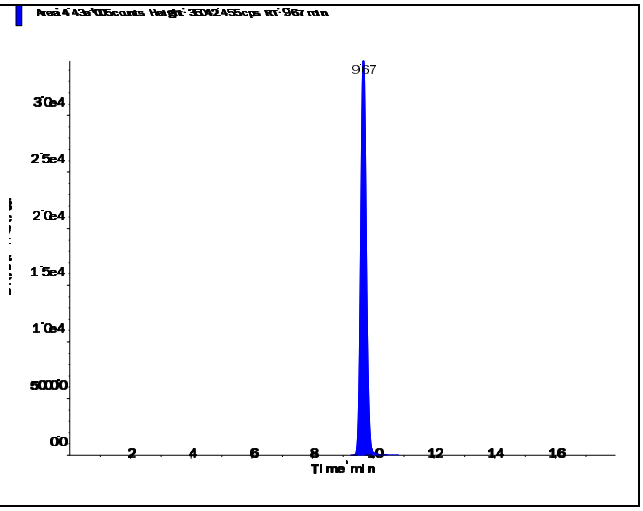

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.68 (9.84) min
Calculated conc:	0.202 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

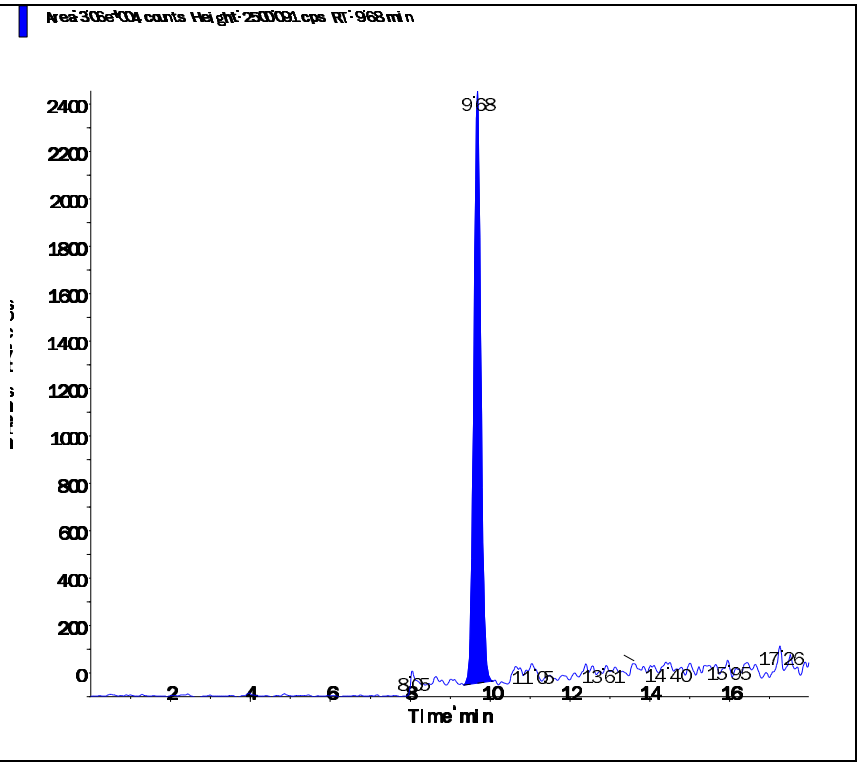

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.67 (9.84) min
Calculated conc:	0.204 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

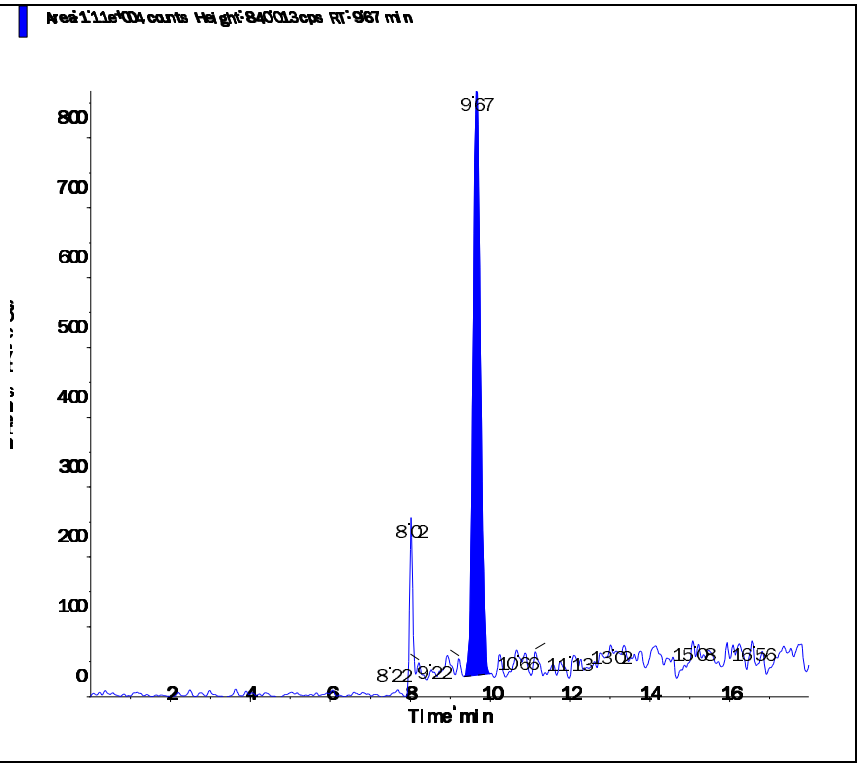

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Data File	LM35239.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 2:14:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-08 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35239.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 2:14:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.960e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.650e+04	9.68	N/A	0.215
Perchlorate conf	1.380e+04	9.66	N/A	0.228

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

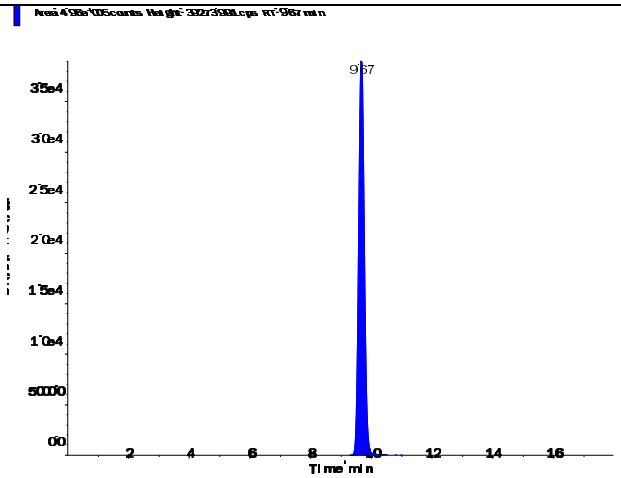

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.68 (9.84) min
Calculated conc:	0.215 ng/ml
Area Ratio:	0.074
Sample Type:	(Unknown)

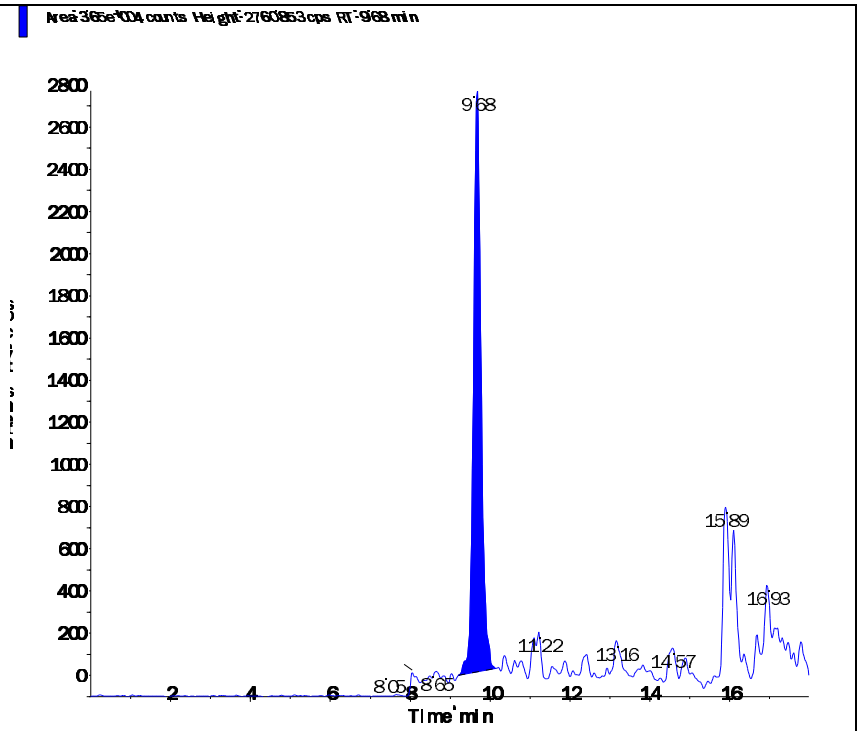

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.228 ng/ml
Area Ratio:	0.028
Sample Type:	(Unknown)

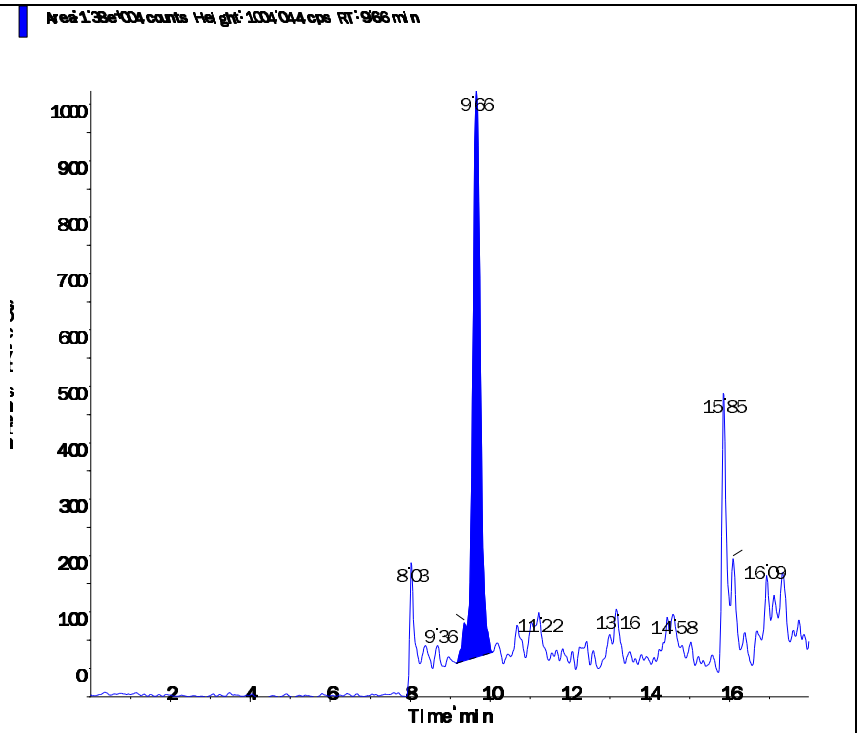

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Data File	LM35245.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 4:08:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-09 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35245.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 4:08:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.670e+04	9.69	N/A	0.21
Perchlorate conf	1.260e+04	9.66	N/A	0.201

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

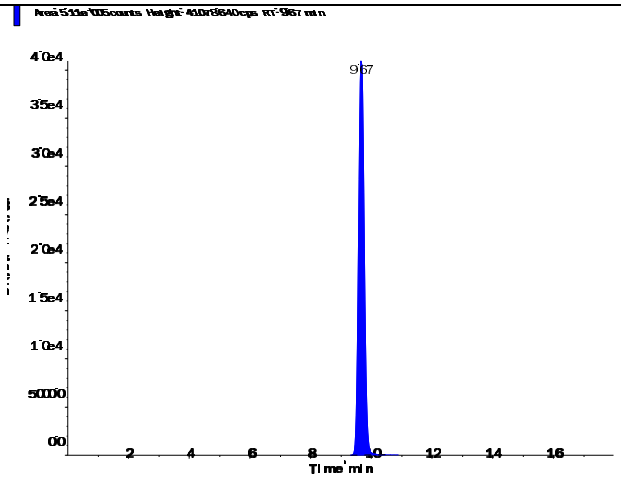

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.69 (9.84) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

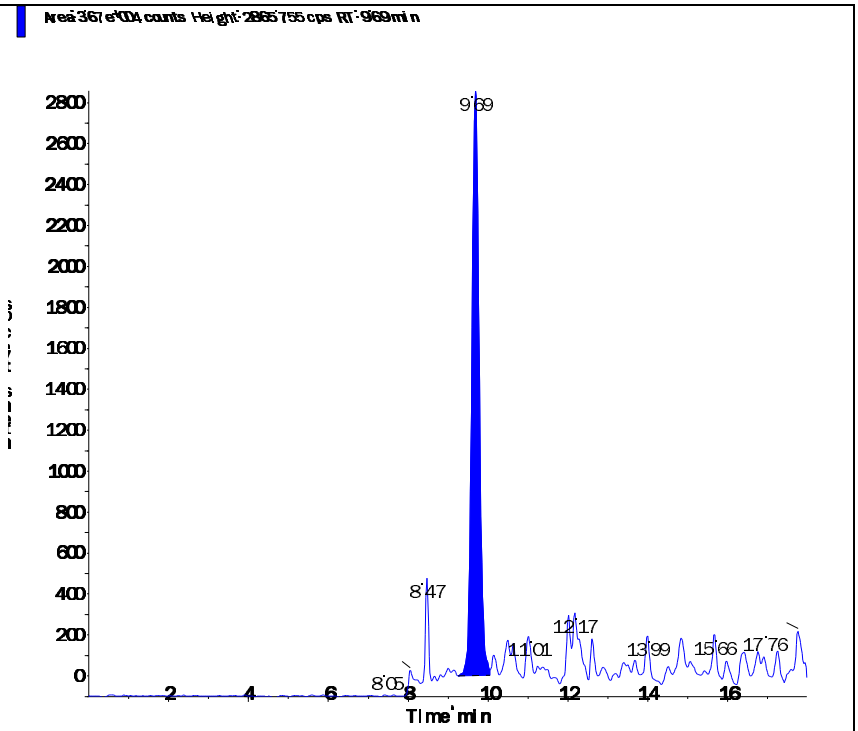

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

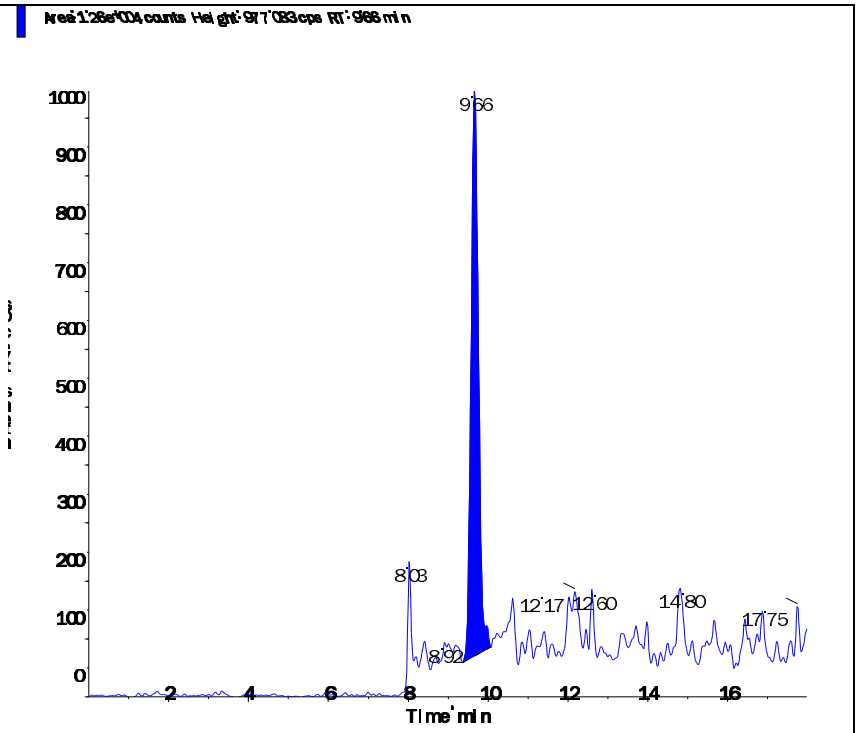

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Data File	LM35258.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 8:15:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-10 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35258.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 8:15:21 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-10	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.620e+04	9.68	N/A	0.222
Perchlorate conf	1.240e+04	9.66	N/A	0.212

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

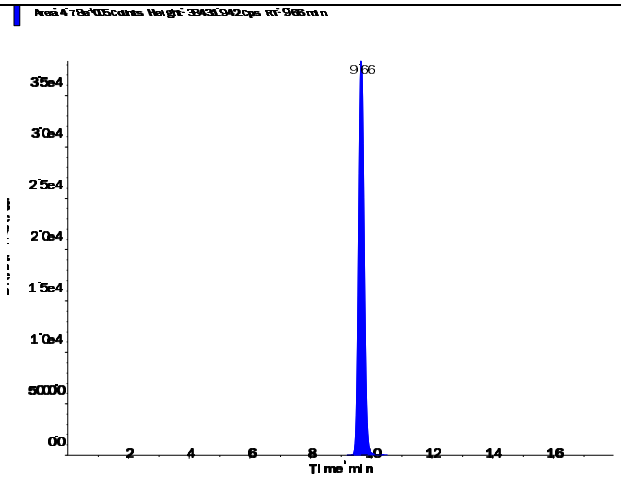

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.68 (9.84) min
Calculated conc:	0.222 ng/ml
Area Ratio:	0.076
Sample Type:	(Unknown)

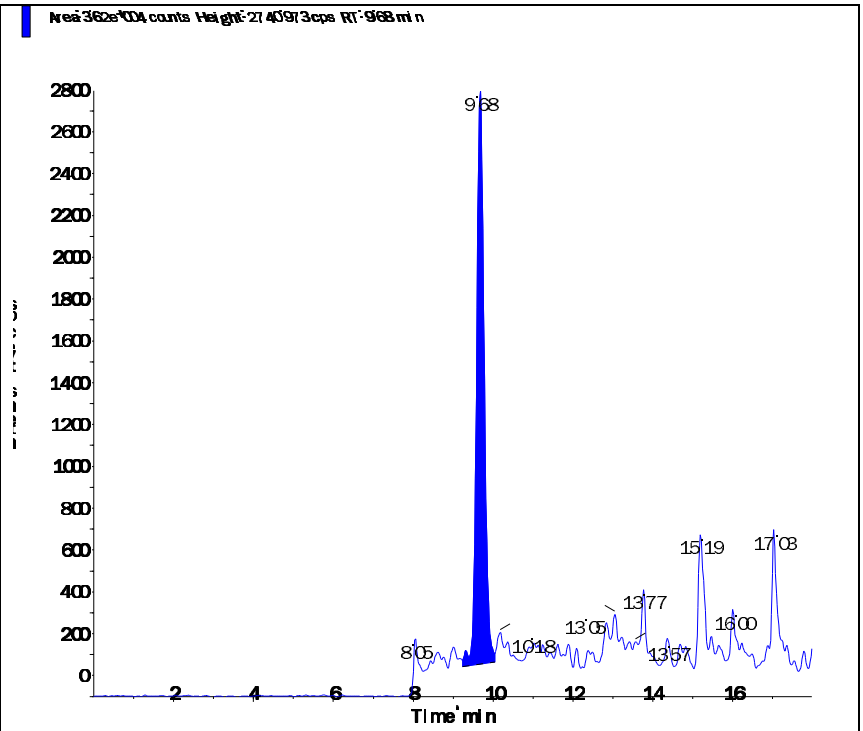

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.212 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

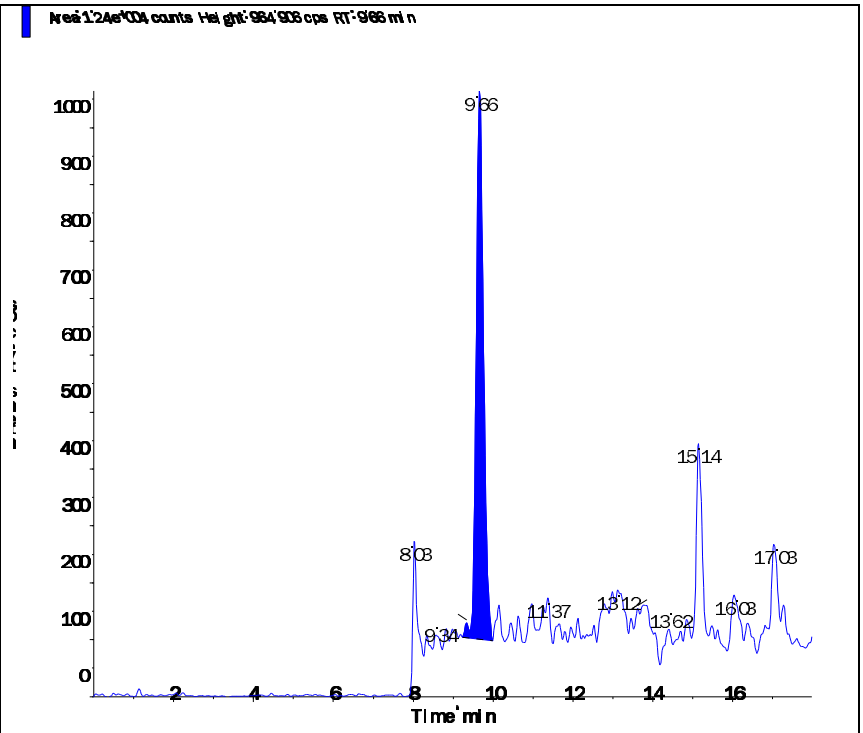

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Data File	LM35265.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 10:27:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-11 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35265.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 10:27:56 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.850e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.580e+04	9.67	N/A	0.216
Perchlorate conf	1.170e+04	9.66	N/A	0.197

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

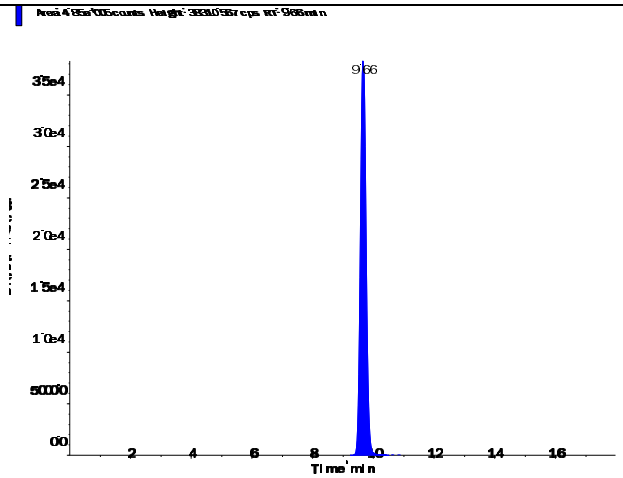

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.67 (9.84) min
Calculated conc:	0.216 ng/ml
Area Ratio:	0.074
Sample Type:	(Unknown)

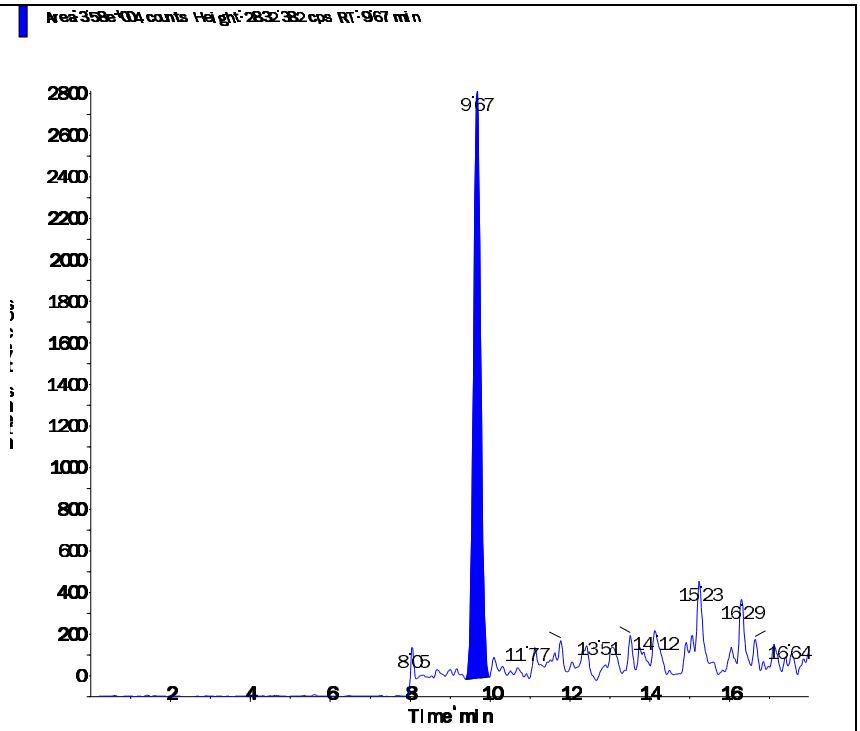

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.197 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

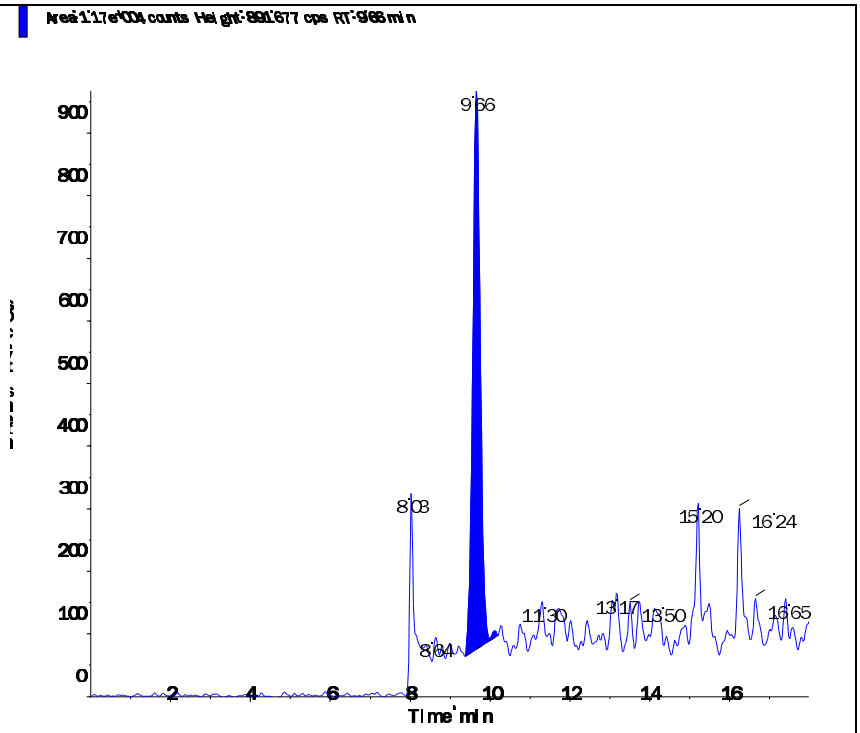

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Printed: 6/12/2016 9:37 PM

Data File	LM35281.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 12:05:19 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-12 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35281.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 12:05:19 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572200-12	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.660e+05	9.65	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+04	9.66	N/A	0.206
Perchlorate conf	1.190e+04	9.65	N/A	0.209

O18LP (Internal Standard)

RT (Exp. RT): 9.65(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

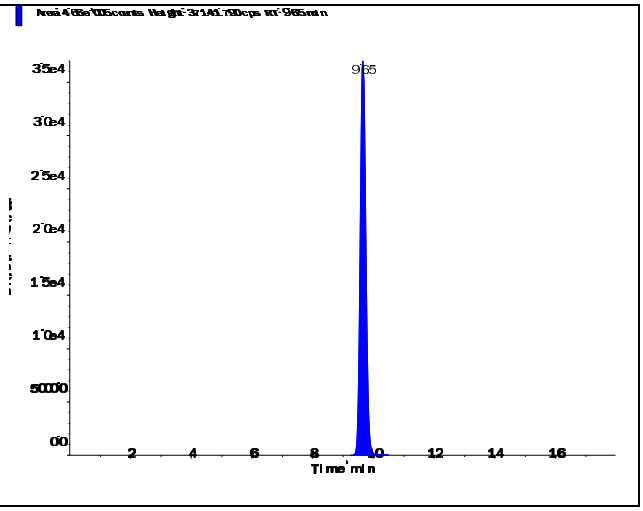

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

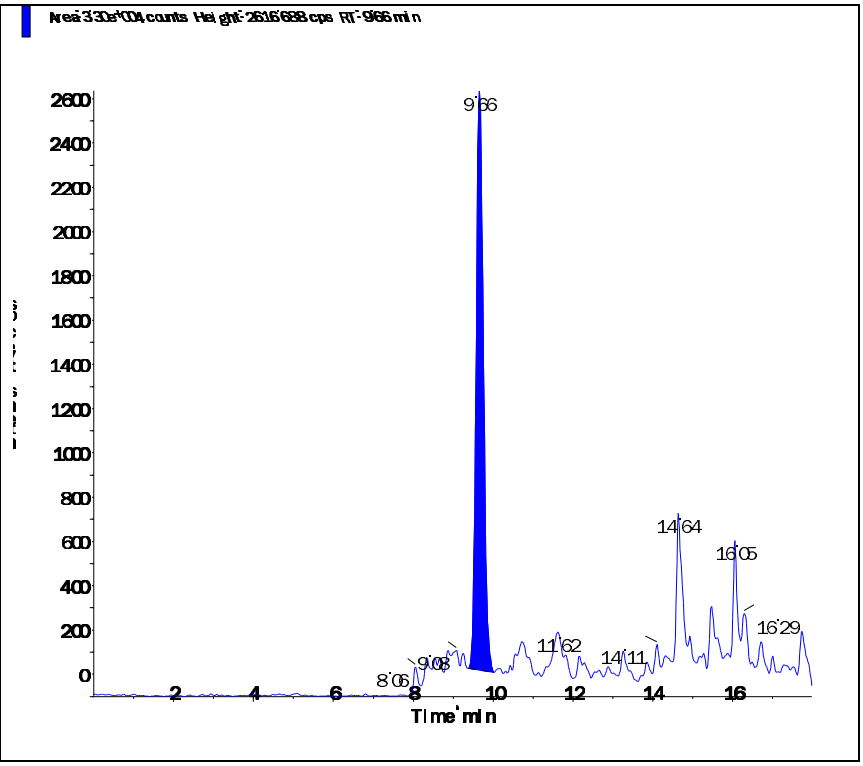

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.65 (9.84) min
Calculated conc:	0.209 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

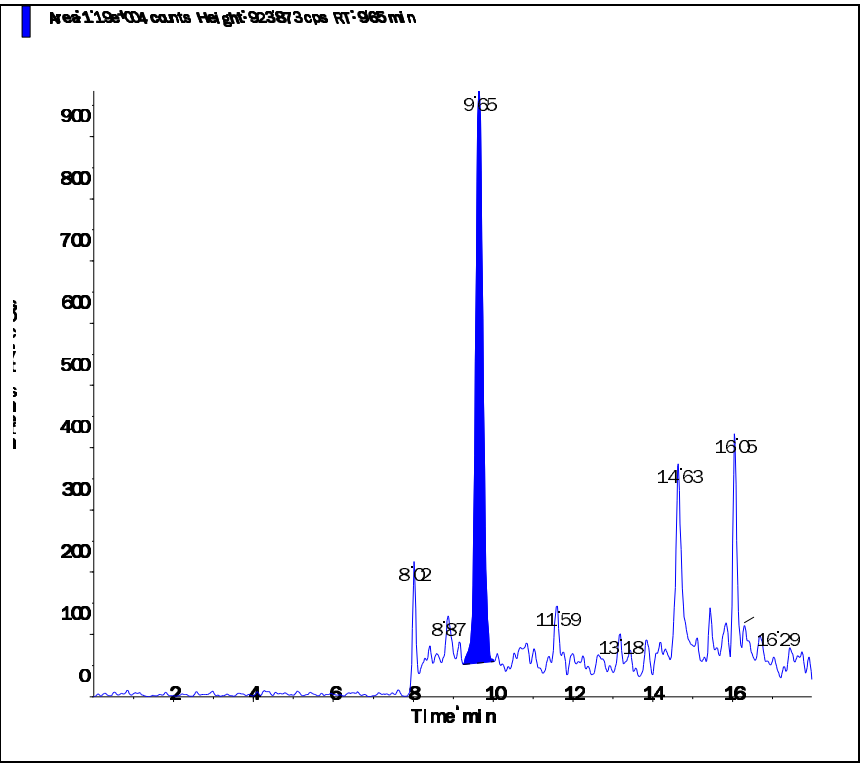

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Printed: 6/12/2016 9:41 PM

Data File	LM35293.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 4:41:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-13 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35293.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 4:41:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572200-13	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.800e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.390e+04	9.68	N/A	0.206
Perchlorate conf	1.220e+04	9.66	N/A	0.207

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

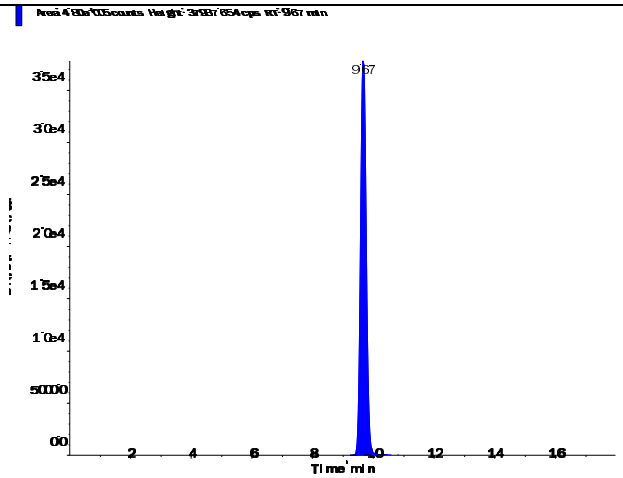

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.68 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

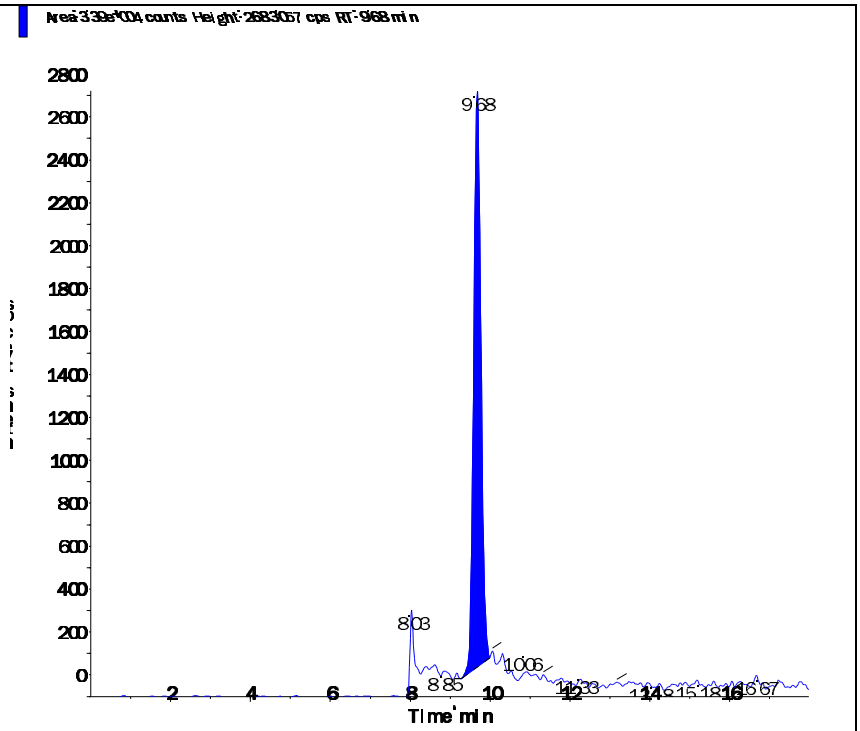

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

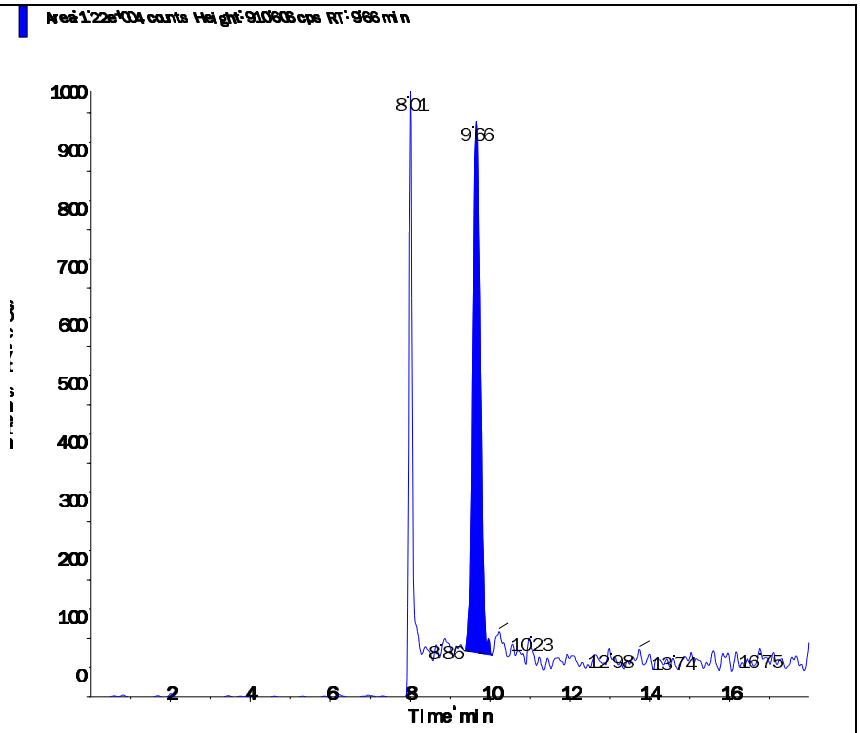

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Data File	LM35297.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 5:57:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-14 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35297.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 5:57:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572200-14	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.980e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.650e+04	9.67	N/A	0.215
Perchlorate conf	1.270e+04	9.66	N/A	0.208

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

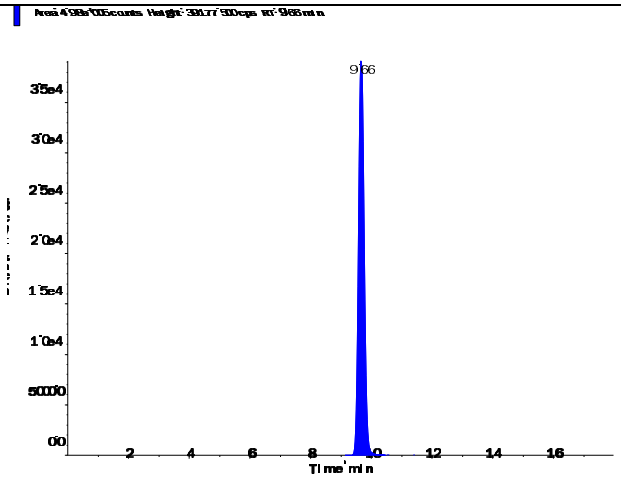

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.67 (9.84) min
Calculated conc:	0.215 ng/ml
Area Ratio:	0.073
Sample Type:	(Unknown)

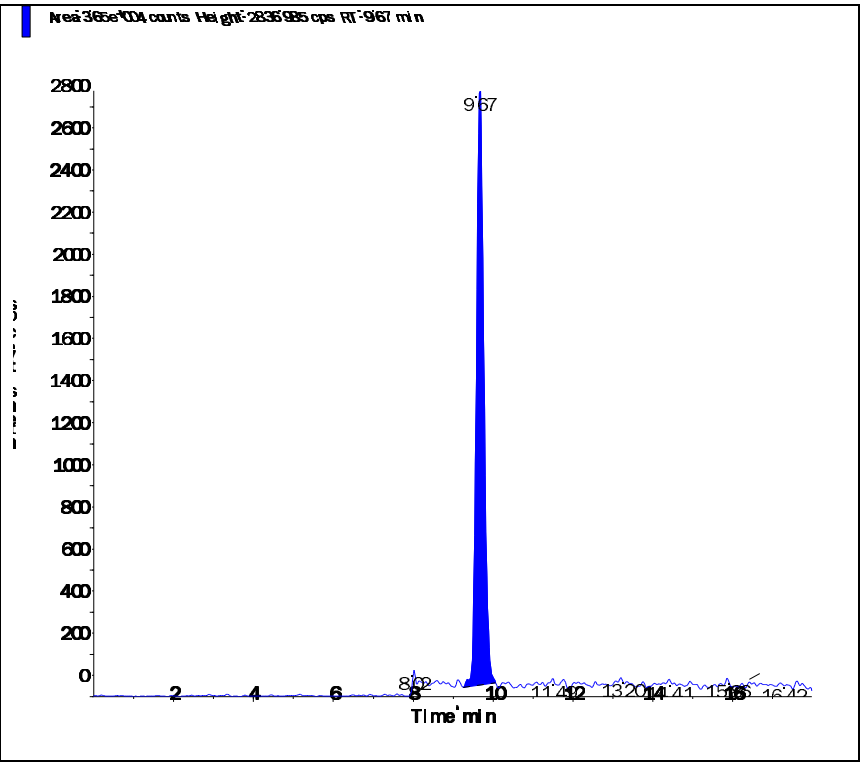

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.66 (9.84) min
Calculated conc:	0.208 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

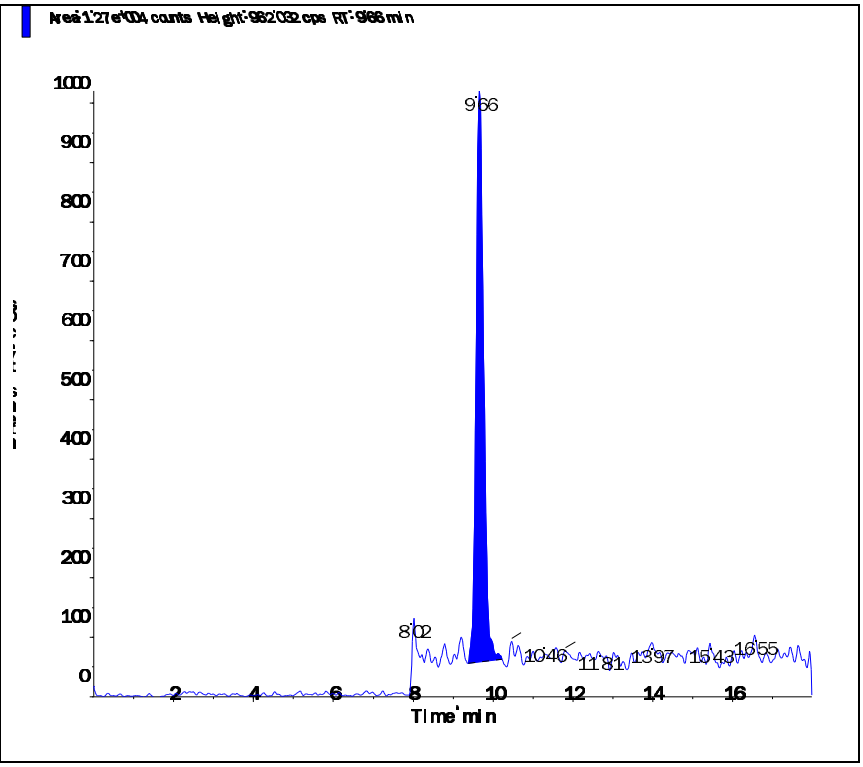

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Data File	LM35225.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 9:49:48 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-01 CCB	**Injection Vial**	1.00
Data File	LM35225.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 9:49:48 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.710e+05	9.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.80(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

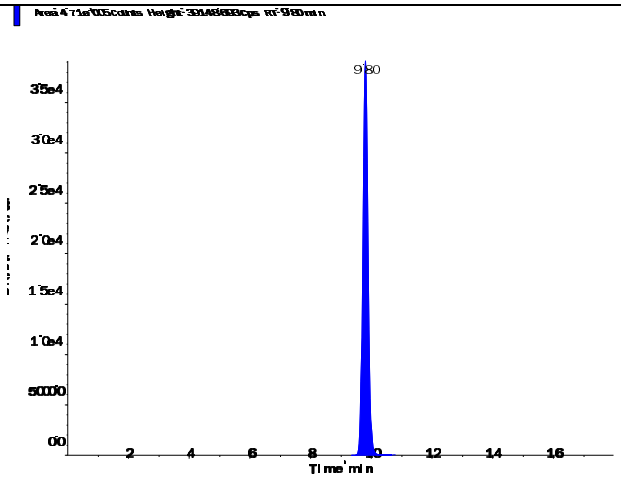

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

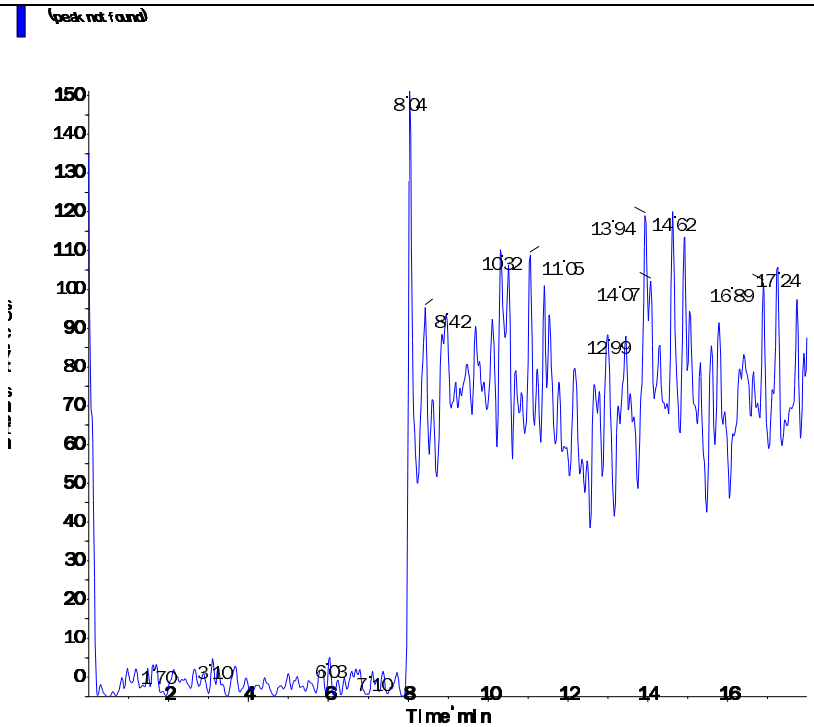

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

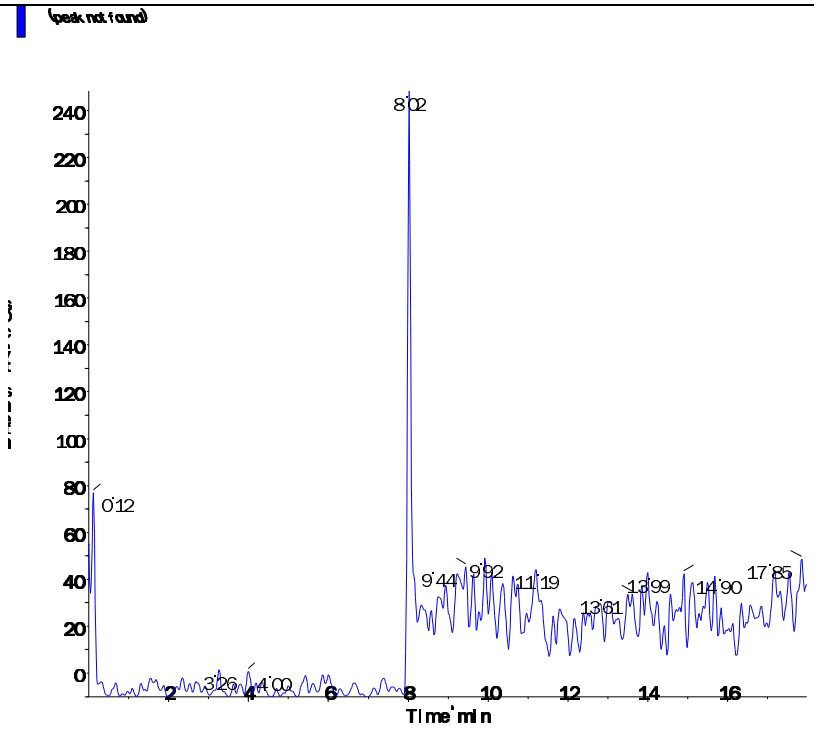

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Printed: 6/11/2016 1:04 PM

Data File	LM35240.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 2:33:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-04 CCB	**Injection Vial**	1.00
Data File	LM35240.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 2:33:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.660e+03	10.00	N/A	0.018
Perchlorate conf	1.770e+03	10.00	N/A	0.0114

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

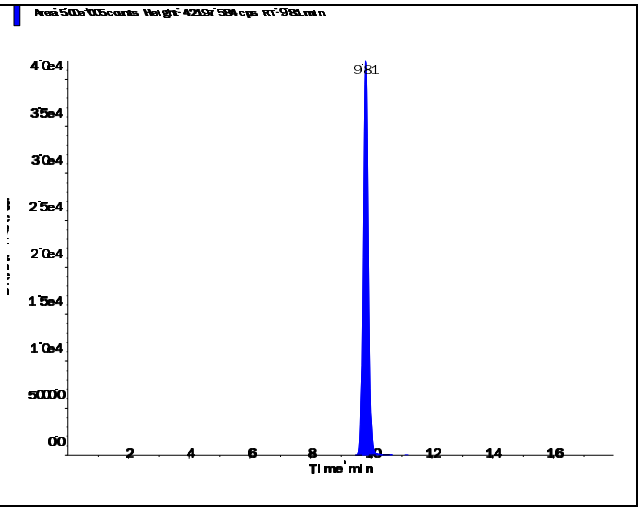

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	10.00 (9.84) min
Calculated conc:	0.018 ng/ml
Area Ratio:	0.007
Sample Type:	(Unknown)

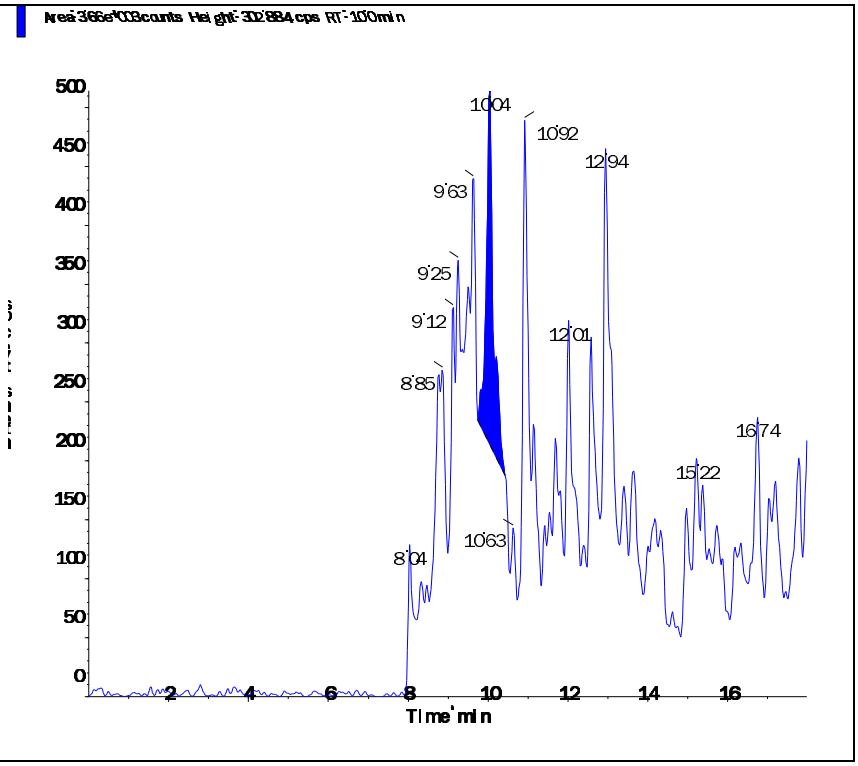

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	10.00 (9.84) min
Calculated conc:	0.0114 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)

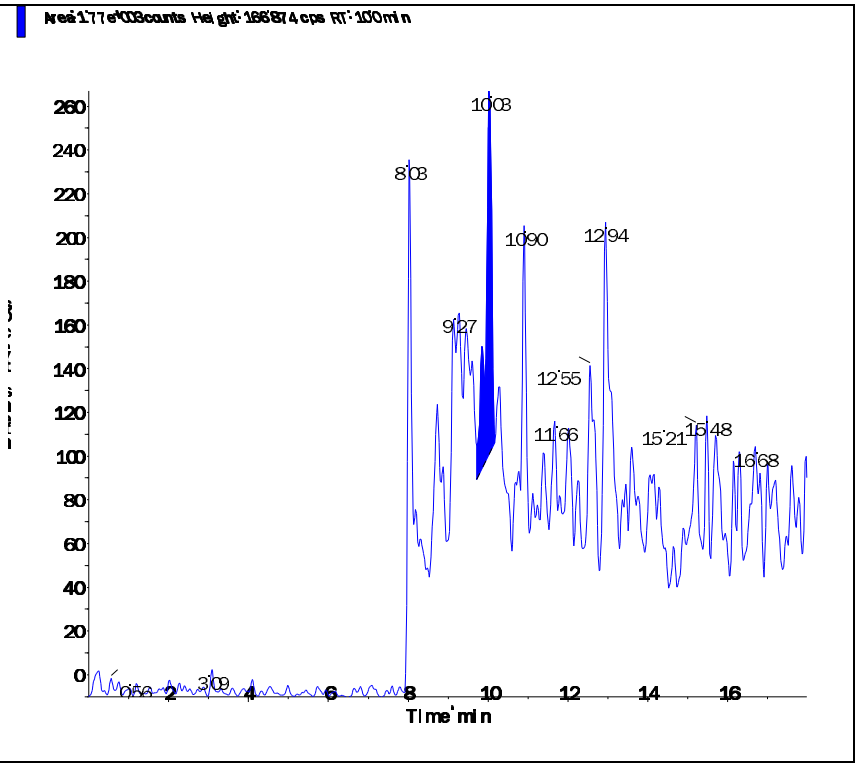

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Data File	LM35246.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 4:27:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-06 CCB	**Injection Vial**	1.00
Data File	LM35246.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 4:27:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.160e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	3.770e+02	9.80	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

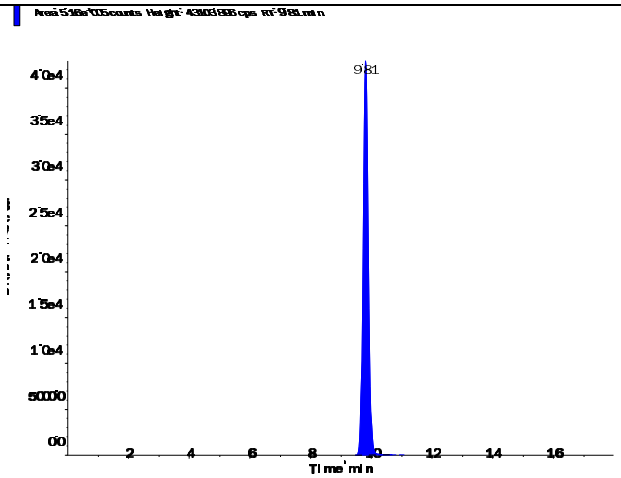

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Printed: 6/11/2016 1:06 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

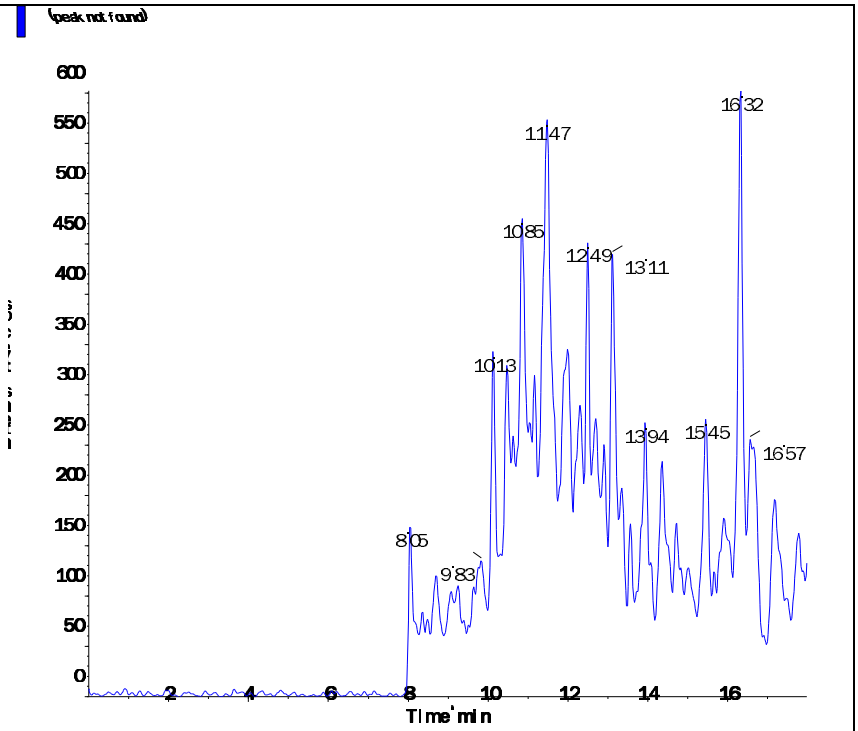

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.80 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

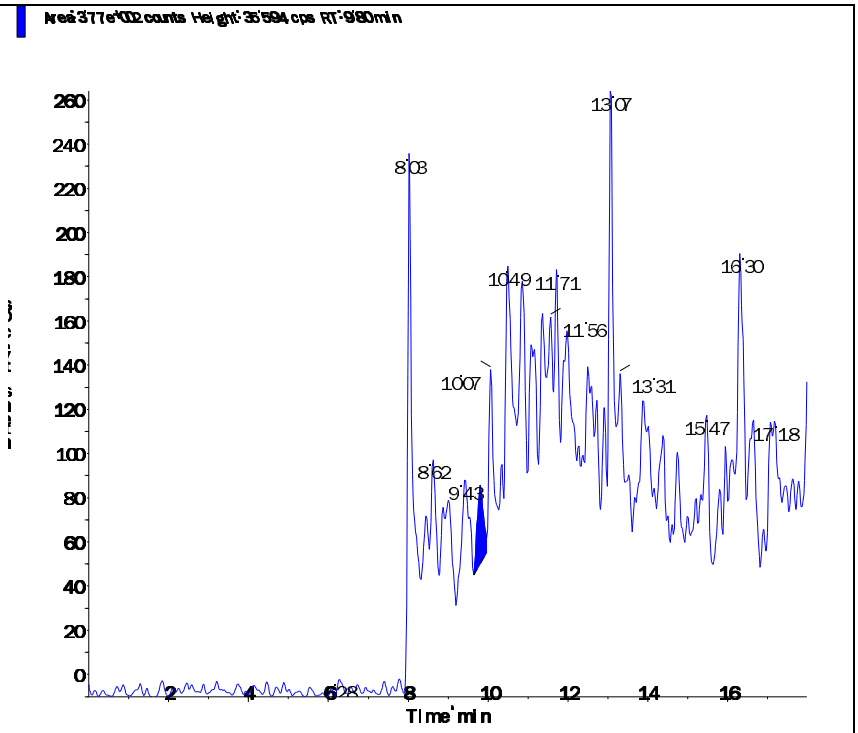

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Data File	LM35259.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 8:34:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-08 CCB	**Injection Vial**	1.00
Data File	LM35259.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 8:34:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.920e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

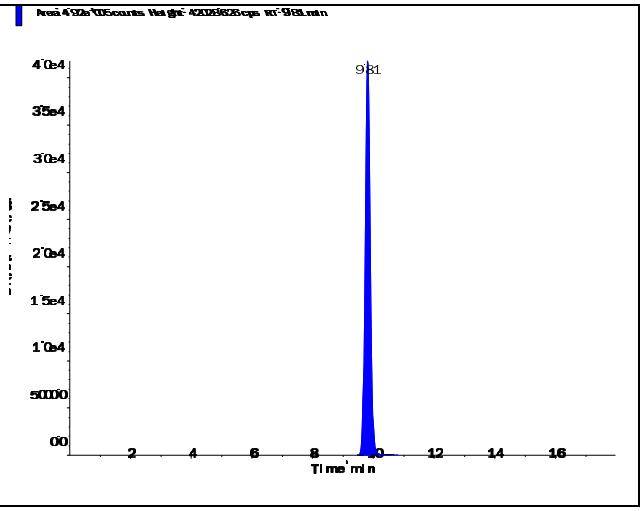

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

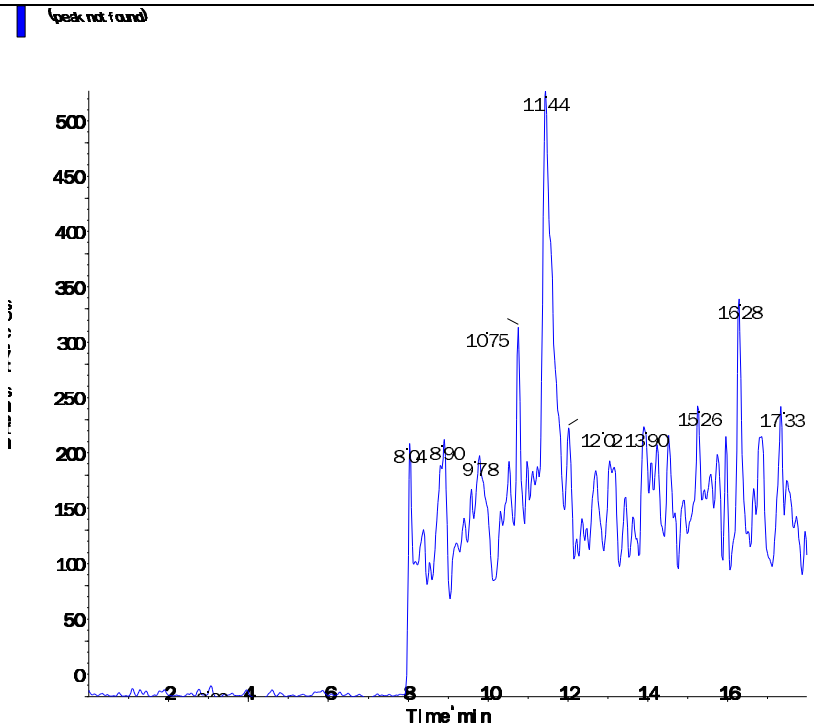

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

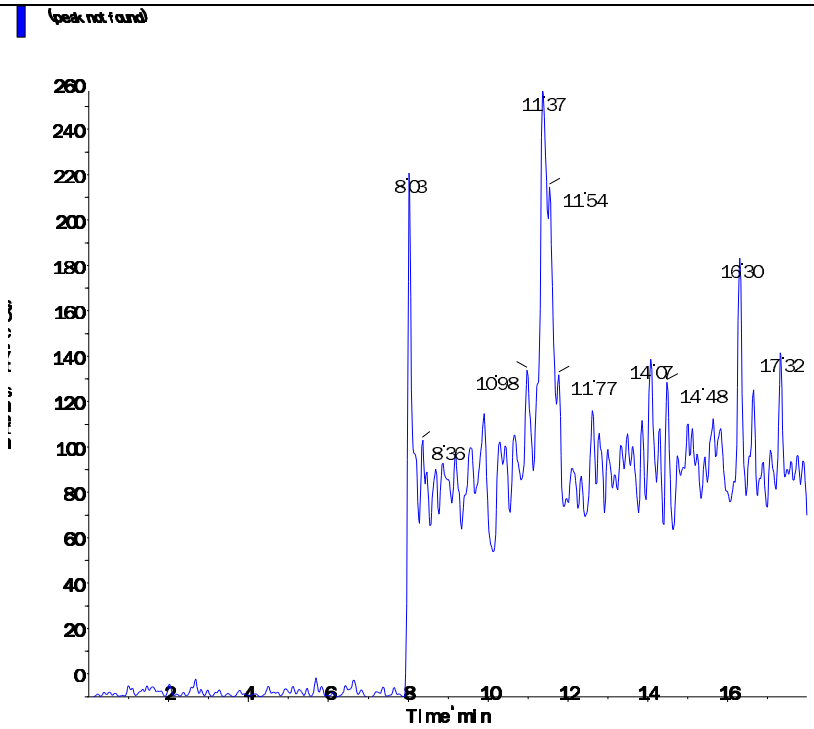

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Printed: 6/11/2016 1:13 PM

Data File	LM35266.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 10:46:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572198-10 CCB	**Injection Vial**	1.00
Data File	LM35266.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 10:46:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572198-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.990e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	9.710e+02	9.90	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

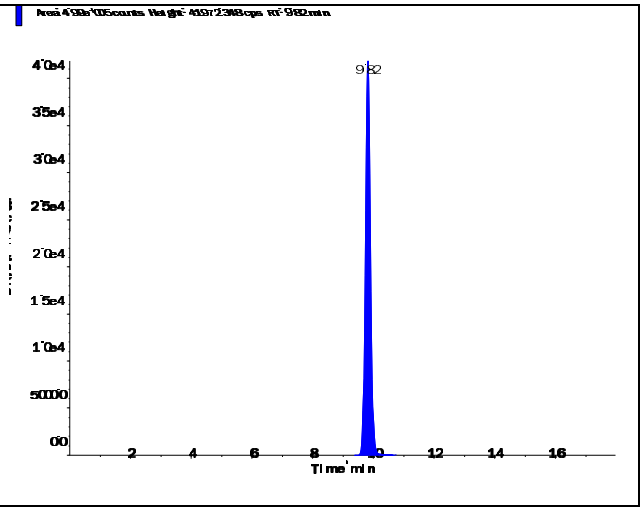

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/11/2016 1:13 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	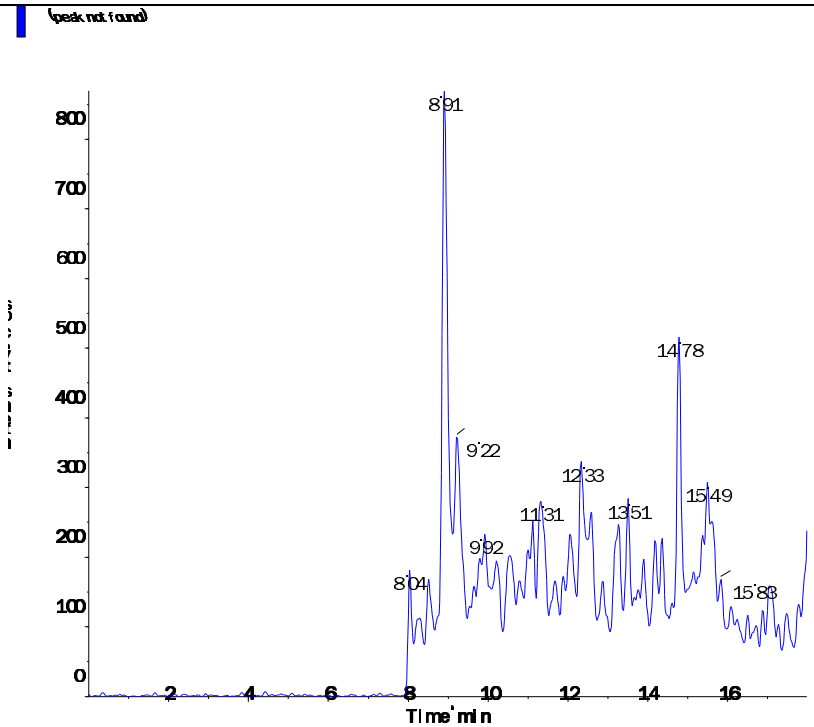
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.90 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	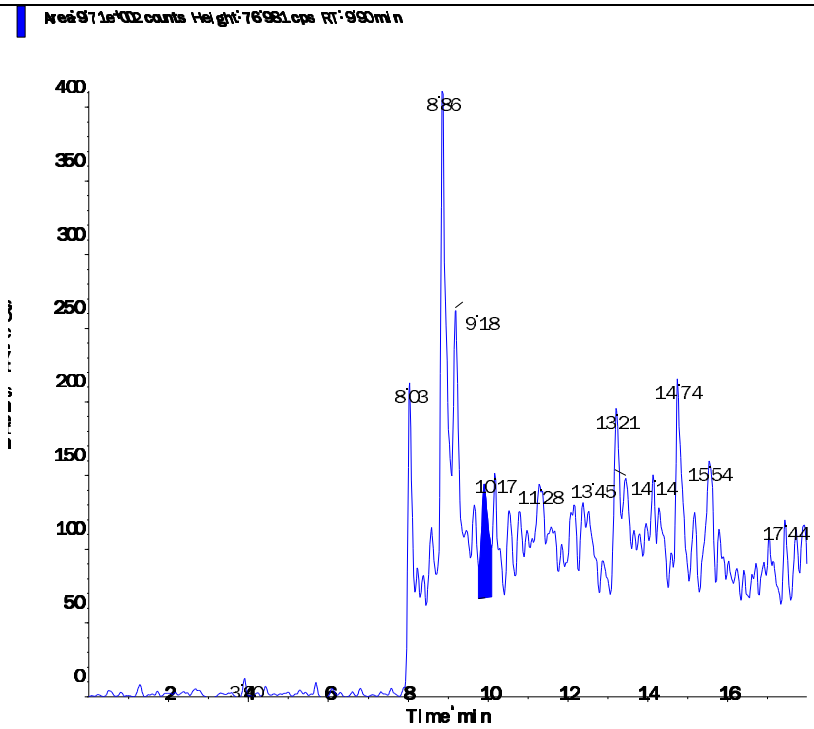

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/12/2016 9:36 PM

Data File	LM35279.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 11:27:29 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-01 CCB	**Injection Vial**	1.00
Data File	LM35279.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 11:27:29 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.540e+05	9.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.310e+03	9.56	N/A	0.0441
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.80(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

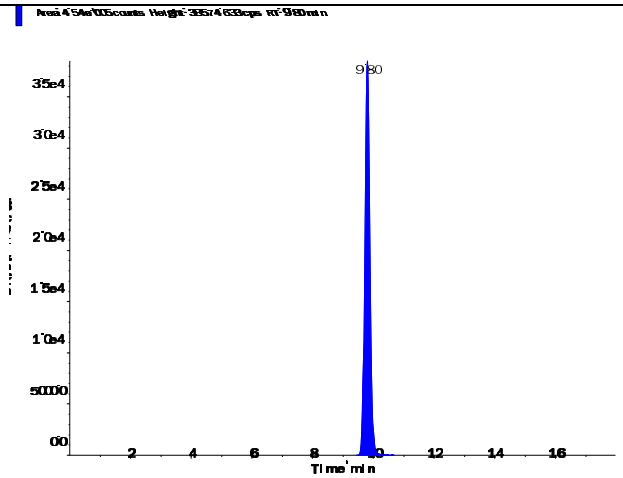

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Created with Analyst Reporter
Printed: 6/12/2016 9:36 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.56 (9.84) min
Calculated conc:	0.0441 ng/ml
Area Ratio:	0.016
Sample Type:	(Unknown)

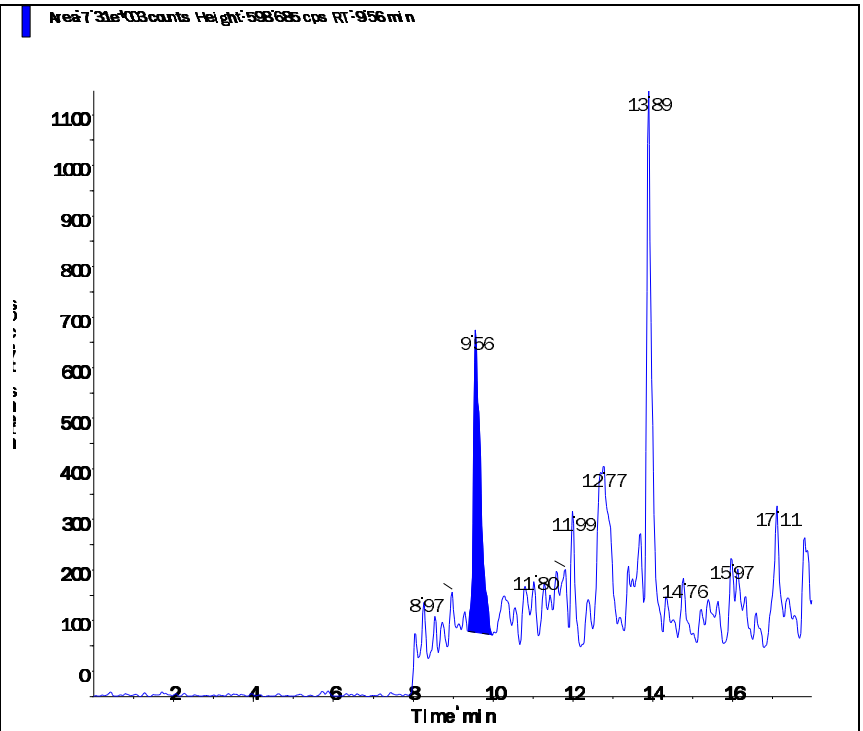

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

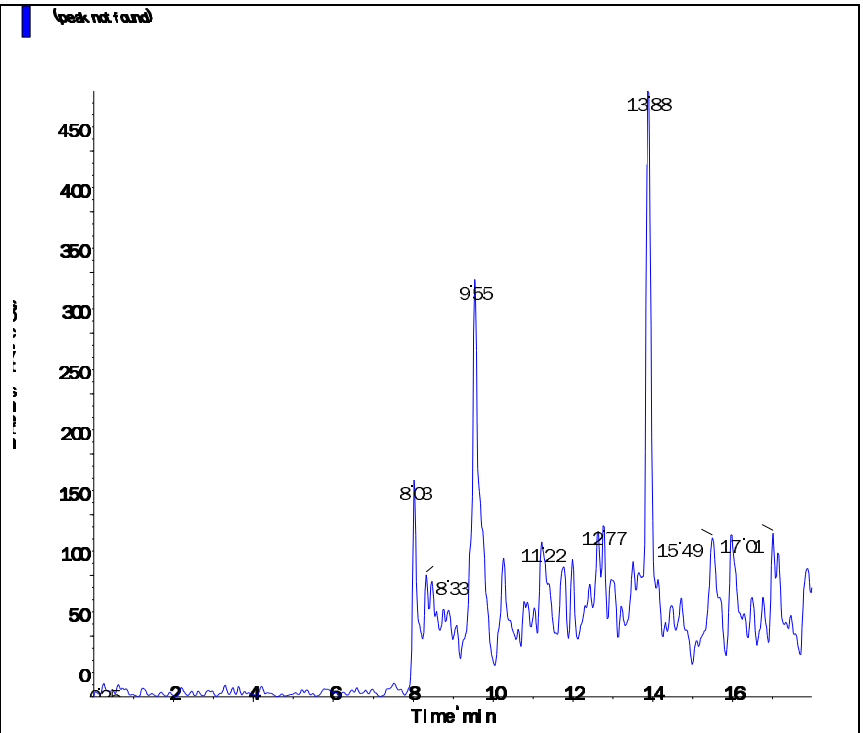

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/12/2016 9:41 PM

Data File	LM35294.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 5:00:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-04 CCB	**Injection Vial**	1.00
Data File	LM35294.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 5:00:09 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.960e+05	9.81	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.81(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

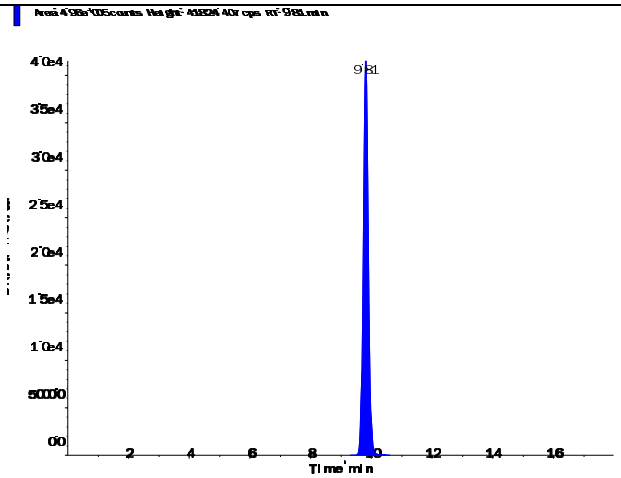

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/12/2016 9:41 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

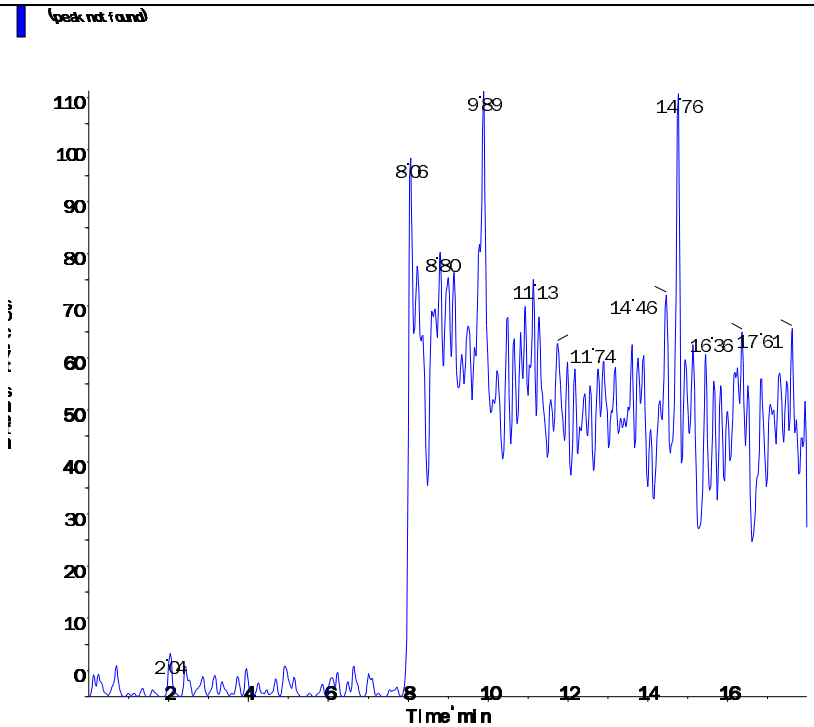

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

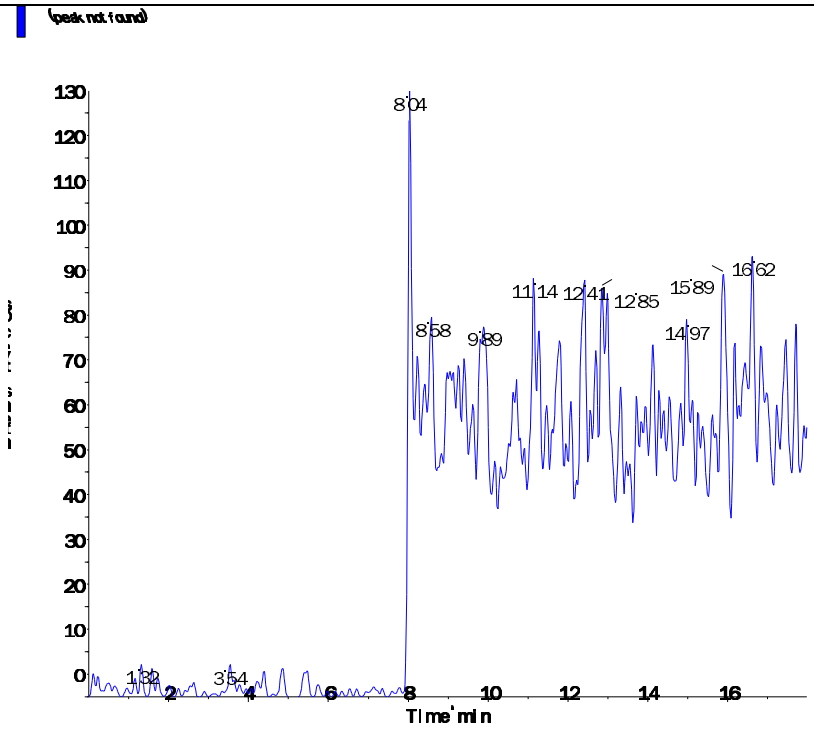

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/12/2016 9:42 PM

Data File	LM35298.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 6:16:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-06 CCB	**Injection Vial**	1.00
Data File	LM35298.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 6:16:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.040e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

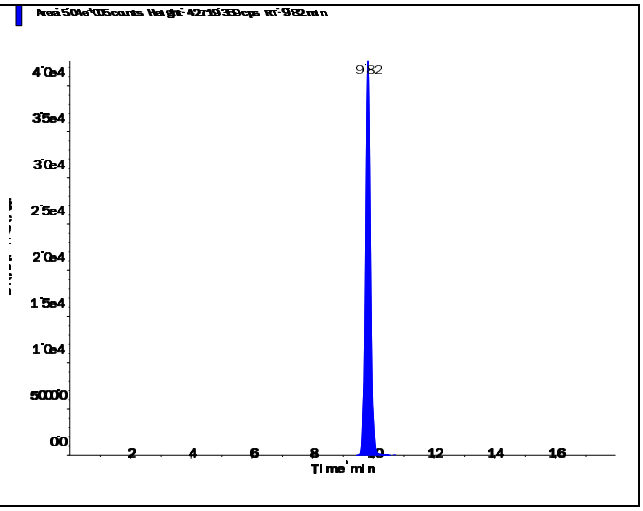

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/12/2016 9:42 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

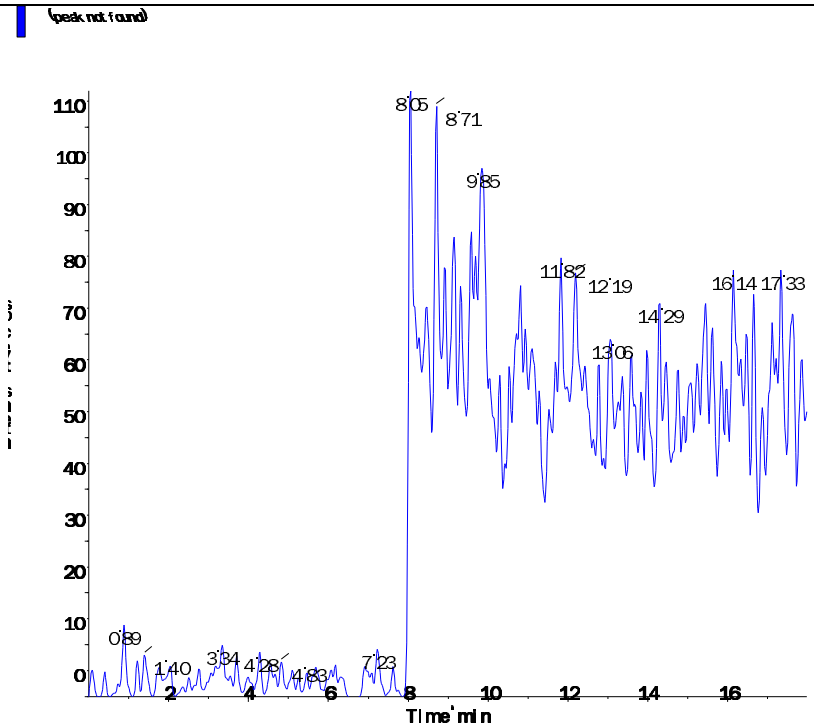

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

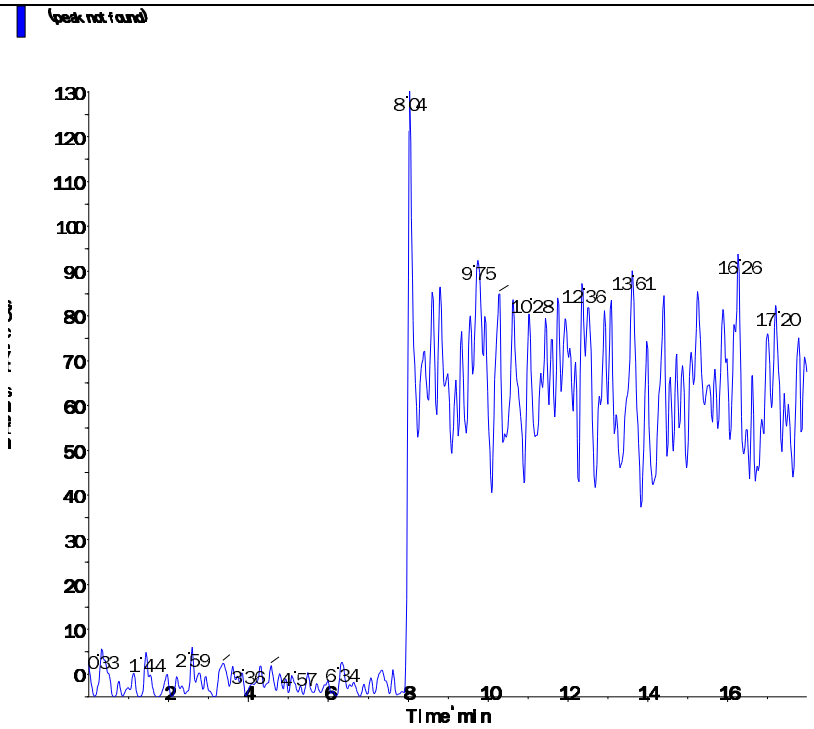

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/11/2016 1:00 PM

Data File	LM35228.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 10:46:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM35228.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 10:46:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.550e+05	9.16	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.520e+04	9.17	N/A	0.226
Perchlorate conf	1.040e+04	9.17	N/A	0.184

O18LP (Internal Standard)

RT (Exp. RT): 9.16(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

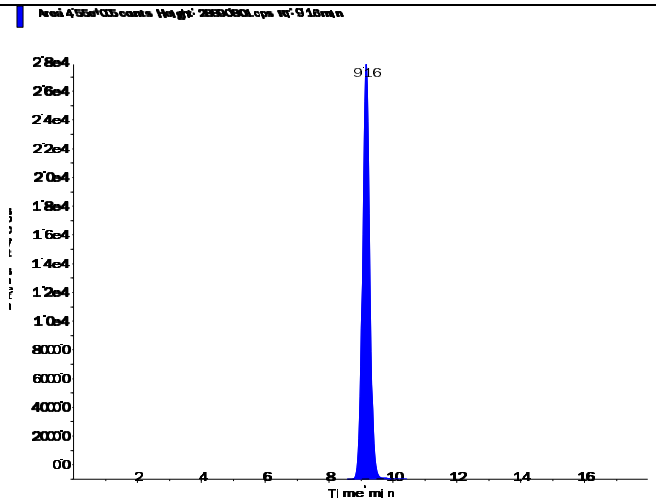

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/11/2016 1:00 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.17 (9.84) min
Calculated conc:	0.226 ng/ml
Area Ratio:	0.077
Sample Type:	(Unknown)

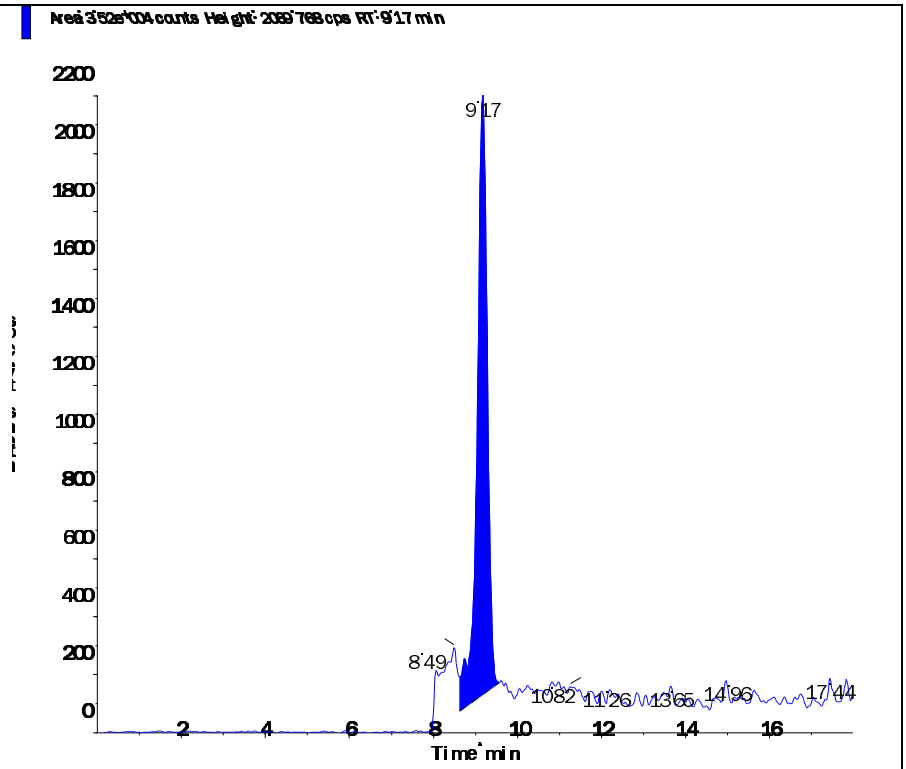

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.17 (9.84) min
Calculated conc:	0.184 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

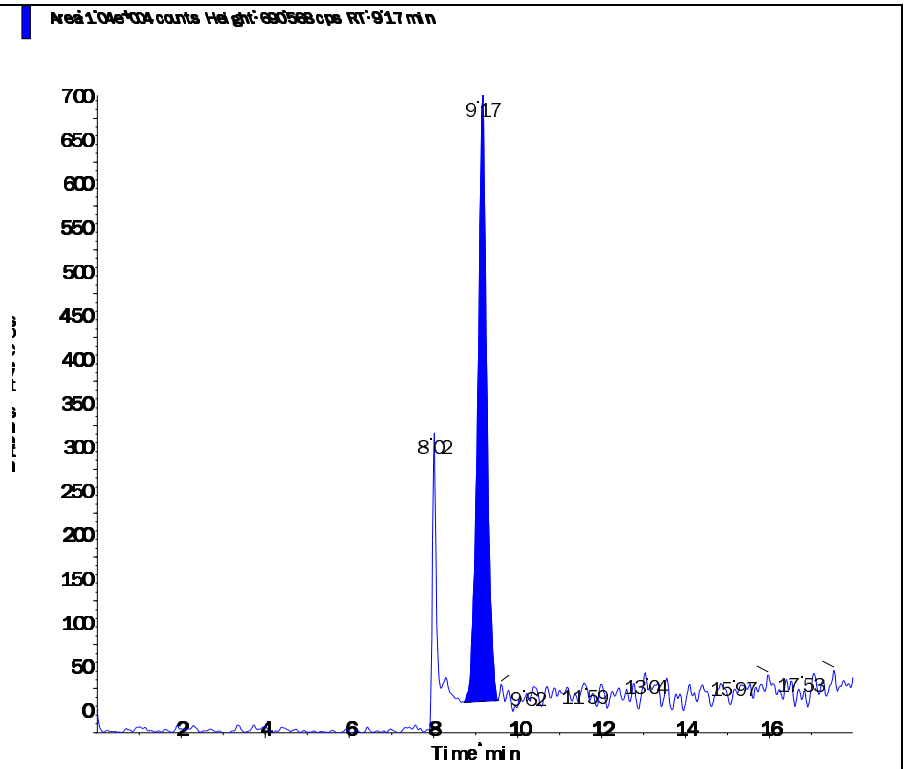

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2.2.2.5 Raw QC Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/11/2016 1:00 PM

Data File	LM35229.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 11:05:30 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-02 BLANK	**Injection Vial**	5.00
Data File	LM35229.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 11:05:30 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.410e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	3.090e+02	9.81	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

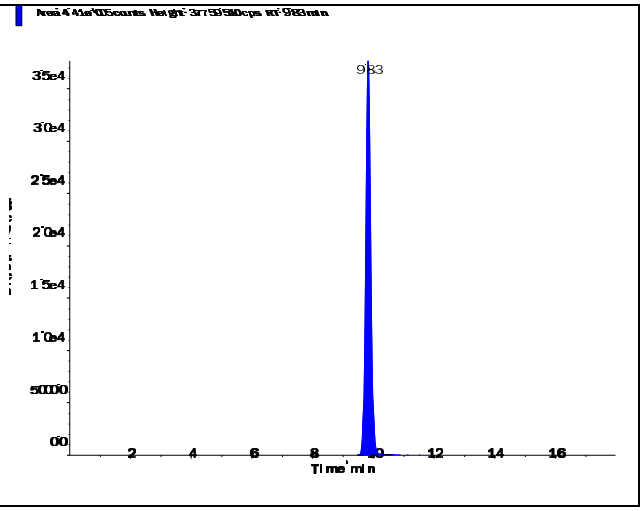

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

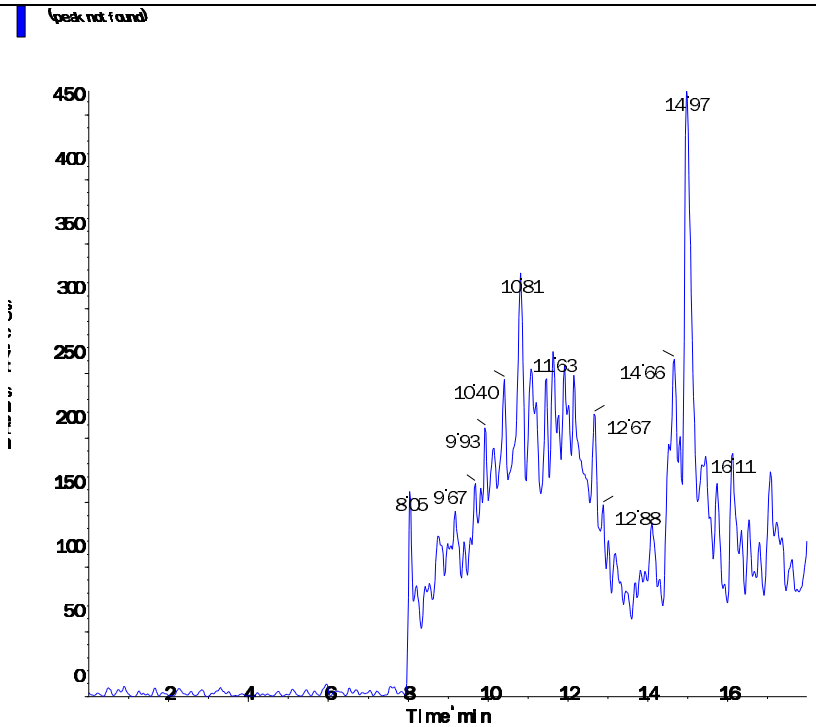

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.81 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

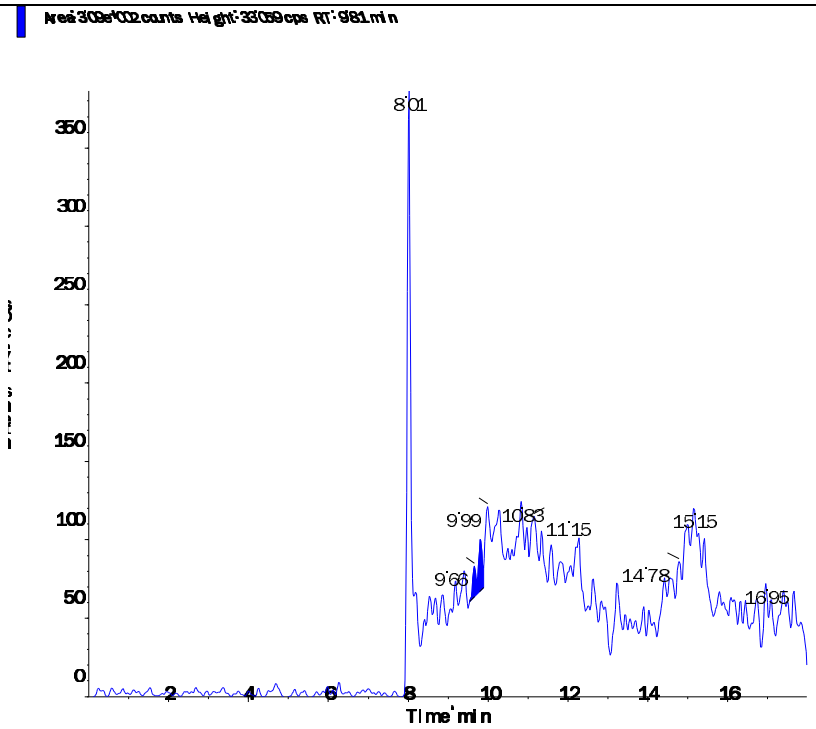

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Printed: 6/11/2016 1:01 PM

Data File	LM35230.wiff	**Result Table**	061016_WTD.rdb
Acquisition Date	6/10/2016 11:24:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572200-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM35230.wiff	**Injection Volume**	10.00
Acquisition Date	6/10/2016 11:24:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061016_WTD.rdb
Sample ID	WG572200-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.340e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.000e+04	9.83	N/A	0.201
Perchlorate conf	1.180e+04	9.83	N/A	0.223

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

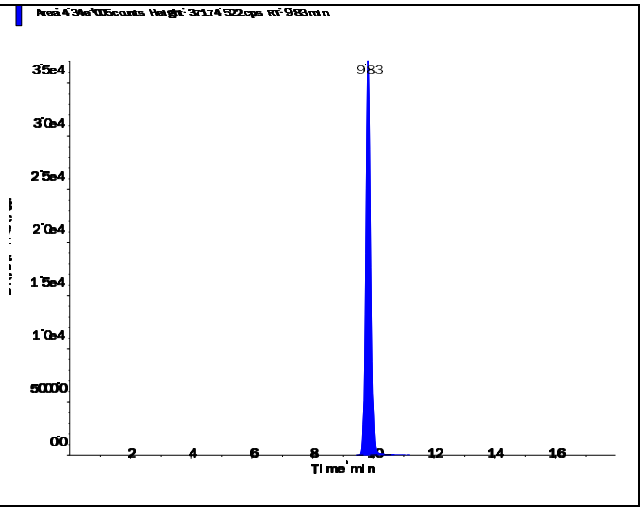

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

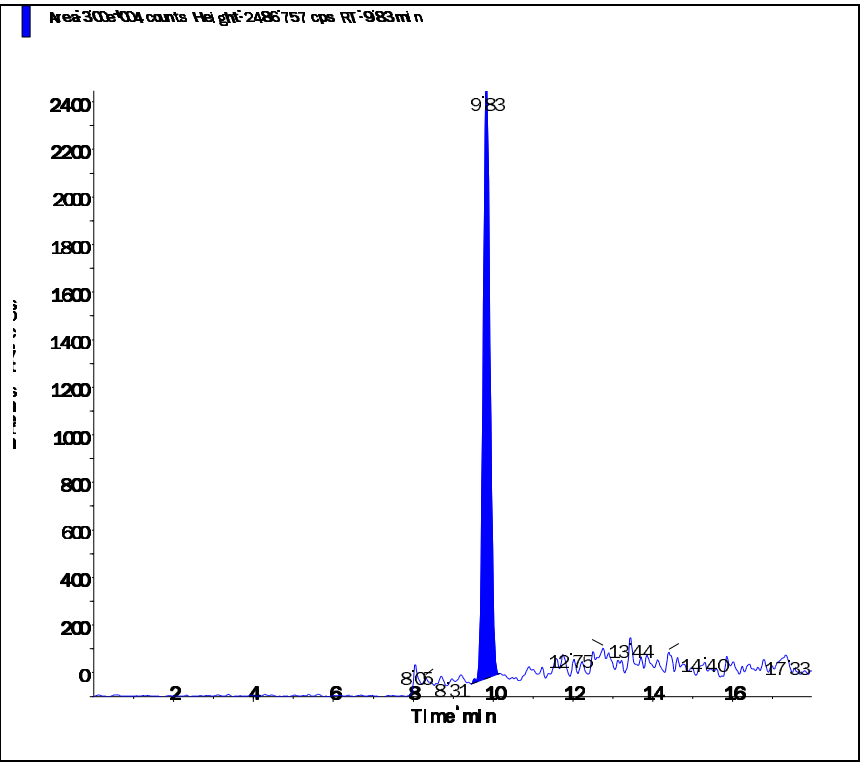

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.223 ng/ml
Area Ratio:	0.027
Sample Type:	(Unknown)

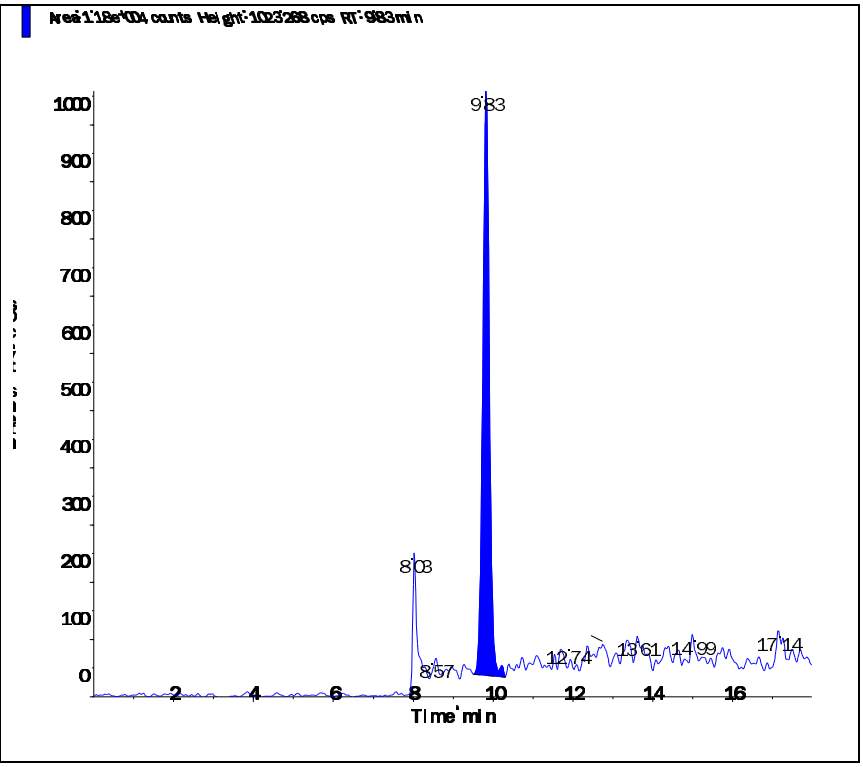

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2.3 Metals Data

2.3.1 Metals I C P Data

2.3.1.1 Summary Data

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW5-060816	**Prep Method:**	3015	**Prep Date:**	06/10/2016 11:21
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/14/2016 12:52
Workgroup #:	WG572544	**Analyst:**	JYH	**Run Date:**	06/14/2016 14:24
Collect Date:	06/08/2016 10:10	**Dilution:**	1	**File ID:**	T3.061416.142427
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.0635	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	24.9		0.500	0.250	0.125
Iron, Total	7439-89-6	1.00		0.200	0.100	0.0500
Potassium, Total	7440-09-7	2.42		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW5-060816	**Prep Method:**	3015	**Prep Date:**	06/10/2016 11:21
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/14/2016 12:52
Workgroup #:	WG572544	**Analyst:**	JYH	**Run Date:**	06/14/2016 14:32
Collect Date:	06/08/2016 10:10	**Dilution:**	5	**File ID:**	T3.061416.143214
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Magnesium, Total	7439-95-4	26.1		5.00	2.50	1.25
Sodium, Total	7440-23-5	124		5.00	2.50	1.25

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.3.1.2 QC Summary Data

Example 6010 Calculations
Thermo Scientific iCAP

1.0 Initial Calibration (ICAL) Parameters
For a multi-point calibration, the system performs linear regression from data consisting of a blank and four standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

TCLP Non-Volatile

Analyst(s): AMA
Date: 06/09/2016
Filter Lot #: 94186030
Microbac SOP: TCLP01 Rev #: 12

Analyst / Date		Analyst / Date	
AMA	6/9/16	CPD	6/10/16
Time On	Temp On °C	Time Off	Temp Off °C
1435	22.9	0810	21.8

Agitator Speed 30 ± 2 rpm ☑

Jug #	Sample #	Tests	Method	Fluid #	Matrix *	% Solid	Pretest pH Initial	Pretest pH Final	Int. Wt. (g)	Fluid Vol. (mL)	Final extract pH
G-8	06-0360-02	ME, SV, Pest, Herb	1311	F1-180	S	100	7.62	3.16	100.79	2015	5.25
↓	↓	pH-L	↓	↓	↓	↓	↓	↓	↓	↓	↓
D	06-0401-01	ME	1311	F2-379	S	100	12.78	12.31	50.40	1008	12.44
D	06-0403-01	ME	1311	F2-379	S	100	12.83	12.32	50.40	1008	11.99
D	06-0418-01	300	1312	SPLP F1-61	S	100	NA	NA	50.45	1009	9.65
D	-02	↓	↓	↓	↓	↓	↓	↓	50.09	1002	9.78
D	-03	↓	↓	↓	↓	↓	↓	↓	50.40	1008	8.85
D	-04	↓	↓	↓	↓	↓	↓	↓	50.54	1010	9.68
D	-05	↓	↓	↓	↓	↓	↓	↓	50.71	1014	9.08
D	-06	↓	↓	↓	↓	↓	↓	↓	50.48	1009	9.65
D	-07	↓	↓	↓	↓	↓	↓	↓	50.56	1011	9.04
D	-08	↓	↓	↓	↓	↓	↓	↓	50.23	1004	9.56
D	06-0482-01	ME	1311		S	100	6.29	2.01	100.64	2013	5.55
	FBLK 1	ME, SV, Pest, Herb, PHL	1311	F1-180	NA	NA	NA	NA	100	100	4.92
	FBLK 2	ME	1311	F2-379	↓	↓	↓	↓	↓	↓	2.92
	SPLP F1	300	1312	F1-61	↓	↓	↓	↓	↓	↓	4.17

AMA 6/10/16

*Matrix Code: (S = solid, sand, soil or sludge) (P = paint) (O = organic) (W = water or aqueous waste)
D = Disposable plastic jug
TCLP Pretest weight will be 5.0 g (± 0.1) unless otherwise noted.
Temperature shall be maintained at 23° ± 2 for 18 ± 2 hours unless otherwise noted.

Comments: NA

Peer Review By: [signature]

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG572244
Analyst: REK
Spike Analyst: REK
Run Date: 06/10/2016 11:21
Method: 3015
Balance: BAL019
Instrument: MW-3
Instrument Start: 06/10/2016 11:31

SOP: ME407 Revison 19
Spike Solution: STD76255
Spike Witness: VC
40 & 50 ML. DIGESTION TU COA18772
HCL Lot #: COA18769
HNO3 Lot #: COA18905
ICP Filters- fisher-Lot# RGT35619

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG572244-02	BLANK	1	40 mL	50 mL	205.022 g	205.023 g		
2	WG572115-01	FBLK1	17	5 mL	50 mL	206.992 g	206.986 g		
3	WG572115-02	FBLK2	17	5 mL	50 mL	207.137 g	207.135 g		
4	WG572244-03	LCS	1	40 mL	50 mL	208.114 g	208.113 g	5 mL	
5	L16060360-02	SAMP	17	5 mL	50 mL	203.076 g	203.077 g		06/17/16
6	WG572244-01	REF	17	5 mL	50 mL	203.751 g	203.758 g		
7	L16060401-01	SAMP	17	5 mL	50 mL	203.751 g	203.758 g		06/16/16
8	L16060403-01	SAMP	17	5 mL	50 mL	205.372 g	205.393 g		06/16/16
9	L16060437-01	SAMP	1	40 mL	50 mL	205.943 g	205.95 g		06/16/16
10	L16060438-01	SAMP	1	40 mL	50 mL	204.961 g	204.972 g		06/13/16
11	L16060442-01	SAMP	1	40 mL	50 mL	204.147 g	204.148 g		06/16/16
12	L16060442-02	SAMP	1	40 mL	50 mL	208.019 g	208.021 g		06/16/16
13	L16060442-03	SAMP	1	40 mL	50 mL	206.775 g	206.778 g		06/16/16
14	L16060442-04	SAMP	1	40 mL	50 mL	207.876 g	207.888 g		06/16/16
15	L16060442-05	SAMP	1	40 mL	50 mL	208.182 g	208.181 g		06/16/16
16	L16060442-06	SAMP	1	40 mL	50 mL	206.956 g	206.956 g		06/16/16
17	L16060443-01	SAMP	1	40 mL	50 mL	209.069 g	209.068 g		06/16/16
18	L16060443-02	SAMP	1	40 mL	50 mL	208.862 g	208.866 g		06/16/16
19	L16060443-03	SAMP	1	40 mL	50 mL	205.416 g	205.415 g		06/16/16
20	L16060446-01	SAMP	1	40 mL	50 mL	206.819 g	206.811 g		06/16/16
21	L16060447-01	SAMP	1	40 mL	50 mL	205.977 g	205.985 g		06/16/16
22	L16060482-01	SAMP	17	5 mL	50 mL	204.66 g	204.657 g		06/14/16
23	L16060504-03	SAMP	1	40 mL	50 mL	208.016 g	208.013 g		06/20/16
24	WG572244-04	MS	1	5 mL	50 mL	211.365 g	211.368 g	5 mL	
25	WG572244-05	MSD	1	5 mL	50 mL	210.515 g	210.529 g	5 mL	

L16060438-01	FILTERED DIGESTATE
L16060442-02	FILTERED DIGESTATE
L16060442-04	FILTERED DIGESTATE
L16060442-06	FILTERED DIGESTATE
L16060443-01	FILTERED DIGESTATE

Analyst: _____

Reviewer: _____

MW_DIG - Modified 09/30/2009
PDF ID: 4803249
Report generated: 06/15/2016 11:00

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 061416T3.2R.TXT

Analyst1: Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 572544, 572626, 572020

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.061416.123628	WG572687-01	Calibration Point		1		06/14/16 12:36
2	T3.061416.124032	WG572687-02	Calibration Point		1		06/14/16 12:40
3	T3.061416.124435	WG572687-03	Calibration Point		1		06/14/16 12:44
4	T3.061416.124840	WG572687-04	Calibration Point		1		06/14/16 12:48
5	T3.061416.125223	WG572687-05	Calibration Point		1		06/14/16 12:52
6	T3.061416.125605	WG572687-06	Initial Calibration Verification		1		06/14/16 12:56
7	T3.061416.125947	WG572687-07	Initial Calib Blank		1		06/14/16 12:59
8	T3.061416.130350	WG572687-08	Low Level Initial Calibration V		1		06/14/16 13:03
9	T3.061416.130753	WG572687-09	Low Level Initial Calibration V		1		06/14/16 13:07
10	T3.061416.131152	WG572687-10	Interference Check		1		06/14/16 13:11
11	T3.061416.131551	WG572687-11	Interference Check		1		06/14/16 13:15
12	T3.061416.131940	WG572687-12	CCV		1		06/14/16 13:19
13	T3.061416.132323	WG572687-13	CCB		1		06/14/16 13:23
14	T3.061416.133305	WG572244-02	Method/Prep Blank	40/50	1		06/14/16 13:33
15	T3.061416.133710	WG572244-03	Laboratory Control S	40/50	1		06/14/16 13:37
16	T3.061416.134058	WG572115-01	Fluid Blank 1		1		06/14/16 13:40
17	T3.061416.134504	WG572115-02	Fluid Blank 2		1		06/14/16 13:45
18	T3.061416.134908	WG572244-01	Reference Sample		1	L16060401-01	06/14/16 13:49
19	T3.061416.135310	WG572244-04	Matrix Spike	40/50	1	L16060401-01	06/14/16 13:53
20	T3.061416.135655	WG572244-05	Matrix Spike Duplica	40/50	1	L16060401-01	06/14/16 13:56
21	T3.061416.140044	L16060360-02	V6F0104-02	5/50	1		06/14/16 14:00
22	T3.061416.140444	L16060403-01	KAISER 12 BAGS 6/6/16	5/50	1		06/14/16 14:04
23	T3.061416.140844	WG572687-14	CCV		1		06/14/16 14:08
24	T3.061416.141227	WG572687-15	CCB		1		06/14/16 14:12
25	T3.061416.141631	L16060438-01	PIT WATER	40/50	1		06/14/16 14:16
26	T3.061416.142028	L16060482-01	13837-SSP0551	5/50	1		06/14/16 14:20
27	T3.061416.142427	L16060504-03	MW5-060816	40/50	1		06/14/16 14:24
28	T3.061416.142829	WG572544-01	Post Digestion Spike		1	L16060504-03	06/14/16 14:28
29	T3.061416.143214	WG572544-02	Serial Dilution		5	L16060504-03	06/14/16 14:32
30	T3.061416.143615	WG572544-02	Serial Dilution		25	L16060504-03	06/14/16 14:36
31	T3.061416.144017	WG572687-16	CCV		1		06/14/16 14:40
32	T3.061416.144359	WG572687-17	CCB		1		06/14/16 14:43
33	T3.061416.144804	WG572687-18	Low Level Continuing Calibra		1		06/14/16 14:48
34	T3.061416.145155	WG572687-19	Low Level Continuing Calibra		1		06/14/16 14:51

Page: 1 Approved: June 14, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 061416T3.2R.TXT
Analyst1: Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 572544, 572626, 572020

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.061416.145555	L16060403-01	KAISER 12 BAGS 6/6/16		1		06/14/16 14:55
36	T3.061416.145955	L16060437-01	0101-151-B	40/50	1		06/14/16 14:59
37	T3.061416.150355	L16060442-01	27-3-25.14 S1	40/50	1		06/14/16 15:03
38	T3.061416.150755	L16060442-02	6-10-15.01 S12	40/50	1		06/14/16 15:07
39	T3.061416.151155	L16060442-03	6-10-15.01 S11		1		06/14/16 15:11
40	T3.061416.151559	L16060442-04	6-10-15.01 S7	40/50	1		06/14/16 15:15
41	T3.061416.152000	L16060442-05	6-10-15.01 S8	40/50	1		06/14/16 15:20
42	T3.061416.152359	L16060442-06	6-10-15.01 S1	40/50	1		06/14/16 15:23
43	T3.061416.152759	WG572687-20	CCV		1		06/14/16 15:27
44	T3.061416.153141	WG572687-21	CCB		1		06/14/16 15:31
45	T3.061416.153545	L16060443-01	45-11-15.02 S2	40/50	1		06/14/16 15:35
46	T3.061416.153934	L16060443-02	45-11-15.02 S1	40/50	1		06/14/16 15:39
47	T3.061416.154331	L16060443-03	1803-126 W1	40/50	1		06/14/16 15:43
48	T3.061416.154727	L16060446-01	1802-116-A W1	40/50	1		06/14/16 15:47
49	T3.061416.155127	L16060447-01	6-7-32 W1	40/50	1		06/14/16 15:51
50	T3.061416.155527	L16060442-03	6-10-15.01 S11	40/50	1		06/14/16 15:55
51	T3.061416.155927	WG572687-22	CCV		1		06/14/16 15:59
52	T3.061416.160309	WG572687-23	CCB		1		06/14/16 16:03
53	T3.061416.160713	WG572463-02	Method/Prep Blank	40/50	1		06/14/16 16:07
54	T3.061416.161106	WG572463-03	Laboratory Control S	40/50	1		06/14/16 16:11
55	T3.061416.161451	WG572463-04	Filter Blank		1		06/14/16 16:14
56	T3.061416.161854	WG572463-01	Reference Sample		1	L16060540-06	06/14/16 16:18
57	T3.061416.162255	WG572463-05	Matrix Spike	40/50	1	L16060540-06	06/14/16 16:22
58	T3.061416.162640	WG572463-06	Matrix Spike Duplica	40/50	1	L16060540-06	06/14/16 16:26
59	T3.061416.163026	L16060645-03	5506-G01-WQ-W0163	40/50	1		06/14/16 16:30
60	T3.061416.163430	WG572626-01	Post Digestion Spike		1	L16060645-03	06/14/16 16:34
61	T3.061416.163816	WG572626-02	Serial Dilution		5	L16060645-03	06/14/16 16:38
62	T3.061416.164220	WG572626-02	Serial Dilution		25	L16060645-03	06/14/16 16:42
63	T3.061416.164625	WG572687-24	CCV		1		06/14/16 16:46
64	T3.061416.165007	WG572687-25	CCB		1		06/14/16 16:50
65	T3.061416.165411	L16060411-03	AWD4T-060716	40/50	1		06/14/16 16:54
66	T3.061416.165809	L16060411-04	AWD4B-060716	40/50	1		06/14/16 16:58
67	T3.061416.170207	L16060485-03	FTB-034-GM-MW16B-06081	40/50	1		06/14/16 17:02
68	T3.061416.170608	L16060485-04	FTB-034-GM-MW08B-06081	40/50	1		06/14/16 17:06

Page: 2 Approved: June 14, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 061416T3.2R.TXT

Analyst1: Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 572544, 572626, 572020

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.061416.170958	L16060485-05	FTB-034-GM-MW15A-06081	40/50	1		06/14/16 17:09
70	T3.061416.171358	L16060485-06	FTB-034-GM-MW11B-06081	40/50	1		06/14/16 17:13
71	T3.061416.171759	L16060540-09	AG4578	40/50	1		06/14/16 17:17
72	T3.061416.172158	L16060540-10	AG4579	40/50	1		06/14/16 17:21
73	T3.061416.172558	L16060540-11	AG4580	40/50	1		06/14/16 17:25
74	T3.061416.172958	L16060540-14	AG4584	40/50	1		06/14/16 17:29
75	T3.061416.173357	WG572687-26	CCV		1		06/14/16 17:33
76	T3.061416.173740	WG572687-27	CCB		1		06/14/16 17:37
77	T3.061416.174143	L16060492-01	SPW_06082016	40/50	100		06/14/16 17:41
78	T3.061416.174556	L16060492-02	SPW_06082016	40/50	100		06/14/16 17:45
79	T3.061416.175013	L16060540-15	AG4587	40/50	1		06/14/16 17:50
80	T3.061416.175412	L16060540-16	AG4589	40/50	1		06/14/16 17:54
81	T3.061416.175813	L16060645-01	5003-G15-WQ-W0222	40/50	1		06/14/16 17:58
82	T3.061416.180216	L16060645-02	5320-G02-WQ-W0182	40/50	1		06/14/16 18:02
83	T3.061416.180620	L16060411-03	AWD4T-060716		20		06/14/16 18:06
84	T3.061416.181023	WG572687-28	CCV		1		06/14/16 18:10
85	T3.061416.181405	WG572687-29	CCB		1		06/14/16 18:14
86	T3.061416.181809	L16060411-04	AWD4B-060716		20		06/14/16 18:18
87	T3.061416.182210	L16060485-03	FTB-034-GM-MW16B-06081	40/50	20		06/14/16 18:22
88	T3.061416.182614	L16060485-04	FTB-034-GM-MW08B-06081	40/50	20		06/14/16 18:26
89	T3.061416.183019	L16060485-05	FTB-034-GM-MW15A-06081	40/50	20		06/14/16 18:30
90	T3.061416.183422	L16060485-06	FTB-034-GM-MW11B-06081	40/50	20		06/14/16 18:34
91	T3.061416.183825	WG572687-30	CCV		1		06/14/16 18:38
92	T3.061416.184207	WG572687-31	CCB		1		06/14/16 18:42
93	T3.061416.184611	WG572687-32	Low Level Continuing Calibra		1		06/14/16 18:46
94	T3.061416.185013	WG571814-02	Method/Prep Blank	40/50	1		06/14/16 18:50
95	T3.061416.185417	WG571814-03	Laboratory Control S	40/50	1		06/14/16 18:54
96	T3.061416.185803	WG571814-01	Reference Sample		1	L16060308-01	06/14/16 18:58
97	T3.061416.190204	WG571814-04	Matrix Spike	40/50	1	L16060308-01	06/14/16 19:02
98	T3.061416.190549	WG571814-05	Matrix Spike Duplica	40/50	1	L16060308-01	06/14/16 19:05
99	T3.061416.190934	L16060303-01	LH18/24-SP650-6368-GRAB	40/50	1		06/14/16 19:09
100	T3.061416.191335	L16060303-02	LH18/24-SP650-6368-COMP	40/50	1		06/14/16 19:13
101	T3.061416.191734	L16060304-02	LH18/24-SP650-6369-GRAB	40/50	1		06/14/16 19:17
102	T3.061416.192134	WG572020-03	Post Digestion Spike		1	L16060304-02	06/14/16 19:21

Page: 3 Approved: June 14, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 061416T3.2R.TXT

Analyst1: Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 572544, 572626, 572020

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T3.061416.192521	WG572020-04	Serial Dilution		5	L16060304-02	06/14/16 19:25
104	T3.061416.192921	WG572687-33	CCV		1		06/14/16 19:29
105	T3.061416.193304	WG572687-34	CCB		1		06/14/16 19:33
106	T3.061416.193707	WG571974-02	Method/Prep Blank	40/50	1		06/14/16 19:37
107	T3.061416.194111	WG571974-03	Laboratory Control S	40/50	1		06/14/16 19:41
108	T3.061416.194456	L16060395-08	MW-4		1	WG571974-01	06/14/16 19:44
109	T3.061416.194858	WG571974-04	Matrix Spike	40/50	1	L16060395-08	06/14/16 19:48
110	T3.061416.195242	WG571974-05	Matrix Spike Duplica	40/50	1	L16060395-08	06/14/16 19:52
111	T3.061416.195628	L16060376-01	FTB-034-GM-MW12B-06071	40/50	10		06/14/16 19:56
112	T3.061416.200030	L16060376-02	FTB-034-GM-MW1C-060716	40/50	10		06/14/16 20:00
113	T3.061416.200432	L16060376-03	FTB-034-GM-MW07B-06071	40/50	10		06/14/16 20:04
114	T3.061416.200832	WG572145-03	Post Digestion Spike		10	L16060376-03	06/14/16 20:08
115	T3.061416.201218	WG572145-04	Serial Dilution		50	L16060376-03	06/14/16 20:12
116	T3.061416.201622	WG572687-35	CCV		1		06/14/16 20:16
117	T3.061416.202004	WG572687-36	CCB		1		06/14/16 20:20
118	T3.061416.202408	L16060376-04	FTB-034-GM-MW13B-06071	40/50	10		06/14/16 20:24
119	T3.061416.202810	WG572687-37	CCV		1		06/14/16 20:28
120	T3.061416.203152	WG572687-38	CCB		1		06/14/16 20:31
121	T3.061416.203555	WG572687-39	Low Level Continuing Calibra		1		06/14/16 20:35

Page: 4 Approved: June 14, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 14-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 572687
Runlog ID: 75684
Analytical Workgroups: 572544, 572626, 572020

Additional Workgroup	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	
Client Forms	X
Level X	
Level 3	
Level 4	482
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer:

Secondary Reviewer:
14-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-15-2016 10:40:52

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010C

AAB#: WG572544

Login Number: L16060504

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW5-060816	03	06/08/16					06/10/2016	2	180		06/14/16	6.2	180	
MW5-060816	03	06/08/16					06/10/2016	2	180		06/14/16	6.2	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4807542
Report generated 06/14/2016 16:35

METHOD BLANK SUMMARY

Login Number: L16060504
Blank File ID: T3.061416.133305
Prep Date: 06/10/16 11:21
Analyzed Date: 06/14/16 13:33
Analyst: JYH

Work Group: WG572544
Blank Sample ID: WG572244-02
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572244-03	T3.061416.133710	06/14/16 13:37	01
MW5-060816	L16060504-03	T3.061416.142427	06/14/16 14:24	01
MW5-060816	L16060504-03	T3.061416.143214	06/14/16 14:32	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4807543
Report generated 06/14/2016 16:35

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060504 Prep Date: 06/10/16 11:21 Sample ID: WG572244-02
Instrument ID: ICP-THERMO3 Run Date: 06/14/16 13:33 Prep Method: 3015
File ID: T3.061416.133305 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG572544 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-14-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Aluminum, Total	0.0500	0.200	0.0500	1	U
Beryllium, Total	0.00500	0.0200	0.00500	1	U
Calcium, Total	0.125	0.500	0.125	1	U
Iron, Total	0.0500	0.200	0.0500	1	U
Magnesium, Total	0.250	1.00	0.250	1	U
Potassium, Total	0.500	2.00	0.500	1	U
Selenium, Total	0.00500	0.0200	0.00500	1	U
Sodium, Total	0.250	1.00	0.250	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4807544
14-JUN-2016 16:35

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060504 Run Date: 06/14/2016 Sample ID: WG572244-03
Instrument ID: ICP-THERMO3 Run Time: 13:37 Prep Method: 3015
File ID: T3.061416.133710 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG572544 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76255 Cal ID: ICP-TH-14-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Aluminum, Total	6.25	6.27	100	80 - 120	
Beryllium, Total	0.0313	0.0306	97.9	80 - 120	
Calcium, Total	6.25	6.25	100	80 - 120	
Iron, Total	2.50	2.50	100	80 - 120	
Magnesium, Total	6.25	6.23	99.6	80 - 120	
Potassium, Total	31.3	30.3	97.1	80 - 120	
Selenium, Total	0.250	0.255	102	80 - 120	
Sodium, Total	31.3	30.6	97.8	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4807545
Report generated: 06/14/2016 16:35

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060504 Cal ID: ICP-THERMO3 - Worknum: WG572544
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG572244-01 File ID: T3.061416.134908 Dil: 1 Matrix: WATER
Sample ID: WG572244-04 MS File ID: T3.061416.135310 Dil: 1 Units: mg/L
Sample ID: WG572244-05 MSD File ID: T3.061416.135655 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Aluminum	ND	50.0	51.0	102	50.0	51.3	103	0.640	80 - 120	20	
Beryllium	ND	0.250	0.244	97.4	0.250	0.247	98.7	1.31	80 - 120	20	
Iron	ND	20.0	19.0	94.9	20.0	19.1	95.7	0.887	80 - 120	20	
Magnesium	ND	50.0	47.1	94.2	50.0	46.2	92.3	2.03	80 - 120	20	
Potassium	2540	250	2800	104	250	2770	94.6	0.833	80 - 120	20	
Selenium	0.264	2.00	2.20	97.0	2.00	2.28	101	3.57	80 - 120	20	
Sodium	3160	250	3430	107	250	3390	91.6	1.16	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4807546
Report generated 06/15/2016 11:17

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16060504 **Worknum:** WG572544
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG572544-02 **File ID:** T3.061416.143615 **Dil:** 25 **Units:** ug/L
Sample: L16060504-03 **File ID:** T3.061416.143214 **Dil:** 5

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	35.0		ND	U		
Beryllium	0.300	X	1.25		317.00	
Calcium	19000		18400		2.90	
Iron	820		824		0.49	
Magnesium	20900		21600		3.42	
Potassium	1430		ND	U		
Selenium	13.7		ND	U		
Sodium	98800		97900		0.87	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4807540
06/14/2016 16:35

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16060504 **Worknum:** WG572544
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG572544-02 **File ID:** T3.061416.143214 **Dil:** 5 **Units:** ug/L
Sample: L16060504-03 **File ID:** T3.061416.142427 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	50.8		35.0		31.10	E
Beryllium	0.0900	X	0.300		233.00	
Calcium	19900		19000		4.55	
Iron	802		820		2.19	
Magnesium	21500		20900		2.90	
Potassium	1930		1430		26.10	E
Selenium	1.56		13.7		775.00	E
Sodium	104000		98800		4.56	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4807540
06/14/2016 16:35

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060504 **Worknum:** WG572544
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG572544-01 **File ID:** T3.061416.142829 **Dil:** 1 **Units:** ug/L
Sample ID: L16060504-03 **File ID:** T3.061416.142427 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	5230		50.8	F	5000	103.8	75 - 125	
BERYLLIUM	25.5		0	U	25	101.9	75 - 125	
CALCIUM	22900		19900		5000	100.8	75 - 125	
IRON	2730		802		2000	100.4	75 - 125	
MAGNESIUM	24100		21500		5000	94.8	75 - 125	
POTASSIUM	26900		1930		25000	100.6	75 - 125	
SELENIUM	204		0	U	200	101.8	75 - 125	
SODIUM	118000		104000		25000	100.5	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4807541
Report generated: 06/14/2016 16:35

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16060504	Workgroup (AAB#):	WG572544
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG572687	Initial Calibration Date:	14-JUN-2016 12:52

	WG572687-01		WG572687-02		WG572687-03		WG572687-04		WG572687-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000680	.1	0.00147	.2	0.00211	10	0.0887	20	0.181	.99992	
BERYLLIUM	0	0.000320	.0005	0.000740	.001	0.00120	.05	0.0569	.1	0.114	.999978	
CALCIUM	0	-0.000380	.1	0.00268	.2	0.00754	10	0.461	20	0.895	.999844	
IRON	0	-0.000350	.04	0.000330	.08	0.00108	4	0.0868	8	0.169	.999976	
MAGNESIUM	0	-0.000290	NA	NA	.2	0.000600	10	0.0603	20	0.118	.999915	
POTASSIUM	0	0.00895	.5	0.0284	1	0.0488	50	3.19	100	6.17	.999883	
SELENIUM	0	-0.0000600	NA	NA	.008	0.0000700	.4	0.00607	.8	0.0124	.999714	
SODIUM	0	0.000500	.5	0.0620	1	0.131	50	8.64	100	16.8	.999875	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4807549
Report generated: 14-JUN-2016 16:35

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060504
Run Date: 06/14/2016
Sample ID: WG572687-07
Instrument ID: ICP-THERMO3
Run Time: 12:59
Method: 6010C
File ID: T3.061416.125947
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG572544
Cal ID: ICP-THERI - 14-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	.004	U
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4807551
Report generated 06/14/2016 16:35

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060504
Run Date: 06/14/2016
Sample ID: WG572687-13
Instrument ID: ICP-THERMO3
Run Time: 13:23
Method: 6010C
File ID: T3.061416.132323
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG572544
Cal ID: ICP-TH - 14-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00506	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4807554
Report generated 06/14/2016 16:35

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060504
Run Date: 06/14/2016
Sample ID: WG572687-15
Instrument ID: ICP-THERMO3
Run Time: 14:12
Method: 6010C
File ID: T3.061416.141227
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG572544
Cal ID: ICP-TH - 14-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00621	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4807554
Report generated 06/14/2016 16:35

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060504
Run Date: 06/14/2016
Sample ID: WG572687-17
Instrument ID: ICP-THERMO3
Run Time: 14:43
Method: 6010C
File ID: T3.061416.144359
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG572544
Cal ID: ICP-TH - 14-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00560	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4807554
Report generated 06/14/2016 16:35

Microbac Laboratories Inc.
INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060504
Run Date: 06/14/2016
Sample ID: WG572687-06
Instrument ID: ICP-THERMO3
Run Time: 12:56
Method: 6010C
File ID: T3.061416.125605
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG572544
Cal ID: ICP-TH - 14-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	9.66	96.6	90 - 110	
Beryllium		.05	0.0488	97.5	90 - 110	
Calcium		10	9.73	97.3	90 - 110	
Iron		4	3.88	96.9	90 - 110	
Magnesium		10	9.72	97.2	90 - 110	
Potassium		50	49.0	98.0	90 - 110	
Selenium		.4	0.394	98.5	90 - 110	
Sodium		50	48.7	97.3	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4807550
Report generated 06/14/2016 16:35

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504
Run Date: 06/14/2016
Sample ID: WG572687-12
Instrument ID: ICP-THERMO3
Run Time: 13:19
Method: 6010C
File ID: T3.061416.131940
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG572544
Cal ID: ICP-TH - 14-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.68	mg/L	96.8	90 - 110		
Beryllium		0.0500	0.0485	mg/L	96.9	90 - 110		
Calcium		10.0	9.59	mg/L	95.9	90 - 110		
Iron		4.00	3.86	mg/L	96.4	90 - 110		
Magnesium		10.0	9.62	mg/L	96.2	90 - 110		
Potassium		50.0	48.2	mg/L	96.4	90 - 110		
Selenium		0.400	0.381	mg/L	95.2	90 - 110		
Sodium		50.0	48.1	mg/L	96.1	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4807553
Report generated 06/14/2016 16:35

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504
Run Date: 06/14/2016
Sample ID: WG572687-14
Instrument ID: ICP-THERMO3
Run Time: 14:08
Method: 6010C
File ID: T3.061416.140844
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG572544
Cal ID: ICP-TH - 14-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.1	mg/L	101	90 - 110		
Beryllium		0.0500	0.0502	mg/L	100	90 - 110		
Calcium		10.0	9.84	mg/L	98.4	90 - 110		
Iron		4.00	3.98	mg/L	99.5	90 - 110		
Magnesium		10.0	9.84	mg/L	98.4	90 - 110		
Potassium		50.0	49.6	mg/L	99.1	90 - 110		
Selenium		0.400	0.404	mg/L	101	90 - 110		
Sodium		50.0	49.2	mg/L	98.4	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4807553
Report generated 06/14/2016 16:35

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504
Run Date: 06/14/2016
Sample ID: WG572687-16
Instrument ID: ICP-THERMO3
Run Time: 14:40
Method: 6010C
File ID: T3.061416.144017
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG572544
Cal ID: ICP-TH - 14-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.69	mg/L	96.9	90 - 110		
Beryllium		0.0500	0.0482	mg/L	96.3	90 - 110		
Calcium		10.0	9.44	mg/L	94.4	90 - 110		
Iron		4.00	3.77	mg/L	94.3	90 - 110		
Magnesium		10.0	9.34	mg/L	93.4	90 - 110		
Potassium		50.0	47.2	mg/L	94.4	90 - 110		
Selenium		0.400	0.380	mg/L	94.9	90 - 110		
Sodium		50.0	47.2	mg/L	94.4	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4807553
Report generated 06/14/2016 16:35

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060504
Run Date: 06/14/2016
Sample ID: WG572687-08
Instrument ID: ICP-THERMO3
Run Time: 13:03
Method: 6010C
File ID: T3.061416.130350
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG572544
Cal ID: ICP-TH - 14-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.161	mg/L	101	70 - 130		
Beryllium		0.00160	0.00154	mg/L	96.3	70 - 130		
Calcium		0.400	0.398	mg/L	99.5	70 - 130		
Iron		0.0800	0.0751	mg/L	93.8	70 - 130		
Magnesium		0.400	0.282	mg/L	70.5	70 - 130		
Potassium		0.800	0.644	mg/L	80.6	70 - 130		
Selenium		0.0160	0.0176	mg/L	110	70 - 130		
Sodium		0.400	0.385	mg/L	96.2	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4807555
Report generated 06/14/2016 16:35

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060504
Run Date: 06/14/2016
Sample ID: WG572687-18
Instrument ID: ICP-THERMO3
Run Time: 14:48
Method: 6010C
File ID: T3.061416.144804
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG572544
Cal ID: ICP-TH - 14-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.161	mg/L	101	70 - 130		
Beryllium		0.00160	0.00157	mg/L	98.1	70 - 130		
Calcium		0.400	0.383	mg/L	95.8	70 - 130		
Iron		0.0800	0.0806	mg/L	101	70 - 130		
Magnesium		0.400	0.332	mg/L	82.9	70 - 130		
Potassium		0.800	0.679	mg/L	84.8	70 - 130		
Selenium		0.0160	0.0153	mg/L	95.4	70 - 130		
Sodium		0.400	0.382	mg/L	95.5	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
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Report generated 06/14/2016 16:35

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060504
Instrument ID: ICP-THERMO3
Sol. A : WG572687-10 **File ID:** T3.061416.131152
Sol. AB : WG572687-11 **File ID:** T3.061416.131551

Workgroup (AAB#): WG572544
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	263	105	250	265	106	
Beryllium	NS	-0.000100	NS	0.250	0.248	99.2	
Calcium	250	235	94.0	250	238	95.2	
Iron	100	94.4	94.4	100	93.4	93.4	
Magnesium	250	242	96.8	250	238	95.2	
Potassium	NS	-0.0698	NS	5.00	5.06	101	
Selenium	NS	0.00541	NS	0.250	0.256	102	
Sodium	NS	0.0153	NS	5.00	5.12	102	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4807552
Report generated 06/14/2016 16:35

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060504 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	AG	AL	AS	B	BA
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000410	0	0	0
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0.0115	0	-0.0000800
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0.000260	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	-0.000289	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	-0.0000490	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.0000120	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0.0000300	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
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Report generated: 06/14/2016 16:35

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060504 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	BE	CA	CD	CO	CR
ALUMINUM	308.20	0	0	0	-0.000820	0
ANTIMONY	206.80	0	0	0	0	0.0200
ARSENIC	189.00	0	0	0	0	-0.00190
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0.00343	0
CADMIUM	228.80	0	0	0	-0.00390	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	-0.000200
COPPER	224.70	0	0	0	0.0000770	-0.00100
IRON	261.10	0	0	0	0	-0.00100
LEAD	220.30	0	0	0	-0.0000130	-0.000132
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.0000500
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	-0.000860	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0.00000500	0	0	0
THALLIUM	190.80	0	0	0	0.00240	0.000276
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	-0.00480
ZINC	206.20	0	0	0	0	-0.00180
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060504 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	CU	FE	K	LI	MG
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000560	0	0	0
ARSENIC	189.00	0	-0.0000500	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0.000300	0	0	0
CADMIUM	228.80	0	-0.0000190	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000500	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0.00160	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0.000609	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.00000300
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0.0000420	0	0	0
PHOSPHORUS	214.90	-0.323	0.000900	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000270	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000400	0	0	0
VANADIUM	292.40	0	0.00000700	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	-0.0000300	0	0	0

CORR_FACTORS - Modified 03/05/2008
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Report generated: 06/14/2016 16:35

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060504 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	MN	MO	NA	NI	P
ALUMINUM	308.20	0	0.0163	0	0	0
ANTIMONY	206.80	0	-0.00310	0	-0.00350	0
ARSENIC	189.00	0	0.00120	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	-0.00190	0	0	0
CADMIUM	228.80	0	0.0000320	0	-0.000770	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0.000360	0	0	0	0
COBALT	228.60	0	-0.00200	0	0.000100	0
COPPER	224.70	0	0.00160	0	-0.0123	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	-0.00210	0	0.000110	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	-0.00290	-0.0230	0	0	0
MANGANESE	257.60	0	0.0000300	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0.00710	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0.000600	0.000580	0	0	0
SILICON	212.40	0	0.0187	0	0	0
SILVER	328.00	0	-0.0000430	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0.00100	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000153	0	0	0
VANADIUM	292.40	-0.000200	-0.00830	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060504 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	PB	SB	SE	SI	SN
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0	0	0	-0.0220
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0.00440	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060504 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	SR	TI	TL	V	ZN
ALUMINUM	308.20	0	0	0	0.0950	0
ANTIMONY	206.80	0	0.00110	0	-0.00360	0
ARSENIC	189.00	0	0	0	0.000107	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	-0.00000700	0	0.000990	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0.000102	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000550	0	0	0
COBALT	228.60	0	0.00210	0	0.0000200	0
COPPER	224.70	0	0.000269	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	-0.000126	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	-0.00290	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	-0.000110	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	-0.00100	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000720	0	-0.000260	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.000800	0	-0.00490	0
TIN	189.90	0	-0.00190	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0.000820	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060504 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	ZR
ALUMINUM	308.20	0
ANTIMONY	206.80	0
ARSENIC	189.00	0
BARIUM	455.40	0
BERYLLIUM	313.10	0
BORON	249.60	0
CADMIUM	228.80	0
CALCIUM	422.60	0
CHROMIUM	267.70	0
COBALT	228.60	0
COPPER	224.70	0
IRON	261.10	0
LEAD	220.30	0
LITHIUM	670.70	0
MAGNESIUM	279.00	0
MANGANESE	257.60	0
MOLYBDENUM	202.00	0
NICKEL	231.60	0
PHOSPHORUS	214.90	0
POTASSIUM	766.40	0
SELENIUM	196.00	0
SILICON	212.40	0
SILVER	328.00	0
SODIUM	589.50	0
STRONTIUM	407.70	0
THALLIUM	190.80	0
TIN	189.90	0
TITANIUM	337.20	0
VANADIUM	292.40	0
ZINC	206.20	0
ZIRCONIUM	339.10	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4807548
Report generated: 06/14/2016 16:35

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16060504 **Date:** 04/29/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	900.0
Antimony	20.00	45.0
Arsenic	10.00	45.0
Barium	10.00	45.0
Beryllium	10.00	1.8
Boron	20.00	45.0
Cadmium	20.00	4.5
Calcium	5.00	270.0
Chromium	20.00	36.0
Cobalt	20.00	45.0
Copper	20.00	180.0
Iron	5.00	720.0
Lead	20.00	225.0
Lithium	5.00	36.0
Magnesium	5.00	900.0
Manganese	10.00	36.0
Molybdenum	20.00	27.0
Nickel	20.00	90.0
Phosphorus	20.00	180.0
Potassium	5.00	450.0
Selenium	20.00	90.0
Silicon	20.00	36.0
Silver	10.00	9.0
Sodium	5.00	270.0
Strontium	5.00	9.0
Thallium	20.00	18.0
Tin	20.00	45.0
Titanium	5.00	36.0
Vanadium	20.00	27.0
Zinc	20.00	45.0
Zirconium	10.00	45.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4807547
Report generated: 06/14/2016 16:35

2.3.1.3 Raw Data

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000058	0.054734	0.000000	1.000000
Al 308.215 {109}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.000676	0.008865	0.000000	1.000000
As 189.042 {478}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.000051	0.022803	0.000000	1.000000
B 249.678 {135}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000098	0.021859	0.000000	1.000000
Ba 455.403 { 74}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.003817	2.128212	0.000000	1.000000
Be 313.107 {108}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.000323	1.115211	0.000000	1.000000
Ca 422.673 { 80}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000378	0.045215	0.000000	1.000000
Cd 228.802 {447}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000159	0.571631	0.000000	1.000000
Co 228.616 {447}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000049	0.361318	0.000000	1.000000
Cr 267.716 {126}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.000083	0.065120	0.000000	1.000000
Cu 224.700 {450}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000084	0.124789	0.000000	1.000000
Fe 261.187 {129}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000350	0.021350	0.000000	1.000000
K 766.490 { 44}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.008937	0.062121	0.000000	1.000000
Li 670.784 { 50}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000147	1.592157	0.000000	1.000000
Mg 279.079 {121}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000292	0.005969	0.000000	1.000000
Mn 257.610 {131}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.000124	0.270877	0.000000	1.000000
Mo 202.030 {467}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.000062	0.185810	0.000000	1.000000
Na 589.592 { 57}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.000491	0.169204	0.000000	1.000000
Ni 231.604 {446}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000561	0.135561	0.000000	1.000000
P 214.914 {457}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000073	0.012159	0.000000	1.000000
Pb 220.353 {453}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000166	0.060818	0.000000	1.000000
Sb 206.833 {463}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.000246	0.029184	0.000000	1.000000
Se 196.090 {472}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000062	0.015516	0.000000	1.000000
Si 212.412 {459}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.001290	0.038259	0.000000	1.000000
Sn 189.989 {477}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000057	0.067376	0.000000	1.000000
Sr 407.771 { 83}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.000549	3.551418	0.000000	1.000000
Ti 337.280 {100}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.002165	0.117486	0.000000	1.000000
Tl 190.856 {477}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000146	0.028829	0.000000	1.000000
V 292.402 {115}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.000079	0.081335	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	0.000320	0.361669	0.000000	1.000000
Zr 339.198 { 99}	6/14/2016 13:30:42	6/14/2016 12:56:00	Linear	1/Conc	-0.002492	2.733046	0.000000	1.000000

Approved: June 15, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999652	0.000004	0.002198	0.007327	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999920	0.000007	0.009539	0.031798	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999693	0.000002	0.003424	0.011414	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999881	0.000002	0.003259	0.010862	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999873	0.000215	0.001054	0.003514	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999978	0.000002	0.000096	0.000321	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999844	0.000051	0.040539	0.135129	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999707	0.000005	0.000276	0.000920	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999981	0.000003	0.000418	0.001394	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999949	0.000002	0.001251	0.004171	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999976	0.000003	0.001417	0.004724	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999883	0.000008	0.022505	0.075016	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999721	0.000465	0.100125	0.333750	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999900	0.000222	0.003661	0.012204	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999915	0.000008	0.087992	0.293308	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999573	0.000025	0.002464	0.008212	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999961	0.000010	0.000428	0.001425	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999875	0.000849	0.031334	0.104447	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999899	0.000006	0.001189	0.003962	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999898	0.000011	0.008173	0.027242	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999271	0.000007	0.003806	0.012688	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999909	0.000003	0.004621	0.015404	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999714	0.000001	0.007217	0.024056	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999985	0.000007	0.002442	0.008140	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999947	0.000004	0.000958	0.003195	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999869	0.000364	0.000427	0.001423	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999565	0.000022	0.006792	0.022640	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999488	0.000004	0.003185	0.010616	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999984	0.000003	0.000968	0.003227	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999970	0.000018	0.000237	0.000790	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.999838	0.000312	0.000590	0.001966	OK.	1.000000	0.000000	1	0

Approved: June 15, 2016

Sample Name: S0 Acquired: 6/14/2016 12:36:28 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00006**	**.00068**	**.00005**	**-.00010**	**.00382**	**.00032**	**-.00038**
Stddev	.00007	.00005	.00006	.00003	.00149	.00008	.00199
%RSD	127.78	6.9540	108.69	28.204	39.007	23.984	527.67
#1	.00002	.00062	.00012	-.00013	.00360	.00023	-.00135
#2	-.00007	.00071	.00002	-.00007	.00244	.00037	.00192
#3	-.00013	.00069	.00001	-.00010	.00540	.00036	-.00170

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00016**	**-.00005**	**.00008**	**-.00008**	**-.00035**	**.00895**	**-.00014**
Stddev	.00018	.00017	.00004	.00010	.00030	.00651	.00294
%RSD	112.42	354.51	53.601	115.31	85.792	72.797	2024.9
#1	-.00036	.00010	.00005	-.00005	-.00062	.00659	-.00183
#2	-.00006	-.00001	.00013	-.00001	-.00003	.00394	-.00185
#3	-.00006	-.00024	.00007	-.00019	-.00040	.01631	.00324

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00029**	**.00012**	**.00006**	**.00050**	**-.00056**	**-.00007**	**-.00017**
Stddev	.00027	.00039	.00003	.00316	.00021	.00004	.00010
%RSD	92.089	311.89	55.494	634.63	37.660	61.525	58.515
#1	-.00011	-.00024	.00008	.00363	-.00076	-.00004	-.00015
#2	-.00060	.00007	.00002	-.00270	-.00058	-.00006	-.00008
#3	-.00017	.00054	.00008	.00056	-.00034	-.00012	-.00027

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00025**	**-.00006**	**.00129**	**-.00006**	**.00055**	**-.00217**	**-.00015**
Stddev	.00005	.00010	.00006	.00001	.00029	.00059	.00010
%RSD	18.752	156.41	4.9051	14.171	52.353	27.408	68.703
#1	.00029	.00005	.00136	-.00006	.00026	-.00176	-.00003
#2	.00020	-.00012	.00125	-.00006	.00083	-.00189	-.00019
#3	.00026	-.00012	.00125	-.00005	.00055	-.00285	-.00022

Approved: June 15, 2016

Sample Name: S0 Acquired: 6/14/2016 12:36:28 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	-.00008	.00032	-.00249
Stddev	.00006	.00004	.00068
%RSD	75.710	11.449	27.236
#1	-.00001	.00031	-.00218
#2	-.00013	.00036	-.00202
#3	-.00010	.00029	-.00326
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8286.5	48489.	3106.1
Stddev	36.0	91.	15.4
%RSD	.43455	.18721	.49564
#1	8272.1	48593.	3092.5
#2	8327.5	48450.	3122.8
#3	8259.9	48424.	3103.0

Approved: June 15, 2016

Sample Name: S1 Acquired: 6/14/2016 12:40:32 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00018**	**.00147**	**.02156**	**.00074**	**.00268**	**.00005**	**.00049**
Stddev	.00004	.00003	.00115	.00006	.00139	.00006	.00025
%RSD	20.982	2.1261	5.3558	8.4884	51.728	121.46	51.031
#1	.00021	.00150	.02122	.00071	.00282	-.00002	.00038
#2	.00014	.00144	.02284	.00070	.00123	.00009	.00032
#3	.00018	.00147	.02061	.00081	.00400	.00008	.00078

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00033**	**.00046**	**.00033**	**.02836**	**.00069**	**.00138**	**.06202**
Stddev	.00003	.00004	.00035	.00810	.00037	.00002	.00264
%RSD	8.6292	9.0648	107.92	28.561	54.643	1.5320	4.2600
#1	.00030	.00041	.00044	.03146	.00104	.00136	.05897
#2	.00036	.00048	.00062	.03445	.00072	.00140	.06342
#3	.00034	.00048	-.00007	.01917	.00029	.00139	.06367

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00004**	**.00089**	**-.00004**	**.00054**	**.00276**	**.00054**	**.02900**
Stddev	.00004	.00010	.00016	.00002	.00003	.00001	.00154
%RSD	97.321	11.053	374.77	3.1119	1.0891	2.3218	5.3103
#1	.00008	.00094	.00001	.00052	.00272	.00053	.02965
#2	-.00000	.00078	.00008	.00054	.00278	.00055	.02724
#3	.00005	.00096	-.00022	.00055	.00277	.00054	.03011

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00081**	**.00057**	**.00313**	**.01677**
Stddev	.00019	.00005	.00008	.00099
%RSD	23.545	9.5839	2.5270	5.9201
#1	-.00102	.00061	.00312	.01792
#2	-.00066	.00060	.00321	.01628
#3	-.00073	.00051	.00305	.01612

Approved: June 15, 2016

Sample Name: S1 Acquired: 6/14/2016 12:40:32 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8265.3**	**47968.**	**3073.4**
Stddev	16.3	320.	22.8
%RSD	.19662	.66685	.74067
#1	8282.0	47602.	3070.6
#2	8249.5	48110.	3097.4
#3	8264.2	48192.	3052.1

Approved: June 15, 2016

Sample Name: S2 Acquired: 6/14/2016 12:44:35 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00038**	**.00211**	**.00016**	**.00005**	**.03946**	**.00120**	**.00754**
Stddev	.00002	.00002	.00007	.00008	.00240	.00005	.00038
%RSD	6.4916	.78489	44.539	143.44	6.0801	4.1595	5.0864
#1	.00040	.00213	.00009	.00011	.03998	.00120	.00774
#2	.00037	.00209	.00023	-.00003	.03684	.00115	.00710
#3	.00035	.00211	.00015	.00008	.04156	.00124	.00779

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00019**	**.00106**	**.00056**	**.00091**	**.00108**	**.04882**	**.02325**
Stddev	.00016	.00021	.00003	.00002	.00053	.00323	.00105
%RSD	83.759	20.238	6.2018	2.1298	49.185	6.6257	4.5078
#1	.00023	.00102	.00054	.00091	.00080	.04535	.02209
#2	.00032	.00129	.00053	.00093	.00075	.05175	.02414
#3	.00001	.00087	.00060	.00089	.00169	.04936	.02352

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00060**	**.00203**	**.00289**	**.13050**	**.00070**	**.00177**	**.00014**
Stddev	.00011	.00036	.00006	.00243	.00011	.00004	.00024
%RSD	17.637	17.923	1.9674	1.8619	15.197	2.3554	174.50
#1	.00055	.00176	.00293	.13247	.00064	.00180	.00015
#2	.00052	.00244	.00291	.13125	.00082	.00179	.00037
#3	.00072	.00189	.00282	.12778	.00063	.00172	-.00011

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00082**	**.00007**	**.00427**	**.00105**	**.05852**	**-.00002**	**.00016**
Stddev	.00007	.00004	.00016	.00004	.00110	.00029	.00000
%RSD	8.5855	61.985	3.8021	3.8322	1.8794	1625.3	1.8552
#1	.00090	.00012	.00440	.00108	.05978	-.00024	.00016
#2	.00078	.00005	.00432	.00105	.05774	.00031	.00016
#3	.00078	.00004	.00409	.00100	.05804	-.00012	.00016

Approved: June 15, 2016

Sample Name: S2 Acquired: 6/14/2016 12:44:35 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00120	.00606	.03826
Stddev	.00006	.00019	.00061
%RSD	5.1133	3.1020	1.6008
#1	.00120	.00623	.03831
#2	.00114	.00608	.03762
#3	.00126	.00586	.03884

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8152.7	47552.	3052.8
Stddev	29.5	83.	45.6
%RSD	.36198	.17399	1.4946
#1	8120.4	47457.	3000.7
#2	8159.5	47611.	3071.7
#3	8178.2	47587.	3085.9

Approved: June 15, 2016

Sample Name: S3 Acquired: 6/14/2016 12:48:40 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.02147	.08865	.00894	.01055	2.1778	.05685	.46084	.03067
Stddev	.00019	.00063	.00015	.00006	.1313	.00018	.02607	.00025
%RSD	.87764	.70925	1.7234	.54571	6.0300	.31600	5.6581	.82726
#1	.02141	.08907	.00885	.01049	2.0765	.05670	.44238	.03078
#2	.02168	.08895	.00885	.01060	2.1307	.05705	.44949	.03038
#3	.02132	.08793	.00912	.01055	2.3261	.05680	.49067	.03085

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.07167	.03236	.06180	.08683	3.1858	1.6217	.06028	.13829
Stddev	.00031	.00005	.00012	.00479	.1845	.1048	.00364	.00846
%RSD	.43603	.15877	.20220	5.5215	5.7921	6.4614	6.0324	6.1165
#1	.07151	.03236	.06172	.08385	3.0466	1.5456	.05768	.13209
#2	.07148	.03241	.06173	.08428	3.1156	1.5784	.05872	.13486
#3	.07203	.03230	.06194	.09236	3.3951	1.7412	.06444	.14793

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.18449	8.6426	.06665	.11728	.03029	.03400	.00607	.19214
Stddev	.00031	.5042	.00021	.00051	.00013	.00013	.00011	.00052
%RSD	.16673	5.8344	.31349	.43130	.43664	.38359	1.8578	.27196
#1	.18463	8.2643	.06652	.11714	.03019	.03396	.00620	.19211
#2	.18414	8.4485	.06654	.11685	.03024	.03390	.00601	.19163
#3	.18471	9.2151	.06689	.11784	.03044	.03415	.00600	.19268

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.06636	3.6329	.11746	.01302	.08043	.35793	2.7949
Stddev	.00026	.2154	.00729	.00006	.00052	.00088	.1051
%RSD	.38747	5.9283	6.2067	.44274	.64284	.24518	3.7586
#1	.06627	3.4707	.11175	.01299	.08042	.35722	2.7056
#2	.06616	3.5508	.11496	.01298	.08095	.35767	2.7683
#3	.06665	3.8773	.12567	.01309	.07992	.35891	2.9106

Approved: June 15, 2016

Sample Name: S3 Acquired: 6/14/2016 12:48:40 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8036.1**	**46688.**	**2947.0**
Stddev	28.9	254.	111.6
%RSD	.35913	.54439	3.7880
#1	8067.6	46396.	3032.5
#2	8030.0	46805.	2987.9
#3	8010.8	46862.	2820.7

Approved: June 15, 2016

Sample Name: S4 Acquired: 6/14/2016 12:52:23 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.04359	.18090	.01840	.02175	4.2122	.11444	.89472	.06280
Stddev	.00016	.00050	.00008	.00005	.0277	.00022	.00335	.00004
%RSD	.37046	.27391	.43894	.21845	.65634	.18788	.37436	.05607
#1	.04362	.18133	.01833	.02178	4.1822	.11456	.89133	.06284
#2	.04373	.18101	.01849	.02170	4.2176	.11456	.89803	.06280
#3	.04341	.18036	.01839	.02178	4.2367	.11419	.89480	.06277

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.14474	.06563	.12514	.16858	6.1655	3.1565	.11778	.26918
Stddev	.00031	.00005	.00063	.00137	.0319	.0155	.00109	.00355
%RSD	.21748	.08337	.50365	.81267	.51675	.48947	.92432	1.3204
#1	.14447	.06565	.12458	.16709	6.1292	3.1387	.11664	.26508
#2	.14509	.06568	.12582	.16887	6.1785	3.1666	.11881	.27137
#3	.14467	.06557	.12502	.16979	6.1887	3.1642	.11789	.27110

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.37331	16.750	.13533	.24176	.06145	.06963	.01242	.38663
Stddev	.00108	.061	.00053	.00064	.00039	.00033	.00010	.00080
%RSD	.29054	.36204	.39317	.26501	.63244	.47878	.81305	.20587
#1	.37363	16.682	.13501	.24117	.06100	.06945	.01248	.38614
#2	.37421	16.774	.13595	.24244	.06166	.07002	.01230	.38755
#3	.37211	16.796	.13504	.24168	.06169	.06943	.01248	.38621

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13518	7.0217	.22950	.02621	.16285	.72726	5.4039
Stddev	.00039	.0367	.00162	.00011	.00027	.00157	.0423
%RSD	.28600	.52243	.70585	.40655	.16349	.21522	.78237
#1	.13481	6.9820	.22778	.02612	.16314	.72583	5.3960
#2	.13558	7.0287	.22975	.02632	.16278	.72893	5.4495
#3	.13516	7.0544	.23099	.02618	.16262	.72701	5.3661

Approved: June 15, 2016

Sample Name: S4 Acquired: 6/14/2016 12:52:23 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7822.2**	**45311.**	**2998.8**
Stddev	28.2	227.	12.6
%RSD	.36089	.50117	.42036
#1	7833.8	45107.	2994.8
#2	7790.0	45556.	2988.6
#3	7842.8	45271.	3012.9

Approved: June 15, 2016

Sample Name: ICV Acquired: 6/14/2016 12:56:05 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38543**	**9.6557**	**.39426**	**.49034**	**.97556**	**.04877**	**9.7251**	**.04918**
Stddev	.01774	.4641	.00050	.02173	.01359	.00226	.1000	.00025
%RSD	4.6025	4.8067	.12759	4.4321	1.3927	4.6241	1.0285	.51776
#1	.40071	10.089	.39484	.51051	.96249	.05089	9.6197	.04929
#2	.36598	9.1661	.39401	.46733	.97460	.04640	9.7368	.04889
#3	.38961	9.7117	.39393	.49318	.98961	.04902	9.8187	.04936
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19716**	**.48666**	**.49480**	**3.8772**	**48.994**	**.97078**	**9.7206**	**.48890**
Stddev	.00029	.02364	.00027	.0845	.688	.01104	.2437	.00666
%RSD	.14939	4.8571	.05481	2.1802	1.4035	1.1376	2.5074	1.3632
#1	.19698	.50898	.49492	3.7928	48.342	.95932	9.4806	.48144
#2	.19750	.46189	.49449	3.8770	48.928	.97166	9.7134	.49100
#3	.19700	.48910	.49499	3.9619	49.713	.98136	9.9679	.49427
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99560**	**48.662**	**.49303**	**9.7939**	**.49546**	**1.1765**	**.39409**	**4.9575**
Stddev	.00075	.610	.00114	.0104	.00196	.0027	.00187	.0084
%RSD	.07581	1.2528	.23061	.10658	.39603	.23247	.47510	.17014
#1	.99520	48.095	.49208	9.7985	.49333	1.1743	.39434	4.9576
#2	.99513	48.583	.49271	9.7819	.49720	1.1758	.39582	4.9490
#3	.99647	49.307	.49429	9.8012	.49585	1.1796	.39210	4.9659
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 15, 2016

Sample Name: ICV Acquired: 6/14/2016 12:56:05 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98209	.97713	.96807	.49283	.97367	.98465	.98282
Stddev	.00262	.01108	.01267	.00210	.04662	.00197	.01299
%RSD	.26629	1.1338	1.3085	.42575	4.7878	.19972	1.3213
#1	.98103	.96733	.95745	.49525	1.0166	.98669	.97922
#2	.98017	.97490	.96467	.49178	.92408	.98276	.97201
#3	.98507	.98915	.98209	.49147	.98034	.98450	.99722
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8082.9	47341.	3031.3
Stddev	21.3	1786.	40.9
%RSD	.26345	3.7721	1.3486
#1	8073.9	45699.	3074.5
#2	8107.2	49242.	3026.3
#3	8067.6	47081.	2993.2

Approved: June 15, 2016

Sample Name: ICB Acquired: 6/14/2016 12:59:47 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00098	.00942	-.00171	.00363	.00011	.00002	.03576	.00005
Stddev	.00078	.00820	.00266	.00212	.00122	.00005	.03492	.00017
%RSD	80.233	87.066	155.97	58.314	1137.9	265.56	97.651	327.57
#1	.00156	.00319	-.00295	.00400	.00074	.00002	-.00424	.00013
#2	.00009	.00635	-.00353	.00554	.00088	.00006	.05135	-.00014
#3	.00129	.01871	.00135	.00135	-.00130	-.00003	.06017	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	.00047	-.00019	.01795	-.08212	.00115	.01184	-.00022
Stddev	.00033	.00091	.00038	.01447	.05829	.00182	.05225	.00316
%RSD	176.47	192.38	202.82	80.618	70.987	158.00	441.14	1423.9
#1	-.00031	.00001	-.00042	.00497	-.04252	.00296	.00562	-.00222
#2	-.00044	-.00011	-.00039	.03356	-.14906	-.00068	.06693	.00343
#3	.00019	.00152	.00025	.01533	-.05477	.00117	-.03701	-.00187
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00248	-.00804	.00009	.00401	-.00201	.00298	.00393	.00114
Stddev	.00043	.02558	.00090	.00372	.00255	.00250	.00519	.00226
%RSD	17.436	318.18	1005.9	92.759	127.12	83.827	132.08	198.39
#1	.00257	.00629	-.00095	.00764	-.00338	.00037	-.00156	.00346
#2	.00201	-.03757	.00062	.00021	.00094	.00534	.00874	.00102
#3	.00286	.00716	.00060	.00416	-.00357	.00323	.00460	-.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: ICB Acquired: 6/14/2016 12:59:47 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00109	.00025	.00491	.00055	-.00068	.00019	.00086
Stddev	.00066	.00022	.00321	.00307	.00056	.00014	.00021
%RSD	60.629	87.512	65.448	554.99	83.490	73.830	23.999
#1	.00179	.00046	.00635	.00132	-.00004	.00032	.00066
#2	.00047	.00027	.00123	.00317	-.00086	.00023	.00107
#3	.00102	.00002	.00715	-.00283	-.00112	.00004	.00085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8272.2	48161.	3104.2
Stddev	22.8	82.	33.4
%RSD	.27532	.16928	1.0772
#1	8279.7	48125.	3070.9
#2	8290.4	48255.	3104.0
#3	8246.7	48104.	3137.8

Approved: June 15, 2016

Sample Name: LLICV Acquired: 6/14/2016 13:03:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00880**	**.16139**	**.00761**	**.07641**	**.00824**	**.00154**	**.39811**	**.00067**
Stddev	.00106	.00724	.00219	.00166	.00029	.00004	.01409	.00009
%RSD	12.035	4.4839	28.794	2.1759	3.5038	2.5652	3.5387	12.844
#1	.00983	.15309	.00858	.07600	.00810	.00156	.40270	.00058
#2	.00772	.16472	.00510	.07500	.00858	.00149	.40932	.00076
#3	.00884	.16636	.00916	.07824	.00805	.00156	.38229	.00068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00405**	**.00423**	**.00388**	**.07505**	**.64449**	**.07565**	**.28195**	**.00660**
Stddev	.00028	.00036	.00040	.00975	.06457	.00211	.06127	.00066
%RSD	6.8288	8.4594	10.205	12.990	10.019	2.7873	21.732	9.9473
#1	.00392	.00459	.00421	.08174	.66926	.07329	.25661	.00708
#2	.00437	.00421	.00399	.07954	.69301	.07734	.23742	.00585
#3	.00387	.00388	.00344	.06386	.57120	.07633	.35183	.00687
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00788**	**.38497**	**.01646**	**.74511**	**.00759**	**.07609**	**.01758**	**.76337**
Stddev	.00018	.01539	.00091	.00508	.00213	.00245	.00573	.00199
%RSD	2.3375	3.9984	5.5065	.68178	28.124	3.2251	32.583	.26020
#1	.00800	.39677	.01652	.74025	.00575	.07875	.01529	.76557
#2	.00766	.39058	.01734	.75039	.00993	.07562	.01335	.76283
#3	.00796	.36756	.01553	.74468	.00709	.07391	.02410	.76171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: LLICV Acquired: 6/14/2016 13:03:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.38632	.03829	.03165	.14530	.00724	.01558	.04231
Stddev	.00287	.00112	.00591	.00348	.00092	.00016	.00124
%RSD	.74389	2.9297	18.689	2.3966	12.749	1.0443	2.9326
#1	.38917	.03700	.03437	.14402	.00619	.01565	.04090
#2	.38636	.03885	.03572	.14925	.00759	.01539	.04279
#3	.38343	.03902	.02486	.14264	.00793	.01569	.04324
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8334.6	48400.	3138.3
Stddev	10.8	361.	29.0
%RSD	.13011	.74658	.92345
#1	8325.4	48694.	3151.1
#2	8331.9	48510.	3158.8
#3	8346.5	47997.	3105.2

Approved: June 15, 2016

Sample Name: LLICV Acquired: 6/14/2016 13:07:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01991	.39026	.01795	.18610	.01975	.00371	.94504	.00202
Stddev	.00019	.01061	.00271	.00129	.00108	.00005	.00570	.00011
%RSD	.96690	2.7190	15.095	.69199	5.4909	1.2610	.60301	5.4056
#1	.01970	.38072	.01988	.18732	.02040	.00366	.94317	.00215
#2	.01999	.40169	.01911	.18476	.02034	.00371	.94051	.00199
#3	.02006	.38838	.01485	.18623	.01849	.00376	.95143	.00194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00962	.00984	.00984	.18756	1.7940	.18739	.94403	.01808
Stddev	.00041	.00070	.00088	.01679	.1044	.00308	.07072	.00340
%RSD	4.2785	7.0637	8.9550	8.9517	5.8207	1.6431	7.4909	18.795
#1	.01008	.00937	.00884	.20458	1.7125	.18652	.86440	.02042
#2	.00928	.01064	.01016	.18710	1.9117	.19081	.96819	.01963
#3	.00952	.00952	.01051	.17101	1.7578	.18484	.99949	.01418
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01794	.93632	.03985	1.8373	.01717	.18868	.03666	1.9003
Stddev	.00031	.01666	.00136	.0085	.00129	.00169	.00731	.0062
%RSD	1.7382	1.7798	3.4162	.46128	7.5186	.89723	19.946	.32625
#1	.01765	.92444	.03991	1.8275	.01733	.18677	.03653	1.8932
#2	.01827	.95537	.04118	1.8425	.01837	.19001	.04404	1.9044
#3	.01791	.92916	.03846	1.8418	.01580	.18925	.02942	1.9034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: LLICV Acquired: 6/14/2016 13:07:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.96121	.09463	.06084	.36358	.01926	.03933	.09673
Stddev	.00258	.00079	.00302	.00212	.00069	.00028	.00035
%RSD	.26849	.83553	4.9712	.58445	3.5652	.71646	.36438
#1	.95841	.09448	.05930	.36237	.01976	.03901	.09667
#2	.96172	.09548	.05889	.36233	.01954	.03942	.09711
#3	.96349	.09392	.06432	.36603	.01848	.03955	.09641
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8214.6	47987.	3082.1
Stddev	36.9	116.	8.8
%RSD	.44975	.24179	.28564
#1	8237.1	48067.	3081.2
#2	8234.7	48041.	3073.8
#3	8172.0	47854.	3091.3

Approved: June 15, 2016

Sample Name: ICSA Acquired: 6/14/2016 13:11:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00253	262.58	.00384	.06070	-.00003	-.00010	235.11	-.00006
Stddev	.00220	.29	.00235	.00160	.00016	.00010	.65	.00032
%RSD	86.930	.11149	61.149	2.6307	621.80	95.355	.27559	534.39
#1	.00504	262.54	.00223	.06238	.00016	-.00005	235.84	.00030
#2	.00091	262.88	.00653	.06054	-.00013	-.00021	234.89	-.00017
#3	.00164	262.30	.00275	.05920	-.00011	-.00005	234.61	-.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00096	-.00132	-.00273	94.416	-.06977	.00355	241.82	-.00121
Stddev	.00023	.00121	.00196	.391	.00708	.00354	.90	.00150
%RSD	23.683	91.662	71.863	.41427	10.151	99.797	.37401	123.89
#1	-.00093	-.00243	-.00356	94.399	-.07486	.00706	242.75	-.00082
#2	-.00120	-.00149	-.00049	94.815	-.06168	-.00003	241.75	.00006
#3	-.00075	-.00003	-.00415	94.033	-.07277	.00362	240.95	-.00287
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00156	.01529	.00217	.06058	.00007	-.00481	.00541	.00486
Stddev	.00020	.00891	.00164	.01011	.00331	.00662	.00382	.00038
%RSD	12.683	58.263	75.524	16.694	4644.1	137.44	70.478	7.8520
#1	-.00145	.00545	.00097	.06875	-.00287	-.01225	.00445	.00474
#2	-.00144	.01760	.00150	.06372	-.00057	-.00261	.00217	.00529
#3	-.00179	.02281	.00404	.04927	.00365	.00042	.00962	.00455
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: ICSA Acquired: 6/14/2016 13:11:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00108	.00006	-.00440	.00243	-.00681	.00109	-.00527
Stddev	.00068	.00007	.00288	.00105	.00090	.00049	.00026
%RSD	63.354	105.93	65.411	43.154	13.237	44.987	4.9047
#1	.00187	.00011	-.00125	.00364	-.00642	.00089	-.00513
#2	.00066	-.00001	-.00506	.00176	-.00784	.00164	-.00556
#3	.00071	.00009	-.00690	.00189	-.00617	.00073	-.00510
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7567.3	43764.	2994.7
Stddev	6.1	135.	18.2
%RSD	.08020	.30953	.60792
#1	7562.8	43847.	2974.9
#2	7574.2	43607.	3010.7
#3	7564.9	43837.	2998.6

Approved: June 15, 2016

Sample Name: ICSAB Acquired: 6/14/2016 13:15:51 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51506	264.64	.25166	.06052	.24591	.24846	238.35	.48785
Stddev	.00145	1.17	.00554	.00533	.00201	.00127	1.23	.00130
%RSD	.28058	.44173	2.2010	8.8082	.81911	.51078	.51598	.26736
#1	.51603	265.66	.25793	.06570	.24823	.24965	239.49	.48677
#2	.51576	264.89	.24746	.05505	.24462	.24861	237.05	.48930
#3	.51340	263.36	.24957	.06080	.24488	.24712	238.52	.48749
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.23689	.24763	.23943	93.425	5.0594	.00409	238.48	.23704
Stddev	.00063	.00124	.00226	.388	.0869	.00160	1.50	.00169
%RSD	.26564	.50095	.94539	.41581	1.7181	39.192	.63072	.71306
#1	.23620	.24900	.23725	93.833	5.1304	.00246	239.93	.23802
#2	.23742	.24732	.24177	93.060	5.0853	.00566	236.93	.23509
#3	.23705	.24658	.23927	93.382	4.9624	.00416	238.57	.23801
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00157	5.1161	.47379	.12146	.48868	.50579	.25646	.01152
Stddev	.00011	.0060	.00276	.01111	.00053	.00493	.01094	.00161
%RSD	7.0318	.11748	.58202	9.1449	.10760	.97382	4.2677	13.950
#1	-.00164	5.1136	.47069	.11309	.48914	.50285	.24427	.01179
#2	-.00163	5.1118	.47470	.13406	.48811	.51148	.26546	.01297
#3	-.00144	5.1230	.47598	.11722	.48881	.50304	.25965	.00979
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: ICSAB Acquired: 6/14/2016 13:15:51 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**.00036**	**-.00226**	**.45396**	**.24570**	**.47320**	**-.00522**
Stddev	.00076	.00033	.00394	.00178	.00158	.00162	.00024
%RSD	717.90	91.178	174.48	.39200	.64430	.34159	4.6419
#1	-.00027	-.00001	-.00171	.45204	.24753	.47141	-.00531
#2	-.00078	.00063	-.00644	.45556	.24483	.47454	-.00495
#3	.00072	.00047	.00138	.45429	.24475	.47365	-.00541
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7513.1**	**43560.**	**2982.5**
Stddev	19.0	244.	20.4
%RSD	.25242	.56027	.68385
#1	7524.1	43280.	2975.5
#2	7491.2	43665.	3005.4
#3	7523.9	43733.	2966.5

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 13:19:40 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38842**	**9.6766**	**.38670**	**.48146**	**.96406**	**.04846**	**9.5852**	**.04848**
Stddev	.00098	.0297	.00253	.00416	.01300	.00044	.1732	.00040
%RSD	.25157	.30735	.65463	.86489	1.3487	.91791	1.8064	.81691
#1	.38857	9.7094	.38712	.48625	.94993	.04897	9.4127	.04850
#2	.38932	9.6689	.38399	.47945	.97553	.04822	9.7589	.04807
#3	.38738	9.6514	.38900	.47868	.96671	.04818	9.5839	.04886
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19459**	**.48546**	**.48652**	**3.8561**	**48.199**	**.96251**	**9.6204**	**.48138**
Stddev	.00098	.00499	.00342	.0607	.641	.00860	.1903	.00688
%RSD	.50162	1.0279	.70275	1.5736	1.3303	.89352	1.9776	1.4298
#1	.19526	.49097	.48987	3.8001	47.506	.95695	9.4044	.47514
#2	.19347	.48417	.48304	3.9206	48.772	.97241	9.6937	.48876
#3	.19505	.48124	.48667	3.8477	48.318	.95816	9.7630	.48022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.97291**	**48.050**	**.48501**	**9.6373**	**.48965**	**1.1590**	**.38093**	**4.8869**
Stddev	.00494	.696	.00161	.0194	.00476	.0037	.00079	.0127
%RSD	.50749	1.4491	.33221	.20096	.97245	.31640	.20650	.26006
#1	.97811	47.304	.48658	9.6588	.49203	1.1568	.38012	4.8994
#2	.96829	48.683	.48336	9.6317	.48417	1.1570	.38169	4.8740
#3	.97234	48.164	.48509	9.6213	.49275	1.1633	.38096	4.8872
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 13:19:40 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.96575**	**.96428**	**.95494**	**.48624**	**.96823**	**.97016**	**.97459**
Stddev	.00169	.01391	.02178	.00378	.00985	.00094	.00888
%RSD	.17512	1.4429	2.2804	.77775	1.0173	.09644	.91115
#1	.96675	.94960	.92982	.48816	.97960	.97099	.96517
#2	.96380	.97727	.96856	.48188	.96284	.96915	.98280
#3	.96670	.96597	.96644	.48867	.96226	.97035	.97581
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8121.3**	**46861.**	**3044.5**
Stddev	6.6	174.	24.7
%RSD	.08169	.37150	.81231
#1	8121.3	46669.	3071.6
#2	8128.0	47009.	3023.3
#3	8114.7	46903.	3038.5

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 13:23:23 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.01018	.00017	.00437	.00045	.00003	-.01350	-.00019
Stddev	.00185	.00088	.00277	.00270	.00058	.00006	.02608	.00008
%RSD	687.15	8.6656	1611.9	61.807	127.00	195.02	193.09	42.189
#1	-.00181	.00930	-.00181	.00585	.00083	-.00004	-.04335	-.00017
#2	.00175	.01106	-.00102	.00125	-.00021	.00006	.00485	-.00012
#3	.00087	.01019	.00334	.00601	.00075	.00008	-.00201	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00019	-.00032	.00005	.01705	-.09454	-.00109	.03233	-.00144
Stddev	.00008	.00135	.00142	.01744	.11900	.00207	.12089	.00023
%RSD	42.335	421.58	2661.9	102.25	125.86	189.98	373.89	15.988
#1	-.00023	-.00080	.00087	.00263	.03856	.00130	-.10164	-.00165
#2	-.00009	.00121	-.00159	.01210	-.19064	-.00241	.06536	-.00148
#3	-.00023	-.00137	.00088	.03643	-.13154	-.00216	.13328	-.00119
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00166	-.00824	.00052	.00046	-.00300	.00064	.00506	.00065
Stddev	.00017	.02537	.00078	.00248	.00188	.00012	.00386	.00218
%RSD	10.394	307.81	149.96	537.03	62.740	19.075	76.221	337.18
#1	.00151	.01786	.00017	.00314	-.00092	.00074	.00577	-.00182
#2	.00162	-.00978	.00141	-.00002	-.00460	.00069	.00090	.00231
#3	.00185	-.03281	-.00002	-.00174	-.00348	.00050	.00852	.00144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 13:23:23 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v950) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00140**	**.00011**	**.00599**	**-.00037**	**.00039**	**-.00005**	**.00046**
Stddev	.00059	.00015	.00636	.00033	.00057	.00017	.00065
%RSD	41.947	133.47	106.18	88.219	144.29	355.84	140.69
#1	.00074	.00028	.00405	-.00062	.00028	-.00025	-.00015
#2	.00185	.00003	.00083	-.00050	.00102	.00008	.00040
#3	.00161	.00002	.01309	-.00000	-.00011	.00002	.00115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8279.0**	**48298.**	**3150.0**
Stddev	18.1	229.	46.0
%RSD	.21838	.47431	1.4612
#1	8279.2	48072.	3107.6
#2	8297.0	48530.	3143.4
#3	8260.9	48293.	3198.9

Approved: June 15, 2016

Sample Name: PBW 46 Acquired: 6/14/2016 13:33:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572244-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00167	.01388	.00104	.00274	-.00034	.00003	.02791	-.00005
Stddev	.00094	.00439	.00157	.00153	.00115	.00004	.01471	.00011
%RSD	56.568	31.644	151.23	55.699	337.19	120.34	52.715	224.25
#1	.00246	.01051	.00181	.00314	-.00124	.00005	.01675	-.00005
#2	.00063	.01885	-.00077	.00403	-.00073	.00006	.04458	.00006
#3	.00192	.01229	.00207	.00106	.00095	-.00001	.02240	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	.00071	-.00014	.02199	-.15165	-.00055	-.04599	-.00023
Stddev	.00014	.00042	.00094	.01014	.08201	.00046	.08242	.00223
%RSD	104.13	59.240	668.69	46.130	54.078	82.275	179.19	983.85
#1	-.00030	.00024	.00010	.02468	-.18048	-.00030	-.05233	.00067
#2	-.00002	.00106	-.00118	.01077	-.21534	-.00028	-.12506	.00141
#3	-.00010	.00084	.00066	.03051	-.05912	-.00108	.03941	-.00276
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	-.00852	.00096	-.00216	.00101	-.00161	-.00102	.00482
Stddev	.00048	.00751	.00028	.00632	.00246	.00429	.00539	.00199
%RSD	190.24	88.124	29.094	292.35	243.46	265.68	526.40	41.278
#1	-.00001	-.00365	.00064	-.00716	-.00098	.00320	.00472	.00347
#2	-.00004	-.01717	.00104	.00494	.00024	-.00304	-.00599	.00387
#3	.00080	-.00474	.00118	-.00427	.00377	-.00501	-.00181	.00710
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: PBW 46 Acquired: 6/14/2016 13:33:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572244-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	.00007	.00408	-.00157	.00006	.00105	.00068
Stddev	.00108	.00022	.00071	.00099	.00060	.00019	.00065
%RSD	179.70	333.32	17.312	63.182	979.98	17.830	96.256
#1	-.00051	.00032	.00382	-.00086	.00057	.00127	.00057
#2	.00164	-.00010	.00487	-.00271	.00022	.00093	.00138
#3	.00067	-.00002	.00354	-.00116	-.00060	.00096	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7863.8	45826.	2967.5
Stddev	15.1	145.	24.8
%RSD	.19230	.31735	.83681
#1	7881.2	45800.	2945.9
#2	7853.7	45695.	2961.9
#3	7856.6	45983.	2994.6

Approved: June 15, 2016

Sample Name: LCSW 46 Acquired: 6/14/2016 13:37:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572244-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19704**	**5.0144**	**.19968**	**.96617**	**.49809**	**.02448**	**5.0003**	**.02463**
Stddev	.00259	.0093	.00495	.00478	.00282	.00006	.0498	.00023
%RSD	1.3127	.18499	2.4785	.49492	.56657	.22489	.99603	.94804
#1	.19426	5.0094	.20392	.97139	.50122	.02453	5.0247	.02488
#2	.19749	5.0251	.20088	.96512	.49731	.02448	4.9430	.02462
#3	.19937	5.0086	.19424	.96200	.49573	.02442	5.0332	.02441
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10135**	**.25165**	**.25303**	**2.0001**	**24.272**	**.49883**	**4.9824**	**.24610**
Stddev	.00031	.00138	.00087	.0308	.137	.00123	.1846	.00466
%RSD	.30274	.54872	.34331	1.5397	.56601	.24576	3.7049	1.8926
#1	.10168	.25187	.25388	2.0040	24.430	.49827	5.0916	.25147
#2	.10131	.25290	.25308	1.9675	24.181	.50023	5.0863	.24355
#3	.10107	.25017	.25214	2.0288	24.205	.49798	4.7692	.24327
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51104**	**24.461**	**.25342**	**4.8383**	**.25092**	**.59123**	**.20401**	**2.5663**
Stddev	.00152	.145	.00050	.0218	.00320	.00037	.00930	.0035
%RSD	.29711	.59146	.19600	.45011	1.2737	.06220	4.5568	.13735
#1	.51249	24.612	.25388	4.8563	.24757	.59085	.19730	2.5675
#2	.50946	24.449	.25289	4.8141	.25394	.59159	.21462	2.5623
#3	.51118	24.323	.25350	4.8444	.25124	.59126	.20010	2.5691
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: LCSW 46 Acquired: 6/14/2016 13:37:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572244-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50211**	**.50421**	**.49421**	**.25176**	**.50027**	**.50541**	**.00451**
Stddev	.00113	.00139	.00229	.00210	.00179	.00065	.00081
%RSD	.22533	.27517	.46297	.83466	.35715	.12806	17.975
#1	.50305	.50577	.49685	.25188	.50233	.50544	.00358
#2	.50085	.50376	.49281	.24959	.49917	.50475	.00486
#3	.50242	.50311	.49296	.25379	.49931	.50604	.00508
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7849.3**	**45516.**	**2986.3**
Stddev	9.1	95.	21.8
%RSD	.11540	.20802	.72880
#1	7848.6	45539.	2971.2
#2	7858.8	45411.	3011.2
#3	7840.7	45596.	2976.5

Approved: June 15, 2016

Sample Name: F BLANK Acquired: 6/14/2016 13:40:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572115-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00185	.01400	.00026	.00476	.00092	.00004	.02957	-.00022
Stddev	.00213	.00374	.00154	.00200	.00091	.00006	.02948	.00014
%RSD	115.20	26.739	594.17	42.124	98.264	149.28	99.713	61.633
#1	-.00056	.01531	-.00127	.00664	.00037	.00010	.04968	-.00022
#2	.00349	.01692	.00024	.00497	.00043	-.00002	-.00428	-.00036
#3	.00261	.00978	.00181	.00265	.00197	.00003	.04330	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00044	.00075	.00060	.02464	-.14630	-.00035	-.03295	-.00164
Stddev	.00031	.00072	.00044	.00914	.06975	.00275	.08765	.00307
%RSD	71.037	96.066	72.661	37.109	47.677	783.39	265.99	187.60
#1	.00014	.00157	.00012	.01419	-.06736	-.00212	-.03307	.00129
#2	.00041	.00025	.00097	.03118	-.19961	-.00174	-.12054	-.00136
#3	.00076	.00043	.00071	.02854	-.17193	.00282	.05475	-.00484
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	160.32	.00146	-.00184	.00085	.00136	.00519	.01119
Stddev	.00028	.87	.00075	.00269	.00024	.00391	.00753	.00213
%RSD	1943.5	.54401	51.722	145.79	28.371	287.40	145.07	19.075
#1	.00028	160.84	.00174	-.00493	.00110	-.00028	.01066	.01313
#2	-.00006	160.81	.00203	-.00054	.00084	-.00146	.00830	.00891
#3	-.00026	159.31	.00060	-.00005	.00062	.00582	-.00339	.01153
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: F BLANK Acquired: 6/14/2016 13:40:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572115-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00123	.00013	.00803	-.00134	-.00004	.00271	-.00017
Stddev	.00082	.00053	.00222	.00184	.00075	.00010	.00010
%RSD	66.327	398.01	27.614	136.77	1965.9	3.8033	59.138
#1	.00182	-.00043	.00550	.00075	-.00055	.00283	-.00023
#2	.00158	.00021	.00896	-.00267	-.00038	.00264	-.00005
#3	.00030	.00062	.00962	-.00211	.00082	.00267	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7878.8	45526.	3023.1
Stddev	12.8	222.	25.0
%RSD	.16243	.48791	.82843
#1	7864.9	45272.	3021.7
#2	7890.1	45623.	2998.8
#3	7881.3	45683.	3048.9

Approved: June 15, 2016

Sample Name: F BLANK Acquired: 6/14/2016 13:45:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572115-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00136	.00351	-.00192	.00345	.00034	.00001	-.00726	.00006
Stddev	.00252	.00131	.00242	.00488	.00029	.00001	.01582	.00022
%RSD	185.37	37.172	125.83	141.41	84.450	129.93	217.92	362.52
#1	-.00243	.00404	-.00445	.00904	.00006	-.00001	.01088	.00007
#2	.00152	.00447	-.00170	.00003	.00033	.00002	-.01815	.00028
#3	-.00316	.00202	.00038	.00128	.00063	.00002	-.01451	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	.00051	.00038	-.01203	-.15029	-.00189	.02947	-.00004
Stddev	.00020	.00043	.00113	.00493	.04617	.00174	.04121	.00159
%RSD	75.575	84.376	297.20	40.977	30.719	91.879	139.83	3862.3
#1	-.00026	.00086	-.00077	-.00758	-.20186	-.00320	-.00969	.00170
#2	-.00006	.00003	.00149	-.01733	-.13619	.00008	.02564	-.00042
#3	-.00045	.00064	.00042	-.01119	-.11282	-.00257	.07246	-.00141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	3.7215	.00127	-.00241	.00047	-.00102	.00776	.00564
Stddev	.00029	.0188	.00041	.00360	.00187	.00062	.00547	.00068
%RSD	50.759	.50397	32.698	149.11	396.34	60.607	70.470	12.073
#1	-.00054	3.7362	.00093	-.00570	-.00102	-.00094	.00899	.00588
#2	-.00086	3.7004	.00115	.00143	-.00014	-.00168	.01251	.00617
#3	-.00029	3.7280	.00173	-.00296	.00258	-.00045	.00178	.00487
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: F BLANK Acquired: 6/14/2016 13:45:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572115-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00079	.00002	.00524	-.00270	.00012	.00291	-.00032
Stddev	.00031	.00074	.00246	.00052	.00043	.00035	.00023
%RSD	38.972	3192.4	46.992	19.091	363.05	12.182	72.008
#1	.00046	.00082	.00240	-.00329	.00061	.00316	-.00006
#2	.00106	-.00013	.00674	-.00231	-.00014	.00251	-.00040
#3	.00085	-.00062	.00659	-.00251	-.00012	.00308	-.00049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8052.0	47666.	3085.0
Stddev	9.9	193.	21.7
%RSD	.12270	.40467	.70499
#1	8063.3	47469.	3072.0
#2	8045.2	47854.	3073.0
#3	8047.4	47675.	3110.2

Approved: June 15, 2016

Sample Name: L1606040101 Acquired: 6/14/2016 13:49:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572244-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00068**	**.03606**	**-.00019**	**.04592**	**.71433**	**.00002**	F **338.51**
Stddev	.00085	.00748	.00279	.00153	.00631	.00007	2.54
%RSD	125.55	20.735	1478.1	3.3300	.88317	416.14	.75155
#1	-.00019	.02770	-.00292	.04444	.72051	-.00007	341.17
#2	-.00019	.03839	-.00031	.04749	.71457	.00005	338.28
#3	-.00166	.04210	.00266	.04583	.70790	.00007	336.09
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.00063**	**.00091**	**.00356**	**.00913**	**253.60**	**.04717**
Stddev	.00007	.00006	.00098	.00090	.02653	1.92	.00396
%RSD	53.778	9.8659	107.64	25.247	290.55	.75540	8.3932
#1	.00022	.00056	.00027	.00362	.01490	255.61	.05134
#2	.00008	.00065	.00204	.00443	.03230	253.40	.04346
#3	.00011	.00068	.00042	.00263	-.01981	251.79	.04670
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09247**	**-.00210**	**.00670**	F **316.05**	**.00021**	**.07799**	**.01568**
Stddev	.11383	.00121	.00047	2.24	.00017	.00668	.00370
%RSD	123.10	57.721	6.9900	.70779	82.322	8.5685	23.601
#1	.12617	-.00306	.00643	318.39	.00039	.07211	.01702
#2	-.03440	-.00249	.00643	315.83	.00018	.08526	.01852
#3	.18565	-.00074	.00724	313.93	.00005	.07660	.01149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 15, 2016

Sample Name: L1606040101 Acquired: 6/14/2016 13:49:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572244-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00223**	**.02642**	**.27128**	**.00085**	**.42467**	F **-.04716**	**-.00249**
Stddev	.00127	.00543	.00084	.00088	.00237	.00308	.00187
%RSD	56.993	20.546	.30879	103.84	.55858	6.5360	75.050
#1	-.00326	.02629	.27160	.00101	.42711	-.05067	-.00386
#2	-.00081	.02105	.27033	-.00010	.42451	-.04593	-.00036
#3	-.00261	.03191	.27191	.00164	.42238	-.04489	-.00326
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00004**	**.01324**	**-.00006**
Stddev	.00105	.00024	.00018
%RSD	2770.5	1.7772	296.48
#1	-.00033	.01314	.00012
#2	-.00091	.01351	-.00023
#3	.00113	.01308	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7563.1**	**43779.**	**3072.4**
Stddev	12.8	81.	43.0
%RSD	.16968	.18476	1.4009
#1	7562.4	43826.	3025.1
#2	7550.7	43826.	3082.6
#3	7576.3	43686.	3109.4

Approved: June 15, 2016

Sample Name: L1606040101S Acquired: 6/14/2016 13:53:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572244-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19684**	**5.0967**	**.20209**	**1.0293**	**1.2091**	**.02436**	F **348.43**
Stddev	.00072	.0198	.00364	.0035	.0047	.00016	1.04
%RSD	.36586	.38874	1.8037	.33737	.38871	.66177	.29871
#1	.19607	5.0758	.20622	1.0256	1.2140	.02442	349.63
#2	.19749	5.0989	.20070	1.0325	1.2089	.02417	347.79
#3	.19697	5.1153	.19934	1.0298	1.2046	.02448	347.87
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02502**	**.09564**	**.24613**	**.24077**	**1.8978**	**279.57**	**.55292**
Stddev	.00022	.00088	.00145	.00121	.0280	1.03	.00424
%RSD	.87422	.91844	.58870	.50163	1.4759	.36950	.76626
#1	.02481	.09556	.24642	.24212	1.9301	280.64	.55508
#2	.02525	.09656	.24742	.23978	1.8804	279.50	.55564
#3	.02500	.09481	.24456	.24042	1.8828	278.58	.54804
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.7110**	**.23643**	**.50454**	F **342.92**	**.23553**	**5.1054**	**.25383**
Stddev	.1325	.00250	.00285	1.61	.00135	.0181	.00445
%RSD	2.8116	1.0580	.56389	.46928	.57240	.35448	1.7549
#1	4.6985	.23703	.50781	344.77	.23515	5.1263	.25324
#2	4.5853	.23857	.50257	342.04	.23702	5.0944	.25855
#3	4.8493	.23368	.50325	341.93	.23441	5.0955	.24969
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 15, 2016

Sample Name: L1606040101S Acquired: 6/14/2016 13:53:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572244-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.59878	.22037	2.8542	.47468	.90635	.43516	.11372
Stddev	.00379	.00716	.0077	.00230	.00451	.00599	.00231
%RSD	.63362	3.2478	.27084	.48499	.49797	1.3757	2.0338
#1	.59849	.22049	2.8625	.47709	.91125	.44190	.11155
#2	.60271	.21315	2.8471	.47250	.90543	.43315	.11615
#3	.59514	.22747	2.8531	.47444	.90237	.43044	.11345
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.50185	.50996	.00426
Stddev	.00231	.00221	.00033
%RSD	.46044	.43407	7.8538
#1	.50384	.51250	.00388
#2	.50239	.50894	.00438
#3	.49932	.50844	.00452
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7390.0	42543.	2969.4
Stddev	21.9	114.	29.1
%RSD	.29659	.26750	.97982
#1	7365.7	42638.	2958.4
#2	7408.2	42573.	3002.4
#3	7396.1	42417.	2947.5

Approved: June 15, 2016

Sample Name: L1606040101SD Acquired: 6/14/2016 13:56:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572244-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20087**	**5.1294**	**.20614**	**1.0412**	**1.1986**	**.02468**	F **342.25**
Stddev	.00169	.0132	.00305	.0012	.0027	.00015	.37
%RSD	.84103	.25629	1.4807	.11249	.22860	.59405	.10873
#1	.20023	5.1306	.20420	1.0399	1.2013	.02470	342.61
#2	.20279	5.1419	.20966	1.0417	1.1988	.02453	342.26
#3	.19959	5.1157	.20457	1.0421	1.1958	.02482	341.87
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02550**	**.09821**	**.24874**	**.24766**	**1.9147**	**277.25**	**.55479**
Stddev	.00025	.00024	.00049	.00122	.0433	.18	.00297
%RSD	.96207	.23992	.19544	.49076	2.2609	.06416	.53472
#1	.02575	.09796	.24907	.24906	1.8856	277.40	.55786
#2	.02526	.09842	.24897	.24698	1.9644	277.30	.55194
#3	.02547	.09824	.24818	.24694	1.8940	277.05	.55456
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.6163**	**.23816**	**.51974**	F **338.95**	**.24144**	**5.2503**	**.25969**
Stddev	.0907	.00076	.00121	2.46	.00117	.0100	.00390
%RSD	1.9649	.31723	.23234	.72579	.48290	.19104	1.5019
#1	4.5117	.23878	.51963	340.51	.24229	5.2430	.26015
#2	4.6733	.23732	.52100	340.23	.24192	5.2617	.25558
#3	4.6640	.23837	.51859	336.12	.24011	5.2461	.26334
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 15, 2016

Sample Name: L1606040101SD Acquired: 6/14/2016 13:56:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572244-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.60859	.22837	2.9129	.48961	.90083	.44288	.18565
Stddev	.00407	.00257	.0028	.00167	.00054	.00669	.00295
%RSD	.66861	1.1272	.09542	.34067	.05968	1.5113	1.5903
#1	.60971	.22771	2.9148	.49096	.90135	.45032	.18245
#2	.61198	.22619	2.9097	.49014	.90027	.43737	.18625
#3	.60408	.23121	2.9142	.48775	.90088	.44094	.18826
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.50879	.51735	.00053
Stddev	.00181	.00047	.00037
%RSD	.35485	.08989	69.842
#1	.51013	.51755	.00022
#2	.50951	.51769	.00043
#3	.50674	.51682	.00095
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7437.0	42930.	3011.0
Stddev	12.2	77.	22.8
%RSD	.16370	.17893	.75631
#1	7440.7	42873.	2987.5
#2	7423.4	42901.	3012.5
#3	7446.9	43018.	3033.0

Approved: June 15, 2016

Sample Name: L1606036002 Acquired: 6/14/2016 14:00:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.03539	-.00160	.04716	.04338	-.00005	13.438	.00025
Stddev	.00179	.00562	.00262	.00095	.00044	.00006	.139	.00008
%RSD	919.45	15.871	163.58	2.0212	1.0145	118.33	1.0321	31.622
#1	.00208	.02891	-.00460	.04742	.04372	-.00004	13.563	.00026
#2	-.00002	.03830	-.00049	.04795	.04288	-.00000	13.289	.00031
#3	-.00148	.03895	.00028	.04610	.04353	-.00012	13.462	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00084	.00068	.00095	.03898	.90932	-.00296	1.7377	.47740
Stddev	.00022	.00054	.00095	.01689	.06082	.00668	.0489	.00609
%RSD	25.717	79.454	100.28	43.336	6.6885	225.59	2.8148	1.2751
#1	.00067	.00102	.00046	.05629	.95023	.00129	1.7694	.48173
#2	.00078	.00006	.00034	.03810	.83943	-.01066	1.6814	.47044
#3	.00109	.00098	.00204	.02254	.93830	.00049	1.7623	.48003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	142.73	.00267	.13572	-.00105	-.00124	.00664	.78284
Stddev	.00019	1.62	.00011	.00523	.00149	.00318	.00793	.00198
%RSD	40.060	1.1376	4.0493	3.8535	141.40	256.83	119.47	.25278
#1	.00027	144.10	.00258	.13845	-.00164	.00208	-.00008	.78083
#2	.00048	140.93	.00266	.12969	-.00216	-.00427	.01539	.78288
#3	.00064	143.15	.00279	.13901	.00064	-.00152	.00460	.78479
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606036002 Acquired: 6/14/2016 14:00:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00136	.21742	.00701	-.00042	-.00004	.10829	-.00001
Stddev	.00043	.00286	.00337	.00141	.00024	.00008	.00063
%RSD	31.504	1.3143	47.997	338.48	626.59	.07249	4577.5
#1	.00136	.21922	.01043	.00093	.00018	.10824	-.00058
#2	.00180	.21412	.00370	-.00189	-.00029	.10838	.00067
#3	.00094	.21890	.00690	-.00029	.00000	.10826	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7913.7	46461.	3136.3
Stddev	21.5	120.	39.8
%RSD	.27174	.25909	1.2706
#1	7938.5	46580.	3096.1
#2	7902.6	46464.	3175.8
#3	7900.1	46340.	3136.9

Approved: June 15, 2016

Sample Name: L1606040301 Acquired: 6/14/2016 14:04:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.10870**	**.00259**	**.03180**	**.22091**	**-.00009**	F **301.33**
Stddev	.00155	.00247	.00230	.00096	.00055	.00004	.70
%RSD	1520.2	2.2763	89.084	3.0261	.24692	43.359	.23170
#1	.00093	.10812	.00521	.03224	.22056	-.00006	301.23
#2	.00064	.10656	.00090	.03247	.22063	-.00008	300.69
#3	-.00188	.11141	.00164	.03070	.22154	-.00014	302.08
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00006**	**.00053**	**.00168**	**.00808**	**.02703**	**246.44**	**1.0250**
Stddev	.00024	.00051	.00026	.00030	.01540	.42	.0030
%RSD	423.83	95.084	15.494	3.6767	56.974	.16978	.29649
#1	-.00003	.00106	.00191	.00833	.03321	246.48	1.0283
#2	.00033	.00051	.00140	.00776	.00950	246.01	1.0224
#3	-.00013	.00004	.00175	.00817	.03838	246.84	1.0243
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.01867**	**-.00091**	**.00410**	F **290.21**	**.00079**	**.05312**	**.01345**
Stddev	.08012	.00232	.00018	1.00	.00078	.00725	.00471
%RSD	429.05	253.68	4.4741	.34363	98.782	13.654	35.045
#1	-.06132	-.00046	.00413	290.01	-.00011	.06077	.01735
#2	-.06845	-.00342	.00427	289.32	.00131	.04634	.00821
#3	.07375	.00114	.00391	291.29	.00117	.05227	.01479
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 15, 2016

Sample Name: L1606040301 Acquired: 6/14/2016 14:04:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00185	.01201	.14023	.00097	.37299	F -.03665	-.00129
Stddev	.00194	.00714	.00189	.00047	.00184	.00141	.00126
%RSD	104.92	59.445	1.3470	48.573	.49453	3.8444	98.372
#1	.00250	.01999	.14122	.00130	.37392	-.03822	-.00095
#2	.00339	.00625	.14141	.00043	.37087	-.03622	-.00268
#3	-.00033	.00978	.13805	.00118	.37418	-.03551	-.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00027	.17242	.00003
Stddev	.00025	.00091	.00049
%RSD	93.764	.53063	1635.1
#1	-.00031	.17166	-.00053
#2	.00000	.17218	.00022
#3	-.00049	.17344	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7444.8	43321.	3001.6
Stddev	15.4	236.	17.0
%RSD	.20751	.54453	.56728
#1	7462.3	43447.	2995.9
#2	7438.7	43468.	3020.8
#3	7433.3	43049.	2988.2

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 14:08:44 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40287**	**10.072**	**.40039**	**.50197**	**.99037**	**.05023**	**9.8363**	**.05078**
Stddev	.00087	.036	.00475	.00183	.00406	.00019	.0185	.00018
%RSD	.21505	.35972	1.1875	.36411	.40995	.37307	.18826	.36196
#1	.40380	10.096	.40588	.50315	.98913	.05040	9.8176	.05057
#2	.40273	10.090	.39749	.50290	.98708	.05025	9.8546	.05090
#3	.40208	10.031	.39781	.49987	.99491	.05003	9.8367	.05087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20329**	**.50144**	**.51034**	**3.9786**	**49.552**	**.99098**	**9.8437**	**.49205**
Stddev	.00043	.00148	.00280	.0079	.197	.00940	.1177	.00061
%RSD	.21307	.29611	.54897	.19805	.39701	.94882	1.1959	.12430
#1	.20368	.50306	.51307	3.9695	49.492	1.0017	9.7321	.49239
#2	.20335	.50115	.51049	3.9841	49.393	.98432	9.8323	.49242
#3	.20283	.50013	.50747	3.9821	49.772	.98688	9.9667	.49135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0152**	**49.223**	**.50945**	**10.062**	**.50837**	**1.2088**	**.40379**	**5.1182**
Stddev	.0049	.070	.00238	.024	.00034	.0042	.00577	.0128
%RSD	.48067	.14158	.46713	.24339	.06659	.34938	1.4280	.25044
#1	1.0199	49.180	.50995	10.082	.50798	1.2073	.40904	5.1186
#2	1.0155	49.187	.51154	10.069	.50860	1.2135	.40472	5.1308
#3	1.0101	49.304	.50686	10.035	.50852	1.2055	.39762	5.1051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 14:08:44 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0080**	**.98991**	**.97455**	**.50425**	**1.0045**	**1.0128**	**1.0065**
Stddev	.0023	.00126	.00867	.00178	.0013	.0037	.0121
%RSD	.22662	.12763	.88921	.35217	.12434	.36160	1.2030
#1	1.0095	.98913	.96990	.50273	1.0056	1.0154	1.0139
#2	1.0092	.98924	.96921	.50620	1.0032	1.0144	1.0131
#3	1.0054	.99137	.98455	.50381	1.0048	1.0086	.99255
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7855.3**	**45661.**	**2998.7**
Stddev	37.4	35.	28.3
%RSD	.47565	.07626	.94396
#1	7833.8	45698.	2982.9
#2	7833.7	45630.	2981.9
#3	7898.5	45654.	3031.4

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 14:12:27 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00145**	**.01301**	**-.00079**	**-.00040**	**.00054**	**.00007**	**.01269**	**-.00023**
Stddev	.00118	.00272	.00417	.00138	.00097	.00007	.03045	.00008
%RSD	81.520	20.883	524.30	345.41	180.39	104.37	240.01	35.478
#1	-.00270	.01093	.00374	-.00170	.00118	.00013	.04622	-.00026
#2	-.00128	.01609	-.00446	-.00054	-.00058	.00008	-.01323	-.00029
#3	-.00036	.01201	-.00166	.00104	.00101	-.00001	.00506	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00018**	**.00013**	**.00040**	**.01146**	**.06408**	**.00116**	**-.01836**	**.00048**
Stddev	.00004	.00111	.00068	.00923	.12796	.00095	.09556	.00146
%RSD	20.747	871.23	171.02	80.558	199.68	82.263	520.63	301.52
#1	.00022	.00129	.00118	.00158	-.05158	.00029	-.05564	-.00119
#2	.00017	-.00093	.00010	.01987	.04229	.00218	-.08965	.00151
#3	.00015	.00002	-.00009	.01294	.20154	.00102	.09023	.00113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00188**	**.04883**	**.00055**	**.00620**	**-.00235**	**-.00116**	**.00621**	**.00071**
Stddev	.00047	.00950	.00034	.00186	.00127	.00391	.00979	.00029
%RSD	25.115	19.460	62.211	29.933	54.281	337.62	157.71	40.450
#1	.00138	.03930	.00037	.00801	-.00095	-.00325	-.00115	.00092
#2	.00194	.04888	.00095	.00630	-.00266	.00335	.00246	.00082
#3	.00232	.05830	.00033	.00430	-.00344	-.00357	.01732	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 14:12:27 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00108	.00026	-.00208	-.00069	-.00014	-.00007	.00042
Stddev	.00137	.00012	.00089	.00375	.00011	.00016	.00033
%RSD	127.39	44.068	42.741	546.89	80.729	233.21	78.883
#1	-.00002	.00013	-.00189	.00363	-.00006	-.00022	.00039
#2	.00064	.00033	-.00130	-.00318	-.00026	-.00009	.00010
#3	.00262	.00033	-.00305	-.00250	-.00009	.00010	.00076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8026.3	46832.	3019.4
Stddev	38.7	175.	16.9
%RSD	.48212	.37290	.55903
#1	8019.8	46693.	3038.0
#2	8067.9	46775.	3005.0
#3	7991.3	47028.	3015.3

Approved: June 15, 2016

Sample Name: L1606043801 Acquired: 6/14/2016 14:16:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00165**	**18.316**	**.01107**	**.04675**	**.24795**	**.00123**	**34.387**	**.00070**
Stddev	.00207	.005	.00205	.00153	.00128	.00004	.043	.00027
%RSD	126.09	.02538	18.509	3.2756	.51748	3.6422	.12484	38.470
#1	-.00021	18.321	.00872	.04595	.24937	.00120	34.420	.00099
#2	.00388	18.312	.01205	.04578	.24687	.00128	34.339	.00045
#3	.00127	18.317	.01245	.04851	.24761	.00121	34.404	.00068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01989**	**.02761**	**.05076**	**30.488**	**5.6678**	**.02554**	**8.3554**	**1.4174**
Stddev	.00035	.00051	.00115	.151	.0258	.00282	.1122	.0016
%RSD	1.7556	1.8359	2.2696	.49600	.45490	11.029	1.3425	.11480
#1	.02010	.02783	.04943	30.662	5.6387	.02237	8.4726	1.4179
#2	.02008	.02703	.05139	30.383	5.6767	.02773	8.3448	1.4188
#3	.01949	.02797	.05146	30.421	5.6880	.02653	8.2490	1.4156
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01045**	**37.585**	**.04256**	**.60322**	**.06107**	**-.00016**	**.00245**	**23.598**
Stddev	.00003	.051	.00062	.00847	.00290	.00213	.00511	.032
%RSD	.25053	.13511	1.4618	1.4044	4.7555	1293.5	208.89	.13456
#1	.01048	37.637	.04280	.59622	.05778	.00196	.00627	23.564
#2	.01043	37.536	.04185	.60079	.06328	-.00015	.00443	23.603
#3	.01044	37.581	.04303	.61264	.06216	-.00230	-.00336	23.627
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606043801 Acquired: 6/14/2016 14:16:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00637	.22090	.19006	.00477	.03490	.30164	.00430
Stddev	.00082	.00022	.01097	.00202	.00052	.00091	.00035
%RSD	12.836	.10049	5.7697	42.372	1.5013	.30290	8.0336
#1	.00621	.22112	.18150	.00542	.03436	.30069	.00414
#2	.00726	.22090	.18626	.00639	.03541	.30172	.00406
#3	.00565	.22068	.20242	.00251	.03493	.30251	.00469
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7828.9	45876.	3028.8
Stddev	16.2	108.	7.8
%RSD	.20630	.23627	.25736
#1	7844.9	45985.	3029.3
#2	7812.6	45875.	3036.3
#3	7829.1	45768.	3020.7

Approved: June 15, 2016

Sample Name: L1606048201 Acquired: 6/14/2016 14:20:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00085	.07848	.00518	.02726	.06388	-.00011	28.356	.01239
Stddev	.00064	.00608	.00266	.00275	.00096	.00010	.053	.00052
%RSD	75.865	7.7426	51.490	10.105	1.5100	94.103	.18745	4.1888
#1	-.00018	.07727	.00716	.02410	.06442	.00001	28.398	.01182
#2	-.00089	.08507	.00215	.02851	.06445	-.00016	28.296	.01253
#3	-.00146	.07310	.00621	.02916	.06276	-.00018	28.375	.01283
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00044	.00153	.07861	.04250	1.1855	.00277	1.5701	.18421
Stddev	.00011	.00083	.00132	.03136	.1146	.00370	.0638	.00117
%RSD	24.371	53.840	1.6782	73.778	9.6697	133.39	4.0625	.63391
#1	.00049	.00102	.07937	.03282	1.3150	.00132	1.5014	.18286
#2	.00032	.00110	.07937	.07756	1.1447	.00002	1.5812	.18488
#3	.00052	.00249	.07709	.01713	1.0969	.00698	1.6275	.18489
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	145.37	.00618	.18213	.00681	-.00178	-.00056	.77992
Stddev	.00009	.04	.00049	.00367	.00330	.00142	.00695	.00200
%RSD	35.255	.02705	7.9203	2.0166	48.520	79.994	1239.9	.25675
#1	-.00022	145.40	.00568	.18637	.00820	-.00341	-.00102	.78213
#2	-.00038	145.37	.00666	.17994	.00919	-.00110	-.00726	.77824
#3	-.00020	145.33	.00620	.18007	.00304	-.00082	.00660	.77938
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606048201 Acquired: 6/14/2016 14:20:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00209	.11794	-.00157	.00100	.00008	3.4861	.00045
Stddev	.00035	.00088	.00575	.00326	.00054	.0158	.00026
%RSD	16.953	.74517	367.13	327.49	642.94	.45166	57.234
#1	.00248	.11895	-.00570	.00132	-.00035	3.4688	.00064
#2	.00178	.11737	-.00400	.00408	-.00008	3.4900	.00016
#3	.00201	.11748	.00500	-.00241	.00068	3.4996	.00055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7671.0	44631.	2991.1
Stddev	8.3	158.	9.8
%RSD	.10797	.35449	.32775
#1	7677.5	44580.	2982.7
#2	7673.9	44505.	3001.9
#3	7661.7	44809.	2988.8

Approved: June 15, 2016

Sample Name: L1606050403 Acquired: 6/14/2016 14:24:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	.05079	-.00123	.00648	.85105	.00009	19.884	.00060
Stddev	.00104	.00255	.00161	.00149	.00455	.00011	.174	.00017
%RSD	242.60	5.0206	131.10	23.050	.53491	123.44	.87263	28.694
#1	.00162	.05313	-.00181	.00807	.85592	.00012	20.072	.00057
#2	-.00008	.05116	.00059	.00625	.85035	-.00003	19.849	.00079
#3	-.00026	.04807	-.00247	.00511	.84689	.00018	19.731	.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00246	.11916	.00293	.80214	1.9322	.05798	21.538	.08731
Stddev	.00010	.00051	.00104	.02673	.0534	.00348	.052	.00209
%RSD	4.0606	.42953	35.447	3.3319	2.7623	6.0091	.24147	2.3890
#1	.00238	.11862	.00366	.79050	1.9822	.06056	21.593	.08943
#2	.00257	.11963	.00340	.78321	1.8760	.05402	21.533	.08725
#3	.00243	.11923	.00174	.83271	1.9385	.05937	21.489	.08526
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	103.53	.06954	.07095	.00117	-.00111	.00156	27.182
Stddev	.00005	.66	.00176	.00512	.00059	.00188	.00471	.081
%RSD	9.2590	.63559	2.5372	7.2097	49.911	169.06	302.33	.29633
#1	.00061	104.18	.06951	.07437	.00075	.00095	.00637	27.102
#2	.00053	103.56	.07132	.06507	.00184	-.00156	-.00303	27.263
#3	.00052	102.86	.06780	.07342	.00093	-.00273	.00133	27.181
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606050403 Acquired: 6/14/2016 14:24:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00123**	**.51113**	**-.00066**	**.00109**	**.00001**	**.01901**	**.00040**
Stddev	.00015	.00256	.00586	.00237	.00050	.00009	.00049
%RSD	12.178	.50066	889.16	217.32	8878.0	.49488	124.24
#1	.00119	.51387	.00499	.00093	.00019	.01891	.00079
#2	.00140	.51072	-.00025	.00354	.00039	.01903	.00055
#3	.00111	.50881	-.00672	-.00120	-.00057	.01909	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7629.8**	**44279.**	**2952.6**
Stddev	27.8	185.	27.3
%RSD	.36469	.41871	.92453
#1	7651.8	44069.	2923.9
#2	7639.1	44421.	2978.2
#3	7598.5	44348.	2955.6

Approved: June 15, 2016

Sample Name: L1606050403PS Acquired: 6/14/2016 14:28:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572544-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20301**	**5.2332**	**.20434**	**1.0191**	**1.2721**	**.02548**	**22.935**	**.02626**
Stddev	.00168	.0230	.00109	.0066	.0014	.00008	.154	.00007
%RSD	.82639	.43963	.53159	.65216	.11363	.32356	.66937	.28400
#1	.20367	5.2532	.20556	1.0189	1.2738	.02539	22.784	.02630
#2	.20426	5.2384	.20401	1.0259	1.2710	.02555	22.931	.02631
#3	.20111	5.2081	.20346	1.0126	1.2717	.02551	23.091	.02618
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10490**	**.36618**	**.25717**	**2.7294**	**26.890**	**.56771**	**24.122**	**.32859**
Stddev	.00058	.00261	.00314	.0179	.024	.00044	.167	.00185
%RSD	.55188	.71375	1.2227	.65570	.08857	.07694	.69034	.56393
#1	.10537	.36918	.26040	2.7201	26.863	.56752	24.123	.33034
#2	.10426	.36493	.25701	2.7182	26.900	.56739	23.956	.32665
#3	.10509	.36442	.25411	2.7501	26.907	.56821	24.289	.32876
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52374**	**118.31**	**.31687**	**5.0964**	**.25698**	**.61196**	**.20359**	**26.803**
Stddev	.00137	.10	.00202	.0159	.00328	.00379	.00561	.038
%RSD	.26119	.08347	.63803	.31259	1.2746	.61899	2.7532	.14288
#1	.52532	118.25	.31900	5.1130	.25917	.60877	.19721	26.839
#2	.52299	118.27	.31662	5.0813	.25321	.61615	.20585	26.763
#3	.52292	118.43	.31498	5.0948	.25855	.61096	.20771	26.809
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606050403PS Acquired: 6/14/2016 14:28:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572544-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51195**	**.95388**	**.50326**	**.25080**	**.51838**	**.53084**	**.00305**
Stddev	.00047	.00310	.00682	.00349	.00242	.00090	.00062
%RSD	.09277	.32492	1.3555	1.3911	.46705	.17019	20.386
#1	.51249	.95571	.51082	.25310	.51944	.53188	.00234
#2	.51159	.95030	.49756	.25252	.52009	.53041	.00332
#3	.51177	.95563	.50140	.24679	.51561	.53024	.00349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7614.3**	**44074.**	**2952.6**
Stddev	10.9	75.	8.0
%RSD	.14253	.16944	.27154
#1	7623.5	44151.	2960.7
#2	7616.9	44002.	2952.6
#3	7602.3	44068.	2944.6

Approved: June 15, 2016

Sample Name: L1606050403SDL Acquired: 6/14/2016 14:32:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG572544-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00062	.00700	.00023	.00421	.16210	.00006	3.7959	-.00001
Stddev	.00089	.00370	.00210	.00182	.00087	.00014	.0433	.00023
%RSD	143.33	52.855	895.70	43.236	.53705	240.43	1.1397	1571.9
#1	-.00122	.00299	.00233	.00623	.16311	-.00003	3.7819	.00012
#2	-.00106	.01029	.00024	.00369	.16161	.00022	3.8444	-.00028
#3	.00040	.00773	-.00187	.00270	.16159	-.00001	3.7614	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.02231	.00117	.16394	.28556	.00746	4.1825	.01651
Stddev	.00020	.00034	.00099	.01427	.08847	.00125	.1080	.00110
%RSD	41.665	1.5310	85.024	8.7072	30.980	16.695	2.5820	6.6413
#1	.00056	.02230	.00003	.15170	.19046	.00870	4.1005	.01615
#2	.00026	.02197	.00159	.17962	.30082	.00747	4.1422	.01774
#3	.00064	.02265	.00188	.16051	.36540	.00621	4.3049	.01564
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	19.761	.01384	.01190	-.00090	.00033	.00273	5.1779
Stddev	.00042	.075	.00067	.00387	.00193	.00212	.00368	.0337
%RSD	229.98	.37868	4.8657	32.494	212.86	644.73	134.54	.65079
#1	.00053	19.690	.01361	.01305	-.00219	.00272	.00525	5.1686
#2	-.00028	19.839	.01460	.00759	-.00183	-.00130	-.00149	5.2153
#3	.00029	19.753	.01332	.01507	.00131	-.00043	.00444	5.1499
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606050403SDL Acquired: 6/14/2016 14:32:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG572544-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00124**	**.09713**	**.00696**	**.00230**	**.00076**	**.00430**	**-.00038**
Stddev	.00064	.00077	.00455	.00259	.00065	.00012	.00044
%RSD	51.460	.79200	65.353	112.64	85.408	2.8192	115.86
#1	.00072	.09662	.01075	.00054	.00116	.00431	-.00081
#2	.00105	.09801	.00192	.00108	.00110	.00417	-.00041
#3	.00196	.09675	.00821	.00528	.00001	.00441	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8107.0**	**46979.**	**3023.3**
Stddev	27.4	142.	14.8
%RSD	.33816	.30134	.48798
#1	8077.2	46827.	3030.2
#2	8131.1	47107.	3006.4
#3	8112.7	47003.	3033.4

Approved: June 15, 2016

Sample Name: L1606050403SDL Acquired: 6/14/2016 14:36:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG572544-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	-.00070	-.00123	.00078	.03286	.00005	.73716	-.00006
Stddev	.00087	.00243	.00190	.00359	.00141	.00008	.04250	.00018
%RSD	117.38	347.31	155.02	460.34	4.2955	150.55	5.7652	295.61
#1	.00004	.00067	-.00340	.00492	.03133	.00014	.69290	-.00021
#2	.00171	-.00351	-.00038	-.00118	.03411	.00004	.77765	.00015
#3	.00047	.00073	.00011	-.00140	.03314	-.00002	.74092	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	.00544	.00053	.03295	-.00023	.00065	.86507	.00262
Stddev	.00020	.00120	.00089	.00496	.04743	.00164	.03420	.00146
%RSD	1719.1	21.985	168.02	15.056	20796.	251.35	3.9539	55.605
#1	.00013	.00409	-.00049	.03130	-.00117	.00055	.90454	.00148
#2	-.00024	.00587	.00096	.02903	.04767	.00234	.84646	.00426
#3	.00008	.00637	.00112	.03853	-.04718	-.00093	.84420	.00212
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	3.9177	.00340	.01257	-.00178	.00162	-.00304	.97233
Stddev	.00040	.0387	.00093	.00205	.00154	.00458	.00214	.02609
%RSD	103.20	.98745	27.225	16.330	86.252	281.99	70.452	2.6830
#1	.00001	3.8792	.00258	.01425	-.00106	.00668	-.00386	1.0024
#2	-.00038	3.9173	.00323	.01028	-.00355	.00045	-.00465	.95901
#3	-.00079	3.9566	.00440	.01316	-.00074	-.00225	-.00061	.95560
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606050403SDL Acquired: 6/14/2016 14:36:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG572544-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00062	.01898	.00344	.00253	-.00028	.00097	-.00018
Stddev	.00081	.00011	.00184	.00165	.00040	.00018	.00010
%RSD	132.03	.56699	53.424	65.164	141.54	18.829	57.425
#1	.00067	.01897	.00452	.00157	-.00047	.00096	-.00029
#2	.00140	.01888	.00448	.00443	-.00056	.00115	-.00008
#3	-.00022	.01909	.00132	.00159	.00018	.00079	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8471.1	47626.	3070.0
Stddev	143.8	163.	28.6
%RSD	1.6969	.34178	.93160
#1	8308.3	47801.	3098.4
#2	8524.6	47479.	3070.5
#3	8580.5	47598.	3041.2

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 14:40:17 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38909**	**9.6925**	**.37921**	**.48367**	**.94871**	**.04815**	**9.4357**	**.04840**
Stddev	.00150	.0208	.00565	.00297	.00487	.00025	.0808	.00058
%RSD	.38504	.21460	1.4889	.61360	.51314	.52837	.85669	1.1917
#1	.39014	9.6698	.38569	.48326	.95060	.04785	9.4155	.04905
#2	.38738	9.6973	.37533	.48682	.95236	.04830	9.5247	.04821
#3	.38976	9.7106	.37660	.48092	.94318	.04829	9.3668	.04794
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19468**	**.48259**	**.48474**	**3.7712**	**47.215**	**.94232**	**9.3385**	**.47111**
Stddev	.00042	.00173	.00305	.0229	.122	.00410	.0059	.00172
%RSD	.21660	.35788	.62936	.60684	.25821	.43465	.06276	.36550
#1	.19514	.48063	.48724	3.7604	47.310	.94206	9.3397	.47065
#2	.19430	.48329	.48134	3.7975	47.258	.94654	9.3436	.47301
#3	.19461	.48386	.48565	3.7557	47.078	.93837	9.3321	.46966
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.96477**	**47.183**	**.48606**	**9.6057**	**.48725**	**1.1594**	**.37971**	**4.8773**
Stddev	.00630	.258	.00293	.0486	.00226	.0115	.00691	.0230
%RSD	.65277	.54583	.60290	.50597	.46433	.98923	1.8187	.47161
#1	.97196	47.262	.48785	9.6534	.48882	1.1722	.38287	4.9025
#2	.96023	47.392	.48268	9.5562	.48826	1.1500	.38447	4.8575
#3	.96213	46.895	.48766	9.6074	.48465	1.1559	.37179	4.8718
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 14:40:17 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.96127	.94929	.93896	.48362	.96581	.96673	.96510
Stddev	.00529	.00476	.00767	.00467	.00268	.00448	.00130
%RSD	.55082	.50164	.81734	.96621	.27763	.46292	.13436
#1	.96644	.95118	.94655	.48681	.96273	.97185	.96425
#2	.95586	.95281	.93912	.47825	.96768	.96354	.96659
#3	.96151	.94387	.93121	.48579	.96700	.96481	.96446
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8074.8	46641.	3084.8
Stddev	12.8	133.	18.4
%RSD	.15824	.28428	.59486
#1	8061.4	46785.	3088.3
#2	8086.9	46523.	3064.9
#3	8076.2	46615.	3101.1

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 14:43:59 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.00075	.00026	.00206	.00087	.00006	-.00390	-.00007
Stddev	.00156	.00812	.00068	.00160	.00062	.00004	.02599	.00036
%RSD	1035.0	1088.9	258.25	77.620	72.146	75.951	665.62	529.10
#1	.00100	.00596	-.00046	.00365	.00132	.00010	-.03020	.00015
#2	-.00165	.00489	.00037	.00045	.00112	.00002	-.00329	.00014
#3	.00111	-.00861	.00089	.00207	.00015	.00005	.02177	-.00049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00061	.00026	-.00361	-.07520	.00069	.01969	-.00125
Stddev	.00016	.00033	.00088	.00455	.07635	.00199	.00698	.00017
%RSD	124.76	53.924	334.68	126.06	101.53	290.03	35.426	13.319
#1	-.00005	.00082	.00126	-.00811	.01272	-.00150	.02673	-.00138
#2	.00026	.00023	-.00042	-.00369	-.11353	.00238	.01277	-.00130
#3	.00016	.00077	-.00005	.00098	-.12479	.00117	.01957	-.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00166	-.00275	.00037	.00208	-.00144	.00044	.00560	.00117
Stddev	.00029	.02001	.00045	.00113	.00140	.00241	.00185	.00112
%RSD	17.264	727.08	119.88	54.385	97.115	551.63	32.972	95.725
#1	.00136	.01876	.00036	.00297	-.00290	.00006	.00774	.00241
#2	.00169	-.00621	.00083	.00081	-.00133	-.00176	.00455	.00091
#3	.00194	-.02082	-.00007	.00245	-.00010	.00302	.00452	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 14:43:59 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00012**	**.00020**	**.00268**	**.00090**	**-.00002**	**.00007**	**.00079**
Stddev	.00049	.00031	.00608	.00338	.00092	.00007	.00022
%RSD	403.62	153.43	226.69	373.90	5032.9	104.09	27.352
#1	-.00049	.00055	-.00003	.00467	.00008	-.00001	.00054
#2	-.00032	.00013	.00964	-.00187	.00085	.00009	.00093
#3	.00044	-.00007	-.00157	-.00008	-.00099	.00013	.00090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8172.0**	**47648.**	**3078.1**
Stddev	64.9	350.	9.5
%RSD	.79392	.73460	.30987
#1	8101.1	47961.	3087.4
#2	8228.4	47714.	3068.4
#3	8186.4	47270.	3078.7

Approved: June 15, 2016

Sample Name: LLCCV Acquired: 6/14/2016 14:48:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00979	.16139	.00635	.07835	.00792	.00157	.38322	.00073
Stddev	.00179	.00594	.00207	.00088	.00061	.00003	.05584	.00011
%RSD	18.313	3.6833	32.545	1.1236	7.6693	2.1807	14.570	14.738
#1	.01185	.15625	.00826	.07743	.00850	.00157	.31895	.00084
#2	.00863	.16790	.00664	.07918	.00729	.00160	.41981	.00062
#3	.00887	.16001	.00415	.07843	.00796	.00153	.41090	.00074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00370	.00385	.00386	.08058	.67879	.07657	.33166	.00633
Stddev	.00039	.00073	.00103	.01502	.02336	.00300	.05512	.00237
%RSD	10.417	19.063	26.542	18.641	3.4417	3.9149	16.621	37.471
#1	.00414	.00336	.00293	.08770	.68168	.07837	.32433	.00375
#2	.00347	.00349	.00371	.06332	.65412	.07825	.28056	.00681
#3	.00349	.00469	.00496	.09071	.70057	.07311	.39008	.00842
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00736	.38207	.01611	.75146	.00769	.07705	.01527	.76721
Stddev	.00029	.00935	.00057	.01311	.00339	.00101	.00082	.00931
%RSD	3.8806	2.4471	3.5650	1.7447	44.017	1.3142	5.3546	1.2136
#1	.00703	.39162	.01658	.76590	.00507	.07696	.01442	.77085
#2	.00753	.38164	.01628	.74819	.01152	.07608	.01535	.77415
#3	.00751	.37294	.01547	.74030	.00650	.07810	.01605	.75663
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: LLCCV Acquired: 6/14/2016 14:48:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38819**	**.03866**	**.03101**	**.14787**	**.00784**	**.01607**	**.04257**
Stddev	.00667	.00044	.00342	.00413	.00022	.00032	.00135
%RSD	1.7177	1.1337	11.035	2.7928	2.8059	1.9833	3.1768
#1	.39344	.03817	.03295	.14966	.00775	.01637	.04102
#2	.39045	.03879	.02706	.15080	.00810	.01611	.04352
#3	.38069	.03902	.03303	.14314	.00769	.01574	.04317
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8296.2**	**47601.**	**3111.3**
Stddev	90.1	568.	13.6
%RSD	1.0858	1.1931	.43636
#1	8224.2	47445.	3122.5
#2	8267.2	47127.	3096.2
#3	8397.2	48230.	3115.2

Approved: June 15, 2016

Sample Name: LLCCV Acquired: 6/14/2016 14:51:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02082**	**.39736**	**.01945**	**.19110**	**.01962**	**.00387**	**.96551**	**.00167**
Stddev	.00017	.01047	.00274	.00416	.00055	.00004	.03154	.00022
%RSD	.83706	2.6349	14.094	2.1769	2.8156	.99294	3.2670	13.376
#1	.02064	.38704	.01648	.18827	.01923	.00383	.99855	.00181
#2	.02085	.40798	.02189	.18915	.01938	.00389	.93571	.00142
#3	.02098	.39707	.01998	.19587	.02025	.00390	.96228	.00180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00938**	**.00996**	**.01040**	**.19547**	**1.7662**	**.18239**	**.96403**	**.01771**
Stddev	.00030	.00104	.00168	.01682	.0591	.00312	.01940	.00042
%RSD	3.1795	10.411	16.126	8.6059	3.3449	1.7112	2.0125	2.3793
#1	.00910	.01049	.01233	.18962	1.7045	.18589	.95579	.01806
#2	.00969	.01062	.00947	.18236	1.8222	.17990	.95011	.01724
#3	.00936	.00877	.00939	.21444	1.7720	.18138	.98619	.01784
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01760**	**.94036**	**.03831**	**1.7960**	**.01636**	**.18198**	**.03416**	**1.8563**
Stddev	.00047	.01118	.00083	.0228	.00371	.00232	.00543	.0273
%RSD	2.6648	1.1889	2.1625	1.2682	22.677	1.2728	15.891	1.4732
#1	.01714	.92881	.03808	1.7714	.01289	.17976	.03561	1.8275
#2	.01759	.94114	.03923	1.8164	.02027	.18180	.03872	1.8819
#3	.01808	.95113	.03762	1.8002	.01593	.18438	.02816	1.8594
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: LLCCV Acquired: 6/14/2016 14:51:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.93317	.09426	.05656	.35433	.01897	.03880	.09721
Stddev	.00966	.00085	.00744	.00369	.00021	.00070	.00052
%RSD	1.0356	.90449	13.146	1.0417	1.1135	1.7944	.53191
#1	.92360	.09447	.05025	.35013	.01894	.03800	.09672
#2	.94292	.09332	.05468	.35578	.01878	.03925	.09717
#3	.93298	.09498	.06476	.35707	.01920	.03916	.09775
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8395.4	47540.	3117.8
Stddev	101.0	351.	5.0
%RSD	1.2028	.73785	.16055
#1	8511.1	47945.	3121.8
#2	8325.2	47345.	3119.5
#3	8349.9	47331.	3112.2

Approved: June 15, 2016

Sample Name: L1606040301 Acquired: 6/14/2016 14:55:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00044**	**.11669**	**.00278**	**.03288**	**.23711**	**-.00002**	F **320.06**
Stddev	.00109	.00421	.00460	.00346	.00353	.00004	4.65
%RSD	246.41	3.6090	165.31	10.508	1.4879	222.16	1.4526
#1	-.00074	.11285	.00442	.02891	.23351	.00000	314.89
#2	.00140	.11603	.00634	.03458	.24057	-.00006	323.90
#3	.00067	.12119	-.00241	.03516	.23725	.00001	321.38
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.00073**	**.00156**	**.00943**	**.00460**	**259.36**	**1.0897**
Stddev	.00013	.00018	.00069	.00107	.01334	3.30	.0182
%RSD	542.41	24.811	43.871	11.301	290.11	1.2740	1.6702
#1	-.00008	.00089	.00190	.00830	.01810	255.75	1.0703
#2	.00012	.00054	.00077	.01042	.00426	262.24	1.1064
#3	-.00012	.00076	.00201	.00955	-.00857	260.09	1.0924
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.03325**	**.00101**	**.00395**	F **306.28**	**.00090**	**.05246**	**.01346**
Stddev	.05226	.00381	.00023	4.34	.00022	.00477	.00396
%RSD	157.20	378.83	5.8151	1.4154	24.384	9.1005	29.393
#1	-.08555	.00356	.00372	301.61	.00109	.05152	.01000
#2	-.03318	-.00337	.00418	310.18	.00066	.05763	.01778
#3	.01898	.00283	.00395	307.05	.00094	.04822	.01261
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 15, 2016

Sample Name: L1606040301 Acquired: 6/14/2016 14:55:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00314	.01843	.13831	.00117	.39726	F -.04397	.00046
Stddev	.00134	.00502	.00251	.00077	.00693	.00264	.00412
%RSD	42.657	27.220	1.8138	65.252	1.7446	5.9945	905.34
#1	.00159	.02144	.13974	.00041	.38942	-.04171	-.00100
#2	.00386	.02121	.13977	.00194	.40258	-.04687	-.00274
#3	.00396	.01264	.13541	.00118	.39977	-.04332	.00511
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00019	.17944	.00124
Stddev	.00045	.00095	.00012
%RSD	234.31	.52849	10.038
#1	.00014	.17876	.00129
#2	-.00001	.18052	.00109
#3	-.00071	.17903	.00132
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7268.2	42211.	2905.0
Stddev	19.3	805.	36.6
%RSD	.26544	1.9060	1.2612
#1	7285.4	43079.	2937.7
#2	7247.4	41490.	2865.4
#3	7271.8	42066.	2912.0

Approved: June 15, 2016

Sample Name: L1606043701 Acquired: 6/14/2016 14:59:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	.20249	.00014	.01592	.04863	-.00003	46.657	-.00009
Stddev	.00154	.01292	.00087	.00166	.00064	.00002	1.430	.00036
%RSD	258.11	6.3819	607.42	10.410	1.3109	55.475	3.0651	379.11
#1	-.00095	.21556	.00015	.01725	.04934	-.00005	47.944	.00028
#2	.00214	.20218	.00101	.01407	.04811	-.00002	46.909	-.00013
#3	.00060	.18972	-.00073	.01645	.04843	-.00002	45.117	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00094	.00181	.16114	.91914	.00368	8.4800	.00804
Stddev	.00024	.00066	.00033	.01534	.02724	.00649	.1670	.00161
%RSD	432.95	70.175	18.521	9.5207	2.9635	176.31	1.9688	20.032
#1	.00012	.00062	.00144	.17156	.93200	.00684	8.6616	.00898
#2	-.00021	.00169	.00189	.16834	.88785	.00799	8.4452	.00897
#3	.00026	.00050	.00209	.14353	.93757	-.00378	8.3332	.00618
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	3.4956	.00161	.00083	-.00103	-.00270	.00463	4.2291
Stddev	.00022	.1165	.00055	.00923	.00111	.00159	.00420	.0240
%RSD	39.374	3.3333	34.071	1116.8	107.14	58.829	90.524	.56690
#1	-.00049	3.6042	.00154	.00362	-.00120	-.00187	.00870	4.2055
#2	-.00038	3.5101	.00218	-.00948	-.00205	-.00169	.00032	4.2284
#3	-.00080	3.3725	.00109	.00834	.00015	-.00452	.00489	4.2534
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606043701 Acquired: 6/14/2016 14:59:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00142	.12394	.00401	.00187	.00065	.00122	.00068
Stddev	.00118	.00388	.00562	.00191	.00063	.00010	.00038
%RSD	82.618	3.1280	140.20	102.44	97.242	7.9647	55.336
#1	.00044	.12713	.00176	.00132	.00136	.00129	.00025
#2	.00111	.12505	.01040	.00029	.00019	.00111	.00084
#3	.00273	.11962	-.00014	.00400	.00039	.00125	.00096
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7666.9	44676.	2932.8
Stddev	38.9	621.	82.3
%RSD	.50787	1.3906	2.8070
#1	7702.9	43965.	2855.3
#2	7672.3	44948.	2924.0
#3	7625.6	45114.	3019.3

Approved: June 15, 2016

Sample Name: L1606044201 Acquired: 6/14/2016 15:03:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.06775	-.00099	.01077	.03792	-.00001	35.951	-.00002
Stddev	.00142	.00217	.00121	.00116	.00058	.00005	.612	.00015
%RSD	348.65	3.2042	122.65	10.798	1.5279	465.80	1.7012	664.77
#1	.00196	.06598	.00017	.01186	.03726	-.00007	35.720	.00013
#2	.00012	.07017	-.00089	.01091	.03837	.00001	36.644	-.00003
#3	-.00085	.06710	-.00225	.00954	.03812	.00003	35.488	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00012	.00190	.00069	.05905	.42169	.00245	3.0962	.00091
Stddev	.00010	.00056	.00055	.02738	.02928	.00330	.1260	.00190
%RSD	80.494	29.481	79.975	46.366	6.9432	134.62	4.0706	208.96
#1	-.00020	.00126	.00073	.03276	.45069	.00189	2.9539	.00060
#2	-.00014	.00230	.00012	.05700	.42224	-.00053	3.1938	.00294
#3	-.00001	.00214	.00121	.08740	.39214	.00600	3.1408	-.00082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00034	2.0353	.00145	.00938	-.00048	.00198	.00441	3.1225
Stddev	.00019	.0518	.00087	.00904	.00251	.00080	.00294	.0016
%RSD	55.912	2.5449	59.807	96.346	525.99	40.298	66.533	.05125
#1	-.00049	1.9937	.00071	.01109	-.00213	.00290	.00200	3.1219
#2	-.00013	2.0933	.00123	.01744	.00241	.00157	.00768	3.1213
#3	-.00042	2.0188	.00240	-.00039	-.00170	.00147	.00356	3.1243
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606044201 Acquired: 6/14/2016 15:03:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.07580	.00001	-.00149	.00037	.00103	.00011
Stddev	.00073	.00107	.00444	.00076	.00054	.00017	.00074
%RSD	234.83	1.4172	51040.	51.307	145.88	16.090	641.66
#1	-.00003	.07488	-.00391	-.00109	.00088	.00100	-.00028
#2	.00114	.07698	-.00090	-.00101	.00042	.00088	-.00035
#3	-.00019	.07554	.00484	-.00237	-.00019	.00121	.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7655.1	45324.	2926.6
Stddev	29.2	249.	58.7
%RSD	.38133	.55021	2.0066
#1	7676.9	45217.	2926.8
#2	7666.3	45609.	2867.8
#3	7621.9	45147.	2985.2

Approved: June 15, 2016

Sample Name: L1606044202 Acquired: 6/14/2016 15:07:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00071	5.0155	.00085	.01962	.10381	.00031	39.957	.00007
Stddev	.00079	.0624	.00173	.00170	.00182	.00003	.627	.00016
%RSD	111.37	1.2437	203.52	8.6473	1.7492	9.8758	1.5704	222.28
#1	.00002	5.0432	.00250	.02129	.10566	.00030	40.269	-.00011
#2	-.00155	4.9441	.00099	.01968	.10375	.00028	40.367	.00015
#3	-.00061	5.0593	-.00094	.01790	.10203	.00034	39.235	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00219	.00739	.00574	6.1191	1.5761	.00646	7.3380	.11606
Stddev	.00008	.00089	.00034	.0746	.0682	.00451	.0440	.00358
%RSD	3.8501	12.059	6.0032	1.2197	4.3287	69.752	.59930	3.0856
#1	.00228	.00660	.00556	6.1907	1.6008	.00290	7.3655	.11479
#2	.00219	.00836	.00614	6.1247	1.6286	.01153	7.3612	.12010
#3	.00211	.00723	.00552	6.0418	1.4990	.00496	7.2873	.11328
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	3.1686	.00652	.09920	.00355	-.00101	.00107	10.533
Stddev	.00027	.0466	.00088	.00648	.00250	.00236	.00267	.025
%RSD	263.85	1.4714	13.431	6.5323	70.426	232.59	249.65	.24009
#1	.00020	3.2130	.00712	.09543	.00123	-.00323	.00091	10.515
#2	-.00032	3.1727	.00552	.09549	.00620	.00146	-.00152	10.521
#3	-.00019	3.1200	.00693	.10668	.00323	-.00126	.00381	10.562
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606044202 Acquired: 6/14/2016 15:07:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00079	.11398	.05807	.00114	.00826	.03322	.00109
Stddev	.00157	.00167	.00612	.00182	.00050	.00019	.00037
%RSD	199.48	1.4686	10.542	159.45	6.0809	.58566	33.428
#1	.00158	.11525	.05991	.00303	.00851	.03341	.00151
#2	.00179	.11461	.05123	.00098	.00768	.03302	.00096
#3	-.00102	.11208	.06305	-.00059	.00859	.03324	.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7634.9	44727.	2918.7
Stddev	9.8	314.	31.4
%RSD	.12817	.70175	1.0746
#1	7633.5	44505.	2917.5
#2	7645.4	45086.	2887.9
#3	7626.0	44591.	2950.6

Approved: June 15, 2016

Sample Name: L1606044203 Acquired: 6/14/2016 15:11:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	s .00054	s .01992	s .00079	s -.00118	.62846	s .00046
Stddev	.00276	.07964	.00274	.00294	.88673	.00068
%RSD	516.65	399.70	348.55	248.40	141.10	147.45
#1	s .00325	s -.02648	s .00359	s .00146	1.6429	s .00010
#2	.00063	-.02563	.00066	-.00067	.24135	.00003
#3	s -.00228	s .11188	k -.00189	s -.00434	.00111	s .00124
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit						
Low Limit						

Elem	Ca4226	Cd2288	Co2286	Cr2677	Cu2247	Fe2611
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -30.820	s .00004	s .00110	s .00140	s -.00014	k 2.7346
Stddev	49.164	.00019	.00135	.00266	.00100	4.0096
%RSD	159.52	483.93	122.55	190.52	710.88	146.62
#1	-87.516	s -.00017	s .00078	s .00078	s -.00118	k 7.3417
#2	-4.9774	.00017	.00259	-.00090	-.00007	.82745
#3	.0328	k .00012	k -.00005	s .00432	k .00082	k .03457
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	270.00					
Low Limit	-.10000					

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	29.752	F -1.7197	k 13.519	k .30236	s -.00125	F -24.342
Stddev	54.733	1.8429	21.494	.55439	.00062	36.570
%RSD	183.96	107.16	158.98	183.36	50.004	150.23
#1	92.919	-3.6653	k 38.307	k .94211	s -.00196	-66.396
#2	-3.5891	-1.4933	2.2059	-.03735	-.00080	-6.6160
#3	-.07354	-.00043	k .04565	k .00232	k -.00098	-.0131
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit		36.000				270.00
Low Limit		-.10000				-.50000

Approved: June 15, 2016

Sample Name: L1606044203 Acquired: 6/14/2016 15:11:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	s **-.00058**	s **-.01024**	sF **-.00505**	s **.00295**	s **.00306**	s **.01376**
Stddev	.00345	.01054	.01028	.00401	.00551	.03196
%RSD	591.14	102.97	203.73	135.92	179.85	232.32
#1	s -.00452	s -.02193	s -.01686	s .00414	s .00942	s .05066
#2	.00083	-.00146	.00190	.00623	-.00002	-.00396
#3	k .00194	k -.00732	k -.00019	k -.00152	k -.00022	k -.00542
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit			225.00			
Low Limit			-.00500			

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	s **-.00050**	F **-.03956**	kF **-6.3621**	s **-.00132**	s **-.00018**	s **-.00031**
Stddev	.00218	.15821	9.6749	.00091	.00194	.00014
%RSD	434.82	399.95	152.07	69.394	1053.7	44.620
#1	s .00030	-.21371	k -17.496	s -.00139	s -.00009	s -.00015
#2	-.00296	.09528	-1.5844	-.00219	.00171	-.00039
#3	k .00116	-.00024	k -.0054	k -.00037	s -.00217	k -.00039
Check ?	Chk Pass	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit		9.0000	36.000			
Low Limit		-.01000	-.03000			

Elem	Zr3391
Units	ppm
Avg	kF **-.27723**
Stddev	.50436
%RSD	181.93
#1	k -.85940
#2	.02775
#3	k -.00005
Check ?	Chk Fail
High Limit	36.000
Low Limit	-.04000

Approved: June 15, 2016

Sample Name: L1606044203 Acquired: 6/14/2016 15:11:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	^ *****	^ *****	939.44
Stddev	-----	-----	1604.6
%RSD	-----	-----	170.80
#1	^ -----	^ -----	2.742
#2	10803.	61946.	23.363
#3	11948.	^ -----	2792.2

Approved: June 15, 2016

Sample Name: L1606044204 Acquired: 6/14/2016 15:15:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00035	.90382	.00126	.01646	.06374	.00013	38.916	-.00008
Stddev	.00097	.00368	.00341	.00103	.00081	.00012	.215	.00023
%RSD	272.85	.40767	270.34	6.2701	1.2688	94.647	.55343	301.83
#1	.00073	.89997	.00520	.01752	.06458	.00025	38.910	.00019
#2	-.00068	.90731	-.00052	.01546	.06370	.00001	38.704	-.00025
#3	-.00111	.90418	-.00089	.01639	.06296	.00012	39.134	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	.00180	.00686	1.3185	.73503	.00102	7.3251	.04660
Stddev	.00032	.00100	.00056	.0217	.01613	.00271	.0264	.00175
%RSD	59.950	55.538	8.1129	1.6466	2.1949	265.70	.36005	3.7497
#1	.00091	.00085	.00634	1.3024	.75359	.00040	7.3547	.04459
#2	.00031	.00171	.00679	1.3100	.72439	-.00132	7.3167	.04767
#3	.00040	.00284	.00745	1.3432	.72711	.00398	7.3040	.04755
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00033	2.8064	.00247	.05513	.00250	.00200	.00793	4.9379
Stddev	.00054	.0316	.00060	.00939	.00208	.00056	.00531	.0407
%RSD	165.02	1.1270	24.108	17.022	83.219	28.057	66.981	.82438
#1	-.00095	2.8419	.00296	.06417	.00327	.00152	.00197	4.9840
#2	.00008	2.7963	.00266	.05580	.00014	.00185	.00964	4.9070
#3	-.00013	2.7812	.00181	.04543	.00407	.00262	.01217	4.9226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606044204 Acquired: 6/14/2016 15:15:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00162	.12336	.00737	-.00004	.00081	.02701	.00020
Stddev	.00073	.00030	.00493	.00400	.00098	.00014	.00044
%RSD	45.314	.24134	66.822	9146.5	121.00	.50285	221.72
#1	.00132	.12370	.00982	.00257	.00193	.02712	.00002
#2	.00245	.12317	.01060	.00195	.00035	.02704	-.00013
#3	.00108	.12320	.00170	-.00465	.00014	.02686	.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7754.1	45315.	2957.6
Stddev	42.8	241.	20.0
%RSD	.55216	.53105	.67617
#1	7707.7	45257.	2940.2
#2	7762.5	45108.	2979.4
#3	7792.1	45579.	2953.2

Approved: June 15, 2016

Sample Name: L1606044205 Acquired: 6/14/2016 15:20:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00049	.67935	.00094	.01451	.11454	.00004	54.607	.00007
Stddev	.00105	.01333	.00197	.00060	.00113	.00009	.192	.00005
%RSD	216.84	1.9628	209.41	4.1071	.98534	237.97	.35243	81.897
#1	-.00062	.68505	-.00069	.01451	.11548	-.00004	54.798	.00007
#2	.00063	.68889	.00039	.01392	.11485	.00001	54.610	.00001
#3	-.00147	.66411	.00312	.01511	.11329	.00014	54.413	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.00260	.00117	.77831	.74549	.00402	7.3643	.03508
Stddev	.00033	.00046	.00160	.03294	.04549	.00151	.0950	.00178
%RSD	210.03	17.659	136.21	4.2323	6.1016	37.607	1.2902	5.0604
#1	.00047	.00253	-.00046	.74129	.75116	.00498	7.2563	.03661
#2	.00019	.00310	.00274	.80440	.78787	.00228	7.4350	.03313
#3	-.00019	.00219	.00124	.78923	.69743	.00481	7.4015	.03549
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	2.8626	.00154	.03129	.00208	-.00346	.00510	5.3358
Stddev	.00020	.0203	.00043	.00486	.00307	.00175	.00021	.0265
%RSD	154.01	.70797	27.735	15.544	147.86	50.678	4.1587	.49572
#1	.00007	2.8660	.00198	.02813	.00046	-.00147	.00487	5.3137
#2	-.00013	2.8810	.00154	.03689	.00562	-.00479	.00529	5.3651
#3	-.00033	2.8409	.00112	.02884	.00015	-.00412	.00514	5.3286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606044205 Acquired: 6/14/2016 15:20:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00152	.17678	.00473	.00077	.00066	.00321	.00048
Stddev	.00030	.00079	.00381	.00153	.00117	.00019	.00029
%RSD	19.441	.44752	80.498	198.57	177.07	5.9449	59.784
#1	.00124	.17746	.00780	-.00013	-.00000	.00326	.00079
#2	.00149	.17696	.00047	.00253	.00200	.00337	.00022
#3	.00183	.17591	.00592	-.00010	-.00003	.00300	.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7713.4	44825.	2930.5
Stddev	21.8	248.	11.9
%RSD	.28287	.55396	.40531
#1	7736.6	44748.	2927.0
#2	7693.3	44625.	2920.8
#3	7710.4	45103.	2943.8

Approved: June 15, 2016

Sample Name: L1606044206 Acquired: 6/14/2016 15:23:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.78971	-.00105	.02039	.07992	.00008	53.195	-.00010
Stddev	.00155	.00820	.00371	.00081	.00125	.00008	.554	.00029
%RSD	508.09	1.0389	353.17	3.9831	1.5583	100.42	1.0419	282.75
#1	.00023	.79790	.00046	.01948	.08059	.00013	53.801	.00022
#2	.00189	.78149	-.00527	.02104	.08069	-.00001	53.072	-.00034
#3	-.00121	.78974	.00167	.02065	.07848	.00013	52.713	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	.00218	.00231	.87911	1.0840	.00272	6.9008	.03949
Stddev	.00019	.00073	.00097	.03512	.2109	.00171	.0985	.00186
%RSD	73.437	33.617	42.108	3.9953	19.456	62.810	1.4280	4.7025
#1	.00043	.00209	.00140	.91957	1.2558	.00097	6.8220	.03940
#2	.00032	.00150	.00333	.85641	.84863	.00437	6.8691	.03768
#3	.00005	.00296	.00220	.86136	1.1476	.00281	7.0113	.04140
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00047	3.2767	.00138	.04207	-.00010	-.00210	.00767	5.0194
Stddev	.00013	.0160	.00064	.00473	.00080	.00565	.00218	.0064
%RSD	28.605	.48933	46.377	11.253	818.94	268.51	28.392	.12725
#1	-.00057	3.2941	.00064	.03682	-.00100	-.00176	.01018	5.0185
#2	-.00051	3.2735	.00166	.04601	.00051	.00336	.00623	5.0262
#3	-.00032	3.2625	.00182	.04339	.00020	-.00792	.00660	5.0135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606044206 Acquired: 6/14/2016 15:23:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00044	.19373	.00199	.00119	.00131	.01675	.00042
Stddev	.00092	.00071	.00447	.00133	.00002	.00007	.00052
%RSD	209.64	.36464	224.35	111.45	1.5482	.40557	125.48
#1	-.00054	.19434	-.00133	.00085	.00129	.01673	.00092
#2	.00058	.19390	.00023	.00266	.00131	.01683	-.00012
#3	.00128	.19296	.00708	.00007	.00133	.01670	.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7704.3	44843.	2915.4
Stddev	16.8	228.	40.0
%RSD	.21830	.50801	1.3718
#1	7717.5	44737.	2891.9
#2	7685.4	44688.	2892.8
#3	7710.1	45105.	2961.6

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 15:27:59 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37019**	**9.2290**	**.36188**	**.46327**	**.90739**	**.04601**	F **8.9539**
Stddev	.00352	.0830	.00051	.00383	.00395	.00055	.0256
%RSD	.95044	.89904	.14152	.82653	.43543	1.1953	.28644
#1	.36957	9.2356	.36242	.46323	.90732	.04595	8.9702
#2	.37398	9.3084	.36182	.46711	.90347	.04659	8.9243
#3	.36703	9.1429	.36140	.45945	.91138	.04550	8.9671
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
Value							10.000
Range							-10.000%

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04629**	**.18621**	**.46236**	**.46486**	**3.6336**	**45.441**	**.90441**
Stddev	.00013	.00071	.00538	.00058	.0480	.162	.00628
%RSD	.27125	.37872	1.1625	.12502	1.3206	.35748	.69435
#1	.04642	.18549	.46097	.46537	3.6051	45.473	.91153
#2	.04626	.18690	.46830	.46500	3.6068	45.265	.89964
#3	.04617	.18624	.45782	.46423	3.6890	45.585	.90207
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **8.9682**	**.45212**	**.92258**	**45.466**	**.46577**	**9.2421**	**.46721**
Stddev	.0196	.00369	.00353	.238	.00181	.0276	.00534
%RSD	.21844	.81578	.38249	.52331	.38795	.29887	1.1433
#1	8.9475	.44813	.92401	45.430	.46725	9.2441	.46738
#2	8.9707	.45281	.92516	45.249	.46631	9.2686	.47247
#3	8.9864	.45541	.91856	45.720	.46376	9.2135	.46179
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	10.000						
Range	-10.000%						

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 15:27:59 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.1065	.36190	4.6690	.92220	.90503	F .89756	.46070
Stddev	.0037	.01232	.0140	.00277	.00456	.00795	.00212
%RSD	.33129	3.4043	.29997	.30051	.50383	.88590	.46092
#1	1.1081	.36969	4.6626	.92337	.90591	.89217	.46276
#2	1.1091	.36831	4.6851	.92420	.90009	.89383	.46083
#3	1.1023	.34769	4.6594	.91904	.90909	.90670	.45852
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
Value						1.0000	
Range						-10.000%	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.92561	.93083	.93804
Stddev	.01088	.00205	.00891
%RSD	1.1754	.22003	.95026
#1	.92367	.92865	.94614
#2	.93733	.93272	.92849
#3	.91583	.93112	.93949
Check ?	Chk Pass	Chk Pass	Chk Pass
Value			
Range			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8391.5	48659.	3170.6
Stddev	26.5	196.	26.9
%RSD	.31626	.40316	.84886
#1	8395.5	48726.	3156.5
#2	8363.2	48438.	3201.6
#3	8415.8	48813.	3153.5

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 15:31:41 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	.00829	-.00086	.00211	.00086	.00005	.00731	-.00017
Stddev	.00171	.00239	.00363	.00085	.00009	.00009	.02393	.00012
%RSD	322.91	28.835	422.57	40.186	10.518	197.52	327.25	66.290
#1	-.00117	.00574	-.00029	.00137	.00093	.00011	-.01856	-.00026
#2	.00225	.01047	-.00474	.00193	.00089	.00008	.02865	-.00022
#3	.00051	.00865	.00245	.00304	.00076	-.00006	.01185	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	-.00053	.00005	.02835	-.14787	.00015	.01936	-.00097
Stddev	.00030	.00040	.00111	.01256	.07615	.00395	.08605	.00385
%RSD	220.00	75.448	2129.9	44.295	51.500	2718.9	444.45	395.98
#1	.00048	-.00061	.00073	.03420	-.23525	.00325	-.07841	-.00207
#2	-.00002	-.00089	-.00123	.03692	-.09564	-.00430	.08356	-.00415
#3	-.00006	-.00010	.00066	.01394	-.11271	.00148	.05293	.00331
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00178	-.01343	.00079	.00419	-.00178	-.00120	.00084	.00142
Stddev	.00043	.01144	.00060	.00347	.00174	.00401	.00240	.00094
%RSD	24.300	85.175	76.408	82.936	98.074	334.16	286.95	66.123
#1	.00130	-.01354	.00009	.00166	-.00282	.00277	.00165	.00060
#2	.00189	-.02481	.00114	.00814	.00024	-.00526	-.00187	.00123
#3	.00214	-.00194	.00113	.00275	-.00275	-.00111	.00273	.00245
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 15:31:41 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00144**	**-.00015**	**.00829**	**.00071**	**.00060**	**-.00027**	**.00048**
Stddev	.00021	.00025	.00385	.00305	.00095	.00032	.00041
%RSD	14.613	163.08	46.437	430.49	160.23	118.65	85.624
#1	.00121	.00009	.00834	.00148	.00103	.00010	.00005
#2	.00162	-.00013	.01212	.00330	-.00050	-.00049	.00086
#3	.00148	-.00041	.00442	-.00265	.00126	-.00042	.00052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8439.4**	**49045.**	**3190.3**
Stddev	36.7	215.	18.8
%RSD	.43529	.43903	.58776
#1	8448.0	49185.	3203.4
#2	8471.1	48797.	3198.8
#3	8399.1	49153.	3168.8

Approved: June 15, 2016

Sample Name: L1606044301 Acquired: 6/14/2016 15:35:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00083	.94483	-.00077	.01655	.05842	.00010	55.517	.00001
Stddev	.00080	.01282	.00471	.00060	.00033	.00009	.209	.00003
%RSD	95.507	1.3568	611.07	3.6218	.57276	90.815	.37579	373.01
#1	-.00007	.95472	-.00053	.01678	.05819	.00014	55.734	.00001
#2	.00144	.94943	.00381	.01699	.05880	-.00000	55.318	-.00003
#3	.00112	.93035	-.00559	.01587	.05826	.00016	55.497	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.00140	.00161	.82585	1.5152	-.00017	11.041	.02198
Stddev	.00008	.00028	.00042	.00767	.0714	.00158	.206	.00163
%RSD	19.490	19.904	26.087	.92853	4.7105	944.41	1.8614	7.4226
#1	.00039	.00135	.00200	.83241	1.4975	-.00085	11.122	.02056
#2	.00034	.00114	.00116	.81742	1.5938	-.00129	10.807	.02377
#3	.00050	.00169	.00167	.82772	1.4544	.00164	11.193	.02162
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	4.2627	.00174	.03928	.00201	-.00196	.00097	5.0783
Stddev	.00019	.0574	.00030	.00947	.00245	.00241	.00332	.0117
%RSD	107.79	1.3460	17.454	24.109	121.41	123.00	340.48	.23054
#1	.00006	4.2825	.00193	.03192	.00032	-.00293	.00301	5.0875
#2	.00007	4.1981	.00139	.03595	.00090	-.00372	.00277	5.0823
#3	.00039	4.3076	.00189	.04996	.00482	.00079	-.00285	5.0652
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606044301 Acquired: 6/14/2016 15:35:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00087	.12664	.01000	-.00067	.00186	.01953	.00143
Stddev	.00045	.00010	.00269	.00183	.00034	.00002	.00023
%RSD	51.898	.07772	26.930	275.48	18.205	.10556	16.329
#1	.00048	.12675	.00833	-.00275	.00147	.01953	.00148
#2	.00077	.12659	.01310	.00071	.00199	.01950	.00118
#3	.00136	.12658	.00856	.00004	.00211	.01954	.00163
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7648.5	44599.	2914.5
Stddev	13.7	198.	16.7
%RSD	.17869	.44313	.57148
#1	7641.1	44599.	2897.3
#2	7664.3	44401.	2915.7
#3	7640.1	44796.	2930.6

Approved: June 15, 2016

Sample Name: L1606044302 Acquired: 6/14/2016 15:39:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	.31425	-.00280	.01501	.05999	.00004	43.485	.00009
Stddev	.00169	.00500	.00193	.00271	.00104	.00007	.260	.00043
%RSD	277.77	1.5906	68.793	18.086	1.7418	172.00	.59711	457.14
#1	.00194	.31017	-.00058	.01188	.05978	.00010	43.752	-.00030
#2	-.00129	.31276	-.00400	.01667	.06112	.00006	43.472	.00054
#3	.00117	.31983	-.00384	.01648	.05906	-.00004	43.233	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00041	.00018	.43885	.23787	.49483	.00015	5.4956	.00096
Stddev	.00027	.00085	.00144	.01500	.03424	.00236	.0245	.00030
%RSD	65.688	471.53	.32740	6.3079	6.9196	1550.7	.44681	31.612
#1	-.00040	.00091	.43984	.24714	.53194	-.00252	5.4992	.00128
#2	-.00014	.00037	.43951	.22056	.48812	.00103	5.4694	.00068
#3	-.00068	-.00075	.43720	.24590	.46445	.00195	5.5182	.00092
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	3.0559	.00190	.12813	.00381	.00193	-.00055	4.9185
Stddev	.00026	.0336	.00040	.01180	.00387	.00142	.00988	.0138
%RSD	68.764	1.1012	20.993	9.2062	101.58	73.572	1785.6	.28151
#1	-.00066	3.0532	.00162	.13002	.00128	.00266	.01043	4.9342
#2	-.00037	3.0909	.00236	.13887	.00826	.00285	-.00870	4.9078
#3	-.00013	3.0238	.00173	.11551	.00188	.00029	-.00340	4.9136
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606044302 Acquired: 6/14/2016 15:39:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.15898	.00558	.00058	.00106	.09812	.00095
Stddev	.00108	.00135	.00502	.00238	.00029	.00040	.00063
%RSD	330.35	.84703	89.858	410.53	26.892	.40424	66.505
#1	.00004	.15983	.00119	.00319	.00098	.09808	.00035
#2	.00152	.15968	.01105	-.00147	.00138	.09853	.00161
#3	-.00058	.15742	.00451	.00002	.00083	.09774	.00089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7669.7	44854.	2899.8
Stddev	24.4	236.	14.7
%RSD	.31765	.52585	.50829
#1	7666.9	44611.	2885.4
#2	7646.9	44869.	2899.1
#3	7695.4	45082.	2914.8

Approved: June 15, 2016

Sample Name: L1606044303 Acquired: 6/14/2016 15:43:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00192	.06868	.00062	.01204	.02592	-.00003	47.125	-.00016
Stddev	.00223	.00330	.00339	.00465	.00096	.00004	.501	.00017
%RSD	115.82	4.7994	550.31	38.640	3.7083	111.70	1.0633	107.83
#1	.00395	.06487	.00075	.00713	.02610	-.00000	47.635	-.00003
#2	.00229	.07073	-.00284	.01639	.02678	-.00002	47.105	-.00010
#3	-.00046	.07042	.00394	.01260	.02488	-.00007	46.634	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.00071	.00154	.05952	.86052	.00487	5.3933	.00488
Stddev	.00031	.00079	.00044	.02152	.11673	.00275	.0232	.00290
%RSD	1753.1	110.70	28.366	36.162	13.565	56.602	.43099	59.379
#1	.00038	.00160	.00178	.04194	.95094	.00788	5.4060	.00389
#2	-.00011	.00009	.00182	.08353	.72874	.00426	5.4074	.00815
#3	-.00021	.00045	.00104	.05310	.90188	.00247	5.3665	.00261
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	3.4088	.00121	.10337	-.00263	.00085	.00133	4.2146
Stddev	.00019	.0392	.00040	.00520	.00140	.00243	.00426	.0129
%RSD	117.75	1.1508	32.874	5.0262	53.377	287.74	320.72	.30560
#1	-.00036	3.4506	.00127	.09962	-.00102	.00363	-.00276	4.2293
#2	-.00015	3.3728	.00079	.10120	-.00360	-.00088	.00100	4.2095
#3	.00002	3.4030	.00158	.10930	-.00327	-.00021	.00574	4.2050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606044303 Acquired: 6/14/2016 15:43:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.13830	-.00843	.00082	-.00023	.00100	.00069
Stddev	.00054	.00099	.00311	.00249	.00049	.00009	.00031
%RSD	249.80	.71918	36.859	303.24	216.47	8.9909	45.504
#1	-.00006	.13944	-.01026	.00312	.00032	.00107	.00070
#2	-.00013	.13790	-.01018	-.00182	-.00036	.00090	.00037
#3	.00084	.13758	-.00484	.00116	-.00064	.00103	.00099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7655.8	45074.	2925.2
Stddev	25.7	330.	40.5
%RSD	.33624	.73106	1.3836
#1	7628.7	44706.	2879.2
#2	7680.0	45173.	2941.2
#3	7658.6	45343.	2955.3

Approved: June 15, 2016

Sample Name: L1606044601 Acquired: 6/14/2016 15:47:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00080	.03283	-.00210	.01285	.08206	.00004	28.822	-.00008
Stddev	.00146	.00667	.00072	.00446	.00077	.00005	.286	.00026
%RSD	182.20	20.307	34.086	34.746	.93723	123.48	.99355	320.10
#1	-.00072	.02516	-.00128	.01161	.08195	.00010	29.141	-.00037
#2	.00062	.03606	-.00244	.00913	.08135	.00003	28.587	-.00001
#3	-.00231	.03726	-.00258	.01780	.08288	-.00000	28.738	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.00140	.05688	.81359	.41082	.00176	5.4125	.36346
Stddev	.00031	.00107	.00111	.01675	.05974	.00276	.1335	.00176
%RSD	2959.0	76.740	1.9535	2.0591	14.541	156.52	2.4660	.48543
#1	.00034	.00232	.05816	.81207	.43404	.00005	5.5071	.36470
#2	-.00004	.00022	.05630	.79765	.34295	.00494	5.2598	.36425
#3	-.00027	.00166	.05619	.83105	.45545	.00029	5.4706	.36144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00060	11.894	.00143	.04483	-.00076	.00045	.00040	5.6474
Stddev	.00054	.103	.00087	.00510	.00348	.00096	.00380	.0084
%RSD	90.785	.86679	61.013	11.379	456.15	215.61	960.82	.14967
#1	-.00099	12.013	.00187	.03900	-.00157	.00108	-.00219	5.6569
#2	-.00083	11.848	.00198	.04848	-.00376	-.00066	.00476	5.6443
#3	.00002	11.823	.00042	.04701	.00305	.00092	-.00138	5.6409
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606044601 Acquired: 6/14/2016 15:47:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00085	.13394	.00143	.00015	-.00060	.02010	.00054
Stddev	.00025	.00125	.00347	.00203	.00054	.00005	.00081
%RSD	29.080	.93161	241.50	1315.7	89.901	.23060	150.64
#1	.00106	.13536	.00534	-.00042	-.00018	.02011	.00065
#2	.00058	.13344	.00022	.00241	-.00041	.02014	-.00032
#3	.00091	.13302	-.00126	-.00152	-.00120	.02005	.00129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7671.8	44661.	2894.4
Stddev	24.4	417.	52.3
%RSD	.31835	.93286	1.8066
#1	7645.6	44196.	2844.2
#2	7675.9	44787.	2890.5
#3	7694.0	45001.	2948.5

Approved: June 15, 2016

Sample Name: L1606044701 Acquired: 6/14/2016 15:51:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00040	.01675	-.00233	.01185	.08080	.00001	107.29	.00013
Stddev	.00263	.00406	.00217	.00379	.00030	.00012	.64	.00027
%RSD	652.02	24.229	93.196	31.979	.37610	2143.5	.59439	211.01
#1	-.00083	.01266	-.00072	.01620	.08068	-.00014	108.02	-.00017
#2	.00241	.02077	-.00480	.01003	.08115	.00008	107.00	.00020
#3	-.00279	.01682	-.00147	.00931	.08058	.00008	106.84	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	.00157	.06676	.02685	1.0096	.00493	8.2299	.00074
Stddev	.00010	.00075	.00043	.01320	.1054	.00459	.0218	.00075
%RSD	62.888	47.612	.65037	49.178	10.443	93.171	.26502	101.69
#1	-.00026	.00177	.06691	.02916	1.1302	.00948	8.2537	.00001
#2	-.00016	.00220	.06709	.01264	.93506	.00029	8.2252	.00069
#3	-.00006	.00074	.06627	.03875	.96343	.00501	8.2108	.00151
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00064	5.5572	.00069	.02575	.00281	-.00010	.00314	4.8264
Stddev	.00034	.0190	.00058	.00140	.00068	.00467	.00191	.0154
%RSD	53.302	.34155	83.998	5.4386	24.061	4744.8	60.793	.31803
#1	-.00101	5.5638	.00047	.02474	.00350	.00031	.00197	4.8287
#2	-.00059	5.5358	.00025	.02517	.00277	.00436	.00212	4.8405
#3	-.00033	5.5720	.00134	.02735	.00215	-.00496	.00535	4.8100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606044701 Acquired: 6/14/2016 15:51:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00126	.28580	-.01963	-.00067	-.00037	.05982	-.00015
Stddev	.00057	.00037	.00570	.00284	.00063	.00030	.00078
%RSD	45.524	.12779	29.018	425.88	170.42	.49562	508.44
#1	.00063	.28566	-.02579	-.00097	.00033	.06010	-.00077
#2	.00139	.28622	-.01455	.00231	-.00055	.05984	-.00043
#3	.00176	.28553	-.01855	-.00334	-.00088	.05951	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7550.7	44078.	2904.1
Stddev	3.5	167.	29.8
%RSD	.04633	.37836	1.0246
#1	7552.5	44215.	2874.7
#2	7553.0	43893.	2903.3
#3	7546.7	44127.	2934.2

Approved: June 15, 2016

Sample Name: L1606044203 Acquired: 6/14/2016 15:55:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00131	11.112	.00161	.02302	.15599	.00065	37.525	.00016
Stddev	.00136	.042	.00103	.00167	.00104	.00010	.057	.00010
%RSD	103.90	.37520	63.879	7.2535	.66564	15.171	.15132	62.036
#1	.00007	11.083	.00155	.02421	.15676	.00056	37.564	.00012
#2	-.00135	11.093	.00061	.02112	.15481	.00075	37.550	.00028
#3	-.00264	11.160	.00266	.02374	.15639	.00063	37.459	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00456	.01455	.01003	12.098	3.0486	.01840	7.6211	.19756
Stddev	.00057	.00205	.00098	.042	.0756	.00083	.0508	.00057
%RSD	12.525	14.093	9.7234	.34548	2.4813	4.5384	.66641	.28648
#1	.00390	.01360	.00937	12.140	3.1033	.01749	7.5668	.19812
#2	.00484	.01691	.01115	12.098	2.9623	.01857	7.6289	.19757
#3	.00492	.01315	.00958	12.056	3.0802	.01914	7.6675	.19699
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	3.0577	.01273	.19586	.00832	-.00305	.00300	18.992
Stddev	.00032	.0079	.00024	.00861	.00057	.00238	.00382	.087
%RSD	247.33	.25810	1.8938	4.3984	6.8097	77.867	127.64	.45862
#1	-.00048	3.0622	.01281	.18736	.00844	-.00539	-.00003	18.908
#2	.00017	3.0624	.01246	.19565	.00771	-.00313	.00172	19.082
#3	-.00008	3.0486	.01292	.20459	.00883	-.00064	.00730	18.988
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606044203 Acquired: 6/14/2016 15:55:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00147	.11444	.12341	.00291	.01817	.08390	.00170
Stddev	.00018	.00085	.00681	.00156	.00050	.00046	.00033
%RSD	12.268	.74678	5.5166	53.415	2.7290	.55383	19.220
#1	.00164	.11399	.12441	.00260	.01804	.08339	.00138
#2	.00149	.11390	.11615	.00460	.01775	.08402	.00204
#3	.00128	.11542	.12966	.00153	.01872	.08429	.00169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7772.8	45486.	2934.4
Stddev	39.2	53.	6.6
%RSD	.50428	.11606	.22468
#1	7810.2	45505.	2928.1
#2	7776.3	45426.	2941.3
#3	7732.0	45526.	2933.7

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 15:59:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.38891	9.7125	.37998	.48822	.95091	.04849	9.4023	.04812
Stddev	.00293	.0408	.00051	.00240	.00479	.00025	.0796	.00022
%RSD	.75420	.42011	.13412	.49100	.50342	.51406	.84648	.46490
#1	.39225	9.7596	.38013	.48582	.94841	.04866	9.3911	.04830
#2	.38673	9.6873	.38039	.49062	.94788	.04860	9.3290	.04820
#3	.38777	9.6907	.37941	.48822	.95643	.04820	9.4870	.04787
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19607	.48779	.48916	3.8239	47.366	.94326	9.4722	.47492
Stddev	.00107	.00373	.00382	.0265	.180	.00342	.0706	.00305
%RSD	.54588	.76387	.78192	.69417	.38084	.36297	.74564	.64195
#1	.19710	.49112	.49085	3.7947	47.206	.94177	9.5253	.47291
#2	.19497	.48850	.48478	3.8467	47.331	.94083	9.4993	.47341
#3	.19614	.48376	.49184	3.8302	47.562	.94718	9.3920	.47843
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.96730	47.630	.49065	9.7031	.49070	1.1679	.37988	4.8920
Stddev	.00778	.255	.00409	.0539	.00399	.0060	.00902	.0247
%RSD	.80397	.53592	.83410	.55504	.81226	.51680	2.3738	.50458
#1	.97622	47.436	.49475	9.7545	.49529	1.1715	.38855	4.9124
#2	.96196	47.534	.48657	9.6471	.48808	1.1714	.37055	4.8645
#3	.96371	47.919	.49064	9.7076	.48873	1.1610	.38052	4.8991
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 15:59:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.96738	.94921	.93495	.48534	.97439	.97833	.98533
Stddev	.00366	.00545	.00103	.00596	.00678	.00607	.00704
%RSD	.37794	.57410	.11058	1.2280	.69586	.62056	.71495
#1	.97078	.94734	.93568	.49181	.97746	.98512	.99347
#2	.96351	.94494	.93377	.48008	.97910	.97344	.98140
#3	.96783	.95535	.93541	.48412	.96662	.97641	.98113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8114.7	46873.	3071.7
Stddev	23.9	188.	13.5
%RSD	.29483	.40094	.43845
#1	8091.4	46745.	3061.4
#2	8113.4	47089.	3086.9
#3	8139.2	46787.	3066.6

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 16:03:09 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00063**	**.00601**	**.00010**	**.00281**	**.00034**	**.00004**	**-.00166**	**-.00003**
Stddev	.00178	.00640	.00377	.00038	.00089	.00005	.02435	.00020
%RSD	283.54	106.40	3764.9	13.448	258.27	122.00	1470.6	590.98
#1	.00005	-.00106	-.00403	.00239	-.00024	-.00002	-.01899	-.00027
#2	-.00265	.00771	.00335	.00313	.00137	.00008	-.01216	.00007
#3	.00071	.01139	.00098	.00291	-.00009	.00007	.02618	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**-.00030**	**.00036**	**.01279**	**-.12005**	**-.00056**	**-.05022**	**-.00285**
Stddev	.00069	.00092	.00100	.01697	.07647	.00076	.13069	.00065
%RSD	1776.4	305.09	273.63	132.65	63.699	136.14	260.22	22.979
#1	-.00008	-.00071	.00041	-.00644	-.04591	-.00090	.09093	-.00216
#2	.00067	.00075	.00133	.02567	-.11558	-.00108	-.16704	-.00346
#3	-.00070	-.00095	-.00066	.01914	-.19866	.00031	-.07456	-.00293
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00151**	**-.03119**	**.00106**	**.00584**	**.00053**	**-.00247**	**-.00147**	**.00152**
Stddev	.00042	.04482	.00091	.00766	.00200	.00558	.00067	.00151
%RSD	27.751	143.70	85.600	131.20	380.16	226.39	45.698	99.453
#1	.00118	-.05886	.00070	-.00296	-.00055	.00371	-.00129	-.00015
#2	.00137	.02052	.00210	.01108	.00283	-.00396	-.00221	.00191
#3	.00198	-.05521	.00039	.00940	-.00071	-.00715	-.00091	.00280
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 16:03:09 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00063**	**-.00007**	**-.00042**	**.00031**	**-.00026**	**-.00025**	**.00102**
Stddev	.00062	.00033	.00669	.00104	.00059	.00019	.00019
%RSD	98.839	500.26	1604.2	340.25	230.81	75.967	18.598
#1	.00025	.00024	.00629	-.00042	.00039	-.00003	.00097
#2	.00029	-.00042	-.00045	.00150	-.00037	-.00033	.00085
#3	.00135	-.00002	-.00709	-.00016	-.00078	-.00039	.00122
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8232.4**	**47973.**	**3040.4**
Stddev	31.1	288.	5.5
%RSD	.37775	.60022	.17943
#1	8197.2	47801.	3045.7
#2	8256.1	47812.	3034.8
#3	8243.8	48305.	3040.7

Approved: June 15, 2016

Sample Name: PBW 53 Acquired: 6/14/2016 16:07:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572463-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	.02998	-.00013	.00649	.00094	.00013	.05144	-.00024
Stddev	.00075	.00761	.00099	.00070	.00022	.00013	.02465	.00005
%RSD	87.541	25.370	749.41	10.727	23.200	97.464	47.926	19.015
#1	.00154	.03432	-.00127	.00728	.00076	.00024	.05075	-.00020
#2	.00005	.02120	.00053	.00595	.00087	-.00001	.07644	-.00029
#3	.00099	.03442	.00034	.00625	.00118	.00017	.02714	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00063	.00022	.00749	-.14447	-.00333	-.02923	-.00060
Stddev	.00019	.00169	.00053	.00649	.09010	.00042	.09794	.00285
%RSD	157.60	266.70	244.38	86.675	62.367	12.701	335.06	478.79
#1	-.00004	.00243	-.00037	.00438	-.24851	-.00361	-.00672	.00133
#2	.00033	-.00092	.00035	.00314	-.09178	-.00353	-.13646	-.00387
#3	.00007	.00039	.00067	.01495	-.09312	-.00284	.05549	.00075
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	-.02146	.00131	-.00648	.00005	-.00086	.00712	.00204
Stddev	.00058	.01487	.00154	.00488	.00248	.00455	.00238	.00008
%RSD	289.27	69.325	117.54	75.247	5206.9	527.23	33.431	4.1127
#1	-.00045	-.03458	.00024	-.00453	-.00034	-.00258	.00915	.00213
#2	.00040	-.00530	.00307	-.00288	-.00221	.00430	.00450	.00204
#3	.00064	-.02449	.00061	-.01203	.00270	-.00431	.00770	.00196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: PBW 53 Acquired: 6/14/2016 16:07:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572463-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00062	.00116	.00369	-.00074	.00015	.00252	.00083
Stddev	.00084	.00029	.00218	.00268	.00047	.00004	.00047
%RSD	135.67	25.163	59.057	360.86	304.10	1.6265	57.345
#1	.00098	.00117	.00167	-.00163	.00059	.00250	.00034
#2	.00123	.00145	.00600	.00227	.00022	.00249	.00086
#3	-.00034	.00087	.00340	-.00287	-.00034	.00256	.00128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7737.0	45156.	2929.4
Stddev	23.3	249.	37.2
%RSD	.30064	.55160	1.2693
#1	7722.8	44906.	2887.1
#2	7724.4	45159.	2956.6
#3	7763.9	45404.	2944.6

Approved: June 15, 2016

Sample Name: LCSW 53 Acquired: 6/14/2016 16:11:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572463-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20502	5.2225	.20642	1.0182	.52227	.02545	5.2203	.02613
Stddev	.00345	.0454	.00026	.0111	.00382	.00028	.1066	.00035
%RSD	1.6817	.86924	.12803	1.0894	.73163	1.0919	2.0428	1.3502
#1	.20232	5.1729	.20648	1.0055	.52201	.02515	5.1822	.02622
#2	.20383	5.2620	.20665	1.0240	.51859	.02553	5.1380	.02642
#3	.20890	5.2327	.20614	1.0253	.52622	.02568	5.3408	.02573
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10689	.26365	.26616	2.0833	25.570	.51931	5.1932	.25849
Stddev	.00021	.00198	.00196	.0036	.123	.00291	.0839	.00488
%RSD	.19311	.74994	.73506	.17375	.48025	.56062	1.6162	1.8879
#1	.10687	.26146	.26392	2.0818	25.530	.51743	5.2674	.26315
#2	.10669	.26532	.26752	2.0875	25.471	.51784	5.1021	.25342
#3	.10710	.26417	.26704	2.0807	25.707	.52266	5.2099	.25891
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53219	25.989	.26935	5.1157	.26583	.63140	.20253	2.6705
Stddev	.00130	.235	.00082	.0122	.00559	.00279	.00298	.0044
%RSD	.24461	.90267	.30355	.23929	2.1024	.44109	1.4715	.16477
#1	.53069	26.047	.26855	5.1044	.27196	.62820	.20539	2.6654
#2	.53284	25.730	.27018	5.1287	.26102	.63321	.19944	2.6734
#3	.53303	26.188	.26933	5.1141	.26452	.63280	.20277	2.6726
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: LCSW 53 Acquired: 6/14/2016 16:11:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572463-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52854	.52944	.51750	.26366	.52365	.53202	.00444
Stddev	.00045	.00403	.01055	.00473	.00620	.00114	.00121
%RSD	.08522	.76107	2.0378	1.7945	1.1844	.21430	27.365
#1	.52858	.52895	.50980	.25880	.51649	.53072	.00333
#2	.52808	.52568	.51319	.26393	.52739	.53244	.00425
#3	.52898	.53369	.52952	.26825	.52706	.53288	.00574
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7655.3	44877.	2918.8
Stddev	38.0	268.	11.4
%RSD	.49703	.59614	.39040
#1	7663.6	45156.	2915.4
#2	7688.5	44623.	2931.5
#3	7613.8	44852.	2909.5

Approved: June 15, 2016

Sample Name: F BLANK Acquired: 6/14/2016 16:14:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572463-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00054	.01871	.00246	.00331	.00203	.00007	.04530	-.00009
Stddev	.00032	.00452	.00296	.00277	.00084	.00003	.04120	.00028
%RSD	60.483	24.171	120.34	83.684	41.492	43.432	90.942	301.74
#1	-.00027	.01918	.00066	.00234	.00136	.00005	.07727	.00015
#2	-.00090	.01398	.00085	.00116	.00175	.00006	-.00119	-.00040
#3	-.00044	.02299	.00588	.00644	.00297	.00010	.05981	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00038	.00119	.00049	.01827	-.11284	-.00438	-.00184	.00025
Stddev	.00029	.00050	.00054	.02171	.14297	.00156	.07871	.00165
%RSD	75.410	42.227	109.51	118.83	126.70	35.544	4266.6	656.42
#1	-.00071	.00167	.00107	.00623	-.27793	-.00529	-.08921	-.00126
#2	-.00028	.00123	.00000	.00525	-.03024	-.00526	.06355	.00202
#3	-.00016	.00067	.00041	.04333	-.03035	-.00258	.02013	.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.02769	-.00007	-.00504	.00126	-.00282	.00159	.00261
Stddev	.00023	.00982	.00050	.00733	.00168	.00172	.00745	.00041
%RSD	93.807	35.460	706.74	145.25	133.76	60.989	469.40	15.677
#1	.00013	.03872	.00018	.00194	.00302	-.00177	-.00618	.00305
#2	.00009	.02446	.00026	-.01266	.00107	-.00188	.00866	.00253
#3	.00050	.01990	-.00064	-.00441	-.00032	-.00480	.00228	.00224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: F BLANK Acquired: 6/14/2016 16:14:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572463-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00144	.00176	.00556	-.00010	.00021	.00147	-.00001
Stddev	.00066	.00027	.00127	.00137	.00042	.00004	.00018
%RSD	45.684	15.394	22.866	1397.3	202.39	2.9369	1486.2
#1	.00073	.00170	.00582	.00010	.00052	.00145	.00013
#2	.00202	.00206	.00418	-.00156	.00036	.00152	-.00021
#3	.00158	.00153	.00668	.00116	-.00027	.00144	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7758.8	45493.	2929.1
Stddev	5.5	16.	17.7
%RSD	.07131	.03506	.60517
#1	7762.6	45478.	2909.9
#2	7761.3	45509.	2932.6
#3	7752.5	45493.	2944.8

Approved: June 15, 2016

Sample Name: L1606054006 Acquired: 6/14/2016 16:18:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572463-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	.30826	.00245	.01619	.05438	.00073	11.475	.00026
Stddev	.00136	.00441	.00152	.00158	.00099	.00006	.079	.00020
%RSD	258.25	1.4316	61.903	9.7770	1.8117	7.9344	.68606	76.539
#1	-.00070	.30354	.00111	.01773	.05549	.00067	11.554	.00003
#2	.00029	.30897	.00410	.01457	.05362	.00073	11.477	.00036
#3	.00199	.31228	.00213	.01628	.05403	.00078	11.396	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00902	.00105	.00123	1.4758	.14149	-.00240	2.9836	.02658
Stddev	.00042	.00100	.00056	.0180	.04944	.00226	.1232	.00106
%RSD	4.6701	95.639	45.460	1.2224	34.938	94.324	4.1278	3.9726
#1	.00875	.00109	.00096	1.4966	.17939	-.00010	3.1192	.02537
#2	.00880	.00202	.00086	1.4659	.08557	-.00462	2.9528	.02701
#3	.00950	.00002	.00188	1.4648	.15952	-.00247	2.8787	.02734
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00065	5.0398	.01193	.00647	-.00183	.00112	.00413	3.3850
Stddev	.00017	.0118	.00141	.00153	.00220	.00096	.00489	.0058
%RSD	26.198	.23311	11.846	23.705	120.34	85.390	118.27	.17205
#1	-.00082	5.0513	.01082	.00824	-.00008	.00125	.00391	3.3852
#2	-.00065	5.0404	.01352	.00545	-.00431	.00011	.00913	3.3791
#3	-.00048	5.0278	.01144	.00573	-.00110	.00201	-.00064	3.3908
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606054006 Acquired: 6/14/2016 16:18:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572463-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00123**	**.13012**	**.00443**	**-.00030**	**.00027**	**.00613**	**.00062**
Stddev	.00021	.00089	.00192	.00093	.00031	.00010	.00062
%RSD	17.414	.68145	43.381	313.26	116.66	1.6216	100.99
#1	.00109	.13111	.00664	.00075	-.00002	.00619	.00001
#2	.00111	.12985	.00313	-.00063	.00059	.00602	.00059
#3	.00147	.12940	.00352	-.00101	.00023	.00618	.00125
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7770.7**	**45610.**	**2938.3**
Stddev	18.6	149.	16.1
%RSD	.23915	.32683	.54842
#1	7763.3	45519.	2921.5
#2	7791.9	45529.	2939.7
#3	7757.0	45782.	2953.6

Approved: June 15, 2016

Sample Name: L1606054007S Acquired: 6/14/2016 16:22:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572463-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20330**	**5.5213**	**.20524**	**1.0135**	**.56339**	**.02595**	**16.043**	**.02570**
Stddev	.00096	.0256	.00256	.0059	.00201	.00005	.066	.00008
%RSD	.47259	.46290	1.2486	.57778	.35592	.18431	.41312	.30634
#1	.20333	5.5162	.20814	1.0181	.56111	.02590	16.012	.02576
#2	.20232	5.5490	.20327	1.0156	.56422	.02598	15.998	.02572
#3	.20424	5.4987	.20430	1.0069	.56485	.02598	16.119	.02561
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.11422**	**.26088**	**.26148**	**3.5507**	**25.657**	**.51757**	**7.9644**	**.28160**
Stddev	.00047	.00130	.00175	.0302	.068	.00476	.0721	.00185
%RSD	.40804	.49953	.66936	.85073	.26578	.91886	.90524	.65681
#1	.11375	.26219	.26264	3.5458	25.676	.51991	7.9460	.28139
#2	.11468	.26087	.26234	3.5232	25.582	.51210	7.9033	.28354
#3	.11422	.25959	.25947	3.5830	25.715	.52070	8.0439	.27986
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52538**	**29.363**	**.27468**	**5.0878**	**.26080**	**.62073**	**.20239**	**6.1089**
Stddev	.00281	.043	.00095	.0171	.00390	.00074	.00306	.0218
%RSD	.53537	.14793	.34666	.33563	1.4947	.11842	1.5136	.35630
#1	.52220	29.318	.27390	5.0724	.26429	.62008	.20077	6.0838
#2	.52757	29.367	.27440	5.0847	.25659	.62153	.20592	6.1224
#3	.52635	29.405	.27574	5.1062	.26151	.62057	.20047	6.1204
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606054007S Acquired: 6/14/2016 16:22:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572463-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52322	.59450	.51115	.26026	.52151	.52827	.00073
Stddev	.00198	.00101	.00748	.00099	.00031	.00095	.00104
%RSD	.37895	.17036	1.4624	.38160	.05849	.17995	141.87
#1	.52099	.59344	.50369	.25922	.52172	.52745	.00028
#2	.52391	.59458	.51864	.26119	.52165	.52931	-.00000
#3	.52476	.59547	.51114	.26038	.52116	.52804	.00192
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7653.6	44760.	2920.2
Stddev	4.3	121.	10.2
%RSD	.05601	.27046	.34770
#1	7658.1	44631.	2929.3
#2	7653.2	44778.	2922.2
#3	7649.6	44871.	2909.3

Approved: June 15, 2016

Sample Name: L1606054008SD Acquired: 6/14/2016 16:26:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572463-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20242**	**5.4639**	**.20654**	**1.0107**	**.55978**	**.02574**	**15.954**	**.02572**
Stddev	.00252	.0625	.00249	.0095	.00367	.00020	.113	.00015
%RSD	1.2442	1.1446	1.2051	.94401	.65617	.76165	.70968	.59265
#1	.20426	5.5118	.20912	1.0195	.56271	.02586	16.050	.02581
#2	.19955	5.3931	.20637	1.0006	.56097	.02551	15.983	.02554
#3	.20344	5.4866	.20415	1.0121	.55566	.02584	15.829	.02580
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.11401**	**.26012**	**.26185**	**3.6461**	**25.636**	**.51350**	**7.9415**	**.27893**
Stddev	.00072	.00244	.00037	.0381	.058	.00572	.1108	.00250
%RSD	.63524	.93979	.14071	1.0446	.22574	1.1148	1.3948	.89454
#1	.11384	.26294	.26226	3.6581	25.703	.51891	8.0651	.28062
#2	.11339	.25860	.26154	3.6767	25.600	.51410	7.8511	.28010
#3	.11481	.25883	.26176	3.6034	25.606	.50750	7.9084	.27606
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52546**	**29.197**	**.27393**	**5.0795**	**.26474**	**.62390**	**.20391**	**6.0710**
Stddev	.00261	.175	.00085	.0176	.00234	.00057	.00447	.0287
%RSD	.49680	.59815	.31129	.34592	.88574	.09073	2.1903	.47293
#1	.52602	29.359	.27402	5.0770	.26366	.62424	.19882	6.0612
#2	.52262	29.221	.27303	5.0632	.26743	.62324	.20719	6.0485
#3	.52775	29.012	.27473	5.0981	.26314	.62421	.20572	6.1034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606054008SD Acquired: 6/14/2016 16:26:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572463-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52265**	**.59843**	**.50614**	**.25658**	**.51560**	**.52711**	**.00017**
Stddev	.00284	.00366	.01422	.00267	.00612	.00167	.00052
%RSD	.54266	.61143	2.8095	1.0391	1.1866	.31640	300.48
#1	.51961	.60253	.52203	.25677	.51933	.52667	-.00042
#2	.52312	.59727	.49461	.25382	.50854	.52571	.00043
#3	.52522	.59549	.50179	.25914	.51894	.52896	.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7649.1**	**44897.**	**2907.9**
Stddev	23.2	331.	9.2
%RSD	.30322	.73616	.31680
#1	7668.9	44526.	2897.3
#2	7654.8	45160.	2913.2
#3	7623.6	45006.	2913.2

Approved: June 15, 2016

Sample Name: L1606064503 Acquired: 6/14/2016 16:30:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00132	.01150	-.00005	.00614	.00013	.00011	-.00379	-.00012
Stddev	.00141	.00180	.00044	.00112	.00120	.00005	.00432	.00020
%RSD	106.66	15.628	824.28	18.242	888.48	45.176	114.24	167.64
#1	.00014	.01228	-.00055	.00735	.00109	.00015	.00106	.00009
#2	-.00267	.01278	.00025	.00593	-.00121	.00012	-.00516	-.00014
#3	-.00143	.00945	.00014	.00514	.00052	.00005	-.00726	-.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	.00094	.00065	.01297	-.13267	-.00173	.00420	-.00047
Stddev	.00021	.00056	.00045	.00272	.13746	.00286	.03994	.00122
%RSD	114.11	59.466	69.557	20.939	103.61	164.81	951.59	257.72
#1	.00006	.00066	.00086	.01535	-.16257	-.00096	.02232	.00093
#2	-.00028	.00058	.00097	.01357	.01728	.00066	-.04160	-.00130
#3	-.00032	.00159	.00013	.01001	-.25272	-.00490	.03186	-.00105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	.00193	.00094	-.00041	-.00413	.00133	.00170	.01392
Stddev	.00007	.03674	.00025	.00534	.00267	.00167	.00316	.00203
%RSD	26.491	1899.3	26.499	1287.9	64.724	125.33	186.06	14.584
#1	-.00021	-.00807	.00066	.00177	-.00487	-.00052	-.00024	.01511
#2	-.00022	-.02877	.00104	.00348	-.00635	.00271	.00535	.01158
#3	-.00033	.04263	.00112	-.00650	-.00116	.00179	-.00001	.01509
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606064503 Acquired: 6/14/2016 16:30:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00101	.00037	.00505	.00047	-.00013	.00108	.00020
Stddev	.00050	.00023	.00363	.00061	.00029	.00025	.00066
%RSD	48.934	63.513	71.935	128.98	220.01	22.710	326.63
#1	.00136	.00058	.00112	-.00014	-.00043	.00131	.00021
#2	.00045	.00040	.00829	.00108	.00015	.00082	.00086
#3	.00124	.00012	.00572	.00049	-.00012	.00112	-.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7747.7	45488.	2923.1
Stddev	26.9	238.	5.4
%RSD	.34760	.52374	.18486
#1	7725.3	45398.	2926.6
#2	7740.3	45309.	2916.9
#3	7777.6	45759.	2925.8

Approved: June 15, 2016

Sample Name: L1606064503PS Acquired: 6/14/2016 16:34:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572626-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20186**	**5.1173**	**.20038**	**.99917**	**.50876**	**.02515**	**5.0916**	**.02544**
Stddev	.00076	.0138	.00013	.00125	.00454	.00006	.0328	.00044
%RSD	.37426	.26892	.06509	.12559	.89193	.24877	.64438	1.7465
#1	.20226	5.1229	.20028	.99775	.51165	.02521	5.0720	.02536
#2	.20099	5.1016	.20053	.99960	.51110	.02509	5.1295	.02505
#3	.20233	5.1273	.20033	1.0001	.50353	.02514	5.0733	.02592
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10526**	**.26078**	**.26205**	**2.0565**	**25.036**	**.50867**	**5.0830**	**.25411**
Stddev	.00081	.00124	.00224	.0079	.201	.00113	.0500	.00451
%RSD	.77104	.47527	.85303	.38346	.80461	.22161	.98310	1.7748
#1	.10448	.26206	.25978	2.0630	25.045	.50878	5.0640	.25847
#2	.10520	.26070	.26212	2.0477	25.233	.50973	5.1396	.25440
#3	.10610	.25959	.26425	2.0590	24.830	.50749	5.0453	.24946
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52345**	**25.498**	**.26585**	**5.0506**	**.26419**	**.61973**	**.20113**	**2.6205**
Stddev	.00145	.178	.00168	.0320	.00199	.00277	.00142	.0129
%RSD	.27632	.69756	.63256	.63420	.75234	.44634	.70372	.49073
#1	.52224	25.575	.26779	5.0176	.26549	.61676	.20202	2.6121
#2	.52306	25.626	.26480	5.0525	.26517	.62022	.19950	2.6142
#3	.52505	25.295	.26496	5.0816	.26190	.62222	.20187	2.6353
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606064503PS Acquired: 6/14/2016 16:34:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572626-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52056**	**.51391**	**.50709**	**.26014**	**.51580**	**.54913**	**.00073**
Stddev	.00071	.00321	.00384	.00456	.00216	.00206	.00013
%RSD	.13609	.62439	.75822	1.7536	.41917	.37507	18.080
#1	.52095	.51608	.50893	.26540	.51513	.54760	.00058
#2	.51974	.51544	.50268	.25779	.51822	.54832	.00082
#3	.52098	.51023	.50967	.25723	.51405	.55148	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7681.7**	**45046.**	**2903.6**
Stddev	20.7	143.	28.5
%RSD	.26996	.31727	.98236
#1	7658.2	44883.	2888.7
#2	7697.3	45147.	2885.7
#3	7689.7	45108.	2936.5

Approved: June 15, 2016

Sample Name: L1606064503SDL Acquired: 6/14/2016 16:38:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG572626-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00086**	**-.00132**	**-.00064**	**.00241**	**.00013**	**.00008**	**.01142**	**-.00008**
Stddev	.00280	.00394	.00095	.00099	.00109	.00003	.02207	.00016
%RSD	327.95	298.49	147.02	41.076	838.13	35.092	193.22	201.73
#1	-.00083	-.00566	-.00007	.00185	.00139	.00008	-.00249	.00005
#2	-.00069	-.00032	-.00173	.00356	-.00056	.00011	-.00011	-.00003
#3	.00409	.00202	-.00012	.00184	-.00044	.00005	.03686	-.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00004**	**.00049**	**.00070**	**-.00875**	**-.12175**	**-.00307**	**.03462**	**-.00139**
Stddev	.00039	.00108	.00091	.02446	.05201	.00171	.05768	.00146
%RSD	1001.2	218.09	129.25	279.55	42.715	55.890	166.59	104.91
#1	.00010	.00174	-.00032	-.03097	-.14052	-.00162	.00634	-.00282
#2	.00040	-.00009	.00100	.01745	-.16177	-.00262	-.00345	-.00144
#3	-.00038	-.00017	.00143	-.01273	-.06297	-.00496	.10099	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00056**	**-.00631**	**.00097**	**.00222**	**-.00123**	**.00255**	**.00803**	**.00158**
Stddev	.00022	.02640	.00060	.00113	.00166	.00209	.00387	.00033
%RSD	38.696	418.14	61.760	50.792	135.23	81.960	48.190	20.922
#1	-.00055	-.02847	.00058	.00247	-.00028	.00347	.00920	.00184
#2	-.00035	-.01337	.00067	.00099	-.00314	.00016	.01117	.00170
#3	-.00079	.02290	.00166	.00321	-.00026	.00403	.00371	.00121
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606064503SDL Acquired: 6/14/2016 16:38:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG572626-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00099	-.00014	.00360	.00074	.00020	.00084	.00037
Stddev	.00066	.00023	.00386	.00062	.00023	.00018	.00045
%RSD	66.595	160.02	107.32	84.512	116.94	21.341	120.74
#1	.00077	-.00041	-.00023	.00028	.00012	.00097	.00071
#2	.00173	.00002	.00353	.00145	.00046	.00091	-.00014
#3	.00047	-.00004	.00750	.00048	.00002	.00064	.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8489.3	49496.	3124.4
Stddev	13.1	124.	7.5
%RSD	.15402	.25143	.23943
#1	8478.8	49391.	3123.6
#2	8504.0	49634.	3132.2
#3	8485.2	49465.	3117.3

Approved: June 15, 2016

Sample Name: L1606064503SDL Acquired: 6/14/2016 16:42:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG572626-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**.00106**	**-.00069**	**.00143**	**.00069**	**.00007**	**-.02519**	**-.00008**
Stddev	.00058	.00443	.00246	.00196	.00020	.00008	.03601	.00012
%RSD	688.48	419.34	353.83	137.46	28.716	112.27	142.96	148.74
#1	-.00063	.00295	-.00034	.00353	.00088	-.00002	-.05078	-.00022
#2	-.00016	-.00400	-.00331	.00110	.00071	.00015	.01599	-.00000
#3	.00053	.00422	.00157	-.00035	.00048	.00009	-.04079	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**.00119**	**.00031**	**-.00661**	**-.17608**	**-.00028**	**.04324**	**-.00129**
Stddev	.00010	.00011	.00090	.02052	.10371	.00267	.04520	.00122
%RSD	67.477	9.0638	288.36	310.21	58.899	939.34	104.53	94.298
#1	.00018	.00126	.00135	-.02862	-.23476	-.00030	.08704	-.00117
#2	.00024	.00106	-.00015	.01200	-.05633	-.00295	.04593	-.00257
#3	.00004	.00124	-.00026	-.00322	-.23714	.00239	-.00324	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00077**	**-.02028**	**.00061**	**.00338**	**.00083**	**-.00143**	**.00178**	**-.00235**
Stddev	.00011	.02046	.00059	.00394	.00282	.00314	.00413	.00203
%RSD	14.613	100.88	95.791	116.47	337.45	220.51	232.12	86.314
#1	-.00079	-.04134	.00128	.00783	-.00163	-.00423	.00078	-.00456
#2	-.00065	-.00048	.00035	.00031	.00023	-.00202	.00632	-.00057
#3	-.00087	-.01901	.00020	.00202	.00391	.00197	-.00176	-.00191
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606064503SDL Acquired: 6/14/2016 16:42:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG572626-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.00014	.00387	.00018	.00007	.00051	-.00004
Stddev	.00026	.00018	.00134	.00191	.00021	.00008	.00100
%RSD	81.755	127.45	34.714	1052.9	284.80	15.405	2464.1
#1	.00030	.00004	.00298	.00138	.00011	.00052	-.00086
#2	.00007	.00004	.00321	.00119	-.00015	.00058	.00107
#3	.00059	.00035	.00541	-.00203	.00026	.00042	-.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8461.6	49123.	3127.6
Stddev	25.4	107.	14.7
%RSD	.30044	.21688	.46882
#1	8482.6	49231.	3128.9
#2	8468.9	49121.	3141.6
#3	8433.4	49018.	3112.4

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 16:46:25 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39081	9.7719	.38242	.49067	.96258	.04873	9.5257	.04896
Stddev	.00243	.0072	.00249	.00509	.00353	.00030	.0605	.00014
%RSD	.62175	.07369	.65224	1.0375	.36707	.62365	.63483	.28628
#1	.39344	9.7714	.38513	.49003	.96243	.04864	9.5913	.04883
#2	.38865	9.7793	.38023	.48594	.95913	.04849	9.5136	.04893
#3	.39035	9.7650	.38189	.49606	.96619	.04907	9.4722	.04911
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19898	.49121	.49478	3.8869	48.124	.95094	9.5171	.47509
Stddev	.00009	.00301	.00133	.0319	.240	.00557	.1776	.00391
%RSD	.04391	.61353	.26810	.82011	.49874	.58621	1.8659	.82349
#1	.19900	.48811	.49412	3.9078	48.372	.95547	9.5166	.47912
#2	.19888	.49140	.49391	3.8502	47.892	.94472	9.6950	.47131
#3	.19905	.49413	.49631	3.9026	48.108	.95265	9.3398	.47483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98127	48.463	.49860	9.8742	.49982	1.1859	.38935	4.9766
Stddev	.00366	.211	.00115	.0300	.00206	.0040	.00201	.0076
%RSD	.37269	.43504	.23027	.30428	.41226	.33810	.51546	.15339
#1	.98440	48.651	.49970	9.8816	.50140	1.1900	.38705	4.9778
#2	.98215	48.235	.49868	9.8999	.50058	1.1820	.39029	4.9836
#3	.97725	48.504	.49741	9.8412	.49749	1.1856	.39072	4.9685
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 16:46:25 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98198	.96216	.94599	.48903	.97974	.99268	.99805
Stddev	.00342	.00368	.00950	.00455	.00391	.00161	.00449
%RSD	.34803	.38298	1.0039	.93033	.39906	.16249	.45023
#1	.98593	.96593	.95555	.48842	.97845	.99445	1.0020
#2	.97999	.95857	.94587	.48481	.97664	.99231	.99316
#3	.98003	.96197	.93656	.49385	.98413	.99128	.99900
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7978.8	46288.	3015.8
Stddev	.5	215.	15.7
%RSD	.00636	.46417	.51920
#1	7979.4	46139.	2998.0
#2	7978.5	46192.	3027.6
#3	7978.5	46535.	3021.8

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 16:50:07 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	.00460	-.00224	.00243	.00122	.00008	.00179	.00001
Stddev	.00065	.00884	.00189	.00187	.00109	.00005	.01725	.00031
%RSD	95.680	192.37	84.306	76.954	88.817	57.942	963.10	4374.3
#1	-.00007	.00642	-.00039	.00452	.00248	.00014	-.01032	.00014
#2	.00107	.01239	-.00416	.00091	.00062	.00007	.02154	.00022
#3	.00103	-.00502	-.00217	.00187	.00057	.00004	-.00584	-.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	-.00012	.00028	.01260	-.15716	-.00016	-.02234	-.00193
Stddev	.00022	.00116	.00085	.01322	.11156	.00233	.09453	.00098
%RSD	226.25	986.00	306.85	104.92	70.985	1472.7	423.09	50.832
#1	-.00010	.00016	.00109	-.00234	-.07470	.00242	.07940	-.00123
#2	.00006	-.00139	-.00060	.01736	-.28409	-.00081	-.03896	-.00151
#3	.00034	.00088	.00034	.02277	-.11267	-.00209	-.10747	-.00306
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00167	.00017	.00101	-.00098	-.00154	-.00057	.00409	.00298
Stddev	.00045	.02520	.00077	.00275	.00418	.00109	.00373	.00206
%RSD	26.941	14627.	76.465	280.19	270.71	191.92	91.120	69.068
#1	.00120	-.01174	.00189	-.00110	.00066	.00058	.00116	.00357
#2	.00169	.02912	.00071	-.00367	-.00636	-.00070	.00829	.00069
#3	.00210	-.01686	.00044	.00182	.00107	-.00158	.00282	.00468
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 16:50:07 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00075**	**.00027**	**.00391**	**.00022**	**-.00064**	**-.00034**	**.00045**
Stddev	.00035	.00043	.00220	.00160	.00020	.00015	.00071
%RSD	46.883	158.52	56.384	723.05	31.461	43.608	159.63
#1	.00041	.00069	.00275	-.00121	-.00059	-.00039	.00018
#2	.00072	.00031	.00645	-.00007	-.00086	-.00017	-.00010
#3	.00111	-.00018	.00253	.00195	-.00046	-.00045	.00126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8070.0**	**46856.**	**3017.3**
Stddev	36.4	288.	32.9
%RSD	.45120	.61475	1.0900
#1	8041.5	47170.	3017.9
#2	8111.0	46603.	3049.9
#3	8057.5	46794.	2984.1

Approved: June 15, 2016

Sample Name: L1606041103 Acquired: 6/14/2016 16:54:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	4.5647	.00040	.01039	.18545	.00030	6.8971
Stddev	.00094	.0044	.00363	.00249	.00046	.00006	.0258
%RSD	115.39	.09682	902.93	23.992	.25015	21.821	.37378
#1	-.00010	4.5630	-.00316	.01230	.18549	.00022	6.9015
#2	.00076	4.5614	.00410	.00757	.18497	.00033	6.8695
#3	.00178	4.5697	.00026	.01129	.18589	.00034	6.9205
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00411	.07832	.00873	4.1063	.36153	.01555
Stddev	.00014	.00026	.00012	.00103	.0360	.10287	.00115
%RSD	79.888	6.3763	.14901	11.764	.87604	28.454	7.3859
#1	.00034	.00441	.07845	.00769	4.0674	.24610	.01422
#2	.00008	.00398	.07826	.00876	4.1132	.39498	.01620
#3	.00012	.00394	.07824	.00975	4.1384	.44352	.01622
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.7810	.03458	.00201	56.450	.20838	.02547	.00721
Stddev	.0177	.00119	.00033	.069	.00108	.00272	.00260
%RSD	.36954	3.4284	16.570	.12255	.52014	10.671	36.089
#1	4.7797	.03585	.00175	56.529	.20961	.02515	.00459
#2	4.7992	.03351	.00189	56.422	.20757	.02292	.00725
#3	4.7640	.03438	.00239	56.399	.20797	.02833	.00980
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 15, 2016

Sample Name: L1606041103 Acquired: 6/14/2016 16:54:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00083**	**.01289**	F **47.548**	**.00068**	**.14132**	**.03990**	**-.00083**
Stddev	.00358	.00245	.078	.00064	.00012	.00485	.00215
%RSD	430.25	19.002	.16342	94.147	.08329	12.166	258.14
#1	-.00476	.01232	47.596	-.00003	.14118	.03464	.00017
#2	.00002	.01558	47.589	.00085	.14138	.04085	.00063
#3	.00225	.01078	47.458	.00123	.14140	.04421	-.00331
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-1.0000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00701**	**.01622**	**.00206**
Stddev	.00081	.00032	.00036
%RSD	11.554	1.9585	17.664
#1	.00747	.01585	.00248
#2	.00750	.01638	.00188
#3	.00608	.01642	.00183
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7655.9**	**44658.**	**2904.3**
Stddev	5.9	251.	23.1
%RSD	.07647	.56235	.79553
#1	7653.4	44498.	2877.6
#2	7651.7	44528.	2918.1
#3	7662.6	44947.	2917.1

Approved: June 15, 2016

Sample Name: L1606041104 Acquired: 6/14/2016 16:58:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	4.2703	-.00025	.01115	.16700	.00024	6.9209
Stddev	.00085	.0189	.00275	.00378	.00144	.00007	.0649
%RSD	4105.9	.44349	1094.0	33.872	.86054	27.267	.93815
#1	-.00028	4.2629	.00083	.00684	.16681	.00031	6.8710
#2	.00099	4.2563	-.00338	.01274	.16852	.00019	6.9943
#3	-.00064	4.2919	.00180	.01387	.16566	.00022	6.8975
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.00493	.07583	.00744	3.7095	.34502	.01555
Stddev	.00013	.00031	.00042	.00053	.0351	.06596	.00152
%RSD	68.175	6.2644	.55838	7.1285	.94733	19.119	9.7561
#1	.00007	.00525	.07562	.00750	3.7368	.28315	.01384
#2	.00016	.00463	.07632	.00688	3.7219	.41443	.01674
#3	.00033	.00491	.07555	.00793	3.6699	.33746	.01606
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	4.5990	.03824	.00328	57.589	.24632	.02793	.00685
Stddev	.1291	.00387	.00048	.313	.00195	.00899	.00195
%RSD	2.8071	10.111	14.656	.54293	.79021	32.181	28.417
#1	4.7046	.03390	.00274	57.819	.24856	.02090	.00464
#2	4.4551	.03952	.00344	57.714	.24513	.03806	.00762
#3	4.6373	.04131	.00366	57.233	.24525	.02484	.00830
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 15, 2016

Sample Name: L1606041104 Acquired: 6/14/2016 16:58:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00134	.00802	F 47.724	.00153	.13535	.04339	-.00167
Stddev	.00223	.00215	.137	.00025	.00030	.00514	.00107
%RSD	166.50	26.828	.28606	16.627	.21970	11.845	63.926
#1	-.00315	.00617	47.876	.00125	.13535	.04706	-.00106
#2	-.00201	.01038	47.684	.00161	.13506	.04561	-.00290
#3	.00115	.00750	47.612	.00174	.13565	.03752	-.00105
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-1.0000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00638	.01397	.00198
Stddev	.00029	.00007	.00041
%RSD	4.4695	.50623	20.917
#1	.00650	.01405	.00196
#2	.00606	.01391	.00158
#3	.00659	.01395	.00241
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7657.4	44804.	2917.9
Stddev	9.3	34.	11.3
%RSD	.12094	.07598	.38571
#1	7656.3	44843.	2916.1
#2	7667.1	44790.	2907.6
#3	7648.7	44780.	2929.9

Approved: June 15, 2016

Sample Name: L1606048503 Acquired: 6/14/2016 17:02:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00152	.01061	.00001	.05813	.06331	.00007	72.107	-.00018
Stddev	.00196	.00546	.00231	.00301	.00087	.00008	.445	.00011
%RSD	128.95	51.417	21723.	5.1731	1.3806	103.08	.61711	58.387
#1	-.00309	.01509	-.00178	.05550	.06364	.00008	72.620	-.00007
#2	.00068	.01222	-.00081	.06141	.06396	-.00001	71.870	-.00020
#3	-.00214	.00453	.00262	.05749	.06231	.00014	71.831	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.00069	.00108	.25572	2.0912	.00196	18.924	.29265
Stddev	.00003	.00089	.00204	.02174	.0273	.00392	.228	.00607
%RSD	28.787	128.75	188.42	8.5010	1.3052	199.53	1.2052	2.0751
#1	.00013	.00033	.00268	.25034	2.1093	.00647	19.122	.29908
#2	.00008	.00170	.00177	.23718	2.0598	-.00058	18.975	.28700
#3	.00009	.00004	-.00121	.27965	2.1045	-.00000	18.674	.29188
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	42.483	.00008	.01719	.00025	-.00220	.00591	9.3210
Stddev	.00025	.228	.00112	.00580	.00262	.00462	.00430	.0317
%RSD	34.474	.53784	1380.0	33.727	1047.0	210.40	72.775	.34014
#1	.00046	42.745	-.00035	.01615	-.00139	-.00084	.00094	9.3538
#2	.00076	42.327	-.00076	.02343	-.00114	.00160	.00836	9.3186
#3	.00096	42.377	.00135	.01198	.00327	-.00734	.00842	9.2906
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606048503 Acquired: 6/14/2016 17:02:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00099	.47561	-.01092	.00058	.00034	.00357	.00121
Stddev	.00056	.00310	.00259	.00147	.00106	.00011	.00052
%RSD	56.087	.65238	23.751	253.30	312.19	3.0534	43.100
#1	.00090	.47907	-.01348	.00126	.00105	.00367	.00079
#2	.00159	.47468	-.01098	-.00111	.00085	.00358	.00104
#3	.00049	.47308	-.00830	.00159	-.00088	.00346	.00180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7623.1	44400.	2911.5
Stddev	9.3	312.	23.1
%RSD	.12201	.70181	.79392
#1	7612.8	44046.	2888.8
#2	7631.0	44519.	2935.0
#3	7625.4	44634.	2910.8

Approved: June 15, 2016

Sample Name: L1606048504 Acquired: 6/14/2016 17:06:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00038	.00809	-.00089	.07200	.13789	.00004	73.871	.00005
Stddev	.00109	.01401	.00392	.00141	.00087	.00003	.386	.00014
%RSD	285.56	173.15	439.20	1.9544	.63250	71.483	.52261	261.72
#1	-.00164	-.00354	.00208	.07163	.13777	.00003	74.265	.00009
#2	.00031	.02365	-.00534	.07082	.13708	.00003	73.493	.00016
#3	.00018	.00417	.00058	.07356	.13881	.00008	73.856	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	.00039	.00084	.02766	2.0711	.01202	20.170	.05556
Stddev	.00022	.00029	.00055	.02848	.0287	.00105	.136	.00248
%RSD	156.26	73.397	65.603	102.97	1.3843	8.7239	.67280	4.4606
#1	-.00032	.00022	.00147	.04751	2.1041	.01280	20.323	.05598
#2	-.00019	.00072	.00056	-.00497	2.0516	.01244	20.125	.05781
#3	.00010	.00023	.00048	.04045	2.0578	.01083	20.063	.05290
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00280	34.620	.00007	.00202	-.00033	.00195	.00608	12.532
Stddev	.00034	.214	.00071	.00171	.00108	.00316	.00199	.015
%RSD	12.163	.61684	960.77	84.643	325.44	161.76	32.708	.12208
#1	.00315	34.830	-.00073	.00400	-.00155	.00490	.00755	12.542
#2	.00247	34.403	.00062	.00095	.00004	-.00138	.00382	12.539
#3	.00276	34.625	.00033	.00112	.00052	.00233	.00687	12.514
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606048504 Acquired: 6/14/2016 17:06:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00090	1.0465	-.00796	-.00112	-.00050	.00188	.00125
Stddev	.00082	.0048	.00800	.00102	.00041	.00013	.00046
%RSD	90.993	.46043	100.58	91.021	81.907	7.1181	37.021
#1	.00184	1.0510	-.00792	-.00154	-.00096	.00176	.00090
#2	.00055	1.0414	.00003	.00004	-.00016	.00188	.00108
#3	.00032	1.0470	-.01598	-.00187	-.00039	.00202	.00177
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7632.8	44543.	2912.7
Stddev	9.8	160.	18.7
%RSD	.12845	.36000	.64357
#1	7625.6	44386.	2909.4
#2	7644.0	44536.	2932.9
#3	7628.9	44707.	2895.9

Approved: June 15, 2016

Sample Name: L1606048505 Acquired: 6/14/2016 17:09:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00034	.01879	.04944	.04926	.22831	-.00001	102.09	.00009
Stddev	.00089	.00569	.00246	.00208	.00242	.00006	.53	.00036
%RSD	263.15	30.297	4.9718	4.2151	1.0581	600.25	.52002	405.18
#1	-.00049	.02331	.04743	.04823	.23095	-.00006	102.47	-.00022
#2	-.00114	.01240	.04870	.05165	.22620	.00006	101.48	.00048
#3	.00062	.02068	.05218	.04791	.22778	-.00003	102.31	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00107	.00105	.00285	13.621	.91780	.00699	11.647	1.6925
Stddev	.00038	.00031	.00048	.062	.03718	.00117	.017	.0045
%RSD	35.181	29.478	16.814	.45567	4.0507	16.764	.14949	.26564
#1	.00131	.00140	.00287	13.693	.91341	.00570	11.658	1.6967
#2	.00127	.00093	.00332	13.584	.88302	.00799	11.627	1.6878
#3	.00064	.00082	.00236	13.586	.95698	.00728	11.655	1.6929
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00880	35.195	.00148	.02014	-.00029	-.00276	.01014	10.052
Stddev	.00006	.204	.00087	.01116	.00179	.00420	.00716	.022
%RSD	.73480	.57867	58.755	55.430	626.55	152.01	70.557	.21544
#1	.00886	35.317	.00233	.03297	-.00103	.00025	.01403	10.046
#2	.00879	34.960	.00060	.01272	-.00159	-.00098	.00188	10.035
#3	.00873	35.308	.00150	.01472	.00176	-.00757	.01451	10.076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606048505 Acquired: 6/14/2016 17:09:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00093	.40788	-.00619	-.00136	-.00112	.00233	.00017
Stddev	.00066	.00052	.00468	.00199	.00031	.00029	.00002
%RSD	70.386	.12751	75.605	146.60	27.400	12.617	11.831
#1	.00165	.40754	-.00081	-.00023	-.00133	.00262	.00017
#2	.00076	.40763	-.00847	-.00019	-.00127	.00203	.00015
#3	.00038	.40848	-.00931	-.00365	-.00077	.00233	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7618.3	44475.	2925.7
Stddev	13.0	191.	30.7
%RSD	.17002	.42925	1.0494
#1	7625.7	44377.	2897.2
#2	7603.4	44696.	2958.2
#3	7625.9	44354.	2921.7

Approved: June 15, 2016

Sample Name: L1606048506 Acquired: 6/14/2016 17:13:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.01138	.00024	.03778	.00736	.00004	106.04	.00006
Stddev	.00023	.00375	.00193	.00217	.00076	.00005	1.13	.00030
%RSD	180.26	32.932	818.96	5.7541	10.303	105.02	1.0640	546.35
#1	-.00010	.00982	-.00051	.03571	.00767	.00009	107.11	.00032
#2	.00036	.00867	-.00122	.04005	.00792	.00003	104.86	.00012
#3	.00012	.01566	.00243	.03757	.00650	.00001	106.15	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00089	.00151	.00421	1.0217	.00847	10.023	.10725
Stddev	.00000	.00105	.00061	.01495	.0430	.00400	.113	.00472
%RSD	1.0820	117.63	39.949	355.30	4.2070	47.284	1.1264	4.3971
#1	.00009	.00086	.00151	-.01303	1.0602	.00631	10.129	.11074
#2	.00009	.00195	.00091	.01365	.97531	.01309	9.9045	.10189
#3	.00009	-.00014	.00212	.01201	1.0295	.00601	10.034	.10913
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	21.638	.00000	.01440	-.00287	-.00145	.00559	8.2477
Stddev	.00052	.238	.00066	.00749	.00105	.00489	.00222	.0108
%RSD	197.84	1.1021	44082.	52.014	36.461	337.86	39.709	.13085
#1	-.00042	21.839	-.00044	.00576	-.00211	.00287	.00583	8.2486
#2	.00032	21.374	.00076	.01837	-.00406	-.00045	.00768	8.2580
#3	-.00069	21.701	-.00032	.01906	-.00244	-.00676	.00326	8.2365
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606048506 Acquired: 6/14/2016 17:13:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00134	.40115	-.01349	-.00088	.00037	.01164	.00050
Stddev	.00061	.00470	.00459	.00242	.00086	.00016	.00059
%RSD	45.823	1.1720	34.033	274.17	230.70	1.3342	116.57
#1	.00069	.40585	-.00890	-.00046	.00101	.01179	.00115
#2	.00191	.39645	-.01349	.00130	.00071	.01148	.00000
#3	.00141	.40117	-.01808	-.00348	-.00060	.01165	.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7638.1	44699.	2914.0
Stddev	20.7	111.	24.2
%RSD	.27089	.24803	.83147
#1	7627.6	44571.	2886.5
#2	7624.8	44757.	2923.7
#3	7661.9	44769.	2931.9

Approved: June 15, 2016

Sample Name: L1606054009 Acquired: 6/14/2016 17:17:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00111	.03943	.00779	.03258	.15787	.00002	41.513	.00028
Stddev	.00130	.00427	.00101	.00104	.00054	.00010	.055	.00022
%RSD	117.32	10.835	12.972	3.2060	.34408	668.10	.13286	79.532
#1	-.00041	.03453	.00685	.03157	.15758	.00006	41.574	.00012
#2	-.00031	.04241	.00886	.03252	.15754	.00009	41.498	.00053
#3	-.00261	.04133	.00766	.03365	.15850	-.00010	41.466	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00148	-.00019	.00256	24.059	73.927	.00089	4.3234	1.9945
Stddev	.00020	.00070	.00122	.087	.392	.00382	.0764	.0055
%RSD	13.837	359.54	47.717	.36250	.53075	427.61	1.7681	.27412
#1	.00130	-.00048	.00319	24.132	74.358	-.00319	4.3759	2.0004
#2	.00170	.00060	.00333	24.084	73.831	.00147	4.2357	1.9933
#3	.00143	-.00070	.00115	23.962	73.592	.00440	4.3587	1.9897
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	26.005	.00333	.03353	-.00058	.00218	.00638	3.0621
Stddev	.00037	.076	.00117	.00682	.00205	.00145	.00436	.0032
%RSD	367.07	.29119	34.967	20.331	351.12	66.629	68.369	.10485
#1	-.00021	26.091	.00363	.02576	.00144	.00082	.00868	3.0626
#2	.00001	25.978	.00432	.03850	-.00265	.00200	.00910	3.0650
#3	.00050	25.947	.00205	.03633	-.00054	.00371	.00135	3.0586
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606054009 Acquired: 6/14/2016 17:17:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.25224	.00858	-.00274	-.00072	.00584	-.00049
Stddev	.00024	.00083	.00691	.00074	.00081	.00017	.00026
%RSD	34.529	.32894	80.505	27.008	112.85	2.9778	52.350
#1	.00042	.25172	.01378	-.00359	-.00065	.00603	-.00044
#2	.00078	.25319	.00074	-.00242	.00006	.00583	-.00077
#3	.00088	.25179	.01121	-.00221	-.00156	.00568	-.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7903.6	46315.	3079.0
Stddev	7.7	134.	26.8
%RSD	.09746	.29005	.86994
#1	7912.4	46452.	3048.4
#2	7898.1	46183.	3090.9
#3	7900.2	46311.	3097.8

Approved: June 15, 2016

Sample Name: L1606054010 Acquired: 6/14/2016 17:21:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00068	.52065	.00622	.03095	.07368	.00009	111.16	.00014
Stddev	.00155	.00029	.00578	.00107	.00070	.00004	.16	.00040
%RSD	227.75	.05474	92.951	3.4634	.94507	48.885	.14044	287.60
#1	-.00202	.52086	.00654	.03041	.07448	.00012	111.17	-.00007
#2	.00101	.52033	.00029	.03218	.07321	.00010	111.01	.00060
#3	-.00103	.52077	.01183	.03025	.07336	.00004	111.32	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	.00275	.00284	3.1244	9.8775	.01955	3.4781	.24503
Stddev	.00010	.00086	.00090	.0122	.0402	.00231	.0584	.00219
%RSD	11.831	31.373	31.651	.38957	.40690	11.827	1.6799	.89444
#1	.00100	.00358	.00388	3.1212	9.9088	.02219	3.5227	.24286
#2	.00079	.00282	.00238	3.1378	9.8915	.01789	3.4119	.24498
#3	.00088	.00186	.00227	3.1141	9.8321	.01857	3.4995	.24724
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00296	139.31	.00163	.10512	.00187	-.00071	.00573	9.0899
Stddev	.00030	.13	.00007	.00533	.00224	.00522	.00584	.0241
%RSD	9.9861	.09166	4.5431	5.0677	119.75	731.40	101.80	.26556
#1	.00319	139.45	.00163	.10531	.00197	-.00669	.01044	9.0921
#2	.00263	139.30	.00170	.11035	-.00042	.00161	-.00080	9.1128
#3	.00307	139.19	.00155	.09970	.00406	.00294	.00756	9.0647
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606054010 Acquired: 6/14/2016 17:21:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00128	.52415	-.00141	.00026	.00251	.03824	.00089
Stddev	.00019	.00015	.00263	.00482	.00017	.00012	.00034
%RSD	14.500	.02827	187.00	1865.9	6.5933	.32280	38.664
#1	.00141	.52411	-.00087	-.00414	.00236	.03835	.00087
#2	.00107	.52431	.00091	-.00050	.00249	.03811	.00055
#3	.00138	.52402	-.00426	.00542	.00269	.03827	.00124
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7560.1	43953.	2932.6
Stddev	31.2	87.	3.3
%RSD	.41305	.19687	.11312
#1	7528.5	43862.	2935.6
#2	7560.8	43962.	2929.0
#3	7590.9	44034.	2933.2

Approved: June 15, 2016

Sample Name: L1606054011 Acquired: 6/14/2016 17:25:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.59515	.00344	.02999	.07563	.00005	115.10	.00000
Stddev	.00078	.00265	.00380	.00089	.00043	.00002	.67	.00016
%RSD	464.25	.44542	110.46	2.9844	.56630	42.594	.58592	7754.2
#1	-.00079	.59669	.00756	.02951	.07514	.00006	115.78	-.00007
#2	-.00044	.59667	.00008	.02943	.07578	.00006	115.07	.00018
#3	.00071	.59209	.00267	.03102	.07596	.00002	114.44	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00106	.00229	.00148	3.2444	10.063	.01918	3.7279	.25161
Stddev	.00025	.00123	.00161	.0362	.046	.00176	.1735	.00137
%RSD	23.474	53.530	108.64	1.1150	.45978	9.1615	4.6546	.54645
#1	.00094	.00127	.00149	3.2072	10.116	.01931	3.9133	.25305
#2	.00089	.00195	.00308	3.2465	10.033	.02087	3.7009	.25145
#3	.00135	.00365	-.00013	3.2795	10.039	.01736	3.5694	.25032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00326	143.24	.00151	.11253	.00076	.00277	.00059	9.5696
Stddev	.00037	.47	.00105	.00442	.00357	.00485	.00570	.0206
%RSD	11.251	.32871	69.691	3.9282	469.50	175.36	962.96	.21480
#1	.00358	143.73	.00087	.11680	-.00197	.00552	-.00589	9.5755
#2	.00335	143.18	.00093	.11283	.00480	.00562	.00485	9.5865
#3	.00286	142.80	.00272	.10797	-.00055	-.00284	.00282	9.5467
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606054011 Acquired: 6/14/2016 17:25:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00112	.54100	-.00388	-.00133	.00210	.03558	.00074
Stddev	.00029	.00204	.00158	.00292	.00047	.00016	.00021
%RSD	26.123	.37736	40.668	218.80	22.534	.45204	28.694
#1	.00145	.54304	-.00563	-.00065	.00220	.03545	.00056
#2	.00102	.54103	-.00342	.00118	.00251	.03576	.00069
#3	.00089	.53895	-.00258	-.00453	.00158	.03553	.00098
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7562.5	43692.	2925.3
Stddev	7.4	94.	21.7
%RSD	.09845	.21575	.74097
#1	7554.0	43714.	2902.1
#2	7567.7	43589.	2928.7
#3	7565.9	43773.	2945.1

Approved: June 15, 2016

Sample Name: L1606054014 Acquired: 6/14/2016 17:29:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	.02147	.02563	.03147	.10443	.00052	44.979	-.00011
Stddev	.00177	.00155	.00230	.00162	.00075	.00003	.156	.00026
%RSD	199.14	7.2106	8.9775	5.1480	.72193	5.1761	.34687	233.98
#1	.00248	.02013	.02523	.03283	.10519	.00055	45.131	-.00040
#2	.00119	.02112	.02811	.02968	.10369	.00052	44.819	.00001
#3	-.00101	.02317	.02356	.03190	.10441	.00050	44.986	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.00065	.00171	11.927	2.8315	.00332	5.0603	4.2095
Stddev	.00032	.00163	.00073	.043	.1122	.00300	.1266	.0225
%RSD	1719.9	252.70	42.747	.35731	3.9615	90.325	2.5015	.53536
#1	.00016	-.00096	.00098	11.976	2.7301	.00471	5.2016	4.2183
#2	-.00035	.00060	.00171	11.903	2.8124	.00537	5.0222	4.1839
#3	.00025	.00230	.00244	11.902	2.9520	-.00012	4.9572	4.2263
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	21.056	.00746	.29297	.00171	.00052	.00342	6.5374
Stddev	.00023	.085	.00023	.00731	.00278	.00281	.00238	.0082
%RSD	182.43	.40320	3.0991	2.4950	162.25	545.40	69.447	.12564
#1	-.00005	21.154	.00721	.28603	.00243	-.00223	.00546	6.5457
#2	.00005	21.000	.00767	.30060	-.00135	.00038	.00400	6.5293
#3	.00039	21.014	.00750	.29228	.00405	.00339	.00081	6.5371
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606054014 Acquired: 6/14/2016 17:29:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	.26905	.00054	-.00104	.00010	.01946	-.00030
Stddev	.00041	.00145	.00327	.00117	.00069	.00024	.00033
%RSD	73.408	.53923	602.21	112.06	703.56	1.2360	108.01
#1	.00057	.27052	-.00004	-.00228	-.00015	.01972	-.00066
#2	.00014	.26761	-.00239	-.00087	.00088	.01941	-.00002
#3	.00095	.26901	.00406	.00003	-.00044	.01925	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7940.0	46251.	3083.1
Stddev	9.7	187.	14.5
%RSD	.12161	.40489	.46939
#1	7929.3	46036.	3071.7
#2	7942.6	46371.	3099.4
#3	7948.1	46347.	3078.2

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 17:33:57 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38498**	**9.6272**	**.37768**	**.48429**	**.94492**	**.04818**	**9.3126**	**.04814**
Stddev	.00131	.0270	.00464	.00312	.00340	.00031	.0767	.00045
%RSD	.34096	.28029	1.2295	.64359	.35938	.63947	.82387	.93562
#1	.38416	9.6046	.38110	.48253	.94654	.04783	9.2598	.04787
#2	.38650	9.6570	.37954	.48789	.94721	.04830	9.4006	.04788
#3	.38429	9.6198	.37239	.48245	.94102	.04841	9.2774	.04866
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19534**	**.48542**	**.48677**	**3.8362**	**47.458**	**.93559**	**9.3954**	**.47377**
Stddev	.00076	.00459	.00292	.0239	.143	.00233	.0588	.00374
%RSD	.38763	.94577	.59982	.62337	.30195	.24913	.62580	.79026
#1	.19614	.48012	.48785	3.8326	47.408	.93568	9.4629	.47387
#2	.19526	.48816	.48900	3.8618	47.620	.93788	9.3675	.47746
#3	.19463	.48798	.48347	3.8143	47.347	.93322	9.3557	.46998
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.96293**	**47.783**	**.49303**	**9.7488**	**.49339**	**1.1697**	**.37378**	**4.9113**
Stddev	.00208	.121	.00182	.0030	.00369	.0094	.00622	.0034
%RSD	.21557	.25352	.36828	.03101	.74785	.80324	1.6639	.06973
#1	.96524	47.741	.49512	9.7514	.49140	1.1747	.37155	4.9082
#2	.96231	47.919	.49215	9.7455	.49113	1.1589	.38080	4.9109
#3	.96123	47.688	.49183	9.7495	.49765	1.1756	.36898	4.9150
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 17:33:57 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.96781	.94451	.93961	.48614	.97117	.98136	.98482
Stddev	.00181	.00385	.00962	.00086	.00421	.00059	.00966
%RSD	.18691	.40778	1.0241	.17744	.43323	.05993	.98123
#1	.96572	.94685	.94895	.48553	.96634	.98200	.97784
#2	.96894	.94662	.92973	.48577	.97403	.98084	.99585
#3	.96877	.94006	.94013	.48713	.97313	.98125	.98076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8106.1	46904.	3053.5
Stddev	14.2	116.	28.0
%RSD	.17535	.24722	.91848
#1	8121.6	46783.	3068.5
#2	8093.5	46913.	3021.2
#3	8103.3	47015.	3070.9

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 17:37:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00093	-.00096	-.00201	.00104	.00066	.00001	.00291	-.00007
Stddev	.00099	.00384	.00191	.00196	.00047	.00000	.02138	.00030
%RSD	105.58	400.76	94.758	188.90	72.011	16.008	735.63	416.90
#1	-.00011	-.00218	-.00126	.00294	.00114	.00001	.02266	.00028
#2	.00184	.00335	-.00418	.00114	.00019	.00001	.00586	-.00026
#3	.00107	-.00405	-.00060	-.00097	.00064	.00001	-.01979	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	.00027	.00078	.02860	-.07775	-.00235	-.08523	-.00011
Stddev	.00030	.00025	.00097	.00867	.03524	.00291	.06296	.00090
%RSD	5543.4	92.384	124.39	30.305	45.320	123.77	73.865	815.20
#1	.00007	-.00001	.00038	.02834	-.06394	.00061	-.12601	-.00105
#2	-.00033	.00033	.00189	.03740	-.11780	-.00246	-.01272	-.00002
#3	.00025	.00047	.00008	.02007	-.05151	-.00521	-.11697	.00074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00172	-.00758	.00067	.00433	-.00180	-.00156	.00163	-.00062
Stddev	.00008	.01278	.00113	.01084	.00201	.00169	.00204	.00304
%RSD	4.5302	168.50	169.28	250.54	111.94	108.44	125.35	492.42
#1	.00171	-.02228	.00050	-.00116	-.00407	-.00172	.00386	.00264
#2	.00180	.00085	-.00037	-.00267	-.00023	-.00317	-.00012	-.00338
#3	.00164	-.00131	.00187	.01681	-.00110	.00020	.00114	-.00111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 17:37:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00084	-.00027	.00695	-.00077	.00062	-.00018	.00097
Stddev	.00053	.00031	.00335	.00191	.00048	.00010	.00019
%RSD	63.218	114.23	48.177	248.77	77.522	56.107	20.049
#1	.00080	-.00012	.01069	-.00296	.00010	-.00019	.00075
#2	.00033	-.00062	.00424	.00015	.00105	-.00007	.00103
#3	.00138	-.00007	.00591	.00051	.00072	-.00027	.00112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8221.5	47984.	3086.2
Stddev	10.2	168.	9.4
%RSD	.12365	.35008	.30370
#1	8233.2	47792.	3094.9
#2	8216.7	48103.	3087.6
#3	8214.6	48058.	3076.3

Approved: June 15, 2016

Sample Name: L1606049201 Acquired: 6/14/2016 17:41:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00215**	**.02347**	**-.00090**	**.87063**	**2.3677**	**.00000**	**156.67**
Stddev	.00076	.00683	.00200	.00033	.0092	.00006	.58
%RSD	35.428	29.125	221.66	.03805	.38693	2330.6	.36866
#1	.00177	.03088	-.00085	.87026	2.3679	-.00003	156.49
#2	.00302	.02210	-.00293	.87087	2.3768	.00007	157.32
#3	.00164	.01742	.00107	.87077	2.3585	-.00003	156.21
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00000**	**.00055**	**.00120**	**.00105**	**.83013**	**12.176**	**.50661**
Stddev	.00012	.00039	.00010	.00099	.01750	.096	.00296
%RSD	3139.3	70.493	8.6986	93.534	2.1085	.78722	.58363
#1	-.00014	.00046	.00132	.00001	.84409	12.169	.50520
#2	.00005	.00098	.00115	.00117	.81050	12.275	.51000
#3	.00008	.00022	.00114	.00197	.83581	12.084	.50461
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**15.352**	**.07152**	**-.00082**	F **354.19**	**-.00034**	**.00655**	**-.00109**
Stddev	.280	.00339	.00031	3.41	.00046	.00996	.00207
%RSD	1.8248	4.7469	38.053	.96361	134.77	152.05	189.28
#1	15.232	.06772	-.00047	355.31	.00011	.01803	.00022
#2	15.672	.07426	-.00094	356.91	-.00081	.00016	-.00348
#3	15.151	.07257	-.00105	350.36	-.00033	.00147	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 15, 2016

Sample Name: L1606049201 Acquired: 6/14/2016 17:41:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00095	-.00089	.06448	.00014	F 29.923	-.02126	.00098
Stddev	.00435	.00190	.00066	.00042	.450	.00367	.00313
%RSD	459.30	214.91	1.0207	304.06	1.5039	17.247	319.44
#1	-.00507	.00097	.06471	.00049	29.773	-.02328	.00152
#2	.00360	-.00080	.06374	.00026	30.429	-.01702	-.00239
#3	-.00137	-.00283	.06499	-.00033	29.568	-.02346	.00381
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00047	.00109	.00001
Stddev	.00091	.00012	.00069
%RSD	193.35	10.669	5931.7
#1	-.00072	.00111	-.00022
#2	-.00122	.00096	.00078
#3	.00054	.00119	-.00053
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7971.4	46009.	3079.7
Stddev	44.5	243.	45.5
%RSD	.55834	.52921	1.4758
#1	8008.8	45858.	3084.4
#2	7983.2	46289.	3032.1
#3	7922.1	45878.	3122.7

Approved: June 15, 2016

Sample Name: L1606049202 Acquired: 6/14/2016 17:45:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00195**	**.00584**	**.00047**	**1.0255**	**2.6925**	**.00009**	**180.26**
Stddev	.00068	.00645	.00085	.0065	.0203	.00003	1.46
%RSD	34.850	110.34	180.73	.63199	.75419	32.062	.80934
#1	-.00257	-.00080	-.00038	1.0180	2.6710	.00013	178.80
#2	-.00122	.01207	.00047	1.0288	2.6952	.00007	180.25
#3	-.00206	.00626	.00131	1.0297	2.7113	.00009	181.72
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.00079**	**.00206**	**.00117**	**.80917**	**13.992**	**.58500**
Stddev	.00025	.00028	.00050	.00038	.03069	.046	.00087
%RSD	778.47	34.987	24.093	32.200	3.7932	.32920	.14892
#1	-.00025	.00073	.00253	.00152	.83454	13.944	.58447
#2	-.00008	.00055	.00154	.00077	.77505	13.997	.58452
#3	.00023	.00109	.00209	.00123	.81791	14.036	.58600
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**17.741**	**.08635**	**-.00109**	F **400.16**	**-.00018**	**.00481**	**.00113**
Stddev	.218	.00134	.00022	8.06	.00014	.00366	.00227
%RSD	1.2310	1.5470	20.438	2.0149	81.500	76.151	200.09
#1	17.627	.08556	-.00096	391.97	-.00009	.00321	.00263
#2	17.602	.08561	-.00096	408.09	-.00010	.00900	-.00148
#3	17.992	.08789	-.00135	400.41	-.00034	.00222	.00225
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 15, 2016

Sample Name: L1606049202 Acquired: 6/14/2016 17:45:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.00457	.04502	-.00029	F 34.426	F -.03234	.00220
Stddev	.00339	.00346	.00083	.00061	.642	.00135	.00088
%RSD	1434.2	75.822	1.8512	208.45	1.8663	4.1862	39.887
#1	.00407	.00823	.04585	-.00048	33.778	-.03372	.00174
#2	-.00103	.00135	.04418	-.00078	35.063	-.03229	.00322
#3	-.00233	.00413	.04504	.00039	34.438	-.03101	.00165
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Pass
High Limit					9.0000	36.000	
Low Limit					-.01000	-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00070	.00074	-.00023
Stddev	.00078	.00008	.00039
%RSD	111.90	11.119	170.09
#1	.00007	.00083	.00021
#2	-.00068	.00067	-.00051
#3	-.00149	.00072	-.00039
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7566.0	42993.	2923.4
Stddev	67.3	191.	41.8
%RSD	.88952	.44475	1.4309
#1	7497.0	42999.	2969.9
#2	7631.5	42800.	2911.5
#3	7569.4	43182.	2888.8

Approved: June 15, 2016

Sample Name: L1606054015 Acquired: 6/14/2016 17:50:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00064	.05888	.00391	.03129	.16499	.00027	40.028	.00011
Stddev	.00270	.01280	.00389	.00177	.00170	.00005	.239	.00016
%RSD	420.10	21.745	99.359	5.6446	1.0311	18.510	.59756	141.22
#1	.00248	.05199	.00681	.02980	.16350	.00032	40.036	.00006
#2	-.00213	.07366	.00544	.03083	.16461	.00022	39.785	-.00001
#3	-.00228	.05100	-.00051	.03324	.16684	.00027	40.263	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.00069	.03741	4.4993	3.4523	.01652	2.7005	.07158
Stddev	.00032	.00045	.00198	.0435	.1087	.00228	.0240	.00236
%RSD	66.875	65.605	5.2808	.96762	3.1471	13.820	.88807	3.3023
#1	.00057	.00091	.03513	4.5082	3.4758	.01902	2.6975	.06963
#2	.00012	.00017	.03859	4.4520	3.3338	.01601	2.6782	.07421
#3	.00075	.00098	.03852	4.5377	3.5473	.01454	2.7259	.07090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00049	39.854	.00303	.84930	.00486	.00570	.00528	26.027
Stddev	.00017	.187	.00016	.00705	.00313	.00445	.00855	.255
%RSD	35.759	.46881	5.2195	.82978	64.456	78.013	161.81	.97825
#1	-.00032	39.893	.00286	.84246	.00140	.00990	-.00455	25.734
#2	-.00048	39.650	.00317	.84890	.00751	.00104	.00948	26.144
#3	-.00067	40.018	.00308	.85653	.00566	.00617	.01092	26.202
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606054015 Acquired: 6/14/2016 17:50:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.22818	.00295	-.00203	.00146	.12516	.00158
Stddev	.00045	.00177	.00178	.00115	.00067	.00151	.00063
%RSD	65.519	.77458	60.266	56.639	46.052	1.2053	39.886
#1	.00112	.23020	.00164	-.00084	.00155	.12343	.00108
#2	.00072	.22743	.00224	-.00212	.00208	.12584	.00138
#3	.00022	.22691	.00498	-.00314	.00075	.12620	.00229
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7466.8	45349.	3005.3
Stddev	49.7	420.	11.4
%RSD	.66497	.92717	.38026
#1	7515.0	45835.	3008.6
#2	7415.9	45119.	3014.8
#3	7469.6	45094.	2992.6

Approved: June 15, 2016

Sample Name: L1606054016 Acquired: 6/14/2016 17:54:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00142**	**.04949**	**.00150**	**.04448**	**.03246**	**.00005**	**80.331**	**-.00002**
Stddev	.00148	.00818	.00200	.00064	.00080	.00009	.248	.00003
%RSD	104.47	16.534	132.84	1.4344	2.4673	178.94	.30895	121.34
#1	-.00034	.04796	.00298	.04492	.03313	.00010	80.364	-.00004
#2	-.00311	.05834	-.00077	.04375	.03157	.00010	80.560	.00001
#3	-.00081	.04219	.00230	.04477	.03268	-.00005	80.067	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00006**	**.00216**	**.00326**	**6.3843**	**1.8356**	**.00865**	**2.6804**	**.16626**
Stddev	.00019	.00076	.00062	.0555	.1457	.00281	.0710	.00030
%RSD	336.57	35.200	19.078	.86908	7.9350	32.493	2.6487	.18110
#1	-.00015	.00299	.00377	6.3295	1.8467	.00688	2.6981	.16642
#2	.00009	.00149	.00257	6.4405	1.9753	.01189	2.7408	.16591
#3	.00022	.00201	.00345	6.3829	1.6847	.00718	2.6022	.16645
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00051**	**28.673**	**.01287**	**1.2137**	**-.00003**	**-.00234**	**.00358**	**17.085**
Stddev	.00059	.126	.00065	.0083	.00374	.00162	.00762	.070
%RSD	116.54	.43795	5.0508	.68200	14167.	68.985	212.89	.40749
#1	-.00093	28.719	.01337	1.2208	-.00418	-.00264	-.00418	17.141
#2	-.00075	28.770	.01214	1.2046	.00103	-.00060	.00387	17.107
#3	.00017	28.531	.01310	1.2156	.00306	-.00379	.01105	17.007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606054016 Acquired: 6/14/2016 17:54:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.36984	-.00618	-.00191	.00059	.01730	.00109
Stddev	.00061	.00119	.00630	.00126	.00147	.00026	.00044
%RSD	225.55	.32169	101.96	66.068	248.31	1.5198	40.069
#1	.00028	.36997	-.00452	-.00184	.00151	.01758	.00072
#2	.00087	.37096	-.00088	-.00068	.00137	.01706	.00098
#3	-.00035	.36859	-.01315	-.00320	-.00110	.01724	.00157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7408.5	43089.	2810.4
Stddev	18.4	120.	10.8
%RSD	.24900	.27807	.38501
#1	7406.7	43207.	2798.0
#2	7391.0	42967.	2815.0
#3	7427.7	43091.	2818.2

Approved: June 15, 2016

Sample Name: L1606064501 Acquired: 6/14/2016 17:58:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00078	.01025	-.00002	-.00000	.00016	.00003	.03499	.00015
Stddev	.00153	.00759	.00189	.00291	.00078	.00004	.03521	.00014
%RSD	195.57	74.093	8696.6	192800.	487.87	169.86	100.63	88.637
#1	.00236	.01552	-.00015	-.00318	.00090	.00005	.06275	.00004
#2	-.00070	.00154	-.00184	.00253	-.00065	.00005	-.00462	.00031
#3	.00068	.01368	.00193	.00064	.00024	-.00002	.04685	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.00099	.00057	-.01457	-.15866	-.00222	.04173	-.00039
Stddev	.00049	.00030	.00097	.02016	.08192	.00402	.07812	.00141
%RSD	291.16	30.575	170.64	138.36	51.630	181.25	187.17	359.52
#1	-.00049	.00109	.00110	-.01251	-.20689	-.00680	.04278	-.00202
#2	.00039	.00124	-.00055	-.03568	-.06408	-.00063	-.03690	.00042
#3	-.00040	.00066	.00116	.00448	-.20501	.00076	.11932	.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00085	.00805	.00038	.00129	-.00172	.00184	.00683	.00181
Stddev	.00052	.03487	.00113	.00101	.00059	.00376	.00256	.00082
%RSD	61.179	433.14	298.55	78.644	34.357	203.67	37.470	45.144
#1	-.00132	-.00592	.00143	.00012	-.00143	.00565	.00716	.00087
#2	-.00029	.04774	.00050	.00190	-.00240	-.00186	.00412	.00235
#3	-.00094	-.01767	-.00081	.00184	-.00133	.00175	.00921	.00220
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606064501 Acquired: 6/14/2016 17:58:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00072**	**.00202**	**.00582**	**-.00226**	**-.00020**	**.00124**	**.00022**
Stddev	.00080	.00024	.00162	.00041	.00026	.00024	.00049
%RSD	110.54	11.685	27.792	18.274	127.80	19.136	221.29
#1	.00150	.00201	.00671	-.00192	.00003	.00151	-.00026
#2	-.00010	.00179	.00396	-.00214	-.00048	.00106	.00020
#3	.00078	.00226	.00681	-.00272	-.00015	.00116	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7507.7**	**44131.**	**2809.4**
Stddev	13.4	94.	31.1
%RSD	.17810	.21357	1.1071
#1	7518.9	44175.	2839.8
#2	7492.9	44022.	2810.9
#3	7511.4	44194.	2777.6

Approved: June 15, 2016

Sample Name: L1606064502 Acquired: 6/14/2016 18:02:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	.01881	.00154	.00007	.00199	.00007	2.0964	.00007
Stddev	.00069	.00654	.00252	.00417	.00148	.00003	.0317	.00012
%RSD	301.82	34.769	163.36	6334.4	74.144	50.420	1.5101	171.99
#1	-.00056	.01507	.00410	.00395	.00029	.00003	2.1239	.00002
#2	.00057	.02637	.00148	-.00433	.00281	.00009	2.0618	.00022
#3	-.00069	.01501	-.00094	.00058	.00289	.00008	2.1035	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00041	.00401	.00151	.14379	-.13332	-.00298	.18185	.00254
Stddev	.00034	.00065	.00128	.01005	.04769	.00094	.05404	.00171
%RSD	81.289	16.084	84.714	6.9902	35.772	31.467	29.716	67.419
#1	-.00074	.00458	.00285	.13275	-.13561	-.00406	.15507	.00267
#2	-.00007	.00331	.00032	.15240	-.08452	-.00244	.24405	.00077
#3	-.00042	.00415	.00135	.14623	-.17982	-.00243	.14643	.00418
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00161	.12292	.00091	.00800	-.00174	-.00264	.00870	.02305
Stddev	.00028	.02001	.00036	.00376	.00146	.00326	.00775	.00248
%RSD	17.696	16.283	39.156	47.061	83.994	123.62	89.101	10.767
#1	.00144	.10059	.00085	.01072	-.00080	.00061	.00585	.02030
#2	.00145	.12894	.00059	.00957	-.00100	-.00261	.00277	.02373
#3	.00194	.13924	.00130	.00370	-.00343	-.00591	.01747	.02512
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606064502 Acquired: 6/14/2016 18:02:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00098	.00416	.00548	.00105	.00104	.01146	.00028
Stddev	.00027	.00051	.00609	.00146	.00110	.00008	.00074
%RSD	27.372	12.269	111.11	139.01	105.08	.68979	269.70
#1	.00067	.00405	.00747	.00173	.00092	.01138	.00113
#2	.00114	.00472	.01034	-.00063	.00001	.01154	-.00018
#3	.00113	.00372	-.00135	.00203	.00219	.01145	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7566.2	43999.	2794.7
Stddev	29.7	263.	11.9
%RSD	.39244	.59722	.42516
#1	7552.8	43697.	2793.1
#2	7545.6	44175.	2807.4
#3	7600.2	44124.	2783.8

Approved: June 15, 2016

Sample Name: L1606041103 Acquired: 6/14/2016 18:06:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	.20230	.00188	.00134	.00804	.00007	.28731	-.00033
Stddev	.00176	.01138	.00080	.00109	.00111	.00003	.00779	.00013
%RSD	767.36	5.6245	42.755	80.910	13.797	45.161	2.7124	39.586
#1	-.00173	.19806	.00276	.00259	.00803	.00006	.29383	-.00044
#2	.00171	.19364	.00169	.00062	.00916	.00011	.27868	-.00019
#3	-.00066	.21518	.00118	.00082	.00694	.00005	.28943	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.00419	.00119	.18721	-.10774	.00140	.17924	-.00033
Stddev	.00046	.00080	.00086	.01977	.11543	.00464	.07879	.00056
%RSD	188.83	19.056	72.501	10.561	107.14	330.49	43.958	168.60
#1	.00034	.00508	.00024	.20924	-.03738	-.00349	.17519	-.00098
#2	-.00026	.00394	.00193	.18138	-.24096	.00197	.10255	.00001
#3	.00064	.00354	.00139	.17101	-.04488	.00573	.25998	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00079	2.5002	.00968	.00687	-.00215	.00170	.00475	2.0899
Stddev	.00039	.0483	.00004	.00785	.00209	.00229	.00239	.0163
%RSD	49.721	1.9311	.44513	114.29	97.277	134.93	50.212	.77799
#1	-.00114	2.5217	.00968	.00211	-.00117	.00162	.00313	2.0989
#2	-.00087	2.5341	.00964	.00257	-.00455	.00403	.00749	2.0997
#3	-.00037	2.4449	.00972	.01593	-.00073	-.00055	.00363	2.0711
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606041103 Acquired: 6/14/2016 18:06:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00076**	**.00576**	**.00895**	**.00105**	**.00066**	**.00138**	**.00045**
Stddev	.00051	.00044	.00280	.00269	.00107	.00008	.00036
%RSD	66.900	7.5966	31.228	257.44	163.17	5.7236	79.319
#1	.00027	.00553	.00573	.00403	-.00051	.00146	.00008
#2	.00128	.00627	.01044	.00033	.00159	.00131	.00048
#3	.00073	.00549	.01069	-.00121	.00089	.00137	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8530.4**	**49451.**	**3121.0**
Stddev	21.2	309.	21.4
%RSD	.24892	.62577	.68619
#1	8525.3	49735.	3096.4
#2	8553.8	49122.	3130.9
#3	8512.3	49497.	3135.7

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 18:10:23 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41032	10.299	.40306	.51555	1.0137	.05157	10.006	.05125
Stddev	.00257	.028	.00072	.00347	.0058	.00042	.020	.00054
%RSD	.62607	.26727	.17928	.67253	.57243	.81202	.19734	1.0553
#1	.41221	10.319	.40315	.51181	1.0080	.05120	9.9914	.05095
#2	.40739	10.310	.40230	.51865	1.0134	.05150	9.9979	.05188
#3	.41135	10.268	.40374	.51620	1.0196	.05203	10.028	.05093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20946	.51928	.52086	4.1267	50.524	1.0038	10.045	.50685
Stddev	.00093	.00422	.00400	.0344	.316	.0040	.110	.00328
%RSD	.44362	.81356	.76862	.83412	.62457	.39440	1.0941	.64805
#1	.20904	.51956	.52195	4.0871	50.168	1.0079	9.9715	.50329
#2	.21053	.51493	.52421	4.1484	50.634	1.0035	9.9918	.50748
#3	.20882	.52336	.51643	4.1448	50.770	1.0000	10.171	.50976
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0294	50.978	.52495	10.362	.52713	1.2490	.39867	5.2281
Stddev	.0067	.288	.00357	.043	.00573	.0091	.00494	.0229
%RSD	.65493	.56404	.68059	.41261	1.0865	.73063	1.2401	.43742
#1	1.0335	50.653	.52609	10.372	.52995	1.2508	.39409	5.2355
#2	1.0331	51.079	.52780	10.399	.53091	1.2571	.40391	5.2463
#3	1.0216	51.201	.52094	10.315	.52054	1.2391	.39801	5.2024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 18:10:23 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0354**	**1.0131**	**1.0079**	**.51623**	**1.0349**	**1.0503**	**1.0615**
Stddev	.0051	.0040	.0032	.00447	.0075	.0036	.0080
%RSD	.49400	.39648	.31784	.86522	.71980	.34332	.75490
#1	1.0358	1.0092	1.0085	.51656	1.0289	1.0498	1.0637
#2	1.0403	1.0129	1.0045	.52053	1.0326	1.0541	1.0526
#3	1.0301	1.0172	1.0109	.51161	1.0432	1.0469	1.0681
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7559.0**	**43649.**	**2831.4**
Stddev	16.5	283.	9.1
%RSD	.21858	.64896	.31973
#1	7539.9	43844.	2838.9
#2	7568.3	43324.	2833.9
#3	7568.7	43779.	2821.3

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 18:14:05 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00113**	**.00778**	**.00082**	**.00237**	**.00115**	**.00017**	**-.00480**	**-.00014**
Stddev	.00080	.00665	.00358	.00224	.00102	.00006	.01651	.00017
%RSD	70.779	85.381	438.45	94.230	88.415	36.371	344.24	119.88
#1	-.00105	.01184	.00405	.00402	.00000	.00021	-.01106	.00005
#2	-.00037	.00011	.00144	.00326	.00194	.00010	-.01725	-.00024
#3	-.00196	.01140	-.00304	-.00017	.00152	.00019	.01393	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**.00075**	**.00023**	**-.00304**	**-.12504**	**-.00263**	**-.02184**	**-.00041**
Stddev	.00011	.00079	.00057	.01464	.02078	.00206	.02081	.00430
%RSD	128.23	105.22	252.89	481.50	16.619	78.140	95.243	1048.0
#1	-.00022	.00165	.00027	-.01353	-.12219	-.00391	-.04166	.00456
#2	-.00004	.00015	-.00037	-.00928	-.10582	-.00373	-.02369	-.00301
#3	-.00001	.00046	.00077	.01369	-.14709	-.00026	-.00018	-.00278
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00184**	**-.00565**	**.00087**	**.00224**	**-.00282**	**.00051**	**.00861**	**.00271**
Stddev	.00047	.02805	.00043	.01179	.00159	.00047	.00687	.00133
%RSD	25.554	496.30	49.363	526.04	56.340	93.444	79.771	48.940
#1	.00146	-.03535	.00131	-.01108	-.00317	.00026	.00279	.00409
#2	.00170	-.00200	.00045	.00648	-.00108	.00105	.01619	.00261
#3	.00237	.02040	.00085	.01132	-.00420	.00021	.00685	.00144
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 18:14:05 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00133	.00014	.00722	.00127	-.00037	-.00014	.00108
Stddev	.00068	.00010	.00779	.00275	.00054	.00008	.00055
%RSD	51.355	70.111	107.90	215.96	143.80	59.039	50.667
#1	.00091	.00019	-.00027	.00081	-.00017	-.00015	.00051
#2	.00211	.00020	.00665	.00423	.00003	-.00021	.00160
#3	.00096	.00003	.01529	-.00122	-.00098	-.00005	.00111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7731.7	45144.	2870.4
Stddev	35.6	209.	39.0
%RSD	.46004	.46369	1.3589
#1	7699.2	44902.	2846.8
#2	7726.0	45253.	2848.9
#3	7769.7	45276.	2915.4

Approved: June 15, 2016

Sample Name: L1606041104 Acquired: 6/14/2016 18:18:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00044	.19521	.00109	.00048	.00823	.00005	.30813	-.00016
Stddev	.00144	.00461	.00128	.00292	.00062	.00004	.04735	.00001
%RSD	329.00	2.3633	117.97	606.69	7.5050	75.630	15.366	3.6712
#1	-.00058	.19072	.00245	.00361	.00769	.00006	.28619	-.00016
#2	-.00180	.19497	-.00010	.00001	.00810	.00001	.27574	-.00017
#3	.00107	.19994	.00091	-.00217	.00891	.00009	.36247	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.00350	.00048	.15658	-.10616	.00126	.15753	.00213
Stddev	.00064	.00090	.00102	.01788	.11285	.00341	.02033	.00122
%RSD	189.36	25.626	212.11	11.421	106.31	271.11	12.909	57.205
#1	.00044	.00270	.00145	.13774	-.12677	.00198	.18071	.00218
#2	.00092	.00447	-.00058	.15869	.01558	-.00246	.14269	.00089
#3	-.00035	.00333	.00058	.17331	-.20728	.00425	.14918	.00333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00062	2.5794	.01140	-.00045	-.00159	-.00393	.00168	2.1311
Stddev	.00014	.0085	.00031	.00882	.00310	.00227	.00399	.0073
%RSD	23.379	.32897	2.6775	1942.8	195.12	57.783	237.06	.34468
#1	-.00068	2.5781	.01147	-.00216	.00146	-.00159	.00104	2.1329
#2	-.00072	2.5716	.01107	-.00830	-.00149	-.00613	.00596	2.1373
#3	-.00045	2.5885	.01167	.00910	-.00475	-.00408	-.00195	2.1230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606041104 Acquired: 6/14/2016 18:18:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00111**	**.00582**	**.00470**	**.00111**	**.00046**	**.00090**	**.00056**
Stddev	.00105	.00014	.00103	.00138	.00055	.00005	.00037
%RSD	94.390	2.4767	21.984	123.73	117.56	5.1249	65.026
#1	.00230	.00567	.00458	.00265	.00079	.00095	.00082
#2	.00070	.00584	.00373	-.00002	-.00017	.00085	.00014
#3	.00032	.00595	.00578	.00072	.00077	.00090	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8444.9**	**48946.**	**3101.3**
Stddev	14.8	250.	19.0
%RSD	.17482	.51108	.61358
#1	8461.5	49117.	3121.9
#2	8439.8	48659.	3097.7
#3	8433.3	49061.	3084.3

Approved: June 15, 2016

Sample Name: L1606048503 Acquired: 6/14/2016 18:22:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00058	.00254	.00128	.00221	.00376	.00014	3.2725	-.00004
Stddev	.00202	.00600	.00310	.00076	.00140	.00005	.0107	.00019
%RSD	347.20	236.50	242.50	34.549	37.260	32.373	.32565	498.52
#1	.00095	.00885	.00485	.00300	.00329	.00016	3.2610	-.00024
#2	-.00288	-.00309	-.00054	.00148	.00266	.00009	3.2746	.00013
#3	.00017	.00185	-.00048	.00213	.00534	.00017	3.2819	-.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	-.00031	.00023	-.00132	-.06347	-.00035	.93682	.01121
Stddev	.00031	.00085	.00040	.00460	.06537	.00299	.07738	.00361
%RSD	159.75	278.32	178.44	349.46	103.00	850.12	8.2594	32.208
#1	-.00016	-.00097	.00061	.00211	.00627	.00041	.90753	.00734
#2	.00042	-.00060	.00026	.00049	-.07332	-.00364	1.0246	.01449
#3	.00032	.00065	-.00019	-.00655	-.12335	.00218	.87837	.01180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00059	1.9280	.00051	.00463	-.00199	-.00168	.00135	.41261
Stddev	.00022	.0235	.00035	.00539	.00139	.00394	.00217	.00375
%RSD	37.233	1.2187	67.504	116.36	69.919	234.73	160.18	.90853
#1	-.00045	1.9122	.00082	.00069	-.00200	.00016	.00019	.40925
#2	-.00084	1.9167	.00014	.01077	-.00338	.00101	.00386	.41665
#3	-.00048	1.9550	.00059	.00243	-.00060	-.00621	.00001	.41192
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606048503 Acquired: 6/14/2016 18:22:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	.02080	.00951	-.00064	.00001	.00086	-.00037
Stddev	.00052	.00028	.00247	.00222	.00064	.00004	.00059
%RSD	132.27	1.3291	25.919	345.32	6624.0	4.6434	160.18
#1	.00063	.02049	.00809	.00085	-.00059	.00086	-.00103
#2	-.00020	.02088	.01236	-.00320	-.00006	.00082	.00010
#3	.00077	.02103	.00808	.00042	.00068	.00090	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8407.4	48756.	3086.6
Stddev	20.9	237.	25.6
%RSD	.24893	.48688	.83029
#1	8431.4	48977.	3089.7
#2	8392.5	48505.	3110.6
#3	8398.4	48785.	3059.6

Approved: June 15, 2016

Sample Name: L1606048504 Acquired: 6/14/2016 18:26:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00045**	**.00098**	**.00006**	**.00218**	**.00711**	**.00006**	**3.3571**	**.00008**
Stddev	.00104	.00627	.00148	.00141	.00106	.00004	.0451	.00027
%RSD	233.10	641.65	2510.0	64.848	14.945	76.439	1.3427	341.24
#1	-.00158	.00274	.00151	.00168	.00590	.00001	3.3096	.00028
#2	.00048	.00618	.00012	.00378	.00754	.00006	3.3992	.00019
#3	-.00024	-.00599	-.00145	.00109	.00788	.00010	3.3627	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00020**	**-.00045**	**-.00053**	**.00386**	**-.09403**	**-.00304**	**.92898**	**.00177**
Stddev	.00025	.00033	.00105	.00685	.06519	.00159	.09330	.00246
%RSD	123.37	72.868	197.72	177.67	69.332	52.321	10.043	139.40
#1	-.00002	-.00007	-.00175	.00029	-.10545	-.00474	1.0102	-.00098
#2	.00048	-.00068	.00002	.01175	-.15276	-.00280	.94970	.00251
#3	.00015	-.00060	.00013	-.00048	-.02388	-.00158	.82707	.00377
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00084**	**1.5620**	**.00088**	**.00463**	**-.00211**	**.00083**	**.00265**	**.55044**
Stddev	.00013	.0322	.00075	.00429	.00351	.00220	.00452	.00142
%RSD	15.857	2.0638	85.246	92.836	166.39	264.78	170.92	.25850
#1	-.00093	1.5794	.00003	-.00033	-.00225	.00072	.00344	.54956
#2	-.00090	1.5818	.00118	.00699	.00147	.00308	.00672	.54966
#3	-.00068	1.5248	.00143	.00722	-.00555	-.00131	-.00222	.55208
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606048504 Acquired: 6/14/2016 18:26:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.04727	.00667	-.00152	.00023	.00048	.00024
Stddev	.00029	.00090	.00460	.00123	.00062	.00013	.00026
%RSD	81.209	1.8954	69.026	80.601	269.03	25.958	109.58
#1	.00011	.04646	.00207	-.00049	-.00006	.00063	.00008
#2	.00028	.04712	.00666	-.00288	-.00019	.00043	.00054
#3	.00067	.04823	.01128	-.00120	.00094	.00040	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8436.1	48837.	3119.8
Stddev	21.5	146.	17.4
%RSD	.25510	.29970	.55763
#1	8421.4	48972.	3114.2
#2	8460.8	48682.	3139.3
#3	8426.0	48858.	3105.8

Approved: June 15, 2016

Sample Name: L1606048505 Acquired: 6/14/2016 18:30:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00083	.00445	.00078	.00185	.00999	.00013	4.6841	-.00010
Stddev	.00047	.00402	.00268	.00158	.00053	.00002	.0160	.00016
%RSD	56.539	90.453	342.81	85.685	5.3470	16.719	.34123	151.60
#1	.00104	.00859	.00373	.00002	.00938	.00012	4.7026	-.00007
#2	.00029	.00421	-.00151	.00274	.01034	.00011	4.6748	-.00028
#3	.00115	.00055	.00012	.00279	.01026	.00015	4.6751	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00028	.00072	.00057	.61374	-.17492	-.00242	.52461	.07515
Stddev	.00031	.00136	.00070	.00905	.06054	.00423	.00041	.00209
%RSD	112.90	188.34	123.55	1.4744	34.609	174.86	.07910	2.7832
#1	-.00034	.00201	.00064	.62149	-.20814	-.00227	.52429	.07636
#2	.00006	.00086	-.00017	.60380	-.10505	.00173	.52508	.07635
#3	-.00055	-.00070	.00123	.61594	-.21158	-.00672	.52446	.07273
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00041	1.5866	.00067	.00377	-.00126	-.00263	-.00066	.44091
Stddev	.00018	.0273	.00091	.00176	.00360	.00354	.00654	.00084
%RSD	43.607	1.7237	135.54	46.702	285.20	134.77	999.04	.19116
#1	-.00037	1.5869	.00033	.00237	-.00414	-.00582	.00617	.44114
#2	-.00060	1.6139	-.00002	.00319	-.00243	.00118	-.00127	.43997
#3	-.00025	1.5592	.00170	.00574	.00278	-.00324	-.00687	.44161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606048505 Acquired: 6/14/2016 18:30:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.01787	.00933	-.00022	.00072	.00032	.00018
Stddev	.00039	.00008	.00676	.00059	.00102	.00021	.00023
%RSD	56.937	.47570	72.461	262.69	141.06	67.491	130.76
#1	.00086	.01796	.00164	-.00048	-.00023	.00008	.00006
#2	.00098	.01784	.01200	.00045	.00060	.00037	.00044
#3	.00024	.01780	.01435	-.00064	.00179	.00049	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8429.3	48865.	3091.3
Stddev	36.1	178.	8.3
%RSD	.42862	.36515	.26929
#1	8460.6	49064.	3093.3
#2	8437.4	48720.	3082.2
#3	8389.7	48811.	3098.5

Approved: June 15, 2016

Sample Name: L1606048506 Acquired: 6/14/2016 18:34:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00168	-.00820	.00027	-.00185	.00094	.00014	4.7670	-.00010
Stddev	.00273	.00704	.00198	.00190	.00125	.00003	.0185	.00021
%RSD	162.99	85.857	727.08	102.67	132.47	24.575	.38836	220.74
#1	.00382	-.01162	-.00181	-.00148	.00081	.00015	4.7789	-.00031
#2	-.00140	-.00010	.00213	-.00390	.00225	.00010	4.7457	.00012
#3	.00261	-.01288	.00049	-.00016	-.00024	.00016	4.7765	-.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00003	.00030	.00040	.01260	-.16821	-.00191	.35472	.00380
Stddev	.00010	.00099	.00201	.01751	.09808	.00189	.03415	.00102
%RSD	350.66	332.79	503.89	138.95	58.309	98.734	9.6286	26.773
#1	.00002	.00087	.00082	.00016	-.28006	-.00345	.32173	.00460
#2	-.00014	-.00085	-.00179	.00503	-.12769	.00019	.35251	.00414
#3	.00004	.00087	.00216	.03262	-.09688	-.00247	.38993	.00266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00073	.94385	.00083	.00634	-.00363	-.00009	.00168	.35914
Stddev	.00045	.00809	.00069	.00605	.00329	.00319	.00041	.00237
%RSD	61.788	.85693	82.879	95.403	90.695	3491.7	24.317	.65887
#1	-.00097	.95250	.00009	.01212	-.00683	-.00002	.00161	.35648
#2	-.00102	.94257	.00145	.00005	-.00025	-.00332	.00131	.36099
#3	-.00021	.93648	.00096	.00685	-.00382	.00307	.00212	.35996
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606048506 Acquired: 6/14/2016 18:34:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	.01749	.00512	-.00046	.00036	.00073	.00017
Stddev	.00042	.00027	.00617	.00013	.00047	.00032	.00060
%RSD	90.558	1.5678	120.47	28.235	132.43	43.531	358.82
#1	.00090	.01777	.00844	-.00032	-.00018	.00046	.00063
#2	.00006	.01746	.00891	-.00058	.00070	.00108	.00039
#3	.00043	.01723	-.00200	-.00048	.00054	.00066	-.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8416.3	48869.	3117.6
Stddev	8.4	313.	16.6
%RSD	.09954	.64122	.53141
#1	8422.3	48705.	3134.3
#2	8406.7	48673.	3101.2
#3	8419.9	49231.	3117.5

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 18:38:25 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37274**	**9.3653**	**.36703**	**.47488**	**.92360**	**.04696**	**9.1202**	**.04737**
Stddev	.00134	.0510	.00363	.00362	.00453	.00032	.0773	.00032
%RSD	.35883	.54508	.98905	.76257	.49001	.68764	.84750	.67029
#1	.37191	9.3403	.36303	.47282	.91867	.04664	9.0562	.04772
#2	.37428	9.3317	.36793	.47277	.92757	.04695	9.0983	.04711
#3	.37203	9.4241	.37013	.47906	.92455	.04729	9.2060	.04727
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19201**	**.47216**	**.47977**	**3.7033**	**46.458**	**.91691**	**9.1244**	**.46057**
Stddev	.00050	.00483	.00235	.0236	.146	.00279	.1308	.00329
%RSD	.26014	1.0227	.48972	.63846	.31321	.30386	1.4335	.71400
#1	.19161	.46705	.48075	3.6768	46.328	.92004	8.9963	.45718
#2	.19184	.47278	.47710	3.7223	46.615	.91600	9.2577	.46375
#3	.19257	.47664	.48148	3.7107	46.431	.91469	9.1193	.46079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.94277**	**46.744**	**.48271**	**9.5480**	**.48330**	**1.1424**	**.37235**	**4.8111**
Stddev	.00261	.200	.00239	.0174	.00182	.0059	.00249	.0055
%RSD	.27714	.42770	.49593	.18237	.37693	.51475	.66988	.11352
#1	.94575	46.545	.48067	9.5290	.48146	1.1367	.37126	4.8120
#2	.94086	46.944	.48535	9.5518	.48510	1.1420	.37059	4.8053
#3	.94171	46.742	.48211	9.5631	.48334	1.1485	.37521	4.8161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 18:38:25 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.94699	.91805	.90974	.47244	.94584	.96456	.96527
Stddev	.00181	.00419	.00971	.00132	.00791	.00170	.00518
%RSD	.19122	.45684	1.0672	.27897	.83580	.17614	.53644
#1	.94683	.91342	.90198	.47396	.93770	.96260	.95930
#2	.94888	.92159	.90662	.47164	.94634	.96559	.96855
#3	.94527	.91914	.92063	.47171	.95348	.96549	.96796
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8063.2	47010.	3057.0
Stddev	17.3	244.	17.2
%RSD	.21481	.51893	.56114
#1	8057.6	47116.	3074.7
#2	8049.3	47182.	3040.5
#3	8082.6	46731.	3055.9

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 18:42:07 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.00600	.00009	.00022	.00034	.00006	-.00541	-.00007
Stddev	.00170	.00632	.00131	.00112	.00040	.00005	.02196	.00030
%RSD	1887.5	105.34	1439.3	511.75	114.92	81.633	405.75	420.91
#1	.00187	-.00032	.00114	.00146	.00075	.00009	.01783	-.00042
#2	-.00093	.01233	.00051	-.00072	-.00004	.00000	-.02581	.00013
#3	-.00121	.00600	-.00138	-.00008	.00033	.00008	-.00826	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00032	-.00081	.00003	.02147	-.05580	-.00112	-.02941	-.00024
Stddev	.00042	.00063	.00192	.03470	.08976	.00086	.09497	.00102
%RSD	133.48	77.830	5607.3	161.62	160.86	76.588	322.96	427.33
#1	-.00028	-.00068	-.00212	.00337	-.02672	-.00206	-.01489	.00042
#2	.00008	-.00026	.00155	.06148	.01581	-.00095	.05747	.00028
#3	-.00076	-.00150	.00068	-.00044	-.15649	-.00036	-.13080	-.00142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00147	-.00272	.00046	.00153	-.00219	.00120	.00256	.00126
Stddev	.00037	.01584	.00075	.00616	.00232	.00095	.00265	.00094
%RSD	25.463	583.30	164.17	401.98	106.10	79.560	103.41	74.211
#1	.00108	-.02051	-.00031	-.00397	-.00478	.00090	.00560	.00162
#2	.00150	.00983	.00049	.00819	-.00149	.00226	.00139	.00197
#3	.00183	.00253	.00119	.00038	-.00030	.00043	.00070	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 18:42:07 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00112	.00048	.00352	.00219	.00003	-.00039	.00088
Stddev	.00016	.00017	.00461	.00227	.00030	.00020	.00017
%RSD	14.068	34.660	130.87	103.84	860.88	51.149	19.189
#1	.00126	.00064	-.00090	-.00016	-.00023	-.00058	.00073
#2	.00095	.00031	.00317	.00438	.00036	-.00018	.00084
#3	.00115	.00048	.00830	.00236	-.00003	-.00043	.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8215.9	47868.	3055.8
Stddev	14.8	104.	40.5
%RSD	.18052	.21828	1.3267
#1	8199.4	47752.	3075.6
#2	8228.2	47895.	3009.2
#3	8220.1	47956.	3082.7

Approved: June 15, 2016

Sample Name: LLCCV Acquired: 6/14/2016 18:46:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00798	.16315	.00817	.07319	.00789	.00155	.37749	.00044
Stddev	.00104	.00903	.00056	.00026	.00031	.00006	.05271	.00028
%RSD	13.084	5.5357	6.8744	.35783	3.9768	3.8843	13.962	62.553
#1	.00883	.15394	.00752	.07289	.00765	.00149	.32452	.00019
#2	.00682	.16354	.00842	.07339	.00777	.00157	.37802	.00073
#3	.00830	.17199	.00856	.07328	.00824	.00160	.42993	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00376	.00399	.00500	.08442	.61306	.07166	.35674	.00688
Stddev	.00013	.00040	.00056	.02379	.06630	.00403	.04913	.00129
%RSD	3.3607	10.023	11.105	28.186	10.814	5.6263	13.771	18.728
#1	.00381	.00443	.00545	.08961	.67849	.07614	.33374	.00816
#2	.00361	.00390	.00518	.05845	.54593	.06833	.41314	.00690
#3	.00384	.00364	.00438	.10518	.61477	.07051	.32332	.00558
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00692	.36710	.01663	.73730	.00701	.07462	.01686	.75697
Stddev	.00040	.01092	.00054	.00538	.00158	.00239	.00068	.00168
%RSD	5.7176	2.9739	3.2572	.73035	22.502	3.2073	4.0544	.22256
#1	.00661	.37923	.01601	.73657	.00567	.07678	.01652	.75561
#2	.00737	.35807	.01702	.74301	.00875	.07504	.01764	.75644
#3	.00679	.36399	.01684	.73231	.00661	.07205	.01641	.75886
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: LLCCV Acquired: 6/14/2016 18:46:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38559**	**.03748**	**.02579**	**.14398**	**.00705**	**.01793**	**.04204**
Stddev	.00077	.00025	.00251	.00189	.00087	.00014	.00135
%RSD	.19844	.67853	9.7484	1.3141	12.389	.75305	3.2147
#1	.38633	.03720	.02823	.14595	.00604	.01809	.04084
#2	.38563	.03768	.02594	.14382	.00752	.01785	.04179
#3	.38481	.03757	.02321	.14218	.00758	.01786	.04351
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8291.9**	**48232.**	**3085.5**
Stddev	23.9	66.	36.0
%RSD	.28860	.13642	1.1683
#1	8268.2	48157.	3125.8
#2	8291.5	48276.	3056.3
#3	8316.1	48264.	3074.3

Approved: June 15, 2016

Sample Name: PBW 17 Acquired: 6/14/2016 18:50:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571814-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00051**	**.02468**	**-.00105**	**.00628**	**.00138**	**.00008**	**.05267**	**-.00014**
Stddev	.00170	.00685	.00113	.00072	.00033	.00011	.02410	.00014
%RSD	332.22	27.752	107.87	11.501	24.202	143.89	45.760	96.762
#1	-.00230	.01993	-.00199	.00702	.00176	.00003	.08014	-.00027
#2	.00109	.03253	.00021	.00558	.00126	.00020	.04279	.00000
#3	-.00033	.02158	-.00136	.00624	.00113	.00000	.03507	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.00088**	**.00035**	**.00586**	**-.06296**	**-.00161**	**.03112**	**.00009**
Stddev	.00032	.00025	.00092	.02103	.06670	.00582	.11790	.00293
%RSD	247.63	28.236	260.21	359.08	105.95	362.49	378.92	3187.5
#1	.00023	.00073	.00127	.02986	-.12655	.00438	.09487	.00280
#2	-.00021	.00075	.00036	-.00294	-.06879	-.00196	-.10494	.00049
#3	-.00040	.00117	-.00057	-.00935	.00647	-.00724	.10342	-.00301
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**-.00995**	**.00087**	**-.00250**	**-.00099**	**-.00027**	**-.00549**	**.05286**
Stddev	.00018	.02677	.00021	.00255	.00178	.00185	.00448	.00171
%RSD	135.07	269.16	23.933	101.98	180.81	695.80	81.631	3.2432
#1	.00001	-.04047	.00104	.00028	-.00303	-.00009	-.00853	.05216
#2	-.00008	.00956	.00094	-.00473	.00026	.00149	-.00761	.05160
#3	-.00034	.00107	.00064	-.00307	-.00020	-.00219	-.00034	.05481
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: PBW 17 Acquired: 6/14/2016 18:50:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571814-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**.00153**	**-.00135**	**.00051**	**.00001**	**.00194**	**.00042**
Stddev	.00035	.00029	.00531	.00072	.00074	.00013	.00042
%RSD	244.19	18.664	392.83	141.06	7560.1	6.5013	98.186
#1	.00054	.00183	-.00557	.00084	-.00046	.00208	.00073
#2	-.00012	.00151	.00461	.00100	-.00037	.00184	-.00005
#3	.00001	.00126	-.00309	-.00031	.00086	.00190	.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7689.5**	**44705.**	**2859.4**
Stddev	19.7	153.	14.5
%RSD	.25604	.34284	.50814
#1	7668.2	44541.	2865.8
#2	7707.0	44844.	2869.7
#3	7693.3	44730.	2842.8

Approved: June 15, 2016

Sample Name: LCSW 17 Acquired: 6/14/2016 18:54:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571814-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20598**	**5.2596**	**.20344**	**1.0180**	**.51982**	**.02559**	**5.2299**	**.02594**
Stddev	.00217	.0042	.00146	.0029	.00436	.00008	.0654	.00012
%RSD	1.0543	.07910	.71623	.28485	.83942	.32218	1.2502	.46800
#1	.20357	5.2638	.20502	1.0214	.52484	.02556	5.3022	.02588
#2	.20657	5.2555	.20314	1.0167	.51692	.02553	5.1750	.02608
#3	.20779	5.2595	.20215	1.0161	.51770	.02569	5.2125	.02586
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10708**	**.26691**	**.26658**	**2.1224**	**25.321**	**.51860**	**5.2287**	**.25794**
Stddev	.00020	.00188	.00074	.0070	.161	.00430	.1258	.00478
%RSD	.18536	.70334	.27923	.32977	.63658	.82820	2.4061	1.8538
#1	.10726	.26806	.26682	2.1144	25.507	.51708	5.3686	.25733
#2	.10687	.26794	.26574	2.1277	25.228	.51527	5.1249	.25349
#3	.10712	.26475	.26717	2.1249	25.227	.52345	5.1927	.26300
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53157**	**25.885**	**.27151**	**5.1280**	**.26913**	**.62741**	**.20347**	**2.9553**
Stddev	.00087	.171	.00050	.0064	.00047	.00332	.00208	.0060
%RSD	.16430	.66175	.18488	.12459	.17524	.52993	1.0227	.20402
#1	.53240	26.068	.27106	5.1248	.26954	.62833	.20389	2.9483
#2	.53066	25.728	.27143	5.1238	.26862	.63018	.20531	2.9588
#3	.53166	25.858	.27205	5.1353	.26924	.62372	.20121	2.9587
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: LCSW 17 Acquired: 6/14/2016 18:54:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571814-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52856	.52429	.50473	.26522	.52582	.54577	.00342
Stddev	.00193	.00218	.00065	.00201	.00088	.00103	.00085
%RSD	.36426	.41657	.12903	.75767	.16726	.18839	24.808
#1	.52729	.52629	.50409	.26404	.52588	.54516	.00245
#2	.52761	.52196	.50472	.26754	.52490	.54520	.00400
#3	.53077	.52463	.50540	.26409	.52666	.54696	.00382
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7534.5	43877.	2842.3
Stddev	4.4	144.	42.4
%RSD	.05883	.32754	1.4903
#1	7538.2	44036.	2793.4
#2	7529.6	43838.	2866.1
#3	7535.7	43756.	2867.4

Approved: June 15, 2016

Sample Name: L1606030801 Acquired: 6/14/2016 18:58:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571814-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	.02242	-.00112	.12124	.05938	.00009	76.611	-.00004
Stddev	.00102	.00692	.00177	.00226	.00113	.00005	.443	.00003
%RSD	118.66	30.851	158.69	1.8678	1.9070	58.435	.57770	93.387
#1	.00150	.03002	.00088	.12248	.05998	.00010	77.113	-.00003
#2	-.00032	.02077	-.00173	.11863	.06009	.00003	76.447	-.00001
#3	.00141	.01649	-.00250	.12261	.05808	.00013	76.275	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.00130	.00224	.07656	2.1859	.00686	21.950	.07143
Stddev	.00035	.00084	.00106	.01324	.0107	.00225	.042	.00214
%RSD	786.29	64.466	47.374	17.296	.48943	32.827	.19281	3.0009
#1	-.00034	.00148	.00313	.09114	2.1766	.00856	21.902	.06997
#2	.00012	.00204	.00106	.06527	2.1976	.00772	21.982	.07044
#3	.00035	.00039	.00254	.07327	2.1835	.00431	21.966	.07389
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00283	48.809	.00040	.00276	.00231	.00008	.00141	12.663
Stddev	.00054	.307	.00048	.00468	.00146	.00272	.00154	.023
%RSD	19.130	.62999	120.87	169.96	62.889	3589.5	109.63	.18225
#1	.00220	49.161	.00072	.00816	.00131	.00185	.00204	12.648
#2	.00312	48.668	-.00016	.00026	.00164	.00144	-.00035	12.690
#3	.00316	48.596	.00064	-.00015	.00398	-.00306	.00252	12.652
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606030801 Acquired: 6/14/2016 18:58:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571814-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	.93998	-.00948	.00023	.00065	.00446	.00036
Stddev	.00067	.00533	.00108	.00312	.00045	.00028	.00018
%RSD	94.864	.56733	11.404	1349.8	69.250	6.2130	49.868
#1	.00148	.94604	-.01045	.00085	.00098	.00426	.00047
#2	.00036	.93788	-.00967	.00300	.00083	.00477	.00047
#3	.00028	.93602	-.00831	-.00315	.00014	.00434	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7436.0	43134.	2815.2
Stddev	9.2	251.	18.3
%RSD	.12369	.58076	.65017
#1	7436.6	43022.	2810.5
#2	7444.9	42960.	2835.4
#3	7426.6	43421.	2799.7

Approved: June 15, 2016

Sample Name: L1606030802S Acquired: 6/14/2016 19:02:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571814-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20854**	**5.3073**	**.20999**	**1.1552**	**.57984**	**.02610**	**82.512**	**.02617**
Stddev	.00264	.0137	.00471	.0047	.00507	.00005	.582	.00017
%RSD	1.2660	.25776	2.2453	.40985	.87482	.19170	.70558	.64413
#1	.20615	5.2916	.21457	1.1598	.58409	.02605	83.094	.02636
#2	.21137	5.3161	.20515	1.1554	.58121	.02615	82.512	.02610
#3	.20809	5.3143	.21024	1.1503	.57423	.02609	81.930	.02604
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10496**	**.26631**	**.26067**	**2.1725**	**28.222**	**.53424**	**27.217**	**.33167**
Stddev	.00013	.00188	.00241	.0103	.288	.00453	.379	.00291
%RSD	.12668	.70702	.92492	.47246	1.0218	.84755	1.3929	.87677
#1	.10485	.26413	.26317	2.1714	28.470	.53706	26.970	.33005
#2	.10511	.26742	.25836	2.1628	28.290	.53665	27.653	.33503
#3	.10493	.26737	.26048	2.1832	27.906	.52902	27.027	.32994
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53852**	**75.773**	**.26178**	**5.2904**	**.26538**	**.63873**	**.20557**	**15.610**
Stddev	.00227	.437	.00225	.0146	.00446	.00383	.00649	.030
%RSD	.42221	.57696	.86040	.27651	1.6814	.59966	3.1567	.19182
#1	.53819	76.173	.25962	5.3029	.26910	.63472	.20705	15.604
#2	.53643	75.839	.26159	5.2743	.26661	.63911	.19846	15.583
#3	.54094	75.306	.26412	5.2940	.26043	.64235	.21118	15.642
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606030802S Acquired: 6/14/2016 19:02:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571814-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53213	1.4639	.51003	.25626	.53177	.53841	.00066
Stddev	.00076	.0086	.00891	.00282	.00080	.00145	.00049
%RSD	.14293	.59087	1.7476	1.1007	.14972	.26878	73.735
#1	.53256	1.4719	.51540	.25620	.53127	.53758	.00035
#2	.53125	1.4651	.51496	.25348	.53269	.53756	.00041
#3	.53257	1.4548	.49974	.25912	.53135	.54008	.00122
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7385.7	42973.	2817.7
Stddev	21.3	279.	25.1
%RSD	.28879	.65015	.89148
#1	7362.2	42818.	2794.0
#2	7391.0	42806.	2815.0
#3	7403.9	43296.	2844.0

Approved: June 15, 2016

Sample Name: L1606030803SD Acquired: 6/14/2016 19:05:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571814-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20901	5.3769	.21028	1.1784	.58833	.02630	82.590	.02637
Stddev	.00238	.0105	.00198	.0027	.00473	.00011	.635	.00016
%RSD	1.1372	.19530	.94293	.23229	.80332	.41396	.76911	.60864
#1	.20650	5.3855	.21232	1.1771	.59327	.02624	83.245	.02639
#2	.21123	5.3800	.20836	1.1766	.58788	.02623	82.548	.02620
#3	.20930	5.3652	.21018	1.1816	.58385	.02642	81.976	.02652
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10653	.26918	.26383	2.1850	28.541	.54186	27.103	.33541
Stddev	.00020	.00136	.00151	.0082	.283	.00482	.080	.00300
%RSD	.18373	.50378	.57354	.37464	.99235	.88896	.29601	.89365
#1	.10673	.26845	.26521	2.1887	28.842	.54691	27.195	.33683
#2	.10635	.27075	.26221	2.1906	28.499	.54136	27.063	.33743
#3	.10650	.26835	.26407	2.1756	28.281	.53732	27.051	.33197
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.54505	76.360	.26744	5.3480	.26828	.64664	.21093	15.617
Stddev	.00306	.525	.00178	.0279	.00449	.00524	.00905	.064
%RSD	.56103	.68814	.66643	.52101	1.6739	.81088	4.2925	.40748
#1	.54815	76.957	.26942	5.3783	.26346	.65083	.21309	15.672
#2	.54497	76.158	.26692	5.3419	.27234	.64833	.20099	15.632
#3	.54204	75.966	.26597	5.3236	.26905	.64076	.21871	15.547
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606030803SD Acquired: 6/14/2016 19:05:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571814-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53706	1.4729	.51688	.26207	.54027	.54531	.00066
Stddev	.00106	.0122	.00615	.00144	.00152	.00105	.00023
%RSD	.19681	.83012	1.1891	.54763	.28146	.19216	34.873
#1	.53809	1.4853	.52389	.26372	.53908	.54650	.00050
#2	.53711	1.4727	.51431	.26109	.54198	.54451	.00056
#3	.53598	1.4608	.51243	.26142	.53976	.54493	.00093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7395.5	42933.	2822.4
Stddev	25.4	128.	23.3
%RSD	.34379	.29830	.82376
#1	7367.0	43059.	2796.5
#2	7403.3	42803.	2829.2
#3	7416.0	42936.	2841.4

Approved: June 15, 2016

Sample Name: L1606030301 Acquired: 6/14/2016 19:09:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00094	.02561	.00009	.03370	.27526	.00010	34.425
Stddev	.00066	.00510	.00232	.00082	.00064	.00003	.257
%RSD	70.159	19.896	2451.3	2.4305	.23199	31.215	.74549
#1	-.00046	.02602	.00277	.03407	.27600	.00013	34.711
#2	-.00067	.03049	-.00138	.03276	.27481	.00007	34.215
#3	-.00169	.02032	-.00111	.03426	.27498	.00010	34.348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00024	.00142	.00160	.00078	.12819	1.4329	.02149
Stddev	.00017	.00034	.00081	.00070	.01700	.0736	.00230
%RSD	68.829	23.765	50.457	90.379	13.264	5.1373	10.697
#1	-.00028	.00161	.00159	.00149	.11594	1.3479	.01888
#2	-.00039	.00103	.00241	.00075	.12103	1.4750	.02322
#3	-.00006	.00162	.00080	.00009	.14760	1.4759	.02237
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	39.760	.05630	.00020	F 360.13	.00187	1.7585	-.00211
Stddev	.187	.00172	.00026	2.84	.00129	.0125	.00201
%RSD	.46957	3.0503	130.15	.78947	69.122	.71314	95.240
#1	39.877	.05828	-.00010	363.31	.00066	1.7501	-.00443
#2	39.544	.05536	.00031	357.83	.00324	1.7729	-.00079
#3	39.857	.05525	.00039	359.25	.00172	1.7525	-.00112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 15, 2016

Sample Name: L1606030301 Acquired: 6/14/2016 19:09:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00213	.00476	16.167	.00099	.65002	.00199	-.00095
Stddev	.00167	.00114	.021	.00061	.01290	.00304	.00107
%RSD	78.527	23.879	.13049	60.961	1.9842	152.87	112.66
#1	.00318	.00475	16.190	.00133	.66491	.00322	-.00210
#2	.00300	.00590	16.150	.00029	.64229	-.00147	-.00073
#3	.00020	.00363	16.159	.00136	.64286	.00422	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00086	.00790	.00041
Stddev	.00009	.00015	.00077
%RSD	10.367	1.9145	188.33
#1	-.00096	.00785	.00086
#2	-.00079	.00807	-.00048
#3	-.00082	.00778	.00084
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7267.7	41836.	2822.8
Stddev	45.9	257.	32.4
%RSD	.63161	.61406	1.1475
#1	7235.1	41564.	2786.0
#2	7247.7	41870.	2835.3
#3	7320.2	42074.	2847.0

Approved: June 15, 2016

Sample Name: L1606030302 Acquired: 6/14/2016 19:13:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00044	.03559	-.00044	.03092	.26461	.00001	33.104
Stddev	.00039	.00868	.00188	.00189	.00432	.00006	.395
%RSD	87.497	24.386	426.27	6.1079	1.6328	430.22	1.1935
#1	.00037	.03223	.00157	.03260	.26781	.00007	33.478
#2	.00009	.04545	-.00074	.02887	.26633	-.00005	33.144
#3	.00086	.02909	-.00216	.03129	.25970	.00002	32.691
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00000	.00126	.00205	.00188	.18886	1.4522	.02124
Stddev	.00017	.00026	.00023	.00055	.01820	.0778	.00555
%RSD	3694.4	20.669	11.219	29.409	9.6354	5.3548	26.129
#1	-.00002	.00127	.00179	.00205	.16885	1.5252	.01666
#2	-.00015	.00099	.00215	.00233	.19333	1.4609	.01964
#3	.00019	.00151	.00223	.00126	.20441	1.3704	.02741
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	37.836	.05394	-.00005	F 344.59	.00217	1.7031	.00015
Stddev	.580	.00293	.00018	4.32	.00121	.0153	.00135
%RSD	1.5326	5.4407	365.11	1.2542	55.839	.89731	870.71
#1	38.503	.05731	.00011	349.14	.00185	1.7147	.00169
#2	37.451	.05193	-.00001	344.11	.00115	1.7088	-.00084
#3	37.555	.05258	-.00025	340.54	.00351	1.6858	-.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 15, 2016

Sample Name: L1606030302 Acquired: 6/14/2016 19:13:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00115	.00106	16.148	.00074	.62653	-.00058	.00083
Stddev	.00291	.00135	.033	.00087	.01164	.00393	.00075
%RSD	253.59	128.23	.20357	117.71	1.8572	677.66	90.535
#1	-.00030	.00226	16.176	.00114	.63930	.00147	.00030
#2	-.00439	-.00041	16.155	.00135	.62377	.00190	.00050
#3	.00124	.00132	16.112	-.00026	.61653	-.00511	.00168
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00094	.00970	-.00003
Stddev	.00053	.00009	.00059
%RSD	56.435	.89047	2036.3
#1	-.00151	.00961	-.00070
#2	-.00046	.00975	.00041
#3	-.00084	.00976	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7307.8	41959.	2801.5
Stddev	27.4	342.	55.2
%RSD	.37463	.81610	1.9720
#1	7276.2	41603.	2738.1
#2	7324.2	41986.	2827.3
#3	7323.0	42286.	2839.2

Approved: June 15, 2016

Sample Name: L1606030402 Acquired: 6/14/2016 19:17:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	.03015	.00182	.02867	.25811	.00008	32.990
Stddev	.00138	.00433	.00203	.00122	.00258	.00002	.370
%RSD	204.76	14.351	111.57	4.2535	1.0003	22.938	1.1215
#1	-.00073	.02520	.00242	.02924	.26078	.00006	33.410
#2	.00071	.03323	-.00044	.02727	.25562	.00010	32.710
#3	.00204	.03202	.00347	.02950	.25794	.00009	32.851
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.00156	.00211	.00125	.13755	1.4713	.02050
Stddev	.00033	.00042	.00076	.00007	.01539	.1025	.00201
%RSD	364.38	26.952	36.303	5.4418	11.187	6.9638	9.8081
#1	-.00001	.00171	.00268	.00123	.15504	1.4645	.02268
#2	.00019	.00109	.00240	.00132	.12610	1.5770	.01872
#3	-.00045	.00189	.00124	.00119	.13151	1.3724	.02009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	37.039	.05311	-.00047	F 326.91	.00179	1.5936	.00352
Stddev	.458	.00337	.00019	3.29	.00097	.0060	.00499
%RSD	1.2376	6.3398	40.068	1.0063	54.341	.37596	141.72
#1	37.528	.05457	-.00043	330.71	.00245	1.5990	.00813
#2	36.619	.05551	-.00031	325.05	.00067	1.5947	.00420
#3	36.971	.04926	-.00068	324.97	.00225	1.5872	-.00177
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 15, 2016

Sample Name: L1606030402 Acquired: 6/14/2016 19:17:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00076	16.412	.00060	.62324	-.00001	-.00050
Stddev	.00431	.00409	.031	.00052	.01053	.00329	.00088
%RSD	7156.8	534.50	.18932	86.965	1.6898	26749.	177.90
#1	-.00489	-.00395	16.430	.00075	.63540	-.00370	-.00074
#2	.00300	.00308	16.429	.00104	.61692	.00260	-.00123
#3	.00207	.00317	16.376	.00002	.61741	.00106	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00092	.00784	-.00025
Stddev	.00115	.00012	.00054
%RSD	124.39	1.5091	221.00
#1	-.00003	.00771	-.00083
#2	-.00222	.00790	-.00015
#3	-.00052	.00792	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7323.3	41993.	2789.0
Stddev	20.3	242.	32.0
%RSD	.27717	.57550	1.1470
#1	7299.8	41753.	2754.2
#2	7334.9	41990.	2817.2
#3	7335.0	42236.	2795.7

Approved: June 15, 2016

Sample Name: L1606030402PS Acquired: 6/14/2016 19:21:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572020-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20716**	**5.3118**	**.21056**	**1.0592**	**.75547**	**.02620**	**34.998**
Stddev	.00096	.0185	.00287	.0044	.00700	.00007	.267
%RSD	.46463	.34851	1.3632	.41668	.92721	.27594	.76303
#1	.20679	5.3199	.21217	1.0623	.76212	.02628	35.243
#2	.20644	5.3249	.21226	1.0610	.75614	.02617	35.037
#3	.20825	5.2906	.20724	1.0541	.74816	.02614	34.713
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02582**	**.10585**	**.26541**	**.26089**	**2.2193**	**27.784**	**.54758**
Stddev	.00031	.00006	.00111	.00156	.0087	.323	.00395
%RSD	1.2146	.05795	.41956	.59606	.39191	1.1636	.72175
#1	.02607	.10584	.26597	.25952	2.2246	28.103	.54467
#2	.02547	.10580	.26614	.26057	2.2241	27.792	.54600
#3	.02591	.10592	.26413	.26258	2.2093	27.456	.55208
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**38.334**	**.30344**	**.53016**	F **321.49**	**.26333**	**6.7219**	**.25823**
Stddev	.126	.00480	.00125	2.47	.00106	.0263	.00091
%RSD	.32902	1.5811	.23525	.76926	.40435	.39101	.35323
#1	38.317	.30706	.52968	323.38	.26432	6.6920	.25922
#2	38.467	.30528	.53157	322.41	.26346	6.7414	.25806
#3	38.217	.29800	.52921	318.69	.26221	6.7322	.25742
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 15, 2016

Sample Name: L1606030402PS Acquired: 6/14/2016 19:21:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572020-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.63492**	**.20066**	**17.488**	**.52603**	**1.0714**	**.50816**	**.24861**
Stddev	.00819	.00346	.049	.00105	.0079	.00820	.00198
%RSD	1.2897	1.7225	.28101	.19876	.73529	1.6139	.79641
#1	.62615	.20454	17.431	.52505	1.0792	.50866	.24835
#2	.64237	.19952	17.516	.52713	1.0716	.49972	.25071
#3	.63624	.19792	17.517	.52589	1.0634	.51610	.24678
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.53155**	**.53916**	**-.00020**
Stddev	.00151	.00058	.00011
%RSD	.28468	.10824	55.034
#1	.53133	.53866	-.00028
#2	.53316	.53980	-.00008
#3	.53016	.53903	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7310.5**	**41943.**	**2781.5**
Stddev	15.7	117.	21.1
%RSD	.21455	.27937	.75858
#1	7298.3	41808.	2762.8
#2	7305.1	42003.	2777.5
#3	7328.2	42018.	2804.4

Approved: June 15, 2016

Sample Name: L1606030402SDL Acquired: 6/14/2016 19:25:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG572020-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00117**	**.00571**	**.00101**	**.00740**	**.04361**	**.00014**	**5.4801**	**-.00010**
Stddev	.00135	.01502	.00205	.00306	.00091	.00009	.0698	.00019
%RSD	115.68	263.28	203.68	41.393	2.0835	67.058	1.2739	185.54
#1	-.00268	-.00334	-.00105	.00398	.04270	.00014	5.4292	-.00031
#2	-.00070	-.00258	.00305	.00832	.04451	.00005	5.4515	.00007
#3	-.00011	.02304	.00102	.00990	.04362	.00024	5.5597	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**-.00002**	**.00067**	**.02565**	**.19574**	**.00072**	**6.4219**	**.01051**
Stddev	.00019	.00044	.00168	.01486	.06160	.00039	.0540	.00077
%RSD	2431.7	2734.0	250.33	57.920	31.470	53.959	.84022	7.3661
#1	.00022	-.00010	.00098	.03488	.12863	.00105	6.3675	.01060
#2	-.00007	-.00041	-.00114	.03355	.20886	.00029	6.4754	.01124
#3	-.00013	.00046	.00218	.00851	.24972	.00083	6.4226	.00970
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**54.984**	**.00117**	**.26580**	**-.00313**	**.00179**	**-.00024**	**2.8192**
Stddev	.00017	.237	.00063	.00815	.00250	.00202	.00191	.0036
%RSD	172.16	.43085	54.055	3.0670	79.803	112.95	785.76	.12845
#1	-.00018	54.739	.00164	.26260	-.00034	.00060	-.00074	2.8190
#2	-.00021	55.001	.00142	.27507	-.00390	.00412	.00187	2.8157
#3	.00010	55.212	.00045	.25974	-.00515	.00065	-.00186	2.8229
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606030402SDL Acquired: 6/14/2016 19:25:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG572020-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	.10587	.00245	.00126	.00036	.00177	-.00014
Stddev	.00120	.00085	.00449	.00181	.00063	.00019	.00027
%RSD	196.39	.80757	183.63	143.96	176.29	10.821	188.65
#1	.00094	.10544	-.00149	.00071	.00069	.00183	.00003
#2	-.00072	.10531	.00149	.00327	.00075	.00156	-.00001
#3	.00160	.10685	.00734	-.00022	-.00037	.00193	-.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8270.6	47795.	3071.7
Stddev	13.8	199.	16.2
%RSD	.16681	.41665	.52828
#1	8265.2	47756.	3072.7
#2	8286.2	48011.	3087.4
#3	8260.2	47618.	3055.0

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 19:29:21 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37506**	**9.3974**	**.36909**	**.47805**	**.91683**	**.04727**	**9.0768**	**.04742**
Stddev	.00353	.0191	.00176	.00407	.00871	.00023	.0698	.00007
%RSD	.94038	.20293	.47672	.85179	.95044	.49652	.76959	.13993
#1	.37424	9.3868	.37093	.47559	.90776	.04700	9.0578	.04743
#2	.37202	9.3860	.36743	.47581	.91758	.04742	9.0185	.04747
#3	.37893	9.4194	.36892	.48275	.92514	.04740	9.1542	.04734
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19204**	**.47573**	**.47884**	**3.7028**	**45.974**	**.90927**	**9.1493**	**.45874**
Stddev	.00043	.00308	.00152	.0688	.476	.00799	.0809	.00684
%RSD	.22562	.64671	.31678	1.8587	1.0357	.87897	.88445	1.4913
#1	.19199	.47256	.47714	3.6263	45.629	.90277	9.0946	.45518
#2	.19164	.47592	.47933	3.7224	45.775	.90686	9.1111	.45442
#3	.19250	.47871	.48005	3.7597	46.517	.91819	9.2423	.46663
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.94632**	**46.252**	**.48300**	**9.5302**	**.48341**	**1.1449**	**.37311**	**4.8067**
Stddev	.00098	.486	.00184	.0157	.00293	.0047	.00354	.0064
%RSD	.10325	1.0501	.38123	.16437	.60631	.40947	.94810	.13271
#1	.94744	45.866	.48334	9.5325	.48054	1.1432	.37478	4.8007
#2	.94564	46.093	.48101	9.5135	.48329	1.1413	.36905	4.8060
#3	.94587	46.798	.48464	9.5446	.48640	1.1502	.37550	4.8134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 19:29:21 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.94958**	**.91521**	**.91034**	**.47524**	**.94987**	**.96174**	**.96285**
Stddev	.00351	.00813	.01228	.00124	.00696	.00095	.01228
%RSD	.36999	.88803	1.3490	.26100	.73306	.09921	1.2749
#1	.94758	.90751	.90035	.47510	.94196	.96211	.95842
#2	.94753	.91441	.90661	.47655	.95256	.96066	.95341
#3	.95364	.92371	.92405	.47408	.95508	.96246	.97672
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8049.1**	**46705.**	**3036.1**
Stddev	17.8	43.	35.0
%RSD	.22149	.09260	1.1522
#1	8062.1	46683.	3048.2
#2	8056.3	46754.	3063.4
#3	8028.8	46676.	2996.6

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 19:33:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**.00265**	**.00141**	**.00105**	**.00070**	**.00009**	**.03686**	**-.00034**
Stddev	.00076	.00140	.00015	.00068	.00088	.00014	.01834	.00006
%RSD	180.29	52.712	10.480	64.570	126.63	150.66	49.766	17.366
#1	.00032	.00208	.00144	.00153	-.00030	-.00005	.05223	-.00028
#2	-.00028	.00424	.00153	.00028	.00138	.00023	.04180	-.00040
#3	.00123	.00162	.00124	.00135	.00101	.00009	.01655	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00000**	**.00131**	**.00087**	**-.00376**	**-.14930**	**-.00253**	**.00807**	**-.00216**
Stddev	.00014	.00053	.00033	.00841	.01221	.00239	.06261	.00104
%RSD	3001.5	40.686	38.603	223.47	8.1768	94.446	775.94	48.168
#1	.00013	.00129	.00121	-.01248	-.16067	-.00010	.07963	-.00308
#2	-.00015	.00185	.00054	.00431	-.15082	-.00487	-.01882	-.00103
#3	.00001	.00079	.00085	-.00312	-.13640	-.00261	-.03660	-.00238
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00135**	**-.01983**	**.00054**	**.00492**	**-.00144**	**.00011**	**.00275**	**.00153**
Stddev	.00042	.02377	.00102	.00972	.00168	.00122	.00295	.00092
%RSD	31.199	119.85	188.52	197.76	116.62	1092.0	107.10	60.095
#1	.00091	-.03222	.00164	.01574	.00014	.00065	-.00024	.00255
#2	.00141	.00757	.00036	.00206	-.00125	-.00129	.00284	.00124
#3	.00175	-.03486	-.00037	-.00306	-.00320	.00098	.00565	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 19:33:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00111**	**.00015**	**.00516**	**-.00218**	**.00018**	**-.00030**	**.00092**
Stddev	.00064	.00038	.00845	.00060	.00012	.00016	.00036
%RSD	57.434	246.29	163.76	27.548	64.141	52.839	39.305
#1	.00179	.00057	.00693	-.00187	.00006	-.00014	.00128
#2	.00054	.00003	.01258	-.00179	.00028	-.00046	.00056
#3	.00099	-.00015	-.00404	-.00287	.00020	-.00030	.00091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8190.1**	**47609.**	**3025.4**
Stddev	37.2	128.	21.8
%RSD	.45429	.26849	.72140
#1	8150.5	47546.	3050.4
#2	8195.8	47525.	3009.9
#3	8224.2	47756.	3015.9

Approved: June 15, 2016

Sample Name: PBW A7 Acquired: 6/14/2016 19:37:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571974-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.00720	.00087	.00055	.00184	.00007	-.04157	.00003
Stddev	.00147	.01132	.00379	.00049	.00109	.00010	.02939	.00027
%RSD	850.81	157.25	435.32	88.623	59.140	142.26	70.709	882.98
#1	-.00151	-.00477	-.00184	.00110	.00302	.00005	-.05691	.00020
#2	.00081	.01774	.00520	.00041	.00161	.00018	-.00768	-.00028
#3	.00122	.00864	-.00075	.00015	.00088	-.00002	-.06011	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00060	.00032	-.00907	-.12906	-.00203	-.05239	-.00079
Stddev	.00012	.00048	.00152	.01275	.10454	.00262	.03768	.00352
%RSD	185.65	80.493	471.75	140.59	81.000	129.41	71.923	444.81
#1	-.00007	.00062	.00207	.00565	-.00849	.00076	-.03880	-.00259
#2	.00009	.00011	-.00048	-.01609	-.19444	-.00444	-.09497	.00326
#3	.00016	.00107	-.00063	-.01677	-.18426	-.00240	-.02339	-.00304
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	-.00351	.00072	-.00331	-.00074	.00211	.00983	.03320
Stddev	.00058	.02246	.00069	.00245	.00092	.00499	.00752	.00014
%RSD	8665.7	639.87	96.310	74.047	125.62	236.68	76.523	.40960
#1	.00026	-.00652	.00070	-.00254	-.00022	-.00010	.01178	.03310
#2	-.00065	.02031	.00004	-.00134	-.00019	.00782	.00153	.03336
#3	.00041	-.02432	.00142	-.00606	-.00180	-.00139	.01619	.03315
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: PBW A7 Acquired: 6/14/2016 19:37:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571974-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00105	.00030	-.00260	-.00307	.00050	.00077	.00059
Stddev	.00125	.00028	.00409	.00326	.00045	.00005	.00030
%RSD	118.85	94.383	157.60	106.16	89.721	6.3200	50.880
#1	.00120	.00061	-.00166	-.00280	.00084	.00082	.00031
#2	-.00027	.00021	.00094	.00005	-.00001	.00076	.00054
#3	.00222	.00007	-.00707	-.00645	.00066	.00072	.00091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7568.6	43918.	2787.6
Stddev	12.6	145.	19.8
%RSD	.16596	.33103	.71091
#1	7558.8	43910.	2772.6
#2	7582.8	43777.	2780.2
#3	7564.4	44067.	2810.1

Approved: June 15, 2016

Sample Name: LCSW A7 Acquired: 6/14/2016 19:41:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571974-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20807**	**5.2852**	**.20553**	**1.0275**	**.52606**	**.02592**	**5.2718**	**.02606**
Stddev	.00197	.0088	.00236	.0027	.00556	.00005	.0775	.00042
%RSD	.94632	.16701	1.1506	.26298	1.0570	.20552	1.4706	1.6247
#1	.20593	5.2945	.20382	1.0294	.53244	.02586	5.3274	.02575
#2	.20846	5.2769	.20453	1.0244	.52345	.02594	5.3047	.02654
#3	.20981	5.2844	.20823	1.0286	.52228	.02596	5.1832	.02588
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10824**	**.26830**	**.27004**	**2.1237**	**26.008**	**.52386**	**5.2434**	**.26123**
Stddev	.00062	.00227	.00041	.0419	.286	.00256	.0732	.00355
%RSD	.57695	.84641	.15223	1.9746	1.1007	.48924	1.3964	1.3586
#1	.10837	.26744	.27003	2.1466	26.339	.52681	5.2546	.26482
#2	.10756	.26659	.27045	2.1493	25.843	.52264	5.1652	.26114
#3	.10880	.27088	.26963	2.0753	25.842	.52214	5.3104	.25773
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53678**	**26.331**	**.27362**	**5.1611**	**.26830**	**.63319**	**.20684**	**2.8617**
Stddev	.00128	.206	.00065	.0100	.00224	.00177	.00413	.0026
%RSD	.23837	.78206	.23909	.19312	.83363	.27976	1.9964	.09044
#1	.53658	26.569	.27432	5.1519	.26573	.63427	.20414	2.8646
#2	.53562	26.211	.27302	5.1596	.26939	.63416	.21159	2.8595
#3	.53815	26.213	.27352	5.1717	.26978	.63115	.20478	2.8610
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: LCSW A7 Acquired: 6/14/2016 19:41:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571974-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53563**	**.53378**	**.51587**	**.26514**	**.53250**	**.53776**	**.00413**
Stddev	.00079	.00412	.00397	.00249	.00160	.00091	.00110
%RSD	.14697	.77145	.77052	.93894	.30052	.16838	26.657
#1	.53525	.53844	.51258	.26507	.53321	.53834	.00316
#2	.53654	.53226	.51474	.26767	.53067	.53672	.00389
#3	.53511	.53064	.52029	.26269	.53362	.53823	.00533
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7498.6**	**43546.**	**2803.0**
Stddev	15.2	234.	43.1
%RSD	.20258	.53779	1.5362
#1	7484.2	43290.	2753.9
#2	7497.3	43749.	2834.3
#3	7514.5	43599.	2820.8

Approved: June 15, 2016

Sample Name: L1606039508 Acquired: 6/14/2016 19:44:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571974-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**.01639**	**-.00015**	**.01975**	**.08787**	**.00010**	**65.420**	**-.00005**
Stddev	.00150	.00814	.00338	.00291	.00091	.00012	.406	.00018
%RSD	612.46	49.655	2188.6	14.735	1.0393	116.48	.62037	396.50
#1	.00148	.00820	-.00083	.02247	.08892	-.00003	65.887	-.00011
#2	-.00115	.02448	-.00314	.02009	.08724	.00019	65.229	-.00018
#3	-.00107	.01649	.00351	.01668	.08746	.00014	65.146	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.00074**	**.00230**	**.02232**	**1.7167**	**.00758**	**14.923**	**.00195**
Stddev	.00034	.00041	.00127	.01034	.0941	.00477	.058	.00136
%RSD	168.62	55.487	55.388	46.345	5.4830	62.936	.38825	69.665
#1	-.00005	.00080	.00375	.01050	1.7924	.01300	14.981	.00347
#2	.00004	.00112	.00176	.02671	1.7464	.00570	14.865	.00089
#3	-.00059	.00030	.00138	.02974	1.6113	.00403	14.922	.00148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00031**	**9.0544**	**.00111**	**.00635**	**-.00305**	**.00122**	**.00944**	**2.5428**
Stddev	.00032	.0906	.00058	.00660	.00168	.00403	.00806	.0105
%RSD	106.12	1.0011	52.196	103.86	55.043	330.14	85.392	.41368
#1	-.00001	9.1589	.00089	.00496	-.00370	-.00163	.00318	2.5463
#2	.00063	9.0065	.00068	.00056	-.00431	-.00054	.00660	2.5510
#3	.00029	8.9976	.00177	.01353	-.00114	.00583	.01853	2.5309
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606039508 Acquired: 6/14/2016 19:44:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571974-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.27938	-.00328	.00131	-.00043	.00191	.00002
Stddev	.00050	.00187	.00461	.00107	.00085	.00004	.00076
%RSD	272.59	.66811	140.75	81.879	197.81	2.2227	3783.1
#1	.00062	.28132	.00086	.00250	.00013	.00186	-.00086
#2	.00029	.27760	-.00825	.00042	-.00142	.00193	.00053
#3	-.00036	.27921	-.00244	.00101	-.00001	.00193	.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7485.5	43573.	2795.9
Stddev	13.6	272.	30.6
%RSD	.18208	.62346	1.0928
#1	7472.5	43651.	2764.9
#2	7484.4	43270.	2796.8
#3	7499.7	43796.	2826.0

Approved: June 15, 2016

Sample Name: L1606039508S Acquired: 6/14/2016 19:48:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571974-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21003**	**5.4004**	**.21220**	**1.0640**	**.62209**	**.02634**	**72.551**	**.02624**
Stddev	.00030	.0056	.00204	.0034	.00216	.00003	.252	.00021
%RSD	.14384	.10280	.96108	.31692	.34720	.11663	.34739	.78334
#1	.21038	5.4068	.21160	1.0605	.62229	.02635	72.803	.02647
#2	.20982	5.3971	.21447	1.0672	.61984	.02636	72.299	.02607
#3	.20989	5.3974	.21052	1.0643	.62414	.02630	72.552	.02618
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10639**	**.27104**	**.26556**	**2.1376**	**28.231**	**.54738**	**20.453**	**.26857**
Stddev	.00050	.00197	.00124	.0222	.164	.00181	.152	.00190
%RSD	.47429	.72857	.46541	1.0369	.58063	.33065	.74273	.70922
#1	.10694	.26925	.26679	2.1241	28.214	.54587	20.371	.26877
#2	.10630	.27316	.26432	2.1632	28.076	.54688	20.628	.26658
#3	.10594	.27072	.26557	2.1256	28.403	.54938	20.360	.27037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.54526**	**35.974**	**.26676**	**5.3429**	**.26913**	**.64798**	**.20364**	**5.3639**
Stddev	.00277	.030	.00217	.0240	.00218	.00065	.00281	.0233
%RSD	.50825	.08384	.81499	.44925	.81078	.09958	1.3807	.43369
#1	.54846	36.002	.26874	5.3705	.27076	.64777	.20569	5.3907
#2	.54359	35.942	.26444	5.3307	.26999	.64747	.20480	5.3492
#3	.54373	35.978	.26712	5.3273	.26665	.64871	.20044	5.3518
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606039508S Acquired: 6/14/2016 19:48:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571974-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53794**	**.80495**	**.51824**	**.26501**	**.54074**	**.53367**	**.00057**
Stddev	.00307	.00129	.00764	.00658	.00171	.00281	.00044
%RSD	.57045	.16062	1.4749	2.4844	.31661	.52634	76.984
#1	.54144	.80478	.52694	.27219	.54058	.53691	.00007
#2	.53662	.80375	.51522	.25925	.54252	.53212	.00075
#3	.53574	.80632	.51257	.26360	.53911	.53197	.00090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7401.9**	**42787.**	**2797.6**
Stddev	43.8	116.	23.0
%RSD	.59240	.27032	.82384
#1	7351.3	42653.	2781.9
#2	7427.5	42857.	2824.0
#3	7427.0	42850.	2786.8

Approved: June 15, 2016

Sample Name: L1606039508SD Acquired: 6/14/2016 19:52:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571974-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20851	5.3665	.20899	1.0619	.62106	.02632	72.427	.02675
Stddev	.00270	.0172	.00276	.0024	.00329	.00009	.229	.00005
%RSD	1.2926	.32056	1.3219	.22839	.52977	.32479	.31647	.18053
#1	.21144	5.3725	.20582	1.0638	.62316	.02641	72.687	.02670
#2	.20613	5.3799	.21027	1.0592	.62275	.02632	72.342	.02678
#3	.20795	5.3471	.21087	1.0628	.61727	.02624	72.252	.02679
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10707	.27170	.26697	2.1111	28.377	.54651	20.400	.26652
Stddev	.00055	.00127	.00075	.0083	.190	.00518	.056	.00292
%RSD	.51616	.46853	.28076	.39356	.66862	.94844	.27536	1.0960
#1	.10753	.27057	.26778	2.1082	28.596	.55190	20.390	.26913
#2	.10723	.27144	.26631	2.1046	28.258	.54605	20.350	.26707
#3	.10646	.27308	.26681	2.1205	28.277	.54156	20.461	.26337
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.54821	36.067	.26714	5.3592	.27142	.64907	.21231	5.3873
Stddev	.00158	.135	.00028	.0095	.00304	.00480	.00566	.0105
%RSD	.28732	.37522	.10369	.17697	1.1192	.73895	2.6662	.19454
#1	.55000	36.161	.26702	5.3680	.27404	.64701	.21853	5.3958
#2	.54703	36.127	.26695	5.3605	.26809	.65456	.20746	5.3905
#3	.54759	35.912	.26746	5.3492	.27213	.64566	.21095	5.3756
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606039508SD Acquired: 6/14/2016 19:52:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG571974-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.54066**	**.80474**	**.52622**	**.26649**	**.54208**	**.53669**	**.00046**
Stddev	.00132	.00376	.00890	.00354	.00109	.00110	.00052
%RSD	.24472	.46719	1.6906	1.3276	.20129	.20446	113.12
#1	.54217	.80820	.52425	.26720	.54214	.53737	.00040
#2	.54011	.80527	.53594	.26264	.54097	.53728	-.00003
#3	.53970	.80074	.51848	.26961	.54315	.53543	.00101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7390.9**	**43047.**	**2800.8**
Stddev	17.0	267.	14.1
%RSD	.23008	.62072	.50521
#1	7377.3	42745.	2784.5
#2	7385.6	43142.	2808.9
#3	7410.0	43253.	2809.0

Approved: June 15, 2016

Sample Name: L1606037601 Acquired: 6/14/2016 19:56:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	-.00014	.00094	.00726	.00371	.00011	6.0557	-.00020
Stddev	.00150	.00851	.00054	.00024	.00072	.00003	.0567	.00018
%RSD	205.65	6070.8	57.218	3.3266	19.533	24.154	.93610	88.758
#1	-.00094	.00305	.00033	.00726	.00453	.00010	6.0436	-.00001
#2	.00117	.00632	.00136	.00702	.00317	.00009	6.0061	-.00037
#3	.00197	-.00979	.00114	.00750	.00342	.00014	6.1175	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.00093	.00084	-.00926	-.02341	.00207	1.9740	.00190
Stddev	.00015	.00060	.00062	.01229	.04957	.00216	.0819	.00112
%RSD	450.72	64.373	74.097	132.77	211.75	104.05	4.1494	59.160
#1	-.00008	.00146	.00093	-.02345	-.07749	.00184	2.0682	.00110
#2	-.00002	.00028	.00018	-.00230	-.01263	.00004	1.9191	.00142
#3	.00020	.00104	.00141	-.00203	.01988	.00434	1.9348	.00319
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	2.4390	.00034	.00575	.00036	.00286	.00141	.67438
Stddev	.00011	.0467	.00138	.00687	.00293	.00177	.00067	.00389
%RSD	132.32	1.9138	400.87	119.34	816.88	61.951	47.777	.57680
#1	.00010	2.3999	.00189	.00080	-.00265	.00093	.00120	.67886
#2	.00019	2.4265	-.00077	.00287	.00053	.00322	.00216	.67226
#3	-.00003	2.4907	-.00008	.01359	.00320	.00441	.00086	.67200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606037601 Acquired: 6/14/2016 19:56:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	.12237	.00187	.00147	.00073	.00297	-.00011
Stddev	.00051	.00017	.00895	.00106	.00057	.00007	.00065
%RSD	57.552	.13790	477.52	71.939	77.807	2.3218	566.12
#1	.00092	.12220	.00919	.00035	.00072	.00290	-.00031
#2	.00036	.12237	-.00811	.00245	.00131	.00295	-.00064
#3	.00138	.12254	.00454	.00160	.00017	.00304	.00061
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8367.7	48536.	3026.6
Stddev	16.7	329.	33.1
%RSD	.19959	.67740	1.0928
#1	8386.1	48895.	3043.3
#2	8353.5	48464.	3048.0
#3	8363.4	48249.	2988.5

Approved: June 15, 2016

Sample Name: L1606037602 Acquired: 6/14/2016 20:00:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	.00592	-.00091	.00782	.00354	.00007	5.9713	-.00003
Stddev	.00307	.00708	.00202	.00289	.00026	.00005	.0317	.00025
%RSD	344.07	119.69	220.80	36.909	7.4289	70.102	.53161	932.08
#1	-.00256	.00231	.00049	.00694	.00338	.00004	5.9390	-.00032
#2	.00192	.00136	-.00000	.00548	.00385	.00013	6.0025	.00015
#3	.00332	.01408	-.00323	.01105	.00340	.00004	5.9725	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	-.00001	-.00033	.03570	-.05760	-.00271	2.1279	.00219
Stddev	.00021	.00115	.00115	.02041	.01524	.00211	.1105	.00083
%RSD	152.47	15261.	345.69	57.159	26.463	77.893	5.1935	37.762
#1	.00010	.00132	.00072	.01495	-.04001	-.00390	2.1230	.00220
#2	-.00024	-.00059	-.00157	.05574	-.06574	-.00396	2.0199	.00136
#3	-.00028	-.00075	-.00015	.03641	-.06704	-.00027	2.2408	.00302
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	2.3138	.00030	.00544	-.00128	.00145	.00263	.66338
Stddev	.00036	.0343	.00116	.00122	.00220	.00238	.00089	.00341
%RSD	165.63	1.4830	385.02	22.336	172.23	164.18	33.857	.51465
#1	.00005	2.3113	.00164	.00530	-.00359	.00071	.00173	.66405
#2	-.00062	2.3493	-.00028	.00672	-.00102	-.00047	.00351	.66641
#3	-.00007	2.2808	-.00045	.00430	.00078	.00412	.00264	.65968
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606037602 Acquired: 6/14/2016 20:00:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00098	.12589	.00504	.00091	-.00058	.00165	-.00027
Stddev	.00056	.00094	.00194	.00237	.00037	.00026	.00032
%RSD	57.044	.74629	38.505	261.46	64.091	15.772	117.99
#1	.00155	.12485	.00713	.00070	-.00099	.00138	.00004
#2	.00097	.12613	.00330	.00337	-.00027	.00166	-.00059
#3	.00043	.12668	.00470	-.00135	-.00048	.00190	-.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8346.8	48368.	3061.9
Stddev	19.9	133.	44.9
%RSD	.23813	.27530	1.4650
#1	8369.7	48513.	3076.7
#2	8333.5	48250.	3011.5
#3	8337.3	48341.	3097.4

Approved: June 15, 2016

Sample Name: L1606037603 Acquired: 6/14/2016 20:04:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00096	.02968	.00056	.07611	.10444	-.00001	95.727	-.00019
Stddev	.00095	.00304	.00516	.00094	.00195	.00011	.930	.00033
%RSD	98.134	10.231	925.81	1.2340	1.8680	1336.6	.97202	172.21
#1	.00196	.03189	-.00270	.07707	.10649	.00009	96.590	-.00049
#2	.00007	.03093	-.00213	.07607	.10424	-.00012	95.851	.00017
#3	.00086	.02621	.00651	.07519	.10260	.00000	94.741	-.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	.00154	.00136	.22364	2.0989	.00833	50.340	.14855
Stddev	.00015	.00127	.00161	.01700	.0889	.00290	.333	.00193
%RSD	19.058	82.160	119.06	7.6001	4.2342	34.767	.66152	1.3009
#1	.00093	.00012	.00232	.24130	2.1119	.00752	50.603	.14977
#2	.00066	.00255	-.00051	.22222	2.0042	.00593	50.451	.14632
#3	.00071	.00195	.00226	.20739	2.1805	.01154	49.966	.14955
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00304	83.455	.00081	.01036	.00176	-.00253	.00653	9.3352
Stddev	.00024	.785	.00079	.00625	.00391	.00509	.00407	.0339
%RSD	7.9983	.94114	97.320	60.365	222.30	201.08	62.292	.36345
#1	.00312	84.149	.00168	.00802	-.00135	-.00105	.00183	9.3690
#2	.00323	83.613	.00015	.00561	.00614	.00166	.00894	9.3356
#3	.00276	82.603	.00060	.01745	.00048	-.00820	.00883	9.3011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606037603 Acquired: 6/14/2016 20:04:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00078**	**1.4500**	**-.01203**	**-.00400**	**-.00070**	**.00146**	**-.00024**
Stddev	.00069	.0150	.00372	.00078	.00128	.00009	.00044
%RSD	87.683	1.0373	30.925	19.362	183.82	5.8270	185.51
#1	-.00000	1.4640	-.01576	-.00318	-.00201	.00148	.00024
#2	.00107	1.4518	-.00832	-.00410	-.00064	.00153	-.00063
#3	.00128	1.4341	-.01201	-.00473	.00055	.00137	-.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7293.7**	**42511.**	**2808.7**
Stddev	15.6	250.	35.6
%RSD	.21378	.58896	1.2663
#1	7293.7	42569.	2769.0
#2	7278.1	42237.	2819.5
#3	7309.3	42727.	2837.6

Approved: June 15, 2016

Sample Name: L1606037603PS Acquired: 6/14/2016 20:08:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG572145-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.16732**	**4.2412**	**.16944**	**.83702**	**.41439**	**.02074**	**11.579**	**.02115**
Stddev	.00139	.0191	.00055	.00429	.00359	.00011	.063	.00010
%RSD	.82837	.45074	.32693	.51228	.86551	.53973	.54503	.45567
#1	.16603	4.2333	.16930	.84081	.41141	.02062	11.543	.02107
#2	.16878	4.2272	.16896	.83237	.41337	.02076	11.542	.02112
#3	.16714	4.2630	.17004	.83789	.41837	.02084	11.651	.02125
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.08601**	**.21073**	**.21599**	**1.6632**	**20.569**	**.40388**	**8.1236**	**.21564**
Stddev	.00040	.00198	.00122	.0255	.143	.00058	.0942	.00140
%RSD	.46318	.93892	.56504	1.5349	.69709	.14430	1.1594	.65062
#1	.08561	.21093	.21589	1.6338	20.497	.40327	8.1811	.21440
#2	.08601	.21260	.21482	1.6797	20.477	.40444	8.0149	.21535
#3	.08641	.20866	.21726	1.6762	20.735	.40393	8.1747	.21716
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41572**	**27.073**	**.21550**	**4.2521**	**.21524**	**.51017**	**.17452**	**2.8867**
Stddev	.00074	.163	.00156	.0179	.00219	.00226	.00975	.0102
%RSD	.17800	.60189	.72201	.42172	1.0170	.44375	5.5860	.35409
#1	.41638	26.907	.21398	4.2603	.21760	.50995	.16328	2.8804
#2	.41586	27.080	.21541	4.2316	.21327	.51254	.17973	2.8813
#3	.41492	27.233	.21709	4.2645	.21486	.50803	.18056	2.8985
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606037603PS Acquired: 6/14/2016 20:08:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG572145-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.42434**	**.52719**	**.39763**	**.21184**	**.41778**	**.44062**	**.00026**
Stddev	.00079	.00274	.00417	.00138	.00012	.00160	.00018
%RSD	.18688	.51925	1.0479	.65013	.02859	.36335	70.019
#1	.42415	.52439	.39765	.21034	.41792	.43949	.00011
#2	.42367	.52734	.39346	.21213	.41770	.43991	.00046
#3	.42522	.52986	.40179	.21305	.41773	.44245	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8298.7**	**48092.**	**3084.7**
Stddev	12.4	86.	20.2
%RSD	.14907	.17788	.65460
#1	8288.8	48133.	3072.9
#2	8312.6	48150.	3073.2
#3	8294.8	47994.	3108.1

Approved: June 15, 2016

Sample Name: L1606037603SDL Acquired: 6/14/2016 20:12:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 50 Custom ID2: Custom ID3:
Comment: WG572145-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00031	-.00011	-.00097	.00240	.00192	.00011	.87778	.00003
Stddev	.00260	.00534	.00110	.00082	.00097	.00007	.01744	.00017
%RSD	841.71	5015.3	113.10	34.080	50.302	59.901	1.9871	678.48
#1	-.00185	-.00220	-.00008	.00334	.00301	.00004	.85985	.00013
#2	-.00177	.00596	-.00064	.00201	.00115	.00016	.89469	.00011
#3	.00269	-.00408	-.00219	.00185	.00161	.00014	.87880	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	-.00023	.00070	.01828	-.16788	-.00115	.47163	.00013
Stddev	.00048	.00071	.00071	.01664	.04101	.00386	.02394	.00101
%RSD	223.31	310.73	101.23	91.044	24.431	334.03	5.0753	777.31
#1	.00012	-.00097	.00149	.00012	-.14254	.00224	.44631	.00080
#2	-.00077	-.00015	.00010	.02193	-.21520	-.00035	.49389	.00062
#3	.00000	.00044	.00052	.03280	-.14590	-.00535	.47469	-.00103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00111	.72833	.00096	.00426	-.00417	.00129	-.00065	.08029
Stddev	.00041	.02820	.00090	.00142	.00166	.00287	.00232	.00106
%RSD	36.848	3.8712	93.807	33.267	39.811	223.01	360.18	1.3149
#1	.00073	.76071	.00140	.00373	-.00324	-.00167	.00199	.08117
#2	.00105	.71513	-.00008	.00319	-.00609	.00147	-.00150	.08057
#3	.00154	.70916	.00156	.00587	-.00318	.00407	-.00242	.07912
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606037603SDL Acquired: 6/14/2016 20:12:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 50 Custom ID2: Custom ID3:
Comment: WG572145-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00079**	**.01313**	**.01047**	**.00019**	**.00030**	**.00034**	**-.00008**
Stddev	.00037	.00024	.00514	.00188	.00079	.00023	.00040
%RSD	46.789	1.8404	49.142	988.87	263.82	67.672	497.35
#1	.00042	.01340	.00662	.00146	.00115	.00020	-.00004
#2	.00115	.01293	.00847	-.00197	-.00040	.00022	-.00050
#3	.00079	.01307	.01631	.00108	.00015	.00061	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8299.8**	**48423.**	**3040.2**
Stddev	2.4	241.	19.9
%RSD	.02852	.49677	.65448
#1	8300.5	48697.	3022.5
#2	8301.7	48325.	3061.7
#3	8297.1	48246.	3036.3

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 20:16:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37667**	**9.4035**	**.37286**	**.47167**	**.91227**	**.04717**	**9.0153**	**.04733**
Stddev	.00057	.0112	.00507	.00209	.00363	.00052	.0508	.00009
%RSD	.15239	.11915	1.3598	.44295	.39777	1.1056	.56302	.18986
#1	.37679	9.4093	.36870	.47367	.91318	.04776	8.9983	.04732
#2	.37717	9.3906	.37138	.47184	.90827	.04680	8.9752	.04724
#3	.37604	9.4106	.37851	.46950	.91535	.04694	9.0723	.04742
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19138**	**.47412**	**.47768**	**3.6643**	**45.667**	**.90836**	**9.0831**	**.45268**
Stddev	.00014	.00427	.00155	.0187	.193	.01297	.0576	.00104
%RSD	.07565	.89993	.32400	.51025	.42192	1.4277	.63437	.22950
#1	.19134	.47904	.47937	3.6823	45.628	.92071	9.0439	.45192
#2	.19154	.47152	.47633	3.6658	45.497	.89485	9.0561	.45386
#3	.19126	.47178	.47734	3.6449	45.876	.90952	9.1492	.45225
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.94376**	**45.777**	**.47920**	**9.4727**	**.47711**	**1.1407**	**.37357**	**4.7802**
Stddev	.00129	.168	.00165	.0120	.00216	.0020	.00433	.0044
%RSD	.13645	.36596	.34418	.12611	.45245	.17860	1.1581	.09222
#1	.94378	45.655	.47935	9.4621	.47545	1.1412	.37603	4.7810
#2	.94504	45.708	.48076	9.4704	.47634	1.1424	.36858	4.7754
#3	.94246	45.968	.47748	9.4856	.47955	1.1384	.37611	4.7841
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 20:16:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.94598**	**.91008**	**.90369**	**.47410**	**.94227**	**.95554**	**.94155**
Stddev	.00185	.00240	.00268	.00143	.00647	.00081	.00205
%RSD	.19513	.26351	.29672	.30197	.68629	.08453	.21754
#1	.94734	.90976	.90113	.47353	.94973	.95463	.94138
#2	.94671	.90785	.90648	.47304	.93835	.95617	.93959
#3	.94388	.91261	.90346	.47573	.93872	.95582	.94367
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7990.7**	**46358.**	**3064.5**
Stddev	9.5	189.	12.5
%RSD	.11949	.40691	.40645
#1	7986.0	46249.	3065.8
#2	8001.6	46576.	3076.3
#3	7984.4	46249.	3051.5

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 20:20:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00041**	**.00477**	**-.00352**	**.00434**	**.00063**	**.00004**	**.00529**	**-.00028**
Stddev	.00148	.00927	.00260	.00261	.00035	.00005	.02742	.00023
%RSD	358.80	194.45	73.925	60.210	55.103	124.46	518.08	79.970
#1	-.00068	.01259	-.00192	.00391	.00096	.00007	-.02614	-.00007
#2	.00119	-.00547	-.00212	.00713	.00027	-.00002	.01776	-.00052
#3	-.00175	.00717	-.00652	.00197	.00067	.00008	.02427	-.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00027**	**.00049**	**.00115**	**-.01548**	**-.16235**	**-.00338**	**-.10490**	**-.00144**
Stddev	.00043	.00079	.00098	.01032	.08835	.00370	.07013	.00188
%RSD	159.36	160.48	85.441	66.640	54.419	109.36	66.857	130.28
#1	-.00056	.00140	.00228	-.01628	-.26434	-.00613	-.17497	-.00361
#2	-.00048	-.00003	.00064	-.00479	-.11311	-.00484	-.10501	-.00034
#3	.00023	.00010	.00052	-.02537	-.10959	.00082	-.03471	-.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00154**	**-.01137**	**.00094**	**-.00396**	**.00016**	**-.00066**	**.00783**	**.00086**
Stddev	.00031	.00719	.00070	.00432	.00142	.00225	.00680	.00113
%RSD	20.100	63.243	74.541	109.13	914.54	343.13	86.840	131.58
#1	.00122	-.00683	.00175	-.00894	-.00062	.00151	.01483	.00213
#2	.00183	-.00761	.00062	-.00187	.00179	-.00298	.00126	.00044
#3	.00157	-.01965	.00046	-.00108	-.00071	-.00050	.00738	-.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 20:20:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00072**	**-.00001**	**.00377**	**.00009**	**.00009**	**-.00035**	**.00075**
Stddev	.00107	.00035	.00166	.00197	.00007	.00014	.00032
%RSD	147.86	2694.1	44.168	2118.5	76.833	38.859	42.404
#1	.00191	.00026	.00246	-.00218	.00004	-.00049	.00092
#2	-.00014	.00011	.00320	.00136	.00006	-.00036	.00094
#3	.00039	-.00041	.00564	.00110	.00017	-.00021	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8168.3**	**47490.**	**3047.5**
Stddev	10.3	198.	12.7
%RSD	.12556	.41629	.41563
#1	8176.9	47701.	3044.4
#2	8170.9	47308.	3061.5
#3	8156.9	47462.	3036.7

Approved: June 15, 2016

Sample Name: L1606037604 Acquired: 6/14/2016 20:24:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00032**	**.00756**	**-.00185**	**.00469**	**.00404**	**.00007**	**8.7792**	**-.00032**
Stddev	.00019	.00312	.00051	.00180	.00005	.00008	.0398	.00009
%RSD	59.067	41.210	27.877	38.444	1.2193	113.73	.45339	29.604
#1	-.00026	.01101	-.00206	.00275	.00402	-.00001	8.7433	-.00028
#2	-.00016	.00494	-.00222	.00500	.00400	.00015	8.7724	-.00025
#3	-.00053	.00674	-.00126	.00632	.00409	.00008	8.8220	-.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**.00039**	**.00058**	**.00730**	**.00847**	**.00083**	**1.2642**	**.03208**
Stddev	.00038	.00082	.00073	.01936	.04904	.00128	.0199	.00048
%RSD	1319.7	212.15	125.15	265.20	579.15	154.65	1.5728	1.4950
#1	.00046	-.00036	.00116	.02451	-.04789	.00204	1.2658	.03202
#2	-.00026	.00026	.00083	-.01366	.03191	.00097	1.2832	.03164
#3	-.00011	.00126	-.00024	.01105	.04139	-.00052	1.2435	.03259
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00030**	**3.7411**	**.00189**	**.00717**	**-.00387**	**.00020**	**-.00206**	**.76318**
Stddev	.00045	.0143	.00183	.00136	.00242	.00213	.00680	.00111
%RSD	150.40	.38310	96.540	18.952	62.478	1056.0	330.72	.14550
#1	-.00074	3.7570	.00399	.00765	-.00665	-.00221	-.00933	.76446
#2	.00016	3.7370	.00062	.00564	-.00219	.00099	-.00099	.76269
#3	-.00033	3.7292	.00107	.00822	-.00279	.00183	.00414	.76241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: L1606037604 Acquired: 6/14/2016 20:24:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00072**	**.04318**	**-.00014**	**.00075**	**.00033**	**.00145**	**-.00023**
Stddev	.00006	.00011	.00435	.00228	.00014	.00014	.00105
%RSD	8.4337	.25383	3096.5	301.47	43.640	9.5729	452.41
#1	.00074	.04307	.00031	.00337	.00016	.00153	-.00117
#2	.00065	.04319	-.00470	-.00073	.00043	.00129	-.00044
#3	.00077	.04329	.00396	-.00037	.00039	.00153	.00091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8314.4**	**48031.**	**3034.3**
Stddev	12.3	138.	25.7
%RSD	.14819	.28704	.84757
#1	8306.7	47891.	3030.2
#2	8328.6	48034.	3061.8
#3	8307.8	48167.	3010.9

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 20:28:10 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38145**	**9.5297**	**.37179**	**.47895**	**.91835**	**.04744**	**9.0623**	**.04770**
Stddev	.00074	.0208	.00359	.00192	.00362	.00029	.0379	.00014
%RSD	.19353	.21829	.96432	.40042	.39393	.61309	.41775	.28741
#1	.38124	9.5376	.36791	.48097	.91631	.04778	9.0921	.04762
#2	.38228	9.5455	.37246	.47873	.91622	.04725	9.0197	.04763
#3	.38084	9.5061	.37499	.47715	.92253	.04730	9.0750	.04786
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19264**	**.47622**	**.48088**	**3.6771**	**46.027**	**.91668**	**9.1578**	**.46068**
Stddev	.00058	.00219	.00109	.0271	.144	.00757	.0724	.00386
%RSD	.29895	.45902	.22576	.73645	.31279	.82598	.79011	.83793
#1	.19200	.47875	.48020	3.6525	45.914	.92433	9.0875	.45627
#2	.19281	.47502	.48030	3.6728	45.977	.90919	9.2320	.46341
#3	.19311	.47491	.48213	3.7061	46.189	.91650	9.1539	.46237
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.95289**	**46.112**	**.48191**	**9.5513**	**.48065**	**1.1478**	**.37978**	**4.8187**
Stddev	.00288	.222	.00113	.0283	.00473	.0063	.00516	.0172
%RSD	.30192	.48246	.23487	.29588	.98378	.54720	1.3580	.35629
#1	.95113	45.892	.48073	9.5206	.47833	1.1406	.38331	4.8019
#2	.95621	46.107	.48299	9.5571	.47754	1.1507	.38218	4.8362
#3	.95134	46.337	.48202	9.5763	.48609	1.1521	.37386	4.8182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 15, 2016

Sample Name: CCV Acquired: 6/14/2016 20:28:10 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.95214**	**.91766**	**.91145**	**.47927**	**.95378**	**.96314**	**.95662**
Stddev	.00224	.00487	.00908	.00249	.00832	.00208	.00950
%RSD	.23556	.53063	.99667	.51969	.87275	.21595	.99290
#1	.95106	.91471	.90663	.47834	.96319	.96092	.95069
#2	.95472	.91500	.90579	.48209	.95078	.96504	.95161
#3	.95064	.92328	.92193	.47737	.94737	.96345	.96758
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8029.3**	**46259.**	**3052.8**
Stddev	40.6	206.	17.4
%RSD	.50537	.44620	.57101
#1	8035.1	46087.	3059.4
#2	7986.2	46203.	3065.9
#3	8066.7	46488.	3033.0

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 20:31:52 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00069	.00437	.00079	.00195	.00089	.00004	.01496	-.00002
Stddev	.00059	.00687	.00511	.00214	.00047	.00006	.03133	.00015
%RSD	85.649	157.29	643.31	109.54	53.013	160.33	209.40	643.65
#1	-.00030	.01102	-.00465	.00409	.00085	.00002	.03337	.00015
#2	-.00137	-.00271	.00548	-.00019	.00044	.00011	-.02121	-.00008
#3	-.00040	.00481	.00156	.00197	.00138	-.00001	.03273	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00047	.00090	.00007	-.00390	-.12491	-.00044	-.03143	-.00151
Stddev	.00024	.00117	.00052	.03152	.11655	.00214	.00810	.00239
%RSD	50.813	129.53	737.64	807.40	93.313	487.54	25.752	158.74
#1	-.00038	-.00041	.00057	.03124	-.24893	.00139	-.02619	.00055
#2	-.00074	.00127	-.00047	-.01327	-.10814	.00008	-.02736	-.00094
#3	-.00028	.00185	.00012	-.02968	-.01764	-.00279	-.04076	-.00413
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00150	-.01020	-.00000	.00303	-.00270	-.00035	.00675	.00182
Stddev	.00038	.02614	.00033	.00543	.00172	.00335	.00318	.00079
%RSD	25.535	256.29	12533.	179.56	63.729	958.50	47.058	43.331
#1	.00106	-.03994	-.00014	-.00311	-.00379	.00159	.00633	.00273
#2	.00165	.00912	-.00024	.00498	-.00072	.00158	.01012	.00140
#3	.00177	.00023	.00037	.00721	-.00359	-.00422	.00381	.00133
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: CCB Acquired: 6/14/2016 20:31:52 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	.00014	.00541	.00038	-.00080	-.00014	.00069
Stddev	.00060	.00004	.00437	.00194	.00017	.00017	.00006
%RSD	282.76	31.285	80.645	506.67	20.920	125.59	8.2535
#1	.00049	.00018	.00744	-.00159	-.00096	-.00003	.00066
#2	-.00048	.00014	.00040	.00045	-.00081	-.00005	.00075
#3	.00063	.00009	.00840	.00229	-.00062	-.00034	.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8164.0	47462.	3072.1
Stddev	14.2	179.	18.2
%RSD	.17425	.37672	.59115
#1	8152.7	47258.	3051.6
#2	8159.2	47592.	3078.4
#3	8180.0	47536.	3086.3

Approved: June 15, 2016

Sample Name: LLCCV Acquired: 6/14/2016 20:35:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00796	.15654	.00520	.07362	.00772	.00155	.36450	.00072
Stddev	.00058	.00604	.00233	.00171	.00060	.00003	.00774	.00008
%RSD	7.2560	3.8586	44.788	2.3295	7.7289	1.8142	2.1230	11.177
#1	.00863	.16003	.00770	.07267	.00720	.00156	.35816	.00064
#2	.00766	.14956	.00309	.07259	.00759	.00151	.37312	.00071
#3	.00760	.16002	.00482	.07560	.00837	.00156	.36222	.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00374	.00376	.00416	.08157	.58896	.07087	.34991	.00537
Stddev	.00013	.00055	.00080	.00802	.06552	.00052	.04718	.00220
%RSD	3.4987	14.670	19.296	9.8277	11.124	.73849	13.483	40.929
#1	.00389	.00388	.00409	.08757	.56210	.07050	.40372	.00309
#2	.00367	.00316	.00499	.08467	.54115	.07064	.31562	.00748
#3	.00367	.00425	.00339	.07246	.66364	.07147	.33040	.00555
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00723	.35769	.01538	.72222	.00467	.07288	.01608	.74185
Stddev	.00045	.01580	.00072	.00535	.00062	.00148	.00634	.00241
%RSD	6.2012	4.4166	4.6660	.74030	13.263	2.0373	39.420	.32510
#1	.00671	.37510	.01481	.72802	.00439	.07167	.02340	.74233
#2	.00746	.34427	.01618	.71749	.00424	.07245	.01257	.74399
#3	.00751	.35370	.01514	.72115	.00538	.07454	.01227	.73924
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 15, 2016

Sample Name: LLCCV Acquired: 6/14/2016 20:35:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v951) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.37476**	**.03636**	**.02406**	**.14149**	**.00689**	**.01529**	**.04153**
Stddev	.00102	.00023	.00222	.00136	.00043	.00012	.00094
%RSD	.27273	.63775	9.2116	.96161	6.2626	.77005	2.2600
#1	.37560	.03610	.02169	.14259	.00666	.01517	.04059
#2	.37506	.03645	.02441	.14192	.00661	.01541	.04153
#3	.37362	.03654	.02608	.13997	.00738	.01529	.04247
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8208.9**	**47722.**	**3044.8**
Stddev	14.5	284.	6.1
%RSD	.17665	.59522	.20194
#1	8214.3	47755.	3047.5
#2	8192.5	47423.	3037.7
#3	8220.0	47989.	3049.0

Approved: June 15, 2016

2.3.2 Metals ICP-MS Data

2.3.2.1 Summary Data

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW5-060816	**Prep Method:**	3015	**Prep Date:**	06/10/2016 07:51
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/15/2016 12:43
Workgroup #:	WG572444	**Analyst:**	BKT	**Run Date:**	06/15/2016 14:46
Collect Date:	06/08/2016 10:10	**Dilution:**	1	**File ID:**	NI.061516.144612
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Cobalt, Total	7440-48-4	0.00267		0.00200	0.00100	0.000500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW5-060816	**Prep Method:**	3015	**Prep Date:**	06/10/2016 07:51
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/13/2016 11:56
Workgroup #:	WG572444	**Analyst:**	BKT	**Run Date:**	06/13/2016 14:36
Collect Date:	06/08/2016 10:10	**Dilution:**	1	**File ID:**	NI.061316.143618
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00122	J	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000758	J	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.126		0.00400	0.00200	0.00100
Copper, Total	7440-50-8	0.00218	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.102		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.0777		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00158	J	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0231	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW5-060816	**Prep Method:**	3015	**Prep Date:**	06/10/2016 07:51
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/15/2016 12:43
Workgroup #:	WG572444	**Analyst:**	BKT	**Run Date:**	06/15/2016 14:49
Collect Date:	06/08/2016 10:10	**Dilution:**	10	**File ID:**	NI.061516.144923
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.960		0.0600	0.0300	0.0150

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer NexION 300X

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	100
Vi = Initial volume	40
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/L)	0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	200
Vi = Initial volume	0.5
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/kg)	40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	40
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	50

50 ug/kg = 0.050 mg/kg

Perkin Elmer NexION ICP/MS

STANDARDS KEY

QC Std 1 - ICV
QC Std 2 - ICB
QC Std 3 - LLICV
QC Std 4 - ICSA
QC Std 5 - ICSAB
QC Std 6 - CCV
QC Std 7 - CCB
QC Std 8 - LLCCV

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.00005	0.05	0.1
Sb	10	0	0.00005	0.05	0.1
As	10	0	0.00005	0.05	0.1
Ba	10	0	0.00005	0.05	0.1
Be	10	0	0.00005	0.05	0.1
Ca	1000	0	0.005	5	10
Cd	10	0	0.0005	0.05	0.1
Cr	10	0	0.0005	0.05	0.1
Co	10	0	0.0005	0.05	0.1
Cu	10	0	0.0005	0.05	0.1
Fe	1000	0	0.005	5	10
Pb	10	0	0.00005	0.05	0.1
Mg	1000	0	0.005	5	10
Mn	10	0	0.00005	0.05	0.1
Ni	10	0	0.00005	0.05	0.1
K	1000	0	0.005	5	10
Se	10	0	0.00005	0.05	0.1
Ag	10	0	0.00005	0.05	0.1
Na	1000	0	0.005	5	10
Tl	10	0	0.00005	0.05	0.1
V	10	0	0.00005	0.05	0.1
U	1000	0	0.00005	0.05	0.1
Zn	10	0	0.00005	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG572187
Analyst: VC
Spike Analyst: VC
Run Date: 06/10/2016 07:51
Method: 3015
Balance: BAL016
Instrument: MW-3
Instrument Start: 06/10/2016 07:50

SOP: ME407 Revison 19
Spike Solution: STD75998
Spike Witness: REK
40 & 50 ML. DIGESTION TU COA18772
HNO3 Lot #: COA18905
MS Filters- fisher-Lot#R RGT35621

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG572187-02	BLANK	1	20 mL	50 mL	181.549 g	181.542 g		
2	WG572187-03	LCS	1	20 mL	50 mL	181.588 g	181.571 g	.25 mL	
3	L16060400-01	SAMP	2	20 mL	50 mL	185.42 g	185.402 g		06/15/16
4	L16060400-02	SAMP	2	20 mL	50 mL	183.811 g	183.793 g		06/15/16
5	L16060400-05	SAMP	2	20 mL	50 mL	184.322 g	184.308 g		06/15/16
6	L16060400-06	SAMP	2	20 mL	50 mL	181.391 g	181.38 g		06/15/16
7	L16060400-07	SAMP	2	20 mL	50 mL	184.098 g	184.081 g		06/15/16
8	L16060400-08	SAMP	2	20 mL	50 mL	183.079 g	183.045 g		06/15/16
9	L16060400-09	SAMP	2	20 mL	50 mL	184.037 g	184.034 g		06/15/16
10	L16060400-10	SAMP	2	20 mL	50 mL	183.132 g	183.107 g		06/15/16
11	L16060433-01	SAMP	2	20 mL	50 mL	183.108 g	183.097 g		06/15/16
12	L16060438-01	SAMP	1	20 mL	50 mL	182.495 g	182.459 g		06/13/16
13	L16060465-01	SAMP	2	20 mL	50 mL	183.574 g	183.552 g		06/16/16
14	L16060481-01	SAMP	2	20 mL	50 mL	182.723 g	182.693 g		06/16/16
15	L16060481-02	SAMP	2	20 mL	50 mL	183.527 g	183.501 g		06/16/16
16	L16060492-01	SAMP	1	20 mL	50 mL	187.008 g	186.993 g		06/20/16
17	L16060504-03	SAMP	1	20 mL	50 mL	179.157 g	179.146 g		06/20/16
18	L16060519-01	SAMP	2	20 mL	50 mL	180.63 g	180.607 g		06/16/16
19	WG572187-01	REF	2	20 mL	50 mL	183.832 g	183.82 g		
20	L16060521-01	SAMP	2	20 mL	50 mL	183.832 g	183.82 g		06/13/16
21	WG572187-04	DUP	1	20 mL	50 mL	182.133 g	182.116 g		
22	WG572187-05	MS	1	20 mL	50 mL	183.926 g	183.91 g	.25 mL	
23	WG572187-06	MSD	1	20 mL	50 mL	183.033 g	183.029 g	.25 mL	

L16060400-09	PH ADJ
L16060438-01	PH ADJ , FILTERED DIGESTATE
L16060400-01	PH ADJ

Analyst: Vicki Collins

Reviewer:

MW_DIG - Modified 09/30/2009
PDF ID: 4802154
Report generated: 06/10/2016 09:18

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 061316A.REP

Analyst1: BKT Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705

ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607

CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345

Stannous : Hydroxylamine :

Workgroups: 572083,572444

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.061316.114314	Blank	Blank		1		06/13/16 11:43
2	NI.061316.114626	WG572466-01	Calibration Point		1		06/13/16 11:46
3	NI.061316.114938	WG572466-02	Calibration Point		1		06/13/16 11:49
4	NI.061316.115249	WG572466-03	Calibration Point		1		06/13/16 11:52
5	NI.061316.115601	WG572466-04	Calibration Point		1		06/13/16 11:56
6	NI.061316.115914	WG572466-05	Initial Calibration Verification		1		06/13/16 11:59
7	NI.061316.120227	WG572466-06	Initial Calib Blank		1		06/13/16 12:02
8	NI.061316.120540	WG572466-07	Low Level Initial Calibration V		1		06/13/16 12:05
9	NI.061316.120851	WG572466-08	Interference Check		1		06/13/16 12:08
10	NI.061316.121203	WG572466-09	Interference Check		1		06/13/16 12:12
11	NI.061316.121517	WG572466-10	CCV		1		06/13/16 12:15
12	NI.061316.121828	WG572466-11	CCB		1		06/13/16 12:18
13	NI.061316.122517	WG571571-02	Method/Prep Blank	20/50	1		06/13/16 12:25
14	NI.061316.122828	WG571571-03	Laboratory Control S	20/50	1		06/13/16 12:28
15	NI.061316.123139	WG571571-01	Reference Sample		5	L16060283-01	06/13/16 12:31
16	NI.061316.123451	WG571571-05	Matrix Spike	20/50	5	L16060283-01	06/13/16 12:34
17	NI.061316.123802	WG571571-06	Matrix Spike Duplica	20/50	5	L16060283-01	06/13/16 12:38
18	NI.061316.124114	L16060081-02	T6E0899-02	20/50	1		06/13/16 12:41
19	NI.061316.124426	L16060088-01	LH18/24-SP650-6366-GRAB	20/50	1		06/13/16 12:44
20	NI.061316.124738	L16060088-02	LH18/24-SP650-6366-COMP	20/50	1		06/13/16 12:47
21	NI.061316.125049	WG572083-03	Post Digestion Spike		1	L16060088-02	06/13/16 12:50
22	NI.061316.125401	WG572083-04	Serial Dilution		5	L16060088-02	06/13/16 12:54
23	NI.061316.125714	WG572466-12	CCV		1		06/13/16 12:57
24	NI.061316.130025	WG572466-13	CCB		1		06/13/16 13:00
25	NI.061316.130339	WG572187-02	Method/Prep Blank	20/50	1		06/13/16 13:03
26	NI.061316.130650	WG572187-03	Laboratory Control S	20/50	1		06/13/16 13:06
27	NI.061316.131001	L16060438-01	PIT WATER	20/50	1		06/13/16 13:10
28	NI.061316.131313	WG572187-01	Reference Sample		1	L16060521-01	06/13/16 13:13
29	NI.061316.131624	WG572187-04	Duplicate	20/50	1	L16060521-01	06/13/16 13:16
30	NI.061316.131936	WG572187-05	Matrix Spike	20/50	1	L16060521-01	06/13/16 13:19
31	NI.061316.132247	WG572187-06	Matrix Spike Duplica	20/50	1	L16060521-01	06/13/16 13:22
32	NI.061316.132559	WG572444-01	Post Digestion Spike		1	L16060521-01	06/13/16 13:25
33	NI.061316.132910	WG572444-02	Serial Dilution		5	L16060521-01	06/13/16 13:29
34	NI.061316.133221	WG572444-02	Serial Dilution		25	L16060521-01	06/13/16 13:32

Page: 1 Approved: June 15, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 061316A.REP

Analyst1: BKT Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705

ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607

CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345

Stannous : Hydroxylamine :

Workgroups: 572083,572444

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.061316.133534	WG572466-14	CCV		1		06/13/16 13:35
36	NI.061316.133846	WG572466-15	CCB		1		06/13/16 13:38
37	NI.061316.134159	WG572466-16	Low Level Continuing Calibra		1		06/13/16 13:41
38	NI.061316.134512	WG571571-04	Duplicate	20/50	5	L16060283-01	06/13/16 13:45
39	NI.061316.134823	L16060400-01	NBD01	20/50	1		06/13/16 13:48
40	NI.061316.135135	L16060400-02	NBD01	20/50	1		06/13/16 13:51
41	NI.061316.135446	L16060400-05	ALD02	20/50	1		06/13/16 13:54
42	NI.061316.135758	L16060400-06	ALD02	20/50	1		06/13/16 13:57
43	NI.061316.140109	L16060400-07	ALD01	20/50	1		06/13/16 14:01
44	NI.061316.140421	L16060400-08	ALD01	20/50	1		06/13/16 14:04
45	NI.061316.140732	L16060400-09	NBD05	20/50	1		06/13/16 14:07
46	NI.061316.141044	L16060400-10	NBD05	20/50	1		06/13/16 14:10
47	NI.061316.141355	L16060433-01	16F0536-01	20/50	1		06/13/16 14:13
48	NI.061316.141708	WG572466-17	CCV		1		06/13/16 14:17
49	NI.061316.142019	WG572466-18	CCB		1		06/13/16 14:20
50	NI.061316.142332	L16060465-01	HOA01	20/50	1		06/13/16 14:23
51	NI.061316.142644	L16060481-01	ROADSIDE GH53-01	20/50	1		06/13/16 14:26
52	NI.061316.142955	L16060481-02	CORNER SUMP GH53-01	20/50	1		06/13/16 14:29
53	NI.061316.143306	L16060492-01	SPW_06082016	20/50	100		06/13/16 14:33
54	NI.061316.143618	L16060504-03	MW5-060816	20/50	1		06/13/16 14:36
55	NI.061316.143929	L16060519-01	V6F0101-02	20/50	1		06/13/16 14:39
56	NI.061316.144242	WG572466-19	CCV		1		06/13/16 14:42
57	NI.061316.144553	WG572466-20	CCB		1		06/13/16 14:45
58	NI.061316.154623	WG572466-21	CCV		1		06/13/16 15:46
59	NI.061316.160813	WG572466-22	CCB		1		06/13/16 16:08
60	NI.061316.210354	WG572466-23	Low Level Continuing Calibra		1		06/13/16 21:03
61	NI.061316.210706	WG572466-24	CCV		1		06/13/16 21:07
62	NI.061316.211018	WG572466-25	CCB		1		06/13/16 21:10

Page: 2 Approved: June 15, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 061516A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 572831,572444,572834,572844

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.061516.123034	Blank	Blank		1		06/15/16 12:30
2	NI.061516.123346	WG572861-01	Calibration Point		1		06/15/16 12:33
3	NI.061516.123658	WG572861-02	Calibration Point		1		06/15/16 12:36
4	NI.061516.124010	WG572861-03	Calibration Point		1		06/15/16 12:40
5	NI.061516.124321	WG572861-04	Calibration Point		1		06/15/16 12:43
6	NI.061516.124634	WG572861-05	Initial Calibration Verification		1		06/15/16 12:46
7	NI.061516.124947	WG572861-06	Initial Calib Blank		1		06/15/16 12:49
8	NI.061516.125300	WG572861-07	Low Level Initial Calibration V		1		06/15/16 12:53
9	NI.061516.125613	WG572861-08	Interference Check		1		06/15/16 12:56
10	NI.061516.125925	WG572861-09	Interference Check		1		06/15/16 12:59
11	NI.061516.130238	WG572861-10	CCV		1		06/15/16 13:02
12	NI.061516.130550	WG572861-11	CCB		1		06/15/16 13:05
13	NI.061516.130902	WG572379-02	Method/Prep Blank	.25/100	1		06/15/16 13:09
14	NI.061516.131213	WG572379-03	Laboratory Control S	.25/100	1		06/15/16 13:12
15	NI.061516.131525	WG572379-01	Reference Sample		1	L16060620-01	06/15/16 13:15
16	NI.061516.131836	WG572379-04	Matrix Spike	.25/100	1	L16060620-01	06/15/16 13:18
17	NI.061516.132148	WG572379-05	Matrix Spike Duplica	.257/100	1	L16060620-01	06/15/16 13:21
18	NI.061516.132459	L16060418-01	GH58-1	.253/100	1		06/15/16 13:24
19	NI.061516.132811	L16060418-03	GH58-3	.252/100	1		06/15/16 13:28
20	NI.061516.133122	L16060418-02	GH58-2	.251/100	1		06/15/16 13:31
21	NI.061516.134129	WG572831-01	Post Digestion Spike		1	L16060418-02	06/15/16 13:41
22	NI.061516.134440	WG572831-02	Serial Dilution		5	L16060418-02	06/15/16 13:44
23	NI.061516.134753	WG572861-12	CCV		1		06/15/16 13:47
24	NI.061516.135104	WG572861-13	CCB		1		06/15/16 13:51
25	NI.061516.135418	L16060418-04	GH58-4	.259/100	1		06/15/16 13:54
26	NI.061516.135729	L16060418-05	GH58-5	.25/100	1		06/15/16 13:57
27	NI.061516.140040	L16060418-06	GH58-6	.259/100	1		06/15/16 14:00
28	NI.061516.140352	L16060418-07	GH58-7	.255/100	1		06/15/16 14:03
29	NI.061516.140703	L16060418-08	GH58-8	.256/100	1		06/15/16 14:07
30	NI.061516.141015	L16060531-01	GH53-04	.259/100	1		06/15/16 14:10
31	NI.061516.141415	L16060532-01	GH53-SC1	.254/100	1		06/15/16 14:14
32	NI.061516.141726	L16060532-02	GH53-SC2	.252/100	1		06/15/16 14:17
33	NI.061516.142037	L16060532-03	GH53-SC3	.25/100	1		06/15/16 14:20
34	NI.061516.142348	L16060532-04	GH53-SC4	.256/100	1		06/15/16 14:23

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Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 061516A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 572831,572444,572834,572844

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.061516.142702	WG572861-14	CCV		1		06/15/16 14:27
36	NI.061516.143013	WG572861-15	CCB		1		06/15/16 14:30
37	NI.061516.143326	L16060519-01	V6F0101-02	20/50	1		06/15/16 14:33
38	NI.061516.143637	L16060481-01	ROADSIDE GH53-01	20/50	1		06/15/16 14:36
39	NI.061516.143949	L16060481-02	CORNER SUMP GH53-01	20/50	1		06/15/16 14:39
40	NI.061516.144300	L16060465-01	HOA01	20/50	1		06/15/16 14:43
41	NI.061516.144612	L16060504-03	MW5-060816	20/50	1		06/15/16 14:46
42	NI.061516.144923	L16060504-03	MW5-060816	20/50	10		06/15/16 14:49
43	NI.061516.145235	L16060433-01	16F0536-01	20/50	10		06/15/16 14:52
44	NI.061516.145547	WG572861-16	CCV		1		06/15/16 14:55
45	NI.061516.145859	WG572861-17	CCB		1		06/15/16 14:58
46	NI.061516.150212	WG572861-18	Low Level Continuing Calibra		1		06/15/16 15:02
47	NI.061516.150525	WG572244-02	Method/Prep Blank	40/50	50		06/15/16 15:05
48	NI.061516.150836	WG572244-03	Laboratory Control S	40/50	50		06/15/16 15:08
49	NI.061516.151148	WG572244-01	Reference Sample		50	L16060401-01	06/15/16 15:11
50	NI.061516.151459	WG572244-04	Matrix Spike	5/50	50	L16060401-01	06/15/16 15:14
51	NI.061516.151811	WG572244-05	Matrix Spike Duplica	5/50	50	L16060401-01	06/15/16 15:18
52	NI.061516.152122	L16060403-01	KAISER 12 BAGS 6/6/16	5/50	50		06/15/16 15:21
53	NI.061516.152433	WG572834-01	Post Digestion Spike		50	L16060403-01	06/15/16 15:24
54	NI.061516.152745	WG572834-02	Serial Dilution		250	L16060403-01	06/15/16 15:27
55	NI.061516.153237	WG572861-19	CCV		1		06/15/16 15:32
56	NI.061516.153549	WG572861-20	CCB		1		06/15/16 15:35
57	NI.061516.154241	WG572637-03	Method/Prep Blank	40/50	50		06/15/16 15:42
58	NI.061516.154552	WG572637-04	Laboratory Control S	40/50	50		06/15/16 15:45
59	NI.061516.154904	WG572637-01	Reference Sample		1000	L16060564-01	06/15/16 15:49
60	NI.061516.155216	WG572637-06	Matrix Spike	40/50	1000	L16060564-01	06/15/16 15:52
61	NI.061516.155527	WG572637-07	Matrix Spike Duplica	40/50	1000	L16060564-01	06/15/16 15:55
62	NI.061516.155839	L16060633-01	ALAN 17 BAGS	5/50	50		06/15/16 15:58
63	NI.061516.160150	WG572844-01	Post Digestion Spike		50	L16060633-01	06/15/16 16:01
64	NI.061516.160501	WG572844-02	Serial Dilution		250	L16060633-01	06/15/16 16:05
65	NI.061516.160814	WG572861-21	CCV		1		06/15/16 16:08
66	NI.061516.161126	WG572861-22	CCB		1		06/15/16 16:11
67	NI.061516.172115	+10	+10		1		06/15/16 17:21
68	NI.061516.172427	+20	+20		1		06/15/16 17:24

Page: 2 Approved: June 16, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 061516A.REP

Analyst1: BKT Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705

ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607

CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345

Stannous : Hydroxylamine :

Workgroups: 572831,572444,572834,572844

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.061516.172739	+30	+30		1		06/15/16 17:27
70	NI.061516.173052	WG572861-23	CCV		1		06/15/16 17:30
71	NI.061516.173403	WG572861-24	CCB		1		06/15/16 17:34

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Microbac Laboratories Inc.

Data Checklist

Date: 13-JUN-2016
Analyst: BKT
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 572466
Runlog ID: 75655
Analytical Workgroups: 572083,572444

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	
Level 4	88,504
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BKT
Secondary Reviewer	KHR
Comments	

Primary Reviewer:
15-JUN-2016

Secondary Reviewer:
15-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-15-2016 13:46:03

Microbac Laboratories Inc.

Data Checklist

Date: 15-JUN-2016
Analyst: BKT
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 572861
Runlog ID: 75705
Analytical Workgroups: 572831,572444,572834,572844

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	
Level 4	504
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BKT
Secondary Reviewer	KHR
Comments	

Primary Reviewer:
16-JUN-2016

Secondary Reviewer:
16-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-16-2016 12:29:10

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG572444

Login Number: L16060504

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW5-060816	03	06/08/16					06/10/2016	1.9	180		06/15/16	7.2	180	
MW5-060816	03	06/08/16					06/10/2016	1.9	180		06/13/16	5.2	180	
MW5-060816	03	06/08/16					06/10/2016	1.9	180		06/15/16	7.2	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4805716
Report generated 06/28/2016 16:55

METHOD BLANK SUMMARY

Login Number: L16060504
Blank File ID: NI.061316.130339
Prep Date: 06/10/16 07:51
Analyzed Date: 06/13/16 13:03
Analyst: BKT

Work Group: WG572444
Blank Sample ID: WG572187-02
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572187-03	NI.061316.130650	06/13/16 13:06	01
DUP	WG572187-04	NI.061316.131624	06/13/16 13:16	01
MW5-060816	L16060504-03	NI.061316.143618	06/13/16 14:36	01
MW5-060816	L16060504-03	NI.061516.144612	06/15/16 14:46	02
MW5-060816	L16060504-03	NI.061516.144923	06/15/16 14:49	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4805717
Report generated 06/28/2016 16:55

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060504 Prep Date: 06/10/16 07:51 Sample ID: WG572187-02
Instrument ID: ICP-MS2 Run Date: 06/13/16 13:03 Prep Method: 3015
File ID: NI.061316.130339 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG572444 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-13-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Antimony, Total	0.000500	0.00200	0.000500	1	U
Arsenic, Total	0.000500	0.00200	0.000500	1	U
Barium, Total	0.00150	0.00600	0.00150	1	U
Cadmium, Total	0.000300	0.00120	0.000300	1	U
Chromium, Total	0.00100	0.00400	0.00100	1	U
Cobalt, Total	0.000500	0.00200	0.000500	1	U
Copper, Total	0.00100	0.00400	0.00100	1	U
Lead, Total	0.000500	0.00200	0.000500	1	U
Manganese, Total	0.00100	0.00400	0.00100	1	U
Nickel, Total	0.00200	0.00800	0.00200	1	U
Silver, Total	0.000500	0.00200	0.000500	1	U
Thallium, Total	0.000100	0.000400	0.000100	1	U
Vanadium, Total	0.000500	0.00200	0.000500	1	U
Zinc, Total	0.0125	0.0500	0.0125	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4805718
28-JUN-2016 16:55

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060504 Run Date: 06/13/2016 Sample ID: WG572187-03
Instrument ID: ICP-MS2 Run Time: 13:06 Prep Method: 3015
File ID: NI.061316.130650 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG572444 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD75998 Cal ID: ICP-MS-13-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Antimony, Total	0.125	0.129	103	80 - 120	
Arsenic, Total	0.125	0.125	100	80 - 120	
Barium, Total	0.125	0.128	102	80 - 120	
Cadmium, Total	0.125	0.129	103	80 - 120	
Chromium, Total	0.125	0.126	100	80 - 120	
Cobalt, Total	0.125	0.131	105	80 - 120	
Copper, Total	0.125	0.129	103	80 - 120	
Lead, Total	0.125	0.129	103	80 - 120	
Manganese, Total	0.125	0.130	104	80 - 120	
Nickel, Total	0.125	0.127	102	80 - 120	
Silver, Total	0.125	0.134	107	80 - 120	
Thallium, Total	0.125	0.128	103	80 - 120	
Vanadium, Total	0.125	0.127	102	80 - 120	
Zinc, Total	0.125	0.130	104	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4805719
Report generated: 06/28/2016 16:55

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060504 | Cal ID: ICP-MS2- | Worknum: WG572444
Instrument ID: ICP-MS2 | Contract #: | Method: 6020A
Parent ID: WG572187-01 | File ID: NI.061316.131313 | Dil: 1 | Matrix: WATER
Sample ID: WG572187-05 MS | File ID: NI.061316.131936 | Dil: 1 | Units: mg/L
Sample ID: WG572187-06 MSD | File ID: NI.061316.132247 | Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Antimony	ND	0.125	0.134	107	0.125	0.130	104	3.06	80 - 120	20	
Arsenic	0.00267	0.125	0.132	104	0.125	0.136	106	2.52	80 - 120	20	
Barium	0.0417	0.125	0.167	100	0.125	0.166	99.2	0.604	80 - 120	20	
Cadmium	ND	0.125	0.128	103	0.125	0.126	100	2.29	80 - 120	20	
Chromium	ND	0.125	0.126	100	0.125	0.130	104	3.39	80 - 120	20	
Cobalt	ND	0.125	0.132	105	0.125	0.137	110	4.20	80 - 120	20	
Copper	0.00187	0.125	0.128	101	0.125	0.131	103	2.69	80 - 120	20	
Lead	ND	0.125	0.127	101	0.125	0.128	102	0.982	80 - 120	20	
Manganese	0.0339	0.125	0.158	99.7	0.125	0.165	105	4.31	80 - 120	20	
Nickel	ND	0.125	0.128	102	0.125	0.130	104	1.41	80 - 120	20	
Silver	ND	0.125	0.131	105	0.125	0.128	103	2.19	80 - 120	20	
Thallium	0.000122	0.125	0.128	102	0.125	0.128	103	0.277	80 - 120	20	
Vanadium	0.00125	0.125	0.131	104	0.125	0.132	105	1.20	80 - 120	20	
Zinc	ND	0.125	0.133	106	0.125	0.134	107	0.913	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4805720
Report generated 06/28/2016 16:55

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16060504 **Worknum:** WG572444
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG572444-02 **File ID:** NI.061316.132910 **Dil:** 5 **Units:** ug/L
Sample: L16060521-01 **File ID:** NI.061316.131313 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	ND	U	2.55	F	1300.00	
Arsenic	1.07	X	1.28	F	19.70	
Barium	16.7	X	17.1	X	2.68	
Cadmium	ND	U	ND	U		
Chromium	ND	U	ND	U		
Cobalt	ND	U	ND	U		
Copper	0.747	F	ND	U		
Lead	ND	U	ND	U		
Manganese	13.6	X	13.2	X	2.71	
Nickel	ND	U	ND	U		
Silver	ND	U	ND	U		
Thallium	0.0488	F	ND	U		
Vanadium	0.498	F	ND	U		
Zinc	ND	U	ND	U		

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4805714
06/28/2016 16:55

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060504 **Worknum:** WG572444
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG572444-01 **File ID:** NI.061316.132559 **Dil:** 1 **Units:** ug/L
Sample ID: L16060521-01 **File ID:** NI.061316.131313 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	51.0		0	U	50	102.0	75 - 125	
ARSENIC	53.3		1.07		50	104.5	75 - 125	
BARIUM	66.4		16.7		50	99.5	75 - 125	
CADMIUM	51.6		0	U	50	103.1	75 - 125	
CHROMIUM	50.5		0	U	50	101.0	75 - 125	
COBALT	55.4		0	U	50	110.8	75 - 125	
COPPER	51.5		0.747	F	50	101.5	75 - 125	
LEAD	52.6		0	U	50	105.2	75 - 125	
MANGANESE	67.0		13.6		50	106.8	75 - 125	
NICKEL	51.1		0	U	50	102.2	75 - 125	
SILVER	51.1		0	U	50	102.3	75 - 125	
THALLIUM	51.5		0.0488	F	50	103.0	75 - 125	
VANADIUM	52.7		0.498	F	50	104.4	75 - 125	
ZINC	53.6		0	U	50	107.3	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4805715
Report generated: 06/28/2016 16:55

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16060504	Workgroup (AAB#):	WG572444
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG572466	Initial Calibration Date:	13-JUN-2016 11:56

	WG572466-01		WG572466-02		WG572466-03		WG572466-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	71.5	.4	330	50	277000	100	541000	.999913	
ARSENIC	0	-93.3	.4	-5.60	50	66300	100	132000	.999961	
BARIUM	0	57.7	.4	182	50	121000	100	235000	.9999	
CADMIUM	0	16.0	.4	134	50	129000	100	257000	.999988	
CHROMIUM	0	8480	.4	9260	50	490000	100	943000	.99999	
COBALT	0	213	.4	640	50	432000	100	854000	.999987	
COPPER	0	238	.4	370	50	118000	100	228000	.999961	
LEAD	0	1100	.4	2430	50	1140000	100	2250000	.999971	
MANGANESE	0	1080	.4	1570	50	378000	100	753000	.999961	
NICKEL	0	328	.4	441	50	122000	100	233000	.999947	
SILVER	0	127	.4	535	50	419000	100	803000	.999734	
THALLIUM	0	48.0	.4	545	50	492000	100	960000	.999997	
VANADIUM	0	1650	.4	2140	50	478000	100	939000	.999999	
ZINC	0	604	.4	802	50	67900	100	132000	1	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4805723
Report generated: 28-JUN-2016 16:55

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16060504	Workgroup (AAB#):	WG572444
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG572861	Initial Calibration Date:	15-JUN-2016 12:43

	WG572861-01		WG572861-02		WG572861-03		WG572861-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	23.7	.4	209	50	161000	100	319000	.999936	
ARSENIC	0	-28.0	.4	8.20	50	42000	100	82900	.99997	
BARIUM	0	17.3	.4	100	50	68700	100	136000	.999942	
CADMIUM	0	1.70	.4	84.6	50	72700	100	144000	.999919	
CHROMIUM	0	6480	.4	6940	50	296000	100	579000	.999988	
COBALT	0	144	.4	409	50	239000	100	477000	.999999	
COPPER	0	109	.4	214	50	70200	100	138000	.999954	
LEAD	0	728	.4	1510	50	619000	100	1240000	.999907	
MANGANESE	0	656	.4	1070	50	220000	100	439000	1	
NICKEL	0	174	.4	253	50	72000	100	141000	.999946	
SILVER	0	69.7	.4	317	50	226000	100	443000	.999981	
THALLIUM	0	19.3	.4	338	50	263000	100	518000	.999978	
VANADIUM	0	1310	.4	1700	50	280000	100	547000	.999939	
ZINC	0	110	.4	247	50	40900	100	80600	.99998	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4805723
Report generated: 28-JUN-2016 16:55

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060504
Run Date: 06/13/2016
Sample ID: WG572466-06
Instrument ID: ICP-MS2
Run Time: 12:02
Method: 6020A
File ID: NI.061316.120227
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572444
Cal ID: ICP-MS2 - 13-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
COPPER	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.443	*
THALLIUM	.04	.16	.04	U
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4805725
Report generated 06/28/2016 16:55

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060504
Run Date: 06/15/2016
Sample ID: WG572861-06
Instrument ID: ICP-MS2
Run Time: 12:49
Method: 6020A
File ID: NI.061516.124947
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572444
Cal ID: ICP-MS2 - 15-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
COPPER	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.508	*
THALLIUM	.04	.16	.0502	F
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4805725
Report generated 06/28/2016 16:55

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060504
Run Date: 06/13/2016
Sample ID: WG572466-11
Instrument ID: ICP-MS2
Run Time: 12:18
Method: 6020A
File ID: NI.061316.121828
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572444
Cal ID: ICP-MS - 13-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.259	F
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4805728
Report generated 06/28/2016 16:55

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060504
Run Date: 06/13/2016
Sample ID: WG572466-13
Instrument ID: ICP-MS2
Run Time: 13:00
Method: 6020A
File ID: NI.061316.130025
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572444
Cal ID: ICP-MS - 13-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4805728
Report generated 06/28/2016 16:55

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060504
Run Date: 06/13/2016
Sample ID: WG572466-15
Instrument ID: ICP-MS2
Run Time: 13:38
Method: 6020A
File ID: NI.061316.133846
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572444
Cal ID: ICP-MS - 13-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4805728
Report generated 06/28/2016 16:55

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060504
Run Date: 06/13/2016
Sample ID: WG572466-18
Instrument ID: ICP-MS2
Run Time: 14:20
Method: 6020A
File ID: NI.061316.142019
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572444
Cal ID: ICP-MS - 13-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	1.04	F
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4805728
Report generated 06/28/2016 16:55

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060504
Run Date: 06/13/2016
Sample ID: WG572466-20
Instrument ID: ICP-MS2
Run Time: 14:45
Method: 6020A
File ID: NI.061316.144553
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572444
Cal ID: ICP-MS - 13-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4805728
Report generated 06/28/2016 16:55

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060504
Run Date: 06/15/2016
Sample ID: WG572861-11
Instrument ID: ICP-MS2
Run Time: 13:05
Method: 6020A
File ID: NI.061516.130550
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572444
Cal ID: ICP-MS - 15-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.271	F
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4805728
Report generated 06/28/2016 16:55

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060504
Run Date: 06/15/2016
Sample ID: WG572861-15
Instrument ID: ICP-MS2
Run Time: 14:30
Method: 6020A
File ID: NI.061516.143013
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572444
Cal ID: ICP-MS - 15-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060504
Run Date: 06/15/2016
Sample ID: WG572861-17
Instrument ID: ICP-MS2
Run Time: 14:58
Method: 6020A
File ID: NI.061516.145859
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572444
Cal ID: ICP-MS - 15-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060504 Run Date: 06/13/2016 Sample ID: WG572466-05
Instrument ID: ICP-MS2 Run Time: 11:59 Method: 6020A
File ID: NI.061316.115914 Analyst: BKT Units: ug/L
Workgroup (AAB#): WG572444 Cal ID: ICP-MS - 13-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	49.3	98.5	90 - 110	
Arsenic		50	50.6	101	90 - 110	
Barium		50	49.7	99.3	90 - 110	
Cadmium		50	50.0	99.9	90 - 110	
Chromium		50	50.0	99.9	90 - 110	
Cobalt		50	50.3	101	90 - 110	
Copper		50	50.6	101	90 - 110	
Lead		50	49.8	99.5	90 - 110	
Manganese		50	51.1	102	90 - 110	
Nickel		50	49.7	99.4	90 - 110	
Silver		50	50.3	101	90 - 110	
Thallium		50	49.8	99.7	90 - 110	
Vanadium		50	49.9	99.8	90 - 110	
Zinc		50	51.1	102	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
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Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060504
Run Date: 06/15/2016
Sample ID: WG572861-05
Instrument ID: ICP-MS2
Run Time: 12:46
Method: 6020A
File ID: NI.061516.124634
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572444
Cal ID: ICP-MS - 15-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	51.1	102	90 - 110	
Arsenic		50	52.3	105	90 - 110	
Barium		50	51.8	104	90 - 110	
Cadmium		50	53.1	106	90 - 110	
Chromium		50	51.8	104	90 - 110	
Cobalt		50	51.8	104	90 - 110	
Copper		50	52.9	106	90 - 110	
Lead		50	52.3	105	90 - 110	
Manganese		50	52.7	105	90 - 110	
Nickel		50	52.3	105	90 - 110	
Silver		50	52.2	104	90 - 110	
Thallium		50	52.0	104	90 - 110	
Vanadium		50	52.3	105	90 - 110	
Zinc		50	53.6	107	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4805724
Report generated 06/28/2016 16:55

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504
Run Date: 06/13/2016
Sample ID: WG572466-10
Instrument ID: ICP-MS2
Run Time: 12:15
Method: 6020A
File ID: NI.061316.121517
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572444
Cal ID: ICP-MS - 13-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0525	mg/L	105	90 - 110		
Arsenic		0.0500	0.0506	mg/L	101	90 - 110		
Barium		0.0500	0.0505	mg/L	101	90 - 110		
Cadmium		0.0500	0.0507	mg/L	101	90 - 110		
Chromium		0.0500	0.0494	mg/L	98.8	90 - 110		
Cobalt		0.0500	0.0524	mg/L	105	90 - 110		
Copper		0.0500	0.0509	mg/L	102	90 - 110		
Lead		0.0500	0.0515	mg/L	103	90 - 110		
Manganese		0.0500	0.0510	mg/L	102	90 - 110		
Nickel		0.0500	0.0499	mg/L	99.8	90 - 110		
Silver		0.0500	0.0513	mg/L	103	90 - 110		
Thallium		0.0500	0.0511	mg/L	102	90 - 110		
Vanadium		0.0500	0.0506	mg/L	101	90 - 110		
Zinc		0.0500	0.0498	mg/L	99.6	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504
Run Date: 06/13/2016
Sample ID: WG572466-12
Instrument ID: ICP-MS2
Run Time: 12:57
Method: 6020A
File ID: NI.061316.125714
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572444
Cal ID: ICP-MS - 13-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0510	mg/L	102	90 - 110		
Arsenic		0.0500	0.0507	mg/L	101	90 - 110		
Barium		0.0500	0.0493	mg/L	98.6	90 - 110		
Cadmium		0.0500	0.0504	mg/L	101	90 - 110		
Chromium		0.0500	0.0502	mg/L	100	90 - 110		
Cobalt		0.0500	0.0539	mg/L	108	90 - 110		
Copper		0.0500	0.0508	mg/L	102	90 - 110		
Lead		0.0500	0.0518	mg/L	104	90 - 110		
Manganese		0.0500	0.0523	mg/L	105	90 - 110		
Nickel		0.0500	0.0508	mg/L	102	90 - 110		
Silver		0.0500	0.0510	mg/L	102	90 - 110		
Thallium		0.0500	0.0508	mg/L	102	90 - 110		
Vanadium		0.0500	0.0514	mg/L	103	90 - 110		
Zinc		0.0500	0.0506	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504 Run Date: 06/13/2016 Sample ID: WG572466-14
Instrument ID: ICP-MS2 Run Time: 13:35 Method: 6020A
File ID: NI.061316.133534 Analyst: BKT QC Key: DOD4
Workgroup (AAB#): WG572444 Cal ID: ICP-MS - 13-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0500	mg/L	100	90 - 110		
Arsenic		0.0500	0.0506	mg/L	101	90 - 110		
Barium		0.0500	0.0484	mg/L	96.7	90 - 110		
Cadmium		0.0500	0.0500	mg/L	100	90 - 110		
Chromium		0.0500	0.0499	mg/L	99.7	90 - 110		
Cobalt		0.0500	0.0542	mg/L	108	90 - 110		
Copper		0.0500	0.0507	mg/L	101	90 - 110		
Lead		0.0500	0.0519	mg/L	104	90 - 110		
Manganese		0.0500	0.0525	mg/L	105	90 - 110		
Nickel		0.0500	0.0503	mg/L	101	90 - 110		
Silver		0.0500	0.0495	mg/L	98.9	90 - 110		
Thallium		0.0500	0.0505	mg/L	101	90 - 110		
Vanadium		0.0500	0.0502	mg/L	100	90 - 110		
Zinc		0.0500	0.0512	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504
Run Date: 06/13/2016
Sample ID: WG572466-17
Instrument ID: ICP-MS2
Run Time: 14:17
Method: 6020A
File ID: NI.061316.141708
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572444
Cal ID: ICP-MS - 13-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0527	mg/L	105	90 - 110		
Arsenic		0.0500	0.0519	mg/L	104	90 - 110		
Barium		0.0500	0.0501	mg/L	100	90 - 110		
Cadmium		0.0500	0.0513	mg/L	103	90 - 110		
Chromium		0.0500	0.0507	mg/L	101	90 - 110		
Cobalt		0.0500	0.0597	mg/L	119	90 - 110		*
Copper		0.0500	0.0517	mg/L	103	90 - 110		
Lead		0.0500	0.0516	mg/L	103	90 - 110		
Manganese		0.0500	0.0527	mg/L	105	90 - 110		
Nickel		0.0500	0.0517	mg/L	103	90 - 110		
Silver		0.0500	0.0542	mg/L	108	90 - 110		
Thallium		0.0500	0.0520	mg/L	104	90 - 110		
Vanadium		0.0500	0.0539	mg/L	108	90 - 110		
Zinc		0.0500	0.0512	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504
Run Date: 06/13/2016
Sample ID: WG572466-19
Instrument ID: ICP-MS2
Run Time: 14:42
Method: 6020A
File ID: NI.061316.144242
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572444
Cal ID: ICP-MS - 13-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0522	mg/L	104	90 - 110		
Arsenic		0.0500	0.0507	mg/L	101	90 - 110		
Barium		0.0500	0.0496	mg/L	99.1	90 - 110		
Cadmium		0.0500	0.0519	mg/L	104	90 - 110		
Chromium		0.0500	0.0505	mg/L	101	90 - 110		
Cobalt		0.0500	0.0598	mg/L	120	90 - 110		*
Copper		0.0500	0.0516	mg/L	103	90 - 110		
Lead		0.0500	0.0540	mg/L	108	90 - 110		
Manganese		0.0500	0.0542	mg/L	108	90 - 110		
Nickel		0.0500	0.0523	mg/L	105	90 - 110		
Silver		0.0500	0.0536	mg/L	107	90 - 110		
Thallium		0.0500	0.0526	mg/L	105	90 - 110		
Vanadium		0.0500	0.0540	mg/L	108	90 - 110		
Zinc		0.0500	0.0503	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504
Instrument ID: ICP-MS2
File ID: NI.061516.130238
Workgroup (AAB#): WG572444
Matrix: WATER

Run Date: 06/15/2016
Run Time: 13:02
Analyst: BKT
Cal ID: ICP-MS - 15-JUN-16

Sample ID: WG572861-10
Method: 6020A
QC Key: DOD4

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0521	mg/L	104	90 - 110		
Arsenic		0.0500	0.0509	mg/L	102	90 - 110		
Barium		0.0500	0.0511	mg/L	102	90 - 110		
Cadmium		0.0500	0.0516	mg/L	103	90 - 110		
Chromium		0.0500	0.0510	mg/L	102	90 - 110		
Cobalt		0.0500	0.0521	mg/L	104	90 - 110		
Copper		0.0500	0.0514	mg/L	103	90 - 110		
Lead		0.0500	0.0520	mg/L	104	90 - 110		
Manganese		0.0500	0.0513	mg/L	103	90 - 110		
Nickel		0.0500	0.0515	mg/L	103	90 - 110		
Silver		0.0500	0.0515	mg/L	103	90 - 110		
Thallium		0.0500	0.0515	mg/L	103	90 - 110		
Vanadium		0.0500	0.0523	mg/L	105	90 - 110		
Zinc		0.0500	0.0520	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504
Run Date: 06/15/2016
Sample ID: WG572861-14
Instrument ID: ICP-MS2
Run Time: 14:27
Method: 6020A
File ID: NI.061516.142702
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572444
Cal ID: ICP-MS - 15-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0518	mg/L	104	90 - 110		
Arsenic		0.0500	0.0515	mg/L	103	90 - 110		
Barium		0.0500	0.0527	mg/L	105	90 - 110		
Cadmium		0.0500	0.0519	mg/L	104	90 - 110		
Chromium		0.0500	0.0541	mg/L	108	90 - 110		
Cobalt		0.0500	0.0506	mg/L	101	90 - 110		
Copper		0.0500	0.0535	mg/L	107	90 - 110		
Lead		0.0500	0.0522	mg/L	104	90 - 110		
Manganese		0.0500	0.0557	mg/L	111	90 - 110		*
Nickel		0.0500	0.0540	mg/L	108	90 - 110		
Silver		0.0500	0.0526	mg/L	105	90 - 110		
Thallium		0.0500	0.0519	mg/L	104	90 - 110		
Vanadium		0.0500	0.0531	mg/L	106	90 - 110		
Zinc		0.0500	0.0522	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504
Run Date: 06/15/2016
Sample ID: WG572861-16
Instrument ID: ICP-MS2
Run Time: 14:55
Method: 6020A
File ID: NI.061516.145547
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572444
Cal ID: ICP-MS - 15-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0522	mg/L	104	90 - 110		
Arsenic		0.0500	0.0513	mg/L	103	90 - 110		
Barium		0.0500	0.0528	mg/L	106	90 - 110		
Cadmium		0.0500	0.0526	mg/L	105	90 - 110		
Chromium		0.0500	0.0532	mg/L	106	90 - 110		
Cobalt		0.0500	0.0530	mg/L	106	90 - 110		
Copper		0.0500	0.0524	mg/L	105	90 - 110		
Lead		0.0500	0.0523	mg/L	105	90 - 110		
Manganese		0.0500	0.0555	mg/L	111	90 - 110		*
Nickel		0.0500	0.0526	mg/L	105	90 - 110		
Silver		0.0500	0.0522	mg/L	104	90 - 110		
Thallium		0.0500	0.0525	mg/L	105	90 - 110		
Vanadium		0.0500	0.0536	mg/L	107	90 - 110		
Zinc		0.0500	0.0521	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060504
Run Date: 06/13/2016
Sample ID: WG572466-07
Instrument ID: ICP-MS2
Run Time: 12:05
Method: 6020A
File ID: NI.061316.120540
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572444
Cal ID: ICP-MS - 13-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.461	ug/L	115	70 - 130		
Arsenic		0.400	0.392	ug/L	97.9	70 - 130		
Barium		0.750	0.754	ug/L	101	70 - 130		
Cadmium		0.240	0.253	ug/L	105	70 - 130		
Chromium		0.800	0.738	ug/L	92.3	70 - 130		
Cobalt		0.400	0.390	ug/L	97.4	70 - 130		
Copper		0.800	0.751	ug/L	93.9	70 - 130		
Lead		0.200	0.199	ug/L	99.5	70 - 130		
Manganese		0.500	0.453	ug/L	90.6	70 - 130		
Nickel		1.60	1.49	ug/L	92.9	70 - 130		
Silver		0.400	0.405	ug/L	101	70 - 130		
Thallium		0.0800	0.0978	ug/L	122	70 - 130		
Vanadium		0.400	0.384	ug/L	95.9	70 - 130		
Zinc		6.25	6.49	ug/L	104	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4805729
Report generated 06/28/2016 16:55

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060504
Run Date: 06/13/2016
Sample ID: WG572466-16
Instrument ID: ICP-MS2
Run Time: 13:41
Method: 6020A
File ID: NI.061316.134159
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572444
Cal ID: ICP-MS - 13-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.416	ug/L	104	70 - 130		
Arsenic		0.400	0.407	ug/L	102	70 - 130		
Barium		0.750	0.700	ug/L	93.4	70 - 130		
Cadmium		0.240	0.236	ug/L	98.3	70 - 130		
Chromium		0.800	0.824	ug/L	103	70 - 130		
Cobalt		0.400	0.405	ug/L	101	70 - 130		
Copper		0.800	0.778	ug/L	97.3	70 - 130		
Lead		0.200	0.191	ug/L	95.3	70 - 130		
Manganese		0.500	0.434	ug/L	86.8	70 - 130		
Nickel		1.60	1.55	ug/L	97.2	70 - 130		
Silver		0.400	0.399	ug/L	99.6	70 - 130		
Thallium		0.0800	0.0771	ug/L	96.4	70 - 130		
Vanadium		0.400	0.384	ug/L	95.9	70 - 130		
Zinc		6.25	6.76	ug/L	108	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4805729
Report generated 06/28/2016 16:55

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060504
Run Date: 06/13/2016
Sample ID: WG572466-23
Instrument ID: ICP-MS2
Run Time: 21:03
Method: 6020A
File ID: NI.061316.210354
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572444
Cal ID: ICP-MS - 13-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.433	ug/L	108	70 - 130		
Arsenic		0.400	0.380	ug/L	95.1	70 - 130		
Barium		0.750	0.728	ug/L	97.1	70 - 130		
Cadmium		0.240	0.257	ug/L	107	70 - 130		
Chromium		0.800	0.829	ug/L	104	70 - 130		
Cobalt		0.400	0.427	ug/L	107	70 - 130		
Copper		0.800	0.785	ug/L	98.1	70 - 130		
Lead		0.200	0.207	ug/L	104	70 - 130		
Manganese		0.500	0.531	ug/L	106	70 - 130		
Nickel		1.60	1.57	ug/L	98.1	70 - 130		
Silver		0.400	0.389	ug/L	97.3	70 - 130		
Thallium		0.0800	0.0801	ug/L	100	70 - 130		
Vanadium		0.400	0.394	ug/L	98.6	70 - 130		
Zinc		6.25	6.87	ug/L	110	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4805729
Report generated 06/28/2016 16:55

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060504
Run Date: 06/15/2016
Sample ID: WG572861-07
Instrument ID: ICP-MS2
Run Time: 12:53
Method: 6020A
File ID: NI.061516.125300
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572444
Cal ID: ICP-MS - 15-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.457	ug/L	114	70 - 130		
Arsenic		0.400	0.458	ug/L	115	70 - 130		
Barium		0.750	0.726	ug/L	96.8	70 - 130		
Cadmium		0.240	0.230	ug/L	95.7	70 - 130		
Chromium		0.800	0.689	ug/L	86.1	70 - 130		
Cobalt		0.400	0.402	ug/L	100	70 - 130		
Copper		0.800	0.784	ug/L	98.0	70 - 130		
Lead		0.200	0.195	ug/L	97.5	70 - 130		
Manganese		0.500	0.422	ug/L	84.4	70 - 130		
Nickel		1.60	1.58	ug/L	98.9	70 - 130		
Silver		0.400	0.385	ug/L	96.3	70 - 130		
Thallium		0.0800	0.0677	ug/L	84.6	70 - 130		
Vanadium		0.400	0.345	ug/L	86.1	70 - 130		
Zinc		6.25	6.89	ug/L	110	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4805729
Report generated 06/28/2016 16:55

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060504
Run Date: 06/15/2016
Sample ID: WG572861-18
Instrument ID: ICP-MS2
Run Time: 15:02
Method: 6020A
File ID: NI.061516.150212
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572444
Cal ID: ICP-MS - 15-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.419	ug/L	105	70 - 130		
Arsenic		0.400	0.385	ug/L	96.2	70 - 130		
Barium		0.750	0.746	ug/L	99.5	70 - 130		
Cadmium		0.240	0.230	ug/L	96.0	70 - 130		
Chromium		0.800	0.750	ug/L	93.8	70 - 130		
Cobalt		0.400	0.405	ug/L	101	70 - 130		
Copper		0.800	0.767	ug/L	95.9	70 - 130		
Lead		0.200	0.190	ug/L	95.0	70 - 130		
Manganese		0.500	0.461	ug/L	92.3	70 - 130		
Nickel		1.60	1.56	ug/L	97.2	70 - 130		
Silver		0.400	0.408	ug/L	102	70 - 130		
Thallium		0.0800	0.0701	ug/L	87.6	70 - 130		
Vanadium		0.400	0.380	ug/L	95.0	70 - 130		
Zinc		6.25	6.98	ug/L	112	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4805729
Report generated 06/28/2016 16:55

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060504
Instrument ID: ICP-MS2
Sol. A : WG572466-08 **File ID:** NI.061316.120851
Sol. AB : WG572466-09 **File ID:** NI.061316.121203

Workgroup (AAB#): WG572444
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.0816	NS	100	102	102	
Arsenic	NS	-0.0231	NS	100	102	102	
Barium	NS	0.0854	NS	100	97.7	97.7	
Cadmium	NS	-0.0880	NS	100	98.9	98.9	
Chromium	NS	0.170	NS	100	98.7	98.7	
Cobalt	NS	0.0318	NS	100	102	102	
Copper	NS	0.263	NS	100	99.6	99.6	
Lead	NS	0.0291	NS	100	99.9	99.9	
Manganese	NS	0.0535	NS	100	103	103	
Nickel	NS	0.332	NS	100	97.2	97.2	
Silver	NS	0.0154	NS	100	93.1	93.1	
Thallium	NS	0.0181	NS	100	99.1	99.1	
Vanadium	NS	0.0246	NS	100	102	102	
Zinc	NS	1.11	NS	100	118	118	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4805726
Report generated 06/28/2016 16:55

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060504
Instrument ID: ICP-MS2
Sol. A : WG572861-08 **File ID:** NI.061516.125613
Sol. AB : WG572861-09 **File ID:** NI.061516.125925

Workgroup (AAB#): WG572444
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.0773	NS	100	102	102	
Arsenic	NS	-0.0358	NS	100	101	101	
Barium	NS	0.112	NS	100	99.8	99.8	
Cadmium	NS	-0.0800	NS	100	102	102	
Chromium	NS	0.0733	NS	100	99.2	99.2	
Cobalt	NS	0.0262	NS	100	101	101	
Copper	NS	0.267	NS	100	99.4	99.4	
Lead	NS	0.0560	NS	100	102	102	
Manganese	NS	0.0617	NS	100	101	101	
Nickel	NS	0.371	NS	100	99.6	99.6	
Silver	NS	0.0166	NS	100	96.7	96.7	
Thallium	NS	0.0190	NS	100	101	101	
Vanadium	NS	0.00520	NS	100	101	101	
Zinc	NS	1.71	NS	100	103	103	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4805726
Report generated 06/28/2016 16:55

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060504 **Analytical Method:** 6020
Analytical Workgroup: WG572444 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 13-JUN-2016 11:46

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060504-03	SAMP	13-JUN-2016 14:36	**120.771**	**130.874**	**130.453**
WG572187-02	BLANK	13-JUN-2016 13:03	103.424	103.34	103.703
WG572187-03	LCS	13-JUN-2016 13:06	105.257	106.493	103.205
WG572444-01	PSPK	13-JUN-2016 13:25	104.688	103.265	104.526
WG572444-02	SERIAL	13-JUN-2016 13:29	105.696	106.73	103.16
WG572466-05	ICV	13-JUN-2016 11:59	97.657	97.055	97.722
WG572466-06	ICB	13-JUN-2016 12:02	99.906	101.319	97.494
WG572466-07	LLICV	13-JUN-2016 12:05	95.199	96.228	93.99
WG572466-08	ICS	13-JUN-2016 12:08	98.471	101.039	96.668
WG572466-09	ICS	13-JUN-2016 12:12	99.358	97.883	99.373
WG572466-10	CCV	13-JUN-2016 12:15	98.2	99.58	98.661
WG572466-11	CCB	13-JUN-2016 12:18	101.138	102.225	99.275
WG572466-12	CCV	13-JUN-2016 12:57	102.719	101.678	103.107
WG572466-13	CCB	13-JUN-2016 13:00	105.056	105.369	101.201
WG572466-14	CCV	13-JUN-2016 13:35	103.123	101.406	105.086
WG572466-15	CCB	13-JUN-2016 13:38	104.172	107.193	102.272
WG572466-16	LLCCV	13-JUN-2016 13:41	104.274	99.993	102.431
WG572466-17	CCV	13-JUN-2016 14:17	119.809	117.758	118.939
WG572466-18	CCB	13-JUN-2016 14:20	119.783	113.592	119.37
WG572466-19	CCV	13-JUN-2016 14:42	**129.284**	**137.056**	**134.523**
WG572466-20	CCB	13-JUN-2016 14:45	**134.134**	**136.92**	**138.965**
WG572466-23	LLCCV	13-JUN-2016 21:03	100.875	107.211	104.668

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4805722
Report generated: 06/16/2016 11:32

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060504 **Analytical Method:** 6020
Analytical Workgroup: WG572444 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 15-JUN-2016 12:33

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060504-03	SAMP	15-JUN-2016 14:46	99.515	101.743	99.913
L16060504-03	SAMP	15-JUN-2016 14:49	100.991	102.99	101.928
WG572861-05	ICV	15-JUN-2016 12:46	99.605	99.446	99.631
WG572861-06	ICB	15-JUN-2016 12:49	100.469	100.685	99.97
WG572861-07	LLICV	15-JUN-2016 12:53	97.635	96.409	97.761
WG572861-08	ICS	15-JUN-2016 12:56	100.228	100.1	100.221
WG572861-09	ICS	15-JUN-2016 12:59	101.86	101.718	101.144
WG572861-10	CCV	15-JUN-2016 13:02	100.078	99.765	100.204
WG572861-11	CCB	15-JUN-2016 13:05	102.995	101.825	99.792
WG572861-14	CCV	15-JUN-2016 14:27	92.966	97.16	95.088
WG572861-15	CCB	15-JUN-2016 14:30	95.141	98.174	95.869
WG572861-16	CCV	15-JUN-2016 14:55	99.118	100.336	99.632
WG572861-17	CCB	15-JUN-2016 14:58	100.669	100.489	100.49
WG572861-18	LLCCV	15-JUN-2016 15:02	98.981	97.223	96.665

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4805722
Report generated: 06/16/2016 11:32

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060504 **Analytical Method:** 6020
Analytical Workgroup: WG572444 **Matrix:** 2
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 13-JUN-2016 11:46

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060521-01	SAMP	13-JUN-2016 13:13	105.098	104.902	106.454

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4805722
Report generated: 06/16/2016 11:32

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16060504 **Date:** 04/19/2016
Insturment ID: ICP-MS2 **Method:** 6020A

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Uranium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4805721
Report generated: 06/28/2016 16:55

2.3.2.3 Raw Data

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Monday, June 13, 2016 11:23:32

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	6.975	1329	2024	0.710	
Mg	23.985	23.975	4500	2020	0.694	
Co	58.933	58.975	11692	2022	0.693	
In	114.904	114.875	22859	2028	0.693	
U	238.050	238.025	47455	2043	0.695	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	3.872
5.575	4.277
5.625	4.975
5.675	2.676
5.725	3.582
5.775	2.848
5.825	1.299
5.875	3.478
5.925	2.709
5.975	2.916
6.025	1.716
6.075	4.024
6.125	5.522
6.175	5.231
6.225	31.882
6.275	149.071
6.325	122.475
6.375	61.237
6.425	47.128
6.475	18.164
6.525	6.930
6.575	4.274
6.625	1.867
6.675	2.685
6.725	2.168
6.775	2.386
6.825	1.357

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6.875	1.506
6.925	1.702
6.975	2.603
7.025	2.028
7.075	1.978
7.125	1.748
7.175	3.451
7.225	4.646
7.275	16.298
7.325	47.140
7.375	51.602
7.425	59.266
7.475	108.653
7.525	81.441
7.575	70.711
7.625	81.441
7.675	70.711
7.725	136.931
7.775	106.863
7.825	81.441
7.875	173.205
7.925	74.689
7.975	70.711
8.025	62.361
8.075	120.442
8.125	24.845
8.175	91.287
8.225	91.287
8.275	63.888
8.325	70.711
8.375	104.583
8.425	35.355
8.475	49.793
22.525	223.607
22.575	61.237
22.625	50.000
22.675	45.799
22.725	46.187
22.775	37.815
22.825	41.650
22.875	37.908
22.925	11.111
22.975	64.489
23.025	17.008
23.075	19.325
23.125	22.361
23.175	16.667

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23.225	20.761
23.275	50.713
23.325	11.641
23.375	9.508
23.425	28.085
23.475	18.468
23.525	4.230
23.575	2.591
23.625	0.928
23.675	1.849
23.725	0.544
23.775	1.138
23.825	0.694
23.875	0.714
23.925	1.101
23.975	1.210
24.025	0.379
24.075	0.657
24.125	1.119
24.175	1.390
24.225	0.711
24.275	3.302
24.325	27.000
24.375	28.085
24.425	15.972
24.475	9.595
24.525	3.960
24.575	1.558
24.625	2.740
24.675	2.275
24.725	1.087
24.775	1.357
24.825	2.276
24.875	1.434
24.925	0.898
24.975	1.969
25.025	1.479
25.075	1.003
25.125	1.315
25.175	1.386
25.225	2.255
25.275	7.773
25.325	37.268
25.375	51.618
25.425	26.517
25.475	20.152
57.525	9.084

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57.575	4.902
57.625	1.407
57.675	3.656
57.725	2.588
57.775	1.196
57.825	1.769
57.875	1.538
57.925	0.743
57.975	1.697
58.025	1.999
58.075	1.930
58.125	2.673
58.175	2.864
58.225	1.586
58.275	4.625
58.325	15.252
58.375	47.628
58.425	52.916
58.475	20.543
58.525	10.239
58.575	4.575
58.625	2.425
58.675	2.241
58.725	1.397
58.775	0.767
58.825	1.548
58.875	2.102
58.925	1.498
58.975	2.567
59.025	2.470
59.075	1.531
59.125	1.628
59.175	1.990
59.225	1.780
59.275	4.889
59.325	38.434
59.375	35.355
59.425	80.889
59.475	15.972
59.525	5.226
59.575	10.590
59.625	5.524
59.675	4.686
59.725	1.904
59.775	3.764
59.825	1.831
59.875	2.691

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59.925	1.606
59.975	1.226
60.025	2.822
60.075	2.196
60.125	1.505
60.175	1.785
60.225	6.014
60.275	16.858
60.325	33.333
60.375	34.233
60.425	80.889
60.475	73.823
113.525	6.393
113.575	1.215
113.625	3.222
113.675	3.263
113.725	1.330
113.775	1.501
113.825	1.440
113.875	1.964
113.925	1.679
113.975	2.673
114.025	1.847
114.075	1.699
114.125	2.371
114.175	2.587
114.225	2.941
114.275	8.558
114.325	35.551
114.375	14.684
114.425	12.771
114.475	3.252
114.525	4.334
114.575	1.842
114.625	1.651
114.675	0.827
114.725	1.334
114.775	1.411
114.825	2.196
114.875	1.247
114.925	0.785
114.975	2.189
115.025	1.206
115.075	0.527
115.125	0.997
115.175	2.735
115.225	4.012

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115.275	10.537
115.325	19.174
115.375	40.825
115.425	18.923
115.475	17.815
115.525	6.811
115.575	3.816
115.625	4.586
115.675	4.231
115.725	1.514
115.775	2.139
115.825	3.560
115.875	2.648
115.925	0.479
115.975	3.505
116.025	1.602
116.075	1.766
116.125	5.054
116.175	6.329
116.225	9.464
116.275	17.151
116.325	74.689
116.375	89.694
116.425	70.711
116.475	64.438
236.525	223.607
236.575	30.322
236.625	42.229
236.675	27.163
236.725	26.307
236.775	22.934
236.825	24.845
236.875	35.315
236.925	21.030
236.975	43.853
237.025	29.315
237.075	22.978
237.125	32.407
237.175	39.772
237.225	23.565
237.275	23.177
237.325	30.138
237.375	23.458
237.425	33.853
237.475	26.146
237.525	16.019
237.575	7.424

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237.625	6.375
237.675	2.653
237.725	2.384
237.775	1.845
237.825	2.982
237.875	1.394
237.925	1.594
237.975	1.294
238.025	1.729
238.075	1.181
238.125	0.431
238.175	1.030
238.225	0.943
238.275	0.818
238.325	2.345
238.375	3.285
238.425	1.713
238.475	5.998
238.525	18.910
238.575	11.103
238.625	14.650
238.675	30.534
238.725	29.463
238.775	34.480
238.825	37.293
238.875	44.599
238.925	25.408
238.975	13.176
239.025	33.402
239.075	57.334
239.125	39.317
239.175	30.018
239.225	34.272
239.275	43.241
239.325	35.355
239.375	28.838
239.425	50.047
239.475	35.761

Approved: June 15, 2016

SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 6/13/2016 11:28:07 AM
End Time: 6/13/2016 11:30:19 AM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 6033.60
        Obtained Intensity (Mg 23.985): 164863.95
        Obtained Intensity (In 114.904): 82215.15
        Obtained Intensity (U 238.05): 160232.06
        Obtained Intensity (Bkgd 220): 0.40
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.019 (=4506.67 / 232395.33)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.007 (=1511.14 / 232395.33)
```

Report Date/Time: Monday, June 13, 2016 11:30:19
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Approved: June 15, 2016

SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 6/13/2016 11:28:07 AM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 6033.60
                Obtained Intensity (Mg 23.985): 164863.95
                Obtained Intensity (In 114.904): 82215.15
                Obtained Intensity (U 238.05): 160232.06
                Obtained Intensity (Bkgd 220): 0.40
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.019 (=4506.67 / 232395.33)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.007 (=1511.14 / 232395.33)
[Passed]  Optimum value(s): N/A

End Time: 6/13/2016 11:30:19 AM
```


Approved: June 15, 2016

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Monday, June 13, 2016 11:43:14
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84319.0	1.4				ug/L		Standard
	Be	9	6.7	86.6				ug/L		Standard
	Al	27	1021.7	7.8				ug/L		Standard
	Sc	45	56654.1	2.6				ug/L		Standard
	Ti	47	114.0	9.8				ug/L		Standard
	V	51	1609.2	4.6				ug/L		Standard
	Cr	52	8547.7	1.6				ug/L		Standard
	Cr	53	925.0	13.6				ug/L		Standard
	Mn	55	1051.4	0.3				ug/L		Standard
	Co	59	178.0	4.1				ug/L		Standard
	Ni	60	311.7	3.9				ug/L		Standard
	Cu	65	232.7	11.2				ug/L		Standard
	Zn	66	606.3	11.7				ug/L		Standard
>	**Ge**	72	641815.7	0.9				ug/L		Standard
	As	75	-20.8	116.8				ug/L		Standard
	Se	82	23.4	36.2				ug/L		Standard
	Se-1	77	85.7	11.7				ug/L		Standard
>	**Ga**	71	151.7	31.2				mg/L		Standard
	Rb	85	18.3	83.3				ug/L		Standard
	Y	89	578199.4	1.7				ug/L		Standard
>	**Rh**	103	20.0	66.1				ug/L		Standard
	Mo	98	18.6	16.4				ug/L		Standard
	Ag	107	113.3	6.4				ug/L		Standard
	Cd	111	3.3	17.5				mg/L		Standard
	Cd	114	8.4	286.9				ug/L		Standard
>	**In**	115	797687.1	0.7				ug/L		Standard
	Sn	118	620.0	6.6				ug/L		Standard
	Sb	123	112.7	28.5				ug/L		Standard
	Ba	135	47.7	10.3				ug/L		Standard
	Ce	140	33.3	22.9				ug/L		Standard
>	**Tb**	159	1160331.0	1.3				ug/L		Standard
	Ho	165	5.0	173.2				ug/L		Standard
	Tl	203	14.7	30.7				ug/L		Standard
	Tl	205	15.0	33.3				ug/L		Standard
	Pb	206	289.0	2.3				ug/L		Standard
	Pb	207	249.7	11.0				ug/L		Standard
	Pb	208	1112.7	4.6				ug/L		Standard
	U	238	2.7	21.7				ug/L		Standard
>	**Bi**	209	670731.5	1.0				ug/L		Standard

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	Na	23	0.0		mg/L	Standard
	Mg	24	31.7	36.5	mg/L	Standard
	K	39	33.3	48.2	mg/L	Standard
	Ca	43	58.3	13.1	mg/L	Standard
	Fe	54	212.6	8.8	mg/L	Standard
	Fe	57	131.7	30.9	mg/L	Standard
>	**Sc-1**	45	56654.1	2.6	mg/L	Standard
	Cl	35	93221.2	0.8	ug/L	Standard
	Kr	83	1.3	114.6	ug/L	Standard
	Br	81	2706.9	7.2	ug/L	Standard
	P	31	24082.5	0.3	ug/L	Standard
	S	34	3865.5	1.4	ug/L	Standard
	Sr	88	43.3	13.3	ug/L	Standard
	C	12	103.3	22.3	mg/L	Standard
	N	14	0.0		mg/L	Standard
	Hg	202	0.0		mg/L	Standard
	Dy	164	19.5	90.9	mg/L	Standard
	Ho-1	165	5.0	173.2	mg/L	Standard
	Er	166	10.0	100.0	mg/L	Standard
	I	127	2335.2	2.8	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Monday, June 13, 2016 11:46:26
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81168.5	1.5				ug/L	84319	Standard
	Be	9	16.7	34.6				ug/L	7	Standard
	Al	27	1023.4	3.5				ug/L	1022	Standard
	Sc	45	54011.1	0.6				ug/L	56654	Standard
	Ti	47	116.0	13.5				ug/L	114	Standard
	V	51	1652.9	7.2				ug/L	1609	Standard
	Cr	52	8477.4	1.2				ug/L	8548	Standard
	Cr	53	933.4	3.4				ug/L	925	Standard
	Mn	55	1081.4	2.7				ug/L	1051	Standard
	Co	59	213.3	19.1				ug/L	178	Standard
	Ni	60	328.3	7.7				ug/L	312	Standard
	Cu	65	238.0	6.4				ug/L	233	Standard
	Zn	66	604.0	10.8				ug/L	606	Standard
>	**Ge**	72	635761.0	0.3				ug/L	641816	Standard
	As	75	-93.3	24.7				ug/L	-21	Standard
	Se	82	19.8	12.3				ug/L	23	Standard
	Se-1	77	83.7	10.2				ug/L	86	Standard
>	**Ga**	71	170.0	18.4				mg/L	152	Standard
	Rb	85	25.0	20.0				ug/L	18	Standard
	Y	89	582683.3	0.9				ug/L	578199	Standard
>	**Rh**	103	13.3	78.1				ug/L	20	Standard
	Mo	98	16.7	15.9				ug/L	19	Standard
	Ag	107	126.7	43.4				ug/L	113	Standard
	Cd	111	16.0	114.9				mg/L	3	Standard
	Cd	114	45.9	101.2				ug/L	8	Standard
>	**In**	115	779321.4	1.4				ug/L	797687	Standard
	Sn	118	586.7	4.3				ug/L	620	Standard
	Sb	123	71.5	70.9				ug/L	113	Standard
	Ba	135	57.7	31.1				ug/L	48	Standard
	Ce	140	196.7	151.2				ug/L	33	Standard
>	**Tb**	159	1132847.9	0.9				ug/L	1160331	Standard
	Ho	165	11.7	24.7				ug/L	5	Standard
	Tl	203	48.0	133.7				ug/L	15	Standard
	Tl	205	30.0	144.3				ug/L	15	Standard
	Pb	206	309.7	18.1				ug/L	289	Standard
	Pb	207	252.0	16.5				ug/L	250	Standard
	Pb	208	1103.3	5.7				ug/L	1113	Standard
	U	238	17.3	158.2				ug/L	3	Standard
>	**Bi**	209	650912.4	0.9				ug/L	670731	Standard

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Na	23	1.7	173.2	mg/L	0	Standard
Mg	24	31.7	63.8	mg/L	32	Standard
K	39	30.0	28.9	mg/L	33	Standard
Ca	43	65.0	15.4	mg/L	58	Standard
Fe	54	204.4	27.1	mg/L	213	Standard
Fe	57	128.3	18.4	mg/L	132	Standard
> **Sc-1**	45	54011.1	0.6	mg/L	56654	Standard
Cl	35	93648.7	3.0	ug/L	93221	Standard
Kr	83	2.0	100.0	ug/L	1	Standard
Br	81	2716.9	10.0	ug/L	2707	Standard
P	31	23546.6	3.0	ug/L	24082	Standard
S	34	3778.8	4.7	ug/L	3865	Standard
Sr	88	41.7	13.9	ug/L	43	Standard
C	12	96.7	15.8	mg/L	103	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	6.7	86.6	mg/L	0	Standard
Dy	164	5.9	107.8	mg/L	20	Standard
Ho-1	165	11.7	24.7	mg/L	5	Standard
Er	166	16.7	69.3	mg/L	10	Standard
I	127	2235.2	7.2	mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 1
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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Monday, June 13, 2016 11:49:38
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81899.1	0.4				ug/L	84319	Standard
	Be	9	68.3	25.7				ug/L	7	Standard
	Al	27	11100.7	3.8				ug/L	1022	Standard
	Sc	45	54874.3	4.2				ug/L	56654	Standard
	Ti	47	139.7	8.5				ug/L	114	Standard
	V	51	2138.1	1.9				ug/L	1609	Standard
	Cr	52	9263.2	1.5				ug/L	8548	Standard
	Cr	53	965.0	10.4				ug/L	925	Standard
	Mn	55	1571.7	1.9				ug/L	1051	Standard
	Co	59	640.0	6.9				ug/L	178	Standard
	Ni	60	440.7	2.3				ug/L	312	Standard
	Cu	65	370.3	5.1				ug/L	233	Standard
	Zn	66	801.7	10.6				ug/L	606	Standard
>	**Ge**	72	644427.5	0.7				ug/L	641816	Standard
	As	75	-5.6	433.2				ug/L	-21	Standard
	Se	82	30.0	14.2				ug/L	23	Standard
	Se-1	77	87.0	11.5				ug/L	86	Standard
>	**Ga**	71	165.0	18.4				mg/L	152	Standard
	Rb	85	26.7	10.8				ug/L	18	Standard
	Y	89	572363.1	1.2				ug/L	578199	Standard
>	**Rh**	103	28.3	71.3				ug/L	20	Standard
	Mo	98	361.0	2.2				ug/L	19	Standard
	Ag	107	535.0	2.1				ug/L	113	Standard
	Cd	111	134.0	4.9				mg/L	3	Standard
	Cd	114	331.6	0.6				ug/L	8	Standard
>	**In**	115	774875.1	1.9				ug/L	797687	Standard
	Sn	118	998.4	3.3				ug/L	620	Standard
	Sb	123	330.2	4.9				ug/L	113	Standard
	Ba	135	181.7	7.7				ug/L	48	Standard
	Ce	140	156.7	95.8				ug/L	33	Standard
>	**Tb**	159	1149410.5	2.1				ug/L	1160331	Standard
	Ho	165	18.3	41.7				ug/L	5	Standard
	Tl	203	545.0	1.1				ug/L	15	Standard
	Tl	205	530.0	10.7				ug/L	15	Standard
	Pb	206	613.0	4.8				ug/L	289	Standard
	Pb	207	556.3	4.3				ug/L	250	Standard
	Pb	208	2431.4	2.4				ug/L	1113	Standard
	U	238	450.0	6.5				ug/L	3	Standard
>	**Bi**	209	661162.0	0.5				ug/L	670731	Standard

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Na	23	1.7	173.2	mg/L	0	Standard
Mg	24	40.0	57.3	mg/L	32	Standard
K	39	35.0	42.9	mg/L	33	Standard
Ca	43	51.7	39.1	mg/L	58	Standard
Fe	54	229.0	7.6	mg/L	213	Standard
Fe	57	138.3	24.6	mg/L	132	Standard
Sc-1	45	54874.3	4.2	mg/L	56654	Standard
Cl	35	94803.7	1.3	ug/L	93221	Standard
Kr	83	1.7	34.6	ug/L	1	Standard
Br	81	2900.3	9.7	ug/L	2707	Standard
P	31	24823.7	1.2	ug/L	24082	Standard
S	34	3888.8	2.5	ug/L	3865	Standard
Sr	88	60.0	8.3	ug/L	43	Standard
C	12	116.7	4.9	mg/L	103	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	0.0		mg/L	0	Standard
Dy	164	5.4	109.8	mg/L	20	Standard
Ho-1	165	18.3	41.7	mg/L	5	Standard
Er	166	26.7	21.7	mg/L	10	Standard
I	127	2246.8	5.7	mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Monday, June 13, 2016 11:52:49
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81589.1	0.2				ug/L	84319	Standard
	Be	9	55993.3	1.2	**50.0000**	0.533	1.1	ug/L	7	Standard
	Al	27	9172857.8	1.5	**50.0000**	0.859	1.7	ug/L	1022	Standard
	Sc	45	54017.8	1.0				ug/L	56654	Standard
	Ti	47	38414.0	0.6	**100.0000**	0.518	0.5	ug/L	114	Standard
	V	51	478474.4	2.1	**50.0000**	0.841	1.7	ug/L	1609	Standard
	Cr	52	489860.3	0.9	**50.0000**	0.024	0.0	ug/L	8548	Standard
	Cr	53	59300.8	1.6	**50.0000**	0.772	1.5	ug/L	925	Standard
	Mn	55	378147.4	0.4	**50.0000**	0.567	1.1	ug/L	1051	Standard
	Co	59	431691.6	1.1	**50.0000**	0.312	0.6	ug/L	178	Standard
	Ni	60	121780.8	1.2	**50.0000**	0.334	0.7	ug/L	312	Standard
	Cu	65	118443.2	1.0	**50.0000**	0.138	0.3	ug/L	233	Standard
	Zn	66	67909.2	0.4	**50.0000**	0.684	1.4	ug/L	606	Standard
>	**Ge**	72	624508.9	1.0				ug/L	641816	Standard
	As	75	66257.2	0.5	**50.0000**	0.697	1.4	ug/L	-21	Standard
	Se	82	7170.9	0.8	**50.0000**	0.845	1.7	ug/L	23	Standard
	Se-1	77	4611.0	0.4	**50.0000**	0.704	1.4	ug/L	86	Standard
>	**Ga**	71	203.3	6.2				mg/L	152	Standard
	Rb	85	1076.7	7.0				ug/L	18	Standard
	Y	89	558525.8	2.1				ug/L	578199	Standard
>	**Rh**	103	36.7	41.7				ug/L	20	Standard
	Mo	98	314495.2	0.7	**100.0000**	1.588	1.6	ug/L	19	Standard
	Ag	107	419234.8	0.8	**50.0000**	0.963	1.9	ug/L	113	Standard
	Cd	111	129201.7	0.3	**50.0000**	0.447	0.9	mg/L	3	Standard
	Cd	114	320878.3	2.2	**50.0000**	1.080	2.2	ug/L	8	Standard
>	**In**	115	771254.5	1.2				ug/L	797687	Standard
	Sn	118	361723.8	0.8	**50.0000**	0.211	0.4	ug/L	620	Standard
	Sb	123	276858.0	0.4	**50.0000**	0.762	1.5	ug/L	113	Standard
	Ba	135	120747.6	0.2	**50.0000**	0.641	1.3	ug/L	48	Standard
	Ce	140	88.3	22.9				ug/L	33	Standard
>	**Tb**	159	1157963.5	1.1				ug/L	1160331	Standard
	Ho	165	13.3	78.1				ug/L	5	Standard
	Tl	203	492193.7	0.3	**50.0000**	0.167	0.3	ug/L	15	Standard
	Tl	205	455137.1	2.3	**50.0000**	1.061	2.1	ug/L	15	Standard
	Pb	206	286848.5	0.3	**50.0000**	0.097	0.2	ug/L	289	Standard
	Pb	207	259850.0	0.2	**50.0000**	0.053	0.1	ug/L	250	Standard
	Pb	208	1141940.3	0.8	**50.0000**	0.476	1.0	ug/L	1113	Standard
	U	238	420698.9	0.8	**50.0000**	0.394	0.8	ug/L	3	Standard
>	**Bi**	209	651081.8	0.3				ug/L	670731	Standard

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Na	23	0.0		**5.0000**	0.000	0.0	mg/L	0	Standard
Mg	24	5139.2	5.2	**5.0000**	0.284	5.7	mg/L	32	Standard
K	39	1326.7	7.9	**5.0000**	0.457	9.1	mg/L	33	Standard
Ca	43	123.3	9.4	**5.0000**	0.884	17.7	mg/L	58	Standard
Fe	54	8611.3	1.3	**5.0000**	0.080	1.6	mg/L	213	Standard
Fe	57	2326.8	2.9	**5.0000**	0.205	4.1	mg/L	132	Standard
> **Sc-1**	45	54017.8	1.0				mg/L	56654	Standard
Cl	35	96881.4	0.8				ug/L	93221	Standard
Kr	83	2.3	49.5				ug/L	1	Standard
Br	81	2766.9	4.6				ug/L	2707	Standard
P	31	25145.9	3.3				ug/L	24082	Standard
S	34	4150.6	2.6				ug/L	3865	Standard
Sr	88	38.3	37.7				ug/L	43	Standard
C	12	120.0	30.0				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	0	Standard
Dy	164	19.2	179.7				mg/L	20	Standard
Ho-1	165	13.3	78.1				mg/L	5	Standard
Er	166	16.7	91.7				mg/L	10	Standard
I	127	14835.6	0.4				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Monday, June 13, 2016 11:56:01
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78888.3	2.9				ug/L	84319	Standard
	Be	9	110671.2	2.7	**101.1013**	1.119	1.1	ug/L	7	Standard
	Al	27	17805083.0	0.9	**100.2140**	2.444	2.4	ug/L	1022	Standard
	Sc	45	53684.9	1.1				ug/L	56654	Standard
	Ti	47	74773.7	0.6	**199.5109**	0.683	0.3	ug/L	114	Standard
	V	51	938535.1	1.0	**100.1614**	0.392	0.4	ug/L	1609	Standard
	Cr	52	942837.6	1.1	**99.5606**	0.297	0.3	ug/L	8548	Standard
	Cr	53	113381.0	1.6	**99.1682**	2.478	2.5	ug/L	925	Standard
	Mn	55	752659.0	0.8	**100.8818**	0.891	0.9	ug/L	1051	Standard
	Co	59	854020.9	0.5	**100.5156**	0.885	0.9	ug/L	178	Standard
	Ni	60	233378.7	0.8	**98.9763**	0.810	0.8	ug/L	312	Standard
	Cu	65	227693.1	0.2	**99.1220**	1.008	1.0	ug/L	233	Standard
	Zn	66	132116.5	0.9	**99.9260**	1.277	1.3	ug/L	606	Standard
>	**Ge**	72	611557.6	0.9				ug/L	641816	Standard
	As	75	132167.1	0.8	**100.8859**	0.917	0.9	ug/L	-21	Standard
	Se	82	14366.1	0.8	**101.2050**	0.108	0.1	ug/L	23	Standard
	Se-1	77	9129.1	0.7	**100.9800**	0.603	0.6	ug/L	86	Standard
>	**Ga**	71	203.3	3.8				mg/L	152	Standard
	Rb	85	2018.5	7.2				ug/L	18	Standard
	Y	89	563953.0	2.0				ug/L	578199	Standard
>	**Rh**	103	46.7	40.6				ug/L	20	Standard
	Mo	98	626567.8	0.6	**199.3721**	0.745	0.4	ug/L	19	Standard
	Ag	107	802574.4	0.5	**97.6942**	0.522	0.5	ug/L	113	Standard
	Cd	111	256528.6	0.6	**99.5143**	0.320	0.3	mg/L	3	Standard
	Cd	114	631685.3	1.8	**99.0872**	1.146	1.2	ug/L	8	Standard
>	**In**	115	773097.9	0.6				ug/L	797687	Standard
	Sn	118	714191.9	1.9	**99.2775**	1.558	1.6	ug/L	620	Standard
	Sb	123	540593.0	1.0	**98.6808**	0.716	0.7	ug/L	113	Standard
	Ba	135	235298.9	1.3	**98.5876**	0.756	0.8	ug/L	48	Standard
	Ce	140	168.3	7.5				ug/L	33	Standard
>	**Tb**	159	1131506.4	1.5				ug/L	1160331	Standard
	Ho	165	16.7	17.3				ug/L	5	Standard
	Tl	203	960318.4	0.5	**100.2485**	0.569	0.6	ug/L	15	Standard
	Tl	205	899926.0	0.8	**100.9182**	1.250	1.2	ug/L	15	Standard
	Pb	206	559141.9	0.2	**100.2269**	0.207	0.2	ug/L	289	Standard
	Pb	207	507629.0	0.4	**100.3370**	0.549	0.5	ug/L	250	Standard
	Pb	208	2249670.0	0.3	**100.7565**	0.332	0.3	ug/L	1113	Standard
	U	238	845051.2	0.4	**101.7011**	0.440	0.4	ug/L	3	Standard
>	**Bi**	209	632042.9	0.4				ug/L	670731	Standard

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Na	23	0.0		**6.6672**	0.000	0.0	mg/L	0	Standard
Mg	24	10346.9	2.4	**10.0800**	0.248	2.5	mg/L	32	Standard
K	39	2598.6	7.1	**9.9847**	0.636	6.4	mg/L	33	Standard
Ca	43	201.7	23.8	**10.2600**	3.370	32.8	mg/L	58	Standard
Fe	54	17019.8	2.7	**10.0368**	0.389	3.9	mg/L	213	Standard
Fe	57	4485.7	3.8	**9.9905**	0.345	3.5	mg/L	132	Standard
> **Sc-1**	45	53684.9	1.1				mg/L	56654	Standard
Cl	35	97672.5	1.4				ug/L	93221	Standard
Kr	83	1.0	173.2				ug/L	1	Standard
Br	81	2713.6	2.7				ug/L	2707	Standard
P	31	24680.1	0.6				ug/L	24082	Standard
S	34	4287.3	3.2				ug/L	3865	Standard
Sr	88	48.3	58.8				ug/L	43	Standard
C	12	93.3	16.4				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.5	122.8				mg/L	20	Standard
Ho-1	165	16.7	17.3				mg/L	5	Standard
Er	166	16.7	91.7				mg/L	10	Standard
I	127	25715.1	0.4				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Monday, June 13, 2016 11:59:14
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81029.4	1.0				ug/L	84319	Standard
	Be	9	56023.4	2.0	**49.8160**	0.653	1.3	ug/L	7	Standard
	Al	27	9062729.2	2.4	**49.6289**	0.705	1.4	ug/L	1022	Standard
	Sc	45	55770.9	3.4				ug/L	56654	Standard
	Ti	47	40709.0	1.2	**106.5180**	1.091	1.0	ug/L	114	Standard
	V	51	476990.1	1.3	**49.8941**	0.727	1.5	ug/L	1609	Standard
	Cr	52	486057.0	1.9	**49.9523**	0.904	1.8	ug/L	8548	Standard
	Cr	53	59041.5	0.8	**50.3216**	0.394	0.8	ug/L	925	Standard
	Mn	55	388850.8	1.7	**51.0920**	0.725	1.4	ug/L	1051	Standard
	Co	59	435016.2	2.3	**50.2519**	1.001	2.0	ug/L	178	Standard
	Ni	60	119573.0	1.5	**49.7208**	0.613	1.2	ug/L	312	Standard
	Cu	65	118467.7	1.4	**50.5782**	0.588	1.2	ug/L	233	Standard
	Zn	66	69144.8	2.2	**51.0825**	0.985	1.9	ug/L	606	Standard
>	Ge	72	622912.5	0.3				ug/L	641816	Standard
	As	75	67536.2	1.8	**50.6361**	0.790	1.6	ug/L	-21	Standard
	Se	82	7214.5	0.7	**49.8206**	0.252	0.5	ug/L	23	Standard
	Se-1	77	4657.7	2.3	**50.1463**	1.173	2.3	ug/L	86	Standard
>	Ga	71	203.3	16.4				mg/L	152	Standard
	Rb	85	775.0	6.8				ug/L	18	Standard
	Y	89	559626.1	0.6				ug/L	578199	Standard
>	Rh	103	41.7	54.1				ug/L	20	Standard
	Mo	98	333437.9	1.3	**105.2226**	1.711	1.6	ug/L	19	Standard
	Ag	107	416526.7	1.9	**50.2805**	1.208	2.4	ug/L	113	Standard
	Cd	111	129830.8	0.8	**49.9506**	0.554	1.1	mg/L	3	Standard
	Cd	114	317356.2	0.8	**49.3721**	0.178	0.4	ug/L	8	Standard
>	In	115	779512.9	0.5				ug/L	797687	Standard
	Sn	118	407209.8	0.9	**56.1014**	0.314	0.6	ug/L	620	Standard
	Sb	123	272085.7	1.6	**49.2561**	1.018	2.1	ug/L	113	Standard
	Ba	135	119552.1	0.2	**49.6677**	0.177	0.4	ug/L	48	Standard
	Ce	140	166.7	12.1				ug/L	33	Standard
>	Tb	159	1150128.7	1.3				ug/L	1160331	Standard
	Ho	165	15.0	57.7				ug/L	5	Standard
	Tl	203	494663.5	0.3	**49.8272**	0.357	0.7	ug/L	15	Standard
	Tl	205	458952.9	1.2	**49.6616**	0.865	1.7	ug/L	15	Standard
	Pb	206	292469.5	0.1	**50.5624**	0.462	0.9	ug/L	289	Standard
	Pb	207	254331.8	0.2	**48.4826**	0.579	1.2	ug/L	250	Standard
	Pb	208	1152176.4	1.0	**49.7705**	0.877	1.8	ug/L	1113	Standard
	U	238	419150.0	0.5	**48.6790**	0.750	1.5	ug/L	3	Standard
>	Bi	209	655014.8	1.0				ug/L	670731	Standard

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Na	23	0.0		**6.6672**	0.000	0.0	mg/L	0	Standard
Mg	24	5547.7	0.6	**5.1911**	0.208	4.0	mg/L	32	Standard
K	39	1338.4	6.0	**4.8853**	0.195	4.0	mg/L	33	Standard
Ca	43	115.0	21.7	**4.0623**	1.627	40.0	mg/L	58	Standard
Fe	54	8734.1	2.1	**4.8977**	0.284	5.8	mg/L	213	Standard
Fe	57	2308.5	4.9	**4.8060**	0.437	9.1	mg/L	132	Standard
> **Sc-1**	45	55770.9	3.4				mg/L	56654	Standard
Cl	35	97879.2	1.3				ug/L	93221	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	2496.9	9.7				ug/L	2707	Standard
P	31	25815.3	1.4				ug/L	24082	Standard
S	34	4083.9	3.7				ug/L	3865	Standard
Sr	88	48.3	15.8				ug/L	43	Standard
C	12	133.3	43.3				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	28.9	59.5				mg/L	20	Standard
Ho-1	165	15.0	57.7				mg/L	5	Standard
Er	166	23.3	65.5				mg/L	10	Standard
I	127	1930.1	4.3				mg/L	2335	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	99.632		
	Al	27	99.258		
	Sc	45			
	Ti	47	106.518		
	V	51	99.788		
	Cr	52	99.905		
	Cr	53			
	Mn	55	102.184		
	Co	59	100.504		
	Ni	60	99.442		
	Cu	65	101.156		
	Zn	66	102.165		
>	Ge	72		97.055	
	As	75	101.272		
	Se	82	99.641		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	105.223		
Ag	107	100.561		
Cd	111	99.901		
Cd	114			
> In	115		97.722	
Sn	118	112.203		
Sb	123	98.512		
Ba	135	99.335		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.654		
Tl	205			
Pb	206	101.125		
Pb	207	96.965		
Pb	208	99.541		
U	238	97.358		
> Bi	209		97.657	
Na	23	133.344		
Mg	24	103.822		
K	39	97.707		
Ca	43	81.246		
Fe	54	97.954		
Fe	57	96.121		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	

Sample ID: QC Std 1
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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Monday, June 13, 2016 12:02:27
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79087.6	2.1				ug/L	84319	Standard
	Be	9	68.3	90.9	**0.0513**	0.055	106.5	ug/L	7	Standard
	Al	27	6799.2	97.3	**0.0275**	0.036	130.7	ug/L	1022	Standard
	Sc	45	55131.8	0.9				ug/L	56654	Standard
	Ti	47	117.7	20.4	**0.0413**	0.057	139.2	ug/L	114	Standard
	V	51	1709.1	3.6	**0.0049**	0.006	129.1	ug/L	1609	Standard
	Cr	52	8802.9	4.2	**-0.0047**	0.031	654.3	ug/L	8548	Standard
	Cr	53	886.7	11.1	**-0.0218**	0.085	390.3	ug/L	925	Standard
	Mn	55	1047.7	5.7	**-0.0180**	0.007	40.3	ug/L	1051	Standard
	Co	59	314.3	20.8	**0.0133**	0.007	54.6	ug/L	178	Standard
	Ni	60	313.0	34.1	**-0.0028**	0.041	1450.4	ug/L	312	Standard
	Cu	65	298.7	26.8	**0.0191**	0.031	164.8	ug/L	233	Standard
	Zn	66	626.7	12.9	**-0.0805**	0.053	65.9	ug/L	606	Standard
>	**Ge**	72	650284.1	1.0				ug/L	641816	Standard
	As	75	-32.0	81.9	**0.0309**	0.019	61.1	ug/L	-21	Standard
	Se	82	24.9	13.1	**0.0142**	0.023	162.9	ug/L	23	Standard
	Se-1	77	83.0	8.4	**-0.0003**	0.065	20540.4	ug/L	86	Standard
>	**Ga**	71	148.3	25.5				mg/L	152	Standard
	Rb	85	18.3	63.0				ug/L	18	Standard
	Y	89	566284.2	1.2				ug/L	578199	Standard
>	**Rh**	103	23.3	75.3				ug/L	20	Standard
	Mo	98	357.6	18.8	**0.0985**	0.021	21.3	ug/L	19	Standard
	Ag	107	236.7	24.5	**0.0136**	0.007	51.1	ug/L	113	Standard
	Cd	111	41.6	47.8	**0.0141**	0.008	54.1	mg/L	3	Standard
	Cd	114	94.2	64.4	**0.0128**	0.009	74.0	ug/L	8	Standard
>	**In**	115	777700.8	0.4				ug/L	797687	Standard
	Sn	118	1396.7	16.5	**0.1046**	0.031	30.0	ug/L	620	Standard
	Sb	123	2496.0	25.5	**0.4427**	0.114	25.8	ug/L	113	Standard
	Ba	135	83.0	25.3	**0.0087**	0.009	100.1	ug/L	48	Standard
	Ce	140	25.0	52.9				ug/L	33	Standard
>	**Tb**	159	1151749.4	0.8				ug/L	1160331	Standard
	Ho	165	18.3	56.8				ug/L	5	Standard
	Tl	203	167.0	37.3	**0.0120**	0.006	50.7	ug/L	15	Standard
	Tl	205	135.0	42.7	**0.0074**	0.006	80.7	ug/L	15	Standard
	Pb	206	375.0	7.9	**0.0083**	0.005	58.3	ug/L	289	Standard
	Pb	207	308.0	12.7	**0.0023**	0.007	320.3	ug/L	250	Standard
	Pb	208	1391.4	8.6	**0.0046**	0.005	106.2	ug/L	1113	Standard
	U	238	119.7	39.8	**0.0118**	0.005	45.4	ug/L	3	Standard
>	**Bi**	209	670101.2	0.5				ug/L	670731	Standard

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Na	23	0.0		**6.6672**	0.000	0.0	mg/L	0	Standard
Mg	24	30.0	16.7	**-0.0043**	0.005	108.0	mg/L	32	Standard
K	39	16.7	45.8	**-0.0657**	0.029	44.2	mg/L	33	Standard
Ca	43	48.3	6.0	**-0.2726**	0.193	71.0	mg/L	58	Standard
Fe	54	234.4	4.3	**0.0071**	0.007	91.8	mg/L	213	Standard
Fe	57	123.3	19.2	**-0.0284**	0.053	187.4	mg/L	132	Standard
> **Sc-1**	45	55131.8	0.9				mg/L	56654	Standard
Cl	35	96164.9	1.3				ug/L	93221	Standard
Kr	83	1.3	86.6				ug/L	1	Standard
Br	81	2650.2	2.4				ug/L	2707	Standard
P	31	25107.5	1.0				ug/L	24082	Standard
S	34	4027.2	8.6				ug/L	3865	Standard
Sr	88	40.0	45.1				ug/L	43	Standard
C	12	93.3	22.3				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.5	45.0				mg/L	20	Standard
Ho-1	165	18.3	56.8				mg/L	5	Standard
Er	166	16.7	34.6				mg/L	10	Standard
I	127	2298.5	7.9				mg/L	2335	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.319	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.494
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.906
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Na	23	
QC Std 2	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Monday, June 13, 2016 12:05:40
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75094.0	1.5				ug/L	84319	Standard
	Be	9	238.3	7.4	**0.2188**	0.020	9.2	ug/L	7	Standard
	Al	27	1581.8	31.4	**-0.0008**	0.003	329.6	ug/L	1022	Standard
	Sc	45	52193.1	2.5				ug/L	56654	Standard
	Ti	47	88.7	16.0	**-0.0195**	0.037	187.6	ug/L	114	Standard
	V	51	5199.9	1.8	**0.3835**	0.006	1.5	ug/L	1609	Standard
	Cr	52	15398.2	2.1	**0.7381**	0.045	6.0	ug/L	8548	Standard
	Cr	53	1601.8	5.3	**0.6412**	0.085	13.3	ug/L	925	Standard
	Mn	55	4538.7	1.4	**0.4531**	0.010	2.1	ug/L	1051	Standard
	Co	59	3526.7	4.9	**0.3896**	0.020	5.1	ug/L	178	Standard
	Ni	60	3836.8	2.8	**1.4857**	0.043	2.9	ug/L	312	Standard
	Cu	65	1980.5	3.7	**0.7514**	0.027	3.6	ug/L	233	Standard
	Zn	66	9322.5	1.1	**6.4902**	0.025	0.4	ug/L	606	Standard
>	**Ge**	72	617606.4	0.7				ug/L	641816	Standard
	As	75	447.0	10.5	**0.3915**	0.034	8.7	ug/L	-21	Standard
	Se	82	69.8	18.2	**0.3362**	0.087	25.8	ug/L	23	Standard
	Se-1	77	115.0	5.4	**0.3994**	0.061	15.2	ug/L	86	Standard
>	**Ga**	71	156.7	4.9				mg/L	152	Standard
	Rb	85	18.3	41.7				ug/L	18	Standard
	Y	89	552227.5	3.4				ug/L	578199	Standard
>	**Rh**	103	13.3	43.3				ug/L	20	Standard
	Mo	98	152.0	51.2	**0.0354**	0.026	73.1	ug/L	19	Standard
	Ag	107	3343.4	1.5	**0.4047**	0.006	1.5	ug/L	113	Standard
	Cd	111	636.2	6.1	**0.2526**	0.016	6.4	mg/L	3	Standard
	Cd	114	1755.0	12.5	**0.2821**	0.037	13.1	ug/L	8	Standard
>	**In**	115	749746.2	0.6				ug/L	797687	Standard
	Sn	118	813.4	34.5	**0.0283**	0.041	144.8	ug/L	620	Standard
	Sb	123	2500.6	8.2	**0.4608**	0.041	9.0	ug/L	113	Standard
	Ba	135	1805.1	1.8	**0.7542**	0.013	1.7	ug/L	48	Standard
	Ce	140	33.3	31.2				ug/L	33	Standard
>	**Tb**	159	1098900.7	0.1				ug/L	1160331	Standard
	Ho	165	8.3	69.3				ug/L	5	Standard
	Tl	203	988.0	18.6	**0.0978**	0.019	19.9	ug/L	15	Standard
	Tl	205	776.7	11.3	**0.0794**	0.010	12.8	ug/L	15	Standard
	Pb	206	1467.4	7.3	**0.2055**	0.020	9.9	ug/L	289	Standard
	Pb	207	1261.7	3.8	**0.1919**	0.010	5.4	ug/L	250	Standard
	Pb	208	5706.1	2.9	**0.1990**	0.009	4.3	ug/L	1113	Standard
	U	238	3298.0	1.3	**0.3911**	0.006	1.6	ug/L	3	Standard
>	**Bi**	209	638527.2	0.5				ug/L	670731	Standard

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Na	23	0.0		**6.6672**	0.000	0.0	mg/L	0	Standard
Mg	24	40.0	25.0	**0.0074**	0.010	135.9	mg/L	32	Standard
K	39	18.3	41.7	**-0.0555**	0.031	56.0	mg/L	33	Standard
Ca	43	46.7	37.6	**-0.2105**	1.237	587.6	mg/L	58	Standard
Fe	54	158.9	22.6	**-0.0318**	0.021	65.6	mg/L	213	Standard
Fe	57	153.3	6.8	**0.0582**	0.030	51.8	mg/L	132	Standard
Sc-1	45	52193.1	2.5				mg/L	56654	Standard
Cl	35	94428.8	2.1				ug/L	93221	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	2496.9	11.0				ug/L	2707	Standard
P	31	17917.3	2.1				ug/L	24082	Standard
S	34	4107.2	4.6				ug/L	3865	Standard
Sr	88	56.7	31.0				ug/L	43	Standard
C	12	73.3	61.5				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.0	93.6				mg/L	20	Standard
Ho-1	165	8.3	69.3				mg/L	5	Standard
Er	166	13.3	43.3				mg/L	10	Standard
I	127	1278.4	1.2				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	109.378		
Al	27	-0.084		
Sc	45			
Ti	47			
V	51	95.870		
Cr	52	92.262		
Cr	53			
Mn	55	90.612		
Co	59	97.404		
Ni	60	92.858		
Cu	65	93.920		
Zn	66	103.843		
Ge	72		96.228	
As	75	97.884		
Se	82	84.060		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	101.174		
Cd	111	105.255		
Cd	114			
> In	115			93.990
Sn	118			
Sb	123	115.192		
Ba	135	100.558		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	122.217		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.487		
U	238	97.780		
> Bi	209			95.199
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Monday, June 13, 2016 12:08:51
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	87234.0	4.0				ug/L	84319	Standard
	Be	9	25.0	20.0	**0.0105**	0.004	41.5	ug/L	7	Standard
	Al	27	9429502.9	1.1	**48.0063**	1.429	3.0	ug/L	1022	Standard
	Sc	45	56490.1	0.7				ug/L	56654	Standard
	Ti	47	43315.8	1.2	**108.8771**	0.485	0.4	ug/L	114	Standard
	V	51	1899.2	1.7	**0.0246**	0.004	15.5	ug/L	1609	Standard
	Cr	52	10513.3	0.5	**0.1699**	0.012	7.3	ug/L	8548	Standard
	Cr	53	2558.6	10.5	**1.3708**	0.241	17.6	ug/L	925	Standard
	Mn	55	1609.1	2.1	**0.0535**	0.005	10.2	ug/L	1051	Standard
	Co	59	479.7	2.4	**0.0318**	0.001	3.1	ug/L	178	Standard
	Ni	60	1146.7	1.9	**0.3316**	0.005	1.5	ug/L	312	Standard
	Cu	65	891.0	1.4	**0.2631**	0.009	3.3	ug/L	233	Standard
	Zn	66	2278.8	2.8	**1.1056**	0.028	2.6	ug/L	606	Standard
>	Ge	72	648482.1	1.1				ug/L	641816	Standard
	As	75	-107.1	30.5	**-0.0231**	0.024	103.9	ug/L	-21	Standard
	Se	82	26.4	18.4	**0.0245**	0.031	124.5	ug/L	23	Standard
	Se-1	77	305.3	1.3	**2.3423**	0.076	3.3	ug/L	86	Standard
>	Ga	71	258.3	9.1				mg/L	152	Standard
	Rb	85	1181.7	12.7				ug/L	18	Standard
	Y	89	563336.5	0.5				ug/L	578199	Standard
>	Rh	103	18.3	31.5				ug/L	20	Standard
	Mo	98	326094.9	1.7	**104.0482**	3.099	3.0	ug/L	19	Standard
	Ag	107	248.7	5.5	**0.0154**	0.002	12.6	ug/L	113	Standard
	Cd	111	-221.4	7.7	**-0.0880**	0.007	8.3	mg/L	3	Standard
	Cd	114	571.0	14.2	**0.0880**	0.014	15.6	ug/L	8	Standard
>	In	115	771109.1	1.2				ug/L	797687	Standard
	Sn	118	1020.0	11.6	**0.0536**	0.015	27.7	ug/L	620	Standard
	Sb	123	502.3	26.2	**0.0816**	0.023	28.3	ug/L	113	Standard
	Ba	135	265.0	8.5	**0.0854**	0.008	9.5	ug/L	48	Standard
	Ce	140	146.7	5.2				ug/L	33	Standard
>	Tb	159	1149451.9	1.0				ug/L	1160331	Standard
	Ho	165	16.7	34.6				ug/L	5	Standard
	Tl	203	225.0	16.4	**0.0181**	0.004	21.7	ug/L	15	Standard
	Tl	205	173.3	4.4	**0.0118**	0.001	7.4	ug/L	15	Standard
	Pb	206	501.7	3.5	**0.0310**	0.003	10.6	ug/L	289	Standard
	Pb	207	442.7	5.9	**0.0287**	0.006	21.6	ug/L	250	Standard
	Pb	208	1940.4	2.5	**0.0291**	0.002	7.3	ug/L	1113	Standard
	U	238	46.0	37.7	**0.0035**	0.002	58.1	ug/L	3	Standard
>	Bi	209	660477.4	1.9				ug/L	670731	Standard

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Na	23	5.0	0.0	**-13.6415**	0.135	1.0	mg/L	0	Standard
Mg	24	13591.1	0.4	**12.5912**	0.136	1.1	mg/L	32	Standard
K	39	1246.7	7.6	**4.4824**	0.318	7.1	mg/L	33	Standard
Ca	43	248.3	6.5	**12.5788**	0.990	7.9	mg/L	58	Standard
Fe	54	21160.3	3.3	**11.8777**	0.315	2.7	mg/L	213	Standard
Fe	57	5427.6	2.4	**11.5335**	0.202	1.8	mg/L	132	Standard
> **Sc-1**	45	56490.1	0.7				mg/L	56654	Standard
Cl	35	101892.2	1.2				ug/L	93221	Standard
Kr	83	1.7	173.2				ug/L	1	Standard
Br	81	2636.9	5.2				ug/L	2707	Standard
P	31	23820.4	2.2				ug/L	24082	Standard
S	34	3750.5	5.0				ug/L	3865	Standard
Sr	88	36.7	39.4				ug/L	43	Standard
C	12	193.3	38.8				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	52.9				mg/L	0	Standard
Dy	164	14.1	43.4				mg/L	20	Standard
Ho-1	165	16.7	34.6				mg/L	5	Standard
Er	166	53.3	39.0				mg/L	10	Standard
I	127	2553.5	0.9				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27	0.960		
Sc	45			
Ti	47	108.877		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.039	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	104.048		
Ag	107			
Cd	111			
Cd	114			
> In	115		96.668	
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209		98.471	
Na	23	-109.132		
Mg	24	251.825		
K	39	89.649		
Ca	43	83.859		
Fe	54	95.021		
Fe	57	92.268		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Monday, June 13, 2016 12:12:03
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	91306.0	1.1				ug/L	84319	Standard
	Be	9	129259.1	1.0	**102.0236**	1.566	1.5	ug/L	7	Standard
	Al	27	10149123.8	1.2	**49.3275**	0.331	0.7	ug/L	1022	Standard
	Sc	45	54770.5	2.3				ug/L	56654	Standard
	Ti	47	45204.3	1.5	**117.3341**	3.296	2.8	ug/L	114	Standard
	V	51	981257.4	0.4	**101.9518**	0.909	0.9	ug/L	1609	Standard
	Cr	52	960312.8	0.9	**98.7258**	2.118	2.1	ug/L	8548	Standard
	Cr	53	116953.0	0.5	**99.5731**	0.867	0.9	ug/L	925	Standard
	Mn	55	788843.7	0.7	**102.9377**	1.615	1.6	ug/L	1051	Standard
	Co	59	894273.8	0.1	**102.4661**	1.237	1.2	ug/L	178	Standard
	Ni	60	235534.7	0.7	**97.2486**	1.749	1.8	ug/L	312	Standard
	Cu	65	234969.1	1.2	**99.5772**	1.508	1.5	ug/L	233	Standard
	Zn	66	159752.1	0.3	**117.7235**	1.790	1.5	ug/L	606	Standard
>	Ge	72	628231.1	1.3				ug/L	641816	Standard
	As	75	137608.7	1.5	**102.2457**	0.291	0.3	ug/L	-21	Standard
	Se	82	14890.6	1.3	**102.1169**	0.318	0.3	ug/L	23	Standard
	Se-1	77	9569.0	0.6	**103.0673**	1.786	1.7	ug/L	86	Standard
>	Ga	71	395.0	13.3				mg/L	152	Standard
	Rb	85	1285.1	6.3				ug/L	18	Standard
	Y	89	589237.9	1.7				ug/L	578199	Standard
>	Rh	103	61.7	12.4				ug/L	20	Standard
	Mo	98	347631.4	1.0	**107.8964**	2.267	2.1	ug/L	19	Standard
	Ag	107	784271.1	2.0	**93.1145**	1.923	2.1	ug/L	113	Standard
	Cd	111	261459.2	0.3	**98.9395**	1.824	1.8	mg/L	3	Standard
	Cd	114	643639.1	4.3	**98.4586**	3.361	3.4	ug/L	8	Standard
>	In	115	792684.5	1.6				ug/L	797687	Standard
	Sn	118	5819.5	2.2	**0.7011**	0.005	0.7	ug/L	620	Standard
	Sb	123	574192.6	0.7	**102.2342**	0.942	0.9	ug/L	113	Standard
	Ba	135	239065.0	0.6	**97.7029**	0.957	1.0	ug/L	48	Standard
	Ce	140	100.0	18.0				ug/L	33	Standard
>	Tb	159	1170611.2	1.6				ug/L	1160331	Standard
	Ho	165	10.0	100.0				ug/L	5	Standard
	Tl	203	1000553.9	0.3	**99.0620**	0.524	0.5	ug/L	15	Standard
	Tl	205	951413.7	0.3	**101.1877**	0.662	0.7	ug/L	15	Standard
	Pb	206	602703.7	0.5	**102.4697**	1.346	1.3	ug/L	289	Standard
	Pb	207	527421.7	0.8	**98.8729**	1.048	1.1	ug/L	250	Standard
	Pb	208	2352885.2	1.0	**99.9469**	1.417	1.4	ug/L	1113	Standard
	U	238	871702.0	0.5	**99.5006**	1.046	1.1	ug/L	3	Standard
>	Bi	209	666427.5	0.9				ug/L	670731	Standard

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Na	23	1.7	173.2	**-0.4927**	12.401	2517.2	mg/L	0	Standard
Mg	24	14333.4	0.9	**13.7013**	0.222	1.6	mg/L	32	Standard
K	39	1231.7	4.6	**4.5748**	0.285	6.2	mg/L	33	Standard
Ca	43	276.7	10.4	**15.0086**	2.356	15.7	mg/L	58	Standard
Fe	54	21795.9	0.7	**12.6326**	0.312	2.5	mg/L	213	Standard
Fe	57	5937.8	3.8	**13.0641**	0.750	5.7	mg/L	132	Standard
Sc-1	45	54770.5	2.3				mg/L	56654	Standard
Cl	35	103787.6	1.1				ug/L	93221	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	2706.9	4.1				ug/L	2707	Standard
P	31	22917.3	1.2				ug/L	24082	Standard
S	34	3657.1	1.3				ug/L	3865	Standard
Sr	88	43.3	17.6				ug/L	43	Standard
C	12	203.3	47.8				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	25.9	57.5				mg/L	20	Standard
Ho-1	165	10.0	100.0				mg/L	5	Standard
Er	166	16.7	69.3				mg/L	10	Standard
I	127	2115.1	7.1				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	102.024		
Al	27	0.987		
Sc	45			
Ti	47	117.334		
V	51	101.952		
Cr	52	98.726		
Cr	53			
Mn	55	102.938		
Co	59	102.466		
Ni	60	97.249		
Cu	65	99.577		
Zn	66	117.723		
> Ge	72		97.883	
As	75	102.246		
Se	82	102.117		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	107.896		
Ag	107	93.114		
Cd	111	98.939		
Cd	114			
In	115		99.373	
Sn	118			
Sb	123	102.234		
Ba	135	97.703		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.062		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.947		
U	238	99.501		
Bi	209		99.358	
Na	23	-3.941		
Mg	24	274.027		
K	39	91.497		
Ca	43	100.057		
Fe	54	101.061		
Fe	57	104.512		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, June 13, 2016 12:15:17
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	87621.1	3.3				ug/L	84319	Standard
	Be	9	62783.1	0.9	**51.6763**	2.140	4.1	ug/L	7	Standard
	Al	27	9759268.2	0.9	**49.4679**	1.898	3.8	ug/L	1022	Standard
	Sc	45	54287.1	1.3				ug/L	56654	Standard
	Ti	47	39129.5	1.3	**99.8108**	3.040	3.0	ug/L	114	Standard
	V	51	495918.1	0.1	**50.5724**	1.000	2.0	ug/L	1609	Standard
	Cr	52	493202.9	0.6	**49.4012**	0.741	1.5	ug/L	8548	Standard
	Cr	53	59750.9	2.0	**49.6384**	1.498	3.0	ug/L	925	Standard
	Mn	55	398421.6	1.6	**51.0460**	1.797	3.5	ug/L	1051	Standard
	Co	59	465160.6	0.6	**52.3837**	0.773	1.5	ug/L	178	Standard
	Ni	60	123100.1	0.7	**49.9022**	0.962	1.9	ug/L	312	Standard
	Cu	65	122412.2	0.4	**50.9497**	0.897	1.8	ug/L	233	Standard
	Zn	66	69164.5	0.4	**49.8007**	0.858	1.7	ug/L	606	Standard
>	Ge	72	639120.3	1.9				ug/L	641816	Standard
	As	75	69232.2	0.4	**50.6073**	1.164	2.3	ug/L	-21	Standard
	Se	82	7603.3	1.5	**51.2001**	1.746	3.4	ug/L	23	Standard
	Se-1	77	4843.1	0.9	**50.8377**	0.524	1.0	ug/L	86	Standard
>	Ga	71	123.3	13.0				mg/L	152	Standard
	Rb	85	1055.0	7.6				ug/L	18	Standard
	Y	89	579517.4	2.9				ug/L	578199	Standard
>	Rh	103	45.0	29.4				ug/L	20	Standard
	Mo	98	337796.1	1.0	**105.5984**	1.409	1.3	ug/L	19	Standard
	Ag	107	428845.0	0.3	**51.2854**	0.974	1.9	ug/L	113	Standard
	Cd	111	133115.4	1.7	**50.7293**	0.267	0.5	mg/L	3	Standard
	Cd	114	326206.4	1.1	**50.2755**	0.692	1.4	ug/L	8	Standard
>	In	115	787004.9	2.2				ug/L	797687	Standard
	Sn	118	376891.9	0.9	**51.4367**	1.007	2.0	ug/L	620	Standard
	Sb	123	292557.2	0.1	**52.4722**	1.156	2.2	ug/L	113	Standard
	Ba	135	122800.3	0.9	**50.5405**	0.626	1.2	ug/L	48	Standard
	Ce	140	93.3	27.0				ug/L	33	Standard
>	Tb	159	1160213.3	2.0				ug/L	1160331	Standard
	Ho	165	15.0	33.3				ug/L	5	Standard
	Tl	203	509631.5	0.2	**51.0522**	0.571	1.1	ug/L	15	Standard
	Tl	205	480281.1	2.4	**51.6767**	1.056	2.0	ug/L	15	Standard
	Pb	206	300861.3	1.0	**51.7256**	0.606	1.2	ug/L	289	Standard
	Pb	207	274197.9	0.6	**51.9834**	0.571	1.1	ug/L	250	Standard
	Pb	208	1199313.0	1.5	**51.5185**	0.815	1.6	ug/L	1113	Standard
	U	238	444313.6	1.6	**51.3120**	0.796	1.6	ug/L	3	Standard
>	Bi	209	658656.9	0.9				ug/L	670731	Standard

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Na	23	0.0		**6.6672**	0.000	0.0	mg/L	0	Standard
Mg	24	5556.0	3.2	**5.3367**	0.136	2.5	mg/L	32	Standard
K	39	1148.4	11.8	**4.2965**	0.573	13.3	mg/L	33	Standard
Ca	43	158.3	35.5	**7.2098**	3.923	54.4	mg/L	58	Standard
Fe	54	8567.4	5.9	**4.9329**	0.359	7.3	mg/L	213	Standard
Fe	57	2116.8	6.0	**4.4989**	0.246	5.5	mg/L	132	Standard
> **Sc-1**	45	54287.1	1.3				mg/L	56654	Standard
Cl	35	98634.1	2.0				ug/L	93221	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	2853.6	9.0				ug/L	2707	Standard
P	31	24992.3	1.2				ug/L	24082	Standard
S	34	3940.5	4.1				ug/L	3865	Standard
Sr	88	48.3	51.0				ug/L	43	Standard
C	12	106.7	10.8				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	16.0	32.7				mg/L	20	Standard
Ho-1	165	15.0	33.3				mg/L	5	Standard
Er	166	13.3	114.6				mg/L	10	Standard
I	127	2106.8	5.1				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	103.353		
Al	27	98.936		
Sc	45			
Ti	47	99.811		
V	51	101.145		
Cr	52	98.802		
Cr	53			
Mn	55	102.092		
Co	59	104.767		
Ni	60	99.804		
Cu	65	101.899		
Zn	66	99.601		
> Ge	72		99.580	
As	75	101.215		
Se	82	102.400		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	105.598		
Ag	107	102.571		
Cd	111	101.459		
Cd	114			
> In	115			98.661
Sn	118	102.873		
Sb	123	104.944		
Ba	135	101.081		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	102.104		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.037		
U	238	102.624		
> Bi	209			98.200
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, June 13, 2016 12:18:28
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	87004.1	0.7				ug/L	84319	Standard
	Be	9	40.0	43.3	**0.0230**	0.014	62.9	ug/L	7	Standard
	Al	27	4185.6	29.6	**0.0112**	0.006	57.4	ug/L	1022	Standard
	Sc	45	55284.0	0.9				ug/L	56654	Standard
	Ti	47	92.7	9.8	**-0.0231**	0.025	109.1	ug/L	114	Standard
	V	51	1796.5	11.2	**0.0120**	0.018	150.2	ug/L	1609	Standard
	Cr	52	8901.9	2.0	**-0.0025**	0.016	632.3	ug/L	8548	Standard
	Cr	53	935.0	12.3	**0.0105**	0.085	814.4	ug/L	925	Standard
	Mn	55	1045.7	2.2	**-0.0194**	0.001	7.3	ug/L	1051	Standard
	Co	59	366.0	20.7	**0.0187**	0.008	43.6	ug/L	178	Standard
	Ni	60	310.0	41.1	**-0.0052**	0.049	934.5	ug/L	312	Standard
	Cu	65	317.7	38.3	**0.0256**	0.048	186.6	ug/L	233	Standard
	Zn	66	601.7	15.2	**-0.1022**	0.061	59.5	ug/L	606	Standard
>	**Ge**	72	656094.0	1.2				ug/L	641816	Standard
	As	75	7.2	672.4	**0.0588**	0.034	58.2	ug/L	-21	Standard
	Se	82	34.4	13.0	**0.0752**	0.030	39.6	ug/L	23	Standard
	Se-1	77	94.3	10.9	**0.1095**	0.096	87.7	ug/L	86	Standard
>	**Ga**	71	96.7	18.2				mg/L	152	Standard
	Rb	85	15.0	66.7				ug/L	18	Standard
	Y	89	573528.9	1.0				ug/L	578199	Standard
>	**Rh**	103	18.3	83.3				ug/L	20	Standard
	Mo	98	370.6	7.6	**0.1005**	0.009	8.5	ug/L	19	Standard
	Ag	107	319.0	34.7	**0.0229**	0.013	57.2	ug/L	113	Standard
	Cd	111	60.2	68.7	**0.0209**	0.016	74.9	mg/L	3	Standard
	Cd	114	175.5	80.0	**0.0249**	0.021	86.0	ug/L	8	Standard
>	**In**	115	791905.7	0.3				ug/L	797687	Standard
	Sn	118	1163.4	21.5	**0.0694**	0.033	48.3	ug/L	620	Standard
	Sb	123	1509.2	35.2	**0.2587**	0.094	36.3	ug/L	113	Standard
	Ba	135	104.3	36.3	**0.0168**	0.015	92.0	ug/L	48	Standard
	Ce	140	36.7	83.3				ug/L	33	Standard
>	**Tb**	159	1154148.0	1.1				ug/L	1160331	Standard
	Ho	165	10.0	86.6				ug/L	5	Standard
	Tl	203	255.0	49.7	**0.0204**	0.012	60.9	ug/L	15	Standard
	Tl	205	218.3	35.0	**0.0160**	0.008	50.1	ug/L	15	Standard
	Pb	206	423.3	10.9	**0.0156**	0.008	49.6	ug/L	289	Standard
	Pb	207	363.7	8.6	**0.0118**	0.006	49.0	ug/L	250	Standard
	Pb	208	1530.7	8.5	**0.0098**	0.005	55.4	ug/L	1113	Standard
	U	238	140.7	45.3	**0.0140**	0.007	50.6	ug/L	3	Standard
>	**Bi**	209	678363.4	0.6				ug/L	670731	Standard

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Na	23	0.0		**6.6672**	0.000	0.0	mg/L	0	Standard
Mg	24	36.7	7.9	**0.0020**	0.003	131.9	mg/L	32	Standard
K	39	21.7	26.6	**-0.0472**	0.021	45.0	mg/L	33	Standard
Ca	43	35.0	24.7	**-1.1638**	0.562	48.3	mg/L	58	Standard
Fe	54	225.6	16.0	**0.0015**	0.020	1319.1	mg/L	213	Standard
Fe	57	130.0	20.4	**-0.0146**	0.057	393.9	mg/L	132	Standard
Sc-1	45	55284.0	0.9				mg/L	56654	Standard
Cl	35	99944.6	2.0				ug/L	93221	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	2623.6	6.7				ug/L	2707	Standard
P	31	25324.5	2.7				ug/L	24082	Standard
S	34	4048.9	1.6				ug/L	3865	Standard
Sr	88	53.3	19.5				ug/L	43	Standard
C	12	110.0	24.1				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.2	111.3				mg/L	20	Standard
Ho-1	165	10.0	86.6				mg/L	5	Standard
Er	166	16.7	34.6				mg/L	10	Standard
I	127	2230.2	4.5				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.225	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.275	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	101.138	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW 63 WG571571-02
Sample Date/Time: Monday, June 13, 2016 12:25:17
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84050.9	2.1				ug/L	84319	Standard
	Be	9	23.3	81.1	**0.0096**	0.016	162.8	ug/L	7	Standard
	Al	27	11569.4	1.3	**0.0510**	0.002	3.2	ug/L	1022	Standard
	Sc	45	55187.0	0.9				ug/L	56654	Standard
	Ti	47	93.0	11.3	**-0.0196**	0.028	143.2	ug/L	114	Standard
	V	51	1689.0	0.5	**0.0034**	0.003	75.5	ug/L	1609	Standard
	Cr	52	10003.6	1.6	**0.1184**	0.013	11.1	ug/L	8548	Standard
	Cr	53	926.7	5.4	**0.0134**	0.048	359.0	ug/L	925	Standard
	Mn	55	2122.1	0.5	**0.1184**	0.003	3.0	ug/L	1051	Standard
	Co	59	264.0	2.4	**0.0078**	0.001	9.4	ug/L	178	Standard
	Ni	60	2588.6	2.8	**0.9087**	0.019	2.1	ug/L	312	Standard
	Cu	65	1028.4	2.0	**0.3194**	0.009	2.7	ug/L	233	Standard
	Zn	66	2396.9	1.7	**1.1902**	0.032	2.7	ug/L	606	Standard
>	**Ge**	72	648584.5	1.0				ug/L	641816	Standard
	As	75	-80.9	25.9	**-0.0042**	0.015	348.4	ug/L	-21	Standard
	Se	82	17.5	32.1	**-0.0340**	0.038	112.6	ug/L	23	Standard
	Se-1	77	82.0	13.4	**-0.0076**	0.122	1611.6	ug/L	86	Standard
>	**Ga**	71	80.0	12.5				mg/L	152	Standard
	Rb	85	55.0	18.2				ug/L	18	Standard
	Y	89	588258.7	3.4				ug/L	578199	Standard
>	**Rh**	103	35.0	42.9				ug/L	20	Standard
	Mo	98	74.3	12.6	**0.0085**	0.003	39.6	ug/L	19	Standard
	Ag	107	110.7	7.6	**-0.0019**	0.001	46.5	ug/L	113	Standard
	Cd	111	13.5	18.8	**0.0032**	0.001	26.9	mg/L	3	Standard
	Cd	114	29.9	30.5	**0.0027**	0.001	54.9	ug/L	8	Standard
>	**In**	115	792011.9	2.1				ug/L	797687	Standard
	Sn	118	1183.4	11.6	**0.0725**	0.022	30.1	ug/L	620	Standard
	Sb	123	661.4	30.3	**0.1083**	0.038	35.0	ug/L	113	Standard
	Ba	135	146.3	6.9	**0.0340**	0.005	13.8	ug/L	48	Standard
	Ce	140	56.7	50.9				ug/L	33	Standard
>	**Tb**	159	1160309.8	1.3				ug/L	1160331	Standard
	Ho	165	10.0	50.0				ug/L	5	Standard
	Tl	203	37.0	16.4	**-0.0007**	0.001	88.6	ug/L	15	Standard
	Tl	205	26.7	39.0	**-0.0040**	0.001	27.1	ug/L	15	Standard
	Pb	206	363.3	6.1	**0.0068**	0.004	65.8	ug/L	289	Standard
	Pb	207	305.7	2.6	**0.0022**	0.001	42.4	ug/L	250	Standard
	Pb	208	1324.4	1.8	**0.0022**	0.001	44.7	ug/L	1113	Standard
	U	238	16.0	18.8	**0.0000**	0.000	779.6	ug/L	3	Standard
>	**Bi**	209	665818.4	1.2				ug/L	670731	Standard

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Na	23	0.0		**6.6672**	0.000	0.0	mg/L	0	Standard
Mg	24	43.3	52.0	**0.0084**	0.022	256.9	mg/L	32	Standard
K	39	30.0	44.1	**-0.0151**	0.051	335.2	mg/L	33	Standard
Ca	43	50.0	10.0	**-0.1636**	0.358	218.6	mg/L	58	Standard
Fe	54	212.6	16.0	**-0.0056**	0.021	371.7	mg/L	213	Standard
Fe	57	83.3	34.6	**-0.1182**	0.064	54.0	mg/L	132	Standard
Sc-1	45	55187.0	0.9				mg/L	56654	Standard
Cl	35	101884.9	2.5				ug/L	93221	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	2870.3	4.0				ug/L	2707	Standard
P	31	24281.1	0.9				ug/L	24082	Standard
S	34	3942.2	2.0				ug/L	3865	Standard
Sr	88	50.0	10.0				ug/L	43	Standard
C	12	156.7	31.5				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	8.9	196.7				mg/L	20	Standard
Ho-1	165	10.0	50.0				mg/L	5	Standard
Er	166	23.3	65.5				mg/L	10	Standard
I	127	1461.7	3.6				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.682	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.055	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.289
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.268
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 15, 2016

Method 6020 - Summary Report

Sample ID: LCSW 63 WG571571-03
Sample Date/Time: Monday, June 13, 2016 12:28:28
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85277.8	3.0				ug/L	84319	Standard
	Be	9	63812.5	3.2	**53.9154**	0.270	0.5	ug/L	7	Standard
	Al	27	9779.8	1.5	**0.0408**	0.002	5.4	ug/L	1022	Standard
	Sc	45	57279.7	1.4				ug/L	56654	Standard
	Ti	47	88.7	16.0	**-0.0248**	0.038	152.1	ug/L	114	Standard
	V	51	500713.9	0.6	**51.6066**	0.412	0.8	ug/L	1609	Standard
	Cr	52	511824.9	0.8	**51.8560**	0.238	0.5	ug/L	8548	Standard
	Cr	53	62510.4	0.6	**52.5229**	0.279	0.5	ug/L	925	Standard
	Mn	55	413305.1	0.7	**53.5105**	0.291	0.5	ug/L	1051	Standard
	Co	59	461679.5	1.6	**52.5502**	1.137	2.2	ug/L	178	Standard
	Ni	60	127503.7	1.7	**52.2410**	0.799	1.5	ug/L	312	Standard
	Cu	65	126169.8	0.7	**53.0761**	0.326	0.6	ug/L	233	Standard
	Zn	66	72980.4	1.0	**53.1427**	0.598	1.1	ug/L	606	Standard
>	**Ge**	72	632266.1	0.6				ug/L	641816	Standard
	As	75	68919.4	1.4	**50.9114**	0.839	1.6	ug/L	-21	Standard
	Se	82	7592.0	1.6	**51.6614**	1.090	2.1	ug/L	23	Standard
	Se-1	77	4978.2	1.8	**52.8463**	0.666	1.3	ug/L	86	Standard
>	**Ga**	71	160.0	17.4				mg/L	152	Standard
	Rb	85	61.7	18.7				ug/L	18	Standard
	Y	89	599090.2	1.0				ug/L	578199	Standard
>	**Rh**	103	26.7	28.6				ug/L	20	Standard
	Mo	98	82.5	8.3	**0.0101**	0.002	18.6	ug/L	19	Standard
	Ag	107	445417.7	0.6	**51.1369**	0.507	1.0	ug/L	113	Standard
	Cd	111	136194.9	0.4	**49.8405**	0.856	1.7	mg/L	3	Standard
	Cd	114	331587.0	1.2	**49.0690**	1.009	2.1	ug/L	8	Standard
>	**In**	115	819636.2	1.4				ug/L	797687	Standard
	Sn	118	981.7	14.7	**0.0403**	0.019	48.2	ug/L	620	Standard
	Sb	123	285564.2	1.3	**49.1653**	0.612	1.2	ug/L	113	Standard
	Ba	135	126024.3	0.6	**49.7986**	0.641	1.3	ug/L	48	Standard
	Ce	140	81.7	7.1				ug/L	33	Standard
>	**Tb**	159	1187671.0	2.2				ug/L	1160331	Standard
	Ho	165	6.7	114.6				ug/L	5	Standard
	Tl	203	516990.3	0.2	**50.5443**	0.881	1.7	ug/L	15	Standard
	Tl	205	486579.5	1.8	**51.1081**	1.672	3.3	ug/L	15	Standard
	Pb	206	310108.9	1.0	**52.0349**	0.979	1.9	ug/L	289	Standard
	Pb	207	271197.9	0.4	**50.1749**	0.678	1.4	ug/L	250	Standard
	Pb	208	1224520.6	0.6	**51.3397**	1.052	2.0	ug/L	1113	Standard
	U	238	444295.1	0.4	**50.0764**	0.686	1.4	ug/L	3	Standard
>	**Bi**	209	674964.7	1.6				ug/L	670731	Standard

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Na	23	1.7	173.2	**0.0850**	11.401	13412.2	mg/L	0	Standard
Mg	24	86.7	17.6	**0.0467**	0.015	32.2	mg/L	32	Standard
K	39	28.3	44.4	**-0.0254**	0.047	183.7	mg/L	33	Standard
Ca	43	48.3	33.3	**-0.3993**	1.002	251.0	mg/L	58	Standard
Fe	54	169.3	24.0	**-0.0344**	0.023	66.2	mg/L	213	Standard
Fe	57	120.0	19.1	**-0.0455**	0.053	116.1	mg/L	132	Standard
Sc-1	45	57279.7	1.4				mg/L	56654	Standard
Cl	35	102805.0	1.7				ug/L	93221	Standard
Kr	83	3.3	34.6				ug/L	1	Standard
Br	81	2763.6	2.3				ug/L	2707	Standard
P	31	24464.7	3.3				ug/L	24082	Standard
S	34	4080.5	2.7				ug/L	3865	Standard
Sr	88	56.7	44.4				ug/L	43	Standard
C	12	126.7	12.1				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	15.7	73.8				mg/L	20	Standard
Ho-1	165	6.7	114.6				mg/L	5	Standard
Er	166	20.0	100.0				mg/L	10	Standard
I	127	1568.4	6.6				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.137	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.512	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.752
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.631
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 15, 2016

Method 6020 - Summary Report

Sample ID: L1606028301 WG571571-01
Sample Date/Time: Monday, June 13, 2016 12:31:39
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92458.1	3.6				ug/L	84319	Standard
	Be	9	33.3	22.9	**0.0158**	0.006	39.1	ug/L	7	Standard
	Al	27	40754745.8	3.1	**195.6610**	0.981	0.5	ug/L	1022	Standard
	Sc	45	54514.6	2.1				ug/L	56654	Standard
	Ti	47	366.0	5.8	**0.6798**	0.052	7.7	ug/L	114	Standard
	V	51	9198.3	0.5	**0.7722**	0.005	0.6	ug/L	1609	Standard
	Cr	52	11101.7	3.4	**0.2431**	0.036	14.9	ug/L	8548	Standard
	Cr	53	2458.5	15.8	**1.3113**	0.316	24.1	ug/L	925	Standard
	Mn	55	1416681.6	1.0	**181.4679**	1.677	0.9	ug/L	1051	Standard
	Co	59	6280.6	3.2	**0.6847**	0.027	3.9	ug/L	178	Standard
	Ni	60	29702.4	0.7	**11.9187**	0.107	0.9	ug/L	312	Standard
	Cu	65	2086.5	2.3	**0.7652**	0.018	2.4	ug/L	233	Standard
	Zn	66	9871.2	1.2	**6.6402**	0.128	1.9	ug/L	606	Standard
>	**Ge**	72	640325.2	0.6				ug/L	641816	Standard
	As	75	731.3	15.3	**0.5871**	0.085	14.4	ug/L	-21	Standard
	Se	82	623.6	1.0	**4.0514**	0.063	1.6	ug/L	23	Standard
	Se-1	77	549.3	6.1	**4.9819**	0.338	6.8	ug/L	86	Standard
>	**Ga**	71	300.0	10.9				mg/L	152	Standard
	Rb	85	8242.2	4.3				ug/L	18	Standard
	Y	89	587377.7	2.3				ug/L	578199	Standard
>	**Rh**	103	85.0	15.6				ug/L	20	Standard
	Mo	98	8067.0	1.7	**2.5012**	0.040	1.6	ug/L	19	Standard
	Ag	107	196.3	18.8	**0.0084**	0.004	52.2	ug/L	113	Standard
	Cd	111	1082.7	1.7	**0.4098**	0.010	2.3	mg/L	3	Standard
	Cd	114	2773.0	1.0	**0.4244**	0.005	1.1	ug/L	8	Standard
>	**In**	115	788878.2	0.7				ug/L	797687	Standard
	Sn	118	890.0	7.8	**0.0328**	0.010	31.5	ug/L	620	Standard
	Sb	123	3156.0	18.9	**0.5548**	0.110	19.7	ug/L	113	Standard
	Ba	135	10515.3	0.5	**4.2932**	0.048	1.1	ug/L	48	Standard
	Ce	140	1280.1	3.1				ug/L	33	Standard
>	**Tb**	159	1180404.0	0.9				ug/L	1160331	Standard
	Ho	165	70.0	39.8				ug/L	5	Standard
	Tl	203	1071.4	8.8	**0.1028**	0.010	9.5	ug/L	15	Standard
	Tl	205	1061.7	6.4	**0.1074**	0.009	8.1	ug/L	15	Standard
	Pb	206	741.0	7.2	**0.0722**	0.009	12.4	ug/L	289	Standard
	Pb	207	645.7	2.5	**0.0672**	0.003	4.9	ug/L	250	Standard
	Pb	208	2882.8	2.8	**0.0697**	0.005	7.0	ug/L	1113	Standard
	U	238	24255.4	0.6	**2.7959**	0.019	0.7	ug/L	3	Standard
>	**Bi**	209	659513.1	1.2				ug/L	670731	Standard

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Na	23	1.7	173.2	**-0.5014**	12.416	2476.3	mg/L	0	Standard
Mg	24	14411.9	3.2	**13.8438**	0.583	4.2	mg/L	32	Standard
K	39	170.0	14.7	**0.5217**	0.082	15.8	mg/L	33	Standard
Ca	43	241.7	12.6	**12.7100**	1.958	15.4	mg/L	58	Standard
Fe	54	267.6	34.4	**0.0284**	0.055	192.2	mg/L	213	Standard
Fe	57	245.0	39.7	**0.2503**	0.221	88.3	mg/L	132	Standard
> **Sc-1**	45	54514.6	2.1				mg/L	56654	Standard
Cl	35	163254.9	0.9				ug/L	93221	Standard
Kr	83	2.3	89.2				ug/L	1	Standard
Br	81	27368.1	6.9				ug/L	2707	Standard
P	31	25945.5	2.7				ug/L	24082	Standard
S	34	3887.2	0.9				ug/L	3865	Standard
Sr	88	295.0	10.3				ug/L	43	Standard
C	12	130.0	27.7				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	100.6	21.8				mg/L	20	Standard
Ho-1	165	70.0	39.8				mg/L	5	Standard
Er	166	56.7	44.4				mg/L	10	Standard
I	127	125585.1	7.2				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.653	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.768	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.896
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.327
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606028301S WG571571-05
Sample Date/Time: Monday, June 13, 2016 12:34:51
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	101396.6	2.1				ug/L	84319	Standard
	Be	9	13873.0	2.9	**9.8506**	0.231	2.3	ug/L	7	Standard
	Al	27	41429044.0	1.1	**181.3717**	2.225	1.2	ug/L	1022	Standard
	Sc	45	56438.3	1.5				ug/L	56654	Standard
	Ti	47	354.0	3.4	**0.6335**	0.014	2.2	ug/L	114	Standard
	V	51	112026.4	0.1	**11.0767**	0.225	2.0	ug/L	1609	Standard
	Cr	52	111990.4	1.0	**10.3143**	0.153	1.5	ug/L	8548	Standard
	Cr	53	15090.9	4.5	**11.7213**	0.321	2.7	ug/L	925	Standard
	Mn	55	1431126.0	1.8	**180.2379**	6.244	3.5	ug/L	1051	Standard
	Co	59	98614.2	1.2	**10.8786**	0.309	2.8	ug/L	178	Standard
	Ni	60	54843.4	0.3	**21.7369**	0.389	1.8	ug/L	312	Standard
	Cu	65	26742.6	0.5	**10.8374**	0.181	1.7	ug/L	233	Standard
	Zn	66	23354.0	1.0	**16.1451**	0.509	3.2	ug/L	606	Standard
>	**Ge**	72	651549.4	2.1				ug/L	641816	Standard
	As	75	15203.1	0.7	**10.9426**	0.158	1.4	ug/L	-21	Standard
	Se	82	2073.1	2.0	**13.5780**	0.146	1.1	ug/L	23	Standard
	Se-1	77	1487.7	0.4	**14.7135**	0.365	2.5	ug/L	86	Standard
>	**Ga**	71	291.7	21.7				mg/L	152	Standard
	Rb	85	8038.8	1.1				ug/L	18	Standard
	Y	89	576972.6	2.8				ug/L	578199	Standard
>	**Rh**	103	78.3	9.8				ug/L	20	Standard
	Mo	98	8131.4	2.9	**2.5203**	0.060	2.4	ug/L	19	Standard
	Ag	107	81667.9	1.8	**9.7256**	0.129	1.3	ug/L	113	Standard
	Cd	111	27326.1	1.3	**10.3843**	0.161	1.5	mg/L	3	Standard
	Cd	114	67591.5	0.4	**10.3878**	0.202	1.9	ug/L	8	Standard
>	**In**	115	789140.2	1.5				ug/L	797687	Standard
	Sn	118	833.4	7.2	**0.0251**	0.009	34.6	ug/L	620	Standard
	Sb	123	61796.9	0.9	**11.0442**	0.219	2.0	ug/L	113	Standard
	Ba	135	34664.6	0.4	**14.2091**	0.202	1.4	ug/L	48	Standard
	Ce	140	1326.7	4.1				ug/L	33	Standard
>	**Tb**	159	1190805.2	2.0				ug/L	1160331	Standard
	Ho	165	58.3	34.6				ug/L	5	Standard
	Tl	203	104008.8	1.0	**10.1634**	0.225	2.2	ug/L	15	Standard
	Tl	205	98046.2	0.5	**10.2887**	0.129	1.3	ug/L	15	Standard
	Pb	206	63590.8	0.6	**10.6242**	0.166	1.6	ug/L	289	Standard
	Pb	207	55498.5	0.5	**10.2222**	0.157	1.5	ug/L	250	Standard
	Pb	208	240918.4	0.6	**10.0544**	0.119	1.2	ug/L	1113	Standard
	U	238	113391.4	0.8	**12.7769**	0.229	1.8	ug/L	3	Standard
>	**Bi**	209	675071.6	1.3				ug/L	670731	Standard

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Na	23	1.7	173.2	**-0.1069**	11.733	10970.8	mg/L	0	Standard
Mg	24	14820.6	1.5	**13.7495**	0.421	3.1	mg/L	32	Standard
K	39	128.3	16.2	**0.3471**	0.084	24.1	mg/L	33	Standard
Ca	43	223.3	9.0	**10.9667**	1.088	9.9	mg/L	58	Standard
Fe	54	265.2	3.4	**0.0214**	0.003	15.3	mg/L	213	Standard
Fe	57	266.7	10.3	**0.2781**	0.060	21.6	mg/L	132	Standard
Sc-1	45	56438.3	1.5				mg/L	56654	Standard
Cl	35	168793.1	1.2				ug/L	93221	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	21238.2	2.4				ug/L	2707	Standard
P	31	26885.5	1.1				ug/L	24082	Standard
S	34	3875.5	0.7				ug/L	3865	Standard
Sr	88	305.0	1.6				ug/L	43	Standard
C	12	143.3	47.5				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	94.4				mg/L	0	Standard
Dy	164	96.6	10.5				mg/L	20	Standard
Ho-1	165	58.3	34.6				mg/L	5	Standard
Er	166	70.0	49.5				mg/L	10	Standard
I	127	127757.9	6.6				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		120.254	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.517	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.929
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.647
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606028301SD WG571571-06
Sample Date/Time: Monday, June 13, 2016 12:38:02
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	107045.2	1.8				ug/L	84319	Standard
	Be	9	15371.1	1.8	**10.3428**	0.369	3.6	ug/L	7	Standard
	Al	27	45843992.5	0.9	**190.1379**	4.961	2.6	ug/L	1022	Standard
	Sc	45	58564.7	1.7				ug/L	56654	Standard
	Ti	47	390.0	13.9	**0.7319**	0.124	17.0	ug/L	114	Standard
	V	51	113349.6	0.9	**11.3107**	0.062	0.5	ug/L	1609	Standard
	Cr	52	114750.0	1.7	**10.6962**	0.343	3.2	ug/L	8548	Standard
	Cr	53	15714.8	3.1	**12.3583**	0.277	2.2	ug/L	925	Standard
	Mn	55	1566842.9	0.5	**199.0866**	3.044	1.5	ug/L	1051	Standard
	Co	59	101547.8	0.9	**11.3022**	0.144	1.3	ug/L	178	Standard
	Ni	60	57368.4	1.3	**22.9474**	0.184	0.8	ug/L	312	Standard
	Cu	65	26815.7	1.2	**10.9656**	0.116	1.1	ug/L	233	Standard
	Zn	66	23953.9	0.7	**16.7241**	0.219	1.3	ug/L	606	Standard
>	**Ge**	72	645654.1	1.4				ug/L	641816	Standard
	As	75	15488.0	0.5	**11.2470**	0.158	1.4	ug/L	-21	Standard
	Se	82	2239.1	1.2	**14.8158**	0.394	2.7	ug/L	23	Standard
	Se-1	77	1606.1	2.1	**16.1018**	0.305	1.9	ug/L	86	Standard
>	**Ga**	71	355.0	14.1				mg/L	152	Standard
	Rb	85	8906.0	0.3				ug/L	18	Standard
	Y	89	594937.0	3.0				ug/L	578199	Standard
>	**Rh**	103	85.0	15.6				ug/L	20	Standard
	Mo	98	8568.1	1.7	**2.5492**	0.084	3.3	ug/L	19	Standard
	Ag	107	88973.2	1.1	**10.1697**	0.256	2.5	ug/L	113	Standard
	Cd	111	28814.6	0.1	**10.5092**	0.288	2.7	mg/L	3	Standard
	Cd	114	70255.8	2.5	**10.3571**	0.101	1.0	ug/L	8	Standard
>	**In**	115	822574.5	2.7				ug/L	797687	Standard
	Sn	118	815.0	11.8	**0.0178**	0.010	54.9	ug/L	620	Standard
	Sb	123	62704.6	0.2	**10.7539**	0.283	2.6	ug/L	113	Standard
	Ba	135	37584.9	1.7	**14.7817**	0.162	1.1	ug/L	48	Standard
	Ce	140	3062.0	0.8				ug/L	33	Standard
>	**Tb**	159	1232680.5	0.8				ug/L	1160331	Standard
	Ho	165	95.0	10.5				ug/L	5	Standard
	Tl	203	108543.4	0.8	**10.3272**	0.071	0.7	ug/L	15	Standard
	Tl	205	101386.5	1.7	**10.3601**	0.188	1.8	ug/L	15	Standard
	Pb	206	64920.1	0.3	**10.5610**	0.057	0.5	ug/L	289	Standard
	Pb	207	56143.5	0.5	**10.0685**	0.065	0.6	ug/L	250	Standard
	Pb	208	250669.6	1.2	**10.1874**	0.112	1.1	ug/L	1113	Standard
	U	238	119244.7	0.4	**13.0832**	0.057	0.4	ug/L	3	Standard
>	**Bi**	209	693203.6	0.2				ug/L	670731	Standard

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Na	23	1.7	173.2	**0.0085**	11.53	135803.2	mg/L	0	Standard
Mg	24	16479.0	2.5	**14.7350**	0.514	3.5	mg/L	32	Standard
K	39	131.7	22.3	**0.3422**	0.113	33.1	mg/L	33	Standard
Ca	43	231.7	17.3	**10.9497**	2.296	21.0	mg/L	58	Standard
Fe	54	291.7	13.7	**0.0304**	0.021	69.1	mg/L	213	Standard
Fe	57	291.7	8.8	**0.3102**	0.065	20.8	mg/L	132	Standard
> **Sc-1**	45	58564.7	1.7				mg/L	56654	Standard
Cl	35	180448.3	1.1				ug/L	93221	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	24025.7	2.3				ug/L	2707	Standard
P	31	27895.7	1.9				ug/L	24082	Standard
S	34	4055.5	2.6				ug/L	3865	Standard
Sr	88	335.0	17.0				ug/L	43	Standard
C	12	123.3	16.9				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	65.5				mg/L	0	Standard
Dy	164	95.7	17.2				mg/L	20	Standard
Ho-1	165	95.0	10.5				mg/L	5	Standard
Er	166	90.0	22.2				mg/L	10	Standard
I	127	142292.7	7.8				mg/L	2335	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		126.953	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.598	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.120
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.350
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606028301SD WG571571-06
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Method 6020 - Summary Report

Sample ID: L1606008102
Sample Date/Time: Monday, June 13, 2016 12:41:14
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	104928.8	1.2				ug/L	84319	Standard
	Be	9	21.7	48.0	**0.0047**	0.007	151.7	ug/L	7	Standard
	Al	27	19651278.2	1.6	**83.1141**	0.452	0.5	ug/L	1022	Standard
	Sc	45	55422.9	3.5				ug/L	56654	Standard
	Ti	47	1381.4	4.4	**3.3413**	0.168	5.0	ug/L	114	Standard
	V	51	6405.9	3.9	**0.5001**	0.024	4.8	ug/L	1609	Standard
	Cr	52	33646.7	1.2	**2.6056**	0.055	2.1	ug/L	8548	Standard
	Cr	53	6903.2	3.7	**5.1694**	0.235	4.6	ug/L	925	Standard
	Mn	55	278781.4	0.4	**36.3036**	0.090	0.2	ug/L	1051	Standard
	Co	59	10011.3	2.1	**1.1266**	0.028	2.5	ug/L	178	Standard
	Ni	60	9409.9	1.6	**3.7651**	0.075	2.0	ug/L	312	Standard
	Cu	65	8316.9	0.9	**3.4275**	0.040	1.2	ug/L	233	Standard
	Zn	66	46880.1	0.1	**34.1943**	0.114	0.3	ug/L	606	Standard
>	**Ge**	72	627777.3	0.4				ug/L	641816	Standard
	As	75	6667.1	1.9	**5.0086**	0.078	1.6	ug/L	-21	Standard
	Se	82	249.4	9.9	**1.5628**	0.163	10.5	ug/L	23	Standard
	Se-1	77	415.7	13.9	**3.6465**	0.625	17.1	ug/L	86	Standard
>	**Ga**	71	386.7	6.4				mg/L	152	Standard
	Rb	85	163703.1	1.9				ug/L	18	Standard
	Y	89	581637.8	1.8				ug/L	578199	Standard
>	**Rh**	103	38.3	52.7				ug/L	20	Standard
	Mo	98	1669.3	1.4	**0.5082**	0.013	2.6	ug/L	19	Standard
	Ag	107	2419.5	4.9	**0.2749**	0.015	5.3	ug/L	113	Standard
	Cd	111	89.2	13.6	**0.0322**	0.005	15.0	mg/L	3	Standard
	Cd	114	719.1	44.3	**0.1096**	0.051	46.8	ug/L	8	Standard
>	**In**	115	785729.5	1.8				ug/L	797687	Standard
	Sn	118	256199.3	3.2	**34.9864**	1.023	2.9	ug/L	620	Standard
	Sb	123	4040.1	2.5	**0.7159**	0.029	4.0	ug/L	113	Standard
	Ba	135	14394.2	1.3	**5.9106**	0.090	1.5	ug/L	48	Standard
	Ce	140	628.3	14.0				ug/L	33	Standard
>	**Tb**	159	1182512.7	2.3				ug/L	1160331	Standard
	Ho	165	53.3	28.6				ug/L	5	Standard
	Tl	203	153.7	9.8	**0.0111**	0.001	11.8	ug/L	15	Standard
	Tl	205	135.0	3.7	**0.0078**	0.000	4.6	ug/L	15	Standard
	Pb	206	3815.5	1.6	**0.6043**	0.020	3.4	ug/L	289	Standard
	Pb	207	3252.3	2.5	**0.5645**	0.014	2.4	ug/L	250	Standard
	Pb	208	14820.5	0.4	**0.5857**	0.011	1.8	ug/L	1113	Standard
	U	238	69.7	0.8	**0.0063**	0.000	2.7	ug/L	3	Standard
>	**Bi**	209	656109.8	1.5				ug/L	670731	Standard

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Na	23	0.0		**6.6672**	0.000	0.0	mg/L	0	Standard
Mg	24	84218.6	3.0	**79.7154**	1.661	2.1	mg/L	32	Standard
K	39	2486.9	5.1	**9.2461**	0.148	1.6	mg/L	33	Standard
Ca	43	215.0	12.3	**10.6726**	1.405	13.2	mg/L	58	Standard
Fe	54	301.9	16.6	**0.0452**	0.027	60.4	mg/L	213	Standard
Fe	57	223.3	14.9	**0.1913**	0.059	30.6	mg/L	132	Standard
Sc-1	45	55422.9	3.5				mg/L	56654	Standard
Cl	35	158329.0	1.0				ug/L	93221	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	42044.9	2.3				ug/L	2707	Standard
P	31	28727.2	3.3				ug/L	24082	Standard
S	34	4122.2	1.0				ug/L	3865	Standard
Sr	88	126.7	17.8				ug/L	43	Standard
C	12	340.0	0.0				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	57.3				mg/L	0	Standard
Dy	164	68.9	13.8				mg/L	20	Standard
Ho-1	165	53.3	28.6				mg/L	5	Standard
Er	166	23.3	49.5				mg/L	10	Standard
I	127	371709.2	4.7				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.443	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.813	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.501
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.820
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606008801
Sample Date/Time: Monday, June 13, 2016 12:44:26
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	108733.8	0.7				ug/L	84319	Standard
	Be	9	26.7	96.2	**0.0074**	0.017	226.9	ug/L	7	Standard
	Al	27	40750443.8	1.5	**166.3405**	2.634	1.6	ug/L	1022	Standard
	Sc	45	58407.4	2.3				ug/L	56654	Standard
	Ti	47	1382.4	2.6	**3.3229**	0.057	1.7	ug/L	114	Standard
	V	51	4206.4	4.2	**0.2686**	0.017	6.2	ug/L	1609	Standard
	Cr	52	18025.1	1.6	**0.9736**	0.024	2.5	ug/L	8548	Standard
	Cr	53	11512.7	4.6	**9.0691**	0.419	4.6	ug/L	925	Standard
	Mn	55	176531.8	0.5	**22.8033**	0.209	0.9	ug/L	1051	Standard
	Co	59	4986.8	0.6	**0.5472**	0.006	1.1	ug/L	178	Standard
	Ni	60	3431.1	1.8	**1.2837**	0.019	1.5	ug/L	312	Standard
	Cu	65	2145.8	3.1	**0.8026**	0.024	3.0	ug/L	233	Standard
	Zn	66	7467.2	1.3	**4.9712**	0.076	1.5	ug/L	606	Standard
>	**Ge**	72	631367.4	1.1				ug/L	641816	Standard
	As	75	1235.7	4.8	**0.9674**	0.052	5.4	ug/L	-21	Standard
	Se	82	464.6	3.5	**3.0245**	0.115	3.8	ug/L	23	Standard
	Se-1	77	1006.0	5.3	**9.9980**	0.474	4.7	ug/L	86	Standard
>	**Ga**	71	146.7	18.8				mg/L	152	Standard
	Rb	85	9938.3	2.3				ug/L	18	Standard
	Y	89	566158.6	1.6				ug/L	578199	Standard
>	**Rh**	103	121.7	19.4				ug/L	20	Standard
	Mo	98	487.4	4.2	**0.1452**	0.005	3.7	ug/L	19	Standard
	Ag	107	122.3	13.6	**0.0003**	0.002	613.3	ug/L	113	Standard
	Cd	111	47.2	7.7	**0.0170**	0.002	9.2	mg/L	3	Standard
	Cd	114	120.1	45.9	**0.0175**	0.009	50.7	ug/L	8	Standard
>	**In**	115	750396.9	0.8				ug/L	797687	Standard
	Sn	118	1238.4	10.4	**0.0889**	0.017	19.5	ug/L	620	Standard
	Sb	123	762.7	5.3	**0.1333**	0.008	5.7	ug/L	113	Standard
	Ba	135	212124.4	1.4	**91.5649**	0.760	0.8	ug/L	48	Standard
	Ce	140	610.0	8.7				ug/L	33	Standard
>	**Tb**	159	1151465.5	1.6				ug/L	1160331	Standard
	Ho	165	60.0	14.4				ug/L	5	Standard
	Tl	203	123.0	4.2	**0.0084**	0.000	4.6	ug/L	15	Standard
	Tl	205	110.0	19.8	**0.0055**	0.002	40.1	ug/L	15	Standard
	Pb	206	399.7	7.0	**0.0164**	0.005	30.5	ug/L	289	Standard
	Pb	207	335.7	2.8	**0.0111**	0.003	27.1	ug/L	250	Standard
	Pb	208	1484.0	2.1	**0.0122**	0.001	11.2	ug/L	1113	Standard
	U	238	723.0	2.4	**0.0851**	0.003	3.8	ug/L	3	Standard
>	**Bi**	209	633362.2	2.3				ug/L	670731	Standard

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Na	23	3.3	173.2	**-6.5349**	22.867	349.9	mg/L	0	Standard
Mg	24	181097.8	2.0	**162.7409**	6.446	4.0	mg/L	32	Standard
K	39	145.0	10.3	**0.3893**	0.042	10.9	mg/L	33	Standard
Ca	43	175.0	11.4	**7.4579**	1.071	14.4	mg/L	58	Standard
Fe	54	263.4	23.0	**0.0155**	0.034	221.5	mg/L	213	Standard
Fe	57	238.3	27.3	**0.2008**	0.148	73.6	mg/L	132	Standard
> **Sc-1**	45	58407.4	2.3				mg/L	56654	Standard
Cl	35	133054.6	2.6				ug/L	93221	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	90704.3	3.9				ug/L	2707	Standard
P	31	38756.2	1.4				ug/L	24082	Standard
S	34	4013.9	2.0				ug/L	3865	Standard
Sr	88	408.3	8.7				ug/L	43	Standard
C	12	576.7	10.0				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	47.3	61.5				mg/L	20	Standard
Ho-1	165	60.0	14.4				mg/L	5	Standard
Er	166	56.7	53.9				mg/L	10	Standard
I	127	703148.1	6.9				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.955	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.372	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.072
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.429
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606008802
Sample Date/Time: Monday, June 13, 2016 12:47:38
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	111332.7	2.3				ug/L	84319	Standard
	Be	9	18.3	56.8	**0.0018**	0.007	390.8	ug/L	7	Standard
	Al	27	36511284.7	0.3	**145.5985**	3.036	2.1	ug/L	1022	Standard
	Sc	45	59493.4	4.4				ug/L	56654	Standard
	Ti	47	1348.7	6.3	**3.2085**	0.313	9.8	ug/L	114	Standard
	V	51	4383.1	5.7	**0.2825**	0.018	6.3	ug/L	1609	Standard
	Cr	52	19222.2	0.5	**1.0793**	0.058	5.4	ug/L	8548	Standard
	Cr	53	12004.8	3.0	**9.4020**	0.553	5.9	ug/L	925	Standard
	Mn	55	150976.8	0.8	**19.3009**	0.436	2.3	ug/L	1051	Standard
	Co	59	5053.8	1.7	**0.5497**	0.023	4.1	ug/L	178	Standard
	Ni	60	3857.5	0.7	**1.4446**	0.034	2.4	ug/L	312	Standard
	Cu	65	2346.8	2.0	**0.8783**	0.022	2.5	ug/L	233	Standard
	Zn	66	8811.6	1.5	**5.9023**	0.181	3.1	ug/L	606	Standard
>	Ge	72	637402.2	2.6				ug/L	641816	Standard
	As	75	1777.7	7.0	**1.3547**	0.071	5.3	ug/L	-21	Standard
	Se	82	628.6	3.2	**4.1043**	0.072	1.7	ug/L	23	Standard
	Se-1	77	965.0	3.3	**9.4646**	0.461	4.9	ug/L	86	Standard
>	Ga	71	135.0	16.1				mg/L	152	Standard
	Rb	85	9714.8	2.3				ug/L	18	Standard
	Y	89	563598.0	0.9				ug/L	578199	Standard
>	Rh	103	131.7	41.7				ug/L	20	Standard
	Mo	98	660.8	4.2	**0.1965**	0.008	4.1	ug/L	19	Standard
	Ag	107	122.7	3.9	**-0.0000**	0.001	2511.2	ug/L	113	Standard
	Cd	111	57.1	4.4	**0.0204**	0.001	4.9	mg/L	3	Standard
	Cd	114	146.1	25.2	**0.0211**	0.006	27.4	ug/L	8	Standard
>	In	115	769968.5	0.5				ug/L	797687	Standard
	Sn	118	1203.4	9.8	**0.0795**	0.016	19.8	ug/L	620	Standard
	Sb	123	831.5	8.1	**0.1423**	0.012	8.2	ug/L	113	Standard
	Ba	135	179427.2	0.6	**75.4803**	0.534	0.7	ug/L	48	Standard
	Ce	140	730.0	12.8				ug/L	33	Standard
>	Tb	159	1176611.5	1.1				ug/L	1160331	Standard
	Ho	165	46.7	6.2				ug/L	5	Standard
	Tl	203	126.0	9.9	**0.0084**	0.001	15.3	ug/L	15	Standard
	Tl	205	116.7	13.8	**0.0059**	0.002	29.7	ug/L	15	Standard
	Pb	206	670.3	0.8	**0.0619**	0.001	1.9	ug/L	289	Standard
	Pb	207	580.0	3.7	**0.0565**	0.004	7.7	ug/L	250	Standard
	Pb	208	2530.7	1.4	**0.0562**	0.001	2.3	ug/L	1113	Standard
	U	238	1309.4	2.8	**0.1516**	0.005	3.0	ug/L	3	Standard
>	Bi	209	649460.7	0.2				ug/L	670731	Standard

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Na	23	1.7	173.2	**0.5205**	10.646	2045.4	mg/L	0	Standard
Mg	24	188917.2	1.0	**166.7371**	5.536	3.3	mg/L	32	Standard
K	39	111.7	20.7	**0.2637**	0.082	31.3	mg/L	33	Standard
Ca	43	155.0	32.3	**6.0917**	3.349	55.0	mg/L	58	Standard
Fe	54	270.4	8.3	**0.0170**	0.018	108.1	mg/L	213	Standard
Fe	57	195.0	11.2	**0.1005**	0.051	50.6	mg/L	132	Standard
Sc-1	45	59493.4	4.4				mg/L	56654	Standard
Cl	35	146877.2	0.7				ug/L	93221	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	125521.2	1.2				ug/L	2707	Standard
P	31	38112.9	2.4				ug/L	24082	Standard
S	34	3837.2	2.8				ug/L	3865	Standard
Sr	88	355.0	24.4				ug/L	43	Standard
C	12	463.3	4.5				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	51.1	79.1				mg/L	20	Standard
Ho-1	165	46.7	6.2				mg/L	5	Standard
Er	166	46.7	68.9				mg/L	10	Standard
I	127	828159.0	7.3				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		132.037	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.312	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.525
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.829
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606008802PS WG572083-03
Sample Date/Time: Monday, June 13, 2016 12:50:49
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	112126.7	0.5				ug/L	84319	Standard
	Be	9	78266.6	0.6	**50.2950**	0.088	0.2	ug/L	7	Standard
	Al	27	36592388.6	0.7	**144.8476**	1.578	1.1	ug/L	1022	Standard
	Sc	45	58114.6	1.7				ug/L	56654	Standard
	Ti	47	1292.4	1.2	**3.2149**	0.057	1.8	ug/L	114	Standard
	V	51	508926.3	0.4	**54.4967**	1.056	1.9	ug/L	1609	Standard
	Cr	52	503964.0	0.9	**53.0558**	0.620	1.2	ug/L	8548	Standard
	Cr	53	70029.8	0.6	**61.2473**	1.192	1.9	ug/L	925	Standard
	Mn	55	552522.1	1.5	**74.3769**	2.248	3.0	ug/L	1051	Standard
	Co	59	471322.0	0.6	**55.7274**	1.193	2.1	ug/L	178	Standard
	Ni	60	123626.7	0.6	**52.6166**	0.789	1.5	ug/L	312	Standard
	Cu	65	120220.7	0.4	**52.5334**	0.923	1.8	ug/L	233	Standard
	Zn	66	77862.6	0.8	**58.9479**	0.616	1.0	ug/L	606	Standard
>	**Ge**	72	608768.1	1.5				ug/L	641816	Standard
	As	75	72064.7	0.6	**55.2926**	0.972	1.8	ug/L	-21	Standard
	Se	82	8263.6	0.6	**58.4277**	1.042	1.8	ug/L	23	Standard
	Se-1	77	5793.4	2.4	**64.0551**	0.633	1.0	ug/L	86	Standard
>	**Ga**	71	165.0	5.2				mg/L	152	Standard
	Rb	85	9793.2	4.1				ug/L	18	Standard
	Y	89	582382.8	1.3				ug/L	578199	Standard
>	**Rh**	103	146.7	20.5				ug/L	20	Standard
	Mo	98	693.9	5.4	**0.2012**	0.010	5.2	ug/L	19	Standard
	Ag	107	394611.6	1.7	**46.9492**	0.621	1.3	ug/L	113	Standard
	Cd	111	131027.6	0.5	**49.6919**	0.495	1.0	mg/L	3	Standard
	Cd	114	324035.1	0.8	**49.6944**	0.669	1.3	ug/L	8	Standard
>	**In**	115	790801.9	0.6				ug/L	797687	Standard
	Sn	118	1458.4	3.4	**0.1098**	0.006	5.7	ug/L	620	Standard
	Sb	123	290215.0	1.1	**51.7858**	0.562	1.1	ug/L	113	Standard
	Ba	135	303537.9	1.1	**124.3470**	1.847	1.5	ug/L	48	Standard
	Ce	140	626.7	13.2				ug/L	33	Standard
>	**Tb**	159	1191836.2	1.7				ug/L	1160331	Standard
	Ho	165	50.0	52.9				ug/L	5	Standard
	Tl	203	510640.9	0.7	**51.9191**	0.783	1.5	ug/L	15	Standard
	Tl	205	484948.9	0.8	**52.9673**	1.057	2.0	ug/L	15	Standard
	Pb	206	310138.4	0.5	**54.1240**	0.888	1.6	ug/L	289	Standard
	Pb	207	268968.4	0.3	**51.7558**	0.750	1.4	ug/L	250	Standard
	Pb	208	1190321.6	1.3	**51.9033**	1.231	2.4	ug/L	1113	Standard
	U	238	465562.1	1.7	**54.5789**	1.520	2.8	ug/L	3	Standard
>	**Bi**	209	648967.3	1.1				ug/L	670731	Standard

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Na	23	1.7	173.2	**-0.0137**	11.572	84498.2	mg/L	0	Standard
Mg	24	188834.5	0.9	**170.4996**	4.081	2.4	mg/L	32	Standard
K	39	116.7	26.2	**0.2895**	0.102	35.3	mg/L	33	Standard
Ca	43	105.0	9.5	**3.1299**	0.700	22.4	mg/L	58	Standard
Fe	54	297.0	15.4	**0.0346**	0.025	72.1	mg/L	213	Standard
Fe	57	225.0	20.4	**0.1719**	0.089	51.5	mg/L	132	Standard
> **Sc-1**	45	58114.6	1.7				mg/L	56654	Standard
Cl	35	150715.3	1.2				ug/L	93221	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	125551.9	3.8				ug/L	2707	Standard
P	31	39299.2	1.0				ug/L	24082	Standard
S	34	4078.9	2.7				ug/L	3865	Standard
Sr	88	415.0	9.9				ug/L	43	Standard
C	12	510.0	31.1				mg/L	103	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	46.8	58.7				mg/L	20	Standard
Ho-1	165	50.0	52.9				mg/L	5	Standard
Er	166	66.7	56.8				mg/L	10	Standard
I	127	858238.4	6.3				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.979	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.851	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.137
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.755
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606008802SDL WG572083-04
Sample Date/Time: Monday, June 13, 2016 12:54:01
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	108040.5	0.8				ug/L	84319	Standard
	Be	9	26.7	10.8	**0.0076**	0.002	23.7	ug/L	7	Standard
	Al	27	7425581.1	0.7	**30.4964**	0.140	0.5	ug/L	1022	Standard
	Sc	45	56809.6	0.9				ug/L	56654	Standard
	Ti	47	292.3	5.1	**0.4868**	0.032	6.5	ug/L	114	Standard
	V	51	2678.0	3.6	**0.1048**	0.013	12.7	ug/L	1609	Standard
	Cr	52	12281.6	0.7	**0.3552**	0.026	7.3	ug/L	8548	Standard
	Cr	53	3913.8	5.6	**2.5149**	0.162	6.5	ug/L	925	Standard
	Mn	55	32391.9	0.5	**3.9757**	0.062	1.5	ug/L	1051	Standard
	Co	59	1273.7	2.4	**0.1208**	0.004	3.5	ug/L	178	Standard
	Ni	60	996.7	2.0	**0.2740**	0.006	2.3	ug/L	312	Standard
	Cu	65	808.4	3.4	**0.2312**	0.015	6.6	ug/L	233	Standard
	Zn	66	3226.0	3.1	**1.7999**	0.104	5.8	ug/L	606	Standard
>	**Ge**	72	644555.7	1.4				ug/L	641816	Standard
	As	75	331.5	11.6	**0.2937**	0.025	8.3	ug/L	-21	Standard
	Se	82	161.3	3.8	**0.9286**	0.041	4.4	ug/L	23	Standard
	Se-1	77	272.0	8.1	**2.0092**	0.243	12.1	ug/L	86	Standard
>	**Ga**	71	118.3	28.1				mg/L	152	Standard
	Rb	85	2055.1	0.6				ug/L	18	Standard
	Y	89	605278.9	1.8				ug/L	578199	Standard
>	**Rh**	103	31.7	59.8				ug/L	20	Standard
	Mo	98	148.8	2.1	**0.0306**	0.002	6.2	ug/L	19	Standard
	Ag	107	325.0	8.5	**0.0228**	0.003	12.4	ug/L	113	Standard
	Cd	111	32.7	40.4	**0.0103**	0.005	50.6	mg/L	3	Standard
	Cd	114	95.8	47.8	**0.0125**	0.007	55.6	ug/L	8	Standard
>	**In**	115	809401.5	2.4				ug/L	797687	Standard
	Sn	118	778.4	3.9	**0.0149**	0.006	38.8	ug/L	620	Standard
	Sb	123	2864.4	19.6	**0.4911**	0.109	22.2	ug/L	113	Standard
	Ba	135	37185.3	2.1	**14.8606**	0.056	0.4	ug/L	48	Standard
	Ce	140	120.0	14.4				ug/L	33	Standard
>	**Tb**	159	1202927.6	1.4				ug/L	1160331	Standard
	Ho	165	20.0	0.0				ug/L	5	Standard
	Tl	203	217.7	22.0	**0.0169**	0.005	28.5	ug/L	15	Standard
	Tl	205	215.0	26.4	**0.0157**	0.006	37.2	ug/L	15	Standard
	Pb	206	490.7	4.7	**0.0271**	0.004	16.1	ug/L	289	Standard
	Pb	207	407.3	6.1	**0.0201**	0.005	25.1	ug/L	250	Standard
	Pb	208	1791.4	6.7	**0.0209**	0.005	26.3	ug/L	1113	Standard
	U	238	350.3	9.4	**0.0376**	0.004	10.5	ug/L	3	Standard
>	**Bi**	209	676259.7	0.6				ug/L	670731	Standard

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Na	23	1.7	173.2	**0.0044**	11.54(261	296.2	mg/L	0	Standard
Mg	24	37478.0	1.0	**34.5836**	0.545	1.6	mg/L	32	Standard
K	39	53.3	23.6	**0.0671**	0.045	67.1	mg/L	33	Standard
Ca	43	65.0	46.2	**0.7063**	1.945	275.4	mg/L	58	Standard
Fe	54	258.7	8.6	**0.0167**	0.011	67.7	mg/L	213	Standard
Fe	57	153.3	18.5	**0.0287**	0.063	221.1	mg/L	132	Standard
> **Sc-1**	45	56809.6	0.9				mg/L	56654	Standard
Cl	35	133779.7	2.9				ug/L	93221	Standard
Kr	83	1.3	86.6				ug/L	1	Standard
Br	81	28707.2	3.1				ug/L	2707	Standard
P	31	31299.0	5.8				ug/L	24082	Standard
S	34	4278.9	3.2				ug/L	3865	Standard
Sr	88	126.7	23.1				ug/L	43	Standard
C	12	223.3	21.2				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	25.9	93.0				mg/L	20	Standard
Ho-1	165	20.0	0.0				mg/L	5	Standard
Er	166	16.7	124.9				mg/L	10	Standard
I	127	192431.3	2.1				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.133	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.427	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	101.469
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.824
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 15, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, June 13, 2016 12:57:14
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	101438.6	2.8				ug/L	84319	Standard
	Be	9	72503.2	3.5	**51.5023**	1.173	2.3	ug/L	7	Standard
	Al	27	10255791.6	0.8	**44.8837**	1.013	2.3	ug/L	1022	Standard
	Sc	45	56844.8	3.0				ug/L	56654	Standard
	Ti	47	40589.0	0.2	**101.3717**	1.063	1.0	ug/L	114	Standard
	V	51	514228.4	1.5	**51.3556**	1.215	2.4	ug/L	1609	Standard
	Cr	52	511130.5	0.5	**50.1503**	0.772	1.5	ug/L	8548	Standard
	Cr	53	62289.5	1.5	**50.6866**	1.042	2.1	ug/L	925	Standard
	Mn	55	417238.2	0.2	**52.3394**	0.680	1.3	ug/L	1051	Standard
	Co	59	488794.0	1.0	**53.9056**	0.882	1.6	ug/L	178	Standard
	Ni	60	128056.9	0.8	**50.8369**	0.840	1.7	ug/L	312	Standard
	Cu	65	124690.0	1.0	**50.8198**	0.762	1.5	ug/L	233	Standard
	Zn	66	71730.7	0.1	**50.5843**	0.532	1.1	ug/L	606	Standard
>	**Ge**	72	652585.5	1.2				ug/L	641816	Standard
	As	75	70845.0	1.1	**50.7089**	0.928	1.8	ug/L	-21	Standard
	Se	82	7771.8	1.0	**51.2413**	1.070	2.1	ug/L	23	Standard
	Se-1	77	5110.5	0.2	**52.5643**	0.528	1.0	ug/L	86	Standard
>	**Ga**	71	113.3	5.1				mg/L	152	Standard
	Rb	85	1105.0	9.5				ug/L	18	Standard
	Y	89	596668.7	1.7				ug/L	578199	Standard
>	**Rh**	103	33.3	31.2				ug/L	20	Standard
	Mo	98	348758.8	0.9	**104.3451**	2.409	2.3	ug/L	19	Standard
	Ag	107	445344.2	0.2	**50.9711**	1.314	2.6	ug/L	113	Standard
	Cd	111	138186.1	1.4	**50.4000**	0.820	1.6	mg/L	3	Standard
	Cd	114	337557.1	0.7	**49.7897**	0.988	2.0	ug/L	8	Standard
>	**In**	115	822475.3	2.7				ug/L	797687	Standard
	Sn	118	397402.5	2.2	**51.8923**	0.774	1.5	ug/L	620	Standard
	Sb	123	297300.4	0.8	**51.0238**	0.961	1.9	ug/L	113	Standard
	Ba	135	125221.0	1.3	**49.3181**	0.814	1.7	ug/L	48	Standard
	Ce	140	90.0	19.2				ug/L	33	Standard
>	**Tb**	159	1200158.4	3.0				ug/L	1160331	Standard
	Ho	165	16.7	86.6				ug/L	5	Standard
	Tl	203	530633.7	0.2	**50.8173**	0.431	0.8	ug/L	15	Standard
	Tl	205	506228.9	1.4	**52.0750**	0.677	1.3	ug/L	15	Standard
	Pb	206	316810.3	0.7	**52.0722**	0.393	0.8	ug/L	289	Standard
	Pb	207	287476.7	0.8	**52.1018**	0.298	0.6	ug/L	250	Standard
	Pb	208	1262223.2	0.3	**51.8380**	0.557	1.1	ug/L	1113	Standard
	U	238	470975.4	0.4	**51.9997**	0.364	0.7	ug/L	3	Standard
>	**Bi**	209	688966.5	1.1				ug/L	670731	Standard

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Na	23	3.3	86.6	**-6.6116**	11.505	174.0	mg/L	0	Standard
Mg	24	5831.1	6.0	**5.3464**	0.180	3.4	mg/L	32	Standard
K	39	1101.7	5.9	**3.9214**	0.194	4.9	mg/L	33	Standard
Ca	43	96.7	24.4	**2.7299**	1.464	53.6	mg/L	58	Standard
Fe	54	8527.6	1.5	**4.6816**	0.102	2.2	mg/L	213	Standard
Fe	57	2298.5	4.9	**4.6853**	0.384	8.2	mg/L	132	Standard
> **Sc-1**	45	56844.8	3.0				mg/L	56654	Standard
Cl	35	121876.5	2.8				ug/L	93221	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	3663.8	1.8				ug/L	2707	Standard
P	31	28775.6	2.2				ug/L	24082	Standard
S	34	4440.7	1.9				ug/L	3865	Standard
Sr	88	68.3	30.5				ug/L	43	Standard
C	12	150.0	29.1				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	18.9	107.2				mg/L	20	Standard
Ho-1	165	16.7	86.6				mg/L	5	Standard
Er	166	23.3	24.7				mg/L	10	Standard
I	127	11499.5	24.1				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	103.005		
Al	27	89.767		
Sc	45			
Ti	47	101.372		
V	51	102.711		
Cr	52	100.301		
Cr	53			
Mn	55	104.679		
Co	59	107.811		
Ni	60	101.674		
Cu	65	101.640		
Zn	66	101.169		
> Ge	72		101.678	
As	75	101.418		
Se	82	102.483		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	104.345		
Ag	107	101.942		
Cd	111	100.800		
Cd	114			
In	115		103.107	
Sn	118	103.785		
Sb	123	102.048		
Ba	135	98.636		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.635		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.676		
U	238	103.999		
Bi	209		102.719	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Approved: June 15, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, June 13, 2016 13:00:25
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	97896.9	0.8				ug/L	84319	Standard
	Be	9	43.3	17.6	**0.0218**	0.006	26.9	ug/L	7	Standard
	Al	27	4687.6	65.7	**0.0111**	0.014	126.2	ug/L	1022	Standard
	Sc	45	57587.6	2.4				ug/L	56654	Standard
	Ti	47	72.3	3.5	**-0.0793**	0.006	8.0	ug/L	114	Standard
	V	51	1766.6	4.0	**0.0038**	0.005	139.3	ug/L	1609	Standard
	Cr	52	9151.8	1.2	**-0.0048**	0.001	29.3	ug/L	8548	Standard
	Cr	53	955.0	4.2	**0.0041**	0.029	696.5	ug/L	925	Standard
	Mn	55	980.4	4.5	**-0.0312**	0.004	14.2	ug/L	1051	Standard
	Co	59	254.3	28.7	**0.0056**	0.008	137.5	ug/L	178	Standard
	Ni	60	203.0	4.3	**-0.0496**	0.003	6.1	ug/L	312	Standard
	Cu	65	252.0	6.0	**-0.0038**	0.006	160.5	ug/L	233	Standard
	Zn	66	442.7	5.2	**-0.2239**	0.013	5.8	ug/L	606	Standard
>	**Ge**	72	676275.4	1.0				ug/L	641816	Standard
	As	75	-66.8	63.8	**0.0081**	0.029	359.5	ug/L	-21	Standard
	Se	82	25.9	26.2	**0.0148**	0.044	296.2	ug/L	23	Standard
	Se-1	77	93.3	11.8	**0.0715**	0.118	165.4	ug/L	86	Standard
>	**Ga**	71	80.0	6.3				mg/L	152	Standard
	Rb	85	26.7	21.7				ug/L	18	Standard
	Y	89	578144.7	4.3				ug/L	578199	Standard
>	**Rh**	103	23.3	53.9				ug/L	20	Standard
	Mo	98	236.0	17.3	**0.0573**	0.012	21.4	ug/L	19	Standard
	Ag	107	190.0	22.2	**0.0071**	0.005	67.6	ug/L	113	Standard
	Cd	111	21.9	74.5	**0.0062**	0.006	96.8	mg/L	3	Standard
	Cd	114	53.9	42.6	**0.0062**	0.003	55.4	ug/L	8	Standard
>	**In**	115	807268.0	0.8				ug/L	797687	Standard
	Sn	118	1160.0	15.8	**0.0660**	0.025	37.2	ug/L	620	Standard
	Sb	123	833.8	27.8	**0.1356**	0.040	29.6	ug/L	113	Standard
	Ba	135	59.0	29.4	**-0.0022**	0.007	310.7	ug/L	48	Standard
	Ce	140	28.3	27.0				ug/L	33	Standard
>	**Tb**	159	1178675.3	0.9				ug/L	1160331	Standard
	Ho	165	18.3	63.0				ug/L	5	Standard
	Tl	203	103.7	61.3	**0.0054**	0.006	113.6	ug/L	15	Standard
	Tl	205	90.0	48.1	**0.0023**	0.004	197.4	ug/L	15	Standard
	Pb	206	345.7	11.7	**0.0006**	0.007	1306.6	ug/L	289	Standard
	Pb	207	303.7	9.3	**-0.0013**	0.006	457.3	ug/L	250	Standard
	Pb	208	1345.4	9.8	**-0.0000**	0.006	18195.4	ug/L	1113	Standard
	U	238	78.3	77.2	**0.0067**	0.007	99.0	ug/L	3	Standard
>	**Bi**	209	704643.6	1.4				ug/L	670731	Standard

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Na	23	0.0		**6.6672**	0.000	0.0	mg/L	0	Standard
Mg	24	36.7	61.5	**0.0004**	0.020	4994.9	mg/L	32	Standard
K	39	31.7	18.2	**-0.0137**	0.023	167.2	mg/L	33	Standard
Ca	43	45.0	33.3	**-0.6144**	0.964	156.9	mg/L	58	Standard
Fe	54	225.5	11.5	**-0.0037**	0.013	343.3	mg/L	213	Standard
Fe	57	128.3	18.4	**-0.0286**	0.058	201.8	mg/L	132	Standard
Sc-1	45	57587.6	2.4				mg/L	56654	Standard
Cl	35	118667.7	2.2				ug/L	93221	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	2920.3	2.7				ug/L	2707	Standard
P	31	29009.4	1.8				ug/L	24082	Standard
S	34	4557.4	1.8				ug/L	3865	Standard
Sr	88	58.3	27.6				ug/L	43	Standard
C	12	123.3	36.6				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	18.9	141.6				mg/L	20	Standard
Ho-1	165	18.3	63.0				mg/L	5	Standard
Er	166	23.3	65.5				mg/L	10	Standard
I	127	6938.3	4.8				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		105.369	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.201
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.056
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW 45 WG572187-02
Sample Date/Time: Monday, June 13, 2016 13:03:39
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	95327.5	3.1				ug/L	84319	Standard
	Be	9	25.0	40.0	**0.0088**	0.008	88.9	ug/L	7	Standard
	Al	27	20086.7	7.9	**0.0833**	0.004	5.3	ug/L	1022	Standard
	Sc	45	57549.1	2.1				ug/L	56654	Standard
	Ti	47	78.7	0.7	**-0.0602**	0.003	5.7	ug/L	114	Standard
	V	51	1803.6	8.7	**0.0110**	0.017	155.9	ug/L	1609	Standard
	Cr	52	10531.3	0.3	**0.1481**	0.014	9.6	ug/L	8548	Standard
	Cr	53	1093.4	4.9	**0.1316**	0.045	34.2	ug/L	925	Standard
	Mn	55	2613.9	1.2	**0.1733**	0.003	1.8	ug/L	1051	Standard
	Co	59	241.7	13.2	**0.0047**	0.003	67.0	ug/L	178	Standard
	Ni	60	318.3	4.6	**-0.0029**	0.006	191.3	ug/L	312	Standard
	Cu	65	368.0	4.8	**0.0447**	0.005	12.1	ug/L	233	Standard
	Zn	66	2082.1	6.3	**0.9313**	0.086	9.3	ug/L	606	Standard
>	**Ge**	72	663249.4	1.2				ug/L	641816	Standard
	As	75	-42.9	35.2	**0.0237**	0.011	46.6	ug/L	-21	Standard
	Se	82	31.6	10.0	**0.0548**	0.020	36.8	ug/L	23	Standard
	Se-1	77	95.7	13.9	**0.1125**	0.127	113.1	ug/L	86	Standard
>	**Ga**	71	90.0	20.0				mg/L	152	Standard
	Rb	85	151.7	10.1				ug/L	18	Standard
	Y	89	605883.5	3.0				ug/L	578199	Standard
>	**Rh**	103	36.7	51.6				ug/L	20	Standard
	Mo	98	95.6	4.7	**0.0138**	0.001	7.5	ug/L	19	Standard
	Ag	107	127.7	15.1	**-0.0005**	0.002	418.5	ug/L	113	Standard
	Cd	111	10.5	19.7	**0.0019**	0.001	39.6	mg/L	3	Standard
	Cd	114	24.2	74.6	**0.0017**	0.003	159.6	ug/L	8	Standard
>	**In**	115	827223.5	2.3				ug/L	797687	Standard
	Sn	118	1645.1	6.1	**0.1256**	0.018	14.2	ug/L	620	Standard
	Sb	123	367.3	34.9	**0.0529**	0.023	43.9	ug/L	113	Standard
	Ba	135	323.7	10.2	**0.1011**	0.015	14.8	ug/L	48	Standard
	Ce	140	156.7	25.8				ug/L	33	Standard
>	**Tb**	159	1194142.1	1.8				ug/L	1160331	Standard
	Ho	165	10.0					ug/L	5	Standard
	Tl	203	52.3	30.7	**0.0006**	0.001	257.0	ug/L	15	Standard
	Tl	205	78.3	7.4	**0.0012**	0.001	54.2	ug/L	15	Standard
	Pb	206	366.7	4.5	**0.0048**	0.003	58.6	ug/L	289	Standard
	Pb	207	318.7	5.9	**0.0022**	0.003	135.9	ug/L	250	Standard
	Pb	208	1390.7	6.1	**0.0026**	0.003	111.2	ug/L	1113	Standard
	U	238	25.7	23.8	**0.0010**	0.001	62.7	ug/L	3	Standard
>	**Bi**	209	693694.9	1.3				ug/L	670731	Standard

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Na	23	0.0		**6.6672**	0.000	0.0	mg/L	0	Standard
Mg	24	66.7	11.5	**0.0280**	0.007	25.1	mg/L	32	Standard
K	39	23.3	75.3	**-0.0448**	0.062	139.0	mg/L	33	Standard
Ca	43	41.7	45.4	**-0.8432**	1.165	138.2	mg/L	58	Standard
Fe	54	204.0	15.4	**-0.0158**	0.015	96.8	mg/L	213	Standard
Fe	57	128.3	15.7	**-0.0289**	0.047	161.1	mg/L	132	Standard
Sc-1	45	57549.1	2.1				mg/L	56654	Standard
Cl	35	120402.6	1.9				ug/L	93221	Standard
Kr	83	4.3	58.1				ug/L	1	Standard
Br	81	3603.8	1.6				ug/L	2707	Standard
P	31	28082.7	4.5				ug/L	24082	Standard
S	34	4313.9	2.6				ug/L	3865	Standard
Sr	88	61.7	9.4				ug/L	43	Standard
C	12	146.7	41.1				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.2	96.3				mg/L	20	Standard
Ho-1	165	10.0					mg/L	5	Standard
Er	166	10.0	100.0				mg/L	10	Standard
I	127	5821.1	4.5				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		113.056	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.340	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: PBW 45 WG572187-02
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.703
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.424
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 15, 2016

Method 6020 - Summary Report

Sample ID: LCSW 45 WG572187-03
Sample Date/Time: Monday, June 13, 2016 13:06:50
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	95230.0	1.1				ug/L	84319	Standard
	Be	9	71129.9	0.7	**53.8248**	0.753	1.4	ug/L	7	Standard
	Al	27	21637.6	21.1	**0.0906**	0.020	22.3	ug/L	1022	Standard
	Sc	45	57749.9	0.7				ug/L	56654	Standard
	Ti	47	108.0	25.2	**0.0040**	0.064	1600.3	ug/L	114	Standard
	V	51	534088.6	1.2	**50.9189**	0.524	1.0	ug/L	1609	Standard
	Cr	52	535925.0	0.7	**50.2058**	0.776	1.5	ug/L	8548	Standard
	Cr	53	64871.9	1.8	**50.4019**	1.480	2.9	ug/L	925	Standard
	Mn	55	433541.1	0.9	**51.9251**	0.940	1.8	ug/L	1051	Standard
	Co	59	498906.8	1.3	**52.5304**	0.818	1.6	ug/L	178	Standard
	Ni	60	134458.0	0.6	**50.9651**	0.854	1.7	ug/L	312	Standard
	Cu	65	132530.1	0.8	**51.5769**	0.966	1.9	ug/L	233	Standard
	Zn	66	77392.8	0.3	**52.1239**	0.394	0.8	ug/L	606	Standard
>	**Ge**	72	683491.4	1.1				ug/L	641816	Standard
	As	75	73439.9	0.7	**50.1872**	0.587	1.2	ug/L	-21	Standard
	Se	82	7964.2	1.1	**50.1309**	1.000	2.0	ug/L	23	Standard
	Se-1	77	5299.3	2.8	**52.0349**	1.737	3.3	ug/L	86	Standard
>	**Ga**	71	105.0	9.5				mg/L	152	Standard
	Rb	85	106.7	13.5				ug/L	18	Standard
	Y	89	599999.8	1.7				ug/L	578199	Standard
>	**Rh**	103	60.0	30.0				ug/L	20	Standard
	Mo	98	88.0	8.4	**0.0117**	0.002	20.9	ug/L	19	Standard
	Ag	107	469938.6	0.9	**53.7214**	0.912	1.7	ug/L	113	Standard
	Cd	111	141237.8	0.7	**51.4654**	1.190	2.3	mg/L	3	Standard
	Cd	114	345934.8	1.7	**50.9666**	0.962	1.9	ug/L	8	Standard
>	**In**	115	823255.6	1.9				ug/L	797687	Standard
	Sn	118	1610.1	5.7	**0.1220**	0.016	13.2	ug/L	620	Standard
	Sb	123	301523.5	1.1	**51.6885**	0.505	1.0	ug/L	113	Standard
	Ba	135	130049.4	1.0	**51.1697**	1.004	2.0	ug/L	48	Standard
	Ce	140	140.0	21.7				ug/L	33	Standard
>	**Tb**	159	1197220.6	1.9				ug/L	1160331	Standard
	Ho	165	8.3	69.3				ug/L	5	Standard
	Tl	203	549655.9	0.5	**51.3749**	0.879	1.7	ug/L	15	Standard
	Tl	205	517709.2	2.3	**51.9889**	1.945	3.7	ug/L	15	Standard
	Pb	206	336325.1	1.1	**53.9535**	0.937	1.7	ug/L	289	Standard
	Pb	207	293419.8	1.3	**51.8985**	0.605	1.2	ug/L	250	Standard
	Pb	208	1287226.4	0.3	**51.5949**	0.903	1.7	ug/L	1113	Standard
	U	238	472176.2	0.3	**50.8814**	0.887	1.7	ug/L	3	Standard
>	**Bi**	209	705989.3	1.5				ug/L	670731	Standard

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Na	23	0.0		**6.6672**	0.000	0.0	mg/L	0	Standard
Mg	24	58.3	4.9	**0.0202**	0.003	13.5	mg/L	32	Standard
K	39	16.7	75.5	**-0.0684**	0.046	67.3	mg/L	33	Standard
Ca	43	41.7	36.7	**-0.8351**	0.983	117.7	mg/L	58	Standard
Fe	54	180.2	14.4	**-0.0292**	0.014	48.8	mg/L	213	Standard
Fe	57	116.7	39.6	**-0.0548**	0.101	183.8	mg/L	132	Standard
Sc-1	45	57749.9	0.7				mg/L	56654	Standard
Cl	35	118632.1	2.3				ug/L	93221	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	3133.7	5.1				ug/L	2707	Standard
P	31	27758.8	2.8				ug/L	24082	Standard
S	34	4382.3	3.4				ug/L	3865	Standard
Sr	88	66.7	24.1				ug/L	43	Standard
C	12	193.3	3.0				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	6.0	100.7				mg/L	20	Standard
Ho-1	165	8.3	69.3				mg/L	5	Standard
Er	166	13.3	86.6				mg/L	10	Standard
I	127	4390.6	4.5				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.940	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.493	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.205
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.257
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606043801
Sample Date/Time: Monday, June 13, 2016 13:10:01
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	110080.1	1.0				ug/L	84319	Standard
	Be	9	1441.7	4.4	**0.9335**	0.032	3.4	ug/L	7	Standard
	Al	27	10649163.2	3.4	**42.9223**	1.026	2.4	ug/L	1022	Standard
	Sc	45	81790.2	0.8				ug/L	56654	Standard
	Ti	47	92496.5	1.9	**224.0952**	7.919	3.5	ug/L	114	Standard
	V	51	328554.5	1.4	**31.7140**	0.693	2.2	ug/L	1609	Standard
	Cr	52	244119.7	1.1	**22.7235**	0.604	2.7	ug/L	8548	Standard
	Cr	53	30353.7	0.6	**23.5209**	0.291	1.2	ug/L	925	Standard
	Mn	55	5389171.8	1.0	**656.5483**	17.388	2.6	ug/L	1051	Standard
	Co	59	98183.8	0.7	**10.4695**	0.163	1.6	ug/L	178	Standard
	Ni	60	58746.0	0.9	**22.5161**	0.426	1.9	ug/L	312	Standard
	Cu	65	63150.0	0.9	**24.8734**	0.221	0.9	ug/L	233	Standard
	Zn	66	179998.2	0.7	**123.6942**	2.037	1.6	ug/L	606	Standard
>	**Ge**	72	673848.8	1.6				ug/L	641816	Standard
	As	75	9931.9	0.8	**6.9312**	0.079	1.1	ug/L	-21	Standard
	Se	82	115.3	6.4	**0.5880**	0.054	9.1	ug/L	23	Standard
	Se-1	77	230.0	5.4	**1.4594**	0.153	10.5	ug/L	86	Standard
>	**Ga**	71	39103.7	0.6				mg/L	152	Standard
	Rb	85	556526.3	2.7				ug/L	18	Standard
	Y	89	797002.6	0.9				ug/L	578199	Standard
>	**Rh**	103	88.3	14.2				ug/L	20	Standard
	Mo	98	18963.9	2.6	**5.6444**	0.153	2.7	ug/L	19	Standard
	Ag	107	571.7	0.3	**0.0503**	0.000	0.3	ug/L	113	Standard
	Cd	111	690.6	3.4	**0.2493**	0.008	3.3	mg/L	3	Standard
	Cd	114	1803.8	7.0	**0.2635**	0.019	7.3	ug/L	8	Standard
>	**In**	115	824435.1	0.3				ug/L	797687	Standard
	Sn	118	11791.3	2.6	**1.4498**	0.040	2.8	ug/L	620	Standard
	Sb	123	5389.7	11.7	**0.9125**	0.108	11.8	ug/L	113	Standard
	Ba	135	393319.1	1.8	**154.5535**	2.770	1.8	ug/L	48	Standard
	Ce	140	1076739.8	2.3				ug/L	33	Standard
>	**Tb**	159	1247422.7	0.6				ug/L	1160331	Standard
	Ho	165	15177.6	2.1				ug/L	5	Standard
	Tl	203	3102.0	0.7	**0.2899**	0.003	1.0	ug/L	15	Standard
	Tl	205	2928.6	6.9	**0.2917**	0.022	7.5	ug/L	15	Standard
	Pb	206	197214.9	0.4	**32.0906**	0.244	0.8	ug/L	289	Standard
	Pb	207	161734.7	0.8	**29.0147**	0.357	1.2	ug/L	250	Standard
	Pb	208	732070.6	1.7	**29.7618**	0.682	2.3	ug/L	1113	Standard
	U	238	8856.6	2.6	**0.9670**	0.030	3.1	ug/L	3	Standard
>	**Bi**	209	695462.4	0.6				ug/L	670731	Standard

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Na	23	5.0	0.0	**-7.3596**	0.112	1.5	mg/L	0	Standard
Mg	24	22124.5	0.8	**14.1611**	0.217	1.5	mg/L	32	Standard
K	39	1278.4	3.3	**3.1378**	0.101	3.2	mg/L	33	Standard
Ca	43	286.7	11.6	**9.3195**	1.397	15.0	mg/L	58	Standard
Fe	54	31077.3	2.3	**12.0508**	0.218	1.8	mg/L	213	Standard
Fe	57	8115.5	2.8	**11.9234**	0.421	3.5	mg/L	132	Standard
Sc-1	45	81790.2	0.8				mg/L	56654	Standard
Cl	35	120480.6	1.9				ug/L	93221	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	6871.6	0.9				ug/L	2707	Standard
P	31	75052.1	0.4				ug/L	24082	Standard
S	34	3557.1	4.3				ug/L	3865	Standard
Sr	88	308.3	8.9				ug/L	43	Standard
C	12	426.7	11.6				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	63.3	9.1				mg/L	0	Standard
Dy	164	26554.5	4.3				mg/L	20	Standard
Ho-1	165	15177.6	2.1				mg/L	5	Standard
Er	166	13986.5	4.0				mg/L	10	Standard
I	127	30953.3	4.6				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		130.552	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		104.991	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.353
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.687
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	

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Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606052101 WG572187-01
Sample Date/Time: Monday, June 13, 2016 13:13:13
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	106305.1	2.7				ug/L	84319	Standard
	Be	9	46.7	37.6	**0.0214**	0.012	54.9	ug/L	7	Standard
	Al	27	8564606.4	0.9	**35.7609**	0.620	1.7	ug/L	1022	Standard
	Sc	45	59101.8	2.9				ug/L	56654	Standard
	Ti	47	374.3	17.5	**0.6538**	0.154	23.5	ug/L	114	Standard
	V	51	6851.2	4.0	**0.4984**	0.029	5.8	ug/L	1609	Standard
	Cr	52	12168.2	1.0	**0.2910**	0.005	1.7	ug/L	8548	Standard
	Cr	53	2008.5	3.8	**0.8510**	0.069	8.1	ug/L	925	Standard
	Mn	55	112440.7	0.8	**13.5596**	0.165	1.2	ug/L	1051	Standard
	Co	59	1148.7	13.9	**0.1014**	0.018	17.3	ug/L	178	Standard
	Ni	60	2388.5	4.2	**0.7938**	0.040	5.1	ug/L	312	Standard
	Cu	65	2148.5	1.3	**0.7473**	0.015	2.1	ug/L	233	Standard
	Zn	66	4971.8	0.2	**2.9055**	0.026	0.9	ug/L	606	Standard
>	**Ge**	72	673274.8	0.6				ug/L	641816	Standard
	As	75	1463.8	4.5	**1.0685**	0.050	4.7	ug/L	-21	Standard
	Se	82	79.4	20.7	**0.3580**	0.106	29.7	ug/L	23	Standard
	Se-1	77	161.7	1.8	**0.7677**	0.035	4.6	ug/L	86	Standard
>	**Ga**	71	313.3	24.2				mg/L	152	Standard
	Rb	85	9324.5	3.0				ug/L	18	Standard
	Y	89	622233.2	0.5				ug/L	578199	Standard
>	**Rh**	103	60.0	8.3				ug/L	20	Standard
	Mo	98	2190.0	1.5	**0.6199**	0.014	2.2	ug/L	19	Standard
	Ag	107	293.7	95.7	**0.0176**	0.031	177.9	ug/L	113	Standard
	Cd	111	114.0	117.7	**0.0385**	0.048	123.8	mg/L	3	Standard
	Cd	114	284.2	116.6	**0.0388**	0.048	122.6	ug/L	8	Standard
>	**In**	115	849170.2	0.7				ug/L	797687	Standard
	Sn	118	1646.8	22.3	**0.1202**	0.048	39.8	ug/L	620	Standard
	Sb	123	1158.1	28.2	**0.1826**	0.055	30.4	ug/L	113	Standard
	Ba	135	43765.5	1.5	**16.6746**	0.332	2.0	ug/L	48	Standard
	Ce	140	2165.2	22.7				ug/L	33	Standard
>	**Tb**	159	1234112.5	1.6				ug/L	1160331	Standard
	Ho	165	48.3	43.1				ug/L	5	Standard
	Tl	203	568.7	69.5	**0.0488**	0.037	75.8	ug/L	15	Standard
	Tl	205	425.0	32.9	**0.0359**	0.014	39.3	ug/L	15	Standard
	Pb	206	928.4	18.5	**0.0942**	0.028	29.5	ug/L	289	Standard
	Pb	207	738.7	22.2	**0.0758**	0.029	38.5	ug/L	250	Standard
	Pb	208	3293.8	12.8	**0.0782**	0.017	21.7	ug/L	1113	Standard
	U	238	1206.0	7.3	**0.1284**	0.010	7.6	ug/L	3	Standard
>	**Bi**	209	704923.0	0.5				ug/L	670731	Standard

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Na	23	1.7	173.2	**0.3743**	10.900	2912.3	mg/L	0	Standard
Mg	24	10075.0	3.7	**8.9099**	0.086	1.0	mg/L	32	Standard
K	39	183.3	18.2	**0.5213**	0.133	25.6	mg/L	33	Standard
Ca	43	231.7	4.5	**10.8607**	1.036	9.5	mg/L	58	Standard
Fe	54	237.0	2.6	**-0.0006**	0.007	1236.7	mg/L	213	Standard
Fe	57	233.3	4.5	**0.1830**	0.036	19.4	mg/L	132	Standard
> **Sc-1**	45	59101.8	2.9				mg/L	56654	Standard
Cl	35	140032.8	0.2				ug/L	93221	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	10363.5	1.3				ug/L	2707	Standard
P	31	27578.4	1.2				ug/L	24082	Standard
S	34	3962.2	2.4				ug/L	3865	Standard
Sr	88	230.0	21.0				ug/L	43	Standard
C	12	293.3	14.2				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	107.0	24.4				mg/L	20	Standard
Ho-1	165	48.3	43.1				mg/L	5	Standard
Er	166	63.3	18.2				mg/L	10	Standard
I	127	22630.2	3.2				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		126.075	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.902	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.454
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.098
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606052101DP WG572187-04
Sample Date/Time: Monday, June 13, 2016 13:16:24
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	103482.2	1.6				ug/L	84319	Standard
	Be	9	53.3	23.6	**0.0269**	0.009	31.7	ug/L	7	Standard
	Al	27	8008861.6	0.8	**34.3450**	0.355	1.0	ug/L	1022	Standard
	Sc	45	57975.7	0.7				ug/L	56654	Standard
	Ti	47	323.3	2.0	**0.5217**	0.005	1.0	ug/L	114	Standard
	V	51	6643.2	2.3	**0.4710**	0.020	4.2	ug/L	1609	Standard
	Cr	52	12060.8	1.2	**0.2678**	0.032	12.1	ug/L	8548	Standard
	Cr	53	2161.8	4.0	**0.9535**	0.046	4.9	ug/L	925	Standard
	Mn	55	104704.2	0.4	**12.4744**	0.286	2.3	ug/L	1051	Standard
	Co	59	1015.4	8.7	**0.0860**	0.011	13.0	ug/L	178	Standard
	Ni	60	2210.5	1.3	**0.7157**	0.027	3.7	ug/L	312	Standard
	Cu	65	2175.8	3.2	**0.7488**	0.043	5.7	ug/L	233	Standard
	Zn	66	3401.0	4.2	**1.7934**	0.065	3.6	ug/L	606	Standard
>	**Ge**	72	681008.5	1.9				ug/L	641816	Standard
	As	75	1338.8	1.4	**0.9715**	0.026	2.7	ug/L	-21	Standard
	Se	82	75.4	22.0	**0.3264**	0.101	31.0	ug/L	23	Standard
	Se-1	77	142.3	5.3	**0.5558**	0.083	15.0	ug/L	86	Standard
>	**Ga**	71	315.0	8.4				mg/L	152	Standard
	Rb	85	8605.8	0.6				ug/L	18	Standard
	Y	89	602770.4	1.9				ug/L	578199	Standard
>	**Rh**	103	58.3	13.1				ug/L	20	Standard
	Mo	98	2006.8	2.6	**0.5904**	0.028	4.7	ug/L	19	Standard
	Ag	107	206.7	54.6	**0.0086**	0.012	143.5	ug/L	113	Standard
	Cd	111	58.6	100.1	**0.0194**	0.021	107.8	mg/L	3	Standard
	Cd	114	147.1	108.9	**0.0197**	0.023	117.5	ug/L	8	Standard
>	**In**	115	816623.0	2.7				ug/L	797687	Standard
	Sn	118	1473.4	6.0	**0.1058**	0.017	16.1	ug/L	620	Standard
	Sb	123	734.4	15.5	**0.1172**	0.023	19.9	ug/L	113	Standard
	Ba	135	40876.7	0.8	**16.2030**	0.568	3.5	ug/L	48	Standard
	Ce	140	1840.1	0.7				ug/L	33	Standard
>	**Tb**	159	1211252.3	1.0				ug/L	1160331	Standard
	Ho	165	58.3	32.5				ug/L	5	Standard
	Tl	203	419.0	37.3	**0.0352**	0.015	42.3	ug/L	15	Standard
	Tl	205	278.3	5.5	**0.0214**	0.002	7.7	ug/L	15	Standard
	Pb	206	786.7	11.6	**0.0726**	0.015	21.0	ug/L	289	Standard
	Pb	207	658.7	6.1	**0.0628**	0.008	12.1	ug/L	250	Standard
	Pb	208	2893.4	4.1	**0.0632**	0.005	8.2	ug/L	1113	Standard
	U	238	1008.0	6.2	**0.1081**	0.007	6.7	ug/L	3	Standard
>	**Bi**	209	698146.4	0.3				ug/L	670731	Standard

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Na	23	6.7	114.6	**-19.6698**	30.051	152.8	mg/L	0	Standard
Mg	24	9496.3	0.7	**8.5619**	0.118	1.4	mg/L	32	Standard
K	39	175.0	12.5	**0.5018**	0.076	15.2	mg/L	33	Standard
Ca	43	218.3	15.2	**10.2852**	2.146	20.9	mg/L	58	Standard
Fe	54	277.4	19.8	**0.0243**	0.032	129.6	mg/L	213	Standard
Fe	57	221.7	5.7	**0.1670**	0.026	15.5	mg/L	132	Standard
Sc-1	45	57975.7	0.7				mg/L	56654	Standard
Cl	35	139851.9	1.5				ug/L	93221	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	9536.3	4.6				ug/L	2707	Standard
P	31	27224.4	2.0				ug/L	24082	Standard
S	34	3842.2	1.5				ug/L	3865	Standard
Sr	88	223.3	12.3				ug/L	43	Standard
C	12	266.7	26.6				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	96.6	29.8				mg/L	20	Standard
Ho-1	165	58.3	32.5				mg/L	5	Standard
Er	166	70.0	37.8				mg/L	10	Standard
I	127	19165.5	2.8				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		122.727	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.107	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.374
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.087
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606052101S WG572187-05
Sample Date/Time: Monday, June 13, 2016 13:19:36
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	104752.6	1.2				ug/L	84319	Standard
	Be	9	78601.7	0.5	**54.0718**	0.676	1.2	ug/L	7	Standard
	Al	27	8314786.7	0.4	**35.2258**	0.562	1.6	ug/L	1022	Standard
	Sc	45	58604.8	2.1				ug/L	56654	Standard
	Ti	47	361.0	5.3	**0.6151**	0.049	7.9	ug/L	114	Standard
	V	51	544169.7	1.6	**52.2501**	0.833	1.6	ug/L	1609	Standard
	Cr	52	532120.2	0.4	**50.2031**	0.991	2.0	ug/L	8548	Standard
	Cr	53	65263.6	1.5	**51.0720**	1.326	2.6	ug/L	925	Standard
	Mn	55	525325.1	0.8	**63.3944**	1.140	1.8	ug/L	1051	Standard
	Co	59	496426.2	0.4	**52.6380**	0.603	1.1	ug/L	178	Standard
	Ni	60	134094.8	0.6	**51.1878**	1.019	2.0	ug/L	312	Standard
	Cu	65	130375.5	0.7	**51.0908**	0.544	1.1	ug/L	233	Standard
	Zn	66	78391.0	1.2	**53.1784**	0.741	1.4	ug/L	606	Standard
>	**Ge**	72	678742.4	1.6				ug/L	641816	Standard
	As	75	76873.3	1.1	**52.8992**	0.612	1.2	ug/L	-21	Standard
	Se	82	8026.1	1.2	**50.8730**	0.507	1.0	ug/L	23	Standard
	Se-1	77	5204.2	2.3	**51.4408**	0.709	1.4	ug/L	86	Standard
>	**Ga**	71	350.0	19.8				mg/L	152	Standard
	Rb	85	8742.5	4.9				ug/L	18	Standard
	Y	89	584476.9	2.3				ug/L	578199	Standard
>	**Rh**	103	66.7	28.4				ug/L	20	Standard
	Mo	98	2087.6	1.9	**0.6085**	0.014	2.4	ug/L	19	Standard
	Ag	107	459605.0	0.3	**52.4713**	1.209	2.3	ug/L	113	Standard
	Cd	111	141175.3	0.8	**51.3767**	1.566	3.0	mg/L	3	Standard
	Cd	114	347643.1	0.5	**51.1502**	0.921	1.8	ug/L	8	Standard
>	**In**	115	824454.5	2.3				ug/L	797687	Standard
	Sn	118	1461.7	9.4	**0.1020**	0.015	14.8	ug/L	620	Standard
	Sb	123	313258.7	0.8	**53.6394**	1.564	2.9	ug/L	113	Standard
	Ba	135	169607.0	0.6	**66.6537**	1.605	2.4	ug/L	48	Standard
	Ce	140	2006.8	12.7				ug/L	33	Standard
>	**Tb**	159	1215073.8	2.1				ug/L	1160331	Standard
	Ho	165	68.3	29.6				ug/L	5	Standard
	Tl	203	548954.0	0.4	**51.1655**	0.311	0.6	ug/L	15	Standard
	Tl	205	520237.5	0.6	**52.0863**	0.407	0.8	ug/L	15	Standard
	Pb	206	334180.6	0.7	**53.4625**	0.744	1.4	ug/L	289	Standard
	Pb	207	291384.0	0.9	**51.4011**	0.834	1.6	ug/L	250	Standard
	Pb	208	1267404.3	1.5	**50.6581**	0.944	1.9	ug/L	1113	Standard
	U	238	480924.0	0.9	**51.6784**	0.524	1.0	ug/L	3	Standard
>	**Bi**	209	707877.4	0.7				ug/L	670731	Standard

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Na	23	5.0	100.0	**-12.7394**	19.501	153.1	mg/L	0	Standard
Mg	24	9804.8	3.0	**8.7510**	0.434	5.0	mg/L	32	Standard
K	39	206.7	25.2	**0.6060**	0.171	28.2	mg/L	33	Standard
Ca	43	228.3	11.0	**10.7748**	1.813	16.8	mg/L	58	Standard
Fe	54	302.4	3.3	**0.0362**	0.003	9.7	mg/L	213	Standard
Fe	57	276.7	1.0	**0.2777**	0.013	4.5	mg/L	132	Standard
> **Sc-1**	45	58604.8	2.1				mg/L	56654	Standard
Cl	35	141179.4	0.8				ug/L	93221	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	10360.2	3.7				ug/L	2707	Standard
P	31	28293.2	7.2				ug/L	24082	Standard
S	34	3978.9	1.9				ug/L	3865	Standard
Sr	88	210.0	13.3				ug/L	43	Standard
C	12	223.3	20.2				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	0	Standard
Dy	164	80.5	17.6				mg/L	20	Standard
Ho-1	165	68.3	29.6				mg/L	5	Standard
Er	166	60.0	44.1				mg/L	10	Standard
I	127	18279.4	2.6				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.234	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.753	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.356
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.538
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: L1606052101S WG572187-05
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Method 6020 - Summary Report

Sample ID: L1606052101SD WG572187-06
Sample Date/Time: Monday, June 13, 2016 13:22:47
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	108292.4	1.9				ug/L	84319	Standard
	Be	9	79141.2	0.9	**52.6764**	1.451	2.8	ug/L	7	Standard
	Al	27	8618464.2	1.0	**35.3262**	0.957	2.7	ug/L	1022	Standard
	Sc	45	59965.1	2.1				ug/L	56654	Standard
	Ti	47	401.3	20.5	**0.7404**	0.194	26.2	ug/L	114	Standard
	V	51	534426.7	0.5	**52.8835**	0.878	1.7	ug/L	1609	Standard
	Cr	52	533956.0	0.8	**51.9333**	0.306	0.6	ug/L	8548	Standard
	Cr	53	65041.0	1.6	**52.4579**	0.643	1.2	ug/L	925	Standard
	Mn	55	532263.3	1.3	**66.1865**	0.642	1.0	ug/L	1051	Standard
	Co	59	502453.1	1.7	**54.8937**	0.437	0.8	ug/L	178	Standard
	Ni	60	131995.9	1.4	**51.9168**	0.787	1.5	ug/L	312	Standard
	Cu	65	129972.8	0.8	**52.4855**	0.446	0.8	ug/L	233	Standard
	Zn	66	76763.6	1.0	**53.6660**	0.814	1.5	ug/L	606	Standard
>	**Ge**	72	658673.7	1.3				ug/L	641816	Standard
	As	75	76500.0	0.2	**54.2469**	0.775	1.4	ug/L	-21	Standard
	Se	82	8049.3	0.5	**52.5827**	0.826	1.6	ug/L	23	Standard
	Se-1	77	5281.9	3.6	**53.8311**	1.274	2.4	ug/L	86	Standard
>	**Ga**	71	325.0	1.5				mg/L	152	Standard
	Rb	85	9002.7	2.0				ug/L	18	Standard
	Y	89	605661.1	3.3				ug/L	578199	Standard
>	**Rh**	103	98.3	17.9				ug/L	20	Standard
	Mo	98	2162.1	1.4	**0.6136**	0.001	0.2	ug/L	19	Standard
	Ag	107	461872.5	0.5	**51.3337**	0.746	1.5	ug/L	113	Standard
	Cd	111	141753.2	1.3	**50.2118**	0.570	1.1	mg/L	3	Standard
	Cd	114	348698.8	0.7	**49.9490**	0.573	1.1	ug/L	8	Standard
>	**In**	115	846702.3	1.5				ug/L	797687	Standard
	Sn	118	1265.1	6.0	**0.0722**	0.010	13.8	ug/L	620	Standard
	Sb	123	312103.2	0.4	**52.0242**	0.979	1.9	ug/L	113	Standard
	Ba	135	173173.0	0.4	**66.2520**	0.902	1.4	ug/L	48	Standard
	Ce	140	2036.8	7.0				ug/L	33	Standard
>	**Tb**	159	1238915.1	0.6				ug/L	1160331	Standard
	Ho	165	76.7	27.2				ug/L	5	Standard
	Tl	203	554198.4	0.7	**51.3076**	0.539	1.1	ug/L	15	Standard
	Tl	205	531286.4	0.9	**52.8342**	0.455	0.9	ug/L	15	Standard
	Pb	206	334260.7	0.8	**53.1131**	0.477	0.9	ug/L	289	Standard
	Pb	207	290958.8	0.1	**50.9802**	0.672	1.3	ug/L	250	Standard
	Pb	208	1288512.7	0.6	**51.1579**	0.836	1.6	ug/L	1113	Standard
	U	238	488505.6	0.6	**52.1438**	0.875	1.7	ug/L	3	Standard
>	**Bi**	209	712703.7	1.4				ug/L	670731	Standard

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Na	23	0.0		**6.6672**	0.000	0.0	mg/L	0	Standard
Mg	24	10216.8	3.4	**8.9118**	0.439	4.9	mg/L	32	Standard
K	39	168.3	21.9	**0.4597**	0.141	30.7	mg/L	33	Standard
Ca	43	271.7	9.1	**13.0937**	1.818	13.9	mg/L	58	Standard
Fe	54	280.3	7.4	**0.0208**	0.013	62.3	mg/L	213	Standard
Fe	57	313.3	18.4	**0.3390**	0.113	33.2	mg/L	132	Standard
> **Sc-1**	45	59965.1	2.1				mg/L	56654	Standard
Cl	35	145143.9	0.5				ug/L	93221	Standard
Kr	83	0.3	173.2				ug/L	1	Standard
Br	81	9953.3	5.1				ug/L	2707	Standard
P	31	28446.7	0.8				ug/L	24082	Standard
S	34	4303.9	1.9				ug/L	3865	Standard
Sr	88	231.7	5.4				ug/L	43	Standard
C	12	263.3	17.5				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	74.1	61.4				mg/L	20	Standard
Ho-1	165	76.7	27.2				mg/L	5	Standard
Er	166	53.3	28.6				mg/L	10	Standard
I	127	18629.8	4.9				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.432	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.627	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.145
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.258
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: L1606052101SD WG572187-06
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Method 6020 - Summary Report

Sample ID: L1606052101PS WG572444-01
Sample Date/Time: Monday, June 13, 2016 13:25:59
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	104475.7	2.1				ug/L	84319	Standard
	Be	9	77149.3	2.4	**53.2063**	0.160	0.3	ug/L	7	Standard
	Al	27	8335662.4	2.3	**35.4026**	0.066	0.2	ug/L	1022	Standard
	Sc	45	57197.8	3.0				ug/L	56654	Standard
	Ti	47	318.3	15.2	**0.5307**	0.119	22.4	ug/L	114	Standard
	V	51	535725.5	1.7	**52.6745**	0.713	1.4	ug/L	1609	Standard
	Cr	52	522708.2	0.8	**50.4988**	0.410	0.8	ug/L	8548	Standard
	Cr	53	63538.0	1.5	**50.9090**	1.046	2.1	ug/L	925	Standard
	Mn	55	541961.6	0.2	**66.9761**	0.303	0.5	ug/L	1051	Standard
	Co	59	510279.1	0.4	**55.4060**	0.349	0.6	ug/L	178	Standard
	Ni	60	130747.1	0.8	**51.1020**	0.343	0.7	ug/L	312	Standard
	Cu	65	128339.3	0.6	**51.5015**	0.497	1.0	ug/L	233	Standard
	Zn	66	77192.5	0.4	**53.6267**	0.174	0.3	ug/L	606	Standard
>	Ge	72	662773.9	0.5				ug/L	641816	Standard
	As	75	75687.1	0.3	**53.3340**	0.377	0.7	ug/L	-21	Standard
	Se	82	8260.5	1.1	**53.6260**	0.635	1.2	ug/L	23	Standard
	Se-1	77	5303.9	2.6	**53.7348**	1.649	3.1	ug/L	86	Standard
>	Ga	71	330.0	6.6				mg/L	152	Standard
	Rb	85	8667.5	2.5				ug/L	18	Standard
	Y	89	617595.2	1.3				ug/L	578199	Standard
>	Rh	103	93.3	31.4				ug/L	20	Standard
	Mo	98	2130.4	1.1	**0.6140**	0.010	1.7	ug/L	19	Standard
	Ag	107	453154.0	1.5	**51.1414**	0.890	1.7	ug/L	113	Standard
	Cd	111	143338.3	0.6	**51.5587**	0.343	0.7	mg/L	3	Standard
	Cd	114	348896.2	3.1	**50.7421**	1.205	2.4	ug/L	8	Standard
>	In	115	833792.1	1.2				ug/L	797687	Standard
	Sn	118	1625.1	3.0	**0.1211**	0.008	6.5	ug/L	620	Standard
	Sb	123	301424.5	1.0	**51.0160**	0.670	1.3	ug/L	113	Standard
	Ba	135	170986.2	1.6	**66.4176**	0.286	0.4	ug/L	48	Standard
	Ce	140	1733.4	5.9				ug/L	33	Standard
>	Tb	159	1211697.2	0.9				ug/L	1160331	Standard
	Ho	165	66.7	17.3				ug/L	5	Standard
	Tl	203	548366.7	0.3	**51.5284**	0.566	1.1	ug/L	15	Standard
	Tl	205	533441.2	1.6	**53.8466**	1.161	2.2	ug/L	15	Standard
	Pb	206	334258.6	0.7	**53.9076**	0.220	0.4	ug/L	289	Standard
	Pb	207	291663.9	0.7	**51.8661**	0.224	0.4	ug/L	250	Standard
	Pb	208	1305457.7	0.5	**52.6068**	0.715	1.4	ug/L	1113	Standard
	U	238	484891.9	0.6	**52.5309**	0.675	1.3	ug/L	3	Standard
>	Bi	209	702177.9	1.1				ug/L	670731	Standard

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Na	23	3.3	86.6	**-6.6463**	11.544	173.7	mg/L	0	Standard
Mg	24	9764.8	1.1	**8.9311**	0.333	3.7	mg/L	32	Standard
K	39	165.0	34.9	**0.4701**	0.190	40.4	mg/L	33	Standard
Ca	43	233.3	13.8	**11.3953**	1.613	14.2	mg/L	58	Standard
Fe	54	262.7	16.0	**0.0178**	0.021	120.4	mg/L	213	Standard
Fe	57	273.3	12.2	**0.2847**	0.071	24.9	mg/L	132	Standard
> **Sc-1**	45	57197.8	3.0				mg/L	56654	Standard
Cl	35	149037.4	0.8				ug/L	93221	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	9856.5	5.3				ug/L	2707	Standard
P	31	28870.8	2.4				ug/L	24082	Standard
S	34	3977.2	10.2				ug/L	3865	Standard
Sr	88	253.3	13.4				ug/L	43	Standard
C	12	193.3	28.5				mg/L	103	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	81.1	42.8				mg/L	20	Standard
Ho-1	165	66.7	17.3				mg/L	5	Standard
Er	166	46.7	32.7				mg/L	10	Standard
I	127	20947.8	4.5				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.905	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.265	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.526
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.688
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606052101SDL WG572444-02
Sample Date/Time: Monday, June 13, 2016 13:29:10
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	100124.8	1.8				ug/L	84319	Standard
	Be	9	58.3	19.8	**0.0317**	0.008	24.6	ug/L	7	Standard
	Al	27	1824533.2	1.4	**8.0785**	0.037	0.5	ug/L	1022	Standard
	Sc	45	58827.3	1.8				ug/L	56654	Standard
	Ti	47	113.7	12.9	**0.0169**	0.033	194.0	ug/L	114	Standard
	V	51	3159.3	3.4	**0.1346**	0.011	8.0	ug/L	1609	Standard
	Cr	52	10754.1	1.4	**0.1365**	0.021	15.2	ug/L	8548	Standard
	Cr	53	1106.7	4.3	**0.1143**	0.050	44.0	ug/L	925	Standard
	Mn	55	23269.9	2.4	**2.6383**	0.045	1.7	ug/L	1051	Standard
	Co	59	504.7	28.7	**0.0314**	0.014	46.1	ug/L	178	Standard
	Ni	60	681.3	6.2	**0.1306**	0.012	9.3	ug/L	312	Standard
	Cu	65	692.0	5.1	**0.1660**	0.010	6.3	ug/L	233	Standard
	Zn	66	2505.2	3.1	**1.1720**	0.027	2.3	ug/L	606	Standard
>	**Ge**	72	685012.7	1.5				ug/L	641816	Standard
	As	75	296.1	3.4	**0.2557**	0.008	3.0	ug/L	-21	Standard
	Se	82	46.5	11.9	**0.1417**	0.032	22.4	ug/L	23	Standard
	Se-1	77	89.3	11.0	**0.0182**	0.087	474.7	ug/L	86	Standard
>	**Ga**	71	140.0	3.6				mg/L	152	Standard
	Rb	85	1873.4	4.5				ug/L	18	Standard
	Y	89	597287.3	0.7				ug/L	578199	Standard
>	**Rh**	103	28.3	10.2				ug/L	20	Standard
	Mo	98	429.3	10.5	**0.1138**	0.014	12.4	ug/L	19	Standard
	Ag	107	239.3	46.5	**0.0124**	0.013	103.9	ug/L	113	Standard
	Cd	111	43.2	94.3	**0.0139**	0.015	107.4	mg/L	3	Standard
	Cd	114	96.5	65.2	**0.0124**	0.009	75.7	ug/L	8	Standard
>	**In**	115	822891.9	0.7				ug/L	797687	Standard
	Sn	118	875.0	2.3	**0.0258**	0.002	8.2	ug/L	620	Standard
	Sb	123	3036.8	20.1	**0.5103**	0.102	19.9	ug/L	113	Standard
	Ba	135	8761.9	1.5	**3.4244**	0.073	2.1	ug/L	48	Standard
	Ce	140	396.7	4.8				ug/L	33	Standard
>	**Tb**	159	1196832.6	1.2				ug/L	1160331	Standard
	Ho	165	20.0	0.0				ug/L	5	Standard
	Tl	203	256.3	49.5	**0.0195**	0.012	61.6	ug/L	15	Standard
	Tl	205	190.0	64.0	**0.0122**	0.012	100.9	ug/L	15	Standard
	Pb	206	503.0	18.9	**0.0254**	0.016	62.0	ug/L	289	Standard
	Pb	207	428.7	20.3	**0.0205**	0.016	78.0	ug/L	250	Standard
	Pb	208	1928.0	18.2	**0.0229**	0.015	63.7	ug/L	1113	Standard
	U	238	346.7	20.9	**0.0355**	0.008	22.7	ug/L	3	Standard
>	**Bi**	209	708933.1	0.7				ug/L	670731	Standard

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Na	23	0.0		**6.6672**	0.000	0.0	mg/L	0	Standard
Mg	24	2065.1	0.2	**1.8095**	0.031	1.7	mg/L	32	Standard
K	39	40.0	37.5	**0.0129**	0.052	401.2	mg/L	33	Standard
Ca	43	58.3	19.8	**0.1403**	0.668	476.1	mg/L	58	Standard
Fe	54	203.9	23.3	**-0.0181**	0.026	144.7	mg/L	213	Standard
Fe	57	130.0	27.7	**-0.0320**	0.074	230.7	mg/L	132	Standard
> **Sc-1**	45	58827.3	1.8				mg/L	56654	Standard
Cl	35	135766.9	1.0				ug/L	93221	Standard
Kr	83	2.3	107.9				ug/L	1	Standard
Br	81	4237.3	3.3				ug/L	2707	Standard
P	31	28217.9	1.7				ug/L	24082	Standard
S	34	4352.3	3.3				ug/L	3865	Standard
Sr	88	80.0	45.1				ug/L	43	Standard
C	12	136.7	33.8				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	0	Standard
Dy	164	29.0	61.1				mg/L	20	Standard
Ho-1	165	20.0	0.0				mg/L	5	Standard
Er	166	20.0	50.0				mg/L	10	Standard
I	127	6283.0	1.3				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.745	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.730	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.160
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.696
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606052101SDL WG572444-02
Sample Date/Time: Monday, June 13, 2016 13:32:21
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	99601.4	1.9				ug/L	84319	Standard
	Be	9	48.3	63.2	**0.0250**	0.022	89.1	ug/L	7	Standard
	Al	27	379123.6	3.6	**1.6797**	0.066	3.9	ug/L	1022	Standard
	Sc	45	58233.4	1.1				ug/L	56654	Standard
	Ti	47	70.7	22.0	**-0.0856**	0.036	42.6	ug/L	114	Standard
	V	51	2414.3	3.8	**0.0635**	0.009	14.8	ug/L	1609	Standard
	Cr	52	10538.0	2.7	**0.1157**	0.026	22.7	ug/L	8548	Standard
	Cr	53	963.4	3.7	**0.0009**	0.028	2976.9	ug/L	925	Standard
	Mn	55	6168.3	20.2	**0.5887**	0.148	25.1	ug/L	1051	Standard
	Co	59	372.3	55.3	**0.0176**	0.022	122.2	ug/L	178	Standard
	Ni	60	349.7	19.8	**0.0049**	0.026	525.7	ug/L	312	Standard
	Cu	65	340.0	22.7	**0.0291**	0.030	102.3	ug/L	233	Standard
	Zn	66	2022.8	2.8	**0.8448**	0.043	5.1	ug/L	606	Standard
>	**Ge**	72	685105.0	0.8				ug/L	641816	Standard
	As	75	-19.3	227.9	**0.0407**	0.030	73.8	ug/L	-21	Standard
	Se	82	26.1	4.1	**0.0133**	0.007	53.3	ug/L	23	Standard
	Se-1	77	82.3	16.1	**-0.0506**	0.134	264.3	ug/L	86	Standard
>	**Ga**	71	83.3	22.7				mg/L	152	Standard
	Rb	85	416.7	5.7				ug/L	18	Standard
	Y	89	595367.1	3.4				ug/L	578199	Standard
>	**Rh**	103	21.7	48.0				ug/L	20	Standard
	Mo	98	109.9	7.5	**0.0178**	0.002	11.0	ug/L	19	Standard
	Ag	107	155.0	27.4	**0.0024**	0.005	190.8	ug/L	113	Standard
	Cd	111	21.5	98.2	**0.0058**	0.007	128.9	mg/L	3	Standard
	Cd	114	55.4	56.3	**0.0061**	0.004	72.4	ug/L	8	Standard
>	**In**	115	835090.9	2.0				ug/L	797687	Standard
	Sn	118	730.0	6.3	**0.0054**	0.005	85.4	ug/L	620	Standard
	Sb	123	739.8	24.7	**0.1153**	0.033	28.9	ug/L	113	Standard
	Ba	135	1817.1	4.4	**0.6790**	0.023	3.4	ug/L	48	Standard
	Ce	140	80.0	28.6				ug/L	33	Standard
>	**Tb**	159	1201293.1	0.7				ug/L	1160331	Standard
	Ho	165	16.7	75.5				ug/L	5	Standard
	Tl	203	79.3	59.6	**0.0030**	0.004	148.0	ug/L	15	Standard
	Tl	205	395.0	145.8	**0.0327**	0.058	176.4	ug/L	15	Standard
	Pb	206	380.7	12.7	**0.0056**	0.008	141.6	ug/L	289	Standard
	Pb	207	325.7	8.0	**0.0021**	0.005	225.2	ug/L	250	Standard
	Pb	208	2336.4	67.6	**0.0391**	0.063	162.2	ug/L	1113	Standard
	U	238	374.0	139.2	**0.0384**	0.056	145.8	ug/L	3	Standard
>	**Bi**	209	710502.1	0.5				ug/L	670731	Standard

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Na	23	0.0		**6.6672**	0.000	0.0	mg/L	0	Standard
Mg	24	436.7	18.5	**0.3602**	0.069	19.2	mg/L	32	Standard
K	39	28.3	20.4	**-0.0272**	0.021	78.1	mg/L	33	Standard
Ca	43	48.3	15.8	**-0.4454**	0.456	102.4	mg/L	58	Standard
Fe	54	240.6	15.9	**0.0032**	0.021	654.6	mg/L	213	Standard
Fe	57	126.7	8.2	**-0.0359**	0.025	68.8	mg/L	132	Standard
Sc-1	45	58233.4	1.1				mg/L	56654	Standard
Cl	35	135596.6	3.8				ug/L	93221	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	3457.1	8.0				ug/L	2707	Standard
P	31	28642.1	2.5				ug/L	24082	Standard
S	34	4359.0	3.5				ug/L	3865	Standard
Sr	88	55.0	41.7				ug/L	43	Standard
C	12	103.3	20.1				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	0	Standard
Dy	164	2.2	231.7				mg/L	20	Standard
Ho-1	165	16.7	75.5				mg/L	5	Standard
Er	166	23.3	89.2				mg/L	10	Standard
I	127	3130.3	2.4				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.124	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.745	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.689
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.929
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 15, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, June 13, 2016 13:35:34
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	97316.6	2.0				ug/L	84319	Standard
	Be	9	68566.5	1.8	**50.7696**	0.332	0.7	ug/L	7	Standard
	Al	27	10166042.3	2.6	**46.3559**	0.636	1.4	ug/L	1022	Standard
	Sc	45	57912.1	1.3				ug/L	56654	Standard
	Ti	47	40894.5	1.6	**102.4207**	2.622	2.6	ug/L	114	Standard
	V	51	501809.5	1.0	**50.2411**	0.655	1.3	ug/L	1609	Standard
	Cr	52	506775.1	0.4	**49.8502**	0.676	1.4	ug/L	8548	Standard
	Cr	53	61486.2	1.7	**50.1579**	1.020	2.0	ug/L	925	Standard
	Mn	55	417758.6	0.2	**52.5452**	0.649	1.2	ug/L	1051	Standard
	Co	59	490079.7	0.1	**54.1907**	0.512	0.9	ug/L	178	Standard
	Ni	60	126408.1	0.2	**50.3138**	0.531	1.1	ug/L	312	Standard
	Cu	65	123945.9	0.9	**50.6534**	0.898	1.8	ug/L	233	Standard
	Zn	66	72355.0	1.0	**51.1701**	1.017	2.0	ug/L	606	Standard
>	**Ge**	72	650836.7	1.0				ug/L	641816	Standard
	As	75	70555.0	0.8	**50.6352**	0.732	1.4	ug/L	-21	Standard
	Se	82	7727.2	1.0	**51.0804**	0.830	1.6	ug/L	23	Standard
	Se-1	77	5062.8	2.1	**52.2012**	0.764	1.5	ug/L	86	Standard
>	**Ga**	71	98.3	43.8				mg/L	152	Standard
	Rb	85	1098.4	7.1				ug/L	18	Standard
	Y	89	614527.0	1.8				ug/L	578199	Standard
>	**Rh**	103	33.3	60.6				ug/L	20	Standard
	Mo	98	348248.6	0.9	**102.1991**	0.837	0.8	ug/L	19	Standard
	Ag	107	440650.2	1.8	**49.4604**	0.274	0.6	ug/L	113	Standard
	Cd	111	139726.1	1.1	**49.9966**	0.885	1.8	mg/L	3	Standard
	Cd	114	345564.7	0.6	**50.0012**	0.777	1.6	ug/L	8	Standard
>	**In**	115	838255.8	1.6				ug/L	797687	Standard
	Sn	118	398492.8	3.4	**51.0368**	0.987	1.9	ug/L	620	Standard
	Sb	123	297212.2	1.9	**50.0303**	0.341	0.7	ug/L	113	Standard
	Ba	135	125190.8	1.6	**48.3649**	0.328	0.7	ug/L	48	Standard
	Ce	140	80.0	18.8				ug/L	33	Standard
>	**Tb**	159	1193616.8	2.4				ug/L	1160331	Standard
	Ho	165	11.7	49.5				ug/L	5	Standard
	Tl	203	529483.0	1.0	**50.5063**	0.413	0.8	ug/L	15	Standard
	Tl	205	510108.1	0.2	**52.2699**	0.466	0.9	ug/L	15	Standard
	Pb	206	313992.2	1.3	**51.4055**	0.686	1.3	ug/L	289	Standard
	Pb	207	284386.5	0.9	**51.3394**	0.475	0.9	ug/L	250	Standard
	Pb	208	1269724.2	0.6	**51.9423**	0.721	1.4	ug/L	1113	Standard
	U	238	472726.2	0.8	**51.9891**	0.648	1.2	ug/L	3	Standard
>	**Bi**	209	691679.6	1.0				ug/L	670731	Standard

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Na	23	0.0		**6.6672**	0.000	0.0	mg/L	0	Standard
Mg	24	5564.4	0.6	**5.0093**	0.096	1.9	mg/L	32	Standard
K	39	1086.7	6.3	**3.7915**	0.196	5.2	mg/L	33	Standard
Ca	43	108.3	2.7	**3.3598**	0.270	8.0	mg/L	58	Standard
Fe	54	8545.6	3.2	**4.6025**	0.189	4.1	mg/L	213	Standard
Fe	57	2420.2	4.5	**4.8464**	0.264	5.4	mg/L	132	Standard
Sc-1	45	57912.1	1.3				mg/L	56654	Standard
Cl	35	130616.7	1.5				ug/L	93221	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	2896.9	10.6				ug/L	2707	Standard
P	31	29049.5	2.8				ug/L	24082	Standard
S	34	4889.1	0.6				ug/L	3865	Standard
Sr	88	61.7	65.0				ug/L	43	Standard
C	12	113.3	27.0				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	14.4	142.9				mg/L	20	Standard
Ho-1	165	11.7	49.5				mg/L	5	Standard
Er	166	46.7	12.4				mg/L	10	Standard
I	127	2175.2	2.7				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	101.539		
Al	27	92.712		
Sc	45			
Ti	47	102.421		
V	51	100.482		
Cr	52	99.700		
Cr	53			
Mn	55	105.090		
Co	59	108.381		
Ni	60	100.628		
Cu	65	101.307		
Zn	66	102.340		
Ge	72		101.406	
As	75	101.270		
Se	82	102.161		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	102.199		
Ag	107	98.921		
Cd	111	99.993		
Cd	114			
In	115			105.086
Sn	118	102.074		
Sb	123	100.061		
Ba	135	96.730		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.013		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.885		
U	238	103.978		
Bi	209			103.123
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, June 13, 2016 13:38:46
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92508.3	2.2				ug/L	84319	Standard
	Be	9	63.3	73.4	**0.0391**	0.036	91.2	ug/L	7	Standard
	Al	27	5244.7	87.9	**0.0149**	0.022	146.1	ug/L	1022	Standard
	Sc	45	57813.4	1.6				ug/L	56654	Standard
	Ti	47	65.3	0.9	**-0.0988**	0.004	4.2	ug/L	114	Standard
	V	51	1912.1	24.5	**0.0156**	0.049	318.0	ug/L	1609	Standard
	Cr	52	9112.7	2.6	**-0.0228**	0.042	185.9	ug/L	8548	Standard
	Cr	53	700.0	8.7	**-0.2076**	0.059	28.4	ug/L	925	Standard
	Mn	55	1189.1	38.5	**-0.0074**	0.059	793.4	ug/L	1051	Standard
	Co	59	435.3	65.2	**0.0246**	0.031	127.0	ug/L	178	Standard
	Ni	60	241.0	7.7	**-0.0365**	0.009	23.9	ug/L	312	Standard
	Cu	65	240.0	26.8	**-0.0097**	0.027	283.1	ug/L	233	Standard
	Zn	66	447.7	10.3	**-0.2250**	0.039	17.3	ug/L	606	Standard
>	**Ge**	72	687982.4	2.6				ug/L	641816	Standard
	As	75	-70.0	54.8	**0.0069**	0.025	359.0	ug/L	-21	Standard
	Se	82	22.8	18.3	**-0.0072**	0.030	418.7	ug/L	23	Standard
	Se-1	77	91.3	6.2	**0.0364**	0.079	217.0	ug/L	86	Standard
>	**Ga**	71	86.7	32.8				mg/L	152	Standard
	Rb	85	36.7	43.8				ug/L	18	Standard
	Y	89	600019.3	1.8				ug/L	578199	Standard
>	**Rh**	103	16.7	75.5				ug/L	20	Standard
	Mo	98	324.9	42.8	**0.0827**	0.039	47.0	ug/L	19	Standard
	Ag	107	402.7	94.6	**0.0307**	0.042	137.1	ug/L	113	Standard
	Cd	111	93.4	126.0	**0.0317**	0.042	131.8	mg/L	3	Standard
	Cd	114	255.3	131.0	**0.0352**	0.048	136.4	ug/L	8	Standard
>	**In**	115	815813.7	3.2				ug/L	797687	Standard
	Sn	118	1295.1	3.1	**0.0823**	0.009	10.9	ug/L	620	Standard
	Sb	123	927.2	7.2	**0.1505**	0.015	9.6	ug/L	113	Standard
	Ba	135	150.7	116.6	**0.0327**	0.067	205.5	ug/L	48	Standard
	Ce	140	53.3	125.9				ug/L	33	Standard
>	**Tb**	159	1170481.1	1.8				ug/L	1160331	Standard
	Ho	165	11.7	65.5				ug/L	5	Standard
	Tl	203	393.3	127.3	**0.0327**	0.047	144.3	ug/L	15	Standard
	Tl	205	246.7	85.6	**0.0182**	0.021	117.5	ug/L	15	Standard
	Pb	206	509.0	45.3	**0.0274**	0.037	135.9	ug/L	289	Standard
	Pb	207	443.7	47.6	**0.0242**	0.038	155.9	ug/L	250	Standard
	Pb	208	1748.7	38.1	**0.0167**	0.027	160.9	ug/L	1113	Standard
	U	238	195.0	100.1	**0.0194**	0.021	109.1	ug/L	3	Standard
>	**Bi**	209	698712.0	0.9				ug/L	670731	Standard

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Na	23	3.3	86.6	**-6.4697**	11.379	175.9	mg/L	0	Standard
Mg	24	46.7	22.3	**0.0095**	0.009	96.5	mg/L	32	Standard
K	39	21.7	35.3	**-0.0505**	0.028	55.7	mg/L	33	Standard
Ca	43	41.7	27.7	**-0.8359**	0.768	91.8	mg/L	58	Standard
Fe	54	199.2	13.3	**-0.0189**	0.013	70.0	mg/L	213	Standard
Fe	57	121.7	13.2	**-0.0445**	0.037	84.0	mg/L	132	Standard
Sc-1	45	57813.4	1.6				mg/L	56654	Standard
Cl	35	127954.8	1.6				ug/L	93221	Standard
Kr	83	3.3	34.6				ug/L	1	Standard
Br	81	2743.6	1.1				ug/L	2707	Standard
P	31	28949.3	3.0				ug/L	24082	Standard
S	34	4654.0	4.2				ug/L	3865	Standard
Sr	88	43.3	53.3				ug/L	43	Standard
C	12	106.7	37.9				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.2	122.9				mg/L	20	Standard
Ho-1	165	11.7	65.5				mg/L	5	Standard
Er	166	23.3	24.7				mg/L	10	Standard
I	127	2428.5	1.7				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.193	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.272
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.172
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Monday, June 13, 2016 13:41:59
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	90171.1	3.4				ug/L	84319	Standard
	Be	9	290.0	9.6	**0.2216**	0.020	9.1	ug/L	7	Standard
	Al	27	1443.4	18.2	**-0.0031**	0.001	41.7	ug/L	1022	Standard
	Sc	45	56419.9	2.2				ug/L	56654	Standard
	Ti	47	50.3	18.8	**-0.1259**	0.024	18.7	ug/L	114	Standard
	V	51	5404.4	1.3	**0.3836**	0.007	1.7	ug/L	1609	Standard
	Cr	52	16849.7	2.0	**0.8240**	0.026	3.1	ug/L	8548	Standard
	Cr	53	1575.1	8.1	**0.5657**	0.106	18.7	ug/L	925	Standard
	Mn	55	4565.7	1.5	**0.4338**	0.009	2.1	ug/L	1051	Standard
	Co	59	3801.1	1.1	**0.4049**	0.006	1.4	ug/L	178	Standard
	Ni	60	4156.9	1.3	**1.5545**	0.024	1.5	ug/L	312	Standard
	Cu	65	2122.1	1.2	**0.7781**	0.007	0.9	ug/L	233	Standard
	Zn	66	10060.7	2.7	**6.7602**	0.152	2.3	ug/L	606	Standard
>	Ge	72	641773.3	0.7				ug/L	641816	Standard
	As	75	485.7	9.0	**0.4069**	0.029	7.2	ug/L	-21	Standard
	Se	82	78.5	21.5	**0.3766**	0.111	29.5	ug/L	23	Standard
	Se-1	77	116.3	3.0	**0.3660**	0.036	9.8	ug/L	86	Standard
>	Ga	71	83.3	34.1				mg/L	152	Standard
	Rb	85	26.7	57.3				ug/L	18	Standard
	Y	89	568878.0	2.3				ug/L	578199	Standard
>	Rh	103	35.0	57.1				ug/L	20	Standard
	Mo	98	73.7	7.8	**0.0076**	0.002	26.8	ug/L	19	Standard
	Ag	107	3588.1	2.9	**0.3985**	0.017	4.4	ug/L	113	Standard
	Cd	111	647.9	1.4	**0.2360**	0.007	2.8	mg/L	3	Standard
	Cd	114	1633.1	3.2	**0.2406**	0.009	3.9	ug/L	8	Standard
>	In	115	817076.8	1.5				ug/L	797687	Standard
	Sn	118	695.0	17.0	**0.0028**	0.014	510.7	ug/L	620	Standard
	Sb	123	2467.9	2.6	**0.4162**	0.010	2.5	ug/L	113	Standard
	Ba	135	1830.8	1.2	**0.7002**	0.016	2.3	ug/L	48	Standard
	Ce	140	26.7	10.8				ug/L	33	Standard
>	Tb	159	1175430.4	0.9				ug/L	1160331	Standard
	Ho	165	13.3	43.3				ug/L	5	Standard
	Tl	203	863.7	1.2	**0.0771**	0.001	0.8	ug/L	15	Standard
	Tl	205	783.4	5.9	**0.0726**	0.004	6.0	ug/L	15	Standard
	Pb	206	1533.7	4.2	**0.1935**	0.011	5.6	ug/L	289	Standard
	Pb	207	1319.7	1.3	**0.1807**	0.005	2.6	ug/L	250	Standard
	Pb	208	6041.5	0.4	**0.1905**	0.002	0.8	ug/L	1113	Standard
	U	238	3577.1	1.4	**0.3873**	0.007	1.9	ug/L	3	Standard
>	Bi	209	699398.8	0.8				ug/L	670731	Standard

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Na	23	0.0		**6.6672**	0.000	0.0	mg/L	0	Standard
Mg	24	38.3	58.8	**0.0028**	0.021	760.4	mg/L	32	Standard
K	39	28.3	44.4	**-0.0242**	0.047	192.6	mg/L	33	Standard
Ca	43	33.3	22.9	**-1.3224**	0.455	34.4	mg/L	58	Standard
Fe	54	178.3	17.5	**-0.0281**	0.016	57.1	mg/L	213	Standard
Fe	57	140.0	9.4	**0.0018**	0.031	1731.0	mg/L	132	Standard
Sc-1	45	56419.9	2.2				mg/L	56654	Standard
Cl	35	124197.0	1.1				ug/L	93221	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	2850.3	7.0				ug/L	2707	Standard
P	31	20981.2	1.4				ug/L	24082	Standard
S	34	4974.1	1.3				ug/L	3865	Standard
Sr	88	65.0	30.8				ug/L	43	Standard
C	12	140.0	0.0				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.5	186.3				mg/L	20	Standard
Ho-1	165	13.3	43.3				mg/L	5	Standard
Er	166	10.0	100.0				mg/L	10	Standard
I	127	1555.1	2.9				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	110.777		
Al	27			
Sc	45			
Ti	47			
V	51	95.907		
Cr	52	103.004		
Cr	53			
Mn	55	86.759		
Co	59	101.232		
Ni	60	97.159		
Cu	65	97.259		
Zn	66	108.163		
Ge	72		99.993	
As	75	101.735		
Se	82	94.147		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	99.614		
Cd	111	98.325		
Cd	114			
> In	115			102.431
Sn	118			
Sb	123	104.049		
Ba	135	93.364		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	96.364		
Tl	205			
Pb	206			
Pb	207			
Pb	208	95.253		
U	238	96.822		
> Bi	209			104.274
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
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Method 6020 - Summary Report

Sample ID: L1606028301DP WG571571-04
Sample Date/Time: Monday, June 13, 2016 13:45:12
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	99462.3	3.2				ug/L	84319	Standard
	Be	9	38.3	15.1	**0.0177**	0.005	29.0	ug/L	7	Standard
	Al	27	44212153.0	1.8	**197.3553**	3.058	1.5	ug/L	1022	Standard
	Sc	45	57194.4	1.2				ug/L	56654	Standard
	Ti	47	329.3	4.6	**0.5324**	0.043	8.1	ug/L	114	Standard
	V	51	9902.4	1.0	**0.7790**	0.014	1.8	ug/L	1609	Standard
	Cr	52	11778.2	2.0	**0.2346**	0.013	5.4	ug/L	8548	Standard
	Cr	53	4125.6	4.3	**2.4910**	0.121	4.8	ug/L	925	Standard
	Mn	55	1497151.4	1.1	**179.4350**	3.619	2.0	ug/L	1051	Standard
	Co	59	6645.1	2.1	**0.6776**	0.020	3.0	ug/L	178	Standard
	Ni	60	31969.4	1.7	**12.0018**	0.105	0.9	ug/L	312	Standard
	Cu	65	2549.2	3.7	**0.8893**	0.028	3.2	ug/L	233	Standard
	Zn	66	10138.4	0.7	**6.3597**	0.085	1.3	ug/L	606	Standard
>	**Ge**	72	684433.9	0.9				ug/L	641816	Standard
	As	75	629.8	5.2	**0.4832**	0.019	4.0	ug/L	-21	Standard
	Se	82	619.2	1.0	**3.7531**	0.076	2.0	ug/L	23	Standard
	Se-1	77	592.3	3.7	**5.0342**	0.217	4.3	ug/L	86	Standard
>	**Ga**	71	255.0	21.2				mg/L	152	Standard
	Rb	85	8357.3	2.9				ug/L	18	Standard
	Y	89	591283.2	0.1				ug/L	578199	Standard
>	**Rh**	103	101.7	12.4				ug/L	20	Standard
	Mo	98	8795.9	2.7	**2.6346**	0.080	3.0	ug/L	19	Standard
	Ag	107	126.7	5.7	**-0.0004**	0.001	187.7	ug/L	113	Standard
	Cd	111	1101.7	2.8	**0.4026**	0.010	2.5	mg/L	3	Standard
	Cd	114	2879.7	3.4	**0.4257**	0.016	3.9	ug/L	8	Standard
>	**In**	115	816865.0	0.5				ug/L	797687	Standard
	Sn	118	891.7	10.4	**0.0288**	0.012	40.8	ug/L	620	Standard
	Sb	123	753.7	14.8	**0.1201**	0.019	15.6	ug/L	113	Standard
	Ba	135	11199.5	1.1	**4.4163**	0.030	0.7	ug/L	48	Standard
	Ce	140	1341.7	9.4				ug/L	33	Standard
>	**Tb**	159	1202264.1	1.9				ug/L	1160331	Standard
	Ho	165	58.3	21.6				ug/L	5	Standard
	Tl	203	1093.4	2.7	**0.1004**	0.001	0.9	ug/L	15	Standard
	Tl	205	1023.4	0.3	**0.0986**	0.002	2.0	ug/L	15	Standard
	Pb	206	758.4	7.1	**0.0697**	0.007	9.5	ug/L	289	Standard
	Pb	207	581.7	6.4	**0.0504**	0.006	11.2	ug/L	250	Standard
	Pb	208	2718.1	0.9	**0.0577**	0.003	4.5	ug/L	1113	Standard
	U	238	26178.3	1.7	**2.8911**	0.013	0.4	ug/L	3	Standard
>	**Bi**	209	688357.9	1.9				ug/L	670731	Standard

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Na	23	6.7	43.3	**-20.0082**	11.274	56.3	mg/L	0	Standard
Mg	24	15568.0	3.2	**14.2470**	0.313	2.2	mg/L	32	Standard
K	39	105.0	17.2	**0.2543**	0.061	24.2	mg/L	33	Standard
Ca	43	283.3	2.7	**14.6193**	0.511	3.5	mg/L	58	Standard
Fe	54	265.9	12.6	**0.0200**	0.021	103.4	mg/L	213	Standard
Fe	57	245.0	12.4	**0.2241**	0.070	31.2	mg/L	132	Standard
> **Sc-1**	45	57194.4	1.2				mg/L	56654	Standard
Cl	35	201507.5	2.1				ug/L	93221	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	20587.3	3.9				ug/L	2707	Standard
P	31	29520.4	4.4				ug/L	24082	Standard
S	34	4610.7	3.2				ug/L	3865	Standard
Sr	88	368.3	6.4				ug/L	43	Standard
C	12	106.7	39.0				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	90.8	23.1				mg/L	20	Standard
Ho-1	165	58.3	21.6				mg/L	5	Standard
Er	166	53.3	47.2				mg/L	10	Standard
I	127	122018.9	6.2				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.960	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.640	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	102.404
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.628
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606040001
Sample Date/Time: Monday, June 13, 2016 13:48:23
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	116036.2	3.0				ug/L	84319	Standard
	Be	9	25594.9	2.1	**15.8892**	0.134	0.8	ug/L	7	Standard
	Al	27	72417806.6	2.0	**277.0790**	5.269	1.9	ug/L	1022	Standard
	Sc	45	95563.8	1.0				ug/L	56654	Standard
	Ti	47	29782.9	0.8	**76.6451**	1.966	2.6	ug/L	114	Standard
	V	51	60086.8	6.3	**6.0363**	0.295	4.9	ug/L	1609	Standard
	Cr	52	684370.6	2.4	**69.5564**	0.814	1.2	ug/L	8548	Standard
	Cr	53	88353.7	3.2	**74.4623**	1.713	2.3	ug/L	925	Standard
	Mn	55	66899523.0	1.1	**8678.3634**	210.130	2.4	ug/L	1051	Standard
	Co	59	2854823.4	1.8	**324.8016**	11.100	3.4	ug/L	178	Standard
	Ni	60	1418301.1	0.5	**581.9054**	11.791	2.0	ug/L	312	Standard
	Cu	65	413627.9	0.1	**174.0811**	3.106	1.8	ug/L	233	Standard
	Zn	66	1859031.5	0.3	**1365.4264**	26.722	2.0	ug/L	606	Standard
>	**Ge**	72	632957.3	1.8				ug/L	641816	Standard
	As	75	11091.8	0.7	**8.2320**	0.199	2.4	ug/L	-21	Standard
	Se	82	291.0	4.4	**1.8341**	0.122	6.7	ug/L	23	Standard
	Se-1	77	283.3	10.0	**2.1857**	0.337	15.4	ug/L	86	Standard
>	**Ga**	71	9881.6	3.4				mg/L	152	Standard
	Rb	85	81490.3	2.7				ug/L	18	Standard
	Y	89	2798901.8	1.2				ug/L	578199	Standard
>	**Rh**	103	538.3	7.2				ug/L	20	Standard
	Mo	98	99034.4	1.7	**32.1478**	0.219	0.7	ug/L	19	Standard
	Ag	107	331.0	28.8	**0.0261**	0.012	44.8	ug/L	113	Standard
	Cd	111	6498.1	2.6	**2.5707**	0.048	1.9	mg/L	3	Standard
	Cd	114	16678.7	2.8	**2.6679**	0.018	0.7	ug/L	8	Standard
>	**In**	115	757573.2	2.1				ug/L	797687	Standard
	Sn	118	2816.9	1.2	**0.3115**	0.010	3.3	ug/L	620	Standard
	Sb	123	1177.0	6.5	**0.2090**	0.010	4.7	ug/L	113	Standard
	Ba	135	109565.8	1.2	**46.8414**	0.445	1.0	ug/L	48	Standard
	Ce	140	1474039.5	1.6				ug/L	33	Standard
>	**Tb**	159	1323437.1	1.9				ug/L	1160331	Standard
	Ho	165	186626.1	2.3				ug/L	5	Standard
	Tl	203	1534.4	9.0	**0.1549**	0.013	8.4	ug/L	15	Standard
	Tl	205	1348.4	8.2	**0.1436**	0.011	7.6	ug/L	15	Standard
	Pb	206	8732.2	0.8	**1.5034**	0.012	0.8	ug/L	289	Standard
	Pb	207	6817.5	1.0	**1.2865**	0.006	0.4	ug/L	250	Standard
	Pb	208	30826.5	2.1	**1.3203**	0.013	1.0	ug/L	1113	Standard
	U	238	46626.0	1.6	**5.5820**	0.023	0.4	ug/L	3	Standard
>	**Bi**	209	635161.3	1.3				ug/L	670731	Standard

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Na	23	61.7	24.8	**-141.1821**	35.545	25.2	mg/L	0	Standard
Mg	24	7698.6	3.4	**4.1935**	0.110	2.6	mg/L	32	Standard
K	39	653.3	4.2	**1.2999**	0.054	4.1	mg/L	33	Standard
Ca	43	5072.5	2.3	**190.3657**	2.551	1.3	mg/L	58	Standard
Fe	54	283603.4	2.0	**95.0030**	1.199	1.3	mg/L	213	Standard
Fe	57	79193.1	1.2	**101.8008**	0.349	0.3	mg/L	132	Standard
Sc-1	45	95563.8	1.0				mg/L	56654	Standard
Cl	35	374891.0	1.2				ug/L	93221	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	8469.0	3.9				ug/L	2707	Standard
P	31	68039.1	1.0				ug/L	24082	Standard
S	34	4447.3	0.6				ug/L	3865	Standard
Sr	88	2723.6	2.7				ug/L	43	Standard
C	12	546.7	11.0				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	24.7				mg/L	0	Standard
Dy	164	290319.1	2.2				mg/L	20	Standard
Ho-1	165	186626.1	2.3				mg/L	5	Standard
Er	166	158067.0	1.3				mg/L	10	Standard
I	127	16831.0	3.6				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		137.616	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.620	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.971
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.697
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Co 59 Upper, S, EEE	Co	59
Ni 60 Upper, S, EEE	Ni	60
Cu 65 Upper, S, EEE	Cu	65
Zn 66 Upper, S, EEE	Zn	66

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Method 6020 - Summary Report

Sample ID: L1606040002
Sample Date/Time: Monday, June 13, 2016 13:51:35
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	128694.3	0.7				ug/L	84319	Standard
	Be	9	43.3	29.0	**0.0141**	0.007	49.1	ug/L	7	Standard
	Al	27	51670343.9	0.9	**178.1965**	0.619	0.3	ug/L	1022	Standard
	Sc	45	59277.5	3.4				ug/L	56654	Standard
	Ti	47	210.7	20.9	**0.2692**	0.114	42.2	ug/L	114	Standard
	V	51	2606.1	3.4	**0.0918**	0.007	7.8	ug/L	1609	Standard
	Cr	52	13135.0	2.3	**0.4133**	0.041	9.8	ug/L	8548	Standard
	Cr	53	1300.1	11.4	**0.3065**	0.114	37.0	ug/L	925	Standard
	Mn	55	4004673.5	0.2	**499.0753**	4.534	0.9	ug/L	1051	Standard
	Co	59	54422.6	0.7	**5.9285**	0.089	1.5	ug/L	178	Standard
	Ni	60	48938.6	2.0	**19.1739**	0.531	2.8	ug/L	312	Standard
	Cu	65	31925.9	1.1	**12.8177**	0.236	1.8	ug/L	233	Standard
	Zn	66	6337.7	4.5	**3.9472**	0.216	5.5	ug/L	606	Standard
>	**Ge**	72	658527.5	0.8				ug/L	641816	Standard
	As	75	747.0	2.9	**0.5832**	0.014	2.4	ug/L	-21	Standard
	Se	82	379.7	2.2	**2.3366**	0.035	1.5	ug/L	23	Standard
	Se-1	77	118.7	8.6	**0.3582**	0.097	27.1	ug/L	86	Standard
>	**Ga**	71	421.7	5.6				mg/L	152	Standard
	Rb	85	83638.7	2.8				ug/L	18	Standard
	Y	89	630379.7	0.4				ug/L	578199	Standard
>	**Rh**	103	281.7	17.1				ug/L	20	Standard
	Mo	98	2033.6	1.9	**0.5587**	0.008	1.3	ug/L	19	Standard
	Ag	107	124.7	9.9	**-0.0016**	0.001	83.5	ug/L	113	Standard
	Cd	111	59.7	11.1	**0.0186**	0.003	14.1	mg/L	3	Standard
	Cd	114	175.3	13.4	**0.0224**	0.003	14.2	ug/L	8	Standard
>	**In**	115	872641.9	1.9				ug/L	797687	Standard
	Sn	118	1978.5	10.2	**0.1552**	0.023	15.0	ug/L	620	Standard
	Sb	123	242.0	23.1	**0.0291**	0.010	33.1	ug/L	113	Standard
	Ba	135	12744.7	3.8	**4.7055**	0.118	2.5	ug/L	48	Standard
	Ce	140	1048.4	7.0				ug/L	33	Standard
>	**Tb**	159	1270897.4	3.1				ug/L	1160331	Standard
	Ho	165	68.3	62.2				ug/L	5	Standard
	Tl	203	496.3	2.0	**0.0428**	0.001	1.3	ug/L	15	Standard
	Tl	205	501.7	3.5	**0.0444**	0.002	3.5	ug/L	15	Standard
	Pb	206	547.0	2.1	**0.0342**	0.002	6.9	ug/L	289	Standard
	Pb	207	455.3	2.0	**0.0268**	0.002	7.0	ug/L	250	Standard
	Pb	208	2044.7	1.7	**0.0293**	0.001	4.9	ug/L	1113	Standard
	U	238	1966.8	1.4	**0.2138**	0.006	3.0	ug/L	3	Standard
>	**Bi**	209	694264.8	1.6				ug/L	670731	Standard

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Na	23	13.3	21.7	**-45.1469**	12.281	27.2	mg/L	0	Standard
Mg	24	9928.3	2.9	**8.7566**	0.121	1.4	mg/L	32	Standard
K	39	581.7	6.9	**1.9210**	0.093	4.9	mg/L	33	Standard
Ca	43	1461.7	12.2	**86.6274**	10.850	12.5	mg/L	58	Standard
Fe	54	340.3	11.0	**0.0547**	0.017	31.9	mg/L	213	Standard
Fe	57	1266.7	5.8	**2.3299**	0.151	6.5	mg/L	132	Standard
> **Sc-1**	45	59277.5	3.4				mg/L	56654	Standard
Cl	35	399873.4	0.5				ug/L	93221	Standard
Kr	83	1.0	173.2				ug/L	1	Standard
Br	81	66753.5	3.7				ug/L	2707	Standard
P	31	30378.8	4.0				ug/L	24082	Standard
S	34	4514.0	1.2				ug/L	3865	Standard
Sr	88	1125.0	2.8				ug/L	43	Standard
C	12	296.7	32.7				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	57.7				mg/L	0	Standard
Dy	164	127.9	27.3				mg/L	20	Standard
Ho-1	165	68.3	62.2				mg/L	5	Standard
Er	166	113.3	36.7				mg/L	10	Standard
I	127	12823.8	2.0				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		152.628	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.604	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.397
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.509
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606040002
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Method 6020 - Summary Report

Sample ID: L1606040005
Sample Date/Time: Monday, June 13, 2016 13:54:46
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	150486.1	4.0				ug/L	84319	Standard
	Be	9	19305.6	3.8	**9.2392**	0.302	3.3	ug/L	7	Standard
	Al	27	51314890.6	1.1	**151.4874**	5.581	3.7	ug/L	1022	Standard
	Sc	45	72905.0	0.4				ug/L	56654	Standard
	Ti	47	700.3	4.6	**1.4598**	0.111	7.6	ug/L	114	Standard
	V	51	43747.2	3.9	**4.1133**	0.141	3.4	ug/L	1609	Standard
	Cr	52	164328.4	1.0	**15.1435**	0.471	3.1	ug/L	8548	Standard
	Cr	53	19711.2	3.5	**15.1488**	0.767	5.1	ug/L	925	Standard
	Mn	55	14658971.8	2.0	**1801.4840**	61.314	3.4	ug/L	1051	Standard
	Co	59	989261.6	0.7	**106.5892**	2.017	1.9	ug/L	178	Standard
	Ni	60	511895.7	0.4	**198.8892**	4.931	2.5	ug/L	312	Standard
	Cu	65	86135.5	1.0	**34.2592**	0.717	2.1	ug/L	233	Standard
	Zn	66	913230.3	0.7	**635.1245**	12.178	1.9	ug/L	606	Standard
>	**Ge**	72	668176.1	2.0				ug/L	641816	Standard
	As	75	5589.8	1.0	**3.9585**	0.111	2.8	ug/L	-21	Standard
	Se	82	186.6	5.1	**1.0534**	0.039	3.7	ug/L	23	Standard
	Se-1	77	187.7	5.7	**1.0475**	0.149	14.2	ug/L	86	Standard
>	**Ga**	71	5350.9	2.8				mg/L	152	Standard
	Rb	85	92114.2	1.3				ug/L	18	Standard
	Y	89	1540112.0	1.1				ug/L	578199	Standard
>	**Rh**	103	125.0	32.7				ug/L	20	Standard
	Mo	98	171.5	16.0	**0.0376**	0.008	21.5	ug/L	19	Standard
	Ag	107	148.0	14.1	**0.0023**	0.003	115.5	ug/L	113	Standard
	Cd	111	2637.3	2.2	**0.9779**	0.012	1.2	mg/L	3	Standard
	Cd	114	6427.6	1.6	**0.9639**	0.022	2.3	ug/L	8	Standard
>	**In**	115	807192.5	1.0				ug/L	797687	Standard
	Sn	118	1381.7	5.3	**0.0956**	0.012	12.1	ug/L	620	Standard
	Sb	123	234.8	13.6	**0.0309**	0.006	17.8	ug/L	113	Standard
	Ba	135	6729.2	1.3	**2.6752**	0.022	0.8	ug/L	48	Standard
	Ce	140	714093.1	1.1				ug/L	33	Standard
>	**Tb**	159	1291200.1	1.2				ug/L	1160331	Standard
	Ho	165	81676.2	0.8				ug/L	5	Standard
	Tl	203	2286.8	2.0	**0.2127**	0.004	2.0	ug/L	15	Standard
	Tl	205	2186.8	5.6	**0.2162**	0.012	5.7	ug/L	15	Standard
	Pb	206	1438.7	3.5	**0.1795**	0.003	1.8	ug/L	289	Standard
	Pb	207	1189.0	2.8	**0.1589**	0.012	7.3	ug/L	250	Standard
	Pb	208	5243.4	2.8	**0.1597**	0.011	6.8	ug/L	1113	Standard
	U	238	20020.2	1.4	**2.1898**	0.037	1.7	ug/L	3	Standard
>	**Bi**	209	695070.4	2.7				ug/L	670731	Standard

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Na	23	20.0	43.3	**-56.3389**	27.419	48.7	mg/L	0	Standard
Mg	24	1603.4	5.1	**1.1211**	0.059	5.2	mg/L	32	Standard
K	39	171.7	14.7	**0.3631**	0.071	19.5	mg/L	33	Standard
Ca	43	1138.4	13.4	**53.5497**	7.636	14.3	mg/L	58	Standard
Fe	54	187414.7	0.5	**82.2818**	0.752	0.9	mg/L	213	Standard
Fe	57	50631.1	1.9	**85.2634**	1.425	1.7	mg/L	132	Standard
Sc-1	45	72905.0	0.4				mg/L	56654	Standard
Cl	35	708575.0	2.0				ug/L	93221	Standard
Kr	83	0.0					ug/L	1	Standard
Br	81	5841.1	4.2				ug/L	2707	Standard
P	31	50594.3	0.8				ug/L	24082	Standard
S	34	4527.3	1.7				ug/L	3865	Standard
Sr	88	755.0	14.4				ug/L	43	Standard
C	12	310.0	8.5				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	130296.4	1.6				mg/L	20	Standard
Ho-1	165	81676.2	0.8				mg/L	5	Standard
Er	166	69174.3	2.1				mg/L	10	Standard
I	127	13352.6	7.9				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		178.472	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.107	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.192
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.629
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Co 59 Upper, S, EEE	Co	59
Ni 60 Upper, S, EEE	Ni	60
Zn 66 Upper, S, EEE	Zn	66

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Method 6020 - Summary Report

Sample ID: L1606040006
Sample Date/Time: Monday, June 13, 2016 13:57:58
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	160357.7	2.0				ug/L	84319	Standard
	Be	9	19422.5	5.0	**8.7193**	0.419	4.8	ug/L	7	Standard
	Al	27	49041210.9	1.7	**135.7403**	1.095	0.8	ug/L	1022	Standard
	Sc	45	72035.8	0.8				ug/L	56654	Standard
	Ti	47	698.3	4.9	**1.4386**	0.083	5.8	ug/L	114	Standard
	V	51	40397.6	0.7	**3.7512**	0.057	1.5	ug/L	1609	Standard
	Cr	52	152239.2	1.7	**13.8305**	0.387	2.8	ug/L	8548	Standard
	Cr	53	18114.2	1.8	**13.7275**	0.429	3.1	ug/L	925	Standard
	Mn	55	13464096.0	0.9	**1639.4820**	5.894	0.4	ug/L	1051	Standard
	Co	59	895155.9	0.4	**95.5824**	0.811	0.8	ug/L	178	Standard
	Ni	60	476583.8	1.0	**183.4970**	3.670	2.0	ug/L	312	Standard
	Cu	65	81705.7	1.2	**32.2003**	0.530	1.6	ug/L	233	Standard
	Zn	66	848509.3	0.6	**584.7946**	7.666	1.3	ug/L	606	Standard
>	Ge	72	674104.8	1.2				ug/L	641816	Standard
	As	75	5047.3	2.9	**3.5476**	0.113	3.2	ug/L	-21	Standard
	Se	82	179.7	3.8	**0.9993**	0.039	3.9	ug/L	23	Standard
	Se-1	77	169.7	6.1	**0.8475**	0.126	14.8	ug/L	86	Standard
>	Ga	71	4892.5	2.9				mg/L	152	Standard
	Rb	85	82499.0	1.3				ug/L	18	Standard
	Y	89	1448250.4	2.0				ug/L	578199	Standard
>	Rh	103	111.7	18.6				ug/L	20	Standard
	Mo	98	229.2	4.7	**0.0540**	0.004	7.0	ug/L	19	Standard
	Ag	107	152.7	7.0	**0.0025**	0.001	51.0	ug/L	113	Standard
	Cd	111	2691.2	1.6	**0.9806**	0.019	1.9	mg/L	3	Standard
	Cd	114	6906.0	1.4	**1.0176**	0.014	1.3	ug/L	8	Standard
>	In	115	821560.9	0.8				ug/L	797687	Standard
	Sn	118	1388.4	0.9	**0.0932**	0.003	3.1	ug/L	620	Standard
	Sb	123	220.8	20.1	**0.0278**	0.007	26.4	ug/L	113	Standard
	Ba	135	7531.9	1.6	**2.9444**	0.028	0.9	ug/L	48	Standard
	Ce	140	659080.7	2.2				ug/L	33	Standard
>	Tb	159	1317501.4	0.6				ug/L	1160331	Standard
	Ho	165	76713.7	0.6				ug/L	5	Standard
	Tl	203	2117.5	2.6	**0.1904**	0.006	3.1	ug/L	15	Standard
	Tl	205	1995.1	4.5	**0.1904**	0.010	5.1	ug/L	15	Standard
	Pb	206	1556.7	0.7	**0.1909**	0.001	0.6	ug/L	289	Standard
	Pb	207	1334.4	0.9	**0.1774**	0.003	1.7	ug/L	250	Standard
	Pb	208	5604.4	2.0	**0.1672**	0.005	3.2	ug/L	1113	Standard
	U	238	18695.9	1.8	**1.9813**	0.042	2.1	ug/L	3	Standard
>	Bi	209	717159.7	0.5				ug/L	670731	Standard

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Na	23	10.0	50.0	**-25.0994**	15.657	62.4	mg/L	0	Standard
Mg	24	1673.4	12.7	**1.1869**	0.165	13.9	mg/L	32	Standard
K	39	150.0	20.3	**0.3058**	0.084	27.6	mg/L	33	Standard
Ca	43	998.4	9.6	**47.1310**	4.705	10.0	mg/L	58	Standard
Fe	54	171114.0	2.0	**76.0317**	2.175	2.9	mg/L	213	Standard
Fe	57	46676.8	1.1	**79.5423**	1.546	1.9	mg/L	132	Standard
Sc-1	45	72035.8	0.8				mg/L	56654	Standard
Cl	35	663406.6	1.3				ug/L	93221	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	4570.7	0.9				ug/L	2707	Standard
P	31	46549.7	1.8				ug/L	24082	Standard
S	34	4369.0	3.0				ug/L	3865	Standard
Sr	88	736.7	5.8				ug/L	43	Standard
C	12	303.3	16.9				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	120655.2	1.2				mg/L	20	Standard
Ho-1	165	76713.7	0.6				mg/L	5	Standard
Er	166	64256.0	2.3				mg/L	10	Standard
I	127	12892.2	3.8				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		190.180	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.031	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.993
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.922
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Ni 60 Upper, S, EEE	Ni	60
Zn 66 Upper, S, EEE	Zn	66

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Method 6020 - Summary Report

Sample ID: L1606040007
Sample Date/Time: Monday, June 13, 2016 14:01:09
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	144637.7	3.6				ug/L	84319	Standard
	Be	9	2271.8	5.0	**1.1217**	0.034	3.0	ug/L	7	Standard
	Al	27	14785046.5	4.1	**45.3644**	1.071	2.4	ug/L	1022	Standard
	Sc	45	59998.6	2.3				ug/L	56654	Standard
	Ti	47	162.3	3.7	**0.1525**	0.012	7.9	ug/L	114	Standard
	V	51	2237.6	3.7	**0.0573**	0.008	14.6	ug/L	1609	Standard
	Cr	52	21092.7	2.3	**1.2200**	0.029	2.4	ug/L	8548	Standard
	Cr	53	2155.2	5.8	**1.0230**	0.087	8.5	ug/L	925	Standard
	Mn	55	3790508.0	0.2	**476.8649**	3.450	0.7	ug/L	1051	Standard
	Co	59	179362.4	0.7	**19.7743**	0.280	1.4	ug/L	178	Standard
	Ni	60	84139.7	2.1	**33.3659**	0.442	1.3	ug/L	312	Standard
	Cu	65	23498.5	1.3	**9.4963**	0.056	0.6	ug/L	233	Standard
	Zn	66	104790.8	0.9	**74.1677**	0.805	1.1	ug/L	606	Standard
>	**Ge**	72	652331.5	0.9				ug/L	641816	Standard
	As	75	223.4	5.1	**0.2138**	0.008	3.6	ug/L	-21	Standard
	Se	82	88.2	3.3	**0.4326**	0.017	4.0	ug/L	23	Standard
	Se-1	77	102.7	3.0	**0.2030**	0.026	13.0	ug/L	86	Standard
>	**Ga**	71	390.0	7.1				mg/L	152	Standard
	Rb	85	36923.3	1.1				ug/L	18	Standard
	Y	89	736261.6	0.7				ug/L	578199	Standard
>	**Rh**	103	140.0	25.8				ug/L	20	Standard
	Mo	98	54.1	25.5	**0.0010**	0.004	391.5	ug/L	19	Standard
	Ag	107	181.0	67.5	**0.0049**	0.013	271.6	ug/L	113	Standard
	Cd	111	592.2	12.0	**0.2060**	0.023	10.9	mg/L	3	Standard
	Cd	114	1504.4	15.0	**0.2116**	0.029	13.8	ug/L	8	Standard
>	**In**	115	853374.1	1.4				ug/L	797687	Standard
	Sn	118	1268.4	5.1	**0.0713**	0.008	11.9	ug/L	620	Standard
	Sb	123	240.9	34.7	**0.0297**	0.013	45.3	ug/L	113	Standard
	Ba	135	19839.3	1.0	**7.5073**	0.076	1.0	ug/L	48	Standard
	Ce	140	141817.3	0.7				ug/L	33	Standard
>	**Tb**	159	1286046.5	1.7				ug/L	1160331	Standard
	Ho	165	10662.1	3.0				ug/L	5	Standard
	Tl	203	1150.0	17.8	**0.1003**	0.018	17.5	ug/L	15	Standard
	Tl	205	1008.4	7.2	**0.0919**	0.007	7.9	ug/L	15	Standard
	Pb	206	3084.6	1.6	**0.4278**	0.005	1.1	ug/L	289	Standard
	Pb	207	2626.9	1.7	**0.3984**	0.010	2.6	ug/L	250	Standard
	Pb	208	11621.1	1.1	**0.4004**	0.006	1.5	ug/L	1113	Standard
	U	238	5018.2	2.4	**0.5255**	0.018	3.5	ug/L	3	Standard
>	**Bi**	209	724066.0	1.2				ug/L	670731	Standard

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Na	23	5.0	0.0	**-12.4600**	0.441	3.5	mg/L	0	Standard
Mg	24	563.3	9.2	**0.4604**	0.053	11.5	mg/L	32	Standard
K	39	181.7	20.7	**0.5037**	0.127	25.1	mg/L	33	Standard
Ca	43	785.0	7.1	**44.3714**	4.409	9.9	mg/L	58	Standard
Fe	54	6216.2	3.6	**3.1951**	0.197	6.2	mg/L	213	Standard
Fe	57	2021.8	3.9	**3.8469**	0.071	1.9	mg/L	132	Standard
> **Sc-1**	45	59998.6	2.3				mg/L	56654	Standard
Cl	35	299210.9	0.2				ug/L	93221	Standard
Kr	83	2.0	0.0				ug/L	1	Standard
Br	81	5187.6	2.9				ug/L	2707	Standard
P	31	29373.5	2.1				ug/L	24082	Standard
S	34	3773.8	2.3				ug/L	3865	Standard
Sr	88	728.4	7.3				ug/L	43	Standard
C	12	290.0	18.2				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	16811.7	2.4				mg/L	20	Standard
Ho-1	165	10662.1	3.0				mg/L	5	Standard
Er	166	9146.1	3.3				mg/L	10	Standard
I	127	17840.5	5.8				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		171.536	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.638	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.981
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.952
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606040008
Sample Date/Time: Monday, June 13, 2016 14:04:21
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	143080.9	2.1				ug/L	84319	Standard
	Be	9	2495.2	3.3	**1.2465**	0.025	2.0	ug/L	7	Standard
	Al	27	14826742.9	0.4	**46.0017**	1.191	2.6	ug/L	1022	Standard
	Sc	45	60791.7	2.1				ug/L	56654	Standard
	Ti	47	183.7	5.1	**0.1915**	0.020	10.3	ug/L	114	Standard
	V	51	2733.1	8.6	**0.0986**	0.025	25.8	ug/L	1609	Standard
	Cr	52	23742.9	1.2	**1.4108**	0.028	2.0	ug/L	8548	Standard
	Cr	53	2301.8	3.2	**1.0855**	0.063	5.8	ug/L	925	Standard
	Mn	55	3977003.1	1.3	**484.7410**	11.360	2.3	ug/L	1051	Standard
	Co	59	193649.9	1.7	**20.6841**	0.507	2.5	ug/L	178	Standard
	Ni	60	90437.8	1.1	**34.7518**	0.510	1.5	ug/L	312	Standard
	Cu	65	25288.1	1.2	**9.9052**	0.145	1.5	ug/L	233	Standard
	Zn	66	116897.9	0.5	**80.1947**	0.889	1.1	ug/L	606	Standard
>	**Ge**	72	673384.7	1.0				ug/L	641816	Standard
	As	75	281.1	9.8	**0.2487**	0.019	7.4	ug/L	-21	Standard
	Se	82	80.7	2.4	**0.3665**	0.008	2.1	ug/L	23	Standard
	Se-1	77	98.0	6.2	**0.1221**	0.057	46.9	ug/L	86	Standard
>	**Ga**	71	518.3	11.4				mg/L	152	Standard
	Rb	85	38523.9	0.8				ug/L	18	Standard
	Y	89	757826.2	0.1				ug/L	578199	Standard
>	**Rh**	103	155.0	3.2				ug/L	20	Standard
	Mo	98	90.1	25.3	**0.0116**	0.007	61.0	ug/L	19	Standard
	Ag	107	150.3	32.8	**0.0017**	0.006	339.4	ug/L	113	Standard
	Cd	111	711.9	2.2	**0.2494**	0.010	4.1	mg/L	3	Standard
	Cd	114	1762.4	8.2	**0.2495**	0.018	7.0	ug/L	8	Standard
>	**In**	115	849855.3	2.0				ug/L	797687	Standard
	Sn	118	1530.1	10.5	**0.1054**	0.024	22.4	ug/L	620	Standard
	Sb	123	248.9	21.3	**0.0313**	0.009	29.6	ug/L	113	Standard
	Ba	135	19368.0	0.5	**7.3598**	0.117	1.6	ug/L	48	Standard
	Ce	140	149290.5	2.3				ug/L	33	Standard
>	**Tb**	159	1282958.1	1.3				ug/L	1160331	Standard
	Ho	165	11607.8	1.5				ug/L	5	Standard
	Tl	203	1238.1	2.8	**0.1084**	0.003	3.0	ug/L	15	Standard
	Tl	205	1281.7	8.8	**0.1187**	0.012	9.9	ug/L	15	Standard
	Pb	206	3156.0	0.7	**0.4388**	0.002	0.4	ug/L	289	Standard
	Pb	207	2626.6	2.1	**0.3981**	0.012	3.0	ug/L	250	Standard
	Pb	208	12218.0	4.9	**0.4237**	0.027	6.3	ug/L	1113	Standard
	U	238	5482.0	3.5	**0.5740**	0.024	4.1	ug/L	3	Standard
>	**Bi**	209	724358.5	0.7				ug/L	670731	Standard

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Na	23	3.3	173.2	**-6.0745**	22.069	363.3	mg/L	0	Standard
Mg	24	671.7	4.4	**0.5473**	0.034	6.3	mg/L	32	Standard
K	39	186.7	12.4	**0.5141**	0.092	17.9	mg/L	33	Standard
Ca	43	711.7	2.9	**39.2767**	0.415	1.1	mg/L	58	Standard
Fe	54	8081.2	2.7	**4.1339**	0.164	4.0	mg/L	213	Standard
Fe	57	2703.6	6.1	**5.1764**	0.340	6.6	mg/L	132	Standard
Sc-1	45	60791.7	2.1				mg/L	56654	Standard
Cl	35	309983.4	1.6				ug/L	93221	Standard
Kr	83	1.3	86.6				ug/L	1	Standard
Br	81	5517.7	8.1				ug/L	2707	Standard
P	31	30899.8	1.6				ug/L	24082	Standard
S	34	3905.5	1.1				ug/L	3865	Standard
Sr	88	690.0	13.5				ug/L	43	Standard
C	12	270.0	16.1				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	19180.2	2.9				mg/L	20	Standard
Ho-1	165	11607.8	1.5				mg/L	5	Standard
Er	166	10143.4	6.0				mg/L	10	Standard
I	127	15187.6	6.0				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		169.690	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.919	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	106.540
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	107.995
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606040009
Sample Date/Time: Monday, June 13, 2016 14:07:32
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	241118.5	0.8				ug/L	84319	Standard
	Be	9	83420.7	0.5	**24.9241**	0.089	0.4	ug/L	7	Standard
	Al	27	69485009.8	0.7	**127.9014**	0.515	0.4	ug/L	1022	Standard
	Sc	45	112984.7	0.9				ug/L	56654	Standard
	Ti	47	31838.8	0.6	**80.7362**	0.950	1.2	ug/L	114	Standard
	V	51	34433.8	5.5	**3.3376**	0.187	5.6	ug/L	1609	Standard
	Cr	52	376636.9	1.3	**37.3213**	0.693	1.9	ug/L	8548	Standard
	Cr	53	45357.8	0.9	**37.2983**	0.122	0.3	ug/L	925	Standard
	Mn	55	66562072.0	1.1	**8506.5563**	52.058	0.6	ug/L	1051	Standard
	Co	59	4976449.1	0.7	**557.7470**	2.195	0.4	ug/L	178	Standard
	Ni	60	1951788.4	2.3	**789.0452**	20.454	2.6	ug/L	312	Standard
	Cu	65	230346.5	0.6	**95.4693**	0.781	0.8	ug/L	233	Standard
	Zn	66	4295984.0	1.3	**3109.4991**	50.188	1.6	ug/L	606	Standard
>	Ge	72	642304.3	0.6				ug/L	641816	Standard
	As	75	5393.1	2.4	**3.9718**	0.117	2.9	ug/L	-21	Standard
	Se	82	938.5	2.4	**6.1535**	0.141	2.3	ug/L	23	Standard
	Se-1	77	660.3	3.3	**6.1431**	0.193	3.1	ug/L	86	Standard
>	Ga	71	12276.6	3.8				mg/L	152	Standard
	Rb	85	102629.8	1.5				ug/L	18	Standard
	Y	89	6872953.3	0.5				ug/L	578199	Standard
>	Rh	103	398.3	9.4				ug/L	20	Standard
	Mo	98	122527.6	1.0	**38.9999**	0.658	1.7	ug/L	19	Standard
	Ag	107	362.3	10.3	**0.0291**	0.004	14.8	ug/L	113	Standard
	Cd	111	13971.2	1.2	**5.4215**	0.110	2.0	mg/L	3	Standard
	Cd	114	35164.3	0.6	**5.5177**	0.076	1.4	ug/L	8	Standard
>	In	115	772693.7	1.0				ug/L	797687	Standard
	Sn	118	1798.4	3.5	**0.1618**	0.010	6.3	ug/L	620	Standard
	Sb	123	837.9	2.2	**0.1430**	0.005	3.3	ug/L	113	Standard
	Ba	135	150520.7	1.3	**63.1005**	1.407	2.2	ug/L	48	Standard
	Ce	140	4698578.1	1.7				ug/L	33	Standard
>	Tb	159	1706421.0	1.5				ug/L	1160331	Standard
	Ho	165	540817.8	1.7				ug/L	5	Standard
	Tl	203	2115.8	3.7	**0.2085**	0.009	4.3	ug/L	15	Standard
	Tl	205	1991.8	5.8	**0.2085**	0.013	6.4	ug/L	15	Standard
	Pb	206	34722.7	1.4	**5.9464**	0.119	2.0	ug/L	289	Standard
	Pb	207	28841.1	0.7	**5.4414**	0.058	1.1	ug/L	250	Standard
	Pb	208	125475.1	0.7	**5.3642**	0.043	0.8	ug/L	1113	Standard
	U	238	52135.9	0.8	**6.0450**	0.082	1.4	ug/L	3	Standard
>	Bi	209	655885.7	0.6				ug/L	670731	Standard

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Na	23	38.3	39.8	**-71.1539**	30.776	43.3	mg/L	0	Standard
Mg	24	5686.1	1.0	**2.6078**	0.033	1.3	mg/L	32	Standard
K	39	793.4	7.3	**1.3393**	0.118	8.8	mg/L	33	Standard
Ca	43	3600.4	2.0	**112.9119**	2.463	2.2	mg/L	58	Standard
Fe	54	205252.8	2.1	**58.1087**	1.161	2.0	mg/L	213	Standard
Fe	57	58382.3	1.2	**63.3659**	0.828	1.3	mg/L	132	Standard
> **Sc-1**	45	112984.7	0.9				mg/L	56654	Standard
Cl	35	390445.6	0.6				ug/L	93221	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	59871.6	5.4				ug/L	2707	Standard
P	31	103890.1	2.3				ug/L	24082	Standard
S	34	3902.2	6.1				ug/L	3865	Standard
Sr	88	2296.8	9.8				ug/L	43	Standard
C	12	626.7	20.2				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	848267.3	1.1				mg/L	20	Standard
Ho-1	165	540817.8	1.7				mg/L	5	Standard
Er	166	449991.7	1.1				mg/L	10	Standard
I	127	46620.1	6.2				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		285.960	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.076	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.867
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.787
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Co 59 Upper, S, EEE	Co	59
Ni 60 Upper, S, EEE	Ni	60
Zn 66 Upper, S, EEE	Zn	66

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Method 6020 - Summary Report

Sample ID: L1606040010
Sample Date/Time: Monday, June 13, 2016 14:10:44
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	246529.6	0.9				ug/L	84319	Standard
	Be	9	190.0	29.3	**0.0453**	0.016	35.1	ug/L	7	Standard
	Al	27	42226569.9	1.8	**76.0255**	1.881	2.5	ug/L	1022	Standard
	Sc	45	58069.4	1.2				ug/L	56654	Standard
	Ti	47	209.0	12.9	**0.2602**	0.075	29.0	ug/L	114	Standard
	V	51	2469.3	3.9	**0.0758**	0.009	12.2	ug/L	1609	Standard
	Cr	52	13191.4	1.7	**0.4054**	0.010	2.4	ug/L	8548	Standard
	Cr	53	1173.4	9.7	**0.1935**	0.090	46.4	ug/L	925	Standard
	Mn	55	4632084.7	0.6	**571.5339**	12.496	2.2	ug/L	1051	Standard
	Co	59	124969.6	1.3	**13.5025**	0.143	1.1	ug/L	178	Standard
	Ni	60	94575.3	2.1	**36.7874**	0.203	0.6	ug/L	312	Standard
	Cu	65	3813.5	1.3	**1.4246**	0.022	1.5	ug/L	233	Standard
	Zn	66	14065.5	3.2	**9.3014**	0.216	2.3	ug/L	606	Standard
>	Ge	72	665307.9	1.9				ug/L	641816	Standard
	As	75	582.9	11.4	**0.4632**	0.053	11.5	ug/L	-21	Standard
	Se	82	332.5	6.8	**2.0071**	0.179	8.9	ug/L	23	Standard
	Se-1	77	149.7	3.8	**0.6640**	0.042	6.3	ug/L	86	Standard
>	Ga	71	371.7	20.7				mg/L	152	Standard
	Rb	85	106967.9	0.8				ug/L	18	Standard
	Y	89	605988.8	1.4				ug/L	578199	Standard
>	Rh	103	231.7	2.5				ug/L	20	Standard
	Mo	98	3100.4	1.5	**0.8866**	0.009	1.0	ug/L	19	Standard
	Ag	107	118.7	5.9	**-0.0018**	0.001	44.9	ug/L	113	Standard
	Cd	111	207.6	8.1	**0.0717**	0.006	8.5	mg/L	3	Standard
	Cd	114	558.4	13.3	**0.0782**	0.011	14.2	ug/L	8	Standard
>	In	115	846324.2	0.7				ug/L	797687	Standard
	Sn	118	1428.4	10.2	**0.0930**	0.018	19.6	ug/L	620	Standard
	Sb	123	163.5	7.9	**0.0172**	0.002	13.6	ug/L	113	Standard
	Ba	135	18188.6	0.9	**6.9375**	0.026	0.4	ug/L	48	Standard
	Ce	140	11802.9	1.3				ug/L	33	Standard
>	Tb	159	1271124.7	1.2				ug/L	1160331	Standard
	Ho	165	821.7	3.5				ug/L	5	Standard
	Tl	203	740.4	3.8	**0.0641**	0.003	4.4	ug/L	15	Standard
	Tl	205	706.7	10.3	**0.0634**	0.007	11.0	ug/L	15	Standard
	Pb	206	558.0	2.5	**0.0336**	0.002	5.8	ug/L	289	Standard
	Pb	207	498.0	3.3	**0.0321**	0.003	9.7	ug/L	250	Standard
	Pb	208	2206.4	2.0	**0.0335**	0.002	6.4	ug/L	1113	Standard
	U	238	5145.5	0.7	**0.5471**	0.004	0.8	ug/L	3	Standard
>	Bi	209	713159.0	0.5				ug/L	670731	Standard

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Na	23	20.0	86.6	**-72.7554**	69.461	95.5	mg/L	0	Standard
Mg	24	6221.3	3.3	**5.5900**	0.236	4.2	mg/L	32	Standard
K	39	905.0	13.1	**3.1256**	0.389	12.4	mg/L	33	Standard
Ca	43	1358.4	5.1	**81.9869**	4.992	6.1	mg/L	58	Standard
Fe	54	1695.3	3.6	**0.8068**	0.036	4.5	mg/L	213	Standard
Fe	57	1645.1	4.3	**3.1879**	0.189	5.9	mg/L	132	Standard
> **Sc-1**	45	58069.4	1.2				mg/L	56654	Standard
Cl	35	413082.9	0.9				ug/L	93221	Standard
Kr	83	1.3	86.6				ug/L	1	Standard
Br	81	42924.1	1.9				ug/L	2707	Standard
P	31	29603.9	3.8				ug/L	24082	Standard
S	34	4068.9	2.6				ug/L	3865	Standard
Sr	88	1051.7	6.8				ug/L	43	Standard
C	12	326.7	12.4				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	1342.7	8.9				mg/L	20	Standard
Ho-1	165	821.7	3.5				mg/L	5	Standard
Er	166	780.0	5.9				mg/L	10	Standard
I	127	28752.3	1.1				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		292.377	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.660	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.097
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.326
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606043301
Sample Date/Time: Monday, June 13, 2016 14:13:55
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	139556.7	2.5				ug/L	84319	Standard
	Be	9	20.0	50.0	**0.0001**	0.005	6248.3	ug/L	7	Standard
	Al	27	6460718.2	1.1	**20.5441**	0.385	1.9	ug/L	1022	Standard
	Sc	45	62441.7	1.3				ug/L	56654	Standard
	Ti	47	1064.4	5.3	**2.2353**	0.152	6.8	ug/L	114	Standard
	V	51	5302.4	3.4	**0.3291**	0.015	4.5	ug/L	1609	Standard
	Cr	52	22317.4	1.6	**1.1942**	0.022	1.8	ug/L	8548	Standard
	Cr	53	5162.5	3.6	**3.2250**	0.164	5.1	ug/L	925	Standard
	Mn	55	119265.0	1.9	**13.8610**	0.318	2.3	ug/L	1051	Standard
	Co	59	1823.4	5.6	**0.1664**	0.010	5.9	ug/L	178	Standard
	Ni	60	79447.8	0.7	**29.3971**	0.121	0.4	ug/L	312	Standard
	Cu	65	526894.4	0.7	**200.8397**	2.299	1.1	ug/L	233	Standard
	Zn	66	9094.1	2.0	**5.5238**	0.175	3.2	ug/L	606	Standard
>	**Ge**	72	698815.9	1.1				ug/L	641816	Standard
	As	75	419.2	5.3	**0.3339**	0.014	4.3	ug/L	-21	Standard
	Se	82	136.9	7.3	**0.6938**	0.053	7.7	ug/L	23	Standard
	Se-1	77	334.7	3.8	**2.3974**	0.143	5.9	ug/L	86	Standard
>	**Ga**	71	228.3	18.2				mg/L	152	Standard
	Rb	85	65531.4	2.1				ug/L	18	Standard
	Y	89	655183.0	2.0				ug/L	578199	Standard
>	**Rh**	103	105.0	26.5				ug/L	20	Standard
	Mo	98	161891.8	1.4	**44.1266**	1.333	3.0	ug/L	19	Standard
	Ag	107	8713.8	1.9	**0.8938**	0.021	2.3	ug/L	113	Standard
	Cd	111	-98.3	16.8	**-0.0345**	0.005	15.1	mg/L	3	Standard
	Cd	114	743.0	36.0	**0.0979**	0.035	36.0	ug/L	8	Standard
>	**In**	115	902632.4	2.1				ug/L	797687	Standard
	Sn	118	279364.5	2.3	**33.2133**	1.064	3.2	ug/L	620	Standard
	Sb	123	2471.6	1.1	**0.3764**	0.004	1.1	ug/L	113	Standard
	Ba	135	167536.3	1.6	**60.1188**	0.552	0.9	ug/L	48	Standard
	Ce	140	2181.8	7.5				ug/L	33	Standard
>	**Tb**	159	1326788.2	0.9				ug/L	1160331	Standard
	Ho	165	55.0					ug/L	5	Standard
	Tl	203	103.7	14.5	**0.0050**	0.001	26.4	ug/L	15	Standard
	Tl	205	100.0	5.0	**0.0030**	0.001	18.4	ug/L	15	Standard
	Pb	206	242648.0	1.0	**37.9130**	0.316	0.8	ug/L	289	Standard
	Pb	207	204741.1	0.5	**35.2729**	0.435	1.2	ug/L	250	Standard
	Pb	208	920215.5	0.7	**35.9264**	0.690	1.9	ug/L	1113	Standard
	U	238	103.0	8.6	**0.0090**	0.001	9.6	ug/L	3	Standard
>	**Bi**	209	724469.1	1.2				ug/L	670731	Standard

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Na	23	1.7	173.2	**0.6258**	10.464	1672.0	mg/L	0	Standard
Mg	24	106291.7	2.7	**89.2720**	1.467	1.6	mg/L	32	Standard
K	39	4429.0	2.7	**14.6946**	0.228	1.6	mg/L	33	Standard
Ca	43	183.3	12.3	**7.2438**	1.245	17.2	mg/L	58	Standard
Fe	54	276.2	7.3	**0.0127**	0.012	94.6	mg/L	213	Standard
Fe	57	295.0	15.1	**0.2774**	0.081	29.2	mg/L	132	Standard
> **Sc-1**	45	62441.7	1.3				mg/L	56654	Standard
Cl	35	277225.7	1.8				ug/L	93221	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	17797.1	1.2				ug/L	2707	Standard
P	31	32174.2	3.6				ug/L	24082	Standard
S	34	4075.5	4.7				ug/L	3865	Standard
Sr	88	233.3	17.3				ug/L	43	Standard
C	12	1023.4	7.3				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	73.2	60.0				mg/L	20	Standard
Ho-1	165	55.0					mg/L	5	Standard
Er	166	73.3	90.8				mg/L	10	Standard
I	127	112783.9	5.1				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		165.510	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.881	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.156
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.012
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, June 13, 2016 14:17:08
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	138980.2	4.1				ug/L	84319	Standard
	Be	9	102086.3	2.7	**52.9507**	1.046	2.0	ug/L	7	Standard
	Al	27	12926124.5	0.6	**41.3122**	1.467	3.6	ug/L	1022	Standard
	Sc	45	65812.7	2.3				ug/L	56654	Standard
	Ti	47	47653.5	1.3	**102.7598**	0.167	0.2	ug/L	114	Standard
	V	51	624568.8	2.1	**53.8569**	0.805	1.5	ug/L	1609	Standard
	Cr	52	598810.4	1.0	**50.7375**	0.443	0.9	ug/L	8548	Standard
	Cr	53	71724.4	2.6	**50.3868**	1.296	2.6	ug/L	925	Standard
	Mn	55	486834.1	1.6	**52.7304**	0.898	1.7	ug/L	1051	Standard
	Co	59	627025.7	2.6	**59.7039**	1.310	2.2	ug/L	178	Standard
	Ni	60	150918.3	1.1	**51.7302**	0.449	0.9	ug/L	312	Standard
	Cu	65	146939.2	1.8	**51.7064**	0.441	0.9	ug/L	233	Standard
	Zn	66	84050.5	2.0	**51.1782**	0.497	1.0	ug/L	606	Standard
>	Ge	72	755791.0	1.3				ug/L	641816	Standard
	As	75	84017.0	1.8	**51.9205**	0.888	1.7	ug/L	-21	Standard
	Se	82	9404.7	1.2	**53.5453**	1.015	1.9	ug/L	23	Standard
	Se-1	77	6111.2	1.9	**54.3010**	1.042	1.9	ug/L	86	Standard
>	Ga	71	178.3	9.8				mg/L	152	Standard
	Rb	85	1288.4	7.3				ug/L	18	Standard
	Y	89	677742.4	1.7				ug/L	578199	Standard
>	Rh	103	46.7	40.6				ug/L	20	Standard
	Mo	98	439563.5	2.5	**113.9585**	2.271	2.0	ug/L	19	Standard
	Ag	107	546295.0	0.6	**54.1829**	0.765	1.4	ug/L	113	Standard
	Cd	111	162261.0	0.2	**51.2931**	0.549	1.1	mg/L	3	Standard
	Cd	114	397137.9	0.1	**50.7654**	0.428	0.8	ug/L	8	Standard
>	In	115	948762.6	0.9				ug/L	797687	Standard
	Sn	118	480482.4	1.5	**54.3897**	1.097	2.0	ug/L	620	Standard
	Sb	123	354322.0	0.4	**52.7002**	0.340	0.6	ug/L	113	Standard
	Ba	135	146913.8	0.5	**50.1497**	0.542	1.1	ug/L	48	Standard
	Ce	140	171.7	18.5				ug/L	33	Standard
>	Tb	159	1375234.2	1.4				ug/L	1160331	Standard
	Ho	165	35.0	14.3				ug/L	5	Standard
	Tl	203	633389.4	0.8	**52.0022**	0.404	0.8	ug/L	15	Standard
	Tl	205	612855.6	0.3	**54.0491**	0.053	0.1	ug/L	15	Standard
	Pb	206	377848.7	1.0	**53.2452**	0.632	1.2	ug/L	289	Standard
	Pb	207	343134.8	0.9	**53.3181**	0.513	1.0	ug/L	250	Standard
	Pb	208	1464924.4	0.4	**51.5770**	0.348	0.7	ug/L	1113	Standard
	U	238	559539.3	1.1	**52.9638**	0.707	1.3	ug/L	3	Standard
>	Bi	209	803599.7	0.3				ug/L	670731	Standard

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Na	23	0.0		**6.6672**	0.000	0.0	mg/L	0	Standard
Mg	24	6794.9	1.6	**5.3864**	0.162	3.0	mg/L	32	Standard
K	39	963.4	10.0	**2.9363**	0.373	12.7	mg/L	33	Standard
Ca	43	121.7	23.4	**3.2789**	1.598	48.7	mg/L	58	Standard
Fe	54	10095.1	1.4	**4.7895**	0.111	2.3	mg/L	213	Standard
Fe	57	2840.3	6.9	**5.0203**	0.480	9.6	mg/L	132	Standard
> **Sc-1**	45	65812.7	2.3				mg/L	56654	Standard
Cl	35	152981.6	3.2				ug/L	93221	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	3710.5	1.7				ug/L	2707	Standard
P	31	33991.5	4.3				ug/L	24082	Standard
S	34	4634.0	3.5				ug/L	3865	Standard
Sr	88	46.7	22.3				ug/L	43	Standard
C	12	183.3	12.6				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	39.4	52.0				mg/L	20	Standard
Ho-1	165	35.0	14.3				mg/L	5	Standard
Er	166	13.3	86.6				mg/L	10	Standard
I	127	4279.0	27.8				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	105.901		
Al	27	82.624		
Sc	45			
Ti	47	102.760		
V	51	107.714		
Cr	52	101.475		
Cr	53			
Mn	55	105.461		
Co	59	119.408		
Ni	60	103.460		
Cu	65	103.413		
Zn	66	102.356		
> Ge	72		117.758	
As	75	103.841		
Se	82	107.091		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	113.958		
Ag	107	108.366		
Cd	111	102.586		
Cd	114			
> In	115		118.939	
Sn	118	108.779		
Sb	123	105.400		
Ba	135	100.299		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	104.004		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.154		
U	238	105.928		
> Bi	209		119.809	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	
QC Std 6	Co	59	
QC Std 6	Mo	98	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, June 13, 2016 14:20:19
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	134721.5	2.4				ug/L	84319	Standard
	Be	9	96.7	70.2	**0.0410**	0.035	84.5	ug/L	7	Standard
	Al	27	58012.9	143.9	**0.1768**	0.267	151.0	ug/L	1022	Standard
	Sc	45	65024.3	1.8				ug/L	56654	Standard
	Ti	47	78.0	49.9	**-0.0810**	0.080	98.8	ug/L	114	Standard
	V	51	2003.9	9.8	**0.0125**	0.011	89.5	ug/L	1609	Standard
	Cr	52	10169.8	6.9	**0.0217**	0.033	150.3	ug/L	8548	Standard
	Cr	53	758.4	20.6	**-0.1984**	0.095	47.7	ug/L	925	Standard
	Mn	55	10819.8	100.5	**1.0416**	1.160	111.4	ug/L	1051	Standard
	Co	59	978.0	78.9	**0.0735**	0.072	97.4	ug/L	178	Standard
	Ni	60	898.7	123.5	**0.1839**	0.377	205.1	ug/L	312	Standard
	Cu	65	571.3	81.8	**0.1020**	0.161	157.4	ug/L	233	Standard
	Zn	66	1659.8	110.2	**0.5050**	1.109	219.6	ug/L	606	Standard
>	**Ge**	72	729051.9	3.4				ug/L	641816	Standard
	As	75	-55.2	69.3	**0.0181**	0.025	139.6	ug/L	-21	Standard
	Se	82	30.4	25.3	**0.0288**	0.045	154.6	ug/L	23	Standard
	Se-1	77	88.3	9.2	**-0.0444**	0.065	146.3	ug/L	86	Standard
>	**Ga**	71	125.0	14.4				mg/L	152	Standard
	Rb	85	96.7	113.5				ug/L	18	Standard
	Y	89	672898.0	1.5				ug/L	578199	Standard
>	**Rh**	103	13.3	57.3				ug/L	20	Standard
	Mo	98	408.6	37.7	**0.0909**	0.040	43.7	ug/L	19	Standard
	Ag	107	273.7	49.9	**0.0120**	0.013	111.9	ug/L	113	Standard
	Cd	111	50.5	102.8	**0.0140**	0.016	116.6	mg/L	3	Standard
	Cd	114	109.2	103.8	**0.0120**	0.014	120.1	ug/L	8	Standard
>	**In**	115	952198.9	0.1				ug/L	797687	Standard
	Sn	118	1521.7	8.9	**0.0833**	0.015	18.4	ug/L	620	Standard
	Sb	123	721.1	9.9	**0.0968**	0.011	11.0	ug/L	113	Standard
	Ba	135	130.3	102.2	**0.0184**	0.045	245.9	ug/L	48	Standard
	Ce	140	663.4	115.3				ug/L	33	Standard
>	**Tb**	159	1380161.3	1.8				ug/L	1160331	Standard
	Ho	165	70.0	118.9				ug/L	5	Standard
	Tl	203	207.7	93.4	**0.0125**	0.016	124.7	ug/L	15	Standard
	Tl	205	236.7	100.2	**0.0139**	0.021	147.9	ug/L	15	Standard
	Pb	206	492.0	36.1	**0.0141**	0.024	171.2	ug/L	289	Standard
	Pb	207	420.0	36.1	**0.0100**	0.023	227.1	ug/L	250	Standard
	Pb	208	1951.7	35.6	**0.0145**	0.024	162.9	ug/L	1113	Standard
	U	238	207.3	109.4	**0.0177**	0.021	119.5	ug/L	3	Standard
>	**Bi**	209	803423.2	1.4				ug/L	670731	Standard

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Na	23	0.0		**6.6672**	0.000	0.0	mg/L	0	Standard
Mg	24	78.3	101.4	**0.0298**	0.063	210.4	mg/L	32	Standard
K	39	20.0	50.0	**-0.0648**	0.031	48.4	mg/L	33	Standard
Ca	43	31.7	32.9	**-1.7011**	0.566	33.3	mg/L	58	Standard
Fe	54	335.9	58.3	**0.0354**	0.093	263.6	mg/L	213	Standard
Fe	57	141.7	17.8	**-0.0362**	0.043	119.0	mg/L	132	Standard
Sc-1	45	65024.3	1.8				mg/L	56654	Standard
Cl	35	150415.3	2.7				ug/L	93221	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	3543.7	2.1				ug/L	2707	Standard
P	31	34123.4	2.7				ug/L	24082	Standard
S	34	4979.2	2.2				ug/L	3865	Standard
Sr	88	56.7	10.2				ug/L	43	Standard
C	12	173.3	24.0				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	145.8	85.6				mg/L	20	Standard
Ho-1	165	70.0	118.9				mg/L	5	Standard
Er	166	86.7	123.4				mg/L	10	Standard
I	127	2726.9	2.6				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		113.592	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		119.370
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		119.783
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Mn	55	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606046501
Sample Date/Time: Monday, June 13, 2016 14:23:32
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	136608.2	1.7				ug/L	84319	Standard
	Be	9	76.7	43.4	**0.0301**	0.017	57.0	ug/L	7	Standard
	Al	27	26429434.9	3.5	**85.8461**	1.597	1.9	ug/L	1022	Standard
	Sc	45	62781.5	1.1				ug/L	56654	Standard
	Ti	47	178.0	11.7	**0.1621**	0.060	37.3	ug/L	114	Standard
	V	51	2916.9	3.6	**0.1053**	0.008	8.0	ug/L	1609	Standard
	Cr	52	12471.1	1.2	**0.2736**	0.019	6.9	ug/L	8548	Standard
	Cr	53	1246.7	7.4	**0.2039**	0.097	47.4	ug/L	925	Standard
	Mn	55	289882.3	1.0	**33.8388**	1.293	3.8	ug/L	1051	Standard
	Co	59	5994.9	11.2	**0.5961**	0.086	14.5	ug/L	178	Standard
	Ni	60	7171.7	4.3	**2.5301**	0.050	2.0	ug/L	312	Standard
	Cu	65	3928.5	3.1	**1.3912**	0.020	1.5	ug/L	233	Standard
	Zn	66	6846.9	0.4	**4.0179**	0.112	2.8	ug/L	606	Standard
>	**Ge**	72	700607.4	2.8				ug/L	641816	Standard
	As	75	400.8	4.6	**0.3209**	0.011	3.3	ug/L	-21	Standard
	Se	82	155.6	14.1	**0.8058**	0.113	14.0	ug/L	23	Standard
	Se-1	77	126.0	4.1	**0.3568**	0.056	15.6	ug/L	86	Standard
>	**Ga**	71	138.3	12.7				mg/L	152	Standard
	Rb	85	16340.5	2.0				ug/L	18	Standard
	Y	89	681890.0	1.4				ug/L	578199	Standard
>	**Rh**	103	123.3	31.5				ug/L	20	Standard
	Mo	98	311.8	8.4	**0.0701**	0.006	8.8	ug/L	19	Standard
	Ag	107	131.3	2.9	**-0.0014**	0.001	39.9	ug/L	113	Standard
	Cd	111	46.9	8.6	**0.0136**	0.001	10.9	mg/L	3	Standard
	Cd	114	125.5	16.7	**0.0149**	0.003	18.4	ug/L	8	Standard
>	**In**	115	905472.2	1.3				ug/L	797687	Standard
	Sn	118	1783.4	4.5	**0.1233**	0.009	7.4	ug/L	620	Standard
	Sb	123	638.2	10.2	**0.0895**	0.011	12.8	ug/L	113	Standard
	Ba	135	18624.4	2.4	**6.6408**	0.248	3.7	ug/L	48	Standard
	Ce	140	3270.4	4.0				ug/L	33	Standard
>	**Tb**	159	1307334.7	1.4				ug/L	1160331	Standard
	Ho	165	338.3	3.7				ug/L	5	Standard
	Tl	203	181.7	13.6	**0.0122**	0.002	17.2	ug/L	15	Standard
	Tl	205	215.0	18.2	**0.0142**	0.004	25.5	ug/L	15	Standard
	Pb	206	662.3	1.7	**0.0486**	0.003	5.2	ug/L	289	Standard
	Pb	207	576.3	0.8	**0.0443**	0.000	0.4	ug/L	250	Standard
	Pb	208	2675.1	2.9	**0.0505**	0.002	4.4	ug/L	1113	Standard
	U	238	482.7	9.1	**0.0489**	0.004	9.2	ug/L	3	Standard
>	**Bi**	209	724136.1	0.9				ug/L	670731	Standard

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Na	23	5.0	0.0	**-11.6074**	0.210	1.8	mg/L	0	Standard
Mg	24	89240.5	2.3	**74.5507**	1.692	2.3	mg/L	32	Standard
K	39	225.0	6.7	**0.6200**	0.046	7.4	mg/L	33	Standard
Ca	43	595.0	9.9	**31.1165**	3.057	9.8	mg/L	58	Standard
Fe	54	285.4	18.0	**0.0166**	0.027	161.4	mg/L	213	Standard
Fe	57	615.0	7.2	**0.9035**	0.098	10.8	mg/L	132	Standard
> **Sc-1**	45	62781.5	1.1				mg/L	56654	Standard
Cl	35	404291.9	2.6				ug/L	93221	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	18581.4	2.2				ug/L	2707	Standard
P	31	31880.2	4.1				ug/L	24082	Standard
S	34	4667.4	2.9				ug/L	3865	Standard
Sr	88	510.0	5.5				ug/L	43	Standard
C	12	236.7	19.1				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	600.7	5.0				mg/L	20	Standard
Ho-1	165	338.3	3.7				mg/L	5	Standard
Er	166	263.3	12.2				mg/L	10	Standard
I	127	13115.7	7.2				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		162.014	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.160	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.512
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.962
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606048101
Sample Date/Time: Monday, June 13, 2016 14:26:44
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	146565.6	1.4				ug/L	84319	Standard
	Be	9	88.3	3.3	**0.0333**	0.001	4.0	ug/L	7	Standard
	Al	27	13591611.9	1.2	**41.1568**	0.830	2.0	ug/L	1022	Standard
	Sc	45	72101.2	0.9				ug/L	56654	Standard
	Ti	47	1736.4	15.4	**3.2651**	0.516	15.8	ug/L	114	Standard
	V	51	7698.0	1.9	**0.4579**	0.018	3.9	ug/L	1609	Standard
	Cr	52	15566.3	1.6	**0.3726**	0.033	8.8	ug/L	8548	Standard
	Cr	53	2710.2	5.5	**1.0567**	0.113	10.7	ug/L	925	Standard
	Mn	55	1725153.9	2.4	**175.6787**	6.035	3.4	ug/L	1051	Standard
	Co	59	3754.1	4.1	**0.3141**	0.017	5.5	ug/L	178	Standard
	Ni	60	3422.4	2.8	**0.9759**	0.043	4.4	ug/L	312	Standard
	Cu	65	1731.1	0.5	**0.4696**	0.009	1.8	ug/L	233	Standard
	Zn	66	5300.6	5.4	**2.5325**	0.196	7.8	ug/L	606	Standard
>	**Ge**	72	805604.8	1.1				ug/L	641816	Standard
	As	75	1249.6	2.6	**0.7776**	0.013	1.7	ug/L	-21	Standard
	Se	82	374.3	1.9	**1.8538**	0.048	2.6	ug/L	23	Standard
	Se-1	77	174.7	5.3	**0.6092**	0.094	15.5	ug/L	86	Standard
>	**Ga**	71	648.3	5.2				mg/L	152	Standard
	Rb	85	12311.7	1.4				ug/L	18	Standard
	Y	89	700834.8	1.0				ug/L	578199	Standard
>	**Rh**	103	71.7	28.2				ug/L	20	Standard
	Mo	98	1016.0	2.2	**0.2355**	0.007	2.9	ug/L	19	Standard
	Ag	107	162.3	9.3	**0.0003**	0.001	498.9	ug/L	113	Standard
	Cd	111	32.3	18.7	**0.0078**	0.002	24.0	mg/L	3	Standard
	Cd	114	64.6	34.3	**0.0059**	0.003	45.3	ug/L	8	Standard
>	**In**	115	999640.3	0.8				ug/L	797687	Standard
	Sn	118	1628.4	9.2	**0.0866**	0.015	17.5	ug/L	620	Standard
	Sb	123	309.2	13.2	**0.0335**	0.005	16.3	ug/L	113	Standard
	Ba	135	92694.0	0.3	**30.0200**	0.220	0.7	ug/L	48	Standard
	Ce	140	17722.0	2.1				ug/L	33	Standard
>	**Tb**	159	1445130.9	1.6				ug/L	1160331	Standard
	Ho	165	280.0	7.8				ug/L	5	Standard
	Tl	203	257.0	11.5	**0.0159**	0.003	16.9	ug/L	15	Standard
	Tl	205	266.7	7.6	**0.0158**	0.002	11.1	ug/L	15	Standard
	Pb	206	1862.4	2.2	**0.1974**	0.001	0.7	ug/L	289	Standard
	Pb	207	1593.8	3.2	**0.1832**	0.012	6.3	ug/L	250	Standard
	Pb	208	7172.3	1.2	**0.1889**	0.007	3.7	ug/L	1113	Standard
	U	238	2628.2	1.7	**0.2374**	0.007	2.7	ug/L	3	Standard
>	**Bi**	209	836105.7	1.7				ug/L	670731	Standard

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Na	23	8.3	124.9	**-19.7621**	32.860	166.3	mg/L	0	Standard
Mg	24	8602.4	4.5	**6.2288**	0.324	5.2	mg/L	32	Standard
K	39	125.0	10.6	**0.2334**	0.038	16.3	mg/L	33	Standard
Ca	43	396.7	15.0	**16.6365**	3.208	19.3	mg/L	58	Standard
Fe	54	880.2	8.2	**0.2624**	0.035	13.5	mg/L	213	Standard
Fe	57	600.0	7.4	**0.7209**	0.068	9.5	mg/L	132	Standard
Sc-1	45	72101.2	0.9				mg/L	56654	Standard
Cl	35	169376.9	1.2				ug/L	93221	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	59131.9	2.7				ug/L	2707	Standard
P	31	38343.5	1.2				ug/L	24082	Standard
S	34	4964.1	3.1				ug/L	3865	Standard
Sr	88	408.3	9.9				ug/L	43	Standard
C	12	356.7	21.2				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	435.0	7.1				mg/L	20	Standard
Ho-1	165	280.0	7.8				mg/L	5	Standard
Er	166	243.3	19.0				mg/L	10	Standard
I	127	10472.0	1.7				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		173.823	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		125.520	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	125.317
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	124.656
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ge 72 Int Std for sample	Ge	72	Rerun sample

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In 115 Int Std for sample	In	115	Rerun sample
Bi 209 Int Std for sample	Bi	209	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606048102
Sample Date/Time: Monday, June 13, 2016 14:29:55
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	316635.7	3.8				ug/L	84319	Standard
	Be	9	163.3	9.8	**0.0270**	0.003	11.1	ug/L	7	Standard
	Al	27	65453119.3	0.6	**91.8210**	3.165	3.4	ug/L	1022	Standard
	Sc	45	67865.0	2.1				ug/L	56654	Standard
	Ti	47	4156.6	0.8	**9.3631**	0.047	0.5	ug/L	114	Standard
	V	51	17992.1	5.6	**1.4987**	0.088	5.8	ug/L	1609	Standard
	Cr	52	23444.1	1.6	**1.2766**	0.028	2.2	ug/L	8548	Standard
	Cr	53	31285.6	2.1	**23.1192**	0.471	2.0	ug/L	925	Standard
	Mn	55	3770129.6	0.9	**438.1354**	3.570	0.8	ug/L	1051	Standard
	Co	59	23512.9	2.4	**2.3757**	0.059	2.5	ug/L	178	Standard
	Ni	60	24105.2	1.1	**8.7376**	0.106	1.2	ug/L	312	Standard
	Cu	65	13602.8	0.4	**5.0306**	0.009	0.2	ug/L	233	Standard
	Zn	66	13739.9	1.0	**8.5195**	0.115	1.3	ug/L	606	Standard
>	**Ge**	72	706126.1	0.4				ug/L	641816	Standard
	As	75	19631.1	1.1	**13.0245**	0.125	1.0	ug/L	-21	Standard
	Se	82	7881.8	0.5	**48.0092**	0.162	0.3	ug/L	23	Standard
	Se-1	77	3690.8	3.0	**34.7888**	0.946	2.7	ug/L	86	Standard
>	**Ga**	71	1565.1	3.1				mg/L	152	Standard
	Rb	85	164446.0	1.3				ug/L	18	Standard
	Y	89	682826.2	1.5				ug/L	578199	Standard
>	**Rh**	103	12131.5	4.6				ug/L	20	Standard
	Mo	98	20177.7	1.5	**5.6929**	0.151	2.6	ug/L	19	Standard
	Ag	107	741.4	28.8	**0.0650**	0.022	34.0	ug/L	113	Standard
	Cd	111	450.2	20.3	**0.1530**	0.029	19.1	mg/L	3	Standard
	Cd	114	1107.5	6.5	**0.1524**	0.008	5.6	ug/L	8	Standard
>	**In**	115	869938.4	1.5				ug/L	797687	Standard
	Sn	118	2145.2	11.3	**0.1764**	0.026	14.8	ug/L	620	Standard
	Sb	123	2482.0	7.0	**0.3924**	0.023	5.9	ug/L	113	Standard
	Ba	135	4033120.2	2.2	**1502.1804**	28.009	1.9	ug/L	48	Standard
	Ce	140	84478.3	3.0				ug/L	33	Standard
>	**Tb**	159	1310182.1	2.0				ug/L	1160331	Standard
	Ho	165	2770.3	8.4				ug/L	5	Standard
	Tl	203	1496.4	14.7	**0.1444**	0.022	14.9	ug/L	15	Standard
	Tl	205	1291.7	4.1	**0.1311**	0.005	3.8	ug/L	15	Standard
	Pb	206	6292.3	2.8	**1.0195**	0.027	2.7	ug/L	289	Standard
	Pb	207	5206.9	3.1	**0.9254**	0.026	2.8	ug/L	250	Standard
	Pb	208	21469.3	1.2	**0.8621**	0.012	1.4	ug/L	1113	Standard
	U	238	8090.5	1.1	**0.9255**	0.007	0.7	ug/L	3	Standard
>	**Bi**	209	663694.0	0.7				ug/L	670731	Standard

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Na	23	18.3	41.7	**-55.0671**	25.183	45.7	mg/L	0	Standard
Mg	24	475368.3	1.7	**367.5069**	1.540	0.4	mg/L	32	Standard
K	39	1913.5	3.7	**5.7687**	0.337	5.8	mg/L	33	Standard
Ca	43	1955.1	7.7	**101.8102**	9.196	9.0	mg/L	58	Standard
Fe	54	2121.0	1.2	**0.8728**	0.009	1.0	mg/L	213	Standard
Fe	57	2433.5	4.6	**4.1167**	0.259	6.3	mg/L	132	Standard
> **Sc-1**	45	67865.0	2.1				mg/L	56654	Standard
Cl	35	171524.4	2.1				ug/L	93221	Standard
Kr	83	1.0	0.0				ug/L	1	Standard
Br	81	1480890.1	4.0				ug/L	2707	Standard
P	31	37715.3	4.0				ug/L	24082	Standard
S	34	5060.8	3.3				ug/L	3865	Standard
Sr	88	54780.6	2.3				ug/L	43	Standard
C	12	280.0	23.4				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	4689.5	1.0				mg/L	20	Standard
Ho-1	165	2770.3	8.4				mg/L	5	Standard
Er	166	2253.5	3.8				mg/L	10	Standard
I	127	1077170.4	13.1				mg/L	2335	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		375.521	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		110.020	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	109.058	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.951	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606048102
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Method 6020 - Summary Report

Sample ID: L1606049201
Sample Date/Time: Monday, June 13, 2016 14:33:06
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	227506.4	3.0				ug/L	84319	Standard
	Be	9	35.0	14.3	**0.0009**	0.002	176.5	ug/L	7	Standard
	Al	27	24076857.6	1.5	**46.9780**	0.760	1.6	ug/L	1022	Standard
	Sc	45	73087.5	1.4				ug/L	56654	Standard
	Ti	47	172.7	13.6	**0.1200**	0.050	42.0	ug/L	114	Standard
	V	51	3536.3	24.4	**0.1393**	0.073	52.4	ug/L	1609	Standard
	Cr	52	14542.0	0.9	**0.3696**	0.003	0.7	ug/L	8548	Standard
	Cr	53	20178.4	2.2	**13.6593**	0.236	1.7	ug/L	925	Standard
	Mn	55	466754.8	1.4	**50.6466**	0.313	0.6	ug/L	1051	Standard
	Co	59	2907.3	3.3	**0.2560**	0.007	2.7	ug/L	178	Standard
	Ni	60	10049.3	3.2	**3.3324**	0.108	3.3	ug/L	312	Standard
	Cu	65	1747.8	1.9	**0.5144**	0.007	1.3	ug/L	233	Standard
	Zn	66	4509.0	1.5	**2.2513**	0.022	1.0	ug/L	606	Standard
>	**Ge**	72	754266.8	0.8				ug/L	641816	Standard
	As	75	26399.5	7.6	**16.3837**	1.237	7.6	ug/L	-21	Standard
	Se	82	11152.7	7.8	**63.6483**	4.966	7.8	ug/L	23	Standard
	Se-1	77	2245.2	2.8	**19.4413**	0.702	3.6	ug/L	86	Standard
>	**Ga**	71	118.3	6.5				mg/L	152	Standard
	Rb	85	280451.2	2.5				ug/L	18	Standard
	Y	89	712015.9	0.3				ug/L	578199	Standard
>	**Rh**	103	14907.3	3.4				ug/L	20	Standard
	Mo	98	347.6	5.5	**0.0749**	0.006	7.5	ug/L	19	Standard
	Ag	107	236.3	0.6	**0.0083**	0.000	3.8	ug/L	113	Standard
	Cd	111	32.7	14.5	**0.0084**	0.001	17.1	mg/L	3	Standard
	Cd	114	37.3	70.4	**0.0028**	0.003	118.1	ug/L	8	Standard
>	**In**	115	955135.7	0.8				ug/L	797687	Standard
	Sn	118	908.4	3.0	**0.0137**	0.002	16.5	ug/L	620	Standard
	Sb	123	415.8	8.5	**0.0513**	0.005	10.4	ug/L	113	Standard
	Ba	135	3904358.9	1.3	**1324.4741**	16.181	1.2	ug/L	48	Standard
	Ce	140	298.3	3.9				ug/L	33	Standard
>	**Tb**	159	1361720.3	1.2				ug/L	1160331	Standard
	Ho	165	16.7	34.6				ug/L	5	Standard
	Tl	203	5113.2	0.3	**0.4846**	0.007	1.5	ug/L	15	Standard
	Tl	205	5299.3	3.7	**0.5374**	0.013	2.5	ug/L	15	Standard
	Pb	206	647.7	7.0	**0.0513**	0.008	15.5	ug/L	289	Standard
	Pb	207	538.3	4.8	**0.0423**	0.004	9.4	ug/L	250	Standard
	Pb	208	2286.7	1.3	**0.0397**	0.002	6.1	ug/L	1113	Standard
	U	238	6.7	37.7	**-0.0010**	0.000	26.7	ug/L	3	Standard
>	**Bi**	209	690118.5	1.5				ug/L	670731	Standard

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Na	23	16.7	34.6	**-45.5642**	17.807	39.1	mg/L	0	Standard
Mg	24	314123.7	2.1	**225.4614**	2.517	1.1	mg/L	32	Standard
K	39	1605.1	4.3	**4.4632**	0.250	5.6	mg/L	33	Standard
Ca	43	1660.1	3.4	**79.4805**	2.632	3.3	mg/L	58	Standard
Fe	54	1401.4	4.8	**0.4858**	0.036	7.5	mg/L	213	Standard
Fe	57	1776.8	5.4	**2.6909**	0.151	5.6	mg/L	132	Standard
> **Sc-1**	45	73087.5	1.4				mg/L	56654	Standard
Cl	35	189854.8	0.6				ug/L	93221	Standard
Kr	83	0.3	173.2				ug/L	1	Standard
Br	81	2008450.0	7.7				ug/L	2707	Standard
P	31	39691.9	0.9				ug/L	24082	Standard
S	34	5874.5	1.2				ug/L	3865	Standard
Sr	88	60217.8	1.6				ug/L	43	Standard
C	12	180.0	41.9				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	15.2	35.5				mg/L	20	Standard
Ho-1	165	16.7	34.6				mg/L	5	Standard
Er	166	30.0	57.7				mg/L	10	Standard
I	127	1219264.2	1.7				mg/L	2335	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		269.816	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		117.521	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		119.738
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.890
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606050403
Sample Date/Time: Monday, June 13, 2016 14:36:18
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	137748.4	1.4				ug/L	84319	Standard
	Be	9	120.0	30.0	**0.0525**	0.018	34.3	ug/L	7	Standard
	Al	27	25596114.1	2.0	**82.4929**	2.774	3.4	ug/L	1022	Standard
	Sc	45	82492.4	3.0				ug/L	56654	Standard
	Ti	47	1048.4	4.2	**1.7864**	0.119	6.7	ug/L	114	Standard
	V	51	10260.4	1.3	**0.6317**	0.003	0.6	ug/L	1609	Standard
	Cr	52	659714.0	1.6	**50.2852**	0.099	0.2	ug/L	8548	Standard
	Cr	53	90291.7	2.8	**57.1675**	1.011	1.8	ug/L	925	Standard
	Mn	55	420449.2	1.1	**40.9508**	1.083	2.6	ug/L	1051	Standard
	Co	59	15239.3	0.9	**1.2848**	0.021	1.6	ug/L	178	Standard
	Ni	60	100948.9	0.7	**31.0853**	0.313	1.0	ug/L	312	Standard
	Cu	65	3069.6	2.8	**0.8712**	0.043	4.9	ug/L	233	Standard
	Zn	66	17675.6	0.9	**9.2570**	0.088	0.9	ug/L	606	Standard
>	**Ge**	72	839972.2	1.6				ug/L	641816	Standard
	As	75	782.3	21.8	**0.4896**	0.101	20.6	ug/L	-21	Standard
	Se	82	392.2	2.6	**1.8645**	0.075	4.0	ug/L	23	Standard
	Se-1	77	670.7	0.9	**4.5778**	0.091	2.0	ug/L	86	Standard
>	**Ga**	71	168.3	6.2				mg/L	152	Standard
	Rb	85	26686.8	1.9				ug/L	18	Standard
	Y	89	767145.4	0.7				ug/L	578199	Standard
>	**Rh**	103	273.3	7.6				ug/L	20	Standard
	Mo	98	2049.1	1.6	**0.4698**	0.006	1.2	ug/L	19	Standard
	Ag	107	180.0	11.3	**0.0013**	0.002	155.3	ug/L	113	Standard
	Cd	111	1058.9	0.4	**0.3033**	0.003	0.9	mg/L	3	Standard
	Cd	114	2520.3	8.0	**0.2918**	0.023	8.0	ug/L	8	Standard
>	**In**	115	1040609.6	1.1				ug/L	797687	Standard
	Sn	118	1860.1	8.5	**0.1038**	0.018	17.5	ug/L	620	Standard
	Sb	123	287.0	4.6	**0.0288**	0.002	7.5	ug/L	113	Standard
	Ba	135	1148690.2	1.1	**357.6706**	5.904	1.7	ug/L	48	Standard
	Ce	140	9824.9	1.9				ug/L	33	Standard
>	**Tb**	159	1461184.5	0.9				ug/L	1160331	Standard
	Ho	165	413.3	19.4				ug/L	5	Standard
	Tl	203	313.3	3.5	**0.0211**	0.001	3.8	ug/L	15	Standard
	Tl	205	333.3	0.9	**0.0224**	0.000	1.4	ug/L	15	Standard
	Pb	206	1199.4	4.1	**0.1127**	0.006	5.7	ug/L	289	Standard
	Pb	207	923.7	3.9	**0.0874**	0.005	5.8	ug/L	250	Standard
	Pb	208	4562.3	2.2	**0.1054**	0.003	2.8	ug/L	1113	Standard
	U	238	247.3	9.2	**0.0214**	0.002	9.6	ug/L	3	Standard
>	**Bi**	209	810049.0	0.4				ug/L	670731	Standard

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Na	23	1.7	173.2	**2.0790**	7.947	382.3	mg/L	0	Standard
Mg	24	68625.1	0.2	**43.6401**	1.242	2.8	mg/L	32	Standard
K	39	160.0	22.5	**0.2750**	0.082	29.9	mg/L	33	Standard
Ca	43	175.0	5.7	**4.2713**	0.313	7.3	mg/L	58	Standard
Fe	54	1007.0	8.5	**0.2617**	0.022	8.3	mg/L	213	Standard
Fe	57	440.0	7.5	**0.3528**	0.039	11.1	mg/L	132	Standard
> **Sc-1**	45	82492.4	3.0				mg/L	56654	Standard
Cl	35	175671.2	3.1				ug/L	93221	Standard
Kr	83	2.3	49.5				ug/L	1	Standard
Br	81	60872.1	1.5				ug/L	2707	Standard
P	31	62614.1	2.1				ug/L	24082	Standard
S	34	5329.3	2.3				ug/L	3865	Standard
Sr	88	838.4	3.6				ug/L	43	Standard
C	12	313.3	24.8				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	66.1				mg/L	0	Standard
Dy	164	484.2	24.9				mg/L	20	Standard
Ho-1	165	413.3	19.4				mg/L	5	Standard
Er	166	330.0	19.9				mg/L	10	Standard
I	127	369435.6	7.4				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		163.366	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		130.874	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		130.453
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		120.771
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ge 72 Int Std for sample	Ge	72	Rerun sample
In 115 Int Std for sample	In	115	Rerun sample

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Ba 135 Upper, S, EEE	Ba	135	
Bi 209 Int Std for sample	Bi	209	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606051901
Sample Date/Time: Monday, June 13, 2016 14:39:29
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	142361.0	2.8				ug/L	84319	Standard
	Be	9	55.0	15.7	**0.0177**	0.005	27.1	ug/L	7	Standard
	Al	27	30331548.3	3.0	**94.5556**	0.376	0.4	ug/L	1022	Standard
	Sc	45	81711.4	0.9				ug/L	56654	Standard
	Ti	47	4194.9	2.2	**7.4518**	0.045	0.6	ug/L	114	Standard
	V	51	8328.4	1.3	**0.4454**	0.013	3.0	ug/L	1609	Standard
	Cr	52	21617.4	1.9	**0.6977**	0.055	7.8	ug/L	8548	Standard
	Cr	53	6769.8	3.8	**3.3446**	0.107	3.2	ug/L	925	Standard
	Mn	55	119188.7	1.7	**10.8527**	0.235	2.2	ug/L	1051	Standard
	Co	59	3658.4	2.6	**0.2747**	0.006	2.1	ug/L	178	Standard
	Ni	60	6529.7	0.9	**1.7795**	0.040	2.2	ug/L	312	Standard
	Cu	65	134804.0	0.7	**40.2943**	0.382	0.9	ug/L	233	Standard
	Zn	66	54326.2	1.1	**27.8762**	0.174	0.6	ug/L	606	Standard
>	**Ge**	72	889360.6	1.7				ug/L	641816	Standard
	As	75	557.8	6.4	**0.3466**	0.018	5.2	ug/L	-21	Standard
	Se	82	315.6	2.7	**1.3801**	0.034	2.4	ug/L	23	Standard
	Se-1	77	460.0	2.4	**2.6583**	0.059	2.2	ug/L	86	Standard
>	**Ga**	71	328.3	16.3				mg/L	152	Standard
	Rb	85	123748.4	1.4				ug/L	18	Standard
	Y	89	768617.0	2.1				ug/L	578199	Standard
>	**Rh**	103	105.0	0.0				ug/L	20	Standard
	Mo	98	1581.2	2.6	**0.3463**	0.013	3.7	ug/L	19	Standard
	Ag	107	329.7	7.3	**0.0138**	0.002	16.8	ug/L	113	Standard
	Cd	111	73.0	8.4	**0.0184**	0.002	8.4	mg/L	3	Standard
	Cd	114	206.0	10.3	**0.0213**	0.002	10.2	ug/L	8	Standard
>	**In**	115	1078076.9	1.2				ug/L	797687	Standard
	Sn	118	3565.4	7.1	**0.2674**	0.029	10.8	ug/L	620	Standard
	Sb	123	456.0	0.7	**0.0496**	0.001	1.7	ug/L	113	Standard
	Ba	135	41722.4	0.1	**12.5149**	0.154	1.2	ug/L	48	Standard
	Ce	140	1230.1	12.8				ug/L	33	Standard
>	**Tb**	159	1535596.5	1.1				ug/L	1160331	Standard
	Ho	165	63.3	9.1				ug/L	5	Standard
	Tl	203	122.0	7.5	**0.0048**	0.001	16.5	ug/L	15	Standard
	Tl	205	80.0	10.8	**-0.0003**	0.001	217.5	ug/L	15	Standard
	Pb	206	3267.0	0.7	**0.3671**	0.002	0.5	ug/L	289	Standard
	Pb	207	2753.9	0.5	**0.3373**	0.003	0.8	ug/L	250	Standard
	Pb	208	12321.3	1.7	**0.3438**	0.007	2.1	ug/L	1113	Standard
	U	238	2740.6	1.1	**0.2359**	0.004	1.6	ug/L	3	Standard
>	**Bi**	209	877054.4	1.2				ug/L	670731	Standard

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Na	23	8.3	124.9	**-16.5602**	28.935	174.7	mg/L	0	Standard
Mg	24	59160.3	0.9	**37.9552**	0.168	0.4	mg/L	32	Standard
K	39	1481.7	9.0	**3.6632**	0.371	10.1	mg/L	33	Standard
Ca	43	410.0	16.8	**14.8399**	2.983	20.1	mg/L	58	Standard
Fe	54	792.8	7.7	**0.1819**	0.025	13.6	mg/L	213	Standard
Fe	57	571.7	7.1	**0.5577**	0.056	10.0	mg/L	132	Standard
> **Sc-1**	45	81711.4	0.9				mg/L	56654	Standard
Cl	35	231206.6	2.2				ug/L	93221	Standard
Kr	83	2.0	0.0				ug/L	1	Standard
Br	81	36046.2	2.5				ug/L	2707	Standard
P	31	44680.8	0.3				ug/L	24082	Standard
S	34	5404.3	1.8				ug/L	3865	Standard
Sr	88	303.3	4.8				ug/L	43	Standard
C	12	713.4	4.9				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	63.3	9.1				mg/L	0	Standard
Dy	164	74.0	14.9				mg/L	20	Standard
Ho-1	165	63.3	9.1				mg/L	5	Standard
Er	166	56.7	20.4				mg/L	10	Standard
I	127	54074.7	2.3				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		168.836	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		138.569	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		135.150
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		130.761
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ge 72 Int Std for sample	Ge	72	Rerun sample
In 115 Int Std for sample	In	115	Rerun sample

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Bi 209 Int Std for sample	Bi	209	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, June 13, 2016 14:42:42
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	133287.3	2.6				ug/L	84319	Standard
	Be	9	107725.0	2.1	**58.2431**	0.566	1.0	ug/L	7	Standard
	Al	27	14441189.3	1.7	**48.0893**	0.643	1.3	ug/L	1022	Standard
	Sc	45	77601.7	3.0				ug/L	56654	Standard
	Ti	47	56148.5	1.9	**104.0411**	2.460	2.4	ug/L	114	Standard
	V	51	728258.4	2.1	**53.9631**	1.473	2.7	ug/L	1609	Standard
	Cr	52	694228.1	0.5	**50.5356**	0.430	0.9	ug/L	8548	Standard
	Cr	53	84173.2	2.1	**50.8137**	1.251	2.5	ug/L	925	Standard
	Mn	55	582456.0	2.4	**54.2048**	1.251	2.3	ug/L	1051	Standard
	Co	59	731360.1	2.4	**59.8361**	1.525	2.5	ug/L	178	Standard
	Ni	60	177455.9	0.9	**52.2629**	0.607	1.2	ug/L	312	Standard
	Cu	65	170755.1	0.4	**51.6295**	0.429	0.8	ug/L	233	Standard
	Zn	66	96061.6	0.6	**50.2513**	0.581	1.2	ug/L	606	Standard
>	**Ge**	72	879646.2	0.8				ug/L	641816	Standard
	As	75	95567.9	0.6	**50.7428**	0.336	0.7	ug/L	-21	Standard
	Se	82	10792.7	1.7	**52.7876**	0.877	1.7	ug/L	23	Standard
	Se-1	77	7138.3	3.1	**54.4957**	1.591	2.9	ug/L	86	Standard
>	**Ga**	71	81.7	9.4				mg/L	152	Standard
	Rb	85	1523.4	7.9				ug/L	18	Standard
	Y	89	767738.8	2.1				ug/L	578199	Standard
>	**Rh**	103	53.3	46.2				ug/L	20	Standard
	Mo	98	511738.3	1.5	**117.3037**	1.126	1.0	ug/L	19	Standard
	Ag	107	611775.4	0.5	**53.6438**	0.033	0.1	ug/L	113	Standard
	Cd	111	185865.4	1.5	**51.9437**	0.554	1.1	mg/L	3	Standard
	Cd	114	462051.5	1.1	**52.2176**	0.350	0.7	ug/L	8	Standard
>	**In**	115	1073071.8	0.5				ug/L	797687	Standard
	Sn	118	547917.9	0.4	**54.8360**	0.442	0.8	ug/L	620	Standard
	Sb	123	396944.4	0.5	**52.1987**	0.246	0.5	ug/L	113	Standard
	Ba	135	164198.3	0.2	**49.5548**	0.361	0.7	ug/L	48	Standard
	Ce	140	136.7	33.2				ug/L	33	Standard
>	**Tb**	159	1486211.6	2.2				ug/L	1160331	Standard
	Ho	165	18.3	15.7				ug/L	5	Standard
	Tl	203	691241.4	0.4	**52.6019**	0.919	1.7	ug/L	15	Standard
	Tl	205	686107.4	0.4	**56.0817**	0.646	1.2	ug/L	15	Standard
	Pb	206	413424.2	0.6	**53.9993**	1.052	1.9	ug/L	289	Standard
	Pb	207	379951.2	0.8	**54.7212**	0.908	1.7	ug/L	250	Standard
	Pb	208	1653042.5	2.0	**53.9557**	1.861	3.5	ug/L	1113	Standard
	U	238	623110.1	1.2	**54.6725**	1.468	2.7	ug/L	3	Standard
>	**Bi**	209	867145.5	1.5				ug/L	670731	Standard

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Na	23	1.7	173.2	**1.6710**	8.654	517.9	mg/L	0	Standard
Mg	24	7793.7	5.8	**5.2363**	0.254	4.9	mg/L	32	Standard
K	39	1080.0	11.2	**2.7758**	0.246	8.9	mg/L	33	Standard
Ca	43	100.0	18.0	**1.2477**	0.962	77.1	mg/L	58	Standard
Fe	54	12311.5	2.9	**4.9578**	0.129	2.6	mg/L	213	Standard
Fe	57	3357.0	4.7	**5.0279**	0.264	5.3	mg/L	132	Standard
Sc-1	45	77601.7	3.0				mg/L	56654	Standard
Cl	35	188402.8	2.9				ug/L	93221	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	6081.2	6.0				ug/L	2707	Standard
P	31	42410.9	0.9				ug/L	24082	Standard
S	34	6037.9	0.4				ug/L	3865	Standard
Sr	88	53.3	30.1				ug/L	43	Standard
C	12	150.0	11.5				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.0	48.8				mg/L	20	Standard
Ho-1	165	18.3	15.7				mg/L	5	Standard
Er	166	20.0	86.6				mg/L	10	Standard
I	127	6934.9	12.6				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	116.486		
Al	27	96.179		
Sc	45			
Ti	47	104.041		
V	51	107.926		
Cr	52	101.071		
Cr	53			
Mn	55	108.410		
Co	59	119.672		
Ni	60	104.526		
Cu	65	103.259		
Zn	66	100.503		
Ge	72		137.056	
As	75	101.486		
Se	82	105.575		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	117.304		
Ag	107	107.288		
Cd	111	103.887		
Cd	114			
> In	115			134.523
Sn	118	109.672		
Sb	123	104.397		
Ba	135	99.110		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	105.204		
Tl	205			
Pb	206			
Pb	207			
Pb	208	107.911		
U	238	109.345		
> Bi	209			129.284
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Co	59	
Ge 72 Int Std for QC Std	Ge	72	Rerun sample

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QC Std 6	Mo	98	
In 115 Int Std for QC Std	In	115	Rerun sample
Bi 209 Int Std for QC Std	Bi	209	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, June 13, 2016 14:45:53
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	133467.1	2.1				ug/L	84319	Standard
	Be	9	48.3	11.9	**0.0159**	0.003	16.1	ug/L	7	Standard
	Al	27	4856.0	59.0	**0.0059**	0.009	155.2	ug/L	1022	Standard
	Sc	45	79226.7	3.0				ug/L	56654	Standard
	Ti	47	57.0	9.8	**-0.1481**	0.010	6.5	ug/L	114	Standard
	V	51	2124.8	2.7	**-0.0088**	0.003	31.3	ug/L	1609	Standard
	Cr	52	11649.5	0.8	**-0.0226**	0.015	65.6	ug/L	8548	Standard
	Cr	53	1190.0	10.5	**-0.0277**	0.064	229.8	ug/L	925	Standard
	Mn	55	1128.0	15.7	**-0.0450**	0.014	31.3	ug/L	1051	Standard
	Co	59	250.0	18.0	**-0.0010**	0.003	310.5	ug/L	178	Standard
	Ni	60	227.0	13.4	**-0.0606**	0.008	13.1	ug/L	312	Standard
	Cu	65	295.7	6.3	**-0.0135**	0.004	27.3	ug/L	233	Standard
	Zn	66	421.3	10.0	**-0.3056**	0.017	5.5	ug/L	606	Standard
>	**Ge**	72	878773.0	2.4				ug/L	641816	Standard
	As	75	-90.1	24.3	**0.0062**	0.011	184.0	ug/L	-21	Standard
	Se	82	39.4	13.0	**0.0424**	0.021	48.6	ug/L	23	Standard
	Se-1	77	122.0	5.0	**0.0761**	0.027	35.9	ug/L	86	Standard
>	**Ga**	71	48.3	33.3				mg/L	152	Standard
	Rb	85	31.7	50.8				ug/L	18	Standard
	Y	89	779251.1	2.6				ug/L	578199	Standard
>	**Rh**	103	25.0	34.6				ug/L	20	Standard
	Mo	98	333.9	23.1	**0.0596**	0.017	29.3	ug/L	19	Standard
	Ag	107	218.7	7.6	**0.0036**	0.001	38.8	ug/L	113	Standard
	Cd	111	15.4	55.0	**0.0023**	0.002	101.0	mg/L	3	Standard
	Cd	114	46.8	78.4	**0.0032**	0.004	124.7	ug/L	8	Standard
>	**In**	115	1108508.1	0.9				ug/L	797687	Standard
	Sn	118	1673.4	16.7	**0.0737**	0.026	35.7	ug/L	620	Standard
	Sb	123	791.0	23.0	**0.0905**	0.023	25.0	ug/L	113	Standard
	Ba	135	122.7	29.0	**0.0100**	0.010	105.2	ug/L	48	Standard
	Ce	140	26.7	60.3				ug/L	33	Standard
>	**Tb**	159	1540536.3	1.7				ug/L	1160331	Standard
	Ho	165	10.0					ug/L	5	Standard
	Tl	203	128.3	33.0	**0.0050**	0.003	61.5	ug/L	15	Standard
	Tl	205	150.0	41.0	**0.0050**	0.005	96.4	ug/L	15	Standard
	Pb	206	454.7	1.9	**0.0022**	0.002	77.5	ug/L	289	Standard
	Pb	207	357.0	7.6	**-0.0056**	0.004	70.6	ug/L	250	Standard
	Pb	208	1689.7	11.6	**-0.0010**	0.006	628.0	ug/L	1113	Standard
	U	238	90.3	69.3	**0.0058**	0.005	90.2	ug/L	3	Standard
>	**Bi**	209	899677.6	1.2				ug/L	670731	Standard

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Na	23	1.7	173.2	**1.6739**	8.649	516.7	mg/L	0	Standard
Mg	24	50.0	36.1	**0.0003**	0.012	3618.9	mg/L	32	Standard
K	39	16.7	45.8	**-0.0852**	0.020	23.0	mg/L	33	Standard
Ca	43	31.7	9.1	**-2.0146**	0.128	6.4	mg/L	58	Standard
Fe	54	292.2	21.7	**-0.0114**	0.023	199.6	mg/L	213	Standard
Fe	57	106.7	14.3	**-0.1385**	0.020	14.6	mg/L	132	Standard
> **Sc-1**	45	79226.7	3.0				mg/L	56654	Standard
Cl	35	186524.0	1.9				ug/L	93221	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	5597.7	4.3				ug/L	2707	Standard
P	31	43007.6	0.9				ug/L	24082	Standard
S	34	5994.5	3.9				ug/L	3865	Standard
Sr	88	48.3	21.5				ug/L	43	Standard
C	12	150.0	24.0				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.2	6.0				mg/L	20	Standard
Ho-1	165	10.0					mg/L	5	Standard
Er	166	16.7	69.3				mg/L	10	Standard
I	127	5152.5	4.3				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		136.920	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		138.965
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		134.134
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ge 72 Int Std for QC Std	Ge	72	Rerun sample
In 115 Int Std for QC Std	In	115	Rerun sample
Bi 209 Int Std for QC Std	Bi	209	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, June 13, 2016 15:46:23
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90504.6	1.9				ug/L	84319	Standard
	Be	9	70123.7	3.8	**55.8169**	1.177	2.1	ug/L	7	Standard
	Al	27	10001449.2	1.5	**49.0421**	0.214	0.4	ug/L	1022	Standard
	Sc	45	59871.4	1.4				ug/L	56654	Standard
	Ti	47	42801.0	1.3	**97.9927**	2.264	2.3	ug/L	114	Standard
	V	51	536147.1	1.5	**49.0787**	1.239	2.5	ug/L	1609	Standard
	Cr	52	538053.0	0.9	**48.3654**	0.962	2.0	ug/L	8548	Standard
	Cr	53	65909.7	1.1	**49.1379**	0.161	0.3	ug/L	925	Standard
	Mn	55	474781.7	0.2	**54.6022**	0.516	0.9	ug/L	1051	Standard
	Co	59	545176.8	1.4	**55.1124**	0.690	1.3	ug/L	178	Standard
	Ni	60	135720.9	1.0	**49.3843**	0.397	0.8	ug/L	312	Standard
	Cu	65	132821.3	0.8	**49.6202**	0.282	0.6	ug/L	233	Standard
	Zn	66	76939.9	0.8	**49.7287**	0.522	1.1	ug/L	606	Standard
>	**Ge**	72	711876.1	1.1				ug/L	641816	Standard
	As	75	76000.8	0.5	**49.8668**	0.515	1.0	ug/L	-21	Standard
	Se	82	8375.9	1.0	**50.6196**	0.792	1.6	ug/L	23	Standard
	Se-1	77	5565.0	2.3	**52.4615**	0.671	1.3	ug/L	86	Standard
>	**Ga**	71	78.3	9.8				mg/L	152	Standard
	Rb	85	1158.4	6.0				ug/L	18	Standard
	Y	89	625056.0	0.6				ug/L	578199	Standard
>	**Rh**	103	46.7	44.6				ug/L	20	Standard
	Mo	98	378970.0	1.9	**108.5490**	3.410	3.1	ug/L	19	Standard
	Ag	107	463186.6	1.2	**50.7357**	0.164	0.3	ug/L	113	Standard
	Cd	111	146905.9	3.0	**51.2796**	0.803	1.6	mg/L	3	Standard
	Cd	114	358943.4	1.9	**50.6725**	0.454	0.9	ug/L	8	Standard
>	**In**	115	859021.8	1.5				ug/L	797687	Standard
	Sn	118	418307.4	4.2	**52.2830**	1.783	3.4	ug/L	620	Standard
	Sb	123	310700.2	1.1	**51.0398**	0.215	0.4	ug/L	113	Standard
	Ba	135	130644.9	1.7	**49.2507**	0.117	0.2	ug/L	48	Standard
	Ce	140	111.7	27.4				ug/L	33	Standard
>	**Tb**	159	1224198.1	1.0				ug/L	1160331	Standard
	Ho	165	8.3	124.9				ug/L	5	Standard
	Tl	203	544685.2	2.0	**50.7097**	1.077	2.1	ug/L	15	Standard
	Tl	205	531265.6	0.8	**53.1291**	0.373	0.7	ug/L	15	Standard
	Pb	206	323361.8	0.2	**51.6683**	0.149	0.3	ug/L	289	Standard
	Pb	207	294025.8	1.3	**51.8054**	0.722	1.4	ug/L	250	Standard
	Pb	208	1328408.6	1.0	**53.0360**	0.486	0.9	ug/L	1113	Standard
	U	238	489296.9	0.7	**52.5178**	0.382	0.7	ug/L	3	Standard
>	**Bi**	209	708674.9	0.1				ug/L	670731	Standard

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Na	23	1.7	173.2	**0.3445**	10.951	3179.0	mg/L	0	Standard
Mg	24	5949.5	2.7	**5.1806**	0.089	1.7	mg/L	32	Standard
K	39	968.4	7.6	**3.2520**	0.257	7.9	mg/L	33	Standard
Ca	43	110.0	12.0	**3.2306**	0.735	22.8	mg/L	58	Standard
Fe	54	9230.0	3.6	**4.8127**	0.152	3.1	mg/L	213	Standard
Fe	57	2478.5	0.4	**4.7975**	0.092	1.9	mg/L	132	Standard
Sc-1	45	59871.4	1.4				mg/L	56654	Standard
Cl	35	155800.1	3.0				ug/L	93221	Standard
Kr	83	3.3	17.3				ug/L	1	Standard
Br	81	3657.1	8.0				ug/L	2707	Standard
P	31	33463.6	1.6				ug/L	24082	Standard
S	34	5664.4	2.3				ug/L	3865	Standard
Sr	88	61.7	24.8				ug/L	43	Standard
C	12	126.7	24.1				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	29.5	58.7				mg/L	20	Standard
Ho-1	165	8.3	124.9				mg/L	5	Standard
Er	166	10.0					mg/L	10	Standard
I	127	1806.8	3.1				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	111.634		
Al	27	98.084		
Sc	45			
Ti	47	97.993		
V	51	98.157		
Cr	52	96.731		
Cr	53			
Mn	55	109.204		
Co	59	110.225		
Ni	60	98.769		
Cu	65	99.240		
Zn	66	99.457		
Ge	72		110.916	
As	75	99.734		
Se	82	101.239		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	108.549		
Ag	107	101.471		
Cd	111	102.559		
Cd	114			
In	115		107.689	
Sn	118	104.566		
Sb	123	102.080		
Ba	135	98.501		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.419		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.072		
U	238	105.036		
Bi	209		105.657	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Co	59	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, June 13, 2016 16:08:13
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	87532.2	2.8				ug/L	84319	Standard
	Be	9	18.3	83.3	**0.0051**	0.013	252.8	ug/L	7	Standard
	Al	27	765.0	4.0	**-0.0063**	0.000	1.7	ug/L	1022	Standard
	Sc	45	63089.5	2.5				ug/L	56654	Standard
	Ti	47	48.0	9.5	**-0.1474**	0.010	6.9	ug/L	114	Standard
	V	51	1955.8	3.5	**0.0070**	0.008	115.3	ug/L	1609	Standard
	Cr	52	10278.5	2.1	**0.0240**	0.030	124.6	ug/L	8548	Standard
	Cr	53	640.0	4.1	**-0.2878**	0.026	8.9	ug/L	925	Standard
	Mn	55	779.4	1.2	**-0.0632**	0.002	3.0	ug/L	1051	Standard
	Co	59	158.0	5.5	**-0.0060**	0.001	10.7	ug/L	178	Standard
	Ni	60	183.7	10.9	**-0.0628**	0.007	10.8	ug/L	312	Standard
	Cu	65	166.3	2.5	**-0.0428**	0.002	5.3	ug/L	233	Standard
	Zn	66	311.7	7.4	**-0.3312**	0.016	4.7	ug/L	606	Standard
>	**Ge**	72	735675.7	1.4				ug/L	641816	Standard
	As	75	-107.7	34.0	**-0.0145**	0.024	164.4	ug/L	-21	Standard
	Se	82	24.8	19.9	**-0.0055**	0.027	486.6	ug/L	23	Standard
	Se-1	77	84.7	10.9	**-0.0856**	0.084	98.6	ug/L	86	Standard
>	**Ga**	71	55.0	27.3				mg/L	152	Standard
	Rb	85	28.3	66.8				ug/L	18	Standard
	Y	89	635109.7	3.8				ug/L	578199	Standard
>	**Rh**	103	16.7	62.4				ug/L	20	Standard
	Mo	98	55.6	32.6	**0.0008**	0.005	665.2	ug/L	19	Standard
	Ag	107	113.3	2.8	**-0.0030**	0.000	13.0	ug/L	113	Standard
	Cd	111	3.2	98.6	**-0.0008**	0.001	134.6	mg/L	3	Standard
	Cd	114	23.3	141.2	**0.0012**	0.004	359.8	ug/L	8	Standard
>	**In**	115	890672.3	1.7				ug/L	797687	Standard
	Sn	118	935.0	21.5	**0.0246**	0.026	104.4	ug/L	620	Standard
	Sb	123	360.6	32.6	**0.0472**	0.020	41.3	ug/L	113	Standard
	Ba	135	34.3	22.2	**-0.0134**	0.003	19.9	ug/L	48	Standard
	Ce	140	20.0	25.0				ug/L	33	Standard
>	**Tb**	159	1253592.1	1.0				ug/L	1160331	Standard
	Ho	165	8.3	34.6				ug/L	5	Standard
	Tl	203	9.7	26.0	**-0.0035**	0.000	6.2	ug/L	15	Standard
	Tl	205	11.7	24.7	**-0.0057**	0.000	4.9	ug/L	15	Standard
	Pb	206	323.7	5.8	**-0.0051**	0.004	68.8	ug/L	289	Standard
	Pb	207	266.0	2.3	**-0.0099**	0.002	16.3	ug/L	250	Standard
	Pb	208	1256.7	4.2	**-0.0057**	0.002	26.8	ug/L	1113	Standard
	U	238	5.0	52.9	**-0.0013**	0.000	21.2	ug/L	3	Standard
>	**Bi**	209	734066.4	1.3				ug/L	670731	Standard

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Na	23	1.7	173.2	**0.4263**	10.810	2535.4	mg/L	0	Standard
Mg	24	35.0	42.9	**-0.0037**	0.012	326.9	mg/L	32	Standard
K	39	8.3	34.6	**-0.1015**	0.009	8.9	mg/L	33	Standard
Ca	43	40.0	33.1	**-1.1711**	0.716	61.2	mg/L	58	Standard
Fe	54	235.5	15.4	**-0.0093**	0.020	218.5	mg/L	213	Standard
Fe	57	126.7	14.9	**-0.0573**	0.031	54.4	mg/L	132	Standard
Sc-1	45	63089.5	2.5				mg/L	56654	Standard
Cl	35	153619.9	2.8				ug/L	93221	Standard
Kr	83	2.7	78.1				ug/L	1	Standard
Br	81	3493.7	3.1				ug/L	2707	Standard
P	31	32912.4	2.0				ug/L	24082	Standard
S	34	5227.6	5.8				ug/L	3865	Standard
Sr	88	86.7	6.7				ug/L	43	Standard
C	12	90.0	19.2				mg/L	103	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.0	0.0				mg/L	20	Standard
Ho-1	165	8.3	34.6				mg/L	5	Standard
Er	166	20.0	0.0				mg/L	10	Standard
I	127	1866.8	2.3				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.624	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.657
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.443
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Monday, June 13, 2016 21:03:54
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66760.1	1.9				ug/L	84319	Standard
	Be	9	223.3	6.8	**0.2311**	0.020	8.5	ug/L	7	Standard
	Al	27	645.0	6.9	**-0.0059**	0.000	6.1	ug/L	1022	Standard
	Sc	45	56137.2	2.3				ug/L	56654	Standard
	Ti	47	70.0	14.5	**-0.0877**	0.025	28.8	ug/L	114	Standard
	V	51	5905.9	2.0	**0.3942**	0.006	1.5	ug/L	1609	Standard
	Cr	52	18109.8	0.6	**0.8288**	0.042	5.0	ug/L	8548	Standard
	Cr	53	1408.4	8.9	**0.3456**	0.086	25.0	ug/L	925	Standard
	Mn	55	5708.1	2.7	**0.5310**	0.025	4.7	ug/L	1051	Standard
	Co	59	4282.6	1.0	**0.4267**	0.010	2.4	ug/L	178	Standard
	Ni	60	4494.0	1.9	**1.5690**	0.052	3.3	ug/L	312	Standard
	Cu	65	2291.5	0.8	**0.7845**	0.010	1.2	ug/L	233	Standard
	Zn	66	10940.9	0.5	**6.8672**	0.177	2.6	ug/L	606	Standard
>	**Ge**	72	688099.6	1.9				ug/L	641816	Standard
	As	75	481.7	8.1	**0.3804**	0.022	5.9	ug/L	-21	Standard
	Se	82	91.5	5.9	**0.4226**	0.027	6.3	ug/L	23	Standard
	Se-1	77	120.3	3.5	**0.3222**	0.020	6.3	ug/L	86	Standard
>	**Ga**	71	71.7	21.3				mg/L	152	Standard
	Rb	85	11.7	24.7				ug/L	18	Standard
	Y	89	612110.0	1.7				ug/L	578199	Standard
>	**Rh**	103	15.0	88.2				ug/L	20	Standard
	Mo	98	32.6	34.8	**-0.0050**	0.004	71.0	ug/L	19	Standard
	Ag	107	3585.1	1.4	**0.3892**	0.008	2.1	ug/L	113	Standard
	Cd	111	721.3	2.4	**0.2573**	0.010	3.9	mg/L	3	Standard
	Cd	114	1781.8	5.5	**0.2571**	0.017	6.6	ug/L	8	Standard
>	**In**	115	834926.5	1.6				ug/L	797687	Standard
	Sn	118	745.0	4.1	**0.0074**	0.005	63.2	ug/L	620	Standard
	Sb	123	2622.4	2.3	**0.4332**	0.012	2.7	ug/L	113	Standard
	Ba	135	1942.1	1.7	**0.7279**	0.017	2.3	ug/L	48	Standard
	Ce	140	11.7	65.5				ug/L	33	Standard
>	**Tb**	159	1155299.6	1.1				ug/L	1160331	Standard
	Ho	165	13.3	78.1				ug/L	5	Standard
	Tl	203	866.0	4.1	**0.0801**	0.003	3.9	ug/L	15	Standard
	Tl	205	800.0	11.9	**0.0770**	0.010	13.3	ug/L	15	Standard
	Pb	206	1647.4	1.3	**0.2209**	0.002	0.7	ug/L	289	Standard
	Pb	207	1347.4	2.0	**0.1938**	0.007	3.8	ug/L	250	Standard
	Pb	208	6237.5	1.4	**0.2070**	0.004	2.0	ug/L	1113	Standard
	U	238	3676.4	1.5	**0.4116**	0.008	1.8	ug/L	3	Standard
>	**Bi**	209	676602.1	1.2				ug/L	670731	Standard

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Na	23	0.0		**6.6672**	0.000	0.0	mg/L	0	Standard
Mg	24	35.0	28.6	**0.0000**	0.010	48535.2	mg/L	32	Standard
K	39	21.7	13.3	**-0.0483**	0.010	21.1	mg/L	33	Standard
Ca	43	43.3	24.0	**-0.6628**	0.623	94.0	mg/L	58	Standard
Fe	54	155.3	14.2	**-0.0405**	0.012	29.8	mg/L	213	Standard
Fe	57	91.7	30.0	**-0.1035**	0.058	55.6	mg/L	132	Standard
> **Sc-1**	45	56137.2	2.3				mg/L	56654	Standard
Cl	35	148842.9	0.8				ug/L	93221	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	3387.0	6.7				ug/L	2707	Standard
P	31	22698.7	2.5				ug/L	24082	Standard
S	34	5347.6	2.8				ug/L	3865	Standard
Sr	88	53.3	14.3				ug/L	43	Standard
C	12	76.7	84.9				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.5	8.7				mg/L	20	Standard
Ho-1	165	13.3	78.1				mg/L	5	Standard
Er	166	10.0	173.2				mg/L	10	Standard
I	127	983.4	5.7				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		79.176	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.211	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.668
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.875
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Monday, June 13, 2016 21:07:06
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68568.2	2.6				ug/L	84319	Standard
	Be	9	59421.3	0.4	**62.4740**	1.741	2.8	ug/L	7	Standard
	Al	27	9557418.6	2.6	**61.8665**	1.336	2.2	ug/L	1022	Standard
	Sc	45	58655.1	4.0				ug/L	56654	Standard
	Ti	47	44243.2	1.5	**100.8261**	1.372	1.4	ug/L	114	Standard
	V	51	556462.7	0.5	**50.7043**	0.310	0.6	ug/L	1609	Standard
	Cr	52	567968.9	0.1	**50.8618**	0.340	0.7	ug/L	8548	Standard
	Cr	53	68663.6	0.8	**50.9860**	0.158	0.3	ug/L	925	Standard
	Mn	55	548242.7	0.5	**62.7834**	0.354	0.6	ug/L	1051	Standard
	Co	59	571490.2	0.6	**57.5106**	0.370	0.6	ug/L	178	Standard
	Ni	60	145564.6	0.8	**52.7341**	0.550	1.0	ug/L	312	Standard
	Cu	65	145258.7	1.5	**54.0310**	1.031	1.9	ug/L	233	Standard
	Zn	66	81655.1	0.6	**52.5657**	0.579	1.1	ug/L	606	Standard
>	Ge	72	715120.0	0.5				ug/L	641816	Standard
	As	75	79969.0	0.3	**52.2268**	0.120	0.2	ug/L	-21	Standard
	Se	82	8652.4	0.6	**52.0530**	0.097	0.2	ug/L	23	Standard
	Se-1	77	5811.4	2.0	**54.5754**	1.087	2.0	ug/L	86	Standard
>	Ga	71	85.0	11.8				mg/L	152	Standard
	Rb	85	1123.4	4.9				ug/L	18	Standard
	Y	89	629410.1	1.3				ug/L	578199	Standard
>	Rh	103	26.7	47.2				ug/L	20	Standard
	Mo	98	399931.8	0.4	**115.9954**	2.107	1.8	ug/L	19	Standard
	Ag	107	473116.6	1.0	**52.4919**	1.242	2.4	ug/L	113	Standard
	Cd	111	151290.5	0.6	**53.4948**	0.704	1.3	mg/L	3	Standard
	Cd	114	370377.8	2.0	**52.9486**	0.157	0.3	ug/L	8	Standard
>	In	115	848289.0	1.8				ug/L	797687	Standard
	Sn	118	424966.7	1.7	**53.8018**	0.712	1.3	ug/L	620	Standard
	Sb	123	320929.0	0.8	**53.4023**	1.388	2.6	ug/L	113	Standard
	Ba	135	136105.6	0.7	**51.9685**	0.627	1.2	ug/L	48	Standard
	Ce	140	96.7	10.8				ug/L	33	Standard
>	Tb	159	1202880.8	1.6				ug/L	1160331	Standard
	Ho	165	13.3	21.7				ug/L	5	Standard
	Tl	203	562936.7	0.4	**53.5724**	0.348	0.7	ug/L	15	Standard
	Tl	205	529700.7	2.6	**54.1464**	1.251	2.3	ug/L	15	Standard
	Pb	206	338700.7	0.8	**55.3253**	0.613	1.1	ug/L	289	Standard
	Pb	207	306243.7	0.6	**55.1596**	0.452	0.8	ug/L	250	Standard
	Pb	208	1363084.4	0.7	**55.6308**	0.234	0.4	ug/L	1113	Standard
	U	238	501597.8	1.0	**55.0325**	0.473	0.9	ug/L	3	Standard
>	Bi	209	693287.7	0.3				ug/L	670731	Standard

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Na	23	1.7	173.2	**0.0073**	11.53	157401.9	mg/L	0	Standard
Mg	24	5647.7	1.9	**5.0270**	0.292	5.8	mg/L	32	Standard
K	39	1211.7	6.0	**4.1973**	0.382	9.1	mg/L	33	Standard
Ca	43	125.0	21.2	**4.3472**	1.881	43.3	mg/L	58	Standard
Fe	54	9447.7	1.7	**5.0418**	0.282	5.6	mg/L	213	Standard
Fe	57	2585.2	8.1	**5.1264**	0.386	7.5	mg/L	132	Standard
> **Sc-1**	45	58655.1	4.0				mg/L	56654	Standard
Cl	35	151905.9	1.8				ug/L	93221	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	3490.4	12.3				ug/L	2707	Standard
P	31	34477.6	4.2				ug/L	24082	Standard
S	34	5682.7	2.9				ug/L	3865	Standard
Sr	88	63.3	4.6				ug/L	43	Standard
C	12	73.3	92.8				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	22.7	53.9				mg/L	20	Standard
Ho-1	165	13.3	21.7				mg/L	5	Standard
Er	166	13.3	114.6				mg/L	10	Standard
I	127	978.4	15.1				mg/L	2335	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	124.948		
	Al	27	123.733		
	Sc	45			
	Ti	47	100.826		
	V	51	101.409		
	Cr	52	101.724		
	Cr	53			
	Mn	55	125.567		
	Co	59	115.021		
	Ni	60	105.468		
	Cu	65	108.062		
	Zn	66	105.131		
>	Ge	72		111.421	
	As	75	104.454		
	Se	82	104.106		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	115.995		
Ag	107	104.984		
Cd	111	106.990		
Cd	114			
In	115		106.344	
Sn	118	107.604		
Sb	123	106.805		
Ba	135	103.937		
Ce	140			
Tb	159			
Ho	165			
Tl	203	107.145		
Tl	205			
Pb	206			
Pb	207			
Pb	208	111.262		
U	238	110.065		
Bi	209		103.363	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	
QC Std 6	Mn	55	

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QC Std 6	Co	59
QC Std 6	Mo	98
QC Std 6	Pb	208
QC Std 6	U	238

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Monday, June 13, 2016 21:10:18
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66733.3	1.6				ug/L	84319	Standard
	Be	9	18.3	31.5	**0.0097**	0.007	68.0	ug/L	7	Standard
	Al	27	1570.1	4.4	**0.0003**	0.000	110.6	ug/L	1022	Standard
	Sc	45	58994.7	2.9				ug/L	56654	Standard
	Ti	47	79.7	21.1	**-0.0808**	0.035	43.4	ug/L	114	Standard
	V	51	1849.4	1.9	**-0.0058**	0.004	74.8	ug/L	1609	Standard
	Cr	52	9574.0	2.9	**-0.0552**	0.028	50.1	ug/L	8548	Standard
	Cr	53	553.3	4.1	**-0.3594**	0.019	5.3	ug/L	925	Standard
	Mn	55	925.4	2.6	**-0.0490**	0.003	6.2	ug/L	1051	Standard
	Co	59	201.0	8.1	**-0.0022**	0.002	71.9	ug/L	178	Standard
	Ni	60	170.0	10.5	**-0.0687**	0.006	9.1	ug/L	312	Standard
	Cu	65	182.7	1.7	**-0.0382**	0.001	3.6	ug/L	233	Standard
	Zn	66	235.3	6.5	**-0.3824**	0.010	2.7	ug/L	606	Standard
>	**Ge**	72	750482.6	0.8				ug/L	641816	Standard
	As	75	-71.7	30.0	**0.0094**	0.014	144.5	ug/L	-21	Standard
	Se	82	31.1	6.7	**0.0281**	0.011	37.7	ug/L	23	Standard
	Se-1	77	86.3	17.4	**-0.0851**	0.142	166.8	ug/L	86	Standard
>	**Ga**	71	33.3	52.7				mg/L	152	Standard
	Rb	85	25.0	52.9				ug/L	18	Standard
	Y	89	609265.2	2.2				ug/L	578199	Standard
>	**Rh**	103	13.3	21.7				ug/L	20	Standard
	Mo	98	290.2	17.3	**0.0711**	0.015	21.1	ug/L	19	Standard
	Ag	107	142.7	8.4	**0.0011**	0.001	123.5	ug/L	113	Standard
	Cd	111	9.9	16.2	**0.0016**	0.001	34.1	mg/L	3	Standard
	Cd	114	39.6	56.2	**0.0039**	0.003	83.4	ug/L	8	Standard
>	**In**	115	833337.2	0.4				ug/L	797687	Standard
	Sn	118	1320.1	24.3	**0.0818**	0.041	50.5	ug/L	620	Standard
	Sb	123	596.8	27.9	**0.0909**	0.028	31.0	ug/L	113	Standard
	Ba	135	38.3	8.4	**-0.0110**	0.001	11.6	ug/L	48	Standard
	Ce	140	20.0	90.1				ug/L	33	Standard
>	**Tb**	159	1194168.6	1.1				ug/L	1160331	Standard
	Ho	165	8.3	34.6				ug/L	5	Standard
	Tl	203	78.3	1.5	**0.0029**	0.000	3.9	ug/L	15	Standard
	Tl	205	60.0	28.9	**-0.0008**	0.002	210.0	ug/L	15	Standard
	Pb	206	341.0	1.8	**-0.0004**	0.001	283.0	ug/L	289	Standard
	Pb	207	319.3	2.8	**0.0013**	0.001	101.7	ug/L	250	Standard
	Pb	208	1346.0	2.3	**-0.0002**	0.002	794.6	ug/L	1113	Standard
	U	238	59.7	11.9	**0.0046**	0.001	15.1	ug/L	3	Standard
>	**Bi**	209	707114.2	1.2				ug/L	670731	Standard

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Na	23	0.0		**6.6672**	0.000	0.0	mg/L	0	Standard
Mg	24	35.0	28.6	**-0.0015**	0.010	633.0	mg/L	32	Standard
K	39	15.0	33.3	**-0.0757**	0.018	23.4	mg/L	33	Standard
Ca	43	31.7	18.2	**-1.5107**	0.380	25.2	mg/L	58	Standard
Fe	54	238.7	10.4	**0.0008**	0.017	2187.0	mg/L	213	Standard
Fe	57	85.0		**-0.1265**	0.005	4.1	mg/L	132	Standard
Sc-1	45	58994.7	2.9				mg/L	56654	Standard
Cl	35	149254.5	2.3				ug/L	93221	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	3373.7	6.7				ug/L	2707	Standard
P	31	33887.9	1.3				ug/L	24082	Standard
S	34	5676.1	1.8				ug/L	3865	Standard
Sr	88	36.7	67.3				ug/L	43	Standard
C	12	63.3	65.7				mg/L	103	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.5	103.2				mg/L	20	Standard
Ho-1	165	8.3	34.6				mg/L	5	Standard
Er	166	16.7	173.2				mg/L	10	Standard
I	127	1080.0	7.1				mg/L	2335	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		116.931	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.469
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.424
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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MassCal File Name

Mass Calibration File Name default.tun
MassCal File Path C:\NexIONData\MassCal\default.tun
Peak Search Window: 1.00

Sample Information

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Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	6.975	1321	2024	0.707	
Mg	23.985	24.025	4507	2020	0.702	
Co	58.933	58.925	11690	2022	0.694	
In	114.904	114.925	22863	2028	0.698	
U	238.050	238.025	47450	2043	0.702	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	6.085
5.575	9.199
5.625	3.785
5.675	2.650
5.725	2.784
5.775	4.551
5.825	2.721
5.875	3.667
5.925	2.298
5.975	2.960
6.025	2.051
6.075	2.518
6.125	1.883
6.175	6.416
6.225	9.261
6.275	34.993
6.325	24.786
6.375	54.565
6.425	67.528
6.475	28.287
6.525	24.416
6.575	8.293
6.625	7.843
6.675	1.449
6.725	3.824
6.775	4.256
6.825	2.187

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6.875	2.362
6.925	2.244
6.975	3.853
7.025	2.385
7.075	1.497
7.125	3.271
7.175	3.067
7.225	2.717
7.275	5.711
7.325	17.986
7.375	26.438
7.425	44.721
7.475	56.845
7.525	67.711
7.575	22.017
7.625	16.667
7.675	30.619
7.725	42.127
7.775	20.000
7.825	47.650
7.875	62.828
7.925	33.503
7.975	28.284
8.025	20.963
8.075	40.745
8.125	22.017
8.175	43.241
8.225	69.869
8.275	39.123
8.325	16.090
8.375	42.592
8.425	35.355
8.475	25.913
22.525	223.607
22.575	79.820
22.625	45.426
22.675	38.846
22.725	44.963
22.775	24.306
22.825	20.328
22.875	28.384
22.925	12.448
22.975	28.221
23.025	35.590
23.075	18.864
23.125	32.660
23.175	19.197

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23.225	41.177
23.275	33.610
23.325	20.242
23.375	39.529
23.425	36.629
23.475	26.220
23.525	1.441
23.575	3.254
23.625	1.840
23.675	1.920
23.725	1.519
23.775	0.490
23.825	1.010
23.875	0.892
23.925	0.952
23.975	0.867
24.025	1.370
24.075	0.752
24.125	0.449
24.175	1.134
24.225	0.680
24.275	1.451
24.325	6.069
24.375	10.480
24.425	43.240
24.475	18.519
24.525	7.275
24.575	1.840
24.625	1.790
24.675	2.333
24.725	2.288
24.775	1.503
24.825	0.889
24.875	2.405
24.925	1.668
24.975	1.830
25.025	2.001
25.075	1.001
25.125	1.831
25.175	1.646
25.225	2.647
25.275	5.737
25.325	28.897
25.375	37.769
25.425	24.787
25.475	14.691
57.525	9.274

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57.575	4.697
57.625	3.697
57.675	1.704
57.725	2.788
57.775	1.286
57.825	2.150
57.875	1.665
57.925	2.665
57.975	2.532
58.025	2.233
58.075	1.653
58.125	2.242
58.175	2.307
58.225	1.438
58.275	9.597
58.325	24.601
58.375	42.056
58.425	11.467
58.475	2.672
58.525	4.688
58.575	3.061
58.625	2.248
58.675	1.580
58.725	1.967
58.775	1.672
58.825	2.160
58.875	2.144
58.925	2.513
58.975	1.953
59.025	2.216
59.075	2.347
59.125	2.549
59.175	2.216
59.225	4.027
59.275	14.816
59.325	28.022
59.375	48.591
59.425	45.913
59.475	15.469
59.525	6.956
59.575	8.038
59.625	4.166
59.675	3.302
59.725	2.024
59.775	3.681
59.825	2.407
59.875	3.150

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59.925	2.356
59.975	3.905
60.025	4.293
60.075	5.249
60.125	2.699
60.175	2.860
60.225	2.555
60.275	16.716
60.325	34.583
60.375	20.203
60.425	44.410
60.475	66.296
113.525	9.103
113.575	3.403
113.625	4.527
113.675	2.870
113.725	4.156
113.775	2.098
113.825	2.205
113.875	0.979
113.925	1.953
113.975	2.036
114.025	1.318
114.075	2.633
114.125	2.614
114.175	2.495
114.225	4.458
114.275	7.728
114.325	11.819
114.375	19.764
114.425	26.842
114.475	16.098
114.525	6.809
114.575	3.363
114.625	3.119
114.675	2.382
114.725	1.074
114.775	1.623
114.825	1.260
114.875	1.385
114.925	0.609
114.975	1.861
115.025	1.207
115.075	1.153
115.125	1.036
115.175	1.651
115.225	6.453

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115.275	5.674
115.325	7.932
115.375	32.810
115.425	16.723
115.475	34.585
115.525	8.547
115.575	16.462
115.625	9.844
115.675	3.172
115.725	3.113
115.775	1.916
115.825	4.169
115.875	5.175
115.925	5.005
115.975	0.626
116.025	4.094
116.075	3.969
116.125	1.868
116.175	3.143
116.225	12.221
116.275	16.944
116.325	40.074
116.375	21.254
116.425	20.494
116.475	24.786
236.525	
236.575	16.383
236.625	26.465
236.675	13.419
236.725	12.512
236.775	25.343
236.825	30.417
236.875	26.514
236.925	20.337
236.975	19.685
237.025	20.721
237.075	9.028
237.125	22.692
237.175	32.775
237.225	17.653
237.275	21.548
237.325	26.716
237.375	35.845
237.425	25.759
237.475	17.149
237.525	22.522
237.575	9.617

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237.625	4.071
237.675	4.758
237.725	4.246
237.775	1.442
237.825	2.101
237.875	1.651
237.925	1.987
237.975	1.469
238.025	1.085
238.075	0.718
238.125	0.946
238.175	0.604
238.225	1.723
238.275	1.434
238.325	0.602
238.375	1.453
238.425	3.040
238.475	3.991
238.525	10.823
238.575	23.859
238.625	20.615
238.675	15.689
238.725	8.818
238.775	30.817
238.825	22.273
238.875	14.038
238.925	14.222
238.975	23.329
239.025	24.882
239.075	12.644
239.125	4.180
239.175	17.049
239.225	31.147
239.275	18.371
239.325	18.669
239.375	17.877
239.425	16.090
239.475	14.076

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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Wednesday, June 15, 2016 12:33:46
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59894.8	1.8				ug/L	58443	Standard
	Be	9	6.7	43.3				ug/L	5	Standard
	Al	27	378.3	14.5				ug/L	385	Standard
	Sc	45	46815.6	0.8				ug/L	46031	Standard
	Ti	47	105.0	0.0				ug/L	94	Standard
	V	51	1305.3	6.5				ug/L	1280	Standard
	Cr	52	6478.7	1.9				ug/L	6381	Standard
	Cr	53	2038.5	2.1				ug/L	1957	Standard
	Mn	55	656.3	6.6				ug/L	667	Standard
	Co	59	144.3	10.9				ug/L	156	Standard
	Ni	60	174.0	16.1				ug/L	154	Standard
	Cu	65	108.7	1.9				ug/L	116	Standard
	Zn	66	110.0	4.7				ug/L	114	Standard
>	**Ge**	72	469196.8	0.5				ug/L	467488	Standard
	As	75	-28.0	48.9				ug/L	-61	Standard
	Se	82	12.5	28.7				ug/L	9	Standard
	Se-1	77	115.7	4.1				ug/L	125	Standard
>	**Ga**	71	76.7	35.9				mg/L	50	Standard
	Rb	85	15.0	0.0				ug/L	18	Standard
	Y	89	409664.9	1.3				ug/L	402730	Standard
>	**Rh**	103	10.0	50.0				ug/L	12	Standard
	Mo	98	7.6	38.4				ug/L	8	Standard
	Ag	107	69.7	15.3				ug/L	65	Standard
	Cd	111	1.7	34.9				mg/L	3	Standard
	Cd	114	3.1	74.2				ug/L	15	Standard
>	**In**	115	536217.4	0.2				ug/L	526825	Standard
	Sn	118	380.0	6.6				ug/L	368	Standard
	Sb	123	23.7	10.9				ug/L	46	Standard
	Ba	135	17.3	29.0				ug/L	16	Standard
	Ce	140	15.0	57.7				ug/L	43	Standard
>	**Tb**	159	789291.6	0.3				ug/L	771780	Standard
	Ho	165	8.3	34.6				ug/L	8	Standard
	Tl	203	19.3	13.0				ug/L	28	Standard
	Tl	205	20.0	43.3				ug/L	20	Standard
	Pb	206	194.7	2.4				ug/L	184	Standard
	Pb	207	148.0	4.7				ug/L	161	Standard
	Pb	208	728.0	3.9				ug/L	746	Standard
	U	238	3.3	45.8				ug/L	6	Standard
>	**Bi**	209	429902.5	0.7				ug/L	429329	Standard

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Na	23	0.0		mg/L	0	Standard
Mg	24	15.0	33.3	mg/L	25	Standard
K	39	43.3	33.3	mg/L	25	Standard
Ca	43	60.0	8.3	mg/L	77	Standard
Fe	54	154.2	12.8	mg/L	165	Standard
Fe	57	155.0	8.5	mg/L	205	Standard
Sc-1	45	46815.6	0.8	mg/L	46031	Standard
Cl	35	29329.0	1.2	ug/L	28530	Standard
Kr	83	2.0	86.6	ug/L	2	Standard
Br	81	1410.1	10.0	ug/L	1560	Standard
P	31	15611.4	2.2	ug/L	15481	Standard
S	34	2200.2	5.0	ug/L	2072	Standard
Sr	88	66.7	17.3	ug/L	70	Standard
C	12	40.0	66.1	mg/L	47	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	0.0		mg/L	0	Standard
Dy	164	12.7	120.8	mg/L	13	Standard
Ho-1	165	8.3	34.6	mg/L	8	Standard
Er	166	13.3	43.3	mg/L	7	Standard
I	127	1153.4	4.0	mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Wednesday, June 15, 2016 12:36:58
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59116.8	1.2				ug/L	58443	Standard
	Be	9	41.7	48.5				ug/L	5	Standard
	Al	27	6709.8	2.1				ug/L	385	Standard
	Sc	45	46795.5	2.1				ug/L	46031	Standard
	Ti	47	129.3	9.4				ug/L	94	Standard
	V	51	1699.2	6.9				ug/L	1280	Standard
	Cr	52	6943.9	1.7				ug/L	6381	Standard
	Cr	53	2026.8	3.7				ug/L	1957	Standard
	Mn	55	1065.7	4.0				ug/L	667	Standard
	Co	59	409.3	1.3				ug/L	156	Standard
	Ni	60	252.7	8.3				ug/L	154	Standard
	Cu	65	214.3	2.9				ug/L	116	Standard
	Zn	66	246.7	9.1				ug/L	114	Standard
>	**Ge**	72	466862.1	2.3				ug/L	467488	Standard
	As	75	8.2	611.9				ug/L	-61	Standard
	Se	82	18.8	46.8				ug/L	9	Standard
	Se-1	77	117.3	13.1				ug/L	125	Standard
>	**Ga**	71	60.0	16.7				mg/L	50	Standard
	Rb	85	15.0	57.7				ug/L	18	Standard
	Y	89	405698.1	0.3				ug/L	402730	Standard
>	**Rh**	103	10.0	100.0				ug/L	12	Standard
	Mo	98	190.7	6.9				ug/L	8	Standard
	Ag	107	317.3	9.2				ug/L	65	Standard
	Cd	111	84.6	13.3				mg/L	3	Standard
	Cd	114	228.9	8.3				ug/L	15	Standard
>	**In**	115	531834.4	1.9				ug/L	526825	Standard
	Sn	118	661.7	11.7				ug/L	368	Standard
	Sb	123	209.4	14.9				ug/L	46	Standard
	Ba	135	100.3	22.1				ug/L	16	Standard
	Ce	140	98.3	133.8				ug/L	43	Standard
>	**Tb**	159	782367.7	1.2				ug/L	771780	Standard
	Ho	165	8.3	34.6				ug/L	8	Standard
	Tl	203	338.0	10.8				ug/L	28	Standard
	Tl	205	296.7	12.4				ug/L	20	Standard
	Pb	206	385.3	6.7				ug/L	184	Standard
	Pb	207	348.3	2.8				ug/L	161	Standard
	Pb	208	1512.4	1.8				ug/L	746	Standard
	U	238	248.3	2.6				ug/L	6	Standard
>	**Bi**	209	430875.6	0.8				ug/L	429329	Standard

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Na	23	0.0		mg/L	0	Standard
Mg	24	28.3	20.4	mg/L	25	Standard
K	39	41.7	18.3	mg/L	25	Standard
Ca	43	55.0	27.3	mg/L	77	Standard
Fe	54	137.7	18.3	mg/L	165	Standard
Fe	57	145.0	39.8	mg/L	205	Standard
> **Sc-1**	45	46795.5	2.1	mg/L	46031	Standard
Cl	35	29985.0	1.3	ug/L	28530	Standard
Kr	83	2.3	49.5	ug/L	2	Standard
Br	81	1570.1	10.8	ug/L	1560	Standard
P	31	16232.0	2.2	ug/L	15481	Standard
S	34	2168.5	2.3	ug/L	2072	Standard
Sr	88	40.0	21.7	ug/L	70	Standard
C	12	23.3	107.9	mg/L	47	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	0.0		mg/L	0	Standard
Dy	164	6.5	86.7	mg/L	13	Standard
Ho-1	165	8.3	34.6	mg/L	8	Standard
Er	166	3.3	173.2	mg/L	7	Standard
I	127	1193.4	4.1	mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Wednesday, June 15, 2016 12:40:10
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59981.9	3.6				ug/L	58443	Standard
	Be	9	29993.0	1.1	**50.0000**	1.351	2.7	ug/L	5	Standard
	Al	27	5732865.5	0.3	**50.0000**	1.774	3.5	ug/L	385	Standard
	Sc	45	47929.1	3.5				ug/L	46031	Standard
	Ti	47	22645.6	0.4	**100.0000**	1.162	1.2	ug/L	94	Standard
	V	51	279829.0	0.2	**50.0000**	0.702	1.4	ug/L	1280	Standard
	Cr	52	295657.6	0.9	**50.0000**	0.722	1.4	ug/L	6381	Standard
	Cr	53	36983.4	2.8	**50.0000**	1.119	2.2	ug/L	1957	Standard
	Mn	55	219931.5	1.1	**50.0000**	0.165	0.3	ug/L	667	Standard
	Co	59	239304.1	2.0	**50.0000**	0.437	0.9	ug/L	156	Standard
	Ni	60	72031.5	0.3	**50.0000**	0.569	1.1	ug/L	154	Standard
	Cu	65	70171.1	0.3	**50.0000**	0.596	1.2	ug/L	116	Standard
	Zn	66	40866.4	1.6	**50.0000**	0.857	1.7	ug/L	114	Standard
>	**Ge**	72	469614.7	1.5				ug/L	467488	Standard
	As	75	42037.0	0.5	**50.0000**	0.567	1.1	ug/L	-61	Standard
	Se	82	4311.2	1.2	**50.0000**	0.141	0.3	ug/L	9	Standard
	Se-1	77	2977.3	2.9	**50.0000**	1.306	2.6	ug/L	125	Standard
>	**Ga**	71	76.7	38.2				mg/L	50	Standard
	Rb	85	623.3	5.3				ug/L	18	Standard
	Y	89	407531.8	2.5				ug/L	402730	Standard
>	**Rh**	103	30.0	16.7				ug/L	12	Standard
	Mo	98	176109.1	1.6	**100.0000**	1.617	1.6	ug/L	8	Standard
	Ag	107	226464.6	0.7	**50.0000**	1.054	2.1	ug/L	65	Standard
	Cd	111	72737.9	1.2	**50.0000**	0.555	1.1	mg/L	3	Standard
	Cd	114	180232.2	1.6	**50.0000**	0.988	2.0	ug/L	15	Standard
>	**In**	115	538513.5	2.3				ug/L	526825	Standard
	Sn	118	204941.8	0.9	**50.0000**	0.791	1.6	ug/L	368	Standard
	Sb	123	161078.7	0.5	**50.0000**	1.144	2.3	ug/L	46	Standard
	Ba	135	68714.8	1.1	**50.0000**	0.635	1.3	ug/L	16	Standard
	Ce	140	83.3	29.6				ug/L	43	Standard
>	**Tb**	159	794334.1	1.4				ug/L	771780	Standard
	Ho	165	1.7	173.2				ug/L	8	Standard
	Tl	203	262806.6	1.4	**50.0000**	0.423	0.8	ug/L	28	Standard
	Tl	205	241330.3	1.2	**50.0000**	0.539	1.1	ug/L	20	Standard
	Pb	206	157753.7	0.5	**50.0000**	1.316	2.6	ug/L	184	Standard
	Pb	207	143572.7	0.3	**50.0000**	1.105	2.2	ug/L	161	Standard
	Pb	208	618918.2	0.5	**50.0000**	0.952	1.9	ug/L	746	Standard
	U	238	225836.4	1.1	**50.0000**	0.731	1.5	ug/L	6	Standard
>	**Bi**	209	435345.3	2.2				ug/L	429329	Standard

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	Na	23	1.7	173.2	**5.0000**	8.652	173.0	mg/L	0	Standard
	Mg	24	3297.0	3.4	**5.0000**	0.058	1.2	mg/L	25	Standard
	K	39	1426.7	5.0	**5.0000**	0.422	8.4	mg/L	25	Standard
	Ca	43	123.3	23.4	**5.0000**	2.398	48.0	mg/L	77	Standard
	Fe	54	5013.1	7.8	**5.0000**	0.288	5.8	mg/L	165	Standard
	Fe	57	1366.7	9.0	**5.0000**	0.683	13.7	mg/L	205	Standard
>	**Sc-1**	45	47929.1	3.5				mg/L	46031	Standard
	Cl	35	30672.4	1.5				ug/L	28530	Standard
	Kr	83	2.3	65.5				ug/L	2	Standard
	Br	81	1486.7	6.5				ug/L	1560	Standard
	P	31	18886.8	3.6				ug/L	15481	Standard
	S	34	2423.5	12.3				ug/L	2072	Standard
	Sr	88	56.7	39.8				ug/L	70	Standard
	C	12	33.3	45.8				mg/L	47	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	6.7	173.2				mg/L	0	Standard
	Dy	164	23.0	66.2				mg/L	13	Standard
	Ho-1	165	1.7	173.2				mg/L	8	Standard
	Er	166	6.7	86.6				mg/L	7	Standard
	I	127	7708.6	4.0				mg/L	1227	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Wednesday, June 15, 2016 12:43:21
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	57676.3	1.8				ug/L	58443	Standard
	Be	9	59829.6	0.4	**101.8199**	2.141	2.1	ug/L	5	Standard
	Al	27	11520319.6	0.8	**102.1690**	1.939	1.9	ug/L	385	Standard
	Sc	45	45707.2	2.2				ug/L	46031	Standard
	Ti	47	44442.1	0.7	**198.2591**	3.744	1.9	ug/L	94	Standard
	V	51	546612.7	0.7	**98.8980**	0.582	0.6	ug/L	1280	Standard
	Cr	52	579384.3	0.9	**99.5024**	1.833	1.8	ug/L	6381	Standard
	Cr	53	71307.4	1.1	**99.4897**	1.169	1.2	ug/L	1957	Standard
	Mn	55	438858.0	0.4	**99.9442**	1.656	1.7	ug/L	667	Standard
	Co	59	477240.9	0.3	**99.8392**	1.493	1.5	ug/L	156	Standard
	Ni	60	141052.9	0.8	**98.9594**	0.596	0.6	ug/L	154	Standard
	Cu	65	137671.3	0.1	**99.0462**	1.245	1.3	ug/L	116	Standard
	Zn	66	80578.0	1.0	**99.3681**	0.706	0.7	ug/L	114	Standard
>	Ge	72	470029.0	1.3				ug/L	467488	Standard
	As	75	82892.7	1.1	**99.2245**	0.367	0.4	ug/L	-61	Standard
	Se	82	8458.4	0.6	**99.0802**	0.701	0.7	ug/L	9	Standard
	Se-1	77	5834.8	0.6	**99.9201**	1.417	1.4	ug/L	125	Standard
>	Ga	71	86.7	35.3				mg/L	50	Standard
	Rb	85	1113.4	4.4				ug/L	18	Standard
	Y	89	398537.8	1.7				ug/L	402730	Standard
>	Rh	103	28.3	44.4				ug/L	12	Standard
	Mo	98	350338.1	0.7	**202.8726**	2.503	1.2	ug/L	8	Standard
	Ag	107	443136.9	1.3	**100.6123**	1.512	1.5	ug/L	65	Standard
	Cd	111	144216.9	0.7	**101.2703**	0.778	0.8	mg/L	3	Standard
	Cd	114	348736.1	2.2	**100.0648**	3.573	3.6	ug/L	15	Standard
>	In	115	520450.0	1.4				ug/L	526825	Standard
	Sn	118	400593.3	0.2	**100.6111**	1.254	1.2	ug/L	368	Standard
	Sb	123	318534.4	0.7	**101.1343**	0.726	0.7	ug/L	46	Standard
	Ba	135	135680.1	0.6	**101.0715**	0.888	0.9	ug/L	16	Standard
	Ce	140	90.0	33.8				ug/L	43	Standard
>	Tb	159	769703.4	0.6				ug/L	771780	Standard
	Ho	165	5.0	0.0				ug/L	8	Standard
	Tl	203	518300.6	0.2	**100.6693**	0.750	0.7	ug/L	28	Standard
	Tl	205	471865.7	1.2	**100.2348**	1.054	1.1	ug/L	20	Standard
	Pb	206	311901.1	0.8	**100.8135**	1.533	1.5	ug/L	184	Standard
	Pb	207	281780.2	1.0	**100.4457**	1.149	1.1	ug/L	161	Standard
	Pb	208	1237117.9	0.5	**101.3630**	0.942	0.9	ug/L	746	Standard
	U	238	448538.7	1.6	**101.0170**	2.354	2.3	ug/L	6	Standard
>	Bi	209	423608.2	0.7				ug/L	429329	Standard

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Na	23	1.7	173.2	**6.6927**	11.583	173.1	mg/L	0	Standard
Mg	24	6264.6	4.6	**10.0050**	0.675	6.7	mg/L	25	Standard
K	39	2880.3	6.8	**10.3484**	0.482	4.7	mg/L	25	Standard
Ca	43	145.0	34.0	**8.2466**	4.255	51.6	mg/L	77	Standard
Fe	54	9624.4	1.5	**10.1083**	0.339	3.3	mg/L	165	Standard
Fe	57	2636.9	2.7	**10.3424**	0.376	3.6	mg/L	205	Standard
> **Sc-1**	45	45707.2	2.2				mg/L	46031	Standard
Cl	35	31191.4	0.8				ug/L	28530	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	1590.1	12.6				ug/L	1560	Standard
P	31	19404.1	2.0				ug/L	15481	Standard
S	34	2561.9	4.4				ug/L	2072	Standard
Sr	88	68.3	36.8				ug/L	70	Standard
C	12	40.0	66.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.7	234.8				mg/L	13	Standard
Ho-1	165	5.0	0.0				mg/L	8	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	13973.1	1.3				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998
Corr. Coef.	Ca	43	Correlation coefficient < 0.998

Sample ID: Standard 4
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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Wednesday, June 15, 2016 12:46:34
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	56458.3	0.3				ug/L	58443	Standard
	Be	9	30484.0	2.0	**52.9771**	1.175	2.2	ug/L	5	Standard
	Al	27	5934784.1	1.0	**53.7551**	0.718	1.3	ug/L	385	Standard
	Sc	45	46456.1	1.2				ug/L	46031	Standard
	Ti	47	24624.0	1.2	**110.8354**	0.408	0.4	ug/L	94	Standard
	V	51	286833.1	1.9	**52.3440**	0.508	1.0	ug/L	1280	Standard
	Cr	52	301449.3	0.5	**51.7899**	0.810	1.6	ug/L	6381	Standard
	Cr	53	37929.1	1.5	**52.1770**	1.142	2.2	ug/L	1957	Standard
	Mn	55	229205.8	2.7	**52.6755**	1.188	2.3	ug/L	667	Standard
	Co	59	244822.1	2.3	**51.7567**	0.742	1.4	ug/L	156	Standard
	Ni	60	73844.5	0.8	**52.3232**	0.750	1.4	ug/L	154	Standard
	Cu	65	72817.6	1.8	**52.9101**	0.258	0.5	ug/L	116	Standard
	Zn	66	43066.8	1.4	**53.5801**	0.802	1.5	ug/L	114	Standard
>	Ge	72	464899.7	1.6				ug/L	467488	Standard
	As	75	43179.9	0.7	**52.2807**	0.470	0.9	ug/L	-61	Standard
	Se	82	4405.0	0.6	**52.0955**	1.038	2.0	ug/L	9	Standard
	Se-1	77	3029.6	1.6	**51.4921**	0.239	0.5	ug/L	125	Standard
>	Ga	71	113.3	11.1				mg/L	50	Standard
	Rb	85	483.3	5.7				ug/L	18	Standard
	Y	89	396212.4	1.1				ug/L	402730	Standard
>	Rh	103	25.0	52.9				ug/L	12	Standard
	Mo	98	191822.5	1.1	**110.1271**	0.332	0.3	ug/L	8	Standard
	Ag	107	231879.7	1.0	**52.1956**	1.050	2.0	ug/L	65	Standard
	Cd	111	76220.8	0.9	**53.0650**	0.427	0.8	mg/L	3	Standard
	Cd	114	185005.6	0.8	**52.6130**	0.114	0.2	ug/L	15	Standard
>	In	115	524881.4	1.0				ug/L	526825	Standard
	Sn	118	229862.3	1.1	**57.1930**	0.913	1.6	ug/L	368	Standard
	Sb	123	162444.6	0.7	**51.1353**	0.848	1.7	ug/L	46	Standard
	Ba	135	70081.4	0.1	**51.7529**	0.549	1.1	ug/L	16	Standard
	Ce	140	91.7	12.6				ug/L	43	Standard
>	Tb	159	768984.7	0.4				ug/L	771780	Standard
	Ho	165	8.3	124.9				ug/L	8	Standard
	Tl	203	270475.2	0.7	**52.0339**	0.653	1.3	ug/L	28	Standard
	Tl	205	250233.6	2.4	**52.6514**	1.371	2.6	ug/L	20	Standard
	Pb	206	164463.8	0.4	**52.6210**	0.319	0.6	ug/L	184	Standard
	Pb	207	143608.7	0.9	**50.6751**	0.600	1.2	ug/L	161	Standard
	Pb	208	645002.9	2.5	**52.3136**	1.205	2.3	ug/L	746	Standard
	U	238	229515.8	1.4	**51.1958**	0.650	1.3	ug/L	6	Standard
>	Bi	209	427634.1	0.9				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3153.7	1.9	**4.9310**	0.085	1.7	mg/L	25	Standard
K	39	1320.1	3.6	**4.5928**	0.227	4.9	mg/L	25	Standard
Ca	43	136.7	23.2	**7.3651**	2.942	39.9	mg/L	77	Standard
Fe	54	5128.1	2.7	**5.2316**	0.173	3.3	mg/L	165	Standard
Fe	57	1470.1	2.7	**5.4065**	0.121	2.2	mg/L	205	Standard
Sc-1	45	46456.1	1.2				mg/L	46031	Standard
Cl	35	31195.4	0.7				ug/L	28530	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1446.7	5.6				ug/L	1560	Standard
P	31	20018.2	2.7				ug/L	15481	Standard
S	34	2606.9	3.4				ug/L	2072	Standard
Sr	88	55.0	24.1				ug/L	70	Standard
C	12	56.7	83.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	22.5	66.9				mg/L	13	Standard
Ho-1	165	8.3	124.9				mg/L	8	Standard
Er	166	16.7	34.6				mg/L	7	Standard
I	127	1100.0	8.5				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	105.954		
Al	27	107.510		
Sc	45			
Ti	47	110.835		
V	51	104.688		
Cr	52	103.580		
Cr	53			
Mn	55	105.351		
Co	59	103.513		
Ni	60	104.646		
Cu	65	105.820		
Zn	66	107.160		
Ge	72		99.446	
As	75	104.561		
Se	82	104.191		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	110.127		
Ag	107	104.391		
Cd	111	106.130		
Cd	114			
> In	115		99.631	
Sn	118	114.386		
Sb	123	102.271		
Ba	135	103.506		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	104.068		
Tl	205			
Pb	206	105.242		
Pb	207	101.350		
Pb	208	104.627		
U	238	102.392		
> Bi	209		99.605	
Na	23	0.100		
Mg	24	98.619		
K	39	91.856		
Ca	43	147.303		
Fe	54	104.633		
Fe	57	108.130		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Ti	47	
QC Std 1	Mo	98	
QC Std 1	Na	23	

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QC Std 1	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Wednesday, June 15, 2016 12:49:47
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57264.7	1.0				ug/L	58443	Standard
	Be	9	25.0	40.0	**0.0234**	0.017	71.5	ug/L	5	Standard
	Al	27	3342.1	25.2	**0.0218**	0.008	34.7	ug/L	385	Standard
	Sc	45	47216.8	1.9				ug/L	46031	Standard
	Ti	47	101.0	13.1	**-0.0329**	0.051	156.3	ug/L	94	Standard
	V	51	1361.7	17.8	**-0.0139**	0.040	286.5	ug/L	1280	Standard
	Cr	52	5900.1	3.4	**-0.1417**	0.016	11.0	ug/L	6381	Standard
	Cr	53	1636.8	6.6	**-0.5341**	0.151	28.3	ug/L	1957	Standard
	Mn	55	749.4	11.8	**-0.0245**	0.017	69.1	ug/L	667	Standard
	Co	59	340.7	22.6	**0.0347**	0.015	42.8	ug/L	156	Standard
	Ni	60	194.0	16.1	**0.0072**	0.019	267.9	ug/L	154	Standard
	Cu	65	150.0	1.8	**0.0024**	0.002	86.0	ug/L	116	Standard
	Zn	66	120.3	11.0	**-0.1082**	0.018	16.9	ug/L	114	Standard
>	**Ge**	72	470690.1	2.0				ug/L	467488	Standard
	As	75	24.6	102.5	**0.0702**	0.030	42.6	ug/L	-61	Standard
	Se	82	16.7	10.3	**0.0243**	0.020	82.0	ug/L	9	Standard
	Se-1	77	107.3	16.6	**-0.1451**	0.281	194.0	ug/L	125	Standard
>	**Ga**	71	45.0	61.9				mg/L	50	Standard
	Rb	85	21.7	35.3				ug/L	18	Standard
	Y	89	397351.5	2.4				ug/L	402730	Standard
>	**Rh**	103	10.0					ug/L	12	Standard
	Mo	98	281.9	21.6	**0.1533**	0.034	22.5	ug/L	8	Standard
	Ag	107	336.0	72.9	**0.0546**	0.054	98.8	ug/L	65	Standard
	Cd	111	51.8	62.2	**0.0279**	0.022	79.5	mg/L	3	Standard
	Cd	114	227.3	77.1	**0.0500**	0.049	97.8	ug/L	15	Standard
>	**In**	115	526665.5	1.8				ug/L	526825	Standard
	Sn	118	970.0	19.6	**0.1280**	0.044	34.6	ug/L	368	Standard
	Sb	123	1667.8	15.0	**0.5084**	0.078	15.3	ug/L	46	Standard
	Ba	135	88.3	61.6	**0.0418**	0.039	93.9	ug/L	16	Standard
	Ce	140	141.7	154.9				ug/L	43	Standard
>	**Tb**	159	779790.8	1.5				ug/L	771780	Standard
	Ho	165	11.7	65.5				ug/L	8	Standard
	Tl	203	338.7	77.5	**0.0502**	0.050	100.1	ug/L	28	Standard
	Tl	205	178.3	33.4	**0.0253**	0.013	50.3	ug/L	20	Standard
	Pb	206	354.0	32.0	**0.0400**	0.036	90.9	ug/L	184	Standard
	Pb	207	278.0	26.1	**0.0253**	0.026	101.8	ug/L	161	Standard
	Pb	208	1158.0	14.6	**0.0214**	0.014	67.0	ug/L	746	Standard
	U	238	153.3	24.8	**0.0290**	0.009	30.1	ug/L	6	Standard
>	**Bi**	209	431343.9	1.1				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	21.7	93.3	**-0.0062**	0.030	488.1	mg/L	25	Standard
K	39	26.7	65.8	**-0.0484**	0.063	129.5	mg/L	25	Standard
Ca	43	48.3	26.0	**-0.6414**	1.093	170.4	mg/L	77	Standard
Fe	54	147.8	8.4	**0.0142**	0.016	109.5	mg/L	165	Standard
Fe	57	128.3	30.3	**-0.0714**	0.153	213.8	mg/L	205	Standard
> **Sc-1**	45	47216.8	1.9				mg/L	46031	Standard
Cl	35	31151.3	2.0				ug/L	28530	Standard
Kr	83	2.7	94.4				ug/L	2	Standard
Br	81	1490.1	9.9				ug/L	1560	Standard
P	31	19479.2	3.9				ug/L	15481	Standard
S	34	2538.5	5.4				ug/L	2072	Standard
Sr	88	65.0	13.3				ug/L	70	Standard
C	12	36.7	15.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.7	86.6				mg/L	13	Standard
Ho-1	165	11.7	65.5				mg/L	8	Standard
Er	166	0.0					mg/L	7	Standard
I	127	1135.0	9.2				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.685	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.970
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.469
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Tl	203	
QC Std 2	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Wednesday, June 15, 2016 12:53:00
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54728.7	2.6				ug/L	58443	Standard
	Be	9	128.3	23.5	**0.2116**	0.058	27.4	ug/L	5	Standard
	Al	27	771.7	6.9	**-0.0008**	0.000	47.2	ug/L	385	Standard
	Sc	45	44283.0	1.3				ug/L	46031	Standard
	Ti	47	74.0	8.9	**-0.1382**	0.030	21.8	ug/L	94	Standard
	V	51	3196.3	4.9	**0.3445**	0.030	8.7	ug/L	1280	Standard
	Cr	52	10232.8	1.4	**0.6888**	0.024	3.5	ug/L	6381	Standard
	Cr	53	2025.1	4.3	**0.1510**	0.127	84.2	ug/L	1957	Standard
	Mn	55	2593.2	1.8	**0.4220**	0.010	2.5	ug/L	667	Standard
	Co	59	2006.8	0.9	**0.4017**	0.003	0.8	ug/L	156	Standard
	Ni	60	2334.8	3.7	**1.5819**	0.064	4.0	ug/L	154	Standard
	Cu	65	1184.7	2.8	**0.7842**	0.024	3.1	ug/L	116	Standard
	Zn	66	5542.0	1.5	**6.8886**	0.098	1.4	ug/L	114	Standard
>	**Ge**	72	450702.1	0.2				ug/L	467488	Standard
	As	75	334.5	7.2	**0.4584**	0.030	6.5	ug/L	-61	Standard
	Se	82	53.2	10.0	**0.4798**	0.064	13.3	ug/L	9	Standard
	Se-1	77	131.0	10.7	**0.3724**	0.258	69.4	ug/L	125	Standard
>	**Ga**	71	63.3	25.4				mg/L	50	Standard
	Rb	85	23.3	32.7				ug/L	18	Standard
	Y	89	391548.7	1.4				ug/L	402730	Standard
>	**Rh**	103	20.0	25.0				ug/L	12	Standard
	Mo	98	56.5	7.5	**0.0250**	0.003	10.1	ug/L	8	Standard
	Ag	107	1767.8	2.4	**0.3853**	0.016	4.1	ug/L	65	Standard
	Cd	111	334.9	1.4	**0.2296**	0.006	2.6	mg/L	3	Standard
	Cd	114	831.8	14.1	**0.2269**	0.034	14.8	ug/L	15	Standard
>	**In**	115	515028.4	1.8				ug/L	526825	Standard
	Sn	118	430.0	19.4	**-0.0033**	0.022	684.8	ug/L	368	Standard
	Sb	123	1470.6	5.1	**0.4571**	0.029	6.3	ug/L	46	Standard
	Ba	135	994.7	1.4	**0.7259**	0.004	0.5	ug/L	16	Standard
	Ce	140	16.7	45.8				ug/L	43	Standard
>	**Tb**	159	757506.4	0.7				ug/L	771780	Standard
	Ho	165	6.7	114.6				ug/L	8	Standard
	Tl	203	419.0	4.1	**0.0677**	0.002	2.9	ug/L	28	Standard
	Tl	205	406.7	17.7	**0.0755**	0.017	22.5	ug/L	20	Standard
	Pb	206	807.7	1.9	**0.1916**	0.008	4.4	ug/L	184	Standard
	Pb	207	679.3	2.9	**0.1727**	0.003	1.8	ug/L	161	Standard
	Pb	208	3221.1	1.8	**0.1950**	0.005	2.8	ug/L	746	Standard
	U	238	1750.8	1.9	**0.3935**	0.010	2.5	ug/L	6	Standard
>	**Bi**	209	419177.4	1.7				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	15.0	33.3	**-0.0146**	0.008	58.1	mg/L	25	Standard
K	39	43.3	40.5	**0.0199**	0.066	332.1	mg/L	25	Standard
Ca	43	46.7	6.2	**-0.5094**	0.313	61.4	mg/L	77	Standard
Fe	54	105.9	16.7	**-0.0219**	0.020	91.4	mg/L	165	Standard
Fe	57	143.3	23.2	**0.0271**	0.139	511.8	mg/L	205	Standard
Sc-1	45	44283.0	1.3				mg/L	46031	Standard
Cl	35	30587.5	0.8				ug/L	28530	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	1396.7	4.3				ug/L	1560	Standard
P	31	13781.3	2.8				ug/L	15481	Standard
S	34	2420.2	6.0				ug/L	2072	Standard
Sr	88	55.0	9.1				ug/L	70	Standard
C	12	40.0	75.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	2.9	202.3				mg/L	13	Standard
Ho-1	165	6.7	114.6				mg/L	8	Standard
Er	166	10.0					mg/L	7	Standard
I	127	743.4	3.8				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	105.781		
Al	27	-0.084		
Sc	45			
Ti	47			
V	51	86.134		
Cr	52	86.103		
Cr	53			
Mn	55	84.398		
Co	59	100.416		
Ni	60	98.867		
Cu	65	98.029		
Zn	66	110.217		
Ge	72		96.409	
As	75	114.608		
Se	82	119.950		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	96.326		
Cd	111	95.671		
Cd	114			
> In	115			97.761
Sn	118			
Sb	123	114.283		
Ba	135	96.786		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	84.579		
Tl	205			
Pb	206			
Pb	207			
Pb	208	97.502		
U	238	98.382		
> Bi	209			97.635
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Wednesday, June 15, 2016 12:56:13
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64538.9	1.6				ug/L	58443	Standard
	Be	9	11.7	49.5	**-0.0016**	0.009	531.0	ug/L	5	Standard
	Al	27	6126940.4	3.0	**48.5459**	1.264	2.6	ug/L	385	Standard
	Sc	45	45832.6	1.7				ug/L	46031	Standard
	Ti	47	25647.4	1.5	**114.6970**	1.263	1.1	ug/L	94	Standard
	V	51	1456.8	10.6	**0.0052**	0.028	525.2	ug/L	1280	Standard
	Cr	52	7097.0	0.8	**0.0733**	0.005	7.2	ug/L	6381	Standard
	Cr	53	4490.7	6.0	**3.5936**	0.369	10.3	ug/L	1957	Standard
	Mn	55	1120.4	1.9	**0.0617**	0.004	7.1	ug/L	667	Standard
	Co	59	297.0	7.2	**0.0262**	0.005	18.1	ug/L	156	Standard
	Ni	60	707.7	5.1	**0.3707**	0.023	6.3	ug/L	154	Standard
	Cu	65	515.3	6.0	**0.2672**	0.021	7.9	ug/L	116	Standard
	Zn	66	1586.7	0.7	**1.7135**	0.013	0.8	ug/L	114	Standard
>	**Ge**	72	467957.0	0.4				ug/L	467488	Standard
	As	75	-63.9	68.0	**-0.0358**	0.052	146.0	ug/L	-61	Standard
	Se	82	10.1	42.8	**-0.0515**	0.051	99.9	ug/L	9	Standard
	Se-1	77	341.3	2.9	**3.9747**	0.175	4.4	ug/L	125	Standard
>	**Ga**	71	100.0	26.0				mg/L	50	Standard
	Rb	85	696.7	13.7				ug/L	18	Standard
	Y	89	402173.4	1.5				ug/L	402730	Standard
>	**Rh**	103	8.3	34.6				ug/L	12	Standard
	Mo	98	182711.3	1.5	**104.3381**	3.876	3.7	ug/L	8	Standard
	Ag	107	165.7	3.0	**0.0166**	0.001	4.4	ug/L	65	Standard
	Cd	111	-103.6	22.0	**-0.0800**	0.017	21.6	mg/L	3	Standard
	Cd	114	423.4	4.4	**0.1054**	0.003	2.7	ug/L	15	Standard
>	**In**	115	527988.1	2.3				ug/L	526825	Standard
	Sn	118	680.0	20.2	**0.0564**	0.037	66.4	ug/L	368	Standard
	Sb	123	293.3	34.2	**0.0773**	0.033	43.1	ug/L	46	Standard
	Ba	135	184.0	11.2	**0.1123**	0.017	15.3	ug/L	16	Standard
	Ce	140	130.0	7.7				ug/L	43	Standard
>	**Tb**	159	785913.3	0.8				ug/L	771780	Standard
	Ho	165	8.3	34.6				ug/L	8	Standard
	Tl	203	175.3	5.0	**0.0190**	0.002	9.3	ug/L	28	Standard
	Tl	205	150.0	16.7	**0.0194**	0.005	27.3	ug/L	20	Standard
	Pb	206	400.7	4.2	**0.0550**	0.005	8.9	ug/L	184	Standard
	Pb	207	354.3	5.0	**0.0523**	0.007	12.8	ug/L	161	Standard
	Pb	208	1584.4	2.1	**0.0560**	0.002	4.0	ug/L	746	Standard
	U	238	17.3	39.3	**-0.0011**	0.001	130.7	ug/L	6	Standard
>	**Bi**	209	430307.3	0.4				ug/L	429329	Standard

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Na	23	5.0	100.0	**20.3984**	20.626	101.1	mg/L	0	Standard
Mg	24	8332.3	4.9	**13.2809**	0.872	6.6	mg/L	25	Standard
K	39	1423.4	5.8	**5.0310**	0.283	5.6	mg/L	25	Standard
Ca	43	218.3	23.5	**14.9093**	4.528	30.4	mg/L	77	Standard
Fe	54	12569.8	1.2	**13.2042**	0.292	2.2	mg/L	165	Standard
Fe	57	3147.0	0.9	**12.4198**	0.314	2.5	mg/L	205	Standard
Sc-1	45	45832.6	1.7				mg/L	46031	Standard
Cl	35	31224.1	0.7				ug/L	28530	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1510.1	10.7				ug/L	1560	Standard
P	31	17895.6	2.2				ug/L	15481	Standard
S	34	2375.2	6.3				ug/L	2072	Standard
Sr	88	53.3	37.9				ug/L	70	Standard
C	12	100.0	26.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	36.7				mg/L	0	Standard
Dy	164	16.0	96.0				mg/L	13	Standard
Ho-1	165	8.3	34.6				mg/L	8	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	1500.1	4.3				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27	0.971		
Sc	45			
Ti	47	114.697		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.100	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	104.338		
Ag	107			
Cd	111			
Cd	114			
In	115			100.221
Sn	118			
Sb	123			
Ba	135			
Ce	140			
Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
Bi	209			100.228
Na	23	163.188		
Mg	24	265.617		
K	39	100.621		
Ca	43	99.395		
Fe	54	105.634		
Fe	57	99.359		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Wednesday, June 15, 2016 12:59:25
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67344.4	1.8				ug/L	58443	Standard
	Be	9	70490.3	2.6	**102.7696**	4.501	4.4	ug/L	5	Standard
	Al	27	6597238.0	0.7	**50.1071**	1.108	2.2	ug/L	385	Standard
	Sc	45	45718.9	1.1				ug/L	46031	Standard
	Ti	47	26318.8	1.7	**115.8578**	3.199	2.8	ug/L	94	Standard
	V	51	565995.4	0.7	**101.2332**	1.511	1.5	ug/L	1280	Standard
	Cr	52	584422.4	2.5	**99.2149**	3.524	3.6	ug/L	6381	Standard
	Cr	53	75889.6	2.1	**104.8256**	3.289	3.1	ug/L	1957	Standard
	Mn	55	448849.4	0.4	**101.0319**	0.705	0.7	ug/L	667	Standard
	Co	59	486759.6	0.3	**100.6479**	0.858	0.9	ug/L	156	Standard
	Ni	60	143574.2	1.7	**99.5816**	2.812	2.8	ug/L	154	Standard
	Cu	65	139830.3	0.6	**99.4396**	1.683	1.7	ug/L	116	Standard
	Zn	66	84138.0	1.5	**102.5744**	2.096	2.0	ug/L	114	Standard
>	**Ge**	72	475520.9	1.1				ug/L	467488	Standard
	As	75	85537.0	1.3	**101.2188**	2.224	2.2	ug/L	-61	Standard
	Se	82	8746.5	0.9	**101.2821**	1.807	1.8	ug/L	9	Standard
	Se-1	77	6149.6	0.7	**104.1809**	1.886	1.8	ug/L	125	Standard
>	**Ga**	71	130.0	16.8				mg/L	50	Standard
	Rb	85	700.0	13.1				ug/L	18	Standard
	Y	89	411297.9	0.6				ug/L	402730	Standard
>	**Rh**	103	36.7	41.7				ug/L	12	Standard
	Mo	98	190089.2	0.9	**107.5201**	2.040	1.9	ug/L	8	Standard
	Ag	107	435749.0	1.5	**96.6552**	2.925	3.0	ug/L	65	Standard
	Cd	111	148564.8	1.8	**101.8892**	0.888	0.9	mg/L	3	Standard
	Cd	114	368407.5	2.1	**103.2187**	1.735	1.7	ug/L	15	Standard
>	**In**	115	532849.4	1.7				ug/L	526825	Standard
	Sn	118	658.3	3.7	**0.0490**	0.005	10.8	ug/L	368	Standard
	Sb	123	327281.4	1.1	**101.5143**	2.591	2.6	ug/L	46	Standard
	Ba	135	137138.5	0.8	**99.7904**	1.807	1.8	ug/L	16	Standard
	Ce	140	45.0	77.8				ug/L	43	Standard
>	**Tb**	159	798568.0	0.7				ug/L	771780	Standard
	Ho	165	10.0	50.0				ug/L	8	Standard
	Tl	203	538041.3	0.6	**101.2247**	0.333	0.3	ug/L	28	Standard
	Tl	205	497774.8	0.7	**102.4236**	0.373	0.4	ug/L	20	Standard
	Pb	206	331906.0	0.5	**103.9121**	0.402	0.4	ug/L	184	Standard
	Pb	207	289166.5	1.1	**99.8453**	1.057	1.1	ug/L	161	Standard
	Pb	208	1280347.2	1.0	**101.6154**	1.178	1.2	ug/L	746	Standard
	U	238	470856.4	1.5	**102.7106**	1.735	1.7	ug/L	6	Standard
>	**Bi**	209	437315.1	0.6				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	8664.1	4.1	**13.8393**	0.675	4.9	mg/L	25	Standard
K	39	1358.4	2.7	**4.8065**	0.083	1.7	mg/L	25	Standard
Ca	43	235.0	12.9	**16.5125**	2.941	17.8	mg/L	77	Standard
Fe	54	12773.4	2.2	**13.4541**	0.437	3.2	mg/L	165	Standard
Fe	57	3382.0	3.0	**13.4264**	0.571	4.3	mg/L	205	Standard
> **Sc-1**	45	45718.9	1.1				mg/L	46031	Standard
Cl	35	30870.1	0.9				ug/L	28530	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1296.7	19.7				ug/L	1560	Standard
P	31	17752.1	2.0				ug/L	15481	Standard
S	34	2196.8	4.5				ug/L	2072	Standard
Sr	88	65.0	23.1				ug/L	70	Standard
C	12	116.7	26.2				mg/L	47	Standard
N	14	6.7	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	19.8	1.4				mg/L	13	Standard
Ho-1	165	10.0	50.0				mg/L	8	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	1120.0	2.9				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	102.770		
Al	27	1.002		
Sc	45			
Ti	47	115.858		
V	51	101.233		
Cr	52	99.215		
Cr	53			
Mn	55	101.032		
Co	59	100.648		
Ni	60	99.582		
Cu	65	99.440		
Zn	66	102.574		
> Ge	72		101.718	
As	75	101.219		
Se	82	101.282		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	107.520		
Ag	107	96.655		
Cd	111	101.889		
Cd	114			
In	115		101.144	
Sn	118			
Sb	123	101.514		
Ba	135	99.790		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.225		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.615		
U	238	102.711		
Bi	209		101.860	
Na	23	0.040		
Mg	24	276.786		
K	39	96.131		
Ca	43	110.084		
Fe	54	107.633		
Fe	57	107.411		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 15, 2016 13:02:38
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64548.9	1.2				ug/L	58443	Standard
	Be	9	33754.3	3.8	**51.2985**	1.492	2.9	ug/L	5	Standard
	Al	27	6153497.0	2.4	**48.7603**	1.673	3.4	ug/L	385	Standard
	Sc	45	46049.9	3.0				ug/L	46031	Standard
	Ti	47	22927.0	0.8	**102.8403**	1.804	1.8	ug/L	94	Standard
	V	51	287721.7	1.3	**52.3441**	1.059	2.0	ug/L	1280	Standard
	Cr	52	298106.9	0.8	**51.0336**	0.958	1.9	ug/L	6381	Standard
	Cr	53	37543.1	0.5	**51.4393**	0.786	1.5	ug/L	1957	Standard
	Mn	55	224132.1	1.2	**51.3453**	1.012	2.0	ug/L	667	Standard
	Co	59	247009.4	1.2	**52.0600**	1.058	2.0	ug/L	156	Standard
	Ni	60	72894.9	0.2	**51.4800**	0.565	1.1	ug/L	154	Standard
	Cu	65	71022.1	0.4	**51.4409**	0.398	0.8	ug/L	116	Standard
	Zn	66	41920.2	0.8	**51.9751**	0.122	0.2	ug/L	114	Standard
>	Ge	72	466390.8	1.0				ug/L	467488	Standard
	As	75	42173.3	0.4	**50.8980**	0.485	1.0	ug/L	-61	Standard
	Se	82	4364.9	1.0	**51.4480**	0.823	1.6	ug/L	9	Standard
	Se-1	77	3011.0	2.3	**51.0004**	1.564	3.1	ug/L	125	Standard
>	Ga	71	75.0	6.7				mg/L	50	Standard
	Rb	85	668.3	7.0				ug/L	18	Standard
	Y	89	402229.2	0.5				ug/L	402730	Standard
>	Rh	103	28.3	10.2				ug/L	12	Standard
	Mo	98	183654.5	0.9	**104.8399**	1.332	1.3	ug/L	8	Standard
	Ag	107	229943.1	0.8	**51.4601**	0.734	1.4	ug/L	65	Standard
	Cd	111	74576.9	1.1	**51.6238**	0.650	1.3	mg/L	3	Standard
	Cd	114	184091.2	1.9	**52.0543**	1.025	2.0	ug/L	15	Standard
>	In	115	527898.9	0.8				ug/L	526825	Standard
	Sn	118	207398.2	0.7	**51.2949**	0.503	1.0	ug/L	368	Standard
	Sb	123	166408.9	0.9	**52.0828**	0.861	1.7	ug/L	46	Standard
	Ba	135	69581.7	0.5	**51.0874**	0.230	0.5	ug/L	16	Standard
	Ce	140	61.7	23.4				ug/L	43	Standard
>	Tb	159	785180.2	1.4				ug/L	771780	Standard
	Ho	165	6.7	114.6				ug/L	8	Standard
	Tl	203	269101.7	0.6	**51.5257**	0.646	1.3	ug/L	28	Standard
	Tl	205	251041.0	0.2	**52.5721**	0.503	1.0	ug/L	20	Standard
	Pb	206	164373.1	0.5	**52.3470**	0.810	1.5	ug/L	184	Standard
	Pb	207	148431.5	0.6	**52.1347**	0.840	1.6	ug/L	161	Standard
	Pb	208	643527.2	0.2	**51.9505**	0.524	1.0	ug/L	746	Standard
	U	238	235025.8	0.6	**52.1823**	0.856	1.6	ug/L	6	Standard
>	Bi	209	429665.8	1.1				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3247.0	5.3	**5.1288**	0.371	7.2	mg/L	25	Standard
K	39	1406.7	5.3	**4.9518**	0.365	7.4	mg/L	25	Standard
Ca	43	116.7	20.3	**5.6800**	2.350	41.4	mg/L	77	Standard
Fe	54	5009.1	4.5	**5.1606**	0.401	7.8	mg/L	165	Standard
Fe	57	1366.7	4.8	**5.0336**	0.156	3.1	mg/L	205	Standard
Sc-1	45	46049.9	3.0				mg/L	46031	Standard
Cl	35	30512.7	0.5				ug/L	28530	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	1516.7	2.7				ug/L	1560	Standard
P	31	18082.5	3.9				ug/L	15481	Standard
S	34	2281.8	5.8				ug/L	2072	Standard
Sr	88	40.0	50.0				ug/L	70	Standard
C	12	30.0	57.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.2	93.3				mg/L	13	Standard
Ho-1	165	6.7	114.6				mg/L	8	Standard
Er	166	10.0					mg/L	7	Standard
I	127	1105.0	7.5				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.597		
Al	27	97.521		
Sc	45			
Ti	47	102.840		
V	51	104.688		
Cr	52	102.067		
Cr	53			
Mn	55	102.691		
Co	59	104.120		
Ni	60	102.960		
Cu	65	102.882		
Zn	66	103.950		
Ge	72		99.765	
As	75	101.796		
Se	82	102.896		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	104.840		
Ag	107	102.920		
Cd	111	103.248		
Cd	114			
In	115			100.204
Sn	118	102.590		
Sb	123	104.166		
Ba	135	102.175		
Ce	140			
Tb	159			
Ho	165			
Tl	203	103.051		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.901		
U	238	104.365		
Bi	209			100.078
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 15, 2016 13:05:50
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64172.3	1.9				ug/L	58443	Standard
	Be	9	25.0	52.9	**0.0187**	0.019	103.7	ug/L	5	Standard
	Al	27	2038.5	48.4	**0.0081**	0.008	92.6	ug/L	385	Standard
	Sc	45	46172.0	3.3				ug/L	46031	Standard
	Ti	47	79.0	3.8	**-0.1343**	0.018	13.3	ug/L	94	Standard
	V	51	1277.9	2.1	**-0.0312**	0.007	23.6	ug/L	1280	Standard
	Cr	52	5752.8	2.1	**-0.1781**	0.022	12.6	ug/L	6381	Standard
	Cr	53	1361.7	2.6	**-0.9503**	0.049	5.2	ug/L	1957	Standard
	Mn	55	619.3	5.9	**-0.0554**	0.010	18.9	ug/L	667	Standard
	Co	59	246.0	19.2	**0.0147**	0.011	72.2	ug/L	156	Standard
	Ni	60	152.0	16.0	**-0.0230**	0.018	79.5	ug/L	154	Standard
	Cu	65	131.3	18.6	**-0.0119**	0.019	158.8	ug/L	116	Standard
	Zn	66	116.7	8.2	**-0.1144**	0.014	12.3	ug/L	114	Standard
>	**Ge**	72	476018.1	1.7				ug/L	467488	Standard
	As	75	-2.2	1152.6	**0.0386**	0.030	76.9	ug/L	-61	Standard
	Se	82	16.3	25.3	**0.0185**	0.049	266.9	ug/L	9	Standard
	Se-1	77	98.3	6.5	**-0.3166**	0.137	43.3	ug/L	125	Standard
>	**Ga**	71	55.0	15.7				mg/L	50	Standard
	Rb	85	21.7	93.3				ug/L	18	Standard
	Y	89	398620.8	0.8				ug/L	402730	Standard
>	**Rh**	103	11.7	49.5				ug/L	12	Standard
	Mo	98	216.4	26.6	**0.1158**	0.032	27.3	ug/L	8	Standard
	Ag	107	149.7	24.8	**0.0131**	0.008	60.9	ug/L	65	Standard
	Cd	111	20.9	52.9	**0.0064**	0.008	117.4	mg/L	3	Standard
	Cd	114	77.3	28.5	**0.0076**	0.006	78.9	ug/L	15	Standard
>	**In**	115	525731.3	1.1				ug/L	526825	Standard
	Sn	118	721.7	32.2	**0.0674**	0.060	88.9	ug/L	368	Standard
	Sb	123	906.7	30.1	**0.2707**	0.089	32.8	ug/L	46	Standard
	Ba	135	39.0	46.6	**0.0057**	0.013	231.6	ug/L	16	Standard
	Ce	140	13.3	94.4				ug/L	43	Standard
>	**Tb**	159	782785.7	0.8				ug/L	771780	Standard
	Ho	165	3.3	86.6				ug/L	8	Standard
	Tl	203	89.7	43.0	**0.0022**	0.007	339.6	ug/L	28	Standard
	Tl	205	86.7	46.6	**0.0057**	0.008	148.3	ug/L	20	Standard
	Pb	206	235.0	6.6	**0.0003**	0.006	1699.1	ug/L	184	Standard
	Pb	207	212.3	6.7	**0.0004**	0.006	1316.0	ug/L	161	Standard
	Pb	208	887.0	11.3	**-0.0022**	0.009	394.8	ug/L	746	Standard
	U	238	76.0	41.5	**0.0115**	0.007	61.1	ug/L	6	Standard
>	**Bi**	209	442186.0	1.3				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	23.3	32.7	**-0.0022**	0.013	609.8	mg/L	25	Standard
K	39	28.3	27.0	**-0.0410**	0.026	63.4	mg/L	25	Standard
Ca	43	53.3	32.9	**-0.0525**	1.730	3295.0	mg/L	77	Standard
Fe	54	127.7	26.1	**-0.0032**	0.038	1185.5	mg/L	165	Standard
Fe	57	120.0	11.0	**-0.0917**	0.067	73.5	mg/L	205	Standard
Sc-1	45	46172.0	3.3				mg/L	46031	Standard
Cl	35	30157.3	2.5				ug/L	28530	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	1473.4	7.7				ug/L	1560	Standard
P	31	17753.7	3.0				ug/L	15481	Standard
S	34	2231.8	5.7				ug/L	2072	Standard
Sr	88	60.0	8.3				ug/L	70	Standard
C	12	73.3	43.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.8	2.8				mg/L	13	Standard
Ho-1	165	3.3	86.6				mg/L	8	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	1120.0	10.8				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.825	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.792	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	102.995	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

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Method 6020 - Summary Report

Sample ID: PBS M9 WG572379-02
Sample Date/Time: Wednesday, June 15, 2016 13:09:02
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62428.4	1.1				ug/L	58443	Standard
	Be	9	21.7	26.6	**0.0148**	0.009	62.7	ug/L	5	Standard
	Al	27	14969.1	3.7	**0.1146**	0.004	3.1	ug/L	385	Standard
	Sc	45	47144.9	2.8				ug/L	46031	Standard
	Ti	47	76.3	29.5	**-0.1408**	0.100	71.1	ug/L	94	Standard
	V	51	1336.4	14.0	**-0.0170**	0.032	189.3	ug/L	1280	Standard
	Cr	52	7139.3	2.7	**0.0801**	0.037	46.5	ug/L	6381	Standard
	Cr	53	1566.7	6.7	**-0.6223**	0.163	26.2	ug/L	1957	Standard
	Mn	55	1546.1	4.1	**0.1591**	0.016	9.9	ug/L	667	Standard
	Co	59	207.3	1.1	**0.0073**	0.001	11.6	ug/L	156	Standard
	Ni	60	650.7	6.5	**0.3302**	0.029	8.8	ug/L	154	Standard
	Cu	65	502.3	3.0	**0.2576**	0.008	3.0	ug/L	116	Standard
	Zn	66	1575.4	3.2	**1.6981**	0.052	3.1	ug/L	114	Standard
>	**Ge**	72	468230.5	0.8				ug/L	467488	Standard
	As	75	19.6	202.5	**0.0648**	0.048	73.8	ug/L	-61	Standard
	Se	82	18.5	15.3	**0.0463**	0.032	68.5	ug/L	9	Standard
	Se-1	77	99.7	14.4	**-0.2672**	0.244	91.5	ug/L	125	Standard
>	**Ga**	71	38.3	7.5				mg/L	50	Standard
	Rb	85	50.0	40.0				ug/L	18	Standard
	Y	89	407194.3	2.3				ug/L	402730	Standard
>	**Rh**	103	8.3	69.3				ug/L	12	Standard
	Mo	98	287.0	1.0	**0.1541**	0.003	1.9	ug/L	8	Standard
	Ag	107	138.7	7.8	**0.0103**	0.003	29.8	ug/L	65	Standard
	Cd	111	12.8	39.4	**0.0007**	0.003	495.9	mg/L	3	Standard
	Cd	114	49.2	4.0	**-0.0005**	0.001	159.3	ug/L	15	Standard
>	**In**	115	533352.2	2.1				ug/L	526825	Standard
	Sn	118	961.7	7.6	**0.1231**	0.015	12.0	ug/L	368	Standard
	Sb	123	412.3	25.4	**0.1124**	0.030	27.1	ug/L	46	Standard
	Ba	135	205.3	5.3	**0.1262**	0.005	3.9	ug/L	16	Standard
	Ce	140	120.0	15.0				ug/L	43	Standard
>	**Tb**	159	786218.7	1.4				ug/L	771780	Standard
	Ho	165	10.0	50.0				ug/L	8	Standard
	Tl	203	64.3	10.9	**-0.0024**	0.001	59.8	ug/L	28	Standard
	Tl	205	70.0	24.7	**0.0025**	0.004	147.0	ug/L	20	Standard
	Pb	206	313.7	10.2	**0.0262**	0.010	37.2	ug/L	184	Standard
	Pb	207	239.7	4.7	**0.0110**	0.004	35.3	ug/L	161	Standard
	Pb	208	1087.3	2.5	**0.0149**	0.003	20.1	ug/L	746	Standard
	U	238	23.3	35.9	**0.0001**	0.002	1341.8	ug/L	6	Standard
>	**Bi**	209	435318.4	1.0				ug/L	429329	Standard

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	Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
	Mg	24	25.0	34.6	**-0.0008**	0.013	1677.3	mg/L	25	Standard
	K	39	26.7	21.7	**-0.0490**	0.019	38.9	mg/L	25	Standard
	Ca	43	56.7	22.2	**0.0910**	0.988	1085.9	mg/L	77	Standard
	Fe	54	129.2	21.6	**-0.0053**	0.025	481.3	mg/L	165	Standard
	Fe	57	136.7	16.5	**-0.0376**	0.076	201.1	mg/L	205	Standard
>	**Sc-1**	45	47144.9	2.8				mg/L	46031	Standard
	Cl	35	30856.7	2.0				ug/L	28530	Standard
	Kr	83	1.0	0.0				ug/L	2	Standard
	Br	81	1700.1	3.9				ug/L	1560	Standard
	P	31	16839.4	3.7				ug/L	15481	Standard
	S	34	2298.5	5.0				ug/L	2072	Standard
	Sr	88	50.0	0.0				ug/L	70	Standard
	C	12	60.0	44.1				mg/L	47	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	0	Standard
	Dy	164	6.0	187.0				mg/L	13	Standard
	Ho-1	165	10.0	50.0				mg/L	8	Standard
	Er	166	13.3	43.3				mg/L	7	Standard
	I	127	1051.7	10.3				mg/L	1227	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		106.820	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.159	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.239
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.395
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSS M9 WG572379-03
Sample Date/Time: Wednesday, June 15, 2016 13:12:13
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63350.5	0.6				ug/L	58443	Standard
	Be	9	17144.7	1.0	**26.5444**	0.378	1.4	ug/L	5	Standard
	Al	27	6076.2	4.3	**0.0410**	0.002	5.6	ug/L	385	Standard
	Sc	45	46798.8	1.3				ug/L	46031	Standard
	Ti	47	74.7	5.6	**-0.1499**	0.018	12.1	ug/L	94	Standard
	V	51	144501.2	1.3	**25.9122**	0.201	0.8	ug/L	1280	Standard
	Cr	52	157338.0	0.3	**26.1281**	0.073	0.3	ug/L	6381	Standard
	Cr	53	19469.2	0.5	**25.0268**	0.131	0.5	ug/L	1957	Standard
	Mn	55	115362.2	3.3	**26.0831**	0.718	2.8	ug/L	667	Standard
	Co	59	124469.4	2.4	**25.9687**	0.487	1.9	ug/L	156	Standard
	Ni	60	38013.0	1.9	**26.5330**	0.380	1.4	ug/L	154	Standard
	Cu	65	36188.5	2.2	**25.9146**	0.436	1.7	ug/L	116	Standard
	Zn	66	22028.0	0.9	**26.9362**	0.086	0.3	ug/L	114	Standard
>	**Ge**	72	470727.2	0.5				ug/L	467488	Standard
	As	75	21444.6	1.6	**25.6605**	0.261	1.0	ug/L	-61	Standard
	Se	82	2168.6	2.1	**25.2369**	0.550	2.2	ug/L	9	Standard
	Se-1	77	1562.4	2.2	**25.2370**	0.524	2.1	ug/L	125	Standard
>	**Ga**	71	51.7	11.2				mg/L	50	Standard
	Rb	85	41.7	13.9				ug/L	18	Standard
	Y	89	404521.0	1.1				ug/L	402730	Standard
>	**Rh**	103	21.7	35.3				ug/L	12	Standard
	Mo	98	80.2	13.7	**0.0370**	0.007	17.7	ug/L	8	Standard
	Ag	107	118241.6	1.2	**25.9955**	0.174	0.7	ug/L	65	Standard
	Cd	111	37677.7	2.6	**25.6262**	0.440	1.7	mg/L	3	Standard
	Cd	114	92030.3	1.6	**25.5677**	0.274	1.1	ug/L	15	Standard
>	**In**	115	537119.8	1.0				ug/L	526825	Standard
	Sn	118	566.7	12.0	**0.0254**	0.017	66.9	ug/L	368	Standard
	Sb	123	84277.9	0.8	**25.9152**	0.067	0.3	ug/L	46	Standard
	Ba	135	35340.2	1.6	**25.4886**	0.192	0.8	ug/L	16	Standard
	Ce	140	70.0	21.4				ug/L	43	Standard
>	**Tb**	159	788867.1	1.2				ug/L	771780	Standard
	Ho	165	18.3	83.3				ug/L	8	Standard
	Tl	203	137074.3	0.5	**25.5792**	0.158	0.6	ug/L	28	Standard
	Tl	205	125267.7	3.0	**25.5686**	0.784	3.1	ug/L	20	Standard
	Pb	206	84923.4	1.7	**26.3289**	0.475	1.8	ug/L	184	Standard
	Pb	207	73855.2	1.1	**25.2510**	0.302	1.2	ug/L	161	Standard
	Pb	208	326489.5	0.8	**25.6584**	0.224	0.9	ug/L	746	Standard
	U	238	116478.4	1.1	**25.2083**	0.295	1.2	ug/L	6	Standard
>	**Bi**	209	440707.1	0.1				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	26.7	10.8	**0.0023**	0.005	218.2	mg/L	25	Standard
K	39	53.3	5.4	**0.0470**	0.012	26.5	mg/L	25	Standard
Ca	43	48.3	11.9	**-0.5946**	0.567	95.4	mg/L	77	Standard
Fe	54	139.8	5.5	**0.0071**	0.007	97.6	mg/L	165	Standard
Fe	57	133.3	15.2	**-0.0450**	0.087	194.4	mg/L	205	Standard
> **Sc-1**	45	46798.8	1.3				mg/L	46031	Standard
Cl	35	29947.6	2.2				ug/L	28530	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	1450.1	15.6				ug/L	1560	Standard
P	31	17258.2	4.1				ug/L	15481	Standard
S	34	2220.2	4.1				ug/L	2072	Standard
Sr	88	50.0	26.5				ug/L	70	Standard
C	12	53.3	28.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.4	124.8				mg/L	13	Standard
Ho-1	165	18.3	83.3				mg/L	8	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	955.0	8.7				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.398	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.693	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.954
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.650
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSS M9 WG572379-03
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Method 6020 - Summary Report

Sample ID: L1606062001 WG572379-01
Sample Date/Time: Wednesday, June 15, 2016 13:15:25
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69450.5	1.5				ug/L	58443	Standard
	Be	9	1548.4	7.7	**2.1678**	0.138	6.4	ug/L	5	Standard
	Al	27	7905061.9	1.4	**58.2084**	0.572	1.0	ug/L	385	Standard
	Sc	45	58735.3	2.5				ug/L	46031	Standard
	Ti	47	16940.5	2.0	**75.6967**	2.120	2.8	ug/L	94	Standard
	V	51	333145.6	1.6	**60.5148**	1.325	2.2	ug/L	1280	Standard
	Cr	52	303985.4	1.7	**51.9477**	1.341	2.6	ug/L	6381	Standard
	Cr	53	37123.8	1.6	**50.7180**	1.351	2.7	ug/L	1957	Standard
	Mn	55	8595402.4	0.6	**1971.8444**	6.957	0.4	ug/L	667	Standard
	Co	59	142818.3	0.9	**30.0166**	0.308	1.0	ug/L	156	Standard
	Ni	60	139345.2	0.5	**98.3106**	1.333	1.4	ug/L	154	Standard
	Cu	65	111908.8	0.9	**80.9403**	1.247	1.5	ug/L	116	Standard
	Zn	66	136006.0	0.6	**168.8466**	2.483	1.5	ug/L	114	Standard
>	**Ge**	72	467414.6	0.9				ug/L	467488	Standard
	As	75	10602.9	0.9	**12.7996**	0.214	1.7	ug/L	-61	Standard
	Se	82	128.7	4.6	**1.3469**	0.058	4.3	ug/L	9	Standard
	Se-1	77	201.3	3.5	**1.5228**	0.137	9.0	ug/L	125	Standard
>	**Ga**	71	30637.6	2.1				mg/L	50	Standard
	Rb	85	328604.2	1.8				ug/L	18	Standard
	Y	89	669572.5	1.7				ug/L	402730	Standard
>	**Rh**	103	68.3	36.1				ug/L	12	Standard
	Mo	98	3545.4	1.3	**2.0491**	0.042	2.0	ug/L	8	Standard
	Ag	107	2839.9	1.5	**0.6257**	0.010	1.6	ug/L	65	Standard
	Cd	111	914.9	3.8	**0.6358**	0.030	4.8	mg/L	3	Standard
	Cd	114	2306.2	2.9	**0.6487**	0.024	3.7	ug/L	15	Standard
>	**In**	115	519437.9	1.1				ug/L	526825	Standard
	Sn	118	583.3	4.9	**0.0343**	0.008	23.7	ug/L	368	Standard
	Sb	123	235.3	28.9	**0.0598**	0.021	35.6	ug/L	46	Standard
	Ba	135	2676280.5	1.0	**1997.8531**	19.391	1.0	ug/L	16	Standard
	Ce	140	1594990.6	1.0				ug/L	43	Standard
>	**Tb**	159	807554.4	2.1				ug/L	771780	Standard
	Ho	165	20382.0	1.5				ug/L	8	Standard
	Tl	203	2195.8	2.3	**0.4072**	0.012	2.9	ug/L	28	Standard
	Tl	205	2075.1	4.1	**0.4239**	0.015	3.6	ug/L	20	Standard
	Pb	206	334095.7	0.5	**106.7722**	0.505	0.5	ug/L	184	Standard
	Pb	207	275193.5	0.9	**96.9913**	0.827	0.9	ug/L	161	Standard
	Pb	208	1234782.9	0.5	**100.0349**	1.088	1.1	ug/L	746	Standard
	U	238	10981.0	1.9	**2.4402**	0.047	1.9	ug/L	6	Standard
>	**Bi**	209	428418.9	0.6				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	396.7	12.4	**0.4562**	0.073	15.9	mg/L	25	Standard
K	39	963.4	2.9	**2.5915**	0.130	5.0	mg/L	25	Standard
Ca	43	328.3	8.7	**18.3462**	1.414	7.7	mg/L	77	Standard
Fe	54	54428.3	0.5	**44.9504**	0.964	2.1	mg/L	165	Standard
Fe	57	14026.5	1.7	**44.6485**	1.135	2.5	mg/L	205	Standard
Sc-1	45	58735.3	2.5				mg/L	46031	Standard
Cl	35	29192.8	1.0				ug/L	28530	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	7368.5	1.7				ug/L	1560	Standard
P	31	17354.9	3.2				ug/L	15481	Standard
S	34	2341.8	2.8				ug/L	2072	Standard
Sr	88	153.3	21.7				ug/L	70	Standard
C	12	126.7	37.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10580.4	3.7				mg/L	0	Standard
Dy	164	34559.0	1.3				mg/L	13	Standard
Ho-1	165	20382.0	1.5				mg/L	8	Standard
Er	166	18908.5	1.9				mg/L	7	Standard
I	127	4907.5	3.5				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.836	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.984	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.598
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.788
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Pb 206 Upper, S, EEE	Pb	206
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1606062001S WG572379-04
Sample Date/Time: Wednesday, June 15, 2016 13:18:36
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69085.5	0.7				ug/L	58443	Standard
	Be	9	18823.4	3.4	**26.7222**	0.861	3.2	ug/L	5	Standard
	Al	27	10039050.4	1.8	**74.3080**	0.866	1.2	ug/L	385	Standard
	Sc	45	59993.5	0.7				ug/L	46031	Standard
	Ti	47	18791.3	0.9	**83.2618**	1.824	2.2	ug/L	94	Standard
	V	51	488887.7	1.1	**88.1221**	1.211	1.4	ug/L	1280	Standard
	Cr	52	493352.3	1.7	**84.2716**	2.777	3.3	ug/L	6381	Standard
	Cr	53	59510.1	3.3	**82.3015**	4.385	5.3	ug/L	1957	Standard
	Mn	55	6122828.8	0.1	**1392.1095**	24.659	1.8	ug/L	667	Standard
	Co	59	285086.3	1.2	**59.4302**	1.801	3.0	ug/L	156	Standard
	Ni	60	174281.1	1.6	**121.9012**	3.450	2.8	ug/L	154	Standard
	Cu	65	148308.7	1.4	**106.3480**	2.712	2.6	ug/L	116	Standard
	Zn	66	187521.7	0.9	**230.8237**	5.137	2.2	ug/L	114	Standard
>	**Ge**	72	471690.0	1.9				ug/L	467488	Standard
	As	75	29679.8	1.3	**35.4382**	0.951	2.7	ug/L	-61	Standard
	Se	82	1826.6	4.2	**21.2011**	1.281	6.0	ug/L	9	Standard
	Se-1	77	1362.1	1.8	**21.6960**	0.266	1.2	ug/L	125	Standard
>	**Ga**	71	36131.4	1.1				mg/L	50	Standard
	Rb	85	354442.9	2.5				ug/L	18	Standard
	Y	89	644035.6	1.1				ug/L	402730	Standard
>	**Rh**	103	80.0	6.3				ug/L	12	Standard
	Mo	98	2128.9	3.0	**1.2276**	0.033	2.6	ug/L	8	Standard
	Ag	107	110570.3	0.7	**25.1488**	0.196	0.8	ug/L	65	Standard
	Cd	111	36614.1	2.3	**25.7695**	0.790	3.1	mg/L	3	Standard
	Cd	114	90238.0	1.8	**25.9386**	0.595	2.3	ug/L	15	Standard
>	**In**	115	519190.1	0.9				ug/L	526825	Standard
	Sn	118	685.0	2.5	**0.0599**	0.003	4.6	ug/L	368	Standard
	Sb	123	1056.0	3.5	**0.3211**	0.009	2.9	ug/L	46	Standard
	Ba	135	2778530.6	1.2	**2075.1616**	23.828	1.1	ug/L	16	Standard
	Ce	140	1494057.4	1.8				ug/L	43	Standard
>	**Tb**	159	807634.2	1.0				ug/L	771780	Standard
	Ho	165	18836.7	3.0				ug/L	8	Standard
	Tl	203	129744.2	1.1	**24.9051**	0.334	1.3	ug/L	28	Standard
	Tl	205	119669.1	1.0	**25.1261**	0.381	1.5	ug/L	20	Standard
	Pb	206	493773.9	0.5	**157.8317**	0.803	0.5	ug/L	184	Standard
	Pb	207	418302.5	0.8	**147.4663**	1.750	1.2	ug/L	161	Standard
	Pb	208	1863695.4	0.7	**151.0129**	1.217	0.8	ug/L	746	Standard
	U	238	122137.3	0.6	**27.1911**	0.269	1.0	ug/L	6	Standard
>	**Bi**	209	428435.4	0.5				ug/L	429329	Standard

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Na	23	1.7	173.2	**5.1153**	8.851	173.0	mg/L	0	Standard
Mg	24	490.0	4.4	**0.5587**	0.030	5.3	mg/L	25	Standard
K	39	910.0	13.9	**2.3841**	0.350	14.7	mg/L	25	Standard
Ca	43	411.7	17.7	**23.6408**	4.832	20.4	mg/L	77	Standard
Fe	54	53553.0	1.4	**43.2839**	0.917	2.1	mg/L	165	Standard
Fe	57	13422.6	1.1	**41.7833**	0.781	1.9	mg/L	205	Standard
Sc-1	45	59993.5	0.7				mg/L	46031	Standard
Cl	35	28576.9	2.1				ug/L	28530	Standard
Kr	83	3.3	45.8				ug/L	2	Standard
Br	81	1950.1	5.6				ug/L	1560	Standard
P	31	17021.2	1.3				ug/L	15481	Standard
S	34	2215.2	3.6				ug/L	2072	Standard
Sr	88	198.3	10.2				ug/L	70	Standard
C	12	116.7	13.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	9192.8	5.6				mg/L	0	Standard
Dy	164	31814.2	1.7				mg/L	13	Standard
Ho-1	165	18836.7	3.0				mg/L	8	Standard
Er	166	17556.8	1.6				mg/L	7	Standard
I	127	4934.1	3.1				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		118.211	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.899	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.551
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.792
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	
Cu 65 Upper, S, EEE	Cu	65	

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Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135
Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1606062001SD WG572379-05
Sample Date/Time: Wednesday, June 15, 2016 13:21:48
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69584.4	1.3				ug/L	58443	Standard
	Be	9	18596.4	4.7	**26.2090**	1.120	4.3	ug/L	5	Standard
	Al	27	8151420.7	1.9	**59.9020**	0.535	0.9	ug/L	385	Standard
	Sc	45	59921.6	1.4				ug/L	46031	Standard
	Ti	47	16903.4	0.5	**74.7371**	0.068	0.1	ug/L	94	Standard
	V	51	480140.4	2.3	**86.4254**	2.210	2.6	ug/L	1280	Standard
	Cr	52	491988.0	1.0	**83.9003**	0.925	1.1	ug/L	6381	Standard
	Cr	53	59727.6	3.3	**82.4474**	2.471	3.0	ug/L	1957	Standard
	Mn	55	6504545.5	0.6	**1476.7782**	10.251	0.7	ug/L	667	Standard
	Co	59	285493.4	1.6	**59.4215**	1.088	1.8	ug/L	156	Standard
	Ni	60	196747.1	1.8	**137.4227**	2.466	1.8	ug/L	154	Standard
	Cu	65	169980.5	2.2	**121.7230**	2.731	2.2	ug/L	116	Standard
	Zn	66	185304.2	1.8	**227.7553**	4.205	1.8	ug/L	114	Standard
>	**Ge**	72	472270.8	0.4				ug/L	467488	Standard
	As	75	31518.3	3.0	**37.5734**	1.113	3.0	ug/L	-61	Standard
	Se	82	1912.7	3.6	**22.1633**	0.756	3.4	ug/L	9	Standard
	Se-1	77	1403.1	4.1	**22.3763**	0.906	4.1	ug/L	125	Standard
>	**Ga**	71	37048.6	4.3				mg/L	50	Standard
	Rb	85	363287.1	0.5				ug/L	18	Standard
	Y	89	668003.2	0.5				ug/L	402730	Standard
>	**Rh**	103	81.7	30.8				ug/L	12	Standard
	Mo	98	5010.1	1.8	**2.8881**	0.026	0.9	ug/L	8	Standard
	Ag	107	113490.6	2.1	**25.7085**	0.551	2.1	ug/L	65	Standard
	Cd	111	37384.8	2.5	**26.2030**	0.736	2.8	mg/L	3	Standard
	Cd	114	91495.3	3.1	**26.1931**	0.876	3.3	ug/L	15	Standard
>	**In**	115	521311.7	1.1				ug/L	526825	Standard
	Sn	118	1073.4	6.0	**0.1567**	0.017	10.6	ug/L	368	Standard
	Sb	123	713.3	6.6	**0.2111**	0.013	6.1	ug/L	46	Standard
	Ba	135	3782208.3	1.6	**2813.3686**	50.816	1.8	ug/L	16	Standard
	Ce	140	1515363.0	1.4				ug/L	43	Standard
>	**Tb**	159	805345.9	0.3				ug/L	771780	Standard
	Ho	165	19761.2	3.1				ug/L	8	Standard
	Tl	203	131930.0	1.3	**25.2592**	0.501	2.0	ug/L	28	Standard
	Tl	205	119775.1	2.7	**25.0844**	0.853	3.4	ug/L	20	Standard
	Pb	206	423598.4	1.6	**135.0417**	2.975	2.2	ug/L	184	Standard
	Pb	207	352960.3	1.3	**124.0951**	2.341	1.9	ug/L	161	Standard
	Pb	208	1581411.6	0.7	**127.7953**	1.782	1.4	ug/L	746	Standard
	U	238	123397.2	1.5	**27.4006**	0.586	2.1	ug/L	6	Standard
>	**Bi**	209	429575.1	0.7				ug/L	429329	Standard

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Na	23	5.0	100.0	**15.6021**	15.579	99.9	mg/L	0	Standard
Mg	24	496.7	8.1	**0.5676**	0.053	9.3	mg/L	25	Standard
K	39	1028.4	8.7	**2.7157**	0.237	8.7	mg/L	25	Standard
Ca	43	348.3	8.4	**19.2930**	1.918	9.9	mg/L	77	Standard
Fe	54	57080.2	1.3	**46.2064**	1.257	2.7	mg/L	165	Standard
Fe	57	14371.8	3.1	**44.8429**	1.842	4.1	mg/L	205	Standard
> **Sc-1**	45	59921.6	1.4				mg/L	46031	Standard
Cl	35	28389.2	2.0				ug/L	28530	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	1703.4	2.9				ug/L	1560	Standard
P	31	16614.1	2.6				ug/L	15481	Standard
S	34	2268.5	3.8				ug/L	2072	Standard
Sr	88	201.7	12.5				ug/L	70	Standard
C	12	120.0	14.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10316.8	4.3				mg/L	0	Standard
Dy	164	32294.5	1.8				mg/L	13	Standard
Ho-1	165	19761.2	3.1				mg/L	8	Standard
Er	166	17920.6	3.6				mg/L	7	Standard
I	127	3640.4	2.1				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.065	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.023	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.953
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.057
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	
Cu 65 Upper, S, EEE	Cu	65	

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Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135
Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1606041801
Sample Date/Time: Wednesday, June 15, 2016 13:24:59
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67786.3	0.9				ug/L	58443	Standard
	Be	9	1190.0	10.3	**1.7029**	0.162	9.5	ug/L	5	Standard
	Al	27	8981501.2	1.6	**67.7545**	0.625	0.9	ug/L	385	Standard
	Sc	45	59454.8	0.9				ug/L	46031	Standard
	Ti	47	5858.5	3.3	**25.5904**	0.968	3.8	ug/L	94	Standard
	V	51	164865.4	1.6	**29.5059**	0.528	1.8	ug/L	1280	Standard
	Cr	52	189463.1	1.7	**31.5939**	0.478	1.5	ug/L	6381	Standard
	Cr	53	23576.7	2.6	**30.8100**	1.102	3.6	ug/L	1957	Standard
	Mn	55	4544332.2	1.6	**1031.7046**	14.859	1.4	ug/L	667	Standard
	Co	59	149671.3	2.6	**31.1341**	0.748	2.4	ug/L	156	Standard
	Ni	60	81067.4	2.0	**56.5474**	0.908	1.6	ug/L	154	Standard
	Cu	65	76159.0	2.0	**54.4816**	1.152	2.1	ug/L	116	Standard
	Zn	66	108001.0	2.0	**132.6394**	2.517	1.9	ug/L	114	Standard
>	**Ge**	72	472256.2	0.7				ug/L	467488	Standard
	As	75	7432.4	1.4	**8.8922**	0.135	1.5	ug/L	-61	Standard
	Se	82	56.7	15.1	**0.4903**	0.095	19.4	ug/L	9	Standard
	Se-1	77	131.7	7.6	**0.2755**	0.186	67.4	ug/L	125	Standard
>	**Ga**	71	25920.5	1.8				mg/L	50	Standard
	Rb	85	279377.6	1.7				ug/L	18	Standard
	Y	89	668381.6	1.0				ug/L	402730	Standard
>	**Rh**	103	45.0	33.3				ug/L	12	Standard
	Mo	98	1371.1	3.5	**0.7769**	0.037	4.7	ug/L	8	Standard
	Ag	107	562.7	4.4	**0.1058**	0.007	6.9	ug/L	65	Standard
	Cd	111	226.7	9.7	**0.1493**	0.016	10.9	mg/L	3	Standard
	Cd	114	557.1	7.3	**0.1437**	0.012	8.6	ug/L	15	Standard
>	**In**	115	526625.0	1.4				ug/L	526825	Standard
	Sn	118	231.7	12.3	**-0.0552**	0.006	11.5	ug/L	368	Standard
	Sb	123	125.3	10.2	**0.0243**	0.003	14.3	ug/L	46	Standard
	Ba	135	240051.4	0.6	**176.7590**	3.487	2.0	ug/L	16	Standard
	Ce	140	905805.2	0.3				ug/L	43	Standard
>	**Tb**	159	810661.8	0.3				ug/L	771780	Standard
	Ho	165	21188.2	3.6				ug/L	8	Standard
	Tl	203	1291.7	4.1	**0.2328**	0.012	5.0	ug/L	28	Standard
	Tl	205	1156.7	1.2	**0.2303**	0.002	0.7	ug/L	20	Standard
	Pb	206	58996.3	1.2	**18.7397**	0.318	1.7	ug/L	184	Standard
	Pb	207	48786.1	1.3	**17.0854**	0.336	2.0	ug/L	161	Standard
	Pb	208	222396.6	1.2	**17.9051**	0.294	1.6	ug/L	746	Standard
	U	238	4886.1	2.5	**1.0798**	0.025	2.3	ug/L	6	Standard
>	**Bi**	209	429692.6	0.6				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	280.0	6.2	**0.3055**	0.024	7.9	mg/L	25	Standard
K	39	921.7	5.4	**2.4408**	0.164	6.7	mg/L	25	Standard
Ca	43	283.3	6.2	**14.9343**	1.129	7.6	mg/L	77	Standard
Fe	54	43450.9	1.7	**35.4123**	0.826	2.3	mg/L	165	Standard
Fe	57	11037.4	0.6	**34.5685**	0.351	1.0	mg/L	205	Standard
Sc-1	45	59454.8	0.9				mg/L	46031	Standard
Cl	35	28745.9	0.4				ug/L	28530	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	3620.4	10.5				ug/L	1560	Standard
P	31	16712.5	1.3				ug/L	15481	Standard
S	34	2228.5	5.5				ug/L	2072	Standard
Sr	88	125.0	6.9				ug/L	70	Standard
C	12	63.3	74.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	53.3	28.6				mg/L	0	Standard
Dy	164	34495.4	1.1				mg/L	13	Standard
Ho-1	165	21188.2	3.6				mg/L	8	Standard
Er	166	18214.3	3.5				mg/L	7	Standard
I	127	2781.9	3.9				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.988	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.020	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.962	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.085	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606041803
Sample Date/Time: Wednesday, June 15, 2016 13:28:11
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68198.1	0.2				ug/L	58443	Standard
	Be	9	1153.4	5.4	**1.6405**	0.086	5.3	ug/L	5	Standard
	Al	27	9640563.2	0.9	**72.2902**	0.654	0.9	ug/L	385	Standard
	Sc	45	58531.2	0.8				ug/L	46031	Standard
	Ti	47	4838.1	0.6	**21.2366**	0.274	1.3	ug/L	94	Standard
	V	51	158120.8	1.8	**28.5356**	0.347	1.2	ug/L	1280	Standard
	Cr	52	200133.1	2.8	**33.7409**	0.888	2.6	ug/L	6381	Standard
	Cr	53	25124.2	4.2	**33.3316**	1.539	4.6	ug/L	1957	Standard
	Mn	55	4555464.0	1.9	**1043.2278**	13.251	1.3	ug/L	667	Standard
	Co	59	135189.0	2.4	**28.3632**	0.514	1.8	ug/L	156	Standard
	Ni	60	88704.0	1.8	**62.4292**	0.890	1.4	ug/L	154	Standard
	Cu	65	86177.2	3.0	**62.1959**	1.573	2.5	ug/L	116	Standard
	Zn	66	119874.9	2.8	**148.5293**	3.444	2.3	ug/L	114	Standard
>	**Ge**	72	468158.5	0.6				ug/L	467488	Standard
	As	75	15142.2	2.4	**18.2299**	0.338	1.9	ug/L	-61	Standard
	Se	82	46.7	24.1	**0.3785**	0.130	34.2	ug/L	9	Standard
	Se-1	77	140.0	5.0	**0.4408**	0.114	25.9	ug/L	125	Standard
>	**Ga**	71	28296.4	4.9				mg/L	50	Standard
	Rb	85	269310.1	2.7				ug/L	18	Standard
	Y	89	665572.0	1.7				ug/L	402730	Standard
>	**Rh**	103	38.3	30.1				ug/L	12	Standard
	Mo	98	2841.2	2.2	**1.6290**	0.047	2.9	ug/L	8	Standard
	Ag	107	563.0	9.5	**0.1067**	0.012	11.6	ug/L	65	Standard
	Cd	111	250.2	4.0	**0.1667**	0.007	4.1	mg/L	3	Standard
	Cd	114	632.6	13.7	**0.1663**	0.025	15.1	ug/L	15	Standard
>	**In**	115	523112.8	0.8				ug/L	526825	Standard
	Sn	118	275.0	15.5	**-0.0439**	0.010	23.4	ug/L	368	Standard
	Sb	123	138.2	16.7	**0.0287**	0.007	24.5	ug/L	46	Standard
	Ba	135	234833.9	2.5	**174.0739**	5.560	3.2	ug/L	16	Standard
	Ce	140	827283.0	1.0				ug/L	43	Standard
>	**Tb**	159	807787.5	1.1				ug/L	771780	Standard
	Ho	165	19843.0	1.3				ug/L	8	Standard
	Tl	203	1252.4	3.3	**0.2220**	0.008	3.6	ug/L	28	Standard
	Tl	205	1050.0	8.3	**0.2049**	0.018	8.7	ug/L	20	Standard
	Pb	206	83829.7	2.5	**26.2946**	0.758	2.9	ug/L	184	Standard
	Pb	207	68468.4	2.7	**23.6795**	0.730	3.1	ug/L	161	Standard
	Pb	208	313626.5	1.9	**24.9342**	0.573	2.3	ug/L	746	Standard
	U	238	5635.7	3.3	**1.2292**	0.044	3.6	ug/L	6	Standard
>	**Bi**	209	435627.5	0.5				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	166.7	26.9	**0.1689**	0.055	32.8	mg/L	25	Standard
K	39	751.7	14.6	**1.9984**	0.329	16.5	mg/L	25	Standard
Ca	43	320.0	8.3	**17.8490**	1.683	9.4	mg/L	77	Standard
Fe	54	43552.1	3.0	**36.0605**	1.352	3.8	mg/L	165	Standard
Fe	57	10775.5	1.5	**34.2787**	0.794	2.3	mg/L	205	Standard
> **Sc-1**	45	58531.2	0.8				mg/L	46031	Standard
Cl	35	28072.0	1.0				ug/L	28530	Standard
Kr	83	3.0	0.0				ug/L	2	Standard
Br	81	2446.9	7.6				ug/L	1560	Standard
P	31	16517.3	2.9				ug/L	15481	Standard
S	34	2230.2	3.1				ug/L	2072	Standard
Sr	88	115.0	27.2				ug/L	70	Standard
C	12	56.7	36.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	70.0	14.3				mg/L	0	Standard
Dy	164	33720.4	1.0				mg/L	13	Standard
Ho-1	165	19843.0	1.3				mg/L	8	Standard
Er	166	17653.6	2.8				mg/L	7	Standard
I	127	2163.5	6.2				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.693	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.143	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.295
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.467
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606041802
Sample Date/Time: Wednesday, June 15, 2016 13:31:22
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67682.5	1.4				ug/L	58443	Standard
	Be	9	1211.7	3.7	**1.7376**	0.049	2.8	ug/L	5	Standard
	Al	27	11268872.8	0.6	**85.1526**	0.875	1.0	ug/L	385	Standard
	Sc	45	58748.7	2.1				ug/L	46031	Standard
	Ti	47	5918.2	2.1	**26.6073**	0.401	1.5	ug/L	94	Standard
	V	51	154733.3	1.5	**28.4768**	0.386	1.4	ug/L	1280	Standard
	Cr	52	206589.4	1.4	**35.5789**	0.284	0.8	ug/L	6381	Standard
	Cr	53	25638.3	2.5	**34.8005**	0.849	2.4	ug/L	1957	Standard
	Mn	55	5223821.2	0.9	**1220.0141**	6.775	0.6	ug/L	667	Standard
	Co	59	160217.1	1.7	**34.2877**	0.490	1.4	ug/L	156	Standard
	Ni	60	94959.0	0.9	**68.1655**	0.378	0.6	ug/L	154	Standard
	Cu	65	113209.4	1.5	**83.3599**	0.788	0.9	ug/L	116	Standard
	Zn	66	130707.8	1.5	**165.1865**	1.541	0.9	ug/L	114	Standard
>	**Ge**	72	459087.1	0.6				ug/L	467488	Standard
	As	75	5398.6	1.1	**6.6543**	0.042	0.6	ug/L	-61	Standard
	Se	82	59.6	12.5	**0.5458**	0.094	17.2	ug/L	9	Standard
	Se-1	77	145.3	4.1	**0.5848**	0.101	17.3	ug/L	125	Standard
>	**Ga**	71	29244.9	5.5				mg/L	50	Standard
	Rb	85	267224.3	0.4				ug/L	18	Standard
	Y	89	714902.4	0.6				ug/L	402730	Standard
>	**Rh**	103	53.3	14.3				ug/L	12	Standard
	Mo	98	1965.6	1.6	**1.1495**	0.021	1.8	ug/L	8	Standard
	Ag	107	469.0	6.3	**0.0878**	0.007	7.9	ug/L	65	Standard
	Cd	111	452.9	5.3	**0.3154**	0.018	5.6	mg/L	3	Standard
	Cd	114	1094.9	6.9	**0.3052**	0.022	7.3	ug/L	15	Standard
>	**In**	115	511717.9	0.2				ug/L	526825	Standard
	Sn	118	378.3	17.0	**-0.0159**	0.017	104.3	ug/L	368	Standard
	Sb	123	124.7	11.6	**0.0253**	0.005	18.1	ug/L	46	Standard
	Ba	135	231692.1	0.6	**175.5425**	1.270	0.7	ug/L	16	Standard
	Ce	140	1028249.4	0.4				ug/L	43	Standard
>	**Tb**	159	810087.8	1.3				ug/L	771780	Standard
	Ho	165	26180.9	1.3				ug/L	8	Standard
	Tl	203	1340.4	2.0	**0.2495**	0.004	1.7	ug/L	28	Standard
	Tl	205	1108.4	14.6	**0.2270**	0.036	15.8	ug/L	20	Standard
	Pb	206	70924.3	1.2	**23.1956**	0.270	1.2	ug/L	184	Standard
	Pb	207	57741.8	1.0	**20.8214**	0.308	1.5	ug/L	161	Standard
	Pb	208	264689.6	0.2	**21.9414**	0.113	0.5	ug/L	746	Standard
	U	238	6237.0	1.2	**1.4198**	0.024	1.7	ug/L	6	Standard
>	**Bi**	209	417621.7	0.5				ug/L	429329	Standard

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Na	23	15.0	0.0	**47.3827**	0.982	2.1	mg/L	0	Standard
Mg	24	390.0	12.4	**0.4475**	0.069	15.4	mg/L	25	Standard
K	39	791.7	5.3	**2.1025**	0.119	5.7	mg/L	25	Standard
Ca	43	796.7	6.6	**51.5838**	4.287	8.3	mg/L	77	Standard
Fe	54	48826.4	0.9	**40.2925**	0.472	1.2	mg/L	165	Standard
Fe	57	13069.0	0.6	**41.5481**	0.808	1.9	mg/L	205	Standard
> **Sc-1**	45	58748.7	2.1				mg/L	46031	Standard
Cl	35	28997.7	1.6				ug/L	28530	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	2560.2	4.1				ug/L	1560	Standard
P	31	17019.6	3.6				ug/L	15481	Standard
S	34	2300.2	8.3				ug/L	2072	Standard
Sr	88	165.0	3.0				ug/L	70	Standard
C	12	80.0	33.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	88.2				mg/L	0	Standard
Dy	164	43790.1	0.4				mg/L	13	Standard
Ho-1	165	26180.9	1.3				mg/L	8	Standard
Er	166	22606.9	2.7				mg/L	7	Standard
I	127	2458.5	3.4				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.810	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.203	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.132
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.273
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606041802PS WG572831-01
Sample Date/Time: Wednesday, June 15, 2016 13:41:29
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66325.0	3.4				ug/L	58443	Standard
	Be	9	34495.9	2.5	**51.0583**	1.787	3.5	ug/L	5	Standard
	Al	27	11374685.7	1.2	**87.7855**	3.703	4.2	ug/L	385	Standard
	Sc	45	58700.2	2.6				ug/L	46031	Standard
	Ti	47	6052.2	1.7	**27.1311**	0.678	2.5	ug/L	94	Standard
	V	51	442730.3	0.8	**81.6879**	1.268	1.6	ug/L	1280	Standard
	Cr	52	503762.3	1.1	**88.1378**	1.666	1.9	ug/L	6381	Standard
	Cr	53	60380.1	1.1	**85.5639**	1.361	1.6	ug/L	1957	Standard
	Mn	55	5675002.2	1.2	**1320.9708**	24.350	1.8	ug/L	667	Standard
	Co	59	401137.0	1.4	**85.6171**	1.879	2.2	ug/L	156	Standard
	Ni	60	166313.9	1.2	**119.0850**	2.309	1.9	ug/L	154	Standard
	Cu	65	182558.6	0.6	**134.0419**	1.921	1.4	ug/L	116	Standard
	Zn	66	172296.9	1.2	**217.1077**	4.187	1.9	ug/L	114	Standard
>	**Ge**	72	460668.2	0.8				ug/L	467488	Standard
	As	75	48361.5	1.3	**59.0878**	1.230	2.1	ug/L	-61	Standard
	Se	82	4381.0	1.6	**52.2834**	1.224	2.3	ug/L	9	Standard
	Se-1	77	3020.0	2.2	**51.8197**	1.593	3.1	ug/L	125	Standard
>	**Ga**	71	30121.6	1.7				mg/L	50	Standard
	Rb	85	272553.4	1.8				ug/L	18	Standard
	Y	89	736201.6	0.1				ug/L	402730	Standard
>	**Rh**	103	56.7	45.3				ug/L	12	Standard
	Mo	98	1999.1	0.5	**1.1774**	0.013	1.1	ug/L	8	Standard
	Ag	107	224778.9	1.1	**52.2570**	1.101	2.1	ug/L	65	Standard
	Cd	111	73199.6	1.5	**52.6398**	1.303	2.5	mg/L	3	Standard
	Cd	114	179274.6	1.6	**52.6581**	1.006	1.9	ug/L	15	Standard
>	**In**	115	508224.3	1.3				ug/L	526825	Standard
	Sn	118	436.7	6.9	**-0.0002**	0.008	3224.1	ug/L	368	Standard
	Sb	123	161952.3	0.7	**52.6527**	0.895	1.7	ug/L	46	Standard
	Ba	135	297754.5	1.1	**227.1911**	5.099	2.2	ug/L	16	Standard
	Ce	140	1030642.3	0.9				ug/L	43	Standard
>	**Tb**	159	793703.2	1.6				ug/L	771780	Standard
	Ho	165	26668.5	1.2				ug/L	8	Standard
	Tl	203	264676.1	0.6	**52.9300**	0.416	0.8	ug/L	28	Standard
	Tl	205	238127.0	1.6	**52.0819**	0.703	1.3	ug/L	20	Standard
	Pb	206	232649.9	0.5	**77.4135**	0.335	0.4	ug/L	184	Standard
	Pb	207	198876.7	0.4	**72.9818**	0.354	0.5	ug/L	161	Standard
	Pb	208	877093.3	0.5	**73.9821**	0.561	0.8	ug/L	746	Standard
	U	238	232166.7	0.9	**53.8350**	0.495	0.9	ug/L	6	Standard
>	**Bi**	209	411364.9	0.4				ug/L	429329	Standard

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Na	23	1.7	173.2	**5.2708**	9.121	173.0	mg/L	0	Standard
Mg	24	460.0	24.0	**0.5328**	0.125	23.5	mg/L	25	Standard
K	39	761.7	12.2	**2.0172**	0.233	11.5	mg/L	25	Standard
Ca	43	788.4	8.8	**51.1079**	6.244	12.2	mg/L	77	Standard
Fe	54	49724.3	1.2	**41.0737**	0.594	1.4	mg/L	165	Standard
Fe	57	12963.9	3.6	**41.2500**	1.770	4.3	mg/L	205	Standard
> **Sc-1**	45	58700.2	2.6				mg/L	46031	Standard
Cl	35	29176.1	1.4				ug/L	28530	Standard
Kr	83	1.7	124.9				ug/L	2	Standard
Br	81	2596.9	7.7				ug/L	1560	Standard
P	31	17425.0	3.1				ug/L	15481	Standard
S	34	2358.5	5.3				ug/L	2072	Standard
Sr	88	175.0	11.4				ug/L	70	Standard
C	12	90.0	38.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	43.3				mg/L	0	Standard
Dy	164	44070.8	1.2				mg/L	13	Standard
Ho-1	165	26668.5	1.2				mg/L	8	Standard
Er	166	23237.8	4.3				mg/L	7	Standard
I	127	2595.2	1.3				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.488	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.541	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.469
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.816
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	
Cu 65 Upper, S, EEE	Cu	65	

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Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606041802SDL WG572831-02
Sample Date/Time: Wednesday, June 15, 2016 13:44:40
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61857.7	1.6				ug/L	58443	Standard
	Be	9	270.0	9.8	**0.4095**	0.048	11.6	ug/L	5	Standard
	Al	27	2424594.6	1.9	**20.0400**	0.362	1.8	ug/L	385	Standard
	Sc	45	51626.2	4.0				ug/L	46031	Standard
	Ti	47	1295.1	2.0	**5.2965**	0.108	2.0	ug/L	94	Standard
	V	51	34070.6	0.6	**5.9088**	0.033	0.6	ug/L	1280	Standard
	Cr	52	49126.5	1.9	**7.3534**	0.125	1.7	ug/L	6381	Standard
	Cr	53	6054.5	2.6	**5.7959**	0.276	4.8	ug/L	1957	Standard
	Mn	55	1029733.7	2.5	**234.3041**	5.606	2.4	ug/L	667	Standard
	Co	59	34623.2	3.3	**7.1953**	0.230	3.2	ug/L	156	Standard
	Ni	60	20615.7	2.7	**14.3266**	0.392	2.7	ug/L	154	Standard
	Cu	65	24841.4	1.5	**17.7510**	0.287	1.6	ug/L	116	Standard
	Zn	66	28605.3	1.3	**35.0443**	0.509	1.5	ug/L	114	Standard
>	**Ge**	72	470897.1	0.6				ug/L	467488	Standard
	As	75	1138.6	2.0	**1.4008**	0.026	1.8	ug/L	-61	Standard
	Se	82	24.9	25.7	**0.1203**	0.076	63.4	ug/L	9	Standard
	Se-1	77	87.0	4.6	**-0.4975**	0.062	12.4	ug/L	125	Standard
>	**Ga**	71	6288.0	1.8				mg/L	50	Standard
	Rb	85	57301.5	1.3				ug/L	18	Standard
	Y	89	481754.2	0.6				ug/L	402730	Standard
>	**Rh**	103	25.0	20.0				ug/L	12	Standard
	Mo	98	435.1	3.5	**0.2377**	0.010	4.3	ug/L	8	Standard
	Ag	107	202.7	13.6	**0.0244**	0.006	25.1	ug/L	65	Standard
	Cd	111	104.2	11.5	**0.0633**	0.008	13.3	mg/L	3	Standard
	Cd	114	226.4	10.5	**0.0491**	0.007	14.5	ug/L	15	Standard
>	**In**	115	533673.5	0.8				ug/L	526825	Standard
	Sn	118	383.3	9.2	**-0.0187**	0.009	48.9	ug/L	368	Standard
	Sb	123	1689.7	17.6	**0.5082**	0.091	17.9	ug/L	46	Standard
	Ba	135	49410.4	1.7	**35.8779**	0.583	1.6	ug/L	16	Standard
	Ce	140	223922.7	1.3				ug/L	43	Standard
>	**Tb**	159	790867.7	0.6				ug/L	771780	Standard
	Ho	165	5561.0	3.7				ug/L	8	Standard
	Tl	203	336.7	7.1	**0.0505**	0.005	9.3	ug/L	28	Standard
	Tl	205	358.3	10.5	**0.0637**	0.008	12.4	ug/L	20	Standard
	Pb	206	15151.2	0.4	**4.8006**	0.018	0.4	ug/L	184	Standard
	Pb	207	12528.2	1.6	**4.3720**	0.077	1.8	ug/L	161	Standard
	Pb	208	56711.5	1.3	**4.5521**	0.066	1.5	ug/L	746	Standard
	U	238	1347.7	2.8	**0.2968**	0.009	2.9	ug/L	6	Standard
>	**Bi**	209	425975.7	0.1				ug/L	429329	Standard

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Na	23	3.3	86.6	**11.9680**	10.384	86.8	mg/L	0	Standard
Mg	24	96.7	16.6	**0.0983**	0.028	28.5	mg/L	25	Standard
K	39	228.3	14.9	**0.5974**	0.137	22.9	mg/L	25	Standard
Ca	43	255.0	16.8	**15.7733**	4.235	26.9	mg/L	77	Standard
Fe	54	10651.6	1.5	**9.9068**	0.396	4.0	mg/L	165	Standard
Fe	57	2866.9	7.6	**9.9233**	0.521	5.2	mg/L	205	Standard
> **Sc-1**	45	51626.2	4.0				mg/L	46031	Standard
Cl	35	29725.8	1.4				ug/L	28530	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1666.8	4.9				ug/L	1560	Standard
P	31	18075.8	6.3				ug/L	15481	Standard
S	34	2523.5	0.5				ug/L	2072	Standard
Sr	88	81.7	14.1				ug/L	70	Standard
C	12	73.3	34.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	9751.2	2.5				mg/L	13	Standard
Ho-1	165	5561.0	3.7				mg/L	8	Standard
Er	166	4427.3	0.9				mg/L	7	Standard
I	127	1280.1	5.8				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.844	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.729	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	101.300
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.219
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 15, 2016 13:47:53
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60174.3	2.2				ug/L	58443	Standard
	Be	9	31559.6	6.5	**51.4478**	2.885	5.6	ug/L	5	Standard
	Al	27	5818243.8	4.9	**49.4539**	2.501	5.1	ug/L	385	Standard
	Sc	45	48012.7	2.9				ug/L	46031	Standard
	Ti	47	22960.4	5.7	**103.6500**	4.765	4.6	ug/L	94	Standard
	V	51	277672.3	4.8	**50.8347**	1.874	3.7	ug/L	1280	Standard
	Cr	52	292823.5	6.3	**50.4322**	2.650	5.3	ug/L	6381	Standard
	Cr	53	36039.6	6.1	**49.5955**	2.567	5.2	ug/L	1957	Standard
	Mn	55	224134.3	5.6	**51.6746**	2.275	4.4	ug/L	667	Standard
	Co	59	238927.7	6.1	**50.6753**	2.543	5.0	ug/L	156	Standard
	Ni	60	71561.7	6.5	**50.8579**	2.718	5.3	ug/L	154	Standard
	Cu	65	69534.5	5.2	**50.6880**	2.044	4.0	ug/L	116	Standard
	Zn	66	40574.7	4.9	**50.6292**	1.870	3.7	ug/L	114	Standard
>	**Ge**	72	463219.9	1.2				ug/L	467488	Standard
	As	75	41379.5	4.8	**50.2655**	1.823	3.6	ug/L	-61	Standard
	Se	82	4167.8	6.8	**49.4276**	2.794	5.7	ug/L	9	Standard
	Se-1	77	2888.3	2.3	**49.1764**	0.653	1.3	ug/L	125	Standard
>	**Ga**	71	48.3	15.8				mg/L	50	Standard
	Rb	85	696.7	17.9				ug/L	18	Standard
	Y	89	402110.7	3.0				ug/L	402730	Standard
>	**Rh**	103	20.0	50.0				ug/L	12	Standard
	Mo	98	175752.8	6.4	**102.4468**	3.823	3.7	ug/L	8	Standard
	Ag	107	224033.2	4.4	**51.2132**	0.826	1.6	ug/L	65	Standard
	Cd	111	71558.1	3.8	**50.6056**	0.752	1.5	mg/L	3	Standard
	Cd	114	178074.4	4.5	**51.4334**	0.913	1.8	ug/L	15	Standard
>	**In**	115	516622.4	2.8				ug/L	526825	Standard
	Sn	118	201596.8	3.6	**50.9377**	0.435	0.9	ug/L	368	Standard
	Sb	123	159299.4	4.5	**50.9257**	0.942	1.8	ug/L	46	Standard
	Ba	135	67188.5	4.4	**50.3907**	0.804	1.6	ug/L	16	Standard
	Ce	140	153.3	41.5				ug/L	43	Standard
>	**Tb**	159	762703.1	2.6				ug/L	771780	Standard
	Ho	165	18.3	83.3				ug/L	8	Standard
	Tl	203	257586.0	2.9	**50.6785**	0.497	1.0	ug/L	28	Standard
	Tl	205	232742.9	4.5	**50.0707**	1.172	2.3	ug/L	20	Standard
	Pb	206	155047.2	3.4	**50.7290**	0.717	1.4	ug/L	184	Standard
	Pb	207	139591.6	3.4	**50.3713**	0.666	1.3	ug/L	161	Standard
	Pb	208	606250.5	4.7	**50.2737**	1.339	2.7	ug/L	746	Standard
	U	238	219016.4	4.9	**49.9496**	1.390	2.8	ug/L	6	Standard
>	**Bi**	209	418078.6	2.2				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3218.7	10.3	**4.8619**	0.377	7.7	mg/L	25	Standard
K	39	1333.4	9.9	**4.4779**	0.339	7.6	mg/L	25	Standard
Ca	43	81.7	19.7	**2.1702**	1.278	58.9	mg/L	77	Standard
Fe	54	4617.4	6.0	**4.5367**	0.149	3.3	mg/L	165	Standard
Fe	57	1280.1	12.3	**4.4571**	0.522	11.7	mg/L	205	Standard
Sc-1	45	48012.7	2.9				mg/L	46031	Standard
Cl	35	29463.3	3.3				ug/L	28530	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	1530.1	19.3				ug/L	1560	Standard
P	31	17296.5	2.3				ug/L	15481	Standard
S	34	2430.2	2.1				ug/L	2072	Standard
Sr	88	48.3	23.9				ug/L	70	Standard
C	12	43.3	53.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	16.0	37.9				mg/L	13	Standard
Ho-1	165	18.3	83.3				mg/L	8	Standard
Er	166	13.3	86.6				mg/L	7	Standard
I	127	1038.4	11.6				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.896		
Al	27	98.908		
Sc	45			
Ti	47	103.650		
V	51	101.669		
Cr	52	100.864		
Cr	53			
Mn	55	103.349		
Co	59	101.351		
Ni	60	101.716		
Cu	65	101.376		
Zn	66	101.258		
Ge	72		99.087	
As	75	100.531		
Se	82	98.855		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	102.447		
Ag	107	102.426		
Cd	111	101.211		
Cd	114			
> In	115			98.063
Sn	118	101.875		
Sb	123	101.851		
Ba	135	100.781		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.357		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.547		
U	238	99.899		
> Bi	209			97.380
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 15, 2016 13:51:04
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61332.2	0.5				ug/L	58443	Standard
	Be	9	13.3	57.3	**0.0020**	0.012	611.7	ug/L	5	Standard
	Al	27	1903.5	39.0	**0.0078**	0.006	79.1	ug/L	385	Standard
	Sc	45	47728.4	2.3				ug/L	46031	Standard
	Ti	47	52.3	15.4	**-0.2500**	0.033	13.1	ug/L	94	Standard
	V	51	1152.5	3.7	**-0.0514**	0.010	18.5	ug/L	1280	Standard
	Cr	52	5735.4	0.4	**-0.1703**	0.018	10.7	ug/L	6381	Standard
	Cr	53	823.4	4.0	**-1.7003**	0.063	3.7	ug/L	1957	Standard
	Mn	55	813.0	13.3	**-0.0100**	0.023	228.2	ug/L	667	Standard
	Co	59	213.7	7.6	**0.0083**	0.003	32.6	ug/L	156	Standard
	Ni	60	101.3	6.9	**-0.0576**	0.004	6.9	ug/L	154	Standard
	Cu	65	131.3	9.5	**-0.0112**	0.008	68.4	ug/L	116	Standard
	Zn	66	136.3	17.9	**-0.0889**	0.028	31.9	ug/L	114	Standard
>	**Ge**	72	470868.5	1.5				ug/L	467488	Standard
	As	75	-3.0	553.5	**0.0374**	0.020	52.3	ug/L	-61	Standard
	Se	82	20.8	15.8	**0.0729**	0.036	50.0	ug/L	9	Standard
	Se-1	77	69.0	16.5	**-0.8122**	0.186	22.9	ug/L	125	Standard
>	**Ga**	71	46.7	43.3				mg/L	50	Standard
	Rb	85	50.0	36.1				ug/L	18	Standard
	Y	89	408287.3	1.7				ug/L	402730	Standard
>	**Rh**	103	10.0					ug/L	12	Standard
	Mo	98	154.3	19.8	**0.0802**	0.017	21.5	ug/L	8	Standard
	Ag	107	145.3	15.7	**0.0121**	0.005	40.0	ug/L	65	Standard
	Cd	111	22.0	39.4	**0.0072**	0.006	84.2	mg/L	3	Standard
	Cd	114	59.5	46.6	**0.0026**	0.008	304.9	ug/L	15	Standard
>	**In**	115	526220.7	1.4				ug/L	526825	Standard
	Sn	118	640.0	14.1	**0.0465**	0.023	48.7	ug/L	368	Standard
	Sb	123	489.2	21.7	**0.1388**	0.034	24.8	ug/L	46	Standard
	Ba	135	62.0	24.4	**0.0226**	0.011	48.4	ug/L	16	Standard
	Ce	140	65.0	60.1				ug/L	43	Standard
>	**Tb**	159	785908.6	1.0				ug/L	771780	Standard
	Ho	165	18.3	56.8				ug/L	8	Standard
	Tl	203	81.7	33.2	**0.0011**	0.005	488.0	ug/L	28	Standard
	Tl	205	55.0	63.6	**-0.0004**	0.008	1778.1	ug/L	20	Standard
	Pb	206	250.0	8.7	**0.0072**	0.007	97.1	ug/L	184	Standard
	Pb	207	206.3	3.2	**0.0004**	0.004	821.0	ug/L	161	Standard
	Pb	208	908.3	8.1	**0.0016**	0.007	445.1	ug/L	746	Standard
	U	238	50.0	60.5	**0.0062**	0.007	112.4	ug/L	6	Standard
>	**Bi**	209	429670.2	2.1				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	23.3	44.6	**-0.0034**	0.017	499.1	mg/L	25	Standard
K	39	43.3	52.0	**0.0086**	0.079	915.3	mg/L	25	Standard
Ca	43	35.0	24.7	**-1.8404**	0.780	42.4	mg/L	77	Standard
Fe	54	136.3	11.8	**0.0006**	0.015	2366.1	mg/L	165	Standard
Fe	57	138.3	18.2	**-0.0375**	0.089	236.7	mg/L	205	Standard
Sc-1	45	47728.4	2.3				mg/L	46031	Standard
Cl	35	28812.1	4.2				ug/L	28530	Standard
Kr	83	3.7	15.7				ug/L	2	Standard
Br	81	1190.0	8.9				ug/L	1560	Standard
P	31	16827.7	3.3				ug/L	15481	Standard
S	34	2285.2	1.6				ug/L	2072	Standard
Sr	88	48.3	15.8				ug/L	70	Standard
C	12	46.7	44.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	0	Standard
Dy	164	9.8	101.7				mg/L	13	Standard
Ho-1	165	18.3	56.8				mg/L	8	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	981.7	6.0				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.723	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.885
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.079
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606041804
Sample Date/Time: Wednesday, June 15, 2016 13:54:18
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66870.6	1.1				ug/L	58443	Standard
	Be	9	1426.7	0.7	**2.0750**	0.033	1.6	ug/L	5	Standard
	Al	27	11080839.3	0.7	**84.7454**	0.749	0.9	ug/L	385	Standard
	Sc	45	61981.5	1.7				ug/L	46031	Standard
	Ti	47	4966.1	3.8	**21.7926**	0.984	4.5	ug/L	94	Standard
	V	51	190877.8	0.8	**34.4683**	0.182	0.5	ug/L	1280	Standard
	Cr	52	230077.7	0.4	**38.9268**	0.408	1.0	ug/L	6381	Standard
	Cr	53	28465.0	0.5	**38.1059**	0.358	0.9	ug/L	1957	Standard
	Mn	55	5743498.7	0.8	**1314.1457**	13.791	1.0	ug/L	667	Standard
	Co	59	171177.5	0.2	**35.8911**	0.250	0.7	ug/L	156	Standard
	Ni	60	108053.0	1.2	**76.0061**	1.256	1.7	ug/L	154	Standard
	Cu	65	102506.3	0.7	**73.9344**	0.422	0.6	ug/L	116	Standard
	Zn	66	137461.1	0.6	**170.2057**	1.682	1.0	ug/L	114	Standard
>	**Ge**	72	468623.2	0.7				ug/L	467488	Standard
	As	75	15288.0	0.9	**18.3884**	0.185	1.0	ug/L	-61	Standard
	Se	82	55.3	16.5	**0.4805**	0.110	23.0	ug/L	9	Standard
	Se-1	77	141.7	6.1	**0.4678**	0.149	31.8	ug/L	125	Standard
>	**Ga**	71	32984.2	1.7				mg/L	50	Standard
	Rb	85	350791.4	1.2				ug/L	18	Standard
	Y	89	750797.9	0.7				ug/L	402730	Standard
>	**Rh**	103	38.3	15.1				ug/L	12	Standard
	Mo	98	864.1	4.5	**0.5005**	0.017	3.5	ug/L	8	Standard
	Ag	107	687.7	4.0	**0.1383**	0.008	5.9	ug/L	65	Standard
	Cd	111	412.4	4.4	**0.2862**	0.010	3.4	mg/L	3	Standard
	Cd	114	998.2	0.6	**0.2768**	0.004	1.5	ug/L	15	Standard
>	**In**	115	511987.2	1.3				ug/L	526825	Standard
	Sn	118	318.3	13.7	**-0.0314**	0.010	32.7	ug/L	368	Standard
	Sb	123	210.2	17.6	**0.0528**	0.011	20.9	ug/L	46	Standard
	Ba	135	265794.8	0.7	**201.3122**	4.088	2.0	ug/L	16	Standard
	Ce	140	1006442.1	1.8				ug/L	43	Standard
>	**Tb**	159	792141.6	0.5				ug/L	771780	Standard
	Ho	165	27596.8	2.4				ug/L	8	Standard
	Tl	203	1494.7	1.2	**0.2798**	0.006	2.0	ug/L	28	Standard
	Tl	205	1358.4	8.5	**0.2808**	0.028	9.9	ug/L	20	Standard
	Pb	206	81000.3	0.6	**26.4883**	0.233	0.9	ug/L	184	Standard
	Pb	207	67084.2	0.6	**24.1892**	0.232	1.0	ug/L	161	Standard
	Pb	208	305067.5	0.2	**25.2870**	0.192	0.8	ug/L	746	Standard
	U	238	6149.9	0.3	**1.3992**	0.018	1.3	ug/L	6	Standard
>	**Bi**	209	417840.8	1.0				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	120.0	15.0	**0.1025**	0.023	22.6	mg/L	25	Standard
K	39	1053.4	8.3	**2.6916**	0.284	10.6	mg/L	25	Standard
Ca	43	395.0	16.2	**21.6715**	4.656	21.5	mg/L	77	Standard
Fe	54	51255.0	2.9	**40.1039**	1.832	4.6	mg/L	165	Standard
Fe	57	13164.1	3.3	**39.6527**	1.978	5.0	mg/L	205	Standard
> **Sc-1**	45	61981.5	1.7				mg/L	46031	Standard
Cl	35	29019.1	1.0				ug/L	28530	Standard
Kr	83	2.3	137.8				ug/L	2	Standard
Br	81	1720.1	4.8				ug/L	1560	Standard
P	31	16742.6	1.9				ug/L	15481	Standard
S	34	2348.5	4.6				ug/L	2072	Standard
Sr	88	141.7	8.2				ug/L	70	Standard
C	12	43.3	70.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	53.3	28.6				mg/L	0	Standard
Dy	164	46789.4	2.1				mg/L	13	Standard
Ho-1	165	27596.8	2.4				mg/L	8	Standard
Er	166	24489.8	1.3				mg/L	7	Standard
I	127	1586.7	3.8				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.421	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.243	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.184
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.324
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606041805
Sample Date/Time: Wednesday, June 15, 2016 13:57:29
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66378.4	1.3				ug/L	58443	Standard
	Be	9	1078.4	6.1	**1.5761**	0.114	7.3	ug/L	5	Standard
	Al	27	10071343.0	1.7	**77.5894**	0.627	0.8	ug/L	385	Standard
	Sc	45	57698.0	1.7				ug/L	46031	Standard
	Ti	47	6554.1	5.7	**29.0600**	1.427	4.9	ug/L	94	Standard
	V	51	197571.3	0.6	**35.8861**	0.786	2.2	ug/L	1280	Standard
	Cr	52	219624.7	0.6	**37.3139**	0.610	1.6	ug/L	6381	Standard
	Cr	53	26965.6	0.4	**36.1575**	0.435	1.2	ug/L	1957	Standard
	Mn	55	4629685.6	0.9	**1065.0156**	14.954	1.4	ug/L	667	Standard
	Co	59	153015.9	1.6	**32.2500**	0.130	0.4	ug/L	156	Standard
	Ni	60	89531.4	0.7	**63.2967**	0.841	1.3	ug/L	154	Standard
	Cu	65	82581.8	1.1	**59.8676**	0.877	1.5	ug/L	116	Standard
	Zn	66	123870.0	0.9	**154.1777**	1.128	0.7	ug/L	114	Standard
>	**Ge**	72	466132.7	1.5				ug/L	467488	Standard
	As	75	9758.7	1.3	**11.8174**	0.272	2.3	ug/L	-61	Standard
	Se	82	53.4	20.6	**0.4613**	0.139	30.1	ug/L	9	Standard
	Se-1	77	132.0	11.0	**0.3111**	0.254	81.7	ug/L	125	Standard
>	**Ga**	71	31025.1	3.0				mg/L	50	Standard
	Rb	85	310246.1	1.1				ug/L	18	Standard
	Y	89	662984.7	1.4				ug/L	402730	Standard
>	**Rh**	103	23.3	61.9				ug/L	12	Standard
	Mo	98	922.3	1.6	**0.5259**	0.010	1.9	ug/L	8	Standard
	Ag	107	528.0	7.9	**0.0994**	0.009	9.3	ug/L	65	Standard
	Cd	111	242.6	5.6	**0.1622**	0.009	5.6	mg/L	3	Standard
	Cd	114	579.0	3.2	**0.1518**	0.006	3.8	ug/L	15	Standard
>	**In**	115	520566.8	0.3				ug/L	526825	Standard
	Sn	118	285.0	20.7	**-0.0410**	0.015	36.5	ug/L	368	Standard
	Sb	123	153.5	29.6	**0.0338**	0.015	43.0	ug/L	46	Standard
	Ba	135	181689.3	1.4	**135.3103**	1.728	1.3	ug/L	16	Standard
	Ce	140	981840.4	1.3				ug/L	43	Standard
>	**Tb**	159	793974.0	1.3				ug/L	771780	Standard
	Ho	165	21136.4	2.8				ug/L	8	Standard
	Tl	203	1304.7	4.4	**0.2440**	0.011	4.3	ug/L	28	Standard
	Tl	205	1111.7	2.0	**0.2290**	0.006	2.6	ug/L	20	Standard
	Pb	206	57878.7	1.0	**19.0251**	0.112	0.6	ug/L	184	Standard
	Pb	207	47221.5	1.0	**17.1125**	0.135	0.8	ug/L	161	Standard
	Pb	208	216540.2	0.8	**18.0409**	0.155	0.9	ug/L	746	Standard
	U	238	5354.9	1.2	**1.2254**	0.020	1.6	ug/L	6	Standard
>	**Bi**	209	415222.7	0.5				ug/L	429329	Standard

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Na	23	1.7	173.2	**5.2912**	9.156	173.0	mg/L	0	Standard
Mg	24	86.7	21.8	**0.0703**	0.022	31.9	mg/L	25	Standard
K	39	871.7	7.1	**2.3759**	0.211	8.9	mg/L	25	Standard
Ca	43	323.3	16.4	**18.4374**	3.861	20.9	mg/L	77	Standard
Fe	54	48370.7	0.6	**40.6432**	0.492	1.2	mg/L	165	Standard
Fe	57	11956.4	2.8	**38.6635**	1.401	3.6	mg/L	205	Standard
Sc-1	45	57698.0	1.7				mg/L	46031	Standard
Cl	35	28811.4	0.9				ug/L	28530	Standard
Kr	83	2.3	89.2				ug/L	2	Standard
Br	81	1880.1	1.4				ug/L	1560	Standard
P	31	16322.1	2.6				ug/L	15481	Standard
S	34	2218.5	0.9				ug/L	2072	Standard
Sr	88	108.3	7.1				ug/L	70	Standard
C	12	46.7	32.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	17.3				mg/L	0	Standard
Dy	164	34411.5	1.4				mg/L	13	Standard
Ho-1	165	21136.4	2.8				mg/L	8	Standard
Er	166	18501.3	1.8				mg/L	7	Standard
I	127	1670.1					mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.579	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.710	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.812
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.714
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606041806
Sample Date/Time: Wednesday, June 15, 2016 14:00:40
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64358.1	0.6				ug/L	58443	Standard
	Be	9	910.0	6.2	**1.3682**	0.079	5.8	ug/L	5	Standard
	Al	27	13361620.0	1.1	**106.1767**	1.367	1.3	ug/L	385	Standard
	Sc	45	55332.5	0.3				ug/L	46031	Standard
	Ti	47	6032.2	1.5	**27.3073**	0.207	0.8	ug/L	94	Standard
	V	51	118504.4	0.7	**21.8899**	0.087	0.4	ug/L	1280	Standard
	Cr	52	128054.3	1.7	**21.7572**	0.301	1.4	ug/L	6381	Standard
	Cr	53	15327.7	0.2	**19.7930**	0.215	1.1	ug/L	1957	Standard
	Mn	55	3935045.2	0.1	**924.9155**	7.268	0.8	ug/L	667	Standard
	Co	59	103155.6	0.7	**22.2067**	0.293	1.3	ug/L	156	Standard
	Ni	60	62677.7	1.4	**45.2373**	0.373	0.8	ug/L	154	Standard
	Cu	65	36887.9	0.8	**27.2662**	0.075	0.3	ug/L	116	Standard
	Zn	66	98143.8	0.7	**124.7710**	0.091	0.1	ug/L	114	Standard
>	**Ge**	72	456159.1	0.8				ug/L	467488	Standard
	As	75	10585.5	1.0	**13.0916**	0.063	0.5	ug/L	-61	Standard
	Se	82	74.6	3.4	**0.7304**	0.025	3.5	ug/L	9	Standard
	Se-1	77	134.0	7.5	**0.3983**	0.193	48.4	ug/L	125	Standard
>	**Ga**	71	17513.5	1.6				mg/L	50	Standard
	Rb	85	176960.9	1.5				ug/L	18	Standard
	Y	89	684660.8	1.4				ug/L	402730	Standard
>	**Rh**	103	48.3	11.9				ug/L	12	Standard
	Mo	98	1710.5	3.8	**1.0258**	0.035	3.4	ug/L	8	Standard
	Ag	107	558.7	14.4	**0.1121**	0.021	19.0	ug/L	65	Standard
	Cd	111	404.7	3.6	**0.2887**	0.016	5.4	mg/L	3	Standard
	Cd	114	1011.8	15.6	**0.2894**	0.054	18.5	ug/L	15	Standard
>	**In**	115	498609.4	2.1				ug/L	526825	Standard
	Sn	118	430.0	5.3	**0.0001**	0.004	3693.1	ug/L	368	Standard
	Sb	123	174.8	30.9	**0.0432**	0.019	44.4	ug/L	46	Standard
	Ba	135	197196.7	0.7	**153.3657**	2.668	1.7	ug/L	16	Standard
	Ce	140	688106.9	0.5				ug/L	43	Standard
>	**Tb**	159	776744.7	2.4				ug/L	771780	Standard
	Ho	165	22853.9	4.4				ug/L	8	Standard
	Tl	203	955.7	11.2	**0.1831**	0.023	12.7	ug/L	28	Standard
	Tl	205	875.0	7.2	**0.1858**	0.014	7.7	ug/L	20	Standard
	Pb	206	50176.6	1.4	**17.1979**	0.236	1.4	ug/L	184	Standard
	Pb	207	41090.3	1.4	**15.5254**	0.097	0.6	ug/L	161	Standard
	Pb	208	185495.8	0.0	**16.1135**	0.128	0.8	ug/L	746	Standard
	U	238	5455.3	1.1	**1.3024**	0.009	0.7	ug/L	6	Standard
>	**Bi**	209	398062.7	0.8				ug/L	429329	Standard

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Na	23	8.3	91.7	**27.9820**	25.668	91.7	mg/L	0	Standard
Mg	24	328.3	14.1	**0.3950**	0.061	15.5	mg/L	25	Standard
K	39	630.0	5.6	**1.7537**	0.100	5.7	mg/L	25	Standard
Ca	43	1738.4	9.3	**125.8947**	12.527	10.0	mg/L	77	Standard
Fe	54	29315.7	1.0	**25.6310**	0.190	0.7	mg/L	165	Standard
Fe	57	8287.3	0.2	**27.7746**	0.020	0.1	mg/L	205	Standard
> **Sc-1**	45	55332.5	0.3				mg/L	46031	Standard
Cl	35	30369.1	0.6				ug/L	28530	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	3737.1	4.1				ug/L	1560	Standard
P	31	16010.1	2.2				ug/L	15481	Standard
S	34	2293.5	3.3				ug/L	2072	Standard
Sr	88	296.7	5.4				ug/L	70	Standard
C	12	110.0	24.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	0	Standard
Dy	164	38119.6	2.8				mg/L	13	Standard
Ho-1	165	22853.9	4.4				mg/L	8	Standard
Er	166	19218.9	2.7				mg/L	7	Standard
I	127	5105.9	3.7				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.122	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.577	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.644
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	92.717
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606041807
Sample Date/Time: Wednesday, June 15, 2016 14:03:52
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65556.5	1.1				ug/L	58443	Standard
	Be	9	1356.7	2.4	**2.0118**	0.033	1.6	ug/L	5	Standard
	Al	27	8811144.5	2.9	**68.7355**	2.060	3.0	ug/L	385	Standard
	Sc	45	62148.9	0.3				ug/L	46031	Standard
	Ti	47	5403.3	4.3	**23.9482**	0.921	3.8	ug/L	94	Standard
	V	51	183697.8	0.8	**33.4417**	0.296	0.9	ug/L	1280	Standard
	Cr	52	195683.8	1.8	**33.2155**	0.458	1.4	ug/L	6381	Standard
	Cr	53	23423.1	1.3	**31.1266**	0.381	1.2	ug/L	1957	Standard
	Mn	55	4666933.6	1.0	**1076.6681**	7.121	0.7	ug/L	667	Standard
	Co	59	149905.3	1.2	**31.6882**	0.304	1.0	ug/L	156	Standard
	Ni	60	87732.6	1.3	**62.1998**	0.549	0.9	ug/L	154	Standard
	Cu	65	88127.3	1.5	**64.0783**	0.730	1.1	ug/L	116	Standard
	Zn	66	118622.3	1.2	**148.0660**	1.211	0.8	ug/L	114	Standard
>	**Ge**	72	464738.2	0.5				ug/L	467488	Standard
	As	75	21228.1	1.0	**25.7293**	0.185	0.7	ug/L	-61	Standard
	Se	82	69.3	7.4	**0.6510**	0.062	9.6	ug/L	9	Standard
	Se-1	77	136.3	6.8	**0.3945**	0.167	42.3	ug/L	125	Standard
>	**Ga**	71	27453.2	2.1				mg/L	50	Standard
	Rb	85	342614.3	1.5				ug/L	18	Standard
	Y	89	726916.3	1.5				ug/L	402730	Standard
>	**Rh**	103	51.7	36.6				ug/L	12	Standard
	Mo	98	997.7	1.0	**0.5794**	0.011	1.9	ug/L	8	Standard
	Ag	107	691.0	1.9	**0.1390**	0.003	2.2	ug/L	65	Standard
	Cd	111	273.5	3.6	**0.1872**	0.007	3.9	mg/L	3	Standard
	Cd	114	664.7	11.7	**0.1795**	0.021	11.9	ug/L	15	Standard
>	**In**	115	511850.8	0.9				ug/L	526825	Standard
	Sn	118	321.7	16.6	**-0.0305**	0.014	45.1	ug/L	368	Standard
	Sb	123	117.2	21.7	**0.0229**	0.008	36.1	ug/L	46	Standard
	Ba	135	247257.2	0.7	**187.2991**	2.440	1.3	ug/L	16	Standard
	Ce	140	1043756.4	0.6				ug/L	43	Standard
>	**Tb**	159	799766.5	1.1				ug/L	771780	Standard
	Ho	165	26623.4	1.9				ug/L	8	Standard
	Tl	203	1415.7	0.4	**0.2638**	0.001	0.5	ug/L	28	Standard
	Tl	205	1328.4	8.0	**0.2737**	0.024	8.8	ug/L	20	Standard
	Pb	206	87325.3	0.5	**28.5166**	0.179	0.6	ug/L	184	Standard
	Pb	207	72346.6	0.5	**26.0509**	0.252	1.0	ug/L	161	Standard
	Pb	208	328779.2	0.3	**27.2144**	0.136	0.5	ug/L	746	Standard
	U	238	8460.0	1.2	**1.9236**	0.029	1.5	ug/L	6	Standard
>	**Bi**	209	418496.0	0.6				ug/L	429329	Standard

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Na	23	1.7	173.2	**4.9871**	8.629	173.0	mg/L	0	Standard
Mg	24	181.7	13.0	**0.1746**	0.028	16.3	mg/L	25	Standard
K	39	978.4	2.8	**2.4798**	0.078	3.2	mg/L	25	Standard
Ca	43	263.3	9.7	**12.7376**	1.705	13.4	mg/L	77	Standard
Fe	54	50092.4	3.2	**39.0632**	1.158	3.0	mg/L	165	Standard
Fe	57	12972.2	1.0	**38.9375**	0.291	0.7	mg/L	205	Standard
> **Sc-1**	45	62148.9	0.3				mg/L	46031	Standard
Cl	35	29361.1	3.6				ug/L	28530	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	2323.5	8.1				ug/L	1560	Standard
P	31	16337.1	0.6				ug/L	15481	Standard
S	34	2321.8	7.1				ug/L	2072	Standard
Sr	88	131.7	19.1				ug/L	70	Standard
C	12	70.0	0.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	0	Standard
Dy	164	44613.6	2.8				mg/L	13	Standard
Ho-1	165	26623.4	1.9				mg/L	8	Standard
Er	166	23214.4	1.9				mg/L	7	Standard
I	127	1880.1	5.6				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.173	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.412	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.158
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.477
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606041808
Sample Date/Time: Wednesday, June 15, 2016 14:07:03
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67724.4	1.3				ug/L	58443	Standard
	Be	9	1018.4	9.8	**1.4555**	0.127	8.7	ug/L	5	Standard
	Al	27	6752275.7	1.2	**50.9873**	0.690	1.4	ug/L	385	Standard
	Sc	45	55463.0	1.4				ug/L	46031	Standard
	Ti	47	4421.3	1.2	**19.0526**	0.070	0.4	ug/L	94	Standard
	V	51	117871.0	1.6	**20.8730**	0.543	2.6	ug/L	1280	Standard
	Cr	52	147118.1	2.5	**24.0904**	0.446	1.9	ug/L	6381	Standard
	Cr	53	17822.1	0.7	**22.4033**	0.156	0.7	ug/L	1957	Standard
	Mn	55	2921235.7	1.5	**658.4436**	7.963	1.2	ug/L	667	Standard
	Co	59	110592.2	1.1	**22.8337**	0.269	1.2	ug/L	156	Standard
	Ni	60	64168.0	2.3	**44.4119**	0.506	1.1	ug/L	154	Standard
	Cu	65	55309.1	1.5	**39.2546**	0.299	0.8	ug/L	116	Standard
	Zn	66	90664.9	2.0	**110.5083**	1.255	1.1	ug/L	114	Standard
>	**Ge**	72	475634.9	1.2				ug/L	467488	Standard
	As	75	9658.7	1.7	**11.4615**	0.135	1.2	ug/L	-61	Standard
	Se	82	67.3	14.9	**0.6084**	0.108	17.8	ug/L	9	Standard
	Se-1	77	103.7	10.8	**-0.2239**	0.204	91.0	ug/L	125	Standard
>	**Ga**	71	20338.6	2.0				mg/L	50	Standard
	Rb	85	227131.8	1.9				ug/L	18	Standard
	Y	89	605173.2	1.0				ug/L	402730	Standard
>	**Rh**	103	25.0	34.6				ug/L	12	Standard
	Mo	98	1147.5	4.3	**0.6589**	0.024	3.7	ug/L	8	Standard
	Ag	107	501.3	13.8	**0.0936**	0.014	14.9	ug/L	65	Standard
	Cd	111	206.7	22.3	**0.1376**	0.033	23.6	mg/L	3	Standard
	Cd	114	447.6	13.0	**0.1145**	0.015	13.1	ug/L	15	Standard
>	**In**	115	518422.5	1.6				ug/L	526825	Standard
	Sn	118	338.3	11.1	**-0.0273**	0.009	33.1	ug/L	368	Standard
	Sb	123	117.5	29.5	**0.0224**	0.011	48.0	ug/L	46	Standard
	Ba	135	195010.3	2.0	**145.8547**	3.456	2.4	ug/L	16	Standard
	Ce	140	570484.7	2.7				ug/L	43	Standard
>	**Tb**	159	799024.1	0.4				ug/L	771780	Standard
	Ho	165	15878.3	4.2				ug/L	8	Standard
	Tl	203	1056.0	5.3	**0.1931**	0.010	5.0	ug/L	28	Standard
	Tl	205	896.7	4.3	**0.1809**	0.007	3.8	ug/L	20	Standard
	Pb	206	58493.4	0.7	**19.0830**	0.268	1.4	ug/L	184	Standard
	Pb	207	47752.5	1.1	**17.1757**	0.330	1.9	ug/L	161	Standard
	Pb	208	218797.4	1.0	**18.0921**	0.301	1.7	ug/L	746	Standard
	U	238	4034.5	2.7	**0.9151**	0.032	3.5	ug/L	6	Standard
>	**Bi**	209	418402.0	1.0				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	716.7	5.9	**0.9072**	0.067	7.4	mg/L	25	Standard
K	39	683.3	15.7	**1.9079**	0.307	16.1	mg/L	25	Standard
Ca	43	188.3	16.2	**9.2301**	2.219	24.0	mg/L	77	Standard
Fe	54	38087.5	2.0	**33.2620**	0.280	0.8	mg/L	165	Standard
Fe	57	9818.2	4.0	**32.9397**	1.433	4.3	mg/L	205	Standard
> **Sc-1**	45	55463.0	1.4				mg/L	46031	Standard
Cl	35	27952.4	2.0				ug/L	28530	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	7005.0	3.2				ug/L	1560	Standard
P	31	15362.8	3.7				ug/L	15481	Standard
S	34	2173.5	8.3				ug/L	2072	Standard
Sr	88	141.7	7.3				ug/L	70	Standard
C	12	80.0	94.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	0	Standard
Dy	164	25584.6	3.5				mg/L	13	Standard
Ho-1	165	15878.3	4.2				mg/L	8	Standard
Er	166	13599.4	3.8				mg/L	7	Standard
I	127	3335.4	7.8				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.882	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.743	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.405
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.455
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606041808
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Method 6020 - Summary Report

Sample ID: L1606053101
Sample Date/Time: Wednesday, June 15, 2016 14:10:15
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66500.7	2.8				ug/L	58443	Standard
	Be	9	1150.0	8.3	**1.6771**	0.116	6.9	ug/L	5	Standard
	Al	27	15615140.8	1.3	**120.1310**	2.748	2.3	ug/L	385	Standard
	Sc	45	61300.4	0.2				ug/L	46031	Standard
	Ti	47	10253.8	0.9	**46.0760**	0.578	1.3	ug/L	94	Standard
	V	51	193809.6	0.9	**35.4417**	0.379	1.1	ug/L	1280	Standard
	Cr	52	196291.7	2.0	**33.4630**	0.598	1.8	ug/L	6381	Standard
	Cr	53	23489.9	1.4	**31.3611**	0.228	0.7	ug/L	1957	Standard
	Mn	55	17084552.8	1.9	**3957.8112**	50.826	1.3	ug/L	667	Standard
	Co	59	142155.8	2.9	**30.1671**	0.622	2.1	ug/L	156	Standard
	Ni	60	78767.6	1.5	**56.0580**	0.560	1.0	ug/L	154	Standard
	Cu	65	60263.9	0.3	**43.9664**	0.416	0.9	ug/L	116	Standard
	Zn	66	108743.8	0.4	**136.2710**	0.550	0.4	ug/L	114	Standard
>	**Ge**	72	462862.3	0.8				ug/L	467488	Standard
	As	75	13112.5	0.8	**15.9733**	0.091	0.6	ug/L	-61	Standard
	Se	82	104.0	3.8	**1.0675**	0.037	3.4	ug/L	9	Standard
	Se-1	77	161.3	9.0	**0.8477**	0.259	30.6	ug/L	125	Standard
>	**Ga**	71	27543.4	2.1				mg/L	50	Standard
	Rb	85	282670.8	0.6				ug/L	18	Standard
	Y	89	790683.2	0.4				ug/L	402730	Standard
>	**Rh**	103	70.0	44.6				ug/L	12	Standard
	Mo	98	2290.8	2.5	**1.3624**	0.035	2.6	ug/L	8	Standard
	Ag	107	668.0	1.3	**0.1362**	0.001	1.1	ug/L	65	Standard
	Cd	111	887.6	5.5	**0.6358**	0.033	5.2	mg/L	3	Standard
	Cd	114	2122.1	1.8	**0.6147**	0.014	2.2	ug/L	15	Standard
>	**In**	115	503745.2	0.4				ug/L	526825	Standard
	Sn	118	298.3	9.2	**-0.0352**	0.007	20.9	ug/L	368	Standard
	Sb	123	92.8	16.1	**0.0155**	0.005	31.0	ug/L	46	Standard
	Ba	135	679604.4	0.8	**523.1112**	5.817	1.1	ug/L	16	Standard
	Ce	140	1672508.0	1.3				ug/L	43	Standard
>	**Tb**	159	799991.8	1.7				ug/L	771780	Standard
	Ho	165	30430.6	3.3				ug/L	8	Standard
	Tl	203	1375.7	2.1	**0.2641**	0.006	2.4	ug/L	28	Standard
	Tl	205	1261.7	6.7	**0.2675**	0.018	6.9	ug/L	20	Standard
	Pb	206	103034.8	0.7	**34.6778**	0.321	0.9	ug/L	184	Standard
	Pb	207	84579.4	1.0	**31.3890**	0.350	1.1	ug/L	161	Standard
	Pb	208	383337.0	0.2	**32.7022**	0.131	0.4	ug/L	746	Standard
	U	238	7872.0	1.0	**1.8436**	0.018	1.0	ug/L	6	Standard
>	**Bi**	209	406233.8	0.2				ug/L	429329	Standard

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Na	23	3.3	173.2	**10.0834**	17.456	173.1	mg/L	0	Standard
Mg	24	535.0	3.4	**0.5995**	0.021	3.5	mg/L	25	Standard
K	39	706.7	9.6	**1.7774**	0.181	10.2	mg/L	25	Standard
Ca	43	1741.8	7.5	**113.3699**	8.886	7.8	mg/L	77	Standard
Fe	54	56290.3	1.3	**44.5249**	0.475	1.1	mg/L	165	Standard
Fe	57	15115.9	0.5	**46.1065**	0.134	0.3	mg/L	205	Standard
> **Sc-1**	45	61300.4	0.2				mg/L	46031	Standard
Cl	35	30070.5	1.4				ug/L	28530	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	8759.2	4.8				ug/L	1560	Standard
P	31	16956.2	2.9				ug/L	15481	Standard
S	34	2418.5	4.5				ug/L	2072	Standard
Sr	88	258.3	24.5				ug/L	70	Standard
C	12	113.3	25.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	90.0	11.1				mg/L	0	Standard
Dy	164	48196.6	3.0				mg/L	13	Standard
Ho-1	165	30430.6	3.3				mg/L	8	Standard
Er	166	26947.3	1.5				mg/L	7	Standard
I	127	6041.2	0.3				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.788	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.010	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.619
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.621
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606053201
Sample Date/Time: Wednesday, June 15, 2016 14:14:15
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62212.5	1.5				ug/L	58443	Standard
	Be	9	248.3	9.1	**0.3727**	0.039	10.5	ug/L	5	Standard
	Al	27	11851064.0	3.1	**97.4040**	1.719	1.8	ug/L	385	Standard
	Sc	45	48273.5	2.8				ug/L	46031	Standard
	Ti	47	1615.1	5.7	**7.1476**	0.504	7.0	ug/L	94	Standard
	V	51	58901.8	2.5	**11.0273**	0.358	3.2	ug/L	1280	Standard
	Cr	52	51639.6	2.5	**8.3121**	0.300	3.6	ug/L	6381	Standard
	Cr	53	6192.9	2.6	**6.5090**	0.179	2.7	ug/L	1957	Standard
	Mn	55	7472888.2	1.9	**1800.9446**	49.162	2.7	ug/L	667	Standard
	Co	59	26054.7	3.9	**5.7242**	0.281	4.9	ug/L	156	Standard
	Ni	60	25425.3	2.0	**18.7386**	0.484	2.6	ug/L	154	Standard
	Cu	65	11582.4	1.7	**8.7047**	0.134	1.5	ug/L	116	Standard
	Zn	66	65841.8	1.8	**85.7274**	1.513	1.8	ug/L	114	Standard
>	**Ge**	72	444994.9	1.0				ug/L	467488	Standard
	As	75	2657.0	2.4	**3.3988**	0.059	1.7	ug/L	-61	Standard
	Se	82	215.5	1.9	**2.4998**	0.038	1.5	ug/L	9	Standard
	Se-1	77	98.0	3.1	**-0.2056**	0.073	35.4	ug/L	125	Standard
>	**Ga**	71	3277.0	3.1				mg/L	50	Standard
	Rb	85	44455.1	0.8				ug/L	18	Standard
	Y	89	517705.7	2.3				ug/L	402730	Standard
>	**Rh**	103	108.3	18.7				ug/L	12	Standard
	Mo	98	1900.2	4.2	**1.1928**	0.048	4.0	ug/L	8	Standard
	Ag	107	439.3	5.5	**0.0884**	0.007	7.6	ug/L	65	Standard
	Cd	111	666.7	1.9	**0.5030**	0.016	3.2	mg/L	3	Standard
	Cd	114	1642.5	6.1	**0.4998**	0.026	5.1	ug/L	15	Standard
>	**In**	115	476889.8	1.4				ug/L	526825	Standard
	Sn	118	283.3	2.7	**-0.0349**	0.002	6.5	ug/L	368	Standard
	Sb	123	88.2	1.4	**0.0156**	0.001	3.8	ug/L	46	Standard
	Ba	135	298760.2	1.6	**242.8966**	1.818	0.7	ug/L	16	Standard
	Ce	140	295791.1	0.6				ug/L	43	Standard
>	**Tb**	159	744198.4	1.7				ug/L	771780	Standard
	Ho	165	9429.6	2.6				ug/L	8	Standard
	Tl	203	330.3	12.9	**0.0580**	0.009	15.3	ug/L	28	Standard
	Tl	205	303.3	20.1	**0.0609**	0.014	23.6	ug/L	20	Standard
	Pb	206	27353.7	1.4	**9.9419**	0.115	1.2	ug/L	184	Standard
	Pb	207	22564.1	0.7	**9.0390**	0.050	0.6	ug/L	161	Standard
	Pb	208	100992.2	1.2	**9.3010**	0.075	0.8	ug/L	746	Standard
	U	238	3082.6	2.3	**0.7808**	0.013	1.7	ug/L	6	Standard
>	**Bi**	209	374225.3	0.8				ug/L	429329	Standard

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Na	23	21.7	35.3	**83.8232**	31.965	38.1	mg/L	0	Standard
Mg	24	255.0	2.0	**0.3474**	0.006	1.7	mg/L	25	Standard
K	39	246.7	23.5	**0.7105**	0.211	29.6	mg/L	25	Standard
Ca	43	4385.6	4.8	**373.3637**	18.356	4.9	mg/L	77	Standard
Fe	54	14425.2	4.6	**14.4074**	0.870	6.0	mg/L	165	Standard
Fe	57	5981.2	3.0	**22.8849**	0.828	3.6	mg/L	205	Standard
> **Sc-1**	45	48273.5	2.8				mg/L	46031	Standard
Cl	35	32751.4	1.3				ug/L	28530	Standard
Kr	83	3.3	105.4				ug/L	2	Standard
Br	81	40985.4	1.7				ug/L	1560	Standard
P	31	17470.1	1.9				ug/L	15481	Standard
S	34	2440.2	4.2				ug/L	2072	Standard
Sr	88	355.0	11.5				ug/L	70	Standard
C	12	140.0	37.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	14520.7	0.7				mg/L	13	Standard
Ho-1	165	9429.6	2.6				mg/L	8	Standard
Er	166	8629.1	7.4				mg/L	7	Standard
I	127	9551.3	0.5				mg/L	1227	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		106.451	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.188	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	90.521
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	87.165
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606053202
Sample Date/Time: Wednesday, June 15, 2016 14:17:26
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60175.9	1.6				ug/L	58443	Standard
	Be	9	273.3	2.8	**0.4267**	0.020	4.6	ug/L	5	Standard
	Al	27	15242479.5	0.6	**129.5549**	1.535	1.2	ug/L	385	Standard
	Sc	45	49490.8	3.3				ug/L	46031	Standard
	Ti	47	2872.3	7.2	**13.3509**	1.187	8.9	ug/L	94	Standard
	V	51	55593.9	1.9	**10.5936**	0.012	0.1	ug/L	1280	Standard
	Cr	52	64387.5	0.6	**10.8760**	0.177	1.6	ug/L	6381	Standard
	Cr	53	7458.5	1.8	**8.6439**	0.169	2.0	ug/L	1957	Standard
	Mn	55	6794420.6	2.0	**1668.3231**	29.371	1.8	ug/L	667	Standard
	Co	59	38705.7	2.8	**8.6810**	0.201	2.3	ug/L	156	Standard
	Ni	60	32203.5	0.7	**24.2223**	0.311	1.3	ug/L	154	Standard
	Cu	65	15836.6	0.8	**12.1706**	0.157	1.3	ug/L	116	Standard
	Zn	66	37864.9	1.5	**50.1357**	0.956	1.9	ug/L	114	Standard
>	**Ge**	72	436720.0	2.0				ug/L	467488	Standard
	As	75	5525.4	0.7	**7.1578**	0.110	1.5	ug/L	-61	Standard
	Se	82	66.1	11.5	**0.6643**	0.106	16.0	ug/L	9	Standard
	Se-1	77	108.0	7.6	**0.0172**	0.170	985.7	ug/L	125	Standard
>	**Ga**	71	5547.7	1.3				mg/L	50	Standard
	Rb	85	72285.4	1.5				ug/L	18	Standard
	Y	89	525601.2	0.6				ug/L	402730	Standard
>	**Rh**	103	110.0	7.9				ug/L	12	Standard
	Mo	98	4255.4	1.8	**2.7007**	0.024	0.9	ug/L	8	Standard
	Ag	107	364.0	4.3	**0.0704**	0.003	4.8	ug/L	65	Standard
	Cd	111	492.0	10.3	**0.3716**	0.036	9.6	mg/L	3	Standard
	Cd	114	1232.7	2.9	**0.3745**	0.009	2.4	ug/L	15	Standard
>	**In**	115	473401.1	1.0				ug/L	526825	Standard
	Sn	118	336.7	10.7	**-0.0197**	0.009	48.0	ug/L	368	Standard
	Sb	123	103.7	10.7	**0.0212**	0.003	16.5	ug/L	46	Standard
	Ba	135	274505.1	1.0	**224.8244**	1.818	0.8	ug/L	16	Standard
	Ce	140	315463.0	2.3				ug/L	43	Standard
>	**Tb**	159	740242.4	0.9				ug/L	771780	Standard
	Ho	165	9714.8	1.6				ug/L	8	Standard
	Tl	203	555.7	3.7	**0.1075**	0.005	4.7	ug/L	28	Standard
	Tl	205	483.3	21.2	**0.1042**	0.025	24.1	ug/L	20	Standard
	Pb	206	30263.2	1.2	**10.9919**	0.101	0.9	ug/L	184	Standard
	Pb	207	24465.7	0.8	**9.7937**	0.130	1.3	ug/L	161	Standard
	Pb	208	110227.5	0.8	**10.1443**	0.086	0.8	ug/L	746	Standard
	U	238	7840.4	0.6	**1.9910**	0.023	1.2	ug/L	6	Standard
>	**Bi**	209	374739.3	0.6				ug/L	429329	Standard

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Na	23	26.7	60.3	**101.3156**	64.622	63.8	mg/L	0	Standard
Mg	24	250.0	10.6	**0.3300**	0.031	9.4	mg/L	25	Standard
K	39	375.0	15.1	**1.1215**	0.205	18.3	mg/L	25	Standard
Ca	43	4002.2	2.0	**331.8246**	7.286	2.2	mg/L	77	Standard
Fe	54	14933.8	4.4	**14.5536**	0.915	6.3	mg/L	165	Standard
Fe	57	5961.2	2.5	**22.2272**	0.316	1.4	mg/L	205	Standard
Sc-1	45	49490.8	3.3				mg/L	46031	Standard
Cl	35	32627.1	2.7				ug/L	28530	Standard
Kr	83	2.3	99.0				ug/L	2	Standard
Br	81	2473.5	6.0				ug/L	1560	Standard
P	31	17283.2	0.8				ug/L	15481	Standard
S	34	2568.6	2.6				ug/L	2072	Standard
Sr	88	371.7	7.9				ug/L	70	Standard
C	12	120.0	25.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	15700.4	3.6				mg/L	13	Standard
Ho-1	165	9714.8	1.6				mg/L	8	Standard
Er	166	8729.2	2.9				mg/L	7	Standard
I	127	10663.8	3.0				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.966	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.418	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	89.859
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	87.285
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606053202
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Method 6020 - Summary Report

Sample ID: L1606053203
Sample Date/Time: Wednesday, June 15, 2016 14:20:37
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58113.0	4.0				ug/L	58443	Standard
	Be	9	208.3	14.1	**0.3323**	0.046	14.0	ug/L	5	Standard
	Al	27	10122760.3	3.0	**89.2411**	6.096	6.8	ug/L	385	Standard
	Sc	45	50039.2	3.0				ug/L	46031	Standard
	Ti	47	2190.8	3.3	**10.1484**	0.268	2.6	ug/L	94	Standard
	V	51	48910.6	2.9	**9.3705**	0.273	2.9	ug/L	1280	Standard
	Cr	52	62114.2	3.8	**10.5464**	0.356	3.4	ug/L	6381	Standard
	Cr	53	7436.8	1.6	**8.7101**	0.325	3.7	ug/L	1957	Standard
	Mn	55	5217651.6	3.8	**1291.8536**	43.119	3.3	ug/L	667	Standard
	Co	59	29025.8	5.4	**6.5555**	0.320	4.9	ug/L	156	Standard
	Ni	60	28380.9	5.2	**21.5079**	1.003	4.7	ug/L	154	Standard
	Cu	65	20447.5	3.7	**15.8771**	0.543	3.4	ug/L	116	Standard
	Zn	66	37242.4	3.0	**49.7220**	1.402	2.8	ug/L	114	Standard
>	**Ge**	72	433027.4	1.3				ug/L	467488	Standard
	As	75	3361.2	3.5	**4.4060**	0.130	2.9	ug/L	-61	Standard
	Se	82	61.3	10.7	**0.6105**	0.091	14.9	ug/L	9	Standard
	Se-1	77	109.0	10.8	**0.0511**	0.202	395.2	ug/L	125	Standard
>	**Ga**	71	3957.2	3.8				mg/L	50	Standard
	Rb	85	55033.2	4.5				ug/L	18	Standard
	Y	89	517677.4	1.0				ug/L	402730	Standard
>	**Rh**	103	106.7	28.3				ug/L	12	Standard
	Mo	98	1917.5	5.8	**1.2290**	0.076	6.2	ug/L	8	Standard
	Ag	107	524.0	6.4	**0.1121**	0.009	8.0	ug/L	65	Standard
	Cd	111	759.1	5.2	**0.5858**	0.033	5.6	mg/L	3	Standard
	Cd	114	1856.9	5.2	**0.5792**	0.034	5.8	ug/L	15	Standard
>	**In**	115	467204.3	0.5				ug/L	526825	Standard
	Sn	118	370.0	8.2	**-0.0090**	0.009	100.4	ug/L	368	Standard
	Sb	123	84.1	18.0	**0.0148**	0.005	37.1	ug/L	46	Standard
	Ba	135	1678043.5	2.8	**1392.7876**	44.681	3.2	ug/L	16	Standard
	Ce	140	289378.8	2.9				ug/L	43	Standard
>	**Tb**	159	740142.8	1.6				ug/L	771780	Standard
	Ho	165	8971.0	2.3				ug/L	8	Standard
	Tl	203	330.0	3.4	**0.0590**	0.003	4.5	ug/L	28	Standard
	Tl	205	283.3	16.4	**0.0571**	0.011	19.1	ug/L	20	Standard
	Pb	206	26350.9	2.5	**9.7146**	0.294	3.0	ug/L	184	Standard
	Pb	207	21546.6	2.4	**8.7540**	0.256	2.9	ug/L	161	Standard
	Pb	208	96947.7	3.3	**9.0564**	0.351	3.9	ug/L	746	Standard
	U	238	5540.0	3.4	**1.4278**	0.059	4.1	ug/L	6	Standard
>	**Bi**	209	368923.9	0.7				ug/L	429329	Standard

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Na	23	21.7	58.1	**81.3239**	49.541	60.9	mg/L	0	Standard
Mg	24	226.7	10.4	**0.2930**	0.043	14.8	mg/L	25	Standard
K	39	310.0	15.4	**0.8928**	0.189	21.2	mg/L	25	Standard
Ca	43	4484.0	5.9	**368.6824**	31.853	8.6	mg/L	77	Standard
Fe	54	10612.2	3.2	**10.1777**	0.176	1.7	mg/L	165	Standard
Fe	57	5210.9	1.4	**19.1400**	0.329	1.7	mg/L	205	Standard
Sc-1	45	50039.2	3.0				mg/L	46031	Standard
Cl	35	32055.9	2.2				ug/L	28530	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	2020.1	6.9				ug/L	1560	Standard
P	31	17026.2	5.8				ug/L	15481	Standard
S	34	2385.2	4.5				ug/L	2072	Standard
Sr	88	401.7	9.2				ug/L	70	Standard
C	12	140.0	37.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	14180.2	1.3				mg/L	13	Standard
Ho-1	165	8971.0	2.3				mg/L	8	Standard
Er	166	8075.5	4.2				mg/L	7	Standard
I	127	8130.5	6.2				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		99.436	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		92.629	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	88.683
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	85.930
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606053204
Sample Date/Time: Wednesday, June 15, 2016 14:23:48
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57383.5	1.9				ug/L	58443	Standard
	Be	9	266.7	7.1	**0.4368**	0.031	7.2	ug/L	5	Standard
	Al	27	9417672.4	0.7	**83.9447**	1.310	1.6	ug/L	385	Standard
	Sc	45	50591.1	4.3				ug/L	46031	Standard
	Ti	47	3106.0	4.2	**14.3279**	0.880	6.1	ug/L	94	Standard
	V	51	48624.1	1.7	**9.1440**	0.333	3.6	ug/L	1280	Standard
	Cr	52	68682.7	1.8	**11.5552**	0.385	3.3	ug/L	6381	Standard
	Cr	53	8177.2	3.3	**9.6375**	0.641	6.7	ug/L	1957	Standard
	Mn	55	5169814.0	2.2	**1257.3460**	46.117	3.7	ug/L	667	Standard
	Co	59	38740.8	2.9	**8.6069**	0.362	4.2	ug/L	156	Standard
	Ni	60	34109.7	2.3	**25.4146**	0.828	3.3	ug/L	154	Standard
	Cu	65	28816.0	1.8	**22.0195**	0.785	3.6	ug/L	116	Standard
	Zn	66	40011.1	0.6	**52.4782**	1.314	2.5	ug/L	114	Standard
>	**Ge**	72	441038.4	1.9				ug/L	467488	Standard
	As	75	3054.9	0.6	**3.9377**	0.096	2.4	ug/L	-61	Standard
	Se	82	65.7	11.0	**0.6510**	0.092	14.2	ug/L	9	Standard
	Se-1	77	104.3	8.2	**-0.0707**	0.174	245.6	ug/L	125	Standard
>	**Ga**	71	5741.1	2.7				mg/L	50	Standard
	Rb	85	87325.9	1.1				ug/L	18	Standard
	Y	89	523613.7	2.3				ug/L	402730	Standard
>	**Rh**	103	108.3	7.1				ug/L	12	Standard
	Mo	98	1940.0	2.7	**1.2203**	0.041	3.4	ug/L	8	Standard
	Ag	107	343.7	1.8	**0.0648**	0.002	2.6	ug/L	65	Standard
	Cd	111	473.9	3.0	**0.3557**	0.010	2.8	mg/L	3	Standard
	Cd	114	1178.3	6.1	**0.3552**	0.021	5.8	ug/L	15	Standard
>	**In**	115	476028.9	0.7				ug/L	526825	Standard
	Sn	118	313.3	9.8	**-0.0266**	0.009	32.1	ug/L	368	Standard
	Sb	123	114.7	4.5	**0.0248**	0.002	6.8	ug/L	46	Standard
	Ba	135	738377.3	1.1	**601.4548**	8.510	1.4	ug/L	16	Standard
	Ce	140	346615.0	0.6				ug/L	43	Standard
>	**Tb**	159	743264.3	0.4				ug/L	771780	Standard
	Ho	165	10158.4	2.6				ug/L	8	Standard
	Tl	203	431.7	10.1	**0.0797**	0.010	12.6	ug/L	28	Standard
	Tl	205	355.0	8.6	**0.0728**	0.007	9.7	ug/L	20	Standard
	Pb	206	22622.5	1.5	**8.1511**	0.166	2.0	ug/L	184	Standard
	Pb	207	18713.9	1.6	**7.4306**	0.148	2.0	ug/L	161	Standard
	Pb	208	84573.8	1.4	**7.7216**	0.145	1.9	ug/L	746	Standard
	U	238	3144.3	2.5	**0.7909**	0.024	3.1	ug/L	6	Standard
>	**Bi**	209	376923.9	0.6				ug/L	429329	Standard

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Na	23	25.0	40.0	**91.8384**	36.178	39.4	mg/L	0	Standard
Mg	24	310.0	8.4	**0.4103**	0.050	12.2	mg/L	25	Standard
K	39	420.0	6.0	**1.2418**	0.099	8.0	mg/L	25	Standard
Ca	43	3627.1	1.9	**293.7487**	8.445	2.9	mg/L	77	Standard
Fe	54	13505.2	5.0	**12.8816**	1.240	9.6	mg/L	165	Standard
Fe	57	5262.6	2.1	**19.1367**	0.957	5.0	mg/L	205	Standard
Sc-1	45	50591.1	4.3				mg/L	46031	Standard
Cl	35	31888.9	2.7				ug/L	28530	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	1933.5	4.0				ug/L	1560	Standard
P	31	17406.7	2.4				ug/L	15481	Standard
S	34	2663.6	4.2				ug/L	2072	Standard
Sr	88	373.3	20.1				ug/L	70	Standard
C	12	116.7	40.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	16348.0	2.2				mg/L	13	Standard
Ho-1	165	10158.4	2.6				mg/L	8	Standard
Er	166	9002.7	3.7				mg/L	7	Standard
I	127	7376.8	5.8				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.188	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.342	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	90.358
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	87.794
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 15, 2016 14:27:02
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	55605.2	0.4				ug/L	58443	Standard
	Be	9	29609.0	5.3	**52.2405**	2.680	5.1	ug/L	5	Standard
	Al	27	5798926.1	3.2	**53.3263**	1.582	3.0	ug/L	385	Standard
	Sc	45	48412.2	1.9				ug/L	46031	Standard
	Ti	47	24336.9	3.4	**112.1165**	3.510	3.1	ug/L	94	Standard
	V	51	284028.5	4.9	**53.0517**	2.486	4.7	ug/L	1280	Standard
	Cr	52	307694.4	3.0	**54.1480**	1.509	2.8	ug/L	6381	Standard
	Cr	53	37701.9	1.7	**53.1253**	0.794	1.5	ug/L	1957	Standard
	Mn	55	236844.9	3.8	**55.7196**	1.987	3.6	ug/L	667	Standard
	Co	59	234044.4	3.7	**50.6404**	1.734	3.4	ug/L	156	Standard
	Ni	60	74487.8	3.3	**54.0152**	1.655	3.1	ug/L	154	Standard
	Cu	65	71892.2	2.3	**53.4672**	1.100	2.1	ug/L	116	Standard
	Zn	66	41041.2	3.9	**52.2472**	1.919	3.7	ug/L	114	Standard
>	Ge	72	454210.3	0.3				ug/L	467488	Standard
	As	75	41590.3	3.5	**51.5343**	1.685	3.3	ug/L	-61	Standard
	Se	82	4195.6	1.7	**50.7706**	0.721	1.4	ug/L	9	Standard
	Se-1	77	2847.3	4.8	**49.4516**	2.391	4.8	ug/L	125	Standard
>	Ga	71	73.3	15.7				mg/L	50	Standard
	Rb	85	696.7	7.1				ug/L	18	Standard
	Y	89	403813.9	0.6				ug/L	402730	Standard
>	Rh	103	20.0	86.6				ug/L	12	Standard
	Mo	98	169384.9	3.2	**101.8738**	1.747	1.7	ug/L	8	Standard
	Ag	107	222886.5	2.6	**52.5554**	0.592	1.1	ug/L	65	Standard
	Cd	111	71212.3	3.0	**51.9394**	0.931	1.8	mg/L	3	Standard
	Cd	114	176395.5	6.3	**52.5373**	2.617	5.0	ug/L	15	Standard
>	In	115	500946.8	1.5				ug/L	526825	Standard
	Sn	118	199084.6	1.5	**51.8896**	0.602	1.2	ug/L	368	Standard
	Sb	123	157078.5	3.4	**51.7930**	0.999	1.9	ug/L	46	Standard
	Ba	135	68070.6	2.1	**52.6655**	0.645	1.2	ug/L	16	Standard
	Ce	140	143.3	46.8				ug/L	43	Standard
>	Tb	159	744062.2	0.5				ug/L	771780	Standard
	Ho	165	6.7	86.6				ug/L	8	Standard
	Tl	203	251542.0	3.0	**51.8671**	2.288	4.4	ug/L	28	Standard
	Tl	205	223420.5	1.8	**50.3805**	1.657	3.3	ug/L	20	Standard
	Pb	206	153283.2	2.9	**52.5632**	2.130	4.1	ug/L	184	Standard
	Pb	207	138476.8	2.4	**52.3725**	1.971	3.8	ug/L	161	Standard
	Pb	208	600834.5	2.0	**52.2302**	1.831	3.5	ug/L	746	Standard
	U	238	216645.8	2.4	**51.7956**	1.990	3.8	ug/L	6	Standard
>	Bi	209	399130.9	1.5				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3252.0	5.6	**4.8811**	0.317	6.5	mg/L	25	Standard
K	39	1450.1	6.6	**4.8516**	0.403	8.3	mg/L	25	Standard
Ca	43	91.7	26.9	**2.9927**	2.178	72.8	mg/L	77	Standard
Fe	54	5107.5	2.3	**4.9933**	0.080	1.6	mg/L	165	Standard
Fe	57	1370.1	10.4	**4.7694**	0.481	10.1	mg/L	205	Standard
> **Sc-1**	45	48412.2	1.9				mg/L	46031	Standard
Cl	35	31723.2	2.2				ug/L	28530	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	1473.4	19.4				ug/L	1560	Standard
P	31	18795.0	0.8				ug/L	15481	Standard
S	34	2708.6	2.6				ug/L	2072	Standard
Sr	88	66.7	31.2				ug/L	70	Standard
C	12	53.3	47.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.7	108.3				mg/L	13	Standard
Ho-1	165	6.7	86.6				mg/L	8	Standard
Er	166	6.7	173.2				mg/L	7	Standard
I	127	1025.0	10.4				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	104.481		
Al	27	106.653		
Sc	45			
Ti	47	112.116		
V	51	106.103		
Cr	52	108.296		
Cr	53			
Mn	55	111.439		
Co	59	101.281		
Ni	60	108.030		
Cu	65	106.934		
Zn	66	104.494		
> Ge	72		97.160	
As	75	103.069		
Se	82	101.541		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.874		
Ag	107	105.111		
Cd	111	103.879		
Cd	114			
In	115		95.088	
Sn	118	103.779		
Sb	123	103.586		
Ba	135	105.331		
Ce	140			
Tb	159			
Ho	165			
Tl	203	103.734		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.460		
U	238	103.591		
Bi	209		92.966	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Ti	47	
QC Std 6	Mn	55	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 15, 2016 14:30:13
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56073.6	1.1				ug/L	58443	Standard
	Be	9	16.7	75.5	**0.0099**	0.022	225.3	ug/L	5	Standard
	Al	27	3030.4	55.2	**0.0197**	0.015	78.8	ug/L	385	Standard
	Sc	45	48979.0	0.9				ug/L	46031	Standard
	Ti	47	48.0	19.9	**-0.2639**	0.040	15.2	ug/L	94	Standard
	V	51	1173.8	4.1	**-0.0421**	0.007	16.1	ug/L	1280	Standard
	Cr	52	6112.9	1.7	**-0.0773**	0.021	27.5	ug/L	6381	Standard
	Cr	53	655.0	4.3	**-1.9178**	0.032	1.7	ug/L	1957	Standard
	Mn	55	1735.4	41.3	**0.2090**	0.160	76.7	ug/L	667	Standard
	Co	59	202.0	12.0	**0.0070**	0.005	64.9	ug/L	156	Standard
	Ni	60	74.0	23.8	**-0.0754**	0.012	16.5	ug/L	154	Standard
	Cu	65	122.7	9.4	**-0.0151**	0.008	50.5	ug/L	116	Standard
	Zn	66	114.3	17.4	**-0.1124**	0.023	20.2	ug/L	114	Standard
>	**Ge**	72	458950.8	1.6				ug/L	467488	Standard
	As	75	-43.8	44.5	**-0.0128**	0.025	192.4	ug/L	-61	Standard
	Se	82	12.4	26.2	**-0.0219**	0.040	181.2	ug/L	9	Standard
	Se-1	77	58.3	7.9	**-0.9713**	0.070	7.2	ug/L	125	Standard
>	**Ga**	71	68.3	23.5				mg/L	50	Standard
	Rb	85	46.7	24.7				ug/L	18	Standard
	Y	89	394684.6	0.5				ug/L	402730	Standard
>	**Rh**	103	6.7	43.3				ug/L	12	Standard
	Mo	98	138.7	17.6	**0.0747**	0.015	19.6	ug/L	8	Standard
	Ag	107	110.3	6.9	**0.0053**	0.002	33.2	ug/L	65	Standard
	Cd	111	14.1	17.7	**0.0021**	0.002	86.8	mg/L	3	Standard
	Cd	114	24.7	61.1	**-0.0070**	0.004	64.0	ug/L	15	Standard
>	**In**	115	505060.6	0.1				ug/L	526825	Standard
	Sn	118	631.7	33.2	**0.0510**	0.054	106.9	ug/L	368	Standard
	Sb	123	329.6	32.5	**0.0929**	0.035	37.7	ug/L	46	Standard
	Ba	135	190.3	47.6	**0.1231**	0.070	56.7	ug/L	16	Standard
	Ce	140	90.0	40.1				ug/L	43	Standard
>	**Tb**	159	752617.8	1.3				ug/L	771780	Standard
	Ho	165	6.7	43.3				ug/L	8	Standard
	Tl	203	53.7	32.1	**-0.0037**	0.004	94.7	ug/L	28	Standard
	Tl	205	58.3	13.1	**0.0009**	0.002	198.5	ug/L	20	Standard
	Pb	206	208.3	2.9	**-0.0026**	0.002	83.0	ug/L	184	Standard
	Pb	207	191.0	2.6	**-0.0015**	0.002	147.0	ug/L	161	Standard
	Pb	208	841.3	3.9	**-0.0004**	0.003	834.6	ug/L	746	Standard
	U	238	42.0	44.5	**0.0048**	0.004	91.5	ug/L	6	Standard
>	**Bi**	209	408466.8	0.7				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	28.3	27.0	**0.0029**	0.012	393.6	mg/L	25	Standard
K	39	46.7	6.2	**0.0157**	0.009	54.7	mg/L	25	Standard
Ca	43	40.0	45.1	**-1.4951**	1.547	103.5	mg/L	77	Standard
Fe	54	134.3	6.5	**-0.0049**	0.008	156.5	mg/L	165	Standard
Fe	57	130.0	10.2	**-0.0828**	0.047	56.4	mg/L	205	Standard
> **Sc-1**	45	48979.0	0.9				mg/L	46031	Standard
Cl	35	32103.3	1.2				ug/L	28530	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1463.4	5.5				ug/L	1560	Standard
P	31	19627.7	0.9				ug/L	15481	Standard
S	34	2701.9	0.8				ug/L	2072	Standard
Sr	88	63.3	40.5				ug/L	70	Standard
C	12	53.3	60.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.9	38.5				mg/L	13	Standard
Ho-1	165	6.7	43.3				mg/L	8	Standard
Er	166	10.0	173.2				mg/L	7	Standard
I	127	943.4	8.6				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.174	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.869
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.141
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 16, 2016

Method 6020 - Summary Report

Sample ID: L1606051901
Sample Date/Time: Wednesday, June 15, 2016 14:33:26
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61419.2	1.3				ug/L	58443	Standard
	Be	9	10.0		**-0.0034**	0.000	6.0	ug/L	5	Standard
	Al	27	12353213.0	1.9	**102.8823**	3.131	3.0	ug/L	385	Standard
	Sc	45	49836.8	1.0				ug/L	46031	Standard
	Ti	47	1465.4	13.7	**6.1687**	0.913	14.8	ug/L	94	Standard
	V	51	3358.4	6.3	**0.3583**	0.038	10.6	ug/L	1280	Standard
	Cr	52	10234.1	2.0	**0.6397**	0.026	4.1	ug/L	6381	Standard
	Cr	53	2500.2	15.1	**0.7612**	0.533	70.0	ug/L	1957	Standard
	Mn	55	48120.0	2.9	**10.9505**	0.333	3.0	ug/L	667	Standard
	Co	59	1288.1	2.5	**0.2374**	0.007	3.1	ug/L	156	Standard
	Ni	60	2214.2	2.4	**1.4505**	0.046	3.2	ug/L	154	Standard
	Cu	65	55279.7	1.2	**40.3076**	0.495	1.2	ug/L	116	Standard
	Zn	66	23289.2	0.6	**28.9736**	0.219	0.8	ug/L	114	Standard
>	**Ge**	72	463000.9	0.5				ug/L	467488	Standard
	As	75	198.8	26.0	**0.2824**	0.062	21.9	ug/L	-61	Standard
	Se	82	101.4	8.2	**1.0370**	0.096	9.3	ug/L	9	Standard
	Se-1	77	213.3	8.8	**1.7681**	0.319	18.0	ug/L	125	Standard
>	**Ga**	71	180.0	21.0				mg/L	50	Standard
	Rb	85	48755.1	4.1				ug/L	18	Standard
	Y	89	408705.7	0.4				ug/L	402730	Standard
>	**Rh**	103	28.3	10.2				ug/L	12	Standard
	Mo	98	546.3	7.0	**0.3148**	0.026	8.3	ug/L	8	Standard
	Ag	107	142.3	3.2	**0.0125**	0.001	6.1	ug/L	65	Standard
	Cd	111	25.6	18.4	**0.0102**	0.003	29.0	mg/L	3	Standard
	Cd	114	70.2	66.4	**0.0061**	0.013	215.8	ug/L	15	Standard
>	**In**	115	510325.1	2.1				ug/L	526825	Standard
	Sn	118	1360.1	9.8	**0.2359**	0.031	13.2	ug/L	368	Standard
	Sb	123	261.3	13.4	**0.0697**	0.012	16.8	ug/L	46	Standard
	Ba	135	16991.2	3.6	**12.8932**	0.617	4.8	ug/L	16	Standard
	Ce	140	1108.4	87.3				ug/L	43	Standard
>	**Tb**	159	767793.7	1.8				ug/L	771780	Standard
	Ho	165	23.3	24.7				ug/L	8	Standard
	Tl	203	80.3	25.0	**0.0017**	0.004	240.2	ug/L	28	Standard
	Tl	205	56.7	20.4	**0.0006**	0.003	474.2	ug/L	20	Standard
	Pb	206	1297.7	1.7	**0.3646**	0.010	2.8	ug/L	184	Standard
	Pb	207	1029.7	4.9	**0.3104**	0.021	6.8	ug/L	161	Standard
	Pb	208	4732.0	5.1	**0.3321**	0.021	6.4	ug/L	746	Standard
	U	238	961.0	3.6	**0.2204**	0.010	4.6	ug/L	6	Standard
>	**Bi**	209	406831.8	0.9				ug/L	429329	Standard

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Na	23	3.3	86.6	**12.3499**	10.691	86.6	mg/L	0	Standard
Mg	24	25060.7	2.1	**36.7846**	1.115	3.0	mg/L	25	Standard
K	39	2076.8	4.0	**6.8008**	0.309	4.5	mg/L	25	Standard
Ca	43	321.7	9.9	**21.9826**	2.849	13.0	mg/L	77	Standard
Fe	54	262.2	11.3	**0.1178**	0.031	26.2	mg/L	165	Standard
Fe	57	323.3	11.2	**0.6428**	0.128	19.9	mg/L	205	Standard
Sc-1	45	49836.8	1.0				mg/L	46031	Standard
Cl	35	34587.5	3.4				ug/L	28530	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	14190.0	4.9				ug/L	1560	Standard
P	31	19370.7	4.8				ug/L	15481	Standard
S	34	2470.2	7.2				ug/L	2072	Standard
Sr	88	145.0	3.4				ug/L	70	Standard
C	12	150.0	24.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	15.7				mg/L	0	Standard
Dy	164	38.4	50.3				mg/L	13	Standard
Ho-1	165	23.3	24.7				mg/L	8	Standard
Er	166	33.3	75.5				mg/L	7	Standard
I	127	16959.5	5.4				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		105.093	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.040	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.868
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.760
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Approved: June 16, 2016

Method 6020 - Summary Report

Sample ID: L1606048101
Sample Date/Time: Wednesday, June 15, 2016 14:36:37
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62179.0	1.1				ug/L	58443	Standard
	Be	9	25.0	40.0	**0.0201**	0.016	78.9	ug/L	5	Standard
	Al	27	6158750.4	1.9	**50.6514**	0.957	1.9	ug/L	385	Standard
	Sc	45	49739.9	1.7				ug/L	46031	Standard
	Ti	47	750.0	1.0	**2.9435**	0.040	1.4	ug/L	94	Standard
	V	51	4057.5	9.3	**0.4923**	0.075	15.3	ug/L	1280	Standard
	Cr	52	9284.2	2.7	**0.4833**	0.057	11.9	ug/L	6381	Standard
	Cr	53	2001.8	2.2	**0.0558**	0.070	126.3	ug/L	1957	Standard
	Mn	55	818659.9	1.0	**190.6722**	3.250	1.7	ug/L	667	Standard
	Co	59	1626.4	8.8	**0.3116**	0.033	10.6	ug/L	156	Standard
	Ni	60	1431.1	2.2	**0.8988**	0.030	3.3	ug/L	154	Standard
	Cu	65	853.4	6.5	**0.5226**	0.044	8.5	ug/L	116	Standard
	Zn	66	2471.5	3.1	**2.8659**	0.118	4.1	ug/L	114	Standard
>	**Ge**	72	459992.7	0.7				ug/L	467488	Standard
	As	75	553.1	5.1	**0.7173**	0.035	4.9	ug/L	-61	Standard
	Se	82	142.8	2.5	**1.5414**	0.050	3.2	ug/L	9	Standard
	Se-1	77	130.3	7.3	**0.3130**	0.186	59.5	ug/L	125	Standard
>	**Ga**	71	356.7	15.4				mg/L	50	Standard
	Rb	85	5826.1	6.1				ug/L	18	Standard
	Y	89	408233.4	0.9				ug/L	402730	Standard
>	**Rh**	103	28.3	50.9				ug/L	12	Standard
	Mo	98	457.5	7.4	**0.2619**	0.020	7.7	ug/L	8	Standard
	Ag	107	178.7	68.6	**0.0208**	0.028	136.3	ug/L	65	Standard
	Cd	111	27.8	4.3	**0.0118**	0.001	6.9	mg/L	3	Standard
	Cd	114	58.7	25.8	**0.0029**	0.004	154.5	ug/L	15	Standard
>	**In**	115	510784.2	0.1				ug/L	526825	Standard
	Sn	118	670.0	2.0	**0.0589**	0.004	6.0	ug/L	368	Standard
	Sb	123	199.0	33.4	**0.0494**	0.022	43.6	ug/L	46	Standard
	Ba	135	42499.5	1.8	**32.2403**	0.615	1.9	ug/L	16	Standard
	Ce	140	8782.5	2.9				ug/L	43	Standard
>	**Tb**	159	770095.1	1.0				ug/L	771780	Standard
	Ho	165	141.7	13.4				ug/L	8	Standard
	Tl	203	198.0	40.1	**0.0248**	0.015	62.5	ug/L	28	Standard
	Tl	205	165.0	24.1	**0.0239**	0.008	35.0	ug/L	20	Standard
	Pb	206	1037.4	22.2	**0.2709**	0.074	27.2	ug/L	184	Standard
	Pb	207	850.7	20.3	**0.2385**	0.061	25.5	ug/L	161	Standard
	Pb	208	3501.2	8.1	**0.2221**	0.022	9.9	ug/L	746	Standard
	U	238	1097.0	3.5	**0.2481**	0.008	3.4	ug/L	6	Standard
>	**Bi**	209	413447.6	0.7				ug/L	429329	Standard

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Na	23	3.3	173.2	**12.4250**	21.512	173.1	mg/L	0	Standard
Mg	24	4118.9	1.1	**6.0252**	0.155	2.6	mg/L	25	Standard
K	39	243.3	4.3	**0.6723**	0.040	5.9	mg/L	25	Standard
Ca	43	331.7	16.3	**22.8131**	4.097	18.0	mg/L	77	Standard
Fe	54	535.9	7.9	**0.3861**	0.046	11.8	mg/L	165	Standard
Fe	57	391.7	7.3	**0.9066**	0.120	13.2	mg/L	205	Standard
Sc-1	45	49739.9	1.7				mg/L	46031	Standard
Cl	35	34448.5	2.2				ug/L	28530	Standard
Kr	83	3.7	56.8				ug/L	2	Standard
Br	81	30727.8	1.0				ug/L	1560	Standard
P	31	19966.5	3.4				ug/L	15481	Standard
S	34	2421.9	5.3				ug/L	2072	Standard
Sr	88	161.7	12.9				ug/L	70	Standard
C	12	50.0	72.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	213.0	27.7				mg/L	13	Standard
Ho-1	165	141.7	13.4				mg/L	8	Standard
Er	166	146.7	49.3				mg/L	7	Standard
I	127	4649.0	2.8				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.393	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.397	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.955
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.301
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: June 16, 2016

Method 6020 - Summary Report

Sample ID: L1606048102
Sample Date/Time: Wednesday, June 15, 2016 14:39:49
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	143999.9	3.5				ug/L	58443	Standard
	Be	9	50.0	34.6	**0.0145**	0.010	71.9	ug/L	5	Standard
	Al	27	31972791.5	1.4	**113.6035**	2.343	2.1	ug/L	385	Standard
	Sc	45	46461.1	1.6				ug/L	46031	Standard
	Ti	47	1928.1	3.4	**9.0972**	0.317	3.5	ug/L	94	Standard
	V	51	9219.4	6.4	**1.5983**	0.119	7.4	ug/L	1280	Standard
	Cr	52	12735.7	1.4	**1.2937**	0.039	3.0	ug/L	6381	Standard
	Cr	53	16245.4	3.4	**23.0345**	0.812	3.5	ug/L	1957	Standard
	Mn	55	1940591.8	1.3	**491.8401**	7.521	1.5	ug/L	667	Standard
	Co	59	9357.2	1.3	**2.1397**	0.033	1.6	ug/L	156	Standard
	Ni	60	10290.2	2.1	**7.9046**	0.180	2.3	ug/L	154	Standard
	Cu	65	6456.4	2.4	**5.0615**	0.126	2.5	ug/L	116	Standard
	Zn	66	7124.0	1.6	**9.5312**	0.171	1.8	ug/L	114	Standard
>	**Ge**	72	422952.1	0.3				ug/L	467488	Standard
	As	75	7476.8	4.1	**9.9834**	0.430	4.3	ug/L	-61	Standard
	Se	82	2924.5	2.4	**37.9637**	0.989	2.6	ug/L	9	Standard
	Se-1	77	2481.9	2.4	**46.1634**	1.040	2.3	ug/L	125	Standard
>	**Ga**	71	785.0	2.3				mg/L	50	Standard
	Rb	85	78017.0	0.8				ug/L	18	Standard
	Y	89	388145.4	2.3				ug/L	402730	Standard
>	**Rh**	103	4307.3	4.5				ug/L	12	Standard
	Mo	98	8501.8	2.2	**5.5451**	0.141	2.6	ug/L	8	Standard
	Ag	107	277.0	7.5	**0.0505**	0.006	12.5	ug/L	65	Standard
	Cd	111	205.7	8.5	**0.1548**	0.014	8.7	mg/L	3	Standard
	Cd	114	467.5	6.0	**0.1369**	0.007	5.4	ug/L	15	Standard
>	**In**	115	461437.9	1.6				ug/L	526825	Standard
	Sn	118	901.7	3.2	**0.1429**	0.004	3.0	ug/L	368	Standard
	Sb	123	1130.0	1.6	**0.3897**	0.004	0.9	ug/L	46	Standard
	Ba	135	1971028.8	0.4	**1656.5108**	24.739	1.5	ug/L	16	Standard
	Ce	140	40930.2	2.3				ug/L	43	Standard
>	**Tb**	159	724305.8	0.9				ug/L	771780	Standard
	Ho	165	1155.0	1.7				ug/L	8	Standard
	Tl	203	591.7	4.8	**0.1223**	0.007	6.0	ug/L	28	Standard
	Tl	205	555.0	4.1	**0.1284**	0.006	5.0	ug/L	20	Standard
	Pb	206	2747.6	3.1	**0.9857**	0.039	3.9	ug/L	184	Standard
	Pb	207	2268.5	3.8	**0.8913**	0.034	3.9	ug/L	161	Standard
	Pb	208	9439.8	1.7	**0.8497**	0.021	2.5	ug/L	746	Standard
	U	238	3302.7	0.4	**0.8806**	0.007	0.7	ug/L	6	Standard
>	**Bi**	209	355775.6	0.5				ug/L	429329	Standard

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Na	23	11.7	65.5	**46.6267**	30.360	65.1	mg/L	0	Standard
Mg	24	225807.4	2.2	**355.8056**	5.617	1.6	mg/L	25	Standard
K	39	2728.6	3.7	**9.6465**	0.515	5.3	mg/L	25	Standard
Ca	43	1686.8	2.8	**146.2245**	4.153	2.8	mg/L	77	Standard
Fe	54	934.2	9.5	**0.8390**	0.079	9.4	mg/L	165	Standard
Fe	57	1248.4	6.9	**4.5056**	0.404	9.0	mg/L	205	Standard
Sc-1	45	46461.1	1.6				mg/L	46031	Standard
Cl	35	35186.8	2.4				ug/L	28530	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	732817.1	0.7				ug/L	1560	Standard
P	31	19163.8	2.4				ug/L	15481	Standard
S	34	2536.9	1.8				ug/L	2072	Standard
Sr	88	15381.1	2.4				ug/L	70	Standard
C	12	60.0	28.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	2192.8	7.7				mg/L	13	Standard
Ho-1	165	1155.0	1.7				mg/L	8	Standard
Er	166	850.0	12.4				mg/L	7	Standard
I	127	539761.8	10.0				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		246.396	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.473	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	87.588
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	82.868
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606046501
Sample Date/Time: Wednesday, June 15, 2016 14:43:00
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67540.5	5.6				ug/L	58443	Standard
	Be	9	26.7	47.2	**0.0202**	0.021	102.4	ug/L	5	Standard
	Al	27	13547102.6	5.7	**102.5742**	0.947	0.9	ug/L	385	Standard
	Sc	45	49873.6	2.0				ug/L	46031	Standard
	Ti	47	92.0	7.6	**-0.0700**	0.026	37.0	ug/L	94	Standard
	V	51	2045.4	9.2	**0.1126**	0.029	25.9	ug/L	1280	Standard
	Cr	52	8596.4	2.1	**0.3361**	0.014	4.1	ug/L	6381	Standard
	Cr	53	2218.5	9.2	**0.3239**	0.340	105.0	ug/L	1957	Standard
	Mn	55	147357.2	3.1	**33.5964**	0.626	1.9	ug/L	667	Standard
	Co	59	2304.5	1.5	**0.4485**	0.003	0.6	ug/L	156	Standard
	Ni	60	3559.1	3.0	**2.3844**	0.047	2.0	ug/L	154	Standard
	Cu	65	2435.2	2.2	**1.6573**	0.023	1.4	ug/L	116	Standard
	Zn	66	3680.8	4.2	**4.3165**	0.135	3.1	ug/L	114	Standard
>	**Ge**	72	467570.1	1.4				ug/L	467488	Standard
	As	75	206.6	16.0	**0.2898**	0.042	14.6	ug/L	-61	Standard
	Se	82	84.0	3.8	**0.8199**	0.051	6.2	ug/L	9	Standard
	Se-1	77	158.3	7.0	**0.7681**	0.232	30.2	ug/L	125	Standard
>	**Ga**	71	60.0	36.3				mg/L	50	Standard
	Rb	85	8055.5	1.5				ug/L	18	Standard
	Y	89	405021.2	1.6				ug/L	402730	Standard
>	**Rh**	103	108.3	48.9				ug/L	12	Standard
	Mo	98	104.5	8.8	**0.0528**	0.005	9.6	ug/L	8	Standard
	Ag	107	67.0	14.9	**-0.0052**	0.002	41.1	ug/L	65	Standard
	Cd	111	27.5	9.1	**0.0113**	0.002	15.1	mg/L	3	Standard
	Cd	114	42.8	35.4	**-0.0020**	0.004	215.1	ug/L	15	Standard
>	**In**	115	516766.2	1.3				ug/L	526825	Standard
	Sn	118	828.4	1.5	**0.0971**	0.005	4.7	ug/L	368	Standard
	Sb	123	277.8	9.0	**0.0738**	0.007	9.2	ug/L	46	Standard
	Ba	135	9554.3	2.0	**7.1458**	0.079	1.1	ug/L	16	Standard
	Ce	140	1636.8	4.8				ug/L	43	Standard
>	**Tb**	159	777215.2	2.3				ug/L	771780	Standard
	Ho	165	183.3	5.7				ug/L	8	Standard
	Tl	203	85.7	19.0	**0.0029**	0.004	121.8	ug/L	28	Standard
	Tl	205	91.7	19.2	**0.0085**	0.004	49.5	ug/L	20	Standard
	Pb	206	338.7	5.2	**0.0423**	0.007	17.1	ug/L	184	Standard
	Pb	207	290.3	12.2	**0.0362**	0.012	32.4	ug/L	161	Standard
	Pb	208	1252.0	6.4	**0.0356**	0.006	16.7	ug/L	746	Standard
	U	238	195.0	8.6	**0.0410**	0.004	9.2	ug/L	6	Standard
>	**Bi**	209	404413.2	1.5				ug/L	429329	Standard

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Na	23	3.3	173.2	**12.6687**	21.934	173.1	mg/L	0	Standard
Mg	24	46563.2	5.1	**68.3637**	4.500	6.6	mg/L	25	Standard
K	39	338.3	2.3	**0.9876**	0.041	4.2	mg/L	25	Standard
Ca	43	560.0	3.1	**41.8687**	2.343	5.6	mg/L	77	Standard
Fe	54	172.8	16.0	**0.0301**	0.024	79.8	mg/L	165	Standard
Fe	57	411.7	11.0	**0.9782**	0.174	17.7	mg/L	205	Standard
> **Sc-1**	45	49873.6	2.0				mg/L	46031	Standard
Cl	35	50009.1	3.6				ug/L	28530	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	13986.5	6.0				ug/L	1560	Standard
P	31	17636.9	3.7				ug/L	15481	Standard
S	34	2438.5	3.1				ug/L	2072	Standard
Sr	88	218.3	13.0				ug/L	70	Standard
C	12	56.7	20.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	270.1	31.8				mg/L	13	Standard
Ho-1	165	183.3	5.7				mg/L	8	Standard
Er	166	136.7	41.6				mg/L	7	Standard
I	127	21809.4	43.8				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.567	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.018	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.091
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.197
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606050403
Sample Date/Time: Wednesday, June 15, 2016 14:46:12
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76794.1	0.9				ug/L	58443	Standard
	Be	9	45.0	29.4	**0.0383**	0.017	45.3	ug/L	5	Standard
	Al	27	11974801.8	1.2	**79.7521**	1.585	2.0	ug/L	385	Standard
	Sc	45	53435.7	0.6				ug/L	46031	Standard
	Ti	47	399.7	9.1	**1.2857**	0.198	15.4	ug/L	94	Standard
	V	51	5222.5	11.0	**0.6753**	0.090	13.3	ug/L	1280	Standard
	Cr	52	290372.2	2.9	**48.7314**	2.734	5.6	ug/L	6381	Standard
	Cr	53	41926.3	1.9	**56.6413**	2.642	4.7	ug/L	1957	Standard
	Mn	55	170536.3	3.2	**38.2904**	2.188	5.7	ug/L	667	Standard
	Co	59	5338.6	2.4	**1.0686**	0.055	5.1	ug/L	156	Standard
	Ni	60	42646.6	3.4	**29.5042**	1.723	5.8	ug/L	154	Standard
	Cu	65	1321.1	3.4	**0.8356**	0.056	6.7	ug/L	116	Standard
	Zn	66	7416.5	2.0	**8.8101**	0.375	4.3	ug/L	114	Standard
>	**Ge**	72	475638.4	2.6				ug/L	467488	Standard
	As	75	271.8	18.0	**0.3635**	0.066	18.2	ug/L	-61	Standard
	Se	82	121.4	3.6	**1.2379**	0.085	6.9	ug/L	9	Standard
	Se-1	77	453.3	6.1	**5.8067**	0.278	4.8	ug/L	125	Standard
>	**Ga**	71	95.0	10.5				mg/L	50	Standard
	Rb	85	11087.4	2.6				ug/L	18	Standard
	Y	89	408962.0	1.9				ug/L	402730	Standard
>	**Rh**	103	50.0	17.3				ug/L	12	Standard
	Mo	98	739.1	4.0	**0.4153**	0.023	5.4	ug/L	8	Standard
	Ag	107	94.0	5.9	**0.0006**	0.001	225.0	ug/L	65	Standard
	Cd	111	435.2	0.9	**0.2941**	0.007	2.3	mg/L	3	Standard
	Cd	114	1017.1	11.9	**0.2745**	0.038	13.8	ug/L	15	Standard
>	**In**	115	526368.4	1.3				ug/L	526825	Standard
	Sn	118	856.7	2.4	**0.1003**	0.004	3.7	ug/L	368	Standard
	Sb	123	117.4	8.6	**0.0219**	0.003	14.3	ug/L	46	Standard
	Ba	135	489503.3	2.1	**360.6757**	11.966	3.3	ug/L	16	Standard
	Ce	140	4450.7	4.7				ug/L	43	Standard
>	**Tb**	159	796351.6	1.9				ug/L	771780	Standard
	Ho	165	113.3	13.5				ug/L	8	Standard
	Tl	203	125.0	12.5	**0.0095**	0.003	27.0	ug/L	28	Standard
	Tl	205	123.3	11.7	**0.0140**	0.004	26.1	ug/L	20	Standard
	Pb	206	524.0	7.8	**0.0955**	0.013	13.3	ug/L	184	Standard
	Pb	207	423.7	4.6	**0.0778**	0.010	12.5	ug/L	161	Standard
	Pb	208	1937.7	2.4	**0.0857**	0.005	6.3	ug/L	746	Standard
	U	238	84.3	16.1	**0.0139**	0.003	23.6	ug/L	6	Standard
>	**Bi**	209	427245.1	2.3				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	31659.7	3.6	**43.3373**	1.421	3.3	mg/L	25	Standard
K	39	240.0	11.0	**0.6056**	0.087	14.4	mg/L	25	Standard
Ca	43	140.0	25.0	**5.9961**	2.657	44.3	mg/L	77	Standard
Fe	54	456.0	3.9	**0.2768**	0.014	4.9	mg/L	165	Standard
Fe	57	268.3	25.4	**0.3647**	0.236	64.8	mg/L	205	Standard
> **Sc-1**	45	53435.7	0.6				mg/L	46031	Standard
Cl	35	32893.0	3.3				ug/L	28530	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	25571.6	2.1				ug/L	1560	Standard
P	31	26755.3	6.1				ug/L	15481	Standard
S	34	2166.8	3.8				ug/L	2072	Standard
Sr	88	246.7	13.5				ug/L	70	Standard
C	12	60.0	28.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	0	Standard
Dy	164	210.1	13.5				mg/L	13	Standard
Ho-1	165	113.3	13.5				mg/L	8	Standard
Er	166	136.7	37.5				mg/L	7	Standard
I	127	162971.9	5.6				mg/L	1227	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		131.401	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.743	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.913
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.515
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606050403
Sample Date/Time: Wednesday, June 15, 2016 14:49:23
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70190.6	1.4				ug/L	58443	Standard
	Be	9	10.0	50.0	**-0.0053**	0.007	135.9	ug/L	5	Standard
	Al	27	1210961.4	2.3	**8.8150**	0.100	1.1	ug/L	385	Standard
	Sc	45	50552.5	0.6				ug/L	46031	Standard
	Ti	47	80.0	6.5	**-0.1340**	0.024	17.7	ug/L	94	Standard
	V	51	1921.1	12.3	**0.0800**	0.041	50.9	ug/L	1280	Standard
	Cr	52	38584.1	0.6	**5.3787**	0.041	0.8	ug/L	6381	Standard
	Cr	53	6102.9	2.1	**5.6718**	0.155	2.7	ug/L	1957	Standard
	Mn	55	19883.7	2.2	**4.2337**	0.096	2.3	ug/L	667	Standard
	Co	59	708.3	7.4	**0.1084**	0.011	9.8	ug/L	156	Standard
	Ni	60	4718.1	0.7	**3.1070**	0.026	0.8	ug/L	154	Standard
	Cu	65	264.3	4.2	**0.0804**	0.008	10.3	ug/L	116	Standard
	Zn	66	1909.8	2.0	**2.0481**	0.045	2.2	ug/L	114	Standard
>	**Ge**	72	481465.4	0.3				ug/L	467488	Standard
	As	75	6.9	478.5	**0.0491**	0.039	78.7	ug/L	-61	Standard
	Se	82	28.5	9.4	**0.1555**	0.030	19.1	ug/L	9	Standard
	Se-1	77	137.3	1.1	**0.3277**	0.025	7.7	ug/L	125	Standard
>	**Ga**	71	41.7	34.6				mg/L	50	Standard
	Rb	85	1228.4	10.2				ug/L	18	Standard
	Y	89	417399.8	0.8				ug/L	402730	Standard
>	**Rh**	103	23.3	32.7				ug/L	12	Standard
	Mo	98	88.8	21.0	**0.0418**	0.011	25.9	ug/L	8	Standard
	Ag	107	72.0	15.0	**-0.0046**	0.002	53.5	ug/L	65	Standard
	Cd	111	45.5	4.6	**0.0229**	0.002	7.1	mg/L	3	Standard
	Cd	114	100.1	9.2	**0.0136**	0.003	20.0	ug/L	15	Standard
>	**In**	115	536984.2	0.9				ug/L	526825	Standard
	Sn	118	430.0	21.0	**-0.0079**	0.022	282.3	ug/L	368	Standard
	Sb	123	72.5	2.9	**0.0073**	0.000	6.4	ug/L	46	Standard
	Ba	135	53197.9	0.9	**38.3944**	0.643	1.7	ug/L	16	Standard
	Ce	140	543.3	9.8				ug/L	43	Standard
>	**Tb**	159	804236.3	0.6				ug/L	771780	Standard
	Ho	165	35.0	37.8				ug/L	8	Standard
	Tl	203	74.7	16.4	**-0.0004**	0.002	565.0	ug/L	28	Standard
	Tl	205	83.3	9.2	**0.0053**	0.002	30.9	ug/L	20	Standard
	Pb	206	263.7	6.6	**0.0108**	0.005	46.4	ug/L	184	Standard
	Pb	207	226.3	9.8	**0.0067**	0.008	115.6	ug/L	161	Standard
	Pb	208	966.7	2.7	**0.0055**	0.002	38.5	ug/L	746	Standard
	U	238	14.7	20.8	**-0.0018**	0.001	37.7	ug/L	6	Standard
>	**Bi**	209	433583.5	0.7				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3310.4	1.8	**4.7551**	0.087	1.8	mg/L	25	Standard
K	39	58.3	4.9	**0.0492**	0.009	18.8	mg/L	25	Standard
Ca	43	33.3	31.2	**-2.1562**	0.840	38.9	mg/L	77	Standard
Fe	54	206.0	8.6	**0.0601**	0.018	30.2	mg/L	165	Standard
Fe	57	140.0	12.9	**-0.0610**	0.064	105.4	mg/L	205	Standard
> **Sc-1**	45	50552.5	0.6				mg/L	46031	Standard
Cl	35	34902.8	2.2				ug/L	28530	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	4737.4	8.4				ug/L	1560	Standard
P	31	19787.9	2.6				ug/L	15481	Standard
S	34	2363.5	4.1				ug/L	2072	Standard
Sr	88	70.0	12.4				ug/L	70	Standard
C	12	73.3	34.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	11.7	90.7				mg/L	13	Standard
Ho-1	165	35.0	37.8				mg/L	8	Standard
Er	166	33.3	96.4				mg/L	7	Standard
I	127	22934.0	5.6				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		120.102	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.990	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.928
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.991
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606043301
Sample Date/Time: Wednesday, June 15, 2016 14:52:35
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72573.4	1.3				ug/L	58443	Standard
	Be	9	8.3	34.6	**-0.0080**	0.004	50.1	ug/L	5	Standard
	Al	27	329254.8	1.8	**2.3126**	0.057	2.5	ug/L	385	Standard
	Sc	45	51950.6	1.5				ug/L	46031	Standard
	Ti	47	90.0	4.0	**-0.0875**	0.018	20.3	ug/L	94	Standard
	V	51	1521.2	7.8	**0.0112**	0.021	186.6	ug/L	1280	Standard
	Cr	52	7732.0	1.8	**0.1558**	0.027	17.6	ug/L	6381	Standard
	Cr	53	1990.1	4.2	**-0.0716**	0.111	154.9	ug/L	1957	Standard
	Mn	55	7002.6	2.4	**1.3760**	0.042	3.0	ug/L	667	Standard
	Co	59	188.3	1.6	**0.0025**	0.000	19.6	ug/L	156	Standard
	Ni	60	4567.7	0.8	**3.0265**	0.027	0.9	ug/L	154	Standard
	Cu	65	30584.5	0.3	**21.5518**	0.090	0.4	ug/L	116	Standard
	Zn	66	1433.1	2.4	**1.4851**	0.035	2.3	ug/L	114	Standard
>	**Ge**	72	478011.0	0.5				ug/L	467488	Standard
	As	75	-5.7	39.6	**0.0343**	0.003	7.6	ug/L	-61	Standard
	Se	82	18.0	14.9	**0.0360**	0.031	85.0	ug/L	9	Standard
	Se-1	77	120.7	6.9	**0.0585**	0.146	249.6	ug/L	125	Standard
>	**Ga**	71	60.0	22.0				mg/L	50	Standard
	Rb	85	3538.7	4.1				ug/L	18	Standard
	Y	89	411938.1	0.2				ug/L	402730	Standard
>	**Rh**	103	30.0	33.3				ug/L	12	Standard
	Mo	98	7380.9	1.2	**4.1661**	0.028	0.7	ug/L	8	Standard
	Ag	107	472.0	2.0	**0.0842**	0.002	2.1	ug/L	65	Standard
	Cd	111	2.7	62.7	**-0.0062**	0.001	18.7	mg/L	3	Standard
	Cd	114	32.1	58.0	**-0.0053**	0.005	99.5	ug/L	15	Standard
>	**In**	115	532868.7	0.5				ug/L	526825	Standard
	Sn	118	14024.8	1.3	**3.3312**	0.058	1.7	ug/L	368	Standard
	Sb	123	204.3	3.8	**0.0484**	0.002	4.5	ug/L	46	Standard
	Ba	135	8798.6	0.7	**6.3794**	0.020	0.3	ug/L	16	Standard
	Ce	140	141.7	19.4				ug/L	43	Standard
>	**Tb**	159	802129.6	0.9				ug/L	771780	Standard
	Ho	165	8.3	91.7				ug/L	8	Standard
	Tl	203	52.7	7.7	**-0.0046**	0.001	15.6	ug/L	28	Standard
	Tl	205	56.7	56.0	**-0.0002**	0.007	3937.1	ug/L	20	Standard
	Pb	206	12165.2	1.3	**3.7810**	0.086	2.3	ug/L	184	Standard
	Pb	207	10162.7	0.3	**3.4781**	0.039	1.1	ug/L	161	Standard
	Pb	208	45144.8	1.1	**3.5530**	0.062	1.7	ug/L	746	Standard
	U	238	6.0	60.1	**-0.0037**	0.001	21.5	ug/L	6	Standard
>	**Bi**	209	432583.0	1.0				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	5946.2	1.5	**8.3427**	0.217	2.6	mg/L	25	Standard
K	39	721.7	6.7	**2.1711**	0.143	6.6	mg/L	25	Standard
Ca	43	66.7	11.5	**0.4480**	0.668	149.1	mg/L	77	Standard
Fe	54	117.3	33.0	**-0.0281**	0.038	133.9	mg/L	165	Standard
Fe	57	136.7	24.4	**-0.0877**	0.118	134.4	mg/L	205	Standard
Sc-1	45	51950.6	1.5				mg/L	46031	Standard
Cl	35	36107.0	1.8				ug/L	28530	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	2653.6	0.8				ug/L	1560	Standard
P	31	18596.4	2.8				ug/L	15481	Standard
S	34	2321.8	6.5				ug/L	2072	Standard
Sr	88	56.7	36.7				ug/L	70	Standard
C	12	66.7	31.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.7	43.3				mg/L	13	Standard
Ho-1	165	8.3	91.7				mg/L	8	Standard
Er	166	13.3	43.3				mg/L	7	Standard
I	127	8283.9	1.8				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.179	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.251	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.147
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.758
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 16, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 15, 2016 14:55:47
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67285.9	3.5				ug/L	58443	Standard
	Be	9	37327.6	1.8	**54.4539**	1.054	1.9	ug/L	5	Standard
	Al	27	6517774.9	0.2	**49.5727**	1.662	3.4	ug/L	385	Standard
	Sc	45	50527.5	1.8				ug/L	46031	Standard
	Ti	47	24779.2	0.7	**110.5550**	2.050	1.9	ug/L	94	Standard
	V	51	296531.9	0.7	**53.6454**	0.722	1.3	ug/L	1280	Standard
	Cr	52	312177.7	0.7	**53.1815**	0.217	0.4	ug/L	6381	Standard
	Cr	53	38849.8	2.4	**52.9998**	0.700	1.3	ug/L	1957	Standard
	Mn	55	243510.4	2.0	**55.4790**	1.127	2.0	ug/L	667	Standard
	Co	59	252828.7	1.6	**52.9808**	0.942	1.8	ug/L	156	Standard
	Ni	60	74893.6	0.5	**52.5922**	0.368	0.7	ug/L	154	Standard
	Cu	65	72733.8	1.2	**52.3801**	0.059	0.1	ug/L	116	Standard
	Zn	66	42220.7	0.7	**52.0528**	0.523	1.0	ug/L	114	Standard
>	Ge	72	469059.1	1.1				ug/L	467488	Standard
	As	75	42745.0	0.4	**51.2957**	0.630	1.2	ug/L	-61	Standard
	Se	82	4414.1	0.3	**51.7318**	0.474	0.9	ug/L	9	Standard
	Se-1	77	3032.6	1.8	**51.0806**	1.479	2.9	ug/L	125	Standard
>	Ga	71	68.3	22.4				mg/L	50	Standard
	Rb	85	696.7	6.8				ug/L	18	Standard
	Y	89	404714.3	0.9				ug/L	402730	Standard
>	Rh	103	36.7	15.7				ug/L	12	Standard
	Mo	98	184831.1	0.7	**106.1277**	1.796	1.7	ug/L	8	Standard
	Ag	107	231707.3	0.5	**52.1591**	1.017	2.0	ug/L	65	Standard
	Cd	111	75563.5	1.2	**52.6075**	0.429	0.8	mg/L	3	Standard
	Cd	114	186633.1	1.1	**53.0776**	0.438	0.8	ug/L	15	Standard
>	In	115	524888.1	1.5				ug/L	526825	Standard
	Sn	118	209525.5	0.5	**52.1231**	0.506	1.0	ug/L	368	Standard
	Sb	123	165853.0	0.3	**52.2086**	0.663	1.3	ug/L	46	Standard
	Ba	135	71517.8	2.8	**52.8077**	1.091	2.1	ug/L	16	Standard
	Ce	140	418.3	146.3				ug/L	43	Standard
>	Tb	159	786120.2	0.7				ug/L	771780	Standard
	Ho	165	16.7	124.9				ug/L	8	Standard
	Tl	203	271739.8	0.1	**52.5314**	0.136	0.3	ug/L	28	Standard
	Tl	205	249765.6	1.8	**52.8082**	0.924	1.8	ug/L	20	Standard
	Pb	206	166336.8	0.7	**53.4822**	0.504	0.9	ug/L	184	Standard
	Pb	207	150287.0	0.3	**53.2941**	0.300	0.6	ug/L	161	Standard
	Pb	208	642256.1	1.6	**52.3468**	0.783	1.5	ug/L	746	Standard
	U	238	238601.6	1.5	**53.4834**	0.741	1.4	ug/L	6	Standard
>	Bi	209	425541.4	0.3				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3600.4	1.6	**5.1792**	0.144	2.8	mg/L	25	Standard
K	39	1420.1	4.8	**4.5379**	0.149	3.3	mg/L	25	Standard
Ca	43	106.7	15.1	**3.8763**	1.165	30.1	mg/L	77	Standard
Fe	54	5271.3	1.2	**4.9370**	0.101	2.1	mg/L	165	Standard
Fe	57	1328.4	2.7	**4.3925**	0.048	1.1	mg/L	205	Standard
Sc-1	45	50527.5	1.8				mg/L	46031	Standard
Cl	35	35178.1	2.1				ug/L	28530	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	1706.8	7.6				ug/L	1560	Standard
P	31	20785.9	1.7				ug/L	15481	Standard
S	34	2698.6	2.9				ug/L	2072	Standard
Sr	88	40.0	12.5				ug/L	70	Standard
C	12	40.0	66.1				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	21.7	109.9				mg/L	13	Standard
Ho-1	165	16.7	124.9				mg/L	8	Standard
Er	166	33.3	96.4				mg/L	7	Standard
I	127	2238.5	12.8				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	108.908		
Al	27	99.145		
Sc	45			
Ti	47	110.555		
V	51	107.291		
Cr	52	106.363		
Cr	53			
Mn	55	110.958		
Co	59	105.962		
Ni	60	105.184		
Cu	65	104.760		
Zn	66	104.106		
Ge	72		100.336	
As	75	102.591		
Se	82	103.464		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	106.128		
Ag	107	104.318		
Cd	111	105.215		
Cd	114			
In	115		99.632	
Sn	118	104.246		
Sb	123	104.417		
Ba	135	105.615		
Ce	140			
Tb	159			
Ho	165			
Tl	203	105.063		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.694		
U	238	106.967		
Bi	209		99.118	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Ti	47	
QC Std 6	Mn	55	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 15, 2016 14:58:59
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65683.7	0.0				ug/L	58443	Standard
	Be	9	26.7	21.7	**0.0205**	0.009	42.1	ug/L	5	Standard
	Al	27	1630.1	23.5	**0.0046**	0.003	64.3	ug/L	385	Standard
	Sc	45	49781.7	1.4				ug/L	46031	Standard
	Ti	47	48.7	12.0	**-0.2657**	0.024	9.1	ug/L	94	Standard
	V	51	1162.0	13.1	**-0.0493**	0.027	54.5	ug/L	1280	Standard
	Cr	52	6291.3	1.4	**-0.0713**	0.024	34.1	ug/L	6381	Standard
	Cr	53	1113.4	5.3	**-1.2804**	0.110	8.6	ug/L	1957	Standard
	Mn	55	683.0	3.5	**-0.0390**	0.008	19.9	ug/L	667	Standard
	Co	59	165.0	11.2	**-0.0017**	0.004	218.4	ug/L	156	Standard
	Ni	60	100.0	3.6	**-0.0583**	0.001	2.5	ug/L	154	Standard
	Cu	65	125.7	13.7	**-0.0148**	0.014	92.6	ug/L	116	Standard
	Zn	66	129.0	5.6	**-0.0973**	0.010	10.2	ug/L	114	Standard
>	**Ge**	72	469772.3	1.6				ug/L	467488	Standard
	As	75	-35.5	48.9	**-0.0016**	0.021	1300.9	ug/L	-61	Standard
	Se	82	14.5	25.5	**-0.0012**	0.041	3452.4	ug/L	9	Standard
	Se-1	77	75.7	11.5	**-0.6919**	0.151	21.8	ug/L	125	Standard
>	**Ga**	71	60.0	8.3				mg/L	50	Standard
	Rb	85	18.3	15.7				ug/L	18	Standard
	Y	89	407882.1	2.1				ug/L	402730	Standard
>	**Rh**	103	23.3	32.7				ug/L	12	Standard
	Mo	98	155.5	25.1	**0.0804**	0.022	27.3	ug/L	8	Standard
	Ag	107	122.7	27.4	**0.0069**	0.007	108.8	ug/L	65	Standard
	Cd	111	16.3	51.8	**0.0032**	0.006	182.5	mg/L	3	Standard
	Cd	114	41.9	24.7	**-0.0025**	0.003	120.3	ug/L	15	Standard
>	**In**	115	529408.6	0.6				ug/L	526825	Standard
	Sn	118	675.0	23.3	**0.0542**	0.039	72.6	ug/L	368	Standard
	Sb	123	364.8	17.9	**0.0990**	0.021	21.3	ug/L	46	Standard
	Ba	135	66.0	7.9	**0.0253**	0.004	14.6	ug/L	16	Standard
	Ce	140	8.3	124.9				ug/L	43	Standard
>	**Tb**	159	783914.4	1.1				ug/L	771780	Standard
	Ho	165	15.0	33.3				ug/L	8	Standard
	Tl	203	61.0	37.8	**-0.0029**	0.004	149.0	ug/L	28	Standard
	Tl	205	91.7	25.8	**0.0071**	0.005	69.9	ug/L	20	Standard
	Pb	206	231.3	8.0	**0.0008**	0.006	733.6	ug/L	184	Standard
	Pb	207	200.0	21.0	**-0.0023**	0.015	645.7	ug/L	161	Standard
	Pb	208	862.7	1.2	**-0.0026**	0.000	18.2	ug/L	746	Standard
	U	238	43.7	15.2	**0.0047**	0.002	32.4	ug/L	6	Standard
>	**Bi**	209	432202.5	0.5				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	21.7	26.6	**-0.0075**	0.009	115.9	mg/L	25	Standard
K	39	46.7	52.9	**0.0127**	0.081	638.2	mg/L	25	Standard
Ca	43	43.3	35.3	**-1.2826**	1.244	97.0	mg/L	77	Standard
Fe	54	161.0	7.2	**0.0191**	0.011	55.6	mg/L	165	Standard
Fe	57	143.3	28.2	**-0.0405**	0.150	370.8	mg/L	205	Standard
Sc-1	45	49781.7	1.4				mg/L	46031	Standard
Cl	35	35265.7	1.4				ug/L	28530	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1693.4	7.1				ug/L	1560	Standard
P	31	20332.0	1.0				ug/L	15481	Standard
S	34	2808.6	5.5				ug/L	2072	Standard
Sr	88	65.0	7.7				ug/L	70	Standard
C	12	36.7	15.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	8.9	196.7				mg/L	13	Standard
Ho-1	165	15.0	33.3				mg/L	8	Standard
Er	166	23.3	65.5				mg/L	7	Standard
I	127	1706.8	4.8				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.489	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.490
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.669
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 16, 2016

Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Wednesday, June 15, 2016 15:02:12
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64461.9	2.1				ug/L	58443	Standard
	Be	9	126.7	13.9	**0.1733**	0.024	13.8	ug/L	5	Standard
	Al	27	861.7	12.4	**-0.0012**	0.001	63.6	ug/L	385	Standard
	Sc	45	49059.3	1.0				ug/L	46031	Standard
	Ti	47	33.7	9.1	**-0.3276**	0.013	4.0	ug/L	94	Standard
	V	51	3411.9	6.1	**0.3798**	0.035	9.3	ug/L	1280	Standard
	Cr	52	10659.4	0.2	**0.7500**	0.015	1.9	ug/L	6381	Standard
	Cr	53	1678.4	5.4	**-0.3893**	0.125	32.2	ug/L	1957	Standard
	Mn	55	2781.9	0.6	**0.4614**	0.000	0.0	ug/L	667	Standard
	Co	59	2039.8	2.5	**0.4052**	0.013	3.2	ug/L	156	Standard
	Ni	60	2318.2	2.2	**1.5554**	0.029	1.9	ug/L	154	Standard
	Cu	65	1172.0	0.8	**0.7674**	0.003	0.4	ug/L	116	Standard
	Zn	66	5663.1	0.7	**6.9836**	0.010	0.1	ug/L	114	Standard
>	**Ge**	72	454504.0	0.6				ug/L	467488	Standard
	As	75	277.5	14.3	**0.3846**	0.051	13.2	ug/L	-61	Standard
	Se	82	45.1	15.7	**0.3766**	0.088	23.3	ug/L	9	Standard
	Se-1	77	100.7	3.2	**-0.1957**	0.056	28.6	ug/L	125	Standard
>	**Ga**	71	60.0	22.0				mg/L	50	Standard
	Rb	85	13.3	43.3				ug/L	18	Standard
	Y	89	390903.5	0.7				ug/L	402730	Standard
>	**Rh**	103	18.3	41.7				ug/L	12	Standard
	Mo	98	45.8	5.5	**0.0191**	0.002	8.5	ug/L	8	Standard
	Ag	107	1846.1	4.0	**0.4080**	0.019	4.6	ug/L	65	Standard
	Cd	111	332.2	13.8	**0.2303**	0.032	13.8	mg/L	3	Standard
	Cd	114	836.6	5.9	**0.2310**	0.015	6.5	ug/L	15	Standard
>	**In**	115	509256.1	0.5				ug/L	526825	Standard
	Sn	118	313.3	16.8	**-0.0322**	0.013	41.0	ug/L	368	Standard
	Sb	123	1337.1	2.7	**0.4189**	0.009	2.2	ug/L	46	Standard
	Ba	135	1010.4	2.6	**0.7463**	0.020	2.7	ug/L	16	Standard
	Ce	140	15.0	88.2				ug/L	43	Standard
>	**Tb**	159	765779.8	1.2				ug/L	771780	Standard
	Ho	165	10.0	50.0				ug/L	8	Standard
	Tl	203	437.3	1.6	**0.0701**	0.001	1.9	ug/L	28	Standard
	Tl	205	420.0	12.4	**0.0769**	0.010	13.5	ug/L	20	Standard
	Pb	206	851.7	2.8	**0.2021**	0.009	4.6	ug/L	184	Standard
	Pb	207	706.3	4.2	**0.1791**	0.013	7.1	ug/L	161	Standard
	Pb	208	3205.1	1.8	**0.1900**	0.003	1.3	ug/L	746	Standard
	U	238	1772.1	2.0	**0.3928**	0.005	1.4	ug/L	6	Standard
>	**Bi**	209	424954.5	0.8				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	20.0	66.1	**-0.0096**	0.020	205.4	mg/L	25	Standard
K	39	38.3	7.5	**-0.0128**	0.011	86.6	mg/L	25	Standard
Ca	43	41.7	18.3	**-1.3623**	0.654	48.0	mg/L	77	Standard
Fe	54	115.5	13.4	**-0.0236**	0.016	69.1	mg/L	165	Standard
Fe	57	156.7	12.9	**0.0196**	0.079	401.9	mg/L	205	Standard
Sc-1	45	49059.3	1.0				mg/L	46031	Standard
Cl	35	34409.7	0.9				ug/L	28530	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1456.7	15.2				ug/L	1560	Standard
P	31	14605.4	1.9				ug/L	15481	Standard
S	34	2621.9	3.0				ug/L	2072	Standard
Sr	88	51.7	27.9				ug/L	70	Standard
C	12	23.3	24.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.8	99.2				mg/L	13	Standard
Ho-1	165	10.0	50.0				mg/L	8	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	1108.4	11.9				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	86.661		
Al	27			
Sc	45			
Ti	47			
V	51	94.942		
Cr	52	93.755		
Cr	53			
Mn	55	92.271		
Co	59	101.297		
Ni	60	97.211		
Cu	65	95.919		
Zn	66	111.737		
> Ge	72		97.223	
As	75	96.141		
Se	82	94.142		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	101.989		
Cd	111	95.943		
Cd	114			
> In	115			96.665
Sn	118			
Sb	123	104.721		
Ba	135	99.504		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	87.648		
Tl	205			
Pb	206			
Pb	207			
Pb	208	95.010		
U	238	98.203		
> Bi	209			98.981
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 16, 2016

Method 6020 - Summary Report

Sample ID: PBW 46 WG572244-02
Sample Date/Time: Wednesday, June 15, 2016 15:05:25
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72211.7	2.1				ug/L	58443	Standard
	Be	9	11.7	65.5	**-0.0034**	0.011	313.7	ug/L	5	Standard
	Al	27	1231.7	10.9	**0.0007**	0.001	146.4	ug/L	385	Standard
	Sc	45	50353.6	2.2				ug/L	46031	Standard
	Ti	47	41.7	18.0	**-0.2997**	0.030	10.1	ug/L	94	Standard
	V	51	2254.3	13.2	**0.1438**	0.058	40.4	ug/L	1280	Standard
	Cr	52	6773.8	1.8	**-0.0035**	0.027	758.3	ug/L	6381	Standard
	Cr	53	13290.8	6.2	**15.9508**	1.177	7.4	ug/L	1957	Standard
	Mn	55	935.7	1.9	**0.0157**	0.003	20.0	ug/L	667	Standard
	Co	59	145.0	12.4	**-0.0063**	0.003	53.4	ug/L	156	Standard
	Ni	60	99.0	7.1	**-0.0600**	0.004	7.3	ug/L	154	Standard
	Cu	65	163.7	4.9	**0.0108**	0.004	35.7	ug/L	116	Standard
	Zn	66	2460.2	0.7	**2.7452**	0.046	1.7	ug/L	114	Standard
>	**Ge**	72	476281.7	1.7				ug/L	467488	Standard
	As	75	-86.7	33.1	**-0.0617**	0.035	57.2	ug/L	-61	Standard
	Se	82	17.5	26.2	**0.0308**	0.050	161.0	ug/L	9	Standard
	Se-1	77	545.3	6.5	**7.3827**	0.474	6.4	ug/L	125	Standard
>	**Ga**	71	48.3	52.1				mg/L	50	Standard
	Rb	85	23.3	12.4				ug/L	18	Standard
	Y	89	411189.1	1.6				ug/L	402730	Standard
>	**Rh**	103	16.7	34.6				ug/L	12	Standard
	Mo	98	35.7	17.3	**0.0120**	0.004	30.0	ug/L	8	Standard
	Ag	107	81.3	6.3	**-0.0025**	0.001	46.6	ug/L	65	Standard
	Cd	111	5.6	44.8	**-0.0043**	0.002	39.7	mg/L	3	Standard
	Cd	114	27.9	45.5	**-0.0065**	0.004	55.2	ug/L	15	Standard
>	**In**	115	535377.7	0.7				ug/L	526825	Standard
	Sn	118	451.7	6.7	**-0.0023**	0.008	359.6	ug/L	368	Standard
	Sb	123	115.2	32.8	**0.0205**	0.011	55.8	ug/L	46	Standard
	Ba	135	46.0	19.6	**0.0103**	0.007	64.5	ug/L	16	Standard
	Ce	140	23.3	65.5				ug/L	43	Standard
>	**Tb**	159	798301.1	0.6				ug/L	771780	Standard
	Ho	165	10.0	86.6				ug/L	8	Standard
	Tl	203	100.3	9.8	**0.0044**	0.002	45.7	ug/L	28	Standard
	Tl	205	78.3	38.5	**0.0042**	0.006	147.8	ug/L	20	Standard
	Pb	206	248.0	7.0	**0.0055**	0.006	113.4	ug/L	184	Standard
	Pb	207	220.0	4.6	**0.0042**	0.003	73.6	ug/L	161	Standard
	Pb	208	942.7	0.3	**0.0033**	0.001	27.9	ug/L	746	Standard
	U	238	6.3	63.8	**-0.0036**	0.001	24.6	ug/L	6	Standard
>	**Bi**	209	435516.3	1.0				ug/L	429329	Standard

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Na	23	1.7	173.2	**6.0340**	10.442	173.1	mg/L	0	Standard
Mg	24	28.3	20.4	**0.0017**	0.008	473.7	mg/L	25	Standard
K	39	25.0	52.9	**-0.0597**	0.046	77.0	mg/L	25	Standard
Ca	43	31.7	24.1	**-2.2785**	0.633	27.8	mg/L	77	Standard
Fe	54	159.6	21.7	**0.0155**	0.030	195.0	mg/L	165	Standard
Fe	57	158.3	15.6	**0.0113**	0.101	889.1	mg/L	205	Standard
Sc-1	45	50353.6	2.2				mg/L	46031	Standard
Cl	35	35245.6	1.2				ug/L	28530	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1703.4	3.6				ug/L	1560	Standard
P	31	20256.9	2.3				ug/L	15481	Standard
S	34	2766.9	1.4				ug/L	2072	Standard
Sr	88	50.0	43.6				ug/L	70	Standard
C	12	36.7	87.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.5	179.6				mg/L	13	Standard
Ho-1	165	10.0	86.6				mg/L	8	Standard
Er	166	3.3	173.2				mg/L	7	Standard
I	127	1381.7	8.6				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.560	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.881	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	101.623
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.441
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: PBW 46 WG572244-02
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Method 6020 - Summary Report

Sample ID: LCSW 46 WG572244-03
Sample Date/Time: Wednesday, June 15, 2016 15:08:36
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76841.1	1.9				ug/L	58443	Standard
	Be	9	400.0	10.0	**0.4913**	0.044	9.0	ug/L	5	Standard
	Al	27	123508.1	2.0	**0.8143**	0.028	3.4	ug/L	385	Standard
	Sc	45	50935.5	2.1				ug/L	46031	Standard
	Ti	47	2483.5	3.4	**10.5222**	0.470	4.5	ug/L	94	Standard
	V	51	60821.9	2.2	**10.6737**	0.341	3.2	ug/L	1280	Standard
	Cr	52	37203.0	2.4	**5.2401**	0.213	4.1	ug/L	6381	Standard
	Cr	53	29188.2	6.6	**38.6551**	3.109	8.0	ug/L	1957	Standard
	Mn	55	24061.1	1.8	**5.2450**	0.142	2.7	ug/L	667	Standard
	Co	59	10087.4	0.9	**2.0554**	0.038	1.8	ug/L	156	Standard
	Ni	60	7416.8	1.8	**5.0344**	0.130	2.6	ug/L	154	Standard
	Cu	65	7357.5	4.3	**5.1460**	0.275	5.3	ug/L	116	Standard
	Zn	66	9385.6	3.7	**11.2437**	0.534	4.8	ug/L	114	Standard
>	**Ge**	72	474375.4	1.0				ug/L	467488	Standard
	As	75	3255.7	4.9	**3.9022**	0.223	5.7	ug/L	-61	Standard
	Se	82	347.1	2.8	**3.8633**	0.077	2.0	ug/L	9	Standard
	Se-1	77	1247.7	6.9	**19.5916**	1.668	8.5	ug/L	125	Standard
>	**Ga**	71	66.7	28.4				mg/L	50	Standard
	Rb	85	93.3	24.2				ug/L	18	Standard
	Y	89	411430.1	2.5				ug/L	402730	Standard
>	**Rh**	103	23.3	44.6				ug/L	12	Standard
	Mo	98	18006.7	1.7	**10.1840**	0.220	2.2	ug/L	8	Standard
	Ag	107	18205.9	1.3	**4.0204**	0.062	1.5	ug/L	65	Standard
	Cd	111	708.2	3.9	**0.4780**	0.020	4.1	mg/L	3	Standard
	Cd	114	1957.6	7.7	**0.5346**	0.042	7.9	ug/L	15	Standard
>	**In**	115	532473.0	0.8				ug/L	526825	Standard
	Sn	118	39553.3	3.4	**9.6084**	0.385	4.0	ug/L	368	Standard
	Sb	123	39445.3	2.5	**12.2287**	0.375	3.1	ug/L	46	Standard
	Ba	135	13618.1	1.7	**9.8951**	0.247	2.5	ug/L	16	Standard
	Ce	140	30.0	44.1				ug/L	43	Standard
>	**Tb**	159	808535.6	1.1				ug/L	771780	Standard
	Ho	165	6.7	43.3				ug/L	8	Standard
	Tl	203	26544.6	1.6	**4.9345**	0.169	3.4	ug/L	28	Standard
	Tl	205	24054.1	1.5	**4.8925**	0.150	3.1	ug/L	20	Standard
	Pb	206	16768.9	3.6	**5.1341**	0.272	5.3	ug/L	184	Standard
	Pb	207	15037.5	2.1	**5.0764**	0.193	3.8	ug/L	161	Standard
	Pb	208	64620.1	3.1	**5.0138**	0.234	4.7	ug/L	746	Standard
	U	238	6.3	32.9	**-0.0036**	0.000	11.9	ug/L	6	Standard
>	**Bi**	209	441519.9	1.8				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	420.0	5.2	**0.5648**	0.041	7.3	mg/L	25	Standard
K	39	186.7	15.5	**0.4669**	0.086	18.4	mg/L	25	Standard
Ca	43	41.7	27.7	**-1.4787**	1.027	69.4	mg/L	77	Standard
Fe	54	159.9	9.3	**0.0145**	0.013	92.3	mg/L	165	Standard
Fe	57	166.7	14.8	**0.0359**	0.106	294.3	mg/L	205	Standard
> **Sc-1**	45	50935.5	2.1				mg/L	46031	Standard
Cl	35	35019.1	0.9				ug/L	28530	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1506.7	6.2				ug/L	1560	Standard
P	31	20153.4	2.8				ug/L	15481	Standard
S	34	2606.9	7.2				ug/L	2072	Standard
Sr	88	73.3	31.5				ug/L	70	Standard
C	12	73.3	55.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.5	122.8				mg/L	13	Standard
Ho-1	165	6.7	43.3				mg/L	8	Standard
Er	166	16.7	69.3				mg/L	7	Standard
I	127	1448.4	7.6				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		131.481	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.473	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.072
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.840
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606040101 WG572244-01
Sample Date/Time: Wednesday, June 15, 2016 15:11:48
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71630.7	3.2				ug/L	58443	Standard
	Be	9	13.3	78.1	**-0.0008**	0.015	1885.9	ug/L	5	Standard
	Al	27	1371.7	3.8	**0.0018**	0.000	16.1	ug/L	385	Standard
	Sc	45	50756.5	0.4				ug/L	46031	Standard
	Ti	47	40.7	7.1	**-0.3021**	0.012	4.0	ug/L	94	Standard
	V	51	2487.4	7.1	**0.1891**	0.025	13.3	ug/L	1280	Standard
	Cr	52	7001.0	3.8	**0.0466**	0.042	89.8	ug/L	6381	Standard
	Cr	53	8755.9	8.8	**9.6336**	0.934	9.7	ug/L	1957	Standard
	Mn	55	849.4	4.1	**-0.0020**	0.005	244.3	ug/L	667	Standard
	Co	59	194.7	7.2	**0.0043**	0.003	67.6	ug/L	156	Standard
	Ni	60	333.0	7.2	**0.1046**	0.019	17.8	ug/L	154	Standard
	Cu	65	198.0	6.1	**0.0365**	0.007	18.1	ug/L	116	Standard
	Zn	66	1173.7	5.5	**1.1881**	0.058	4.9	ug/L	114	Standard
>	**Ge**	72	471812.3	1.6				ug/L	467488	Standard
	As	75	-65.7	92.2	**-0.0373**	0.072	192.0	ug/L	-61	Standard
	Se	82	49.1	21.1	**0.4017**	0.115	28.6	ug/L	9	Standard
	Se-1	77	588.0	10.5	**8.2166**	1.027	12.5	ug/L	125	Standard
>	**Ga**	71	81.7	14.1				mg/L	50	Standard
	Rb	85	12131.5	2.4				ug/L	18	Standard
	Y	89	416495.6	1.0				ug/L	402730	Standard
>	**Rh**	103	20.0	50.0				ug/L	12	Standard
	Mo	98	291.7	2.2	**0.1547**	0.003	2.2	ug/L	8	Standard
	Ag	107	71.3	15.0	**-0.0049**	0.002	46.9	ug/L	65	Standard
	Cd	111	3.1	49.5	**-0.0060**	0.001	17.1	mg/L	3	Standard
	Cd	114	5.2	107.0	**-0.0128**	0.002	11.9	ug/L	15	Standard
>	**In**	115	539933.2	0.3				ug/L	526825	Standard
	Sn	118	551.7	5.2	**0.0210**	0.007	34.6	ug/L	368	Standard
	Sb	123	103.3	7.7	**0.0167**	0.003	15.2	ug/L	46	Standard
	Ba	135	20015.5	1.1	**14.3515**	0.205	1.4	ug/L	16	Standard
	Ce	140	13.3	94.4				ug/L	43	Standard
>	**Tb**	159	795150.1	1.3				ug/L	771780	Standard
	Ho	165	8.3	124.9				ug/L	8	Standard
	Tl	203	125.7	5.9	**0.0079**	0.001	16.7	ug/L	28	Standard
	Tl	205	81.7	40.8	**0.0040**	0.007	163.7	ug/L	20	Standard
	Pb	206	1355.7	4.5	**0.3317**	0.017	5.1	ug/L	184	Standard
	Pb	207	1166.4	3.3	**0.3115**	0.014	4.6	ug/L	161	Standard
	Pb	208	5116.3	0.7	**0.3149**	0.005	1.6	ug/L	746	Standard
	U	238	4.3	26.6	**-0.0041**	0.000	6.0	ug/L	6	Standard
>	**Bi**	209	459462.6	0.7				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4570.7	2.5	**6.5542**	0.187	2.9	mg/L	25	Standard
K	39	1461.7	8.5	**4.6558**	0.423	9.1	mg/L	25	Standard
Ca	43	126.7	26.9	**5.4879**	2.784	50.7	mg/L	77	Standard
Fe	54	137.6	15.2	**-0.0064**	0.020	305.2	mg/L	165	Standard
Fe	57	193.3	3.0	**0.1361**	0.019	13.8	mg/L	205	Standard
> **Sc-1**	45	50756.5	0.4				mg/L	46031	Standard
Cl	35	35101.3	1.1				ug/L	28530	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	2080.1	16.7				ug/L	1560	Standard
P	31	19836.3	0.7				ug/L	15481	Standard
S	34	2595.2	1.3				ug/L	2072	Standard
Sr	88	83.3	28.4				ug/L	70	Standard
C	12	73.3	28.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	3.3	173.2				mg/L	13	Standard
Ho-1	165	8.3	124.9				mg/L	8	Standard
Er	166	0.0					mg/L	7	Standard
I	127	4447.3	5.7				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		122.566	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.925	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.488
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.019
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606040101S WG572244-04
Sample Date/Time: Wednesday, June 15, 2016 15:14:59
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78176.3	3.5				ug/L	58443	Standard
	Be	9	366.7	4.8	**0.4409**	0.011	2.5	ug/L	5	Standard
	Al	27	128072.7	3.1	**0.8309**	0.051	6.1	ug/L	385	Standard
	Sc	45	50984.0	1.6				ug/L	46031	Standard
	Ti	47	2635.9	2.5	**10.9416**	0.356	3.3	ug/L	94	Standard
	V	51	61843.2	0.2	**10.6136**	0.116	1.1	ug/L	1280	Standard
	Cr	52	38169.7	2.0	**5.2624**	0.144	2.7	ug/L	6381	Standard
	Cr	53	20458.8	1.0	**25.5868**	0.376	1.5	ug/L	1957	Standard
	Mn	55	24809.0	1.6	**5.2918**	0.130	2.5	ug/L	667	Standard
	Co	59	10311.5	2.5	**2.0553**	0.061	3.0	ug/L	156	Standard
	Ni	60	7826.7	3.5	**5.2010**	0.214	4.1	ug/L	154	Standard
	Cu	65	7373.1	1.7	**5.0405**	0.041	0.8	ug/L	116	Standard
	Zn	66	9729.8	0.3	**11.4030**	0.121	1.1	ug/L	114	Standard
>	**Ge**	72	484946.6	0.9				ug/L	467488	Standard
	As	75	3359.1	4.0	**3.9363**	0.142	3.6	ug/L	-61	Standard
	Se	82	397.0	4.9	**4.3424**	0.187	4.3	ug/L	9	Standard
	Se-1	77	1251.7	3.8	**19.1827**	0.941	4.9	ug/L	125	Standard
>	**Ga**	71	91.7	51.8				mg/L	50	Standard
	Rb	85	12680.3	3.8				ug/L	18	Standard
	Y	89	416497.4	1.2				ug/L	402730	Standard
>	**Rh**	103	43.3	33.3				ug/L	12	Standard
	Mo	98	18749.0	0.9	**10.6609**	0.092	0.9	ug/L	8	Standard
	Ag	107	18713.9	2.3	**4.1555**	0.090	2.2	ug/L	65	Standard
	Cd	111	741.5	5.3	**0.5039**	0.034	6.8	mg/L	3	Standard
	Cd	114	2118.8	3.6	**0.5831**	0.024	4.0	ug/L	15	Standard
>	**In**	115	529635.2	1.6				ug/L	526825	Standard
	Sn	118	40380.5	3.9	**9.8616**	0.273	2.8	ug/L	368	Standard
	Sb	123	40369.0	1.1	**12.5832**	0.256	2.0	ug/L	46	Standard
	Ba	135	34194.9	1.5	**25.0124**	0.222	0.9	ug/L	16	Standard
	Ce	140	21.7	35.3				ug/L	43	Standard
>	**Tb**	159	811978.4	2.1				ug/L	771780	Standard
	Ho	165	6.7	43.3				ug/L	8	Standard
	Tl	203	27090.2	0.7	**4.7501**	0.064	1.3	ug/L	28	Standard
	Tl	205	25054.0	2.3	**4.8076**	0.139	2.9	ug/L	20	Standard
	Pb	206	18150.5	0.9	**5.2427**	0.065	1.2	ug/L	184	Standard
	Pb	207	16409.2	1.9	**5.2278**	0.121	2.3	ug/L	161	Standard
	Pb	208	69974.8	1.8	**5.1232**	0.135	2.6	ug/L	746	Standard
	U	238	6.3	24.1	**-0.0037**	0.000	8.6	ug/L	6	Standard
>	**Bi**	209	467878.1	0.8				ug/L	429329	Standard

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Na	23	1.7	173.2	**6.0005**	10.385	173.1	mg/L	0	Standard
Mg	24	5085.9	5.9	**7.2694**	0.537	7.4	mg/L	25	Standard
K	39	1613.4	2.4	**5.1303**	0.161	3.1	mg/L	25	Standard
Ca	43	145.0	6.9	**6.9432**	0.857	12.3	mg/L	77	Standard
Fe	54	179.9	14.4	**0.0334**	0.025	74.1	mg/L	165	Standard
Fe	57	201.7	3.8	**0.1637**	0.019	11.8	mg/L	205	Standard
Sc-1	45	50984.0	1.6				mg/L	46031	Standard
Cl	35	36922.3	1.2				ug/L	28530	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	2156.8	2.2				ug/L	1560	Standard
P	31	20720.8	1.3				ug/L	15481	Standard
S	34	2725.2	6.8				ug/L	2072	Standard
Sr	88	76.7	16.4				ug/L	70	Standard
C	12	106.7	42.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	0	Standard
Dy	164	9.5	102.6				mg/L	13	Standard
Ho-1	165	6.7	43.3				mg/L	8	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	4192.3	10.6				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		133.766	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.734	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.533
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.979
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 16, 2016

Method 6020 - Summary Report

Sample ID: L1606040101SD WG572244-05
Sample Date/Time: Wednesday, June 15, 2016 15:18:11
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77472.6	1.2				ug/L	58443	Standard
	Be	9	370.0	10.6	**0.4494**	0.049	10.8	ug/L	5	Standard
	Al	27	126644.0	2.6	**0.8279**	0.012	1.4	ug/L	385	Standard
	Sc	45	50992.4	2.1				ug/L	46031	Standard
	Ti	47	2495.9	2.4	**10.5729**	0.357	3.4	ug/L	94	Standard
	V	51	61169.9	2.0	**10.7308**	0.188	1.8	ug/L	1280	Standard
	Cr	52	37758.0	1.2	**5.3323**	0.032	0.6	ug/L	6381	Standard
	Cr	53	21223.2	2.3	**27.2955**	0.461	1.7	ug/L	1957	Standard
	Mn	55	24734.5	1.3	**5.3946**	0.028	0.5	ug/L	667	Standard
	Co	59	10245.1	2.4	**2.0871**	0.037	1.8	ug/L	156	Standard
	Ni	60	7744.3	3.0	**5.2594**	0.117	2.2	ug/L	154	Standard
	Cu	65	7364.5	1.9	**5.1474**	0.055	1.1	ug/L	116	Standard
	Zn	66	9786.5	1.2	**11.7277**	0.037	0.3	ug/L	114	Standard
>	**Ge**	72	474518.4	0.9				ug/L	467488	Standard
	As	75	3328.3	4.3	**3.9848**	0.133	3.3	ug/L	-61	Standard
	Se	82	395.7	6.7	**4.4261**	0.273	6.2	ug/L	9	Standard
	Se-1	77	1324.1	5.1	**20.8997**	1.269	6.1	ug/L	125	Standard
>	**Ga**	71	75.0	23.1				mg/L	50	Standard
	Rb	85	12164.9	0.3				ug/L	18	Standard
	Y	89	410499.5	1.9				ug/L	402730	Standard
>	**Rh**	103	40.0	25.0				ug/L	12	Standard
	Mo	98	18829.8	0.6	**10.5327**	0.077	0.7	ug/L	8	Standard
	Ag	107	18488.6	3.3	**4.0374**	0.093	2.3	ug/L	65	Standard
	Cd	111	720.4	2.2	**0.4810**	0.012	2.4	mg/L	3	Standard
	Cd	114	2034.8	5.5	**0.5499**	0.026	4.7	ug/L	15	Standard
>	**In**	115	538367.6	1.0				ug/L	526825	Standard
	Sn	118	40963.7	2.4	**9.8422**	0.140	1.4	ug/L	368	Standard
	Sb	123	40186.6	1.7	**12.3200**	0.091	0.7	ug/L	46	Standard
	Ba	135	34155.1	1.6	**24.5758**	0.148	0.6	ug/L	16	Standard
	Ce	140	33.3	31.2				ug/L	43	Standard
>	**Tb**	159	812709.9	0.9				ug/L	771780	Standard
	Ho	165	11.7	65.5				ug/L	8	Standard
	Tl	203	27012.7	1.0	**4.7136**	0.044	0.9	ug/L	28	Standard
	Tl	205	24544.9	3.4	**4.6865**	0.152	3.2	ug/L	20	Standard
	Pb	206	18181.2	1.6	**5.2262**	0.086	1.6	ug/L	184	Standard
	Pb	207	16257.1	1.6	**5.1532**	0.072	1.4	ug/L	161	Standard
	Pb	208	69371.8	1.4	**5.0531**	0.065	1.3	ug/L	746	Standard
	U	238	12.3	47.5	**-0.0025**	0.001	48.0	ug/L	6	Standard
>	**Bi**	209	470114.6	0.4				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	5012.5	3.5	**7.1632**	0.406	5.7	mg/L	25	Standard
K	39	1603.4	5.0	**5.0951**	0.216	4.2	mg/L	25	Standard
Ca	43	121.7	15.6	**5.0152**	1.361	27.1	mg/L	77	Standard
Fe	54	172.0	21.1	**0.0258**	0.034	130.9	mg/L	165	Standard
Fe	57	195.0	9.2	**0.1395**	0.072	51.8	mg/L	205	Standard
> **Sc-1**	45	50992.4	2.1				mg/L	46031	Standard
Cl	35	36753.9	1.9				ug/L	28530	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	2080.1	5.5				ug/L	1560	Standard
P	31	20387.0	1.6				ug/L	15481	Standard
S	34	2653.6	4.0				ug/L	2072	Standard
Sr	88	103.3	29.6				ug/L	70	Standard
C	12	93.3	24.7				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.9	122.5				mg/L	13	Standard
Ho-1	165	11.7	65.5				mg/L	8	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	3510.4	3.8				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.562	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.504	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.191
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.500
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 16, 2016

Method 6020 - Summary Report

Sample ID: L1606040301
Sample Date/Time: Wednesday, June 15, 2016 15:21:22
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74839.4	0.7				ug/L	58443	Standard
	Be	9	5.0	173.2	**-0.0128**	0.011	89.4	ug/L	5	Standard
	Al	27	2396.9	7.5	**0.0083**	0.001	13.4	ug/L	385	Standard
	Sc	45	50233.1	1.3				ug/L	46031	Standard
	Ti	47	43.7	6.6	**-0.2894**	0.014	4.7	ug/L	94	Standard
	V	51	2522.7	23.8	**0.1940**	0.106	54.7	ug/L	1280	Standard
	Cr	52	7611.6	2.2	**0.1478**	0.024	16.4	ug/L	6381	Standard
	Cr	53	11112.4	0.6	**12.9583**	0.142	1.1	ug/L	1957	Standard
	Mn	55	1332.7	1.7	**0.1069**	0.004	3.6	ug/L	667	Standard
	Co	59	180.7	12.4	**0.0013**	0.005	372.9	ug/L	156	Standard
	Ni	60	330.7	2.8	**0.1020**	0.006	6.2	ug/L	154	Standard
	Cu	65	416.0	3.6	**0.1919**	0.009	4.9	ug/L	116	Standard
	Zn	66	4802.4	2.4	**5.6378**	0.116	2.1	ug/L	114	Standard
>	**Ge**	72	473401.3	0.5				ug/L	467488	Standard
	As	75	-30.9	301.5	**0.0045**	0.111	2472.4	ug/L	-61	Standard
	Se	82	37.1	19.8	**0.2610**	0.087	33.4	ug/L	9	Standard
	Se-1	77	653.3	6.0	**9.3159**	0.641	6.9	ug/L	125	Standard
>	**Ga**	71	153.3	16.1				mg/L	50	Standard
	Rb	85	11045.7	0.6				ug/L	18	Standard
	Y	89	414380.6	1.2				ug/L	402730	Standard
>	**Rh**	103	15.0	33.3				ug/L	12	Standard
	Mo	98	204.7	1.8	**0.1079**	0.004	3.4	ug/L	8	Standard
	Ag	107	67.3	3.7	**-0.0055**	0.001	16.2	ug/L	65	Standard
	Cd	111	3.6	100.1	**-0.0056**	0.003	46.1	mg/L	3	Standard
	Cd	114	18.7	107.8	**-0.0090**	0.006	61.9	ug/L	15	Standard
>	**In**	115	532263.7	2.3				ug/L	526825	Standard
	Sn	118	670.0	2.6	**0.0521**	0.008	15.6	ug/L	368	Standard
	Sb	123	105.7	9.7	**0.0179**	0.004	21.5	ug/L	46	Standard
	Ba	135	6290.0	1.1	**4.5610**	0.127	2.8	ug/L	16	Standard
	Ce	140	31.7	50.8				ug/L	43	Standard
>	**Tb**	159	796234.8	0.6				ug/L	771780	Standard
	Ho	165	16.7	17.3				ug/L	8	Standard
	Tl	203	117.3	3.2	**0.0071**	0.001	8.2	ug/L	28	Standard
	Tl	205	103.3	14.8	**0.0089**	0.003	36.3	ug/L	20	Standard
	Pb	206	1243.4	0.9	**0.3093**	0.004	1.4	ug/L	184	Standard
	Pb	207	1059.7	2.7	**0.2867**	0.009	3.3	ug/L	161	Standard
	Pb	208	4658.3	1.7	**0.2907**	0.009	3.0	ug/L	746	Standard
	U	238	3.7	87.7	**-0.0042**	0.001	16.4	ug/L	6	Standard
>	**Bi**	209	446223.0	0.7				ug/L	429329	Standard

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Na	23	1.7	173.2	**6.0720**	10.508	173.1	mg/L	0	Standard
Mg	24	4202.3	5.5	**6.0847**	0.306	5.0	mg/L	25	Standard
K	39	1475.1	5.7	**4.7476**	0.223	4.7	mg/L	25	Standard
Ca	43	101.7	14.2	**3.5197**	1.126	32.0	mg/L	77	Standard
Fe	54	170.8	7.2	**0.0271**	0.010	36.2	mg/L	165	Standard
Fe	57	175.0	20.0	**0.0736**	0.123	167.5	mg/L	205	Standard
Sc-1	45	50233.1	1.3				mg/L	46031	Standard
Cl	35	36933.6	0.7				ug/L	28530	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	2400.2	4.4				ug/L	1560	Standard
P	31	20023.2	1.1				ug/L	15481	Standard
S	34	2633.6	3.1				ug/L	2072	Standard
Sr	88	86.7	14.5				ug/L	70	Standard
C	12	110.0	45.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	6.2	93.6				mg/L	13	Standard
Ho-1	165	16.7	17.3				mg/L	8	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	5019.2	6.5				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		128.056	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.265	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.032
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.935
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 16, 2016

Method 6020 - Summary Report

Sample ID: L1606040301PS WG572834-01
Sample Date/Time: Wednesday, June 15, 2016 15:24:33
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75003.6	2.0				ug/L	58443	Standard
	Be	9	37396.1	3.2	**48.9095**	0.625	1.3	ug/L	5	Standard
	Al	27	2003.5	5.1	**0.0056**	0.001	16.5	ug/L	385	Standard
	Sc	45	50890.4	2.5				ug/L	46031	Standard
	Ti	47	39.3	19.3	**-0.3056**	0.032	10.5	ug/L	94	Standard
	V	51	295847.6	0.8	**54.0439**	0.963	1.8	ug/L	1280	Standard
	Cr	52	311990.0	1.0	**53.6798**	0.998	1.9	ug/L	6381	Standard
	Cr	53	48268.5	3.3	**67.2085**	0.926	1.4	ug/L	1957	Standard
	Mn	55	239337.2	0.3	**55.0677**	1.477	2.7	ug/L	667	Standard
	Co	59	249012.1	1.3	**52.6867**	0.826	1.6	ug/L	156	Standard
	Ni	60	74372.1	1.4	**52.7302**	0.541	1.0	ug/L	154	Standard
	Cu	65	73723.9	1.2	**53.6142**	0.813	1.5	ug/L	116	Standard
	Zn	66	46684.2	1.5	**58.1407**	0.742	1.3	ug/L	114	Standard
>	**Ge**	72	464631.2	2.4				ug/L	467488	Standard
	As	75	42201.0	2.2	**51.1231**	0.257	0.5	ug/L	-61	Standard
	Se	82	4345.6	2.1	**51.4148**	0.556	1.1	ug/L	9	Standard
	Se-1	77	3509.1	1.5	**60.0132**	1.416	2.4	ug/L	125	Standard
>	**Ga**	71	105.0	12.6				mg/L	50	Standard
	Rb	85	10907.3	3.8				ug/L	18	Standard
	Y	89	402465.8	1.3				ug/L	402730	Standard
>	**Rh**	103	38.3	49.4				ug/L	12	Standard
	Mo	98	199.7	1.4	**0.1062**	0.004	3.7	ug/L	8	Standard
	Ag	107	228964.1	0.7	**51.3443**	0.777	1.5	ug/L	65	Standard
	Cd	111	75510.7	2.4	**52.3646**	0.247	0.5	mg/L	3	Standard
	Cd	114	182539.1	2.7	**51.7065**	0.408	0.8	ug/L	15	Standard
>	**In**	115	526903.4	2.0				ug/L	526825	Standard
	Sn	118	543.3	6.1	**0.0222**	0.008	35.1	ug/L	368	Standard
	Sb	123	162880.8	1.6	**51.0732**	0.288	0.6	ug/L	46	Standard
	Ba	135	75839.1	2.2	**55.7864**	0.100	0.2	ug/L	16	Standard
	Ce	140	16.7	75.5				ug/L	43	Standard
>	**Tb**	159	795188.3	2.3				ug/L	771780	Standard
	Ho	165	3.3	86.6				ug/L	8	Standard
	Tl	203	272059.6	2.7	**50.8420**	0.302	0.6	ug/L	28	Standard
	Tl	205	252198.3	0.7	**51.5713**	1.385	2.7	ug/L	20	Standard
	Pb	206	173068.2	1.1	**53.8064**	0.563	1.0	ug/L	184	Standard
	Pb	207	149775.4	1.0	**51.3543**	0.611	1.2	ug/L	161	Standard
	Pb	208	653882.6	0.2	**51.5381**	1.000	1.9	ug/L	746	Standard
	U	238	237790.1	0.3	**51.5483**	1.191	2.3	ug/L	6	Standard
>	**Bi**	209	440157.7	2.1				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4028.9	2.1	**5.7581**	0.120	2.1	mg/L	25	Standard
K	39	1363.4	4.0	**4.3248**	0.279	6.4	mg/L	25	Standard
Ca	43	116.7	23.6	**4.6413**	2.222	47.9	mg/L	77	Standard
Fe	54	118.3	2.0	**-0.0251**	0.005	19.2	mg/L	165	Standard
Fe	57	178.3	7.1	**0.0779**	0.031	40.1	mg/L	205	Standard
> **Sc-1**	45	50890.4	2.5				mg/L	46031	Standard
Cl	35	36766.6	1.0				ug/L	28530	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	2096.8	5.9				ug/L	1560	Standard
P	31	20617.4	1.9				ug/L	15481	Standard
S	34	2593.6	5.5				ug/L	2072	Standard
Sr	88	68.3	27.7				ug/L	70	Standard
C	12	83.3	18.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.5	102.6				mg/L	13	Standard
Ho-1	165	3.3	86.6				mg/L	8	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	5000.8	6.0				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.337	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.389	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606040301PS WG572834-01
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.015
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.522
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 16, 2016

Method 6020 - Summary Report

Sample ID: L1606040301SDL WG572834-02
Sample Date/Time: Wednesday, June 15, 2016 15:27:45
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 250
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68231.6	1.1				ug/L	58443	Standard
	Be	9	11.7	49.5	**-0.0026**	0.008	313.7	ug/L	5	Standard
	Al	27	2081.8	37.7	**0.0075**	0.006	76.2	ug/L	385	Standard
	Sc	45	50072.6	2.9				ug/L	46031	Standard
	Ti	47	34.3	17.6	**-0.3293**	0.027	8.1	ug/L	94	Standard
	V	51	1647.7	24.2	**0.0399**	0.074	185.5	ug/L	1280	Standard
	Cr	52	7028.6	2.8	**0.0598**	0.035	58.4	ug/L	6381	Standard
	Cr	53	4322.3	2.5	**3.3433**	0.131	3.9	ug/L	1957	Standard
	Mn	55	1369.4	15.1	**0.1184**	0.048	40.2	ug/L	667	Standard
	Co	59	188.3	7.5	**0.0033**	0.003	91.4	ug/L	156	Standard
	Ni	60	158.7	6.3	**-0.0168**	0.007	40.2	ug/L	154	Standard
	Cu	65	207.0	0.5	**0.0440**	0.001	2.6	ug/L	116	Standard
	Zn	66	1857.1	0.8	**2.0464**	0.030	1.5	ug/L	114	Standard
>	**Ge**	72	468556.4	0.5				ug/L	467488	Standard
	As	75	-20.3	309.8	**0.0166**	0.076	455.0	ug/L	-61	Standard
	Se	82	16.7	36.6	**0.0260**	0.072	278.1	ug/L	9	Standard
	Se-1	77	213.0	6.6	**1.7177**	0.235	13.7	ug/L	125	Standard
>	**Ga**	71	50.0	36.1				mg/L	50	Standard
	Rb	85	2293.5	1.2				ug/L	18	Standard
	Y	89	406703.5	1.3				ug/L	402730	Standard
>	**Rh**	103	35.0	14.3				ug/L	12	Standard
	Mo	98	93.1	9.2	**0.0453**	0.005	11.6	ug/L	8	Standard
	Ag	107	84.7	13.8	**-0.0015**	0.003	182.1	ug/L	65	Standard
	Cd	111	12.2	62.3	**0.0004**	0.005	1434.0	mg/L	3	Standard
	Cd	114	29.4	15.2	**-0.0059**	0.001	22.0	ug/L	15	Standard
>	**In**	115	526127.8	0.8				ug/L	526825	Standard
	Sn	118	396.7	5.8	**-0.0140**	0.006	46.0	ug/L	368	Standard
	Sb	123	1531.9	18.9	**0.4659**	0.088	19.0	ug/L	46	Standard
	Ba	135	1360.7	7.6	**0.9800**	0.080	8.1	ug/L	16	Standard
	Ce	140	21.7	26.6				ug/L	43	Standard
>	**Tb**	159	802019.9	1.3				ug/L	771780	Standard
	Ho	165	11.7	24.7				ug/L	8	Standard
	Tl	203	172.7	4.5	**0.0180**	0.001	7.8	ug/L	28	Standard
	Tl	205	181.7	20.7	**0.0255**	0.008	30.4	ug/L	20	Standard
	Pb	206	508.7	5.6	**0.0874**	0.009	10.1	ug/L	184	Standard
	Pb	207	402.3	3.1	**0.0674**	0.004	6.1	ug/L	161	Standard
	Pb	208	1805.0	5.4	**0.0720**	0.008	10.7	ug/L	746	Standard
	U	238	39.0	31.1	**0.0036**	0.003	74.4	ug/L	6	Standard
>	**Bi**	209	435659.3	0.2				ug/L	429329	Standard

Sample ID: L1606040301SDL WG572834-02
Report Date/Time: Wednesday, June 15, 2016 15:30:02
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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	810.0	16.0	**1.1420**	0.157	13.7	mg/L	25	Standard
K	39	356.7	8.0	**1.0426**	0.062	6.0	mg/L	25	Standard
Ca	43	58.3	27.6	**-0.0678**	1.243	1834.7	mg/L	77	Standard
Fe	54	129.4	20.3	**-0.0129**	0.022	173.9	mg/L	165	Standard
Fe	57	125.0	0.0	**-0.1122**	0.014	12.1	mg/L	205	Standard
Sc-1	45	50072.6	2.9				mg/L	46031	Standard
Cl	35	36811.3	1.0				ug/L	28530	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	1640.1	3.2				ug/L	1560	Standard
P	31	20208.5	1.2				ug/L	15481	Standard
S	34	2615.2	8.5				ug/L	2072	Standard
Sr	88	71.7	4.0				ug/L	70	Standard
C	12	46.7	44.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	0.0					mg/L	13	Standard
Ho-1	165	11.7	24.7				mg/L	8	Standard
Er	166	0.0					mg/L	7	Standard
I	127	2031.8	4.1				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		116.750	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.228	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.868
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.474
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 16, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 15, 2016 15:32:37
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64838.5	2.6				ug/L	58443	Standard
	Be	9	32344.7	8.9	**48.8957**	3.247	6.6	ug/L	5	Standard
	Al	27	5823704.0	6.1	**45.9089**	1.914	4.2	ug/L	385	Standard
	Sc	45	49363.7	3.0				ug/L	46031	Standard
	Ti	47	22727.4	6.4	**101.7715**	7.161	7.0	ug/L	94	Standard
	V	51	270530.3	5.7	**49.1154**	3.019	6.1	ug/L	1280	Standard
	Cr	52	285162.9	6.9	**48.6835**	3.698	7.6	ug/L	6381	Standard
	Cr	53	35339.6	6.1	**48.1610**	3.265	6.8	ug/L	1957	Standard
	Mn	55	224386.4	7.0	**51.3183**	3.887	7.6	ug/L	667	Standard
	Co	59	235436.6	6.2	**49.5355**	3.312	6.7	ug/L	156	Standard
	Ni	60	69564.6	4.9	**49.0385**	2.645	5.4	ug/L	154	Standard
	Cu	65	67707.9	4.9	**48.9522**	2.606	5.3	ug/L	116	Standard
	Zn	66	39477.1	4.3	**48.8462**	2.219	4.5	ug/L	114	Standard
>	Ge	72	467238.6	0.8				ug/L	467488	Standard
	As	75	39926.9	3.3	**48.1059**	1.834	3.8	ug/L	-61	Standard
	Se	82	4157.0	3.5	**48.8998**	1.805	3.7	ug/L	9	Standard
	Se-1	77	2809.9	6.2	**47.3814**	3.437	7.3	ug/L	125	Standard
>	Ga	71	38.3	15.1				mg/L	50	Standard
	Rb	85	588.3	17.9				ug/L	18	Standard
	Y	89	407306.1	2.6				ug/L	402730	Standard
>	Rh	103	23.3	24.7				ug/L	12	Standard
	Mo	98	170390.1	5.5	**98.2013**	5.092	5.2	ug/L	8	Standard
	Ag	107	217123.6	4.4	**49.0603**	2.108	4.3	ug/L	65	Standard
	Cd	111	69746.2	6.6	**48.7519**	3.302	6.8	mg/L	3	Standard
	Cd	114	171140.6	7.6	**48.8643**	3.761	7.7	ug/L	15	Standard
>	In	115	522806.8	1.0				ug/L	526825	Standard
	Sn	118	192844.7	9.3	**48.1567**	4.564	9.5	ug/L	368	Standard
	Sb	123	154400.9	6.6	**48.7900**	3.170	6.5	ug/L	46	Standard
	Ba	135	65574.5	5.4	**48.6139**	2.653	5.5	ug/L	16	Standard
	Ce	140	58.3	9.9				ug/L	43	Standard
>	Tb	159	786413.2	0.7				ug/L	771780	Standard
	Ho	165	10.0	86.6				ug/L	8	Standard
	Tl	203	255753.9	3.6	**48.9542**	1.506	3.1	ug/L	28	Standard
	Tl	205	234889.5	3.1	**49.1756**	1.300	2.6	ug/L	20	Standard
	Pb	206	155440.9	6.1	**49.4774**	2.779	5.6	ug/L	184	Standard
	Pb	207	140478.3	5.1	**49.3179**	2.279	4.6	ug/L	161	Standard
	Pb	208	605397.5	5.7	**48.8493**	2.517	5.2	ug/L	746	Standard
	U	238	219486.4	7.2	**48.7095**	3.294	6.8	ug/L	6	Standard
>	Bi	209	429719.7	0.7				ug/L	429329	Standard

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Na	23	1.7	173.2	**6.4771**	11.210	173.1	mg/L	0	Standard
Mg	24	3158.7	9.9	**4.6394**	0.329	7.1	mg/L	25	Standard
K	39	1341.7	12.5	**4.3807**	0.494	11.3	mg/L	25	Standard
Ca	43	101.7	10.2	**3.6623**	0.633	17.3	mg/L	77	Standard
Fe	54	4416.7	3.0	**4.2147**	0.114	2.7	mg/L	165	Standard
Fe	57	1220.0	13.3	**4.0859**	0.490	12.0	mg/L	205	Standard
Sc-1	45	49363.7	3.0				mg/L	46031	Standard
Cl	35	34884.8	0.6				ug/L	28530	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	1466.7	13.7				ug/L	1560	Standard
P	31	20492.2	2.3				ug/L	15481	Standard
S	34	2856.9	1.9				ug/L	2072	Standard
Sr	88	46.7	22.3				ug/L	70	Standard
C	12	46.7	101.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.5	177.6				mg/L	13	Standard
Ho-1	165	10.0	86.6				mg/L	8	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	1023.4	14.6				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	97.791		
Al	27	91.818		
Sc	45			
Ti	47	101.771		
V	51	98.231		
Cr	52	97.367		
Cr	53			
Mn	55	102.637		
Co	59	99.071		
Ni	60	98.077		
Cu	65	97.904		
Zn	66	97.692		
Ge	72		99.947	
As	75	96.212		
Se	82	97.800		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	98.201		
Ag	107	98.121		
Cd	111	97.504		
Cd	114			
In	115			99.237
Sn	118	96.313		
Sb	123	97.580		
Ba	135	97.228		
Ce	140			
Tb	159			
Ho	165			
Tl	203	97.908		
Tl	205			
Pb	206			
Pb	207			
Pb	208	97.699		
U	238	97.419		
Bi	209			100.091
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 15, 2016 15:35:49
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62881.9	1.8				ug/L	58443	Standard
	Be	9	36.7	28.4	**0.0378**	0.016	42.6	ug/L	5	Standard
	Al	27	5893.2	68.4	**0.0400**	0.033	83.3	ug/L	385	Standard
	Sc	45	49686.4	3.5				ug/L	46031	Standard
	Ti	47	47.7	14.0	**-0.2691**	0.030	11.3	ug/L	94	Standard
	V	51	1648.7	26.6	**0.0411**	0.084	205.6	ug/L	1280	Standard
	Cr	52	6046.2	1.2	**-0.1096**	0.014	12.8	ug/L	6381	Standard
	Cr	53	888.4	7.7	**-1.6001**	0.082	5.1	ug/L	1957	Standard
	Mn	55	2619.4	119.7	**0.4118**	0.732	177.8	ug/L	667	Standard
	Co	59	435.3	50.1	**0.0557**	0.047	84.8	ug/L	156	Standard
	Ni	60	149.0	9.3	**-0.0235**	0.009	37.1	ug/L	154	Standard
	Cu	65	142.7	2.1	**-0.0022**	0.004	162.0	ug/L	116	Standard
	Zn	66	156.0	15.6	**-0.0631**	0.030	47.8	ug/L	114	Standard
>	**Ge**	72	467807.2	1.3				ug/L	467488	Standard
	As	75	-25.0	95.6	**0.0107**	0.029	273.9	ug/L	-61	Standard
	Se	82	14.2	58.0	**-0.0042**	0.096	2293.6	ug/L	9	Standard
	Se-1	77	85.0	8.2	**-0.5215**	0.138	26.5	ug/L	125	Standard
>	**Ga**	71	43.3	13.3				mg/L	50	Standard
	Rb	85	26.7	75.8				ug/L	18	Standard
	Y	89	406948.4	1.5				ug/L	402730	Standard
>	**Rh**	103	25.0	40.0				ug/L	12	Standard
	Mo	98	282.7	50.9	**0.1529**	0.081	53.0	ug/L	8	Standard
	Ag	107	284.3	66.4	**0.0429**	0.042	97.2	ug/L	65	Standard
	Cd	111	38.0	27.0	**0.0182**	0.007	39.2	mg/L	3	Standard
	Cd	114	95.5	39.9	**0.0127**	0.011	83.5	ug/L	15	Standard
>	**In**	115	528347.8	0.6				ug/L	526825	Standard
	Sn	118	726.7	23.9	**0.0674**	0.044	65.4	ug/L	368	Standard
	Sb	123	595.6	16.5	**0.1712**	0.030	17.4	ug/L	46	Standard
	Ba	135	91.7	26.2	**0.0443**	0.018	40.4	ug/L	16	Standard
	Ce	140	25.0	87.2				ug/L	43	Standard
>	**Tb**	159	789974.0	1.6				ug/L	771780	Standard
	Ho	165	10.0	50.0				ug/L	8	Standard
	Tl	203	151.7	35.6	**0.0142**	0.011	73.9	ug/L	28	Standard
	Tl	205	221.7	41.7	**0.0340**	0.020	57.4	ug/L	20	Standard
	Pb	206	412.3	56.0	**0.0581**	0.075	128.9	ug/L	184	Standard
	Pb	207	396.0	59.5	**0.0662**	0.084	127.1	ug/L	161	Standard
	Pb	208	1403.7	30.9	**0.0405**	0.036	89.3	ug/L	746	Standard
	U	238	186.0	57.4	**0.0360**	0.024	66.0	ug/L	6	Standard
>	**Bi**	209	434816.3	1.4				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	36.7	56.8	**0.0152**	0.032	212.5	mg/L	25	Standard
K	39	35.0	24.7	**-0.0262**	0.024	93.4	mg/L	25	Standard
Ca	43	46.7	16.4	**-0.9810**	0.703	71.7	mg/L	77	Standard
Fe	54	134.2	7.7	**-0.0069**	0.007	101.5	mg/L	165	Standard
Fe	57	135.0	7.4	**-0.0695**	0.054	78.3	mg/L	205	Standard
Sc-1	45	49686.4	3.5				mg/L	46031	Standard
Cl	35	35578.4	3.0				ug/L	28530	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	1320.1	11.2				ug/L	1560	Standard
P	31	21199.8	4.3				ug/L	15481	Standard
S	34	2786.9	3.9				ug/L	2072	Standard
Sr	88	66.7	38.5				ug/L	70	Standard
C	12	40.0	25.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.7	86.7				mg/L	13	Standard
Ho-1	165	10.0	50.0				mg/L	8	Standard
Er	166	13.3	114.6				mg/L	7	Standard
I	127	938.4	7.5				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.068	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.289
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.278
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Mn	55	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW H4 WG572637-03
Sample Date/Time: Wednesday, June 15, 2016 15:42:41
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69269.6	0.3				ug/L	58443	Standard
	Be	9	10.0		**-0.0052**	0.000	0.8	ug/L	5	Standard
	Al	27	831.7	12.1	**-0.0019**	0.001	38.4	ug/L	385	Standard
	Sc	45	49499.1	0.9				ug/L	46031	Standard
	Ti	47	37.7	8.5	**-0.3159**	0.013	4.3	ug/L	94	Standard
	V	51	2002.5	4.8	**0.1009**	0.014	13.9	ug/L	1280	Standard
	Cr	52	6592.8	0.9	**-0.0264**	0.007	26.5	ug/L	6381	Standard
	Cr	53	9954.9	3.6	**11.3329**	0.709	6.3	ug/L	1957	Standard
	Mn	55	1245.4	0.7	**0.0875**	0.004	5.1	ug/L	667	Standard
	Co	59	156.7	1.0	**-0.0037**	0.000	10.1	ug/L	156	Standard
	Ni	60	102.7	16.8	**-0.0568**	0.013	22.5	ug/L	154	Standard
	Cu	65	122.3	11.0	**-0.0180**	0.009	48.8	ug/L	116	Standard
	Zn	66	1088.7	4.4	**1.0813**	0.060	5.5	ug/L	114	Standard
>	**Ge**	72	472797.0	1.4				ug/L	467488	Standard
	As	75	-64.0	84.4	**-0.0356**	0.065	181.9	ug/L	-61	Standard
	Se	82	11.1	57.5	**-0.0425**	0.072	170.1	ug/L	9	Standard
	Se-1	77	441.0	3.4	**5.6474**	0.357	6.3	ug/L	125	Standard
>	**Ga**	71	48.3	31.6				mg/L	50	Standard
	Rb	85	26.7	28.6				ug/L	18	Standard
	Y	89	418855.7	0.5				ug/L	402730	Standard
>	**Rh**	103	10.0	86.6				ug/L	12	Standard
	Mo	98	32.8	23.0	**0.0103**	0.004	39.8	ug/L	8	Standard
	Ag	107	76.3	16.2	**-0.0037**	0.003	73.0	ug/L	65	Standard
	Cd	111	7.3	21.1	**-0.0031**	0.001	34.7	mg/L	3	Standard
	Cd	114	18.5	172.0	**-0.0092**	0.009	96.6	ug/L	15	Standard
>	**In**	115	536371.3	0.8				ug/L	526825	Standard
	Sn	118	551.7	10.8	**0.0218**	0.014	62.3	ug/L	368	Standard
	Sb	123	234.2	12.2	**0.0571**	0.008	14.6	ug/L	46	Standard
	Ba	135	41.0	12.2	**0.0066**	0.004	54.8	ug/L	16	Standard
	Ce	140	18.3	68.6				ug/L	43	Standard
>	**Tb**	159	793471.3	1.1				ug/L	771780	Standard
	Ho	165	11.7	65.5				ug/L	8	Standard
	Tl	203	93.7	5.5	**0.0030**	0.001	34.7	ug/L	28	Standard
	Tl	205	91.7	16.7	**0.0068**	0.003	44.1	ug/L	20	Standard
	Pb	206	254.0	5.9	**0.0067**	0.005	81.7	ug/L	184	Standard
	Pb	207	199.0	9.2	**-0.0037**	0.007	189.4	ug/L	161	Standard
	Pb	208	904.3	5.0	**-0.0004**	0.004	1007.1	ug/L	746	Standard
	U	238	7.3	61.5	**-0.0034**	0.001	29.5	ug/L	6	Standard
>	**Bi**	209	439438.1	1.0				ug/L	429329	Standard

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Na	23	3.3	173.2	**12.6169**	21.844	173.1	mg/L	0	Standard
Mg	24	26.7	60.3	**-0.0001**	0.023	17656.4	mg/L	25	Standard
K	39	36.7	15.7	**-0.0195**	0.020	103.9	mg/L	25	Standard
Ca	43	35.0	24.7	**-1.9580**	0.704	36.0	mg/L	77	Standard
Fe	54	141.3	20.3	**0.0006**	0.028	4728.1	mg/L	165	Standard
Fe	57	171.7	26.3	**0.0721**	0.174	242.0	mg/L	205	Standard
Sc-1	45	49499.1	0.9				mg/L	46031	Standard
Cl	35	37424.8	2.3				ug/L	28530	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	1386.7	12.8				ug/L	1560	Standard
P	31	21118.0	0.9				ug/L	15481	Standard
S	34	2801.9	0.9				ug/L	2072	Standard
Sr	88	63.3	16.4				ug/L	70	Standard
C	12	60.0	28.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	15.7	39.4				mg/L	13	Standard
Ho-1	165	11.7	65.5				mg/L	8	Standard
Er	166	20.0	50.0				mg/L	7	Standard
I	127	1058.4	5.1				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.526	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.136	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.812
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.355
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW H4 WG572637-04
Sample Date/Time: Wednesday, June 15, 2016 15:45:52
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73437.9	5.4				ug/L	58443	Standard
	Be	9	378.3	10.0	**0.4855**	0.025	5.1	ug/L	5	Standard
	Al	27	120268.9	10.5	**0.8280**	0.044	5.4	ug/L	385	Standard
	Sc	45	51985.9	5.7				ug/L	46031	Standard
	Ti	47	2355.5	11.7	**9.9825**	0.745	7.5	ug/L	94	Standard
	V	51	57774.4	9.8	**10.1605**	0.536	5.3	ug/L	1280	Standard
	Cr	52	35255.0	11.0	**4.9224**	0.384	7.8	ug/L	6381	Standard
	Cr	53	23829.0	15.6	**31.0765**	3.912	12.6	ug/L	1957	Standard
	Mn	55	24394.8	11.4	**5.3362**	0.371	6.9	ug/L	667	Standard
	Co	59	9922.6	12.7	**2.0263**	0.169	8.3	ug/L	156	Standard
	Ni	60	7230.7	10.5	**4.9207**	0.292	5.9	ug/L	154	Standard
	Cu	65	7106.7	9.7	**4.9834**	0.252	5.1	ug/L	116	Standard
	Zn	66	9581.1	11.3	**11.5152**	0.784	6.8	ug/L	114	Standard
>	**Ge**	72	471938.8	4.8				ug/L	467488	Standard
	As	75	3149.3	10.4	**3.7873**	0.226	6.0	ug/L	-61	Standard
	Se	82	328.3	9.9	**3.6599**	0.228	6.2	ug/L	9	Standard
	Se-1	77	1088.7	12.6	**16.8798**	1.569	9.3	ug/L	125	Standard
>	**Ga**	71	55.0	24.1				mg/L	50	Standard
	Rb	85	73.3	14.2				ug/L	18	Standard
	Y	89	407634.9	5.6				ug/L	402730	Standard
>	**Rh**	103	33.3	45.8				ug/L	12	Standard
	Mo	98	17522.4	12.0	**9.9487**	0.787	7.9	ug/L	8	Standard
	Ag	107	17739.1	10.8	**3.9338**	0.261	6.6	ug/L	65	Standard
	Cd	111	665.3	11.5	**0.4505**	0.035	7.7	mg/L	3	Standard
	Cd	114	1922.2	16.3	**0.5263**	0.067	12.8	ug/L	15	Standard
>	**In**	115	529160.5	4.4				ug/L	526825	Standard
	Sn	118	38262.1	12.8	**9.3244**	0.821	8.8	ug/L	368	Standard
	Sb	123	37906.1	11.5	**11.7987**	0.885	7.5	ug/L	46	Standard
	Ba	135	13141.8	12.7	**9.5831**	0.825	8.6	ug/L	16	Standard
	Ce	140	25.0	40.0				ug/L	43	Standard
>	**Tb**	159	801285.2	4.6				ug/L	771780	Standard
	Ho	165	1.7	173.2				ug/L	8	Standard
	Tl	203	25608.5	11.9	**4.7112**	0.377	8.0	ug/L	28	Standard
	Tl	205	23880.6	11.7	**4.8079**	0.375	7.8	ug/L	20	Standard
	Pb	206	16265.8	10.9	**4.9267**	0.346	7.0	ug/L	184	Standard
	Pb	207	14670.2	11.2	**4.9003**	0.363	7.4	ug/L	161	Standard
	Pb	208	62783.4	10.9	**4.8197**	0.341	7.1	ug/L	746	Standard
	U	238	8.7	73.3	**-0.0031**	0.001	47.9	ug/L	6	Standard
>	**Bi**	209	444929.7	4.1				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	330.0	12.9	**0.4271**	0.072	16.8	mg/L	25	Standard
K	39	176.7	23.1	**0.4194**	0.102	24.3	mg/L	25	Standard
Ca	43	38.3	15.1	**-1.8043**	0.654	36.2	mg/L	77	Standard
Fe	54	182.6	12.6	**0.0330**	0.023	71.0	mg/L	165	Standard
Fe	57	168.3	24.0	**0.0288**	0.145	503.3	mg/L	205	Standard
Sc-1	45	51985.9	5.7				mg/L	46031	Standard
Cl	35	35708.8	7.0				ug/L	28530	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	1553.4	6.4				ug/L	1560	Standard
P	31	20256.9	6.2				ug/L	15481	Standard
S	34	2726.9	9.5				ug/L	2072	Standard
Sr	88	70.0	18.9				ug/L	70	Standard
C	12	43.3	35.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	6.0	100.4				mg/L	13	Standard
Ho-1	165	1.7	173.2				mg/L	8	Standard
Er	166	13.3	43.3				mg/L	7	Standard
I	127	911.7	8.5				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		125.658	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.952	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.443
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.634
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606056401 WG572637-01
Sample Date/Time: Wednesday, June 15, 2016 15:49:04
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 1000
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74931.5	0.9				ug/L	58443	Standard
	Be	9	10.0	50.0	**-0.0063**	0.006	102.3	ug/L	5	Standard
	Al	27	1577044.3	1.0	**10.7562**	0.090	0.8	ug/L	385	Standard
	Sc	45	51188.0	2.9				ug/L	46031	Standard
	Ti	47	41.0	16.0	**-0.2999**	0.031	10.4	ug/L	94	Standard
	V	51	1546.7	11.7	**0.0202**	0.033	161.7	ug/L	1280	Standard
	Cr	52	6596.1	6.0	**-0.0195**	0.081	416.1	ug/L	6381	Standard
	Cr	53	2483.5	7.3	**0.6804**	0.229	33.6	ug/L	1957	Standard
	Mn	55	39725.0	0.4	**8.8619**	0.135	1.5	ug/L	667	Standard
	Co	59	284.7	5.9	**0.0232**	0.003	13.9	ug/L	156	Standard
	Ni	60	560.3	6.0	**0.2648**	0.024	9.2	ug/L	154	Standard
	Cu	65	293.3	2.3	**0.1056**	0.003	2.5	ug/L	116	Standard
	Zn	66	1200.4	3.5	**1.2264**	0.066	5.4	ug/L	114	Standard
>	**Ge**	72	470404.5	1.1				ug/L	467488	Standard
	As	75	414.2	12.6	**0.5361**	0.061	11.4	ug/L	-61	Standard
	Se	82	149.2	11.1	**1.5799**	0.212	13.4	ug/L	9	Standard
	Se-1	77	269.0	3.8	**2.6801**	0.126	4.7	ug/L	125	Standard
>	**Ga**	71	38.3	27.2				mg/L	50	Standard
	Rb	85	11509.4	2.3				ug/L	18	Standard
	Y	89	413399.2	1.1				ug/L	402730	Standard
>	**Rh**	103	633.3	14.0				ug/L	12	Standard
	Mo	98	53.0	1.9	**0.0219**	0.000	1.4	ug/L	8	Standard
	Ag	107	90.3	12.8	**-0.0005**	0.002	472.0	ug/L	65	Standard
	Cd	111	3.9	25.4	**-0.0054**	0.001	12.1	mg/L	3	Standard
	Cd	114	7.6	176.9	**-0.0122**	0.004	30.8	ug/L	15	Standard
>	**In**	115	532652.5	1.6				ug/L	526825	Standard
	Sn	118	463.3	15.4	**0.0012**	0.018	1496.9	ug/L	368	Standard
	Sb	123	132.0	13.9	**0.0260**	0.006	24.6	ug/L	46	Standard
	Ba	135	1029509.5	0.2	**749.5599**	12.810	1.7	ug/L	16	Standard
	Ce	140	28.3	62.0				ug/L	43	Standard
>	**Tb**	159	802871.1	1.9				ug/L	771780	Standard
	Ho	165	8.3	91.7				ug/L	8	Standard
	Tl	203	270.3	2.6	**0.0370**	0.002	4.8	ug/L	28	Standard
	Tl	205	223.3	13.7	**0.0347**	0.007	19.6	ug/L	20	Standard
	Pb	206	249.3	2.1	**0.0067**	0.002	33.7	ug/L	184	Standard
	Pb	207	190.7	9.5	**-0.0053**	0.007	121.7	ug/L	161	Standard
	Pb	208	899.3	5.1	**0.0005**	0.004	789.0	ug/L	746	Standard
	U	238	5.7	27.0	**-0.0037**	0.000	9.4	ug/L	6	Standard
>	**Bi**	209	431194.6	1.0				ug/L	429329	Standard

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Na	23	5.0	100.0	**17.9732**	17.633	98.1	mg/L	0	Standard
Mg	24	20540.6	3.9	**29.3766**	1.963	6.7	mg/L	25	Standard
K	39	165.0	16.0	**0.3928**	0.071	18.1	mg/L	25	Standard
Ca	43	206.7	15.6	**11.9258**	2.767	23.2	mg/L	77	Standard
Fe	54	197.4	12.0	**0.0491**	0.019	38.0	mg/L	165	Standard
Fe	57	263.3	4.0	**0.3893**	0.041	10.5	mg/L	205	Standard
> **Sc-1**	45	51188.0	2.9				mg/L	46031	Standard
Cl	35	37349.3	1.8				ug/L	28530	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	34843.5	8.3				ug/L	1560	Standard
P	31	20765.9	1.6				ug/L	15481	Standard
S	34	2796.9	1.6				ug/L	2072	Standard
Sr	88	1973.5	1.9				ug/L	70	Standard
C	12	36.7	68.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	-0.3	86.6				mg/L	13	Standard
Ho-1	165	8.3	91.7				mg/L	8	Standard
Er	166	6.7	86.6				mg/L	7	Standard
I	127	46651.7	1.1				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.214	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.624	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	101.106
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.435
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606056405S WG572637-06
Sample Date/Time: Wednesday, June 15, 2016 15:52:16
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 1000
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75507.7	0.3				ug/L	58443	Standard
	Be	9	45.0	11.1	**0.0392**	0.007	16.9	ug/L	5	Standard
	Al	27	1691889.5	1.0	**11.4516**	0.096	0.8	ug/L	385	Standard
	Sc	45	49306.8	1.5				ug/L	46031	Standard
	Ti	47	161.3	2.2	**0.2342**	0.019	8.2	ug/L	94	Standard
	V	51	4663.1	2.5	**0.5811**	0.025	4.3	ug/L	1280	Standard
	Cr	52	8820.2	1.4	**0.3587**	0.008	2.2	ug/L	6381	Standard
	Cr	53	2666.9	2.0	**0.9262**	0.022	2.4	ug/L	1957	Standard
	Mn	55	43400.1	0.3	**9.6531**	0.171	1.8	ug/L	667	Standard
	Co	59	868.4	12.6	**0.1447**	0.026	17.7	ug/L	156	Standard
	Ni	60	1040.0	4.2	**0.5983**	0.042	6.9	ug/L	154	Standard
	Cu	65	674.0	2.8	**0.3774**	0.020	5.3	ug/L	116	Standard
	Zn	66	2056.8	3.1	**2.2718**	0.072	3.2	ug/L	114	Standard
>	**Ge**	72	472669.6	1.5				ug/L	467488	Standard
	As	75	884.8	7.0	**1.0933**	0.060	5.5	ug/L	-61	Standard
	Se	82	284.6	6.3	**3.1482**	0.164	5.2	ug/L	9	Standard
	Se-1	77	318.3	3.5	**3.5146**	0.125	3.6	ug/L	125	Standard
>	**Ga**	71	33.3	22.9				mg/L	50	Standard
	Rb	85	12034.8	3.1				ug/L	18	Standard
	Y	89	406513.0	0.7				ug/L	402730	Standard
>	**Rh**	103	626.7	12.0				ug/L	12	Standard
	Mo	98	1055.8	7.0	**0.5960**	0.041	7.0	ug/L	8	Standard
	Ag	107	1040.0	2.3	**0.2128**	0.005	2.6	ug/L	65	Standard
	Cd	111	38.4	15.0	**0.0186**	0.004	21.4	mg/L	3	Standard
	Cd	114	100.2	8.7	**0.0141**	0.002	17.4	ug/L	15	Standard
>	**In**	115	526732.1	0.2				ug/L	526825	Standard
	Sn	118	2476.9	6.7	**0.5025**	0.040	8.0	ug/L	368	Standard
	Sb	123	2154.6	1.8	**0.6610**	0.011	1.7	ug/L	46	Standard
	Ba	135	1100818.0	1.9	**810.3433**	15.286	1.9	ug/L	16	Standard
	Ce	140	16.7	45.8				ug/L	43	Standard
>	**Tb**	159	795363.1	0.9				ug/L	771780	Standard
	Ho	165	1.7	173.2				ug/L	8	Standard
	Tl	203	1629.1	2.4	**0.2995**	0.007	2.5	ug/L	28	Standard
	Tl	205	1493.4	6.8	**0.3029**	0.021	7.0	ug/L	20	Standard
	Pb	206	1077.7	4.1	**0.2734**	0.014	5.1	ug/L	184	Standard
	Pb	207	991.0	3.6	**0.2787**	0.012	4.4	ug/L	161	Standard
	Pb	208	4257.2	3.8	**0.2745**	0.013	4.7	ug/L	746	Standard
	U	238	31.3	140.1	**0.0020**	0.010	486.5	ug/L	6	Standard
>	**Bi**	209	426779.2	0.2				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	22555.1	1.2	**33.4549**	0.328	1.0	mg/L	25	Standard
K	39	245.0	14.1	**0.6855**	0.124	18.1	mg/L	25	Standard
Ca	43	188.3	10.7	**10.9949**	1.615	14.7	mg/L	77	Standard
Fe	54	237.7	14.8	**0.0966**	0.037	38.7	mg/L	165	Standard
Fe	57	263.3	22.3	**0.4271**	0.232	54.4	mg/L	205	Standard
> **Sc-1**	45	49306.8	1.5				mg/L	46031	Standard
Cl	35	39386.5	0.9				ug/L	28530	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	61477.9	4.0				ug/L	1560	Standard
P	31	21268.3	5.1				ug/L	15481	Standard
S	34	2930.3	6.7				ug/L	2072	Standard
Sr	88	2013.5	4.6				ug/L	70	Standard
C	12	23.3	24.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.4	243.1				mg/L	13	Standard
Ho-1	165	1.7	173.2				mg/L	8	Standard
Er	166	20.0	0.0				mg/L	7	Standard
I	127	49850.3	4.6				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.200	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.108	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.982
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.406
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606056407SD WG572637-07
Sample Date/Time: Wednesday, June 15, 2016 15:55:27
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 1000
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75482.6	0.6				ug/L	58443	Standard
	Be	9	26.7	60.3	**0.0154**	0.021	136.9	ug/L	5	Standard
	Al	27	1664226.9	0.6	**11.2682**	0.041	0.4	ug/L	385	Standard
	Sc	45	50136.2	1.7				ug/L	46031	Standard
	Ti	47	168.7	5.3	**0.2656**	0.040	15.1	ug/L	94	Standard
	V	51	4526.7	2.3	**0.5553**	0.025	4.6	ug/L	1280	Standard
	Cr	52	9060.0	0.1	**0.3979**	0.014	3.5	ug/L	6381	Standard
	Cr	53	2628.6	3.0	**0.8669**	0.142	16.4	ug/L	1957	Standard
	Mn	55	43043.1	0.2	**9.5566**	0.085	0.9	ug/L	667	Standard
	Co	59	778.7	4.6	**0.1255**	0.006	5.1	ug/L	156	Standard
	Ni	60	1045.0	1.7	**0.6004**	0.014	2.4	ug/L	154	Standard
	Cu	65	681.0	4.3	**0.3814**	0.017	4.4	ug/L	116	Standard
	Zn	66	1717.8	1.6	**1.8518**	0.024	1.3	ug/L	114	Standard
>	**Ge**	72	473362.1	0.9				ug/L	467488	Standard
	As	75	945.0	8.7	**1.1635**	0.092	7.9	ug/L	-61	Standard
	Se	82	318.5	3.9	**3.5391**	0.113	3.2	ug/L	9	Standard
	Se-1	77	290.0	5.1	**3.0155**	0.237	7.9	ug/L	125	Standard
>	**Ga**	71	38.3	27.2				mg/L	50	Standard
	Rb	85	11898.0	4.3				ug/L	18	Standard
	Y	89	415198.5	2.1				ug/L	402730	Standard
>	**Rh**	103	716.7	5.3				ug/L	12	Standard
	Mo	98	1000.3	3.1	**0.5637**	0.018	3.1	ug/L	8	Standard
	Ag	107	1042.4	2.5	**0.2132**	0.006	2.9	ug/L	65	Standard
	Cd	111	39.7	16.5	**0.0194**	0.004	22.8	mg/L	3	Standard
	Cd	114	104.5	37.3	**0.0153**	0.011	72.7	ug/L	15	Standard
>	**In**	115	527226.5	0.4				ug/L	526825	Standard
	Sn	118	2505.2	3.6	**0.5091**	0.025	4.8	ug/L	368	Standard
	Sb	123	2192.7	0.3	**0.6723**	0.005	0.7	ug/L	46	Standard
	Ba	135	1081659.1	0.3	**795.4983**	2.315	0.3	ug/L	16	Standard
	Ce	140	10.0	50.0				ug/L	43	Standard
>	**Tb**	159	791434.4	0.5				ug/L	771780	Standard
	Ho	165	6.7	86.6				ug/L	8	Standard
	Tl	203	1628.8	0.5	**0.3001**	0.005	1.5	ug/L	28	Standard
	Tl	205	1558.4	8.8	**0.3174**	0.031	9.7	ug/L	20	Standard
	Pb	206	1135.0	3.0	**0.2926**	0.014	4.9	ug/L	184	Standard
	Pb	207	991.4	1.3	**0.2795**	0.006	2.1	ug/L	161	Standard
	Pb	208	4182.6	1.7	**0.2691**	0.009	3.3	ug/L	746	Standard
	U	238	6.7	82.6	**-0.0035**	0.001	35.8	ug/L	6	Standard
>	**Bi**	209	425996.3	0.9				ug/L	429329	Standard

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Na	23	3.3	173.2	**12.1198**	20.984	173.1	mg/L	0	Standard
Mg	24	21864.1	2.6	**31.8880**	0.458	1.4	mg/L	25	Standard
K	39	201.7	19.3	**0.5278**	0.133	25.3	mg/L	25	Standard
Ca	43	171.7	23.7	**9.3465**	3.324	35.6	mg/L	77	Standard
Fe	54	250.7	8.4	**0.1051**	0.022	21.2	mg/L	165	Standard
Fe	57	213.3	14.3	**0.2220**	0.128	57.8	mg/L	205	Standard
> **Sc-1**	45	50136.2	1.7				mg/L	46031	Standard
Cl	35	40705.3	0.3				ug/L	28530	Standard
Kr	83	2.7	94.4				ug/L	2	Standard
Br	81	67272.6	5.0				ug/L	1560	Standard
P	31	21989.3	3.8				ug/L	15481	Standard
S	34	2786.9	1.3				ug/L	2072	Standard
Sr	88	2088.5	3.3				ug/L	70	Standard
C	12	56.7	88.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.2	124.3				mg/L	13	Standard
Ho-1	165	6.7	86.6				mg/L	8	Standard
Er	166	23.3	49.5				mg/L	7	Standard
I	127	51529.2	2.6				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.157	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.256	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.076	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.224	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606063301
Sample Date/Time: Wednesday, June 15, 2016 15:58:39
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70944.1	1.8				ug/L	58443	Standard
	Be	9	13.3	43.3	**-0.0009**	0.008	871.6	ug/L	5	Standard
	Al	27	1658.4	14.4	**0.0039**	0.002	41.3	ug/L	385	Standard
	Sc	45	51412.1	1.9				ug/L	46031	Standard
	Ti	47	44.0	4.5	**-0.2881**	0.012	4.0	ug/L	94	Standard
	V	51	1870.3	16.3	**0.0757**	0.050	66.4	ug/L	1280	Standard
	Cr	52	8109.5	0.7	**0.2318**	0.031	13.5	ug/L	6381	Standard
	Cr	53	5069.2	7.2	**4.3286**	0.412	9.5	ug/L	1957	Standard
	Mn	55	941.7	3.7	**0.0181**	0.011	62.5	ug/L	667	Standard
	Co	59	215.7	0.7	**0.0085**	0.001	10.2	ug/L	156	Standard
	Ni	60	668.3	2.1	**0.3369**	0.013	3.9	ug/L	154	Standard
	Cu	65	278.7	0.2	**0.0935**	0.003	3.6	ug/L	116	Standard
	Zn	66	1038.0	1.1	**1.0155**	0.033	3.2	ug/L	114	Standard
>	**Ge**	72	474167.1	1.6				ug/L	467488	Standard
	As	75	-24.8	68.4	**0.0119**	0.020	166.4	ug/L	-61	Standard
	Se	82	164.4	4.2	**1.7420**	0.107	6.1	ug/L	9	Standard
	Se-1	77	553.7	12.5	**7.5621**	1.058	14.0	ug/L	125	Standard
>	**Ga**	71	110.0	15.7				mg/L	50	Standard
	Rb	85	10465.3	1.4				ug/L	18	Standard
	Y	89	415884.3	1.2				ug/L	402730	Standard
>	**Rh**	103	13.3	43.3				ug/L	12	Standard
	Mo	98	223.7	2.4	**0.1172**	0.002	1.9	ug/L	8	Standard
	Ag	107	69.3	0.8	**-0.0053**	0.000	7.1	ug/L	65	Standard
	Cd	111	2.2	53.3	**-0.0066**	0.001	11.7	mg/L	3	Standard
	Cd	114	17.6	37.7	**-0.0094**	0.002	18.7	ug/L	15	Standard
>	**In**	115	538182.9	1.8				ug/L	526825	Standard
	Sn	118	400.0	9.4	**-0.0155**	0.008	49.0	ug/L	368	Standard
	Sb	123	89.0	10.9	**0.0124**	0.003	26.4	ug/L	46	Standard
	Ba	135	5910.8	2.2	**4.2376**	0.167	4.0	ug/L	16	Standard
	Ce	140	11.7	24.7				ug/L	43	Standard
>	**Tb**	159	808655.2	1.1				ug/L	771780	Standard
	Ho	165	13.3	57.3				ug/L	8	Standard
	Tl	203	112.7	7.5	**0.0064**	0.001	21.6	ug/L	28	Standard
	Tl	205	141.7	10.8	**0.0169**	0.003	18.2	ug/L	20	Standard
	Pb	206	323.0	1.1	**0.0278**	0.002	7.7	ug/L	184	Standard
	Pb	207	291.0	3.3	**0.0275**	0.003	10.6	ug/L	161	Standard
	Pb	208	1237.7	1.0	**0.0255**	0.001	2.8	ug/L	746	Standard
	U	238	3.0	0.0	**-0.0043**	0.000	0.2	ug/L	6	Standard
>	**Bi**	209	441149.9	1.1				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3957.2	3.2	**5.5970**	0.193	3.4	mg/L	25	Standard
K	39	1241.7	9.6	**3.8840**	0.428	11.0	mg/L	25	Standard
Ca	43	143.3	10.7	**6.7229**	1.446	21.5	mg/L	77	Standard
Fe	54	122.4	13.1	**-0.0226**	0.013	58.0	mg/L	165	Standard
Fe	57	205.0	16.9	**0.1711**	0.136	79.7	mg/L	205	Standard
> **Sc-1**	45	51412.1	1.9				mg/L	46031	Standard
Cl	35	41556.2	1.3				ug/L	28530	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	3477.1	4.2				ug/L	1560	Standard
P	31	21859.1	0.9				ug/L	15481	Standard
S	34	2848.6	4.2				ug/L	2072	Standard
Sr	88	76.7	27.2				ug/L	70	Standard
C	12	96.7	15.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.0	70.3				mg/L	13	Standard
Ho-1	165	13.3	57.3				mg/L	8	Standard
Er	166	13.3	43.3				mg/L	7	Standard
I	127	11859.6	4.5				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		121.391	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.429	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.156
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.753
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606063301PS WG572844-01
Sample Date/Time: Wednesday, June 15, 2016 16:01:50
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69542.6	0.9				ug/L	58443	Standard
	Be	9	38823.0	0.6	**54.7771**	0.638	1.2	ug/L	5	Standard
	Al	27	1706.8	0.9	**0.0045**	0.000	3.6	ug/L	385	Standard
	Sc	45	50679.7	3.0				ug/L	46031	Standard
	Ti	47	38.3	9.9	**-0.3139**	0.019	5.9	ug/L	94	Standard
	V	51	306878.3	1.5	**54.6946**	0.112	0.2	ug/L	1280	Standard
	Cr	52	330333.8	0.3	**55.4957**	0.750	1.4	ug/L	6381	Standard
	Cr	53	44592.2	0.8	**60.3274**	1.336	2.2	ug/L	1957	Standard
	Mn	55	257215.6	0.6	**57.7432**	0.480	0.8	ug/L	667	Standard
	Co	59	263442.2	1.6	**54.3847**	0.430	0.8	ug/L	156	Standard
	Ni	60	79037.6	0.4	**54.6874**	0.507	0.9	ug/L	154	Standard
	Cu	65	76928.5	0.4	**54.5911**	0.671	1.2	ug/L	116	Standard
	Zn	66	44991.7	1.0	**54.6594**	0.350	0.6	ug/L	114	Standard
>	**Ge**	72	476108.6	1.3				ug/L	467488	Standard
	As	75	44820.2	0.8	**52.9883**	0.648	1.2	ug/L	-61	Standard
	Se	82	4774.8	1.4	**55.1500**	1.388	2.5	ug/L	9	Standard
	Se-1	77	3653.1	2.2	**61.0029**	2.165	3.5	ug/L	125	Standard
>	**Ga**	71	110.0	18.2				mg/L	50	Standard
	Rb	85	10525.3	2.9				ug/L	18	Standard
	Y	89	417417.4	1.3				ug/L	402730	Standard
>	**Rh**	103	13.3	21.7				ug/L	12	Standard
	Mo	98	216.7	3.5	**0.1142**	0.004	3.2	ug/L	8	Standard
	Ag	107	238064.1	0.8	**52.6764**	0.377	0.7	ug/L	65	Standard
	Cd	111	79517.0	0.5	**54.4257**	0.546	1.0	mg/L	3	Standard
	Cd	114	191266.1	1.8	**53.4777**	1.164	2.2	ug/L	15	Standard
>	**In**	115	533895.5	0.6				ug/L	526825	Standard
	Sn	118	585.0	6.0	**0.0307**	0.008	26.8	ug/L	368	Standard
	Sb	123	169783.7	1.5	**52.5366**	0.614	1.2	ug/L	46	Standard
	Ba	135	79133.4	0.6	**57.4516**	0.606	1.1	ug/L	16	Standard
	Ce	140	18.3	83.3				ug/L	43	Standard
>	**Tb**	159	807555.8	0.5				ug/L	771780	Standard
	Ho	165	8.3	91.7				ug/L	8	Standard
	Tl	203	283634.8	1.2	**53.2625**	0.662	1.2	ug/L	28	Standard
	Tl	205	261346.4	0.7	**53.6785**	0.689	1.3	ug/L	20	Standard
	Pb	206	178963.7	0.4	**55.8985**	0.277	0.5	ug/L	184	Standard
	Pb	207	154023.3	1.0	**53.0556**	0.535	1.0	ug/L	161	Standard
	Pb	208	682472.9	0.5	**54.0369**	0.468	0.9	ug/L	746	Standard
	U	238	247794.5	0.4	**53.9559**	0.388	0.7	ug/L	6	Standard
>	**Bi**	209	438083.6	0.7				ug/L	429329	Standard

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Na	23	1.7	173.2	**5.9030**	10.216	173.1	mg/L	0	Standard
Mg	24	3870.5	1.6	**5.5541**	0.105	1.9	mg/L	25	Standard
K	39	1325.1	3.9	**4.2176**	0.271	6.4	mg/L	25	Standard
Ca	43	130.0	16.8	**5.7973**	1.937	33.4	mg/L	77	Standard
Fe	54	144.6	20.0	**0.0008**	0.030	3578.8	mg/L	165	Standard
Fe	57	211.7	5.9	**0.2053**	0.028	13.6	mg/L	205	Standard
> **Sc-1**	45	50679.7	3.0				mg/L	46031	Standard
Cl	35	40835.6	1.9				ug/L	28530	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	2800.3	8.4				ug/L	1560	Standard
P	31	22323.1	1.0				ug/L	15481	Standard
S	34	2803.6	4.0				ug/L	2072	Standard
Sr	88	48.3	46.6				ug/L	70	Standard
C	12	90.0	33.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	15.9	37.3				mg/L	13	Standard
Ho-1	165	8.3	91.7				mg/L	8	Standard
Er	166	16.7	34.6				mg/L	7	Standard
I	127	14213.4	7.3				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.993	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.844	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.342
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.039
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 16, 2016

Method 6020 - Summary Report

Sample ID: L1606063301SDL WG572844-02
Sample Date/Time: Wednesday, June 15, 2016 16:05:01
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 250
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66591.0	1.2				ug/L	58443	Standard
	Be	9	16.7	17.3	**0.0053**	0.005	85.7	ug/L	5	Standard
	Al	27	870.0	2.1	**-0.0014**	0.000	15.2	ug/L	385	Standard
	Sc	45	50346.9	2.5				ug/L	46031	Standard
	Ti	47	38.3	12.9	**-0.3156**	0.023	7.2	ug/L	94	Standard
	V	51	1637.1	3.6	**0.0302**	0.010	33.4	ug/L	1280	Standard
	Cr	52	7222.4	0.8	**0.0616**	0.013	21.5	ug/L	6381	Standard
	Cr	53	2630.2	4.0	**0.8115**	0.177	21.9	ug/L	1957	Standard
	Mn	55	913.0	5.0	**0.0086**	0.010	115.6	ug/L	667	Standard
	Co	59	213.3	10.7	**0.0073**	0.004	57.2	ug/L	156	Standard
	Ni	60	243.7	4.8	**0.0387**	0.006	16.1	ug/L	154	Standard
	Cu	65	663.3	1.1	**0.3615**	0.004	1.2	ug/L	116	Standard
	Zn	66	1272.7	2.6	**1.2813**	0.036	2.8	ug/L	114	Standard
>	**Ge**	72	480802.4	1.1				ug/L	467488	Standard
	As	75	-2.7	1252.7	**0.0378**	0.039	103.9	ug/L	-61	Standard
	Se	82	40.7	9.8	**0.2965**	0.050	17.0	ug/L	9	Standard
	Se-1	77	199.3	9.0	**1.3898**	0.309	22.2	ug/L	125	Standard
>	**Ga**	71	56.7	5.1				mg/L	50	Standard
	Rb	85	2143.5	8.7				ug/L	18	Standard
	Y	89	411327.1	0.8				ug/L	402730	Standard
>	**Rh**	103	18.3	68.6				ug/L	12	Standard
	Mo	98	54.3	12.1	**0.0226**	0.004	16.1	ug/L	8	Standard
	Ag	107	139.3	25.3	**0.0104**	0.008	76.5	ug/L	65	Standard
	Cd	111	14.6	4.0	**0.0019**	0.000	21.4	mg/L	3	Standard
	Cd	114	35.4	23.5	**-0.0044**	0.002	54.4	ug/L	15	Standard
>	**In**	115	532999.6	0.5				ug/L	526825	Standard
	Sn	118	421.7	6.9	**-0.0092**	0.007	73.2	ug/L	368	Standard
	Sb	123	1533.1	18.4	**0.4601**	0.085	18.5	ug/L	46	Standard
	Ba	135	1260.1	7.1	**0.8938**	0.069	7.7	ug/L	16	Standard
	Ce	140	20.0	0.0				ug/L	43	Standard
>	**Tb**	159	800598.9	0.1				ug/L	771780	Standard
	Ho	165	10.0	86.6				ug/L	8	Standard
	Tl	203	182.0	14.6	**0.0195**	0.005	26.5	ug/L	28	Standard
	Tl	205	186.7	8.2	**0.0262**	0.004	13.4	ug/L	20	Standard
	Pb	206	258.7	16.2	**0.0081**	0.014	170.5	ug/L	184	Standard
	Pb	207	227.3	7.4	**0.0059**	0.006	108.4	ug/L	161	Standard
	Pb	208	960.7	4.2	**0.0039**	0.004	100.0	ug/L	746	Standard
	U	238	38.7	25.9	**0.0034**	0.002	66.1	ug/L	6	Standard
>	**Bi**	209	440019.7	1.0				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	743.4	4.7	**1.0413**	0.030	2.9	mg/L	25	Standard
K	39	316.7	12.9	**0.9044**	0.128	14.1	mg/L	25	Standard
Ca	43	46.7	6.2	**-1.0364**	0.296	28.5	mg/L	77	Standard
Fe	54	126.1	8.3	**-0.0164**	0.010	59.3	mg/L	165	Standard
Fe	57	176.7	17.3	**0.0778**	0.099	126.9	mg/L	205	Standard
Sc-1	45	50346.9	2.5				mg/L	46031	Standard
Cl	35	39593.0	1.1				ug/L	28530	Standard
Kr	83	3.3	62.4				ug/L	2	Standard
Br	81	1886.8	2.4				ug/L	1560	Standard
P	31	20932.8	1.1				ug/L	15481	Standard
S	34	2918.6	3.9				ug/L	2072	Standard
Sr	88	70.0	18.9				ug/L	70	Standard
C	12	53.3	10.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.5	105.0				mg/L	13	Standard
Ho-1	165	10.0	86.6				mg/L	8	Standard
Er	166	10.0					mg/L	7	Standard
I	127	3610.4	3.9				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.943	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.848	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.172
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.490
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 15, 2016 16:08:14
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	62892.0	1.9				ug/L	58443	Standard
	Be	9	35012.1	3.7	**54.6084**	1.019	1.9	ug/L	5	Standard
	Al	27	6225431.5	1.1	**50.6235**	0.530	1.0	ug/L	385	Standard
	Sc	45	50388.7	2.3				ug/L	46031	Standard
	Ti	47	24321.5	1.4	**108.6780**	1.695	1.6	ug/L	94	Standard
	V	51	295707.3	1.8	**53.5842**	1.021	1.9	ug/L	1280	Standard
	Cr	52	309489.7	0.7	**52.8050**	0.420	0.8	ug/L	6381	Standard
	Cr	53	37990.9	2.2	**51.8625**	1.100	2.1	ug/L	1957	Standard
	Mn	55	240599.8	1.4	**54.9061**	0.775	1.4	ug/L	667	Standard
	Co	59	250679.4	0.2	**52.6175**	0.176	0.3	ug/L	156	Standard
	Ni	60	74858.1	1.0	**52.6552**	0.499	0.9	ug/L	154	Standard
	Cu	65	72775.0	0.4	**52.5007**	0.216	0.4	ug/L	116	Standard
	Zn	66	42218.7	0.5	**52.1376**	0.330	0.6	ug/L	114	Standard
>	Ge	72	468252.8	0.2				ug/L	467488	Standard
	As	75	43051.3	0.9	**51.7479**	0.569	1.1	ug/L	-61	Standard
	Se	82	4408.7	1.7	**51.7555**	0.958	1.9	ug/L	9	Standard
	Se-1	77	3004.3	1.3	**50.6652**	0.767	1.5	ug/L	125	Standard
>	Ga	71	63.3	50.8				mg/L	50	Standard
	Rb	85	613.3	7.4				ug/L	18	Standard
	Y	89	410457.4	1.0				ug/L	402730	Standard
>	Rh	103	28.3	27.0				ug/L	12	Standard
	Mo	98	183247.1	0.5	**104.4401**	0.745	0.7	ug/L	8	Standard
	Ag	107	232014.6	1.8	**51.8358**	0.571	1.1	ug/L	65	Standard
	Cd	111	74860.2	1.4	**51.7366**	0.668	1.3	mg/L	3	Standard
	Cd	114	183492.1	1.7	**51.7998**	0.605	1.2	ug/L	15	Standard
>	In	115	528741.4	1.0				ug/L	526825	Standard
	Sn	118	209282.1	0.5	**51.6792**	0.308	0.6	ug/L	368	Standard
	Sb	123	164569.1	1.4	**51.4191**	0.191	0.4	ug/L	46	Standard
	Ba	135	70101.1	0.6	**51.3886**	0.509	1.0	ug/L	16	Standard
	Ce	140	51.7	31.1				ug/L	43	Standard
>	Tb	159	792615.0	1.1				ug/L	771780	Standard
	Ho	165	3.3	86.6				ug/L	8	Standard
	Tl	203	270987.2	1.5	**51.8932**	0.274	0.5	ug/L	28	Standard
	Tl	205	245726.6	0.6	**51.4722**	0.753	1.5	ug/L	20	Standard
	Pb	206	165722.5	1.4	**52.7865**	0.818	1.6	ug/L	184	Standard
	Pb	207	150102.9	0.7	**52.7310**	0.441	0.8	ug/L	161	Standard
	Pb	208	641631.4	0.3	**51.8117**	0.841	1.6	ug/L	746	Standard
	U	238	237113.0	0.5	**52.6543**	0.436	0.8	ug/L	6	Standard
>	Bi	209	429578.7	1.4				ug/L	429329	Standard

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Na	23	1.7	173.2	**6.0893**	10.538	173.1	mg/L	0	Standard
Mg	24	3428.7	1.1	**4.9437**	0.080	1.6	mg/L	25	Standard
K	39	1338.4	12.0	**4.2756**	0.433	10.1	mg/L	25	Standard
Ca	43	81.7	49.5	**1.8531**	3.310	178.6	mg/L	77	Standard
Fe	54	5144.4	1.7	**4.8303**	0.188	3.9	mg/L	165	Standard
Fe	57	1481.7	0.5	**4.9854**	0.155	3.1	mg/L	205	Standard
Sc-1	45	50388.7	2.3				mg/L	46031	Standard
Cl	35	36671.0	1.7				ug/L	28530	Standard
Kr	83	3.0	100.0				ug/L	2	Standard
Br	81	1710.1	10.5				ug/L	1560	Standard
P	31	21909.2	3.6				ug/L	15481	Standard
S	34	2972.0	4.6				ug/L	2072	Standard
Sr	88	48.3	21.5				ug/L	70	Standard
C	12	43.3	26.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	5.9	95.1				mg/L	13	Standard
Ho-1	165	3.3	86.6				mg/L	8	Standard
Er	166	16.7	124.9				mg/L	7	Standard
I	127	1095.0	5.6				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	109.217		
Al	27	101.247		
Sc	45			
Ti	47	108.678		
V	51	107.168		
Cr	52	105.610		
Cr	53			
Mn	55	109.812		
Co	59	105.235		
Ni	60	105.310		
Cu	65	105.001		
Zn	66	104.275		
Ge	72		100.164	
As	75	103.496		
Se	82	103.511		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	104.440		
Ag	107	103.672		
Cd	111	103.473		
Cd	114			
> In	115			100.364
Sn	118	103.358		
Sb	123	102.838		
Ba	135	102.777		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	103.786		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.623		
U	238	105.309		
> Bi	209			100.058
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 15, 2016 16:11:26
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62421.7	2.4				ug/L	58443	Standard
	Be	9	25.0	34.6	**0.0200**	0.014	68.3	ug/L	5	Standard
	Al	27	1875.1	60.2	**0.0072**	0.009	122.5	ug/L	385	Standard
	Sc	45	49647.9	2.0				ug/L	46031	Standard
	Ti	47	38.3	13.4	**-0.3125**	0.023	7.4	ug/L	94	Standard
	V	51	1199.0	7.7	**-0.0434**	0.017	39.1	ug/L	1280	Standard
	Cr	52	6026.5	1.1	**-0.1220**	0.011	9.0	ug/L	6381	Standard
	Cr	53	816.7	7.2	**-1.7126**	0.085	5.0	ug/L	1957	Standard
	Mn	55	628.3	10.7	**-0.0522**	0.015	29.4	ug/L	667	Standard
	Co	59	244.7	22.1	**0.0147**	0.011	76.1	ug/L	156	Standard
	Ni	60	119.0	10.1	**-0.0453**	0.009	18.8	ug/L	154	Standard
	Cu	65	119.3	8.6	**-0.0199**	0.007	36.4	ug/L	116	Standard
	Zn	66	121.0	12.7	**-0.1079**	0.019	17.5	ug/L	114	Standard
>	**Ge**	72	471761.9	0.2				ug/L	467488	Standard
	As	75	-23.7	38.8	**0.0128**	0.011	85.5	ug/L	-61	Standard
	Se	82	16.3	21.3	**0.0192**	0.040	210.4	ug/L	9	Standard
	Se-1	77	69.0	8.1	**-0.8135**	0.095	11.7	ug/L	125	Standard
>	**Ga**	71	43.3	13.3				mg/L	50	Standard
	Rb	85	26.7	10.8				ug/L	18	Standard
	Y	89	417701.0	0.2				ug/L	402730	Standard
>	**Rh**	103	15.0	33.3				ug/L	12	Standard
	Mo	98	162.1	26.0	**0.0843**	0.023	27.6	ug/L	8	Standard
	Ag	107	151.3	20.0	**0.0133**	0.007	49.2	ug/L	65	Standard
	Cd	111	24.0	42.3	**0.0085**	0.007	81.6	mg/L	3	Standard
	Cd	114	77.7	34.9	**0.0076**	0.007	97.4	ug/L	15	Standard
>	**In**	115	528495.1	0.8				ug/L	526825	Standard
	Sn	118	643.3	15.2	**0.0466**	0.025	53.1	ug/L	368	Standard
	Sb	123	506.1	18.2	**0.1434**	0.030	20.8	ug/L	46	Standard
	Ba	135	112.3	43.7	**0.0592**	0.035	59.6	ug/L	16	Standard
	Ce	140	13.3	43.3				ug/L	43	Standard
>	**Tb**	159	784677.6	0.3				ug/L	771780	Standard
	Ho	165	5.0	100.0				ug/L	8	Standard
	Tl	203	104.7	39.0	**0.0052**	0.008	149.6	ug/L	28	Standard
	Tl	205	111.7	76.6	**0.0112**	0.018	160.1	ug/L	20	Standard
	Pb	206	270.0	12.0	**0.0124**	0.010	83.6	ug/L	184	Standard
	Pb	207	215.7	7.7	**0.0027**	0.006	224.7	ug/L	161	Standard
	Pb	208	958.7	15.0	**0.0046**	0.012	258.8	ug/L	746	Standard
	U	238	88.7	67.4	**0.0145**	0.013	91.5	ug/L	6	Standard
>	**Bi**	209	435460.2	0.7				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	36.7	20.8	**0.0147**	0.012	80.2	mg/L	25	Standard
K	39	36.7	28.4	**-0.0202**	0.034	168.5	mg/L	25	Standard
Ca	43	28.3	20.4	**-2.5171**	0.524	20.8	mg/L	77	Standard
Fe	54	142.9	19.3	**0.0020**	0.029	1427.1	mg/L	165	Standard
Fe	57	138.3	29.2	**-0.0559**	0.163	292.2	mg/L	205	Standard
Sc-1	45	49647.9	2.0				mg/L	46031	Standard
Cl	35	35386.6	0.4				ug/L	28530	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1520.1	8.0				ug/L	1560	Standard
P	31	21662.1	2.4				ug/L	15481	Standard
S	34	2938.6	5.7				ug/L	2072	Standard
Sr	88	55.0	27.3				ug/L	70	Standard
C	12	36.7	15.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.9	41.7				mg/L	13	Standard
Ho-1	165	5.0	100.0				mg/L	8	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	948.4	2.1				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.914	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.317
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.428
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: +10
Sample Date/Time: Wednesday, June 15, 2016 17:21:15
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68551.4	0.9				ug/L	58443	Standard
	Be	9	7561.9	3.8	**10.8062**	0.344	3.2	ug/L	5	Standard
	Al	27	1358.4	4.1	**0.0021**	0.000	20.6	ug/L	385	Standard
	Sc	45	50637.8	1.8				ug/L	46031	Standard
	Ti	47	40.3	12.5	**-0.3074**	0.022	7.2	ug/L	94	Standard
	V	51	64964.4	1.8	**11.2268**	0.186	1.7	ug/L	1280	Standard
	Cr	52	71758.5	0.8	**10.9869**	0.102	0.9	ug/L	6381	Standard
	Cr	53	13055.6	6.8	**15.3895**	1.253	8.1	ug/L	1957	Standard
	Mn	55	58418.4	1.3	**12.7972**	0.179	1.4	ug/L	667	Standard
	Co	59	55903.3	0.2	**11.3667**	0.042	0.4	ug/L	156	Standard
	Ni	60	16659.5	0.5	**11.2790**	0.064	0.6	ug/L	154	Standard
	Cu	65	16366.5	1.0	**11.3834**	0.106	0.9	ug/L	116	Standard
	Zn	66	9928.3	1.4	**11.7080**	0.145	1.2	ug/L	114	Standard
>	**Ge**	72	482183.4	0.2				ug/L	467488	Standard
	As	75	9230.3	2.2	**10.8065**	0.223	2.1	ug/L	-61	Standard
	Se	82	1079.9	3.9	**12.1806**	0.472	3.9	ug/L	9	Standard
	Se-1	77	1202.0	1.1	**18.4539**	0.192	1.0	ug/L	125	Standard
>	**Ga**	71	128.3	25.9				mg/L	50	Standard
	Rb	85	10315.2	3.1				ug/L	18	Standard
	Y	89	420118.7	1.2				ug/L	402730	Standard
>	**Rh**	103	23.3	12.4				ug/L	12	Standard
	Mo	98	220.4	6.6	**0.1168**	0.009	7.4	ug/L	8	Standard
	Ag	107	49727.1	0.8	**11.0198**	0.045	0.4	ug/L	65	Standard
	Cd	111	16191.6	1.6	**11.1086**	0.150	1.3	mg/L	3	Standard
	Cd	114	39432.3	2.3	**11.0462**	0.234	2.1	ug/L	15	Standard
>	**In**	115	532295.7	0.5				ug/L	526825	Standard
	Sn	118	458.3	12.2	**0.0000**	0.01	<282811.5	ug/L	368	Standard
	Sb	123	35052.0	1.8	**10.8672**	0.188	1.7	ug/L	46	Standard
	Ba	135	20449.1	1.6	**14.8727**	0.169	1.1	ug/L	16	Standard
	Ce	140	11.7	24.7				ug/L	43	Standard
>	**Tb**	159	814293.9	1.6				ug/L	771780	Standard
	Ho	165	6.7	43.3				ug/L	8	Standard
	Tl	203	58742.7	1.6	**10.8745**	0.236	2.2	ug/L	28	Standard
	Tl	205	54113.1	0.9	**10.9582**	0.165	1.5	ug/L	20	Standard
	Pb	206	38293.7	0.7	**11.7461**	0.151	1.3	ug/L	184	Standard
	Pb	207	32936.8	0.2	**11.1390**	0.096	0.9	ug/L	161	Standard
	Pb	208	141154.3	0.9	**10.9712**	0.080	0.7	ug/L	746	Standard
	U	238	51846.2	0.9	**11.1365**	0.162	1.5	ug/L	6	Standard
>	**Bi**	209	443945.8	0.7				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3770.5	3.2	**5.4145**	0.241	4.4	mg/L	25	Standard
K	39	1231.7	2.8	**3.9111**	0.165	4.2	mg/L	25	Standard
Ca	43	133.3	38.5	**6.0163**	4.000	66.5	mg/L	77	Standard
Fe	54	163.1	16.2	**0.0185**	0.026	139.7	mg/L	165	Standard
Fe	57	206.7	13.8	**0.1890**	0.118	62.5	mg/L	205	Standard
> **Sc-1**	45	50637.8	1.8				mg/L	46031	Standard
Cl	35	37896.0	1.1				ug/L	28530	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2286.8	2.6				ug/L	1560	Standard
P	31	21149.8	1.9				ug/L	15481	Standard
S	34	2833.6	3.1				ug/L	2072	Standard
Sr	88	61.7	33.8				ug/L	70	Standard
C	12	86.7	33.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.0	35.4				mg/L	13	Standard
Ho-1	165	6.7	43.3				mg/L	8	Standard
Er	166	13.3	114.6				mg/L	7	Standard
I	127	15000.8	7.4				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.297	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.143	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.038
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.405
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: +20
Sample Date/Time: Wednesday, June 15, 2016 17:24:27
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68665.3	1.8				ug/L	58443	Standard
	Be	9	13831.3	5.1	**19.7487**	0.862	4.4	ug/L	5	Standard
	Al	27	1265.1	8.1	**0.0014**	0.001	43.9	ug/L	385	Standard
	Sc	45	49341.9	0.6				ug/L	46031	Standard
	Ti	47	34.0	2.9	**-0.3322**	0.005	1.6	ug/L	94	Standard
	V	51	116389.3	1.5	**20.7239**	0.360	1.7	ug/L	1280	Standard
	Cr	52	124909.2	1.5	**20.4034**	0.432	2.1	ug/L	6381	Standard
	Cr	53	19692.8	2.2	**25.2186**	0.757	3.0	ug/L	1957	Standard
	Mn	55	102759.4	2.3	**23.1079**	0.632	2.7	ug/L	667	Standard
	Co	59	99576.3	2.9	**20.6748**	0.694	3.4	ug/L	156	Standard
	Ni	60	29770.6	1.5	**20.6572**	0.402	1.9	ug/L	154	Standard
	Cu	65	29011.1	1.1	**20.6596**	0.337	1.6	ug/L	116	Standard
	Zn	66	17266.8	0.8	**20.9605**	0.246	1.2	ug/L	114	Standard
>	**Ge**	72	472923.0	0.5				ug/L	467488	Standard
	As	75	16507.5	1.7	**19.6727**	0.420	2.1	ug/L	-61	Standard
	Se	82	1840.7	1.9	**21.2966**	0.532	2.5	ug/L	9	Standard
	Se-1	77	1702.8	0.9	**27.5495**	0.431	1.6	ug/L	125	Standard
>	**Ga**	71	110.0	12.0				mg/L	50	Standard
	Rb	85	9908.2	3.9				ug/L	18	Standard
	Y	89	414451.5	2.8				ug/L	402730	Standard
>	**Rh**	103	21.7	58.1				ug/L	12	Standard
	Mo	98	201.0	8.7	**0.1065**	0.010	9.2	ug/L	8	Standard
	Ag	107	91013.9	1.2	**20.3190**	0.127	0.6	ug/L	65	Standard
	Cd	111	29428.1	1.1	**20.3297**	0.113	0.6	mg/L	3	Standard
	Cd	114	70794.5	3.4	**19.9714**	0.525	2.6	ug/L	15	Standard
>	**In**	115	528827.1	1.1				ug/L	526825	Standard
	Sn	118	398.3	13.8	**-0.0140**	0.015	104.8	ug/L	368	Standard
	Sb	123	63776.4	1.5	**19.9142**	0.096	0.5	ug/L	46	Standard
	Ba	135	32598.4	1.5	**23.8825**	0.547	2.3	ug/L	16	Standard
	Ce	140	18.3	56.8				ug/L	43	Standard
>	**Tb**	159	806775.0	2.1				ug/L	771780	Standard
	Ho	165	8.3	69.3				ug/L	8	Standard
	Tl	203	106990.1	0.5	**19.9924**	0.194	1.0	ug/L	28	Standard
	Tl	205	96380.7	2.0	**19.6975**	0.282	1.4	ug/L	20	Standard
	Pb	206	69510.4	1.5	**21.5681**	0.147	0.7	ug/L	184	Standard
	Pb	207	60101.7	1.8	**20.5640**	0.145	0.7	ug/L	161	Standard
	Pb	208	254873.7	1.3	**20.0436**	0.111	0.6	ug/L	746	Standard
	U	238	93564.0	0.3	**20.2790**	0.193	1.0	ug/L	6	Standard
>	**Bi**	209	440065.4	1.1				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3770.5	3.9	**5.5549**	0.198	3.6	mg/L	25	Standard
K	39	1291.7	1.5	**4.2188**	0.088	2.1	mg/L	25	Standard
Ca	43	145.0	11.9	**7.3378**	1.511	20.6	mg/L	77	Standard
Fe	54	106.3	24.8	**-0.0334**	0.026	78.4	mg/L	165	Standard
Fe	57	178.3	4.3	**0.0994**	0.033	33.3	mg/L	205	Standard
Sc-1	45	49341.9	0.6				mg/L	46031	Standard
Cl	35	37411.5	1.2				ug/L	28530	Standard
Kr	83	2.7	142.0				ug/L	2	Standard
Br	81	2010.1	2.6				ug/L	1560	Standard
P	31	20709.1	2.3				ug/L	15481	Standard
S	34	2730.2	7.0				ug/L	2072	Standard
Sr	88	80.0	25.0				ug/L	70	Standard
C	12	66.7	22.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.3	129.7				mg/L	13	Standard
Ho-1	165	8.3	69.3				mg/L	8	Standard
Er	166	6.7	173.2				mg/L	7	Standard
I	127	13916.4	4.2				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.492	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.163	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.380
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.501
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: +30
Sample Date/Time: Wednesday, June 15, 2016 17:27:39
Number of Replicates: 3
Autosampler Position: 346
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69524.2	1.6				ug/L	58443	Standard
	Be	9	19812.9	1.5	**27.9534**	0.409	1.5	ug/L	5	Standard
	Al	27	1428.4	5.6	**0.0025**	0.001	28.8	ug/L	385	Standard
	Sc	45	50480.6	1.7				ug/L	46031	Standard
	Ti	47	45.3	18.0	**-0.2855**	0.036	12.8	ug/L	94	Standard
	V	51	168793.5	0.9	**29.5996**	0.130	0.4	ug/L	1280	Standard
	Cr	52	178724.3	1.0	**29.1148**	0.259	0.9	ug/L	6381	Standard
	Cr	53	26401.3	0.9	**34.0809**	0.288	0.8	ug/L	1957	Standard
	Mn	55	149959.2	1.5	**33.1703**	0.430	1.3	ug/L	667	Standard
	Co	59	145068.7	1.8	**29.5681**	0.559	1.9	ug/L	156	Standard
	Ni	60	42799.4	1.4	**29.1917**	0.398	1.4	ug/L	154	Standard
	Cu	65	42552.7	1.8	**29.7780**	0.408	1.4	ug/L	116	Standard
	Zn	66	24889.4	0.5	**29.7526**	0.109	0.4	ug/L	114	Standard
>	**Ge**	72	481965.4	0.5				ug/L	467488	Standard
	As	75	24286.0	1.7	**28.3798**	0.485	1.7	ug/L	-61	Standard
	Se	82	2625.7	0.8	**29.8754**	0.396	1.3	ug/L	9	Standard
	Se-1	77	2266.2	1.9	**36.5919**	0.747	2.0	ug/L	125	Standard
>	**Ga**	71	116.7	19.3				mg/L	50	Standard
	Rb	85	9683.1	1.5				ug/L	18	Standard
	Y	89	414011.7	2.1				ug/L	402730	Standard
>	**Rh**	103	28.3	27.0				ug/L	12	Standard
	Mo	98	208.3	1.5	**0.1093**	0.003	2.7	ug/L	8	Standard
	Ag	107	133541.6	1.1	**29.4901**	0.560	1.9	ug/L	65	Standard
	Cd	111	42473.4	0.3	**29.0170**	0.392	1.4	mg/L	3	Standard
	Cd	114	104041.3	1.3	**29.0295**	0.206	0.7	ug/L	15	Standard
>	**In**	115	534861.3	1.3				ug/L	526825	Standard
	Sn	118	428.3	7.6	**-0.0080**	0.007	86.1	ug/L	368	Standard
	Sb	123	94217.4	0.6	**29.0977**	0.329	1.1	ug/L	46	Standard
	Ba	135	44787.1	0.9	**32.4474**	0.252	0.8	ug/L	16	Standard
	Ce	140	21.7	53.3				ug/L	43	Standard
>	**Tb**	159	823463.9	0.6				ug/L	771780	Standard
	Ho	165	10.0	100.0				ug/L	8	Standard
	Tl	203	156200.4	0.3	**28.1773**	0.220	0.8	ug/L	28	Standard
	Tl	205	141634.1	1.9	**27.9424**	0.293	1.0	ug/L	20	Standard
	Pb	206	101074.0	0.9	**30.3013**	0.334	1.1	ug/L	184	Standard
	Pb	207	87601.5	0.4	**28.9617**	0.183	0.6	ug/L	161	Standard
	Pb	208	375609.1	0.7	**28.5410**	0.099	0.3	ug/L	746	Standard
	U	238	137490.7	0.5	**28.7636**	0.259	0.9	ug/L	6	Standard
>	**Bi**	209	455940.2	1.0				ug/L	429329	Standard

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Na	23	1.7	173.2	**6.2307**	10.783	173.1	mg/L	0	Standard
Mg	24	3608.8	4.1	**5.1938**	0.159	3.1	mg/L	25	Standard
K	39	1323.4	9.6	**4.2212**	0.350	8.3	mg/L	25	Standard
Ca	43	116.7	38.4	**4.6876**	3.584	76.5	mg/L	77	Standard
Fe	54	143.2	3.4	**-0.0002**	0.006	2370.7	mg/L	165	Standard
Fe	57	221.7	15.0	**0.2456**	0.118	48.0	mg/L	205	Standard
Sc-1	45	50480.6	1.7				mg/L	46031	Standard
Cl	35	37949.5	1.1				ug/L	28530	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	2096.8	4.0				ug/L	1560	Standard
P	31	20452.1	0.5				ug/L	15481	Standard
S	34	2645.2	0.8				ug/L	2072	Standard
Sr	88	58.3	21.6				ug/L	70	Standard
C	12	60.0	16.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.5	107.6				mg/L	13	Standard
Ho-1	165	10.0	100.0				mg/L	8	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	12902.2	6.3				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		118.962	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.097	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Report Date/Time: Wednesday, June 15, 2016 17:29:55
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.525
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.198
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: +30
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Approved: June 16, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 15, 2016 17:30:52
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	62547.2	1.5				ug/L	58443	Standard
	Be	9	31795.0	3.0	**49.8912**	2.098	4.2	ug/L	5	Standard
	Al	27	5683695.8	1.5	**46.4805**	1.369	2.9	ug/L	385	Standard
	Sc	45	50375.3	1.9				ug/L	46031	Standard
	Ti	47	22755.7	0.6	**98.9418**	0.549	0.6	ug/L	94	Standard
	V	51	277125.5	0.7	**48.8633**	0.518	1.1	ug/L	1280	Standard
	Cr	52	289226.3	1.0	**47.9352**	0.636	1.3	ug/L	6381	Standard
	Cr	53	34883.5	2.1	**46.0529**	0.999	2.2	ug/L	1957	Standard
	Mn	55	243690.3	1.4	**54.1353**	0.871	1.6	ug/L	667	Standard
	Co	59	239639.1	3.2	**48.9651**	1.599	3.3	ug/L	156	Standard
	Ni	60	70731.1	1.0	**48.4228**	0.393	0.8	ug/L	154	Standard
	Cu	65	68223.9	1.3	**47.9032**	0.551	1.1	ug/L	116	Standard
	Zn	66	39798.5	1.4	**47.8234**	0.539	1.1	ug/L	114	Standard
>	Ge	72	481004.1	0.3				ug/L	467488	Standard
	As	75	40566.4	0.9	**47.4724**	0.563	1.2	ug/L	-61	Standard
	Se	82	4156.5	0.9	**47.4861**	0.498	1.0	ug/L	9	Standard
	Se-1	77	2834.9	0.7	**46.3768**	0.234	0.5	ug/L	125	Standard
>	Ga	71	56.7	33.4				mg/L	50	Standard
	Rb	85	605.0	5.2				ug/L	18	Standard
	Y	89	409485.2	2.5				ug/L	402730	Standard
>	Rh	103	23.3	32.7				ug/L	12	Standard
	Mo	98	175724.0	1.1	**100.4820**	1.467	1.5	ug/L	8	Standard
	Ag	107	217508.3	1.6	**48.7577**	0.897	1.8	ug/L	65	Standard
	Cd	111	71113.6	0.5	**49.3092**	0.386	0.8	mg/L	3	Standard
	Cd	114	172332.6	0.9	**48.8116**	0.586	1.2	ug/L	15	Standard
>	In	115	526998.6	0.3				ug/L	526825	Standard
	Sn	118	196162.0	2.1	**48.5933**	1.155	2.4	ug/L	368	Standard
	Sb	123	157628.8	1.0	**49.4152**	0.623	1.3	ug/L	46	Standard
	Ba	135	66458.8	0.6	**48.8766**	0.412	0.8	ug/L	16	Standard
	Ce	140	56.7	45.3				ug/L	43	Standard
>	Tb	159	797154.4	1.2				ug/L	771780	Standard
	Ho	165	3.3	86.6				ug/L	8	Standard
	Tl	203	257014.2	0.5	**48.2910**	0.729	1.5	ug/L	28	Standard
	Tl	205	232534.2	0.6	**47.7866**	0.761	1.6	ug/L	20	Standard
	Pb	206	159568.2	1.1	**49.8588**	0.493	1.0	ug/L	184	Standard
	Pb	207	144733.4	0.9	**49.8817**	0.885	1.8	ug/L	161	Standard
	Pb	208	616599.7	0.8	**48.8421**	0.717	1.5	ug/L	746	Standard
	U	238	226676.4	0.4	**49.3854**	0.654	1.3	ug/L	6	Standard
>	Bi	209	437856.0	1.0				ug/L	429329	Standard

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Na	23	1.7	173.2	**6.2801**	10.869	173.1	mg/L	0	Standard
Mg	24	3333.7	4.3	**4.8080**	0.256	5.3	mg/L	25	Standard
K	39	1565.1	9.1	**5.0289**	0.387	7.7	mg/L	25	Standard
Ca	43	100.0	8.7	**3.3634**	0.668	19.8	mg/L	77	Standard
Fe	54	4489.6	4.7	**4.1954**	0.136	3.2	mg/L	165	Standard
Fe	57	1196.7	6.8	**3.9114**	0.250	6.4	mg/L	205	Standard
> **Sc-1**	45	50375.3	1.9				mg/L	46031	Standard
Cl	35	35202.2	2.3				ug/L	28530	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	1276.7	12.5				ug/L	1560	Standard
P	31	20600.7	1.8				ug/L	15481	Standard
S	34	2878.6	1.0				ug/L	2072	Standard
Sr	88	56.7	13.5				ug/L	70	Standard
C	12	46.7	68.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.7	103.5				mg/L	13	Standard
Ho-1	165	3.3	86.6				mg/L	8	Standard
Er	166	6.7	173.2				mg/L	7	Standard
I	127	1131.7	21.5				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	99.782		
Al	27	92.961		
Sc	45			
Ti	47	98.942		
V	51	97.727		
Cr	52	95.870		
Cr	53			
Mn	55	108.271		
Co	59	97.930		
Ni	60	96.846		
Cu	65	95.806		
Zn	66	95.647		
> Ge	72		102.891	
As	75	94.945		
Se	82	94.972		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	100.482		
Ag	107	97.515		
Cd	111	98.618		
Cd	114			
In	115			100.033
Sn	118	97.187		
Sb	123	98.830		
Ba	135	97.753		
Ce	140			
Tb	159			
Ho	165			
Tl	203	96.582		
Tl	205			
Pb	206			
Pb	207			
Pb	208	97.684		
U	238	98.771		
Bi	209			101.986
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 15, 2016 17:34:03
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60411.9	1.1				ug/L	58443	Standard
	Be	9	13.3	43.3	**0.0024**	0.010	403.8	ug/L	5	Standard
	Al	27	1033.4	13.7	**0.0007**	0.001	158.3	ug/L	385	Standard
	Sc	45	49393.7	1.6				ug/L	46031	Standard
	Ti	47	37.0	18.9	**-0.3189**	0.032	10.0	ug/L	94	Standard
	V	51	1127.6	9.6	**-0.0569**	0.022	37.8	ug/L	1280	Standard
	Cr	52	6033.9	2.8	**-0.1238**	0.039	31.5	ug/L	6381	Standard
	Cr	53	658.3	2.9	**-1.9419**	0.034	1.8	ug/L	1957	Standard
	Mn	55	600.0	4.4	**-0.0590**	0.007	11.6	ug/L	667	Standard
	Co	59	199.3	1.3	**0.0052**	0.000	2.2	ug/L	156	Standard
	Ni	60	112.7	8.2	**-0.0499**	0.007	14.5	ug/L	154	Standard
	Cu	65	105.7	17.3	**-0.0300**	0.013	41.9	ug/L	116	Standard
	Zn	66	112.3	7.3	**-0.1191**	0.009	7.8	ug/L	114	Standard
>	**Ge**	72	473283.4	1.1				ug/L	467488	Standard
	As	75	-20.6	128.3	**0.0167**	0.031	188.7	ug/L	-61	Standard
	Se	82	17.3	29.9	**0.0310**	0.062	201.1	ug/L	9	Standard
	Se-1	77	65.7	4.9	**-0.8746**	0.067	7.7	ug/L	125	Standard
>	**Ga**	71	60.0	43.3				mg/L	50	Standard
	Rb	85	23.3	24.7				ug/L	18	Standard
	Y	89	408353.1	0.5				ug/L	402730	Standard
>	**Rh**	103	13.3	78.1				ug/L	12	Standard
	Mo	98	144.1	15.4	**0.0745**	0.013	17.6	ug/L	8	Standard
	Ag	107	119.3	18.4	**0.0063**	0.005	80.5	ug/L	65	Standard
	Cd	111	8.4	29.7	**-0.0023**	0.002	77.9	mg/L	3	Standard
	Cd	114	20.9	88.7	**-0.0083**	0.005	63.4	ug/L	15	Standard
>	**In**	115	526612.4	0.7				ug/L	526825	Standard
	Sn	118	651.7	18.6	**0.0491**	0.029	59.2	ug/L	368	Standard
	Sb	123	597.5	25.6	**0.1723**	0.047	27.1	ug/L	46	Standard
	Ba	135	40.7	24.1	**0.0069**	0.007	104.6	ug/L	16	Standard
	Ce	140	5.0	0.0				ug/L	43	Standard
>	**Tb**	159	795959.1	0.6				ug/L	771780	Standard
	Ho	165	15.0	66.7				ug/L	8	Standard
	Tl	203	71.0	19.4	**-0.0013**	0.003	204.6	ug/L	28	Standard
	Tl	205	56.7	28.4	**-0.0004**	0.003	839.9	ug/L	20	Standard
	Pb	206	233.3	10.8	**0.0002**	0.008	3615.9	ug/L	184	Standard
	Pb	207	207.0	12.2	**-0.0010**	0.009	895.1	ug/L	161	Standard
	Pb	208	854.3	3.4	**-0.0044**	0.002	54.5	ug/L	746	Standard
	U	238	43.3	9.3	**0.0044**	0.001	19.9	ug/L	6	Standard
>	**Bi**	209	439522.5	0.2				ug/L	429329	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	28.3	53.9	**0.0027**	0.023	854.1	mg/L	25	Standard
K	39	41.7	30.2	**-0.0023**	0.044	1930.5	mg/L	25	Standard
Ca	43	33.3	34.6	**-2.0783**	1.008	48.5	mg/L	77	Standard
Fe	54	151.1	21.9	**0.0102**	0.030	294.3	mg/L	165	Standard
Fe	57	160.0	5.4	**0.0284**	0.037	129.4	mg/L	205	Standard
> **Sc-1**	45	49393.7	1.6				mg/L	46031	Standard
Cl	35	36381.0	1.1				ug/L	28530	Standard
Kr	83	4.3	48.0				ug/L	2	Standard
Br	81	1453.4	4.4				ug/L	1560	Standard
P	31	22440.0	3.9				ug/L	15481	Standard
S	34	2871.9	0.9				ug/L	2072	Standard
Sr	88	45.0	38.5				ug/L	70	Standard
C	12	33.3	121.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.5	88.8				mg/L	13	Standard
Ho-1	165	15.0	66.7				mg/L	8	Standard
Er	166	10.0	100.0				mg/L	7	Standard
I	127	945.0	11.3				mg/L	1227	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.240	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.960
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.374
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Wednesday, June 15, 2016 17:36:20
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Approved: June 16, 2016

2.3.3 Metals CVAA Data (Mercury)

2.3.3.1 Summary Data

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060504-03	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW5-060816	**Prep Method:**	7470A	**Prep Date:**	06/10/2016 10:23
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/13/2016 15:11
Workgroup #:	WG572285	**Analyst:**	AMA	**Run Date:**	06/13/2016 16:05
Collect Date:	06/08/2016 10:10	**Dilution:**	1	**File ID:**	M7.061316.160504
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060504
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.3.2 QC Summary

Example Cold Vapor Mercury Calculations
Hydra AA Mercury Analyzer / CETAC M-7600 Quick Trace Mercury Analyzer

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and five standards.

2.0 Calculating the concentration (C) of an element in water using data from run log and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to Volume (mL)	40
Vi = Aliquot Volume (mL)	40
D = Manual dilution factor, if required (10X = 10)	1
Cx = Concentration of element in ppb (ug/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Ws} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to volume (mL)	40
Ws = Aliquot weight (g)	0.6
D = Manual dilution factor	1
Cx = Concentration of element in ug/kg	6.67

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

1 Cx = Concentration calculated as received (wet basis)	6.67
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	8.33

8.33 ug/kg = 0.00833 mg/kg

Microbac Laboratories Inc.
Metals Digest Log

Workgroup: WG572231
Analyst: REK
Spike Analyst: REK
Method: 7470A
Run Date: 06/10/2016 10:23
Hotblock Start Temp: 94.8 @ 10:15
Hotblock End Temp: 95 @ 12:15
Instrument: HB2

SOP: ME404 Revison 17
Spike Solution: STD76541
Spike Witness: VC
H2SO4 Lot #: COA18359
40 & 50 ML. DIGESTION TU COA18772
HNO3 Lot #: COA18905
K2S2O8 1:1 Lot #: RGT36713
KMnO4 1:1 Lot #: RGT37006
Mercury Water ICV Lot #: STD76543
HG H2O STDS 10PPM Lot #: STD76549

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Spike Amount	Due Date
1	WG572231-03	BLANK	1	40 mL	40 mL		
2	WG572115-01	FBLK1	17	4 mL	40 mL		
3	WG572115-02	FBLK2	17	4 mL	40 mL		
4	WG572231-04	LCS	1	40 mL	40 mL	4 mL	
5	L16060360-02	SAMP	17	4 mL	40 mL		06/17/16
6	L16060401-01	SAMP	17	4 mL	40 mL		06/16/16
7	L16060403-01	SAMP	17	4 mL	40 mL		06/16/16
8	L16060438-01	SAMP	1	40 mL	40 mL		06/13/16
9	L16060492-01	SAMP	1	40 mL	40 mL		06/20/16
10	L16060504-03	SAMP	1	40 mL	40 mL		06/20/16
11	WG572231-01	REF	1	40 mL	40 mL		
12	L16060540-06	RS01	1	40 mL	40 mL		06/20/16
13	WG572231-05	MS	1	36 mL	40 mL	4 mL	
14	L16060540-07	MS01	1	36 mL	40 mL	4 mL	06/20/16
15	WG572231-06	MSD	1	36 mL	40 mL	4 mL	
16	L16060540-08	SD01	1	36 mL	40 mL	4 mL	06/20/16
17	L16060540-09	SAMP	1	40 mL	40 mL		06/20/16
18	L16060540-10	SAMP	1	40 mL	40 mL		06/20/16
19	L16060540-11	SAMP	1	40 mL	40 mL		06/20/16
20	L16060540-14	SAMP	1	40 mL	40 mL		06/20/16
21	L16060540-15	SAMP	1	40 mL	40 mL		06/20/16
22	L16060540-16	SAMP	1	40 mL	40 mL		06/20/16
23	L16060546-01	SAMP	2	40 mL	40 mL		06/16/16
24	WG572231-02	REF	2	40 mL	40 mL		
25	L16060551-01	SAMP	2	40 mL	40 mL		06/16/16
26	WG572231-07	DUP	1	40 mL	40 mL		

L16060492-01	SAMPLE IS BRINE

Analyst: _____

Reviewer: _____

* All calibration and check standards are prepared and digested with sample batch following the procedures in section 7.0 of SOP ME404/ME405.

HB_DIG - Modified 07/26/2012
PDF ID: 4803223
Report generated: 06/10/2016 12:53

TCLP Non-Volatile

Analyst(s): AMA
Date: 06/09/2016
Filter Lot #: 94186030
Microbac SOP: TCLP01 Rev #: 12

Analyst / Date		Analyst / Date	
AMA	6/9/16	CPD	6/10/16
Time On	Temp On °C	Time Off	Temp Off °C
1435	22.9	0810	21.8

Agitator Speed 30 ± 2 rpm ☑

Jug #	Sample #	Tests	Method	Fluid #	Matrix *	% Solid	Pretest pH Initial	Pretest pH Final	Int. Wt. (g)	Fluid Vol. (mL)	Final extract pH
G-8	06-0360-02	ME, SV, Pest, Herb	1311	F1-180	S	100	7.62	3.16	100.79	2015	5.25
↓	↓	pH-L	↓	↓	↓	↓	↓	↓	↓	↓	↓
D	06-0401-01	ME	1311	F2-379	S	100	12.78	12.31	50.40	1008	12.44
D	06-0403-01	ME	1311	F2-379	S	100	12.83	12.32	50.40	1008	11.99
D	06-0418-01	300	1312	SPLP F1-61	S	100	NA	NA	50.45	1009	9.65
D	-02	↓	↓	↓	↓	↓	↓	↓	50.09	1002	9.78
D	-03	↓	↓	↓	↓	↓	↓	↓	50.40	1008	8.85
D	-04	↓	↓	↓	↓	↓	↓	↓	50.54	1010	9.68
D	-05	↓	↓	↓	↓	↓	↓	↓	50.71	1014	9.08
D	-06	↓	↓	↓	↓	↓	↓	↓	50.48	1009	9.65
D	-07	↓	↓	↓	↓	↓	↓	↓	50.56	1011	9.04
D	-08	↓	↓	↓	↓	↓	↓	↓	50.23	1004	9.56
D	06-0482-01	ME	1311		S	100	6.29	2.01	100.64	2013	5.55
	FBlk 1	ME, SV, Pest, Herb, PHL	1311	F1-180	NA	NA	NA	NA	100	100	4.92
	FBlk 2	ME	1311	F2-379	↓	↓	↓	↓	↓	↓	2.92
	SPLP F1	300	1312	F1-61	↓	↓	↓	↓	↓	↓	4.17

AMA 6/10/16

*Matrix Code: (S = solid, sand, soil or sludge) (P = paint) (O = organic) (W = water or aqueous waste)
D = Disposable plastic jug
TCLP Pretest weight will be 5.0 g (± 0.1) unless otherwise noted.
Temperature shall be maintained at 23° ± 2 for 18 ± 2 hours unless otherwise noted.

Comments: NA

Peer Review By: [signature]

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 061316D.CSV

Analyst1: PDM Analyst2: N/A

Method: 7470A/245.1 SOP: ME404 Rev: 17

Maintenance Log ID:

Calibration Std: STD76549 ICV Std: STD76543 Post Spike: STD76549

ICSA: N/A ICSAB: N/A Int. Std:

CCV: LLCCV: Tuning Sol :

Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 572285

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	M7.061316.145724	WG572551-01	Calibration Point		1		06/13/16 14:57
2	M7.061316.145955	WG572551-02	Calibration Point		1		06/13/16 14:59
3	M7.061316.150227	WG572551-03	Calibration Point		1		06/13/16 15:02
4	M7.061316.150500	WG572551-04	Calibration Point		1		06/13/16 15:05
5	M7.061316.150918	WG572551-05	Calibration Point		1		06/13/16 15:09
6	M7.061316.151152	WG572551-06	Calibration Point		1		06/13/16 15:11
7	M7.061316.151426	WG572551-07	Initial Calibration Verification		1		06/13/16 15:14
8	M7.061316.151657	WG572551-08	Initial Calib Blank		1		06/13/16 15:16
9	M7.061316.151930	WG572551-09	CCV		1		06/13/16 15:19
10	M7.061316.152200	WG572551-10	CCB		1		06/13/16 15:22
11	M7.061316.152431	WG572231-03	Method/Prep Blank	40/40	1		06/13/16 15:24
12	M7.061316.152702	WG572231-04	Laboratory Control S	40/40	1		06/13/16 15:27
13	M7.061316.152934	WG572115-01	Fluid Blank 1		1		06/13/16 15:29
14	M7.061316.153206	WG572115-02	Fluid Blank 2		1		06/13/16 15:32
15	M7.061316.153438	L16060438-01	PIT WATER	40/40	1		06/13/16 15:34
16	M7.061316.153710	WG572285-02	Post Digestion Spike		1	L16060438-01	06/13/16 15:37
17	M7.061316.153942	L16060450-06	L1606045006	40/40	1		06/13/16 15:39
18	M7.061316.154215	WG572231-05	Matrix Spike	36/40	1	L16060540-06	06/13/16 15:42
19	M7.061316.154448	WG572231-06	Matrix Spike Duplica	36/40	1	L16060540-06	06/13/16 15:44
20	M7.061316.154722	L16060360-02	V6F0104-02	4/40	1		06/13/16 15:47
21	M7.061316.154954	WG572551-11	CCV		1		06/13/16 15:49
22	M7.061316.155225	WG572551-12	CCB		1		06/13/16 15:52
23	M7.061316.155458	WG572285-01	Post Digestion Spike		1	L16060360-02	06/13/16 15:54
24	M7.061316.155732	L16060401-01	SAPA 12 BAGS 6/6/16	4/40	1		06/13/16 15:57
25	M7.061316.160003	L16060403-01	KAISER 12 BAGS 6/6/16	4/40	1		06/13/16 16:00
26	M7.061316.160233	L16060492-01	SPW_06082016	40/40	1		06/13/16 16:02
27	M7.061316.160504	L16060504-03	MW5-060816	40/40	1		06/13/16 16:05
28	M7.061316.160735	L16060540-09	AG4578	40/40	1		06/13/16 16:07
29	M7.061316.161007	L16060540-10	AG4579	40/40	1		06/13/16 16:10
30	M7.061316.161238	L16060540-11	AG4580	40/40	1		06/13/16 16:12
31	M7.061316.161510	L16060540-14	AG4584	40/40	1		06/13/16 16:15
32	M7.061316.161743	L16060540-15	AG4587	40/40	1		06/13/16 16:17
33	M7.061316.162015	WG572551-13	CCV		1		06/13/16 16:20
34	M7.061316.162246	WG572551-14	CCB		1		06/13/16 16:22

Page: 1 Approved: June 16, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 061316D.CSV

Analyst1: PDM Analyst2: N/A

Method: 7470A/245.1 SOP: ME404 Rev: 17

Maintenance Log ID:

Calibration Std: STD76549 ICV Std: STD76543 Post Spike: STD76549

ICSA: N/A ICSAB: N/A Int. Std:

CCV: LLCCV: Tuning Sol :

Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 572285

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	M7.061316.162519	L16060540-16	AG4589	40/40	1		06/13/16 16:25
36	M7.061316.162752	L16060546-01	J6F0161-01	40/40	1		06/13/16 16:27
37	M7.061316.163025	WG572231-02	Reference Sample	40/40	1	L16060551-01	06/13/16 16:30
38	M7.061316.163258	WG572231-07	Duplicate	40/40	1	L16060551-01	06/13/16 16:32
39	M7.061316.163531	WG572551-15	CCV		1		06/13/16 16:35
40	M7.061316.163802	WG572551-16	CCB		1		06/13/16 16:38

Page: 2 Approved: June 16, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 13-JUN-2016
Analyst: PDM
Analyst: NA
Method: 7470A/245.1
Instrument: CVAA1
Curve Workgroup: 572551
Runlog ID: 75664
Analytical Workgroups: 572285

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	0540, 0504
Client Forms	X
Level X	
Level 3	
Level 4	0540, 0504
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	AMA
Secondary Reviewer	KHR
Comments	

Primary Reviewer:
15-JUN-2016
Alexandra M. Alfred

Secondary Reviewer:
16-JUN-2016
Kym H. Rhoden

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-16-2016 08:29:46

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 7470A

AAB#: WG572285

Login Number: L16060504

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW5-060816	03	06/08/16					06/10/2016	2	28		06/13/16	5.2	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4808644
Report generated 06/15/2016 12:32

METHOD BLANK SUMMARY

Login Number: L16060504
Blank File ID: M7.061316.152431
Prep Date: 06/10/16 10:23
Analyzed Date: 06/13/16 15:24
Analyst: AMA

Work Group: WG572285
Blank Sample ID: WG572231-03
Instrument ID: CVAA1
Method: 7470A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572231-04	M7.061316.152702	06/13/16 15:27	01
MW5-060816	L16060504-03	M7.061316.160504	06/13/16 16:05	01
DUP	WG572231-07	M7.061316.163258	06/13/16 16:32	01

Report Name: BLANK_SUMMARY
PDF File ID: 4808645
Report generated 06/15/2016 12:32

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060504 Prep Date: 06/10/16 10:23 Sample ID: WG572231-03
Instrument ID: CVAA1 Run Date: 06/13/16 15:24 Prep Method: 7470A
File ID: M7.061316.152431 Analyst: AMA Method: 7470A
Workgroup (AAB#): WG572285 Matrix: Water Units: mg/L
Contract #: Cal ID: CVAA1-13-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Mercury	0.000100	0.000400	0.000100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4808646
15-JUN-2016 12:32

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060504 Run Date: 06/13/2016 Sample ID: WG572231-04
Instrument ID: CVAA1 Run Time: 15:27 Prep Method: 7470A
File ID: M7.061316.152702 Analyst: AMA Method: 7470A
Workgroup (AAB#): WG572285 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76541 Cal ID: CVAA1-13-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Mercury	0.00400	0.00393	98.3	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4808647
Report generated: 06/15/2016 12:32

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060504 Cal ID: CVAA1 - Worknum: WG572285
Instrument ID: CVAA1 Contract #: Method: 7470A
Parent ID: WG572231-01 File ID: M7.061316.153942 Dil: 1 Matrix: WATER
Sample ID: WG572231-05 MS File ID: M7.061316.154215 Dil: 1 Units: mg/L
Sample ID: WG572231-06 MSD File ID: M7.061316.154448 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Mercury	ND	0.00444	0.00440	98.9	0.00444	0.00457	103	3.91	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4808648
Report generated 06/15/2016 12:32

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060504 **Worknum:** WG572285
Instrument ID: CVAA1 **Method:** 7470A
Post Spike ID: WG572285-02 **File ID:** M7.061316.153710 **Dil:** 1 **Units:** ug/L
Sample ID: L16060438-01 **File ID:** M7.061316.153438 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MERCURY	1.01		0	U	1	101.3	85 - 115	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4808643
Report generated: 06/15/2016 12:32

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060504
Analytical Method: 7470A
ICAL Worknum: WG572551

Workgroup (AAB#): WG572285
Instrument ID: CVAA1
Initial Calibration Date: 06/13/2016 15:11

Analyte	WG572551-01		WG572551-02		WG572551-03		WG572551-04		WG572551-05		WG572551-06	
	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT
Mercury	0	36.39	0.200	1752	1.00	8753	2.00	17060	5.00	42970	10.0	82370

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4808649
Report generated 06/15/2016 12:32

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060504
Analytical Method: 7470A
ICAL Worknum: WG572551

Workgroup (AAB#): WG572285
Instrument ID: CVAA1
Initial Calibration Date: 06/13/2016 15:11

Analyte	R	Q
Mercury	1.000	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4808649
Report generated 06/15/2016 12:32

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060504
Run Date: 06/13/2016
Sample ID: WG572551-08
Instrument ID: CVAA1
Run Time: 15:16
Method: 7470A
File ID: M7.061316.151657
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG572285
Cal ID: CVAA1 - 13-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
MERCURY	.1	.4	.1	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4808651
Report generated 06/15/2016 12:32

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060504
Run Date: 06/13/2016
Sample ID: WG572551-10
Instrument ID: CVAA1
Run Time: 15:22
Method: 7470A
File ID: M7.061316.152200
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG572285
Cal ID: CVAA1 - 13-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4808653
Report generated 06/15/2016 12:32

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060504
Run Date: 06/13/2016
Sample ID: WG572551-12
Instrument ID: CVAA1
Run Time: 15:52
Method: 7470A
File ID: M7.061316.155225
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG572285
Cal ID: CVAA1 - 13-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4808653
Report generated 06/15/2016 12:32

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060504
Run Date: 06/13/2016
Sample ID: WG572551-14
Instrument ID: CVAA1
Run Time: 16:22
Method: 7470A
File ID: M7.061316.162246
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG572285
Cal ID: CVAA1 - 13-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4808653
Report generated 06/15/2016 12:32

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060504 Run Date: 06/13/2016 Sample ID: WG572551-07
Instrument ID: CVAA1 Run Time: 15:14 Method: 7470A
File ID: M7.061316.151426 Analyst: AMA Units: ug/L
Workgroup (AAB#): WG572285 Cal ID: CVAA1 - 13-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Mercury		2	2.05	102	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4808650
Report generated 06/15/2016 12:32

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504
Run Date: 06/13/2016
Sample ID: WG572551-09
Instrument ID: CVAA1
Run Time: 15:19
Method: 7470A
File ID: M7.061316.151930
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG572285
Cal ID: CVAA1 - 13-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00204	mg/L	102	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4808652
Report generated 06/15/2016 12:32

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504
Run Date: 06/13/2016
Sample ID: WG572551-11
Instrument ID: CVAA1
Run Time: 15:49
Method: 7470A
File ID: M7.061316.154954
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG572285
Cal ID: CVAA1 - 13-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00203	mg/L	102	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4808652
Report generated 06/15/2016 12:32

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060504
Run Date: 06/13/2016
Sample ID: WG572551-13
Instrument ID: CVAA1
Run Time: 16:20
Method: 7470A
File ID: M7.061316.162015
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG572285
Cal ID: CVAA1 - 13-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00208	mg/L	104	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4808652
Report generated 06/15/2016 12:32

2.3.3.3 Raw Data

PDM CVAA1 245.1/7470/7471

Report Generated By CETAC QuickTrace
Analyst: VOA
Worksheet file: C:\Program Files (x86)\QuickTrace\Worksheets\061316D.wsz
Date Started: 6/13/2016 2:37:29 PM
Comment:

Results

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
Standard #0					STD	06/13/16 02:57:24 pm	0.0000	36	36.36		1.00
Replicates	26.8	50.8	44.3	23.6							
Standard #1 (0.2 ug/L)					STD	06/13/16 02:59:55 pm	0.2000	1752	1.25		1.00
Replicates	1741.0	1726.5	1767.2	1773.0							
Standard #2 (1.0 ug/L)					STD	06/13/16 03:02:27 pm	1.0000	8753	0.54		1.00
Replicates	8724.1	8744.6	8721.6	8822.3							
Standard #3 (2.0 ug/L)					STD	06/13/16 03:05:00 pm	2.0000	17058	0.44		1.00
Replicates	16961.0	17037.5	17109.1	17122.8							
Standard #4 (5.0 ug/L)					STD	06/13/16 03:09:18 pm	5.0000	42974	0.41		1.00
Replicates	42748.8	42929.4	43067.1	43150.6							
Standard #5 (10.0 ug/L)					STD	06/13/16 03:11:52 pm	10.0000	82368	0.27		1.00
Replicates	82096.1	82320.4	82419.4	82637.4							

Calibration

Equation: A = 445.985 + 8256.340C
R2: 0.99956
SEE: 752.2704
Flags:

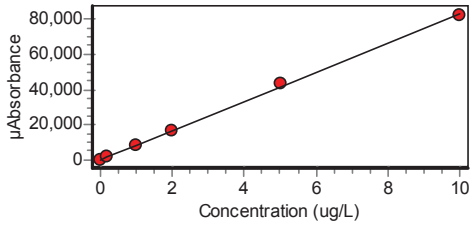

ICV					ICV	06/13/16 03:14:26 pm	2.0480	17355	0.17		1.00
Replicates	17314.1	17351.8	17371.3	17382.8							
% Recovery	102.40										

Approved: June 15, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
ICB					ICB	06/13/16 03:16:57 pm	-0.0517	19	47.20		1.00
Replicates	16.7	27.5	7.6	25.8							
CCV					CCV	06/13/16 03:19:30 pm	2.0410	17301	0.49		1.00
Replicates	17197.0	17279.4	17327.5	17398.9							
% Recovery	102.07										
CCB					CCB	06/13/16 03:22:00 pm	-0.0525	13	55.51		1.00
Replicates	18.3	19.1	7.6	5.6							
WG572231-03					MB	06/13/16 03:24:31 pm	-0.0535	4	397.70		1.00
Replicates	-12.5	25.3	1.9	1.1							
WG572231-04					LCS	06/13/16 03:27:02 pm	3.9310	32901	0.73		1.00
Replicates	32619.7	32803.4	33005.6	33175.4							
% Recovery	98.27										
WG572115-01					UNK	06/13/16 03:29:34 pm	-0.0549	-8	234.92		1.00
Replicates	15.9	-11.7	-7.4	-27.2							
WG572115-02					UNK	06/13/16 03:32:06 pm	-0.0527	11	121.63		1.00
Replicates	8.1	-5.9	24.7	15.7							
L1606043801					UNK	06/13/16 03:34:38 pm	0.0152	571	1.49		1.00
Replicates	566.9	565.2	583.8	569.2							
WG572285-02					SPK	06/13/16 03:37:10 pm	1.0130	8813	0.47		1.00
Replicates	8755.4	8810.7	8839.4	8845.5							
% Recovery	99.82										
L1606045006					UNK	06/13/16 03:39:42 pm	-0.0547	-6	275.71		1.00
Replicates	1.3	-14.1	12.7	-23.0							
WG572231-05					MSK	06/13/16 03:42:15 pm	3.9570	33114	0.54		1.00
Replicates	32888.3	33070.8	33186.6	33309.1							
% Recovery	100.29										
WG572231-06					MSDUP	06/13/16 03:44:48 pm	4.1150	34422	0.46		1.00
Replicates	34220.9	34385.5	34496.0	34585.8							
% Recovery	104.25	RPD 3.93									

Approved: June 15, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1606036002					UNK	06/13/16 03:47:22 pm	-0.0547	-6	262.64		1.00
Replicates	7.0	-24.3	6.7	-13.0							
CCV					CCV	06/13/16 03:49:54 pm	2.0320	17220	0.43		1.00
Replicates	17121.7	17212.7	17249.2	17297.2							
% Recovery	101.58										
CCB					CCB	06/13/16 03:52:25 pm	-0.0544	-3	607.17		1.00
Replicates	-20.5	4.2	17.8	-12.8							
WG572285-01					UNK	06/13/16 03:54:58 pm	0.9702	8457	0.48		1.00
Replicates	8398.8	8467.8	8466.3	8493.6							
L1606040101					UNK	06/13/16 03:57:32 pm	-0.0425	95	8.71		1.00
Replicates	105.8	86.9	96.9	90.4							
L1606040301					UNK	06/13/16 04:00:03 pm	-0.0514	22	52.64		1.00
Replicates	33.7	13.2	10.9	30.1							
L1606049201					UNK	06/13/16 04:02:33 pm	-0.0136	334	3.53		1.00
Replicates	328.0	331.0	324.3	350.7							
L1606050403					UNK	06/13/16 04:05:04 pm	-0.0313	188	6.68		1.00
Replicates	177.2	188.8	179.8	204.9							
L1606054009					UNK	06/13/16 04:07:35 pm	-0.0486	45	26.68		1.00
Replicates	53.3	51.3	27.3	46.6							
L1606054010					UNK	06/13/16 04:10:07 pm	-0.0545	-4	274.23		1.00
Replicates	5.2	-15.1	-11.9	5.8							
L1606054011					UNK	06/13/16 04:12:38 pm	-0.0497	36	63.49		1.00
Replicates	24.9	14.6	67.1	36.6							
L1606054014					UNK	06/13/16 04:15:10 pm	-0.0505	29	29.14		1.00
Replicates	18.7	39.1	27.6	31.8							

Approved: June 15, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1606054015					UNK	06/13/16 04:17:43 pm	-0.0503	30	56.67		1.00
Replicates	22.1	16.1	55.2	28.6							
CCV					CCV	06/13/16 04:20:15 pm	2.0780	17606	0.51		1.00
Replicates	17486.5	17600.0	17637.5	17699.0							
% Recovery	103.92										
CCB					CCB	06/13/16 04:22:46 pm	-0.0531	8	109.89		1.00
Replicates	12.3	13.9	9.1	-4.6							
L1606054016					UNK	06/13/16 04:25:19 pm	-0.0525	12	97.98		1.00
Replicates	27.5	5.4	15.1	0.6							
L1606054601					UNK	06/13/16 04:27:52 pm	-0.0209	274	0.89		1.00
Replicates	271.7	275.9	275.4	271.2							
L1606055101					UNK	06/13/16 04:30:25 pm	-0.0527	11	125.09		1.00
Replicates	12.9	11.6	-7.0	26.0							
WG572231-07					DUP	06/13/16 04:32:58 pm	-0.0523	14	116.05		1.00
Replicates	21.3	-5.0	32.8	7.5							
		RPD 0.00									
CCV					CCV	06/13/16 04:35:31 pm	2.0660	17501	0.32		1.00
Replicates	17426.2	17498.2	17520.9	17559.7							
% Recovery	103.29										
CCB					CCB	06/13/16 04:38:02 pm	-0.0548	-6	187.39		1.00
Replicates	6.5	-9.1	-1.3	-21.6							

Approved: June 15, 2016
Alexandra M. Alfred

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
July 1, 2016

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BNB - Brandi N. Bentley
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJQ - Cameron J. Quick
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
CV - Carl Volkman
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
EMW - ERIC M. WILKEN
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LJH - Lacey J. Hendershot
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
NPH - Natalie P. Hart
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
July 01, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
July 01, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Debra Richmann	Mail to:	Linda Raabe
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000		112 East Pecan STE. 400
	Marietta, OH 45750	Sampler (print):	Scott Beesinger		San Antonio, TX 78205
Phone:	1-800-373-4071				210-296-2000
Client:	AECOM	Signature:	Scott Beesinger	Fed Ex Airbill No:	
Address:	112 East Pecan Ste. 400				
	San Antonio, TX 78205	pH:		Program:	
Turn Around Time:	STANDARD				
Project Name/Location:	Longhorn				
Project Number:	60274185.0013BH 1824 MR10				

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Total Metals	1,4 - DIOXANE					SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 18/24	18CPTMW08SW-060816			6/8/16	0800		✓	W	6	✓	✓		✓									
	18CPTMW08DW-060816			6/8/16	0905		✓	W	3		✓		✓									
	MW5-060816			6/8/16	1010		✓	W	7	✓	✓	✓	✓									
	18CPTMW03SW-060816			6/8/16	1120		✓	W	6	✓	✓		✓									
	TRIP BLANK			6/8/16			✓	W	2	✓												

Microbac OVD
Received: 06/09/2016 10:30
By: BRENDA GREGORY 221000086977
Brenda Gregory

Comments: **STANDARD TAT**

Relinquished by: (Signature) Scott Beesinger	Date 6/8/16	Time 1545	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time	Remarks:	

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060504
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 20-JUN-2016

Samplenum	Container ID	Products
L16060504-01	757239	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:39	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:45	AWE	CLS	
Comments:Products cancelled.							
3	STORE	ORG4	A1	23-JUN-2016 07:38	CLS	AWE	
Comments:Products cancelled.							
4	ANALYZ	A1	ORG4	29-JUN-2016 09:17	JDS	CLS	
Comments:Products cancelled.							
5	STORE	V1	A1	29-JUN-2016 09:28	CLS	JDS	
Comments:Products cancelled.							

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:39	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:45	AWE	CLS	
Comments:Products cancelled.							
3	STORE	ORG4	A1	23-JUN-2016 07:38	CLS	AWE	
Comments:Products cancelled.							
4	ANALYZ	A1	ORG4	29-JUN-2016 09:17	JDS	CLS	
Comments:Products cancelled.							
5	STORE	V1	A1	29-JUN-2016 09:28	CLS	JDS	
Comments:Products cancelled.							

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:39	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:45	AWE	CLS	
Comments:Products cancelled.							
3	STORE	ORG4	A1	23-JUN-2016 07:38	CLS	AWE	
Comments:Products cancelled.							
4	ANALYZ	A1	ORG4	29-JUN-2016 09:18	JDS	CLS	
Comments:Products cancelled.							
5	STORE	V1	A1	29-JUN-2016 09:28	CLS	JDS	
Comments:Products cancelled.							

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060504
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 20-JUN-2016

Samplenum	Container ID	Products
L16060504-01	757240	826-LOW 827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	09-JUN-2016 14:39	CLS		
2	PREP	W1	EXT	13-JUN-2016 15:30	CPD	BRG	
3	SUBBED	EXT	DISP	14-JUN-2016 10:05	BJO	BJO	
4	ANALYZ*	EXT	SEMI	20-JUN-2016 12:17	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		09-JUN-2016 14:39	CLS		

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060504-01	757241	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	09-JUN-2016 14:39	CLS		
2	ANALYZ	W1	SEM	10-JUN-2016 08:24	WTD	BRG	
3	STORE	SEM	A1	11-JUN-2016 11:56	AZH	WTD	

Samplenum	Container ID	Products
L16060504-02	757242	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	09-JUN-2016 14:39	CLS		
2	PREP	W1	EXT	13-JUN-2016 15:30	CPD	BRG	
3	SUBBED	EXT	DISP	14-JUN-2016 10:05	BJO	BJO	
4	ANALYZ*	EXT	SEMI	20-JUN-2016 12:17	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		09-JUN-2016 14:39	CLS		

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060504
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 20-JUN-2016

Samplenum	Container ID	Products
L16060504-02	757243	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	09-JUN-2016 14:39	CLS		
2	ANALYZ	W1	SEM	10-JUN-2016 08:23	WTD	BRG	
3	STORE	SEM	A1	11-JUN-2016 11:56	AZH	WTD	

Samplenum	Container ID	Products
L16060504-03	757244	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:39	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:45	AWE	CLS	

Comments:Products cancelled.

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:39	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:45	AWE	CLS	

Comments:Products cancelled.

3	STORE	ORG4	A1	23-JUN-2016 07:38	CLS	AWE	

Comments:Products cancelled.

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:39	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:45	AWE	CLS	

Comments:Products cancelled.

3	STORE	ORG4	A1	23-JUN-2016 07:38	CLS	AWE	

Comments:Products cancelled.

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060504
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 20-JUN-2016

Samplenum	Container ID	Products
L16060504-03	757245	826-LOW 827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	09-JUN-2016 14:39	CLS		
2	PREP	W1	EXT	13-JUN-2016 15:30	CPD	BRG	
3	SUBBED	EXT	DISP	14-JUN-2016 10:05	BJO	BJO	
4	ANALYZ*	EXT	SEMI	20-JUN-2016 12:17	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		09-JUN-2016 14:39	CLS		

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060504-03	757246	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	09-JUN-2016 14:39	CLS		
2	ANALYZ	W1	SEM	10-JUN-2016 08:24	WTD	BRG	
3	STORE	SEM	A1	11-JUN-2016 11:56	AZH	WTD	

Samplenum	Container ID	Products
L16060504-03	757247	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	09-JUN-2016 14:39	CLS		
2	PREP	W1	DIG	09-JUN-2016 15:20	ERP	CLS	
3	ANALYZ*	DIG	METALS	10-JUN-2016 13:57	AMA	ERP	
4	STORE	DIG	A1	10-JUN-2016 14:59	BRG	VC	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060504
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 20-JUN-2016

Samplenum	Container ID	Products
L16060504-04	757248	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:39	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:45	AWE	CLS	
Comments:Products cancelled.							
3	STORE	ORG4	A1	23-JUN-2016 07:38	CLS	AWE	
Comments:Products cancelled.							

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:39	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:45	AWE	CLS	
Comments:Products cancelled.							
3	STORE	ORG4	A1	23-JUN-2016 07:38	CLS	AWE	
Comments:Products cancelled.							

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:39	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:45	AWE	CLS	
Comments:Products cancelled.							
3	STORE	ORG4	A1	23-JUN-2016 07:38	CLS	AWE	
Comments:Products cancelled.							

Samplenum	Container ID	Products
L16060504-04	757249	826-LOW 827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	09-JUN-2016 14:39	CLS		
2	PREP	W1	EXT	13-JUN-2016 15:30	CPD	BRG	
3	SUBBED	EXT	DISP	14-JUN-2016 10:05	BJO	BJO	
4	ANALYZ*	EXT	SEMI	20-JUN-2016 12:17	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		09-JUN-2016 14:39	CLS		

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060504
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 20-JUN-2016

Samplenum	Container ID	Products
L16060504-04	757250	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	09-JUN-2016 14:39	CLS		
2	ANALYZ	W1	SEM	10-JUN-2016 08:24	WTD	BRG	
3	STORE	SEM	A1	11-JUN-2016 11:56	AZH	WTD	

Samplenum	Container ID	Products
L16060504-04	757251	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	09-JUN-2016 14:39	CLS		

Samplenum	Container ID	Products
L16060504-05	757252	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:39	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:45	AWE	CLS	
3	STORE	ORG4	A1	23-JUN-2016 07:38	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	09-JUN-2016 14:39	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 07:45	AWE	CLS	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16060615

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Michelle Taylor – Client Services Specialist
(740) 373-4071
Michelle.Taylor@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on June 22 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00112637	H	2.0		J2317165054	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18CPTMW22R-060916	L16060615-01	06/09/2016 07:40	06/10/2016 10:43
18CPTMW22DW-060916	L16060615-02	06/09/2016 08:40	06/10/2016 10:43
18CPTMW22DWFD-060916	L16060615-03	06/09/2016 08:40	06/10/2016 10:43
18CPTMW22SW-060916	L16060615-04	06/09/2016 09:55	06/10/2016 10:43
TRIP BLANK	L16060615-05	06/09/2016 00:01	06/10/2016 10:43

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16060615
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.0 Summary Data

1.1 Narratives

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060615
Project Name:		**Method:**	8260
Prep Batch Number(s):	572737	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-20 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2016-06-20 18:01:46

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060615
Project Name:		**Method:**	8260
Prep Batch Number(s):	572737	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-20 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060615
Project Name:		**Method:**	8260
Prep Batch Number(s):	572737	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-20 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060615
Project Name:		**Method:**	8260
Prep Batch Number(s):	572737	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-20 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060615
Project Name:		**Method:**	8260
Prep Batch Number(s):	572737	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-20 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060615
Project Name:		**Method:**	8260
Prep Batch Number(s):	572737	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-20 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1)Bromomethane exceeded the UCL in the CCV.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060615
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572341	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-21 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-06-21 18:32:49

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060615
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572341	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-21 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060615
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572341	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-21 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060615
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572341	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-21 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060615
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572341	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-21 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060615
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572341	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-21 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060615
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572350	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-06-14 16:51:16

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060615
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572350	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060615
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572350	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060615
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572350	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060615
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572350	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060615
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572350	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

1.2 Certificate of Analysis

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060615-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW22R-060916	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572737	**Analyst:**	TMB	**Run Date:**	06/15/2016 20:07
Collect Date:	06/09/2016 07:40	**Dilution:**	1	**File ID:**	8M413025
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	117	70	120	
Toluene-d8	107	85	120	
4-Bromofluorobenzene	101	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060615-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW22R-060916	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 13:48
Collect Date:	06/09/2016 07:40	**Dilution:**	1	**File ID:**	15M18410
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	56.5	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060615-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22R-060916	**Prep Method:**	6850	**Prep Date:**	06/11/2016 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572350	**Analyst:**	WTD	**Run Date:**	06/12/2016 22:56
Collect Date:	06/09/2016 07:40	**Dilution:**	1	**File ID:**	1LM.LM35328
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.917		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16060615-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW22DW-060916	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572737	**Analyst:**	TMB	**Run Date:**	06/15/2016 19:38
Collect Date:	06/09/2016 08:40	**Dilution:**	1	**File ID:**	8M413024
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	111	85	115	
1,2-Dichloroethane-d4	116	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	101	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060615-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW22DW-060916	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 14:11
Collect Date:	06/09/2016 08:40	**Dilution:**	1	**File ID:**	15M18411
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	62.1	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060615-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW-060916	**Prep Method:**	6850	**Prep Date:**	06/11/2016 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572350	**Analyst:**	WTD	**Run Date:**	06/12/2016 23:34
Collect Date:	06/09/2016 08:40	**Dilution:**	1	**File ID:**	1LM.LM35330
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1.21		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16060615-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW22DWFD-060916	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572737	**Analyst:**	TMB	**Run Date:**	06/15/2016 19:09
Collect Date:	06/09/2016 08:40	**Dilution:**	1	**File ID:**	8M413023
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	116	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	100	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060615-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW22DWFD-060916	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 14:33
Collect Date:	06/09/2016 08:40	**Dilution:**	1	**File ID:**	15M18412
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	47.8	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060615-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DWFD-060916	**Prep Method:**	6850	**Prep Date:**	06/11/2016 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572350	**Analyst:**	WTD	**Run Date:**	06/12/2016 23:53
Collect Date:	06/09/2016 08:40	**Dilution:**	1	**File ID:**	1LM.LM35331
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.473		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16060615-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW22SW-060916	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572737	**Analyst:**	TMB	**Run Date:**	06/15/2016 18:40
Collect Date:	06/09/2016 09:55	**Dilution:**	1	**File ID:**	8M413022
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	15.4		10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.534	J	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.633	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	115	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	99.2	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060615-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW22SW-060916	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 14:56
Collect Date:	06/09/2016 09:55	**Dilution:**	1	**File ID:**	15M18413
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	44.9	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060615-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22SW-060916	**Prep Method:**	6850	**Prep Date:**	06/11/2016 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572350	**Analyst:**	WTD	**Run Date:**	06/13/2016 00:12
Collect Date:	06/09/2016 09:55	**Dilution:**	10000	**File ID:**	1LM.LM35332
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	10200		4000	2000	1000

Certificate of Analysis

Sample #:	L16060615-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572737	**Analyst:**	TMB	**Run Date:**	06/15/2016 14:20
Collect Date:	06/09/2016 00:01	**Dilution:**	1	**File ID:**	8M413013
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	112	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	99.6	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060615-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW22R-060916	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572737	**Analyst:**	TMB	**Run Date:**	06/15/2016 20:07
Collect Date:	06/09/2016 07:40	**Dilution:**	1	**File ID:**	8M413025
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	117	70	120	
Toluene-d8	107	85	120	
4-Bromofluorobenzene	101	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060615-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW22DW-060916	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572737	**Analyst:**	TMB	**Run Date:**	06/15/2016 19:38
Collect Date:	06/09/2016 08:40	**Dilution:**	1	**File ID:**	8M413024
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	111	85	115	
1,2-Dichloroethane-d4	116	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	101	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060615-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW22DWFD-060916	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572737	**Analyst:**	TMB	**Run Date:**	06/15/2016 19:09
Collect Date:	06/09/2016 08:40	**Dilution:**	1	**File ID:**	8M413023
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	116	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	100	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060615-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW22SW-060916	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572737	**Analyst:**	TMB	**Run Date:**	06/15/2016 18:40
Collect Date:	06/09/2016 09:55	**Dilution:**	1	**File ID:**	8M413022
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	15.4		10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.534	J	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.633	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	115	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	99.2	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060615-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572737	**Analyst:**	TMB	**Run Date:**	06/15/2016 14:20
Collect Date:	06/09/2016 00:01	**Dilution:**	1	**File ID:**	8M413013
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	112	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	99.6	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051316
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53752

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG568561

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412209	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 08:38
8M412210	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 08:57
8M412211	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 09:29
8M412212	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 09:56
8M412213	WG568561-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/13/16 10:19
8M412214	WG568561-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/13/16 10:51
8M412215	WG568565-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76072	05/13/16 11:36
8M412216	BFB CHECK	NA	1	1	STD76034	05/13/16 12:04
8M412217	BFB CHECK	NA	1	1	STD76034	05/13/16 12:18
8M412218	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 12:36
8M412219	RINSE	NA	1	1		05/13/16 13:00
8M412220	WG568561-02 0.3ug/L STD 8260	NA	1	1	STD76127	05/13/16 13:29
8M412221	WG568561-03 0.4ug/L STD 8260	NA	1	1	STD76127	05/13/16 13:58
8M412222	WG568561-04 1ug/L STD 8260	NA	1	1	STD76127	05/13/16 14:27
8M412223	WG568561-05 2ug/L STD 8260	NA	1	1	STD76127	05/13/16 14:56
8M412224	WG568561-06 5ug/L STD 8260	NA	1	1	STD76127	05/13/16 15:25
8M412225	WG568561-07 20ug/L STD 8260	NA	1	1	STD76127	05/13/16 15:54
8M412226	WG568561-08 50ug/L STD 8260	NA	1	1	STD76127	05/13/16 16:23
8M412227	WG568561-09 100ug/L STD 8260	NA	1	1	STD76127	05/13/16 16:52
8M412228	WG568561-10 200ug/L STD 8260	NA	1	1	STD76127	05/13/16 17:21
8M412229	WG568561-11 300ug/L STD 8260	NA	1	1	STD76127	05/13/16 17:50
8M412230	RINSE	NA	1	1		05/13/16 18:19
8M412231	RINSE	NA	1	1		05/13/16 18:49
8M412232	WG568561-12 50ug/L ALT SRC STD 8260	NA	1	1	STD76109	05/13/16 19:17
8M412233	RINSE	NA	1	1		05/13/16 19:46

Comments

Seq.	Rerun	Dil.	Reason	Analytes
5	X			
File ID: 8M412213				
	Several compounds were low, DNR.			
6				
File ID: 8M412214				

Approved: May 20, 2016

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Instrument Run Log

Instrument:	HPMS8	Dataset:	051316		
Analyst1:	TMB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	23
Method:	624	SOP:	MSV10	Rev:	14
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:	53752				

Internal Standard: STD75899 Surrogate Standard: STD75899

CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG568561

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			Two C compounds failed. DNR. Run a curve.	
7 File ID: 8M412215				
			DNR.	

Approved: May 20, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051716
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76072; STD76127 LCS: STD76109; STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG569079; WG569083

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412319	WG569084-01 50ng BFB STD 8260	NA	1	1	STD76034	05/17/16 08:53
8M412320	WG569084-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/17/16 09:18
8M412321	WG569079-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76072	05/17/16 09:47
8M412322	WG569079-03 50ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 10:16
8M412323	WG569079-04 20ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 10:44
8M412324	WG569079-05 5ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 11:13
8M412325	WG569079-06 200ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 11:42
8M412326	WG569079-07 300ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 12:40
8M412327	WG569079-08 400ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 13:10
8M412328	WG569079-09 500ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 13:39
8M412329	RINSE	NA	1	1		05/17/16 14:08
8M412330	RINSE	NA	1	1		05/17/16 14:37
8M412331	WG569079-10 100ug/L ALT SRC STD 826	NA	1	1	STD75801	05/17/16 15:06
8M412332	WG569259-01 BFB 50ng 8260	NA	1	1	STD76034	05/17/16 18:27
8M412333	WG569259-02 50ug/L CCV 8260	NA	1	1	STD76034	05/17/16 18:53
8M412334	WG569260-01 100ug/L CCV A9	NA	1	1	STD76072	05/17/16 19:22
8M412335	WG569083-01 VBLK0517 BLANK 8260	NA	1	1		05/17/16 19:51
8M412336	WG569083-02 20ug/L LCS 8260	NA	1	1	STD76109	05/17/16 20:20
8M412337	WG569083-03 20ug/L LCS2 8260	NA	1	1	STD76109	05/17/16 20:49
8M412338	WG569083-04 100ug/L LCS A9	NA	1	1	STD75801	05/17/16 21:18
8M412339	WG569083-05 100ug/L LCS2 A9	NA	1	1	STD75801	05/17/16 21:46
8M412340	L16050844-01 TB A 826-A9-SPE	5	1	1		05/17/16 22:16
8M412341	L16050844-07 EB A 826-A9-SPE	5	1	1		05/17/16 22:45
8M412342	L16050844-11 AB A 826-A9-SPE	5	1	1		05/17/16 23:14
8M412343	L16050844-02 A 826-A9-SPE	6	1	1		05/17/16 23:43
8M412344	L16050844-05 A 826-A9-SPE	6	1	1		05/18/16 00:12
8M412345	L16050844-06 A 826-A9-SPE	6	1	1		05/18/16 00:41
8M412346	L16050844-12 A 826-A9-SPE	6	1	1		05/18/16 01:10
8M412347	L16050840-01 A 826-A9-SPE	7	1	1		05/18/16 01:38
8M412348	L16050844-08 A 826-A9-SPE	7	1	1		05/18/16 02:07
8M412349	L16050844-13 A 826-A9-SPE	7	1	1		05/18/16 02:36
8M412350	L16050844-15 A 826-A9-SPE	7	1	1		05/18/16 03:05
8M412351	L16050839-01 A 826-A9-SPE	7	1	1		05/18/16 03:33
8M412352	L16050844-03 2.5X A 826-A9-SPE	7	1	2.5		05/18/16 04:02

Approved: May 20, 2016

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Instrument Run Log

Instrument: HPMS8 Dataset: 051716
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76072; STD76127 LCS: STD76109; STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG569079; WG569083

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412353	L16050844-04 5X A 826-A9-SPE	7	1	5		05/18/16 04:31
8M412354	L16050844-09 5X A 826-A9-SPE	7	1	5		05/18/16 05:01
8M412355	L16050844-10 5X A 826-A9-SPE	7	1	5		05/18/16 05:30
8M412356	L16050844-14 50X A 826-A9-SPE	7	1	50		05/18/16 05:59
8M412357	RINSE	NA	1	1		05/18/16 06:28

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
File ID: 8M412320				
	DNR. Running an a9/foo curve.			
32	X	10	Over Calibration Range	CIS12-DCE
File ID: 8M412350				
40	X	2.5	Analyzed too dilute	
File ID: 8M412353				
	DNR.			
37	X	25	Over Calibration Range	TCE
File ID: 8M412355				
38	X	20	Analyzed too dilute	
File ID: 8M412356				
	DNR.			

Approved: May 20, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 061516
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75370 Surrogate Standard: STD76370
CCV: STD76578 LCS: STD76597 MS/MSD: STD76597

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG572737

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M413001	WG572735-01 50ng BFB STD 8260	NA	1	1	STD76496	06/15/16 08:36
8M413002	WG572735-02 50ug/L CCV STD 8260	NA	1	1	STD76578	06/15/16 09:00
8M413003	WG572735-02 50ug/L CCV STD 8260	NA	1	1	STD76578	06/15/16 09:29
8M413004	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76432	06/15/16 09:58
8M413005	WG572737-01 VBLK0615 BLANK STD 826	NA	1	1		06/15/16 10:27
8M413006	WG572737-02 20ug/L LCS STD 8260	NA	1	1	STD75597	06/15/16 10:56
8M413007	WG572737-03 20ug/L LCS2 STD 8260	NA	1	1	STD75597	06/15/16 11:25
8M413008	L16060540-14 B 10X 826-SPE D1	<2	1	10		06/15/16 11:54
8M413009	L16060656-08 A TB 826-BETX	<2	1	1		06/15/16 12:23
8M413010	L16060651-02 A TB 826-BETX	<2	1	1		06/15/16 12:52
8M413011	L16060651-01 A EB 826-BETX	<2	1	1		06/15/16 13:22
8M413012	L16060616-05 A TB 826-LOW	<2	1	1		06/15/16 13:50
8M413013	L16060615-05 A TB 826-LOW	<2	1	1		06/15/16 14:20
8M413014	L16060669-11 B TB 826-VAP2	<2	1	1		06/15/16 14:49
8M413015	L16060760-01 A TB 826-SPE	5	1	1		06/15/16 15:18
8M413016	L16060669-10 B BB 826-VAP2	5	1	1		06/15/16 15:47
8M413017	L16060669-09 B 826-VAP2	6	1	1		06/15/16 16:16
8M413018	L16060540-15 B 826-SPE	<2	1	1		06/15/16 16:45
8M413019	L16060760-02 A 826-SPE	6	1	1		06/15/16 17:14
8M413020	L16060616-03 A 826-LOW	<2	1	1		06/15/16 17:43
8M413021	L16060616-02 A 826-LOW	<2	1	1		06/15/16 18:11
8M413022	L16060615-04 A 826-LOW	<2	1	1		06/15/16 18:40
8M413023	L16060615-03 A 826-LOW	<2	1	1		06/15/16 19:09
8M413024	L16060615-02 A 826-LOW	<2	1	1		06/15/16 19:38
8M413025	L16060615-01 A 826-LOW	<2	1	1		06/15/16 20:07
8M413026	L16060616-01 A 2.5X 826-LOW	<2	1	2.5		06/15/16 20:36
8M413027	CCV	NA	1	1		06/15/16 21:05
8M413028	RINSE	NA	1	1		06/15/16 21:34
8M413029	RINSE	NA	1	1		06/15/16 22:03
8M413030	RINSE	NA	1	1		06/15/16 22:32

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Approved: June 20, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS8	Dataset:	061516		
Analyst1:	ADC	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	23
Method:	OVAP	SOP:	MSV01/PAT01	Rev:	0
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:					

Internal Standard: STD75370 Surrogate Standard: STD76370

CCV: STD76578 LCS: STD76597 MS/MSD: STD76597

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG572737

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
26	X		Analyzed too dilute	
File ID: 8M413026				
L16060616-01 DNR RR STR.				

Approved: June 20, 2016

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Microbac Laboratories Inc.

Data Checklist

Date: 13-MAY-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75126
Analytical Workgroups: WG568561

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	TMB
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
17-MAY-2016
Tiffany Bailey

Secondary Reviewer:
20-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2016 11:18:36

Microbac Laboratories Inc.

Data Checklist

Date: 17-MAY-2016
Analyst: TMB
Analyst: FJB
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75174
Analytical Workgroups: WG569079; WG569083

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
19-MAY-2016
Tiffany Bailey

Secondary Reviewer:
20-MAY-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2016 11:05:37

Microbac Laboratories Inc.

Data Checklist

Date: 15-JUN-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75739
Analytical Workgroups: WG572737

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
16-JUN-2016

Secondary Reviewer:
20-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-20-2016 13:15:59

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG572737

Login Number: L16060615

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW22R-060916	01	06/09/16					06/15/2016	6.5	14		06/15/16	6.5	14	
18CPTMW22DW-060916	02	06/09/16					06/15/2016	6.5	14		06/15/16	6.5	14	
18CPTMW22DWFD-060916	03	06/09/16					06/15/2016	6.4	14		06/15/16	6.4	14	
18CPTMW22SW-060916	04	06/09/16					06/15/2016	6.4	14		06/15/16	6.4	14	
TRIP BLANK	05	06/09/16					06/15/2016	6.6	14		06/15/16	6.6	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4810854
Report generated 06/20/2016 13:19

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060615
Instrument Id: HPMS8
Workgroup (AAB#): WG572737

Method: 8260
CAL ID: HPMS8 - 13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16060615-01	1.00	01	117	113	101	107
L16060615-02	1.00	01	116	111	101	103
L16060615-03	1.00	01	116	113	100	104
L16060615-04	1.00	01	115	112	99.2	104
L16060615-05	1.00	01	112	110	99.6	102
WG572737-01	1.00	01	110	110	97.6	104
WG572737-02	1.00	01	111	107	100	104
WG572737-03	1.00	01	111	110	102	104

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4810862
Report generated: 06/20/2016 13:19

METHOD BLANK SUMMARY

Login Number: L16060615
Blank File ID: 8M413005
Prep Date: 06/15/16 10:27
Analyzed Date: 06/15/16 10:27
Analyst: TMB

Work Group: WG572737
Blank Sample ID: WG572737-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572737-02	8M413006	06/15/16 10:56	01
LCS2	WG572737-03	8M413007	06/15/16 11:25	01
TRIP BLANK	L16060615-05	8M413013	06/15/16 14:20	01
18CPTMW22SW-060916	L16060615-04	8M413022	06/15/16 18:40	01
18CPTMW22DWFD-060916	L16060615-03	8M413023	06/15/16 19:09	01
18CPTMW22DW-060916	L16060615-02	8M413024	06/15/16 19:38	01
18CPTMW22R-060916	L16060615-01	8M413025	06/15/16 20:07	01

Report Name: BLANK_SUMMARY
PDF File ID: 4810855
Report generated 06/20/2016 13:19

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060615 Prep Date: 06/15/16 10:27 Sample ID: WG572737-01
Instrument ID: HPMS8 Run Date: 06/15/16 10:27 Prep Method: 5030B/5030C/503
File ID: 8M413005 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG572737 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 4810856
20-JUN-2016 13:19

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16060615 Prep Date: 06/15/16 10:27 Sample ID: WG572737-01
Instrument ID: HPMS8 Run Date: 06/15/16 10:27 Prep Method: 5030B/5030C/503
File ID: 8M413005 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG572737 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	110	85 - 115	PASS
1,2-Dichloroethane-d4	110	70 - 120	PASS
Toluene-d8	104	85 - 120	PASS
4-Bromofluorobenzene	97.6	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4810856
20-JUN-2016 13:19

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060615 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG572737 Units: ug/L
QC Key: DOD4 Lot #: STD76597

Sample ID: WG572737-02 LCS File ID: 8M413006 Run Date: 06/15/2016 10:56
Sample ID: WG572737-03 LCS2 File ID: 8M413007 Run Date: 06/15/2016 11:25

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	21.1	106	20.0	20.8	104	1.33	80 - 130	30	
1,1,1-Trichloroethane	20.0	22.3	112	20.0	22.2	111	0.500	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	18.1	90.5	20.0	18.8	94.0	3.89	65 - 130	30	
1,1,2-Trichloroethane	20.0	20.2	101	20.0	20.0	100	0.857	75 - 125	30	
1,1-Dichloroethane	20.0	19.9	99.4	20.0	20.2	101	1.73	70 - 135	30	
1,1-Dichloroethene	20.0	19.6	97.8	20.0	20.0	99.9	2.07	70 - 130	30	
1,1-Dichloropropene	20.0	20.1	101	20.0	20.7	104	3.16	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	19.0	95.1	20.0	19.3	96.5	1.40	55 - 140	30	
1,2,3-Trichloropropane	20.0	20.5	103	20.0	20.1	100	2.21	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	19.8	98.9	20.0	20.0	100	1.32	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	20.2	101	20.0	20.0	99.9	1.28	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	19.7	98.4	20.0	19.4	97.0	1.49	50 - 130	30	
1,2-Dibromoethane	20.0	20.4	102	20.0	20.3	102	0.581	80 - 120	30	
1,2-Dichlorobenzene	20.0	20.3	102	20.0	20.7	104	1.97	70 - 120	30	
1,2-Dichloroethane	20.0	22.4	112	20.0	23.6	118	5.32	70 - 130	30	
1,2-Dichloropropane	20.0	20.7	104	20.0	21.0	105	1.42	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	20.8	104	20.0	20.8	104	0.0710	75 - 130	30	
1,3-Dichlorobenzene	20.0	20.6	103	20.0	20.6	103	0.116	75 - 125	30	
1,3-Dichloropropane	20.0	21.9	109	20.0	21.5	107	2.01	75 - 125	30	
1,4-Dichlorobenzene	20.0	20.6	103	20.0	20.5	103	0.231	75 - 125	30	
2,2-Dichloropropane	20.0	22.9	114	20.0	23.2	116	1.44	70 - 135	30	
2-Butanone	20.0	20.9	104	20.0	22.3	112	6.63	30 - 150	30	
2-Chlorotoluene	20.0	18.5	92.3	20.0	18.6	92.9	0.574	75 - 125	30	
2-Hexanone	20.0	18.6	92.8	20.0	19.1	95.7	3.07	55 - 130	30	
4-Chlorotoluene	20.0	22.4	112	20.0	22.4	112	0.398	75 - 130	30	
4-Methyl-2-pentanone	20.0	19.8	98.8	20.0	20.3	102	2.82	60 - 135	30	
Acetone	20.0	22.4	112	20.0	24.7	123	9.61	40 - 140	30	
Benzene	20.0	20.7	103	20.0	20.9	105	1.27	80 - 120	30	
Bromobenzene	20.0	19.7	98.7	20.0	20.1	101	1.82	75 - 125	30	
Bromochloromethane	20.0	20.7	104	20.0	21.1	105	1.74	65 - 130	30	
Bromodichloromethane	20.0	21.8	109	20.0	22.3	111	2.31	75 - 120	30	
Bromoform	20.0	20.1	100	20.0	20.2	101	0.331	70 - 130	30	
Bromomethane	20.0	13.9	69.7	20.0	14.9	74.4	6.59	30 - 145	30	
Carbon disulfide	20.0	18.3	91.3	20.0	18.5	92.6	1.44	35 - 160	30	
Carbon tetrachloride	20.0	21.9	109	20.0	21.7	108	0.914	65 - 140	30	
Chlorobenzene	20.0	21.0	105	20.0	20.6	103	1.91	80 - 120	30	
Chloroethane	20.0	21.1	105	20.0	21.5	108	2.22	60 - 135	30	
Chloroform	20.0	21.4	107	20.0	21.3	107	0.454	65 - 135	30	
Chloromethane	20.0	20.3	102	20.0	20.7	104	2.04	40 - 125	30	
cis-1,2-Dichloroethene	20.0	21.2	106	20.0	20.9	104	1.68	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4810857
Report generated: 06/20/2016 13:19

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060615 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG572737 Units: ug/L
QC Key: DOD4 Lot #: STD76597

Sample ID: WG572737-02 LCS File ID: 8M413006 Run Date: 06/15/2016 10:56
Sample ID: WG572737-03 LCS2 File ID: 8M413007 Run Date: 06/15/2016 11:25

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	23.4	117	20.0	23.9	119	2.17	70 - 130	30	
Chlorodibromomethane	20.0	21.0	105	20.0	20.9	105	0.266	60 - 135	30	
Dibromomethane	20.0	19.5	97.6	20.0	19.5	97.3	0.352	75 - 125	30	
Dichlorodifluoromethane	20.0	21.2	106	20.0	21.6	108	1.62	30 - 155	30	
Ethylbenzene	20.0	19.9	99.5	20.0	19.9	99.5	0.0185	75 - 125	30	
Hexachlorobutadiene	20.0	21.0	105	20.0	21.1	105	0.463	50 - 140	30	
Isopropylbenzene	20.0	21.7	109	20.0	21.7	109	0.0757	75 - 125	30	
m-,p-Xylene	40.0	42.0	105	40.0	41.3	103	1.56	75 - 130	30	
Methylene chloride	20.0	19.9	99.3	20.0	20.7	104	4.32	55 - 140	30	
n-Butylbenzene	20.0	19.4	97.1	20.0	19.7	98.6	1.60	70 - 135	30	
n-Propylbenzene	20.0	20.8	104	20.0	21.0	105	0.657	70 - 130	30	
Naphthalene	20.0	17.4	86.8	20.0	17.8	89.0	2.56	55 - 140	30	
o-Xylene	20.0	21.3	107	20.0	20.8	104	2.31	80 - 120	30	
p-Isopropyltoluene	20.0	20.3	102	20.0	20.4	102	0.386	75 - 130	30	
sec-Butylbenzene	20.0	20.5	103	20.0	20.8	104	1.32	70 - 125	30	
Styrene	20.0	21.1	105	20.0	21.1	105	0.0674	65 - 135	30	
tert-Butylbenzene	20.0	19.9	99.5	20.0	20.0	100	0.470	70 - 130	30	
Tetrachloroethene	20.0	20.8	104	20.0	20.6	103	1.34	45 - 150	30	
Toluene	20.0	20.2	101	20.0	20.3	101	0.147	75 - 120	30	
trans-1,2-Dichloroethene	20.0	20.1	100	20.0	20.9	104	3.89	60 - 140	30	
trans-1,3-Dichloropropene	20.0	21.1	106	20.0	20.8	104	1.47	55 - 140	30	
Trichloroethene	20.0	21.9	109	20.0	22.4	112	2.49	70 - 125	30	
Trichlorofluoromethane	20.0	21.1	105	20.0	21.6	108	2.45	60 - 145	30	
Vinyl chloride	20.0	23.1	115	20.0	23.4	117	1.48	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	111	111	70 - 120	PASS
Dibromofluoromethane	107	110	85 - 115	PASS
4-Bromofluorobenzene	100	102	75 - 120	PASS
Toluene-d8	104	104	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4810857
Report generated: 06/20/2016 13:19

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060615
Instrument: HPMS8
Analyst: TMB
Workgroup: WG568561

Tune ID: WG568561-01
Run Date: 05/13/2016
Run Time: 12:36
File ID: 8M412218
Cal ID: HPMS8 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	16.7	6575	PASS
75.0	95.0	30.0	60.0	51.3	20171	PASS
95.0	95.0	100	100	100	39312	PASS
96.0	95.0	5.00	9.00	6.74	2649	PASS
173	174	0	2.00	0.363	122	PASS
174	95.0	50.0	100	85.5	33616	PASS
175	174	5.00	9.00	8.17	2746	PASS
176	174	95.0	101	99.2	33360	PASS
177	176	5.00	9.00	6.80	2267	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG568561-02	STD	01	05/13/2016 13:29	
WG568561-03	STD	01	05/13/2016 13:58	
WG568561-04	STD	01	05/13/2016 14:27	
WG568561-05	STD	01	05/13/2016 14:56	
WG568561-06	STD	01	05/13/2016 15:25	
WG568561-07	STD	01	05/13/2016 15:54	
WG568561-08	STD-CCV	01	05/13/2016 16:23	
WG568561-09	STD	01	05/13/2016 16:52	
WG568561-10	STD	01	05/13/2016 17:21	
WG568561-11	STD	01	05/13/2016 17:50	
WG568561-12	SSCV	01	05/13/2016 19:17	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4810859
Report generated 06/20/2016 13:19

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060615
Instrument: HPMS8
Analyst: TMB
Workgroup: WG569084

Tune ID: WG569084-01
Run Date: 05/17/2016
Run Time: 08:53
File ID: 8M412319
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.1	6316	PASS
75.0	95.0	30.0	60.0	54.7	18130	PASS
95.0	95.0	100	100	100	33138	PASS
96.0	95.0	5.00	9.00	6.76	2241	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	72.2	23934	PASS
175	174	5.00	9.00	7.88	1886	PASS
176	174	95.0	101	96.8	23159	PASS
177	176	5.00	9.00	7.15	1655	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG569079-01	STD-CCV	01	05/17/2016 09:47	
WG569079-03	STD	01	05/17/2016 10:16	
WG569079-04	STD	01	05/17/2016 10:44	
WG569079-05	STD	01	05/17/2016 11:13	
WG569079-06	STD	01	05/17/2016 11:42	
WG569079-07	STD	01	05/17/2016 12:40	
WG569079-08	STD	01	05/17/2016 13:10	
WG569079-09	STD	01	05/17/2016 13:39	
WG569079-10	SSCV	01	05/17/2016 15:06	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4810859
Report generated 06/20/2016 13:19

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060615
Instrument: HPMS8
Analyst: TMB
Workgroup: WG572735

Tune ID: WG572735-01
Run Date: 06/15/2016
Run Time: 08:36
File ID: 8M413001
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	18.6	9690	PASS
75.0	95.0	30.0	60.0	55.4	28818	PASS
95.0	95.0	100	100	100	52034	PASS
96.0	95.0	5.00	9.00	6.36	3311	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	75.4	39229	PASS
175	174	5.00	9.00	8.10	3176	PASS
176	174	95.0	101	96.0	37669	PASS
177	176	5.00	9.00	6.36	2397	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG572735-02	CCV	01	06/15/2016 09:29	
WG572737-01	BLANK	01	06/15/2016 10:27	
WG572737-02	LCS	01	06/15/2016 10:56	
WG572737-03	LCS2	01	06/15/2016 11:25	
L16060615-05	TRIP BLANK	01	06/15/2016 14:20	
L16060615-04	18CPTMW22SW-060916	01	06/15/2016 18:40	
L16060615-03	18CPTMW22DWFD-060916	01	06/15/2016 19:09	
L16060615-02	18CPTMW22DW-060916	01	06/15/2016 19:38	
L16060615-01	18CPTMW22R-060916	01	06/15/2016 20:07	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4810859
Report generated 06/20/2016 13:19

Calibration Table Report
Method: 8260WT.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Calibration: Sat May 14 18:08:06 2016
Curve: WG568561
Calibration Files

	Compound	0.3 8M412220.D	0.4 8M412221.D	1 8M412222.D	2 8M412223.D	5 8M412224.D	20 8M412225.D	50 8M412226.D	100 8M412227.D	200 8M412228.D	300 8M412229.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane		0.427	0.390	0.397	0.364	0.468	0.439	0.452	0.427	0.408	0.419	7.751		
P	Chloromethane			0.264	0.257	0.223	0.253	0.240	0.240	0.239	0.241	0.245	5.336		
C	Vinyl Chloride		0.274	0.296	0.297	0.277	0.299	0.292	0.299	0.292	0.288	0.290	3.191		
T	1,3-Butadiene				0.218	0.208	0.242	0.251	0.277	0.254	0.254	0.243	9.644		
T	Bromomethane			0.129	0.133	0.127	0.162	0.167	0.187	0.205	0.212	0.165	20.449		1.000
T	Chloroethane		0.173	0.157	0.153	0.143	0.164	0.157	0.163	0.164	0.164	0.160	5.354		
T	Trichlorofluoromethane		0.544	0.538	0.559	0.506	0.570	0.538	0.551	0.531	0.525	0.540	3.520		
T	Diethyl ether			0.130	0.138	0.123	0.132	0.125	0.128		0.127	0.129	3.866		
T	Isoprene		0.335	0.351	0.334	0.293	0.334	0.320	0.334	0.322	0.329	0.328	4.867		
T	Acrolein				0.012	0.010	0.010	0.011	0.012		0.014	0.012	12.987		
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.256	0.269	0.240	0.260	0.249	0.257	0.251	0.250	0.254	3.397		
T	Acetone					0.023	0.030	0.029	0.030	0.028	0.028	0.028	9.132		
C	1,1-Dichloroethene		0.424	0.407	0.406	0.387	0.416	0.398	0.409	0.400	0.393	0.404	2.830		
T	Tert-Butyl Alcohol				0.010	0.009	0.009	0.009	0.009		0.009	0.009	2.872		
T	Dimethyl Sulfide		0.133	0.142	0.152	0.137	0.145	0.142	0.151	0.147	0.151	0.145	4.534		
T	Iodomethane				0.019	0.024	0.066	0.101	0.129	0.135	0.131	0.087	58.244		0.998
T	Methyl acetate					0.075	0.076	0.074	0.078	0.076	0.078	0.076	2.221		
T	Methylene Chloride			0.274	0.265	0.244	0.263	0.250	0.255	0.254	0.252	0.257	3.686		
T	Carbon Disulfide			0.888	0.922	0.801	0.873	0.816	0.854	0.813	0.802	0.846	5.346		
T	Acrylonitrile			0.027	0.035	0.033	0.038	0.038	0.039		0.044	0.036	14.671		
T	Methyl Tert Butyl Ether			0.534	0.543	0.521	0.586	0.579	0.585	0.560	0.546	0.557	4.455		
T	trans-1,2-Dichloroethene		0.389	0.395	0.364	0.352	0.381	0.367	0.372	0.364	0.358	0.371	3.858		
T	n-Hexane					0.265	0.280	0.270	0.286	0.275	0.279	0.276	2.732		
T	Diisopropyl ether			0.600	0.607	0.548	0.588	0.572	0.571		0.567	0.579	3.559		
T	Vinyl Acetate				0.256	0.243	0.270	0.275	0.266	0.271	0.275	0.265	4.509		
P	1,1-Dichloroethane		0.441	0.463	0.486	0.434	0.488	0.464	0.470	0.459	0.447	0.461	4.012		
T	Ethyl-Tert-Butyl ether			0.616	0.645	0.590	0.641	0.628	0.619		0.603	0.620	3.188		
T	2-Butanone					0.035	0.042	0.043	0.045	0.041	0.043	0.041	8.268		
T	Propionitrile			0.010	0.012	0.012	0.013	0.012	0.013		0.013	0.012	8.354		
T	2,2-Dichloropropane		0.471	0.462	0.520	0.476	0.503	0.494	0.497	0.483	0.470	0.486	3.839		
T	cis-1,2-Dichloroethene		0.299	0.298	0.291	0.267	0.295	0.282	0.289	0.283	0.277	0.287	3.685		
C	Chloroform	0.563	0.567	0.581	0.536	0.509	0.566	0.543	0.546	0.529	0.506	0.545	4.619		
T	1-Bromopropane			0.034	0.040	0.040	0.043	0.041	0.043	0.043	0.044	0.041	7.649		
T	Bromochloromethane		0.131	0.164	0.147	0.137	0.154	0.148	0.151	0.148	0.145	0.147	6.598		
T	Tetrahydrofuran			0.034	0.028	0.025	0.026	0.026	0.026		0.026	0.027	11.724		
S	Dibromofluoromethane			0.249	0.261	0.257	0.280	0.271	0.284	0.271	0.275	0.269	4.465		
T	1,1,1-Trichloroethane		0.492	0.537	0.515	0.496	0.545	0.525	0.533	0.515	0.499	0.517	3.660		
T	Cyclohexane			0.373	0.369	0.335	0.359	0.344	0.366	0.356	0.364	0.358	3.619		
T	1,1-Dichloropropene			0.414	0.399	0.369	0.403	0.395	0.399	0.392	0.382	0.394	3.488		
T	Tert-Amyl-Methyl ether			0.567	0.587	0.534	0.576	0.568	0.561		0.549	0.563	3.077		
T	Carbon Tetrachloride		0.444	0.456	0.462	0.441	0.481	0.465	0.474	0.462	0.448	0.4594	2.92173		
S	1,2-Dichloroethane-d4			0.241	0.309	0.276	0.312	0.295	0.301	0.284	0.286	0.288	7.93644		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.347	0.335	0.354	0.336	0.371	0.36	0.364	0.349	0.338	0.3505	3.65503		
T	Benzene		1.128	1.084	1.071	0.977	1.085	1.033	1.019	0.963	0.883	1.0269	7.39343		
T	Trichloroethene		0.285	0.275	0.276	0.251	0.283	0.273	0.279	0.273	0.27	0.2739	3.66126		
T	Methylcyclohexane					0.396	0.426	0.408	0.429	0.416	0.422	0.4161	2.94153		
C	1,2-Dichloropropane		0.239	0.222	0.233	0.207	0.238	0.226	0.233	0.231	0.229	0.2286	4.30096		
T	Bromodichloromethane		0.369	0.382	0.412	0.385	0.426	0.421	0.417	0.41	0.395	0.4018	4.93305		
T	1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.0011	14.5817		
T	Dibromomethane		0.141	0.13	0.137	0.128	0.141	0.134	0.137	0.136	0.133	0.1353	3.26799		
T	2-Chloroethyl Vinyl Ether				0.1	0.084	0.103	0.104	0.103	0.095	0.098	0.0983	7.09792		
T	4-Methyl-2-Pentanone					0.033	0.042	0.042	0.043	0.04	0.041	0.0401	8.66859		
T	cis-1,3-Dichloropropene		0.391	0.393	0.386	0.398	0.431	0.428	0.428	0.42	0.405	0.409	4.41527		

T	Dimethyl Disulfide					0.182	0.218	0.221	0.23	0.229	0.23	0.2183	8.49419	
I	Chlorobenzene-d5	ISTD												
S	Toluene-d8			1.282	1.295	1.228	1.385	1.333	1.378	1.289	1.278	1.3084	4.07746	
C	Toluene		1.653	1.696	1.678	1.507	1.647	1.554	1.545	1.418	1.27	1.552	8.98325	
T	Ethyl Methacrylate			0.251	0.293	0.268	0.314	0.314	0.327	0.309	0.31	0.2981	8.76897	
T	Paraldehyde											0	0	
T	trans-1,3-Dichloropropene			0.472	0.51	0.466	0.561	0.552	0.553	0.533	0.515	0.5201	7.01006	
T	1,1,2-Trichloroethane		0.261	0.241	0.242	0.222	0.254	0.249	0.252	0.243	0.241	0.2449	4.54209	
T	2-Hexanone					0.042	0.053	0.053	0.056	0.051	0.053	0.0515	9.50479	
T	1,3-Dichloropropane		0.355	0.442	0.465	0.42	0.468	0.454	0.457	0.437	0.428	0.436	7.93348	
T	Tetrachloroethene		0.355	0.337	0.336	0.306	0.333	0.325	0.337	0.334	0.33	0.3325	3.83886	
T	Dibromochloromethane		0.349	0.336	0.338	0.328	0.373	0.372	0.383	0.373	0.367	0.3576	5.60043	
T	1,2-Dibromoethane		0.233	0.234	0.234	0.227	0.259	0.254	0.258	0.251	0.247	0.2441	5.04151	
T	1-Chlorohexane		0.532	0.584	0.505	0.502	0.54	0.52	0.547	0.521	0.516	0.5298	4.7826	
P	Chlorobenzene		1.029	1.173	1.09	1.007	1.099	1.037	1.043	1.002	0.939	1.0466	6.41465	
T	1,1,1,2-Tetrachloroethane		0.392	0.399	0.403	0.357	0.431	0.414	0.424	0.417	0.413	0.4055	5.39495	
C	Ethylbenzene		0.6	0.594	0.59	0.532	0.586	0.559	0.57	0.564	0.558	0.5726	3.7769	
T	m-,p-Xylene		0.744	0.696	0.691	0.643	0.713	0.67	0.673	0.634	0.581	0.6716	7.12586	
T	o-Xylene			0.691	0.651	0.614	0.692	0.658	0.667	0.65	0.63	0.6567	4.11758	
T	Styrene		1.05	1.06	1.096	1.043	1.159	1.124	1.12	1.061	0.98	1.077	4.96781	
P	Bromoform			0.177	0.21	0.181	0.226	0.221	0.232	0.227	0.223	0.2121	10.0546	
T	Isopropylbenzene		1.853	1.891	1.871	1.708	1.897	1.781	1.75	1.573	1.377	1.7444	9.92447	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.426	0.492	0.503	0.486	0.543	0.51	0.527	0.513	0.514	0.5018	6.60291	
S	p-Bromofluorobenzene				1.054	0.976	1.071	1.016	1.053	1.031	1.046	1.0352	3.05136	
T	1,2,3-Trichloropropane			0.119	0.158	0.161	0.162	0.155	0.162	0.16	0.158	0.1545	9.40789	
T	trans-1,4-Dichloro-2-Butene			0.085	0.118	0.12	0.149	0.151	0.16	0.159	0.161	0.1376	19.9543	1.000
T	n-Propylbenzene		4.139	4.239	4.243	4.051	4.241	3.953	3.882	3.419	2.935	3.9003	11.4439	
T	Bromobenzene	0.796	0.708	0.843	0.837	0.778	0.84	0.798	0.817	0.803	0.803	0.8022	4.93253	
T	1,3,5-Trimethylbenzene		2.941	2.93	2.941	2.839	3.053	2.882	2.871	2.689	2.423	2.8411	6.50391	
T	2-Chlorotoluene		2.917	2.935	2.929	2.712	2.861	2.795	2.682	2.533	2.145	2.7231	9.37022	
T	4-Chlorotoluene		2.681	2.596	2.581	2.474	2.625	2.326	2.447	2.286	2.121	2.4597	7.49558	
T	a-Methylstyrene					1.257	1.406	1.34	1.384	1.35	1.351	1.3479	3.77654	
T	tert-Butylbenzene			0.587	0.555	0.53	0.571	0.533	0.552	0.561	0.558	0.5558	3.34508	
T	1,2,4-Trimethylbenzene		2.955	3.168	3.127	2.936	3.12	2.914	2.937	2.709	2.427	2.9214	7.97314	
T	sec-Butylbenzene			3.701	3.536	3.487	3.607	3.34	3.332	3.045	2.69	3.3424	9.93324	
T	p-Isopropyltoluene			3.112	3.062	2.903	2.988	2.813	2.809	2.634	2.382	2.8379	8.45265	
T	1,3-Dichlorobenzene		1.484	1.617	1.627	1.53	1.605	1.531	1.549	1.51	1.45	1.5448	3.95774	
T	1,4-Dichlorobenzene	1.713	1.524	1.672	1.594	1.503	1.6	1.511	1.535	1.49	1.431	1.5574	5.56562	
T	n-Butylbenzene			3.143	2.96	2.895	3.002	2.791	2.792	2.571	2.292	2.8056	9.55812	
T	1,2-Dichlorobenzene	1.59	1.307	1.415	1.41	1.322	1.404	1.333	1.356	1.315	1.286	1.3739	6.4618	
T	1,2-Dibromo-3-Chloropropane				0.085	0.103	0.102	0.103	0.106	0.104	0.103	0.1007	6.86771	
T	1,2,4-Trichlorobenzene		1.074	1.01	1.028	0.982	1.069	1.013	1.036	1.029	1.002	1.0269	2.90829	
T	Hexachlorobutadiene		0.516	0.476	0.483	0.447	0.487	0.459	0.48	0.485	0.485	0.4798	4.00465	
T	Naphthalene		1.594	1.457	1.574	1.455	1.63	1.552	1.564	1.485	1.422	1.5258	4.75891	
T	1,2,3-Trichlorobenzene	0.913	0.934	0.905	0.862	0.805	0.877	0.824	0.862	0.846	0.835	0.8664	4.7474	

Tue May 17 11:49:41 2016

Calibration Table Report
Method: A9FOOWT.M
Title: A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Calibration: Thu May 19 08:54:31 2016
Curve: WG569079
Calibration Files

	Compound	5 8M412324.D	20 8M412323.D	50 8M412322.D	100 8M412321.D	200 8M412325.D	300 8M412326.D	400 8M412327.D	500 8M412328.D	Avg	%RSD
I	Fluorobenzene	ISTD									
T	Acetonitrile		0.009	0.010	0.010	0.010	0.010	0.010	0.010	0.010	2.076
T	3-Chloro-1-propene	0.306	0.330	0.335	0.331	0.324	0.307	0.304	0.304	0.318	4.307
T	2-Chloro-1,3-butadiene	0.368	0.420	0.420	0.419	0.419	0.392	0.389	0.387	0.402	5.022
T	Ethyl Acetate	0.080	0.096	0.097	0.100	0.099	0.098	0.100	0.095	0.096	6.751
T	Methacrylonitrile	0.041	0.054	0.055	0.055	0.055	0.054	0.055	0.052	0.053	9.227
T	Isobutyl Alcohol			0.003	0.003	0.003	0.003	0.003	0.003	0.003	3.599
T	1-Butanol									0.000	0.000
T	Methyl methacrylate	0.089	0.106	0.106	0.105	0.106	0.105	0.107	0.102	0.103	5.868
T	2-Nitropropane		0.041	0.042	0.043	0.046	0.047	0.048	0.046	0.045	5.992
I	Chlorobenzene-d5	ISTD									
I	1,4-Dichlorobenzene-d4	ISTD									
T	Cyclohexanone		0.011	0.010	0.010	0.009	0.010	0.011	0.010	0.010	4.971

Thu May 19 09:04:52 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060615 Run Date: 05/13/2016 Sample ID: WG568561-12
Instrument ID: HPMS8 Run Time: 19:17 Method: 8260B
File ID: 8M412232 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG568561 Cal ID: HPMS8 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.1	ug/L	0.513	5.70	20	
1,1-Dichloroethene	CCC	50.0	46.0	ug/L	0.372	8.10	20	
1,2-Dichloropropane	CCC	50.0	51.0	ug/L	0.233	1.90	20	
Ethylbenzene	CCC	50.0	48.2	ug/L	0.552	3.60	20	
Toluene	CCC	50.0	49.1	ug/L	1.52	1.80	20	
Vinyl Chloride	CCC	50.0	52.4	ug/L	0.304	4.80	20	
Bromoform	SPCC	50.0	48.2	ug/L	0.205	3.60	20	
Chlorobenzene	SPCC	50.0	50.2	ug/L	1.05	0.400	20	
Chloromethane	SPCC	50.0	50.7	ug/L	0.248	1.40	20	
1,1-Dichloroethane	SPCC	50.0	46.7	ug/L	0.431	6.60	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.6	ug/L	0.498	0.800	20	
Acetone		50.0	57.5	ug/L	0.0324	15.1	20	
Benzene		50.0	48.5	ug/L	0.997	3.00	20	
Bromobenzene		50.0	49.5	ug/L	0.794	1.10	20	
Bromochloromethane		50.0	47.5	ug/L	0.140	4.90	20	
Bromodichloromethane		50.0	48.3	ug/L	0.388	3.40	20	
Bromomethane		50.0	46.4	ug/L	0.162	7.20	20	
2-Butanone		50.0	53.0	ug/L	0.0438	6.00	20	
n-Butylbenzene		50.0	49.7	ug/L	2.79	0.700	20	
sec-Butylbenzene		50.0	51.3	ug/L	3.43	2.70	20	
tert-Butylbenzene		50.0	50.9	ug/L	0.566	1.90	20	
Carbon Disulfide		50.0	42.3	ug/L	0.716	15.4	20	
Carbon Tetrachloride		50.0	46.2	ug/L	0.425	7.50	20	
Dibromochloromethane		50.0	49.7	ug/L	0.355	0.700	20	
Chloroethane		50.0	53.3	ug/L	0.170	6.70	20	
2-Chlorotoluene		50.0	51.6	ug/L	2.81	3.10	20	
4-Chlorotoluene		50.0	48.3	ug/L	2.37	3.50	20	
1,2-Dibromo-3-Chloropropane		50.0	48.5	ug/L	0.0977	3.00	20	
1,2-Dibromoethane		50.0	51.1	ug/L	0.250	2.20	20	
Dibromomethane		50.0	45.8	ug/L	0.124	8.40	20	
1,2-Dichlorobenzene		50.0	50.5	ug/L	1.39	1.00	20	
1,3-Dichlorobenzene		50.0	50.9	ug/L	1.57	1.80	20	
1,4-Dichlorobenzene		50.0	50.5	ug/L	1.57	0.900	20	
Dichlorodifluoromethane		50.0	54.2	ug/L	0.455	8.40	20	
1,2-Dichloroethane		50.0	49.0	ug/L	0.344	2.00	20	
cis-1,2-Dichloroethene		50.0	48.9	ug/L	0.281	2.20	20	
trans-1,2-Dichloroethene		50.0	48.1	ug/L	0.357	3.90	20	
1,3-Dichloropropane		50.0	53.7	ug/L	0.468	7.30	20	
2,2-Dichloropropane		50.0	47.9	ug/L	0.466	4.20	20	
cis-1,3-Dichloropropene		50.0	53.9	ug/L	0.441	7.80	20	
trans-1,3-Dichloropropene		50.0	50.7	ug/L	0.527	1.30	20	
1,1-Dichloropropene		50.0	47.5	ug/L	0.374	5.10	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4810858
Report generated 06/20/2016 13:19

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060615 Run Date: 05/13/2016 Sample ID: WG568561-12
Instrument ID: HPMS8 Run Time: 19:17 Method: 8260B
File ID: 8M412232 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG568561 Cal ID: HPMS8 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	53.6	ug/L	0.0552	7.20	20	
Hexachlorobutadiene		50.0	52.1	ug/L	0.500	4.20	20	
Isopropylbenzene		50.0	51.1	ug/L	1.78	2.20	20	
p-Isopropyltoluene		50.0	50.1	ug/L	2.85	0.300	20	
4-Methyl-2-Pentanone		50.0	51.9	ug/L	0.0416	3.70	20	
Methylene Chloride		50.0	48.4	ug/L	0.249	3.10	20	
Naphthalene		50.0	45.8	ug/L	1.40	8.40	20	
n-Propylbenzene		50.0	51.9	ug/L	4.05	3.80	20	
Styrene		50.0	51.5	ug/L	1.11	3.00	20	
1,1,1,2-Tetrachloroethane		50.0	49.4	ug/L	0.400	1.20	20	
Tetrachloroethene		50.0	47.8	ug/L	0.318	4.40	20	
1,2,3-Trichlorobenzene		50.0	47.7	ug/L	0.827	4.50	20	
1,2,4-Trichlorobenzene		50.0	50.1	ug/L	1.03	0.200	20	
1,1,1-Trichloroethane		50.0	47.6	ug/L	0.492	4.80	20	
1,1,2-Trichloroethane		50.0	49.0	ug/L	0.240	1.90	20	
Trichloroethene		50.0	51.1	ug/L	0.280	2.10	20	
Trichlorofluoromethane		50.0	46.9	ug/L	0.507	6.10	20	
1,2,3-Trichloropropane		50.0	50.1	ug/L	0.155	0.200	20	
1,2,4-Trimethylbenzene		50.0	49.7	ug/L	2.90	0.700	20	
1,3,5-Trimethylbenzene		50.0	51.6	ug/L	2.93	3.30	20	
o-Xylene		50.0	50.6	ug/L	0.664	1.10	20	
m-,p-Xylene		100	101	ug/L	0.679	1.10	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4810858
Report generated 06/20/2016 13:19

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060615 Run Date: 06/15/2016 Sample ID: WG572735-02
Instrument ID: HPMS8 Run Time: 09:29 Method: 8260B
File ID: 8M413003 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG572737 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	52.9	ug/L	0.576	5.76	20	
1,1-Dichloroethene	CCC	50.0	51.9	ug/L	0.420	3.89	20	
1,2-Dichloropropane	CCC	50.0	48.5	ug/L	0.222	2.97	20	
Ethylbenzene	CCC	50.0	48.3	ug/L	0.553	3.36	20	
Toluene	CCC	50.0	49.2	ug/L	1.53	1.70	20	
Vinyl Chloride	CCC	50.0	54.2	ug/L	0.315	8.36	20	
Bromoform	SPCC	50.0	53.0	ug/L	0.225	6.02	20	
Chlorobenzene	SPCC	50.0	49.4	ug/L	1.03	1.22	20	
Chloromethane	SPCC	50.0	48.4	ug/L	0.237	3.28	20	
1,1-Dichloroethane	SPCC	50.0	51.1	ug/L	0.472	2.22	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	45.2	ug/L	0.454	9.55	20	
Xylenes		150	149	ug/L	0.662	0.449	20	
Acetone		50.0	56.4	ug/L	0.0317	12.8	20	
Benzene		50.0	50.9	ug/L	1.04	1.75	20	
Bromobenzene		50.0	48.6	ug/L	0.779	2.89	20	
Bromochloromethane		50.0	52.5	ug/L	0.155	5.07	20	
Bromodichloromethane		50.0	54.1	ug/L	0.435	8.30	20	
Bromomethane		50.0	38.6	ug/L	0.134	22.9	20	*
2-Butanone		50.0	50.0	ug/L	0.0413	0.0610	20	
n-Butylbenzene		50.0	47.3	ug/L	2.65	5.42	20	
sec-Butylbenzene		50.0	47.3	ug/L	3.16	5.46	20	
tert-Butylbenzene		50.0	46.7	ug/L	0.519	6.67	20	
Carbon Disulfide		50.0	51.5	ug/L	0.871	2.99	20	
Carbon Tetrachloride		50.0	56.0	ug/L	0.514	11.9	20	
Dibromochloromethane		50.0	52.2	ug/L	0.373	4.37	20	
Chloroethane		50.0	50.2	ug/L	0.160	0.381	20	
2-Chlorotoluene		50.0	43.7	ug/L	2.38	12.5	20	
4-Chlorotoluene		50.0	51.6	ug/L	2.54	3.26	20	
1,2-Dibromo-3-Chloropropane		50.0	46.2	ug/L	0.0931	7.57	20	
1,2-Dibromoethane		50.0	49.4	ug/L	0.241	1.17	20	
Dibromomethane		50.0	50.0	ug/L	0.135	0.0556	20	
1,2-Dichlorobenzene		50.0	47.1	ug/L	1.29	5.79	20	
1,3-Dichlorobenzene		50.0	49.2	ug/L	1.52	1.67	20	
1,4-Dichlorobenzene		50.0	47.7	ug/L	1.49	4.58	20	
Dichlorodifluoromethane		50.0	54.7	ug/L	0.459	9.40	20	
1,2-Dichloroethane		50.0	55.6	ug/L	0.390	11.2	20	
cis-1,2-Dichloroethene		50.0	51.1	ug/L	0.294	2.30	20	
trans-1,2-Dichloroethene		50.0	50.8	ug/L	0.378	1.67	20	
1,3-Dichloropropane		50.0	48.9	ug/L	0.426	2.29	20	
2,2-Dichloropropane		50.0	58.2	ug/L	0.566	16.4	20	
cis-1,3-Dichloropropene		50.0	53.5	ug/L	0.438	7.09	20	
trans-1,3-Dichloropropene		50.0	51.9	ug/L	0.540	3.77	20	

CCV - Modified 03/05/2008
PDF File ID: 4810860
Report generated 06/20/2016 13:19

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060615 Run Date: 06/15/2016 Sample ID: WG572735-02
Instrument ID: HPMS8 Run Time: 09:29 Method: 8260B
File ID: 8M413003 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG572737 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	53.0	ug/L	0.418	6.05	20	
2-Hexanone		50.0	50.3	ug/L	0.0518	0.596	20	
Hexachlorobutadiene		50.0	50.8	ug/L	0.488	1.64	20	
Isopropylbenzene		50.0	51.1	ug/L	1.78	2.16	20	
p-Isopropyltoluene		50.0	47.9	ug/L	2.72	4.24	20	
4-Methyl-2-Pentanone		50.0	51.2	ug/L	0.0411	2.32	20	
Methylene Chloride		50.0	49.5	ug/L	0.255	1.01	20	
Naphthalene		50.0	46.9	ug/L	1.43	6.24	20	
n-Propylbenzene		50.0	47.7	ug/L	3.72	4.62	20	
Styrene		50.0	51.6	ug/L	1.11	3.15	20	
1,1,1,2-Tetrachloroethane		50.0	51.8	ug/L	0.420	3.61	20	
Tetrachloroethene		50.0	51.9	ug/L	0.345	3.86	20	
1,2,3-Trichlorobenzene		50.0	47.2	ug/L	0.819	5.51	20	
1,2,4-Trichlorobenzene		50.0	48.5	ug/L	0.996	3.02	20	
1,1,1-Trichloroethane		50.0	55.5	ug/L	0.575	11.1	20	
1,1,2-Trichloroethane		50.0	47.8	ug/L	0.234	4.49	20	
Trichloroethene		50.0	52.4	ug/L	0.287	4.80	20	
Trichlorofluoromethane		50.0	55.4	ug/L	0.599	10.9	20	
1,2,3-Trichloropropane		50.0	47.3	ug/L	0.146	5.43	20	
1,2,4-Trimethylbenzene		50.0	48.0	ug/L	2.80	4.05	20	
1,3,5-Trimethylbenzene		50.0	48.3	ug/L	2.74	3.39	20	
o-Xylene		50.0	49.9	ug/L	0.656	0.182	20	
m-,p-Xylene		100	99.4	ug/L	0.668	0.583	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4810860
Report generated 06/20/2016 13:19

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060615
Instrument ID: HPMS8
Workgroup (AAB#): WG572737

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	288225	539116	778260
Upper Limit	NA	NA	576450	1078232	1556520
Lower Limit	NA	NA	144113	269558	389130
L16060615-01	1.00	01	283407	512337	683419
L16060615-02	1.00	01	283174	516723	668654
L16060615-03	1.00	01	286537	519090	682795
L16060615-04	1.00	01	288805	519373	691525
L16060615-05	1.00	01	307596	560361	732888
WG572737-01	1.00	01	330295	588241	780700
WG572737-02	1.00	01	327915	583746	797707
WG572737-03	1.00	01	329286	592812	790550

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4810861
Report generated 06/20/2016 13:19

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060615
Instrument ID: HPMS8
Workgroup (AAB#): WG572737

ICAL CCV Number: WG568561-08
CAL ID: HPMS8-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	17.6	14.58	10.71
Upper Limit	NA	NA	18.1	15.08	11.21
Lower Limit	NA	NA	17.1	14.08	10.21
L16060615-01	1.00	01	17.6	14.57	10.71
L16060615-02	1.00	01	17.6	14.58	10.71
L16060615-03	1.00	01	17.6	14.57	10.71
L16060615-04	1.00	01	17.6	14.57	10.71
L16060615-05	1.00	01	17.6	14.58	10.71
WG572737-01	1.00	01	17.6	14.58	10.71
WG572737-02	1.00	01	17.6	14.57	10.71
WG572737-03	1.00	01	17.6	14.58	10.71

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4810863
Report generated: 06/20/2016 13:19

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413025.D Vial: 25
Acq On : 15 Jun 2016 20:07 Operator: TMB
Sample : L16060615-01 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 13:26:45 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	683419	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	512337	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	283407	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	206760	28.1584 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 112.64%		
43) 1,2-Dichloroethane-d4	10.31	65	230445	29.2693 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 117.08%		
58) Toluene-d8	12.68	98	718279	26.7881 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 107.16%		
80) p-Bromofluorobenzene	16.08	95	296874	25.2980 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.20%		

Target Compounds					Qvalue
3) Chloromethane	3.61	50	961	0.1437 ug/L	89

(#) = qualifier out of range (m) = manual integration
8M413025.D 8260WT.M Thu Jun 16 13:26:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413025.D Vial: 25
Acq On : 15 Jun 2016 20:07 Operator: TMB
Sample : L16060615-01 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 13:26 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

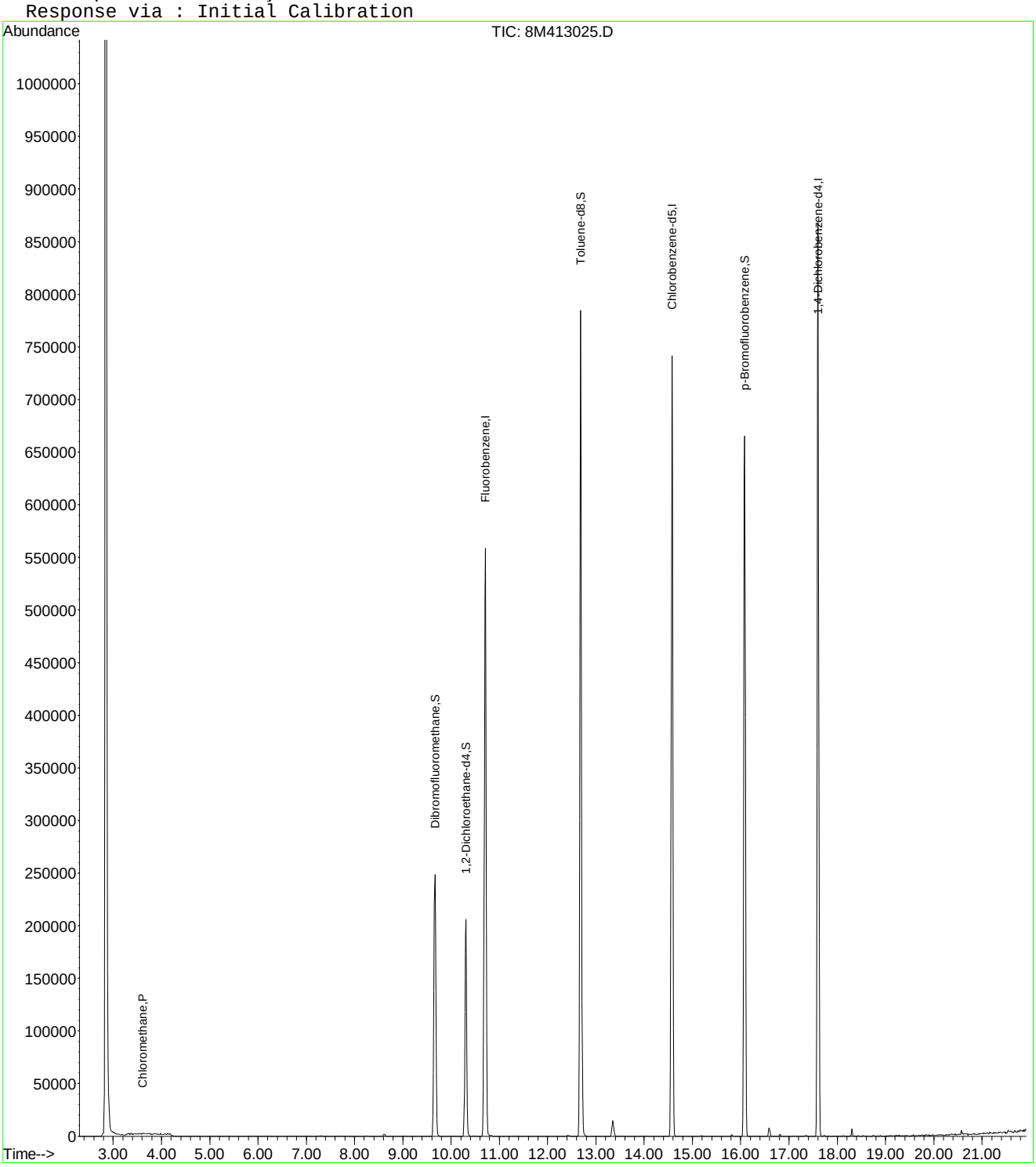

8M413025.D 8260WT.M Thu Jun 16 13:26:49 2016 Page 2

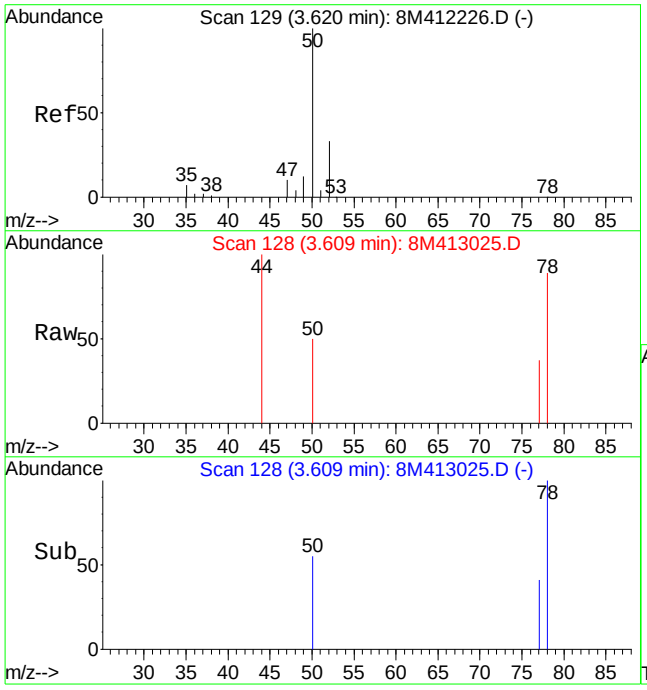

#3
Chloromethane
Concen: 0.14 ug/L
RT: 3.61 min Scan# 128
Delta R.T. -0.01 min
Lab File: 8M413025.D
Acq: 15 Jun 2016 20:07

Tgt Ion: 50 Resp: 961

Ion	Ratio	Lower	Upper
50	100		
52	26.7	19.9	46.3

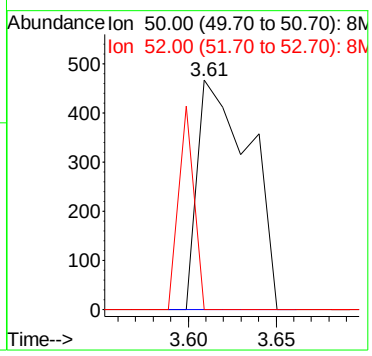

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413024.D Vial: 24
Acq On : 15 Jun 2016 19:38 Operator: TMB
Sample : L16060615-02 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 13:26:39 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	668654	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	516723	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	283174	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	199664	27.7924 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.16%		
43) 1,2-Dichloroethane-d4	10.31	65	223662	29.0351 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 116.16%		
58) Toluene-d8	12.68	98	699222	25.8560 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.44%		
80) p-Bromofluorobenzene	16.07	95	294688	25.1324 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.52%		

Target Compounds

					Qvalue
3) Chloromethane	3.61	50	1231	0.1881 ug/L #	65
13) Acetone	6.22	43	1105	1.4688 ug/L #	50
28) Ethyl-Tert-Butyl ether	8.62	59	2054	0.1238 ug/L #	37

(#) = qualifier out of range (m) = manual integration
8M413024.D 8260WT.M Thu Jun 16 13:26:42 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413024.D Vial: 24
Acq On : 15 Jun 2016 19:38 Operator: TMB
Sample : L16060615-02 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 13:26 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

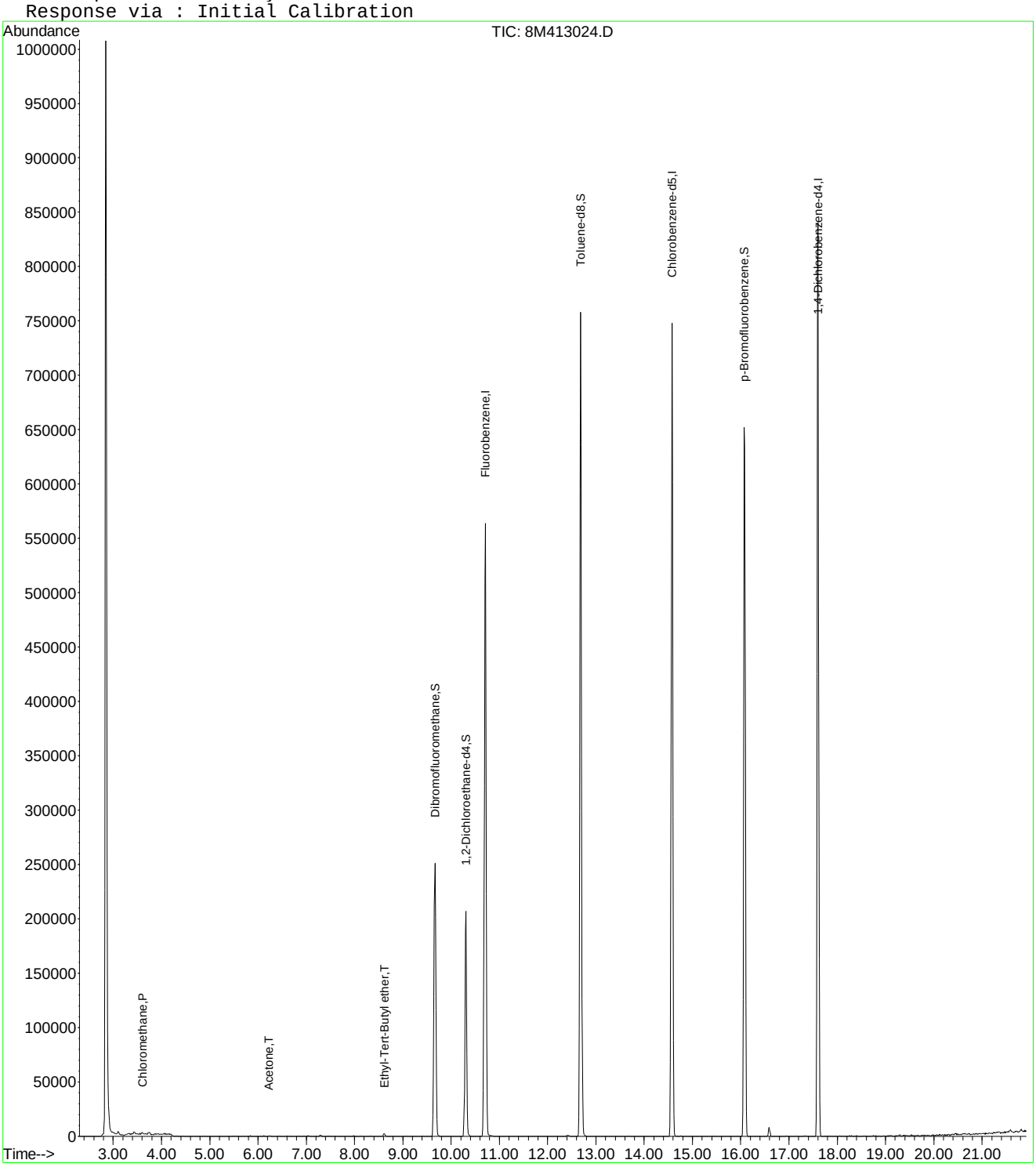

8M413024.D 8260WT.M Thu Jun 16 13:26:43 2016 Page 2

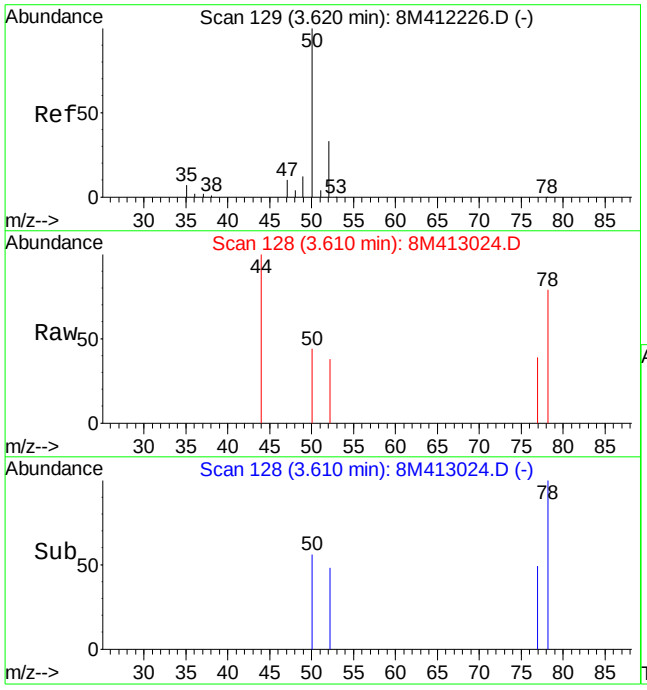

#3
Chloromethane
Concen: 0.19 ug/L
RT: 3.61 min Scan# 128
Delta R.T. -0.01 min
Lab File: 8M413024.D
Acq: 15 Jun 2016 19:38

Tgt Ion: 50 Resp: 1231

Ion	Ratio	Lower	Upper
50	100		
52	52.7	19.9	46.3#

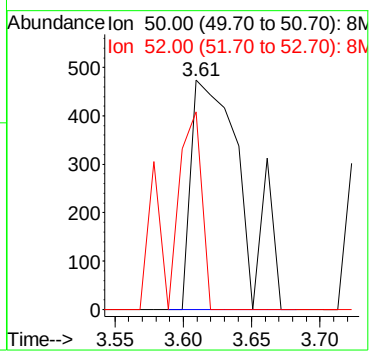

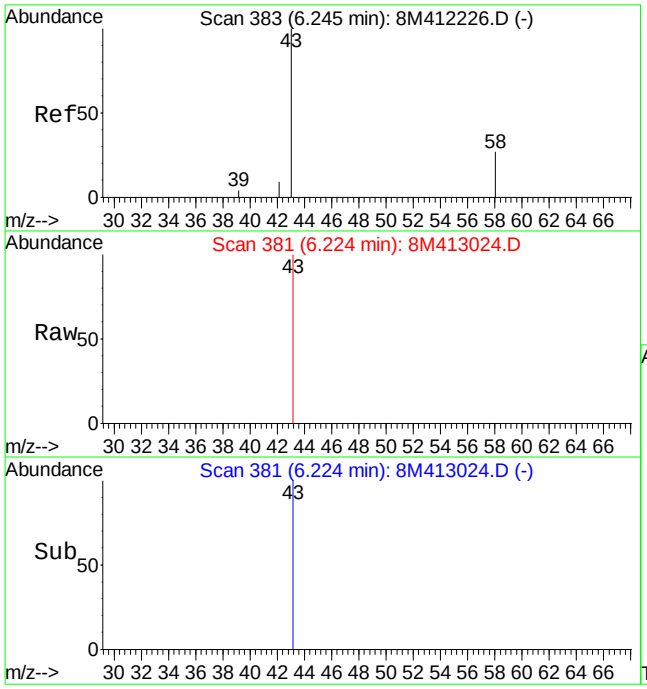

#13
Acetone
Concen: 1.47 ug/L
RT: 6.22 min Scan# 381
Delta R.T. -0.02 min
Lab File: 8M413024.D
Acq: 15 Jun 2016 19:38

Tgt Ion: 43 Resp: 1105

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.2	35.4#

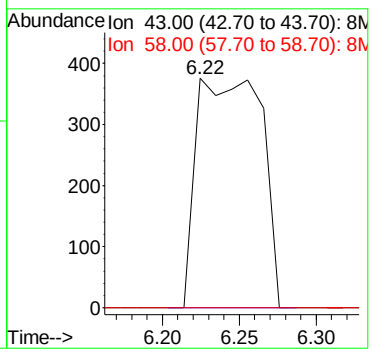

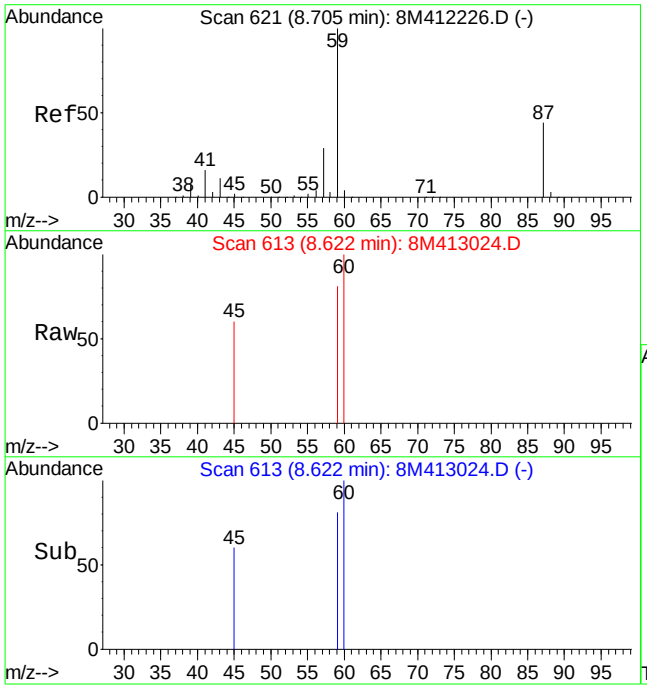

#28
Ethyl-Tert-Butyl ether
Concen: 0.12 ug/L
RT: 8.62 min Scan# 613
Delta R.T. -0.08 min
Lab File: 8M413024.D
Acq: 15 Jun 2016 19:38

Tgt Ion: 59 Resp: 2054

Ion	Ratio	Lower	Upper
59	100		
87	0.0	26.8	62.4#
57	0.0	17.4	40.6#

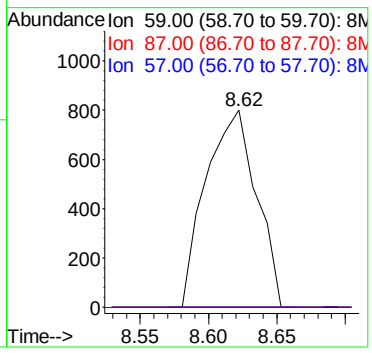

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413023.D Vial: 23
Acq On : 15 Jun 2016 19:09 Operator: TMB
Sample : L16060615-03 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 13:26:33 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	682795	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	519090	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	286537	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	206817	28.1919 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 112.76%		
43) 1,2-Dichloroethane-d4	10.31	65	227860	28.9674 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 115.88%		
58) Toluene-d8	12.68	98	709666	26.1226 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.48%		
80) p-Bromofluorobenzene	16.07	95	296656	25.0033 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.00%		

Target Compounds					Qvalue
3) Chloromethane	3.63	50	1492	0.2233 ug/L	99
13) Acetone	6.23	43	1298	1.6896 ug/L #	50

(#) = qualifier out of range (m) = manual integration
8M413023.D 8260WT.M Thu Jun 16 13:26:37 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413023.D Vial: 23
Acq On : 15 Jun 2016 19:09 Operator: TMB
Sample : L16060615-03 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 13:26 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

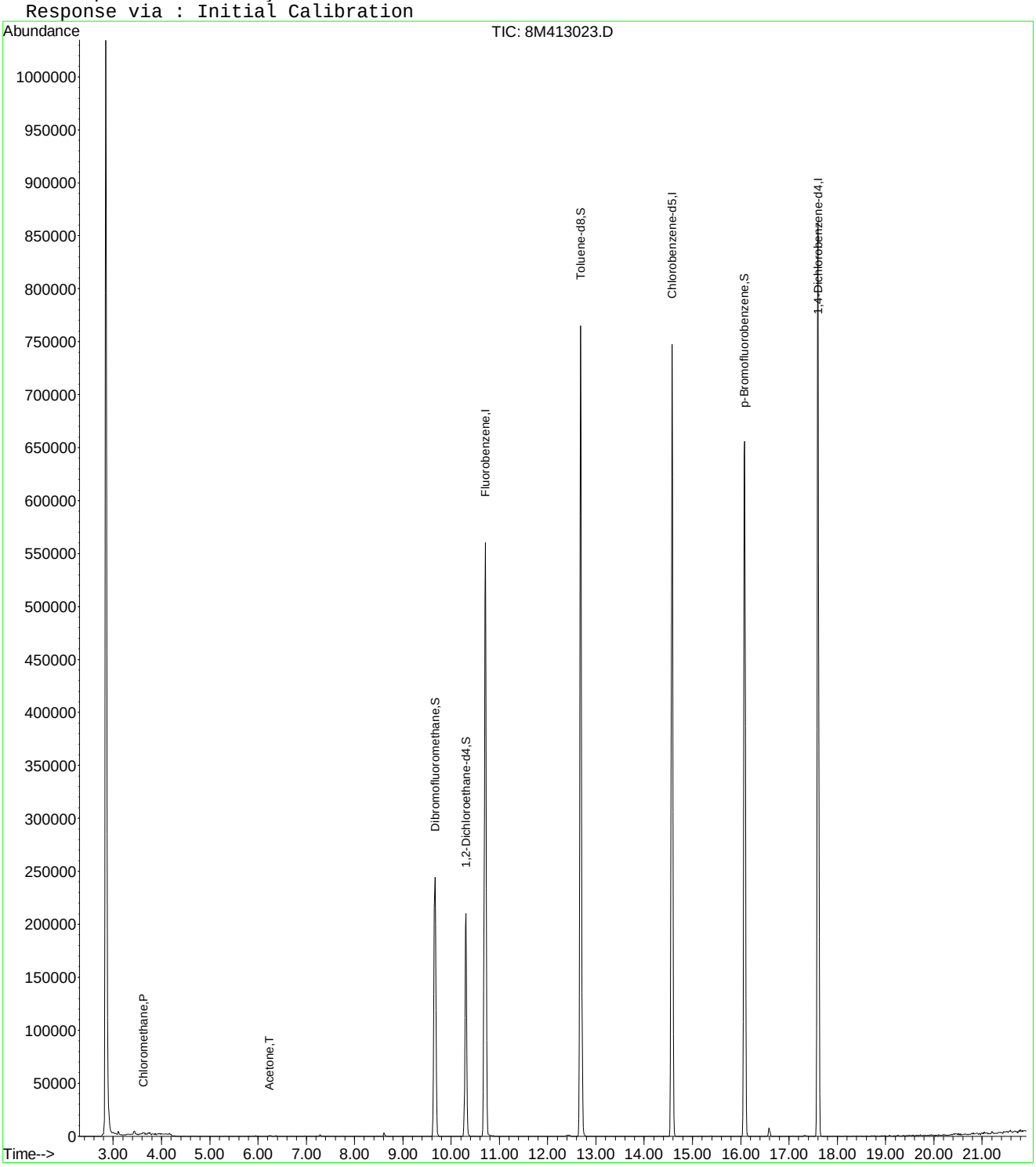

8M413023.D 8260WT.M Thu Jun 16 13:26:37 2016 Page 2

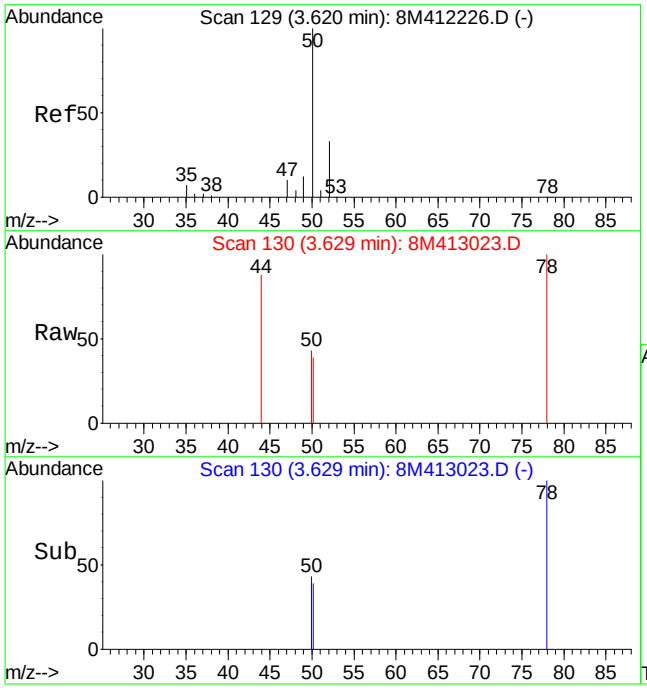

#3
Chloromethane
Concen: 0.22 ug/L
RT: 3.63 min Scan# 130
Delta R.T. 0.01 min
Lab File: 8M413023.D
Acq: 15 Jun 2016 19:09

Tgt Ion: 50 Resp: 1492

Ion	Ratio	Lower	Upper
50	100		
52	32.4	19.9	46.3

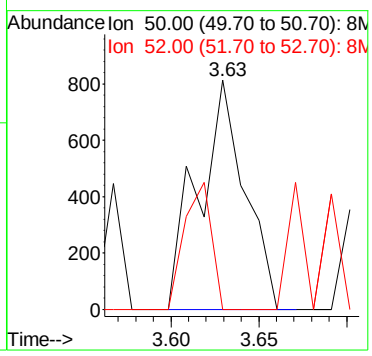

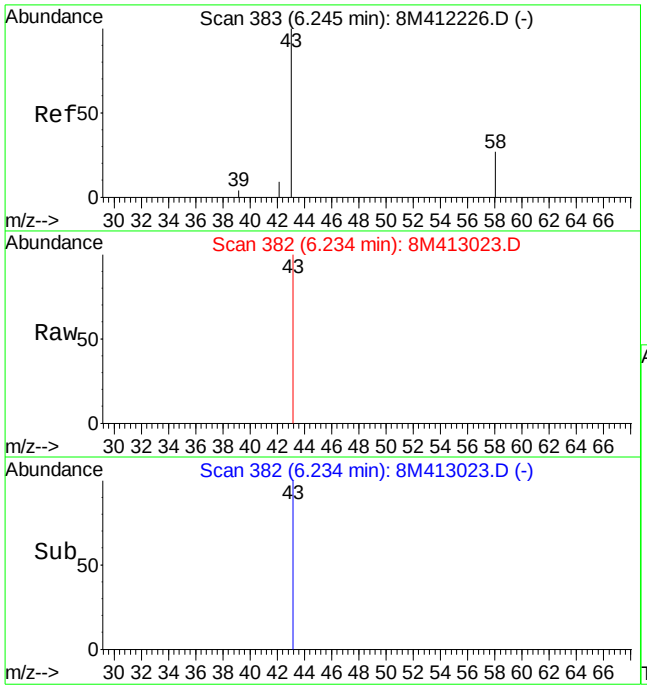

#13
Acetone
Concen: 1.69 ug/L
RT: 6.23 min Scan# 382
Delta R.T. -0.01 min
Lab File: 8M413023.D
Acq: 15 Jun 2016 19:09

Tgt Ion: 43 Resp: 1298

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.2	35.4#

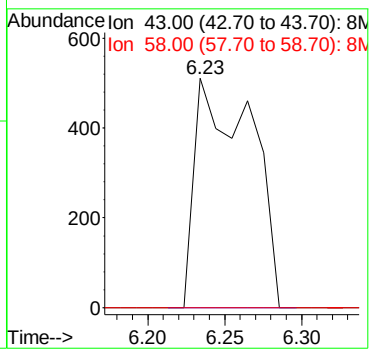

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413022.D Vial: 22
Acq On : 15 Jun 2016 18:40 Operator: TMB
Sample : L16060615-04 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 13:26:27 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	691525	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	519373	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	288805	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	207770	27.9642 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.84%		
43) 1,2-Dichloroethane-d4	10.30	65	229057	28.7520 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 115.00%		
58) Toluene-d8	12.68	98	707388	26.0245 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.08%		
80) p-Bromofluorobenzene	16.08	95	296637	24.8054 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.24%		

Target Compounds					Qvalue
3) Chloromethane	3.61	50	910	0.1345 ug/L	84
13) Acetone	6.23	43	12002	15.4261 ug/L	94
19) Methylene Chloride	7.24	84	3801	0.5341 ug/L	85
29) 2-Butanone	8.91	43	807	0.7060 ug/L #	47
47) Trichloroethene	11.20	130	4792	0.6325 ug/L	91

(#) = qualifier out of range (m) = manual integration
8M413022.D 8260WT.M Thu Jun 16 13:26:30 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413022.D Vial: 22
Acq On : 15 Jun 2016 18:40 Operator: TMB
Sample : L16060615-04 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 13:26 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

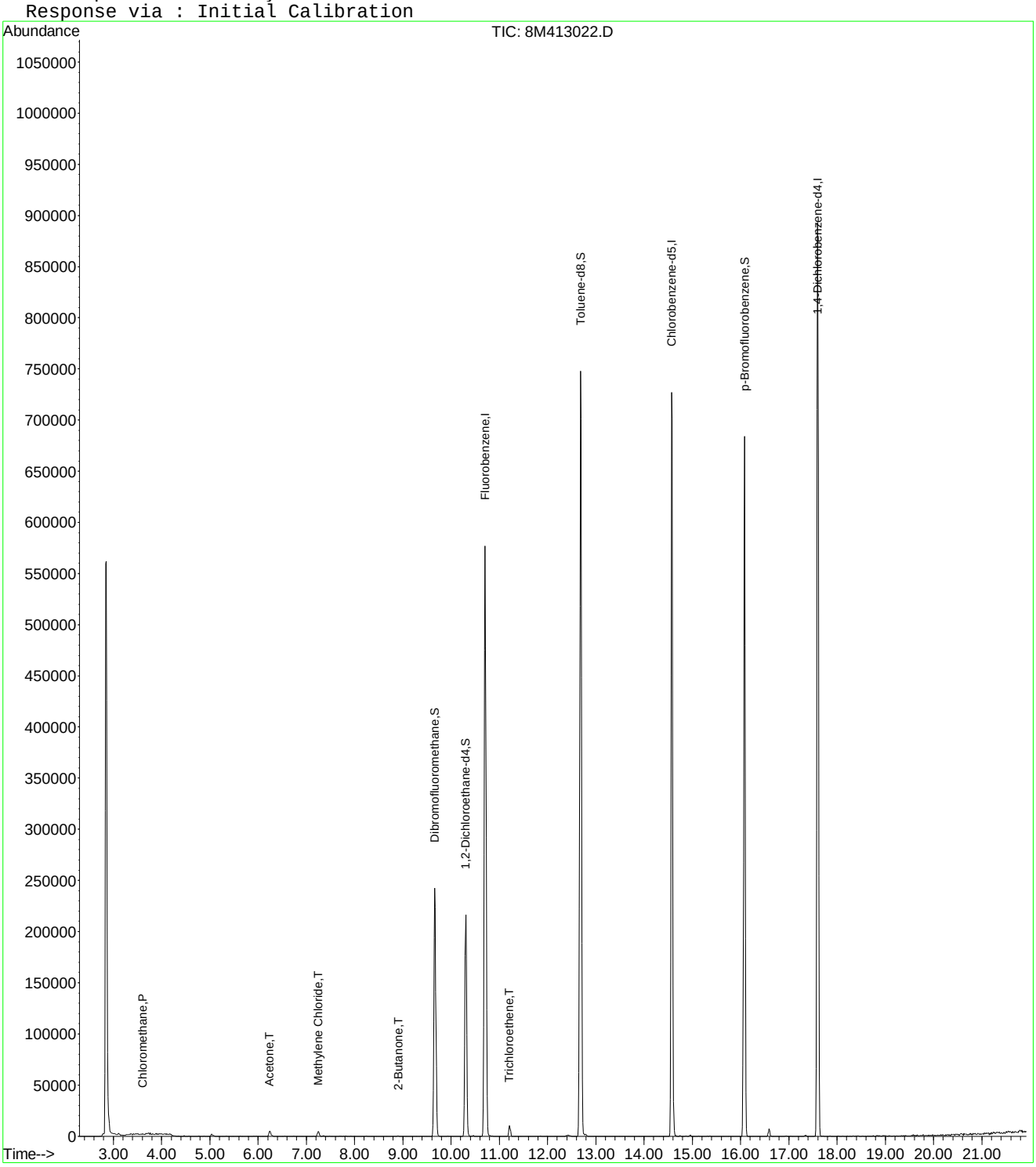

8M413022.D 8260WT.M Thu Jun 16 13:26:31 2016 Page 2

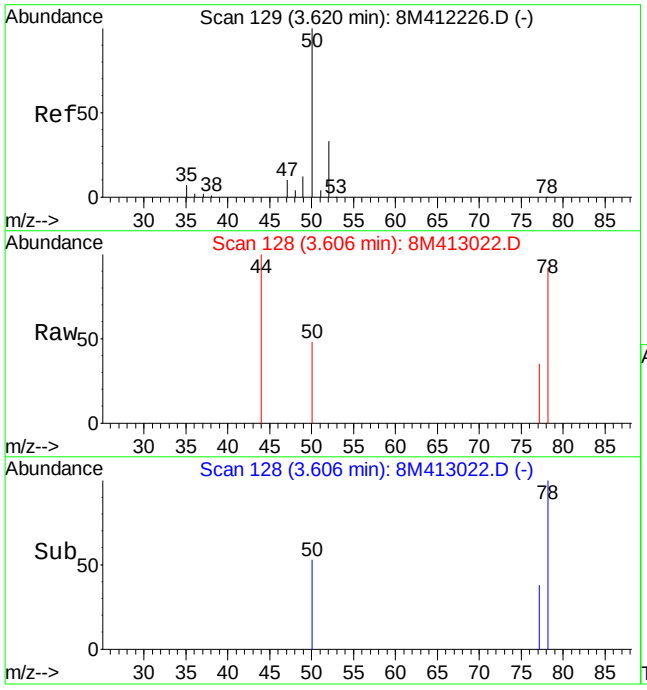

#3
Chloromethane
Concen: 0.13 ug/L
RT: 3.61 min Scan# 128
Delta R.T. -0.01 min
Lab File: 8M413022.D
Acq: 15 Jun 2016 18:40

Tgt Ion: 50 Resp: 910

Ion	Ratio	Lower	Upper
50	100		
52	23.8	19.9	46.3

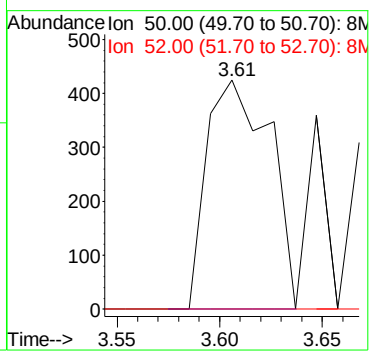

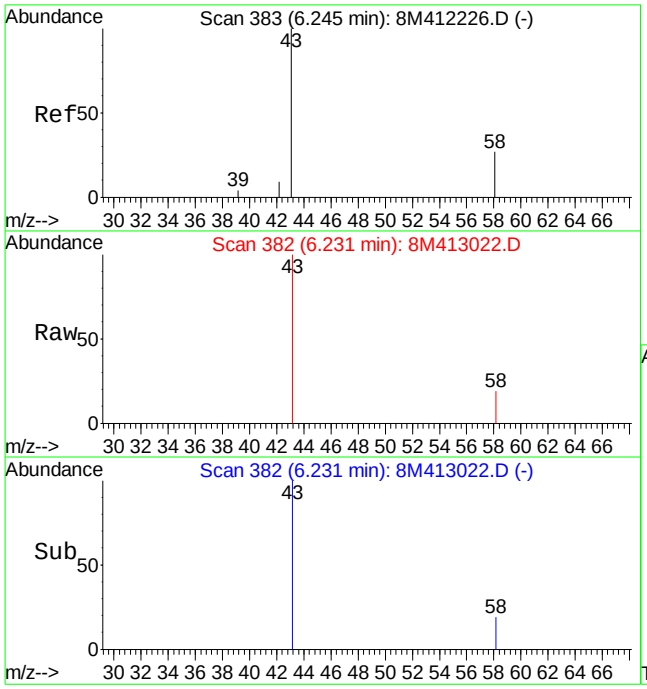

#13
Acetone
Concen: 15.43 ug/L
RT: 6.23 min Scan# 382
Delta R.T. -0.01 min
Lab File: 8M413022.D
Acq: 15 Jun 2016 18:40

Tgt Ion: 43 Resp: 12002

Ion	Ratio	Lower	Upper
43	100		
58	22.5	15.2	35.4

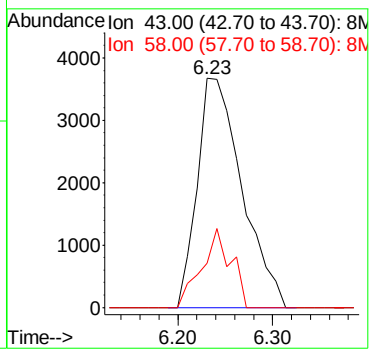

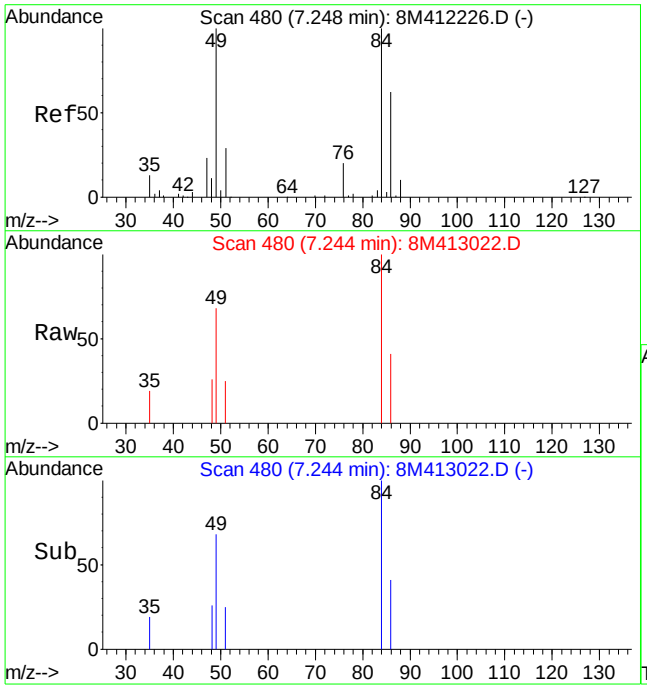

#19
Methylene Chloride
Concen: 0.53 ug/L
RT: 7.24 min Scan# 480
Delta R.T. -0.00 min
Lab File: 8M413022.D
Acq: 15 Jun 2016 18:40

Tgt Ion: 84 Resp: 3801

Ion	Ratio	Lower	Upper
84	100		
49	85.4	60.5	141.3

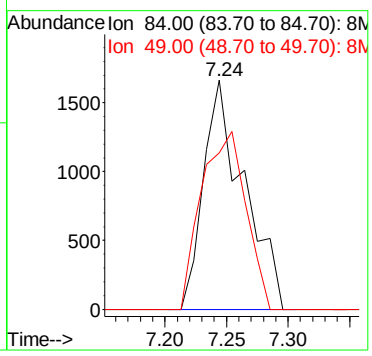

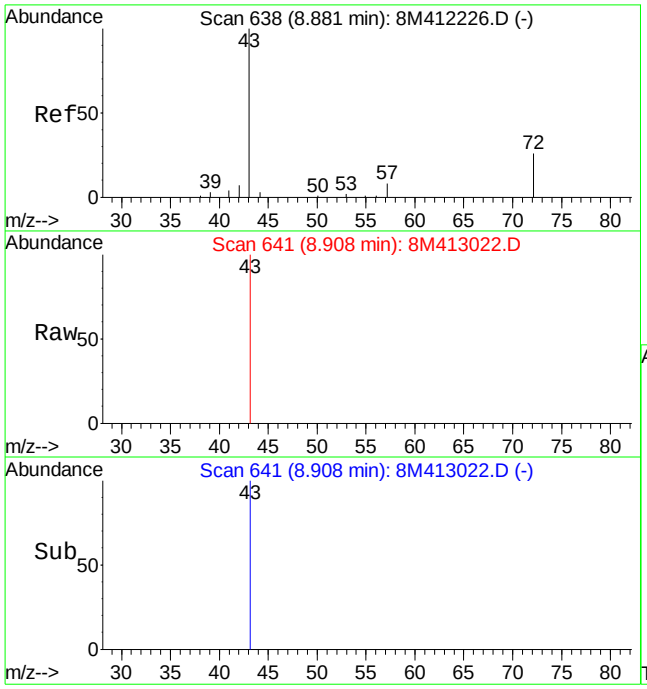

#29
2-Butanone
Concen: 0.71 ug/L
RT: 8.91 min Scan# 641
Delta R.T. 0.03 min
Lab File: 8M413022.D
Acq: 15 Jun 2016 18:40

Tgt Ion: 43 Resp: 807

Ion	Ratio	Lower	Upper
43	100		
72	0.0	16.4	38.4#

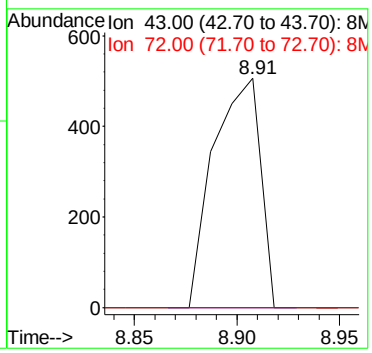

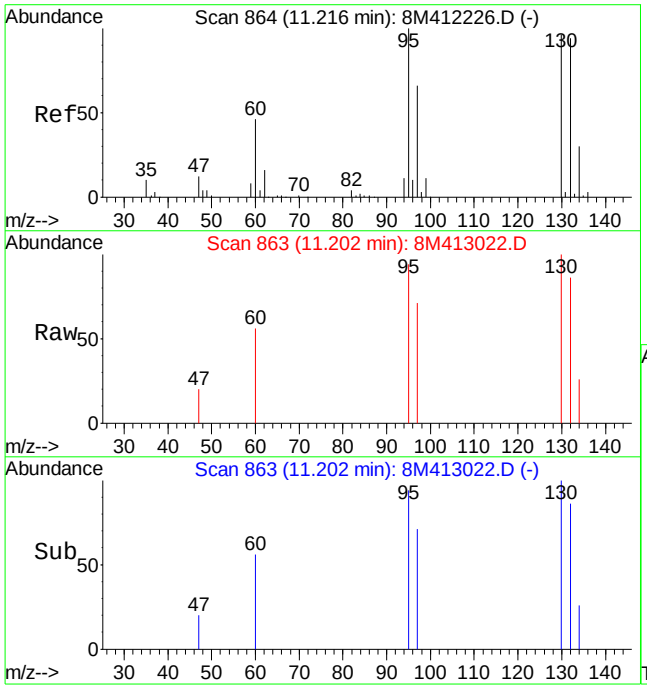

#47
Trichloroethene
Concen: 0.63 ug/L
RT: 11.20 min Scan# 863
Delta R.T. -0.01 min
Lab File: 8M413022.D
Acq: 15 Jun 2016 18:40

Tgt Ion:130 Resp: 4792

Ion	Ratio	Lower	Upper
130	100		
132	100.9	58.0	135.2
95	95.2	64.9	151.5

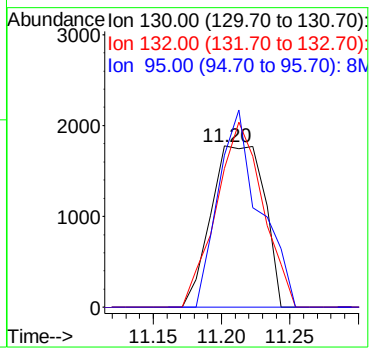

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413013.D Vial: 13
Acq On : 15 Jun 2016 14:20 Operator: TMB
Sample : L16060615-05 A TB 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 13:25:34 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	732888	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	560361	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	307596	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	217056	27.5653 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.28%		
43) 1,2-Dichloroethane-d4	10.31	65	237264	28.1013 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.40%		
58) Toluene-d8	12.68	98	750312	25.5846 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.32%		
80) p-Bromofluorobenzene	16.07	95	317130	24.8990 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.60%		

Target Compounds					Qvalue
3) Chloromethane	3.63	50	1247	0.1739 ug/L #	42
36) Tetrahydrofuran	9.64	42	1116	1.3986 ug/L #	58

(#) = qualifier out of range (m) = manual integration
8M413013.D 8260WT.M Thu Jun 16 13:25:37 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413013.D Vial: 13
Acq On : 15 Jun 2016 14:20 Operator: TMB
Sample : L16060615-05 A TB 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 13:25 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

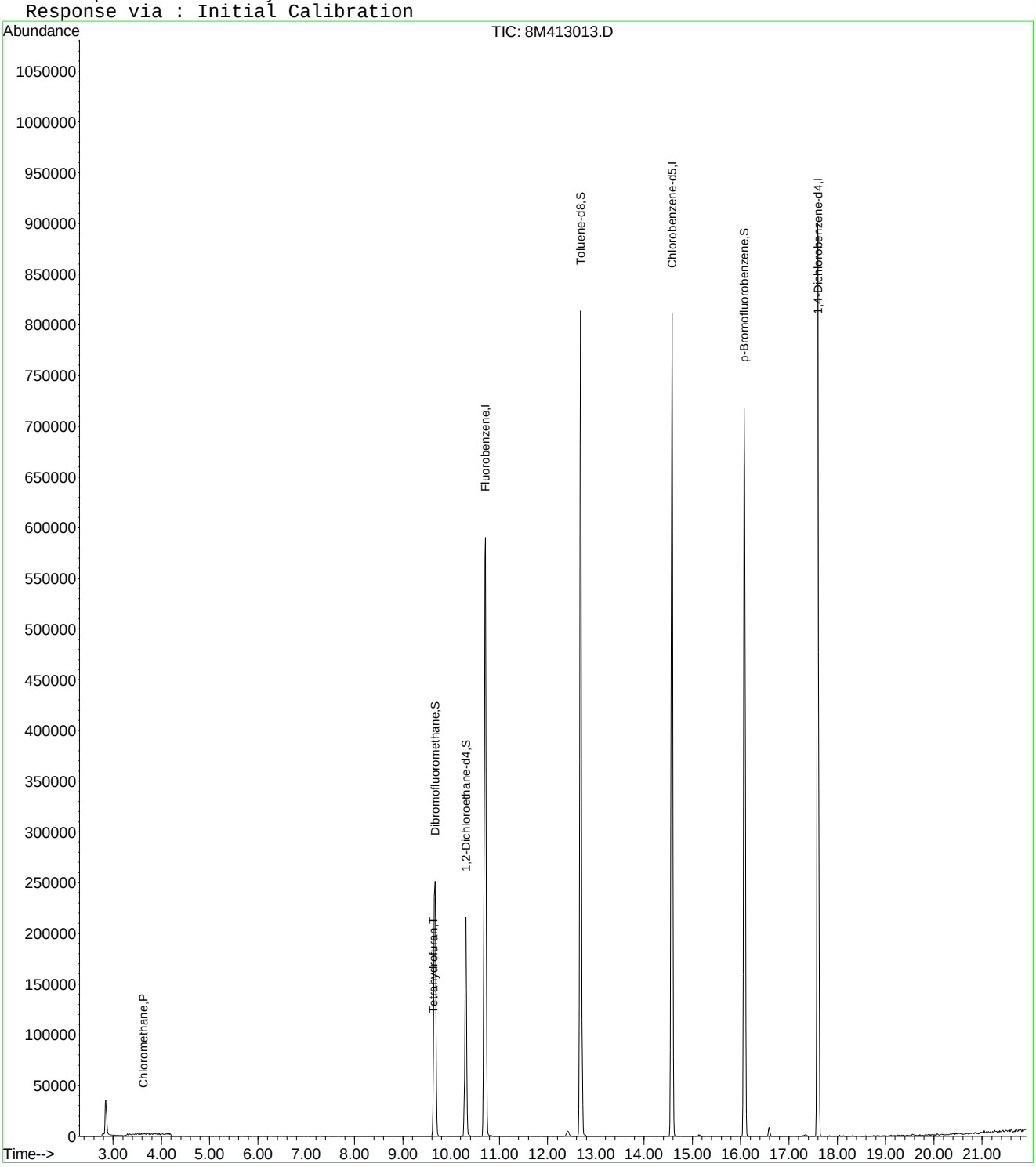

8M413013.D 8260WT.M Thu Jun 16 13:25:37 2016 Page 2

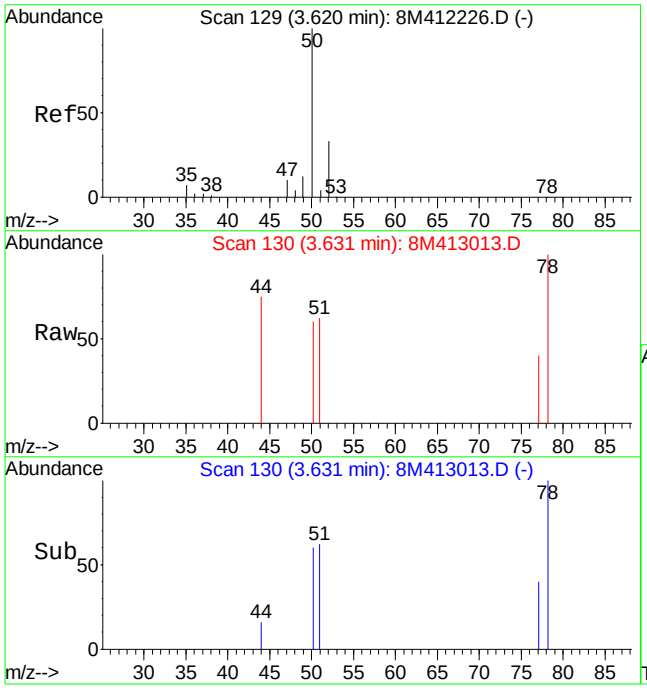

#3
Chloromethane
Concen: 0.17 ug/L
RT: 3.63 min Scan# 130
Delta R.T. 0.01 min
Lab File: 8M413013.D
Acq: 15 Jun 2016 14:20

Tgt Ion: 50 Resp: 1247

Ion	Ratio	Lower	Upper
50	100		
52	0.0	19.9	46.3#

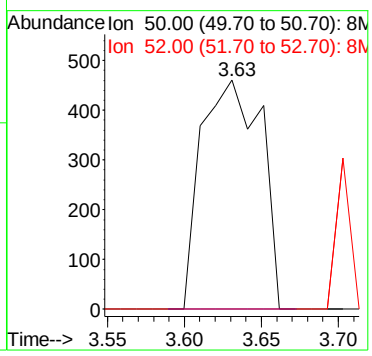

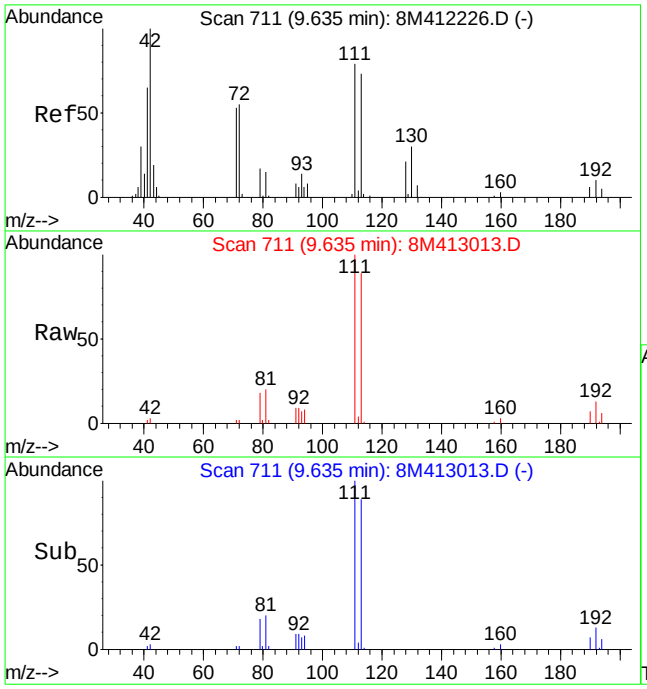

#36
Tetrahydrofuran
Concen: 1.40 ug/L
RT: 9.64 min Scan# 711
Delta R.T. 0.00 min
Lab File: 8M413013.D
Acq: 15 Jun 2016 14:20

Tgt Ion: 42 Resp: 1116

Ion	Ratio	Lower	Upper
42	100		
72	23.6	33.8	78.8#
71	26.2	32.0	74.8#

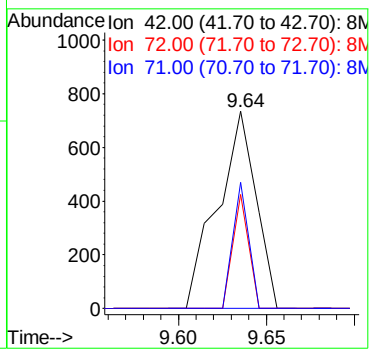

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:40:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	823748	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	571926	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	299321	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	12.68	98	567	0.0189 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.08%#	
80) p-Bromofluorobenzene	16.08	95	313	0.0253 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	3836	0.2778 ug/L	91
3) Chloromethane	3.62	50	3658	0.4537 ug/L	95
4) Vinyl Chloride	3.85	62	2516	0.2630 ug/L #	58
5) 1,3-Butadiene	3.91	54	2079	0.2592 ug/L	71
6) Bromomethane	4.73	94	1152	0.6530 ug/L #	55
7) Chloroethane	4.90	64	1112	0.2113 ug/L #	72
8) Trichlorofluoromethane	5.35	101	2706	0.1520 ug/L #	53
10) Isoprene	5.93	67	2147	0.1987 ug/L	85
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1746	0.2087 ug/L	97
14) 1,1-Dichloroethene	6.48	61	3332	0.2501 ug/L	75
16) Dimethyl Sulfide	6.73	62	1099	0.2308 ug/L	95
19) Methylene Chloride	7.26	84	3414	0.4028 ug/L	88
20) Carbon Disulfide	7.30	76	10739	0.3853 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	4927	0.2686 ug/L #	60
23) trans-1,2-Dichloroethene	7.70	61	3879	0.3170 ug/L	98
24) n-Hexane	7.78	57	2794	0.3075 ug/L	85
26) Vinyl Acetate	8.30	43	1973	0.2259 ug/L #	70
27) 1,1-Dichloroethane	8.33	63	4881	0.3212 ug/L #	88
31) 2,2-Dichloropropane	9.11	77	4966	0.3101 ug/L	89
32) cis-1,2-Dichloroethene	9.17	96	2958	0.3128 ug/L	87
33) Chloroform	9.37	83	5564	0.3101 ug/L	95
34) 1-Bromopropane	9.52	122	210	0.1551 ug/L #	1
35) Bromochloromethane	9.60	130	1386	0.2858 ug/L	76
36) Tetrahydrofuran	9.62	42	1849	2.0617 ug/L #	60
38) 1,1,1-Trichloroethane	9.91	97	4978	0.2921 ug/L	95
39) Cyclohexane	9.93	56	3120	0.2644 ug/L #	85
40) 1,1-Dichloropropene	10.11	75	3779	0.2909 ug/L	97
42) Carbon Tetrachloride	10.24	117	4835	0.3194 ug/L #	74
45) 1,2-Dichloroethane	10.43	62	3295	0.2853 ug/L #	81
46) Benzene	10.46	78	11279	0.3333 ug/L	93
47) Trichloroethene	11.20	130	2410	0.2670 ug/L	97
48) Methylcyclohexane	11.31	83	3936	0.2871 ug/L	84
49) 1,2-Dichloropropane	11.42	63	2136	0.2836 ug/L	88
50) Bromodichloromethane	11.73	83	3767	0.2845 ug/L #	91
52) Dibromomethane	11.82	93	700	0.1570 ug/L #	59
53) 2-Chloroethyl Vinyl Ether	12.02	63	847	0.2616 ug/L #	47
55) cis-1,3-Dichloropropene	12.36	75	4763	0.3535 ug/L	84
56) Dimethyl Disulfide	12.63	79	1647	0.2290 ug/L	82
59) Toluene	12.78	91	11513	0.3243 ug/L	92
60) Ethyl Methacrylate	12.89	69	1631	0.2392 ug/L #	64

(#) = qualifier out of range (m) = manual integration
8M412220.D 8260WT.M Tue May 17 11:40:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:40:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
62)	trans-1,3-Dichloropropene	12.96	75	3626	0.3047 ug/L		82
63)	1,1,2-Trichloroethane	13.18	97	1409	0.2515 ug/L		98
65)	1,3-Dichloropropane	13.49	76	2584	0.2590 ug/L		93
66)	Tetrachloroethene	13.61	164	2678	0.3520 ug/L	#	75
67)	Dibromochloromethane	13.87	129	2126	0.2599 ug/L		79
68)	1,2-Dibromoethane	14.12	107	1895	0.3394 ug/L		91
69)	1-Chlorohexane	14.21	91	3835	0.3164 ug/L		99
70)	Chlorobenzene	14.62	112	7968	0.3328 ug/L		88
71)	1,1,1,2-Tetrachloroethane	14.67	131	2872	0.3096 ug/L		87
72)	Ethylbenzene	14.64	106	3844	0.2934 ug/L		81
73)	m-,p-Xylene	14.75	106	10447	0.6799 ug/L		96
74)	o-Xylene	15.31	106	4577	0.3047 ug/L		97
75)	Styrene	15.35	104	7545	0.3062 ug/L		95
76)	Bromoform	15.84	173	1301	0.2681 ug/L	#	51
77)	Isopropylbenzene	15.74	105	13119	0.3287 ug/L		90
79)	1,1,2,2-Tetrachloroethane	15.96	83	1714	0.2853 ug/L	#	85
83)	n-Propylbenzene	16.24	91	15676	0.3357 ug/L		92
84)	Bromobenzene	16.38	156	2859	0.2977 ug/L		90
85)	1,3,5-Trimethylbenzene	16.43	105	10873	0.3196 ug/L		99
86)	2-Chlorotoluene	16.52	91	11133	0.3415 ug/L		96
87)	4-Chlorotoluene	16.56	91	10305	0.3499 ug/L		97
88)	a-Methylstyrene	16.83	118	4090	0.2534 ug/L		86
89)	tert-Butylbenzene	16.90	134	1734	0.2606 ug/L		72
90)	1,2,4-Trimethylbenzene	16.95	105	10734	0.3069 ug/L		89
91)	sec-Butylbenzene	17.16	105	13749	0.3436 ug/L		97
92)	p-Isopropyltoluene	17.32	119	10847	0.3192 ug/L		95
93)	1,3-Dichlorobenzene	17.52	146	6023	0.3257 ug/L		99
94)	1,4-Dichlorobenzene	17.65	146	6152	0.3299 ug/L	#	60
95)	n-Butylbenzene	17.85	91	11161	0.3323 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	5711	0.3472 ug/L		92
98)	1,2,4-Trichlorobenzene	20.29	180	4203	0.3418 ug/L		91
99)	Hexachlorobutadiene	20.43	225	1894	0.3297 ug/L		84
100)	Naphthalene	20.65	128	6039	0.3306 ug/L		91
101)	1,2,3-Trichlorobenzene	20.96	180	3279	0.3161 ug/L		86

(#) = qualifier out of range (m) = manual integration
8M412220.D 8260WT.M Tue May 17 11:40:55 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2778	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.4537	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.2630	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	0.2592	0.0	100	0.03
6	T	Bromomethane	-1.0000	0.9911	0.0	100	0.00
7	T	Chloroethane	-1.0000	0.2113	0.0	100	0.00
8	T	Trichlorofluoromethane	-1.0000	0.1520	0.0	100	-0.02
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.90#
10	T	Isoprene	-1.0000	0.1987	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.13#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2087	0.0	100	0.00
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	-1.0000	0.2501	0.0	100	0.02
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.58#
16	T	Dimethyl Sulfide	-1.0000	0.2308	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.0000	0.0	0	-7.00#
19	T	Methylene Chloride	-1.0000	0.4028	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.3853	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.43#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2686	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	-1.0000	0.3170	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.3075	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.2259	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.3212	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.98#
31	T	2,2-Dichloropropane	-1.0000	0.3101	0.0	100	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.3128	0.0	100	0.00
33	C	Chloroform	0.3000	0.3101	-3.4	100	0.00
34		1-Bromopropane	-1.0000	0.1551	0.0	100	0.00
35	T	Bromochloromethane	-1.0000	0.2858	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	2.0617	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	-1.0000	0.2921	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.2644	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.2909	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	-1.0000	0.3194	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	-1.0000	0.2853	0.0	100	0.00
46	T	Benzene	-1.0000	0.3333	0.0	100	0.00
47	T	Trichloroethene	-1.0000	0.2670	0.0	100	-0.01
48	T	Methylcyclohexane	-1.0000	0.2871	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2836	0.0	100	0.00
50	T	Bromodichloromethane	-1.0000	0.2845	0.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	-1.0000	0.1570	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2616	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.05#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.3535	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2290	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0189	0.0	100	0.00
59	C	Toluene	-1.0000	0.3243	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2392	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3047	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.2515	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	-1.0000	0.2590	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.3520	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.2599	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.3394	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.3164	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.3328	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.3096	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.2934	0.0	100	-0.01
73	T	m-,p-Xylene	-1.0000	0.6799	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.3047	0.0	100	0.00
75	T	Styrene	-1.0000	0.3062	0.0	100	0.00
76	P	Bromoform	-1.0000	0.2681	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.3287	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2853	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0253	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.1103	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	-1.0000	0.3357	0.0	100	0.00
84	T	Bromobenzene	0.3000	0.2977	0.8	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.3196	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.3415	0.0	100	0.00
87	T	4-Chlorotoluene	-1.0000	0.3499	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2534	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.2606	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.3069	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3436	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.3192	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.3257	0.0	100	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.3299	-10.0	100	0.00
95	T	n-Butylbenzene	-1.0000	0.3323	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.3472	-15.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.3418	0.0	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.3297	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.3306	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.3161	-5.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412220.D 8260WT.M Sat May 14 18:03:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	801173	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	557498	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	293108	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.00%#	
80) p-Bromofluorobenzene	16.08	95	343	0.0286 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	5478	0.3262 ug/L	79
3) Chloromethane	3.63	50	3930	0.2484 ug/L	85
4) Vinyl Chloride	3.84	62	3512	0.3288 ug/L	97
5) 1,3-Butadiene	3.90	54	2479	0.2375 ug/L #	75
6) Bromomethane	4.73	94	1343	0.9497 ug/L	85
7) Chloroethane	4.90	64	2219	0.3174 ug/L #	43
8) Trichlorofluoromethane	5.36	101	6974	0.3289 ug/L #	93
10) Isoprene	5.94	67	4288	0.3952 ug/L #	62
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	3168	0.3263 ug/L #	40
14) 1,1-Dichloroethene	6.47	61	5431	0.2882 ug/L	92
16) Dimethyl Sulfide	6.74	62	1708	0.2453 ug/L	64
19) Methylene Chloride	7.24	84	3785	0.4239 ug/L #	43
20) Carbon Disulfide	7.29	76	12437	0.4565 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	6580	0.3336 ug/L #	76
23) trans-1,2-Dichloroethene	7.71	61	4990	0.2928 ug/L	96
24) n-Hexane	7.79	57	3110	0.2011 ug/L	99
26) Vinyl Acetate	8.31	43	2753	0.1566 ug/L	100
27) 1,1-Dichloroethane	8.32	63	5655	0.2774 ug/L #	92
31) 2,2-Dichloropropane	9.10	77	6035	0.3360 ug/L	82
32) cis-1,2-Dichloroethene	9.16	96	3837	0.3762 ug/L	74
33) Chloroform	9.37	83	7267	0.3842 ug/L	100
34) 1-Bromopropane	9.50	122	234	0.1456 ug/L #	1
35) Bromochloromethane	9.60	130	1674	0.3137 ug/L	62
36) Tetrahydrofuran	9.62	42	447	0.2146 ug/L #	41
38) 1,1,1-Trichloroethane	9.91	97	6304	0.3305 ug/L	90
39) Cyclohexane	9.94	56	4658	0.2238 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	5172	0.3768 ug/L	80
42) Carbon Tetrachloride	10.25	117	5692	0.3172 ug/L	95
45) 1,2-Dichloroethane	10.43	62	4443	0.2796 ug/L #	63
46) Benzene	10.46	78	14456	0.4134 ug/L #	77
47) Trichloroethene	11.21	130	3659	0.3626 ug/L	98
48) Methylcyclohexane	11.29	83	5025	0.3562 ug/L	84
49) 1,2-Dichloropropane	11.42	63	3060	0.3007 ug/L	98
50) Bromodichloromethane	11.73	83	4734	0.3343 ug/L #	93
52) Dibromomethane	11.82	93	1805	0.3767 ug/L	84
55) cis-1,3-Dichloropropene	12.36	75	5008	0.3514 ug/L	90
56) Dimethyl Disulfide	12.63	79	1921	0.2573 ug/L	85
59) Toluene	12.78	91	14742	0.4416 ug/L	98
60) Ethyl Methacrylate	12.90	69	2062	0.3292 ug/L	66
62) trans-1,3-Dichloropropene	12.96	75	3693	0.3171 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M412221.D 8260WT.M Fri May 13 14:20:38 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
63)	1,1,2-Trichloroethane	13.18	97	2326	0.4391 ug/L	70
65)	1,3-Dichloropropane	13.49	76	3163	0.3219 ug/L	88
66)	Tetrachloroethene	13.61	164	3164	0.4185 ug/L	93
67)	Dibromochloromethane	13.87	129	3113	0.3727 ug/L	86
68)	1,2-Dibromoethane	14.12	107	2076	0.3760 ug/L	90
69)	1-Chlorohexane	14.21	91	4746	0.4174 ug/L	80
70)	Chlorobenzene	14.62	112	9180	0.3960 ug/L	98
71)	1,1,1,2-Tetrachloroethane	14.66	131	3501	0.3876 ug/L	95
72)	Ethylbenzene	14.65	106	5348	0.4066 ug/L	84
73)	m-,p-Xylene	14.75	106	13269	0.8757 ug/L	89
74)	o-Xylene	15.31	106	6019	0.3943 ug/L	97
75)	Styrene	15.35	104	9370	0.3849 ug/L	95
76)	Bromoform	15.83	173	1198	0.2500 ug/L #	76
77)	Isopropylbenzene	15.73	105	16528	0.4270 ug/L	92
79)	1,1,2,2-Tetrachloroethane	15.96	83	1999	0.3419 ug/L #	83
83)	n-Propylbenzene	16.25	91	19410	0.4297 ug/L	95
84)	Bromobenzene	16.37	156	3319	0.3524 ug/L	75
85)	1,3,5-Trimethylbenzene	16.42	105	13794	0.4127 ug/L	95
86)	2-Chlorotoluene	16.51	91	13678	0.4729 ug/L	90
87)	4-Chlorotoluene	16.56	91	12572	0.4219 ug/L	98
88)	a-Methylstyrene	16.84	118	5739	0.3485 ug/L	96
89)	tert-Butylbenzene	16.90	134	2254	0.3403 ug/L	55
90)	1,2,4-Trimethylbenzene	16.95	105	13859	0.4051 ug/L	90
91)	sec-Butylbenzene	17.17	105	17612	0.4382 ug/L	90
92)	p-Isopropyltoluene	17.32	119	13616	0.3968 ug/L	90
93)	1,3-Dichlorobenzene	17.52	146	6961	0.3724 ug/L	86
94)	1,4-Dichlorobenzene	17.64	146	7149	0.3832 ug/L #	1
95)	n-Butylbenzene	17.85	91	15223	0.4664 ug/L	91
96)	1,2-Dichlorobenzene	18.14	146	6129	0.3742 ug/L	92
98)	1,2,4-Trichlorobenzene	20.28	180	5035	0.3969 ug/L	97
99)	Hexachlorobutadiene	20.44	225	2420	0.4122 ug/L	83
100)	Naphthalene	20.65	128	7474	0.3874 ug/L #	84
101)	1,2,3-Trichlorobenzene	20.96	180	4378	0.4056 ug/L #	78

(#) = qualifier out of range (m) = manual integration
8M412221.D 8260WT.M Fri May 13 14:20:39 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

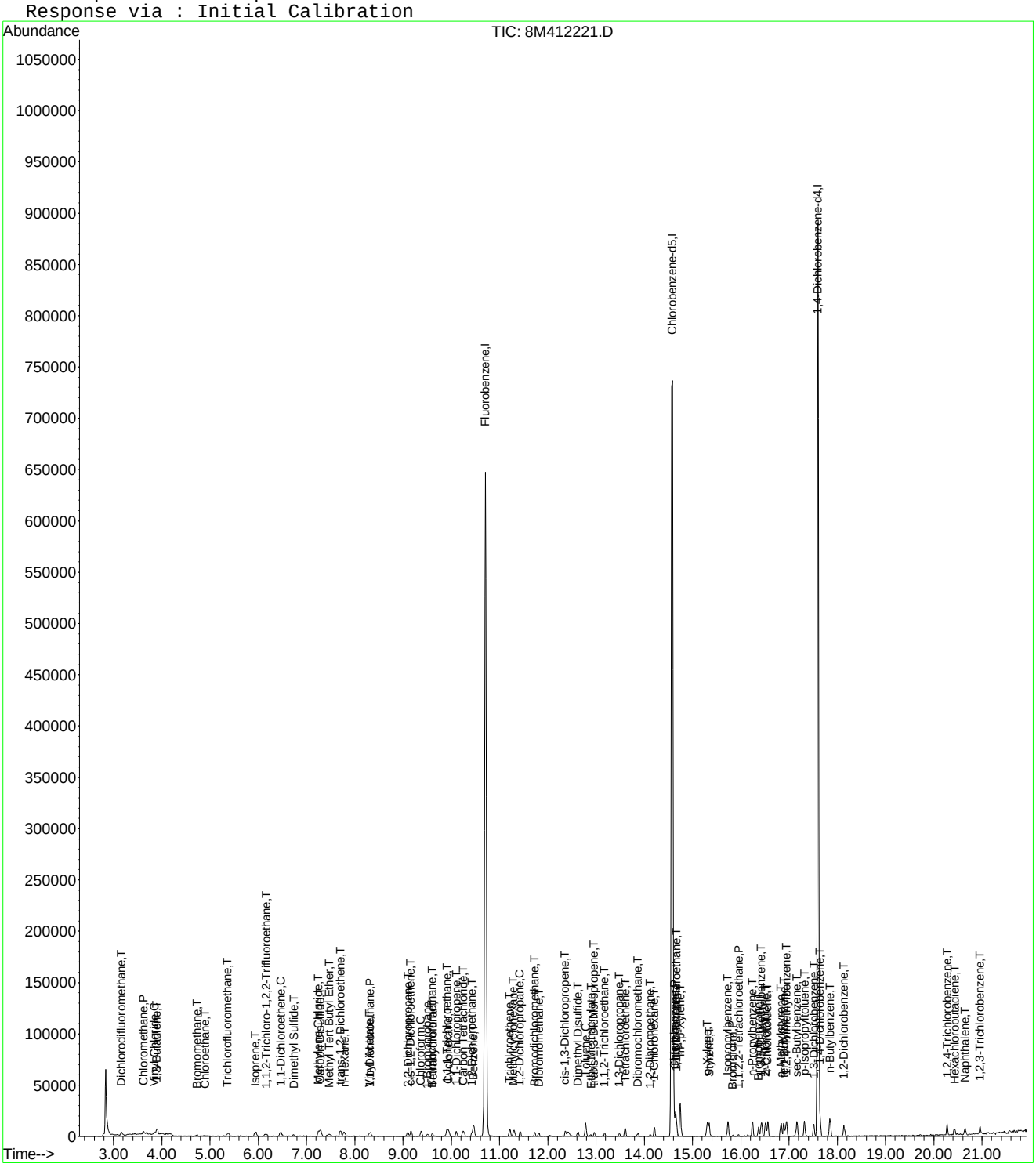

8M412221.D 8260WT.M Fri May 13 14:20:40 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	0.4000	0.4078	-2.0	100	0.00
3	P	Chloromethane	-1.0000	0.5012	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.3775	5.6	100	0.00
5	T	1,3-Butadiene	-1.0000	0.3178	0.0	100	0.02
6	T	Bromomethane	-1.0000	1.0253	0.0	100	0.00
7	T	Chloroethane	0.4000	0.4335	-8.4	100	0.00
8	T	Trichlorofluoromethane	0.4000	0.4029	-0.7	100	-0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.90#
10	T	Isoprene	0.4000	0.4079	-2.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.13#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3894	0.0	100	0.02
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	0.4000	0.4192	-4.8	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.58#
16	T	Dimethyl Sulfide	0.4000	0.3687	7.8	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.2179	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4591	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4587	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.43#
22	T	Methyl Tert Butyl Ether	-1.0000	0.3688	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.4193	-4.8	100	0.00
24	T	n-Hexane	-1.0000	0.3519	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.3241	0.0	100	0.02
27	P	1,1-Dichloroethane	0.4000	0.3826	4.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.98#
31	T	2,2-Dichloropropane	0.4000	0.3874	3.1	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.4172	-4.3	100	-0.01
33	C	Chloroform	0.4000	0.4164	-4.1	100	0.00
34		1-Bromopropane	-1.0000	0.1776	0.0	100	-0.01
35	T	Bromochloromethane	0.4000	0.3550	11.3	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.5125	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	0.4000	0.3803	4.9	100	0.00
39	T	Cyclohexane	-1.0000	0.4058	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4093	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	0.4000	0.3867	3.3	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	0.4000	0.3955	1.1	100	0.00
46	T	Benzene	0.4000	0.4393	-9.8	100	0.00
47	T	Trichloroethene	0.4000	0.4169	-4.2	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3768	0.0	100	-0.01
49	C	1,2-Dichloropropane	0.4000	0.4177	-4.4	100	0.00
50	T	Bromodichloromethane	0.4000	0.3676	8.1	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	0.4000	0.4162	-4.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1401	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.05#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3821	4.5	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2746	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0000	0.0	0	-12.68#
59	C	Toluene	0.4000	0.4259	-6.5	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3102	0.0	100	0.02
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3184	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.4259	-6.5	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	0.4000	0.3253	18.7	100	0.00
66	T	Tetrachloroethene	0.4000	0.4267	-6.7	100	0.00
67	T	Dibromochloromethane	0.4000	0.3904	2.4	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.3814	4.6	100	0.00
69	T	1-Chlorohexane	0.4000	0.4017	-0.4	100	0.00
70	P	Chlorobenzene	0.4000	0.3933	1.7	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3872	3.2	100	0.00
72	C	Ethylbenzene	0.4000	0.4188	-4.7	100	0.00
73	T	m-,p-Xylene	0.8000	0.8859	-10.7	100	0.00
74	T	o-Xylene	-1.0000	0.4110	0.0	100	0.00
75	T	Styrene	0.4000	0.3901	2.5	100	0.00
76	P	Bromoform	-1.0000	0.2533	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.4249	-6.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.3398	15.1	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0283	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.14#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	0.4000	0.4245	-6.1	100	0.00
84	T	Bromobenzene	0.4000	0.3529	11.8	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.4141	-3.5	100	0.00
86	T	2-Chlorotoluene	0.4000	0.4284	-7.1	100	0.00
87	T	4-Chlorotoluene	0.4000	0.4359	-9.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.3631	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3459	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	0.4000	0.4046	-1.2	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.4494	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4092	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.3844	3.9	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.3915	2.1	100	0.00
95	T	n-Butylbenzene	-1.0000	0.4628	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.3805	4.9	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	0.4000	0.4182	-4.5	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.4302	-7.5	100	0.00
100	T	Naphthalene	0.4000	0.4178	-4.5	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.4310	-7.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412221.D 8260WT.M Sat May 14 18:03:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	795577	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	547129	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	284579	25.00 ug/L	0.01
System Monitoring Compounds					
37) Dibromofluoromethane	9.65	111	3962	0.3966 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery	= 1.60%#	
43) 1,2-Dichloroethane-d4	10.31	65	3835	0.3356 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery	= 1.36%#	
58) Toluene-d8	12.68	98	14023	0.4957 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 2.00%#	
80) p-Bromofluorobenzene	16.08	95	6483	0.5565 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery	= 2.24%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	12402	0.7438 ug/L	97
3) Chloromethane	3.62	50	8415	0.5357 ug/L #	75
4) Vinyl Chloride	3.84	62	9412	0.8873 ug/L	89
5) 1,3-Butadiene	3.90	54	6974	0.6729 ug/L	81
6) Bromomethane	4.73	94	4114	1.3123 ug/L	92
7) Chloroethane	4.90	64	4983	0.7178 ug/L #	80
8) Trichlorofluoromethane	5.38	101	17133	0.8136 ug/L #	96
9) Diethyl ether	5.90	59	20707	3.2140 ug/L	84
10) Isoprene	5.94	67	11176	1.0373 ug/L	76
11) Acrolein	6.14	56	246	0.4300 ug/L #	15
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	8135	0.8438 ug/L	96
13) Acetone	6.24	43	413	0.2115 ug/L #	48
14) 1,1-Dichloroethene	6.46	61	12947	0.6919 ug/L	91
15) Tert-Butyl Alcohol	6.59	59	3316	7.3747 ug/L #	55
16) Dimethyl Sulfide	6.72	62	4505	0.6515 ug/L	79
18) Methyl acetate	7.00	43	2119	0.3630 ug/L #	66
19) Methylene Chloride	7.24	84	8723	0.9837 ug/L #	43
20) Carbon Disulfide	7.29	76	28246	1.0441 ug/L	100
21) Acrylonitrile	7.43	53	2164	0.8620 ug/L	76
22) Methyl Tert Butyl Ether	7.47	73	16998	0.8678 ug/L	84
23) trans-1,2-Dichloroethene	7.70	61	12571	0.7427 ug/L	100
24) n-Hexane	7.78	57	9382	0.6109 ug/L	82
25) Diisopropyl ether	8.12	45	95400	2.1939 ug/L #	91
26) Vinyl Acetate	8.30	43	6750	0.3867 ug/L #	89
27) 1,1-Dichloroethane	8.32	63	14721	0.7271 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	97972	3.2102 ug/L	88
29) 2-Butanone	8.88	43	380	0.1215 ug/L #	57
30) Propionitrile	8.99	54	1593	2.0138 ug/L #	56
31) 2,2-Dichloropropane	9.09	77	14691	0.8236 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	9482	0.9362 ug/L	72
33) Chloroform	9.37	83	18494	0.9845 ug/L	94
34) 1-Bromopropane	9.50	122	1092	0.6844 ug/L	80
35) Bromochloromethane	9.61	130	5234	0.9877 ug/L #	55
36) Tetrahydrofuran	9.63	42	5415	2.6185 ug/L #	68
38) 1,1,1-Trichloroethane	9.91	97	17074	0.9016 ug/L	92
39) Cyclohexane	9.94	56	11865	0.5740 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	13172	0.9663 ug/L	87
41) Tert-Amyl-Methyl ether	10.21	73	90255	4.6173 ug/L #	88
42) Carbon Tetrachloride	10.25	117	14515	0.8146 ug/L	95
45) 1,2-Dichloroethane	10.42	62	10675	0.6766 ug/L	85

(#) = qualifier out of range (m) = manual integration
8M412222.D 8260WT.M Fri May 13 14:49:47 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	10.47	78	34504	0.9938 ug/L		84
47)	Trichloroethene	11.21	130	8752	0.8735 ug/L		93
48)	Methylcyclohexane	11.30	83	13513	0.9646 ug/L		79
49)	1,2-Dichloropropane	11.43	63	7057	0.6982 ug/L	#	67
50)	Bromodichloromethane	11.73	83	12147	0.8638 ug/L		96
52)	Dibromomethane	11.81	93	4130	0.8681 ug/L		95
53)	2-Chloroethyl Vinyl Ether	12.03	63	2694	0.6366 ug/L		86
54)	4-Methyl-2-Pentanone	12.06	58	848	0.3671 ug/L	#	41
55)	cis-1,3-Dichloropropene	12.36	75	12521	0.8847 ug/L		97
56)	Dimethyl Disulfide	12.63	79	5799	0.7821 ug/L		96
59)	Toluene	12.79	91	37114	1.1328 ug/L		95
60)	Ethyl Methacrylate	12.88	69	5490	0.8930 ug/L		69
62)	trans-1,3-Dichloropropene	12.96	75	10328	0.9035 ug/L		92
63)	1,1,2-Trichloroethane	13.18	97	5274	1.0144 ug/L		93
64)	2-Hexanone	13.10	58	397	0.2127 ug/L	#	1
65)	1,3-Dichloropropane	13.49	76	9673	1.0032 ug/L		73
66)	Tetrachloroethene	13.61	164	7373	0.9937 ug/L		95
67)	Dibromochloromethane	13.87	129	7358	0.8977 ug/L		95
68)	1,2-Dibromoethane	14.13	107	5123	0.9454 ug/L		95
69)	1-Chlorohexane	14.21	91	12790	1.1461 ug/L		79
70)	Chlorobenzene	14.62	112	25662	1.1281 ug/L		89
71)	1,1,1,2-Tetrachloroethane	14.66	131	8722	0.9838 ug/L		94
72)	Ethylbenzene	14.65	106	13009	1.0078 ug/L		87
73)	m-,p-Xylene	14.75	106	30465	2.0486 ug/L		84
74)	o-Xylene	15.31	106	15133	1.0101 ug/L		84
75)	Styrene	15.35	104	23191	0.9707 ug/L		91
76)	Bromoform	15.84	173	3875	0.8240 ug/L		96
77)	Isopropylbenzene	15.74	105	41382	1.0895 ug/L		95
79)	1,1,2,2-Tetrachloroethane	15.95	83	5604	0.9873 ug/L	#	93
81)	1,2,3-Trichloropropane	16.15	110	1355	0.7428 ug/L	#	1
82)	trans-1,4-Dichloro-2-Buten	16.19	53	962	0.3479 ug/L	#	1
83)	n-Propylbenzene	16.25	91	48249	1.1002 ug/L		99
84)	Bromobenzene	16.37	156	9598	1.0497 ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	33355	1.0278 ug/L		96
86)	2-Chlorotoluene	16.51	91	33408	1.1895 ug/L		94
87)	4-Chlorotoluene	16.56	91	29548	1.0213 ug/L		95
88)	a-Methylstyrene	16.84	118	14414	0.9014 ug/L		91
89)	tert-Butylbenzene	16.89	134	6686	1.0398 ug/L		86
90)	1,2,4-Trimethylbenzene	16.95	105	36066	1.0857 ug/L		96
91)	sec-Butylbenzene	17.16	105	42128	1.0796 ug/L		96
92)	p-Isopropyltoluene	17.32	119	35424	1.0633 ug/L		94
93)	1,3-Dichlorobenzene	17.52	146	18409	1.0144 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	19031	1.0506 ug/L	#	62
95)	n-Butylbenzene	17.85	91	35772	1.1288 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	16104	1.0126 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.14	75	1262	1.0152 ug/L	#	53
98)	1,2,4-Trichlorobenzene	20.28	180	11494	0.9331 ug/L		98
99)	Hexachlorobutadiene	20.43	225	5421	0.9510 ug/L		98
100)	Naphthalene	20.65	128	16581	0.8853 ug/L		100
101)	1,2,3-Trichlorobenzene	20.96	180	10306	0.9835 ug/L		94

(#) = qualifier out of range (m) = manual integration
8M412222.D 8260WT.M Fri May 13 14:49:48 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

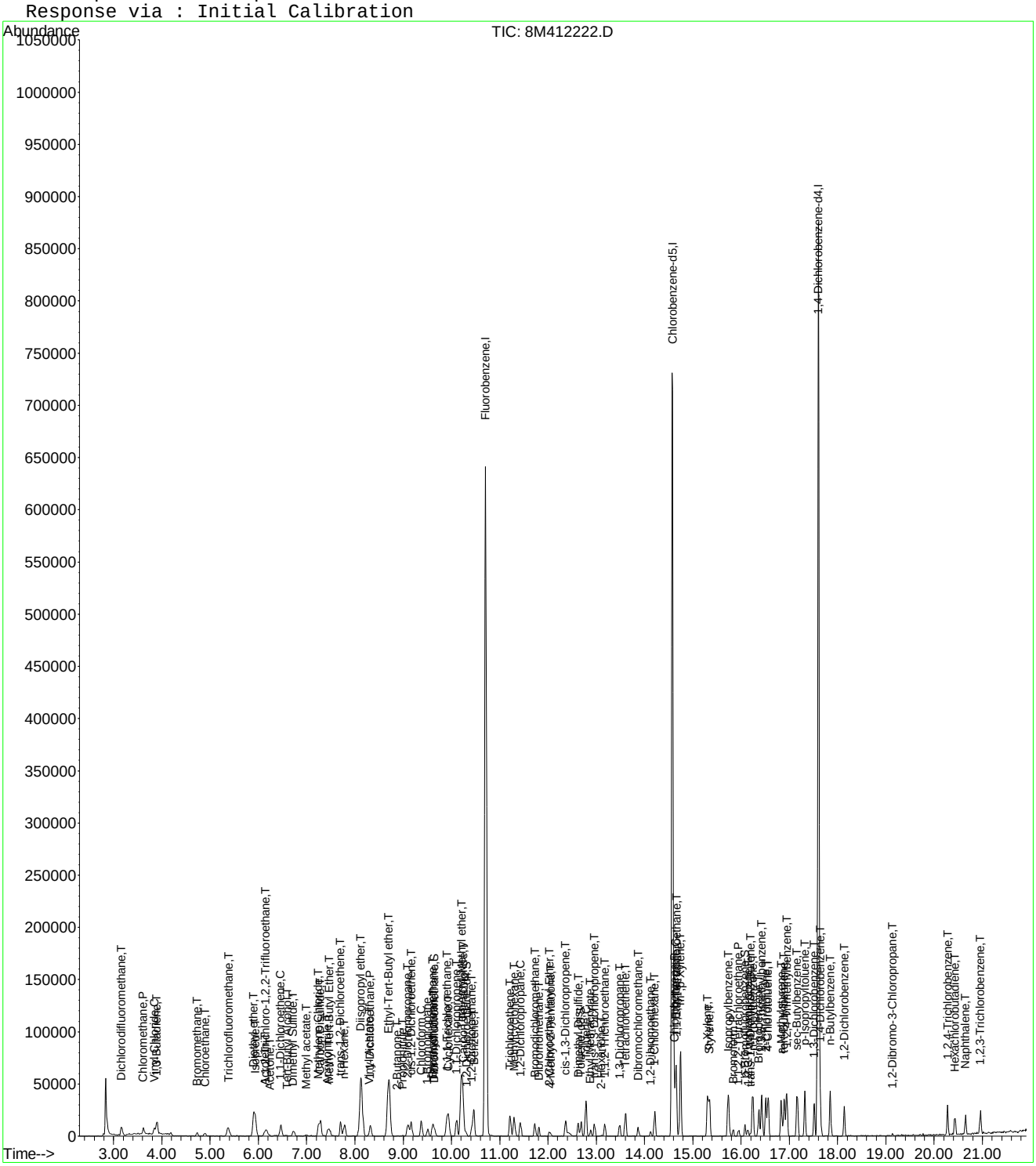

8M412222.D 8260WT.M Fri May 13 14:49:48 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:05:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9298	7.0	100	0.00
3	P	Chloromethane	1.0000	1.0808	-8.1	100	0.00
4	C	Vinyl Chloride	1.0000	1.0189	-1.9	100	0.00
5	T	1,3-Butadiene	-1.0000	0.9002	0.0	100	0.02
6	T	Bromomethane	1.0000	1.2082	-20.8	100	0.00
7	T	Chloroethane	1.0000	0.9803	2.0	100	0.00
8	T	Trichlorofluoromethane	1.0000	0.9968	0.3	100	0.00
9	T	Diethyl ether	5.0000	5.0462	-0.9	100	0.00
10	T	Isoprene	1.0000	1.0707	-7.1	100	0.00
11	T	Acrolein	-1.0000	0.6696	0.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0069	-0.7	100	0.00
13	T	Acetone	-1.0000	0.4614	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	1.0064	-0.6	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	11.5604	0.0	0	0.02
16	T	Dimethyl Sulfide	1.0000	0.9794	2.1	100	-0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.8758	0.0	100	0.00
19	T	Methylene Chloride	1.0000	1.0655	-6.5	100	0.00
20	T	Carbon Disulfide	1.0000	1.0492	-4.9	100	0.00
21	T	Acrylonitrile	2.5000	1.8633	25.5#	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9593	4.1	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	1.0636	-6.4	100	0.00
24	T	n-Hexane	-1.0000	1.0690	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	5.1784	-3.6	100	0.00
26	T	Vinyl Acetate	-1.0000	0.8002	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0029	-0.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.9635	0.7	100	0.00
29	T	2-Butanone	-1.0000	0.2889	0.0	100	0.00
30	T	Propionitrile	5.0000	4.1566	16.9	100	0.00
31	T	2,2-Dichloropropane	1.0000	0.9498	5.0	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	1.0383	-3.8	100	0.00
33	C	Chloroform	1.0000	1.0671	-6.7	100	0.00
34		1-Bromopropane	1.0000	0.8348	16.5	100	-0.01
35	T	Bromochloromethane	1.0000	1.1177	-11.8	100	0.00
36	T	Tetrahydrofuran	5.0000	6.2516	-25.0#	100	0.00
37	S	Dibromofluoromethane	0.5000	0.4635	7.3	100	-0.01
38	T	1,1,1-Trichloroethane	1.0000	1.0372	-3.7	100	0.00
39	T	Cyclohexane	1.0000	1.0411	-4.1	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0498	-5.0	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	5.0344	-0.7	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.9930	0.7	100	0.00
43	S	1,2-Dichloroethane-d4	0.5000	0.4184	16.3	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	1.0000	0.9570	4.3	100	0.00
46	T	Benzene	1.0000	1.0558	-5.6	100	0.00
47	T	Trichloroethene	1.0000	1.0041	-0.4	100	0.00
48	T	Methylcyclohexane	-1.0000	1.0205	0.0	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.9700	3.0	100	0.00
50	T	Bromodichloromethane	1.0000	0.9500	5.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	1.0000	0.9590	4.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.8616	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.6639	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:05:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9621	3.8	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.8348	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	0.5000	0.4897	2.1	100	0.00
59	C	Toluene	1.0000	1.0927	-9.3	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.8416	15.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	1.0000	0.9073	9.3	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.9840	1.6	100	0.00
64	T	2-Hexanone	-1.0000	0.3525	0.0	100	-0.01
65	T	1,3-Dichloropropane	1.0000	1.0137	-1.4	100	0.00
66	T	Tetrachloroethene	1.0000	1.0132	-1.3	100	0.00
67	T	Dibromochloromethane	1.0000	0.9402	6.0	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.9590	4.1	100	0.00
69	T	1-Chlorohexane	1.0000	1.1031	-10.3	100	0.00
70	P	Chlorobenzene	1.0000	1.1204	-12.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.9829	1.7	100	0.00
72	C	Ethylbenzene	1.0000	1.0381	-3.8	100	0.00
73	T	m-,p-Xylene	2.0000	2.0726	-3.6	100	0.00
74	T	o-Xylene	1.0000	1.0530	-5.3	100	0.00
75	T	Styrene	1.0000	0.9839	1.6	100	0.00
76	P	Bromoform	1.0000	0.8348	16.5	100	0.00
77	T	Isopropylbenzene	1.0000	1.0840	-8.4	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	0.9810	1.9	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5502	0.0	100	0.00
81	T	1,2,3-Trichloropropane	1.0000	0.7703	23.0	100	0.02
82	T	trans-1,4-Dichloro-2-Butene	1.0000	1.1443	-14.4	100	0.00
83	T	n-Propylbenzene	1.0000	1.0868	-8.7	100	0.00
84	T	Bromobenzene	1.0000	1.0510	-5.1	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	1.0314	-3.1	100	0.00
86	T	2-Chlorotoluene	1.0000	1.0778	-7.8	100	0.00
87	T	4-Chlorotoluene	1.0000	1.0553	-5.5	100	0.00
88	T	a-Methylstyrene	-1.0000	0.9394	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	1.0567	-5.7	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	1.0845	-8.5	100	0.00
91	T	sec-Butylbenzene	1.0000	1.1073	-10.7	100	0.00
92	T	p-Isopropyltoluene	1.0000	1.0966	-9.7	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0469	-4.7	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	1.0735	-7.3	100	0.00
95	T	n-Butylbenzene	1.0000	1.1201	-12.0	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0297	-3.0	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.1006	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	1.0000	0.9832	1.7	100	0.00
99	T	Hexachlorobutadiene	1.0000	0.9925	0.7	100	0.00
100	T	Naphthalene	1.0000	0.9547	4.5	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	1.0450	-4.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	782460	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.57	117	543252	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	286450	25.00	ug/L	0.01

System Monitoring Compounds						
37) Dibromofluoromethane	9.66	111	8161	0.8307	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.32%#		
43) 1,2-Dichloroethane-d4	10.30	65	9681	0.8613	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.44%#		
58) Toluene-d8	12.68	98	28135	1.0016	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.00%#		
80) p-Bromofluorobenzene	16.08	95	12079	1.0302	ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.12%#		

Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.16	85	24870	1.5166	ug/L	98
3) Chloromethane	3.62	50	16106	1.0425	ug/L	93
4) Vinyl Chloride	3.85	62	18562	1.7792	ug/L	94
5) 1,3-Butadiene	3.90	54	13617	1.3360	ug/L	92
6) Bromomethane	4.73	94	8329	1.8804	ug/L	94
7) Chloroethane	4.90	64	9562	1.4006	ug/L	86
8) Trichlorofluoromethane	5.39	101	34970	1.6885	ug/L	97
9) Diethyl ether	5.90	59	107986	17.0420	ug/L	79
10) Isoprene	5.93	67	20936	1.9757	ug/L	73
11) Acrolein	6.14	56	4864	8.6444	ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	16832	1.7751	ug/L	99
13) Acetone	6.23	43	1519	0.7908	ug/L #	48
14) 1,1-Dichloroethene	6.47	61	25394	1.3798	ug/L	89
15) Tert-Butyl Alcohol	6.58	59	14891	33.6725	ug/L	85
16) Dimethyl Sulfide	6.73	62	9489	1.3953	ug/L	79
17) Iodomethane	6.98	142	1211	1.3472	ug/L #	60
18) Methyl acetate	7.01	43	5064	0.8821	ug/L #	79
19) Methylene Chloride	7.25	84	16579	1.9010	ug/L	52
20) Carbon Disulfide	7.29	76	57693	2.1683	ug/L	98
21) Acrylonitrile	7.43	53	13848	5.6089	ug/L	93
22) Methyl Tert Butyl Ether	7.47	73	33991	1.7644	ug/L	84
23) trans-1,2-Dichloroethene	7.70	61	22786	1.3688	ug/L	88
24) n-Hexane	7.79	57	18282	1.2105	ug/L	84
25) Diisopropyl ether	8.12	45	475271	11.1128	ug/L #	92
26) Vinyl Acetate	8.29	43	15998	0.9318	ug/L	93
27) 1,1-Dichloroethane	8.32	63	30419	1.5277	ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	505010	16.8250	ug/L	89
29) 2-Butanone	8.90	43	2250	0.7313	ug/L #	57
30) Propionitrile	8.99	54	9373	12.0479	ug/L	86
31) 2,2-Dichloropropane	9.10	77	32521	1.8538	ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	18238	1.8309	ug/L	91
33) Chloroform	9.37	83	33543	1.8156	ug/L	99
34) 1-Bromopropane	9.52	122	2513	1.6014	ug/L	88
35) Bromochloromethane	9.60	130	9189	1.7632	ug/L	67
36) Tetrahydrofuran	9.63	42	22074	10.8529	ug/L #	66
38) 1,1,1-Trichloroethane	9.90	97	32268	1.7324	ug/L	96
39) Cyclohexane	9.93	56	23097	1.1362	ug/L #	65
40) 1,1-Dichloropropene	10.10	75	24988	1.8639	ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	459535	23.9029	ug/L	87
42) Carbon Tetrachloride	10.24	117	28935	1.6512	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412223.D 8260WT.M Fri May 13 15:18:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.42	62	22142	1.4270 ug/L #	83
46)	Benzene	10.46	78	67028	1.9629 ug/L	83
47)	Trichloroethene	11.21	130	17287	1.7543 ug/L	96
48)	Methylcyclohexane	11.30	83	26050	1.8907 ug/L	84
49)	1,2-Dichloropropane	11.42	63	14582	1.4670 ug/L	77
50)	Bromodichloromethane	11.73	83	25794	1.8651 ug/L	93
51)	1,4-Dioxane	11.73	88	1282	32.3515 ug/L	74
52)	Dibromomethane	11.81	93	8575	1.8325 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.02	63	6234	1.4979 ug/L	100
54)	4-Methyl-2-Pentanone	12.06	58	2139	0.9416 ug/L	84
55)	cis-1,3-Dichloropropene	12.37	75	24153	1.7353 ug/L	98
56)	Dimethyl Disulfide	12.62	79	12288	1.6851 ug/L	99
59)	Toluene	12.79	91	72944	2.2423 ug/L	95
60)	Ethyl Methacrylate	12.88	69	12716	2.0832 ug/L	71
62)	trans-1,3-Dichloropropene	12.96	75	22163	1.9527 ug/L	100
63)	1,1,2-Trichloroethane	13.18	97	10537	2.0412 ug/L	99
64)	2-Hexanone	13.13	58	2200	1.1873 ug/L #	65
65)	1,3-Dichloropropane	13.49	76	20212	2.1112 ug/L	72
66)	Tetrachloroethene	13.60	164	14595	1.9811 ug/L	90
67)	Dibromochloromethane	13.87	129	14698	1.8061 ug/L	98
68)	1,2-Dibromoethane	14.12	107	10152	1.8869 ug/L	95
69)	1-Chlorohexane	14.21	91	21960	1.9818 ug/L	89
70)	Chlorobenzene	14.62	112	47376	2.0974 ug/L	81
71)	1,1,1,2-Tetrachloroethane	14.66	131	17526	1.9910 ug/L	97
72)	Ethylbenzene	14.66	106	25628	1.9996 ug/L	92
73)	m-,p-Xylene	14.74	106	60087	4.0693 ug/L	84
74)	o-Xylene	15.31	106	28289	1.9017 ug/L	79
75)	Styrene	15.35	104	47644	2.0086 ug/L	92
76)	Bromoform	15.84	173	9145	1.9585 ug/L	95
77)	Isopropylbenzene	15.73	105	81301	2.1557 ug/L	97
79)	1,1,2,2-Tetrachloroethane	15.95	83	11538	2.0194 ug/L	95
81)	1,2,3-Trichloropropane	16.13	110	3630	1.9770 ug/L	94
82)	trans-1,4-Dichloro-2-Buten	16.19	53	2699	0.9698 ug/L #	36
83)	n-Propylbenzene	16.24	91	97233	2.2026 ug/L	96
84)	Bromobenzene	16.37	156	19174	2.0834 ug/L	92
85)	1,3,5-Trimethylbenzene	16.42	105	67395	2.0631 ug/L	97
86)	2-Chlorotoluene	16.51	91	67110	2.3739 ug/L	94
87)	4-Chlorotoluene	16.56	91	59154	2.0313 ug/L	92
88)	a-Methylstyrene	16.84	118	29415	1.8275 ug/L	86
89)	tert-Butylbenzene	16.89	134	12716	1.9647 ug/L	67
90)	1,2,4-Trimethylbenzene	16.95	105	71669	2.1435 ug/L	94
91)	sec-Butylbenzene	17.17	105	81038	2.0632 ug/L	98
92)	p-Isopropyltoluene	17.32	119	70170	2.0924 ug/L	92
93)	1,3-Dichlorobenzene	17.52	146	37289	2.0413 ug/L	93
94)	1,4-Dichlorobenzene	17.64	146	36528	2.0034 ug/L #	73
95)	n-Butylbenzene	17.85	91	67823	2.1262 ug/L	96
96)	1,2-Dichlorobenzene	18.14	146	32322	2.0190 ug/L	92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	1955	1.5624 ug/L	94
98)	1,2,4-Trichlorobenzene	20.28	180	23558	1.9000 ug/L	98
99)	Hexachlorobutadiene	20.43	225	11066	1.9286 ug/L	99
100)	Naphthalene	20.65	128	36066	1.9130 ug/L	99
101)	1,2,3-Trichlorobenzene	20.96	180	19765	1.8738 ug/L	95

(#) = qualifier out of range (m) = manual integration
8M412223.D 8260WT.M Fri May 13 15:18:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

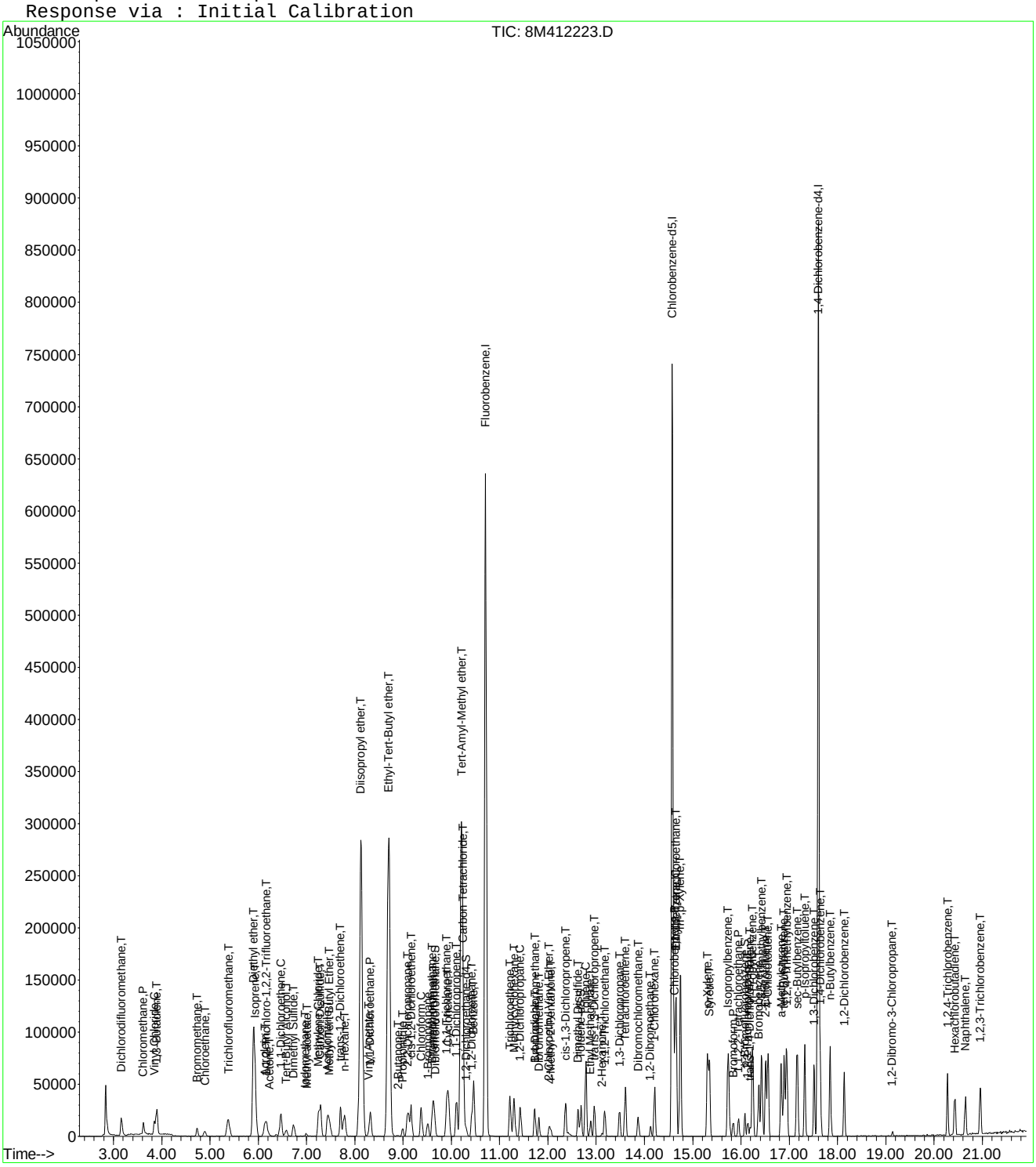

8M412223.D 8260WT.M Fri May 13 15:18:37 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.8958	5.2	100	0.00
3	P	Chloromethane	2.0000	2.1033	-5.2	100	0.00
4	C	Vinyl Chloride	2.0000	2.0431	-2.2	100	0.00
5	T	1,3-Butadiene	2.0000	1.7872	10.6	100	0.02
6	T	Bromomethane	2.0000	2.0126	-0.6	100	0.00
7	T	Chloroethane	2.0000	1.9127	4.4	100	0.00
8	T	Trichlorofluoromethane	2.0000	2.0686	-3.4	100	0.00
9	T	Diethyl ether	25.0000	26.7567	-7.0	100	0.00
10	T	Isoprene	2.0000	2.0394	-2.0	100	0.00
11	T	Acrolein	12.5000	13.4606	-7.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	2.1182	-5.9	100	0.02
13	T	Acetone	-1.0000	1.7255	0.0	100	-0.01
14	C	1,1-Dichloroethene	2.0000	2.0070	-0.4	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	52.7840	-5.6	100	0.00
16	T	Dimethyl Sulfide	2.0000	2.0975	-4.9	100	0.00
17	T	Iodomethane	2.0000	3.0680	-53.4#	100	0.00
18	T	Methyl acetate	-1.0000	2.1281	0.0	100	0.00
19	T	Methylene Chloride	2.0000	2.0590	-3.0	100	0.00
20	T	Carbon Disulfide	2.0000	2.1789	-8.9	100	0.00
21	T	Acrylonitrile	12.5000	12.1237	3.0	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.9505	2.5	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.9603	2.0	100	0.00
24	T	n-Hexane	-1.0000	2.1181	0.0	100	0.00
25	T	Diisopropyl ether	25.0000	26.2305	-4.9	100	0.00
26	T	Vinyl Acetate	2.0000	1.9284	3.6	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.1072	-5.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	26.0139	-4.1	100	0.00
29	T	2-Butanone	-1.0000	1.7396	0.0	100	0.02
30	T	Propionitrile	25.0000	24.8668	0.5	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1378	-6.9	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0306	-1.5	100	0.00
33	C	Chloroform	2.0000	1.9679	1.6	100	0.00
34		1-Bromopropane	2.0000	1.9533	2.3	100	0.00
35	T	Bromochloromethane	2.0000	1.9951	0.2	100	0.00
36	T	Tetrahydrofuran	25.0000	25.9117	-3.6	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9708	2.9	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.9930	0.3	100	0.00
39	T	Cyclohexane	2.0000	2.0605	-3.0	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0248	-1.2	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	26.0627	-4.3	100	0.00
42	T	Carbon Tetrachloride	2.0000	2.0126	-0.6	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0740	-7.4	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	2.0000	2.0183	-0.9	100	0.00
46	T	Benzene	2.0000	2.0854	-4.3	100	0.00
47	T	Trichloroethene	2.0000	2.0166	-0.8	100	0.00
48	T	Methylcyclohexane	-1.0000	2.0003	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0380	-1.9	100	0.00
50	T	Bromodichloromethane	2.0000	2.0511	-2.6	100	0.00
51	T	1,4-Dioxane	-1.0000	35.6688	0.0	100	0.02
52	T	Dibromomethane	2.0000	2.0246	-1.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	2.0271	-1.4	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.7027	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.8869	5.7	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.7986	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	0.9896	1.0	100	0.00
59	C	Toluene	2.0000	2.1628	-8.1	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.9633	1.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	2.0000	1.9609	2.0	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.9800	1.0	100	0.00
64	T	2-Hexanone	-1.0000	1.9672	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.1332	-6.7	100	0.00
66	T	Tetrachloroethene	2.0000	2.0198	-1.0	100	0.00
67	T	Dibromochloromethane	2.0000	1.8915	5.4	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.9141	4.3	100	0.00
69	T	1-Chlorohexane	2.0000	1.9075	4.6	100	0.00
70	P	Chlorobenzene	2.0000	2.0831	-4.2	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.9892	0.5	100	0.00
72	C	Ethylbenzene	2.0000	2.0596	-3.0	100	0.00
73	T	m-,p-Xylene	4.0000	4.1170	-2.9	100	0.00
74	T	o-Xylene	2.0000	1.9825	0.9	100	0.00
75	T	Styrene	2.0000	2.0358	-1.8	100	0.00
76	P	Bromoform	2.0000	1.9841	0.8	100	0.00
77	T	Isopropylbenzene	2.0000	2.1448	-7.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	2.0066	-0.3	100	0.00
80	S	p-Bromofluorobenzene	1.0000	1.0184	-1.8	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	2.0501	-2.5	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	2.0915	-4.6	100	0.00
83	T	n-Propylbenzene	2.0000	2.1757	-8.8	100	0.00
84	T	Bromobenzene	2.0000	2.0859	-4.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.0703	-3.5	100	0.00
86	T	2-Chlorotoluene	2.0000	2.1509	-7.5	100	0.00
87	T	4-Chlorotoluene	2.0000	2.0989	-4.9	100	0.00
88	T	a-Methylstyrene	-1.0000	1.9045	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	1.9967	0.2	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.1411	-7.1	100	0.00
91	T	sec-Butylbenzene	2.0000	2.1161	-5.8	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.1579	-7.9	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.1067	-5.3	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.0470	-2.4	100	0.00
95	T	n-Butylbenzene	2.0000	2.1098	-5.5	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0532	-2.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.6938	15.3	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	2.0021	-0.1	100	0.00
99	T	Hexachlorobutadiene	2.0000	2.0128	-0.6	100	0.00
100	T	Naphthalene	2.0000	2.0630	-3.2	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9910	0.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412223.D 8260WT.M Sat May 14 18:08:14 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	768397	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.58	117	534372	25.00	ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	274234	25.00	ug/L	0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	19775	2.0496	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	8.20%#		
43) 1,2-Dichloroethane-d4	10.30	65	21200	1.9207	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	7.68%#		
58) Toluene-d8	12.68	98	65647	2.3758	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	9.52%#		
80) p-Bromofluorobenzene	16.08	95	26759	2.3838	ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	9.52%#		

Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.16	85	55961	3.4750	ug/L	99
3) Chloromethane	3.62	50	34194	2.2538	ug/L	100
4) Vinyl Chloride	3.84	62	42506	4.1488	ug/L	99
5) 1,3-Butadiene	3.89	54	32006	3.1976	ug/L	93
6) Bromomethane	4.72	94	19582	3.4204	ug/L	94
7) Chloroethane	4.90	64	22000	3.2814	ug/L	84
8) Trichlorofluoromethane	5.37	101	77715	3.8212	ug/L	96
9) Diethyl ether	5.90	59	188516	30.2955	ug/L	79
10) Isoprene	5.94	67	44975	4.3218	ug/L	78
11) Acrolein	6.15	56	7712	13.9568	ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	36867	3.9591	ug/L	99
13) Acetone	6.24	43	3578	1.8967	ug/L	85
14) 1,1-Dichloroethene	6.47	61	59405	3.2870	ug/L	95
15) Tert-Butyl Alcohol	6.58	59	27833	64.0897	ug/L #	82
16) Dimethyl Sulfide	6.73	62	21102	3.1597	ug/L	77
17) Iodomethane	6.99	142	3667	1.8964	ug/L	95
18) Methyl acetate	7.00	43	11500	2.0398	ug/L #	86
19) Methylene Chloride	7.24	84	37533	4.3823	ug/L	52
20) Carbon Disulfide	7.29	76	123060	4.7097	ug/L	100
21) Acrylonitrile	7.43	53	25653	10.5804	ug/L	99
22) Methyl Tert Butyl Ether	7.47	73	80005	4.2289	ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	54124	3.3108	ug/L	94
24) n-Hexane	7.78	57	40758	2.7480	ug/L	82
25) Diisopropyl ether	8.12	45	841400	20.0337	ug/L #	91
26) Vinyl Acetate	8.30	43	37284	2.2113	ug/L #	90
27) 1,1-Dichloroethane	8.32	63	66711	3.4116	ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	907423	30.7852	ug/L	89
29) 2-Butanone	8.89	43	5359	1.7738	ug/L #	82
30) Propionitrile	8.99	54	17933	23.4726	ug/L	100
31) 2,2-Dichloropropane	9.10	77	73150	4.2462	ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	41036	4.1950	ug/L	89
33) Chloroform	9.37	83	78227	4.3116	ug/L	99
34) 1-Bromopropane	9.52	122	6162	3.9986	ug/L	99
35) Bromochloromethane	9.60	130	20988	4.1009	ug/L #	62
36) Tetrahydrofuran	9.62	42	38098	19.0742	ug/L #	62
38) 1,1,1-Trichloroethane	9.91	97	76152	4.1633	ug/L	97
39) Cyclohexane	9.94	56	51439	2.5767	ug/L #	66
40) 1,1-Dichloropropene	10.11	75	56645	4.3027	ug/L	93
41) Tert-Amyl-Methyl ether	10.21	73	821180	43.4958	ug/L	87
42) Carbon Tetrachloride	10.25	117	67831	3.9416	ug/L	96

(#) = qualifier out of range (m) = manual integration
8M412224.D 8260WT.M Fri May 13 15:47:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	51708	3.3934 ug/L		85
46)	Benzene	10.46	78	150204	4.4792 ug/L		86
47)	Trichloroethene	11.21	130	38500	3.9784 ug/L		94
48)	Methylcyclohexane	11.30	83	60897	4.5008 ug/L		81
49)	1,2-Dichloropropane	11.43	63	31773	3.2549 ug/L		77
50)	Bromodichloromethane	11.73	83	59127	4.3535 ug/L		94
51)	1,4-Dioxane	11.71	88	2719	69.8702 ug/L	#	62
52)	Dibromomethane	11.81	93	19711	4.2894 ug/L		96
53)	2-Chloroethyl Vinyl Ether	12.03	63	12946	3.1676 ug/L		98
54)	4-Methyl-2-Pentanone	12.05	58	5129	2.2991 ug/L	#	78
55)	cis-1,3-Dichloropropene	12.36	75	61169	4.4752 ug/L		94
56)	Dimethyl Disulfide	12.62	79	27966	3.9053 ug/L		98
59)	Toluene	12.78	91	161007	5.0316 ug/L		97
60)	Ethyl Methacrylate	12.88	69	28595	4.7624 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	49791	4.4599 ug/L		97
63)	1,1,2-Trichloroethane	13.18	97	23678	4.6631 ug/L		99
64)	2-Hexanone	13.11	58	4499	2.4685 ug/L	#	97
65)	1,3-Dichloropropane	13.49	76	44838	4.7614 ug/L		73
66)	Tetrachloroethene	13.60	164	32715	4.5144 ug/L		97
67)	Dibromochloromethane	13.87	129	35009	4.3734 ug/L		98
68)	1,2-Dibromoethane	14.13	107	24247	4.5815 ug/L		99
69)	1-Chlorohexane	14.21	91	53599	4.9176 ug/L		84
70)	Chlorobenzene	14.62	112	107618	4.8437 ug/L		95
71)	1,1,1,2-Tetrachloroethane	14.65	131	38120	4.4025 ug/L		96
72)	Ethylbenzene	14.65	106	56905	4.5138 ug/L		91
73)	m-,p-Xylene	14.75	106	137390	9.4592 ug/L		86
74)	o-Xylene	15.31	106	65650	4.4866 ug/L		85
75)	Styrene	15.35	104	111433	4.7758 ug/L		91
76)	Bromoform	15.84	173	19346	4.2121 ug/L		97
77)	Isopropylbenzene	15.73	105	182523	4.9200 ug/L		96
79)	1,1,2,2-Tetrachloroethane	15.95	83	26655	4.8730 ug/L		99
81)	1,2,3-Trichloropropane	16.13	110	8840	5.0289 ug/L		81
82)	trans-1,4-Dichloro-2-Buten	16.19	53	6584	2.4712 ug/L	#	51
83)	n-Propylbenzene	16.24	91	222196	5.2576 ug/L		96
84)	Bromobenzene	16.37	156	42665	4.8423 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	155714	4.9790 ug/L		93
86)	2-Chlorotoluene	16.52	91	148764	5.4968 ug/L		94
87)	4-Chlorotoluene	16.56	91	135679	4.8666 ug/L		94
88)	a-Methylstyrene	16.84	118	68945	4.4743 ug/L		91
89)	tert-Butylbenzene	16.89	134	29069	4.6914 ug/L		77
90)	1,2,4-Trimethylbenzene	16.95	105	161016	5.0301 ug/L		94
91)	sec-Butylbenzene	17.17	105	191273	5.0866 ug/L		94
92)	p-Isopropyltoluene	17.32	119	159232	4.9597 ug/L		93
93)	1,3-Dichlorobenzene	17.52	146	83896	4.7972 ug/L		95
94)	1,4-Dichlorobenzene	17.64	146	82462	4.7242 ug/L		86
95)	n-Butylbenzene	17.85	91	158787	5.1996 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	72524	4.7321 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	5629	4.6990 ug/L		76
98)	1,2,4-Trichlorobenzene	20.28	180	53855	4.5369 ug/L		98
99)	Hexachlorobutadiene	20.43	225	24504	4.4608 ug/L		93
100)	Naphthalene	20.65	128	79806	4.4217 ug/L		98
101)	1,2,3-Trichlorobenzene	20.96	180	44150	4.3720 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412224.D 8260WT.M Fri May 13 15:47:44 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

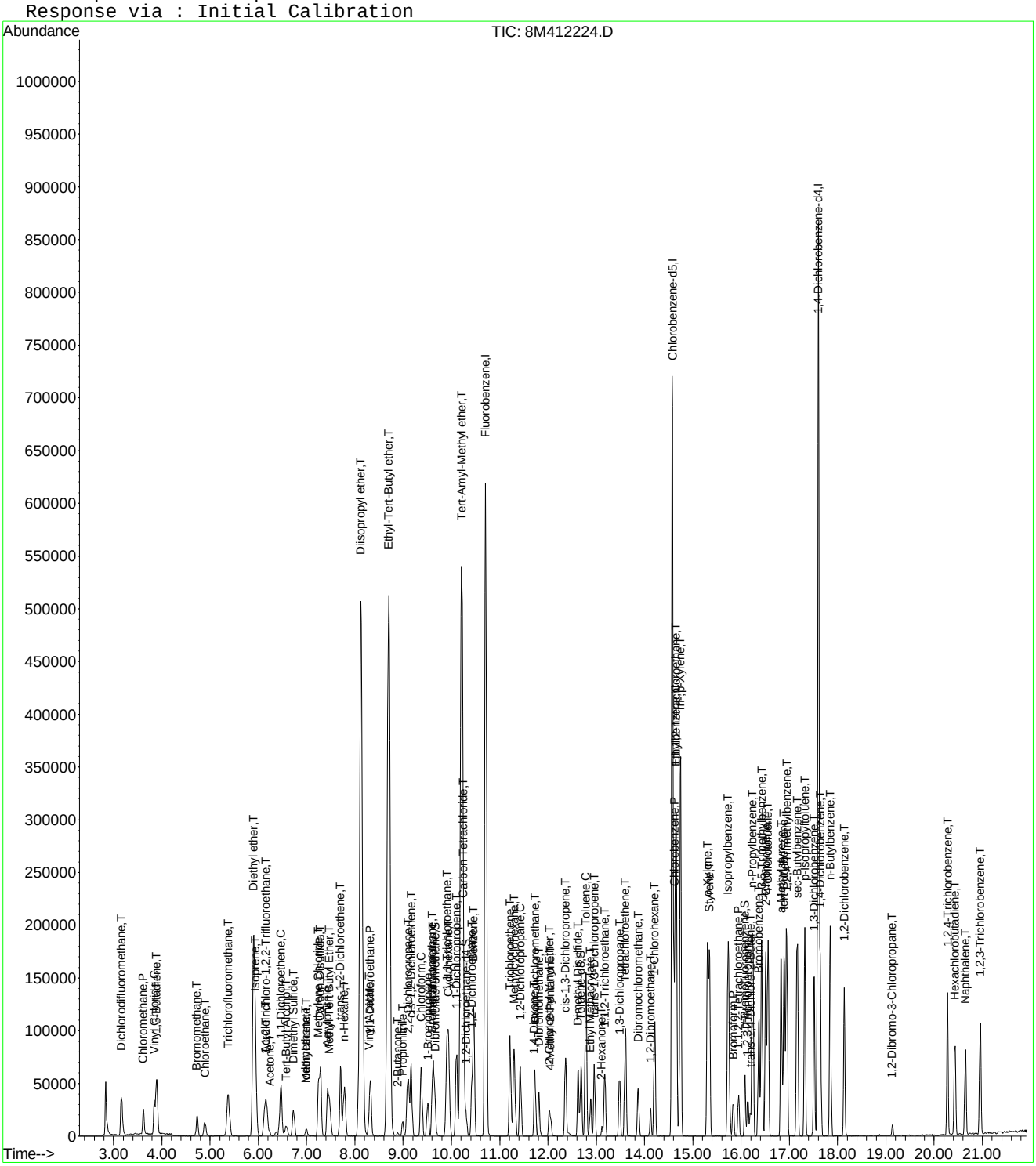

8M412224.D 8260WT.M Fri May 13 15:47:44 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.3438	13.1	100	0.00
3	P	Chloromethane	5.0000	4.5471	9.1	100	0.00
4	C	Vinyl Chloride	5.0000	4.7641	4.7	100	0.00
5	T	1,3-Butadiene	5.0000	4.2777	14.4	100	0.00
6	T	Bromomethane	5.0000	4.1880	16.2	100	-0.01
7	T	Chloroethane	5.0000	4.4813	10.4	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.6812	6.4	100	0.00
9	T	Diethyl ether	50.0000	47.5652	4.9	100	0.00
10	T	Isoprene	5.0000	4.4611	10.8	100	0.00
11	T	Acrolein	25.0000	21.7328	13.1	100	0.02
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.7244	5.5	100	0.00
13	T	Acetone	5.0000	4.1387	17.2	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.7810	4.4	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	100.4650	-0.5	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.7499	5.0	100	0.00
17	T	Iodomethane	5.0000	3.7634	24.7	100	0.00
18	T	Methyl acetate	5.0000	4.9211	1.6	100	0.00
19	T	Methylene Chloride	5.0000	4.7467	5.1	100	0.00
20	T	Carbon Disulfide	5.0000	4.7328	5.3	100	0.00
21	T	Acrylonitrile	25.0000	22.8698	8.5	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.6750	6.5	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.7415	5.2	100	0.00
24	T	n-Hexane	5.0000	4.8084	3.8	100	0.00
25	T	Diisopropyl ether	50.0000	47.2872	5.4	100	0.00
26	T	Vinyl Acetate	5.0000	4.5766	8.5	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.7058	5.9	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	47.5984	4.8	100	0.00
29	T	2-Butanone	5.0000	4.2191	15.6	100	0.00
30	T	Propionitrile	50.0000	48.4475	3.1	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.8965	2.1	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.6525	7.0	100	0.00
33	C	Chloroform	5.0000	4.6735	6.5	100	0.00
34		1-Bromopropane	5.0000	4.8774	2.5	100	0.00
35	T	Bromochloromethane	5.0000	4.6403	7.2	100	0.00
36	T	Tetrahydrofuran	50.0000	45.5400	8.9	100	-0.01
37	S	Dibromofluoromethane	2.5000	2.3953	4.2	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.7896	4.2	100	0.00
39	T	Cyclohexane	5.0000	4.6730	6.5	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.6741	6.5	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	47.6211	4.8	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.8044	3.9	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.3949	4.2	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	5.0000	4.7996	4.0	100	0.00
46	T	Benzene	5.0000	4.7588	4.8	100	0.00
47	T	Trichloroethene	5.0000	4.5733	8.5	100	0.00
48	T	Methylcyclohexane	5.0000	4.7616	4.8	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.5219	9.6	100	0.00
50	T	Bromodichloromethane	5.0000	4.7878	4.2	100	0.00
51	T	1,4-Dioxane	100.0000	77.0346	23.0	100	0.00
52	T	Dibromomethane	5.0000	4.7390	5.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.2867	14.3	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.1576	16.8	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.8662	2.7	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.1683	16.6	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.3473	6.1	100	0.00
59	C	Toluene	5.0000	4.8533	2.9	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.4883	10.2	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	5.0000	4.4786	10.4	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.5231	9.5	100	0.00
64	T	2-Hexanone	5.0000	4.0898	18.2	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.8109	3.8	100	0.00
66	T	Tetrachloroethene	5.0000	4.6028	7.9	100	0.00
67	T	Dibromochloromethane	5.0000	4.5802	8.4	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.6475	7.1	100	0.00
69	T	1-Chlorohexane	5.0000	4.7331	5.3	100	0.00
70	P	Chlorobenzene	5.0000	4.8107	3.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.3984	12.0	100	0.00
72	C	Ethylbenzene	5.0000	4.6492	7.0	100	0.00
73	T	m-,p-Xylene	10.0000	9.5700	4.3	100	0.00
74	T	o-Xylene	5.0000	4.6773	6.5	100	0.00
75	T	Styrene	5.0000	4.8405	3.2	100	0.00
76	P	Bromoform	5.0000	4.2672	14.7	100	0.00
77	T	Isopropylbenzene	5.0000	4.8951	2.1	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	4.8422	3.2	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.3565	5.7	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.2150	-4.3	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.3781	12.4	100	0.00
83	T	n-Propylbenzene	5.0000	5.1935	-3.9	100	0.00
84	T	Bromobenzene	5.0000	4.8483	3.0	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	4.9964	0.1	100	0.00
86	T	2-Chlorotoluene	5.0000	4.9803	0.4	100	0.00
87	T	4-Chlorotoluene	5.0000	5.0286	-0.6	100	0.00
88	T	a-Methylstyrene	5.0000	4.6629	6.7	100	0.00
89	T	tert-Butylbenzene	5.0000	4.7677	4.6	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.0245	-0.5	100	0.00
91	T	sec-Butylbenzene	5.0000	5.2170	-4.3	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.1150	-2.3	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	4.9511	1.0	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	4.8270	3.5	100	0.00
95	T	n-Butylbenzene	5.0000	5.1595	-3.2	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	4.8122	3.8	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	5.0942	-1.9	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.7808	4.4	100	0.00
99	T	Hexachlorobutadiene	5.0000	4.6555	6.9	100	0.00
100	T	Naphthalene	5.0000	4.7684	4.6	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.6455	7.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412224.D 8260WT.M Sat May 14 18:08:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	770027	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	531490	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	283594	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	86295	10.9569 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 43.84%#		
43) 1,2-Dichloroethane-d4	10.30	65	96239	11.3450 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 45.36%#		
58) Toluene-d8	12.68	98	294491	10.9223 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 43.68%#		
80) p-Bromofluorobenzene	16.08	95	121459	10.5490 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 42.20%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	288235	23.7135 ug/L	99
3) Chloromethane	3.62	50	155712	20.3784 ug/L	98
4) Vinyl Chloride	3.84	62	184250	20.9368 ug/L	95
5) 1,3-Butadiene	3.89	54	149348	22.7750 ug/L	96
6) Bromomethane	4.73	94	100098	25.0143 ug/L	99
7) Chloroethane	4.89	64	100876	20.9404 ug/L	91
8) Trichlorofluoromethane	5.37	101	351299	21.2512 ug/L	98
9) Diethyl ether	5.90	59	324317	80.8265 ug/L	78
10) Isoprene	5.94	67	205842	20.3622 ug/L	77
11) Acrolein	6.14	56	12049	34.8201 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	159996	20.3859 ug/L	97
13) Acetone	6.25	43	18459	25.7405 ug/L	98
14) 1,1-Dichloroethene	6.47	61	256241	20.5065 ug/L	92
15) Tert-Butyl Alcohol	6.57	59	43922	153.5712 ug/L	93
16) Dimethyl Sulfide	6.73	62	89456	20.6087 ug/L	83
17) Iodomethane	6.99	142	40622	61.0474 ug/L	93
18) Methyl acetate	7.00	43	46598	20.2171 ug/L #	85
19) Methylene Chloride	7.25	84	161897	20.1338 ug/L	52
20) Carbon Disulfide	7.30	76	538090	20.0802 ug/L	98
21) Acrylonitrile	7.43	53	46305	46.9889 ug/L	100
22) Methyl Tert Butyl Ether	7.47	73	361116	22.0137 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	234754	20.3175 ug/L	90
24) n-Hexane	7.78	57	172498	21.1165 ug/L	84
25) Diisopropyl ether	8.12	45	1447822	80.3755 ug/L #	91
26) Vinyl Acetate	8.30	43	166501	21.7017 ug/L #	88
27) 1,1-Dichloroethane	8.33	63	300321	21.3849 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	1579265	83.0733 ug/L	89
29) 2-Butanone	8.88	43	25681	23.9099 ug/L	87
30) Propionitrile	8.98	54	30953	89.5673 ug/L	94
31) 2,2-Dichloropropane	9.10	77	309575	20.8527 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	181973	20.4488 ug/L	89
33) Chloroform	9.37	83	348925	20.5535 ug/L	96
34) 1-Bromopropane	9.52	122	26723	22.7206 ug/L	96
35) Bromochloromethane	9.61	130	94952	21.3181 ug/L	65
36) Tetrahydrofuran	9.63	42	63066	70.5772 ug/L #	57
38) 1,1,1-Trichloroethane	9.91	97	335486	21.3640 ug/L	99
39) Cyclohexane	9.94	56	221040	19.9984 ug/L #	64
40) 1,1-Dichloropropene	10.11	75	248373	20.4717 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1418183	81.7883 ug/L	88
42) Carbon Tetrachloride	10.25	117	296471	21.3449 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412225.D 8260WT.M Fri May 13 16:16:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	228665	21.6403	ug/L		85
46)	Benzene	10.46	78	668449	20.3769	ug/L		86
47)	Trichloroethene	11.21	130	174107	20.7980	ug/L		96
48)	Methylcyclohexane	11.29	83	262275	21.4887	ug/L		82
49)	1,2-Dichloropropane	11.43	63	146868	21.1883	ug/L	#	72
50)	Bromodichloromethane	11.73	83	262192	21.9986	ug/L		98
51)	1,4-Dioxane	11.71	88	5351	196.3837	ug/L		76
52)	Dibromomethane	11.81	93	86951	21.0734	ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	63586	22.4600	ug/L		91
54)	4-Methyl-2-Pentanone	12.05	58	25754	25.0531	ug/L	#	73
55)	cis-1,3-Dichloropropene	12.36	75	265439	21.9841	ug/L		99
56)	Dimethyl Disulfide	12.63	79	134192	23.9412	ug/L		100
59)	Toluene	12.78	91	700473	20.1722	ug/L		99
60)	Ethyl Methacrylate	12.88	69	133361	23.2046	ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	238585	23.2548	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	107901	21.0216	ug/L		99
64)	2-Hexanone	13.11	58	22561	25.2093	ug/L	#	85
65)	1,3-Dichloropropane	13.49	76	198804	22.2491	ug/L		74
66)	Tetrachloroethene	13.60	164	141791	20.0055	ug/L		94
67)	Dibromochloromethane	13.87	129	158465	22.0695	ug/L		99
68)	1,2-Dibromoethane	14.13	107	110085	22.3366	ug/L		100
69)	1-Chlorohexane	14.21	91	229753	20.3591	ug/L		83
70)	Chlorobenzene	14.62	112	467492	20.4613	ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.65	131	183079	22.2095	ug/L		96
72)	Ethylbenzene	14.65	106	249016	20.2289	ug/L		90
73)	m-,p-Xylene	14.75	106	606381	41.1308	ug/L		88
74)	o-Xylene	15.30	106	294106	21.2106	ug/L		90
75)	Styrene	15.35	104	492781	21.8207	ug/L		89
76)	Bromoform	15.83	173	95911	23.8070	ug/L		99
77)	Isopropylbenzene	15.73	105	806678	20.7280	ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	123253	22.7779	ug/L		95
81)	1,2,3-Trichloropropane	16.14	110	36712	22.1354	ug/L		94
82)	trans-1,4-Dichloro-2-Buten	16.18	53	33702	27.6513	ug/L	#	56
83)	n-Propylbenzene	16.24	91	962196	20.3511	ug/L		97
84)	Bromobenzene	16.37	156	190566	21.2033	ug/L		94
85)	1,3,5-Trimethylbenzene	16.43	105	692633	20.9615	ug/L		94
86)	2-Chlorotoluene	16.51	91	649077	19.9155	ug/L		96
87)	4-Chlorotoluene	16.56	91	595446	20.3225	ug/L		95
88)	a-Methylstyrene	16.83	118	318960	22.3680	ug/L		92
89)	tert-Butylbenzene	16.90	134	129440	20.4705	ug/L		83
90)	1,2,4-Trimethylbenzene	16.95	105	707749	20.4783	ug/L		94
91)	sec-Butylbenzene	17.17	105	818359	20.1802	ug/L		97
92)	p-Isopropyltoluene	17.32	119	677859	19.7492	ug/L		96
93)	1,3-Dichlorobenzene	17.52	146	364065	20.5126	ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	363066	19.9874	ug/L		92
95)	n-Butylbenzene	17.85	91	681055	20.0187	ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	318612	19.9358	ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	23070	21.6419	ug/L		93
98)	1,2,4-Trichlorobenzene	20.28	180	242455	20.8863	ug/L		98
99)	Hexachlorobutadiene	20.43	225	110384	20.2523	ug/L		96
100)	Naphthalene	20.65	128	369849	21.4526	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	198876	19.8356	ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration

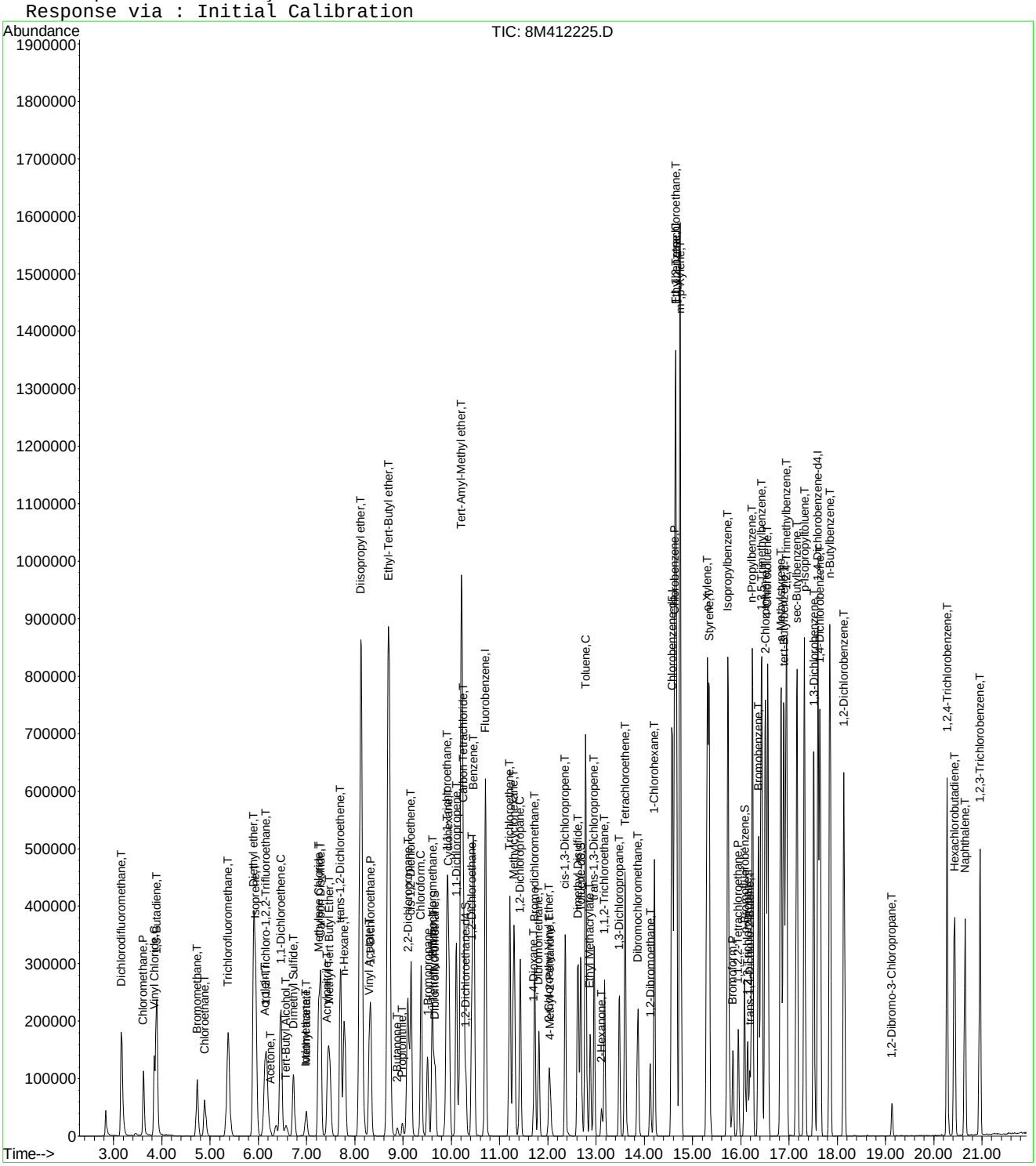

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45:30 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	778260	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	539116	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	288225	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	211053	26.5139 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.04%		
43) 1,2-Dichloroethane-d4	10.31	65	229348	26.7504 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.00%		
58) Toluene-d8	12.68	98	718491	26.2709 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.08%		
80) p-Bromofluorobenzene	16.07	95	292755	25.0180 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.08%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	682745	55.5761 ug/L	100
3) Chloromethane	3.62	50	372858	48.2806 ug/L	98
4) Vinyl Chloride	3.85	62	453905	51.0328 ug/L	96
5) 1,3-Butadiene	3.88	54	390501	58.9199 ug/L	99
6) Bromomethane	4.74	94	260493	64.4080 ug/L	97
7) Chloroethane	4.89	64	244336	50.1840 ug/L	91
8) Trichlorofluoromethane	5.38	101	837676	50.1376 ug/L	99
9) Diethyl ether	5.90	59	389327	96.0019 ug/L	79
10) Isoprene	5.94	67	498060	48.7477 ug/L	76
11) Acrolein	6.13	56	17644	50.4496 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	387643	48.8691 ug/L	97
13) Acetone	6.25	43	45901	63.3305 ug/L	97
14) 1,1-Dichloroethene	6.46	61	619744	49.0724 ug/L	94
15) Tert-Butyl Alcohol	6.58	59	53656	185.6211 ug/L	91
16) Dimethyl Sulfide	6.73	62	221107	50.3993 ug/L	82
17) Iodomethane	6.98	142	157872	234.7428 ug/L	94
18) Methyl acetate	7.00	43	114759	49.2629 ug/L #	81
19) Methylene Chloride	7.25	84	389653	47.9453 ug/L	52
20) Carbon Disulfide	7.29	76	1269941	46.8897 ug/L	99
21) Acrylonitrile	7.43	53	59882	60.1236 ug/L	97
22) Methyl Tert Butyl Ether	7.46	73	901668	54.3843 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	571507	48.9396 ug/L	93
24) n-Hexane	7.79	57	419656	50.8290 ug/L	83
25) Diisopropyl ether	8.13	45	1781012	97.8265 ug/L #	90
26) Vinyl Acetate	8.29	43	428708	55.2866 ug/L #	89
27) 1,1-Dichloroethane	8.32	63	722574	50.9078 ug/L	96
28) Ethyl-Tert-Butyl ether	8.71	59	1955100	101.7552 ug/L	89
29) 2-Butanone	8.88	43	66579	61.3316 ug/L #	82
30) Propionitrile	8.98	54	38235	109.4684 ug/L	95
31) 2,2-Dichloropropane	9.10	77	768496	51.2175 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	439590	48.8754 ug/L	91
33) Chloroform	9.38	83	844564	49.2230 ug/L	97
34) 1-Bromopropane	9.51	122	63442	53.3693 ug/L	99
35) Bromochloromethane	9.60	130	230119	51.1185 ug/L	66
36) Tetrahydrofuran	9.64	42	79437	87.9575 ug/L #	62
38) 1,1,1-Trichloroethane	9.90	97	817606	51.5150 ug/L	99
39) Cyclohexane	9.93	56	535882	47.9707 ug/L #	65
40) 1,1-Dichloropropene	10.10	75	615439	50.1899 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1769381	100.9628 ug/L	88
42) Carbon Tetrachloride	10.24	117	724058	51.5782 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412226.D 8260WT.M Fri May 13 16:45:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45:30 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	561107	52.5401 ug/L		85
46)	Benzene	10.46	78	1607407	48.4816 ug/L		86
47)	Trichloroethene	11.22	130	424998	50.2312 ug/L		96
48)	Methylcyclohexane	11.30	83	635339	51.5040 ug/L		83
49)	1,2-Dichloropropane	11.42	63	351908	50.2320 ug/L	#	71
50)	Bromodichloromethane	11.72	83	654943	54.3701 ug/L		97
51)	1,4-Dioxane	11.71	88	7573	274.9918 ug/L		73
52)	Dibromomethane	11.82	93	209167	50.1574 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	162319	56.7281 ug/L		93
54)	4-Methyl-2-Pentanone	12.05	58	64928	62.4928 ug/L		80
55)	cis-1,3-Dichloropropene	12.36	75	666861	54.6463 ug/L		98
56)	Dimethyl Disulfide	12.62	79	343446	60.6260 ug/L		96
59)	Toluene	12.79	91	1676069	47.5846 ug/L		100
60)	Ethyl Methacrylate	12.88	69	338996	58.1503 ug/L		69
62)	trans-1,3-Dichloropropene	12.96	75	594749	57.1499 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	268432	51.5570 ug/L		98
64)	2-Hexanone	13.12	58	56859	62.6347 ug/L	#	83
65)	1,3-Dichloropropane	13.48	76	489226	53.9770 ug/L		75
66)	Tetrachloroethene	13.60	164	350332	48.7296 ug/L		95
67)	Dibromochloromethane	13.86	129	401149	55.0780 ug/L		100
68)	1,2-Dibromoethane	14.12	107	273580	54.7252 ug/L		99
69)	1-Chlorohexane	14.21	91	560883	48.9984 ug/L		82
70)	Chlorobenzene	14.63	112	1117812	48.2326 ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	446892	53.4462 ug/L		99
72)	Ethylbenzene	14.66	106	603074	48.2980 ug/L		91
73)	m-,p-Xylene	14.74	106	1443780	96.5463 ug/L		90
74)	o-Xylene	15.31	106	709244	50.4265 ug/L		90
75)	Styrene	15.34	104	1212099	52.9133 ug/L		91
76)	Bromoform	15.84	173	238354	58.3272 ug/L		100
77)	Isopropylbenzene	15.73	105	1919993	48.6372 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	294266	53.5083 ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	89279	52.9656 ug/L		93
82)	trans-1,4-Dichloro-2-Buten	16.19	53	86829	70.0956 ug/L	#	53
83)	n-Propylbenzene	16.24	91	2278994	47.4277 ug/L		98
84)	Bromobenzene	16.37	156	459959	50.3549 ug/L		93
85)	1,3,5-Trimethylbenzene	16.43	105	1661486	49.4745 ug/L		95
86)	2-Chlorotoluene	16.51	91	1611031	48.6367 ug/L		97
87)	4-Chlorotoluene	16.56	91	1341051	45.0344 ug/L		95
88)	a-Methylstyrene	16.83	118	772611	53.3111 ug/L		90
89)	tert-Butylbenzene	16.89	134	307503	47.8493 ug/L		81
90)	1,2,4-Trimethylbenzene	16.94	105	1679809	47.8234 ug/L		95
91)	sec-Butylbenzene	17.16	105	1925411	46.7166 ug/L		97
92)	p-Isopropyltoluene	17.32	119	1621383	46.4795 ug/L		95
93)	1,3-Dichlorobenzene	17.51	146	882656	48.9327 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	871210	47.1909 ug/L		92
95)	n-Butylbenzene	17.85	91	1608832	46.5296 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	768548	47.3159 ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	59586	54.9992 ug/L		86
98)	1,2,4-Trichlorobenzene	20.28	180	583880	49.4902 ug/L		100
99)	Hexachlorobutadiene	20.44	225	264699	47.7844 ug/L		98
100)	Naphthalene	20.65	128	894629	51.0579 ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	475246	46.6387 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412226.D 8260WT.M Fri May 13 16:45:33 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration

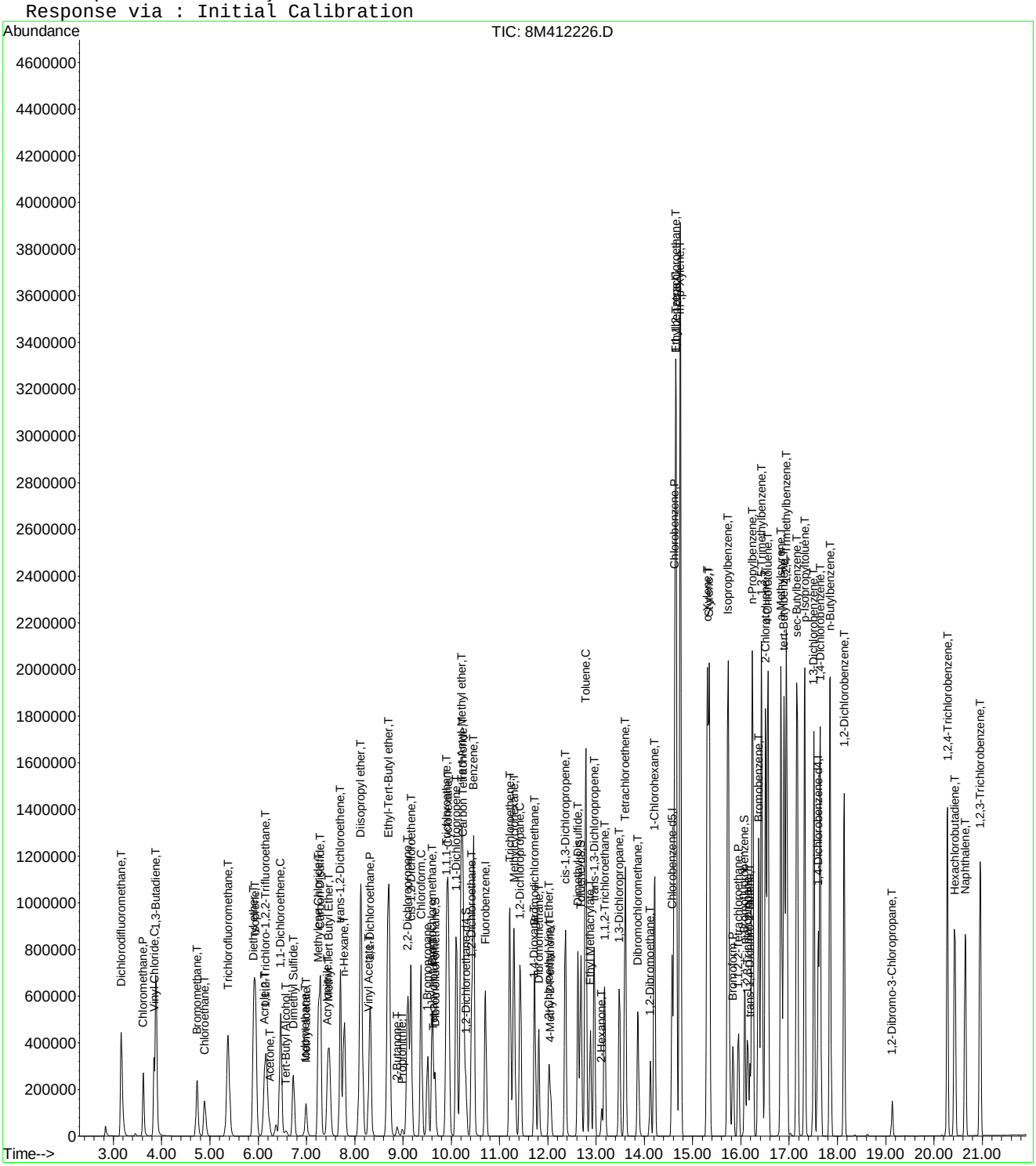

8M412226.D 8260WT.M Fri May 13 16:45:33 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	809533	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	559075	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	296193	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	460283	53.9056 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 215.64%#		
43) 1,2-Dichloroethane-d4	10.30	65	488116	52.5821 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 210.32%#		
58) Toluene-d8	12.68	98	1540572	52.8075 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 211.24%#		
80) p-Bromofluorobenzene	16.08	95	623735	51.1573 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 204.64%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	1463283	109.1068 ug/L	100
3) Chloromethane	3.62	50	778702	97.2380 ug/L	98
4) Vinyl Chloride	3.84	62	968312	103.4979 ug/L	95
5) 1,3-Butadiene	3.88	54	896569	120.4972 ug/L	95
6) Bromomethane	4.73	94	605228	129.8677 ug/L	99
7) Chloroethane	4.89	64	528153	103.4126 ug/L	90
8) Trichlorofluoromethane	5.37	101	1782726	101.4754 ug/L	99
9) Diethyl ether	5.90	59	828091	197.4770 ug/L	79
10) Isoprene	5.94	67	1080684	101.8037 ug/L	78
11) Acrolein	6.14	56	38655	109.5572 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	833546	101.0906 ug/L	97
13) Acetone	6.24	43	97515	109.1944 ug/L	100
14) 1,1-Dichloroethene	6.46	61	1323999	100.6729 ug/L	93
15) Tert-Butyl Alcohol	6.57	59	114220	387.5328 ug/L	91
16) Dimethyl Sulfide	6.73	62	489571	106.5996 ug/L	82
17) Iodomethane	6.99	142	416890	244.5557 ug/L	97
18) Methyl acetate	7.00	43	252444	104.3161 ug/L #	81
19) Methylene Chloride	7.24	84	827241	98.5346 ug/L	53
20) Carbon Disulfide	7.29	76	2766110	99.3432 ug/L	100
21) Acrylonitrile	7.43	53	126153	113.2272 ug/L	98
22) Methyl Tert Butyl Ether	7.46	73	1894494	105.8643 ug/L	87
23) trans-1,2-Dichloroethene	7.70	61	1203701	99.1822 ug/L	93
24) n-Hexane	7.78	57	926226	105.3097 ug/L	84
25) Diisopropyl ether	8.12	45	3699807	196.0386 ug/L #	90
26) Vinyl Acetate	8.29	43	860820	101.8643 ug/L #	88
27) 1,1-Dichloroethane	8.32	63	1521237	101.5567 ug/L	96
28) Ethyl-Tert-Butyl ether	8.70	59	4005676	198.2271 ug/L	89
29) 2-Butanone	8.88	43	145126	112.6698 ug/L #	81
30) Propionitrile	8.98	54	83038	219.1648 ug/L	97
31) 2,2-Dichloropropane	9.11	77	1610615	102.0557 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	935490	99.9944 ug/L	89
33) Chloroform	9.37	83	1766988	98.8341 ug/L	98
34) 1-Bromopropane	9.51	122	139657	108.5299 ug/L	100
35) Bromochloromethane	9.61	130	488678	102.8480 ug/L	66
36) Tetrahydrofuran	9.63	42	167812	187.5699 ug/L #	61
38) 1,1,1-Trichloroethane	9.91	97	1724504	102.7713 ug/L	100
39) Cyclohexane	9.94	56	1185537	102.8628 ug/L #	66
40) 1,1-Dichloropropene	10.11	75	1293224	100.8377 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	3634806	198.1264 ug/L	88
42) Carbon Tetrachloride	10.25	117	1534696	103.3979 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412227.D 8260WT.M Fri May 13 17:14:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	1177876	103.7352	ug/L		85
46)	Benzene	10.46	78	3298928	95.8405	ug/L		87
47)	Trichloroethene	11.21	130	903490	101.9036	ug/L		97
48)	Methylcyclohexane	11.30	83	1389528	104.6454	ug/L		83
49)	1,2-Dichloropropane	11.43	63	755128	102.5297	ug/L		73
50)	Bromodichloromethane	11.73	83	1351612	104.6036	ug/L		99
51)	1,4-Dioxane	11.72	88	16303	473.9624	ug/L		68
52)	Dibromomethane	11.81	93	445130	101.6543	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.02	63	333977	105.4228	ug/L		92
54)	4-Methyl-2-Pentanone	12.05	58	138980	110.1494	ug/L	#	77
55)	cis-1,3-Dichloropropene	12.36	75	1387475	105.9136	ug/L		100
56)	Dimethyl Disulfide	12.62	79	745504	111.3169	ug/L		97
59)	Toluene	12.78	91	3455614	95.2346	ug/L		99
60)	Ethyl Methacrylate	12.88	69	731009	113.5760	ug/L		70
62)	trans-1,3-Dichloropropene	12.96	75	1236182	107.9445	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	564076	103.0604	ug/L		99
64)	2-Hexanone	13.12	58	126268	114.5366	ug/L	#	79
65)	1,3-Dichloropropane	13.48	76	1021082	105.2672	ug/L		74
66)	Tetrachloroethene	13.60	164	752835	101.4023	ug/L		95
67)	Dibromochloromethane	13.87	129	856499	109.6525	ug/L		100
68)	1,2-Dibromoethane	14.12	107	577701	107.6426	ug/L		98
69)	1-Chlorohexane	14.21	91	1222720	103.0385	ug/L		82
70)	Chlorobenzene	14.62	112	2332247	97.2408	ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	947925	106.1463	ug/L		99
72)	Ethylbenzene	14.66	106	1275519	98.8771	ug/L		97
73)	m-,p-Xylene	14.75	106	3009424	194.2602	ug/L		98
74)	o-Xylene	15.31	106	1490638	100.8068	ug/L		93
75)	Styrene	15.35	104	2503721	102.8373	ug/L		88
76)	Bromoform	15.83	173	517827	114.0520	ug/L		100
77)	Isopropylbenzene	15.73	105	3913141	95.4433	ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	624965	106.8610	ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	192087	107.3268	ug/L		97
82)	trans-1,4-Dichloro-2-Buten	16.18	53	189214	128.4818	ug/L	#	59
83)	n-Propylbenzene	16.24	91	4599057	93.6644	ug/L		100
84)	Bromobenzene	16.37	156	968011	102.1426	ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	3401719	97.9556	ug/L		97
86)	2-Chlorotoluene	16.52	91	3177047	93.8267	ug/L		98
87)	4-Chlorotoluene	16.56	91	2899171	96.0712	ug/L		96
88)	a-Methylstyrene	16.84	118	1639166	103.6811	ug/L		90
89)	tert-Butylbenzene	16.90	134	654025	99.4199	ug/L		85
90)	1,2,4-Trimethylbenzene	16.95	105	3479295	96.7054	ug/L		97
91)	sec-Butylbenzene	17.17	105	3947832	94.2785	ug/L		98
92)	p-Isopropyltoluene	17.32	119	3328450	94.4148	ug/L		97
93)	1,3-Dichlorobenzene	17.52	146	1834740	98.9074	ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	1818309	96.6271	ug/L		92
95)	n-Butylbenzene	17.85	91	3308330	94.4002	ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	1606254	97.0179	ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	125368	107.7020	ug/L		87
98)	1,2,4-Trichlorobenzene	20.28	180	1227926	100.7076	ug/L		99
99)	Hexachlorobutadiene	20.43	225	569213	100.5231	ug/L		97
100)	Naphthalene	20.65	128	1852486	101.2968	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	1021163	98.5794	ug/L		100

(#) = qualifier out of range (m) = manual integration
8M412227.D 8260WT.M Fri May 13 17:14:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration

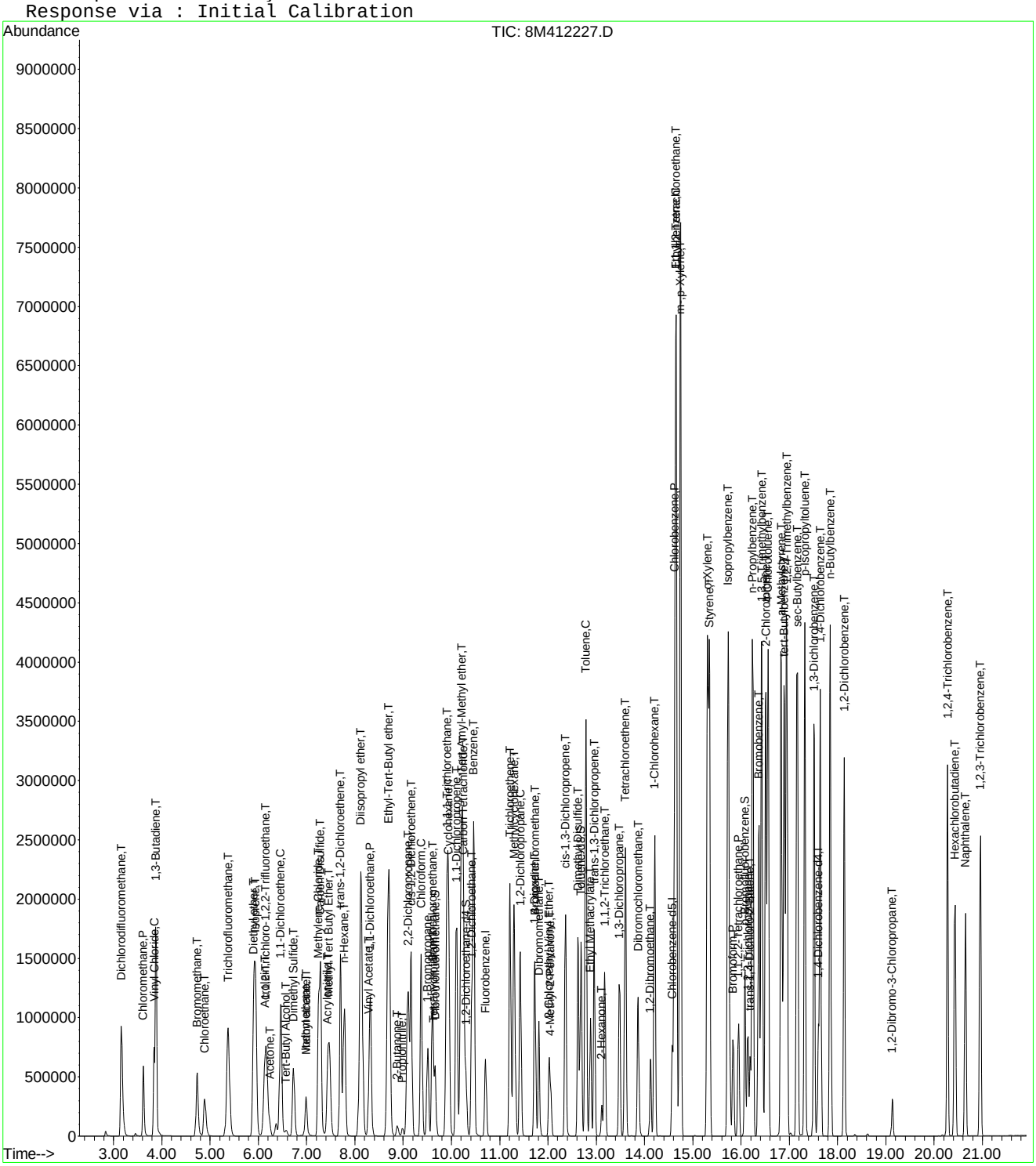

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	828540	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	578848	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	301401	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	898145	101.4517 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 405.80%#		
43) 1,2-Dichloroethane-d4	10.30	65	939848	98.0779 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 392.32%#		
58) Toluene-d8	12.68	98	2984162	97.8805 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 391.52%#		
80) p-Bromofluorobenzene	16.08	95	1242720	99.7023 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 398.80%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	2830517	203.5621 ug/L	98
3) Chloromethane	3.62	50	1586058	194.4056 ug/L	97
4) Vinyl Chloride	3.83	62	1935009	201.0738 ug/L	94
5) 1,3-Butadiene	3.88	54	1684964	212.5477 ug/L	94
6) Bromomethane	4.72	94	1358068	271.2231 ug/L	99
7) Chloroethane	4.89	64	1084803	206.5255 ug/L	90
8) Trichlorofluoromethane	5.37	101	3516760	195.1756 ug/L	99
10) Isoprene	5.94	67	2136665	196.1573 ug/L	78
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1662142	196.5993 ug/L	95
13) Acetone	6.24	43	187748	200.7963 ug/L	97
14) 1,1-Dichloroethene	6.46	61	2649821	196.6732 ug/L	92
15) Tert-Butyl Alcohol	6.58	59	6024	20.0950 ug/L #	87
16) Dimethyl Sulfide	6.73	62	976862	205.8822 ug/L	82
17) Iodomethane	6.99	142	896947	398.7987 ug/L	100
18) Methyl acetate	7.00	43	504293	201.4324 ug/L #	81
19) Methylene Chloride	7.25	84	1684780	196.5546 ug/L	52
20) Carbon Disulfide	7.29	76	5386210	189.2120 ug/L	99
21) Acrylonitrile	7.45	53	30354	26.0447 ug/L #	32
22) Methyl Tert Butyl Ether	7.46	73	3711011	200.6529 ug/L	87
23) trans-1,2-Dichloroethene	7.70	61	2410498	194.2902 ug/L	92
24) n-Hexane	7.78	57	1821777	199.7288 ug/L	84
26) Vinyl Acetate	8.29	43	1796217	206.9060 ug/L #	88
27) 1,1-Dichloroethane	8.32	63	3042055	197.9863 ug/L	95
29) 2-Butanone	8.88	43	271767	199.8193 ug/L #	77
30) Propionitrile	8.90	54	208	0.5280 ug/L #	1
31) 2,2-Dichloropropane	9.11	77	3202633	197.6970 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	1875631	195.8883 ug/L	89
33) Chloroform	9.37	83	3506648	191.9199 ug/L	99
34) 1-Bromopropane	9.51	122	286158	214.2313 ug/L	99
35) Bromochloromethane	9.60	130	980373	200.7807 ug/L	66
36) Tetrahydrofuran	9.62	42	2381	2.6275 ug/L	87
38) 1,1,1-Trichloroethane	9.91	97	3410306	197.7909 ug/L	99
39) Cyclohexane	9.94	56	2357393	198.8974 ug/L #	66
40) 1,1-Dichloropropene	10.10	75	2601175	197.8946 ug/L	96
42) Carbon Tetrachloride	10.25	117	3062767	200.6417 ug/L	99
45) 1,2-Dichloroethane	10.42	62	2313662	198.0324 ug/L	85
46) Benzene	10.46	78	6379817	182.1771 ug/L	89
47) Trichloroethene	11.21	130	1810459	198.9741 ug/L	97
48) Methylcyclohexane	11.30	83	2755373	200.4193 ug/L	83
49) 1,2-Dichloropropane	11.43	63	1528407	202.0331 ug/L	74

(#) = qualifier out of range (m) = manual integration
8M412228.D 8260WT.M Fri May 13 17:43:34 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
50)	Bromodichloromethane	11.73	83	2716764	204.0895 ug/L		99
51)	1,4-Dioxane	11.73	88	3865	104.9352 ug/L	#	18
52)	Dibromomethane	11.81	93	898971	200.1154 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.02	63	631656	192.7236 ug/L		90
54)	4-Methyl-2-Pentanone	12.05	58	262702	198.3957 ug/L	#	75
55)	cis-1,3-Dichloropropene	12.36	75	2784162	205.9153 ug/L		99
56)	Dimethyl Disulfide	12.62	79	1518705	215.4711 ug/L		95
59)	Toluene	12.78	91	6564353	175.9274 ug/L		96
60)	Ethyl Methacrylate	12.88	69	1429837	209.8161 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	2468609	205.4771 ug/L		98
63)	1,1,2-Trichloroethane	13.18	97	1124672	197.6019 ug/L		100
64)	2-Hexanone	13.12	58	237678	200.9290 ug/L	#	81
65)	1,3-Dichloropropane	13.48	76	2023247	199.9545 ug/L		76
66)	Tetrachloroethene	13.60	164	1546618	200.8018 ug/L		97
67)	Dibromochloromethane	13.87	129	1726523	210.5823 ug/L		100
68)	1,2-Dibromoethane	14.12	107	1163160	207.0667 ug/L		99
69)	1-Chlorohexane	14.21	91	2414147	195.6413 ug/L		83
70)	Chlorobenzene	14.62	112	4641169	187.6386 ug/L		94
71)	1,1,1,2-Tetrachloroethane	14.66	131	1929251	206.8372 ug/L		99
72)	Ethylbenzene	14.66	106	2611321	195.8267 ug/L		88
73)	m-,p-Xylene	14.75	106	5876234	367.8657 ug/L		83
74)	o-Xylene	15.31	106	3012318	196.4899 ug/L		98
75)	Styrene	15.35	104	4913204	194.1235 ug/L		86
76)	Bromoform	15.83	173	1052629	218.7989 ug/L		100
77)	Isopropylbenzene	15.73	105	7284624	172.7305 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	1237171	205.8673 ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	386738	209.7906 ug/L	#	54
82)	trans-1,4-Dichloro-2-Buten	16.19	53	382467	243.6526 ug/L		76
83)	n-Propylbenzene	16.24	91	8244387	166.5110 ug/L		93
84)	Bromobenzene	16.37	156	1935166	200.1305 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	6482975	183.9948 ug/L		98
86)	2-Chlorotoluene	16.52	91	6108308	178.8549 ug/L		99
87)	4-Chlorotoluene	16.56	91	5513221	180.5508 ug/L		99
88)	a-Methylstyrene	16.84	118	3255254	200.4995 ug/L		89
89)	tert-Butylbenzene	16.90	134	1351569	202.1005 ug/L		92
90)	1,2,4-Trimethylbenzene	16.95	105	6531416	179.2445 ug/L		97
91)	sec-Butylbenzene	17.17	105	7342730	173.9814 ug/L		97
92)	p-Isopropyltoluene	17.32	119	6352010	178.7315 ug/L		99
93)	1,3-Dichlorobenzene	17.52	146	3640547	193.1654 ug/L		90
94)	1,4-Dichlorobenzene	17.64	146	3593548	188.4603 ug/L		91
95)	n-Butylbenzene	17.85	91	6198060	175.4375 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	3171699	188.9651 ug/L		89
97)	1,2-Dibromo-3-Chloropropan	19.13	75	249646	207.5645 ug/L		88
98)	1,2,4-Trichlorobenzene	20.28	180	2480626	199.7296 ug/L		99
99)	Hexachlorobutadiene	20.43	225	1169411	202.7981 ug/L		98
100)	Naphthalene	20.65	128	3580198	192.0323 ug/L		97
101)	1,2,3-Trichlorobenzene	20.96	180	2040570	193.9298 ug/L		100

(#) = qualifier out of range (m) = manual integration
8M412228.D 8260WT.M Fri May 13 17:43:35 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration

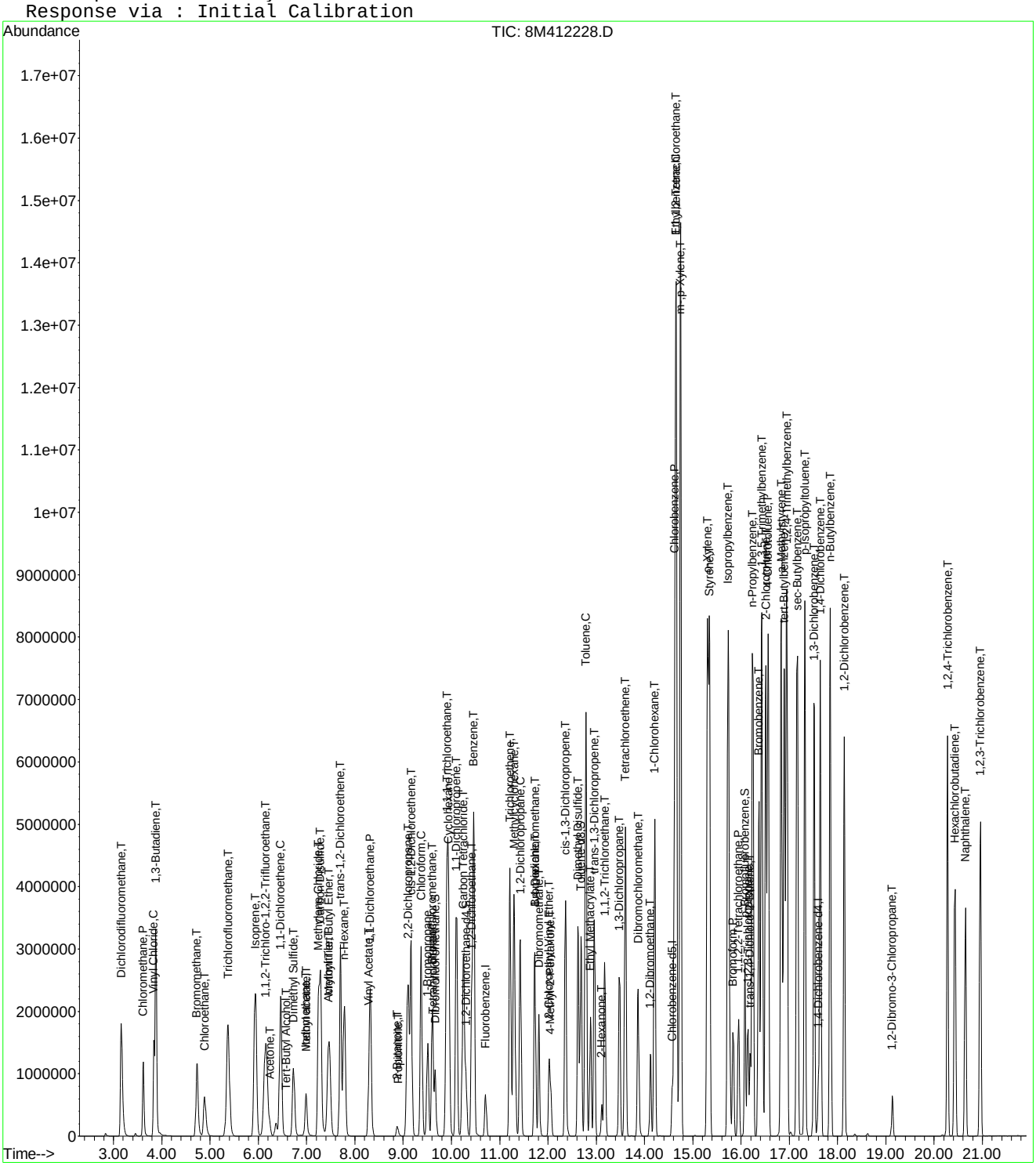

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	855409	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	599314	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	305726	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	1411837	154.4674 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 617.88%#		
43) 1,2-Dichloroethane-d4	10.30	65	1466019	148.1811 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 592.72%#		
58) Toluene-d8	12.69	98	4594713	145.5601 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 582.24%#		
80) p-Bromofluorobenzene	16.08	95	1918996	151.7813 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 607.12%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	4191932	292.0014 ug/L	97
3) Chloromethane	3.62	50	2474035	293.7212 ug/L	97
4) Vinyl Chloride	3.83	62	2956347	297.5552 ug/L	94
5) 1,3-Butadiene	3.87	54	2605506	318.3447 ug/L	94
6) Bromomethane	4.72	94	2177550	421.2239 ug/L	98
7) Chloroethane	4.89	64	1688005	311.2693 ug/L	90
8) Trichlorofluoromethane	5.37	101	5387662	289.6161 ug/L	99
9) Diethyl ether	5.90	59	1306432	295.4610 ug/L	80
10) Isoprene	5.93	67	3377164	300.3032 ug/L	78
11) Acrolein	6.14	56	70572	185.7401 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	2563878	293.7317 ug/L	94
13) Acetone	6.24	43	283185	293.3529 ug/L	90
14) 1,1-Dichloroethene	6.46	61	4031745	289.8421 ug/L	91
15) Tert-Butyl Alcohol	6.58	59	181796	587.3907 ug/L	90
16) Dimethyl Sulfide	6.73	62	1553493	317.1280 ug/L	81
17) Iodomethane	6.99	142	1347307	580.2206 ug/L	98
18) Methyl acetate	7.00	43	800046	309.5287 ug/L #	80
19) Methylene Chloride	7.24	84	2587731	292.4144 ug/L	52
20) Carbon Disulfide	7.29	76	8228181	279.9683 ug/L	98
21) Acrylonitrile	7.43	53	228227	189.6753 ug/L	94
22) Methyl Tert Butyl Ether	7.46	73	5605924	293.5892 ug/L	88
23) trans-1,2-Dichloroethene	7.70	61	3678699	287.1957 ug/L	92
24) n-Hexane	7.78	57	2863434	304.0691 ug/L	86
25) Diisopropyl ether	8.12	45	5819647	292.7898 ug/L #	89
26) Vinyl Acetate	8.30	43	2819503	314.5767 ug/L #	87
27) 1,1-Dichloroethane	8.32	63	4586531	289.1293 ug/L	94
28) Ethyl-Tert-Butyl ether	8.70	59	6190206	290.3321 ug/L	89
29) 2-Butanone	8.88	43	439359	312.8959 ug/L #	76
30) Propionitrile	8.99	54	133197	327.4673 ug/L	95
31) 2,2-Dichloropropane	9.10	77	4821388	288.2735 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	2847005	287.9976 ug/L	89
33) Chloroform	9.37	83	5197860	275.5447 ug/L	100
34) 1-Bromopropane	9.51	122	450012	326.3179 ug/L	100
35) Bromochloromethane	9.61	130	1490221	295.6112 ug/L	66
36) Tetrahydrofuran	9.63	42	271736	290.4491 ug/L #	62
38) 1,1,1-Trichloroethane	9.91	97	5126354	287.9792 ug/L	98
39) Cyclohexane	9.94	56	3733392	305.0987 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	3923871	289.1471 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	5639573	291.3713 ug/L	88
42) Carbon Tetrachloride	10.25	117	4598150	291.7629 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412229.D 8260WT.M Fri May 13 18:12:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	3468738	287.5726	ug/L		86
46)	Benzene	10.46	78	9065861	250.7462	ug/L		93
47)	Trichloroethene	11.21	130	2772282	295.1106	ug/L		97
48)	Methylcyclohexane	11.30	83	4327357	304.8748	ug/L		84
49)	1,2-Dichloropropane	11.43	63	2350729	300.9718	ug/L		74
50)	Bromodichloromethane	11.73	83	4051493	294.7973	ug/L		99
51)	1,4-Dioxane	11.72	88	26614	699.8767	ug/L		67
52)	Dibromomethane	11.81	93	1369945	295.3776	ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.03	63	1006317	297.3917	ug/L		90
54)	4-Methyl-2-Pentanone	12.06	58	424684	310.6522	ug/L	#	76
55)	cis-1,3-Dichloropropene	12.36	75	4156310	297.7431	ug/L		97
56)	Dimethyl Disulfide	12.63	79	2359825	324.2911	ug/L		94
59)	Toluene	12.78	91	9135213	236.4669	ug/L		90
60)	Ethyl Methacrylate	12.88	69	2228037	315.7801	ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	3700845	297.5240	ug/L		96
63)	1,1,2-Trichloroethane	13.18	97	1730199	293.6104	ug/L		100
64)	2-Hexanone	13.11	58	381967	311.8816	ug/L	#	78
65)	1,3-Dichloropropane	13.49	76	3080177	294.0141	ug/L		76
66)	Tetrachloroethene	13.60	164	2374435	297.7522	ug/L		96
67)	Dibromochloromethane	13.87	129	2638145	310.7838	ug/L		100
68)	1,2-Dibromoethane	14.13	107	1778561	305.8085	ug/L		99
69)	1-Chlorohexane	14.21	91	3712592	290.5924	ug/L		84
70)	Chlorobenzene	14.63	112	6754240	263.7433	ug/L		90
71)	1,1,1,2-Tetrachloroethane	14.65	131	2967650	307.3001	ug/L		100
72)	Ethylbenzene	14.65	106	4014412	290.7661	ug/L		70
73)	m-,p-Xylene	14.75	106	8357822	505.3514	ug/L		70
74)	o-Xylene	15.31	106	4530840	285.4488	ug/L		88
75)	Styrene	15.35	104	7050702	269.0641	ug/L		82
76)	Bromoform	15.84	173	1602587	321.7373	ug/L		99
77)	Isopropylbenzene	15.73	105	9900817	226.7477	ug/L		90
79)	1,1,2,2-Tetrachloroethane	15.95	83	1885953	309.3861	ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	581198	310.8176	ug/L		61
82)	trans-1,4-Dichloro-2-Buten	16.18	53	589705	370.3601	ug/L		82
83)	n-Propylbenzene	16.25	91	10768378	214.4110	ug/L		86
84)	Bromobenzene	16.37	156	2947671	300.5290	ug/L		99
85)	1,3,5-Trimethylbenzene	16.43	105	8890651	248.7580	ug/L		92
86)	2-Chlorotoluene	16.51	91	7868844	227.1449	ug/L		92
87)	4-Chlorotoluene	16.57	91	7782731	251.2687	ug/L		93
88)	a-Methylstyrene	16.84	118	4955768	300.9205	ug/L		86
89)	tert-Butylbenzene	16.90	134	2046401	301.6701	ug/L		95
90)	1,2,4-Trimethylbenzene	16.95	105	8903769	240.8932	ug/L		89
91)	sec-Butylbenzene	17.17	105	9867862	230.5051	ug/L		91
92)	p-Isopropyltoluene	17.32	119	8738927	242.4155	ug/L		94
93)	1,3-Dichlorobenzene	17.52	146	5319954	278.2806	ug/L		87
94)	1,4-Dichlorobenzene	17.64	146	5248511	271.3593	ug/L		88
95)	n-Butylbenzene	17.85	91	8408157	234.6279	ug/L		92
96)	1,2-Dichlorobenzene	18.14	146	4717385	277.0787	ug/L		87
97)	1,2-Dibromo-3-Chloropropan	19.13	75	377070	309.0741	ug/L		91
98)	1,2,4-Trichlorobenzene	20.28	180	3677657	291.9206	ug/L		98
99)	Hexachlorobutadiene	20.43	225	1780695	304.4378	ug/L		96
100)	Naphthalene	20.65	128	5216751	275.8542	ug/L		95
101)	1,2,3-Trichlorobenzene	20.96	180	3064908	287.1593	ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration

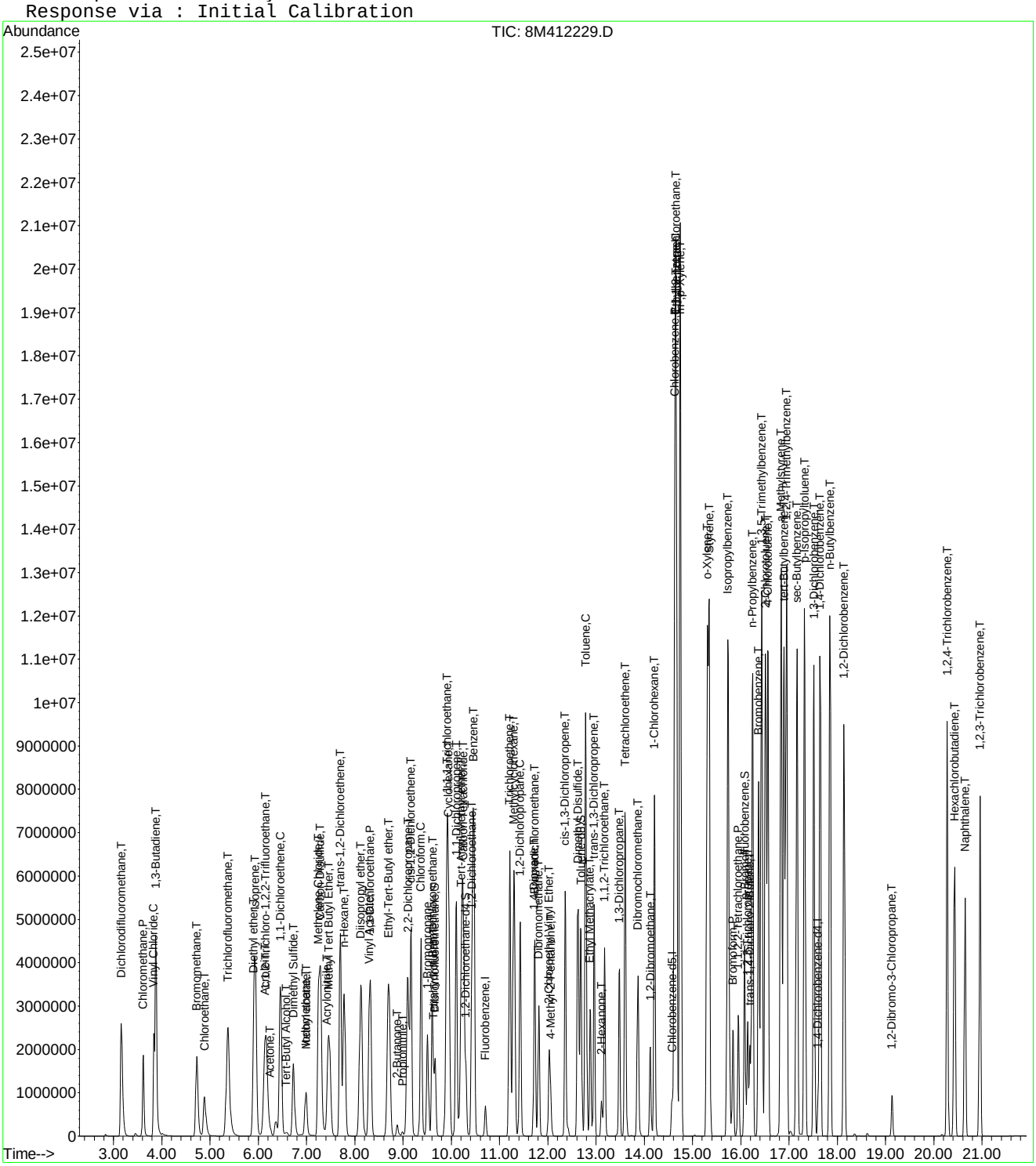

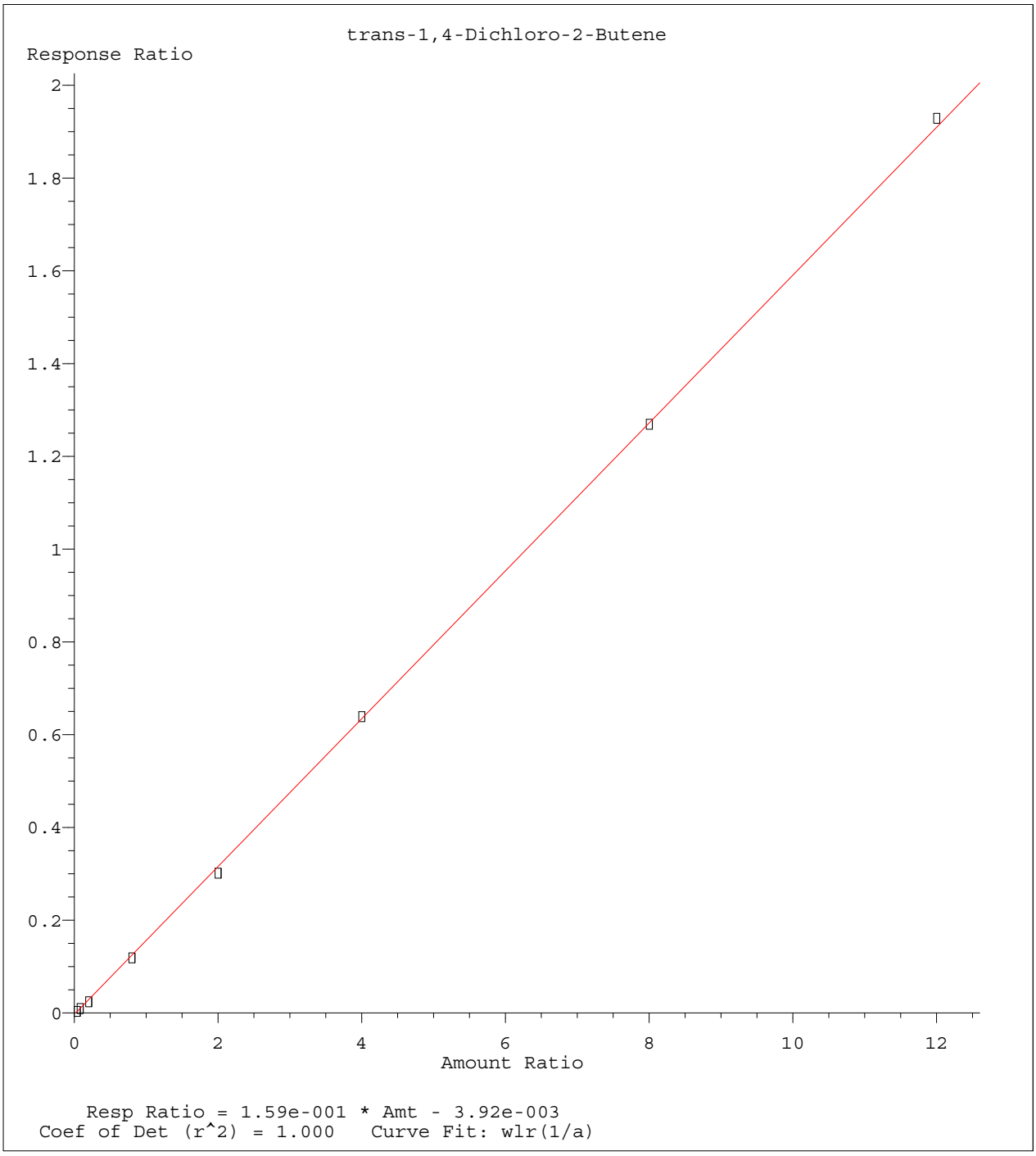

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

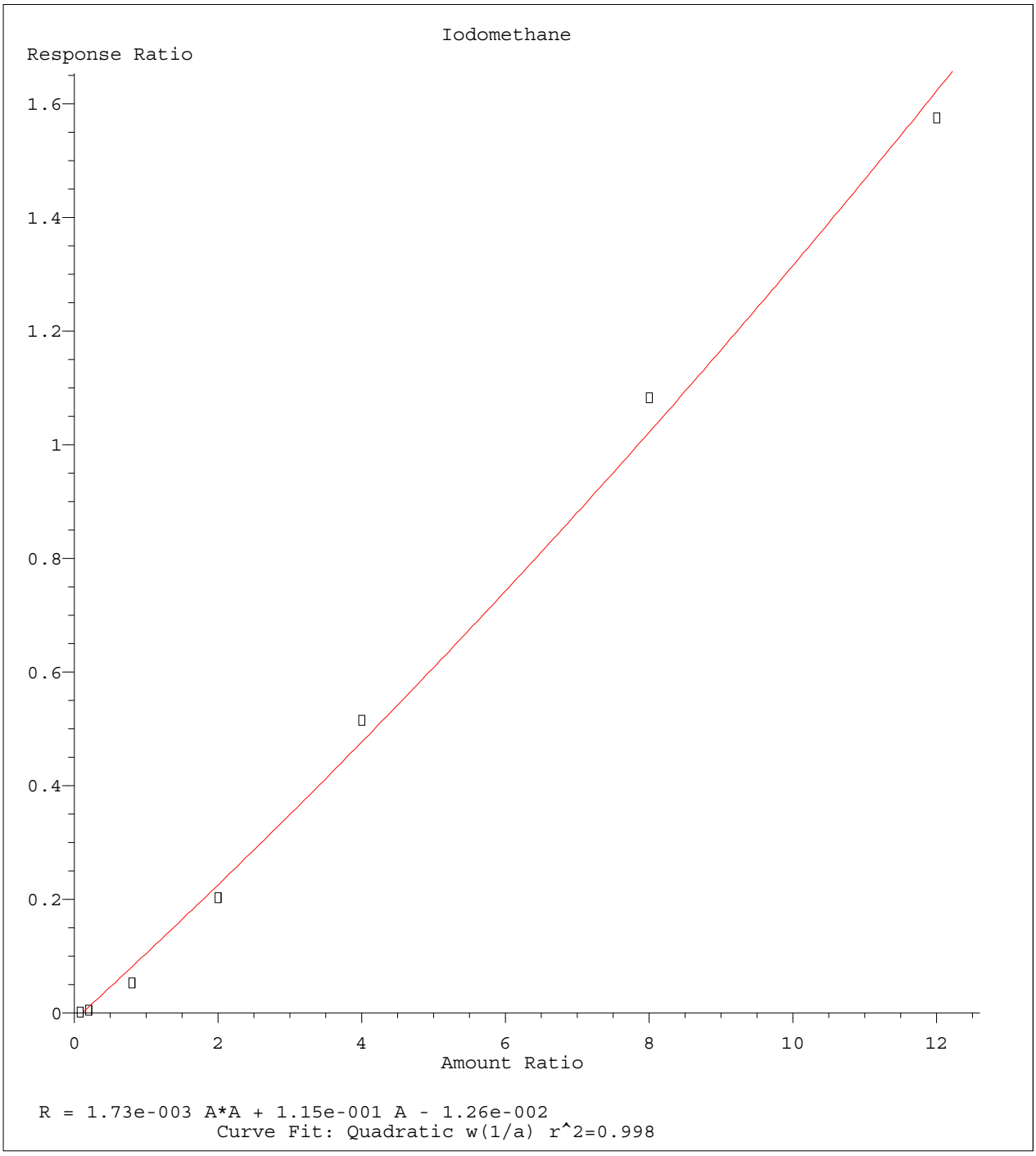

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

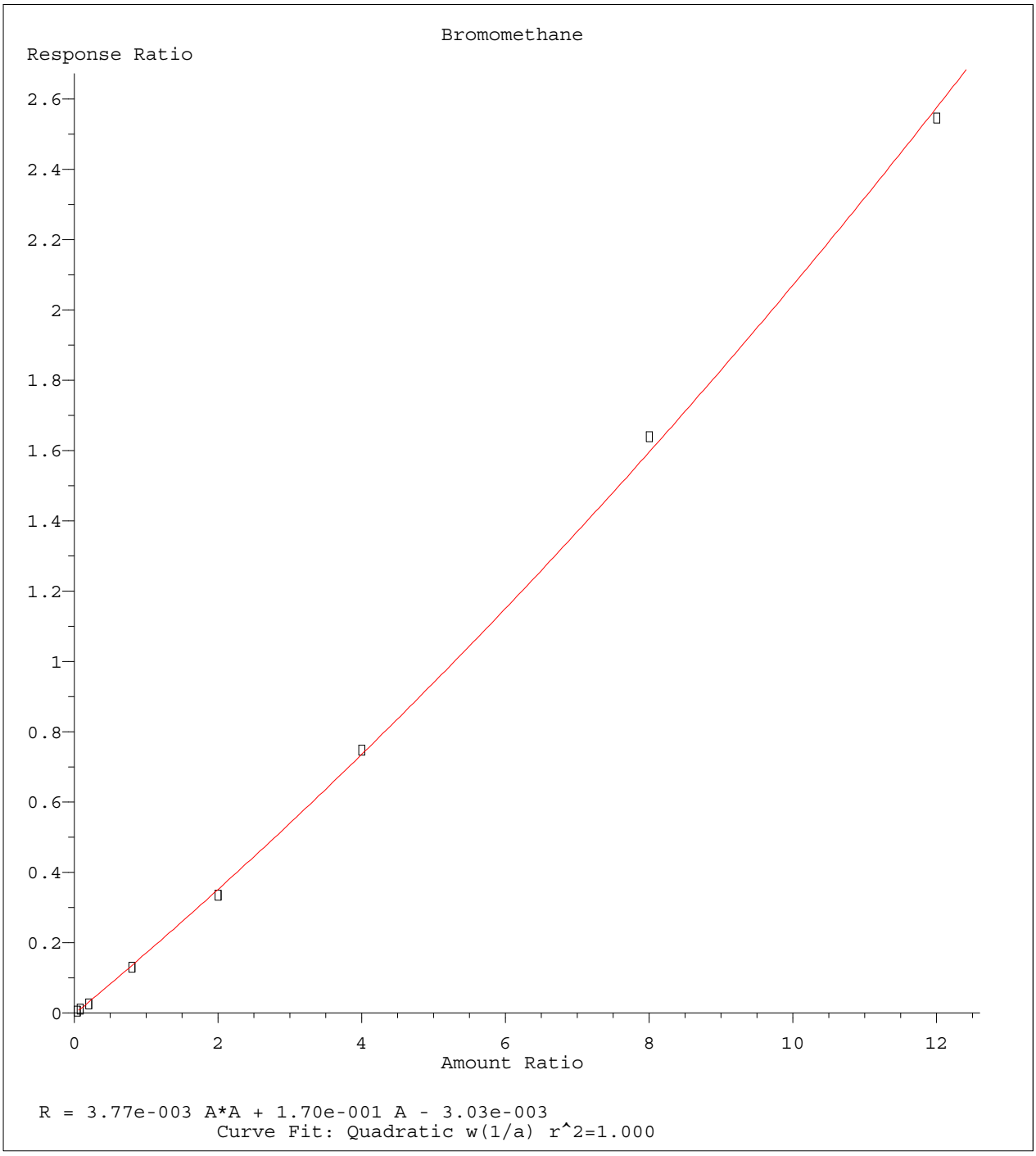

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:44:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Tue May 17 11:43:20 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	837879	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	574720	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	304324	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	229742	25.5204 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.08%		
43) 1,2-Dichloroethane-d4	10.31	65	238672	24.7259 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.92%		
58) Toluene-d8	12.68	98	776362	25.8115 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.24%		
80) p-Bromofluorobenzene	16.07	95	315683	25.0519 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.20%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	761591	54.2141 ug/L	99
3) Chloromethane	3.62	50	415589	50.6814 ug/L	100
4) Vinyl Chloride	3.84	62	509607	52.3810 ug/L	100
5) 1,3-Butadiene	3.88	54	347562	42.6002 ug/L	97
6) Bromomethane	4.73	94	272060	46.3924 ug/L	99
7) Chloroethane	4.88	64	285509	53.3336 ug/L	98
8) Trichlorofluoromethane	5.37	101	849580	46.9313 ug/L	100
9) Diethyl ether	5.90	59	451307	104.4282 ug/L	99
10) Isoprene	5.93	67	582863	53.0208 ug/L	99
11) Acrolein	6.13	56	38877	100.4722 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	419584	49.3091 ug/L	97
13) Acetone	6.23	43	54234	57.5310 ug/L	94
14) 1,1-Dichloroethene	6.46	61	622831	45.9700 ug/L	99
15) Tert-Butyl Alcohol	6.59	59	59797	197.9422 ug/L	97
16) Dimethyl Sulfide	6.73	62	351814	72.6234 ug/L	98
17) Iodomethane	6.99	142	92716	26.2832 ug/L	99
18) Methyl acetate	7.00	43	127540	50.0514 ug/L	98
19) Methylene Chloride	7.25	84	417642	48.4385 ug/L	99
20) Carbon Disulfide	7.29	76	1199899	42.3200 ug/L	100
21) Acrylonitrile	7.43	53	65324	53.4074 ug/L	93
22) Methyl Tert Butyl Ether	7.46	73	949572	50.8859 ug/L	97
23) trans-1,2-Dichloroethene	7.70	61	598296	48.0666 ug/L	99
24) n-Hexane	7.77	57	425106	45.9930 ug/L	99
25) Diisopropyl ether	8.13	45	2040382	105.1615 ug/L	98
26) Vinyl Acetate	8.29	43	415568	46.7802 ug/L	99
27) 1,1-Dichloroethane	8.32	63	721661	46.6846 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	2040020	98.1343 ug/L	99
29) 2-Butanone	8.88	43	73394	52.9905 ug/L	99
30) Propionitrile	8.98	54	42290	104.7756 ug/L	100
31) 2,2-Dichloropropane	9.10	77	780073	47.8861 ug/L	99
32) cis-1,2-Dichloroethene	9.16	96	470465	48.9162 ug/L	98
33) Chloroform	9.38	83	860252	47.1317 ug/L	100
34) 1-Bromopropane	9.51	122	98585	71.5615 ug/L	98
35) Bromochloromethane	9.60	130	234493	47.5456 ug/L	99
36) Tetrahydrofuran	9.62	42	86049	94.3281 ug/L	99
38) 1,1,1-Trichloroethane	9.90	97	825167	47.5949 ug/L	100
39) Cyclohexane	9.93	56	586721	48.8808 ug/L	97
40) 1,1-Dichloropropene	10.10	75	627217	47.4632 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1962875	103.9618 ug/L	99
42) Carbon Tetrachloride	10.24	117	711823	46.2363 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M412232.D 8260WT.M Tue May 17 11:44:38 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	108	0.00
2	T	Dichlorodifluoromethane	50.0000	54.2141	-8.4	112	0.00
3	P	Chloromethane	50.0000	50.6814	-1.4	111	0.00
4	C	Vinyl Chloride	50.0000	52.3811	-4.8	112	-0.01
5	T	1,3-Butadiene	50.0000	42.6002	14.8	89	0.00
6	T	Bromomethane	50.0000	46.3924	7.2	104	-0.01
7	T	Chloroethane	50.0000	53.3336	-6.7	117	-0.01
8	T	Trichlorofluoromethane	50.0000	46.9313	6.1	101	-0.01
9	T	Diethyl ether	100.0000	104.4282	-4.4	116	0.00
10	T	Isoprene	50.0000	53.0208	-6.0	117	0.00
11	T	Acrolein	50.0000	100.4722	-100.9#	220	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	49.3091	1.4	108	0.00
13	T	Acetone	50.0000	57.5310	-15.1	118	-0.01
14	C	1,1-Dichloroethene	50.0000	45.9700	8.1	100	0.00
15	T	Tert-Butyl Alcohol	200.0000	197.9423	1.0	108	0.01
16	T	Dimethyl Sulfide	50.0000	72.6234	-45.2#	159	0.00
17	T	Iodomethane	50.0000	26.2832	47.4#	59	0.01
18	T	Methyl acetate	50.0000	50.0514	-0.1	111	0.00
19	T	Methylene Chloride	50.0000	48.4385	3.1	107	0.00
20	T	Carbon Disulfide	50.0000	42.3200	15.4	94	0.00
21	T	Acrylonitrile	50.0000	53.4074	-6.8	109	0.00
22	T	Methyl Tert Butyl Ether	50.0000	50.8859	-1.8	105	0.00
23	T	trans-1,2-Dichloroethene	50.0000	48.0666	3.9	105	0.00
24	T	n-Hexane	50.0000	45.9930	8.0	101	-0.01
25	T	Diisopropyl ether	100.0000	105.1615	-5.2	115	0.00
26	T	Vinyl Acetate	50.0000	46.7802	6.4	97	0.00
27	P	1,1-Dichloroethane	50.0000	46.6846	6.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.1343	1.9	104	0.00
29	T	2-Butanone	50.0000	52.9905	-6.0	110	0.00
30	T	Propionitrile	100.0000	104.7756	-4.8	111	0.00
31	T	2,2-Dichloropropane	50.0000	47.8861	4.2	102	0.00
32	T	cis-1,2-Dichloroethene	50.0000	48.9162	2.2	107	-0.01
33	C	Chloroform	50.0000	47.1317	5.7	102	0.00
34		1-Bromopropane	50.0000	71.5615	-43.1#	155	0.00
35	T	Bromochloromethane	50.0000	47.5456	4.9	102	0.00
36	T	Tetrahydrofuran	100.0000	94.3281	5.7	108	-0.01
37	S	Dibromofluoromethane	25.0000	25.5204	-2.1	109	0.00
38	T	1,1,1-Trichloroethane	50.0000	47.5949	4.8	101	0.00
39	T	Cyclohexane	50.0000	48.8808	2.2	109	0.00
40	T	1,1-Dichloropropene	50.0000	47.4632	5.1	102	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	103.9618	-4.0	111	0.00
42	T	Carbon Tetrachloride	50.0000	46.2363	7.5	98	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.7259	1.1	104	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	49.0148	2.0	103	0.00
46	T	Benzene	50.0000	48.5232	3.0	104	0.00
47	T	Trichloroethene	50.0000	51.0658	-2.1	110	0.00
48	T	Methylcyclohexane	50.0000	49.8573	0.3	109	0.00
49	C	1,2-Dichloropropane	50.0000	50.9747	-1.9	111	0.00
50	T	Bromodichloromethane	50.0000	48.3053	3.4	99	0.00
51	T	1,4-Dioxane	200.0000	216.9538	-8.5	110	0.01
52	T	Dibromomethane	50.0000	45.8126	8.4	99	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	51.2623	-2.5	104	0.00
54	T	4-Methyl-2-Pentanone	50.0000	51.8715	-3.7	107	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.8979	-7.8	111	0.00
56	T	Dimethyl Disulfide	50.0000	52.2714	-4.5	111	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	107	0.00
58	S	Toluene-d8	25.0000	25.8115	-3.2	108	0.00
59	C	Toluene	50.0000	49.0912	1.8	105	0.00
60	T	Ethyl Methacrylate	50.0000	55.9509	-11.9	113	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	50.6740	-1.3	102	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.0377	1.9	103	0.00
64	T	2-Hexanone	50.0000	53.6057	-7.2	112	0.00
65	T	1,3-Dichloropropane	50.0000	53.6720	-7.3	110	0.00
66	T	Tetrachloroethene	50.0000	47.8053	4.4	104	0.00
67	T	Dibromochloromethane	50.0000	49.6585	0.7	102	0.00
68	T	1,2-Dibromoethane	50.0000	51.1121	-2.2	105	0.00
69	T	1-Chlorohexane	50.0000	51.0611	-2.1	111	0.00
70	P	Chlorobenzene	50.0000	50.1844	-0.4	108	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	49.3793	1.2	103	0.00
72	C	Ethylbenzene	50.0000	48.2013	3.6	105	0.00
73	T	m-,p-Xylene	100.0000	101.1341	-1.1	108	0.00
74	T	o-Xylene	50.0000	50.5675	-1.1	108	0.00
75	T	Styrene	50.0000	51.5086	-3.0	105	0.00
76	P	Bromoform	50.0000	48.2227	3.6	99	0.00
77	T	Isopropylbenzene	50.0000	51.1140	-2.2	107	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	106	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	49.6172	0.8	103	0.00
80	S	p-Bromofluorobenzene	25.0000	25.0519	-0.2	108	0.00
81	T	1,2,3-Trichloropropane	50.0000	50.0849	-0.2	106	0.01
82	T	trans-1,4-Dichloro-2-Butene	50.0000	39.2043	21.6	86	0.00
83	T	n-Propylbenzene	50.0000	51.9237	-3.8	108	0.00
84	T	Bromobenzene	50.0000	49.4648	1.1	105	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	51.6344	-3.3	107	0.00
86	T	2-Chlorotoluene	50.0000	51.5639	-3.1	106	0.00
87	T	4-Chlorotoluene	50.0000	48.2650	3.5	108	0.00
88	T	a-Methylstyrene	50.0000	56.4132	-12.8	120	0.00
89	T	tert-Butylbenzene	50.0000	50.9494	-1.9	112	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	49.6617	0.7	105	0.00
91	T	sec-Butylbenzene	50.0000	51.3386	-2.7	108	0.00
92	T	p-Isopropyltoluene	50.0000	50.1261	-0.3	107	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.8943	-1.8	108	0.00
94	T	1,4-Dichlorobenzene	50.0000	50.4742	-0.9	110	0.00
95	T	n-Butylbenzene	50.0000	49.6520	0.7	105	0.00
96	T	1,2-Dichlorobenzene	50.0000	50.4907	-1.0	110	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	48.4851	3.0	100	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	50.1129	-0.2	107	0.00
99	T	Hexachlorobutadiene	50.0000	52.0919	-4.2	115	0.00
100	T	Naphthalene	50.0000	45.8047	8.4	95	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	47.7353	4.5	106	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412232.D 8260WT.M Sat May 14 18:09:03 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:21 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	709364	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	505399	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	272922	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	27428	100.2132 ug/L	99
3) 3-Chloro-1-propene	7.07	41	940418	104.3259 ug/L	82
4) 2-Chloro-1,3-butadiene	8.45	53	1188994	104.3183 ug/L	86
5) Ethyl Acetate	9.10	43	283167	104.3264 ug/L	95
6) Methacrylonitrile	9.25	67	155775	104.5365 ug/L #	63
7) Isobutyl Alcohol	9.25	43	17893	197.3629 ug/L #	96
9) Methyl methacrylate	11.42	41	298802	102.0346 ug/L	70
10) 2-Nitropropane	11.75	43	121321	95.8263 ug/L	97
13) Cyclohexanone	15.84	55	11401	102.1363 ug/L #	70

(#) = qualifier out of range (m) = manual integration
8M412321.D A9FOOWT.M Thu May 19 09:01:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

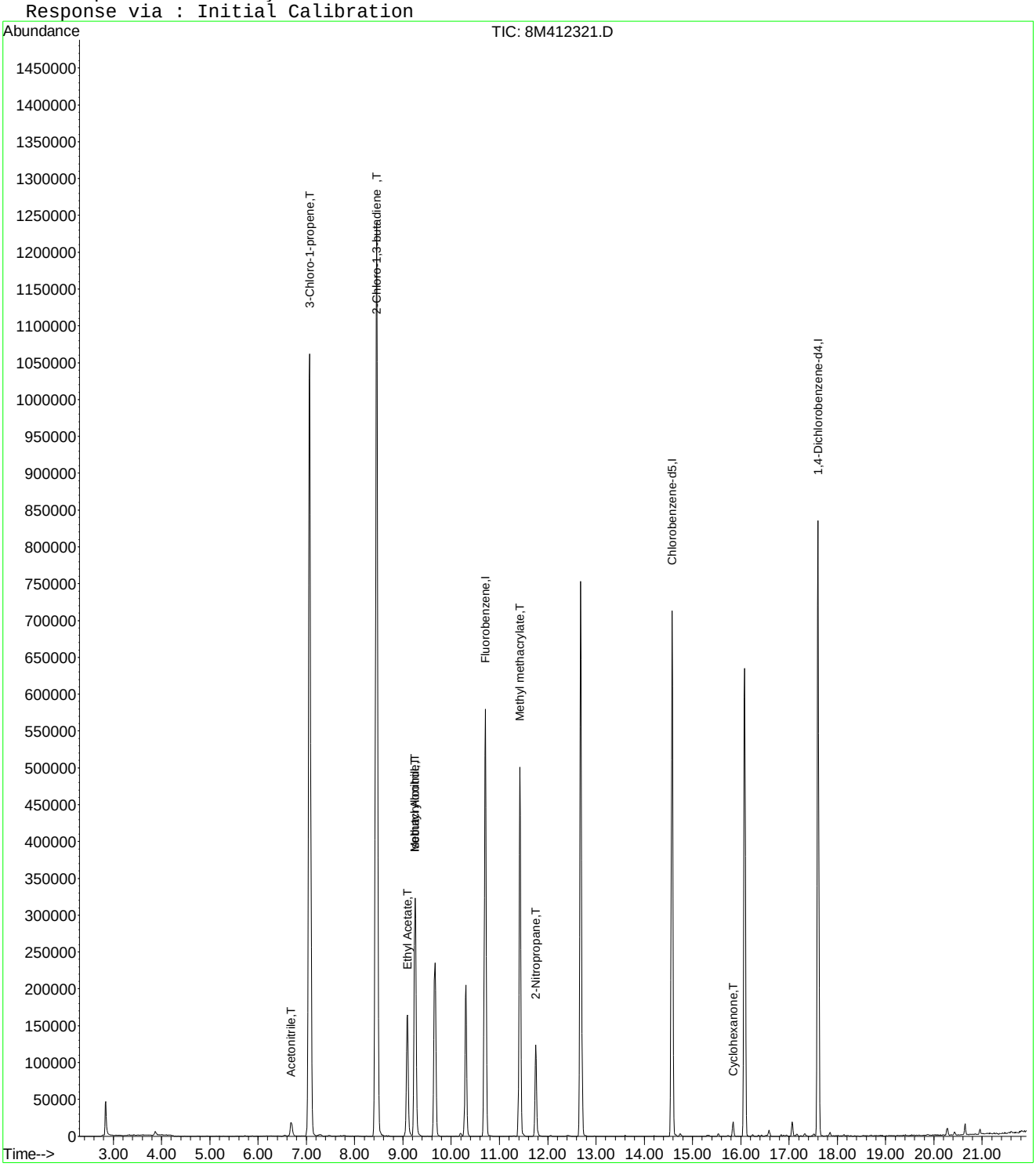

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	100.2132	-0.2	100	0.00
3	T	3-Chloro-1-propene	100.0000	104.3259	-4.3	100	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	104.3183	-4.3	100	0.00
5	T	Ethyl Acetate	100.0000	104.3264	-4.3	100	0.00
6	T	Methacrylonitrile	100.0000	104.5365	-4.5	100	0.00
7	T	Isobutyl Alcohol	200.0000	197.3629	1.3	100	-0.01
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.02
9	T	Methyl methacrylate	100.0000	102.0346	-2.0	100	0.00
10	T	2-Nitropropane	100.0000	95.8263	4.2	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	100.0000	102.1363	-2.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412321.D A9FOOWT.M Thu May 19 09:02:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:20:35 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	677339	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	488377	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	260939	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	13323	50.9795 ug/L	98
3) 3-Chloro-1-propene	7.07	41	453655	52.7060 ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	568765	52.2609 ug/L	87
5) Ethyl Acetate	9.09	43	131636	50.7913 ug/L	97
6) Methacrylonitrile	9.25	67	74064	52.0523 ug/L #	62
7) Isobutyl Alcohol	9.26	43	8483	97.9930 ug/L	95
9) Methyl methacrylate	11.42	41	143892	51.4593 ug/L	70
10) 2-Nitropropane	11.75	43	56559	46.7858 ug/L	95
13) Cyclohexanone	15.84	55	5225	48.9579 ug/L	83

(#) = qualifier out of range (m) = manual integration
8M412322.D A9FOOWT.M Thu May 19 09:20:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:19 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

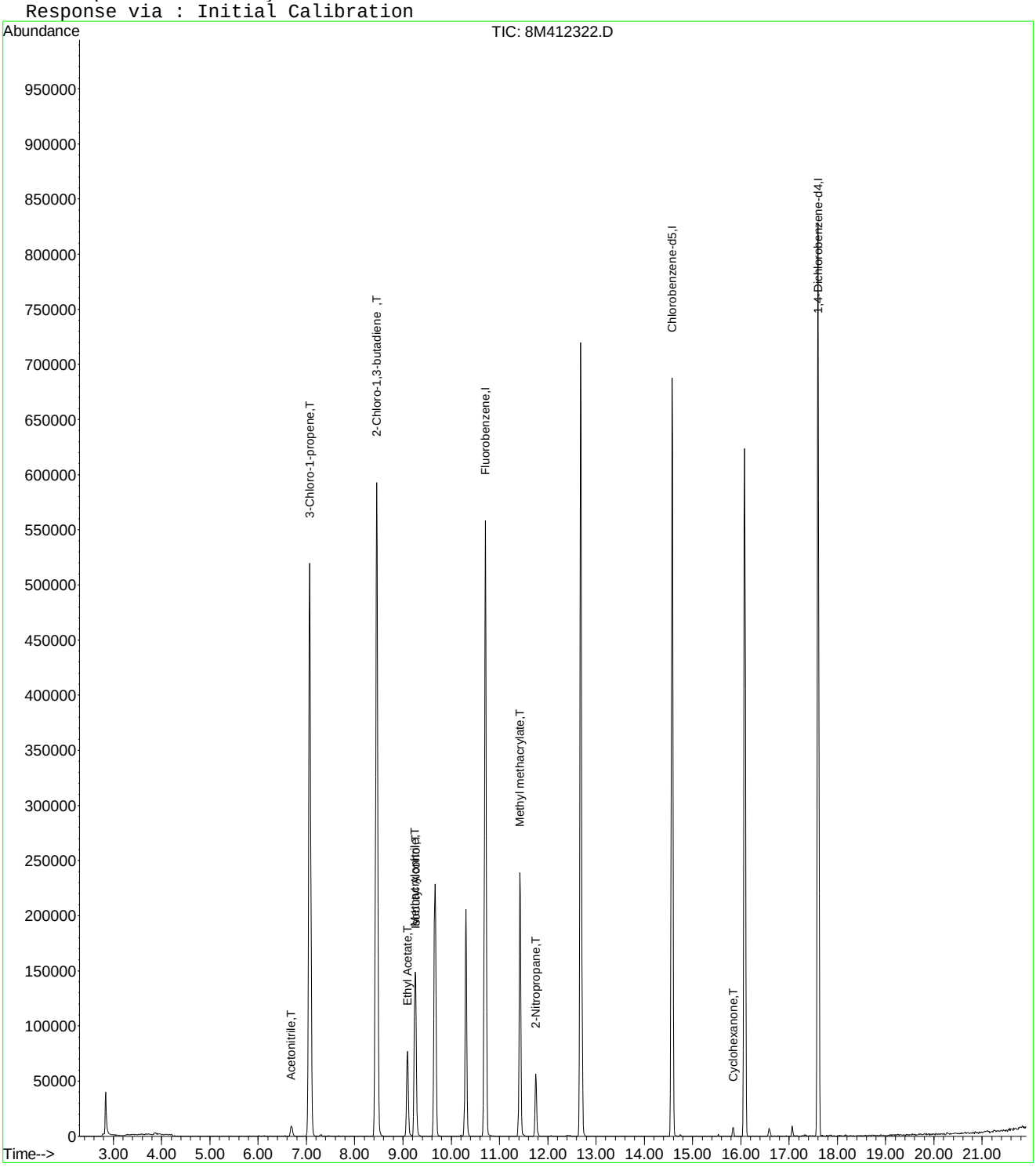

8M412322.D A9FOOWT.M Thu May 19 09:20:36 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	50.9795	-2.0	100	0.00
3	T	3-Chloro-1-propene	50.0000	52.7060	-5.4	100	0.00
4	T	2-Chloro-1,3-butadiene	50.0000	52.2609	-4.5	100	0.00
5	T	Ethyl Acetate	50.0000	50.7913	-1.6	100	0.00
6	T	Methacrylonitrile	50.0000	52.0523	-4.1	100	0.00
7	T	Isobutyl Alcohol	100.0000	97.9929	2.0	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.02
9	T	Methyl methacrylate	50.0000	51.4592	-2.9	100	0.00
10	T	2-Nitropropane	50.0000	46.7858	6.4	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	50.0000	48.9579	2.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412322.D A9FOOWT.M Thu May 19 09:02:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:22:33 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	652985	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	476539	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	256082	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	4873	19.3416 ug/L	80
3) 3-Chloro-1-propene	7.07	41	172467	20.7847 ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	219296	20.9015 ug/L	87
5) Ethyl Acetate	9.09	43	50385	20.1659 ug/L	100
6) Methacrylonitrile	9.26	67	28119	20.4992 ug/L #	63
7) Isobutyl Alcohol	9.27	43	2774	33.2395 ug/L #	8
9) Methyl methacrylate	11.42	41	55309	20.5176 ug/L	73
10) 2-Nitropropane	11.75	43	21584	18.5202 ug/L	99
13) Cyclohexanone	15.84	55	2230	21.2913 ug/L	87

(#) = qualifier out of range (m) = manual integration
8M412323.D A9FOOWT.M Thu May 19 09:22:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:21 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

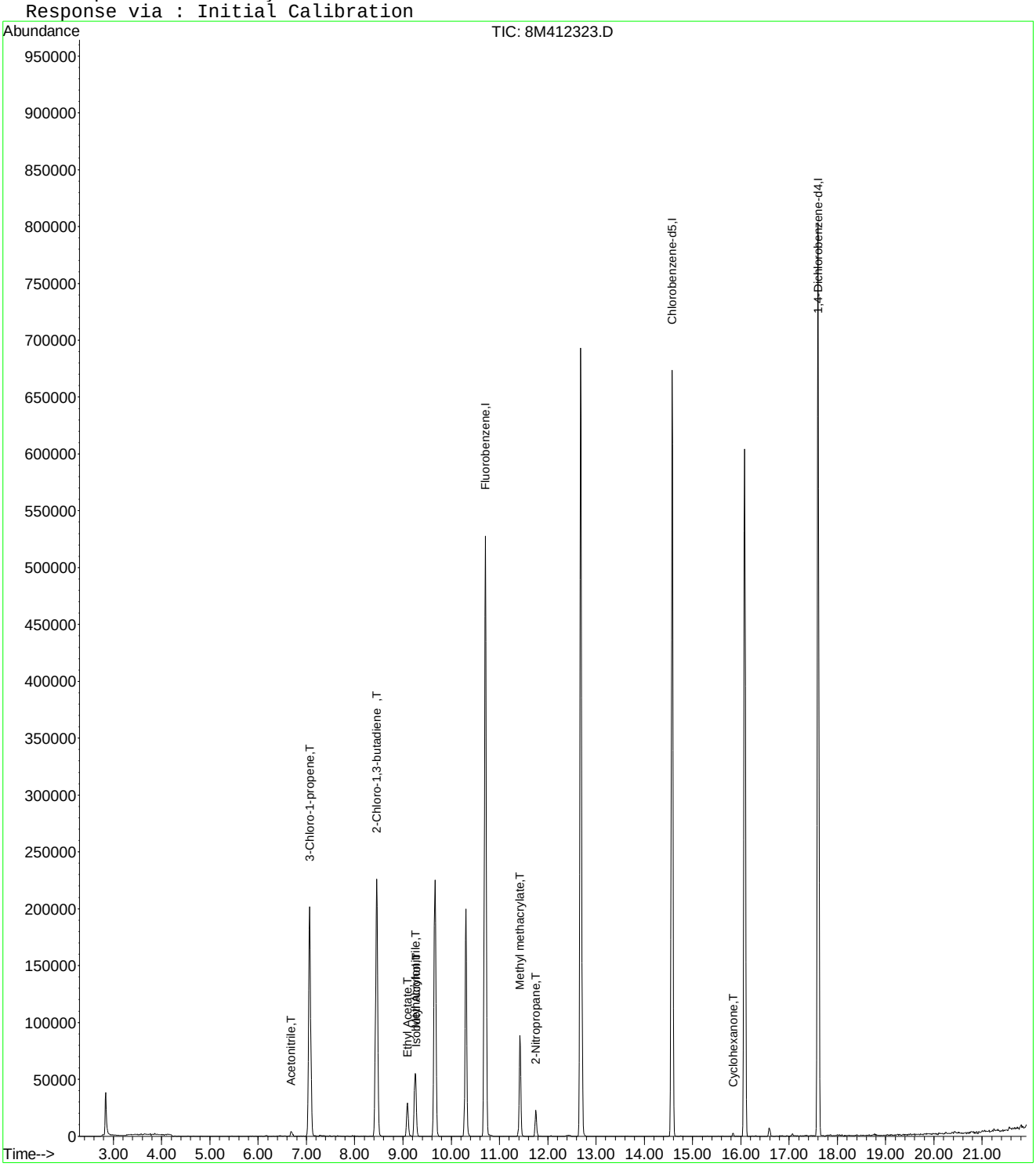

8M412323.D A9FOOWT.M Thu May 19 09:22:34 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	19.3416	3.3	100	0.00
3	T	3-Chloro-1-propene	20.0000	20.7847	-3.9	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	20.9015	-4.5	100	0.00
5	T	Ethyl Acetate	20.0000	20.1659	-0.8	100	0.00
6	T	Methacrylonitrile	20.0000	20.4992	-2.5	100	0.00
7	T	Isobutyl Alcohol	-1.0000	33.2395	0.0	0	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.18#
9	T	Methyl methacrylate	20.0000	20.5176	-2.6	100	0.00
10	T	2-Nitropropane	20.0000	18.5203	7.4	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	20.0000	21.2913	-6.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412323.D A9FOOWT.M Thu May 19 09:02:17 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:22:43 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	665645	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	483812	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	257678	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	405	1.5769 ug/L #	23
3) 3-Chloro-1-propene	7.07	41	40699	4.8115 ug/L	84
4) 2-Chloro-1,3-butadiene	8.45	53	48973	4.5789 ug/L	81
5) Ethyl Acetate	9.09	43	10675	4.1913 ug/L	95
6) Methacrylonitrile	9.26	67	5417	3.8740 ug/L #	72
7) Isobutyl Alcohol	9.27	43	441	5.1838 ug/L #	8
9) Methyl methacrylate	11.43	41	11811	4.2981 ug/L	65
10) 2-Nitropropane	11.76	43	4170	3.5100 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412324.D A9FOOWT.M Thu May 19 09:22:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:21 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

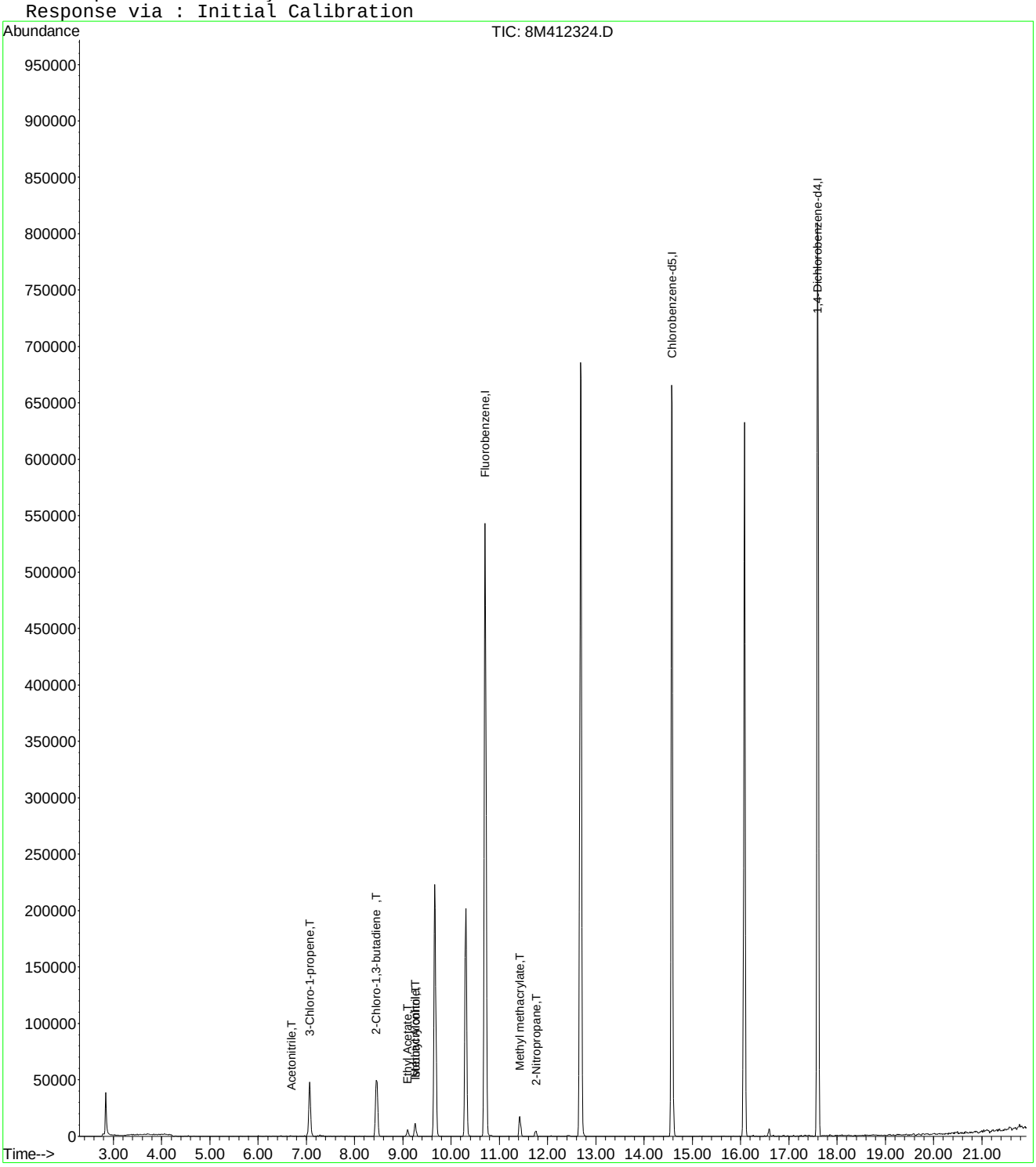

8M412324.D A9FOOWT.M Thu May 19 09:22:43 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	-1.0000	1.5769	0.0	0	0.00
3	T	3-Chloro-1-propene	5.0000	4.8115	3.8	100	0.00
4	T	2-Chloro-1,3-butadiene	5.0000	4.5789	8.4	100	0.00
5	T	Ethyl Acetate	5.0000	4.1913	16.2	100	0.00
6	T	Methacrylonitrile	5.0000	3.8740	22.5	100	0.00
7	T	Isobutyl Alcohol	-1.0000	5.1838	0.0	0	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.18#
9	T	Methyl methacrylate	5.0000	4.2981	14.0	100	0.00
10	T	2-Nitropropane	-1.0000	3.5100	0.0	0	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	0.0000	0.0	0	-15.84#

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412324.D A9FOOWT.M Thu May 19 09:02:03 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412325.D Vial: 7
Acq On : 17 May 2016 11:42 Operator: TMB
Sample : WG569079-06 200ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:27 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	682012	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	491515	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	261877	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.68	41	52022	197.6946 ug/L	97
3) 3-Chloro-1-propene	7.06	41	1768403	204.0468 ug/L	83
4) 2-Chloro-1,3-butadiene	8.46	53	2283706	208.4003 ug/L	87
5) Ethyl Acetate	9.09	43	537585	206.0040 ug/L	94
6) Methacrylonitrile	9.25	67	297408	207.5869 ug/L #	63
7) Isobutyl Alcohol	9.26	43	34441	395.1256 ug/L	95
9) Methyl methacrylate	11.42	41	577612	205.1526 ug/L	72
10) 2-Nitropropane	11.75	43	248395	204.0652 ug/L	95
13) Cyclohexanone	15.85	55	19752	184.4122 ug/L #	59

(#) = qualifier out of range (m) = manual integration
8M412325.D A9FOOWT.M Thu May 19 09:01:28 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412325.D Vial: 7
Acq On : 17 May 2016 11:42 Operator: TMB
Sample : WG569079-06 200ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

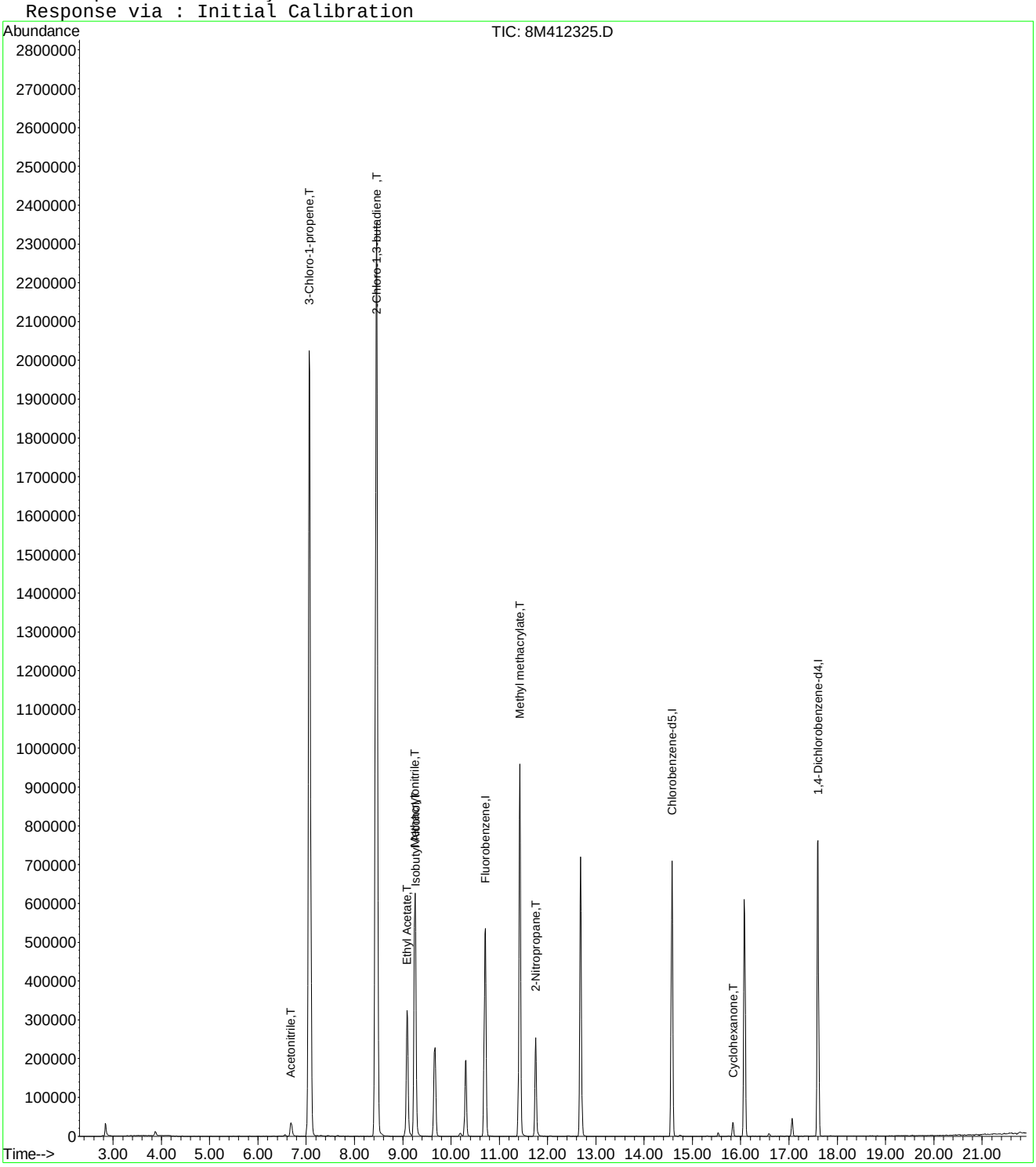

8M412325.D A9FOOWT.M Thu May 19 09:01:28 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412326.D Vial: 8
Acq On : 17 May 2016 12:40 Operator: TMB
Sample : WG569079-07 300ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:29 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	694903	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	496643	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	267309	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.69	41	81471	303.8636	ug/L	98
3) 3-Chloro-1-propene	7.06	41	2563559	290.3084	ug/L	83
4) 2-Chloro-1,3-butadiene	8.46	53	3270971	292.9562	ug/L	86
5) Ethyl Acetate	9.09	43	821184	308.8424	ug/L	95
6) Methacrylonitrile	9.25	67	451708	309.4374	ug/L #	62
7) Isobutyl Alcohol	9.26	43	55071	620.0836	ug/L	94
9) Methyl methacrylate	11.42	41	874430	304.8132	ug/L	70
10) 2-Nitropropane	11.75	43	392965	316.8456	ug/L	94
13) Cyclohexanone	15.84	55	33523	306.6233	ug/L #	61

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412326.D Vial: 8
Acq On : 17 May 2016 12:40 Operator: TMB
Sample : WG569079-07 300ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

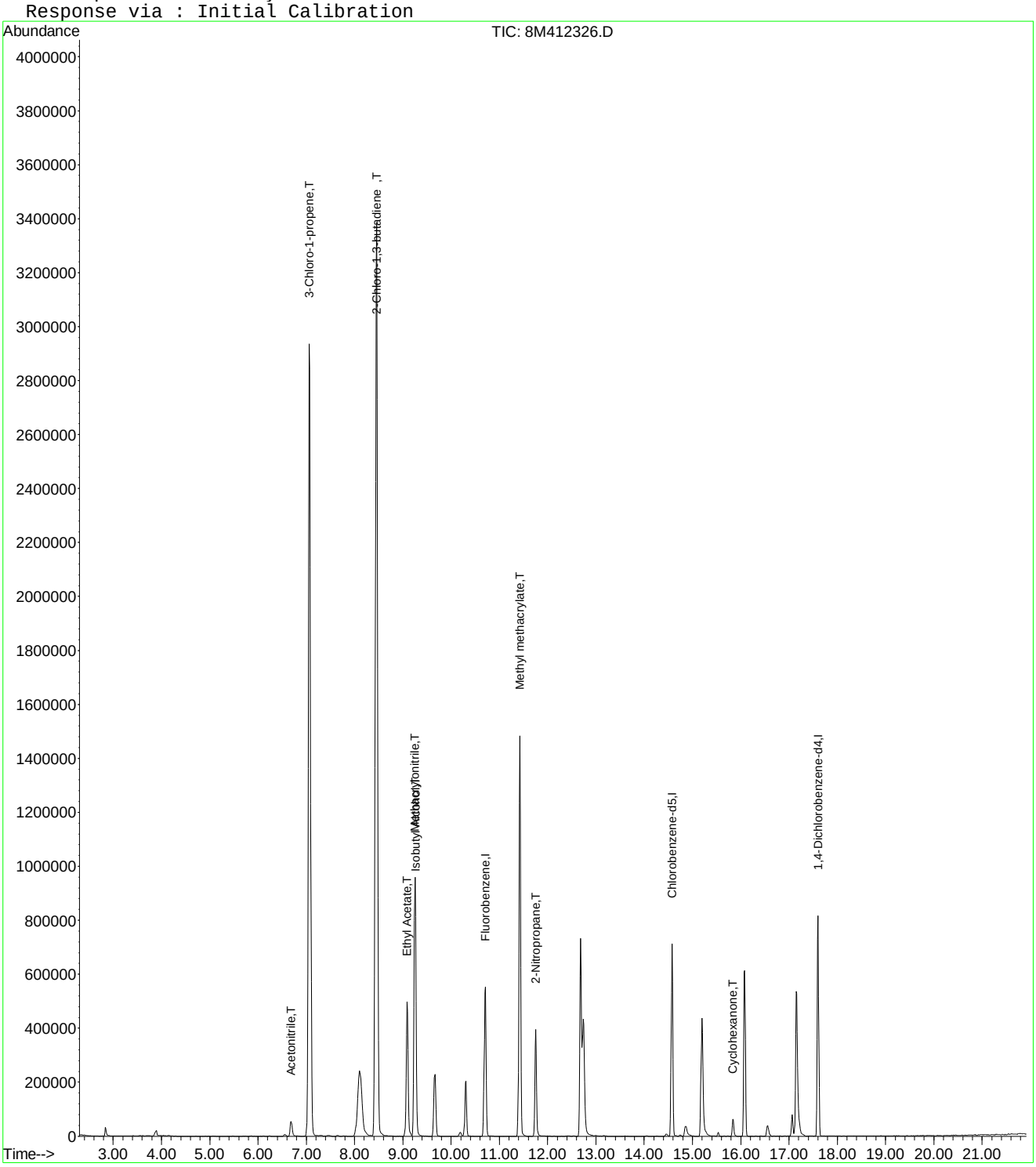

8M412326.D A9FOOWT.M Thu May 19 09:01:29 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412327.D Vial: 9
Acq On : 17 May 2016 13:10 Operator: TMB
Sample : WG569079-08 400ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:30 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	700514	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	502552	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	270883	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	110761	409.7980 ug/L	97
3) 3-Chloro-1-propene	7.07	41	3406131	382.6353 ug/L	82
4) 2-Chloro-1,3-butadiene	8.45	53	4356691	387.0705 ug/L	85
5) Ethyl Acetate	9.09	43	1116818	416.6642 ug/L	94
6) Methacrylonitrile	9.25	67	615482	418.2517 ug/L #	62
7) Isobutyl Alcohol	9.26	43	75472	842.9862 ug/L	97
9) Methyl methacrylate	11.42	41	1199317	414.7153 ug/L	71
10) 2-Nitropropane	11.75	43	538580	430.7760 ug/L	94
13) Cyclohexanone	15.84	55	45874	414.0575 ug/L #	55

(#) = qualifier out of range (m) = manual integration
8M412327.D A9FOOWT.M Thu May 19 09:01:31 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412327.D Vial: 9
Acq On : 17 May 2016 13:10 Operator: TMB
Sample : WG569079-08 400ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

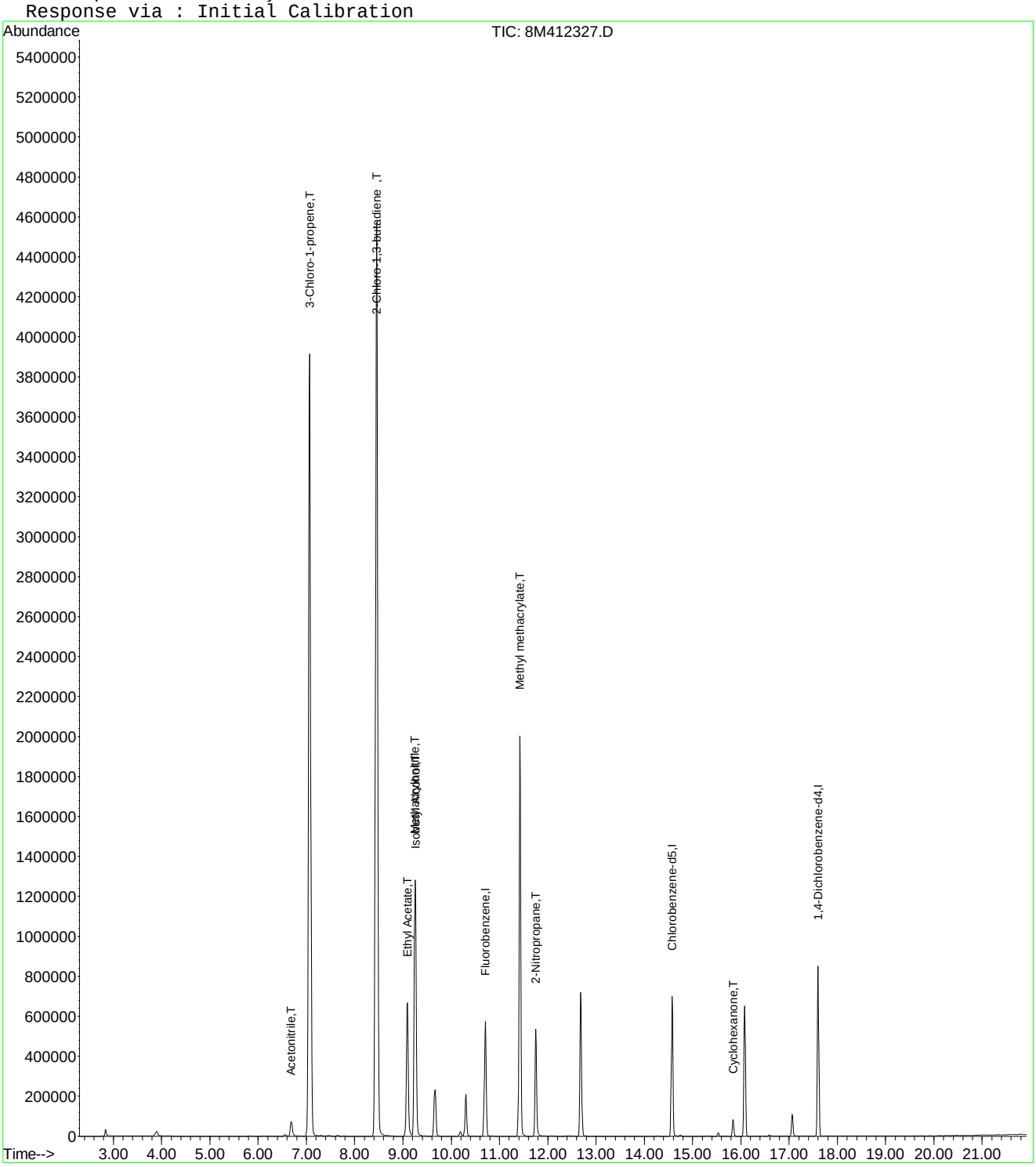

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412328.D Vial: 10
Acq On : 17 May 2016 13:39 Operator: TMB
Sample : WG569079-09 500ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:31 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	695694	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	495257	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	266442	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	132245	492.6753 ug/L	99
3) 3-Chloro-1-propene	7.06	41	4228273	478.2834 ug/L	82
4) 2-Chloro-1,3-butadiene	8.46	53	5390856	482.2693 ug/L	85
5) Ethyl Acetate	9.09	43	1321922	496.6017 ug/L	95
6) Methacrylonitrile	9.25	67	729852	499.4083 ug/L #	61
7) Isobutyl Alcohol	9.26	43	85200	958.2367 ug/L	96
9) Methyl methacrylate	11.42	41	1416438	493.1877 ug/L	72
10) 2-Nitropropane	11.75	43	637335	513.2956 ug/L	93
13) Cyclohexanone	15.84	55	52070	477.8160 ug/L #	61

(#) = qualifier out of range (m) = manual integration
8M412328.D A9FOOWT.M Thu May 19 09:01:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412328.D Vial: 10
Acq On : 17 May 2016 13:39 Operator: TMB
Sample : WG569079-09 500ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

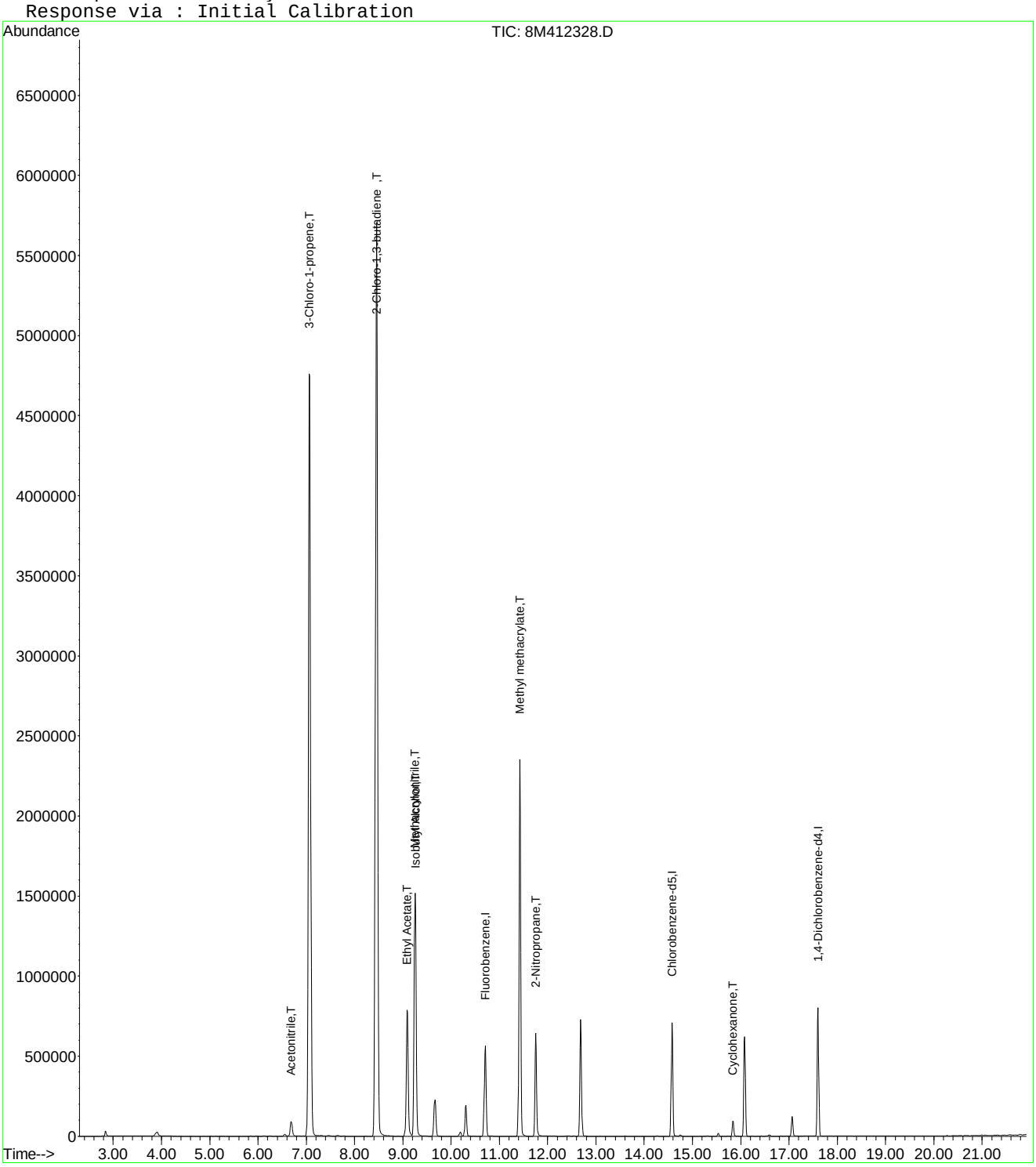

8M412328.D A9FOOWT.M Thu May 19 09:01:32 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:32 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	676765	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	486447	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	263036	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	29876	114.4154 ug/L	97
3) 3-Chloro-1-propene	7.07	41	858035	99.7718 ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	1224194	112.5803 ug/L	87
5) Ethyl Acetate	9.09	43	295545	114.1317 ug/L	96
6) Methacrylonitrile	9.25	67	161574	113.6509 ug/L #	63
7) Isobutyl Alcohol	9.26	43	19948	230.6285 ug/L	94
9) Methyl methacrylate	11.42	41	326465	116.8508 ug/L	72
10) 2-Nitropropane	11.75	43	131261	108.6716 ug/L	94
13) Cyclohexanone	15.83	55	10459	97.2189 ug/L #	74

(#) = qualifier out of range (m) = manual integration
8M412331.D A9FOOWT.M Thu May 19 09:01:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

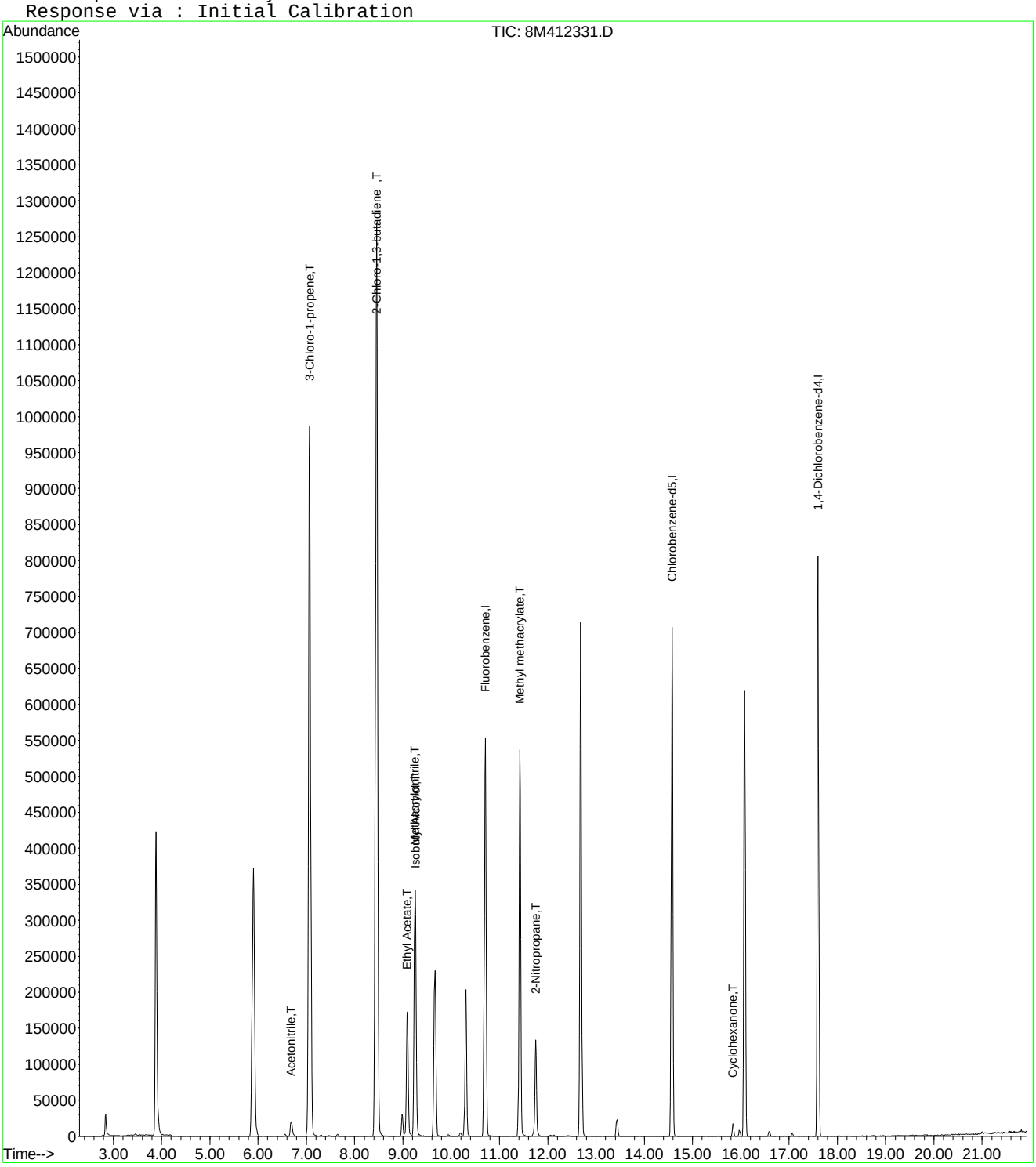

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	95	0.00
2	T	Acetonitrile	100.0000	114.4154	-14.4	109	0.00
3	T	3-Chloro-1-propene	100.0000	99.7718	0.2	91	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	112.5803	-12.6	103	0.00
5	T	Ethyl Acetate	100.0000	114.1317	-14.1	104	0.00
6	T	Methacrylonitrile	100.0000	113.6509	-13.7	104	0.00
7	T	Isobutyl Alcohol	200.0000	230.6285	-15.3	111	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.01
9	T	Methyl methacrylate	100.0000	116.8508	-16.9	109	0.00
10	T	2-Nitropropane	100.0000	108.6716	-8.7	108	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	96	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	96	0.00
13	T	Cyclohexanone	100.0000	97.2189	2.8	92	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412331.D A9FOOWT.M Thu May 19 09:03:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413003.D Vial: 3
Acq On : 15 Jun 2016 9:29 Operator: TMB
Sample : WG572735-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 10:22:49 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	816224	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	599005	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	338264	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	236500	26.9681 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.88%		
43) 1,2-Dichloroethane-d4	10.30	65	258613	27.5026 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 110.00%		
58) Toluene-d8	12.68	98	818079	26.0957 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.40%		
80) p-Bromofluorobenzene	16.07	95	353603	25.2456 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.00%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	748538	54.6986 ug/L	100
3) Chloromethane	3.62	50	386302	48.3597 ug/L	100
4) Vinyl Chloride	3.84	62	513508	54.1824 ug/L	99
5) 1,3-Butadiene	3.88	54	466770	58.7292 ug/L	96
6) Bromomethane	4.73	94	218355	38.5562 ug/L	99
7) Chloroethane	4.89	64	261740	50.1907 ug/L	98
8) Trichlorofluoromethane	5.38	101	977647	55.4386 ug/L	99
9) Diethyl ether	5.90	59	422418	100.3367 ug/L	98
10) Isoprene	5.94	67	537019	50.1466 ug/L	99
11) Acrolein	6.14	56	18159	48.1745 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	431258	52.0256 ug/L	95
13) Acetone	6.24	43	51802	56.4090 ug/L	95
14) 1,1-Dichloroethene	6.46	61	685625	51.9473 ug/L	100
15) Tert-Butyl Alcohol	6.58	59	67191	228.3191 ug/L	97
16) Dimethyl Sulfide	6.73	62	226446	47.9844 ug/L	99
17) Iodomethane	6.98	142	125753	35.3473 ug/L	100
18) Methyl acetate	6.99	43	118016	47.5426 ug/L	98
19) Methylene Chloride	7.25	84	415706	49.4931 ug/L	99
20) Carbon Disulfide	7.29	76	1422328	51.4959 ug/L	100
21) Acrylonitrile	7.43	53	60177	50.5046 ug/L	97
22) Methyl Tert Butyl Ether	7.46	73	970167	53.3688 ug/L	100
23) trans-1,2-Dichloroethene	7.70	61	616383	50.8335 ug/L	99
24) n-Hexane	7.79	57	485002	53.8655 ug/L	98
25) Diisopropyl ether	8.13	45	1875461	99.2260 ug/L	97
26) Vinyl Acetate	8.29	43	459133	53.0555 ug/L	98
27) 1,1-Dichloroethane	8.32	63	769638	51.1092 ug/L	99
28) Ethyl-Tert-Butyl ether	8.69	59	2150385	106.1878 ug/L	99
29) 2-Butanone	8.88	43	67421	49.9695 ug/L	93
30) Propionitrile	8.98	54	40188	102.2094 ug/L	100
31) 2,2-Dichloropropane	9.10	77	923892	58.2193 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	479211	51.1475 ug/L	99
33) Chloroform	9.38	83	940195	52.8783 ug/L	100
34) 1-Bromopropane	9.51	122	75331	56.1325 ug/L	98
35) Bromochloromethane	9.60	130	252399	52.5340 ug/L	96
36) Tetrahydrofuran	9.64	42	81466	91.6734 ug/L	96
38) 1,1,1-Trichloroethane	9.90	97	938108	55.5448 ug/L	100
39) Cyclohexane	9.94	56	590132	50.4693 ug/L	98
40) 1,1-Dichloropropene	10.10	75	682624	53.0265 ug/L	99
41) Tert-Amyl-Methyl ether	10.20	73	1943999	105.6937 ug/L	99
42) Carbon Tetrachloride	10.25	117	839273	55.9611 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413003.D Vial: 3
Acq On : 15 Jun 2016 9:29 Operator: TMB
Sample : WG572735-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 10:22:49 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	636211	55.5933 ug/L		99
46)	Benzene	10.46	78	1705672	50.8725 ug/L		100
47)	Trichloroethene	11.22	130	468582	52.4002 ug/L		99
48)	Methylcyclohexane	11.30	83	717908	52.8453 ug/L		99
49)	1,2-Dichloropropane	11.42	63	362121	48.5171 ug/L		92
50)	Bromodichloromethane	11.72	83	710340	54.1489 ug/L		99
51)	1,4-Dioxane	11.71	88	8043	214.5215 ug/L		95
52)	Dibromomethane	11.81	93	220787	49.9722 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	143050	44.5915 ug/L		93
54)	4-Methyl-2-Pentanone	12.05	58	67041	51.1598 ug/L		93
55)	cis-1,3-Dichloropropene	12.36	75	714929	53.5425 ug/L		99
56)	Dimethyl Disulfide	12.62	79	371775	52.1661 ug/L		99
59)	Toluene	12.79	91	1827795	49.1512 ug/L		100
60)	Ethyl Methacrylate	12.88	69	367861	51.5092 ug/L		99
62)	trans-1,3-Dichloropropene	12.96	75	646613	51.8862 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	280232	47.7558 ug/L		99
64)	2-Hexanone	13.12	58	62023	50.2978 ug/L	#	98
65)	1,3-Dichloropropane	13.48	76	510391	48.8533 ug/L		99
66)	Tetrachloroethene	13.60	164	413750	51.9308 ug/L		97
67)	Dibromochloromethane	13.86	129	447120	52.1844 ug/L		99
68)	1,2-Dibromoethane	14.12	107	289001	49.4166 ug/L		99
69)	1-Chlorohexane	14.21	91	633582	49.9121 ug/L		99
70)	Chlorobenzene	14.63	112	1238478	49.3881 ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.66	131	503284	51.8051 ug/L		100
72)	Ethylbenzene	14.66	106	662931	48.3185 ug/L		99
73)	m-,p-Xylene	14.74	106	1599907	99.4174 ug/L		100
74)	o-Xylene	15.31	106	785244	49.9090 ug/L		99
75)	Styrene	15.34	104	1330888	51.5739 ug/L		98
76)	Bromoform	15.84	173	269390	53.0081 ug/L		99
77)	Isopropylbenzene	15.73	105	2134970	51.0798 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	307089	45.2267 ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	98863	47.2826 ug/L		91
82)	trans-1,4-Dichloro-2-Buten	16.19	53	100957	47.4023 ug/L		86
83)	n-Propylbenzene	16.24	91	2516708	47.6894 ug/L		99
84)	Bromobenzene	16.36	156	527081	48.5575 ug/L		96
85)	1,3,5-Trimethylbenzene	16.43	105	1856939	48.3052 ug/L		99
86)	2-Chlorotoluene	16.51	91	1611266	43.7311 ug/L		91
87)	4-Chlorotoluene	16.56	91	1718296	51.6293 ug/L		92
88)	a-Methylstyrene	16.83	118	859171	47.1080 ug/L		99
89)	tert-Butylbenzene	16.89	134	350937	46.6633 ug/L		99
90)	1,2,4-Trimethylbenzene	16.94	105	1896413	47.9759 ug/L		100
91)	sec-Butylbenzene	17.16	105	2137758	47.2703 ug/L		99
92)	p-Isopropyltoluene	17.32	119	1838625	47.8823 ug/L		98
93)	1,3-Dichlorobenzene	17.51	146	1027662	49.1672 ug/L		98
94)	1,4-Dichlorobenzene	17.65	146	1005384	47.7112 ug/L		98
95)	n-Butylbenzene	17.84	91	1795243	47.2912 ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	875659	47.1049 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	62987	46.2131 ug/L		94
98)	1,2,4-Trichlorobenzene	20.28	180	673757	48.4887 ug/L		99
99)	Hexachlorobutadiene	20.43	225	329928	50.8181 ug/L		100
100)	Naphthalene	20.64	128	967801	46.8800 ug/L		99
101)	1,2,3-Trichlorobenzene	20.95	180	553851	47.2458 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M413003.D 8260WT.M Wed Jun 15 10:22:53 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413003.D Vial: 3
Acq On : 15 Jun 2016 9:29 Operator: TMB
Sample : WG572735-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 10:22 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

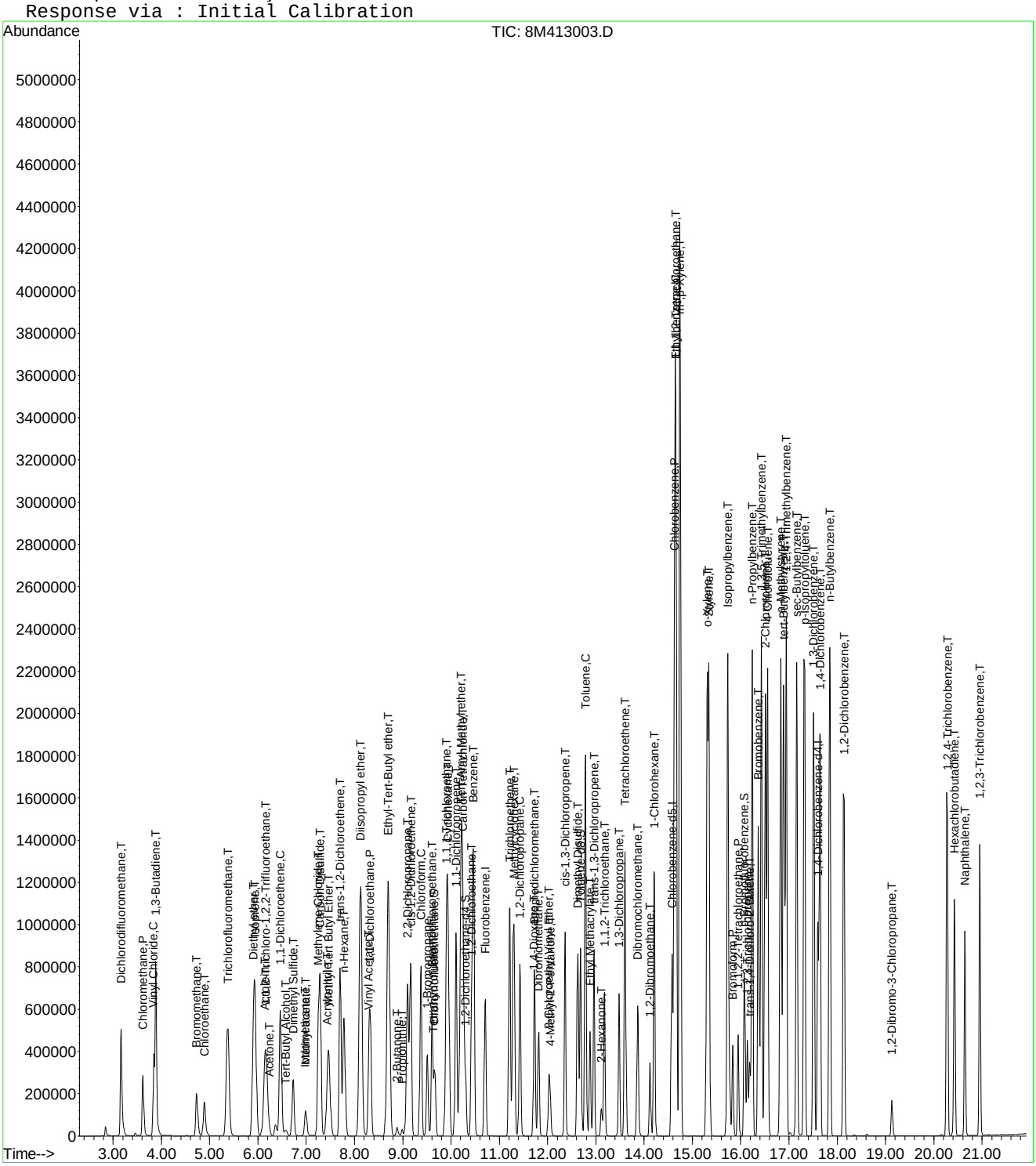

8M413003.D 8260WT.M Wed Jun 15 10:22:54 2016 Page 3

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413003.D Vial: 3
Acq On : 15 Jun 2016 9:29 Operator: TMB
Sample : WG572735-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	105	0.00
2	T	Dichlorodifluoromethane	0.4192	0.4585	-9.4	110	0.00
3	P	Chloromethane	0.2447	0.2366	3.3	104	0.00
4	C	Vinyl Chloride	0.2903	0.3146	-8.4	113	-0.01
5	T	1,3-Butadiene	0.2434	0.2859	-17.5	120	0.00
6	T	Bromomethane	0.1654	0.1338	19.1	84	0.00
7	T	Chloroethane	0.1597	0.1603	-0.4	107	0.00
8	T	Trichlorofluoromethane	0.5401	0.5989	-10.9	117	0.00
9	T	Diethyl ether	0.1290	0.1294	-0.3	108	0.00
10	T	Isoprene	0.3280	0.3290	-0.3	108	0.00
11	T	Acrolein	0.0116	0.0111	3.7	103	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2539	0.2642	-4.1	111	0.01
13	T	Acetone	0.0281	0.0317	-12.8	113	-0.01
14	C	1,1-Dichloroethene	0.4043	0.4200	-3.9	111	0.00
15	T	Tert-Butyl Alcohol	0.0090	0.0103	-14.2	121	0.00
16	T	Dimethyl Sulfide	0.1445	0.1387	4.0	102	0.00
17	T	Iodomethane	0.0866	0.0770	11.0	80	0.00
18	T	Methyl acetate	0.0760	0.0723	4.9	103	-0.01
19	T	Methylene Chloride	0.2573	0.2546	1.0	107	0.00
20	T	Carbon Disulfide	0.8460	0.8713	-3.0	112	0.00
21	T	Acrylonitrile	0.0365	0.0369	-1.0	100	0.00
22	T	Methyl Tert Butyl Ether	0.5568	0.5943	-6.7	108	0.00
23	T	trans-1,2-Dichloroethene	0.3714	0.3776	-1.7	108	0.00
24	T	n-Hexane	0.2758	0.2971	-7.7	116	0.00
25	T	Diisopropyl ether	0.5789	0.5744	0.8	105	0.00
26	T	Vinyl Acetate	0.2651	0.2813	-6.1	107	0.00
27	P	1,1-Dichloroethane	0.4612	0.4715	-2.2	107	0.00
28	T	Ethyl-Tert-Butyl ether	0.6203	0.6586	-6.2	110	-0.01
29	T	2-Butanone	0.0413	0.0413	0.1	101	0.00
30	T	Propionitrile	0.0120	0.0123	-2.2	105	0.00
31	T	2,2-Dichloropropane	0.4860	0.5659	-16.4	120	0.00
32	T	cis-1,2-Dichloroethene	0.2870	0.2935	-2.3	109	0.00
33	C	Chloroform	0.5446	0.5759	-5.8	111	0.00
34		1-Bromopropane	0.0411	0.0461	-12.3	119	0.00
35	T	Bromochloromethane	0.1472	0.1546	-5.1	110	0.00
36	T	Tetrahydrofuran	0.0272	0.0250	8.3	103	0.00
37	S	Dibromofluoromethane	0.2686	0.2898	-7.9	112	-0.01
38	T	1,1,1-Trichloroethane	0.5173	0.5747	-11.1	115	0.00
39	T	Cyclohexane	0.3581	0.3615	-0.9	110	0.00
40	T	1,1-Dichloropropene	0.3943	0.4182	-6.1	111	0.00
41	T	Tert-Amyl-Methyl ether	0.5634	0.5954	-5.7	110	-0.01
42	T	Carbon Tetrachloride	0.4593	0.5141	-11.9	116	0.00
43	S	1,2-Dichloroethane-d4	0.2880	0.3168	-10.0	113	-0.01
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.3505	0.3897	-11.2	113	0.00
46	T	Benzene	1.0269	1.0449	-1.7	106	0.00
47	T	Trichloroethene	0.2739	0.2870	-4.8	110	0.00
48	T	Methylcyclohexane	0.4161	0.4398	-5.7	113	0.00
49	C	1,2-Dichloropropane	0.2286	0.2218	3.0	103	0.00
50	T	Bromodichloromethane	0.4018	0.4351	-8.3	108	0.00
51	T	1,4-Dioxane	0.0012	0.0012	-7.0	106	0.00
52	T	Dibromomethane	0.1353	0.1353	0.1	106	-0.01
53	T	2-Chloroethyl Vinyl Ether	0.0983	0.0876	10.8	88	0.00
54	T	4-Methyl-2-Pentanone	0.0401	0.0411	-2.3	103	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413003.D Vial: 3
Acq On : 15 Jun 2016 9:29 Operator: TMB
Sample : WG572735-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4090	0.4380	-7.1	107	0.00
56	T	Dimethyl Disulfide	0.2183	0.2277	-4.3	108	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	111	0.00
58	S	Toluene-d8	1.3084	1.3657	-4.4	114	0.00
59	C	Toluene	1.5520	1.5257	1.7	109	0.00
60	T	Ethyl Methacrylate	0.2981	0.3071	-3.0	109	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.5201	0.5397	-3.8	109	0.00
63	T	1,1,2-Trichloroethane	0.2449	0.2339	4.5	104	0.00
64	T	2-Hexanone	0.0515	0.0518	-0.6	109	0.00
65	T	1,3-Dichloropropane	0.4360	0.4260	2.3	104	0.00
66	T	Tetrachloroethene	0.3325	0.3454	-3.9	118	0.00
67	T	Dibromochloromethane	0.3576	0.3732	-4.4	111	0.00
68	T	1,2-Dibromoethane	0.2441	0.2412	1.2	106	0.00
69	T	1-Chlorohexane	0.5298	0.5289	0.2	113	0.00
70	P	Chlorobenzene	1.0466	1.0338	1.2	111	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4055	0.4201	-3.6	113	0.00
72	C	Ethylbenzene	0.5726	0.5534	3.4	110	0.00
73	T	m-,p-Xylene	0.6716	0.6677	0.6	111	0.00
74	T	o-Xylene	0.6566	0.6555	0.2	111	0.00
75	T	Styrene	1.0770	1.1109	-3.1	110	0.00
76	P	Bromoform	0.2121	0.2249	-6.0	113	0.00
77	T	Isopropylbenzene	1.7444	1.7821	-2.2	111	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	117	0.00
79	P	1,1,2,2-Tetrachloroethane	0.5018	0.4539	9.5	104	0.00
80	S	p-Bromofluorobenzene	1.0352	1.0454	-1.0	121	0.00
81	T	1,2,3-Trichloropropane	0.1545	0.1461	5.4	111	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1376	0.1492	-8.5	116	0.00
83	T	n-Propylbenzene	3.9003	3.7200	4.6	110	0.00
84	T	Bromobenzene	0.8022	0.7791	2.9	115	-0.01
85	T	1,3,5-Trimethylbenzene	2.8411	2.7448	3.4	112	0.00
86	T	2-Chlorotoluene	2.7231	2.3817	12.5	100	0.00
87	T	4-Chlorotoluene	2.4597	2.5399	-3.3	128	0.00
88	T	a-Methylstyrene	1.3479	1.2700	5.8	111	0.00
89	T	tert-Butylbenzene	0.5558	0.5187	6.7	114	0.00
90	T	1,2,4-Trimethylbenzene	2.9214	2.8032	4.0	113	0.00
91	T	sec-Butylbenzene	3.3424	3.1599	5.5	111	0.00
92	T	p-Isopropyltoluene	2.8379	2.7177	4.2	113	0.00
93	T	1,3-Dichlorobenzene	1.5448	1.5190	1.7	116	0.00
94	T	1,4-Dichlorobenzene	1.5574	1.4861	4.6	115	0.00
95	T	n-Butylbenzene	2.8056	2.6536	5.4	112	-0.01
96	T	1,2-Dichlorobenzene	1.3739	1.2943	5.8	114	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1007	0.0931	7.6	106	0.00
98	T	1,2,4-Trichlorobenzene	1.0269	0.9959	3.0	115	0.00
99	T	Hexachlorobutadiene	0.4798	0.4877	-1.6	125	-0.01
100	T	Naphthalene	1.5257	1.4305	6.2	108	-0.01
101	T	1,2,3-Trichlorobenzene	0.8664	0.8187	5.5	117	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413003.D 8260WT.M Wed Jun 15 10:23:15 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413003.D Vial: 3
Acq On : 15 Jun 2016 9:29 Operator: TMB
Sample : WG572735-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	105	0.00
2	T	Dichlorodifluoromethane	50.0000	54.6986	-9.4	110	0.00
3	P	Chloromethane	50.0000	48.3597	3.3	104	0.00
4	C	Vinyl Chloride	50.0000	54.1824	-8.4	113	-0.01
5	T	1,3-Butadiene	50.0000	58.7292	-17.5	120	0.00
6	T	Bromomethane	50.0000	38.5562	22.9	84	0.00
7	T	Chloroethane	50.0000	50.1907	-0.4	107	0.00
8	T	Trichlorofluoromethane	50.0000	55.4386	-10.9	117	0.00
9	T	Diethyl ether	100.0000	100.3367	-0.3	108	0.00
10	T	Isoprene	50.0000	50.1466	-0.3	108	0.00
11	T	Acrolein	50.0000	48.1745	3.7	103	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	52.0256	-4.1	111	0.01
13	T	Acetone	50.0000	56.4090	-12.8	113	-0.01
14	C	1,1-Dichloroethene	50.0000	51.9473	-3.9	111	0.00
15	T	Tert-Butyl Alcohol	200.0000	228.3191	-14.2	121	0.00
16	T	Dimethyl Sulfide	50.0000	47.9844	4.0	102	0.00
17	T	Iodomethane	50.0000	35.3473	29.3#	80	0.00
18	T	Methyl acetate	50.0000	47.5426	4.9	103	-0.01
19	T	Methylene Chloride	50.0000	49.4931	1.0	107	0.00
20	T	Carbon Disulfide	50.0000	51.4959	-3.0	112	0.00
21	T	Acrylonitrile	50.0000	50.5046	-1.0	100	0.00
22	T	Methyl Tert Butyl Ether	50.0000	53.3689	-6.7	108	0.00
23	T	trans-1,2-Dichloroethene	50.0000	50.8335	-1.7	108	0.00
24	T	n-Hexane	50.0000	53.8655	-7.7	116	0.00
25	T	Diisopropyl ether	100.0000	99.2260	0.8	105	0.00
26	T	Vinyl Acetate	50.0000	53.0555	-6.1	107	0.00
27	P	1,1-Dichloroethane	50.0000	51.1092	-2.2	107	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	106.1878	-6.2	110	-0.01
29	T	2-Butanone	50.0000	49.9695	0.1	101	0.00
30	T	Propionitrile	100.0000	102.2094	-2.2	105	0.00
31	T	2,2-Dichloropropane	50.0000	58.2193	-16.4	120	0.00
32	T	cis-1,2-Dichloroethene	50.0000	51.1475	-2.3	109	0.00
33	C	Chloroform	50.0000	52.8783	-5.8	111	0.00
34		1-Bromopropane	50.0000	56.1325	-12.3	119	0.00
35	T	Bromochloromethane	50.0000	52.5340	-5.1	110	0.00
36	T	Tetrahydrofuran	100.0000	91.6734	8.3	103	0.00
37	S	Dibromofluoromethane	25.0000	26.9681	-7.9	112	-0.01
38	T	1,1,1-Trichloroethane	50.0000	55.5448	-11.1	115	0.00
39	T	Cyclohexane	50.0000	50.4693	-0.9	110	0.00
40	T	1,1-Dichloropropene	50.0000	53.0265	-6.1	111	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	105.6937	-5.7	110	-0.01
42	T	Carbon Tetrachloride	50.0000	55.9611	-11.9	116	0.00
43	S	1,2-Dichloroethane-d4	25.0000	27.5026	-10.0	113	-0.01
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	55.5933	-11.2	113	0.00
46	T	Benzene	50.0000	50.8725	-1.7	106	0.00
47	T	Trichloroethene	50.0000	52.4002	-4.8	110	0.00
48	T	Methylcyclohexane	50.0000	52.8453	-5.7	113	0.00
49	C	1,2-Dichloropropane	50.0000	48.5171	3.0	103	0.00
50	T	Bromodichloromethane	50.0000	54.1489	-8.3	108	0.00
51	T	1,4-Dioxane	200.0000	214.5215	-7.3	106	0.00
52	T	Dibromomethane	50.0000	49.9722	0.1	106	-0.01
53	T	2-Chloroethyl Vinyl Ether	50.0000	44.5915	10.8	88	0.00
54	T	4-Methyl-2-Pentanone	50.0000	51.1598	-2.3	103	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413003.D Vial: 3
Acq On : 15 Jun 2016 9:29 Operator: TMB
Sample : WG572735-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.5425	-7.1	107	0.00
56	T	Dimethyl Disulfide	50.0000	52.1661	-4.3	108	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	111	0.00
58	S	Toluene-d8	25.0000	26.0957	-4.4	114	0.00
59	C	Toluene	50.0000	49.1512	1.7	109	0.00
60	T	Ethyl Methacrylate	50.0000	51.5092	-3.0	109	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	51.8862	-3.8	109	0.00
63	T	1,1,2-Trichloroethane	50.0000	47.7558	4.5	104	0.00
64	T	2-Hexanone	50.0000	50.2978	-0.6	109	0.00
65	T	1,3-Dichloropropane	50.0000	48.8533	2.3	104	0.00
66	T	Tetrachloroethene	50.0000	51.9308	-3.9	118	0.00
67	T	Dibromochloromethane	50.0000	52.1844	-4.4	111	0.00
68	T	1,2-Dibromoethane	50.0000	49.4166	1.2	106	0.00
69	T	1-Chlorohexane	50.0000	49.9121	0.2	113	0.00
70	P	Chlorobenzene	50.0000	49.3881	1.2	111	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	51.8051	-3.6	113	0.00
72	C	Ethylbenzene	50.0000	48.3185	3.4	110	0.00
73	T	m-,p-Xylene	100.0000	99.4174	0.6	111	0.00
74	T	o-Xylene	50.0000	49.9090	0.2	111	0.00
75	T	Styrene	50.0000	51.5739	-3.1	110	0.00
76	P	Bromoform	50.0000	53.0080	-6.0	113	0.00
77	T	Isopropylbenzene	50.0000	51.0798	-2.2	111	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	117	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	45.2267	9.5	104	0.00
80	S	p-Bromofluorobenzene	25.0000	25.2456	-1.0	121	0.00
81	T	1,2,3-Trichloropropane	50.0000	47.2826	5.4	111	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	47.4023	5.2	116	0.00
83	T	n-Propylbenzene	50.0000	47.6894	4.6	110	0.00
84	T	Bromobenzene	50.0000	48.5575	2.9	115	-0.01
85	T	1,3,5-Trimethylbenzene	50.0000	48.3051	3.4	112	0.00
86	T	2-Chlorotoluene	50.0000	43.7312	12.5	100	0.00
87	T	4-Chlorotoluene	50.0000	51.6293	-3.3	128	0.00
88	T	a-Methylstyrene	50.0000	47.1080	5.8	111	0.00
89	T	tert-Butylbenzene	50.0000	46.6633	6.7	114	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	47.9759	4.0	113	0.00
91	T	sec-Butylbenzene	50.0000	47.2703	5.5	111	0.00
92	T	p-Isopropyltoluene	50.0000	47.8823	4.2	113	0.00
93	T	1,3-Dichlorobenzene	50.0000	49.1672	1.7	116	0.00
94	T	1,4-Dichlorobenzene	50.0000	47.7112	4.6	115	0.00
95	T	n-Butylbenzene	50.0000	47.2912	5.4	112	-0.01
96	T	1,2-Dichlorobenzene	50.0000	47.1049	5.8	114	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	46.2131	7.6	106	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	48.4887	3.0	115	0.00
99	T	Hexachlorobutadiene	50.0000	50.8181	-1.6	125	-0.01
100	T	Naphthalene	50.0000	46.8800	6.2	108	-0.01
101	T	1,2,3-Trichlorobenzene	50.0000	47.2458	5.5	117	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

2.1.1.5 Raw QC Data

BFB

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Data File : C:\MSDCHEM\2\DATA\051316\8M412218.D          Vial: 3
Acq On    : 13 May 2016  12:36                       Operator: TMB
Sample    : WG568561-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD76034                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

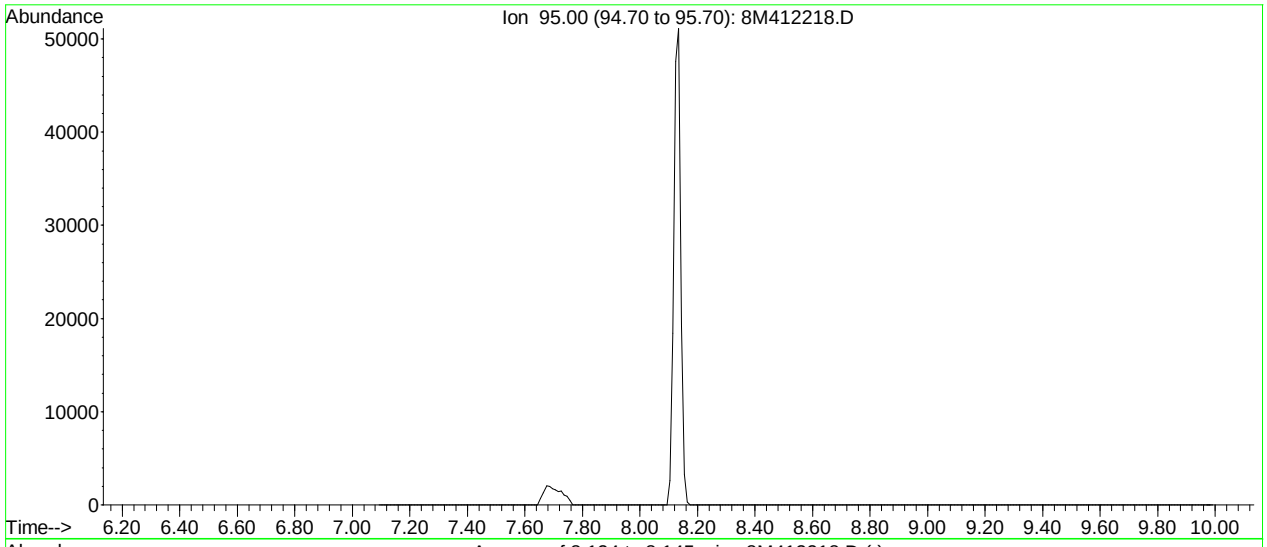

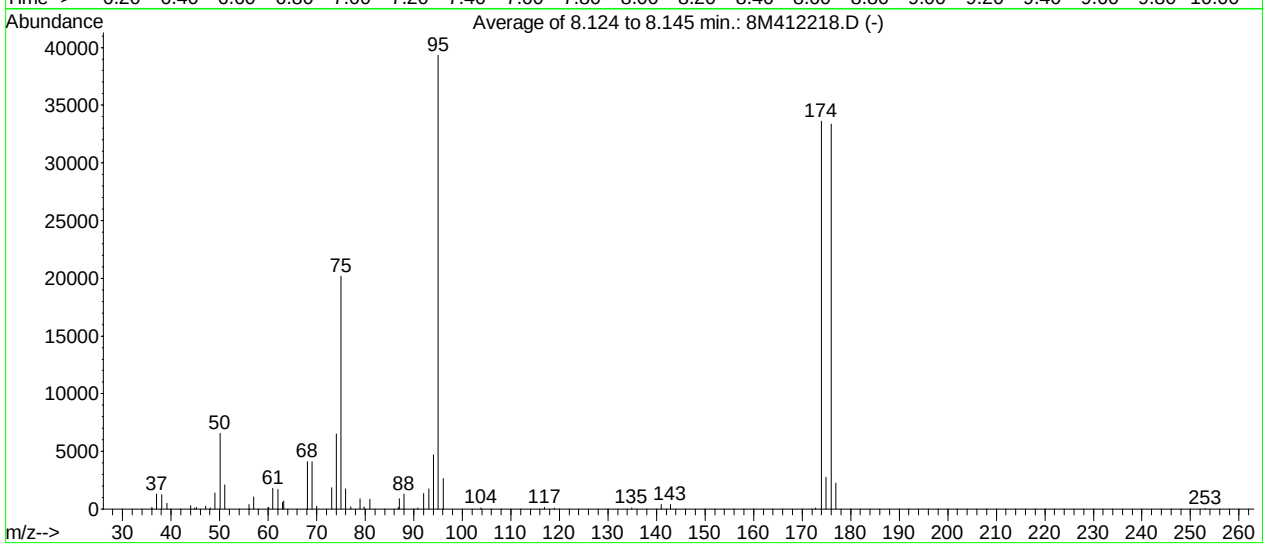

AutoFind: Scans 102, 103, 104; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.7	6575	PASS
75	95	30	60	51.3	20171	PASS
95	95	100	100	100.0	39312	PASS
96	95	5	9	6.7	2649	PASS
173	174	0.00	2	0.4	122	PASS
174	95	50	100	85.5	33616	PASS
175	174	5	9	8.2	2746	PASS
176	174	95	101	99.2	33360	PASS
177	176	5	9	6.8	2267	PASS

8M412218.D BFB.M Fri May 13 12:47:24 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413001.D Vial: 1
Acq On    : 15 Jun 2016   8:36                        Operator: TMB
Sample    : WG572735-01 50ng BFB STD 8260             Inst    : HPMS8
Misc      : 1,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title     : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
```

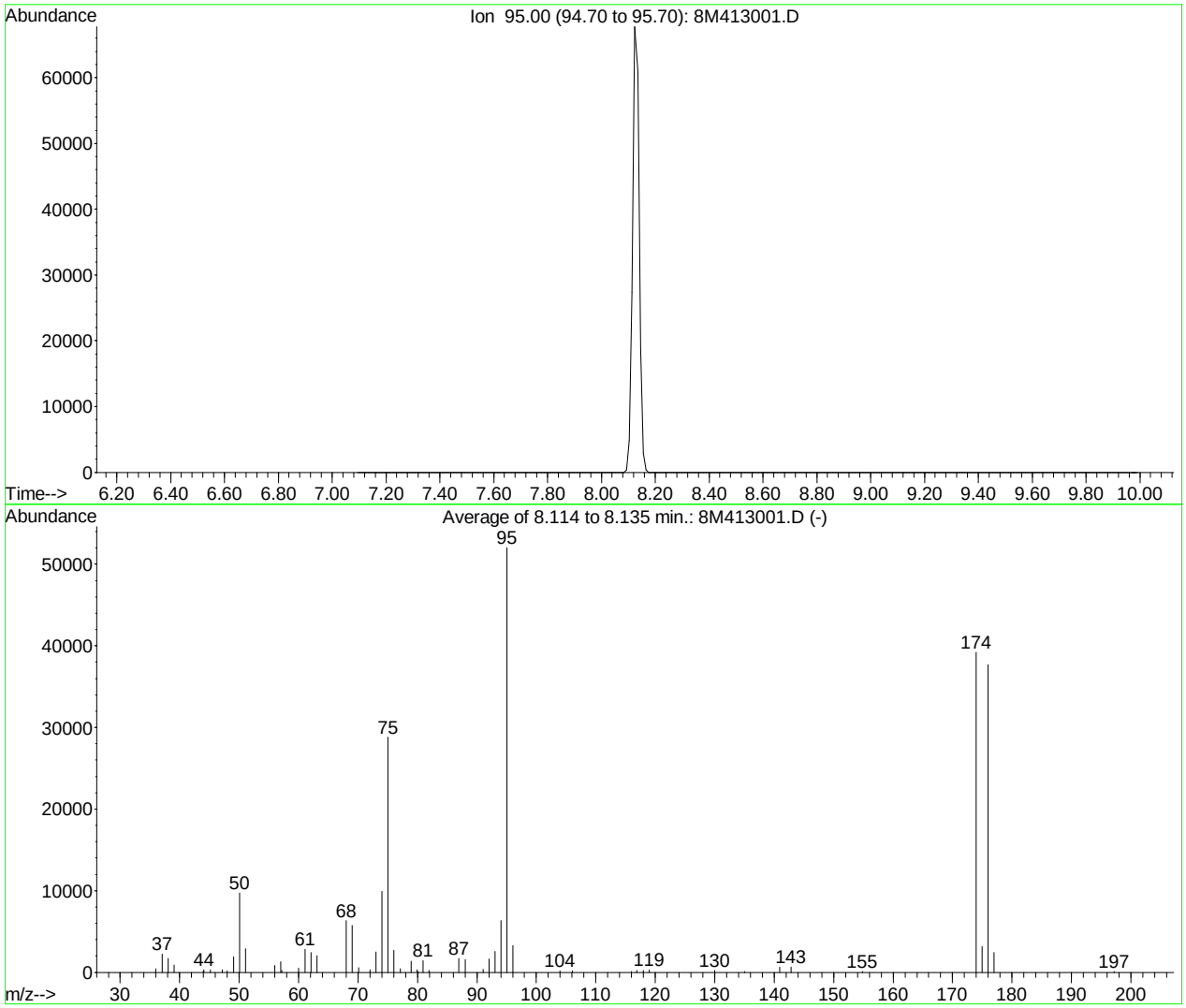

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 96

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.6	9690	PASS
75	95	30	60	55.4	28818	PASS
95	95	100	100	100.0	52034	PASS
96	95	5	9	6.4	3311	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	75.4	39229	PASS
175	174	5	9	8.1	3176	PASS
176	174	95	101	96.0	37669	PASS
177	176	5	9	6.4	2397	PASS

8M413001.D 8260WT.M Wed Jun 15 10:23:34 2016

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413005.D Vial: 5
Acq On : 15 Jun 2016 10:27 Operator: TMB
Sample : WG572737-01 VBLK0615 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 13:24:55 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	780700	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	588241	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	330295	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	231246	27.5688 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.28%		
43) 1,2-Dichloroethane-d4	10.31	65	247427	27.5103 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 110.04%		
58) Toluene-d8	12.68	98	800099	25.9892 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.96%		
80) p-Bromofluorobenzene	16.07	95	333874	24.4121 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.64%		
Target Compounds					Qvalue
36) Tetrahydrofuran	9.66	42	1213	1.4271 ug/L #	53

(#) = qualifier out of range (m) = manual integration
8M413005.D 8260WT.M Thu Jun 16 13:24:58 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413005.D Vial: 5
Acq On : 15 Jun 2016 10:27 Operator: TMB
Sample : WG572737-01 VBLK0615 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 13:24 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

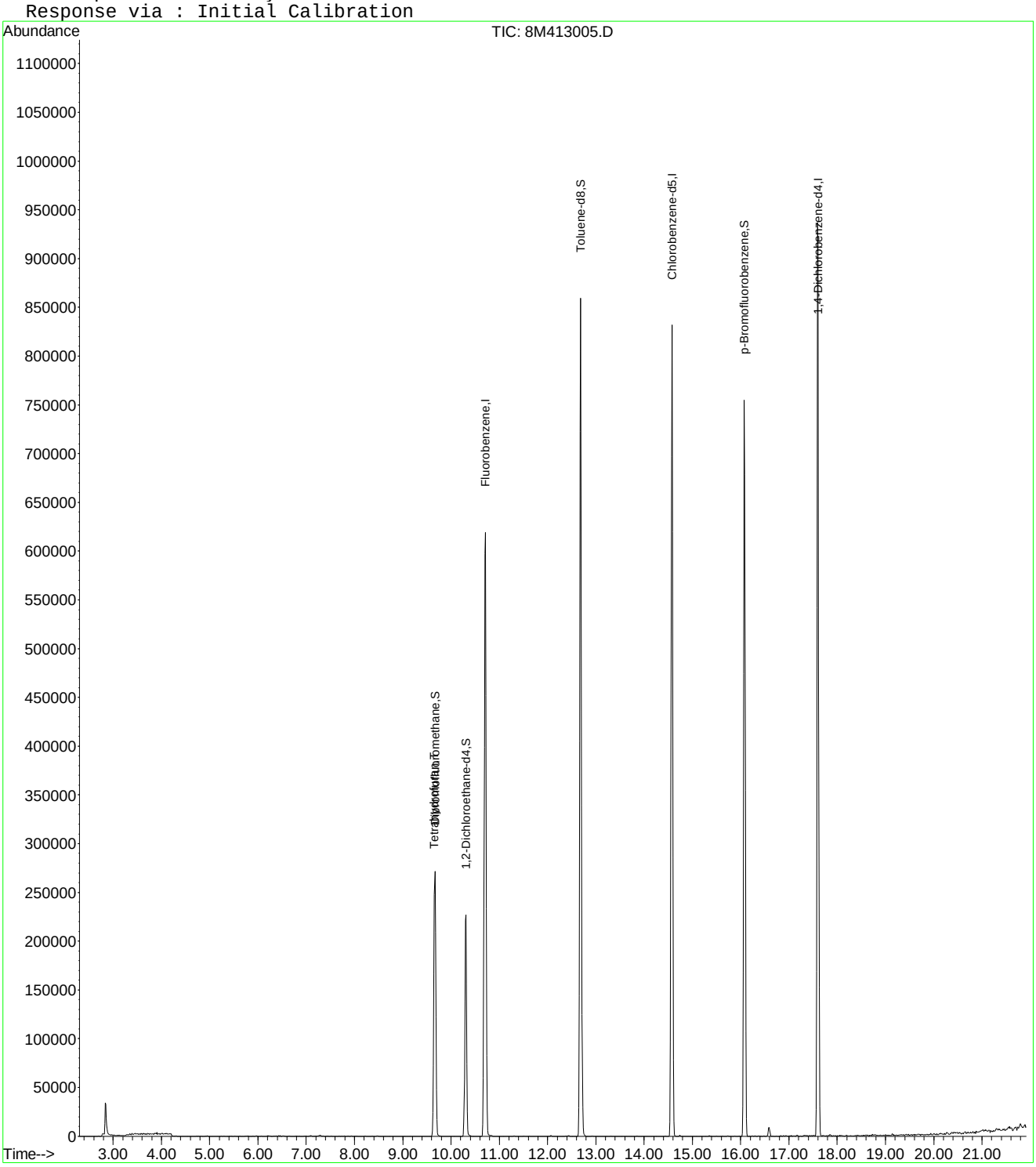

8M413005.D 8260WT.M Thu Jun 16 13:24:59 2016 Page 2

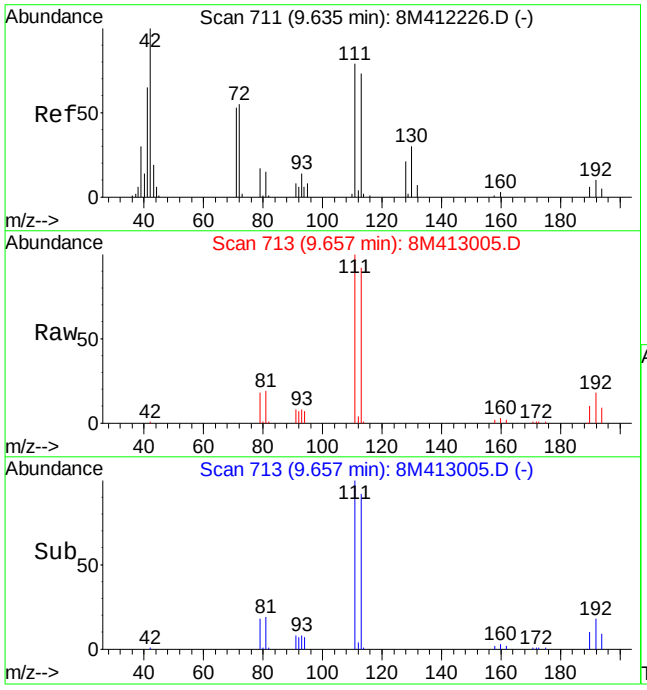

#36
Tetrahydrofuran
Concen: 1.43 ug/L
RT: 9.66 min Scan# 713
Delta R.T. 0.02 min
Lab File: 8M413005.D
Acq: 15 Jun 2016 10:27

Tgt Ion: 42 Resp: 1213

Ion	Ratio	Lower	Upper
42	100		
72	22.8	33.8	78.8#
71	19.7	32.0	74.8#

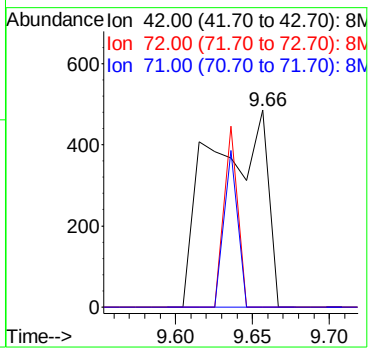

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413006.D Vial: 6
Acq On : 15 Jun 2016 10:56 Operator: TMB
Sample : WG572737-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD75597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 13:12:46 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	797707	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	583746	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	327915	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	229384	26.7638 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.04%		
43) 1,2-Dichloroethane-d4	10.31	65	254648	27.7095 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 110.84%		
58) Toluene-d8	12.68	98	795894	26.0517 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.20%		
80) p-Bromofluorobenzene	16.07	95	340031	25.0428 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.16%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	284160	21.2467 ug/L	99
3) Chloromethane	3.62	50	158514	20.3044 ug/L	98
4) Vinyl Chloride	3.84	62	213868	23.0899 ug/L	98
5) 1,3-Butadiene	3.88	54	35533	4.5746 ug/L	96
6) Bromomethane	4.73	94	73922	13.9336 ug/L	99
7) Chloroethane	4.89	64	107290	21.0513 ug/L	98
8) Trichlorofluoromethane	5.38	101	363474	21.0897 ug/L	100
9) Diethyl ether	5.90	59	423085	102.8279 ug/L	98
10) Isoprene	5.94	67	223906	21.3936 ug/L	98
11) Acrolein	6.14	56	35908	97.4725 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	169440	20.9152 ug/L	98
13) Acetone	6.23	43	20126	22.4246 ug/L	99
14) 1,1-Dichloroethene	6.46	61	252423	19.5691 ug/L	99
15) Tert-Butyl Alcohol	6.59	59	67383	234.2865 ug/L	96
16) Dimethyl Sulfide	6.73	62	167195	36.2514 ug/L	100
17) Iodomethane	6.98	142	45880	15.0557 ug/L	95
18) Methyl acetate	7.00	43	48803	20.1166 ug/L	98
19) Methylene Chloride	7.25	84	163005	19.8575 ug/L	99
20) Carbon Disulfide	7.29	76	492635	18.2500 ug/L	100
21) Acrylonitrile	7.43	53	24089	20.6864 ug/L	99
22) Methyl Tert Butyl Ether	7.46	73	394184	22.1874 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	237897	20.0749 ug/L	97
24) n-Hexane	7.78	57	165301	18.7849 ug/L	98
25) Diisopropyl ether	8.13	45	1883063	101.9408 ug/L	97
26) Vinyl Acetate	8.30	43	133404	15.7735 ug/L	100
27) 1,1-Dichloroethane	8.32	63	292700	19.8885 ug/L	99
28) Ethyl-Tert-Butyl ether	8.69	59	2019885	102.0589 ug/L	98
29) 2-Butanone	8.88	43	27520	20.8701 ug/L	95
30) Propionitrile	8.99	54	38179	99.3539 ug/L	98
31) 2,2-Dichloropropane	9.10	77	354710	22.8710 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	194451	21.2361 ug/L	98
33) Chloroform	9.38	83	372083	21.4124 ug/L	100
34) 1-Bromopropane	9.51	122	41342	31.5209 ug/L	99
35) Bromochloromethane	9.60	130	97315	20.7252 ug/L	96
36) Tetrahydrofuran	9.63	42	74098	85.3178 ug/L	93
38) 1,1,1-Trichloroethane	9.90	97	368225	22.3085 ug/L	100
39) Cyclohexane	9.93	56	222193	19.4435 ug/L	98
40) 1,1-Dichloropropene	10.10	75	252909	20.1021 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1926409	107.1686 ug/L	100
42) Carbon Tetrachloride	10.24	117	320660	21.8773 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413006.D 8260WT.M Wed Jun 15 13:12:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413006.D Vial: 6
Acq On : 15 Jun 2016 10:56 Operator: TMB
Sample : WG572737-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD75597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 13:12:46 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	249988	22.3515 ug/L		99
46)	Benzene	10.46	78	677769	20.6840 ug/L		100
47)	Trichloroethene	11.22	130	191249	21.8833 ug/L		98
48)	Methylcyclohexane	11.30	83	271212	20.4274 ug/L		98
49)	1,2-Dichloropropane	11.42	63	151089	20.7129 ug/L		94
50)	Bromodichloromethane	11.72	83	279173	21.7752 ug/L		100
51)	1,4-Dioxane	11.72	88	7089	193.4655 ug/L		97
52)	Dibromomethane	11.82	93	84325	19.5289 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	59062	18.8382 ug/L		95
54)	4-Methyl-2-Pentanone	12.05	58	25295	19.7510 ug/L		93
55)	cis-1,3-Dichloropropene	12.36	75	305008	23.3729 ug/L		98
56)	Dimethyl Disulfide	12.62	79	150140	21.5561 ug/L		92
59)	Toluene	12.79	91	733515	20.2405 ug/L		100
60)	Ethyl Methacrylate	12.88	69	148427	21.3266 ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	256810	21.1459 ug/L		98
63)	1,1,2-Trichloroethane	13.18	97	115499	20.1973 ug/L		99
64)	2-Hexanone	13.12	58	22315	18.5695 ug/L	#	96
65)	1,3-Dichloropropane	13.48	76	222881	21.8913 ug/L		97
66)	Tetrachloroethene	13.60	164	161836	20.8434 ug/L		96
67)	Dibromochloromethane	13.86	129	175372	21.0031 ug/L		98
68)	1,2-Dibromoethane	14.12	107	116504	20.4419 ug/L		98
69)	1-Chlorohexane	14.21	91	248464	20.0851 ug/L		98
70)	Chlorobenzene	14.63	112	512807	20.9843 ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.66	131	200020	21.1271 ug/L		98
72)	Ethylbenzene	14.66	106	265988	19.8936 ug/L		98
73)	m-,p-Xylene	14.74	106	658272	41.9739 ug/L		97
74)	o-Xylene	15.31	106	327127	21.3352 ug/L		99
75)	Styrene	15.34	104	529865	21.0698 ug/L		96
76)	Bromoform	15.84	173	99478	20.0860 ug/L		99
77)	Isopropylbenzene	15.73	105	884775	21.7219 ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	119073	18.0900 ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	41646	20.5464 ug/L	#	30
82)	trans-1,4-Dichloro-2-Buten	16.19	53	31015	15.4417 ug/L	#	1
83)	n-Propylbenzene	16.24	91	1065587	20.8292 ug/L		100
84)	Bromobenzene	16.36	156	207745	19.7426 ug/L		98
85)	1,3,5-Trimethylbenzene	16.42	105	774723	20.7892 ug/L		99
86)	2-Chlorotoluene	16.51	91	659635	18.4681 ug/L		91
87)	4-Chlorotoluene	16.56	91	724140	22.4448 ug/L		92
88)	a-Methylstyrene	16.83	118	376018	21.2676 ug/L		100
89)	tert-Butylbenzene	16.89	134	145153	19.9098 ug/L		96
90)	1,2,4-Trimethylbenzene	16.94	105	775871	20.2476 ug/L		100
91)	sec-Butylbenzene	17.16	105	899124	20.5090 ug/L		99
92)	p-Isopropyltoluene	17.32	119	756722	20.3288 ug/L		100
93)	1,3-Dichlorobenzene	17.51	146	417144	20.5876 ug/L		97
94)	1,4-Dichlorobenzene	17.64	146	420670	20.5932 ug/L		99
95)	n-Butylbenzene	17.84	91	714421	19.4136 ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	366373	20.3305 ug/L		97
97)	1,2-Dibromo-3-Chloropropan	19.13	75	26008	19.6841 ug/L		99
98)	1,2,4-Trichlorobenzene	20.28	180	266543	19.7879 ug/L		99
99)	Hexachlorobutadiene	20.43	225	132022	20.9768 ug/L		99
100)	Naphthalene	20.64	128	347414	17.3597 ug/L		100
101)	1,2,3-Trichlorobenzene	20.95	180	216248	19.0291 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M413006.D 8260WT.M Wed Jun 15 13:12:49 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413006.D Vial: 6
Acq On : 15 Jun 2016 10:56 Operator: TMB
Sample : WG572737-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD75597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 13:12 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

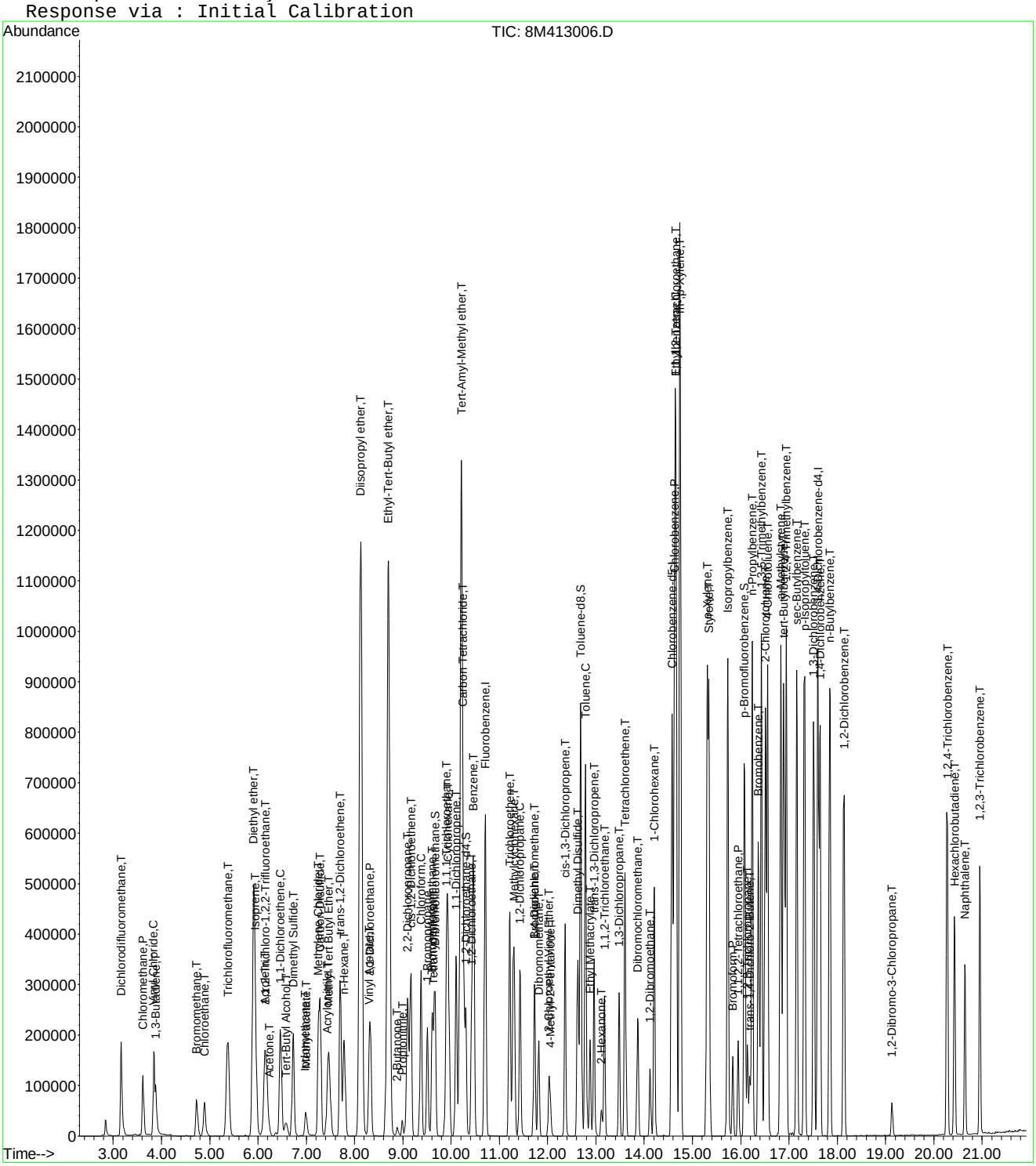

8M413006.D 8260WT.M Wed Jun 15 13:12:50 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413007.D Vial: 7
Acq On : 15 Jun 2016 11:25 Operator: TMB
Sample : WG572737-03 20ug/L LCS2 STD 8260 Inst : HPMS8
Misc : 1,1 STD75597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 13:12:51 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	790550	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	592812	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	329286	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	233097	27.4432 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.76%		
43) 1,2-Dichloroethane-d4	10.31	65	253627	27.8483 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.40%		
58) Toluene-d8	12.68	98	809553	26.0935 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.36%		
80) p-Bromofluorobenzene	16.07	95	346437	25.4083 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.64%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	286211	21.5938 ug/L	100
3) Chloromethane	3.62	50	160333	20.7233 ug/L	99
4) Vinyl Chloride	3.84	62	215100	23.4332 ug/L	100
5) 1,3-Butadiene	3.88	54	33429	4.3426 ug/L	94
6) Bromomethane	4.73	94	78480	14.8828 ug/L	100
7) Chloroethane	4.89	64	108715	21.5240 ug/L	99
8) Trichlorofluoromethane	5.38	101	369142	21.6124 ug/L	99
9) Diethyl ether	5.90	59	423639	103.8947 ug/L	99
10) Isoprene	5.93	67	224199	21.6155 ug/L	96
11) Acrolein	6.13	56	36618	100.2997 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	171548	21.3671 ug/L	94
13) Acetone	6.24	43	21959	24.6885 ug/L	96
14) 1,1-Dichloroethene	6.46	61	255403	19.9794 ug/L	98
15) Tert-Butyl Alcohol	6.58	59	69960	245.4488 ug/L	96
16) Dimethyl Sulfide	6.73	62	171865	37.6013 ug/L	99
17) Iodomethane	6.99	142	60508	19.0922 ug/L	96
18) Methyl acetate	7.00	43	52216	21.7183 ug/L	97
19) Methylene Chloride	7.25	84	168673	20.7340 ug/L	99
20) Carbon Disulfide	7.29	76	495290	18.5145 ug/L	99
21) Acrylonitrile	7.43	53	23838	20.6562 ug/L	99
22) Methyl Tert Butyl Ether	7.46	73	402312	22.8499 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	245125	20.8721 ug/L	100
24) n-Hexane	7.78	57	170844	19.5905 ug/L	100
25) Diisopropyl ether	8.13	45	1907939	104.2226 ug/L	97
26) Vinyl Acetate	8.29	43	143629	17.1362 ug/L	98
27) 1,1-Dichloroethane	8.32	63	295146	20.2362 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	2059515	105.0034 ug/L	98
29) 2-Butanone	8.88	43	29144	22.3017 ug/L	99
30) Propionitrile	8.98	54	40076	105.2347 ug/L	99
31) 2,2-Dichloropropane	9.10	77	356627	23.2028 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	189499	20.8826 ug/L	97
33) Chloroform	9.38	83	367074	21.3154 ug/L	99
34) 1-Bromopropane	9.51	122	41437	31.8793 ug/L	97
35) Bromochloromethane	9.60	130	98136	21.0892 ug/L	95
36) Tetrahydrofuran	9.63	42	79387	92.2351 ug/L	97
38) 1,1,1-Trichloroethane	9.90	97	363100	22.1971 ug/L	99
39) Cyclohexane	9.93	56	224247	19.8009 ug/L	96
40) 1,1-Dichloropropene	10.10	75	258698	20.7484 ug/L	99
41) Tert-Amyl-Methyl ether	10.20	73	1971434	110.6663 ug/L	99
42) Carbon Tetrachloride	10.24	117	314892	21.6783 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413007.D 8260WT.M Wed Jun 15 13:12:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413007.D Vial: 7
Acq On : 15 Jun 2016 11:25 Operator: TMB
Sample : WG572737-03 20ug/L LCS2 STD 8260 Inst : HPMS8
Misc : 1,1 STD75597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 13:12:51 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	261278	23.5724	ug/L		97
46)	Benzene	10.46	78	680256	20.9479	ug/L		100
47)	Trichloroethene	11.22	130	194311	22.4349	ug/L		98
48)	Methylcyclohexane	11.30	83	283441	21.5417	ug/L		98
49)	1,2-Dichloropropane	11.42	63	151880	21.0098	ug/L		95
50)	Bromodichloromethane	11.72	83	283122	22.2832	ug/L		100
51)	1,4-Dioxane	11.71	88	7908	217.7707	ug/L		96
52)	Dibromomethane	11.81	93	83275	19.4603	ug/L		94
53)	2-Chloroethyl Vinyl Ether	12.02	63	63767	20.5230	ug/L		100
54)	4-Methyl-2-Pentanone	12.05	58	25785	20.3159	ug/L		91
55)	cis-1,3-Dichloropropene	12.36	75	308896	23.8851	ug/L		100
56)	Dimethyl Disulfide	12.62	79	152219	22.0525	ug/L		94
59)	Toluene	12.79	91	746005	20.2704	ug/L		99
60)	Ethyl Methacrylate	12.88	69	149599	21.1662	ug/L		99
62)	trans-1,3-Dichloropropene	12.96	75	256988	20.8369	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	116292	20.0250	ug/L		95
64)	2-Hexanone	13.12	58	23367	19.1475	ug/L	#	100
65)	1,3-Dichloropropane	13.48	76	221842	21.4560	ug/L		98
66)	Tetrachloroethene	13.60	164	162164	20.5662	ug/L		96
67)	Dibromochloromethane	13.86	129	177622	20.9473	ug/L		98
68)	1,2-Dibromoethane	14.12	107	117628	20.3235	ug/L		99
69)	1-Chlorohexane	14.21	91	252462	20.0962	ug/L		99
70)	Chlorobenzene	14.63	112	510921	20.5874	ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.66	131	200448	20.8485	ug/L		98
72)	Ethylbenzene	14.66	106	270169	19.8973	ug/L		100
73)	m-,p-Xylene	14.74	106	658179	41.3262	ug/L		96
74)	o-Xylene	15.31	106	324634	20.8488	ug/L		96
75)	Styrene	15.34	104	538457	21.0840	ug/L		98
76)	Bromoform	15.84	173	101358	20.1526	ug/L		100
77)	Isopropylbenzene	15.73	105	899197	21.7383	ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	124317	18.8081	ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	40906	20.0973	ug/L	#	13
82)	trans-1,4-Dichloro-2-Buten	16.19	53	35020	17.2867	ug/L	#	1
83)	n-Propylbenzene	16.24	91	1077100	20.9666	ug/L		99
84)	Bromobenzene	16.36	156	212450	20.1057	ug/L		96
85)	1,3,5-Trimethylbenzene	16.43	105	777410	20.7744	ug/L		99
86)	2-Chlorotoluene	16.51	91	666207	18.5744	ug/L		92
87)	4-Chlorotoluene	16.56	91	724276	22.3555	ug/L		92
88)	a-Methylstyrene	16.83	118	373977	21.0641	ug/L		98
89)	tert-Butylbenzene	16.89	134	146447	20.0037	ug/L		98
90)	1,2,4-Trimethylbenzene	16.94	105	769177	19.9894	ug/L		99
91)	sec-Butylbenzene	17.16	105	914916	20.7823	ug/L		99
92)	p-Isopropyltoluene	17.32	119	762827	20.4075	ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	419374	20.6115	ug/L		98
94)	1,4-Dichlorobenzene	17.64	146	421455	20.5458	ug/L		100
95)	n-Butylbenzene	17.84	91	729014	19.7277	ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	375223	20.7349	ug/L		97
97)	1,2-Dibromo-3-Chloropropan	19.13	75	25730	19.3926	ug/L		94
98)	1,2,4-Trichlorobenzene	20.28	180	271201	20.0498	ug/L		99
99)	Hexachlorobutadiene	20.42	225	133189	21.0741	ug/L		99
100)	Naphthalene	20.64	128	357898	17.8092	ug/L		100
101)	1,2,3-Trichlorobenzene	20.95	180	220212	19.2972	ug/L		99

(#) = qualifier out of range (m) = manual integration
8M413007.D 8260WT.M Wed Jun 15 13:12:54 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413007.D Vial: 7
Acq On : 15 Jun 2016 11:25 Operator: TMB
Sample : WG572737-03 20ug/L LCS2 STD 8260 Inst : HPMS8
Misc : 1,1 STD75597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 13:12 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

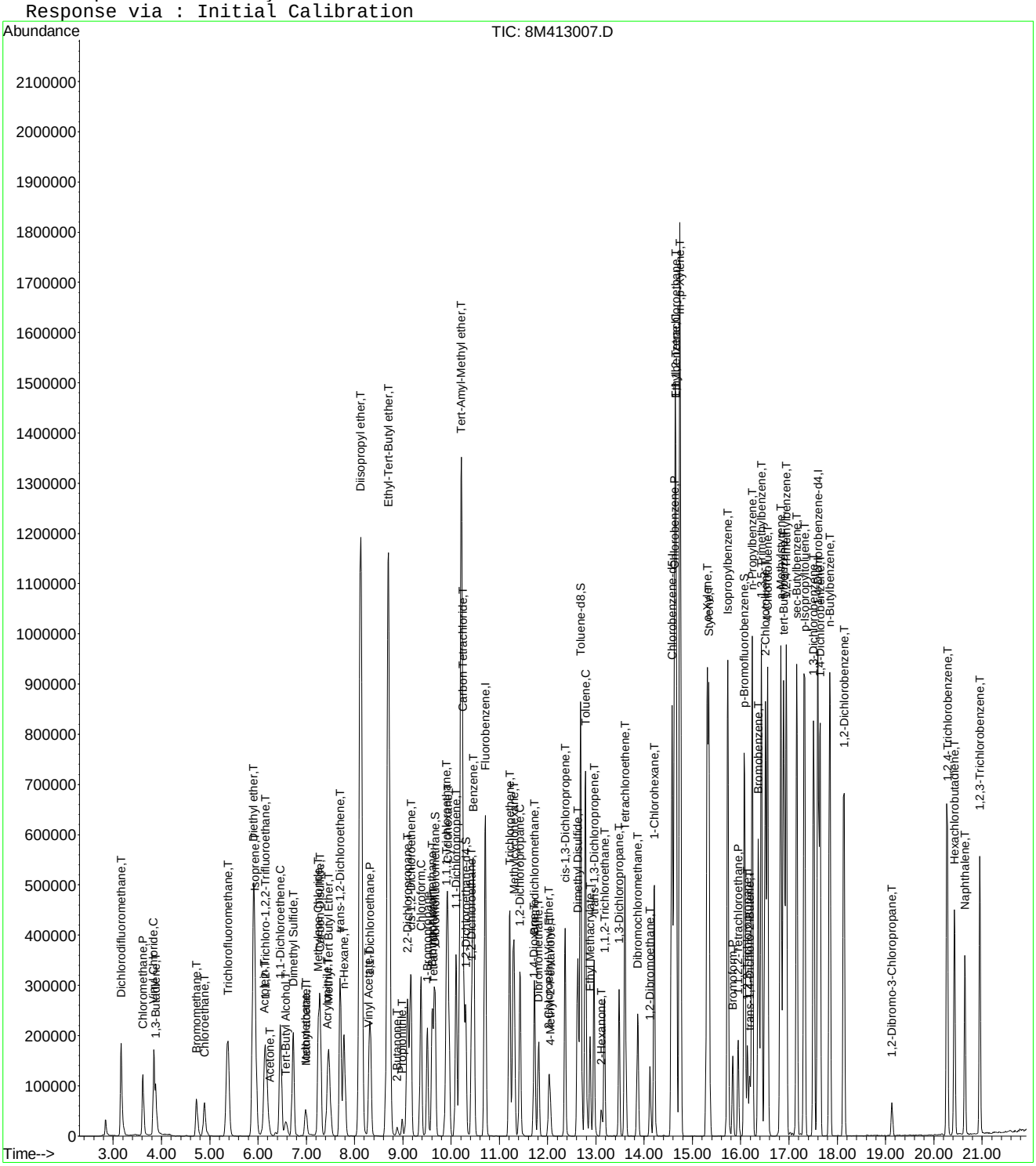

2.2 Semivolatiles Data

2.2.1 Semivolatiles GC/MS Data (Dioxane)

2.2.1.1 Summary Data

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060615-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW22R-060916	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 13:48
Collect Date:	06/09/2016 07:40	**Dilution:**	1	**File ID:**	15M18410
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	56.5	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060615-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW22DW-060916	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 14:11
Collect Date:	06/09/2016 08:40	**Dilution:**	1	**File ID:**	15M18411
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	62.1	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060615-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW22DWFD-060916	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 14:33
Collect Date:	06/09/2016 08:40	**Dilution:**	1	**File ID:**	15M18412
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	47.8	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060615-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW22SW-060916	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 14:56
Collect Date:	06/09/2016 09:55	**Dilution:**	1	**File ID:**	15M18413
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	44.9	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.2.1.2 QC Summary Data

Example 8270 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	1261197
Cis = Concentration of the specific internal standard (ug/mL)	40
Ais = Area of the characteristic ion of the specific internal standard	608044
Cx = Concentration of the compound in the standard being measured (ug/mL)	50
RF = Calculated Response Factor	**1.65935**

2.0 Calculating the concentration (C) of a compound in water using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Vi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Vi = Initial volume of sample extracted from prep log (mL)	1021
Cx = Concentration of the compound in the sample being measured (ug/mL)	0.016947
Cx = Concentration of the compound in the sample being measured (ug/L)	**16.947**

3.0 Calculating the concentration (C) of a compound in soil using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Wi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Wi = Initial weight of sample extracted (g) from prep log	30
Cx = Concentration of the compound in the sample being measured (ug/g)	0.576763
Cx = Concentration of the compound in the sample being measured (ug/kg)	**576.7627**

Dry weight correction:

Percent solids (PCT_S)	50
Cd = (Cx) (100)/PCT_S	**1153.525** ug/kg

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve plot

b = intercept from curve plot

Step 2: Calculate y from Quantitation Report

y = 16790/784838 = 0.02139

Step 3: Solve for x

x = (y - b)/m = [(0.02139 -(- 0.0435)]/ 0.0783 = 0.829

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.829) = 20.72 ug/L

Example Spreadsheet Calculation:

Slope from curve, m:	0.0783	
Intercept from curve, b:	-0.0435	
Area of analyte, Ax:	16790	
Area of Internal Standard , Ais:	784484	
Concentration of IS, Cis	25.00	ug/L
Response Ratio (y) :	0.021403	
Amount Ratio:	0.828897	
Concentration (Cx):	20.72241	ug/L

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**0.0259**	
Value of B from plot:	**0.0596**	
Value of C from plot:	**-0.0165**	
Area of analyte from quantitation report:	**203233**	
Area of IS from quantiation report:	**1425653**	
Response ratio, y:	**0.142554**	
C - y:	**-0.15905**	
Root 1 - Computed amount ratio , X1:	**-3.88278**	
Root 2 - Computed amount ratio , X2:	**1.581623**	use this solution
Concentration of IS, Cis:	**40.00**	
Concentration of analyte, Cx:	**63.26**	ug/L

Microbac Laboratories Inc.
Continuous Sample Extract Log

Workgroup: WG572341
Analyst: CPD
Spike Analyst: CPD
Method: 3520C
Run Date: 06/13/2016 16:16
SOP: EXB01 Revison 20
Spike Witness: AED
Surr Solution: STD74051

TIME ON: 16:55 OFF: 12:40 ON: 15:20 OFF: 11:00

CH2CL2 Lot #: COA18982
sodium sulfate Lot #: COA18814
1:1 H2SO4 Lot #: RGT36755

	SAMPLE #	Type	Reference	Prod	pH	Init Amnt	Surr Amnt	Spike Amnt	Spike Sol	Final Vol	Color
1	L16060497-01	RS01		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
2	L16060497-02	MS01	L16060497-01	827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD66388	1 mL	Transparent
3	L16060497-03	SD01	L16060497-01	827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD66388	1 mL	Transparent
4	L16060504-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
5	L16060504-02	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
6	L16060504-03	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
7	L16060504-04	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
8	L16060615-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
9	L16060615-02	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
10	L16060615-03	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
11	L16060615-04	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
12	L16060616-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
13	L16060616-02	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
14	L16060616-03	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
15	L16060637-03	SAMP		827-DIOX	<2	1000 mL	.05 mL			1 mL	Transparent
16	WG572341-01	BLANK		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
17	WG572341-02	LCS		827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD66388	1 mL	Transparent
18	WG572341-03	REF	L16060497-01	827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
19	WG572341-04	MS	L16060497-01	827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD66388	1 mL	Transparent
20	WG572341-05	MSD	L16060497-01	827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD66388	1 mL	Transparent

Analyst: Chelsie Davis

Reviewer: Justin Hesson

EXTRACT - Modified 01/23/2009
PDF ID: 4809359
Report generated: 06/16/2016 08:25

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 061016
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG571947

Internal STD: STD75471 Surrogate STD: NA Calibration STD
CCV STD: STD74784 LCS STD: STD74214 MS/MSD STD:

Comments: L16051582-01, and L16060024-01,03,05 were already sent for re-extract due to QC contamination. L16060024s are being re-extracted as 827-SPE-DIOX only.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18332	BAKEOUT-IS CHECK	1	1		06/10/16 08:27
2	15M18333	BAKEOUT-IS CHECK	1	1		06/10/16 08:53
3	15M18334	WG571981-01 5PPM DFTPP STD	1	1	STD75016	06/10/16 09:13
4	15M18335	BAKEOUT-IS CHECK	1	1		06/10/16 09:31
5	15M18336	BAKEOUT-IS CHECK	1	1		06/10/16 09:53
6	15M18337	WG572230-01 5PPM DFTPP STD	1	1	STD75016	06/10/16 10:18
7	15M18338	WG572230-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 10:36
8	15M18339	WG572230-03 10 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 11:00
9	15M18340	WG572230-04 7.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 11:22
10	15M18341	WG572230-05 2.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 11:45
11	15M18342	WG572230-06 1 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 12:08
12	15M18343	WG572230-07 0.4 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 12:30
13	15M18344	WG572230-08 5PPM 1,4-DIOXANE ALT SRC	1	1	STD74214	06/10/16 12:52
14	15M18345	WG571410-01 BLANK 6/6	1	1		06/10/16 13:15
15	15M18346	WG571410-02 LCS 6/6	1	1		06/10/16 13:38
16	15M18347	WG571410-03 LCSDUP 6/6	1	1		06/10/16 14:01
17	15M18348	WG571404-01 BLANK 6/2	1	1		06/10/16 14:24
18	15M18349	WG571404-02 LCS 6/2	1	1		06/10/16 14:47
19	15M18350	WG571404-03 LCSDUP 6/2	1	1		06/10/16 15:09
20	15M18351	L16060067-01 827-DIOX	1	1		06/10/16 15:32
21	15M18352	L16051582-01 5X 827-DIOX	1	5		06/10/16 15:55
22	15M18353	L16060024-05 20X 827-DIOX	1	20		06/10/16 16:18
23	15M18354	L16060024-03 20X 827-DIOX	1	20		06/10/16 16:40
24	15M18355	L16060024-01 20,000X 827-DIOX	1	20000		06/10/16 17:03
25	15M18356	L16060067-01 2X 827-DIOX	1	2		06/10/16 17:26
26	15M18357	L16060024-03 100X 827-DIOX	1	100		06/10/16 17:49

Comments

Seq.	Rerun	Dil.	Reason	Analytes
3				
	DFTPP check after installing new source and retuning.			
17				
	WG571404-01 BLANK 6/2 dioxane hit above the RL.			

Page: 1 Approved: 13-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 061016

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG571947

Internal STD: STD75471 Surrogate STD: NA

CCV STD: STD74784 LCS STD: STD74214

Comments

Seq.	Rerun	Dil.	Reason	Analytes
18				
	WG571404-02 LCS 6/2 fails high.			
19				
	WG571404-03 LCSDUP 6/2 fails high.			
20	X	2	Over Calibration Range	
	L16060067-01			
23	X	100	Over Calibration Range	
	L16060024-03 20X DNR			

Page: 2 Approved: 13-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 061616
Analyst1: SCB Analyst2: MES
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG572971

Internal STD: STD75471, 76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18399	WG572958-01 5PPM DFTPP STD	1	1	STD75016	06/16/16 09:38
2	15M18400	WG572958-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/16/16 10:00
3	15M18401	WG572341-01 BLANK 6/13	1	1		06/16/16 10:23
4	15M18402	WG572341-02 LCS 6/13	1	1		06/16/16 10:46
5	15M18403	L16060497-01 REF 827-DIOX	1	1		06/16/16 11:08
6	15M18404	L16060497-02 MS 827-DIOX	1	1		06/16/16 11:31
7	15M18405	L16060497-03 MSD 827-DIOX	1	1		06/16/16 11:54
8	15M18406	L16060504-01 827-DIOX	1	1		06/16/16 12:17
9	15M18407	L16060504-02 827-DIOX	1	1		06/16/16 12:39
10	15M18408	L16060504-03 827-DIOX	1	1		06/16/16 13:02
11	15M18409	L16060504-04 827-DIOX	1	1		06/16/16 13:25
12	15M18410	L16060615-01 827-DIOX	1	1		06/16/16 13:48
13	15M18411	L16060615-02 827-DIOX	1	1		06/16/16 14:11
14	15M18412	L16060615-03 827-DIOX	1	1		06/16/16 14:33
15	15M18413	L16060615-04 827-DIOX	1	1		06/16/16 14:56
16	15M18414	L16060616-01 827-DIOX	1	1		06/16/16 15:19
17	15M18415	L16060616-02 827-DIOX	1	1		06/16/16 15:42
18	15M18416	L16060616-03 827-DIOX	1	1		06/16/16 16:04
19	15M18417	L16060637-03 827-DIOX	1	1		06/16/16 16:27

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 20-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 10-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75640
Analytical Workgroups: L16051582, L16060024, L16060067

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 12-JUN-2016

Secondary Reviewer: 13-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-13-2016 08:34:44

Microbac Laboratories Inc.

Data Checklist

Date: 16-JUN-2016
Analyst: SCB
Analyst: MES
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75783
Analytical Workgroups: L16060497, L16060504, L16060615, L16060616, L16060637

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	SCB
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 20-JUN-2016 Sarah Bogolin

Secondary Reviewer: 20-JUN-2016 Eric C. Zum

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-20-2016 16:55:27

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8270D

AAB#: WG572971

Login Number: L16060615

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW22R-060916	01	06/09/16					06/13/2016	4.4	7		06/16/16	2.9	40	
18CPTMW22DW-060916	02	06/09/16					06/13/2016	4.3	7		06/16/16	2.9	40	
18CPTMW22DWFD-060916	03	06/09/16					06/13/2016	4.3	7		06/16/16	2.9	40	
18CPTMW22SW-060916	04	06/09/16					06/13/2016	4.3	7		06/16/16	2.9	40	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4814668
Report generated 06/21/2016 08:51

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060615
Instrument Id: HPMS15
Workgroup (AAB#): WG572971

Method: 827-DIOXANE
CAL ID: HPMS15-10-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1
L16060615-01	1.00	01	56.5
L16060615-02	1.00	01	62.1
L16060615-03	1.00	01	47.8
L16060615-04	1.00	01	44.9
WG572341-01	1.00	01	29.4
WG572341-02	1.00	01	35.7

Surrogates	Surrogate Limits		
1 - 1,4-Dioxane-d8	20	-	129

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4814677
Report generated: 06/21/2016 08:51

METHOD BLANK SUMMARY

Login Number: L16060615
Blank File ID: 15M18401
Prep Date: 06/13/16 16:16
Analyzed Date: 06/16/16 10:23
Analyst: MES

Work Group: WG572971
Blank Sample ID: WG572341-01
Instrument ID: HPMS15
Method: 8270D

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572341-02	15M18402	06/16/16 10:46	01
18CPTMW22R-060916	L16060615-01	15M18410	06/16/16 13:48	01
18CPTMW22DW-060916	L16060615-02	15M18411	06/16/16 14:11	01
18CPTMW22DWFD-060916	L16060615-03	15M18412	06/16/16 14:33	01
18CPTMW22SW-060916	L16060615-04	15M18413	06/16/16 14:56	01

Report Name: BLANK_SUMMARY
PDF File ID: 4814669
Report generated 06/21/2016 08:51

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060615 Prep Date: 06/13/16 16:16 Sample ID: WG572341-01
Instrument ID: HPMS15 Run Date: 06/16/16 10:23 Prep Method: 3520C
File ID: 15M18401 Analyst: MES Method: 8270D
Workgroup (AAB#): WG572971 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS15-10-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
1,4-Dioxane	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	29.4	20 - 129	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4814670
21-JUN-2016 08:51

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060615 Run Date: 06/16/2016 Sample ID: WG572341-02
Instrument ID: HPMS15 Run Time: 10:46 Prep Method: 3520C
File ID: 15M18402 Analyst: MES Method: 8270D
Workgroup (AAB#): WG572971 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD66388 Cal ID: HPMS15-10-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
1,4-Dioxane	5.00	1.67	33.3	30 - 104	

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	35.7	20 - 129	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4814671
Report generated: 06/21/2016 08:51

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16060615
Instrument: HPMS15
Analyst: MES
Workgroup: WG572230

Tune ID: WG572230-01
Run Date: 06/10/2016
Run Time: 10:18
File ID: 15M18337
Cal ID: HPMS15 - 10-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	39.5	52157	PASS
68.0	69.0	0	2.00	1.91	1026	PASS
69.0	198	0	100	40.8	53844	PASS
70.0	69.0	0	2.00	0.223	120	PASS
127	198	40.0	60.0	51.4	67853	PASS
197	198	0	1.00	0.383	505	PASS
198	198	100	100	100	131981	PASS
199	198	5.00	9.00	6.72	8869	PASS
275	198	10.0	30.0	26.4	34853	PASS
365	198	1.00	100	3.17	4186	PASS
441	443	0.0100	100	73.9	15632	PASS
442	198	40.0	100	83.4	110112	PASS
443	442	17.0	23.0	19.2	21163	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG572230-02	STD-CCV	01	06/10/2016 10:36	
WG572230-03	STD	01	06/10/2016 11:00	
WG572230-04	STD	01	06/10/2016 11:22	
WG572230-05	STD	01	06/10/2016 11:45	
WG572230-06	STD	01	06/10/2016 12:08	
WG572230-07	STD	01	06/10/2016 12:30	
WG572230-08	SSCV	01	06/10/2016 12:52	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4814674
Report generated 06/21/2016 08:51

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16060615
Instrument: HPMS15
Analyst: MES
Workgroup: WG572958

Tune ID: WG572958-01
Run Date: 06/16/2016
Run Time: 09:38
File ID: 15M18399
Cal ID: HPMS15 - 10-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	39.7	42335	PASS
68.0	69.0	0	2.00	1.65	714	PASS
69.0	198	0	100	40.7	43391	PASS
70.0	69.0	0	2.00	0.643	279	PASS
127	198	40.0	60.0	52.1	55592	PASS
197	198	0	1.00	0.0637	68	PASS
198	198	100	100	100	106736	PASS
199	198	5.00	9.00	6.72	7172	PASS
275	198	10.0	30.0	25.9	27632	PASS
365	198	1.00	100	3.04	3241	PASS
441	443	0.0100	100	76.2	12912	PASS
442	198	40.0	100	81.0	86427	PASS
443	442	17.0	23.0	19.6	16937	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG572958-02	CCV	01	06/16/2016 10:00	
WG572341-01	BLANK	01	06/16/2016 10:23	
WG572341-02	LCS	01	06/16/2016 10:46	
L16060615-01	18CPTMW22R-060916	01	06/16/2016 13:48	
L16060615-02	18CPTMW22DW-060916	01	06/16/2016 14:11	
L16060615-03	18CPTMW22DWFD-060916	01	06/16/2016 14:33	
L16060615-04	18CPTMW22SW-060916	01	06/16/2016 14:56	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4814674
Report generated 06/21/2016 08:51

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060615
Analytical Method: 8270D
ICAL Workgroup: WG572230

Instrument ID: HPMS15
Initial Calibration Date: 10-JUN-16 12:30
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
1,4-Dioxane		0.3253	2.74		

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4814672
Report generated 06/21/2016 08:51

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060615

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 10-JUN-16 12:30

Column ID: F

Analyte	WG572230-02			WG572230-03			WG572230-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	5.00	107215.000	0.3234	10.0	192761.000	0.3420	7.50	146003.000	0.3236

INT_CAL - Modified 03/06/2008
PDF File ID: 4814672
Report generated 06/21/2016 08:51

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060615

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 10-JUN-16 12:30

Column ID: F

Analyte	WG572230-05			WG572230-06			WG572230-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	2.50	36488.0000	0.3190	1.00	18621.0000	0.3169	0.400	6733.00000	0.3266

INT_CAL - Modified 03/06/2008
PDF File ID: 4814672
Report generated 06/21/2016 08:51

Calibration Table Report
Method: DIOXANE_D8.M
Title: OVD MSS01 SIM 1,4-dioxane ICAL 061016
Last Calibration: Fri Jun 10 12:46:00 2016
Curve:WG572230
Calibration Files

Compound	10 15M18339.D	7.5 15M18340.D	5 15M18338.D	2.5 15M18341.D	1 15M18342.D	0.4 15M18343.D	Avg	%RSD	Linear
1,4-Dichlorobenzene-d4	ISTD								
1,4-Dioxane	0.342	0.324	0.324	0.319	0.317	0.327	0.325	2.735	
1,4-Dioxane-d8	0.440	0.415	0.417	0.411	0.409		0.419	2.988	
Nitrobenzene-d5	1.115	1.034	0.970	0.852	0.755	0.697	0.904	18.064	0.994
2-Fluorobiphenyl	2.685	2.595	2.549	2.638	2.570	2.639	2.613	1.934	
p-Terphenyl-d14	2.815	2.671	2.579	2.506	2.382	2.421	2.562	6.338	

Sun Jun 12 19:13:55 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060615 Run Date: 06/10/2016 Sample ID: WG572230-08
Instrument ID: HPMS15 Run Time: 12:52 Method: 8270D
File ID: 15M18344 Analyst: MES QC Key: DOD4
ICal Workgroup: WG572230 Cal ID: HPMS15 - 10-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
1,4-Dioxane		5000	5110	ug/L	0.333	2.30	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4814673
Report generated 06/21/2016 08:51

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060615
Run Date: 06/16/2016
Sample ID: WG572958-02
Instrument ID: HPMS15
Run Time: 10:00
Method: 8270D
File ID: 15M18400
Analyst: MES
QC Key: DOD4
Workgroup (AAB#): WG572971
Cal ID: HPMS15 - 10-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,4-Dioxane		5000	5080	ug/L	0.331	1.65	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4814675
Report generated 06/21/2016 08:51

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060615
Instrument ID: HPMS15
Workgroup (AAB#): WG572971

ICAL CCV Number: WG572230-02
CAL ID: HPMS15-10-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG572230-02	NA	NA	66625
Upper Limit	NA	NA	133250
Lower Limit	NA	NA	33313
L16060615-01	1.00	01	55264
L16060615-02	1.00	01	54973
L16060615-03	1.00	01	49699
L16060615-04	1.00	01	44316
WG572341-01	1.00	01	57712
WG572341-02	1.00	01	54087

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4814676
Report generated 06/21/2016 08:51

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060615
Instrument ID: HPMS15
Workgroup (AAB#): WG572971

ICAL CCV Number: WG572230-02
CAL ID: HPMS15-10-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG572230-02	NA	NA	6.94
Upper Limit	NA	NA	7.44
Lower Limit	NA	NA	6.44
L16060615-01	1.00	01	6.951
L16060615-02	1.00	01	6.951
L16060615-03	1.00	01	6.955
L16060615-04	1.00	01	6.955
WG572341-01	1.00	01	6.948
WG572341-02	1.00	01	6.951

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4814678
Report generated: 06/21/2016 08:51

2.2.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18410.D
Acq On : 16 Jun 2016 13:48
Operator : MES
Sample : L16060615-01 827-DIOX
Misc : 1,1
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jun 16 14:42:05 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.951	152	55264	1.0000	ug/mL	# 0.01
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.883	96	65352	2.8254	ug/L	0.02
Spiked Amount 5.000			Recovery	=	56.60%	
4) Nitrobenzene-d5	7.452	82	7967	0.3523	ug/L	0.02
Spiked Amount 5.000			Recovery	=	7.00%	
5) 2-Fluorobiphenyl	8.937	172	694	0.0048	ug/L	0.01
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.254	244	707	0.0050	ug/L	0.07
Spiked Amount 5.000			Recovery	=	0.00%	

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18410.D
Acq On : 16 Jun 2016 13:48
Operator : MES
Sample : L16060615-01 827-DIOX
Misc : 1,1
ALS Vial : 12 Sample Multiplier: 1

Quant Time: Jun 16 14:42:05 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

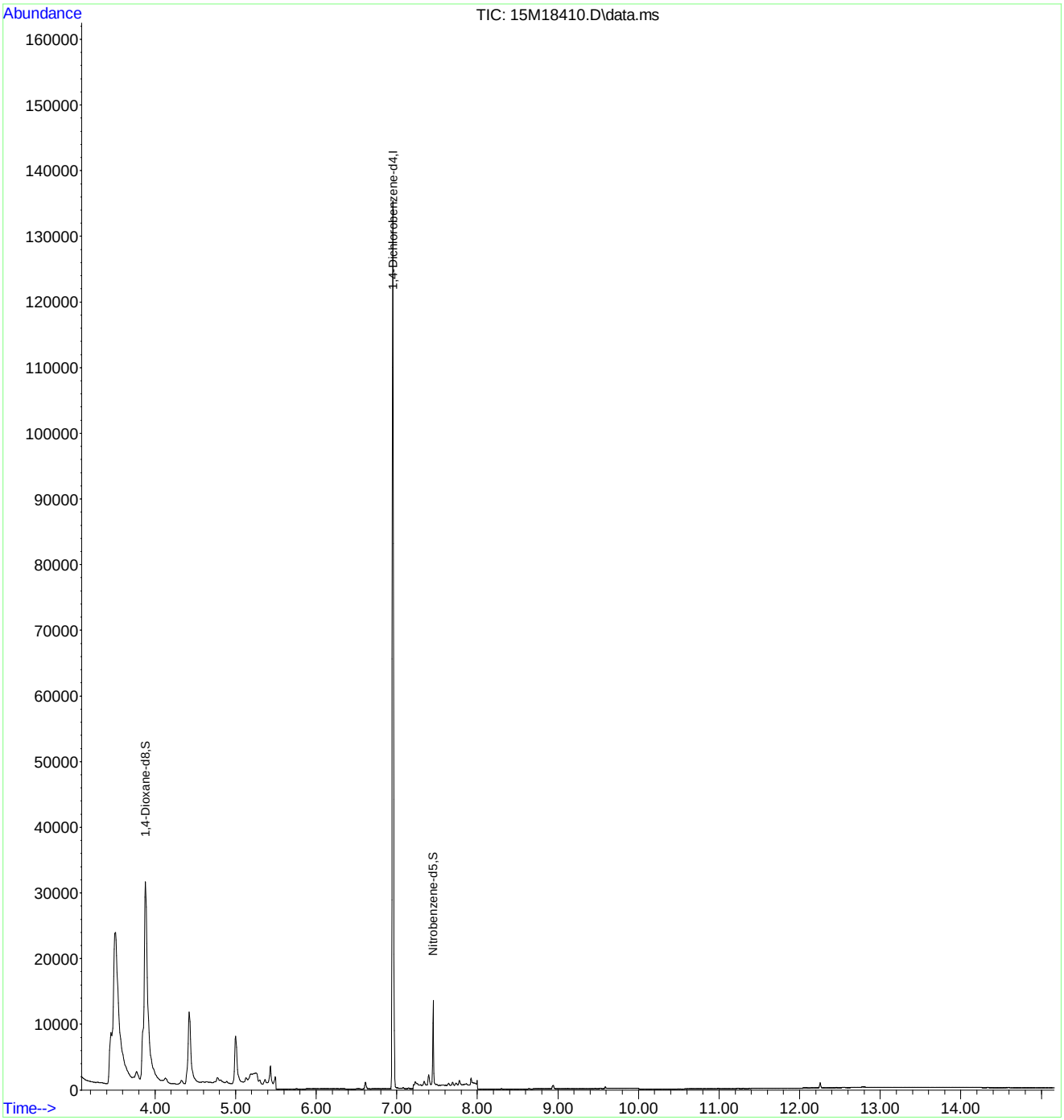

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18411.D
Acq On : 16 Jun 2016 14:11
Operator : MES
Sample : L16060615-02 827-DIOX
Misc : 1,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jun 16 17:37:41 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.951	152	54973	1.0000	ug/mL	# 0.01
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.876	96	71386	3.1026	ug/L	0.01
Spiked Amount 5.000			Recovery	=	62.00%	
4) Nitrobenzene-d5	7.452	82	3113	0.2707	ug/L	0.02
Spiked Amount 5.000			Recovery	=	5.40%	
5) 2-Fluorobiphenyl	8.941	172	105	0.0007	ug/L	0.01
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.247	244	581	0.0041	ug/L	0.07
Spiked Amount 5.000			Recovery	=	0.00%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18411.D
Acq On : 16 Jun 2016 14:11
Operator : MES
Sample : L16060615-02 827-DIOX
Misc : 1,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jun 16 17:37:41 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

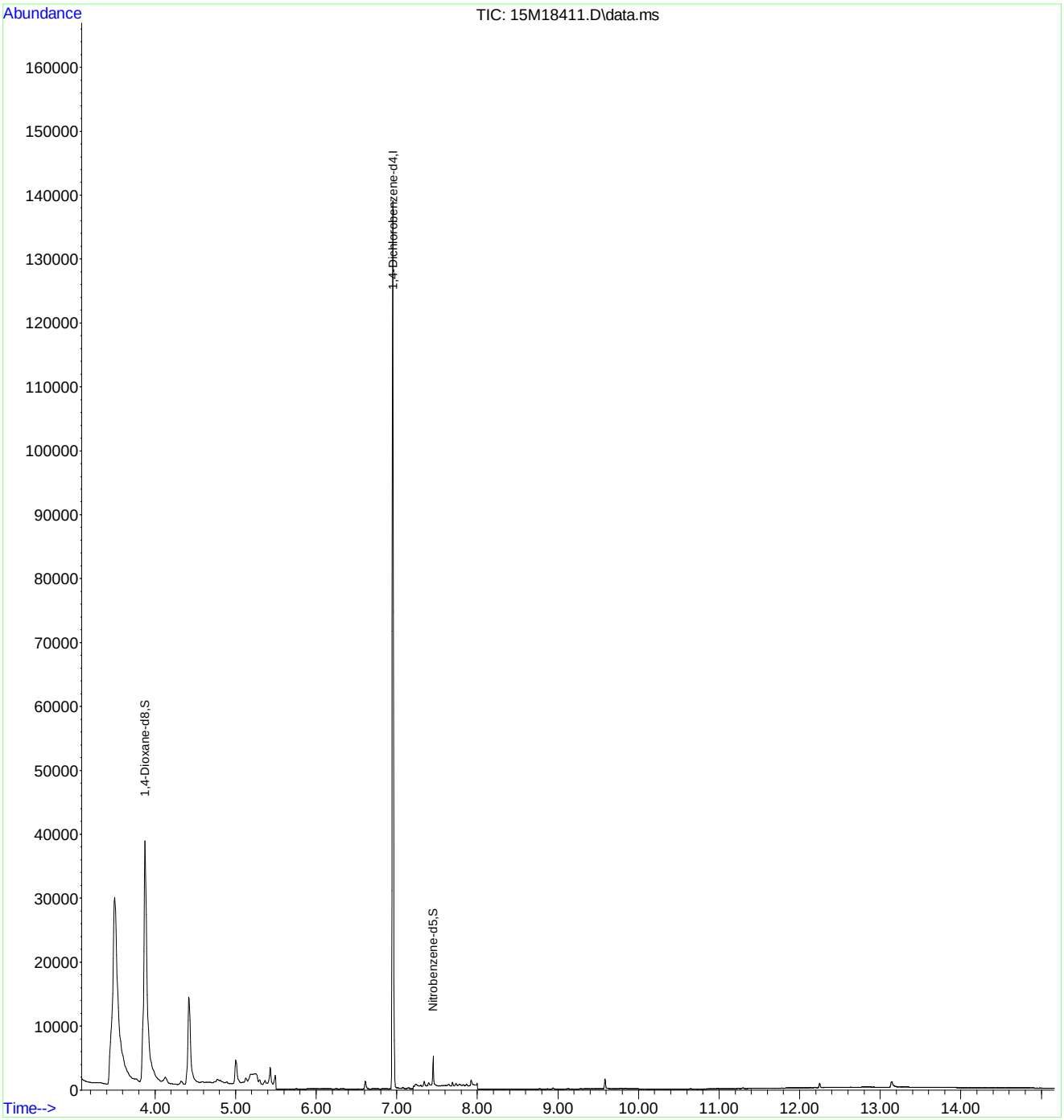

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18412.D
Acq On : 16 Jun 2016 14:33
Operator : MES
Sample : L16060615-03 827-DIOX
Misc : 1,1
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jun 16 17:37:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.955	152	49699	1.0000	ug/mL	# 0.01
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.876	96	49665	2.3876	ug/L	0.01
Spiked Amount 5.000			Recovery	=	47.80%	
4) Nitrobenzene-d5	7.452	82	2680	0.2682	ug/L	0.02
Spiked Amount 5.000			Recovery	=	5.40%	
5) 2-Fluorobiphenyl	8.941	172	129	0.0010	ug/L	0.01
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.239	244	2149	0.0169	ug/L	0.06
Spiked Amount 5.000			Recovery	=	0.40%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18412.D
Acq On : 16 Jun 2016 14:33
Operator : MES
Sample : L16060615-03 827-DIOX
Misc : 1,1
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Jun 16 17:37:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

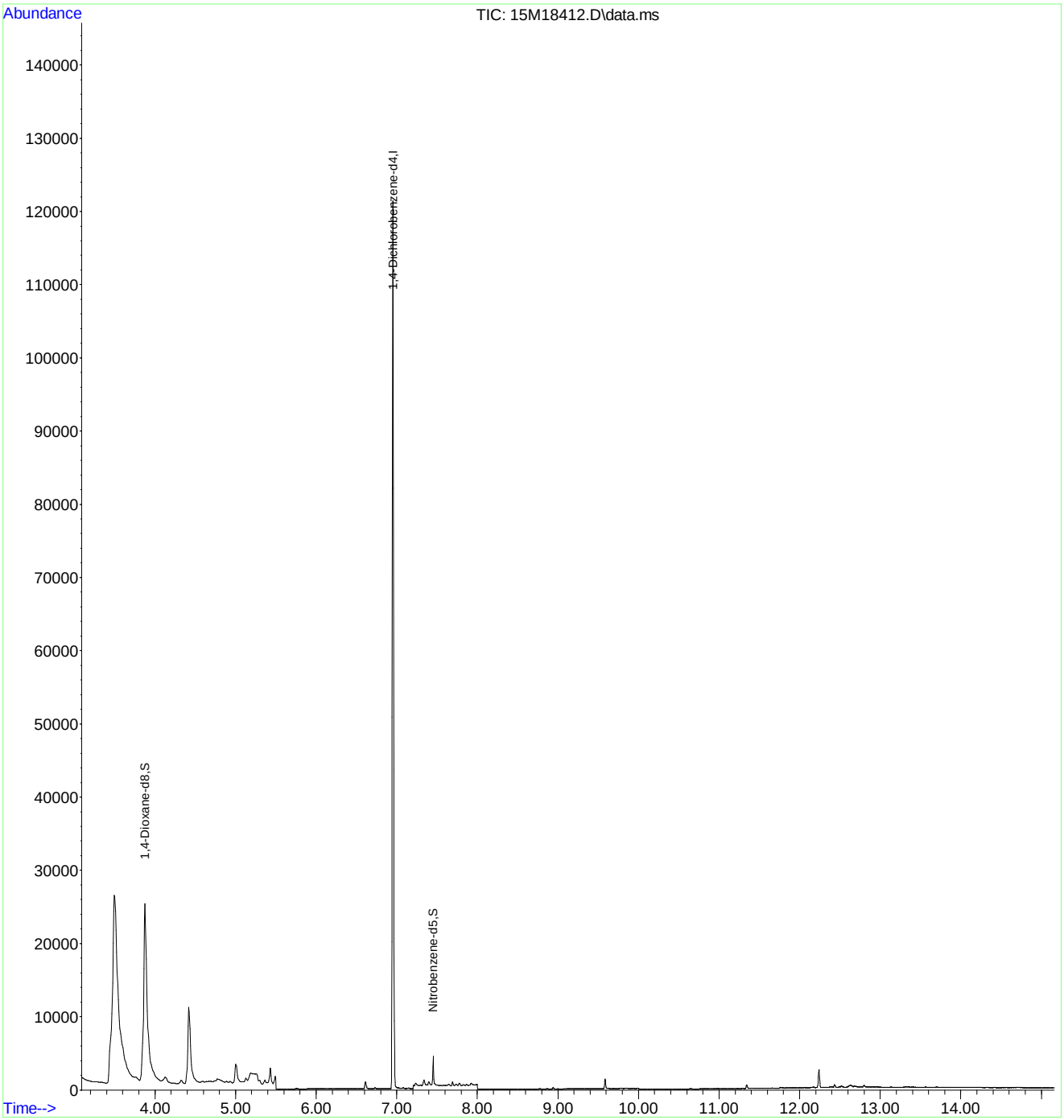

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18413.D
Acq On : 16 Jun 2016 14:56
Operator : MES
Sample : L16060615-04 827-DIOX
Misc : 1,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 16 17:37:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.955	152	44316	1.0000	ug/mL	# 0.01
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.869	96	41627	2.2443	ug/L	0.00
Spiked Amount 5.000			Recovery	=	44.80%	
4) Nitrobenzene-d5	7.452	82	2456	0.2696	ug/L	0.02
Spiked Amount 5.000			Recovery	=	5.40%	
5) 2-Fluorobiphenyl	8.941	172	79	0.0007	ug/L	0.01
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.254	244	490	0.0043	ug/L	0.07
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.904	58	6181	0.4287	ug/L	78

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18413.D
Acq On : 16 Jun 2016 14:56
Operator : MES
Sample : L16060615-04 827-DIOX
Misc : 1,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 16 17:37:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

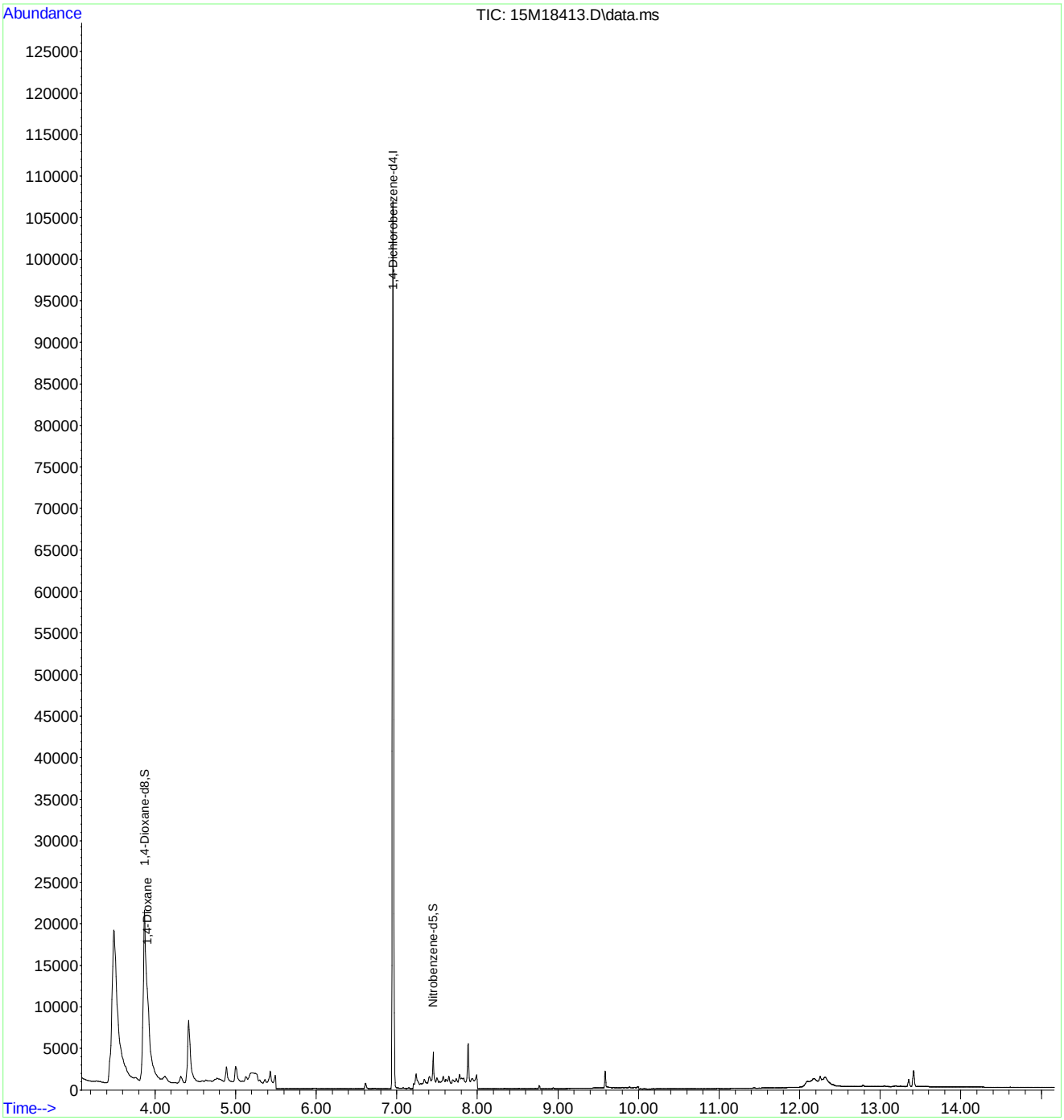

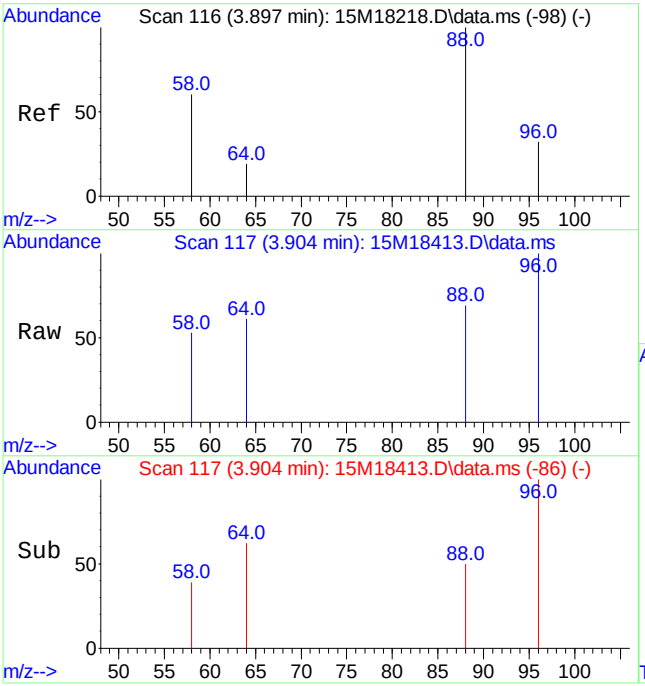

#2
1,4-Dioxane
Concen: 0.43 ug/L
RT: 3.904 min Scan# 117
Delta R.T. 0.007 min
Lab File: 15M18413.D
Acq: 16 Jun 2016 14:56

Tgt Ion: 58 Resp: 6181

Ion	Ratio	Lower	Upper
58	100		
88	142.0	103.1	240.7

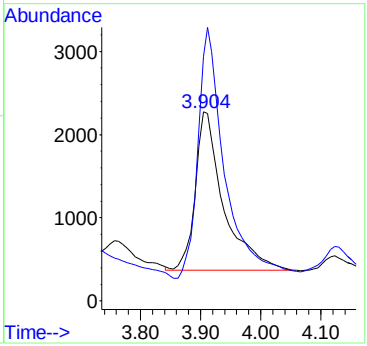

2.2.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18338.D
Acq On : 10 Jun 2016 10:36
Operator : MES
Sample : WG572230-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 10 18:15:30 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.940	152	66625	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.862	96	138302	4.9596 ug/L	0.00
Spiked Amount 5.000			Recovery	= 99.20%	
4) Nitrobenzene-d5	7.436	82	321639	4.7189 ug/L	0.00
Spiked Amount 5.000			Recovery	= 94.40%	
5) 2-Fluorobiphenyl	8.926	172	845013	4.8542 ug/L	0.00
Spiked Amount 5.000			Recovery	= 97.00%	
6) p-Terphenyl-d14	12.181	244	855352	5.0103 ug/L	0.00
Spiked Amount 5.000			Recovery	= 100.20%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.897	58	107215	4.9462 ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18338.D
Acq On : 10 Jun 2016 10:36
Operator : MES
Sample : WG572230-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 10 18:15:30 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

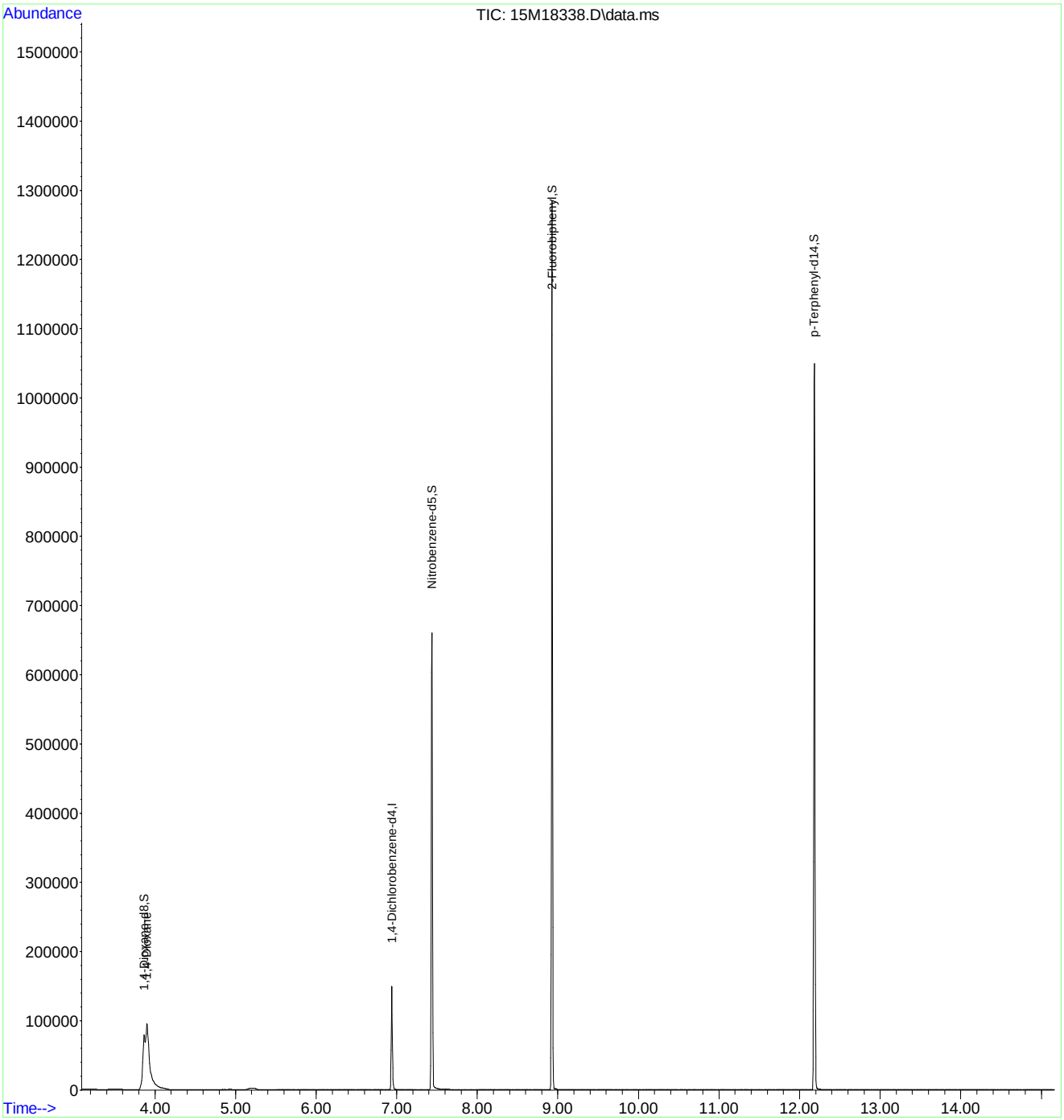

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18339.D
Acq On : 10 Jun 2016 11:00
Operator : MES
Sample : WG572230-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 10 18:15:34 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	56194	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	248072	10.5474	ug/L	0.00
Spiked Amount 5.000			Recovery = 211.00%			
4) Nitrobenzene-d5	7.436	82	628184	10.6403	ug/L	0.00
Spiked Amount 5.000			Recovery = 212.80%			
5) 2-Fluorobiphenyl	8.926	172	1513331	10.3070	ug/L	0.00
Spiked Amount 5.000			Recovery = 206.20%			
6) p-Terphenyl-d14	12.184	244	1587021	11.0217	ug/L	0.00
Spiked Amount 5.000			Recovery = 220.40%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	192761	10.5434	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18339.D
Acq On : 10 Jun 2016 11:00
Operator : MES
Sample : WG572230-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 10 18:15:34 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

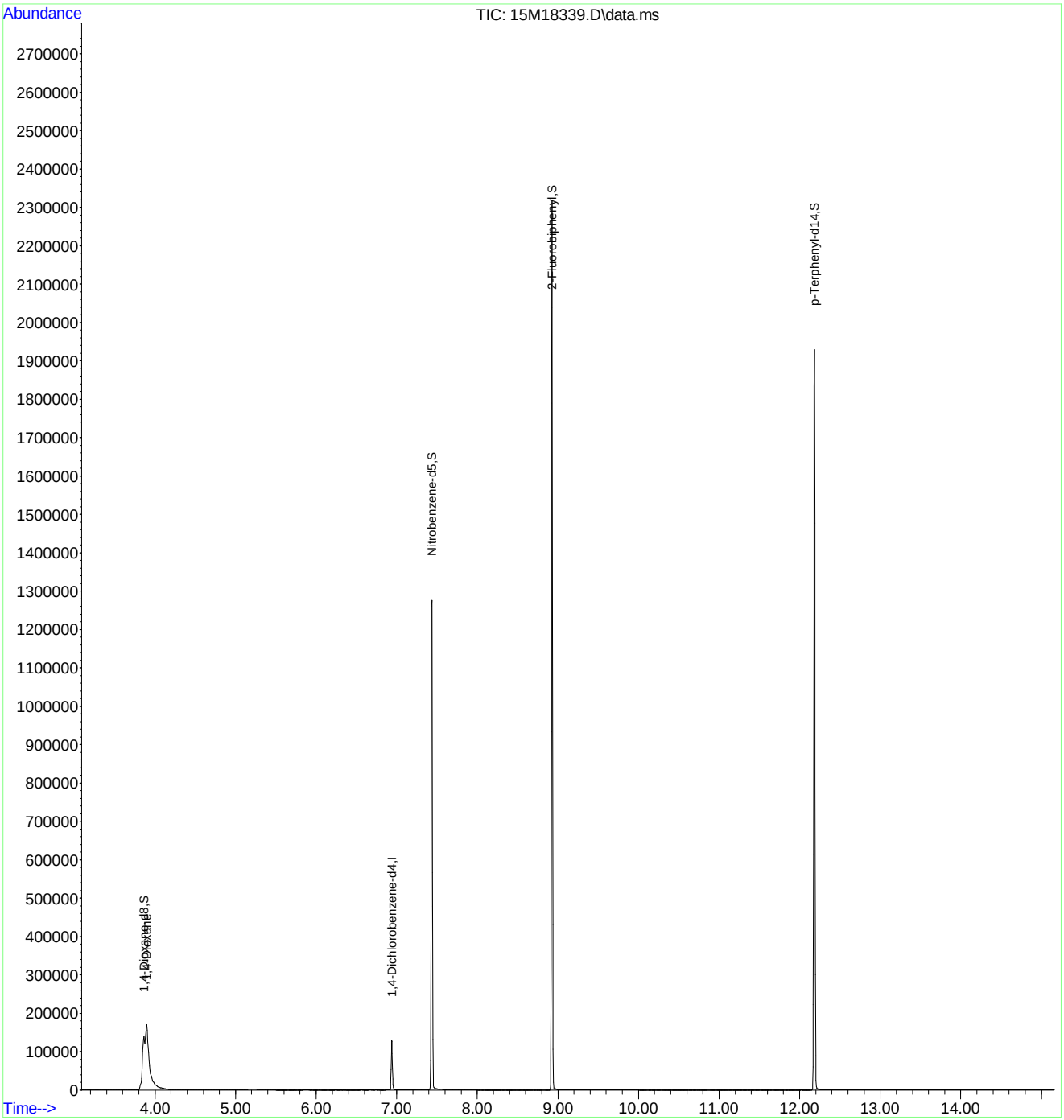

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18340.D
Acq On : 10 Jun 2016 11:22
Operator : MES
Sample : WG572230-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 10 18:15:37 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.940	152	60457	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.862	96	187351	7.4040 ug/L	0.00
Spiked Amount 5.000			Recovery	= 148.00%	
4) Nitrobenzene-d5	7.431	82	466388	7.4103 ug/L	0.00
Spiked Amount 5.000			Recovery	= 148.20%	
5) 2-Fluorobiphenyl	8.926	172	1170859	7.4122 ug/L	0.00
Spiked Amount 5.000			Recovery	= 148.20%	
6) p-Terphenyl-d14	12.192	244	1205938	7.7846 ug/L	0.01
Spiked Amount 5.000			Recovery	= 155.60%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.897	58	146003	7.4228 ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18340.D
Acq On : 10 Jun 2016 11:22
Operator : MES
Sample : WG572230-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 10 18:15:37 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

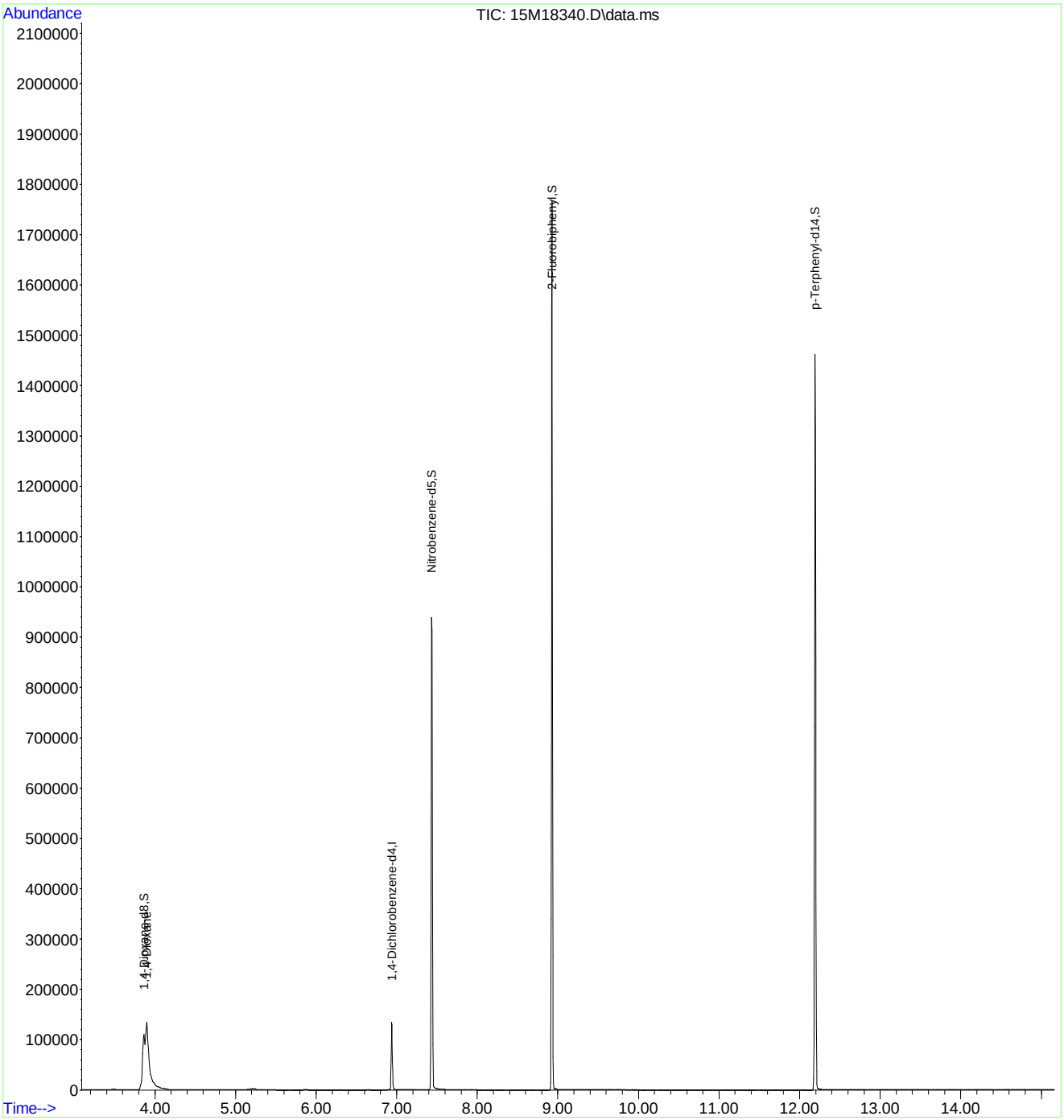

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18341.D
Acq On : 10 Jun 2016 11:45
Operator : MES
Sample : WG572230-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 10 18:15:40 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	45954	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.848	96	46972	2.4422	ug/L	-0.01
Spiked Amount 5.000			Recovery	=	48.80%	
4) Nitrobenzene-d5	7.436	82	97423	2.1945	ug/L	0.00
Spiked Amount 5.000			Recovery	=	43.80%	
5) 2-Fluorobiphenyl	8.926	172	301696	2.5127	ug/L	0.00
Spiked Amount 5.000			Recovery	=	50.20%	
6) p-Terphenyl-d14	12.188	244	286720	2.4350	ug/L	0.00
Spiked Amount 5.000			Recovery	=	48.60%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.883	58	36488	2.4405	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18341.D
Acq On : 10 Jun 2016 11:45
Operator : MES
Sample : WG572230-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 10 18:15:40 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

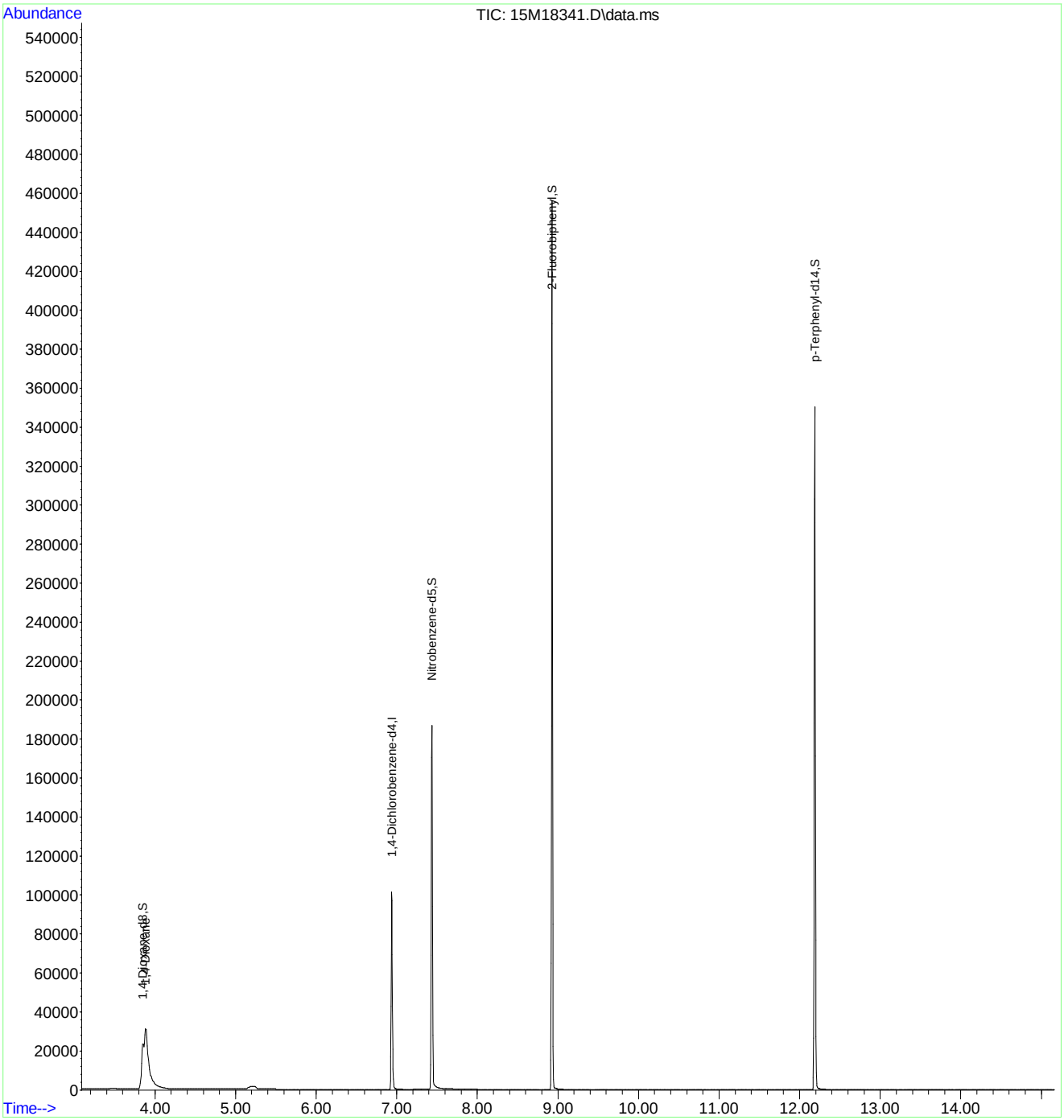

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18342.D
Acq On : 10 Jun 2016 12:08
Operator : MES
Sample : WG572230-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 10 18:15:43 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	59037	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	24054	0.9735	ug/L	0.00
Spiked Amount 5.000			Recovery = 19.40%			
4) Nitrobenzene-d5	7.436	82	44358	0.9184	ug/L	0.00
Spiked Amount 5.000			Recovery = 18.40%			
5) 2-Fluorobiphenyl	8.926	172	151018	0.9790	ug/L	0.00
Spiked Amount 5.000			Recovery = 19.60%			
6) p-Terphenyl-d14	12.199	244	140040	0.9257	ug/L	0.02
Spiked Amount 5.000			Recovery = 18.60%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.904	58	18621	0.9695	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18342.D
Acq On : 10 Jun 2016 12:08
Operator : MES
Sample : WG572230-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 10 18:15:43 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

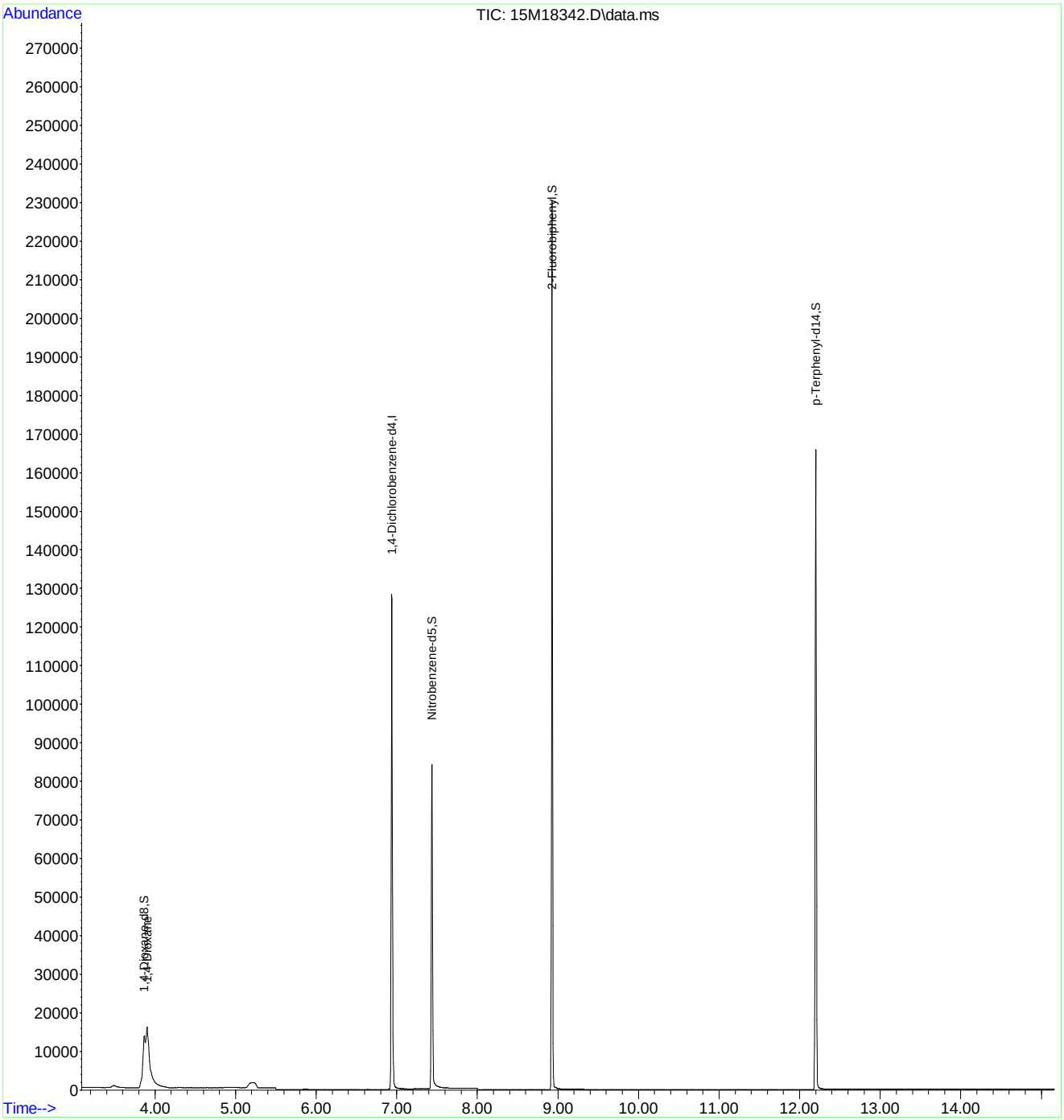

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18343.D
Acq On : 10 Jun 2016 12:30
Operator : MES
Sample : WG572230-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 10 18:15:46 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	51531	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	8760	0.4062	ug/L	0.00
Spiked Amount 5.000			Recovery	=	8.20%	
4) Nitrobenzene-d5	7.436	82	14371	0.4779	ug/L	0.00
Spiked Amount 5.000			Recovery	=	9.60%	
5) 2-Fluorobiphenyl	8.926	172	54404	0.4041	ug/L	0.00
Spiked Amount 5.000			Recovery	=	8.00%	
6) p-Terphenyl-d14	12.203	244	49910	0.3780	ug/L	0.02
Spiked Amount 5.000			Recovery	=	7.60%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	6733	0.4016	ug/L	79

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18343.D
Acq On : 10 Jun 2016 12:30
Operator : MES
Sample : WG572230-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 10 18:15:46 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

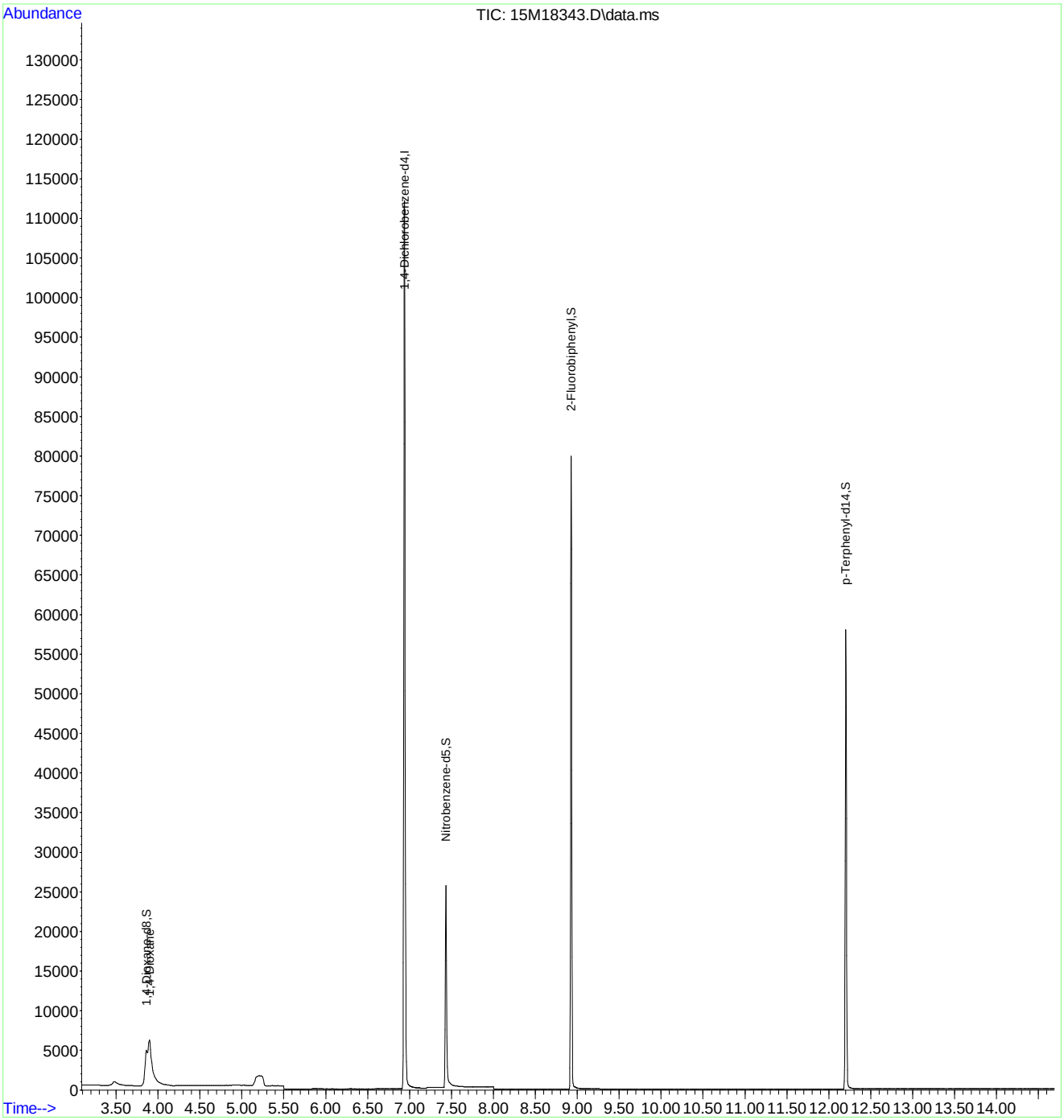

Nitrobenzene-d5

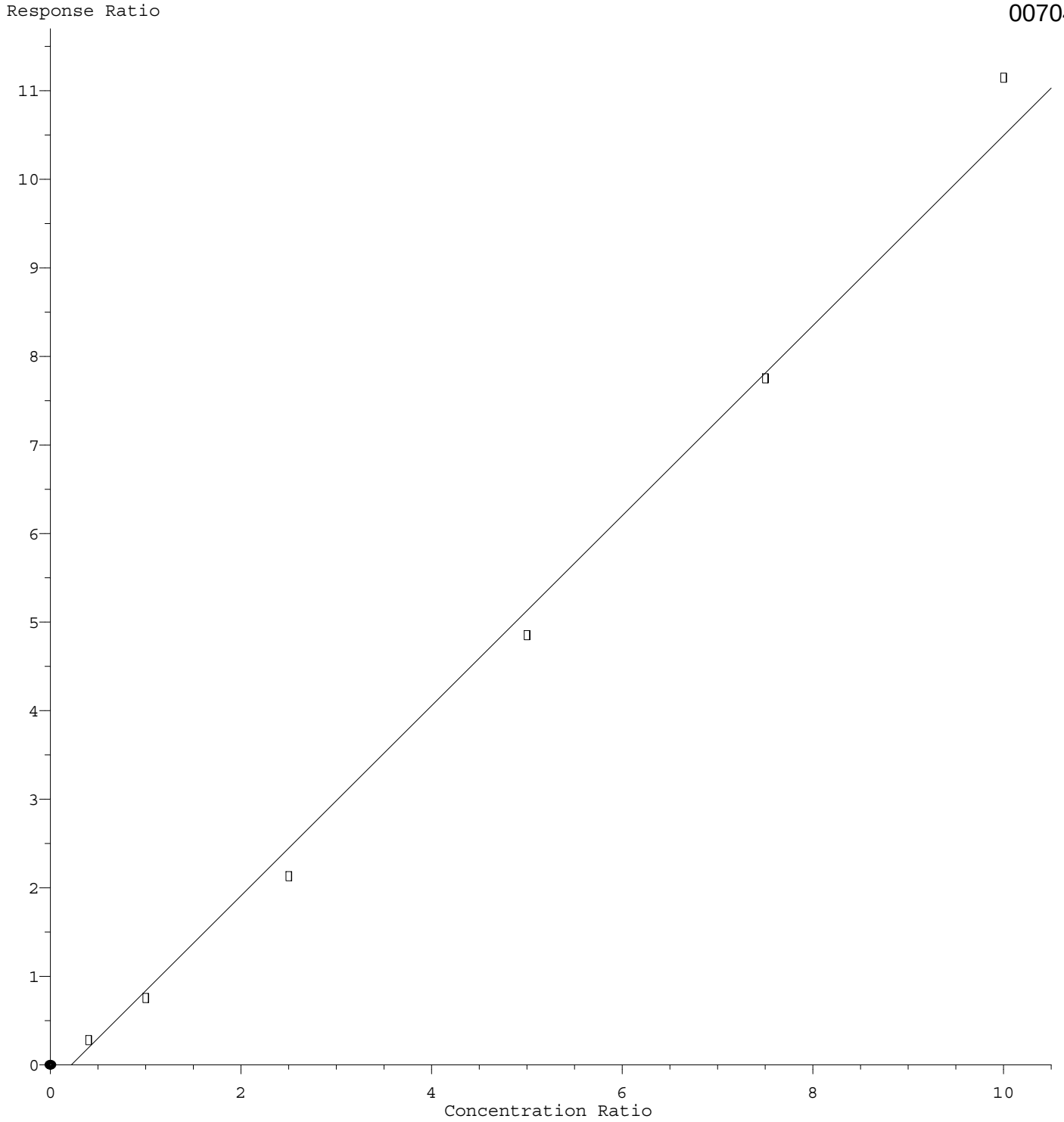

Response = 1.07e+000 * Amt - 2.34e-001
Coef of Det (r^2) = 0.994 Curve Fit: wlr(1/a)
Method Name: C:\msdchem\1\methods\DIOXANE_D8.M
Calibration Table Last Updated: Fri Jun 10 12:46:00 2016

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18344.D
Acq On : 10 Jun 2016 12:52
Operator : MES
Sample : WG572230-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 10 18:15:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	51498	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.897	96	61	0.0028	ug/L	0.04
Spiked Amount 5.000			Recovery	=	0.00%	
4) Nitrobenzene-d5	7.442	82	61	0.2190	ug/L	0.00
Spiked Amount 5.000			Recovery	=	4.40%	
5) 2-Fluorobiphenyl	8.926	172	23	0.0002	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.214	244	150	0.0011	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	85662	5.1127	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18344.D
Acq On : 10 Jun 2016 12:52
Operator : MES
Sample : WG572230-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 10 18:15:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

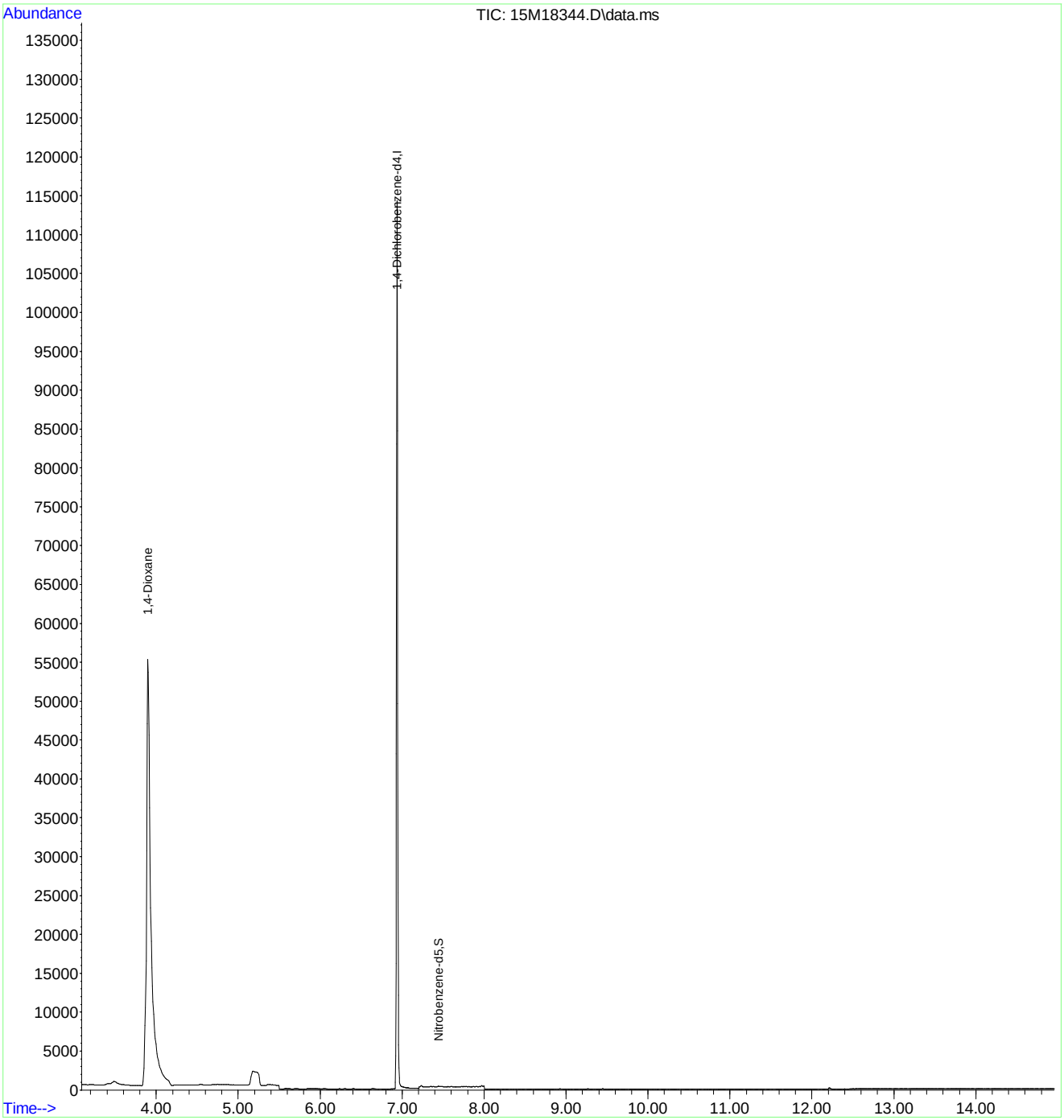

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18344.D
Acq On : 10 Jun 2016 12:52
Operator : MES
Sample : WG572230-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 10 18:15:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	78	0.00
2	1,4-Dioxane	5.000	5.113	-2.3	80	0.00
3 S	1,4-Dioxane-d8	5.000	0.003	99.9#	0	0.04
4 S	Nitrobenzene-d5	5.000	0.219	95.6#	0	0.00
5 S	2-Fluorobiphenyl	5.000	0.000	100.0#	0	0.00
6 S	p-Terphenyl-d14	5.000	0.001	100.0#	0	0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18400.D
Acq On : 16 Jun 2016 10:00
Operator : MES
Sample : WG572958-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 16 10:16:14 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.951	152	63702	1.0000	ug/mL	# 0.01
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.876	96	138261	5.1857	ug/L	0.01
Spiked Amount 5.000			Recovery	= 103.80%		
4) Nitrobenzene-d5	7.447	82	239213	3.7190	ug/L	0.01
Spiked Amount 5.000			Recovery	= 74.40%		
5) 2-Fluorobiphenyl	8.937	172	842255	5.0603	ug/L	0.01
Spiked Amount 5.000			Recovery	= 101.20%		
6) p-Terphenyl-d14	12.228	244	851642	5.2175	ug/L	0.05
Spiked Amount 5.000			Recovery	= 104.40%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.918	58	105339	5.0826	ug/L	81

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18400.D
Acq On : 16 Jun 2016 10:00
Operator : MES
Sample : WG572958-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 16 10:16:14 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

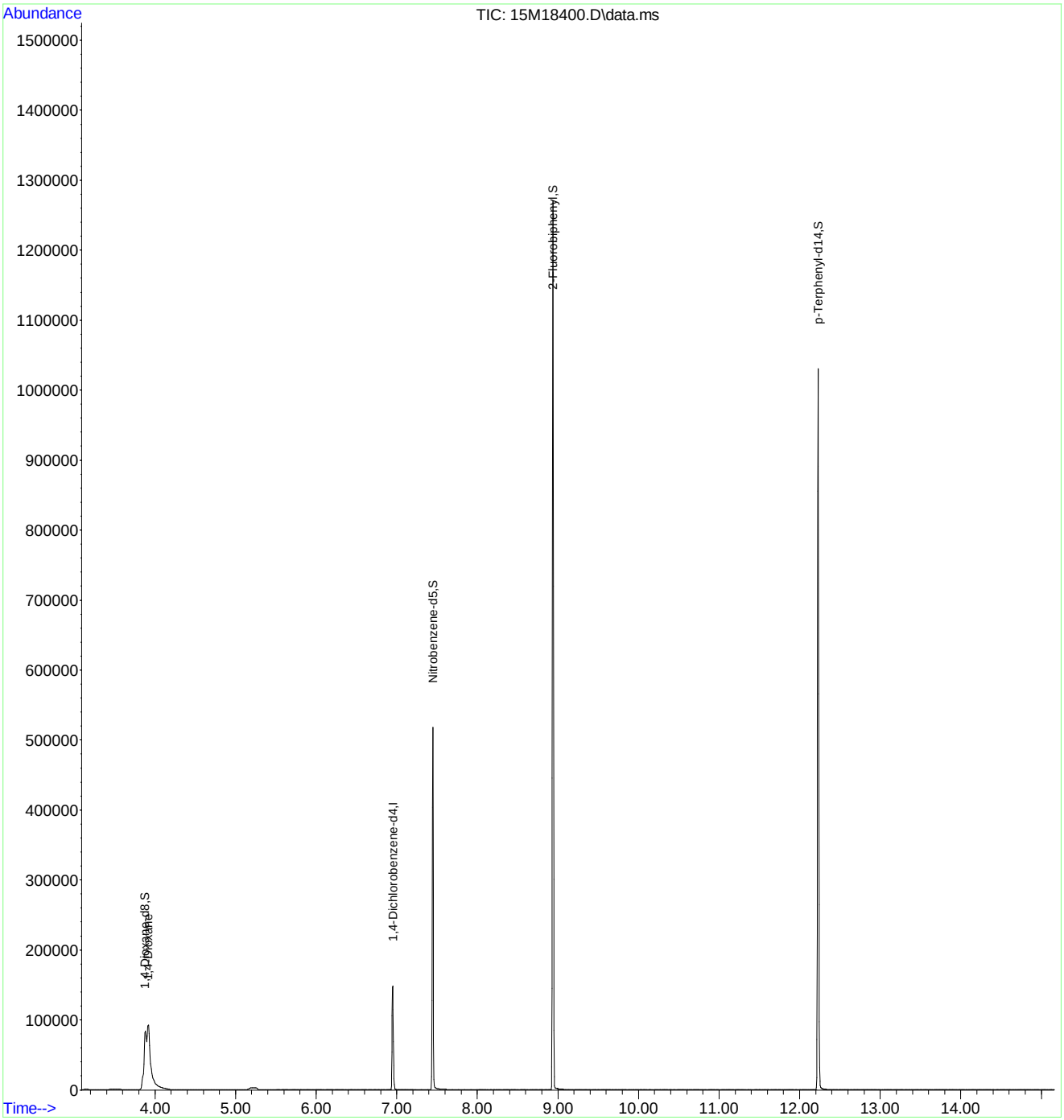

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18400.D
Acq On : 16 Jun 2016 10:00
Operator : MES
Sample : WG572958-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 16 10:16:14 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	96	0.01
2	1,4-Dioxane	5.000	5.083	-1.7	98	0.02
3 S	1,4-Dioxane-d8	5.000	5.186	-3.7	100	0.01
4 S	Nitrobenzene-d5	5.000	3.719	25.6#	74	0.01
5 S	2-Fluorobiphenyl	5.000	5.060	-1.2	100	0.01
6 S	p-Terphenyl-d14	5.000	5.217	-4.3	100	0.05

(#) = Out of Range SPCC's out = 0 CCC's out = 0

2.2.1.5 Raw QC Data

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18337.D
Acq On : 10 Jun 2016 10:18
Operator : MES
Sample : WG572230-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

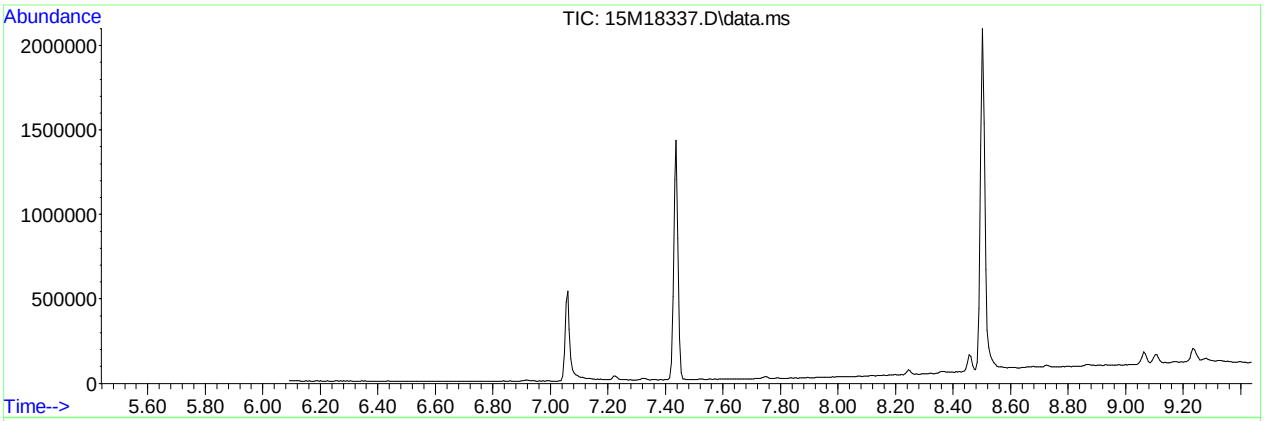

AutoFind: Scans 235, 236, 237; Background Corrected with Scan 229

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	39.5	52157	PASS
68	69	0.00	2	1.9	1026	PASS
69	198	0.00	100	40.8	53844	PASS
70	69	0.00	2	0.2	120	PASS
127	198	40	60	51.4	67853	PASS
197	198	0.00	1	0.4	505	PASS
198	198	100	100	100.0	131981	PASS
199	198	5	9	6.7	8869	PASS
275	198	10	30	26.4	34853	PASS
365	198	1	100	3.2	4186	PASS
441	443	0.01	100	73.9	15632	PASS
442	198	40	100	83.4	110112	PASS
443	442	17	23	19.2	21163	PASS

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18337.D
Acq On : 10 Jun 2016 10:18
Operator : MES
Sample : WG572230-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 10 10:29:37 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

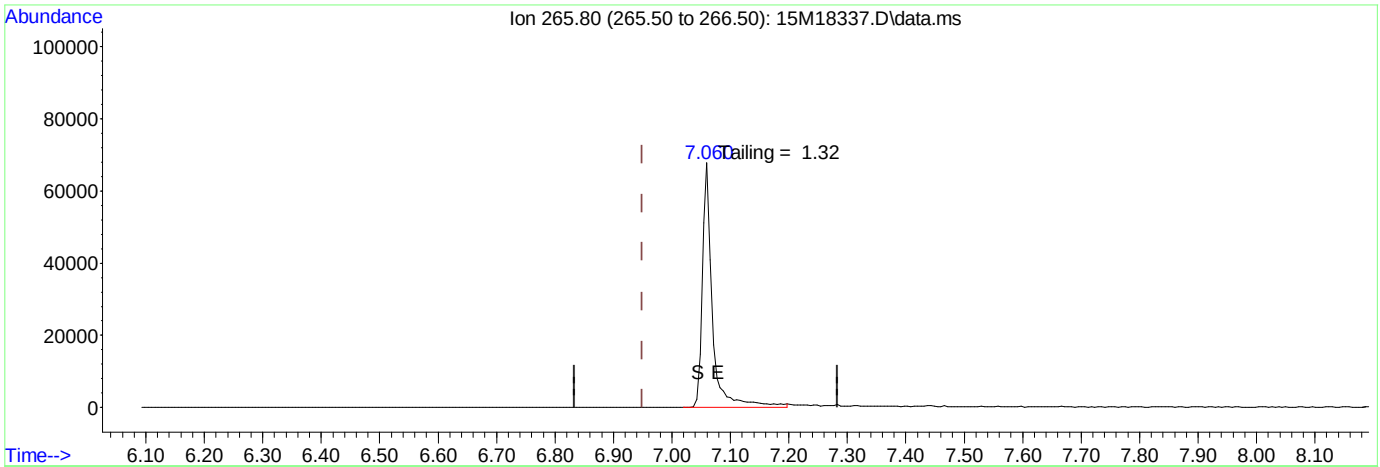

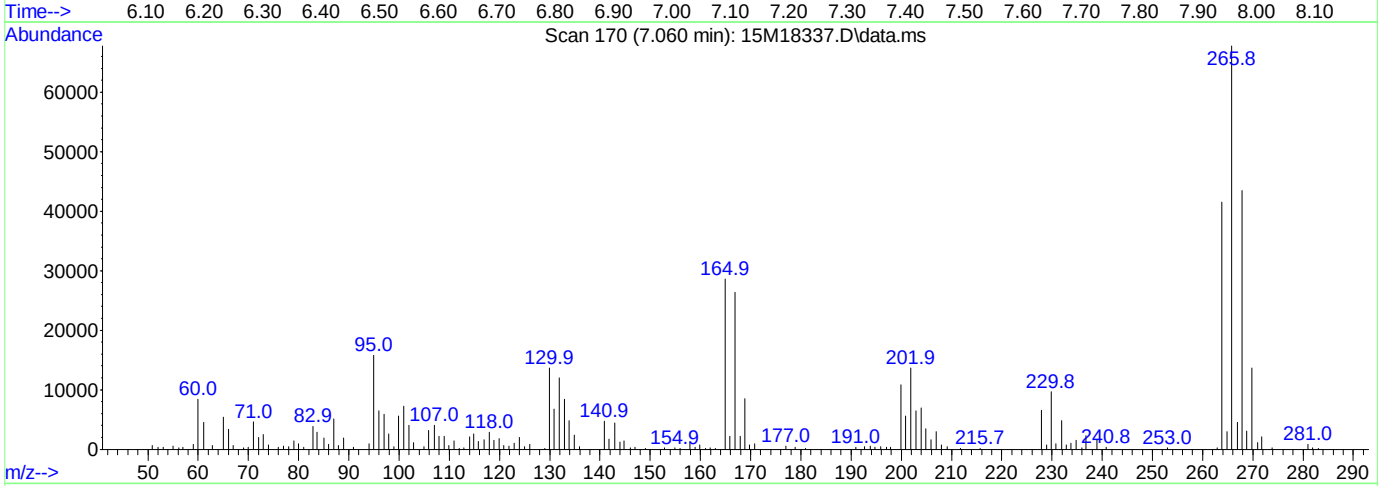

(1) Pentachlorophenol

7.060min (+ 0.111) 0.00 ug/ml

response 82111

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18337.D
Acq On : 10 Jun 2016 10:18
Operator : MES
Sample : WG572230-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 10 10:29:37 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

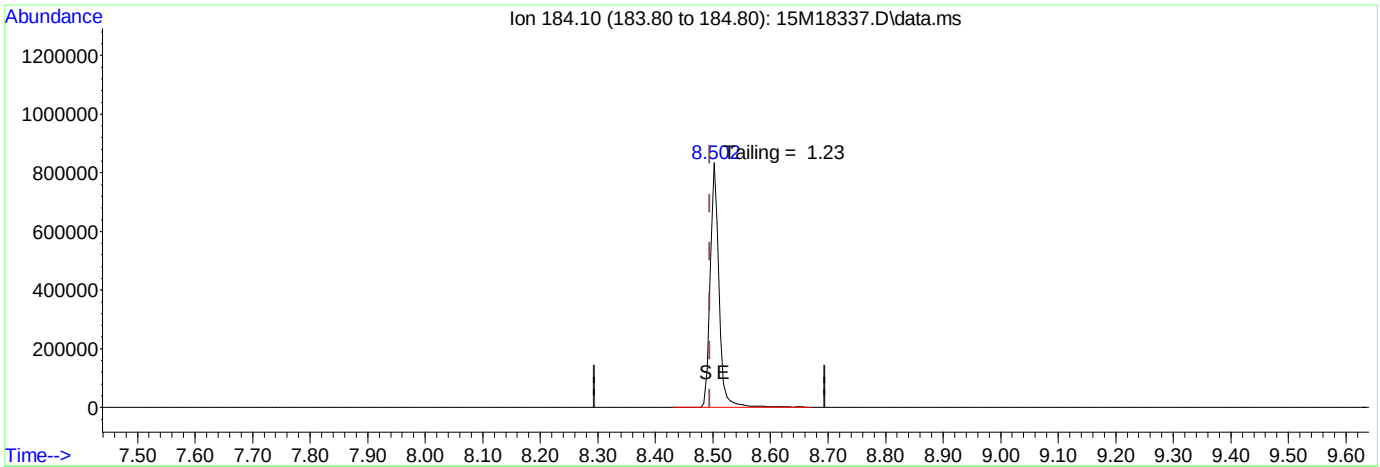

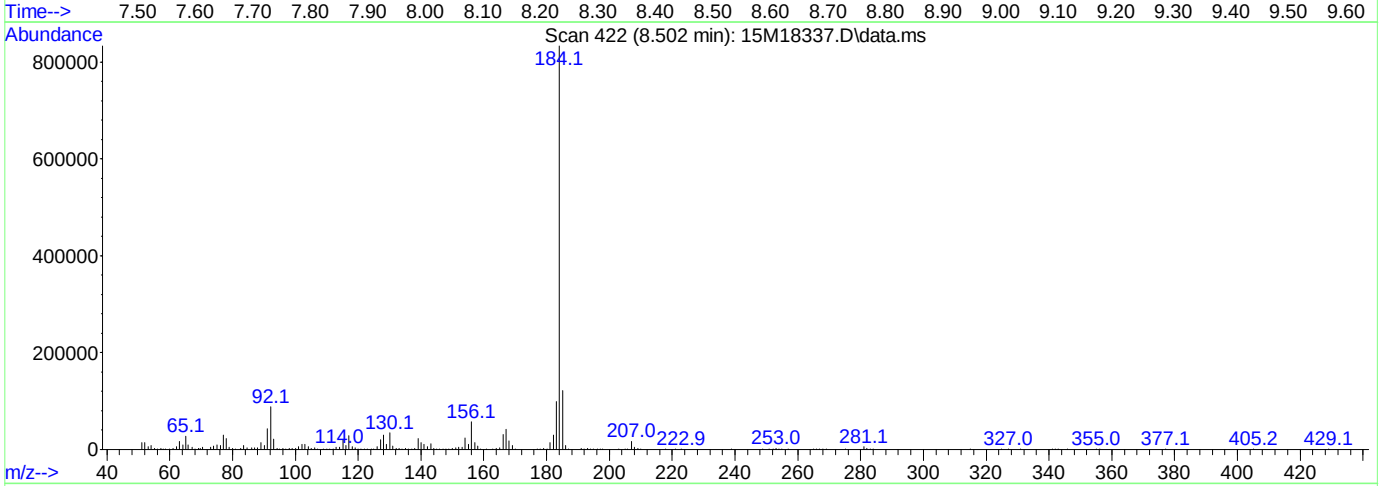

TIC: 15M18337.D\data.ms

(2) Benzidine

8.502min (+ 0.008) 0.00 ug/ml

response 896980

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18337.D
Acq On : 10 Jun 2016 10:18
Operator : MES
Sample : WG572230-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 10 10:29:37 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

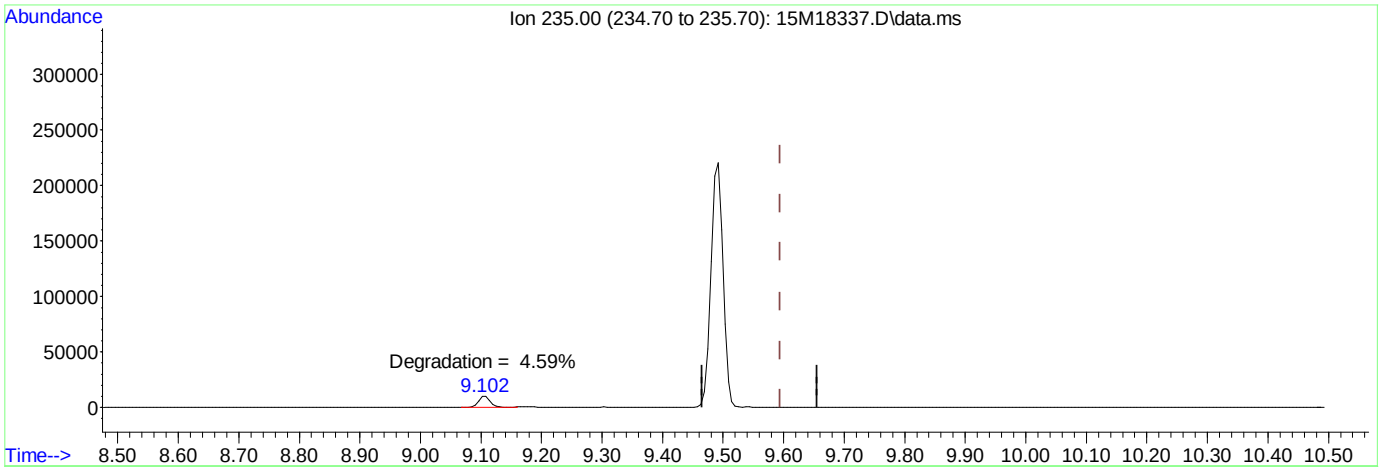

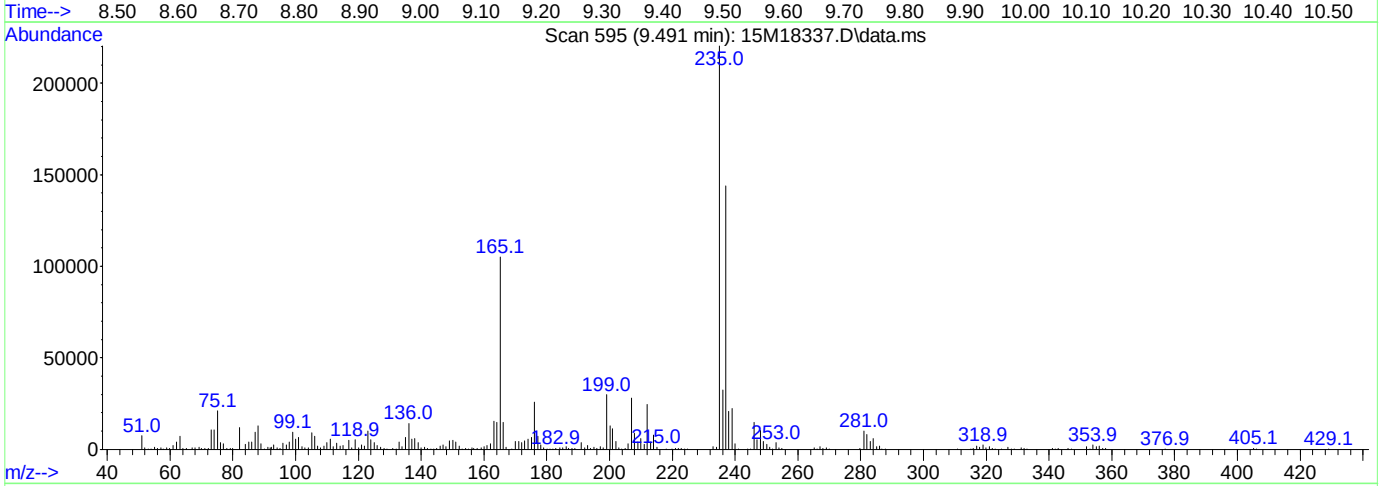

TIC: 15M18337.D\data.ms

(3) DDT

9.491min (-0.103) 0.00 ug/ml

response 283319

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18399.D
Acq On : 16 Jun 2016 9:38
Operator : MES
Sample : WG572958-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

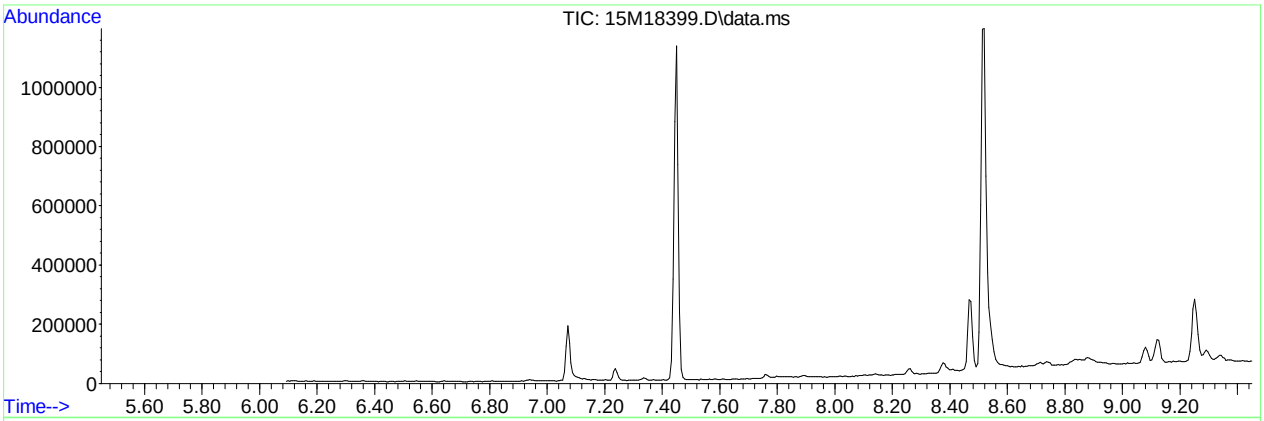

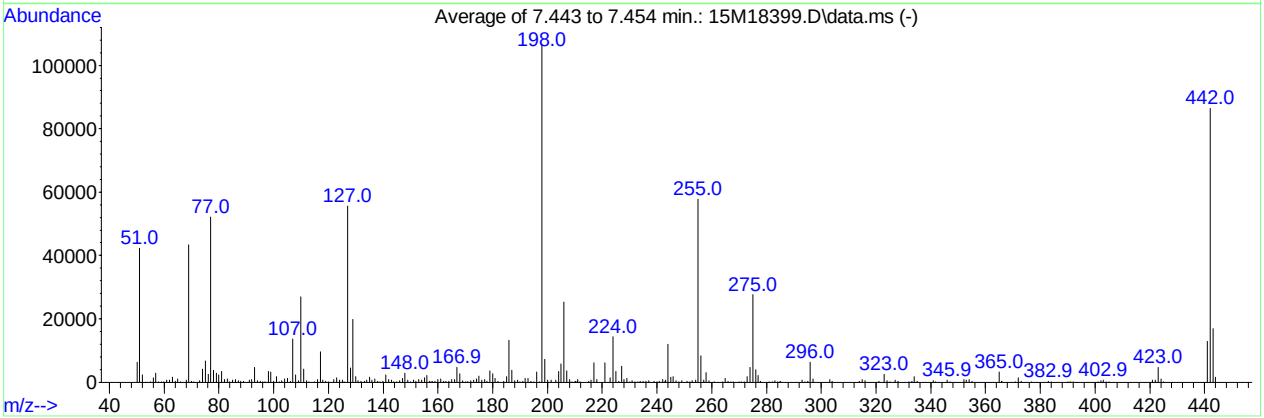

AutoFind: Scans 237, 238, 239; Background Corrected with Scan 231

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	39.7	42335	PASS
68	69	0.00	2	1.6	714	PASS
69	198	0.00	100	40.7	43391	PASS
70	69	0.00	2	0.6	279	PASS
127	198	40	60	52.1	55592	PASS
197	198	0.00	1	0.1	68	PASS
198	198	100	100	100.0	106736	PASS
199	198	5	9	6.7	7172	PASS
275	198	10	30	25.9	27632	PASS
365	198	1	100	3.0	3241	PASS
441	443	0.01	100	76.2	12912	PASS
442	198	40	100	81.0	86427	PASS
443	442	17	23	19.6	16937	PASS

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18399.D
Acq On : 16 Jun 2016 9:38
Operator : MES
Sample : WG572958-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 16 09:56:45 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

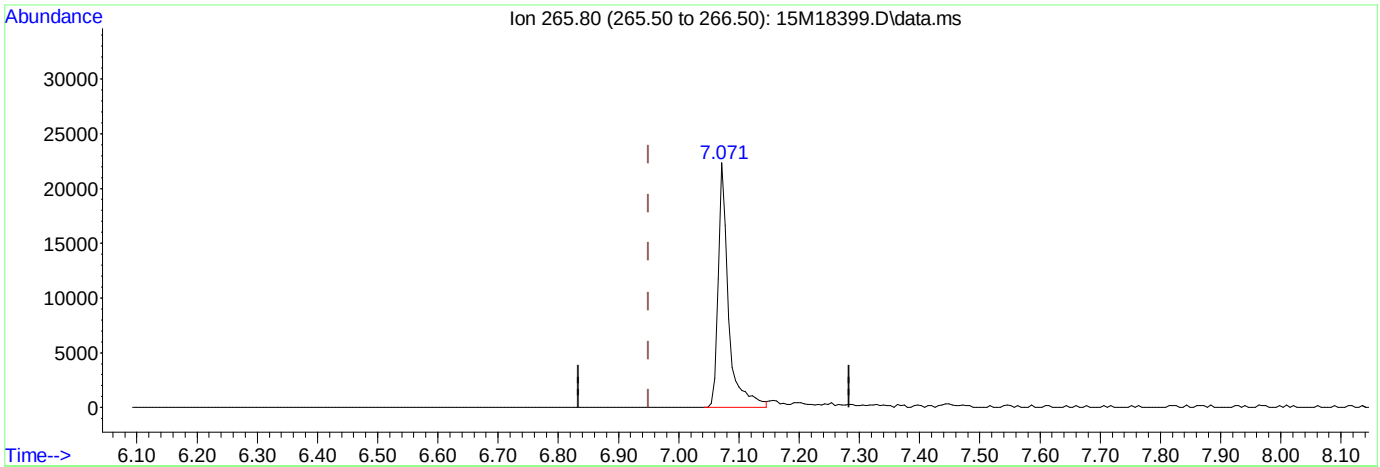

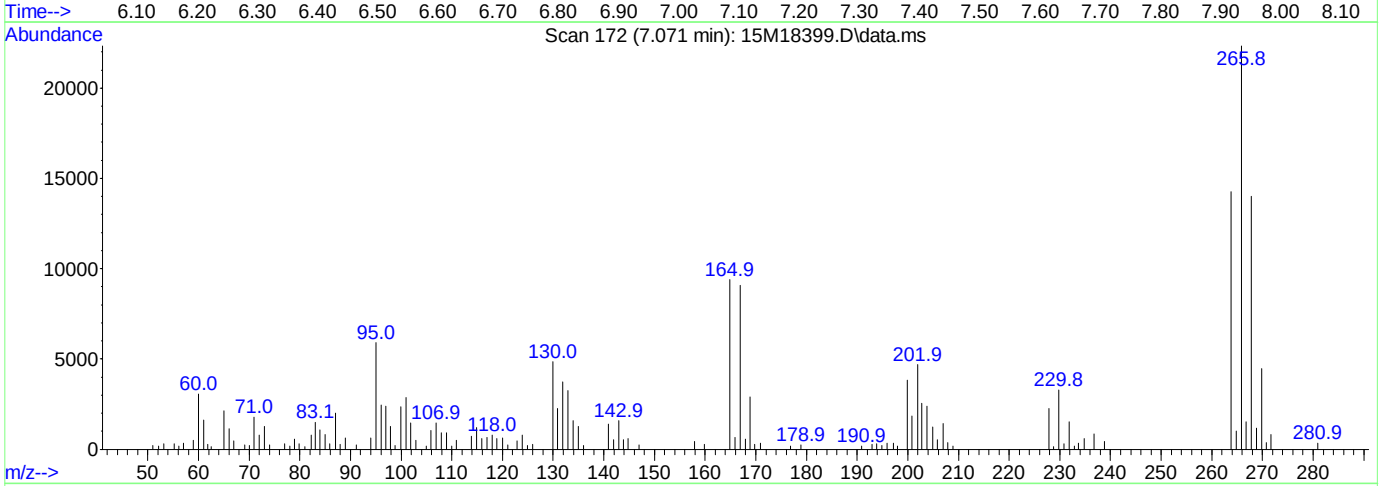

TIC: 15M18399.D\data.ms

(1) Pentachlorophenol

7.071min (+ 0.122) 0.00 ug/ml

response 26601

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18399.D
Acq On : 16 Jun 2016 9:38
Operator : MES
Sample : WG572958-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 16 09:56:45 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

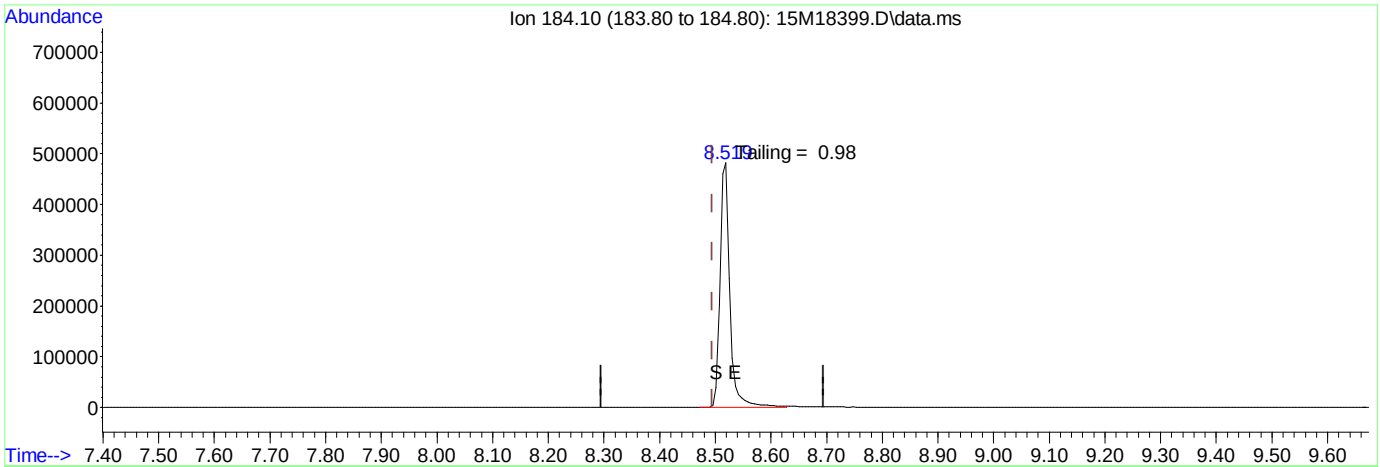

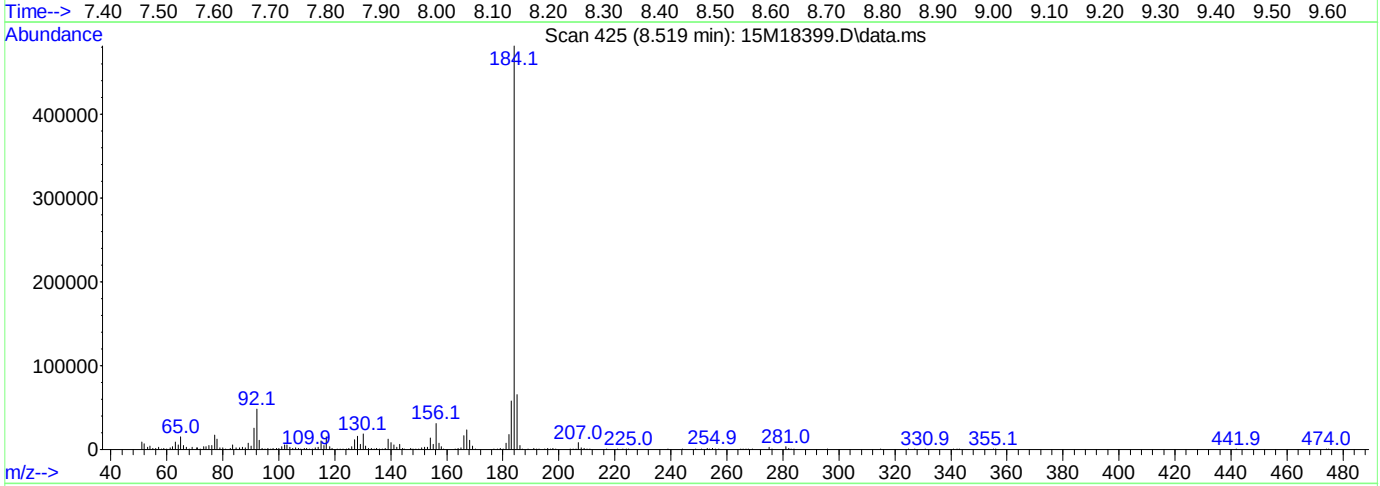

(2) Benzidine

8.519min (+ 0.025) 0.00 ug/ml

response 591309

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18399.D
Acq On : 16 Jun 2016 9:38
Operator : MES
Sample : WG572958-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 16 09:56:45 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

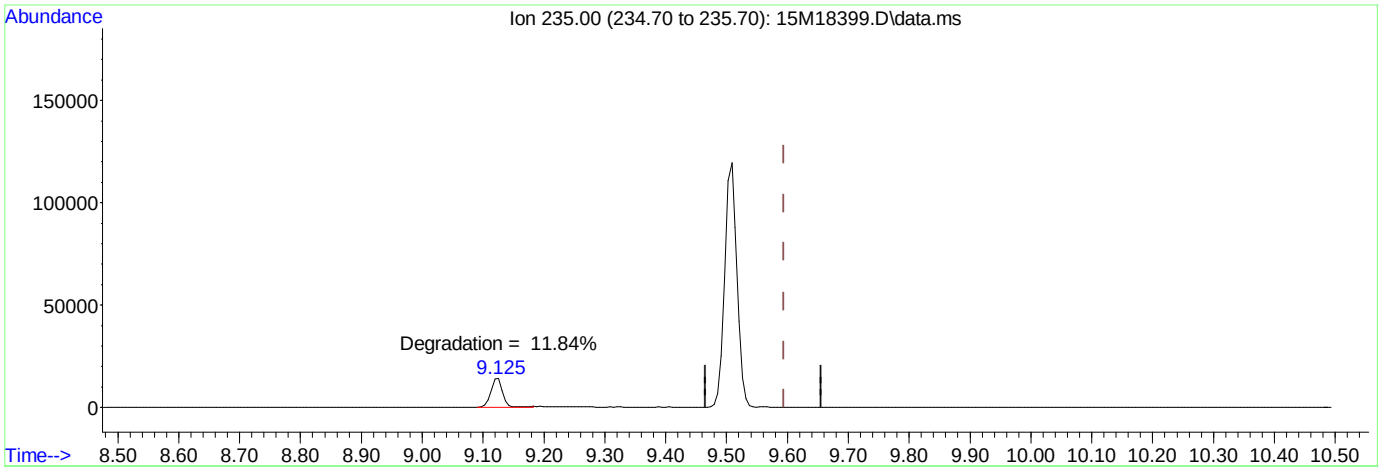

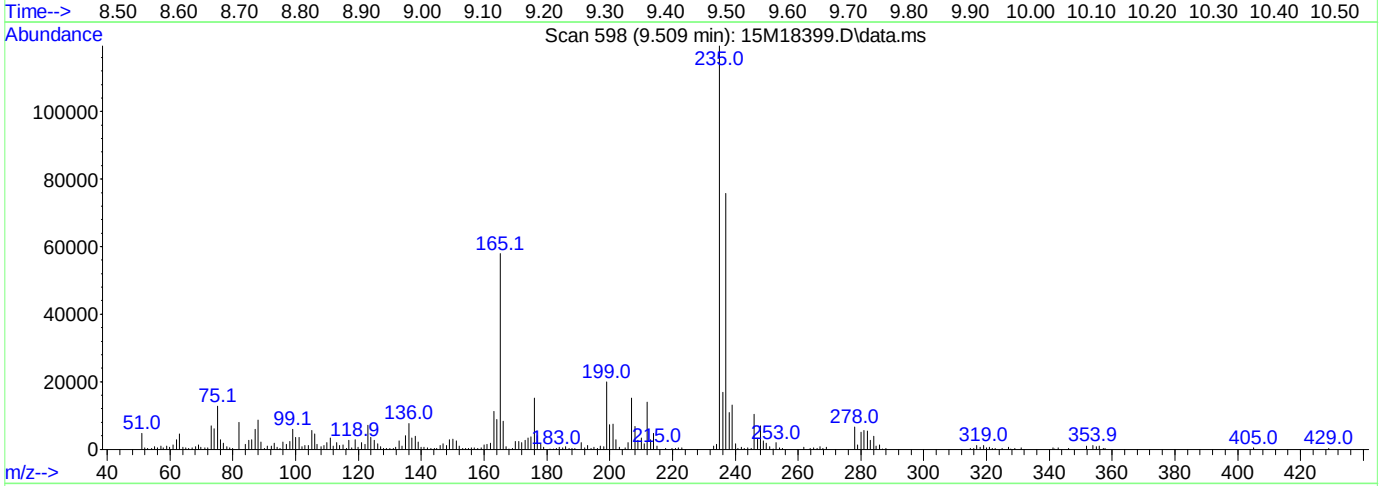

(3) DDT

9.509min (-0.085) 0.00 ug/ml

response 162825

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18401.D
Acq On : 16 Jun 2016 10:23
Operator : MES
Sample : WG572341-01 BLANK 6/13
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 16 12:53:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.948	152	57712	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.876	96	35450	1.4676	ug/L	0.01
Spiked Amount 5.000			Recovery = 29.40%			
4) Nitrobenzene-d5	7.442	82	935690	15.3339	ug/L	0.00
Spiked Amount 5.000			Recovery = 306.60%			
5) 2-Fluorobiphenyl	8.937	172	2176930	14.4366	ug/L	0.01
Spiked Amount 5.000			Recovery = 288.80%			
6) p-Terphenyl-d14	12.221	244	5289384	35.7680	ug/L	0.04
Spiked Amount 5.000			Recovery = 715.40%			

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18401.D
Acq On : 16 Jun 2016 10:23
Operator : MES
Sample : WG572341-01 BLANK 6/13
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 16 12:53:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

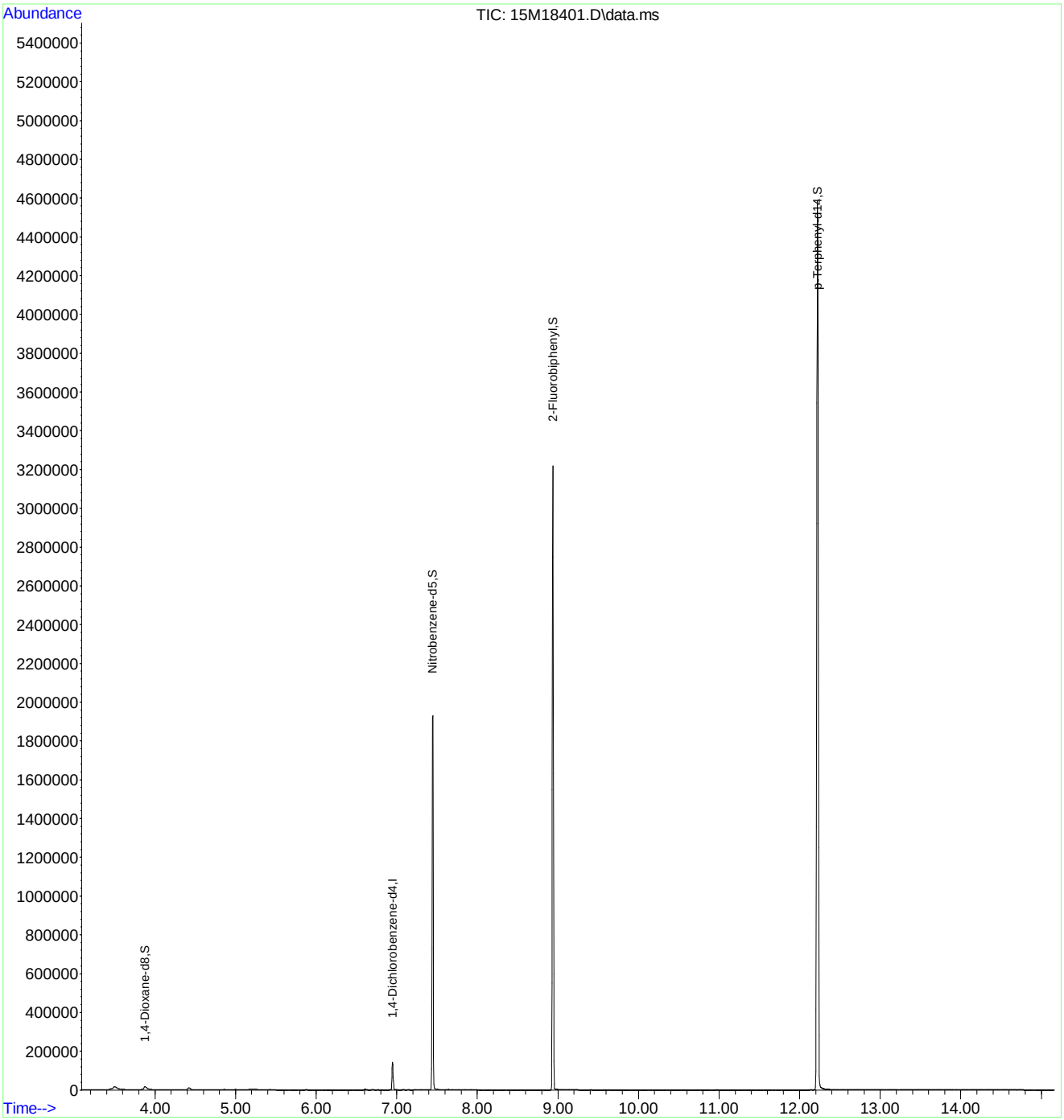

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18402.D
Acq On : 16 Jun 2016 10:46
Operator : MES
Sample : WG572341-02 LCS 6/13
Misc : 1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 16 12:54:04 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.951	152	54087	1.0000	ug/mL	# 0.01
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.883	96	40383	1.7839	ug/L	0.02
Spiked Amount 5.000			Recovery	=	35.60%	
4) Nitrobenzene-d5	7.447	82	8192	0.3591	ug/L	0.01
Spiked Amount 5.000			Recovery	=	7.20%	
5) 2-Fluorobiphenyl	8.937	172	5120	0.0362	ug/L	0.01
Spiked Amount 5.000			Recovery	=	0.80%	
6) p-Terphenyl-d14	12.228	244	1871	0.0135	ug/L	0.05
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.918	58	29330	1.6668	ug/L	82

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18402.D
Acq On : 16 Jun 2016 10:46
Operator : MES
Sample : WG572341-02 LCS 6/13
Misc : 1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 16 12:54:04 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

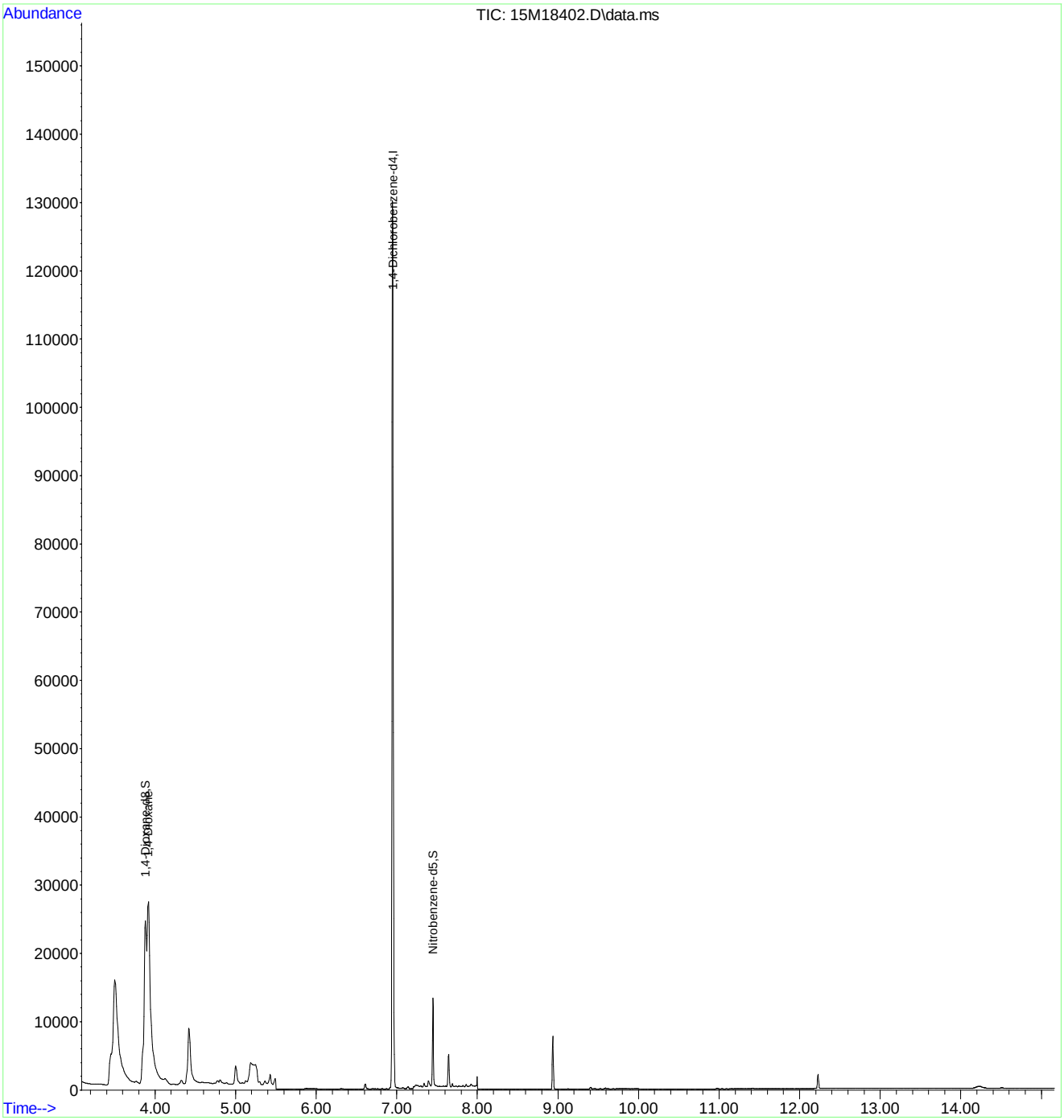

2.2 General Chromatography Data

2.2.2 6850 LC/MS Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060615-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22R-060916	**Prep Method:**	6850	**Prep Date:**	06/11/2016 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572350	**Analyst:**	WTD	**Run Date:**	06/12/2016 22:56
Collect Date:	06/09/2016 07:40	**Dilution:**	1	**File ID:**	1LM.LM35328
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.917		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16060615-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DW-060916	**Prep Method:**	6850	**Prep Date:**	06/11/2016 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572350	**Analyst:**	WTD	**Run Date:**	06/12/2016 23:34
Collect Date:	06/09/2016 08:40	**Dilution:**	1	**File ID:**	1LM.LM35330
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1.21		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16060615-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22DWFD-060916	**Prep Method:**	6850	**Prep Date:**	06/11/2016 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572350	**Analyst:**	WTD	**Run Date:**	06/12/2016 23:53
Collect Date:	06/09/2016 08:40	**Dilution:**	1	**File ID:**	1LM.LM35331
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.473		0.400	0.200	0.100

Certificate of Analysis

Microbac

Lab Report #: L16060615
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Sample #:	L16060615-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW22SW-060916	**Prep Method:**	6850	**Prep Date:**	06/11/2016 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572350	**Analyst:**	WTD	**Run Date:**	06/13/2016 00:12
Collect Date:	06/09/2016 09:55	**Dilution:**	10000	**File ID:**	1LM.LM35332
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	10200		4000	2000	1000

2.2.2.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1405 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG572350-01 MCT	9960	
-02 Blk	0.27	
-03 LCS	0.31	
-04 LCS2	0.31	
L16060615-01	117	
-02	1261	
-03	1269	
-04	3050	
L16060616-01	979	
-02	2840	
-03	112	
L16060632-01	474	
-02	349	
-03	471	
-04	483	

Analyst: Wade T. Deb

Date/Time: 6-11-16 / 1559

DCN#119043

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

Page: 2 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061116_WTD.TXT
Analyst1: WTD Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)
CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35279	WG572339-01 CCB	1	1		06/11/16 11:27
2	1LM.LM35280	WG572339-02 CCV (1.0ug/L)	1	1	STD75510	06/11/16 11:46
3	1LM.LM35281	WG572200-12 MRL (0.2ug/L)	1	1	STD75510	06/11/16 12:05
4	1LM.LM35282	L16060411-01 500X	1	500		06/11/16 12:24
5	1LM.LM35283	L16060411-02 100X	1	100		06/11/16 12:43
6	1LM.LM35284	L16060414-03 10000X	1	10000		06/11/16 13:02
7	1LM.LM35285	L16060414-04 10000X	1	10000		06/11/16 13:21
8	1LM.LM35286	L16060504-01 10000X	1	10000		06/11/16 13:40
9	1LM.LM35287	L16060504-02 1000X	1	1000		06/11/16 13:58
10	1LM.LM35288	L16060504-03 10000X	1	10000		06/11/16 14:17
11	1LM.LM35289	L16060504-04 1000X	1	1000		06/11/16 14:36
12	1LM.LM35290	L16060414-03 100000X	1	100000		06/11/16 14:55
13	1LM.LM35291	L16060414-04 100000X	1	100000		06/11/16 15:15
14	1LM.LM35292	WG572339-03 CCV (1.0ug/L)	1	1	STD75510	06/11/16 15:34
15	1LM.LM35293	WG572200-13 MRL (0.2ug/L)	1	1	STD75510	06/11/16 16:41
16	1LM.LM35294	WG572339-04 CCB	1	1		06/11/16 17:00
17	1LM.LM35295	L16060504-04 100X	1	100		06/11/16 17:19
18	1LM.LM35296	WG572339-05 CCV (1.0ug/L)	1	1	STD75510	06/11/16 17:38
19	1LM.LM35297	WG572200-14 MRL (0.2ug/L)	1	1	STD75510	06/11/16 17:57
20	1LM.LM35298	WG572339-06 CCB	1	1		06/11/16 18:16
21	1LM.LM35299	WG572350-05 MRL (0.2ug/L)	1	1	STD75510	06/11/16 18:35
22	1LM.LM35300	WG572350-01 MCT (0.2ug/l)	1	1	STD75512	06/11/16 18:54
23	1LM.LM35301	WG572350-02 BLANK	1	1		06/11/16 19:13
24	1LM.LM35302	WG572350-03 LCS (0.2ug/L)	1	1	STD75512	06/11/16 19:32
25	1LM.LM35303	WG572350-03 LCSD (0.2ug/L)	1	1	STD75512	06/11/16 19:51
26	1LM.LM35304	L16060632-01 100X	1	100		06/11/16 20:10
27	1LM.LM35305	L16060632-02 100X	1	100		06/11/16 20:29
28	1LM.LM35306	L16060632-03 100X	1	100		06/11/16 20:48
29	1LM.LM35307	L16060632-04 100X	1	100		06/11/16 21:07
30	1LM.LM35308	L16060615-01 10000X	1	10000		06/11/16 21:26
31	1LM.LM35309	L16060615-02 100X	1	100		06/11/16 21:44
43	1LM.LM35310	WG572339-07 CCV (1.0ug/L)	1	1	STD75510	06/11/16 22:03
33	1LM.LM35311	WG572350-06 MRL (0.2ug/L)	1	1	STD75510	06/11/16 22:22

Page: 1 Approved: 13-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061116_WTD.TXT
Analyst1: WTD Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:
Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)
CCV STD: STD75510 LCS STD: STD75512 NA

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
44	1LM.LM35312	WG572339-08 CCB	1	1		06/11/16 22:41
35	1LM.LM35313	L16060615-03 100X	1	100		06/11/16 23:00
36	1LM.LM35314	L16060615-04 100X	1	100		06/11/16 23:19
37	1LM.LM35315	L16060616-01 10000X	1	10000		06/11/16 23:38
38	1LM.LM35316	L16060616-02 10000X	1	10000		06/11/16 23:57
39	1LM.LM35317	L16060616-03	1	1		06/12/16 00:16
45	1LM.LM35318	WG572339-09 CCV (1.0ug/L)	1	1	STD75510	06/12/16 00:35
41	1LM.LM35319	WG572350-07 MRL (0.2ug/L)	1	1	STD75510	06/12/16 00:54
46	1LM.LM35320	WG572339-10 CCB	1	1		06/12/16 01:13

Comments

Seq.	Rerun	Dil.	Reason	Analytes
6	X	100000	Over Calibration Range	
	L16060414-03			
7	X	100000	Over Calibration Range	
	L16060414-04			
11	X	100	Analyzed too dilute	
	L16060504-04			
26	X	1	Analyzed too dilute	
	L16060632-01			
27	X	1	Analyzed too dilute	
	L16060632-02			
28	X	1	Analyzed too dilute	
	L16060632-03			
29	X	1	Analyzed too dilute	
	L16060632-04			
30	X	1	Analyzed too dilute	
	L16060615-01			
31	X	1	Analyzed too dilute	
	L16060615-02			
35	X	1	Analyzed too dilute	
	L16060615-03			
36	X	10000	Over Calibration Range	
	L16060615-04			
37				
	L16060616-01 Analyzed at a dilution based on historical data			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061116_WTD.TXT

Analyst1: WTD Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups:

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 NA

Comments

Seq.	Rerun	Dil.	Reason	Analytes
38	X	100	Analyzed too dilute	
	L16060616-02			

Page: 3 Approved: 13-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061216_WTD.TXT
Analyst1: WTD Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG572350

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35321	WG572372-01 CCB	1	1		06/12/16 20:44
2	1LM.LM35322	WG572372-02 CCV (1.0ug/L)	1	1	STD75510	06/12/16 21:03
3	1LM.LM35323	WG572350-08 MRL (0.2ug/L)	1	1	STD75510	06/12/16 21:22
4	1LM.LM35324	L16060632-01	1	1		06/12/16 21:41
5	1LM.LM35325	L16060632-02	1	1		06/12/16 22:00
6	1LM.LM35326	L16060632-03	1	1		06/12/16 22:19
7	1LM.LM35327	L16060632-04	1	1		06/12/16 22:37
8	1LM.LM35328	L16060615-01	1	1		06/12/16 22:56
9	1LM.LM35329	L16060615-01 10x	1	10		06/12/16 23:15
10	1LM.LM35330	L16060615-02	1	1		06/12/16 23:34
11	1LM.LM35331	L16060615-03	1	1		06/12/16 23:53
12	1LM.LM35332	L16060615-04 10000x	1	10000		06/13/16 00:12
13	1LM.LM35333	L16060616-02 100X	1	100		06/13/16 00:31
14	1LM.LM35334	WG572372-03 CCV (1.0ug/L)	1	1	STD75510	06/13/16 00:50
15	1LM.LM35335	WG572350-09 MRL (0.2ug/L)	1	1	STD75510	06/13/16 01:09
16	1LM.LM35336	WG572372-04 CCB	1	1		06/13/16 01:28
17	1LM.LM35337	WG572372-05 CCB	1	1		06/13/16 07:50
18	1LM.LM35338	WG572372-06 CCV (1.0ug/L)	1	1	STD75510	06/13/16 08:09
19	1LM.LM35339	WG572350-10 MRL (0.2ug/L)	1	1	STD75510	06/13/16 08:28
20	1LM.LM35340	L16060616-02	1	1		06/13/16 08:47
21	1LM.LM35341	WG572372-07 CCV (1.0ug/L)	1	1	STD75510	06/13/16 09:06
22	1LM.LM35342	WG572350-10 MRL (0.2ug/L)	1	1	STD75510	06/13/16 09:25
23	1LM.LM35343	WG572372-08 CCB	1	1		06/13/16 09:44

Comments

Seq.	Rerun	Dil.	Reason	Analytes
9				
	L16060615-01 Dilution not needed.			
13	X	1	Analyzed too dilute	
	L16060616-02			

Page: 1 Approved: 13-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
04-MAY-2016
John Richards

Secondary Reviewer:
05-MAY-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 11-JUN-2016
Analyst: WTD
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 75641
Analytical Workgroups: L16060411, L16060414, L16060504, L16060616

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	WTD
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 12-JUN-2016

Secondary Reviewer: 13-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-14-2016 08:50:47

Microbac Laboratories Inc.

Data Checklist

Date: 12-JUN-2016
Analyst: WTD
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 75643
Analytical Workgroups: L16060615, L16060616, L16060632

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	X
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	WTD
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer:
13-JUN-2016

Secondary Reviewer:
13-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-14-2016 08:50:19

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG572350

Login Number: L16060615

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW22R-060916	01	06/09/16					06/11/2016	2.1	28		06/12/16	1.5	28	
18CPTMW22DW-060916	02	06/09/16					06/11/2016	2.1	28		06/12/16	1.5	28	
18CPTMW22DWFD-060916	03	06/09/16					06/11/2016	2.1	28		06/12/16	1.5	28	
18CPTMW22SW-060916	04	06/09/16					06/11/2016	2	28		06/13/16	1.6	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4804229
Report generated 06/14/2016 08:46

METHOD BLANK SUMMARY

Login Number: L16060615
Blank File ID: 1LM.LM35301
Prep Date: 06/11/16 11:00
Analyzed Date: 06/11/16 19:13
Analyst: WTD

Work Group: WG572350
Blank Sample ID: WG572350-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG572350-05	1LM.LM35299	06/11/16 18:35	01
MCT	WG572350-01	1LM.LM35300	06/11/16 18:54	01
LCS	WG572350-03	1LM.LM35302	06/11/16 19:32	01
LCS2	WG572350-04	1LM.LM35303	06/11/16 19:51	01
QCMRL	WG572350-06	1LM.LM35311	06/11/16 22:22	01
QCMRL	WG572350-07	1LM.LM35319	06/12/16 00:54	01
QCMRL	WG572350-08	1LM.LM35323	06/12/16 21:22	01
18CPTMW22R-060916	L16060615-01	1LM.LM35328	06/12/16 22:56	01
18CPTMW22DW-060916	L16060615-02	1LM.LM35330	06/12/16 23:34	01
18CPTMW22DWFD-060916	L16060615-03	1LM.LM35331	06/12/16 23:53	01
18CPTMW22SW-060916	L16060615-04	1LM.LM35332	06/13/16 00:12	DL01
QCMRL	WG572350-09	1LM.LM35335	06/13/16 01:09	01
QCMRL	WG572350-10	1LM.LM35339	06/13/16 08:28	01
QCMRL	WG572350-10	1LM.LM35342	06/13/16 09:25	02

Report Name: BLANK_SUMMARY
PDF File ID: 4804230
Report generated 06/14/2016 08:46

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060615 Prep Date: 06/11/16 11:00 Sample ID: WG572350-02
Instrument ID: LCMS1 Run Date: 06/11/16 19:13 Prep Method: 6850
File ID: 1LM.LM35301 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572350 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4804231
14-JUN-2016 08:46

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060615 Analyst: WTD Prep Method: 6850
Instrument ID: LCMS1 Matrix: Water Method: 6850
Workgroup (AAB#): WG572350 Units: ug/L
QC Key: DOD4 Lot #: STD75512

Sample ID: WG572350-03 LCS File ID: 1LM.LM35302 Run Date: 06/11/2016 19:32
Sample ID: WG572350-04 LCS2 File ID: 1LM.LM35303 Run Date: 06/11/2016 19:51

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Perchlorate	0.200	0.211	106	0.200	0.208	104	1.43	80 - 120	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4804232
Report generated: 06/14/2016 08:46

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060615
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4804234
Report generated 06/14/2016 08:46

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060615

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4804234
Report generated 06/14/2016 08:46

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060615

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4804234
Report generated 06/14/2016 08:46

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060615

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008
PDF File ID: 4804234
Report generated 06/14/2016 08:46

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060615 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4804235
Report generated 06/14/2016 08:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060615
Run Date: 06/11/2016
Sample ID: WG572339-06
Instrument ID: LCMS1
Run Time: 18:16
Method: 6850
File ID: 1LM.LM35298
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4804237
Report generated 06/14/2016 08:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060615
Run Date: 06/11/2016
Sample ID: WG572339-08
Instrument ID: LCMS1
Run Time: 22:41
Method: 6850
File ID: 1LM.LM35312
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4804237
Report generated 06/14/2016 08:47

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060615
Run Date: 06/12/2016
Sample ID: WG572339-10
Instrument ID: LCMS1
Run Time: 01:13
Method: 6850
File ID: 1LM.LM35320
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4804237
Report generated 06/14/2016 08:47

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060615
Run Date: 06/12/2016
Sample ID: WG572372-01
Instrument ID: LCMS1
Run Time: 20:44
Method: 6850
File ID: 1LM.LM35321
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4804237
Report generated 06/14/2016 08:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060615
Run Date: 06/13/2016
Sample ID: WG572372-04
Instrument ID: LCMS1
Run Time: 01:28
Method: 6850
File ID: 1LM.LM35336
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4804237
Report generated 06/14/2016 08:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060615
Run Date: 06/13/2016
Sample ID: WG572372-05
Instrument ID: LCMS1
Run Time: 07:50
Method: 6850
File ID: 1LM.LM35337
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4804237
Report generated 06/14/2016 08:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060615
Run Date: 06/13/2016
Sample ID: WG572372-08
Instrument ID: LCMS1
Run Time: 09:44
Method: 6850
File ID: 1LM.LM35343
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4804237
Report generated 06/14/2016 08:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060615
Run Date: 06/11/2016
Sample ID: WG572339-05
Instrument ID: LCMS1
Run Time: 17:38
Method: 6850
File ID: 1LM.LM35296
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.73	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4804236
Report generated 06/14/2016 08:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060615
Run Date: 06/11/2016
Sample ID: WG572339-07
Instrument ID: LCMS1
Run Time: 22:03
Method: 6850
File ID: 1LM.LM35310
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.06	ug/L	1.79	6.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4804236
Report generated 06/14/2016 08:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060615
Run Date: 06/12/2016
Sample ID: WG572339-09
Instrument ID: LCMS1
Run Time: 00:35
Method: 6850
File ID: 1LM.LM35318
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.70	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4804236
Report generated 06/14/2016 08:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060615 Run Date: 06/12/2016 Sample ID: WG572372-02
Instrument ID: LCMS1 Run Time: 21:03 Method: 6850
File ID: 1LM.LM35322 Analyst: WTD QC Key: DOD4
Workgroup (AAB#): WG572350 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.72	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4804236
Report generated 06/14/2016 08:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060615 Run Date: 06/13/2016 Sample ID: WG572372-03
Instrument ID: LCMS1 Run Time: 00:50 Method: 6850
File ID: 1LM.LM35334 Analyst: WTD QC Key: DOD4
Workgroup (AAB#): WG572350 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.71	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4804236
Report generated 06/14/2016 08:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060615 Run Date: 06/13/2016 Sample ID: WG572372-06
Instrument ID: LCMS1 Run Time: 08:09 Method: 6850
File ID: 1LM.LM35338 Analyst: WTD QC Key: DOD4
Workgroup (AAB#): WG572350 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.76	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4804236
Report generated 06/14/2016 08:47

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060615
Run Date: 06/13/2016
Sample ID: WG572372-07
Instrument ID: LCMS1
Run Time: 09:06
Method: 6850
File ID: 1LM.LM35341
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.73	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4804236
Report generated 06/14/2016 08:47

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060615 Run Date: 06/11/2016 Sample ID: WG572350-05
Instrument ID: LCMS1 Run Time: 18:35 Prep Method: 6850
File ID: 1LM.LM35299 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572350 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.207	104	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4804233
Report generated 06/14/2016 08:46

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060615 Run Date: 06/11/2016 Sample ID: WG572350-06
Instrument ID: LCMS1 Run Time: 22:22 Prep Method: 6850
File ID: 1LM.LM35311 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572350 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.217	109	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4804233
Report generated 06/14/2016 08:46

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060615 Run Date: 06/12/2016 Sample ID: WG572350-07
Instrument ID: LCMS1 Run Time: 00:54 Prep Method: 6850
File ID: 1LM.LM35319 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572350 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.219	110	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4804233
Report generated 06/14/2016 08:46

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060615 Run Date: 06/12/2016 Sample ID: WG572350-08
Instrument ID: LCMS1 Run Time: 21:22 Prep Method: 6850
File ID: 1LM.LM35323 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572350 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.214	107	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4804233
Report generated 06/14/2016 08:46

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060615 Run Date: 06/13/2016 Sample ID: WG572350-09
Instrument ID: LCMS1 Run Time: 01:09 Prep Method: 6850
File ID: 1LM.LM35335 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572350 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.216	108	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4804233
Report generated 06/14/2016 08:46

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060615 Run Date: 06/13/2016 Sample ID: WG572350-10
Instrument ID: LCMS1 Run Time: 08:28 Prep Method: 6850
File ID: 1LM.LM35339 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572350 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.210	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4804233
Report generated 06/14/2016 08:46

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060615 Run Date: 06/13/2016 Sample ID: WG572350-10
Instrument ID: LCMS1 Run Time: 09:25 Prep Method: 6850
File ID: 1LM.LM35342 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572350 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.220	110	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4804233
Report generated 06/14/2016 08:46

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16060615
Instrument ID: LCMS1
Workgroup (AAB#): WG572350

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16060615-01	1.00	01	517000
L16060615-02	1.00	01	528000
L16060615-03	1.00	01	529000
L16060615-04	10000	DL01	534000
WG572350-02	1.00	01	490000
WG572350-03	1.00	01	484000
WG572350-04	1.00	01	484000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4804240
Report generated 06/14/2016 08:47

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**	6850	**Samplenum:**	L16060615-01
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35328
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/12/2016 22:56	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	160000	54700	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**	6850	**Samplenum:**	L16060615-02
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35330
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/12/2016 23:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	215000	73000	2.95	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**	6850	**Samplenum:**	L16060615-03
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35331
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/12/2016 23:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	84900	29500	2.88	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**	6850	**Samplenum:**	L16060615-04
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35332
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/13/2016 00:12	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	184000	62800	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**		**Samplenum:**	WG572339-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35296
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/11/2016 17:38	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	172000	59300	2.90	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**		**Samplenum:**	WG572339-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35298
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/11/2016 18:16	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**		**Samplenum:**	WG572339-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35310
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/11/2016 22:03	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	180000	60500	2.98	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**		**Samplenum:**	WG572339-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35312
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/11/2016 22:41	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**		**Samplenum:**	WG572339-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35318
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/12/2016 00:35	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	174000	61600	2.82	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**		**Samplenum:**	WG572339-10
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35320
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/12/2016 01:13	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	674	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**	6850	**Samplenum:**	WG572350-01
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35300
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/11/2016 18:54	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	41100	12200	3.37	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**	6850	**Samplenum:**	WG572350-02
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35301
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/11/2016 19:13	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	227	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**	6850	**Samplenum:**	WG572350-03
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35302
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/11/2016 19:32	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35000	12100	2.89	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**	6850	**Samplenum:**	WG572350-04
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35303
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/11/2016 19:51	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34400	11900	2.89	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**	6850	**Samplenum:**	WG572350-05
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35299
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/11/2016 18:35	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35100	12900	2.72	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**	6850	**Samplenum:**	WG572350-06
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35311
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/11/2016 22:22	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37800	12300	3.07	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**	6850	**Samplenum:**	WG572350-07
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35319
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/12/2016 00:54	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38100	13000	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**	6850	**Samplenum:**	WG572350-08
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35323
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/12/2016 21:22	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36000	12100	2.98	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**	6850	**Samplenum:**	WG572350-09
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35335
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/13/2016 01:09	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	41200	14000	2.94	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**	6850	**Samplenum:**	WG572350-10
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35339
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/13/2016 08:28	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	39900	13800	2.89	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**	6850	**Samplenum:**	WG572350-10
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35342
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/13/2016 09:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	42100	14300	2.94	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**		**Samplenum:**	WG572372-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35321
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/12/2016 20:44	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1120	906	1.24	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**		**Samplenum:**	WG572372-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35322
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/12/2016 21:03	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	166000	58600	2.83	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**		**Samplenum:**	WG572372-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35334
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/13/2016 00:50	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	190000	63900	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**		**Samplenum:**	WG572372-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35336
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/13/2016 01:28	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**		**Samplenum:**	WG572372-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35337
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/13/2016 07:50	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**		**Samplenum:**	WG572372-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35338
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/13/2016 08:09	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	189000	64700	2.92	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**		**Samplenum:**	WG572372-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35341
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/13/2016 09:06	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	192000	65900	2.91	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060615	**Prep Method:**		**Samplenum:**	WG572372-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35343
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/13/2016 09:44	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

2.2.2.3 Sample Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/13/2016 10:32 AM

Data File	LM35328.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/12/2016 10:56:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060615-01	**Injection Vial**	55.00
Data File	LM35328.wiff	**Injection Volume**	10.00
Acquisition Date	6/12/2016 10:56:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	L16060615-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.170e+05	9.72	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.600e+05	9.73	N/A	0.917
Perchlorate conf	5.470e+04	9.71	N/A	0.928

O18LP (Internal Standard)

RT (Exp. RT): 9.72(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

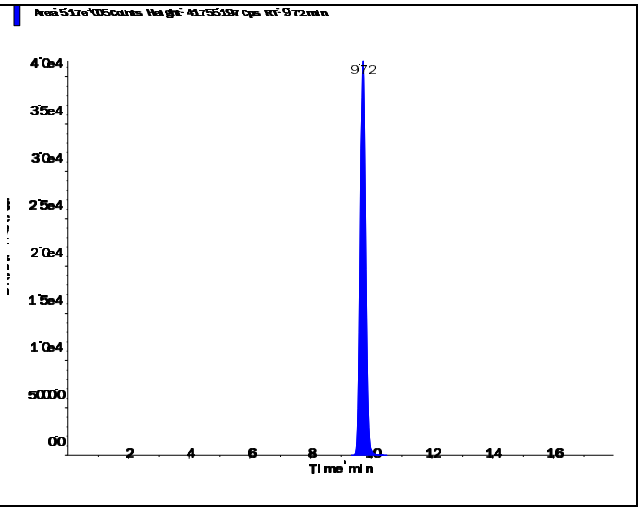

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.73 (9.84) min Calculated conc: 0.917 ng/ml Area Ratio: 0.31 Sample Type: (Unknown)	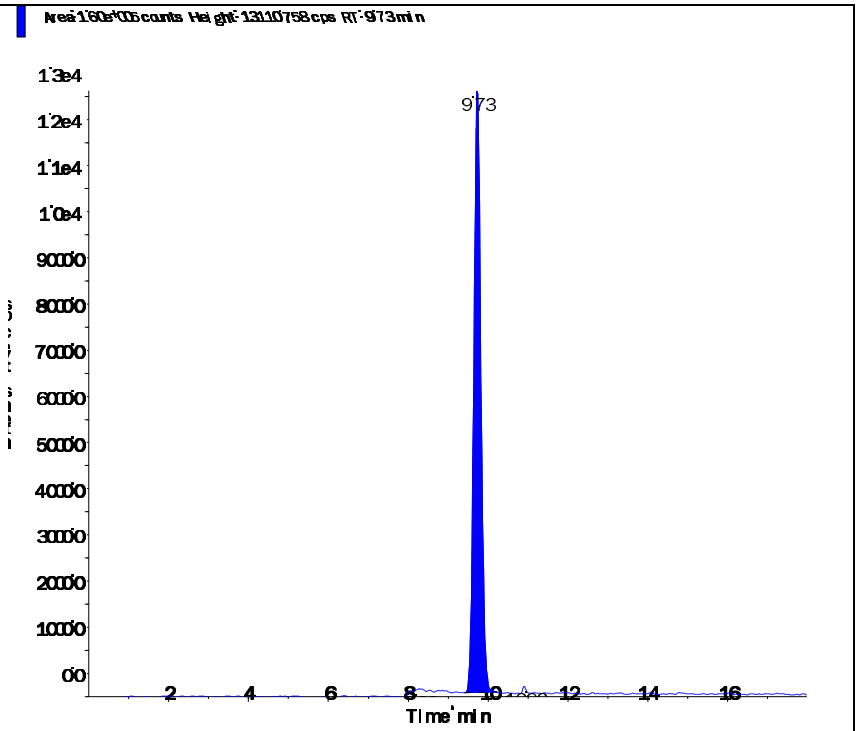
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.71 (9.84) min Calculated conc: 0.928 ng/ml Area Ratio: 0.106 Sample Type: (Unknown)	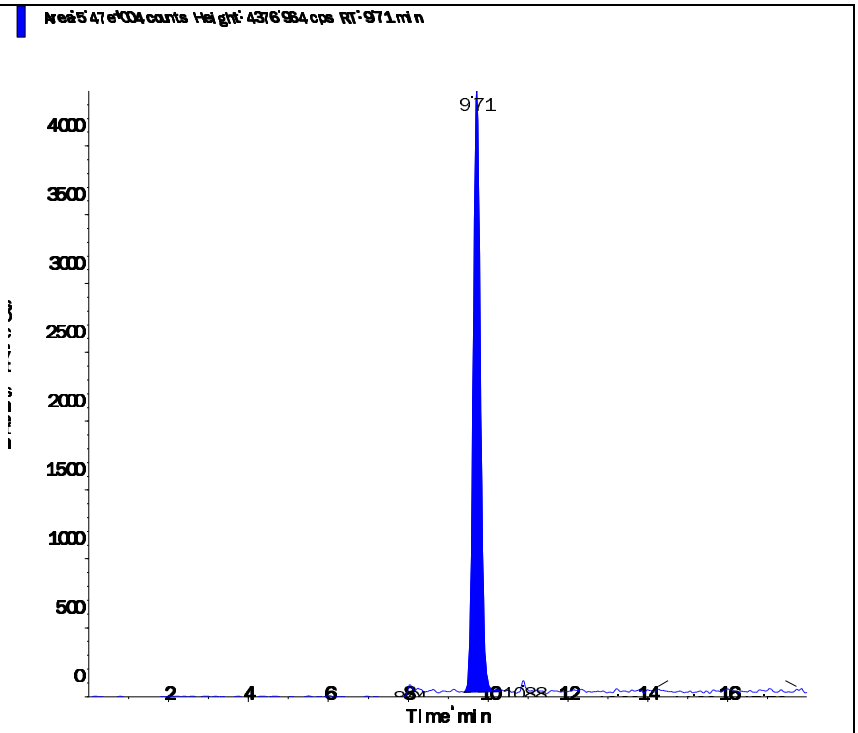

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Data File	LM35330.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/12/2016 11:34:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060615-02	**Injection Vial**	57.00
Data File	LM35330.wiff	**Injection Volume**	10.00
Acquisition Date	6/12/2016 11:34:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	L16060615-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.280e+05	9.57	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.150e+05	9.58	N/A	1.21
Perchlorate conf	7.300e+04	9.56	N/A	1.22

O18LP (Internal Standard)

RT (Exp. RT): 9.57(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

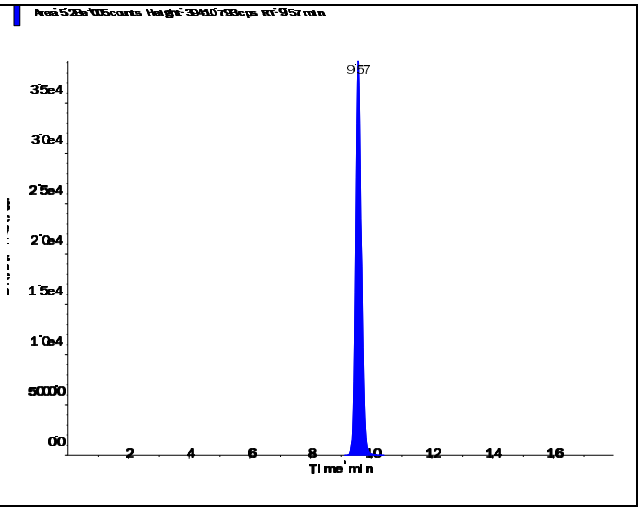

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.58 (9.84) min
Calculated conc:	1.21 ng/ml
Area Ratio:	0.407
Sample Type:	(Unknown)

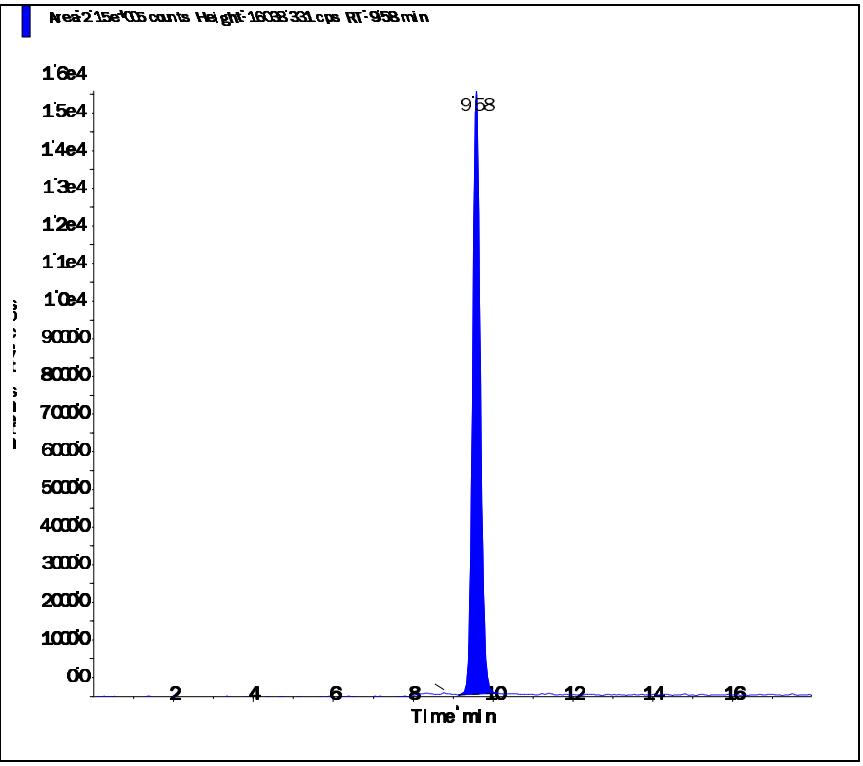

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.56 (9.84) min
Calculated conc:	1.22 ng/ml
Area Ratio:	0.138
Sample Type:	(Unknown)

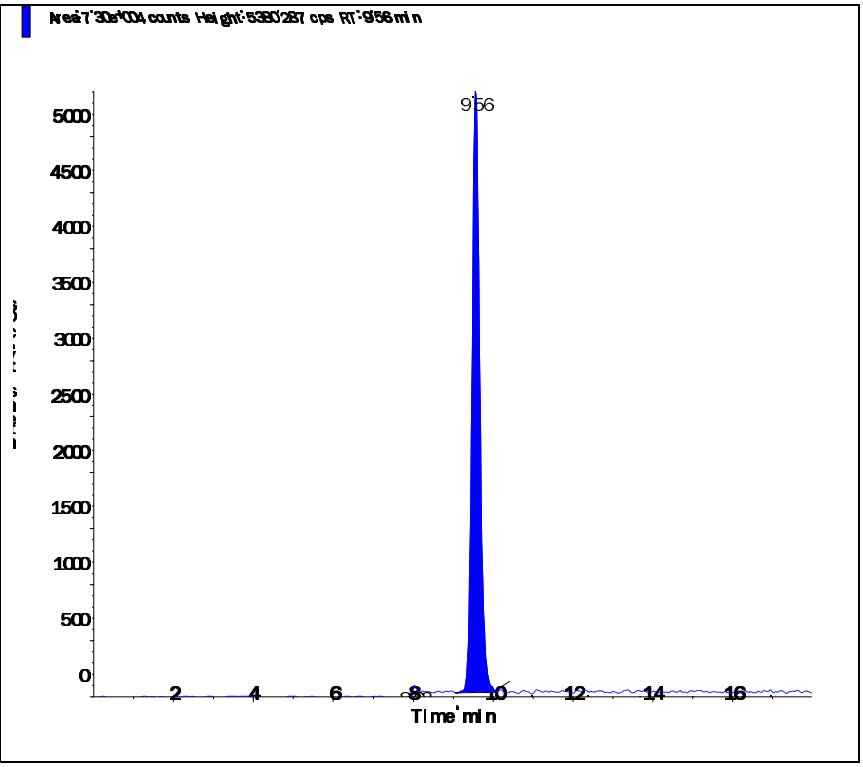

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Data File	LM35331.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/12/2016 11:53:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060615-03	**Injection Vial**	58.00
Data File	LM35331.wiff	**Injection Volume**	10.00
Acquisition Date	6/12/2016 11:53:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	L16060615-03	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.290e+05	9.55	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.490e+04	9.57	N/A	0.473
Perchlorate conf	2.950e+04	9.55	N/A	0.479

O18LP (Internal Standard)

RT (Exp. RT): 9.55(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

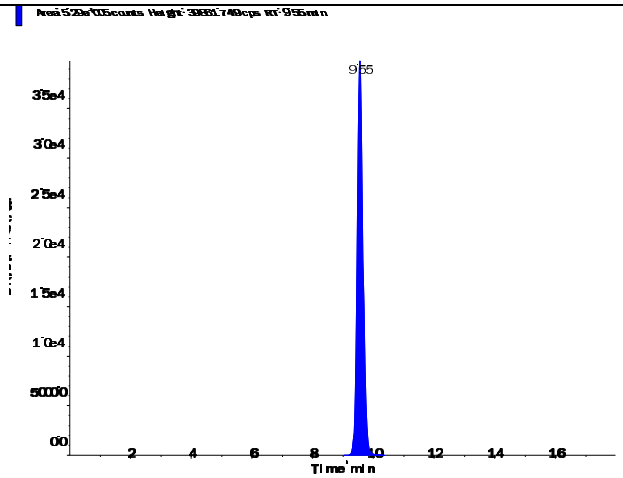

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.57 (9.84) min
Calculated conc:	0.473 ng/ml
Area Ratio:	0.16
Sample Type:	(Unknown)

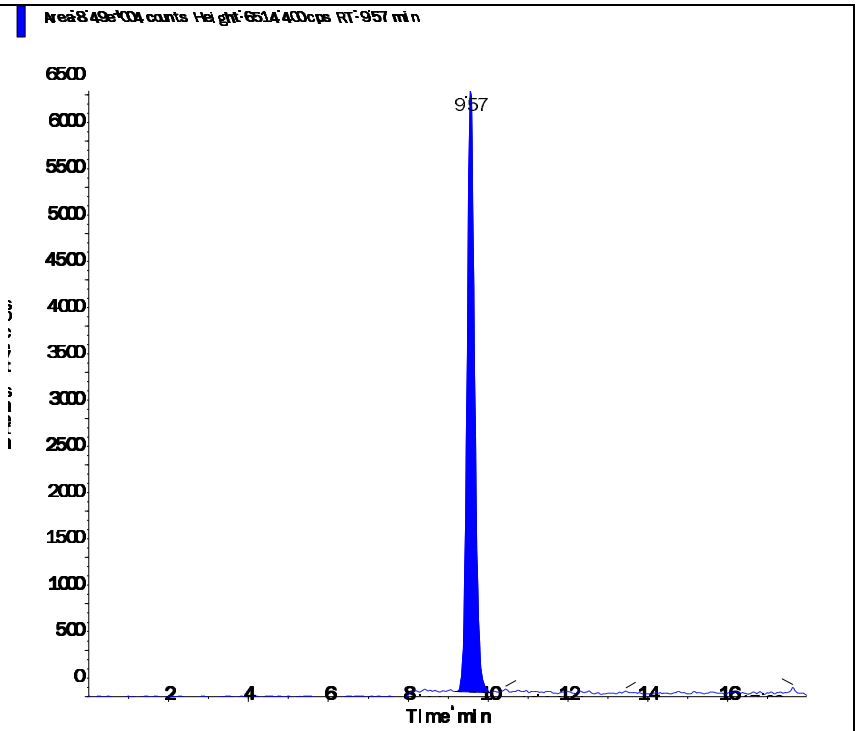

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.55 (9.84) min
Calculated conc:	0.479 ng/ml
Area Ratio:	0.056
Sample Type:	(Unknown)

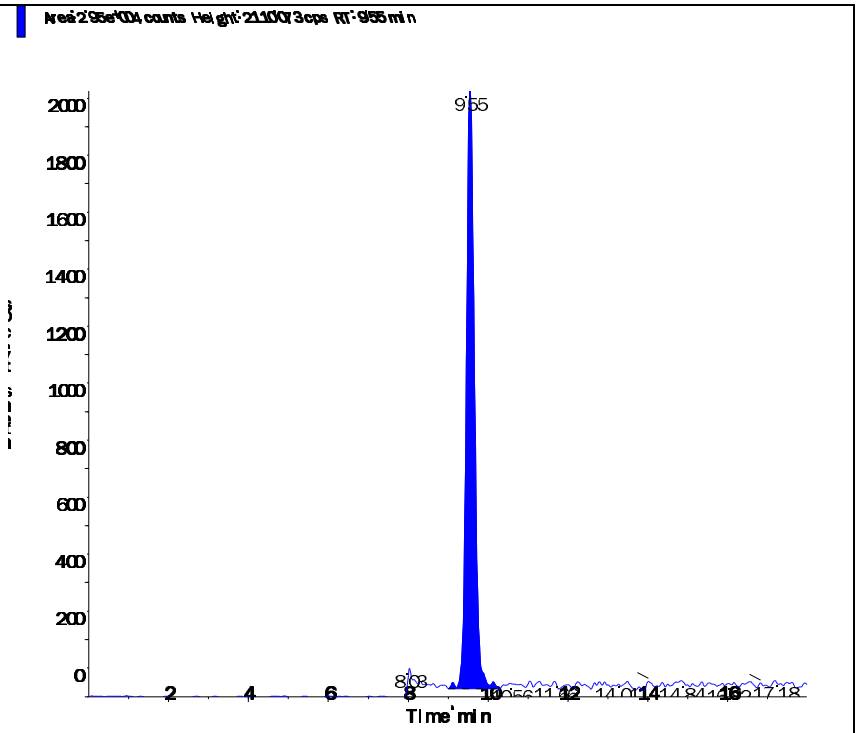

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Data File	LM35332.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/13/2016 12:12:35 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060615-04 10000x	**Injection Vial**	59.00
Data File	LM35332.wiff	**Injection Volume**	10.00
Acquisition Date	6/13/2016 12:12:35 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	L16060615-04	**Dilution Factor**	1.00
Sample Comment	110,000.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.340e+05	9.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.840e+05	9.81	N/A	1.02
Perchlorate conf	6.280e+04	9.80	N/A	1.03

O18LP (Internal Standard)

RT (Exp. RT): 9.80(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

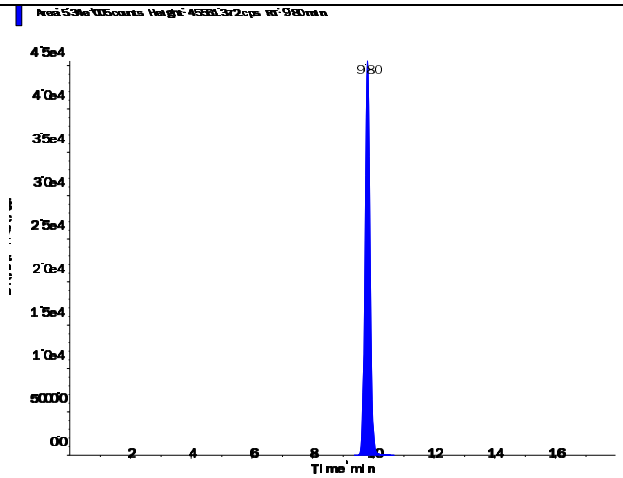

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.81 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.344
Sample Type:	(Unknown)

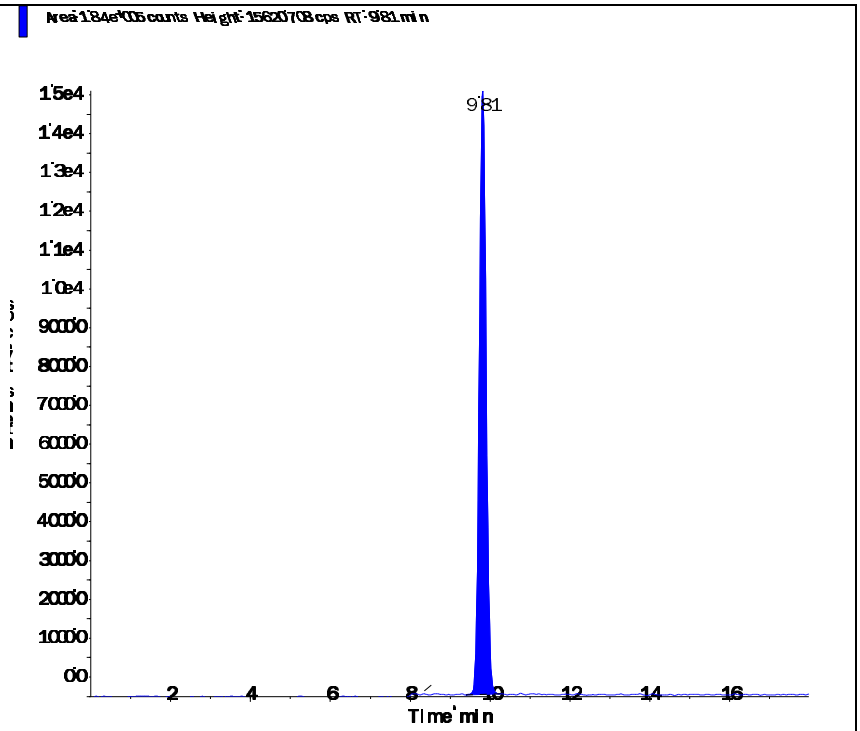

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.80 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.118
Sample Type:	(Unknown)

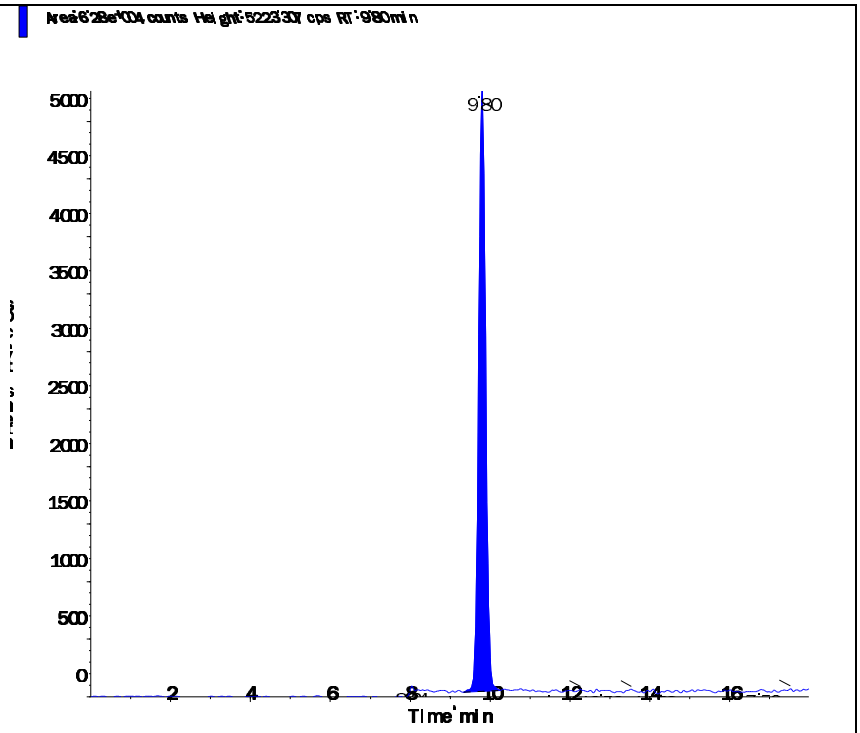

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2.2.2.4 Standards Data

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Data File	LM34686.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

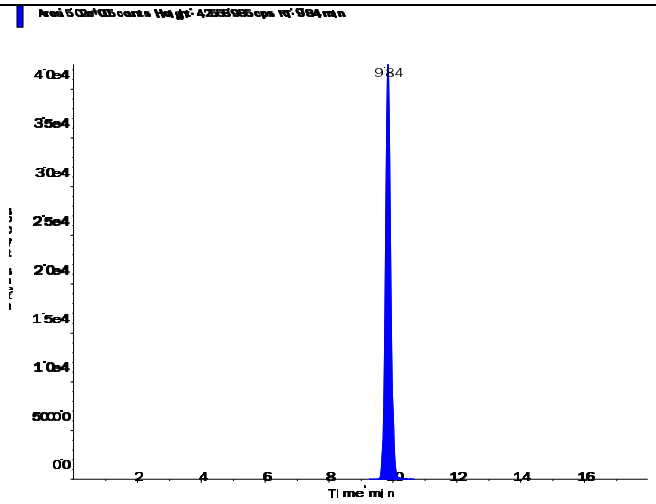

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Printed: 6/13/2016 10:27 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

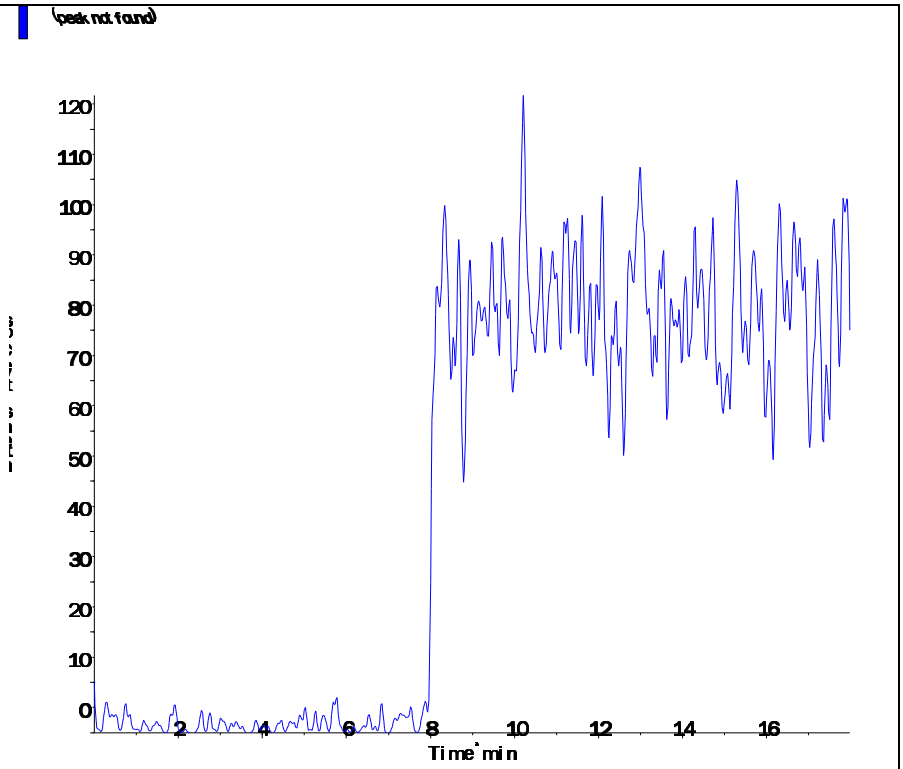

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

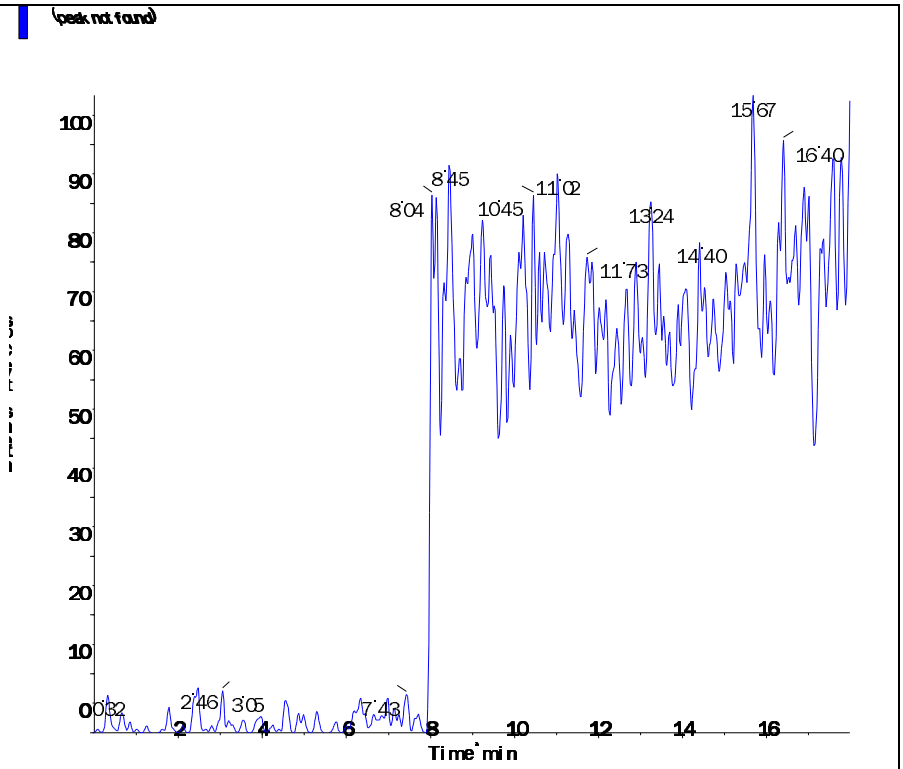

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Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

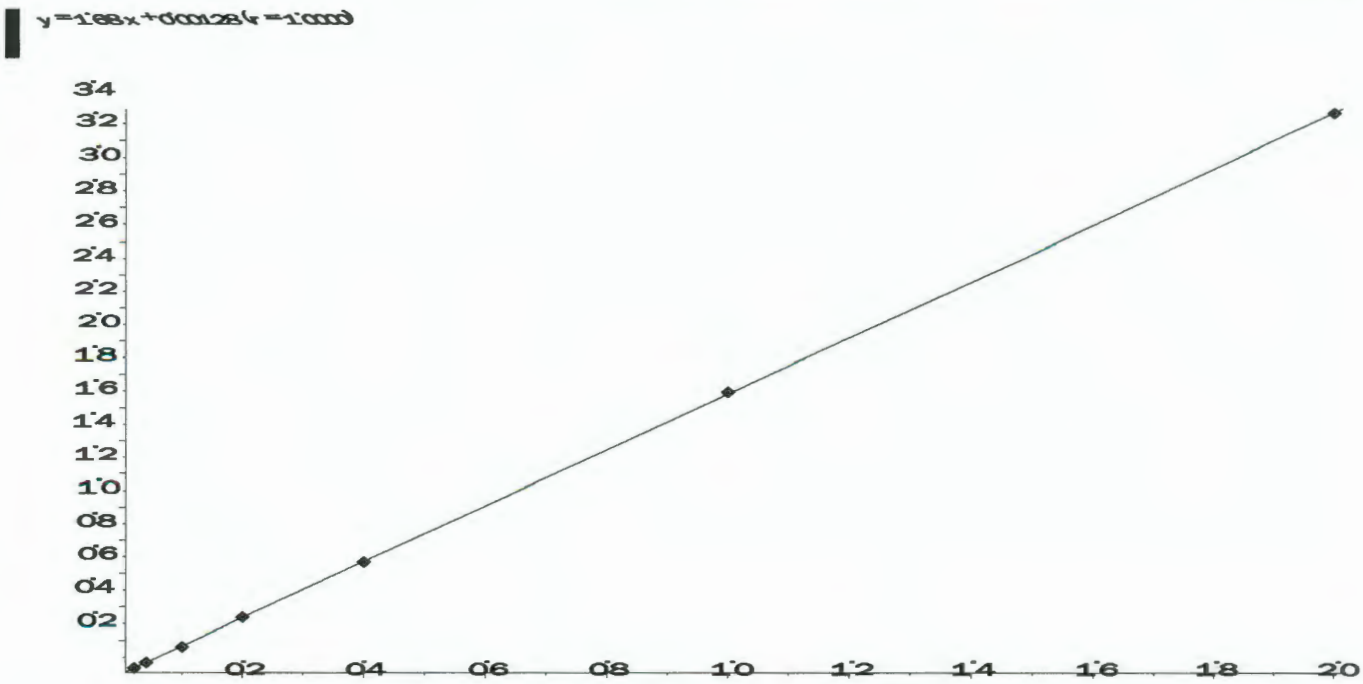

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Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

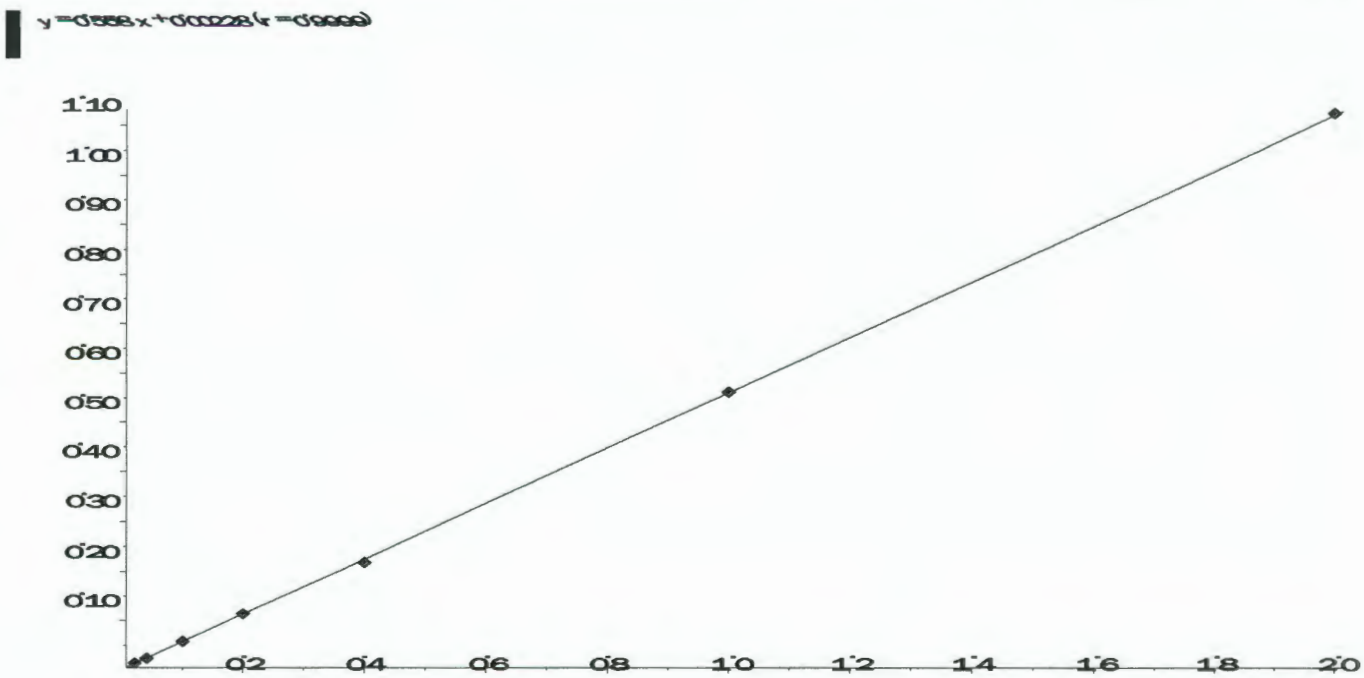

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Data File	LM34687.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

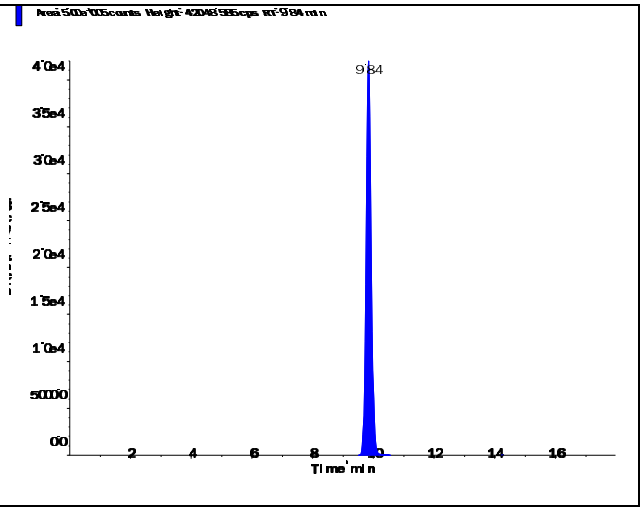

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.103 ng/ml
Area Ratio:	0.036
Sample Type:	(Standard)

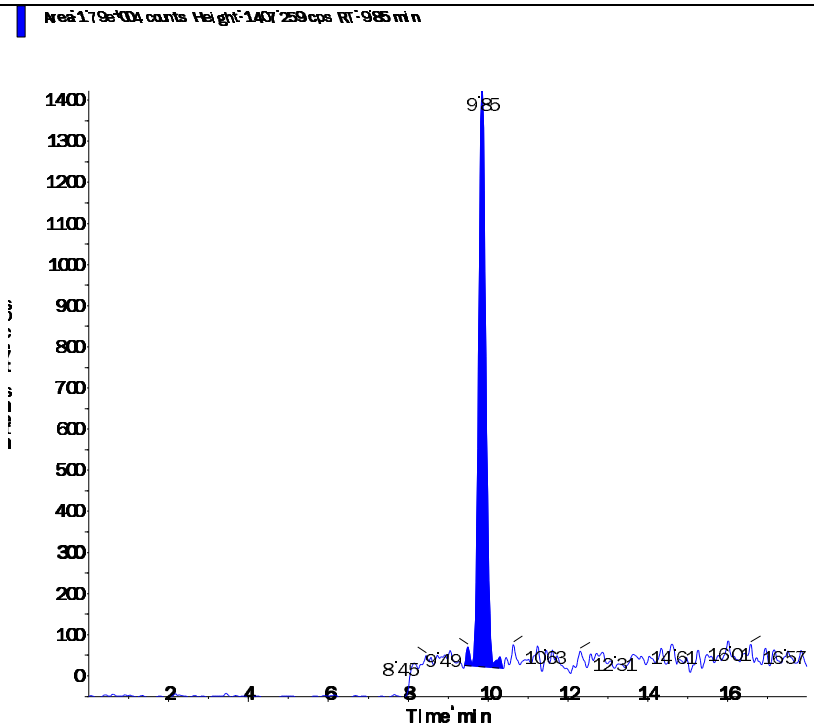

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.104 ng/ml
Area Ratio:	0.014
Sample Type:	(Standard)

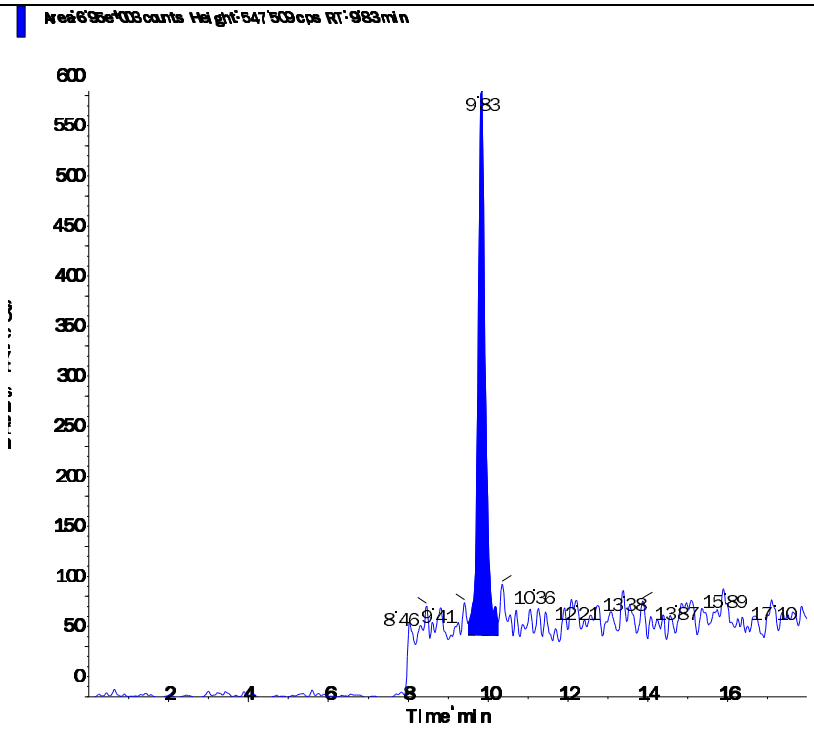

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Data File	LM34688.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

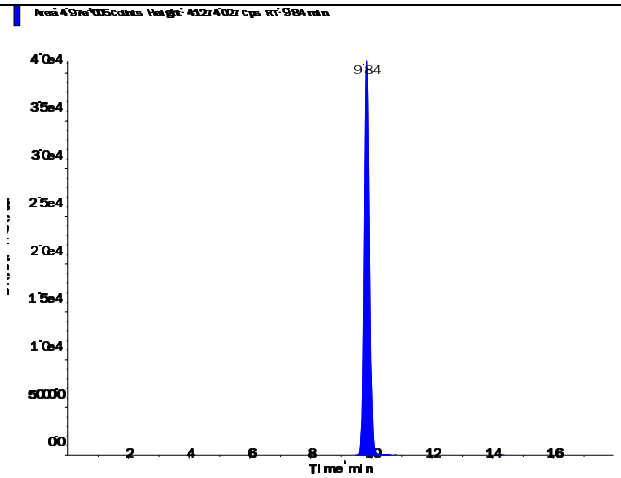

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

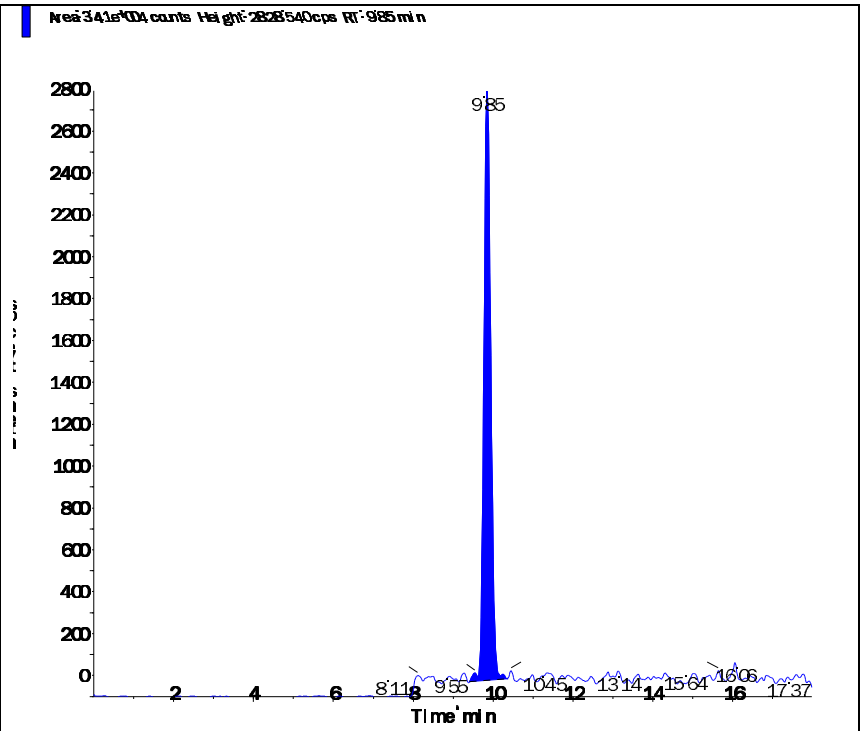

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

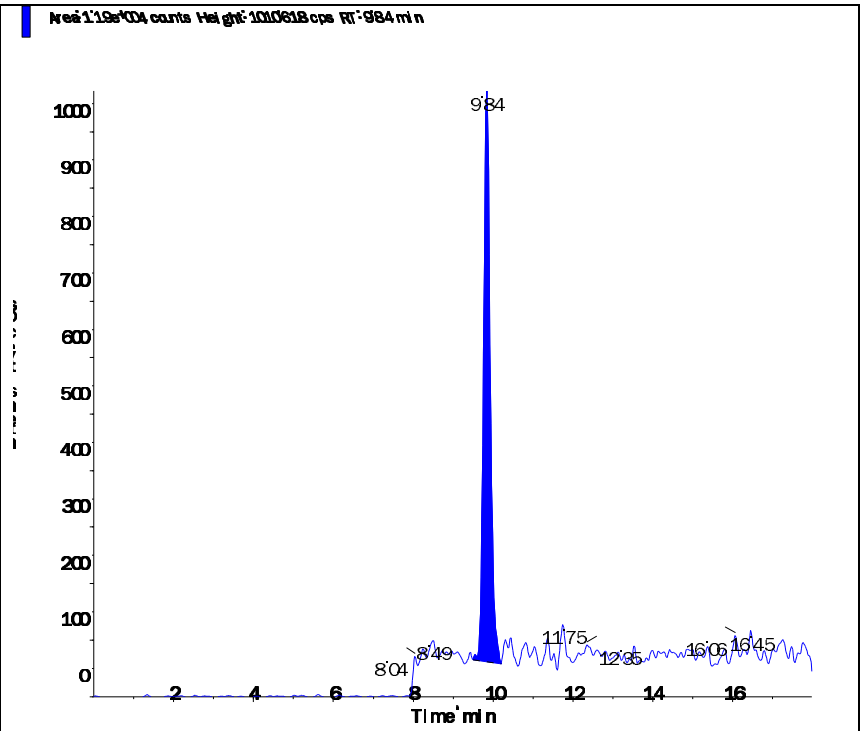

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Data File	LM34689.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

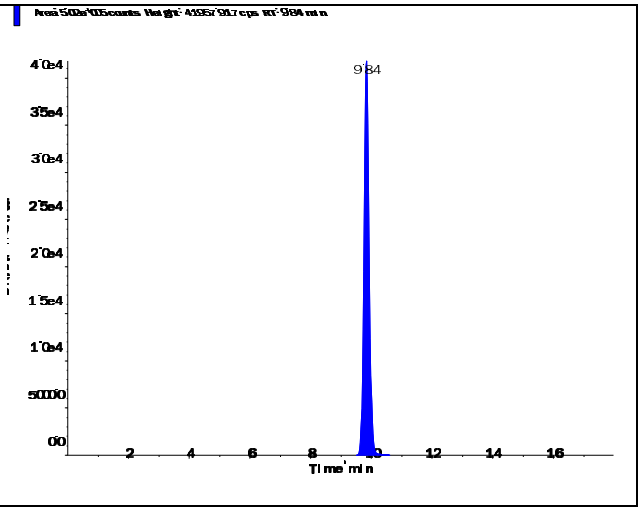

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 0.483 ng/ml Area Ratio: 0.164 Sample Type: (Standard)	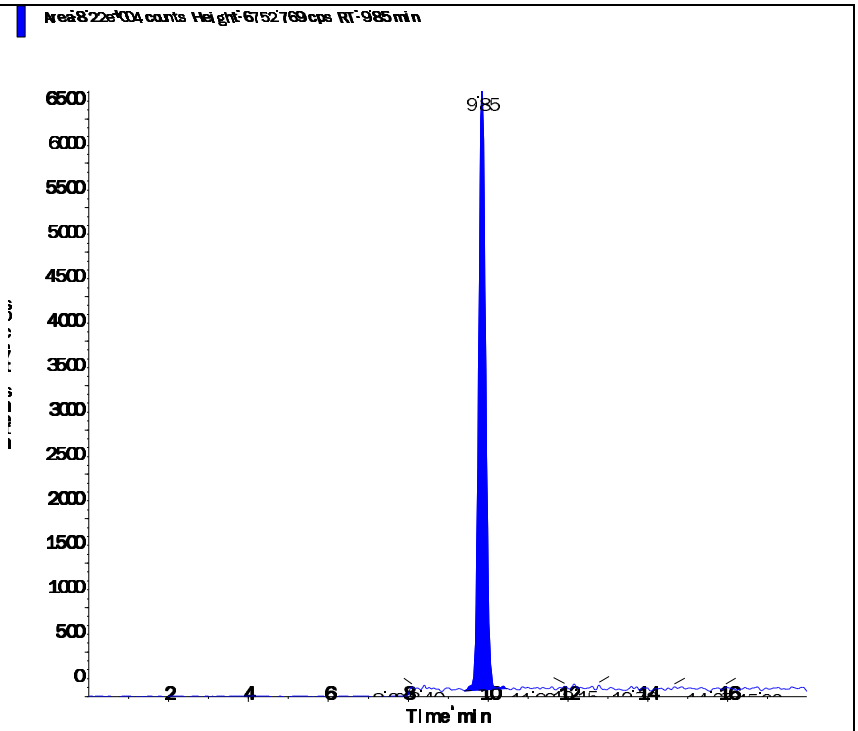
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 0.503 ng/ml Area Ratio: 0.058 Sample Type: (Standard)	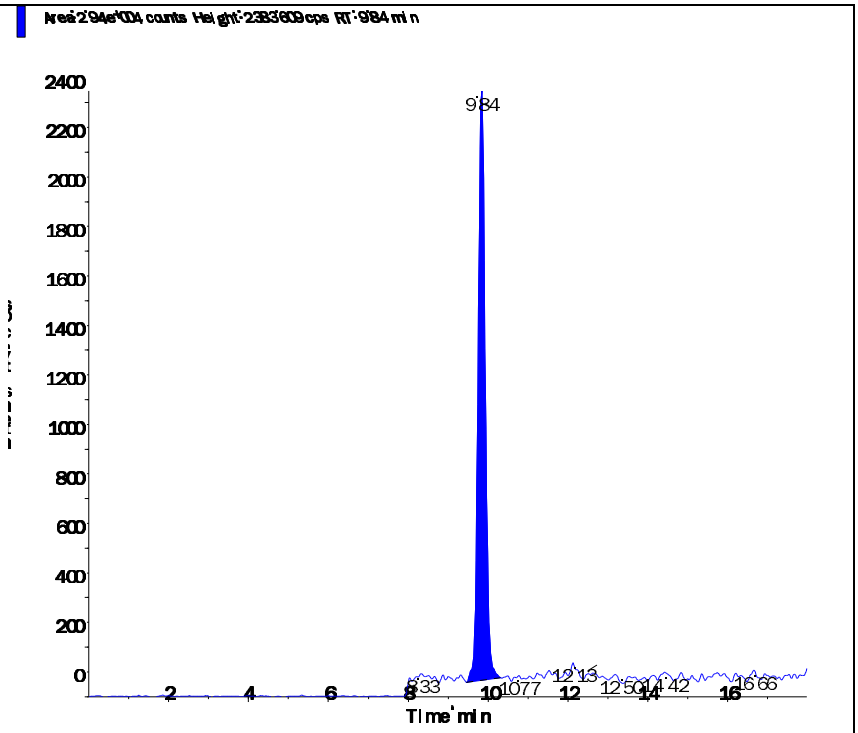

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Printed: 6/13/2016 10:29 AM

Data File	LM34690.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

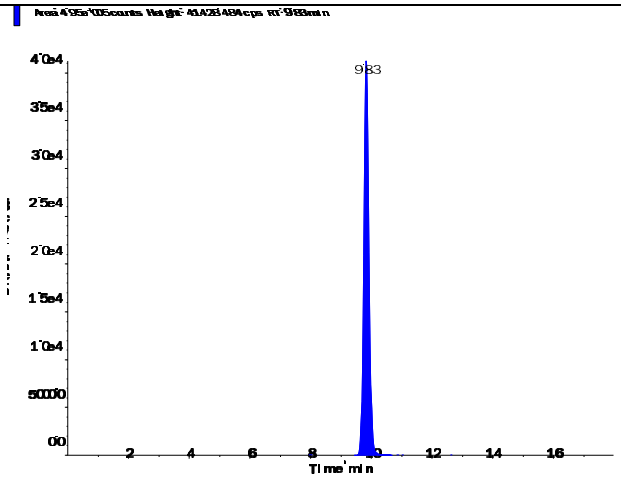

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

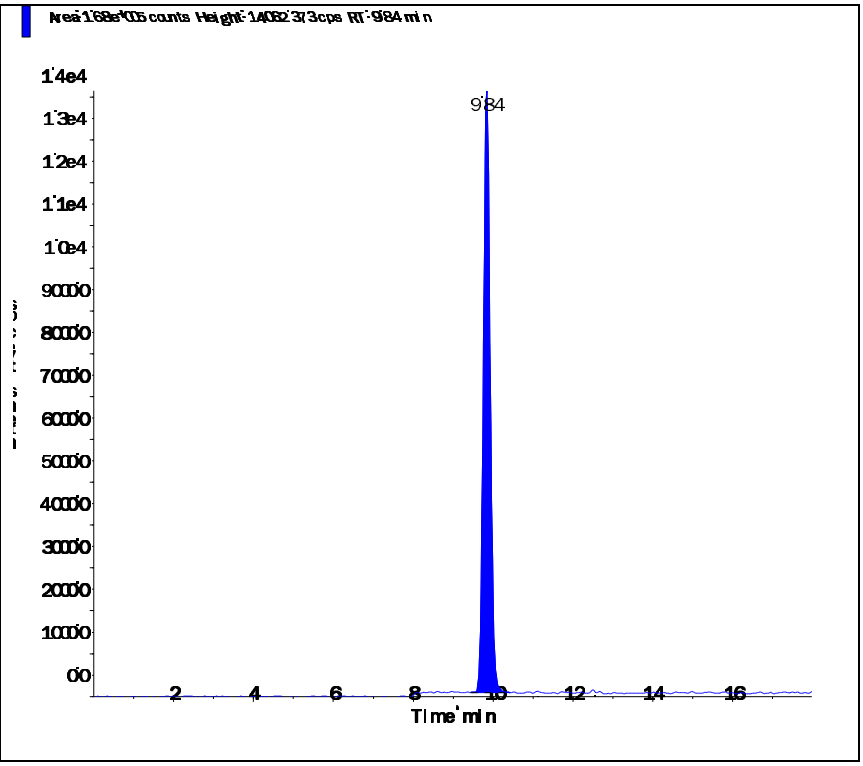

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

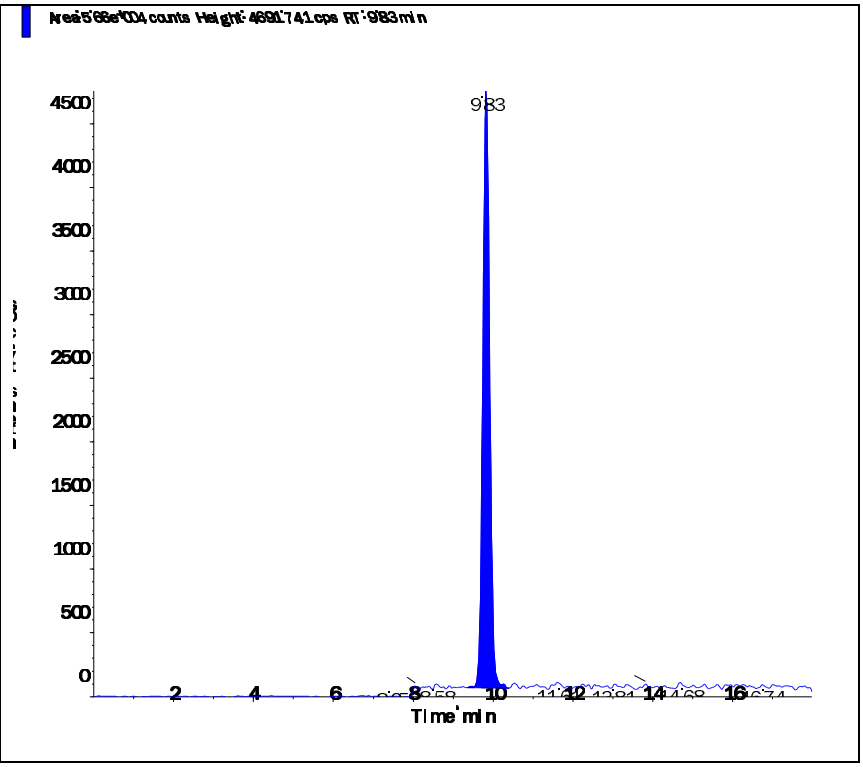

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Data File	LM34691.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

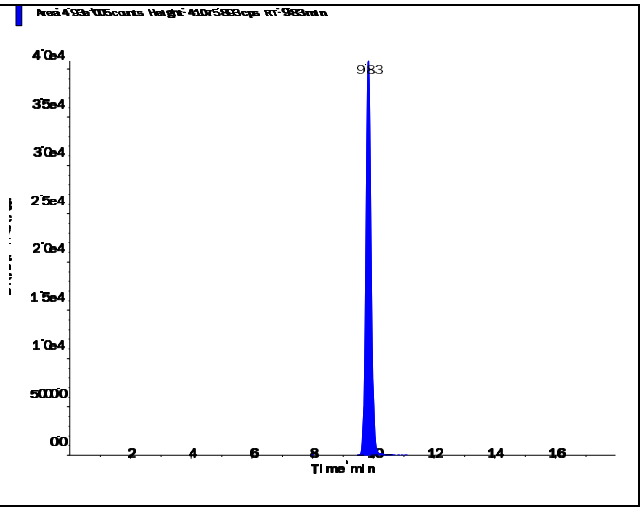

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 1.99 ng/ml Area Ratio: 0.669 Sample Type: (Standard)	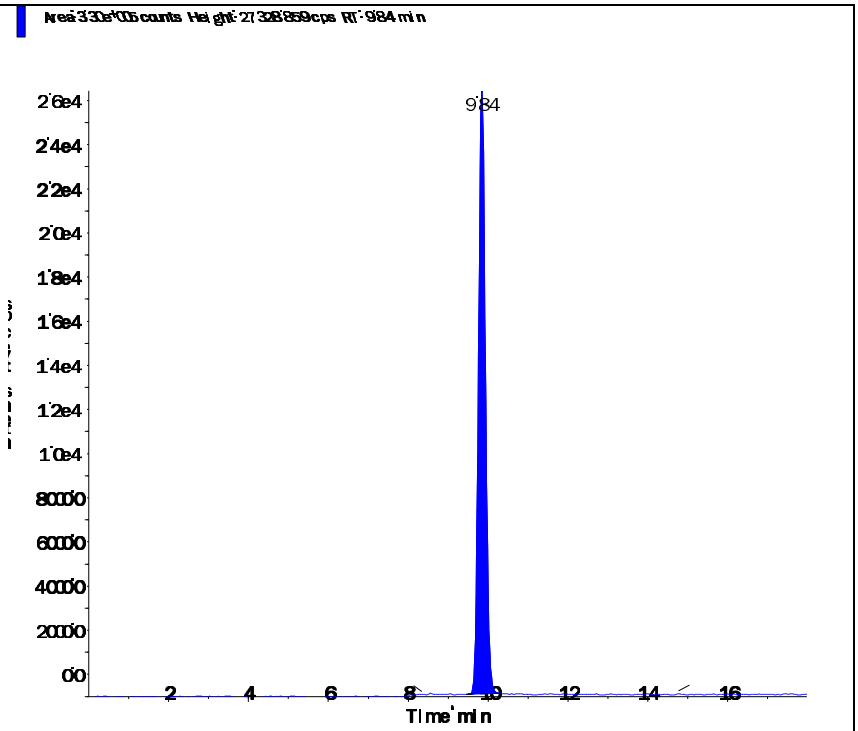
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 1.94 ng/ml Area Ratio: 0.219 Sample Type: (Standard)	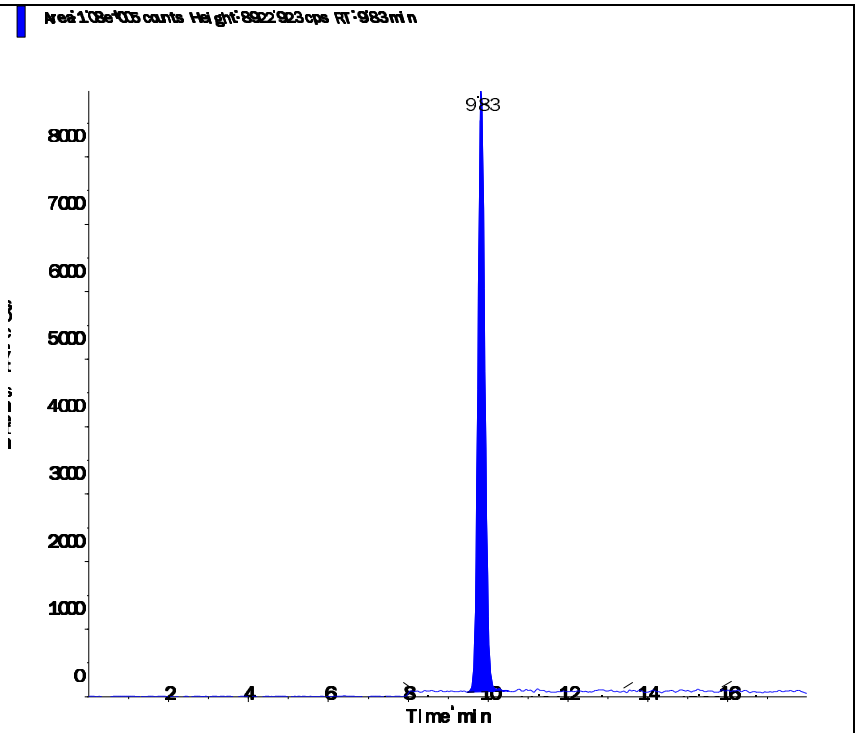

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Printed: 6/13/2016 10:29 AM

Data File	LM34692.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

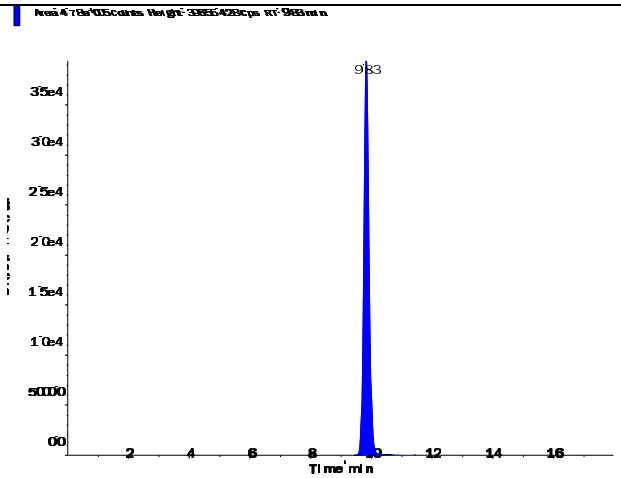

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

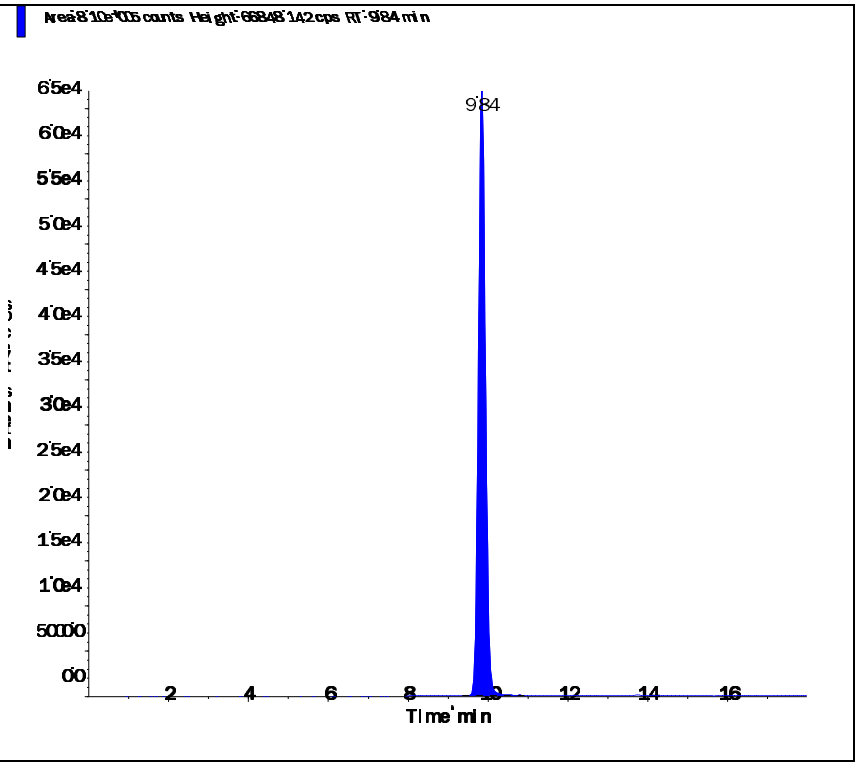

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

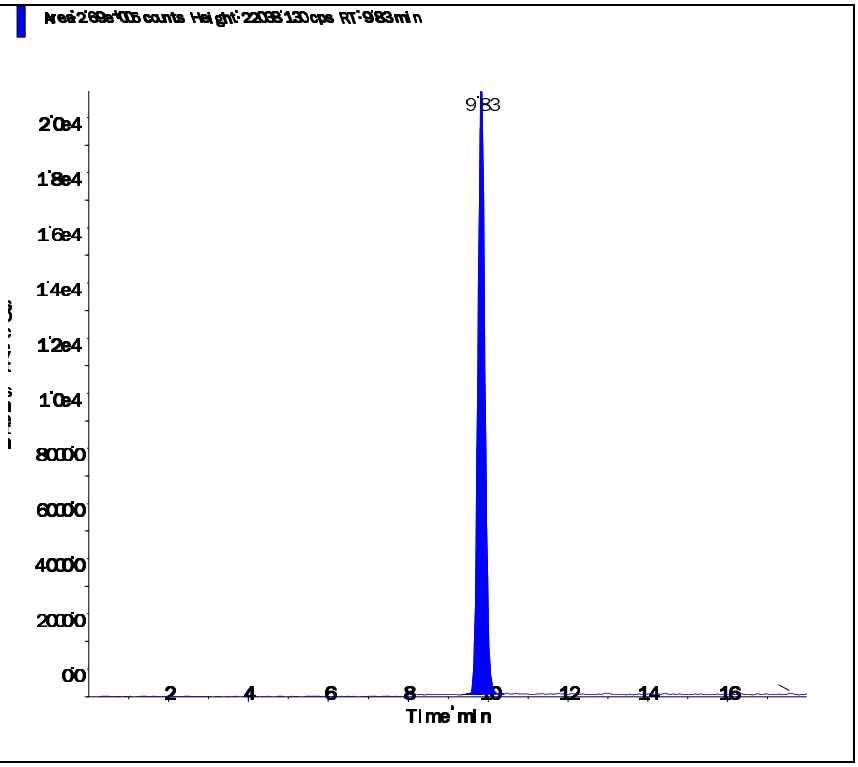

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Printed: 6/13/2016 10:30 AM

Data File	LM34693.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

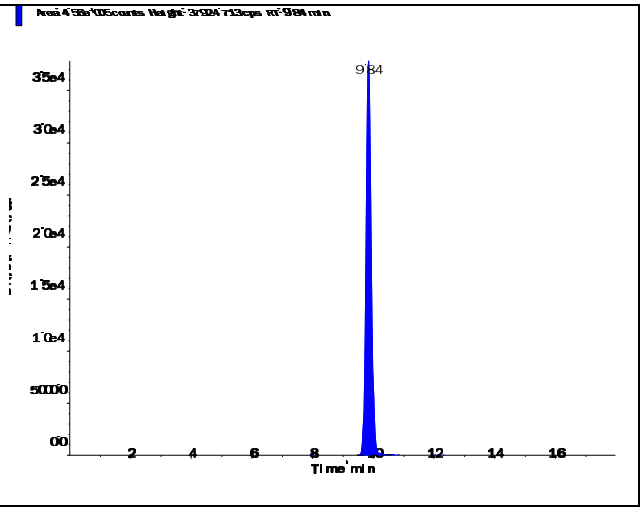

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 9.99 ng/ml Area Ratio: 3.36 Sample Type: (Standard)	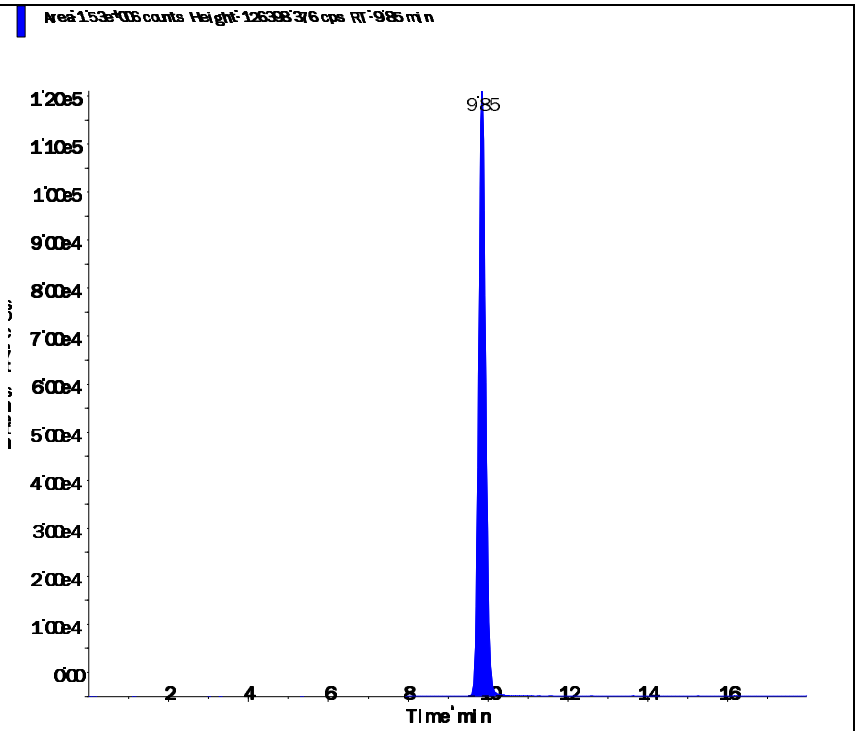
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 10.00 ng/ml Area Ratio: 1.122 Sample Type: (Standard)	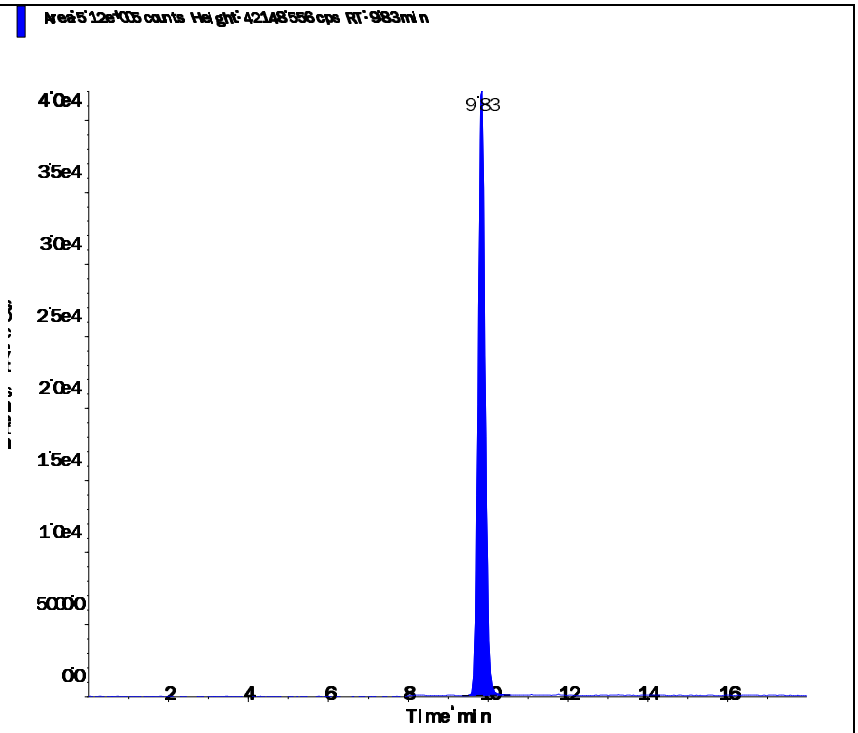

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Printed: 5/4/2016 1:23 PM

Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

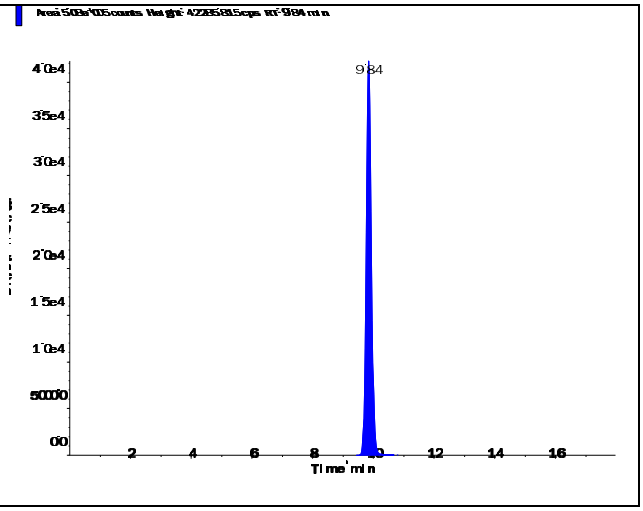

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Printed: 5/4/2016 1:23 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.332
Sample Type:	(Quality Control)

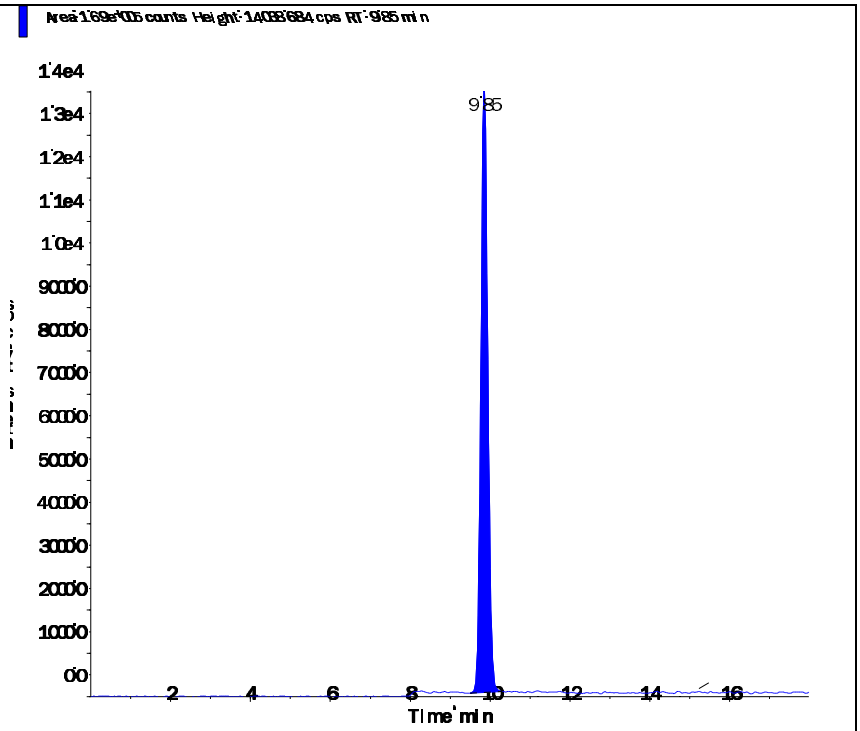

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

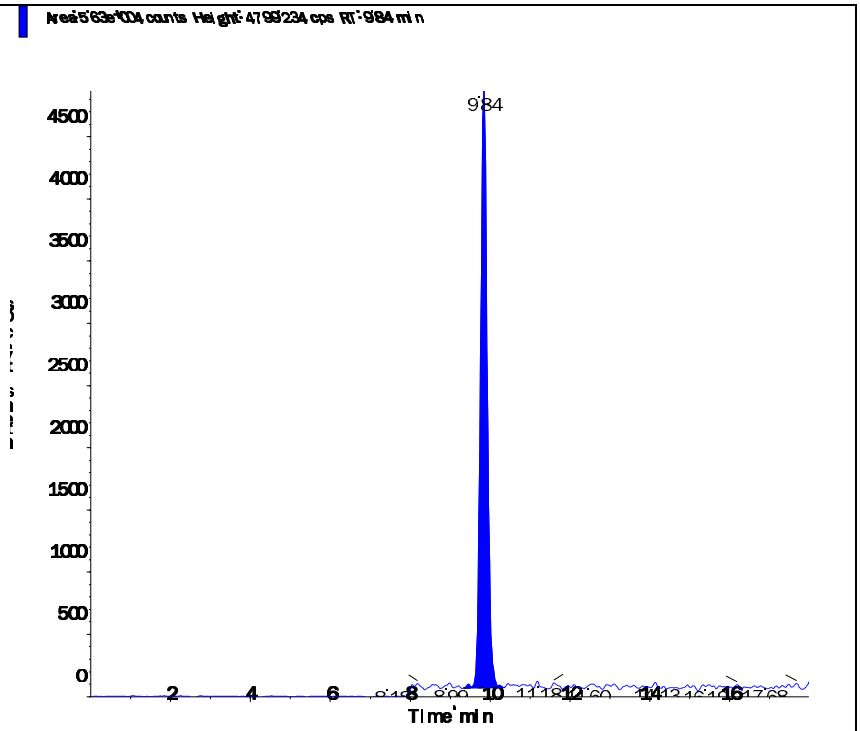

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Printed: 6/12/2016 9:42 PM

Data File	LM35296.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 5:38:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35296.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 5:38:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.960e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.720e+05	9.65	1.00	1.03
Perchlorate conf	5.930e+04	9.64	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

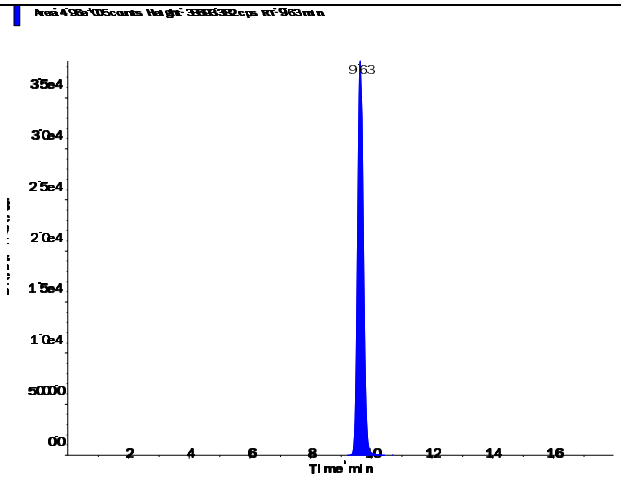

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Printed: 6/12/2016 9:42 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.65 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.346
Sample Type:	(Quality Control)

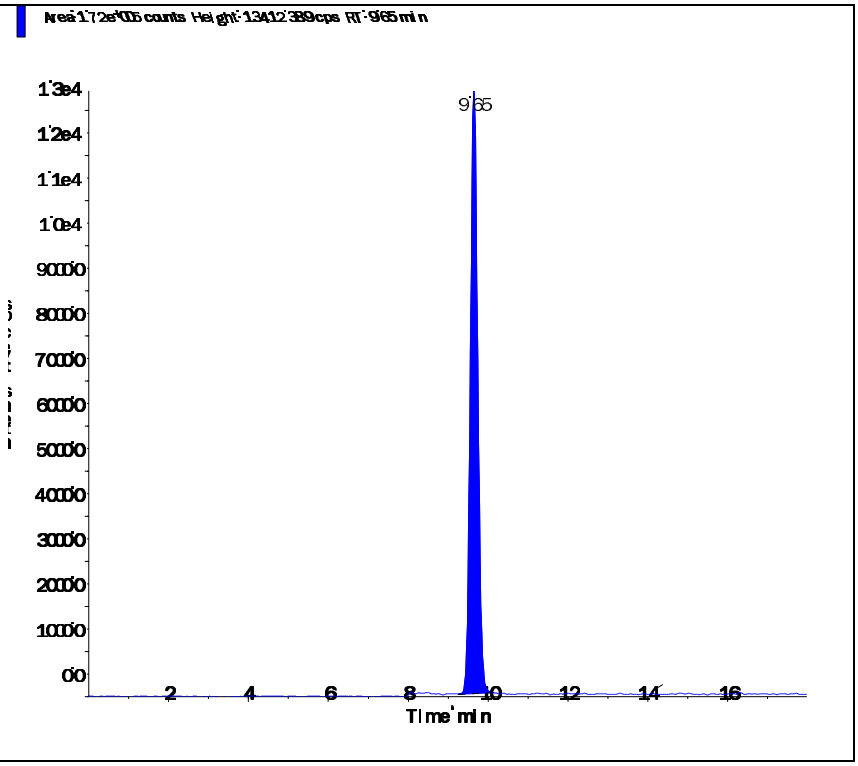

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

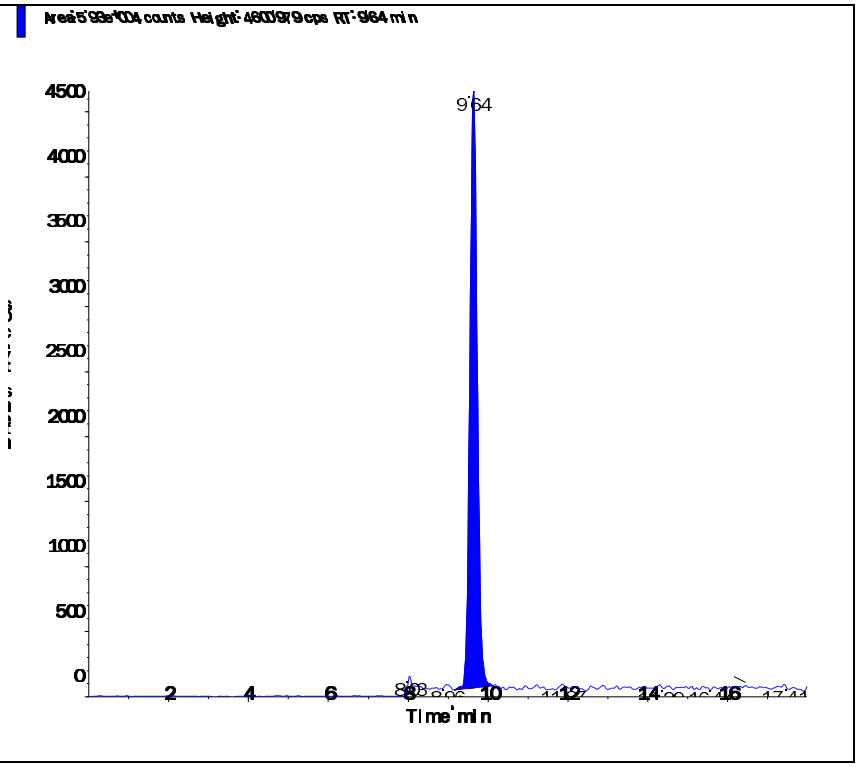

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Created with Analyst Reporter
Printed: 6/12/2016 9:46 PM

Data File	LM35310.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 10:03:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35310.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 10:03:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.050e+05	9.62	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.800e+05	9.63	1.00	1.06
Perchlorate conf	6.050e+04	9.62	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.62(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

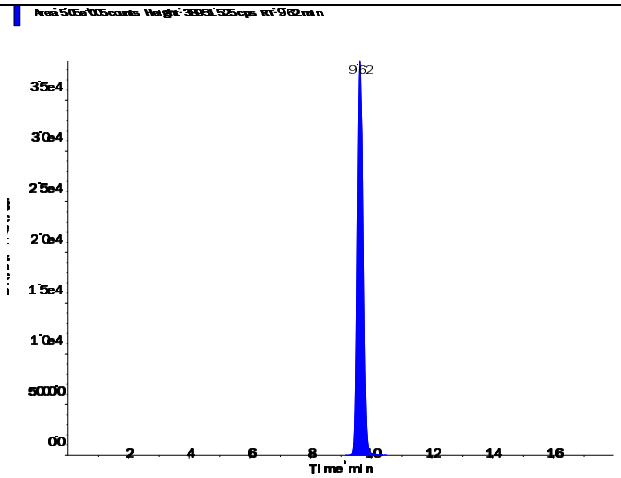

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.357
Sample Type:	(Quality Control)

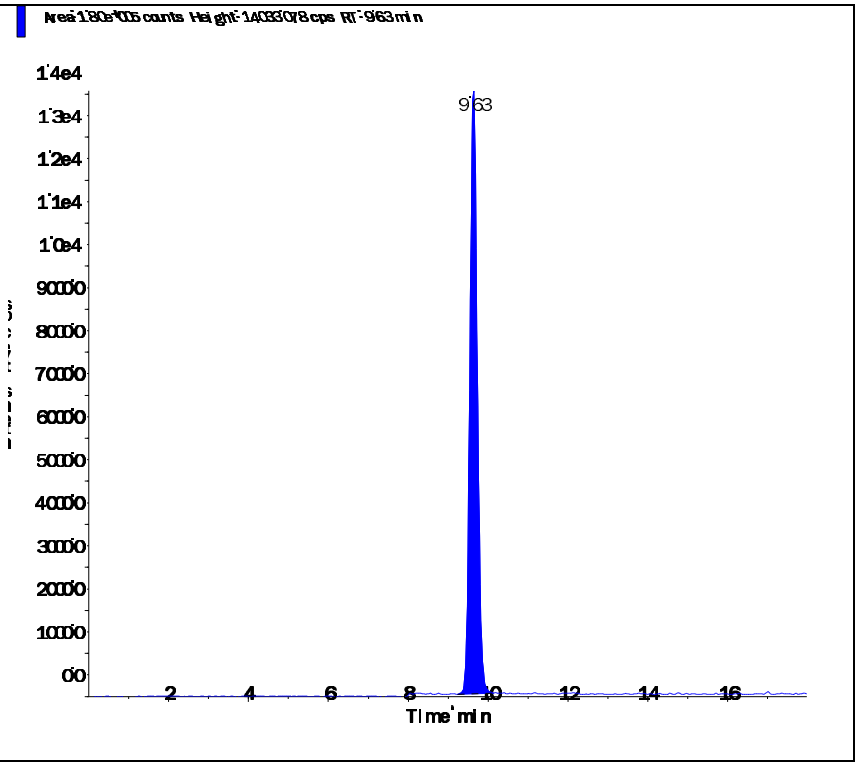

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.62 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.12
Sample Type:	(Quality Control)

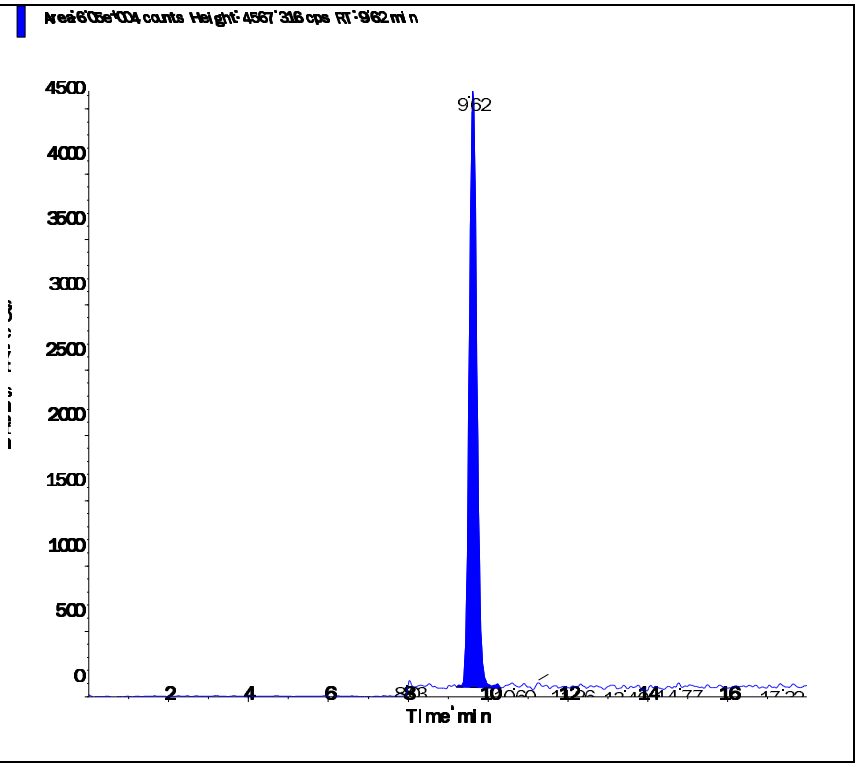

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Printed: 6/12/2016 9:48 PM

Data File	LM35318.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/12/2016 12:35:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35318.wiff	**Injection Volume**	10.00
Acquisition Date	6/12/2016 12:35:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.62	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.740e+05	9.63	1.00	1.01
Perchlorate conf	6.160e+04	9.62	1.00	1.06

O18LP (Internal Standard)

RT (Exp. RT): 9.62(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

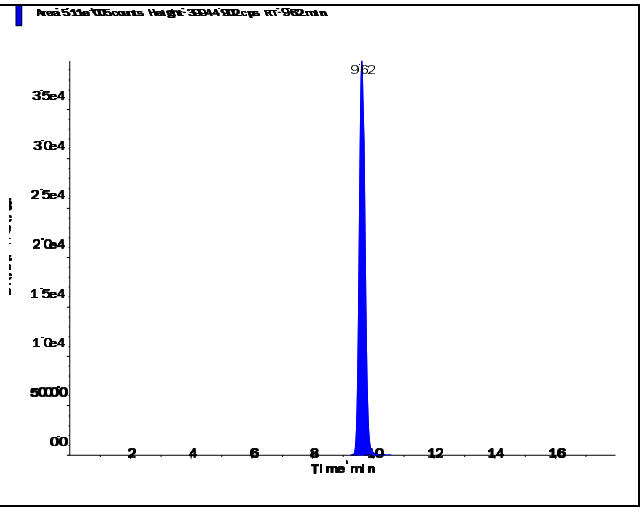

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.341
Sample Type:	(Quality Control)

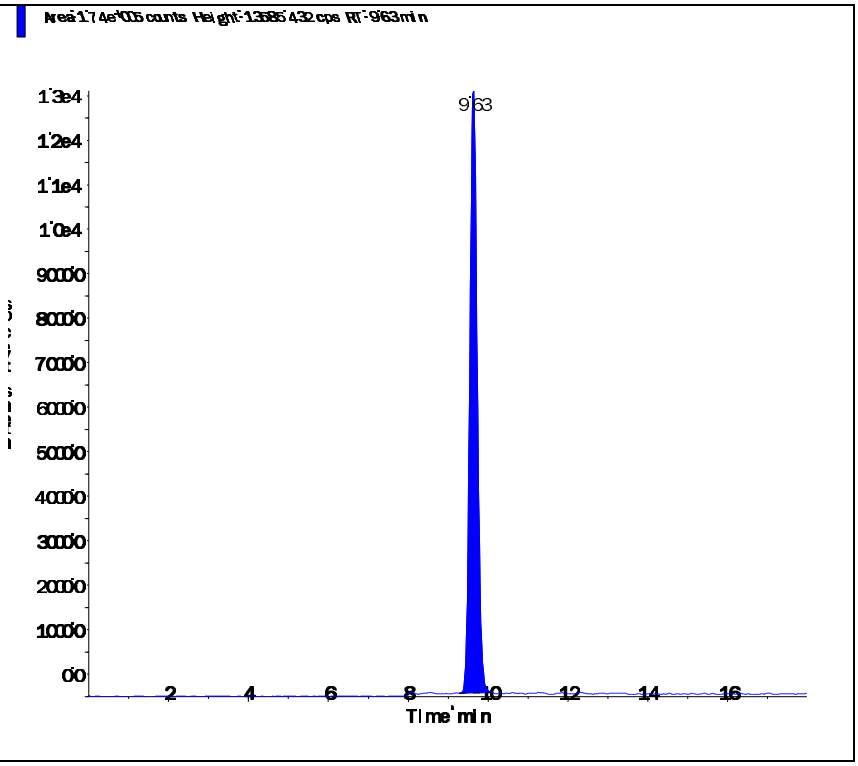

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.62 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.12
Sample Type:	(Quality Control)

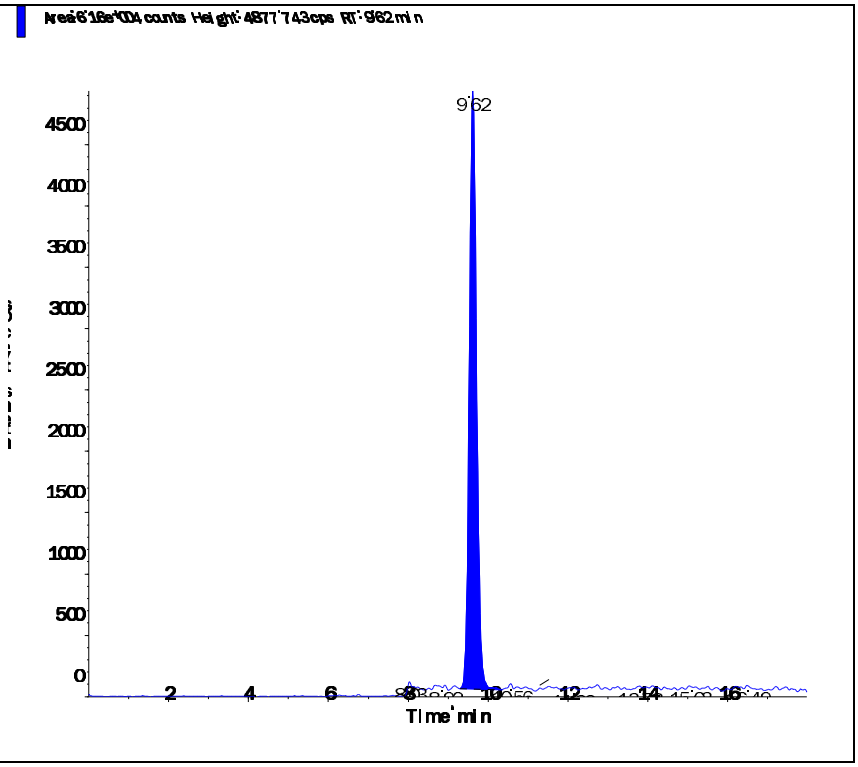

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Data File	LM35322.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/12/2016 9:03:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572372-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35322.wiff	**Injection Volume**	10.00
Acquisition Date	6/12/2016 9:03:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG572372-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.820e+05	9.60	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.660e+05	9.61	1.00	1.02
Perchlorate conf	5.860e+04	9.60	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 9.60(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

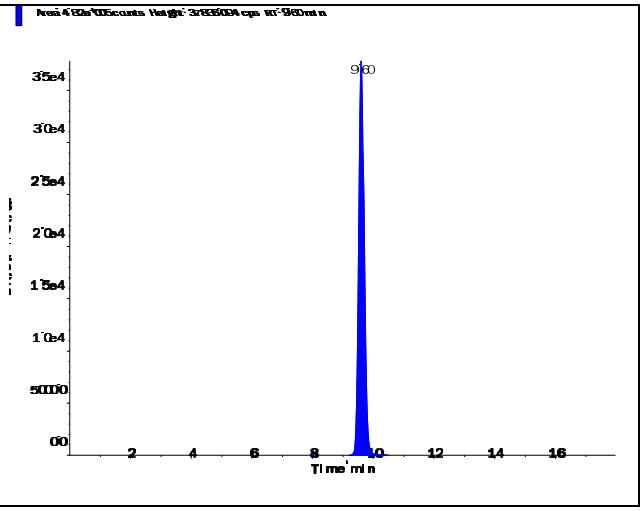

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.61 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.345
Sample Type:	(Quality Control)

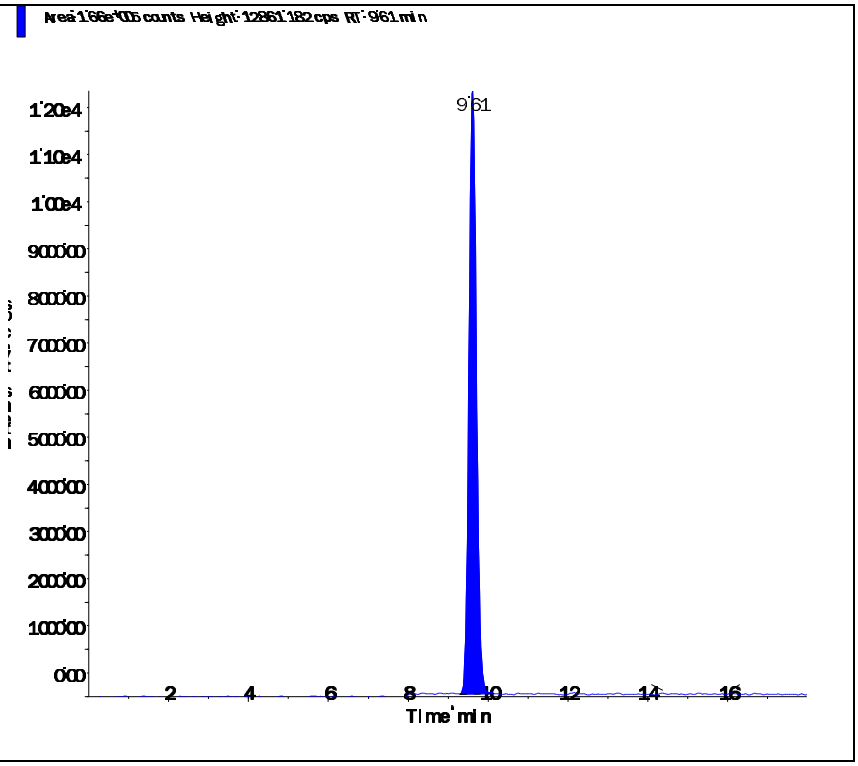

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.60 (9.84) min
Calculated conc:	1.07 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

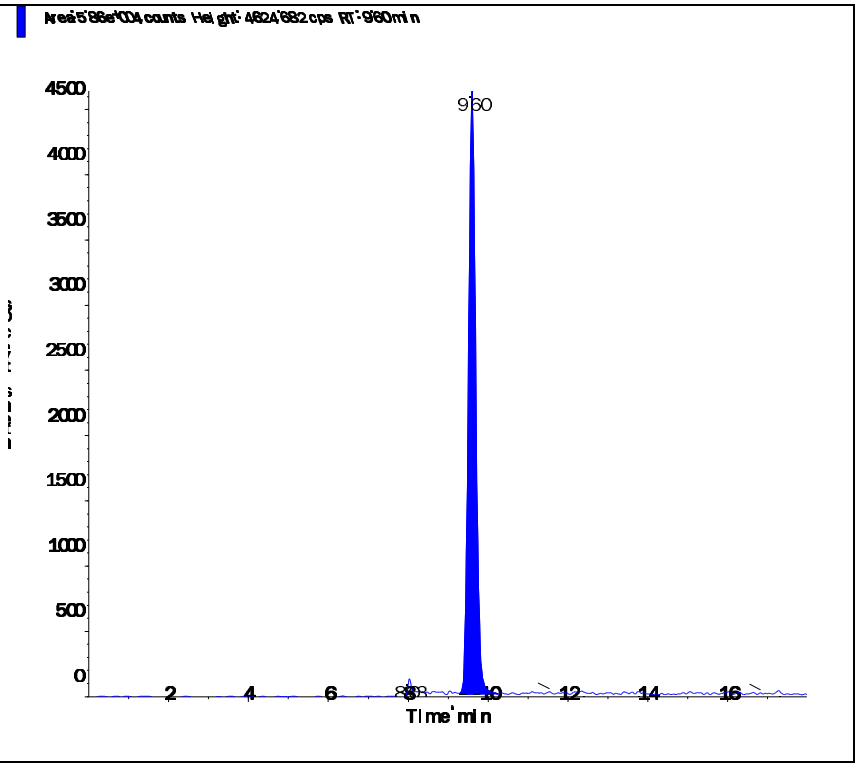

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Data File	LM35334.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/13/2016 12:50:29 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572372-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35334.wiff	**Injection Volume**	10.00
Acquisition Date	6/13/2016 12:50:29 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG572372-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.560e+05	9.60	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.900e+05	9.62	1.00	1.01
Perchlorate conf	6.390e+04	9.60	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.60(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

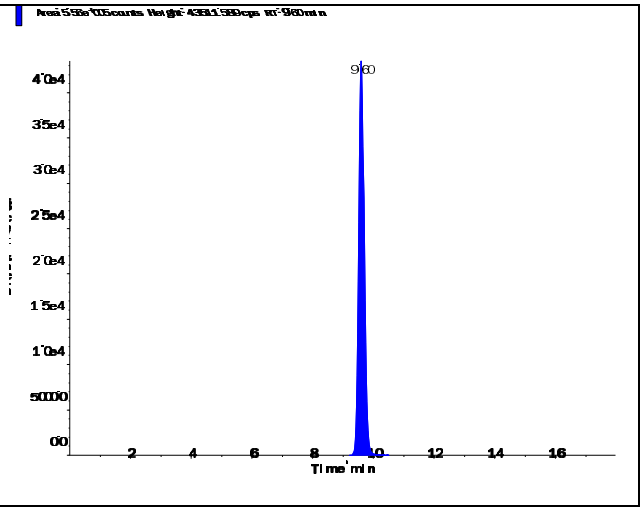

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.62 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.342
Sample Type:	(Quality Control)

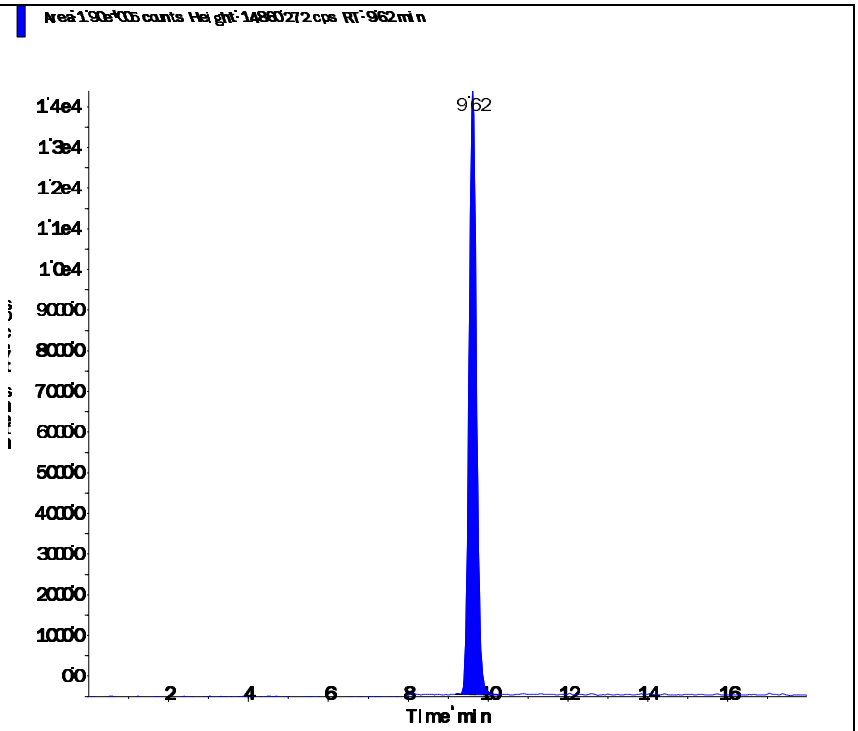

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.60 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.115
Sample Type:	(Quality Control)

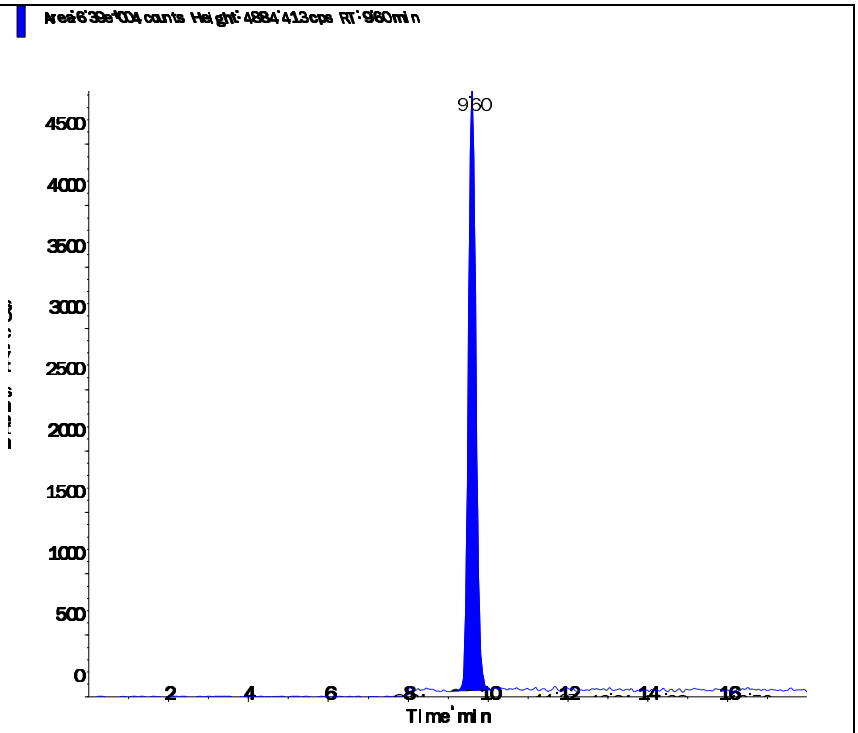

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Data File	LM35338.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/13/2016 8:09:16 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572372-06 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35338.wiff	**Injection Volume**	10.00
Acquisition Date	6/13/2016 8:09:16 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG572372-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.380e+05	9.57	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.890e+05	9.58	1.00	1.04
Perchlorate conf	6.470e+04	9.57	1.00	1.06

O18LP (Internal Standard)

RT (Exp. RT): 9.57(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

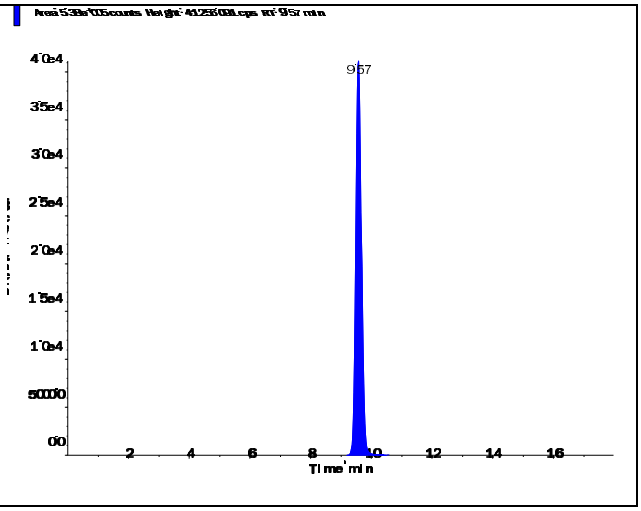

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Printed: 6/13/2016 10:36 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.58 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.351
Sample Type:	(Quality Control)

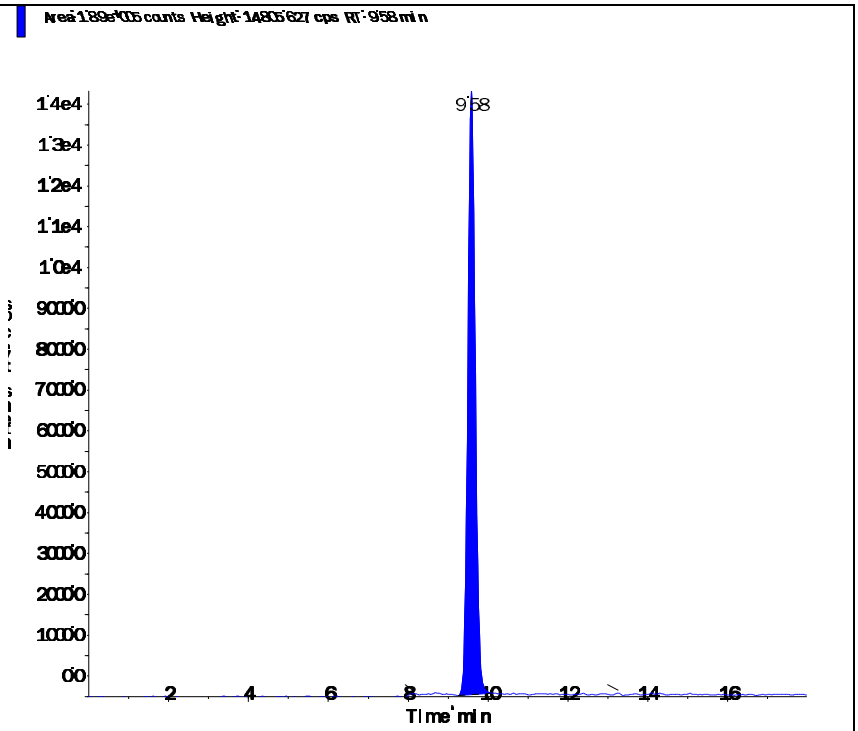

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.57 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.12
Sample Type:	(Quality Control)

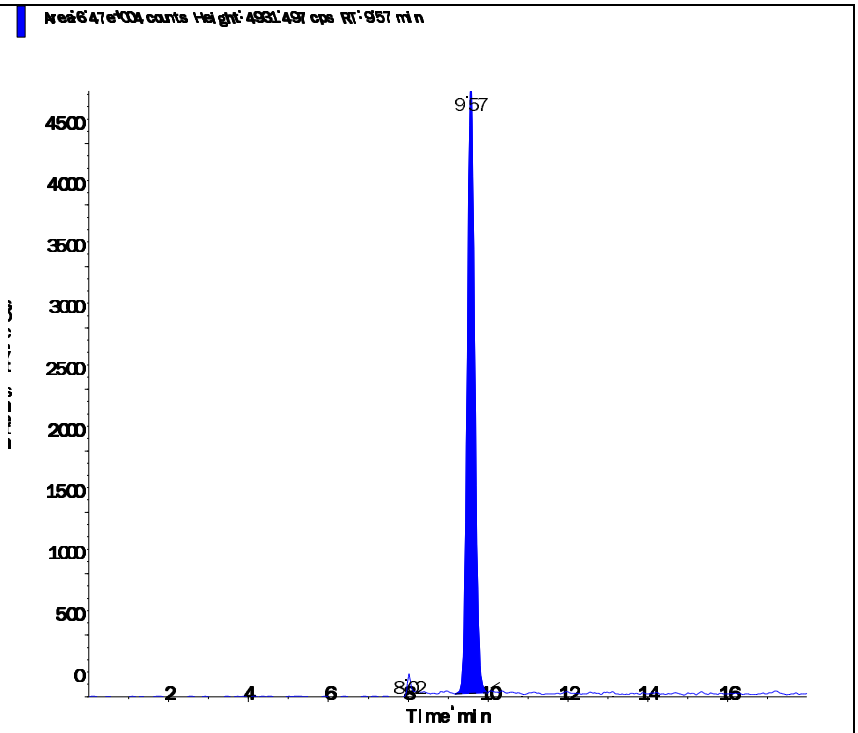

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Printed: 6/13/2016 10:37 AM

Data File	LM35341.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/13/2016 9:06:40 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572372-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35341.wiff	**Injection Volume**	10.00
Acquisition Date	6/13/2016 9:06:40 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG572372-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.550e+05	9.59	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.920e+05	9.60	1.00	1.02
Perchlorate conf	6.590e+04	9.59	1.00	1.04

O18LP (Internal Standard)

RT (Exp. RT): 9.59(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

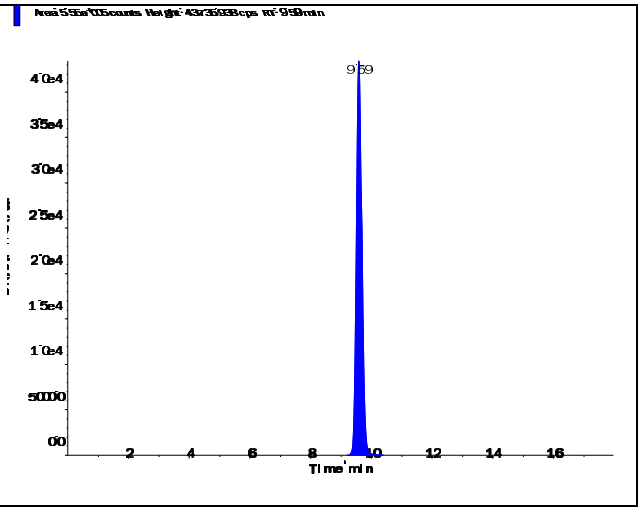

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.60 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.346
Sample Type:	(Quality Control)

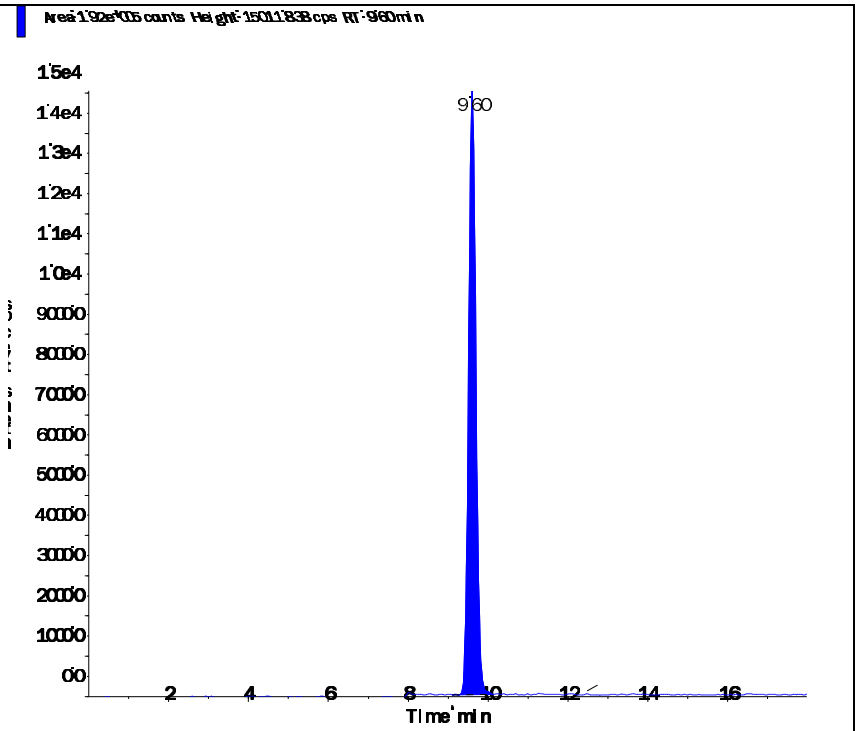

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.59 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

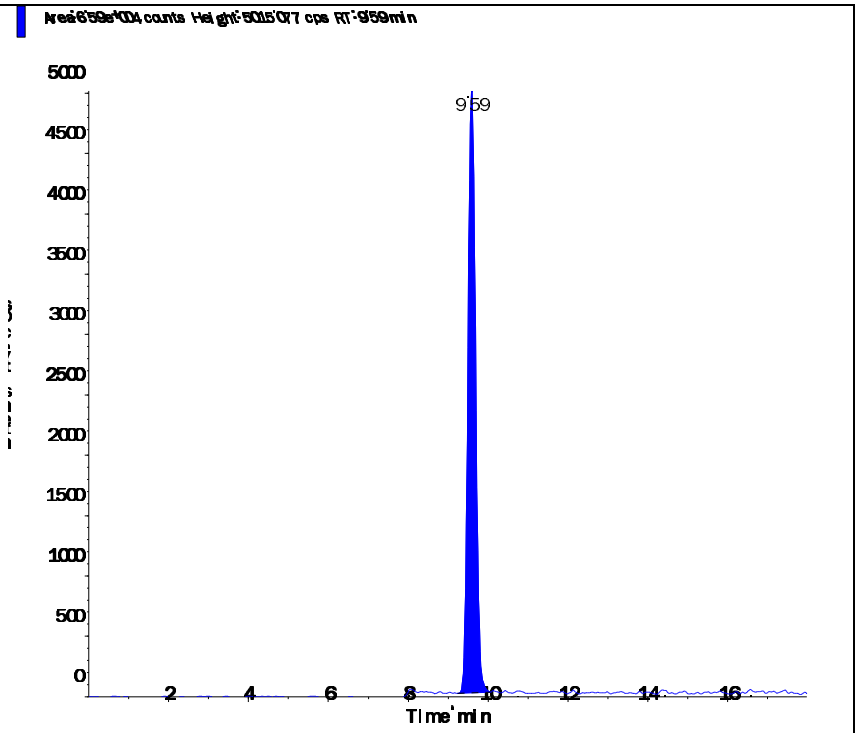

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Data File	LM35299.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 6:35:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572350-05 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35299.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 6:35:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572350-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.960e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.510e+04	9.68	N/A	0.207
Perchlorate conf	1.290e+04	9.67	N/A	0.213

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

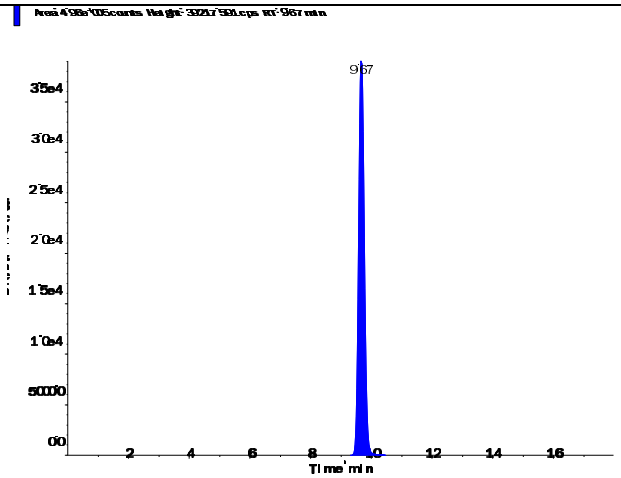

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.68 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

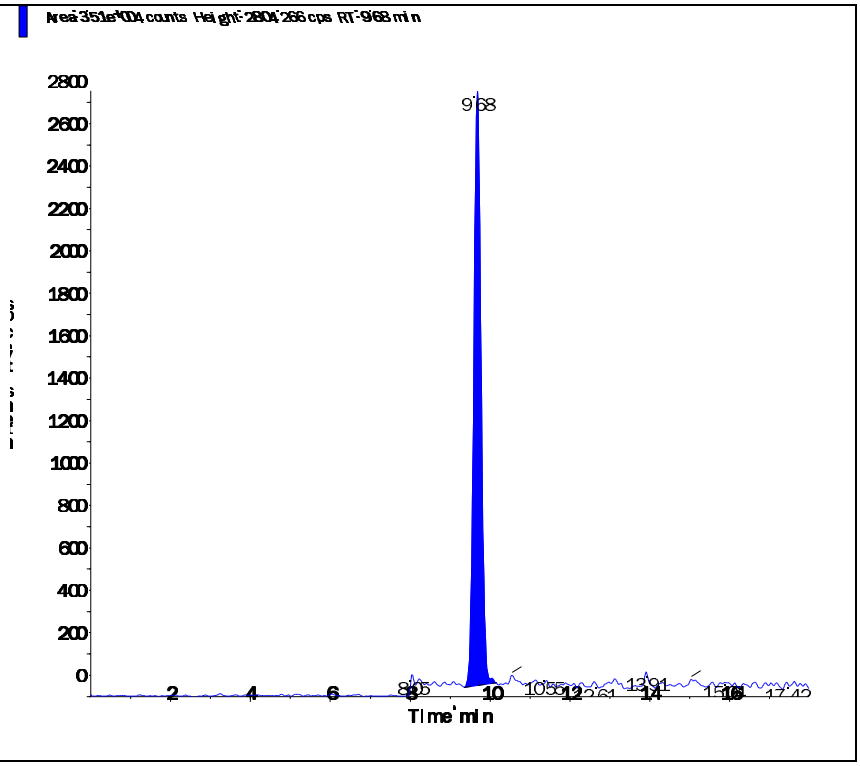

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.67 (9.84) min
Calculated conc:	0.213 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

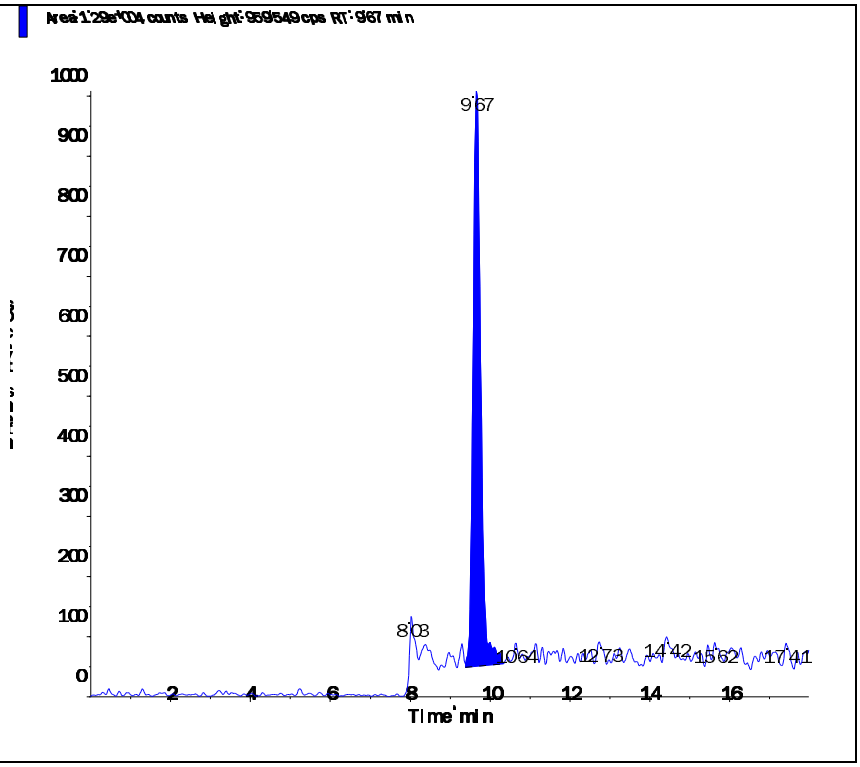

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Data File	LM35311.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 10:22:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572350-06 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35311.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 10:22:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572350-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.090e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.780e+04	9.67	N/A	0.217
Perchlorate conf	1.230e+04	9.67	N/A	0.195

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

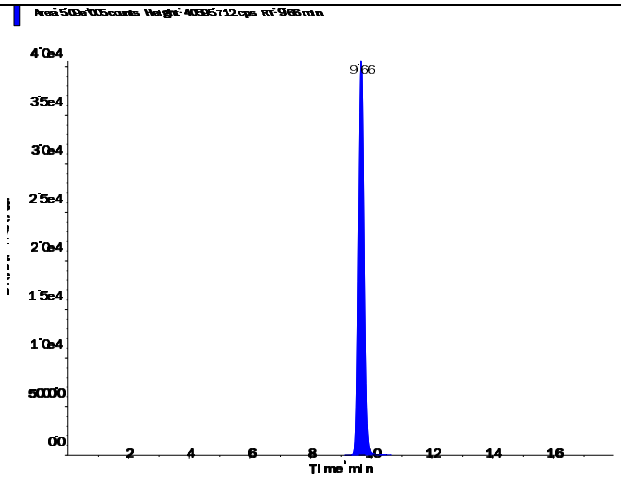

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.67 (9.84) min
Calculated conc:	0.217 ng/ml
Area Ratio:	0.074
Sample Type:	(Unknown)

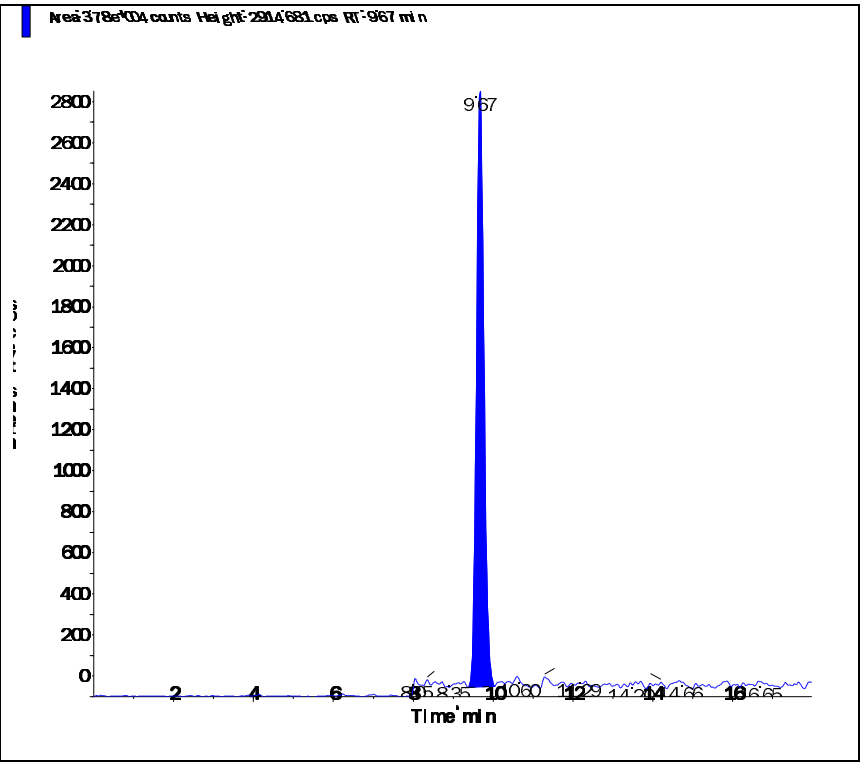

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.67 (9.84) min
Calculated conc:	0.195 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

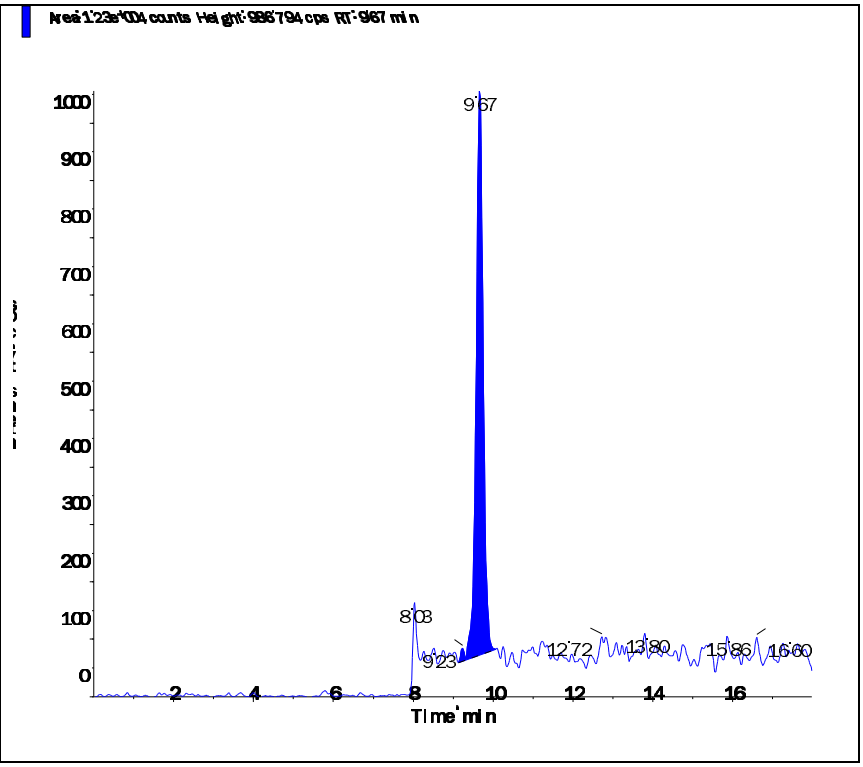

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Printed: 6/12/2016 9:49 PM

Data File	LM35319.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/12/2016 12:54:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572350-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35319.wiff	**Injection Volume**	10.00
Acquisition Date	6/12/2016 12:54:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572350-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.810e+04	9.67	N/A	0.219
Perchlorate conf	1.300e+04	9.65	N/A	0.209

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

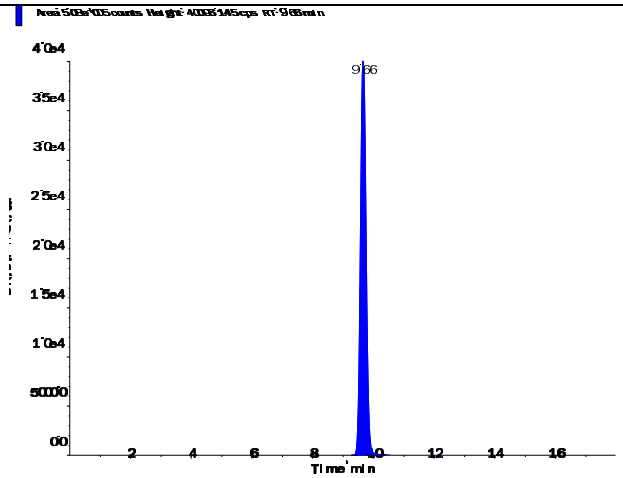

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.67 (9.84) min
Calculated conc:	0.219 ng/ml
Area Ratio:	0.075
Sample Type:	(Unknown)

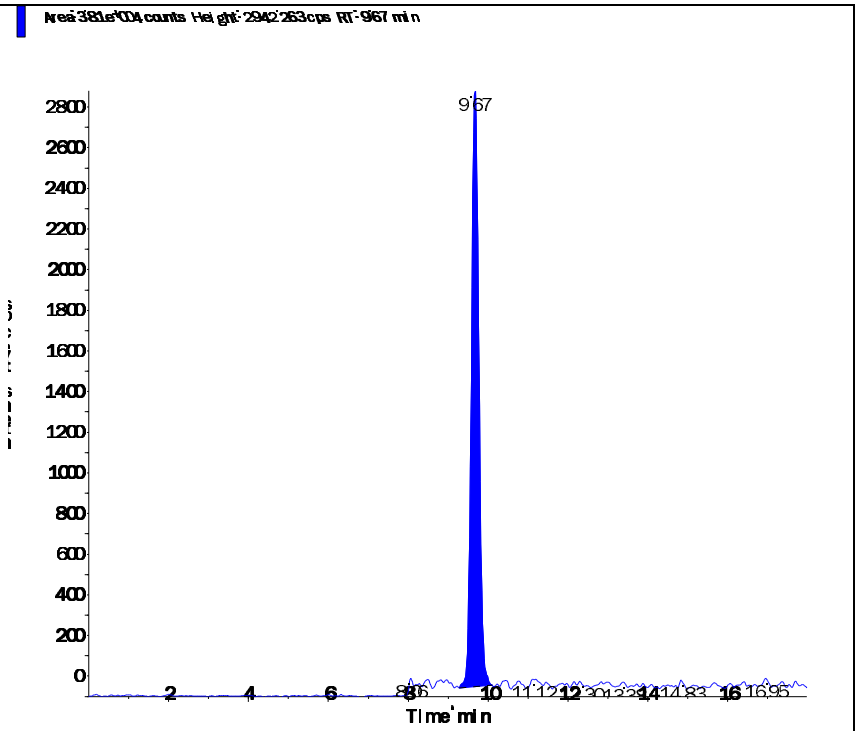

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.65 (9.84) min
Calculated conc:	0.209 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

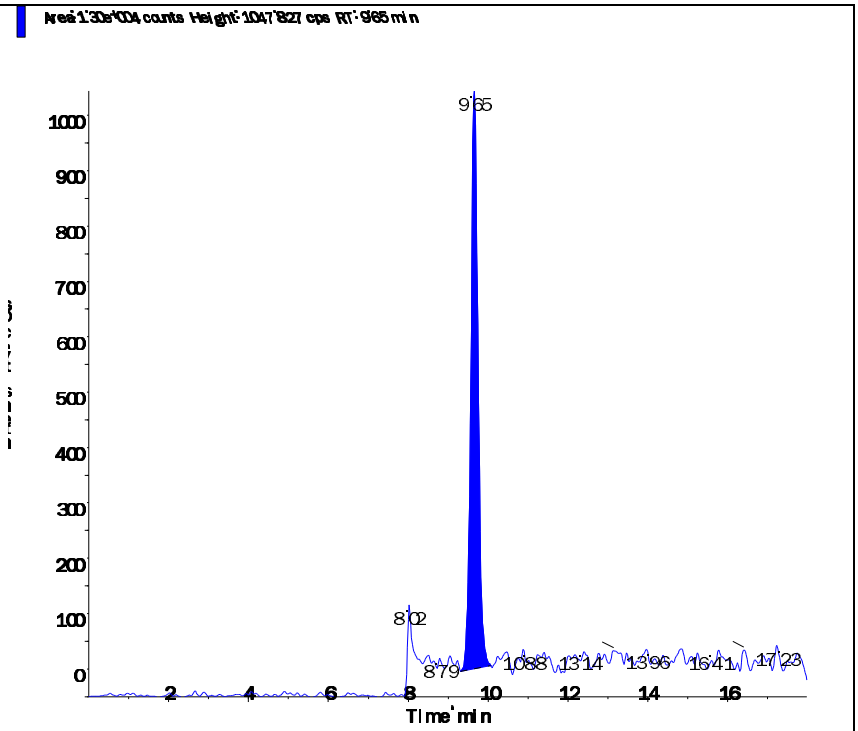

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Data File	LM35323.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/12/2016 9:22:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572350-08 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35323.wiff	**Injection Volume**	10.00
Acquisition Date	6/12/2016 9:22:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG572350-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.920e+05	9.64	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.600e+04	9.65	N/A	0.214
Perchlorate conf	1.210e+04	9.64	N/A	0.199

O18LP (Internal Standard)

RT (Exp. RT): 9.64(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

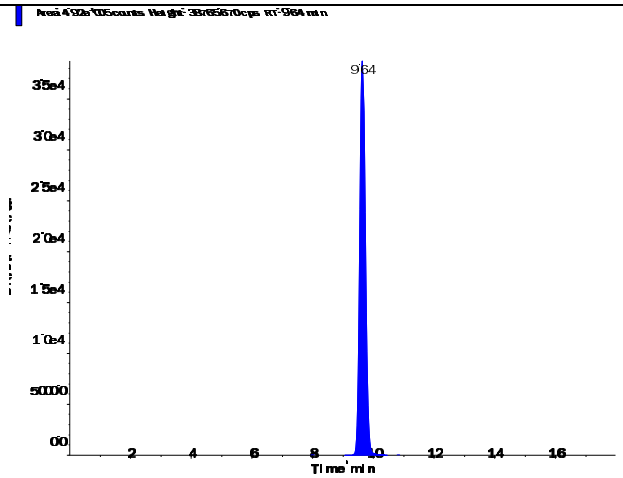

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.65 (9.84) min Calculated conc: 0.214 ng/ml Area Ratio: 0.073 Sample Type: (Unknown)	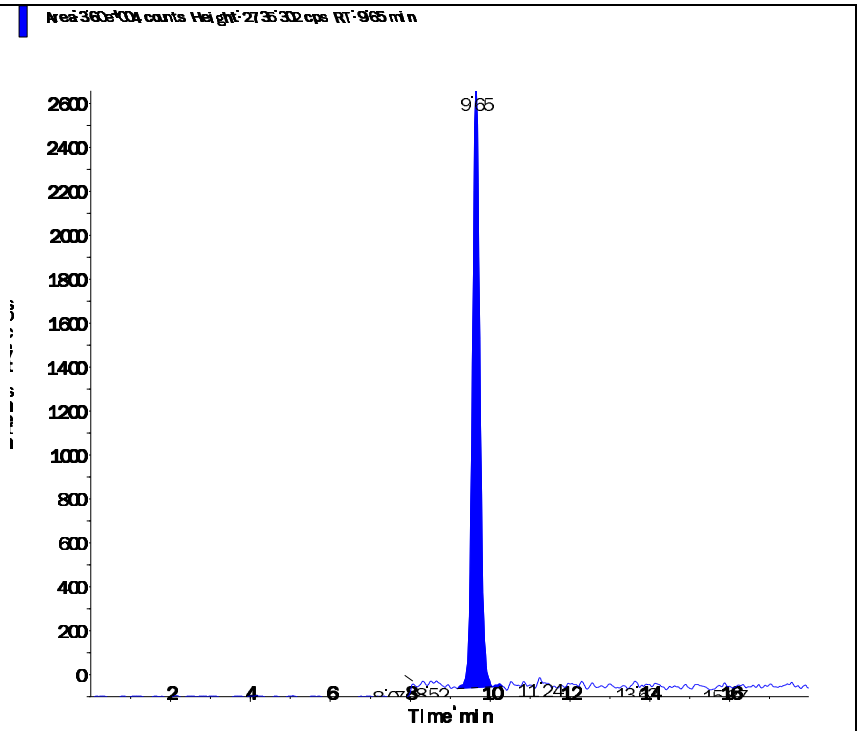
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.64 (9.84) min Calculated conc: 0.199 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	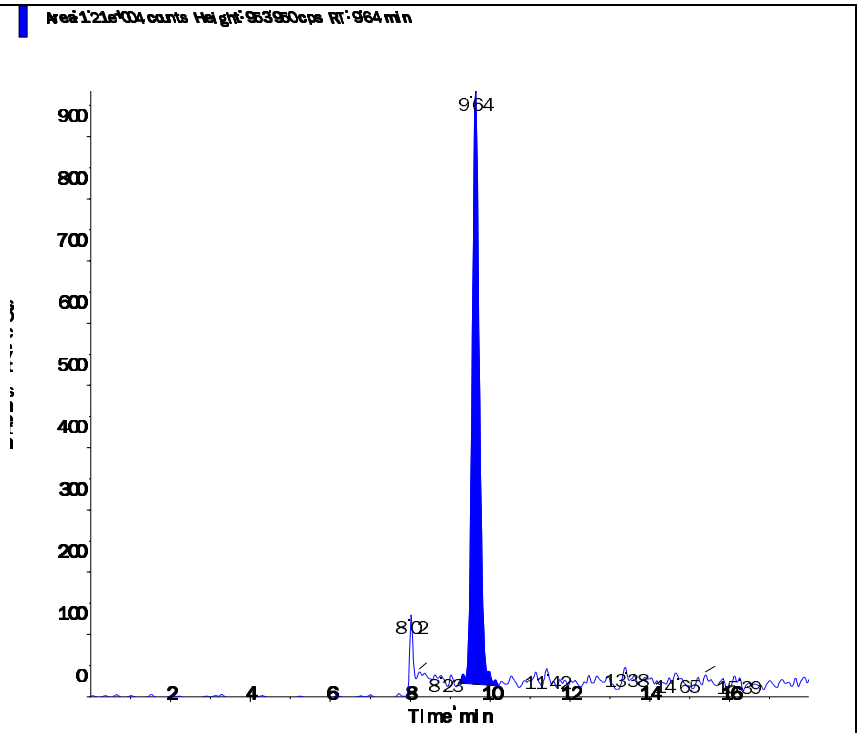

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Data File	LM35335.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/13/2016 1:09:24 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572350-09 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35335.wiff	**Injection Volume**	10.00
Acquisition Date	6/13/2016 1:09:24 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG572350-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.570e+05	9.64	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.120e+04	9.64	N/A	0.216
Perchlorate conf	1.400e+04	9.63	N/A	0.205

O18LP (Internal Standard)

RT (Exp. RT): 9.64(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

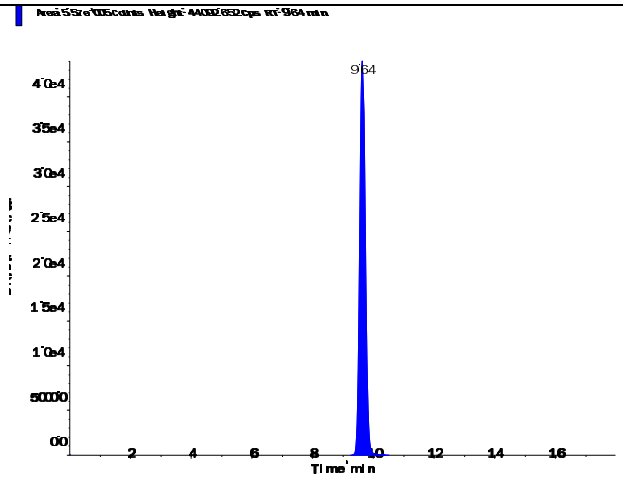

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	0.216 ng/ml
Area Ratio:	0.074
Sample Type:	(Unknown)

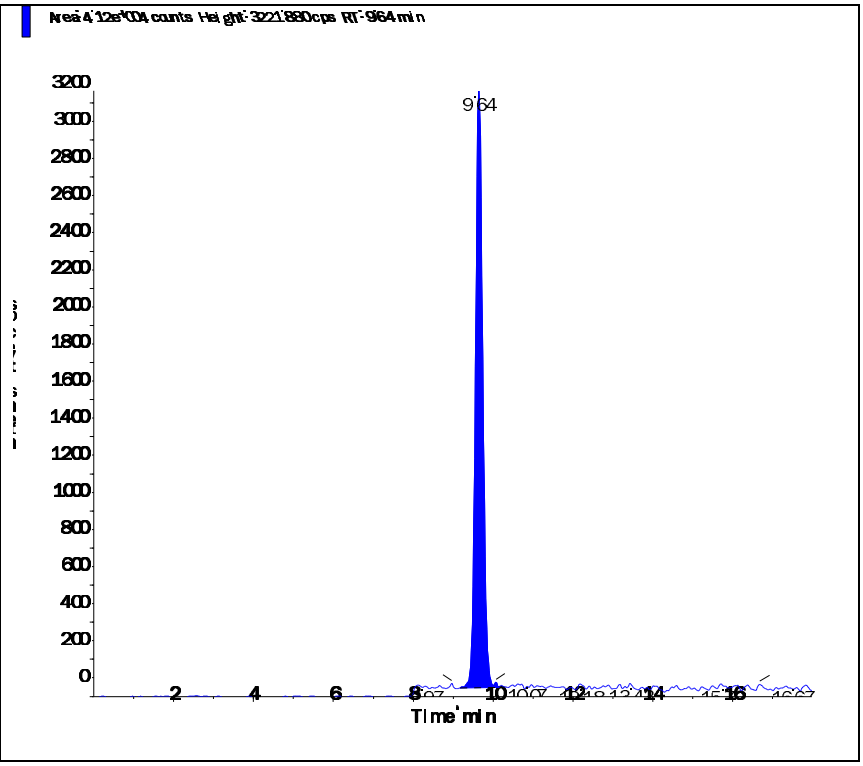

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	0.205 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

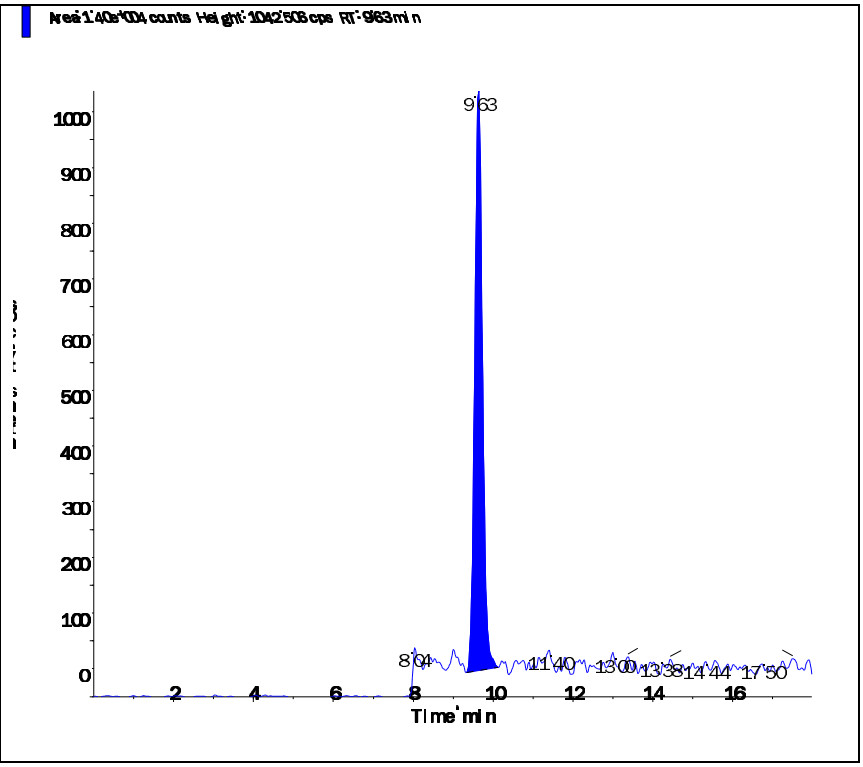

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Created with Analyst Reporter
Printed: 6/13/2016 10:36 AM

Data File	LM35339.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/13/2016 8:28:11 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572350-10 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35339.wiff	**Injection Volume**	10.00
Acquisition Date	6/13/2016 8:28:11 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG572350-10	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.540e+05	9.61	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.990e+04	9.62	N/A	0.21
Perchlorate conf	1.380e+04	9.60	N/A	0.203

O18LP (Internal Standard)

RT (Exp. RT): 9.61(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

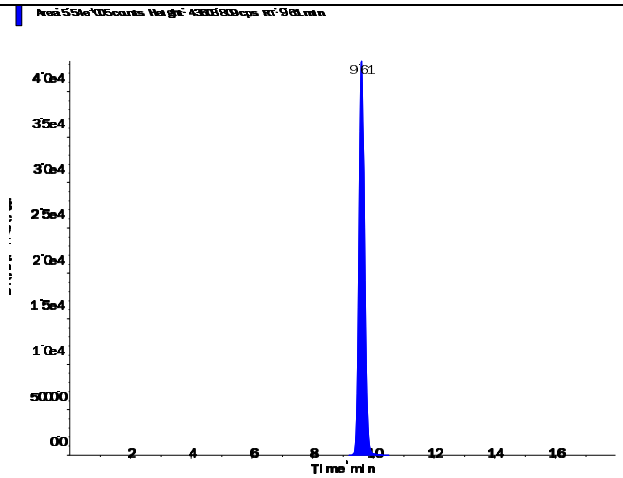

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.62 (9.84) min Calculated conc: 0.21 ng/ml Area Ratio: 0.072 Sample Type: (Unknown)	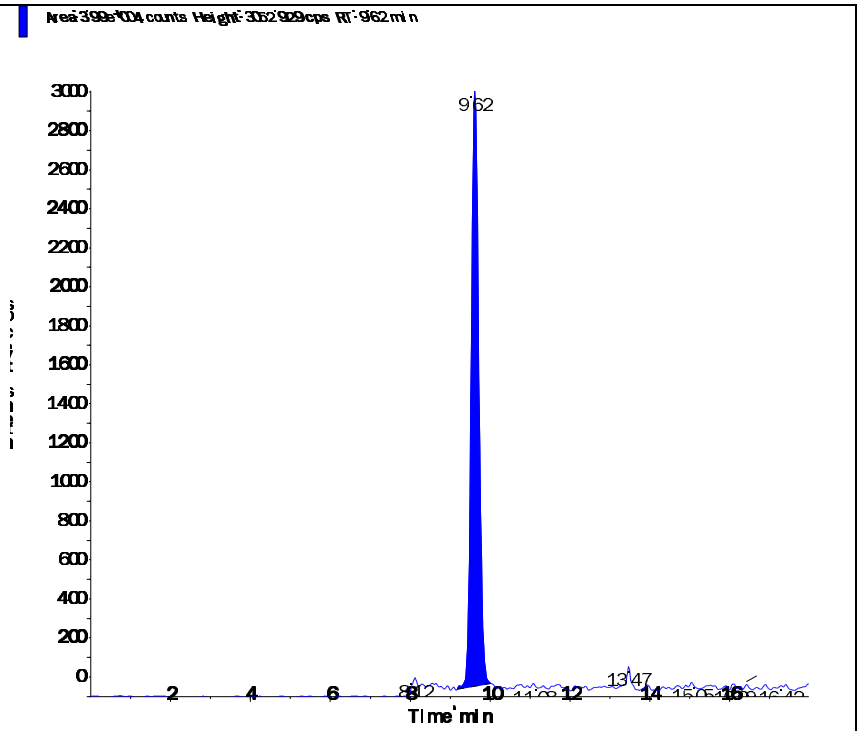
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.60 (9.84) min Calculated conc: 0.203 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	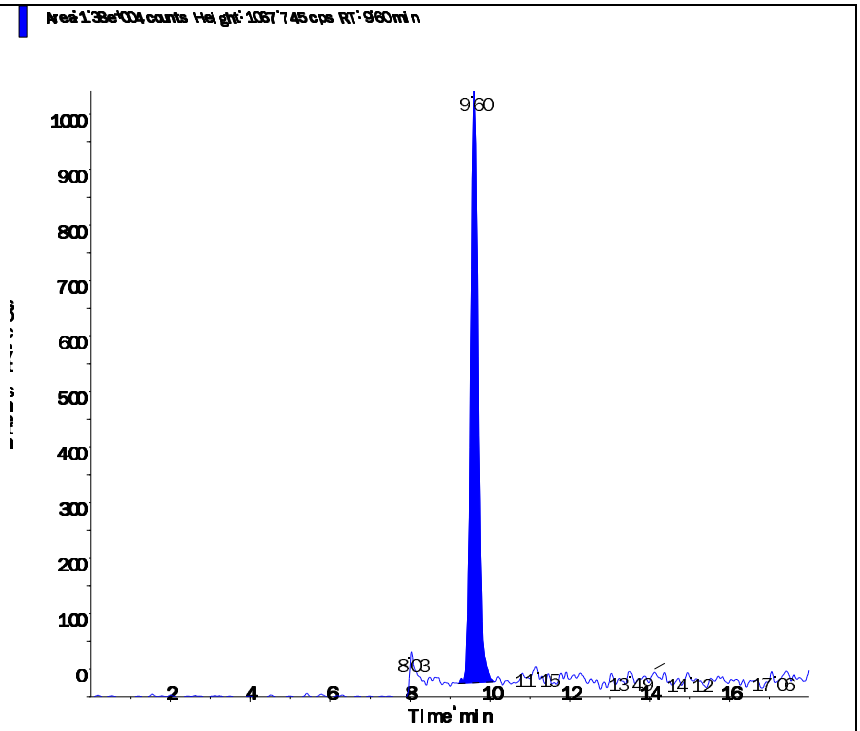

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Created with Analyst Reporter
Printed: 6/13/2016 10:37 AM

Data File	LM35342.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/13/2016 9:25:30 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572350-10 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35342.wiff	**Injection Volume**	10.00
Acquisition Date	6/13/2016 9:25:30 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG572350-10	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.600e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.210e+04	9.64	N/A	0.22
Perchlorate conf	1.430e+04	9.63	N/A	0.209

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

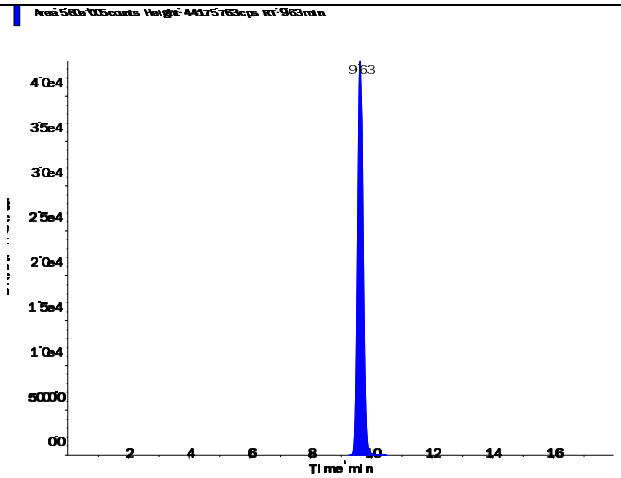

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Printed: 6/13/2016 10:37 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	0.22 ng/ml
Area Ratio:	0.075
Sample Type:	(Unknown)

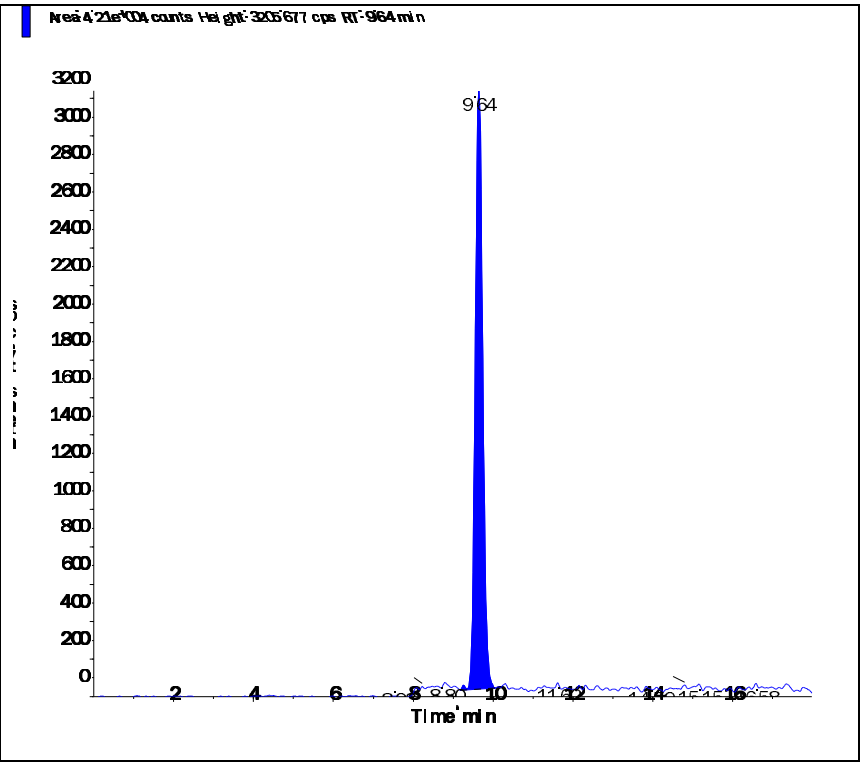

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	0.209 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

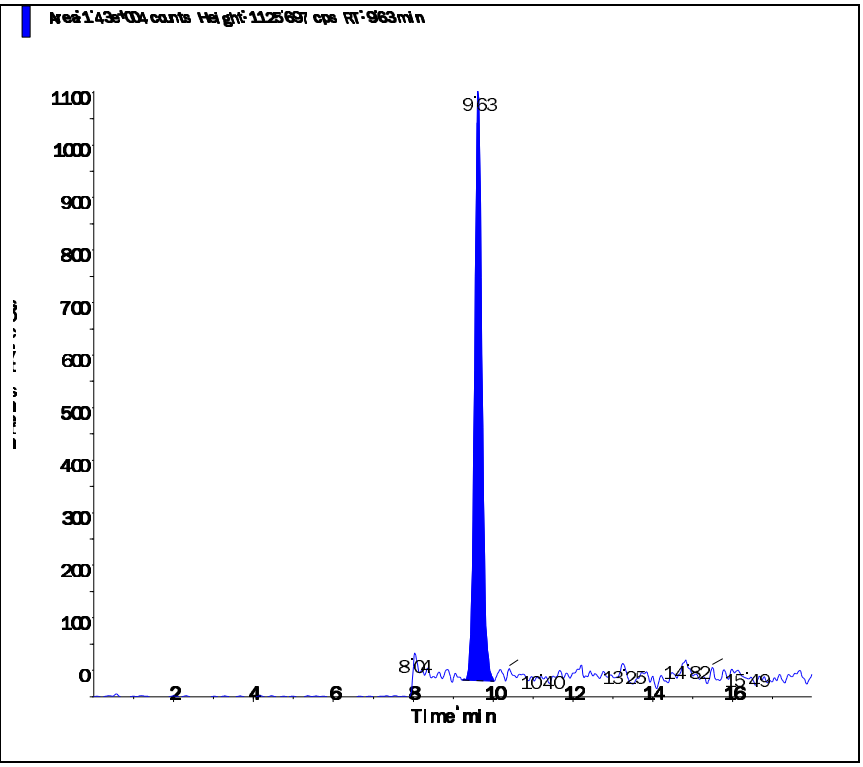

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Data File	LM35298.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 6:16:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-06 CCB	**Injection Vial**	1.00
Data File	LM35298.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 6:16:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.040e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

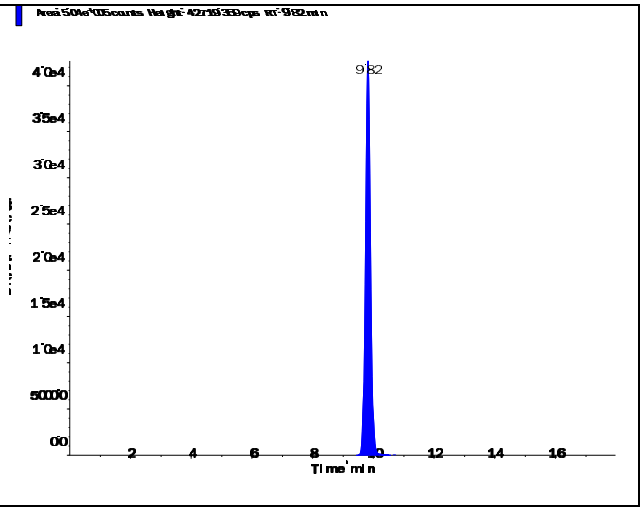

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

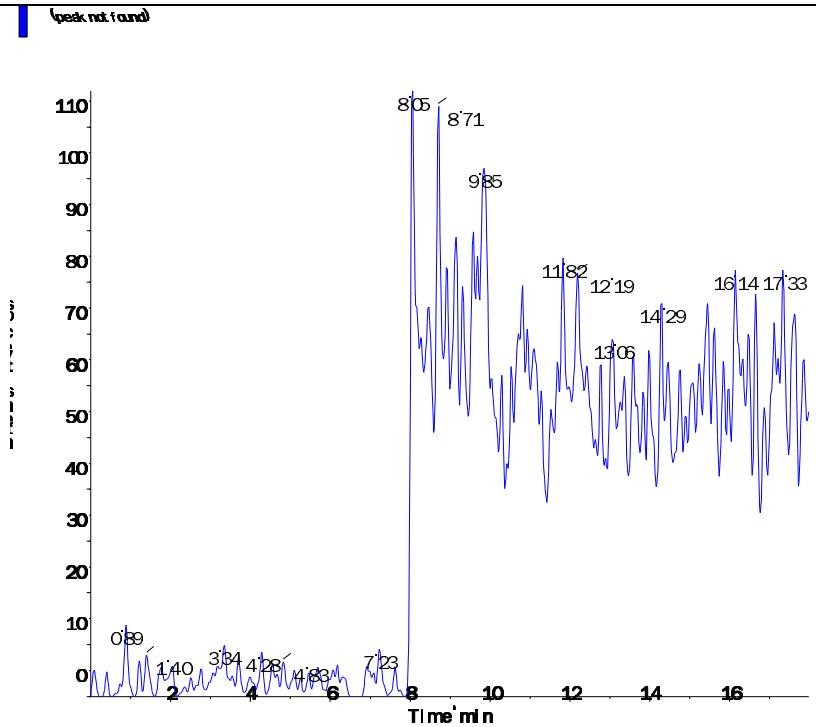

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

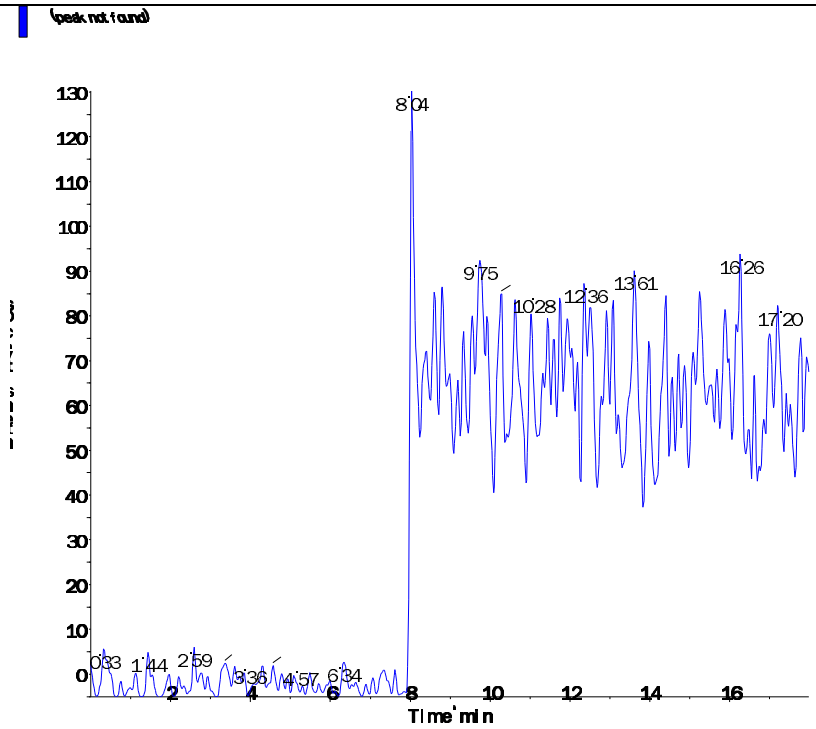

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Data File	LM35312.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 10:41:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-08 CCB	**Injection Vial**	1.00
Data File	LM35312.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 10:41:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.190e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

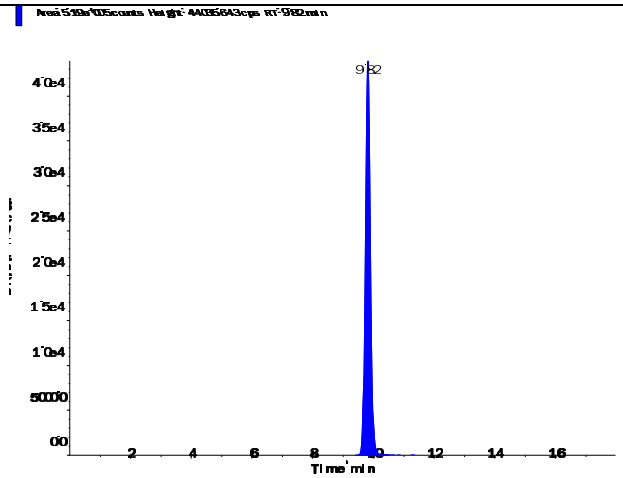

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Printed: 6/12/2016 9:47 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

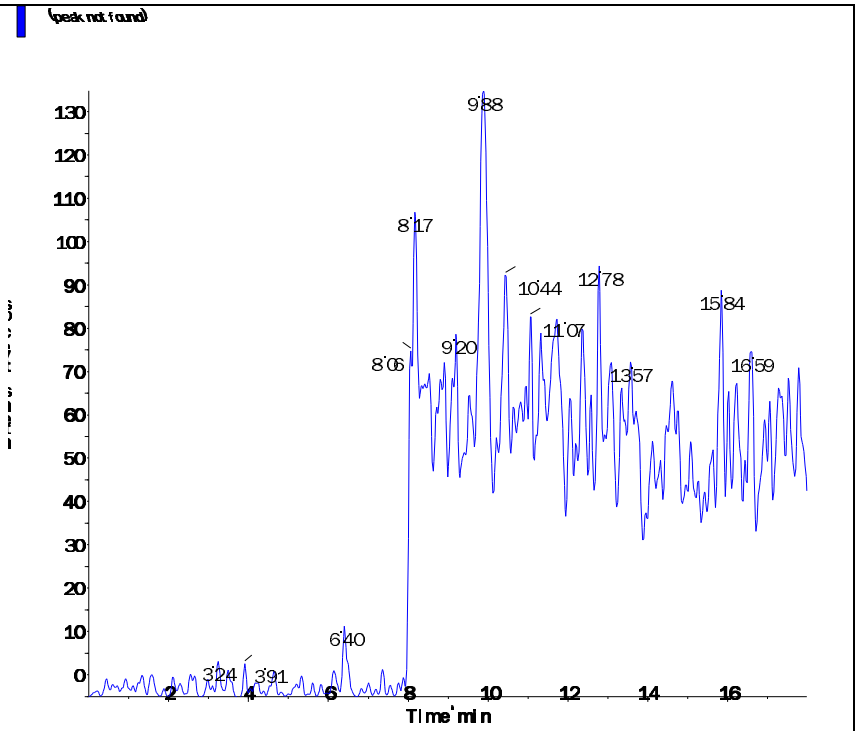

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

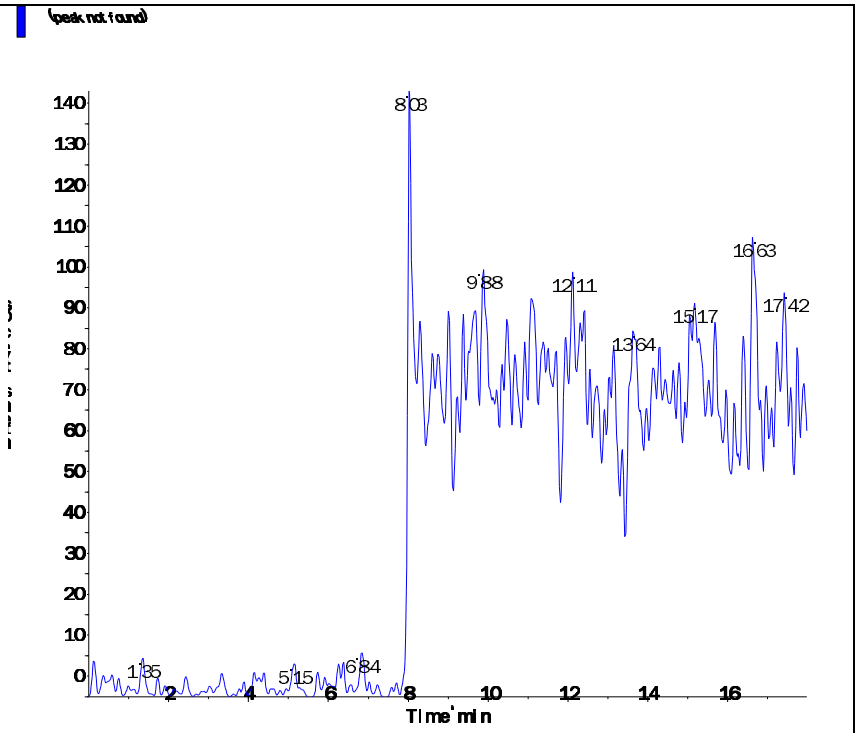

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Data File	LM35320.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/12/2016 1:13:20 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-10 CCB	**Injection Vial**	1.00
Data File	LM35320.wiff	**Injection Volume**	10.00
Acquisition Date	6/12/2016 1:13:20 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.260e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	6.740e+02	9.81	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

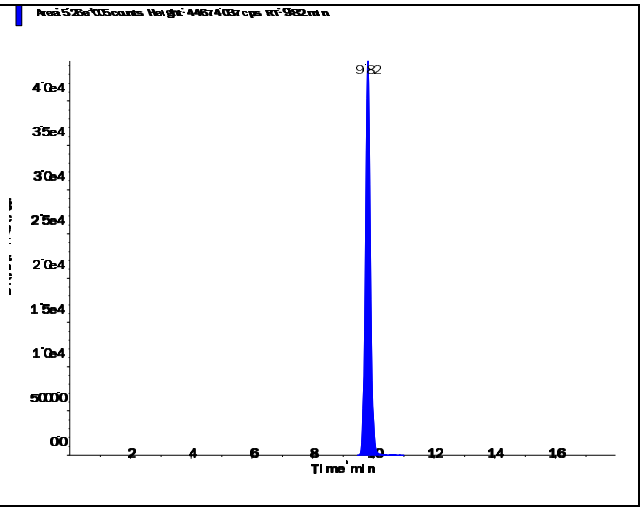

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

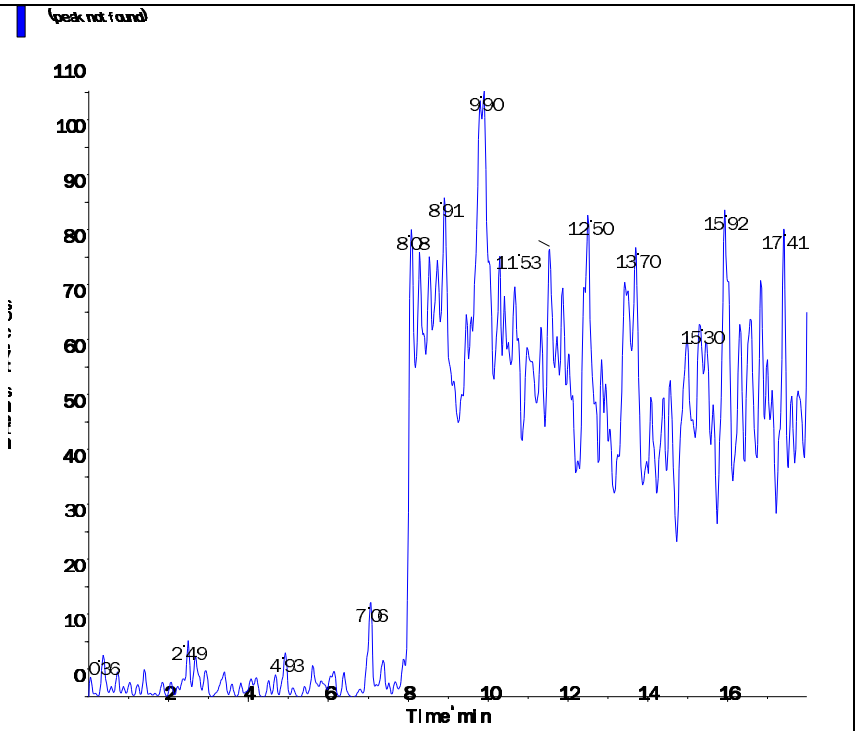

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.81 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

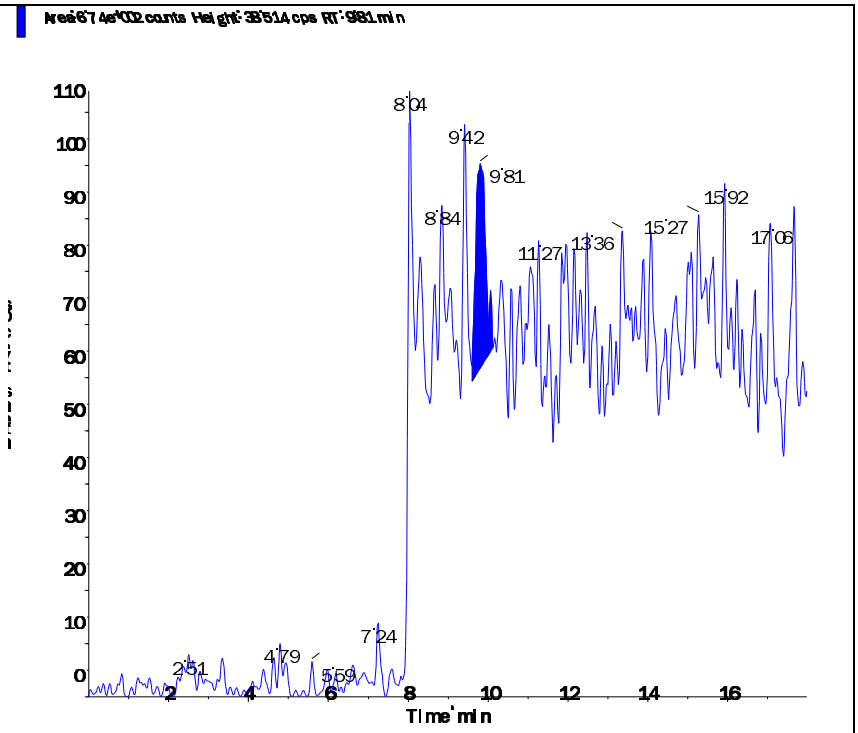

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Created with Analyst Reporter
Printed: 6/13/2016 10:30 AM

Data File	LM35321.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/12/2016 8:44:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572372-01 CCB	**Injection Vial**	1.00
Data File	LM35321.wiff	**Injection Volume**	10.00
Acquisition Date	6/12/2016 8:44:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG572372-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.830e+05	9.79	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.120e+03	9.62	N/A	0.0031
Perchlorate conf	9.060e+02	9.69	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.79(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

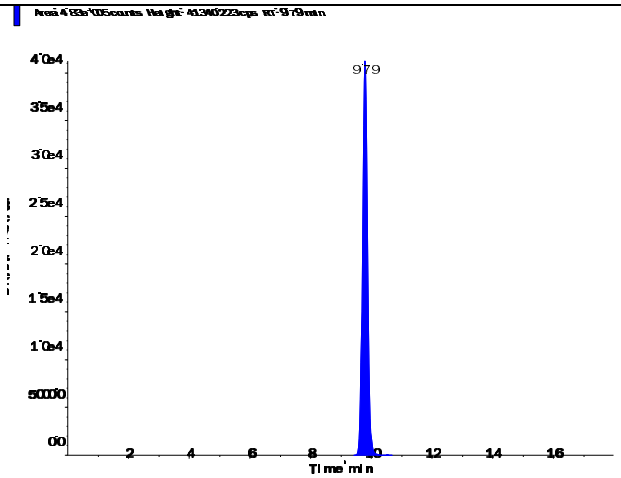

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Created with Analyst Reporter
Printed: 6/13/2016 10:30 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.62 (9.84) min Calculated conc: 0.0031 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	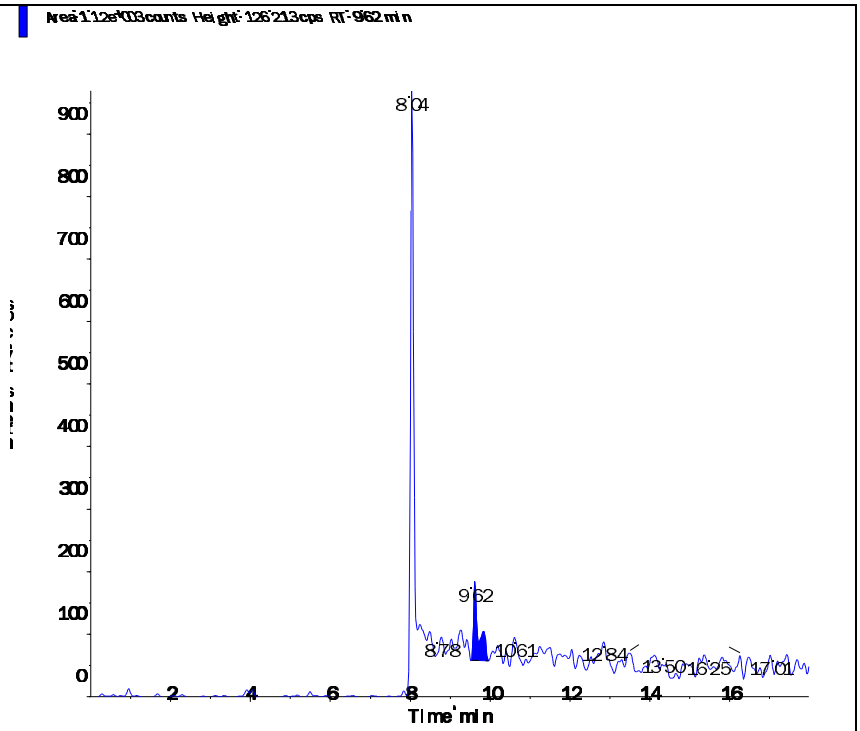
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.69 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	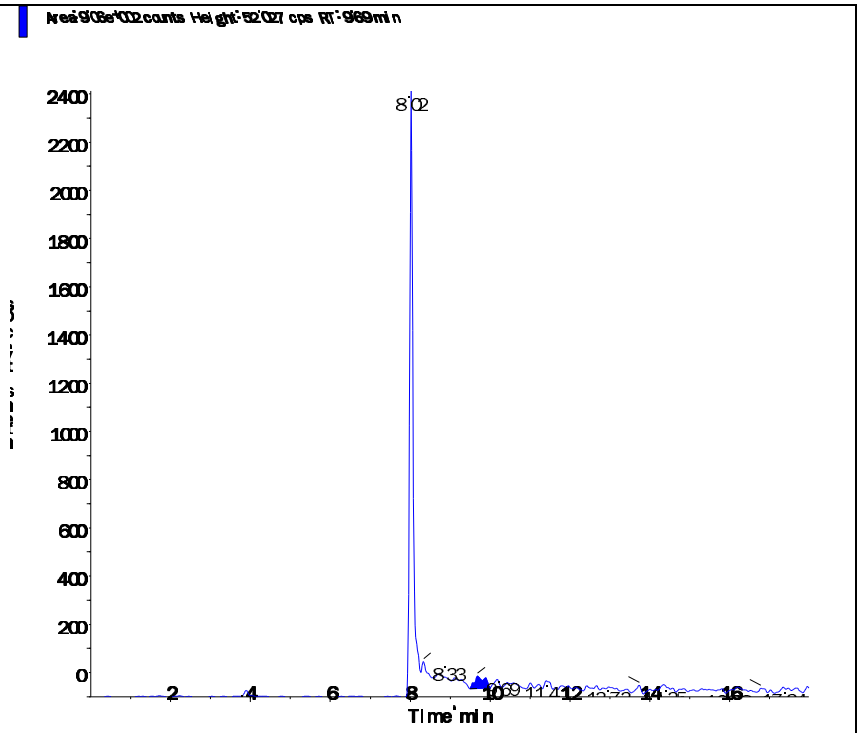

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Created with Analyst Reporter
Printed: 6/13/2016 10:35 AM

Data File	LM35336.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/13/2016 1:28:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572372-04 CCB	**Injection Vial**	1.00
Data File	LM35336.wiff	**Injection Volume**	10.00
Acquisition Date	6/13/2016 1:28:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG572372-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.610e+05	9.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.80(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

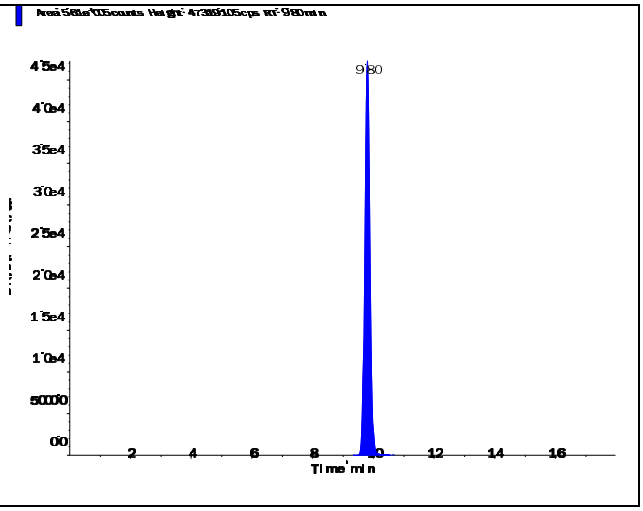

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

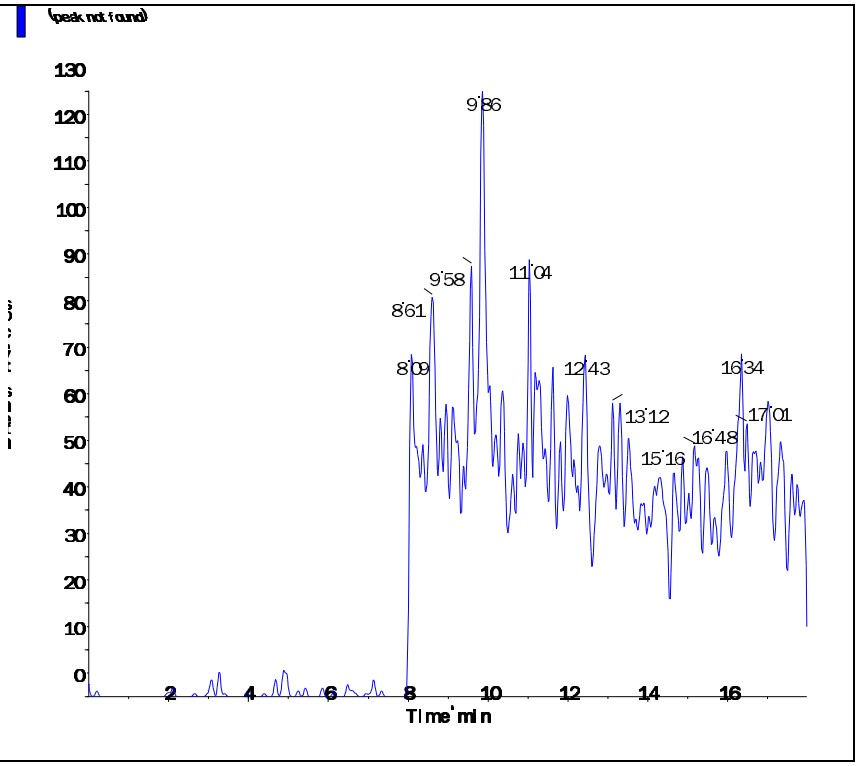

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

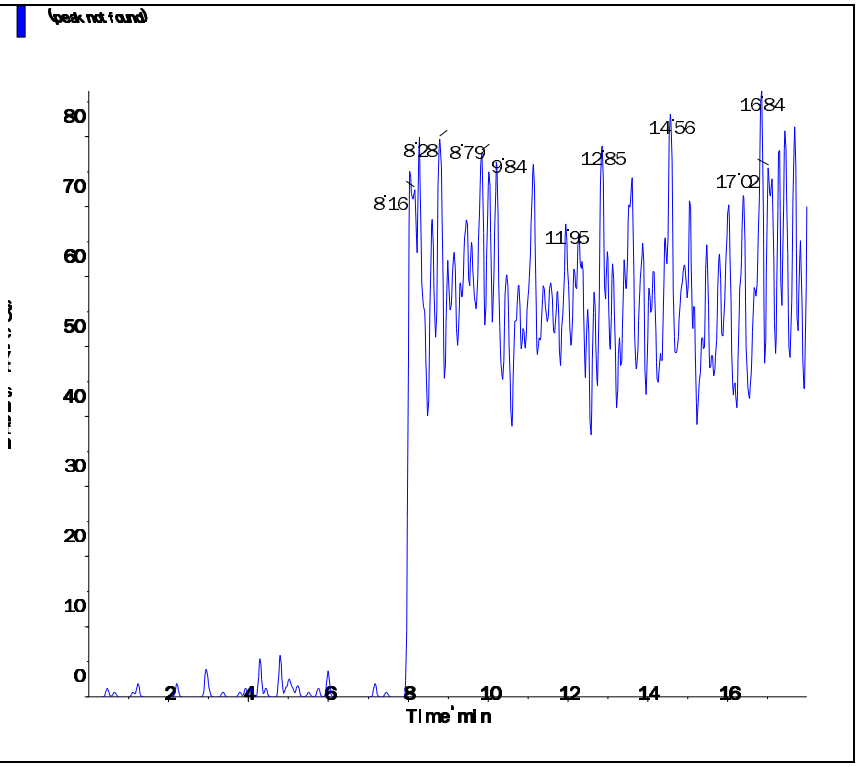

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Created with Analyst Reporter
Printed: 6/13/2016 10:35 AM

Data File	LM35337.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/13/2016 7:50:17 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572372-05 CCB	**Injection Vial**	1.00
Data File	LM35337.wiff	**Injection Volume**	10.00
Acquisition Date	6/13/2016 7:50:17 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG572372-05	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.360e+05	9.79	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.79(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

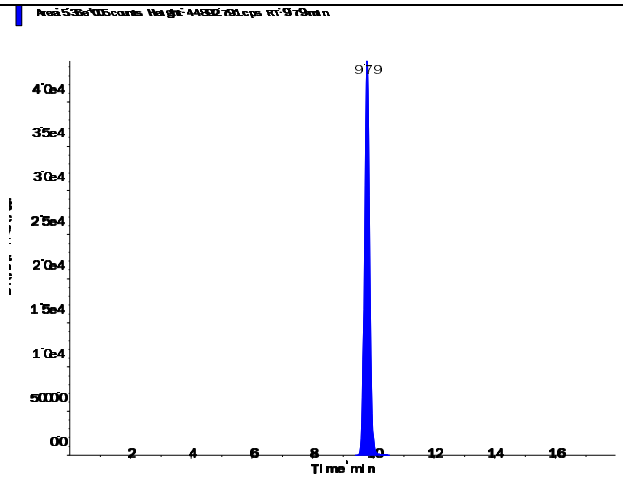

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

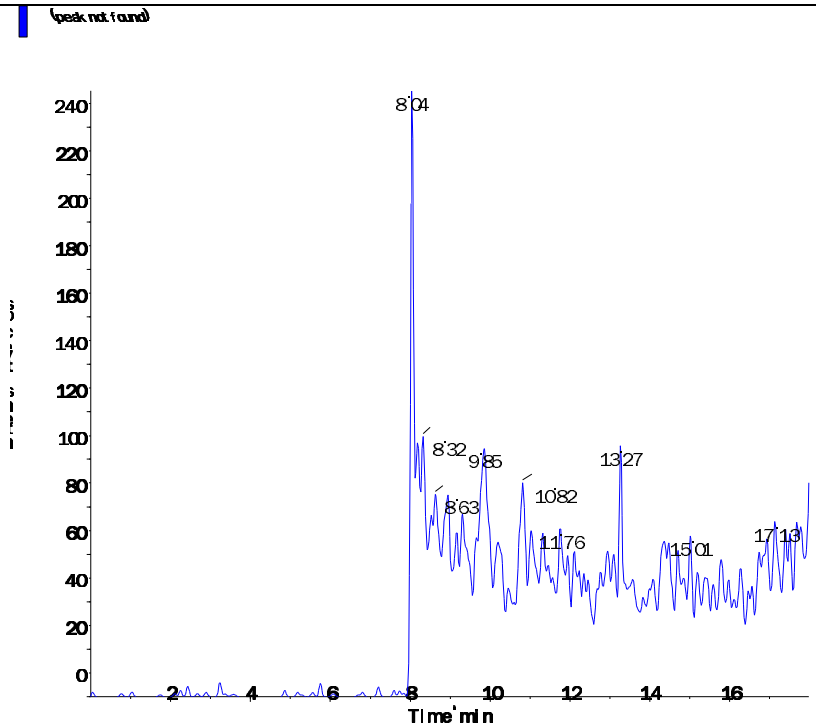

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

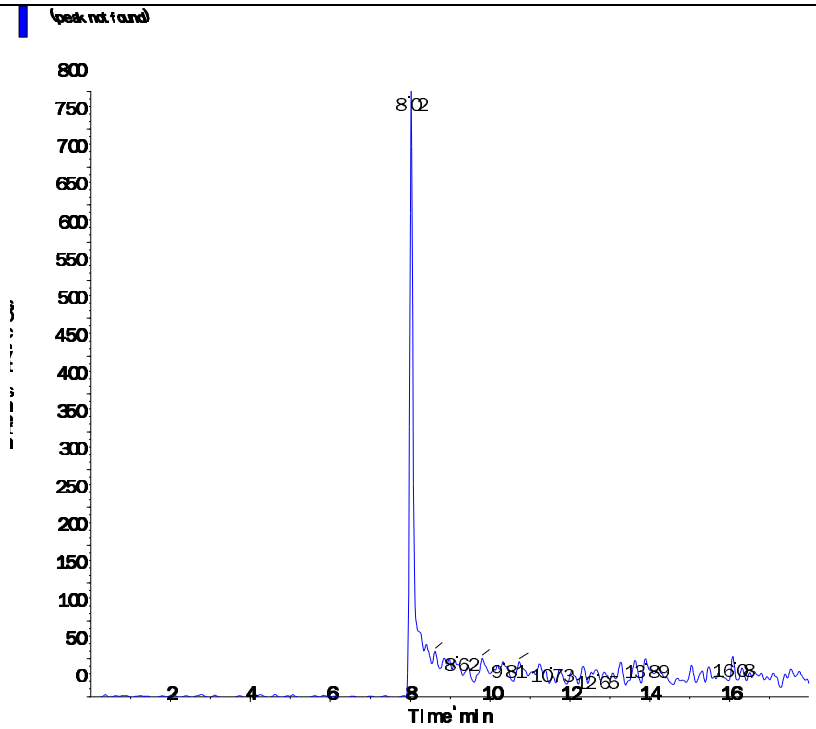

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Created with Analyst Reporter
Printed: 6/13/2016 10:37 AM

Data File	LM35343.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/13/2016 9:44:27 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572372-08 CCB	**Injection Vial**	1.00
Data File	LM35343.wiff	**Injection Volume**	10.00
Acquisition Date	6/13/2016 9:44:27 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG572372-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.710e+05	9.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.80(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

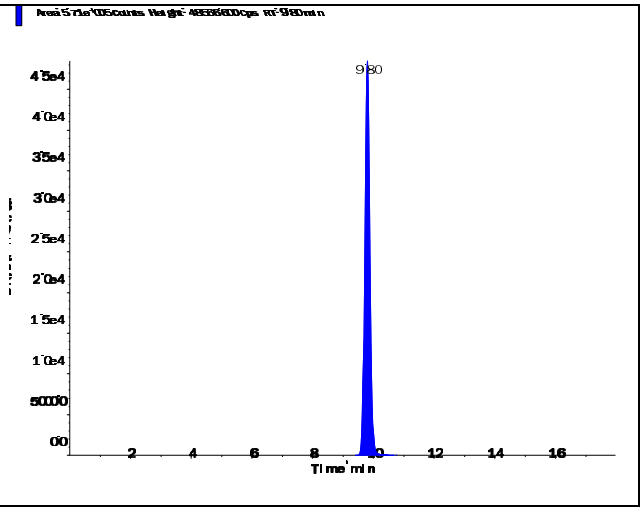

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

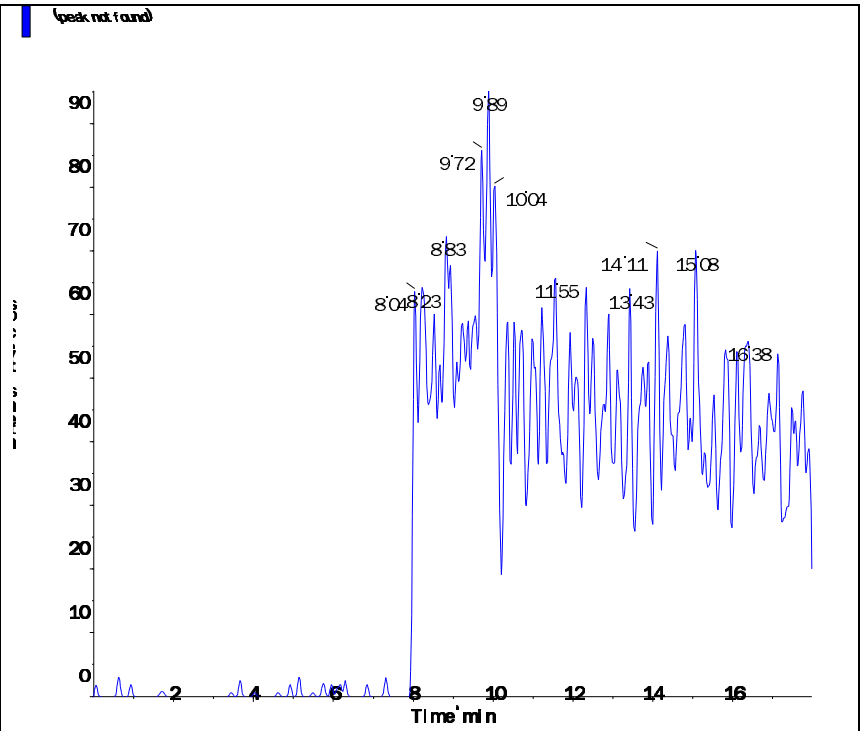

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

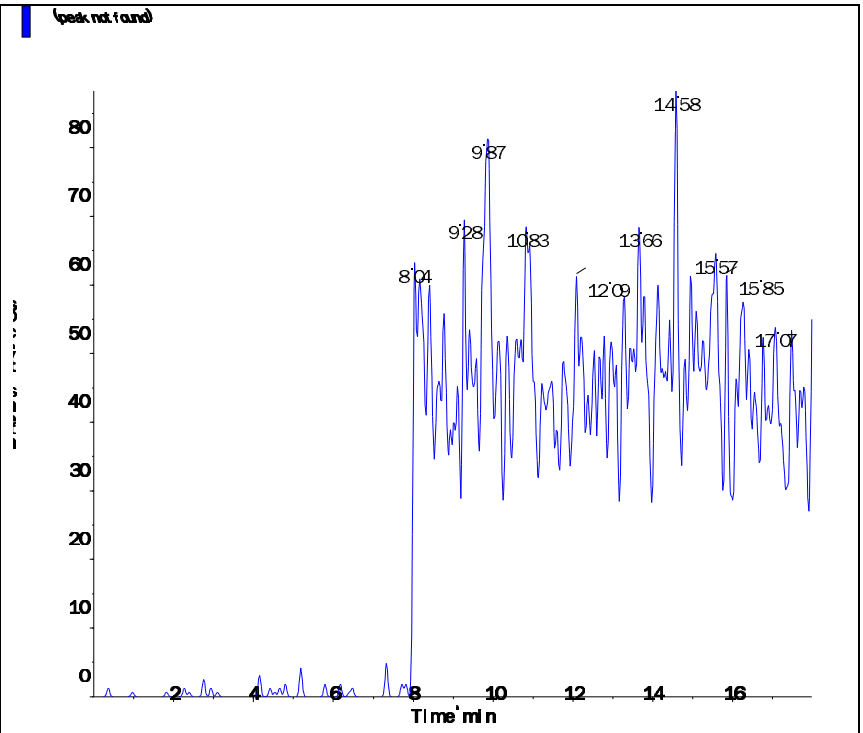

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Created with Analyst Reporter
Printed: 6/12/2016 9:43 PM

Data File	LM35300.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 6:54:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572350-01 MCT (0.2ug/l)	**Injection Vial**	37.00
Data File	LM35300.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 6:54:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572350-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.070e+05	9.15	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.110e+04	9.17	N/A	0.237
Perchlorate conf	1.220e+04	9.15	N/A	0.195

O18LP (Internal Standard)

RT (Exp. RT): 9.15(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

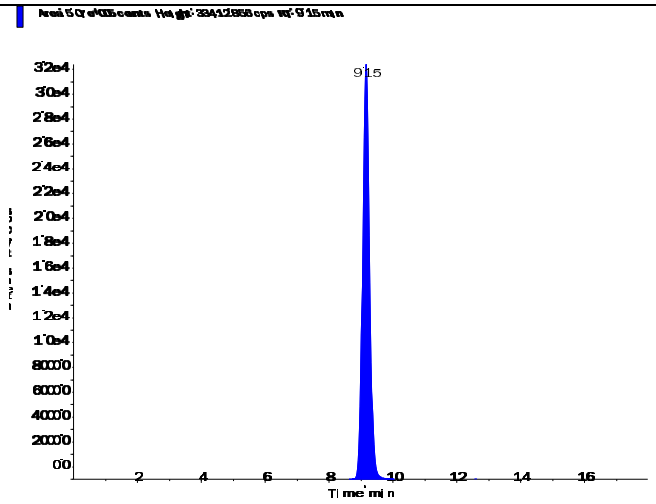

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Created with Analyst Reporter
Printed: 6/12/2016 9:43 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.17 (9.84) min
Calculated conc:	0.237 ng/ml
Area Ratio:	0.081
Sample Type:	(Unknown)

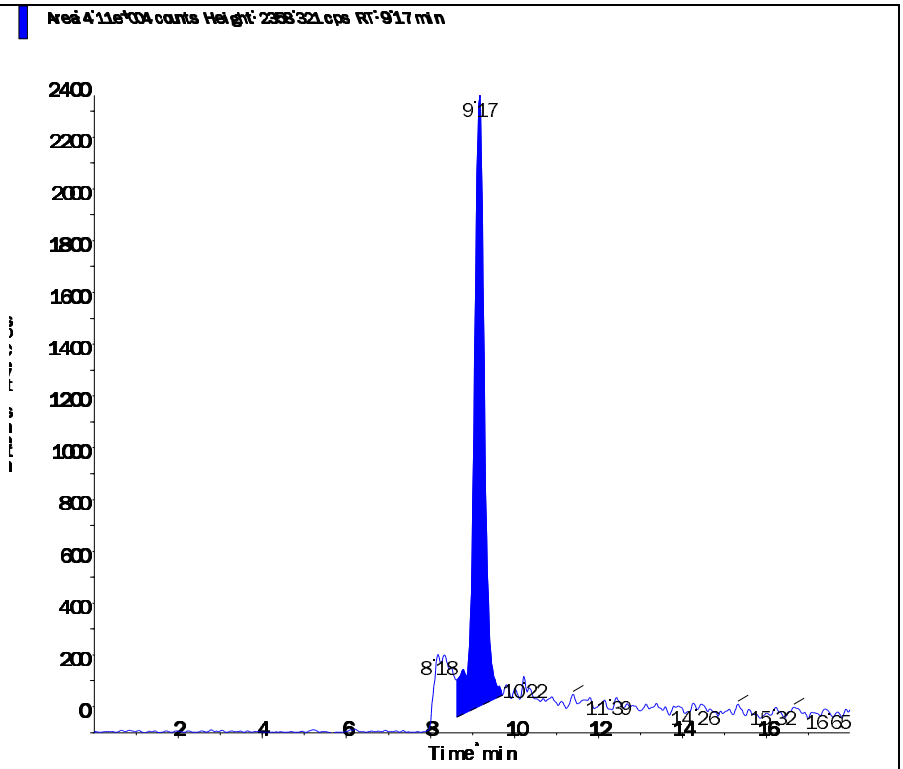

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.15 (9.84) min
Calculated conc:	0.195 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

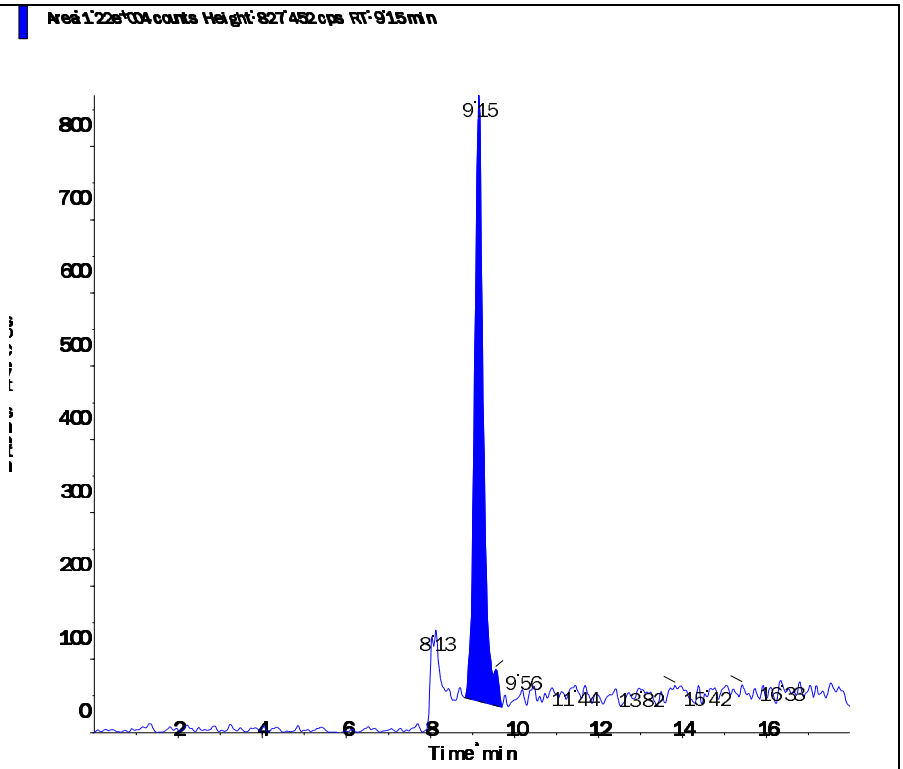

2.2.2.5 Raw QC Data

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Created with Analyst Reporter
Printed: 6/12/2016 9:43 PM

Data File	LM35301.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 7:13:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572350-02 BLANK	**Injection Vial**	38.00
Data File	LM35301.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 7:13:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572350-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.900e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	2.270e+02	9.59	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

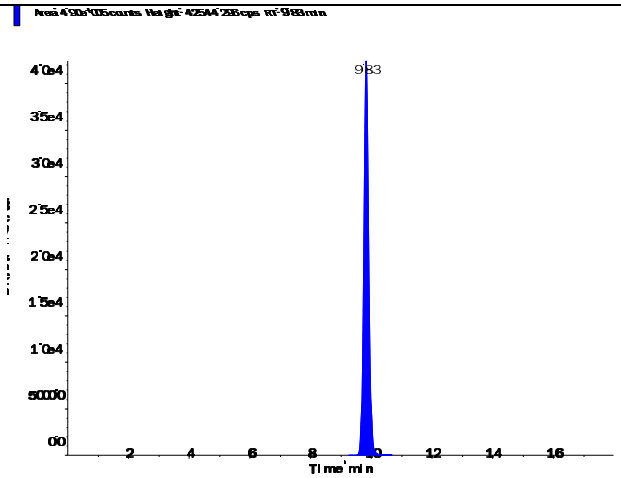

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Created with Analyst Reporter
Printed: 6/12/2016 9:43 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	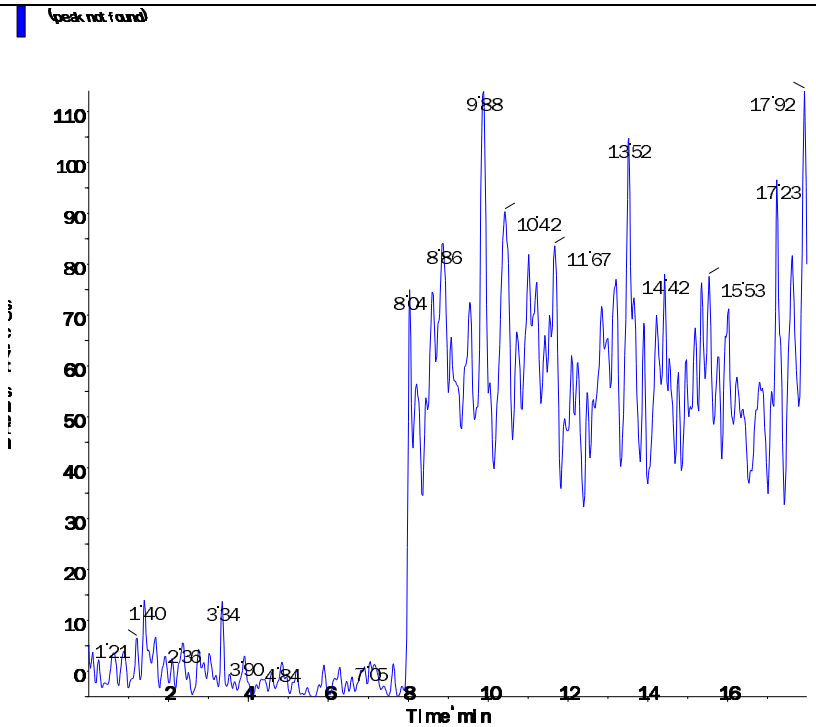
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.59 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	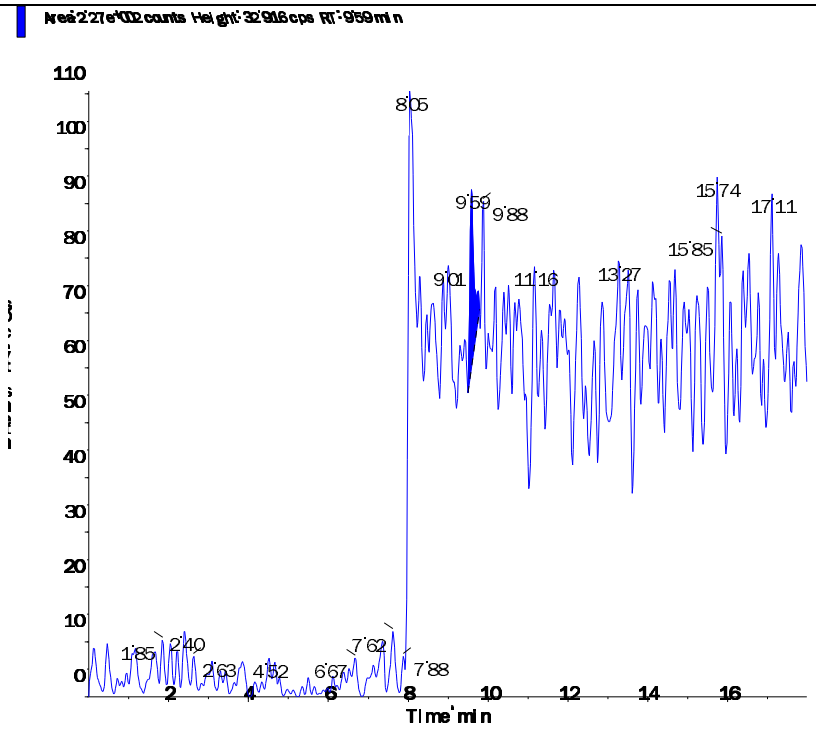

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Created with Analyst Reporter
Printed: 6/12/2016 9:44 PM

Data File	LM35302.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 7:32:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572350-03 LCS (0.2ug/L)	**Injection Vial**	39.00
Data File	LM35302.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 7:32:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572350-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.840e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.500e+04	9.84	N/A	0.211
Perchlorate conf	1.210e+04	9.83	N/A	0.203

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

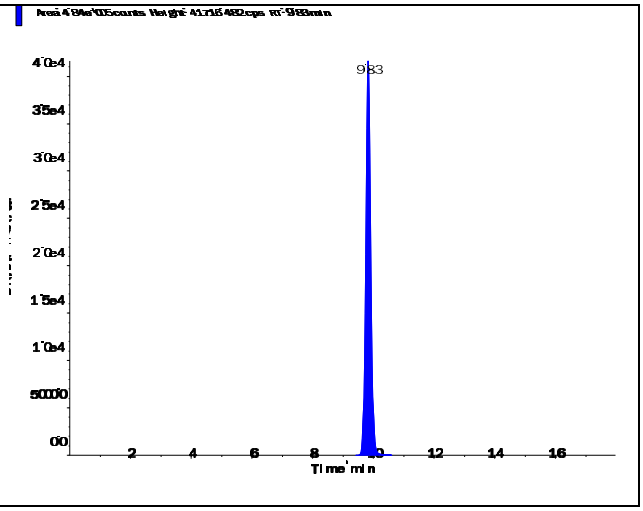

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.211 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

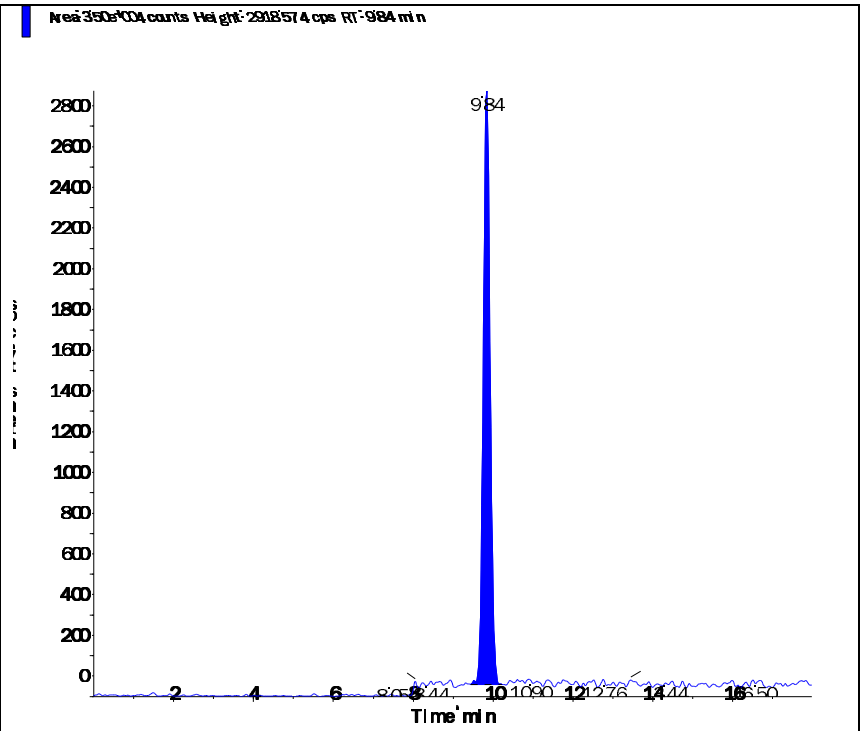

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.203 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

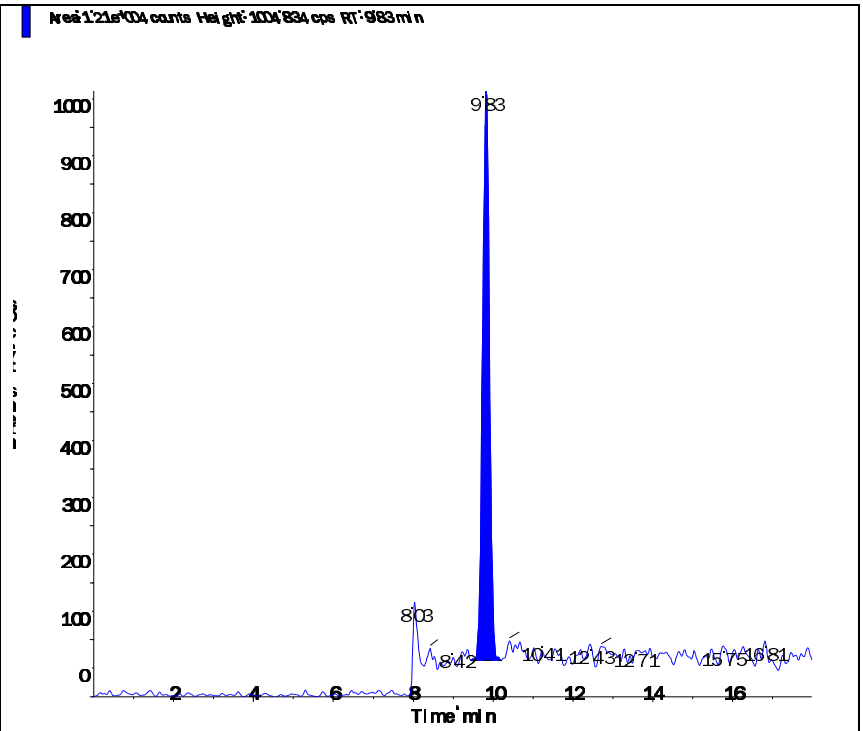

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Printed: 6/12/2016 9:44 PM

Data File	LM35303.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 7:51:23 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572350-03 LCSD (0.2ug/L)	**Injection Vial**	40.00
Data File	LM35303.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 7:51:23 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572350-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.840e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.440e+04	9.84	N/A	0.208
Perchlorate conf	1.190e+04	9.83	N/A	0.20

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

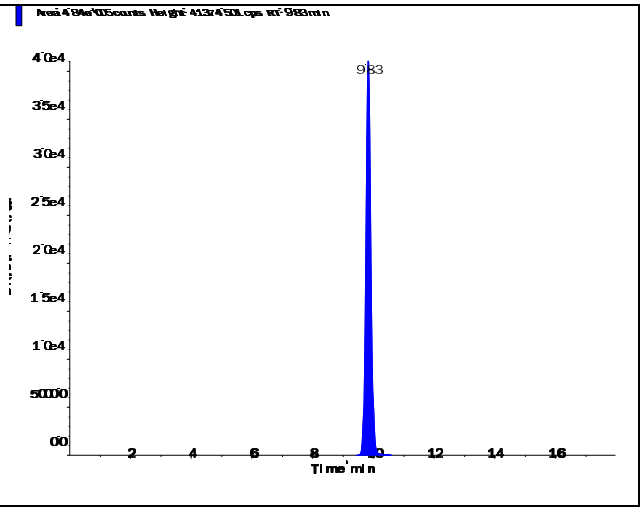

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/12/2016 9:44 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.208 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

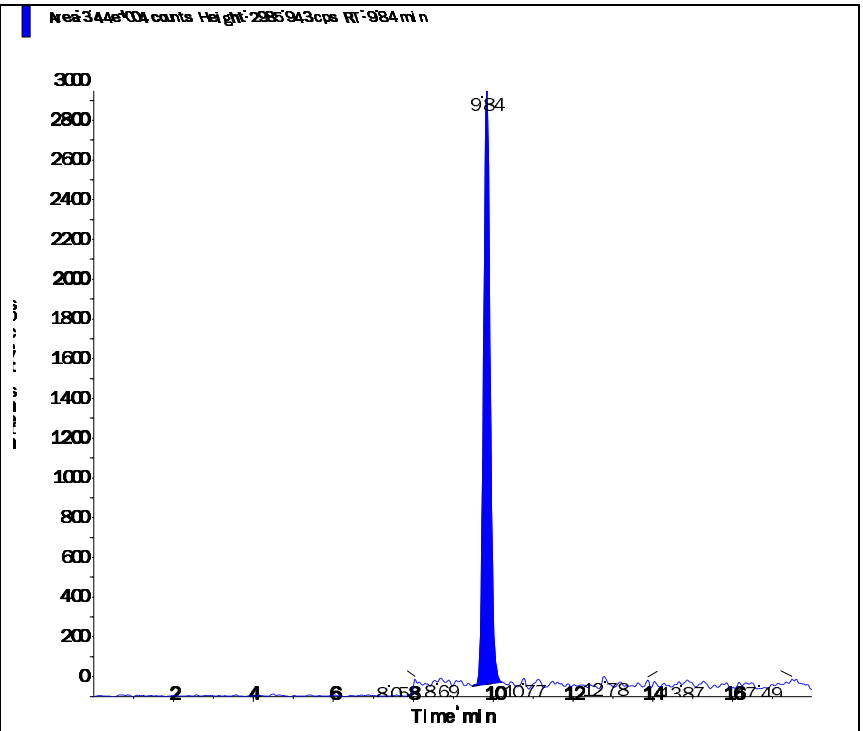

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.20 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

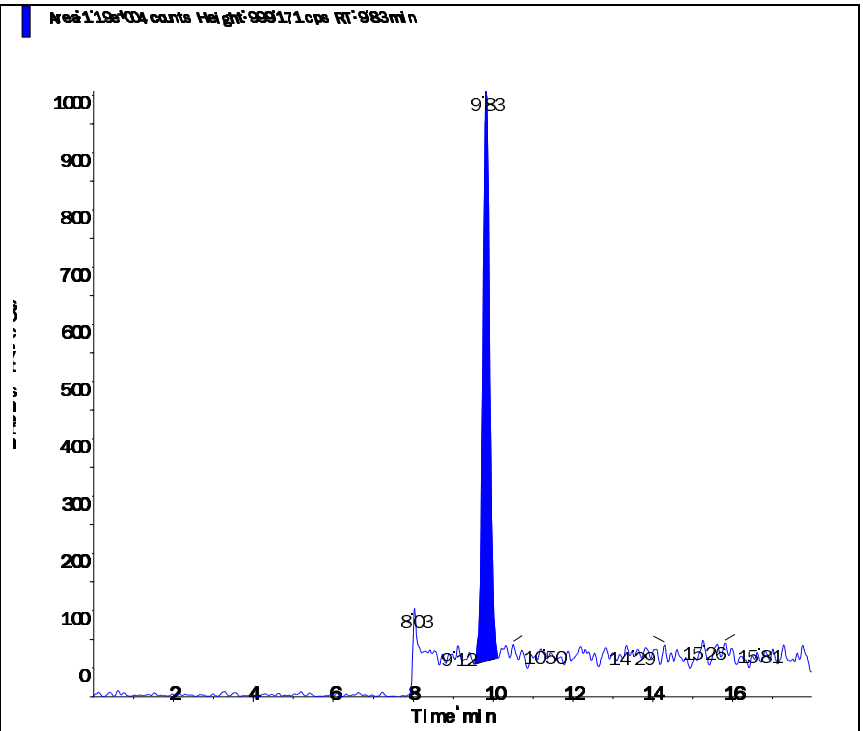

s.dataFile Page 2 of 2

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
June 22, 2016

001 - BIO-CHEM TESTING WVDEP 220	002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental	004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES	006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES	008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND	AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER	ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS	ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED	AWE - ANDREW W. ESSIG
AZH - AFTER HOURS	BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE	BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY	CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS	CEB - CHAD E. BARNES
CJQ - Cameron J. Quick	CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD	CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS	CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL	DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE	DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON	DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE	DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR	ECL - ERIC C. LAWSON
EMW - ERIC M. WILKEN	ENY - EMILY N. YOAK
ERP - ERIN R. PORTER	FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY	JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH	JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS	JLD - JESSICA L. DELONG
JLL - JOHN L. LENT	JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON	JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES	JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON	KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH	KEB - KATIE E. BARNES
KHR - KIM H. RHODES	KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON	KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS	LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF	LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA	MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON	MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN	MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE	MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR	MSW - MATT S. WILSON
NPH - Natalie P. Hart	PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE	PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB	QX - QIN XU
RAH - ROY A. HALSTEAD	REK - BOB E. KYER
RLB - BOB BUCHANAN	RM - RAYMOND MALEKE
RNP - RICK N. PETTY	RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG	SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY	SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF	TB - TODD BOYLE
TGF - TIM G. FELTON	TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS	VC - VICKI COLLIER
WJB - WILL J. BEASLEY	WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG	XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
June 22, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
June 22, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Debra Richmann
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD	pH:	
Project Name/Location:	Longhorn		
Project Number:	60274185.0013BH 1824 MR10		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Total Metals	1, 4 - DIOXANE					SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 18/24	18CPTMW22R-060916			6/9/16	0740		✓	W	6	✓	✓		✓									
	18CPTMW22DW-060916			6/9/16	0840		✓	W	6	✓	✓		✓									
	18CPTMW22DWFD-060916			6/9/16	0840		✓	W	6	✓	✓		✓									
	18CPTMW22SW-060916			6/9/16	0955		✓	W	6	✓	✓		✓									
	TRIP BLANK			6/9/16			✓	W	2	✓												

Comments: **STANDARD TAT**

	Date	Time					
Relinquished by: (Signature) Scott Beesinger	6/9/16	1545	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Receiv (Signat			Time	Remarks:

*Homogenize all composite samples prior to analysis

Microbac OVD
Received: 06/10/2016 10:43
By: BRENDA GREGORY 221000087047

Brenda Gregory

ger, Pink QA/QC Manager

00704467

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060615
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 21-JUN-2016

Samplenum	Container ID	Products
L16060615-01	758402	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:03	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:03	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:03	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	

Samplenum	Container ID	Products
L16060615-01	758403	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	10-JUN-2016 15:03	CLS		
2	PREP	W1	EXT	13-JUN-2016 15:30	CPD	BRG	
3	SUBBED	EXT	DISP	14-JUN-2016 10:05	BJO	BJO	
4	ANALYZ*	EXT	SEMI	20-JUN-2016 12:17	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		10-JUN-2016 15:03	CLS		

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060615-01	758404	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	10-JUN-2016 15:03	CLS		
2	ANALYZ	W1	SEM	11-JUN-2016 10:50	WTD	CLS	
3	STORE	SEM	A1	12-JUN-2016 22:05	AZH	WTD	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060615
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 21-JUN-2016

Samplenum	Container ID	Products
L16060615-02	758405	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:03	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:03	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:03	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	

Samplenum	Container ID	Products
L16060615-02	758406	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	10-JUN-2016 15:03	CLS		
2	PREP	W1	EXT	13-JUN-2016 15:30	CPD	BRG	
3	SUBBED	EXT	DISP	14-JUN-2016 10:05	BJO	BJO	
4	ANALYZ*	EXT	SEMI	20-JUN-2016 12:17	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		10-JUN-2016 15:03	CLS		

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060615-02	758407	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	10-JUN-2016 15:03	CLS		
2	ANALYZ	W1	SEM	11-JUN-2016 10:50	WTD	CLS	
3	STORE	SEM	A1	12-JUN-2016 22:05	AZH	WTD	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060615
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 21-JUN-2016

Samplenum	Container ID	Products
L16060615-03	758408	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:03	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:03	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:03	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	

Samplenum	Container ID	Products
L16060615-03	758409	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	10-JUN-2016 15:03	CLS		
2	PREP	W1	EXT	13-JUN-2016 15:30	CPD	BRG	
3	SUBBED	EXT	DISP	14-JUN-2016 10:05	BJO	BJO	
4	ANALYZ*	EXT	SEMI	20-JUN-2016 12:17	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		10-JUN-2016 15:03	CLS		

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060615-03	758410	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	10-JUN-2016 15:03	CLS		
2	ANALYZ	W1	SEM	11-JUN-2016 10:50	WTD	CLS	
3	STORE	SEM	A1	12-JUN-2016 22:05	AZH	WTD	

A1 - Sample Archive (COLD)
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F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060615
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 21-JUN-2016

Samplenum	Container ID	Products
L16060615-04	758411	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:03	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:03	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:03	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	

Samplenum	Container ID	Products
L16060615-04	758412	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	10-JUN-2016 15:03	CLS		
2	PREP	W1	EXT	13-JUN-2016 15:30	CPD	BRG	
3	SUBBED	EXT	DISP	14-JUN-2016 10:05	BJO	BJO	
4	ANALYZ*	EXT	SEMI	20-JUN-2016 12:17	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		10-JUN-2016 15:03	CLS		

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060615-04	758413	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	10-JUN-2016 15:03	CLS		
2	ANALYZ	W1	SEM	11-JUN-2016 10:50	WTD	CLS	
3	STORE	SEM	A1	12-JUN-2016 22:05	AZH	WTD	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060615
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 21-JUN-2016

Samplenum	Container ID	Products
L16060615-05	758414	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:03	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:03	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16060616

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Michelle Taylor – Client Services Specialist
(740) 373-4071
Michelle.Taylor@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on June 27 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00110314	H	3.0		J2317165063	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
MW8-060916	L16060616-01	06/09/2016 11:00	06/10/2016 10:46
18CPTMW26SW-060916	L16060616-02	06/09/2016 13:25	06/10/2016 10:46
MW10-060916	L16060616-03	06/09/2016 14:40	06/10/2016 10:46
MW10F-060916	L16060616-04	06/09/2016 14:40	06/10/2016 10:46
TRIP BLANK	L16060616-05	06/09/2016 00:01	06/10/2016 10:46

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16060616
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.1 Narratives

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	8260
Prep Batch Number(s):	572737,573038	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-23 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2016-06-23 18:27:25

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Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	8260
Prep Batch Number(s):	572737,573038	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-23 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	8260
Prep Batch Number(s):	572737,573038	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-23 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	8260
Prep Batch Number(s):	572737,573038	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-23 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	8260
Prep Batch Number(s):	572737,573038	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-23 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	8260
Prep Batch Number(s):	572737,573038	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-23 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1)Bromomethane exceeded the UCL in the CCV analyzed 06/15/2016 on HPMS8. Bromomethane exceeded the UCL in the CCV analyzed 06/16/2016 on HPMS8.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572341	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-21 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-06-21 18:34:06

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572341	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-21 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples			X		
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572341	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-21 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572341	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-21 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572341	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-21 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572341	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-21 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572350	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-06-14 16:53:07

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572350	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572350	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572350	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572350	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG572350	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-14 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572965	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-26 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-06-26 22:54:39

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572965	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-26 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?		X			ER#2
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572965	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-26 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572965	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-26 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			ER#1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572965	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-26 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572965	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-26 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - The low level continuing calibration verification analyzed on 17-Jun-2016 at 12:59 yielded a recovery for selenium that was above the acceptance limit. Generally this elevated recovery could indicate a high bias on the sample result, however, since the samples yielded results less than the LOQ, no further action was taken.

ER#2 - Client sample 01 required dilution analysis in order to obtain a result for sodium within the calibration range. Client sample 02 required dilution analysis in order to obtain results for calcium, iron, magnesium, and sodium within the calibration range.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG572730, WG573483	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-26 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-06-26 22:47:23

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG572730, WG573483	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-26 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?		X			ER#3
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?		X			ER#1
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG572730, WG573483	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-26 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		X			ER#2
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG572730, WG573483	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-26 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG572730, WG573483	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-26 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG572730, WG573483	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-26 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - The method blank analyzed on 16-JUN-2016 yielded results for arsenic and barium that exceeded the reporting detection limit. All QA/QC and client samples 01 and 04 were redigested and reanalyzed on a later calibration for barium. All QA/QC and client sample 02 were redigested and reanalyzed on a later calibration for arsenic. The latter results were reported under WG573557.

ER#2 - The laboratory control sample analysis performed on 16-JUN-2016 yielded a noncompliant result for silver. All QA/QC and client samples were redigested and reanalyzed for silver with a compliant LCS. The latter results were reported under WG573557.

ER#3 - Client samples 01, 02, 04 required dilution analyses in order to obtain results for manganese within the calibration range. Client sample 01 required dilution analyses in order to obtain results for chromium and nickel within the calibration range. Client sample 02 required dilution analysis in order to obtain a result for barium within the calibration range.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572607	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-26 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-06-26 22:42:58

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572607	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-26 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572607	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-26 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		X			ER#1
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572607	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-26 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572607	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-26 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
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3. NA = Not applicable;
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Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060616
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572607	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-06-26 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - The matrix spike/matrix spike duplicate performed on nonclient samples on 16-JUN-2016 yielded a noncompliant result for mercury. The samples were reported with a compliant post digestion spike and no further action was takne.

1.2 Certificate of Analysis

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW8-060916	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573038	**Analyst:**	FJB	**Run Date:**	06/16/2016 19:52
Collect Date:	06/09/2016 11:00	**Dilution:**	1	**File ID:**	8M413043
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.607	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.592	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.867	J	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	247		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	116	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	101	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	MW8-060916	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 15:19
Collect Date:	06/09/2016 11:00	**Dilution:**	1	**File ID:**	15M18414
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	0.649	J	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	52.6	20	129	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW8-060916	**Prep Method:**	6850	**Prep Date:**	06/11/2016 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572350	**Analyst:**	WTD	**Run Date:**	06/11/2016 23:38
Collect Date:	06/09/2016 11:00	**Dilution:**	10000	**File ID:**	1LM.LM35315
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	8290		4000	2000	1000

Certificate of Analysis

Sample #:	L16060616-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW8-060916	**Prep Method:**	3015	**Prep Date:**	06/15/2016 10:00
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/17/2016 10:37
Workgroup #:	WG572965	**Analyst:**	JYH	**Run Date:**	06/17/2016 12:00
Collect Date:	06/09/2016 11:00	**Dilution:**	1	**File ID:**	T3.061716.120053
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.122	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	8.30		0.500	0.250	0.125
Iron, Total	7439-89-6	0.888		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	7.45		1.00	0.500	0.250
Potassium, Total	7440-09-7	0.503	J	2.00	1.00	0.500
Selenium, Total	7782-49-2	0.00533	J	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW8-060916	**Prep Method:**	3015	**Prep Date:**	06/15/2016 10:00
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/17/2016 10:37
Workgroup #:	WG572965	**Analyst:**	JYH	**Run Date:**	06/17/2016 12:36
Collect Date:	06/09/2016 11:00	**Dilution:**	100	**File ID:**	T3.061716.123610
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sodium, Total	7440-23-5	191		100	50.0	25.0

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW8-060916	**Prep Method:**	3015	**Prep Date:**	06/21/2016 07:48
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/21/2016 12:44
Workgroup #:	WG573557	**Analyst:**	BKT	**Run Date:**	06/21/2016 15:22
Collect Date:	06/09/2016 11:00	**Dilution:**	1	**File ID:**	NI.062116.152226
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.144		0.00600	0.00300	0.00150
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW8-060916	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 19:47
Collect Date:	06/09/2016 11:00	**Dilution:**	1	**File ID:**	NI.061616.194738
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00171	J	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000344	J	0.00120	0.000600	0.000300
Cobalt, Total	7440-48-4	0.0414		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.0107		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000105	J	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0267	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW8-060916	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 21:13
Collect Date:	06/09/2016 11:00	**Dilution:**	10	**File ID:**	NI.061616.211326
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chromium, Total	7440-47-3	0.278		0.0400	0.0200	0.0100
Manganese, Total	7439-96-5	0.350		0.0400	0.0200	0.0100
Nickel, Total	7440-02-0	0.447		0.0800	0.0400	0.0200

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-01	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW8-060916	**Prep Method:**	7470A	**Prep Date:**	06/14/2016 10:23
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/16/2016 14:15
Workgroup #:	WG573072	**Analyst:**	PDM	**Run Date:**	06/16/2016 15:03
Collect Date:	06/09/2016 11:00	**Dilution:**	1	**File ID:**	M7.061616.150321
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW26SW-060916	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572737	**Analyst:**	TMB	**Run Date:**	06/15/2016 18:11
Collect Date:	06/09/2016 13:25	**Dilution:**	1	**File ID:**	8M413021
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	7.39	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	117	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	100	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW26SW-060916	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 15:42
Collect Date:	06/09/2016 13:25	**Dilution:**	1	**File ID:**	15M18415
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	50.8	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW26SW-060916	**Prep Method:**	6850	**Prep Date:**	06/11/2016 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572350	**Analyst:**	WTD	**Run Date:**	06/13/2016 08:47
Collect Date:	06/09/2016 13:25	**Dilution:**	1	**File ID:**	1LM.LM35340
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	6.42		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16060616-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW26SW-060916	**Prep Method:**	3015	**Prep Date:**	06/15/2016 10:00
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/17/2016 10:37
Workgroup #:	WG572965	**Analyst:**	JYH	**Run Date:**	06/17/2016 12:04
Collect Date:	06/09/2016 13:25	**Dilution:**	1	**File ID:**	T3.061716.120445
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.158	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Potassium, Total	7440-09-7	3.46		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.00586	J	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW26SW-060916	**Prep Method:**	3015	**Prep Date:**	06/15/2016 10:00
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/17/2016 10:37
Workgroup #:	WG572965	**Analyst:**	JYH	**Run Date:**	06/17/2016 12:47
Collect Date:	06/09/2016 13:25	**Dilution:**	20	**File ID:**	T3.061716.124747
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	61.4		10.0	5.00	2.50
Iron, Total	7439-89-6	72.2		4.00	2.00	1.00
Magnesium, Total	7439-95-4	34.1		20.0	10.0	5.00
Sodium, Total	7440-23-5	320		20.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW26SW-060916	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 19:50
Collect Date:	06/09/2016 13:25	**Dilution:**	1	**File ID:**	NI.061616.195050
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00237	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.000803	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00116	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.00238	J	0.00800	0.00400	0.00200
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00101	J	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW26SW-060916	**Prep Method:**	3015	**Prep Date:**	06/21/2016 07:48
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/21/2016 12:44
Workgroup #:	WG573557	**Analyst:**	BKT	**Run Date:**	06/21/2016 15:25
Collect Date:	06/09/2016 13:25	**Dilution:**	1	**File ID:**	NI.062116.152538
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Arsenic, Total	7440-38-2	0.00640		0.00200	0.00100	0.000500
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW26SW-060916	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 21:16
Collect Date:	06/09/2016 13:25	**Dilution:**	10	**File ID:**	NI.061616.211638
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.635		0.0600	0.0300	0.0150
Manganese, Total	7439-96-5	1.70		0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-02	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18CPTMW26SW-060916	**Prep Method:**	7470A	**Prep Date:**	06/14/2016 10:23
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/16/2016 14:15
Workgroup #:	WG573072	**Analyst:**	PDM	**Run Date:**	06/16/2016 15:05
Collect Date:	06/09/2016 13:25	**Dilution:**	1	**File ID:**	M7.061616.150552
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW10-060916	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572737	**Analyst:**	TMB	**Run Date:**	06/15/2016 17:43
Collect Date:	06/09/2016 14:40	**Dilution:**	1	**File ID:**	8M413020
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.796	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	114	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	102	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	MW10-060916	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 16:04
Collect Date:	06/09/2016 14:40	**Dilution:**	1	**File ID:**	15M18416
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	35.0	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW10-060916	**Prep Method:**	6850	**Prep Date:**	06/11/2016 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572350	**Analyst:**	WTD	**Run Date:**	06/12/2016 00:16
Collect Date:	06/09/2016 14:40	**Dilution:**	1	**File ID:**	1LM.LM35317
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.492		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16060616-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW10F-060916	**Prep Method:**	3015	**Prep Date:**	06/15/2016 10:00
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/17/2016 10:37
Workgroup #:	WG572965	**Analyst:**	JYH	**Run Date:**	06/17/2016 12:08
Collect Date:	06/09/2016 14:40	**Dilution:**	1	**File ID:**	T3.061716.120837
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.0804	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	7.72		0.500	0.250	0.125
Iron, Total	7439-89-6	5.73		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	2.22		1.00	0.500	0.250
Potassium, Total	7440-09-7	2.09		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	9.56		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW10F-060916	**Prep Method:**	3015	**Prep Date:**	06/21/2016 07:48
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/21/2016 12:44
Workgroup #:	WG573557	**Analyst:**	BKT	**Run Date:**	06/21/2016 15:28
Collect Date:	06/09/2016 14:40	**Dilution:**	1	**File ID:**	NI.062116.152849
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.0526		0.00600	0.00300	0.00150
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW10F-060916	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 19:54
Collect Date:	06/09/2016 14:40	**Dilution:**	1	**File ID:**	NI.061616.195401
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00100	U	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000376	J	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00283	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00127	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00144	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.00494	J	0.00800	0.00400	0.00200
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW10F-060916	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 21:19
Collect Date:	06/09/2016 14:40	**Dilution:**	10	**File ID:**	NI.061616.211949
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Total	7439-96-5	0.300		0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-04	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW10F-060916	**Prep Method:**	7470A	**Prep Date:**	06/14/2016 10:23
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/16/2016 14:15
Workgroup #:	WG573072	**Analyst:**	PDM	**Run Date:**	06/16/2016 15:08
Collect Date:	06/09/2016 14:40	**Dilution:**	1	**File ID:**	M7.061616.150822
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572737	**Analyst:**	TMB	**Run Date:**	06/15/2016 13:50
Collect Date:	06/09/2016 00:01	**Dilution:**	1	**File ID:**	8M413012
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	111	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	99.8	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW8-060916	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573038	**Analyst:**	FJB	**Run Date:**	06/16/2016 19:52
Collect Date:	06/09/2016 11:00	**Dilution:**	1	**File ID:**	8M413043
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.607	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.592	J	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.867	J	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	247		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	116	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	101	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW26SW-060916	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572737	**Analyst:**	TMB	**Run Date:**	06/15/2016 18:11
Collect Date:	06/09/2016 13:25	**Dilution:**	1	**File ID:**	8M413021
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	7.39	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	117	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	100	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	MW10-060916	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572737	**Analyst:**	TMB	**Run Date:**	06/15/2016 17:43
Collect Date:	06/09/2016 14:40	**Dilution:**	1	**File ID:**	8M413020
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.796	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	114	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	102	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG572737	**Analyst:**	TMB	**Run Date:**	06/15/2016 13:50
Collect Date:	06/09/2016 00:01	**Dilution:**	1	**File ID:**	8M413012
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	111	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	99.8	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051316
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53752

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG568561

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412209	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 08:38
8M412210	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 08:57
8M412211	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 09:29
8M412212	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 09:56
8M412213	WG568561-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/13/16 10:19
8M412214	WG568561-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/13/16 10:51
8M412215	WG568565-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76072	05/13/16 11:36
8M412216	BFB CHECK	NA	1	1	STD76034	05/13/16 12:04
8M412217	BFB CHECK	NA	1	1	STD76034	05/13/16 12:18
8M412218	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 12:36
8M412219	RINSE	NA	1	1		05/13/16 13:00
8M412220	WG568561-02 0.3ug/L STD 8260	NA	1	1	STD76127	05/13/16 13:29
8M412221	WG568561-03 0.4ug/L STD 8260	NA	1	1	STD76127	05/13/16 13:58
8M412222	WG568561-04 1ug/L STD 8260	NA	1	1	STD76127	05/13/16 14:27
8M412223	WG568561-05 2ug/L STD 8260	NA	1	1	STD76127	05/13/16 14:56
8M412224	WG568561-06 5ug/L STD 8260	NA	1	1	STD76127	05/13/16 15:25
8M412225	WG568561-07 20ug/L STD 8260	NA	1	1	STD76127	05/13/16 15:54
8M412226	WG568561-08 50ug/L STD 8260	NA	1	1	STD76127	05/13/16 16:23
8M412227	WG568561-09 100ug/L STD 8260	NA	1	1	STD76127	05/13/16 16:52
8M412228	WG568561-10 200ug/L STD 8260	NA	1	1	STD76127	05/13/16 17:21
8M412229	WG568561-11 300ug/L STD 8260	NA	1	1	STD76127	05/13/16 17:50
8M412230	RINSE	NA	1	1		05/13/16 18:19
8M412231	RINSE	NA	1	1		05/13/16 18:49
8M412232	WG568561-12 50ug/L ALT SRC STD 8260	NA	1	1	STD76109	05/13/16 19:17
8M412233	RINSE	NA	1	1		05/13/16 19:46

Comments

Seq.	Rerun	Dil.	Reason	Analytes
5	X			
File ID: 8M412213				
	Several compounds were low, DNR.			
6				
File ID: 8M412214				

Approved: May 20, 2016

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Instrument Run Log

Instrument:	HPMS8	Dataset:	051316		
Analyst1:	TMB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	23
Method:	624	SOP:	MSV10	Rev:	14
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:	53752				

Internal Standard: STD75899 Surrogate Standard: STD75899

CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG568561

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			Two C compounds failed. DNR. Run a curve.	
7 File ID: 8M412215				
			DNR.	

Approved: May 20, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051716
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76072; STD76127 LCS: STD76109; STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG569079; WG569083

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412319	WG569084-01 50ng BFB STD 8260	NA	1	1	STD76034	05/17/16 08:53
8M412320	WG569084-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/17/16 09:18
8M412321	WG569079-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76072	05/17/16 09:47
8M412322	WG569079-03 50ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 10:16
8M412323	WG569079-04 20ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 10:44
8M412324	WG569079-05 5ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 11:13
8M412325	WG569079-06 200ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 11:42
8M412326	WG569079-07 300ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 12:40
8M412327	WG569079-08 400ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 13:10
8M412328	WG569079-09 500ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 13:39
8M412329	RINSE	NA	1	1		05/17/16 14:08
8M412330	RINSE	NA	1	1		05/17/16 14:37
8M412331	WG569079-10 100ug/L ALT SRC STD 826	NA	1	1	STD75801	05/17/16 15:06
8M412332	WG569259-01 BFB 50ng 8260	NA	1	1	STD76034	05/17/16 18:27
8M412333	WG569259-02 50ug/L CCV 8260	NA	1	1	STD76034	05/17/16 18:53
8M412334	WG569260-01 100ug/L CCV A9	NA	1	1	STD76072	05/17/16 19:22
8M412335	WG569083-01 VBLK0517 BLANK 8260	NA	1	1		05/17/16 19:51
8M412336	WG569083-02 20ug/L LCS 8260	NA	1	1	STD76109	05/17/16 20:20
8M412337	WG569083-03 20ug/L LCS2 8260	NA	1	1	STD76109	05/17/16 20:49
8M412338	WG569083-04 100ug/L LCS A9	NA	1	1	STD75801	05/17/16 21:18
8M412339	WG569083-05 100ug/L LCS2 A9	NA	1	1	STD75801	05/17/16 21:46
8M412340	L16050844-01 TB A 826-A9-SPE	5	1	1		05/17/16 22:16
8M412341	L16050844-07 EB A 826-A9-SPE	5	1	1		05/17/16 22:45
8M412342	L16050844-11 AB A 826-A9-SPE	5	1	1		05/17/16 23:14
8M412343	L16050844-02 A 826-A9-SPE	6	1	1		05/17/16 23:43
8M412344	L16050844-05 A 826-A9-SPE	6	1	1		05/18/16 00:12
8M412345	L16050844-06 A 826-A9-SPE	6	1	1		05/18/16 00:41
8M412346	L16050844-12 A 826-A9-SPE	6	1	1		05/18/16 01:10
8M412347	L16050840-01 A 826-A9-SPE	7	1	1		05/18/16 01:38
8M412348	L16050844-08 A 826-A9-SPE	7	1	1		05/18/16 02:07
8M412349	L16050844-13 A 826-A9-SPE	7	1	1		05/18/16 02:36
8M412350	L16050844-15 A 826-A9-SPE	7	1	1		05/18/16 03:05
8M412351	L16050839-01 A 826-A9-SPE	7	1	1		05/18/16 03:33
8M412352	L16050844-03 2.5X A 826-A9-SPE	7	1	2.5		05/18/16 04:02

Approved: May 20, 2016

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Instrument Run Log

Instrument: HPMS8 Dataset: 051716
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76072; STD76127 LCS: STD76109; STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG569079; WG569083

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412353	L16050844-04 5X A 826-A9-SPE	7	1	5		05/18/16 04:31
8M412354	L16050844-09 5X A 826-A9-SPE	7	1	5		05/18/16 05:01
8M412355	L16050844-10 5X A 826-A9-SPE	7	1	5		05/18/16 05:30
8M412356	L16050844-14 50X A 826-A9-SPE	7	1	50		05/18/16 05:59
8M412357	RINSE	NA	1	1		05/18/16 06:28

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
File ID: 8M412320				
	DNR. Running an a9/foo curve.			
32	X	10	Over Calibration Range	CIS12-DCE
File ID: 8M412350				
40	X	2.5	Analyzed too dilute	
File ID: 8M412353				
	DNR.			
37	X	25	Over Calibration Range	TCE
File ID: 8M412355				
38	X	20	Analyzed too dilute	
File ID: 8M412356				
	DNR.			

Approved: May 20, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 061516
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75370 Surrogate Standard: STD76370
CCV: STD76578 LCS: STD76597 MS/MSD: STD76597

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG572737

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M413001	WG572735-01 50ng BFB STD 8260	NA	1	1	STD76496	06/15/16 08:36
8M413002	WG572735-02 50ug/L CCV STD 8260	NA	1	1	STD76578	06/15/16 09:00
8M413003	WG572735-02 50ug/L CCV STD 8260	NA	1	1	STD76578	06/15/16 09:29
8M413004	WG000000-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76432	06/15/16 09:58
8M413005	WG572737-01 VBLK0615 BLANK STD 826	NA	1	1		06/15/16 10:27
8M413006	WG572737-02 20ug/L LCS STD 8260	NA	1	1	STD75597	06/15/16 10:56
8M413007	WG572737-03 20ug/L LCS2 STD 8260	NA	1	1	STD75597	06/15/16 11:25
8M413008	L16060540-14 B 10X 826-SPE D1	<2	1	10		06/15/16 11:54
8M413009	L16060656-08 A TB 826-BETX	<2	1	1		06/15/16 12:23
8M413010	L16060651-02 A TB 826-BETX	<2	1	1		06/15/16 12:52
8M413011	L16060651-01 A EB 826-BETX	<2	1	1		06/15/16 13:22
8M413012	L16060616-05 A TB 826-LOW	<2	1	1		06/15/16 13:50
8M413013	L16060615-05 A TB 826-LOW	<2	1	1		06/15/16 14:20
8M413014	L16060669-11 B TB 826-VAP2	<2	1	1		06/15/16 14:49
8M413015	L16060760-01 A TB 826-SPE	5	1	1		06/15/16 15:18
8M413016	L16060669-10 B BB 826-VAP2	5	1	1		06/15/16 15:47
8M413017	L16060669-09 B 826-VAP2	6	1	1		06/15/16 16:16
8M413018	L16060540-15 B 826-SPE	<2	1	1		06/15/16 16:45
8M413019	L16060760-02 A 826-SPE	6	1	1		06/15/16 17:14
8M413020	L16060616-03 A 826-LOW	<2	1	1		06/15/16 17:43
8M413021	L16060616-02 A 826-LOW	<2	1	1		06/15/16 18:11
8M413022	L16060615-04 A 826-LOW	<2	1	1		06/15/16 18:40
8M413023	L16060615-03 A 826-LOW	<2	1	1		06/15/16 19:09
8M413024	L16060615-02 A 826-LOW	<2	1	1		06/15/16 19:38
8M413025	L16060615-01 A 826-LOW	<2	1	1		06/15/16 20:07
8M413026	L16060616-01 A 2.5X 826-LOW	<2	1	2.5		06/15/16 20:36
8M413027	CCV	NA	1	1		06/15/16 21:05
8M413028	RINSE	NA	1	1		06/15/16 21:34
8M413029	RINSE	NA	1	1		06/15/16 22:03
8M413030	RINSE	NA	1	1		06/15/16 22:32

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Approved: June 20, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS8	Dataset:	061516		
Analyst1:	ADC	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	23
Method:	OVAP	SOP:	MSV01/PAT01	Rev:	0
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:					

Internal Standard: STD75370 Surrogate Standard: STD76370

CCV: STD76578 LCS: STD76597 MS/MSD: STD76597

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG572737

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
26	X		Analyzed too dilute	
File ID: 8M413026				
L16060616-01 DNR RR STR.				

Approved: June 20, 2016

Sarah Vandenberg

Microbac

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 061616
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75370 Surrogate Standard: STD76370
CCV: STD76578 LCS: STD76597 MS/MSD: STD76597

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG573038

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M413031	WG573037-01 BFB 50ng 8260	NA	1	1	STD76496	06/16/16 14:02
8M413032	WG573037-02 50ug/L CCV 8260	NA	1	1	STD76578	06/16/16 14:25
8M413033	WG573XXX-01 100ug/L CCV A9	NA	1	1	STD7XXXX	06/16/16 14:54
8M413034	WG573038-01 BLANK 6/16 8260	NA	1	1		06/16/16 15:23
8M413035	WG573038-02 20ug/L LCS 8260	NA	1	1	STD76597	06/16/16 15:52
8M413036	WG573038-03 20ug/L LCS2 8260	NA	1	1	STD76597	06/16/16 16:21
8M413037	L16060637-04 TB A 826-SPE	<2	1	1		06/16/16 16:58
8M413038	L16060756-05 TB A 826-SPE	<2	1	1		06/16/16 17:27
8M413039	L16060765-01 TB A 826-SPE	<2	1	1		06/16/16 17:56
8M413040	L16060730-04 TB A 826-LOW	<2	1	1		06/16/16 18:25
8M413041	L16060732-03 TB A 826-LOW	<2	1	1		06/16/16 18:54
8M413042	L16060823-05 TB A 826-LOW	<2	1	1		06/16/16 19:23
8M413043	L16060616-01 B 826-LOW	<2	1	1		06/16/16 19:52
8M413044	L16060732-01 A 826-LOW	<2	1	1		06/16/16 20:21
8M413045	L16060823-01 A 826-LOW	<2	1	1		06/16/16 20:50
8M413046	L16060823-03 A 826-LOW	<2	1	1		06/16/16 21:19
8M413047	L16060823-04 A 826-LOW	<2	1	1		06/16/16 21:48
8M413048	L16060730-03 A 826-LOW	<2	1	1		06/16/16 22:17
8M413049	L16060765-02 A 826-SPE	<2	1	1		06/16/16 22:46
8M413050	L16060765-03 A 826-SPE	<2	1	1		06/16/16 23:15
8M413051	L16060765-04 A 826-SPE	<2	1	1		06/16/16 23:43
8M413052	L16060730-01 A 826-SPE	<2	1	1		06/17/16 00:12
8M413053	L16060730-02 A 826-SPE	<2	1	1		06/17/16 00:41
8M413054	L16060637-03 A 826-SPE	<2	1	1		06/17/16 01:10
8M413055	L16060756-04 A 826-SPE	<2	1	1		06/17/16 01:38
8M413056	RINSE	NA	1	1		06/17/16 02:07
8M413057	RINSE	NA	1	1		06/17/16 02:37
8M413058	RINSE	NA	1	1		06/17/16 03:05

Comments

Seq.	Rerun	Dil.	Reason	Analytes
14	X		Carry-over contamination	
File ID: 8M413044				

Approved: June 23, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 061616
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75370 Surrogate Standard: STD76370
CCV: STD76578 LCS: STD76597 MS/MSD: STD76597

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG573038

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
	L16060732-01			
15 File ID: 8M413045				
	L16060823-01 high surrogate but sample is ND.			
17 File ID: 8M413047	X		Surrogate standard failure	
	L16060823-04			
18 File ID: 8M413048	X		Surrogate standard failure	
	L16060730-03			
24 File ID: 8M413054	X	20	Over Calibration Range	CFORM, CTET, TCE
	L16060637-03			
25 File ID: 8M413055	X	20	Over Calibration Range	CB
	L16060756-04			

Approved: June 23, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Data Checklist

Date: 13-MAY-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75126
Analytical Workgroups: WG568561

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	TMB
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
17-MAY-2016
Tiffany Bailey

Secondary Reviewer:
20-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2016 11:18:36

Microbac Laboratories Inc.

Data Checklist

Date: 17-MAY-2016
Analyst: TMB
Analyst: FJB
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75174
Analytical Workgroups: WG569079; WG569083

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
19-MAY-2016
Tiffany Bailey

Secondary Reviewer:
20-MAY-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2016 11:05:37

Microbac Laboratories Inc.

Data Checklist

Date: 15-JUN-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75739
Analytical Workgroups: WG572737

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
16-JUN-2016

Secondary Reviewer:
20-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-20-2016 13:15:59

Microbac Laboratories Inc.

Data Checklist

Date: 16-JUN-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75860
Analytical Workgroups: WG573038

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
22-JUN-2016

Secondary Reviewer:
23-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-23-2016 13:34:00

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG572737

Login Number: L16060616

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW26SW-060916	02	06/09/16					06/15/2016	6.2	14		06/15/16	6.2	14	
MW10-060916	03	06/09/16					06/15/2016	6.1	14		06/15/16	6.1	14	
TRIP BLANK	05	06/09/16					06/15/2016	6.6	14		06/15/16	6.6	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4810864
Report generated 06/23/2016 13:32

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG573038

Login Number: L16060616

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW8-060916	01	06/09/16					06/16/2016	7.4	14		06/16/16	7.4	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4810864
Report generated 06/23/2016 13:32

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060616
Instrument Id: HPMS8
Workgroup (AAB#): WG572737

Method: 8260
CAL ID: HPMS8 - 13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16060616-02	1.00	01	117	112	100	105
L16060616-03	1.00	01	114	112	102	104
L16060616-05	1.00	01	111	110	99.8	105
WG572737-01	1.00	01	110	110	97.6	104
WG572737-02	1.00	01	111	107	100	104
WG572737-03	1.00	01	111	110	102	104

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4810872
Report generated: 06/23/2016 13:32

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060616
Instrument Id: HPMS8
Workgroup (AAB#): WG573038

Method: 8260
CAL ID: HPMS8-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16060616-01	1.00	01	116	110	101	105
WG573038-01	1.00	01	114	109	102	106
WG573038-02	1.00	01	118	110	99.2	104
WG573038-03	1.00	01	114	108	98.9	104

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4810872
Report generated: 06/23/2016 13:32

METHOD BLANK SUMMARY

Login Number: L16060616
Blank File ID: 8M413005
Prep Date: 06/15/16 10:27
Analyzed Date: 06/15/16 10:27
Analyst: TMB

Work Group: WG572737
Blank Sample ID: WG572737-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572737-02	8M413006	06/15/16 10:56	01
LCS2	WG572737-03	8M413007	06/15/16 11:25	01
TRIP BLANK	L16060616-05	8M413012	06/15/16 13:50	01
MW10-060916	L16060616-03	8M413020	06/15/16 17:43	01
18CPTMW26SW-060916	L16060616-02	8M413021	06/15/16 18:11	01

Report Name: BLANK_SUMMARY
PDF File ID: 4810865
Report generated 06/23/2016 13:32

METHOD BLANK SUMMARY

Login Number: L16060616
Blank File ID: 8M413034
Prep Date: 06/16/16 15:23
Analyzed Date: 06/16/16 15:23
Analyst: FJB

Work Group: WG573038
Blank Sample ID: WG573038-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573038-02	8M413035	06/16/16 15:52	01
LCS2	WG573038-03	8M413036	06/16/16 16:21	01
MW8-060916	L16060616-01	8M413043	06/16/16 19:52	01

Report Name: BLANK_SUMMARY
PDF File ID: 4810865
Report generated 06/23/2016 13:32

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16060616 Prep Date: 06/15/16 10:27 Sample ID: WG572737-01
Instrument ID: HPMS8 Run Date: 06/15/16 10:27 Prep Method: 5030B/5030C/503
File ID: 8M413005 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG572737 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 4810866
23-JUN-2016 13:32

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060616 Prep Date: 06/15/16 10:27 Sample ID: WG572737-01
Instrument ID: HPMS8 Run Date: 06/15/16 10:27 Prep Method: 5030B/5030C/503
File ID: 8M413005 Analyst: TMB Method: 8260B
Workgroup (AAB#): WG572737 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	110	85 - 115	PASS
1,2-Dichloroethane-d4	110	70 - 120	PASS
Toluene-d8	104	85 - 120	PASS
4-Bromofluorobenzene	97.6	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4810866
23-JUN-2016 13:32

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16060616 Prep Date: 06/16/16 15:23 Sample ID: WG573038-01
Instrument ID: HPMS8 Run Date: 06/16/16 15:23 Prep Method: 5030B/5030C/503
File ID: 8M413034 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573038 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4810866
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Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060616 Prep Date: 06/16/16 15:23 Sample ID: WG573038-01
Instrument ID: HPMS8 Run Date: 06/16/16 15:23 Prep Method: 5030B/5030C/503
File ID: 8M413034 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573038 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	109	85 - 115	PASS
1,2-Dichloroethane-d4	114	70 - 120	PASS
Toluene-d8	106	85 - 120	PASS
4-Bromofluorobenzene	102	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4810866
23-JUN-2016 13:32

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060616 Analyst: FJB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG573038 Units: ug/L
QC Key: DOD4 Lot #: STD76597

Sample ID: WG573038-02 LCS File ID: 8M413035 Run Date: 06/16/2016 15:52
Sample ID: WG573038-03 LCS2 File ID: 8M413036 Run Date: 06/16/2016 16:21

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	20.8	104	20.0	20.9	105	0.576	80 - 130	30	
1,1,1-Trichloroethane	20.0	22.5	112	20.0	23.2	116	3.45	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	17.7	88.5	20.0	18.1	90.5	2.29	65 - 130	30	
1,1,2-Trichloroethane	20.0	19.6	97.9	20.0	19.6	98.1	0.148	75 - 125	30	
1,1-Dichloroethane	20.0	19.5	97.5	20.0	19.9	99.5	2.06	70 - 135	30	
1,1-Dichloroethene	20.0	18.9	94.6	20.0	19.6	98.2	3.75	70 - 130	30	
1,1-Dichloropropene	20.0	20.6	103	20.0	21.0	105	2.03	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	19.0	94.8	20.0	19.4	96.8	2.05	55 - 140	30	
1,2,3-Trichloropropane	20.0	19.8	99.1	20.0	19.6	97.8	1.36	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	19.4	96.9	20.0	20.1	100	3.60	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	19.9	99.5	20.0	20.3	102	2.19	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	19.7	98.7	20.0	21.4	107	7.93	50 - 130	30	
1,2-Dibromoethane	20.0	20.1	100	20.0	19.9	99.3	1.19	80 - 120	30	
1,2-Dichlorobenzene	20.0	19.7	98.6	20.0	20.3	102	3.14	70 - 120	30	
1,2-Dichloroethane	20.0	23.3	117	20.0	23.5	118	0.816	70 - 130	30	
1,2-Dichloropropane	20.0	20.4	102	20.0	21.0	105	3.16	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	20.3	102	20.0	20.9	105	3.05	75 - 130	30	
1,3-Dichlorobenzene	20.0	20.0	99.9	20.0	20.6	103	3.29	75 - 125	30	
1,3-Dichloropropane	20.0	20.7	103	20.0	21.0	105	1.29	75 - 125	30	
1,4-Dichlorobenzene	20.0	19.7	98.6	20.0	20.4	102	3.14	75 - 125	30	
2,2-Dichloropropane	20.0	23.0	115	20.0	23.5	118	2.50	70 - 135	30	
2-Butanone	20.0	20.2	101	20.0	20.8	104	3.17	30 - 150	30	
2-Chlorotoluene	20.0	20.3	102	20.0	20.6	103	1.51	75 - 125	30	
2-Hexanone	20.0	18.6	93.0	20.0	17.8	89.1	4.24	55 - 130	30	
4-Chlorotoluene	20.0	19.7	98.5	20.0	20.0	100	1.77	75 - 130	30	
4-Methyl-2-pentanone	20.0	19.8	98.8	20.0	20.7	103	4.57	60 - 135	30	
Acetone	20.0	21.8	109	20.0	24.1	121	10.2	40 - 140	30	
Benzene	20.0	20.4	102	20.0	21.1	105	3.43	80 - 120	30	
Bromobenzene	20.0	19.2	95.9	20.0	19.7	98.4	2.64	75 - 125	30	
Bromochloromethane	20.0	20.7	103	20.0	20.6	103	0.508	65 - 130	30	
Bromodichloromethane	20.0	21.6	108	20.0	22.5	112	4.14	75 - 120	30	
Bromoform	20.0	20.0	99.8	20.0	20.0	99.9	0.134	70 - 130	30	
Bromomethane	20.0	14.0	70.2	20.0	15.7	78.3	11.0	30 - 145	30	
Carbon disulfide	20.0	18.1	90.6	20.0	18.6	92.9	2.55	35 - 160	30	
Carbon tetrachloride	20.0	22.5	112	20.0	23.1	115	2.71	65 - 140	30	
Chlorobenzene	20.0	20.4	102	20.0	20.7	104	1.62	80 - 120	30	
Chloroethane	20.0	20.4	102	20.0	21.7	109	6.06	60 - 135	30	
Chloroform	20.0	21.2	106	20.0	21.7	108	2.28	65 - 135	30	
Chloromethane	20.0	18.9	94.7	20.0	20.2	101	6.46	40 - 125	30	
cis-1,2-Dichloroethene	20.0	20.5	102	20.0	21.2	106	3.58	70 - 125	30	

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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060616 Analyst: FJB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG573038 Units: ug/L
QC Key: DOD4 Lot #: STD76597

Sample ID: WG573038-02 LCS File ID: 8M413035 Run Date: 06/16/2016 15:52
Sample ID: WG573038-03 LCS2 File ID: 8M413036 Run Date: 06/16/2016 16:21

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	23.1	115	20.0	23.5	117	1.55	70 - 130	30	
Chlorodibromomethane	20.0	20.5	102	20.0	20.8	104	1.79	60 - 135	30	
Dibromomethane	20.0	19.9	99.3	20.0	19.9	99.6	0.358	75 - 125	30	
Dichlorodifluoromethane	20.0	20.8	104	20.0	21.8	109	4.81	30 - 155	30	
Ethylbenzene	20.0	19.9	99.3	20.0	19.9	99.5	0.215	75 - 125	30	
Hexachlorobutadiene	20.0	21.3	106	20.0	21.7	108	1.84	50 - 140	30	
Isopropylbenzene	20.0	21.6	108	20.0	22.0	110	1.89	75 - 125	30	
m-,p-Xylene	40.0	40.9	102	40.0	41.7	104	2.14	75 - 130	30	
Methylene chloride	20.0	19.3	96.4	20.0	19.9	99.5	3.13	55 - 140	30	
n-Butylbenzene	20.0	19.4	97.2	20.0	19.8	99.2	2.07	70 - 135	30	
n-Propylbenzene	20.0	20.4	102	20.0	21.0	105	2.87	70 - 130	30	
Naphthalene	20.0	17.4	87.0	20.0	18.1	90.5	3.97	55 - 140	30	
o-Xylene	20.0	21.1	106	20.0	21.4	107	1.39	80 - 120	30	
p-Isopropyltoluene	20.0	20.0	100	20.0	20.9	104	4.05	75 - 130	30	
sec-Butylbenzene	20.0	20.2	101	20.0	20.7	104	2.34	70 - 125	30	
Styrene	20.0	20.7	103	20.0	21.1	106	2.22	65 - 135	30	
tert-Butylbenzene	20.0	19.7	98.5	20.0	20.4	102	3.70	70 - 130	30	
Tetrachloroethene	20.0	20.1	101	20.0	20.5	102	1.70	45 - 150	30	
Toluene	20.0	19.7	98.6	20.0	20.1	101	1.94	75 - 120	30	
trans-1,2-Dichloroethene	20.0	20.1	100	20.0	20.4	102	1.57	60 - 140	30	
trans-1,3-Dichloropropene	20.0	20.9	104	20.0	21.1	105	0.925	55 - 140	30	
Trichloroethene	20.0	21.8	109	20.0	22.5	112	3.24	70 - 125	30	
Trichlorofluoromethane	20.0	22.3	111	20.0	22.8	114	2.49	60 - 145	30	
Vinyl chloride	20.0	23.0	115	20.0	24.1	121	4.97	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	118	114	70 - 120	PASS
Dibromofluoromethane	110	108	85 - 115	PASS
4-Bromofluorobenzene	99.2	98.9	75 - 120	PASS
Toluene-d8	104	104	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060616 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG572737 Units: ug/L
QC Key: DOD4 Lot #: STD76597

Sample ID: WG572737-02 LCS File ID: 8M413006 Run Date: 06/15/2016 10:56
Sample ID: WG572737-03 LCS2 File ID: 8M413007 Run Date: 06/15/2016 11:25

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	21.1	106	20.0	20.8	104	1.33	80 - 130	30	
1,1,1-Trichloroethane	20.0	22.3	112	20.0	22.2	111	0.500	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	18.1	90.5	20.0	18.8	94.0	3.89	65 - 130	30	
1,1,2-Trichloroethane	20.0	20.2	101	20.0	20.0	100	0.857	75 - 125	30	
1,1-Dichloroethane	20.0	19.9	99.4	20.0	20.2	101	1.73	70 - 135	30	
1,1-Dichloroethene	20.0	19.6	97.8	20.0	20.0	99.9	2.07	70 - 130	30	
1,1-Dichloropropene	20.0	20.1	101	20.0	20.7	104	3.16	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	19.0	95.1	20.0	19.3	96.5	1.40	55 - 140	30	
1,2,3-Trichloropropane	20.0	20.5	103	20.0	20.1	100	2.21	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	19.8	98.9	20.0	20.0	100	1.32	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	20.2	101	20.0	20.0	99.9	1.28	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	19.7	98.4	20.0	19.4	97.0	1.49	50 - 130	30	
1,2-Dibromoethane	20.0	20.4	102	20.0	20.3	102	0.581	80 - 120	30	
1,2-Dichlorobenzene	20.0	20.3	102	20.0	20.7	104	1.97	70 - 120	30	
1,2-Dichloroethane	20.0	22.4	112	20.0	23.6	118	5.32	70 - 130	30	
1,2-Dichloropropane	20.0	20.7	104	20.0	21.0	105	1.42	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	20.8	104	20.0	20.8	104	0.0710	75 - 130	30	
1,3-Dichlorobenzene	20.0	20.6	103	20.0	20.6	103	0.116	75 - 125	30	
1,3-Dichloropropane	20.0	21.9	109	20.0	21.5	107	2.01	75 - 125	30	
1,4-Dichlorobenzene	20.0	20.6	103	20.0	20.5	103	0.231	75 - 125	30	
2,2-Dichloropropane	20.0	22.9	114	20.0	23.2	116	1.44	70 - 135	30	
2-Butanone	20.0	20.9	104	20.0	22.3	112	6.63	30 - 150	30	
2-Chlorotoluene	20.0	18.5	92.3	20.0	18.6	92.9	0.574	75 - 125	30	
2-Hexanone	20.0	18.6	92.8	20.0	19.1	95.7	3.07	55 - 130	30	
4-Chlorotoluene	20.0	22.4	112	20.0	22.4	112	0.398	75 - 130	30	
4-Methyl-2-pentanone	20.0	19.8	98.8	20.0	20.3	102	2.82	60 - 135	30	
Acetone	20.0	22.4	112	20.0	24.7	123	9.61	40 - 140	30	
Benzene	20.0	20.7	103	20.0	20.9	105	1.27	80 - 120	30	
Bromobenzene	20.0	19.7	98.7	20.0	20.1	101	1.82	75 - 125	30	
Bromochloromethane	20.0	20.7	104	20.0	21.1	105	1.74	65 - 130	30	
Bromodichloromethane	20.0	21.8	109	20.0	22.3	111	2.31	75 - 120	30	
Bromoform	20.0	20.1	100	20.0	20.2	101	0.331	70 - 130	30	
Bromomethane	20.0	13.9	69.7	20.0	14.9	74.4	6.59	30 - 145	30	
Carbon disulfide	20.0	18.3	91.3	20.0	18.5	92.6	1.44	35 - 160	30	
Carbon tetrachloride	20.0	21.9	109	20.0	21.7	108	0.914	65 - 140	30	
Chlorobenzene	20.0	21.0	105	20.0	20.6	103	1.91	80 - 120	30	
Chloroethane	20.0	21.1	105	20.0	21.5	108	2.22	60 - 135	30	
Chloroform	20.0	21.4	107	20.0	21.3	107	0.454	65 - 135	30	
Chloromethane	20.0	20.3	102	20.0	20.7	104	2.04	40 - 125	30	
cis-1,2-Dichloroethene	20.0	21.2	106	20.0	20.9	104	1.68	70 - 125	30	

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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060616 Analyst: TMB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG572737 Units: ug/L
QC Key: DOD4 Lot #: STD76597

Sample ID: WG572737-02 LCS File ID: 8M413006 Run Date: 06/15/2016 10:56
Sample ID: WG572737-03 LCS2 File ID: 8M413007 Run Date: 06/15/2016 11:25

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	23.4	117	20.0	23.9	119	2.17	70 - 130	30	
Chlorodibromomethane	20.0	21.0	105	20.0	20.9	105	0.266	60 - 135	30	
Dibromomethane	20.0	19.5	97.6	20.0	19.5	97.3	0.352	75 - 125	30	
Dichlorodifluoromethane	20.0	21.2	106	20.0	21.6	108	1.62	30 - 155	30	
Ethylbenzene	20.0	19.9	99.5	20.0	19.9	99.5	0.0185	75 - 125	30	
Hexachlorobutadiene	20.0	21.0	105	20.0	21.1	105	0.463	50 - 140	30	
Isopropylbenzene	20.0	21.7	109	20.0	21.7	109	0.0757	75 - 125	30	
m-,p-Xylene	40.0	42.0	105	40.0	41.3	103	1.56	75 - 130	30	
Methylene chloride	20.0	19.9	99.3	20.0	20.7	104	4.32	55 - 140	30	
n-Butylbenzene	20.0	19.4	97.1	20.0	19.7	98.6	1.60	70 - 135	30	
n-Propylbenzene	20.0	20.8	104	20.0	21.0	105	0.657	70 - 130	30	
Naphthalene	20.0	17.4	86.8	20.0	17.8	89.0	2.56	55 - 140	30	
o-Xylene	20.0	21.3	107	20.0	20.8	104	2.31	80 - 120	30	
p-Isopropyltoluene	20.0	20.3	102	20.0	20.4	102	0.386	75 - 130	30	
sec-Butylbenzene	20.0	20.5	103	20.0	20.8	104	1.32	70 - 125	30	
Styrene	20.0	21.1	105	20.0	21.1	105	0.0674	65 - 135	30	
tert-Butylbenzene	20.0	19.9	99.5	20.0	20.0	100	0.470	70 - 130	30	
Tetrachloroethene	20.0	20.8	104	20.0	20.6	103	1.34	45 - 150	30	
Toluene	20.0	20.2	101	20.0	20.3	101	0.147	75 - 120	30	
trans-1,2-Dichloroethene	20.0	20.1	100	20.0	20.9	104	3.89	60 - 140	30	
trans-1,3-Dichloropropene	20.0	21.1	106	20.0	20.8	104	1.47	55 - 140	30	
Trichloroethene	20.0	21.9	109	20.0	22.4	112	2.49	70 - 125	30	
Trichlorofluoromethane	20.0	21.1	105	20.0	21.6	108	2.45	60 - 145	30	
Vinyl chloride	20.0	23.1	115	20.0	23.4	117	1.48	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	111	111	70 - 120	PASS
Dibromofluoromethane	107	110	85 - 115	PASS
4-Bromofluorobenzene	100	102	75 - 120	PASS
Toluene-d8	104	104	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
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Report generated: 06/23/2016 13:32

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060616
Instrument: HPMS8
Analyst: TMB
Workgroup: WG568561

Tune ID: WG568561-01
Run Date: 05/13/2016
Run Time: 12:36
File ID: 8M412218
Cal ID: HPMS8 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	16.7	6575	PASS
75.0	95.0	30.0	60.0	51.3	20171	PASS
95.0	95.0	100	100	100	39312	PASS
96.0	95.0	5.00	9.00	6.74	2649	PASS
173	174	0	2.00	0.363	122	PASS
174	95.0	50.0	100	85.5	33616	PASS
175	174	5.00	9.00	8.17	2746	PASS
176	174	95.0	101	99.2	33360	PASS
177	176	5.00	9.00	6.80	2267	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG568561-02	STD	01	05/13/2016 13:29	
WG568561-03	STD	01	05/13/2016 13:58	
WG568561-04	STD	01	05/13/2016 14:27	
WG568561-05	STD	01	05/13/2016 14:56	
WG568561-06	STD	01	05/13/2016 15:25	
WG568561-07	STD	01	05/13/2016 15:54	
WG568561-08	STD-CCV	01	05/13/2016 16:23	
WG568561-09	STD	01	05/13/2016 16:52	
WG568561-10	STD	01	05/13/2016 17:21	
WG568561-11	STD	01	05/13/2016 17:50	
WG568561-12	SSCV	01	05/13/2016 19:17	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4810869
Report generated 06/23/2016 13:32

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060616
Instrument: HPMS8
Analyst: TMB
Workgroup: WG569084

Tune ID: WG569084-01
Run Date: 05/17/2016
Run Time: 08:53
File ID: 8M412319
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.1	6316	PASS
75.0	95.0	30.0	60.0	54.7	18130	PASS
95.0	95.0	100	100	100	33138	PASS
96.0	95.0	5.00	9.00	6.76	2241	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	72.2	23934	PASS
175	174	5.00	9.00	7.88	1886	PASS
176	174	95.0	101	96.8	23159	PASS
177	176	5.00	9.00	7.15	1655	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG569079-01	STD-CCV	01	05/17/2016 09:47	
WG569079-03	STD	01	05/17/2016 10:16	
WG569079-04	STD	01	05/17/2016 10:44	
WG569079-05	STD	01	05/17/2016 11:13	
WG569079-06	STD	01	05/17/2016 11:42	
WG569079-07	STD	01	05/17/2016 12:40	
WG569079-08	STD	01	05/17/2016 13:10	
WG569079-09	STD	01	05/17/2016 13:39	
WG569079-10	SSCV	01	05/17/2016 15:06	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4810869
Report generated 06/23/2016 13:32

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060616
Instrument: HPMS8
Analyst: TMB
Workgroup: WG572735

Tune ID: WG572735-01
Run Date: 06/15/2016
Run Time: 08:36
File ID: 8M413001
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	18.6	9690	PASS
75.0	95.0	30.0	60.0	55.4	28818	PASS
95.0	95.0	100	100	100	52034	PASS
96.0	95.0	5.00	9.00	6.36	3311	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	75.4	39229	PASS
175	174	5.00	9.00	8.10	3176	PASS
176	174	95.0	101	96.0	37669	PASS
177	176	5.00	9.00	6.36	2397	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG572735-02	CCV	01	06/15/2016 09:29	
WG572737-01	BLANK	01	06/15/2016 10:27	
WG572737-02	LCS	01	06/15/2016 10:56	
WG572737-03	LCS2	01	06/15/2016 11:25	
L16060616-05	TRIP BLANK	01	06/15/2016 13:50	
L16060616-03	MW10-060916	01	06/15/2016 17:43	
L16060616-02	18CPTMW26SW-060916	01	06/15/2016 18:11	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4810869
Report generated 06/23/2016 13:32

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060616
Instrument: HPMS8
Analyst: FJB
Workgroup: WG573037

Tune ID: WG573037-01
Run Date: 06/16/2016
Run Time: 14:02
File ID: 8M413031
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.9	6352	PASS
75.0	95.0	30.0	60.0	57.2	18249	PASS
95.0	95.0	100	100	100	31890	PASS
96.0	95.0	5.00	9.00	7.42	2366	PASS
173	174	0	2.00	1.50	352	PASS
174	95.0	50.0	100	73.7	23499	PASS
175	174	5.00	9.00	7.96	1870	PASS
176	174	95.0	101	97.3	22869	PASS
177	176	5.00	9.00	6.73	1538	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573037-02	CCV	01	06/16/2016 14:25	
WG573038-01	BLANK	01	06/16/2016 15:23	
WG573038-02	LCS	01	06/16/2016 15:52	
WG573038-03	LCS2	01	06/16/2016 16:21	
L16060616-01	MW8-060916	01	06/16/2016 19:52	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4810869
Report generated 06/23/2016 13:32

Calibration Table Report
Method: 8260WT.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Calibration: Sat May 14 18:08:06 2016
Curve: WG568561
Calibration Files

	Compound	0.3 8M412220.D	0.4 8M412221.D	1 8M412222.D	2 8M412223.D	5 8M412224.D	20 8M412225.D	50 8M412226.D	100 8M412227.D	200 8M412228.D	300 8M412229.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane		0.427	0.390	0.397	0.364	0.468	0.439	0.452	0.427	0.408	0.419	7.751		
P	Chloromethane			0.264	0.257	0.223	0.253	0.240	0.240	0.239	0.241	0.245	5.336		
C	Vinyl Chloride		0.274	0.296	0.297	0.277	0.299	0.292	0.299	0.292	0.288	0.290	3.191		
T	1,3-Butadiene				0.218	0.208	0.242	0.251	0.277	0.254	0.254	0.243	9.644		
T	Bromomethane			0.129	0.133	0.127	0.162	0.167	0.187	0.205	0.212	0.165	20.449		1.000
T	Chloroethane		0.173	0.157	0.153	0.143	0.164	0.157	0.163	0.164	0.164	0.160	5.354		
T	Trichlorofluoromethane		0.544	0.538	0.559	0.506	0.570	0.538	0.551	0.531	0.525	0.540	3.520		
T	Diethyl ether			0.130	0.138	0.123	0.132	0.125	0.128		0.127	0.129	3.866		
T	Isoprene		0.335	0.351	0.334	0.293	0.334	0.320	0.334	0.322	0.329	0.328	4.867		
T	Acrolein				0.012	0.010	0.010	0.011	0.012		0.014	0.012	12.987		
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.256	0.269	0.240	0.260	0.249	0.257	0.251	0.250	0.254	3.397		
T	Acetone					0.023	0.030	0.029	0.030	0.028	0.028	0.028	9.132		
C	1,1-Dichloroethene		0.424	0.407	0.406	0.387	0.416	0.398	0.409	0.400	0.393	0.404	2.830		
T	Tert-Butyl Alcohol				0.010	0.009	0.009	0.009	0.009		0.009	0.009	2.872		
T	Dimethyl Sulfide		0.133	0.142	0.152	0.137	0.145	0.142	0.151	0.147	0.151	0.145	4.534		
T	Iodomethane				0.019	0.024	0.066	0.101	0.129	0.135	0.131	0.087	58.244		0.998
T	Methyl acetate					0.075	0.076	0.074	0.078	0.076	0.078	0.076	2.221		
T	Methylene Chloride			0.274	0.265	0.244	0.263	0.250	0.255	0.254	0.252	0.257	3.686		
T	Carbon Disulfide			0.888	0.922	0.801	0.873	0.816	0.854	0.813	0.802	0.846	5.346		
T	Acrylonitrile			0.027	0.035	0.033	0.038	0.038	0.039		0.044	0.036	14.671		
T	Methyl Tert Butyl Ether			0.534	0.543	0.521	0.586	0.579	0.585	0.560	0.546	0.557	4.455		
T	trans-1,2-Dichloroethene		0.389	0.395	0.364	0.352	0.381	0.367	0.372	0.364	0.358	0.371	3.858		
T	n-Hexane					0.265	0.280	0.270	0.286	0.275	0.279	0.276	2.732		
T	Diisopropyl ether			0.600	0.607	0.548	0.588	0.572	0.571		0.567	0.579	3.559		
T	Vinyl Acetate				0.256	0.243	0.270	0.275	0.266	0.271	0.275	0.265	4.509		
P	1,1-Dichloroethane		0.441	0.463	0.486	0.434	0.488	0.464	0.470	0.459	0.447	0.461	4.012		
T	Ethyl-Tert-Butyl ether			0.616	0.645	0.590	0.641	0.628	0.619		0.603	0.620	3.188		
T	2-Butanone					0.035	0.042	0.043	0.045	0.041	0.043	0.041	8.268		
T	Propionitrile			0.010	0.012	0.012	0.013	0.012	0.013		0.013	0.012	8.354		
T	2,2-Dichloropropane		0.471	0.462	0.520	0.476	0.503	0.494	0.497	0.483	0.470	0.486	3.839		
T	cis-1,2-Dichloroethene		0.299	0.298	0.291	0.267	0.295	0.282	0.289	0.283	0.277	0.287	3.685		
C	Chloroform	0.563	0.567	0.581	0.536	0.509	0.566	0.543	0.546	0.529	0.506	0.545	4.619		
T	1-Bromopropane			0.034	0.040	0.040	0.043	0.041	0.043	0.043	0.044	0.041	7.649		
T	Bromochloromethane		0.131	0.164	0.147	0.137	0.154	0.148	0.151	0.148	0.145	0.147	6.598		
T	Tetrahydrofuran			0.034	0.028	0.025	0.026	0.026	0.026		0.026	0.027	11.724		
S	Dibromofluoromethane			0.249	0.261	0.257	0.280	0.271	0.284	0.271	0.275	0.269	4.465		
T	1,1,1-Trichloroethane		0.492	0.537	0.515	0.496	0.545	0.525	0.533	0.515	0.499	0.517	3.660		
T	Cyclohexane			0.373	0.369	0.335	0.359	0.344	0.366	0.356	0.364	0.358	3.619		
T	1,1-Dichloropropene			0.414	0.399	0.369	0.403	0.395	0.399	0.392	0.382	0.394	3.488		
T	Tert-Amyl-Methyl ether			0.567	0.587	0.534	0.576	0.568	0.561		0.549	0.563	3.077		
T	Carbon Tetrachloride		0.444	0.456	0.462	0.441	0.481	0.465	0.474	0.462	0.448	0.4594	2.92173		
S	1,2-Dichloroethane-d4			0.241	0.309	0.276	0.312	0.295	0.301	0.284	0.286	0.288	7.93644		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.347	0.335	0.354	0.336	0.371	0.36	0.364	0.349	0.338	0.3505	3.65503		
T	Benzene		1.128	1.084	1.071	0.977	1.085	1.033	1.019	0.963	0.883	1.0269	7.39343		
T	Trichloroethene		0.285	0.275	0.276	0.251	0.283	0.273	0.279	0.273	0.27	0.2739	3.66126		
T	Methylcyclohexane					0.396	0.426	0.408	0.429	0.416	0.422	0.4161	2.94153		
C	1,2-Dichloropropane		0.239	0.222	0.233	0.207	0.238	0.226	0.233	0.231	0.229	0.2286	4.30096		
T	Bromodichloromethane		0.369	0.382	0.412	0.385	0.426	0.421	0.417	0.41	0.395	0.4018	4.93305		
T	1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.0011	14.5817		
T	Dibromomethane		0.141	0.13	0.137	0.128	0.141	0.134	0.137	0.136	0.133	0.1353	3.26799		
T	2-Chloroethyl Vinyl Ether				0.1	0.084	0.103	0.104	0.103	0.095	0.098	0.0983	7.09792		
T	4-Methyl-2-Pentanone					0.033	0.042	0.042	0.043	0.04	0.041	0.0401	8.66859		
T	cis-1,3-Dichloropropene		0.391	0.393	0.386	0.398	0.431	0.428	0.428	0.42	0.405	0.409	4.41527		

T	Dimethyl Disulfide					0.182	0.218	0.221	0.23	0.229	0.23	0.2183	8.49419	
I	Chlorobenzene-d5	ISTD												
S	Toluene-d8			1.282	1.295	1.228	1.385	1.333	1.378	1.289	1.278	1.3084	4.07746	
C	Toluene		1.653	1.696	1.678	1.507	1.647	1.554	1.545	1.418	1.27	1.552	8.98325	
T	Ethyl Methacrylate			0.251	0.293	0.268	0.314	0.314	0.327	0.309	0.31	0.2981	8.76897	
T	Paraldehyde											0	0	
T	trans-1,3-Dichloropropene			0.472	0.51	0.466	0.561	0.552	0.553	0.533	0.515	0.5201	7.01006	
T	1,1,2-Trichloroethane		0.261	0.241	0.242	0.222	0.254	0.249	0.252	0.243	0.241	0.2449	4.54209	
T	2-Hexanone					0.042	0.053	0.053	0.056	0.051	0.053	0.0515	9.50479	
T	1,3-Dichloropropane		0.355	0.442	0.465	0.42	0.468	0.454	0.457	0.437	0.428	0.436	7.93348	
T	Tetrachloroethene		0.355	0.337	0.336	0.306	0.333	0.325	0.337	0.334	0.33	0.3325	3.83886	
T	Dibromochloromethane		0.349	0.336	0.338	0.328	0.373	0.372	0.383	0.373	0.367	0.3576	5.60043	
T	1,2-Dibromoethane		0.233	0.234	0.234	0.227	0.259	0.254	0.258	0.251	0.247	0.2441	5.04151	
T	1-Chlorohexane		0.532	0.584	0.505	0.502	0.54	0.52	0.547	0.521	0.516	0.5298	4.7826	
P	Chlorobenzene		1.029	1.173	1.09	1.007	1.099	1.037	1.043	1.002	0.939	1.0466	6.41465	
T	1,1,1,2-Tetrachloroethane		0.392	0.399	0.403	0.357	0.431	0.414	0.424	0.417	0.413	0.4055	5.39495	
C	Ethylbenzene		0.6	0.594	0.59	0.532	0.586	0.559	0.57	0.564	0.558	0.5726	3.7769	
T	m-,p-Xylene		0.744	0.696	0.691	0.643	0.713	0.67	0.673	0.634	0.581	0.6716	7.12586	
T	o-Xylene			0.691	0.651	0.614	0.692	0.658	0.667	0.65	0.63	0.6567	4.11758	
T	Styrene		1.05	1.06	1.096	1.043	1.159	1.124	1.12	1.061	0.98	1.077	4.96781	
P	Bromoform			0.177	0.21	0.181	0.226	0.221	0.232	0.227	0.223	0.2121	10.0546	
T	Isopropylbenzene		1.853	1.891	1.871	1.708	1.897	1.781	1.75	1.573	1.377	1.7444	9.92447	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.426	0.492	0.503	0.486	0.543	0.51	0.527	0.513	0.514	0.5018	6.60291	
S	p-Bromofluorobenzene				1.054	0.976	1.071	1.016	1.053	1.031	1.046	1.0352	3.05136	
T	1,2,3-Trichloropropane			0.119	0.158	0.161	0.162	0.155	0.162	0.16	0.158	0.1545	9.40789	
T	trans-1,4-Dichloro-2-Butene			0.085	0.118	0.12	0.149	0.151	0.16	0.159	0.161	0.1376	19.9543	1.000
T	n-Propylbenzene		4.139	4.239	4.243	4.051	4.241	3.953	3.882	3.419	2.935	3.9003	11.4439	
T	Bromobenzene	0.796	0.708	0.843	0.837	0.778	0.84	0.798	0.817	0.803	0.803	0.8022	4.93253	
T	1,3,5-Trimethylbenzene		2.941	2.93	2.941	2.839	3.053	2.882	2.871	2.689	2.423	2.8411	6.50391	
T	2-Chlorotoluene		2.917	2.935	2.929	2.712	2.861	2.795	2.682	2.533	2.145	2.7231	9.37022	
T	4-Chlorotoluene		2.681	2.596	2.581	2.474	2.625	2.326	2.447	2.286	2.121	2.4597	7.49558	
T	a-Methylstyrene					1.257	1.406	1.34	1.384	1.35	1.351	1.3479	3.77654	
T	tert-Butylbenzene			0.587	0.555	0.53	0.571	0.533	0.552	0.561	0.558	0.5558	3.34508	
T	1,2,4-Trimethylbenzene		2.955	3.168	3.127	2.936	3.12	2.914	2.937	2.709	2.427	2.9214	7.97314	
T	sec-Butylbenzene			3.701	3.536	3.487	3.607	3.34	3.332	3.045	2.69	3.3424	9.93324	
T	p-Isopropyltoluene			3.112	3.062	2.903	2.988	2.813	2.809	2.634	2.382	2.8379	8.45265	
T	1,3-Dichlorobenzene		1.484	1.617	1.627	1.53	1.605	1.531	1.549	1.51	1.45	1.5448	3.95774	
T	1,4-Dichlorobenzene	1.713	1.524	1.672	1.594	1.503	1.6	1.511	1.535	1.49	1.431	1.5574	5.56562	
T	n-Butylbenzene			3.143	2.96	2.895	3.002	2.791	2.792	2.571	2.292	2.8056	9.55812	
T	1,2-Dichlorobenzene	1.59	1.307	1.415	1.41	1.322	1.404	1.333	1.356	1.315	1.286	1.3739	6.4618	
T	1,2-Dibromo-3-Chloropropane				0.085	0.103	0.102	0.103	0.106	0.104	0.103	0.1007	6.86771	
T	1,2,4-Trichlorobenzene		1.074	1.01	1.028	0.982	1.069	1.013	1.036	1.029	1.002	1.0269	2.90829	
T	Hexachlorobutadiene		0.516	0.476	0.483	0.447	0.487	0.459	0.48	0.485	0.485	0.4798	4.00465	
T	Naphthalene		1.594	1.457	1.574	1.455	1.63	1.552	1.564	1.485	1.422	1.5258	4.75891	
T	1,2,3-Trichlorobenzene	0.913	0.934	0.905	0.862	0.805	0.877	0.824	0.862	0.846	0.835	0.8664	4.7474	

Tue May 17 11:49:41 2016

Calibration Table Report
Method: A9FOOWT.M
Title: A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Calibration: Thu May 19 08:54:31 2016
Curve: WG569079
Calibration Files

	Compound	5 8M412324.D	20 8M412323.D	50 8M412322.D	100 8M412321.D	200 8M412325.D	300 8M412326.D	400 8M412327.D	500 8M412328.D	Avg	%RSD
I	Fluorobenzene	ISTD									
T	Acetonitrile		0.009	0.010	0.010	0.010	0.010	0.010	0.010	0.010	2.076
T	3-Chloro-1-propene	0.306	0.330	0.335	0.331	0.324	0.307	0.304	0.304	0.318	4.307
T	2-Chloro-1,3-butadiene	0.368	0.420	0.420	0.419	0.419	0.392	0.389	0.387	0.402	5.022
T	Ethyl Acetate	0.080	0.096	0.097	0.100	0.099	0.098	0.100	0.095	0.096	6.751
T	Methacrylonitrile	0.041	0.054	0.055	0.055	0.055	0.054	0.055	0.052	0.053	9.227
T	Isobutyl Alcohol			0.003	0.003	0.003	0.003	0.003	0.003	0.003	3.599
T	1-Butanol									0.000	0.000
T	Methyl methacrylate	0.089	0.106	0.106	0.105	0.106	0.105	0.107	0.102	0.103	5.868
T	2-Nitropropane		0.041	0.042	0.043	0.046	0.047	0.048	0.046	0.045	5.992
I	Chlorobenzene-d5	ISTD									
I	1,4-Dichlorobenzene-d4	ISTD									
T	Cyclohexanone		0.011	0.010	0.010	0.009	0.010	0.011	0.010	0.010	4.971

Thu May 19 09:04:52 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060616 Run Date: 05/13/2016 Sample ID: WG568561-12
Instrument ID: HPMS8 Run Time: 19:17 Method: 8260B
File ID: 8M412232 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG568561 Cal ID: HPMS8 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.1	ug/L	0.513	5.70	20	
1,1-Dichloroethene	CCC	50.0	46.0	ug/L	0.372	8.10	20	
1,2-Dichloropropane	CCC	50.0	51.0	ug/L	0.233	1.90	20	
Ethylbenzene	CCC	50.0	48.2	ug/L	0.552	3.60	20	
Toluene	CCC	50.0	49.1	ug/L	1.52	1.80	20	
Vinyl Chloride	CCC	50.0	52.4	ug/L	0.304	4.80	20	
Bromoform	SPCC	50.0	48.2	ug/L	0.205	3.60	20	
Chlorobenzene	SPCC	50.0	50.2	ug/L	1.05	0.400	20	
Chloromethane	SPCC	50.0	50.7	ug/L	0.248	1.40	20	
1,1-Dichloroethane	SPCC	50.0	46.7	ug/L	0.431	6.60	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.6	ug/L	0.498	0.800	20	
Acetone		50.0	57.5	ug/L	0.0324	15.1	20	
Benzene		50.0	48.5	ug/L	0.997	3.00	20	
Bromobenzene		50.0	49.5	ug/L	0.794	1.10	20	
Bromochloromethane		50.0	47.5	ug/L	0.140	4.90	20	
Bromodichloromethane		50.0	48.3	ug/L	0.388	3.40	20	
Bromomethane		50.0	46.4	ug/L	0.162	7.20	20	
2-Butanone		50.0	53.0	ug/L	0.0438	6.00	20	
n-Butylbenzene		50.0	49.7	ug/L	2.79	0.700	20	
sec-Butylbenzene		50.0	51.3	ug/L	3.43	2.70	20	
tert-Butylbenzene		50.0	50.9	ug/L	0.566	1.90	20	
Carbon Disulfide		50.0	42.3	ug/L	0.716	15.4	20	
Carbon Tetrachloride		50.0	46.2	ug/L	0.425	7.50	20	
Dibromochloromethane		50.0	49.7	ug/L	0.355	0.700	20	
Chloroethane		50.0	53.3	ug/L	0.170	6.70	20	
2-Chlorotoluene		50.0	51.6	ug/L	2.81	3.10	20	
4-Chlorotoluene		50.0	48.3	ug/L	2.37	3.50	20	
1,2-Dibromo-3-Chloropropane		50.0	48.5	ug/L	0.0977	3.00	20	
1,2-Dibromoethane		50.0	51.1	ug/L	0.250	2.20	20	
Dibromomethane		50.0	45.8	ug/L	0.124	8.40	20	
1,2-Dichlorobenzene		50.0	50.5	ug/L	1.39	1.00	20	
1,3-Dichlorobenzene		50.0	50.9	ug/L	1.57	1.80	20	
1,4-Dichlorobenzene		50.0	50.5	ug/L	1.57	0.900	20	
Dichlorodifluoromethane		50.0	54.2	ug/L	0.455	8.40	20	
1,2-Dichloroethane		50.0	49.0	ug/L	0.344	2.00	20	
cis-1,2-Dichloroethene		50.0	48.9	ug/L	0.281	2.20	20	
trans-1,2-Dichloroethene		50.0	48.1	ug/L	0.357	3.90	20	
1,3-Dichloropropane		50.0	53.7	ug/L	0.468	7.30	20	
2,2-Dichloropropane		50.0	47.9	ug/L	0.466	4.20	20	
cis-1,3-Dichloropropene		50.0	53.9	ug/L	0.441	7.80	20	
trans-1,3-Dichloropropene		50.0	50.7	ug/L	0.527	1.30	20	
1,1-Dichloropropene		50.0	47.5	ug/L	0.374	5.10	20	

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Version 1.5 PDF File ID: 4810868
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Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060616 Run Date: 05/13/2016 Sample ID: WG568561-12
Instrument ID: HPMS8 Run Time: 19:17 Method: 8260B
File ID: 8M412232 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG568561 Cal ID: HPMS8 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	53.6	ug/L	0.0552	7.20	20	
Hexachlorobutadiene		50.0	52.1	ug/L	0.500	4.20	20	
Isopropylbenzene		50.0	51.1	ug/L	1.78	2.20	20	
p-Isopropyltoluene		50.0	50.1	ug/L	2.85	0.300	20	
4-Methyl-2-Pentanone		50.0	51.9	ug/L	0.0416	3.70	20	
Methylene Chloride		50.0	48.4	ug/L	0.249	3.10	20	
Naphthalene		50.0	45.8	ug/L	1.40	8.40	20	
n-Propylbenzene		50.0	51.9	ug/L	4.05	3.80	20	
Styrene		50.0	51.5	ug/L	1.11	3.00	20	
1,1,1,2-Tetrachloroethane		50.0	49.4	ug/L	0.400	1.20	20	
Tetrachloroethene		50.0	47.8	ug/L	0.318	4.40	20	
1,2,3-Trichlorobenzene		50.0	47.7	ug/L	0.827	4.50	20	
1,2,4-Trichlorobenzene		50.0	50.1	ug/L	1.03	0.200	20	
1,1,1-Trichloroethane		50.0	47.6	ug/L	0.492	4.80	20	
1,1,2-Trichloroethane		50.0	49.0	ug/L	0.240	1.90	20	
Trichloroethene		50.0	51.1	ug/L	0.280	2.10	20	
Trichlorofluoromethane		50.0	46.9	ug/L	0.507	6.10	20	
1,2,3-Trichloropropane		50.0	50.1	ug/L	0.155	0.200	20	
1,2,4-Trimethylbenzene		50.0	49.7	ug/L	2.90	0.700	20	
1,3,5-Trimethylbenzene		50.0	51.6	ug/L	2.93	3.30	20	
o-Xylene		50.0	50.6	ug/L	0.664	1.10	20	
m-,p-Xylene		100	101	ug/L	0.679	1.10	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

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Version 1.5 PDF File ID: 4810868
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Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616 Run Date: 06/15/2016 Sample ID: WG572735-02
Instrument ID: HPMS8 Run Time: 09:29 Method: 8260B
File ID: 8M413003 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG572737 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	52.9	ug/L	0.576	5.76	20	
1,1-Dichloroethene	CCC	50.0	51.9	ug/L	0.420	3.89	20	
1,2-Dichloropropane	CCC	50.0	48.5	ug/L	0.222	2.97	20	
Ethylbenzene	CCC	50.0	48.3	ug/L	0.553	3.36	20	
Toluene	CCC	50.0	49.2	ug/L	1.53	1.70	20	
Vinyl Chloride	CCC	50.0	54.2	ug/L	0.315	8.36	20	
Bromoform	SPCC	50.0	53.0	ug/L	0.225	6.02	20	
Chlorobenzene	SPCC	50.0	49.4	ug/L	1.03	1.22	20	
Chloromethane	SPCC	50.0	48.4	ug/L	0.237	3.28	20	
1,1-Dichloroethane	SPCC	50.0	51.1	ug/L	0.472	2.22	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	45.2	ug/L	0.454	9.55	20	
Xylenes		150	149	ug/L	0.662	0.449	20	
Acetone		50.0	56.4	ug/L	0.0317	12.8	20	
Benzene		50.0	50.9	ug/L	1.04	1.75	20	
Bromobenzene		50.0	48.6	ug/L	0.779	2.89	20	
Bromochloromethane		50.0	52.5	ug/L	0.155	5.07	20	
Bromodichloromethane		50.0	54.1	ug/L	0.435	8.30	20	
Bromomethane		50.0	38.6	ug/L	0.134	22.9	20	*
2-Butanone		50.0	50.0	ug/L	0.0413	0.0610	20	
n-Butylbenzene		50.0	47.3	ug/L	2.65	5.42	20	
sec-Butylbenzene		50.0	47.3	ug/L	3.16	5.46	20	
tert-Butylbenzene		50.0	46.7	ug/L	0.519	6.67	20	
Carbon Disulfide		50.0	51.5	ug/L	0.871	2.99	20	
Carbon Tetrachloride		50.0	56.0	ug/L	0.514	11.9	20	
Dibromochloromethane		50.0	52.2	ug/L	0.373	4.37	20	
Chloroethane		50.0	50.2	ug/L	0.160	0.381	20	
2-Chlorotoluene		50.0	43.7	ug/L	2.38	12.5	20	
4-Chlorotoluene		50.0	51.6	ug/L	2.54	3.26	20	
1,2-Dibromo-3-Chloropropane		50.0	46.2	ug/L	0.0931	7.57	20	
1,2-Dibromoethane		50.0	49.4	ug/L	0.241	1.17	20	
Dibromomethane		50.0	50.0	ug/L	0.135	0.0556	20	
1,2-Dichlorobenzene		50.0	47.1	ug/L	1.29	5.79	20	
1,3-Dichlorobenzene		50.0	49.2	ug/L	1.52	1.67	20	
1,4-Dichlorobenzene		50.0	47.7	ug/L	1.49	4.58	20	
Dichlorodifluoromethane		50.0	54.7	ug/L	0.459	9.40	20	
1,2-Dichloroethane		50.0	55.6	ug/L	0.390	11.2	20	
cis-1,2-Dichloroethene		50.0	51.1	ug/L	0.294	2.30	20	
trans-1,2-Dichloroethene		50.0	50.8	ug/L	0.378	1.67	20	
1,3-Dichloropropane		50.0	48.9	ug/L	0.426	2.29	20	
2,2-Dichloropropane		50.0	58.2	ug/L	0.566	16.4	20	
cis-1,3-Dichloropropene		50.0	53.5	ug/L	0.438	7.09	20	
trans-1,3-Dichloropropene		50.0	51.9	ug/L	0.540	3.77	20	

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616 Run Date: 06/15/2016 Sample ID: WG572735-02
Instrument ID: HPMS8 Run Time: 09:29 Method: 8260B
File ID: 8M413003 Analyst: TMB QC Key: DOD4
Workgroup (AAB#): WG572737 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	53.0	ug/L	0.418	6.05	20	
2-Hexanone		50.0	50.3	ug/L	0.0518	0.596	20	
Hexachlorobutadiene		50.0	50.8	ug/L	0.488	1.64	20	
Isopropylbenzene		50.0	51.1	ug/L	1.78	2.16	20	
p-Isopropyltoluene		50.0	47.9	ug/L	2.72	4.24	20	
4-Methyl-2-Pentanone		50.0	51.2	ug/L	0.0411	2.32	20	
Methylene Chloride		50.0	49.5	ug/L	0.255	1.01	20	
Naphthalene		50.0	46.9	ug/L	1.43	6.24	20	
n-Propylbenzene		50.0	47.7	ug/L	3.72	4.62	20	
Styrene		50.0	51.6	ug/L	1.11	3.15	20	
1,1,1,2-Tetrachloroethane		50.0	51.8	ug/L	0.420	3.61	20	
Tetrachloroethene		50.0	51.9	ug/L	0.345	3.86	20	
1,2,3-Trichlorobenzene		50.0	47.2	ug/L	0.819	5.51	20	
1,2,4-Trichlorobenzene		50.0	48.5	ug/L	0.996	3.02	20	
1,1,1-Trichloroethane		50.0	55.5	ug/L	0.575	11.1	20	
1,1,2-Trichloroethane		50.0	47.8	ug/L	0.234	4.49	20	
Trichloroethene		50.0	52.4	ug/L	0.287	4.80	20	
Trichlorofluoromethane		50.0	55.4	ug/L	0.599	10.9	20	
1,2,3-Trichloropropane		50.0	47.3	ug/L	0.146	5.43	20	
1,2,4-Trimethylbenzene		50.0	48.0	ug/L	2.80	4.05	20	
1,3,5-Trimethylbenzene		50.0	48.3	ug/L	2.74	3.39	20	
o-Xylene		50.0	49.9	ug/L	0.656	0.182	20	
m-,p-Xylene		100	99.4	ug/L	0.668	0.583	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616 Run Date: 06/16/2016 Sample ID: WG573037-02
Instrument ID: HPMS8 Run Time: 14:25 Method: 8260B
File ID: 8M413032 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG573038 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	54.8	ug/L	0.597	9.65	20	
1,1-Dichloroethene	CCC	50.0	54.7	ug/L	0.442	9.30	20	
1,2-Dichloropropane	CCC	50.0	48.6	ug/L	0.222	2.70	20	
Ethylbenzene	CCC	50.0	50.5	ug/L	0.578	0.905	20	
Toluene	CCC	50.0	50.3	ug/L	1.56	0.600	20	
Vinyl Chloride	CCC	50.0	55.1	ug/L	0.320	10.2	20	
Bromoform	SPCC	50.0	50.9	ug/L	0.216	1.72	20	
Chlorobenzene	SPCC	50.0	49.8	ug/L	1.04	0.474	20	
Chloromethane	SPCC	50.0	46.6	ug/L	0.228	6.88	20	
1,1-Dichloroethane	SPCC	50.0	52.3	ug/L	0.483	4.61	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	41.5	ug/L	0.416	17.0	20	
Xylenes		150	154	ug/L	0.683	2.90	20	
Acetone		50.0	52.2	ug/L	0.0293	4.31	20	
Benzene		50.0	52.0	ug/L	1.07	3.99	20	
Bromobenzene		50.0	48.0	ug/L	0.770	4.08	20	
Bromochloromethane		50.0	51.3	ug/L	0.151	2.54	20	
Bromodichloromethane		50.0	55.4	ug/L	0.445	10.8	20	
Bromomethane		50.0	37.0	ug/L	0.128	26.0	20	*
2-Butanone		50.0	45.9	ug/L	0.0380	8.13	20	
n-Butylbenzene		50.0	50.5	ug/L	2.83	1.00	20	
sec-Butylbenzene		50.0	50.3	ug/L	3.37	0.699	20	
tert-Butylbenzene		50.0	48.9	ug/L	0.544	2.12	20	
Carbon Disulfide		50.0	53.0	ug/L	0.897	6.05	20	
Carbon Tetrachloride		50.0	60.0	ug/L	0.551	20.0	20	
Dibromochloromethane		50.0	50.5	ug/L	0.361	0.983	20	
Chloroethane		50.0	48.9	ug/L	0.156	2.14	20	
2-Chlorotoluene		50.0	47.7	ug/L	2.60	4.50	20	
4-Chlorotoluene		50.0	49.7	ug/L	2.44	0.615	20	
1,2-Dibromo-3-Chloropropane		50.0	44.0	ug/L	0.0886	12.0	20	
1,2-Dibromoethane		50.0	47.2	ug/L	0.230	5.67	20	
Dibromomethane		50.0	49.7	ug/L	0.135	0.584	20	
1,2-Dichlorobenzene		50.0	46.6	ug/L	1.28	6.76	20	
1,3-Dichlorobenzene		50.0	49.6	ug/L	1.53	0.820	20	
1,4-Dichlorobenzene		50.0	47.6	ug/L	1.48	4.82	20	
Dichlorodifluoromethane		50.0	57.6	ug/L	0.483	15.3	20	
1,2-Dichloroethane		50.0	56.7	ug/L	0.397	13.3	20	
cis-1,2-Dichloroethene		50.0	50.9	ug/L	0.292	1.90	20	
trans-1,2-Dichloroethene		50.0	52.1	ug/L	0.387	4.10	20	
1,3-Dichloropropane		50.0	47.0	ug/L	0.410	5.96	20	
2,2-Dichloropropane		50.0	61.8	ug/L	0.601	23.6	20	*
cis-1,3-Dichloropropene		50.0	53.3	ug/L	0.436	6.58	20	
trans-1,3-Dichloropropene		50.0	51.1	ug/L	0.532	2.30	20	

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616 Run Date: 06/16/2016 Sample ID: WG573037-02
Instrument ID: HPMS8 Run Time: 14:25 Method: 8260B
File ID: 8M413032 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG573038 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	54.6	ug/L	0.430	9.13	20	
2-Hexanone		50.0	44.4	ug/L	0.0457	11.3	20	
Hexachlorobutadiene		50.0	54.7	ug/L	0.525	9.43	20	
Isopropylbenzene		50.0	54.0	ug/L	1.88	7.91	20	
p-Isopropyltoluene		50.0	50.6	ug/L	2.87	1.20	20	
4-Methyl-2-Pentanone		50.0	45.5	ug/L	0.0366	8.93	20	
Methylene Chloride		50.0	48.8	ug/L	0.251	2.36	20	
Naphthalene		50.0	43.5	ug/L	1.33	13.0	20	
n-Propylbenzene		50.0	49.8	ug/L	3.88	0.484	20	
Styrene		50.0	52.0	ug/L	1.12	4.02	20	
1,1,1,2-Tetrachloroethane		50.0	52.3	ug/L	0.424	4.56	20	
Tetrachloroethene		50.0	53.6	ug/L	0.356	7.11	20	
1,2,3-Trichlorobenzene		50.0	45.4	ug/L	0.786	9.28	20	
1,2,4-Trichlorobenzene		50.0	48.6	ug/L	0.997	2.89	20	
1,1,1-Trichloroethane		50.0	59.6	ug/L	0.616	19.1	20	
1,1,2-Trichloroethane		50.0	46.3	ug/L	0.227	7.39	20	
Trichloroethene		50.0	54.0	ug/L	0.296	7.92	20	
Trichlorofluoromethane		50.0	59.7	ug/L	0.645	19.5	20	
1,2,3-Trichloropropane		50.0	45.0	ug/L	0.139	10.0	20	
1,2,4-Trimethylbenzene		50.0	50.1	ug/L	2.93	0.254	20	
1,3,5-Trimethylbenzene		50.0	50.2	ug/L	2.85	0.347	20	
o-Xylene		50.0	51.2	ug/L	0.673	2.46	20	
m-,p-Xylene		100	103	ug/L	0.693	3.11	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4810870
Report generated 06/23/2016 13:32

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060616
Instrument ID: HPMS8
Workgroup (AAB#): WG572737

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	288225	539116	778260
Upper Limit	NA	NA	576450	1078232	1556520
Lower Limit	NA	NA	144113	269558	389130
L16060616-02	1.00	01	289966	525132	693655
L16060616-03	1.00	01	290970	530102	703430
L16060616-05	1.00	01	312456	559741	750369
WG572737-01	1.00	01	330295	588241	780700
WG572737-02	1.00	01	327915	583746	797707
WG572737-03	1.00	01	329286	592812	790550

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4810871
Report generated 06/23/2016 13:32

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060616
Instrument ID: HPMS8
Workgroup (AAB#): WG573038

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	288225	539116	778260
Upper Limit	NA	NA	576450	1078232	1556520
Lower Limit	NA	NA	144113	269558	389130
L16060616-01	1.00	01	293456	520089	691444
WG573038-01	1.00	01	292043	533754	717429
WG573038-02	1.00	01	307888	540053	724153
WG573038-03	1.00	01	312159	553122	735322

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4810871
Report generated 06/23/2016 13:32

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060616
Instrument ID: HPMS8
Workgroup (AAB#): WG572737

ICAL CCV Number: WG568561-08
CAL ID: HPMS8-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	17.6	14.58	10.71
Upper Limit	NA	NA	18.1	15.08	11.21
Lower Limit	NA	NA	17.1	14.08	10.21
L16060616-02	1.00	01	17.6	14.57	10.71
L16060616-03	1.00	01	17.6	14.57	10.71
L16060616-05	1.00	01	17.6	14.57	10.71
WG572737-01	1.00	01	17.6	14.58	10.71
WG572737-02	1.00	01	17.6	14.57	10.71
WG572737-03	1.00	01	17.6	14.58	10.71

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4810873
Report generated: 06/23/2016 13:32

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060616
Instrument ID: HPMS8
Workgroup (AAB#): WG573038

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	17.6	14.58	10.71
Upper Limit	NA	NA	18.1	15.08	11.21
Lower Limit	NA	NA	17.1	14.08	10.21
L16060616-01	1.00	01	17.6	14.57	10.71
WG573038-01	1.00	01	17.6	14.57	10.71
WG573038-02	1.00	01	17.6	14.57	10.71
WG573038-03	1.00	01	17.6	14.57	10.71

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4810873
Report generated: 06/23/2016 13:32

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413043.D Vial: 13
Acq On : 16 Jun 2016 19:52 Operator: FJB
Sample : L16060616-01 B 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:18:24 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	691444	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	520089	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	293456	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	203759	27.4276 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.72%		
43) 1,2-Dichloroethane-d4	10.30	65	230731	28.9655 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 115.88%		
58) Toluene-d8	12.68	98	713814	26.2248 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.88%		
80) p-Bromofluorobenzene	16.08	95	305455	25.1379 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.56%		

Target Compounds					Qvalue
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	10422	1.4842 ug/L	95
32) cis-1,2-Dichloroethene	9.17	96	6885	0.8675 ug/L	77
33) Chloroform	9.37	83	9137	0.6066 ug/L	92
45) 1,2-Dichloroethane	10.42	62	5741	0.5922 ug/L #	78
47) Trichloroethene	11.21	130	1871960	247.1133 ug/L	99
48) Methylcyclohexane	11.21	83	26067	2.2651 ug/L #	1

(#) = qualifier out of range (m) = manual integration
8M413043.D 8260WT.M Mon Jun 20 09:19:55 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413043.D Vial: 13
Acq On : 16 Jun 2016 19:52 Operator: FJB
Sample : L16060616-01 B 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 8:18 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

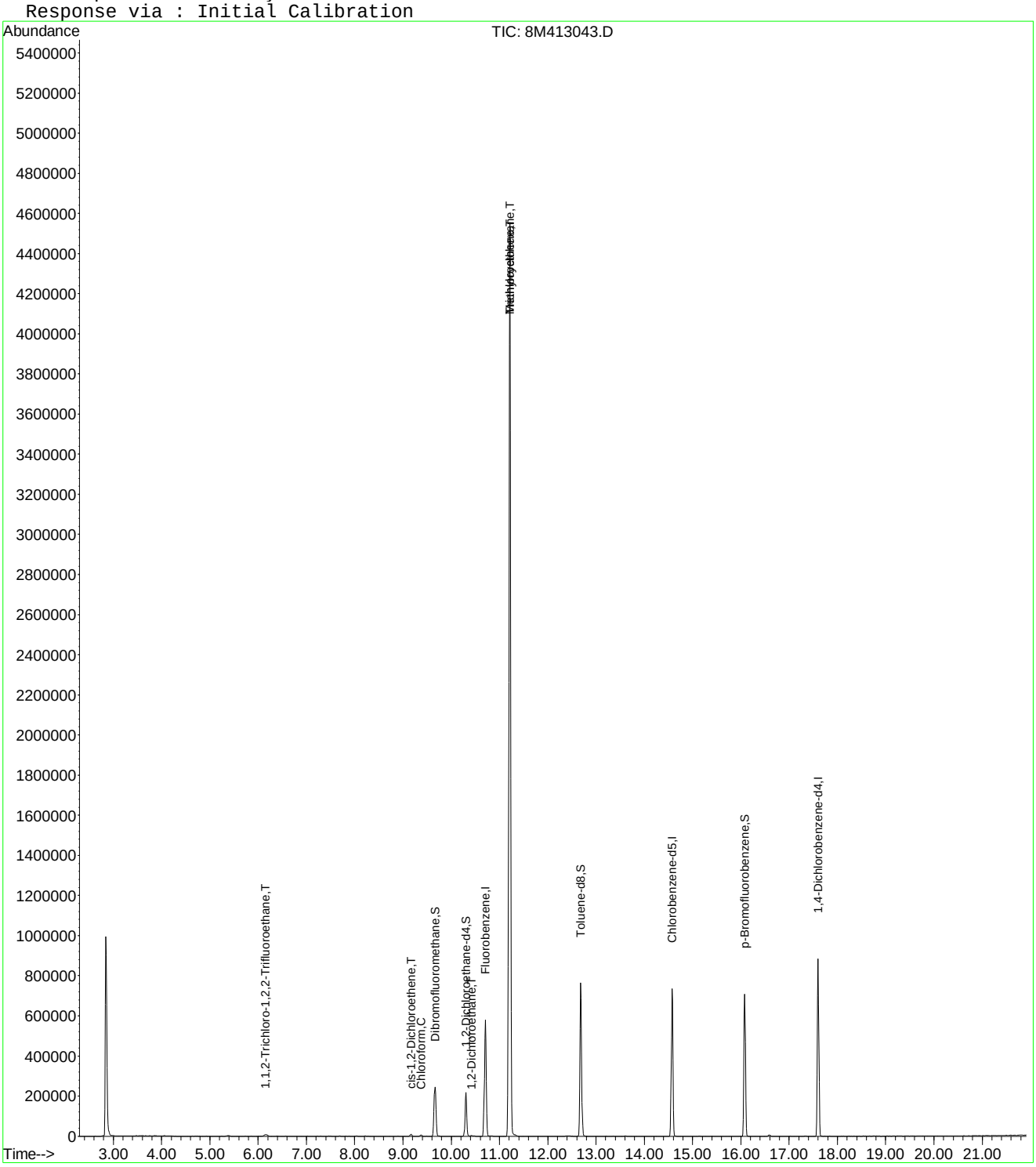

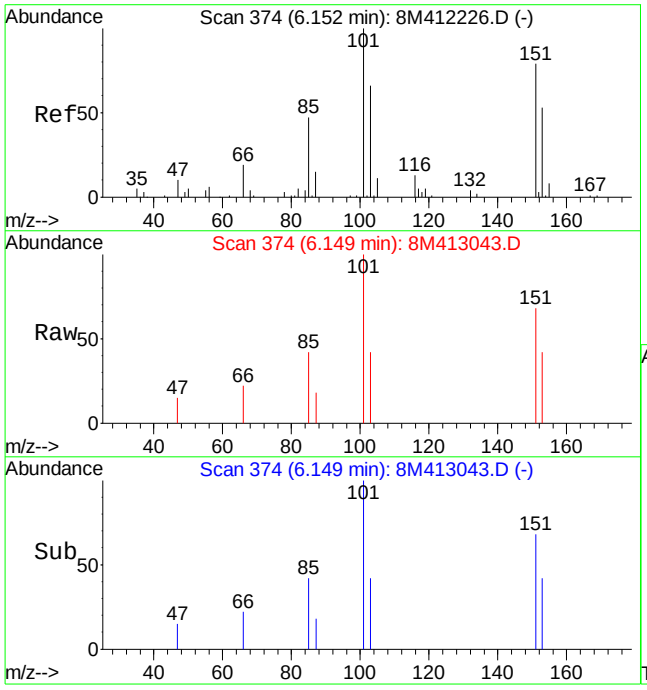

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 1.48 ug/L
RT: 6.15 min Scan# 374
Delta R.T. -0.00 min
Lab File: 8M413043.D
Acq: 16 Jun 2016 19:52

Tgt Ion:101 Resp: 10422

Ion	Ratio	Lower	Upper
101	100		
151	75.5	40.2	120.2

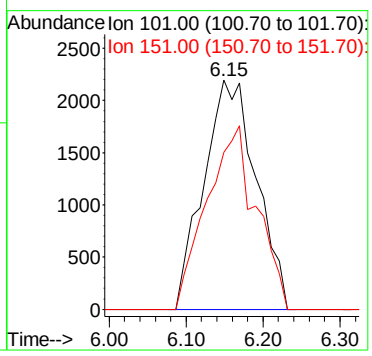

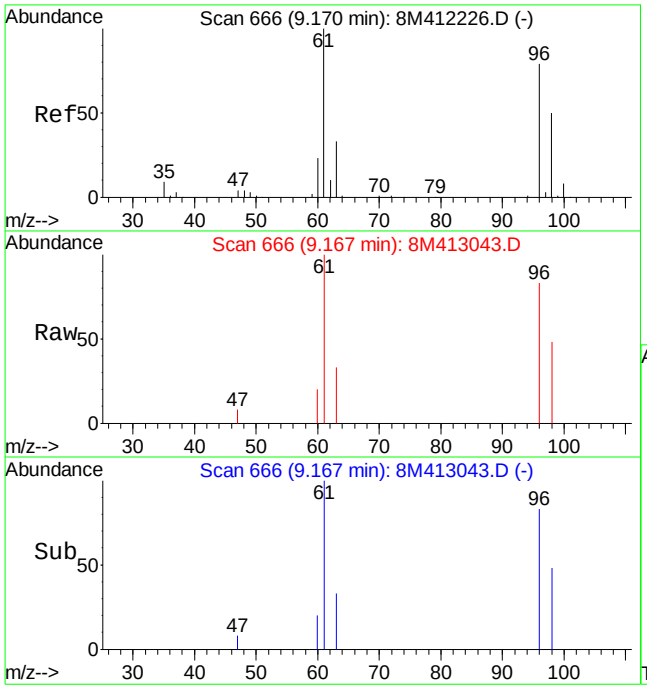

#32
cis-1,2-Dichloroethene
Concen: 0.87 ug/L
RT: 9.17 min Scan# 666
Delta R.T. -0.00 min
Lab File: 8M413043.D
Acq: 16 Jun 2016 19:52

Tgt Ion: 96 Resp: 6885

Ion	Ratio	Lower	Upper
96	100		
61	123.4	91.5	213.5

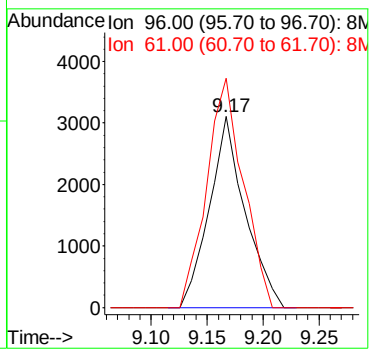

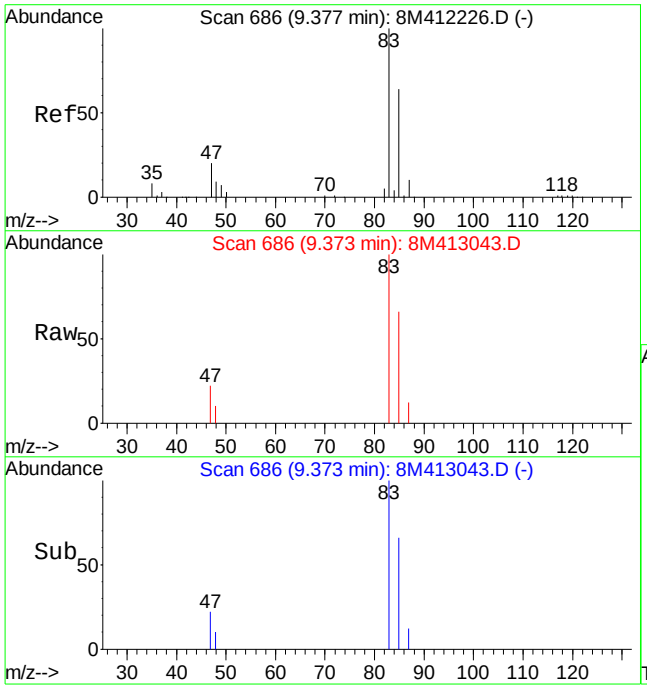

#33
Chloroform
Concen: 0.61 ug/L
RT: 9.37 min Scan# 686
Delta R.T. -0.00 min
Lab File: 8M413043.D
Acq: 16 Jun 2016 19:52

Tgt Ion: 83 Resp: 9137

Ion	Ratio	Lower	Upper
83	100		
85	56.2	37.5	87.5

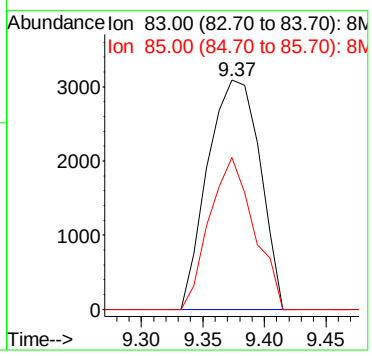

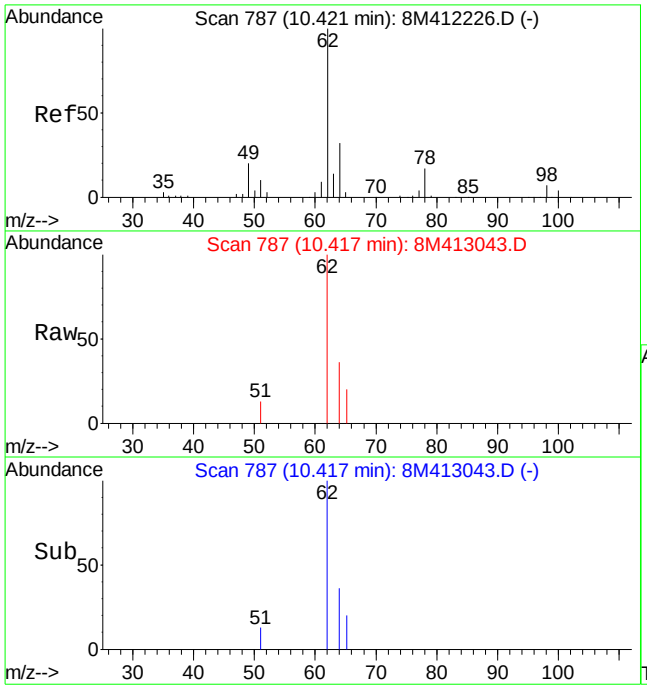

#45
1,2-Dichloroethane
Concen: 0.59 ug/L
RT: 10.42 min Scan# 787
Delta R.T. -0.00 min
Lab File: 8M413043.D
Acq: 16 Jun 2016 19:52

Tgt Ion: 62 Resp: 5741

Ion	Ratio	Lower	Upper
62	100		
64	28.8	19.6	45.6
49	5.0	15.5	36.1#

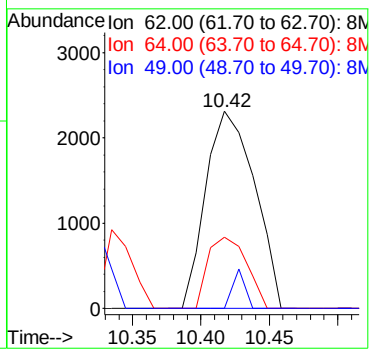

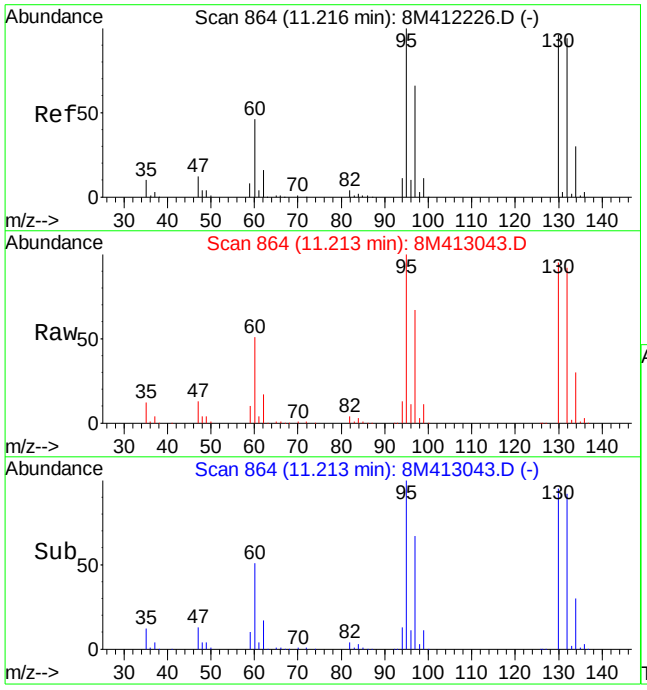

#47
Trichloroethene
Concen: 247.11 ug/L
RT: 11.21 min Scan# 864
Delta R.T. -0.00 min
Lab File: 8M413043.D
Acq: 16 Jun 2016 19:52

Tgt Ion:130 Resp: 1871960

Ion	Ratio	Lower	Upper
130	100		
132	96.5	58.0	135.2
95	106.7	64.9	151.5

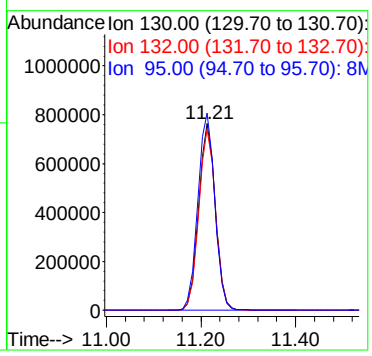

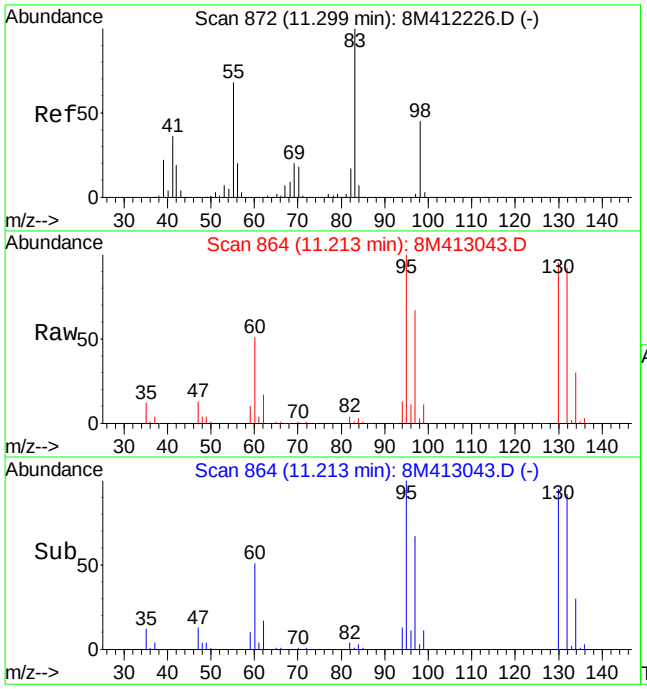

#48
Methylcyclohexane
Concen: 2.27 ug/L
RT: 11.21 min Scan# 864
Delta R.T. -0.09 min
Lab File: 8M413043.D
Acq: 16 Jun 2016 19:52

Tgt Ion: 83 Resp: 26067

Ion	Ratio	Lower	Upper
83	100		
55	0.0	40.9	95.3#
98	215.0	28.1	65.7#

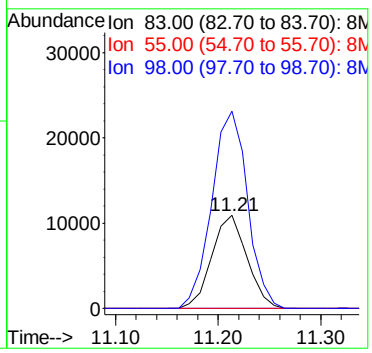

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413021.D Vial: 21
Acq On : 15 Jun 2016 18:11 Operator: TMB
Sample : L16060616-02 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 13:26:22 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	693655	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	525132	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	289966	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	208320	27.9522 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.80%		
43) 1,2-Dichloroethane-d4	10.31	65	234577	29.3545 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 117.40%		
58) Toluene-d8	12.68	98	723557	26.3275 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.32%		
80) p-Bromofluorobenzene	16.07	95	300487	25.0267 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.12%		

Target Compounds					Qvalue
3) Chloromethane	3.62	50	1200	0.1768 ug/L #	42
13) Acetone	6.24	43	5769	7.3921 ug/L #	73
28) Ethyl-Tert-Butyl ether	8.61	59	4729	0.2748 ug/L #	40

(#) = qualifier out of range (m) = manual integration
8M413021.D 8260WT.M Thu Jun 16 13:26:25 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413021.D Vial: 21
Acq On : 15 Jun 2016 18:11 Operator: TMB
Sample : L16060616-02 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 13:26 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

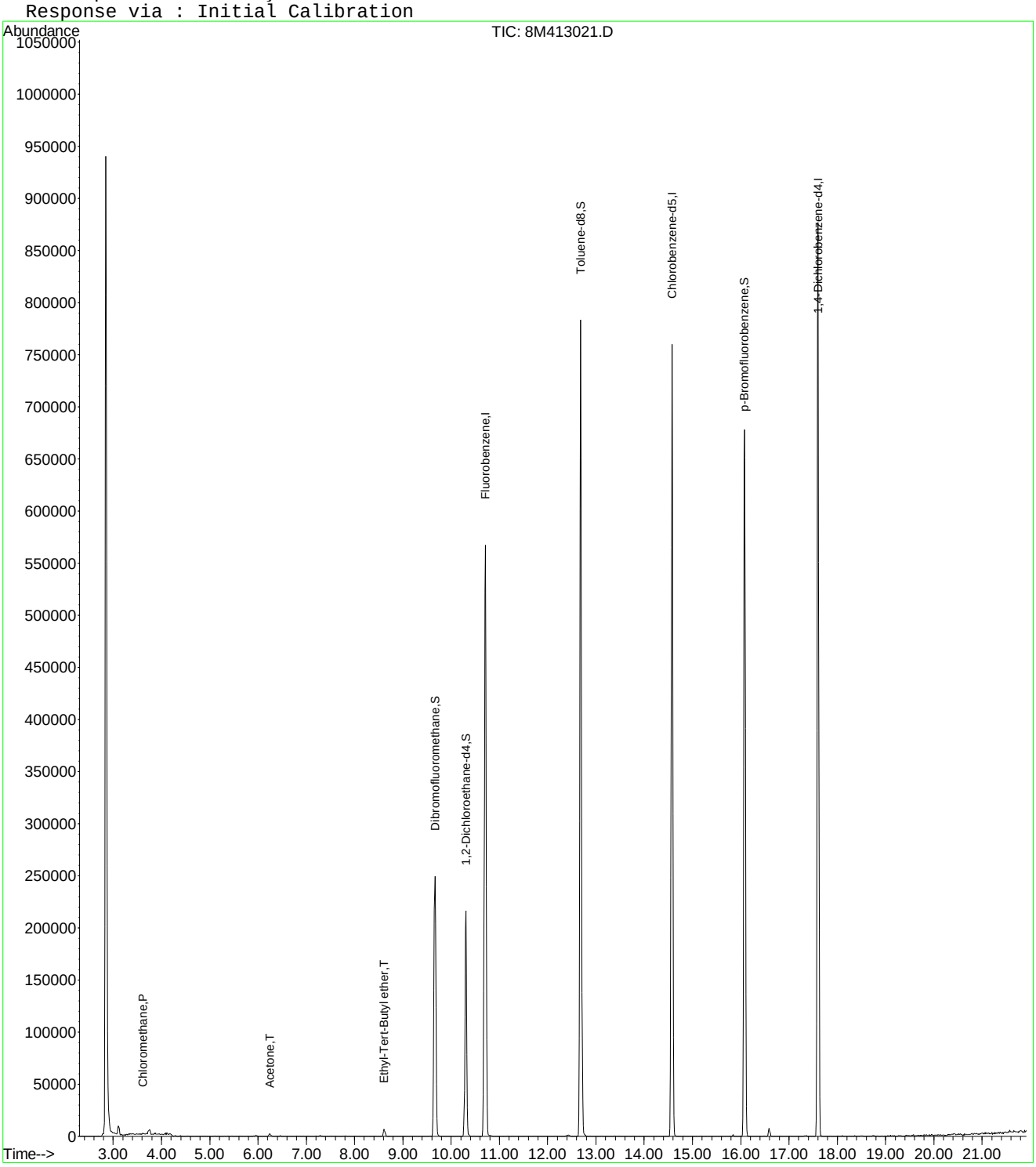

8M413021.D 8260WT.M Thu Jun 16 13:26:25 2016 Page 2

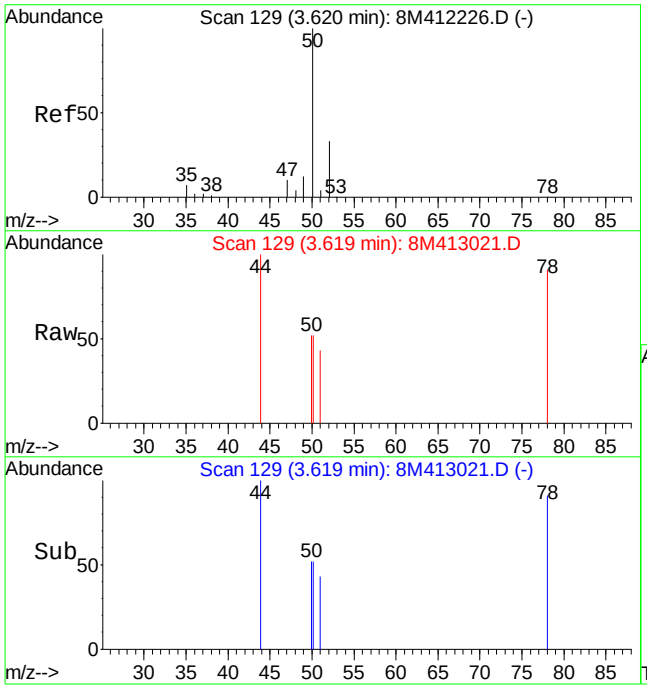

#3
Chloromethane
Concen: 0.18 ug/L
RT: 3.62 min Scan# 129
Delta R.T. -0.00 min
Lab File: 8M413021.D
Acq: 15 Jun 2016 18:11

Tgt Ion: 50 Resp: 1200

Ion	Ratio	Lower	Upper
50	100		
52	0.0	19.9	46.3#

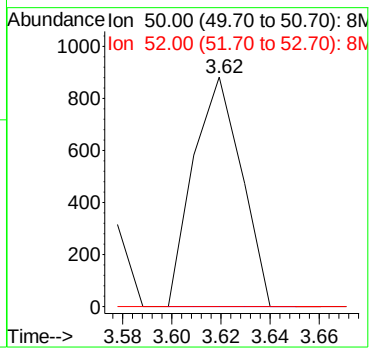

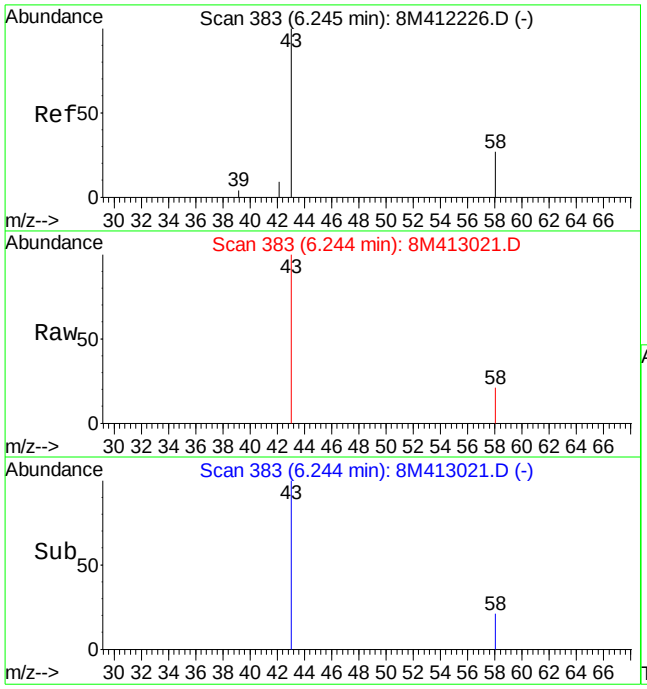

#13
Acetone
Concen: 7.39 ug/L
RT: 6.24 min Scan# 383
Delta R.T. -0.00 min
Lab File: 8M413021.D
Acq: 15 Jun 2016 18:11

Tgt Ion: 43 Resp: 5769

Ion	Ratio	Lower	Upper
43	100		
58	11.6	15.2	35.4#

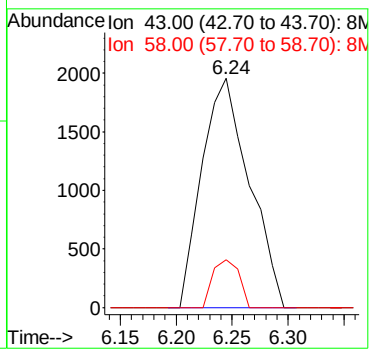

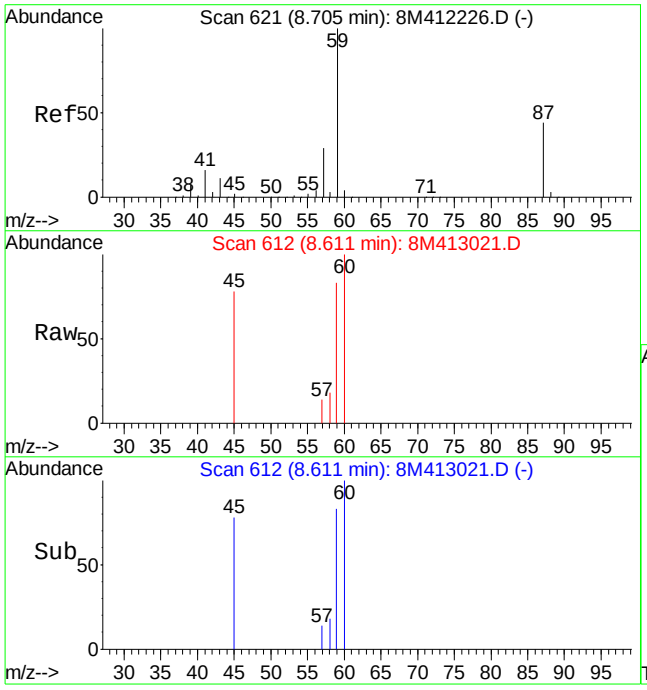

#28
Ethyl-Tert-Butyl ether
Concen: 0.27 ug/L
RT: 8.61 min Scan# 612
Delta R.T. -0.09 min
Lab File: 8M413021.D
Acq: 15 Jun 2016 18:11

Tgt Ion: 59 Resp: 4729

Ion	Ratio	Lower	Upper
59	100		
87	0.0	26.8	62.4#
57	4.4	17.4	40.6#

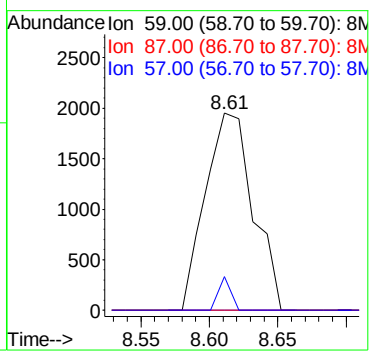

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413020.D Vial: 20
Acq On : 15 Jun 2016 17:43 Operator: TMB
Sample : L16060616-03 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 13:26:16 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	703430	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	530102	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	290970	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	211267	27.9537 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.80%		
43) 1,2-Dichloroethane-d4	10.30	65	231862	28.6115 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 114.44%		
58) Toluene-d8	12.68	98	718796	25.9090 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.64%		
80) p-Bromofluorobenzene	16.08	95	306497	25.4392 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.76%		

Target Compounds					Qvalue
3) Chloromethane	3.63	50	2464	0.3579 ug/L #	56
13) Acetone	6.24	43	1571	1.9850 ug/L #	50
47) Trichloroethene	11.22	130	6132	0.7957 ug/L	95

(#) = qualifier out of range (m) = manual integration
8M413020.D 8260WT.M Thu Jun 16 13:26:19 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413020.D Vial: 20
Acq On : 15 Jun 2016 17:43 Operator: TMB
Sample : L16060616-03 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 13:26 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

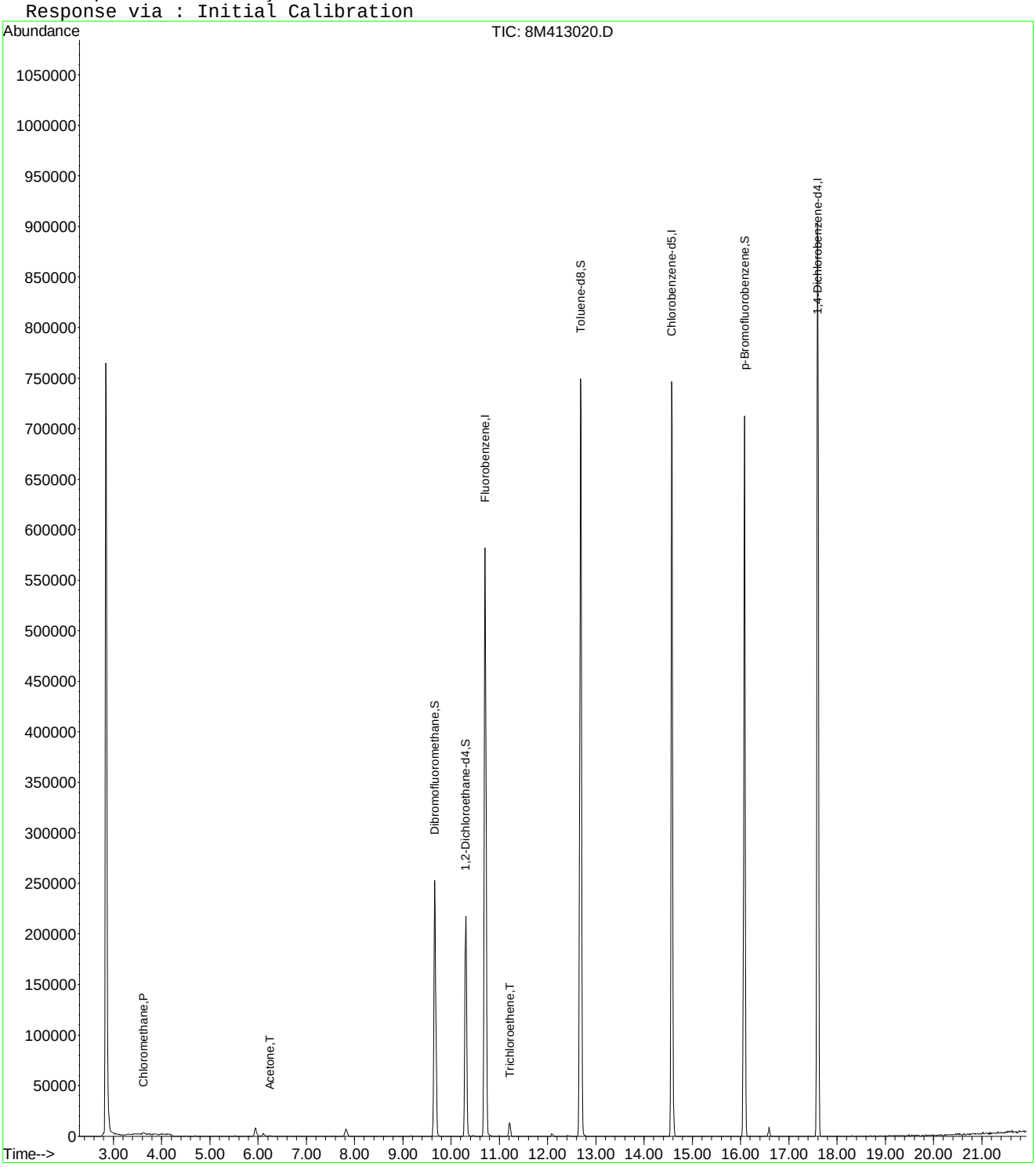

8M413020.D 8260WT.M Thu Jun 16 13:26:20 2016 Page 2

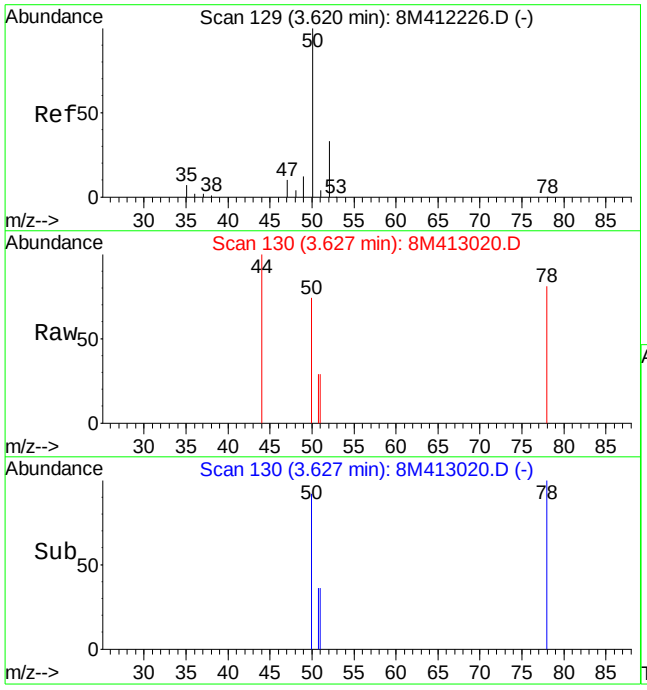

#3
Chloromethane
Concen: 0.36 ug/L
RT: 3.63 min Scan# 130
Delta R.T. 0.01 min
Lab File: 8M413020.D
Acq: 15 Jun 2016 17:43

Tgt Ion: 50 Resp: 2464

Ion	Ratio	Lower	Upper
50	100		
52	8.3	19.9	46.3#

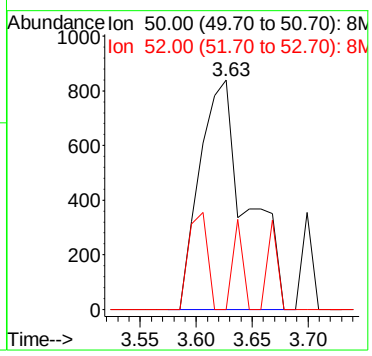

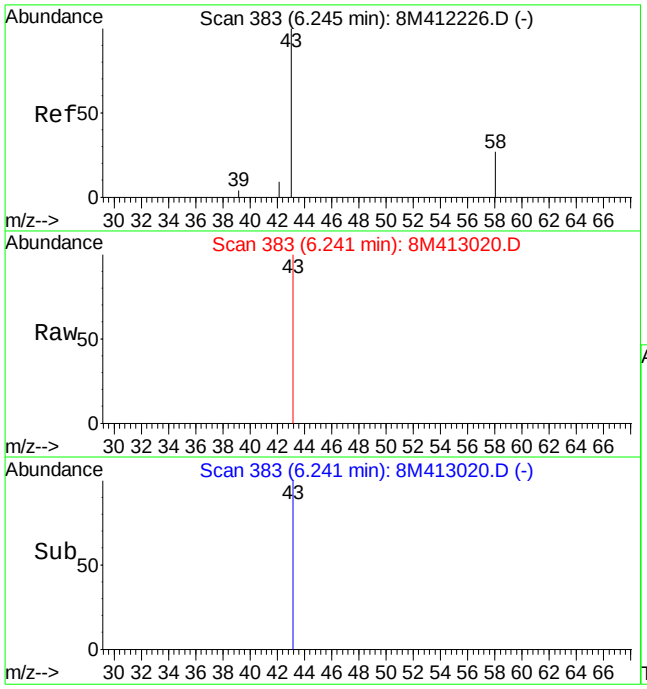

#13
Acetone
Concen: 1.99 ug/L
RT: 6.24 min Scan# 383
Delta R.T. -0.00 min
Lab File: 8M413020.D
Acq: 15 Jun 2016 17:43

Tgt Ion: 43 Resp: 1571

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.2	35.4#

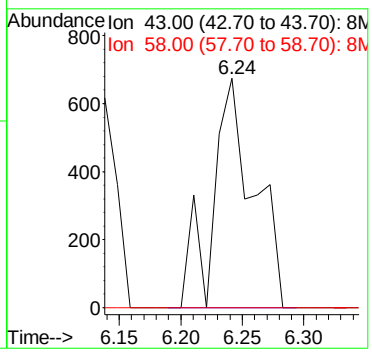

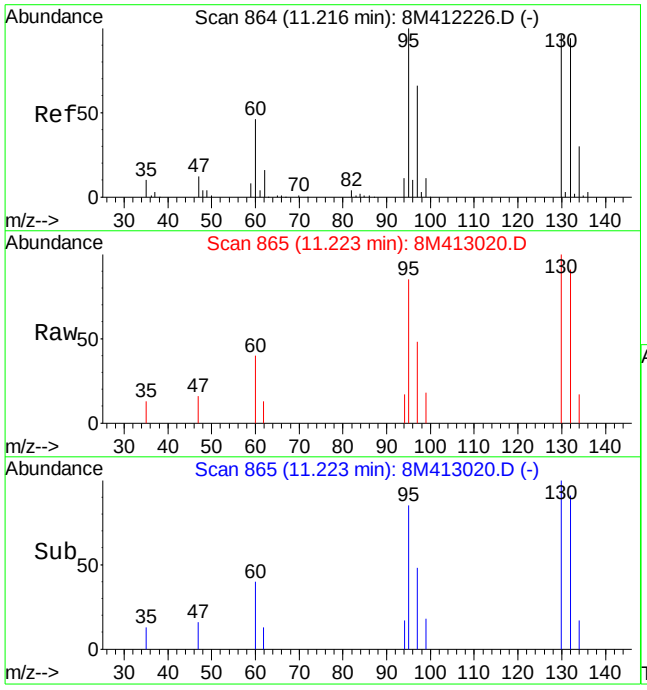

#47
Trichloroethene
Concen: 0.80 ug/L
RT: 11.22 min Scan# 865
Delta R.T. 0.01 min
Lab File: 8M413020.D
Acq: 15 Jun 2016 17:43

Tgt Ion:130 Resp: 6132

Ion	Ratio	Lower	Upper
130	100		
132	98.8	58.0	135.2
95	116.6	64.9	151.5

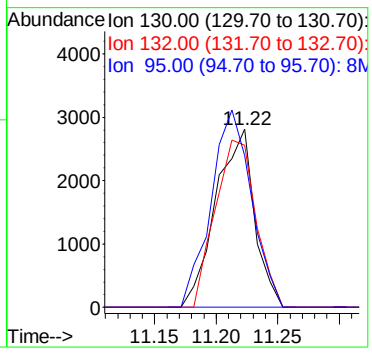

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413012.D Vial: 12
Acq On : 15 Jun 2016 13:50 Operator: TMB
Sample : L16060616-05 A TB 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 13:25:28 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	750369	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	559741	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	312456	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	221306	27.4502 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.80%		
43) 1,2-Dichloroethane-d4	10.30	65	239711	27.7297 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 110.92%		
58) Toluene-d8	12.68	98	767949	26.2150 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.88%		
80) p-Bromofluorobenzene	16.08	95	322926	24.9597 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.84%		
Target Compounds					Qvalue
36) Tetrahydrofuran	9.63	42	856	1.0478 ug/L #	58

(#) = qualifier out of range (m) = manual integration
8M413012.D 8260WT.M Thu Jun 16 13:25:31 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413012.D Vial: 12
Acq On : 15 Jun 2016 13:50 Operator: TMB
Sample : L16060616-05 A TB 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 13:25 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

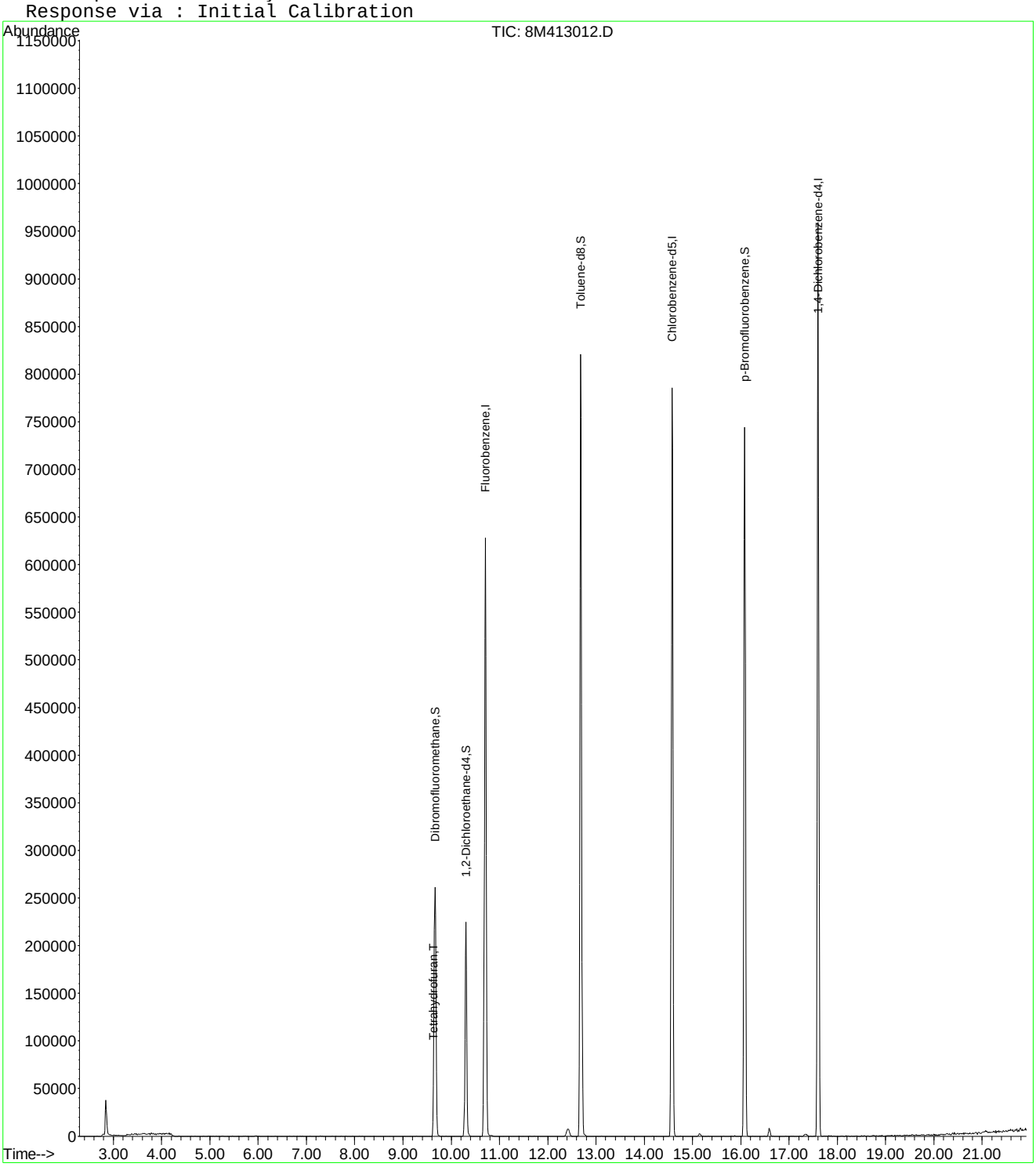

8M413012.D 8260WT.M Thu Jun 16 13:25:32 2016 Page 2

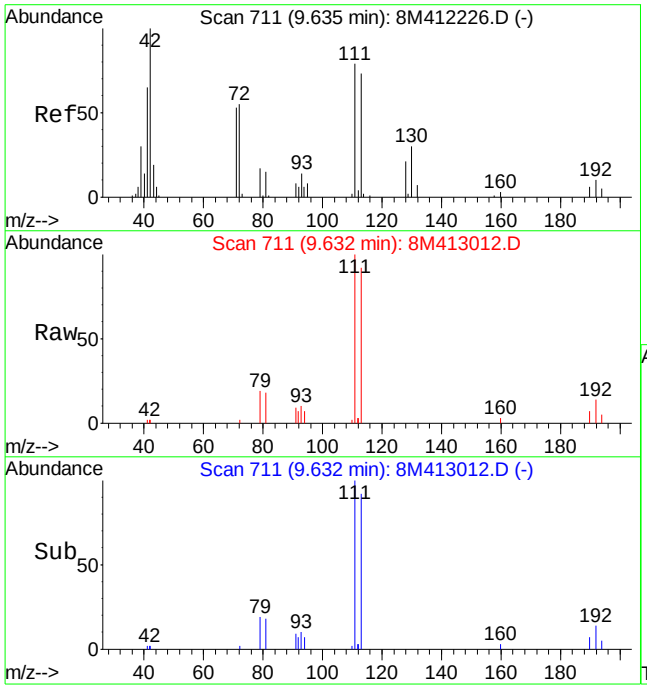

#36
Tetrahydrofuran
Concen: 1.05 ug/L
RT: 9.63 min Scan# 711
Delta R.T. -0.00 min
Lab File: 8M413012.D
Acq: 15 Jun 2016 13:50

Tgt Ion: 42 Resp: 856

Ion	Ratio	Lower	Upper
42	100		
72	47.8	33.8	78.8
71	0.0	32.0	74.8#

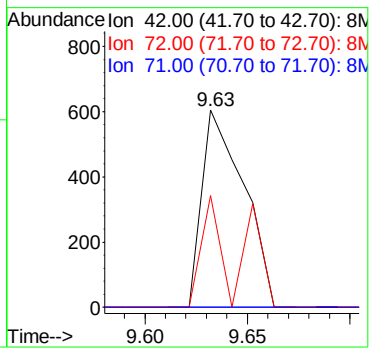

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:40:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	823748	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	571926	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	299321	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	12.68	98	567	0.0189 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.08%#	
80) p-Bromofluorobenzene	16.08	95	313	0.0253 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	3836	0.2778 ug/L	91
3) Chloromethane	3.62	50	3658	0.4537 ug/L	95
4) Vinyl Chloride	3.85	62	2516	0.2630 ug/L #	58
5) 1,3-Butadiene	3.91	54	2079	0.2592 ug/L	71
6) Bromomethane	4.73	94	1152	0.6530 ug/L #	55
7) Chloroethane	4.90	64	1112	0.2113 ug/L #	72
8) Trichlorofluoromethane	5.35	101	2706	0.1520 ug/L #	53
10) Isoprene	5.93	67	2147	0.1987 ug/L	85
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1746	0.2087 ug/L	97
14) 1,1-Dichloroethene	6.48	61	3332	0.2501 ug/L	75
16) Dimethyl Sulfide	6.73	62	1099	0.2308 ug/L	95
19) Methylene Chloride	7.26	84	3414	0.4028 ug/L	88
20) Carbon Disulfide	7.30	76	10739	0.3853 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	4927	0.2686 ug/L #	60
23) trans-1,2-Dichloroethene	7.70	61	3879	0.3170 ug/L	98
24) n-Hexane	7.78	57	2794	0.3075 ug/L	85
26) Vinyl Acetate	8.30	43	1973	0.2259 ug/L #	70
27) 1,1-Dichloroethane	8.33	63	4881	0.3212 ug/L #	88
31) 2,2-Dichloropropane	9.11	77	4966	0.3101 ug/L	89
32) cis-1,2-Dichloroethene	9.17	96	2958	0.3128 ug/L	87
33) Chloroform	9.37	83	5564	0.3101 ug/L	95
34) 1-Bromopropane	9.52	122	210	0.1551 ug/L #	1
35) Bromochloromethane	9.60	130	1386	0.2858 ug/L	76
36) Tetrahydrofuran	9.62	42	1849	2.0617 ug/L #	60
38) 1,1,1-Trichloroethane	9.91	97	4978	0.2921 ug/L	95
39) Cyclohexane	9.93	56	3120	0.2644 ug/L #	85
40) 1,1-Dichloropropene	10.11	75	3779	0.2909 ug/L	97
42) Carbon Tetrachloride	10.24	117	4835	0.3194 ug/L #	74
45) 1,2-Dichloroethane	10.43	62	3295	0.2853 ug/L #	81
46) Benzene	10.46	78	11279	0.3333 ug/L	93
47) Trichloroethene	11.20	130	2410	0.2670 ug/L	97
48) Methylcyclohexane	11.31	83	3936	0.2871 ug/L	84
49) 1,2-Dichloropropane	11.42	63	2136	0.2836 ug/L	88
50) Bromodichloromethane	11.73	83	3767	0.2845 ug/L #	91
52) Dibromomethane	11.82	93	700	0.1570 ug/L #	59
53) 2-Chloroethyl Vinyl Ether	12.02	63	847	0.2616 ug/L #	47
55) cis-1,3-Dichloropropene	12.36	75	4763	0.3535 ug/L	84
56) Dimethyl Disulfide	12.63	79	1647	0.2290 ug/L	82
59) Toluene	12.78	91	11513	0.3243 ug/L	92
60) Ethyl Methacrylate	12.89	69	1631	0.2392 ug/L #	64

(#) = qualifier out of range (m) = manual integration
8M412220.D 8260WT.M Tue May 17 11:40:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:40:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
62)	trans-1,3-Dichloropropene	12.96	75	3626	0.3047 ug/L		82
63)	1,1,2-Trichloroethane	13.18	97	1409	0.2515 ug/L		98
65)	1,3-Dichloropropane	13.49	76	2584	0.2590 ug/L		93
66)	Tetrachloroethene	13.61	164	2678	0.3520 ug/L	#	75
67)	Dibromochloromethane	13.87	129	2126	0.2599 ug/L		79
68)	1,2-Dibromoethane	14.12	107	1895	0.3394 ug/L		91
69)	1-Chlorohexane	14.21	91	3835	0.3164 ug/L		99
70)	Chlorobenzene	14.62	112	7968	0.3328 ug/L		88
71)	1,1,1,2-Tetrachloroethane	14.67	131	2872	0.3096 ug/L		87
72)	Ethylbenzene	14.64	106	3844	0.2934 ug/L		81
73)	m-,p-Xylene	14.75	106	10447	0.6799 ug/L		96
74)	o-Xylene	15.31	106	4577	0.3047 ug/L		97
75)	Styrene	15.35	104	7545	0.3062 ug/L		95
76)	Bromoform	15.84	173	1301	0.2681 ug/L	#	51
77)	Isopropylbenzene	15.74	105	13119	0.3287 ug/L		90
79)	1,1,2,2-Tetrachloroethane	15.96	83	1714	0.2853 ug/L	#	85
83)	n-Propylbenzene	16.24	91	15676	0.3357 ug/L		92
84)	Bromobenzene	16.38	156	2859	0.2977 ug/L		90
85)	1,3,5-Trimethylbenzene	16.43	105	10873	0.3196 ug/L		99
86)	2-Chlorotoluene	16.52	91	11133	0.3415 ug/L		96
87)	4-Chlorotoluene	16.56	91	10305	0.3499 ug/L		97
88)	a-Methylstyrene	16.83	118	4090	0.2534 ug/L		86
89)	tert-Butylbenzene	16.90	134	1734	0.2606 ug/L		72
90)	1,2,4-Trimethylbenzene	16.95	105	10734	0.3069 ug/L		89
91)	sec-Butylbenzene	17.16	105	13749	0.3436 ug/L		97
92)	p-Isopropyltoluene	17.32	119	10847	0.3192 ug/L		95
93)	1,3-Dichlorobenzene	17.52	146	6023	0.3257 ug/L		99
94)	1,4-Dichlorobenzene	17.65	146	6152	0.3299 ug/L	#	60
95)	n-Butylbenzene	17.85	91	11161	0.3323 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	5711	0.3472 ug/L		92
98)	1,2,4-Trichlorobenzene	20.29	180	4203	0.3418 ug/L		91
99)	Hexachlorobutadiene	20.43	225	1894	0.3297 ug/L		84
100)	Naphthalene	20.65	128	6039	0.3306 ug/L		91
101)	1,2,3-Trichlorobenzene	20.96	180	3279	0.3161 ug/L		86

(#) = qualifier out of range (m) = manual integration

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2778	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.4537	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.2630	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	0.2592	0.0	100	0.03
6	T	Bromomethane	-1.0000	0.9911	0.0	100	0.00
7	T	Chloroethane	-1.0000	0.2113	0.0	100	0.00
8	T	Trichlorofluoromethane	-1.0000	0.1520	0.0	100	-0.02
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.90#
10	T	Isoprene	-1.0000	0.1987	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.13#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2087	0.0	100	0.00
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	-1.0000	0.2501	0.0	100	0.02
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.58#
16	T	Dimethyl Sulfide	-1.0000	0.2308	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.0000	0.0	0	-7.00#
19	T	Methylene Chloride	-1.0000	0.4028	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.3853	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.43#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2686	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	-1.0000	0.3170	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.3075	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.2259	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.3212	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.98#
31	T	2,2-Dichloropropane	-1.0000	0.3101	0.0	100	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.3128	0.0	100	0.00
33	C	Chloroform	0.3000	0.3101	-3.4	100	0.00
34		1-Bromopropane	-1.0000	0.1551	0.0	100	0.00
35	T	Bromochloromethane	-1.0000	0.2858	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	2.0617	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	-1.0000	0.2921	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.2644	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.2909	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	-1.0000	0.3194	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	-1.0000	0.2853	0.0	100	0.00
46	T	Benzene	-1.0000	0.3333	0.0	100	0.00
47	T	Trichloroethene	-1.0000	0.2670	0.0	100	-0.01
48	T	Methylcyclohexane	-1.0000	0.2871	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2836	0.0	100	0.00
50	T	Bromodichloromethane	-1.0000	0.2845	0.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	-1.0000	0.1570	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2616	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.05#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.3535	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2290	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0189	0.0	100	0.00
59	C	Toluene	-1.0000	0.3243	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2392	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3047	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.2515	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	-1.0000	0.2590	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.3520	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.2599	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.3394	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.3164	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.3328	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.3096	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.2934	0.0	100	-0.01
73	T	m-,p-Xylene	-1.0000	0.6799	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.3047	0.0	100	0.00
75	T	Styrene	-1.0000	0.3062	0.0	100	0.00
76	P	Bromoform	-1.0000	0.2681	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.3287	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2853	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0253	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.1103	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	-1.0000	0.3357	0.0	100	0.00
84	T	Bromobenzene	0.3000	0.2977	0.8	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.3196	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.3415	0.0	100	0.00
87	T	4-Chlorotoluene	-1.0000	0.3499	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2534	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.2606	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.3069	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3436	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.3192	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.3257	0.0	100	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.3299	-10.0	100	0.00
95	T	n-Butylbenzene	-1.0000	0.3323	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.3472	-15.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.3418	0.0	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.3297	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.3306	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.3161	-5.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412220.D 8260WT.M Sat May 14 18:03:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	801173	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	557498	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	293108	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.00%#	
80) p-Bromofluorobenzene	16.08	95	343	0.0286 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	5478	0.3262 ug/L	79
3) Chloromethane	3.63	50	3930	0.2484 ug/L	85
4) Vinyl Chloride	3.84	62	3512	0.3288 ug/L	97
5) 1,3-Butadiene	3.90	54	2479	0.2375 ug/L #	75
6) Bromomethane	4.73	94	1343	0.9497 ug/L	85
7) Chloroethane	4.90	64	2219	0.3174 ug/L #	43
8) Trichlorofluoromethane	5.36	101	6974	0.3289 ug/L #	93
10) Isoprene	5.94	67	4288	0.3952 ug/L #	62
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	3168	0.3263 ug/L #	40
14) 1,1-Dichloroethene	6.47	61	5431	0.2882 ug/L	92
16) Dimethyl Sulfide	6.74	62	1708	0.2453 ug/L	64
19) Methylene Chloride	7.24	84	3785	0.4239 ug/L #	43
20) Carbon Disulfide	7.29	76	12437	0.4565 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	6580	0.3336 ug/L #	76
23) trans-1,2-Dichloroethene	7.71	61	4990	0.2928 ug/L	96
24) n-Hexane	7.79	57	3110	0.2011 ug/L	99
26) Vinyl Acetate	8.31	43	2753	0.1566 ug/L	100
27) 1,1-Dichloroethane	8.32	63	5655	0.2774 ug/L #	92
31) 2,2-Dichloropropane	9.10	77	6035	0.3360 ug/L	82
32) cis-1,2-Dichloroethene	9.16	96	3837	0.3762 ug/L	74
33) Chloroform	9.37	83	7267	0.3842 ug/L	100
34) 1-Bromopropane	9.50	122	234	0.1456 ug/L #	1
35) Bromochloromethane	9.60	130	1674	0.3137 ug/L	62
36) Tetrahydrofuran	9.62	42	447	0.2146 ug/L #	41
38) 1,1,1-Trichloroethane	9.91	97	6304	0.3305 ug/L	90
39) Cyclohexane	9.94	56	4658	0.2238 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	5172	0.3768 ug/L	80
42) Carbon Tetrachloride	10.25	117	5692	0.3172 ug/L	95
45) 1,2-Dichloroethane	10.43	62	4443	0.2796 ug/L #	63
46) Benzene	10.46	78	14456	0.4134 ug/L #	77
47) Trichloroethene	11.21	130	3659	0.3626 ug/L	98
48) Methylcyclohexane	11.29	83	5025	0.3562 ug/L	84
49) 1,2-Dichloropropane	11.42	63	3060	0.3007 ug/L	98
50) Bromodichloromethane	11.73	83	4734	0.3343 ug/L #	93
52) Dibromomethane	11.82	93	1805	0.3767 ug/L	84
55) cis-1,3-Dichloropropene	12.36	75	5008	0.3514 ug/L	90
56) Dimethyl Disulfide	12.63	79	1921	0.2573 ug/L	85
59) Toluene	12.78	91	14742	0.4416 ug/L	98
60) Ethyl Methacrylate	12.90	69	2062	0.3292 ug/L	66
62) trans-1,3-Dichloropropene	12.96	75	3693	0.3171 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
63)	1,1,2-Trichloroethane	13.18	97	2326	0.4391 ug/L		70
65)	1,3-Dichloropropane	13.49	76	3163	0.3219 ug/L		88
66)	Tetrachloroethene	13.61	164	3164	0.4185 ug/L		93
67)	Dibromochloromethane	13.87	129	3113	0.3727 ug/L		86
68)	1,2-Dibromoethane	14.12	107	2076	0.3760 ug/L		90
69)	1-Chlorohexane	14.21	91	4746	0.4174 ug/L		80
70)	Chlorobenzene	14.62	112	9180	0.3960 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.66	131	3501	0.3876 ug/L		95
72)	Ethylbenzene	14.65	106	5348	0.4066 ug/L		84
73)	m-,p-Xylene	14.75	106	13269	0.8757 ug/L		89
74)	o-Xylene	15.31	106	6019	0.3943 ug/L		97
75)	Styrene	15.35	104	9370	0.3849 ug/L		95
76)	Bromoform	15.83	173	1198	0.2500 ug/L	#	76
77)	Isopropylbenzene	15.73	105	16528	0.4270 ug/L		92
79)	1,1,2,2-Tetrachloroethane	15.96	83	1999	0.3419 ug/L	#	83
83)	n-Propylbenzene	16.25	91	19410	0.4297 ug/L		95
84)	Bromobenzene	16.37	156	3319	0.3524 ug/L		75
85)	1,3,5-Trimethylbenzene	16.42	105	13794	0.4127 ug/L		95
86)	2-Chlorotoluene	16.51	91	13678	0.4729 ug/L		90
87)	4-Chlorotoluene	16.56	91	12572	0.4219 ug/L		98
88)	a-Methylstyrene	16.84	118	5739	0.3485 ug/L		96
89)	tert-Butylbenzene	16.90	134	2254	0.3403 ug/L		55
90)	1,2,4-Trimethylbenzene	16.95	105	13859	0.4051 ug/L		90
91)	sec-Butylbenzene	17.17	105	17612	0.4382 ug/L		90
92)	p-Isopropyltoluene	17.32	119	13616	0.3968 ug/L		90
93)	1,3-Dichlorobenzene	17.52	146	6961	0.3724 ug/L		86
94)	1,4-Dichlorobenzene	17.64	146	7149	0.3832 ug/L	#	1
95)	n-Butylbenzene	17.85	91	15223	0.4664 ug/L		91
96)	1,2-Dichlorobenzene	18.14	146	6129	0.3742 ug/L		92
98)	1,2,4-Trichlorobenzene	20.28	180	5035	0.3969 ug/L		97
99)	Hexachlorobutadiene	20.44	225	2420	0.4122 ug/L		83
100)	Naphthalene	20.65	128	7474	0.3874 ug/L	#	84
101)	1,2,3-Trichlorobenzene	20.96	180	4378	0.4056 ug/L	#	78

(#) = qualifier out of range (m) = manual integration
8M412221.D 8260WT.M Fri May 13 14:20:39 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

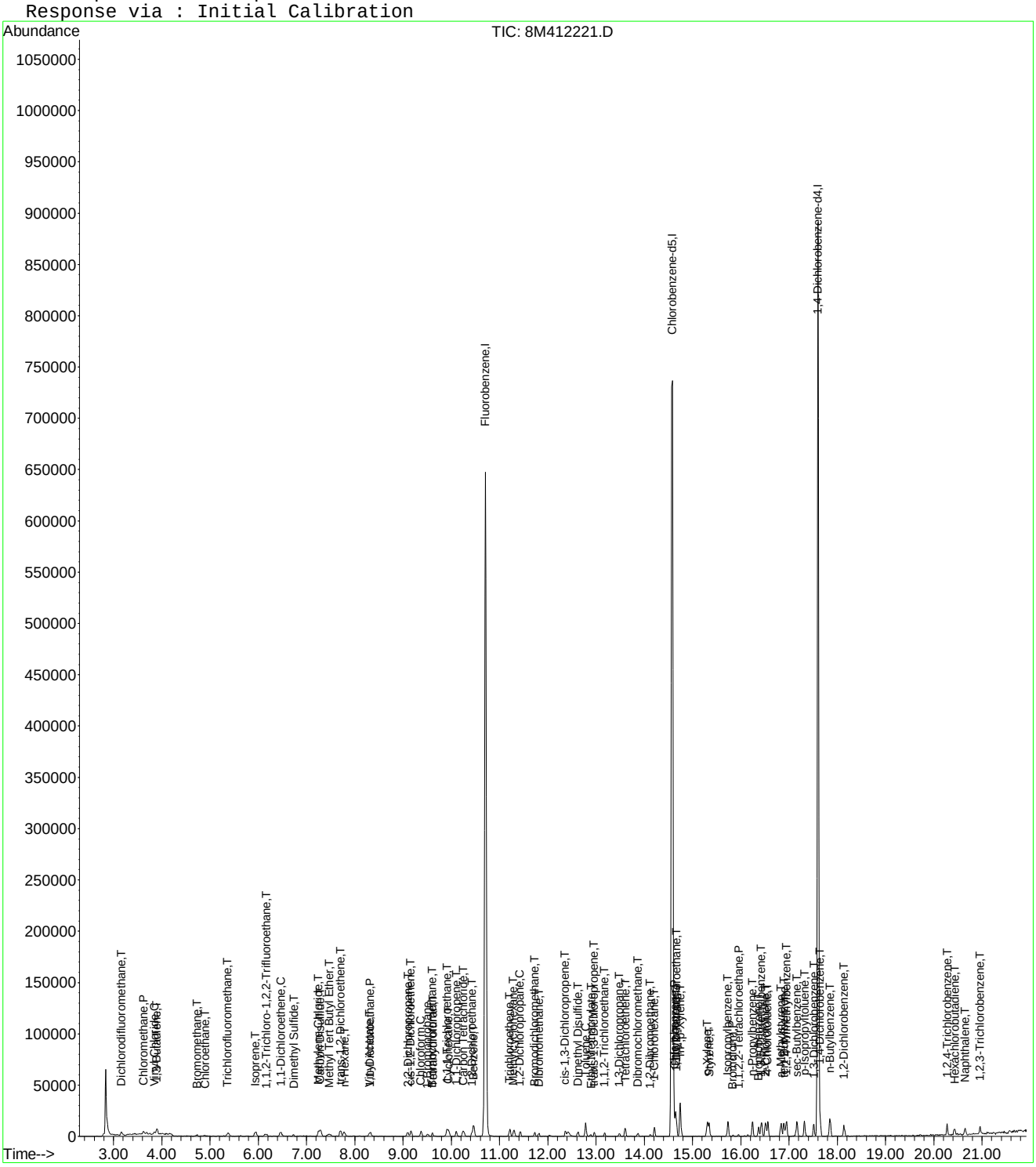

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	0.4000	0.4078	-2.0	100	0.00
3	P	Chloromethane	-1.0000	0.5012	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.3775	5.6	100	0.00
5	T	1,3-Butadiene	-1.0000	0.3178	0.0	100	0.02
6	T	Bromomethane	-1.0000	1.0253	0.0	100	0.00
7	T	Chloroethane	0.4000	0.4335	-8.4	100	0.00
8	T	Trichlorofluoromethane	0.4000	0.4029	-0.7	100	-0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.90#
10	T	Isoprene	0.4000	0.4079	-2.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.13#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3894	0.0	100	0.02
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	0.4000	0.4192	-4.8	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.58#
16	T	Dimethyl Sulfide	0.4000	0.3687	7.8	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.2179	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4591	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4587	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.43#
22	T	Methyl Tert Butyl Ether	-1.0000	0.3688	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.4193	-4.8	100	0.00
24	T	n-Hexane	-1.0000	0.3519	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.3241	0.0	100	0.02
27	P	1,1-Dichloroethane	0.4000	0.3826	4.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.98#
31	T	2,2-Dichloropropane	0.4000	0.3874	3.1	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.4172	-4.3	100	-0.01
33	C	Chloroform	0.4000	0.4164	-4.1	100	0.00
34		1-Bromopropane	-1.0000	0.1776	0.0	100	-0.01
35	T	Bromochloromethane	0.4000	0.3550	11.3	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.5125	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	0.4000	0.3803	4.9	100	0.00
39	T	Cyclohexane	-1.0000	0.4058	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4093	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	0.4000	0.3867	3.3	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	0.4000	0.3955	1.1	100	0.00
46	T	Benzene	0.4000	0.4393	-9.8	100	0.00
47	T	Trichloroethene	0.4000	0.4169	-4.2	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3768	0.0	100	-0.01
49	C	1,2-Dichloropropane	0.4000	0.4177	-4.4	100	0.00
50	T	Bromodichloromethane	0.4000	0.3676	8.1	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	0.4000	0.4162	-4.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1401	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.05#

(#) = Out of Range

8M412221.D 8260WT.M Sat May 14 18:03:54 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3821	4.5	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2746	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0000	0.0	0	-12.68#
59	C	Toluene	0.4000	0.4259	-6.5	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3102	0.0	100	0.02
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3184	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.4259	-6.5	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	0.4000	0.3253	18.7	100	0.00
66	T	Tetrachloroethene	0.4000	0.4267	-6.7	100	0.00
67	T	Dibromochloromethane	0.4000	0.3904	2.4	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.3814	4.6	100	0.00
69	T	1-Chlorohexane	0.4000	0.4017	-0.4	100	0.00
70	P	Chlorobenzene	0.4000	0.3933	1.7	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3872	3.2	100	0.00
72	C	Ethylbenzene	0.4000	0.4188	-4.7	100	0.00
73	T	m-,p-Xylene	0.8000	0.8859	-10.7	100	0.00
74	T	o-Xylene	-1.0000	0.4110	0.0	100	0.00
75	T	Styrene	0.4000	0.3901	2.5	100	0.00
76	P	Bromoform	-1.0000	0.2533	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.4249	-6.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.3398	15.1	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0283	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.14#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	0.4000	0.4245	-6.1	100	0.00
84	T	Bromobenzene	0.4000	0.3529	11.8	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.4141	-3.5	100	0.00
86	T	2-Chlorotoluene	0.4000	0.4284	-7.1	100	0.00
87	T	4-Chlorotoluene	0.4000	0.4359	-9.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.3631	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3459	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	0.4000	0.4046	-1.2	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.4494	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4092	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.3844	3.9	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.3915	2.1	100	0.00
95	T	n-Butylbenzene	-1.0000	0.4628	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.3805	4.9	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	0.4000	0.4182	-4.5	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.4302	-7.5	100	0.00
100	T	Naphthalene	0.4000	0.4178	-4.5	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.4310	-7.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412221.D 8260WT.M Sat May 14 18:03:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	795577	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	547129	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	284579	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.65	111	3962	0.3966 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery	= 1.60%#	
43) 1,2-Dichloroethane-d4	10.31	65	3835	0.3356 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery	= 1.36%#	
58) Toluene-d8	12.68	98	14023	0.4957 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 2.00%#	
80) p-Bromofluorobenzene	16.08	95	6483	0.5565 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery	= 2.24%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	12402	0.7438 ug/L	97
3) Chloromethane	3.62	50	8415	0.5357 ug/L #	75
4) Vinyl Chloride	3.84	62	9412	0.8873 ug/L	89
5) 1,3-Butadiene	3.90	54	6974	0.6729 ug/L	81
6) Bromomethane	4.73	94	4114	1.3123 ug/L	92
7) Chloroethane	4.90	64	4983	0.7178 ug/L #	80
8) Trichlorofluoromethane	5.38	101	17133	0.8136 ug/L #	96
9) Diethyl ether	5.90	59	20707	3.2140 ug/L	84
10) Isoprene	5.94	67	11176	1.0373 ug/L	76
11) Acrolein	6.14	56	246	0.4300 ug/L #	15
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	8135	0.8438 ug/L	96
13) Acetone	6.24	43	413	0.2115 ug/L #	48
14) 1,1-Dichloroethene	6.46	61	12947	0.6919 ug/L	91
15) Tert-Butyl Alcohol	6.59	59	3316	7.3747 ug/L #	55
16) Dimethyl Sulfide	6.72	62	4505	0.6515 ug/L	79
18) Methyl acetate	7.00	43	2119	0.3630 ug/L #	66
19) Methylene Chloride	7.24	84	8723	0.9837 ug/L #	43
20) Carbon Disulfide	7.29	76	28246	1.0441 ug/L	100
21) Acrylonitrile	7.43	53	2164	0.8620 ug/L	76
22) Methyl Tert Butyl Ether	7.47	73	16998	0.8678 ug/L	84
23) trans-1,2-Dichloroethene	7.70	61	12571	0.7427 ug/L	100
24) n-Hexane	7.78	57	9382	0.6109 ug/L	82
25) Diisopropyl ether	8.12	45	95400	2.1939 ug/L #	91
26) Vinyl Acetate	8.30	43	6750	0.3867 ug/L #	89
27) 1,1-Dichloroethane	8.32	63	14721	0.7271 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	97972	3.2102 ug/L	88
29) 2-Butanone	8.88	43	380	0.1215 ug/L #	57
30) Propionitrile	8.99	54	1593	2.0138 ug/L #	56
31) 2,2-Dichloropropane	9.09	77	14691	0.8236 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	9482	0.9362 ug/L	72
33) Chloroform	9.37	83	18494	0.9845 ug/L	94
34) 1-Bromopropane	9.50	122	1092	0.6844 ug/L	80
35) Bromochloromethane	9.61	130	5234	0.9877 ug/L #	55
36) Tetrahydrofuran	9.63	42	5415	2.6185 ug/L #	68
38) 1,1,1-Trichloroethane	9.91	97	17074	0.9016 ug/L	92
39) Cyclohexane	9.94	56	11865	0.5740 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	13172	0.9663 ug/L	87
41) Tert-Amyl-Methyl ether	10.21	73	90255	4.6173 ug/L #	88
42) Carbon Tetrachloride	10.25	117	14515	0.8146 ug/L	95
45) 1,2-Dichloroethane	10.42	62	10675	0.6766 ug/L	85

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	10.47	78	34504	0.9938 ug/L		84
47)	Trichloroethene	11.21	130	8752	0.8735 ug/L		93
48)	Methylcyclohexane	11.30	83	13513	0.9646 ug/L		79
49)	1,2-Dichloropropane	11.43	63	7057	0.6982 ug/L	#	67
50)	Bromodichloromethane	11.73	83	12147	0.8638 ug/L		96
52)	Dibromomethane	11.81	93	4130	0.8681 ug/L		95
53)	2-Chloroethyl Vinyl Ether	12.03	63	2694	0.6366 ug/L		86
54)	4-Methyl-2-Pentanone	12.06	58	848	0.3671 ug/L	#	41
55)	cis-1,3-Dichloropropene	12.36	75	12521	0.8847 ug/L		97
56)	Dimethyl Disulfide	12.63	79	5799	0.7821 ug/L		96
59)	Toluene	12.79	91	37114	1.1328 ug/L		95
60)	Ethyl Methacrylate	12.88	69	5490	0.8930 ug/L		69
62)	trans-1,3-Dichloropropene	12.96	75	10328	0.9035 ug/L		92
63)	1,1,2-Trichloroethane	13.18	97	5274	1.0144 ug/L		93
64)	2-Hexanone	13.10	58	397	0.2127 ug/L	#	1
65)	1,3-Dichloropropane	13.49	76	9673	1.0032 ug/L		73
66)	Tetrachloroethene	13.61	164	7373	0.9937 ug/L		95
67)	Dibromochloromethane	13.87	129	7358	0.8977 ug/L		95
68)	1,2-Dibromoethane	14.13	107	5123	0.9454 ug/L		95
69)	1-Chlorohexane	14.21	91	12790	1.1461 ug/L		79
70)	Chlorobenzene	14.62	112	25662	1.1281 ug/L		89
71)	1,1,1,2-Tetrachloroethane	14.66	131	8722	0.9838 ug/L		94
72)	Ethylbenzene	14.65	106	13009	1.0078 ug/L		87
73)	m-,p-Xylene	14.75	106	30465	2.0486 ug/L		84
74)	o-Xylene	15.31	106	15133	1.0101 ug/L		84
75)	Styrene	15.35	104	23191	0.9707 ug/L		91
76)	Bromoform	15.84	173	3875	0.8240 ug/L		96
77)	Isopropylbenzene	15.74	105	41382	1.0895 ug/L		95
79)	1,1,2,2-Tetrachloroethane	15.95	83	5604	0.9873 ug/L	#	93
81)	1,2,3-Trichloropropane	16.15	110	1355	0.7428 ug/L	#	1
82)	trans-1,4-Dichloro-2-Buten	16.19	53	962	0.3479 ug/L	#	1
83)	n-Propylbenzene	16.25	91	48249	1.1002 ug/L		99
84)	Bromobenzene	16.37	156	9598	1.0497 ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	33355	1.0278 ug/L		96
86)	2-Chlorotoluene	16.51	91	33408	1.1895 ug/L		94
87)	4-Chlorotoluene	16.56	91	29548	1.0213 ug/L		95
88)	a-Methylstyrene	16.84	118	14414	0.9014 ug/L		91
89)	tert-Butylbenzene	16.89	134	6686	1.0398 ug/L		86
90)	1,2,4-Trimethylbenzene	16.95	105	36066	1.0857 ug/L		96
91)	sec-Butylbenzene	17.16	105	42128	1.0796 ug/L		96
92)	p-Isopropyltoluene	17.32	119	35424	1.0633 ug/L		94
93)	1,3-Dichlorobenzene	17.52	146	18409	1.0144 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	19031	1.0506 ug/L	#	62
95)	n-Butylbenzene	17.85	91	35772	1.1288 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	16104	1.0126 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.14	75	1262	1.0152 ug/L	#	53
98)	1,2,4-Trichlorobenzene	20.28	180	11494	0.9331 ug/L		98
99)	Hexachlorobutadiene	20.43	225	5421	0.9510 ug/L		98
100)	Naphthalene	20.65	128	16581	0.8853 ug/L		100
101)	1,2,3-Trichlorobenzene	20.96	180	10306	0.9835 ug/L		94

(#) = qualifier out of range (m) = manual integration
8M412222.D 8260WT.M Fri May 13 14:49:48 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

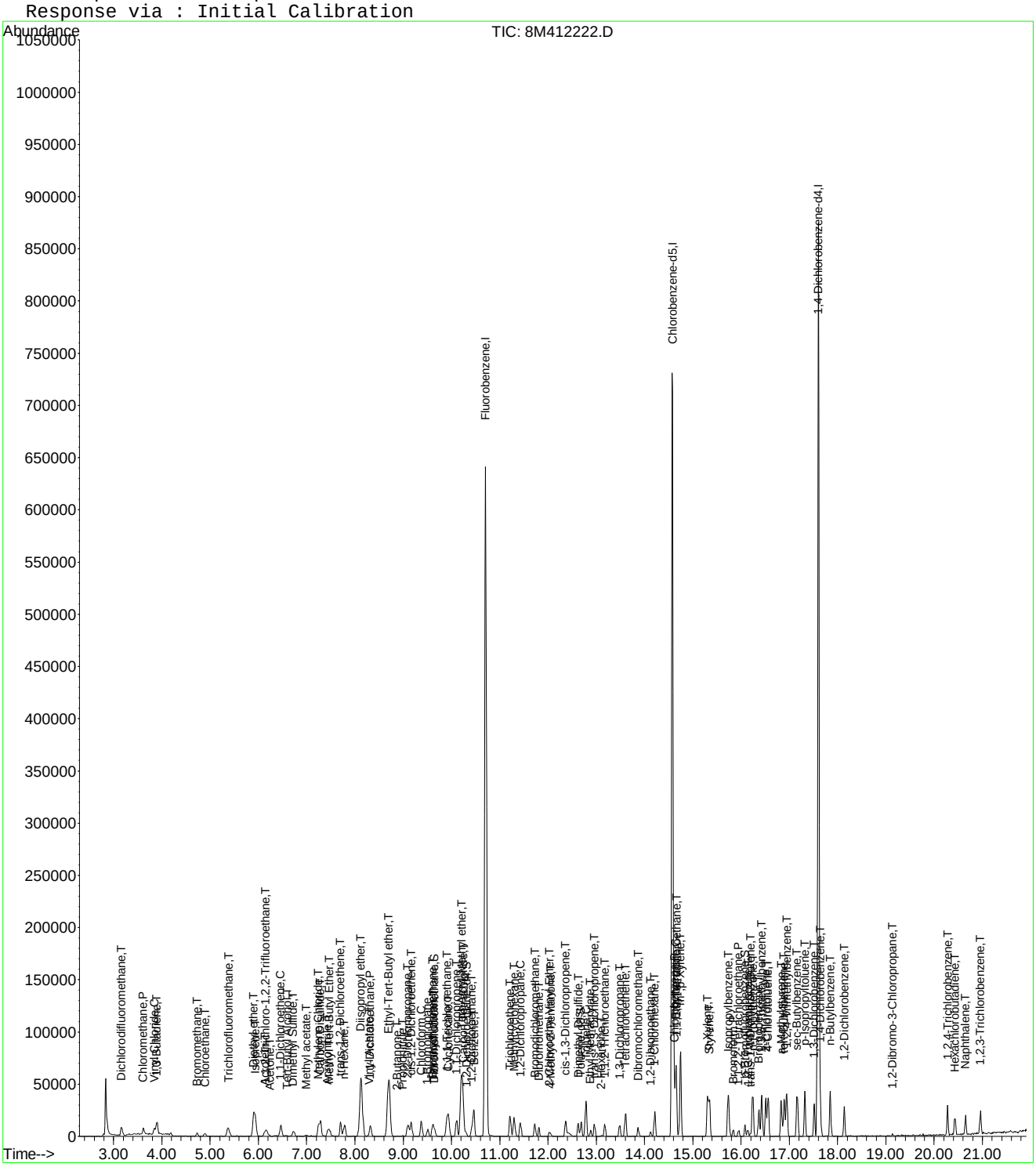

8M412222.D 8260WT.M Fri May 13 14:49:48 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:05:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9298	7.0	100	0.00
3	P	Chloromethane	1.0000	1.0808	-8.1	100	0.00
4	C	Vinyl Chloride	1.0000	1.0189	-1.9	100	0.00
5	T	1,3-Butadiene	-1.0000	0.9002	0.0	100	0.02
6	T	Bromomethane	1.0000	1.2082	-20.8	100	0.00
7	T	Chloroethane	1.0000	0.9803	2.0	100	0.00
8	T	Trichlorofluoromethane	1.0000	0.9968	0.3	100	0.00
9	T	Diethyl ether	5.0000	5.0462	-0.9	100	0.00
10	T	Isoprene	1.0000	1.0707	-7.1	100	0.00
11	T	Acrolein	-1.0000	0.6696	0.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0069	-0.7	100	0.00
13	T	Acetone	-1.0000	0.4614	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	1.0064	-0.6	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	11.5604	0.0	0	0.02
16	T	Dimethyl Sulfide	1.0000	0.9794	2.1	100	-0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.8758	0.0	100	0.00
19	T	Methylene Chloride	1.0000	1.0655	-6.5	100	0.00
20	T	Carbon Disulfide	1.0000	1.0492	-4.9	100	0.00
21	T	Acrylonitrile	2.5000	1.8633	25.5#	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9593	4.1	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	1.0636	-6.4	100	0.00
24	T	n-Hexane	-1.0000	1.0690	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	5.1784	-3.6	100	0.00
26	T	Vinyl Acetate	-1.0000	0.8002	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0029	-0.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.9635	0.7	100	0.00
29	T	2-Butanone	-1.0000	0.2889	0.0	100	0.00
30	T	Propionitrile	5.0000	4.1566	16.9	100	0.00
31	T	2,2-Dichloropropane	1.0000	0.9498	5.0	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	1.0383	-3.8	100	0.00
33	C	Chloroform	1.0000	1.0671	-6.7	100	0.00
34		1-Bromopropane	1.0000	0.8348	16.5	100	-0.01
35	T	Bromochloromethane	1.0000	1.1177	-11.8	100	0.00
36	T	Tetrahydrofuran	5.0000	6.2516	-25.0#	100	0.00
37	S	Dibromofluoromethane	0.5000	0.4635	7.3	100	-0.01
38	T	1,1,1-Trichloroethane	1.0000	1.0372	-3.7	100	0.00
39	T	Cyclohexane	1.0000	1.0411	-4.1	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0498	-5.0	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	5.0344	-0.7	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.9930	0.7	100	0.00
43	S	1,2-Dichloroethane-d4	0.5000	0.4184	16.3	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	1.0000	0.9570	4.3	100	0.00
46	T	Benzene	1.0000	1.0558	-5.6	100	0.00
47	T	Trichloroethene	1.0000	1.0041	-0.4	100	0.00
48	T	Methylcyclohexane	-1.0000	1.0205	0.0	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.9700	3.0	100	0.00
50	T	Bromodichloromethane	1.0000	0.9500	5.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	1.0000	0.9590	4.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.8616	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.6639	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:05:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9621	3.8	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.8348	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	0.5000	0.4897	2.1	100	0.00
59	C	Toluene	1.0000	1.0927	-9.3	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.8416	15.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	1.0000	0.9073	9.3	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.9840	1.6	100	0.00
64	T	2-Hexanone	-1.0000	0.3525	0.0	100	-0.01
65	T	1,3-Dichloropropane	1.0000	1.0137	-1.4	100	0.00
66	T	Tetrachloroethene	1.0000	1.0132	-1.3	100	0.00
67	T	Dibromochloromethane	1.0000	0.9402	6.0	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.9590	4.1	100	0.00
69	T	1-Chlorohexane	1.0000	1.1031	-10.3	100	0.00
70	P	Chlorobenzene	1.0000	1.1204	-12.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.9829	1.7	100	0.00
72	C	Ethylbenzene	1.0000	1.0381	-3.8	100	0.00
73	T	m-,p-Xylene	2.0000	2.0726	-3.6	100	0.00
74	T	o-Xylene	1.0000	1.0530	-5.3	100	0.00
75	T	Styrene	1.0000	0.9839	1.6	100	0.00
76	P	Bromoform	1.0000	0.8348	16.5	100	0.00
77	T	Isopropylbenzene	1.0000	1.0840	-8.4	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	0.9810	1.9	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5502	0.0	100	0.00
81	T	1,2,3-Trichloropropane	1.0000	0.7703	23.0	100	0.02
82	T	trans-1,4-Dichloro-2-Butene	1.0000	1.1443	-14.4	100	0.00
83	T	n-Propylbenzene	1.0000	1.0868	-8.7	100	0.00
84	T	Bromobenzene	1.0000	1.0510	-5.1	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	1.0314	-3.1	100	0.00
86	T	2-Chlorotoluene	1.0000	1.0778	-7.8	100	0.00
87	T	4-Chlorotoluene	1.0000	1.0553	-5.5	100	0.00
88	T	a-Methylstyrene	-1.0000	0.9394	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	1.0567	-5.7	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	1.0845	-8.5	100	0.00
91	T	sec-Butylbenzene	1.0000	1.1073	-10.7	100	0.00
92	T	p-Isopropyltoluene	1.0000	1.0966	-9.7	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0469	-4.7	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	1.0735	-7.3	100	0.00
95	T	n-Butylbenzene	1.0000	1.1201	-12.0	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0297	-3.0	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.1006	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	1.0000	0.9832	1.7	100	0.00
99	T	Hexachlorobutadiene	1.0000	0.9925	0.7	100	0.00
100	T	Naphthalene	1.0000	0.9547	4.5	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	1.0450	-4.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	782460	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	543252	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	286450	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	8161	0.8307 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.32%#	
43) 1,2-Dichloroethane-d4	10.30	65	9681	0.8613 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.44%#	
58) Toluene-d8	12.68	98	28135	1.0016 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.00%#	
80) p-Bromofluorobenzene	16.08	95	12079	1.0302 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	24870	1.5166 ug/L	98
3) Chloromethane	3.62	50	16106	1.0425 ug/L	93
4) Vinyl Chloride	3.85	62	18562	1.7792 ug/L	94
5) 1,3-Butadiene	3.90	54	13617	1.3360 ug/L	92
6) Bromomethane	4.73	94	8329	1.8804 ug/L	94
7) Chloroethane	4.90	64	9562	1.4006 ug/L	86
8) Trichlorofluoromethane	5.39	101	34970	1.6885 ug/L	97
9) Diethyl ether	5.90	59	107986	17.0420 ug/L	79
10) Isoprene	5.93	67	20936	1.9757 ug/L	73
11) Acrolein	6.14	56	4864	8.6444 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	16832	1.7751 ug/L	99
13) Acetone	6.23	43	1519	0.7908 ug/L #	48
14) 1,1-Dichloroethene	6.47	61	25394	1.3798 ug/L	89
15) Tert-Butyl Alcohol	6.58	59	14891	33.6725 ug/L	85
16) Dimethyl Sulfide	6.73	62	9489	1.3953 ug/L	79
17) Iodomethane	6.98	142	1211	1.3472 ug/L #	60
18) Methyl acetate	7.01	43	5064	0.8821 ug/L #	79
19) Methylene Chloride	7.25	84	16579	1.9010 ug/L	52
20) Carbon Disulfide	7.29	76	57693	2.1683 ug/L	98
21) Acrylonitrile	7.43	53	13848	5.6089 ug/L	93
22) Methyl Tert Butyl Ether	7.47	73	33991	1.7644 ug/L	84
23) trans-1,2-Dichloroethene	7.70	61	22786	1.3688 ug/L	88
24) n-Hexane	7.79	57	18282	1.2105 ug/L	84
25) Diisopropyl ether	8.12	45	475271	11.1128 ug/L #	92
26) Vinyl Acetate	8.29	43	15998	0.9318 ug/L	93
27) 1,1-Dichloroethane	8.32	63	30419	1.5277 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	505010	16.8250 ug/L	89
29) 2-Butanone	8.90	43	2250	0.7313 ug/L #	57
30) Propionitrile	8.99	54	9373	12.0479 ug/L	86
31) 2,2-Dichloropropane	9.10	77	32521	1.8538 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	18238	1.8309 ug/L	91
33) Chloroform	9.37	83	33543	1.8156 ug/L	99
34) 1-Bromopropane	9.52	122	2513	1.6014 ug/L	88
35) Bromochloromethane	9.60	130	9189	1.7632 ug/L	67
36) Tetrahydrofuran	9.63	42	22074	10.8529 ug/L #	66
38) 1,1,1-Trichloroethane	9.90	97	32268	1.7324 ug/L	96
39) Cyclohexane	9.93	56	23097	1.1362 ug/L #	65
40) 1,1-Dichloropropene	10.10	75	24988	1.8639 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	459535	23.9029 ug/L	87
42) Carbon Tetrachloride	10.24	117	28935	1.6512 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412223.D 8260WT.M Fri May 13 15:18:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.42	62	22142	1.4270 ug/L #	83
46)	Benzene	10.46	78	67028	1.9629 ug/L	83
47)	Trichloroethene	11.21	130	17287	1.7543 ug/L	96
48)	Methylcyclohexane	11.30	83	26050	1.8907 ug/L	84
49)	1,2-Dichloropropane	11.42	63	14582	1.4670 ug/L	77
50)	Bromodichloromethane	11.73	83	25794	1.8651 ug/L	93
51)	1,4-Dioxane	11.73	88	1282	32.3515 ug/L	74
52)	Dibromomethane	11.81	93	8575	1.8325 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.02	63	6234	1.4979 ug/L	100
54)	4-Methyl-2-Pentanone	12.06	58	2139	0.9416 ug/L	84
55)	cis-1,3-Dichloropropene	12.37	75	24153	1.7353 ug/L	98
56)	Dimethyl Disulfide	12.62	79	12288	1.6851 ug/L	99
59)	Toluene	12.79	91	72944	2.2423 ug/L	95
60)	Ethyl Methacrylate	12.88	69	12716	2.0832 ug/L	71
62)	trans-1,3-Dichloropropene	12.96	75	22163	1.9527 ug/L	100
63)	1,1,2-Trichloroethane	13.18	97	10537	2.0412 ug/L	99
64)	2-Hexanone	13.13	58	2200	1.1873 ug/L #	65
65)	1,3-Dichloropropane	13.49	76	20212	2.1112 ug/L	72
66)	Tetrachloroethene	13.60	164	14595	1.9811 ug/L	90
67)	Dibromochloromethane	13.87	129	14698	1.8061 ug/L	98
68)	1,2-Dibromoethane	14.12	107	10152	1.8869 ug/L	95
69)	1-Chlorohexane	14.21	91	21960	1.9818 ug/L	89
70)	Chlorobenzene	14.62	112	47376	2.0974 ug/L	81
71)	1,1,1,2-Tetrachloroethane	14.66	131	17526	1.9910 ug/L	97
72)	Ethylbenzene	14.66	106	25628	1.9996 ug/L	92
73)	m-,p-Xylene	14.74	106	60087	4.0693 ug/L	84
74)	o-Xylene	15.31	106	28289	1.9017 ug/L	79
75)	Styrene	15.35	104	47644	2.0086 ug/L	92
76)	Bromoform	15.84	173	9145	1.9585 ug/L	95
77)	Isopropylbenzene	15.73	105	81301	2.1557 ug/L	97
79)	1,1,2,2-Tetrachloroethane	15.95	83	11538	2.0194 ug/L	95
81)	1,2,3-Trichloropropane	16.13	110	3630	1.9770 ug/L	94
82)	trans-1,4-Dichloro-2-Buten	16.19	53	2699	0.9698 ug/L #	36
83)	n-Propylbenzene	16.24	91	97233	2.2026 ug/L	96
84)	Bromobenzene	16.37	156	19174	2.0834 ug/L	92
85)	1,3,5-Trimethylbenzene	16.42	105	67395	2.0631 ug/L	97
86)	2-Chlorotoluene	16.51	91	67110	2.3739 ug/L	94
87)	4-Chlorotoluene	16.56	91	59154	2.0313 ug/L	92
88)	a-Methylstyrene	16.84	118	29415	1.8275 ug/L	86
89)	tert-Butylbenzene	16.89	134	12716	1.9647 ug/L	67
90)	1,2,4-Trimethylbenzene	16.95	105	71669	2.1435 ug/L	94
91)	sec-Butylbenzene	17.17	105	81038	2.0632 ug/L	98
92)	p-Isopropyltoluene	17.32	119	70170	2.0924 ug/L	92
93)	1,3-Dichlorobenzene	17.52	146	37289	2.0413 ug/L	93
94)	1,4-Dichlorobenzene	17.64	146	36528	2.0034 ug/L #	73
95)	n-Butylbenzene	17.85	91	67823	2.1262 ug/L	96
96)	1,2-Dichlorobenzene	18.14	146	32322	2.0190 ug/L	92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	1955	1.5624 ug/L	94
98)	1,2,4-Trichlorobenzene	20.28	180	23558	1.9000 ug/L	98
99)	Hexachlorobutadiene	20.43	225	11066	1.9286 ug/L	99
100)	Naphthalene	20.65	128	36066	1.9130 ug/L	99
101)	1,2,3-Trichlorobenzene	20.96	180	19765	1.8738 ug/L	95

(#) = qualifier out of range (m) = manual integration
8M412223.D 8260WT.M Fri May 13 15:18:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

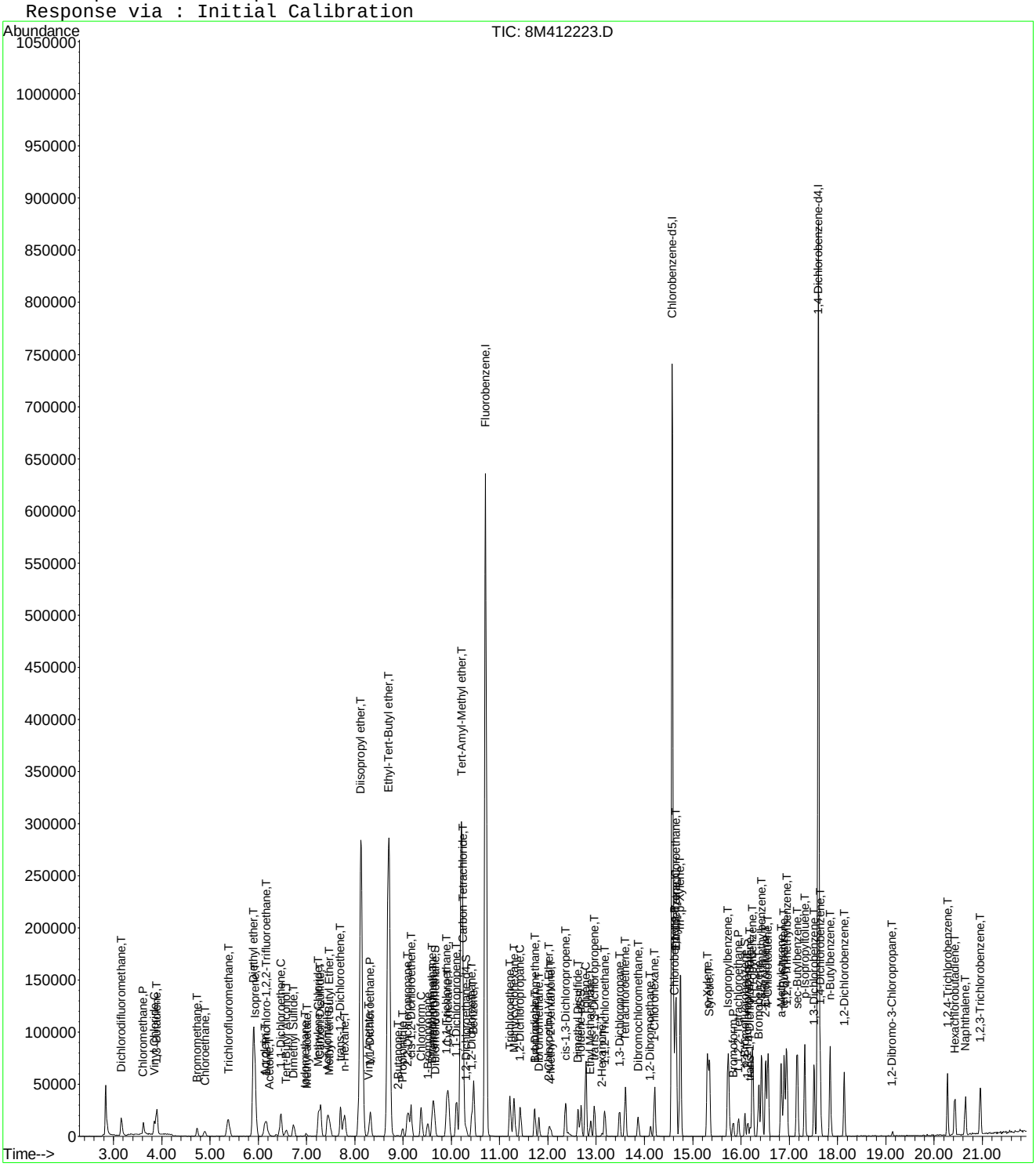

8M412223.D 8260WT.M Fri May 13 15:18:37 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.8958	5.2	100	0.00
3	P	Chloromethane	2.0000	2.1033	-5.2	100	0.00
4	C	Vinyl Chloride	2.0000	2.0431	-2.2	100	0.00
5	T	1,3-Butadiene	2.0000	1.7872	10.6	100	0.02
6	T	Bromomethane	2.0000	2.0126	-0.6	100	0.00
7	T	Chloroethane	2.0000	1.9127	4.4	100	0.00
8	T	Trichlorofluoromethane	2.0000	2.0686	-3.4	100	0.00
9	T	Diethyl ether	25.0000	26.7567	-7.0	100	0.00
10	T	Isoprene	2.0000	2.0394	-2.0	100	0.00
11	T	Acrolein	12.5000	13.4606	-7.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	2.1182	-5.9	100	0.02
13	T	Acetone	-1.0000	1.7255	0.0	100	-0.01
14	C	1,1-Dichloroethene	2.0000	2.0070	-0.4	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	52.7840	-5.6	100	0.00
16	T	Dimethyl Sulfide	2.0000	2.0975	-4.9	100	0.00
17	T	Iodomethane	2.0000	3.0680	-53.4#	100	0.00
18	T	Methyl acetate	-1.0000	2.1281	0.0	100	0.00
19	T	Methylene Chloride	2.0000	2.0590	-3.0	100	0.00
20	T	Carbon Disulfide	2.0000	2.1789	-8.9	100	0.00
21	T	Acrylonitrile	12.5000	12.1237	3.0	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.9505	2.5	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.9603	2.0	100	0.00
24	T	n-Hexane	-1.0000	2.1181	0.0	100	0.00
25	T	Diisopropyl ether	25.0000	26.2305	-4.9	100	0.00
26	T	Vinyl Acetate	2.0000	1.9284	3.6	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.1072	-5.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	26.0139	-4.1	100	0.00
29	T	2-Butanone	-1.0000	1.7396	0.0	100	0.02
30	T	Propionitrile	25.0000	24.8668	0.5	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1378	-6.9	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0306	-1.5	100	0.00
33	C	Chloroform	2.0000	1.9679	1.6	100	0.00
34		1-Bromopropane	2.0000	1.9533	2.3	100	0.00
35	T	Bromochloromethane	2.0000	1.9951	0.2	100	0.00
36	T	Tetrahydrofuran	25.0000	25.9117	-3.6	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9708	2.9	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.9930	0.3	100	0.00
39	T	Cyclohexane	2.0000	2.0605	-3.0	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0248	-1.2	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	26.0627	-4.3	100	0.00
42	T	Carbon Tetrachloride	2.0000	2.0126	-0.6	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0740	-7.4	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	2.0000	2.0183	-0.9	100	0.00
46	T	Benzene	2.0000	2.0854	-4.3	100	0.00
47	T	Trichloroethene	2.0000	2.0166	-0.8	100	0.00
48	T	Methylcyclohexane	-1.0000	2.0003	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0380	-1.9	100	0.00
50	T	Bromodichloromethane	2.0000	2.0511	-2.6	100	0.00
51	T	1,4-Dioxane	-1.0000	35.6688	0.0	100	0.02
52	T	Dibromomethane	2.0000	2.0246	-1.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	2.0271	-1.4	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.7027	0.0	100	0.00

(#) = Out of Range

8M412223.D 8260WT.M Sat May 14 18:08:13 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.8869	5.7	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.7986	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	0.9896	1.0	100	0.00
59	C	Toluene	2.0000	2.1628	-8.1	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.9633	1.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	2.0000	1.9609	2.0	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.9800	1.0	100	0.00
64	T	2-Hexanone	-1.0000	1.9672	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.1332	-6.7	100	0.00
66	T	Tetrachloroethene	2.0000	2.0198	-1.0	100	0.00
67	T	Dibromochloromethane	2.0000	1.8915	5.4	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.9141	4.3	100	0.00
69	T	1-Chlorohexane	2.0000	1.9075	4.6	100	0.00
70	P	Chlorobenzene	2.0000	2.0831	-4.2	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.9892	0.5	100	0.00
72	C	Ethylbenzene	2.0000	2.0596	-3.0	100	0.00
73	T	m-,p-Xylene	4.0000	4.1170	-2.9	100	0.00
74	T	o-Xylene	2.0000	1.9825	0.9	100	0.00
75	T	Styrene	2.0000	2.0358	-1.8	100	0.00
76	P	Bromoform	2.0000	1.9841	0.8	100	0.00
77	T	Isopropylbenzene	2.0000	2.1448	-7.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	2.0066	-0.3	100	0.00
80	S	p-Bromofluorobenzene	1.0000	1.0184	-1.8	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	2.0501	-2.5	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	2.0915	-4.6	100	0.00
83	T	n-Propylbenzene	2.0000	2.1757	-8.8	100	0.00
84	T	Bromobenzene	2.0000	2.0859	-4.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.0703	-3.5	100	0.00
86	T	2-Chlorotoluene	2.0000	2.1509	-7.5	100	0.00
87	T	4-Chlorotoluene	2.0000	2.0989	-4.9	100	0.00
88	T	a-Methylstyrene	-1.0000	1.9045	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	1.9967	0.2	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.1411	-7.1	100	0.00
91	T	sec-Butylbenzene	2.0000	2.1161	-5.8	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.1579	-7.9	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.1067	-5.3	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.0470	-2.4	100	0.00
95	T	n-Butylbenzene	2.0000	2.1098	-5.5	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0532	-2.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.6938	15.3	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	2.0021	-0.1	100	0.00
99	T	Hexachlorobutadiene	2.0000	2.0128	-0.6	100	0.00
100	T	Naphthalene	2.0000	2.0630	-3.2	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9910	0.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	768397	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	534372	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	274234	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	19775	2.0496 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	8.20%#	
43) 1,2-Dichloroethane-d4	10.30	65	21200	1.9207 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	7.68%#	
58) Toluene-d8	12.68	98	65647	2.3758 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	9.52%#	
80) p-Bromofluorobenzene	16.08	95	26759	2.3838 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	9.52%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	55961	3.4750 ug/L	99
3) Chloromethane	3.62	50	34194	2.2538 ug/L	100
4) Vinyl Chloride	3.84	62	42506	4.1488 ug/L	99
5) 1,3-Butadiene	3.89	54	32006	3.1976 ug/L	93
6) Bromomethane	4.72	94	19582	3.4204 ug/L	94
7) Chloroethane	4.90	64	22000	3.2814 ug/L	84
8) Trichlorofluoromethane	5.37	101	77715	3.8212 ug/L	96
9) Diethyl ether	5.90	59	188516	30.2955 ug/L	79
10) Isoprene	5.94	67	44975	4.3218 ug/L	78
11) Acrolein	6.15	56	7712	13.9568 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	36867	3.9591 ug/L	99
13) Acetone	6.24	43	3578	1.8967 ug/L	85
14) 1,1-Dichloroethene	6.47	61	59405	3.2870 ug/L	95
15) Tert-Butyl Alcohol	6.58	59	27833	64.0897 ug/L #	82
16) Dimethyl Sulfide	6.73	62	21102	3.1597 ug/L	77
17) Iodomethane	6.99	142	3667	1.8964 ug/L	95
18) Methyl acetate	7.00	43	11500	2.0398 ug/L #	86
19) Methylene Chloride	7.24	84	37533	4.3823 ug/L	52
20) Carbon Disulfide	7.29	76	123060	4.7097 ug/L	100
21) Acrylonitrile	7.43	53	25653	10.5804 ug/L	99
22) Methyl Tert Butyl Ether	7.47	73	80005	4.2289 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	54124	3.3108 ug/L	94
24) n-Hexane	7.78	57	40758	2.7480 ug/L	82
25) Diisopropyl ether	8.12	45	841400	20.0337 ug/L #	91
26) Vinyl Acetate	8.30	43	37284	2.2113 ug/L #	90
27) 1,1-Dichloroethane	8.32	63	66711	3.4116 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	907423	30.7852 ug/L	89
29) 2-Butanone	8.89	43	5359	1.7738 ug/L #	82
30) Propionitrile	8.99	54	17933	23.4726 ug/L	100
31) 2,2-Dichloropropane	9.10	77	73150	4.2462 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	41036	4.1950 ug/L	89
33) Chloroform	9.37	83	78227	4.3116 ug/L	99
34) 1-Bromopropane	9.52	122	6162	3.9986 ug/L	99
35) Bromochloromethane	9.60	130	20988	4.1009 ug/L #	62
36) Tetrahydrofuran	9.62	42	38098	19.0742 ug/L #	62
38) 1,1,1-Trichloroethane	9.91	97	76152	4.1633 ug/L	97
39) Cyclohexane	9.94	56	51439	2.5767 ug/L #	66
40) 1,1-Dichloropropene	10.11	75	56645	4.3027 ug/L	93
41) Tert-Amyl-Methyl ether	10.21	73	821180	43.4958 ug/L	87
42) Carbon Tetrachloride	10.25	117	67831	3.9416 ug/L	96

(#) = qualifier out of range (m) = manual integration
8M412224.D 8260WT.M Fri May 13 15:47:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	51708	3.3934 ug/L		85
46)	Benzene	10.46	78	150204	4.4792 ug/L		86
47)	Trichloroethene	11.21	130	38500	3.9784 ug/L		94
48)	Methylcyclohexane	11.30	83	60897	4.5008 ug/L		81
49)	1,2-Dichloropropane	11.43	63	31773	3.2549 ug/L		77
50)	Bromodichloromethane	11.73	83	59127	4.3535 ug/L		94
51)	1,4-Dioxane	11.71	88	2719	69.8702 ug/L	#	62
52)	Dibromomethane	11.81	93	19711	4.2894 ug/L		96
53)	2-Chloroethyl Vinyl Ether	12.03	63	12946	3.1676 ug/L		98
54)	4-Methyl-2-Pentanone	12.05	58	5129	2.2991 ug/L	#	78
55)	cis-1,3-Dichloropropene	12.36	75	61169	4.4752 ug/L		94
56)	Dimethyl Disulfide	12.62	79	27966	3.9053 ug/L		98
59)	Toluene	12.78	91	161007	5.0316 ug/L		97
60)	Ethyl Methacrylate	12.88	69	28595	4.7624 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	49791	4.4599 ug/L		97
63)	1,1,2-Trichloroethane	13.18	97	23678	4.6631 ug/L		99
64)	2-Hexanone	13.11	58	4499	2.4685 ug/L	#	97
65)	1,3-Dichloropropane	13.49	76	44838	4.7614 ug/L		73
66)	Tetrachloroethene	13.60	164	32715	4.5144 ug/L		97
67)	Dibromochloromethane	13.87	129	35009	4.3734 ug/L		98
68)	1,2-Dibromoethane	14.13	107	24247	4.5815 ug/L		99
69)	1-Chlorohexane	14.21	91	53599	4.9176 ug/L		84
70)	Chlorobenzene	14.62	112	107618	4.8437 ug/L		95
71)	1,1,1,2-Tetrachloroethane	14.65	131	38120	4.4025 ug/L		96
72)	Ethylbenzene	14.65	106	56905	4.5138 ug/L		91
73)	m-,p-Xylene	14.75	106	137390	9.4592 ug/L		86
74)	o-Xylene	15.31	106	65650	4.4866 ug/L		85
75)	Styrene	15.35	104	111433	4.7758 ug/L		91
76)	Bromoform	15.84	173	19346	4.2121 ug/L		97
77)	Isopropylbenzene	15.73	105	182523	4.9200 ug/L		96
79)	1,1,2,2-Tetrachloroethane	15.95	83	26655	4.8730 ug/L		99
81)	1,2,3-Trichloropropane	16.13	110	8840	5.0289 ug/L		81
82)	trans-1,4-Dichloro-2-Buten	16.19	53	6584	2.4712 ug/L	#	51
83)	n-Propylbenzene	16.24	91	222196	5.2576 ug/L		96
84)	Bromobenzene	16.37	156	42665	4.8423 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	155714	4.9790 ug/L		93
86)	2-Chlorotoluene	16.52	91	148764	5.4968 ug/L		94
87)	4-Chlorotoluene	16.56	91	135679	4.8666 ug/L		94
88)	a-Methylstyrene	16.84	118	68945	4.4743 ug/L		91
89)	tert-Butylbenzene	16.89	134	29069	4.6914 ug/L		77
90)	1,2,4-Trimethylbenzene	16.95	105	161016	5.0301 ug/L		94
91)	sec-Butylbenzene	17.17	105	191273	5.0866 ug/L		94
92)	p-Isopropyltoluene	17.32	119	159232	4.9597 ug/L		93
93)	1,3-Dichlorobenzene	17.52	146	83896	4.7972 ug/L		95
94)	1,4-Dichlorobenzene	17.64	146	82462	4.7242 ug/L		86
95)	n-Butylbenzene	17.85	91	158787	5.1996 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	72524	4.7321 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	5629	4.6990 ug/L		76
98)	1,2,4-Trichlorobenzene	20.28	180	53855	4.5369 ug/L		98
99)	Hexachlorobutadiene	20.43	225	24504	4.4608 ug/L		93
100)	Naphthalene	20.65	128	79806	4.4217 ug/L		98
101)	1,2,3-Trichlorobenzene	20.96	180	44150	4.3720 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412224.D 8260WT.M Fri May 13 15:47:44 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

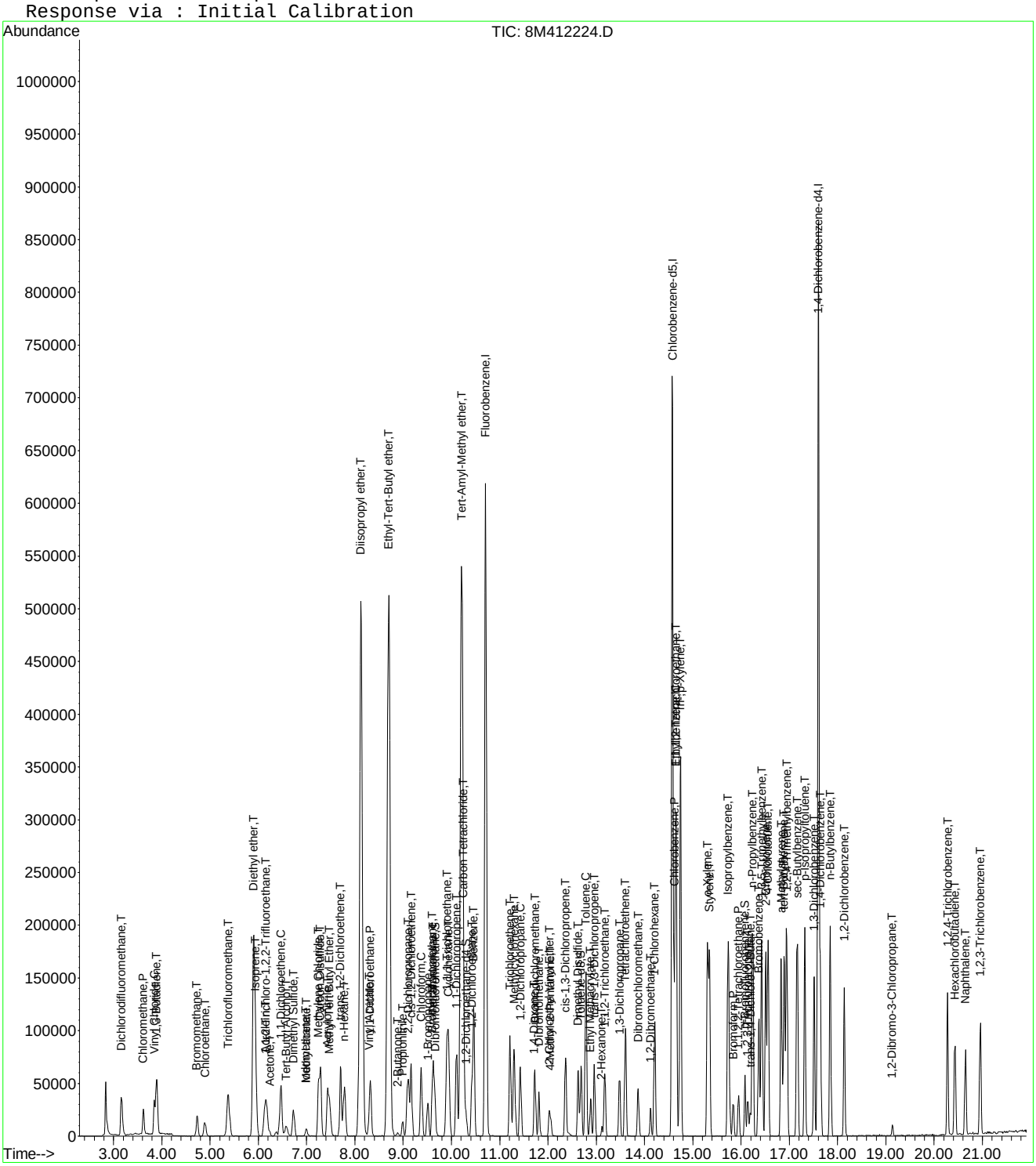

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.3438	13.1	100	0.00
3	P	Chloromethane	5.0000	4.5471	9.1	100	0.00
4	C	Vinyl Chloride	5.0000	4.7641	4.7	100	0.00
5	T	1,3-Butadiene	5.0000	4.2777	14.4	100	0.00
6	T	Bromomethane	5.0000	4.1880	16.2	100	-0.01
7	T	Chloroethane	5.0000	4.4813	10.4	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.6812	6.4	100	0.00
9	T	Diethyl ether	50.0000	47.5652	4.9	100	0.00
10	T	Isoprene	5.0000	4.4611	10.8	100	0.00
11	T	Acrolein	25.0000	21.7328	13.1	100	0.02
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.7244	5.5	100	0.00
13	T	Acetone	5.0000	4.1387	17.2	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.7810	4.4	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	100.4650	-0.5	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.7499	5.0	100	0.00
17	T	Iodomethane	5.0000	3.7634	24.7	100	0.00
18	T	Methyl acetate	5.0000	4.9211	1.6	100	0.00
19	T	Methylene Chloride	5.0000	4.7467	5.1	100	0.00
20	T	Carbon Disulfide	5.0000	4.7328	5.3	100	0.00
21	T	Acrylonitrile	25.0000	22.8698	8.5	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.6750	6.5	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.7415	5.2	100	0.00
24	T	n-Hexane	5.0000	4.8084	3.8	100	0.00
25	T	Diisopropyl ether	50.0000	47.2872	5.4	100	0.00
26	T	Vinyl Acetate	5.0000	4.5766	8.5	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.7058	5.9	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	47.5984	4.8	100	0.00
29	T	2-Butanone	5.0000	4.2191	15.6	100	0.00
30	T	Propionitrile	50.0000	48.4475	3.1	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.8965	2.1	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.6525	7.0	100	0.00
33	C	Chloroform	5.0000	4.6735	6.5	100	0.00
34		1-Bromopropane	5.0000	4.8774	2.5	100	0.00
35	T	Bromochloromethane	5.0000	4.6403	7.2	100	0.00
36	T	Tetrahydrofuran	50.0000	45.5400	8.9	100	-0.01
37	S	Dibromofluoromethane	2.5000	2.3953	4.2	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.7896	4.2	100	0.00
39	T	Cyclohexane	5.0000	4.6730	6.5	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.6741	6.5	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	47.6211	4.8	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.8044	3.9	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.3949	4.2	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	5.0000	4.7996	4.0	100	0.00
46	T	Benzene	5.0000	4.7588	4.8	100	0.00
47	T	Trichloroethene	5.0000	4.5733	8.5	100	0.00
48	T	Methylcyclohexane	5.0000	4.7616	4.8	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.5219	9.6	100	0.00
50	T	Bromodichloromethane	5.0000	4.7878	4.2	100	0.00
51	T	1,4-Dioxane	100.0000	77.0346	23.0	100	0.00
52	T	Dibromomethane	5.0000	4.7390	5.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.2867	14.3	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.1576	16.8	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.8662	2.7	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.1683	16.6	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.3473	6.1	100	0.00
59	C	Toluene	5.0000	4.8533	2.9	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.4883	10.2	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	5.0000	4.4786	10.4	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.5231	9.5	100	0.00
64	T	2-Hexanone	5.0000	4.0898	18.2	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.8109	3.8	100	0.00
66	T	Tetrachloroethene	5.0000	4.6028	7.9	100	0.00
67	T	Dibromochloromethane	5.0000	4.5802	8.4	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.6475	7.1	100	0.00
69	T	1-Chlorohexane	5.0000	4.7331	5.3	100	0.00
70	P	Chlorobenzene	5.0000	4.8107	3.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.3984	12.0	100	0.00
72	C	Ethylbenzene	5.0000	4.6492	7.0	100	0.00
73	T	m-,p-Xylene	10.0000	9.5700	4.3	100	0.00
74	T	o-Xylene	5.0000	4.6773	6.5	100	0.00
75	T	Styrene	5.0000	4.8405	3.2	100	0.00
76	P	Bromoform	5.0000	4.2672	14.7	100	0.00
77	T	Isopropylbenzene	5.0000	4.8951	2.1	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	4.8422	3.2	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.3565	5.7	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.2150	-4.3	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.3781	12.4	100	0.00
83	T	n-Propylbenzene	5.0000	5.1935	-3.9	100	0.00
84	T	Bromobenzene	5.0000	4.8483	3.0	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	4.9964	0.1	100	0.00
86	T	2-Chlorotoluene	5.0000	4.9803	0.4	100	0.00
87	T	4-Chlorotoluene	5.0000	5.0286	-0.6	100	0.00
88	T	a-Methylstyrene	5.0000	4.6629	6.7	100	0.00
89	T	tert-Butylbenzene	5.0000	4.7677	4.6	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.0245	-0.5	100	0.00
91	T	sec-Butylbenzene	5.0000	5.2170	-4.3	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.1150	-2.3	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	4.9511	1.0	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	4.8270	3.5	100	0.00
95	T	n-Butylbenzene	5.0000	5.1595	-3.2	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	4.8122	3.8	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	5.0942	-1.9	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.7808	4.4	100	0.00
99	T	Hexachlorobutadiene	5.0000	4.6555	6.9	100	0.00
100	T	Naphthalene	5.0000	4.7684	4.6	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.6455	7.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412224.D 8260WT.M Sat May 14 18:08:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	770027	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	531490	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	283594	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	86295	10.9569 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 43.84%#		
43) 1,2-Dichloroethane-d4	10.30	65	96239	11.3450 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 45.36%#		
58) Toluene-d8	12.68	98	294491	10.9223 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 43.68%#		
80) p-Bromofluorobenzene	16.08	95	121459	10.5490 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 42.20%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	288235	23.7135 ug/L	99
3) Chloromethane	3.62	50	155712	20.3784 ug/L	98
4) Vinyl Chloride	3.84	62	184250	20.9368 ug/L	95
5) 1,3-Butadiene	3.89	54	149348	22.7750 ug/L	96
6) Bromomethane	4.73	94	100098	25.0143 ug/L	99
7) Chloroethane	4.89	64	100876	20.9404 ug/L	91
8) Trichlorofluoromethane	5.37	101	351299	21.2512 ug/L	98
9) Diethyl ether	5.90	59	324317	80.8265 ug/L	78
10) Isoprene	5.94	67	205842	20.3622 ug/L	77
11) Acrolein	6.14	56	12049	34.8201 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	159996	20.3859 ug/L	97
13) Acetone	6.25	43	18459	25.7405 ug/L	98
14) 1,1-Dichloroethene	6.47	61	256241	20.5065 ug/L	92
15) Tert-Butyl Alcohol	6.57	59	43922	153.5712 ug/L	93
16) Dimethyl Sulfide	6.73	62	89456	20.6087 ug/L	83
17) Iodomethane	6.99	142	40622	61.0474 ug/L	93
18) Methyl acetate	7.00	43	46598	20.2171 ug/L #	85
19) Methylene Chloride	7.25	84	161897	20.1338 ug/L	52
20) Carbon Disulfide	7.30	76	538090	20.0802 ug/L	98
21) Acrylonitrile	7.43	53	46305	46.9889 ug/L	100
22) Methyl Tert Butyl Ether	7.47	73	361116	22.0137 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	234754	20.3175 ug/L	90
24) n-Hexane	7.78	57	172498	21.1165 ug/L	84
25) Diisopropyl ether	8.12	45	1447822	80.3755 ug/L #	91
26) Vinyl Acetate	8.30	43	166501	21.7017 ug/L #	88
27) 1,1-Dichloroethane	8.33	63	300321	21.3849 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	1579265	83.0733 ug/L	89
29) 2-Butanone	8.88	43	25681	23.9099 ug/L	87
30) Propionitrile	8.98	54	30953	89.5673 ug/L	94
31) 2,2-Dichloropropane	9.10	77	309575	20.8527 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	181973	20.4488 ug/L	89
33) Chloroform	9.37	83	348925	20.5535 ug/L	96
34) 1-Bromopropane	9.52	122	26723	22.7206 ug/L	96
35) Bromochloromethane	9.61	130	94952	21.3181 ug/L	65
36) Tetrahydrofuran	9.63	42	63066	70.5772 ug/L #	57
38) 1,1,1-Trichloroethane	9.91	97	335486	21.3640 ug/L	99
39) Cyclohexane	9.94	56	221040	19.9984 ug/L #	64
40) 1,1-Dichloropropene	10.11	75	248373	20.4717 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1418183	81.7883 ug/L	88
42) Carbon Tetrachloride	10.25	117	296471	21.3449 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412225.D 8260WT.M Fri May 13 16:16:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	228665	21.6403	ug/L		85
46)	Benzene	10.46	78	668449	20.3769	ug/L		86
47)	Trichloroethene	11.21	130	174107	20.7980	ug/L		96
48)	Methylcyclohexane	11.29	83	262275	21.4887	ug/L		82
49)	1,2-Dichloropropane	11.43	63	146868	21.1883	ug/L	#	72
50)	Bromodichloromethane	11.73	83	262192	21.9986	ug/L		98
51)	1,4-Dioxane	11.71	88	5351	196.3837	ug/L		76
52)	Dibromomethane	11.81	93	86951	21.0734	ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	63586	22.4600	ug/L		91
54)	4-Methyl-2-Pentanone	12.05	58	25754	25.0531	ug/L	#	73
55)	cis-1,3-Dichloropropene	12.36	75	265439	21.9841	ug/L		99
56)	Dimethyl Disulfide	12.63	79	134192	23.9412	ug/L		100
59)	Toluene	12.78	91	700473	20.1722	ug/L		99
60)	Ethyl Methacrylate	12.88	69	133361	23.2046	ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	238585	23.2548	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	107901	21.0216	ug/L		99
64)	2-Hexanone	13.11	58	22561	25.2093	ug/L	#	85
65)	1,3-Dichloropropane	13.49	76	198804	22.2491	ug/L		74
66)	Tetrachloroethene	13.60	164	141791	20.0055	ug/L		94
67)	Dibromochloromethane	13.87	129	158465	22.0695	ug/L		99
68)	1,2-Dibromoethane	14.13	107	110085	22.3366	ug/L		100
69)	1-Chlorohexane	14.21	91	229753	20.3591	ug/L		83
70)	Chlorobenzene	14.62	112	467492	20.4613	ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.65	131	183079	22.2095	ug/L		96
72)	Ethylbenzene	14.65	106	249016	20.2289	ug/L		90
73)	m-,p-Xylene	14.75	106	606381	41.1308	ug/L		88
74)	o-Xylene	15.30	106	294106	21.2106	ug/L		90
75)	Styrene	15.35	104	492781	21.8207	ug/L		89
76)	Bromoform	15.83	173	95911	23.8070	ug/L		99
77)	Isopropylbenzene	15.73	105	806678	20.7280	ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	123253	22.7779	ug/L		95
81)	1,2,3-Trichloropropane	16.14	110	36712	22.1354	ug/L		94
82)	trans-1,4-Dichloro-2-Buten	16.18	53	33702	27.6513	ug/L	#	56
83)	n-Propylbenzene	16.24	91	962196	20.3511	ug/L		97
84)	Bromobenzene	16.37	156	190566	21.2033	ug/L		94
85)	1,3,5-Trimethylbenzene	16.43	105	692633	20.9615	ug/L		94
86)	2-Chlorotoluene	16.51	91	649077	19.9155	ug/L		96
87)	4-Chlorotoluene	16.56	91	595446	20.3225	ug/L		95
88)	a-Methylstyrene	16.83	118	318960	22.3680	ug/L		92
89)	tert-Butylbenzene	16.90	134	129440	20.4705	ug/L		83
90)	1,2,4-Trimethylbenzene	16.95	105	707749	20.4783	ug/L		94
91)	sec-Butylbenzene	17.17	105	818359	20.1802	ug/L		97
92)	p-Isopropyltoluene	17.32	119	677859	19.7492	ug/L		96
93)	1,3-Dichlorobenzene	17.52	146	364065	20.5126	ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	363066	19.9874	ug/L		92
95)	n-Butylbenzene	17.85	91	681055	20.0187	ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	318612	19.9358	ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	23070	21.6419	ug/L		93
98)	1,2,4-Trichlorobenzene	20.28	180	242455	20.8863	ug/L		98
99)	Hexachlorobutadiene	20.43	225	110384	20.2523	ug/L		96
100)	Naphthalene	20.65	128	369849	21.4526	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	198876	19.8356	ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration

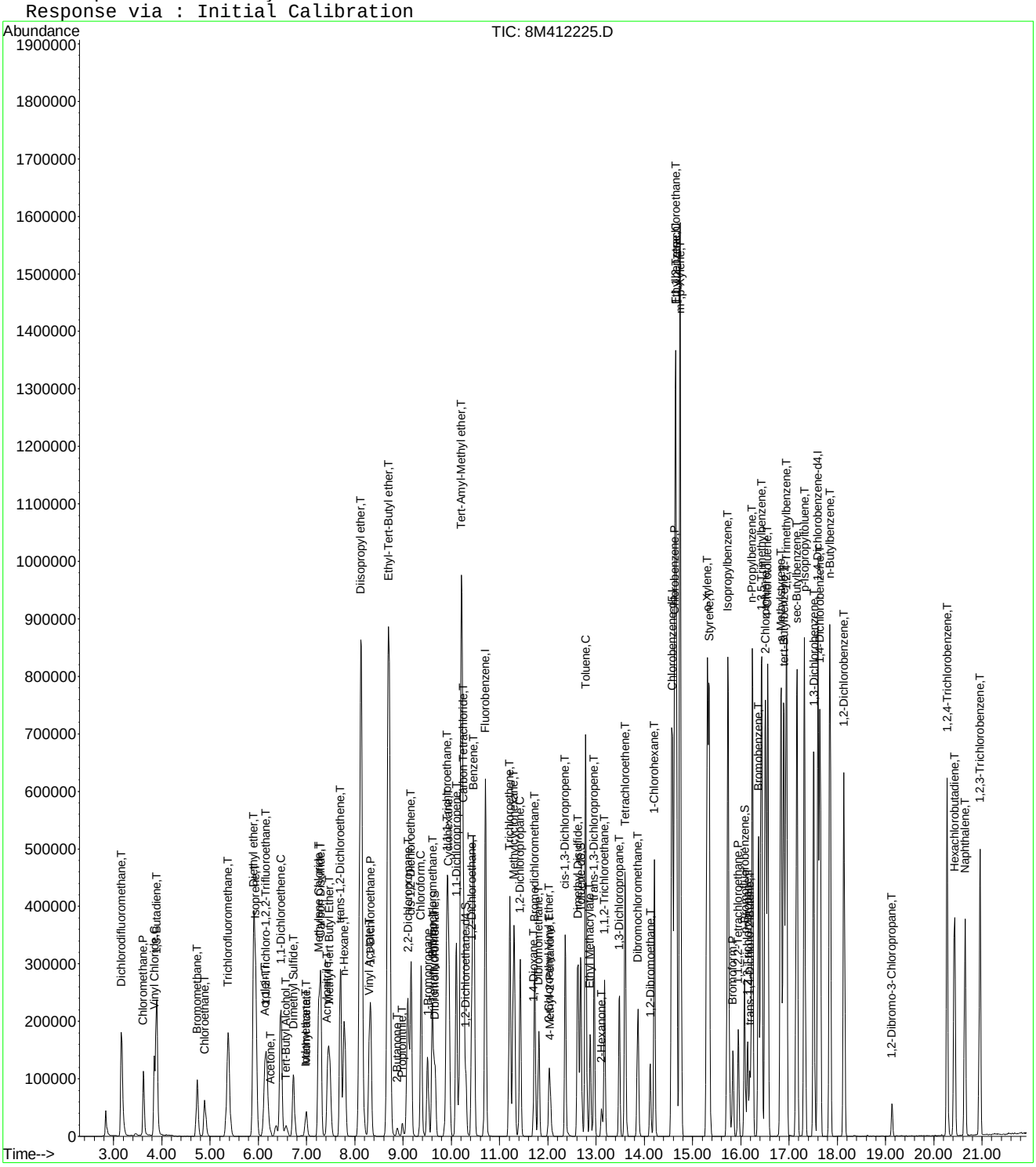

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45:30 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	778260	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	539116	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	288225	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	211053	26.5139 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.04%		
43) 1,2-Dichloroethane-d4	10.31	65	229348	26.7504 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.00%		
58) Toluene-d8	12.68	98	718491	26.2709 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.08%		
80) p-Bromofluorobenzene	16.07	95	292755	25.0180 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.08%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	682745	55.5761 ug/L	100
3) Chloromethane	3.62	50	372858	48.2806 ug/L	98
4) Vinyl Chloride	3.85	62	453905	51.0328 ug/L	96
5) 1,3-Butadiene	3.88	54	390501	58.9199 ug/L	99
6) Bromomethane	4.74	94	260493	64.4080 ug/L	97
7) Chloroethane	4.89	64	244336	50.1840 ug/L	91
8) Trichlorofluoromethane	5.38	101	837676	50.1376 ug/L	99
9) Diethyl ether	5.90	59	389327	96.0019 ug/L	79
10) Isoprene	5.94	67	498060	48.7477 ug/L	76
11) Acrolein	6.13	56	17644	50.4496 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	387643	48.8691 ug/L	97
13) Acetone	6.25	43	45901	63.3305 ug/L	97
14) 1,1-Dichloroethene	6.46	61	619744	49.0724 ug/L	94
15) Tert-Butyl Alcohol	6.58	59	53656	185.6211 ug/L	91
16) Dimethyl Sulfide	6.73	62	221107	50.3993 ug/L	82
17) Iodomethane	6.98	142	157872	234.7428 ug/L	94
18) Methyl acetate	7.00	43	114759	49.2629 ug/L #	81
19) Methylene Chloride	7.25	84	389653	47.9453 ug/L	52
20) Carbon Disulfide	7.29	76	1269941	46.8897 ug/L	99
21) Acrylonitrile	7.43	53	59882	60.1236 ug/L	97
22) Methyl Tert Butyl Ether	7.46	73	901668	54.3843 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	571507	48.9396 ug/L	93
24) n-Hexane	7.79	57	419656	50.8290 ug/L	83
25) Diisopropyl ether	8.13	45	1781012	97.8265 ug/L #	90
26) Vinyl Acetate	8.29	43	428708	55.2866 ug/L #	89
27) 1,1-Dichloroethane	8.32	63	722574	50.9078 ug/L	96
28) Ethyl-Tert-Butyl ether	8.71	59	1955100	101.7552 ug/L	89
29) 2-Butanone	8.88	43	66579	61.3316 ug/L #	82
30) Propionitrile	8.98	54	38235	109.4684 ug/L	95
31) 2,2-Dichloropropane	9.10	77	768496	51.2175 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	439590	48.8754 ug/L	91
33) Chloroform	9.38	83	844564	49.2230 ug/L	97
34) 1-Bromopropane	9.51	122	63442	53.3693 ug/L	99
35) Bromochloromethane	9.60	130	230119	51.1185 ug/L	66
36) Tetrahydrofuran	9.64	42	79437	87.9575 ug/L #	62
38) 1,1,1-Trichloroethane	9.90	97	817606	51.5150 ug/L	99
39) Cyclohexane	9.93	56	535882	47.9707 ug/L #	65
40) 1,1-Dichloropropene	10.10	75	615439	50.1899 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1769381	100.9628 ug/L	88
42) Carbon Tetrachloride	10.24	117	724058	51.5782 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412226.D 8260WT.M Fri May 13 16:45:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45:30 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	561107	52.5401 ug/L		85
46)	Benzene	10.46	78	1607407	48.4816 ug/L		86
47)	Trichloroethene	11.22	130	424998	50.2312 ug/L		96
48)	Methylcyclohexane	11.30	83	635339	51.5040 ug/L		83
49)	1,2-Dichloropropane	11.42	63	351908	50.2320 ug/L	#	71
50)	Bromodichloromethane	11.72	83	654943	54.3701 ug/L		97
51)	1,4-Dioxane	11.71	88	7573	274.9918 ug/L		73
52)	Dibromomethane	11.82	93	209167	50.1574 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	162319	56.7281 ug/L		93
54)	4-Methyl-2-Pentanone	12.05	58	64928	62.4928 ug/L		80
55)	cis-1,3-Dichloropropene	12.36	75	666861	54.6463 ug/L		98
56)	Dimethyl Disulfide	12.62	79	343446	60.6260 ug/L		96
59)	Toluene	12.79	91	1676069	47.5846 ug/L		100
60)	Ethyl Methacrylate	12.88	69	338996	58.1503 ug/L		69
62)	trans-1,3-Dichloropropene	12.96	75	594749	57.1499 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	268432	51.5570 ug/L		98
64)	2-Hexanone	13.12	58	56859	62.6347 ug/L	#	83
65)	1,3-Dichloropropane	13.48	76	489226	53.9770 ug/L		75
66)	Tetrachloroethene	13.60	164	350332	48.7296 ug/L		95
67)	Dibromochloromethane	13.86	129	401149	55.0780 ug/L		100
68)	1,2-Dibromoethane	14.12	107	273580	54.7252 ug/L		99
69)	1-Chlorohexane	14.21	91	560883	48.9984 ug/L		82
70)	Chlorobenzene	14.63	112	1117812	48.2326 ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	446892	53.4462 ug/L		99
72)	Ethylbenzene	14.66	106	603074	48.2980 ug/L		91
73)	m-,p-Xylene	14.74	106	1443780	96.5463 ug/L		90
74)	o-Xylene	15.31	106	709244	50.4265 ug/L		90
75)	Styrene	15.34	104	1212099	52.9133 ug/L		91
76)	Bromoform	15.84	173	238354	58.3272 ug/L		100
77)	Isopropylbenzene	15.73	105	1919993	48.6372 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	294266	53.5083 ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	89279	52.9656 ug/L		93
82)	trans-1,4-Dichloro-2-Buten	16.19	53	86829	70.0956 ug/L	#	53
83)	n-Propylbenzene	16.24	91	2278994	47.4277 ug/L		98
84)	Bromobenzene	16.37	156	459959	50.3549 ug/L		93
85)	1,3,5-Trimethylbenzene	16.43	105	1661486	49.4745 ug/L		95
86)	2-Chlorotoluene	16.51	91	1611031	48.6367 ug/L		97
87)	4-Chlorotoluene	16.56	91	1341051	45.0344 ug/L		95
88)	a-Methylstyrene	16.83	118	772611	53.3111 ug/L		90
89)	tert-Butylbenzene	16.89	134	307503	47.8493 ug/L		81
90)	1,2,4-Trimethylbenzene	16.94	105	1679809	47.8234 ug/L		95
91)	sec-Butylbenzene	17.16	105	1925411	46.7166 ug/L		97
92)	p-Isopropyltoluene	17.32	119	1621383	46.4795 ug/L		95
93)	1,3-Dichlorobenzene	17.51	146	882656	48.9327 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	871210	47.1909 ug/L		92
95)	n-Butylbenzene	17.85	91	1608832	46.5296 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	768548	47.3159 ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	59586	54.9992 ug/L		86
98)	1,2,4-Trichlorobenzene	20.28	180	583880	49.4902 ug/L		100
99)	Hexachlorobutadiene	20.44	225	264699	47.7844 ug/L		98
100)	Naphthalene	20.65	128	894629	51.0579 ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	475246	46.6387 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412226.D 8260WT.M Fri May 13 16:45:33 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration

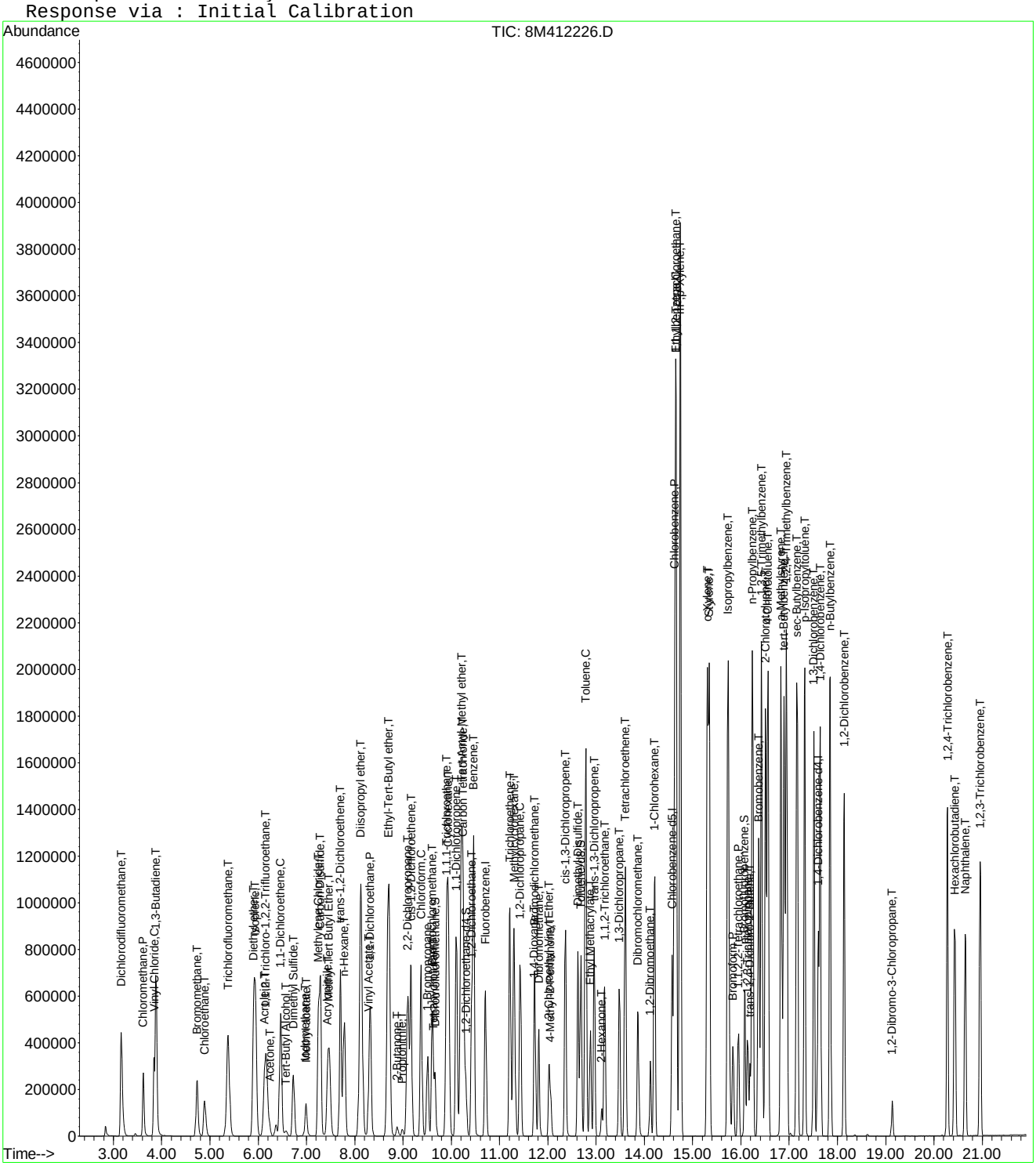

8M412226.D 8260WT.M Fri May 13 16:45:33 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	809533	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	559075	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	296193	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	460283	53.9056 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 215.64%#		
43) 1,2-Dichloroethane-d4	10.30	65	488116	52.5821 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 210.32%#		
58) Toluene-d8	12.68	98	1540572	52.8075 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 211.24%#		
80) p-Bromofluorobenzene	16.08	95	623735	51.1573 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 204.64%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	1463283	109.1068 ug/L	100
3) Chloromethane	3.62	50	778702	97.2380 ug/L	98
4) Vinyl Chloride	3.84	62	968312	103.4979 ug/L	95
5) 1,3-Butadiene	3.88	54	896569	120.4972 ug/L	95
6) Bromomethane	4.73	94	605228	129.8677 ug/L	99
7) Chloroethane	4.89	64	528153	103.4126 ug/L	90
8) Trichlorofluoromethane	5.37	101	1782726	101.4754 ug/L	99
9) Diethyl ether	5.90	59	828091	197.4770 ug/L	79
10) Isoprene	5.94	67	1080684	101.8037 ug/L	78
11) Acrolein	6.14	56	38655	109.5572 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	833546	101.0906 ug/L	97
13) Acetone	6.24	43	97515	109.1944 ug/L	100
14) 1,1-Dichloroethene	6.46	61	1323999	100.6729 ug/L	93
15) Tert-Butyl Alcohol	6.57	59	114220	387.5328 ug/L	91
16) Dimethyl Sulfide	6.73	62	489571	106.5996 ug/L	82
17) Iodomethane	6.99	142	416890	244.5557 ug/L	97
18) Methyl acetate	7.00	43	252444	104.3161 ug/L #	81
19) Methylene Chloride	7.24	84	827241	98.5346 ug/L	53
20) Carbon Disulfide	7.29	76	2766110	99.3432 ug/L	100
21) Acrylonitrile	7.43	53	126153	113.2272 ug/L	98
22) Methyl Tert Butyl Ether	7.46	73	1894494	105.8643 ug/L	87
23) trans-1,2-Dichloroethene	7.70	61	1203701	99.1822 ug/L	93
24) n-Hexane	7.78	57	926226	105.3097 ug/L	84
25) Diisopropyl ether	8.12	45	3699807	196.0386 ug/L #	90
26) Vinyl Acetate	8.29	43	860820	101.8643 ug/L #	88
27) 1,1-Dichloroethane	8.32	63	1521237	101.5567 ug/L	96
28) Ethyl-Tert-Butyl ether	8.70	59	4005676	198.2271 ug/L	89
29) 2-Butanone	8.88	43	145126	112.6698 ug/L #	81
30) Propionitrile	8.98	54	83038	219.1648 ug/L	97
31) 2,2-Dichloropropane	9.11	77	1610615	102.0557 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	935490	99.9944 ug/L	89
33) Chloroform	9.37	83	1766988	98.8341 ug/L	98
34) 1-Bromopropane	9.51	122	139657	108.5299 ug/L	100
35) Bromochloromethane	9.61	130	488678	102.8480 ug/L	66
36) Tetrahydrofuran	9.63	42	167812	187.5699 ug/L #	61
38) 1,1,1-Trichloroethane	9.91	97	1724504	102.7713 ug/L	100
39) Cyclohexane	9.94	56	1185537	102.8628 ug/L #	66
40) 1,1-Dichloropropene	10.11	75	1293224	100.8377 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	3634806	198.1264 ug/L	88
42) Carbon Tetrachloride	10.25	117	1534696	103.3979 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	1177876	103.7352	ug/L		85
46)	Benzene	10.46	78	3298928	95.8405	ug/L		87
47)	Trichloroethene	11.21	130	903490	101.9036	ug/L		97
48)	Methylcyclohexane	11.30	83	1389528	104.6454	ug/L		83
49)	1,2-Dichloropropane	11.43	63	755128	102.5297	ug/L		73
50)	Bromodichloromethane	11.73	83	1351612	104.6036	ug/L		99
51)	1,4-Dioxane	11.72	88	16303	473.9624	ug/L		68
52)	Dibromomethane	11.81	93	445130	101.6543	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.02	63	333977	105.4228	ug/L		92
54)	4-Methyl-2-Pentanone	12.05	58	138980	110.1494	ug/L	#	77
55)	cis-1,3-Dichloropropene	12.36	75	1387475	105.9136	ug/L		100
56)	Dimethyl Disulfide	12.62	79	745504	111.3169	ug/L		97
59)	Toluene	12.78	91	3455614	95.2346	ug/L		99
60)	Ethyl Methacrylate	12.88	69	731009	113.5760	ug/L		70
62)	trans-1,3-Dichloropropene	12.96	75	1236182	107.9445	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	564076	103.0604	ug/L		99
64)	2-Hexanone	13.12	58	126268	114.5366	ug/L	#	79
65)	1,3-Dichloropropane	13.48	76	1021082	105.2672	ug/L		74
66)	Tetrachloroethene	13.60	164	752835	101.4023	ug/L		95
67)	Dibromochloromethane	13.87	129	856499	109.6525	ug/L		100
68)	1,2-Dibromoethane	14.12	107	577701	107.6426	ug/L		98
69)	1-Chlorohexane	14.21	91	1222720	103.0385	ug/L		82
70)	Chlorobenzene	14.62	112	2332247	97.2408	ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	947925	106.1463	ug/L		99
72)	Ethylbenzene	14.66	106	1275519	98.8771	ug/L		97
73)	m-,p-Xylene	14.75	106	3009424	194.2602	ug/L		98
74)	o-Xylene	15.31	106	1490638	100.8068	ug/L		93
75)	Styrene	15.35	104	2503721	102.8373	ug/L		88
76)	Bromoform	15.83	173	517827	114.0520	ug/L		100
77)	Isopropylbenzene	15.73	105	3913141	95.4433	ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	624965	106.8610	ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	192087	107.3268	ug/L		97
82)	trans-1,4-Dichloro-2-Buten	16.18	53	189214	128.4818	ug/L	#	59
83)	n-Propylbenzene	16.24	91	4599057	93.6644	ug/L		100
84)	Bromobenzene	16.37	156	968011	102.1426	ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	3401719	97.9556	ug/L		97
86)	2-Chlorotoluene	16.52	91	3177047	93.8267	ug/L		98
87)	4-Chlorotoluene	16.56	91	2899171	96.0712	ug/L		96
88)	a-Methylstyrene	16.84	118	1639166	103.6811	ug/L		90
89)	tert-Butylbenzene	16.90	134	654025	99.4199	ug/L		85
90)	1,2,4-Trimethylbenzene	16.95	105	3479295	96.7054	ug/L		97
91)	sec-Butylbenzene	17.17	105	3947832	94.2785	ug/L		98
92)	p-Isopropyltoluene	17.32	119	3328450	94.4148	ug/L		97
93)	1,3-Dichlorobenzene	17.52	146	1834740	98.9074	ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	1818309	96.6271	ug/L		92
95)	n-Butylbenzene	17.85	91	3308330	94.4002	ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	1606254	97.0179	ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	125368	107.7020	ug/L		87
98)	1,2,4-Trichlorobenzene	20.28	180	1227926	100.7076	ug/L		99
99)	Hexachlorobutadiene	20.43	225	569213	100.5231	ug/L		97
100)	Naphthalene	20.65	128	1852486	101.2968	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	1021163	98.5794	ug/L		100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration

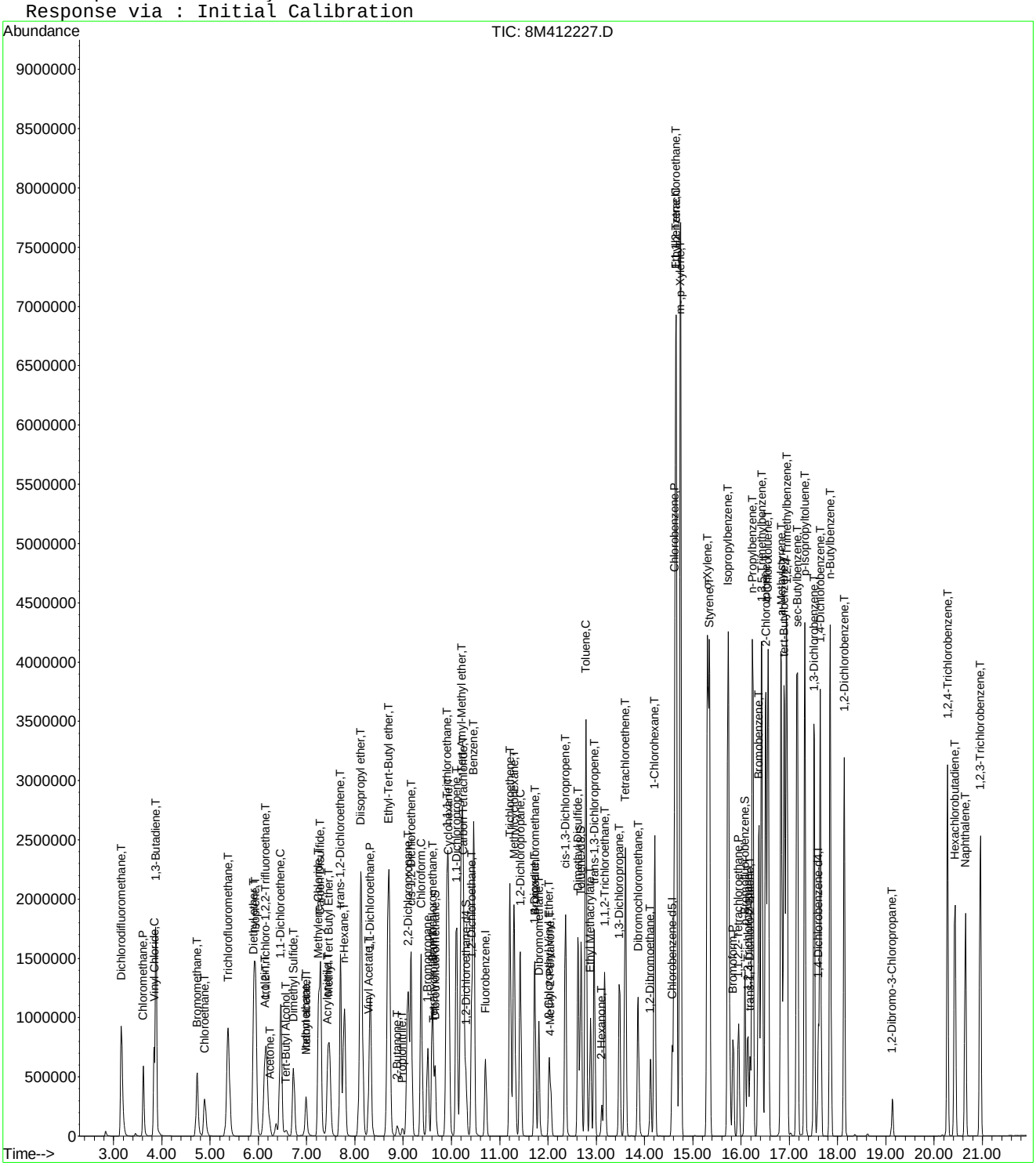

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	828540	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	578848	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	301401	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	898145	101.4517 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 405.80%#		
43) 1,2-Dichloroethane-d4	10.30	65	939848	98.0779 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 392.32%#		
58) Toluene-d8	12.68	98	2984162	97.8805 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 391.52%#		
80) p-Bromofluorobenzene	16.08	95	1242720	99.7023 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 398.80%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	2830517	203.5621 ug/L	98
3) Chloromethane	3.62	50	1586058	194.4056 ug/L	97
4) Vinyl Chloride	3.83	62	1935009	201.0738 ug/L	94
5) 1,3-Butadiene	3.88	54	1684964	212.5477 ug/L	94
6) Bromomethane	4.72	94	1358068	271.2231 ug/L	99
7) Chloroethane	4.89	64	1084803	206.5255 ug/L	90
8) Trichlorofluoromethane	5.37	101	3516760	195.1756 ug/L	99
10) Isoprene	5.94	67	2136665	196.1573 ug/L	78
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1662142	196.5993 ug/L	95
13) Acetone	6.24	43	187748	200.7963 ug/L	97
14) 1,1-Dichloroethene	6.46	61	2649821	196.6732 ug/L	92
15) Tert-Butyl Alcohol	6.58	59	6024	20.0950 ug/L #	87
16) Dimethyl Sulfide	6.73	62	976862	205.8822 ug/L	82
17) Iodomethane	6.99	142	896947	398.7987 ug/L	100
18) Methyl acetate	7.00	43	504293	201.4324 ug/L #	81
19) Methylene Chloride	7.25	84	1684780	196.5546 ug/L	52
20) Carbon Disulfide	7.29	76	5386210	189.2120 ug/L	99
21) Acrylonitrile	7.45	53	30354	26.0447 ug/L #	32
22) Methyl Tert Butyl Ether	7.46	73	3711011	200.6529 ug/L	87
23) trans-1,2-Dichloroethene	7.70	61	2410498	194.2902 ug/L	92
24) n-Hexane	7.78	57	1821777	199.7288 ug/L	84
26) Vinyl Acetate	8.29	43	1796217	206.9060 ug/L #	88
27) 1,1-Dichloroethane	8.32	63	3042055	197.9863 ug/L	95
29) 2-Butanone	8.88	43	271767	199.8193 ug/L #	77
30) Propionitrile	8.90	54	208	0.5280 ug/L #	1
31) 2,2-Dichloropropane	9.11	77	3202633	197.6970 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	1875631	195.8883 ug/L	89
33) Chloroform	9.37	83	3506648	191.9199 ug/L	99
34) 1-Bromopropane	9.51	122	286158	214.2313 ug/L	99
35) Bromochloromethane	9.60	130	980373	200.7807 ug/L	66
36) Tetrahydrofuran	9.62	42	2381	2.6275 ug/L	87
38) 1,1,1-Trichloroethane	9.91	97	3410306	197.7909 ug/L	99
39) Cyclohexane	9.94	56	2357393	198.8974 ug/L #	66
40) 1,1-Dichloropropene	10.10	75	2601175	197.8946 ug/L	96
42) Carbon Tetrachloride	10.25	117	3062767	200.6417 ug/L	99
45) 1,2-Dichloroethane	10.42	62	2313662	198.0324 ug/L	85
46) Benzene	10.46	78	6379817	182.1771 ug/L	89
47) Trichloroethene	11.21	130	1810459	198.9741 ug/L	97
48) Methylcyclohexane	11.30	83	2755373	200.4193 ug/L	83
49) 1,2-Dichloropropane	11.43	63	1528407	202.0331 ug/L	74

(#) = qualifier out of range (m) = manual integration
8M412228.D 8260WT.M Fri May 13 17:43:34 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
50)	Bromodichloromethane	11.73	83	2716764	204.0895 ug/L		99
51)	1,4-Dioxane	11.73	88	3865	104.9352 ug/L	#	18
52)	Dibromomethane	11.81	93	898971	200.1154 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.02	63	631656	192.7236 ug/L		90
54)	4-Methyl-2-Pentanone	12.05	58	262702	198.3957 ug/L	#	75
55)	cis-1,3-Dichloropropene	12.36	75	2784162	205.9153 ug/L		99
56)	Dimethyl Disulfide	12.62	79	1518705	215.4711 ug/L		95
59)	Toluene	12.78	91	6564353	175.9274 ug/L		96
60)	Ethyl Methacrylate	12.88	69	1429837	209.8161 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	2468609	205.4771 ug/L		98
63)	1,1,2-Trichloroethane	13.18	97	1124672	197.6019 ug/L		100
64)	2-Hexanone	13.12	58	237678	200.9290 ug/L	#	81
65)	1,3-Dichloropropane	13.48	76	2023247	199.9545 ug/L		76
66)	Tetrachloroethene	13.60	164	1546618	200.8018 ug/L		97
67)	Dibromochloromethane	13.87	129	1726523	210.5823 ug/L		100
68)	1,2-Dibromoethane	14.12	107	1163160	207.0667 ug/L		99
69)	1-Chlorohexane	14.21	91	2414147	195.6413 ug/L		83
70)	Chlorobenzene	14.62	112	4641169	187.6386 ug/L		94
71)	1,1,1,2-Tetrachloroethane	14.66	131	1929251	206.8372 ug/L		99
72)	Ethylbenzene	14.66	106	2611321	195.8267 ug/L		88
73)	m-,p-Xylene	14.75	106	5876234	367.8657 ug/L		83
74)	o-Xylene	15.31	106	3012318	196.4899 ug/L		98
75)	Styrene	15.35	104	4913204	194.1235 ug/L		86
76)	Bromoform	15.83	173	1052629	218.7989 ug/L		100
77)	Isopropylbenzene	15.73	105	7284624	172.7305 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	1237171	205.8673 ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	386738	209.7906 ug/L	#	54
82)	trans-1,4-Dichloro-2-Buten	16.19	53	382467	243.6526 ug/L		76
83)	n-Propylbenzene	16.24	91	8244387	166.5110 ug/L		93
84)	Bromobenzene	16.37	156	1935166	200.1305 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	6482975	183.9948 ug/L		98
86)	2-Chlorotoluene	16.52	91	6108308	178.8549 ug/L		99
87)	4-Chlorotoluene	16.56	91	5513221	180.5508 ug/L		99
88)	a-Methylstyrene	16.84	118	3255254	200.4995 ug/L		89
89)	tert-Butylbenzene	16.90	134	1351569	202.1005 ug/L		92
90)	1,2,4-Trimethylbenzene	16.95	105	6531416	179.2445 ug/L		97
91)	sec-Butylbenzene	17.17	105	7342730	173.9814 ug/L		97
92)	p-Isopropyltoluene	17.32	119	6352010	178.7315 ug/L		99
93)	1,3-Dichlorobenzene	17.52	146	3640547	193.1654 ug/L		90
94)	1,4-Dichlorobenzene	17.64	146	3593548	188.4603 ug/L		91
95)	n-Butylbenzene	17.85	91	6198060	175.4375 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	3171699	188.9651 ug/L		89
97)	1,2-Dibromo-3-Chloropropan	19.13	75	249646	207.5645 ug/L		88
98)	1,2,4-Trichlorobenzene	20.28	180	2480626	199.7296 ug/L		99
99)	Hexachlorobutadiene	20.43	225	1169411	202.7981 ug/L		98
100)	Naphthalene	20.65	128	3580198	192.0323 ug/L		97
101)	1,2,3-Trichlorobenzene	20.96	180	2040570	193.9298 ug/L		100

(#) = qualifier out of range (m) = manual integration
8M412228.D 8260WT.M Fri May 13 17:43:35 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration

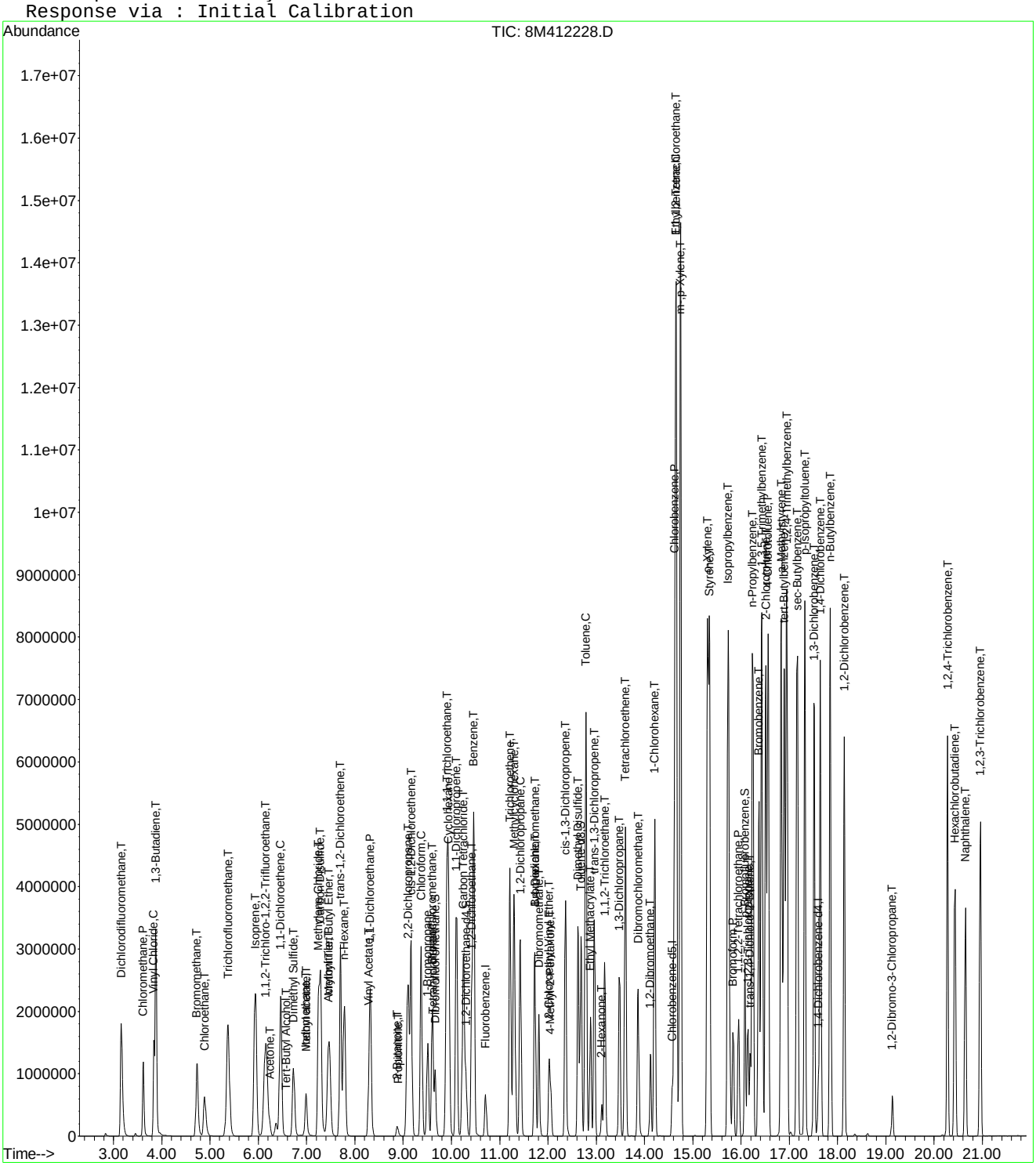

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	855409	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	599314	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	305726	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	1411837	154.4674 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 617.88%#		
43) 1,2-Dichloroethane-d4	10.30	65	1466019	148.1811 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 592.72%#		
58) Toluene-d8	12.69	98	4594713	145.5601 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 582.24%#		
80) p-Bromofluorobenzene	16.08	95	1918996	151.7813 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 607.12%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	4191932	292.0014 ug/L	97
3) Chloromethane	3.62	50	2474035	293.7212 ug/L	97
4) Vinyl Chloride	3.83	62	2956347	297.5552 ug/L	94
5) 1,3-Butadiene	3.87	54	2605506	318.3447 ug/L	94
6) Bromomethane	4.72	94	2177550	421.2239 ug/L	98
7) Chloroethane	4.89	64	1688005	311.2693 ug/L	90
8) Trichlorofluoromethane	5.37	101	5387662	289.6161 ug/L	99
9) Diethyl ether	5.90	59	1306432	295.4610 ug/L	80
10) Isoprene	5.93	67	3377164	300.3032 ug/L	78
11) Acrolein	6.14	56	70572	185.7401 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	2563878	293.7317 ug/L	94
13) Acetone	6.24	43	283185	293.3529 ug/L	90
14) 1,1-Dichloroethene	6.46	61	4031745	289.8421 ug/L	91
15) Tert-Butyl Alcohol	6.58	59	181796	587.3907 ug/L	90
16) Dimethyl Sulfide	6.73	62	1553493	317.1280 ug/L	81
17) Iodomethane	6.99	142	1347307	580.2206 ug/L	98
18) Methyl acetate	7.00	43	800046	309.5287 ug/L #	80
19) Methylene Chloride	7.24	84	2587731	292.4144 ug/L	52
20) Carbon Disulfide	7.29	76	8228181	279.9683 ug/L	98
21) Acrylonitrile	7.43	53	228227	189.6753 ug/L	94
22) Methyl Tert Butyl Ether	7.46	73	5605924	293.5892 ug/L	88
23) trans-1,2-Dichloroethene	7.70	61	3678699	287.1957 ug/L	92
24) n-Hexane	7.78	57	2863434	304.0691 ug/L	86
25) Diisopropyl ether	8.12	45	5819647	292.7898 ug/L #	89
26) Vinyl Acetate	8.30	43	2819503	314.5767 ug/L #	87
27) 1,1-Dichloroethane	8.32	63	4586531	289.1293 ug/L	94
28) Ethyl-Tert-Butyl ether	8.70	59	6190206	290.3321 ug/L	89
29) 2-Butanone	8.88	43	439359	312.8959 ug/L #	76
30) Propionitrile	8.99	54	133197	327.4673 ug/L	95
31) 2,2-Dichloropropane	9.10	77	4821388	288.2735 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	2847005	287.9976 ug/L	89
33) Chloroform	9.37	83	5197860	275.5447 ug/L	100
34) 1-Bromopropane	9.51	122	450012	326.3179 ug/L	100
35) Bromochloromethane	9.61	130	1490221	295.6112 ug/L	66
36) Tetrahydrofuran	9.63	42	271736	290.4491 ug/L #	62
38) 1,1,1-Trichloroethane	9.91	97	5126354	287.9792 ug/L	98
39) Cyclohexane	9.94	56	3733392	305.0987 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	3923871	289.1471 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	5639573	291.3713 ug/L	88
42) Carbon Tetrachloride	10.25	117	4598150	291.7629 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412229.D 8260WT.M Fri May 13 18:12:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.43	62	3468738	287.5726 ug/L	86
46)	Benzene	10.46	78	9065861	250.7462 ug/L	93
47)	Trichloroethene	11.21	130	2772282	295.1106 ug/L	97
48)	Methylcyclohexane	11.30	83	4327357	304.8748 ug/L	84
49)	1,2-Dichloropropane	11.43	63	2350729	300.9718 ug/L	74
50)	Bromodichloromethane	11.73	83	4051493	294.7973 ug/L	99
51)	1,4-Dioxane	11.72	88	26614	699.8767 ug/L	67
52)	Dibromomethane	11.81	93	1369945	295.3776 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.03	63	1006317	297.3917 ug/L	90
54)	4-Methyl-2-Pentanone	12.06	58	424684	310.6522 ug/L #	76
55)	cis-1,3-Dichloropropene	12.36	75	4156310	297.7431 ug/L	97
56)	Dimethyl Disulfide	12.63	79	2359825	324.2911 ug/L	94
59)	Toluene	12.78	91	9135213	236.4669 ug/L	90
60)	Ethyl Methacrylate	12.88	69	2228037	315.7801 ug/L	71
62)	trans-1,3-Dichloropropene	12.96	75	3700845	297.5240 ug/L	96
63)	1,1,2-Trichloroethane	13.18	97	1730199	293.6104 ug/L	100
64)	2-Hexanone	13.11	58	381967	311.8816 ug/L #	78
65)	1,3-Dichloropropane	13.49	76	3080177	294.0141 ug/L	76
66)	Tetrachloroethene	13.60	164	2374435	297.7522 ug/L	96
67)	Dibromochloromethane	13.87	129	2638145	310.7838 ug/L	100
68)	1,2-Dibromoethane	14.13	107	1778561	305.8085 ug/L	99
69)	1-Chlorohexane	14.21	91	3712592	290.5924 ug/L	84
70)	Chlorobenzene	14.63	112	6754240	263.7433 ug/L	90
71)	1,1,1,2-Tetrachloroethane	14.65	131	2967650	307.3001 ug/L	100
72)	Ethylbenzene	14.65	106	4014412	290.7661 ug/L	70
73)	m-,p-Xylene	14.75	106	8357822	505.3514 ug/L	70
74)	o-Xylene	15.31	106	4530840	285.4488 ug/L	88
75)	Styrene	15.35	104	7050702	269.0641 ug/L	82
76)	Bromoform	15.84	173	1602587	321.7373 ug/L	99
77)	Isopropylbenzene	15.73	105	9900817	226.7477 ug/L	90
79)	1,1,2,2-Tetrachloroethane	15.95	83	1885953	309.3861 ug/L	98
81)	1,2,3-Trichloropropane	16.14	110	581198	310.8176 ug/L	61
82)	trans-1,4-Dichloro-2-Buten	16.18	53	589705	370.3601 ug/L	82
83)	n-Propylbenzene	16.25	91	10768378	214.4110 ug/L	86
84)	Bromobenzene	16.37	156	2947671	300.5290 ug/L	99
85)	1,3,5-Trimethylbenzene	16.43	105	8890651	248.7580 ug/L	92
86)	2-Chlorotoluene	16.51	91	7868844	227.1449 ug/L	92
87)	4-Chlorotoluene	16.57	91	7782731	251.2687 ug/L	93
88)	a-Methylstyrene	16.84	118	4955768	300.9205 ug/L	86
89)	tert-Butylbenzene	16.90	134	2046401	301.6701 ug/L	95
90)	1,2,4-Trimethylbenzene	16.95	105	8903769	240.8932 ug/L	89
91)	sec-Butylbenzene	17.17	105	9867862	230.5051 ug/L	91
92)	p-Isopropyltoluene	17.32	119	8738927	242.4155 ug/L	94
93)	1,3-Dichlorobenzene	17.52	146	5319954	278.2806 ug/L	87
94)	1,4-Dichlorobenzene	17.64	146	5248511	271.3593 ug/L	88
95)	n-Butylbenzene	17.85	91	8408157	234.6279 ug/L	92
96)	1,2-Dichlorobenzene	18.14	146	4717385	277.0787 ug/L	87
97)	1,2-Dibromo-3-Chloropropan	19.13	75	377070	309.0741 ug/L	91
98)	1,2,4-Trichlorobenzene	20.28	180	3677657	291.9206 ug/L	98
99)	Hexachlorobutadiene	20.43	225	1780695	304.4378 ug/L	96
100)	Naphthalene	20.65	128	5216751	275.8542 ug/L	95
101)	1,2,3-Trichlorobenzene	20.96	180	3064908	287.1593 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412229.D 8260WT.M Fri May 13 18:12:36 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration

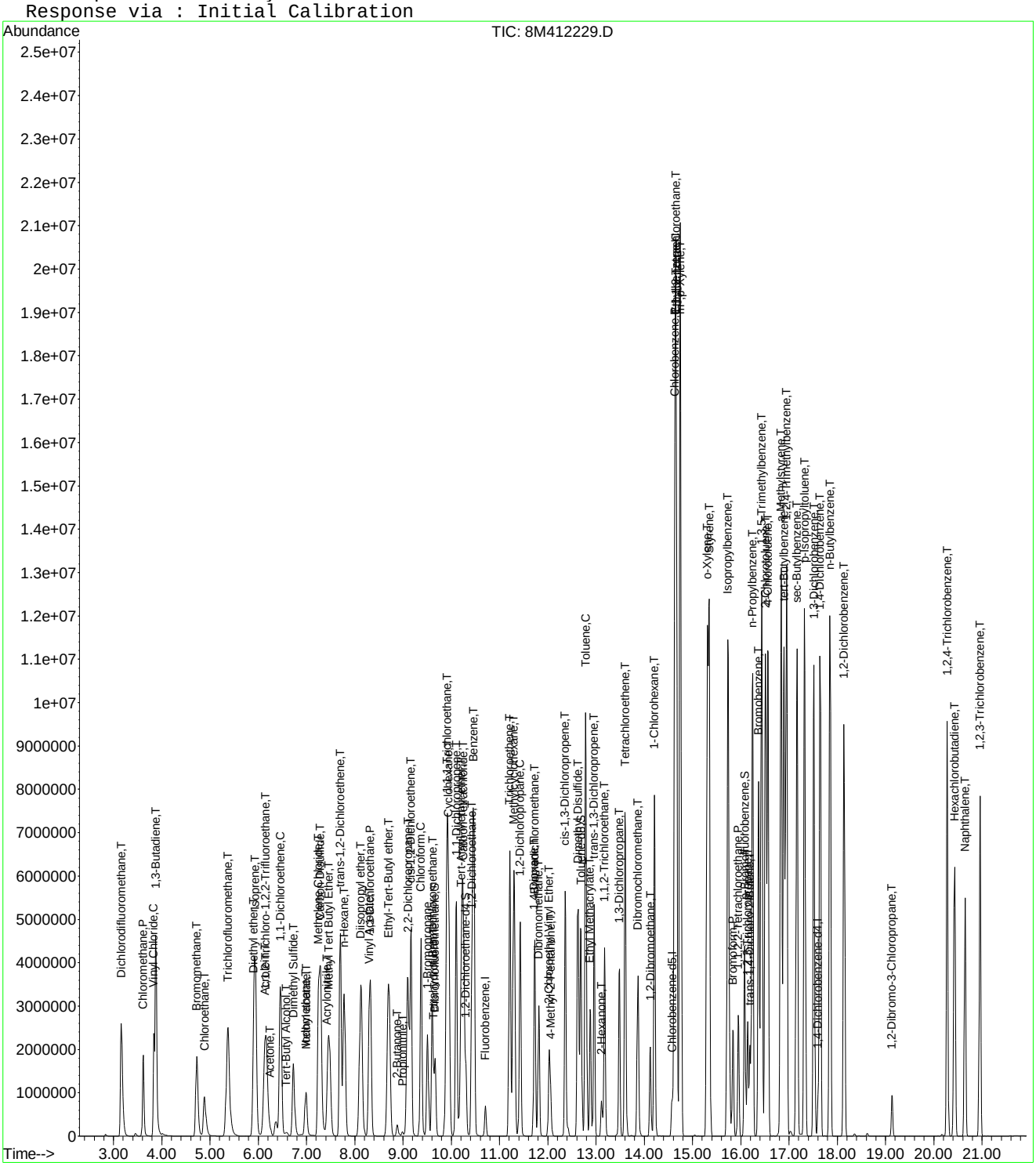

8M412229.D 8260WT.M Fri May 13 18:12:36 2016 Page 3

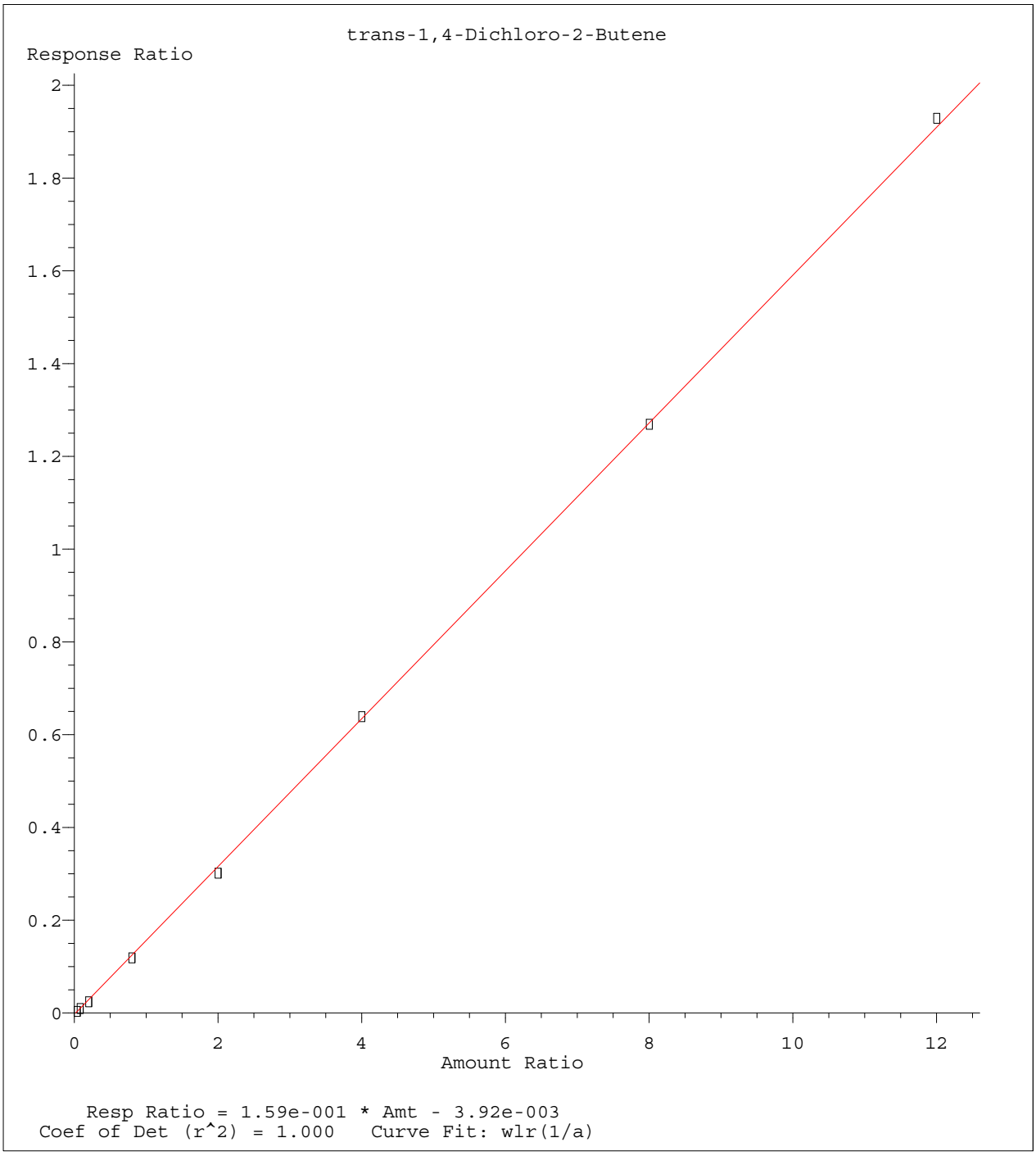

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

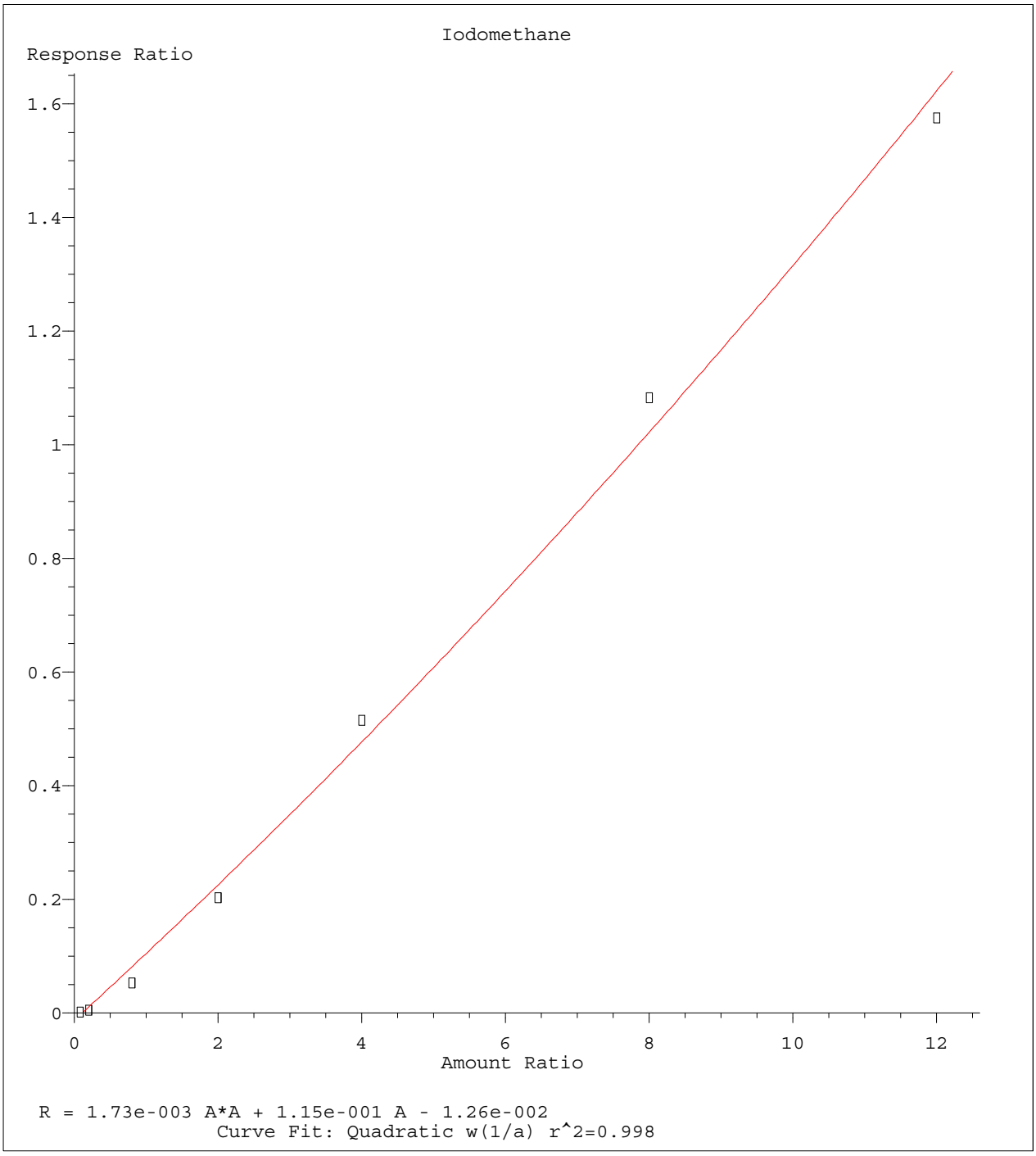

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

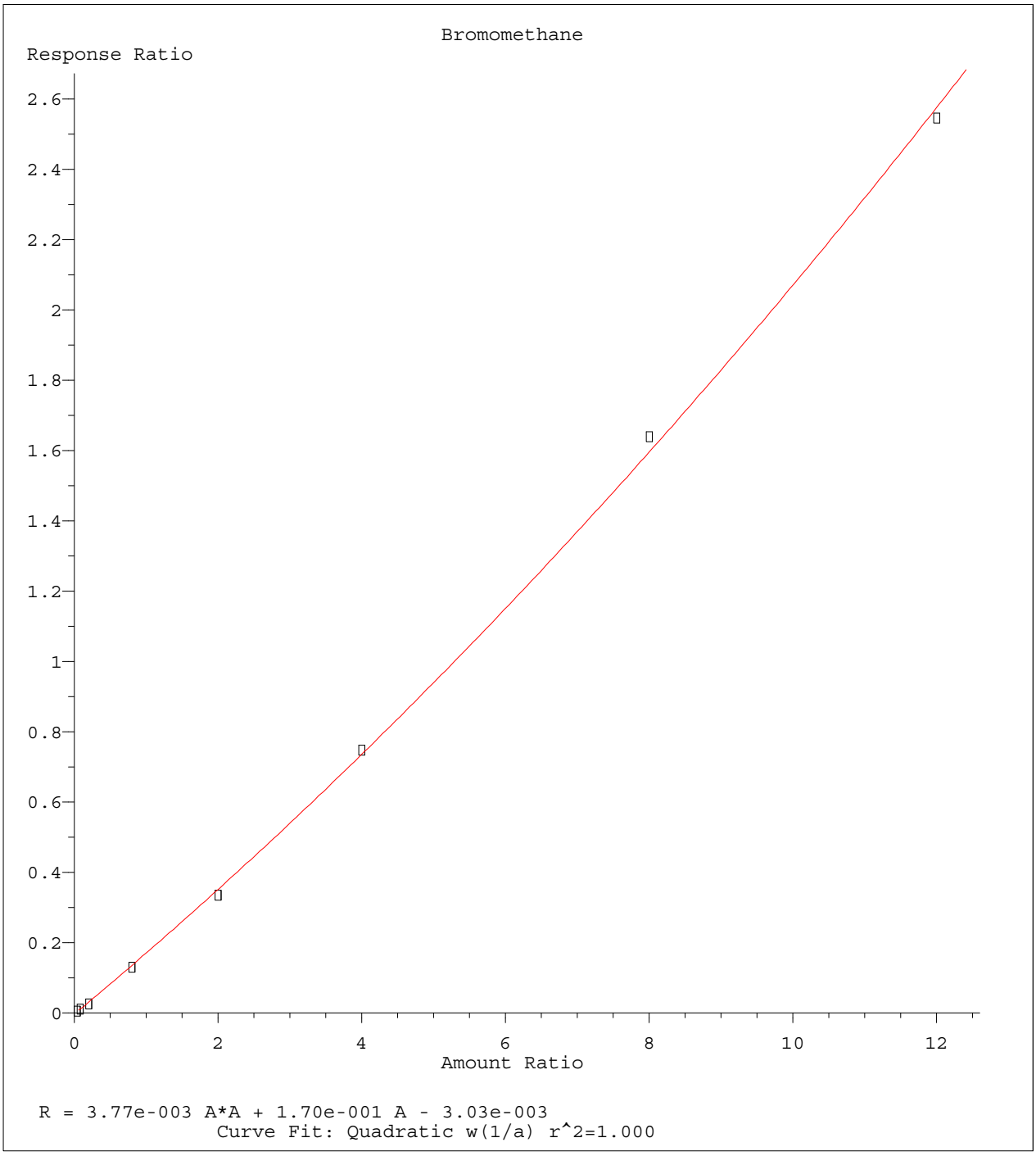

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:44:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Tue May 17 11:43:20 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	837879	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	574720	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	304324	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	229742	25.5204 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.08%		
43) 1,2-Dichloroethane-d4	10.31	65	238672	24.7259 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.92%		
58) Toluene-d8	12.68	98	776362	25.8115 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.24%		
80) p-Bromofluorobenzene	16.07	95	315683	25.0519 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.20%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	761591	54.2141 ug/L	99
3) Chloromethane	3.62	50	415589	50.6814 ug/L	100
4) Vinyl Chloride	3.84	62	509607	52.3810 ug/L	100
5) 1,3-Butadiene	3.88	54	347562	42.6002 ug/L	97
6) Bromomethane	4.73	94	272060	46.3924 ug/L	99
7) Chloroethane	4.88	64	285509	53.3336 ug/L	98
8) Trichlorofluoromethane	5.37	101	849580	46.9313 ug/L	100
9) Diethyl ether	5.90	59	451307	104.4282 ug/L	99
10) Isoprene	5.93	67	582863	53.0208 ug/L	99
11) Acrolein	6.13	56	38877	100.4722 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	419584	49.3091 ug/L	97
13) Acetone	6.23	43	54234	57.5310 ug/L	94
14) 1,1-Dichloroethene	6.46	61	622831	45.9700 ug/L	99
15) Tert-Butyl Alcohol	6.59	59	59797	197.9422 ug/L	97
16) Dimethyl Sulfide	6.73	62	351814	72.6234 ug/L	98
17) Iodomethane	6.99	142	92716	26.2832 ug/L	99
18) Methyl acetate	7.00	43	127540	50.0514 ug/L	98
19) Methylene Chloride	7.25	84	417642	48.4385 ug/L	99
20) Carbon Disulfide	7.29	76	1199899	42.3200 ug/L	100
21) Acrylonitrile	7.43	53	65324	53.4074 ug/L	93
22) Methyl Tert Butyl Ether	7.46	73	949572	50.8859 ug/L	97
23) trans-1,2-Dichloroethene	7.70	61	598296	48.0666 ug/L	99
24) n-Hexane	7.77	57	425106	45.9930 ug/L	99
25) Diisopropyl ether	8.13	45	2040382	105.1615 ug/L	98
26) Vinyl Acetate	8.29	43	415568	46.7802 ug/L	99
27) 1,1-Dichloroethane	8.32	63	721661	46.6846 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	2040020	98.1343 ug/L	99
29) 2-Butanone	8.88	43	73394	52.9905 ug/L	99
30) Propionitrile	8.98	54	42290	104.7756 ug/L	100
31) 2,2-Dichloropropane	9.10	77	780073	47.8861 ug/L	99
32) cis-1,2-Dichloroethene	9.16	96	470465	48.9162 ug/L	98
33) Chloroform	9.38	83	860252	47.1317 ug/L	100
34) 1-Bromopropane	9.51	122	98585	71.5615 ug/L	98
35) Bromochloromethane	9.60	130	234493	47.5456 ug/L	99
36) Tetrahydrofuran	9.62	42	86049	94.3281 ug/L	99
38) 1,1,1-Trichloroethane	9.90	97	825167	47.5949 ug/L	100
39) Cyclohexane	9.93	56	586721	48.8808 ug/L	97
40) 1,1-Dichloropropene	10.10	75	627217	47.4632 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1962875	103.9618 ug/L	99
42) Carbon Tetrachloride	10.24	117	711823	46.2363 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M412232.D 8260WT.M Tue May 17 11:44:38 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	108	0.00
2	T	Dichlorodifluoromethane	50.0000	54.2141	-8.4	112	0.00
3	P	Chloromethane	50.0000	50.6814	-1.4	111	0.00
4	C	Vinyl Chloride	50.0000	52.3811	-4.8	112	-0.01
5	T	1,3-Butadiene	50.0000	42.6002	14.8	89	0.00
6	T	Bromomethane	50.0000	46.3924	7.2	104	-0.01
7	T	Chloroethane	50.0000	53.3336	-6.7	117	-0.01
8	T	Trichlorofluoromethane	50.0000	46.9313	6.1	101	-0.01
9	T	Diethyl ether	100.0000	104.4282	-4.4	116	0.00
10	T	Isoprene	50.0000	53.0208	-6.0	117	0.00
11	T	Acrolein	50.0000	100.4722	-100.9#	220	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	49.3091	1.4	108	0.00
13	T	Acetone	50.0000	57.5310	-15.1	118	-0.01
14	C	1,1-Dichloroethene	50.0000	45.9700	8.1	100	0.00
15	T	Tert-Butyl Alcohol	200.0000	197.9423	1.0	108	0.01
16	T	Dimethyl Sulfide	50.0000	72.6234	-45.2#	159	0.00
17	T	Iodomethane	50.0000	26.2832	47.4#	59	0.01
18	T	Methyl acetate	50.0000	50.0514	-0.1	111	0.00
19	T	Methylene Chloride	50.0000	48.4385	3.1	107	0.00
20	T	Carbon Disulfide	50.0000	42.3200	15.4	94	0.00
21	T	Acrylonitrile	50.0000	53.4074	-6.8	109	0.00
22	T	Methyl Tert Butyl Ether	50.0000	50.8859	-1.8	105	0.00
23	T	trans-1,2-Dichloroethene	50.0000	48.0666	3.9	105	0.00
24	T	n-Hexane	50.0000	45.9930	8.0	101	-0.01
25	T	Diisopropyl ether	100.0000	105.1615	-5.2	115	0.00
26	T	Vinyl Acetate	50.0000	46.7802	6.4	97	0.00
27	P	1,1-Dichloroethane	50.0000	46.6846	6.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.1343	1.9	104	0.00
29	T	2-Butanone	50.0000	52.9905	-6.0	110	0.00
30	T	Propionitrile	100.0000	104.7756	-4.8	111	0.00
31	T	2,2-Dichloropropane	50.0000	47.8861	4.2	102	0.00
32	T	cis-1,2-Dichloroethene	50.0000	48.9162	2.2	107	-0.01
33	C	Chloroform	50.0000	47.1317	5.7	102	0.00
34		1-Bromopropane	50.0000	71.5615	-43.1#	155	0.00
35	T	Bromochloromethane	50.0000	47.5456	4.9	102	0.00
36	T	Tetrahydrofuran	100.0000	94.3281	5.7	108	-0.01
37	S	Dibromofluoromethane	25.0000	25.5204	-2.1	109	0.00
38	T	1,1,1-Trichloroethane	50.0000	47.5949	4.8	101	0.00
39	T	Cyclohexane	50.0000	48.8808	2.2	109	0.00
40	T	1,1-Dichloropropene	50.0000	47.4632	5.1	102	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	103.9618	-4.0	111	0.00
42	T	Carbon Tetrachloride	50.0000	46.2363	7.5	98	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.7259	1.1	104	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	49.0148	2.0	103	0.00
46	T	Benzene	50.0000	48.5232	3.0	104	0.00
47	T	Trichloroethene	50.0000	51.0658	-2.1	110	0.00
48	T	Methylcyclohexane	50.0000	49.8573	0.3	109	0.00
49	C	1,2-Dichloropropane	50.0000	50.9747	-1.9	111	0.00
50	T	Bromodichloromethane	50.0000	48.3053	3.4	99	0.00
51	T	1,4-Dioxane	200.0000	216.9538	-8.5	110	0.01
52	T	Dibromomethane	50.0000	45.8126	8.4	99	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	51.2623	-2.5	104	0.00
54	T	4-Methyl-2-Pentanone	50.0000	51.8715	-3.7	107	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.8979	-7.8	111	0.00
56	T	Dimethyl Disulfide	50.0000	52.2714	-4.5	111	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	107	0.00
58	S	Toluene-d8	25.0000	25.8115	-3.2	108	0.00
59	C	Toluene	50.0000	49.0912	1.8	105	0.00
60	T	Ethyl Methacrylate	50.0000	55.9509	-11.9	113	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	50.6740	-1.3	102	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.0377	1.9	103	0.00
64	T	2-Hexanone	50.0000	53.6057	-7.2	112	0.00
65	T	1,3-Dichloropropane	50.0000	53.6720	-7.3	110	0.00
66	T	Tetrachloroethene	50.0000	47.8053	4.4	104	0.00
67	T	Dibromochloromethane	50.0000	49.6585	0.7	102	0.00
68	T	1,2-Dibromoethane	50.0000	51.1121	-2.2	105	0.00
69	T	1-Chlorohexane	50.0000	51.0611	-2.1	111	0.00
70	P	Chlorobenzene	50.0000	50.1844	-0.4	108	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	49.3793	1.2	103	0.00
72	C	Ethylbenzene	50.0000	48.2013	3.6	105	0.00
73	T	m-,p-Xylene	100.0000	101.1341	-1.1	108	0.00
74	T	o-Xylene	50.0000	50.5675	-1.1	108	0.00
75	T	Styrene	50.0000	51.5086	-3.0	105	0.00
76	P	Bromoform	50.0000	48.2227	3.6	99	0.00
77	T	Isopropylbenzene	50.0000	51.1140	-2.2	107	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	106	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	49.6172	0.8	103	0.00
80	S	p-Bromofluorobenzene	25.0000	25.0519	-0.2	108	0.00
81	T	1,2,3-Trichloropropane	50.0000	50.0849	-0.2	106	0.01
82	T	trans-1,4-Dichloro-2-Butene	50.0000	39.2043	21.6	86	0.00
83	T	n-Propylbenzene	50.0000	51.9237	-3.8	108	0.00
84	T	Bromobenzene	50.0000	49.4648	1.1	105	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	51.6344	-3.3	107	0.00
86	T	2-Chlorotoluene	50.0000	51.5639	-3.1	106	0.00
87	T	4-Chlorotoluene	50.0000	48.2650	3.5	108	0.00
88	T	a-Methylstyrene	50.0000	56.4132	-12.8	120	0.00
89	T	tert-Butylbenzene	50.0000	50.9494	-1.9	112	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	49.6617	0.7	105	0.00
91	T	sec-Butylbenzene	50.0000	51.3386	-2.7	108	0.00
92	T	p-Isopropyltoluene	50.0000	50.1261	-0.3	107	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.8943	-1.8	108	0.00
94	T	1,4-Dichlorobenzene	50.0000	50.4742	-0.9	110	0.00
95	T	n-Butylbenzene	50.0000	49.6520	0.7	105	0.00
96	T	1,2-Dichlorobenzene	50.0000	50.4907	-1.0	110	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	48.4851	3.0	100	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	50.1129	-0.2	107	0.00
99	T	Hexachlorobutadiene	50.0000	52.0919	-4.2	115	0.00
100	T	Naphthalene	50.0000	45.8047	8.4	95	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	47.7353	4.5	106	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412232.D 8260WT.M Sat May 14 18:09:03 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:21 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	709364	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	505399	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	272922	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	27428	100.2132 ug/L	99
3) 3-Chloro-1-propene	7.07	41	940418	104.3259 ug/L	82
4) 2-Chloro-1,3-butadiene	8.45	53	1188994	104.3183 ug/L	86
5) Ethyl Acetate	9.10	43	283167	104.3264 ug/L	95
6) Methacrylonitrile	9.25	67	155775	104.5365 ug/L #	63
7) Isobutyl Alcohol	9.25	43	17893	197.3629 ug/L #	96
9) Methyl methacrylate	11.42	41	298802	102.0346 ug/L	70
10) 2-Nitropropane	11.75	43	121321	95.8263 ug/L	97
13) Cyclohexanone	15.84	55	11401	102.1363 ug/L #	70

(#) = qualifier out of range (m) = manual integration
8M412321.D A9FOOWT.M Thu May 19 09:01:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

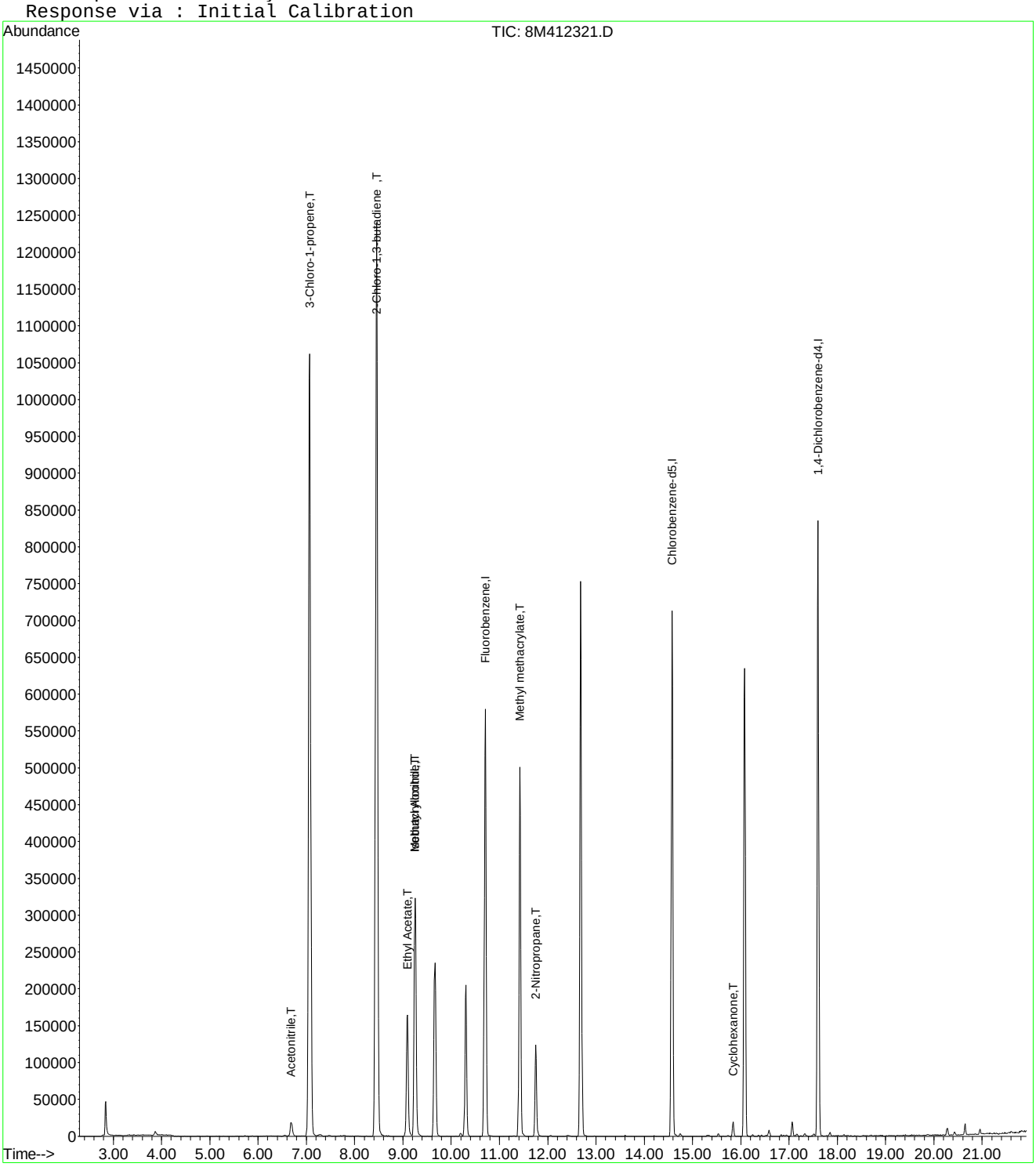

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	100.2132	-0.2	100	0.00
3	T	3-Chloro-1-propene	100.0000	104.3259	-4.3	100	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	104.3183	-4.3	100	0.00
5	T	Ethyl Acetate	100.0000	104.3264	-4.3	100	0.00
6	T	Methacrylonitrile	100.0000	104.5365	-4.5	100	0.00
7	T	Isobutyl Alcohol	200.0000	197.3629	1.3	100	-0.01
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.02
9	T	Methyl methacrylate	100.0000	102.0346	-2.0	100	0.00
10	T	2-Nitropropane	100.0000	95.8263	4.2	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	100.0000	102.1363	-2.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412321.D A9FOOWT.M Thu May 19 09:02:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:20:35 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	677339	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	488377	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	260939	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	13323	50.9795 ug/L	98
3) 3-Chloro-1-propene	7.07	41	453655	52.7060 ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	568765	52.2609 ug/L	87
5) Ethyl Acetate	9.09	43	131636	50.7913 ug/L	97
6) Methacrylonitrile	9.25	67	74064	52.0523 ug/L #	62
7) Isobutyl Alcohol	9.26	43	8483	97.9930 ug/L	95
9) Methyl methacrylate	11.42	41	143892	51.4593 ug/L	70
10) 2-Nitropropane	11.75	43	56559	46.7858 ug/L	95
13) Cyclohexanone	15.84	55	5225	48.9579 ug/L	83

(#) = qualifier out of range (m) = manual integration
8M412322.D A9FOOWT.M Thu May 19 09:20:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:19 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

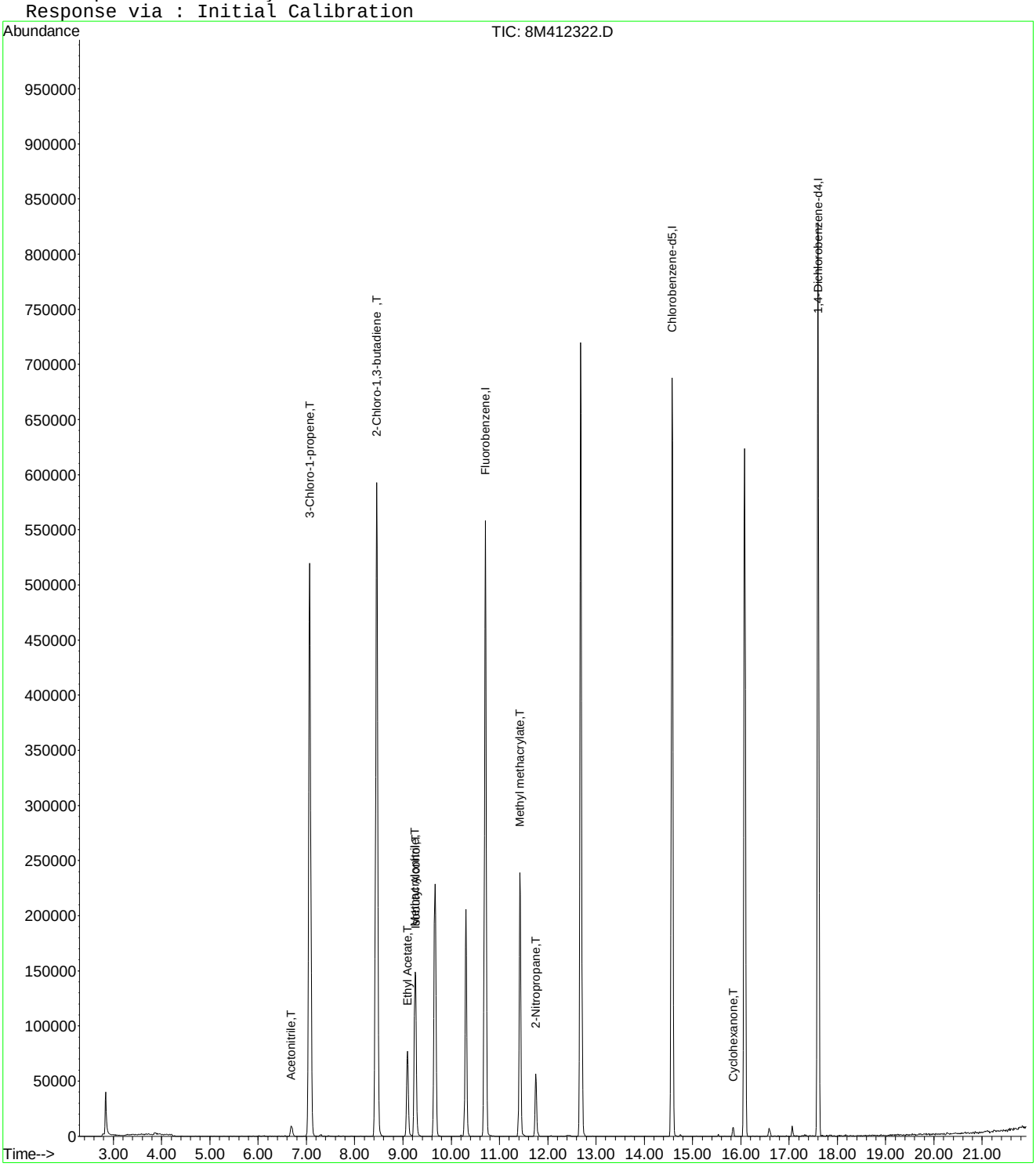

8M412322.D A9FOOWT.M Thu May 19 09:20:36 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	50.9795	-2.0	100	0.00
3	T	3-Chloro-1-propene	50.0000	52.7060	-5.4	100	0.00
4	T	2-Chloro-1,3-butadiene	50.0000	52.2609	-4.5	100	0.00
5	T	Ethyl Acetate	50.0000	50.7913	-1.6	100	0.00
6	T	Methacrylonitrile	50.0000	52.0523	-4.1	100	0.00
7	T	Isobutyl Alcohol	100.0000	97.9929	2.0	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.02
9	T	Methyl methacrylate	50.0000	51.4592	-2.9	100	0.00
10	T	2-Nitropropane	50.0000	46.7858	6.4	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	50.0000	48.9579	2.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412322.D A9FOOWT.M Thu May 19 09:02:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:22:33 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	652985	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	476539	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	256082	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	4873	19.3416 ug/L	80
3) 3-Chloro-1-propene	7.07	41	172467	20.7847 ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	219296	20.9015 ug/L	87
5) Ethyl Acetate	9.09	43	50385	20.1659 ug/L	100
6) Methacrylonitrile	9.26	67	28119	20.4992 ug/L #	63
7) Isobutyl Alcohol	9.27	43	2774	33.2395 ug/L #	8
9) Methyl methacrylate	11.42	41	55309	20.5176 ug/L	73
10) 2-Nitropropane	11.75	43	21584	18.5202 ug/L	99
13) Cyclohexanone	15.84	55	2230	21.2913 ug/L	87

(#) = qualifier out of range (m) = manual integration
8M412323.D A9FOOWT.M Thu May 19 09:22:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:21 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

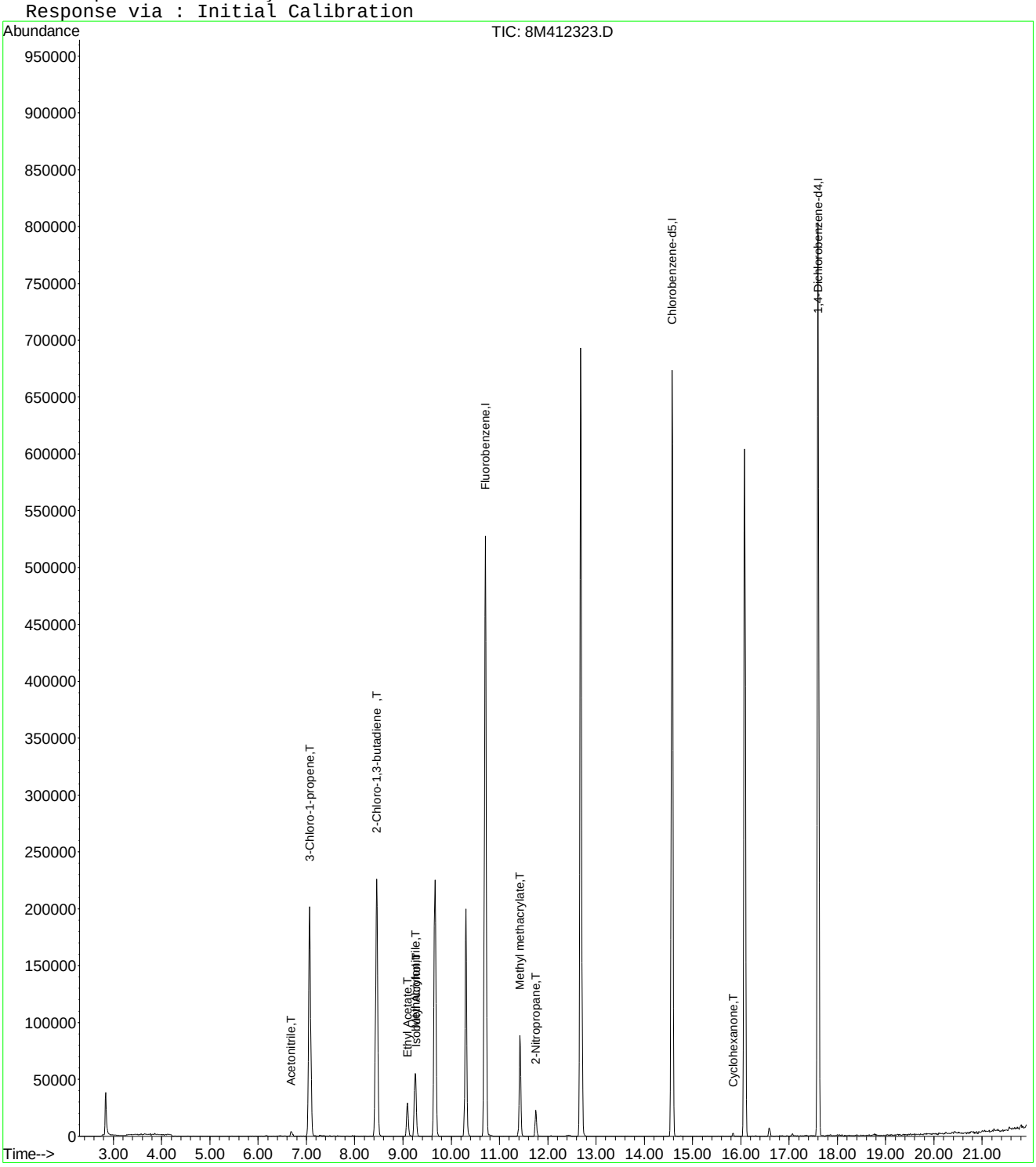

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	19.3416	3.3	100	0.00
3	T	3-Chloro-1-propene	20.0000	20.7847	-3.9	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	20.9015	-4.5	100	0.00
5	T	Ethyl Acetate	20.0000	20.1659	-0.8	100	0.00
6	T	Methacrylonitrile	20.0000	20.4992	-2.5	100	0.00
7	T	Isobutyl Alcohol	-1.0000	33.2395	0.0	0	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.18#
9	T	Methyl methacrylate	20.0000	20.5176	-2.6	100	0.00
10	T	2-Nitropropane	20.0000	18.5203	7.4	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	20.0000	21.2913	-6.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412323.D A9FOOWT.M Thu May 19 09:02:17 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:22:43 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	665645	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	483812	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	257678	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	405	1.5769 ug/L #	23
3) 3-Chloro-1-propene	7.07	41	40699	4.8115 ug/L	84
4) 2-Chloro-1,3-butadiene	8.45	53	48973	4.5789 ug/L	81
5) Ethyl Acetate	9.09	43	10675	4.1913 ug/L	95
6) Methacrylonitrile	9.26	67	5417	3.8740 ug/L #	72
7) Isobutyl Alcohol	9.27	43	441	5.1838 ug/L #	8
9) Methyl methacrylate	11.43	41	11811	4.2981 ug/L	65
10) 2-Nitropropane	11.76	43	4170	3.5100 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412324.D A9FOOWT.M Thu May 19 09:22:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:21 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

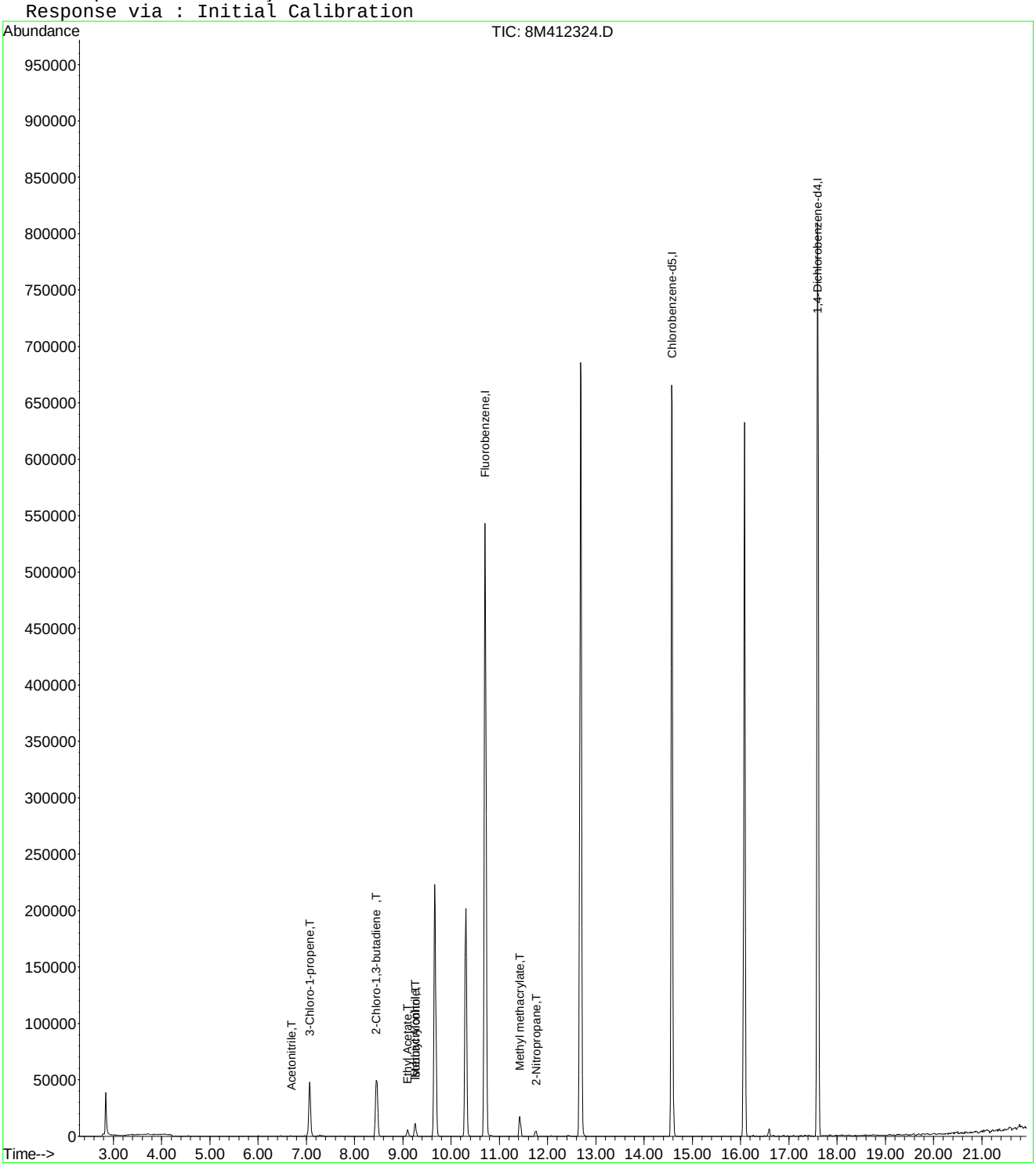

8M412324.D A9FOOWT.M Thu May 19 09:22:43 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	-1.0000	1.5769	0.0	0	0.00
3	T	3-Chloro-1-propene	5.0000	4.8115	3.8	100	0.00
4	T	2-Chloro-1,3-butadiene	5.0000	4.5789	8.4	100	0.00
5	T	Ethyl Acetate	5.0000	4.1913	16.2	100	0.00
6	T	Methacrylonitrile	5.0000	3.8740	22.5	100	0.00
7	T	Isobutyl Alcohol	-1.0000	5.1838	0.0	0	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.18#
9	T	Methyl methacrylate	5.0000	4.2981	14.0	100	0.00
10	T	2-Nitropropane	-1.0000	3.5100	0.0	0	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	0.0000	0.0	0	-15.84#

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412324.D A9FOOWT.M Thu May 19 09:02:03 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412325.D Vial: 7
Acq On : 17 May 2016 11:42 Operator: TMB
Sample : WG569079-06 200ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:27 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	682012	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	491515	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	261877	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.68	41	52022	197.6946 ug/L	97
3) 3-Chloro-1-propene	7.06	41	1768403	204.0468 ug/L	83
4) 2-Chloro-1,3-butadiene	8.46	53	2283706	208.4003 ug/L	87
5) Ethyl Acetate	9.09	43	537585	206.0040 ug/L	94
6) Methacrylonitrile	9.25	67	297408	207.5869 ug/L #	63
7) Isobutyl Alcohol	9.26	43	34441	395.1256 ug/L	95
9) Methyl methacrylate	11.42	41	577612	205.1526 ug/L	72
10) 2-Nitropropane	11.75	43	248395	204.0652 ug/L	95
13) Cyclohexanone	15.85	55	19752	184.4122 ug/L #	59

(#) = qualifier out of range (m) = manual integration
8M412325.D A9FOOWT.M Thu May 19 09:01:28 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412325.D Vial: 7
Acq On : 17 May 2016 11:42 Operator: TMB
Sample : WG569079-06 200ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

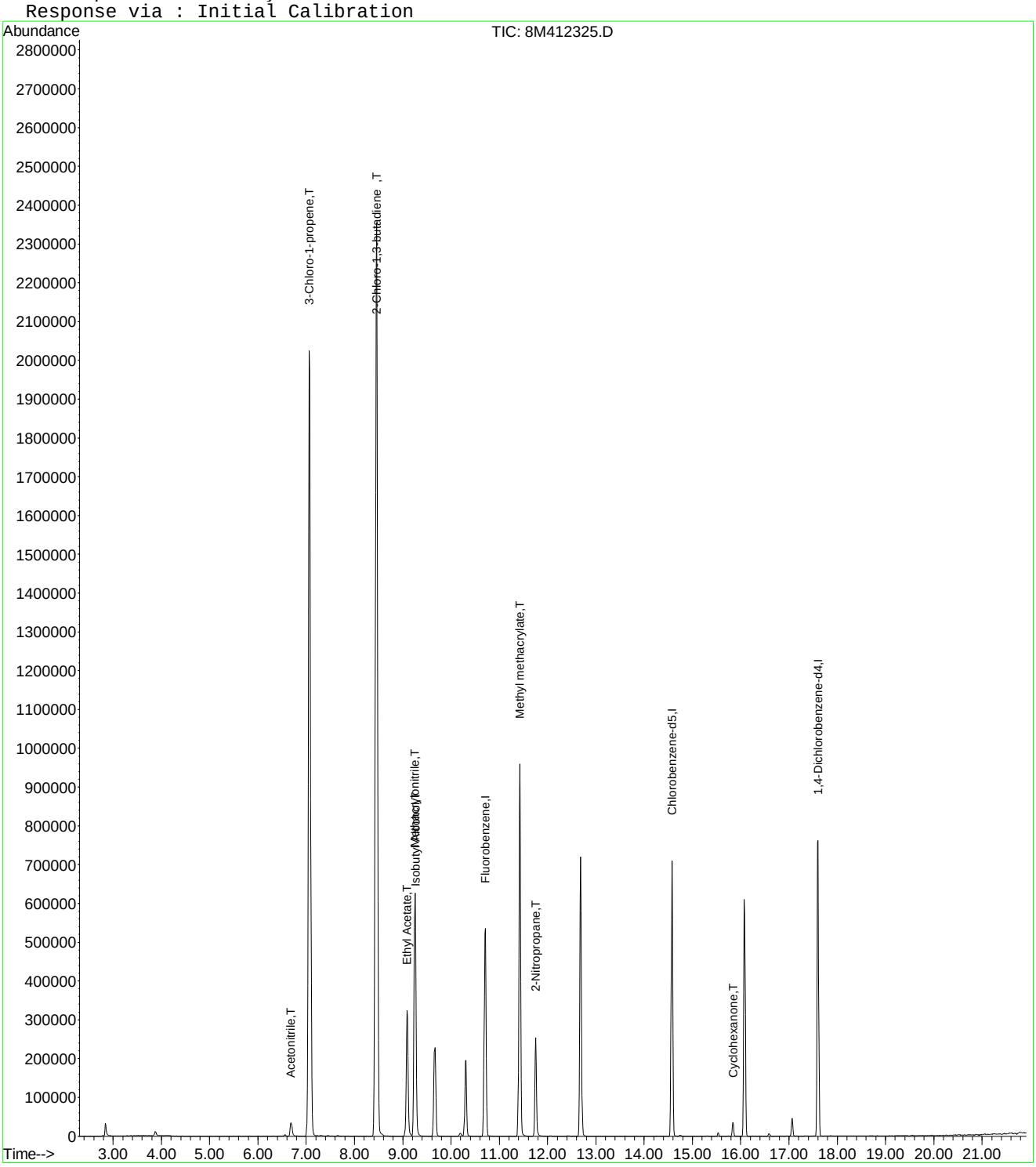

8M412325.D A9FOOWT.M Thu May 19 09:01:28 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412326.D Vial: 8
Acq On : 17 May 2016 12:40 Operator: TMB
Sample : WG569079-07 300ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:29 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	694903	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	496643	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	267309	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.69	41	81471	303.8636	ug/L	98
3) 3-Chloro-1-propene	7.06	41	2563559	290.3084	ug/L	83
4) 2-Chloro-1,3-butadiene	8.46	53	3270971	292.9562	ug/L	86
5) Ethyl Acetate	9.09	43	821184	308.8424	ug/L	95
6) Methacrylonitrile	9.25	67	451708	309.4374	ug/L #	62
7) Isobutyl Alcohol	9.26	43	55071	620.0836	ug/L	94
9) Methyl methacrylate	11.42	41	874430	304.8132	ug/L	70
10) 2-Nitropropane	11.75	43	392965	316.8456	ug/L	94
13) Cyclohexanone	15.84	55	33523	306.6233	ug/L #	61

(#) = qualifier out of range (m) = manual integration
8M412326.D A9FOOWT.M Thu May 19 09:01:29 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412326.D Vial: 8
Acq On : 17 May 2016 12:40 Operator: TMB
Sample : WG569079-07 300ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

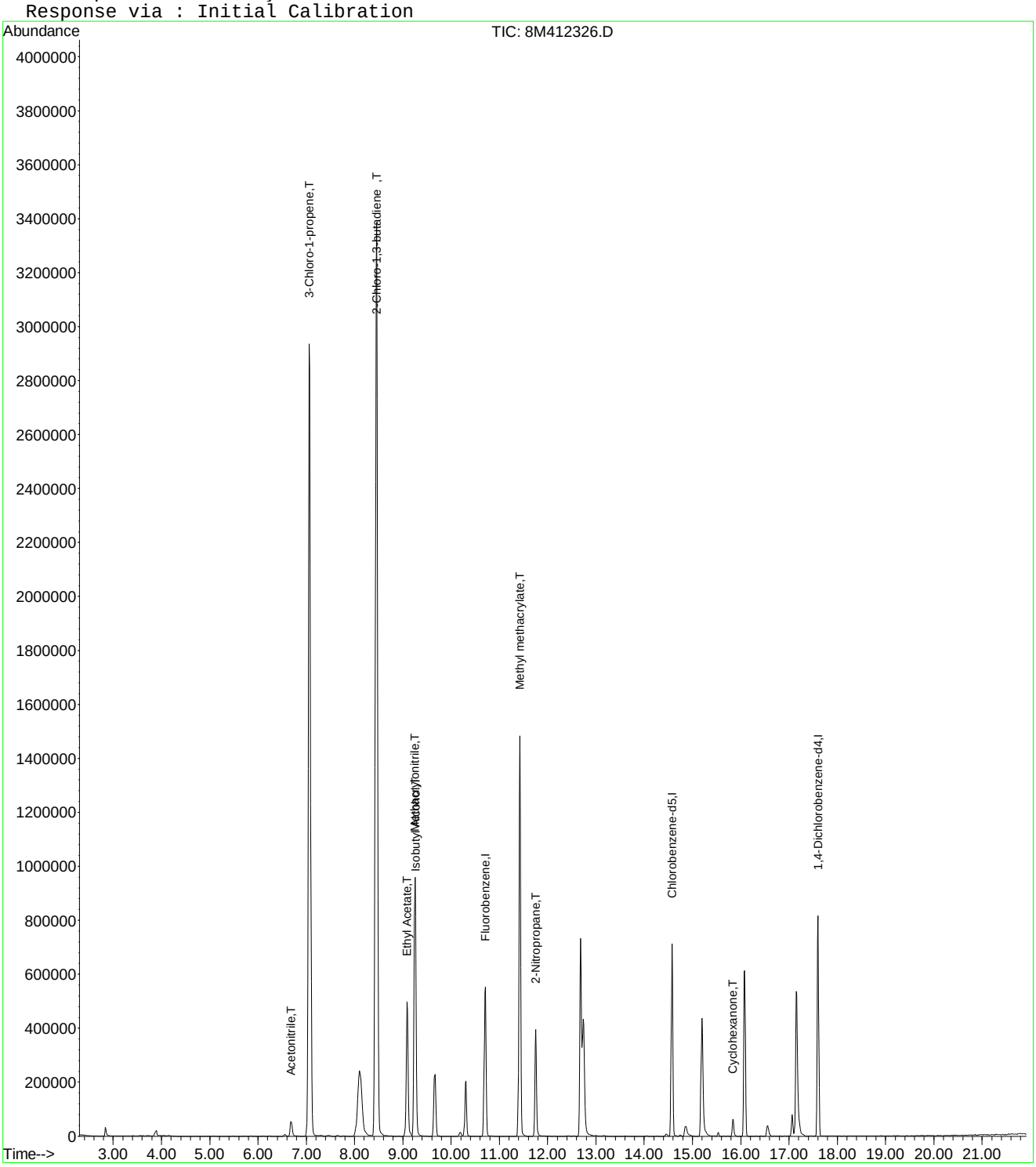

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412327.D Vial: 9
Acq On : 17 May 2016 13:10 Operator: TMB
Sample : WG569079-08 400ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:30 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	700514	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	502552	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	270883	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	110761	409.7980 ug/L	97
3) 3-Chloro-1-propene	7.07	41	3406131	382.6353 ug/L	82
4) 2-Chloro-1,3-butadiene	8.45	53	4356691	387.0705 ug/L	85
5) Ethyl Acetate	9.09	43	1116818	416.6642 ug/L	94
6) Methacrylonitrile	9.25	67	615482	418.2517 ug/L #	62
7) Isobutyl Alcohol	9.26	43	75472	842.9862 ug/L	97
9) Methyl methacrylate	11.42	41	1199317	414.7153 ug/L	71
10) 2-Nitropropane	11.75	43	538580	430.7760 ug/L	94
13) Cyclohexanone	15.84	55	45874	414.0575 ug/L #	55

(#) = qualifier out of range (m) = manual integration
8M412327.D A9FOOWT.M Thu May 19 09:01:31 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412327.D Vial: 9
Acq On : 17 May 2016 13:10 Operator: TMB
Sample : WG569079-08 400ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

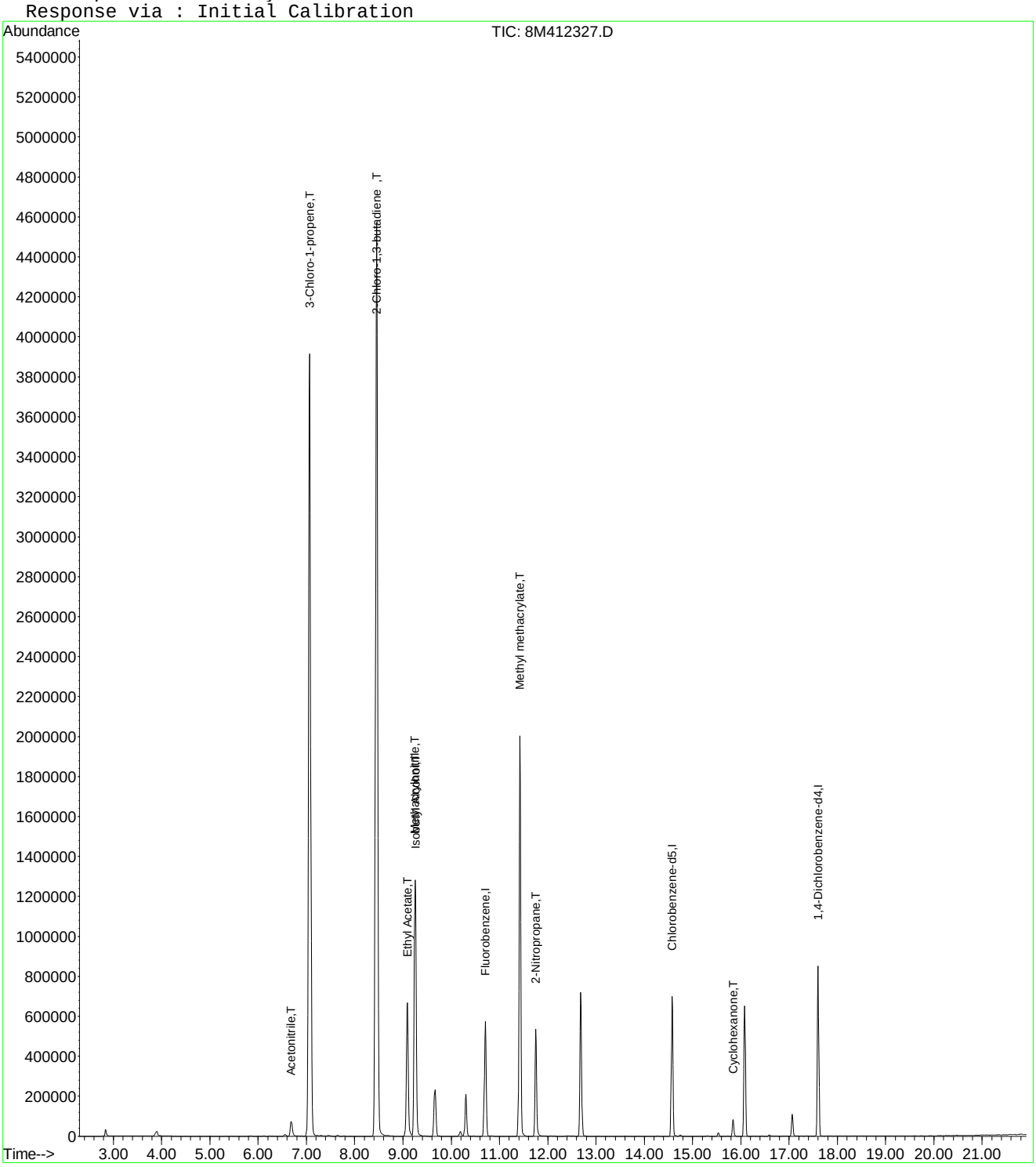

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412328.D Vial: 10
Acq On : 17 May 2016 13:39 Operator: TMB
Sample : WG569079-09 500ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:31 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	695694	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	495257	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	266442	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	132245	492.6753 ug/L	99
3) 3-Chloro-1-propene	7.06	41	4228273	478.2834 ug/L	82
4) 2-Chloro-1,3-butadiene	8.46	53	5390856	482.2693 ug/L	85
5) Ethyl Acetate	9.09	43	1321922	496.6017 ug/L	95
6) Methacrylonitrile	9.25	67	729852	499.4083 ug/L #	61
7) Isobutyl Alcohol	9.26	43	85200	958.2367 ug/L	96
9) Methyl methacrylate	11.42	41	1416438	493.1877 ug/L	72
10) 2-Nitropropane	11.75	43	637335	513.2956 ug/L	93
13) Cyclohexanone	15.84	55	52070	477.8160 ug/L #	61

(#) = qualifier out of range (m) = manual integration
8M412328.D A9FOOWT.M Thu May 19 09:01:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412328.D Vial: 10
Acq On : 17 May 2016 13:39 Operator: TMB
Sample : WG569079-09 500ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

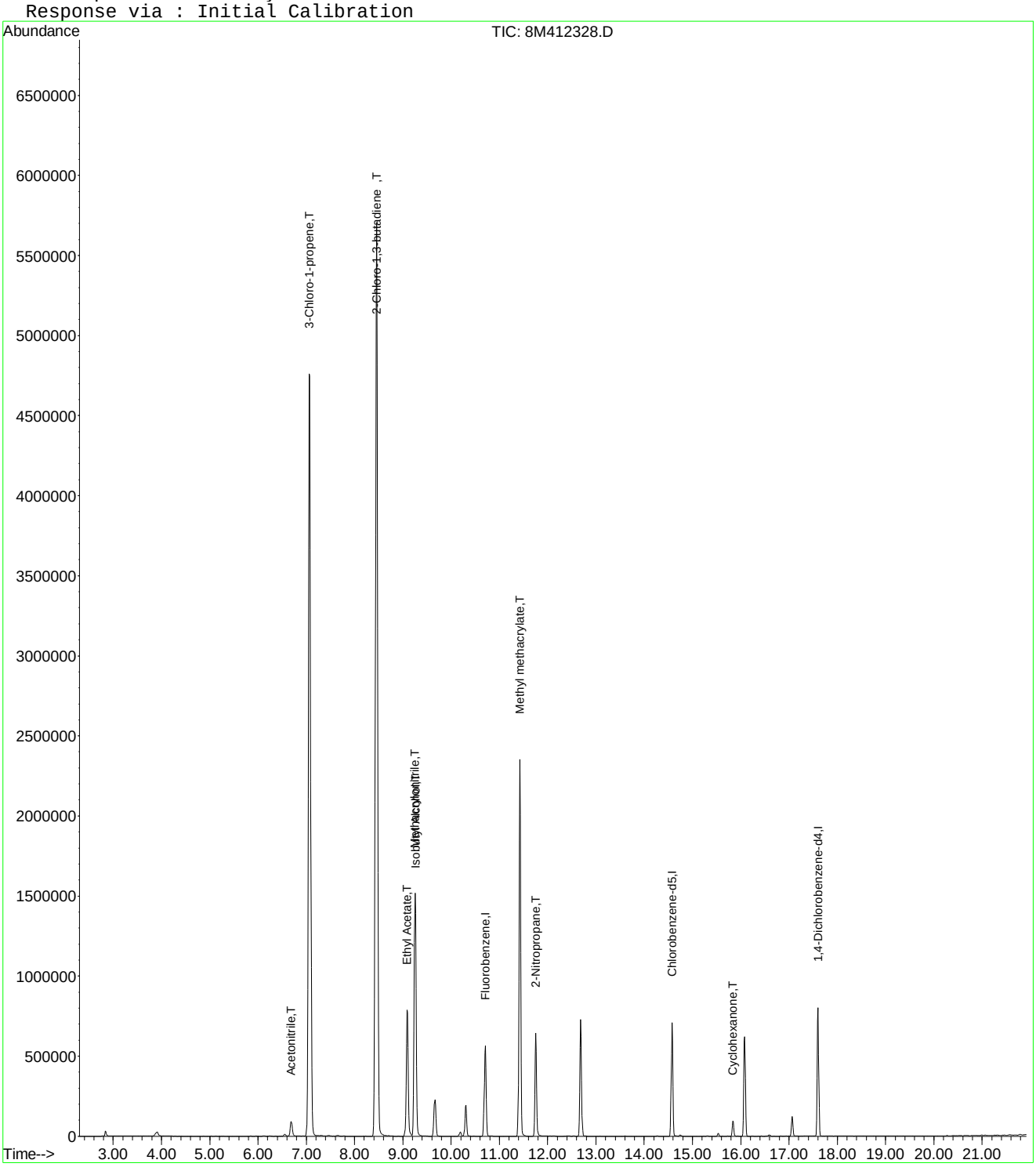

8M412328.D A9FOOWT.M Thu May 19 09:01:32 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:32 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	676765	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	486447	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	263036	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.69	41	29876	114.4154	ug/L	97
3) 3-Chloro-1-propene	7.07	41	858035	99.7718	ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	1224194	112.5803	ug/L	87
5) Ethyl Acetate	9.09	43	295545	114.1317	ug/L	96
6) Methacrylonitrile	9.25	67	161574	113.6509	ug/L #	63
7) Isobutyl Alcohol	9.26	43	19948	230.6285	ug/L	94
9) Methyl methacrylate	11.42	41	326465	116.8508	ug/L	72
10) 2-Nitropropane	11.75	43	131261	108.6716	ug/L	94
13) Cyclohexanone	15.83	55	10459	97.2189	ug/L #	74

(#) = qualifier out of range (m) = manual integration
8M412331.D A9FOOWT.M Thu May 19 09:01:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

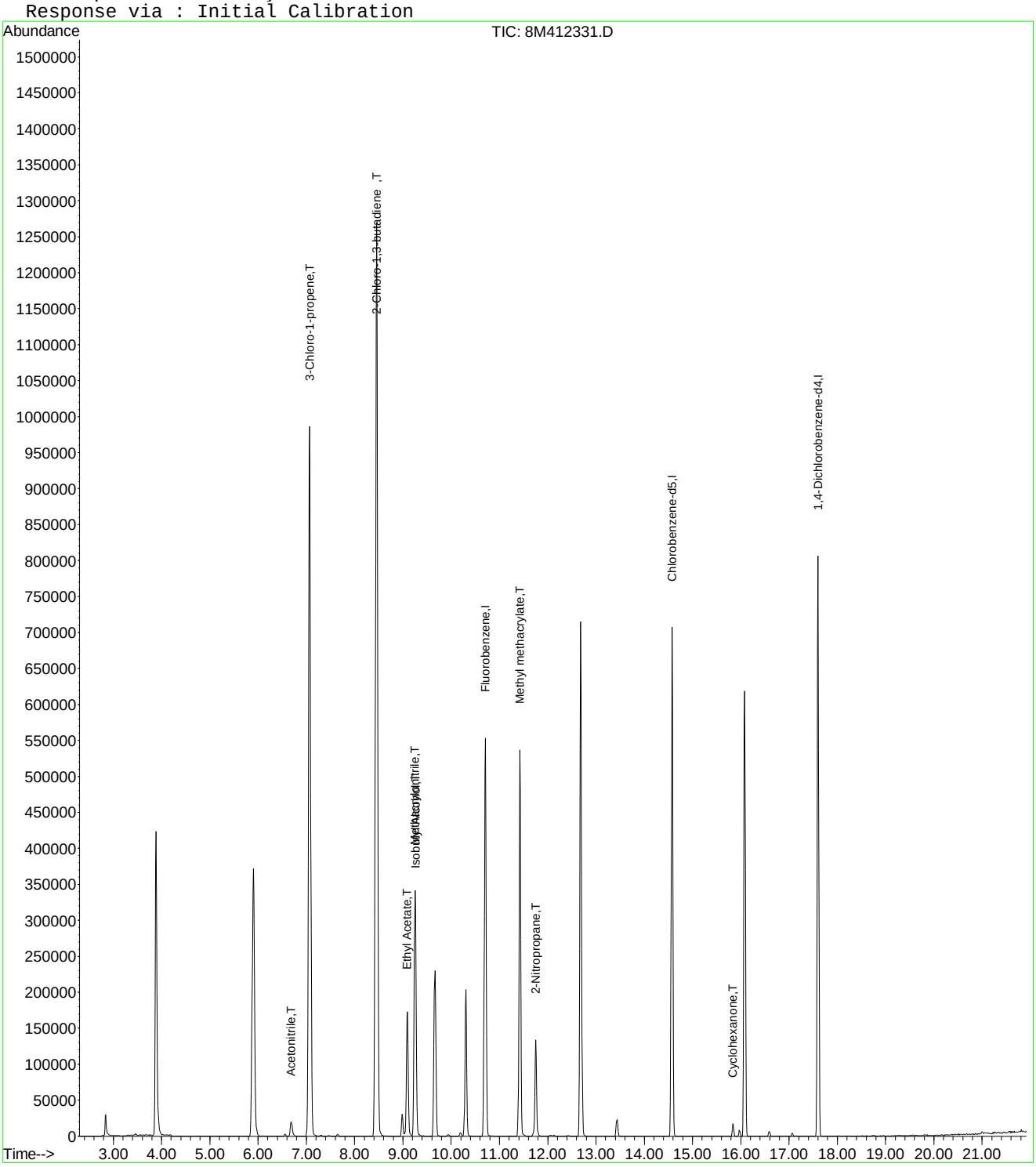

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	95	0.00
2	T	Acetonitrile	100.0000	114.4154	-14.4	109	0.00
3	T	3-Chloro-1-propene	100.0000	99.7718	0.2	91	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	112.5803	-12.6	103	0.00
5	T	Ethyl Acetate	100.0000	114.1317	-14.1	104	0.00
6	T	Methacrylonitrile	100.0000	113.6509	-13.7	104	0.00
7	T	Isobutyl Alcohol	200.0000	230.6285	-15.3	111	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.01
9	T	Methyl methacrylate	100.0000	116.8508	-16.9	109	0.00
10	T	2-Nitropropane	100.0000	108.6716	-8.7	108	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	96	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	96	0.00
13	T	Cyclohexanone	100.0000	97.2189	2.8	92	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412331.D A9FOOWT.M Thu May 19 09:03:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413003.D Vial: 3
Acq On : 15 Jun 2016 9:29 Operator: TMB
Sample : WG572735-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 10:22:49 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	816224	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	599005	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	338264	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	236500	26.9681 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.88%		
43) 1,2-Dichloroethane-d4	10.30	65	258613	27.5026 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 110.00%		
58) Toluene-d8	12.68	98	818079	26.0957 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.40%		
80) p-Bromofluorobenzene	16.07	95	353603	25.2456 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.00%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	748538	54.6986 ug/L	100
3) Chloromethane	3.62	50	386302	48.3597 ug/L	100
4) Vinyl Chloride	3.84	62	513508	54.1824 ug/L	99
5) 1,3-Butadiene	3.88	54	466770	58.7292 ug/L	96
6) Bromomethane	4.73	94	218355	38.5562 ug/L	99
7) Chloroethane	4.89	64	261740	50.1907 ug/L	98
8) Trichlorofluoromethane	5.38	101	977647	55.4386 ug/L	99
9) Diethyl ether	5.90	59	422418	100.3367 ug/L	98
10) Isoprene	5.94	67	537019	50.1466 ug/L	99
11) Acrolein	6.14	56	18159	48.1745 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	431258	52.0256 ug/L	95
13) Acetone	6.24	43	51802	56.4090 ug/L	95
14) 1,1-Dichloroethene	6.46	61	685625	51.9473 ug/L	100
15) Tert-Butyl Alcohol	6.58	59	67191	228.3191 ug/L	97
16) Dimethyl Sulfide	6.73	62	226446	47.9844 ug/L	99
17) Iodomethane	6.98	142	125753	35.3473 ug/L	100
18) Methyl acetate	6.99	43	118016	47.5426 ug/L	98
19) Methylene Chloride	7.25	84	415706	49.4931 ug/L	99
20) Carbon Disulfide	7.29	76	1422328	51.4959 ug/L	100
21) Acrylonitrile	7.43	53	60177	50.5046 ug/L	97
22) Methyl Tert Butyl Ether	7.46	73	970167	53.3688 ug/L	100
23) trans-1,2-Dichloroethene	7.70	61	616383	50.8335 ug/L	99
24) n-Hexane	7.79	57	485002	53.8655 ug/L	98
25) Diisopropyl ether	8.13	45	1875461	99.2260 ug/L	97
26) Vinyl Acetate	8.29	43	459133	53.0555 ug/L	98
27) 1,1-Dichloroethane	8.32	63	769638	51.1092 ug/L	99
28) Ethyl-Tert-Butyl ether	8.69	59	2150385	106.1878 ug/L	99
29) 2-Butanone	8.88	43	67421	49.9695 ug/L	93
30) Propionitrile	8.98	54	40188	102.2094 ug/L	100
31) 2,2-Dichloropropane	9.10	77	923892	58.2193 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	479211	51.1475 ug/L	99
33) Chloroform	9.38	83	940195	52.8783 ug/L	100
34) 1-Bromopropane	9.51	122	75331	56.1325 ug/L	98
35) Bromochloromethane	9.60	130	252399	52.5340 ug/L	96
36) Tetrahydrofuran	9.64	42	81466	91.6734 ug/L	96
38) 1,1,1-Trichloroethane	9.90	97	938108	55.5448 ug/L	100
39) Cyclohexane	9.94	56	590132	50.4693 ug/L	98
40) 1,1-Dichloropropene	10.10	75	682624	53.0265 ug/L	99
41) Tert-Amyl-Methyl ether	10.20	73	1943999	105.6937 ug/L	99
42) Carbon Tetrachloride	10.25	117	839273	55.9611 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413003.D 8260WT.M Wed Jun 15 10:22:53 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413003.D Vial: 3
Acq On : 15 Jun 2016 9:29 Operator: TMB
Sample : WG572735-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 10:22:49 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.42	62	636211	55.5933 ug/L	99
46)	Benzene	10.46	78	1705672	50.8725 ug/L	100
47)	Trichloroethene	11.22	130	468582	52.4002 ug/L	99
48)	Methylcyclohexane	11.30	83	717908	52.8453 ug/L	99
49)	1,2-Dichloropropane	11.42	63	362121	48.5171 ug/L	92
50)	Bromodichloromethane	11.72	83	710340	54.1489 ug/L	99
51)	1,4-Dioxane	11.71	88	8043	214.5215 ug/L	95
52)	Dibromomethane	11.81	93	220787	49.9722 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.02	63	143050	44.5915 ug/L	93
54)	4-Methyl-2-Pentanone	12.05	58	67041	51.1598 ug/L	93
55)	cis-1,3-Dichloropropene	12.36	75	714929	53.5425 ug/L	99
56)	Dimethyl Disulfide	12.62	79	371775	52.1661 ug/L	99
59)	Toluene	12.79	91	1827795	49.1512 ug/L	100
60)	Ethyl Methacrylate	12.88	69	367861	51.5092 ug/L	99
62)	trans-1,3-Dichloropropene	12.96	75	646613	51.8862 ug/L	99
63)	1,1,2-Trichloroethane	13.18	97	280232	47.7558 ug/L	99
64)	2-Hexanone	13.12	58	62023	50.2978 ug/L #	98
65)	1,3-Dichloropropane	13.48	76	510391	48.8533 ug/L	99
66)	Tetrachloroethene	13.60	164	413750	51.9308 ug/L	97
67)	Dibromochloromethane	13.86	129	447120	52.1844 ug/L	99
68)	1,2-Dibromoethane	14.12	107	289001	49.4166 ug/L	99
69)	1-Chlorohexane	14.21	91	633582	49.9121 ug/L	99
70)	Chlorobenzene	14.63	112	1238478	49.3881 ug/L	99
71)	1,1,1,2-Tetrachloroethane	14.66	131	503284	51.8051 ug/L	100
72)	Ethylbenzene	14.66	106	662931	48.3185 ug/L	99
73)	m-,p-Xylene	14.74	106	1599907	99.4174 ug/L	100
74)	o-Xylene	15.31	106	785244	49.9090 ug/L	99
75)	Styrene	15.34	104	1330888	51.5739 ug/L	98
76)	Bromoform	15.84	173	269390	53.0081 ug/L	99
77)	Isopropylbenzene	15.73	105	2134970	51.0798 ug/L	99
79)	1,1,2,2-Tetrachloroethane	15.95	83	307089	45.2267 ug/L	99
81)	1,2,3-Trichloropropane	16.14	110	98863	47.2826 ug/L	91
82)	trans-1,4-Dichloro-2-Buten	16.19	53	100957	47.4023 ug/L	86
83)	n-Propylbenzene	16.24	91	2516708	47.6894 ug/L	99
84)	Bromobenzene	16.36	156	527081	48.5575 ug/L	96
85)	1,3,5-Trimethylbenzene	16.43	105	1856939	48.3052 ug/L	99
86)	2-Chlorotoluene	16.51	91	1611266	43.7311 ug/L	91
87)	4-Chlorotoluene	16.56	91	1718296	51.6293 ug/L	92
88)	a-Methylstyrene	16.83	118	859171	47.1080 ug/L	99
89)	tert-Butylbenzene	16.89	134	350937	46.6633 ug/L	99
90)	1,2,4-Trimethylbenzene	16.94	105	1896413	47.9759 ug/L	100
91)	sec-Butylbenzene	17.16	105	2137758	47.2703 ug/L	99
92)	p-Isopropyltoluene	17.32	119	1838625	47.8823 ug/L	98
93)	1,3-Dichlorobenzene	17.51	146	1027662	49.1672 ug/L	98
94)	1,4-Dichlorobenzene	17.65	146	1005384	47.7112 ug/L	98
95)	n-Butylbenzene	17.84	91	1795243	47.2912 ug/L	99
96)	1,2-Dichlorobenzene	18.14	146	875659	47.1049 ug/L	99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	62987	46.2131 ug/L	94
98)	1,2,4-Trichlorobenzene	20.28	180	673757	48.4887 ug/L	99
99)	Hexachlorobutadiene	20.43	225	329928	50.8181 ug/L	100
100)	Naphthalene	20.64	128	967801	46.8800 ug/L	99
101)	1,2,3-Trichlorobenzene	20.95	180	553851	47.2458 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413003.D 8260WT.M Wed Jun 15 10:22:53 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413003.D Vial: 3
Acq On : 15 Jun 2016 9:29 Operator: TMB
Sample : WG572735-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 10:22 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

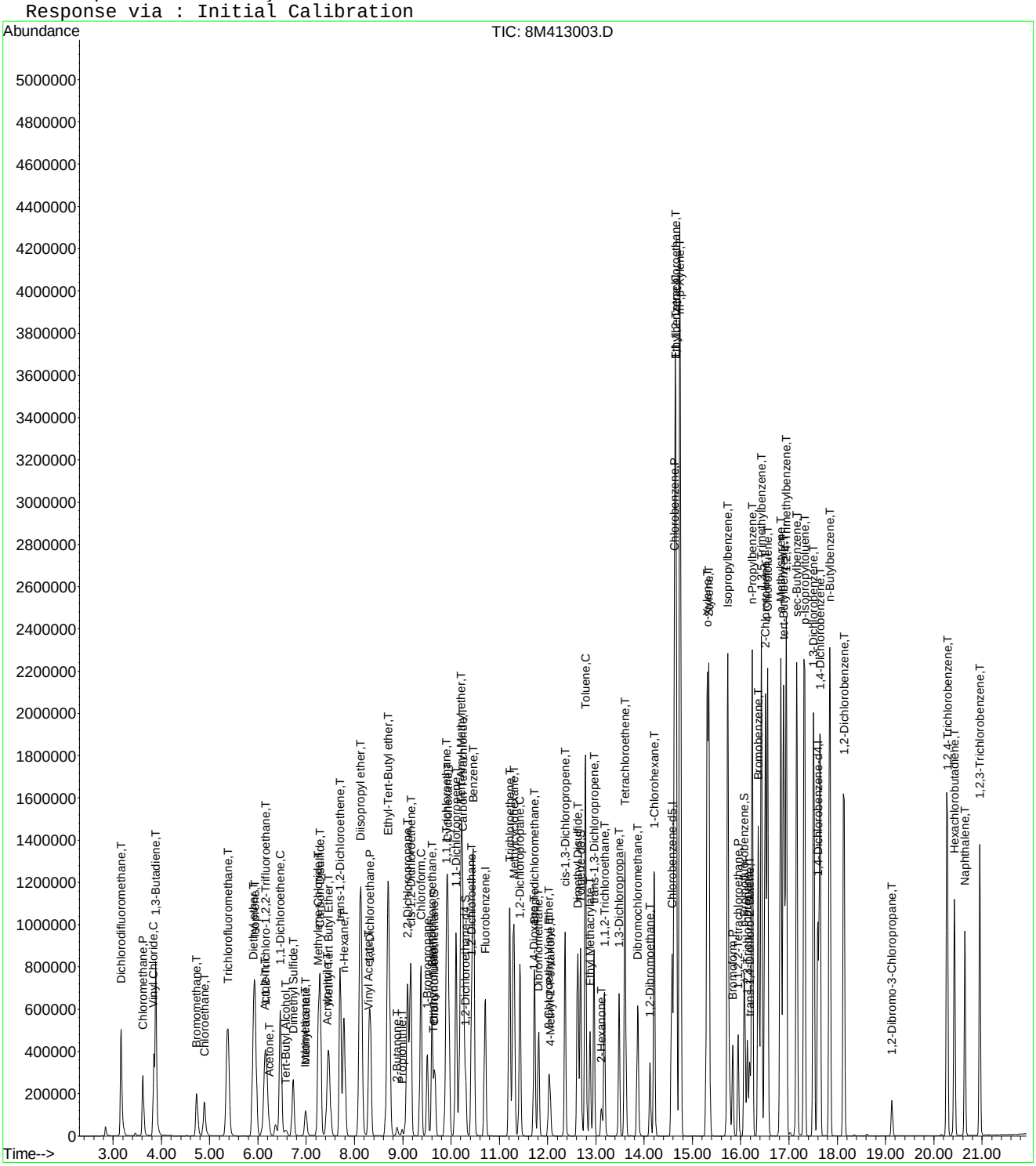

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413003.D Vial: 3
Acq On : 15 Jun 2016 9:29 Operator: TMB
Sample : WG572735-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	105	0.00
2	T	Dichlorodifluoromethane	0.4192	0.4585	-9.4	110	0.00
3	P	Chloromethane	0.2447	0.2366	3.3	104	0.00
4	C	Vinyl Chloride	0.2903	0.3146	-8.4	113	-0.01
5	T	1,3-Butadiene	0.2434	0.2859	-17.5	120	0.00
6	T	Bromomethane	0.1654	0.1338	19.1	84	0.00
7	T	Chloroethane	0.1597	0.1603	-0.4	107	0.00
8	T	Trichlorofluoromethane	0.5401	0.5989	-10.9	117	0.00
9	T	Diethyl ether	0.1290	0.1294	-0.3	108	0.00
10	T	Isoprene	0.3280	0.3290	-0.3	108	0.00
11	T	Acrolein	0.0116	0.0111	3.7	103	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2539	0.2642	-4.1	111	0.01
13	T	Acetone	0.0281	0.0317	-12.8	113	-0.01
14	C	1,1-Dichloroethene	0.4043	0.4200	-3.9	111	0.00
15	T	Tert-Butyl Alcohol	0.0090	0.0103	-14.2	121	0.00
16	T	Dimethyl Sulfide	0.1445	0.1387	4.0	102	0.00
17	T	Iodomethane	0.0866	0.0770	11.0	80	0.00
18	T	Methyl acetate	0.0760	0.0723	4.9	103	-0.01
19	T	Methylene Chloride	0.2573	0.2546	1.0	107	0.00
20	T	Carbon Disulfide	0.8460	0.8713	-3.0	112	0.00
21	T	Acrylonitrile	0.0365	0.0369	-1.0	100	0.00
22	T	Methyl Tert Butyl Ether	0.5568	0.5943	-6.7	108	0.00
23	T	trans-1,2-Dichloroethene	0.3714	0.3776	-1.7	108	0.00
24	T	n-Hexane	0.2758	0.2971	-7.7	116	0.00
25	T	Diisopropyl ether	0.5789	0.5744	0.8	105	0.00
26	T	Vinyl Acetate	0.2651	0.2813	-6.1	107	0.00
27	P	1,1-Dichloroethane	0.4612	0.4715	-2.2	107	0.00
28	T	Ethyl-Tert-Butyl ether	0.6203	0.6586	-6.2	110	-0.01
29	T	2-Butanone	0.0413	0.0413	0.1	101	0.00
30	T	Propionitrile	0.0120	0.0123	-2.2	105	0.00
31	T	2,2-Dichloropropane	0.4860	0.5659	-16.4	120	0.00
32	T	cis-1,2-Dichloroethene	0.2870	0.2935	-2.3	109	0.00
33	C	Chloroform	0.5446	0.5759	-5.8	111	0.00
34		1-Bromopropane	0.0411	0.0461	-12.3	119	0.00
35	T	Bromochloromethane	0.1472	0.1546	-5.1	110	0.00
36	T	Tetrahydrofuran	0.0272	0.0250	8.3	103	0.00
37	S	Dibromofluoromethane	0.2686	0.2898	-7.9	112	-0.01
38	T	1,1,1-Trichloroethane	0.5173	0.5747	-11.1	115	0.00
39	T	Cyclohexane	0.3581	0.3615	-0.9	110	0.00
40	T	1,1-Dichloropropene	0.3943	0.4182	-6.1	111	0.00
41	T	Tert-Amyl-Methyl ether	0.5634	0.5954	-5.7	110	-0.01
42	T	Carbon Tetrachloride	0.4593	0.5141	-11.9	116	0.00
43	S	1,2-Dichloroethane-d4	0.2880	0.3168	-10.0	113	-0.01
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.3505	0.3897	-11.2	113	0.00
46	T	Benzene	1.0269	1.0449	-1.7	106	0.00
47	T	Trichloroethene	0.2739	0.2870	-4.8	110	0.00
48	T	Methylcyclohexane	0.4161	0.4398	-5.7	113	0.00
49	C	1,2-Dichloropropane	0.2286	0.2218	3.0	103	0.00
50	T	Bromodichloromethane	0.4018	0.4351	-8.3	108	0.00
51	T	1,4-Dioxane	0.0012	0.0012	-7.0	106	0.00
52	T	Dibromomethane	0.1353	0.1353	0.1	106	-0.01
53	T	2-Chloroethyl Vinyl Ether	0.0983	0.0876	10.8	88	0.00
54	T	4-Methyl-2-Pentanone	0.0401	0.0411	-2.3	103	0.00

(#) = Out of Range

8M413003.D 8260WT.M Wed Jun 15 10:23:15 2016 Page 1

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413003.D Vial: 3
Acq On : 15 Jun 2016 9:29 Operator: TMB
Sample : WG572735-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4090	0.4380	-7.1	107	0.00
56	T	Dimethyl Disulfide	0.2183	0.2277	-4.3	108	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	111	0.00
58	S	Toluene-d8	1.3084	1.3657	-4.4	114	0.00
59	C	Toluene	1.5520	1.5257	1.7	109	0.00
60	T	Ethyl Methacrylate	0.2981	0.3071	-3.0	109	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.5201	0.5397	-3.8	109	0.00
63	T	1,1,2-Trichloroethane	0.2449	0.2339	4.5	104	0.00
64	T	2-Hexanone	0.0515	0.0518	-0.6	109	0.00
65	T	1,3-Dichloropropane	0.4360	0.4260	2.3	104	0.00
66	T	Tetrachloroethene	0.3325	0.3454	-3.9	118	0.00
67	T	Dibromochloromethane	0.3576	0.3732	-4.4	111	0.00
68	T	1,2-Dibromoethane	0.2441	0.2412	1.2	106	0.00
69	T	1-Chlorohexane	0.5298	0.5289	0.2	113	0.00
70	P	Chlorobenzene	1.0466	1.0338	1.2	111	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4055	0.4201	-3.6	113	0.00
72	C	Ethylbenzene	0.5726	0.5534	3.4	110	0.00
73	T	m-,p-Xylene	0.6716	0.6677	0.6	111	0.00
74	T	o-Xylene	0.6566	0.6555	0.2	111	0.00
75	T	Styrene	1.0770	1.1109	-3.1	110	0.00
76	P	Bromoform	0.2121	0.2249	-6.0	113	0.00
77	T	Isopropylbenzene	1.7444	1.7821	-2.2	111	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	117	0.00
79	P	1,1,2,2-Tetrachloroethane	0.5018	0.4539	9.5	104	0.00
80	S	p-Bromofluorobenzene	1.0352	1.0454	-1.0	121	0.00
81	T	1,2,3-Trichloropropane	0.1545	0.1461	5.4	111	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1376	0.1492	-8.5	116	0.00
83	T	n-Propylbenzene	3.9003	3.7200	4.6	110	0.00
84	T	Bromobenzene	0.8022	0.7791	2.9	115	-0.01
85	T	1,3,5-Trimethylbenzene	2.8411	2.7448	3.4	112	0.00
86	T	2-Chlorotoluene	2.7231	2.3817	12.5	100	0.00
87	T	4-Chlorotoluene	2.4597	2.5399	-3.3	128	0.00
88	T	a-Methylstyrene	1.3479	1.2700	5.8	111	0.00
89	T	tert-Butylbenzene	0.5558	0.5187	6.7	114	0.00
90	T	1,2,4-Trimethylbenzene	2.9214	2.8032	4.0	113	0.00
91	T	sec-Butylbenzene	3.3424	3.1599	5.5	111	0.00
92	T	p-Isopropyltoluene	2.8379	2.7177	4.2	113	0.00
93	T	1,3-Dichlorobenzene	1.5448	1.5190	1.7	116	0.00
94	T	1,4-Dichlorobenzene	1.5574	1.4861	4.6	115	0.00
95	T	n-Butylbenzene	2.8056	2.6536	5.4	112	-0.01
96	T	1,2-Dichlorobenzene	1.3739	1.2943	5.8	114	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1007	0.0931	7.6	106	0.00
98	T	1,2,4-Trichlorobenzene	1.0269	0.9959	3.0	115	0.00
99	T	Hexachlorobutadiene	0.4798	0.4877	-1.6	125	-0.01
100	T	Naphthalene	1.5257	1.4305	6.2	108	-0.01
101	T	1,2,3-Trichlorobenzene	0.8664	0.8187	5.5	117	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413003.D 8260WT.M Wed Jun 15 10:23:15 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413003.D Vial: 3
Acq On : 15 Jun 2016 9:29 Operator: TMB
Sample : WG572735-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	105	0.00
2	T	Dichlorodifluoromethane	50.0000	54.6986	-9.4	110	0.00
3	P	Chloromethane	50.0000	48.3597	3.3	104	0.00
4	C	Vinyl Chloride	50.0000	54.1824	-8.4	113	-0.01
5	T	1,3-Butadiene	50.0000	58.7292	-17.5	120	0.00
6	T	Bromomethane	50.0000	38.5562	22.9	84	0.00
7	T	Chloroethane	50.0000	50.1907	-0.4	107	0.00
8	T	Trichlorofluoromethane	50.0000	55.4386	-10.9	117	0.00
9	T	Diethyl ether	100.0000	100.3367	-0.3	108	0.00
10	T	Isoprene	50.0000	50.1466	-0.3	108	0.00
11	T	Acrolein	50.0000	48.1745	3.7	103	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	52.0256	-4.1	111	0.01
13	T	Acetone	50.0000	56.4090	-12.8	113	-0.01
14	C	1,1-Dichloroethene	50.0000	51.9473	-3.9	111	0.00
15	T	Tert-Butyl Alcohol	200.0000	228.3191	-14.2	121	0.00
16	T	Dimethyl Sulfide	50.0000	47.9844	4.0	102	0.00
17	T	Iodomethane	50.0000	35.3473	29.3#	80	0.00
18	T	Methyl acetate	50.0000	47.5426	4.9	103	-0.01
19	T	Methylene Chloride	50.0000	49.4931	1.0	107	0.00
20	T	Carbon Disulfide	50.0000	51.4959	-3.0	112	0.00
21	T	Acrylonitrile	50.0000	50.5046	-1.0	100	0.00
22	T	Methyl Tert Butyl Ether	50.0000	53.3689	-6.7	108	0.00
23	T	trans-1,2-Dichloroethene	50.0000	50.8335	-1.7	108	0.00
24	T	n-Hexane	50.0000	53.8655	-7.7	116	0.00
25	T	Diisopropyl ether	100.0000	99.2260	0.8	105	0.00
26	T	Vinyl Acetate	50.0000	53.0555	-6.1	107	0.00
27	P	1,1-Dichloroethane	50.0000	51.1092	-2.2	107	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	106.1878	-6.2	110	-0.01
29	T	2-Butanone	50.0000	49.9695	0.1	101	0.00
30	T	Propionitrile	100.0000	102.2094	-2.2	105	0.00
31	T	2,2-Dichloropropane	50.0000	58.2193	-16.4	120	0.00
32	T	cis-1,2-Dichloroethene	50.0000	51.1475	-2.3	109	0.00
33	C	Chloroform	50.0000	52.8783	-5.8	111	0.00
34		1-Bromopropane	50.0000	56.1325	-12.3	119	0.00
35	T	Bromochloromethane	50.0000	52.5340	-5.1	110	0.00
36	T	Tetrahydrofuran	100.0000	91.6734	8.3	103	0.00
37	S	Dibromofluoromethane	25.0000	26.9681	-7.9	112	-0.01
38	T	1,1,1-Trichloroethane	50.0000	55.5448	-11.1	115	0.00
39	T	Cyclohexane	50.0000	50.4693	-0.9	110	0.00
40	T	1,1-Dichloropropene	50.0000	53.0265	-6.1	111	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	105.6937	-5.7	110	-0.01
42	T	Carbon Tetrachloride	50.0000	55.9611	-11.9	116	0.00
43	S	1,2-Dichloroethane-d4	25.0000	27.5026	-10.0	113	-0.01
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	55.5933	-11.2	113	0.00
46	T	Benzene	50.0000	50.8725	-1.7	106	0.00
47	T	Trichloroethene	50.0000	52.4002	-4.8	110	0.00
48	T	Methylcyclohexane	50.0000	52.8453	-5.7	113	0.00
49	C	1,2-Dichloropropane	50.0000	48.5171	3.0	103	0.00
50	T	Bromodichloromethane	50.0000	54.1489	-8.3	108	0.00
51	T	1,4-Dioxane	200.0000	214.5215	-7.3	106	0.00
52	T	Dibromomethane	50.0000	49.9722	0.1	106	-0.01
53	T	2-Chloroethyl Vinyl Ether	50.0000	44.5915	10.8	88	0.00
54	T	4-Methyl-2-Pentanone	50.0000	51.1598	-2.3	103	0.00

(#) = Out of Range

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413003.D Vial: 3
Acq On : 15 Jun 2016 9:29 Operator: TMB
Sample : WG572735-02 50ug/L CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.5425	-7.1	107	0.00
56	T	Dimethyl Disulfide	50.0000	52.1661	-4.3	108	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	111	0.00
58	S	Toluene-d8	25.0000	26.0957	-4.4	114	0.00
59	C	Toluene	50.0000	49.1512	1.7	109	0.00
60	T	Ethyl Methacrylate	50.0000	51.5092	-3.0	109	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	51.8862	-3.8	109	0.00
63	T	1,1,2-Trichloroethane	50.0000	47.7558	4.5	104	0.00
64	T	2-Hexanone	50.0000	50.2978	-0.6	109	0.00
65	T	1,3-Dichloropropane	50.0000	48.8533	2.3	104	0.00
66	T	Tetrachloroethene	50.0000	51.9308	-3.9	118	0.00
67	T	Dibromochloromethane	50.0000	52.1844	-4.4	111	0.00
68	T	1,2-Dibromoethane	50.0000	49.4166	1.2	106	0.00
69	T	1-Chlorohexane	50.0000	49.9121	0.2	113	0.00
70	P	Chlorobenzene	50.0000	49.3881	1.2	111	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	51.8051	-3.6	113	0.00
72	C	Ethylbenzene	50.0000	48.3185	3.4	110	0.00
73	T	m-,p-Xylene	100.0000	99.4174	0.6	111	0.00
74	T	o-Xylene	50.0000	49.9090	0.2	111	0.00
75	T	Styrene	50.0000	51.5739	-3.1	110	0.00
76	P	Bromoform	50.0000	53.0080	-6.0	113	0.00
77	T	Isopropylbenzene	50.0000	51.0798	-2.2	111	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	117	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	45.2267	9.5	104	0.00
80	S	p-Bromofluorobenzene	25.0000	25.2456	-1.0	121	0.00
81	T	1,2,3-Trichloropropane	50.0000	47.2826	5.4	111	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	47.4023	5.2	116	0.00
83	T	n-Propylbenzene	50.0000	47.6894	4.6	110	0.00
84	T	Bromobenzene	50.0000	48.5575	2.9	115	-0.01
85	T	1,3,5-Trimethylbenzene	50.0000	48.3051	3.4	112	0.00
86	T	2-Chlorotoluene	50.0000	43.7312	12.5	100	0.00
87	T	4-Chlorotoluene	50.0000	51.6293	-3.3	128	0.00
88	T	a-Methylstyrene	50.0000	47.1080	5.8	111	0.00
89	T	tert-Butylbenzene	50.0000	46.6633	6.7	114	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	47.9759	4.0	113	0.00
91	T	sec-Butylbenzene	50.0000	47.2703	5.5	111	0.00
92	T	p-Isopropyltoluene	50.0000	47.8823	4.2	113	0.00
93	T	1,3-Dichlorobenzene	50.0000	49.1672	1.7	116	0.00
94	T	1,4-Dichlorobenzene	50.0000	47.7112	4.6	115	0.00
95	T	n-Butylbenzene	50.0000	47.2912	5.4	112	-0.01
96	T	1,2-Dichlorobenzene	50.0000	47.1049	5.8	114	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	46.2131	7.6	106	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	48.4887	3.0	115	0.00
99	T	Hexachlorobutadiene	50.0000	50.8181	-1.6	125	-0.01
100	T	Naphthalene	50.0000	46.8800	6.2	108	-0.01
101	T	1,2,3-Trichlorobenzene	50.0000	47.2458	5.5	117	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413003.D 8260WT.M Wed Jun 15 10:23:18 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413032.D Vial: 2
Acq On : 16 Jun 2016 14:25 Operator: FJB
Sample : WG573037-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 20 09:11:28 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	733857	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	538326	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	307491	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	215897	27.3819 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.52%		
43) 1,2-Dichloroethane-d4	10.30	65	234596	27.7486 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.00%		
58) Toluene-d8	12.68	98	742553	26.3564 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.44%		
80) p-Bromofluorobenzene	16.08	95	315298	24.7636 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.04%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	709296	57.6485 ug/L	100
3) Chloromethane	3.62	50	334378	46.5578 ug/L	99
4) Vinyl Chloride	3.84	62	469712	55.1239 ug/L	99
5) 1,3-Butadiene	3.89	54	449731	62.9364 ug/L	97
6) Bromomethane	4.73	94	187928	36.9767 ug/L	99
7) Chloroethane	4.89	64	229428	48.9325 ug/L	97
8) Trichlorofluoromethane	5.37	101	947245	59.7435 ug/L	99
9) Diethyl ether	5.91	59	359174	94.8900 ug/L	97
10) Isoprene	5.94	67	490773	50.9718 ug/L	97
11) Acrolein	6.14	56	15092	44.5317 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	413268	55.4511 ug/L	96
13) Acetone	6.24	43	43062	52.1548 ug/L	100
14) 1,1-Dichloroethene	6.47	61	648526	54.6514 ug/L	98
15) Tert-Butyl Alcohol	6.57	59	62702	236.9793 ug/L	98
16) Dimethyl Sulfide	6.73	62	205530	48.4405 ug/L	98
17) Iodomethane	6.99	142	88941	28.4929 ug/L	92
18) Methyl acetate	7.00	43	95456	42.7704 ug/L	98
19) Methylene Chloride	7.26	84	368680	48.8209 ug/L	100
20) Carbon Disulfide	7.29	76	1316779	53.0253 ug/L	100
21) Acrylonitrile	7.43	53	50980	47.5881 ug/L	94
22) Methyl Tert Butyl Ether	7.46	73	815898	49.9201 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	567448	52.0503 ug/L	100
24) n-Hexane	7.78	57	440578	54.4236 ug/L	99
25) Diisopropyl ether	8.12	45	1629728	95.9026 ug/L	96
26) Vinyl Acetate	8.30	43	383450	49.2832 ug/L	99
27) 1,1-Dichloroethane	8.33	63	708177	52.3061 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1837543	100.9239 ug/L	98
29) 2-Butanone	8.88	43	55723	45.9348 ug/L	98
30) Propionitrile	8.99	54	34053	96.3269 ug/L	98
31) 2,2-Dichloropropane	9.11	77	881786	61.8026 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	429176	50.9485 ug/L	97
33) Chloroform	9.37	83	876461	54.8264 ug/L	100
34) 1-Bromopropane	9.51	122	69827	57.8711 ug/L	99
35) Bromochloromethane	9.61	130	221472	51.2707 ug/L	96
36) Tetrahydrofuran	9.63	42	65588	82.0898 ug/L	92
38) 1,1,1-Trichloroethane	9.91	97	904390	59.5586 ug/L	99
39) Cyclohexane	9.94	56	543065	51.6569 ug/L	96
40) 1,1-Dichloropropene	10.11	75	631550	54.5654 ug/L	100
41) Tert-Amyl-Methyl ether	10.21	73	1667474	100.8347 ug/L	100
42) Carbon Tetrachloride	10.25	117	809209	60.0125 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M413032.D 8260WT.M Mon Jun 20 09:11:29 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413032.D Vial: 2
Acq On : 16 Jun 2016 14:25 Operator: FJB
Sample : WG573037-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 20 09:11:28 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	583022	56.6636	ug/L		98
46)	Benzene	10.46	78	1567451	51.9972	ug/L		99
47)	Trichloroethene	11.21	130	433837	53.9600	ug/L		99
48)	Methylcyclohexane	11.30	83	676953	55.4235	ug/L		100
49)	1,2-Dichloropropane	11.43	63	326457	48.6480	ug/L		86
50)	Bromodichloromethane	11.73	83	653209	55.3826	ug/L		100
51)	1,4-Dioxane	11.72	88	7428	220.3548	ug/L		98
52)	Dibromomethane	11.81	93	197458	49.7082	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.03	63	129844	45.0178	ug/L		95
54)	4-Methyl-2-Pentanone	12.06	58	53646	45.5327	ug/L		94
55)	cis-1,3-Dichloropropene	12.36	75	639780	53.2922	ug/L		100
56)	Dimethyl Disulfide	12.63	79	328801	51.3144	ug/L		99
59)	Toluene	12.78	91	1681041	50.3002	ug/L		100
60)	Ethyl Methacrylate	12.88	69	300733	46.8562	ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	572847	51.1483	ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	244197	46.3057	ug/L		99
64)	2-Hexanone	13.12	58	49168	44.3674	ug/L	#	100
65)	1,3-Dichloropropane	13.48	76	441493	47.0219	ug/L		97
66)	Tetrachloroethene	13.60	164	383463	53.5544	ug/L		98
67)	Dibromochloromethane	13.87	129	388793	50.4917	ug/L		99
68)	1,2-Dibromoethane	14.13	107	247883	47.1634	ug/L		98
69)	1-Chlorohexane	14.21	91	594465	52.1092	ug/L		98
70)	Chlorobenzene	14.62	112	1121470	49.7630	ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.66	131	456454	52.2807	ug/L		100
72)	Ethylbenzene	14.66	106	622088	50.4524	ug/L		99
73)	m-,p-Xylene	14.75	106	1491287	103.1131	ug/L		100
74)	o-Xylene	15.31	106	724388	51.2307	ug/L		99
75)	Styrene	15.35	104	1206191	52.0104	ug/L		96
76)	Bromoform	15.84	173	232298	50.8617	ug/L		99
77)	Isopropylbenzene	15.73	105	2026613	53.9527	ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	256105	41.4928	ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	85494	44.9807	ug/L		72
82)	trans-1,4-Dichloro-2-Buten	16.18	53	84374	43.6303	ug/L	#	51
83)	n-Propylbenzene	16.24	91	2386990	49.7580	ug/L		99
84)	Bromobenzene	16.37	156	473221	47.9586	ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	1753288	50.1733	ug/L		100
86)	2-Chlorotoluene	16.52	91	1599256	47.7491	ug/L		100
87)	4-Chlorotoluene	16.56	91	1503375	49.6923	ug/L		100
88)	a-Methylstyrene	16.84	118	786649	47.4481	ug/L		98
89)	tert-Butylbenzene	16.90	134	334560	48.9377	ug/L		99
90)	1,2,4-Trimethylbenzene	16.95	105	1801178	50.1269	ug/L		100
91)	sec-Butylbenzene	17.17	105	2069862	50.3494	ug/L		99
92)	p-Isopropyltoluene	17.32	119	1766300	50.6022	ug/L		99
93)	1,3-Dichlorobenzene	17.52	146	942205	49.5900	ug/L		98
94)	1,4-Dichlorobenzene	17.64	146	911590	47.5896	ug/L		99
95)	n-Butylbenzene	17.85	91	1742674	50.5007	ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	787813	46.6205	ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	54489	43.9791	ug/L		98
98)	1,2,4-Trichlorobenzene	20.28	180	613274	48.5529	ug/L		100
99)	Hexachlorobutadiene	20.43	225	322898	54.7126	ug/L		99
100)	Naphthalene	20.65	128	816338	43.5006	ug/L		100
101)	1,2,3-Trichlorobenzene	20.96	180	483344	45.3576	ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413032.D Vial: 2
Acq On : 16 Jun 2016 14:25 Operator: FJB
Sample : WG573037-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 20 9:11 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

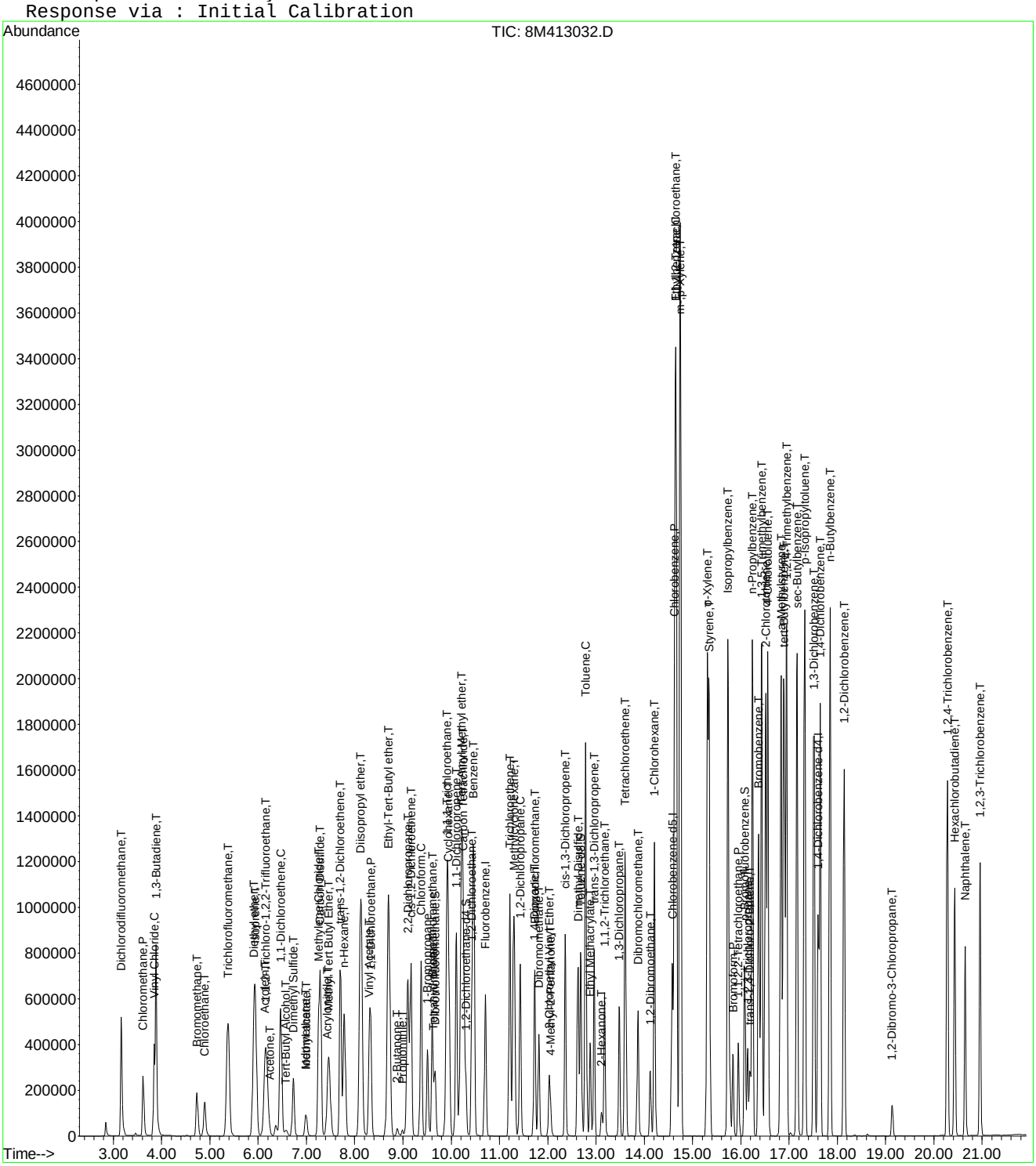

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413032.D Vial: 2
Acq On : 16 Jun 2016 14:25 Operator: FJB
Sample : WG573037-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	94	0.00
2	T	Dichlorodifluoromethane	0.4192	0.4833	-15.3	104	0.00
3	P	Chloromethane	0.2447	0.2278	6.9	90	0.00
4	C	Vinyl Chloride	0.2903	0.3200	-10.2	103	0.00
5	T	1,3-Butadiene	0.2434	0.3064	-25.9#	115	0.00
6	T	Bromomethane	0.1654	0.1280	22.6	72	0.00
7	T	Chloroethane	0.1597	0.1563	2.1	94	0.00
8	T	Trichlorofluoromethane	0.5401	0.6454	-19.5	113	0.00
9	T	Diethyl ether	0.1290	0.1224	5.1	92	0.00
10	T	Isoprene	0.3280	0.3344	-1.9	99	0.00
11	T	Acrolein	0.0116	0.0103	11.0	86	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2539	0.2816	-10.9	107	0.00
13	T	Acetone	0.0281	0.0293	-4.3	94	0.00
14	C	1,1-Dichloroethene	0.4043	0.4419	-9.3	105	0.00
15	T	Tert-Butyl Alcohol	0.0090	0.0107	-18.5	113	0.00
16	T	Dimethyl Sulfide	0.1445	0.1400	3.1	93	0.00
17	T	Iodomethane	0.0866	0.0606	30.0#	56	0.00
18	T	Methyl acetate	0.0760	0.0650	14.5	83	0.00
19	T	Methylene Chloride	0.2573	0.2512	2.4	95	0.00
20	T	Carbon Disulfide	0.8460	0.8972	-6.0	104	0.00
21	T	Acrylonitrile	0.0365	0.0347	4.8	85	0.00
22	T	Methyl Tert Butyl Ether	0.5568	0.5559	0.2	90	0.00
23	T	trans-1,2-Dichloroethene	0.3714	0.3866	-4.1	99	0.00
24	T	n-Hexane	0.2758	0.3002	-8.8	105	0.00
25	T	Diisopropyl ether	0.5789	0.5552	4.1	92	0.00
26	T	Vinyl Acetate	0.2651	0.2613	1.4	89	0.00
27	P	1,1-Dichloroethane	0.4612	0.4825	-4.6	98	0.00
28	T	Ethyl-Tert-Butyl ether	0.6203	0.6260	-0.9	94	0.00
29	T	2-Butanone	0.0413	0.0380	8.1	84	0.00
30	T	Propionitrile	0.0120	0.0116	3.7	89	0.00
31	T	2,2-Dichloropropane	0.4860	0.6008	-23.6	115	0.00
32	T	cis-1,2-Dichloroethene	0.2870	0.2924	-1.9	98	0.00
33	C	Chloroform	0.5446	0.5972	-9.7	104	0.00
34		1-Bromopropane	0.0411	0.0476	-15.8	110	0.00
35	T	Bromochloromethane	0.1472	0.1509	-2.5	96	0.00
36	T	Tetrahydrofuran	0.0272	0.0223	17.9	83	0.00
37	S	Dibromofluoromethane	0.2686	0.2942	-9.5	102	0.00
38	T	1,1,1-Trichloroethane	0.5173	0.6162	-19.1	111	0.00
39	T	Cyclohexane	0.3581	0.3700	-3.3	101	0.00
40	T	1,1-Dichloropropene	0.3943	0.4303	-9.1	103	0.00
41	T	Tert-Amyl-Methyl ether	0.5634	0.5681	-0.8	94	0.00
42	T	Carbon Tetrachloride	0.4593	0.5513	-20.0	112	0.00
43	S	1,2-Dichloroethane-d4	0.2880	0.3197	-11.0	102	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.3505	0.3972	-13.3	104	0.00
46	T	Benzene	1.0269	1.0680	-4.0	98	0.00
47	T	Trichloroethene	0.2739	0.2956	-7.9	102	0.00
48	T	Methylcyclohexane	0.4161	0.4612	-10.8	107	0.00
49	C	1,2-Dichloropropane	0.2286	0.2224	2.7	93	0.00
50	T	Bromodichloromethane	0.4018	0.4451	-10.8	100	0.00
51	T	1,4-Dioxane	0.0012	0.0013	-10.4	98	0.00
52	T	Dibromomethane	0.1353	0.1345	0.6	94	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0983	0.0885	10.0	80	0.00
54	T	4-Methyl-2-Pentanone	0.0401	0.0365	8.9	83	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413032.D Vial: 2
Acq On : 16 Jun 2016 14:25 Operator: FJB
Sample : WG573037-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4090	0.4359	-6.6	96	0.00
56	T	Dimethyl Disulfide	0.2183	0.2240	-2.6	96	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	100	0.00
58	S	Toluene-d8	1.3084	1.3794	-5.4	103	0.00
59	C	Toluene	1.5520	1.5614	-0.6	100	0.00
60	T	Ethyl Methacrylate	0.2981	0.2793	6.3	89	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.5201	0.5321	-2.3	96	0.00
63	T	1,1,2-Trichloroethane	0.2449	0.2268	7.4	91	0.00
64	T	2-Hexanone	0.0515	0.0457	11.3	86	0.00
65	T	1,3-Dichloropropane	0.4360	0.4101	6.0	90	0.00
66	T	Tetrachloroethene	0.3325	0.3562	-7.1	109	0.00
67	T	Dibromochloromethane	0.3576	0.3611	-1.0	97	0.00
68	T	1,2-Dibromoethane	0.2441	0.2302	5.7	91	0.00
69	T	1-Chlorohexane	0.5298	0.5521	-4.2	106	0.00
70	P	Chlorobenzene	1.0466	1.0416	0.5	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4055	0.4240	-4.6	102	0.00
72	C	Ethylbenzene	0.5726	0.5778	-0.9	103	0.00
73	T	m-,p-Xylene	0.6716	0.6926	-3.1	103	0.00
74	T	o-Xylene	0.6566	0.6728	-2.5	102	0.00
75	T	Styrene	1.0770	1.1203	-4.0	100	0.00
76	P	Bromoform	0.2121	0.2158	-1.7	97	0.00
77	T	Isopropylbenzene	1.7444	1.8823	-7.9	106	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	107	0.00
79	P	1,1,2,2-Tetrachloroethane	0.5018	0.4164	17.0	87	0.00
80	S	p-Bromofluorobenzene	1.0352	1.0254	0.9	108	0.00
81	T	1,2,3-Trichloropropane	0.1545	0.1390	10.0	96	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1376	0.1372	0.3	97	0.00
83	T	n-Propylbenzene	3.9003	3.8814	0.5	105	0.00
84	T	Bromobenzene	0.8022	0.7695	4.1	103	0.00
85	T	1,3,5-Trimethylbenzene	2.8411	2.8510	-0.3	106	0.00
86	T	2-Chlorotoluene	2.7231	2.6005	4.5	99	0.00
87	T	4-Chlorotoluene	2.4597	2.4446	0.6	112	0.00
88	T	a-Methylstyrene	1.3479	1.2791	5.1	102	0.00
89	T	tert-Butylbenzene	0.5558	0.5440	2.1	109	0.00
90	T	1,2,4-Trimethylbenzene	2.9214	2.9288	-0.3	107	0.00
91	T	sec-Butylbenzene	3.3424	3.3657	-0.7	108	0.00
92	T	p-Isopropyltoluene	2.8379	2.8721	-1.2	109	0.00
93	T	1,3-Dichlorobenzene	1.5448	1.5321	0.8	107	0.00
94	T	1,4-Dichlorobenzene	1.5574	1.4823	4.8	105	0.00
95	T	n-Butylbenzene	2.8056	2.8337	-1.0	108	0.00
96	T	1,2-Dichlorobenzene	1.3739	1.2810	6.8	103	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1007	0.0886	12.0	91	0.00
98	T	1,2,4-Trichlorobenzene	1.0269	0.9972	2.9	105	0.00
99	T	Hexachlorobutadiene	0.4798	0.5251	-9.4	122	0.00
100	T	Naphthalene	1.5257	1.3274	13.0	91	0.00
101	T	1,2,3-Trichlorobenzene	0.8664	0.7860	9.3	102	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413032.D 8260WT.M Mon Jun 20 09:11:49 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413032.D Vial: 2
Acq On : 16 Jun 2016 14:25 Operator: FJB
Sample : WG573037-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	94	0.00
2	T	Dichlorodifluoromethane	50.0000	57.6485	-15.3	104	0.00
3	P	Chloromethane	50.0000	46.5578	6.9	90	0.00
4	C	Vinyl Chloride	50.0000	55.1240	-10.2	103	0.00
5	T	1,3-Butadiene	50.0000	62.9364	-25.9#	115	0.00
6	T	Bromomethane	50.0000	36.9767	26.0#	72	0.00
7	T	Chloroethane	50.0000	48.9325	2.1	94	0.00
8	T	Trichlorofluoromethane	50.0000	59.7435	-19.5	113	0.00
9	T	Diethyl ether	100.0000	94.8900	5.1	92	0.00
10	T	Isoprene	50.0000	50.9718	-1.9	99	0.00
11	T	Acrolein	50.0000	44.5317	10.9	86	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	55.4511	-10.9	107	0.00
13	T	Acetone	50.0000	52.1548	-4.3	94	0.00
14	C	1,1-Dichloroethene	50.0000	54.6514	-9.3	105	0.00
15	T	Tert-Butyl Alcohol	200.0000	236.9793	-18.5	113	0.00
16	T	Dimethyl Sulfide	50.0000	48.4405	3.1	93	0.00
17	T	Iodomethane	50.0000	28.4930	43.0#	56	0.00
18	T	Methyl acetate	50.0000	42.7704	14.5	83	0.00
19	T	Methylene Chloride	50.0000	48.8209	2.4	95	0.00
20	T	Carbon Disulfide	50.0000	53.0253	-6.1	104	0.00
21	T	Acrylonitrile	50.0000	47.5881	4.8	85	0.00
22	T	Methyl Tert Butyl Ether	50.0000	49.9201	0.2	90	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.0503	-4.1	99	0.00
24	T	n-Hexane	50.0000	54.4236	-8.8	105	0.00
25	T	Diisopropyl ether	100.0000	95.9026	4.1	92	0.00
26	T	Vinyl Acetate	50.0000	49.2832	1.4	89	0.00
27	P	1,1-Dichloroethane	50.0000	52.3061	-4.6	98	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	100.9239	-0.9	94	0.00
29	T	2-Butanone	50.0000	45.9348	8.1	84	0.00
30	T	Propionitrile	100.0000	96.3269	3.7	89	0.00
31	T	2,2-Dichloropropane	50.0000	61.8026	-23.6	115	0.00
32	T	cis-1,2-Dichloroethene	50.0000	50.9485	-1.9	98	0.00
33	C	Chloroform	50.0000	54.8264	-9.7	104	0.00
34		1-Bromopropane	50.0000	57.8711	-15.7	110	0.00
35	T	Bromochloromethane	50.0000	51.2707	-2.5	96	0.00
36	T	Tetrahydrofuran	100.0000	82.0898	17.9	83	0.00
37	S	Dibromofluoromethane	25.0000	27.3819	-9.5	102	0.00
38	T	1,1,1-Trichloroethane	50.0000	59.5586	-19.1	111	0.00
39	T	Cyclohexane	50.0000	51.6569	-3.3	101	0.00
40	T	1,1-Dichloropropene	50.0000	54.5654	-9.1	103	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	100.8347	-0.8	94	0.00
42	T	Carbon Tetrachloride	50.0000	60.0125	-20.0	112	0.00
43	S	1,2-Dichloroethane-d4	25.0000	27.7486	-11.0	102	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	56.6636	-13.3	104	0.00
46	T	Benzene	50.0000	51.9972	-4.0	98	0.00
47	T	Trichloroethene	50.0000	53.9600	-7.9	102	0.00
48	T	Methylcyclohexane	50.0000	55.4235	-10.8	107	0.00
49	C	1,2-Dichloropropane	50.0000	48.6480	2.7	93	0.00
50	T	Bromodichloromethane	50.0000	55.3826	-10.8	100	0.00
51	T	1,4-Dioxane	200.0000	220.3548	-10.2	98	0.00
52	T	Dibromomethane	50.0000	49.7082	0.6	94	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	45.0178	10.0	80	0.00
54	T	4-Methyl-2-Pentanone	50.0000	45.5327	8.9	83	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413032.D Vial: 2
Acq On : 16 Jun 2016 14:25 Operator: FJB
Sample : WG573037-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.2922	-6.6	96	0.00
56	T	Dimethyl Disulfide	50.0000	51.3144	-2.6	96	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	25.0000	26.3564	-5.4	103	0.00
59	C	Toluene	50.0000	50.3002	-0.6	100	0.00
60	T	Ethyl Methacrylate	50.0000	46.8562	6.3	89	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	51.1483	-2.3	96	0.00
63	T	1,1,2-Trichloroethane	50.0000	46.3057	7.4	91	0.00
64	T	2-Hexanone	50.0000	44.3674	11.3	86	0.00
65	T	1,3-Dichloropropane	50.0000	47.0219	6.0	90	0.00
66	T	Tetrachloroethene	50.0000	53.5544	-7.1	109	0.00
67	T	Dibromochloromethane	50.0000	50.4917	-1.0	97	0.00
68	T	1,2-Dibromoethane	50.0000	47.1634	5.7	91	0.00
69	T	1-Chlorohexane	50.0000	52.1093	-4.2	106	0.00
70	P	Chlorobenzene	50.0000	49.7630	0.5	100	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	52.2807	-4.6	102	0.00
72	C	Ethylbenzene	50.0000	50.4524	-0.9	103	0.00
73	T	m-,p-Xylene	100.0000	103.1131	-3.1	103	0.00
74	T	o-Xylene	50.0000	51.2307	-2.5	102	0.00
75	T	Styrene	50.0000	52.0104	-4.0	100	0.00
76	P	Bromoform	50.0000	50.8617	-1.7	97	0.00
77	T	Isopropylbenzene	50.0000	53.9527	-7.9	106	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	107	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	41.4928	17.0	87	0.00
80	S	p-Bromofluorobenzene	25.0000	24.7636	0.9	108	0.00
81	T	1,2,3-Trichloropropane	50.0000	44.9807	10.0	96	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	43.6303	12.7	97	0.00
83	T	n-Propylbenzene	50.0000	49.7580	0.5	105	0.00
84	T	Bromobenzene	50.0000	47.9586	4.1	103	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	50.1733	-0.3	106	0.00
86	T	2-Chlorotoluene	50.0000	47.7491	4.5	99	0.00
87	T	4-Chlorotoluene	50.0000	49.6923	0.6	112	0.00
88	T	a-Methylstyrene	50.0000	47.4481	5.1	102	0.00
89	T	tert-Butylbenzene	50.0000	48.9378	2.1	109	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	50.1269	-0.3	107	0.00
91	T	sec-Butylbenzene	50.0000	50.3494	-0.7	108	0.00
92	T	p-Isopropyltoluene	50.0000	50.6022	-1.2	109	0.00
93	T	1,3-Dichlorobenzene	50.0000	49.5900	0.8	107	0.00
94	T	1,4-Dichlorobenzene	50.0000	47.5896	4.8	105	0.00
95	T	n-Butylbenzene	50.0000	50.5007	-1.0	108	0.00
96	T	1,2-Dichlorobenzene	50.0000	46.6205	6.8	103	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	43.9791	12.0	91	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	48.5529	2.9	105	0.00
99	T	Hexachlorobutadiene	50.0000	54.7126	-9.4	122	0.00
100	T	Naphthalene	50.0000	43.5006	13.0	91	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	45.3576	9.3	102	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413032.D 8260WT.M Mon Jun 20 09:11:52 2016 Page 2

2.1.1.5 Raw QC Data

BFB

Data File : C:\MSDCHEM\2\DATA\051316\8M412218.D Vial: 3
Acq On : 13 May 2016 12:36 Operator: TMB
Sample : WG568561-01 50ng BFB STD 8260 Inst : HPMS8
Misc : 1,1 STD76034 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title : SOP:OVL MSV01

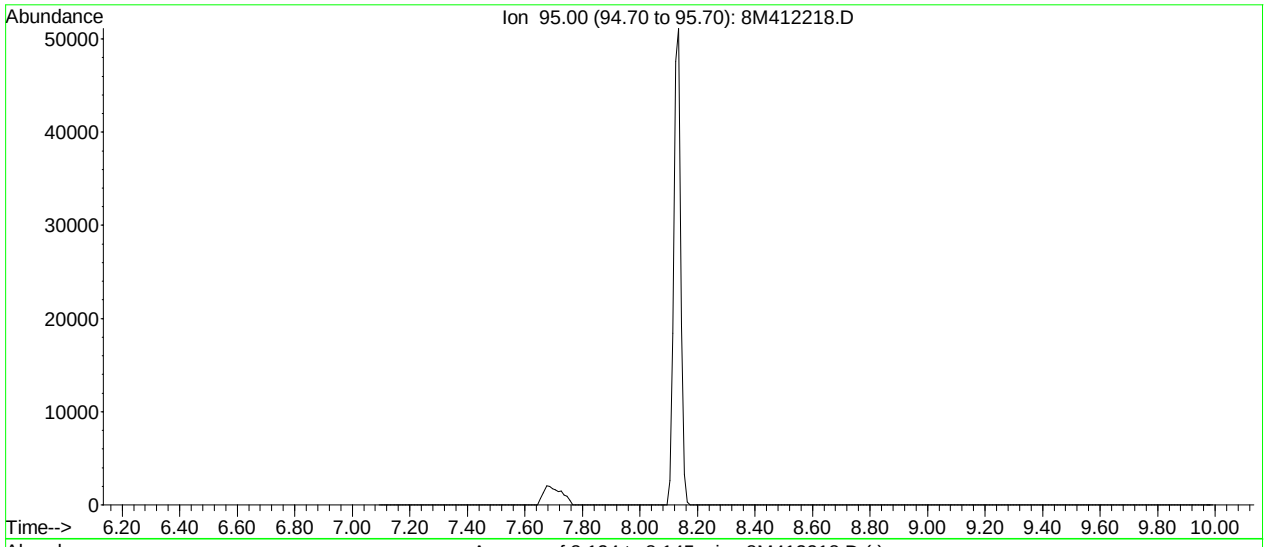

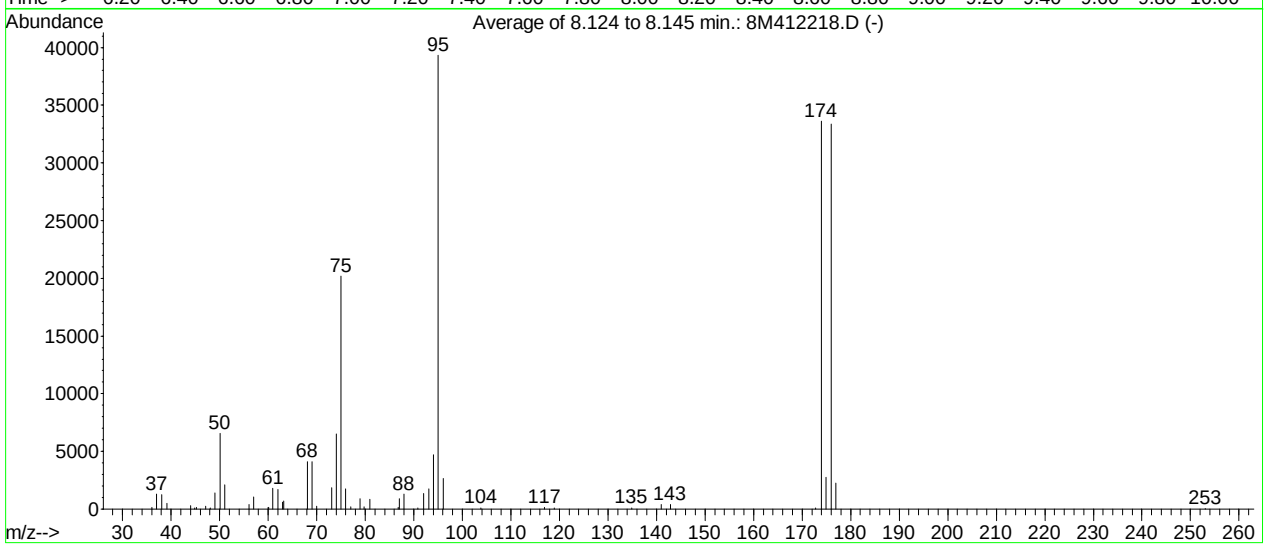

AutoFind: Scans 102, 103, 104; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.7	6575	PASS
75	95	30	60	51.3	20171	PASS
95	95	100	100	100.0	39312	PASS
96	95	5	9	6.7	2649	PASS
173	174	0.00	2	0.4	122	PASS
174	95	50	100	85.5	33616	PASS
175	174	5	9	8.2	2746	PASS
176	174	95	101	99.2	33360	PASS
177	176	5	9	6.8	2267	PASS

8M412218.D BFB.M Fri May 13 12:47:24 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413001.D Vial: 1
Acq On    : 15 Jun 2016   8:36                        Operator: TMB
Sample    : WG572735-01 50ng BFB STD 8260             Inst    : HPMS8
Misc      : 1,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title     : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
```

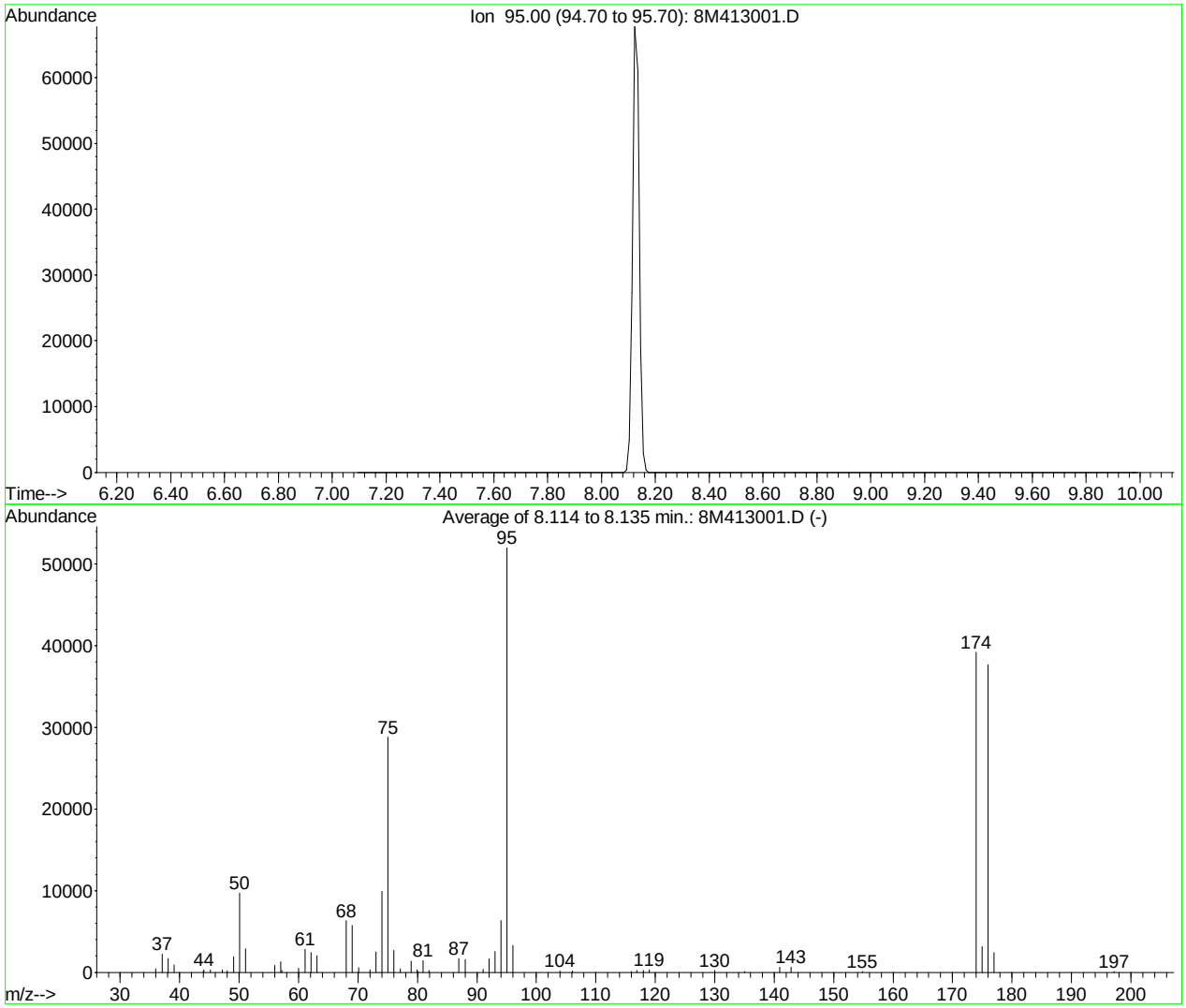

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 96

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	18.6	9690	PASS
75	95	30	60	55.4	28818	PASS
95	95	100	100	100.0	52034	PASS
96	95	5	9	6.4	3311	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	75.4	39229	PASS
175	174	5	9	8.1	3176	PASS
176	174	95	101	96.0	37669	PASS
177	176	5	9	6.4	2397	PASS

8M413001.D 8260WT.M Wed Jun 15 10:23:34 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413031.D Vial: 1
Acq On    : 16 Jun 2016  14:02                        Operator: FJB
Sample    : WG573037-01 BFB 50ng 8260                 Inst    : HPMS8
Misc      : 1,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title     : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
```

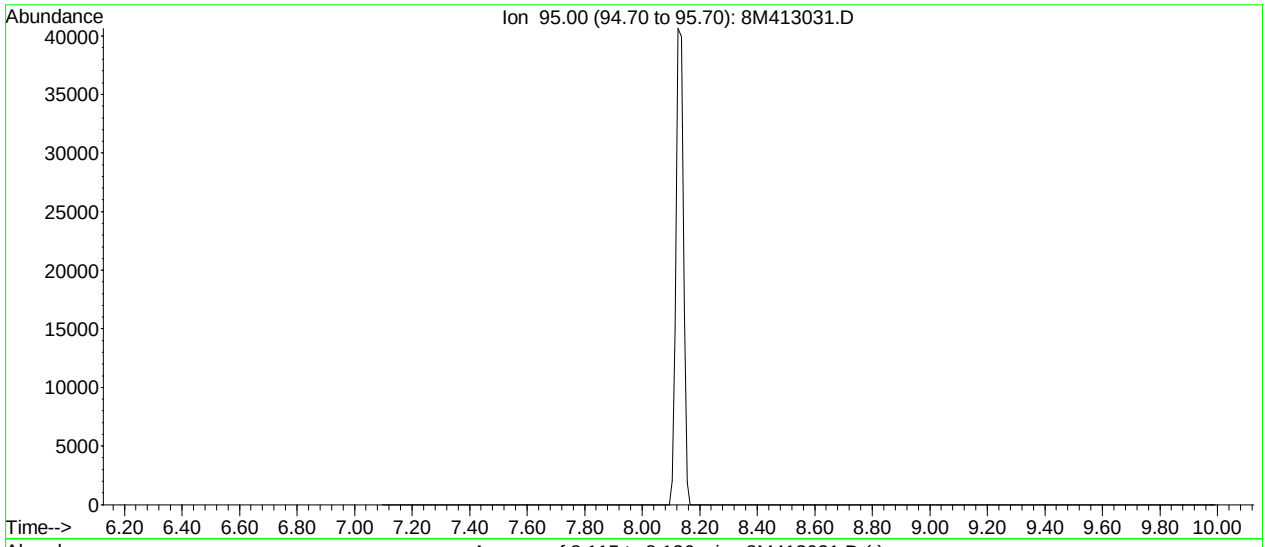

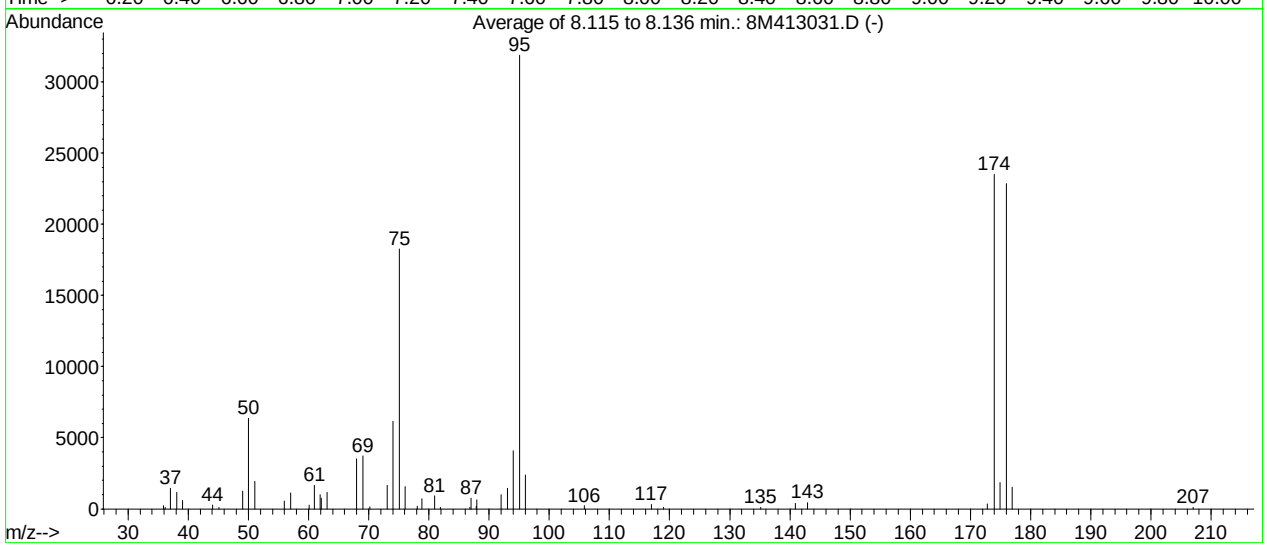

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.9	6352	PASS
75	95	30	60	57.2	18249	PASS
95	95	100	100	100.0	31890	PASS
96	95	5	9	7.4	2366	PASS
173	174	0.00	2	1.5	352	PASS
174	95	50	100	73.7	23499	PASS
175	174	5	9	8.0	1870	PASS
176	174	95	101	97.3	22869	PASS
177	176	5	9	6.7	1538	PASS

8M413031.D 8260WT.M Mon Jun 20 09:08:01 2016

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413005.D Vial: 5
Acq On : 15 Jun 2016 10:27 Operator: TMB
Sample : WG572737-01 VBLK0615 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 13:24:55 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	780700	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	588241	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	330295	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	231246	27.5688 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.28%		
43) 1,2-Dichloroethane-d4	10.31	65	247427	27.5103 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 110.04%		
58) Toluene-d8	12.68	98	800099	25.9892 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.96%		
80) p-Bromofluorobenzene	16.07	95	333874	24.4121 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.64%		

Target Compounds					Qvalue
36) Tetrahydrofuran	9.66	42	1213	1.4271 ug/L #	53

(#) = qualifier out of range (m) = manual integration
8M413005.D 8260WT.M Thu Jun 16 13:24:58 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413005.D Vial: 5
Acq On : 15 Jun 2016 10:27 Operator: TMB
Sample : WG572737-01 VBLK0615 BLANK STD 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 13:24 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

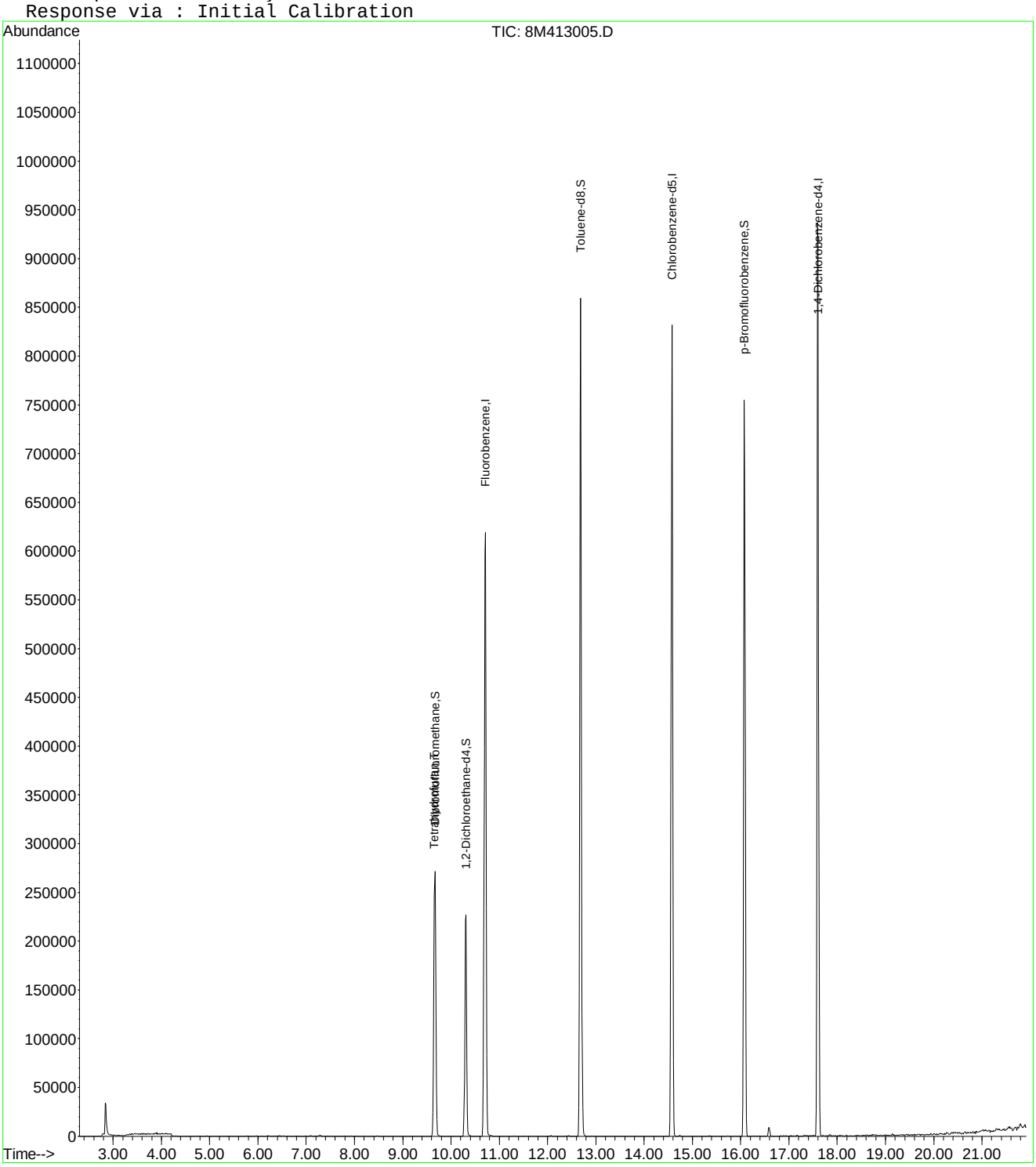

8M413005.D 8260WT.M Thu Jun 16 13:24:59 2016 Page 2

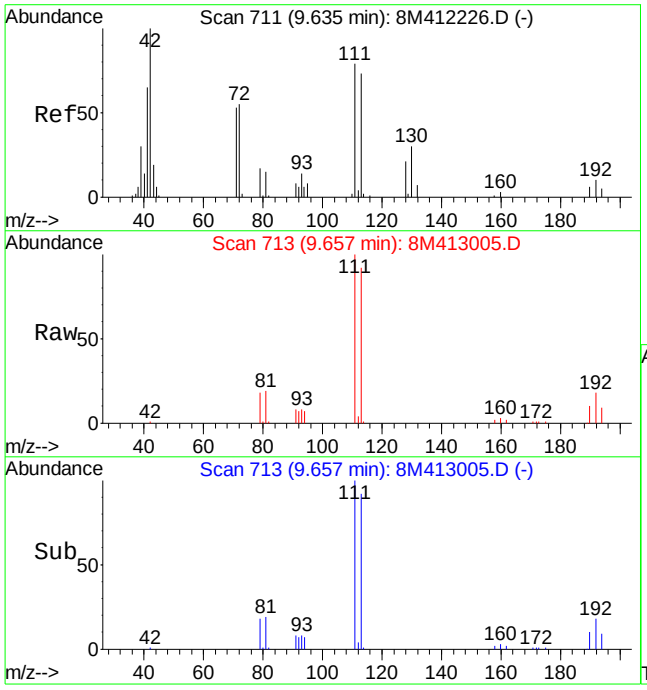

#36
Tetrahydrofuran
Concen: 1.43 ug/L
RT: 9.66 min Scan# 713
Delta R.T. 0.02 min
Lab File: 8M413005.D
Acq: 15 Jun 2016 10:27

Tgt Ion: 42 Resp: 1213

Ion	Ratio	Lower	Upper
42	100		
72	22.8	33.8	78.8#
71	19.7	32.0	74.8#

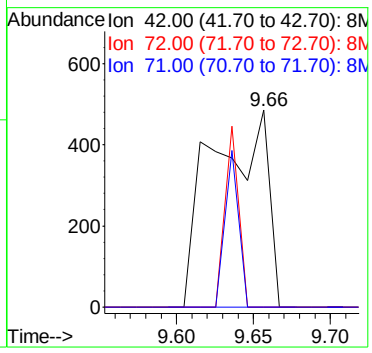

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413034.D Vial: 4
Acq On : 16 Jun 2016 15:23 Operator: FJB
Sample : WG573038-01 BLANK 6/16 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:18:21 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	717429	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	533754	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	292043	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	209977	27.2409 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 108.96%		
43) 1,2-Dichloroethane-d4	10.30	65	235474	28.4902 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 113.96%		
58) Toluene-d8	12.68	98	740524	26.5096 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 106.04%		
80) p-Bromofluorobenzene	16.08	95	307463	25.4256 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.72%		
Target Compounds					Qvalue
36) Tetrahydrofuran	9.64	42	956	1.2239 ug/L	79

(#) = qualifier out of range (m) = manual integration
8M413034.D 8260WT.M Mon Jun 20 09:19:27 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413034.D Vial: 4
Acq On : 16 Jun 2016 15:23 Operator: FJB
Sample : WG573038-01 BLANK 6/16 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 8:18 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

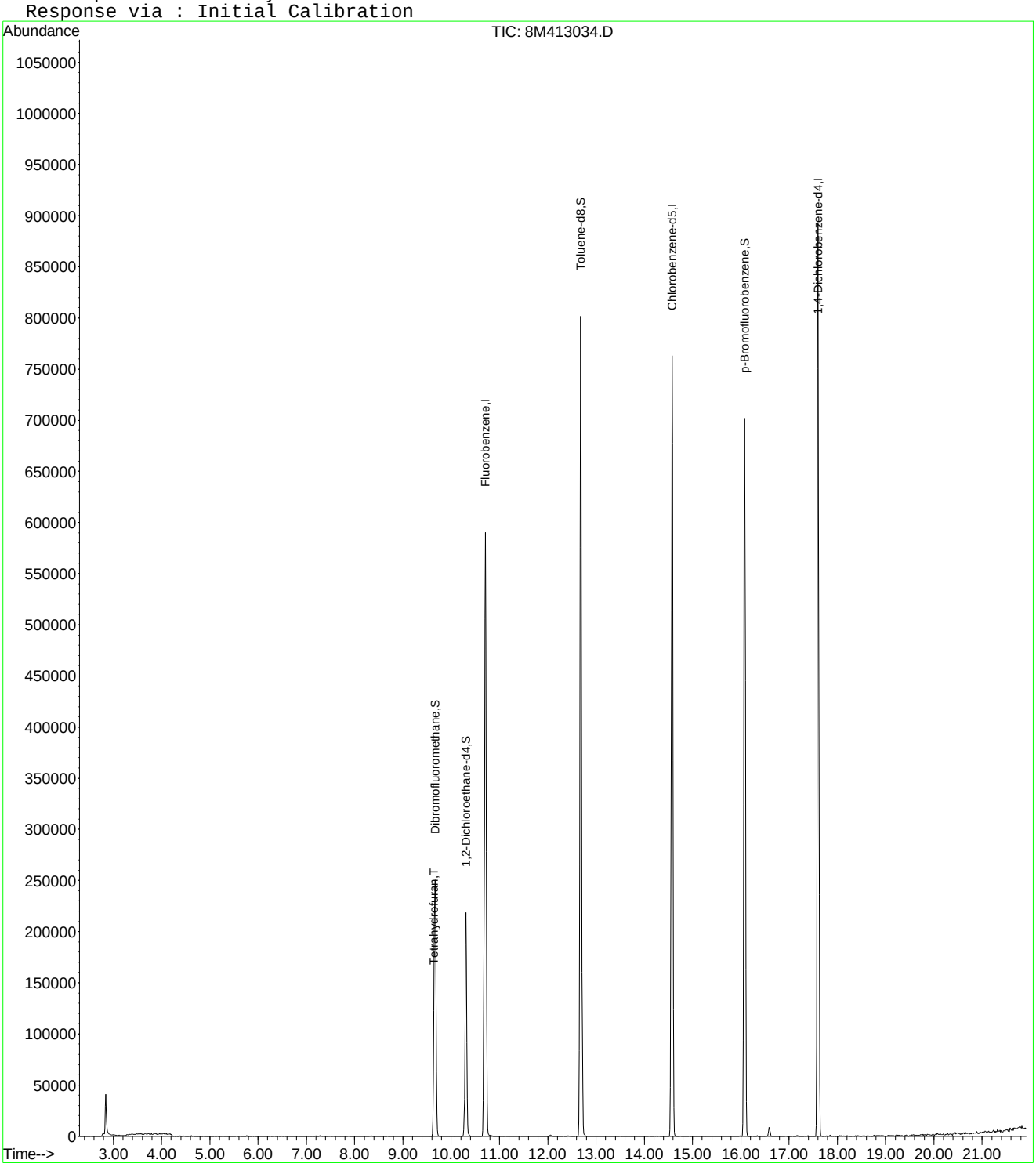

8M413034.D 8260WT.M Mon Jun 20 09:19:28 2016 Page 2

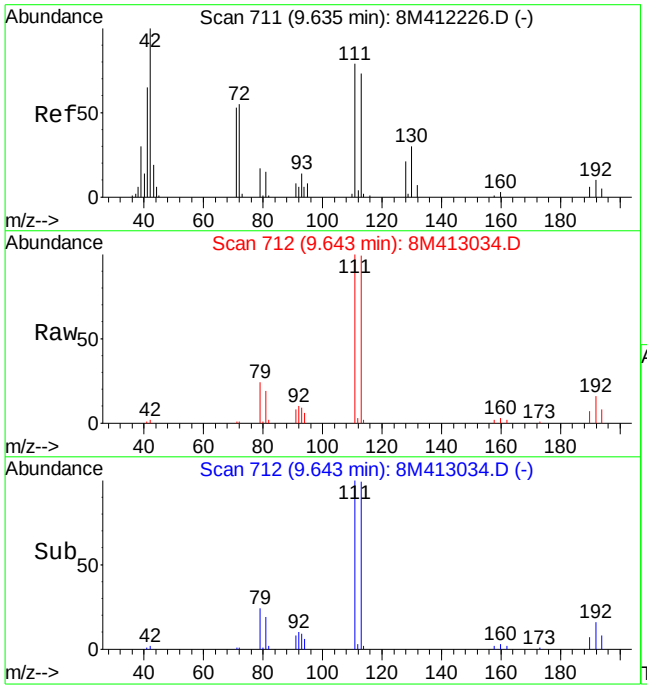

#36
Tetrahydrofuran
Concen: 1.22 ug/L
RT: 9.64 min Scan# 712
Delta R.T. 0.01 min
Lab File: 8M413034.D
Acq: 16 Jun 2016 15:23

Tgt Ion: 42 Resp: 956

Ion	Ratio	Lower	Upper
42	100		
72	74.6	33.8	78.8
71	41.9	32.0	74.8

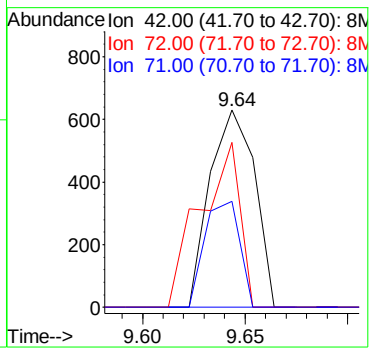

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413006.D Vial: 6
Acq On : 15 Jun 2016 10:56 Operator: TMB
Sample : WG572737-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD75597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 13:12:46 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	797707	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	583746	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	327915	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	229384	26.7638 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.04%		
43) 1,2-Dichloroethane-d4	10.31	65	254648	27.7095 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 110.84%		
58) Toluene-d8	12.68	98	795894	26.0517 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.20%		
80) p-Bromofluorobenzene	16.07	95	340031	25.0428 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.16%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	284160	21.2467 ug/L	99
3) Chloromethane	3.62	50	158514	20.3044 ug/L	98
4) Vinyl Chloride	3.84	62	213868	23.0899 ug/L	98
5) 1,3-Butadiene	3.88	54	35533	4.5746 ug/L	96
6) Bromomethane	4.73	94	73922	13.9336 ug/L	99
7) Chloroethane	4.89	64	107290	21.0513 ug/L	98
8) Trichlorofluoromethane	5.38	101	363474	21.0897 ug/L	100
9) Diethyl ether	5.90	59	423085	102.8279 ug/L	98
10) Isoprene	5.94	67	223906	21.3936 ug/L	98
11) Acrolein	6.14	56	35908	97.4725 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	169440	20.9152 ug/L	98
13) Acetone	6.23	43	20126	22.4246 ug/L	99
14) 1,1-Dichloroethene	6.46	61	252423	19.5691 ug/L	99
15) Tert-Butyl Alcohol	6.59	59	67383	234.2865 ug/L	96
16) Dimethyl Sulfide	6.73	62	167195	36.2514 ug/L	100
17) Iodomethane	6.98	142	45880	15.0557 ug/L	95
18) Methyl acetate	7.00	43	48803	20.1166 ug/L	98
19) Methylene Chloride	7.25	84	163005	19.8575 ug/L	99
20) Carbon Disulfide	7.29	76	492635	18.2500 ug/L	100
21) Acrylonitrile	7.43	53	24089	20.6864 ug/L	99
22) Methyl Tert Butyl Ether	7.46	73	394184	22.1874 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	237897	20.0749 ug/L	97
24) n-Hexane	7.78	57	165301	18.7849 ug/L	98
25) Diisopropyl ether	8.13	45	1883063	101.9408 ug/L	97
26) Vinyl Acetate	8.30	43	133404	15.7735 ug/L	100
27) 1,1-Dichloroethane	8.32	63	292700	19.8885 ug/L	99
28) Ethyl-Tert-Butyl ether	8.69	59	2019885	102.0589 ug/L	98
29) 2-Butanone	8.88	43	27520	20.8701 ug/L	95
30) Propionitrile	8.99	54	38179	99.3539 ug/L	98
31) 2,2-Dichloropropane	9.10	77	354710	22.8710 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	194451	21.2361 ug/L	98
33) Chloroform	9.38	83	372083	21.4124 ug/L	100
34) 1-Bromopropane	9.51	122	41342	31.5209 ug/L	99
35) Bromochloromethane	9.60	130	97315	20.7252 ug/L	96
36) Tetrahydrofuran	9.63	42	74098	85.3178 ug/L	93
38) 1,1,1-Trichloroethane	9.90	97	368225	22.3085 ug/L	100
39) Cyclohexane	9.93	56	222193	19.4435 ug/L	98
40) 1,1-Dichloropropene	10.10	75	252909	20.1021 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1926409	107.1686 ug/L	100
42) Carbon Tetrachloride	10.24	117	320660	21.8773 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413006.D 8260WT.M Wed Jun 15 13:12:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413006.D Vial: 6
Acq On : 15 Jun 2016 10:56 Operator: TMB
Sample : WG572737-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD75597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 13:12:46 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	249988	22.3515	ug/L		99
46)	Benzene	10.46	78	677769	20.6840	ug/L		100
47)	Trichloroethene	11.22	130	191249	21.8833	ug/L		98
48)	Methylcyclohexane	11.30	83	271212	20.4274	ug/L		98
49)	1,2-Dichloropropane	11.42	63	151089	20.7129	ug/L		94
50)	Bromodichloromethane	11.72	83	279173	21.7752	ug/L		100
51)	1,4-Dioxane	11.72	88	7089	193.4655	ug/L		97
52)	Dibromomethane	11.82	93	84325	19.5289	ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	59062	18.8382	ug/L		95
54)	4-Methyl-2-Pentanone	12.05	58	25295	19.7510	ug/L		93
55)	cis-1,3-Dichloropropene	12.36	75	305008	23.3729	ug/L		98
56)	Dimethyl Disulfide	12.62	79	150140	21.5561	ug/L		92
59)	Toluene	12.79	91	733515	20.2405	ug/L		100
60)	Ethyl Methacrylate	12.88	69	148427	21.3266	ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	256810	21.1459	ug/L		98
63)	1,1,2-Trichloroethane	13.18	97	115499	20.1973	ug/L		99
64)	2-Hexanone	13.12	58	22315	18.5695	ug/L	#	96
65)	1,3-Dichloropropane	13.48	76	222881	21.8913	ug/L		97
66)	Tetrachloroethene	13.60	164	161836	20.8434	ug/L		96
67)	Dibromochloromethane	13.86	129	175372	21.0031	ug/L		98
68)	1,2-Dibromoethane	14.12	107	116504	20.4419	ug/L		98
69)	1-Chlorohexane	14.21	91	248464	20.0851	ug/L		98
70)	Chlorobenzene	14.63	112	512807	20.9843	ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.66	131	200020	21.1271	ug/L		98
72)	Ethylbenzene	14.66	106	265988	19.8936	ug/L		98
73)	m-,p-Xylene	14.74	106	658272	41.9739	ug/L		97
74)	o-Xylene	15.31	106	327127	21.3352	ug/L		99
75)	Styrene	15.34	104	529865	21.0698	ug/L		96
76)	Bromoform	15.84	173	99478	20.0860	ug/L		99
77)	Isopropylbenzene	15.73	105	884775	21.7219	ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	119073	18.0900	ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	41646	20.5464	ug/L	#	30
82)	trans-1,4-Dichloro-2-Buten	16.19	53	31015	15.4417	ug/L	#	1
83)	n-Propylbenzene	16.24	91	1065587	20.8292	ug/L		100
84)	Bromobenzene	16.36	156	207745	19.7426	ug/L		98
85)	1,3,5-Trimethylbenzene	16.42	105	774723	20.7892	ug/L		99
86)	2-Chlorotoluene	16.51	91	659635	18.4681	ug/L		91
87)	4-Chlorotoluene	16.56	91	724140	22.4448	ug/L		92
88)	a-Methylstyrene	16.83	118	376018	21.2676	ug/L		100
89)	tert-Butylbenzene	16.89	134	145153	19.9098	ug/L		96
90)	1,2,4-Trimethylbenzene	16.94	105	775871	20.2476	ug/L		100
91)	sec-Butylbenzene	17.16	105	899124	20.5090	ug/L		99
92)	p-Isopropyltoluene	17.32	119	756722	20.3288	ug/L		100
93)	1,3-Dichlorobenzene	17.51	146	417144	20.5876	ug/L		97
94)	1,4-Dichlorobenzene	17.64	146	420670	20.5932	ug/L		99
95)	n-Butylbenzene	17.84	91	714421	19.4136	ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	366373	20.3305	ug/L		97
97)	1,2-Dibromo-3-Chloropropan	19.13	75	26008	19.6841	ug/L		99
98)	1,2,4-Trichlorobenzene	20.28	180	266543	19.7879	ug/L		99
99)	Hexachlorobutadiene	20.43	225	132022	20.9768	ug/L		99
100)	Naphthalene	20.64	128	347414	17.3597	ug/L		100
101)	1,2,3-Trichlorobenzene	20.95	180	216248	19.0291	ug/L		98

(#) = qualifier out of range (m) = manual integration
8M413006.D 8260WT.M Wed Jun 15 13:12:49 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413006.D Vial: 6
Acq On : 15 Jun 2016 10:56 Operator: TMB
Sample : WG572737-02 20ug/L LCS STD 8260 Inst : HPMS8
Misc : 1,1 STD75597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 13:12 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

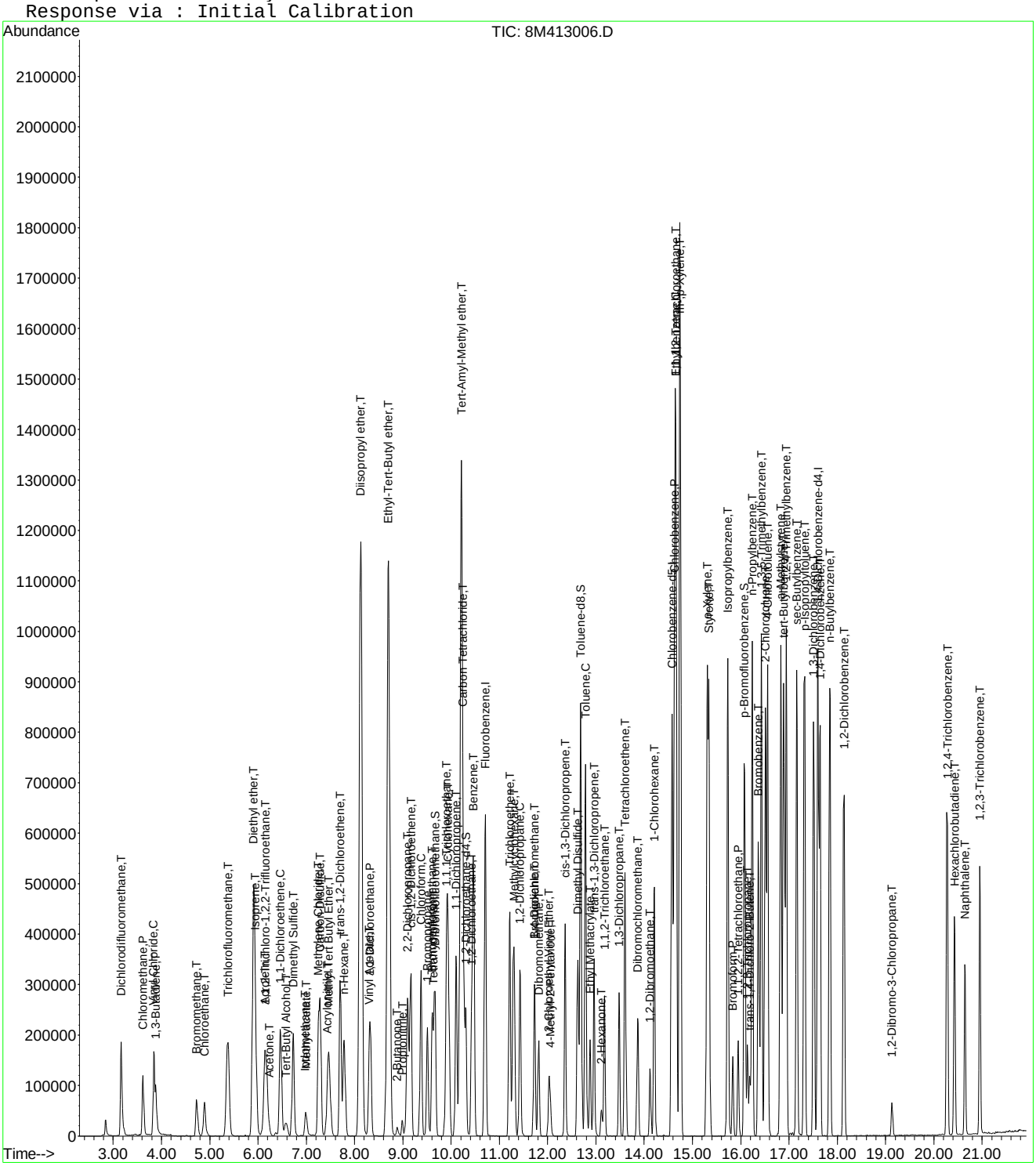

8M413006.D 8260WT.M Wed Jun 15 13:12:50 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413035.D Vial: 5
Acq On : 16 Jun 2016 15:52 Operator: FJB
Sample : WG573038-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:18:21 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	724153	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	540053	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	307888	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	213643	27.4591 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.84%		
43) 1,2-Dichloroethane-d4	10.31	65	245621	29.4420 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 117.76%		
58) Toluene-d8	12.68	98	736706	26.0653 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.28%		
80) p-Bromofluorobenzene	16.08	95	316242	24.8057 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.24%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	252315	20.7819 ug/L	99
3) Chloromethane	3.62	50	134208	18.9371 ug/L	99
4) Vinyl Chloride	3.85	62	192999	22.9533 ug/L	100
5) 1,3-Butadiene	3.88	54	21596	3.0627 ug/L	93
6) Bromomethane	4.72	94	67601	14.0319 ug/L	96
7) Chloroethane	4.89	64	94578	20.4419 ug/L	99
8) Trichlorofluoromethane	5.38	101	348634	22.2833 ug/L	99
9) Diethyl ether	5.90	59	376158	100.7087 ug/L	98
10) Isoprene	5.93	67	202345	21.2972 ug/L	96
11) Acrolein	6.13	56	30585	91.4560 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	157632	21.4340 ug/L	96
13) Acetone	6.23	43	17743	21.7775 ug/L	94
14) 1,1-Dichloroethene	6.46	61	221517	18.9174 ug/L	99
15) Tert-Butyl Alcohol	6.58	59	54296	207.9591 ug/L	97
16) Dimethyl Sulfide	6.73	62	149005	35.5890 ug/L	99
17) Iodomethane	6.99	142	33488	12.6554 ug/L	96
18) Methyl acetate	7.00	43	45239	20.5416 ug/L	98
19) Methylene Chloride	7.26	84	143716	19.2860 ug/L	97
20) Carbon Disulfide	7.29	76	443914	18.1155 ug/L	99
21) Acrylonitrile	7.44	53	20303	19.2061 ug/L	97
22) Methyl Tert Butyl Ether	7.46	73	362621	22.4840 ug/L	97
23) trans-1,2-Dichloroethene	7.70	61	216143	20.0918 ug/L	99
24) n-Hexane	7.78	57	148742	18.6200 ug/L	98
25) Diisopropyl ether	8.12	45	1674940	99.8839 ug/L	96
26) Vinyl Acetate	8.30	43	113665	14.8046 ug/L	99
27) 1,1-Dichloroethane	8.32	63	260446	19.4944 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	1819224	101.2567 ug/L	98
29) 2-Butanone	8.88	43	24177	20.1972 ug/L	96
30) Propionitrile	8.99	54	32822	94.0889 ug/L	98
31) 2,2-Dichloropropane	9.11	77	323361	22.9674 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	170309	20.4887 ug/L	97
33) Chloroform	9.37	83	334264	21.1899 ug/L	100
34) 1-Bromopropane	9.51	122	36217	30.4181 ug/L	100
35) Bromochloromethane	9.60	130	88133	20.6762 ug/L	92
36) Tetrahydrofuran	9.62	42	66083	83.8177 ug/L	91
38) 1,1,1-Trichloroethane	9.91	97	336501	22.4572 ug/L	100
39) Cyclohexane	9.94	56	203672	19.6331 ug/L	95
40) 1,1-Dichloropropene	10.10	75	235033	20.5788 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	1758569	107.7684 ug/L	100
42) Carbon Tetrachloride	10.25	117	299046	22.4750 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M413035.D 8260WT.M Mon Jun 20 09:08:47 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413035.D Vial: 5
Acq On : 16 Jun 2016 15:52 Operator: FJB
Sample : WG573038-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:18:21 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	236926	23.3353	ug/L		98
46)	Benzene	10.46	78	605690	20.3618	ug/L		99
47)	Trichloroethene	11.21	130	172682	21.7657	ug/L		99
48)	Methylcyclohexane	11.30	83	251284	20.8488	ug/L		98
49)	1,2-Dichloropropane	11.42	63	134844	20.3635	ug/L		90
50)	Bromodichloromethane	11.73	83	251163	21.5803	ug/L		98
51)	1,4-Dioxane	11.72	88	5908	177.6120	ug/L		98
52)	Dibromomethane	11.81	93	77825	19.8542	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.03	63	55535	19.5124	ug/L		91
54)	4-Methyl-2-Pentanone	12.05	58	22978	19.7642	ug/L		93
55)	cis-1,3-Dichloropropene	12.36	75	273539	23.0905	ug/L		100
56)	Dimethyl Disulfide	12.62	79	137758	21.7873	ug/L		95
59)	Toluene	12.79	91	661287	19.7238	ug/L		99
60)	Ethyl Methacrylate	12.88	69	133238	20.6930	ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	234780	20.8960	ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	103597	19.5817	ug/L		97
64)	2-Hexanone	13.12	58	20672	18.5940	ug/L	#	95
65)	1,3-Dichloropropane	13.48	76	194941	20.6961	ug/L		95
66)	Tetrachloroethene	13.60	164	144676	20.1408	ug/L		99
67)	Dibromochloromethane	13.87	129	158132	20.4706	ug/L		100
68)	1,2-Dibromoethane	14.12	107	105951	20.0943	ug/L		99
69)	1-Chlorohexane	14.21	91	223061	19.4904	ug/L		97
70)	Chlorobenzene	14.63	112	460997	20.3904	ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.66	131	182348	20.8187	ug/L		99
72)	Ethylbenzene	14.66	106	245573	19.8527	ug/L		100
73)	m-,p-Xylene	14.75	106	592898	40.8641	ug/L		95
74)	o-Xylene	15.31	106	299422	21.1082	ug/L		99
75)	Styrene	15.35	104	480813	20.6661	ug/L		96
76)	Bromoform	15.83	173	91438	19.9564	ug/L		99
77)	Isopropylbenzene	15.73	105	813144	21.5784	ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	109337	17.6914	ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	37733	19.8268	ug/L		73
82)	trans-1,4-Dichloro-2-Buten	16.19	53	28275	15.0111	ug/L		99
83)	n-Propylbenzene	16.24	91	981466	20.4328	ug/L		100
84)	Bromobenzene	16.37	156	189420	19.1720	ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	710541	20.3071	ug/L		100
86)	2-Chlorotoluene	16.51	91	681730	20.3282	ug/L		98
87)	4-Chlorotoluene	16.56	91	596710	19.6981	ug/L		99
88)	a-Methylstyrene	16.83	118	344648	20.7612	ug/L		100
89)	tert-Butylbenzene	16.90	134	134805	19.6932	ug/L		98
90)	1,2,4-Trimethylbenzene	16.94	105	716254	19.9077	ug/L		99
91)	sec-Butylbenzene	17.16	105	833548	20.2499	ug/L		99
92)	p-Isopropyltoluene	17.32	119	700643	20.0466	ug/L		100
93)	1,3-Dichlorobenzene	17.51	146	379985	19.9735	ug/L		100
94)	1,4-Dichlorobenzene	17.64	146	378307	19.7240	ug/L		99
95)	n-Butylbenzene	17.85	91	671796	19.4428	ug/L		100
96)	1,2-Dichlorobenzene	18.14	146	333637	19.7182	ug/L		97
97)	1,2-Dibromo-3-Chloropropan	19.13	75	24498	19.7473	ug/L		99
98)	1,2,4-Trichlorobenzene	20.28	180	244999	19.3716	ug/L		99
99)	Hexachlorobutadiene	20.43	225	125683	21.2686	ug/L		98
100)	Naphthalene	20.65	128	326897	17.3970	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	202292	18.9589	ug/L		97

(#) = qualifier out of range (m) = manual integration
8M413035.D 8260WT.M Mon Jun 20 09:08:47 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413035.D Vial: 5
Acq On : 16 Jun 2016 15:52 Operator: FJB
Sample : WG573038-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 8:18 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

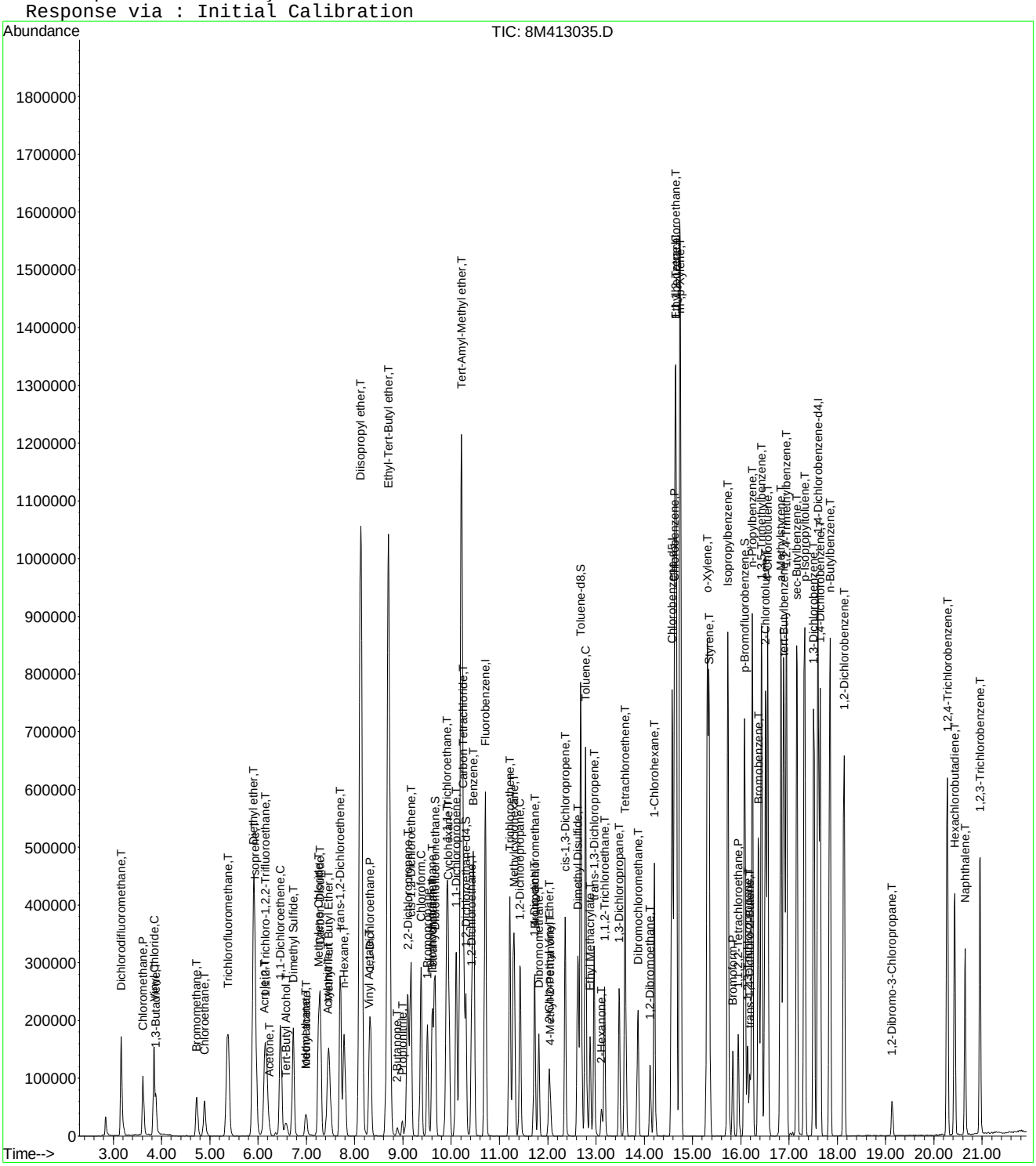

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413007.D Vial: 7
Acq On : 15 Jun 2016 11:25 Operator: TMB
Sample : WG572737-03 20ug/L LCS2 STD 8260 Inst : HPMS8
Misc : 1,1 STD75597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 13:12:51 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	790550	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	592812	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	329286	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	233097	27.4432 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.76%		
43) 1,2-Dichloroethane-d4	10.31	65	253627	27.8483 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.40%		
58) Toluene-d8	12.68	98	809553	26.0935 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.36%		
80) p-Bromofluorobenzene	16.07	95	346437	25.4083 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.64%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	286211	21.5938 ug/L	100
3) Chloromethane	3.62	50	160333	20.7233 ug/L	99
4) Vinyl Chloride	3.84	62	215100	23.4332 ug/L	100
5) 1,3-Butadiene	3.88	54	33429	4.3426 ug/L	94
6) Bromomethane	4.73	94	78480	14.8828 ug/L	100
7) Chloroethane	4.89	64	108715	21.5240 ug/L	99
8) Trichlorofluoromethane	5.38	101	369142	21.6124 ug/L	99
9) Diethyl ether	5.90	59	423639	103.8947 ug/L	99
10) Isoprene	5.93	67	224199	21.6155 ug/L	96
11) Acrolein	6.13	56	36618	100.2997 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	171548	21.3671 ug/L	94
13) Acetone	6.24	43	21959	24.6885 ug/L	96
14) 1,1-Dichloroethene	6.46	61	255403	19.9794 ug/L	98
15) Tert-Butyl Alcohol	6.58	59	69960	245.4488 ug/L	96
16) Dimethyl Sulfide	6.73	62	171865	37.6013 ug/L	99
17) Iodomethane	6.99	142	60508	19.0922 ug/L	96
18) Methyl acetate	7.00	43	52216	21.7183 ug/L	97
19) Methylene Chloride	7.25	84	168673	20.7340 ug/L	99
20) Carbon Disulfide	7.29	76	495290	18.5145 ug/L	99
21) Acrylonitrile	7.43	53	23838	20.6562 ug/L	99
22) Methyl Tert Butyl Ether	7.46	73	402312	22.8499 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	245125	20.8721 ug/L	100
24) n-Hexane	7.78	57	170844	19.5905 ug/L	100
25) Diisopropyl ether	8.13	45	1907939	104.2226 ug/L	97
26) Vinyl Acetate	8.29	43	143629	17.1362 ug/L	98
27) 1,1-Dichloroethane	8.32	63	295146	20.2362 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	2059515	105.0034 ug/L	98
29) 2-Butanone	8.88	43	29144	22.3017 ug/L	99
30) Propionitrile	8.98	54	40076	105.2347 ug/L	99
31) 2,2-Dichloropropane	9.10	77	356627	23.2028 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	189499	20.8826 ug/L	97
33) Chloroform	9.38	83	367074	21.3154 ug/L	99
34) 1-Bromopropane	9.51	122	41437	31.8793 ug/L	97
35) Bromochloromethane	9.60	130	98136	21.0892 ug/L	95
36) Tetrahydrofuran	9.63	42	79387	92.2351 ug/L	97
38) 1,1,1-Trichloroethane	9.90	97	363100	22.1971 ug/L	99
39) Cyclohexane	9.93	56	224247	19.8009 ug/L	96
40) 1,1-Dichloropropene	10.10	75	258698	20.7484 ug/L	99
41) Tert-Amyl-Methyl ether	10.20	73	1971434	110.6663 ug/L	99
42) Carbon Tetrachloride	10.24	117	314892	21.6783 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413007.D 8260WT.M Wed Jun 15 13:12:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413007.D Vial: 7
Acq On : 15 Jun 2016 11:25 Operator: TMB
Sample : WG572737-03 20ug/L LCS2 STD 8260 Inst : HPMS8
Misc : 1,1 STD75597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 13:12:51 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	261278	23.5724	ug/L		97
46)	Benzene	10.46	78	680256	20.9479	ug/L		100
47)	Trichloroethene	11.22	130	194311	22.4349	ug/L		98
48)	Methylcyclohexane	11.30	83	283441	21.5417	ug/L		98
49)	1,2-Dichloropropane	11.42	63	151880	21.0098	ug/L		95
50)	Bromodichloromethane	11.72	83	283122	22.2832	ug/L		100
51)	1,4-Dioxane	11.71	88	7908	217.7707	ug/L		96
52)	Dibromomethane	11.81	93	83275	19.4603	ug/L		94
53)	2-Chloroethyl Vinyl Ether	12.02	63	63767	20.5230	ug/L		100
54)	4-Methyl-2-Pentanone	12.05	58	25785	20.3159	ug/L		91
55)	cis-1,3-Dichloropropene	12.36	75	308896	23.8851	ug/L		100
56)	Dimethyl Disulfide	12.62	79	152219	22.0525	ug/L		94
59)	Toluene	12.79	91	746005	20.2704	ug/L		99
60)	Ethyl Methacrylate	12.88	69	149599	21.1662	ug/L		99
62)	trans-1,3-Dichloropropene	12.96	75	256988	20.8369	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	116292	20.0250	ug/L		95
64)	2-Hexanone	13.12	58	23367	19.1475	ug/L	#	100
65)	1,3-Dichloropropane	13.48	76	221842	21.4560	ug/L		98
66)	Tetrachloroethene	13.60	164	162164	20.5662	ug/L		96
67)	Dibromochloromethane	13.86	129	177622	20.9473	ug/L		98
68)	1,2-Dibromoethane	14.12	107	117628	20.3235	ug/L		99
69)	1-Chlorohexane	14.21	91	252462	20.0962	ug/L		99
70)	Chlorobenzene	14.63	112	510921	20.5874	ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.66	131	200448	20.8485	ug/L		98
72)	Ethylbenzene	14.66	106	270169	19.8973	ug/L		100
73)	m-,p-Xylene	14.74	106	658179	41.3262	ug/L		96
74)	o-Xylene	15.31	106	324634	20.8488	ug/L		96
75)	Styrene	15.34	104	538457	21.0840	ug/L		98
76)	Bromoform	15.84	173	101358	20.1526	ug/L		100
77)	Isopropylbenzene	15.73	105	899197	21.7383	ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	124317	18.8081	ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	40906	20.0973	ug/L	#	13
82)	trans-1,4-Dichloro-2-Buten	16.19	53	35020	17.2867	ug/L	#	1
83)	n-Propylbenzene	16.24	91	1077100	20.9666	ug/L		99
84)	Bromobenzene	16.36	156	212450	20.1057	ug/L		96
85)	1,3,5-Trimethylbenzene	16.43	105	777410	20.7744	ug/L		99
86)	2-Chlorotoluene	16.51	91	666207	18.5744	ug/L		92
87)	4-Chlorotoluene	16.56	91	724276	22.3555	ug/L		92
88)	a-Methylstyrene	16.83	118	373977	21.0641	ug/L		98
89)	tert-Butylbenzene	16.89	134	146447	20.0037	ug/L		98
90)	1,2,4-Trimethylbenzene	16.94	105	769177	19.9894	ug/L		99
91)	sec-Butylbenzene	17.16	105	914916	20.7823	ug/L		99
92)	p-Isopropyltoluene	17.32	119	762827	20.4075	ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	419374	20.6115	ug/L		98
94)	1,4-Dichlorobenzene	17.64	146	421455	20.5458	ug/L		100
95)	n-Butylbenzene	17.84	91	729014	19.7277	ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	375223	20.7349	ug/L		97
97)	1,2-Dibromo-3-Chloropropan	19.13	75	25730	19.3926	ug/L		94
98)	1,2,4-Trichlorobenzene	20.28	180	271201	20.0498	ug/L		99
99)	Hexachlorobutadiene	20.42	225	133189	21.0741	ug/L		99
100)	Naphthalene	20.64	128	357898	17.8092	ug/L		100
101)	1,2,3-Trichlorobenzene	20.95	180	220212	19.2972	ug/L		99

(#) = qualifier out of range (m) = manual integration
8M413007.D 8260WT.M Wed Jun 15 13:12:54 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061516\8M413007.D Vial: 7
Acq On : 15 Jun 2016 11:25 Operator: TMB
Sample : WG572737-03 20ug/L LCS2 STD 8260 Inst : HPMS8
Misc : 1,1 STD75597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 15 13:12 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

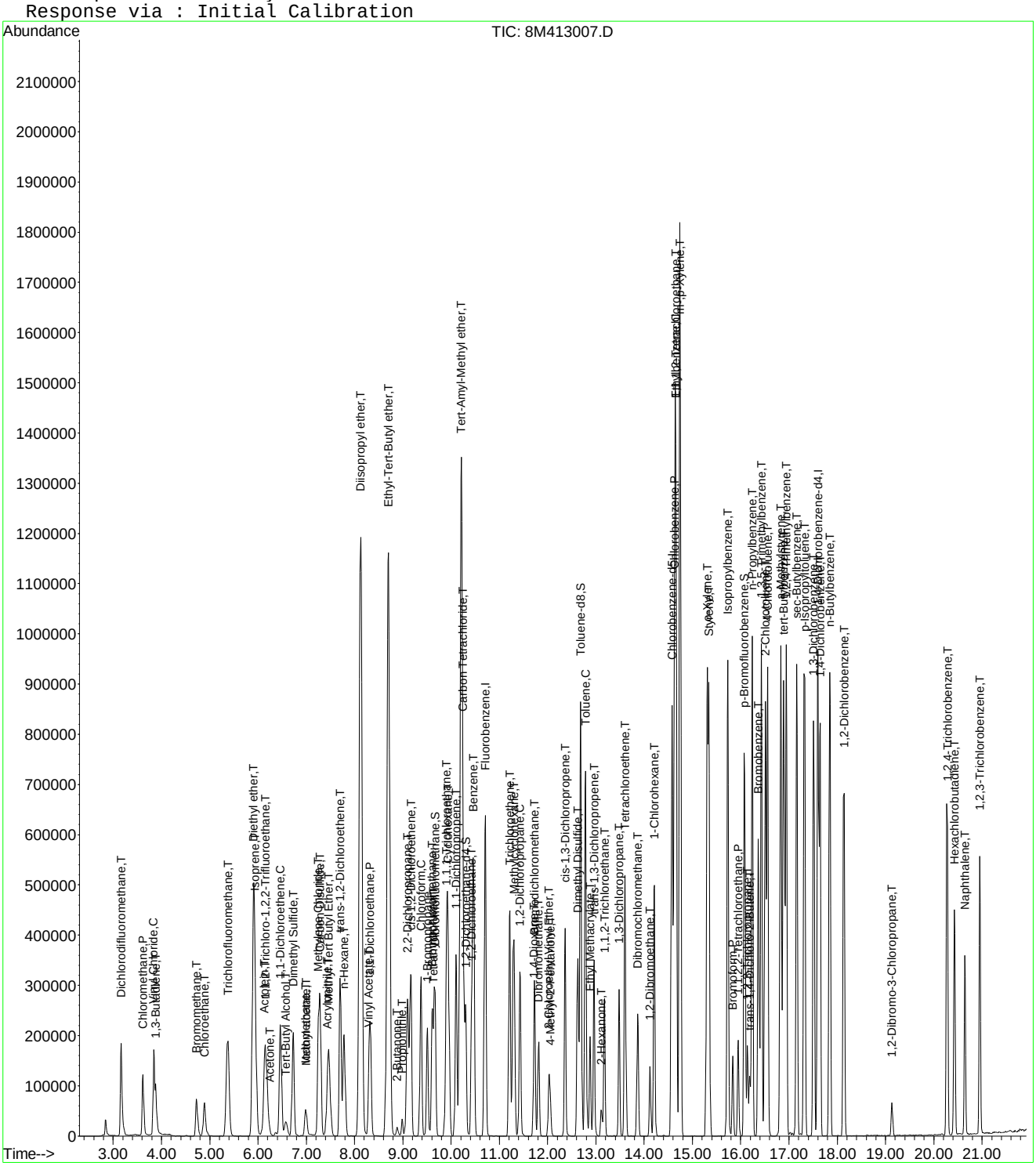

8M413007.D 8260WT.M Wed Jun 15 13:12:55 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413036.D Vial: 6
Acq On : 16 Jun 2016 16:21 Operator: FJB
Sample : WG573038-03 20ug/L LCS2 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:18:22 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	735322	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	553122	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	312159	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	213768	27.0578 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 108.24%		
43) 1,2-Dichloroethane-d4	10.30	65	240558	28.3971 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 113.60%		
58) Toluene-d8	12.68	98	752327	25.9891 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.96%		
80) p-Bromofluorobenzene	16.08	95	319552	24.7224 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.88%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	268839	21.8065 ug/L	99
3) Chloromethane	3.62	50	145372	20.2008 ug/L	99
4) Vinyl Chloride	3.85	62	205956	24.1222 ug/L	100
5) 1,3-Butadiene	3.88	54	22591	3.1551 ug/L	94
6) Bromomethane	4.72	94	76970	15.6580 ug/L	99
7) Chloroethane	4.89	64	102039	21.7196 ug/L	98
8) Trichlorofluoromethane	5.38	101	362939	22.8452 ug/L	98
9) Diethyl ether	5.90	59	397097	104.6998 ug/L	97
10) Isoprene	5.94	67	218692	22.6682 ug/L	99
11) Acrolein	6.14	56	33320	98.1209 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	161414	21.6149 ug/L	94
13) Acetone	6.23	43	19963	24.1301 ug/L	97
14) 1,1-Dichloroethene	6.46	61	233526	19.6401 ug/L	99
15) Tert-Butyl Alcohol	6.57	59	65029	245.2844 ug/L	97
16) Dimethyl Sulfide	6.73	62	155773	36.6403 ug/L	99
17) Iodomethane	6.99	142	48971	16.9853 ug/L	95
18) Methyl acetate	7.00	43	45727	20.4478 ug/L	97
19) Methylene Chloride	7.25	84	150567	19.8985 ug/L	100
20) Carbon Disulfide	7.29	76	462391	18.5829 ug/L	100
21) Acrylonitrile	7.43	53	21986	20.4823 ug/L	92
22) Methyl Tert Butyl Ether	7.47	73	371382	22.6774 ug/L	98
23) trans-1,2-Dichloroethene	7.70	61	222944	20.4092 ug/L	100
24) n-Hexane	7.78	57	159355	19.6456 ug/L	98
25) Diisopropyl ether	8.12	45	1757628	103.2229 ug/L	96
26) Vinyl Acetate	8.30	43	118636	15.2174 ug/L	100
27) 1,1-Dichloroethane	8.32	63	269975	19.9007 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1896750	103.9682 ug/L	98
29) 2-Butanone	8.88	43	25340	20.8472 ug/L	94
30) Propionitrile	8.99	54	36109	101.9393 ug/L	100
31) 2,2-Dichloropropane	9.10	77	336668	23.5494 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	179241	21.2357 ug/L	98
33) Chloroform	9.37	83	347237	21.6779 ug/L	100
34) 1-Bromopropane	9.51	122	37842	31.3001 ug/L	100
35) Bromochloromethane	9.61	130	89039	20.5714 ug/L	96
36) Tetrahydrofuran	9.63	42	72974	91.1522 ug/L	97
38) 1,1,1-Trichloroethane	9.91	97	353698	23.2464 ug/L	100
39) Cyclohexane	9.93	56	214088	20.3237 ug/L	97
40) 1,1-Dichloropropene	10.11	75	243549	21.0005 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1837419	110.8902 ug/L	99
42) Carbon Tetrachloride	10.25	117	311990	23.0917 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413036.D 8260WT.M Mon Jun 20 09:08:50 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413036.D Vial: 6
Acq On : 16 Jun 2016 16:21 Operator: FJB
Sample : WG573038-03 20ug/L LCS2 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:18:22 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	242552	23.5265 ug/L		98
46)	Benzene	10.46	78	636475	21.0718 ug/L		100
47)	Trichloroethene	11.21	130	181127	22.4834 ug/L		99
48)	Methylcyclohexane	11.30	83	268536	21.9418 ug/L		99
49)	1,2-Dichloropropane	11.42	63	141319	21.0171 ug/L		89
50)	Bromodichloromethane	11.73	83	265829	22.4935 ug/L		99
51)	1,4-Dioxane	11.72	88	6780	200.7309 ug/L		99
52)	Dibromomethane	11.81	93	79309	19.9255 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.02	63	56761	19.6402 ug/L		94
54)	4-Methyl-2-Pentanone	12.06	58	24424	20.6889 ug/L		92
55)	cis-1,3-Dichloropropene	12.36	75	282091	23.4507 ug/L		99
56)	Dimethyl Disulfide	12.62	79	140775	21.9263 ug/L		94
59)	Toluene	12.79	91	690537	20.1096 ug/L		99
60)	Ethyl Methacrylate	12.88	69	134927	20.4602 ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	242695	21.0901 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	106261	19.6107 ug/L		98
64)	2-Hexanone	13.12	58	20293	17.8218 ug/L	#	97
65)	1,3-Dichloropropane	13.48	76	202255	20.9653 ug/L		97
66)	Tetrachloroethene	13.60	164	150723	20.4869 ug/L		99
67)	Dibromochloromethane	13.87	129	164885	20.8405 ug/L		100
68)	1,2-Dibromoethane	14.12	107	107229	19.8562 ug/L		100
69)	1-Chlorohexane	14.21	91	238806	20.3731 ug/L		97
70)	Chlorobenzene	14.63	112	479877	20.7240 ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.66	131	187840	20.9390 ug/L		99
72)	Ethylbenzene	14.66	106	252056	19.8954 ug/L		96
73)	m-,p-Xylene	14.75	106	620374	41.7475 ug/L		96
74)	o-Xylene	15.31	106	310957	21.4035 ug/L		98
75)	Styrene	15.35	104	503519	21.1307 ug/L		97
76)	Bromoform	15.83	173	93776	19.9830 ug/L		98
77)	Isopropylbenzene	15.73	105	848704	21.9899 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	113419	18.1008 ug/L		100
81)	1,2,3-Trichloropropane	16.14	110	37740	19.5591 ug/L		73
82)	trans-1,4-Dichloro-2-Buten	16.19	53	34462	17.9212 ug/L		82
83)	n-Propylbenzene	16.24	91	1024017	21.0269 ug/L		99
84)	Bromobenzene	16.37	156	197176	19.6840 ug/L		97
85)	1,3,5-Trimethylbenzene	16.42	105	742680	20.9352 ug/L		99
86)	2-Chlorotoluene	16.51	91	701689	20.6371 ug/L		98
87)	4-Chlorotoluene	16.56	91	615763	20.0490 ug/L		99
88)	a-Methylstyrene	16.83	118	365485	21.7152 ug/L		99
89)	tert-Butylbenzene	16.89	134	141823	20.4349 ug/L		98
90)	1,2,4-Trimethylbenzene	16.94	105	742233	20.3475 ug/L		100
91)	sec-Butylbenzene	17.16	105	865092	20.7287 ug/L		100
92)	p-Isopropyltoluene	17.32	119	739719	20.8751 ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	398135	20.6412 ug/L		100
94)	1,4-Dichlorobenzene	17.64	146	395783	20.3529 ug/L		99
95)	n-Butylbenzene	17.85	91	695375	19.8498 ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	349070	20.3481 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	26890	21.3789 ug/L		96
98)	1,2,4-Trichlorobenzene	20.28	180	257503	20.0816 ug/L		99
99)	Hexachlorobutadiene	20.43	225	129798	21.6644 ug/L		98
100)	Naphthalene	20.65	128	344850	18.1014 ug/L		100
101)	1,2,3-Trichlorobenzene	20.96	180	209338	19.3508 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M413036.D 8260WT.M Mon Jun 20 09:08:51 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413036.D Vial: 6
Acq On : 16 Jun 2016 16:21 Operator: FJB
Sample : WG573038-03 20ug/L LCS2 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 8:18 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

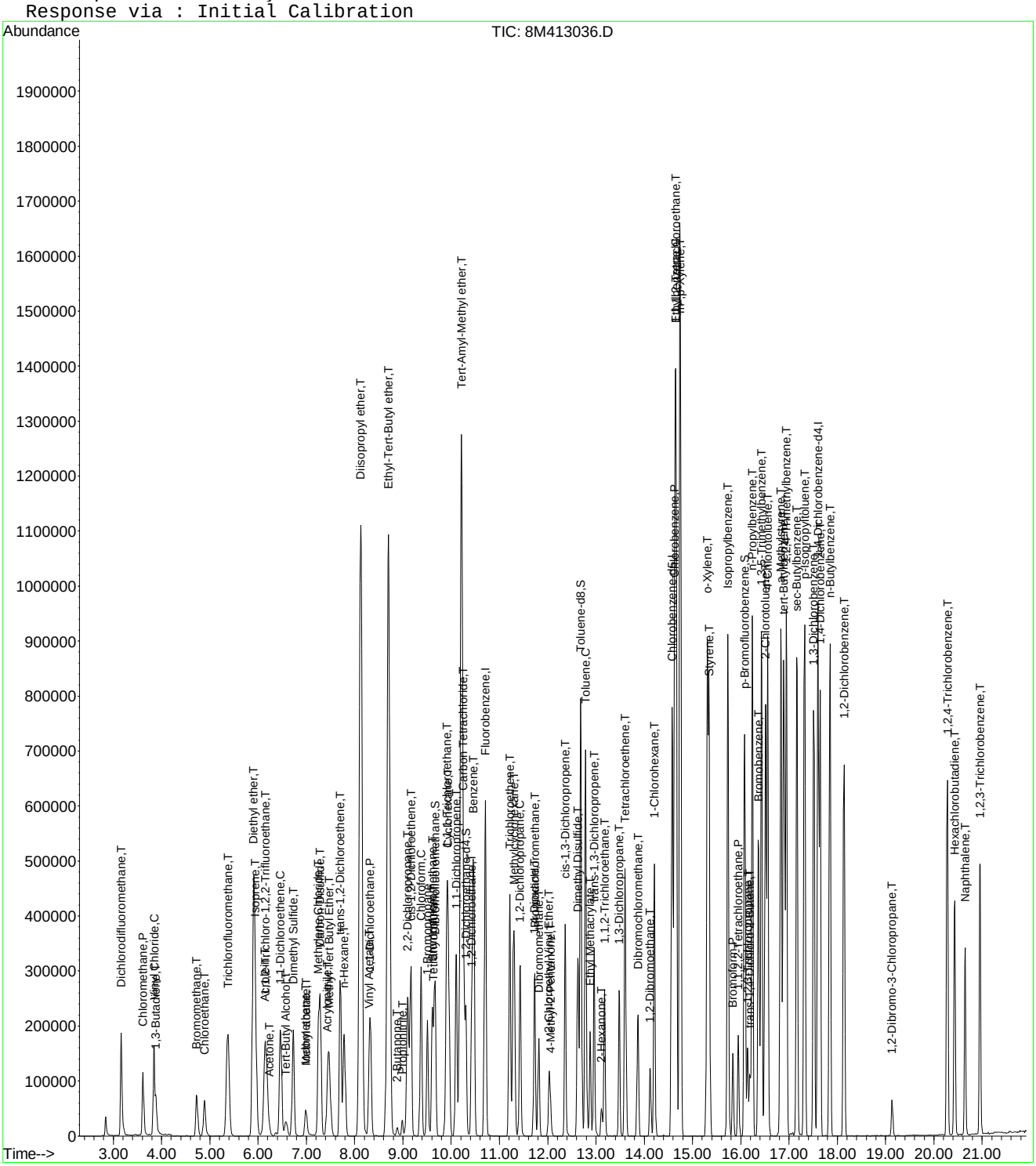

8M413036.D 8260WT.M Mon Jun 20 09:08:52 2016 Page 3

2.2 Semivolatiles Data

2.2.1 Semivolatiles GC/MS Data (Dioxane)

2.2.1.1 Summary Data

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	MW8-060916	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 15:19
Collect Date:	06/09/2016 11:00	**Dilution:**	1	**File ID:**	15M18414
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	0.649	J	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	52.6	20	129	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW26SW-060916	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 15:42
Collect Date:	06/09/2016 13:25	**Dilution:**	1	**File ID:**	15M18415
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	50.8	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	MW10-060916	**Prep Method:**	3520C	**Prep Date:**	06/13/2016 16:16
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/10/2016 12:30
Workgroup #:	WG572971	**Analyst:**	MES	**Run Date:**	06/16/2016 16:04
Collect Date:	06/09/2016 14:40	**Dilution:**	1	**File ID:**	15M18416
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	35.0	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.2.1.2 QC Summary Data

Example 8270 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:

	Example
Ax = Area of the characteristic ion for the compound being measured:	1261197
Cis = Concentration of the specific internal standard (ug/mL)	40
Ais = Area of the characteristic ion of the specific internal standard	608044
Cx = Concentration of the compound in the standard being measured (ug/mL)	50
RF = Calculated Response Factor	**1.65935**

2.0 Calculating the concentration (C) of a compound in water using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Vi)]

where:

	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Vi = Initial volume of sample extracted from prep log (mL)	1021
Cx = Concentration of the compound in the sample being measured (ug/mL)	0.016947
Cx = Concentration of the compound in the sample being measured (ug/L)	**16.947**

3.0 Calculating the concentration (C) of a compound in soil using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Wi)]

where:

	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Wi = Initial weight of sample extracted (g) from prep log	30
Cx = Concentration of the compound in the sample being measured (ug/g)	0.576763
Cx = Concentration of the compound in the sample being measured (ug/kg)	**576.7627**

Dry weight correction:

Percent solids (PCT_S)	50
Cd = (Cx) (100)/PCT_S	**1153.525** ug/kg

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve plot

b = intercept from curve plot

Step 2: Calculate y from Quantitation Report

y = 16790/784838 = 0.02139

Step 3: Solve for x

x = (y - b)/m = [(0.02139 -(- 0.0435)]/ 0.0783 = 0.829

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.829) = 20.72 ug/L

Example Spreadsheet Calculation:

Slope from curve, m:	0.0783	
Intercept from curve, b:	-0.0435	
Area of analyte, Ax:	16790	
Area of Internal Standard , Ais:	784484	
Concentration of IS, Cis	25.00	ug/L
Response Ratio (y) :	0.021403	
Amount Ratio:	0.828897	
Concentration (Cx):	20.72241	ug/L

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**0.0259**	
Value of B from plot:	**0.0596**	
Value of C from plot:	**-0.0165**	
Area of analyte from quantitation report:	**203233**	
Area of IS from quantiation report:	**1425653**	
Response ratio, y:	**0.142554**	
C - y:	**-0.15905**	
Root 1 - Computed amount ratio , X1:	**-3.88278**	
Root 2 - Computed amount ratio , X2:	**1.581623**	use this solution
Concentration of IS, Cis:	**40.00**	
Concentration of analyte, Cx:	**63.26**	ug/L

Microbac Laboratories Inc.
Continuous Sample Extract Log

Workgroup: WG572341
Analyst: CPD
Spike Analyst: CPD
Method: 3520C
Run Date: 06/13/2016 16:16
SOP: EXB01 Revison 20
Spike Witness: AED
Surr Solution: STD74051

TIME ON: 16:55 OFF: 12:40 ON: 15:20 OFF: 11:00

CH2CL2 Lot #: COA18982
sodium sulfate Lot #: COA18814
1:1 H2SO4 Lot #: RGT36755

	SAMPLE #	Type	Reference	Prod	pH	Init Amnt	Surr Amnt	Spike Amnt	Spike Sol	Final Vol	Color
1	L16060497-01	RS01		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
2	L16060497-02	MS01	L16060497-01	827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD66388	1 mL	Transparent
3	L16060497-03	SD01	L16060497-01	827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD66388	1 mL	Transparent
4	L16060504-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
5	L16060504-02	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
6	L16060504-03	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
7	L16060504-04	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
8	L16060615-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
9	L16060615-02	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
10	L16060615-03	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
11	L16060615-04	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
12	L16060616-01	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
13	L16060616-02	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
14	L16060616-03	SAMP		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
15	L16060637-03	SAMP		827-DIOX	<2	1000 mL	.05 mL			1 mL	Transparent
16	WG572341-01	BLANK		827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
17	WG572341-02	LCS		827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD66388	1 mL	Transparent
18	WG572341-03	REF	L16060497-01	827-DIOXANE	<2	1000 mL	.05 mL			1 mL	Transparent
19	WG572341-04	MS	L16060497-01	827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD66388	1 mL	Transparent
20	WG572341-05	MSD	L16060497-01	827-DIOXANE	<2	1000 mL	.05 mL	.05 mL	STD66388	1 mL	Transparent

Analyst: Chelsea Davis

Reviewer: Justin Hesson

EXTRACT - Modified 01/23/2009
PDF ID: 4809355
Report generated: 06/16/2016 08:25

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 061016
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG571947

Internal STD: STD75471 Surrogate STD: NA Calibration STD
CCV STD: STD74784 LCS STD: STD74214 MS/MSD STD:

Comments: L16051582-01, and L16060024-01,03,05 were already sent for re-extract due to QC contamination. L16060024s are being re-extracted as 827-SPE-DIOX only.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18332	BAKEOUT-IS CHECK	1	1		06/10/16 08:27
2	15M18333	BAKEOUT-IS CHECK	1	1		06/10/16 08:53
3	15M18334	WG571981-01 5PPM DFTPP STD	1	1	STD75016	06/10/16 09:13
4	15M18335	BAKEOUT-IS CHECK	1	1		06/10/16 09:31
5	15M18336	BAKEOUT-IS CHECK	1	1		06/10/16 09:53
6	15M18337	WG572230-01 5PPM DFTPP STD	1	1	STD75016	06/10/16 10:18
7	15M18338	WG572230-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 10:36
8	15M18339	WG572230-03 10 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 11:00
9	15M18340	WG572230-04 7.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 11:22
10	15M18341	WG572230-05 2.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 11:45
11	15M18342	WG572230-06 1 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 12:08
12	15M18343	WG572230-07 0.4 PPM 1,4-DIOXANE STD	1	1	STD74784	06/10/16 12:30
13	15M18344	WG572230-08 5PPM 1,4-DIOXANE ALT SRC	1	1	STD74214	06/10/16 12:52
14	15M18345	WG571410-01 BLANK 6/6	1	1		06/10/16 13:15
15	15M18346	WG571410-02 LCS 6/6	1	1		06/10/16 13:38
16	15M18347	WG571410-03 LCSDUP 6/6	1	1		06/10/16 14:01
17	15M18348	WG571404-01 BLANK 6/2	1	1		06/10/16 14:24
18	15M18349	WG571404-02 LCS 6/2	1	1		06/10/16 14:47
19	15M18350	WG571404-03 LCSDUP 6/2	1	1		06/10/16 15:09
20	15M18351	L16060067-01 827-DIOX	1	1		06/10/16 15:32
21	15M18352	L16051582-01 5X 827-DIOX	1	5		06/10/16 15:55
22	15M18353	L16060024-05 20X 827-DIOX	1	20		06/10/16 16:18
23	15M18354	L16060024-03 20X 827-DIOX	1	20		06/10/16 16:40
24	15M18355	L16060024-01 20,000X 827-DIOX	1	20000		06/10/16 17:03
25	15M18356	L16060067-01 2X 827-DIOX	1	2		06/10/16 17:26
26	15M18357	L16060024-03 100X 827-DIOX	1	100		06/10/16 17:49

Comments

Seq.	Rerun	Dil.	Reason	Analytes
3				
	DFTPP check after installing new source and retuning.			
17				
	WG571404-01 BLANK 6/2 dioxane hit above the RL.			

Page: 1 Approved: 13-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 061016

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG571947

Internal STD: STD75471 Surrogate STD: NA

CCV STD: STD74784 LCS STD: STD74214

Comments

Seq.	Rerun	Dil.	Reason	Analytes
18				
	WG571404-02 LCS 6/2 fails high.			
19				
	WG571404-03 LCSDUP 6/2 fails high.			
20	X	2	Over Calibration Range	
	L16060067-01			
23	X	100	Over Calibration Range	
	L16060024-03 20X DNR			

Page: 2 Approved: 13-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 061616
Analyst1: SCB Analyst2: MES
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG572971

Internal STD: STD75471, 76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18399	WG572958-01 5PPM DFTPP STD	1	1	STD75016	06/16/16 09:38
2	15M18400	WG572958-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/16/16 10:00
3	15M18401	WG572341-01 BLANK 6/13	1	1		06/16/16 10:23
4	15M18402	WG572341-02 LCS 6/13	1	1		06/16/16 10:46
5	15M18403	L16060497-01 REF 827-DIOX	1	1		06/16/16 11:08
6	15M18404	L16060497-02 MS 827-DIOX	1	1		06/16/16 11:31
7	15M18405	L16060497-03 MSD 827-DIOX	1	1		06/16/16 11:54
8	15M18406	L16060504-01 827-DIOX	1	1		06/16/16 12:17
9	15M18407	L16060504-02 827-DIOX	1	1		06/16/16 12:39
10	15M18408	L16060504-03 827-DIOX	1	1		06/16/16 13:02
11	15M18409	L16060504-04 827-DIOX	1	1		06/16/16 13:25
12	15M18410	L16060615-01 827-DIOX	1	1		06/16/16 13:48
13	15M18411	L16060615-02 827-DIOX	1	1		06/16/16 14:11
14	15M18412	L16060615-03 827-DIOX	1	1		06/16/16 14:33
15	15M18413	L16060615-04 827-DIOX	1	1		06/16/16 14:56
16	15M18414	L16060616-01 827-DIOX	1	1		06/16/16 15:19
17	15M18415	L16060616-02 827-DIOX	1	1		06/16/16 15:42
18	15M18416	L16060616-03 827-DIOX	1	1		06/16/16 16:04
19	15M18417	L16060637-03 827-DIOX	1	1		06/16/16 16:27

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 1 Approved: 20-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 10-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75640
Analytical Workgroups: L16051582, L16060024, L16060067

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 12-JUN-2016

Secondary Reviewer: 13-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-13-2016 08:34:44

Microbac Laboratories Inc.

Data Checklist

Date: 16-JUN-2016
Analyst: SCB
Analyst: MES
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75783
Analytical Workgroups: L16060497, L16060504, L16060615, L16060616, L16060637

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	SCB
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 20-JUN-2016 Sarah Bogolin

Secondary Reviewer: 20-JUN-2016 Eric C. Zum

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-20-2016 16:55:27

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8270D

AAB#: WG572971

Login Number: L16060616

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW8-060916	01	06/09/16					06/13/2016	4.2	7		06/16/16	3	40	
18CPTMW26SW-060916	02	06/09/16					06/13/2016	4.1	7		06/16/16	3	40	
MW10-060916	03	06/09/16					06/13/2016	4.1	7		06/16/16	3	40	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4814679
Report generated 06/21/2016 08:52

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060616
Instrument Id: HPMS15
Workgroup (AAB#): WG572971

Method: 827-DIOXANE
CAL ID: HPMS15-10-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1
L16060616-01	1.00	01	52.6
L16060616-02	1.00	01	50.8
L16060616-03	1.00	01	35.0
WG572341-01	1.00	01	29.4
WG572341-02	1.00	01	35.7

Surrogates	Surrogate Limits		
1 - 1,4-Dioxane-d8	20	-	129

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4814688
Report generated: 06/21/2016 08:52

METHOD BLANK SUMMARY

Login Number: L16060616
Blank File ID: 15M18401
Prep Date: 06/13/16 16:16
Analyzed Date: 06/16/16 10:23
Analyst: MES

Work Group: WG572971
Blank Sample ID: WG572341-01
Instrument ID: HPMS15
Method: 8270D

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572341-02	15M18402	06/16/16 10:46	01
MW8-060916	L16060616-01	15M18414	06/16/16 15:19	01
18CPTMW26SW-060916	L16060616-02	15M18415	06/16/16 15:42	01
MW10-060916	L16060616-03	15M18416	06/16/16 16:04	01

Report Name: BLANK_SUMMARY
PDF File ID: 4814680
Report generated 06/21/2016 08:52

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060616 Prep Date: 06/13/16 16:16 Sample ID: WG572341-01
Instrument ID: HPMS15 Run Date: 06/16/16 10:23 Prep Method: 3520C
File ID: 15M18401 Analyst: MES Method: 8270D
Workgroup (AAB#): WG572971 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS15-10-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
1,4-Dioxane	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	29.4	20 - 129	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4814681
21-JUN-2016 08:52

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060616 Run Date: 06/16/2016 Sample ID: WG572341-02
Instrument ID: HPMS15 Run Time: 10:46 Prep Method: 3520C
File ID: 15M18402 Analyst: MES Method: 8270D
Workgroup (AAB#): WG572971 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD66388 Cal ID: HPMS15-10-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
1,4-Dioxane	5.00	1.67	33.3	30 - 104	

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	35.7	20 - 129	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4814682
Report generated: 06/21/2016 08:52

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16060616
Instrument: HPMS15
Analyst: MES
Workgroup: WG572230

Tune ID: WG572230-01
Run Date: 06/10/2016
Run Time: 10:18
File ID: 15M18337
Cal ID: HPMS15 - 10-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	39.5	52157	PASS
68.0	69.0	0	2.00	1.91	1026	PASS
69.0	198	0	100	40.8	53844	PASS
70.0	69.0	0	2.00	0.223	120	PASS
127	198	40.0	60.0	51.4	67853	PASS
197	198	0	1.00	0.383	505	PASS
198	198	100	100	100	131981	PASS
199	198	5.00	9.00	6.72	8869	PASS
275	198	10.0	30.0	26.4	34853	PASS
365	198	1.00	100	3.17	4186	PASS
441	443	0.0100	100	73.9	15632	PASS
442	198	40.0	100	83.4	110112	PASS
443	442	17.0	23.0	19.2	21163	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG572230-02	STD-CCV	01	06/10/2016 10:36	
WG572230-03	STD	01	06/10/2016 11:00	
WG572230-04	STD	01	06/10/2016 11:22	
WG572230-05	STD	01	06/10/2016 11:45	
WG572230-06	STD	01	06/10/2016 12:08	
WG572230-07	STD	01	06/10/2016 12:30	
WG572230-08	SSCV	01	06/10/2016 12:52	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4814685
Report generated 06/21/2016 08:52

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16060616
Instrument: HPMS15
Analyst: MES
Workgroup: WG572958

Tune ID: WG572958-01
Run Date: 06/16/2016
Run Time: 09:38
File ID: 15M18399
Cal ID: HPMS15 - 10-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	39.7	42335	PASS
68.0	69.0	0	2.00	1.65	714	PASS
69.0	198	0	100	40.7	43391	PASS
70.0	69.0	0	2.00	0.643	279	PASS
127	198	40.0	60.0	52.1	55592	PASS
197	198	0	1.00	0.0637	68	PASS
198	198	100	100	100	106736	PASS
199	198	5.00	9.00	6.72	7172	PASS
275	198	10.0	30.0	25.9	27632	PASS
365	198	1.00	100	3.04	3241	PASS
441	443	0.0100	100	76.2	12912	PASS
442	198	40.0	100	81.0	86427	PASS
443	442	17.0	23.0	19.6	16937	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG572958-02	CCV	01	06/16/2016 10:00	
WG572341-01	BLANK	01	06/16/2016 10:23	
WG572341-02	LCS	01	06/16/2016 10:46	
L16060616-01	MW8-060916	01	06/16/2016 15:19	
L16060616-02	18CPTMW26SW-060916	01	06/16/2016 15:42	
L16060616-03	MW10-060916	01	06/16/2016 16:04	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4814685
Report generated 06/21/2016 08:52

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060616
Analytical Method: 8270D
ICAL Workgroup: WG572230

Instrument ID: HPMS15
Initial Calibration Date: 10-JUN-16 12:30
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
1,4-Dioxane		0.3253	2.74		

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4814683
Report generated 06/21/2016 08:52

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060616

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 10-JUN-16 12:30

Column ID: F

Analyte	WG572230-02			WG572230-03			WG572230-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	5.00	107215.000	0.3234	10.0	192761.000	0.3420	7.50	146003.000	0.3236

INT_CAL - Modified 03/06/2008
PDF File ID: 4814683
Report generated 06/21/2016 08:52

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060616

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 10-JUN-16 12:30

Column ID: F

Analyte	WG572230-05			WG572230-06			WG572230-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	2.50	36488.0000	0.3190	1.00	18621.0000	0.3169	0.400	6733.00000	0.3266

INT_CAL - Modified 03/06/2008
PDF File ID: 4814683
Report generated 06/21/2016 08:52

Calibration Table Report
Method: DIOXANE_D8.M
Title: OVD MSS01 SIM 1,4-dioxane ICAL 061016
Last Calibration: Fri Jun 10 12:46:00 2016
Curve:WG572230
Calibration Files

Compound	10 15M18339.D	7.5 15M18340.D	5 15M18338.D	2.5 15M18341.D	1 15M18342.D	0.4 15M18343.D	Avg	%RSD	Linear
1,4-Dichlorobenzene-d4	ISTD								
1,4-Dioxane	0.342	0.324	0.324	0.319	0.317	0.327	0.325	2.735	
1,4-Dioxane-d8	0.440	0.415	0.417	0.411	0.409		0.419	2.988	
Nitrobenzene-d5	1.115	1.034	0.970	0.852	0.755	0.697	0.904	18.064	0.994
2-Fluorobiphenyl	2.685	2.595	2.549	2.638	2.570	2.639	2.613	1.934	
p-Terphenyl-d14	2.815	2.671	2.579	2.506	2.382	2.421	2.562	6.338	

Sun Jun 12 19:13:55 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060616 Run Date: 06/10/2016 Sample ID: WG572230-08
Instrument ID: HPMS15 Run Time: 12:52 Method: 8270D
File ID: 15M18344 Analyst: MES QC Key: DOD4
ICal Workgroup: WG572230 Cal ID: HPMS15 - 10-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
1,4-Dioxane		5000	5110	ug/L	0.333	2.30	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4814684
Report generated 06/21/2016 08:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG572958-02
Instrument ID: HPMS15
Run Time: 10:00
Method: 8270D
File ID: 15M18400
Analyst: MES
QC Key: DOD4
Workgroup (AAB#): WG572971
Cal ID: HPMS15 - 10-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,4-Dioxane		5000	5080	ug/L	0.331	1.65	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4814686
Report generated 06/21/2016 08:52

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060616
Instrument ID: HPMS15
Workgroup (AAB#): WG572971

ICAL CCV Number: WG572230-02
CAL ID: HPMS15-10-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG572230-02	NA	NA	66625
Upper Limit	NA	NA	133250
Lower Limit	NA	NA	33313
L16060616-01	1.00	01	52733
L16060616-02	1.00	01	45224
L16060616-03	1.00	01	49761
WG572341-01	1.00	01	57712
WG572341-02	1.00	01	54087

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4814687
Report generated 06/21/2016 08:52

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060616
Instrument ID: HPMS15
Workgroup (AAB#): WG572971

ICAL CCV Number: WG572230-02
CAL ID: HPMS15-10-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG572230-02	NA	NA	6.94
Upper Limit	NA	NA	7.44
Lower Limit	NA	NA	6.44
L16060616-01	1.00	01	6.955
L16060616-02	1.00	01	6.955
L16060616-03	1.00	01	6.955
WG572341-01	1.00	01	6.948
WG572341-02	1.00	01	6.951

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4814689
Report generated: 06/21/2016 08:52

2.2.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18414.D
Acq On : 16 Jun 2016 15:19
Operator : MES
Sample : L16060616-01 827-DIOX
Misc : 1,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jun 16 17:37:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.955	152	52733	1.0000	ug/mL	# 0.02
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.883	96	58024	2.6289	ug/L	0.02
Spiked Amount 5.000			Recovery	=	52.60%	
4) Nitrobenzene-d5	7.453	82	2808	0.2676	ug/L	0.02
Spiked Amount 5.000			Recovery	=	5.40%	
5) 2-Fluorobiphenyl	8.941	172	631	0.0046	ug/L	0.02
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.247	244	15751	0.1166	ug/L	0.07
Spiked Amount 5.000			Recovery	=	2.40%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.919	58	11130	0.6487	ug/L	87

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18414.D
Acq On : 16 Jun 2016 15:19
Operator : MES
Sample : L16060616-01 827-DIOX
Misc : 1,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jun 16 17:37:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

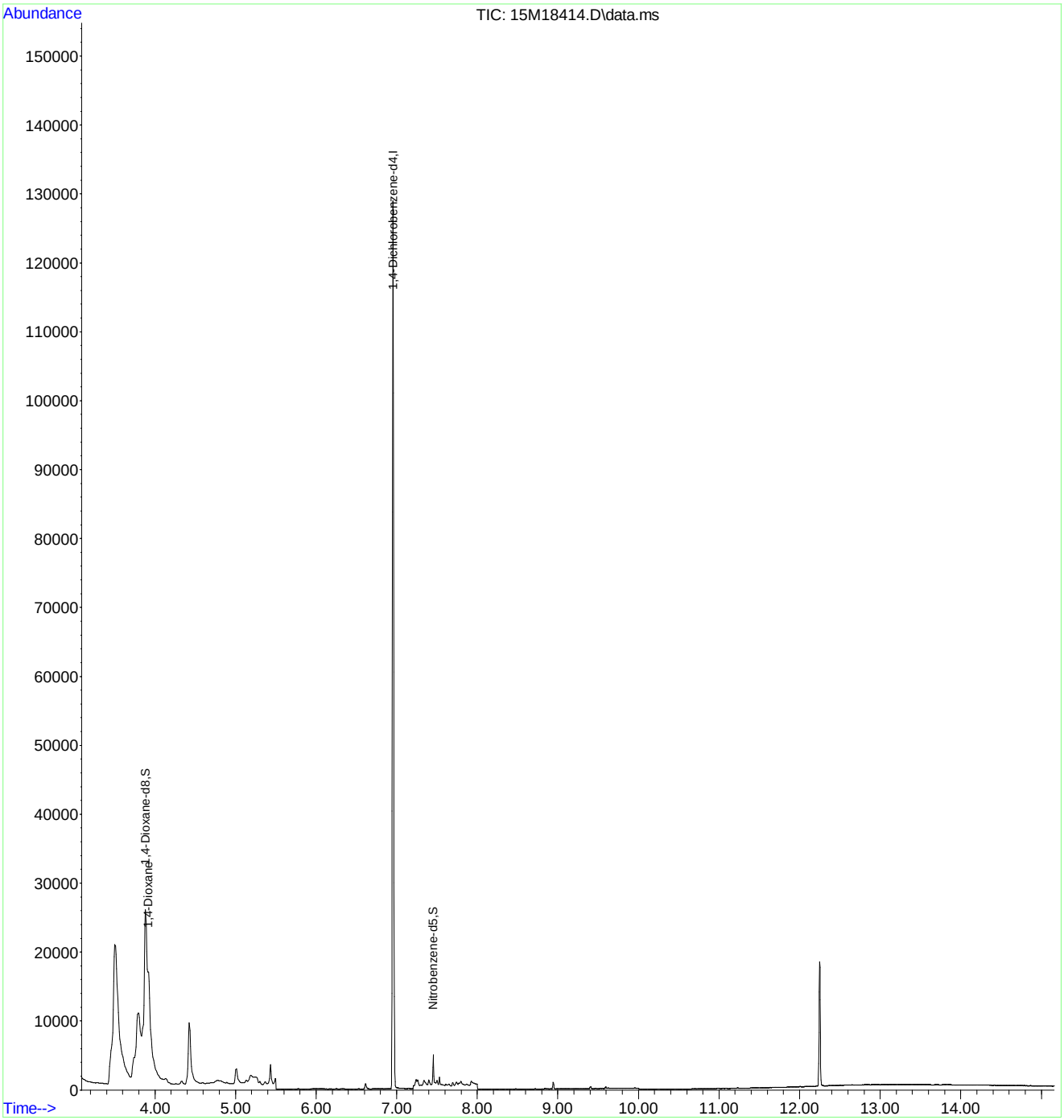

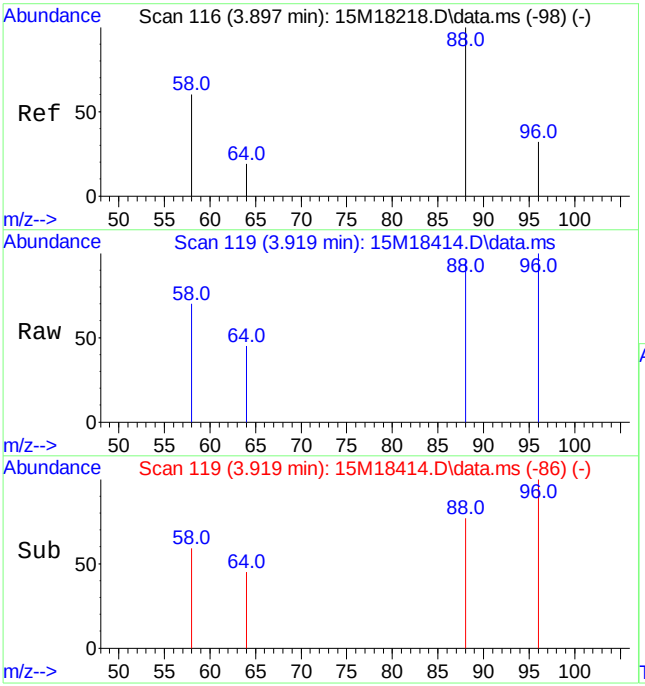

#2
1,4-Dioxane
Concen: 0.65 ug/L
RT: 3.919 min Scan# 119
Delta R.T. 0.022 min
Lab File: 15M18414.D
Acq: 16 Jun 2016 15:19

Tgt Ion: 58 Resp: 11130

Ion	Ratio	Lower	Upper
58	100		
88	154.3	103.1	240.7

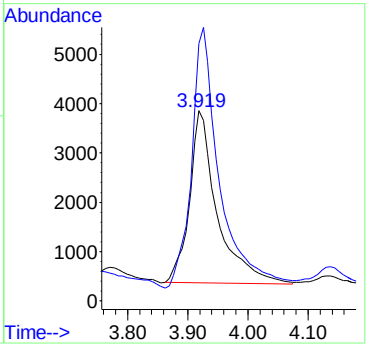

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18415.D
Acq On : 16 Jun 2016 15:42
Operator : MES
Sample : L16060616-02 827-DIOX
Misc : 1,1
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Jun 16 17:37:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.955	152	45224	1.0000	ug/mL	# 0.01
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.869	96	48075	2.5398	ug/L	0.00
Spiked Amount 5.000			Recovery	=	50.80%	
4) Nitrobenzene-d5	7.452	82	3291	0.2858	ug/L	0.02
Spiked Amount 5.000			Recovery	=	5.80%	
5) 2-Fluorobiphenyl	8.945	172	2161	0.0183	ug/L	0.02
Spiked Amount 5.000			Recovery	=	0.40%	
6) p-Terphenyl-d14	12.225	244	2114	0.0182	ug/L	0.04
Spiked Amount 5.000			Recovery	=	0.40%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18415.D
Acq On : 16 Jun 2016 15:42
Operator : MES
Sample : L16060616-02 827-DIOX
Misc : 1,1
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Jun 16 17:37:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

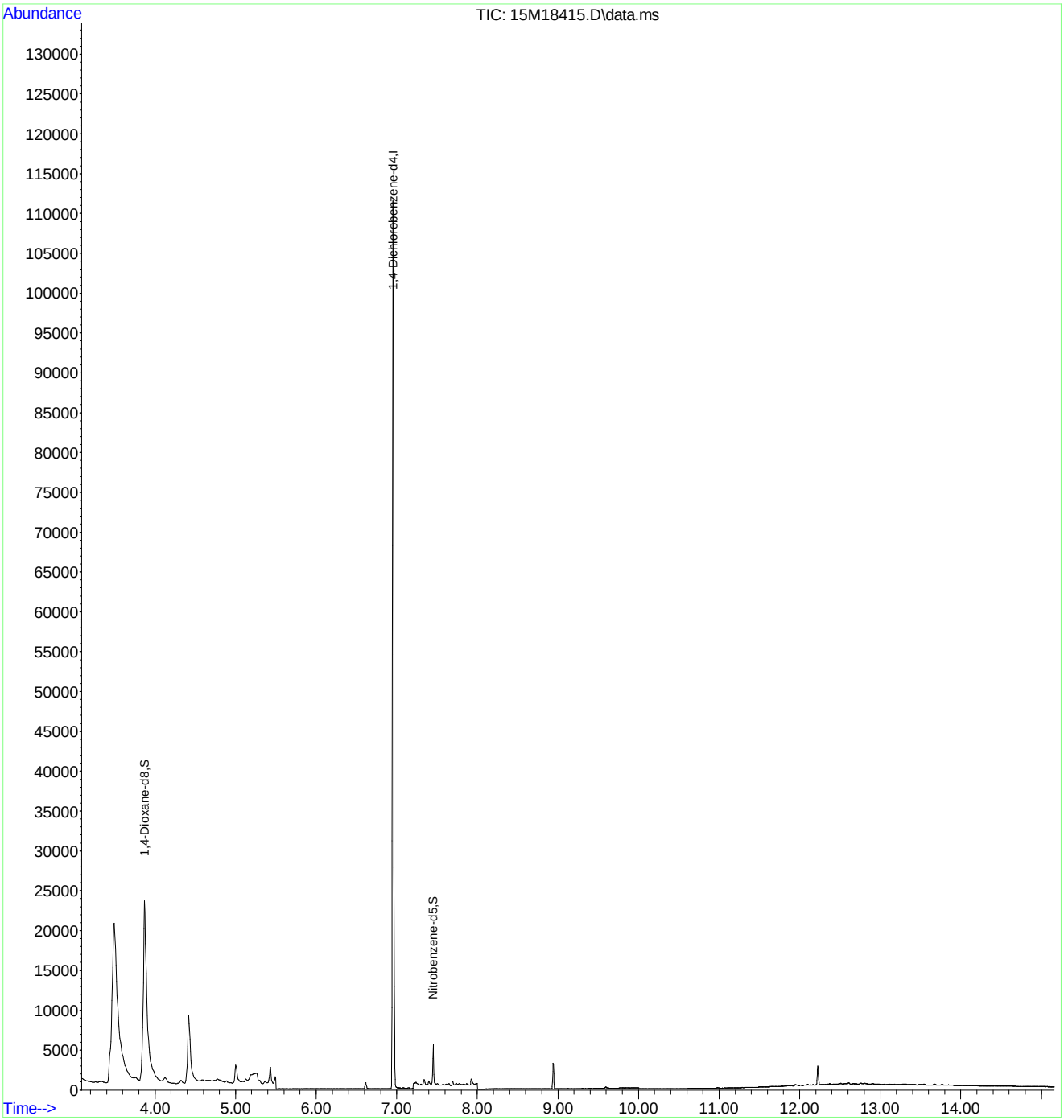

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18416.D
Acq On : 16 Jun 2016 16:04
Operator : MES
Sample : L16060616-03 827-DIOX
Misc : 1,1
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Jun 16 17:37:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.955	152	49761	1.0000	ug/mL	# 0.02
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.883	96	36463	1.7507	ug/L	0.02
Spiked Amount 5.000			Recovery	=	35.00%	
4) Nitrobenzene-d5	7.453	82	1828	0.2522	ug/L	0.02
Spiked Amount 5.000			Recovery	=	5.00%	
5) 2-Fluorobiphenyl	8.941	172	170	0.0013	ug/L	0.02
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.210	244	408	0.0032	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.00%	

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18416.D
Acq On : 16 Jun 2016 16:04
Operator : MES
Sample : L16060616-03 827-DIOX
Misc : 1,1
ALS Vial : 18 Sample Multiplier: 1

Quant Time: Jun 16 17:37:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

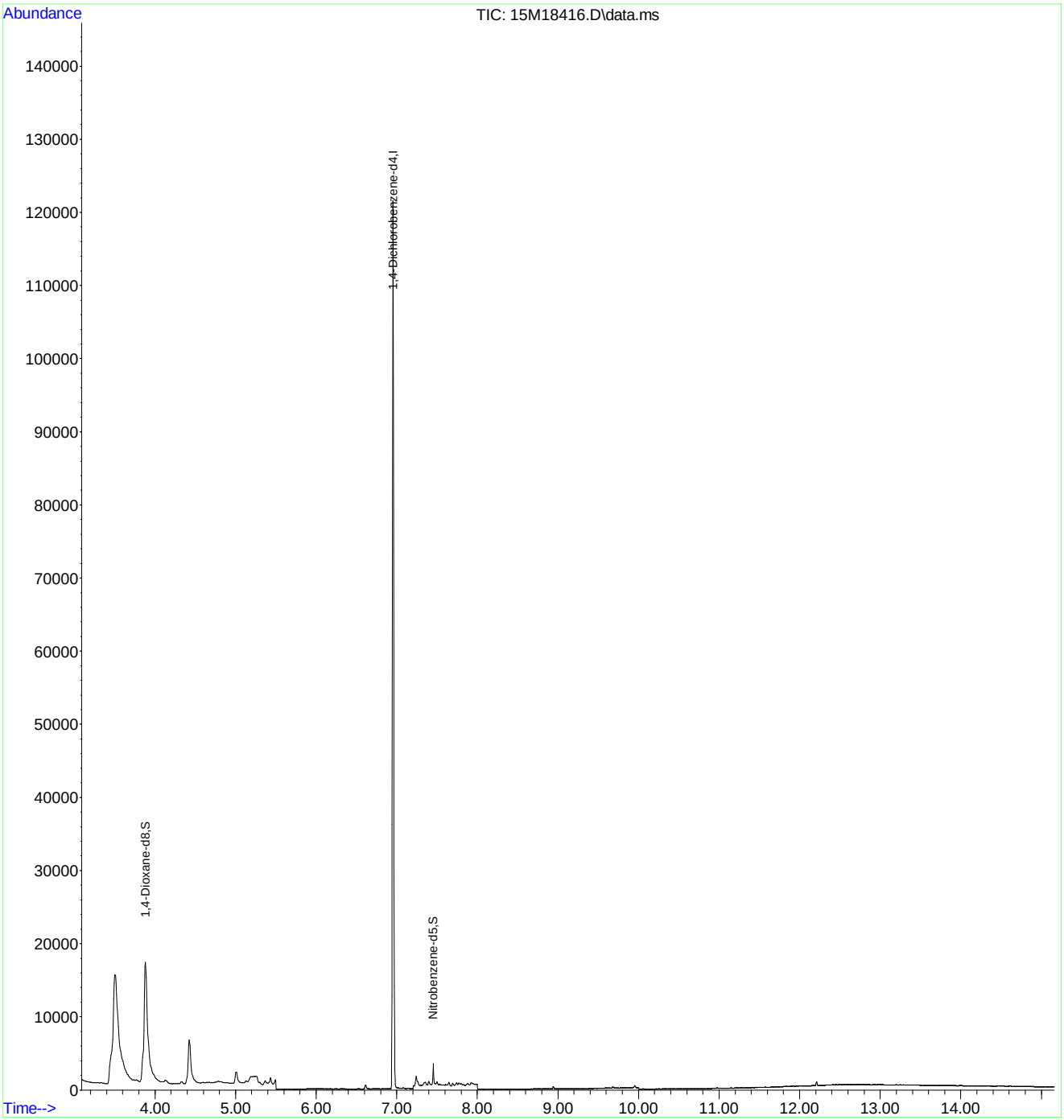

2.2.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18338.D
Acq On : 10 Jun 2016 10:36
Operator : MES
Sample : WG572230-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 10 18:15:30 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	66625	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	138302	4.9596	ug/L	0.00
Spiked Amount 5.000			Recovery	=	99.20%	
4) Nitrobenzene-d5	7.436	82	321639	4.7189	ug/L	0.00
Spiked Amount 5.000			Recovery	=	94.40%	
5) 2-Fluorobiphenyl	8.926	172	845013	4.8542	ug/L	0.00
Spiked Amount 5.000			Recovery	=	97.00%	
6) p-Terphenyl-d14	12.181	244	855352	5.0103	ug/L	0.00
Spiked Amount 5.000			Recovery	=	100.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	107215	4.9462	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18338.D
Acq On : 10 Jun 2016 10:36
Operator : MES
Sample : WG572230-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 10 18:15:30 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

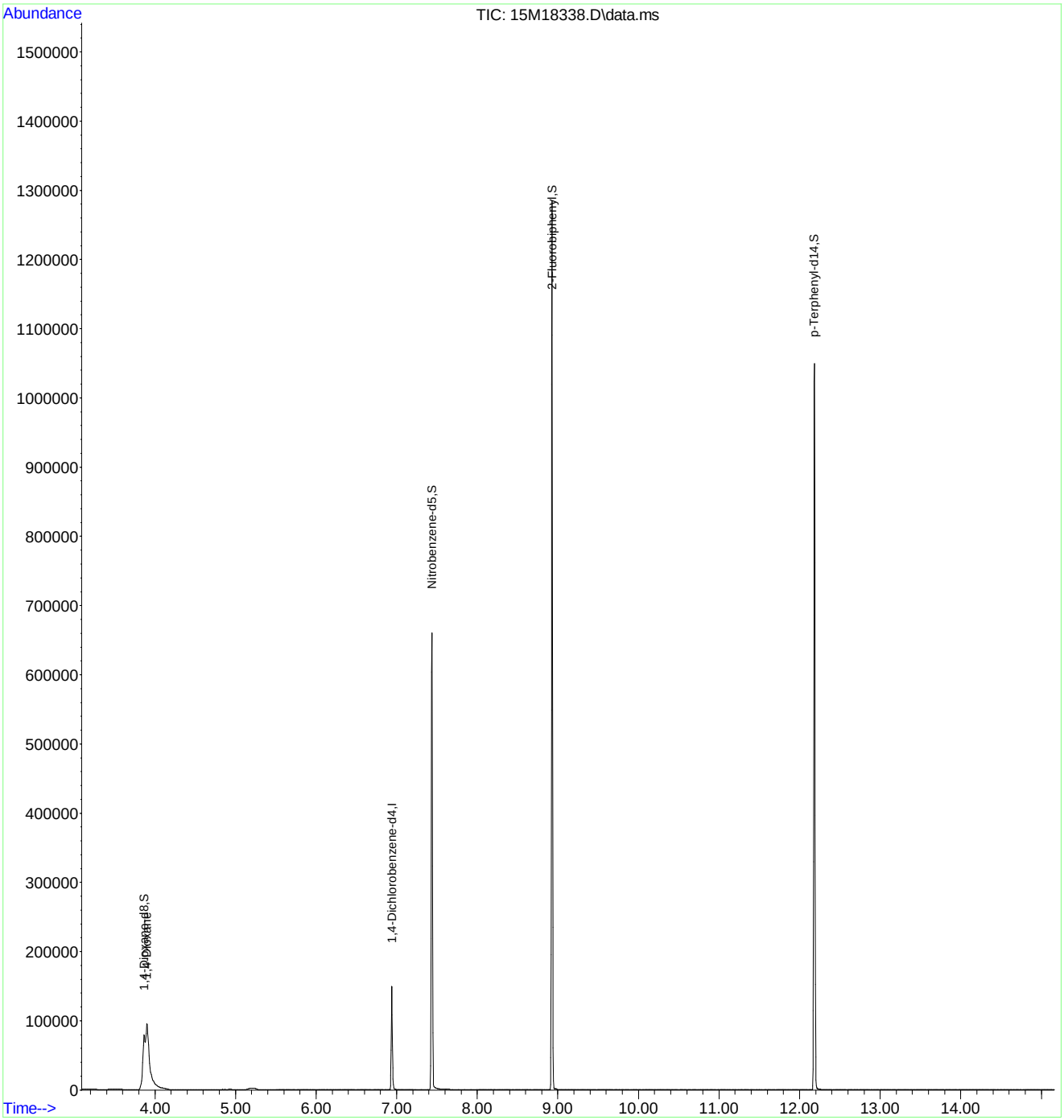

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18339.D
Acq On : 10 Jun 2016 11:00
Operator : MES
Sample : WG572230-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 10 18:15:34 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	56194	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	248072	10.5474	ug/L	0.00
Spiked Amount 5.000			Recovery = 211.00%			
4) Nitrobenzene-d5	7.436	82	628184	10.6403	ug/L	0.00
Spiked Amount 5.000			Recovery = 212.80%			
5) 2-Fluorobiphenyl	8.926	172	1513331	10.3070	ug/L	0.00
Spiked Amount 5.000			Recovery = 206.20%			
6) p-Terphenyl-d14	12.184	244	1587021	11.0217	ug/L	0.00
Spiked Amount 5.000			Recovery = 220.40%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	192761	10.5434	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18339.D
Acq On : 10 Jun 2016 11:00
Operator : MES
Sample : WG572230-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 10 18:15:34 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

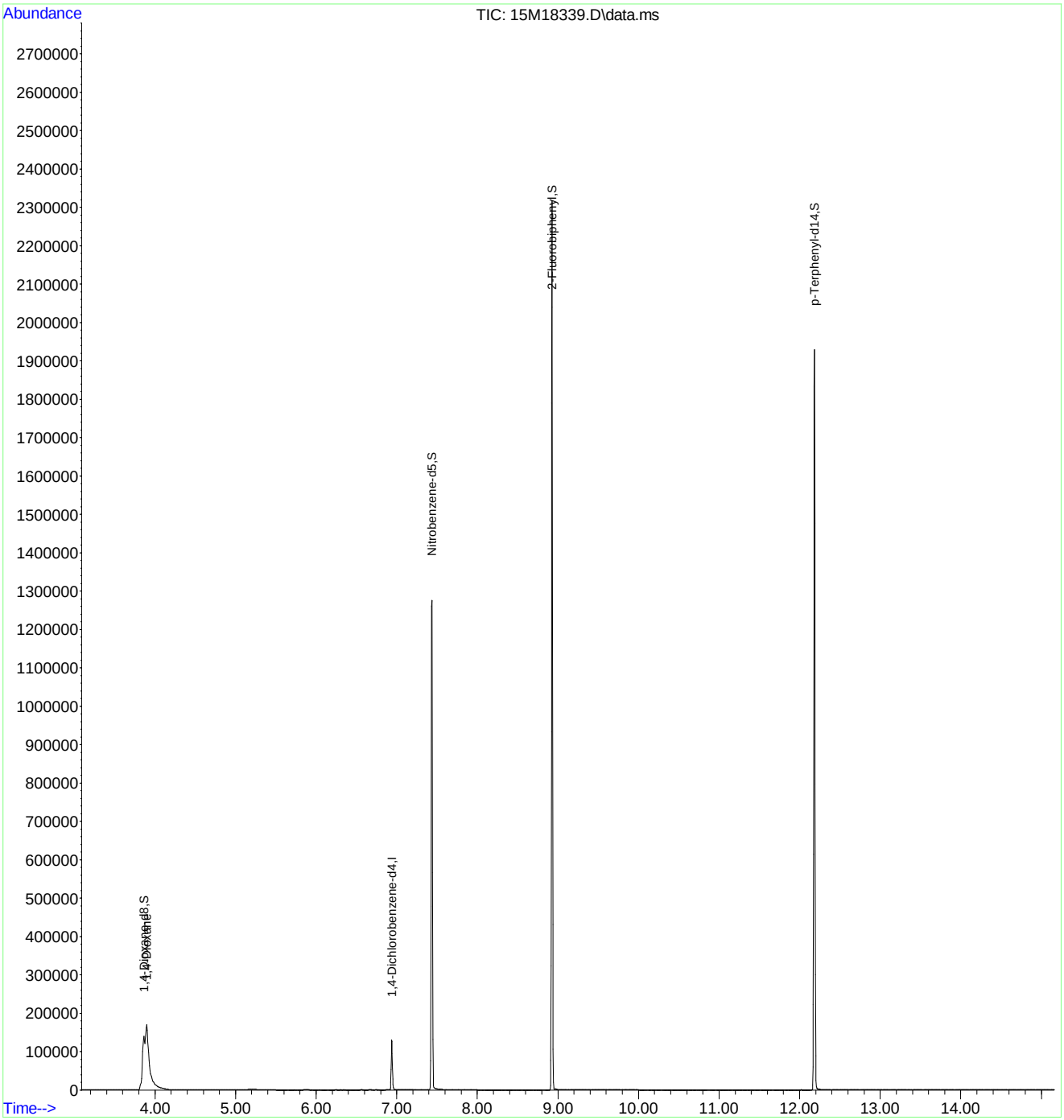

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18340.D
Acq On : 10 Jun 2016 11:22
Operator : MES
Sample : WG572230-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 10 18:15:37 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.940	152	60457	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.862	96	187351	7.4040 ug/L	0.00
Spiked Amount 5.000			Recovery	= 148.00%	
4) Nitrobenzene-d5	7.431	82	466388	7.4103 ug/L	0.00
Spiked Amount 5.000			Recovery	= 148.20%	
5) 2-Fluorobiphenyl	8.926	172	1170859	7.4122 ug/L	0.00
Spiked Amount 5.000			Recovery	= 148.20%	
6) p-Terphenyl-d14	12.192	244	1205938	7.7846 ug/L	0.01
Spiked Amount 5.000			Recovery	= 155.60%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.897	58	146003	7.4228 ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18340.D
Acq On : 10 Jun 2016 11:22
Operator : MES
Sample : WG572230-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 10 18:15:37 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

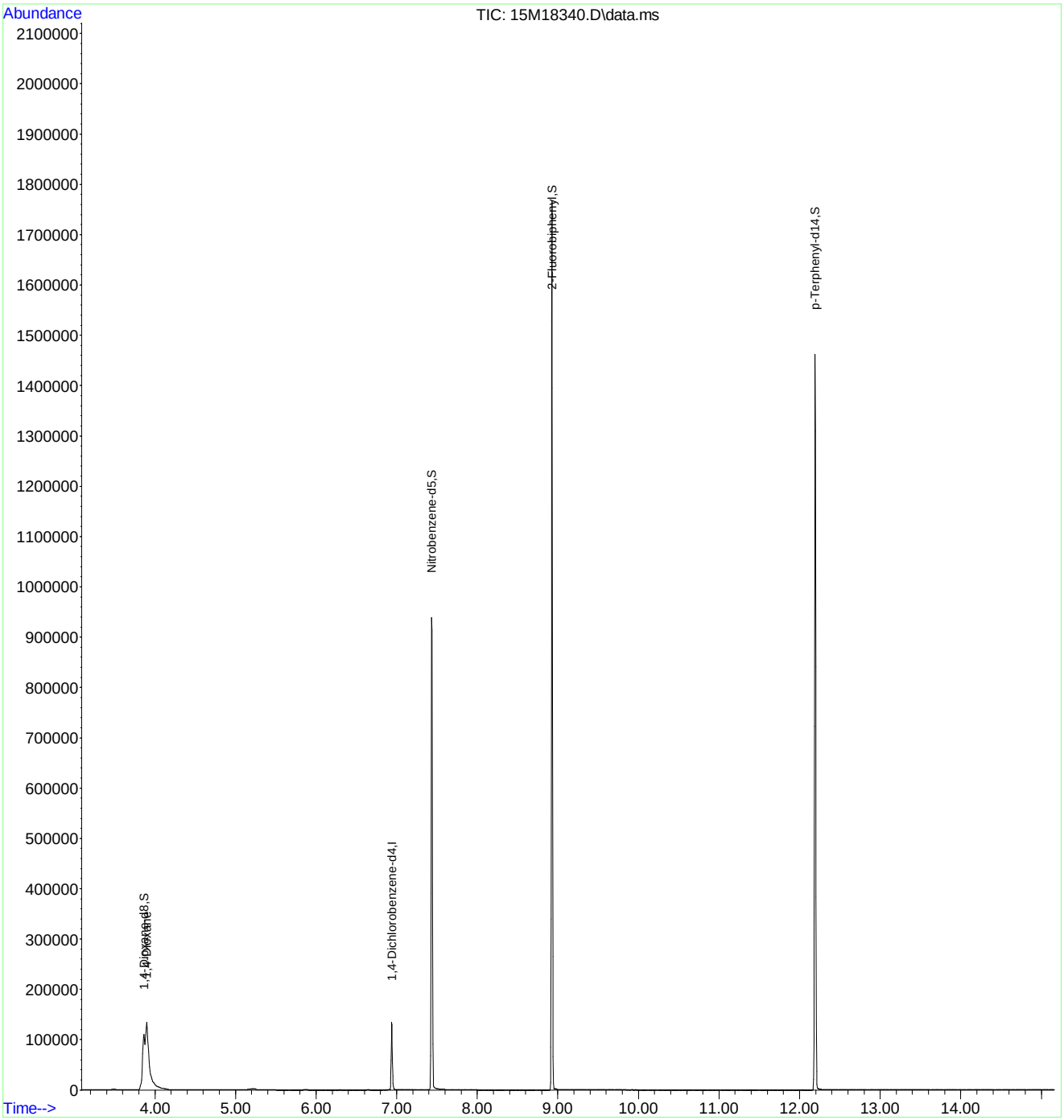

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18341.D
Acq On : 10 Jun 2016 11:45
Operator : MES
Sample : WG572230-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 10 18:15:40 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	45954	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.848	96	46972	2.4422	ug/L	-0.01
Spiked Amount 5.000			Recovery	=	48.80%	
4) Nitrobenzene-d5	7.436	82	97423	2.1945	ug/L	0.00
Spiked Amount 5.000			Recovery	=	43.80%	
5) 2-Fluorobiphenyl	8.926	172	301696	2.5127	ug/L	0.00
Spiked Amount 5.000			Recovery	=	50.20%	
6) p-Terphenyl-d14	12.188	244	286720	2.4350	ug/L	0.00
Spiked Amount 5.000			Recovery	=	48.60%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.883	58	36488	2.4405	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18341.D
Acq On : 10 Jun 2016 11:45
Operator : MES
Sample : WG572230-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 10 18:15:40 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

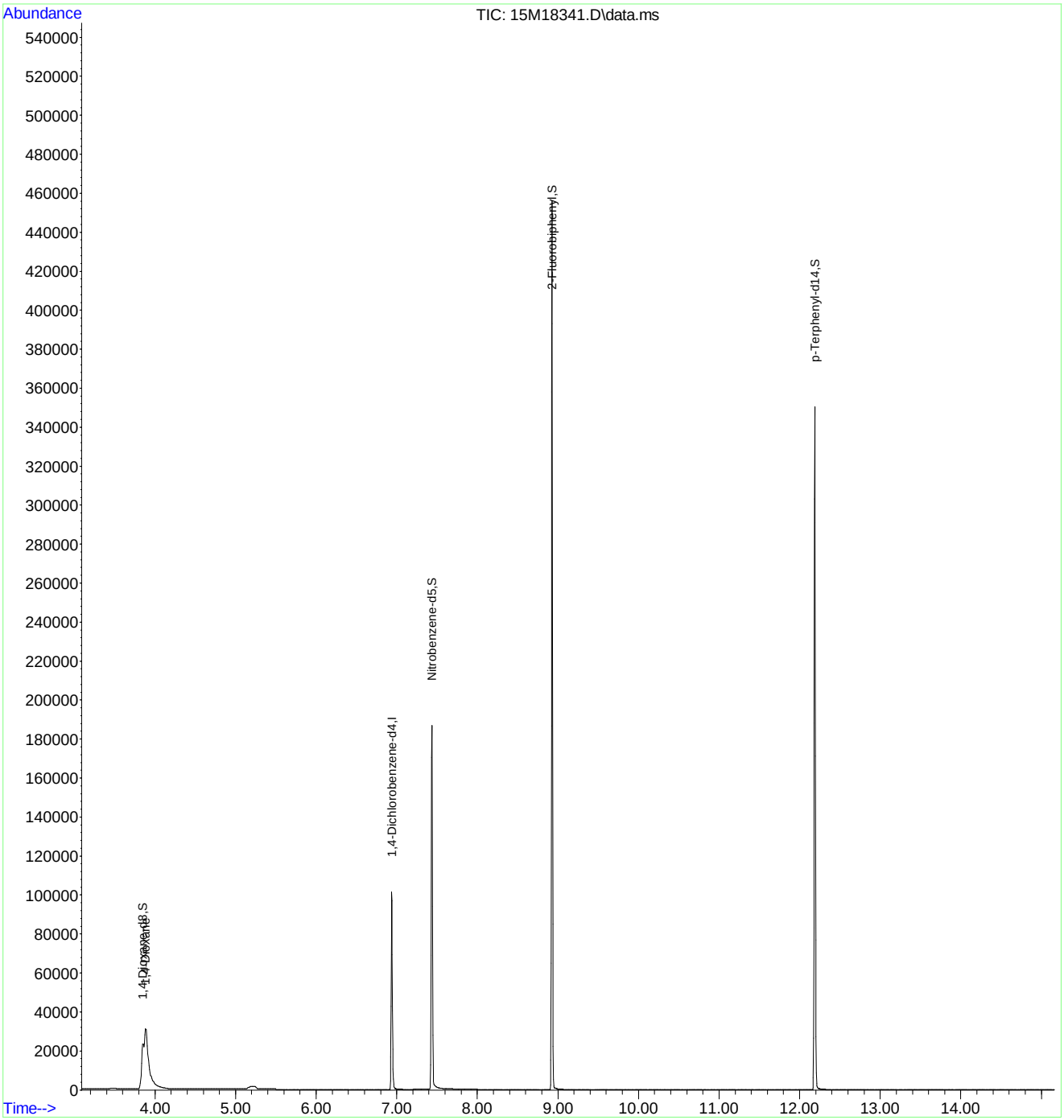

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18342.D
Acq On : 10 Jun 2016 12:08
Operator : MES
Sample : WG572230-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 10 18:15:43 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	59037	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	24054	0.9735	ug/L	0.00
Spiked Amount 5.000			Recovery = 19.40%			
4) Nitrobenzene-d5	7.436	82	44358	0.9184	ug/L	0.00
Spiked Amount 5.000			Recovery = 18.40%			
5) 2-Fluorobiphenyl	8.926	172	151018	0.9790	ug/L	0.00
Spiked Amount 5.000			Recovery = 19.60%			
6) p-Terphenyl-d14	12.199	244	140040	0.9257	ug/L	0.02
Spiked Amount 5.000			Recovery = 18.60%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.904	58	18621	0.9695	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18342.D
Acq On : 10 Jun 2016 12:08
Operator : MES
Sample : WG572230-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 10 18:15:43 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

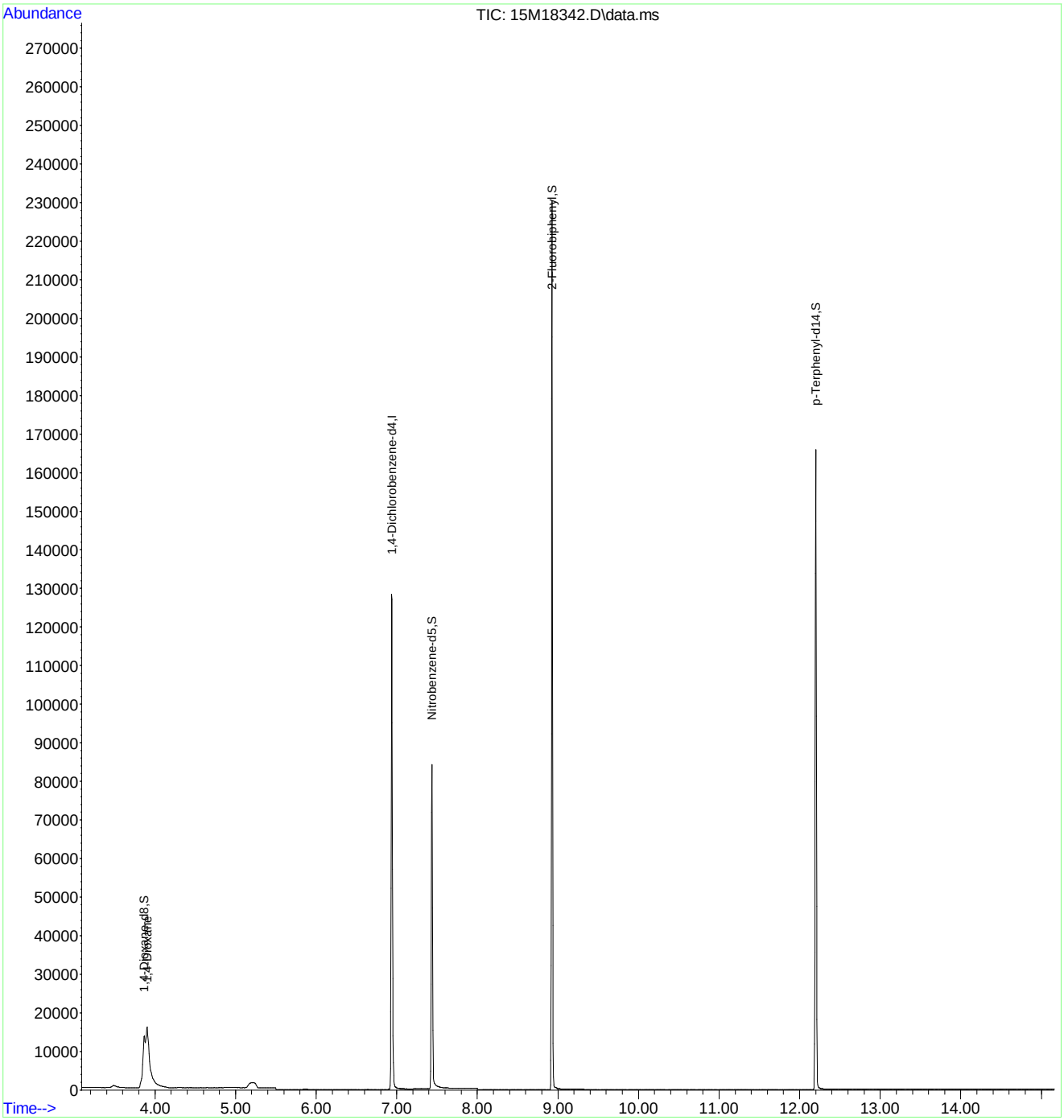

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18343.D
Acq On : 10 Jun 2016 12:30
Operator : MES
Sample : WG572230-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 10 18:15:46 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	51531	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	8760	0.4062	ug/L	0.00
Spiked Amount 5.000			Recovery	=	8.20%	
4) Nitrobenzene-d5	7.436	82	14371	0.4779	ug/L	0.00
Spiked Amount 5.000			Recovery	=	9.60%	
5) 2-Fluorobiphenyl	8.926	172	54404	0.4041	ug/L	0.00
Spiked Amount 5.000			Recovery	=	8.00%	
6) p-Terphenyl-d14	12.203	244	49910	0.3780	ug/L	0.02
Spiked Amount 5.000			Recovery	=	7.60%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	6733	0.4016	ug/L	79

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18343.D
Acq On : 10 Jun 2016 12:30
Operator : MES
Sample : WG572230-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 10 18:15:46 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

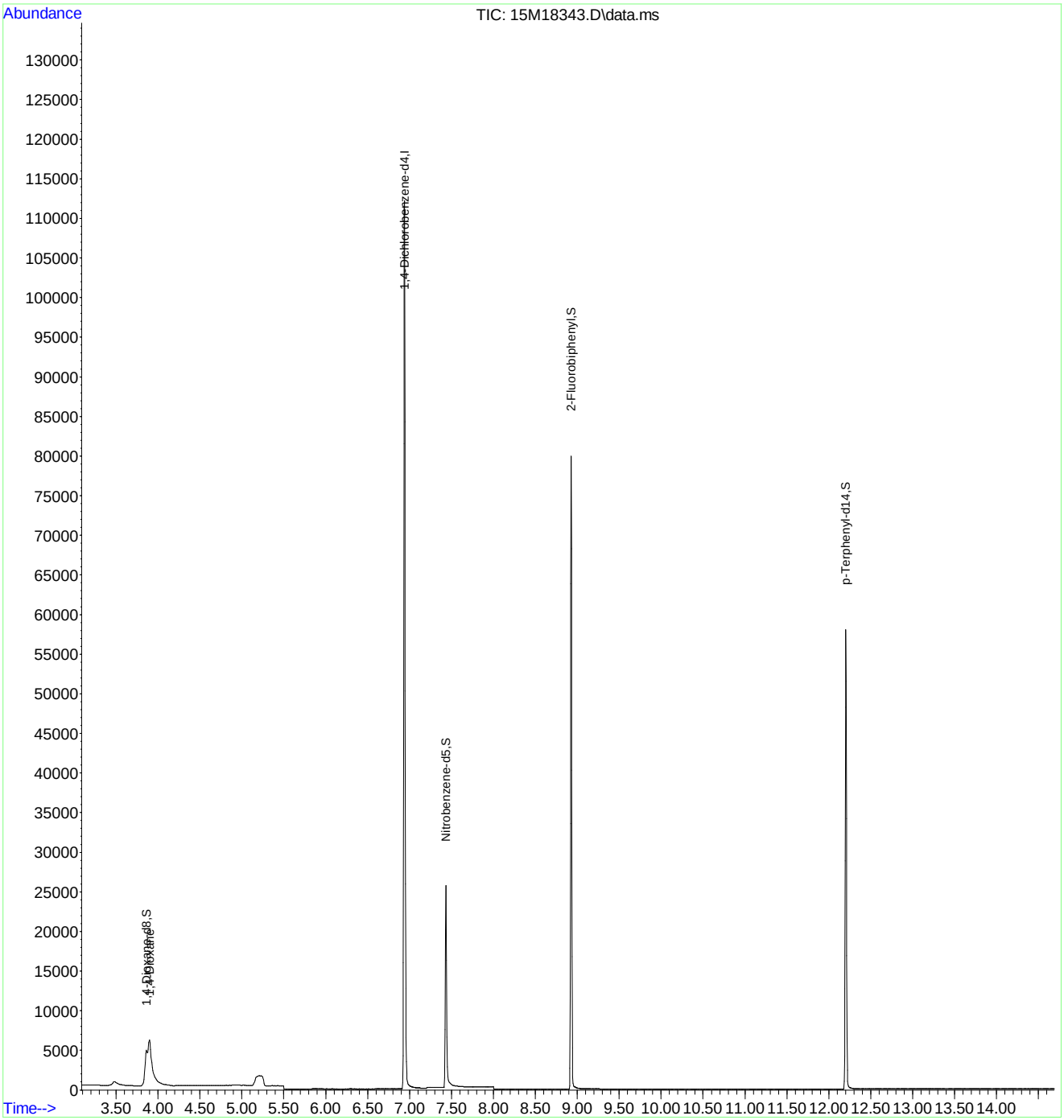

Nitrobenzene-d5

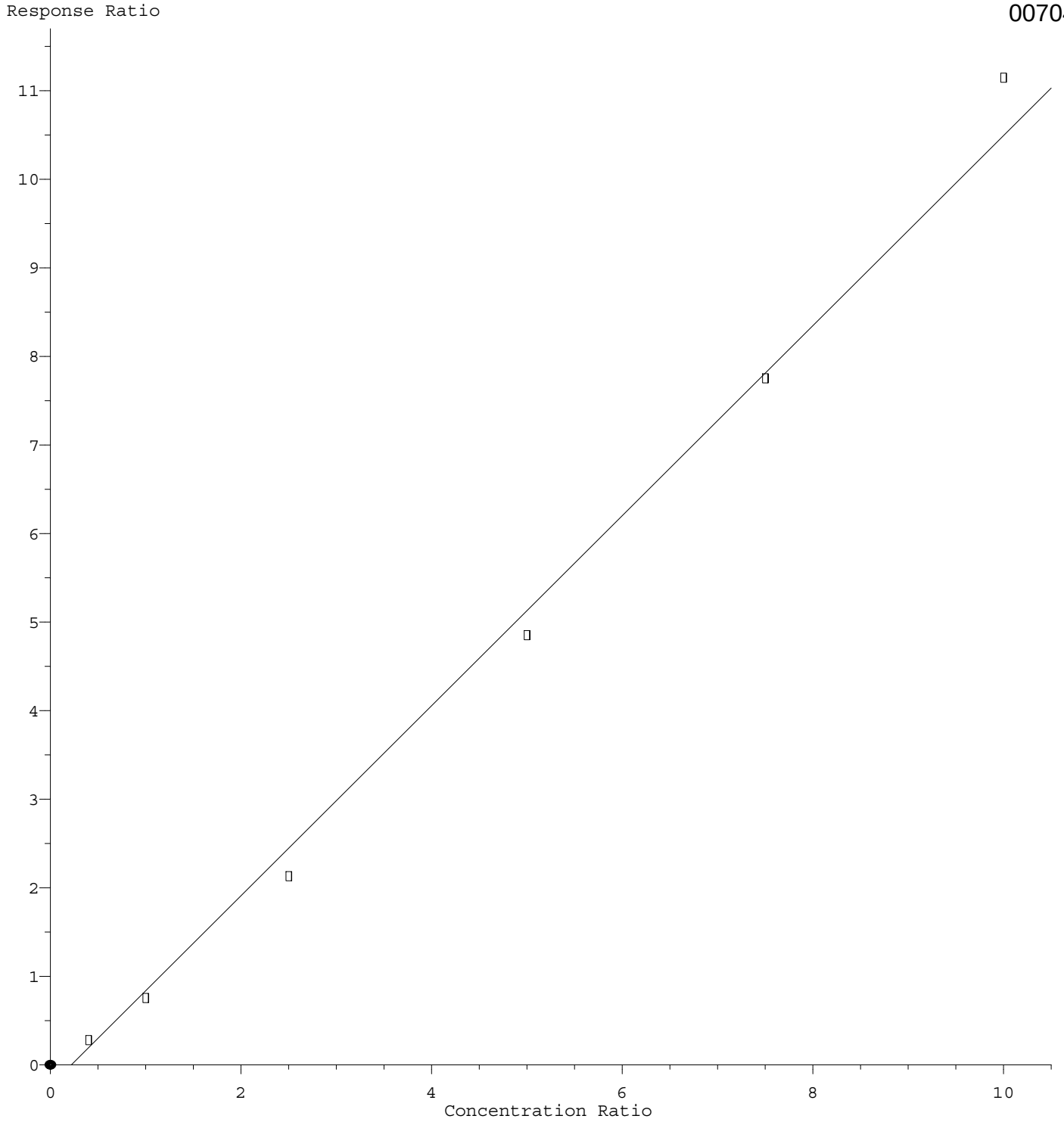

Response = 1.07e+000 * Amt - 2.34e-001
Coef of Det (r^2) = 0.994 Curve Fit: wlr(1/a)
Method Name: C:\msdchem\1\methods\DIOXANE_D8.M
Calibration Table Last Updated: Fri Jun 10 12:46:00 2016

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18344.D
Acq On : 10 Jun 2016 12:52
Operator : MES
Sample : WG572230-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 10 18:15:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.940	152	51498	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.897	96	61	0.0028	ug/L	0.04
Spiked Amount 5.000			Recovery	=	0.00%	
4) Nitrobenzene-d5	7.442	82	61	0.2190	ug/L	0.00
Spiked Amount 5.000			Recovery	=	4.40%	
5) 2-Fluorobiphenyl	8.926	172	23	0.0002	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.214	244	150	0.0011	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	85662	5.1127	ug/L	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18344.D
Acq On : 10 Jun 2016 12:52
Operator : MES
Sample : WG572230-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 10 18:15:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

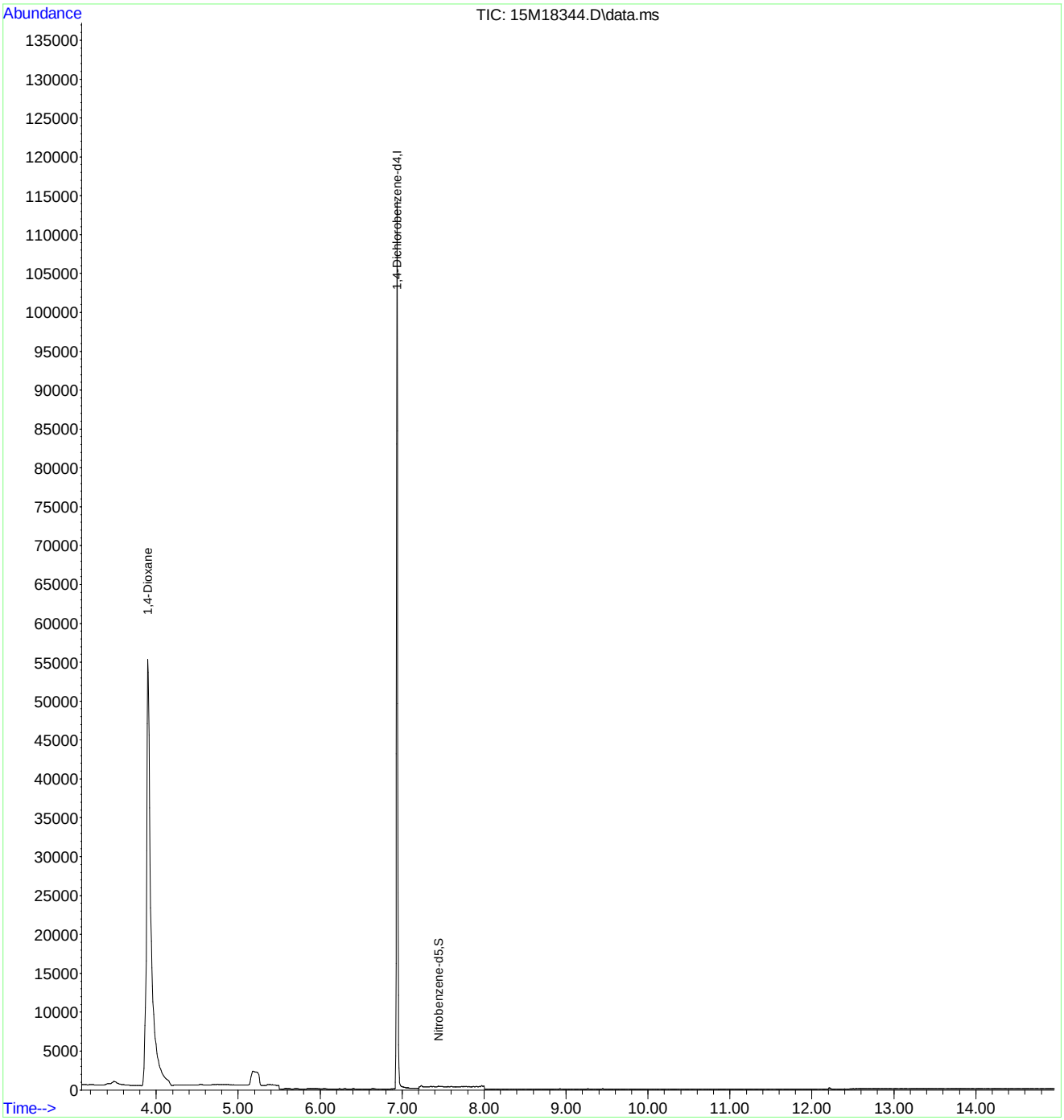

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18344.D
Acq On : 10 Jun 2016 12:52
Operator : MES
Sample : WG572230-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 10 18:15:49 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	78	0.00
2	1,4-Dioxane	5.000	5.113	-2.3	80	0.00
3 S	1,4-Dioxane-d8	5.000	0.003	99.9#	0	0.04
4 S	Nitrobenzene-d5	5.000	0.219	95.6#	0	0.00
5 S	2-Fluorobiphenyl	5.000	0.000	100.0#	0	0.00
6 S	p-Terphenyl-d14	5.000	0.001	100.0#	0	0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18400.D
Acq On : 16 Jun 2016 10:00
Operator : MES
Sample : WG572958-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 16 10:16:14 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.951	152	63702	1.0000	ug/mL	# 0.01
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.876	96	138261	5.1857	ug/L	0.01
Spiked Amount 5.000			Recovery	= 103.80%		
4) Nitrobenzene-d5	7.447	82	239213	3.7190	ug/L	0.01
Spiked Amount 5.000			Recovery	= 74.40%		
5) 2-Fluorobiphenyl	8.937	172	842255	5.0603	ug/L	0.01
Spiked Amount 5.000			Recovery	= 101.20%		
6) p-Terphenyl-d14	12.228	244	851642	5.2175	ug/L	0.05
Spiked Amount 5.000			Recovery	= 104.40%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.918	58	105339	5.0826	ug/L	81

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18400.D
Acq On : 16 Jun 2016 10:00
Operator : MES
Sample : WG572958-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 16 10:16:14 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

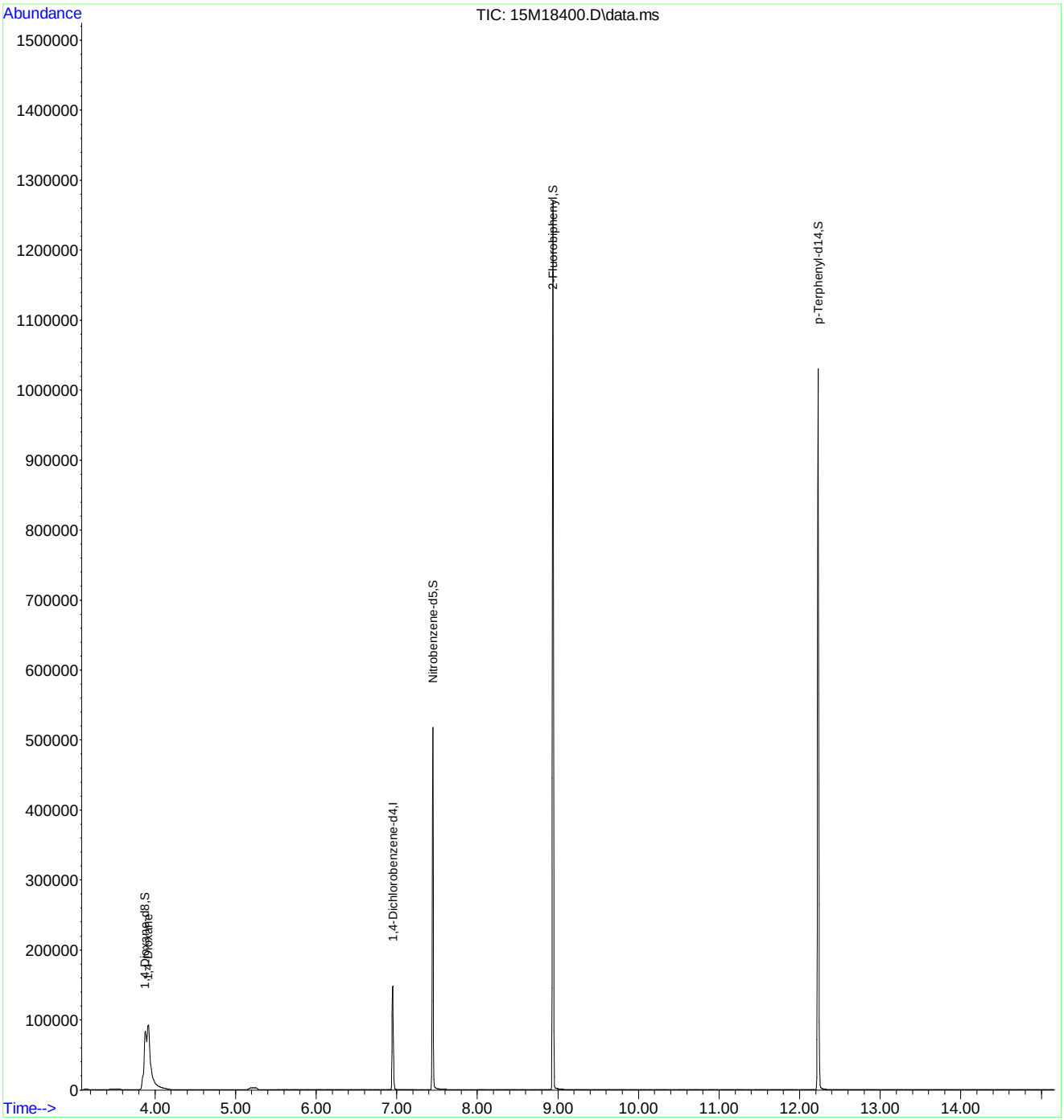

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18400.D
Acq On : 16 Jun 2016 10:00
Operator : MES
Sample : WG572958-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 16 10:16:14 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	96	0.01
2	1,4-Dioxane	5.000	5.083	-1.7	98	0.02
3 S	1,4-Dioxane-d8	5.000	5.186	-3.7	100	0.01
4 S	Nitrobenzene-d5	5.000	3.719	25.6#	74	0.01
5 S	2-Fluorobiphenyl	5.000	5.060	-1.2	100	0.01
6 S	p-Terphenyl-d14	5.000	5.217	-4.3	100	0.05

(#) = Out of Range SPCC's out = 0 CCC's out = 0

2.2.1.5 Raw QC Data

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18337.D
Acq On : 10 Jun 2016 10:18
Operator : MES
Sample : WG572230-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

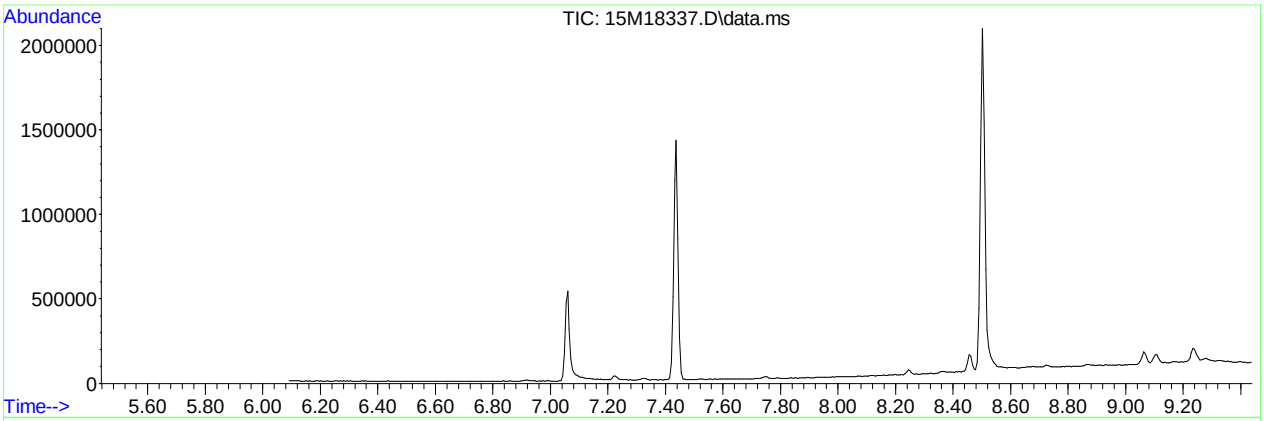

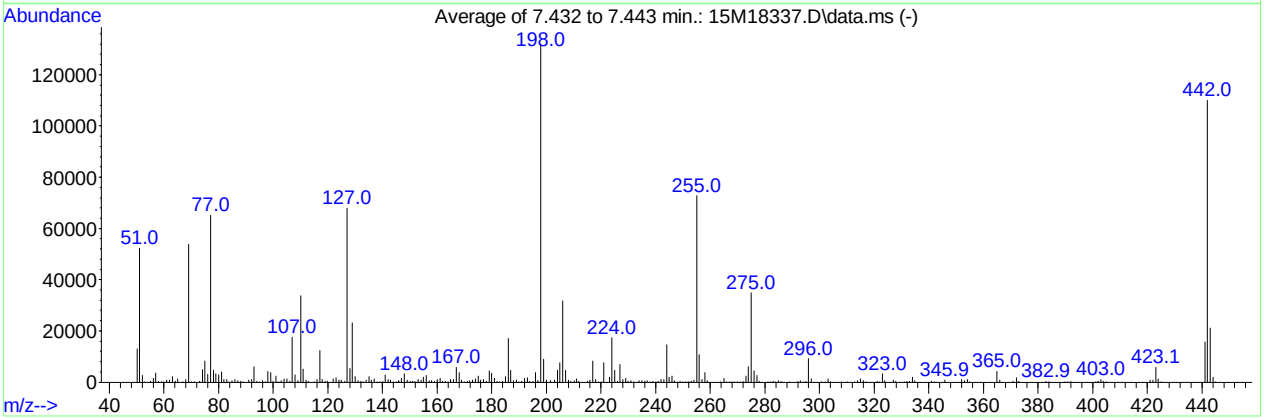

AutoFind: Scans 235, 236, 237; Background Corrected with Scan 229

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	39.5	52157	PASS
68	69	0.00	2	1.9	1026	PASS
69	198	0.00	100	40.8	53844	PASS
70	69	0.00	2	0.2	120	PASS
127	198	40	60	51.4	67853	PASS
197	198	0.00	1	0.4	505	PASS
198	198	100	100	100.0	131981	PASS
199	198	5	9	6.7	8869	PASS
275	198	10	30	26.4	34853	PASS
365	198	1	100	3.2	4186	PASS
441	443	0.01	100	73.9	15632	PASS
442	198	40	100	83.4	110112	PASS
443	442	17	23	19.2	21163	PASS

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18337.D
Acq On : 10 Jun 2016 10:18
Operator : MES
Sample : WG572230-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 10 10:29:37 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

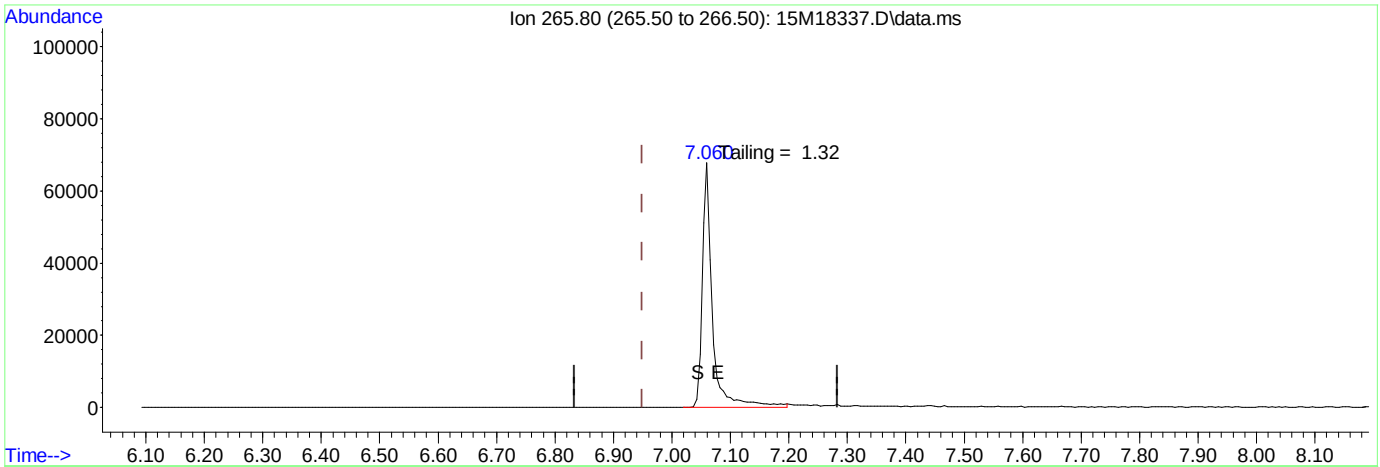

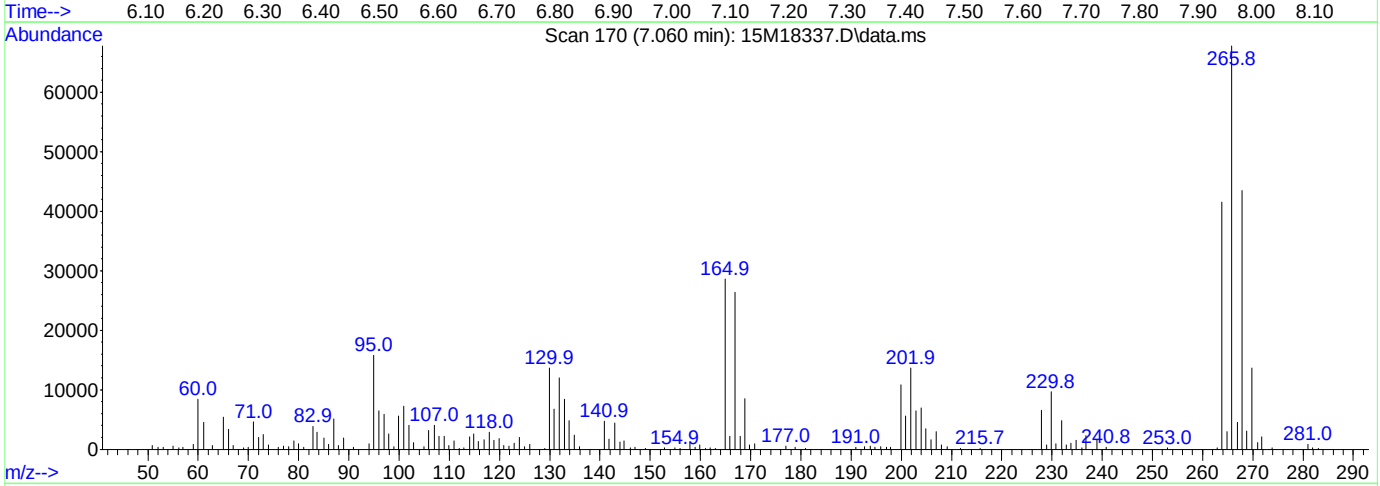

(1) Pentachlorophenol

7.060min (+ 0.111) 0.00 ug/ml

response 82111

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18337.D
Acq On : 10 Jun 2016 10:18
Operator : MES
Sample : WG572230-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 10 10:29:37 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

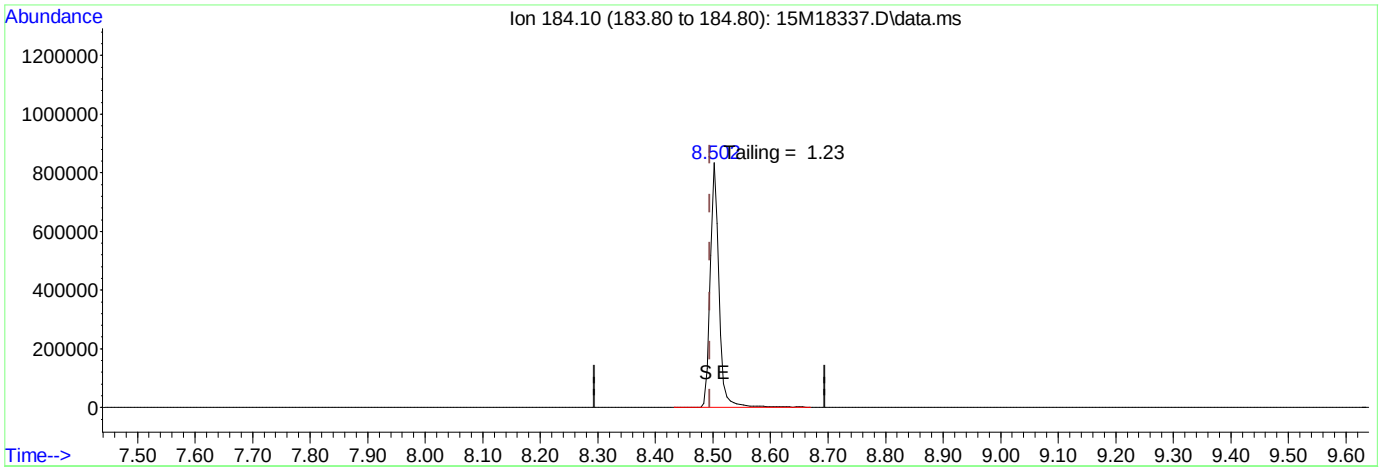

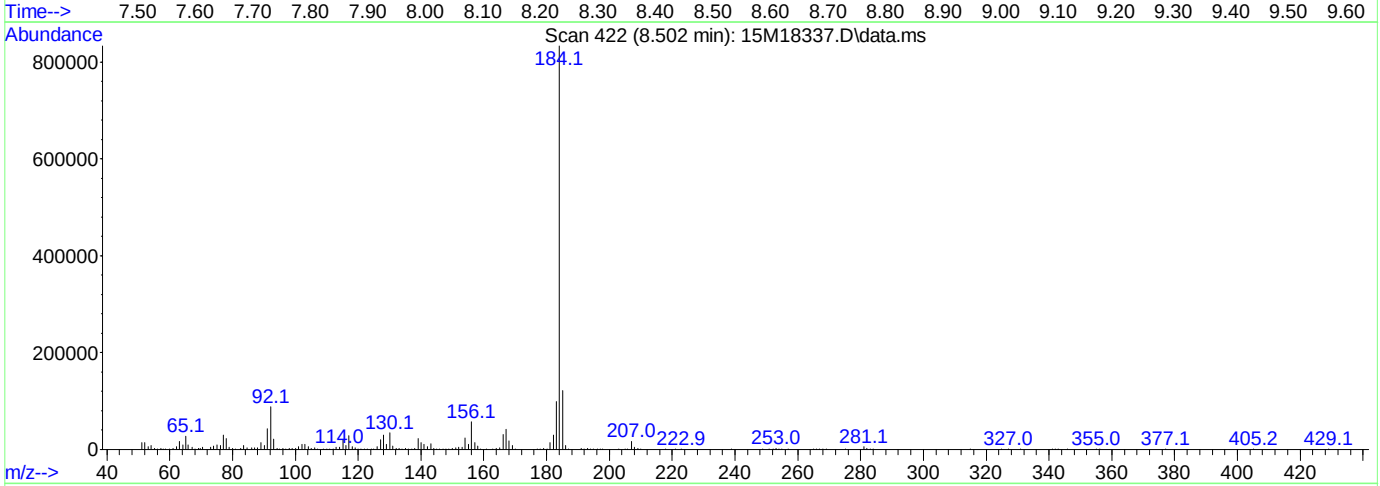

TIC: 15M18337.D\data.ms

(2) Benzidine

8.502min (+ 0.008) 0.00 ug/ml

response 896980

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061016\
Data File : 15M18337.D
Acq On : 10 Jun 2016 10:18
Operator : MES
Sample : WG572230-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 10 10:29:37 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

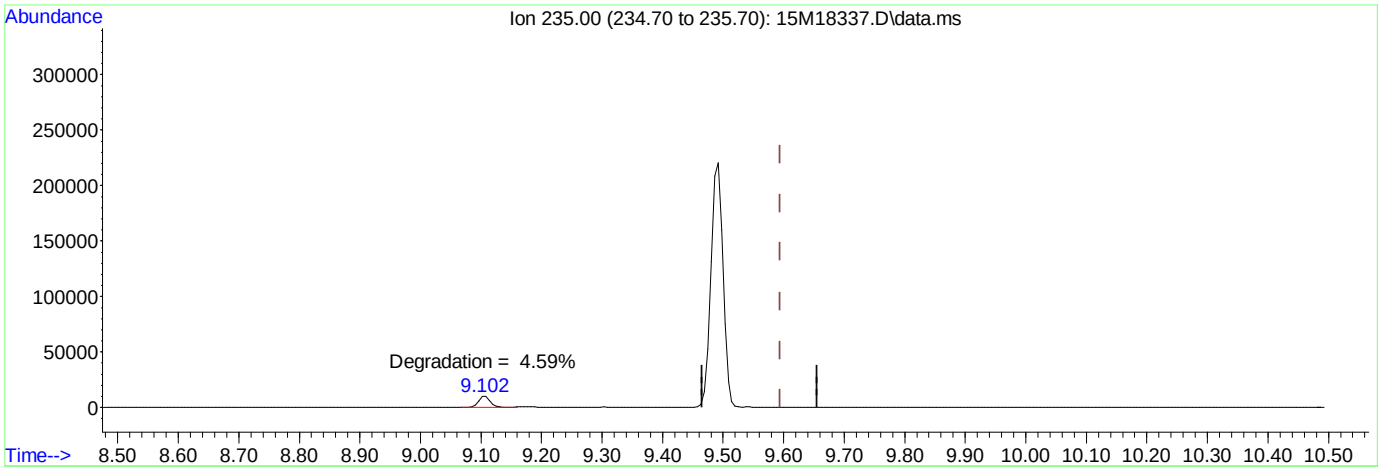

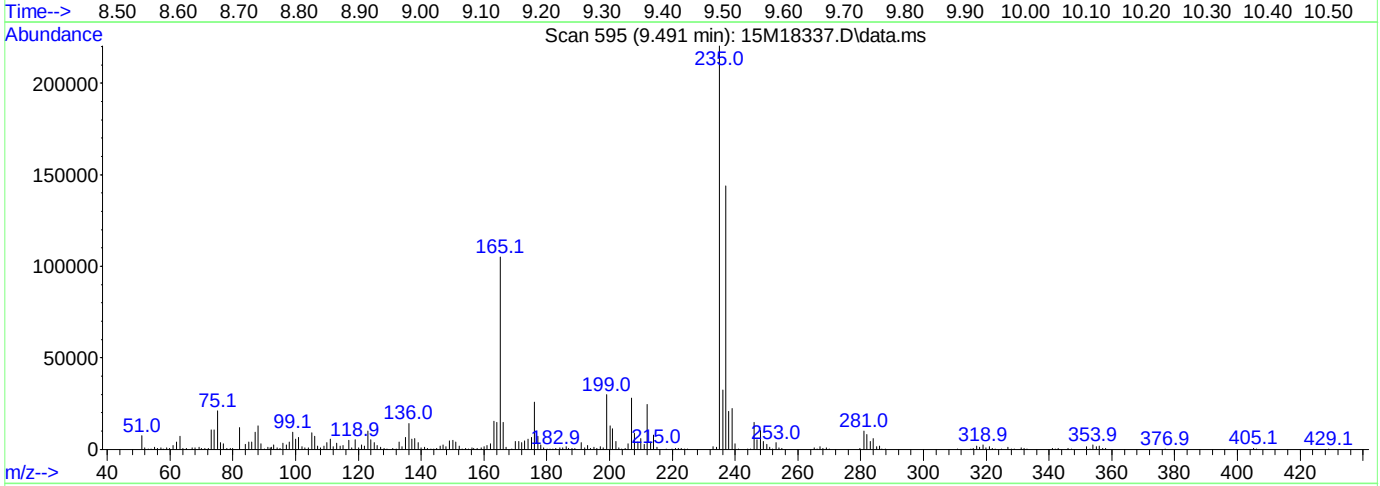

TIC: 15M18337.D\data.ms

(3) DDT

9.491min (-0.103) 0.00 ug/ml

response 283319

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18399.D
Acq On : 16 Jun 2016 9:38
Operator : MES
Sample : WG572958-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

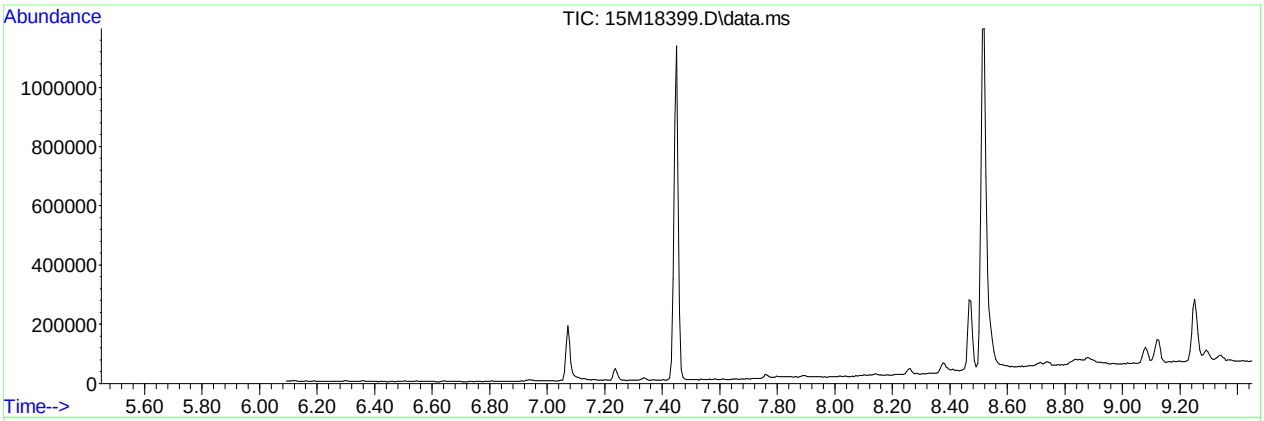

AutoFind: Scans 237, 238, 239; Background Corrected with Scan 231

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	39.7	42335	PASS
68	69	0.00	2	1.6	714	PASS
69	198	0.00	100	40.7	43391	PASS
70	69	0.00	2	0.6	279	PASS
127	198	40	60	52.1	55592	PASS
197	198	0.00	1	0.1	68	PASS
198	198	100	100	100.0	106736	PASS
199	198	5	9	6.7	7172	PASS
275	198	10	30	25.9	27632	PASS
365	198	1	100	3.0	3241	PASS
441	443	0.01	100	76.2	12912	PASS
442	198	40	100	81.0	86427	PASS
443	442	17	23	19.6	16937	PASS

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18399.D
Acq On : 16 Jun 2016 9:38
Operator : MES
Sample : WG572958-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 16 09:56:45 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

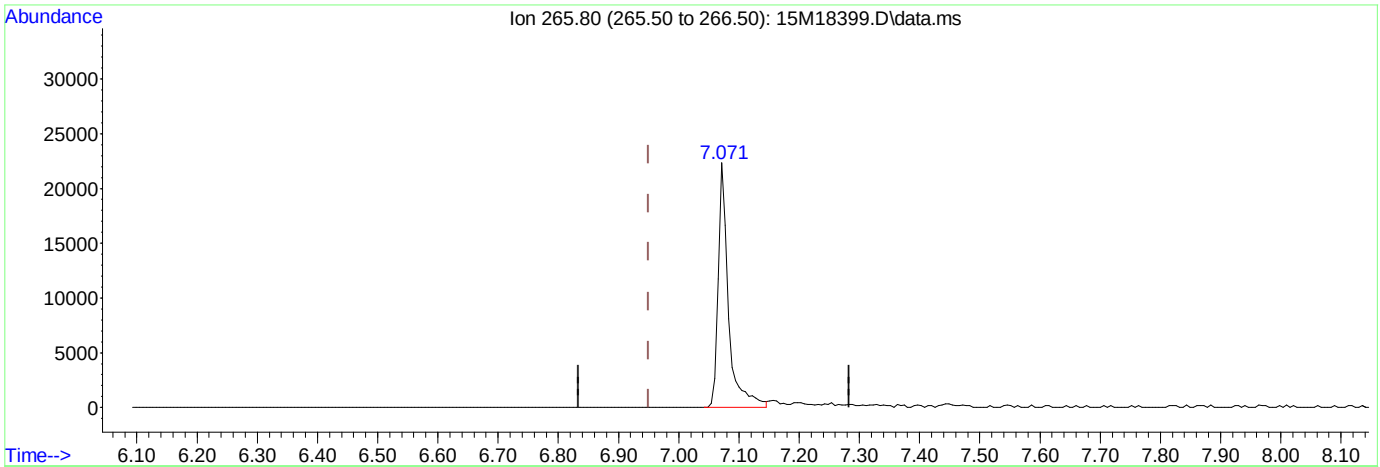

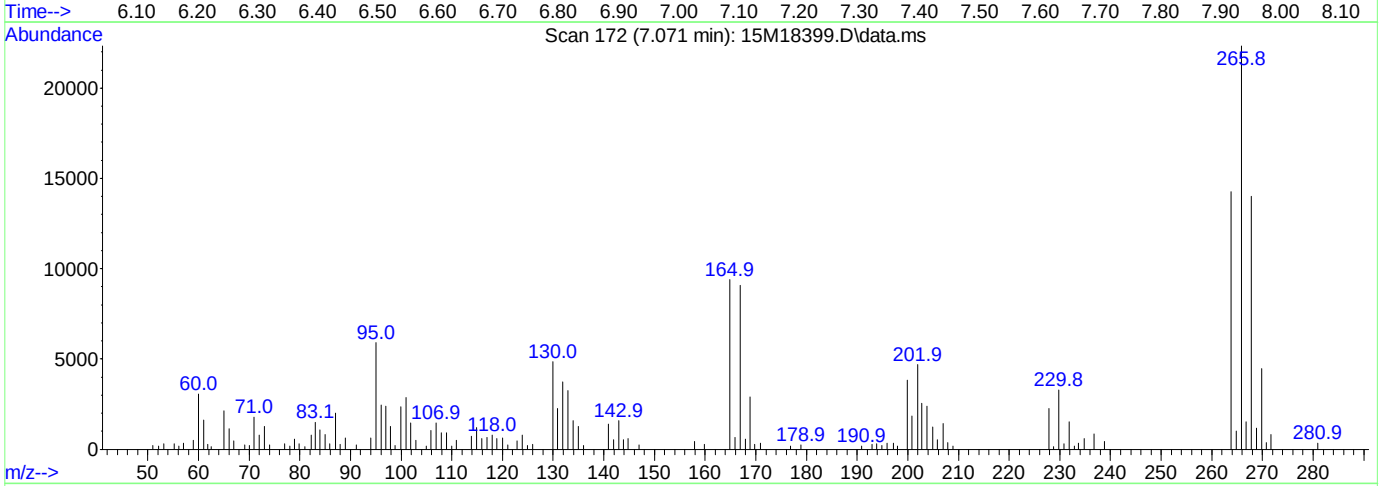

TIC: 15M18399.D\data.ms

(1) Pentachlorophenol

7.071min (+ 0.122) 0.00 ug/ml

response 26601

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18399.D
Acq On : 16 Jun 2016 9:38
Operator : MES
Sample : WG572958-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 16 09:56:45 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

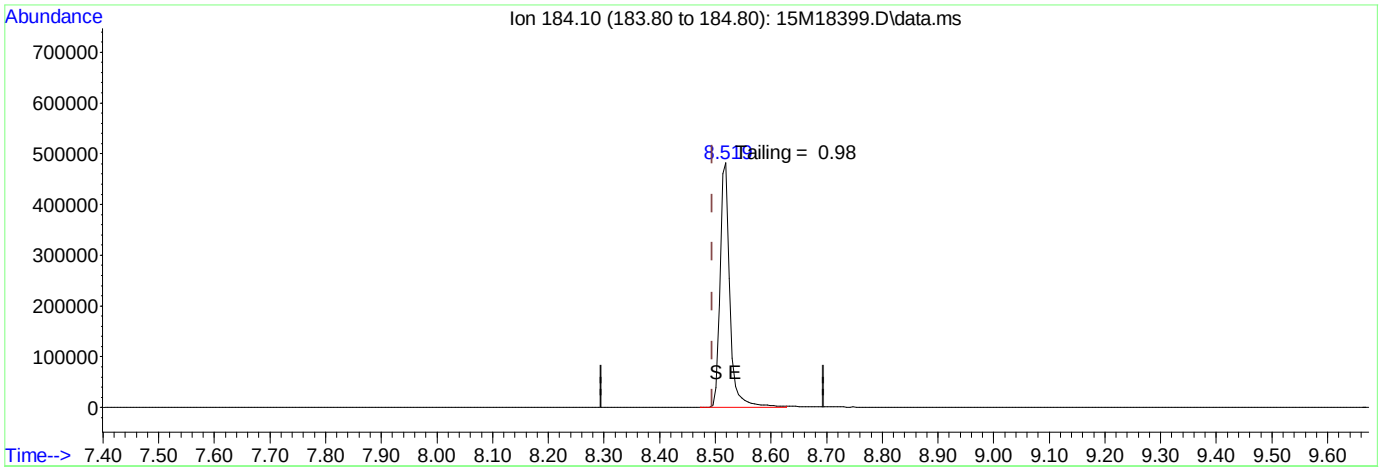

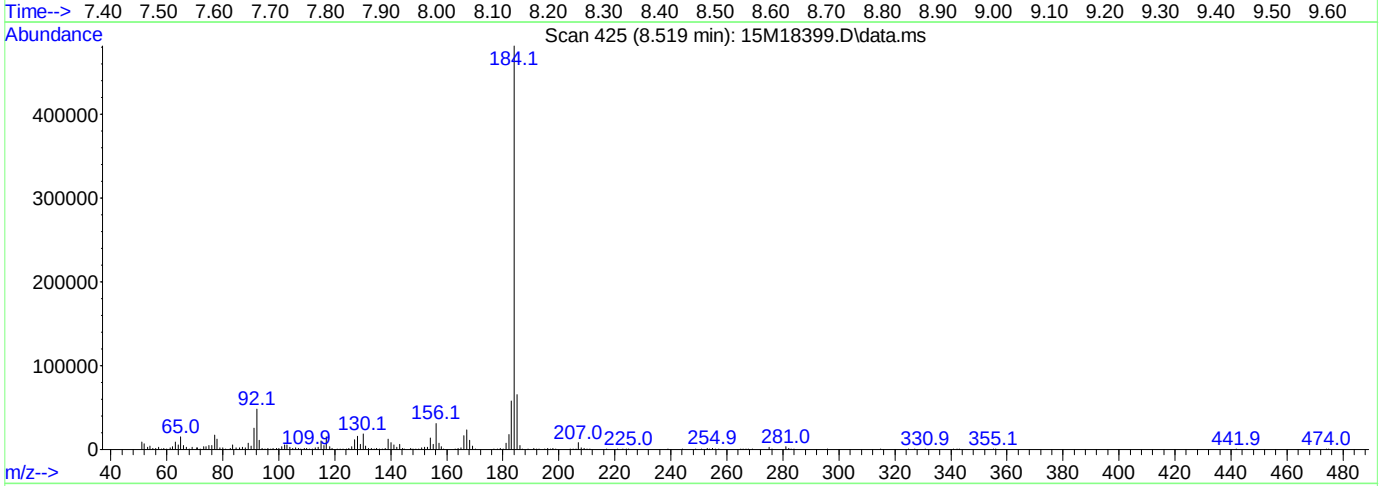

(2) Benzidine

8.519min (+ 0.025) 0.00 ug/ml

response 591309

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18399.D
Acq On : 16 Jun 2016 9:38
Operator : MES
Sample : WG572958-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 16 09:56:45 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

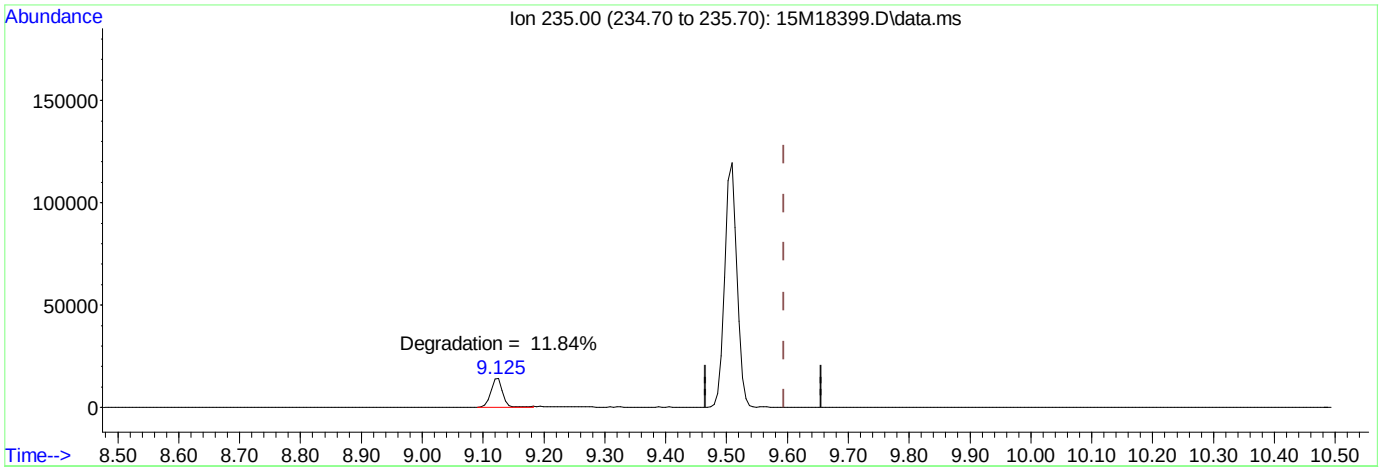

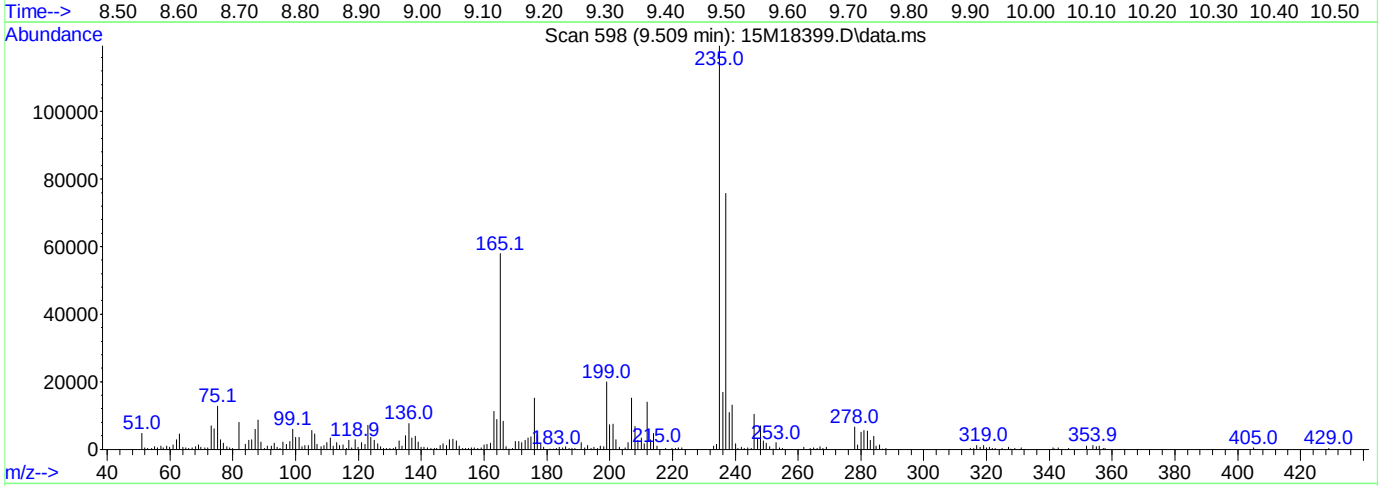

TIC: 15M18399.D\data.ms

(3) DDT

9.509min (-0.085) 0.00 ug/ml

response 162825

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18401.D
Acq On : 16 Jun 2016 10:23
Operator : MES
Sample : WG572341-01 BLANK 6/13
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 16 12:53:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.948	152	57712	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.876	96	35450	1.4676	ug/L	0.01
Spiked Amount 5.000			Recovery = 29.40%			
4) Nitrobenzene-d5	7.442	82	935690	15.3339	ug/L	0.00
Spiked Amount 5.000			Recovery = 306.60%			
5) 2-Fluorobiphenyl	8.937	172	2176930	14.4366	ug/L	0.01
Spiked Amount 5.000			Recovery = 288.80%			
6) p-Terphenyl-d14	12.221	244	5289384	35.7680	ug/L	0.04
Spiked Amount 5.000			Recovery = 715.40%			

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18401.D
Acq On : 16 Jun 2016 10:23
Operator : MES
Sample : WG572341-01 BLANK 6/13
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 16 12:53:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

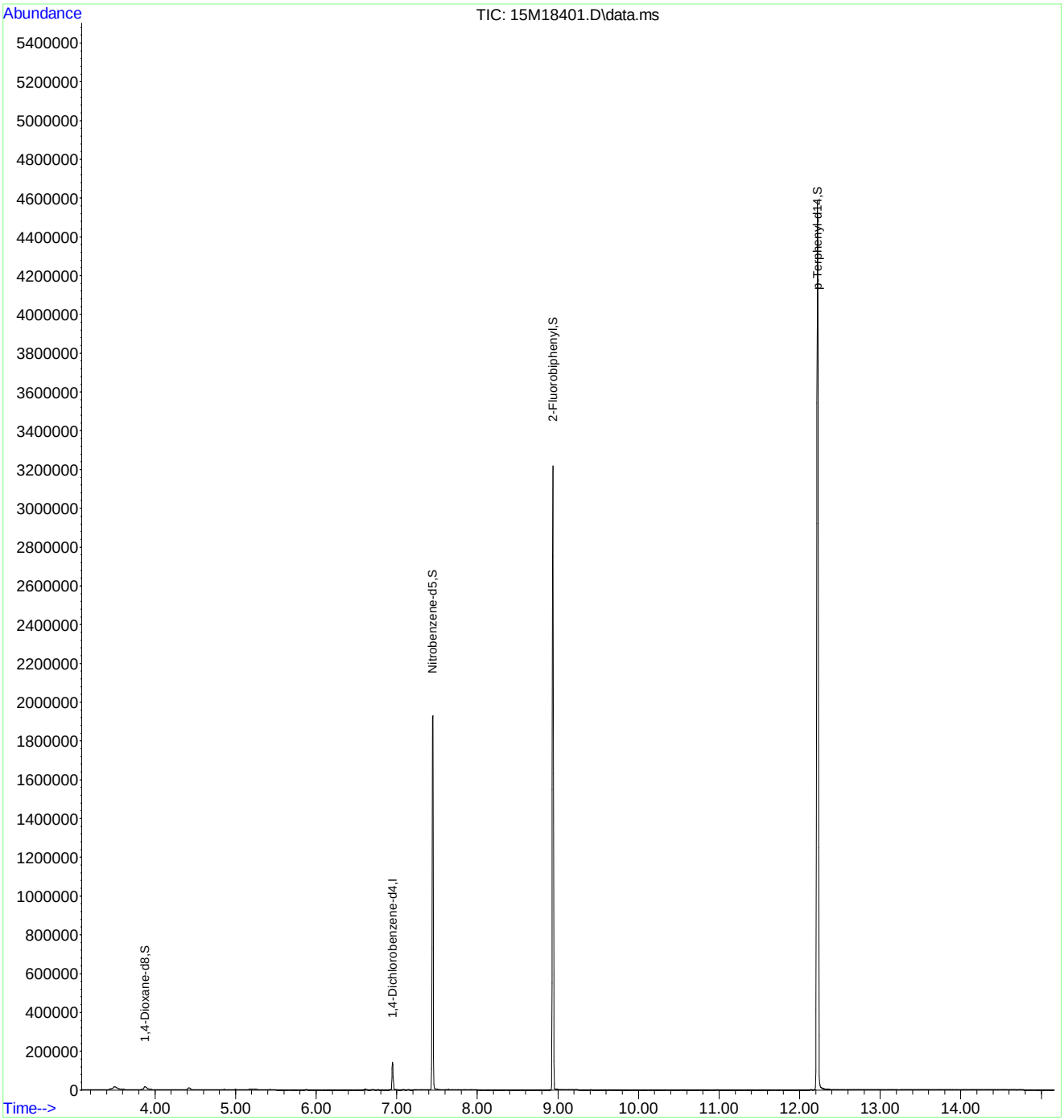

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18402.D
Acq On : 16 Jun 2016 10:46
Operator : MES
Sample : WG572341-02 LCS 6/13
Misc : 1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 16 12:54:04 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.951	152	54087	1.0000	ug/mL	# 0.01
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.883	96	40383	1.7839	ug/L	0.02
Spiked Amount 5.000			Recovery	=	35.60%	
4) Nitrobenzene-d5	7.447	82	8192	0.3591	ug/L	0.01
Spiked Amount 5.000			Recovery	=	7.20%	
5) 2-Fluorobiphenyl	8.937	172	5120	0.0362	ug/L	0.01
Spiked Amount 5.000			Recovery	=	0.80%	
6) p-Terphenyl-d14	12.228	244	1871	0.0135	ug/L	0.05
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.918	58	29330	1.6668	ug/L	82

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\061616\
Data File : 15M18402.D
Acq On : 16 Jun 2016 10:46
Operator : MES
Sample : WG572341-02 LCS 6/13
Misc : 1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 16 12:54:04 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 061016
QLast Update : Fri Jun 10 12:46:00 2016
Response via : Initial Calibration

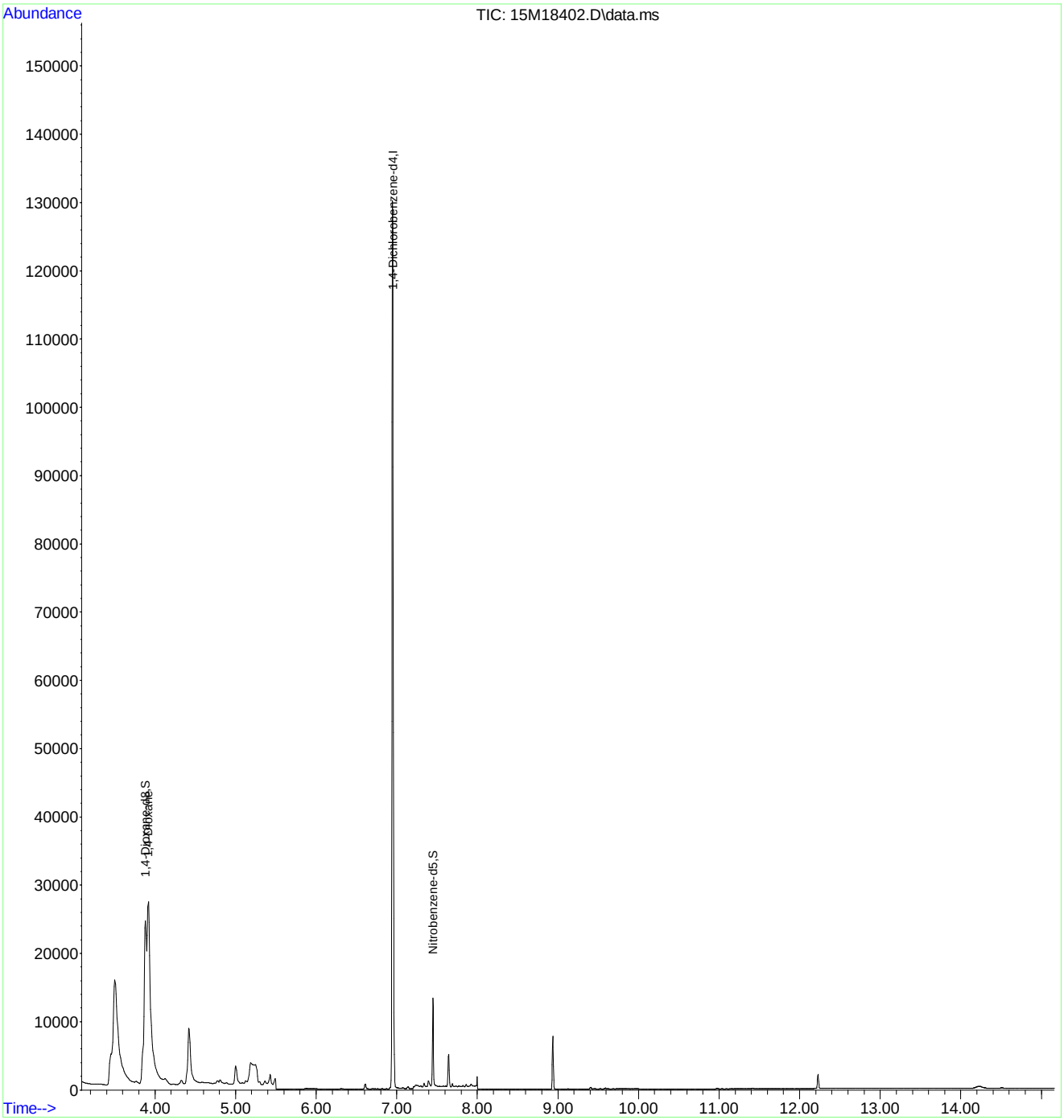

2.2 General Chromatography Data

2.2.2 6850 LC/MS Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW8-060916	**Prep Method:**	6850	**Prep Date:**	06/11/2016 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572350	**Analyst:**	WTD	**Run Date:**	06/11/2016 23:38
Collect Date:	06/09/2016 11:00	**Dilution:**	10000	**File ID:**	1LM.LM35315
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	8290		4000	2000	1000

Certificate of Analysis

Sample #:	L16060616-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW26SW-060916	**Prep Method:**	6850	**Prep Date:**	06/11/2016 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572350	**Analyst:**	WTD	**Run Date:**	06/13/2016 08:47
Collect Date:	06/09/2016 13:25	**Dilution:**	1	**File ID:**	1LM.LM35340
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	6.42		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16060616-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW10-060916	**Prep Method:**	6850	**Prep Date:**	06/11/2016 11:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG572350	**Analyst:**	WTD	**Run Date:**	06/12/2016 00:16
Collect Date:	06/09/2016 14:40	**Dilution:**	1	**File ID:**	1LM.LM35317
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.492		0.400	0.200	0.100

2.2.2.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1405 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG572350-01 MCT	9960	
-02 Blk	0.27	
-03 LCS	0.31	
-04 LCS2	0.31	
L16060615-01	117	
-02	1261	
-03	1269	
-04	3050	
L16060616-01	979	
-02	2840	
-03	112	
L16060632-01	474	
-02	349	
-03	471	
-04	483	

Analyst: Wade T. Deb

Date/Time: 6-11-16 / 1559

DCN#119043

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

Page: 2 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061116_WTD.TXT
Analyst1: WTD Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)
CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35279	WG572339-01 CCB	1	1		06/11/16 11:27
2	1LM.LM35280	WG572339-02 CCV (1.0ug/L)	1	1	STD75510	06/11/16 11:46
3	1LM.LM35281	WG572200-12 MRL (0.2ug/L)	1	1	STD75510	06/11/16 12:05
4	1LM.LM35282	L16060411-01 500X	1	500		06/11/16 12:24
5	1LM.LM35283	L16060411-02 100X	1	100		06/11/16 12:43
6	1LM.LM35284	L16060414-03 10000X	1	10000		06/11/16 13:02
7	1LM.LM35285	L16060414-04 10000X	1	10000		06/11/16 13:21
8	1LM.LM35286	L16060504-01 10000X	1	10000		06/11/16 13:40
9	1LM.LM35287	L16060504-02 1000X	1	1000		06/11/16 13:58
10	1LM.LM35288	L16060504-03 10000X	1	10000		06/11/16 14:17
11	1LM.LM35289	L16060504-04 1000X	1	1000		06/11/16 14:36
12	1LM.LM35290	L16060414-03 100000X	1	100000		06/11/16 14:55
13	1LM.LM35291	L16060414-04 100000X	1	100000		06/11/16 15:15
14	1LM.LM35292	WG572339-03 CCV (1.0ug/L)	1	1	STD75510	06/11/16 15:34
15	1LM.LM35293	WG572200-13 MRL (0.2ug/L)	1	1	STD75510	06/11/16 16:41
16	1LM.LM35294	WG572339-04 CCB	1	1		06/11/16 17:00
17	1LM.LM35295	L16060504-04 100X	1	100		06/11/16 17:19
18	1LM.LM35296	WG572339-05 CCV (1.0ug/L)	1	1	STD75510	06/11/16 17:38
19	1LM.LM35297	WG572200-14 MRL (0.2ug/L)	1	1	STD75510	06/11/16 17:57
20	1LM.LM35298	WG572339-06 CCB	1	1		06/11/16 18:16
21	1LM.LM35299	WG572350-05 MRL (0.2ug/L)	1	1	STD75510	06/11/16 18:35
22	1LM.LM35300	WG572350-01 MCT (0.2ug/l)	1	1	STD75512	06/11/16 18:54
23	1LM.LM35301	WG572350-02 BLANK	1	1		06/11/16 19:13
24	1LM.LM35302	WG572350-03 LCS (0.2ug/L)	1	1	STD75512	06/11/16 19:32
25	1LM.LM35303	WG572350-03 LCSD (0.2ug/L)	1	1	STD75512	06/11/16 19:51
26	1LM.LM35304	L16060632-01 100X	1	100		06/11/16 20:10
27	1LM.LM35305	L16060632-02 100X	1	100		06/11/16 20:29
28	1LM.LM35306	L16060632-03 100X	1	100		06/11/16 20:48
29	1LM.LM35307	L16060632-04 100X	1	100		06/11/16 21:07
30	1LM.LM35308	L16060615-01 10000X	1	10000		06/11/16 21:26
31	1LM.LM35309	L16060615-02 100X	1	100		06/11/16 21:44
43	1LM.LM35310	WG572339-07 CCV (1.0ug/L)	1	1	STD75510	06/11/16 22:03
33	1LM.LM35311	WG572350-06 MRL (0.2ug/L)	1	1	STD75510	06/11/16 22:22

Page: 1 Approved: 13-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061116_WTD.TXT

Analyst1: WTD Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Workgroups: Column 1 ID: KP-RPPX250 Column 2 ID: NA

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 NA

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
44	1LM.LM35312	WG572339-08 CCB	1	1		06/11/16 22:41
35	1LM.LM35313	L16060615-03 100X	1	100		06/11/16 23:00
36	1LM.LM35314	L16060615-04 100X	1	100		06/11/16 23:19
37	1LM.LM35315	L16060616-01 10000X	1	10000		06/11/16 23:38
38	1LM.LM35316	L16060616-02 10000X	1	10000		06/11/16 23:57
39	1LM.LM35317	L16060616-03	1	1		06/12/16 00:16
45	1LM.LM35318	WG572339-09 CCV (1.0ug/L)	1	1	STD75510	06/12/16 00:35
41	1LM.LM35319	WG572350-07 MRL (0.2ug/L)	1	1	STD75510	06/12/16 00:54
46	1LM.LM35320	WG572339-10 CCB	1	1		06/12/16 01:13

Comments

Seq.	Rerun	Dil.	Reason	Analytes
6	X	100000	Over Calibration Range	
	L16060414-03			
7	X	100000	Over Calibration Range	
	L16060414-04			
11	X	100	Analyzed too dilute	
	L16060504-04			
26	X	1	Analyzed too dilute	
	L16060632-01			
27	X	1	Analyzed too dilute	
	L16060632-02			
28	X	1	Analyzed too dilute	
	L16060632-03			
29	X	1	Analyzed too dilute	
	L16060632-04			
30	X	1	Analyzed too dilute	
	L16060615-01			
31	X	1	Analyzed too dilute	
	L16060615-02			
35	X	1	Analyzed too dilute	
	L16060615-03			
36	X	10000	Over Calibration Range	
	L16060615-04			
37				
	L16060616-01 Analyzed at a dilution based on historical data			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061116_WTD.TXT

Analyst1: WTD Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups:

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 NA

Comments

Seq.	Rerun	Dil.	Reason	Analytes
38	X	100	Analyzed too dilute	
	L16060616-02			

Page: 3 Approved: 13-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 061216_WTD.TXT
Analyst1: WTD Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: WG572350

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35321	WG572372-01 CCB	1	1		06/12/16 20:44
2	1LM.LM35322	WG572372-02 CCV (1.0ug/L)	1	1	STD75510	06/12/16 21:03
3	1LM.LM35323	WG572350-08 MRL (0.2ug/L)	1	1	STD75510	06/12/16 21:22
4	1LM.LM35324	L16060632-01	1	1		06/12/16 21:41
5	1LM.LM35325	L16060632-02	1	1		06/12/16 22:00
6	1LM.LM35326	L16060632-03	1	1		06/12/16 22:19
7	1LM.LM35327	L16060632-04	1	1		06/12/16 22:37
8	1LM.LM35328	L16060615-01	1	1		06/12/16 22:56
9	1LM.LM35329	L16060615-01 10x	1	10		06/12/16 23:15
10	1LM.LM35330	L16060615-02	1	1		06/12/16 23:34
11	1LM.LM35331	L16060615-03	1	1		06/12/16 23:53
12	1LM.LM35332	L16060615-04 10000x	1	10000		06/13/16 00:12
13	1LM.LM35333	L16060616-02 100X	1	100		06/13/16 00:31
14	1LM.LM35334	WG572372-03 CCV (1.0ug/L)	1	1	STD75510	06/13/16 00:50
15	1LM.LM35335	WG572350-09 MRL (0.2ug/L)	1	1	STD75510	06/13/16 01:09
16	1LM.LM35336	WG572372-04 CCB	1	1		06/13/16 01:28
17	1LM.LM35337	WG572372-05 CCB	1	1		06/13/16 07:50
18	1LM.LM35338	WG572372-06 CCV (1.0ug/L)	1	1	STD75510	06/13/16 08:09
19	1LM.LM35339	WG572350-10 MRL (0.2ug/L)	1	1	STD75510	06/13/16 08:28
20	1LM.LM35340	L16060616-02	1	1		06/13/16 08:47
21	1LM.LM35341	WG572372-07 CCV (1.0ug/L)	1	1	STD75510	06/13/16 09:06
22	1LM.LM35342	WG572350-10 MRL (0.2ug/L)	1	1	STD75510	06/13/16 09:25
23	1LM.LM35343	WG572372-08 CCB	1	1		06/13/16 09:44

Comments

Seq.	Rerun	Dil.	Reason	Analytes
9				
	L16060615-01 Dilution not needed.			
13	X	1	Analyzed too dilute	
	L16060616-02			

Page: 1 Approved: 13-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 04-MAY-2016 John Richards

Secondary Reviewer: 05-MAY-2016 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 11-JUN-2016
Analyst: WTD
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 75641
Analytical Workgroups: L16060411, L16060414, L16060504, L16060616

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	WTD
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 12-JUN-2016

Secondary Reviewer: 13-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-14-2016 08:50:47

Microbac Laboratories Inc.

Data Checklist

Date: 12-JUN-2016
Analyst: WTD
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 75643
Analytical Workgroups: L16060615, L16060616, L16060632

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	X
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	X
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	WTD
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer:
13-JUN-2016

Secondary Reviewer:
13-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-14-2016 08:50:19

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG572350

Login Number: L16060616

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW8-060916	01	06/09/16					06/11/2016	2	28		06/11/16	.5	28	
18CPTMW26SW-060916	02	06/09/16					06/11/2016	1.9	28		06/13/16	1.9	28	
MW10-060916	03	06/09/16					06/11/2016	1.8	28		06/12/16	.6	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4804241
Report generated 06/14/2016 08:48

METHOD BLANK SUMMARY

Login Number: L16060616
Blank File ID: 1LM.LM35301
Prep Date: 06/11/16 11:00
Analyzed Date: 06/11/16 19:13
Analyst: WTD

Work Group: WG572350
Blank Sample ID: WG572350-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG572350-05	1LM.LM35299	06/11/16 18:35	01
MCT	WG572350-01	1LM.LM35300	06/11/16 18:54	01
LCS	WG572350-03	1LM.LM35302	06/11/16 19:32	01
LCS2	WG572350-04	1LM.LM35303	06/11/16 19:51	01
QCMRL	WG572350-06	1LM.LM35311	06/11/16 22:22	01
MW8-060916	L16060616-01	1LM.LM35315	06/11/16 23:38	DL01
MW10-060916	L16060616-03	1LM.LM35317	06/12/16 00:16	01
QCMRL	WG572350-07	1LM.LM35319	06/12/16 00:54	01
QCMRL	WG572350-08	1LM.LM35323	06/12/16 21:22	01
QCMRL	WG572350-09	1LM.LM35335	06/13/16 01:09	01
QCMRL	WG572350-10	1LM.LM35339	06/13/16 08:28	01
18CPTMW26SW-060916	L16060616-02	1LM.LM35340	06/13/16 08:47	01
QCMRL	WG572350-10	1LM.LM35342	06/13/16 09:25	02

Report Name: BLANK_SUMMARY
PDF File ID: 4804242
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060616 Prep Date: 06/11/16 11:00 Sample ID: WG572350-02
Instrument ID: LCMS1 Run Date: 06/11/16 19:13 Prep Method: 6850
File ID: 1LM.LM35301 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572350 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4804243
14-JUN-2016 08:48

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060616 Analyst: WTD Prep Method: 6850
Instrument ID: LCMS1 Matrix: Water Method: 6850
Workgroup (AAB#): WG572350 Units: ug/L
QC Key: DOD4 Lot #: STD75512

Sample ID: WG572350-03 LCS File ID: 1LM.LM35302 Run Date: 06/11/2016 19:32
Sample ID: WG572350-04 LCS2 File ID: 1LM.LM35303 Run Date: 06/11/2016 19:51

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Perchlorate	0.200	0.211	106	0.200	0.208	104	1.43	80 - 120	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4804244
Report generated: 06/14/2016 08:48

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060616
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4804246
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060616

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4804246
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060616

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4804246
Report generated 06/14/2016 08:48

INITIAL CALIBRATION DATA

Login Number: L16060616
Analytical Method: 6850
Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008
PDF File ID: 4804246
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060616 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4804247
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060616
Run Date: 06/11/2016
Sample ID: WG572339-06
Instrument ID: LCMS1
Run Time: 18:16
Method: 6850
File ID: 1LM.LM35298
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4804249
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060616
Run Date: 06/11/2016
Sample ID: WG572339-08
Instrument ID: LCMS1
Run Time: 22:41
Method: 6850
File ID: 1LM.LM35312
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4804249
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060616
Run Date: 06/12/2016
Sample ID: WG572339-10
Instrument ID: LCMS1
Run Time: 01:13
Method: 6850
File ID: 1LM.LM35320
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4804249
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060616
Run Date: 06/12/2016
Sample ID: WG572372-01
Instrument ID: LCMS1
Run Time: 20:44
Method: 6850
File ID: 1LM.LM35321
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4804249
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060616
Run Date: 06/13/2016
Sample ID: WG572372-04
Instrument ID: LCMS1
Run Time: 01:28
Method: 6850
File ID: 1LM.LM35336
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4804249
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060616
Run Date: 06/13/2016
Sample ID: WG572372-05
Instrument ID: LCMS1
Run Time: 07:50
Method: 6850
File ID: 1LM.LM35337
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4804249
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060616
Run Date: 06/13/2016
Sample ID: WG572372-08
Instrument ID: LCMS1
Run Time: 09:44
Method: 6850
File ID: 1LM.LM35343
Analyst: WTD
Units: ug/L
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4804249
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/11/2016
Sample ID: WG572339-05
Instrument ID: LCMS1
Run Time: 17:38
Method: 6850
File ID: 1LM.LM35296
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.73	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4804248
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/11/2016
Sample ID: WG572339-07
Instrument ID: LCMS1
Run Time: 22:03
Method: 6850
File ID: 1LM.LM35310
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.06	ug/L	1.79	6.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4804248
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/12/2016
Sample ID: WG572339-09
Instrument ID: LCMS1
Run Time: 00:35
Method: 6850
File ID: 1LM.LM35318
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.70	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4804248
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/12/2016
Sample ID: WG572372-02
Instrument ID: LCMS1
Run Time: 21:03
Method: 6850
File ID: 1LM.LM35322
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.72	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4804248
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/13/2016
Sample ID: WG572372-03
Instrument ID: LCMS1
Run Time: 00:50
Method: 6850
File ID: 1LM.LM35334
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.71	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4804248
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/13/2016
Sample ID: WG572372-06
Instrument ID: LCMS1
Run Time: 08:09
Method: 6850
File ID: 1LM.LM35338
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.76	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4804248
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/13/2016
Sample ID: WG572372-07
Instrument ID: LCMS1
Run Time: 09:06
Method: 6850
File ID: 1LM.LM35341
Analyst: WTD
QC Key: DOD4
Workgroup (AAB#): WG572350
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.73	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4804248
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060616 Run Date: 06/11/2016 Sample ID: WG572350-05
Instrument ID: LCMS1 Run Time: 18:35 Prep Method: 6850
File ID: 1LM.LM35299 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572350 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.207	104	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4804245
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060616 Run Date: 06/11/2016 Sample ID: WG572350-06
Instrument ID: LCMS1 Run Time: 22:22 Prep Method: 6850
File ID: 1LM.LM35311 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572350 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.217	109	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4804245
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060616 Run Date: 06/12/2016 Sample ID: WG572350-07
Instrument ID: LCMS1 Run Time: 00:54 Prep Method: 6850
File ID: 1LM.LM35319 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572350 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.219	110	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4804245
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060616 Run Date: 06/12/2016 Sample ID: WG572350-08
Instrument ID: LCMS1 Run Time: 21:22 Prep Method: 6850
File ID: 1LM.LM35323 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572350 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.214	107	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4804245
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060616 Run Date: 06/13/2016 Sample ID: WG572350-09
Instrument ID: LCMS1 Run Time: 01:09 Prep Method: 6850
File ID: 1LM.LM35335 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572350 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.216	108	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4804245
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060616 Run Date: 06/13/2016 Sample ID: WG572350-10
Instrument ID: LCMS1 Run Time: 08:28 Prep Method: 6850
File ID: 1LM.LM35339 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572350 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.210	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4804245
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060616 Run Date: 06/13/2016 Sample ID: WG572350-10
Instrument ID: LCMS1 Run Time: 09:25 Prep Method: 6850
File ID: 1LM.LM35342 Analyst: WTD Method: 6850
Workgroup (AAB#): WG572350 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.220	110	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4804245
Report generated 06/14/2016 08:48

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16060616
Instrument ID: LCMS1
Workgroup (AAB#): WG572350

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16060616-01	10000	DL01	483000
L16060616-02	1.00	01	415000
L16060616-03	1.00	01	467000
WG572350-02	1.00	01	490000
WG572350-03	1.00	01	484000
WG572350-04	1.00	01	484000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4804250
Report generated 06/14/2016 08:48

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**	6850	**Samplenum:**	L16060616-01
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35315
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/11/2016 23:38	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	135000	46200	2.92	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**	6850	**Samplenum:**	L16060616-02
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35340
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/13/2016 08:47	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	896000	301000	2.98	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**	6850	**Samplenum:**	L16060616-03
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35317
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/12/2016 00:16	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	77800	26400	2.95	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**		**Samplenum:**	WG572339-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35296
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/11/2016 17:38	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	172000	59300	2.90	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**		**Samplenum:**	WG572339-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35298
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/11/2016 18:16	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**		**Samplenum:**	WG572339-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35310
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/11/2016 22:03	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	180000	60500	2.98	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**		**Samplenum:**	WG572339-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35312
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/11/2016 22:41	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**		**Samplenum:**	WG572339-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35318
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/12/2016 00:35	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	174000	61600	2.82	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**		**Samplenum:**	WG572339-10
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35320
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/12/2016 01:13	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	674	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**	6850	**Samplenum:**	WG572350-01
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35300
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/11/2016 18:54	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	41100	12200	3.37	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**	6850	**Samplenum:**	WG572350-02
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35301
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/11/2016 19:13	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	227	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**	6850	**Samplenum:**	WG572350-03
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35302
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/11/2016 19:32	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35000	12100	2.89	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**	6850	**Samplenum:**	WG572350-04
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35303
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/11/2016 19:51	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34400	11900	2.89	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**	6850	**Samplenum:**	WG572350-05
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35299
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/11/2016 18:35	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35100	12900	2.72	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**	6850	**Samplenum:**	WG572350-06
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35311
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/11/2016 22:22	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37800	12300	3.07	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**	6850	**Samplenum:**	WG572350-07
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35319
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/12/2016 00:54	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38100	13000	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**	6850	**Samplenum:**	WG572350-08
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35323
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/12/2016 21:22	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36000	12100	2.98	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**	6850	**Samplenum:**	WG572350-09
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35335
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/13/2016 01:09	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	41200	14000	2.94	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**	6850	**Samplenum:**	WG572350-10
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35339
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/13/2016 08:28	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	39900	13800	2.89	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**	6850	**Samplenum:**	WG572350-10
Instrument:	LCMS1	**Prep Date:**	06/11/2016 11:00	**File ID:**	1LM.LM35342
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/13/2016 09:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	42100	14300	2.94	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**		**Samplenum:**	WG572372-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35321
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/12/2016 20:44	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1120	906	1.24	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**		**Samplenum:**	WG572372-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35322
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/12/2016 21:03	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	166000	58600	2.83	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**		**Samplenum:**	WG572372-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35334
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/13/2016 00:50	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	190000	63900	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**		**Samplenum:**	WG572372-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35336
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/13/2016 01:28	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**		**Samplenum:**	WG572372-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35337
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/13/2016 07:50	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**		**Samplenum:**	WG572372-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35338
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/13/2016 08:09	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	189000	64700	2.92	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**		**Samplenum:**	WG572372-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35341
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/13/2016 09:06	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	192000	65900	2.91	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060616	**Prep Method:**		**Samplenum:**	WG572372-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35343
Analyst:	WTD	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG572350	**Analysis Date:**	06/13/2016 09:44	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

2.2.2.3 Sample Data

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Printed: 6/12/2016 9:48 PM

Data File	LM35315.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 11:38:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060616-01 10000X	**Injection Vial**	49.00
Data File	LM35315.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 11:38:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	L16060616-01	**Dilution Factor**	1.00
Sample Comment	110,000.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.830e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.350e+05	9.84	N/A	0.829
Perchlorate conf	4.620e+04	9.83	N/A	0.837

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

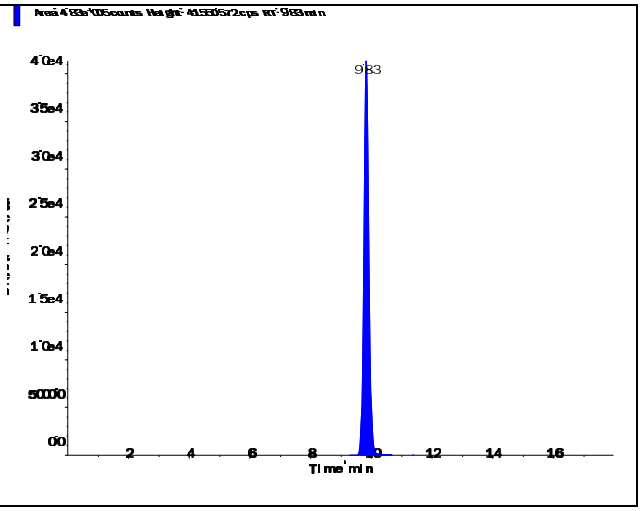

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.829 ng/ml
Area Ratio:	0.28
Sample Type:	(Unknown)

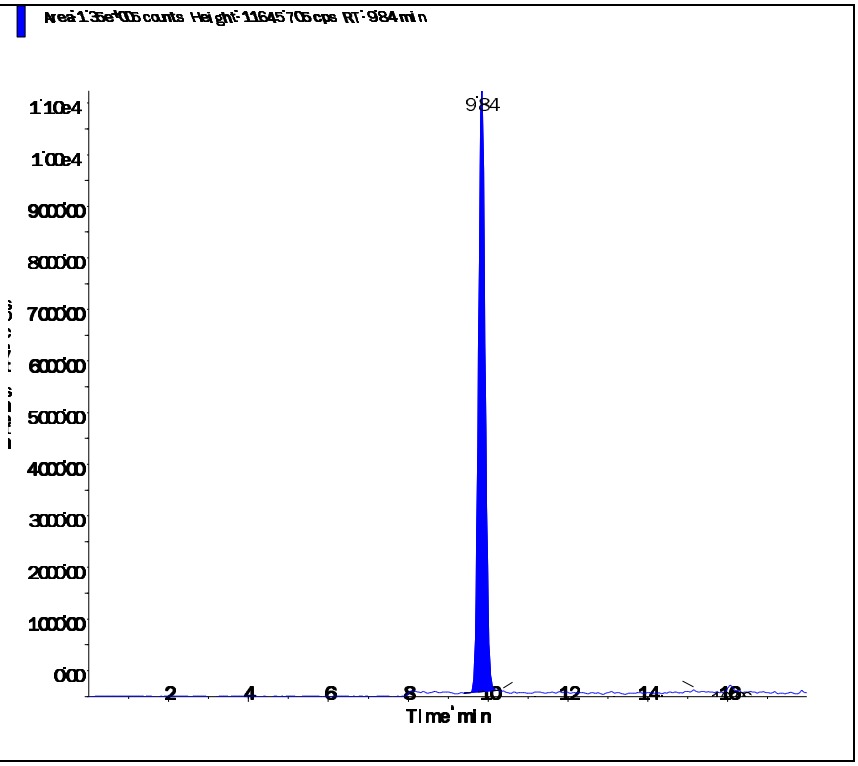

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.837 ng/ml
Area Ratio:	0.096
Sample Type:	(Unknown)

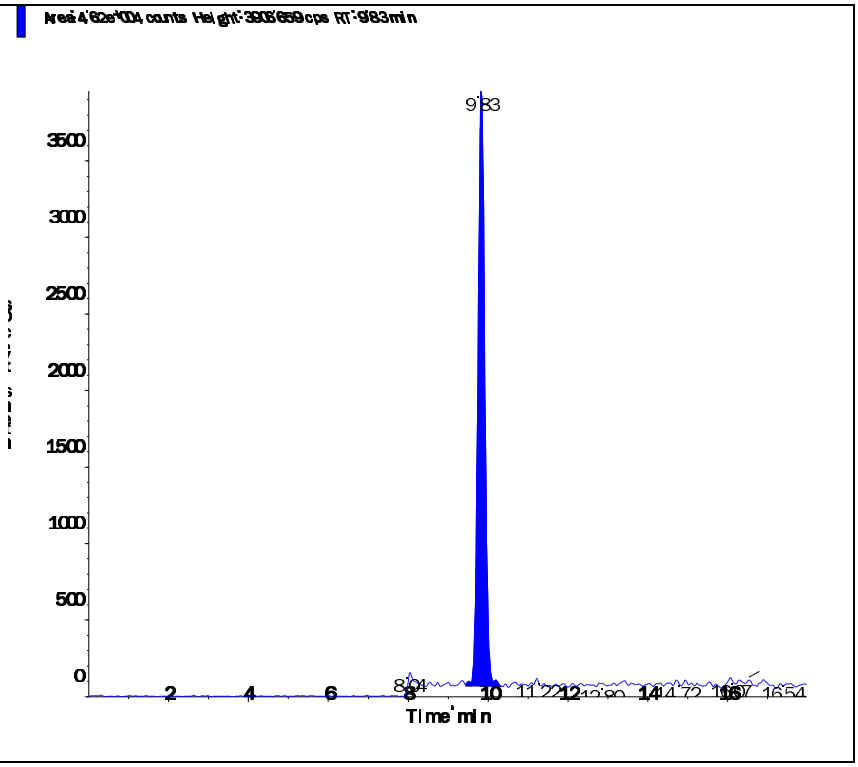

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Printed: 6/13/2016 10:36 AM

Data File	LM35340.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/13/2016 8:47:07 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060616-02	**Injection Vial**	60.00
Data File	LM35340.wiff	**Injection Volume**	10.00
Acquisition Date	6/13/2016 8:47:07 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	L16060616-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.150e+05	9.40	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.960e+05	9.42	N/A	6.42
Perchlorate conf	3.010e+05	9.40	N/A	6.48

O18LP (Internal Standard)

RT (Exp. RT): 9.40(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

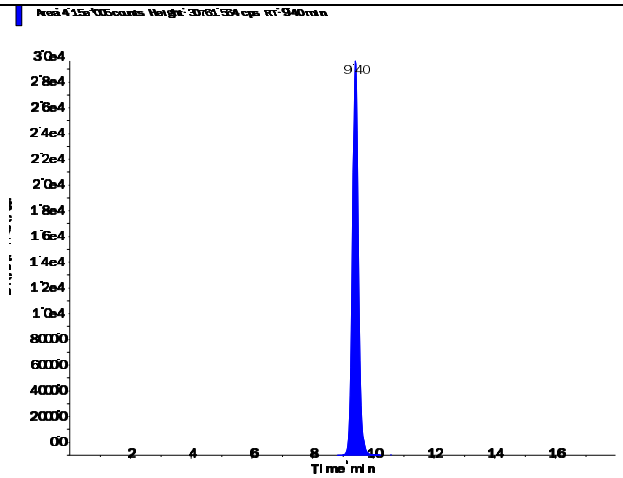

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Applied Biosystems | MDS SCIEX

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.42 (9.84) min
Calculated conc:	6.42 ng/ml
Area Ratio:	2.159
Sample Type:	(Unknown)

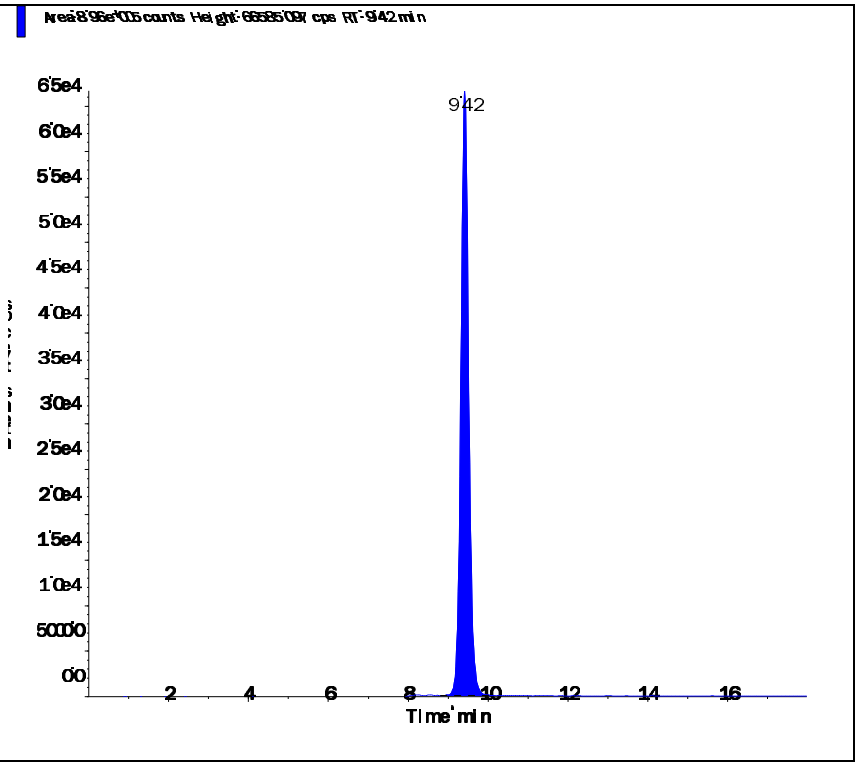

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	6.48 ng/ml
Area Ratio:	0.725
Sample Type:	(Unknown)

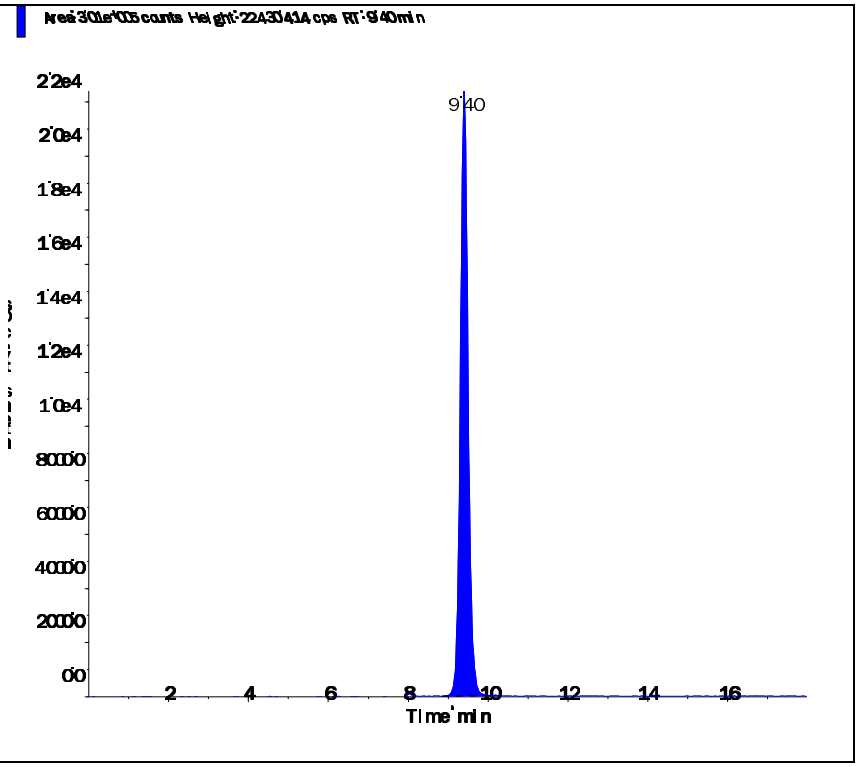

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Data File	LM35317.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/12/2016 12:16:29 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060616-03	**Injection Vial**	51.00
Data File	LM35317.wiff	**Injection Volume**	10.00
Acquisition Date	6/12/2016 12:16:29 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	L16060616-03	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.670e+05	9.77	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.780e+04	9.79	N/A	0.492
Perchlorate conf	2.640e+04	9.77	N/A	0.487

O18LP (Internal Standard)

RT (Exp. RT): 9.77(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

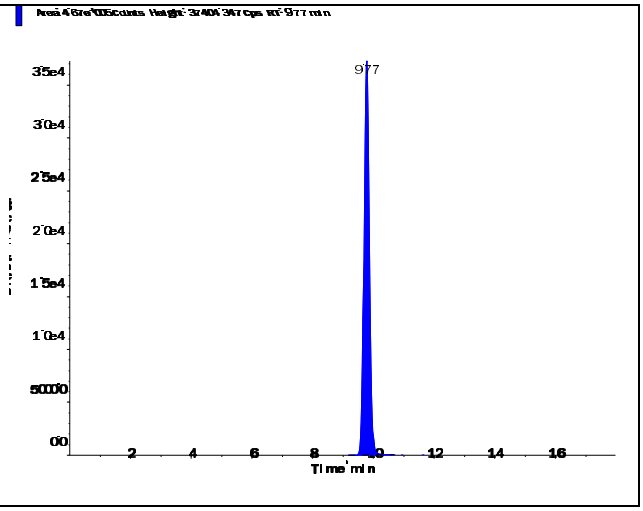

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.79 (9.84) min
Calculated conc:	0.492 ng/ml
Area Ratio:	0.167
Sample Type:	(Unknown)

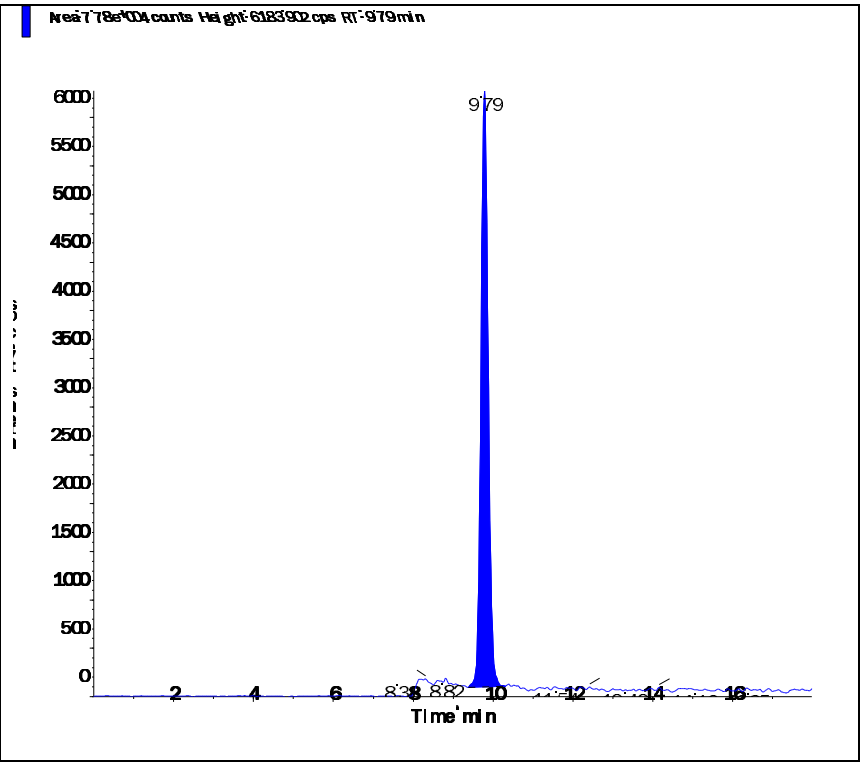

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.77 (9.84) min
Calculated conc:	0.487 ng/ml
Area Ratio:	0.057
Sample Type:	(Unknown)

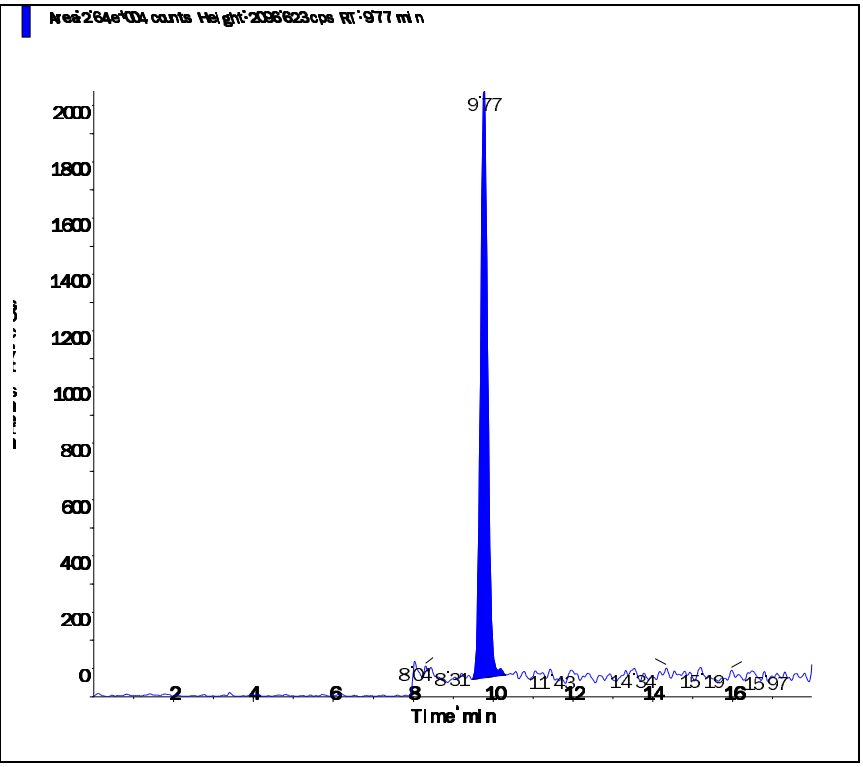

2.2.2.4 Standards Data

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Data File	LM34686.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

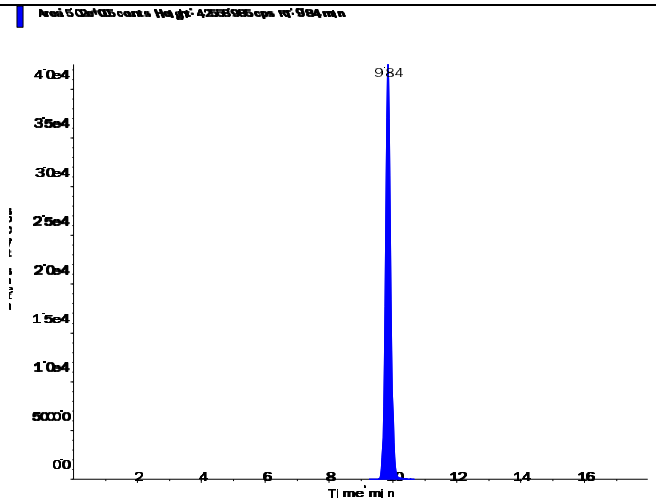

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

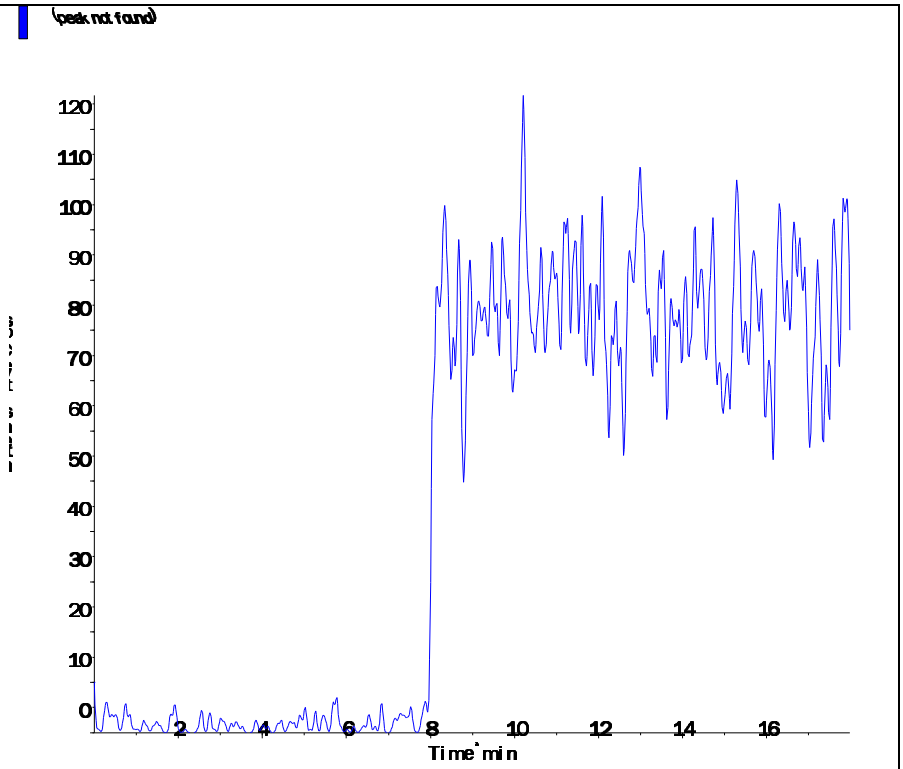

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

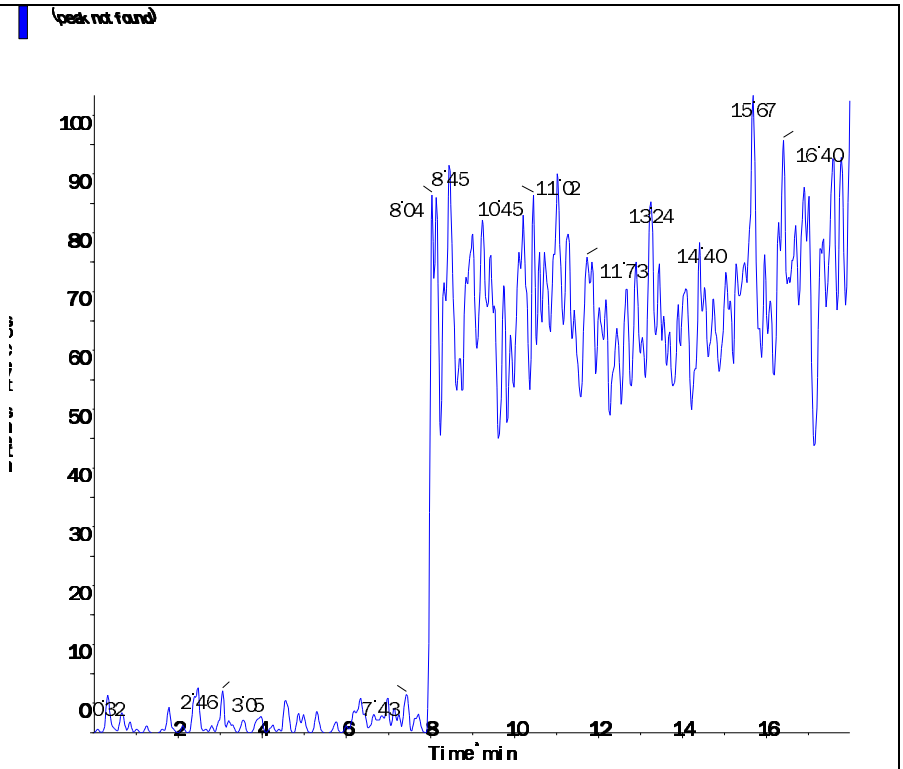

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Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

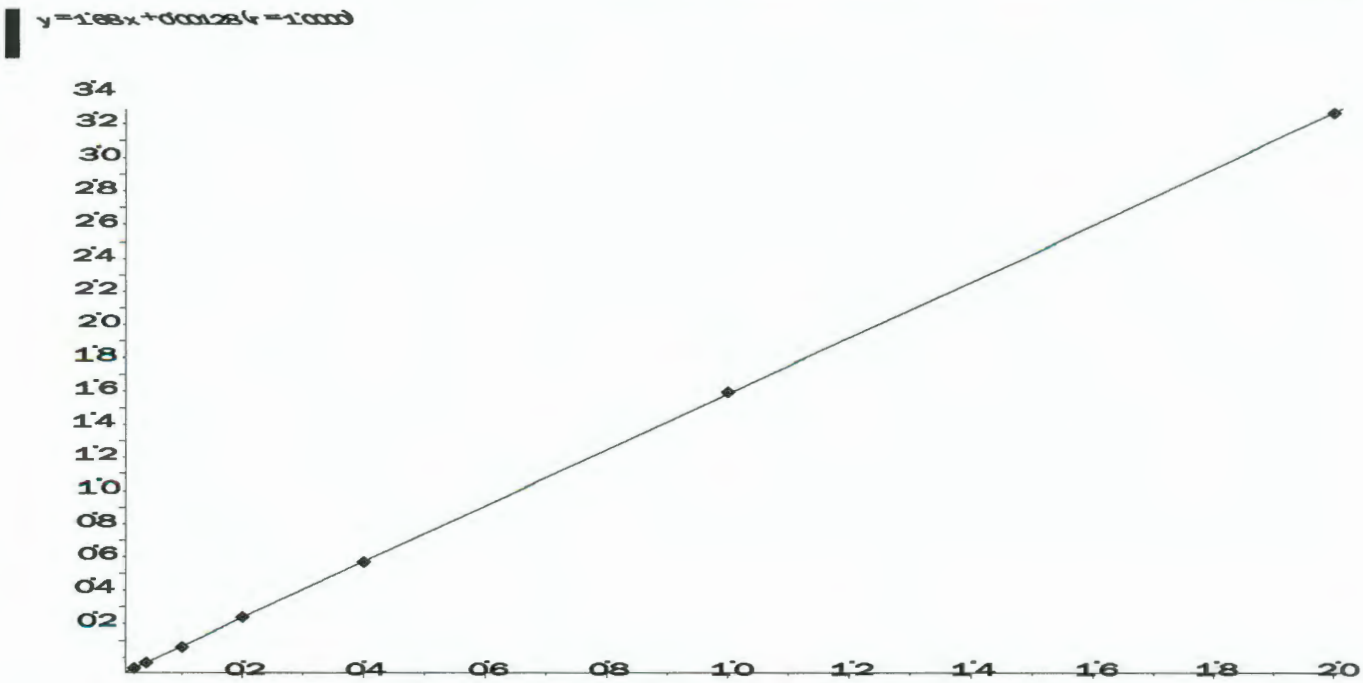

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Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

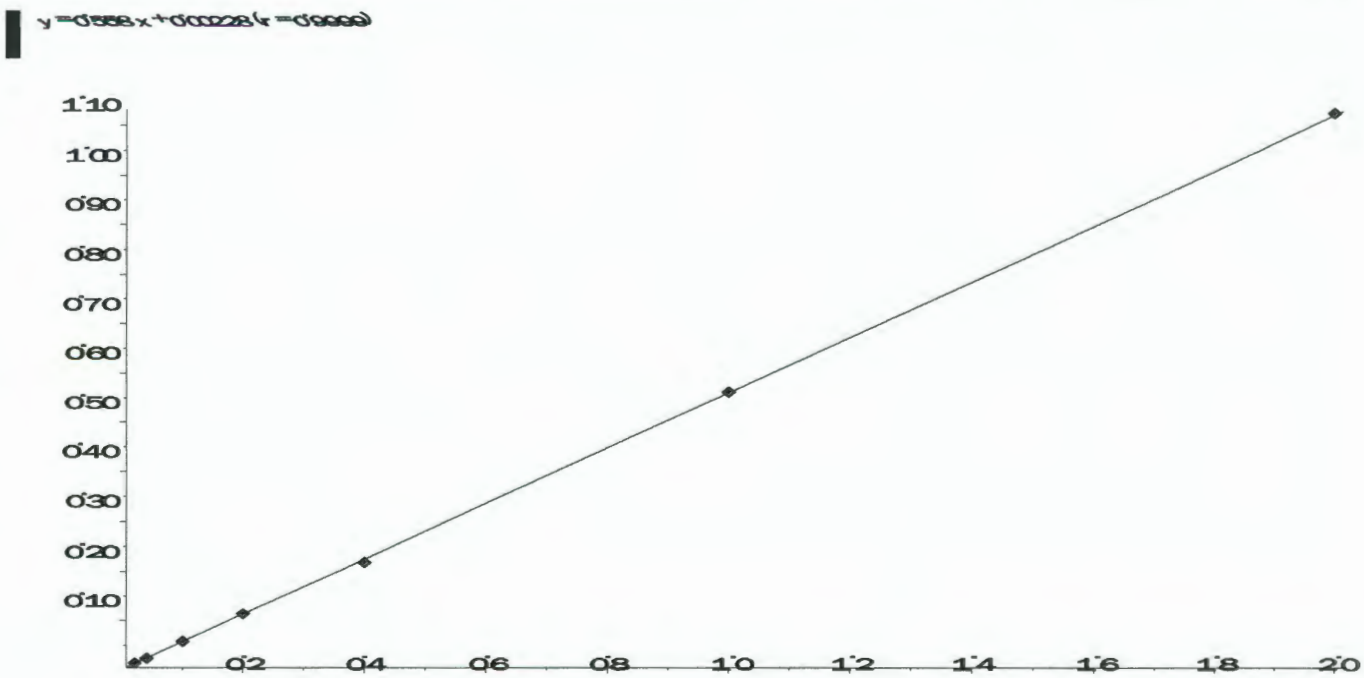

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Printed: 6/13/2016 10:28 AM

Data File	LM34687.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

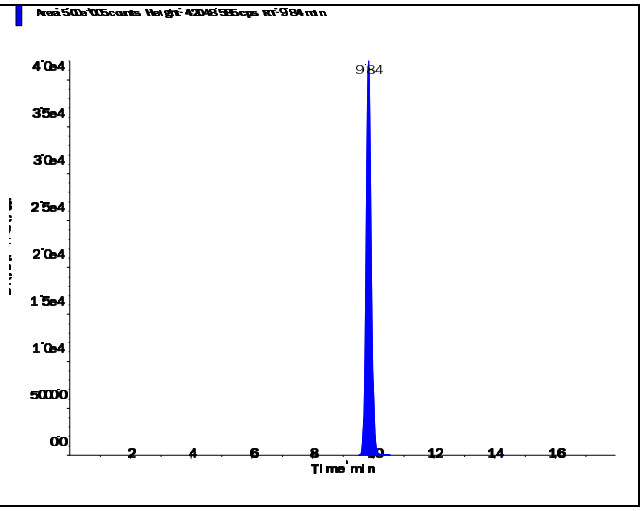

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.103 ng/ml
Area Ratio:	0.036
Sample Type:	(Standard)

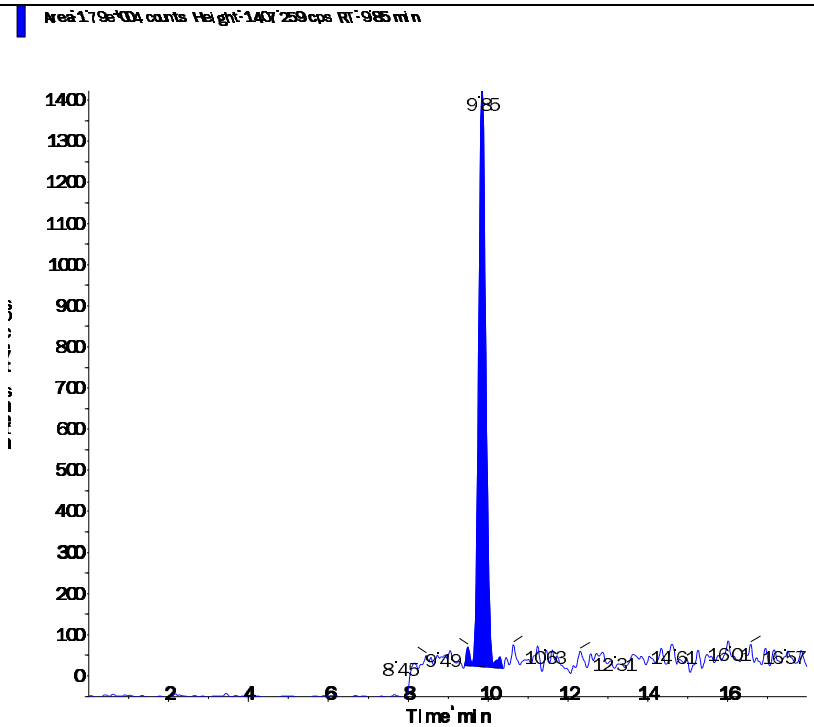

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.104 ng/ml
Area Ratio:	0.014
Sample Type:	(Standard)

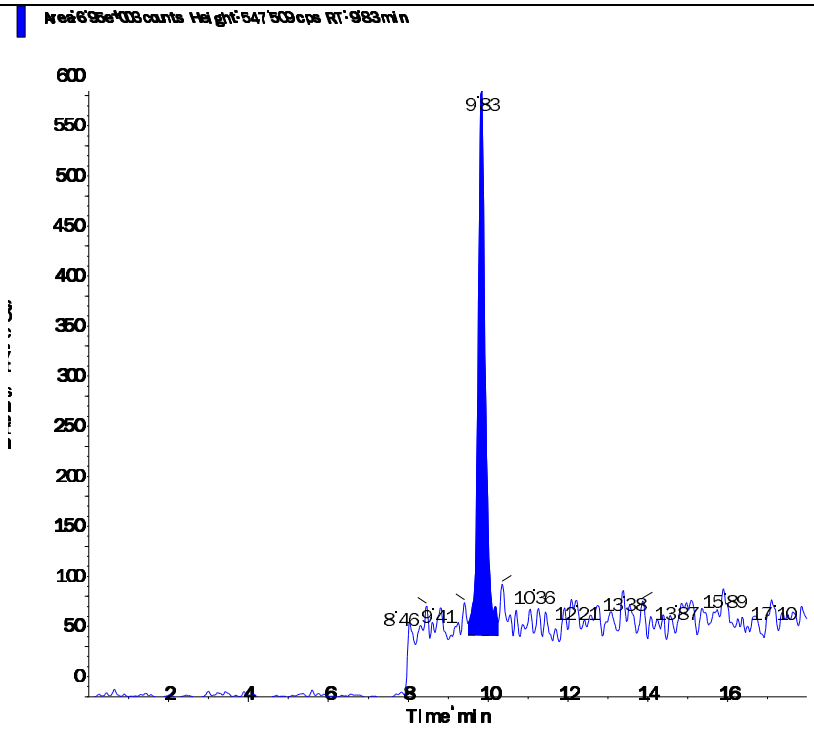

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Data File	LM34688.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

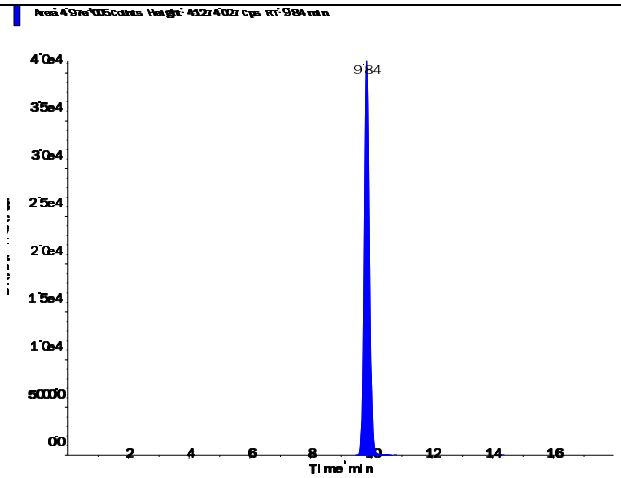

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

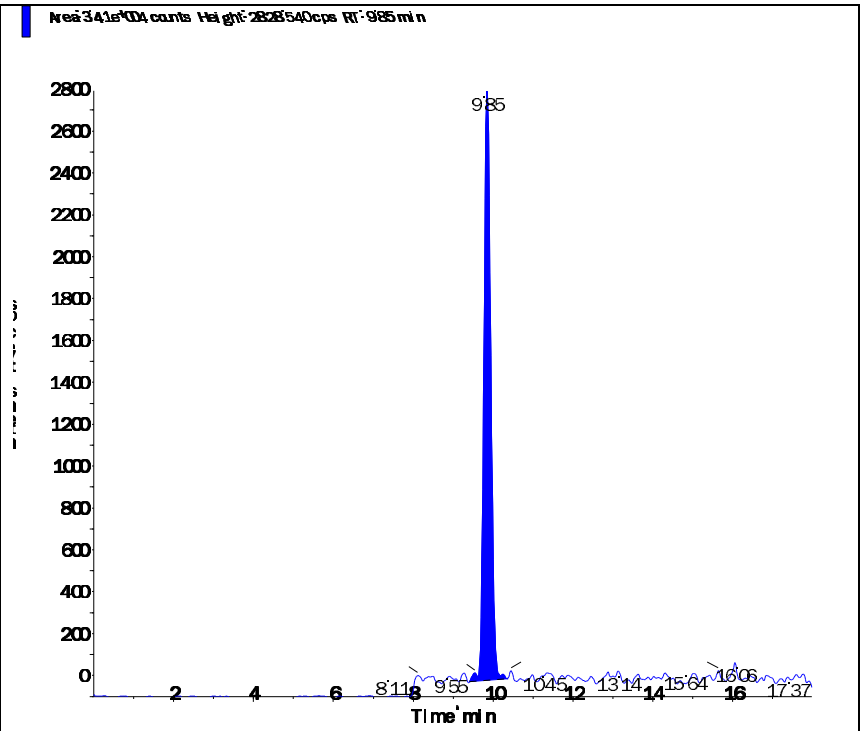

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

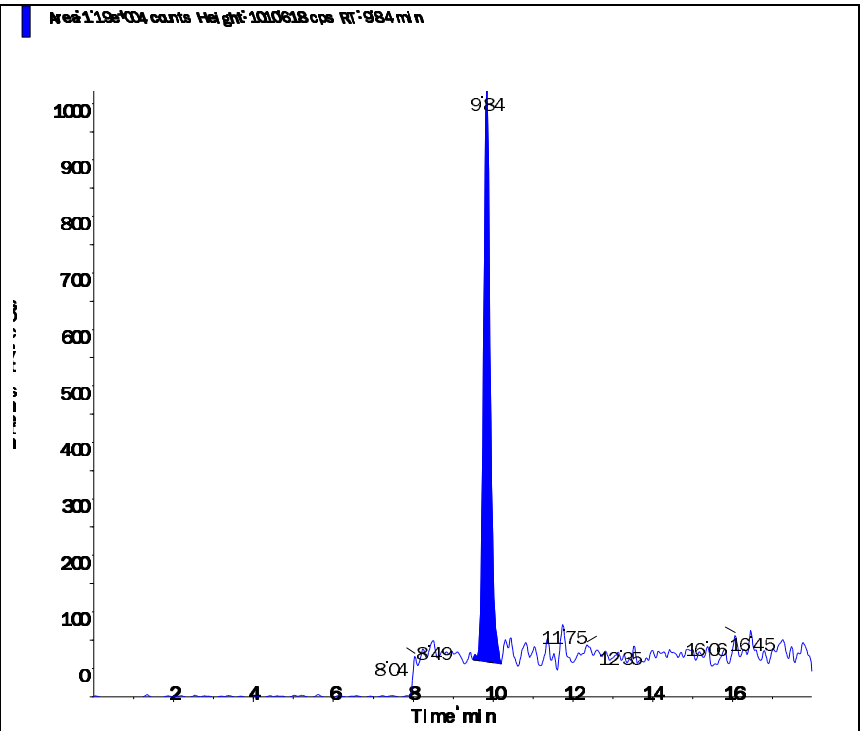

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Printed: 6/13/2016 10:28 AM

Data File	LM34689.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

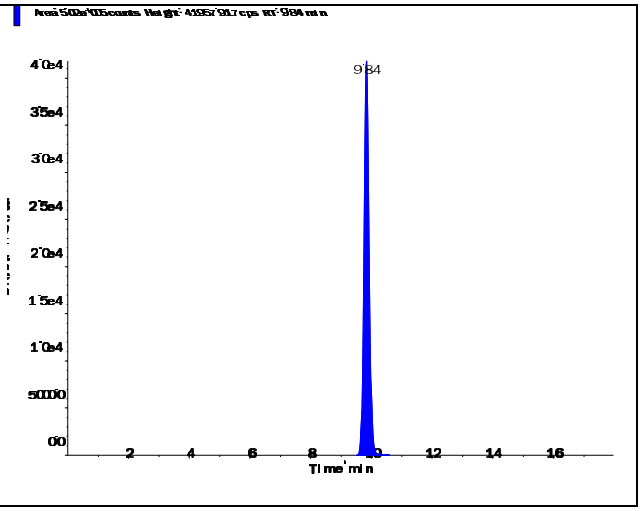

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 0.483 ng/ml Area Ratio: 0.164 Sample Type: (Standard)	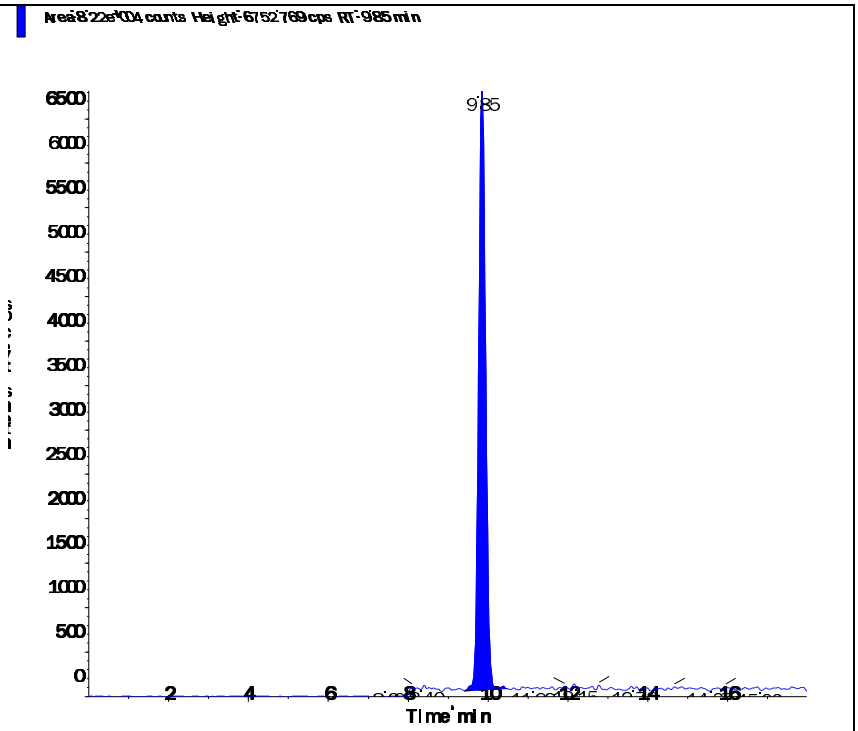
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 0.503 ng/ml Area Ratio: 0.058 Sample Type: (Standard)	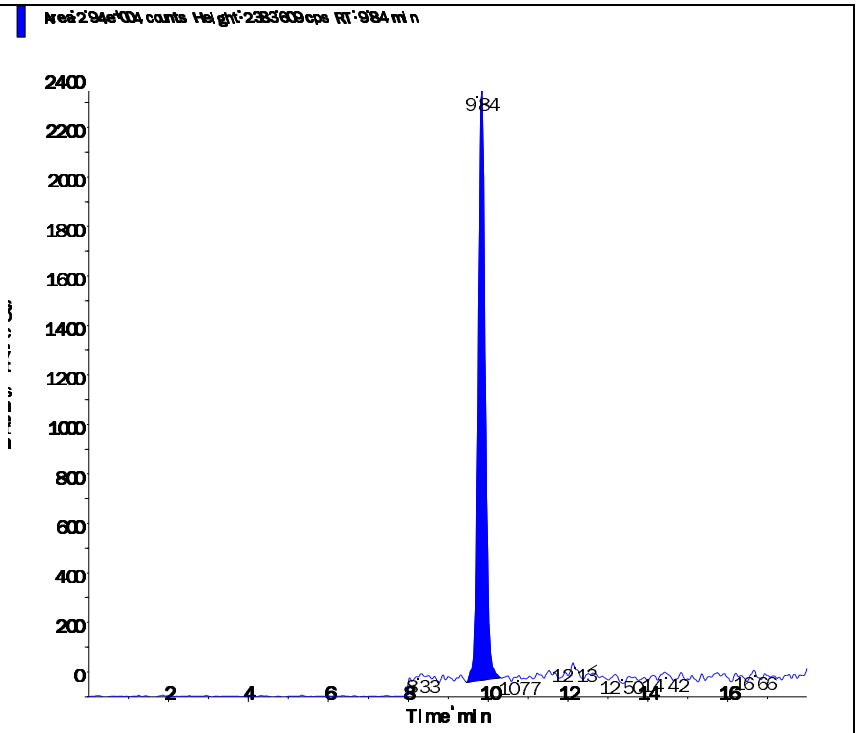

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Printed: 6/13/2016 10:29 AM

Data File	LM34690.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

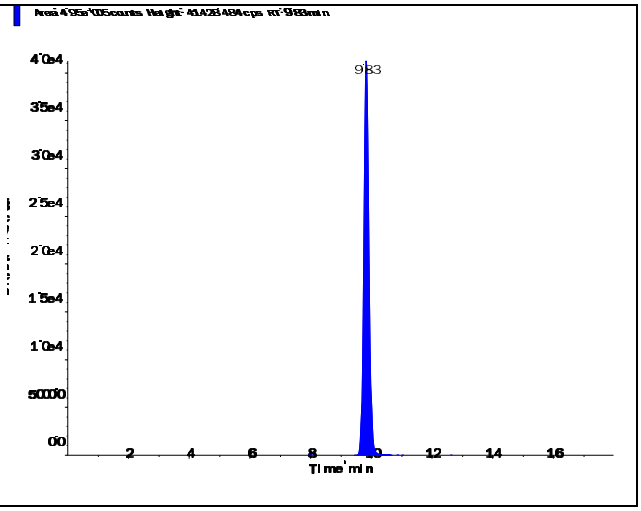

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Printed: 6/13/2016 10:29 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

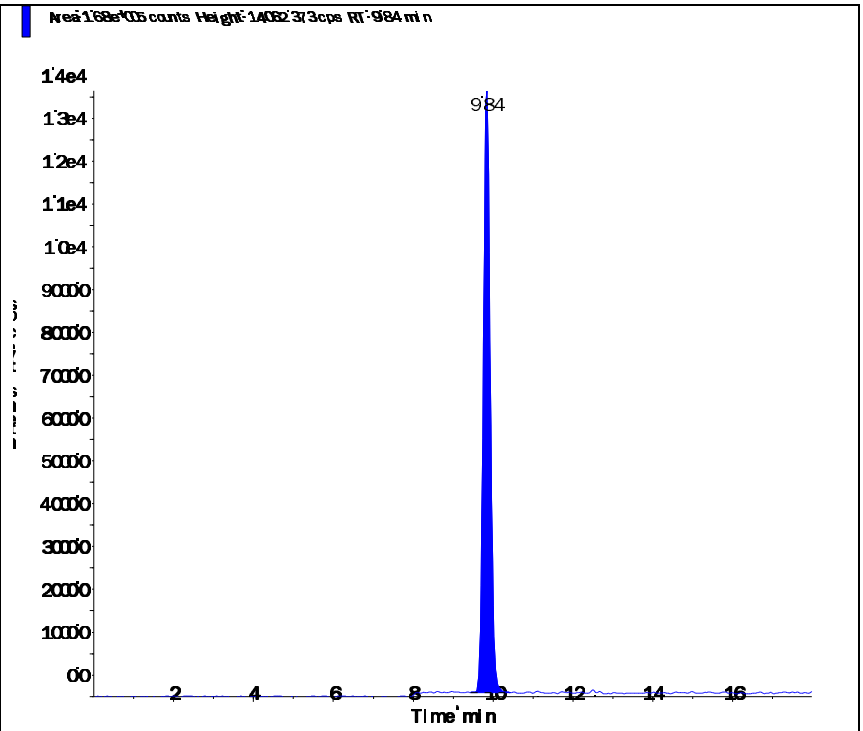

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

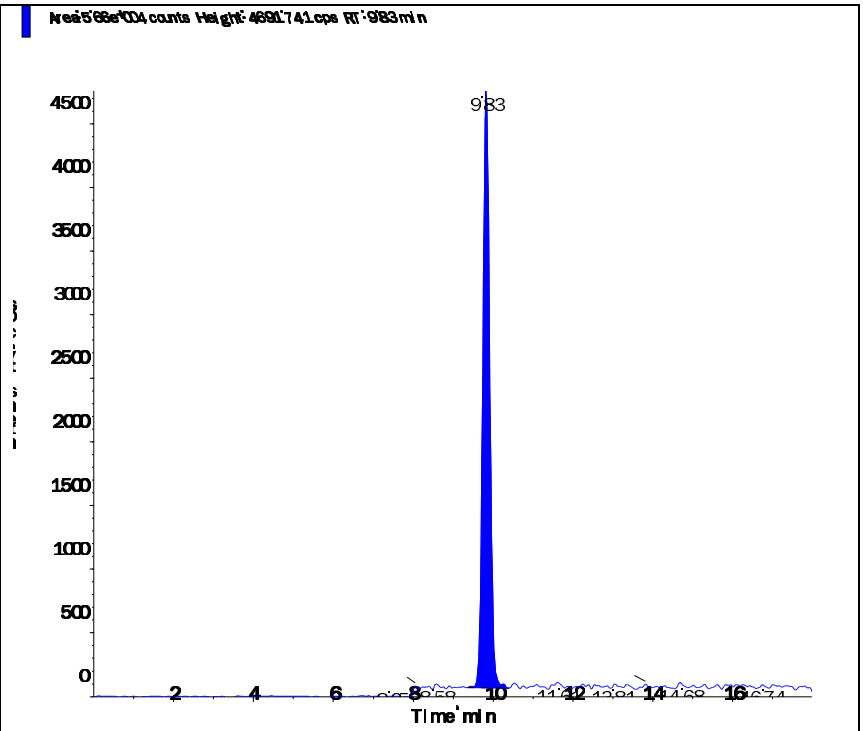

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Created with Analyst Reporter
Printed: 6/13/2016 10:29 AM

Data File	LM34691.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

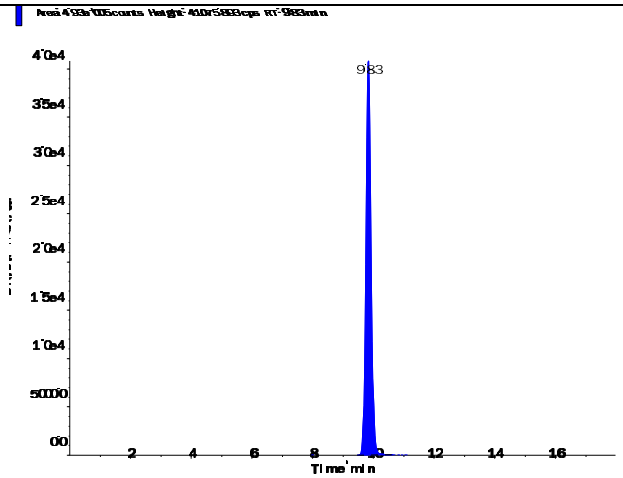

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 1.99 ng/ml Area Ratio: 0.669 Sample Type: (Standard)	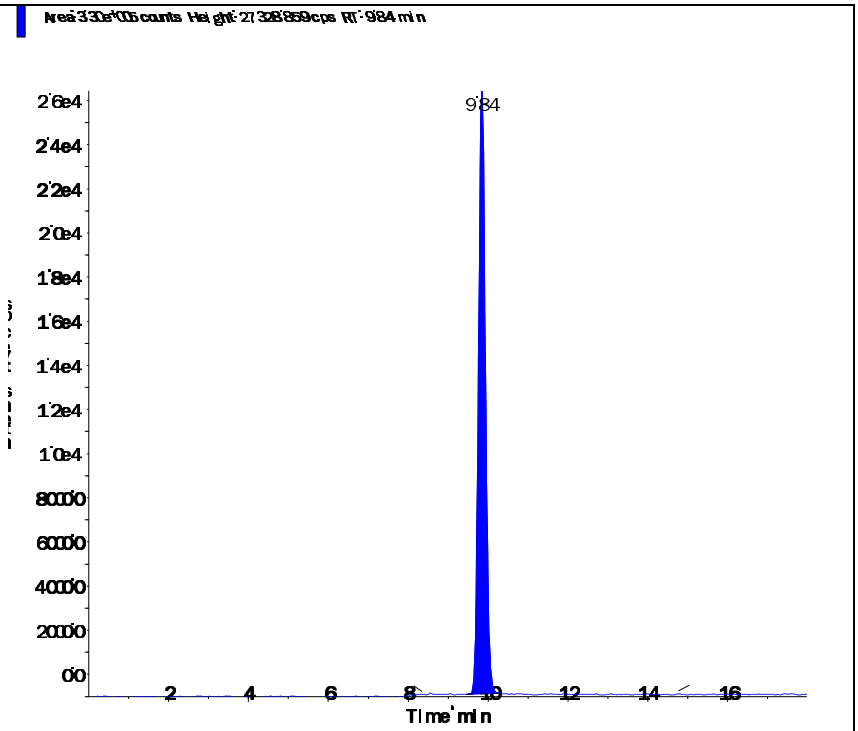
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 1.94 ng/ml Area Ratio: 0.219 Sample Type: (Standard)	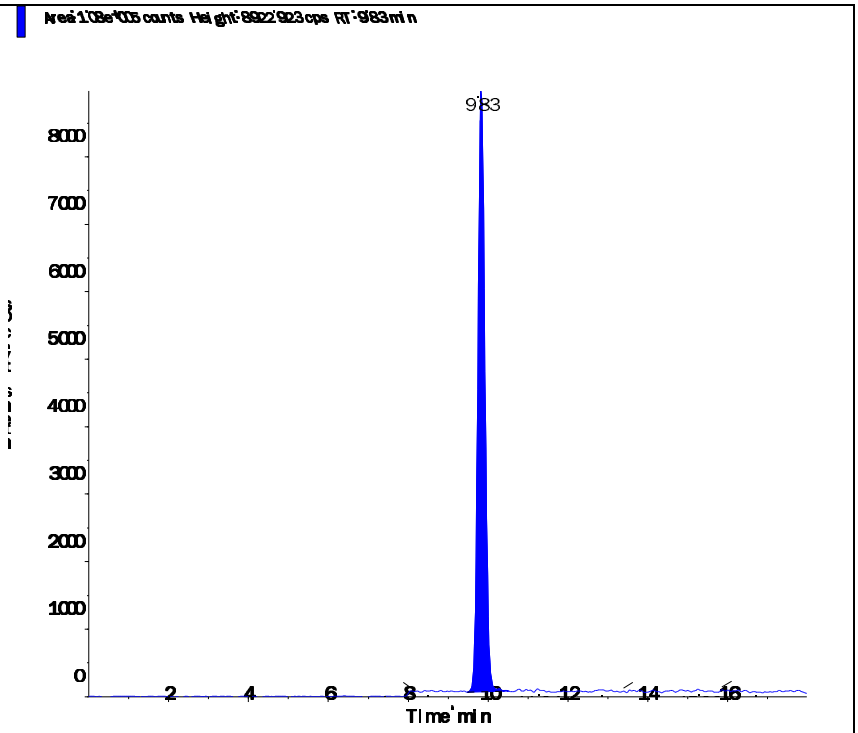

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Printed: 6/13/2016 10:29 AM

Data File	LM34692.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

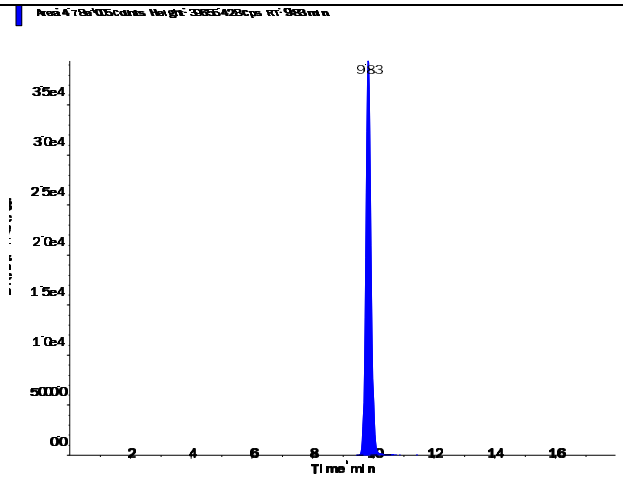

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

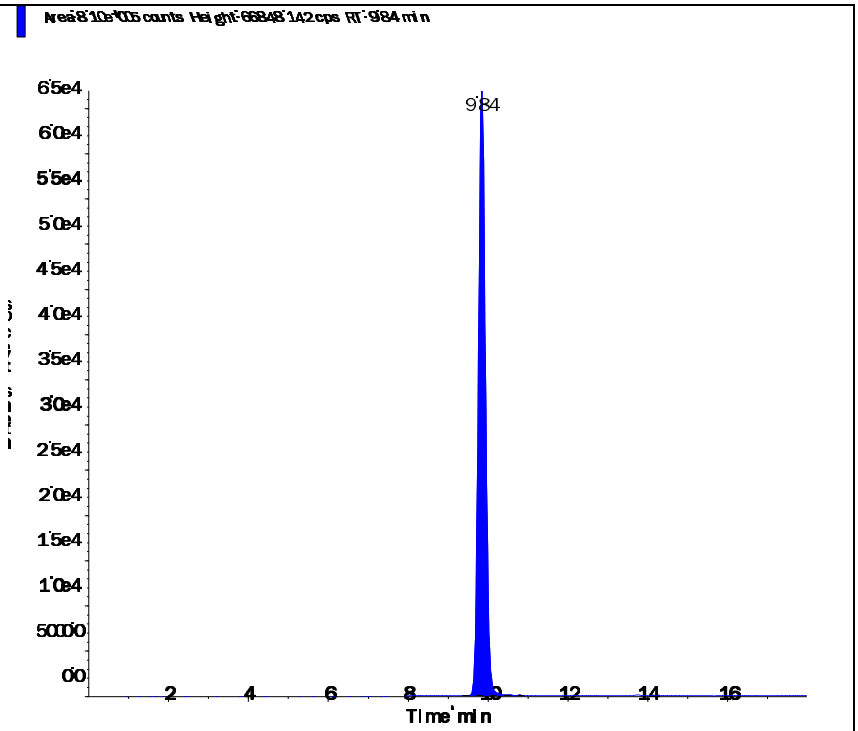

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

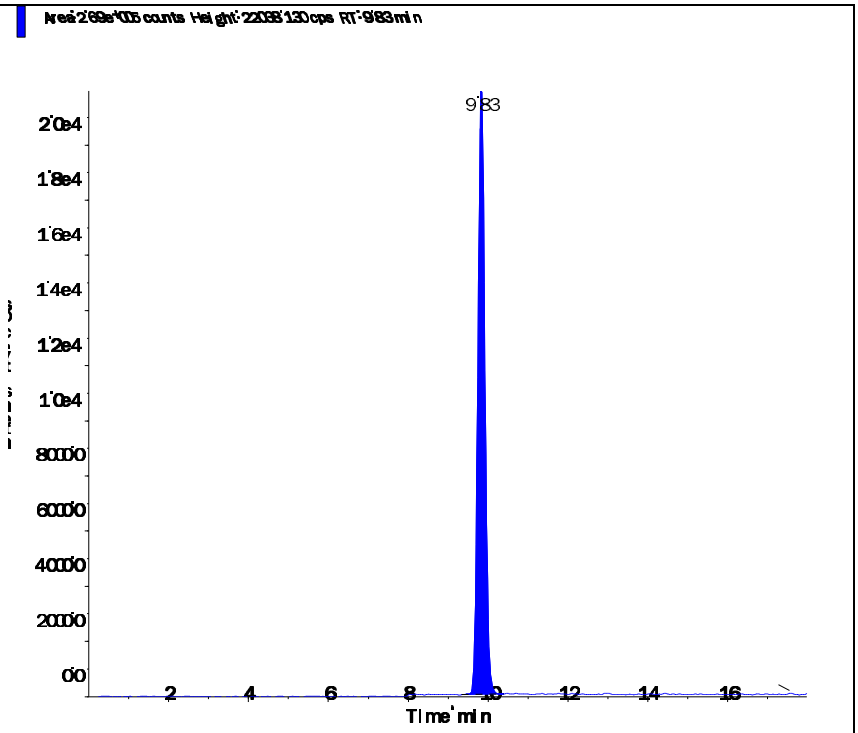

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Printed: 6/13/2016 10:30 AM

Data File	LM34693.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

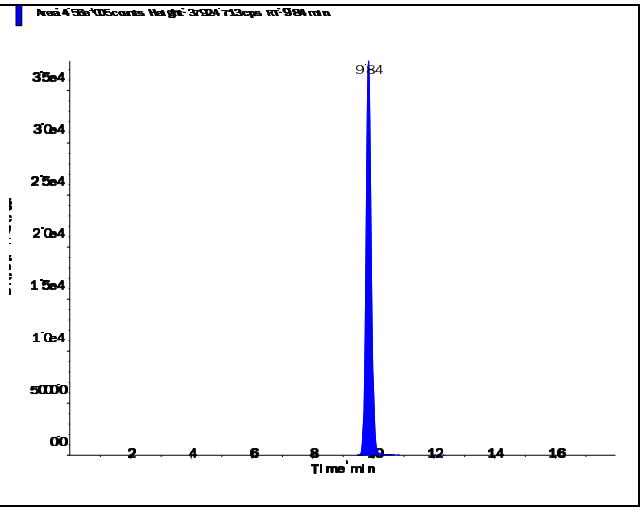

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	9.99 ng/ml
Area Ratio:	3.36
Sample Type:	(Standard)

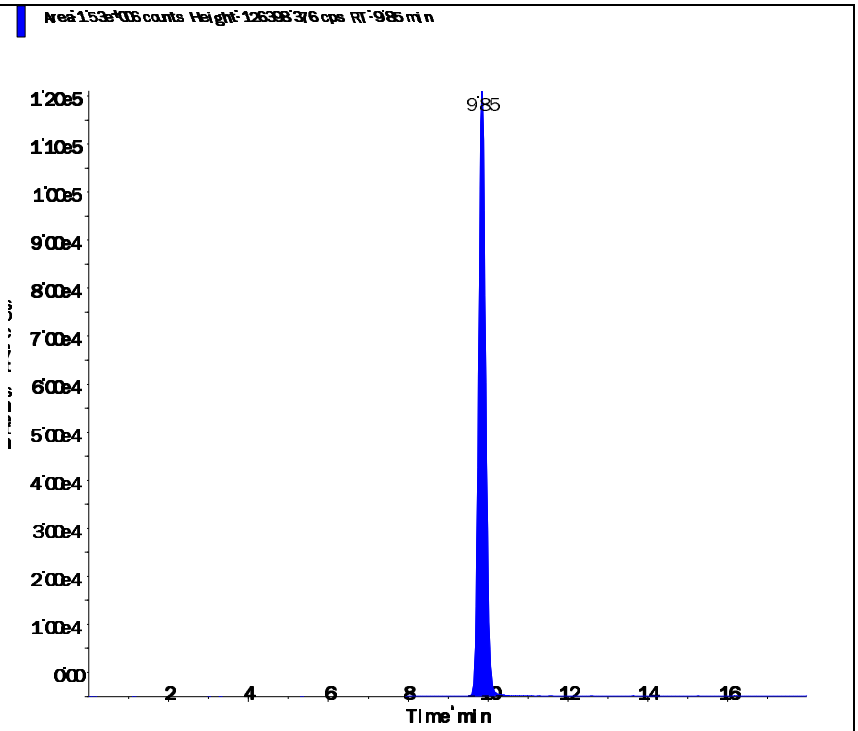

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	10.00 ng/ml
Area Ratio:	1.122
Sample Type:	(Standard)

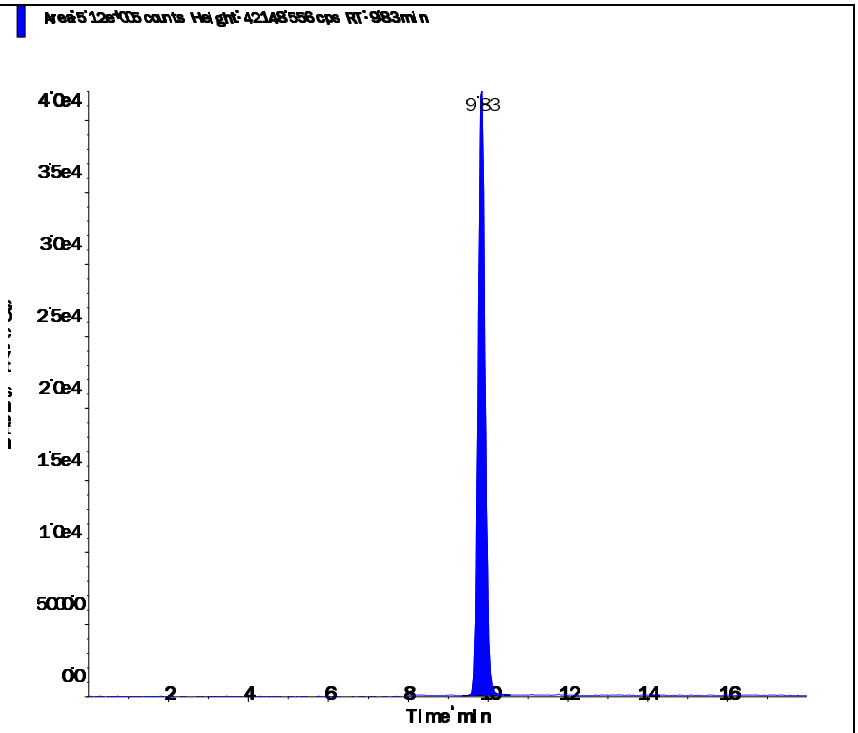

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Printed: 5/4/2016 1:23 PM

Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

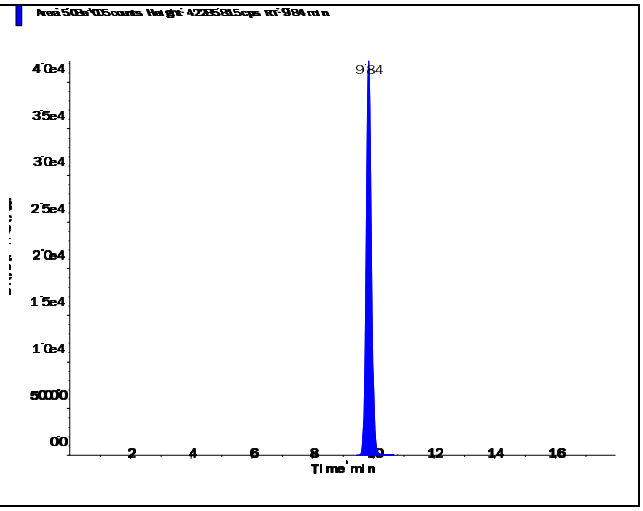

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Printed: 5/4/2016 1:23 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.332
Sample Type:	(Quality Control)

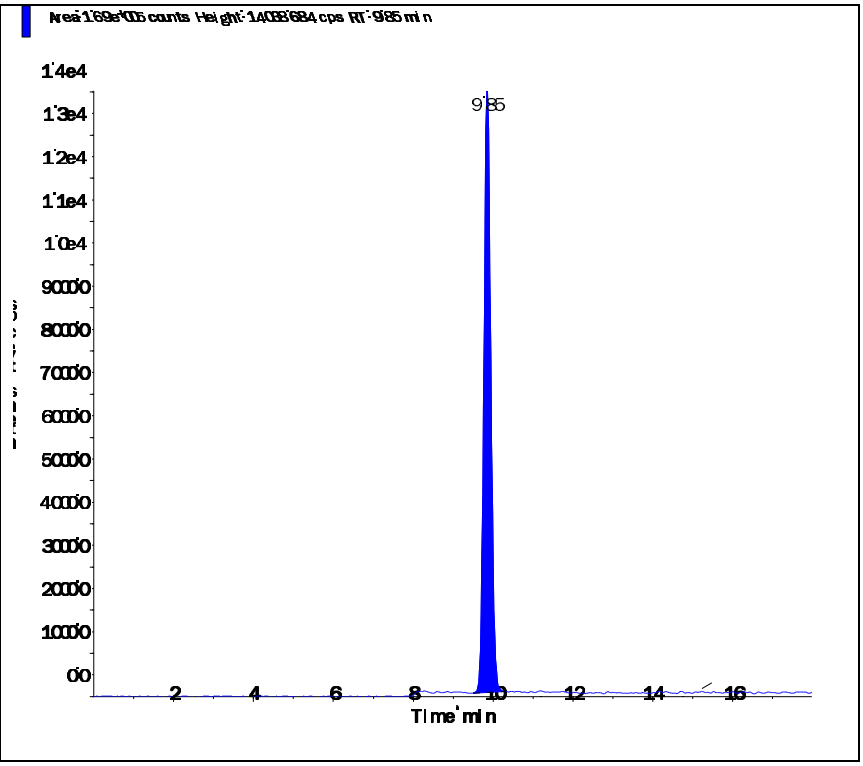

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

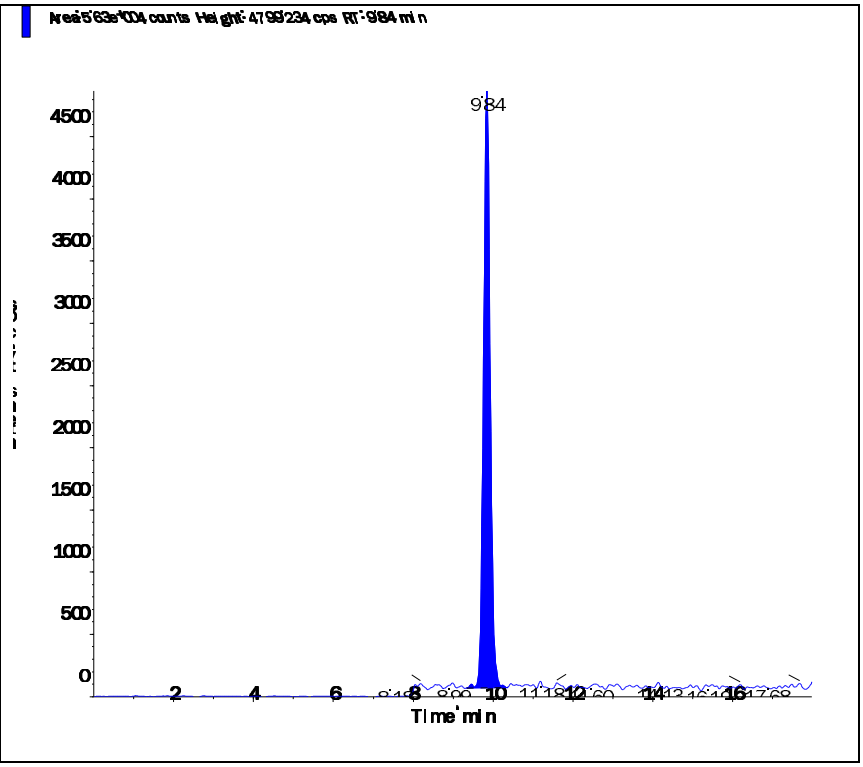

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Printed: 6/12/2016 9:42 PM

Data File	LM35296.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 5:38:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35296.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 5:38:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.960e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.720e+05	9.65	1.00	1.03
Perchlorate conf	5.930e+04	9.64	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

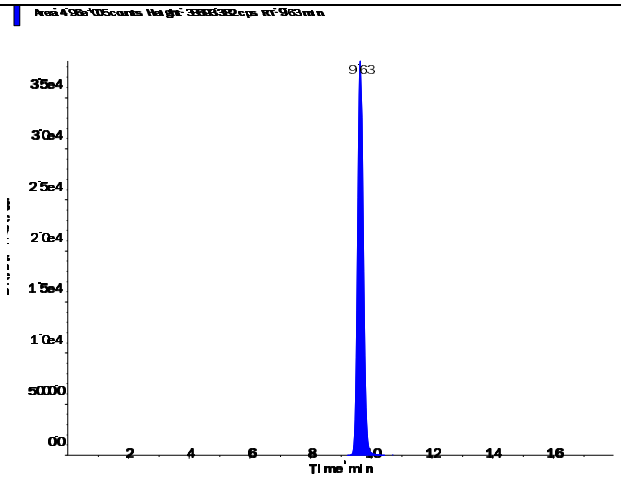

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Printed: 6/12/2016 9:42 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.65 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.346
Sample Type:	(Quality Control)

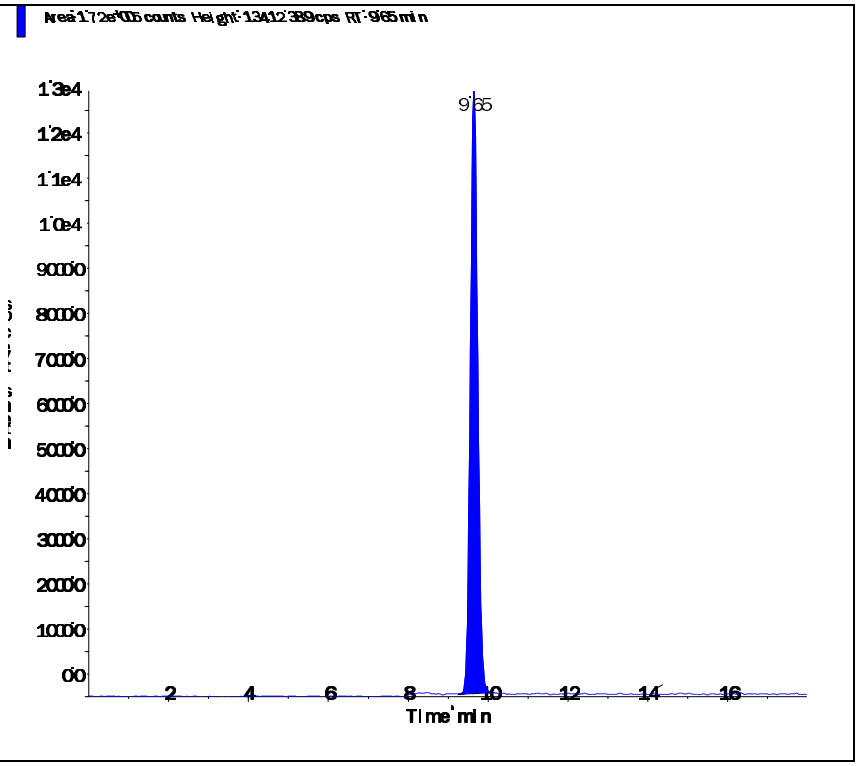

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

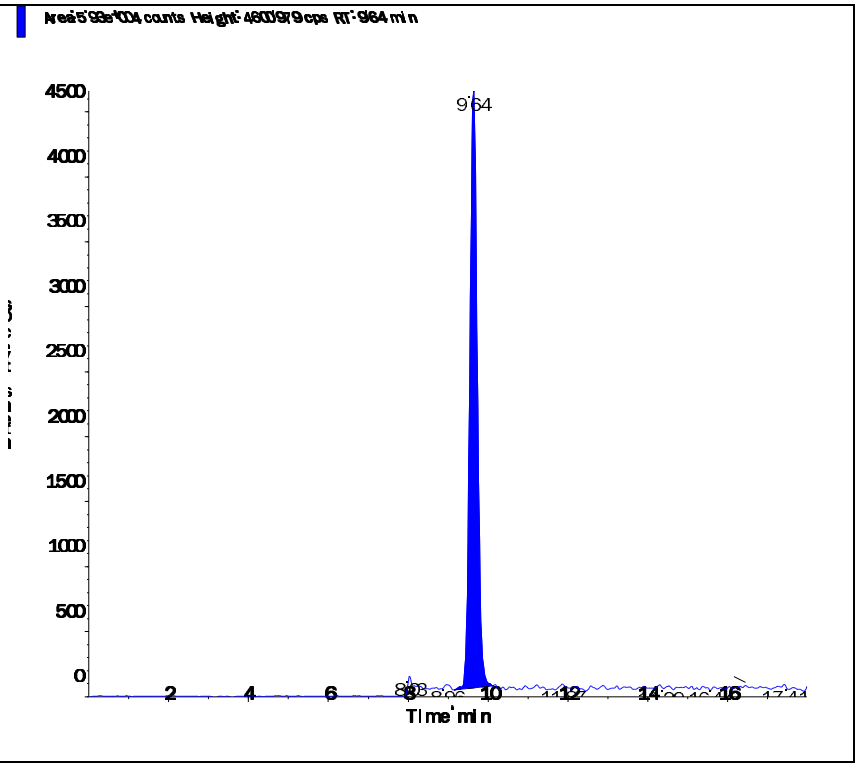

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Printed: 6/12/2016 9:46 PM

Data File	LM35310.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 10:03:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35310.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 10:03:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.050e+05	9.62	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.800e+05	9.63	1.00	1.06
Perchlorate conf	6.050e+04	9.62	1.00	1.05

O18LP (Internal Standard)

RT (Exp. RT): 9.62(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

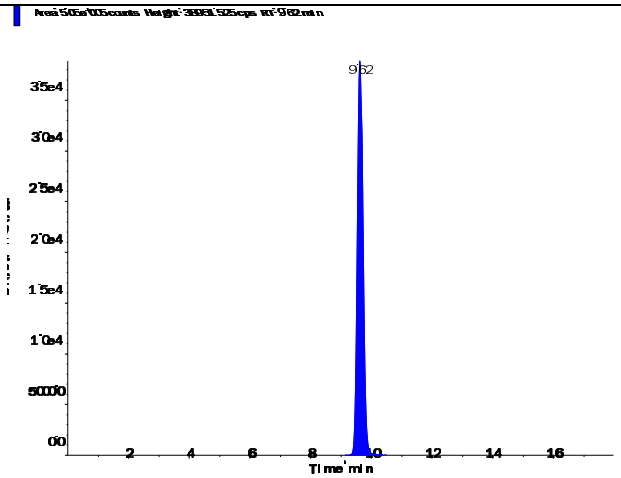

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.357
Sample Type:	(Quality Control)

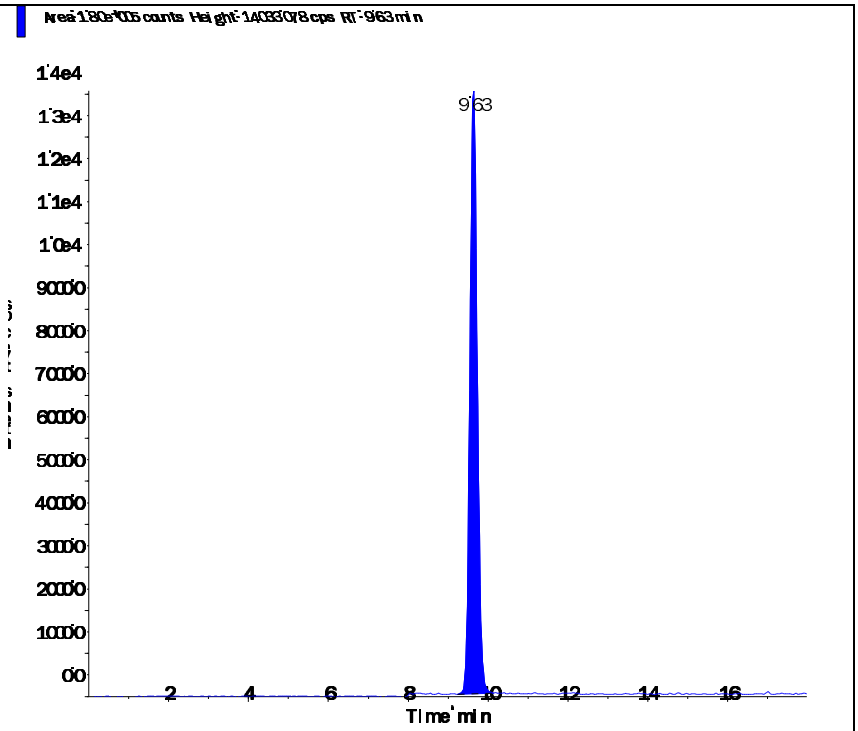

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.62 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.12
Sample Type:	(Quality Control)

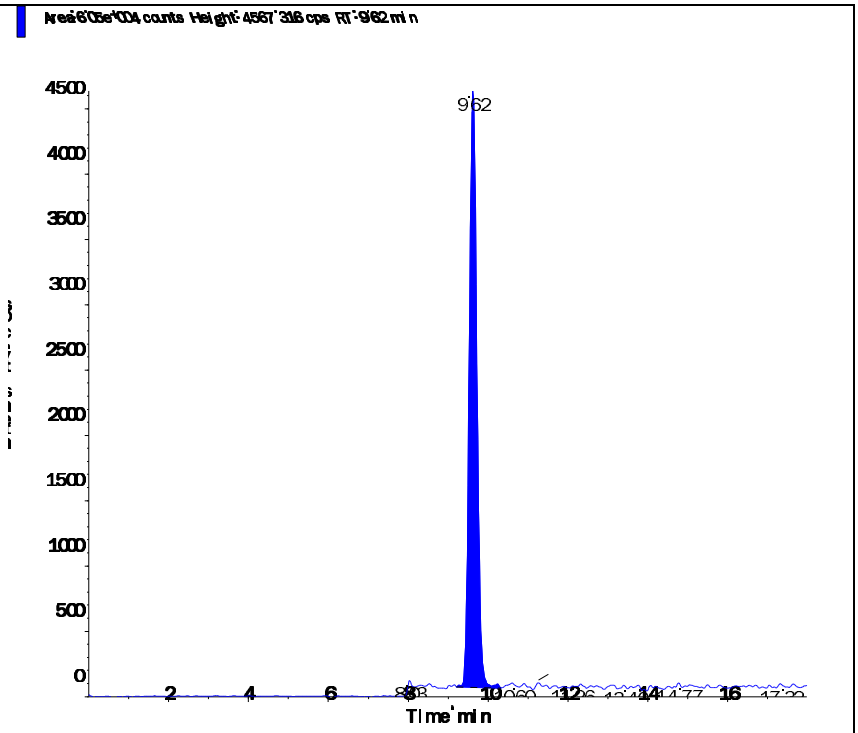

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Created with Analyst Reporter
Printed: 6/12/2016 9:48 PM

Data File	LM35318.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/12/2016 12:35:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35318.wiff	**Injection Volume**	10.00
Acquisition Date	6/12/2016 12:35:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.62	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.740e+05	9.63	1.00	1.01
Perchlorate conf	6.160e+04	9.62	1.00	1.06

O18LP (Internal Standard)

RT (Exp. RT): 9.62(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

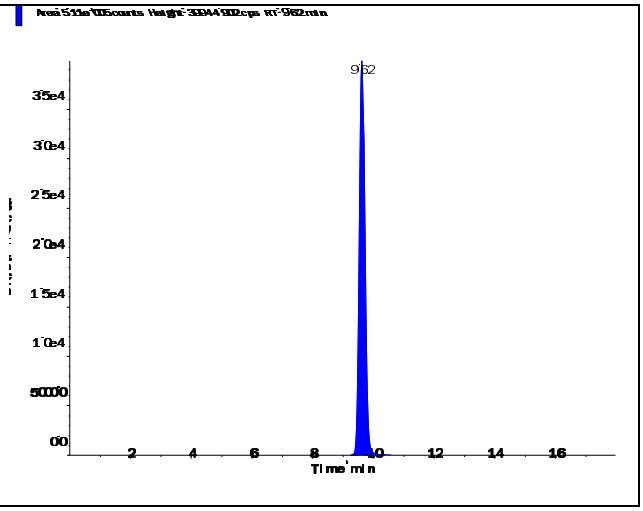

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.341
Sample Type:	(Quality Control)

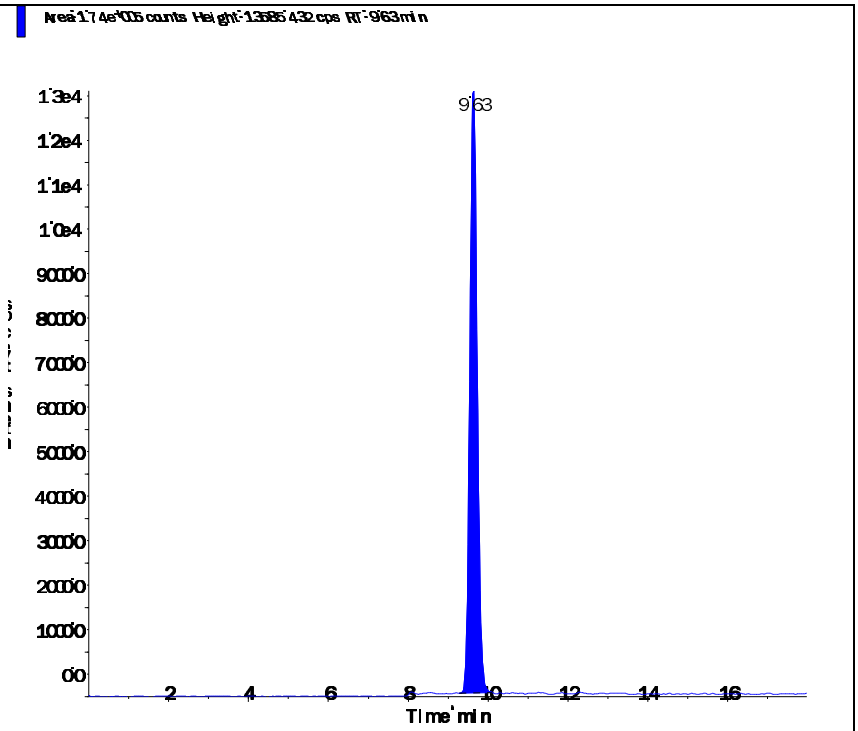

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.62 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.12
Sample Type:	(Quality Control)

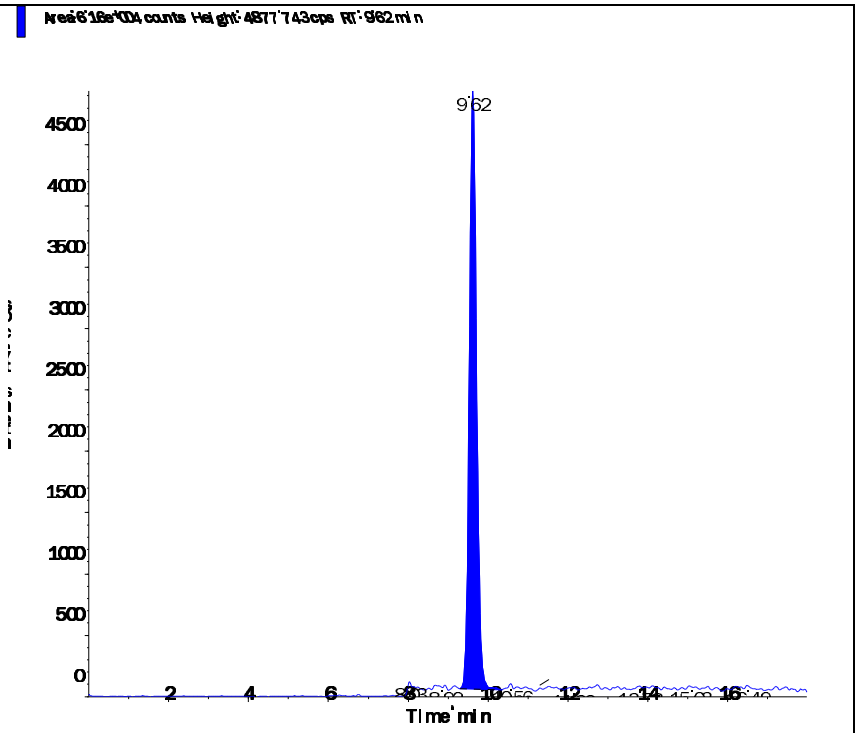

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Data File	LM35322.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/12/2016 9:03:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572372-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35322.wiff	**Injection Volume**	10.00
Acquisition Date	6/12/2016 9:03:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG572372-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.820e+05	9.60	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.660e+05	9.61	1.00	1.02
Perchlorate conf	5.860e+04	9.60	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 9.60(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

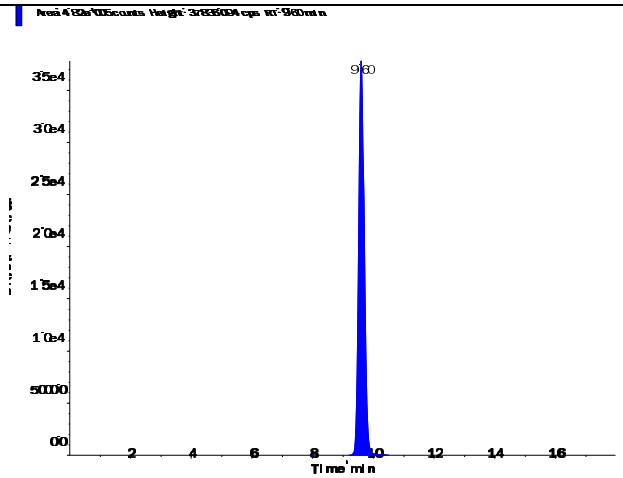

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.61 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.345
Sample Type:	(Quality Control)

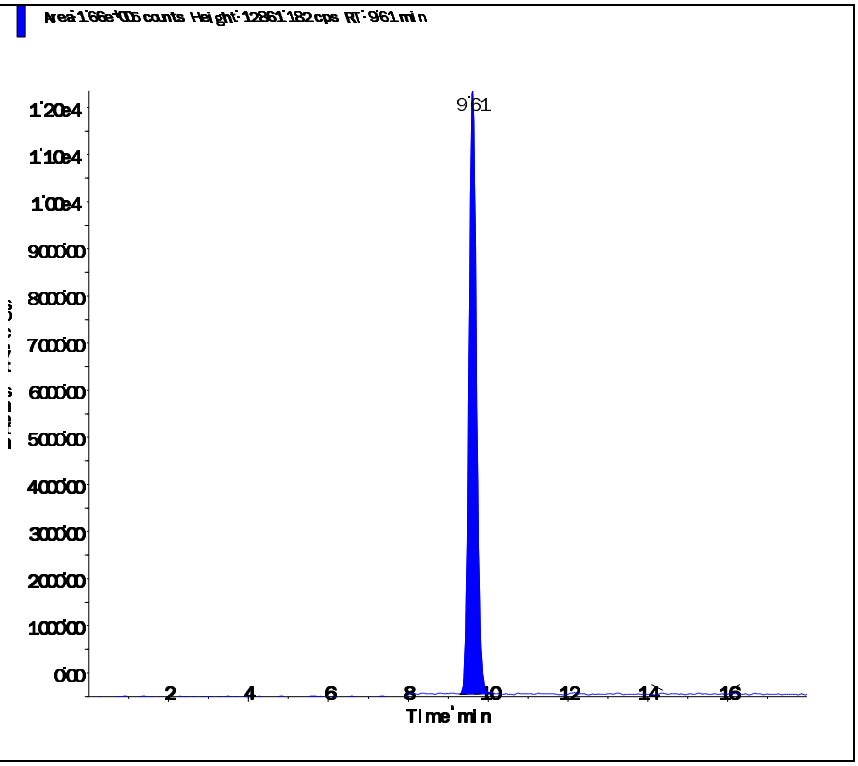

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.60 (9.84) min
Calculated conc:	1.07 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

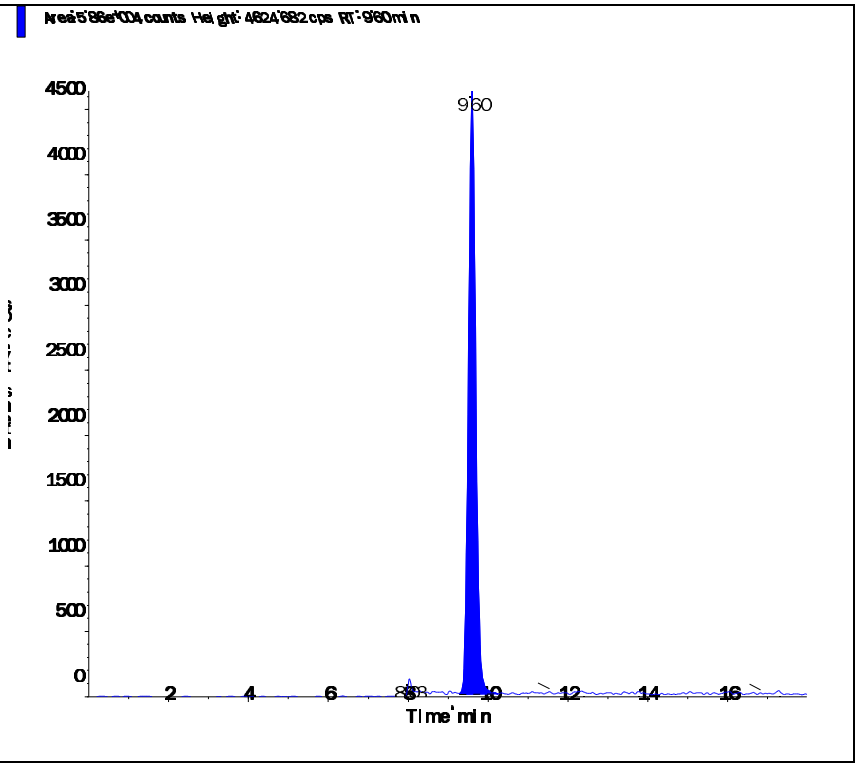

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Data File	LM35334.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/13/2016 12:50:29 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572372-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35334.wiff	**Injection Volume**	10.00
Acquisition Date	6/13/2016 12:50:29 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG572372-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.560e+05	9.60	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.900e+05	9.62	1.00	1.01
Perchlorate conf	6.390e+04	9.60	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.60(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

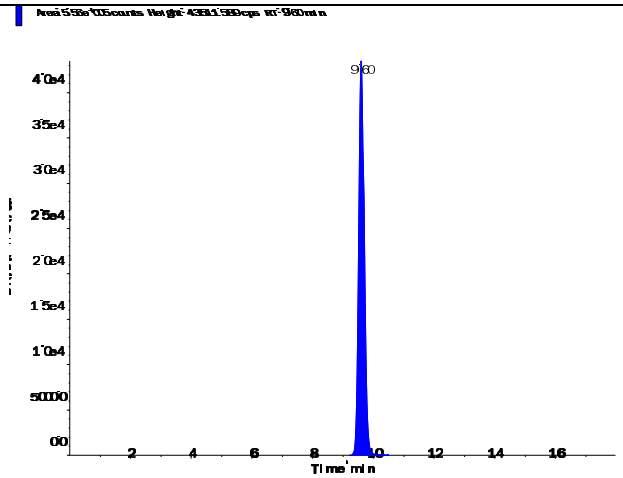

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.62 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.342
Sample Type:	(Quality Control)

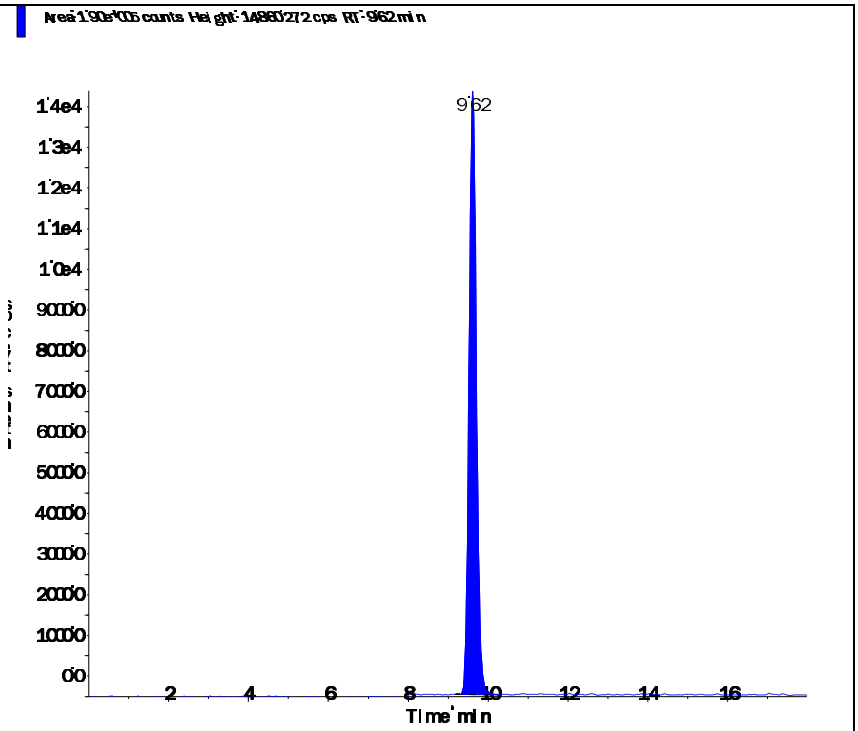

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.60 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.115
Sample Type:	(Quality Control)

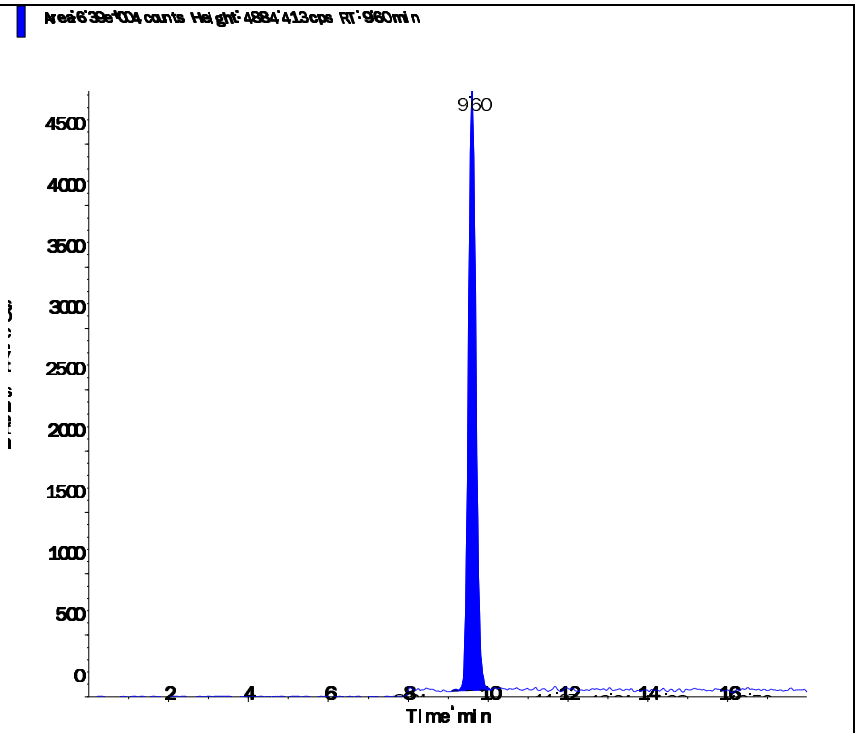

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Data File	LM35338.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/13/2016 8:09:16 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572372-06 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35338.wiff	**Injection Volume**	10.00
Acquisition Date	6/13/2016 8:09:16 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG572372-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.380e+05	9.57	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.890e+05	9.58	1.00	1.04
Perchlorate conf	6.470e+04	9.57	1.00	1.06

O18LP (Internal Standard)

RT (Exp. RT): 9.57(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

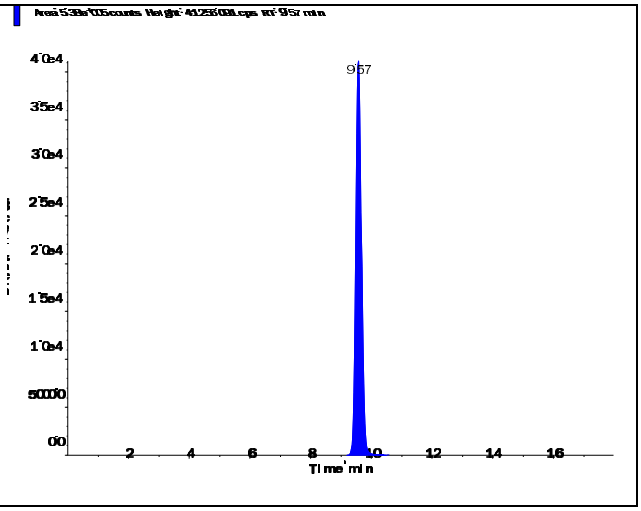

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.58 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.351
Sample Type:	(Quality Control)

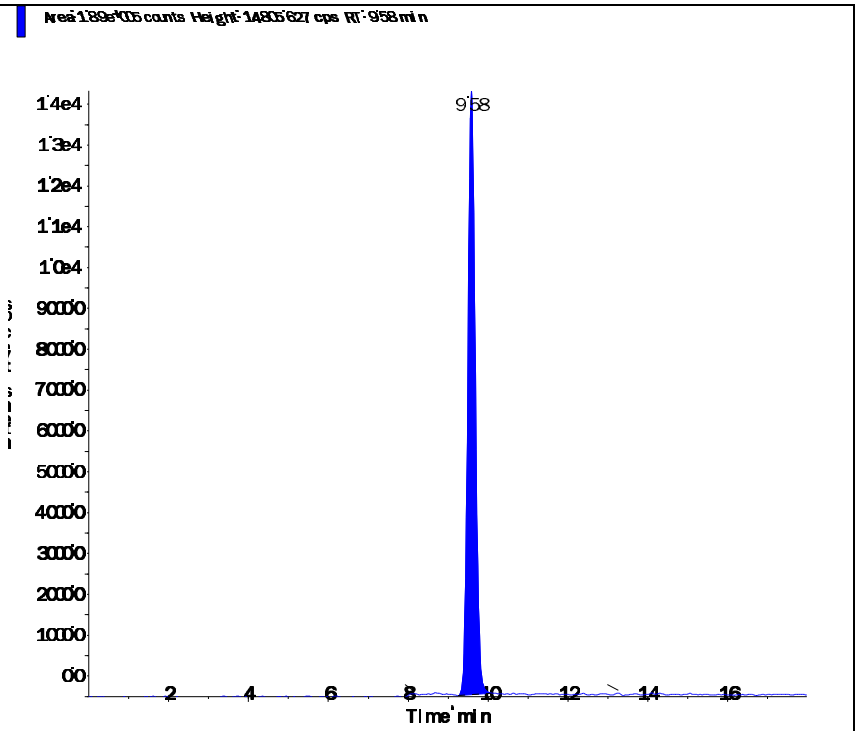

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.57 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.12
Sample Type:	(Quality Control)

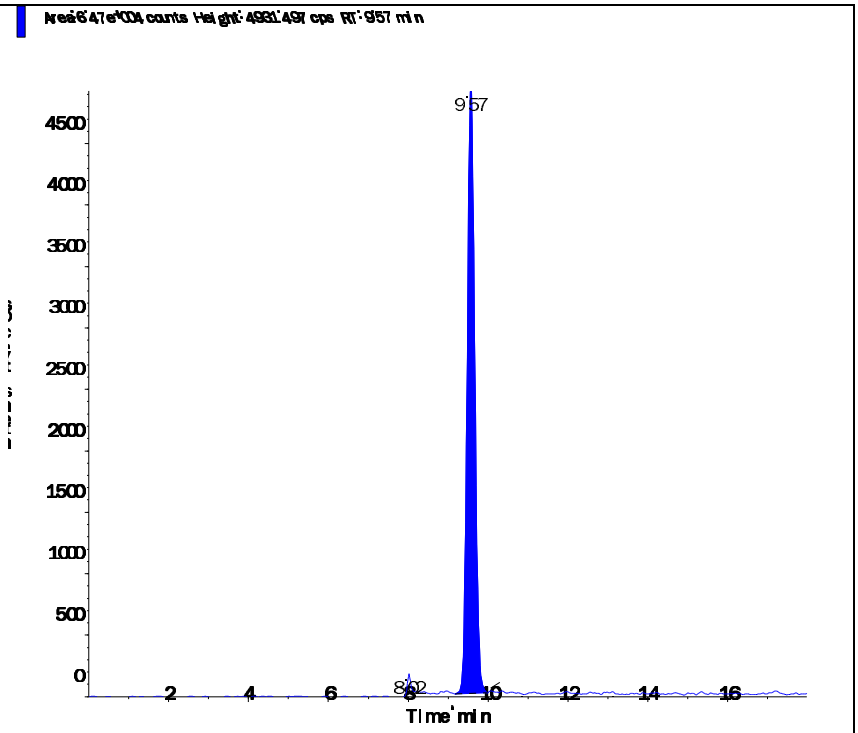

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Printed: 6/13/2016 10:37 AM

Data File	LM35341.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/13/2016 9:06:40 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572372-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35341.wiff	**Injection Volume**	10.00
Acquisition Date	6/13/2016 9:06:40 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG572372-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.550e+05	9.59	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.920e+05	9.60	1.00	1.02
Perchlorate conf	6.590e+04	9.59	1.00	1.04

O18LP (Internal Standard)

RT (Exp. RT): 9.59(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

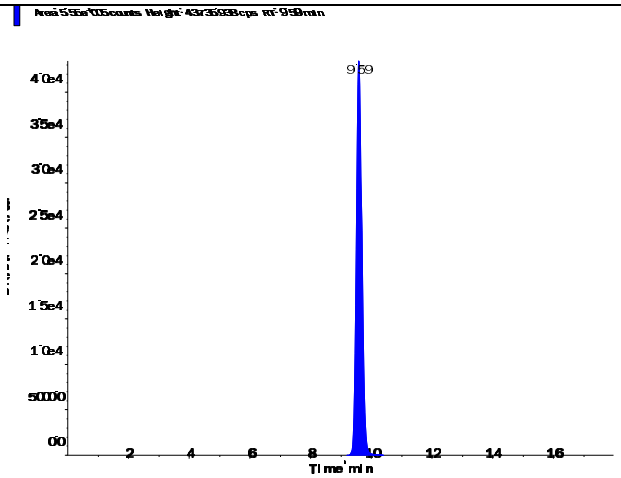

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.60 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.346
Sample Type:	(Quality Control)

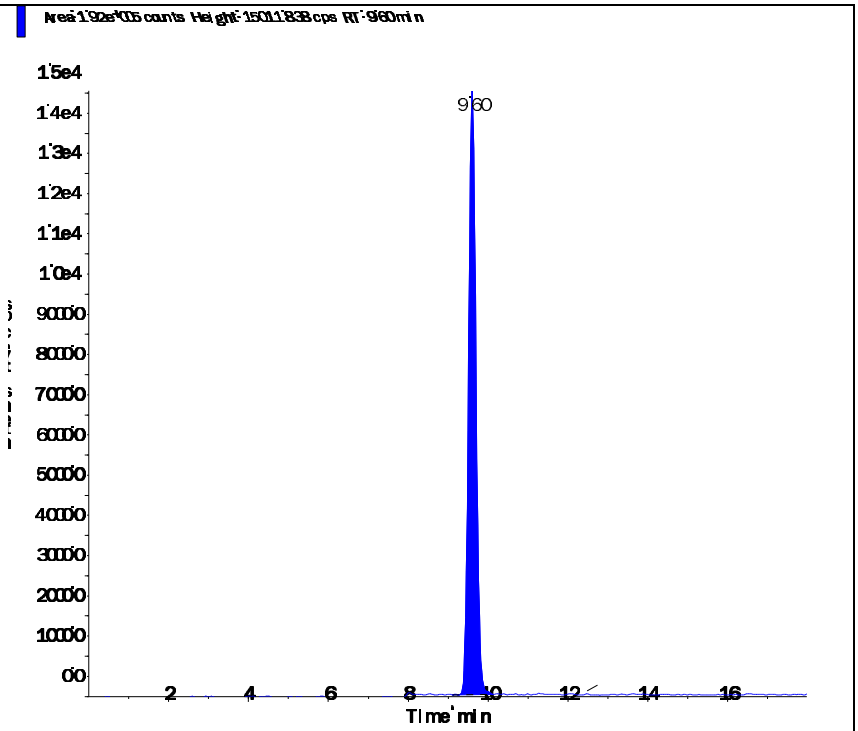

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.59 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

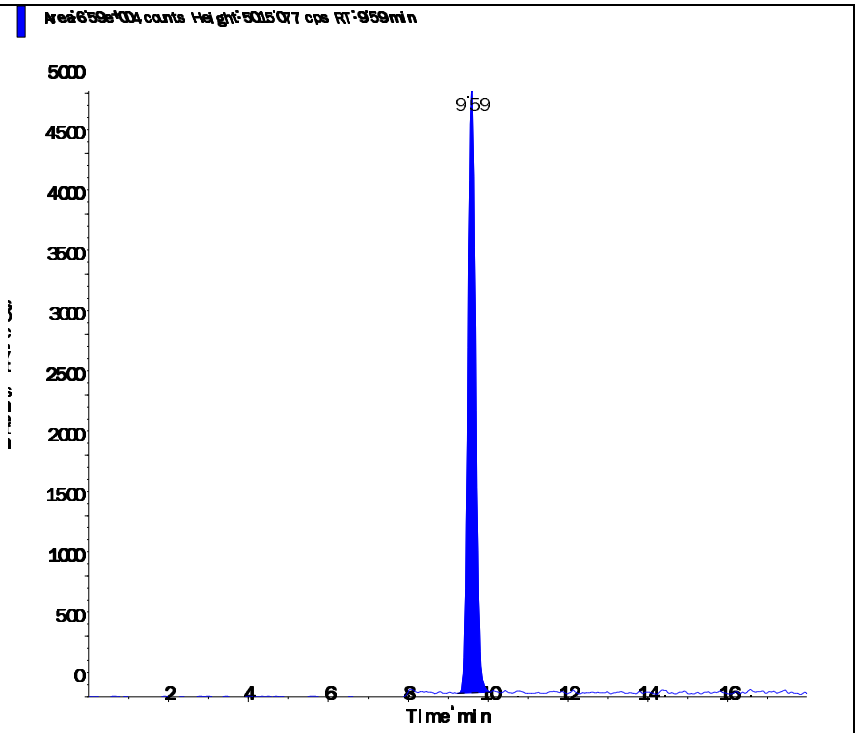

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Printed: 6/12/2016 9:43 PM

Data File	LM35299.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 6:35:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572350-05 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35299.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 6:35:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572350-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.960e+05	9.67	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.510e+04	9.68	N/A	0.207
Perchlorate conf	1.290e+04	9.67	N/A	0.213

O18LP (Internal Standard)

RT (Exp. RT): 9.67(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

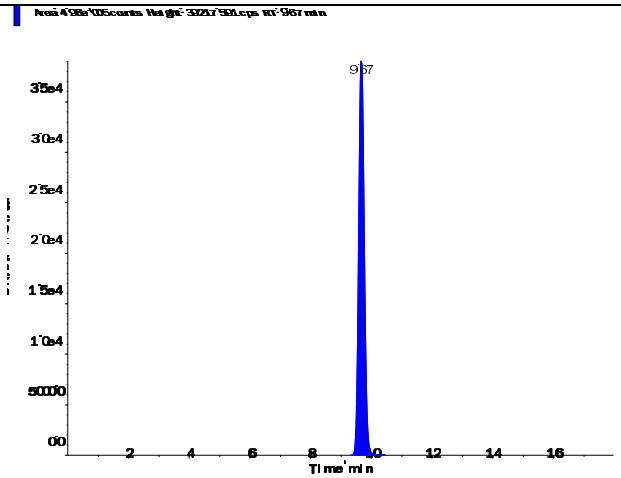

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.68 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

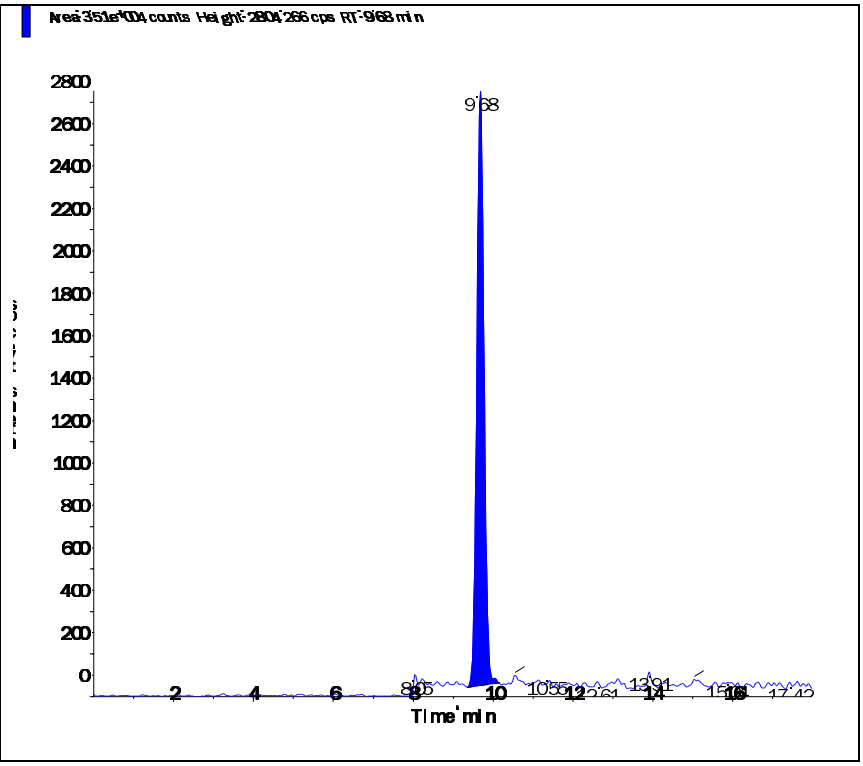

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.67 (9.84) min
Calculated conc:	0.213 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

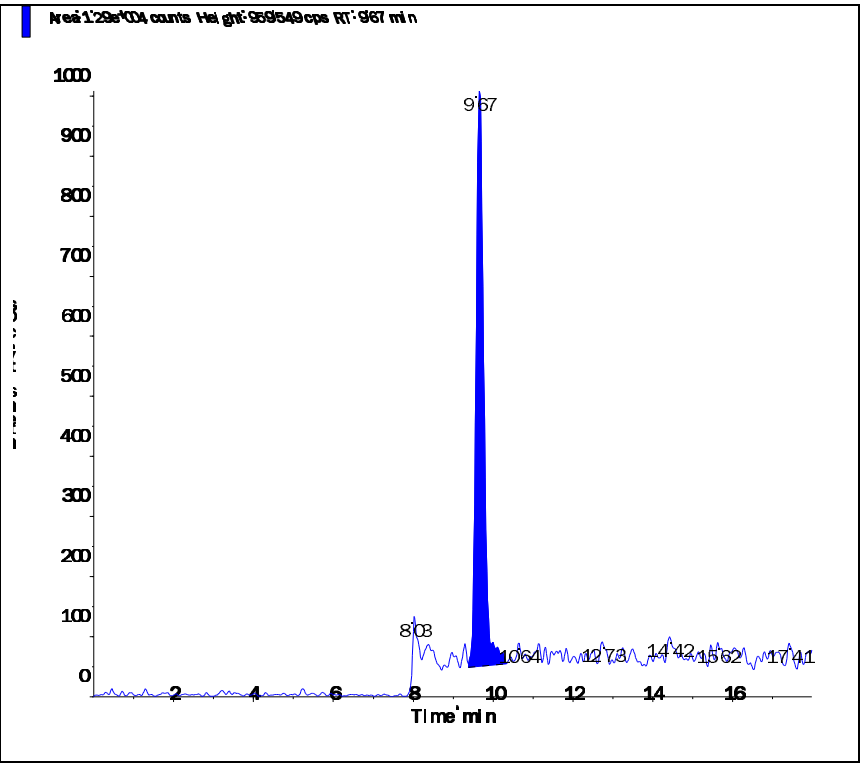

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Data File	LM35311.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 10:22:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572350-06 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35311.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 10:22:51 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572350-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.090e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.780e+04	9.67	N/A	0.217
Perchlorate conf	1.230e+04	9.67	N/A	0.195

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

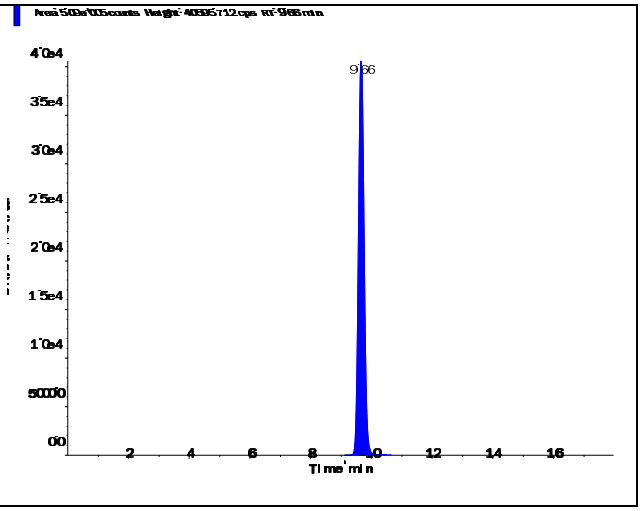

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.67 (9.84) min
Calculated conc:	0.217 ng/ml
Area Ratio:	0.074
Sample Type:	(Unknown)

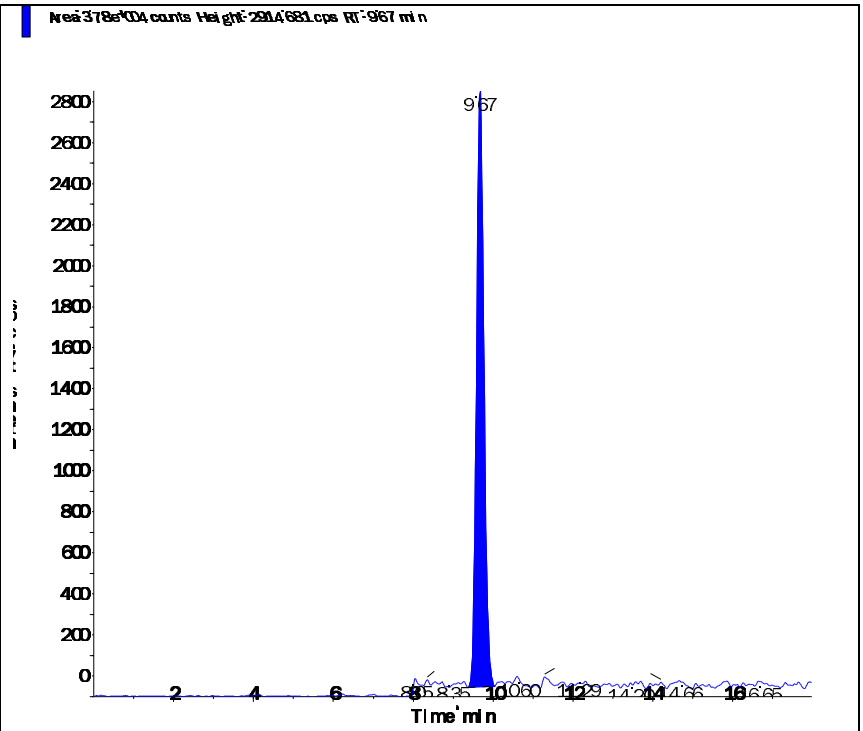

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.67 (9.84) min
Calculated conc:	0.195 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

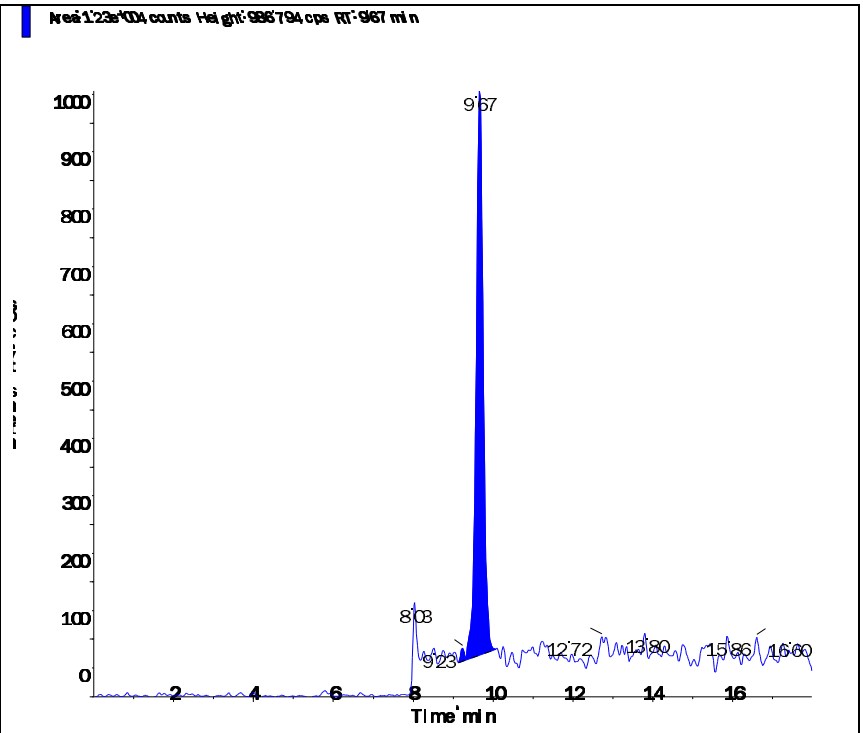

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Data File	LM35319.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/12/2016 12:54:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572350-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35319.wiff	**Injection Volume**	10.00
Acquisition Date	6/12/2016 12:54:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572350-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.66	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.810e+04	9.67	N/A	0.219
Perchlorate conf	1.300e+04	9.65	N/A	0.209

O18LP (Internal Standard)

RT (Exp. RT): 9.66(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

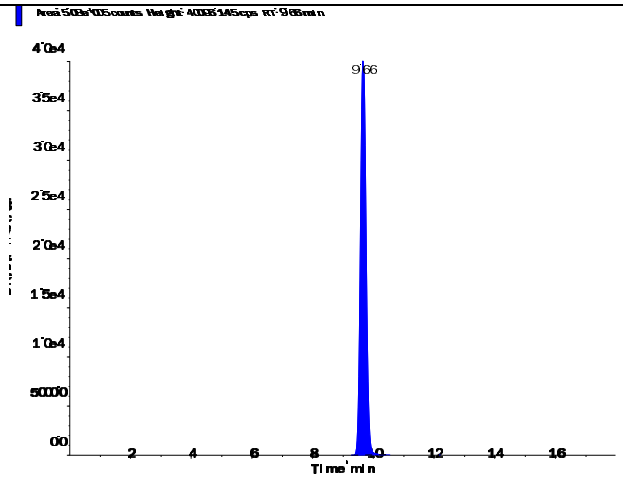

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.67 (9.84) min Calculated conc: 0.219 ng/ml Area Ratio: 0.075 Sample Type: (Unknown)	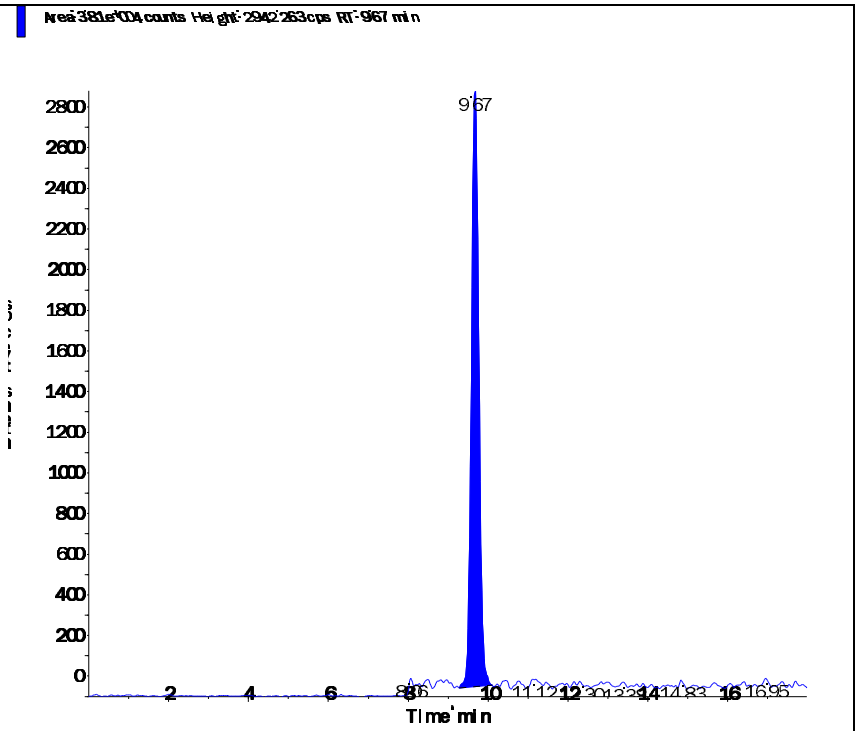
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.65 (9.84) min Calculated conc: 0.209 ng/ml Area Ratio: 0.026 Sample Type: (Unknown)	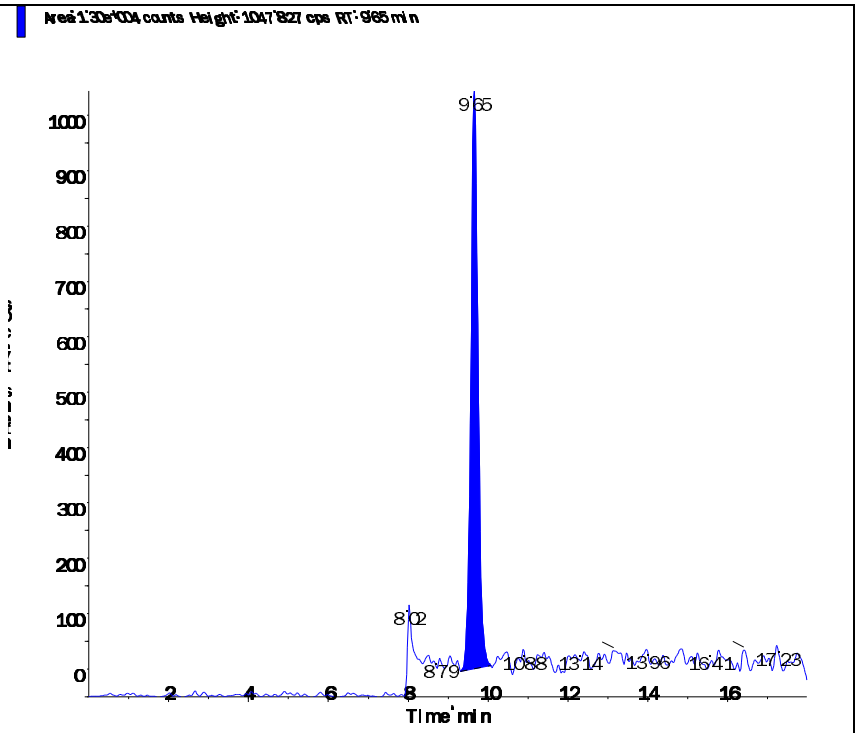

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Printed: 6/13/2016 10:31 AM

Data File	LM35323.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/12/2016 9:22:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572350-08 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35323.wiff	**Injection Volume**	10.00
Acquisition Date	6/12/2016 9:22:14 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG572350-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.920e+05	9.64	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.600e+04	9.65	N/A	0.214
Perchlorate conf	1.210e+04	9.64	N/A	0.199

O18LP (Internal Standard)

RT (Exp. RT): 9.64(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

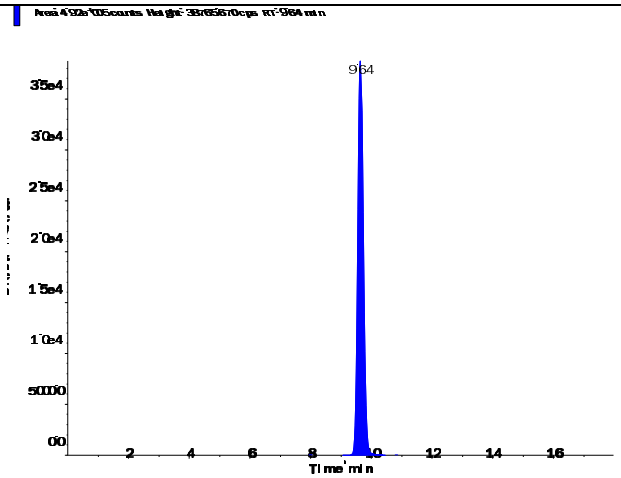

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.65 (9.84) min Calculated conc: 0.214 ng/ml Area Ratio: 0.073 Sample Type: (Unknown)	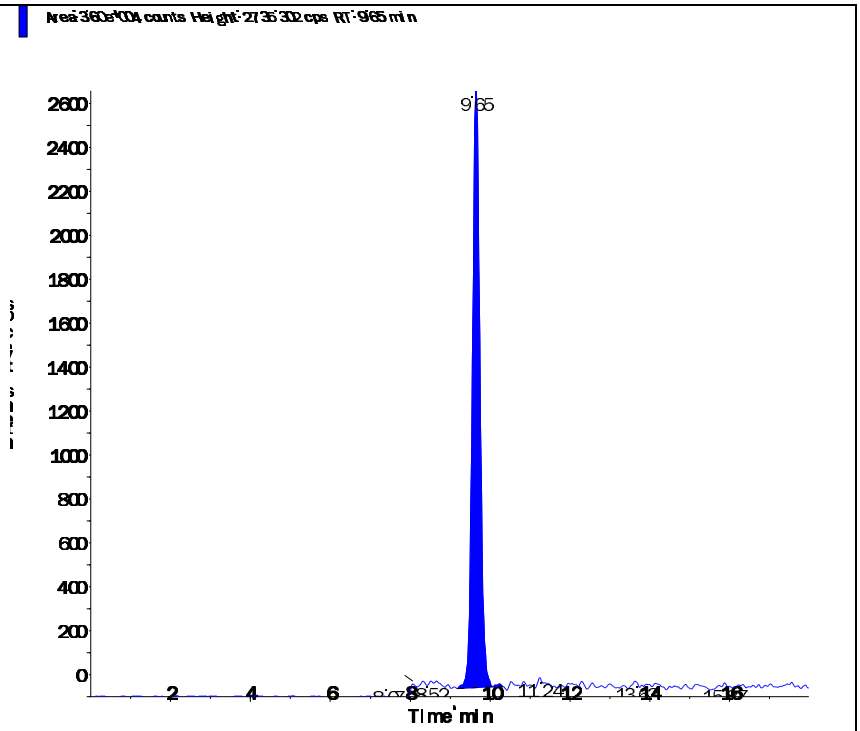
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.64 (9.84) min Calculated conc: 0.199 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	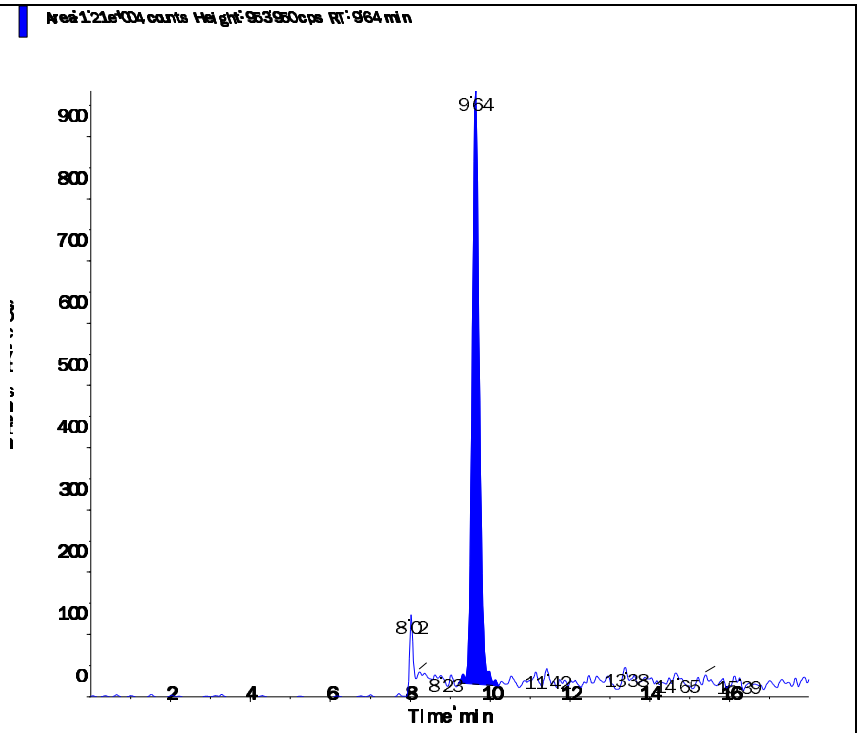

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Printed: 6/13/2016 10:34 AM

Data File	LM35335.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/13/2016 1:09:24 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572350-09 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35335.wiff	**Injection Volume**	10.00
Acquisition Date	6/13/2016 1:09:24 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG572350-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.570e+05	9.64	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.120e+04	9.64	N/A	0.216
Perchlorate conf	1.400e+04	9.63	N/A	0.205

O18LP (Internal Standard)

RT (Exp. RT): 9.64(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

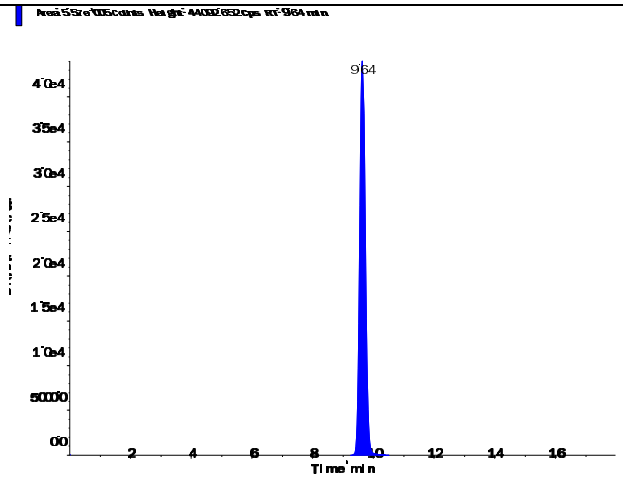

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	0.216 ng/ml
Area Ratio:	0.074
Sample Type:	(Unknown)

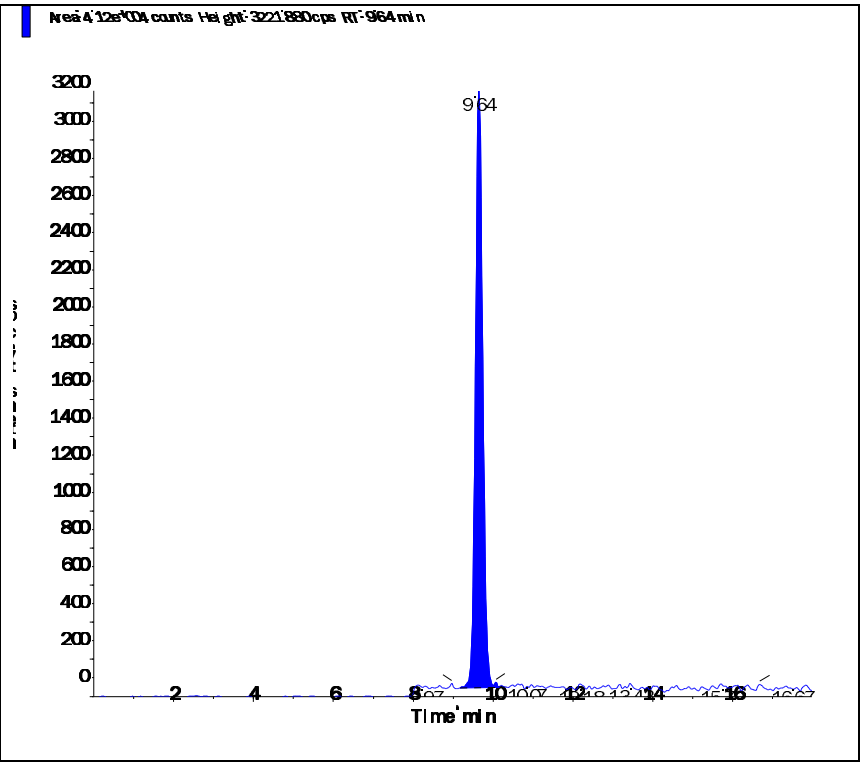

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	0.205 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

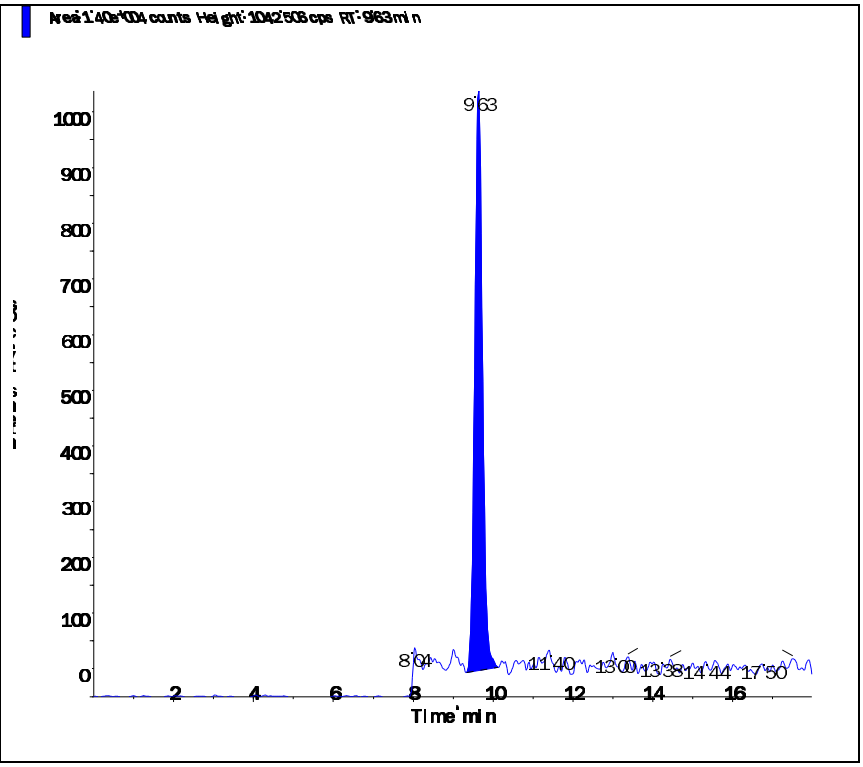

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Printed: 6/13/2016 10:36 AM

Data File	LM35339.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/13/2016 8:28:11 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572350-10 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35339.wiff	**Injection Volume**	10.00
Acquisition Date	6/13/2016 8:28:11 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG572350-10	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.540e+05	9.61	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.990e+04	9.62	N/A	0.21
Perchlorate conf	1.380e+04	9.60	N/A	0.203

O18LP (Internal Standard)

RT (Exp. RT): 9.61(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

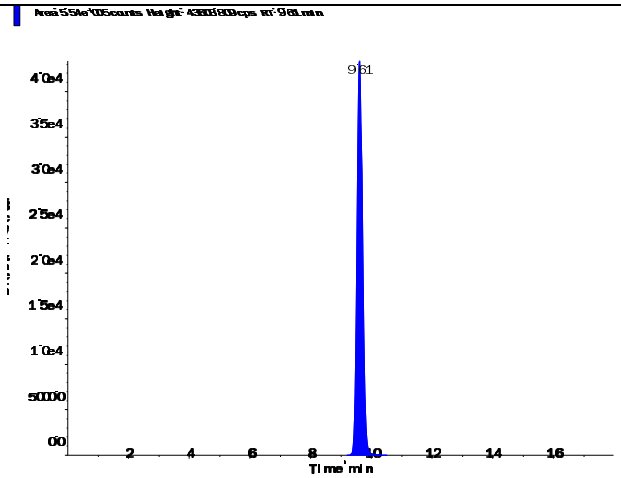

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.62 (9.84) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

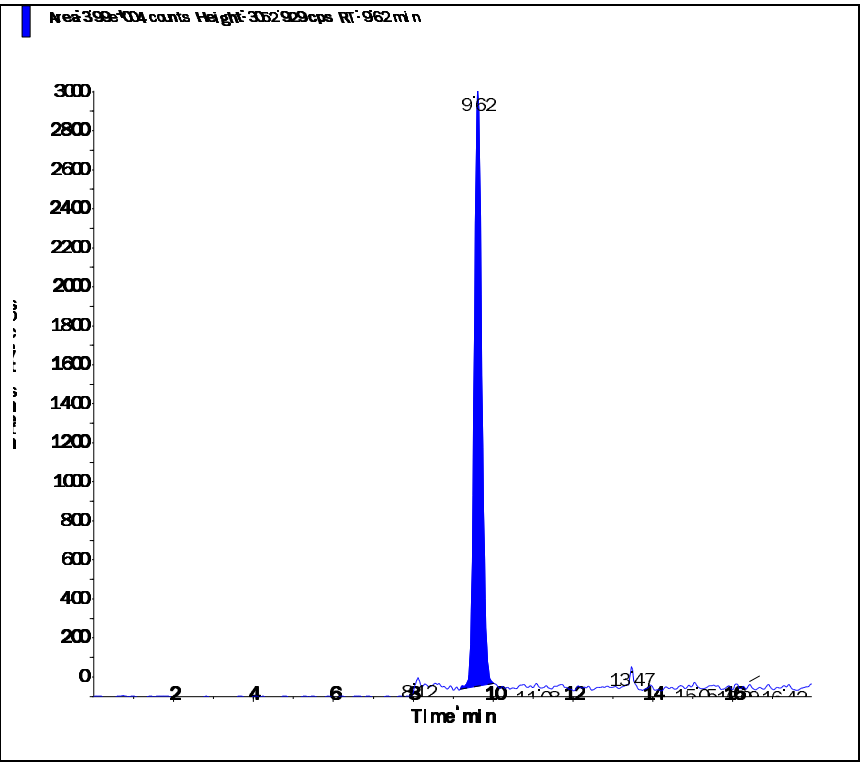

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.60 (9.84) min
Calculated conc:	0.203 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

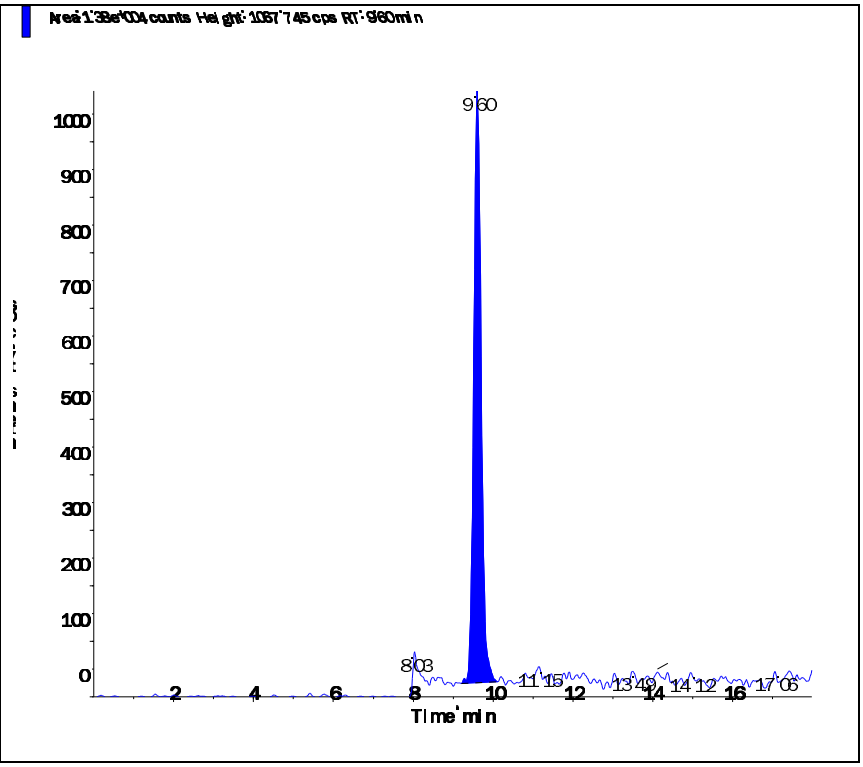

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Data File	LM35342.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/13/2016 9:25:30 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572350-10 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35342.wiff	**Injection Volume**	10.00
Acquisition Date	6/13/2016 9:25:30 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG572350-10	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.600e+05	9.63	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.210e+04	9.64	N/A	0.22
Perchlorate conf	1.430e+04	9.63	N/A	0.209

O18LP (Internal Standard)

RT (Exp. RT): 9.63(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

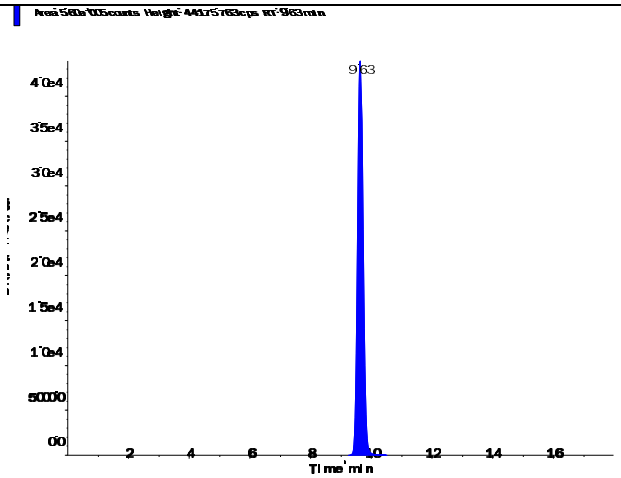

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.64 (9.84) min
Calculated conc:	0.22 ng/ml
Area Ratio:	0.075
Sample Type:	(Unknown)

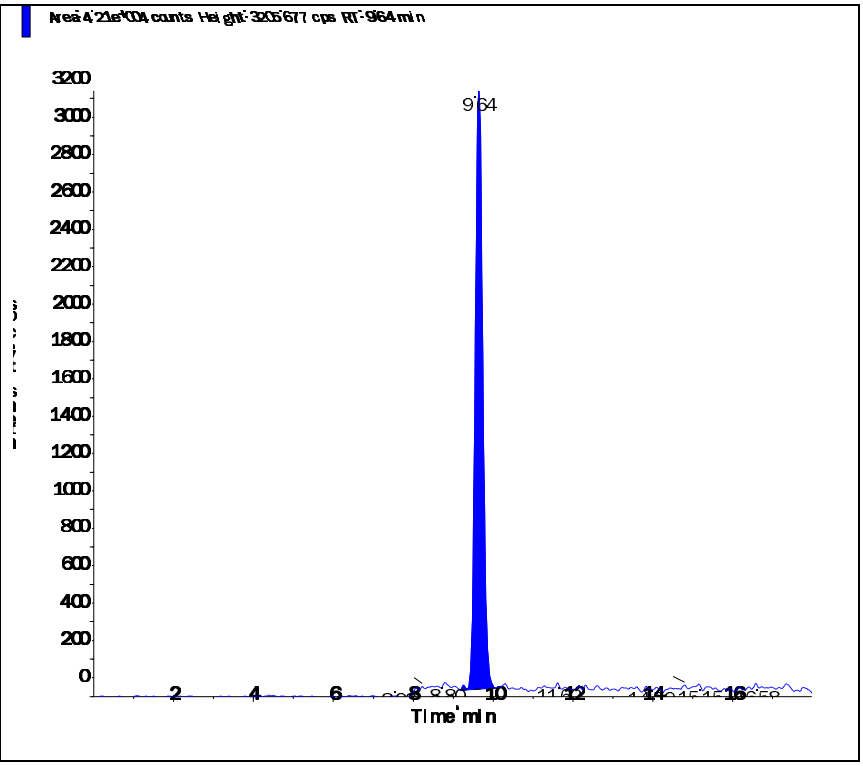

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	0.209 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

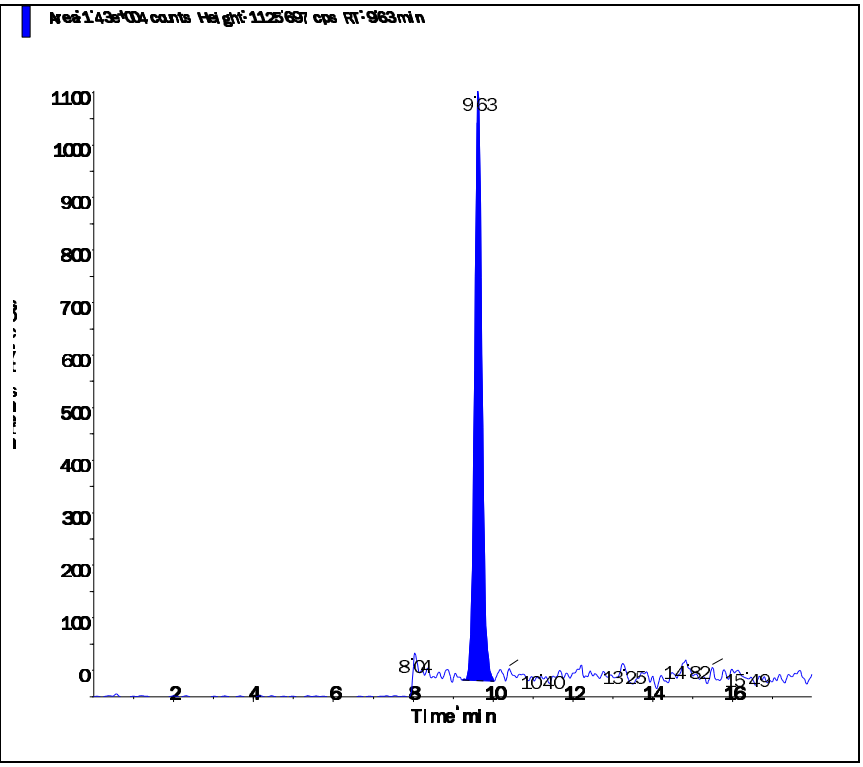

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Data File	LM35298.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 6:16:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-06 CCB	**Injection Vial**	1.00
Data File	LM35298.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 6:16:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.040e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

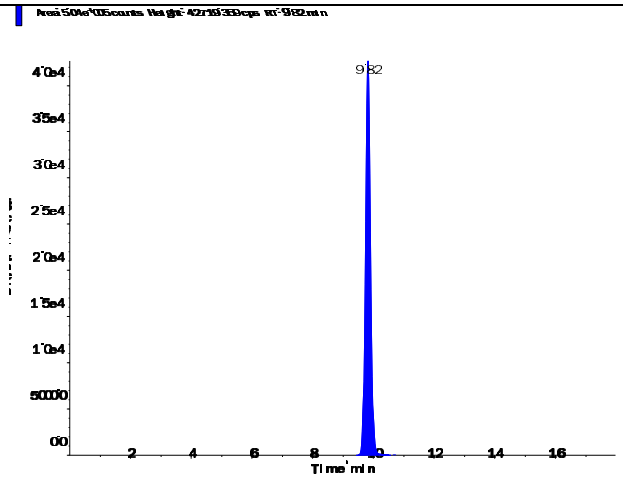

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

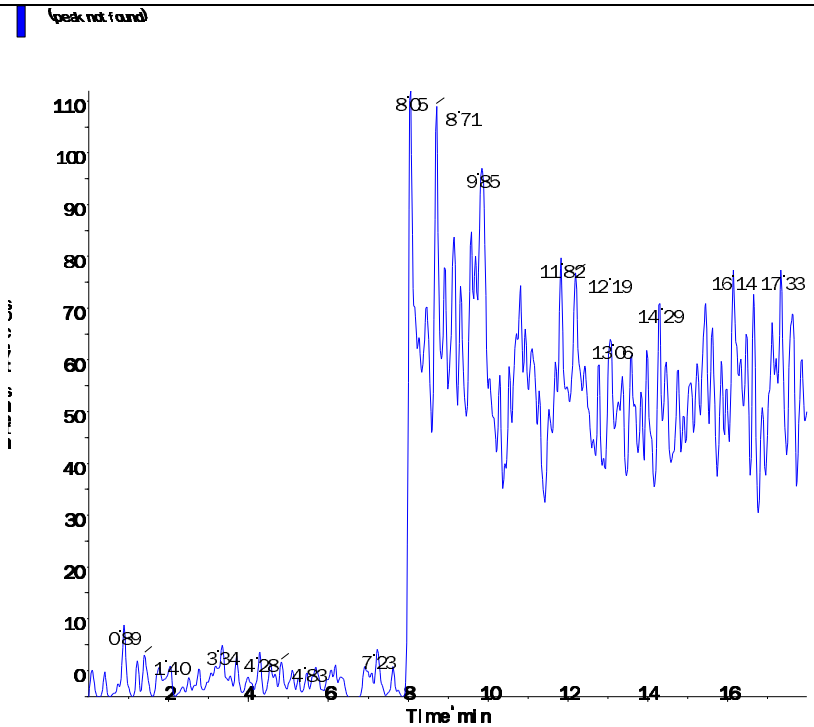

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

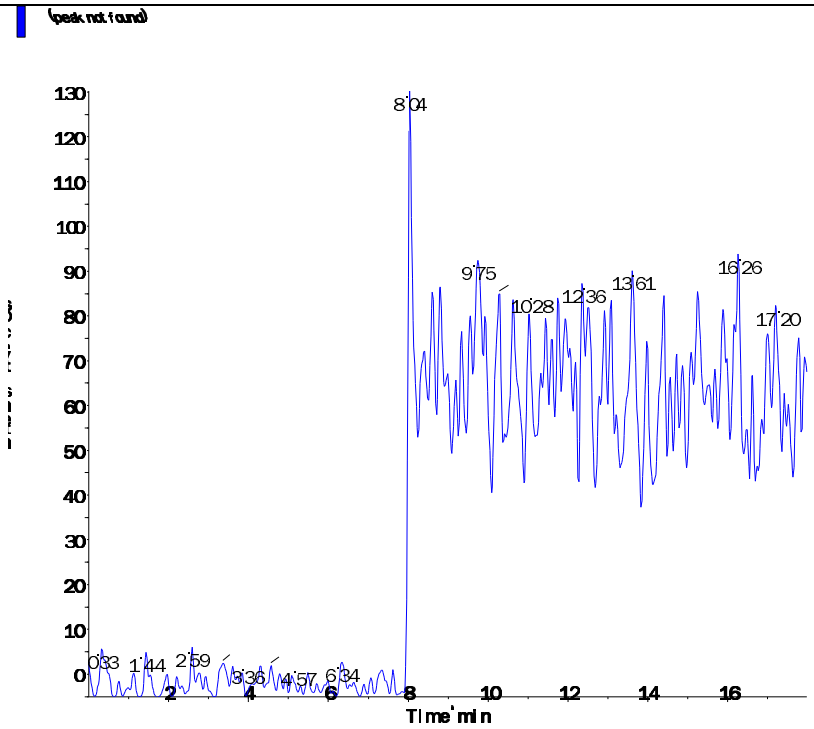

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Printed: 6/12/2016 9:47 PM

Data File	LM35312.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 10:41:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-08 CCB	**Injection Vial**	1.00
Data File	LM35312.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 10:41:48 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.190e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

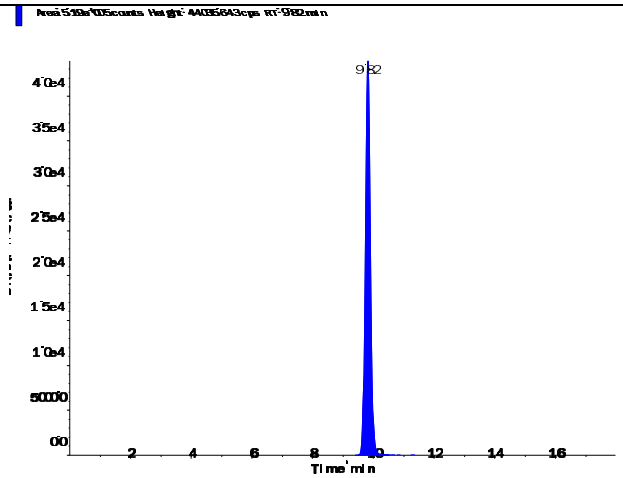

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	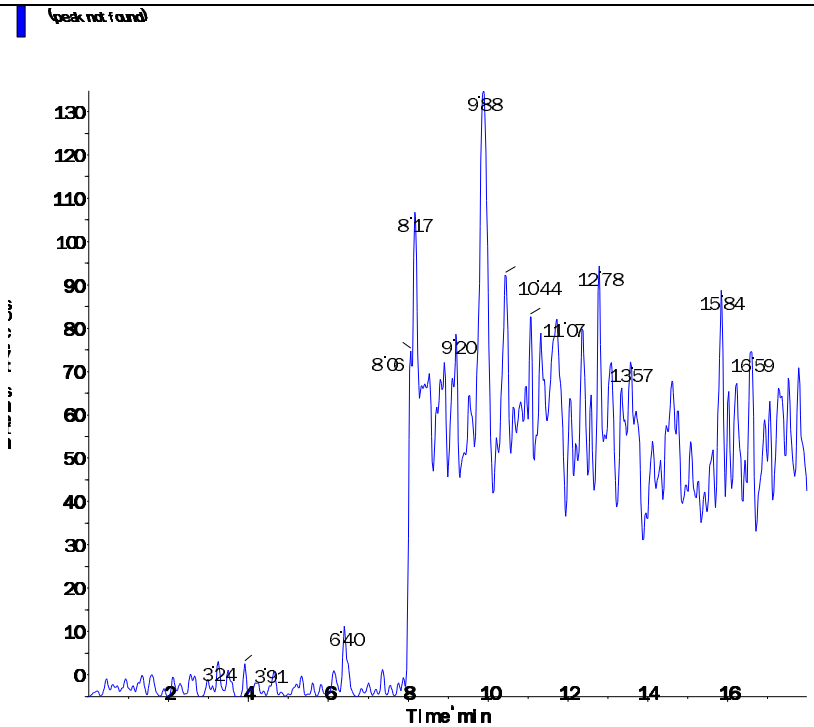
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	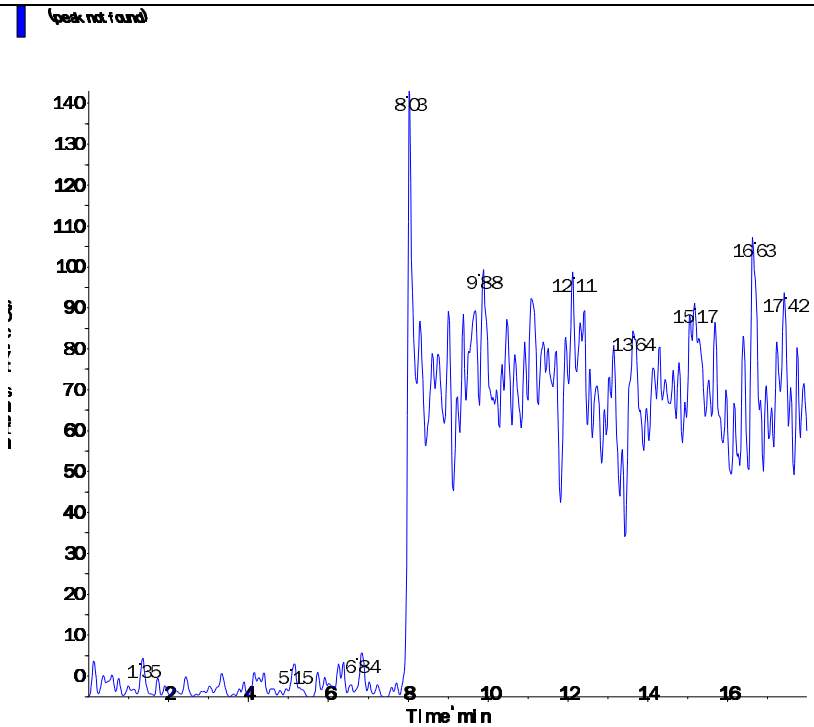

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Printed: 6/12/2016 9:49 PM

Data File	LM35320.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/12/2016 1:13:20 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572339-10 CCB	**Injection Vial**	1.00
Data File	LM35320.wiff	**Injection Volume**	10.00
Acquisition Date	6/12/2016 1:13:20 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572339-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.260e+05	9.82	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	6.740e+02	9.81	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.82(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

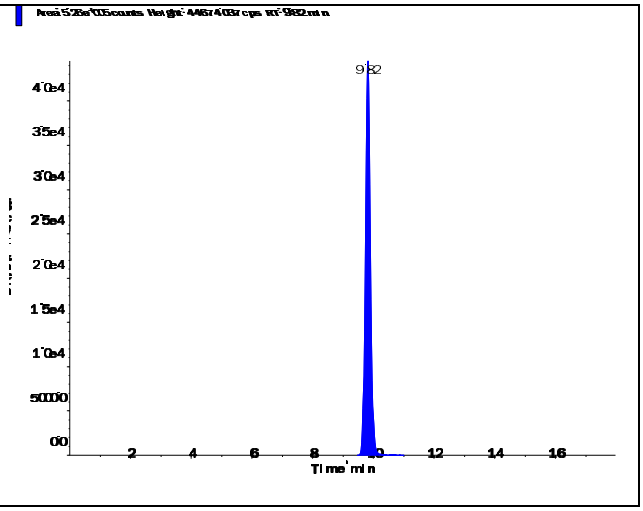

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Printed: 6/12/2016 9:49 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

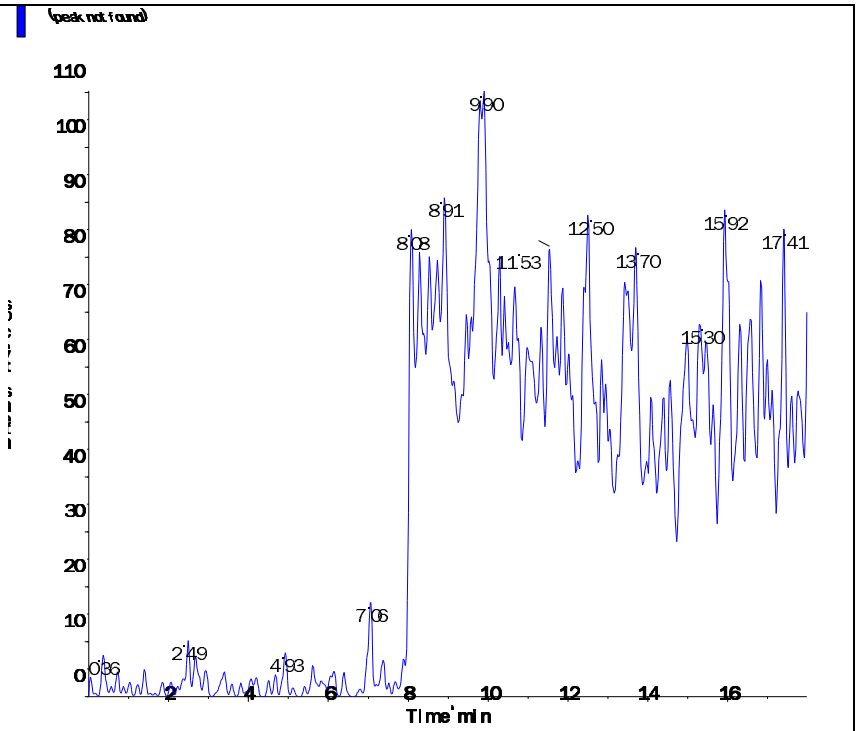

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.81 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

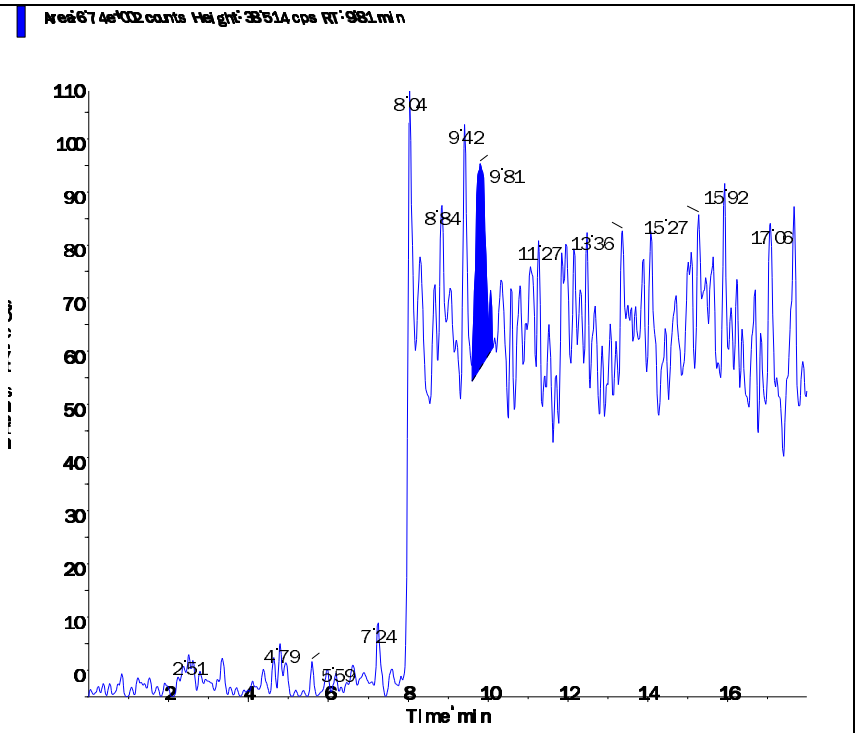

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Created with Analyst Reporter
Printed: 6/13/2016 10:30 AM

Data File	LM35321.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/12/2016 8:44:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572372-01 CCB	**Injection Vial**	1.00
Data File	LM35321.wiff	**Injection Volume**	10.00
Acquisition Date	6/12/2016 8:44:24 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG572372-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.830e+05	9.79	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.120e+03	9.62	N/A	0.0031
Perchlorate conf	9.060e+02	9.69	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.79(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

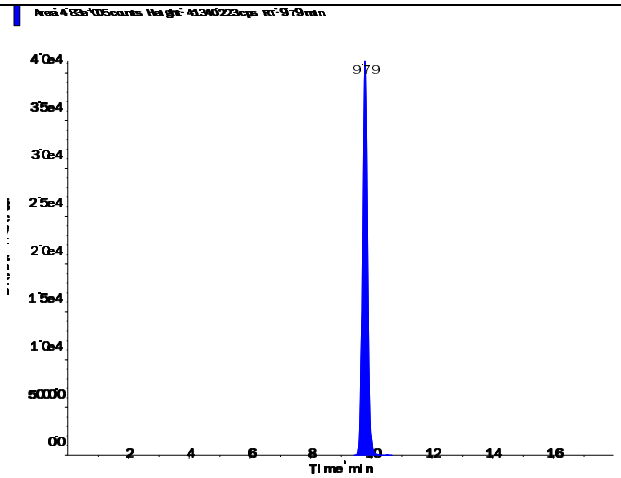

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Printed: 6/13/2016 10:30 AM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.62 (9.84) min Calculated conc: 0.0031 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	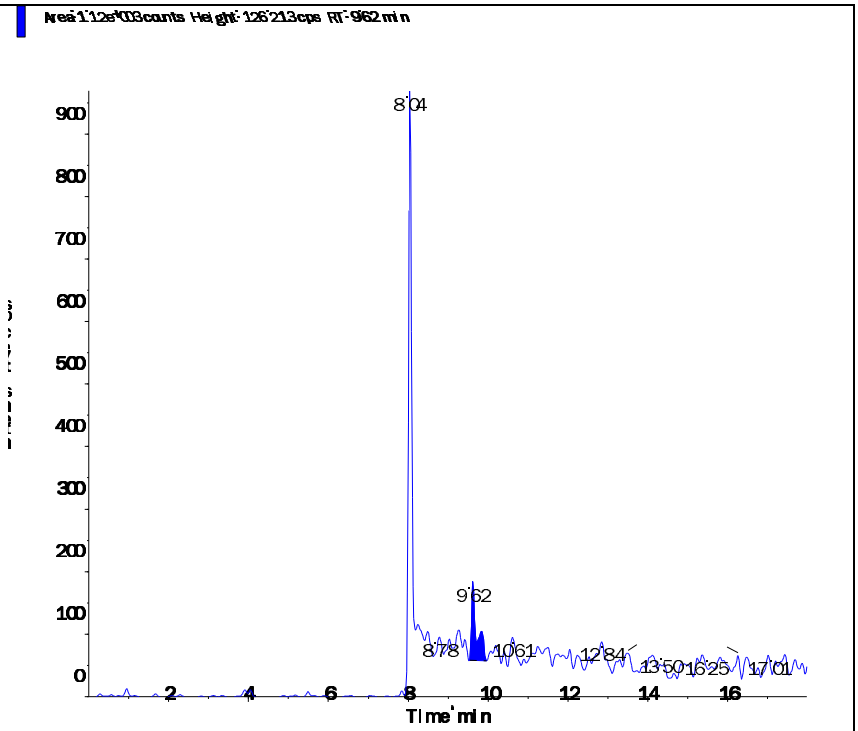
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.69 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	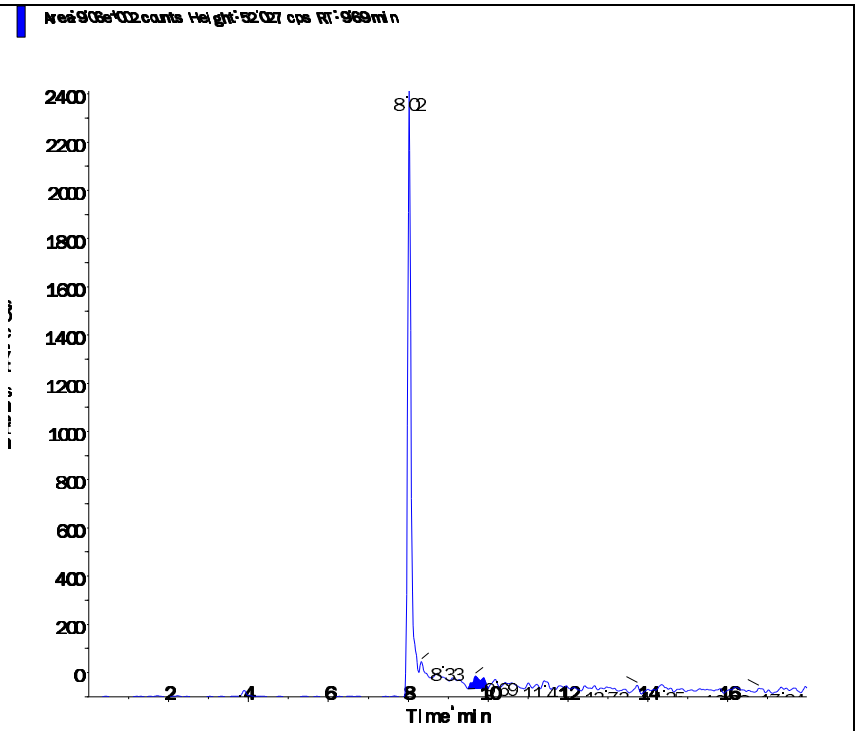

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Created with Analyst Reporter
Printed: 6/13/2016 10:35 AM

Data File	LM35336.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/13/2016 1:28:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572372-04 CCB	**Injection Vial**	1.00
Data File	LM35336.wiff	**Injection Volume**	10.00
Acquisition Date	6/13/2016 1:28:21 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG572372-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.610e+05	9.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.80(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

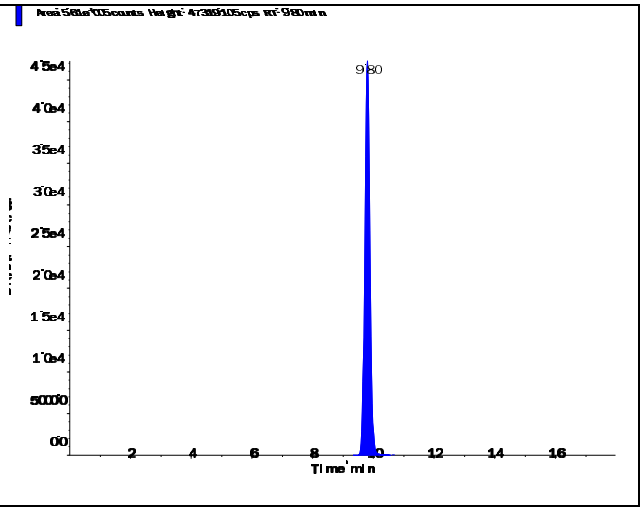

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Printed: 6/13/2016 10:35 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

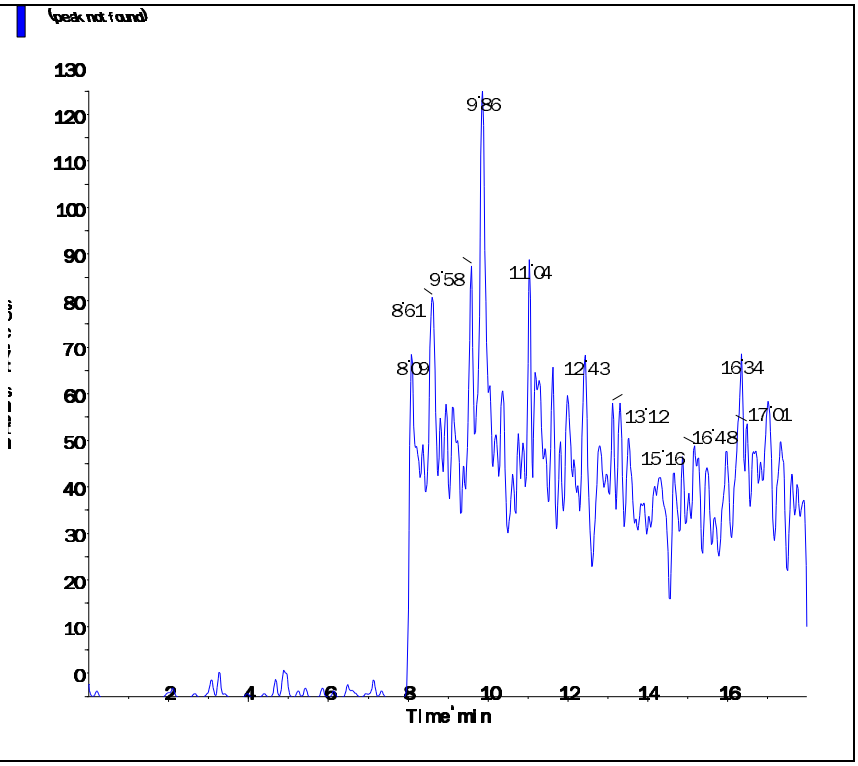

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

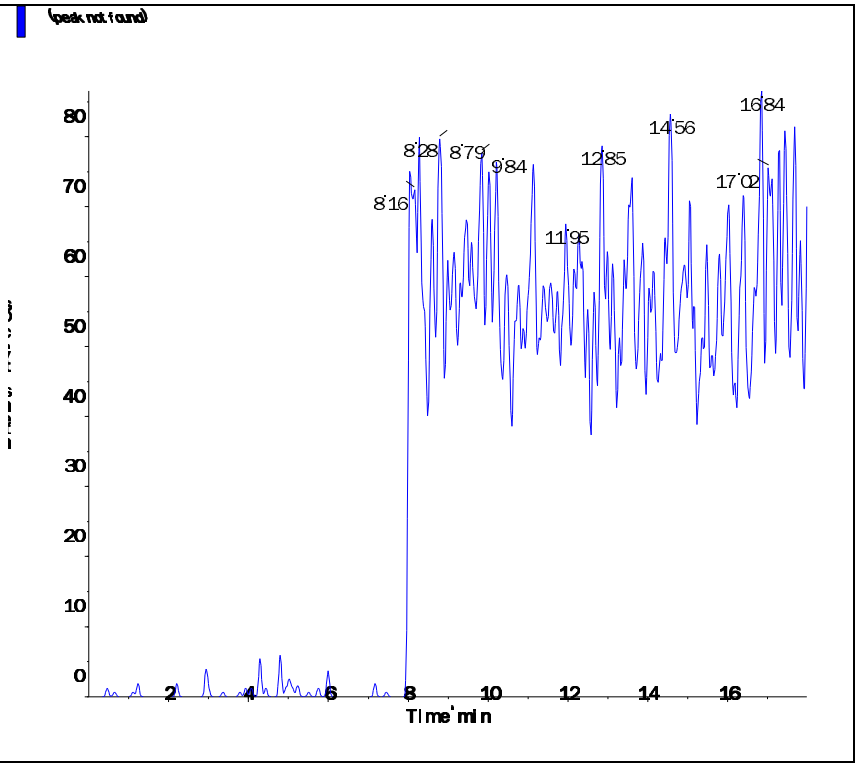

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Created with Analyst Reporter
Printed: 6/13/2016 10:35 AM

Data File	LM35337.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/13/2016 7:50:17 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572372-05 CCB	**Injection Vial**	1.00
Data File	LM35337.wiff	**Injection Volume**	10.00
Acquisition Date	6/13/2016 7:50:17 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG572372-05	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.360e+05	9.79	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.79(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

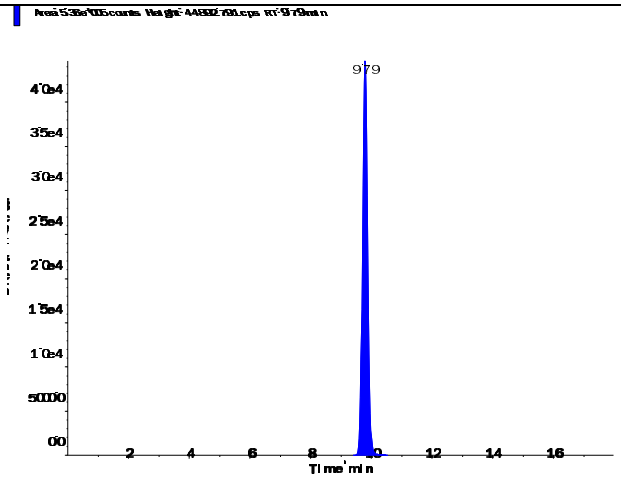

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Printed: 6/13/2016 10:35 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

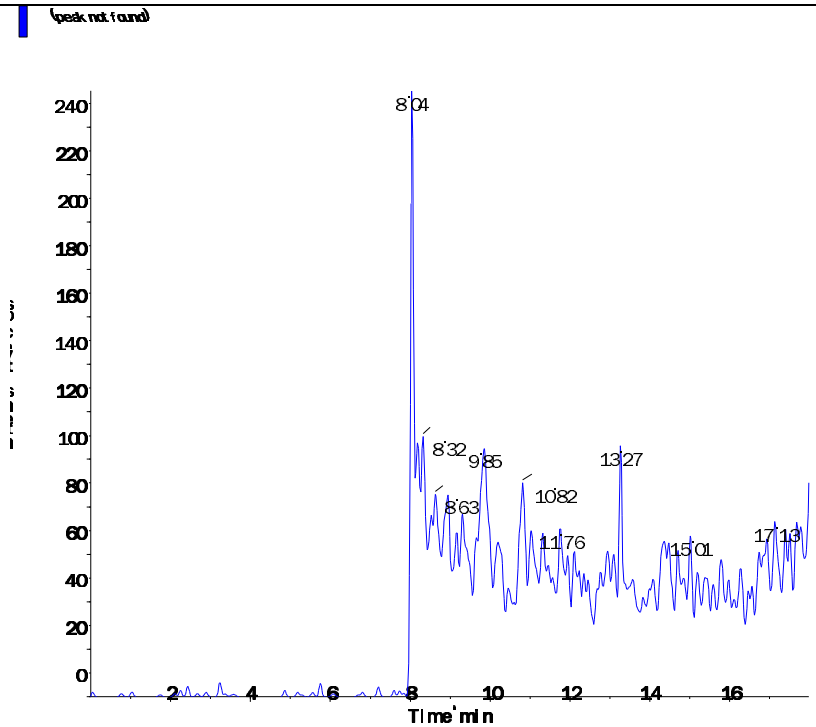

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

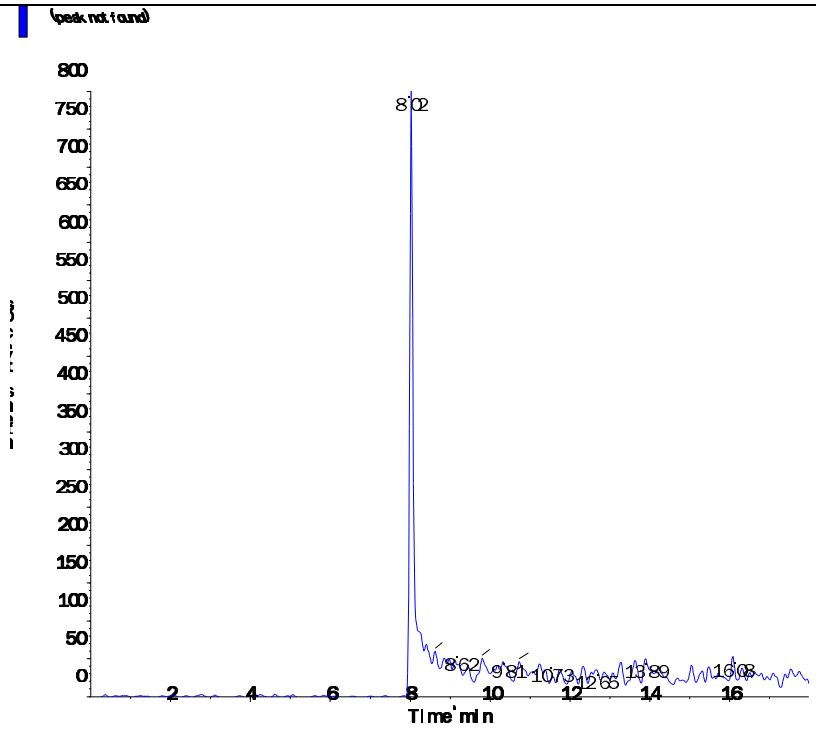

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Created with Analyst Reporter
Printed: 6/13/2016 10:37 AM

Data File	LM35343.wiff	**Result Table**	061216_WTD.rdb
Acquisition Date	6/13/2016 9:44:27 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572372-08 CCB	**Injection Vial**	1.00
Data File	LM35343.wiff	**Injection Volume**	10.00
Acquisition Date	6/13/2016 9:44:27 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061216_WTD.rdb
Sample ID	WG572372-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.710e+05	9.80	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.80(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

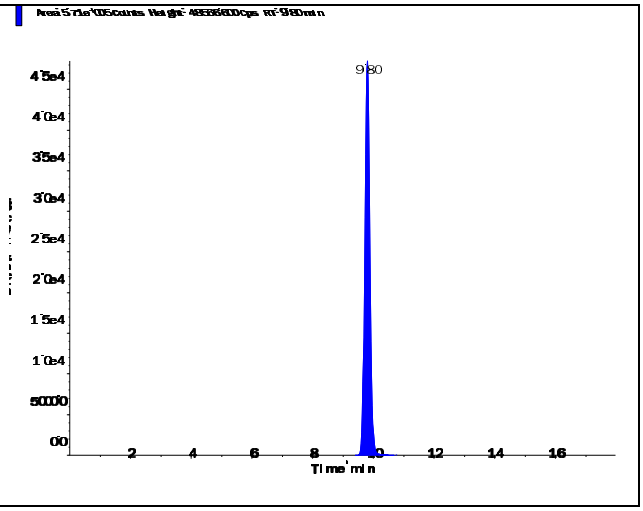

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Printed: 6/13/2016 10:37 AM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

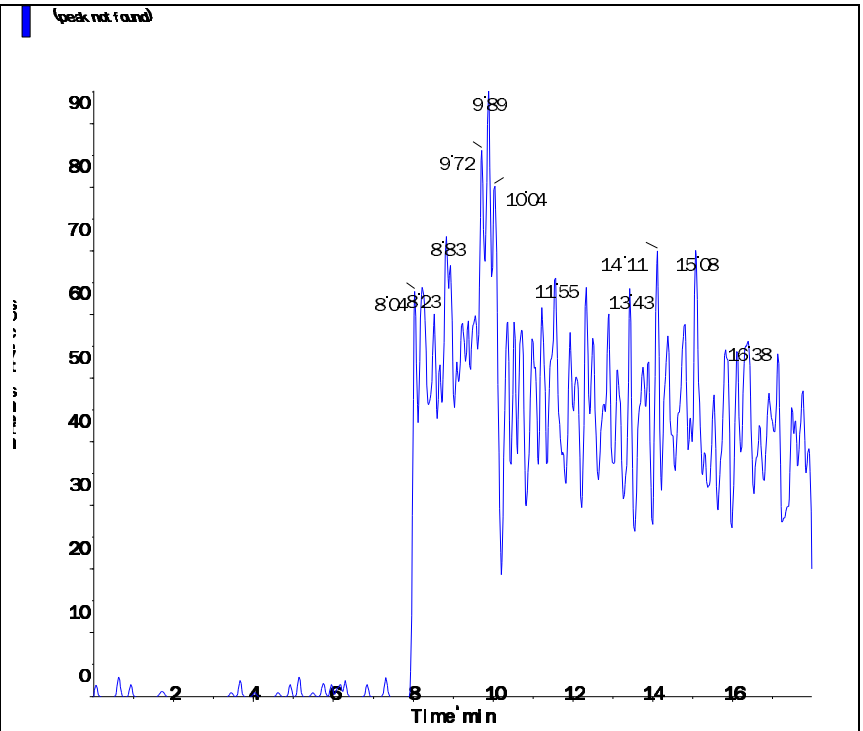

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

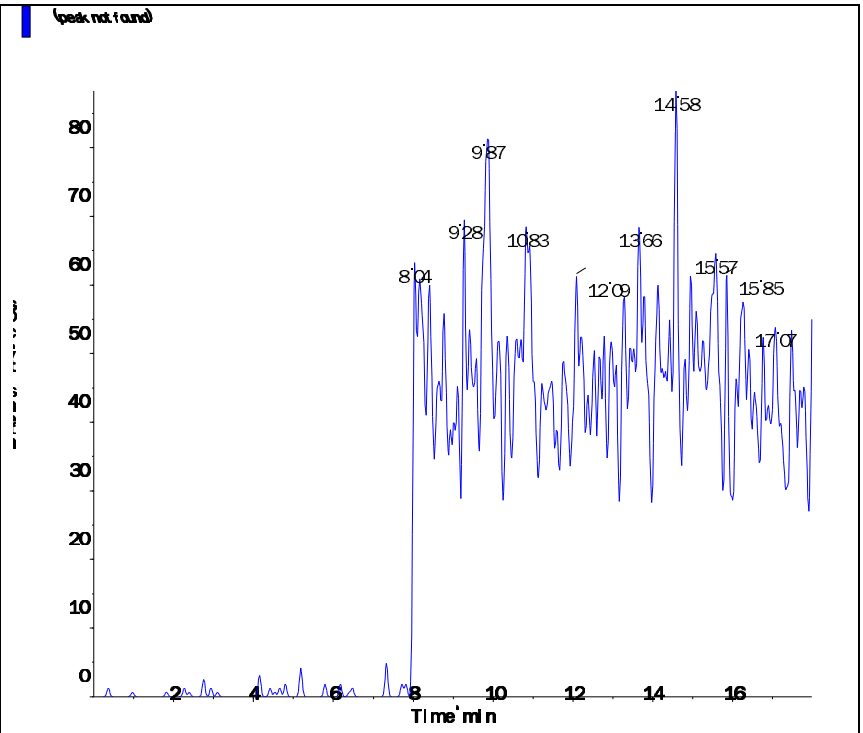

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Created with Analyst Reporter
Printed: 6/12/2016 9:43 PM

Data File	LM35300.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 6:54:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572350-01 MCT (0.2ug/l)	**Injection Vial**	37.00
Data File	LM35300.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 6:54:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572350-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.070e+05	9.15	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	4.110e+04	9.17	N/A	0.237
Perchlorate conf	1.220e+04	9.15	N/A	0.195

O18LP (Internal Standard)

RT (Exp. RT): 9.15(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

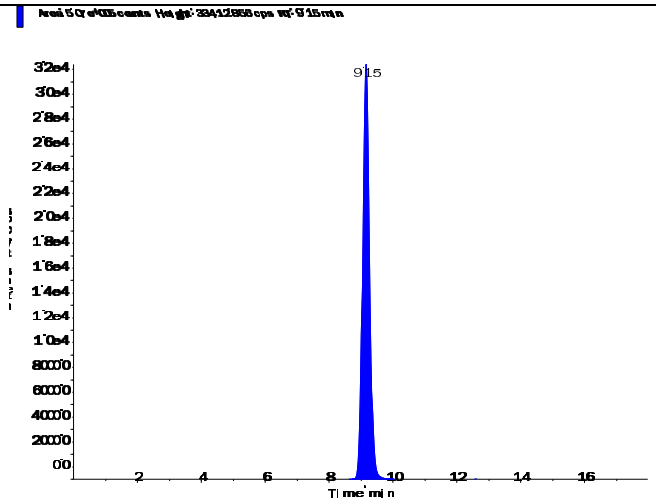

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Created with Analyst Reporter
Printed: 6/12/2016 9:43 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.17 (9.84) min
Calculated conc:	0.237 ng/ml
Area Ratio:	0.081
Sample Type:	(Unknown)

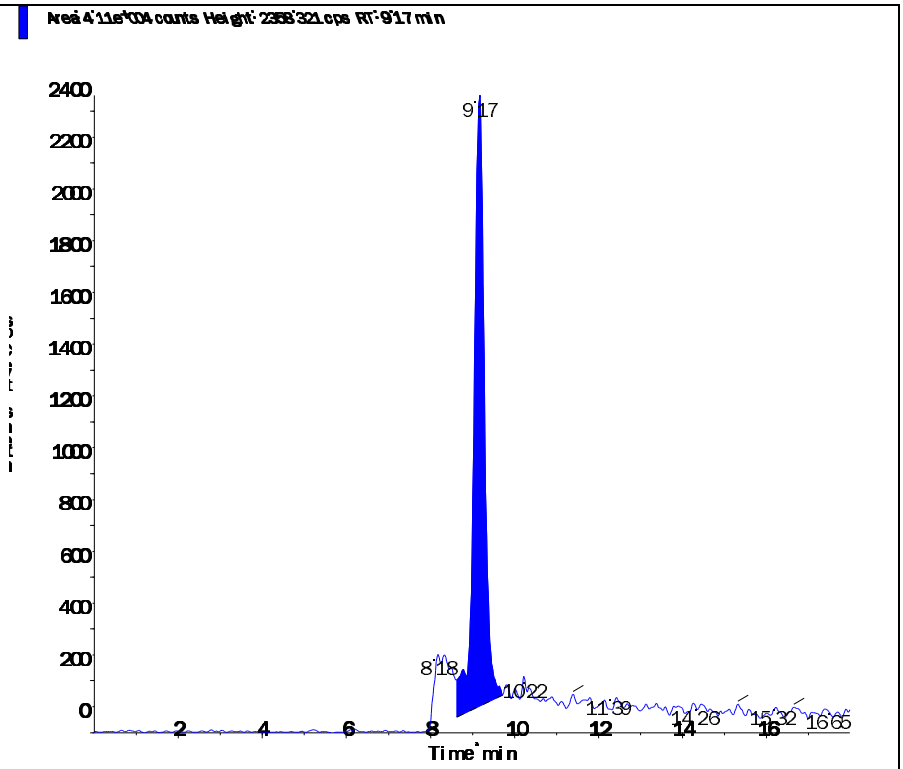

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.15 (9.84) min
Calculated conc:	0.195 ng/ml
Area Ratio:	0.024
Sample Type:	(Unknown)

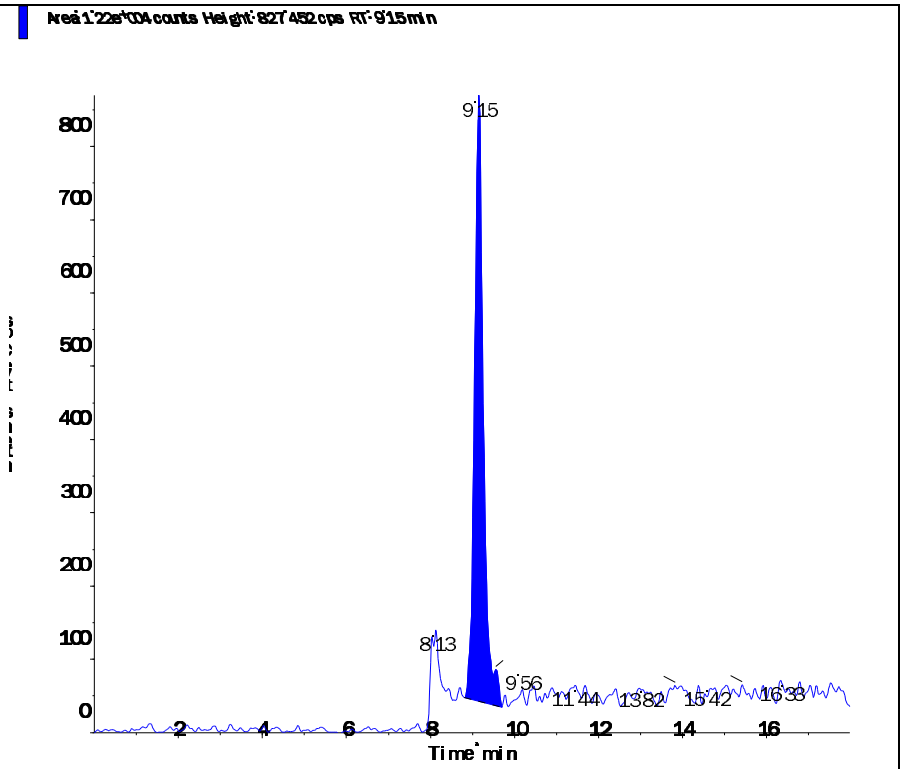

2.2.2.5 Raw QC Data

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Created with Analyst Reporter
Printed: 6/12/2016 9:43 PM

Data File	LM35301.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 7:13:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572350-02 BLANK	**Injection Vial**	38.00
Data File	LM35301.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 7:13:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572350-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.900e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	2.270e+02	9.59	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

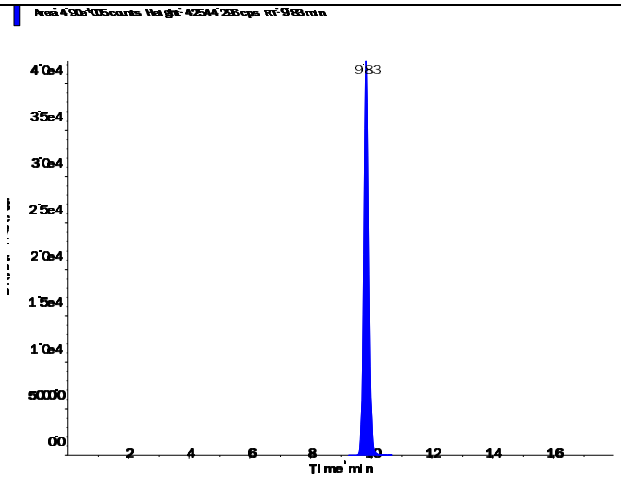

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

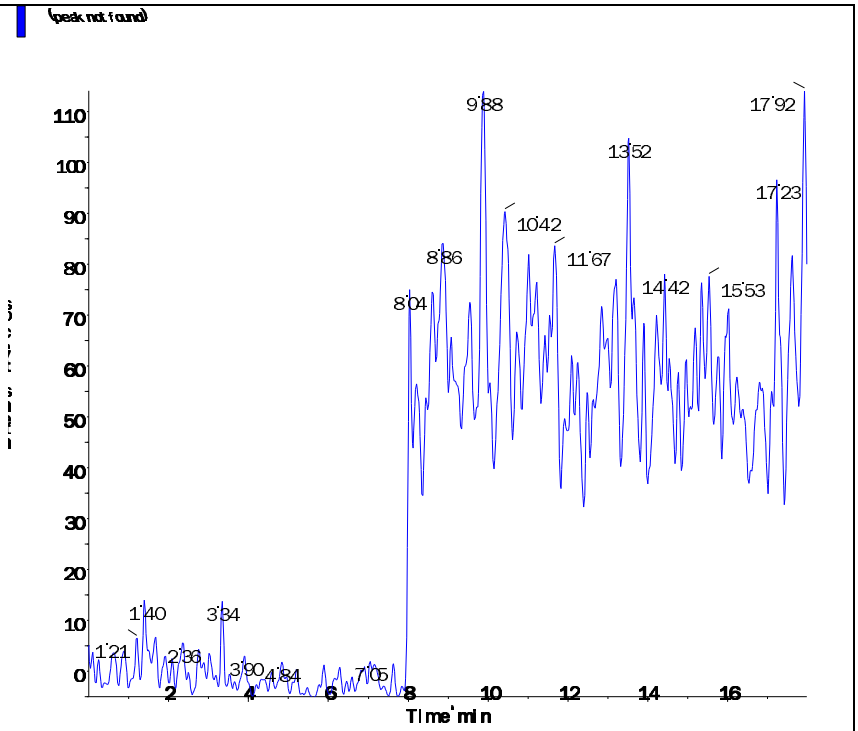

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.59 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

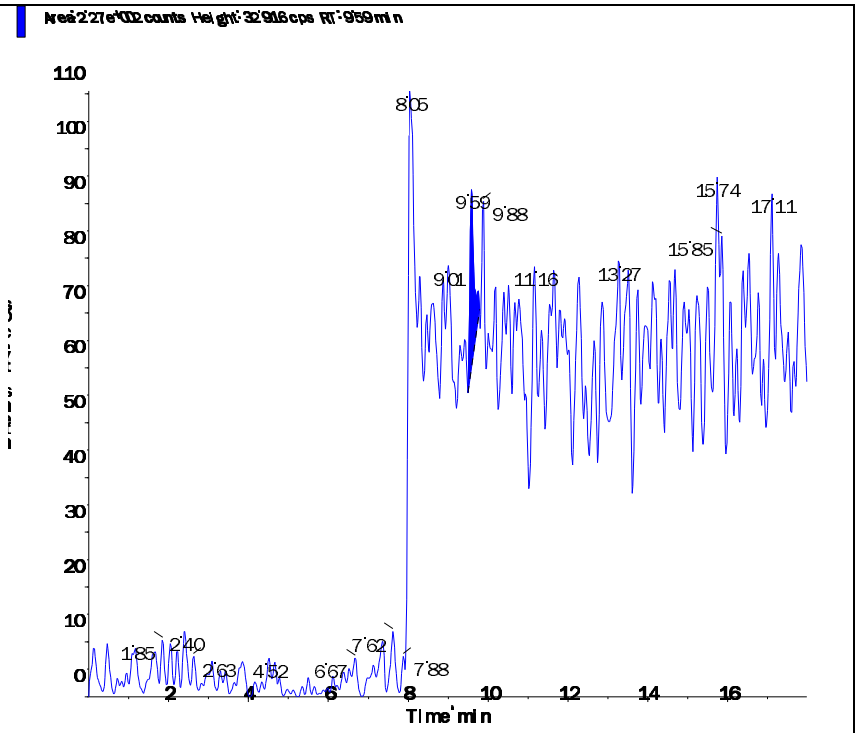

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Printed: 6/12/2016 9:44 PM

Data File	LM35302.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 7:32:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572350-03 LCS (0.2ug/L)	**Injection Vial**	39.00
Data File	LM35302.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 7:32:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572350-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.840e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.500e+04	9.84	N/A	0.211
Perchlorate conf	1.210e+04	9.83	N/A	0.203

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

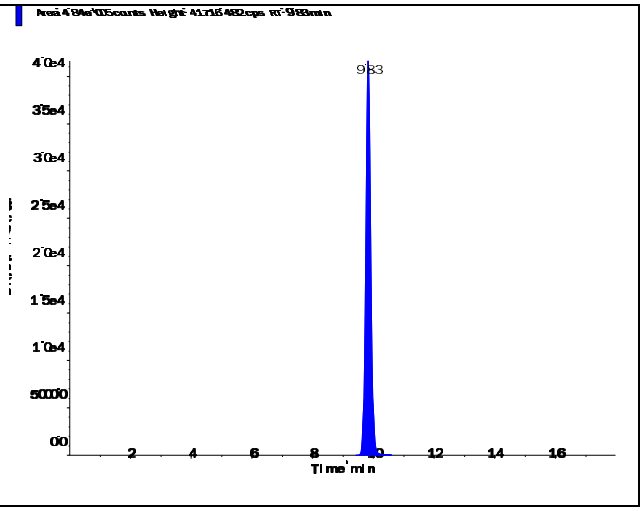

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.211 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

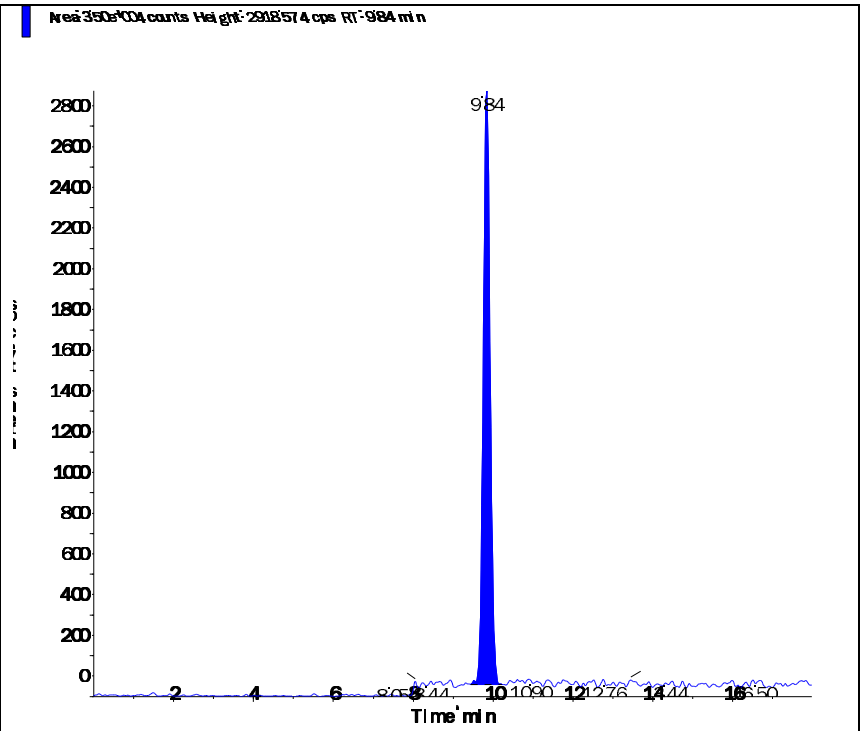

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.203 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

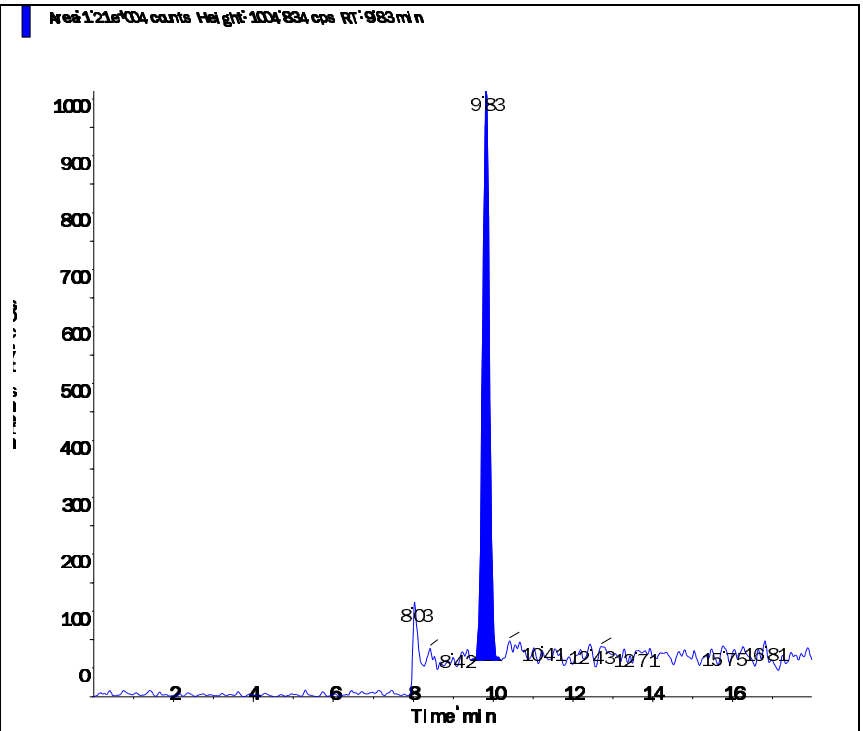

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Printed: 6/12/2016 9:44 PM

Data File	LM35303.wiff	**Result Table**	061116_WTD.rdb
Acquisition Date	6/11/2016 7:51:23 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG572350-03 LCSD (0.2ug/L)	**Injection Vial**	40.00
Data File	LM35303.wiff	**Injection Volume**	10.00
Acquisition Date	6/11/2016 7:51:23 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	061116_WTD.rdb
Sample ID	WG572350-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.840e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.440e+04	9.84	N/A	0.208
Perchlorate conf	1.190e+04	9.83	N/A	0.20

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

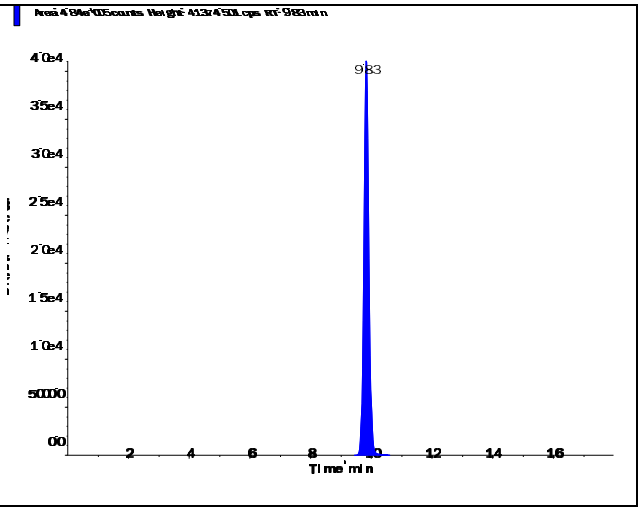

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.208 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

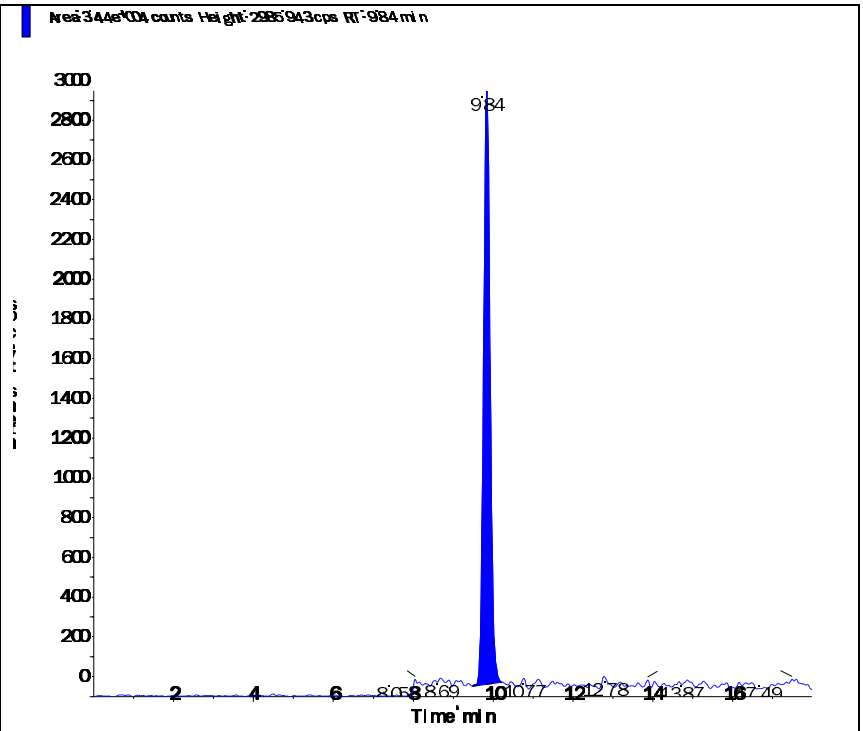

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.20 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

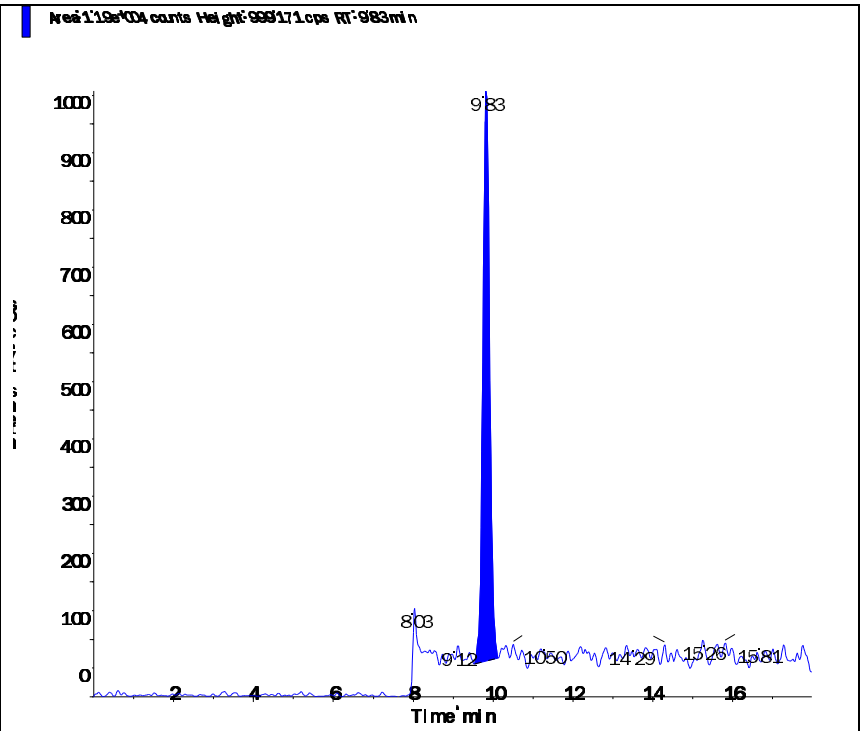

s.dataFile Page 2 of 2

2.3 Metals Data

2.3.1 Metals I C P Data

2.3.1.1 Summary Data

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW8-060916	**Prep Method:**	3015	**Prep Date:**	06/15/2016 10:00
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/17/2016 10:37
Workgroup #:	WG572965	**Analyst:**	JYH	**Run Date:**	06/17/2016 12:00
Collect Date:	06/09/2016 11:00	**Dilution:**	1	**File ID:**	T3.061716.120053
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.122	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	8.30		0.500	0.250	0.125
Iron, Total	7439-89-6	0.888		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	7.45		1.00	0.500	0.250
Potassium, Total	7440-09-7	0.503	J	2.00	1.00	0.500
Selenium, Total	7782-49-2	0.00533	J	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW8-060916	**Prep Method:**	3015	**Prep Date:**	06/15/2016 10:00
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/17/2016 10:37
Workgroup #:	WG572965	**Analyst:**	JYH	**Run Date:**	06/17/2016 12:36
Collect Date:	06/09/2016 11:00	**Dilution:**	100	**File ID:**	T3.061716.123610
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sodium, Total	7440-23-5	191		100	50.0	25.0

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW26SW-060916	**Prep Method:**	3015	**Prep Date:**	06/15/2016 10:00
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/17/2016 10:37
Workgroup #:	WG572965	**Analyst:**	JYH	**Run Date:**	06/17/2016 12:04
Collect Date:	06/09/2016 13:25	**Dilution:**	1	**File ID:**	T3.061716.120445
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.158	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Potassium, Total	7440-09-7	3.46		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.00586	J	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW26SW-060916	**Prep Method:**	3015	**Prep Date:**	06/15/2016 10:00
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/17/2016 10:37
Workgroup #:	WG572965	**Analyst:**	JYH	**Run Date:**	06/17/2016 12:47
Collect Date:	06/09/2016 13:25	**Dilution:**	20	**File ID:**	T3.061716.124747
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	61.4		10.0	5.00	2.50
Iron, Total	7439-89-6	72.2		4.00	2.00	1.00
Magnesium, Total	7439-95-4	34.1		20.0	10.0	5.00
Sodium, Total	7440-23-5	320		20.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW10F-060916	**Prep Method:**	3015	**Prep Date:**	06/15/2016 10:00
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/17/2016 10:37
Workgroup #:	WG572965	**Analyst:**	JYH	**Run Date:**	06/17/2016 12:08
Collect Date:	06/09/2016 14:40	**Dilution:**	1	**File ID:**	T3.061716.120837
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.0804	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	7.72		0.500	0.250	0.125
Iron, Total	7439-89-6	5.73		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	2.22		1.00	0.500	0.250
Potassium, Total	7440-09-7	2.09		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	9.56		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.1.2 QC Summary Data

Example 6010 Calculations
Thermo Scientific iCAP

1.0 Initial Calibration (ICAL) Parameters
For a multi-point calibration, the system performs linear regression from data consisting of a blank and four standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

TCLP Non-Volatile

Analyst(s): AMA/CPD
Date: 06/14/2016
Filter Lot #: 94860030
Microbac SOP: TCLP01 Rev #: 12

Analyst / Date		Analyst / Date	
CPD 6/14/16		AMA 6/15/16	
Time On	Temp On °C	Time Off	Temp Off °C
1427	23.8	0827	21.9

Agitator Speed 30 ± 2 rpm ☑

Jug #	Sample #	Tests	Method	Fluid #	Matrix *	% Solid	Pretest pH Initial	Pretest pH Final	Int. Wt. (g)	Fluid Vol. (mL)	Final extract pH
D	06-0670-01	ME	1311	F1-181	S	100	8.12	2.08	7.67	153	5.19
↓	-02	↓	↓	↓	↓	↓	8.98	2.06	100.27	2005	5.79
↓	-03	↓	↓	↓	↓	↓	10.07	4.79	100.14	2003	7.34
↓	-04	↓	↓	↓	↓	↓	9.53	1.65	100.72	2014	5.13
↓	-05	↓	↓	↓	↓	↓	8.98	2.69	100.32	2006	6.67
↓	-06	↓	↓	↓	↓	↓	9.43	1.94	40.43	807	6.79
↓	-07	↓	↓	F2-379	↓	↓	8.10	7.75	25.70	514	8.08
D	06-0731-01	ME pH-L	1311	F2-379	S	100	8.47	5.86	50.46	1009	4.32
↓	-02	↓ ↓	1312	SPLP F2-326	↓	↓	NA	NA	100.62	2012	8.44
NA	FBIK1	ME	1311	F1-181	NA	NA	NA	NA	100	100	4.93
↓	FBIK2	↓ COD pH-L ~~ME~~	↓	F2-379	↓	↓	↓	↓	↓	↓	2.88
↓	SPLP F2-	↓ pH-L	1312	SPLP F2-326	↓	↓	↓	↓	↓	↓	5.05

CPD 6/14/16

*Matrix Code: (S = solid, sand, soil or sludge) (P = paint) (O = organic) (W = water or aqueous waste)
D = Disposable plastic jug
TCLP Pretest weight will be 5.0 g (± 0.1) unless otherwise noted.
Temperature shall be maintained at 23° ± 2 for 18 ± 2 hours unless otherwise noted.

Comments: 5x 06-0670-01 recieved with limited volume.

Peer Review By: [signature]

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG572775
Analyst: ERP
Spike Analyst: ERP
Run Date: 06/15/2016 10:00
Method: 3015
Balance: BAL019
Instrument: MW-1
Instrument Start: 06/15/2016 10:22

SOP: ME407 Revison 19
Spike Solution: STD76255
Spike Witness: VC
HNO3 Lot #: COA18905
HCL Lot #: COA18769
40 & 50 ML. DIGESTION TU COA18772
ICP Filters- fisher-Lot# RGT35619

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG572775-02	BLANK	1	40 mL	50 mL	205.069 g	205.054 g		
2	WG572612-01	FBLK1	17	5 mL	50 mL	206.144 g	206.129 g		
3	WG572612-02	FBLK2	17	5 mL	50 mL	206.415 g	206.441 g		
4	WG572775-03	LCS	1	40 mL	50 mL	210.819 g	210.843 g	5 mL	
5	L16060616-01	SAMP	1	40 mL	50 mL	205.789 g	205.79 g		06/21/16
6	L16060616-02	SAMP	1	40 mL	50 mL	207.381 g	207.384 g		06/21/16
7	L16060616-04	SAMP	1	40 mL	50 mL	206.111 g	206.112 g		06/21/16
8	L16060641-01	SAMP	1	40 mL	50 mL	208.974 g	208.976 g		06/20/16
9	L16060641-02	SAMP	1	40 mL	50 mL	206.828 g	206.836 g		06/20/16
10	L16060641-03	SAMP	1	40 mL	50 mL	206.487 g	206.505 g		06/20/16
11	L16060641-04	SAMP	1	40 mL	50 mL	207.332 g	207.333 g		06/20/16
12	L16060641-05	SAMP	1	40 mL	50 mL	205.747 g	205.749 g		06/20/16
13	L16060641-06	SAMP	1	40 mL	50 mL	205.335 g	205.347 g		06/20/16
14	L16060641-07	SAMP	1	40 mL	50 mL	209.831 g	209.833 g		06/20/16
15	L16060670-01	SAMP	17	5 mL	50 mL	203.994 g	204.008 g		06/17/16
16	L16060670-02	SAMP	17	5 mL	50 mL	205.631 g	205.626 g		06/17/16
17	L16060670-03	SAMP	17	5 mL	50 mL	205.959 g	205.962 g		06/17/16
18	WG572775-01	REF	17	5 mL	50 mL	209.048 g	209.053 g		
19	L16060670-04	SAMP	17	5 mL	50 mL	209.048 g	209.053 g		06/17/16
20	L16060670-05	SAMP	17	5 mL	50 mL	208.402 g	208.418 g		06/17/16
21	L16060670-06	SAMP	17	5 mL	50 mL	206.817 g	206.807 g		06/17/16
22	L16060670-07	SAMP	17	5 mL	50 mL	207.789 g	207.796 g		06/17/16
23	L16060731-01	SAMP	17	5 mL	50 mL	207.38 g	207.372 g		06/17/16
24	WG572775-04	MS	1	5 mL	50 mL	211.133 g	211.133 g	5 mL	
25	WG572775-05	MSD	1	5 mL	50 mL	211.88 g	211.881 g	5 mL	

L16060641-07	filtered digestate

Analyst: Erin Potter

Reviewer: Vicki Collins

MW_DIG - Modified 09/30/2009
PDF ID: 4808455
Report generated: 06/15/2016 11:03

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 061716T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 572965,572145,572626,572900,573214,573149

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.061716.102216	WG573227-01	Calibration Point		1		06/17/16 10:22
2	T3.061716.102614	WG573227-02	Calibration Point		1		06/17/16 10:26
3	T3.061716.103013	WG573227-03	Calibration Point		1		06/17/16 10:30
4	T3.061716.103412	WG573227-04	Calibration Point		1		06/17/16 10:34
5	T3.061716.103749	WG573227-05	Calibration Point		1		06/17/16 10:37
6	T3.061716.104127	WG573227-06	Initial Calibration Verification		1		06/17/16 10:41
7	T3.061716.104504	WG573227-07	Initial Calib Blank		1		06/17/16 10:45
8	T3.061716.104903	WG573227-08	Low Level Initial Calibration V		1		06/17/16 10:49
9	T3.061716.105259	WG573227-09	Low Level Initial Calibration V		1		06/17/16 10:52
10	T3.061716.105653	WG573227-10	Interference Check		1		06/17/16 10:56
11	T3.061716.110046	WG573227-11	Interference Check		1		06/17/16 11:00
12	T3.061716.110429	WG573227-12	CCV		1		06/17/16 11:04
13	T3.061716.110808	WG573227-13	CCB		1		06/17/16 11:08
14	T3.061716.111457	WG572775-02	Method/Prep Blank	40/50	1		06/17/16 11:14
15	T3.061716.111855	WG572775-03	Laboratory Control S	40/50	1		06/17/16 11:18
16	T3.061716.112235	WG572612-01	Fluid Blank 1		1		06/17/16 11:22
17	T3.061716.112634	WG572616-02	Laboratory Control S		1		06/17/16 11:26
18	T3.061716.113033	WG572775-01	Reference Sample		1	L16060670-04	06/17/16 11:30
19	T3.061716.113430	WG572775-04	Matrix Spike	5/50	1	L16060670-04	06/17/16 11:34
20	T3.061716.113810	WG572775-05	Matrix Spike Duplica	5/50	1	L16060670-04	06/17/16 11:38
21	T3.061716.114150	L16060731-01	60500-SSP0041-SSP0041	5/50	1		06/17/16 11:41
22	T3.061716.114541	WG572965-01	Post Digestion Spike		1	L16060731-01	06/17/16 11:45
23	T3.061716.114921	WG572965-02	Serial Dilution		5	L16060731-01	06/17/16 11:49
24	T3.061716.115317	WG573227-14	CCV		1		06/17/16 11:53
25	T3.061716.115654	WG573227-15	CCB		1		06/17/16 11:56
26	T3.061716.120053	L16060616-01	MW8-060916	40/50	1		06/17/16 12:00
27	T3.061716.120445	L16060616-02	18CPTMW26SW-060916	40/50	1		06/17/16 12:04
28	T3.061716.120837	L16060616-04	MW10F-060916	40/50	1		06/17/16 12:08
29	T3.061716.121233	L16060670-01	J6F0497-01	5/50	1		06/17/16 12:12
30	T3.061716.121629	L16060670-02	J6F0497-02	5/50	1		06/17/16 12:16
31	T3.061716.122019	L16060670-03	J6F0497-03	5/50	1		06/17/16 12:20
32	T3.061716.122415	L16060670-05	J6F0497-05	5/50	1		06/17/16 12:24
33	T3.061716.122811	L16060670-06	J6F0497-06	5/50	1		06/17/16 12:28
34	T3.061716.123203	L16060670-07	J6F0497-07	5/50	1		06/17/16 12:32

Page: 1 Approved: June 20, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 061716T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 572965,572145,572626,572900,573214,573149

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.061716.123610	L16060616-01	MW8-060916	40/50	100		06/17/16 12:36
36	T3.061716.124009	WG573227-16	CCV		1		06/17/16 12:40
37	T3.061716.124347	WG573227-17	CCB		1		06/17/16 12:43
38	T3.061716.124747	L16060616-02	18CPTMW26SW-060916	40/50	20		06/17/16 12:47
39	T3.061716.125146	WG573227-18	CCV		1		06/17/16 12:51
40	T3.061716.125524	WG573227-19	CCB		1		06/17/16 12:55
41	T3.061716.125924	WG573227-20	Low Level Continuing Calibra		1		06/17/16 12:59
42	T3.061716.130321	WG573227-21	Low Level Continuing Calibra		1		06/17/16 13:03
43	T3.061716.130713	L16060641-01	6-10-18 W1	40/50	1		06/17/16 13:07
44	T3.061716.131108	L16060641-02	6-10-18 S3	40/50	1		06/17/16 13:11
45	T3.061716.131503	L16060641-03	6-10-18 S4	40/50	1		06/17/16 13:15
46	T3.061716.131859	L16060641-04	6-10-18 S2	40/50	1		06/17/16 13:18
47	T3.061716.132242	L16060641-05	6-10-18 S7	40/50	1		06/17/16 13:22
48	T3.061716.132638	L16060641-06	59-11-10.03 S3	40/50	1		06/17/16 13:26
49	T3.061716.133033	L16060641-07	59-11-10.03 P1	40/50	1		06/17/16 13:30
50	T3.061716.133428	WG573227-22	CCV		1		06/17/16 13:34
51	T3.061716.133805	WG573227-23	CCB		1		06/17/16 13:38
52	T3.061716.134206	L16060376-01	FTB-034-GM-MW12B-06071	40/50	1		06/17/16 13:42
53	T3.061716.134601	L16060376-02	FTB-034-GM-MW1C-060716	40/50	1		06/17/16 13:46
54	T3.061716.134956	L16060376-03	FTB-034-GM-MW07B-06071	40/50	1		06/17/16 13:49
55	T3.061716.135351	L16060376-04	FTB-034-GM-MW13B-06071	40/50	1		06/17/16 13:53
56	T3.061716.135746	WG572145-05	Post Digestion Spike		1	L16060376-04	06/17/16 13:57
57	T3.061716.141229	WG572145-06	Serial Dilution		5	L16060376-04	06/17/16 14:12
58	T3.061716.141625	L16060364-01	27-12-9 RPW3-POST	40/50	100		06/17/16 14:16
59	T3.061716.142024	L16060364-04	27-12-9 RPW3-HT	40/50	100		06/17/16 14:20
60	T3.061716.142422	L16060492-01	SPW_06082016	40/50	1000		06/17/16 14:24
61	T3.061716.142819	WG573227-24	CCV		1		06/17/16 14:28
62	T3.061716.143157	WG573227-25	CCB		1		06/17/16 14:31
63	T3.061716.143556	WG572914-01	Method/Prep Blank	1/50	1		06/17/16 14:35
64	T3.061716.143952	WG572914-02	Laboratory Control S	1/50	1		06/17/16 14:39
65	T3.061716.144332	WG572914-03	Laboratory Control S	1/50	1		06/17/16 14:43
66	T3.061716.144711	L16060793-01	500662-WP-001	1/50	1		06/17/16 14:47
67	T3.061716.145105	WG573214-01	Post Digestion Spike		1	L16060793-01	06/17/16 14:51
68	T3.061716.145458	WG573214-02	Serial Dilution		5	L16060793-01	06/17/16 14:54

Page: 2 Approved: June 20, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 061716T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 572965,572145,572626,572900,573214,573149

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.061716.145847	WG573214-02	Serial Dilution		25	L16060793-01	06/17/16 14:58
70	T3.061716.150234	WG573227-26	CCV		1		06/17/16 15:02
71	T3.061716.150613	WG573227-27	CCB		1		06/17/16 15:06
72	T3.061716.151012	WG573227-28	Low Level Continuing Calibra		1		06/17/16 15:10
73	T3.061716.151407	WG572637-03	Method/Prep Blank	40/50	1		06/17/16 15:14
74	T3.061716.151806	WG572637-04	Laboratory Control S	40/50	1		06/17/16 15:18
75	T3.061716.152146	WG572637-05	Filter Blank		1		06/17/16 15:21
76	T3.061716.153713	WG573214-01	Post Digestion Spike	1/50	20	L16060793-01	06/17/16 15:37
77	T3.061716.154059	WG573214-02	Serial Dilution		20	L16060793-01	06/17/16 15:40
78	T3.061716.154437	WG573214-02	Serial Dilution		100	L16060793-01	06/17/16 15:44
79	T3.061716.154831	WG573214-01	Post Digestion Spike	1/50	100	L16060793-01	06/17/16 15:48
80	T3.061716.155224	WG573214-02	Serial Dilution		100	L16060793-01	06/17/16 15:52
81	T3.061716.155602	WG573214-02	Serial Dilution		500	L16060793-01	06/17/16 15:56
82	T3.061716.155958	WG573227-29	CCV		1		06/17/16 15:59
83	T3.061716.160335	WG573227-30	CCB		1		06/17/16 16:03
84	T3.061716.160734	WG573227-31	Low Level Continuing Calibra		1		06/17/16 16:07
85	T3.061716.161119	WG572637-01	Reference Sample		100	L16060564-01	06/17/16 16:11
86	T3.061716.161523	WG572637-06	Matrix Spike	40/50	100	L16060564-01	06/17/16 16:15
87	T3.061716.161928	WG572637-07	Matrix Spike Duplica	40/50	100	L16060564-01	06/17/16 16:19
88	T3.061716.162333	L16060590-04	FTB-034-GM-MW26-060916	40/50	1		06/17/16 16:23
89	T3.061716.162727	WG572900-03	Post Digestion Spike		1	L16060590-04	06/17/16 16:27
90	T3.061716.163106	L16060590-04	FTB-034-GM-MW26-060916		5		06/17/16 16:31
91	T3.061716.163501	WG572900-04	Serial Dilution		25	L16060590-04	06/17/16 16:35
92	T3.061716.163900	WG573227-32	CCV		1		06/17/16 16:39
93	T3.061716.164238	WG573227-33	CCB		1		06/17/16 16:42
94	T3.061716.164636	WG572637-02	Reference Sample		100	L16060564-02	06/17/16 16:46
95	T3.061716.165040	L16060564-03	WBW-FD-06092016	40/50	100		06/17/16 16:50
96	T3.061716.165445	L16060564-04	WBW-FD-06092016	40/50	100		06/17/16 16:54
97	T3.061716.165849	WG572637-08	Matrix Spike	40/50	100	L16060564-02	06/17/16 16:58
98	T3.061716.170254	WG572637-09	Matrix Spike Duplica	40/50	100	L16060564-02	06/17/16 17:02
99	T3.061716.170656	L16060535-01	FPL16027	5/50	2		06/17/16 17:06
100	T3.061716.171053	L16060590-05	FTB-034-GM-MW2C-060916	40/50	1		06/17/16 17:10
101	T3.061716.171447	L16060590-06	FTB-034-GM-MW11A-06091	40/50	1		06/17/16 17:14
102	T3.061716.171842	L16060590-07	FTB-034-GM-MW25-060916	40/50	1		06/17/16 17:18

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Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 061716T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 572965,572145,572626,572900,573214,573149

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T3.061716.172237	WG572637-01	Reference Sample		1000	L16060564-01	06/17/16 17:22
104	T3.061716.172633	WG573227-34	CCV		1		06/17/16 17:26
105	T3.061716.173010	WG573227-35	CCB		1		06/17/16 17:30
106	T3.061716.173408	WG572637-06	Matrix Spike	40/50	1000	L16060564-01	06/17/16 17:34
107	T3.061716.173804	WG572637-07	Matrix Spike Duplica	40/50	1000	L16060564-01	06/17/16 17:38
108	T3.061716.174200	L16060564-03	WBW-FD-06092016	40/50	1000		06/17/16 17:42
109	T3.061716.174556	WG573227-36	CCV		1		06/17/16 17:45
110	T3.061716.174934	WG573227-37	CCB		1		06/17/16 17:49
111	T3.061716.175332	WG573227-38	Low Level Continuing Calibra		1		06/17/16 17:53
112	T3.061716.175725	WG572980-02	Method/Prep Blank	40/50	1		06/17/16 17:57
113	T3.061716.180123	WG572980-03	Laboratory Control S	40/50	1		06/17/16 18:01
114	T3.061716.180503	WG572980-01	Reference Sample		1	L16060796-01	06/17/16 18:05
115	T3.061716.180852	WG572980-04	Matrix Spike	5/50	1	L16060796-01	06/17/16 18:08
116	T3.061716.181229	WG572980-05	Matrix Spike Duplica	5/50	1	L16060796-01	06/17/16 18:12
117	T3.061716.181606	L16060732-01	LH18/24-SP650-6371-GRAB		1		06/17/16 18:16
118	T3.061716.181958	L16060732-02	LH18/24-SP650-6371-COMP		1		06/17/16 18:19
119	T3.061716.182353	WG573149-03	Post Digestion Spike		1	L16060732-02	06/17/16 18:23
120	T3.061716.182732	WG573149-04	Serial Dilution		5	L16060732-02	06/17/16 18:27
121	T3.061716.183128	WG573149-04	Serial Dilution		25	L16060732-02	06/17/16 18:31
122	T3.061716.183525	WG573227-39	CCV		1		06/17/16 18:35
123	T3.061716.183904	WG573227-40	CCB		1		06/17/16 18:39
124	T3.061716.184303	L16060794-01	A08-MW06-Y1S2	40/50	1		06/17/16 18:43
125	T3.061716.184656	L16060794-02	A08-MW09-Y1S2	40/50	1		06/17/16 18:46
126	T3.061716.185052	L16060794-03	A09-MW02-Y1S2	40/50	1		06/17/16 18:50
127	T3.061716.185448	L16060794-04	A09-MW07-Y1S2	40/50	1		06/17/16 18:54
128	T3.061716.185840	WG573227-41	CCV		1		06/17/16 18:58
129	T3.061716.190218	WG573227-42	CCB		1		06/17/16 19:02

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Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 17-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 573227
Runlog ID: 75759
Analytical Workgroups: 572965,572145,572626,572900,573214,573149

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	535
Level 4	616,734,376,794,590
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer:

Secondary Reviewer:
20-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-20-2016 12:17:06

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010C

AAB#: WG572965

Login Number: L16060616

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW8-060916	01	06/09/16					06/15/2016	6	180		06/17/16	8	180	
MW8-060916	01	06/09/16					06/15/2016	6	180		06/17/16	8.1	180	
18CPTMW26SW-060916	02	06/09/16					06/15/2016	5.9	180		06/17/16	7.9	180	
18CPTMW26SW-060916	02	06/09/16					06/15/2016	5.9	180		06/17/16	8	180	
MW10F-060916	04	06/09/16					06/15/2016	5.8	180		06/17/16	7.9	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4812878
Report generated 06/17/2016 14:32

METHOD BLANK SUMMARY

Login Number: L16060616
Blank File ID: T3.061716.111457
Prep Date: 06/15/16 10:00
Analyzed Date: 06/17/16 11:14
Analyst: JYH

Work Group: WG572965
Blank Sample ID: WG572775-02
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572775-03	T3.061716.111855	06/17/16 11:18	01
MW8-060916	L16060616-01	T3.061716.120053	06/17/16 12:00	01
18CPTMW26SW-060916	L16060616-02	T3.061716.120445	06/17/16 12:04	01
MW10F-060916	L16060616-04	T3.061716.120837	06/17/16 12:08	01
MW8-060916	L16060616-01	T3.061716.123610	06/17/16 12:36	DL01
18CPTMW26SW-060916	L16060616-02	T3.061716.124747	06/17/16 12:47	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4812879
Report generated 06/17/2016 14:36

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060616 Prep Date: 06/15/16 10:00 Sample ID: WG572775-02
Instrument ID: ICP-THERMO3 Run Date: 06/17/16 11:14 Prep Method: 3015
File ID: T3.061716.111457 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG572965 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-17-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Aluminum, Total	0.0500	0.200	0.0500	1	U
Beryllium, Total	0.00500	0.0200	0.00500	1	U
Calcium, Total	0.125	0.500	0.125	1	U
Iron, Total	0.0500	0.200	0.0500	1	U
Magnesium, Total	0.250	1.00	0.250	1	U
Potassium, Total	0.500	2.00	0.500	1	U
Selenium, Total	0.00500	0.0200	0.00500	1	U
Sodium, Total	0.250	1.00	0.250	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4812880
17-JUN-2016 14:36

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060616 Run Date: 06/17/2016 Sample ID: WG572775-03
Instrument ID: ICP-THERMO3 Run Time: 11:18 Prep Method: 3015
File ID: T3.061716.111855 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG572965 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76255 Cal ID: ICP-TH-17-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Aluminum, Total	6.25	6.78	109	80 - 120	
Beryllium, Total	0.0313	0.0334	107	80 - 120	
Calcium, Total	6.25	6.92	111	80 - 120	
Iron, Total	2.50	2.75	110	80 - 120	
Magnesium, Total	6.25	6.77	108	80 - 120	
Potassium, Total	31.3	33.5	107	80 - 120	
Selenium, Total	0.250	0.264	106	80 - 120	
Sodium, Total	31.3	33.8	108	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4812881
Report generated: 06/17/2016 14:36

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060616 Cal ID: ICP-THERMO3 - Worknum: WG572965
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG572775-01 File ID: T3.061716.113033 Dil: 1 Matrix: WATER
Sample ID: WG572775-04 MS File ID: T3.061716.113430 Dil: 1 Units: mg/L
Sample ID: WG572775-05 MSD File ID: T3.061716.113810 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Aluminum	2.32	50.0	55.2	106	50.0	54.7	105	0.770	80 - 120	20	
Beryllium	ND	0.250	0.265	106	0.250	0.264	106	0.340	80 - 120	20	
Calcium	8.19	50.0	60.6	105	50.0	61.0	106	0.722	80 - 120	20	
Iron	18.0	20.0	39.4	107	20.0	39.5	108	0.241	80 - 120	20	
Magnesium	ND	50.0	54.0	108	50.0	54.5	109	1.07	80 - 120	20	
Potassium	ND	250	264	106	250	267	107	1.15	80 - 120	20	
Selenium	ND	2.00	2.13	107	2.00	2.03	101	4.93	80 - 120	20	
Sodium	1530	250	1770	97.1	250	1770	98.2	0.152	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4812882
Report generated 06/17/2016 14:36

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16060616 **Worknum:** WG572965
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG572965-02 **File ID:** T3.061716.114921 **Dil:** 5 **Units:** ug/L
Sample: L16060731-01 **File ID:** T3.061716.114150 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	136		118		13.30	E
Beryllium	0.0700	X	0.250		257.00	
Calcium	105000		95200		9.32	
Iron	7.35		ND	U		
Magnesium	1890		1450		23.40	E
Potassium	1970		1470		25.60	E
Selenium	7.06		17.4		146.00	E
Sodium	8320		7600		8.68	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4812876
06/17/2016 14:36

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060616 **Worknum:** WG572965
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG572965-01 **File ID:** T3.061716.114541 **Dil:** 1 **Units:** ug/L
Sample ID: L16060731-01 **File ID:** T3.061716.114150 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	5380		136	F	5000	105.2	75 - 125	
BERYLLIUM	26.3		0	U	25	105.0	75 - 125	
CALCIUM	100000		105000		5000	110.4	75 - 125	
IRON	2150		0	U	2000	107.7	75 - 125	
MAGNESIUM	6790		1890		5000	101.8	75 - 125	
POTASSIUM	27800		1970		25000	104.2	75 - 125	
SELENIUM	213		7.06	F	200	103.5	75 - 125	
SODIUM	33800		8320		25000	105.3	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4812877
Report generated: 06/17/2016 14:36

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16060616	Workgroup (AAB#):	WG572965
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG573227	Initial Calibration Date:	17-JUN-2016 10:37

	WG573227-01		WG573227-02		WG573227-03		WG573227-04		WG573227-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000570	.1	0.00122	.2	0.00194	10	0.0836	20	0.166	.999997	
BERYLLIUM	0	0.000480	.0005	0.000970	.001	0.00143	.05	0.0572	.1	0.114	.99998	
CALCIUM	0	-0.000830	.1	0.00293	.2	0.00743	10	0.422	20	0.847	.99986	
IRON	0	0.0000200	.04	0.0000800	.08	0.00108	4	0.0857	8	0.171	.99874	
MAGNESIUM	0	-0.000130	NA	NA	.2	0.000840	10	0.0623	20	0.124	.999997	
POTASSIUM	0	-0.00156	.5	0.0308	1	0.0452	50	3.21	100	6.49	.999881	
SELENIUM	0	-0.0000500	NA	NA	.008	-0.0000100	.4	0.00616	.8	0.0122	.999251	
SODIUM	0	-0.0168	.5	0.0568	1	0.123	50	8.78	100	17.8	.999976	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4812885
Report generated: 17-JUN-2016 14:32

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060616
Run Date: 06/17/2016
Sample ID: WG573227-07
Instrument ID: ICP-THERMO3
Run Time: 10:45
Method: 6010C
File ID: T3.061716.104504
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG572965
Cal ID: ICP-THERI - 17-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	.004	U
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4812887
Report generated 06/17/2016 14:32

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060616
Run Date: 06/17/2016
Sample ID: WG573227-13
Instrument ID: ICP-THERMO3
Run Time: 11:08
Method: 6010C
File ID: T3.061716.110808
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG572965
Cal ID: ICP-TH - 17-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060616
Run Date: 06/17/2016
Sample ID: WG573227-15
Instrument ID: ICP-THERMO3
Run Time: 11:56
Method: 6010C
File ID: T3.061716.115654
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG572965
Cal ID: ICP-TH - 17-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00581	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812890
Report generated 06/17/2016 14:32

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060616
Run Date: 06/17/2016
Sample ID: WG573227-17
Instrument ID: ICP-THERMO3
Run Time: 12:43
Method: 6010C
File ID: T3.061716.124347
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG572965
Cal ID: ICP-TH - 17-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00722	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060616
Run Date: 06/17/2016
Sample ID: WG573227-19
Instrument ID: ICP-THERMO3
Run Time: 12:55
Method: 6010C
File ID: T3.061716.125524
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG572965
Cal ID: ICP-TH - 17-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
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Report generated 06/17/2016 14:32

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060616
Run Date: 06/17/2016
Sample ID: WG573227-06
Instrument ID: ICP-THERMO3
Run Time: 10:41
Method: 6010C
File ID: T3.061716.104127
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG572965
Cal ID: ICP-TH - 17-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	10.0	100	90 - 110	
Beryllium		.05	0.0498	99.6	90 - 110	
Calcium		10	9.87	98.7	90 - 110	
Iron		4	4.05	101	90 - 110	
Magnesium		10	9.99	99.9	90 - 110	
Potassium		50	49.7	99.4	90 - 110	
Selenium		.4	0.399	99.8	90 - 110	
Sodium		50	49.6	99.2	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4812886
Report generated 06/17/2016 14:32

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/17/2016
Sample ID: WG573227-12
Instrument ID: ICP-THERMO3
Run Time: 11:04
Method: 6010C
File ID: T3.061716.110429
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG572965
Cal ID: ICP-TH - 17-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.99	mg/L	99.9	90 - 110		
Beryllium		0.0500	0.0500	mg/L	100	90 - 110		
Calcium		10.0	9.93	mg/L	99.3	90 - 110		
Iron		4.00	4.03	mg/L	101	90 - 110		
Magnesium		10.0	9.96	mg/L	99.6	90 - 110		
Potassium		50.0	49.6	mg/L	99.2	90 - 110		
Selenium		0.400	0.407	mg/L	102	90 - 110		
Sodium		50.0	49.4	mg/L	98.9	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812889
Report generated 06/17/2016 14:32

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/17/2016
Sample ID: WG573227-14
Instrument ID: ICP-THERMO3
Run Time: 11:53
Method: 6010C
File ID: T3.061716.115317
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG572965
Cal ID: ICP-TH - 17-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.96	mg/L	99.6	90 - 110		
Beryllium		0.0500	0.0497	mg/L	99.3	90 - 110		
Calcium		10.0	9.78	mg/L	97.8	90 - 110		
Iron		4.00	3.98	mg/L	99.4	90 - 110		
Magnesium		10.0	9.90	mg/L	99.0	90 - 110		
Potassium		50.0	49.2	mg/L	98.5	90 - 110		
Selenium		0.400	0.401	mg/L	100	90 - 110		
Sodium		50.0	49.0	mg/L	98.0	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812889
Report generated 06/17/2016 14:32

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/17/2016
Sample ID: WG573227-16
Instrument ID: ICP-THERMO3
Run Time: 12:40
Method: 6010C
File ID: T3.061716.124009
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG572965
Cal ID: ICP-TH - 17-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.0	mg/L	100	90 - 110		
Beryllium		0.0500	0.0499	mg/L	99.8	90 - 110		
Calcium		10.0	9.90	mg/L	99.0	90 - 110		
Iron		4.00	4.02	mg/L	100	90 - 110		
Magnesium		10.0	9.88	mg/L	98.8	90 - 110		
Potassium		50.0	49.5	mg/L	99.1	90 - 110		
Selenium		0.400	0.400	mg/L	100	90 - 110		
Sodium		50.0	49.3	mg/L	98.6	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Report generated 06/17/2016 14:32

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/17/2016
Sample ID: WG573227-18
Instrument ID: ICP-THERMO3
Run Time: 12:51
Method: 6010C
File ID: T3.061716.125146
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG572965
Cal ID: ICP-TH - 17-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.1	mg/L	101	90 - 110		
Beryllium		0.0500	0.0499	mg/L	99.9	90 - 110		
Calcium		10.0	9.77	mg/L	97.7	90 - 110		
Iron		4.00	3.99	mg/L	99.8	90 - 110		
Magnesium		10.0	9.85	mg/L	98.5	90 - 110		
Potassium		50.0	49.0	mg/L	98.0	90 - 110		
Selenium		0.400	0.401	mg/L	100	90 - 110		
Sodium		50.0	48.8	mg/L	97.6	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812889
Report generated 06/17/2016 14:32

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060616
Run Date: 06/17/2016
Sample ID: WG573227-08
Instrument ID: ICP-THERMO3
Run Time: 10:49
Method: 6010C
File ID: T3.061716.104903
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG572965
Cal ID: ICP-TH - 17-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.167	mg/L	104	70 - 130		
Beryllium		0.00160	0.00154	mg/L	96.3	70 - 130		
Calcium		0.400	0.379	mg/L	94.7	70 - 130		
Iron		0.0800	0.0587	mg/L	73.3	70 - 130		
Magnesium		0.400	0.415	mg/L	104	70 - 130		
Potassium		0.800	0.797	mg/L	99.6	70 - 130		
Selenium		0.0160	0.0163	mg/L	102	70 - 130		
Sodium		0.400	0.410	mg/L	103	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4812891
Report generated 06/17/2016 14:36

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060616
Run Date: 06/17/2016
Sample ID: WG573227-20
Instrument ID: ICP-THERMO3
Run Time: 12:59
Method: 6010C
File ID: T3.061716.125924
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG572965
Cal ID: ICP-TH - 17-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.163	mg/L	102	70 - 130		
Beryllium		0.00160	0.00160	mg/L	100	70 - 130		
Calcium		0.400	0.393	mg/L	98.1	70 - 130		
Iron		0.0800	0.0648	mg/L	80.9	70 - 130		
Magnesium		0.400	0.441	mg/L	110	70 - 130		
Potassium		0.800	0.830	mg/L	104	70 - 130		
Selenium		0.0160	0.0238	mg/L	149	70 - 130		*
Sodium		0.400	0.409	mg/L	102	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4812891
Report generated 06/17/2016 14:36

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060616
Instrument ID: ICP-THERMO3
Sol. A : WG573227-10 **File ID:** T3.061716.105653
Sol. AB : WG573227-11 **File ID:** T3.061716.110046

Workgroup (AAB#): WG572965
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	273	109	250	291	116	
Beryllium	NS	0.0000100	NS	0.250	0.279	112	
Calcium	250	253	101	250	271	108	
Iron	100	102	102	100	108	108	
Magnesium	250	256	102	250	270	108	
Potassium	NS	-0.0536	NS	5.00	5.71	114	
Selenium	NS	-0.000610	NS	0.250	0.277	111	
Sodium	NS	-0.0128	NS	5.00	5.78	116	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4812888
Report generated 06/17/2016 14:32

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060616 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	AG	AL	AS	B	BA
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000410	0	0	0
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0.0115	0	-0.0000800
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0.000260	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	-0.000289	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	-0.0000490	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.0000120	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0.0000300	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4812884
Report generated: 06/17/2016 14:32

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060616 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	BE	CA	CD	CO	CR
ALUMINUM	308.20	0	0	0	-0.000820	0
ANTIMONY	206.80	0	0	0	0	0.0200
ARSENIC	189.00	0	0	0	0	-0.00190
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0.00343	0
CADMIUM	228.80	0	0	0	-0.00390	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	-0.000200
COPPER	224.70	0	0	0	0.0000770	-0.00100
IRON	261.10	0	0	0	0	-0.00100
LEAD	220.30	0	0	0	-0.0000130	-0.000132
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.0000500
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	-0.000860	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0.00000500	0	0	0
THALLIUM	190.80	0	0	0	0.00240	0.000276
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	-0.00480
ZINC	206.20	0	0	0	0	-0.00180
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4812884
Report generated: 06/17/2016 14:32

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060616 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	CU	FE	K	LI	MG
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000560	0	0	0
ARSENIC	189.00	0	-0.0000500	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0.000300	0	0	0
CADMIUM	228.80	0	-0.0000190	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000500	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0.00160	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0.000609	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.00000300
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0.0000420	0	0	0
PHOSPHORUS	214.90	-0.323	0.000900	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000270	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000400	0	0	0
VANADIUM	292.40	0	0.00000700	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	-0.0000300	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4812884
Report generated: 06/17/2016 14:32

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060616 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	MN	MO	NA	NI	P
ALUMINUM	308.20	0	0.0163	0	0	0
ANTIMONY	206.80	0	-0.00310	0	-0.00350	0
ARSENIC	189.00	0	0.00120	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	-0.00190	0	0	0
CADMIUM	228.80	0	0.0000320	0	-0.000770	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0.000360	0	0	0	0
COBALT	228.60	0	-0.00200	0	0.000100	0
COPPER	224.70	0	0.00160	0	-0.0123	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	-0.00210	0	0.000110	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	-0.00290	-0.0230	0	0	0
MANGANESE	257.60	0	0.0000300	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0.00710	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0.000600	0.000580	0	0	0
SILICON	212.40	0	0.0187	0	0	0
SILVER	328.00	0	-0.0000430	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0.00100	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000153	0	0	0
VANADIUM	292.40	-0.000200	-0.00830	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4812884
Report generated: 06/17/2016 14:32

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060616 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	PB	SB	SE	SI	SN
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0	0	0	-0.0220
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0.00440	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4812884
Report generated: 06/17/2016 14:32

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060616 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	SR	TI	TL	V	ZN
ALUMINUM	308.20	0	0	0	0.0950	0
ANTIMONY	206.80	0	0.00110	0	-0.00360	0
ARSENIC	189.00	0	0	0	0.000107	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	-0.00000700	0	0.000990	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0.000102	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000550	0	0	0
COBALT	228.60	0	0.00210	0	0.0000200	0
COPPER	224.70	0	0.000269	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	-0.000126	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	-0.00290	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	-0.000110	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	-0.00100	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000720	0	-0.000260	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.000800	0	-0.00490	0
TIN	189.90	0	-0.00190	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0.000820	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4812884
Report generated: 06/17/2016 14:32

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060616 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	ZR
ALUMINUM	308.20	0
ANTIMONY	206.80	0
ARSENIC	189.00	0
BARIUM	455.40	0
BERYLLIUM	313.10	0
BORON	249.60	0
CADMIUM	228.80	0
CALCIUM	422.60	0
CHROMIUM	267.70	0
COBALT	228.60	0
COPPER	224.70	0
IRON	261.10	0
LEAD	220.30	0
LITHIUM	670.70	0
MAGNESIUM	279.00	0
MANGANESE	257.60	0
MOLYBDENUM	202.00	0
NICKEL	231.60	0
PHOSPHORUS	214.90	0
POTASSIUM	766.40	0
SELENIUM	196.00	0
SILICON	212.40	0
SILVER	328.00	0
SODIUM	589.50	0
STRONTIUM	407.70	0
THALLIUM	190.80	0
TIN	189.90	0
TITANIUM	337.20	0
VANADIUM	292.40	0
ZINC	206.20	0
ZIRCONIUM	339.10	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4812884
Report generated: 06/17/2016 14:32

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16060616 **Date:** 04/29/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	900.0
Antimony	20.00	45.0
Arsenic	10.00	45.0
Barium	10.00	45.0
Beryllium	10.00	1.8
Boron	20.00	45.0
Cadmium	20.00	4.5
Calcium	5.00	270.0
Chromium	20.00	36.0
Cobalt	20.00	45.0
Copper	20.00	180.0
Iron	5.00	720.0
Lead	20.00	225.0
Lithium	5.00	36.0
Magnesium	5.00	900.0
Manganese	10.00	36.0
Molybdenum	20.00	27.0
Nickel	20.00	90.0
Phosphorus	20.00	180.0
Potassium	5.00	450.0
Selenium	20.00	90.0
Silicon	20.00	36.0
Silver	10.00	9.0
Sodium	5.00	270.0
Strontium	5.00	9.0
Thallium	20.00	18.0
Tin	20.00	45.0
Titanium	5.00	36.0
Vanadium	20.00	27.0
Zinc	20.00	45.0
Zirconium	10.00	45.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4812883
Report generated: 06/17/2016 14:32

2.3.1.3 Raw Data

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	0.000008	0.048613	0.000000	1.000000
Al 308.215 {109}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	0.000569	0.008225	0.000000	1.000000
As 189.042 {478}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	0.000075	0.022876	0.000000	1.000000
B 249.678 {135}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	0.000199	0.020764	0.000000	1.000000
Ba 455.403 { 74}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	0.010410	2.005353	0.000000	1.000000
Be 313.107 {108}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	0.000477	1.114502	0.000000	1.000000
Ca 422.673 { 80}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	-0.000826	0.042431	0.000000	1.000000
Cd 228.802 {447}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	-0.000316	0.556382	0.000000	1.000000
Co 228.616 {447}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	-0.000067	0.366842	0.000000	1.000000
Cr 267.716 {126}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	0.000072	0.064813	0.000000	1.000000
Cu 224.700 {450}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	-0.000111	0.124447	0.000000	1.000000
Fe 261.187 {129}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	0.000024	0.021350	0.000000	1.000000
K 766.490 { 44}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	-0.001561	0.064687	0.000000	1.000000
Li 670.784 { 50}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	-0.003748	1.538874	0.000000	1.000000
Mg 279.079 {121}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	-0.000129	0.006244	0.000000	1.000000
Mn 257.610 {131}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	-0.000141	0.267754	0.000000	1.000000
Mo 202.030 {467}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	-0.000100	0.187420	0.000000	1.000000
Na 589.592 { 57}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	-0.016774	0.177496	0.000000	1.000000
Ni 231.604 {446}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	-0.000542	0.140077	0.000000	1.000000
P 214.914 {457}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	-0.000053	0.012369	0.000000	1.000000
Pb 220.353 {453}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	-0.000218	0.063332	0.000000	1.000000
Sb 206.833 {463}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	0.000276	0.029311	0.000000	1.000000
Se 196.090 {472}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	-0.000033	0.015502	0.000000	1.000000
Si 212.412 {459}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	0.000970	0.037842	0.000000	1.000000
Sn 189.989 {477}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	0.000009	0.071890	0.000000	1.000000
Sr 407.771 { 83}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	0.002365	3.314864	0.000000	1.000000
Ti 337.280 {100}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	-0.002018	0.120665	0.000000	1.000000
Tl 190.856 {477}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	-0.000210	0.030171	0.000000	1.000000
V 292.402 {115}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	-0.000052	0.080534	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	0.000210	0.399913	0.000000	1.000000
Zr 339.198 { 99}	6/17/2016 10:41:22	6/17/2016 10:41:22	Linear	1/Conc	-0.003077	-0.001618	0.000000	1.000000

Approved: June 20, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999843	0.000002	0.002603	0.008677	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999997	0.000001	0.010903	0.036343	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999974	0.000001	0.003672	0.012239	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999912	0.000001	0.003517	0.011723	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999987	0.000066	0.001338	0.004460	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999980	0.000002	0.000103	0.000343	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999860	0.000045	0.051617	0.172056	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999921	0.000002	0.000304	0.001015	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999973	0.000003	0.000442	0.001473	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999938	0.000002	0.001346	0.004487	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999901	0.000006	0.001529	0.005098	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.998740	0.000027	0.026150	0.087166	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999881	0.000317	0.114694	0.382314	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999993	0.000057	0.004532	0.015108	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999997	0.000002	0.098648	0.328826	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999871	0.000014	0.002929	0.009762	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999989	0.000006	0.000458	0.001526	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999976	0.000392	0.036043	0.120143	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999942	0.000005	0.001236	0.004120	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999983	0.000005	0.008630	0.028767	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999767	0.000004	0.003926	0.013086	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999996	0.000001	0.004979	0.016595	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.996668	0.000005	0.007823	0.026075	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999989	0.000006	0.002658	0.008859	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999985	0.000002	0.000962	0.003206	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999997	0.000053	0.000540	0.001800	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999983	0.000004	0.007924	0.026414	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999559	0.000004	0.003281	0.010936	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999994	0.000002	0.001048	0.003494	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999991	0.000011	0.000232	0.000772	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.213377	0.000047	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0

Approved: June 20, 2016

Sample Name: S0 Acquired: 6/17/2016 10:22:16 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00001**	**.00057**	**.00008**	**.00020**	**.01041**	**.00048**	**-.00083**
Stddev	.00002	.00002	.00004	.00002	.00220	.00006	.00211
%RSD	207.65	3.5173	46.641	12.209	21.103	12.123	255.58
#1	.00000	.00059	.00004	.00020	.00867	.00051	-.00132
#2	-.00000	.00057	.00008	.00022	.01288	.00041	-.00265
#3	.00003	.00055	.00010	.00018	.00968	.00051	.00149

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00032**	**-.00007**	**.00007**	**-.00011**	**.00002**	**-.00156**	**-.00375**
Stddev	.00006	.00009	.00005	.00014	.00048	.00589	.00402
%RSD	20.224	129.60	72.135	130.90	1940.3	376.61	107.24
#1	-.00029	-.00008	.00005	-.00011	.00051	-.00789	-.00316
#2	-.00027	.00003	.00013	-.00026	.00000	-.00057	-.00006
#3	-.00039	-.00015	.00004	.00003	-.00044	.00377	-.00803

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00013**	**-.00014**	**-.00010**	**-.01677**	**-.00054**	**-.00005**	**-.00022**
Stddev	.00032	.00112	.00008	.00279	.00004	.00012	.00013
%RSD	248.41	796.93	81.622	16.606	8.0678	220.12	58.575
#1	-.00040	.00103	-.00002	-.01436	-.00051	-.00018	-.00034
#2	-.00020	-.00025	-.00009	-.01982	-.00053	-.00002	-.00023
#3	.00022	-.00121	-.00018	-.01614	-.00059	.00004	-.00008

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00028**	**-.00005**	**.00097**	**.00001**	**.00237**	**-.00202**	**-.00021**
Stddev	.00015	.00004	.00007	.00007	.00130	.00003	.00004
%RSD	53.892	74.805	7.4897	717.66	54.883	1.5947	16.900
#1	.00010	-.00002	.00105	-.00005	.00300	-.00205	-.00020
#2	.00036	-.00004	.00091	.00000	.00323	-.00203	-.00018
#3	.00037	-.00010	.00096	.00008	.00087	-.00198	-.00025

Approved: June 20, 2016

Sample Name: S0 Acquired: 6/17/2016 10:22:16 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	-.00005	.00021	-.00308
Stddev	.00004	.00006	.00184
%RSD	76.057	27.589	59.718
#1	-.00006	.00015	-.00504
#2	-.00001	.00027	-.00140
#3	-.00009	.00021	-.00279
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8400.1	49112.	2703.2
Stddev	9.4	227.	26.1
%RSD	.11229	.46289	.96555
#1	8408.3	48857.	2680.6
#2	8402.2	49293.	2697.3
#3	8389.8	49186.	2731.8

Approved: June 20, 2016

Sample Name: S1 Acquired: 6/17/2016 10:26:14 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00012**	**.00122**	**.02502**	**.00097**	**.00293**	**-.00011**	**.00057**
Stddev	.00010	.00001	.00222	.00012	.00101	.00018	.00007
%RSD	80.074	.82369	8.8738	12.675	34.490	157.95	12.137
#1	.00023	.00123	.02586	.00084	.00311	.00005	.00064
#2	.00009	.00121	.02670	.00109	.00184	-.00031	.00056
#3	.00004	.00122	.02250	.00099	.00383	-.00009	.00051

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00036**	**.00046**	**.00008**	**.03077**	**.00064**	**.00141**	**.05676**
Stddev	.00003	.00006	.00041	.00367	.00057	.00002	.00564
%RSD	7.3836	13.233	513.47	11.929	88.222	1.5390	9.9450
#1	.00036	.00053	.00035	.03124	.00076	.00142	.05077
#2	.00033	.00045	-.00039	.03417	.00114	.00138	.05755
#3	.00039	.00041	.00029	.02688	.00002	.00142	.06197

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00008**	**.00093**	**-.00004**	**.00057**	**.00244**	**.00054**	**.02769**
Stddev	.00002	.00008	.00009	.00006	.00011	.00003	.00231
%RSD	29.133	8.1567	215.37	10.331	4.6337	5.6671	8.3484
#1	-.00009	.00099	-.00013	.00055	.00237	.00058	.02739
#2	-.00005	.00094	-.00003	.00052	.00257	.00053	.02555
#3	-.00009	.00085	.00004	.00063	.00237	.00052	.03014

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00110**	**.00056**	**.00345**	**-.00408**
Stddev	.00071	.00003	.00004	.00102
%RSD	64.813	5.0845	1.1251	25.077
#1	-.00174	.00056	.00342	-.00460
#2	-.00121	.00059	.00343	-.00474
#3	-.00034	.00053	.00349	-.00290

Approved: June 20, 2016

Sample Name: S1 Acquired: 6/17/2016 10:26:14 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8432.1**	**48987.**	**2678.4**
Stddev	22.4	119.	15.1
%RSD	.26551	.24390	.56407
#1	8444.7	48850.	2666.8
#2	8406.3	49070.	2695.5
#3	8445.4	49041.	2672.9

Approved: June 20, 2016

Sample Name: S2 Acquired: 6/17/2016 10:30:13 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00027**	**.00194**	**.00021**	**.00039**	**.04167**	**.00143**	**.00743**
Stddev	.00007	.00007	.00008	.00003	.00033	.00005	.00178
%RSD	25.918	3.5374	37.052	6.8963	.80198	3.7581	24.002
#1	.00035	.00201	.00025	.00036	.04158	.00143	.00734
#2	.00026	.00189	.00012	.00040	.04138	.00149	.00926
#3	.00021	.00191	.00026	.00041	.04204	.00138	.00570

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00025**	**.00119**	**.00066**	**.00100**	**.00108**	**.04518**	**.02085**
Stddev	.00011	.00006	.00006	.00011	.00016	.00323	.00744
%RSD	42.666	5.0431	9.1090	10.605	15.090	7.1496	35.674
#1	.00037	.00116	.00059	.00105	.00125	.04159	.02940
#2	.00022	.00126	.00071	.00106	.00104	.04785	.01723
#3	.00016	.00115	.00068	.00088	.00093	.04609	.01591

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00084**	**.00223**	**.00295**	**.12272**	**.00058**	**.00188**	**.00039**
Stddev	.00052	.00014	.00011	.00423	.00012	.00010	.00017
%RSD	62.254	6.4538	3.5852	3.4490	20.250	5.3907	43.866
#1	.00143	.00217	.00295	.12008	.00050	.00186	.00031
#2	.00043	.00212	.00285	.12048	.00053	.00179	.00059
#3	.00065	.00239	.00306	.12760	.00071	.00199	.00027

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00083**	**-.00001**	**.00401**	**.00113**	**.05472**	**.00003**	**.00009**
Stddev	.00004	.00002	.00003	.00006	.00035	.00036	.00005
%RSD	4.7346	361.18	.81536	5.4083	.63570	1049.0	54.140
#1	.00088	.00001	.00398	.00115	.05479	.00034	.00004
#2	.00081	-.00000	.00404	.00117	.05503	-.00037	.00014
#3	.00081	-.00003	.00401	.00106	.05434	.00013	.00010

Approved: June 20, 2016

Sample Name: S2 Acquired: 6/17/2016 10:30:13 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00120	.00666	-.00391
Stddev	.00003	.00004	.00082
%RSD	2.2375	.59193	20.900
#1	.00120	.00669	-.00453
#2	.00117	.00667	-.00422
#3	.00122	.00661	-.00298
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8441.2	49030.	2710.9
Stddev	8.7	116.	30.6
%RSD	.10342	.23603	1.1291
#1	8451.3	48937.	2702.2
#2	8435.7	49160.	2685.6
#3	8436.8	48994.	2744.9

Approved: June 20, 2016

Sample Name: S3 Acquired: 6/17/2016 10:34:12 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.01930	.08358	.00910	.01037	2.0123	.05717	.42246
Stddev	.00013	.00014	.00007	.00006	.0064	.00012	.00307
%RSD	.67477	.17229	.80865	.54625	.31760	.21655	.72705
#1	.01945	.08359	.00904	.01041	2.0073	.05712	.42018
#2	.01922	.08372	.00908	.01040	2.0195	.05731	.42595
#3	.01924	.08343	.00918	.01031	2.0100	.05707	.42124

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.02994	.07341	.03248	.06283	.08571	3.2099	1.5269
Stddev	.00014	.00054	.00019	.00025	.00105	.0090	.0030
%RSD	.46234	.73044	.58379	.39078	1.2268	.27972	.19379
#1	.02987	.07356	.03229	.06303	.08451	3.2008	1.5248
#2	.03010	.07386	.03267	.06290	.08622	3.2102	1.5257
#3	.02985	.07282	.03248	.06256	.08642	3.2187	1.5303

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.06227	.13431	.18849	8.7750	.07014	.12071	.03186
Stddev	.00033	.00025	.00110	.0083	.00021	.00014	.00037
%RSD	.53492	.18656	.58421	.09438	.30247	.11781	1.1728
#1	.06261	.13402	.18939	8.7732	.07033	.12076	.03166
#2	.06227	.13443	.18882	8.7840	.07018	.12083	.03163
#3	.06194	.13448	.18726	8.7678	.06991	.12056	.03229

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.03482	.00616	.19206	.07213	3.3171	.11887	.01382
Stddev	.00024	.00009	.00031	.00037	.0159	.00081	.00020
%RSD	.69538	1.4399	.16190	.51030	.47788	.68273	1.4439
#1	.03499	.00620	.19220	.07229	3.2988	.11934	.01385
#2	.03493	.00622	.19227	.07239	3.3269	.11934	.01401
#3	.03455	.00606	.19170	.07171	3.3255	.11794	.01361

Approved: June 20, 2016

Sample Name: S3 Acquired: 6/17/2016 10:34:12 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**.08043**	**.40218**	**-.00502**
Stddev	.00012	.00125	.00107
%RSD	.14379	.30960	21.317
#1	.08041	.40281	-.00622
#2	.08055	.40298	-.00416
#3	.08032	.40075	-.00468
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8262.7**	**47910.**	**2686.5**
Stddev	25.6	57.	15.1
%RSD	.31001	.11869	.56313
#1	8253.3	47969.	2680.8
#2	8243.1	47856.	2675.0
#3	8291.7	47905.	2703.6

Approved: June 20, 2016

Sample Name: S4 Acquired: 6/17/2016 10:37:49 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.03873	.16644	.01835	.02085	4.0269	.11416	.84699
Stddev	.00006	.00042	.00005	.00002	.0149	.00018	.00441
%RSD	.14980	.24984	.27629	.07444	.37075	.15993	.52081
#1	.03873	.16692	.01836	.02083	4.0188	.11433	.84377
#2	.03867	.16625	.01839	.02085	4.0177	.11397	.84518
#3	.03879	.16616	.01829	.02086	4.0441	.11419	.85201

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.06049	.14606	.06486	.12356	.17144	6.4886	3.0822
Stddev	.00028	.00009	.00015	.00043	.00136	.0302	.0121
%RSD	.46188	.06265	.23552	.34851	.79177	.46615	.39339
#1	.06018	.14597	.06500	.12318	.16988	6.4929	3.0806
#2	.06059	.14616	.06489	.12403	.17217	6.4564	3.0710
#3	.06071	.14606	.06470	.12348	.17228	6.5165	3.0951

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.12430	.26723	.37345	17.816	.13899	.24451	.06324
Stddev	.00066	.00128	.00094	.081	.00034	.00027	.00027
%RSD	.52780	.47771	.25255	.45624	.24267	.10953	.43245
#1	.12478	.26627	.37419	17.809	.13863	.24421	.06317
#2	.12355	.26674	.37377	17.738	.13930	.24473	.06301
#3	.12457	.26868	.37239	17.900	.13903	.24458	.06354

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.06934	.01218	.37968	.14322	6.6346	.23851	.02713
Stddev	.00008	.00009	.00067	.00033	.0246	.00134	.00009
%RSD	.11866	.77270	.17777	.22780	.37096	.56077	.33747
#1	.06931	.01228	.37903	.14297	6.6125	.23757	.02720
#2	.06943	.01209	.38037	.14359	6.6301	.23792	.02716
#3	.06927	.01216	.37965	.14311	6.6612	.24004	.02703

Approved: June 20, 2016

Sample Name: S4 Acquired: 6/17/2016 10:37:49 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**.16055**	**.79724**	**-.00419**
Stddev	.00025	.00082	.00069
%RSD	.15800	.10273	16.520
#1	.16085	.79630	-.00435
#2	.16040	.79761	-.00478
#3	.16042	.79781	-.00343
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8140.5**	**47059.**	**2682.8**
Stddev	28.4	145.	16.6
%RSD	.34935	.30715	.61720
#1	8165.6	46968.	2667.2
#2	8109.6	47226.	2700.2
#3	8146.2	46983.	2680.9

Approved: June 20, 2016

Sample Name: ICV Acquired: 6/17/2016 10:41:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39911**	**10.021**	**.39388**	**.50461**	**1.0012**	**.04979**	**9.8705**
Stddev	.00314	.031	.00380	.00285	.0030	.00011	.0549
%RSD	.78578	.30983	.96507	.56485	.30254	.21189	.55606
#1	.40231	10.044	.39813	.50305	.99827	.04985	9.8071
#2	.39605	9.9860	.39273	.50790	1.0009	.04986	9.9009
#3	.39896	10.035	.39079	.50287	1.0043	.04967	9.9035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04976**	**.20054**	**.50022**	**.50469**	**4.0477**	**49.707**	**.99561**
Stddev	.00025	.00028	.00203	.00130	.0808	.023	.00174
%RSD	.49736	.14101	.40673	.25846	1.9960	.04595	.17463
#1	.04967	.20056	.50257	.50389	3.9937	49.684	.99686
#2	.04957	.20082	.49899	.50619	4.0089	49.707	.99634
#3	.05004	.20025	.49911	.50399	4.1406	49.729	.99362
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.9893**	**.50092**	**1.0152**	**49.591**	**.50633**	**9.9254**	**.50490**
Stddev	.0177	.00259	.0034	.235	.00042	.0086	.00191
%RSD	.17708	.51778	.33776	.47301	.08343	.08624	.37888
#1	9.9701	.49811	1.0191	49.496	.50675	9.9277	.50432
#2	9.9931	.50322	1.0138	49.418	.50590	9.9159	.50704
#3	10.005	.50142	1.0126	49.858	.50635	9.9325	.50335
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 20, 2016

Sample Name: ICV Acquired: 6/17/2016 10:41:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2158**	**.39928**	**5.0417**	**1.0050**	**1.0014**	**.99940**	**.50516**
Stddev	.0032	.00713	.0062	.0027	.0038	.00938	.00481
%RSD	.26262	1.7860	.12363	.26842	.38242	.93885	.95257
#1	1.2162	.39633	5.0489	1.0067	.99916	.99571	.51009
#2	1.2124	.40741	5.0376	1.0019	.99914	.99242	.50493
#3	1.2188	.39409	5.0387	1.0064	1.0058	1.0101	.50047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0022**	**1.0041**	F **.18953**
Stddev	.0028	.0009	.40645
%RSD	.28122	.08745	214.45
#1	1.0047	1.0047	.25243
#2	1.0026	1.0031	.56087
#3	.99913	1.0045	-.24470
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-5.0000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8307.4**	**47995.**	**2695.2**
Stddev	17.3	274.	7.7
%RSD	.20847	.57153	.28622
#1	8309.9	47737.	2691.0
#2	8323.4	48283.	2704.1
#3	8289.0	47964.	2690.5

Approved: June 20, 2016

Sample Name: ICB Acquired: 6/17/2016 10:45:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00082	.00384	.00027	.00387	-.00008	.00007	.04038
Stddev	.00067	.00488	.00234	.00277	.00080	.00007	.01819
%RSD	82.253	127.13	867.35	71.633	1015.6	91.932	45.054
#1	.00136	-.00152	-.00039	.00496	-.00076	-.00000	.06040
#2	.00006	.00501	.00287	.00592	.00080	.00010	.02486
#3	.00104	.00803	-.00167	.00072	-.00028	.00013	.03588
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	.00005	.00004	-.00014	-.00505	.02499	-.00283
Stddev	.00017	.00048	.00085	.00095	.02725	.03959	.00349
%RSD	405.62	899.07	1949.2	654.35	540.20	158.46	123.29
#1	-.00011	-.00047	-.00019	-.00046	-.02778	.06847	.00086
#2	-.00016	.00015	-.00066	.00092	-.01253	-.00899	-.00607
#3	.00015	.00048	.00098	-.00089	.02517	.01548	-.00329
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00335	.00002	.00610	.03222	.00073	F .01070	.00088
Stddev	.08931	.00187	.00084	.01686	.00083	.00792	.00310
%RSD	2668.8	8882.6	13.707	52.316	114.43	74.023	353.95
#1	.02205	-.00026	.00541	.03384	-.00021	.00538	-.00158
#2	.08183	-.00169	.00585	.04822	.00139	.01979	.00436
#3	-.09384	.00201	.00703	.01462	.00100	.00691	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						.01000	
Low Limit						-.01000	

Approved: June 20, 2016

Sample Name: ICB Acquired: 6/17/2016 10:45:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00717**	**-.00390**	**.00207**	**-.00015**	**-.00068**	**-.00131**	**.00072**
Stddev	.00633	.00835	.00168	.00042	.00076	.00604	.00079
%RSD	88.271	214.31	80.926	291.50	111.99	459.46	109.47
#1	.00102	-.00442	.00226	-.00044	-.00136	-.00754	.00154
#2	.01365	-.01197	.00365	-.00034	.00014	-.00093	.00066
#3	.00683	.00471	.00031	.00034	-.00082	.00452	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00050**	**.00040**	F **-.45659**
Stddev	.00058	.00013	2.0501
%RSD	115.60	33.347	449.00
#1	.00016	.00043	-1.7391
#2	-.00095	.00052	-1.5385
#3	-.00072	.00026	1.9078
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8339.3**	**48213.**	**2689.4**
Stddev	30.4	204.	8.5
%RSD	.36499	.42257	.31689
#1	8321.5	47983.	2696.3
#2	8322.0	48285.	2692.0
#3	8374.5	48371.	2679.9

Approved: June 20, 2016

Sample Name: LLICV Acquired: 6/17/2016 10:49:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00907	.16696	.00821	.07769	.00682	.00154	.37885
Stddev	.00178	.00620	.00337	.00244	.00142	.00003	.06005
%RSD	19.655	3.7117	40.988	3.1463	20.766	2.0452	15.851
#1	.00939	.16504	.01039	.08041	.00745	.00154	.42364
#2	.00715	.16195	.00434	.07568	.00520	.00151	.31061
#3	.01067	.17389	.00991	.07697	.00782	.00157	.40229
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00062	.00387	.00398	.00530	.05867	.79669	.07640
Stddev	.00007	.00025	.00021	.00073	.01315	.13194	.00539
%RSD	12.076	6.3491	5.2609	13.763	22.419	16.562	7.0495
#1	.00070	.00406	.00379	.00461	.06556	.93519	.07607
#2	.00061	.00395	.00421	.00606	.04350	.78242	.07119
#3	.00055	.00359	.00395	.00524	.06695	.67246	.08194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41475	.00792	.00902	.41041	.01597	.75865	.00849
Stddev	.04733	.00091	.00009	.02401	.00086	.00427	.00406
%RSD	11.412	11.533	.97069	5.8501	5.3743	.56280	47.791
#1	.43027	.00892	.00893	.39923	.01512	.76036	.00459
#2	.36160	.00769	.00903	.39402	.01596	.76179	.01269
#3	.45236	.00714	.00911	.43797	.01683	.75379	.00820
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: LLICV Acquired: 6/17/2016 10:49:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.08183	.01629	.78255	.39539	.03961	.02358	.15529
Stddev	.00275	.00608	.00194	.00239	.00039	.00530	.00046
%RSD	3.3607	37.310	.24816	.60560	.97764	22.483	.29925
#1	.08393	.01572	.78050	.39789	.03916	.02033	.15496
#2	.07872	.02263	.78435	.39516	.03985	.02970	.15583
#3	.08285	.01052	.78281	.39312	.03981	.02072	.15510
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00800	.01656	F -70.405
Stddev	.00022	.00008	.610
%RSD	2.7708	.45554	.86639
#1	.00824	.01664	-70.021
#2	.00780	.01653	-71.109
#3	.00797	.01650	-70.086
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8462.6	49333.	2749.6
Stddev	19.6	332.	6.7
%RSD	.23187	.67258	.24392
#1	8443.1	48951.	2757.1
#2	8482.4	49489.	2744.1
#3	8462.3	49557.	2747.7

Approved: June 20, 2016

Sample Name: LLICV Acquired: 6/17/2016 10:52:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02021	.39901	.01979	.19565	.01919	.00380	1.0341
Stddev	.00027	.01200	.00119	.00027	.00075	.00003	.0324
%RSD	1.3570	3.0086	6.0213	.13952	3.8870	.70319	3.1331
#1	.01990	.40829	.02095	.19533	.01928	.00383	1.0629
#2	.02043	.38546	.01857	.19576	.01841	.00379	1.0404
#3	.02029	.40330	.01987	.19585	.01989	.00378	.99903
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00201	.01007	.01083	.01129	.18441	1.8909	.19159
Stddev	.00010	.00021	.00069	.00058	.01757	.0181	.00403
%RSD	5.0156	2.1067	6.3675	5.0937	9.5253	.95818	2.1056
#1	.00209	.01019	.01162	.01186	.16429	1.9019	.18863
#2	.00205	.00983	.01037	.01071	.19671	1.8699	.19619
#3	.00190	.01020	.01049	.01132	.19222	1.9008	.18996
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.87007	.02123	.01979	.99711	.04022	1.8643	.02055
Stddev	.14381	.00082	.00022	.03556	.00147	.0016	.00161
%RSD	16.529	3.8825	1.1254	3.5660	3.6435	.08357	7.8327
#1	.89525	.02218	.01994	1.0021	.04191	1.8661	.02148
#2	.99962	.02082	.01954	1.0299	.03947	1.8639	.02149
#3	.71533	.02070	.01991	.95930	.03928	1.8630	.01869
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: LLICV Acquired: 6/17/2016 10:52:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19621**	**.04135**	**1.9239**	**.98004**	**.09823**	**.05584**	**.37549**
Stddev	.00188	.00041	.0030	.00151	.00048	.00681	.00254
%RSD	.95953	.99028	.15804	.15411	.49165	12.202	.67516
#1	.19745	.04103	1.9250	.98178	.09794	.05402	.37485
#2	.19714	.04181	1.9205	.97931	.09795	.06338	.37828
#3	.19405	.04121	1.9263	.97903	.09878	.05012	.37333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.01971**	**.04064**	F **-185.86**
Stddev	.00057	.00012	2.19
%RSD	2.8688	.29417	1.1773
#1	.02028	.04065	-187.23
#2	.01915	.04075	-187.02
#3	.01971	.04052	-183.34
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8433.3**	**48922.**	**2732.6**
Stddev	10.2	178.	5.7
%RSD	.12039	.36410	.20851
#1	8428.6	48940.	2729.6
#2	8445.0	49091.	2729.1
#3	8426.4	48736.	2739.2

Approved: June 20, 2016

Sample Name: ICSA Acquired: 6/17/2016 10:56:53 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00382	273.46	.00302	.06474	-.00054	.00001	253.25
Stddev	.00200	.44	.00370	.00281	.00085	.00011	.80
%RSD	52.297	.16074	122.77	4.3380	158.26	1692.4	.31698
#1	.00468	273.62	.00519	.06781	-.00146	.00001	253.94
#2	.00524	272.97	.00512	.06231	-.00038	.00012	252.37
#3	.00153	273.80	-.00126	.06409	.00022	-.00011	253.44
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	-.00128	-.00141	-.00348	102.14	-.05359	.00530
Stddev	.00009	.00016	.00068	.00360	.41	.05470	.00305
%RSD	123.87	12.448	48.378	103.44	.40072	102.07	57.517
#1	-.00006	-.00116	-.00178	-.00412	102.53	-.04272	.00776
#2	-.00017	-.00146	-.00062	.00039	101.72	-.11290	.00627
#3	.00001	-.00122	-.00183	-.00673	102.17	-.00514	.00189
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	256.49	.00205	-.00078	-.01280	.00042	.04582	.00091
Stddev	.23	.00246	.00010	.01300	.00048	.00590	.00271
%RSD	.09059	120.01	12.694	101.59	114.48	12.867	298.54
#1	256.71	.00146	-.00075	.00208	.00009	.05031	-.00222
#2	256.25	.00474	-.00070	-.01850	.00020	.04802	.00243
#3	256.51	-.00007	-.00089	-.02198	.00097	.03915	.00252
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: ICSA Acquired: 6/17/2016 10:56:53 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00175**	**-.00061**	**.01003**	**-.00028**	**.00015**	**-.00856**	**.00554**
Stddev	.00484	.00964	.00095	.00035	.00059	.00405	.00409
%RSD	276.58	1574.1	9.4537	127.05	403.24	47.252	73.877
#1	-.00719	.00595	.00900	-.00022	-.00039	-.00392	.00531
#2	.00207	.00390	.01022	-.00065	.00005	-.01135	.00157
#3	-.00013	-.01169	.01087	.00004	.00078	-.01042	.00974
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00772**	**-.00515**	F **14.353**
Stddev	.00034	.00004	.250
%RSD	4.4636	.79565	1.7434
#1	-.00809	-.00515	14.552
#2	-.00766	-.00511	14.434
#3	-.00741	-.00519	14.072
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02000
Low Limit			-.02000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7691.8**	**43982.**	**2571.7**
Stddev	33.8	184.	17.5
%RSD	.43937	.41817	.67997
#1	7726.6	43771.	2551.5
#2	7659.1	44067.	2580.6
#3	7689.6	44108.	2582.9

Approved: June 20, 2016

Sample Name: ICSAB Acquired: 6/17/2016 11:00:46 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.58193	291.44	.28300	.07012	.27807	.27881	270.93
Stddev	.00080	.40	.00242	.00228	.00030	.00032	.59
%RSD	.13695	.13711	.85472	3.2512	.10654	.11619	.21851
#1	.58174	291.10	.28414	.06886	.27834	.27867	271.53
#2	.58280	291.88	.28022	.06874	.27776	.27918	270.91
#3	.58125	291.34	.28464	.07275	.27813	.27857	270.35
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.54421	.26175	.27563	.26472	107.51	5.7074	.00899
Stddev	.00158	.00059	.00128	.00100	.13	.0288	.00149
%RSD	.28967	.22454	.46554	.37726	.12015	.50461	16.573
#1	.54559	.26230	.27416	.26366	107.65	5.7014	.01042
#2	.54249	.26113	.27646	.26564	107.51	5.7387	.00912
#3	.54453	.26184	.27629	.26485	107.39	5.6820	.00744
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	269.88	.27034	-.00033	5.7782	.52632	.13694	.53746
Stddev	.50	.00310	.00020	.0134	.00213	.01527	.00486
%RSD	.18586	1.1477	61.714	.23222	.40438	11.149	.90369
#1	269.87	.27363	-.00045	5.7902	.52878	.13524	.53462
#2	270.39	.26747	-.00043	5.7808	.52511	.15298	.53470
#3	269.39	.26992	-.00009	5.7637	.52508	.12259	.54307
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: ICSAB Acquired: 6/17/2016 11:00:46 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.56183**	**.27693**	**.01224**	**.00073**	**.00094**	**-.01378**	**.50427**
Stddev	.00631	.00654	.00164	.00029	.00016	.00628	.00287
%RSD	1.1229	2.3632	13.393	39.162	17.110	45.594	.56970
#1	.56909	.28431	.01408	.00057	.00102	-.00656	.50690
#2	.55766	.27183	.01170	.00056	.00105	-.01799	.50470
#3	.55875	.27466	.01094	.00106	.00076	-.01680	.50120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.27184**	**.52176**	F **15.775**
Stddev	.00048	.00136	.913
%RSD	.17669	.26072	5.7860
#1	.27214	.52311	16.427
#2	.27209	.52039	14.732
#3	.27129	.52179	16.167
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02500
Low Limit			-.02500

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7291.4**	**41814.**	**2482.9**
Stddev	6.5	75.	7.6
%RSD	.08902	.17901	.30585
#1	7286.2	41849.	2475.9
#2	7298.7	41728.	2491.0
#3	7289.3	41865.	2481.9

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 11:04:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39765	9.9886	.39574	.49967	.99394	.05003	9.9272
Stddev	.00155	.0246	.00243	.00498	.00634	.00037	.0435
%RSD	.38946	.24670	.61353	.99687	.63779	.73287	.43870
#1	.39706	10.012	.39657	.50345	.98728	.05020	9.8792
#2	.39941	9.9628	.39764	.50153	.99464	.05029	9.9643
#3	.39648	9.9911	.39300	.49402	.99990	.04961	9.9380
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04969	.20033	.50258	.50345	4.0283	49.582	.99193
Stddev	.00010	.00074	.00241	.00118	.0355	.161	.00242
%RSD	.19132	.36854	.48050	.23520	.88058	.32450	.24381
#1	.04960	.20089	.50434	.50481	3.9891	49.439	.98931
#2	.04979	.20061	.50357	.50278	4.0378	49.551	.99241
#3	.04969	.19949	.49983	.50275	4.0581	49.756	.99408
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.9575	.49754	1.0061	49.443	.50447	9.9145	.50553
Stddev	.0734	.00182	.0060	.290	.00311	.0101	.00231
%RSD	.73742	.36607	.59171	.58715	.61702	.10138	.45671
#1	9.9304	.49718	1.0115	49.206	.50559	9.9220	.50815
#2	9.9015	.49592	1.0070	49.355	.50687	9.9184	.50377
#3	10.041	.49951	.99971	49.766	.50096	9.9031	.50468
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 11:04:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1984**	**.40671**	**5.0324**	**1.0017**	**.99494**	**.98888**	**.50725**
Stddev	.0065	.00394	.0136	.0017	.00396	.00413	.00192
%RSD	.54520	.96900	.27058	.16805	.39828	.41805	.37894
#1	1.2057	.41062	5.0393	1.0015	.99194	.99304	.50649
#2	1.1931	.40274	5.0413	1.0035	.99346	.98477	.50943
#3	1.1964	.40677	5.0168	1.0001	.99943	.98882	.50582
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0043**	**1.0030**	F **-1.6655**
Stddev	.0074	.0027	1.3606
%RSD	.74054	.26397	81.693
#1	1.0090	1.0040	-1.5964
#2	1.0081	1.0050	-3.0594
#3	.99571	.99999	-.34081
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8327.3**	**48295.**	**2716.9**
Stddev	16.2	245.	12.4
%RSD	.19490	.50805	.45719
#1	8321.0	48312.	2729.9
#2	8315.1	48531.	2715.7
#3	8345.7	48041.	2705.1

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 11:08:08 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00039**	**.00161**	**-.00084**	**.00092**	**.00019**	**-.00006**	**-.02998**
Stddev	.00090	.00839	.00178	.00093	.00078	.00001	.03337
%RSD	231.33	521.76	212.17	100.62	409.59	18.585	111.34
#1	-.00092	.00977	-.00187	.00167	.00103	-.00007	-.03090
#2	.00065	.00205	-.00187	-.00012	-.00052	-.00005	-.06288
#3	-.00089	-.00700	.00122	.00122	.00006	-.00006	.00385
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.00034**	**.00025**	**.00167**	**-.00649**	**.00403**	**.00157**
Stddev	.00008	.00062	.00108	.00118	.00640	.13140	.00592
%RSD	46.024	182.19	425.52	70.735	98.629	3256.9	376.67
#1	-.00014	.00078	.00144	.00067	-.00571	-.11016	.00416
#2	-.00025	-.00037	-.00001	.00298	-.01325	-.02539	.00575
#3	-.00011	.00060	-.00067	.00136	-.00051	.14765	-.00520
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.03031**	**.00218**	**.00387**	**.02983**	**-.00084**	**-.00119**	**-.00045**
Stddev	.05585	.00278	.00038	.01657	.00075	.00418	.00207
%RSD	184.28	127.82	9.9003	55.554	89.342	350.78	460.68
#1	.01607	.00396	.00347	.03752	-.00168	-.00575	.00181
#2	-.01468	.00360	.00392	.04116	-.00063	-.00028	-.00091
#3	-.09231	-.00103	.00423	.01081	-.00022	.00246	-.00225
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 11:08:08 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v956) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00400**	**.00315**	**.00110**	**-.00020**	**-.00008**	**-.00379**	**.00127**
Stddev	.00209	.00736	.00120	.00024	.00024	.00995	.00300
%RSD	52.283	233.54	108.58	118.63	307.74	262.37	236.52
#1	.00195	-.00527	.00092	-.00016	-.00005	-.01521	.00064
#2	.00391	.00838	.00001	.00001	.00015	.00074	.00453
#3	.00613	.00635	.00238	-.00046	-.00033	.00308	-.00136
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00059**	**-.00010**	F **-.99863**
Stddev	.00026	.00014	1.0695
%RSD	44.531	141.11	107.09
#1	-.00032	.00005	.23106
#2	-.00085	-.00012	-1.5151
#3	-.00060	-.00022	-1.7119
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8460.9**	**49284.**	**2742.8**
Stddev	6.2	160.	21.7
%RSD	.07367	.32448	.79182
#1	8467.7	49265.	2753.3
#2	8459.6	49453.	2757.3
#3	8455.5	49135.	2717.9

Approved: June 20, 2016

Sample Name: PBW B2 Acquired: 6/17/2016 11:14:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572775-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00078**	**.00285**	**.00135**	**.00271**	**-.00030**	**-.00002**	**-.00473**
Stddev	.00170	.00488	.00338	.00283	.00085	.00009	.01327
%RSD	218.52	171.13	250.51	104.38	281.97	415.23	280.56
#1	.00118	.00072	.00090	-.00039	-.00011	-.00006	.01007
#2	-.00174	-.00060	-.00178	.00516	.00044	-.00008	-.00870
#3	-.00177	.00843	.00493	.00336	-.00124	.00008	-.01556
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00002**	**.00003**	**.00017**	**.00142**	**-.00616**	**.04654**	**.00291**
Stddev	.00007	.00039	.00071	.00053	.02705	.12024	.00052
%RSD	342.90	1262.2	423.78	37.411	439.13	258.37	17.909
#1	-.00002	-.00025	-.00012	.00162	-.03108	.10689	.00256
#2	.00010	-.00013	.00098	.00082	.02261	.12465	.00351
#3	-.00002	.00048	-.00035	.00182	-.01001	-.09192	.00266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05294**	**-.00044**	**.00079**	**-.02850**	**-.00024**	**.00172**	**.00232**
Stddev	.06326	.00449	.00018	.02314	.00073	.00368	.00262
%RSD	119.51	1013.6	23.212	81.191	303.88	214.71	113.03
#1	.09812	.00463	.00060	-.01478	.00035	.00597	.00414
#2	.08006	-.00391	.00096	-.05521	-.00105	-.00030	.00351
#3	-.01936	-.00204	.00080	-.01550	-.00001	-.00052	-.00069
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: PBW B2 Acquired: 6/17/2016 11:14:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572775-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00236**	**-.00228**	**.00155**	**-.00026**	**.00013**	**.00367**	**.00183**
Stddev	.00429	.00156	.00223	.00034	.00031	.00403	.00208
%RSD	181.34	68.275	144.50	130.13	236.98	109.87	113.75
#1	-.00470	-.00113	-.00001	-.00002	-.00021	.00831	.00019
#2	.00258	-.00166	.00054	-.00011	.00021	.00150	.00417
#3	-.00498	-.00406	.00411	-.00065	.00040	.00118	.00113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00046**	**.00046**	F **-.81615**
Stddev	.00073	.00012	1.3591
%RSD	156.89	25.397	166.53
#1	-.00114	.00038	.19517
#2	.00031	.00041	-2.3611
#3	-.00056	.00059	-.28255
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8592.4**	**49856.**	**2756.3**
Stddev	9.2	294.	7.5
%RSD	.10658	.58982	.27283
#1	8602.9	50093.	2761.6
#2	8586.1	49949.	2747.7
#3	8588.1	49527.	2759.6

Approved: June 20, 2016

Sample Name: LCSW B2 Acquired: 6/17/2016 11:18:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572775-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21842	5.4259	.21404	1.0938	.54867	.02669	5.5341	.02687
Stddev	.00172	.0159	.00302	.0019	.00046	.00008	.0439	.00025
%RSD	.78555	.29395	1.4108	.17070	.08455	.29687	.79273	.91367
#1	.21807	5.4442	.21088	1.0959	.54897	.02672	5.5842	.02715
#2	.22029	5.4189	.21435	1.0922	.54892	.02660	5.5156	.02677
#3	.21691	5.4146	.21690	1.0933	.54814	.02676	5.5026	.02669
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10911	.27338	.27313	2.2034	26.813	.54456	5.4191	.27451
Stddev	.00034	.00267	.00067	.0197	.104	.00497	.0843	.00072
%RSD	.31364	.97681	.24628	.89300	.38769	.91274	1.5546	.26262
#1	.10873	.27515	.27240	2.2011	26.776	.54742	5.3284	.27381
#2	.10919	.27031	.27328	2.1850	26.733	.54745	5.4341	.27447
#3	.10940	.27468	.27372	2.2241	26.930	.53882	5.4949	.27525
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.55634	27.060	.27722	5.2393	.27384	.65475	.21131	2.7572
Stddev	.00118	.091	.00132	.0059	.00327	.00403	.01050	.0061
%RSD	.21244	.33656	.47792	.11281	1.1931	.61611	4.9691	.22266
#1	.55747	27.160	.27781	5.2457	.27677	.65369	.22255	2.7589
#2	.55511	27.041	.27814	5.2380	.27031	.65135	.20176	2.7504
#3	.55643	26.981	.27570	5.2341	.27445	.65921	.20960	2.7623
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 20, 2016

Sample Name: LCSW B2 Acquired: 6/17/2016 11:18:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572775-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.54263	.55380	.53761	.27833	.54332	.54115	-.00394
Stddev	.00091	.00324	.00939	.00214	.00178	.00041	1.7598
%RSD	.16793	.58490	1.7474	.76902	.32819	.07555	44611.
#1	.54330	.55742	.54785	.27822	.54537	.54159	-1.7733
#2	.54299	.55118	.52939	.28052	.54230	.54079	.01533
#3	.54159	.55279	.53560	.27625	.54227	.54105	1.7462
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7806.1	45484.	2587.1
Stddev	27.3	270.	22.2
%RSD	.35009	.59263	.85769
#1	7779.2	45298.	2561.7
#2	7805.5	45360.	2596.9
#3	7833.8	45793.	2602.6

Approved: June 20, 2016

Sample Name: F BLANK Acquired: 6/17/2016 11:22:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572612-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**.02668**	**.00229**	**.00593**	**-.00081**	**.00010**	**.03625**
Stddev	.00092	.00455	.00282	.00147	.00099	.00016	.07275
%RSD	329.90	17.073	123.10	24.704	121.69	161.45	200.72
#1	-.00004	.02788	.00354	.00696	.00020	.00002	.00264
#2	.00050	.02164	.00427	.00658	-.00087	-.00000	.11973
#3	-.00130	.03051	-.00094	.00426	-.00178	.00029	-.01363
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.00061**	**-.00019**	**.00060**	**.00755**	**.06357**	**-.00139**
Stddev	.00032	.00038	.00093	.00084	.03408	.05432	.00207
%RSD	457.82	61.602	488.48	140.06	451.15	85.459	148.91
#1	-.00011	.00084	-.00041	.00005	.04533	.03165	-.00281
#2	-.00037	.00081	-.00099	.00018	-.00178	.03276	-.00234
#3	.00027	.00018	.00083	.00158	-.02089	.12629	.00098
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00451**	**.00271**	**.00107**	**151.94**	**-.00033**	**-.01043**	**-.00065**
Stddev	.09544	.00253	.00019	.62	.00083	.00567	.00155
%RSD	2114.9	93.616	17.625	.40968	254.84	54.413	239.04
#1	.01851	.00116	.00124	152.58	.00057	-.01452	.00016
#2	.09218	.00133	.00087	151.34	-.00046	-.01281	-.00244
#3	-.09715	.00563	.00110	151.90	-.00109	-.00395	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: F BLANK Acquired: 6/17/2016 11:22:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572612-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00045**	**.00779**	**.00761**	**.00075**	**.00048**	**-.00489**	**.00091**
Stddev	.00246	.00502	.00245	.00073	.00022	.00187	.00088
%RSD	542.43	64.490	32.147	97.375	46.273	38.242	97.544
#1	.00035	.01275	.00680	.00151	.00074	-.00375	.00014
#2	-.00321	.00270	.00568	.00066	.00036	-.00705	.00070
#3	.00150	.00792	.01036	.00007	.00035	-.00388	.00187
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00069**	**.00361**	F **-1.3740**
Stddev	.00047	.00023	1.2722
%RSD	68.077	6.4282	92.592
#1	-.00072	.00350	-1.8400
#2	-.00114	.00346	-2.3474
#3	-.00020	.00388	.06552
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7847.9**	**45269.**	**2606.5**
Stddev	8.6	189.	36.1
%RSD	.10905	.41666	1.3845
#1	7838.9	45053.	2564.9
#2	7855.9	45347.	2626.6
#3	7849.0	45406.	2628.1

Approved: June 20, 2016

Sample Name: F BLANK Acquired: 6/17/2016 11:26:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572616-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.00435**	**-.00077**	**.00354**	**-.00054**	**.00005**	**.00287**
Stddev	.00058	.00698	.00088	.00067	.00085	.00010	.02363
%RSD	419.02	160.51	113.84	18.844	159.44	217.75	823.15
#1	-.00014	.01216	-.00090	.00411	-.00145	-.00007	.00784
#2	-.00072	-.00128	-.00158	.00371	.00024	.00010	.02362
#3	.00044	.00216	.00016	.00281	-.00040	.00011	-.02285
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**-.00005**	**-.00036**	**.00093**	F **-.02722**	**.04347**	**-.00152**
Stddev	.00033	.00047	.00032	.00177	.00694	.10984	.00286
%RSD	332.67	963.18	88.697	191.04	25.490	252.70	188.62
#1	.00048	-.00036	-.00072	.00007	-.01921	.16910	-.00476
#2	-.00012	-.00028	-.00017	-.00025	-.03110	-.00431	.00064
#3	-.00006	.00050	-.00018	.00297	-.03135	-.03439	-.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.07032**	**.00208**	**.00038**	**5.5089**	**.00068**	**.00223**	**.00284**
Stddev	.02815	.00160	.00044	.0524	.00050	.00171	.00245
%RSD	40.035	76.959	116.62	.95025	73.774	76.586	86.157
#1	-.09816	.00393	-.00009	5.5446	.00015	.00026	.00082
#2	-.07095	.00100	.00045	5.5332	.00114	.00333	.00556
#3	-.04186	.00133	.00078	5.4488	.00075	.00308	.00215
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: F BLANK Acquired: 6/17/2016 11:26:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572616-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00103**	**.00564**	**.00483**	**.00057**	**.00034**	**-.00105**	**.00312**
Stddev	.00365	.00748	.00145	.00082	.00032	.00412	.00219
%RSD	353.03	132.73	30.044	144.09	94.612	392.99	70.177
#1	-.00291	.00118	.00449	-.00011	.00004	-.00580	.00137
#2	.00430	.00146	.00642	.00034	.00030	.00123	.00558
#3	.00171	.01428	.00358	.00148	.00068	.00142	.00241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00113**	**.00525**	F **-.60071**
Stddev	.00088	.00009	1.0723
%RSD	78.564	1.6853	178.50
#1	.00011	.00528	-.90863
#2	.00157	.00515	-1.4854
#3	.00170	.00532	.59185
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8118.1**	**47308.**	**2642.8**
Stddev	12.4	191.	4.7
%RSD	.15265	.40321	.17713
#1	8117.9	47475.	2637.4
#2	8105.9	47349.	2644.9
#3	8130.7	47100.	2646.0

Approved: June 20, 2016

Sample Name: L1606067004 Acquired: 6/17/2016 11:30:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572775-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00032	.23187	-.00088	.01872	.03830	.00001	.81863	.00600
Stddev	.00224	.00436	.00245	.00366	.00111	.00011	.04597	.00022
%RSD	704.72	1.8803	278.19	19.542	2.8899	734.85	5.6150	3.6188
#1	.00117	.23546	.00181	.02018	.03914	.00006	.82805	.00601
#2	.00077	.23313	-.00146	.02142	.03872	-.00011	.76869	.00578
#3	-.00290	.22702	-.00299	.01456	.03705	.00009	.85916	.00621
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00062	.00241	.04619	1.8026	.27314	-.00045	.11219	.01726
Stddev	.00013	.00117	.00084	.0226	.12809	.00339	.05215	.00032
%RSD	20.536	48.294	1.8105	1.2511	46.897	749.00	46.483	1.8797
#1	.00077	.00299	.04591	1.8174	.27449	-.00436	.17107	.01757
#2	.00054	.00318	.04713	1.7766	.40056	.00177	.09365	.01729
#3	.00056	.00107	.04553	1.8137	.14438	.00123	.07184	.01692
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00253	152.79	.00692	.00861	.03678	.00147	-.00216	.07661
Stddev	.00039	.76	.00083	.00267	.00188	.00739	.00432	.00135
%RSD	15.580	.49522	11.964	30.977	5.1084	503.43	199.88	1.7686
#1	.00212	153.58	.00775	.01160	.03676	.00672	-.00361	.07543
#2	.00290	152.70	.00692	.00646	.03491	.00467	-.00557	.07809
#3	.00257	152.08	.00609	.00778	.03866	-.00698	.00270	.07630
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 20, 2016

Sample Name: L1606067004 Acquired: 6/17/2016 11:30:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572775-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	.00191	.00203	.00255	-.00022	.47243	.35233
Stddev	.00079	.00015	.00583	.00247	.00052	.00074	.96645
%RSD	129.18	7.9756	288.01	96.878	232.83	.15767	274.30
#1	-.00028	.00186	.00420	.00540	-.00081	.47315	1.4678
#2	.00091	.00179	-.00458	.00102	-.00003	.47246	-.17745
#3	.00121	.00208	.00646	.00123	.00017	.47167	-.23338
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7875.1	45692.	2611.7
Stddev	10.7	219.	37.9
%RSD	.13600	.47961	1.4516
#1	7863.3	45579.	2570.3
#2	7884.2	45945.	2620.3
#3	7877.9	45553.	2644.6

Approved: June 20, 2016

Sample Name: L1606067004S Acquired: 6/17/2016 11:34:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572775-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21130**	**5.5159**	**.21294**	**1.0547**	**.57029**	**.02652**	**6.0610**	**.03194**
Stddev	.00029	.0219	.00441	.0025	.00675	.00015	.0391	.00045
%RSD	.13775	.39667	2.0714	.23677	1.1842	.56452	.64572	1.4166
#1	.21119	5.5088	.21307	1.0575	.57693	.02638	6.0965	.03144
#2	.21107	5.5404	.21728	1.0535	.56343	.02668	6.0676	.03230
#3	.21162	5.4984	.20846	1.0530	.57052	.02652	6.0190	.03209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10661**	**.26984**	**.31167**	**3.9436**	**26.413**	**.53379**	**5.3966**	**.27980**
Stddev	.00029	.00065	.00177	.0481	.266	.00329	.0722	.00454
%RSD	.27662	.24083	.56948	1.2201	1.0081	.61701	1.3386	1.6225
#1	.10652	.26924	.31371	3.9982	26.718	.53230	5.4785	.28011
#2	.10694	.27053	.31054	3.9073	26.223	.53150	5.3693	.27511
#3	.10637	.26975	.31075	3.9254	26.299	.53757	5.3420	.28417
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.54912**	**177.06**	**.27421**	**5.2035**	**.29947**	**.63879**	**.21318**	**2.7817**
Stddev	.00018	1.25	.00176	.0025	.00445	.00432	.00649	.0035
%RSD	.03246	.70543	.64091	.04872	1.4844	.67583	3.0428	.12492
#1	.54929	178.44	.27260	5.2017	.29456	.63389	.21348	2.7791
#2	.54914	175.99	.27608	5.2025	.30322	.64201	.21951	2.7804
#3	.54894	176.76	.27396	5.2064	.30062	.64047	.20655	2.7856
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 20, 2016

Sample Name: L1606067004S Acquired: 6/17/2016 11:34:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572775-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53004	.53883	.53869	.25942	.53554	.98549	.33698
Stddev	.00083	.00275	.00539	.00111	.00180	.00094	.19366
%RSD	.15613	.50973	1.0006	.42781	.33599	.09561	57.468
#1	.52913	.54154	.53925	.26024	.53598	.98474	.14515
#2	.53075	.53605	.53304	.25816	.53709	.98655	.33338
#3	.53022	.53889	.54378	.25987	.53357	.98518	.53242
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7830.8	45331.	2635.4
Stddev	19.5	162.	29.4
%RSD	.24953	.35681	1.1163
#1	7845.9	45495.	2602.6
#2	7808.7	45172.	2659.6
#3	7837.7	45325.	2643.9

Approved: June 20, 2016

Sample Name: L1606067004SD Acquired: 6/17/2016 11:38:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572775-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21305**	**5.4736**	**.21136**	**1.0489**	**.57209**	**.02643**	**6.1049**	**.03162**
Stddev	.00372	.0183	.00188	.0041	.00334	.00007	.0185	.00014
%RSD	1.7463	.33485	.88901	.38728	.58445	.24961	.30340	.45241
#1	.21222	5.4872	.21127	1.0528	.56885	.02639	6.1213	.03162
#2	.20982	5.4808	.21328	1.0492	.57190	.02651	6.0848	.03177
#3	.21712	5.4527	.20952	1.0447	.57553	.02639	6.1087	.03148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10608**	**.26805**	**.31095**	**3.9531**	**26.719**	**.53696**	**5.4547**	**.28112**
Stddev	.00026	.00035	.00101	.0094	.034	.00162	.0659	.00066
%RSD	.24322	.12991	.32629	.23756	.12785	.30155	1.2072	.23424
#1	.10581	.26777	.31087	3.9639	26.717	.53830	5.3805	.28067
#2	.10612	.26844	.30998	3.9482	26.686	.53741	5.4776	.28082
#3	.10632	.26793	.31201	3.9472	26.754	.53516	5.5061	.28187
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.54839**	**177.33**	**.27131**	**5.1711**	**.29793**	**.63518**	**.20293**	**2.7713**
Stddev	.00040	.37	.00041	.0121	.00336	.00164	.00883	.0060
%RSD	.07228	.21037	.14932	.23332	1.1268	.25897	4.3529	.21516
#1	.54877	177.27	.27102	5.1812	.29839	.63391	.19380	2.7748
#2	.54843	176.99	.27178	5.1744	.29437	.63704	.21143	2.7644
#3	.54798	177.73	.27114	5.1577	.30103	.63460	.20356	2.7746
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 20, 2016

Sample Name: L1606067004SD Acquired: 6/17/2016 11:38:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572775-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52775**	**.54038**	**.53506**	**.26150**	**.53372**	**.97783**	**.27341**
Stddev	.00154	.00118	.00498	.00380	.00114	.00146	.31883
%RSD	.29252	.21883	.93045	1.4532	.21376	.14913	116.61
#1	.52854	.54071	.52972	.26435	.53356	.97753	.11714
#2	.52874	.53907	.53587	.25718	.53494	.97941	.64022
#3	.52597	.54136	.53958	.26296	.53267	.97654	.06286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7841.7**	**45376.**	**2602.3**
Stddev	11.7	127.	8.5
%RSD	.14877	.27962	.32726
#1	7833.1	45252.	2596.1
#2	7837.0	45371.	2598.8
#3	7855.0	45506.	2612.0

Approved: June 20, 2016

Sample Name: L1606073101 Acquired: 6/17/2016 11:41:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00092	.13586	.00819	.03721	.10351	.00007	104.93
Stddev	.00124	.00569	.00215	.00252	.00160	.00005	.28
%RSD	134.06	4.1868	26.312	6.7732	1.5416	71.116	.26933
#1	-.00048	.14213	.00761	.03518	.10418	.00010	105.24
#2	.00140	.13102	.00638	.03643	.10465	.00001	104.84
#3	.00186	.13445	.01058	.04003	.10168	.00010	104.70
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00963	.00040	.00049	1.7707	.00735	1.9727	.00503
Stddev	.00014	.00010	.00094	.0015	.01998	.0587	.00167
%RSD	1.4536	23.633	189.90	.08419	271.95	2.9776	33.218
#1	.00951	.00040	.00069	1.7719	.03003	1.9301	.00424
#2	.00959	.00031	-.00052	1.7691	-.00033	2.0397	.00390
#3	.00978	.00050	.00132	1.7713	-.00766	1.9483	.00695
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.8918	.18768	.00109	8.3182	.00298	.66463	.04333
Stddev	.0244	.00125	.00064	.0765	.00096	.00533	.00111
%RSD	1.2909	.66837	58.765	.91969	32.311	.80151	2.5600
#1	1.8789	.18901	.00036	8.4050	.00194	.66969	.04385
#2	1.9200	.18752	.00138	8.2890	.00316	.65907	.04205
#3	1.8766	.18652	.00153	8.2606	.00384	.66515	.04408
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606073101 Acquired: 6/17/2016 11:41:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00181**	**.00706**	**1.0704**	**-.00009**	**.27344**	**-.01539**	**-.00050**
Stddev	.00478	.00133	.0029	.00074	.00062	.00398	.00065
%RSD	264.51	18.859	.27154	797.83	.22501	25.849	129.80
#1	.00281	.00643	1.0726	-.00041	.27406	-.01999	-.00125
#2	-.00672	.00616	1.0671	-.00062	.27283	-.01306	-.00020
#3	-.00151	.00859	1.0716	.00075	.27343	-.01313	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00035**	**.26380**	F **-.66330**
Stddev	.00095	.00015	1.2395
%RSD	268.68	.05546	186.87
#1	.00019	.26384	-.60571
#2	.00020	.26392	.54638
#3	-.00145	.26363	-1.9306
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7969.9**	**46592.**	**2647.0**
Stddev	21.9	113.	20.7
%RSD	.27519	.24220	.78140
#1	7945.4	46602.	2623.1
#2	7976.8	46474.	2658.8
#3	7987.6	46699.	2659.1

Approved: June 20, 2016

Sample Name: L1606073101PS Acquired: 6/17/2016 11:45:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572965-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21464**	**5.3838**	**.22422**	**1.0585**	**.62534**	**.02625**	**99.958**
Stddev	.00013	.0040	.00194	.0008	.00065	.00006	.372
%RSD	.06261	.07415	.86701	.07884	.10320	.21505	.37239
#1	.21452	5.3805	.22345	1.0577	.62470	.02619	99.959
#2	.21479	5.3883	.22279	1.0584	.62533	.02630	99.586
#3	.21461	5.3828	.22643	1.0593	.62599	.02625	100.33
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03497**	**.10652**	**.26678**	**1.8408**	**2.1529**	**27.832**	**.54075**
Stddev	.00012	.00058	.00162	.0050	.0225	.120	.00221
%RSD	.35525	.54899	.60851	.27101	1.0458	.43246	.40921
#1	.03511	.10641	.26574	1.8446	2.1283	27.891	.53917
#2	.03494	.10599	.26595	1.8351	2.1578	27.694	.54328
#3	.03486	.10715	.26865	1.8426	2.1725	27.912	.53980
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**6.7933**	**.43549**	**.54851**	**33.809**	**.26672**	**5.8710**	**.30268**
Stddev	.1130	.00306	.00157	.096	.00184	.0278	.00081
%RSD	1.6641	.70234	.28626	.28366	.68849	.47323	.26843
#1	6.9038	.43243	.54952	33.766	.26733	5.8969	.30272
#2	6.6779	.43550	.54670	33.742	.26465	5.8416	.30185
#3	6.7982	.43855	.54931	33.919	.26817	5.8744	.30347
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606073101PS Acquired: 6/17/2016 11:45:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572965-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.64030**	**.21339**	**3.6872**	**.53032**	**.77047**	**.52104**	**.26381**
Stddev	.00292	.00683	.0125	.00044	.00279	.00814	.00095
%RSD	.45618	3.2028	.33799	.08299	.36157	1.5617	.35898
#1	.63713	.22006	3.7004	.52996	.77365	.52503	.26484
#2	.64089	.21370	3.6756	.53019	.76924	.51168	.26297
#3	.64288	.20641	3.6855	.53081	.76850	.52641	.26363
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.53315**	**.75393**	F **-.89409**
Stddev	.00078	.00063	1.6656
%RSD	.14635	.08346	186.29
#1	.53353	.75461	.08834
#2	.53225	.75379	-2.8172
#3	.53367	.75338	.04658
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7863.2**	**46060.**	**2642.2**
Stddev	5.9	201.	28.2
%RSD	.07520	.43567	1.0675
#1	7862.3	46280.	2646.6
#2	7869.5	46011.	2667.9
#3	7857.8	45888.	2612.0

Approved: June 20, 2016

Sample Name: L1606073101SDL Acquired: 6/17/2016 11:49:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG572965-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00046	.02355	.00082	.00664	.01751	.00005	19.031	.00195
Stddev	.00017	.00629	.00294	.00246	.00119	.00009	.207	.00020
%RSD	36.394	26.689	360.03	37.023	6.7834	176.06	1.0893	10.142
#1	-.00033	.01678	-.00246	.00850	.01879	-.00005	19.127	.00189
#2	-.00065	.02466	.00171	.00385	.01730	.00011	18.793	.00218
#3	-.00040	.02921	.00321	.00758	.01644	.00010	19.173	.00180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.00010	.33168	-.00516	.29354	.00554	.28987	.03541
Stddev	.00052	.00066	.00072	.04065	.01520	.00113	.07761	.00406
%RSD	695.08	634.84	.21807	787.98	5.1776	20.342	26.772	11.478
#1	-.00015	.00070	.33110	-.01282	.28846	.00683	.30681	.03803
#2	-.00029	-.00061	.33249	.03878	.28154	.00472	.20520	.03748
#3	.00067	.00022	.33145	-.04143	.31063	.00507	.35762	.03073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00104	1.5192	.00010	.12502	.00902	-.00065	.00348	.19626
Stddev	.00039	.0111	.00046	.00758	.00145	.00083	.00448	.00059
%RSD	37.384	.73158	483.73	6.0616	16.118	126.80	128.72	.29952
#1	.00065	1.5143	-.00021	.12783	.00735	-.00070	-.00128	.19679
#2	.00105	1.5319	.00063	.11644	.00999	-.00146	.00411	.19563
#3	.00143	1.5113	-.00013	.13079	.00971	.00020	.00760	.19638
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 20, 2016

Sample Name: L1606073101SDL Acquired: 6/17/2016 11:49:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG572965-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00079	.04867	-.00022	.00151	-.00034	.04983	.93778
Stddev	.00081	.00095	.00827	.00256	.00083	.00038	.97810
%RSD	102.67	1.9423	3796.1	169.47	243.67	.76489	104.30
#1	.00071	.04763	-.00349	.00371	.00061	.04957	.11938
#2	.00002	.04894	-.00635	.00213	-.00088	.04964	.67292
#3	.00163	.04946	.00919	-.00130	-.00075	.05026	2.0210
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8673.3	50670.	2813.5
Stddev	18.3	180.	14.1
%RSD	.21102	.35552	.50094
#1	8674.3	50779.	2815.0
#2	8691.0	50769.	2826.7
#3	8654.4	50462.	2798.6

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 11:53:17 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39637	9.9607	.39370	.50001	.99341	.04965	9.7813
Stddev	.00103	.0264	.00259	.00380	.00186	.00018	.0330
%RSD	.26054	.26514	.65884	.76053	.18696	.37196	.33691
#1	.39569	9.9616	.39366	.50115	.99297	.04975	9.7479
#2	.39756	9.9867	.39632	.50311	.99545	.04976	9.8138
#3	.39586	9.9339	.39113	.49576	.99181	.04943	9.7820
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04954	.19935	.49838	.50121	3.9762	49.235	.99004
Stddev	.00017	.00028	.00107	.00110	.0293	.081	.00604
%RSD	.34331	.14230	.21382	.21943	.73780	.16459	.60964
#1	.04944	.19905	.49835	.50043	3.9716	49.149	.98632
#2	.04973	.19962	.49946	.50247	3.9495	49.244	.99700
#3	.04943	.19939	.49733	.50073	4.0076	49.311	.98680
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.9047	.49886	1.0034	49.017	.50243	9.8608	.50352
Stddev	.1391	.00145	.0024	.047	.00100	.0115	.00062
%RSD	1.4039	.28995	.23464	.09575	.19892	.11661	.12222
#1	9.8335	.49782	1.0060	48.986	.50347	9.8520	.50405
#2	9.8157	.49825	1.0026	49.071	.50147	9.8738	.50285
#3	10.065	.50051	1.0015	48.994	.50235	9.8566	.50366
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 11:53:17 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1923**	**.40075**	**5.0165**	**.99950**	**.99347**	**.99712**	**.50700**
Stddev	.0043	.00921	.0062	.00166	.00205	.00720	.00267
%RSD	.35728	2.2989	.12301	.16641	.20678	.72224	.52714
#1	1.1967	.39118	5.0096	.99830	.99144	.99318	.50996
#2	1.1919	.40956	5.0213	1.0014	.99555	.99275	.50476
#3	1.1882	.40152	5.0187	.99881	.99343	1.0054	.50629
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.99604**	**.99584**	F **.73405**
Stddev	.00181	.00116	1.2265
%RSD	.18155	.11609	167.09
#1	.99645	.99664	1.8442
#2	.99762	.99451	.94064
#3	.99407	.99636	-.58267
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8389.5**	**48425.**	**2745.0**
Stddev	8.0	309.	12.4
%RSD	.09533	.63817	.45070
#1	8387.8	48297.	2733.1
#2	8382.5	48200.	2757.8
#3	8398.3	48777.	2744.1

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 11:56:54 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00135**	**.00466**	**.00068**	**.00429**	**-.00067**	**.00001**	**.00733**
Stddev	.00046	.00249	.00388	.00056	.00048	.00012	.03371
%RSD	33.817	53.488	568.99	13.111	71.324	1211.7	460.25
#1	-.00085	.00698	-.00326	.00494	-.00078	.00015	.00154
#2	-.00174	.00496	.00450	.00404	-.00107	-.00003	-.02312
#3	-.00146	.00203	.00081	.00390	-.00014	-.00008	.04356
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**.00024**	**-.00017**	**.00065**	**-.02289**	**.01618**	**-.00260**
Stddev	.00032	.00029	.00114	.00074	.00803	.07586	.00478
%RSD	333.49	119.40	664.24	113.20	35.064	468.88	183.96
#1	-.00013	.00006	.00079	-.00020	-.02295	.03156	-.00798
#2	-.00004	.00009	.00012	.00101	-.03089	.08318	.00117
#3	.00047	.00057	-.00143	.00114	-.01484	-.06620	-.00099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00715**	**-.00232**	**.00423**	**.04189**	**.00062**	**.00072**	**-.00039**
Stddev	.03487	.00029	.00048	.02082	.00033	.00437	.00490
%RSD	487.40	12.727	11.323	49.704	53.049	610.04	1251.6
#1	-.01780	-.00261	.00369	.06547	.00034	-.00379	.00469
#2	.03180	-.00233	.00442	.03413	.00099	.00099	-.00509
#3	-.03546	-.00202	.00459	.02606	.00053	.00495	-.00078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 11:56:54 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00161	.00581	-.00094	-.00027	.00038	-.00230	.00326
Stddev	.00045	.00926	.00035	.00043	.00015	.00560	.00170
%RSD	28.098	159.23	36.800	161.19	40.264	243.61	52.249
#1	.00204	.00104	-.00122	-.00069	.00056	.00386	.00423
#2	.00165	.01649	-.00055	.00017	.00029	-.00368	.00425
#3	.00114	-.00009	-.00105	-.00028	.00029	-.00708	.00129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00008	.00010	F -.19438
Stddev	.00087	.00014	1.1427
%RSD	1063.2	146.41	587.89
#1	.00074	.00026	-1.4068
#2	.00001	.00003	-.03918
#3	-.00099	.00000	.86283
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8492.1	49298.	2742.4
Stddev	39.3	139.	5.8
%RSD	.46293	.28224	.21193
#1	8536.3	49402.	2739.7
#2	8461.0	49351.	2749.0
#3	8479.1	49140.	2738.4

Approved: June 20, 2016

Sample Name: L1606061601 Acquired: 6/17/2016 12:00:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00072	.09799	-.00121	.01489	.12849	.00107	6.6364	.00049
Stddev	.00289	.00874	.00312	.00183	.00081	.00008	.0163	.00034
%RSD	400.16	8.9139	257.97	12.263	.62827	7.5237	.24543	69.649
#1	.00066	.08951	.00239	.01491	.12766	.00116	6.6540	.00011
#2	-.00404	.10696	-.00287	.01306	.12855	.00100	6.6333	.00060
#3	.00122	.09750	-.00315	.01671	.12927	.00106	6.6218	.00076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03413	.23473	.01570	.71033	.40217	.02297	5.9625	.28685
Stddev	.00030	.00047	.00107	.01737	.07968	.00253	.0583	.00635
%RSD	.86752	.19919	6.8264	2.4450	19.812	11.018	.97735	2.2126
#1	.03441	.23421	.01449	.70477	.34663	.02519	5.9980	.29292
#2	.03382	.23511	.01653	.72980	.49347	.02352	5.8952	.28736
#3	.03416	.23487	.01608	.69642	.36643	.02021	5.9942	.28026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00366	148.38	.40415	.01431	.00032	-.00019	.00426	18.279
Stddev	.00035	.54	.00140	.00511	.00224	.00307	.00654	.031
%RSD	9.5109	.36059	.34747	35.689	706.32	1631.5	153.35	.17008
#1	.00343	148.86	.40482	.00871	.00003	-.00203	-.00303	18.293
#2	.00350	147.80	.40509	.01870	-.00176	-.00190	.00621	18.301
#3	.00406	148.48	.40253	.01551	.00268	.00336	.00960	18.244
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 20, 2016

Sample Name: L1606061601 Acquired: 6/17/2016 12:00:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.15150	-.00276	.00224	.00039	.02129	.64258
Stddev	.00010	.00116	.00902	.00317	.00132	.00010	.99819
%RSD	332.64	.76474	327.51	141.29	336.64	.45753	155.34
#1	.00008	.15281	-.01316	.00137	.00168	.02124	1.5163
#2	.00010	.15108	.00300	.00575	.00047	.02123	-.44533
#3	-.00009	.15060	.00189	-.00040	-.00097	.02140	.85678
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7783.1	45045.	2571.8
Stddev	23.4	189.	2.8
%RSD	.30090	.41902	.10805
#1	7772.6	44829.	2569.1
#2	7766.8	45127.	2571.6
#3	7809.9	45179.	2574.7

Approved: June 20, 2016

Sample Name: L1606061602 Acquired: 6/17/2016 12:04:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00324	.12679	-.00273	.17267	.63123	.00008	56.156
Stddev	.00204	.02061	.00186	.00432	.00352	.00003	.206
%RSD	62.870	16.256	68.182	2.5043	.55789	41.131	.36613
#1	.00506	.14002	-.00351	.17738	.63526	.00011	56.371
#2	.00104	.13732	-.00060	.16887	.62965	.00005	55.962
#3	.00362	.10304	-.00406	.17177	.62877	.00007	56.135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00090	-.00090	-.00140	65.724	2.7698	.03721
Stddev	.00008	.00008	.00113	.00054	.239	.0696	.00487
%RSD	91.780	8.4775	125.20	38.370	.36383	2.5120	13.079
#1	.00015	.00088	-.00193	-.00195	66.000	2.7358	.03565
#2	-.00000	.00083	-.00107	-.00088	65.576	2.8498	.03332
#3	.00011	.00098	.00030	-.00137	65.597	2.7237	.04267
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	29.797	1.4964	.00120	F 296.51	.00144	.02573	.00198
Stddev	.110	.0099	.00028	1.43	.00106	.00885	.00152
%RSD	.37038	.66176	23.730	.48295	73.691	34.372	76.606
#1	29.871	1.5076	.00137	298.15	.00037	.03575	.00228
#2	29.670	1.4927	.00087	295.88	.00250	.01900	.00334
#3	29.850	1.4889	.00136	295.50	.00145	.02245	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 20, 2016

Sample Name: L1606061602 Acquired: 6/17/2016 12:04:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00551	.00469	12.887	.00203	1.3416	.01437	.00176
Stddev	.00289	.00073	.015	.00070	.0059	.00445	.00264
%RSD	52.476	15.520	.11650	34.601	.43768	30.943	149.87
#1	.00278	.00388	12.899	.00284	1.3484	.01326	.00035
#2	.00855	.00529	12.870	.00168	1.3384	.01927	.00012
#3	.00521	.00491	12.892	.00157	1.3381	.01059	.00480
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00312	.00532	9.2621
Stddev	.00086	.00007	.0917
%RSD	27.695	1.2954	.99021
#1	-.00259	.00535	9.1766
#2	-.00411	.00525	9.3590
#3	-.00264	.00538	9.2508
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7619.3	43883.	2584.9
Stddev	35.8	97.	26.2
%RSD	.47019	.22102	1.0123
#1	7578.0	43882.	2555.8
#2	7642.6	43981.	2592.5
#3	7637.2	43787.	2606.5

Approved: June 20, 2016

Sample Name: L1606061604 Acquired: 6/17/2016 12:08:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.06435	-.00032	.01748	.04450	-.00001	6.1754
Stddev	.00216	.01010	.00181	.00597	.00077	.00002	.0260
%RSD	388.51	15.698	563.50	34.173	1.7293	115.73	.42161
#1	.00074	.05290	-.00215	.02278	.04537	-.00001	6.1482
#2	.00262	.06815	.00147	.01100	.04419	-.00003	6.2001
#3	-.00169	.07201	-.00028	.01865	.04392	.00000	6.1780
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.00098	.00086	.00137	4.5852	1.6735	.00043
Stddev	.00022	.00026	.00112	.00083	.0237	.1271	.00308
%RSD	68.891	26.572	130.08	60.639	.51728	7.5924	710.48
#1	.00049	.00118	.00122	.00042	4.5939	1.7545	.00158
#2	.00007	.00107	.00174	.00194	4.5583	1.5271	.00277
#3	.00039	.00069	-.00040	.00175	4.6033	1.7390	-.00305
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.7721	.27165	.00035	7.6501	.00404	.01796	.00035
Stddev	.0621	.00147	.00024	.1171	.00120	.00637	.00222
%RSD	3.5019	.54155	67.799	1.5302	29.811	35.448	641.43
#1	1.8239	.26997	.00008	7.7844	.00397	.02460	-.00144
#2	1.7033	.27225	.00046	7.5962	.00288	.01736	-.00035
#3	1.7891	.27273	.00051	7.5697	.00528	.01191	.00283
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606061604 Acquired: 6/17/2016 12:08:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00251	.00396	5.9333	.00068	.10362	.00465	.00286
Stddev	.00224	.00310	.0115	.00046	.00044	.00153	.00118
%RSD	89.176	78.311	.19356	67.706	.42805	32.875	41.211
#1	.00136	.00667	5.9340	.00081	.10412	.00587	.00368
#2	.00508	.00465	5.9444	.00017	.10350	.00294	.00151
#3	.00108	.00057	5.9214	.00107	.10326	.00514	.00339
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00055	.00310	F -.04552
Stddev	.00042	.00029	.79066
%RSD	76.196	9.2600	1736.9
#1	-.00036	.00294	.58409
#2	-.00104	.00293	.21224
#3	-.00026	.00343	-.93289
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7963.9	46635.	2622.5
Stddev	32.1	77.	12.3
%RSD	.40318	.16556	.46709
#1	7994.0	46559.	2608.4
#2	7930.1	46632.	2630.6
#3	7967.5	46714.	2628.6

Approved: June 20, 2016

Sample Name: L1606067001 Acquired: 6/17/2016 12:12:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00138**	**.03051**	**-.00242**	**2.0535**	**.03506**	**-.00002**	**3.3507**
Stddev	.00074	.00638	.00036	.0053	.00248	.00000	.0507
%RSD	53.900	20.915	15.072	.25861	7.0796	9.4143	1.5143
#1	-.00201	.02317	-.00238	2.0593	.03734	-.00002	3.3993
#2	-.00056	.03368	-.00281	2.0489	.03242	-.00002	3.2980
#3	-.00156	.03469	-.00208	2.0522	.03544	-.00002	3.3548
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00680**	**.01707**	**.00068**	**.08363**	**.31719**	**.90374**	**.00377**
Stddev	.00013	.00010	.00067	.00094	.01795	.05655	.00413
%RSD	1.8852	.58090	97.717	1.1185	5.6603	6.2573	109.66
#1	.00684	.01699	.00003	.08471	.30964	.95399	.00066
#2	.00666	.01705	.00136	.08308	.30425	.91472	.00219
#3	.00690	.01718	.00065	.08310	.33769	.84250	.00845
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.34692**	**.01862**	**.00962**	**161.72**	**.00464**	**.05384**	**.00236**
Stddev	.06794	.00116	.00036	.63	.00055	.00152	.00151
%RSD	19.583	6.2378	3.7322	.38753	11.816	2.8200	63.892
#1	.30122	.01983	.00940	162.15	.00454	.05221	.00076
#2	.42499	.01752	.00942	161.00	.00415	.05521	.00376
#3	.31456	.01851	.01003	162.02	.00523	.05410	.00256
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606067001 Acquired: 6/17/2016 12:12:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00099	.00446	.28138	.00021	.01508	-.00300	-.00178
Stddev	.00561	.00397	.00337	.00063	.00007	.00181	.00090
%RSD	564.76	89.151	1.1976	298.77	.46075	60.257	50.451
#1	.00461	.00086	.27930	.00071	.01514	-.00337	-.00075
#2	-.00660	.00872	.28527	.00042	.01510	-.00460	-.00242
#3	-.00099	.00379	.27958	-.00049	.01501	-.00104	-.00216
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00081	1.1446	F -.43614
Stddev	.00050	.0031	.84838
%RSD	62.022	.27294	194.52
#1	-.00076	1.1463	-1.4155
#2	-.00033	1.1465	.03308
#3	-.00133	1.1410	.07397
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7941.2	46277.	2697.2
Stddev	6.4	100.	31.9
%RSD	.08045	.21669	1.1830
#1	7934.3	46242.	2679.7
#2	7942.5	46199.	2734.0
#3	7946.9	46390.	2677.8

Approved: June 20, 2016

Sample Name: L1606067002 Acquired: 6/17/2016 12:16:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00155	.05880	-.00082	.04015	.05108	.00006	24.577	.00031
Stddev	.00034	.00580	.00131	.00038	.00098	.00004	.305	.00026
%RSD	21.865	9.8641	160.05	.94685	1.9259	78.550	1.2418	85.073
#1	.00189	.06549	-.00224	.04035	.05083	.00001	24.904	.00009
#2	.00154	.05549	-.00058	.03971	.05217	.00007	24.528	.00024
#3	.00121	.05541	.00036	.04038	.05025	.00009	24.300	.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00696	.00241	.00345	22.450	.22207	.00057	1.2845	.16283
Stddev	.00008	.00103	.00097	.230	.06141	.00238	.0890	.00589
%RSD	1.1049	42.698	27.978	1.0254	27.651	421.21	6.9276	3.6177
#1	.00703	.00205	.00256	22.711	.19226	-.00185	1.1827	.16844
#2	.00697	.00160	.00332	22.361	.18126	.00291	1.3234	.16336
#3	.00688	.00356	.00448	22.277	.29270	.00063	1.3475	.15670
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00300	152.85	.17549	.00009	.00178	.00081	.00388	.88538
Stddev	.00016	1.54	.00080	.00389	.00218	.00347	.00468	.00451
%RSD	5.3346	1.0079	.45734	4264.0	122.44	429.37	120.46	.50915
#1	.00283	154.37	.17513	-.00135	-.00037	-.00314	.00422	.88146
#2	.00302	152.88	.17493	-.00287	.00172	.00337	.00839	.89031
#3	.00314	151.29	.17641	.00449	.00399	.00219	-.00095	.88438
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 20, 2016

Sample Name: L1606067002 Acquired: 6/17/2016 12:16:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	.13121	-.00128	.00112	-.00154	.50528	2.7527
Stddev	.00034	.00140	.00497	.00287	.00064	.00087	1.0430
%RSD	60.645	1.0647	388.24	255.80	41.815	.17190	37.889
#1	.00021	.13281	.00027	-.00014	-.00144	.50444	3.9489
#2	.00089	.13021	.00273	-.00090	-.00223	.50617	2.2757
#3	.00056	.13062	-.00684	.00440	-.00095	.50524	2.0336
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7893.4	45571.	2616.3
Stddev	38.6	127.	30.6
%RSD	.48950	.27775	1.1687
#1	7937.5	45436.	2581.1
#2	7865.4	45686.	2635.6
#3	7877.4	45591.	2632.3

Approved: June 20, 2016

Sample Name: L1606067003 Acquired: 6/17/2016 12:20:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	.01385	.00161	.05048	.06068	-.00001	3.7138	.00019
Stddev	.00190	.00455	.00223	.00433	.00162	.00002	.0866	.00010
%RSD	418.66	32.817	138.57	8.5741	2.6775	170.38	2.3310	51.761
#1	.00252	.00865	.00282	.04584	.06212	.00001	3.8100	.00008
#2	.00008	.01708	-.00097	.05121	.06101	-.00003	3.6421	.00025
#3	-.00123	.01583	.00298	.05440	.05892	-.00002	3.6894	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00608	.00072	.00078	3.8538	1.9027	.00308	30.154	.15818
Stddev	.00031	.00111	.00137	.0549	.0750	.00380	.338	.00162
%RSD	5.0180	153.86	175.32	1.4239	3.9399	123.34	1.1195	1.0244
#1	.00593	.00071	-.00079	3.8787	1.9655	.00181	30.472	.15854
#2	.00644	-.00038	.00145	3.7909	1.8197	.00736	29.800	.15640
#3	.00589	.00183	.00169	3.8918	1.9227	.00008	30.191	.15958
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02022	150.89	.03466	.01034	.00366	-.00118	-.00160	1.2642
Stddev	.00025	1.41	.00082	.00899	.00106	.00630	.00426	.0015
%RSD	1.2202	.93337	2.3562	86.955	28.928	532.01	266.24	.12222
#1	.01993	152.36	.03527	.02067	.00471	-.00678	.00188	1.2656
#2	.02036	149.55	.03373	.00438	.00259	-.00240	-.00636	1.2645
#3	.02035	150.76	.03498	.00595	.00367	.00563	-.00032	1.2625
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 20, 2016

Sample Name: L1606067003 Acquired: 6/17/2016 12:20:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00049**	**.01440**	**-.00042**	**.00134**	**-.00072**	**.48135**	**.20887**
Stddev	.00101	.00045	.00813	.00215	.00035	.00035	.34186
%RSD	206.19	3.1547	1930.2	161.26	48.087	.07233	163.67
#1	-.00150	.01413	-.00926	.00116	-.00097	.48098	.47523
#2	-.00050	.01493	.00125	.00357	-.00033	.48167	-.17662
#3	.00052	.01416	.00675	-.00073	-.00087	.48140	.32799
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7908.4**	**45757.**	**2628.9**
Stddev	3.3	124.	36.2
%RSD	.04138	.27062	1.3781
#1	7912.1	45620.	2592.1
#2	7905.9	45861.	2664.5
#3	7907.2	45791.	2630.0

Approved: June 20, 2016

Sample Name: L1606067005 Acquired: 6/17/2016 12:24:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00455	.01819	-.00096	.05832	.27991	-.00004	2.2462	.00004
Stddev	.00108	.00693	.00214	.00068	.00085	.00009	.0310	.00035
%RSD	23.829	38.106	223.74	1.1738	.30483	228.21	1.3797	930.32
#1	.00458	.02252	.00126	.05859	.28041	-.00002	2.2788	-.00030
#2	.00562	.01019	-.00111	.05883	.28039	-.00014	2.2171	.00040
#3	.00345	.02186	-.00302	.05754	.27892	.00004	2.2428	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	-.00125	-.00164	59.421	1.9849	.00693	.19294	1.4913
Stddev	.00045	.00092	.00078	.403	.0543	.00245	.08432	.0124
%RSD	70.869	73.682	47.671	.67883	2.7352	35.309	43.703	.82788
#1	.00012	-.00228	-.00191	59.733	1.9470	.00423	.23987	1.5054
#2	.00095	-.00094	-.00076	59.565	2.0471	.00757	.09559	1.4829
#3	.00084	-.00052	-.00226	58.966	1.9606	.00899	.24334	1.4855
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00029	156.41	.00179	-.00019	.00326	.00140	.00316	.09588
Stddev	.00025	1.10	.00040	.00313	.00367	.00217	.00391	.00242
%RSD	85.657	.70431	22.374	1641.3	112.71	155.43	123.64	2.5275
#1	-.00049	157.44	.00168	.00336	.00540	.00365	.00635	.09400
#2	-.00035	156.52	.00145	-.00141	-.00098	.00124	-.00120	.09503
#3	-.00001	155.25	.00223	-.00252	.00536	-.00069	.00433	.09862
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 20, 2016

Sample Name: L1606067005 Acquired: 6/17/2016 12:24:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	.01594	.01809	.00245	-.00306	.01367	8.8463
Stddev	.00074	.00055	.00888	.00221	.00081	.00017	.3767
%RSD	129.63	3.4651	49.103	90.326	26.562	1.2785	4.2585
#1	.00088	.01653	.02470	.00473	-.00226	.01376	8.4131
#2	-.00027	.01544	.00799	.00032	-.00388	.01378	9.0973
#3	.00110	.01586	.02159	.00229	-.00304	.01346	9.0285
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7892.2	45637.	2646.1
Stddev	6.7	42.	23.8
%RSD	.08478	.09265	.90077
#1	7899.9	45638.	2618.6
#2	7887.9	45595.	2659.7
#3	7888.8	45680.	2660.1

Approved: June 20, 2016

Sample Name: L1606067006 Acquired: 6/17/2016 12:28:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00226**	**.05749**	**-.00386**	**.18678**	**.01053**	**.00004**	**58.720**
Stddev	.00244	.01120	.00189	.00131	.00193	.00011	.732
%RSD	108.17	19.485	48.956	.69869	18.359	302.46	1.2465
#1	-.00267	.04579	-.00270	.18576	.01171	.00003	59.300
#2	-.00447	.05857	-.00284	.18825	.00830	.00015	58.963
#3	.00036	.06811	-.00605	.18633	.01159	-.00007	57.897
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00527**	**.06476**	**.00232**	**.06377**	**-.01000**	**28.533**	**.03166**
Stddev	.00025	.00027	.00055	.00155	.01919	.199	.00413
%RSD	4.7049	.42361	23.570	2.4364	191.85	.69573	13.048
#1	.00509	.06458	.00219	.06210	-.01502	28.667	.03623
#2	.00555	.06508	.00292	.06402	-.02619	28.626	.02818
#3	.00517	.06462	.00186	.06518	.01120	28.304	.03058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.5750**	**.22090**	**6.5316**	**178.40**	**.06587**	**.02974**	**.00395**
Stddev	.1465	.00162	.0110	.72	.00021	.00408	.00345
%RSD	1.9338	.73236	.16809	.40091	.32225	13.715	87.484
#1	7.7275	.21949	6.5348	179.20	.06563	.03312	.00205
#2	7.5621	.22267	6.5406	177.81	.06593	.02521	.00794
#3	7.4354	.22055	6.5194	178.20	.06604	.03091	.00186
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606067006 Acquired: 6/17/2016 12:28:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.01248**	**.00358**	**1.8585**	**.00003**	**.36215**	**-.00125**	**.00194**
Stddev	.00104	.00640	.0057	.00040	.00305	.00663	.00114
%RSD	8.3527	178.89	.30852	1224.6	.84180	528.49	58.982
#1	-.01343	-.00272	1.8522	-.00023	.36567	.00639	.00124
#2	-.01136	.01007	1.8635	-.00017	.36028	-.00481	.00326
#3	-.01265	.00338	1.8597	.00049	.36051	-.00534	.00132
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00752**	**22.441**	F **-2.9257**
Stddev	.00058	.031	.7034
%RSD	7.6638	.13644	24.042
#1	-.00765	22.417	-3.0594
#2	-.00802	22.476	-2.1650
#3	-.00689	22.430	-3.5526
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7806.9**	**45129.**	**2623.8**
Stddev	9.6	200.	9.0
%RSD	.12236	.44298	.34290
#1	7806.9	45316.	2627.8
#2	7816.4	44918.	2613.5
#3	7797.3	45154.	2630.2

Approved: June 20, 2016

Sample Name: L1606067007 Acquired: 6/17/2016 12:32:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00093**	**.04231**	**.00120**	**.01307**	**.01733**	**.00002**	**.60157**
Stddev	.00152	.00802	.00228	.00241	.00179	.00005	.03440
%RSD	163.01	18.965	189.81	18.423	10.354	217.49	5.7190
#1	-.00015	.04964	.00043	.01030	.01553	-.00001	.56822
#2	.00027	.04355	-.00060	.01418	.01735	.00008	.59957
#3	.00267	.03374	.00377	.01472	.01912	.00000	.63694
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.00208**	**.00152**	**.00096**	**.00365**	**.16595**	**.00621**
Stddev	.00031	.00022	.00070	.00038	.03602	.13503	.00233
%RSD	2598.1	10.506	46.245	39.072	988.17	81.368	37.582
#1	-.00011	.00211	.00168	.00054	-.03779	.07109	.00654
#2	.00033	.00185	.00212	.00126	.02121	.10621	.00836
#3	-.00026	.00228	.00075	.00109	.02752	.32054	.00373
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02121**	**.00366**	**.01581**	F **1307.0**	**-.00013**	**.00844**	**.00361**
Stddev	.05791	.00015	.00134	14.7	.00113	.00740	.00187
%RSD	273.01	4.1662	8.5005	1.1273	881.12	87.711	51.804
#1	-.02718	.00354	.01426	1296.4	-.00110	.00452	.00251
#2	.08537	.00383	.01653	1300.8	-.00040	.01697	.00255
#3	.00545	.00360	.01665	1323.8	.00112	.00382	.00576
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 20, 2016

Sample Name: L1606067007 Acquired: 6/17/2016 12:32:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00251**	**.00845**	**.03115**	**.00037**	**.00096**	**.00038**	**-.00034**
Stddev	.00522	.00701	.00253	.00046	.00010	.00416	.00140
%RSD	207.48	82.965	8.1231	122.53	10.594	1082.7	413.12
#1	-.00294	.00336	.03139	-.00010	.00093	.00159	-.00195
#2	.00290	.00554	.03355	.00041	.00107	.00381	.00051
#3	-.00750	.01644	.02851	.00081	.00087	-.00424	.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00070**	**.00843**	F **-1.2781**
Stddev	.00147	.00006	.2773
%RSD	211.46	.75238	21.697
#1	.00054	.00838	-1.5084
#2	-.00232	.00850	-.97026
#3	-.00030	.00841	-1.3555
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7452.5**	**42093.**	**2599.6**
Stddev	14.1	103.	8.2
%RSD	.18885	.24483	.31723
#1	7462.2	42201.	2606.2
#2	7458.8	41996.	2602.1
#3	7436.3	42082.	2590.3

Approved: June 20, 2016

Sample Name: L1606061601 Acquired: 6/17/2016 12:36:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	-.00413	.00049	.00152	.00046	.00007	.05455
Stddev	.00050	.01396	.00195	.00223	.00115	.00003	.05186
%RSD	225.35	338.45	401.35	147.22	250.91	43.566	95.082
#1	.00080	-.01946	-.00100	.00229	-.00009	.00004	.11136
#2	-.00007	-.00077	.00269	.00326	.00179	.00010	.00975
#3	-.00006	.00786	-.00023	-.00100	-.00031	.00007	.04253
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.00061	.00169	.00189	.00393	.02488	.00232
Stddev	.00025	.00034	.00102	.00063	.01875	.11264	.00040
%RSD	2970.6	56.175	60.092	33.501	477.21	452.66	17.239
#1	.00030	.00033	.00285	.00129	-.01401	-.10427	.00248
#2	-.00012	.00052	.00126	.00183	.02340	.07613	.00186
#3	-.00015	.00099	.00096	.00255	.00239	.10280	.00261
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05225	.00210	.00182	1.5251	.00394	.00658	.00147
Stddev	.01373	.00109	.00036	.0231	.00159	.00854	.00198
%RSD	26.278	51.883	19.648	1.5174	40.346	129.78	135.29
#1	.06542	.00315	.00142	1.5257	.00211	.00465	.00020
#2	.03802	.00098	.00212	1.5480	.00475	.01593	.00044
#3	.05331	.00216	.00191	1.5017	.00497	-.00083	.00375
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606061601 Acquired: 6/17/2016 12:36:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00368**	**.00706**	**.17005**	**-.00037**	**.00098**	**.00642**	**.00427**
Stddev	.00120	.00460	.00042	.00013	.00014	.00750	.00118
%RSD	32.607	65.247	.24576	35.405	13.834	116.82	27.618
#1	-.00289	.01121	.16958	-.00052	.00091	.01504	.00458
#2	-.00308	.00210	.17022	-.00031	.00114	.00272	.00296
#3	-.00506	.00787	.17036	-.00028	.00091	.00149	.00525
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00037**	**.00078**	F **-1.3475**
Stddev	.00088	.00010	.2777
%RSD	237.27	13.358	20.607
#1	-.00138	.00090	-1.3751
#2	.00002	.00073	-1.0570
#3	.00024	.00071	-1.6103
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8663.3**	**50331.**	**2762.2**
Stddev	31.1	174.	28.9
%RSD	.35924	.34495	1.0470
#1	8691.7	50513.	2795.2
#2	8668.1	50168.	2750.0
#3	8630.0	50311.	2741.3

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 12:40:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40259	10.034	.39707	.50358	1.0008	.04990	9.8983
Stddev	.00151	.017	.00317	.00792	.0026	.00051	.0232
%RSD	.37613	.16949	.79746	1.5718	.25611	1.0232	.23423
#1	.40127	10.017	.40053	.49643	1.0031	.04960	9.9036
#2	.40225	10.051	.39432	.50224	.99807	.04962	9.9183
#3	.40424	10.034	.39636	.51209	1.0012	.05049	9.8729
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05023	.20196	.50156	.50755	4.0176	49.539	.99433
Stddev	.00028	.00015	.00463	.00059	.0210	.071	.00337
%RSD	.55521	.07216	.92328	.11554	.52294	.14348	.33903
#1	.05032	.20198	.50094	.50687	4.0313	49.539	.99179
#2	.05045	.20181	.49726	.50792	3.9934	49.467	.99304
#3	.04991	.20210	.50646	.50785	4.0281	49.609	.99815
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.8756	.50002	1.0130	49.307	.50754	9.9892	.50540
Stddev	.0696	.00355	.0025	.244	.00053	.0098	.00144
%RSD	.70456	.71056	.25114	.49558	.10449	.09789	.28482
#1	9.9266	.49702	1.0158	49.513	.50703	9.9937	.50654
#2	9.7963	.49909	1.0109	49.037	.50750	9.9780	.50378
#3	9.9038	.50394	1.0122	49.370	.50809	9.9959	.50589
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 12:40:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1998**	**.39997**	**5.0616**	**1.0076**	**.99807**	**.99269**	**.51194**
Stddev	.0017	.00582	.0045	.0024	.00234	.00668	.00169
%RSD	.13832	1.4545	.08867	.24129	.23439	.67335	.33053
#1	1.2014	.39394	5.0607	1.0074	.99911	.99424	.51372
#2	1.1981	.40043	5.0576	1.0053	.99539	.98537	.51036
#3	1.1999	.40555	5.0665	1.0101	.99971	.99847	.51173
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0066**	**1.0069**	F **-.20276**
Stddev	.0073	.0004	.59121
%RSD	.72477	.03572	291.58
#1	1.0008	1.0072	-.88256
#2	1.0041	1.0065	.08301
#3	1.0148	1.0069	.19127
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8312.9**	**48244.**	**2734.5**
Stddev	25.0	170.	4.7
%RSD	.30110	.35229	.17317
#1	8284.0	48062.	2730.3
#2	8326.3	48271.	2733.5
#3	8328.3	48399.	2739.7

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 12:43:47 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.00465	.00279	.00333	-.00001	.00004	.00520
Stddev	.00060	.00705	.00119	.00045	.00064	.00007	.03896
%RSD	435.03	151.56	42.736	13.392	6847.7	180.83	749.44
#1	.00016	-.00337	.00416	.00309	.00048	.00012	-.03108
#2	.00073	.00747	.00212	.00304	-.00074	.00001	.04637
#3	-.00048	.00985	.00207	.00384	.00023	-.00001	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00000	.00039	.00011	.00051	.00447	.08752	.00125
Stddev	.00018	.00013	.00148	.00108	.02769	.06716	.00416
%RSD	4348.2	33.960	1329.5	213.76	618.95	76.742	331.78
#1	.00021	.00049	-.00144	-.00047	.02848	.10099	-.00243
#2	-.00012	.00045	.00027	.00031	-.02582	.14693	.00044
#3	-.00008	.00024	.00150	.00167	.01075	.01464	.00576
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	-.00112	.00436	.01965	.00067	.00347	-.00106
Stddev	.08495	.00228	.00040	.02101	.00056	.00756	.00480
%RSD	68385.	204.23	9.2142	106.94	83.402	217.93	451.92
#1	-.03797	.00066	.00393	.01528	.00056	.00623	-.00657
#2	.09745	-.00369	.00443	.04251	.00128	.00926	.00223
#3	-.05912	-.00033	.00472	.00117	.00018	-.00508	.00116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 12:43:47 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00299**	**.00722**	**.00388**	**-.00022**	**-.00026**	**-.00404**	**.00231**
Stddev	.00516	.00577	.00149	.00027	.00020	.00554	.00224
%RSD	172.65	79.938	38.532	123.27	76.736	136.95	96.981
#1	.00795	.00533	.00544	-.00005	-.00012	.00096	.00030
#2	-.00235	.01371	.00373	-.00008	-.00018	-.01000	.00191
#3	.00337	.00263	.00247	-.00054	-.00049	-.00309	.00473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00008**	**-.00009**	F **-.65716**
Stddev	.00087	.00011	1.2876
%RSD	1054.2	123.19	195.93
#1	-.00108	-.00022	-.14397
#2	.00033	-.00004	-2.1222
#3	.00050	-.00001	.29468
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8540.1**	**49363.**	**2759.6**
Stddev	14.3	131.	21.0
%RSD	.16752	.26598	.75970
#1	8539.0	49214.	2735.6
#2	8554.9	49414.	2773.8
#3	8526.3	49462.	2769.5

Approved: June 20, 2016

Sample Name: L1606061602 Acquired: 6/17/2016 12:47:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00012	.00999	-.00070	.00871	.02669	.00003	2.4577	.00016
Stddev	.00110	.01245	.00210	.00151	.00074	.00003	.0256	.00014
%RSD	891.84	124.61	299.44	17.350	2.7562	119.40	1.0410	88.202
#1	-.00051	.00528	-.00249	.00719	.02693	.00001	2.4283	.00019
#2	.00112	.02411	-.00122	.01021	.02586	.00001	2.4755	.00001
#3	-.00098	.00059	.00161	.00874	.02727	.00007	2.4691	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.00043	.00152	2.8869	.08506	.00090	1.3655	.06382
Stddev	.00015	.00110	.00074	.0135	.07620	.00337	.1522	.00178
%RSD	29.674	256.33	48.736	.46623	89.583	375.67	11.142	2.7952
#1	.00041	-.00052	.00223	2.8950	.16469	.00403	1.1908	.06204
#2	.00069	.00163	.00158	2.8714	.07764	-.00266	1.4364	.06381
#3	.00044	.00018	.00075	2.8943	.01284	.00132	1.4693	.06561
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	12.791	.00066	.01183	.00031	-.00248	-.00116	.56616
Stddev	.00018	.070	.00093	.00658	.00357	.00635	.00591	.00549
%RSD	22.960	.54543	142.17	55.645	1167.1	256.56	509.97	.97044
#1	.00060	12.722	-.00033	.00764	.00414	.00437	.00319	.56005
#2	.00095	12.862	.00078	.01942	-.00292	-.00817	-.00789	.56774
#3	.00077	12.789	.00152	.00843	-.00031	-.00363	.00123	.57070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 20, 2016

Sample Name: L1606061602 Acquired: 6/17/2016 12:47:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	.05935	.00269	.00495	.00051	.00088	.00945
Stddev	.00046	.00019	.01122	.00265	.00096	.00008	.94538
%RSD	223.50	.31760	416.74	53.629	186.89	9.4826	10002.
#1	.00064	.05914	.01435	.00577	.00119	.00093	.53652
#2	.00027	.05941	-.00804	.00198	.00093	.00092	.57381
#3	-.00028	.05950	.00178	.00710	-.00058	.00078	-1.0820
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8657.9	50038.	2787.4
Stddev	24.1	125.	10.2
%RSD	.27858	.25061	.36584
#1	8681.8	49989.	2782.1
#2	8658.3	50181.	2780.9
#3	8633.5	49945.	2799.1

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 12:51:46 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40321	10.065	.39762	.49765	.99188	.04994	9.7685
Stddev	.00157	.019	.00176	.00258	.00705	.00017	.0179
%RSD	.38924	.18584	.44295	.51852	.71118	.34253	.18370
#1	.40389	10.054	.39840	.49698	.98374	.05014	9.7632
#2	.40142	10.087	.39561	.49547	.99570	.04982	9.7538
#3	.40433	10.055	.39886	.50050	.99620	.04987	9.7885
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04967	.20043	.50391	.50540	3.9918	49.017	.98795
Stddev	.00040	.00107	.00125	.00376	.0294	.277	.00723
%RSD	.80224	.53546	.24765	.74364	.73521	.56512	.73224
#1	.05007	.20119	.50519	.50967	3.9657	48.697	.98176
#2	.04968	.19920	.50385	.50260	3.9862	49.171	.99590
#3	.04927	.20088	.50269	.50393	4.0235	49.182	.98620
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.8468	.49592	1.0088	48.786	.50505	9.9594	.50500
Stddev	.0418	.00213	.0074	.198	.00079	.0662	.00113
%RSD	.42421	.42896	.73557	.40500	.15545	.66509	.22414
#1	9.8038	.49373	1.0174	48.612	.50569	10.035	.50630
#2	9.8873	.49605	1.0050	49.001	.50417	9.9327	.50443
#3	9.8492	.49797	1.0041	48.747	.50528	9.9106	.50426
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 12:51:46 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2065**	**.40096**	**5.0465**	**1.0060**	**.98842**	**.98924**	**.51100**
Stddev	.0059	.00459	.0226	.0055	.00372	.00572	.00177
%RSD	.48470	1.1452	.44712	.55067	.37633	.57817	.34647
#1	1.2089	.39861	5.0724	1.0120	.98438	.99302	.51295
#2	1.2107	.39803	5.0361	1.0049	.99171	.99204	.50949
#3	1.1998	.40626	5.0310	1.0011	.98917	.98266	.51057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0049**	**1.0033**	F **.41612**
Stddev	.0015	.0038	1.1661
%RSD	.14560	.38263	280.24
#1	1.0036	1.0076	1.6653
#2	1.0065	1.0022	-.64378
#3	1.0046	1.0002	.22685
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8400.8**	**48148.**	**2777.2**
Stddev	39.9	150.	16.1
%RSD	.47452	.31222	.57794
#1	8355.7	47987.	2790.8
#2	8415.3	48285.	2759.5
#3	8431.4	48171.	2781.3

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 12:55:24 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00087**	**-.00262**	**-.00076**	**.00349**	**-.00150**	**-.00000**	**-.01068**
Stddev	.00044	.00910	.00209	.00251	.00048	.00002	.03141
%RSD	50.097	347.86	275.26	71.866	31.785	506.93	294.22
#1	-.00072	-.01182	.00139	.00429	-.00134	-.00002	.01158
#2	-.00136	-.00241	-.00278	.00551	-.00204	.00002	-.04661
#3	-.00053	.00638	-.00088	.00068	-.00113	-.00002	.00300
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00011**	**.00029**	**.00048**	**.00100**	**-.00487**	**.02597**	**.00310**
Stddev	.00010	.00017	.00048	.00037	.01799	.06993	.00410
%RSD	94.022	59.092	100.85	37.272	369.77	269.27	132.44
#1	.00005	.00047	.00102	.00069	-.00800	-.03335	.00085
#2	.00023	.00012	.00008	.00090	-.02109	.00819	.00061
#3	.00005	.00028	.00034	.00142	.01449	.10307	.00783
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03187**	**-.00036**	**.00466**	**.03053**	**.00044**	**.00448**	**-.00065**
Stddev	.06017	.00223	.00024	.00814	.00079	.00818	.00432
%RSD	188.80	614.90	5.1364	26.674	180.81	182.58	661.89
#1	.07996	-.00286	.00443	.03667	.00060	.01009	.00025
#2	.05126	.00035	.00491	.02129	-.00042	.00826	.00315
#3	-.03561	.00143	.00463	.03363	.00114	-.00491	-.00536
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 12:55:24 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00379**	**-.00035**	**.00078**	**.00046**	**-.00030**	**.00242**	**.00130**
Stddev	.00447	.00602	.00205	.00059	.00021	.00768	.00303
%RSD	117.74	1742.4	261.77	128.51	69.584	317.90	233.75
#1	.00761	-.00691	-.00156	.00029	-.00053	.00854	.00297
#2	-.00112	.00096	.00169	-.00003	-.00025	.00490	-.00220
#3	.00488	.00491	.00222	.00111	-.00012	-.00620	.00313
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00015**	**-.00007**	F **-.46665**
Stddev	.00090	.00022	.59934
%RSD	617.89	311.98	128.44
#1	-.00084	-.00001	-.14621
#2	.00087	-.00032	-.09564
#3	-.00047	.00011	-1.1581
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8553.3**	**49737.**	**2774.9**
Stddev	11.5	70.	15.2
%RSD	.13483	.14137	.54902
#1	8560.8	49754.	2792.4
#2	8559.0	49660.	2764.5
#3	8540.0	49797.	2767.8

Approved: June 20, 2016

Sample Name: LLCCV Acquired: 6/17/2016 12:59:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00763**	**.16329**	**.00674**	**.07950**	**.00850**	**.00160**	**.39252**
Stddev	.00087	.00297	.00088	.00111	.00031	.00001	.03729
%RSD	11.383	1.8194	13.019	1.3910	3.6155	.81412	9.4993
#1	.00664	.16122	.00667	.07843	.00869	.00158	.41491
#2	.00828	.16670	.00591	.07944	.00866	.00160	.41317
#3	.00796	.16195	.00766	.08064	.00815	.00161	.34948
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00070**	**.00418**	**.00341**	**.00461**	**.06475**	**.83042**	**.07956**
Stddev	.00011	.00009	.00040	.00216	.00879	.04857	.00568
%RSD	15.278	2.0592	11.830	46.876	13.580	5.8485	7.1379
#1	.00067	.00411	.00373	.00484	.06539	.78229	.07601
#2	.00062	.00416	.00354	.00234	.07321	.82954	.07656
#3	.00082	.00428	.00296	.00665	.05566	.87942	.08610
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.44075**	**.00943**	**.00830**	**.40927**	**.01572**	**.76113**	**.00688**
Stddev	.07994	.00307	.00015	.02156	.00225	.00670	.00103
%RSD	18.138	32.585	1.7739	5.2681	14.312	.88088	15.016
#1	.50106	.00590	.00820	.40276	.01340	.75524	.00791
#2	.47111	.01091	.00847	.39171	.01789	.76843	.00584
#3	.35007	.01149	.00823	.43333	.01587	.75971	.00691
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: LLCCV Acquired: 6/17/2016 12:59:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.07905	.02381	.78129	.39557	.03967	.02951	.15259
Stddev	.00128	.00351	.00263	.00128	.00026	.00966	.00286
%RSD	1.6230	14.751	.33713	.32479	.66394	32.746	1.8716
#1	.08019	.02751	.78182	.39669	.03940	.04021	.15436
#2	.07930	.02340	.77843	.39585	.03993	.02693	.14929
#3	.07766	.02052	.78361	.39417	.03968	.02141	.15411
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00763	.01676	F -72.684
Stddev	.00123	.00007	.914
%RSD	16.100	.43178	1.2570
#1	.00623	.01681	-73.737
#2	.00853	.01668	-72.111
#3	.00813	.01679	-72.202
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8575.9	49841.	2780.9
Stddev	14.1	178.	31.7
%RSD	.16390	.35779	1.1410
#1	8560.3	49859.	2755.4
#2	8587.5	49655.	2816.4
#3	8579.9	50010.	2770.9

Approved: June 20, 2016

Sample Name: LLCCV Acquired: 6/17/2016 13:03:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01932**	**.39890**	**.01856**	**.19698**	**.01840**	**.00388**	**.97551**
Stddev	.00082	.00371	.00152	.00373	.00087	.00008	.03607
%RSD	4.2512	.92957	8.1990	1.8942	4.7410	1.9913	3.6977
#1	.01887	.40314	.02030	.19962	.01940	.00391	.93393
#2	.01882	.39626	.01795	.19271	.01779	.00379	.99841
#3	.02026	.39730	.01744	.19861	.01800	.00393	.99419
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00205**	**.00988**	**.01025**	**.01095**	**.18108**	**1.9716**	**.19771**
Stddev	.00012	.00010	.00033	.00057	.02403	.0960	.00157
%RSD	5.8488	.96987	3.2076	5.2037	13.268	4.8702	.79536
#1	.00201	.00977	.00990	.01069	.20860	2.0743	.19798
#2	.00195	.00994	.01055	.01161	.16428	1.9562	.19913
#3	.00218	.00993	.01031	.01056	.17037	1.8842	.19602
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.96500**	**.01941**	**.01942**	**1.0075**	**.04035**	**1.8845**	**.01906**
Stddev	.06843	.00120	.00029	.0191	.00053	.0021	.00296
%RSD	7.0910	6.1906	1.4938	1.8973	1.3011	.10989	15.541
#1	.89207	.01810	.01909	1.0014	.04043	1.8834	.02206
#2	1.0278	.01965	.01956	1.0289	.03979	1.8833	.01897
#3	.97515	.02046	.01961	.99208	.04083	1.8869	.01614
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: LLCCV Acquired: 6/17/2016 13:03:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19274**	**.04290**	**1.9251**	**.97894**	**.09808**	**.06108**	**.37557**
Stddev	.00269	.00209	.0052	.00109	.00083	.00323	.00305
%RSD	1.3981	4.8674	.26763	.11133	.84904	5.2959	.81211
#1	.19578	.04123	1.9201	.97845	.09896	.06045	.37437
#2	.19179	.04224	1.9247	.98018	.09795	.06458	.37330
#3	.19065	.04524	1.9304	.97817	.09731	.05820	.37903
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.01958**	**.04048**	F **-186.68**
Stddev	.00055	.00027	1.52
%RSD	2.7914	.66854	.81469
#1	.01896	.04025	-188.42
#2	.01980	.04043	-185.98
#3	.01998	.04078	-185.63
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8559.0**	**49632.**	**2773.7**
Stddev	41.1	137.	21.0
%RSD	.47996	.27536	.75624
#1	8554.1	49528.	2754.2
#2	8602.3	49581.	2771.0
#3	8520.6	49786.	2795.9

Approved: June 20, 2016

Sample Name: L1606064101 Acquired: 6/17/2016 13:07:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00033**	**.05648**	**.00204**	**.01560**	**.07561**	**-.00007**	**46.338**
Stddev	.00088	.01127	.00089	.00022	.00127	.00008	.273
%RSD	264.63	19.956	43.823	1.3884	1.6757	118.97	.58909
#1	-.00104	.05948	.00305	.01578	.07416	-.00012	46.630
#2	-.00061	.04401	.00134	.01536	.07617	-.00010	46.295
#3	.00065	.06595	.00173	.01566	.07650	.00002	46.089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**-.00023**	**.00127**	**.00143**	**.21251**	**1.5925**	**.00639**
Stddev	.00019	.00002	.00079	.00076	.01733	.0248	.00144
%RSD	123.71	9.6721	62.187	53.145	8.1528	1.5552	22.584
#1	-.00006	-.00021	.00215	.00202	.20854	1.6140	.00796
#2	.00022	-.00024	.00102	.00057	.23147	1.5980	.00512
#3	.00029	-.00025	.00063	.00170	.19751	1.5654	.00609
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.5382**	**.00900**	**.00100**	**4.3492**	**-.00117**	**.03525**	**-.00165**
Stddev	.0305	.00182	.00020	.0207	.00055	.01034	.00238
%RSD	.40448	20.171	20.252	.47525	47.370	29.341	144.64
#1	7.5030	.00790	.00119	4.3708	-.00070	.04676	.00094
#2	7.5556	.01110	.00079	4.3296	-.00178	.03228	-.00376
#3	7.5560	.00801	.00103	4.3473	-.00104	.02672	-.00212
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606064101 Acquired: 6/17/2016 13:07:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00260**	**.00249**	**5.6608**	**.00095**	**.21645**	**-.00735**	**.00238**
Stddev	.00217	.00769	.0142	.00080	.00133	.00615	.00330
%RSD	83.140	308.32	.25138	84.070	.61352	83.675	138.33
#1	.00140	-.00606	5.6772	.00133	.21750	-.01367	-.00105
#2	.00510	.00470	5.6524	.00003	.21690	-.00139	.00552
#3	.00131	.00884	5.6527	.00148	.21496	-.00698	.00267
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00100**	**.00413**	F **-.20609**
Stddev	.00069	.00009	1.2956
%RSD	68.589	2.1552	628.66
#1	-.00179	.00416	.23416
#2	-.00054	.00402	.81201
#3	-.00067	.00419	-1.6644
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7917.8**	**45938.**	**2625.3**
Stddev	26.8	103.	14.0
%RSD	.33814	.22454	.53205
#1	7904.1	45847.	2609.3
#2	7900.6	46050.	2631.5
#3	7948.6	45916.	2635.1

Approved: June 20, 2016

Sample Name: L1606064102 Acquired: 6/17/2016 13:11:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00074**	**.19802**	**-.00045**	**.02052**	**.05829**	**.00000**	**47.828**
Stddev	.00067	.00944	.00191	.00040	.00103	.00004	.102
%RSD	91.520	4.7660	427.25	1.9500	1.7705	815.14	.21393
#1	-.00149	.18728	-.00149	.02097	.05938	-.00004	47.938
#2	-.00051	.20497	.00175	.02039	.05816	.00003	47.737
#3	-.00021	.20182	-.00160	.02020	.05732	.00002	47.809
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00006**	**.00018**	**.00032**	**.00135**	**.23921**	**1.0317**	**.00592**
Stddev	.00040	.00046	.00046	.00195	.04165	.0384	.00385
%RSD	688.34	249.69	144.85	144.52	17.410	3.7208	65.039
#1	.00023	-.00034	.00074	.00317	.28018	1.0743	.01012
#2	.00034	.00035	-.00017	.00157	.24055	1.0212	.00509
#3	-.00040	.00054	.00038	-.00070	.19692	.99971	.00255
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**8.9909**	**.00717**	**.00092**	**4.3333**	**-.00079**	**.01073**	**.00128**
Stddev	.0888	.00192	.00035	.0513	.00079	.00671	.00276
%RSD	.98817	26.764	37.513	1.1841	99.449	62.584	215.46
#1	9.0912	.00932	.00119	4.3532	-.00140	.00916	.00264
#2	8.9219	.00563	.00053	4.2750	-.00109	.01808	.00309
#3	8.9598	.00656	.00105	4.3717	.00010	.00493	-.00189
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606064102 Acquired: 6/17/2016 13:11:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00354	.00568	4.7764	.00021	.27948	-.00567	.00039
Stddev	.00255	.00458	.0186	.00094	.00145	.00878	.00275
%RSD	72.182	80.635	.38852	437.29	.52025	154.71	705.23
#1	.00326	.00332	4.7940	-.00051	.27999	-.00520	-.00132
#2	.00113	.00275	4.7780	-.00012	.28061	-.01468	.00356
#3	.00622	.01095	4.7570	.00128	.27784	.00286	-.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00032	.00358	F -1.4203
Stddev	.00071	.00005	.8582
%RSD	219.43	1.2623	60.424
#1	-.00054	.00361	-1.4684
#2	.00047	.00360	-.53905
#3	-.00089	.00352	-2.2534
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7939.2	46257.	2633.2
Stddev	26.7	28.	11.8
%RSD	.33643	.06014	.44637
#1	7924.1	46230.	2620.1
#2	7970.1	46285.	2637.1
#3	7923.5	46255.	2642.6

Approved: June 20, 2016

Sample Name: L1606064103 Acquired: 6/17/2016 13:15:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00049**	**.19986**	**-.00014**	**.02424**	**.06128**	**.00006**	**49.398**
Stddev	.00033	.00366	.00096	.00179	.00127	.00004	.163
%RSD	66.465	1.8289	666.89	7.3940	2.0734	58.015	.33042
#1	.00015	.19568	-.00024	.02220	.06251	.00006	49.584
#2	.00080	.20145	-.00105	.02494	.05997	.00003	49.277
#3	.00053	.20246	.00086	.02558	.06137	.00010	49.334
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00011**	**-.00013**	**.00026**	**.00141**	**.22968**	**.90140**	**.00726**
Stddev	.00036	.00030	.00108	.00213	.01302	.04169	.00385
%RSD	320.33	230.97	410.02	151.09	5.6691	4.6253	53.042
#1	.00052	-.00030	.00111	.00360	.22633	.91588	.00507
#2	-.00002	-.00031	.00062	-.00066	.21866	.85440	.01170
#3	-.00017	.00022	-.00095	.00129	.24405	.93392	.00500
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.4354**	**.00578**	**.00051**	**4.4770**	**-.00009**	**.00994**	**.00182**
Stddev	.1642	.00175	.00052	.0387	.00050	.00512	.00076
%RSD	1.7404	30.253	102.11	.86360	568.56	51.502	41.861
#1	9.5972	.00486	.00068	4.5203	-.00033	.01477	.00117
#2	9.2689	.00467	.00092	4.4647	-.00043	.01046	.00266
#3	9.4401	.00779	-.00008	4.4460	.00049	.00458	.00164
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606064103 Acquired: 6/17/2016 13:15:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00394	4.9300	.00027	.28984	-.00325	.00158
Stddev	.00494	.00678	.0059	.00129	.00141	.00509	.00137
%RSD	2751.6	171.97	.11960	481.42	.48480	156.72	86.647
#1	.00587	.01175	4.9349	.00152	.29145	-.00731	.00294
#2	-.00303	-.00050	4.9315	-.00106	.28887	-.00490	.00158
#3	-.00230	.00058	4.9234	.00035	.28919	.00246	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00064	.00256	F -.71501
Stddev	.00034	.00020	.86712
%RSD	53.948	7.8520	121.27
#1	.00027	.00275	.27709
#2	.00094	.00259	-1.0939
#3	.00070	.00235	-1.3282
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7920.9	46256.	2631.8
Stddev	23.0	140.	16.1
%RSD	.28988	.30261	.60997
#1	7947.4	46415.	2613.3
#2	7909.3	46199.	2642.4
#3	7906.1	46153.	2639.7

Approved: June 20, 2016

Sample Name: L1606064104 Acquired: 6/17/2016 13:18:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00159**	**.20655**	**-.00131**	**.01284**	**.08629**	**.00006**	**48.702**
Stddev	.00114	.00245	.00056	.00180	.00096	.00004	.138
%RSD	71.225	1.1851	42.742	13.985	1.1142	71.876	.28435
#1	-.00181	.20561	-.00178	.01090	.08518	.00010	48.798
#2	-.00037	.20933	-.00146	.01445	.08683	.00002	48.766
#3	-.00261	.20470	-.00069	.01318	.08686	.00006	48.543
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.00007**	**.00137**	**.00245**	**.28015**	**.72186**	**.00655**
Stddev	.00032	.00039	.00090	.00108	.01669	.09816	.00211
%RSD	635.93	582.50	65.701	44.231	5.9560	13.598	32.185
#1	-.00019	.00042	.00066	.00319	.26988	.83487	.00692
#2	-.00027	.00015	.00238	.00121	.29940	.67284	.00845
#3	.00031	-.00036	.00106	.00296	.27116	.65787	.00428
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.6502**	**.03400**	**.00076**	**2.4374**	**-.00005**	**.01888**	**-.00069**
Stddev	.1201	.00317	.00069	.0186	.00069	.00447	.00430
%RSD	2.5829	9.3180	90.708	.76096	1270.5	23.670	623.52
#1	4.5790	.03036	-.00001	2.4182	.00030	.02008	-.00534
#2	4.5827	.03552	.00096	2.4552	.00039	.01394	.00314
#3	4.7889	.03613	.00133	2.4388	-.00084	.02263	.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606064104 Acquired: 6/17/2016 13:18:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00228**	**.00338**	**4.8984**	**-.00006**	**.16923**	**-.00609**	**.00163**
Stddev	.00498	.00192	.0173	.00041	.00111	.00506	.00107
%RSD	218.27	56.926	.35278	713.73	.65407	83.091	65.336
#1	.00294	.00555	4.9132	-.00021	.17036	-.01168	.00068
#2	-.00281	.00271	4.9025	-.00037	.16917	-.00181	.00144
#3	-.00697	.00188	4.8794	.00041	.16815	-.00479	.00278
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00025**	**.00217**	F **-.44120**
Stddev	.00032	.00003	.90934
%RSD	125.97	1.3346	206.11
#1	-.00018	.00219	-1.0403
#2	.00003	.00218	-.88842
#3	-.00060	.00214	.60515
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7968.4**	**46430.**	**2631.7**
Stddev	6.0	168.	21.6
%RSD	.07558	.36102	.82186
#1	7962.4	46330.	2608.2
#2	7968.3	46623.	2636.1
#3	7974.5	46335.	2650.7

Approved: June 20, 2016

Sample Name: L1606064105 Acquired: 6/17/2016 13:22:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**.47157**	**-.00096**	**.01225**	**.08682**	**.00004**	**45.589**
Stddev	.00089	.01102	.00487	.00224	.00189	.00004	.271
%RSD	403.63	2.3376	509.53	18.295	2.1819	106.96	.59474
#1	-.00009	.47735	-.00325	.01479	.08898	.00008	45.901
#2	.00060	.47850	-.00426	.01142	.08604	.00001	45.411
#3	-.00116	.45886	.00464	.01055	.08544	.00002	45.454
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00056**	**.00049**	**.00220**	**.00123**	**.80365**	**.72227**	**.00959**
Stddev	.00004	.00004	.00101	.00085	.02270	.02567	.00145
%RSD	6.2961	9.1194	46.166	68.990	2.8249	3.5536	15.159
#1	.00052	.00049	.00332	.00046	.79019	.74973	.01086
#2	.00058	.00044	.00195	.00214	.79089	.71818	.00991
#3	.00057	.00053	.00133	.00110	.82986	.69889	.00801
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**4.5339**	**.05926**	**.00045**	**2.3780**	**.00126**	**.04069**	**.00396**
Stddev	.0379	.00116	.00003	.0111	.00013	.00322	.00189
%RSD	.83632	1.9524	5.6034	.46695	10.512	7.9095	47.741
#1	4.5179	.05899	.00043	2.3801	.00120	.04440	.00552
#2	4.5772	.05826	.00045	2.3879	.00117	.03859	.00449
#3	4.5065	.06053	.00048	2.3660	.00141	.03909	.00186
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606064105 Acquired: 6/17/2016 13:22:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00159	.01011	4.9025	.00024	.15933	.00317	.00227
Stddev	.00249	.00420	.0052	.00066	.00055	.00636	.00269
%RSD	156.29	41.595	.10620	271.15	.34281	200.77	118.53
#1	-.00093	.01022	4.8988	.00032	.15979	-.00116	.00022
#2	.00404	.00585	4.9084	.00085	.15948	.01046	.00532
#3	.00167	.01426	4.9002	-.00045	.15873	.00019	.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00006	.01480	F -.09882
Stddev	.00039	.00020	.13023
%RSD	619.42	1.3755	131.79
#1	-.00009	.01487	.05155
#2	.00051	.01495	-.17595
#3	-.00022	.01457	-.17205
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7976.4	46539.	2638.2
Stddev	6.9	133.	14.2
%RSD	.08658	.28627	.53997
#1	7976.3	46640.	2625.9
#2	7969.6	46388.	2635.0
#3	7983.4	46589.	2653.8

Approved: June 20, 2016

Sample Name: L1606064106 Acquired: 6/17/2016 13:26:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	.02838	.00013	.00927	.12466	-.00007	105.37	.00016
Stddev	.00289	.00454	.00179	.00244	.00125	.00003	.58	.00020
%RSD	1100.4	15.995	1369.9	26.279	1.0003	42.308	.55368	123.41
#1	.00182	.02906	.00186	.01051	.12600	-.00005	105.89	.00011
#2	-.00307	.03254	-.00172	.00646	.12354	-.00010	105.49	.00039
#3	.00204	.02354	.00026	.01084	.12445	-.00006	104.74	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.00054	.00201	.00445	.83679	.00683	6.0363	.00487
Stddev	.00038	.00049	.00114	.02181	.06428	.00233	.0892	.00336
%RSD	1003.7	89.676	56.518	489.99	7.6823	34.173	1.4772	69.045
#1	.00015	.00095	.00092	.02903	.80375	.00511	6.1061	.00099
#2	-.00039	.00068	.00319	-.01257	.91088	.00589	5.9358	.00672
#3	.00035	.00000	.00192	-.00311	.79576	.00948	6.0670	.00691
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	7.6446	.00033	.00367	-.00262	.00025	.00776	3.9880
Stddev	.00052	.1458	.00117	.00119	.00181	.00082	.00852	.0104
%RSD	125.48	1.9074	352.08	32.326	68.954	331.92	109.75	.25995
#1	.00096	7.8123	.00040	.00499	-.00393	-.00048	.01193	3.9814
#2	-.00006	7.5739	-.00087	.00332	-.00338	.00008	.01340	4.0000
#3	.00033	7.5477	.00146	.00269	-.00056	.00114	-.00204	3.9827
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 20, 2016

Sample Name: L1606064106 Acquired: 6/17/2016 13:26:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.25690	-.01758	.00171	-.00050	.00201	.06090
Stddev	.00058	.00161	.00410	.00031	.00067	.00017	.86036
%RSD	6363.9	.62701	23.338	17.892	134.03	8.2694	1412.9
#1	-.00023	.25773	-.02043	.00193	.00003	.00190	.69542
#2	-.00041	.25791	-.01288	.00184	-.00027	.00194	.40564
#3	.00067	.25504	-.01944	.00136	-.00125	.00220	-.91838
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7885.9	45940.	2630.8
Stddev	6.1	147.	23.8
%RSD	.07788	.31975	.90425
#1	7891.3	45858.	2612.3
#2	7887.2	46110.	2622.4
#3	7879.3	45853.	2657.6

Approved: June 20, 2016

Sample Name: L1606064107 Acquired: 6/17/2016 13:30:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00039	1.2812	.00120	.03469	.12839	.00017	92.244
Stddev	.00076	.0108	.00118	.00046	.00227	.00000	.516
%RSD	193.51	.84566	97.959	1.3390	1.7668	2.3476	.55925
#1	-.00043	1.2937	.00247	.03475	.13100	.00017	92.836
#2	.00054	1.2746	.00014	.03511	.12688	.00017	91.891
#3	.00106	1.2753	.00100	.03419	.12729	.00017	92.004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.00069	.00277	.00465	1.8801	2.2837	.00251
Stddev	.00044	.00029	.00016	.00113	.0191	.0890	.00205
%RSD	473.46	41.549	5.7680	24.225	1.0138	3.8957	81.618
#1	.00039	.00097	.00281	.00336	1.9020	2.2825	.00109
#2	-.00047	.00071	.00291	.00521	1.8670	2.3733	.00486
#3	-.00020	.00040	.00260	.00539	1.8714	2.1954	.00158
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.7488	.19243	.00228	22.093	.00333	.10004	.00277
Stddev	.2123	.00043	.00022	.156	.00106	.00588	.00231
%RSD	3.1463	.22363	9.7081	.70591	31.961	5.8775	83.638
#1	6.7242	.19255	.00254	22.265	.00212	.09326	.00363
#2	6.5499	.19279	.00216	21.959	.00410	.10327	.00014
#3	6.9724	.19196	.00215	22.056	.00378	.10360	.00452
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606064107 Acquired: 6/17/2016 13:30:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.00478**	**4.1303**	**-.00038**	**.23593**	**.00760**	**.00326**
Stddev	.00429	.00455	.0111	.00020	.00212	.00249	.00043
%RSD	37592.	95.065	.26764	52.924	.89723	32.694	13.216
#1	.00457	.00484	4.1332	-.00034	.23837	.00951	.00375
#2	-.00394	.00021	4.1181	-.00059	.23476	.00851	.00311
#3	-.00066	.00930	4.1397	-.00020	.23465	.00479	.00293
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00189**	**.03603**	F **-1.6555**
Stddev	.00041	.00004	2.4026
%RSD	21.867	.11223	145.13
#1	.00221	.03607	-1.0138
#2	.00142	.03599	.36109
#3	.00202	.03605	-4.3138
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7898.3**	**46152.**	**2637.4**
Stddev	11.9	160.	22.7
%RSD	.15117	.34759	.86190
#1	7909.3	46173.	2612.9
#2	7900.1	45982.	2657.8
#3	7885.6	46300.	2641.4

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 13:34:28 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40048	9.9849	.39522	.49977	.98951	.04951	9.8633
Stddev	.00129	.0284	.00157	.00436	.00330	.00024	.0039
%RSD	.32300	.28405	.39807	.87273	.33329	.47979	.03902
#1	.40147	10.017	.39377	.50415	.98574	.04978	9.8604
#2	.40095	9.9642	.39690	.49972	.99092	.04943	9.8619
#3	.39901	9.9733	.39500	.49543	.99187	.04932	9.8677
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04963	.20012	.49878	.50511	4.0051	49.291	.98830
Stddev	.00008	.00056	.00112	.00095	.0078	.093	.00326
%RSD	.16998	.28093	.22486	.18870	.19369	.18812	.33006
#1	.04966	.19947	.49844	.50438	4.0015	49.349	.98531
#2	.04970	.20044	.49788	.50619	4.0140	49.184	.99178
#3	.04954	.20045	.50004	.50475	3.9997	49.340	.98781
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.9276	.49714	1.0076	48.941	.50557	9.9569	.50531
Stddev	.0460	.00222	.0043	.081	.00152	.0250	.00097
%RSD	.46312	.44695	.42612	.16616	.30012	.25089	.19226
#1	9.8788	.49920	1.0112	48.854	.50397	9.9473	.50514
#2	9.9340	.49479	1.0086	48.953	.50698	9.9853	.50443
#3	9.9701	.49743	1.0028	49.015	.50576	9.9382	.50635
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 13:34:28 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2012**	**.40069**	**5.0422**	**1.0043**	**.98881**	**.98732**	**.50784**
Stddev	.0034	.00013	.0080	.0023	.00273	.00976	.00543
%RSD	.28578	.03132	.15842	.23245	.27581	.98843	1.0690
#1	1.2015	.40062	5.0330	1.0037	.98574	.97635	.50171
#2	1.2045	.40083	5.0468	1.0068	.99096	.99503	.51207
#3	1.1977	.40061	5.0469	1.0023	.98974	.99059	.50973
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.99772**	**1.0033**	F **-1.6859**
Stddev	.00186	.0020	.4745
%RSD	.18677	.20238	28.146
#1	.99972	1.0009	-1.7675
#2	.99740	1.0045	-2.1144
#3	.99604	1.0044	-1.1759
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8463.0**	**49213.**	**2794.6**
Stddev	37.3	322.	13.8
%RSD	.44113	.65453	.49258
#1	8500.7	49059.	2784.4
#2	8426.0	48997.	2810.3
#3	8462.4	49583.	2789.1

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 13:38:05 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00057	-.00860	-.00045	.00181	-.00017	-.00005	.01151
Stddev	.00222	.00982	.00261	.00109	.00011	.00010	.02694
%RSD	386.72	114.15	579.20	60.252	60.190	205.94	234.00
#1	.00190	-.00057	.00195	.00080	-.00018	-.00005	-.00196
#2	-.00122	-.00569	-.00007	.00297	-.00007	-.00014	-.00603
#3	-.00240	-.01955	-.00323	.00167	-.00028	.00005	.04252
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00049	.00014	.00079	-.01861	.00638	.00228
Stddev	.00021	.00036	.00081	.00092	.03157	.11128	.00373
%RSD	173.13	73.332	592.35	116.40	169.60	1745.1	163.69
#1	.00022	.00070	-.00077	.00123	-.01638	-.12115	.00653
#2	-.00012	.00071	.00079	.00140	.01178	.05647	.00072
#3	.00027	.00008	.00039	-.00027	-.05123	.08381	-.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.03065	.00024	.00421	-.00208	-.00064	.00358	-.00319
Stddev	.07012	.00116	.00009	.03359	.00032	.01200	.00401
%RSD	228.81	491.65	2.2346	1617.6	50.779	335.03	126.01
#1	-.00192	-.00058	.00412	.02733	-.00101	-.01015	.00129
#2	-.11057	-.00027	.00431	-.03868	-.00047	.00886	-.00436
#3	.02055	.00156	.00420	.00512	-.00043	.01204	-.00648
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 13:38:05 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00254	.00199	.00254	.00042	.00010	.00684	.00089
Stddev	.00568	.00036	.00056	.00075	.00009	.00747	.00237
%RSD	223.72	17.919	22.062	179.41	86.103	109.19	265.52
#1	-.00264	.00234	.00216	-.00028	.00017	.00001	.00098
#2	.00165	.00200	.00318	.00033	.00001	.00570	.00322
#3	.00861	.00163	.00228	.00121	.00012	.01482	-.00152
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00010	.00018	F .19082
Stddev	.00065	.00004	.77652
%RSD	678.09	23.057	406.94
#1	.00024	.00019	-.03771
#2	.00032	.00023	1.0560
#3	-.00085	.00014	-.44579
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8594.2	50186.	2795.4
Stddev	12.4	65.	16.9
%RSD	.14459	.13021	.60367
#1	8579.9	50122.	2805.7
#2	8602.3	50182.	2804.6
#3	8600.5	50253.	2775.9

Approved: June 20, 2016

Sample Name: L1606037601 Acquired: 6/17/2016 13:42:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00012**	**.01707**	**-.00145**	**.04768**	**.03532**	**-.00005**	**70.684**
Stddev	.00160	.00923	.00251	.00155	.00147	.00004	.658
%RSD	1335.5	54.058	172.54	3.2543	4.1696	74.862	.93037
#1	-.00089	.01351	.00022	.04598	.03427	-.00001	71.394
#2	.00172	.01016	-.00433	.04902	.03469	-.00006	70.562
#3	-.00119	.02755	-.00024	.04803	.03700	-.00008	70.096
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**.00022**	**.00165**	**.00171**	**-.00426**	**1.3437**	**.00236**
Stddev	.00033	.00055	.00047	.00105	.01189	.0063	.00484
%RSD	428.18	255.39	28.391	61.275	278.93	.47121	205.53
#1	-.00014	-.00025	.00171	.00074	-.01742	1.3403	.00463
#2	.00045	.00007	.00115	.00157	.00572	1.3398	-.00320
#3	-.00008	.00082	.00208	.00283	-.00109	1.3510	.00564
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**23.759**	**.03137**	**.00533**	**28.386**	**.00045**	**.01063**	**.00189**
Stddev	.078	.00163	.00036	.228	.00059	.00463	.00127
%RSD	.32687	5.1988	6.7417	.80375	133.24	43.544	66.890
#1	23.783	.03174	.00544	28.644	.00110	.01190	.00132
#2	23.822	.02958	.00561	28.302	-.00005	.00550	.00101
#3	23.672	.03278	.00492	28.211	.00028	.01450	.00334
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606037601 Acquired: 6/17/2016 13:42:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00206**	**.00919**	**7.9875**	**-.00018**	**1.4467**	**-.01184**	**.00274**
Stddev	.00331	.00159	.0076	.00048	.0148	.01112	.00051
%RSD	160.47	17.325	.09579	260.96	1.0247	93.937	18.639
#1	-.00142	.00879	7.9961	.00025	1.4638	.00095	.00240
#2	.00245	.00784	7.9849	-.00010	1.4368	-.01720	.00332
#3	.00516	.01095	7.9815	-.00070	1.4396	-.01927	.00248
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00057**	**.02745**	F **-.65548**
Stddev	.00034	.00007	.35098
%RSD	60.113	.26891	53.546
#1	-.00027	.02751	-.70226
#2	-.00049	.02748	-.98072
#3	-.00094	.02737	-.28345
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7884.3**	**45809.**	**2623.7**
Stddev	3.7	75.	37.8
%RSD	.04733	.16375	1.4411
#1	7886.3	45760.	2595.4
#2	7886.5	45772.	2609.1
#3	7879.9	45896.	2666.7

Approved: June 20, 2016

Sample Name: L1606037602 Acquired: 6/17/2016 13:46:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	.03388	.00232	.04772	.03768	.00006	71.871	-.00004
Stddev	.00162	.00782	.00351	.00143	.00075	.00015	.416	.00011
%RSD	179.31	23.067	150.92	2.9983	1.9882	245.28	.57914	283.14
#1	.00208	.02789	.00275	.04787	.03791	-.00009	72.333	-.00007
#2	.00159	.04273	-.00138	.04907	.03684	.00021	71.757	.00009
#3	-.00095	.03103	.00559	.04622	.03829	.00006	71.524	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00069	.00096	.00254	.18139	1.4779	.00852	25.660	.02695
Stddev	.00017	.00217	.00037	.01447	.0695	.00163	.238	.00174
%RSD	24.500	224.98	14.481	7.9762	4.7014	19.094	.92816	6.4709
#1	.00078	-.00074	.00212	.16891	1.5415	.00892	25.877	.02542
#2	.00049	.00341	.00281	.19725	1.4037	.00990	25.405	.02658
#3	.00079	.00023	.00271	.17801	1.4884	.00673	25.699	.02885
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00400	27.298	.00097	.01562	.00040	-.00054	.00670	8.0647
Stddev	.00019	.182	.00110	.00661	.00034	.00436	.00187	.0306
%RSD	4.7594	.66605	113.15	42.312	83.322	808.16	27.923	.37930
#1	.00378	27.502	.00157	.02260	.00004	.00176	.00880	8.0999
#2	.00412	27.240	-.00030	.01478	.00070	-.00557	.00521	8.0446
#3	.00410	27.152	.00165	.00947	.00048	.00220	.00609	8.0496
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 20, 2016

Sample Name: L1606037602 Acquired: 6/17/2016 13:46:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00062	1.5131	-.01240	.00467	.00004	.01649	.21370
Stddev	.00092	.0115	.00317	.00438	.00121	.00004	.67124
%RSD	148.68	.76275	25.542	93.820	2841.8	.21639	314.11
#1	.00103	1.5262	-.01354	.00570	-.00079	.01647	.15960
#2	-.00043	1.5085	-.01484	-.00013	-.00051	.01653	-.42886
#3	.00126	1.5046	-.00882	.00845	.00143	.01648	.91035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7880.1	45627.	2621.8
Stddev	13.5	285.	23.6
%RSD	.17190	.62516	.89957
#1	7872.8	45448.	2594.6
#2	7871.8	45476.	2635.6
#3	7895.8	45956.	2635.2

Approved: June 20, 2016

Sample Name: L1606037603 Acquired: 6/17/2016 13:49:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.02105**	**.00218**	**.07997**	**.10788**	**.00006**	**100.30**
Stddev	.00139	.00697	.00667	.00248	.00328	.00003	.71
%RSD	7935.4	33.101	306.11	3.1019	3.0363	55.707	.70506
#1	-.00150	.02238	.00812	.07870	.11165	.00005	101.01
#2	.00019	.01352	.00344	.08283	.10633	.00003	100.29
#3	.00126	.02726	-.00503	.07838	.10567	.00010	99.591
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.00085**	**.00154**	**.00169**	**.21482**	**2.3175**	**.01152**
Stddev	.00007	.00013	.00115	.00101	.03966	.0867	.00223
%RSD	72.009	15.067	74.743	60.091	18.464	3.7392	19.377
#1	-.00010	.00092	.00022	.00268	.25560	2.3285	.01408
#2	-.00003	.00092	.00208	.00065	.21247	2.2258	.01001
#3	-.00016	.00070	.00232	.00173	.17638	2.3981	.01047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**53.039**	**.15471**	**.00370**	**85.837**	**-.00067**	**.00761**	**-.00110**
Stddev	.467	.00283	.00011	.706	.00066	.00559	.00333
%RSD	.88130	1.8269	2.9348	.82281	97.981	73.427	301.99
#1	53.368	.15274	.00379	86.618	-.00084	.00162	-.00252
#2	53.245	.15344	.00374	85.650	.00006	.01267	.00270
#3	52.504	.15795	.00358	85.242	-.00122	.00853	-.00349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606037603 Acquired: 6/17/2016 13:49:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00200**	**.00287**	**9.7852**	**-.00077**	**1.5189**	**-.00973**	**.00076**
Stddev	.00252	.00528	.0082	.00028	.0116	.00304	.00188
%RSD	125.76	183.91	.08379	36.871	.76471	31.193	248.50
#1	.00076	.00896	9.7786	-.00052	1.5293	-.01030	-.00126
#2	.00035	-.00042	9.7944	-.00108	1.5210	-.01245	.00106
#3	.00490	.00007	9.7826	-.00070	1.5064	-.00645	.00248
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00112**	**.00246**	F **-.76087**
Stddev	.00039	.00022	1.2931
%RSD	34.795	9.0955	169.95
#1	-.00154	.00260	.64773
#2	-.00103	.00257	-1.8941
#3	-.00078	.00220	-1.0363
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7741.6**	**45065.**	**2604.3**
Stddev	3.1	63.	29.7
%RSD	.04069	.13951	1.1398
#1	7741.9	45137.	2572.2
#2	7744.6	45022.	2610.1
#3	7738.3	45035.	2630.7

Approved: June 20, 2016

Sample Name: L1606037604 Acquired: 6/17/2016 13:53:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.06881	.00204	.04577	.03627	.00008	103.06
Stddev	.00319	.00049	.00323	.00222	.00157	.00009	.67
%RSD	8815.3	.71424	158.52	4.8507	4.3250	119.98	.64932
#1	.00255	.06847	.00252	.04322	.03667	.00011	103.03
#2	-.00356	.06859	.00501	.04726	.03760	.00015	102.41
#3	.00112	.06938	-.00141	.04682	.03454	-.00003	103.74
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00038	.00092	.00084	.01855	1.8287	.00846
Stddev	.00007	.00036	.00127	.00136	.02462	.0958	.00054
%RSD	62.244	93.898	137.28	160.73	132.72	5.2389	6.4182
#1	.00008	.00056	.00234	.00239	.03079	1.7913	.00785
#2	.00007	-.00003	-.00011	.00026	-.00979	1.9376	.00889
#3	.00020	.00062	.00055	-.00012	.03465	1.7573	.00864
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	14.961	.41274	.00086	43.875	-.00018	.03598	.00021
Stddev	.100	.00233	.00038	.235	.00052	.01654	.00097
%RSD	.67058	.56516	43.936	.53574	289.88	45.971	451.33
#1	14.995	.41543	.00088	43.831	-.00003	.03294	.00106
#2	14.848	.41145	.00123	43.665	.00025	.05382	.00043
#3	15.040	.41134	.00047	44.129	-.00075	.02116	-.00084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606037604 Acquired: 6/17/2016 13:53:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00143**	**.00203**	**9.0682**	**-.00075**	**.53111**	**-.01231**	**.00078**
Stddev	.00477	.00517	.0108	.00047	.00130	.00773	.00541
%RSD	333.24	254.69	.11940	63.274	.24568	62.809	697.23
#1	.00102	.00107	9.0694	-.00121	.53057	-.02097	-.00078
#2	-.00693	.00762	9.0785	-.00026	.53017	-.00988	-.00368
#3	.00162	-.00260	9.0569	-.00078	.53260	-.00609	.00680
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00046**	**.01254**	F **-.04001**
Stddev	.00063	.00008	1.3798
%RSD	137.56	.66123	3448.9
#1	-.00001	.01253	1.4070
#2	.00118	.01263	-1.3410
#3	.00021	.01247	-.18603
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7844.5**	**45497.**	**2632.8**
Stddev	38.3	103.	18.7
%RSD	.48789	.22554	.71186
#1	7843.3	45568.	2621.3
#2	7806.8	45379.	2654.4
#3	7883.4	45543.	2622.7

Approved: June 20, 2016

Sample Name: L1606037604PS Acquired: 6/17/2016 13:57:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572145-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21881	5.4440	.21670	1.1084	.57306	.02689	98.395
Stddev	.00373	.0158	.00490	.0038	.00448	.00005	.322
%RSD	1.7056	.28996	2.2611	.34474	.78168	.19103	.32683
#1	.21976	5.4355	.22097	1.1074	.57783	.02689	98.709
#2	.21469	5.4342	.21135	1.1052	.56894	.02694	98.066
#3	.22197	5.4622	.21777	1.1127	.57243	.02684	98.411
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02668	.10707	.26988	.26789	2.2130	28.166	.55537
Stddev	.00027	.00049	.00041	.00119	.0184	.203	.00262
%RSD	.99779	.45908	.15166	.44260	.83026	.72100	.47228
#1	.02638	.10714	.26971	.26919	2.2279	28.378	.55247
#2	.02677	.10752	.26958	.26760	2.2186	27.974	.55758
#3	.02690	.10654	.27035	.26688	2.1925	28.144	.55607
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	18.730	.63446	.55608	66.330	.26705	5.4364	.27328
Stddev	.175	.00518	.00136	.310	.00153	.0234	.00132
%RSD	.93372	.81664	.24420	.46661	.57331	.43029	.48188
#1	18.841	.63949	.55540	66.673	.26573	5.4516	.27251
#2	18.529	.63475	.55765	66.071	.26671	5.4095	.27481
#3	18.821	.62914	.55520	66.248	.26873	5.4481	.27254
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606037604PS Acquired: 6/17/2016 13:57:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v957) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572145-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.65336**	**.21702**	**10.986**	**.54196**	**.99936**	**.52284**	**.26908**
Stddev	.00616	.00039	.011	.00018	.00663	.00368	.00349
%RSD	.94261	.17852	.10054	.03284	.66357	.70401	1.2957
#1	.64689	.21746	10.992	.54209	1.0070	.51946	.26511
#2	.65916	.21673	10.993	.54175	.99583	.52676	.27045
#3	.65404	.21687	10.973	.54203	.99524	.52229	.27166
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.54407**	**.54289**	F **-.50456**
Stddev	.00106	.00065	.48572
%RSD	.19427	.11962	96.264
#1	.54409	.54258	-.78216
#2	.54299	.54364	.05628
#3	.54511	.54245	-.78781
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7780.8**	**45204.**	**2603.3**
Stddev	8.7	69.	12.2
%RSD	.11214	.15157	.46949
#1	7785.4	45156.	2591.6
#2	7786.2	45174.	2616.0
#3	7770.7	45282.	2602.4

Approved: June 20, 2016

Sample Name: L1606037604SDL Acquired: 6/17/2016 14:12:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG572145-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00233**	**.00742**	**-.00098**	**.00895**	**.00498**	**-.00003**	**18.852**
Stddev	.00178	.00540	.00042	.00217	.00138	.00011	.086
%RSD	76.302	72.714	42.916	24.221	27.707	397.15	.45587
#1	-.00234	.01175	-.00077	.00971	.00579	-.00013	18.755
#2	-.00411	.00137	-.00071	.00651	.00339	.00008	18.882
#3	-.00055	.00914	-.00147	.01064	.00577	-.00003	18.919
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00006**	**.00016**	**-.00059**	**.00099**	**-.00138**	**.35253**	**.00119**
Stddev	.00024	.00025	.00021	.00044	.01516	.03349	.00634
%RSD	424.63	161.47	35.326	44.059	1099.9	9.4993	531.22
#1	-.00008	.00002	-.00057	.00049	.01499	.35345	.00351
#2	.00033	-.00000	-.00039	.00125	-.00418	.38555	.00605
#3	-.00008	.00045	-.00081	.00124	-.01494	.31859	-.00598
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.7148**	**.07612**	**.00056**	**7.8313**	**.00001**	**.00427**	**.00023**
Stddev	.1074	.00282	.00029	.0503	.00027	.00318	.00214
%RSD	3.9553	3.7051	50.965	.64195	2634.1	74.292	925.14
#1	2.8364	.07722	.00087	7.8161	.00008	.00314	-.00182
#2	2.6749	.07823	.00031	7.8875	-.00029	.00182	.00244
#3	2.6330	.07292	.00050	7.7905	.00024	.00786	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606037604SDL Acquired: 6/17/2016 14:12:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG572145-06

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00054**	**.00137**	**1.6282**	**-.00060**	**.09373**	**.00060**	**.00151**
Stddev	.00579	.00545	.0048	.00057	.00034	.00956	.00010
%RSD	1073.5	399.01	.29250	95.851	.35769	1602.5	6.3633
#1	-.00133	.00732	1.6236	-.00125	.09342	-.01033	.00140
#2	-.00589	.00014	1.6331	-.00019	.09367	.00469	.00155
#3	.00560	-.00337	1.6279	-.00035	.09409	.00744	.00157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00003**	**.00290**	F **-.15220**
Stddev	.00127	.00005	.78828
%RSD	4629.3	1.5868	517.93
#1	-.00084	.00294	-.98880
#2	-.00057	.00285	-.04448
#3	.00149	.00291	.57669
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8751.8**	**50406.**	**2816.3**
Stddev	12.0	86.	12.0
%RSD	.13715	.17004	.42519
#1	8765.1	50414.	2823.7
#2	8741.9	50488.	2802.5
#3	8748.2	50317.	2822.8

Approved: June 20, 2016

Sample Name: L1606036401 Acquired: 6/17/2016 14:16:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.00374	-.00234	.00398	.01301	.00009	.58270	.00004
Stddev	.00038	.00833	.00239	.00341	.00085	.00006	.00985	.00019
%RSD	74.405	222.96	102.08	85.686	6.5105	71.008	1.6904	476.97
#1	.00007	-.00524	-.00076	.00574	.01387	.00002	.57147	.00018
#2	.00071	.00523	-.00117	.00005	.01300	.00011	.58985	-.00017
#3	.00075	.01123	-.00508	.00615	.01217	.00014	.58678	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	-.00066	.00067	.01012	-.03357	.00344	.01711	-.00070
Stddev	.00023	.00139	.00045	.03298	.08244	.00053	.02925	.00175
%RSD	117.20	210.31	67.136	326.02	245.61	15.397	170.93	250.43
#1	.00028	-.00096	.00087	.04766	.06155	.00405	-.01614	-.00118
#2	.00037	-.00187	.00099	-.01414	-.07768	.00313	.02863	-.00217
#3	-.00006	.00085	.00016	-.00318	-.08456	.00314	.03884	.00124
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	6.4226	-.00044	.00546	-.00064	-.00293	-.00324	.03402
Stddev	.00014	.0150	.00087	.00554	.00439	.00338	.00748	.00095
%RSD	24.023	.23440	200.68	101.45	691.68	115.23	230.83	2.7963
#1	.00049	6.4305	-.00144	-.00092	.00282	.00080	-.00769	.03447
#2	.00049	6.4053	-.00002	.00904	.00085	-.00579	.00540	.03292
#3	.00073	6.4321	.00015	.00825	-.00558	-.00380	-.00743	.03465
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 20, 2016

Sample Name: L1606036401 Acquired: 6/17/2016 14:16:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.01648**	**-.00308**	**.00322**	**.00000**	**.00097**	**.63832**
Stddev	.00059	.00013	.00673	.00110	.00124	.00023	.46404
%RSD	9982.9	.75890	218.73	34.173	86170.	23.761	72.696
#1	-.00058	.01662	-.00152	.00270	.00133	.00092	.15663
#2	.00060	.01645	.00274	.00248	-.00018	.00077	1.0824
#3	-.00004	.01637	-.01045	.00449	-.00114	.00123	.67592
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8705.6**	**50296.**	**2775.6**
Stddev	20.0	191.	4.7
%RSD	.22944	.38050	.17109
#1	8700.7	50493.	2775.2
#2	8727.5	50285.	2771.1
#3	8688.5	50110.	2780.6

Approved: June 20, 2016

Sample Name: L1606036404 Acquired: 6/17/2016 14:20:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	-.00197	-.00221	-.00049	.01384	.00003	.60010	.00004
Stddev	.00051	.00840	.00351	.00366	.00058	.00007	.03071	.00028
%RSD	341.63	426.86	158.79	751.95	4.2198	228.29	5.1167	753.51
#1	.00045	-.00608	-.00442	-.00044	.01318	-.00003	.63510	-.00000
#2	-.00044	.00770	-.00406	.00315	.01431	.00001	.58748	-.00022
#3	.00042	-.00752	.00184	-.00418	.01402	.00011	.57771	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	.00021	-.00041	-.01320	-.03340	-.00092	.08241	-.00240
Stddev	.00020	.00117	.00156	.02629	.02512	.00474	.08082	.00243
%RSD	188.25	556.05	376.81	199.15	75.221	515.41	98.061	101.33
#1	-.00011	.00130	.00134	-.02861	-.05686	.00032	.03202	-.00188
#2	.00029	-.00103	-.00095	.01715	-.00689	-.00616	.03959	-.00505
#3	.00015	.00037	-.00164	-.02814	-.03646	.00308	.17563	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	6.2920	-.00071	.00483	-.00112	-.00045	-.00094	.03652
Stddev	.00025	.0261	.00137	.00455	.00198	.00105	.00781	.00068
%RSD	65.921	.41535	193.94	94.297	177.16	232.41	832.60	1.8739
#1	.00013	6.2698	-.00227	.00710	.00063	-.00163	-.00333	.03624
#2	.00063	6.3208	-.00008	-.00041	-.00327	-.00006	.00779	.03730
#3	.00038	6.2854	.00024	.00780	-.00072	.00035	-.00727	.03602
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 20, 2016

Sample Name: L1606036404 Acquired: 6/17/2016 14:20:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00054**	**.01595**	**-.00509**	**.00429**	**-.00042**	**.00063**	**.22647**
Stddev	.00026	.00061	.00428	.00169	.00040	.00011	.62138
%RSD	48.642	3.8296	84.087	39.373	95.493	17.430	274.38
#1	-.00024	.01618	-.00166	.00623	-.00071	.00070	-.38661
#2	-.00070	.01642	-.00988	.00319	.00004	.00050	.21018
#3	-.00067	.01526	-.00373	.00345	-.00058	.00069	.85583
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8690.2**	**50071.**	**2789.8**
Stddev	17.6	236.	21.2
%RSD	.20215	.47039	.75844
#1	8691.0	50330.	2796.5
#2	8672.3	50010.	2766.1
#3	8707.4	49871.	2806.8

Approved: June 20, 2016

Sample Name: L1606049201 Acquired: 6/17/2016 14:24:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00152**	**.00818**	**-.00035**	**.09472**	**.27203**	**.00004**	**18.248**
Stddev	.00238	.01488	.00426	.00051	.00121	.00013	.071
%RSD	156.17	181.97	1210.9	.54105	.44300	337.54	.39152
#1	.00292	.00321	.00399	.09460	.27147	-.00010	18.272
#2	-.00122	.02491	-.00051	.09428	.27342	.00006	18.304
#3	.00287	-.00358	-.00454	.09529	.27121	.00015	18.168
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**.00028**	**.00065**	**.00097**	**.05463**	**1.2940**	**.05657**
Stddev	.00019	.00010	.00038	.00067	.02659	.0161	.00640
%RSD	294.67	35.842	58.239	69.510	48.672	1.2472	11.316
#1	-.00007	.00017	.00109	.00089	.06779	1.3039	.06140
#2	.00029	.00033	.00050	.00034	.07207	1.3028	.04931
#3	-.00002	.00036	.00037	.00168	.02403	1.2754	.05900
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.7618**	**.01015**	**.00008**	**39.562**	**-.00030**	**-.00012**	**-.00269**
Stddev	.1366	.00235	.00033	.147	.00012	.00954	.00219
%RSD	7.7567	23.121	423.48	.37044	40.182	7947.6	81.328
#1	1.9195	.01220	.00015	39.710	-.00043	.00666	-.00521
#2	1.6805	.01066	.00037	39.560	-.00030	.00401	-.00158
#3	1.6853	.00759	-.00029	39.417	-.00018	-.01103	-.00128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606049201 Acquired: 6/17/2016 14:24:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	-.00337	.00911	-.00033	3.4621	-.00114	.00424
Stddev	.00207	.00464	.00161	.00097	.0053	.00421	.00293
%RSD	5828.6	137.47	17.732	293.22	.15204	368.57	69.185
#1	.00104	.00084	.00934	-.00137	3.4668	-.00474	.00186
#2	.00142	-.00834	.00739	-.00015	3.4631	-.00219	.00334
#3	-.00235	-.00262	.01059	.00054	3.4564	.00350	.00752
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00037	.00035	F -.53112
Stddev	.00090	.00027	.60232
%RSD	247.38	75.916	113.41
#1	-.00050	.00054	.00384
#2	-.00119	.00046	-1.1835
#3	.00060	.00005	-.41370
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8619.8	49457.	2792.2
Stddev	21.0	192.	11.8
%RSD	.24411	.38764	.42210
#1	8636.9	49667.	2783.3
#2	8596.3	49412.	2805.5
#3	8626.2	49291.	2787.7

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 14:28:19 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40361	10.037	.39897	.50172	.99482	.05040	9.8703
Stddev	.00204	.017	.00550	.00245	.00058	.00038	.0686
%RSD	.50447	.16718	1.3779	.48891	.05811	.75848	.69499
#1	.40344	10.032	.40488	.50454	.99506	.05048	9.8021
#2	.40573	10.055	.39803	.50057	.99416	.04999	9.8695
#3	.40167	10.023	.39400	.50007	.99524	.05074	9.9393
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04983	.20125	.50798	.50476	4.0036	49.176	.99068
Stddev	.00018	.00092	.00071	.00247	.0165	.241	.00294
%RSD	.36521	.45947	.14045	.48885	.41187	.48990	.29659
#1	.04962	.20162	.50827	.50760	4.0219	48.909	.98755
#2	.04997	.20194	.50716	.50310	3.9989	49.377	.99113
#3	.04990	.20020	.50849	.50359	3.9900	49.242	.99337
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.9046	.49966	1.0094	48.957	.50508	9.9463	.50461
Stddev	.1044	.00164	.0075	.225	.00195	.0367	.00566
%RSD	1.0535	.32836	.74628	.45889	.38624	.36928	1.1220
#1	9.9426	.49921	1.0165	48.744	.50572	9.9837	.51103
#2	9.7865	.49829	1.0102	49.192	.50664	9.9448	.50248
#3	9.9846	.50148	1.0015	48.937	.50290	9.9103	.50033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 14:28:19 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1934**	**.39949**	**5.0376**	**1.0072**	**.99570**	**.99701**	**.51068**
Stddev	.0080	.00653	.0053	.0041	.00203	.02132	.00440
%RSD	.66662	1.6345	.10510	.41093	.20425	2.1389	.86189
#1	1.1907	.40686	5.0435	1.0114	.99337	.97355	.51520
#2	1.2024	.39718	5.0360	1.0073	.99715	1.0152	.50641
#3	1.1872	.39443	5.0333	1.0031	.99656	1.0023	.51043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0114**	**1.0015**	F **-.37639**
Stddev	.0044	.0031	.51417
%RSD	.43634	.30411	136.61
#1	1.0145	1.0047	-.45232
#2	1.0063	1.0011	-.84837
#3	1.0132	.99860	.17152
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8429.1**	**48443.**	**2776.2**
Stddev	26.5	153.	5.8
%RSD	.31457	.31481	.20834
#1	8409.4	48390.	2770.6
#2	8418.7	48325.	2782.2
#3	8459.2	48616.	2775.8

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 14:31:57 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00127	.00801	-.00040	.00229	-.00122	-.00003	.02815
Stddev	.00229	.00753	.00110	.00282	.00084	.00004	.01441
%RSD	180.12	93.942	274.93	123.04	69.145	132.56	51.168
#1	-.00129	.01002	-.00025	-.00048	-.00029	-.00007	.04471
#2	.00310	-.00031	-.00156	.00220	-.00194	.00001	.01848
#3	.00200	.01434	.00062	.00516	-.00143	-.00003	.02127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00025	.00106	.00202	-.02229	.12649	-.00168
Stddev	.00027	.00018	.00117	.00177	.01557	.08475	.00234
%RSD	217.80	70.766	110.48	87.217	69.869	67.001	139.09
#1	-.00015	.00042	-.00028	.00357	-.02377	.04189	.00006
#2	.00039	.00007	.00189	.00240	-.00603	.12619	-.00076
#3	.00012	.00024	.00156	.00010	-.03706	.21138	-.00434
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.08937	.00155	.00438	-.00034	-.00061	.00207	-.00011
Stddev	.02413	.00154	.00035	.01378	.00077	.00836	.00066
%RSD	27.006	99.699	7.9673	3997.0	126.34	403.53	601.59
#1	.06620	.00288	.00398	-.00930	.00021	-.00751	.00032
#2	.11437	-.00014	.00452	.01552	-.00131	.00583	-.00087
#3	.08754	.00190	.00463	-.00726	-.00072	.00789	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 14:31:57 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00171	.00513	.00214	.00044	-.00009	.00119	.00268
Stddev	.00148	.00480	.00299	.00065	.00059	.00629	.00104
%RSD	86.915	93.582	139.70	145.60	635.33	530.60	38.839
#1	.00014	.01014	-.00094	.00000	.00054	.00681	.00213
#2	.00309	.00057	.00232	.00118	-.00020	.00236	.00204
#3	.00190	.00467	.00504	.00014	-.00061	-.00561	.00389
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00001	.00016	F .65506
Stddev	.00093	.00027	.51106
%RSD	6856.6	167.06	78.017
#1	.00031	.00017	1.2422
#2	.00071	.00042	.31041
#3	-.00106	-.00011	.41253
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8605.2	49992.	2805.9
Stddev	16.3	192.	8.1
%RSD	.18893	.38471	.28995
#1	8608.7	50111.	2800.2
#2	8587.5	50094.	2802.2
#3	8619.4	49770.	2815.2

Approved: June 20, 2016

Sample Name: PBS 6P Acquired: 6/17/2016 14:35:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572914-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00046**	**.04159**	**.02141**	**.00957**	**.00294**	**-.00002**	**1.1289**
Stddev	.00089	.00187	.00316	.00271	.00056	.00004	.0117
%RSD	194.61	4.4895	14.735	28.294	19.072	275.79	1.0392
#1	.00031	.03976	.02505	.00887	.00280	-.00004	1.1233
#2	-.00143	.04150	.01943	.01256	.00356	.00003	1.1424
#3	-.00025	.04349	.01976	.00728	.00246	-.00004	1.1210
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00055**	**-.00009**	**.00208**	**.03225**	**.08205**	**.91045**	**-.00004**
Stddev	.00011	.00015	.00099	.00089	.00709	.04057	.00145
%RSD	19.782	162.89	47.455	2.7485	8.6409	4.4559	3469.9
#1	.00044	.00002	.00243	.03323	.08637	.86558	-.00012
#2	.00056	-.00026	.00097	.03203	.08591	.94455	-.00145
#3	.00066	-.00003	.00285	.03150	.07387	.92122	.00145
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.5497**	**.00584**	**.00301**	**1.2712**	**.00169**	**.53367**	**.00269**
Stddev	.0916	.00283	.00045	.0209	.00071	.00214	.00110
%RSD	3.5919	48.485	14.980	1.6430	41.845	.40120	40.745
#1	2.5607	.00313	.00249	1.2903	.00116	.53613	.00383
#2	2.6352	.00878	.00326	1.2489	.00250	.53224	.00164
#3	2.4531	.00560	.00329	1.2744	.00142	.53264	.00260
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: PBS 6P Acquired: 6/17/2016 14:35:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572914-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00732**	**.06018**	**.66260**	**.00726**	**.00512**	**.00136**	**-.01218**
Stddev	.00181	.00454	.00174	.00123	.00019	.00416	.00184
%RSD	24.794	7.5482	.26324	16.992	3.6830	305.08	15.118
#1	.00880	.05908	.66325	.00867	.00495	-.00327	-.01429
#2	.00529	.05629	.66393	.00639	.00509	.00257	-.01128
#3	.00787	.06517	.66063	.00672	.00532	.00478	-.01096
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00039**	**1.5485**	F **-2.2396**
Stddev	.00060	.0034	.4971
%RSD	156.06	.21884	22.195
#1	-.00009	1.5495	-1.7658
#2	.00001	1.5513	-2.1960
#3	-.00108	1.5448	-2.7571
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8454.4**	**50211.**	**2939.5**
Stddev	21.0	153.	12.5
%RSD	.24895	.30509	.42642
#1	8439.8	50048.	2932.5
#2	8444.9	50234.	2932.0
#3	8478.6	50352.	2953.9

Approved: June 20, 2016

Sample Name: LCSS 6P Acquired: 6/17/2016 14:39:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572914-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19253**	**4.5767**	**.23968**	**.95174**	**.52185**	**.02589**	**6.0735**
Stddev	.00200	.0138	.00270	.00459	.00523	.00005	.0935
%RSD	1.0398	.30189	1.1283	.48274	1.0026	.20332	1.5398
#1	.19029	4.5920	.23701	.95555	.52707	.02585	6.1383
#2	.19413	4.5651	.24242	.94664	.52187	.02595	6.1160
#3	.19318	4.5731	.23962	.95304	.51660	.02588	5.9663
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02441**	**.10227**	**.25756**	**.27828**	**2.1237**	**25.101**	**.51928**
Stddev	.00014	.00020	.00109	.00193	.0083	.250	.00667
%RSD	.57219	.19120	.42401	.69253	.39104	.99553	1.2844
#1	.02445	.10206	.25871	.27679	2.1150	25.323	.52619
#2	.02453	.10232	.25653	.28045	2.1245	25.150	.51876
#3	.02426	.10244	.25744	.27759	2.1316	24.831	.51288
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.5967**	**.25722**	**.54132**	**25.742**	**.25642**	**5.5272**	**.24562**
Stddev	.0956	.00128	.00056	.174	.00174	.0088	.00243
%RSD	1.2581	.49944	.10303	.67548	.67894	.15992	.99005
#1	7.6568	.25816	.54134	25.914	.25755	5.5368	.24500
#2	7.6468	.25775	.54186	25.745	.25729	5.5254	.24356
#3	7.4865	.25576	.54075	25.566	.25441	5.5194	.24830
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: LCSS 6P Acquired: 6/17/2016 14:39:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572914-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.59324	.30627	3.1068	.49985	.52955	.51756	.23478
Stddev	.00528	.01190	.0060	.00104	.00413	.00912	.00104
%RSD	.88947	3.8866	.19386	.20814	.78021	1.7617	.44217
#1	.59862	.31136	3.1088	.50103	.53389	.52706	.23454
#2	.58808	.31479	3.1115	.49946	.52909	.51675	.23388
#3	.59301	.29267	3.1000	.49906	.52566	.50887	.23592
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.51446	2.0066	F -1.4827
Stddev	.00250	.0043	.7219
%RSD	.48666	.21629	48.685
#1	.51708	2.0041	-2.2921
#2	.51209	2.0116	-1.2506
#3	.51422	2.0041	-.90548
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8360.5	49435.	2956.1
Stddev	22.8	279.	41.6
%RSD	.27306	.56464	1.4062
#1	8345.1	49146.	2911.1
#2	8349.6	49703.	2964.1
#3	8386.7	49456.	2993.0

Approved: June 20, 2016

Sample Name: LCSS DP Acquired: 6/17/2016 14:43:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572914-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19250**	**4.5574**	**.23035**	**.93112**	**.51490**	**.02592**	**5.9204**
Stddev	.00204	.0055	.00206	.00698	.00335	.00006	.0423
%RSD	1.0573	.11973	.89333	.74945	.65113	.22113	.71458
#1	.19467	4.5518	.22873	.93326	.51846	.02588	5.9384
#2	.19063	4.5627	.23267	.92332	.51181	.02599	5.8720
#3	.19221	4.5576	.22965	.93678	.51443	.02589	5.9507
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02442**	**.10234**	**.25980**	**.27735**	**2.1056**	**24.818**	**.51270**
Stddev	.00021	.00032	.00114	.00085	.0445	.172	.00638
%RSD	.85218	.31383	.43981	.30560	2.1110	.69158	1.2441
#1	.02421	.10235	.25894	.27833	2.1345	24.979	.52006
#2	.02443	.10265	.26110	.27681	2.0544	24.637	.50930
#3	.02462	.10201	.25936	.27691	2.1279	24.839	.50874
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.5589**	**.25493**	**.54354**	**25.523**	**.25632**	**5.4584**	**.24782**
Stddev	.0436	.00217	.00067	.137	.00062	.0031	.00243
%RSD	.57728	.85112	.12245	.53575	.24269	.05714	.97966
#1	7.5974	.25730	.54284	25.681	.25583	5.4607	.24547
#2	7.5115	.25444	.54416	25.436	.25610	5.4597	.24769
#3	7.5678	.25304	.54364	25.454	.25702	5.4549	.25032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: LCSS DP Acquired: 6/17/2016 14:43:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572914-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.58863**	**.29450**	**3.0130**	**.50025**	**.52574**	**.51796**	**.23348**
Stddev	.00472	.00756	.0019	.00060	.00394	.00346	.00077
%RSD	.80267	2.5663	.06194	.11905	.74950	.66793	.32989
#1	.58361	.30245	3.0133	.49981	.53029	.51985	.23347
#2	.59298	.29367	3.0111	.50093	.52352	.51397	.23426
#3	.58930	.28740	3.0148	.50002	.52341	.52007	.23272
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.51847**	**1.8734**	F **-1.7228**
Stddev	.00072	.0006	.8151
%RSD	.13944	.03039	47.314
#1	.51797	1.8735	-.99823
#2	.51813	1.8739	-2.6054
#3	.51930	1.8728	-1.5649
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8384.4**	**49518.**	**2982.0**
Stddev	19.5	332.	19.6
%RSD	.23278	.67143	.65803
#1	8364.1	49334.	2960.9
#2	8403.0	49318.	2999.8
#3	8386.3	49902.	2985.3

Approved: June 20, 2016

Sample Name: L1606079301 Acquired: 6/17/2016 14:47:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.31207**	**30.479**	**.06014**	**.66408**	F **74.905**	**.00452**	**157.90**
Stddev	.00289	.089	.00277	.00242	.935	.00005	.82
%RSD	.92756	.29329	4.6039	.36506	1.2482	1.0540	.51676
#1	.30998	30.563	.06059	.66219	74.133	.00454	158.33
#2	.31085	30.385	.05717	.66681	75.945	.00455	156.96
#3	.31537	30.489	.06266	.66324	74.638	.00447	158.41
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					45.000		
Low Limit					-.00500		

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.91777**	**.59091**	**2.5824**	**8.4481**	**52.984**	**13.998**	**.21653**
Stddev	.00064	.00058	.0065	.0094	.339	.190	.00493
%RSD	.06944	.09792	.25294	.11140	.63959	1.3539	2.2771
#1	.91712	.59072	2.5856	8.4378	53.303	14.045	.22222
#2	.91781	.59156	2.5748	8.4502	52.628	13.790	.21363
#3	.91839	.59045	2.5866	8.4563	53.021	14.161	.21374
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**43.801**	**3.7250**	**.04204**	**26.808**	**.72729**	F **348.04**	**18.678**
Stddev	.255	.0153	.00009	.138	.00096	.25	.009
%RSD	.58255	.41073	.22030	.51350	.13148	.07262	.04743
#1	44.078	3.7420	.04203	26.877	.72756	347.87	18.669
#2	43.575	3.7124	.04195	26.649	.72622	347.93	18.680
#3	43.750	3.7206	.04213	26.898	.72808	348.33	18.686
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						180.00	
Low Limit						-.10000	

Approved: June 20, 2016

Sample Name: L1606079301 Acquired: 6/17/2016 14:47:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**8.6818**	**.05575**	**14.772**	**3.3456**	F **95.624**	**.85856**	**-.00337**
Stddev	.0104	.00321	.044	.0032	.903	.01266	.00414
%RSD	.12042	5.7652	.29909	.09593	.94395	1.4744	122.80
#1	8.6701	.05386	14.745	3.3488	94.942	.86241	.00124
#2	8.6900	.05947	14.748	3.3424	96.647	.84443	-.00677
#3	8.6854	.05394	14.823	3.3454	95.282	.86886	-.00459
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.11945**	**26.711**	F **-172.35**
Stddev	.00078	.008	1.80
%RSD	.65254	.02826	1.0437
#1	.11857	26.719	-172.10
#2	.12005	26.706	-170.68
#3	.11973	26.707	-174.26
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8661.8**	**51982.**	**3173.7**
Stddev	23.6	40.	25.1
%RSD	.27260	.07720	.79048
#1	8644.2	51950.	3157.6
#2	8688.7	51970.	3202.6
#3	8652.6	52027.	3161.0

Approved: June 20, 2016

Sample Name: L1606079301PS Acquired: 6/17/2016 14:51:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573214-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48524**	**32.802**	**.26619**	**1.5587**	F **69.207**	**.02913**	**149.15**
Stddev	.00150	.021	.00770	.0050	.836	.00006	.42
%RSD	.30969	.06254	2.8945	.32425	1.2084	.19963	.28059
#1	.48629	32.811	.26492	1.5629	69.906	.02911	149.62
#2	.48590	32.778	.27444	1.5602	69.434	.02908	149.02
#3	.48352	32.816	.25919	1.5531	68.280	.02919	148.81
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					45.000		
Low Limit					-.00500		

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.85693**	**.62944**	**2.6024**	**7.8942**	**50.212**	**37.723**	**.71341**
Stddev	.00102	.00214	.0017	.0114	.161	.059	.00669
%RSD	.11928	.34069	.06515	.14416	.32023	.15730	.93765
#1	.85807	.63192	2.6044	7.9055	50.376	37.664	.71637
#2	.85661	.62826	2.6015	7.8942	50.204	37.782	.71811
#3	.85610	.62815	2.6013	7.8828	50.055	37.724	.70575
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**44.798**	**3.6167**	**.56457**	**49.569**	**.90972**	F **321.56**	**17.119**
Stddev	.312	.0093	.00208	.118	.00183	.56	.034
%RSD	.69731	.25625	.36929	.23816	.20154	.17338	.19640
#1	44.480	3.6235	.56634	49.621	.91138	322.20	17.156
#2	44.812	3.6204	.56509	49.651	.90775	321.34	17.091
#3	45.104	3.6061	.56227	49.434	.91003	321.15	17.112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						180.00	
Low Limit						-.10000	

Approved: June 20, 2016

Sample Name: L1606079301PS Acquired: 6/17/2016 14:51:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573214-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**8.4731**	**.27535**	**16.467**	**3.5293**	F **87.788**	**1.2869**	**.24663**
Stddev	.0163	.00508	.015	.0041	.458	.0046	.00131
%RSD	.19266	1.8435	.09037	.11708	.52120	.35512	.53258
#1	8.4894	.27043	16.479	3.5340	87.286	1.2922	.24559
#2	8.4568	.27504	16.450	3.5275	88.183	1.2847	.24811
#3	8.4731	.28057	16.471	3.5263	87.894	1.2839	.24620
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.61618**	**24.722**	F **-155.70**
Stddev	.00155	.048	.41
%RSD	.25139	.19278	.26279
#1	.61492	24.777	-155.36
#2	.61572	24.698	-155.58
#3	.61791	24.691	-156.15
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8597.4**	**51295.**	**3116.8**
Stddev	18.4	112.	3.4
%RSD	.21458	.21765	.11060
#1	8576.1	51374.	3118.3
#2	8608.5	51167.	3112.8
#3	8607.6	51344.	3119.2

Approved: June 20, 2016

Sample Name: L1606079301SDL Acquired: 6/17/2016 14:54:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573214-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.06054**	**5.9911**	**.01067**	**.13268**	**14.237**	**.00082**	**30.163**
Stddev	.00281	.0093	.00200	.00071	.069	.00011	.118
%RSD	4.6380	.15535	18.759	.53363	.48761	13.355	.38997
#1	.06313	5.9805	.00838	.13220	14.177	.00070	30.087
#2	.06094	5.9948	.01207	.13349	14.313	.00091	30.299
#3	.05756	5.9980	.01156	.13235	14.222	.00085	30.105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.17561**	**.11191**	**.50072**	**1.6361**	**10.248**	**2.7352**	**.04502**
Stddev	.00070	.00053	.00284	.0023	.052	.1075	.00201
%RSD	.39783	.47148	.56695	.14186	.50893	3.9297	4.4713
#1	.17505	.11187	.49829	1.6384	10.200	2.6797	.04718
#2	.17639	.11246	.50384	1.6362	10.303	2.6667	.04320
#3	.17538	.11141	.50003	1.6338	10.241	2.8590	.04469
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**8.6599**	**.70900**	**.00781**	**5.1586**	**.13965**	**63.953**	**3.6642**
Stddev	.0996	.00248	.00025	.0247	.00098	.094	.0124
%RSD	1.1496	.34911	3.2520	.47835	.69845	.14751	.33982
#1	8.5700	.70620	.00773	5.1436	.14077	63.899	3.6617
#2	8.7669	.70991	.00760	5.1871	.13901	64.062	3.6777
#3	8.6427	.71089	.00809	5.1451	.13916	63.898	3.6532
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606079301SDL Acquired: 6/17/2016 14:54:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573214-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.6248**	**.01288**	**2.7227**	**.63785**	F **18.926**	**.16291**	**.00267**
Stddev	.0069	.00488	.0081	.00300	.293	.00596	.00214
%RSD	.42604	37.852	.29758	.47082	1.5471	3.6587	80.272
#1	1.6176	.01573	2.7170	.63920	18.602	.16283	.00108
#2	1.6313	.01566	2.7320	.63994	19.171	.16890	.00182
#3	1.6256	.00725	2.7192	.63441	19.005	.15698	.00510
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.02221**	**5.2631**	F **-34.315**
Stddev	.00097	.0063	.188
%RSD	4.3781	.11964	.54644
#1	.02276	5.2620	-34.528
#2	.02278	5.2698	-34.176
#3	.02109	5.2574	-34.240
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9159.6**	**53448.**	**3039.2**
Stddev	5.6	64.	13.1
%RSD	.06167	.11912	.42984
#1	9162.8	53392.	3053.5
#2	9163.0	53517.	3036.2
#3	9153.1	53435.	3027.9

Approved: June 20, 2016

Sample Name: L1606079301SDL Acquired: 6/17/2016 14:58:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573214-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01202**	**1.2626**	**.00318**	**.03010**	**2.8619**	**.00025**	**6.1667**
Stddev	.00110	.0128	.00219	.00193	.0071	.00005	.0039
%RSD	9.1908	1.0148	68.721	6.4262	.24801	20.399	.06289
#1	.01146	1.2574	.00109	.03205	2.8668	.00030	6.1709
#2	.01131	1.2533	.00299	.03009	2.8651	.00025	6.1658
#3	.01329	1.2772	.00545	.02818	2.8537	.00020	6.1633
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03682**	**.02322**	**.10381**	**.34424**	**2.0925**	**.58809**	**.01038**
Stddev	.00023	.00038	.00037	.00019	.0323	.13210	.00314
%RSD	.63069	1.6463	.35980	.05443	1.5417	22.463	30.209
#1	.03706	.02320	.10338	.34434	2.0770	.67756	.01359
#2	.03679	.02362	.10406	.34403	2.0710	.65035	.01024
#3	.03660	.02286	.10398	.34437	2.1296	.43636	.00732
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.9185**	**.14861**	**.00150**	**1.0335**	**.02831**	**13.239**	**.76064**
Stddev	.1140	.00219	.00033	.0285	.00020	.009	.00257
%RSD	5.9419	1.4713	22.024	2.7623	.70556	.06579	.33778
#1	2.0500	.14673	.00143	1.0023	.02828	13.245	.76131
#2	1.8579	.14808	.00186	1.0583	.02813	13.229	.75780
#3	1.8476	.15101	.00121	1.0399	.02852	13.244	.76280
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606079301SDL Acquired: 6/17/2016 14:58:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573214-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.33121**	**.00714**	**.55800**	**.12281**	**3.8835**	**.04094**	**.00329**
Stddev	.00559	.00371	.00225	.00207	.0126	.00650	.00307
%RSD	1.6868	51.953	.40260	1.6839	.32425	15.868	93.411
#1	.33151	.00428	.56019	.12501	3.8933	.03578	.00139
#2	.33664	.00581	.55810	.12249	3.8879	.04823	.00164
#3	.32548	.01133	.55570	.12091	3.8693	.03880	.00683
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00437**	**1.1054**	F **-6.8687**
Stddev	.00012	.0013	.2291
%RSD	2.7606	.12044	3.3357
#1	.00449	1.1069	-6.9609
#2	.00425	1.1049	-6.6078
#3	.00438	1.1044	-7.0373
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8854.3**	**51289.**	**2880.1**
Stddev	30.8	212.	30.7
%RSD	.34740	.41373	1.0660
#1	8819.2	51469.	2893.3
#2	8876.6	51343.	2845.0
#3	8867.1	51055.	2902.0

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 15:02:34 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40179	10.022	.39313	.49418	.98511	.04976	9.8066
Stddev	.00247	.005	.00304	.00258	.00427	.00008	.0746
%RSD	.61582	.04555	.77304	.52164	.43316	.17052	.76028
#1	.39922	10.018	.39555	.49439	.98120	.04975	9.8360
#2	.40415	10.020	.38972	.49665	.98447	.04985	9.7219
#3	.40201	10.027	.39412	.49150	.98966	.04969	9.8620
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04958	.19924	.50081	.50233	3.9576	48.656	.98219
Stddev	.00014	.00017	.00265	.00176	.0164	.115	.00460
%RSD	.28192	.08753	.52902	.35036	.41315	.23686	.46872
#1	.04950	.19941	.50062	.50408	3.9756	48.555	.98142
#2	.04974	.19906	.50355	.50235	3.9436	48.782	.98713
#3	.04949	.19925	.49826	.50056	3.9536	48.631	.97802
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.9270	.49529	1.0035	48.427	.50155	9.8795	.49965
Stddev	.0316	.00287	.0064	.075	.00301	.0426	.00176
%RSD	.31789	.57995	.63842	.15480	.60022	.43100	.35249
#1	9.8909	.49274	1.0097	48.359	.50337	9.8974	.50046
#2	9.9492	.49472	1.0039	48.414	.50320	9.9102	.50086
#3	9.9410	.49840	.99693	48.507	.49807	9.8309	.49763
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 15:02:34 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1896**	**.40094**	**5.0266**	**1.0019**	**.98594**	**.98352**	**.50526**
Stddev	.0046	.00644	.0177	.0037	.00194	.00730	.00067
%RSD	.38209	1.6051	.35186	.36802	.19680	.74256	.13213
#1	1.1937	.39358	5.0424	1.0054	.98374	.98608	.50490
#2	1.1902	.40369	5.0301	1.0023	.98668	.97528	.50485
#3	1.1847	.40553	5.0075	.99805	.98740	.98919	.50603
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0018**	**.99403**	F **-.08877**
Stddev	.0014	.00267	1.2586
%RSD	.14076	.26820	1417.8
#1	1.0002	.99693	-.23380
#2	1.0028	.99169	1.2361
#3	1.0023	.99346	-1.2686
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8482.7**	**48857.**	**2796.5**
Stddev	18.7	198.	8.2
%RSD	.22022	.40606	.29391
#1	8473.3	49028.	2801.4
#2	8504.2	48902.	2787.0
#3	8470.6	48640.	2801.2

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 15:06:13 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00078**	**.00105**	**-.00318**	**.00506**	**-.00105**	**.00009**	**-.02252**
Stddev	.00120	.00938	.00382	.00507	.00116	.00000	.03878
%RSD	155.20	889.74	120.19	100.06	109.83	4.8087	172.19
#1	-.00140	.00947	.00077	.00935	-.00121	.00008	-.06581
#2	.00061	-.00905	-.00686	.00637	.00018	.00009	-.01078
#3	-.00154	.00274	-.00346	-.00053	-.00212	.00009	.00903
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**-.00009**	**.00027**	**.00094**	**-.03892**	**.03819**	**.00203**
Stddev	.00010	.00012	.00072	.00022	.02631	.06771	.00238
%RSD	106.46	127.07	261.53	23.680	67.612	177.28	117.33
#1	.00007	.00004	.00084	.00119	-.06542	.05385	.00086
#2	.00001	-.00012	-.00053	.00086	-.01280	.09670	.00478
#3	.00020	-.00020	.00052	.00077	-.03854	-.03597	.00046
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.05214**	**.00179**	**.00447**	**-.00578**	**-.00030**	**.00379**	**-.00074**
Stddev	.12870	.00137	.00064	.01950	.00028	.00553	.00064
%RSD	246.85	76.447	14.245	337.29	92.786	145.74	87.071
#1	-.06521	.00325	.00374	.00017	-.00024	.00920	-.00133
#2	-.17380	.00053	.00474	.01005	-.00061	.00402	-.00006
#3	.08260	.00160	.00493	-.02757	-.00006	-.00185	-.00083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 15:06:13 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00288	.00808	.00891	.00050	-.00006	.00293	.00349
Stddev	.00051	.01049	.00066	.00024	.00053	.00374	.00036
%RSD	17.647	129.76	7.4587	47.396	880.33	127.72	10.435
#1	.00319	-.00347	.00966	.00069	.00048	.00384	.00332
#2	.00230	.01701	.00865	.00023	-.00057	-.00118	.00391
#3	.00316	.01070	.00841	.00058	-.00008	.00613	.00324
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00006	.00001	F -.62196
Stddev	.00029	.00008	.58556
%RSD	459.83	645.15	94.147
#1	.00022	-.00007	-.12897
#2	.00025	.00002	-.46771
#3	-.00027	.00009	-1.2692
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8678.0	49913.	2799.0
Stddev	19.3	153.	17.5
%RSD	.22289	.30669	.62615
#1	8695.8	49935.	2791.6
#2	8657.4	49751.	2819.1
#3	8680.8	50054.	2786.4

Approved: June 20, 2016

Sample Name: LLCCV Acquired: 6/17/2016 15:10:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00837**	**.16222**	**.00824**	**.08067**	**.00615**	**.00156**	**.39593**
Stddev	.00091	.00372	.00230	.00127	.00122	.00012	.02920
%RSD	10.869	2.2940	27.957	1.5802	19.898	7.4987	7.3753
#1	.00874	.16356	.00879	.07987	.00718	.00151	.40248
#2	.00734	.16509	.00571	.08214	.00480	.00147	.36401
#3	.00905	.15801	.01022	.08000	.00649	.00169	.42130
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00074**	**.00374**	**.00436**	**.00520**	**.07296**	**.72116**	**.08366**
Stddev	.00003	.00026	.00053	.00051	.02011	.11490	.00331
%RSD	3.7956	6.8976	12.168	9.7959	27.562	15.933	3.9619
#1	.00075	.00347	.00483	.00508	.06637	.59217	.07988
#2	.00076	.00377	.00379	.00576	.09554	.75871	.08607
#3	.00071	.00398	.00445	.00476	.05697	.81258	.08503
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39089**	**.00707**	**.00861**	**.36629**	**.01591**	**.76106**	**.00819**
Stddev	.04302	.00163	.00030	.02581	.00093	.00442	.00075
%RSD	11.007	23.125	3.5383	7.0456	5.8315	.58122	9.1301
#1	.39079	.00625	.00840	.34453	.01678	.75612	.00880
#2	.43397	.00600	.00896	.39480	.01602	.76467	.00735
#3	.34792	.00895	.00847	.35955	.01493	.76238	.00841
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: LLCCV Acquired: 6/17/2016 15:10:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.07705**	**.01536**	**.77675**	**.39285**	**.03881**	**.02468**	**.15424**
Stddev	.00509	.00332	.00357	.00089	.00069	.00372	.00211
%RSD	6.6108	21.634	.45971	.22570	1.7682	15.083	1.3675
#1	.07858	.01195	.77336	.39251	.03840	.02039	.15644
#2	.07136	.01555	.78048	.39385	.03842	.02664	.15403
#3	.08120	.01859	.77641	.39218	.03960	.02702	.15224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00759**	**.01694**	F **-70.315**
Stddev	.00062	.00020	2.511
%RSD	8.1815	1.1872	3.5703
#1	.00830	.01671	-71.960
#2	.00718	.01704	-71.559
#3	.00728	.01707	-67.425
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8645.8**	**50434.**	**2810.1**
Stddev	10.5	242.	14.5
%RSD	.12185	.47909	.51588
#1	8638.3	50172.	2825.3
#2	8657.8	50649.	2796.5
#3	8641.3	50481.	2808.3

Approved: June 20, 2016

Sample Name: PBW H4 Acquired: 6/17/2016 15:14:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572637-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	.00166	-.00022	.00130	-.00095	-.00000	.04106	.00008
Stddev	.00202	.00288	.00074	.00199	.00040	.00005	.02400	.00021
%RSD	274.48	173.60	338.99	153.22	42.578	3344.6	58.453	269.09
#1	-.00139	-.00150	-.00019	.00301	-.00060	.00002	.02637	.00008
#2	.00263	.00235	.00050	.00178	-.00086	.00004	.06876	.00029
#3	.00096	.00413	-.00097	-.00089	-.00139	-.00006	.02805	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	.00053	.00041	-.01892	-.00569	.00251	-.07230	-.00037
Stddev	.00012	.00076	.00029	.01471	.02896	.00202	.10811	.00203
%RSD	241.84	145.52	71.870	77.729	508.64	80.523	149.53	547.50
#1	-.00018	.00138	.00070	-.00252	.02576	.00482	-.12002	-.00070
#2	.00006	-.00008	.00012	-.02329	-.01160	.00107	.05146	-.00222
#3	-.00003	.00027	.00040	-.03094	-.03125	.00164	-.14833	.00180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	.00329	-.00032	.00562	.00008	-.00060	.00613	.00337
Stddev	.00024	.02820	.00050	.00873	.00367	.00205	.00380	.00150
%RSD	55.792	857.81	155.68	155.23	4669.2	340.50	61.885	44.549
#1	.00045	.01534	.00023	-.00376	.00037	.00106	.00447	.00444
#2	.00064	.02346	-.00047	.01351	-.00372	.00002	.00345	.00400
#3	.00017	-.02894	-.00073	.00712	.00359	-.00289	.01047	.00165
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 20, 2016

Sample Name: PBW H4 Acquired: 6/17/2016 15:14:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572637-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	-.00001	.00264	.00299	-.00050	.00076	.22160
Stddev	.00064	.00035	.00202	.00203	.00108	.00016	.93199
%RSD	235.05	3031.7	76.295	67.792	216.06	20.580	420.58
#1	-.00095	.00020	.00268	.00279	-.00173	.00094	-.65518
#2	-.00021	.00019	.00464	.00107	.00029	.00065	.11956
#3	.00034	-.00042	.00061	.00511	-.00006	.00069	1.2004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8761.8	50571.	2829.6
Stddev	15.0	212.	15.3
%RSD	.17102	.41945	.54091
#1	8779.0	50351.	2842.5
#2	8755.0	50587.	2812.7
#3	8751.4	50774.	2833.5

Approved: June 20, 2016

Sample Name: LCSW H4 Acquired: 6/17/2016 15:18:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572637-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.22197**	**5.4230**	**.21513**	**1.0660**	**.55117**	**.02691**	**5.4982**
Stddev	.00080	.0116	.00213	.0056	.00099	.00012	.0420
%RSD	.35946	.21341	.99089	.52523	.17986	.45089	.76291
#1	.22257	5.4109	.21690	1.0638	.55077	.02694	5.5459
#2	.22228	5.4340	.21277	1.0619	.55044	.02678	5.4815
#3	.22107	5.4241	.21573	1.0724	.55230	.02702	5.4672
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02706**	**.11115**	**.27406**	**.27905**	**2.2139**	**26.929**	**.55747**
Stddev	.00032	.00063	.00176	.00151	.0159	.083	.00475
%RSD	1.1745	.56664	.64113	.53956	.71959	.30902	.85291
#1	.02670	.11045	.27297	.27984	2.2021	26.929	.56181
#2	.02722	.11132	.27313	.27731	2.2076	26.846	.55239
#3	.02727	.11168	.27609	.27999	2.2320	27.013	.55822
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.4483**	**.27830**	**.56264**	**27.153**	**.27822**	**5.3235**	**.28040**
Stddev	.1242	.00170	.00040	.141	.00196	.0128	.00213
%RSD	2.2790	.61254	.07162	.51986	.70491	.24034	.75835
#1	5.3091	.28021	.56290	27.212	.27603	5.3097	.28046
#2	5.5476	.27693	.56284	26.991	.27880	5.3257	.27824
#3	5.4881	.27776	.56217	27.254	.27982	5.3350	.28249
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: LCSW H4 Acquired: 6/17/2016 15:18:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572637-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.66318**	**.21560**	**2.8083**	**.55322**	**.55644**	**.55104**	**.28067**
Stddev	.00339	.00523	.0053	.00136	.00305	.00064	.00507
%RSD	.51049	2.4262	.18687	.24505	.54843	.11586	1.8063
#1	.66440	.22092	2.8023	.55479	.55311	.55161	.28381
#2	.66579	.21046	2.8103	.55240	.55709	.55117	.28337
#3	.65935	.21544	2.8122	.55248	.55911	.55035	.27482
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.54683**	**.55402**	F **-2.5670**
Stddev	.00147	.00032	1.0640
%RSD	.26888	.05778	41.448
#1	.54647	.55367	-2.9270
#2	.54557	.55410	-3.4043
#3	.54844	.55430	-1.3697
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7898.8**	**45730.**	**2610.6**
Stddev	4.2	237.	3.6
%RSD	.05359	.51851	.13617
#1	7898.3	45512.	2606.6
#2	7903.3	45694.	2613.3
#3	7894.9	45982.	2612.0

Approved: June 20, 2016

Sample Name: F BLANK Acquired: 6/17/2016 15:21:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572637-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**.01225**	**-.00515**	**.00674**	**-.00158**	**.00011**	**.03187**
Stddev	.00290	.00776	.00290	.00070	.00052	.00004	.02687
%RSD	2106.8	63.342	56.284	10.420	32.860	36.691	84.333
#1	-.00316	.01858	-.00182	.00633	-.00098	.00010	.03067
#2	.00128	.01458	-.00711	.00634	-.00190	.00008	.05932
#3	.00230	.00359	-.00653	.00755	-.00186	.00015	.00561
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00028**	**.00026**	**.00011**	**.00052**	**.00473**	**.04205**	**.00390**
Stddev	.00004	.00040	.00106	.00150	.00737	.09767	.00215
%RSD	15.842	154.33	980.22	291.40	155.81	232.27	55.172
#1	.00024	.00067	.00127	-.00070	.00386	-.00261	.00142
#2	.00027	.00025	-.00013	.00220	.01249	-.02531	.00494
#3	.00032	-.00014	-.00081	.00005	-.00216	.15406	.00533
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.06354**	**-.00101**	**.00081**	**.01050**	**.00014**	**.00115**	**-.00067**
Stddev	.04357	.00280	.00028	.01982	.00015	.00722	.00130
%RSD	68.564	276.94	33.970	188.80	107.98	625.48	193.53
#1	-.09422	-.00423	.00056	-.01238	.00025	-.00086	-.00208
#2	-.08273	.00034	.00111	.02240	-.00003	.00917	.00050
#3	-.01367	.00086	.00078	.02147	.00019	-.00485	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: F BLANK Acquired: 6/17/2016 15:21:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572637-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00016	.00380	.00997	.00036	.00050	-.00154	.00259
Stddev	.00254	.00471	.00041	.00084	.00055	.00735	.00135
%RSD	1608.6	123.94	4.0705	231.55	109.61	478.37	52.130
#1	.00039	-.00030	.00952	-.00050	.00082	.00477	.00167
#2	-.00249	.00894	.01008	.00118	.00081	.00024	.00414
#3	.00258	.00275	.01031	.00041	-.00013	-.00962	.00196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00035	.00295	F -.48683
Stddev	.00007	.00010	1.3517
%RSD	21.223	3.2938	277.65
#1	-.00040	.00302	-1.1249
#2	-.00038	.00299	1.0658
#3	-.00026	.00284	-1.4014
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8007.8	46661.	2617.0
Stddev	7.1	72.	23.0
%RSD	.08898	.15482	.87942
#1	8015.8	46737.	2592.1
#2	8002.2	46652.	2621.5
#3	8005.5	46593.	2637.4

Approved: June 20, 2016

Sample Name: L1606079301 Acquired: 6/17/2016 15:37:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573214-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01480**	**1.5630**	**.00141**	**.03595**	**3.5787**	**.00020**	**7.6693**
Stddev	.00169	.0017	.00140	.00340	.0120	.00006	.0271
%RSD	11.392	.11081	99.843	9.4594	.33488	29.760	.35280
#1	.01530	1.5636	-.00002	.03979	3.5917	.00026	7.7004
#2	.01617	1.5643	.00278	.03332	3.5681	.00016	7.6566
#3	.01292	1.5610	.00146	.03474	3.5763	.00016	7.6510
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04548**	**.02901**	**.12765**	**.42772**	**2.6186**	**.64094**	**.01161**
Stddev	.00043	.00040	.00050	.00057	.0135	.13428	.00053
%RSD	.95238	1.3691	.38976	.13429	.51473	20.950	4.5888
#1	.04524	.02865	.12764	.42722	2.6201	.51686	.01150
#2	.04523	.02895	.12815	.42835	2.6312	.62244	.01114
#3	.04598	.02944	.12716	.42758	2.6044	.78350	.01219
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.1815**	**.18018**	**.00210**	**1.2671**	**.03548**	**16.447**	**.94309**
Stddev	.0808	.00251	.00046	.0167	.00092	.033	.00428
%RSD	3.7028	1.3928	21.850	1.3214	2.6009	.19915	.45364
#1	2.1277	.18308	.00239	1.2479	.03653	16.413	.94469
#2	2.1425	.17876	.00157	1.2751	.03481	16.450	.94633
#3	2.2744	.17871	.00234	1.2783	.03511	16.479	.93824
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606079301 Acquired: 6/17/2016 15:37:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573214-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41406	.00137	.68309	.15314	4.8583	.04455	.00412
Stddev	.00281	.00162	.00189	.00194	.0074	.00268	.00280
%RSD	.67801	118.58	.27726	1.2640	.15292	6.0112	67.995
#1	.41543	.00320	.68176	.15533	4.8668	.04583	.00663
#2	.41083	.00012	.68226	.15245	4.8545	.04147	.00462
#3	.41591	.00079	.68526	.15164	4.8535	.04635	.00110
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00534	1.3729	F -9.3146
Stddev	.00068	.0021	.5612
%RSD	12.803	.15439	6.0250
#1	.00529	1.3704	-8.9633
#2	.00468	1.3737	-9.9619
#3	.00604	1.3744	-9.0187
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8881.4	51469.	2850.1
Stddev	24.1	144.	18.7
%RSD	.27109	.27889	.65681
#1	8898.5	51590.	2845.9
#2	8853.9	51310.	2833.8
#3	8891.9	51507.	2870.6

Approved: June 20, 2016

Sample Name: L1606079301PS Acquired: 6/17/2016 15:40:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573214-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20932	6.3030	.19276	.97307	4.0059	.02416	12.279
Stddev	.00138	.0150	.00055	.00380	.0092	.00003	.112
%RSD	.65931	.23881	.28756	.39038	.23083	.13538	.91378
#1	.20884	6.3059	.19221	.97283	3.9963	.02412	12.171
#2	.20825	6.3163	.19275	.97699	4.0067	.02416	12.395
#3	.21088	6.2867	.19332	.96940	4.0147	.02419	12.270
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.06852	.12418	.36162	.66349	4.4649	24.217	.49231
Stddev	.00029	.00010	.00141	.00120	.0300	.040	.00104
%RSD	.42002	.08124	.38988	.18031	.67081	.16666	.21101
#1	.06844	.12408	.36023	.66438	4.4409	24.215	.49152
#2	.06828	.12418	.36305	.66213	4.4553	24.259	.49349
#3	.06884	.12428	.36159	.66396	4.4985	24.178	.49192
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.9590	.41411	.48136	24.864	.27673	21.243	1.1538
Stddev	.1267	.00239	.00095	.033	.00120	.051	.0020
%RSD	1.8207	.57817	.19835	.13217	.43525	.23858	.17587
#1	6.8414	.41226	.48154	24.830	.27547	21.214	1.1557
#2	6.9424	.41327	.48033	24.896	.27684	21.213	1.1517
#3	7.0931	.41681	.48221	24.865	.27788	21.301	1.1541
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606079301PS Acquired: 6/17/2016 15:40:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573214-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.98515**	**.19898**	**3.0699**	**.63724**	**5.2511**	**.50846**	**.24393**
Stddev	.00399	.00400	.0081	.00092	.0126	.00575	.00184
%RSD	.40480	2.0101	.26360	.14435	.24035	1.1316	.75365
#1	.98055	.19436	3.0720	.63633	5.2393	.50424	.24326
#2	.98716	.20125	3.0610	.63722	5.2495	.50614	.24252
#3	.98772	.20133	3.0768	.63817	5.2644	.51502	.24601
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.47703**	**1.8165**	F **-8.3085**
Stddev	.00035	.0043	.4780
%RSD	.07351	.23772	5.7526
#1	.47719	1.8136	-8.3928
#2	.47663	1.8145	-7.7939
#3	.47727	1.8215	-8.7386
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8820.3**	**51204.**	**2900.9**
Stddev	11.5	108.	28.2
%RSD	.13055	.21035	.97072
#1	8808.2	51329.	2933.2
#2	8831.2	51140.	2881.9
#3	8821.4	51145.	2887.5

Approved: June 20, 2016

Sample Name: L1606079301SDL Acquired: 6/17/2016 15:44:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG573214-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00299**	**.31211**	**.00195**	**.00928**	**.72191**	**.00007**	**1.5813**
Stddev	.00390	.00391	.00202	.00269	.00133	.00008	.0290
%RSD	130.55	1.2537	103.54	28.971	.18478	114.57	1.8361
#1	-.00110	.30762	-.00020	.00800	.72326	.00003	1.6147
#2	.00338	.31477	.00382	.00747	.72188	.00002	1.5675
#3	.00668	.31395	.00224	.01238	.72060	.00016	1.5618
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00940**	**.00614**	**.02581**	**.08930**	**.51800**	**.18525**	**.00132**
Stddev	.00023	.00015	.00009	.00092	.01041	.14831	.00082
%RSD	2.4563	2.4608	.35889	1.0290	2.0091	80.058	62.246
#1	.00964	.00626	.02591	.08993	.52530	.10802	.00144
#2	.00918	.00597	.02573	.08824	.52263	.09149	.00207
#3	.00939	.00619	.02579	.08972	.50609	.35623	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.33625**	**.03741**	**.00108**	**.26052**	**.00669**	**3.3435**	**.19212**
Stddev	.04286	.00213	.00019	.02167	.00119	.0091	.00667
%RSD	12.747	5.6961	17.805	8.3179	17.863	.27232	3.4713
#1	.38575	.03534	.00121	.25430	.00615	3.3500	.19874
#2	.31161	.03731	.00117	.24264	.00586	3.3331	.19220
#3	.31140	.03960	.00086	.28462	.00806	3.3473	.18541
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606079301SDL Acquired: 6/17/2016 15:44:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG573214-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.08538**	**.00027**	**.14185**	**.02379**	**.97836**	**.00762**	**.00299**
Stddev	.00136	.00397	.00157	.00193	.00539	.00721	.00255
%RSD	1.5960	1495.1	1.1103	8.1134	.55048	94.528	85.303
#1	.08568	.00347	.14364	.02517	.98417	.01149	.00579
#2	.08389	.00150	.14121	.02462	.97737	-.00069	.00081
#3	.08656	-.00418	.14069	.02158	.97353	.01208	.00235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00060**	**.28638**	F **-1.8538**
Stddev	.00165	.00085	.6530
%RSD	275.33	.29772	35.225
#1	-.00017	.28562	-1.1001
#2	-.00053	.28621	-2.2098
#3	.00250	.28730	-2.2513
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8809.7**	**51129.**	**2837.0**
Stddev	32.1	199.	29.8
%RSD	.36420	.38924	1.0503
#1	8826.4	51314.	2817.8
#2	8830.0	50918.	2871.3
#3	8772.7	51154.	2821.8

Approved: June 20, 2016

Sample Name: L1606079301 Acquired: 6/17/2016 15:48:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG573214-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00250	.31651	.00024	.00836	.72192	.00006	1.5811
Stddev	.00114	.00605	.00154	.00295	.00244	.00002	.0317
%RSD	45.611	1.9126	630.98	35.322	.33806	38.287	2.0036
#1	.00324	.32286	.00084	.01079	.72441	.00006	1.5446
#2	.00308	.31081	-.00150	.00921	.72183	.00003	1.5981
#3	.00119	.31585	.00140	.00507	.71953	.00008	1.6007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00909	.00583	.02577	.08770	.50956	.19089	.00266
Stddev	.00021	.00056	.00065	.00068	.01493	.05239	.00058
%RSD	2.3279	9.6642	2.5163	.77232	2.9308	27.445	21.805
#1	.00925	.00590	.02646	.08798	.49235	.20557	.00213
#2	.00917	.00636	.02567	.08693	.51908	.23437	.00257
#3	.00885	.00524	.02517	.08819	.51726	.13272	.00328
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.44883	.03766	.00057	.26197	.00718	3.3264	.18843
Stddev	.02465	.00266	.00011	.00596	.00049	.0049	.00330
%RSD	5.4923	7.0570	20.170	2.2761	6.7708	.14623	1.7499
#1	.42301	.03495	.00054	.26764	.00756	3.3313	.19072
#2	.47212	.03778	.00069	.25575	.00663	3.3263	.18992
#3	.45137	.04027	.00047	.26252	.00734	3.3216	.18465
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606079301 Acquired: 6/17/2016 15:48:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG573214-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.08444	.00511	.13857	.02396	.97646	.01159	.00331
Stddev	.00141	.00503	.00101	.00176	.00589	.00535	.00040
%RSD	1.6649	98.573	.73029	7.3510	.60351	46.185	11.959
#1	.08373	.00150	.13895	.02568	.98100	.00715	.00352
#2	.08353	.00296	.13933	.02403	.97858	.01754	.00285
#3	.08606	.01086	.13742	.02216	.96980	.01009	.00356
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00116	.28500	F -.20349
Stddev	.00068	.00015	.91863
%RSD	58.799	.05408	451.43
#1	.00060	.28515	-.11199
#2	.00095	.28485	-1.1644
#3	.00191	.28499	.66596
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8790.6	50790.	2833.5
Stddev	16.7	76.	17.7
%RSD	.19017	.14938	.62331
#1	8799.2	50862.	2816.3
#2	8801.2	50711.	2832.6
#3	8771.3	50799.	2851.5

Approved: June 20, 2016

Sample Name: L1606079301PS Acquired: 6/17/2016 15:52:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG573214-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19712	5.1467	.19291	.96999	1.1824	.02415	6.2995
Stddev	.00169	.0303	.00186	.00516	.0014	.00001	.0083
%RSD	.85568	.58808	.96367	.53235	.11555	.03815	.13156
#1	.19530	5.1122	.19412	.97593	1.1839	.02416	6.2899
#2	.19742	5.1686	.19384	.96660	1.1813	.02415	6.3038
#3	.19863	5.1594	.19077	.96743	1.1820	.02414	6.3047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03322	.10264	.26613	.33365	2.4197	23.866	.48463
Stddev	.00025	.00061	.00064	.00202	.0195	.067	.00377
%RSD	.76506	.59731	.24105	.60518	.80430	.27885	.77705
#1	.03293	.10210	.26580	.33378	2.4404	23.937	.48059
#2	.03336	.10250	.26572	.33559	2.4018	23.805	.48526
#3	.03338	.10331	.26687	.33156	2.4168	23.856	.48805
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.2030	.27494	.47928	24.017	.25073	8.1893	.43270
Stddev	.0166	.00295	.00214	.076	.00245	.0139	.00213
%RSD	.31820	1.0747	.44730	.31816	.97777	.16967	.49211
#1	5.1839	.27570	.48139	24.104	.25064	8.1838	.43499
#2	5.2139	.27744	.47935	23.984	.24833	8.2051	.43078
#3	5.2111	.27168	.47711	23.962	.25323	8.1790	.43232
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606079301PS Acquired: 6/17/2016 15:52:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG573214-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.66555**	**.19817**	**2.5342**	**.51480**	**1.4219**	**.48595**	**.24397**
Stddev	.00226	.00738	.0069	.00054	.0029	.01132	.00374
%RSD	.33896	3.7222	.27394	.10456	.20630	2.3297	1.5339
#1	.66796	.19150	2.5282	.51528	1.4244	.49357	.24442
#2	.66518	.20609	2.5418	.51422	1.4187	.49134	.24747
#3	.66349	.19692	2.5326	.51490	1.4227	.47294	.24002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.47612**	**.76492**	F **-2.3661**
Stddev	.00219	.00048	.9891
%RSD	.46039	.06273	41.802
#1	.47621	.76449	-3.1828
#2	.47389	.76482	-2.6492
#3	.47827	.76544	-1.2664
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8726.8**	**50435.**	**2849.2**
Stddev	10.8	237.	26.1
%RSD	.12430	.46927	.91589
#1	8726.0	50703.	2821.6
#2	8738.0	50254.	2852.5
#3	8716.4	50349.	2873.5

Approved: June 20, 2016

Sample Name: L1606079301SDL Acquired: 6/17/2016 15:56:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 500 Custom ID2: Custom ID3:
Comment: WG573214-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00123	.05971	-.00148	.00695	.13307	-.00004	.31251
Stddev	.00132	.00836	.00366	.00241	.00043	.00003	.03307
%RSD	107.58	13.996	247.02	34.668	.32527	63.950	10.583
#1	-.00008	.06604	-.00065	.00419	.13294	-.00008	.27976
#2	.00120	.06286	-.00549	.00799	.13271	-.00003	.34589
#3	.00256	.05024	.00169	.00866	.13355	-.00003	.31189
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00198	.00105	.00441	.01656	.06612	.05760	.00087
Stddev	.00036	.00011	.00054	.00172	.00673	.02355	.00233
%RSD	18.118	10.253	12.222	10.413	10.181	40.879	268.52
#1	.00161	.00094	.00497	.01563	.07152	.03228	-.00080
#2	.00233	.00107	.00389	.01855	.06826	.07884	-.00013
#3	.00198	.00115	.00438	.01550	.05858	.06170	.00353
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04270	.00713	.00162	.02526	.00097	.60847	.02311
Stddev	.06359	.00375	.00028	.02922	.00058	.00384	.00029
%RSD	148.92	52.683	17.000	115.68	59.517	.63123	1.2501
#1	.01501	.00701	.00150	.04782	.00164	.60624	.02329
#2	-.00235	.00343	.00143	-.00775	.00064	.61291	.02328
#3	.11544	.01094	.00194	.03570	.00064	.60626	.02278
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606079301SDL Acquired: 6/17/2016 15:56:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 500 Custom ID2: Custom ID3:
Comment: WG573214-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01451	.00583	.02927	.00270	.18367	.00149	.00418
Stddev	.00273	.00701	.00031	.00082	.00144	.00984	.00152
%RSD	18.796	120.30	1.0541	30.259	.78513	661.76	36.418
#1	.01691	-.00174	.02907	.00330	.18204	-.00939	.00285
#2	.01154	.01210	.02911	.00301	.18419	.00407	.00584
#3	.01508	.00712	.02963	.00177	.18478	.00978	.00385
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00029	.05258	F -.18722
Stddev	.00017	.00010	.27239
%RSD	59.683	.18657	145.49
#1	.00010	.05265	-.49874
#2	.00045	.05262	-.06907
#3	.00032	.05247	.00615
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8751.6	50374.	2805.7
Stddev	20.9	125.	35.3
%RSD	.23903	.24857	1.2571
#1	8775.7	50411.	2782.7
#2	8738.6	50234.	2788.0
#3	8740.4	50476.	2846.3

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 15:59:58 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40088	10.004	.39802	.50078	.99047	.04977	9.7831	.04984
Stddev	.00276	.016	.00203	.00591	.00576	.00014	.0446	.00039
%RSD	.68802	.16319	.51042	1.1802	.58184	.27794	.45575	.79136
#1	.40092	9.9964	.39586	.50712	.98595	.04989	9.7317	.05009
#2	.39811	9.9920	.39989	.49979	.98849	.04981	9.8119	.04938
#3	.40363	10.022	.39832	.49542	.99696	.04962	9.8056	.05005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20025	.50127	.50377	3.9883	49.161	.99001	9.8097	.49745
Stddev	.00053	.00085	.00175	.0094	.216	.00752	.0402	.00232
%RSD	.26581	.16883	.34684	.23652	.44016	.75948	.41008	.46658
#1	.19964	.50116	.50269	3.9986	49.058	.98183	9.8551	.49559
#2	.20053	.50049	.50579	3.9800	49.015	.99155	9.7784	.49670
#3	.20059	.50217	.50283	3.9863	49.409	.99663	9.7955	.50005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0060	48.966	.50520	9.9480	.50395	1.1969	.40146	5.0433
Stddev	.0026	.250	.00079	.0068	.00225	.0048	.01015	.0108
%RSD	.25737	.50967	.15555	.06805	.44724	.40229	2.5271	.21387
#1	1.0083	48.832	.50517	9.9405	.50459	1.1927	.39484	5.0309
#2	1.0063	48.811	.50443	9.9536	.50145	1.2022	.41314	5.0481
#3	1.0032	49.254	.50600	9.9499	.50582	1.1958	.39640	5.0509
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 15:59:58 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0043**	**.98896**	**.99120**	**.50664**	**.99974**	**1.0002**	**1.0260**
Stddev	.0029	.00505	.00929	.00372	.00091	.0025	.8504
%RSD	.29223	.51042	.93760	.73470	.09052	.24615	82.883
#1	1.0010	.98484	.98247	.50270	.99952	.99794	.06316
#2	1.0051	.98745	1.0010	.50711	.99896	.99984	1.6744
#3	1.0067	.99459	.99016	.51010	1.0007	1.0028	1.3406
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8464.8**	**48796.**	**2787.0**
Stddev	23.6	137.	17.9
%RSD	.27904	.28091	.64252
#1	8451.4	48680.	2774.0
#2	8492.1	48947.	2807.5
#3	8451.0	48760.	2779.6

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 16:03:35 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00073**	**.00306**	**-.00169**	**.00108**	**-.00234**	**.00004**	**.03479**
Stddev	.00159	.00396	.00140	.00124	.00036	.00007	.03364
%RSD	218.87	129.52	83.096	115.49	15.212	155.23	96.679
#1	-.00075	.00695	-.00298	-.00027	-.00193	-.00003	.00166
#2	.00242	-.00096	-.00190	.00218	-.00251	.00005	.03380
#3	.00051	.00318	-.00019	.00132	-.00258	.00010	.06891
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**.00003**	**.00034**	**.00040**	**.00112**	**.06739**	**.00136**
Stddev	.00010	.00059	.00043	.00075	.03060	.02868	.00146
%RSD	114.22	2075.4	126.86	188.52	2730.9	42.561	107.23
#1	.00020	-.00064	.00071	.00125	.03090	.09837	.00046
#2	.00005	.00027	-.00012	-.00018	-.03023	.06203	.00304
#3	.00001	.00046	.00042	.00013	.00269	.04176	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.05961**	**-.00024**	**.00445**	**.01255**	**-.00006**	**.00121**	**.00127**
Stddev	.01166	.00166	.00059	.02017	.00074	.00433	.00096
%RSD	19.568	697.80	13.288	160.68	1136.8	357.07	75.798
#1	-.05215	.00163	.00388	.02414	.00074	.00053	.00114
#2	-.05363	-.00080	.00441	.02426	-.00022	-.00274	.00229
#3	-.07305	-.00155	.00506	-.01074	-.00071	.00584	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 16:03:35 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00606	.00330	.00470	.00064	-.00025	-.00047	.00184
Stddev	.00263	.00271	.00123	.00051	.00033	.00696	.00066
%RSD	43.422	82.097	26.200	79.835	130.79	1473.1	35.813
#1	.00859	.00604	.00613	.00077	-.00028	-.00522	.00229
#2	.00334	.00062	.00401	.00008	-.00057	-.00372	.00108
#3	.00624	.00325	.00398	.00107	.00009	.00752	.00215
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00013	-.00017	F -.67454
Stddev	.00040	.00024	1.4683
%RSD	314.52	145.04	217.67
#1	-.00017	.00004	-2.2306
#2	-.00003	-.00010	.68651
#3	.00058	-.00043	-.47954
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8667.8	50369.	2822.1
Stddev	18.0	251.	2.6
%RSD	.20739	.49780	.09326
#1	8657.2	50086.	2825.0
#2	8688.6	50460.	2821.3
#3	8657.8	50562.	2819.9

Approved: June 20, 2016

Sample Name: LLCCV Acquired: 6/17/2016 16:07:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00636	.16699	.00597	.07955	.00621	.00154	.38982
Stddev	.00224	.00593	.00259	.00157	.00149	.00008	.02564
%RSD	35.253	3.5500	43.295	1.9749	23.944	5.0938	6.5763
#1	.00595	.16024	.00338	.07976	.00729	.00162	.36463
#2	.00878	.17134	.00855	.08100	.00682	.00147	.38895
#3	.00435	.16940	.00599	.07788	.00451	.00154	.41587
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00101	.00412	.00352	.00499	.06925	.73968	.08307
Stddev	.00025	.00018	.00108	.00104	.00999	.10810	.00479
%RSD	24.609	4.3027	30.582	20.789	14.422	14.614	5.7617
#1	.00120	.00409	.00260	.00576	.05838	.86438	.08102
#2	.00073	.00396	.00326	.00381	.07135	.68211	.08854
#3	.00108	.00431	.00471	.00540	.07802	.67255	.07965
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.42109	.00972	.00848	.41303	.01495	.75269	.01105
Stddev	.02151	.00205	.00050	.01547	.00051	.00737	.00196
%RSD	5.1077	21.127	5.8922	3.7443	3.3986	.97953	17.731
#1	.41932	.01117	.00821	.40894	.01546	.76034	.01006
#2	.40053	.01062	.00906	.43013	.01445	.75209	.01331
#3	.44343	.00737	.00818	.40002	.01495	.74563	.00979
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: LLCCV Acquired: 6/17/2016 16:07:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.07595	.01997	.77311	.39092	.03872	.02402	.15095
Stddev	.00356	.00688	.00142	.00147	.00042	.00335	.00245
%RSD	4.6858	34.465	.18402	.37658	1.0920	13.931	1.6236
#1	.08002	.01421	.77231	.39233	.03887	.02148	.15342
#2	.07343	.01810	.77227	.38939	.03905	.02781	.14851
#3	.07439	.02759	.77475	.39105	.03824	.02277	.15091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00757	.01689	F -68.912
Stddev	.00069	.00024	1.371
%RSD	9.0541	1.4312	1.9896
#1	.00679	.01662	-70.493
#2	.00806	.01695	-68.044
#3	.00787	.01710	-68.199
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8654.2	50178.	2833.8
Stddev	5.6	302.	15.2
%RSD	.06521	.60169	.53795
#1	8660.6	50369.	2817.7
#2	8650.2	49830.	2848.0
#3	8651.7	50336.	2835.9

Approved: June 20, 2016

Sample Name: L1606056401 Acquired: 6/17/2016 16:11:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG572637-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00071	.00351	.00064	.40460	7.1095	.00001	121.04
Stddev	.00162	.00138	.00170	.00108	.0262	.00003	.46
%RSD	227.66	39.453	264.60	.26621	.36844	347.38	.37951
#1	.00018	.00372	-.00122	.40338	7.1190	.00004	121.19
#2	-.00259	.00478	.00212	.40503	7.1296	-.00002	121.41
#3	.00027	.00203	.00103	.40541	7.0799	.00001	120.53
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.00125	.00089	.00074	.70841	5.8136	.49804
Stddev	.00020	.00025	.00065	.00114	.03877	.2740	.00379
%RSD	629.21	19.863	72.422	153.66	5.4727	4.7131	.76103
#1	-.00017	.00098	.00015	.00074	.75112	5.8318	.49737
#2	.00024	.00147	.00134	.00188	.69864	6.0780	.50212
#3	.00003	.00129	.00119	-.00039	.67546	5.5309	.49463
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.369	.07780	.00063	F 282.38	-.00075	.01032	-.00221
Stddev	.093	.00194	.00041	1.18	.00114	.00514	.00163
%RSD	.75550	2.4965	64.832	.41931	152.33	49.841	73.605
#1	12.334	.07963	.00091	283.06	-.00066	.00949	-.00376
#2	12.475	.07577	.00081	283.07	-.00193	.00564	-.00236
#3	12.298	.07800	.00016	281.01	.00035	.01583	-.00052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 20, 2016

Sample Name: L1606056401 Acquired: 6/17/2016 16:11:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG572637-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00377	.00303	.08542	-.00084	F 19.258	-.01443	.00347
Stddev	.00313	.00131	.00212	.00048	.113	.00570	.00215
%RSD	83.093	43.270	2.4765	56.413	.58434	39.499	61.900
#1	-.00078	.00401	.08676	-.00042	19.310	-.01943	.00101
#2	-.00703	.00355	.08298	-.00136	19.129	-.01562	.00441
#3	-.00351	.00154	.08652	-.00076	19.334	-.00823	.00498
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00149	.00211	.83554
Stddev	.00102	.00018	1.0530
%RSD	68.631	8.2887	126.03
#1	-.00211	.00193	-.24866
#2	-.00031	.00228	1.8543
#3	-.00206	.00213	.90096
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8339.3	47799.	2789.6
Stddev	8.0	138.	8.5
%RSD	.09652	.28962	.30427
#1	8340.8	47825.	2799.4
#2	8330.7	47922.	2783.9
#3	8346.5	47649.	2785.5

Approved: June 20, 2016

Sample Name: L1606056405S Acquired: 6/17/2016 16:15:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG572637-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00160**	**.05376**	**.00557**	**.42893**	**7.1670**	**.00024**	**121.63**
Stddev	.00044	.01744	.00247	.00594	.0815	.00006	1.40
%RSD	27.440	32.445	44.291	1.3851	1.1371	24.370	1.1540
#1	.00201	.04048	.00497	.42392	7.0753	.00019	120.11
#2	.00114	.07352	.00346	.42737	7.1943	.00030	121.89
#3	.00165	.04728	.00828	.43549	7.2313	.00023	122.88
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**.00198**	**.00249**	**.00338**	**.74638**	**6.2030**	**.50996**
Stddev	.00030	.00036	.00112	.00076	.01348	.0881	.00480
%RSD	297.26	18.293	45.003	22.412	1.8054	1.4195	.94030
#1	-.00007	.00214	.00197	.00378	.73341	6.1017	.50443
#2	.00044	.00223	.00377	.00251	.76031	6.2460	.51292
#3	-.00008	.00156	.00172	.00386	.74541	6.2612	.51253
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**12.650**	**.07981**	**.00360**	F **284.04**	**.00125**	**.05965**	**.00451**
Stddev	.098	.00135	.00036	2.88	.00025	.00492	.00229
%RSD	.77453	1.6953	9.9866	1.0139	19.732	8.2448	50.654
#1	12.727	.08012	.00387	280.84	.00100	.06060	.00646
#2	12.540	.08098	.00374	284.83	.00124	.05432	.00509
#3	12.684	.07833	.00319	286.43	.00149	.06402	.00200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 20, 2016

Sample Name: L1606056405S Acquired: 6/17/2016 16:15:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG572637-06

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00480**	**-.00123**	**.11351**	**.00291**	F **19.147**	**-.02004**	**.00392**
Stddev	.00153	.00573	.00331	.00058	.189	.00623	.00209
%RSD	31.747	466.26	2.9150	19.801	.98655	31.111	53.398
#1	.00525	-.00624	.10976	.00332	18.929	-.02706	.00466
#2	.00606	-.00247	.11600	.00316	19.258	-.01790	.00553
#3	.00311	.00502	.11478	.00225	19.253	-.01515	.00155
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00493**	**.00876**	F **-.32603**
Stddev	.00083	.00041	.29623
%RSD	16.799	4.6422	90.860
#1	.00481	.00854	-.58730
#2	.00582	.00851	-.00420
#3	.00417	.00923	-.38657
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8301.4**	**47696.**	**2790.4**
Stddev	9.8	4.	24.5
%RSD	.11860	.00850	.87786
#1	8290.2	47699.	2816.9
#2	8305.7	47691.	2785.7
#3	8308.4	47697.	2768.6

Approved: June 20, 2016

Sample Name: L1606056407SD Acquired: 6/17/2016 16:19:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG572637-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00158**	**.05782**	**.00602**	**.41310**	**6.9604**	**.00020**	**118.13**
Stddev	.00279	.01094	.00359	.00375	.0334	.00001	.75
%RSD	176.92	18.919	59.675	.90870	.48050	5.2915	.63851
#1	.00013	.07045	.00194	.40977	6.9231	.00021	117.26
#2	.00479	.05151	.00869	.41237	6.9707	.00019	118.61
#3	-.00019	.05149	.00743	.41717	6.9876	.00020	118.51
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.00200**	**.00261**	**.00461**	**.70383**	**5.9326**	**.49586**
Stddev	.00015	.00024	.00085	.00039	.02132	.1483	.00288
%RSD	90.080	11.785	32.525	8.4679	3.0298	2.4996	.58026
#1	-.00004	.00214	.00175	.00469	.70573	5.7738	.49303
#2	-.00032	.00173	.00264	.00495	.72414	6.0674	.49879
#3	-.00012	.00214	.00344	.00419	.68162	5.9565	.49575
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**12.207**	**.07775**	**.00344**	F **275.83**	**.00135**	**.05536**	**.00399**
Stddev	.093	.00158	.00029	1.80	.00093	.00502	.00356
%RSD	.76349	2.0333	8.5237	.65277	68.728	9.0719	89.367
#1	12.289	.07901	.00370	273.75	.00179	.05284	.00478
#2	12.106	.07828	.00349	276.76	.00199	.05210	.00708
#3	12.227	.07598	.00312	276.98	.00029	.06114	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 20, 2016

Sample Name: L1606056407SD Acquired: 6/17/2016 16:19:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG572637-07

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	.00841	.11149	.00291	F 18.564	-.01356	.00602
Stddev	.00292	.00353	.00343	.00144	.304	.00645	.00249
%RSD	1301.2	41.967	3.0744	49.512	1.6387	47.591	41.385
#1	.00306	.00482	.10755	.00228	18.213	-.01977	.00460
#2	-.00119	.00854	.11378	.00456	18.726	-.01403	.00890
#3	-.00254	.01188	.11315	.00190	18.754	-.00689	.00457
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00354	.00720	F -.41791
Stddev	.00048	.00027	1.5795
%RSD	13.474	3.7357	377.95
#1	.00341	.00698	-1.0212
#2	.00314	.00750	-1.6068
#3	.00407	.00712	1.3743
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8332.5	47737.	2811.9
Stddev	2.9	160.	15.9
%RSD	.03425	.33561	.56400
#1	8335.7	47678.	2811.8
#2	8331.8	47918.	2796.1
#3	8330.1	47614.	2827.8

Approved: June 20, 2016

Sample Name: L1606059004 Acquired: 6/17/2016 16:23:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.02362**	**.24953**	**.05023**	**.33712**	**-.00002**	**129.18**	**.00033**
Stddev	.00074	.00743	.00461	.00506	.00247	.00006	.87	.00016
%RSD	373.62	31.447	1.8478	10.080	.73156	391.93	.67406	49.936
#1	-.00040	.02639	.24447	.05192	.33986	-.00005	130.13	.00041
#2	.00063	.01520	.25348	.04453	.33643	-.00005	128.97	.00044
#3	-.00082	.02926	.25065	.05422	.33508	.00006	128.43	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00127**	**.00104**	**.00130**	**9.1064**	**.93613**	**.00766**	**15.685**	**3.4681**
Stddev	.00038	.00178	.00061	.0516	.09459	.00501	.025	.0092
%RSD	29.787	171.23	46.997	.56619	10.104	65.444	.15935	.26497
#1	.00096	.00309	.00064	9.1656	.84769	.00587	15.656	3.4736
#2	.00170	.00008	.00142	9.0819	.92484	.00378	15.702	3.4733
#3	.00116	-.00006	.00185	9.0716	1.0359	.01331	15.698	3.4575
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00450**	**41.248**	**.00073**	**.02294**	**.00267**	**.00064**	**.00565**	**12.064**
Stddev	.00014	.308	.00114	.00420	.00310	.00287	.01055	.015
%RSD	3.1913	.74687	156.80	18.327	115.99	445.04	186.69	.12114
#1	.00466	41.553	.00130	.02151	.00049	.00367	.01355	12.052
#2	.00446	41.255	.00147	.02768	.00130	.00031	-.00633	12.080
#3	.00438	40.937	-.00059	.01964	.00621	-.00204	.00975	12.060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 20, 2016

Sample Name: L1606059004 Acquired: 6/17/2016 16:23:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00144	.54563	-.01435	.00165	-.00067	.02123	.91986
Stddev	.00078	.00425	.00265	.00304	.00085	.00007	.35659
%RSD	53.703	.77903	18.470	184.35	125.78	.33952	38.766
#1	.00063	.54967	-.01720	.00204	-.00014	.02116	1.0162
#2	.00217	.54603	-.01389	.00447	-.00165	.02123	.52500
#3	.00153	.54119	-.01196	-.00157	-.00023	.02130	1.2184
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7808.1	45267.	2618.1
Stddev	3.8	92.	34.0
%RSD	.04848	.20376	1.2993
#1	7805.1	45244.	2588.1
#2	7806.8	45369.	2655.1
#3	7812.3	45189.	2611.2

Approved: June 20, 2016

Sample Name: L1606059004PS Acquired: 6/17/2016 16:27:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572900-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.22018**	**5.4525**	**.44502**	**1.1187**	**.84544**	**.02711**	**122.83**
Stddev	.00309	.0261	.00076	.0031	.00669	.00002	.78
%RSD	1.4046	.47771	.17075	.27482	.79127	.05615	.63352
#1	.22375	5.4239	.44557	1.1191	.84996	.02712	123.31
#2	.21834	5.4590	.44533	1.1155	.84860	.02709	123.25
#3	.21845	5.4748	.44415	1.1216	.83775	.02712	121.93
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02715**	**.10816**	**.27112**	**.26642**	**10.452**	**27.659**	**.55820**
Stddev	.00015	.00048	.00111	.00119	.065	.113	.00202
%RSD	.55605	.44183	.40945	.44787	.62069	.41001	.36144
#1	.02732	.10834	.26987	.26507	10.507	27.785	.56036
#2	.02709	.10762	.27200	.26689	10.467	27.566	.55786
#3	.02704	.10852	.27149	.26731	10.380	27.624	.55637
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**19.453**	**3.4004**	**.56189**	**64.183**	**.26787**	**5.4552**	**.27211**
Stddev	.256	.0150	.00104	.451	.00090	.0104	.00204
%RSD	1.3171	.44258	.18533	.70289	.33550	.19098	.74832
#1	19.721	3.4173	.56287	64.512	.26845	5.4434	.27130
#2	19.427	3.3886	.56201	64.369	.26684	5.4591	.27061
#3	19.211	3.3951	.56080	63.669	.26833	5.4631	.27443
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606059004PS Acquired: 6/17/2016 16:27:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572900-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.65974	.21491	13.681	.54352	1.0118	.53191	.26923
Stddev	.00116	.00477	.018	.00102	.0078	.00297	.00195
%RSD	.17586	2.2206	.13341	.18799	.77308	.55894	.72429
#1	.65987	.21873	13.702	.54367	1.0185	.52885	.26739
#2	.66083	.21644	13.668	.54243	1.0137	.53209	.26903
#3	.65852	.20956	13.674	.54446	1.0032	.53479	.27127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.54698	.55071	F -2.5081
Stddev	.00125	.00084	.0338
%RSD	.22783	.15225	1.3482
#1	.54583	.55145	-2.4868
#2	.54679	.55089	-2.4904
#3	.54830	.54980	-2.5471
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7769.8	44909.	2608.7
Stddev	11.4	311.	31.9
%RSD	.14686	.69178	1.2217
#1	7766.8	44556.	2588.0
#2	7760.2	45027.	2592.7
#3	7782.5	45143.	2645.4

Approved: June 20, 2016

Sample Name: L1606059004SDL Acquired: 6/17/2016 16:31:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG572900-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**.00689**	**.04380**	**.01200**	**.05673**	**.00005**	**22.981**
Stddev	.00156	.00622	.00198	.00130	.00125	.00003	.099
%RSD	548.84	90.202	4.5171	10.863	2.1977	60.632	.42999
#1	-.00163	.01271	.04572	.01224	.05767	.00008	22.912
#2	-.00065	.00763	.04391	.01059	.05720	.00003	23.094
#3	.00142	.00034	.04177	.01316	.05532	.00003	22.936
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.00042**	**.00011**	**.00097**	**1.6119**	**.23603**	**.00413**
Stddev	.00005	.00034	.00085	.00065	.0456	.08477	.00261
%RSD	116.66	80.326	805.96	66.826	2.8304	35.917	63.232
#1	-.00004	.00036	.00108	.00023	1.5776	.32546	.00543
#2	.00000	.00078	-.00033	.00125	1.5945	.22577	.00584
#3	-.00010	.00011	-.00044	.00143	1.6637	.15685	.00112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.7470**	**.61491**	**.00111**	**7.3509**	**.00009**	**.00996**	**.00104**
Stddev	.1300	.00307	.00014	.0592	.00057	.01130	.00055
%RSD	4.7323	.49880	13.054	.80520	607.06	113.47	52.660
#1	2.6042	.61152	.00114	7.3942	-.00032	.01509	.00149
#2	2.8584	.61749	.00124	7.3750	.00075	.01778	.00119
#3	2.7785	.61573	.00095	7.2835	-.00015	-.00300	.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606059004SDL Acquired: 6/17/2016 16:31:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG572900-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00114**	**-.00330**	**2.1468**	**-.00003**	**.09391**	**-.00633**	**.00362**
Stddev	.00801	.00449	.0035	.00035	.00081	.00404	.00084
%RSD	702.92	136.19	.16504	1148.1	.85874	63.825	23.319
#1	-.00332	.00097	2.1434	.00028	.09340	-.00796	.00386
#2	-.00365	-.00799	2.1465	.00004	.09348	-.00173	.00431
#3	.01039	-.00288	2.1505	-.00041	.09484	-.00929	.00268
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00100**	**.00416**	F **-.53942**
Stddev	.00026	.00027	.83728
%RSD	26.028	6.5423	155.22
#1	-.00112	.00386	-1.4051
#2	-.00070	.00423	-.47929
#3	-.00117	.00439	.26619
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8773.4**	**50789.**	**2847.2**
Stddev	44.5	301.	32.1
%RSD	.50710	.59228	1.1278
#1	8819.1	50589.	2857.5
#2	8770.9	50643.	2811.2
#3	8730.3	51135.	2872.9

Approved: June 20, 2016

Sample Name: L1606059004SDL Acquired: 6/17/2016 16:35:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG572900-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00222**	**-.00239**	**.00785**	**.00478**	**.01039**	**.00006**	**4.8244**
Stddev	.00154	.00453	.00215	.00396	.00112	.00002	.0234
%RSD	69.704	189.17	27.437	82.950	10.777	31.418	.48578
#1	.00373	.00227	.00545	.00556	.00911	.00004	4.8034
#2	.00228	-.00268	.00960	.00829	.01092	.00007	4.8202
#3	.00064	-.00677	.00849	.00048	.01115	.00008	4.8497
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00023**	**.00018**	**-.00044**	**.00101**	**.30422**	**-.03809**	**.00260**
Stddev	.00016	.00046	.00023	.00032	.00697	.05415	.00462
%RSD	71.141	261.67	51.442	31.409	2.2914	142.19	177.52
#1	.00009	.00031	-.00070	.00102	.29700	-.09150	-.00266
#2	.00041	.00055	-.00026	.00069	.31091	-.03953	.00599
#3	.00020	-.00034	-.00037	.00132	.30475	.01678	.00449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.58022**	**.12667**	**.00029**	**1.4850**	**-.00074**	**.00643**	**-.00069**
Stddev	.06353	.00088	.00003	.0437	.00153	.00311	.00197
%RSD	10.949	.69753	8.9090	2.9425	208.24	48.408	286.90
#1	.57865	.12613	.00027	1.4469	-.00101	.00661	-.00145
#2	.51749	.12769	.00027	1.4754	.00092	.00945	.00155
#3	.64453	.12618	.00031	1.5327	-.00211	.00323	-.00216
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606059004SDL Acquired: 6/17/2016 16:35:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG572900-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00347**	**.00895**	**.45953**	**-.00036**	**.01916**	**.00013**	**.00429**
Stddev	.00198	.00346	.00749	.00030	.00036	.00272	.00209
%RSD	57.251	38.640	1.6306	83.354	1.8602	2096.4	48.814
#1	-.00121	.00531	.45114	-.00002	.01889	.00031	.00571
#2	-.00496	.00934	.46189	-.00057	.01956	-.00268	.00189
#3	-.00422	.01220	.46556	-.00050	.01903	.00276	.00527
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00010**	**.00178**	F **-.07660**
Stddev	.00069	.00006	.64918
%RSD	666.83	3.3655	847.54
#1	.00059	.00179	.60790
#2	.00040	.00171	-.68348
#3	-.00068	.00183	-.15421
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8743.9**	**50681.**	**2826.5**
Stddev	21.5	143.	13.4
%RSD	.24631	.28304	.47402
#1	8745.4	50837.	2827.6
#2	8721.6	50651.	2812.7
#3	8764.6	50554.	2839.4

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 16:39:00 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39995	9.9922	.39657	.50906	.98752	.05001	9.7807	.04985
Stddev	.00152	.0067	.00186	.00538	.00333	.00040	.0715	.00009
%RSD	.38049	.06726	.46965	1.0560	.33745	.80956	.73115	.19058
#1	.40010	9.9993	.39691	.50538	.98367	.04986	9.7154	.04990
#2	.40138	9.9914	.39824	.50657	.98937	.04971	9.8571	.04974
#3	.39835	9.9860	.39456	.51523	.98952	.05047	9.7694	.04990
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20058	.50309	.50739	3.9942	49.476	.99000	9.7900	.49820
Stddev	.00019	.00319	.00029	.0205	.153	.00397	.0724	.00265
%RSD	.09515	.63485	.05660	.51340	.30855	.40126	.73989	.53286
#1	.20067	.50097	.50747	3.9706	49.643	.99389	9.8088	.50006
#2	.20072	.50154	.50707	4.0079	49.444	.99015	9.7101	.49516
#3	.20037	.50677	.50762	4.0041	49.342	.98595	9.8512	.49938
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0093	49.224	.50751	9.9920	.50807	1.2079	.40153	5.0686
Stddev	.0034	.120	.00050	.0139	.00437	.0069	.00231	.0094
%RSD	.33386	.24423	.09828	.13879	.86092	.57431	.57473	.18587
#1	1.0119	49.280	.50709	9.9814	.51217	1.2088	.39937	5.0612
#2	1.0106	49.306	.50806	10.008	.50856	1.2144	.40126	5.0792
#3	1.0055	49.086	.50736	9.9869	.50347	1.2006	.40396	5.0654
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 16:39:00 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0068**	**.98422**	**1.0035**	**.50990**	**1.0051**	**1.0071**	**1.0693**
Stddev	.0004	.00315	.0048	.00510	.0090	.0024	.6519
%RSD	.03513	.31990	.47393	.99948	.89481	.23783	60.963
#1	1.0065	.98412	1.0007	.50913	1.0028	1.0090	1.1843
#2	1.0072	.98742	1.0090	.50524	.99751	1.0078	1.6560
#3	1.0069	.98113	1.0009	.51534	1.0150	1.0044	.36758
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8464.7**	**49033.**	**2782.4**
Stddev	21.8	109.	18.3
%RSD	.25801	.22330	.65616
#1	8439.7	49130.	2764.1
#2	8474.5	49054.	2782.4
#3	8479.9	48914.	2800.7

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 16:42:38 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00137**	**-.00055**	**-.00294**	**.00640**	**-.00103**	**.00005**	**-.00751**
Stddev	.00171	.00995	.00344	.00038	.00118	.00005	.06485
%RSD	125.25	1795.6	116.86	6.0102	114.15	94.499	863.46
#1	.00053	-.00741	-.00662	.00666	-.00191	.00008	-.08220
#2	-.00184	.01086	.00019	.00657	-.00150	-.00000	.02520
#3	-.00280	-.00511	-.00239	.00595	.00031	.00008	.03447
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**.00011**	**-.00039**	**.00178**	**-.00793**	**.03356**	**.00065**
Stddev	.00020	.00015	.00079	.00103	.01440	.04352	.00650
%RSD	193.27	132.94	203.54	58.159	181.65	129.65	1004.3
#1	.00032	-.00005	-.00121	.00111	-.02455	.07524	-.00403
#2	-.00006	.00024	.00036	.00125	-.00004	-.01159	-.00210
#3	.00004	.00013	-.00031	.00297	.00080	.03704	.00807
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03756**	**.00130**	**.00451**	**.01311**	**.00001**	**-.00109**	**.00003**
Stddev	.03203	.00221	.00053	.03637	.00046	.00720	.00340
%RSD	85.284	169.26	11.689	277.50	4738.4	660.36	10784.
#1	.06037	.00216	.00404	.02402	.00020	.00530	-.00387
#2	.05137	-.00120	.00442	.04277	-.00051	.00032	.00165
#3	.00094	.00295	.00508	-.02747	.00034	-.00890	.00232
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 16:42:38 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00292**	**-.00123**	**.00375**	**-.00013**	**.00009**	**.00142**	**.00091**
Stddev	.00484	.00417	.00060	.00086	.00052	.00485	.00215
%RSD	165.56	339.67	16.026	643.77	581.53	340.90	235.52
#1	.00762	-.00403	.00352	-.00054	-.00005	.00386	-.00077
#2	.00318	.00357	.00443	-.00071	.00066	.00457	.00017
#3	-.00204	-.00323	.00329	.00085	-.00034	-.00416	.00333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00030**	**-.00007**	F **-.60663**
Stddev	.00095	.00005	.77697
%RSD	317.05	67.528	128.08
#1	.00103	-.00011	-.83717
#2	-.00077	-.00010	-1.2422
#3	.00064	-.00002	.25952
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8632.2**	**49916.**	**2797.7**
Stddev	33.1	298.	20.8
%RSD	.38289	.59734	.74362
#1	8599.0	49714.	2813.0
#2	8632.7	50258.	2806.2
#3	8665.0	49775.	2774.0

Approved: June 20, 2016

Sample Name: L1606056402 Acquired: 6/17/2016 16:46:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG572637-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00197**	**.00642**	**.00164**	**.40522**	**7.2782**	**-.00004**	**122.64**
Stddev	.00197	.01087	.00100	.00215	.0199	.00002	.40
%RSD	100.12	169.34	61.459	.52977	.27300	37.911	.32813
#1	.00308	.01057	.00059	.40318	7.2815	-.00006	122.84
#2	-.00031	.01461	.00259	.40746	7.2569	-.00003	122.18
#3	.00313	-.00592	.00173	.40502	7.2962	-.00003	122.91
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.00130**	**.00106**	**.00083**	**.53182**	**5.7768**	**.51164**
Stddev	.00026	.00012	.00041	.00082	.01709	.0235	.00252
%RSD	67.845	8.9930	38.332	99.181	3.2129	.40605	.49332
#1	-.00061	.00124	.00142	-.00007	.51210	5.7556	.50873
#2	-.00010	.00123	.00116	.00154	.54200	5.8020	.51318
#3	-.00043	.00144	.00062	.00100	.54137	5.7727	.51300
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**12.609**	**.07814**	**.00065**	F **286.64**	**-.00150**	**.00657**	**.00078**
Stddev	.116	.00184	.00022	.54	.00133	.00704	.00223
%RSD	.91793	2.3561	34.766	.18884	88.299	107.06	287.26
#1	12.742	.07892	.00047	286.84	-.00155	.01257	.00300
#2	12.551	.07604	.00090	286.03	-.00281	.00832	.00079
#3	12.534	.07947	.00057	287.06	-.00015	-.00117	-.00146
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 20, 2016

Sample Name: L1606056402 Acquired: 6/17/2016 16:46:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG572637-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00248**	**.00573**	**.07087**	**-.00176**	F **19.152**	**-.01736**	**.00341**
Stddev	.00494	.00855	.00329	.00040	.247	.00816	.00262
%RSD	198.83	149.23	4.6396	22.910	1.2888	47.001	76.878
#1	-.00449	-.00413	.07260	-.00166	19.063	-.02678	.00550
#2	.00314	.01105	.06708	-.00220	19.430	-.01236	.00425
#3	-.00610	.01028	.07294	-.00141	18.962	-.01295	.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00136**	**.00188**	**.26018**
Stddev	.00062	.00010	.12527
%RSD	45.462	5.3176	48.147
#1	-.00065	.00193	.11648
#2	-.00167	.00176	.31771
#3	-.00177	.00193	.34635
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8329.8**	**47710.**	**2797.0**
Stddev	7.7	99.	23.3
%RSD	.09275	.20810	.83406
#1	8333.5	47755.	2777.9
#2	8320.9	47779.	2790.1
#3	8335.0	47596.	2823.0

Approved: June 20, 2016

Sample Name: L1606056403 Acquired: 6/17/2016 16:50:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00126	.01052	.00159	.39664	6.7501	.00006	114.79
Stddev	.00147	.00383	.00290	.00189	.0055	.00011	.15
%RSD	117.27	36.431	182.18	.47747	.08120	178.73	.13135
#1	.00294	.00915	.00494	.39675	6.7449	.00007	114.62
#2	.00019	.00755	-.00023	.39847	6.7558	-.00005	114.90
#3	.00064	.01484	.00007	.39469	6.7495	.00016	114.86
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	.00100	-.00030	.00084	.68508	5.5480	.48145
Stddev	.00047	.00036	.00011	.00060	.01732	.0338	.00175
%RSD	308.24	35.807	38.538	71.396	2.5284	.60884	.36318
#1	-.00019	.00099	-.00028	.00022	.70158	5.5830	.48151
#2	.00034	.00065	-.00042	.00142	.66704	5.5454	.48316
#3	-.00061	.00137	-.00019	.00087	.68662	5.5156	.47967
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	11.856	.06994	.00040	F 271.22	-.00115	.00793	.00170
Stddev	.128	.00156	.00030	.58	.00101	.00653	.00079
%RSD	1.0816	2.2296	73.614	.21252	88.182	82.320	46.204
#1	11.726	.07164	.00020	270.59	-.00015	.00786	.00258
#2	11.982	.06857	.00074	271.71	-.00113	.01450	.00106
#3	11.859	.06963	.00026	271.37	-.00218	.00144	.00147
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 20, 2016

Sample Name: L1606056403 Acquired: 6/17/2016 16:50:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00253	.00095	.08301	-.00076	F 18.031	-.02106	.00487
Stddev	.00042	.00928	.00412	.00097	.248	.00433	.00179
%RSD	16.513	976.76	4.9624	127.76	1.3772	20.583	36.726
#1	.00241	-.00931	.07855	-.00188	17.751	-.01656	.00521
#2	.00300	.00877	.08380	-.00030	18.225	-.02521	.00294
#3	.00219	.00339	.08668	-.00011	18.117	-.02142	.00646
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00051	.00193	F -.47559
Stddev	.00097	.00011	1.2082
%RSD	189.69	5.7088	254.04
#1	-.00096	.00200	-1.1611
#2	.00060	.00200	-1.1851
#3	-.00118	.00181	.91945
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8323.5	47789.	2816.4
Stddev	31.7	97.	19.3
%RSD	.38089	.20226	.68601
#1	8353.4	47732.	2827.1
#2	8290.3	47735.	2794.1
#3	8326.9	47901.	2828.1

Approved: June 20, 2016

Sample Name: L1606056404 Acquired: 6/17/2016 16:54:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00030**	**.00638**	**.00101**	**.41082**	**7.3350**	**.00002**	**123.56**
Stddev	.00172	.00613	.00121	.00259	.0563	.00011	.95
%RSD	569.20	96.070	119.14	.63030	.76819	653.59	.76571
#1	.00094	.01312	.00082	.41218	7.2701	.00012	122.49
#2	.00042	.00115	-.00008	.40784	7.3715	.00002	124.26
#3	-.00227	.00486	.00231	.41245	7.3634	-.00009	123.94
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**.00141**	**.00080**	**.00097**	**.58371**	**5.9646**	**.51200**
Stddev	.00017	.00061	.00047	.00120	.01543	.0236	.00436
%RSD	158.31	43.315	59.146	122.69	2.6432	.39547	.85119
#1	-.00022	.00184	.00044	.00089	.56611	5.9802	.50914
#2	.00009	.00071	.00063	-.00018	.59491	5.9762	.51702
#3	-.00020	.00168	.00133	.00221	.59010	5.9375	.50985
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**12.722**	**.07926**	**.00025**	F **287.19**	**-.00103**	**.00738**	**.00152**
Stddev	.178	.00217	.00020	1.56	.00061	.00657	.00538
%RSD	1.3960	2.7372	80.224	.54400	59.963	89.088	353.76
#1	12.925	.07794	.00023	285.42	-.00162	.01280	-.00280
#2	12.597	.07807	.00045	288.38	-.00107	.00926	.00754
#3	12.643	.08176	.00006	287.77	-.00039	.00007	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 20, 2016

Sample Name: L1606056404 Acquired: 6/17/2016 16:54:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00075	.00300	.06825	-.00048	F 19.444	-.01415	.00611
Stddev	.00291	.00318	.00216	.00059	.397	.00295	.00068
%RSD	387.45	106.13	3.1715	123.96	2.0396	20.846	11.200
#1	.00174	-.00061	.06594	-.00115	19.022	-.01222	.00609
#2	-.00004	.00421	.07024	-.00028	19.808	-.01754	.00543
#3	-.00394	.00540	.06857	-.00001	19.501	-.01268	.00680
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00084	.00193	.50821
Stddev	.00017	.00007	.31836
%RSD	19.701	3.8145	62.643
#1	-.00070	.00186	.84507
#2	-.00102	.00192	.46725
#3	-.00080	.00200	.21231
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8302.9	47648.	2774.0
Stddev	12.3	291.	5.8
%RSD	.14826	.61124	.20915
#1	8312.9	47565.	2772.6
#2	8289.2	47972.	2780.3
#3	8306.6	47408.	2769.0

Approved: June 20, 2016

Sample Name: L1606056406S Acquired: 6/17/2016 16:58:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG572637-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00450	.05512	.00397	.40928	6.9475	.00029	116.84
Stddev	.00038	.00855	.00302	.00316	.0503	.00007	.94
%RSD	8.4062	15.505	75.871	.77161	.72463	22.636	.80277
#1	.00442	.05449	.00330	.40749	6.9054	.00030	116.01
#2	.00417	.06397	.00727	.40742	6.9339	.00022	116.66
#3	.00491	.04691	.00135	.41292	7.0033	.00035	117.86
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00000	.00182	.00216	.00345	.55059	5.7496	.48978
Stddev	.00021	.00006	.00171	.00082	.01027	.0827	.00232
%RSD	4605.9	3.3543	78.989	23.827	1.8658	1.4385	.47424
#1	-.00010	.00181	.00187	.00291	.56026	5.6808	.48725
#2	.00025	.00188	.00062	.00305	.55170	5.7266	.49025
#3	-.00013	.00176	.00400	.00440	.53981	5.8413	.49183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	12.106	.07737	.00335	F 272.76	.00190	.05862	.00321
Stddev	.040	.00282	.00031	2.17	.00054	.00885	.00401
%RSD	.33390	3.6384	9.1193	.79522	28.448	15.096	124.84
#1	12.087	.07812	.00360	270.95	.00132	.05226	.00660
#2	12.079	.07426	.00343	272.17	.00239	.05488	.00423
#3	12.153	.07974	.00301	275.17	.00200	.06873	-.00121
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 20, 2016

Sample Name: L1606056406S Acquired: 6/17/2016 16:58:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG572637-08

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00225**	**.00576**	**.09213**	**.00234**	F **18.408**	**-.01376**	**.00664**
Stddev	.00237	.00559	.00099	.00061	.396	.00428	.00257
%RSD	105.31	97.039	1.0710	25.877	2.1525	31.126	38.668
#1	.00497	.01193	.09179	.00302	17.999	-.01813	.00675
#2	.00061	.00105	.09136	.00216	18.436	-.00957	.00402
#3	.00118	.00429	.09325	.00185	18.790	-.01358	.00915
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00380**	**.00683**	F **-.24930**
Stddev	.00063	.00014	.89248
%RSD	16.672	2.0358	357.99
#1	.00308	.00671	-1.0729
#2	.00402	.00680	.69896
#3	.00429	.00698	-.37398
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8309.5**	**47559.**	**2785.5**
Stddev	12.0	320.	25.6
%RSD	.14416	.67333	.91861
#1	8314.9	47214.	2812.6
#2	8317.9	47847.	2781.9
#3	8295.8	47615.	2761.8

Approved: June 20, 2016

Sample Name: L1606056408SD Acquired: 6/17/2016 17:02:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG572637-09

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00197**	**.06610**	**.00495**	**.41252**	**7.0247**	**.00029**	**118.16**
Stddev	.00191	.00489	.00262	.00675	.0723	.00007	1.03
%RSD	96.939	7.3914	52.893	1.6352	1.0291	24.908	.87558
#1	.00417	.07174	.00756	.40473	6.9421	.00035	116.99
#2	.00083	.06343	.00233	.41624	7.0762	.00029	118.97
#3	.00090	.06312	.00496	.41658	7.0558	.00021	118.51
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.00214**	**.00340**	**.00477**	**.56320**	**5.9362**	**.49645**
Stddev	.00029	.00025	.00031	.00195	.02376	.0345	.00473
%RSD	822.16	11.895	9.1002	40.839	4.2191	.58061	.95195
#1	-.00035	.00213	.00373	.00659	.58759	5.9746	.49139
#2	.00003	.00189	.00312	.00272	.56188	5.9081	.49721
#3	.00021	.00240	.00333	.00499	.54012	5.9259	.50076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**12.119**	**.07647**	**.00368**	F **275.79**	**.00176**	**.06011**	**.00373**
Stddev	.169	.00172	.00004	2.22	.00090	.00531	.00128
%RSD	1.3962	2.2524	.96016	.80470	50.804	8.8299	34.243
#1	11.979	.07833	.00371	273.33	.00280	.06192	.00417
#2	12.307	.07615	.00369	277.65	.00129	.06427	.00229
#3	12.071	.07493	.00364	276.38	.00120	.05413	.00473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 20, 2016

Sample Name: L1606056408SD Acquired: 6/17/2016 17:02:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment: WG572637-09

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00615**	**-.00054**	**.09578**	**.00321**	F **18.621**	**-.01014**	**.00626**
Stddev	.00270	.00825	.00283	.00089	.180	.00462	.00307
%RSD	43.892	1530.0	2.9517	27.736	.96675	45.580	49.013
#1	.00887	.00733	.09370	.00312	18.600	-.01536	.00979
#2	.00347	.00018	.09463	.00237	18.811	-.00657	.00477
#3	.00611	-.00913	.09900	.00414	18.452	-.00849	.00422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00525**	**.00704**	F **-.56720**
Stddev	.00061	.00031	.43432
%RSD	11.560	4.3824	76.573
#1	.00535	.00669	-.13035
#2	.00460	.00715	-.57230
#3	.00580	.00727	-.99894
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8294.8**	**47510.**	**2801.4**
Stddev	39.9	88.	20.7
%RSD	.48071	.18576	.73912
#1	8314.7	47546.	2788.6
#2	8320.8	47574.	2790.3
#3	8248.9	47409.	2825.3

Approved: June 20, 2016

Sample Name: L1606053501 Acquired: 6/17/2016 17:06:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00102**	**-.00688**	**.02733**	**.00676**	**.00179**	**-.00019**	**.06372**
Stddev	.00125	.00806	.00133	.00231	.00102	.00007	.01579
%RSD	122.51	117.13	4.8680	34.193	56.928	38.948	24.776
#1	-.00047	-.01250	.02887	.00673	.00296	-.00028	.07124
#2	-.00245	-.01049	.02651	.00909	.00110	-.00016	.04558
#3	-.00014	.00235	.02662	.00447	.00131	-.00014	.07433
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00006**	**.00242**	**.00016**	**.00459**	**-.00012**	**.16215**	**.00199**
Stddev	.00015	.00041	.00025	.00148	.01260	.01836	.00390
%RSD	231.76	16.830	150.29	32.209	10239.	11.321	196.18
#1	-.00011	.00196	.00037	.00301	-.01408	.15273	.00137
#2	.00014	.00271	.00023	.00480	.00328	.15040	.00615
#3	.00015	.00260	-.00011	.00595	.01043	.18330	-.00157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.15873**	**.00282**	**.00195**	**9.3983**	**.00143**	**.12851**	**.00258**
Stddev	.02206	.00019	.00010	.0591	.00071	.00324	.00196
%RSD	13.899	6.6379	4.9790	.62914	49.378	2.5230	75.786
#1	.16358	.00273	.00186	9.4665	.00067	.12654	.00484
#2	.17796	.00304	.00206	9.3665	.00156	.12673	.00137
#3	.13465	.00271	.00193	9.3618	.00206	.13225	.00154
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606053501 Acquired: 6/17/2016 17:06:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00367	.09355	1.9998	.01058	.00416	.00716	-.02346
Stddev	.00127	.00728	.0048	.00084	.00184	.00452	.00291
%RSD	34.497	7.7797	.23801	7.9605	44.114	63.057	12.381
#1	.00449	.08723	1.9969	.01042	.00621	.00828	-.02682
#2	.00221	.10151	1.9971	.01149	.00361	.01102	-.02188
#3	.00431	.09191	2.0053	.00983	.00266	.00219	-.02170
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00002	.05511	F -.65340
Stddev	.00037	.00020	.98577
%RSD	1535.5	.36440	150.87
#1	-.00013	.05531	-.12547
#2	-.00025	.05512	-1.7907
#3	.00045	.05491	-.04404
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10929.	65655.	4206.8
Stddev	29.	202.	34.9
%RSD	.26736	.30712	.82862
#1	10959.	65880.	4171.4
#2	10927.	65593.	4241.1
#3	10901.	65491.	4208.1

Approved: June 20, 2016

Sample Name: L1606059005 Acquired: 6/17/2016 17:10:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00158**	**.03102**	**.25335**	**.04990**	**.34090**	**.00001**	**128.29**	**.00052**
Stddev	.00223	.00317	.00374	.00185	.00135	.00004	.34	.00031
%RSD	141.27	10.205	1.4753	3.7167	.39627	250.64	.26131	59.357
#1	-.00008	.02858	.25014	.05190	.33934	.00000	127.95	.00021
#2	-.00051	.03460	.25247	.04959	.34173	-.00001	128.29	.00082
#3	-.00414	.02987	.25745	.04823	.34163	.00006	128.62	.00052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00116**	**.00046**	**.00240**	**9.1329**	**.97412**	**.01303**	**15.621**	**3.4497**
Stddev	.00046	.00042	.00142	.0185	.14160	.00475	.095	.0111
%RSD	39.876	91.979	59.011	.20227	14.536	36.461	.60961	.32162
#1	.00063	.00094	.00401	9.1541	1.0179	.00865	15.532	3.4374
#2	.00136	.00022	.00131	9.1240	1.0887	.01235	15.722	3.4527
#3	.00149	.00020	.00190	9.1205	.81581	.01808	15.608	3.4589
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00413**	**41.270**	**.00073**	**.01345**	**.00402**	**.00318**	**.00743**	**12.441**
Stddev	.00014	.137	.00031	.01339	.00137	.00682	.00479	.031
%RSD	3.3542	.33264	41.713	99.560	34.194	214.10	64.511	.25224
#1	.00417	41.141	.00055	.02829	.00463	.00156	.01296	12.405
#2	.00425	41.256	.00056	.00228	.00498	.01067	.00474	12.462
#3	.00398	41.414	.00109	.00977	.00245	-.00268	.00459	12.456
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 20, 2016

Sample Name: L1606059005 Acquired: 6/17/2016 17:10:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.54505	-.02036	.00276	-.00138	.02723	.28908
Stddev	.00040	.00234	.00204	.00284	.00046	.00019	.32840
%RSD	299.20	.43012	10.023	103.03	33.593	.68912	113.60
#1	.00011	.54323	-.01800	.00230	-.00099	.02742	.15845
#2	.00054	.54770	-.02157	.00017	-.00125	.02705	.04609
#3	-.00025	.54422	-.02149	.00580	-.00189	.02722	.66269
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7933.1	46759.	2799.4
Stddev	10.2	101.	8.9
%RSD	.12901	.21635	.31693
#1	7943.7	46645.	2809.6
#2	7923.2	46839.	2795.2
#3	7932.3	46792.	2793.4

Approved: June 20, 2016

Sample Name: L1606059006 Acquired: 6/17/2016 17:14:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00184**	**.04181**	**-.00018**	**.03461**	**.02035**	**-.00004**	**102.44**
Stddev	.00061	.00364	.00287	.00119	.00065	.00004	.41
%RSD	33.417	8.6963	1551.4	3.4491	3.1922	99.752	.40136
#1	.00253	.03779	.00313	.03381	.02096	.00000	102.90
#2	.00136	.04280	-.00176	.03598	.01966	-.00008	102.31
#3	.00162	.04485	-.00192	.03403	.02043	-.00004	102.10
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00054**	**.00138**	**.00063**	**.00216**	**.05283**	**1.2651**	**.01667**
Stddev	.00021	.00011	.00113	.00006	.01064	.0512	.00215
%RSD	39.243	7.6707	178.97	2.7514	20.135	4.0453	12.895
#1	.00044	.00129	.00083	.00219	.06351	1.2822	.01539
#2	.00041	.00150	-.00058	.00219	.04224	1.3055	.01547
#3	.00079	.00135	.00165	.00209	.05272	1.2075	.01915
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**17.153**	**2.6706**	**.00082**	**48.447**	**.00596**	**.00170**	**.00226**
Stddev	.051	.0144	.00033	.160	.00169	.00346	.00103
%RSD	.29842	.53866	40.400	.32992	28.419	203.71	45.431
#1	17.203	2.6746	.00121	48.620	.00737	.00234	.00140
#2	17.155	2.6825	.00064	48.305	.00644	-.00204	.00199
#3	17.101	2.6546	.00063	48.415	.00408	.00480	.00339
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606059006 Acquired: 6/17/2016 17:14:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00057**	**.00289**	**14.216**	**-.00002**	**.31513**	**-.01489**	**.00359**
Stddev	.00174	.00465	.047	.00103	.00157	.00411	.00103
%RSD	308.24	161.05	.33285	5745.7	.49909	27.627	28.621
#1	.00160	.00373	14.260	-.00092	.31686	-.01829	.00414
#2	.00154	.00706	14.223	-.00024	.31472	-.01032	.00240
#3	-.00145	-.00213	14.166	.00111	.31380	-.01606	.00421
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00061**	**.01256**	F **-1.0339**
Stddev	.00151	.00007	.6104
%RSD	247.36	.54329	59.035
#1	.00175	.01248	-1.6199
#2	-.00110	.01258	-.40175
#3	.00118	.01262	-1.0801
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7893.1**	**46046.**	**2698.2**
Stddev	5.8	116.	21.2
%RSD	.07321	.25272	.78483
#1	7891.3	46158.	2674.2
#2	7888.5	46055.	2706.0
#3	7899.6	45925.	2714.3

Approved: June 20, 2016

Sample Name: L1606059007 Acquired: 6/17/2016 17:18:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	.01835	.00192	.03851	.16885	-.00001	128.45	.00035
Stddev	.00104	.00774	.00418	.00208	.00161	.00006	.33	.00021
%RSD	140.97	42.184	217.61	5.3896	.95392	817.27	.25644	61.569
#1	.00146	.02682	.00183	.03611	.17038	-.00007	128.79	.00026
#2	.00121	.01164	.00614	.03977	.16901	.00002	128.13	.00019
#3	-.00046	.01659	-.00221	.03963	.16717	.00003	128.44	.00059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00126	.00122	.00245	.03832	1.3143	.01143	14.884	2.6597
Stddev	.00027	.00089	.00024	.01821	.0460	.00424	.232	.0098
%RSD	21.097	72.689	9.8861	47.505	3.5011	37.115	1.5582	.36992
#1	.00118	.00216	.00267	.05463	1.3632	.00659	15.044	2.6535
#2	.00156	.00040	.00219	.04166	1.2718	.01320	14.990	2.6546
#3	.00104	.00110	.00248	.01868	1.3079	.01450	14.618	2.6711
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00095	45.116	.00181	-.00001	.00412	.00187	.01016	10.579
Stddev	.00012	.216	.00161	.00732	.00162	.00678	.00527	.032
%RSD	12.116	.47840	89.113	61722.	39.278	362.59	51.894	.30250
#1	.00092	45.362	.00025	.00795	.00234	-.00273	.01387	10.604
#2	.00086	45.032	.00347	-.00153	.00451	.00966	.01248	10.591
#3	.00108	44.955	.00171	-.00645	.00551	-.00132	.00412	10.543
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 20, 2016

Sample Name: L1606059007 Acquired: 6/17/2016 17:18:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.47912	-.01714	.00305	-.00002	.00590	.83714
Stddev	.00024	.00065	.00622	.00061	.00013	.00011	.97971
%RSD	49.978	.13466	36.313	19.864	632.58	1.9289	117.03
#1	.00055	.47950	-.01554	.00372	.00007	.00598	.62718
#2	.00067	.47837	-.02401	.00291	.00004	.00596	-.02057
#3	.00021	.47949	-.01187	.00253	-.00017	.00577	1.9048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7796.5	45567.	2636.9
Stddev	18.1	137.	21.1
%RSD	.23246	.30146	.79922
#1	7783.3	45454.	2621.0
#2	7817.2	45720.	2660.8
#3	7789.1	45528.	2628.8

Approved: June 20, 2016

Sample Name: L1606056401 Acquired: 6/17/2016 17:22:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment: WG572637-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00070	-.00326	.00103	.04552	.77715	-.00000	13.272
Stddev	.00246	.00217	.00313	.00451	.00381	.00008	.024
%RSD	350.92	66.550	303.15	9.8992	.48975	1918.3	.18101
#1	.00309	-.00485	.00408	.04258	.77572	-.00010	13.256
#2	-.00183	-.00415	-.00217	.04328	.77427	.00002	13.300
#3	.00084	-.00079	.00118	.05071	.78146	.00006	13.261
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.00022	-.00005	.00084	.03303	.70307	.05398
Stddev	.00018	.00016	.00074	.00192	.02322	.03417	.00393
%RSD	3037.9	73.599	1405.5	229.00	70.292	4.8607	7.2785
#1	.00005	.00020	-.00087	-.00038	.05968	.70809	.05103
#2	.00015	.00039	.00055	.00305	.02222	.66666	.05248
#3	-.00019	.00007	.00017	-.00016	.01719	.73445	.05844
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.3682	.00771	-.00018	30.730	.00024	.00588	.00072
Stddev	.0197	.00115	.00021	.196	.00061	.00691	.00363
%RSD	1.4363	14.923	119.05	.63779	247.88	117.45	505.53
#1	1.3603	.00845	-.00016	30.528	-.00023	.00958	.00465
#2	1.3537	.00639	.00003	30.743	.00004	.01016	.00002
#3	1.3905	.00831	-.00040	30.920	.00093	-.00209	-.00251
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606056401 Acquired: 6/17/2016 17:22:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment: WG572637-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00132**	**-.00008**	**.02610**	**-.00014**	**2.1108**	**.00026**	**.00286**
Stddev	.00266	.00546	.00179	.00022	.0141	.00024	.00095
%RSD	201.97	6582.1	6.8673	165.32	.67012	94.077	33.213
#1	-.00074	.00483	.02777	-.00014	2.0972	.00052	.00393
#2	.00100	-.00596	.02421	.00009	2.1100	.00003	.00211
#3	-.00422	.00088	.02633	-.00036	2.1254	.00023	.00254
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00032**	**.00056**	F **-.62187**
Stddev	.00024	.00009	1.3010
%RSD	75.214	16.755	209.20
#1	.00059	.00064	.76839
#2	.00024	.00059	-.82410
#3	.00013	.00046	-1.8099
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8748.1**	**50784.**	**2862.7**
Stddev	26.7	293.	9.0
%RSD	.30497	.57739	.31330
#1	8776.1	51121.	2853.5
#2	8723.0	50651.	2871.4
#3	8745.1	50582.	2863.1

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 17:26:33 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40269	10.024	.39478	.50225	.99731	.05007	9.8228
Stddev	.00143	.003	.00257	.00343	.00249	.00040	.1074
%RSD	.35624	.02990	.65220	.68328	.24985	.78996	1.0935
#1	.40428	10.021	.39246	.50292	.99494	.04988	9.7224
#2	.40232	10.023	.39755	.50530	.99707	.05053	9.8099
#3	.40148	10.027	.39432	.49854	.99991	.04981	9.9360
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05013	.20105	.50651	.50669	4.0575	49.488	.99306
Stddev	.00016	.00074	.00530	.00163	.0255	.172	.00843
%RSD	.31794	.36671	1.0469	.32152	.62777	.34659	.84876
#1	.04996	.20020	.50447	.50772	4.0469	49.335	.98625
#2	.05016	.20143	.51253	.50754	4.0866	49.456	.99045
#3	.05027	.20152	.50252	.50482	4.0390	49.673	1.0025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.9935	.49537	1.0058	49.296	.50741	10.012	.51202
Stddev	.1224	.00387	.0041	.219	.00039	.025	.00553
%RSD	1.2248	.78085	.41154	.44431	.07720	.25026	1.0798
#1	10.105	.49150	1.0091	49.104	.50786	9.9859	.50686
#2	10.013	.49924	1.0071	49.249	.50712	10.036	.51135
#3	9.8626	.49536	1.0012	49.534	.50726	10.014	.51786
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 17:26:33 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2064**	**.39877**	**5.1133**	**1.0038**	**.99348**	**.99656**	**.50612**
Stddev	.0017	.00313	.0149	.0020	.00654	.00652	.00263
%RSD	.14145	.78416	.29044	.19653	.65815	.65445	.51895
#1	1.2079	.40234	5.0965	1.0026	.98719	.99260	.50331
#2	1.2068	.39739	5.1247	1.0061	.99300	.99299	.50851
#3	1.2046	.39656	5.1186	1.0027	1.0002	1.0041	.50656
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0077**	**1.0074**	F **-.31623**
Stddev	.0081	.0012	.14053
%RSD	.80897	.11842	44.439
#1	1.0045	1.0060	-.39906
#2	1.0170	1.0082	-.39567
#3	1.0016	1.0079	-.15398
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8437.6**	**48610.**	**2782.5**
Stddev	6.7	85.	19.2
%RSD	.07991	.17464	.69028
#1	8440.4	48537.	2764.2
#2	8442.6	48589.	2780.9
#3	8430.0	48703.	2802.5

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 17:30:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00060**	**.00021**	**-.00050**	**.00346**	**-.00156**	**-.00001**	**-.02975**
Stddev	.00099	.01304	.00237	.00137	.00113	.00002	.03202
%RSD	165.28	6143.1	476.34	39.643	72.532	300.17	107.64
#1	.00167	.00867	-.00035	.00426	-.00065	-.00002	-.05531
#2	-.00027	.00677	.00179	.00425	-.00282	-.00002	.00617
#3	.00040	-.01481	-.00294	.00188	-.00121	.00002	-.04010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**-.00003**	**.00051**	**.00143**	**-.01872**	**.01793**	**.00322**
Stddev	.00018	.00036	.00092	.00021	.00865	.07281	.00509
%RSD	3521.1	1458.3	179.89	14.595	46.209	406.00	158.01
#1	.00003	.00028	.00057	.00120	-.00942	.09673	-.00074
#2	-.00019	.00007	.00141	.00160	-.02022	.00394	.00896
#3	.00017	-.00043	-.00044	.00150	-.02653	-.04687	.00145
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.12151**	**-.00038**	**.00424**	**-.00706**	**-.00112**	**-.00047**	**-.00113**
Stddev	.02042	.00067	.00078	.02813	.00089	.00472	.00188
%RSD	16.801	178.23	18.299	398.39	79.991	1004.7	166.05
#1	-.10157	-.00081	.00336	-.02579	-.00203	.00082	-.00128
#2	-.14237	-.00071	.00481	.02528	-.00106	-.00571	-.00294
#3	-.12059	.00040	.00455	-.02068	-.00025	.00347	.00082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 17:30:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00508**	**.00016**	**.01434**	**.00041**	**-.00001**	**.00061**	**.00264**
Stddev	.00186	.00778	.00242	.00069	.00018	.00505	.00276
%RSD	36.602	4893.8	16.902	167.11	3293.7	822.68	104.61
#1	.00299	.00758	.01709	-.00017	.00018	.00640	.00530
#2	.00656	-.00794	.01252	.00117	-.00019	-.00293	.00285
#3	.00570	.00084	.01341	.00024	-.00001	-.00162	-.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00016**	**.00001**	F **-.09049**
Stddev	.00045	.00024	1.9608
%RSD	281.42	1574.7	2166.7
#1	.00029	.00011	-.05874
#2	.00053	-.00025	1.8542
#3	-.00034	.00019	-2.0669
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8594.3**	**50015.**	**2804.3**
Stddev	13.4	143.	13.6
%RSD	.15640	.28689	.48610
#1	8590.2	50173.	2789.4
#2	8609.3	49978.	2807.4
#3	8583.3	49894.	2816.2

Approved: June 20, 2016

Sample Name: L1606056405S Acquired: 6/17/2016 17:34:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment: WG572637-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00144**	**.00425**	**-.00146**	**.04708**	**.85020**	**.00015**	**14.475**
Stddev	.00128	.00843	.00145	.00200	.00481	.00005	.020
%RSD	88.598	198.56	99.689	4.2448	.56583	30.103	.13915
#1	-.00081	-.00292	-.00238	.04782	.85354	.00013	14.492
#2	-.00292	.01353	-.00221	.04860	.84469	.00012	14.453
#3	-.00061	.00213	.00022	.04482	.85238	.00020	14.482
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.00014**	**.00066**	**.00087**	**.04396**	**.81745**	**.06238**
Stddev	.00032	.00036	.00026	.00057	.03151	.04631	.00316
%RSD	1938.3	252.60	39.599	65.595	71.684	5.6650	5.0693
#1	.00029	-.00017	.00095	.00120	.08020	.86168	.06586
#2	.00001	.00006	.00059	.00021	.02865	.82135	.05969
#3	-.00035	.00053	.00045	.00121	.02303	.76931	.06159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.4433**	**.00950**	**.00085**	**33.582**	**-.00108**	**.00818**	**.00005**
Stddev	.0988	.00055	.00019	.134	.00023	.00244	.00311
%RSD	6.8428	5.7692	22.244	.39808	21.236	29.843	6867.3
#1	1.5437	.01008	.00106	33.690	-.00084	.01024	.00152
#2	1.3463	.00943	.00070	33.432	-.00110	.00548	-.00353
#3	1.4397	.00899	.00078	33.623	-.00130	.00882	.00215
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606056405S Acquired: 6/17/2016 17:34:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment: WG572637-06

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00552**	**-.00357**	**.01977**	**-.00079**	**2.3049**	**-.00095**	**.00245**
Stddev	.00232	.00649	.00132	.00042	.0107	.00482	.00171
%RSD	41.952	181.95	6.6814	53.794	.46395	507.86	69.688
#1	.00435	-.00767	.02130	-.00080	2.3104	-.00582	.00395
#2	.00818	.00391	.01897	-.00120	2.2926	.00382	.00059
#3	.00402	-.00695	.01905	-.00036	2.3118	-.00085	.00280
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00032**	**.00133**	F **-1.0112**
Stddev	.00035	.00012	1.4770
%RSD	109.28	8.9640	146.07
#1	.00002	.00121	-1.9803
#2	-.00069	.00133	.68878
#3	-.00030	.00144	-1.7421
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8570.3**	**49324.**	**2780.0**
Stddev	20.7	313.	15.8
%RSD	.24156	.63425	.56897
#1	8568.9	48995.	2766.0
#2	8591.6	49359.	2797.1
#3	8550.3	49617.	2776.8

Approved: June 20, 2016

Sample Name: L1606056407SD Acquired: 6/17/2016 17:38:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment: WG572637-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**.01378**	**.00055**	**.04703**	**.81484**	**.00010**	**13.808**
Stddev	.00011	.00224	.00216	.00481	.00606	.00006	.124
%RSD	46.933	16.250	395.45	10.224	.74357	61.694	.89927
#1	-.00024	.01632	.00120	.04939	.80832	.00013	13.667
#2	-.00013	.01291	.00231	.04150	.81590	.00014	13.901
#3	-.00036	.01210	-.00187	.05021	.82029	.00003	13.855
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**-.00003**	**-.00006**	**.00166**	**.05160**	**.67703**	**.05963**
Stddev	.00027	.00047	.00091	.00048	.00959	.03364	.00225
%RSD	271.77	1589.6	1558.0	28.645	18.580	4.9689	3.7753
#1	.00001	-.00018	.00078	.00172	.04391	.64946	.05849
#2	-.00011	-.00040	.00007	.00116	.06234	.66711	.06222
#3	.00040	.00050	-.00103	.00211	.04854	.71451	.05818
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.5122**	**.00814**	**.00068**	**32.114**	**-.00030**	**.01467**	**.00208**
Stddev	.1525	.00212	.00006	.142	.00032	.01134	.00435
%RSD	10.086	26.036	8.9481	.44360	106.29	77.335	208.57
#1	1.5369	.01037	.00074	31.954	-.00007	.02273	-.00000
#2	1.6508	.00791	.00062	32.157	-.00017	.00170	-.00083
#3	1.3488	.00615	.00068	32.229	-.00067	.01957	.00708
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606056407SD Acquired: 6/17/2016 17:38:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment: WG572637-07

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00048**	**.00385**	**.01694**	**.00013**	**2.1996**	**-.00085**	**.00361**
Stddev	.00093	.00455	.00110	.00110	.0138	.00616	.00152
%RSD	194.50	118.16	6.4904	823.82	.62532	723.46	42.123
#1	-.00031	-.00139	.01821	.00007	2.1849	-.00786	.00196
#2	.00025	.00623	.01627	.00126	2.2017	.00161	.00391
#3	.00150	.00670	.01635	-.00093	2.2121	.00369	.00495
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00005**	**.00113**	F **-.96014**
Stddev	.00053	.00007	.28139
%RSD	998.00	6.5681	29.307
#1	.00027	.00115	-.95829
#2	-.00067	.00104	-1.2424
#3	.00023	.00119	-.67968
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8582.8**	**49304.**	**2799.9**
Stddev	35.0	157.	34.0
%RSD	.40803	.31763	1.2137
#1	8614.6	49177.	2839.0
#2	8588.6	49256.	2782.2
#3	8545.3	49479.	2778.3

Approved: June 20, 2016

Sample Name: L1606056403 Acquired: 6/17/2016 17:42:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00041**	**-.00081**	**-.00026**	**.04424**	**.75010**	**.00006**	**12.734**
Stddev	.00081	.01046	.00149	.00112	.00183	.00009	.030
%RSD	197.90	1292.1	571.34	2.5333	.24366	157.86	.23415
#1	-.00086	.00290	-.00182	.04426	.74809	-.00003	12.717
#2	-.00089	.00729	-.00010	.04311	.75055	.00005	12.717
#3	.00053	-.01262	.00114	.04535	.75166	.00014	12.769
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.00050**	**-.00042**	**.00100**	**.05463**	**.67082**	**.05204**
Stddev	.00011	.00011	.00089	.00053	.01303	.03529	.00076
%RSD	118.48	21.638	214.20	53.185	23.843	5.2615	1.4605
#1	-.00017	.00048	.00002	.00043	.06312	.67262	.05140
#2	-.00015	.00061	-.00144	.00148	.06114	.63466	.05288
#3	.00004	.00040	.00017	.00109	.03963	.70518	.05183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2924**	**.00778**	**.00015**	**29.667**	**-.00047**	**.00601**	**.00082**
Stddev	.1007	.00142	.00011	.110	.00148	.00322	.00157
%RSD	7.7923	18.279	72.657	.36992	314.58	53.597	190.59
#1	1.3999	.00674	.00014	29.540	-.00105	.00839	.00264
#2	1.2769	.00940	.00004	29.726	.00121	.00234	-.00010
#3	1.2003	.00720	.00026	29.734	-.00158	.00730	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606056403 Acquired: 6/17/2016 17:42:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00045**	**.00051**	**.01309**	**-.00055**	**2.0350**	**.00331**	**.00502**
Stddev	.00371	.00267	.00105	.00038	.0087	.01096	.00136
%RSD	818.96	520.70	8.0376	69.417	.42760	330.88	27.169
#1	-.00470	-.00231	.01210	-.00017	2.0267	.00460	.00348
#2	.00119	.00299	.01296	-.00093	2.0343	-.00823	.00554
#3	.00215	.00086	.01419	-.00054	2.0440	.01357	.00606
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00004**	**.00063**	F **-.71902**
Stddev	.00060	.00004	.99859
%RSD	1514.9	6.8104	138.88
#1	-.00004	.00067	-1.4362
#2	-.00052	.00062	-1.1423
#3	.00068	.00059	.42149
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8575.0**	**49362.**	**2789.3**
Stddev	14.6	215.	12.8
%RSD	.16989	.43546	.46066
#1	8558.7	49209.	2789.2
#2	8586.9	49608.	2776.4
#3	8579.4	49268.	2802.1

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 17:45:56 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39821	9.9710	.39369	.50169	.98371	.04955	9.6983
Stddev	.00099	.0122	.00391	.00340	.00416	.00018	.0716
%RSD	.24928	.12216	.99332	.67826	.42256	.35355	.73833
#1	.39770	9.9590	.39073	.50218	.97951	.04940	9.6259
#2	.39936	9.9705	.39813	.50481	.98782	.04974	9.7691
#3	.39758	9.9834	.39222	.49806	.98380	.04952	9.6998
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04972	.20100	.49824	.50531	3.9861	49.318	.98765
Stddev	.00044	.00002	.00261	.00033	.0359	.087	.00217
%RSD	.87606	.01188	.52366	.06513	.90012	.17553	.22005
#1	.05021	.20099	.49631	.50493	4.0218	49.224	.98525
#2	.04938	.20103	.50121	.50552	3.9501	49.335	.98821
#3	.04957	.20098	.49720	.50547	3.9865	49.395	.98949
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.7955	.49641	1.0054	49.198	.50831	9.9862	.50590
Stddev	.1952	.00197	.0038	.177	.00114	.0289	.00413
%RSD	1.9928	.39736	.37786	.35922	.22374	.28920	.81732
#1	9.5929	.49734	1.0093	48.994	.50829	9.9742	.50927
#2	9.9823	.49775	1.0052	49.296	.50946	10.019	.50715
#3	9.8114	.49415	1.0017	49.305	.50719	9.9652	.50129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 17:45:56 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2064**	**.39964**	**5.0705**	**1.0052**	**.98103**	**.99282**	**.51073**
Stddev	.0049	.00295	.0088	.0024	.00565	.00835	.00363
%RSD	.40288	.73774	.17442	.24308	.57631	.84118	.71147
#1	1.2104	.40230	5.0680	1.0038	.97469	.98934	.51219
#2	1.2078	.40014	5.0804	1.0080	.98286	1.0023	.51341
#3	1.2010	.39647	5.0632	1.0037	.98555	.98677	.50659
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0006**	**1.0064**	F **-.79648**
Stddev	.0014	.0018	.64951
%RSD	.14212	.18193	81.547
#1	.99893	1.0043	-1.4167
#2	1.0014	1.0076	-.12118
#3	1.0014	1.0073	-.85159
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8391.9**	**48459.**	**2771.1**
Stddev	13.5	117.	22.5
%RSD	.16052	.24098	.81095
#1	8407.4	48593.	2746.9
#2	8382.8	48383.	2791.4
#3	8385.6	48400.	2774.8

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 17:49:34 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00039**	**.00191**	**-.00075**	**.00171**	**-.00085**	**.00011**	**.01548**
Stddev	.00114	.00089	.00096	.00197	.00100	.00004	.05199
%RSD	289.79	46.829	128.92	115.01	117.87	35.004	335.95
#1	.00098	.00088	-.00105	.00052	-.00051	.00010	-.01707
#2	-.00092	.00232	-.00152	.00063	-.00006	.00007	-.01194
#3	.00112	.00252	.00033	.00398	-.00198	.00015	.07543
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00024**	**.00042**	**.00088**	**.00085**	**.00365**	**.05575**	**.00526**
Stddev	.00008	.00018	.00020	.00143	.02429	.07645	.00419
%RSD	32.708	42.470	22.551	168.96	664.55	137.13	79.692
#1	.00018	.00054	.00095	.00177	.00568	-.02842	.00044
#2	.00033	.00021	.00104	-.00080	.02687	.12088	.00727
#3	.00022	.00050	.00066	.00157	-.02158	.07477	.00805
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.03211**	**-.00038**	**.00450**	**.00630**	**-.00039**	**-.00001**	**-.00028**
Stddev	.13442	.00127	.00055	.01658	.00092	.00411	.00055
%RSD	418.63	331.86	12.239	263.36	235.09	65400.	194.50
#1	.11750	-.00184	.00390	.01906	.00035	.00359	-.00055
#2	-.07110	.00035	.00462	-.01245	-.00010	.00088	-.00064
#3	-.14272	.00035	.00498	.01227	-.00143	-.00448	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 17:49:34 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00326	.00170	.00629	.00072	-.00001	-.00652	.00054
Stddev	.00209	.00508	.00270	.00085	.00049	.00355	.00297
%RSD	64.141	298.28	42.967	117.91	4201.4	54.460	551.25
#1	.00257	.00614	.00921	.00025	.00052	-.00246	.00383
#2	.00160	.00282	.00578	.00171	-.00044	-.00803	-.00026
#3	.00561	-.00384	.00388	.00021	-.00012	-.00907	-.00195
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00034	-.00011	F -.32099
Stddev	.00048	.00024	.18379
%RSD	140.31	209.29	57.256
#1	.00001	.00002	-.24894
#2	-.00015	.00002	-.52988
#3	-.00088	-.00039	-.18414
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8512.3	49413.	2785.2
Stddev	10.2	301.	7.8
%RSD	.11972	.60868	.27981
#1	8515.2	49712.	2785.0
#2	8501.0	49110.	2777.5
#3	8520.7	49418.	2793.0

Approved: June 20, 2016

Sample Name: LLCCV Acquired: 6/17/2016 17:53:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02070	.39461	.01605	.19545	.01823	.00388	.96939
Stddev	.00051	.00327	.00135	.00304	.00116	.00009	.03208
%RSD	2.4516	.82755	8.4187	1.5561	6.3716	2.3649	3.3090
#1	.02118	.39616	.01626	.19896	.01956	.00383	.99881
#2	.02017	.39085	.01728	.19377	.01766	.00398	.93519
#3	.02073	.39680	.01460	.19362	.01746	.00382	.97418
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00194	.00991	.00908	.01031	.16971	1.9850	.19741
Stddev	.00016	.00031	.00045	.00023	.03274	.0401	.00443
%RSD	8.5181	3.1670	5.0093	2.1932	19.290	2.0173	2.2464
#1	.00212	.01023	.00912	.01056	.18922	2.0121	.19814
#2	.00181	.00960	.00951	.01011	.13192	1.9390	.20144
#3	.00188	.00989	.00861	.01026	.18800	2.0041	.19266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.89960	.01988	.01948	.98009	.03901	1.8923	.01977
Stddev	.01635	.00180	.00013	.00528	.00206	.0058	.00310
%RSD	1.8179	9.0298	.65878	.53883	5.2819	.30864	15.693
#1	.88200	.01808	.01934	.98471	.03694	1.8894	.02334
#2	.90245	.02167	.01957	.97433	.03904	1.8884	.01768
#3	.91434	.01990	.01954	.98122	.04106	1.8990	.01829
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: LLCCV Acquired: 6/17/2016 17:53:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19749**	**.04636**	**1.9360**	**.98003**	**.09684**	**.06560**	**.37379**
Stddev	.00253	.00197	.0040	.00075	.00074	.00809	.00148
%RSD	1.2811	4.2438	.20543	.07639	.76357	12.339	.39727
#1	.19552	.04708	1.9336	.98021	.09731	.07434	.37551
#2	.19662	.04787	1.9338	.97921	.09599	.06411	.37302
#3	.20035	.04414	1.9406	.98067	.09722	.05836	.37286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.01980**	**.04087**	F **-185.47**
Stddev	.00085	.00016	2.33
%RSD	4.3180	.40346	1.2537
#1	.02071	.04080	-186.40
#2	.01967	.04076	-187.19
#3	.01902	.04106	-182.83
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8531.9**	**49817.**	**2766.4**
Stddev	36.8	250.	18.3
%RSD	.43122	.50204	.66200
#1	8536.9	49722.	2757.4
#2	8565.9	50101.	2754.2
#3	8492.9	49629.	2787.4

Approved: June 20, 2016

Sample Name: PBW 61 Acquired: 6/17/2016 17:57:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00024**	**.00747**	**-.00226**	**.00211**	**-.00066**	**.00013**	**.04186**
Stddev	.00126	.00419	.00076	.00201	.00030	.00004	.02380
%RSD	519.86	56.117	33.400	95.110	45.511	31.648	56.867
#1	-.00063	.00803	-.00148	.00425	-.00082	.00014	.06912
#2	-.00034	.01135	-.00231	.00027	-.00084	.00008	.02519
#3	.00169	.00302	-.00299	.00180	-.00031	.00016	.03127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00017**	**.00013**	**-.00106**	**.00068**	**-.00877**	**-.03842**	**.00044**
Stddev	.00023	.00026	.00069	.00082	.01607	.09662	.00266
%RSD	137.15	196.32	65.455	121.44	183.18	251.48	603.58
#1	.00019	.00016	-.00028	.00163	-.00184	.04093	.00299
#2	-.00007	-.00014	-.00130	.00020	.00267	-.01017	-.00231
#3	.00038	.00038	-.00160	.00020	-.02715	-.14601	.00064
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00545**	**-.00092**	**.00082**	**.02691**	**.00068**	**.00375**	**.00100**
Stddev	.03383	.00312	.00014	.03718	.00026	.00354	.00238
%RSD	620.18	339.42	17.480	138.15	39.162	94.524	237.75
#1	-.01684	-.00380	.00097	-.01499	.00065	.00205	.00375
#2	.04438	.00239	.00068	.03978	.00042	.00782	-.00019
#3	-.01117	-.00134	.00082	.05595	.00095	.00137	-.00054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: PBW 61 Acquired: 6/17/2016 17:57:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00078**	**.00289**	**.00833**	**.00112**	**-.00052**	**.00202**	**.00316**
Stddev	.00155	.00706	.00074	.00012	.00068	.00231	.00353
%RSD	199.87	244.11	8.9102	10.286	131.66	114.73	111.69
#1	-.00054	.00855	.00832	.00105	-.00123	-.00065	.00454
#2	.00064	.00514	.00907	.00106	.00013	.00337	-.00085
#3	-.00243	-.00502	.00759	.00125	-.00045	.00333	.00580
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00015**	**.00128**	F **-.23653**
Stddev	.00038	.00026	.93073
%RSD	249.20	20.065	393.50
#1	.00046	.00150	.73142
#2	-.00027	.00134	-.31605
#3	.00027	.00100	-1.1249
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7881.5**	**46104.**	**2577.1**
Stddev	29.4	144.	40.3
%RSD	.37366	.31185	1.5655
#1	7862.3	46089.	2531.1
#2	7866.8	45968.	2606.2
#3	7915.4	46254.	2594.1

Approved: June 20, 2016

Sample Name: LCSW 61 Acquired: 6/17/2016 18:01:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.22311**	**5.4716**	**.21575**	**1.0716**	**.54950**	**.02719**	**5.5055**
Stddev	.00092	.0152	.00165	.0033	.00136	.00008	.0296
%RSD	.41229	.27770	.76463	.31059	.24688	.29209	.53806
#1	.22409	5.4882	.21605	1.0719	.55044	.02724	5.5193
#2	.22227	5.4681	.21723	1.0681	.55012	.02710	5.5257
#3	.22298	5.4584	.21397	1.0747	.54795	.02724	5.4715
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02706**	**.11162**	**.27763**	**.28060**	**2.2328**	**27.087**	**.56030**
Stddev	.00022	.00027	.00136	.00109	.0395	.210	.00296
%RSD	.79699	.23895	.48853	.38953	1.7697	.77629	.52908
#1	.02685	.11171	.27888	.27939	2.2550	27.315	.56237
#2	.02704	.11132	.27782	.28087	2.2563	27.046	.56162
#3	.02728	.11182	.27619	.28153	2.1872	26.900	.55690
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**5.6060**	**.27557**	**.56352**	**27.317**	**.28114**	**5.3488**	**.28212**
Stddev	.1084	.00528	.00047	.166	.00220	.0104	.00090
%RSD	1.9336	1.9178	.08266	.60723	.78162	.19445	.31805
#1	5.6760	.28094	.56403	27.486	.28302	5.3413	.28118
#2	5.6609	.27037	.56312	27.311	.27873	5.3443	.28296
#3	5.4811	.27541	.56341	27.154	.28168	5.3607	.28222
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: LCSW 61 Acquired: 6/17/2016 18:01:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.66213**	**.21469**	**2.8132**	**.55357**	**.55768**	**.54674**	**.27957**
Stddev	.00349	.00202	.0088	.00121	.00382	.00353	.00292
%RSD	.52694	.93868	.31327	.21946	.68486	.64535	1.0440
#1	.66192	.21700	2.8081	.55424	.56209	.55081	.27815
#2	.65875	.21327	2.8080	.55217	.55548	.54482	.27764
#3	.66572	.21379	2.8233	.55430	.55547	.54458	.28293
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.55303**	**.55186**	F **-3.3190**
Stddev	.00134	.00147	1.1905
%RSD	.24264	.26558	35.868
#1	.55410	.55204	-1.9752
#2	.55153	.55032	-3.7401
#3	.55348	.55323	-4.2417
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7832.6**	**45413.**	**2577.1**
Stddev	23.2	55.	37.8
%RSD	.29572	.12068	1.4661
#1	7807.0	45352.	2542.4
#2	7852.2	45459.	2571.7
#3	7838.4	45428.	2617.4

Approved: June 20, 2016

Sample Name: L1606079601 Acquired: 6/17/2016 18:05:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00004**	**3.3964**	**.00116**	**1.3797**	**.04865**	**.00195**	**188.99**
Stddev	.00173	.0125	.00261	.0018	.00095	.00005	1.15
%RSD	4002.0	.36863	226.19	.12762	1.9619	2.8221	.61049
#1	.00170	3.4108	-.00186	1.3783	.04970	.00197	190.19
#2	-.00175	3.3901	.00264	1.3791	.04782	.00188	188.91
#3	.00017	3.3883	.00269	1.3817	.04844	.00198	187.89
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.24490**	**.00838**	**.00912**	**.47250**	**1.3262**	**3.2706**	**.03939**
Stddev	.00046	.00034	.00188	.00180	.0049	.0610	.00255
%RSD	.18633	4.0090	20.612	.38171	.36998	1.8659	6.4720
#1	.24532	.00816	.01101	.47166	1.3237	3.3404	.03754
#2	.24441	.00877	.00909	.47128	1.3319	3.2440	.03834
#3	.24496	.00822	.00725	.47458	1.3231	3.2274	.04230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**31.864**	**3.1847**	**.00356**	**11.498**	**.03596**	**.45084**	**1.4821**
Stddev	.193	.0248	.00041	.081	.00128	.00900	.0041
%RSD	.60634	.78007	11.568	.70666	3.5481	1.9969	.27812
#1	31.971	3.2075	.00310	11.552	.03457	.45088	1.4815
#2	31.980	3.1883	.00369	11.536	.03626	.44182	1.4783
#3	31.641	3.1582	.00389	11.404	.03707	.45982	1.4865
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606079601 Acquired: 6/17/2016 18:05:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-01

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.29487	.00180	33.611	.00673	.48347	.01753	.00227
Stddev	.00279	.00247	.007	.00017	.00346	.00425	.00263
%RSD	.94497	137.02	.02214	2.4957	.71551	24.253	115.88
#1	.29809	.00456	33.611	.00691	.48722	.01821	.00048
#2	.29320	-.00023	33.619	.00668	.48276	.01298	.00529
#3	.29333	.00108	33.604	.00659	.48041	.02141	.00103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00087	9.4386	F -2.9156
Stddev	.00025	.0054	1.0645
%RSD	29.306	.05764	36.512
#1	.00080	9.4401	-2.1341
#2	.00066	9.4431	-4.1281
#3	.00115	9.4326	-2.4846
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7866.5	45883.	2631.0
Stddev	14.4	47.	27.1
%RSD	.18256	.10247	1.0303
#1	7880.8	45918.	2604.1
#2	7852.0	45901.	2630.7
#3	7866.8	45830.	2658.3

Approved: June 20, 2016

Sample Name: L1606079602S Acquired: 6/17/2016 18:08:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21455**	**8.7890**	**.21667**	**2.4556**	**.56209**	**.02858**	**212.56**
Stddev	.00128	.0183	.00495	.0069	.00492	.00019	1.34
%RSD	.59684	.20795	2.2847	.27942	.87463	.66849	.63013
#1	.21586	8.8004	.22152	2.4598	.56747	.02861	214.10
#2	.21448	8.7987	.21686	2.4594	.56095	.02876	211.99
#3	.21331	8.7679	.21162	2.4477	.55784	.02838	211.61
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.23534**	**.11222**	**.27425**	**.37363**	**3.9935**	**30.236**	**.58994**
Stddev	.00061	.00025	.00212	.00069	.0328	.057	.00404
%RSD	.26128	.21968	.77325	.18363	.82156	.18783	.68503
#1	.23556	.11217	.27541	.37440	4.0305	30.294	.59436
#2	.23465	.11248	.27554	.37309	3.9680	30.234	.58644
#3	.23582	.11200	.27181	.37341	3.9819	30.181	.58901
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**39.557**	**3.7947**	**.54661**	**36.244**	**.28259**	**5.6297**	**1.4227**
Stddev	.149	.0273	.00239	.350	.00080	.0086	.0042
%RSD	.37666	.71816	.43759	.96435	.28340	.15324	.29247
#1	39.724	3.8213	.54911	36.635	.28284	5.6324	1.4255
#2	39.439	3.7669	.54435	36.134	.28170	5.6366	1.4179
#3	39.507	3.7960	.54636	35.962	.28324	5.6200	1.4247
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606079602S Acquired: 6/17/2016 18:08:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.85064**	**.21101**	F **40.910**	**.53640**	**1.0210**	**.53613**	**.26290**
Stddev	.00310	.01035	.098	.00071	.0095	.00069	.00474
%RSD	.36501	4.9030	.23860	.13302	.93395	.12831	1.8021
#1	.85167	.20134	41.002	.53569	1.0320	.53616	.26748
#2	.85309	.22192	40.807	.53637	1.0155	.53543	.26319
#3	.84715	.20977	40.920	.53712	1.0155	.53680	.25802
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-1.0000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.53546**	**9.2913**	F **-4.6740**
Stddev	.00069	.0116	1.7852
%RSD	.12849	.12506	38.195
#1	.53606	9.3025	-3.8957
#2	.53561	9.2793	-3.4101
#3	.53471	9.2920	-6.7163
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7800.5**	**45406.**	**2635.0**
Stddev	1.7	120.	29.7
%RSD	.02121	.26351	1.1255
#1	7799.1	45394.	2608.0
#2	7802.3	45532.	2630.3
#3	7800.0	45293.	2666.8

Approved: June 20, 2016

Sample Name: L1606079603SD Acquired: 6/17/2016 18:12:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21775**	**8.7414**	**.21642**	**2.4511**	**.56448**	**.02860**	**212.88**
Stddev	.00292	.0252	.00478	.0053	.00576	.00013	1.88
%RSD	1.3412	.28807	2.2085	.21470	1.0208	.44518	.88099
#1	.21705	8.7686	.21651	2.4479	.57098	.02874	215.01
#2	.22095	8.7190	.22116	2.4572	.56001	.02858	211.50
#3	.21524	8.7365	.21160	2.4483	.56244	.02848	212.11
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.23448**	**.11227**	**.27314**	**.37328**	**4.0113**	**30.209**	**.59289**
Stddev	.00035	.00072	.00109	.00093	.0581	.144	.00714
%RSD	.14913	.64446	.39841	.24859	1.4474	.47713	1.2036
#1	.23447	.11293	.27326	.37391	4.0680	30.362	.59489
#2	.23484	.11150	.27199	.37370	3.9520	30.076	.58497
#3	.23414	.11239	.27416	.37221	4.0140	30.188	.59882
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**39.642**	**3.7838**	**.54888**	**36.278**	**.28419**	**5.6368**	**1.4210**
Stddev	.420	.0366	.00090	.310	.00056	.0034	.0054
%RSD	1.0597	.96803	.16484	.85338	.19612	.06112	.37701
#1	40.122	3.8171	.54812	36.629	.28355	5.6379	1.4159
#2	39.345	3.7446	.54988	36.044	.28449	5.6396	1.4203
#3	39.457	3.7897	.54865	36.160	.28453	5.6330	1.4266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606079603SD Acquired: 6/17/2016 18:12:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572980-05

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.85771**	**.20873**	F **40.500**	**.53753**	**1.0250**	**.53956**	**.26363**
Stddev	.00243	.00417	.025	.00115	.0126	.01611	.00394
%RSD	.28320	1.9988	.06287	.21365	1.2245	2.9851	1.4947
#1	.86051	.20399	40.475	.53621	1.0391	.55752	.25914
#2	.85611	.21185	40.526	.53805	1.0150	.52640	.26528
#3	.85653	.21034	40.499	.53833	1.0209	.53477	.26648
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-1.0000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.53723**	**9.2510**	F **-4.5838**
Stddev	.00015	.0077	.1279
%RSD	.02797	.08359	2.7899
#1	.53739	9.2464	-4.4943
#2	.53710	9.2599	-4.7303
#3	.53721	9.2466	-4.5269
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7799.8**	**45175.**	**2625.5**
Stddev	5.4	108.	38.4
%RSD	.06903	.23907	1.4622
#1	7802.5	45184.	2581.3
#2	7793.6	45278.	2644.7
#3	7803.3	45062.	2650.5

Approved: June 20, 2016

Sample Name: L1606073201 Acquired: 6/17/2016 18:16:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	.02735	-.00003	.04445	.26254	.00012	30.035
Stddev	.00137	.00887	.00448	.00095	.00105	.00013	.233
%RSD	256.17	32.428	13915.	2.1285	.40184	104.00	.77443
#1	.00208	.03275	.00120	.04521	.26346	.00024	30.191
#2	.00004	.01711	-.00500	.04339	.26139	-.00001	29.768
#3	-.00051	.03218	.00370	.04475	.26277	.00015	30.146
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00215	.00728	.00193	.14991	1.4835	.02644
Stddev	.00010	.00034	.00049	.00095	.02265	.0272	.00367
%RSD	82.276	15.804	6.7558	49.325	15.109	1.8353	13.884
#1	.00001	.00212	.00755	.00273	.12883	1.5058	.02960
#2	.00015	.00250	.00671	.00088	.14705	1.4532	.02730
#3	.00020	.00183	.00757	.00218	.17386	1.4917	.02241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	41.944	.04923	.00076	F 378.40	.00290	1.6938	.00109
Stddev	.293	.00227	.00035	1.85	.00091	.0119	.00019
%RSD	.69851	4.6140	45.776	.48963	31.294	.70354	17.869
#1	42.254	.04771	.00036	380.22	.00186	1.6858	.00092
#2	41.672	.04813	.00099	376.51	.00353	1.7075	.00130
#3	41.905	.05184	.00094	378.46	.00332	1.6882	.00105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 20, 2016

Sample Name: L1606073201 Acquired: 6/17/2016 18:16:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00179**	**.01088**	**16.975**	**-.00044**	**.55986**	**-.00391**	**.00060**
Stddev	.00191	.00878	.019	.00092	.00207	.00123	.00109
%RSD	107.08	80.751	.11239	208.27	.36903	31.414	180.23
#1	.00371	.01866	16.979	-.00077	.56116	-.00264	-.00045
#2	-.00011	.00135	16.992	.00060	.55747	-.00400	.00172
#3	.00177	.01262	16.955	-.00116	.56094	-.00509	.00054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00089**	**.11839**	F **-.14854**
Stddev	.00046	.00027	.51513
%RSD	51.772	.23013	346.79
#1	-.00056	.11849	.39433
#2	-.00069	.11861	-.20944
#3	-.00141	.11809	-.63051
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7573.2**	**43634.**	**2550.5**
Stddev	19.9	123.	18.2
%RSD	.26333	.28290	.71333
#1	7555.9	43603.	2534.2
#2	7595.0	43530.	2570.1
#3	7568.6	43770.	2547.1

Approved: June 20, 2016

Sample Name: L1606073202 Acquired: 6/17/2016 18:19:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.02031	.00071	.03763	.22851	.00005	25.667
Stddev	.00206	.00338	.00364	.00285	.00369	.00004	.249
%RSD	649.63	16.633	512.56	7.5713	1.6155	72.204	.96975
#1	.00072	.01649	-.00347	.04018	.23236	.00009	25.936
#2	-.00192	.02289	.00246	.03455	.22817	.00006	25.620
#3	.00215	.02156	.00314	.03816	.22500	.00001	25.444
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.00203	.00519	.00365	.14692	1.5092	.02656
Stddev	.00026	.00014	.00077	.00085	.04898	.1044	.00557
%RSD	913.02	7.1354	14.770	23.226	33.341	6.9140	20.978
#1	.00008	.00190	.00434	.00269	.20041	1.4593	.02212
#2	.00026	.00200	.00538	.00431	.13608	1.6292	.02475
#3	-.00025	.00218	.00584	.00394	.10426	1.4393	.03281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	36.556	.04234	.00051	F 361.00	.00280	1.7252	.00307
Stddev	.341	.00161	.00026	3.72	.00076	.0045	.00436
%RSD	.93331	3.8106	51.115	1.0309	27.170	.25864	142.24
#1	36.949	.04282	.00022	365.30	.00341	1.7256	.00553
#2	36.335	.04054	.00057	358.96	.00195	1.7295	-.00197
#3	36.384	.04365	.00073	358.76	.00306	1.7206	.00565
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 20, 2016

Sample Name: L1606073202 Acquired: 6/17/2016 18:19:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00098**	**.00422**	**15.529**	**-.00012**	**.48191**	**-.00897**	**.00123**
Stddev	.00680	.00745	.031	.00024	.00203	.00149	.00258
%RSD	692.59	176.71	.19892	197.02	.42021	16.564	210.38
#1	.00004	-.00392	15.494	.00012	.48424	-.01034	.00096
#2	-.00530	.00586	15.542	-.00013	.48097	-.00919	.00393
#3	.00820	.01071	15.551	-.00035	.48053	-.00739	-.00121
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00093**	**.05168**	**.00489**
Stddev	.00139	.00010	.19223
%RSD	149.29	.18723	3932.8
#1	-.00232	.05157	.21562
#2	.00045	.05173	-.16085
#3	-.00091	.05174	-.04011
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7642.6**	**43930.**	**2576.9**
Stddev	11.5	40.	43.2
%RSD	.15056	.09016	1.6771
#1	7629.5	43950.	2531.5
#2	7650.9	43956.	2617.5
#3	7647.6	43884.	2581.8

Approved: June 20, 2016

Sample Name: L1606073202PS Acquired: 6/17/2016 18:23:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573149-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21646**	**5.4401**	**.21755**	**1.1104**	**.74436**	**.02722**	**28.528**
Stddev	.00067	.0142	.00468	.0030	.00767	.00018	.296
%RSD	.30779	.26115	2.1499	.27058	1.0298	.66629	1.0380
#1	.21631	5.4553	.21303	1.1081	.75321	.02743	28.858
#2	.21588	5.4377	.22237	1.1093	.74009	.02714	28.440
#3	.21719	5.4272	.21724	1.1138	.73979	.02709	28.286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02675**	**.10879**	**.27468**	**.26929**	**2.3055**	**28.591**	**.57076**
Stddev	.00016	.00049	.00117	.00148	.0089	.124	.00299
%RSD	.57986	.44782	.42417	.54788	.38452	.43215	.52399
#1	.02693	.10830	.27343	.26986	2.3050	28.733	.57327
#2	.02668	.10927	.27574	.27040	2.3147	28.534	.56745
#3	.02665	.10878	.27486	.26762	2.2969	28.507	.57155
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**38.299**	**.30241**	**.55189**	F **354.01**	**.27066**	**6.9904**	**.26990**
Stddev	.412	.00197	.00025	2.72	.00090	.0222	.00342
%RSD	1.0745	.65060	.04487	.76765	.33264	.31778	1.2681
#1	38.751	.30450	.55191	357.09	.27039	7.0156	.26833
#2	38.203	.30060	.55213	352.97	.27166	6.9736	.27383
#3	37.945	.30214	.55164	351.96	.26992	6.9820	.26754
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 20, 2016

Sample Name: L1606073202PS Acquired: 6/17/2016 18:23:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573149-03

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.66097**	**.22014**	**16.870**	**.54233**	**.95701**	**.54114**	**.26123**
Stddev	.00225	.00178	.014	.00057	.01164	.00932	.00345
%RSD	.34081	.80808	.08579	.10446	1.2161	1.7226	1.3222
#1	.65852	.21952	16.881	.54251	.97036	.53037	.26397
#2	.66146	.22214	16.875	.54279	.95170	.54652	.25735
#3	.66294	.21875	16.854	.54170	.94898	.54652	.26237
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.54951**	**.58913**	F **-.76903**
Stddev	.00117	.00109	.62541
%RSD	.21217	.18556	81.324
#1	.55085	.58983	-.04817
#2	.54888	.58968	-1.1670
#3	.54879	.58787	-1.0919
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7603.3**	**43746.**	**2551.8**
Stddev	6.3	121.	30.8
%RSD	.08290	.27677	1.2058
#1	7606.9	43669.	2517.1
#2	7607.0	43886.	2562.5
#3	7596.0	43683.	2575.8

Approved: June 20, 2016

Sample Name: L1606073202SDL Acquired: 6/17/2016 18:27:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573149-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00113	.00168	.00007	.01175	.03828	.00008	4.5093	-.00007
Stddev	.00237	.00908	.00398	.00324	.00219	.00008	.0291	.00033
%RSD	209.11	541.55	5893.5	27.593	5.7343	109.63	.64455	499.13
#1	-.00265	-.00838	-.00333	.00801	.03939	.00001	4.5117	.00010
#2	.00160	.00414	.00444	.01374	.03575	.00005	4.5371	.00015
#3	-.00234	.00927	-.00091	.01351	.03969	.00017	4.4791	-.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	.00051	.00078	.02285	.29872	.00664	6.5393	.00640
Stddev	.00005	.00133	.00033	.02267	.05995	.00379	.1671	.00142
%RSD	10.732	258.32	42.751	99.179	20.068	57.124	2.5553	22.229
#1	.00046	.00023	.00108	.04700	.26901	.00259	6.3834	.00577
#2	.00052	-.00065	.00042	.01953	.36772	.00721	6.5189	.00540
#3	.00043	.00196	.00083	.00204	.25943	.01012	6.7157	.00803
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	63.843	.00103	.31650	.00003	-.00252	.01152	2.8456
Stddev	.00022	.203	.00056	.00840	.00217	.00382	.00509	.0333
%RSD	34.395	.31788	54.465	2.6556	6819.1	151.59	44.217	1.1690
#1	.00064	63.728	.00108	.30696	-.00246	.00184	.00574	2.8074
#2	.00042	63.725	.00157	.31975	.00101	-.00413	.01534	2.8617
#3	.00086	64.078	.00045	.32280	.00154	-.00527	.01348	2.8678
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 20, 2016

Sample Name: L1606073202SDL Acquired: 6/17/2016 18:27:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573149-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.08360	-.00261	.00251	-.00028	.01013	.07129
Stddev	.00121	.00034	.00179	.00215	.00033	.00021	.34947
%RSD	6303.2	.40876	68.625	85.312	114.87	2.1150	490.22
#1	.00108	.08336	-.00055	.00397	.00005	.00997	-.08373
#2	.00029	.08345	-.00344	.00352	-.00029	.01006	-.17386
#3	-.00131	.08399	-.00383	.00005	-.00061	.01038	.47146
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	8557.3	49916.	2791.3
Stddev	24.8	263.	2.9
%RSD	.29009	.52746	.10551
#1	8585.5	49837.	2788.0
#2	8539.0	50210.	2793.7
#3	8547.2	49702.	2792.2

Approved: June 20, 2016

Sample Name: L1606073202SDL Acquired: 6/17/2016 18:31:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573149-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	-.00257	.00055	.00302	.00624	.00009	.87925
Stddev	.00142	.00773	.00034	.00083	.00112	.00007	.02916
%RSD	759.10	300.28	61.141	27.379	17.879	73.110	3.3161
#1	.00054	-.00197	.00093	.00243	.00735	.00014	.84684
#2	.00140	.00484	.00029	.00268	.00625	.00001	.88754
#3	-.00138	-.01058	.00043	.00397	.00512	.00012	.90336
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00006	.00002	-.00026	.00088	.00054	.08590	.00161
Stddev	.00006	.00025	.00027	.00080	.00984	.12400	.00297
%RSD	99.783	1147.1	104.13	90.905	1826.1	144.35	184.62
#1	-.00009	.00009	-.00005	.00177	.01045	.01255	.00499
#2	-.00010	-.00025	-.00016	.00022	-.00923	.01609	.00044
#3	.00001	.00023	-.00056	.00066	.00040	.22907	-.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2644	.00021	.00058	12.678	.00003	.06746	.00172
Stddev	.1044	.00118	.00021	.056	.00012	.00600	.00090
%RSD	8.2574	548.93	35.797	.44474	443.23	8.9013	52.410
#1	1.3535	.00146	.00081	12.656	.00003	.06152	.00071
#2	1.1495	.00006	.00050	12.742	-.00010	.07353	.00243
#3	1.2902	-.00088	.00042	12.636	.00015	.06732	.00202
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606073202SDL Acquired: 6/17/2016 18:31:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573149-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00250**	**-.00113**	**.56551**	**-.00048**	**.01637**	**-.00514**	**.00183**
Stddev	.00116	.00542	.00608	.00100	.00072	.00252	.00338
%RSD	46.531	481.89	1.0760	209.83	4.3674	48.946	184.69
#1	.00174	-.00121	.56020	-.00049	.01708	-.00738	-.00158
#2	.00193	.00434	.56418	.00053	.01565	-.00242	.00517
#3	.00384	-.00651	.57215	-.00147	.01639	-.00563	.00190
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00014**	**.00250**	F **-.85771**
Stddev	.00052	.00007	.98424
%RSD	374.71	2.6862	114.75
#1	-.00030	.00253	-.62572
#2	.00044	.00254	-1.9372
#3	-.00055	.00242	-.01019
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8591.8**	**49781.**	**2745.1**
Stddev	.2	158.	25.4
%RSD	.00284	.31769	.92592
#1	8591.7	49623.	2754.4
#2	8592.0	49939.	2716.4
#3	8591.5	49782.	2764.6

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 18:35:25 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40472**	**10.128**	**.40028**	**.51209**	**1.0059**	**.05030**	**9.8998**
Stddev	.00181	.016	.00527	.00417	.0044	.00002	.1544
%RSD	.44638	.16196	1.3154	.81417	.43415	.03367	1.5599
#1	.40397	10.141	.40051	.51311	1.0063	.05032	9.7232
#2	.40678	10.109	.40543	.50750	1.0013	.05030	9.9665
#3	.40340	10.133	.39490	.51565	1.0100	.05029	10.010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05054**	**.20348**	**.50724**	**.51252**	**4.0829**	**50.408**	**1.0061**
Stddev	.00047	.00072	.00067	.00141	.0222	.300	.0038
%RSD	.92039	.35150	.13160	.27454	.54441	.59436	.38170
#1	.05107	.20426	.50767	.51371	4.0712	50.434	1.0067
#2	.05031	.20331	.50759	.51289	4.0689	50.096	1.0096
#3	.05023	.20286	.50647	.51097	4.1085	50.693	1.0020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.045**	**.50831**	**1.0196**	**50.369**	**.51605**	**10.138**	**.51445**
Stddev	.109	.00697	.0056	.193	.00098	.023	.00184
%RSD	1.0868	1.3711	.54527	.38405	.18996	.22522	.35794
#1	10.137	.50034	1.0244	50.384	.51633	10.157	.51587
#2	9.9245	.51132	1.0208	50.168	.51686	10.144	.51510
#3	10.074	.51326	1.0135	50.554	.51496	10.113	.51237
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 18:35:25 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2254**	**.40453**	**5.1464**	**1.0215**	**1.0012**	**1.0118**	**.51621**
Stddev	.0006	.01133	.0112	.0032	.0033	.0048	.00187
%RSD	.05017	2.8004	.21704	.31092	.32546	.47440	.36266
#1	1.2255	.39234	5.1517	1.0217	1.0007	1.0082	.51486
#2	1.2247	.40652	5.1539	1.0246	.99818	1.0099	.51543
#3	1.2259	.41473	5.1336	1.0182	1.0047	1.0172	.51835
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0138**	**1.0231**	F **.31943**
Stddev	.0024	.0029	.98548
%RSD	.24168	.28150	308.51
#1	1.0166	1.0251	-.76296
#2	1.0130	1.0243	.55652
#3	1.0119	1.0198	1.1647
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8317.2**	**48096.**	**2704.3**
Stddev	28.3	166.	31.2
%RSD	.34051	.34605	1.1541
#1	8332.7	47957.	2669.6
#2	8284.5	48280.	2730.0
#3	8334.4	48050.	2713.4

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 18:39:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00147**	**-.00205**	**-.00075**	**.00560**	**-.00122**	**.00014**	**.00515**
Stddev	.00088	.00770	.00250	.00090	.00040	.00002	.01713
%RSD	59.888	375.32	333.48	16.023	32.392	15.856	332.60
#1	.00074	-.00498	.00133	.00660	-.00168	.00015	-.01461
#2	.00244	.00668	-.00006	.00535	-.00106	.00012	.01577
#3	.00121	-.00785	-.00352	.00486	-.00094	.00016	.01429
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00012**	**-.00008**	**-.00013**	**.00052**	**-.03872**	**.03897**	**.00054**
Stddev	.00005	.00027	.00048	.00081	.00913	.07224	.00047
%RSD	43.419	331.94	361.08	154.26	23.583	185.37	88.134
#1	.00017	-.00001	.00005	.00089	-.02862	-.04395	.00100
#2	.00008	-.00038	.00023	.00108	-.04116	.07257	.00056
#3	.00010	.00015	-.00068	-.00040	-.04639	.08828	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.04821**	**.00163**	**.00483**	**.02654**	**.00032**	**.00154**	**.00067**
Stddev	.01445	.00284	.00101	.01311	.00081	.00352	.00433
%RSD	29.982	174.04	20.920	49.398	255.63	228.91	649.50
#1	-.03525	-.00138	.00371	.01289	.00089	.00431	.00224
#2	-.04558	.00201	.00511	.03903	-.00061	-.00243	-.00423
#3	-.06380	.00426	.00567	.02771	.00068	.00274	.00399
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 18:39:04 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00433**	**-.00039**	**.00283**	**-.00018**	**-.00004**	**.00067**	**.00416**
Stddev	.00580	.00470	.00204	.00025	.00040	.00679	.00173
%RSD	133.82	1201.9	72.112	138.40	987.40	1009.8	41.482
#1	.00571	-.00048	.00106	.00010	.00003	.00496	.00304
#2	.00933	-.00505	.00506	-.00029	-.00048	-.00716	.00329
#3	-.00203	.00435	.00237	-.00035	.00032	.00422	.00615
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00072**	**.00004**	F **-.26082**
Stddev	.00044	.00010	1.9253
%RSD	60.757	278.84	738.16
#1	-.00031	-.00002	-1.5304
#2	-.00067	.00015	1.9544
#3	-.00119	-.00003	-1.2065
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8460.9**	**49360.**	**2750.0**
Stddev	38.7	194.	18.7
%RSD	.45729	.39202	.67968
#1	8502.6	49423.	2743.9
#2	8454.0	49143.	2771.0
#3	8426.2	49515.	2735.1

Approved: June 20, 2016

Sample Name: L1606079401 Acquired: 6/17/2016 18:43:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.42019	.00239	.09299	.24033	.00010	45.033	.00035
Stddev	.00117	.01547	.00379	.00215	.00182	.00009	.305	.00007
%RSD	1358.0	3.6822	158.70	2.3150	.75838	83.223	.67703	20.786
#1	.00037	.43671	.00437	.09419	.24243	.00019	45.334	.00043
#2	.00079	.40603	.00478	.09427	.23935	.00011	44.725	.00031
#3	-.00142	.41784	-.00198	.09050	.23920	.00001	45.042	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03234	.00133	.00221	14.910	4.0528	-.00391	7.2570	3.9829
Stddev	.00033	.00021	.00095	.042	.0912	.00327	.0487	.0052
%RSD	1.0356	16.007	42.797	.28198	2.2494	83.572	.67104	.13061
#1	.03205	.00157	.00209	14.958	3.9612	-.00745	7.2361	3.9836
#2	.03270	.00117	.00321	14.885	4.1436	-.00326	7.2223	3.9774
#3	.03226	.00125	.00133	14.886	4.0537	-.00101	7.3127	3.9878
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00124	9.9432	.00613	.06117	.00446	.00254	.00697	7.1492
Stddev	.00029	.0782	.00094	.00399	.00219	.00214	.00651	.0455
%RSD	23.755	.78645	15.273	6.5154	49.099	84.054	93.392	.63610
#1	.00092	10.015	.00547	.05990	.00597	.00038	.00566	7.1849
#2	.00130	9.8599	.00720	.06563	.00195	.00465	.00122	7.0980
#3	.00150	9.9546	.00572	.05797	.00545	.00260	.01404	7.1648
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 20, 2016

Sample Name: L1606079401 Acquired: 6/17/2016 18:43:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.64644	.01118	.00063	.00050	.00575	2.1256
Stddev	.00069	.00401	.00216	.00322	.00080	.00035	.7208
%RSD	1449.3	.61980	19.365	511.07	160.48	6.1407	33.911
#1	-.00046	.65030	.01356	.00388	.00132	.00551	2.8051
#2	-.00023	.64230	.01064	.00056	.00047	.00615	1.3696
#3	.00083	.64672	.00934	-.00255	-.00029	.00558	2.2020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7873.6	45551.	2563.5
Stddev	7.6	290.	21.9
%RSD	.09659	.63622	.85388
#1	7879.9	45218.	2538.4
#2	7865.2	45691.	2578.6
#3	7875.8	45745.	2573.5

Approved: June 20, 2016

Sample Name: L1606079402 Acquired: 6/17/2016 18:46:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	.07821	-.00295	.00897	.07266	.00026	3.3941	.00033
Stddev	.00084	.00459	.00251	.00169	.00041	.00012	.0510	.00010
%RSD	570.91	5.8664	85.289	18.849	.56338	45.398	1.5027	29.157
#1	-.00086	.07511	-.00500	.00719	.07228	.00019	3.4287	.00028
#2	-.00037	.07604	-.00014	.00917	.07262	.00020	3.4182	.00044
#3	.00078	.08348	-.00369	.01056	.07309	.00040	3.3356	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00124	.00110	.00257	.06914	3.9989	.00404	2.0711	.01265
Stddev	.00023	.00090	.00046	.02737	.0590	.00784	.1411	.00237
%RSD	18.324	82.171	18.064	39.588	1.4745	194.01	6.8123	18.751
#1	.00104	.00212	.00250	.07966	4.0551	.00723	2.1738	.01535
#2	.00149	.00076	.00214	.08970	3.9375	-.00489	2.1292	.01092
#3	.00120	.00041	.00306	.03807	4.0041	.00978	1.9102	.01166
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	7.8523	.00191	.00338	-.00008	-.00198	.00440	6.3609
Stddev	.00070	.1282	.00074	.00297	.00152	.00608	.00360	.0233
%RSD	156.69	1.6331	38.628	87.810	1814.9	306.60	81.787	.36616
#1	-.00028	8.0004	.00203	.00093	.00113	-.00097	.00166	6.3716
#2	.00113	7.7754	.00112	.00253	.00041	.00353	.00306	6.3769
#3	.00049	7.7813	.00257	.00668	-.00179	-.00851	.00848	6.3342
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 20, 2016

Sample Name: L1606079402 Acquired: 6/17/2016 18:46:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00128**	**.02341**	**.00469**	**.00148**	**-.00010**	**.00851**	**.34629**
Stddev	.00123	.00034	.00827	.00232	.00063	.00018	.63711
%RSD	96.473	1.4616	176.54	156.86	626.27	2.1029	183.98
#1	.00105	.02377	.00780	.00098	-.00018	.00864	-.23588
#2	.00261	.02339	.01095	-.00055	.00056	.00859	1.0269
#3	.00018	.02308	-.00469	.00401	-.00068	.00831	.24787
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7927.5**	**46262.**	**2558.7**
Stddev	14.5	42.	30.1
%RSD	.18291	.09026	1.1761
#1	7910.9	46218.	2524.3
#2	7937.6	46268.	2579.7
#3	7934.1	46301.	2572.3

Approved: June 20, 2016

Sample Name: L1606079403 Acquired: 6/17/2016 18:50:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.25811	-.00193	.01285	.08081	.00026	6.3590
Stddev	.00060	.01135	.00346	.00180	.00019	.00009	.0201
%RSD	178.72	4.3963	178.81	14.021	.23199	36.669	.31570
#1	.00075	.27113	-.00017	.01254	.08089	.00015	6.3822
#2	.00061	.25290	.00029	.01122	.08059	.00031	6.3471
#3	-.00035	.25030	-.00592	.01478	.08094	.00031	6.3477
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	.00097	.00220	.00096	.95240	2.8511	.00397
Stddev	.00024	.00044	.00137	.00031	.01474	.0931	.00495
%RSD	39.424	45.205	62.178	32.524	1.5481	3.2643	124.66
#1	.00049	.00049	.00099	.00131	.93634	2.9310	.00959
#2	.00089	.00106	.00368	.00089	.96533	2.7489	.00026
#3	.00045	.00135	.00191	.00069	.95552	2.8735	.00206
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.8987	.48671	.00025	13.278	.00365	.01237	-.00046
Stddev	.0606	.00428	.00013	.126	.00072	.00130	.00209
%RSD	2.0918	.87875	52.981	.94742	19.685	10.493	454.82
#1	2.9686	.49096	.00010	13.419	.00286	.01386	-.00197
#2	2.8602	.48241	.00033	13.178	.00425	.01170	-.00133
#3	2.8673	.48675	.00033	13.236	.00384	.01154	.00192
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606079403 Acquired: 6/17/2016 18:50:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00057**	**.00448**	**6.8646**	**-.00033**	**.04917**	**.01205**	**.00218**
Stddev	.00324	.00639	.0174	.00113	.00123	.00314	.00327
%RSD	571.06	142.77	.25303	337.09	2.5074	26.050	150.33
#1	-.00297	.00213	6.8581	-.00107	.05030	.01539	.00544
#2	.00312	-.00041	6.8843	.00096	.04785	.00916	.00221
#3	-.00185	.01171	6.8514	-.00090	.04936	.01160	-.00111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00102**	**.00677**	F **-.78279**
Stddev	.00036	.00023	1.0679
%RSD	35.685	3.3464	136.43
#1	.00100	.00681	-2.0031
#2	.00067	.00698	-.01873
#3	.00139	.00653	-.32659
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7929.0**	**46202.**	**2579.7**
Stddev	12.0	168.	23.8
%RSD	.15169	.36310	.92347
#1	7917.5	46073.	2553.2
#2	7941.5	46392.	2586.4
#3	7928.0	46142.	2599.4

Approved: June 20, 2016

Sample Name: L1606079404 Acquired: 6/17/2016 18:54:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00083**	**.45442**	**-.00213**	**.19355**	**.14242**	**.00013**	**12.950**
Stddev	.00013	.00594	.00325	.00416	.00089	.00002	.094
%RSD	15.186	1.3065	152.37	2.1497	.62189	17.672	.72804
#1	-.00096	.44772	-.00584	.18921	.14257	.00012	13.008
#2	-.00084	.45902	.00026	.19394	.14322	.00015	13.000
#3	-.00070	.45654	-.00083	.19751	.14147	.00011	12.841
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00040**	**.05766**	**.00170**	**.00273**	**1.9502**	**4.6082**	**.00427**
Stddev	.00012	.00073	.00202	.00037	.0206	.0540	.00182
%RSD	28.836	1.2586	118.48	13.502	1.0554	1.1714	42.744
#1	.00029	.05846	.00209	.00271	1.9713	4.6153	.00281
#2	.00040	.05704	.00350	.00237	1.9490	4.6582	.00632
#3	.00052	.05748	-.00048	.00311	1.9302	4.5510	.00368
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.254**	**3.2924**	**.00016**	**17.946**	**.01486**	**.01059**	**.00565**
Stddev	.163	.0255	.00023	.149	.00109	.00265	.00165
%RSD	1.5875	.77551	144.84	.83303	7.3432	25.028	29.238
#1	10.179	3.3069	.00035	18.080	.01539	.00833	.00751
#2	10.440	3.3073	-.00010	17.973	.01360	.01351	.00512
#3	10.142	3.2629	.00022	17.784	.01558	.00993	.00434
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: L1606079404 Acquired: 6/17/2016 18:54:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00193**	**.00257**	**5.3899**	**.00048**	**.11422**	**.01787**	**.00240**
Stddev	.00363	.00562	.0027	.00090	.00104	.00667	.00186
%RSD	188.00	218.88	.05018	188.29	.90659	37.341	77.679
#1	.00057	.00296	5.3927	.00015	.11454	.01036	.00080
#2	-.00609	.00798	5.3873	.00149	.11506	.02310	.00195
#3	-.00027	-.00324	5.3897	-.00021	.11307	.02015	.00444
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00038**	**.01348**	F **-1.5938**
Stddev	.00048	.00009	.2219
%RSD	127.21	.63717	13.920
#1	.00021	.01343	-1.8428
#2	.00000	.01343	-1.5217
#3	.00092	.01358	-1.4170
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7914.8**	**46053.**	**2578.3**
Stddev	28.5	192.	15.7
%RSD	.36038	.41697	.60957
#1	7909.5	45846.	2565.7
#2	7889.3	46225.	2573.3
#3	7945.6	46088.	2595.9

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 18:58:40 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40184**	**10.110**	**.39617**	**.50732**	**1.0016**	**.05032**	**9.8180**
Stddev	.00291	.029	.00272	.00268	.0079	.00041	.1040
%RSD	.72413	.28601	.68596	.52922	.78579	.81852	1.0591
#1	.40514	10.143	.39890	.50755	.99381	.04997	9.7305
#2	.40074	10.098	.39615	.50989	1.0095	.05078	9.9329
#3	.39964	10.088	.39347	.50453	1.0013	.05023	9.7904
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05014**	**.20278**	**.50784**	**.51133**	**4.0301**	**49.958**	**.99570**
Stddev	.00027	.00028	.00335	.00169	.0107	.174	.00631
%RSD	.53020	.13891	.65924	.33031	.26543	.34776	.63393
#1	.05039	.20306	.50572	.51266	4.0256	49.815	.98848
#2	.05017	.20277	.51170	.51190	4.0424	50.152	1.0002
#3	.04986	.20250	.50611	.50943	4.0225	49.909	.99845
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.019**	**.50299**	**1.0147**	**49.884**	**.51253**	**10.049**	**.51074**
Stddev	.227	.00494	.0055	.292	.00230	.021	.00220
%RSD	2.2651	.98164	.54574	.58535	.44840	.20693	.43090
#1	9.7570	.49866	1.0195	49.598	.51159	10.070	.51256
#2	10.154	.50194	1.0161	50.181	.51515	10.046	.51136
#3	10.146	.50837	1.0086	49.872	.51084	10.029	.50829
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 20, 2016

Sample Name: CCV Acquired: 6/17/2016 18:58:40 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2121**	**.40496**	**5.1040**	**1.0150**	**.99413**	**1.0050**	**.51342**
Stddev	.0092	.00152	.0065	.0039	.00700	.0025	.00455
%RSD	.75611	.37630	.12653	.38571	.70438	.24802	.88581
#1	1.2106	.40665	5.1086	1.0163	.98695	1.0024	.51722
#2	1.2220	.40457	5.1067	1.0180	1.0009	1.0053	.51466
#3	1.2039	.40368	5.0966	1.0105	.99450	1.0073	.50838
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0169**	**1.0182**	F **.56607**
Stddev	.0047	.0009	.33902
%RSD	.46554	.08949	59.889
#1	1.0167	1.0172	.50955
#2	1.0217	1.0190	.25888
#3	1.0122	1.0183	.92980
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8346.7**	**48197.**	**2724.8**
Stddev	20.8	155.	15.4
%RSD	.24933	.32058	.56426
#1	8359.6	48242.	2727.1
#2	8322.7	48324.	2708.4
#3	8357.9	48025.	2738.9

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 19:02:18 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00133**	**.00306**	**-.00182**	**.00301**	**-.00115**	**.00001**	**-.01439**
Stddev	.00138	.00912	.00192	.00201	.00161	.00006	.04798
%RSD	103.79	297.74	105.69	66.585	139.67	397.54	333.48
#1	-.00260	.01347	-.00189	.00269	-.00006	-.00005	.02018
#2	-.00151	-.00073	.00014	.00516	-.00300	.00003	-.06917
#3	.00013	-.00355	-.00371	.00119	-.00040	.00006	.00582
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**.00011**	**.00004**	**.00167**	**-.01600**	**.09368**	**.00401**
Stddev	.00018	.00024	.00045	.00084	.01909	.13466	.00296
%RSD	522.66	216.42	1005.3	50.274	119.32	143.75	73.807
#1	-.00009	-.00009	.00010	.00071	-.00640	.04813	.00319
#2	.00024	.00004	-.00043	.00225	-.03798	.24521	.00154
#3	-.00005	.00037	.00046	.00205	-.00362	-.01230	.00728
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03961**	**.00052**	**.00448**	**-.00339**	**-.00041**	**-.00103**	**.00164**
Stddev	.02153	.00459	.00053	.01250	.00019	.00763	.00087
%RSD	54.364	885.60	11.914	368.55	45.582	741.14	53.295
#1	.02721	.00030	.00386	.00337	-.00022	-.00464	.00064
#2	.02715	-.00396	.00482	-.01781	-.00041	.00773	.00223
#3	.06447	.00521	.00475	.00427	-.00059	-.00618	.00205
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 20, 2016

Sample Name: CCB Acquired: 6/17/2016 19:02:18 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v959) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00543**	**.00210**	**.00348**	**.00003**	**-.00012**	**.00003**	**.00368**
Stddev	.00198	.00322	.00166	.00066	.00032	.00402	.00238
%RSD	36.493	153.08	47.650	1924.7	255.18	14835.	64.754
#1	.00590	.00549	.00167	.00077	-.00005	-.00247	.00145
#2	.00325	.00173	.00492	-.00049	-.00047	-.00211	.00341
#3	.00713	-.00091	.00384	-.00018	.00015	.00466	.00619
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00027**	**-.00004**	F **-.33753**
Stddev	.00091	.00015	1.0266
%RSD	337.84	323.53	304.15
#1	-.00040	.00012	-.82012
#2	-.00110	-.00013	-1.0339
#3	.00070	-.00013	.84143
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8517.8**	**49372.**	**2728.5**
Stddev	33.8	148.	7.8
%RSD	.39720	.29985	.28567
#1	8552.3	49227.	2727.4
#2	8516.4	49366.	2721.3
#3	8484.7	49523.	2736.8

Approved: June 20, 2016

2.3.2 Metals ICP-MS Data

2.3.2.1 Summary Data

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW8-060916	**Prep Method:**	3015	**Prep Date:**	06/21/2016 07:48
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/21/2016 12:44
Workgroup #:	WG573557	**Analyst:**	BKT	**Run Date:**	06/21/2016 15:22
Collect Date:	06/09/2016 11:00	**Dilution:**	1	**File ID:**	NI.062116.152226
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.144		0.00600	0.00300	0.00150
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW8-060916	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 19:47
Collect Date:	06/09/2016 11:00	**Dilution:**	1	**File ID:**	NI.061616.194738
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00171	J	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000344	J	0.00120	0.000600	0.000300
Cobalt, Total	7440-48-4	0.0414		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.0107		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000105	J	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0267	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW8-060916	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 21:13
Collect Date:	06/09/2016 11:00	**Dilution:**	10	**File ID:**	NI.061616.211326
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chromium, Total	7440-47-3	0.278		0.0400	0.0200	0.0100
Manganese, Total	7439-96-5	0.350		0.0400	0.0200	0.0100
Nickel, Total	7440-02-0	0.447		0.0800	0.0400	0.0200

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW26SW-060916	**Prep Method:**	3015	**Prep Date:**	06/21/2016 07:48
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/21/2016 12:44
Workgroup #:	WG573557	**Analyst:**	BKT	**Run Date:**	06/21/2016 15:25
Collect Date:	06/09/2016 13:25	**Dilution:**	1	**File ID:**	NI.062116.152538
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Arsenic, Total	7440-38-2	0.00640		0.00200	0.00100	0.000500
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW26SW-060916	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 19:50
Collect Date:	06/09/2016 13:25	**Dilution:**	1	**File ID:**	NI.061616.195050
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00237	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.000803	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00116	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.00238	J	0.00800	0.00400	0.00200
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00101	J	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW26SW-060916	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 21:16
Collect Date:	06/09/2016 13:25	**Dilution:**	10	**File ID:**	NI.061616.211638
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.635		0.0600	0.0300	0.0150
Manganese, Total	7439-96-5	1.70		0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW10F-060916	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 19:54
Collect Date:	06/09/2016 14:40	**Dilution:**	1	**File ID:**	NI.061616.195401
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00100	U	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000376	J	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00283	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00127	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00144	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.00494	J	0.00800	0.00400	0.00200
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW10F-060916	**Prep Method:**	3015	**Prep Date:**	06/21/2016 07:48
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/21/2016 12:44
Workgroup #:	WG573557	**Analyst:**	BKT	**Run Date:**	06/21/2016 15:28
Collect Date:	06/09/2016 14:40	**Dilution:**	1	**File ID:**	NI.062116.152849
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.0526		0.00600	0.00300	0.00150
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW10F-060916	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 21:19
Collect Date:	06/09/2016 14:40	**Dilution:**	10	**File ID:**	NI.061616.211949
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Total	7439-96-5	0.300		0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer NexION 300X

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	100
Vi = Initial volume	40
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/L)	0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	200
Vi = Initial volume	0.5
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/kg)	40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	40
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	50

50 ug/kg = 0.050 mg/kg

Perkin Elmer NexION ICP/MS

STANDARDS KEY

QC Std 1 - ICV
QC Std 2 - ICB
QC Std 3 - LLICV
QC Std 4 - ICSA
QC Std 5 - ICSAB
QC Std 6 - CCV
QC Std 7 - CCB
QC Std 8 - LLCCV

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.00005	0.05	0.1
Sb	10	0	0.00005	0.05	0.1
As	10	0	0.00005	0.05	0.1
Ba	10	0	0.00005	0.05	0.1
Be	10	0	0.00005	0.05	0.1
Ca	1000	0	0.005	5	10
Cd	10	0	0.0005	0.05	0.1
Cr	10	0	0.0005	0.05	0.1
Co	10	0	0.0005	0.05	0.1
Cu	10	0	0.0005	0.05	0.1
Fe	1000	0	0.005	5	10
Pb	10	0	0.00005	0.05	0.1
Mg	1000	0	0.005	5	10
Mn	10	0	0.00005	0.05	0.1
Ni	10	0	0.00005	0.05	0.1
K	1000	0	0.005	5	10
Se	10	0	0.00005	0.05	0.1
Ag	10	0	0.00005	0.05	0.1
Na	1000	0	0.005	5	10
Tl	10	0	0.00005	0.05	0.1
V	10	0	0.00005	0.05	0.1
U	1000	0	0.00005	0.05	0.1
Zn	10	0	0.00005	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG573483
Analyst: VC
Spike Analyst: VC
Run Date: 06/21/2016 07:48
Method: 3015
Balance: BAL016
Instrument: MW-4
Instrument Start: 06/21/2016 08:19

SOP: ME407 Revison 19
Spike Solution: STD75998
Spike Witness: ERP
40 & 50 ML. DIGESTION TU COA18987
MS Filters- fisher-Lot#R RGT35621
HNO3 Lot #: COA18905

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG573483-02	BLANK	1	20 mL	50 mL	184.315 g	184.299 g		
2	WG572662-01	FBLK2	18	20 mL	50 mL	182.12 g	182.115 g		
3	WG573483-03	LCS	1	20 mL	50 mL	182.488 g	182.467 g	.25 mL	
4	L16060616-01	SAMP	1	20 mL	50 mL	183.726 g	183.7 g		06/21/16
5	L16060616-02	SAMP	1	20 mL	50 mL	182.782 g	182.769 g		06/21/16
6	L16060616-04	SAMP	1	20 mL	50 mL	182.01 g	181.989 g		06/21/16
7	L16060650-01	SAMP	1	20 mL	50 mL	182.593 g	182.584 g		06/24/16
8	L16060650-02	SAMP	1	20 mL	50 mL	182.881 g	182.855 g		06/24/16
9	L16060650-03	SAMP	1	20 mL	50 mL	182.342 g	182.296 g		06/24/16
10	L16060650-08	SAMP	1	20 mL	50 mL	182.009 g	181.997 g		06/24/16
11	L16060729-02	SAMP	1	20 mL	50 mL	183.948 g	183.941 g		06/24/16
12	L16060729-03	SAMP	1	20 mL	50 mL	180.366 g	180.368 g		06/24/16
13	L16060730-01	SAMP	1	20 mL	50 mL	180.5 g	180.493 g		06/24/16
14	L16060730-02	SAMP	1	20 mL	50 mL	182.181 g	182.183 g		06/24/16
15	L16060730-03	SAMP	1	20 mL	50 mL	181.455 g	181.446 g		06/24/16
16	L16060731-02	SAMP	18	20 mL	50 mL	183.631 g	183.62 g		06/17/16
17	L16060961-01	SAMP	1	20 mL	50 mL	184.464 g	184.461 g		06/24/16
18	L16060961-02	SAMP	1	20 mL	50 mL	182.66 g	182.651 g		06/24/16
19	WG573483-01	REF	1	20 mL	50 mL	181.648 g	181.642 g		
20	L16060961-03	SAMP	1	20 mL	50 mL	181.648 g	181.642 g		06/24/16
21	L16060995-01	SAMP	1	20 mL	50 mL	183.365 g	183.359 g		06/24/16
22	L16060995-02	SAMP	1	20 mL	50 mL	185.146 g	185.151 g		06/24/16
23	WG573483-04	MS	1	20 mL	50 mL	181.067 g	181.054 g	.25 mL	
24	WG573483-05	MSD	1	20 mL	50 mL	183.356 g	183.356 g	.25 mL	

L16060995-01	ph adj
L16060995-02	ph adj

Analyst: Vicki Collins

Reviewer: Erin Potter

MW_DIG - Modified 09/30/2009
PDF ID: 4815646
Report generated: 06/21/2016 09:07

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG572730
Analyst: VC
Spike Analyst: VC
Run Date: 06/15/2016 07:54
Method: 3015
Balance: BAL016
Instrument: MW-3
Instrument Start: 06/15/2016 07:59

SOP: ME407 Revison 19
Spike Solution: STD75998
Spike Witness: ERP
40 & 50 ML. DIGESTION TU COA18772
HNO3 Lot #: COA18905
MS Filters- fisher-Lot#R RGT35621

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG572730-03	BLANK	1	20 mL	50 mL	182.294 g	182.284 g		
2	WG572662-01	FBLK2	18	20 mL	50 mL	180.913 g	180.919 g		
3	WG572730-04	LCS	1	20 mL	50 mL	182.621 g	182.604 g	.25 mL	
4	L16060616-01	SAMP	1	20 mL	50 mL	181.592 g	181.591 g		06/21/16
5	L16060616-02	SAMP	1	20 mL	50 mL	183.537 g	183.546 g		06/21/16
6	L16060616-04	SAMP	1	20 mL	50 mL	183.852 g	183.819 g		06/21/16
7	L16060649-01	SAMP	2	20 mL	50 mL	183.221 g	183.203 g		06/20/16
8	L16060650-01	SAMP	1	20 mL	50 mL	182.311 g	182.309 g		06/24/16
9	L16060650-02	SAMP	1	20 mL	50 mL	183.087 g	183.085 g		06/24/16
10	L16060650-03	SAMP	1	20 mL	50 mL	181.652 g	181.65 g		06/24/16
11	L16060650-08	SAMP	1	20 mL	50 mL	184.579 g	184.558 g		06/24/16
12	WG572730-01	REF	2	20 mL	50 mL	182.936 g	182.92 g		
13	L16060664-01	SAMP	2	20 mL	50 mL	182.936 g	182.92 g		06/17/16
14	L16060724-01	SAMP	1	20 mL	50 mL	187.236 g	187.232 g		06/24/16
15	L16060729-01	SAMP	1	20 mL	50 mL	182.146 g	182.149 g		06/24/16
16	L16060729-02	SAMP	1	20 mL	50 mL	181.631 g	181.644 g		06/24/16
17	WG572730-02	REF	1	20 mL	50 mL	183.736 g	183.731 g		
18	L16060729-03	SAMP	1	20 mL	50 mL	183.736 g	183.731 g		06/24/16
19	L16060730-01	SAMP	1	20 mL	50 mL	184.668 g	184.674 g		06/24/16
20	L16060730-02	SAMP	1	20 mL	50 mL	182.686 g	182.675 g		06/24/16
21	L16060730-03	SAMP	1	20 mL	50 mL	181.928 g	181.933 g		06/24/16
22	L16060731-02	SAMP	18	20 mL	50 mL	183.292 g	183.277 g		06/17/16
23	L16060754-01	SAMP	2	20 mL	50 mL	182.824 g	182.823 g		06/21/16
24	WG572730-05	DUP	1	20 mL	50 mL	181.184 g	181.19 g		
25	WG572730-06	MS	1	20 mL	50 mL	183.99 g	183.994 g	.25 mL	
26	WG572730-07	MSD	1	20 mL	50 mL	183.548 g	183.523 g	.25 mL	

L16060650-03	FILTERED DIGESTATE
L16060729-01	FILTERED DIGESTATE
L16060754-01	FILTERED DIGESTATE
L16060731-02	FILTERED DIGESTATE

Analyst: Vicki Collins

Reviewer: Erin Potter

MW_DIG - Modified 09/30/2009
PDF ID: 4807921
Report generated: 06/15/2016 11:11

TCLP Non-Volatile

Analyst(s): AMA/CPD
Date: 06/14/2016
Filter Lot #: 94860030
Microbac SOP: TCLP01 Rev #: 12

Analyst / Date		Analyst / Date	
CPD 6/14/16		AMA 6/15/16	
Time On	Temp On °C	Time Off	Temp Off °C
1427	23.8	0827	21.9

Agitator Speed 30 ± 2 rpm ☑

Jug #	Sample #	Tests	Method	Fluid #	Matrix *	% Solid	Pretest pH Initial	Pretest pH Final	Int. Wt. (g)	Fluid Vol. (mL)	Final extract pH
D	06-0670-01	ME	1311	F1-181	S	100	8.12	2.08	7.67	153	5.19
↓	-02	↓	↓	↓	↓	↓	8.98	2.06	100.27	2005	5.79
↓	-03	↓	↓	↓	↓	↓	10.07	4.79	100.14	2003	7.34
↓	-04	↓	↓	↓	↓	↓	9.53	1.65	100.72	2014	5.13
↓	-05	↓	↓	↓	↓	↓	8.98	2.69	100.32	2006	6.67
↓	-06	↓	↓	↓	↓	↓	9.43	1.94	40.43	807	6.79
↓	-07	↓	↓	F2-379	↓	↓	8.10	7.75	25.70	514	8.08
D	06-0731-01	ME pH-L	1311	F2-379	S	100	8.47	5.86	50.46	1009	4.32
↓	-02	↓ ↓	1312	SPLP F2-320	↓	↓	NA	NA	100.62	2012	8.44
NA	FBIK1	ME	1311	F1-181	NA	NA	NA	NA	100	100	4.93
↓	FBIK2	↓ COD pH-L ~~ME~~	↓	F2-379	↓	↓	↓	↓	↓	↓	2.88
↓	SPLP F2-	↓ pH-L	1312	SPLP F2-320	↓	↓	↓	↓	↓	↓	5.05

CPD 6/14/16

*Matrix Code: (S = solid, sand, soil or sludge) (P = paint) (O = organic) (W = water or aqueous waste)
D = Disposable plastic jug
TCLP Pretest weight will be 5.0 g (± 0.1) unless otherwise noted.
Temperature shall be maintained at 23° ± 2 for 18 ± 2 hours unless otherwise noted.

Comments: 5x 06-0670-01 recieved with limited volume.

Peer Review By: [signature]

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 061616A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573083,572869,572085,572184

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.061616.153014	Blank	Blank		1		06/16/16 15:30
2	NI.061616.153326	WG573095-01	Calibration Point		1		06/16/16 15:33
3	NI.061616.153637	WG573095-02	Calibration Point		1		06/16/16 15:36
4	NI.061616.153949	WG573095-03	Calibration Point		1		06/16/16 15:39
5	NI.061616.154300	WG573095-04	Calibration Point		1		06/16/16 15:43
6	NI.061616.154613	WG573095-05	ICV		1		06/16/16 15:46
7	NI.061616.154926	WG573095-06	ICB		1		06/16/16 15:49
8	NI.061616.155239	WG573095-07	Low Level Initial Calibration V		1		06/16/16 15:52
9	NI.061616.155746	WG573095-08	Initial Calibration Verification		1		06/16/16 15:57
10	NI.061616.160355	WG573095-09	Initial Calib Blank		1		06/16/16 16:03
11	NI.061616.160740	WG573095-10	Interference Check		1		06/16/16 16:07
12	NI.061616.162201	WG573095-11	Interference Check		1		06/16/16 16:22
13	NI.061616.162516	WG573095-12	CCV		1		06/16/16 16:25
14	NI.061616.163850	WG573095-13	CCB		1		06/16/16 16:38
15	NI.061616.173543	WG572432-04	Method/Prep Blank	20/50	1		06/16/16 17:35
16	NI.061616.173854	WG572432-05	Laboratory Control S	20/50	1		06/16/16 17:38
17	NI.061616.174206	WG572432-01	Reference Sample		1	L16060540-06	06/16/16 17:42
18	NI.061616.174517	WG572432-06	Matrix Spike	20/50	1	L16060540-06	06/16/16 17:45
19	NI.061616.174829	WG572432-07	Matrix Spike Duplica	20/50	1	L16060540-06	06/16/16 17:48
20	NI.061616.175140	L16060533-01	16F0399-01	20/50	1		06/16/16 17:51
21	NI.061616.175452	L16060540-03	AG4573	20/50	1		06/16/16 17:54
22	NI.061616.175803	WG573083-01	Post Digestion Spike		1	L16060540-03	06/16/16 17:58
23	NI.061616.180115	WG573083-02	Serial Dilution		5	L16060540-03	06/16/16 18:01
24	NI.061616.180426	WG573083-02	Serial Dilution		25	L16060540-03	06/16/16 18:04
25	NI.061616.180739	WG573095-14	CCV		1		06/16/16 18:07
26	NI.061616.181051	WG573095-15	CCB		1		06/16/16 18:10
27	NI.061616.181404	L16060540-09	AG4578	20/50	1		06/16/16 18:14
28	NI.061616.181715	L16060540-10	AG4579	20/50	1		06/16/16 18:17
29	NI.061616.182027	L16060540-11	AG4580	20/50	1		06/16/16 18:20
30	NI.061616.182338	L16060540-14	AG4584	20/50	1		06/16/16 18:23
31	NI.061616.182650	L16060540-15	AG4587	20/50	1		06/16/16 18:26
32	NI.061616.183001	L16060540-16	AG4589	20/50	1		06/16/16 18:30
33	NI.061616.183313	L16060549-01	J6F0164-01	20/50	1		06/16/16 18:33
34	NI.061616.183624	L16060614-01	WATER PLANT B/W	20/50	1		06/16/16 18:36

Page: 1 Approved: June 20, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 061616A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573083,572869,572085,572184

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.061616.183936	L16060624-01	16F1312-03	20/50	1		06/16/16 18:39
36	NI.061616.184247	WG572432-03	Reference Sample		1	L16060630-01	06/16/16 18:42
37	NI.061616.184600	WG573095-16	CCV		1		06/16/16 18:46
38	NI.061616.184912	WG573095-17	CCB		1		06/16/16 18:49
39	NI.061616.185225	WG572432-10	Duplicate	20/50	1	L16060630-01	06/16/16 18:52
40	NI.061616.185538	WG573095-18	CCV		1		06/16/16 18:55
41	NI.061616.185850	WG573095-19	CCB		1		06/16/16 18:58
42	NI.061616.190202	WG573095-20	Low Level Continuing Calibra		1		06/16/16 19:02
43	NI.061616.190516	WG572730-03	Method/Prep Blank	20/50	1		06/16/16 19:05
44	NI.061616.190828	WG572730-04	Laboratory Control S	20/50	1		06/16/16 19:08
45	NI.061616.191230	WG572730-01	Reference Sample		1	L16060664-01	06/16/16 19:12
46	NI.061616.191541	WG572730-05	Duplicate	20/50	1	L16060664-01	06/16/16 19:15
47	NI.061616.191852	WG572730-02	Reference Sample		1	L16060729-03	06/16/16 19:18
48	NI.061616.192204	WG572730-06	Matrix Spike	20/50	1	L16060729-03	06/16/16 19:22
49	NI.061616.192515	WG572730-07	Matrix Spike Duplica	20/50	1	L16060729-03	06/16/16 19:25
50	NI.061616.192827	L16060754-01	V6F0103-02	20/50	1		06/16/16 19:28
51	NI.061616.193138	WG572869-01	Post Digestion Spike		1	L16060754-01	06/16/16 19:31
52	NI.061616.193450	L16060754-01	V6F0103-02		5		06/16/16 19:34
53	NI.061616.193803	WG573095-21	CCV		1		06/16/16 19:38
54	NI.061616.194114	WG573095-22	CCB		1		06/16/16 19:41
55	NI.061616.194427	WG572869-02	Serial Dilution		25	L16060754-01	06/16/16 19:44
56	NI.061616.194738	L16060616-01	MW8-060916	20/50	1		06/16/16 19:47
57	NI.061616.195050	L16060616-02	18CPTMW26SW-060916	20/50	1		06/16/16 19:50
58	NI.061616.195401	L16060616-04	MW10F-060916	20/50	1		06/16/16 19:54
59	NI.061616.195713	L16060649-01	V6F0102-02	20/50	1		06/16/16 19:57
60	NI.061616.200024	L16060650-01	MW1-061016	20/50	1		06/16/16 20:00
61	NI.061616.200336	L16060650-02	MW3-061016	20/50	1		06/16/16 20:03
62	NI.061616.200647	L16060650-03	17WW08-061016	20/50	1		06/16/16 20:06
63	NI.061616.201257	L16060650-08	18WW24F-061016	20/50	1		06/16/16 20:12
64	NI.061616.201608	L16060729-01	A09-MW10-Y1S2	20/50	1		06/16/16 20:16
65	NI.061616.201921	WG573095-23	CCV		1		06/16/16 20:19
66	NI.061616.202232	WG573095-24	CCB		1		06/16/16 20:22
67	NI.061616.202638	L16060729-02	A09-MW11-Y1S2	20/50	1		06/16/16 20:26
68	NI.061616.202950	L16060730-01	18CPTMW14-061316	20/50	1		06/16/16 20:29

Page: 2 Approved: June 20, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 061616A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573083,572869,572085,572184

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.061616.204020	L16060730-02	18CPTMW14FD-061316	20/50	1		06/16/16 20:40
70	NI.061616.204331	L16060730-03	18CPTMW24-061316	20/50	1		06/16/16 20:43
71	NI.061616.204643	L16060731-02	60500-SSP0041-SSP0041	20/50	1		06/16/16 20:46
72	NI.061616.204954	L16060731-02	60500-SSP0041-SSP0041	20/50	10		06/16/16 20:49
73	NI.061616.205306	L16060540-09	AG4578	20/50	100		06/16/16 20:53
74	NI.061616.205727	L16060540-10	AG4579	20/50	10		06/16/16 20:57
75	NI.061616.210039	L16060540-11	AG4580	20/50	10		06/16/16 21:00
76	NI.061616.210350	L16060540-14	AG4584	20/50	100		06/16/16 21:03
77	NI.061616.210702	WG573095-25	CCV		1		06/16/16 21:07
78	NI.061616.211014	WG573095-26	CCB		1		06/16/16 21:10
79	NI.061616.211326	L16060616-01	MW8-060916	20/50	10		06/16/16 21:13
80	NI.061616.211638	L16060616-02	18CPTMW26SW-060916	20/50	10		06/16/16 21:16
81	NI.061616.211949	L16060616-04	MW10F-060916	20/50	10		06/16/16 21:19
82	NI.061616.212301	L16060650-01	MW1-061016	20/50	50		06/16/16 21:23
83	NI.061616.212612	L16060650-02	MW3-061016	20/50	10		06/16/16 21:26
84	NI.061616.212923	L16060650-03	17WW08-061016	20/50	10		06/16/16 21:29
85	NI.061616.213235	L16060650-08	18WW24F-061016	20/50	10		06/16/16 21:32
86	NI.061616.213546	L16060730-01	18CPTMW14-061316	20/50	50		06/16/16 21:35
87	NI.061616.213859	L16060730-02	18CPTMW14FD-061316	20/50	50		06/16/16 21:38
88	NI.061616.214210	L16060730-03	18CPTMW24-061316	20/50	50		06/16/16 21:42
89	NI.061616.214523	WG573095-27	CCV		1		06/16/16 21:45
90	NI.061616.214835	WG573095-28	CCB		1		06/16/16 21:48
91	NI.061616.215148	WG573095-29	Low Level Continuing Calibra		1		06/16/16 21:51
92	NI.061616.215500	WG571964-02	Method/Prep Blank	20/50	1		06/16/16 21:55
93	NI.061616.215811	WG571964-03	Laboratory Control S	20/50	1		06/16/16 21:58
94	NI.061616.220123	WG571964-01	Reference Sample		5	L16060428-01	06/16/16 22:01
95	NI.061616.220434	WG571964-05	Matrix Spike	20/50	5	L16060428-01	06/16/16 22:04
96	NI.061616.220746	WG571964-06	Matrix Spike Duplica	20/50	5	L16060428-01	06/16/16 22:07
97	NI.061616.221057	L16060411-03	AWD4T-060716	20/50	1		06/16/16 22:10
98	NI.061616.221409	L16060411-04	AWD4B-060716	20/50	1		06/16/16 22:14
99	NI.061616.221720	WG572085-03	Post Digestion Spike		1	L16060411-04	06/16/16 22:17
100	NI.061616.222032	L16060411-04	AWD4B-060716		5		06/16/16 22:20
101	NI.061616.222343	WG572085-04	Serial Dilution		25	L16060411-04	06/16/16 22:23
102	NI.061616.222656	WG573095-30	CCV		1		06/16/16 22:26

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Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 061616A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573083,572869,572085,572184

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.061616.223007	WG573095-31	CCB		1		06/16/16 22:30
104	NI.061616.223320	WG571834-02	Method/Prep Blank	20/50	1		06/16/16 22:33
105	NI.061616.223632	WG571834-03	Laboratory Control S	20/50	1		06/16/16 22:36
106	NI.061616.223943	WG571834-01	Reference Sample		1	L16060337-02	06/16/16 22:39
107	NI.061616.224254	WG571834-04	Matrix Spike	20/50	1	L16060337-02	06/16/16 22:42
108	NI.061616.224606	WG571834-05	Matrix Spike Duplica	20/50	1	L16060337-02	06/16/16 22:46
109	NI.061616.224917	L16060303-01	LH18/24-SP650-6368-GRAB	20/50	1		06/16/16 22:49
110	NI.061616.225229	L16060303-02	LH18/24-SP650-6368-COMP	20/50	1		06/16/16 22:52
111	NI.061616.225540	L16060304-02	LH18/24-SP650-6369-GRAB	20/50	1		06/16/16 22:55
112	NI.061616.225852	WG572184-03	Post Digestion Spike		1	L16060304-02	06/16/16 22:58
113	NI.061616.230203	WG572184-04	Serial Dilution		5	L16060304-02	06/16/16 23:02
114	NI.061616.230516	WG573095-32	CCV		1		06/16/16 23:05
115	NI.061616.230827	WG573095-33	CCB		1		06/16/16 23:08
116	NI.061616.231140	WG573095-34	Low Level Continuing Calibra		1		06/16/16 23:11

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Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062116A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573557,573473,573475

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.062116.123136	Blank	Blank		1		06/21/16 12:31
2	NI.062116.123447	WG573631-01	Calibration Point		1		06/21/16 12:34
3	NI.062116.123759	WG573631-02	Calibration Point		1		06/21/16 12:37
4	NI.062116.124110	WG573631-03	Calibration Point		1		06/21/16 12:41
5	NI.062116.124422	WG573631-04	Calibration Point		1		06/21/16 12:44
6	NI.062116.124735	WG573631-05	Initial Calibration Verification		1		06/21/16 12:47
7	NI.062116.125048	WG573631-06	Initial Calib Blank		1		06/21/16 12:50
8	NI.062116.125401	WG573631-07	Low Level Initial Calibration V		1		06/21/16 12:54
9	NI.062116.125712	WG573631-08	Interference Check		1		06/21/16 12:57
10	NI.062116.130024	WG573631-09	Interference Check		1		06/21/16 13:00
11	NI.062116.130337	WG573631-10	CCV		1		06/21/16 13:03
12	NI.062116.130648	WG573631-11	CCB		1		06/21/16 13:06
13	NI.062116.131000	WG573483-02	Method/Prep Blank	20/50	1		06/21/16 13:10
14	NI.062116.131312	WG573483-03	Laboratory Control S		1		06/21/16 13:13
15	NI.062116.131623	WG573483-01	Reference Sample		1	L16060961-03	06/21/16 13:16
16	NI.062116.131935	WG573483-04	Matrix Spike	20/50	1	L16060961-03	06/21/16 13:19
17	NI.062116.132247	WG573483-05	Matrix Spike Duplica	20/50	1	L16060961-03	06/21/16 13:22
18	NI.062116.132558	L16060731-02	60500-SSP0041-SSP0041	20/50	1		06/21/16 13:25
19	NI.062116.132910	WG573557-01	Post Digestion Spike		1	L16060731-02	06/21/16 13:29
20	NI.062116.133221	WG573557-02	Serial Dilution		5	L16060731-02	06/21/16 13:32
21	NI.062116.133650	WG573662-01	Reference Sample	20/50	1	L16060907-14	06/21/16 13:36
22	NI.062116.134003	WG573631-12	CCV		1		06/21/16 13:40
23	NI.062116.134314	WG573631-13	CCB		1		06/21/16 13:43
24	NI.062116.152226	L16060616-01	MW8-060916	20/50	1		06/21/16 15:22
25	NI.062116.152538	L16060616-02	18CPTMW26SW-060916	20/50	1		06/21/16 15:25
26	NI.062116.152849	L16060616-04	MW10F-060916	20/50	1		06/21/16 15:28
27	NI.062116.153201	L16060650-01	MW1-061016	20/50	1		06/21/16 15:32
28	NI.062116.153512	L16060650-02	MW3-061016	20/50	1		06/21/16 15:35
29	NI.062116.153823	L16060650-03	17WW08-061016	20/50	1		06/21/16 15:38
30	NI.062116.154135	L16060650-08	18WW24F-061016	20/50	1		06/21/16 15:41
31	NI.062116.154446	L16060729-02	A09-MW11-Y1S2	20/50	1		06/21/16 15:44
32	NI.062116.154758	L16060729-03	A09-MW12-Y1S2	20/50	1	WG572730-02	06/21/16 15:47
33	NI.062116.155109	L16060730-01	18CPTMW14-061316	20/50	1		06/21/16 15:51
34	NI.062116.155422	WG573631-14	CCV		1		06/21/16 15:54

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Maren Berry

Microbac

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Instrument Run Log

Instrument: ICP-MS2 Dataset: 062116A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573557,573473,573475

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.062116.155734	WG573631-15	CCB		1		06/21/16 15:57
36	NI.062116.160047	L16060730-02	18CPTMW14FD-061316	20/50	1		06/21/16 16:00
37	NI.062116.160358	L16060730-03	18CPTMW24-061316	20/50	1		06/21/16 16:03
38	NI.062116.160710	L16060961-01	GH58HS_MELZER_03-03-0	20/50	1		06/21/16 16:07
39	NI.062116.161021	L16060961-02	GH58HS_MELZER_03-03-0	20/50	1		06/21/16 16:10
40	NI.062116.161333	L16060995-01	UNTREATED	20/50	50		06/21/16 16:13
41	NI.062116.161644	L16060995-02	AFTER	20/50	50		06/21/16 16:16
42	NI.062116.161957	WG573631-16	CCV		1		06/21/16 16:19
43	NI.062116.162309	WG573631-17	CCB		1		06/21/16 16:23
44	NI.062116.171200	WG573111-04	Method/Prep Blank	20/50	1		06/21/16 17:12
45	NI.062116.171512	WG573111-05	Laboratory Control S	20/50	1		06/21/16 17:15
46	NI.062116.171823	WG573111-03	Reference Sample		1	L16060540-06	06/21/16 17:18
47	NI.062116.172135	WG573111-09	Matrix Spike	20/50	1	L16060540-06	06/21/16 17:21
48	NI.062116.172446	WG573111-10	Matrix Spike Duplica	20/50	1	L16060540-06	06/21/16 17:24
49	NI.062116.172758	L16060624-01	16F1312-03	20/50	1		06/21/16 17:27
50	NI.062116.173109	WG573473-01	Post Digestion Spike		1	L16060624-01	06/21/16 17:31
51	NI.062116.173421	WG573473-02	Serial Dilution		5	L16060624-01	06/21/16 17:34
52	NI.062116.173732	WG573473-02	Serial Dilution		25	L16060624-01	06/21/16 17:37
53	NI.062116.174045	WG573631-18	CCV		1		06/21/16 17:40
54	NI.062116.174357	WG573631-19	CCB		1		06/21/16 17:43
55	NI.062116.174710	L16060533-01	16F0399-01	20/50	1		06/21/16 17:47
56	NI.062116.175021	L16060784-03	J6E1050-02	20/50	5		06/21/16 17:50
57	NI.062116.175333	WG573111-01	Reference Sample		1	L16060787-09	06/21/16 17:53
58	NI.062116.175644	L16060787-10	U517TW006C	20/50	1		06/21/16 17:56
59	NI.062116.175956	WG573111-06	Matrix Spike	20/50	1	L16060787-09	06/21/16 17:59
60	NI.062116.180307	WG573111-07	Matrix Spike Duplica	20/50	1	L16060787-09	06/21/16 18:03
61	NI.062116.180619	L16060787-18	U517TW008A	20/50	1		06/21/16 18:06
62	NI.062116.180930	WG573111-02	Reference Sample		1	L16060862-01	06/21/16 18:09
63	NI.062116.181242	WG573111-08	Duplicate	20/50	1	L16060862-01	06/21/16 18:12
64	NI.062116.181553	L16060883-02	WC02	20/50	1		06/21/16 18:15
65	NI.062116.181906	WG573631-20	CCV		1		06/21/16 18:19
66	NI.062116.182218	WG573631-21	CCB		1		06/21/16 18:22
67	NI.062116.182531	L16060896-01	A08-MW02-Y1S2	20/50	1		06/21/16 18:25
68	NI.062116.182842	L16060896-02	A08-MW03-Y1S2	20/50	1		06/21/16 18:28

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Maren Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062116A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573557,573473,573475

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.062116.183154	L16060896-03	A08-MW10-Y1S2	20/50	1		06/21/16 18:31
70	NI.062116.183505	L16060896-04	FD-01	20/50	1		06/21/16 18:35
71	NI.062116.183817	L16060896-05	FD-03	20/50	1		06/21/16 18:38
72	NI.062116.184128	L16060896-07	RB01-06-15-16	20/50	1		06/21/16 18:41
73	NI.062116.184440	L16060916-01	PHL 1 FRESHWATER IMPO	20/50	1		06/21/16 18:44
74	NI.062116.184751	L16060916-02	DS TYGERT RIVER	20/50	1		06/21/16 18:47
75	NI.062116.185104	WG573631-22	CCV		1		06/21/16 18:51
76	NI.062116.185415	WG573631-23	CCB		1		06/21/16 18:54
77	NI.062116.191207	WG573631-24	Low Level Continuing Calibra		1		06/21/16 19:12
78	NI.062116.193457	L16060995-01	UNTREATED	20/50	500		06/21/16 19:34
79	NI.062116.193809	L16060995-02	AFTER	20/50	500		06/21/16 19:38
80	NI.062116.194121	WG573631-25	CCV		1		06/21/16 19:41
81	NI.062116.194433	WG573631-26	CCB		1		06/21/16 19:44
82	NI.062116.194745	WG573333-03	Method/Prep Blank	.25/100	1		06/21/16 19:47
83	NI.062116.195057	WG573333-04	Laboratory Control S	.25/100	1		06/21/16 19:50
84	NI.062116.195408	L16061053-01	GS042QDCF01SB061716S-I		1	WG573333-02	06/21/16 19:54
85	NI.062116.195720	L16061053-02	GS042QDCF01SB061716S-I	.253/100	1	WG573333-07	06/21/16 19:57
86	NI.062116.200031	L16061053-03	GS042QDCF01SB061716S-I	.252/100	1	WG573333-08	06/21/16 20:00
87	NI.062116.200343	L16061054-01	GS037QBCF01XB061616S-I	.254/100	1		06/21/16 20:03
88	NI.062116.200654	WG573475-01	Post Digestion Spike		1	L16061054-01	06/21/16 20:06
89	NI.062116.201006	WG573475-02	Serial Dilution		5	L16061054-01	06/21/16 20:10
90	NI.062116.201317	WG573475-02	Serial Dilution		25	L16061054-01	06/21/16 20:13
91	NI.062116.201631	WG573631-27	CCV		1		06/21/16 20:16
92	NI.062116.201942	WG573631-28	CCB		1		06/21/16 20:19
93	NI.062116.202255	L16060787-03	U517SS00510A		1	WG573333-01	06/21/16 20:22
94	NI.062116.202607	L16060787-04	U517SS00510MS	.256/100	1	WG573333-05	06/21/16 20:26
95	NI.062116.202918	L16060787-05	U517SS00510MSD	.253/100	1	WG573333-06	06/21/16 20:29
96	NI.062116.203230	L16060787-06	U517SS00512A	.256/100	1		06/21/16 20:32
97	NI.062116.203541	L16060787-07	U517SS006010A	.256/100	1		06/21/16 20:35
98	NI.062116.203853	L16060787-08	U517SS00612A	.254/100	1		06/21/16 20:38
99	NI.062116.204204	L16060787-13	U517SS00708A	.252/100	1		06/21/16 20:42
100	NI.062116.204516	L16060787-14	U517SS00710A	.259/100	1		06/21/16 20:45
101	NI.062116.204827	L16060787-15	U517SS00808A	.257/100	1		06/21/16 20:48
102	NI.062116.205139	L16060787-16	U517SS00808C	.255/100	1		06/21/16 20:51

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Maren Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062116A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573557,573473,573475

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.062116.205452	WG573631-29	CCV		1		06/21/16 20:54
104	NI.062116.205803	WG573631-30	CCB		1		06/21/16 20:58
105	NI.062116.210116	L16060787-17	U517SS00810A	.259/100	1		06/21/16 21:01
106	NI.062116.210428	L16060964-01	GH5-01	.252/100	1		06/21/16 21:04
107	NI.062116.210739	L16060964-02	GH5-02	.259/100	1		06/21/16 21:07
108	NI.062116.211051	L16060964-03	GH5-03	.254/100	1		06/21/16 21:10
109	NI.062116.211402	L16060964-04	GH5-04	.249/100	1		06/21/16 21:14
110	NI.062116.211714	L16060964-05	GH5-05	.252/100	1		06/21/16 21:17
111	NI.062116.212025	L16060964-06	GH5-06	.258/100	1		06/21/16 21:20
112	NI.062116.212337	L16061048-01	TR0062	.252/100	1		06/21/16 21:23
113	NI.062116.212649	WG573631-31	CCV		1		06/21/16 21:26
114	NI.062116.213001	WG573631-32	CCB		1		06/21/16 21:30

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Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 16-JUN-2016
Analyst: BKT
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 573095
Runlog ID: 75740
Analytical Workgroups: 573083,572869,572085,572184

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	
Level 4	303,304,411,540,616,650,729,730,731
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BKT
Secondary Reviewer	KHR
Comments	

Primary Reviewer:
20-JUN-2016

Secondary Reviewer:
20-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-20-2016 14:36:34

Microbac Laboratories Inc.

Data Checklist

Date: 21-JUN-2016
Analyst: BKT
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 573631
Runlog ID: 75827
Analytical Workgroups: 573557,573473,573475

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	
Level 4	540,616,624,650,729,730,731,787
Level 4	883,896,1053,1054
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BKT
Secondary Reviewer	MMB
Comments	

Primary Reviewer:
21-JUN-2016

Secondary Reviewer:
22-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-22-2016 13:22:13

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG572869

Login Number: L16060616

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW8-060916	01	06/09/16					06/15/2016	5.9	180		06/16/16	7.4	180	
MW8-060916	01	06/09/16					06/15/2016	5.9	180		06/16/16	7.4	180	
18CPTMW26SW-060916	02	06/09/16					06/15/2016	5.8	180		06/16/16	7.3	180	
18CPTMW26SW-060916	02	06/09/16					06/15/2016	5.8	180		06/16/16	7.3	180	
MW10F-060916	04	06/09/16					06/15/2016	5.7	180		06/16/16	7.3	180	
MW10F-060916	04	06/09/16					06/15/2016	5.7	180		06/16/16	7.2	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4812131
Report generated 06/21/2016 18:21

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG573557

Login Number: L16060616

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW8-060916	01	06/09/16					06/21/2016	11.9	180		06/21/16	12.2	180	
18CPTMW26SW-060916	02	06/09/16					06/21/2016	11.8	180		06/21/16	12.1	180	
MW10F-060916	04	06/09/16					06/21/2016	11.7	180		06/21/16	12	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4812131
Report generated 06/21/2016 18:21

METHOD BLANK SUMMARY

Login Number: L16060616
Blank File ID: NI.061616.190516
Prep Date: 06/15/16 07:54
Analyzed Date: 06/16/16 19:05
Analyst: BKT

Work Group: WG572869
Blank Sample ID: WG572730-03
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572730-04	NI.061616.190828	06/16/16 19:08	01
DUP	WG572730-05	NI.061616.191541	06/16/16 19:15	01
MW8-060916	L16060616-01	NI.061616.194738	06/16/16 19:47	01
18CPTMW26SW-060916	L16060616-02	NI.061616.195050	06/16/16 19:50	01
MW10F-060916	L16060616-04	NI.061616.195401	06/16/16 19:54	01
MW8-060916	L16060616-01	NI.061616.211326	06/16/16 21:13	DL01
18CPTMW26SW-060916	L16060616-02	NI.061616.211638	06/16/16 21:16	DL01
MW10F-060916	L16060616-04	NI.061616.211949	06/16/16 21:19	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4812132
Report generated 06/21/2016 18:21

METHOD BLANK SUMMARY

Login Number: L16060616
Blank File ID: NI.062116.131000
Prep Date: 06/21/16 07:48
Analyzed Date: 06/21/16 13:10
Analyst: BKT

Work Group: WG573557
Blank Sample ID: WG573483-02
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573483-03	NI.062116.133650	06/21/16 13:36	01
MW8-060916	L16060616-01	NI.062116.152226	06/21/16 15:22	02
18CPTMW26SW-060916	L16060616-02	NI.062116.152538	06/21/16 15:25	02
MW10F-060916	L16060616-04	NI.062116.152849	06/21/16 15:28	02

Report Name: BLANK_SUMMARY
PDF File ID: 4812132
Report generated 06/21/2016 18:21

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060616 Prep Date: 06/15/16 07:54 Sample ID: WG572730-03
Instrument ID: ICP-MS2 Run Date: 06/16/16 19:05 Prep Method: 3015
File ID: NI.061616.190516 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG572869 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-16-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Antimony, Total	0.000500	0.00200	0.000500	1	U
Arsenic, Total	0.000500	0.00200	0.00354	1	*
Barium, Total	0.00150	0.00600	0.0283	1	*
Cadmium, Total	0.000300	0.00120	0.000300	1	U
Chromium, Total	0.00100	0.00400	0.00100	1	U
Cobalt, Total	0.000500	0.00200	0.000500	1	U
Copper, Total	0.00100	0.00400	0.00100	1	U
Lead, Total	0.000500	0.00200	0.000500	1	U
Manganese, Total	0.00100	0.00400	0.00100	1	U
Nickel, Total	0.00200	0.00800	0.00200	1	U
Thallium, Total	0.000100	0.000400	0.000100	1	U
Vanadium, Total	0.000500	0.00200	0.000500	1	U
Zinc, Total	0.0125	0.0500	0.0125	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4812133
21-JUN-2016 18:21

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060616 Prep Date: 06/21/16 07:48 Sample ID: WG573483-02
Instrument ID: ICP-MS2 Run Date: 06/21/16 13:10 Prep Method: 3015
File ID: NI.062116.131000 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG573557 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-21-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Arsenic, Total	0.000500	0.00200	0.000500	1	U
Barium, Total	0.00150	0.00600	0.00150	1	U
Silver, Total	0.000500	0.00200	0.000500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4812133
21-JUN-2016 18:21

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060616 Run Date: 06/16/2016 Sample ID: WG572730-04
Instrument ID: ICP-MS2 Run Time: 19:08 Prep Method: 3015
File ID: NI.061616.190828 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG572869 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD75998 Cal ID: ICP-MS-16-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Antimony, Total	0.125	0.118	94.6	80 - 120	
Arsenic, Total	0.125	0.122	97.8	80 - 120	
Barium, Total	0.125	0.122	97.3	80 - 120	
Cadmium, Total	0.125	0.122	97.9	80 - 120	
Chromium, Total	0.125	0.126	100	80 - 120	
Cobalt, Total	0.125	0.133	106	80 - 120	
Copper, Total	0.125	0.124	99.5	80 - 120	
Lead, Total	0.125	0.124	99.2	80 - 120	
Manganese, Total	0.125	0.136	109	80 - 120	
Nickel, Total	0.125	0.124	99.1	80 - 120	
Thallium, Total	0.125	0.118	94.7	80 - 120	
Vanadium, Total	0.125	0.127	102	80 - 120	
Zinc, Total	0.125	0.126	101	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4812134
Report generated: 06/21/2016 18:21

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060616 Run Date: 06/21/2016 Sample ID: WG573483-03
Instrument ID: ICP-MS2 Run Time: 13:36 Prep Method: 3015
File ID: NI.062116.133650 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG573557 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD75998 Cal ID: ICP-MS-21-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Arsenic, Total	0.125	0.125	100	80 - 120	
Barium, Total	0.125	0.127	101	80 - 120	
Silver, Total	0.125	0.130	104	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4812134
Report generated: 06/21/2016 18:21

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060616 Cal ID: ICP-MS2- Worknum: WG572869
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG572730-02 File ID: NI.061616.191852 Dil: 1 Matrix: WATER
Sample ID: WG572730-06 MS File ID: NI.061616.192204 Dil: 1 Units: mg/L
Sample ID: WG572730-07 MSD File ID: NI.061616.192515 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Antimony	0.000748	0.125	0.117	93.0	0.125	0.120	95.4	2.48	80 - 120	20	
Arsenic	ND	0.125	0.124	99.1	0.125	0.135	108	8.40	80 - 120	20	
Barium	0.0532	0.125	0.163	87.8	0.125	0.360	246	75.4	80 - 120	20	*#
Cadmium	0.000380	0.125	0.118	94.3	0.125	0.118	94.5	0.202	80 - 120	20	
Chromium	0.00126	0.125	0.122	96.2	0.125	0.128	101	5.15	80 - 120	20	
Cobalt	0.0627	0.125	0.194	105	0.125	0.210	118	8.06	80 - 120	20	
Copper	0.00880	0.125	0.129	96.3	0.125	0.134	100	3.48	80 - 120	20	
Lead	0.00276	0.125	0.122	95.5	0.125	0.128	100	4.87	80 - 120	20	
Manganese	0.984	0.125	1.12	108	0.125	1.21	177	7.43	80 - 120	20	*
Nickel	0.0243	0.125	0.144	95.7	0.125	0.150	100	4.07	80 - 120	20	
Thallium	ND	0.125	0.117	93.4	0.125	0.122	97.3	4.07	80 - 120	20	
Vanadium	ND	0.125	0.127	101	0.125	0.135	108	6.40	80 - 120	20	
Zinc	0.0715	0.125	0.193	97.4	0.125	0.203	105	4.74	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4812135
Report generated 06/21/2016 18:21

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060616 Cal ID: ICP-MS2- Worknum: WG573557
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG573483-01 File ID: NI.062116.131623 Dil: 1 Matrix: WATER
Sample ID: WG573483-04 MS File ID: NI.062116.131935 Dil: 1 Units: mg/L
Sample ID: WG573483-05 MSD File ID: NI.062116.132247 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Arsenic	ND	0.125	0.128	103	0.125	0.125	100	2.26	80 - 120	20	
Barium	0.0370	0.125	0.156	95.4	0.125	0.159	97.5	1.73	80 - 120	20	
Silver	ND	0.125	0.119	95.1	0.125	0.123	98.5	3.53	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4812135
Report generated 06/21/2016 18:21

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16060616 **Worknum:** WG572869
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG572869-02 **File ID:** NI.061616.193450 **Dil:** 5 **Units:** ug/L
Sample: L16060754-01 **File ID:** NI.061616.192827 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	ND	U	2.27	F	1100.00	
Arsenic	0.304	F	ND	U		
Barium	21.4	X	20.8	X	2.86	
Cadmium	ND	U	ND	U		
Chromium	1.95	X	2.11	F	8.12	
Cobalt	0.616	F	ND	U		
Copper	104		107		2.99	
Lead	1.81	X	1.85	F	2.23	
Manganese	18.1	X	17.9	X	0.86	
Nickel	2.91	F	ND	U		
Silver	ND	U	ND	U		
Thallium	ND	U	ND	U		
Vanadium	1.81	X	2.04	F	12.90	
Zinc	97.6	X	100	X	2.53	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4812129
06/21/2016 18:21

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16060616 **Worknum:** WG573557
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG573557-02 **File ID:** NI.062116.133221 **Dil:** 5 **Units:** ug/L
Sample: L16060731-02 **File ID:** NI.062116.132558 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	1.14		ND			
Arsenic	12.2	X	12.5	X	2.14	
Barium	10.8	X	11.8	F	9.87	
Cadmium	0.267		ND			
Chromium	1.95		ND			
Cobalt	0.370		ND			
Copper	147		ND			
Lead	9.25		ND			
Manganese	21.0		ND			
Nickel	1.17		ND			
Silver	ND	U	ND	U		
Thallium	0.0436		ND			
Vanadium	5.28		ND			
Zinc	18.4		ND			

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4812129
06/21/2016 18:21

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16060616 **Worknum:** WG572869
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG572869-02 **File ID:** NI.061616.194427 **Dil:** 25 **Units:** ug/L
Sample: L16060754-01 **File ID:** NI.061616.193450 **Dil:** 5

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	2.27	F	ND	U		
Arsenic	ND	U	ND	U		
Barium	20.8	X	20.9	F	0.70	
Cadmium	ND	U	ND	U		
Chromium	2.11	F	ND	U		
Cobalt	ND	U	ND	U		
Copper	107	X	110	X	2.54	
Lead	1.85	F	ND	U		
Manganese	17.9	X	18.9	F	5.54	
Nickel	ND	U	ND	U		
Silver	ND	U	ND	U		
Thallium	ND	U	ND	U		
Vanadium	2.04	F	ND	U		
Zinc	100	X	ND	U		

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4812129
06/21/2016 18:21

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060616 **Worknum:** WG572869
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG572869-01 **File ID:** NI.061616.193138 **Dil:** 1 **Units:** ug/L
Sample ID: L16060754-01 **File ID:** NI.061616.192827 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	51.2		0	U	50	102.4	75 - 125	
ARSENIC	49.9		0.304	F	50	99.2	75 - 125	
BARIUM	70.7		21.4		50	98.7	75 - 125	
CADMIUM	50.8		0	U	50	101.5	75 - 125	
CHROMIUM	49.7		1.95		50	95.5	75 - 125	
COBALT	53.8		0.616	F	50	106.4	75 - 125	
COPPER	146		104		50	84.8	75 - 125	
LEAD	47.6		1.81		50	91.6	75 - 125	
MANGANESE	68.2		18.1		50	100.2	75 - 125	
NICKEL	49.4		2.91	F	50	92.9	75 - 125	
SILVER	50.6		0	U	50	101.2	75 - 125	
THALLIUM	44.4		0	U	50	88.7	75 - 125	
VANADIUM	53.4		1.81		50	103.2	75 - 125	
ZINC	139		97.6		50	83.0	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4812130
Report generated: 06/21/2016 18:21

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060616 **Worknum:** WG573557
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG573557-01 **File ID:** NI.062116.132910 **Dil:** 1 **Units:** ug/L
Sample ID: L16060731-02 **File ID:** NI.062116.132558 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	50.4		1.14		50	98.5	75 - 125	
ARSENIC	64.0		12.2		50	103.6	75 - 125	
BARIUM	60.7		10.8		50	99.9	75 - 125	
CADMIUM	51.9		0.267	F	50	103.2	75 - 125	
CHROMIUM	52.8		1.95		50	101.7	75 - 125	
COBALT	53.2		0.370	F	50	105.7	75 - 125	
COPPER	195		147		50	96.4	75 - 125	
LEAD	60.3		9.25		50	102.0	75 - 125	
MANGANESE	72.2		21.0		50	102.4	75 - 125	
NICKEL	51.1		1.17	F	50	99.8	75 - 125	
SILVER	50.1		0	U	50	100.3	75 - 125	
THALLIUM	49.7		0.0436	F	50	99.4	75 - 125	
VANADIUM	57.1		5.28		50	103.6	75 - 125	
ZINC	70.3		18.4	F	50	103.8	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4812130
Report generated: 06/21/2016 18:21

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16060616	Workgroup (AAB#):	WG572869
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG573095	Initial Calibration Date:	16-JUN-2016 15:43

	WG573095-01		WG573095-02		WG573095-03		WG573095-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	44.3	.4	294	50	219000	100	429000	.999808	
ARSENIC	0	72.1	.4	27.4	50	55400	100	107000	.999975	
BARIUM	0	17.0	.4	202	50	90500	100	179000	.999915	
CADMIUM	0	3.70	.4	107	50	96700	100	192000	.999929	
CHROMIUM	0	2890	.4	7150	50	370000	100	726000	.999966	
COBALT	0	263	.4	583	50	321000	100	621000	.999989	
COPPER	0	79.7	.4	217	50	93700	100	182000	.999999	
LEAD	0	828	.4	1800	50	831000	100	1630000	.999997	
MANGANESE	0	613	.4	1040	50	296000	100	576000	1	
NICKEL	0	108	.4	245	50	96000	100	187000	1	
SILVER	0	82.7	.4	386	50	301000	100	584000	.999738	
THALLIUM	0	10.0	.4	392	50	373000	100	729000	.999991	
VANADIUM	0	581	.4	1540	50	356000	100	688000	.999992	
ZINC	0	145	.4	311	50	55400	100	108000	1	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4812138
Report generated: 21-JUN-2016 18:21

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16060616	Workgroup (AAB#):	WG573557
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG573631	Initial Calibration Date:	21-JUN-2016 12:44

	WG573631-01		WG573631-02		WG573631-03		WG573631-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	43.1	.4	245	50	207000	100	404000	.999913	
ARSENIC	0	-25.5	.4	16.4	50	52300	100	101000	.999973	
BARIUM	0	106	.4	194	50	89200	100	176000	.999962	
CADMIUM	0	9.30	.4	103	50	91400	100	179000	.999944	
CHROMIUM	0	5910	.4	6080	50	320000	100	622000	.999997	
COBALT	0	269	.4	583	50	304000	100	585000	.999971	
COPPER	0	156	.4	255	50	88900	100	173000	.999998	
LEAD	0	792	.4	1730	50	793000	100	1540000	.999869	
MANGANESE	0	1210	.4	1640	50	319000	100	618000	.999993	
NICKEL	0	292	.4	417	50	89800	100	174000	.999991	
SILVER	0	92.7	.4	386	50	288000	100	561000	.999911	
THALLIUM	0	11.0	.4	386	50	361000	100	706000	.999917	
VANADIUM	0	1010	.4	1270	50	298000	100	571000	.999958	
ZINC	0	143	.4	285	50	51700	100	100000	.999996	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4812138
Report generated: 21-JUN-2016 18:21

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573095-09
Instrument ID: ICP-MS2
Run Time: 16:03
Method: 6020A
File ID: NI.061616.160355
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572869
Cal ID: ICP-MS2 - 16-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
COPPER	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.268	F
THALLIUM	.04	.16	.04	U
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4812140
Report generated 06/21/2016 18:21

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060616
Run Date: 06/21/2016
Sample ID: WG573631-06
Instrument ID: ICP-MS2
Run Time: 12:50
Method: 6020A
File ID: NI.062116.125048
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG573557
Cal ID: ICP-MS2 - 21-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4812140
Report generated 06/21/2016 18:21

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573095-13
Instrument ID: ICP-MS2
Run Time: 16:38
Method: 6020A
File ID: NI.061616.163850
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812143
Report generated 06/21/2016 18:21

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573095-19
Instrument ID: ICP-MS2
Run Time: 18:58
Method: 6020A
File ID: NI.061616.185850
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812143
Report generated 06/21/2016 18:21

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573095-22
Instrument ID: ICP-MS2
Run Time: 19:41
Method: 6020A
File ID: NI.061616.194114
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812143
Report generated 06/21/2016 18:21

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573095-24
Instrument ID: ICP-MS2
Run Time: 20:22
Method: 6020A
File ID: NI.061616.202232
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812143
Report generated 06/21/2016 18:21

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573095-26
Instrument ID: ICP-MS2
Run Time: 21:10
Method: 6020A
File ID: NI.061616.211014
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812143
Report generated 06/21/2016 18:21

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573095-28
Instrument ID: ICP-MS2
Run Time: 21:48
Method: 6020A
File ID: NI.061616.214835
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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PDF File ID: 4812143
Report generated 06/21/2016 18:21

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060616
Run Date: 06/21/2016
Sample ID: WG573631-11
Instrument ID: ICP-MS2
Run Time: 13:06
Method: 6020A
File ID: NI.062116.130648
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Silver	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812143
Report generated 06/21/2016 18:21

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060616
Run Date: 06/21/2016
Sample ID: WG573631-13
Instrument ID: ICP-MS2
Run Time: 13:43
Method: 6020A
File ID: NI.062116.134314
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Silver	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812143
Report generated 06/21/2016 18:21

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060616
Run Date: 06/21/2016
Sample ID: WG573631-15
Instrument ID: ICP-MS2
Run Time: 15:57
Method: 6020A
File ID: NI.062116.155734
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Silver	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812143
Report generated 06/21/2016 18:21

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573095-08
Instrument ID: ICP-MS2
Run Time: 15:57
Method: 6020A
File ID: NI.061616.155746
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	46.9	93.8	90 - 110	
Arsenic		50	49.9	99.8	90 - 110	
Barium		50	47.7	95.3	90 - 110	
Cadmium		50	48.1	96.2	90 - 110	
Chromium		50	50.4	101	90 - 110	
Cobalt		50	49.2	98.4	90 - 110	
Copper		50	50.2	100	90 - 110	
Lead		50	48.5	96.9	90 - 110	
Manganese		50	51.6	103	90 - 110	
Nickel		50	50.1	100	90 - 110	
Thallium		50	47.8	95.7	90 - 110	
Vanadium		50	48.7	97.3	90 - 110	
Zinc		50	50.0	100	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4812139
Report generated 06/21/2016 18:21

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060616
Run Date: 06/21/2016
Sample ID: WG573631-05
Instrument ID: ICP-MS2
Run Time: 12:47
Method: 6020A
File ID: NI.062116.124735
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Arsenic		50	50.4	101	90 - 110	
Barium		50	49.0	98.1	90 - 110	
Silver		50	49.8	99.6	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4812139
Report generated 06/21/2016 18:21

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573095-12
Instrument ID: ICP-MS2
Run Time: 16:25
Method: 6020A
File ID: NI.061616.162516
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0492	mg/L	98.4	90 - 110		
Arsenic		0.0500	0.0498	mg/L	99.6	90 - 110		
Barium		0.0500	0.0480	mg/L	96.0	90 - 110		
Cadmium		0.0500	0.0483	mg/L	96.7	90 - 110		
Chromium		0.0500	0.0497	mg/L	99.4	90 - 110		
Cobalt		0.0500	0.0504	mg/L	101	90 - 110		
Copper		0.0500	0.0502	mg/L	100	90 - 110		
Lead		0.0500	0.0490	mg/L	98.0	90 - 110		
Manganese		0.0500	0.0514	mg/L	103	90 - 110		
Nickel		0.0500	0.0501	mg/L	100	90 - 110		
Thallium		0.0500	0.0491	mg/L	98.2	90 - 110		
Vanadium		0.0500	0.0497	mg/L	99.3	90 - 110		
Zinc		0.0500	0.0499	mg/L	99.7	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812142
Report generated 06/21/2016 18:21

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573095-18
Instrument ID: ICP-MS2
Run Time: 18:55
Method: 6020A
File ID: NI.061616.185538
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0494	mg/L	98.8	90 - 110		
Arsenic		0.0500	0.0496	mg/L	99.2	90 - 110		
Barium		0.0500	0.0486	mg/L	97.2	90 - 110		
Cadmium		0.0500	0.0500	mg/L	100	90 - 110		
Chromium		0.0500	0.0500	mg/L	100	90 - 110		
Cobalt		0.0500	0.0532	mg/L	106	90 - 110		
Copper		0.0500	0.0496	mg/L	99.2	90 - 110		
Lead		0.0500	0.0501	mg/L	100	90 - 110		
Manganese		0.0500	0.0540	mg/L	108	90 - 110		
Nickel		0.0500	0.0492	mg/L	98.5	90 - 110		
Thallium		0.0500	0.0493	mg/L	98.6	90 - 110		
Vanadium		0.0500	0.0506	mg/L	101	90 - 110		
Zinc		0.0500	0.0496	mg/L	99.2	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812142
Report generated 06/21/2016 18:21

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573095-21
Instrument ID: ICP-MS2
Run Time: 19:38
Method: 6020A
File ID: NI.061616.193803
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0512	mg/L	102	90 - 110		
Arsenic		0.0500	0.0488	mg/L	97.6	90 - 110		
Barium		0.0500	0.0486	mg/L	97.1	90 - 110		
Cadmium		0.0500	0.0503	mg/L	101	90 - 110		
Chromium		0.0500	0.0490	mg/L	98.0	90 - 110		
Cobalt		0.0500	0.0548	mg/L	110	90 - 110		
Copper		0.0500	0.0486	mg/L	97.2	90 - 110		
Lead		0.0500	0.0517	mg/L	103	90 - 110		
Manganese		0.0500	0.0527	mg/L	105	90 - 110		
Nickel		0.0500	0.0487	mg/L	97.4	90 - 110		
Thallium		0.0500	0.0499	mg/L	99.9	90 - 110		
Vanadium		0.0500	0.0515	mg/L	103	90 - 110		
Zinc		0.0500	0.0495	mg/L	98.9	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573095-23
Instrument ID: ICP-MS2
Run Time: 20:19
Method: 6020A
File ID: NI.061616.201921
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0477	mg/L	95.4	90 - 110		
Arsenic		0.0500	0.0484	mg/L	96.8	90 - 110		
Barium		0.0500	0.0467	mg/L	93.3	90 - 110		
Cadmium		0.0500	0.0485	mg/L	96.9	90 - 110		
Chromium		0.0500	0.0490	mg/L	97.9	90 - 110		
Cobalt		0.0500	0.0524	mg/L	105	90 - 110		
Copper		0.0500	0.0483	mg/L	96.5	90 - 110		
Lead		0.0500	0.0502	mg/L	100	90 - 110		
Manganese		0.0500	0.0530	mg/L	106	90 - 110		
Nickel		0.0500	0.0478	mg/L	95.6	90 - 110		
Thallium		0.0500	0.0479	mg/L	95.7	90 - 110		
Vanadium		0.0500	0.0501	mg/L	100	90 - 110		
Zinc		0.0500	0.0480	mg/L	95.9	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812142
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573095-25
Instrument ID: ICP-MS2
Run Time: 21:07
Method: 6020A
File ID: NI.061616.210702
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0484	mg/L	96.9	90 - 110		
Arsenic		0.0500	0.0488	mg/L	97.5	90 - 110		
Barium		0.0500	0.0477	mg/L	95.4	90 - 110		
Cadmium		0.0500	0.0483	mg/L	96.7	90 - 110		
Chromium		0.0500	0.0499	mg/L	99.8	90 - 110		
Cobalt		0.0500	0.0494	mg/L	98.8	90 - 110		
Copper		0.0500	0.0496	mg/L	99.2	90 - 110		
Lead		0.0500	0.0494	mg/L	98.8	90 - 110		
Manganese		0.0500	0.0534	mg/L	107	90 - 110		
Nickel		0.0500	0.0496	mg/L	99.2	90 - 110		
Thallium		0.0500	0.0475	mg/L	95.0	90 - 110		
Vanadium		0.0500	0.0503	mg/L	101	90 - 110		
Zinc		0.0500	0.0497	mg/L	99.4	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573095-27
Instrument ID: ICP-MS2
Run Time: 21:45
Method: 6020A
File ID: NI.061616.214523
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0479	mg/L	95.7	90 - 110		
Arsenic		0.0500	0.0498	mg/L	99.7	90 - 110		
Barium		0.0500	0.0478	mg/L	95.6	90 - 110		
Cadmium		0.0500	0.0483	mg/L	96.6	90 - 110		
Chromium		0.0500	0.0507	mg/L	101	90 - 110		
Cobalt		0.0500	0.0512	mg/L	102	90 - 110		
Copper		0.0500	0.0503	mg/L	101	90 - 110		
Lead		0.0500	0.0512	mg/L	102	90 - 110		
Manganese		0.0500	0.0553	mg/L	111	90 - 110		*
Nickel		0.0500	0.0504	mg/L	101	90 - 110		
Thallium		0.0500	0.0492	mg/L	98.4	90 - 110		
Vanadium		0.0500	0.0507	mg/L	101	90 - 110		
Zinc		0.0500	0.0501	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812142
Report generated 06/21/2016 18:21

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/21/2016
Sample ID: WG573631-10
Instrument ID: ICP-MS2
Run Time: 13:03
Method: 6020A
File ID: NI.062116.130337
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Arsenic		0.0500	0.0504	mg/L	101	90 - 110		
Barium		0.0500	0.0495	mg/L	99.0	90 - 110		
Silver		0.0500	0.0492	mg/L	98.4	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812142
Report generated 06/21/2016 18:21

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/21/2016
Sample ID: WG573631-12
Instrument ID: ICP-MS2
Run Time: 13:40
Method: 6020A
File ID: NI.062116.134003
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Arsenic		0.0500	0.0508	mg/L	102	90 - 110		
Barium		0.0500	0.0493	mg/L	98.6	90 - 110		
Silver		0.0500	0.0497	mg/L	99.3	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812142
Report generated 06/21/2016 18:21

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/21/2016
Sample ID: WG573631-14
Instrument ID: ICP-MS2
Run Time: 15:54
Method: 6020A
File ID: NI.062116.155422
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Arsenic		0.0500	0.0505	mg/L	101	90 - 110		
Barium		0.0500	0.0508	mg/L	102	90 - 110		
Silver		0.0500	0.0514	mg/L	103	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812142
Report generated 06/21/2016 18:21

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573095-07
Instrument ID: ICP-MS2
Run Time: 15:52
Method: 6020A
File ID: NI.061616.155239
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.437	ug/L	109	70 - 130		
Arsenic		0.400	0.412	ug/L	103	70 - 130		
Barium		0.750	0.670	ug/L	89.4	70 - 130		
Cadmium		0.240	0.237	ug/L	98.6	70 - 130		
Chromium		0.800	0.723	ug/L	90.4	70 - 130		
Cobalt		0.400	0.380	ug/L	95.0	70 - 130		
Copper		0.800	0.790	ug/L	98.7	70 - 130		
Lead		0.200	0.183	ug/L	91.4	70 - 130		
Manganese		0.500	0.452	ug/L	90.4	70 - 130		
Nickel		1.60	1.54	ug/L	96.1	70 - 130		
Thallium		0.0800	0.0818	ug/L	102	70 - 130		
Vanadium		0.400	0.354	ug/L	88.5	70 - 130		
Zinc		6.25	6.72	ug/L	107	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4812144
Report generated 06/22/2016 13:40

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573095-20
Instrument ID: ICP-MS2
Run Time: 19:02
Method: 6020A
File ID: NI.061616.190202
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.394	ug/L	98.5	70 - 130		
Arsenic		0.400	0.383	ug/L	95.8	70 - 130		
Barium		0.750	0.633	ug/L	84.4	70 - 130		
Cadmium		0.240	0.238	ug/L	99.0	70 - 130		
Chromium		0.800	0.710	ug/L	88.8	70 - 130		
Cobalt		0.400	0.391	ug/L	97.6	70 - 130		
Copper		0.800	0.779	ug/L	97.4	70 - 130		
Lead		0.200	0.185	ug/L	92.4	70 - 130		
Manganese		0.500	0.600	ug/L	120	70 - 130		
Nickel		1.60	1.49	ug/L	93.1	70 - 130		
Thallium		0.0800	0.0829	ug/L	104	70 - 130		
Vanadium		0.400	0.360	ug/L	90.1	70 - 130		
Zinc		6.25	6.68	ug/L	107	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4812144
Report generated 06/22/2016 13:40

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573095-29
Instrument ID: ICP-MS2
Run Time: 21:51
Method: 6020A
File ID: NI.061616.215148
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.379	ug/L	94.7	70 - 130		
Arsenic		0.400	0.373	ug/L	93.3	70 - 130		
Barium		0.750	0.661	ug/L	88.1	70 - 130		
Cadmium		0.240	0.222	ug/L	92.4	70 - 130		
Chromium		0.800	0.719	ug/L	89.8	70 - 130		
Cobalt		0.400	0.364	ug/L	91.0	70 - 130		
Copper		0.800	0.802	ug/L	100	70 - 130		
Lead		0.200	0.176	ug/L	88.2	70 - 130		
Manganese		0.500	0.484	ug/L	96.8	70 - 130		
Nickel		1.60	1.55	ug/L	96.6	70 - 130		
Thallium		0.0800	0.0736	ug/L	92.0	70 - 130		
Vanadium		0.400	0.363	ug/L	90.7	70 - 130		
Zinc		6.25	6.31	ug/L	101	70 - 130		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060616
Run Date: 06/21/2016
Sample ID: WG573631-07
Instrument ID: ICP-MS2
Run Time: 12:54
Method: 6020A
File ID: NI.062116.125401
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Arsenic		0.400	0.431	ug/L	108	70 - 130		
Barium		0.750	0.681	ug/L	90.8	70 - 130		
Silver		0.400	0.401	ug/L	100	70 - 130		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060616
Run Date: 06/21/2016
Sample ID: WG573631-24
Instrument ID: ICP-MS2
Run Time: 19:12
Method: 6020A
File ID: NI.062116.191207
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Arsenic		0.400	0.388	ug/L	97.1	70 - 130		
Barium		0.750	0.690	ug/L	92.0	70 - 130		
Silver		0.400	0.394	ug/L	98.6	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4812144
Report generated 06/22/2016 13:40

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060616
Instrument ID: ICP-MS2
Sol. A : WG573095-10 **File ID:** NI.061616.160740
Sol. AB : WG573095-11 **File ID:** NI.061616.162201

Workgroup (AAB#): WG572869
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.0793	NS	100	94.6	94.6	
Arsenic	NS	-0.0113	NS	100	102	102	
Barium	NS	0.0676	NS	100	94.7	94.7	
Cadmium	NS	-0.0599	NS	100	96.1	96.1	
Chromium	NS	0.0900	NS	100	99.8	99.8	
Cobalt	NS	0.0224	NS	100	104	104	
Copper	NS	0.277	NS	100	99.9	99.9	
Lead	NS	0.0928	NS	100	98.9	98.9	
Manganese	NS	0.0620	NS	100	106	106	
Nickel	NS	0.326	NS	100	99.4	99.4	
Thallium	NS	0.113	NS	100	98.0	98.0	
Vanadium	NS	0.00810	NS	100	100	100	
Zinc	NS	1.37	NS	100	102	102	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

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Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060616
Instrument ID: ICP-MS2
Sol. A : WG573631-08 **File ID:** NI.062116.125712
Sol. AB : WG573631-09 **File ID:** NI.062116.130024

Workgroup (AAB#): WG572869
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.0947	NS	100	101	101	
Arsenic	NS	0.00630	NS	100	101	101	
Barium	NS	0.186	NS	100	100	100	
Cadmium	NS	-0.0833	NS	100	103	103	
Chromium	NS	0.141	NS	100	97.4	97.4	
Cobalt	NS	0.0458	NS	100	101	101	
Copper	NS	0.288	NS	100	97.2	97.2	
Lead	NS	0.0771	NS	100	102	102	
Manganese	NS	0.0891	NS	100	101	101	
Nickel	NS	0.306	NS	100	96.1	96.1	
Thallium	NS	0.0461	NS	100	99.0	99.0	
Vanadium	NS	0.0465	NS	100	97.8	97.8	
Zinc	NS	1.91	NS	100	99.8	99.8	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

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Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060616
Instrument ID: ICP-MS2
Sol. A : WG573095-10 **File ID:** NI.061616.160740
Sol. AB : WG573095-11 **File ID:** NI.061616.162201

Workgroup (AAB#): WG573557
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Arsenic	NS	-0.0113	NS	100	102	102	
Barium	NS	0.0676	NS	100	94.7	94.7	
Silver	NS	0.0163	NS	100	85.5	85.5	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

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Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060616
Instrument ID: ICP-MS2
Sol. A : WG573631-08 **File ID:** NI.062116.125712
Sol. AB : WG573631-09 **File ID:** NI.062116.130024

Workgroup (AAB#): WG573557
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Arsenic	NS	0.00630	NS	100	101	101	
Barium	NS	0.186	NS	100	100	100	
Silver	NS	0.0339	NS	100	95.1	95.1	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

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Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060616 **Analytical Method:** 6020
Analytical Workgroup: WG572869 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 16-JUN-2016 15:33

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060616-01	SAMP	16-JUN-2016 19:47	94.107	94.012	97.737
L16060616-01	SAMP	16-JUN-2016 21:13	97.727	96.646	103.59
L16060616-02	SAMP	16-JUN-2016 19:50	93.673	95.369	95.007
L16060616-02	SAMP	16-JUN-2016 21:16	94.36	97.822	99.92
L16060616-04	SAMP	16-JUN-2016 19:54	102.827	96.941	106.505
L16060616-04	SAMP	16-JUN-2016 21:19	99.554	102.327	99.573
WG572730-03	BLANK	16-JUN-2016 19:05	100.216	99.081	102.939
WG572730-04	LCS	16-JUN-2016 19:08	101.421	99.849	103.204
WG572869-01	PSPK	16-JUN-2016 19:31	112.105	100.336	99.705
WG572869-02	SERIAL	16-JUN-2016 19:34	109.035	99.586	107.45
WG572869-02	SERIAL	16-JUN-2016 19:44	102.137	96.905	105.944
WG573095-07	LLICV	16-JUN-2016 15:52	96.13	93.157	96.318
WG573095-08	ICV	16-JUN-2016 15:57	97.13	96.114	99.927
WG573095-09	ICB	16-JUN-2016 16:03	97.661	96.107	100.676
WG573095-10	ICS	16-JUN-2016 16:07	96.606	97.591	98.938
WG573095-11	ICS	16-JUN-2016 16:22	96.039	94.231	101.38
WG573095-12	CCV	16-JUN-2016 16:25	96.818	96.058	101.069
WG573095-13	CCB	16-JUN-2016 16:38	95.395	96.878	98.817
WG573095-18	CCV	16-JUN-2016 18:55	100.879	98.942	103.257
WG573095-19	CCB	16-JUN-2016 18:58	100.363	100.186	103.213
WG573095-20	LLCCV	16-JUN-2016 19:02	98.621	96.559	99.934
WG573095-21	CCV	16-JUN-2016 19:38	99.655	98.678	100.997
WG573095-22	CCB	16-JUN-2016 19:41	103.251	98.035	102.526
WG573095-23	CCV	16-JUN-2016 20:19	102.275	100.766	107.12
WG573095-24	CCB	16-JUN-2016 20:22	101.002	103.79	104.368
WG573095-25	CCV	16-JUN-2016 21:07	98.791	98.968	101.902
WG573095-26	CCB	16-JUN-2016 21:10	98.056	96.18	104.938
WG573095-27	CCV	16-JUN-2016 21:45	94.877	96.278	101.991
WG573095-28	CCB	16-JUN-2016 21:48	95.773	98.51	99.349
WG573095-29	LLCCV	16-JUN-2016 21:51	96.58	95.236	98.152

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4812137
Report generated: 06/21/2016 18:21

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060616 **Analytical Method:** 6020
Analytical Workgroup: WG572869 **Matrix:** 18
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 16-JUN-2016 15:33

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060731-02	SAMP	16-JUN-2016 20:46	98.985	103.449	100.756
L16060731-02	SAMP	16-JUN-2016 20:49	100.189	99.166	103.967

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4812137
Report generated: 06/21/2016 18:21

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060616 **Analytical Method:** 6020
Analytical Workgroup: WG572869 **Matrix:** 2
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 16-JUN-2016 15:33

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060754-01	SAMP	16-JUN-2016 19:28	110.371	97.831	102.475
L16060754-01	SAMP	16-JUN-2016 19:34	109.035	99.586	107.45

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4812137
Report generated: 06/21/2016 18:21

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060616 **Analytical Method:** 6020
Analytical Workgroup: WG573557 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 21-JUN-2016 12:34

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060616-01	SAMP	21-JUN-2016 15:22	93.272	98.601	93.704
L16060616-02	SAMP	21-JUN-2016 15:25	91.995	98.033	94.561
L16060616-04	SAMP	21-JUN-2016 15:28	97.137	100.95	100.603
WG573483-02	BLANK	21-JUN-2016 13:10	95.679	98.524	97.195
WG573483-03	LCS	21-JUN-2016 13:36	94.921	99.695	97.281
WG573557-01	PSPK	21-JUN-2016 13:29	98.084	98.955	98.448
WG573557-02	SERIAL	21-JUN-2016 13:32	97.19	102.137	97.153
WG573631-05	ICV	21-JUN-2016 12:47	96.069	98.452	97.355
WG573631-06	ICB	21-JUN-2016 12:50	96.354	99.72	98.43
WG573631-07	LLICV	21-JUN-2016 12:54	94.241	93.729	96.647
WG573631-08	ICS	21-JUN-2016 12:57	94.267	96.671	98.81
WG573631-09	ICS	21-JUN-2016 13:00	96.004	99.918	95.904
WG573631-10	CCV	21-JUN-2016 13:03	94.215	98.219	98.362
WG573631-11	CCB	21-JUN-2016 13:06	96.643	100.438	97.789
WG573631-12	CCV	21-JUN-2016 13:40	96.239	97.396	98.415
WG573631-13	CCB	21-JUN-2016 13:43	94.78	98.379	99.644
WG573631-14	CCV	21-JUN-2016 15:54	98.094	101.613	99.232
WG573631-15	CCB	21-JUN-2016 15:57	98.876	97.92	103.15

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4812137
Report generated: 06/21/2016 18:21

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060616 **Analytical Method:** 6020
Analytical Workgroup: WG573557 **Matrix:** 18
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 21-JUN-2016 12:34

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060731-02	SAMP	21-JUN-2016 13:25	97.415	97.241	100.268
WG572662-01	FBLK2	21-JUN-2016 13:13	96.669	99.978	97.284

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4812137
Report generated: 06/21/2016 18:21

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16060616 **Date:** 04/19/2016
Insturment ID: ICP-MS2 **Method:** 6020A

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Uranium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4812136
Report generated: 06/21/2016 18:21

2.3.2.3 Raw Data

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Thursday, June 16, 2016 14:07:39

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1326	2024	0.708	
Mg	23.985	23.975	4498	2020	0.704	
Co	58.933	58.975	11692	2022	0.692	
In	114.904	114.875	22859	2028	0.691	
U	238.050	238.075	47457	2043	0.702	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	7.436
5.575	8.287
5.625	3.892
5.675	4.802
5.725	2.185
5.775	3.031
5.825	4.638
5.875	2.806
5.925	2.266
5.975	4.757
6.025	3.190
6.075	3.669
6.125	3.622
6.175	3.148
6.225	8.886
6.275	33.166
6.325	46.481
6.375	46.566
6.425	40.745
6.475	56.845
6.525	15.768
6.575	18.835
6.625	3.774
6.675	4.099
6.725	2.150
6.775	4.632
6.825	1.659

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6.875	4.657
6.925	1.715
6.975	2.467
7.025	2.458
7.075	2.433
7.125	2.586
7.175	4.875
7.225	1.268
7.275	2.064
7.325	10.536
7.375	54.398
7.425	60.990
7.475	63.888
7.525	51.618
7.575	39.529
7.625	69.722
7.675	47.507
7.725	16.110
7.775	58.685
7.825	58.330
7.875	66.667
7.925	61.450
7.975	55.902
8.025	102.740
8.075	55.902
8.125	38.401
8.175	63.949
8.225	43.853
8.275	60.858
8.325	45.079
8.375	40.074
8.425	40.074
8.475	54.149
22.525	
22.575	50.619
22.625	33.641
22.675	51.618
22.725	55.902
22.775	25.951
22.825	27.809
22.875	40.946
22.925	49.701
22.975	18.923
23.025	32.442
23.075	23.055
23.125	25.635
23.175	20.888

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23.225	21.374
23.275	25.000
23.325	45.400
23.375	27.285
23.425	30.987
23.475	25.476
23.525	13.045
23.575	6.296
23.625	2.182
23.675	2.995
23.725	2.713
23.775	2.035
23.825	1.176
23.875	0.613
23.925	0.955
23.975	1.904
24.025	1.612
24.075	1.077
24.125	1.787
24.175	1.904
24.225	1.298
24.275	1.635
24.325	13.413
24.375	39.123
24.425	39.529
24.475	21.077
24.525	2.911
24.575	3.152
24.625	1.254
24.675	1.656
24.725	1.429
24.775	1.818
24.825	1.348
24.875	0.955
24.925	1.650
24.975	0.624
25.025	1.148
25.075	1.394
25.125	0.398
25.175	1.878
25.225	3.006
25.275	5.326
25.325	42.950
25.375	30.619
25.425	70.613
25.475	32.723
57.525	12.330

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57.575	7.587
57.625	2.112
57.675	3.255
57.725	2.490
57.775	2.165
57.825	1.108
57.875	2.141
57.925	2.456
57.975	1.875
58.025	3.007
58.075	2.288
58.125	0.909
58.175	2.980
58.225	2.412
58.275	3.761
58.325	25.824
58.375	36.748
58.425	23.570
58.475	18.248
58.525	7.221
58.575	2.071
58.625	1.712
58.675	1.278
58.725	1.414
58.775	1.870
58.825	1.537
58.875	1.904
58.925	2.989
58.975	2.279
59.025	1.504
59.075	1.307
59.125	2.089
59.175	2.055
59.225	1.826
59.275	4.437
59.325	13.359
59.375	41.110
59.425	58.736
59.475	26.307
59.525	11.352
59.575	4.879
59.625	5.862
59.675	3.367
59.725	2.650
59.775	4.079
59.825	1.668
59.875	2.310

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59.925	1.238
59.975	3.774
60.025	3.677
60.075	1.742
60.125	2.822
60.175	4.864
60.225	4.103
60.275	3.750
60.325	18.054
60.375	31.623
60.425	49.739
60.475	56.723
113.525	6.653
113.575	1.927
113.625	2.838
113.675	2.697
113.725	2.195
113.775	4.236
113.825	2.523
113.875	1.968
113.925	2.426
113.975	2.953
114.025	1.676
114.075	1.976
114.125	1.813
114.175	2.440
114.225	7.942
114.275	11.452
114.325	42.061
114.375	20.163
114.425	13.593
114.475	1.983
114.525	1.683
114.575	2.531
114.625	0.874
114.675	1.279
114.725	0.891
114.775	1.779
114.825	1.186
114.875	1.029
114.925	1.564
114.975	0.950
115.025	1.530
115.075	1.114
115.125	2.208
115.175	3.123
115.225	4.486

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115.275	7.177
115.325	14.172
115.375	54.799
115.425	53.420
115.475	16.011
115.525	12.692
115.575	2.883
115.625	6.251
115.675	4.509
115.725	4.245
115.775	1.283
115.825	4.008
115.875	1.211
115.925	2.114
115.975	7.687
116.025	5.271
116.075	5.578
116.125	4.248
116.175	11.979
116.225	16.277
116.275	30.596
116.325	24.845
116.375	28.284
116.425	54.149
116.475	40.000
236.525	
236.575	23.855
236.625	34.401
236.675	27.422
236.725	35.668
236.775	39.989
236.825	18.757
236.875	23.077
236.925	20.761
236.975	14.650
237.025	36.943
237.075	27.109
237.125	25.586
237.175	42.799
237.225	24.325
237.275	21.429
237.325	30.129
237.375	15.267
237.425	4.597
237.475	48.577
237.525	19.963
237.575	13.238

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237.625	6.730
237.675	7.800
237.725	2.904
237.775	1.428
237.825	2.396
237.875	1.255
237.925	0.555
237.975	1.682
238.025	0.745
238.075	0.906
238.125	0.901
238.175	0.264
238.225	0.953
238.275	0.886
238.325	1.395
238.375	2.556
238.425	2.763
238.475	2.183
238.525	12.890
238.575	14.452
238.625	38.797
238.675	16.933
238.725	6.952
238.775	20.328
238.825	29.472
238.875	37.989
238.925	27.140
238.975	18.731
239.025	17.049
239.075	5.454
239.125	29.410
239.175	29.569
239.225	22.608
239.275	13.847
239.325	15.978
239.375	4.980
239.425	11.111
239.475	34.914

Approved: June 20, 2016

SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\ReportOutput\a.swz

Start Time: 6/16/2016 3:04:36 PM
End Time: 6/16/2016 3:07:03 PM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 4248.80
        Obtained Intensity (Mg 23.985): 62852.37
        Obtained Intensity (In 114.904): 59263.95
        Obtained Intensity (U 238.05): 123631.92
        Obtained Intensity (Bkgd 220): 0.53
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.020 (=3505.01 / 175287.61)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.005 (=894.29 / 175287.61)
```


Approved: June 20, 2016

SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\ReportOutput\a.swz

Optimization Status

Start Time: 6/16/2016 3:04:36 PM

Daily Performance Check
        Optimization Settings:
                Method: Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 1
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 4248.80
                Obtained Intensity (Mg 23.985): 62852.37
                Obtained Intensity (In 114.904): 59263.95
                Obtained Intensity (U 238.05): 123631.92
                Obtained Intensity (Bkgd 220): 0.53
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.020 (=3505.01 / 175287.61)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.005 (=894.29 / 175287.61)
[Passed]  Optimum value(s): N/A

End Time: 6/16/2016 3:07:03 PM
```


Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Thursday, June 16, 2016 15:30:14
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	51024.1	2.3				ug/L		Standard
	Be	9	6.7	43.3				ug/L		Standard
	Al	27	625.0	8.5				ug/L		Standard
	Sc	45	29647.3	3.2				ug/L		Standard
	Ti	47	57.3	8.1				ug/L		Standard
	V	51	1141.9	1.8				ug/L		Standard
	Cr	52	6628.1	1.7				ug/L		Standard
	Cr	53	430.0	9.1				ug/L		Standard
	Mn	55	603.3	5.5				ug/L		Standard
	Co	59	237.3	7.6				ug/L		Standard
	Ni	60	141.0	3.9				ug/L		Standard
	Cu	65	109.0	10.8				ug/L		Standard
	Zn	66	159.0	8.8				ug/L		Standard
>	Ge	72	474053.1	1.2				ug/L		Standard
	As	75	-34.2	89.8				ug/L		Standard
	Se	82	14.4	39.0				ug/L		Standard
	Se-1	77	55.3	3.8				ug/L		Standard
>	Ga	71	50.0	36.1				mg/L		Standard
	Rb	85	20.0	43.3				ug/L		Standard
	Y	89	376601.7	1.2				ug/L		Standard
>	Rh	103	16.7	69.3				ug/L		Standard
	Mo	98	8.0	17.7				ug/L		Standard
	Ag	107	80.7	16.9				ug/L		Standard
	Cd	111	3.0	0.1				mg/L		Standard
	Cd	114	7.5	153.9				ug/L		Standard
>	In	115	524721.8	2.2				ug/L		Standard
	Sn	118	715.0	18.5				ug/L		Standard
	Sb	123	200.9	30.1				ug/L		Standard
	Ba	135	107.7	7.0				ug/L		Standard
	Ce	140	30.0	0.0				ug/L		Standard
>	Tb	159	792236.5	1.3				ug/L		Standard
	Ho	165	6.7	43.3				ug/L		Standard
	Tl	203	9.0	50.9				ug/L		Standard
	Tl	205	0.0					ug/L		Standard
	Pb	206	216.0	6.4				ug/L		Standard
	Pb	207	179.7	5.8				ug/L		Standard
	Pb	208	717.3	4.2				ug/L		Standard
	U	238	3.7	15.7				ug/L		Standard
>	Bi	209	460342.9	1.5				ug/L		Standard

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	Na	23	0.0		mg/L	Standard
	Mg	24	20.0	50.0	mg/L	Standard
	K	39	21.7	26.6	mg/L	Standard
	Ca	43	46.7	27.0	mg/L	Standard
	Fe	54	151.0	18.9	mg/L	Standard
	Fe	57	195.0	11.2	mg/L	Standard
>	**Sc-1**	45	29647.3	3.2	mg/L	Standard
	Cl	35	154151.6	0.9	ug/L	Standard
	Kr	83	3.3	17.3	ug/L	Standard
	Br	81	1606.8	11.7	ug/L	Standard
	P	31	22752.1	1.8	ug/L	Standard
	S	34	5049.2	1.8	ug/L	Standard
	Sr	88	86.7	6.7	ug/L	Standard
	C	12	46.7	24.7	mg/L	Standard
	N	14	0.0		mg/L	Standard
	Hg	202	0.0		mg/L	Standard
	Dy	164	9.8	99.2	mg/L	Standard
	Ho-1	165	6.7	43.3	mg/L	Standard
	Er	166	3.3	173.2	mg/L	Standard
	I	127	841.7	10.5	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Blank
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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Thursday, June 16, 2016 15:33:26
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61336.5	17.7				ug/L	51024	Standard
	Be	9	5.0	100.0				ug/L	7	Standard
	Al	27	221.7	31.9				ug/L	625	Standard
	Sc	45	28802.5	9.9				ug/L	29647	Standard
	Ti	47	62.3	33.0				ug/L	57	Standard
	V	51	580.8	14.0				ug/L	1142	Standard
	Cr	52	2885.9	3.7				ug/L	6628	Standard
	Cr	53	203.3	7.5				ug/L	430	Standard
	Mn	55	613.3	37.8				ug/L	603	Standard
	Co	59	262.7	10.4				ug/L	237	Standard
	Ni	60	108.3	5.6				ug/L	141	Standard
	Cu	65	79.7	10.1				ug/L	109	Standard
	Zn	66	145.3	10.1				ug/L	159	Standard
>	**Ge**	72	493610.1	8.2				ug/L	474053	Standard
	As	75	72.1	70.6				ug/L	-34	Standard
	Se	82	46.9	37.4				ug/L	14	Standard
	Se-1	77	47.7	12.6				ug/L	55	Standard
>	**Ga**	71	35.0	37.8				mg/L	50	Standard
	Rb	85	20.0	0.0				ug/L	20	Standard
	Y	89	401482.6	6.9				ug/L	376602	Standard
>	**Rh**	103	11.7	107.9				ug/L	17	Standard
	Mo	98	7.8	54.6				ug/L	8	Standard
	Ag	107	82.7	18.8				ug/L	81	Standard
	Cd	111	3.7	15.8				mg/L	3	Standard
	Cd	114	6.4	91.9				ug/L	7	Standard
>	**In**	115	555148.6	6.0				ug/L	524722	Standard
	Sn	118	256.7	2.2				ug/L	715	Standard
	Sb	123	44.3	25.6				ug/L	201	Standard
	Ba	135	17.0	5.9				ug/L	108	Standard
	Ce	140	18.3	15.7				ug/L	30	Standard
>	**Tb**	159	901198.6	13.9				ug/L	792236	Standard
	Ho	165	1.7	173.2				ug/L	7	Standard
	Tl	203	10.0	75.5				ug/L	9	Standard
	Tl	205	8.3	124.9				ug/L	0	Standard
	Pb	206	256.7	23.8				ug/L	216	Standard
	Pb	207	208.0	18.4				ug/L	180	Standard
	Pb	208	827.7	17.4				ug/L	717	Standard
	U	238	2.7	21.7				ug/L	4	Standard
>	**Bi**	209	546132.2	18.5				ug/L	460343	Standard

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	Na	23	0.0		mg/L	0	Standard
	Mg	24	28.3	10.2	mg/L	20	Standard
	K	39	15.0	33.3	mg/L	22	Standard
	Ca	43	50.0	17.3	mg/L	47	Standard
	Fe	54	136.0	58.3	mg/L	151	Standard
	Fe	57	195.0	23.5	mg/L	195	Standard
>	**Sc-1**	45	28802.5	9.9	mg/L	29647	Standard
	Cl	35	67826.3	3.7	ug/L	154152	Standard
	Kr	83	1.7	34.6	ug/L	3	Standard
	Br	81	586.7	16.8	ug/L	1607	Standard
	P	31	15342.0	42.1	ug/L	22752	Standard
	S	34	2116.8	1.5	ug/L	5049	Standard
	Sr	88	106.7	39.0	ug/L	87	Standard
	C	12	23.3	24.7	mg/L	47	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	3.3	173.2	mg/L	0	Standard
	Dy	164	9.5	5.0	mg/L	10	Standard
	Ho-1	165	1.7	173.2	mg/L	7	Standard
	Er	166	10.0	100.0	mg/L	3	Standard
	I	127	316.7	10.7	mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: Standard 1
Report Date/Time: Thursday, June 16, 2016 15:35:43
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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 1
Report Date/Time: Thursday, June 16, 2016 15:35:43
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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Thursday, June 16, 2016 15:36:37
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48482.4	0.7				ug/L	51024	Standard
	Be	9	56.7	51.7				ug/L	7	Standard
	Al	27	8083.8	2.1				ug/L	625	Standard
	Sc	45	30706.1	1.7				ug/L	29647	Standard
	Ti	47	79.3	15.6				ug/L	57	Standard
	V	51	1543.2	4.3				ug/L	1142	Standard
	Cr	52	7153.0	1.0				ug/L	6628	Standard
	Cr	53	445.0	12.2				ug/L	430	Standard
	Mn	55	1041.0	0.8				ug/L	603	Standard
	Co	59	583.0	7.0				ug/L	237	Standard
	Ni	60	245.0	4.3				ug/L	141	Standard
	Cu	65	217.0	8.3				ug/L	109	Standard
	Zn	66	310.7	2.1				ug/L	159	Standard
>	**Ge**	72	471168.8	0.1				ug/L	474053	Standard
	As	75	27.4	88.1				ug/L	-34	Standard
	Se	82	24.1	10.8				ug/L	14	Standard
	Se-1	77	60.7	6.2				ug/L	55	Standard
>	**Ga**	71	60.0	28.9				mg/L	50	Standard
	Rb	85	21.7	26.6				ug/L	20	Standard
	Y	89	408481.5	2.2				ug/L	376602	Standard
>	**Rh**	103	23.3	24.7				ug/L	17	Standard
	Mo	98	258.4	4.9				ug/L	8	Standard
	Ag	107	385.7	3.9				ug/L	81	Standard
	Cd	111	107.2	4.8				mg/L	3	Standard
	Cd	114	267.5	8.7				ug/L	7	Standard
>	**In**	115	544133.0	1.6				ug/L	524722	Standard
	Sn	118	778.4	8.1				ug/L	715	Standard
	Sb	123	293.5	11.5				ug/L	201	Standard
	Ba	135	202.3	5.5				ug/L	108	Standard
	Ce	140	46.7	80.4				ug/L	30	Standard
>	**Tb**	159	788761.6	1.1				ug/L	792236	Standard
	Ho	165	18.3	56.8				ug/L	7	Standard
	Tl	203	392.3	6.9				ug/L	9	Standard
	Tl	205	366.7	20.5				ug/L	0	Standard
	Pb	206	479.7	4.5				ug/L	216	Standard
	Pb	207	426.3	6.0				ug/L	180	Standard
	Pb	208	1798.4	0.2				ug/L	717	Standard
	U	238	349.3	5.8				ug/L	4	Standard
>	**Bi**	209	449760.6	0.7				ug/L	460343	Standard

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Na	23	3.3	86.6	mg/L	0	Standard
Mg	24	38.3	27.2	mg/L	20	Standard
K	39	31.7	24.1	mg/L	22	Standard
Ca	43	58.3	21.6	mg/L	47	Standard
Fe	54	152.6	18.2	mg/L	151	Standard
Fe	57	218.3	10.3	mg/L	195	Standard
Sc-1	45	30706.1	1.7	mg/L	29647	Standard
Cl	35	159978.9	1.3	ug/L	154152	Standard
Kr	83	1.3	43.3	ug/L	3	Standard
Br	81	1600.1	10.1	ug/L	1607	Standard
P	31	22997.4	1.5	ug/L	22752	Standard
S	34	5302.6	1.3	ug/L	5049	Standard
Sr	88	58.3	27.6	ug/L	87	Standard
C	12	23.3	65.5	mg/L	47	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	0.0		mg/L	0	Standard
Dy	164	2.7	234.8	mg/L	10	Standard
Ho-1	165	18.3	56.8	mg/L	7	Standard
Er	166	13.3	86.6	mg/L	3	Standard
I	127	928.4	11.9	mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: Standard 2
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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 2
Report Date/Time: Thursday, June 16, 2016 15:38:54
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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Thursday, June 16, 2016 15:39:49
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50565.9	1.8				ug/L	51024	Standard
	Be	9	42044.9	2.0	**50.0000**	1.656	3.3	ug/L	7	Standard
	Al	27	7094492.1	1.7	**50.0000**	0.240	0.5	ug/L	625	Standard
	Sc	45	29363.4	3.4				ug/L	29647	Standard
	Ti	47	29759.2	1.6	**100.0000**	1.722	1.7	ug/L	57	Standard
	V	51	356139.2	0.8	**50.0000**	0.331	0.7	ug/L	1142	Standard
	Cr	52	369550.1	0.3	**50.0000**	0.347	0.7	ug/L	6628	Standard
	Cr	53	46382.6	2.2	**50.0000**	0.884	1.8	ug/L	430	Standard
	Mn	55	295860.1	0.8	**50.0000**	0.768	1.5	ug/L	603	Standard
	Co	59	321303.4	0.4	**50.0000**	0.569	1.1	ug/L	237	Standard
	Ni	60	95975.7	0.7	**50.0000**	0.220	0.4	ug/L	141	Standard
	Cu	65	93739.7	0.2	**50.0000**	0.238	0.5	ug/L	109	Standard
	Zn	66	55396.4	0.5	**50.0000**	0.181	0.4	ug/L	159	Standard
>	**Ge**	72	471316.6	0.7				ug/L	474053	Standard
	As	75	55401.6	1.7	**50.0000**	1.157	2.3	ug/L	-34	Standard
	Se	82	5512.4	2.0	**50.0000**	1.370	2.7	ug/L	14	Standard
	Se-1	77	3915.5	0.9	**50.0000**	0.786	1.6	ug/L	55	Standard
>	**Ga**	71	120.0	8.3				mg/L	50	Standard
	Rb	85	818.4	2.5				ug/L	20	Standard
	Y	89	383423.6	1.9				ug/L	376602	Standard
>	**Rh**	103	26.7	39.0				ug/L	17	Standard
	Mo	98	238525.6	1.7	**100.0000**	2.248	2.2	ug/L	8	Standard
	Ag	107	300586.5	1.0	**50.0000**	0.931	1.9	ug/L	81	Standard
	Cd	111	96734.5	0.7	**50.0000**	0.446	0.9	mg/L	3	Standard
	Cd	114	239222.4	0.8	**50.0000**	0.320	0.6	ug/L	7	Standard
>	**In**	115	516883.8	1.3				ug/L	524722	Standard
	Sn	118	269170.5	1.9	**50.0000**	0.357	0.7	ug/L	715	Standard
	Sb	123	219395.1	0.6	**50.0000**	0.615	1.2	ug/L	201	Standard
	Ba	135	90538.0	0.9	**50.0000**	0.240	0.5	ug/L	108	Standard
	Ce	140	98.3	33.1				ug/L	30	Standard
>	**Tb**	159	780626.5	1.3				ug/L	792236	Standard
	Ho	165	5.0	0.0				ug/L	7	Standard
	Tl	203	372504.5	0.5	**50.0000**	0.339	0.7	ug/L	9	Standard
	Tl	205	316386.0	0.8	**50.0000**	0.414	0.8	ug/L	0	Standard
	Pb	206	225338.3	0.7	**50.0000**	0.467	0.9	ug/L	216	Standard
	Pb	207	205697.6	0.7	**50.0000**	0.491	1.0	ug/L	180	Standard
	Pb	208	831229.4	0.5	**50.0000**	0.375	0.7	ug/L	717	Standard
	U	238	300295.4	0.8	**50.0000**	0.316	0.6	ug/L	4	Standard
>	**Bi**	209	447053.1	1.0				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.0000**	10.302	206.0	mg/L	0	Standard
Mg	24	3705.5	6.1	**5.0000**	0.367	7.3	mg/L	20	Standard
K	39	671.7	7.3	**5.0000**	0.265	5.3	mg/L	22	Standard
Ca	43	63.3	43.5	**5.0000**	18.565	371.3	mg/L	47	Standard
Fe	54	6334.8	3.3	**5.0000**	0.319	6.4	mg/L	151	Standard
Fe	57	1861.8	5.0	**5.0000**	0.466	9.3	mg/L	195	Standard
> **Sc-1**	45	29363.4	3.4				mg/L	29647	Standard
Cl	35	161698.3	1.0				ug/L	154152	Standard
Kr	83	2.7	21.7				ug/L	3	Standard
Br	81	1496.7	10.1				ug/L	1607	Standard
P	31	25361.3	5.9				ug/L	22752	Standard
S	34	5722.8	8.3				ug/L	5049	Standard
Sr	88	76.7	13.6				ug/L	87	Standard
C	12	36.7	41.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.3	126.2				mg/L	10	Standard
Ho-1	165	5.0	0.0				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	6142.9	1.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: Standard 3
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⎣	Rb	85
⎡	Y	89
⎣>	Rh	103
⎡	Mo	98
⎢	Ag	107
⎢	Cd	111
⎢	Cd	114
⎢>	In	115
⎢	Sn	118
⎢	Sb	123
⎣	Ba	135
⎡	Ce	140
⎣>	Tb	159
⎡	Ho	165
⎢	Tl	203
⎢	Tl	205
⎢	Pb	206
⎢	Pb	207
⎢	Pb	208
⎢	U	238
⎣>	Bi	209
⎡	Na	23
⎢	Mg	24
⎢	K	39
⎢	Ca	43
⎢	Fe	54
⎢	Fe	57
⎣>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 3
Report Date/Time: Thursday, June 16, 2016 15:42:06
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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Thursday, June 16, 2016 15:43:00
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	50435.5	1.6				ug/L	51024	Standard
	Be	9	82346.5	1.2	**99.0819**	1.677	1.7	ug/L	7	Standard
	Al	27	13992181.1	1.0	**99.4387**	0.736	0.7	ug/L	625	Standard
	Sc	45	30006.4	2.8				ug/L	29647	Standard
	Ti	47	58505.4	1.0	**200.8925**	5.085	2.5	ug/L	57	Standard
	V	51	687977.3	0.6	**99.6029**	0.871	0.9	ug/L	1142	Standard
	Cr	52	725902.3	0.9	**100.8293**	2.361	2.3	ug/L	6628	Standard
	Cr	53	91049.5	2.4	**100.5343**	1.118	1.1	ug/L	430	Standard
	Mn	55	576461.1	0.2	**100.0121**	1.485	1.5	ug/L	603	Standard
	Co	59	620596.3	0.4	**99.5359**	1.816	1.8	ug/L	237	Standard
	Ni	60	187359.0	1.0	**100.0839**	1.180	1.2	ug/L	141	Standard
	Cu	65	182121.9	1.8	**99.8326**	0.584	0.6	ug/L	109	Standard
	Zn	66	107693.4	1.7	**99.9466**	0.229	0.2	ug/L	159	Standard
>	Ge	72	459665.5	1.5				ug/L	474053	Standard
	As	75	106571.4	0.3	**99.2933**	1.200	1.2	ug/L	-34	Standard
	Se	82	10745.6	0.0	**100.0548**	1.484	1.5	ug/L	14	Standard
	Se-1	77	7418.5	2.3	**98.9131**	3.363	3.4	ug/L	55	Standard
>	Ga	71	103.3	32.2				mg/L	50	Standard
	Rb	85	1393.4	13.3				ug/L	20	Standard
	Y	89	377187.2	0.3				ug/L	376602	Standard
>	Rh	103	38.3	45.8				ug/L	17	Standard
	Mo	98	461069.8	0.9	**194.9574**	1.968	1.0	ug/L	8	Standard
	Ag	107	583703.5	0.6	**97.7109**	0.535	0.5	ug/L	81	Standard
	Cd	111	192033.7	0.5	**98.8117**	0.100	0.1	mg/L	3	Standard
	Cd	114	474593.2	1.8	**98.7794**	1.465	1.5	ug/L	7	Standard
>	In	115	525374.3	0.4				ug/L	524722	Standard
	Sn	118	532965.7	1.1	**98.7299**	1.022	1.0	ug/L	715	Standard
	Sb	123	428817.2	1.1	**98.0404**	1.345	1.4	ug/L	201	Standard
	Ba	135	179232.3	1.1	**98.7001**	1.049	1.1	ug/L	108	Standard
	Ce	140	138.3	11.0				ug/L	30	Standard
>	Tb	159	777561.5	1.7				ug/L	792236	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	728897.3	1.0	**99.5734**	0.952	1.0	ug/L	9	Standard
	Tl	205	620686.4	2.0	**99.7030**	1.645	1.6	ug/L	0	Standard
	Pb	206	440868.6	1.2	**99.5956**	1.751	1.8	ug/L	216	Standard
	Pb	207	400234.3	1.0	**99.3185**	1.537	1.5	ug/L	180	Standard
	Pb	208	1631531.3	1.4	**99.7532**	0.911	0.9	ug/L	717	Standard
	U	238	597917.2	1.3	**100.4447**	0.594	0.6	ug/L	4	Standard
>	Bi	209	441150.8	1.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	7450.2	2.2	**9.9373**	0.220	2.2	mg/L	20	Standard
K	39	1375.1	15.8	**10.1223**	1.524	15.1	mg/L	22	Standard
Ca	43	130.0	15.4	**16.7571**	3.894	23.2	mg/L	47	Standard
Fe	54	12357.9	4.2	**9.8157**	0.430	4.4	mg/L	151	Standard
Fe	57	3355.4	5.1	**9.6321**	0.814	8.4	mg/L	195	Standard
Sc-1	45	30006.4	2.8				mg/L	29647	Standard
Cl	35	163219.8	1.1				ug/L	154152	Standard
Kr	83	2.3	99.0				ug/L	3	Standard
Br	81	1446.7	4.9				ug/L	1607	Standard
P	31	26878.8	3.1				ug/L	22752	Standard
S	34	5969.5	3.7				ug/L	5049	Standard
Sr	88	53.3	21.7				ug/L	87	Standard
C	12	56.7	36.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	16.2	33.1				mg/L	10	Standard
Ho-1	165	8.3	69.3				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	6194.6	1.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: Standard 4
Report Date/Time: Thursday, June 16, 2016 15:45:17
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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998
Corr. Coef.	Ca	43	Correlation coefficient < 0.998

Sample ID: Standard 4
Report Date/Time: Thursday, June 16, 2016 15:45:17
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Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Thursday, June 16, 2016 15:46:13
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	48900.5	1.4				ug/L	51024	Standard
	Be	9	40029.5	1.7	**49.6695**	1.322	2.7	ug/L	7	Standard
	Al	27	6807595.1	1.1	**49.8931**	0.613	1.2	ug/L	625	Standard
	Sc	45	29859.4	2.2				ug/L	29647	Standard
	Ti	47	30234.8	0.9	**101.5179**	0.557	0.5	ug/L	57	Standard
	V	51	345968.9	0.4	**48.9414**	0.135	0.3	ug/L	1142	Standard
	Cr	52	361268.5	1.4	**48.6339**	0.583	1.2	ug/L	6628	Standard
	Cr	53	44796.1	1.2	**48.2008**	0.799	1.7	ug/L	430	Standard
	Mn	55	290150.7	1.7	**49.2058**	0.854	1.7	ug/L	603	Standard
	Co	59	308353.8	2.9	**48.3820**	1.390	2.9	ug/L	237	Standard
	Ni	60	93264.8	0.6	**48.7266**	0.581	1.2	ug/L	141	Standard
	Cu	65	92121.6	1.1	**49.4021**	0.815	1.6	ug/L	109	Standard
	Zn	66	55388.4	1.1	**50.2077**	0.826	1.6	ug/L	159	Standard
>	Ge	72	469579.4	0.6				ug/L	474053	Standard
	As	75	54025.0	1.0	**49.2819**	0.719	1.5	ug/L	-34	Standard
	Se	82	5305.3	2.4	**48.2613**	1.119	2.3	ug/L	14	Standard
	Se-1	77	3733.1	1.8	**48.3299**	0.600	1.2	ug/L	55	Standard
>	Ga	71	121.7	8.6				mg/L	50	Standard
	Rb	85	516.7	11.5				ug/L	20	Standard
	Y	89	375718.4	2.6				ug/L	376602	Standard
>	Rh	103	33.3	67.6				ug/L	17	Standard
	Mo	98	242646.9	2.2	**104.6905**	2.943	2.8	ug/L	8	Standard
	Ag	107	289971.5	0.6	**49.5201**	0.189	0.4	ug/L	81	Standard
	Cd	111	93046.4	0.5	**48.8483**	0.170	0.3	mg/L	3	Standard
	Cd	114	230715.9	0.2	**48.9961**	0.373	0.8	ug/L	7	Standard
>	In	115	514920.2	0.6				ug/L	524722	Standard
	Sn	118	284710.7	1.9	**53.7768**	1.357	2.5	ug/L	715	Standard
	Sb	123	208688.7	0.3	**48.6728**	0.184	0.4	ug/L	201	Standard
	Ba	135	85799.9	0.5	**48.1785**	0.093	0.2	ug/L	108	Standard
	Ce	140	120.0	21.7				ug/L	30	Standard
>	Tb	159	776088.7	0.5				ug/L	792236	Standard
	Ho	165	16.7	45.8				ug/L	7	Standard
	Tl	203	358537.1	1.1	**48.0462**	0.455	0.9	ug/L	9	Standard
	Tl	205	307552.3	1.7	**48.4612**	0.738	1.5	ug/L	0	Standard
	Pb	206	224129.9	0.7	**49.6400**	0.561	1.1	ug/L	216	Standard
	Pb	207	195303.0	0.4	**47.5147**	0.574	1.2	ug/L	180	Standard
	Pb	208	802915.7	0.1	**48.1309**	0.507	1.1	ug/L	717	Standard
	U	238	288986.2	0.3	**47.6224**	0.342	0.7	ug/L	4	Standard
>	Bi	209	449693.2	1.0				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3802.1	3.0	**5.0768**	0.262	5.2	mg/L	20	Standard
K	39	675.0	17.5	**4.8950**	0.999	20.4	mg/L	22	Standard
Ca	43	53.3	10.8	**-0.7985**	1.553	194.4	mg/L	47	Standard
Fe	54	5993.9	4.1	**4.7227**	0.110	2.3	mg/L	151	Standard
Fe	57	1776.8	6.7	**4.8135**	0.313	6.5	mg/L	195	Standard
Sc-1	45	29859.4	2.2				mg/L	29647	Standard
Cl	35	159749.2	1.5				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	1490.1	3.7				ug/L	1607	Standard
P	31	25977.3	1.4				ug/L	22752	Standard
S	34	5996.2	1.4				ug/L	5049	Standard
Sr	88	60.0	22.0				ug/L	87	Standard
C	12	80.0	66.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	13.3	43.3				mg/L	10	Standard
Ho-1	165	16.7	45.8				mg/L	7	Standard
Er	166	0.0					mg/L	3	Standard
I	127	935.0	3.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	99.339		
Al	27	99.786		
Sc	45			
Ti	47	101.518		
V	51	97.883		
Cr	52	97.268		
Cr	53			
Mn	55	98.412		
Co	59	96.764		
Ni	60	97.453		
Cu	65	98.804		
Zn	66	100.415		
Ge	72		99.056	
As	75	98.564		
Se	82	96.523		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	104.691		
Ag	107	99.040		
Cd	111	97.697		
Cd	114			
> In	115		98.132	
Sn	118	107.554		
Sb	123	97.346		
Ba	135	96.357		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	96.092		
Tl	205			
Pb	206	99.280		
Pb	207	95.029		
Pb	208	96.262		
U	238	95.245		
> Bi	209		97.687	
Na	23	209.044		
Mg	24	101.535		
K	39	97.901		
Ca	43	-15.971		
Fe	54	94.453		
Fe	57	96.269		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	K	39	
QC Std 1	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Thursday, June 16, 2016 15:49:26
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48778.4	0.5				ug/L	51024	Standard
	Be	9	35.0	28.6	**0.0225**	0.013	56.3	ug/L	7	Standard
	Al	27	2908.6	43.3	**0.0116**	0.009	80.6	ug/L	625	Standard
	Sc	45	29670.7	2.3				ug/L	29647	Standard
	Ti	47	66.7	16.0	**0.0643**	0.036	55.5	ug/L	57	Standard
	V	51	1072.6	10.6	**-0.0119**	0.017	142.0	ug/L	1142	Standard
	Cr	52	6126.6	0.6	**-0.0646**	0.004	6.2	ug/L	6628	Standard
	Cr	53	356.7	16.1	**-0.0336**	0.065	194.5	ug/L	430	Standard
	Mn	55	698.3	6.8	**-0.0044**	0.009	209.1	ug/L	603	Standard
	Co	59	364.0	15.3	**0.0175**	0.009	54.1	ug/L	237	Standard
	Ni	60	154.7	17.5	**0.0055**	0.015	280.7	ug/L	141	Standard
	Cu	65	145.3	17.7	**0.0141**	0.015	104.9	ug/L	109	Standard
	Zn	66	148.7	11.8	**-0.0929**	0.016	17.2	ug/L	159	Standard
>	**Ge**	72	457105.8	0.9				ug/L	474053	Standard
	As	75	54.4	52.5	**0.0762**	0.027	35.8	ug/L	-34	Standard
	Se	82	25.8	22.3	**0.0738**	0.056	76.3	ug/L	14	Standard
	Se-1	77	51.3	21.0	**-0.0508**	0.151	296.8	ug/L	55	Standard
>	**Ga**	71	53.3	14.3				mg/L	50	Standard
	Rb	85	23.3	65.5				ug/L	20	Standard
	Y	89	386808.9	0.9				ug/L	376602	Standard
>	**Rh**	103	15.0	88.2				ug/L	17	Standard
	Mo	98	421.2	15.5	**0.1736**	0.026	15.2	ug/L	8	Standard
	Ag	107	183.0	26.0	**0.0185**	0.008	41.8	ug/L	81	Standard
	Cd	111	25.9	54.3	**0.0101**	0.007	70.6	mg/L	3	Standard
	Cd	114	76.1	40.9	**0.0121**	0.006	52.7	ug/L	7	Standard
>	**In**	115	521804.6	1.0				ug/L	524722	Standard
	Sn	118	1013.4	16.6	**0.0999**	0.033	32.7	ug/L	715	Standard
	Sb	123	1969.5	19.3	**0.4392**	0.092	20.9	ug/L	201	Standard
	Ba	135	122.3	18.3	**0.0101**	0.012	117.5	ug/L	108	Standard
	Ce	140	26.7	10.8				ug/L	30	Standard
>	**Tb**	159	767907.3	1.3				ug/L	792236	Standard
	Ho	165	6.7	173.2				ug/L	7	Standard
	Tl	203	152.0	42.0	**0.0183**	0.009	47.5	ug/L	9	Standard
	Tl	205	141.7	44.8	**0.0150**	0.010	67.4	ug/L	0	Standard
	Pb	206	285.3	8.6	**0.0085**	0.005	61.9	ug/L	216	Standard
	Pb	207	228.0	15.9	**0.0031**	0.009	284.7	ug/L	180	Standard
	Pb	208	1006.0	13.7	**0.0040**	0.008	208.4	ug/L	717	Standard
	U	238	107.3	30.4	**0.0105**	0.005	51.5	ug/L	4	Standard
>	**Bi**	209	438481.4	0.6				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	33.3	31.2	**-0.0002**	0.013	6870.4	mg/L	20	Standard
K	39	25.0	20.0	**-0.0379**	0.034	91.0	mg/L	22	Standard
Ca	43	46.7	37.6	**-2.2322**	4.367	195.6	mg/L	47	Standard
Fe	54	197.5	14.9	**0.0458**	0.026	57.7	mg/L	151	Standard
Fe	57	191.7	16.8	**-0.0529**	0.109	205.7	mg/L	195	Standard
Sc-1	45	29670.7	2.3				mg/L	29647	Standard
Cl	35	161750.4	2.1				ug/L	154152	Standard
Kr	83	2.7	21.7				ug/L	3	Standard
Br	81	1533.4	11.2				ug/L	1607	Standard
P	31	25499.8	1.3				ug/L	22752	Standard
S	34	5937.8	4.1				ug/L	5049	Standard
Sr	88	66.7	35.4				ug/L	87	Standard
C	12	33.3	75.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.0	187.0				mg/L	10	Standard
Ho-1	165	6.7	173.2				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	1050.0	3.1				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.425	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.444
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.251
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Na	23	
QC Std 2	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Thursday, June 16, 2016 15:52:39
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	47293.7	2.4				ug/L	51024	Standard
	Be	9	145.0	20.7	**0.1655**	0.042	25.4	ug/L	7	Standard
	Al	27	1435.1	31.2	**0.0012**	0.004	314.1	ug/L	625	Standard
	Sc	45	28264.7	3.0				ug/L	29647	Standard
	Ti	47	62.3	15.2	**0.0569**	0.033	58.3	ug/L	57	Standard
	V	51	3460.4	3.6	**0.3540**	0.018	5.2	ug/L	1142	Standard
	Cr	52	11315.9	0.6	**0.7230**	0.033	4.5	ug/L	6628	Standard
	Cr	53	1030.0	4.2	**0.7573**	0.039	5.1	ug/L	430	Standard
	Mn	55	3199.7	2.3	**0.4520**	0.007	1.5	ug/L	603	Standard
	Co	59	2520.2	3.3	**0.3798**	0.019	5.0	ug/L	237	Standard
	Ni	60	2902.6	0.9	**1.5376**	0.034	2.2	ug/L	141	Standard
	Cu	65	1498.7	1.3	**0.7897**	0.019	2.5	ug/L	109	Standard
	Zn	66	7175.7	0.5	**6.7167**	0.069	1.0	ug/L	159	Standard
>	**Ge**	72	441612.7	1.4				ug/L	474053	Standard
	As	75	399.1	9.4	**0.4120**	0.037	8.9	ug/L	-34	Standard
	Se	82	50.3	13.1	**0.3188**	0.059	18.5	ug/L	14	Standard
	Se-1	77	79.7	18.1	**0.3705**	0.214	57.7	ug/L	55	Standard
>	**Ga**	71	46.7	22.3				mg/L	50	Standard
	Rb	85	16.7	96.4				ug/L	20	Standard
	Y	89	357595.4	2.3				ug/L	376602	Standard
>	**Rh**	103	11.7	49.5				ug/L	17	Standard
	Mo	98	140.4	6.4	**0.0562**	0.004	6.6	ug/L	8	Standard
	Ag	107	2290.2	1.1	**0.3863**	0.009	2.4	ug/L	81	Standard
	Cd	111	448.4	2.4	**0.2366**	0.001	0.5	mg/L	3	Standard
	Cd	114	1122.4	5.7	**0.2391**	0.015	6.2	ug/L	7	Standard
>	**In**	115	505402.5	2.0				ug/L	524722	Standard
	Sn	118	471.7	16.6	**0.0014**	0.014	1036.4	ug/L	715	Standard
	Sb	123	1900.7	8.3	**0.4366**	0.030	6.9	ug/L	201	Standard
	Ba	135	1270.4	2.8	**0.6703**	0.033	4.9	ug/L	108	Standard
	Ce	140	16.7	62.4				ug/L	30	Standard
>	**Tb**	159	761635.7	0.6				ug/L	792236	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	619.3	5.8	**0.0818**	0.004	5.4	ug/L	9	Standard
	Tl	205	548.3	4.7	**0.0800**	0.003	4.2	ug/L	0	Standard
	Pb	206	1103.4	2.4	**0.1922**	0.004	2.3	ug/L	216	Standard
	Pb	207	900.7	2.9	**0.1691**	0.006	3.6	ug/L	180	Standard
	Pb	208	3946.5	2.5	**0.1828**	0.006	3.5	ug/L	717	Standard
	U	238	2295.5	1.9	**0.3769**	0.006	1.5	ug/L	4	Standard
>	**Bi**	209	442529.2	1.0				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	23.3	12.4	**-0.0120**	0.004	34.9	mg/L	20	Standard
K	39	20.0	25.0	**-0.0675**	0.043	63.8	mg/L	22	Standard
Ca	43	46.7	52.9	**-1.7510**	6.062	346.2	mg/L	47	Standard
Fe	54	119.0	25.4	**-0.0137**	0.024	175.0	mg/L	151	Standard
Fe	57	175.0	35.1	**-0.0751**	0.210	280.1	mg/L	195	Standard
Sc-1	45	28264.7	3.0				mg/L	29647	Standard
Cl	35	154177.8	0.4				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	1336.7	4.9				ug/L	1607	Standard
P	31	17880.5	2.1				ug/L	22752	Standard
S	34	5776.1	4.1				ug/L	5049	Standard
Sr	88	76.7	43.4				ug/L	87	Standard
C	12	16.7	69.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.4	191.0				mg/L	10	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	3	Standard
I	127	743.4	2.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	82.727		
Al	27	0.117		
Sc	45			
Ti	47			
V	51	88.501		
Cr	52	90.378		
Cr	53			
Mn	55	90.403		
Co	59	94.938		
Ni	60	96.097		
Cu	65	98.718		
Zn	66	107.467		
Ge	72		93.157	
As	75	103.009		
Se	82	79.699		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	96.587		
Cd	111	98.585		
Cd	114			
> In	115			96.318
Sn	118			
Sb	123	109.162		
Ba	135	89.380		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	102.188		
Tl	205			
Pb	206			
Pb	207			
Pb	208	91.390		
U	238	94.214		
> Bi	209			96.130
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

Sample ID: QC Std 3
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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Thursday, June 16, 2016 15:57:46
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	49537.5	0.6				ug/L	51024	Standard
	Be	9	39588.3	1.2	**48.4820**	0.764	1.6	ug/L	7	Standard
	Al	27	6811607.5	1.0	**49.2765**	0.287	0.6	ug/L	625	Standard
	Sc	45	29944.6	0.9				ug/L	29647	Standard
	Ti	47	30600.5	1.8	**105.9033**	0.546	0.5	ug/L	57	Standard
	V	51	333819.4	1.0	**48.6741**	0.557	1.1	ug/L	1142	Standard
	Cr	52	362624.9	0.8	**50.3521**	0.653	1.3	ug/L	6628	Standard
	Cr	53	44669.1	0.6	**49.5578**	1.018	2.1	ug/L	430	Standard
	Mn	55	295010.7	1.9	**51.5679**	0.147	0.3	ug/L	603	Standard
	Co	59	304256.6	2.3	**49.2031**	0.778	1.6	ug/L	237	Standard
	Ni	60	92980.9	2.3	**50.0643**	0.335	0.7	ug/L	141	Standard
	Cu	65	90826.1	1.2	**50.2022**	0.411	0.8	ug/L	109	Standard
	Zn	66	53553.2	3.1	**50.0191**	0.561	1.1	ug/L	159	Standard
>	Ge	72	455630.4	2.0				ug/L	474053	Standard
	As	75	53060.3	1.3	**49.8858**	0.388	0.8	ug/L	-34	Standard
	Se	82	5361.3	1.9	**50.2739**	0.522	1.0	ug/L	14	Standard
	Se-1	77	3719.8	1.8	**49.6698**	1.476	3.0	ug/L	55	Standard
>	Ga	71	106.7	19.5				mg/L	50	Standard
	Rb	85	516.7	9.1				ug/L	20	Standard
	Y	89	378420.4	2.1				ug/L	376602	Standard
>	Rh	103	21.7	74.2				ug/L	17	Standard
	Mo	98	235943.4	1.8	**99.9874**	3.042	3.0	ug/L	8	Standard
	Ag	107	287193.3	1.4	**48.1797**	1.433	3.0	ug/L	81	Standard
	Cd	111	93247.5	0.8	**48.0828**	0.885	1.8	mg/L	3	Standard
	Cd	114	229861.4	1.2	**47.9476**	1.147	2.4	ug/L	7	Standard
>	In	115	524337.5	1.6				ug/L	524722	Standard
	Sn	118	280407.9	1.2	**52.0144**	1.090	2.1	ug/L	715	Standard
	Sb	123	204641.1	2.4	**46.8900**	1.860	4.0	ug/L	201	Standard
	Ba	135	86406.7	0.9	**47.6572**	1.015	2.1	ug/L	108	Standard
	Ce	140	135.0	7.4				ug/L	30	Standard
>	Tb	159	786784.4	0.3				ug/L	792236	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	354843.5	0.6	**47.8254**	0.499	1.0	ug/L	9	Standard
	Tl	205	306407.3	0.5	**48.5592**	0.423	0.9	ug/L	0	Standard
	Pb	206	218264.7	1.4	**48.6127**	0.167	0.3	ug/L	216	Standard
	Pb	207	191093.3	1.2	**46.7522**	0.112	0.2	ug/L	180	Standard
	Pb	208	804010.8	0.5	**48.4716**	0.281	0.6	ug/L	717	Standard
	U	238	288392.8	0.3	**47.7978**	0.457	1.0	ug/L	4	Standard
>	Bi	209	447132.2	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3715.5	2.1	**4.9417**	0.061	1.2	mg/L	20	Standard
K	39	701.7	9.7	**5.0672**	0.500	9.9	mg/L	22	Standard
Ca	43	61.7	24.8	**1.0552**	3.413	323.4	mg/L	47	Standard
Fe	54	6212.5	1.3	**4.8866**	0.105	2.2	mg/L	151	Standard
Fe	57	1778.4	8.4	**4.8076**	0.510	10.6	mg/L	195	Standard
> **Sc-1**	45	29944.6	0.9				mg/L	29647	Standard
Cl	35	161455.3	2.4				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	1416.7	8.8				ug/L	1607	Standard
P	31	25623.3	0.9				ug/L	22752	Standard
S	34	5979.5	3.9				ug/L	5049	Standard
Sr	88	73.3	41.7				ug/L	87	Standard
C	12	33.3	69.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.0	37.7				mg/L	10	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	1055.0	6.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	96.964		
Al	27	98.553		
Sc	45			
Ti	47	105.903		
V	51	97.348		
Cr	52	100.704		
Cr	53			
Mn	55	103.136		
Co	59	98.406		
Ni	60	100.129		
Cu	65	100.404		
Zn	66	100.038		
> Ge	72		96.114	
As	75	99.772		
Se	82	100.548		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	99.987		
Ag	107	96.359		
Cd	111	96.166		
Cd	114			
> In	115		99.927	
Sn	118	104.029		
Sb	123	93.780		
Ba	135	95.314		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	95.651		
Tl	205			
Pb	206	97.225		
Pb	207	93.504		
Pb	208	96.943		
U	238	95.596		
> Bi	209		97.130	
Na	23	209.044		
Mg	24	98.834		
K	39	101.344		
Ca	43	21.103		
Fe	54	97.732		
Fe	57	96.152		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Thursday, June 16, 2016 16:03:55
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48694.8	0.2				ug/L	51024	Standard
	Be	9	11.7	24.7	**-0.0065**	0.004	55.1	ug/L	7	Standard
	Al	27	941.7	10.9	**-0.0028**	0.001	26.9	ug/L	625	Standard
	Sc	45	29877.8	0.9				ug/L	29647	Standard
	Ti	47	54.3	5.3	**0.0224**	0.010	44.8	ug/L	57	Standard
	V	51	957.2	10.4	**-0.0283**	0.014	48.1	ug/L	1142	Standard
	Cr	52	6138.9	3.0	**-0.0600**	0.025	41.4	ug/L	6628	Standard
	Cr	53	340.0	7.8	**-0.0510**	0.030	59.6	ug/L	430	Standard
	Mn	55	634.3	2.6	**-0.0152**	0.003	19.9	ug/L	603	Standard
	Co	59	238.0	8.6	**-0.0027**	0.004	132.9	ug/L	237	Standard
	Ni	60	130.0	7.3	**-0.0077**	0.005	63.8	ug/L	141	Standard
	Cu	65	103.7	15.4	**-0.0087**	0.009	107.0	ug/L	109	Standard
	Zn	66	127.0	5.2	**-0.1127**	0.007	6.0	ug/L	159	Standard
>	**Ge**	72	455597.3	0.8				ug/L	474053	Standard
	As	75	-43.2	74.2	**-0.0157**	0.030	193.2	ug/L	-34	Standard
	Se	82	18.2	18.4	**0.0019**	0.030	1563.3	ug/L	14	Standard
	Se-1	77	53.3	8.5	**-0.0219**	0.067	305.9	ug/L	55	Standard
>	**Ga**	71	65.0	20.4				mg/L	50	Standard
	Rb	85	26.7	39.0				ug/L	20	Standard
	Y	89	385670.5	2.5				ug/L	376602	Standard
>	**Rh**	103	21.7	48.0				ug/L	17	Standard
	Mo	98	109.5	11.0	**0.0404**	0.004	10.6	ug/L	8	Standard
	Ag	107	89.3	19.3	**0.0026**	0.003	126.0	ug/L	81	Standard
	Cd	111	7.4	34.0	**0.0006**	0.001	222.3	mg/L	3	Standard
	Cd	114	19.0	7.1	**0.0001**	0.000	161.5	ug/L	7	Standard
>	**In**	115	528269.6	2.4				ug/L	524722	Standard
	Sn	118	783.4	18.1	**0.0547**	0.023	42.9	ug/L	715	Standard
	Sb	123	1248.5	31.3	**0.2679**	0.083	31.1	ug/L	201	Standard
	Ba	135	101.3	11.9	**-0.0020**	0.008	395.1	ug/L	108	Standard
	Ce	140	18.3	56.8				ug/L	30	Standard
>	**Tb**	159	789316.7	0.7				ug/L	792236	Standard
	Ho	165	3.3	173.2				ug/L	7	Standard
	Tl	203	34.3	9.4	**0.0020**	0.000	19.3	ug/L	9	Standard
	Tl	205	23.3	61.9	**-0.0042**	0.002	53.7	ug/L	0	Standard
	Pb	206	215.0	9.3	**-0.0087**	0.004	50.2	ug/L	216	Standard
	Pb	207	177.7	3.1	**-0.0106**	0.001	10.4	ug/L	180	Standard
	Pb	208	745.3	3.0	**-0.0132**	0.001	9.1	ug/L	717	Standard
	U	238	19.7	20.5	**-0.0043**	0.001	15.7	ug/L	4	Standard
>	**Bi**	209	449575.7	0.9				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	26.7	60.3	**-0.0094**	0.021	228.0	mg/L	20	Standard
K	39	16.7	45.8	**-0.1015**	0.059	58.3	mg/L	22	Standard
Ca	43	35.0	0.0	**-5.0734**	0.077	1.5	mg/L	47	Standard
Fe	54	139.4	7.2	**-0.0024**	0.009	374.1	mg/L	151	Standard
Fe	57	198.3	8.1	**-0.0375**	0.053	141.8	mg/L	195	Standard
> **Sc-1**	45	29877.8	0.9				mg/L	29647	Standard
Cl	35	160882.5	1.9				ug/L	154152	Standard
Kr	83	1.0	0.0				ug/L	3	Standard
Br	81	1510.1	12.6				ug/L	1607	Standard
P	31	25673.4	1.5				ug/L	22752	Standard
S	34	5894.5	3.2				ug/L	5049	Standard
Sr	88	76.7	32.2				ug/L	87	Standard
C	12	23.3	49.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.4	107.5				mg/L	10	Standard
Ho-1	165	3.3	173.2				mg/L	7	Standard
Er	166	13.3	173.2				mg/L	3	Standard
I	127	965.0	3.2				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.107	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.676	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.661	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Na	23	
QC Std 2	K	39	

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QC Std 2	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Thursday, June 16, 2016 16:07:40
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55474.7	2.1				ug/L	51024	Standard
	Be	9	18.3	15.7	**-0.0010**	0.003	338.2	ug/L	7	Standard
	Al	27	6905396.8	2.8	**44.6071**	0.703	1.6	ug/L	625	Standard
	Sc	45	29577.2	0.8				ug/L	29647	Standard
	Ti	47	31418.2	1.3	**107.0966**	1.877	1.8	ug/L	57	Standard
	V	51	1222.8	22.4	**0.0081**	0.041	507.7	ug/L	1142	Standard
	Cr	52	7310.1	0.7	**0.0900**	0.007	8.1	ug/L	6628	Standard
	Cr	53	3288.7	9.3	**3.1897**	0.292	9.2	ug/L	430	Standard
	Mn	55	1091.7	3.2	**0.0620**	0.006	9.4	ug/L	603	Standard
	Co	59	399.3	5.7	**0.0224**	0.003	12.6	ug/L	237	Standard
	Ni	60	759.0	2.6	**0.3255**	0.016	4.9	ug/L	141	Standard
	Cu	65	628.7	2.7	**0.2766**	0.010	3.8	ug/L	109	Standard
	Zn	66	1729.4	2.6	**1.3663**	0.021	1.6	ug/L	159	Standard
>	**Ge**	72	462633.9	1.3				ug/L	474053	Standard
	As	75	-39.5	207.4	**-0.0113**	0.076	672.8	ug/L	-34	Standard
	Se	82	21.1	40.5	**0.0261**	0.078	299.6	ug/L	14	Standard
	Se-1	77	277.0	14.2	**2.9476**	0.479	16.2	ug/L	55	Standard
>	**Ga**	71	155.0	16.8				mg/L	50	Standard
	Rb	85	810.0	10.2				ug/L	20	Standard
	Y	89	382532.7	1.4				ug/L	376602	Standard
>	**Rh**	103	13.3	57.3				ug/L	17	Standard
	Mo	98	234826.0	1.7	**100.4857**	2.149	2.1	ug/L	8	Standard
	Ag	107	169.0	8.6	**0.0163**	0.002	15.1	ug/L	81	Standard
	Cd	111	-108.8	6.6	**-0.0599**	0.004	5.9	mg/L	3	Standard
	Cd	114	586.7	17.3	**0.1197**	0.021	17.4	ug/L	7	Standard
>	**In**	115	519149.4	0.5				ug/L	524722	Standard
	Sn	118	681.7	7.9	**0.0385**	0.011	27.7	ug/L	715	Standard
	Sb	123	406.1	34.2	**0.0793**	0.032	41.0	ug/L	201	Standard
	Ba	135	224.7	3.6	**0.0676**	0.005	7.3	ug/L	108	Standard
	Ce	140	145.0	18.2				ug/L	30	Standard
>	**Tb**	159	796726.8	0.9				ug/L	792236	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	851.7	23.5	**0.1131**	0.029	25.4	ug/L	9	Standard
	Tl	205	813.4	19.5	**0.1220**	0.027	21.9	ug/L	0	Standard
	Pb	206	671.0	13.8	**0.0943**	0.023	24.1	ug/L	216	Standard
	Pb	207	610.0	7.6	**0.0965**	0.013	13.8	ug/L	180	Standard
	Pb	208	2481.7	5.9	**0.0928**	0.011	11.7	ug/L	717	Standard
	U	238	11.0	24.1	**-0.0057**	0.000	8.1	ug/L	4	Standard
>	**Bi**	209	444717.2	1.3				ug/L	460343	Standard

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Na	23	1.7	173.2	**4.9320**	9.561	193.9	mg/L	0	Standard
Mg	24	9214.5	2.3	**12.4761**	0.188	1.5	mg/L	20	Standard
K	39	665.0	6.6	**4.8546**	0.351	7.2	mg/L	22	Standard
Ca	43	148.3	13.6	**21.5299**	4.516	21.0	mg/L	47	Standard
Fe	54	14427.7	3.0	**11.6428**	0.306	2.6	mg/L	151	Standard
Fe	57	3798.8	1.5	**11.1428**	0.194	1.7	mg/L	195	Standard
Sc-1	45	29577.2	0.8				mg/L	29647	Standard
Cl	35	176475.5	2.2				ug/L	154152	Standard
Kr	83	2.0	86.6				ug/L	3	Standard
Br	81	1553.4	2.3				ug/L	1607	Standard
P	31	23887.2	3.9				ug/L	22752	Standard
S	34	5340.9	1.7				ug/L	5049	Standard
Sr	88	58.3	9.9				ug/L	87	Standard
C	12	96.7	58.8				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	30.0	0.0				mg/L	0	Standard
Dy	164	2.4	262.3				mg/L	10	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	3	Standard
I	127	1410.1	5.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27	0.892		
Sc	45			
Ti	47	107.097		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.591	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	100.486		
Ag	107			
Cd	111			
Cd	114			
> In	115			98.938
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209			96.606
Na	23	39.456		
Mg	24	249.521		
K	39	97.091		
Ca	43	143.533		
Fe	54	93.142		
Fe	57	89.142		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Tl	203	
QC Std 4	Na	23	

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QC Std 4	Mg	24
QC Std 4	Ca	43

Sample ID: QC Std 4
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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Thursday, June 16, 2016 16:22:01
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	58477.6	0.2				ug/L	51024	Standard
	Be	9	88548.0	0.3	**91.8774**	0.469	0.5	ug/L	7	Standard
	Al	27	7648485.8	0.8	**46.8715**	0.352	0.8	ug/L	625	Standard
	Sc	45	29133.0	2.0				ug/L	29647	Standard
	Ti	47	33470.3	2.4	**118.1657**	2.723	2.3	ug/L	57	Standard
	V	51	673843.7	0.9	**100.3884**	1.672	1.7	ug/L	1142	Standard
	Cr	52	698679.1	1.4	**99.8305**	1.037	1.0	ug/L	6628	Standard
	Cr	53	90290.0	2.1	**102.5975**	1.386	1.4	ug/L	430	Standard
	Mn	55	596300.3	1.2	**106.4457**	0.466	0.4	ug/L	603	Standard
	Co	59	629938.1	1.8	**103.9511**	1.908	1.8	ug/L	237	Standard
	Ni	60	180922.1	0.3	**99.4431**	0.584	0.6	ug/L	141	Standard
	Cu	65	177067.3	0.6	**99.8815**	0.324	0.3	ug/L	109	Standard
	Zn	66	106852.8	0.0	**102.0554**	0.902	0.9	ug/L	159	Standard
>	Ge	72	446706.3	0.8				ug/L	474053	Standard
	As	75	106615.2	0.2	**102.2086**	1.049	1.0	ug/L	-34	Standard
	Se	82	10642.5	1.1	**101.9658**	1.771	1.7	ug/L	14	Standard
	Se-1	77	7567.2	2.1	**103.8353**	2.380	2.3	ug/L	55	Standard
>	Ga	71	153.3	10.5				mg/L	50	Standard
	Rb	85	808.4	8.9				ug/L	20	Standard
	Y	89	396492.9	1.1				ug/L	376602	Standard
>	Rh	103	48.3	15.8				ug/L	17	Standard
	Mo	98	245151.1	0.7	**102.3761**	1.234	1.2	ug/L	8	Standard
	Ag	107	517251.9	0.7	**85.5144**	0.680	0.8	ug/L	81	Standard
	Cd	111	189019.4	1.2	**96.0637**	1.742	1.8	mg/L	3	Standard
	Cd	114	457330.5	1.6	**94.0204**	2.156	2.3	ug/L	7	Standard
>	In	115	531964.2	0.7				ug/L	524722	Standard
	Sn	118	896.7	15.7	**0.0749**	0.027	35.8	ug/L	715	Standard
	Sb	123	419181.5	1.0	**94.6488**	1.016	1.1	ug/L	201	Standard
	Ba	135	174129.5	0.2	**94.7022**	0.497	0.5	ug/L	108	Standard
	Ce	140	123.3	45.2				ug/L	30	Standard
>	Tb	159	792285.1	1.1				ug/L	792236	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	718957.1	0.3	**98.0117**	1.579	1.6	ug/L	9	Standard
	Tl	205	627537.4	1.6	**100.6124**	3.065	3.0	ug/L	0	Standard
	Pb	206	453228.9	0.3	**102.1662**	1.141	1.1	ug/L	216	Standard
	Pb	207	393799.0	0.5	**97.5071**	0.924	0.9	ug/L	180	Standard
	Pb	208	1620914.8	1.9	**98.9101**	2.956	3.0	ug/L	717	Standard
	U	238	599569.3	0.5	**100.5173**	1.718	1.7	ug/L	4	Standard
>	Bi	209	442109.9	1.4				ug/L	460343	Standard

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Na	23	1.7	173.2	**4.7867**	9.813	205.0	mg/L	0	Standard
Mg	24	10183.4	1.3	**14.0071**	0.241	1.7	mg/L	20	Standard
K	39	573.3	13.1	**4.2150**	0.510	12.1	mg/L	22	Standard
Ca	43	138.3	13.7	**19.6561**	3.893	19.8	mg/L	47	Standard
Fe	54	15280.5	1.4	**12.5337**	0.416	3.3	mg/L	151	Standard
Fe	57	4085.6	2.5	**12.2326**	0.552	4.5	mg/L	195	Standard
> **Sc-1**	45	29133.0	2.0				mg/L	29647	Standard
Cl	35	179327.8	1.3				ug/L	154152	Standard
Kr	83	1.3	114.6				ug/L	3	Standard
Br	81	1623.4	4.9				ug/L	1607	Standard
P	31	23591.7	0.4				ug/L	22752	Standard
S	34	5254.2	2.3				ug/L	5049	Standard
Sr	88	70.0	42.9				ug/L	87	Standard
C	12	133.3	4.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	15.9	94.6				mg/L	10	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	3	Standard
I	127	930.0	5.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	91.877		
Al	27	0.937		
Sc	45			
Ti	47	118.166		
V	51	100.388		
Cr	52	99.830		
Cr	53			
Mn	55	106.446		
Co	59	103.951		
Ni	60	99.443		
Cu	65	99.882		
Zn	66	102.055		
> Ge	72		94.231	
As	75	102.209		
Se	82	101.966		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	102.376		
Ag	107	85.514		
Cd	111	96.064		
Cd	114			
In	115		101.380	
Sn	118			
Sb	123	94.649		
Ba	135	94.702		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.012		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.910		
U	238	100.517		
Bi	209		96.039	
Na	23	38.294		
Mg	24	280.142		
K	39	84.299		
Ca	43	131.041		
Fe	54	100.269		
Fe	57	97.861		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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QC Std 5	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 16:25:16
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	55603.6	4.4				ug/L	51024	Standard
	Be	9	43453.9	2.4	**47.4947**	3.006	6.3	ug/L	7	Standard
	Al	27	7054078.0	1.0	**45.5100**	1.586	3.5	ug/L	625	Standard
	Sc	45	29373.5	1.7				ug/L	29647	Standard
	Ti	47	28713.9	1.4	**99.4855**	3.895	3.9	ug/L	57	Standard
	V	51	340364.3	1.3	**49.6680**	0.932	1.9	ug/L	1142	Standard
	Cr	52	357828.9	0.7	**49.7225**	1.608	3.2	ug/L	6628	Standard
	Cr	53	43806.6	0.8	**48.6374**	1.665	3.4	ug/L	430	Standard
	Mn	55	293651.9	1.1	**51.3908**	1.852	3.6	ug/L	603	Standard
	Co	59	311248.9	1.6	**50.3908**	1.771	3.5	ug/L	237	Standard
	Ni	60	92893.9	1.1	**50.0647**	1.079	2.2	ug/L	141	Standard
	Cu	65	90724.2	1.5	**50.1802**	0.633	1.3	ug/L	109	Standard
	Zn	66	53344.1	1.6	**49.8682**	0.504	1.0	ug/L	159	Standard
>	Ge	72	455364.8	2.6				ug/L	474053	Standard
	As	75	52938.3	1.1	**49.8092**	0.820	1.6	ug/L	-34	Standard
	Se	82	5329.6	1.7	**50.0105**	0.490	1.0	ug/L	14	Standard
	Se-1	77	3723.8	2.6	**49.7421**	0.784	1.6	ug/L	55	Standard
>	Ga	71	95.0	22.9				mg/L	50	Standard
	Rb	85	726.7	4.9				ug/L	20	Standard
	Y	89	384472.0	0.6				ug/L	376602	Standard
>	Rh	103	16.7	62.4				ug/L	17	Standard
	Mo	98	232118.8	0.3	**97.2358**	1.022	1.1	ug/L	8	Standard
	Ag	107	290638.3	1.3	**48.1940**	0.630	1.3	ug/L	81	Standard
	Cd	111	94793.4	0.9	**48.3272**	1.004	2.1	mg/L	3	Standard
	Cd	114	234828.4	1.3	**48.4291**	1.209	2.5	ug/L	7	Standard
>	In	115	530331.4	1.3				ug/L	524722	Standard
	Sn	118	263139.7	2.6	**48.2596**	1.845	3.8	ug/L	715	Standard
	Sb	123	217327.7	1.3	**49.2164**	0.579	1.2	ug/L	201	Standard
	Ba	135	88067.5	0.7	**48.0226**	0.952	2.0	ug/L	108	Standard
	Ce	140	81.7	18.7				ug/L	30	Standard
>	Tb	159	794129.5	1.0				ug/L	792236	Standard
	Ho	165	6.7	86.6				ug/L	7	Standard
	Tl	203	362843.1	1.0	**49.0795**	1.497	3.1	ug/L	9	Standard
	Tl	205	310212.2	1.3	**49.3427**	1.712	3.5	ug/L	0	Standard
	Pb	206	222989.0	0.9	**49.8435**	1.206	2.4	ug/L	216	Standard
	Pb	207	201083.3	0.8	**49.3722**	1.064	2.2	ug/L	180	Standard
	Pb	208	809454.4	0.8	**48.9759**	1.413	2.9	ug/L	717	Standard
	U	238	299066.7	0.4	**49.7396**	1.132	2.3	ug/L	4	Standard
>	Bi	209	445696.2	2.2				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3647.1	3.0	**4.9460**	0.155	3.1	mg/L	20	Standard
K	39	621.7	4.7	**4.5576**	0.277	6.1	mg/L	22	Standard
Ca	43	53.3	19.5	**-0.5868**	2.635	449.0	mg/L	47	Standard
Fe	54	5858.9	4.9	**4.6943**	0.261	5.6	mg/L	151	Standard
Fe	57	1763.4	1.3	**4.8648**	0.124	2.5	mg/L	195	Standard
> **Sc-1**	45	29373.5	1.7				mg/L	29647	Standard
Cl	35	157950.4	0.4				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	1363.4	1.1				ug/L	1607	Standard
P	31	23531.6	2.3				ug/L	22752	Standard
S	34	5542.7	3.1				ug/L	5049	Standard
Sr	88	65.0	38.5				ug/L	87	Standard
C	12	56.7	71.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.4	50.3				mg/L	10	Standard
Ho-1	165	6.7	86.6				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	3	Standard
I	127	1150.0	8.7				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	94.989		
	Al	27	91.020		
	Sc	45			
	Ti	47	99.485		
	V	51	99.336		
	Cr	52	99.445		
	Cr	53			
	Mn	55	102.782		
	Co	59	100.782		
	Ni	60	100.129		
	Cu	65	100.360		
	Zn	66	99.736		
>	Ge	72		96.058	
	As	75	99.618		
	Se	82	100.021		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	97.236		
Ag	107	96.388		
Cd	111	96.654		
Cd	114			
> In	115			101.069
Sn	118	96.519		
Sb	123	98.433		
Ba	135	96.045		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.159		
Tl	205			
Pb	206			
Pb	207			
Pb	208	97.952		
U	238	99.479		
> Bi	209			96.818
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 16:38:50
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52378.7	2.1				ug/L	51024	Standard
	Be	9	15.0	120.2	**-0.0040**	0.020	512.1	ug/L	7	Standard
	Al	27	540.0	3.7	**-0.0061**	0.000	3.2	ug/L	625	Standard
	Sc	45	28712.2	1.8				ug/L	29647	Standard
	Ti	47	44.7	11.0	**-0.0123**	0.017	140.3	ug/L	57	Standard
	V	51	1065.6	4.8	**-0.0136**	0.008	61.5	ug/L	1142	Standard
	Cr	52	6160.3	1.0	**-0.0638**	0.013	21.0	ug/L	6628	Standard
	Cr	53	386.7	19.4	**-0.0026**	0.081	3156.3	ug/L	430	Standard
	Mn	55	621.0	4.1	**-0.0185**	0.004	21.4	ug/L	603	Standard
	Co	59	231.0	6.0	**-0.0042**	0.002	52.0	ug/L	237	Standard
	Ni	60	109.7	8.8	**-0.0191**	0.005	25.2	ug/L	141	Standard
	Cu	65	97.3	15.8	**-0.0127**	0.008	65.1	ug/L	109	Standard
	Zn	66	133.3	9.4	**-0.1078**	0.012	11.3	ug/L	159	Standard
>	**Ge**	72	459252.1	0.6				ug/L	474053	Standard
	As	75	-47.4	46.6	**-0.0192**	0.021	107.9	ug/L	-34	Standard
	Se	82	15.8	37.3	**-0.0216**	0.055	252.4	ug/L	14	Standard
	Se-1	77	46.7	11.0	**-0.1173**	0.072	61.6	ug/L	55	Standard
>	**Ga**	71	35.0	14.3				mg/L	50	Standard
	Rb	85	20.0	43.3				ug/L	20	Standard
	Y	89	388770.9	2.1				ug/L	376602	Standard
>	**Rh**	103	16.7	62.4				ug/L	17	Standard
	Mo	98	68.1	14.3	**0.0237**	0.004	18.9	ug/L	8	Standard
	Ag	107	85.7	13.7	**0.0022**	0.002	97.9	ug/L	81	Standard
	Cd	111	2.9	60.6	**-0.0017**	0.001	51.5	mg/L	3	Standard
	Cd	114	9.5	115.0	**-0.0018**	0.002	124.6	ug/L	7	Standard
>	**In**	115	518516.6	1.3				ug/L	524722	Standard
	Sn	118	641.7	18.0	**0.0313**	0.023	74.8	ug/L	715	Standard
	Sb	123	920.4	35.2	**0.1991**	0.078	39.0	ug/L	201	Standard
	Ba	135	100.7	10.0	**-0.0014**	0.006	433.1	ug/L	108	Standard
	Ce	140	18.3	78.7				ug/L	30	Standard
>	**Tb**	159	769102.4	0.6				ug/L	792236	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	15.7	25.8	**-0.0004**	0.001	125.3	ug/L	9	Standard
	Tl	205	10.0	50.0	**-0.0062**	0.001	13.5	ug/L	0	Standard
	Pb	206	207.3	13.7	**-0.0092**	0.007	79.6	ug/L	216	Standard
	Pb	207	175.3	4.3	**-0.0101**	0.002	22.2	ug/L	180	Standard
	Pb	208	743.7	4.7	**-0.0122**	0.003	22.5	ug/L	717	Standard
	U	238	8.7	35.3	**-0.0061**	0.000	8.0	ug/L	4	Standard
>	**Bi**	209	439141.9	1.8				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	28.3	66.8	**-0.0053**	0.027	522.2	mg/L	20	Standard
K	39	10.0	86.6	**-0.1489**	0.068	45.9	mg/L	22	Standard
Ca	43	36.7	47.9	**-4.3876**	4.095	93.3	mg/L	47	Standard
Fe	54	152.8	18.0	**0.0136**	0.026	187.8	mg/L	151	Standard
Fe	57	166.7	14.2	**-0.1136**	0.080	70.6	mg/L	195	Standard
> **Sc-1**	45	28712.2	1.8				mg/L	29647	Standard
Cl	35	160111.2	2.5				ug/L	154152	Standard
Kr	83	2.3	89.2				ug/L	3	Standard
Br	81	1460.1	8.4				ug/L	1607	Standard
P	31	22964.1	2.3				ug/L	22752	Standard
S	34	5249.2	1.7				ug/L	5049	Standard
Sr	88	68.3	27.7				ug/L	87	Standard
C	12	40.0	66.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	13.0	113.4				mg/L	10	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	3	Standard
I	127	923.4	1.6				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.878	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.817
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.395
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW B7 WG572432-04
Sample Date/Time: Thursday, June 16, 2016 17:35:43
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50888.7	1.4				ug/L	51024	Standard
	Be	9	10.0	50.0	**-0.0092**	0.006	65.8	ug/L	7	Standard
	Al	27	7250.1	1.6	**0.0413**	0.001	3.2	ug/L	625	Standard
	Sc	45	27620.2	1.5				ug/L	29647	Standard
	Ti	47	62.3	15.4	**0.0529**	0.035	66.0	ug/L	57	Standard
	V	51	1096.4	11.0	**-0.0060**	0.018	297.3	ug/L	1142	Standard
	Cr	52	7148.7	0.7	**0.0949**	0.009	9.1	ug/L	6628	Standard
	Cr	53	635.0	13.1	**0.2873**	0.091	31.7	ug/L	430	Standard
	Mn	55	19861.3	0.9	**3.3957**	0.050	1.5	ug/L	603	Standard
	Co	59	181.7	9.8	**-0.0115**	0.003	26.7	ug/L	237	Standard
	Ni	60	180.7	8.3	**0.0208**	0.008	36.7	ug/L	141	Standard
	Cu	65	122.3	7.7	**0.0024**	0.006	234.7	ug/L	109	Standard
	Zn	66	1100.0	2.9	**0.8128**	0.032	3.9	ug/L	159	Standard
>	**Ge**	72	450229.5	0.6				ug/L	474053	Standard
	As	75	-42.0	42.9	**-0.0149**	0.017	113.9	ug/L	-34	Standard
	Se	82	9.3	47.0	**-0.0801**	0.042	52.5	ug/L	14	Standard
	Se-1	77	64.0	16.5	**0.1328**	0.147	110.5	ug/L	55	Standard
>	**Ga**	71	50.0	26.5				mg/L	50	Standard
	Rb	85	73.3	20.8				ug/L	20	Standard
	Y	89	383468.8	0.7				ug/L	376602	Standard
>	**Rh**	103	13.3	21.7				ug/L	17	Standard
	Mo	98	675.4	5.9	**0.2913**	0.019	6.7	ug/L	8	Standard
	Ag	107	79.3	11.9	**0.0015**	0.002	113.9	ug/L	81	Standard
	Cd	111	2.4	24.1	**-0.0019**	0.000	15.9	mg/L	3	Standard
	Cd	114	32.5	70.3	**0.0032**	0.005	153.9	ug/L	7	Standard
>	**In**	115	505606.7	0.8				ug/L	524722	Standard
	Sn	118	778.4	13.1	**0.0606**	0.021	34.0	ug/L	715	Standard
	Sb	123	423.2	31.6	**0.0859**	0.032	37.8	ug/L	201	Standard
	Ba	135	197.0	6.6	**0.0551**	0.008	14.5	ug/L	108	Standard
	Ce	140	71.7	20.1				ug/L	30	Standard
>	**Tb**	159	761176.8	0.6				ug/L	792236	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	45.0	11.1	**0.0037**	0.001	19.6	ug/L	9	Standard
	Tl	205	38.3	27.2	**-0.0016**	0.002	107.0	ug/L	0	Standard
	Pb	206	207.0	9.6	**-0.0086**	0.005	56.9	ug/L	216	Standard
	Pb	207	183.0	3.8	**-0.0075**	0.002	22.0	ug/L	180	Standard
	Pb	208	773.7	0.5	**-0.0097**	0.001	6.3	ug/L	717	Standard
	U	238	7.0	14.3	**-0.0064**	0.000	2.5	ug/L	4	Standard
>	**Bi**	209	432877.1	0.8				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	46.7	37.6	**0.0228**	0.026	113.0	mg/L	20	Standard
K	39	25.0	20.0	**-0.0231**	0.042	181.8	mg/L	22	Standard
Ca	43	38.3	19.9	**-3.5551**	2.049	57.6	mg/L	47	Standard
Fe	54	166.0	7.2	**0.0299**	0.009	28.8	mg/L	151	Standard
Fe	57	193.3	5.4	**-0.0042**	0.043	1021.8	mg/L	195	Standard
> **Sc-1**	45	27620.2	1.5				mg/L	29647	Standard
Cl	35	157510.0	2.0				ug/L	154152	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	1796.8	8.2				ug/L	1607	Standard
P	31	21511.9	1.4				ug/L	22752	Standard
S	34	4927.5	1.4				ug/L	5049	Standard
Sr	88	76.7	10.0				ug/L	87	Standard
C	12	53.3	47.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	18.7	50.9				mg/L	10	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	26.7	57.3				mg/L	3	Standard
I	127	1125.0	8.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.734	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.974	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.357
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.034
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW B7 WG572432-05
Sample Date/Time: Thursday, June 16, 2016 17:38:54
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51783.3	1.2				ug/L	51024	Standard
	Be	9	41423.2	1.3	**48.5300**	0.724	1.5	ug/L	7	Standard
	Al	27	8105.5	5.6	**0.0464**	0.004	7.6	ug/L	625	Standard
	Sc	45	29290.0	1.1				ug/L	29647	Standard
	Ti	47	66.0	28.8	**0.0608**	0.069	114.0	ug/L	57	Standard
	V	51	347988.7	1.1	**50.1052**	0.398	0.8	ug/L	1142	Standard
	Cr	52	363767.8	1.3	**49.8723**	1.265	2.5	ug/L	6628	Standard
	Cr	53	46272.2	1.3	**50.7068**	1.549	3.1	ug/L	430	Standard
	Mn	55	322059.4	1.1	**55.6120**	1.299	2.3	ug/L	603	Standard
	Co	59	318198.3	0.5	**50.8192**	0.688	1.4	ug/L	237	Standard
	Ni	60	95145.8	1.0	**50.6010**	1.153	2.3	ug/L	141	Standard
	Cu	65	93949.4	0.3	**51.2847**	1.031	2.0	ug/L	109	Standard
	Zn	66	55650.7	0.4	**51.3490**	0.838	1.6	ug/L	159	Standard
>	**Ge**	72	461424.2	1.8				ug/L	474053	Standard
	As	75	53752.8	0.6	**49.9059**	0.739	1.5	ug/L	-34	Standard
	Se	82	5332.6	1.0	**49.3792**	0.829	1.7	ug/L	14	Standard
	Se-1	77	3747.5	1.7	**49.4072**	1.506	3.0	ug/L	55	Standard
>	**Ga**	71	81.7	30.2				mg/L	50	Standard
	Rb	85	53.3	23.6				ug/L	20	Standard
	Y	89	377535.8	0.4				ug/L	376602	Standard
>	**Rh**	103	36.7	31.5				ug/L	17	Standard
	Mo	98	750.8	4.4	**0.3174**	0.017	5.4	ug/L	8	Standard
	Ag	107	297266.0	1.0	**50.6052**	0.925	1.8	ug/L	81	Standard
	Cd	111	95234.0	1.1	**49.8345**	0.593	1.2	mg/L	3	Standard
	Cd	114	234836.7	1.4	**49.7088**	0.798	1.6	ug/L	7	Standard
>	**In**	115	516621.5	1.2				ug/L	524722	Standard
	Sn	118	736.7	13.8	**0.0494**	0.018	37.2	ug/L	715	Standard
	Sb	123	208987.1	0.3	**48.5849**	0.463	1.0	ug/L	201	Standard
	Ba	135	88485.0	1.6	**49.5270**	0.847	1.7	ug/L	108	Standard
	Ce	140	93.3	22.3				ug/L	30	Standard
>	**Tb**	159	786575.0	1.5				ug/L	792236	Standard
	Ho	165	15.0	120.2				ug/L	7	Standard
	Tl	203	367143.4	1.3	**48.6717**	0.655	1.3	ug/L	9	Standard
	Tl	205	311332.9	0.6	**48.5309**	0.337	0.7	ug/L	0	Standard
	Pb	206	233648.2	1.0	**51.1920**	0.365	0.7	ug/L	216	Standard
	Pb	207	204781.6	0.5	**49.2852**	0.113	0.2	ug/L	180	Standard
	Pb	208	826562.7	0.6	**49.0156**	0.301	0.6	ug/L	717	Standard
	U	238	299484.9	0.7	**48.8217**	0.244	0.5	ug/L	4	Standard
>	**Bi**	209	454561.3	0.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	50.0	17.3	**0.0233**	0.011	48.4	mg/L	20	Standard
K	39	26.7	28.6	**-0.0218**	0.061	278.8	mg/L	22	Standard
Ca	43	35.0	75.6	**-4.9193**	6.254	127.1	mg/L	47	Standard
Fe	54	111.6	12.4	**-0.0232**	0.011	46.2	mg/L	151	Standard
Fe	57	160.0	10.8	**-0.1456**	0.055	37.5	mg/L	195	Standard
> **Sc-1**	45	29290.0	1.1				mg/L	29647	Standard
Cl	35	154390.7	1.3				ug/L	154152	Standard
Kr	83	3.3	45.8				ug/L	3	Standard
Br	81	1633.4	8.8				ug/L	1607	Standard
P	31	21568.7	2.2				ug/L	22752	Standard
S	34	5032.5	1.0				ug/L	5049	Standard
Sr	88	65.0	15.4				ug/L	87	Standard
C	12	66.7	17.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	23.2	25.5				mg/L	10	Standard
Ho-1	165	15.0	120.2				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	1071.7	9.3				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		101.488	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.336	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.456
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.744
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606054006 WG572432-01
Sample Date/Time: Thursday, June 16, 2016 17:42:06
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52547.6	1.2				ug/L	51024	Standard
	Be	9	281.7	11.8	**0.3044**	0.040	13.2	ug/L	7	Standard
	Al	27	1816487.4	0.8	**12.3812**	0.043	0.4	ug/L	625	Standard
	Sc	45	29675.7	4.3				ug/L	29647	Standard
	Ti	47	527.0	16.5	**1.6748**	0.301	18.0	ug/L	57	Standard
	V	51	3476.6	2.8	**0.3441**	0.007	2.0	ug/L	1142	Standard
	Cr	52	8938.3	3.6	**0.3455**	0.039	11.3	ug/L	6628	Standard
	Cr	53	901.7	9.0	**0.5864**	0.111	18.9	ug/L	430	Standard
	Mn	55	80134.4	1.0	**14.0253**	0.252	1.8	ug/L	603	Standard
	Co	59	25491.1	1.0	**4.1165**	0.049	1.2	ug/L	237	Standard
	Ni	60	8570.8	3.1	**4.5794**	0.092	2.0	ug/L	141	Standard
	Cu	65	650.0	5.0	**0.2962**	0.012	4.0	ug/L	109	Standard
	Zn	66	3464.7	2.4	**3.0444**	0.035	1.2	ug/L	159	Standard
>	**Ge**	72	452166.6	1.8				ug/L	474053	Standard
	As	75	1182.5	5.5	**1.1442**	0.046	4.0	ug/L	-34	Standard
	Se	82	46.0	21.8	**0.2663**	0.087	32.8	ug/L	14	Standard
	Se-1	77	85.7	5.5	**0.4258**	0.086	20.3	ug/L	55	Standard
>	**Ga**	71	278.3	3.7				mg/L	50	Standard
	Rb	85	4193.9	3.2				ug/L	20	Standard
	Y	89	416460.7	2.0				ug/L	376602	Standard
>	**Rh**	103	23.3	12.4				ug/L	17	Standard
	Mo	98	357.6	5.0	**0.1457**	0.008	5.8	ug/L	8	Standard
	Ag	107	158.3	24.9	**0.0142**	0.007	47.6	ug/L	81	Standard
	Cd	111	270.7	5.4	**0.1360**	0.007	5.2	mg/L	3	Standard
	Cd	114	622.1	11.8	**0.1257**	0.017	13.1	ug/L	7	Standard
>	**In**	115	525525.2	1.0				ug/L	524722	Standard
	Sn	118	728.4	8.0	**0.0455**	0.009	20.8	ug/L	715	Standard
	Sb	123	2010.9	21.8	**0.4446**	0.099	22.2	ug/L	201	Standard
	Ba	135	37719.2	0.5	**20.7210**	0.204	1.0	ug/L	108	Standard
	Ce	140	135002.2	1.6				ug/L	30	Standard
>	**Tb**	159	783120.3	1.3				ug/L	792236	Standard
	Ho	165	2456.9	1.5				ug/L	7	Standard
	Tl	203	253.7	10.2	**0.0320**	0.003	10.8	ug/L	9	Standard
	Tl	205	226.7	16.3	**0.0285**	0.006	20.3	ug/L	0	Standard
	Pb	206	765.0	5.7	**0.1161**	0.008	6.7	ug/L	216	Standard
	Pb	207	652.7	5.5	**0.1078**	0.008	7.7	ug/L	180	Standard
	Pb	208	2766.1	3.6	**0.1109**	0.007	6.4	ug/L	717	Standard
	U	238	1954.1	0.9	**0.3200**	0.006	1.9	ug/L	4	Standard
>	**Bi**	209	442196.1	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1238.4	6.5	**1.6323**	0.087	5.4	mg/L	20	Standard
K	39	41.7	36.7	**0.0889**	0.112	125.7	mg/L	22	Standard
Ca	43	68.3	11.2	**2.8122**	2.229	79.3	mg/L	47	Standard
Fe	54	837.8	5.1	**0.5655**	0.012	2.1	mg/L	151	Standard
Fe	57	411.7	13.3	**0.6277**	0.175	27.9	mg/L	195	Standard
Sc-1	45	29675.7	4.3				mg/L	29647	Standard
Cl	35	169997.1	1.0				ug/L	154152	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	5057.5	1.3				ug/L	1607	Standard
P	31	24386.3	0.9				ug/L	22752	Standard
S	34	5092.5	0.4				ug/L	5049	Standard
Sr	88	103.3	7.4				ug/L	87	Standard
C	12	76.7	60.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	3712.9	1.1				mg/L	10	Standard
Ho-1	165	2456.9	1.5				mg/L	7	Standard
Er	166	2246.8	5.2				mg/L	3	Standard
I	127	9703.1	8.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.986	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.383	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606054006 WG572432-01
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.153
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.058
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606054007S WG572432-06
Sample Date/Time: Thursday, June 16, 2016 17:45:17
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53706.7	0.9				ug/L	51024	Standard
	Be	9	43749.7	1.2	**49.4168**	0.266	0.5	ug/L	7	Standard
	Al	27	1932307.9	0.8	**12.8870**	0.144	1.1	ug/L	625	Standard
	Sc	45	29268.3	2.3				ug/L	29647	Standard
	Ti	47	482.3	20.5	**1.5217**	0.334	21.9	ug/L	57	Standard
	V	51	343151.9	1.8	**50.5559**	1.238	2.4	ug/L	1142	Standard
	Cr	52	356598.9	0.1	**50.0133**	0.323	0.6	ug/L	6628	Standard
	Cr	53	44079.0	0.2	**49.3948**	0.256	0.5	ug/L	430	Standard
	Mn	55	413833.9	0.6	**73.1363**	0.045	0.1	ug/L	603	Standard
	Co	59	348825.8	0.4	**56.9989**	0.424	0.7	ug/L	237	Standard
	Ni	60	100519.4	0.8	**54.6907**	0.393	0.7	ug/L	141	Standard
	Cu	65	91430.0	0.8	**51.0559**	0.663	1.3	ug/L	109	Standard
	Zn	66	56968.2	0.3	**53.7844**	0.273	0.5	ug/L	159	Standard
>	**Ge**	72	450975.6	0.7				ug/L	474053	Standard
	As	75	55730.0	0.9	**52.9297**	0.224	0.4	ug/L	-34	Standard
	Se	82	5454.0	1.2	**51.6747**	0.725	1.4	ug/L	14	Standard
	Se-1	77	3763.1	1.1	**50.7665**	0.264	0.5	ug/L	55	Standard
>	**Ga**	71	263.3	20.3				mg/L	50	Standard
	Rb	85	4255.6	2.8				ug/L	20	Standard
	Y	89	417195.5	2.9				ug/L	376602	Standard
>	**Rh**	103	30.0	16.7				ug/L	17	Standard
	Mo	98	249.7	0.8	**0.1017**	0.004	4.1	ug/L	8	Standard
	Ag	107	291868.5	0.9	**49.6480**	2.126	4.3	ug/L	81	Standard
	Cd	111	96723.0	1.0	**50.5615**	1.461	2.9	mg/L	3	Standard
	Cd	114	235539.9	2.1	**49.7930**	0.984	2.0	ug/L	7	Standard
>	**In**	115	517505.1	3.8				ug/L	524722	Standard
	Sn	118	1476.7	5.3	**0.1884**	0.005	2.4	ug/L	715	Standard
	Sb	123	206896.8	0.8	**48.0521**	1.564	3.3	ug/L	201	Standard
	Ba	135	127540.2	0.0	**71.3559**	2.754	3.9	ug/L	108	Standard
	Ce	140	139925.0	2.0				ug/L	30	Standard
>	**Tb**	159	770775.9	3.8				ug/L	792236	Standard
	Ho	165	2476.9	1.1				ug/L	7	Standard
	Tl	203	360327.5	0.9	**50.2317**	2.202	4.4	ug/L	9	Standard
	Tl	205	316813.0	0.1	**51.9255**	1.944	3.7	ug/L	0	Standard
	Pb	206	230620.2	0.3	**53.1250**	1.777	3.3	ug/L	216	Standard
	Pb	207	202090.2	0.6	**51.1482**	2.204	4.3	ug/L	180	Standard
	Pb	208	841767.9	0.1	**52.4861**	1.864	3.6	ug/L	717	Standard
	U	238	302598.3	0.9	**51.8585**	1.621	3.1	ug/L	4	Standard
>	**Bi**	209	432715.9	3.6				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1251.7	2.3	**1.6745**	0.059	3.5	mg/L	20	Standard
K	39	36.7	20.8	**0.0560**	0.065	115.4	mg/L	22	Standard
Ca	43	53.3	32.9	**-0.5302**	4.352	820.7	mg/L	47	Standard
Fe	54	1026.3	1.7	**0.7308**	0.034	4.6	mg/L	151	Standard
Fe	57	418.3	7.7	**0.6667**	0.128	19.3	mg/L	195	Standard
> **Sc-1**	45	29268.3	2.3				mg/L	29647	Standard
Cl	35	169666.9	1.9				ug/L	154152	Standard
Kr	83	2.0	100.0				ug/L	3	Standard
Br	81	2960.3	5.9				ug/L	1607	Standard
P	31	24135.9	2.5				ug/L	22752	Standard
S	34	4849.1	3.1				ug/L	5049	Standard
Sr	88	106.7	33.9				ug/L	87	Standard
C	12	40.0	50.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	0	Standard
Dy	164	3819.4	7.1				mg/L	10	Standard
Ho-1	165	2476.9	1.1				mg/L	7	Standard
Er	166	2390.2	5.9				mg/L	3	Standard
I	127	12700.3	5.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.257	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.132	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.625
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.999
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606054008SD WG572432-07
Sample Date/Time: Thursday, June 16, 2016 17:48:29
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54998.0	2.9				ug/L	51024	Standard
	Be	9	42282.3	1.6	**46.6702**	1.847	4.0	ug/L	7	Standard
	Al	27	1853346.2	1.8	**12.0720**	0.192	1.6	ug/L	625	Standard
	Sc	45	28618.7	1.6				ug/L	29647	Standard
	Ti	47	438.7	18.4	**1.3101**	0.274	20.9	ug/L	57	Standard
	V	51	339071.1	1.2	**47.9811**	0.898	1.9	ug/L	1142	Standard
	Cr	52	348951.5	0.9	**46.9627**	0.693	1.5	ug/L	6628	Standard
	Cr	53	43296.8	2.2	**46.5875**	1.128	2.4	ug/L	430	Standard
	Mn	55	386934.9	1.9	**65.6847**	1.414	2.2	ug/L	603	Standard
	Co	59	342375.5	0.7	**53.7459**	0.809	1.5	ug/L	237	Standard
	Ni	60	97792.2	0.5	**51.1109**	0.332	0.6	ug/L	141	Standard
	Cu	65	89033.2	0.9	**47.7559**	0.143	0.3	ug/L	109	Standard
	Zn	66	55887.9	0.5	**50.6770**	0.331	0.7	ug/L	159	Standard
>	**Ge**	72	469439.2	1.1				ug/L	474053	Standard
	As	75	54484.6	0.9	**49.7143**	0.277	0.6	ug/L	-34	Standard
	Se	82	5325.5	1.9	**48.4642**	1.024	2.1	ug/L	14	Standard
	Se-1	77	3702.8	2.9	**47.9415**	0.927	1.9	ug/L	55	Standard
>	**Ga**	71	271.7	17.7				mg/L	50	Standard
	Rb	85	4088.9	2.2				ug/L	20	Standard
	Y	89	413416.3	1.0				ug/L	376602	Standard
>	**Rh**	103	41.7	30.2				ug/L	17	Standard
	Mo	98	249.2	1.7	**0.1026**	0.001	1.4	ug/L	8	Standard
	Ag	107	286615.9	0.3	**49.2507**	0.777	1.6	ug/L	81	Standard
	Cd	111	93885.9	0.7	**49.5954**	0.904	1.8	mg/L	3	Standard
	Cd	114	226454.5	0.3	**48.3871**	0.650	1.3	ug/L	7	Standard
>	**In**	115	511810.4	1.2				ug/L	524722	Standard
	Sn	118	701.7	6.8	**0.0441**	0.009	19.5	ug/L	715	Standard
	Sb	123	206600.1	0.8	**48.4856**	0.964	2.0	ug/L	201	Standard
	Ba	135	122408.2	0.7	**69.1850**	1.061	1.5	ug/L	108	Standard
	Ce	140	131819.3	0.1				ug/L	30	Standard
>	**Tb**	159	776885.2	2.2				ug/L	792236	Standard
	Ho	165	2331.8	5.4				ug/L	7	Standard
	Tl	203	352123.1	0.6	**47.6812**	0.707	1.5	ug/L	9	Standard
	Tl	205	309331.5	1.9	**49.2466**	0.608	1.2	ug/L	0	Standard
	Pb	206	228474.4	0.6	**51.1335**	0.852	1.7	ug/L	216	Standard
	Pb	207	200368.2	0.3	**49.2580**	0.755	1.5	ug/L	180	Standard
	Pb	208	813075.7	0.6	**49.2521**	0.923	1.9	ug/L	717	Standard
	U	238	295399.0	1.0	**49.1860**	0.564	1.1	ug/L	4	Standard
>	**Bi**	209	445087.6	1.7				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1281.7	3.9	**1.7556**	0.088	5.0	mg/L	20	Standard
K	39	31.7	63.8	**0.0238**	0.162	681.6	mg/L	22	Standard
Ca	43	90.0	29.4	**8.6263**	6.605	76.6	mg/L	47	Standard
Fe	54	882.7	7.0	**0.6290**	0.061	9.7	mg/L	151	Standard
Fe	57	415.0	3.6	**0.6838**	0.030	4.4	mg/L	195	Standard
Sc-1	45	28618.7	1.6				mg/L	29647	Standard
Cl	35	164516.5	1.8				ug/L	154152	Standard
Kr	83	2.7	78.1				ug/L	3	Standard
Br	81	3177.0	4.4				ug/L	1607	Standard
P	31	23216.1	2.6				ug/L	22752	Standard
S	34	4752.4	2.2				ug/L	5049	Standard
Sr	88	88.3	40.2				ug/L	87	Standard
C	12	76.7	30.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	3671.9	4.0				mg/L	10	Standard
Ho-1	165	2331.8	5.4				mg/L	7	Standard
Er	166	2266.8	11.6				mg/L	3	Standard
I	127	12179.9	5.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.788	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.027	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.539
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.686
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606053301
Sample Date/Time: Thursday, June 16, 2016 17:51:40
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60559.2	3.2				ug/L	51024	Standard
	Be	9	28.3	10.2	**0.0074**	0.004	49.8	ug/L	7	Standard
	Al	27	7003612.2	2.3	**41.4514**	0.476	1.1	ug/L	625	Standard
	Sc	45	30053.2	5.5				ug/L	29647	Standard
	Ti	47	795.7	5.5	**2.5457**	0.146	5.8	ug/L	57	Standard
	V	51	2693.3	6.1	**0.2191**	0.025	11.3	ug/L	1142	Standard
	Cr	52	8930.0	3.3	**0.3138**	0.057	18.2	ug/L	6628	Standard
	Cr	53	2155.2	15.7	**1.9427**	0.407	21.0	ug/L	430	Standard
	Mn	55	115337.0	0.2	**19.7464**	0.327	1.7	ug/L	603	Standard
	Co	59	1383.4	9.3	**0.1788**	0.018	10.2	ug/L	237	Standard
	Ni	60	2905.3	1.7	**1.4630**	0.043	2.9	ug/L	141	Standard
	Cu	65	10476.6	1.4	**5.6346**	0.098	1.7	ug/L	109	Standard
	Zn	66	21460.2	1.0	**19.5697**	0.101	0.5	ug/L	159	Standard
>	**Ge**	72	463434.7	1.4				ug/L	474053	Standard
	As	75	3767.1	1.6	**3.5052**	0.045	1.3	ug/L	-34	Standard
	Se	82	163.8	10.0	**1.3482**	0.174	12.9	ug/L	14	Standard
	Se-1	77	257.3	5.7	**2.6846**	0.227	8.5	ug/L	55	Standard
>	**Ga**	71	133.3	15.6				mg/L	50	Standard
	Rb	85	28246.3	1.8				ug/L	20	Standard
	Y	89	371509.9	1.1				ug/L	376602	Standard
>	**Rh**	103	53.3	54.1				ug/L	17	Standard
	Mo	98	1868.0	0.8	**0.7966**	0.012	1.5	ug/L	8	Standard
	Ag	107	323.0	60.8	**0.0424**	0.033	77.8	ug/L	81	Standard
	Cd	111	115.7	21.0	**0.0572**	0.012	21.6	mg/L	3	Standard
	Cd	114	360.8	28.5	**0.0723**	0.021	29.2	ug/L	7	Standard
>	**In**	115	517402.5	1.9				ug/L	524722	Standard
	Sn	118	1711.8	7.1	**0.2327**	0.020	8.5	ug/L	715	Standard
	Sb	123	4614.0	12.3	**1.0551**	0.113	10.7	ug/L	201	Standard
	Ba	135	35141.4	1.4	**19.6067**	0.326	1.7	ug/L	108	Standard
	Ce	140	703.4	25.4				ug/L	30	Standard
>	**Tb**	159	794129.4	2.7				ug/L	792236	Standard
	Ho	165	41.7	38.6				ug/L	7	Standard
	Tl	203	449.0	60.2	**0.0569**	0.035	62.3	ug/L	9	Standard
	Tl	205	276.7	17.7	**0.0354**	0.008	22.9	ug/L	0	Standard
	Pb	206	1738.1	4.6	**0.3254**	0.021	6.4	ug/L	216	Standard
	Pb	207	1473.7	6.2	**0.3016**	0.022	7.3	ug/L	180	Standard
	Pb	208	5917.1	2.4	**0.2937**	0.008	2.7	ug/L	717	Standard
	U	238	273.7	21.5	**0.0370**	0.009	24.9	ug/L	4	Standard
>	**Bi**	209	454186.9	1.7				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.2936**	8.935	168.8	mg/L	0	Standard
Mg	24	24845.4	1.6	**33.2336**	1.348	4.1	mg/L	20	Standard
K	39	435.0	8.7	**3.0600**	0.462	15.1	mg/L	22	Standard
Ca	43	158.3	13.1	**23.4759**	6.234	26.6	mg/L	47	Standard
Fe	54	199.1	33.0	**0.0465**	0.059	127.4	mg/L	151	Standard
Fe	57	291.7	13.3	**0.2501**	0.172	68.9	mg/L	195	Standard
> **Sc-1**	45	30053.2	5.5				mg/L	29647	Standard
Cl	35	199161.9	1.2				ug/L	154152	Standard
Kr	83	2.3	49.5				ug/L	3	Standard
Br	81	12578.6	3.0				ug/L	1607	Standard
P	31	24539.9	2.1				ug/L	22752	Standard
S	34	5079.2	4.0				ug/L	5049	Standard
Sr	88	208.3	14.7				ug/L	87	Standard
C	12	96.7	36.3				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	0	Standard
Dy	164	61.3	25.3				mg/L	10	Standard
Ho-1	165	41.7	38.6				mg/L	7	Standard
Er	166	43.3	13.3				mg/L	3	Standard
I	127	46957.7	3.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.687	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.760	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.605
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.663
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606054003
Sample Date/Time: Thursday, June 16, 2016 17:54:52
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69060.4	2.1				ug/L	51024	Standard
	Be	9	195.0	15.6	**0.1507**	0.030	20.2	ug/L	7	Standard
	Al	27	5538034.2	2.1	**28.7382**	0.596	2.1	ug/L	625	Standard
	Sc	45	34442.5	3.5				ug/L	29647	Standard
	Ti	47	14518.0	3.2	**50.5821**	0.898	1.8	ug/L	57	Standard
	V	51	33577.2	0.6	**4.7869**	0.070	1.5	ug/L	1142	Standard
	Cr	52	33773.6	0.6	**3.8889**	0.037	1.0	ug/L	6628	Standard
	Cr	53	7016.6	2.1	**7.4876**	0.191	2.6	ug/L	430	Standard
	Mn	55	504059.4	0.9	**88.9661**	0.527	0.6	ug/L	603	Standard
	Co	59	17512.8	1.2	**2.8178**	0.022	0.8	ug/L	237	Standard
	Ni	60	10317.5	0.9	**5.5347**	0.034	0.6	ug/L	141	Standard
	Cu	65	2208.5	1.2	**1.1669**	0.032	2.7	ug/L	109	Standard
	Zn	66	8517.7	1.0	**7.8315**	0.096	1.2	ug/L	159	Standard
>	**Ge**	72	451723.4	1.4				ug/L	474053	Standard
	As	75	12920.2	3.5	**12.2750**	0.581	4.7	ug/L	-34	Standard
	Se	82	2961.0	4.8	**27.9437**	1.699	6.1	ug/L	14	Standard
	Se-1	77	326.3	1.4	**3.7149**	0.003	0.1	ug/L	55	Standard
>	**Ga**	71	2480.2	6.2				mg/L	50	Standard
	Rb	85	38117.9	1.8				ug/L	20	Standard
	Y	89	421962.4	2.5				ug/L	376602	Standard
>	**Rh**	103	78.3	24.2				ug/L	17	Standard
	Mo	98	3944.4	0.7	**1.6261**	0.009	0.6	ug/L	8	Standard
	Ag	107	112.0	6.7	**0.0060**	0.001	21.5	ug/L	81	Standard
	Cd	111	53.6	6.7	**0.0237**	0.002	7.8	mg/L	3	Standard
	Cd	114	133.4	41.0	**0.0233**	0.011	47.5	ug/L	7	Standard
>	**In**	115	537036.3	0.3				ug/L	524722	Standard
	Sn	118	2543.5	1.4	**0.3719**	0.007	2.0	ug/L	715	Standard
	Sb	123	798.0	25.2	**0.1636**	0.044	27.1	ug/L	201	Standard
	Ba	135	340692.9	0.8	**183.5929**	1.953	1.1	ug/L	108	Standard
	Ce	140	164779.7	1.7				ug/L	30	Standard
>	**Tb**	159	813065.5	1.9				ug/L	792236	Standard
	Ho	165	2875.3	7.5				ug/L	7	Standard
	Tl	203	422.0	6.7	**0.0538**	0.003	6.1	ug/L	9	Standard
	Tl	205	353.3	13.4	**0.0477**	0.007	15.2	ug/L	0	Standard
	Pb	206	3737.8	1.9	**0.7699**	0.010	1.3	ug/L	216	Standard
	Pb	207	3100.7	1.2	**0.6991**	0.004	0.6	ug/L	180	Standard
	Pb	208	12994.2	0.7	**0.7197**	0.013	1.8	ug/L	717	Standard
	U	238	1498.4	1.2	**0.2387**	0.006	2.5	ug/L	4	Standard
>	**Bi**	209	451028.7	1.3				ug/L	460343	Standard

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Na	23	6.7	114.6	**-8.8575**	22.422	253.1	mg/L	0	Standard
Mg	24	23361.3	1.7	**27.2407**	1.080	4.0	mg/L	20	Standard
K	39	78.3	19.5	**0.2883**	0.117	40.4	mg/L	22	Standard
Ca	43	363.3	8.7	**59.9201**	6.518	10.9	mg/L	47	Standard
Fe	54	6234.3	4.5	**4.2529**	0.273	6.4	mg/L	151	Standard
Fe	57	2021.8	6.4	**4.7439**	0.351	7.4	mg/L	195	Standard
Sc-1	45	34442.5	3.5				mg/L	29647	Standard
Cl	35	236460.3	1.1				ug/L	154152	Standard
Kr	83	2.0	0.0				ug/L	3	Standard
Br	81	708935.6	4.3				ug/L	1607	Standard
P	31	40141.4	0.8				ug/L	22752	Standard
S	34	5004.2	5.7				ug/L	5049	Standard
Sr	88	448.3	5.6				ug/L	87	Standard
C	12	160.0	16.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	4859.0	3.9				mg/L	10	Standard
Ho-1	165	2875.3	7.5				mg/L	7	Standard
Er	166	2543.5	9.9				mg/L	3	Standard
I	127	141220.9	4.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		135.349	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.290	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.347	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.977	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606054003PS WG573083-01
Sample Date/Time: Thursday, June 16, 2016 17:58:03
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70691.2	0.9				ug/L	51024	Standard
	Be	9	50693.0	1.7	**43.5062**	1.094	2.5	ug/L	7	Standard
	Al	27	5657732.1	0.5	**28.6796**	0.340	1.2	ug/L	625	Standard
	Sc	45	32850.6	4.5				ug/L	29647	Standard
	Ti	47	14458.2	2.7	**49.6930**	1.695	3.4	ug/L	57	Standard
	V	51	385117.2	0.8	**55.8774**	0.585	1.0	ug/L	1142	Standard
	Cr	52	382916.9	0.3	**52.9297**	0.331	0.6	ug/L	6628	Standard
	Cr	53	51097.7	0.4	**56.4380**	0.261	0.5	ug/L	430	Standard
	Mn	55	810895.8	0.8	**141.2253**	1.951	1.4	ug/L	603	Standard
	Co	59	346570.3	0.8	**55.7548**	0.081	0.1	ug/L	237	Standard
	Ni	60	100953.5	0.6	**54.0794**	0.195	0.4	ug/L	141	Standard
	Cu	65	91462.3	1.6	**50.2871**	1.080	2.1	ug/L	109	Standard
	Zn	66	61341.3	0.6	**57.0367**	0.769	1.3	ug/L	159	Standard
>	**Ge**	72	458036.5	0.7				ug/L	474053	Standard
	As	75	68674.9	0.5	**64.2143**	0.182	0.3	ug/L	-34	Standard
	Se	82	8569.6	1.8	**80.0280**	0.981	1.2	ug/L	14	Standard
	Se-1	77	4022.5	4.5	**53.4821**	2.795	5.2	ug/L	55	Standard
>	**Ga**	71	2441.9	7.4				mg/L	50	Standard
	Rb	85	38290.0	2.9				ug/L	20	Standard
	Y	89	428743.2	0.3				ug/L	376602	Standard
>	**Rh**	103	91.7	35.1				ug/L	17	Standard
	Mo	98	3923.8	0.2	**1.6525**	0.023	1.4	ug/L	8	Standard
	Ag	107	276547.4	3.6	**46.2633**	2.008	4.3	ug/L	81	Standard
	Cd	111	96223.0	0.5	**49.4786**	0.725	1.5	mg/L	3	Standard
	Cd	114	238042.9	1.3	**49.5078**	0.331	0.7	ug/L	7	Standard
>	**In**	115	525777.0	1.3				ug/L	524722	Standard
	Sn	118	2560.2	3.5	**0.3851**	0.023	6.0	ug/L	715	Standard
	Sb	123	215296.5	0.5	**49.1839**	0.834	1.7	ug/L	201	Standard
	Ba	135	428635.4	1.2	**235.9452**	0.924	0.4	ug/L	108	Standard
	Ce	140	165650.7	1.3				ug/L	30	Standard
>	**Tb**	159	801648.7	1.5				ug/L	792236	Standard
	Ho	165	2957.0	2.0				ug/L	7	Standard
	Tl	203	362265.3	0.3	**49.7124**	0.432	0.9	ug/L	9	Standard
	Tl	205	324753.6	0.8	**52.4032**	0.722	1.4	ug/L	0	Standard
	Pb	206	240535.6	0.4	**54.5563**	0.254	0.5	ug/L	216	Standard
	Pb	207	210550.9	0.8	**52.4580**	0.578	1.1	ug/L	180	Standard
	Pb	208	845714.1	0.6	**51.9167**	0.481	0.9	ug/L	717	Standard
	U	238	316985.2	0.3	**53.4916**	0.510	1.0	ug/L	4	Standard
>	**Bi**	209	439144.9	0.6				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.2953**	8.932	168.7	mg/L	0	Standard
Mg	24	23556.6	1.1	**28.8162**	1.308	4.5	mg/L	20	Standard
K	39	103.3	22.9	**0.4849**	0.170	35.0	mg/L	22	Standard
Ca	43	350.0	13.1	**60.9958**	12.902	21.2	mg/L	47	Standard
Fe	54	6036.8	1.7	**4.3211**	0.223	5.2	mg/L	151	Standard
Fe	57	2113.5	3.5	**5.2621**	0.189	3.6	mg/L	195	Standard
Sc-1	45	32850.6	4.5				mg/L	29647	Standard
Cl	35	237983.9	1.1				ug/L	154152	Standard
Kr	83	0.0					ug/L	3	Standard
Br	81	723069.8	1.3				ug/L	1607	Standard
P	31	40273.5	4.5				ug/L	22752	Standard
S	34	4915.8	1.6				ug/L	5049	Standard
Sr	88	436.7	3.5				ug/L	87	Standard
C	12	133.3	4.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	4443.9	9.4				mg/L	10	Standard
Ho-1	165	2957.0	2.0				mg/L	7	Standard
Er	166	2646.9	6.4				mg/L	3	Standard
I	127	140910.6	0.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		138.545	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.621	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.201	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	95.395	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606054003SDL WG573083-02
Sample Date/Time: Thursday, June 16, 2016 18:01:15
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67421.4	2.2				ug/L	51024	Standard
	Be	9	65.0	23.1	**0.0373**	0.012	33.1	ug/L	7	Standard
	Al	27	1133068.0	1.4	**6.0172**	0.214	3.6	ug/L	625	Standard
	Sc	45	29907.8	2.2				ug/L	29647	Standard
	Ti	47	2896.9	2.4	**9.4986**	0.237	2.5	ug/L	57	Standard
	V	51	8118.9	1.6	**0.9749**	0.019	2.0	ug/L	1142	Standard
	Cr	52	11547.7	1.7	**0.6435**	0.029	4.5	ug/L	6628	Standard
	Cr	53	2378.5	3.7	**2.1298**	0.095	4.5	ug/L	430	Standard
	Mn	55	103741.0	1.9	**17.3694**	0.315	1.8	ug/L	603	Standard
	Co	59	3838.8	2.5	**0.5567**	0.015	2.6	ug/L	237	Standard
	Ni	60	2235.5	2.6	**1.0826**	0.031	2.9	ug/L	141	Standard
	Cu	65	647.7	4.8	**0.2788**	0.016	5.8	ug/L	109	Standard
	Zn	66	2803.6	0.9	**2.3005**	0.025	1.1	ug/L	159	Standard
>	**Ge**	72	473393.6	0.2				ug/L	474053	Standard
	As	75	2692.6	2.6	**2.4601**	0.062	2.5	ug/L	-34	Standard
	Se	82	639.2	5.1	**5.6193**	0.300	5.3	ug/L	14	Standard
	Se-1	77	131.7	10.1	**0.9721**	0.173	17.8	ug/L	55	Standard
>	**Ga**	71	563.3	2.9				mg/L	50	Standard
	Rb	85	7626.9	1.4				ug/L	20	Standard
	Y	89	387376.2	0.4				ug/L	376602	Standard
>	**Rh**	103	25.0	34.6				ug/L	17	Standard
	Mo	98	784.5	4.4	**0.3255**	0.017	5.2	ug/L	8	Standard
	Ag	107	1243.4	2.6	**0.1954**	0.006	3.2	ug/L	81	Standard
	Cd	111	29.9	54.1	**0.0121**	0.008	67.3	mg/L	3	Standard
	Cd	114	69.0	67.7	**0.0105**	0.010	91.0	ug/L	7	Standard
>	**In**	115	526626.8	0.9				ug/L	524722	Standard
	Sn	118	845.0	11.0	**0.0669**	0.018	26.5	ug/L	715	Standard
	Sb	123	2277.2	24.6	**0.5055**	0.132	26.2	ug/L	201	Standard
	Ba	135	69797.7	0.8	**38.3133**	0.615	1.6	ug/L	108	Standard
	Ce	140	34238.6	1.3				ug/L	30	Standard
>	**Tb**	159	801692.0	0.8				ug/L	792236	Standard
	Ho	165	618.3	9.3				ug/L	7	Standard
	Tl	203	344.7	8.1	**0.0429**	0.004	8.5	ug/L	9	Standard
	Tl	205	311.7	8.8	**0.0405**	0.004	10.8	ug/L	0	Standard
	Pb	206	1064.0	3.5	**0.1759**	0.009	4.9	ug/L	216	Standard
	Pb	207	867.0	6.7	**0.1540**	0.013	8.6	ug/L	180	Standard
	Pb	208	3581.5	3.9	**0.1537**	0.009	6.2	ug/L	717	Standard
	U	238	339.0	2.5	**0.0474**	0.001	2.9	ug/L	4	Standard
>	**Bi**	209	456914.2	0.6				ug/L	460343	Standard

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Na	23	5.0	173.2	**-5.5106**	27.648	501.7	mg/L	0	Standard
Mg	24	4740.7	2.0	**6.3283**	0.198	3.1	mg/L	20	Standard
K	39	31.7	32.9	**0.0103**	0.074	719.1	mg/L	22	Standard
Ca	43	96.7	10.8	**9.2099**	2.490	27.0	mg/L	47	Standard
Fe	54	1310.9	5.1	**0.9427**	0.077	8.2	mg/L	151	Standard
Fe	57	518.3	4.8	**0.9451**	0.104	11.0	mg/L	195	Standard
Sc-1	45	29907.8	2.2				mg/L	29647	Standard
Cl	35	171537.6	0.9				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	154143.7	2.2				ug/L	1607	Standard
P	31	26042.4	2.9				ug/L	22752	Standard
S	34	4889.1	5.0				ug/L	5049	Standard
Sr	88	148.3	17.0				ug/L	87	Standard
C	12	73.3	47.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	929.7	4.3				mg/L	10	Standard
Ho-1	165	618.3	9.3				mg/L	7	Standard
Er	166	563.3	6.2				mg/L	3	Standard
I	127	30853.1	2.8				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		132.136	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.861	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.363
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.255
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606054003SDL WG573083-02
Sample Date/Time: Thursday, June 16, 2016 18:04:26
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65921.5	1.7				ug/L	51024	Standard
	Be	9	28.3	10.2	**0.0050**	0.002	49.4	ug/L	7	Standard
	Al	27	234588.9	1.0	**1.2659**	0.010	0.8	ug/L	625	Standard
	Sc	45	29675.7	0.4				ug/L	29647	Standard
	Ti	47	693.0	13.8	**2.1806**	0.270	12.4	ug/L	57	Standard
	V	51	2547.4	1.6	**0.1965**	0.004	2.1	ug/L	1142	Standard
	Cr	52	7577.9	0.6	**0.1209**	0.025	20.3	ug/L	6628	Standard
	Cr	53	1020.0	10.6	**0.6861**	0.125	18.2	ug/L	430	Standard
	Mn	55	22549.8	0.3	**3.7420**	0.091	2.4	ug/L	603	Standard
	Co	59	941.7	6.4	**0.1080**	0.010	9.7	ug/L	237	Standard
	Ni	60	563.3	5.9	**0.2199**	0.025	11.2	ug/L	141	Standard
	Cu	65	269.3	8.9	**0.0800**	0.016	20.5	ug/L	109	Standard
	Zn	66	1451.4	2.3	**1.1019**	0.057	5.2	ug/L	159	Standard
>	**Ge**	72	465567.5	2.4				ug/L	474053	Standard
	As	75	572.2	6.7	**0.5515**	0.039	7.1	ug/L	-34	Standard
	Se	82	153.8	5.1	**1.2486**	0.091	7.3	ug/L	14	Standard
	Se-1	77	80.7	9.5	**0.3264**	0.123	37.8	ug/L	55	Standard
>	**Ga**	71	155.0	27.6				mg/L	50	Standard
	Rb	85	1620.1	5.6				ug/L	20	Standard
	Y	89	390804.2	2.3				ug/L	376602	Standard
>	**Rh**	103	10.0	50.0				ug/L	17	Standard
	Mo	98	177.1	5.2	**0.0674**	0.004	5.5	ug/L	8	Standard
	Ag	107	160.0	23.9	**0.0138**	0.006	46.0	ug/L	81	Standard
	Cd	111	25.4	77.5	**0.0095**	0.010	103.8	mg/L	3	Standard
	Cd	114	52.9	101.2	**0.0069**	0.011	156.6	ug/L	7	Standard
>	**In**	115	539456.4	0.6				ug/L	524722	Standard
	Sn	118	513.3	2.8	**0.0033**	0.003	95.9	ug/L	715	Standard
	Sb	123	668.0	33.5	**0.1338**	0.049	36.9	ug/L	201	Standard
	Ba	135	14458.9	2.3	**7.7012**	0.163	2.1	ug/L	108	Standard
	Ce	140	7036.6	6.6				ug/L	30	Standard
>	**Tb**	159	818023.3	1.0				ug/L	792236	Standard
	Ho	165	115.0	27.2				ug/L	7	Standard
	Tl	203	200.0	22.5	**0.0231**	0.006	25.9	ug/L	9	Standard
	Tl	205	161.7	23.6	**0.0166**	0.006	35.1	ug/L	0	Standard
	Pb	206	434.7	9.5	**0.0360**	0.009	24.6	ug/L	216	Standard
	Pb	207	375.3	3.2	**0.0337**	0.004	10.7	ug/L	180	Standard
	Pb	208	1515.7	5.1	**0.0292**	0.005	17.5	ug/L	717	Standard
	U	238	114.7	29.0	**0.0105**	0.005	51.2	ug/L	4	Standard
>	**Bi**	209	469475.2	1.0				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1023.4	7.3	**1.3409**	0.102	7.6	mg/L	20	Standard
K	39	6.7	43.3	**-0.1772**	0.022	12.3	mg/L	22	Standard
Ca	43	43.3	46.6	**-3.0610**	4.758	155.5	mg/L	47	Standard
Fe	54	379.2	10.8	**0.1931**	0.034	17.8	mg/L	151	Standard
Fe	57	256.7	21.5	**0.1469**	0.171	116.2	mg/L	195	Standard
> **Sc-1**	45	29675.7	0.4				mg/L	29647	Standard
Cl	35	160581.2	1.2				ug/L	154152	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	34599.5	0.7				ug/L	1607	Standard
P	31	23708.5	0.9				ug/L	22752	Standard
S	34	4770.8	0.4				ug/L	5049	Standard
Sr	88	63.3	39.7				ug/L	87	Standard
C	12	46.7	44.6				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	195.8	8.2				mg/L	10	Standard
Ho-1	165	115.0	27.2				mg/L	7	Standard
Er	166	156.7	19.5				mg/L	3	Standard
I	127	7458.5	3.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.197	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.210	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	102.808
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.984
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 18:07:39
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64746.4	0.3				ug/L	51024	Standard
	Be	9	46935.9	0.9	**43.9752**	0.492	1.1	ug/L	7	Standard
	Al	27	7535309.9	1.9	**41.7048**	0.653	1.6	ug/L	625	Standard
	Sc	45	31043.5	4.7				ug/L	29647	Standard
	Ti	47	28772.6	0.9	**96.6294**	1.169	1.2	ug/L	57	Standard
	V	51	348687.3	1.9	**49.3361**	0.535	1.1	ug/L	1142	Standard
	Cr	52	360685.6	0.1	**48.5749**	1.035	2.1	ug/L	6628	Standard
	Cr	53	45317.7	1.7	**48.7728**	0.185	0.4	ug/L	430	Standard
	Mn	55	312229.0	0.7	**52.9756**	0.740	1.4	ug/L	603	Standard
	Co	59	328785.3	1.7	**51.5998**	0.220	0.4	ug/L	237	Standard
	Ni	60	92818.4	0.9	**48.5066**	0.760	1.6	ug/L	141	Standard
	Cu	65	91019.6	1.6	**48.8181**	0.503	1.0	ug/L	109	Standard
	Zn	66	54227.6	1.6	**49.1583**	0.511	1.0	ug/L	159	Standard
>	Ge	72	469521.9	2.1				ug/L	474053	Standard
	As	75	53936.9	1.2	**49.2114**	0.450	0.9	ug/L	-34	Standard
	Se	82	5505.5	2.6	**50.0972**	0.955	1.9	ug/L	14	Standard
	Se-1	77	3726.1	1.9	**48.2480**	0.384	0.8	ug/L	55	Standard
>	Ga	71	78.3	14.7				mg/L	50	Standard
	Rb	85	671.7	4.5				ug/L	20	Standard
	Y	89	383452.4	1.6				ug/L	376602	Standard
>	Rh	103	25.0	0.0				ug/L	17	Standard
	Mo	98	247423.8	2.1	**101.1140**	2.305	2.3	ug/L	8	Standard
	Ag	107	299585.0	1.0	**48.4657**	0.725	1.5	ug/L	81	Standard
	Cd	111	97195.1	1.0	**48.3387**	0.865	1.8	mg/L	3	Standard
	Cd	114	237825.0	2.4	**47.8442**	1.314	2.7	ug/L	7	Standard
>	In	115	543596.8	0.8				ug/L	524722	Standard
	Sn	118	268878.5	1.5	**48.0977**	1.025	2.1	ug/L	715	Standard
	Sb	123	216173.0	0.7	**47.7614**	0.695	1.5	ug/L	201	Standard
	Ba	135	89328.2	0.9	**47.5171**	0.807	1.7	ug/L	108	Standard
	Ce	140	83.3	25.0				ug/L	30	Standard
>	Tb	159	826706.5	0.3				ug/L	792236	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	368647.9	0.4	**47.0636**	0.889	1.9	ug/L	9	Standard
	Tl	205	321431.2	2.0	**48.2447**	0.798	1.7	ug/L	0	Standard
	Pb	206	230222.8	1.5	**48.5740**	1.152	2.4	ug/L	216	Standard
	Pb	207	209229.9	1.3	**48.4917**	1.019	2.1	ug/L	180	Standard
	Pb	208	835767.1	0.5	**47.7236**	0.588	1.2	ug/L	717	Standard
	U	238	311255.6	0.4	**48.8622**	0.739	1.5	ug/L	4	Standard
>	Bi	209	472106.5	1.5				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3973.9	4.2	**5.1144**	0.463	9.1	mg/L	20	Standard
K	39	603.3	5.9	**4.1749**	0.393	9.4	mg/L	22	Standard
Ca	43	58.3	34.6	**-0.2925**	4.036	1380.2	mg/L	47	Standard
Fe	54	5929.6	4.5	**4.5027**	0.427	9.5	mg/L	151	Standard
Fe	57	1646.8	4.1	**4.2259**	0.199	4.7	mg/L	195	Standard
Sc-1	45	31043.5	4.7				mg/L	29647	Standard
Cl	35	162653.1	0.8				ug/L	154152	Standard
Kr	83	1.0	0.0				ug/L	3	Standard
Br	81	4067.2	17.6				ug/L	1607	Standard
P	31	24251.1	1.7				ug/L	22752	Standard
S	34	5482.7	3.7				ug/L	5049	Standard
Sr	88	45.0	33.3				ug/L	87	Standard
C	12	60.0	28.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	22.5	26.8				mg/L	10	Standard
Ho-1	165	8.3	69.3				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	3	Standard
I	127	1428.4	5.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	87.950		
Al	27	83.410		
Sc	45			
Ti	47	96.629		
V	51	98.672		
Cr	52	97.150		
Cr	53			
Mn	55	105.951		
Co	59	103.200		
Ni	60	97.013		
Cu	65	97.636		
Zn	66	98.317		
Ge	72		99.044	
As	75	98.423		
Se	82	100.194		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.114		
Ag	107	96.931		
Cd	111	96.677		
Cd	114			
In	115		103.597	
Sn	118	96.195		
Sb	123	95.523		
Ba	135	95.034		
Ce	140			
Tb	159			
Ho	165			
Tl	203	94.127		
Tl	205			
Pb	206			
Pb	207			
Pb	208	95.447		
U	238	97.724		
Bi	209		102.555	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 18:10:51
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61896.2	1.1				ug/L	51024	Standard
	Be	9	18.3	56.8	**-0.0031**	0.010	331.6	ug/L	7	Standard
	Al	27	1523.4	19.5	**-0.0009**	0.002	172.8	ug/L	625	Standard
	Sc	45	30746.2	4.2				ug/L	29647	Standard
	Ti	47	48.7	24.0	**0.0041**	0.040	983.7	ug/L	57	Standard
	V	51	1096.5	7.2	**-0.0066**	0.011	164.7	ug/L	1142	Standard
	Cr	52	6114.9	1.9	**-0.0559**	0.020	35.8	ug/L	6628	Standard
	Cr	53	420.0	14.4	**0.0427**	0.071	166.6	ug/L	430	Standard
	Mn	55	696.3	8.0	**-0.0034**	0.009	280.9	ug/L	603	Standard
	Co	59	257.0	3.7	**0.0007**	0.001	190.7	ug/L	237	Standard
	Ni	60	98.3	19.1	**-0.0243**	0.010	42.2	ug/L	141	Standard
	Cu	65	138.3	15.9	**0.0111**	0.013	114.3	ug/L	109	Standard
	Zn	66	155.0	9.1	**-0.0853**	0.013	14.8	ug/L	159	Standard
>	**Ge**	72	451752.5	0.6				ug/L	474053	Standard
	As	75	-25.7	89.3	**0.0007**	0.022	2895.4	ug/L	-34	Standard
	Se	82	22.8	34.8	**0.0475**	0.075	158.2	ug/L	14	Standard
	Se-1	77	56.0	11.7	**0.0207**	0.094	453.1	ug/L	55	Standard
>	**Ga**	71	41.7	18.3				mg/L	50	Standard
	Rb	85	23.3	32.7				ug/L	20	Standard
	Y	89	396184.8	0.8				ug/L	376602	Standard
>	**Rh**	103	16.7	45.8				ug/L	17	Standard
	Mo	98	276.1	23.5	**0.1082**	0.027	25.2	ug/L	8	Standard
	Ag	107	114.0	9.8	**0.0063**	0.002	31.9	ug/L	81	Standard
	Cd	111	11.2	11.3	**0.0024**	0.001	28.4	mg/L	3	Standard
	Cd	114	27.7	73.8	**0.0018**	0.004	228.8	ug/L	7	Standard
>	**In**	115	539405.0	1.3				ug/L	524722	Standard
	Sn	118	770.0	23.8	**0.0496**	0.033	67.2	ug/L	715	Standard
	Sb	123	621.2	30.2	**0.1235**	0.042	34.0	ug/L	201	Standard
	Ba	135	117.7	23.5	**0.0055**	0.015	275.0	ug/L	108	Standard
	Ce	140	10.0	50.0				ug/L	30	Standard
>	**Tb**	159	804197.7	0.7				ug/L	792236	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	67.0	31.6	**0.0062**	0.003	43.0	ug/L	9	Standard
	Tl	205	75.0	13.3	**0.0038**	0.001	37.5	ug/L	0	Standard
	Pb	206	240.0	10.9	**-0.0040**	0.005	132.8	ug/L	216	Standard
	Pb	207	198.7	7.7	**-0.0062**	0.004	60.3	ug/L	180	Standard
	Pb	208	866.3	5.4	**-0.0067**	0.003	50.1	ug/L	717	Standard
	U	238	48.0	12.7	**0.0002**	0.001	508.3	ug/L	4	Standard
>	**Bi**	209	456732.7	1.5				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	38.3	82.8	**0.0048**	0.041	858.7	mg/L	20	Standard
K	39	21.7	87.4	**-0.0684**	0.138	202.1	mg/L	22	Standard
Ca	43	51.7	45.7	**-1.4837**	5.565	375.1	mg/L	47	Standard
Fe	54	127.7	12.6	**-0.0146**	0.015	100.1	mg/L	151	Standard
Fe	57	163.3	30.7	**-0.1626**	0.130	79.6	mg/L	195	Standard
> **Sc-1**	45	30746.2	4.2				mg/L	29647	Standard
Cl	35	165606.2	1.3				ug/L	154152	Standard
Kr	83	3.0	57.7				ug/L	3	Standard
Br	81	2933.6	13.2				ug/L	1607	Standard
P	31	25216.0	5.8				ug/L	22752	Standard
S	34	5477.7	2.3				ug/L	5049	Standard
Sr	88	56.7	33.4				ug/L	87	Standard
C	12	36.7	41.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.9	86.8				mg/L	10	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	10.0	173.2				mg/L	3	Standard
I	127	1125.0	7.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.296	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.798	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.216	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606054009
Sample Date/Time: Thursday, June 16, 2016 18:14:04
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62868.5	2.1				ug/L	51024	Standard
	Be	9	25.0	40.0	**0.0030**	0.010	320.4	ug/L	7	Standard
	Al	27	3263361.8	1.6	**18.5978**	0.187	1.0	ug/L	625	Standard
	Sc	45	30816.3	0.3				ug/L	29647	Standard
	Ti	47	176.7	8.1	**0.4336**	0.054	12.4	ug/L	57	Standard
	V	51	2352.6	1.3	**0.1685**	0.004	2.6	ug/L	1142	Standard
	Cr	52	8208.2	0.8	**0.2076**	0.006	3.1	ug/L	6628	Standard
	Cr	53	778.4	12.3	**0.4216**	0.115	27.4	ug/L	430	Standard
	Mn	55	6000883.1	1.3	**1028.9465**	25.297	2.5	ug/L	603	Standard
	Co	59	5272.3	0.9	**0.7938**	0.018	2.3	ug/L	237	Standard
	Ni	60	2681.9	0.9	**1.3375**	0.018	1.4	ug/L	141	Standard
	Cu	65	979.4	2.5	**0.4642**	0.012	2.6	ug/L	109	Standard
	Zn	66	3790.8	1.0	**3.2497**	0.077	2.4	ug/L	159	Standard
>	**Ge**	72	465659.8	1.3				ug/L	474053	Standard
	As	75	5887.6	1.1	**5.4382**	0.057	1.1	ug/L	-34	Standard
	Se	82	141.8	7.0	**1.1369**	0.108	9.5	ug/L	14	Standard
	Se-1	77	74.7	2.0	**0.2451**	0.023	9.4	ug/L	55	Standard
>	**Ga**	71	296.7	5.1				mg/L	50	Standard
	Rb	85	53373.9	1.9				ug/L	20	Standard
	Y	89	385477.9	2.9				ug/L	376602	Standard
>	**Rh**	103	46.7	16.4				ug/L	17	Standard
	Mo	98	1798.6	2.7	**0.7471**	0.020	2.7	ug/L	8	Standard
	Ag	107	110.0	13.7	**0.0059**	0.003	44.0	ug/L	81	Standard
	Cd	111	71.5	14.9	**0.0332**	0.006	17.6	mg/L	3	Standard
	Cd	114	137.0	6.5	**0.0244**	0.002	7.2	ug/L	7	Standard
>	**In**	115	530892.7	1.2				ug/L	524722	Standard
	Sn	118	731.7	10.0	**0.0448**	0.013	28.2	ug/L	715	Standard
	Sb	123	625.1	16.6	**0.1265**	0.022	17.3	ug/L	201	Standard
	Ba	135	131604.4	0.3	**71.7085**	0.676	0.9	ug/L	108	Standard
	Ce	140	6654.8	2.0				ug/L	30	Standard
>	**Tb**	159	816377.9	1.5				ug/L	792236	Standard
	Ho	165	238.3	11.6				ug/L	7	Standard
	Tl	203	76.0	23.3	**0.0075**	0.002	32.6	ug/L	9	Standard
	Tl	205	63.3	64.3	**0.0021**	0.006	310.8	ug/L	0	Standard
	Pb	206	386.0	5.1	**0.0283**	0.005	18.8	ug/L	216	Standard
	Pb	207	347.0	4.2	**0.0297**	0.005	15.2	ug/L	180	Standard
	Pb	208	1437.7	3.0	**0.0274**	0.003	12.5	ug/L	717	Standard
	U	238	4379.0	0.5	**0.7057**	0.012	1.8	ug/L	4	Standard
>	**Bi**	209	455069.1	1.2				ug/L	460343	Standard

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Na	23	5.0	100.0	**-5.2765**	15.737	298.3	mg/L	0	Standard
Mg	24	9816.5	6.9	**12.7603**	0.918	7.2	mg/L	20	Standard
K	39	4015.5	6.3	**29.2188**	1.778	6.1	mg/L	22	Standard
Ca	43	165.0	35.7	**23.9101**	13.280	55.5	mg/L	47	Standard
Fe	54	13256.8	2.9	**10.2548**	0.305	3.0	mg/L	151	Standard
Fe	57	3875.5	1.1	**10.8966**	0.106	1.0	mg/L	195	Standard
> **Sc-1**	45	30816.3	0.3				mg/L	29647	Standard
Cl	35	225833.9	0.4				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	25945.6	7.7				ug/L	1607	Standard
P	31	26763.6	2.0				ug/L	22752	Standard
S	34	5200.9	3.2				ug/L	5049	Standard
Sr	88	240.0	9.1				ug/L	87	Standard
C	12	193.3	18.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	262.1	17.3				mg/L	10	Standard
Ho-1	165	238.3	11.6				mg/L	7	Standard
Er	166	303.3	18.2				mg/L	3	Standard
I	127	75002.8	8.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.213	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.229	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.176	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.854	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606054010
Sample Date/Time: Thursday, June 16, 2016 18:17:15
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65588.3	0.4				ug/L	51024	Standard
	Be	9	30.0	60.1	**0.0066**	0.017	249.6	ug/L	7	Standard
	Al	27	2526422.5	0.3	**13.7972**	0.064	0.5	ug/L	625	Standard
	Sc	45	30417.2	3.2				ug/L	29647	Standard
	Ti	47	2810.3	3.2	**9.9401**	0.380	3.8	ug/L	57	Standard
	V	51	10857.2	0.9	**1.4795**	0.027	1.9	ug/L	1142	Standard
	Cr	52	13448.6	1.8	**1.0447**	0.048	4.6	ug/L	6628	Standard
	Cr	53	1738.4	6.6	**1.5855**	0.118	7.5	ug/L	430	Standard
	Mn	55	662471.2	0.9	**120.2964**	1.474	1.2	ug/L	603	Standard
	Co	59	2699.2	0.2	**0.4120**	0.004	0.9	ug/L	237	Standard
	Ni	60	3377.4	1.2	**1.8118**	0.036	2.0	ug/L	141	Standard
	Cu	65	1366.7	4.1	**0.7187**	0.039	5.4	ug/L	109	Standard
	Zn	66	9779.2	1.9	**9.2895**	0.243	2.6	ug/L	159	Standard
>	**Ge**	72	439226.0	0.9				ug/L	474053	Standard
	As	75	11053.2	2.0	**10.7998**	0.276	2.6	ug/L	-34	Standard
	Se	82	3723.6	2.4	**36.1764**	1.076	3.0	ug/L	14	Standard
	Se-1	77	120.3	17.9	**0.9478**	0.313	33.0	ug/L	55	Standard
>	**Ga**	71	653.3	7.7				mg/L	50	Standard
	Rb	85	17974.0	0.9				ug/L	20	Standard
	Y	89	392749.3	1.5				ug/L	376602	Standard
>	**Rh**	103	83.3	30.2				ug/L	17	Standard
	Mo	98	4323.3	0.4	**1.8596**	0.045	2.4	ug/L	8	Standard
	Ag	107	99.7	3.2	**0.0047**	0.001	17.3	ug/L	81	Standard
	Cd	111	51.2	16.5	**0.0236**	0.004	17.1	mg/L	3	Standard
	Cd	114	147.6	10.0	**0.0276**	0.004	13.0	ug/L	7	Standard
>	**In**	115	515115.8	2.2				ug/L	524722	Standard
	Sn	118	1333.4	7.7	**0.1626**	0.017	10.4	ug/L	715	Standard
	Sb	123	590.9	5.0	**0.1232**	0.010	8.0	ug/L	201	Standard
	Ba	135	57030.1	1.1	**31.9969**	0.347	1.1	ug/L	108	Standard
	Ce	140	21293.3	3.8				ug/L	30	Standard
>	**Tb**	159	786053.3	2.1				ug/L	792236	Standard
	Ho	165	341.7	14.7				ug/L	7	Standard
	Tl	203	337.7	6.2	**0.0450**	0.003	7.2	ug/L	9	Standard
	Tl	205	321.7	3.2	**0.0455**	0.003	5.8	ug/L	0	Standard
	Pb	206	1862.1	0.7	**0.3774**	0.005	1.2	ug/L	216	Standard
	Pb	207	1577.4	0.7	**0.3498**	0.004	1.2	ug/L	180	Standard
	Pb	208	6669.9	1.5	**0.3627**	0.014	3.8	ug/L	717	Standard
	U	238	10873.6	0.3	**1.8752**	0.033	1.8	ug/L	4	Standard
>	**Bi**	209	428106.7	1.8				ug/L	460343	Standard

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Na	23	6.7	114.6	**-10.3208**	23.457	227.3	mg/L	0	Standard
Mg	24	48188.2	2.0	**63.6943**	3.015	4.7	mg/L	20	Standard
K	39	553.3	6.8	**3.8849**	0.281	7.2	mg/L	22	Standard
Ca	43	321.7	16.0	**60.3557**	13.874	23.0	mg/L	47	Standard
Fe	54	1808.8	3.2	**1.3200**	0.080	6.1	mg/L	151	Standard
Fe	57	981.7	5.4	**2.3180**	0.200	8.6	mg/L	195	Standard
> **Sc-1**	45	30417.2	3.2				mg/L	29647	Standard
Cl	35	209372.7	0.6				ug/L	154152	Standard
Kr	83	0.7	173.2				ug/L	3	Standard
Br	81	933072.6	1.4				ug/L	1607	Standard
P	31	28264.7	0.7				ug/L	22752	Standard
S	34	4879.1	1.2				ug/L	5049	Standard
Sr	88	365.0	15.8				ug/L	87	Standard
C	12	160.0	28.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	522.9	18.7				mg/L	10	Standard
Ho-1	165	341.7	14.7				mg/L	7	Standard
Er	166	356.7	9.8				mg/L	3	Standard
I	127	158946.5	8.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.544	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.653	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.169
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	92.997
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606054011
Sample Date/Time: Thursday, June 16, 2016 18:20:27
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66415.2	0.8				ug/L	51024	Standard
	Be	9	31.7	92.5	**0.0080**	0.027	339.9	ug/L	7	Standard
	Al	27	2599405.0	0.8	**14.0190**	0.029	0.2	ug/L	625	Standard
	Sc	45	30612.6	1.1				ug/L	29647	Standard
	Ti	47	3388.4	4.8	**11.4676**	0.712	6.2	ug/L	57	Standard
	V	51	11365.4	1.1	**1.4778**	0.020	1.3	ug/L	1142	Standard
	Cr	52	14126.6	0.8	**1.0496**	0.030	2.9	ug/L	6628	Standard
	Cr	53	1888.5	10.3	**1.6589**	0.194	11.7	ug/L	430	Standard
	Mn	55	683276.7	0.4	**118.4238**	2.389	2.0	ug/L	603	Standard
	Co	59	2752.6	2.0	**0.3999**	0.015	3.8	ug/L	237	Standard
	Ni	60	3356.7	1.2	**1.7147**	0.043	2.5	ug/L	141	Standard
	Cu	65	1350.7	3.3	**0.6741**	0.033	5.0	ug/L	109	Standard
	Zn	66	8668.5	0.7	**7.8234**	0.178	2.3	ug/L	159	Standard
>	**Ge**	72	460253.4	1.6				ug/L	474053	Standard
	As	75	11667.3	1.2	**10.8800**	0.252	2.3	ug/L	-34	Standard
	Se	82	3942.6	1.6	**36.5587**	0.912	2.5	ug/L	14	Standard
	Se-1	77	129.7	8.5	**0.9935**	0.130	13.1	ug/L	55	Standard
>	**Ga**	71	686.7	16.0				mg/L	50	Standard
	Rb	85	19050.3	3.1				ug/L	20	Standard
	Y	89	381859.4	1.4				ug/L	376602	Standard
>	**Rh**	103	103.3	43.9				ug/L	17	Standard
	Mo	98	4373.4	1.2	**1.9146**	0.031	1.6	ug/L	8	Standard
	Ag	107	74.0	18.9	**0.0005**	0.002	456.1	ug/L	81	Standard
	Cd	111	45.0	20.2	**0.0208**	0.005	23.5	mg/L	3	Standard
	Cd	114	116.5	10.2	**0.0214**	0.003	12.0	ug/L	7	Standard
>	**In**	115	506011.1	0.4				ug/L	524722	Standard
	Sn	118	1185.0	3.8	**0.1387**	0.010	6.9	ug/L	715	Standard
	Sb	123	571.9	4.2	**0.1210**	0.005	4.2	ug/L	201	Standard
	Ba	135	57088.3	0.4	**32.6025**	0.223	0.7	ug/L	108	Standard
	Ce	140	20652.4	1.0				ug/L	30	Standard
>	**Tb**	159	785323.2	1.2				ug/L	792236	Standard
	Ho	165	306.7	8.0				ug/L	7	Standard
	Tl	203	332.3	7.5	**0.0441**	0.003	7.8	ug/L	9	Standard
	Tl	205	303.3	2.5	**0.0423**	0.001	2.9	ug/L	0	Standard
	Pb	206	1906.8	2.4	**0.3865**	0.007	1.8	ug/L	216	Standard
	Pb	207	1585.1	0.2	**0.3506**	0.006	1.6	ug/L	180	Standard
	Pb	208	6566.9	1.1	**0.3550**	0.006	1.8	ug/L	717	Standard
	U	238	10922.6	1.0	**1.8784**	0.027	1.4	ug/L	4	Standard
>	**Bi**	209	429255.9	1.2				ug/L	460343	Standard

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Na	23	10.0		**-21.2549**	0.358	1.7	mg/L	0	Standard
Mg	24	49766.6	0.9	**65.3028**	0.773	1.2	mg/L	20	Standard
K	39	513.3	10.0	**3.5605**	0.354	9.9	mg/L	22	Standard
Ca	43	375.0	2.3	**71.6613**	1.832	2.6	mg/L	47	Standard
Fe	54	1685.6	3.3	**1.2127**	0.057	4.7	mg/L	151	Standard
Fe	57	868.4	4.3	**1.9576**	0.137	7.0	mg/L	195	Standard
> **Sc-1**	45	30612.6	1.1				mg/L	29647	Standard
Cl	35	212698.7	1.3				ug/L	154152	Standard
Kr	83	1.3	114.6				ug/L	3	Standard
Br	81	930543.4	1.3				ug/L	1607	Standard
P	31	28647.1	1.3				ug/L	22752	Standard
S	34	4877.5	1.7				ug/L	5049	Standard
Sr	88	360.0	7.7				ug/L	87	Standard
C	12	163.3	18.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	0	Standard
Dy	164	512.3	22.5				mg/L	10	Standard
Ho-1	165	306.7	8.0				mg/L	7	Standard
Er	166	300.0	28.9				mg/L	3	Standard
I	127	165895.7	6.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		130.164	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.089	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.434
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.247
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606054011
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Method 6020 - Summary Report

Sample ID: L1606054014
Sample Date/Time: Thursday, June 16, 2016 18:23:38
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68457.7	1.1				ug/L	51024	Standard
	Be	9	223.3	18.0	**0.1767**	0.033	18.9	ug/L	7	Standard
	Al	27	3707488.9	1.7	**19.4017**	0.122	0.6	ug/L	625	Standard
	Sc	45	30515.7	3.4				ug/L	29647	Standard
	Ti	47	294.7	2.2	**0.8253**	0.029	3.5	ug/L	57	Standard
	V	51	3410.3	2.9	**0.3157**	0.010	3.3	ug/L	1142	Standard
	Cr	52	8854.9	2.4	**0.2871**	0.040	14.1	ug/L	6628	Standard
	Cr	53	1000.0	7.8	**0.6537**	0.075	11.4	ug/L	430	Standard
	Mn	55	12117646.4	0.4	**2060.2552**	13.775	0.7	ug/L	603	Standard
	Co	59	1473.7	1.2	**0.1902**	0.002	1.2	ug/L	237	Standard
	Ni	60	5603.4	1.0	**2.8548**	0.061	2.1	ug/L	141	Standard
	Cu	65	1122.7	1.8	**0.5367**	0.010	1.8	ug/L	109	Standard
	Zn	66	11386.6	1.1	**10.1370**	0.058	0.6	ug/L	159	Standard
>	**Ge**	72	469570.6	1.1				ug/L	474053	Standard
	As	75	14849.9	0.4	**13.5649**	0.144	1.1	ug/L	-34	Standard
	Se	82	356.9	5.3	**3.0899**	0.192	6.2	ug/L	14	Standard
	Se-1	77	81.7	2.5	**0.3287**	0.021	6.5	ug/L	55	Standard
>	**Ga**	71	528.3	9.7				mg/L	50	Standard
	Rb	85	19908.1	1.7				ug/L	20	Standard
	Y	89	397696.3	3.0				ug/L	376602	Standard
>	**Rh**	103	73.3	28.4				ug/L	17	Standard
	Mo	98	1099.6	1.0	**0.4465**	0.011	2.4	ug/L	8	Standard
	Ag	107	113.3	53.3	**0.0062**	0.010	164.1	ug/L	81	Standard
	Cd	111	46.4	117.1	**0.0203**	0.028	137.1	mg/L	3	Standard
	Cd	114	110.7	115.4	**0.0188**	0.026	140.1	ug/L	7	Standard
>	**In**	115	540492.7	1.5				ug/L	524722	Standard
	Sn	118	843.4	3.6	**0.0625**	0.003	5.4	ug/L	715	Standard
	Sb	123	260.9	5.7	**0.0432**	0.004	9.7	ug/L	201	Standard
	Ba	135	85652.2	2.1	**45.8145**	0.326	0.7	ug/L	108	Standard
	Ce	140	2418.5	4.8				ug/L	30	Standard
>	**Tb**	159	825063.1	0.9				ug/L	792236	Standard
	Ho	165	370.0	15.3				ug/L	7	Standard
	Tl	203	165.0	77.7	**0.0187**	0.017	89.0	ug/L	9	Standard
	Tl	205	83.3	48.9	**0.0048**	0.006	129.6	ug/L	0	Standard
	Pb	206	781.7	2.4	**0.1102**	0.005	4.7	ug/L	216	Standard
	Pb	207	661.7	6.1	**0.1011**	0.010	10.0	ug/L	180	Standard
	Pb	208	2756.1	3.9	**0.1010**	0.006	6.3	ug/L	717	Standard
	U	238	69.7	29.4	**0.0035**	0.003	95.7	ug/L	4	Standard
>	**Bi**	209	467941.3	0.6				ug/L	460343	Standard

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Na	23	1.7	173.2	**4.9367**	9.553	193.5	mg/L	0	Standard
Mg	24	7730.3	2.8	**10.1412**	0.303	3.0	mg/L	20	Standard
K	39	158.3	7.9	**0.9473**	0.128	13.5	mg/L	22	Standard
Ca	43	168.3	19.8	**24.8759**	6.392	25.7	mg/L	47	Standard
Fe	54	6384.0	2.9	**4.9326**	0.253	5.1	mg/L	151	Standard
Fe	57	1760.1	6.1	**4.6585**	0.505	10.8	mg/L	195	Standard
Sc-1	45	30515.7	3.4				mg/L	29647	Standard
Cl	35	207881.0	0.4				ug/L	154152	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	77943.4	2.4				ug/L	1607	Standard
P	31	27538.3	2.1				ug/L	22752	Standard
S	34	5344.3	4.3				ug/L	5049	Standard
Sr	88	228.3	5.5				ug/L	87	Standard
C	12	153.3	22.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	364.7	19.0				mg/L	10	Standard
Ho-1	165	370.0	15.3				mg/L	7	Standard
Er	166	390.0	7.7				mg/L	3	Standard
I	127	96865.7	4.2				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		134.167	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.054	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.006
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.651
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606054015
Sample Date/Time: Thursday, June 16, 2016 18:26:50
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	70212.3	1.0				ug/L	51024	Standard
	Be	9	93.3	11.2	**0.0596**	0.009	14.8	ug/L	7	Standard
	Al	27	2156794.6	1.5	**11.0022**	0.244	2.2	ug/L	625	Standard
	Sc	45	32787.1	2.8				ug/L	29647	Standard
	Ti	47	872.7	1.5	**2.8741**	0.038	1.3	ug/L	57	Standard
	V	51	4953.3	2.7	**0.5601**	0.025	4.5	ug/L	1142	Standard
	Cr	52	12535.5	0.5	**0.8533**	0.007	0.8	ug/L	6628	Standard
	Cr	53	3772.1	6.1	**3.8114**	0.290	7.6	ug/L	430	Standard
	Mn	55	223713.2	0.6	**39.2731**	0.557	1.4	ug/L	603	Standard
	Co	59	2453.9	1.1	**0.3579**	0.004	1.1	ug/L	237	Standard
	Ni	60	3886.2	1.3	**2.0286**	0.038	1.9	ug/L	141	Standard
	Cu	65	32893.7	0.8	**18.2296**	0.262	1.4	ug/L	109	Standard
	Zn	66	61284.4	0.6	**57.5727**	0.568	1.0	ug/L	159	Standard
>	Ge	72	453357.9	0.8				ug/L	474053	Standard
	As	75	5903.1	1.9	**5.6002**	0.148	2.6	ug/L	-34	Standard
	Se	82	1422.0	3.2	**13.2789**	0.537	4.0	ug/L	14	Standard
	Se-1	77	189.7	16.8	**1.8389**	0.442	24.1	ug/L	55	Standard
>	Ga	71	225.0	13.5				mg/L	50	Standard
	Rb	85	13973.1	2.8				ug/L	20	Standard
	Y	89	404441.3	1.8				ug/L	376602	Standard
>	Rh	103	65.0	38.5				ug/L	17	Standard
	Mo	98	294.7	2.2	**0.1146**	0.002	2.0	ug/L	8	Standard
	Ag	107	105.0	9.1	**0.0046**	0.002	33.3	ug/L	81	Standard
	Cd	111	122.5	4.2	**0.0575**	0.003	4.7	mg/L	3	Standard
	Cd	114	252.7	21.3	**0.0469**	0.011	22.8	ug/L	7	Standard
>	In	115	544955.5	0.5				ug/L	524722	Standard
	Sn	118	895.0	4.4	**0.0706**	0.008	11.3	ug/L	715	Standard
	Sb	123	270.4	10.2	**0.0448**	0.006	14.2	ug/L	201	Standard
	Ba	135	146088.3	0.9	**77.5484**	1.011	1.3	ug/L	108	Standard
	Ce	140	17523.5	3.1				ug/L	30	Standard
>	Tb	159	819658.6	1.6				ug/L	792236	Standard
	Ho	165	628.3	0.5				ug/L	7	Standard
	Tl	203	235.3	10.6	**0.0288**	0.003	9.6	ug/L	9	Standard
	Tl	205	200.0	25.0	**0.0236**	0.008	34.4	ug/L	0	Standard
	Pb	206	6489.4	1.2	**1.3771**	0.042	3.0	ug/L	216	Standard
	Pb	207	5497.7	0.5	**1.2800**	0.026	2.0	ug/L	180	Standard
	Pb	208	22985.2	1.3	**1.3164**	0.041	3.1	ug/L	717	Standard
	U	238	227.3	4.1	**0.0298**	0.002	7.0	ug/L	4	Standard
>	Bi	209	451512.8	1.8				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.4796**	8.613	157.2	mg/L	0	Standard
Mg	24	16031.8	1.4	**19.6235**	0.803	4.1	mg/L	20	Standard
K	39	240.0	3.6	**1.4284**	0.103	7.2	mg/L	22	Standard
Ca	43	188.3	18.1	**26.5601**	6.775	25.5	mg/L	47	Standard
Fe	54	2702.3	1.1	**1.8725**	0.045	2.4	mg/L	151	Standard
Fe	57	970.0	7.1	**2.0665**	0.116	5.6	mg/L	195	Standard
> **Sc-1**	45	32787.1	2.8				mg/L	29647	Standard
Cl	35	187497.7	0.8				ug/L	154152	Standard
Kr	83	2.3	49.5				ug/L	3	Standard
Br	81	349533.5	4.1				ug/L	1607	Standard
P	31	41573.8	6.0				ug/L	22752	Standard
S	34	4967.5	2.6				ug/L	5049	Standard
Sr	88	208.3	5.5				ug/L	87	Standard
C	12	116.7	26.2				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	870.5	12.8				mg/L	10	Standard
Ho-1	165	628.3	0.5				mg/L	7	Standard
Er	166	616.7	28.8				mg/L	3	Standard
I	127	319694.7	6.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		137.606	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.634	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.856	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.082	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606054016
Sample Date/Time: Thursday, June 16, 2016 18:30:01
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68176.4	1.2				ug/L	51024	Standard
	Be	9	21.7	13.3	**-0.0018**	0.003	143.7	ug/L	7	Standard
	Al	27	2075359.9	0.4	**10.9025**	0.136	1.2	ug/L	625	Standard
	Sc	45	31050.1	1.7				ug/L	29647	Standard
	Ti	47	887.4	5.3	**2.8528**	0.151	5.3	ug/L	57	Standard
	V	51	3806.8	2.6	**0.3783**	0.010	2.7	ug/L	1142	Standard
	Cr	52	10637.4	1.5	**0.5485**	0.036	6.6	ug/L	6628	Standard
	Cr	53	1405.1	2.8	**1.1115**	0.040	3.6	ug/L	430	Standard
	Mn	55	486178.5	1.9	**83.5032**	2.235	2.7	ug/L	603	Standard
	Co	59	1054.7	3.8	**0.1263**	0.008	6.2	ug/L	237	Standard
	Ni	60	11529.4	0.9	**6.0257**	0.114	1.9	ug/L	141	Standard
	Cu	65	2707.2	1.0	**1.4044**	0.012	0.8	ug/L	109	Standard
	Zn	66	9083.1	1.3	**8.1357**	0.169	2.1	ug/L	159	Standard
>	**Ge**	72	464207.3	1.0				ug/L	474053	Standard
	As	75	2758.8	3.0	**2.5691**	0.059	2.3	ug/L	-34	Standard
	Se	82	1024.4	2.4	**9.2906**	0.197	2.1	ug/L	14	Standard
	Se-1	77	98.0	6.2	**0.5580**	0.071	12.7	ug/L	55	Standard
>	**Ga**	71	195.0	23.5				mg/L	50	Standard
	Rb	85	7673.6	3.9				ug/L	20	Standard
	Y	89	397515.6	2.3				ug/L	376602	Standard
>	**Rh**	103	68.3	30.5				ug/L	17	Standard
	Mo	98	786.7	1.9	**0.3292**	0.014	4.4	ug/L	8	Standard
	Ag	107	78.0	2.6	**0.0008**	0.000	5.5	ug/L	81	Standard
	Cd	111	30.9	35.5	**0.0127**	0.005	42.9	mg/L	3	Standard
	Cd	114	65.2	1.1	**0.0098**	0.000	2.0	ug/L	7	Standard
>	**In**	115	522465.9	2.4				ug/L	524722	Standard
	Sn	118	738.4	3.7	**0.0483**	0.008	17.1	ug/L	715	Standard
	Sb	123	275.0	16.0	**0.0486**	0.012	23.8	ug/L	201	Standard
	Ba	135	25240.0	1.7	**13.9295**	0.222	1.6	ug/L	108	Standard
	Ce	140	3872.2	6.3				ug/L	30	Standard
>	**Tb**	159	782878.6	0.7				ug/L	792236	Standard
	Ho	165	290.0	15.0				ug/L	7	Standard
	Tl	203	118.7	19.0	**0.0136**	0.003	22.8	ug/L	9	Standard
	Tl	205	133.3	20.7	**0.0136**	0.004	32.8	ug/L	0	Standard
	Pb	206	2356.5	1.5	**0.4750**	0.007	1.6	ug/L	216	Standard
	Pb	207	2055.5	1.9	**0.4553**	0.008	1.8	ug/L	180	Standard
	Pb	208	8501.6	2.4	**0.4610**	0.013	2.9	ug/L	717	Standard
	U	238	331.0	4.1	**0.0479**	0.002	5.0	ug/L	4	Standard
>	**Bi**	209	442159.2	0.2				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.1730**	9.144	176.8	mg/L	0	Standard
Mg	24	10690.4	1.9	**13.7935**	0.084	0.6	mg/L	20	Standard
K	39	96.7	13.0	**0.4748**	0.079	16.7	mg/L	22	Standard
Ca	43	233.3	8.9	**38.9201**	5.419	13.9	mg/L	47	Standard
Fe	54	3334.2	1.9	**2.4739**	0.064	2.6	mg/L	151	Standard
Fe	57	1251.7	5.3	**3.0560**	0.253	8.3	mg/L	195	Standard
> **Sc-1**	45	31050.1	1.7				mg/L	29647	Standard
Cl	35	170093.6	1.6				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	245182.8	3.5				ug/L	1607	Standard
P	31	32394.6	2.5				ug/L	22752	Standard
S	34	5009.2	1.9				ug/L	5049	Standard
Sr	88	261.7	17.8				ug/L	87	Standard
C	12	140.0	12.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	323.0	18.5				mg/L	10	Standard
Ho-1	165	290.0	15.0				mg/L	7	Standard
Er	166	216.7	25.4				mg/L	3	Standard
I	127	55511.6	2.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		133.616	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.923	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.570
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.050
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606054901
Sample Date/Time: Thursday, June 16, 2016 18:33:13
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72709.1	1.6				ug/L	51024	Standard
	Be	9	15.0	88.2	**-0.0087**	0.011	126.1	ug/L	7	Standard
	Al	27	11667015.3	1.5	**57.5082**	0.540	0.9	ug/L	625	Standard
	Sc	45	28668.8	2.1				ug/L	29647	Standard
	Ti	47	148.7	19.1	**0.3823**	0.104	27.3	ug/L	57	Standard
	V	51	2595.6	16.9	**0.2356**	0.067	28.4	ug/L	1142	Standard
	Cr	52	17123.0	0.8	**1.6486**	0.049	3.0	ug/L	6628	Standard
	Cr	53	9336.3	15.0	**10.6848**	1.682	15.7	ug/L	430	Standard
	Mn	55	18549.3	0.3	**3.3327**	0.052	1.6	ug/L	603	Standard
	Co	59	5007.8	1.9	**0.8213**	0.019	2.4	ug/L	237	Standard
	Ni	60	15512.9	1.9	**8.8253**	0.199	2.3	ug/L	141	Standard
	Cu	65	297329.3	1.3	**175.0473**	3.650	2.1	ug/L	109	Standard
	Zn	66	4856.4	2.5	**4.6181**	0.121	2.6	ug/L	159	Standard
>	**Ge**	72	428183.3	1.3				ug/L	474053	Standard
	As	75	2686.3	8.7	**2.7111**	0.235	8.7	ug/L	-34	Standard
	Se	82	880.4	5.1	**8.6464**	0.479	5.5	ug/L	14	Standard
	Se-1	77	1273.7	6.1	**17.6237**	1.226	7.0	ug/L	55	Standard
>	**Ga**	71	535.0	8.9				mg/L	50	Standard
	Rb	85	254257.5	1.2				ug/L	20	Standard
	Y	89	359721.9	0.6				ug/L	376602	Standard
>	**Rh**	103	140.0	9.4				ug/L	17	Standard
	Mo	98	3488.6	3.7	**1.5905**	0.067	4.2	ug/L	8	Standard
	Ag	107	123.7	2.8	**0.0101**	0.001	6.2	ug/L	81	Standard
	Cd	111	15.6	26.6	**0.0055**	0.002	42.5	mg/L	3	Standard
	Cd	114	44.2	40.8	**0.0061**	0.004	65.8	ug/L	7	Standard
>	**In**	115	485628.6	0.5				ug/L	524722	Standard
	Sn	118	1148.4	1.8	**0.1409**	0.005	3.6	ug/L	715	Standard
	Sb	123	1921.7	1.1	**0.4606**	0.007	1.6	ug/L	201	Standard
	Ba	135	96043.1	1.3	**57.1923**	0.511	0.9	ug/L	108	Standard
	Ce	140	93.3	49.8				ug/L	30	Standard
>	**Tb**	159	766976.5	0.2				ug/L	792236	Standard
	Ho	165	5.0	173.2				ug/L	7	Standard
	Tl	203	328.3	20.2	**0.0463**	0.010	21.2	ug/L	9	Standard
	Tl	205	263.3	14.0	**0.0383**	0.006	16.9	ug/L	0	Standard
	Pb	206	413.7	9.2	**0.0455**	0.009	20.2	ug/L	216	Standard
	Pb	207	380.0	6.3	**0.0489**	0.006	12.7	ug/L	180	Standard
	Pb	208	1519.7	11.6	**0.0434**	0.011	26.5	ug/L	717	Standard
	U	238	31.3	49.5	**-0.0018**	0.003	153.2	ug/L	4	Standard
>	**Bi**	209	404872.2	0.7				ug/L	460343	Standard

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Na	23	10.0	86.6	**-23.4566**	29.384	125.3	mg/L	0	Standard
Mg	24	267948.6	0.7	**375.7604**	9.820	2.6	mg/L	20	Standard
K	39	5807.8	3.4	**45.5805**	2.203	4.8	mg/L	22	Standard
Ca	43	638.3	3.5	**141.1529**	8.616	6.1	mg/L	47	Standard
Fe	54	146.9	19.8	**0.0083**	0.022	270.3	mg/L	151	Standard
Fe	57	816.7	4.9	**1.9694**	0.159	8.1	mg/L	195	Standard
> **Sc-1**	45	28668.8	2.1				mg/L	29647	Standard
Cl	35	417643.9	1.4				ug/L	154152	Standard
Kr	83	3.0	57.7				ug/L	3	Standard
Br	81	229759.6	2.4				ug/L	1607	Standard
P	31	23254.5	2.6				ug/L	22752	Standard
S	34	4967.5	4.2				ug/L	5049	Standard
Sr	88	355.0	7.8				ug/L	87	Standard
C	12	183.3	32.0				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	56.7	27.0				mg/L	0	Standard
Dy	164	9.8	2.8				mg/L	10	Standard
Ho-1	165	5.0	173.2				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	1031517.8	6.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		142.499	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.324	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		92.550
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.950
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: L1606061401
Sample Date/Time: Thursday, June 16, 2016 18:36:24
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67849.9	1.1				ug/L	51024	Standard
	Be	9	10.0	100.0	**-0.0122**	0.009	72.4	ug/L	7	Standard
	Al	27	7374370.7	1.4	**38.9545**	0.953	2.4	ug/L	625	Standard
	Sc	45	31795.0	3.3				ug/L	29647	Standard
	Ti	47	313.7	6.8	**0.9174**	0.076	8.3	ug/L	57	Standard
	V	51	2621.7	2.2	**0.2138**	0.007	3.4	ug/L	1142	Standard
	Cr	52	11091.1	1.0	**0.6343**	0.009	1.4	ug/L	6628	Standard
	Cr	53	2283.5	15.4	**2.1128**	0.383	18.1	ug/L	430	Standard
	Mn	55	22885192.4	0.4	**3995.0920**	30.113	0.8	ug/L	603	Standard
	Co	59	1232.4	2.0	**0.1575**	0.003	2.1	ug/L	237	Standard
	Ni	60	2098.5	2.4	**1.0496**	0.022	2.1	ug/L	141	Standard
	Cu	65	1216.4	7.2	**0.6044**	0.045	7.4	ug/L	109	Standard
	Zn	66	2288.2	0.5	**1.9075**	0.018	1.0	ug/L	159	Standard
>	**Ge**	72	457333.9	0.5				ug/L	474053	Standard
	As	75	909.5	3.9	**0.8764**	0.032	3.6	ug/L	-34	Standard
	Se	82	87.0	7.9	**0.6466**	0.066	10.1	ug/L	14	Standard
	Se-1	77	157.0	28.6	**1.3726**	0.597	43.5	ug/L	55	Standard
>	**Ga**	71	960.0	12.3				mg/L	50	Standard
	Rb	85	5015.8	1.4				ug/L	20	Standard
	Y	89	394642.7	2.8				ug/L	376602	Standard
>	**Rh**	103	63.3	16.4				ug/L	17	Standard
	Mo	98	105.8	7.3	**0.0386**	0.003	8.5	ug/L	8	Standard
	Ag	107	76.0	8.0	**0.0002**	0.001	446.5	ug/L	81	Standard
	Cd	111	105.5	11.4	**0.0504**	0.007	13.1	mg/L	3	Standard
	Cd	114	217.3	8.1	**0.0408**	0.003	7.9	ug/L	7	Standard
>	**In**	115	532134.8	0.9				ug/L	524722	Standard
	Sn	118	536.7	2.8	**0.0088**	0.003	34.6	ug/L	715	Standard
	Sb	123	277.5	10.8	**0.0479**	0.007	15.3	ug/L	201	Standard
	Ba	135	159442.6	1.1	**86.6865**	1.387	1.6	ug/L	108	Standard
	Ce	140	1033.4	5.7				ug/L	30	Standard
>	**Tb**	159	812600.2	1.7				ug/L	792236	Standard
	Ho	165	136.7	12.8				ug/L	7	Standard
	Tl	203	148.0	12.8	**0.0171**	0.003	14.9	ug/L	9	Standard
	Tl	205	111.7	14.4	**0.0097**	0.003	26.2	ug/L	0	Standard
	Pb	206	315.7	1.6	**0.0132**	0.001	8.8	ug/L	216	Standard
	Pb	207	263.7	2.5	**0.0100**	0.002	15.2	ug/L	180	Standard
	Pb	208	1172.4	3.4	**0.0120**	0.002	19.7	ug/L	717	Standard
	U	238	803.7	2.6	**0.1241**	0.003	2.8	ug/L	4	Standard
>	**Bi**	209	452405.5	0.1				ug/L	460343	Standard

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Na	23	10.0	50.0	**-19.9609**	15.153	75.9	mg/L	0	Standard
Mg	24	11375.9	2.6	**14.3383**	0.138	1.0	mg/L	20	Standard
K	39	516.7	6.4	**3.4516**	0.346	10.0	mg/L	22	Standard
Ca	43	308.3	25.1	**54.1698**	18.153	33.5	mg/L	47	Standard
Fe	54	4619.7	1.0	**3.3894**	0.094	2.8	mg/L	151	Standard
Fe	57	1538.4	4.2	**3.7997**	0.290	7.6	mg/L	195	Standard
> **Sc-1**	45	31795.0	3.3				mg/L	29647	Standard
Cl	35	183919.6	1.0				ug/L	154152	Standard
Kr	83	2.3	89.2				ug/L	3	Standard
Br	81	17553.5	2.0				ug/L	1607	Standard
P	31	29355.1	2.7				ug/L	22752	Standard
S	34	5200.9	1.9				ug/L	5049	Standard
Sr	88	190.0	11.5				ug/L	87	Standard
C	12	103.3	53.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	152.8	48.1				mg/L	10	Standard
Ho-1	165	136.7	12.8				mg/L	7	Standard
Er	166	150.0	34.6				mg/L	3	Standard
I	127	70208.0	15.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.976	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.473	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.413	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.276	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606062401
Sample Date/Time: Thursday, June 16, 2016 18:39:36
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69110.6	0.2				ug/L	51024	Standard
	Be	9	15.0	33.3	**-0.0079**	0.004	55.0	ug/L	7	Standard
	Al	27	7936210.1	0.6	**41.1512**	0.274	0.7	ug/L	625	Standard
	Sc	45	30823.0	3.2				ug/L	29647	Standard
	Ti	47	221.7	9.7	**0.5979**	0.081	13.6	ug/L	57	Standard
	V	51	218784.0	0.6	**31.6314**	0.474	1.5	ug/L	1142	Standard
	Cr	52	16406.2	1.4	**1.3767**	0.046	3.3	ug/L	6628	Standard
	Cr	53	3238.7	7.2	**3.1676**	0.244	7.7	ug/L	430	Standard
	Mn	55	47582.7	4.0	**8.1574**	0.347	4.3	ug/L	603	Standard
	Co	59	6337.0	0.6	**0.9777**	0.004	0.4	ug/L	237	Standard
	Ni	60	16455.3	0.3	**8.7388**	0.105	1.2	ug/L	141	Standard
	Cu	65	7946.8	1.2	**4.3032**	0.079	1.8	ug/L	109	Standard
	Zn	66	49099.1	1.5	**45.5445**	0.480	1.1	ug/L	159	Standard
>	**Ge**	72	458635.0	1.0				ug/L	474053	Standard
	As	75	1613.9	2.7	**1.5315**	0.033	2.1	ug/L	-34	Standard
	Se	82	632.2	1.0	**5.7396**	0.015	0.3	ug/L	14	Standard
	Se-1	77	198.0	8.1	**1.9191**	0.191	10.0	ug/L	55	Standard
>	**Ga**	71	478.3	12.6				mg/L	50	Standard
	Rb	85	15694.8	4.0				ug/L	20	Standard
	Y	89	402857.7	1.3				ug/L	376602	Standard
>	**Rh**	103	55.0	41.7				ug/L	17	Standard
	Mo	98	250973.6	0.6	**101.4589**	1.305	1.3	ug/L	8	Standard
	Ag	107	107.3	16.2	**0.0049**	0.003	57.8	ug/L	81	Standard
	Cd	111	-120.2	20.3	**-0.0625**	0.013	20.5	mg/L	3	Standard
	Cd	114	568.4	5.3	**0.1093**	0.006	5.7	ug/L	7	Standard
>	**In**	115	549544.5	1.2				ug/L	524722	Standard
	Sn	118	805.0	7.3	**0.0532**	0.009	16.5	ug/L	715	Standard
	Sb	123	561.0	5.0	**0.1078**	0.005	5.0	ug/L	201	Standard
	Ba	135	33980.1	2.6	**17.8424**	0.439	2.5	ug/L	108	Standard
	Ce	140	471.7	1.2				ug/L	30	Standard
>	**Tb**	159	820522.7	2.1				ug/L	792236	Standard
	Ho	165	20.0	25.0				ug/L	7	Standard
	Tl	203	251.3	7.2	**0.0306**	0.002	5.8	ug/L	9	Standard
	Tl	205	235.0	7.7	**0.0286**	0.002	7.0	ug/L	0	Standard
	Pb	206	1733.1	4.4	**0.3220**	0.019	5.8	ug/L	216	Standard
	Pb	207	1553.1	3.0	**0.3188**	0.020	6.4	ug/L	180	Standard
	Pb	208	6433.5	1.7	**0.3223**	0.016	4.9	ug/L	717	Standard
	U	238	255.3	11.3	**0.0338**	0.004	11.1	ug/L	4	Standard
>	**Bi**	209	456920.5	2.4				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.0019**	9.440	188.7	mg/L	0	Standard
Mg	24	19250.6	2.3	**25.0636**	0.292	1.2	mg/L	20	Standard
K	39	168.3	17.4	**1.0102**	0.242	24.0	mg/L	22	Standard
Ca	43	145.0	18.2	**19.2916**	5.015	26.0	mg/L	47	Standard
Fe	54	151.8	11.3	**0.0041**	0.017	409.5	mg/L	151	Standard
Fe	57	315.0	7.3	**0.2903**	0.041	14.1	mg/L	195	Standard
> **Sc-1**	45	30823.0	3.2				mg/L	29647	Standard
Cl	35	228215.4	1.2				ug/L	154152	Standard
Kr	83	1.7	124.9				ug/L	3	Standard
Br	81	147558.5	1.4				ug/L	1607	Standard
P	31	26561.6	1.8				ug/L	22752	Standard
S	34	5117.5	2.5				ug/L	5049	Standard
Sr	88	270.0	14.7				ug/L	87	Standard
C	12	100.0	17.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	70.0	24.7				mg/L	0	Standard
Dy	164	58.9	45.9				mg/L	10	Standard
Ho-1	165	20.0	25.0				mg/L	7	Standard
Er	166	23.3	49.5				mg/L	3	Standard
I	127	16912.8	6.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		135.447	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.748	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	104.731	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.257	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	

Sample ID: L1606062401
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Method 6020 - Summary Report

Sample ID: L1606063001 WG572432-03
Sample Date/Time: Thursday, June 16, 2016 18:42:47
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69631.3	1.0				ug/L	51024	Standard
	Be	9	8.3	34.6	**-0.0138**	0.003	18.5	ug/L	7	Standard
	Al	27	1739354.1	0.6	**8.9445**	0.105	1.2	ug/L	625	Standard
	Sc	45	30928.2	2.9				ug/L	29647	Standard
	Ti	47	665.7	3.5	**2.0953**	0.107	5.1	ug/L	57	Standard
	V	51	2109.1	2.9	**0.1339**	0.005	3.7	ug/L	1142	Standard
	Cr	52	7651.6	0.5	**0.1320**	0.020	15.0	ug/L	6628	Standard
	Cr	53	2638.6	11.3	**2.4577**	0.289	11.8	ug/L	430	Standard
	Mn	55	27736.7	1.0	**4.6358**	0.114	2.5	ug/L	603	Standard
	Co	59	815.4	0.8	**0.0880**	0.002	1.9	ug/L	237	Standard
	Ni	60	1350.7	2.9	**0.6359**	0.022	3.4	ug/L	141	Standard
	Cu	65	5230.6	1.3	**2.7695**	0.021	0.8	ug/L	109	Standard
	Zn	66	9220.1	0.6	**8.2452**	0.069	0.8	ug/L	159	Standard
>	**Ge**	72	465111.5	1.4				ug/L	474053	Standard
	As	75	269.2	8.8	**0.2730**	0.025	9.0	ug/L	-34	Standard
	Se	82	49.8	13.6	**0.2903**	0.068	23.4	ug/L	14	Standard
	Se-1	77	173.0	5.2	**1.5506**	0.090	5.8	ug/L	55	Standard
>	**Ga**	71	241.7	10.4				mg/L	50	Standard
	Rb	85	36829.7	1.3				ug/L	20	Standard
	Y	89	384374.8	2.5				ug/L	376602	Standard
>	**Rh**	103	41.7	25.0				ug/L	17	Standard
	Mo	98	728.3	12.5	**0.3031**	0.038	12.6	ug/L	8	Standard
	Ag	107	82.0	10.4	**0.0014**	0.002	110.2	ug/L	81	Standard
	Cd	111	14.7	18.3	**0.0044**	0.001	34.2	mg/L	3	Standard
	Cd	114	39.2	43.5	**0.0044**	0.004	82.7	ug/L	7	Standard
>	**In**	115	524227.9	1.2				ug/L	524722	Standard
	Sn	118	960.0	3.9	**0.0890**	0.009	10.3	ug/L	715	Standard
	Sb	123	670.5	6.9	**0.1389**	0.011	8.0	ug/L	201	Standard
	Ba	135	8761.5	1.0	**4.7811**	0.086	1.8	ug/L	108	Standard
	Ce	140	878.4	8.1				ug/L	30	Standard
>	**Tb**	159	793064.4	3.2				ug/L	792236	Standard
	Ho	165	38.3	19.9				ug/L	7	Standard
	Tl	203	150.0	18.8	**0.0177**	0.004	22.6	ug/L	9	Standard
	Tl	205	133.3	15.6	**0.0133**	0.003	25.5	ug/L	0	Standard
	Pb	206	508.3	5.7	**0.0571**	0.007	12.3	ug/L	216	Standard
	Pb	207	414.7	10.5	**0.0477**	0.010	21.1	ug/L	180	Standard
	Pb	208	1771.7	0.4	**0.0490**	0.001	1.6	ug/L	717	Standard
	U	238	19.0	24.1	**-0.0044**	0.001	16.6	ug/L	4	Standard
>	**Bi**	209	447050.8	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	28164.5	1.9	**36.5804**	1.386	3.8	mg/L	20	Standard
K	39	385.0	0.0	**2.5870**	0.080	3.1	mg/L	22	Standard
Ca	43	85.0	20.4	**5.9218**	4.410	74.5	mg/L	47	Standard
Fe	54	182.6	15.8	**0.0273**	0.022	80.2	mg/L	151	Standard
Fe	57	225.0	0.0	**0.0211**	0.019	90.5	mg/L	195	Standard
> **Sc-1**	45	30928.2	2.9				mg/L	29647	Standard
Cl	35	213453.3	1.7				ug/L	154152	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	8942.7	8.2				ug/L	1607	Standard
P	31	31840.1	1.6				ug/L	22752	Standard
S	34	5007.5	0.9				ug/L	5049	Standard
Sr	88	131.7	11.6				ug/L	87	Standard
C	12	73.3	34.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	40.5	49.2				mg/L	10	Standard
Ho-1	165	38.3	19.9				mg/L	7	Standard
Er	166	60.0	33.3				mg/L	3	Standard
I	127	51039.4	6.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		136.467	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.114	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.906
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.113
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 18:46:00
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68225.0	3.2				ug/L	51024	Standard
	Be	9	50708.1	3.5	**45.0847**	0.435	1.0	ug/L	7	Standard
	Al	27	7858332.7	1.5	**41.2907**	0.687	1.7	ug/L	625	Standard
	Sc	45	30560.8	2.3				ug/L	29647	Standard
	Ti	47	29370.1	1.8	**100.7639**	1.653	1.6	ug/L	57	Standard
	V	51	355260.2	0.6	**51.3611**	0.501	1.0	ug/L	1142	Standard
	Cr	52	364134.0	1.1	**50.1157**	0.189	0.4	ug/L	6628	Standard
	Cr	53	45359.5	2.1	**49.8880**	1.306	2.6	ug/L	430	Standard
	Mn	55	315438.4	1.3	**54.6794**	1.132	2.1	ug/L	603	Standard
	Co	59	335779.3	1.2	**53.8409**	0.832	1.5	ug/L	237	Standard
	Ni	60	93086.4	0.8	**49.6929**	0.140	0.3	ug/L	141	Standard
	Cu	65	91127.3	1.4	**49.9327**	0.679	1.4	ug/L	109	Standard
	Zn	66	54195.8	1.1	**50.1944**	0.353	0.7	ug/L	159	Standard
>	Ge	72	459562.3	0.8				ug/L	474053	Standard
	As	75	53571.2	0.7	**49.9335**	0.666	1.3	ug/L	-34	Standard
	Se	82	5527.7	0.4	**51.3922**	0.186	0.4	ug/L	14	Standard
	Se-1	77	3740.1	0.8	**49.4994**	0.726	1.5	ug/L	55	Standard
>	Ga	71	238.3	8.5				mg/L	50	Standard
	Rb	85	728.4	8.0				ug/L	20	Standard
	Y	89	403863.1	2.0				ug/L	376602	Standard
>	Rh	103	30.0	16.7				ug/L	17	Standard
	Mo	98	249432.2	1.4	**100.2684**	1.541	1.5	ug/L	8	Standard
	Ag	107	296071.6	1.7	**47.1134**	0.851	1.8	ug/L	81	Standard
	Cd	111	98641.2	1.4	**48.2538**	0.726	1.5	mg/L	3	Standard
	Cd	114	241419.7	2.8	**47.7722**	1.408	2.9	ug/L	7	Standard
>	In	115	552610.2	0.1				ug/L	524722	Standard
	Sn	118	274943.9	0.8	**48.3767**	0.444	0.9	ug/L	715	Standard
	Sb	123	217314.9	1.3	**47.2274**	0.669	1.4	ug/L	201	Standard
	Ba	135	89302.7	0.5	**46.7236**	0.287	0.6	ug/L	108	Standard
	Ce	140	61.7	32.8				ug/L	30	Standard
>	Tb	159	816119.0	0.8				ug/L	792236	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	369419.3	1.5	**48.6376**	0.510	1.0	ug/L	9	Standard
	Tl	205	333866.9	0.9	**51.6890**	0.388	0.8	ug/L	0	Standard
	Pb	206	232126.7	1.0	**50.5119**	0.450	0.9	ug/L	216	Standard
	Pb	207	210545.8	0.6	**50.3290**	0.336	0.7	ug/L	180	Standard
	Pb	208	855972.8	0.6	**50.4191**	0.795	1.6	ug/L	717	Standard
	U	238	320948.2	1.1	**51.9636**	0.277	0.5	ug/L	4	Standard
>	Bi	209	457695.0	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	4200.6	2.8	**5.4815**	0.198	3.6	mg/L	20	Standard
K	39	558.3	18.4	**3.8970**	0.711	18.2	mg/L	22	Standard
Ca	43	60.0	25.0	**0.3745**	3.188	851.1	mg/L	47	Standard
Fe	54	6005.7	4.5	**4.6268**	0.322	7.0	mg/L	151	Standard
Fe	57	1721.8	7.2	**4.5229**	0.315	7.0	mg/L	195	Standard
> **Sc-1**	45	30560.8	2.3				mg/L	29647	Standard
Cl	35	169117.3	1.2				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	2713.6	7.9				ug/L	1607	Standard
P	31	25114.1	2.9				ug/L	22752	Standard
S	34	5354.3	6.7				ug/L	5049	Standard
Sr	88	73.3	32.2				ug/L	87	Standard
C	12	66.7	67.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	23.0	67.5				mg/L	10	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	3423.7	23.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	90.169		
Al	27	82.581		
Sc	45			
Ti	47	100.764		
V	51	102.722		
Cr	52	100.231		
Cr	53			
Mn	55	109.359		
Co	59	107.682		
Ni	60	99.386		
Cu	65	99.865		
Zn	66	100.389		
> Ge	72		96.943	
As	75	99.867		
Se	82	102.784		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	100.268		
Ag	107	94.227		
Cd	111	96.508		
Cd	114			
In	115		105.315	
Sn	118	96.753		
Sb	123	94.455		
Ba	135	93.447		
Ce	140			
Tb	159			
Ho	165			
Tl	203	97.275		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.838		
U	238	103.927		
Bi	209		99.425	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 18:49:12
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64312.9	1.7				ug/L	51024	Standard
	Be	9	10.0	100.0	**-0.0116**	0.009	81.0	ug/L	7	Standard
	Al	27	1253.4	11.0	**-0.0028**	0.001	25.9	ug/L	625	Standard
	Sc	45	30213.4	2.2				ug/L	29647	Standard
	Ti	47	46.7	13.1	**-0.0109**	0.022	201.6	ug/L	57	Standard
	V	51	1033.9	3.5	**-0.0234**	0.008	34.0	ug/L	1142	Standard
	Cr	52	6122.9	0.9	**-0.0987**	0.025	25.4	ug/L	6628	Standard
	Cr	53	575.0	8.8	**0.1852**	0.063	34.2	ug/L	430	Standard
	Mn	55	1171.4	5.3	**0.0703**	0.014	19.8	ug/L	603	Standard
	Co	59	202.3	7.7	**-0.0099**	0.003	28.8	ug/L	237	Standard
	Ni	60	113.3	11.9	**-0.0193**	0.006	33.6	ug/L	141	Standard
	Cu	65	139.7	5.5	**0.0080**	0.006	71.9	ug/L	109	Standard
	Zn	66	162.0	9.1	**-0.0865**	0.010	11.9	ug/L	159	Standard
>	**Ge**	72	475844.7	2.3				ug/L	474053	Standard
	As	75	5.3	48.7	**0.0299**	0.002	7.8	ug/L	-34	Standard
	Se	82	21.3	16.5	**0.0231**	0.034	148.8	ug/L	14	Standard
	Se-1	77	70.7	7.0	**0.1723**	0.070	40.6	ug/L	55	Standard
>	**Ga**	71	140.0	34.1				mg/L	50	Standard
	Rb	85	38.3	49.4				ug/L	20	Standard
	Y	89	392359.8	3.0				ug/L	376602	Standard
>	**Rh**	103	15.0	57.7				ug/L	17	Standard
	Mo	98	303.5	29.0	**0.1205**	0.035	28.8	ug/L	8	Standard
	Ag	107	88.3	9.9	**0.0022**	0.001	58.2	ug/L	81	Standard
	Cd	111	9.2	17.1	**0.0014**	0.001	58.9	mg/L	3	Standard
	Cd	114	26.1	34.4	**0.0015**	0.002	118.0	ug/L	7	Standard
>	**In**	115	533517.8	1.4				ug/L	524722	Standard
	Sn	118	766.7	17.2	**0.0508**	0.026	51.1	ug/L	715	Standard
	Sb	123	454.0	26.6	**0.0877**	0.028	32.4	ug/L	201	Standard
	Ba	135	106.0	9.4	**-0.0001**	0.006	3944.8	ug/L	108	Standard
	Ce	140	23.3	44.6				ug/L	30	Standard
>	**Tb**	159	792169.2	1.1				ug/L	792236	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	62.3	2.5	**0.0057**	0.000	2.0	ug/L	9	Standard
	Tl	205	51.7	49.7	**0.0003**	0.004	1341.8	ug/L	0	Standard
	Pb	206	226.7	8.4	**-0.0062**	0.005	76.5	ug/L	216	Standard
	Pb	207	203.3	4.0	**-0.0045**	0.002	40.0	ug/L	180	Standard
	Pb	208	845.7	5.1	**-0.0073**	0.002	33.6	ug/L	717	Standard
	U	238	36.0	10.0	**-0.0017**	0.001	31.3	ug/L	4	Standard
>	**Bi**	209	451238.0	1.2				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	41.7	38.6	**0.0104**	0.022	211.4	mg/L	20	Standard
K	39	10.0	50.0	**-0.1532**	0.037	24.4	mg/L	22	Standard
Ca	43	38.3	32.8	**-4.4370**	2.704	60.9	mg/L	47	Standard
Fe	54	137.9	7.6	**-0.0050**	0.006	124.9	mg/L	151	Standard
Fe	57	133.3	7.8	**-0.2416**	0.038	15.5	mg/L	195	Standard
Sc-1	45	30213.4	2.2				mg/L	29647	Standard
Cl	35	167592.0	1.8				ug/L	154152	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	2426.9	7.0				ug/L	1607	Standard
P	31	25579.9	2.0				ug/L	22752	Standard
S	34	5439.3	0.7				ug/L	5049	Standard
Sr	88	61.7	9.4				ug/L	87	Standard
C	12	56.7	56.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.0	93.6				mg/L	10	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	2145.2	8.8				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.378	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.676	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.022	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, June 16, 2016 18:51:29
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Method 6020 - Summary Report

Sample ID: L1606063001DP WG572432-10
Sample Date/Time: Thursday, June 16, 2016 18:52:25
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68712.2	2.1				ug/L	51024	Standard
	Be	9	13.3	57.3	**-0.0092**	0.007	74.2	ug/L	7	Standard
	Al	27	1694606.4	2.1	**8.8301**	0.029	0.3	ug/L	625	Standard
	Sc	45	32870.6	1.4				ug/L	29647	Standard
	Ti	47	632.0	2.3	**1.9902**	0.036	1.8	ug/L	57	Standard
	V	51	2183.1	15.2	**0.1462**	0.049	33.7	ug/L	1142	Standard
	Cr	52	8437.7	0.6	**0.2463**	0.014	5.5	ug/L	6628	Standard
	Cr	53	3582.1	45.8	**3.5137**	1.806	51.4	ug/L	430	Standard
	Mn	55	25959.2	3.5	**4.3517**	0.184	4.2	ug/L	603	Standard
	Co	59	780.0	4.2	**0.0830**	0.005	6.3	ug/L	237	Standard
	Ni	60	1265.7	3.1	**0.5941**	0.019	3.2	ug/L	141	Standard
	Cu	65	4964.1	2.1	**2.6377**	0.034	1.3	ug/L	109	Standard
	Zn	66	7744.6	0.4	**6.9226**	0.090	1.3	ug/L	159	Standard
>	**Ge**	72	462903.9	0.9				ug/L	474053	Standard
	As	75	268.6	20.8	**0.2737**	0.054	19.7	ug/L	-34	Standard
	Se	82	41.2	34.5	**0.2137**	0.136	63.4	ug/L	14	Standard
	Se-1	77	155.7	4.3	**1.3316**	0.104	7.8	ug/L	55	Standard
>	**Ga**	71	160.0	9.4				mg/L	50	Standard
	Rb	85	36001.1	1.5				ug/L	20	Standard
	Y	89	387483.8	2.3				ug/L	376602	Standard
>	**Rh**	103	38.3	41.9				ug/L	17	Standard
	Mo	98	602.0	7.2	**0.2407**	0.015	6.4	ug/L	8	Standard
	Ag	107	97.7	12.0	**0.0035**	0.002	49.5	ug/L	81	Standard
	Cd	111	14.9	82.6	**0.0042**	0.006	147.6	mg/L	3	Standard
	Cd	114	54.8	20.5	**0.0072**	0.002	30.8	ug/L	7	Standard
>	**In**	115	542940.9	1.2				ug/L	524722	Standard
	Sn	118	1003.4	7.5	**0.0905**	0.011	12.7	ug/L	715	Standard
	Sb	123	760.6	4.7	**0.1535**	0.006	4.0	ug/L	201	Standard
	Ba	135	8458.7	1.6	**4.4523**	0.053	1.2	ug/L	108	Standard
	Ce	140	761.7	12.9				ug/L	30	Standard
>	**Tb**	159	813941.2	0.6				ug/L	792236	Standard
	Ho	165	46.7	60.9				ug/L	7	Standard
	Tl	203	213.3	5.0	**0.0252**	0.001	4.7	ug/L	9	Standard
	Tl	205	173.3	1.7	**0.0188**	0.000	1.2	ug/L	0	Standard
	Pb	206	486.7	2.6	**0.0486**	0.003	6.9	ug/L	216	Standard
	Pb	207	410.0	4.9	**0.0433**	0.005	11.5	ug/L	180	Standard
	Pb	208	1804.7	2.7	**0.0475**	0.003	5.4	ug/L	717	Standard
	U	238	45.0	13.3	**-0.0004**	0.001	279.8	ug/L	4	Standard
>	**Bi**	209	462206.0	0.8				ug/L	460343	Standard

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Na	23	5.0	100.0	**-4.2590**	14.576	342.2	mg/L	0	Standard
Mg	24	26429.7	2.8	**32.2858**	1.354	4.2	mg/L	20	Standard
K	39	396.7	3.9	**2.4991**	0.082	3.3	mg/L	22	Standard
Ca	43	96.7	7.9	**7.1952**	1.844	25.6	mg/L	47	Standard
Fe	54	180.8	15.4	**0.0178**	0.022	121.6	mg/L	151	Standard
Fe	57	203.3	16.0	**-0.0787**	0.096	122.2	mg/L	195	Standard
> **Sc-1**	45	32870.6	1.4				mg/L	29647	Standard
Cl	35	203581.4	1.3				ug/L	154152	Standard
Kr	83	2.0	0.0				ug/L	3	Standard
Br	81	6207.9	4.2				ug/L	1607	Standard
P	31	32229.2	1.5				ug/L	22752	Standard
S	34	4830.8	4.5				ug/L	5049	Standard
Sr	88	108.3	30.0				ug/L	87	Standard
C	12	86.7	6.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	47.3	42.6				mg/L	10	Standard
Ho-1	165	46.7	60.9				mg/L	7	Standard
Er	166	56.7	81.5				mg/L	3	Standard
I	127	39314.5	7.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		134.666	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.648	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.472
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.405
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 18:55:38
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67264.1	3.2				ug/L	51024	Standard
	Be	9	51087.7	3.5	**46.0740**	0.786	1.7	ug/L	7	Standard
	Al	27	7974693.7	0.5	**42.5107**	1.182	2.8	ug/L	625	Standard
	Sc	45	31289.0	2.9				ug/L	29647	Standard
	Ti	47	29983.3	1.5	**100.8099**	2.621	2.6	ug/L	57	Standard
	V	51	356976.4	1.6	**50.5633**	0.626	1.2	ug/L	1142	Standard
	Cr	52	371000.0	2.2	**50.0293**	1.004	2.0	ug/L	6628	Standard
	Cr	53	45682.1	3.1	**49.2179**	1.406	2.9	ug/L	430	Standard
	Mn	55	318039.5	1.1	**54.0099**	0.158	0.3	ug/L	603	Standard
	Co	59	338391.0	1.1	**53.1626**	0.493	0.9	ug/L	237	Standard
	Ni	60	94145.4	2.5	**49.2417**	1.028	2.1	ug/L	141	Standard
	Cu	65	92379.1	1.4	**49.5948**	0.289	0.6	ug/L	109	Standard
	Zn	66	54668.5	1.5	**49.6081**	0.589	1.2	ug/L	159	Standard
>	Ge	72	469038.3	1.3				ug/L	474053	Standard
	As	75	54293.6	1.3	**49.5816**	0.207	0.4	ug/L	-34	Standard
	Se	82	5559.0	0.1	**50.6424**	0.722	1.4	ug/L	14	Standard
	Se-1	77	3786.5	1.3	**49.0965**	0.931	1.9	ug/L	55	Standard
>	Ga	71	158.3	25.7				mg/L	50	Standard
	Rb	85	761.7	7.0				ug/L	20	Standard
	Y	89	395591.6	1.3				ug/L	376602	Standard
>	Rh	103	25.0	80.0				ug/L	17	Standard
	Mo	98	251383.1	0.4	**103.0718**	1.215	1.2	ug/L	8	Standard
	Ag	107	306968.8	0.5	**49.8241**	0.634	1.3	ug/L	81	Standard
	Cd	111	100215.1	0.7	**50.0041**	0.742	1.5	mg/L	3	Standard
	Cd	114	243336.5	2.3	**49.1181**	1.543	3.1	ug/L	7	Standard
>	In	115	541813.2	0.8				ug/L	524722	Standard
	Sn	118	281669.0	0.4	**50.5528**	0.296	0.6	ug/L	715	Standard
	Sb	123	222839.5	0.9	**49.3972**	0.805	1.6	ug/L	201	Standard
	Ba	135	91045.1	0.4	**48.5895**	0.562	1.2	ug/L	108	Standard
	Ce	140	61.7	12.4				ug/L	30	Standard
>	Tb	159	817844.5	0.4				ug/L	792236	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	379786.0	0.6	**49.2821**	0.368	0.7	ug/L	9	Standard
	Tl	205	336318.4	0.5	**51.3165**	0.323	0.6	ug/L	0	Standard
	Pb	206	235111.2	1.0	**50.4225**	0.567	1.1	ug/L	216	Standard
	Pb	207	213294.2	0.5	**50.2491**	0.369	0.7	ug/L	180	Standard
	Pb	208	862915.5	0.7	**50.0892**	0.286	0.6	ug/L	717	Standard
	U	238	324915.2	0.1	**51.8469**	0.100	0.2	ug/L	4	Standard
>	Bi	209	464391.0	0.2				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	4073.9	4.4	**5.1949**	0.373	7.2	mg/L	20	Standard
K	39	616.7	11.0	**4.2379**	0.622	14.7	mg/L	22	Standard
Ca	43	71.7	38.4	**2.7208**	6.257	230.0	mg/L	47	Standard
Fe	54	6184.7	3.6	**4.6538**	0.266	5.7	mg/L	151	Standard
Fe	57	1603.4	6.3	**4.0588**	0.310	7.6	mg/L	195	Standard
> **Sc-1**	45	31289.0	2.9				mg/L	29647	Standard
Cl	35	168092.6	0.3				ug/L	154152	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	1803.4	11.3				ug/L	1607	Standard
P	31	25418.0	3.0				ug/L	22752	Standard
S	34	5476.0	0.8				ug/L	5049	Standard
Sr	88	68.3	36.1				ug/L	87	Standard
C	12	76.7	30.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.5	122.8				mg/L	10	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	3	Standard
I	127	2120.2	19.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	92.148		
Al	27	85.021		
Sc	45			
Ti	47	100.810		
V	51	101.127		
Cr	52	100.059		
Cr	53			
Mn	55	108.020		
Co	59	106.325		
Ni	60	98.483		
Cu	65	99.190		
Zn	66	99.216		
> Ge	72		98.942	
As	75	99.163		
Se	82	101.285		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	103.072		
Ag	107	99.648		
Cd	111	100.008		
Cd	114			
In	115		103.257	
Sn	118	101.106		
Sb	123	98.794		
Ba	135	97.179		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.564		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.178		
U	238	103.694		
Bi	209		100.879	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 18:58:50
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65086.2	2.0				ug/L	51024	Standard
	Be	9	21.7	58.1	**-0.0010**	0.011	1171.7	ug/L	7	Standard
	Al	27	2008.5	34.3	**0.0013**	0.004	284.1	ug/L	625	Standard
	Sc	45	30751.2	2.4				ug/L	29647	Standard
	Ti	47	41.3	24.7	**-0.0285**	0.034	119.2	ug/L	57	Standard
	V	51	1096.5	3.2	**-0.0144**	0.004	27.7	ug/L	1142	Standard
	Cr	52	6076.9	0.1	**-0.1037**	0.008	7.3	ug/L	6628	Standard
	Cr	53	488.3	13.0	**0.0929**	0.070	75.6	ug/L	430	Standard
	Mn	55	1470.4	24.5	**0.1211**	0.063	51.8	ug/L	603	Standard
	Co	59	206.0	14.6	**-0.0092**	0.005	53.2	ug/L	237	Standard
	Ni	60	120.7	4.2	**-0.0153**	0.002	15.6	ug/L	141	Standard
	Cu	65	142.0	16.7	**0.0093**	0.013	141.3	ug/L	109	Standard
	Zn	66	152.7	7.5	**-0.0944**	0.011	12.1	ug/L	159	Standard
>	**Ge**	72	474934.0	0.8				ug/L	474053	Standard
	As	75	-45.5	82.0	**-0.0158**	0.033	212.2	ug/L	-34	Standard
	Se	82	16.2	50.9	**-0.0227**	0.076	333.7	ug/L	14	Standard
	Se-1	77	66.0	6.9	**0.1132**	0.063	55.7	ug/L	55	Standard
>	**Ga**	71	136.7	9.2				mg/L	50	Standard
	Rb	85	30.0	28.9				ug/L	20	Standard
	Y	89	402114.5	0.5				ug/L	376602	Standard
>	**Rh**	103	21.7	35.3				ug/L	17	Standard
	Mo	98	281.3	33.4	**0.1095**	0.037	34.1	ug/L	8	Standard
	Ag	107	96.3	13.1	**0.0033**	0.002	62.1	ug/L	81	Standard
	Cd	111	10.2	38.2	**0.0019**	0.002	104.1	mg/L	3	Standard
	Cd	114	23.6	19.2	**0.0010**	0.001	99.3	ug/L	7	Standard
>	**In**	115	541583.6	1.8				ug/L	524722	Standard
	Sn	118	860.0	27.1	**0.0652**	0.041	63.3	ug/L	715	Standard
	Sb	123	479.5	22.9	**0.0918**	0.026	27.9	ug/L	201	Standard
	Ba	135	123.3	8.3	**0.0082**	0.005	60.8	ug/L	108	Standard
	Ce	140	23.3	65.5				ug/L	30	Standard
>	**Tb**	159	792193.7	1.1				ug/L	792236	Standard
	Ho	165	13.3	78.1				ug/L	7	Standard
	Tl	203	66.0	21.2	**0.0060**	0.002	29.5	ug/L	9	Standard
	Tl	205	46.7	12.4	**-0.0007**	0.001	132.6	ug/L	0	Standard
	Pb	206	228.3	5.2	**-0.0071**	0.002	32.1	ug/L	216	Standard
	Pb	207	200.3	2.5	**-0.0063**	0.001	19.4	ug/L	180	Standard
	Pb	208	858.7	6.2	**-0.0078**	0.003	36.1	ug/L	717	Standard
	U	238	38.3	37.5	**-0.0014**	0.002	161.1	ug/L	4	Standard
>	**Bi**	209	462016.2	0.6				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	36.7	70.0	**0.0029**	0.034	1195.5	mg/L	20	Standard
K	39	18.3	56.8	**-0.0943**	0.072	76.9	mg/L	22	Standard
Ca	43	45.0	22.2	**-3.0781**	2.040	66.3	mg/L	47	Standard
Fe	54	114.4	7.6	**-0.0252**	0.008	31.9	mg/L	151	Standard
Fe	57	173.3	9.3	**-0.1300**	0.041	31.6	mg/L	195	Standard
> **Sc-1**	45	30751.2	2.4				mg/L	29647	Standard
Cl	35	167486.4	2.8				ug/L	154152	Standard
Kr	83	2.0	86.6				ug/L	3	Standard
Br	81	1856.8	2.2				ug/L	1607	Standard
P	31	26229.4	1.8				ug/L	22752	Standard
S	34	5394.3	3.3				ug/L	5049	Standard
Sr	88	46.7	37.6				ug/L	87	Standard
C	12	50.0	20.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.9	187.9				mg/L	10	Standard
Ho-1	165	13.3	78.1				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	1466.7	5.5				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.186	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.213
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.363
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, June 16, 2016 19:02:02
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62105.4	2.6				ug/L	51024	Standard
	Be	9	230.0	20.7	**0.2030**	0.041	20.0	ug/L	7	Standard
	Al	27	2411.9	57.3	**0.0040**	0.008	188.2	ug/L	625	Standard
	Sc	45	29320.0	1.0				ug/L	29647	Standard
	Ti	47	44.0	15.9	**-0.0143**	0.023	160.1	ug/L	57	Standard
	V	51	3629.6	1.0	**0.3604**	0.013	3.7	ug/L	1142	Standard
	Cr	52	11639.8	0.7	**0.7104**	0.026	3.6	ug/L	6628	Standard
	Cr	53	1218.4	6.6	**0.9247**	0.069	7.5	ug/L	430	Standard
	Mn	55	4165.6	11.2	**0.6000**	0.079	13.2	ug/L	603	Standard
	Co	59	2679.2	3.3	**0.3905**	0.015	4.0	ug/L	237	Standard
	Ni	60	2918.9	1.9	**1.4896**	0.048	3.2	ug/L	141	Standard
	Cu	65	1533.7	1.1	**0.7788**	0.010	1.3	ug/L	109	Standard
	Zn	66	7393.8	1.4	**6.6758**	0.118	1.8	ug/L	159	Standard
>	**Ge**	72	457738.9	1.6				ug/L	474053	Standard
	As	75	382.8	8.7	**0.3830**	0.030	7.9	ug/L	-34	Standard
	Se	82	57.3	9.5	**0.3683**	0.054	14.6	ug/L	14	Standard
	Se-1	77	79.7	6.9	**0.3297**	0.074	22.6	ug/L	55	Standard
>	**Ga**	71	103.3	23.9				mg/L	50	Standard
	Rb	85	18.3	41.7				ug/L	20	Standard
	Y	89	375631.5	1.4				ug/L	376602	Standard
>	**Rh**	103	10.0	86.6				ug/L	17	Standard
	Mo	98	122.4	54.4	**0.0465**	0.029	61.8	ug/L	8	Standard
	Ag	107	2330.2	1.4	**0.3786**	0.008	2.1	ug/L	81	Standard
	Cd	111	467.2	1.7	**0.2376**	0.006	2.6	mg/L	3	Standard
	Cd	114	1116.8	1.3	**0.2291**	0.004	1.8	ug/L	7	Standard
>	**In**	115	524377.5	1.0				ug/L	524722	Standard
	Sn	118	430.0	17.1	**-0.0096**	0.013	134.4	ug/L	715	Standard
	Sb	123	1783.9	4.5	**0.3940**	0.022	5.6	ug/L	201	Standard
	Ba	135	1250.7	1.9	**0.6328**	0.015	2.4	ug/L	108	Standard
	Ce	140	8.3	91.7				ug/L	30	Standard
>	**Tb**	159	782327.7	0.6				ug/L	792236	Standard
	Ho	165	11.7	107.9				ug/L	7	Standard
	Tl	203	644.0	4.6	**0.0829**	0.005	5.6	ug/L	9	Standard
	Tl	205	603.3	8.3	**0.0864**	0.009	9.9	ug/L	0	Standard
	Pb	206	1176.0	6.8	**0.2020**	0.018	8.8	ug/L	216	Standard
	Pb	207	1021.4	8.8	**0.1927**	0.023	12.1	ug/L	180	Standard
	Pb	208	4081.2	6.5	**0.1848**	0.017	9.4	ug/L	717	Standard
	U	238	2503.2	1.2	**0.4011**	0.007	1.8	ug/L	4	Standard
>	**Bi**	209	453995.6	0.8				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	40.0	25.0	**0.0095**	0.013	138.3	mg/L	20	Standard
K	39	13.3	43.3	**-0.1249**	0.045	36.2	mg/L	22	Standard
Ca	43	35.0	28.6	**-4.9048**	2.432	49.6	mg/L	47	Standard
Fe	54	120.6	31.6	**-0.0158**	0.032	201.6	mg/L	151	Standard
Fe	57	148.3	13.6	**-0.1825**	0.065	35.6	mg/L	195	Standard
Sc-1	45	29320.0	1.0				mg/L	29647	Standard
Cl	35	160593.3	0.6				ug/L	154152	Standard
Kr	83	0.3	173.2				ug/L	3	Standard
Br	81	1753.4	6.3				ug/L	1607	Standard
P	31	18406.2	0.9				ug/L	22752	Standard
S	34	5287.6	2.4				ug/L	5049	Standard
Sr	88	66.7	18.9				ug/L	87	Standard
C	12	56.7	36.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	13.0	46.6				mg/L	10	Standard
Ho-1	165	11.7	107.9				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	3	Standard
I	127	1111.7	9.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	101.480		
Al	27			
Sc	45			
Ti	47			
V	51	90.091		
Cr	52	88.800		
Cr	53			
Mn	55	120.007		
Co	59	97.613		
Ni	60	93.098		
Cu	65	97.350		
Zn	66	106.813		
Ge	72		96.559	
As	75	95.761		
Se	82	92.069		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	94.641		
Cd	111	99.021		
Cd	114			
> In	115			99.934
Sn	118			
Sb	123	98.503		
Ba	135	84.376		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	103.666		
Tl	205			
Pb	206			
Pb	207			
Pb	208	92.383		
U	238	100.273		
> Bi	209			98.621
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW 42 WG572730-03
Sample Date/Time: Thursday, June 16, 2016 19:05:16
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62749.7	0.4				ug/L	51024	Standard
	Be	9	18.3	95.8	**-0.0034**	0.017	498.2	ug/L	7	Standard
	Al	27	45563.5	4.1	**0.2505**	0.010	4.1	ug/L	625	Standard
	Sc	45	30499.0	0.2				ug/L	29647	Standard
	Ti	47	51.3	19.1	**0.0066**	0.033	492.2	ug/L	57	Standard
	V	51	1097.4	4.3	**-0.0126**	0.007	55.7	ug/L	1142	Standard
	Cr	52	7963.4	1.0	**0.1642**	0.013	7.9	ug/L	6628	Standard
	Cr	53	896.7	4.5	**0.5418**	0.048	8.8	ug/L	430	Standard
	Mn	55	2548.5	1.6	**0.3068**	0.006	2.0	ug/L	603	Standard
	Co	59	285.7	3.7	**0.0036**	0.002	42.0	ug/L	237	Standard
	Ni	60	410.7	8.1	**0.1371**	0.018	13.2	ug/L	141	Standard
	Cu	65	253.3	2.8	**0.0699**	0.004	5.6	ug/L	109	Standard
	Zn	66	1271.7	3.2	**0.9258**	0.037	4.0	ug/L	159	Standard
>	**Ge**	72	469694.2	0.4				ug/L	474053	Standard
	As	75	1524.9	4.2	**1.4151**	0.063	4.5	ug/L	-34	Standard
	Se	82	670.0	3.5	**5.9461**	0.237	4.0	ug/L	14	Standard
	Se-1	77	66.0	18.4	**0.1230**	0.163	132.4	ug/L	55	Standard
>	**Ga**	71	123.3	16.4				mg/L	50	Standard
	Rb	85	295.0	3.4				ug/L	20	Standard
	Y	89	394476.0	3.2				ug/L	376602	Standard
>	**Rh**	103	20.0	66.1				ug/L	17	Standard
	Mo	98	84.7	10.3	**0.0293**	0.004	12.7	ug/L	8	Standard
	Ag	107	83.0	7.9	**0.0012**	0.001	88.8	ug/L	81	Standard
	Cd	111	13.9	21.7	**0.0037**	0.001	39.9	mg/L	3	Standard
	Cd	114	54.3	34.3	**0.0072**	0.004	52.7	ug/L	7	Standard
>	**In**	115	540141.2	0.4				ug/L	524722	Standard
	Sn	118	648.3	6.2	**0.0275**	0.007	26.0	ug/L	715	Standard
	Sb	123	144.9	16.0	**0.0174**	0.005	30.4	ug/L	201	Standard
	Ba	135	21260.9	1.4	**11.3366**	0.117	1.0	ug/L	108	Standard
	Ce	140	155.0	8.5				ug/L	30	Standard
>	**Tb**	159	801981.8	0.8				ug/L	792236	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	205.7	5.0	**0.0243**	0.001	5.5	ug/L	9	Standard
	Tl	205	185.0	17.7	**0.0206**	0.005	24.4	ug/L	0	Standard
	Pb	206	277.0	10.2	**0.0035**	0.006	164.3	ug/L	216	Standard
	Pb	207	230.3	3.9	**0.0008**	0.002	210.4	ug/L	180	Standard
	Pb	208	975.0	1.4	**-0.0009**	0.000	49.0	ug/L	717	Standard
	U	238	16.3	25.5	**-0.0050**	0.001	13.9	ug/L	4	Standard
>	**Bi**	209	461335.7	0.7				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	403.3	18.0	**0.4864**	0.096	19.7	mg/L	20	Standard
K	39	18.3	56.8	**-0.0922**	0.077	83.3	mg/L	22	Standard
Ca	43	38.3	27.2	**-4.4783**	2.388	53.3	mg/L	47	Standard
Fe	54	151.1	15.7	**0.0044**	0.018	419.9	mg/L	151	Standard
Fe	57	180.0	9.6	**-0.1053**	0.052	49.8	mg/L	195	Standard
> **Sc-1**	45	30499.0	0.2				mg/L	29647	Standard
Cl	35	167221.1	1.1				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	161399.3	3.9				ug/L	1607	Standard
P	31	23832.1	1.6				ug/L	22752	Standard
S	34	5314.3	4.0				ug/L	5049	Standard
Sr	88	105.0	12.6				ug/L	87	Standard
C	12	53.3	43.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.5	177.6				mg/L	10	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	4855.8	5.9				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		122.980	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.081	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	102.939
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.216
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: LCSW 42 WG572730-04
Sample Date/Time: Thursday, June 16, 2016 19:08:28
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62985.7	0.9				ug/L	51024	Standard
	Be	9	48407.2	1.0	**46.6239**	0.599	1.3	ug/L	7	Standard
	Al	27	15242.7	3.1	**0.0770**	0.003	4.2	ug/L	625	Standard
	Sc	45	31167.0	1.6				ug/L	29647	Standard
	Ti	47	51.0	3.9	**0.0042**	0.006	137.2	ug/L	57	Standard
	V	51	362150.1	1.2	**50.8470**	1.498	2.9	ug/L	1142	Standard
	Cr	52	375631.9	0.2	**50.2056**	0.853	1.7	ug/L	6628	Standard
	Cr	53	46496.2	1.5	**49.6449**	0.253	0.5	ug/L	430	Standard
	Mn	55	324366.5	2.3	**54.5814**	0.385	0.7	ug/L	603	Standard
	Co	59	341108.8	1.8	**53.1006**	0.301	0.6	ug/L	237	Standard
	Ni	60	95614.1	1.0	**49.5608**	0.383	0.8	ug/L	141	Standard
	Cu	65	93513.4	0.6	**49.7560**	0.725	1.5	ug/L	109	Standard
	Zn	66	55921.0	0.3	**50.2961**	0.929	1.8	ug/L	159	Standard
>	**Ge**	72	473336.6	1.7				ug/L	474053	Standard
	As	75	54052.4	0.1	**48.9231**	0.858	1.8	ug/L	-34	Standard
	Se	82	5549.3	0.5	**50.0944**	0.667	1.3	ug/L	14	Standard
	Se-1	77	3851.2	1.4	**49.4942**	1.249	2.5	ug/L	55	Standard
>	**Ga**	71	148.3	5.1				mg/L	50	Standard
	Rb	85	50.0	45.8				ug/L	20	Standard
	Y	89	393664.1	1.4				ug/L	376602	Standard
>	**Rh**	103	30.0	66.7				ug/L	17	Standard
	Mo	98	67.7	16.2	**0.0222**	0.004	19.7	ug/L	8	Standard
	Ag	107	9538.7	1.3	**1.5370**	0.009	0.6	ug/L	81	Standard
	Cd	111	98094.4	0.8	**48.9748**	0.877	1.8	mg/L	3	Standard
	Cd	114	242274.5	1.2	**48.9293**	1.051	2.1	ug/L	7	Standard
>	**In**	115	541531.8	1.4				ug/L	524722	Standard
	Sn	118	718.4	12.9	**0.0399**	0.018	44.4	ug/L	715	Standard
	Sb	123	213208.4	0.4	**47.2901**	0.830	1.8	ug/L	201	Standard
	Ba	135	91061.5	0.2	**48.6273**	0.710	1.5	ug/L	108	Standard
	Ce	140	75.0	30.6				ug/L	30	Standard
>	**Tb**	159	801949.7	1.3				ug/L	792236	Standard
	Ho	165	15.0	66.7				ug/L	7	Standard
	Tl	203	366890.3	0.3	**47.3558**	0.332	0.7	ug/L	9	Standard
	Tl	205	325136.0	2.3	**49.3487**	1.280	2.6	ug/L	0	Standard
	Pb	206	237911.3	0.3	**50.7518**	0.233	0.5	ug/L	216	Standard
	Pb	207	208877.0	1.0	**48.9436**	0.182	0.4	ug/L	180	Standard
	Pb	208	858938.6	1.3	**49.5964**	0.972	2.0	ug/L	717	Standard
	U	238	311185.8	0.3	**49.3920**	0.274	0.6	ug/L	4	Standard
>	**Bi**	209	466882.1	0.8				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	43.3	37.1	**0.0108**	0.021	197.0	mg/L	20	Standard
K	39	21.7	26.6	**-0.0712**	0.040	55.8	mg/L	22	Standard
Ca	43	35.0	37.8	**-5.4027**	2.947	54.5	mg/L	47	Standard
Fe	54	122.0	30.6	**-0.0208**	0.028	132.3	mg/L	151	Standard
Fe	57	123.3	18.3	**-0.2836**	0.067	23.8	mg/L	195	Standard
Sc-1	45	31167.0	1.6				mg/L	29647	Standard
Cl	35	163506.3	1.5				ug/L	154152	Standard
Kr	83	0.3	173.2				ug/L	3	Standard
Br	81	5531.1	27.3				ug/L	1607	Standard
P	31	23947.2	1.0				ug/L	22752	Standard
S	34	5137.5	2.8				ug/L	5049	Standard
Sr	88	76.7	46.3				ug/L	87	Standard
C	12	70.0	14.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	13.2	44.9				mg/L	10	Standard
Ho-1	165	15.0	66.7				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	1283.4	6.1				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.443	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.849	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.204
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.421
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: LCSW 42 WG572730-04
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Method 6020 - Summary Report

Sample ID: L1606066401 WG572730-01
Sample Date/Time: Thursday, June 16, 2016 19:12:30
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75454.2	2.8				ug/L	51024	Standard
	Be	9	20.0	90.1	**-0.0048**	0.015	318.2	ug/L	7	Standard
	Al	27	11047678.0	1.9	**52.4883**	1.233	2.3	ug/L	625	Standard
	Sc	45	29264.9	1.3				ug/L	29647	Standard
	Ti	47	190.7	4.0	**0.5084**	0.037	7.3	ug/L	57	Standard
	V	51	1712.7	18.3	**0.0872**	0.046	52.6	ug/L	1142	Standard
	Cr	52	16604.1	1.9	**1.4659**	0.021	1.4	ug/L	6628	Standard
	Cr	53	9623.1	1.9	**10.5512**	0.372	3.5	ug/L	430	Standard
	Mn	55	18349.1	1.7	**3.1531**	0.090	2.8	ug/L	603	Standard
	Co	59	837.4	4.2	**0.0969**	0.005	4.7	ug/L	237	Standard
	Ni	60	47686.6	1.9	**26.1478**	0.400	1.5	ug/L	141	Standard
	Cu	65	35936.9	2.3	**20.2125**	0.174	0.9	ug/L	109	Standard
	Zn	66	7845.4	2.5	**7.2754**	0.080	1.1	ug/L	159	Standard
>	**Ge**	72	446804.8	1.5				ug/L	474053	Standard
	As	75	226.8	62.9	**0.2410**	0.135	55.9	ug/L	-34	Standard
	Se	82	88.3	14.1	**0.6770**	0.108	16.0	ug/L	14	Standard
	Se-1	77	1010.0	4.4	**13.2164**	0.770	5.8	ug/L	55	Standard
>	**Ga**	71	121.7	4.7				mg/L	50	Standard
	Rb	85	9374.6	1.9				ug/L	20	Standard
	Y	89	379651.4	1.2				ug/L	376602	Standard
>	**Rh**	103	176.7	43.0				ug/L	17	Standard
	Mo	98	6942.1	1.1	**3.0258**	0.008	0.3	ug/L	8	Standard
	Ag	107	107.7	10.4	**0.0063**	0.002	31.0	ug/L	81	Standard
	Cd	111	16.0	28.8	**0.0053**	0.002	45.3	mg/L	3	Standard
	Cd	114	155.3	55.3	**0.0296**	0.019	62.9	ug/L	7	Standard
>	**In**	115	508746.6	0.9				ug/L	524722	Standard
	Sn	118	32234.3	2.4	**6.0825**	0.133	2.2	ug/L	715	Standard
	Sb	123	2505.0	15.1	**0.5762**	0.084	14.6	ug/L	201	Standard
	Ba	135	56364.3	0.3	**32.0167**	0.382	1.2	ug/L	108	Standard
	Ce	140	273.3	12.5				ug/L	30	Standard
>	**Tb**	159	786168.7	0.3				ug/L	792236	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	162.7	17.5	**0.0211**	0.005	21.6	ug/L	9	Standard
	Tl	205	136.7	17.3	**0.0156**	0.004	27.5	ug/L	0	Standard
	Pb	206	51660.3	0.9	**12.3691**	0.134	1.1	ug/L	216	Standard
	Pb	207	43372.0	1.0	**11.4048**	0.082	0.7	ug/L	180	Standard
	Pb	208	183979.7	0.6	**11.9203**	0.168	1.4	ug/L	717	Standard
	U	238	40.0	22.9	**-0.0004**	0.002	429.9	ug/L	4	Standard
>	**Bi**	209	414575.6	1.7				ug/L	460343	Standard

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Na	23	3.3	173.2	**-0.6680**	19.261	2883.4	mg/L	0	Standard
Mg	24	393015.0	2.1	**539.7437**	8.154	1.5	mg/L	20	Standard
K	39	755.0	20.2	**5.6021**	1.177	21.0	mg/L	22	Standard
Ca	43	273.3	16.4	**51.4216**	9.712	18.9	mg/L	47	Standard
Fe	54	153.2	8.8	**0.0113**	0.013	111.5	mg/L	151	Standard
Fe	57	410.0	9.5	**0.6384**	0.113	17.7	mg/L	195	Standard
> **Sc-1**	45	29264.9	1.3				mg/L	29647	Standard
Cl	35	947330.3	0.6				ug/L	154152	Standard
Kr	83	2.7	86.6				ug/L	3	Standard
Br	81	16345.5	3.0				ug/L	1607	Standard
P	31	24364.6	0.6				ug/L	22752	Standard
S	34	5329.3	1.4				ug/L	5049	Standard
Sr	88	195.0	4.4				ug/L	87	Standard
C	12	283.3	24.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	0	Standard
Dy	164	16.0	130.4				mg/L	10	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	339108.5	7.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		147.879	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.252	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.955
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.058
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606066401DP WG572730-05
Sample Date/Time: Thursday, June 16, 2016 19:15:41
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82599.5	0.8				ug/L	51024	Standard
	Be	9	18.3	31.5	**-0.0076**	0.004	53.8	ug/L	7	Standard
	Al	27	12101738.6	2.4	**52.5022**	0.943	1.8	ug/L	625	Standard
	Sc	45	29381.8	2.9				ug/L	29647	Standard
	Ti	47	224.3	6.3	**0.6337**	0.051	8.1	ug/L	57	Standard
	V	51	1757.9	10.9	**0.0962**	0.030	31.3	ug/L	1142	Standard
	Cr	52	17254.5	0.4	**1.5806**	0.019	1.2	ug/L	6628	Standard
	Cr	53	9484.6	4.9	**10.4776**	0.447	4.3	ug/L	430	Standard
	Mn	55	18275.7	1.8	**3.1668**	0.077	2.4	ug/L	603	Standard
	Co	59	934.4	2.3	**0.1143**	0.005	4.1	ug/L	237	Standard
	Ni	60	50219.4	0.9	**27.7712**	0.300	1.1	ug/L	141	Standard
	Cu	65	38180.1	1.8	**21.6588**	0.226	1.0	ug/L	109	Standard
	Zn	66	9011.3	2.3	**8.4634**	0.126	1.5	ug/L	159	Standard
>	**Ge**	72	443106.2	0.8				ug/L	474053	Standard
	As	75	276.8	42.6	**0.2919**	0.111	38.1	ug/L	-34	Standard
	Se	82	109.2	13.4	**0.8866**	0.132	14.9	ug/L	14	Standard
	Se-1	77	1030.4	1.0	**13.6099**	0.054	0.4	ug/L	55	Standard
>	**Ga**	71	125.0	10.6				mg/L	50	Standard
	Rb	85	9914.9	0.9				ug/L	20	Standard
	Y	89	378132.1	0.5				ug/L	376602	Standard
>	**Rh**	103	276.7	11.8				ug/L	17	Standard
	Mo	98	7350.8	1.1	**3.1941**	0.056	1.8	ug/L	8	Standard
	Ag	107	113.3	9.2	**0.0072**	0.002	27.2	ug/L	81	Standard
	Cd	111	7.2	44.2	**0.0006**	0.002	301.0	mg/L	3	Standard
	Cd	114	112.0	53.6	**0.0203**	0.013	64.2	ug/L	7	Standard
>	**In**	115	510414.8	1.0				ug/L	524722	Standard
	Sn	118	31860.1	0.6	**5.9914**	0.071	1.2	ug/L	715	Standard
	Sb	123	1301.1	10.9	**0.2913**	0.031	10.6	ug/L	201	Standard
	Ba	135	58474.3	1.0	**33.1066**	0.180	0.5	ug/L	108	Standard
	Ce	140	143.3	4.0				ug/L	30	Standard
>	**Tb**	159	793633.3	0.5				ug/L	792236	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	126.3	11.6	**0.0156**	0.002	13.8	ug/L	9	Standard
	Tl	205	108.3	7.1	**0.0105**	0.001	12.1	ug/L	0	Standard
	Pb	206	55773.5	1.1	**13.2134**	0.113	0.9	ug/L	216	Standard
	Pb	207	47080.7	0.8	**12.2506**	0.066	0.5	ug/L	180	Standard
	Pb	208	190215.8	0.7	**12.1921**	0.079	0.7	ug/L	717	Standard
	U	238	29.3	17.2	**-0.0024**	0.001	37.4	ug/L	4	Standard
>	**Bi**	209	419055.7	0.3				ug/L	460343	Standard

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Na	23	10.0	50.0	**-22.7084**	17.142	75.5	mg/L	0	Standard
Mg	24	418232.9	1.5	**572.3635**	15.570	2.7	mg/L	20	Standard
K	39	648.3	17.8	**4.7577**	0.876	18.4	mg/L	22	Standard
Ca	43	226.7	8.4	**40.2176**	3.679	9.1	mg/L	47	Standard
Fe	54	135.1	14.9	**-0.0042**	0.016	368.6	mg/L	151	Standard
Fe	57	428.3	6.4	**0.6912**	0.080	11.6	mg/L	195	Standard
Sc-1	45	29381.8	2.9				mg/L	29647	Standard
Cl	35	974394.4	0.6				ug/L	154152	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	16325.5	4.8				ug/L	1607	Standard
P	31	25179.2	0.8				ug/L	22752	Standard
S	34	5427.6	0.7				ug/L	5049	Standard
Sr	88	171.7	19.8				ug/L	87	Standard
C	12	336.7	27.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	12.9	93.1				mg/L	10	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	345162.2	8.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		161.883	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.472	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.273
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	91.031
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606072903 WG572730-02
Sample Date/Time: Thursday, June 16, 2016 19:18:52
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83167.6	0.4				ug/L	51024	Standard
	Be	9	1595.1	11.9	**1.1433**	0.143	12.5	ug/L	7	Standard
	Al	27	12508760.9	0.4	**53.9014**	0.277	0.5	ug/L	625	Standard
	Sc	45	32636.8	2.2				ug/L	29647	Standard
	Ti	47	734.7	25.1	**2.2005**	0.603	27.4	ug/L	57	Standard
	V	51	2647.4	9.7	**0.1914**	0.035	18.3	ug/L	1142	Standard
	Cr	52	10901.3	2.2	**0.5035**	0.035	7.0	ug/L	6628	Standard
	Cr	53	1756.8	5.0	**1.3940**	0.093	6.7	ug/L	430	Standard
	Mn	55	2418538.1	0.3	**393.4562**	2.564	0.7	ug/L	603	Standard
	Co	59	167227.2	1.2	**25.0953**	0.408	1.6	ug/L	237	Standard
	Ni	60	19549.3	0.9	**9.7135**	0.121	1.2	ug/L	141	Standard
	Cu	65	6980.3	2.4	**3.5215**	0.098	2.8	ug/L	109	Standard
	Zn	66	33084.1	0.4	**28.6038**	0.229	0.8	ug/L	159	Standard
>	**Ge**	72	490606.8	0.4				ug/L	474053	Standard
	As	75	126.0	22.9	**0.1350**	0.026	18.9	ug/L	-34	Standard
	Se	82	91.9	23.2	**0.6344**	0.188	29.7	ug/L	14	Standard
	Se-1	77	154.7	9.2	**1.2017**	0.186	15.5	ug/L	55	Standard
>	**Ga**	71	938.4	4.7				mg/L	50	Standard
	Rb	85	17583.5	1.7				ug/L	20	Standard
	Y	89	717044.0	1.5				ug/L	376602	Standard
>	**Rh**	103	161.7	28.1				ug/L	17	Standard
	Mo	98	55.5	8.7	**0.0173**	0.002	11.5	ug/L	8	Standard
	Ag	107	113.0	9.4	**0.0061**	0.002	26.4	ug/L	81	Standard
	Cd	111	309.2	2.3	**0.1520**	0.004	2.4	mg/L	3	Standard
	Cd	114	755.2	14.7	**0.1496**	0.023	15.3	ug/L	7	Standard
>	**In**	115	538550.6	0.6				ug/L	524722	Standard
	Sn	118	861.7	3.5	**0.0664**	0.005	7.2	ug/L	715	Standard
	Sb	123	1408.2	6.3	**0.2992**	0.018	6.0	ug/L	201	Standard
	Ba	135	39659.2	1.6	**21.2618**	0.456	2.1	ug/L	108	Standard
	Ce	140	1381297.9	0.5				ug/L	30	Standard
>	**Tb**	159	851012.3	2.0				ug/L	792236	Standard
	Ho	165	27889.0	1.7				ug/L	7	Standard
	Tl	203	294.7	3.0	**0.0347**	0.002	6.0	ug/L	9	Standard
	Tl	205	265.0	1.9	**0.0316**	0.001	3.8	ug/L	0	Standard
	Pb	206	5868.1	0.6	**1.1726**	0.027	2.3	ug/L	216	Standard
	Pb	207	4864.8	1.2	**1.0656**	0.042	4.0	ug/L	180	Standard
	Pb	208	20514.5	1.0	**1.1052**	0.038	3.5	ug/L	717	Standard
	U	238	2495.2	0.6	**0.3809**	0.010	2.6	ug/L	4	Standard
>	**Bi**	209	476253.4	2.7				ug/L	460343	Standard

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Na	23	11.7	24.7	**-24.3418**	9.212	37.8	mg/L	0	Standard
Mg	24	2530.2	1.8	**3.0712**	0.030	1.0	mg/L	20	Standard
K	39	120.0	8.3	**0.6043**	0.087	14.3	mg/L	22	Standard
Ca	43	210.0	28.9	**31.2136**	11.780	37.7	mg/L	47	Standard
Fe	54	1764.1	4.7	**1.1881**	0.059	5.0	mg/L	151	Standard
Fe	57	758.4	15.5	**1.4817**	0.281	18.9	mg/L	195	Standard
> **Sc-1**	45	32636.8	2.2				mg/L	29647	Standard
Cl	35	300327.3	0.4				ug/L	154152	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	5971.2	0.5				ug/L	1607	Standard
P	31	27339.7	3.0				ug/L	22752	Standard
S	34	4589.0	1.4				ug/L	5049	Standard
Sr	88	426.7	18.4				ug/L	87	Standard
C	12	223.3	9.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	48154.5	2.6				mg/L	10	Standard
Ho-1	165	27889.0	1.7				mg/L	7	Standard
Er	166	24125.9	1.2				mg/L	3	Standard
I	127	233033.3	7.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		162.997	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.492	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.635
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.456
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606072903S WG572730-06
Sample Date/Time: Thursday, June 16, 2016 19:22:04
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	84593.9	1.7				ug/L	51024	Standard
	Be	9	63747.2	1.4	**45.7285**	1.409	3.1	ug/L	7	Standard
	Al	27	12163442.1	0.7	**51.5412**	1.132	2.2	ug/L	625	Standard
	Sc	45	33602.2	1.6				ug/L	29647	Standard
	Ti	47	659.7	12.0	**2.0785**	0.257	12.4	ug/L	57	Standard
	V	51	353641.1	0.6	**50.6609**	2.238	4.4	ug/L	1142	Standard
	Cr	52	356717.6	1.1	**48.6215**	2.101	4.3	ug/L	6628	Standard
	Cr	53	45185.6	0.4	**49.2470**	2.494	5.1	ug/L	430	Standard
	Mn	55	2601278.5	0.7	**447.6689**	18.661	4.2	ug/L	603	Standard
	Co	59	487177.6	1.1	**77.4106**	2.935	3.8	ug/L	237	Standard
	Ni	60	108783.5	0.6	**57.5580**	2.469	4.3	ug/L	141	Standard
	Cu	65	95167.6	1.2	**51.6700**	2.084	4.0	ug/L	109	Standard
	Zn	66	84097.8	1.1	**77.2971**	3.015	3.9	ug/L	159	Standard
>	Ge	72	464397.8	4.8				ug/L	474053	Standard
	As	75	53679.2	1.0	**49.5736**	2.027	4.1	ug/L	-34	Standard
	Se	82	5551.8	0.7	**51.1533**	2.421	4.7	ug/L	14	Standard
	Se-1	77	3791.1	3.4	**49.6831**	1.424	2.9	ug/L	55	Standard
>	Ga	71	958.4	5.4				mg/L	50	Standard
	Rb	85	16624.1	3.0				ug/L	20	Standard
	Y	89	707625.8	0.5				ug/L	376602	Standard
>	Rh	103	125.0	8.0				ug/L	17	Standard
	Mo	98	62.1	4.6	**0.0194**	0.002	8.1	ug/L	8	Standard
	Ag	107	8913.6	1.8	**1.4061**	0.009	0.7	ug/L	81	Standard
	Cd	111	96671.0	1.6	**47.2862**	1.085	2.3	mg/L	3	Standard
	Cd	114	237983.0	1.9	**47.0816**	0.696	1.5	ug/L	7	Standard
>	In	115	552753.1	1.8				ug/L	524722	Standard
	Sn	118	638.3	15.9	**0.0231**	0.018	79.7	ug/L	715	Standard
	Sb	123	215408.0	1.4	**46.8023**	0.239	0.5	ug/L	201	Standard
	Ba	135	124502.1	0.5	**65.1569**	0.974	1.5	ug/L	108	Standard
	Ce	140	1314417.9	1.3				ug/L	30	Standard
>	Tb	159	881280.8	1.9				ug/L	792236	Standard
	Ho	165	27413.1	3.0				ug/L	7	Standard
	Tl	203	374882.9	0.8	**46.6863**	0.358	0.8	ug/L	9	Standard
	Tl	205	338218.3	0.5	**49.5337**	0.988	2.0	ug/L	0	Standard
	Pb	206	247963.0	0.9	**51.0419**	0.964	1.9	ug/L	216	Standard
	Pb	207	216265.5	0.6	**48.8980**	0.689	1.4	ug/L	180	Standard
	Pb	208	876968.0	0.5	**48.8596**	0.973	2.0	ug/L	717	Standard
	U	238	329321.5	0.3	**50.4388**	0.916	1.8	ug/L	4	Standard
>	Bi	209	483914.0	1.5				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.7187**	8.199	143.4	mg/L	0	Standard
Mg	24	2360.2	1.3	**2.7784**	0.056	2.0	mg/L	20	Standard
K	39	110.0	31.5	**0.5143**	0.242	47.0	mg/L	22	Standard
Ca	43	180.0	27.4	**23.8358**	9.598	40.3	mg/L	47	Standard
Fe	54	1737.6	2.8	**1.1314**	0.022	1.9	mg/L	151	Standard
Fe	57	686.7	6.3	**1.2285**	0.107	8.7	mg/L	195	Standard
Sc-1	45	33602.2	1.6				mg/L	29647	Standard
Cl	35	293323.6	1.0				ug/L	154152	Standard
Kr	83	1.7	124.9				ug/L	3	Standard
Br	81	5094.2	9.2				ug/L	1607	Standard
P	31	27336.3	1.5				ug/L	22752	Standard
S	34	4702.4	5.5				ug/L	5049	Standard
Sr	88	400.0	11.5				ug/L	87	Standard
C	12	270.0	13.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	45484.4	2.9				mg/L	10	Standard
Ho-1	165	27413.1	3.0				mg/L	7	Standard
Er	166	23461.5	1.2				mg/L	3	Standard
I	127	221641.3	5.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		165.792	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.963	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	105.342
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	105.120
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606072903SD WG572730-07
Sample Date/Time: Thursday, June 16, 2016 19:25:15
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86461.0	1.0				ug/L	51024	Standard
	Be	9	64063.5	1.0	**44.9486**	0.413	0.9	ug/L	7	Standard
	Al	27	12456061.3	1.7	**51.6274**	0.457	0.9	ug/L	625	Standard
	Sc	45	32062.2	2.4				ug/L	29647	Standard
	Ti	47	858.4	8.8	**2.9028**	0.272	9.4	ug/L	57	Standard
	V	51	359033.7	1.5	**54.0078**	1.033	1.9	ug/L	1142	Standard
	Cr	52	357394.7	0.2	**51.1915**	0.354	0.7	ug/L	6628	Standard
	Cr	53	45598.6	3.3	**52.1815**	1.498	2.9	ug/L	430	Standard
	Mn	55	2668759.8	1.0	**482.1929**	4.954	1.0	ug/L	603	Standard
	Co	59	502894.6	1.2	**83.9097**	1.409	1.7	ug/L	237	Standard
	Ni	60	107927.8	1.4	**59.9510**	0.489	0.8	ug/L	141	Standard
	Cu	65	93853.1	1.2	**53.5019**	0.490	0.9	ug/L	109	Standard
	Zn	66	83974.7	0.9	**81.0494**	0.217	0.3	ug/L	159	Standard
>	**Ge**	72	441763.7	0.6				ug/L	474053	Standard
	As	75	55613.6	0.2	**53.9212**	0.243	0.5	ug/L	-34	Standard
	Se	82	6086.3	0.3	**58.8898**	0.200	0.3	ug/L	14	Standard
	Se-1	77	3831.8	0.4	**52.8020**	0.183	0.3	ug/L	55	Standard
>	**Ga**	71	981.7	7.0				mg/L	50	Standard
	Rb	85	19140.4	1.5				ug/L	20	Standard
	Y	89	713271.6	1.4				ug/L	376602	Standard
>	**Rh**	103	201.7	43.7				ug/L	17	Standard
	Mo	98	570.8	5.1	**0.2183**	0.009	3.9	ug/L	8	Standard
	Ag	107	9150.1	1.0	**1.4089**	0.031	2.2	ug/L	81	Standard
	Cd	111	99261.8	1.0	**47.3819**	0.778	1.6	mg/L	3	Standard
	Cd	114	244188.0	1.4	**47.1444**	0.226	0.5	ug/L	7	Standard
>	**In**	115	566399.8	1.8				ug/L	524722	Standard
	Sn	118	1108.4	1.6	**0.1012**	0.003	3.2	ug/L	715	Standard
	Sb	123	226221.3	0.0	**47.9756**	0.857	1.8	ug/L	201	Standard
	Ba	135	281949.2	0.1	**144.0743**	2.519	1.7	ug/L	108	Standard
	Ce	140	1344322.7	0.7				ug/L	30	Standard
>	**Tb**	159	856521.4	0.5				ug/L	792236	Standard
	Ho	165	27917.4	1.4				ug/L	7	Standard
	Tl	203	379214.9	0.1	**48.6259**	0.229	0.5	ug/L	9	Standard
	Tl	205	341701.9	0.7	**51.5229**	0.634	1.2	ug/L	0	Standard
	Pb	206	250400.5	0.4	**53.0698**	0.469	0.9	ug/L	216	Standard
	Pb	207	218768.7	0.4	**50.9304**	0.424	0.8	ug/L	180	Standard
	Pb	208	894325.1	0.6	**51.3006**	0.445	0.9	ug/L	717	Standard
	U	238	333573.8	0.7	**52.6006**	0.628	1.2	ug/L	4	Standard
>	**Bi**	209	469954.5	0.6				ug/L	460343	Standard

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Na	23	3.3	173.2	**0.1020**	17.927	17574.6	mg/L	0	Standard
Mg	24	6119.6	7.0	**7.6313**	0.602	7.9	mg/L	20	Standard
K	39	128.3	31.7	**0.6738**	0.269	39.8	mg/L	22	Standard
Ca	43	203.3	13.5	**30.6746**	5.036	16.4	mg/L	47	Standard
Fe	54	1790.2	1.0	**1.2312**	0.019	1.5	mg/L	151	Standard
Fe	57	780.0	10.9	**1.5831**	0.191	12.1	mg/L	195	Standard
Sc-1	45	32062.2	2.4				mg/L	29647	Standard
Cl	35	296539.1	0.3				ug/L	154152	Standard
Kr	83	1.0	0.0				ug/L	3	Standard
Br	81	116096.7	2.9				ug/L	1607	Standard
P	31	27080.9	1.8				ug/L	22752	Standard
S	34	4614.0	1.1				ug/L	5049	Standard
Sr	88	778.4	3.2				ug/L	87	Standard
C	12	196.7	22.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	46630.2	1.4				mg/L	10	Standard
Ho-1	165	27917.4	1.4				mg/L	7	Standard
Er	166	24322.8	2.2				mg/L	3	Standard
I	127	176317.1	2.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		169.451	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.189	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.943
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.088
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606075401
Sample Date/Time: Thursday, June 16, 2016 19:28:27
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82366.7	2.1				ug/L	51024	Standard
	Be	9	51.7	14.8	**0.0170**	0.006	32.8	ug/L	7	Standard
	Al	27	17891826.3	2.7	**77.8692**	2.435	3.1	ug/L	625	Standard
	Sc	45	30427.2	1.9				ug/L	29647	Standard
	Ti	47	2820.9	1.0	**9.4421**	0.167	1.8	ug/L	57	Standard
	V	51	13745.3	1.6	**1.8076**	0.041	2.3	ug/L	1142	Standard
	Cr	52	20733.8	0.8	**1.9525**	0.033	1.7	ug/L	6628	Standard
	Cr	53	4984.2	5.0	**5.0448**	0.169	3.3	ug/L	430	Standard
	Mn	55	105692.4	1.8	**18.0774**	0.683	3.8	ug/L	603	Standard
	Co	59	4134.2	4.3	**0.6164**	0.033	5.4	ug/L	237	Standard
	Ni	60	5645.1	0.8	**2.9135**	0.034	1.2	ug/L	141	Standard
	Cu	65	191176.6	0.9	**103.9111**	2.891	2.8	ug/L	109	Standard
	Zn	66	106024.3	0.8	**97.5572**	2.630	2.7	ug/L	159	Standard
>	**Ge**	72	463769.1	2.0				ug/L	474053	Standard
	As	75	301.2	25.5	**0.3039**	0.075	24.6	ug/L	-34	Standard
	Se	82	127.3	9.6	**1.0095**	0.134	13.3	ug/L	14	Standard
	Se-1	77	289.7	4.6	**3.1103**	0.134	4.3	ug/L	55	Standard
>	**Ga**	71	440.0	5.9				mg/L	50	Standard
	Rb	85	66395.2	1.7				ug/L	20	Standard
	Y	89	407745.6	2.4				ug/L	376602	Standard
>	**Rh**	103	96.7	20.9				ug/L	17	Standard
	Mo	98	1561.5	1.4	**0.6398**	0.014	2.1	ug/L	8	Standard
	Ag	107	747.4	3.8	**0.1101**	0.008	7.2	ug/L	81	Standard
	Cd	111	185.0	11.1	**0.0900**	0.013	14.1	mg/L	3	Standard
	Cd	114	453.1	6.4	**0.0885**	0.009	9.7	ug/L	7	Standard
>	**In**	115	537707.7	3.1				ug/L	524722	Standard
	Sn	118	4545.7	5.8	**0.7338**	0.032	4.3	ug/L	715	Standard
	Sb	123	909.7	21.3	**0.1892**	0.048	25.1	ug/L	201	Standard
	Ba	135	39811.9	1.6	**21.3825**	0.338	1.6	ug/L	108	Standard
	Ce	140	8849.3	2.5				ug/L	30	Standard
>	**Tb**	159	810136.1	3.5				ug/L	792236	Standard
	Ho	165	230.0	24.5				ug/L	7	Standard
	Tl	203	286.7	27.5	**0.0315**	0.010	30.7	ug/L	9	Standard
	Tl	205	228.3	32.9	**0.0241**	0.011	44.8	ug/L	0	Standard
	Pb	206	10175.4	0.5	**1.9406**	0.024	1.2	ug/L	216	Standard
	Pb	207	8305.3	0.7	**1.7365**	0.026	1.5	ug/L	180	Standard
	Pb	208	35130.3	0.9	**1.8082**	0.024	1.3	ug/L	717	Standard
	U	238	1915.5	3.0	**0.2719**	0.010	3.6	ug/L	4	Standard
>	**Bi**	209	508087.3	0.9				ug/L	460343	Standard

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Na	23	3.3	86.6	**-0.2885**	9.302	3224.4	mg/L	0	Standard
Mg	24	30961.6	1.7	**40.8617**	0.835	2.0	mg/L	20	Standard
K	39	656.7	18.1	**4.6487**	0.870	18.7	mg/L	22	Standard
Ca	43	158.3	34.8	**22.7292**	12.064	53.1	mg/L	47	Standard
Fe	54	990.1	10.0	**0.6701**	0.088	13.2	mg/L	151	Standard
Fe	57	505.0	3.4	**0.8773**	0.078	8.8	mg/L	195	Standard
> **Sc-1**	45	30427.2	1.9				mg/L	29647	Standard
Cl	35	217230.9	2.7				ug/L	154152	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	12551.9	10.7				ug/L	1607	Standard
P	31	26334.5	1.0				ug/L	22752	Standard
S	34	4555.7	2.6				ug/L	5049	Standard
Sr	88	170.0	8.8				ug/L	87	Standard
C	12	793.4	8.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	96.7	15.8				mg/L	0	Standard
Dy	164	343.6	11.4				mg/L	10	Standard
Ho-1	165	230.0	24.5				mg/L	7	Standard
Er	166	203.3	15.0				mg/L	3	Standard
I	127	19776.3	5.9				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		161.427	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.831	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.475
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.371
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: L1606075401PS WG572869-01
Sample Date/Time: Thursday, June 16, 2016 19:31:38
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83402.3	0.7				ug/L	51024	Standard
	Be	9	63124.6	1.4	**45.9169**	0.909	2.0	ug/L	7	Standard
	Al	27	17971744.4	2.8	**77.2382**	2.615	3.4	ug/L	625	Standard
	Sc	45	30682.7	4.2				ug/L	29647	Standard
	Ti	47	2792.9	5.6	**9.1051**	0.451	5.0	ug/L	57	Standard
	V	51	382253.4	0.5	**53.4006**	0.320	0.6	ug/L	1142	Standard
	Cr	52	373919.2	1.3	**49.7147**	0.405	0.8	ug/L	6628	Standard
	Cr	53	49711.5	2.7	**52.8478**	1.467	2.8	ug/L	430	Standard
	Mn	55	406935.5	0.9	**68.1780**	0.090	0.1	ug/L	603	Standard
	Co	59	347435.1	1.8	**53.8207**	0.541	1.0	ug/L	237	Standard
	Ni	60	95683.2	0.8	**49.3519**	0.338	0.7	ug/L	141	Standard
	Cu	65	276145.4	0.3	**146.3258**	0.986	0.7	ug/L	109	Standard
	Zn	66	154951.3	0.2	**139.0713**	0.812	0.6	ug/L	159	Standard
>	**Ge**	72	475646.5	0.8				ug/L	474053	Standard
	As	75	55395.2	0.9	**49.8846**	0.262	0.5	ug/L	-34	Standard
	Se	82	5840.3	1.9	**52.4634**	0.711	1.4	ug/L	14	Standard
	Se-1	77	4138.2	1.9	**52.9629**	0.853	1.6	ug/L	55	Standard
>	**Ga**	71	441.7	10.5				mg/L	50	Standard
	Rb	85	63605.0	2.6				ug/L	20	Standard
	Y	89	384934.5	2.9				ug/L	376602	Standard
>	**Rh**	103	75.0	30.6				ug/L	17	Standard
	Mo	98	1506.0	0.6	**0.6341**	0.012	1.9	ug/L	8	Standard
	Ag	107	301051.6	0.9	**50.6101**	0.914	1.8	ug/L	81	Standard
	Cd	111	98227.5	0.6	**50.7616**	0.701	1.4	mg/L	3	Standard
	Cd	114	243020.5	0.8	**50.8000**	0.654	1.3	ug/L	7	Standard
>	**In**	115	523174.3	1.7				ug/L	524722	Standard
	Sn	118	4532.3	4.2	**0.7549**	0.047	6.3	ug/L	715	Standard
	Sb	123	222938.5	1.8	**51.1866**	1.325	2.6	ug/L	201	Standard
	Ba	135	127885.1	0.6	**70.7164**	1.199	1.7	ug/L	108	Standard
	Ce	140	8752.5	5.4				ug/L	30	Standard
>	**Tb**	159	809108.6	3.0				ug/L	792236	Standard
	Ho	165	236.7	12.0				ug/L	7	Standard
	Tl	203	379894.9	0.9	**44.3716**	1.016	2.3	ug/L	9	Standard
	Tl	205	341979.7	0.7	**46.9709**	1.246	2.7	ug/L	0	Standard
	Pb	206	255943.3	0.4	**49.4070**	1.138	2.3	ug/L	216	Standard
	Pb	207	222866.5	0.7	**47.2585**	1.195	2.5	ug/L	180	Standard
	Pb	208	910678.1	0.7	**47.5815**	1.216	2.6	ug/L	717	Standard
	U	238	341419.2	0.1	**49.0368**	0.922	1.9	ug/L	4	Standard
>	**Bi**	209	516066.4	2.0				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.2328**	9.040	172.8	mg/L	0	Standard
Mg	24	30580.8	0.9	**40.0684**	1.906	4.8	mg/L	20	Standard
K	39	683.3	11.4	**4.8016**	0.478	10.0	mg/L	22	Standard
Ca	43	166.7	18.3	**24.6755**	8.602	34.9	mg/L	47	Standard
Fe	54	991.6	6.4	**0.6639**	0.031	4.7	mg/L	151	Standard
Fe	57	553.3	10.9	**1.0152**	0.249	24.5	mg/L	195	Standard
> **Sc-1**	45	30682.7	4.2				mg/L	29647	Standard
Cl	35	218863.4	0.6				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	11077.4	2.3				ug/L	1607	Standard
P	31	26757.0	3.2				ug/L	22752	Standard
S	34	4704.1	1.5				ug/L	5049	Standard
Sr	88	165.0	10.9				ug/L	87	Standard
C	12	693.3	9.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	90.0	50.9				mg/L	0	Standard
Dy	164	284.7	30.5				mg/L	10	Standard
Ho-1	165	236.7	12.0				mg/L	7	Standard
Er	166	180.0	22.2				mg/L	3	Standard
I	127	17368.3	4.1				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		163.456	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.336	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.705	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	112.105	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1606075401SDL WG572869-02
Sample Date/Time: Thursday, June 16, 2016 19:34:50
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84174.9	1.5				ug/L	51024	Standard
	Be	9	35.0	14.3	**0.0042**	0.004	88.5	ug/L	7	Standard
	Al	27	3660235.8	1.3	**15.5808**	0.435	2.8	ug/L	625	Standard
	Sc	45	32820.5	2.8				ug/L	29647	Standard
	Ti	47	607.7	5.7	**1.8669**	0.107	5.7	ug/L	57	Standard
	V	51	4082.9	1.0	**0.4082**	0.006	1.6	ug/L	1142	Standard
	Cr	52	9894.2	1.7	**0.4222**	0.007	1.6	ug/L	6628	Standard
	Cr	53	1803.4	1.6	**1.5160**	0.013	0.8	ug/L	430	Standard
	Mn	55	21935.9	0.6	**3.5843**	0.077	2.1	ug/L	603	Standard
	Co	59	994.0	3.5	**0.1140**	0.003	2.9	ug/L	237	Standard
	Ni	60	1361.1	4.8	**0.6305**	0.026	4.2	ug/L	141	Standard
	Cu	65	40184.2	0.6	**21.4035**	0.546	2.6	ug/L	109	Standard
	Zn	66	22341.5	1.6	**20.0059**	0.236	1.2	ug/L	159	Standard
>	**Ge**	72	472090.7	2.0				ug/L	474053	Standard
	As	75	70.8	22.3	**0.0894**	0.015	16.6	ug/L	-34	Standard
	Se	82	38.3	18.3	**0.1793**	0.069	38.5	ug/L	14	Standard
	Se-1	77	126.7	16.1	**0.9154**	0.302	33.0	ug/L	55	Standard
>	**Ga**	71	170.0	15.6				mg/L	50	Standard
	Rb	85	13192.4	0.8				ug/L	20	Standard
	Y	89	392636.4	3.5				ug/L	376602	Standard
>	**Rh**	103	25.0	69.3				ug/L	17	Standard
	Mo	98	328.6	6.7	**0.1240**	0.011	8.7	ug/L	8	Standard
	Ag	107	258.3	8.0	**0.0280**	0.003	12.2	ug/L	81	Standard
	Cd	111	44.1	38.1	**0.0179**	0.008	45.4	mg/L	3	Standard
	Cd	114	91.6	47.0	**0.0140**	0.009	61.0	ug/L	7	Standard
>	**In**	115	563812.4	1.7				ug/L	524722	Standard
	Sn	118	1306.7	7.2	**0.1365**	0.020	14.5	ug/L	715	Standard
	Sb	123	2201.6	19.8	**0.4534**	0.085	18.8	ug/L	201	Standard
	Ba	135	8201.6	0.8	**4.1541**	0.077	1.9	ug/L	108	Standard
	Ce	140	1823.4	12.4				ug/L	30	Standard
>	**Tb**	159	855756.3	0.3				ug/L	792236	Standard
	Ho	165	45.0	11.1				ug/L	7	Standard
	Tl	203	135.3	4.5	**0.0137**	0.001	4.2	ug/L	9	Standard
	Tl	205	115.0	7.5	**0.0084**	0.001	13.4	ug/L	0	Standard
	Pb	206	2315.2	1.8	**0.4035**	0.003	0.8	ug/L	216	Standard
	Pb	207	1893.5	0.7	**0.3593**	0.003	0.7	ug/L	180	Standard
	Pb	208	7952.2	1.5	**0.3697**	0.005	1.4	ug/L	717	Standard
	U	238	417.0	3.9	**0.0540**	0.002	3.2	ug/L	4	Standard
>	**Bi**	209	501935.6	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	6119.6	2.2	**7.4516**	0.184	2.5	mg/L	20	Standard
K	39	163.3	26.0	**0.8923**	0.268	30.1	mg/L	22	Standard
Ca	43	58.3	13.1	**-0.8716**	1.621	186.0	mg/L	47	Standard
Fe	54	338.9	14.2	**0.1347**	0.043	31.9	mg/L	151	Standard
Fe	57	201.7	14.9	**-0.0843**	0.069	82.1	mg/L	195	Standard
> **Sc-1**	45	32820.5	2.8				mg/L	29647	Standard
Cl	35	191817.3	0.7				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	3760.5	5.3				ug/L	1607	Standard
P	31	26361.2	0.5				ug/L	22752	Standard
S	34	5075.9	2.0				ug/L	5049	Standard
Sr	88	91.7	22.0				ug/L	87	Standard
C	12	203.3	19.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	124.9				mg/L	0	Standard
Dy	164	57.6	17.4				mg/L	10	Standard
Ho-1	165	45.0	11.1				mg/L	7	Standard
Er	166	50.0	34.6				mg/L	3	Standard
I	127	5225.9	3.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		164.971	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.586	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.450
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.035
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 19:38:03
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75524.5	1.6				ug/L	51024	Standard
	Be	9	58757.1	2.5	**47.1905**	0.427	0.9	ug/L	7	Standard
	Al	27	8592238.6	0.7	**40.7782**	0.896	2.2	ug/L	625	Standard
	Sc	45	30089.9	1.6				ug/L	29647	Standard
	Ti	47	29681.7	0.7	**100.0625**	1.696	1.7	ug/L	57	Standard
	V	51	362295.0	0.1	**51.4700**	1.097	2.1	ug/L	1142	Standard
	Cr	52	362530.7	0.7	**49.0151**	1.305	2.7	ug/L	6628	Standard
	Cr	53	44988.4	1.6	**48.6083**	1.321	2.7	ug/L	430	Standard
	Mn	55	309292.7	1.9	**52.6874**	2.042	3.9	ug/L	603	Standard
	Co	59	348007.0	1.3	**54.8425**	1.822	3.3	ug/L	237	Standard
	Ni	60	92789.3	1.3	**48.6823**	1.578	3.2	ug/L	141	Standard
	Cu	65	90263.4	0.9	**48.6062**	1.434	3.0	ug/L	109	Standard
	Zn	66	54352.7	0.8	**49.4652**	1.123	2.3	ug/L	159	Standard
>	Ge	72	467786.9	2.0				ug/L	474053	Standard
	As	75	53262.0	0.4	**48.7810**	0.849	1.7	ug/L	-34	Standard
	Se	82	5640.4	1.6	**51.5356**	1.525	3.0	ug/L	14	Standard
	Se-1	77	3823.8	0.2	**49.7310**	1.059	2.1	ug/L	55	Standard
>	Ga	71	100.0	10.0				mg/L	50	Standard
	Rb	85	738.4	4.8				ug/L	20	Standard
	Y	89	389211.3	4.2				ug/L	376602	Standard
>	Rh	103	41.7	45.4				ug/L	17	Standard
	Mo	98	258410.6	0.4	**108.3200**	0.551	0.5	ug/L	8	Standard
	Ag	107	305258.5	0.7	**50.6525**	0.191	0.4	ug/L	81	Standard
	Cd	111	98577.0	0.6	**50.2856**	0.543	1.1	mg/L	3	Standard
	Cd	114	240956.8	0.8	**49.7198**	0.544	1.1	ug/L	7	Standard
>	In	115	529955.9	0.8				ug/L	524722	Standard
	Sn	118	279031.2	1.4	**51.1979**	0.292	0.6	ug/L	715	Standard
	Sb	123	225733.2	0.6	**51.1556**	0.269	0.5	ug/L	201	Standard
	Ba	135	88992.9	0.5	**48.5568**	0.564	1.2	ug/L	108	Standard
	Ce	140	98.3	54.8				ug/L	30	Standard
>	Tb	159	792501.9	1.8				ug/L	792236	Standard
	Ho	165	15.0	57.7				ug/L	7	Standard
	Tl	203	380190.8	0.8	**49.9446**	0.519	1.0	ug/L	9	Standard
	Tl	205	340670.7	0.6	**52.6256**	0.733	1.4	ug/L	0	Standard
	Pb	206	240176.7	0.8	**52.1541**	1.146	2.2	ug/L	216	Standard
	Pb	207	218112.4	0.3	**52.0255**	0.882	1.7	ug/L	180	Standard
	Pb	208	878933.8	0.7	**51.6572**	1.015	2.0	ug/L	717	Standard
	U	238	331188.2	0.5	**53.5069**	0.993	1.9	ug/L	4	Standard
>	Bi	209	458755.1	1.5				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	4233.9	2.0	**5.6123**	0.183	3.3	mg/L	20	Standard
K	39	481.7	4.2	**3.3891**	0.102	3.0	mg/L	22	Standard
Ca	43	51.7	40.3	**-1.3433**	4.578	340.8	mg/L	47	Standard
Fe	54	6013.8	2.7	**4.7022**	0.066	1.4	mg/L	151	Standard
Fe	57	1661.8	4.6	**4.4228**	0.232	5.3	mg/L	195	Standard
> **Sc-1**	45	30089.9	1.6				mg/L	29647	Standard
Cl	35	174583.8	2.5				ug/L	154152	Standard
Kr	83	2.7	108.3				ug/L	3	Standard
Br	81	1656.8	6.5				ug/L	1607	Standard
P	31	26137.5	2.6				ug/L	22752	Standard
S	34	5366.0	2.6				ug/L	5049	Standard
Sr	88	61.7	56.9				ug/L	87	Standard
C	12	73.3	56.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.5	105.0				mg/L	10	Standard
Ho-1	165	15.0	57.7				mg/L	7	Standard
Er	166	10.0					mg/L	3	Standard
I	127	1988.5	11.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	94.381		
Al	27	81.556		
Sc	45			
Ti	47	100.063		
V	51	102.940		
Cr	52	98.030		
Cr	53			
Mn	55	105.375		
Co	59	109.685		
Ni	60	97.365		
Cu	65	97.212		
Zn	66	98.930		
> Ge	72		98.678	
As	75	97.562		
Se	82	103.071		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	108.320		
Ag	107	101.305		
Cd	111	100.571		
Cd	114			
In	115		100.997	
Sn	118	102.396		
Sb	123	102.311		
Ba	135	97.114		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.889		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.314		
U	238	107.014		
Bi	209		99.655	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 19:41:14
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75737.2	0.8				ug/L	51024	Standard
	Be	9	36.7	64.4	**0.0082**	0.019	228.1	ug/L	7	Standard
	Al	27	2361.9	43.7	**0.0014**	0.005	343.6	ug/L	625	Standard
	Sc	45	30985.0	1.8				ug/L	29647	Standard
	Ti	47	35.3	4.3	**-0.0458**	0.006	13.8	ug/L	57	Standard
	V	51	1037.4	10.2	**-0.0196**	0.013	66.8	ug/L	1142	Standard
	Cr	52	6028.9	1.0	**-0.0922**	0.013	14.2	ug/L	6628	Standard
	Cr	53	500.0	1.7	**0.1170**	0.007	5.6	ug/L	430	Standard
	Mn	55	801.0	1.0	**0.0112**	0.003	28.0	ug/L	603	Standard
	Co	59	242.3	16.2	**-0.0028**	0.006	218.5	ug/L	237	Standard
	Ni	60	194.3	2.8	**0.0250**	0.004	15.2	ug/L	141	Standard
	Cu	65	159.3	5.3	**0.0203**	0.005	24.2	ug/L	109	Standard
	Zn	66	178.7	4.3	**-0.0675**	0.009	14.0	ug/L	159	Standard
>	**Ge**	72	464739.5	1.5				ug/L	474053	Standard
	As	75	7.6	225.8	**0.0322**	0.016	48.9	ug/L	-34	Standard
	Se	82	25.4	8.4	**0.0649**	0.020	31.4	ug/L	14	Standard
	Se-1	77	61.7	15.6	**0.0734**	0.117	159.7	ug/L	55	Standard
>	**Ga**	71	83.3	36.7				mg/L	50	Standard
	Rb	85	23.3	44.6				ug/L	20	Standard
	Y	89	383264.6	3.0				ug/L	376602	Standard
>	**Rh**	103	33.3	8.7				ug/L	17	Standard
	Mo	98	271.3	23.3	**0.1065**	0.026	24.6	ug/L	8	Standard
	Ag	107	117.3	15.5	**0.0068**	0.003	41.5	ug/L	81	Standard
	Cd	111	10.2	68.0	**0.0019**	0.003	183.2	mg/L	3	Standard
	Cd	114	44.5	65.5	**0.0053**	0.006	115.1	ug/L	7	Standard
>	**In**	115	537976.2	1.6				ug/L	524722	Standard
	Sn	118	825.0	17.9	**0.0600**	0.027	44.4	ug/L	715	Standard
	Sb	123	661.4	27.1	**0.1329**	0.040	29.8	ug/L	201	Standard
	Ba	135	101.0	9.8	**-0.0033**	0.006	183.9	ug/L	108	Standard
	Ce	140	31.7	79.5				ug/L	30	Standard
>	**Tb**	159	808787.7	0.7				ug/L	792236	Standard
	Ho	165	10.0					ug/L	7	Standard
	Tl	203	70.0	26.5	**0.0063**	0.002	37.5	ug/L	9	Standard
	Tl	205	83.3	42.1	**0.0046**	0.005	114.0	ug/L	0	Standard
	Pb	206	238.3	5.7	**-0.0064**	0.003	45.5	ug/L	216	Standard
	Pb	207	219.3	6.5	**-0.0033**	0.003	100.2	ug/L	180	Standard
	Pb	208	893.7	3.3	**-0.0072**	0.002	24.1	ug/L	717	Standard
	U	238	52.0	44.7	**0.0005**	0.004	686.7	ug/L	4	Standard
>	**Bi**	209	475308.5	0.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	48.3	26.0	**0.0174**	0.016	91.5	mg/L	20	Standard
K	39	13.3	114.6	**-0.1319**	0.110	83.1	mg/L	22	Standard
Ca	43	30.0	33.3	**-6.4628**	2.334	36.1	mg/L	47	Standard
Fe	54	156.0	6.5	**0.0065**	0.010	153.3	mg/L	151	Standard
Fe	57	171.7	23.4	**-0.1375**	0.125	91.1	mg/L	195	Standard
Sc-1	45	30985.0	1.8				mg/L	29647	Standard
Cl	35	175790.7	1.2				ug/L	154152	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	1680.1	2.7				ug/L	1607	Standard
P	31	26980.7	1.7				ug/L	22752	Standard
S	34	5335.9	0.5				ug/L	5049	Standard
Sr	88	53.3	19.5				ug/L	87	Standard
C	12	106.7	44.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.8	173.2				mg/L	10	Standard
Ho-1	165	10.0					mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	1423.4	7.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.035	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.526
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.251
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606075401SDL WG572869-02
Sample Date/Time: Thursday, June 16, 2016 19:44:27
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75285.0	2.4				ug/L	51024	Standard
	Be	9	28.3	27.0	**0.0018**	0.006	349.7	ug/L	7	Standard
	Al	27	678933.6	1.5	**3.2237**	0.074	2.3	ug/L	625	Standard
	Sc	45	30959.9	1.5				ug/L	29647	Standard
	Ti	47	147.0	11.8	**0.3390**	0.053	15.6	ug/L	57	Standard
	V	51	1608.8	3.2	**0.0651**	0.007	11.5	ug/L	1142	Standard
	Cr	52	6858.9	5.4	**0.0335**	0.040	118.0	ug/L	6628	Standard
	Cr	53	711.7	14.1	**0.3581**	0.110	30.8	ug/L	430	Standard
	Mn	55	5081.9	4.1	**0.7566**	0.025	3.3	ug/L	603	Standard
	Co	59	396.3	6.0	**0.0224**	0.003	13.2	ug/L	237	Standard
	Ni	60	495.3	27.9	**0.1866**	0.070	37.6	ug/L	141	Standard
	Cu	65	8119.8	4.3	**4.3896**	0.136	3.1	ug/L	109	Standard
	Zn	66	5396.3	4.5	**4.7897**	0.160	3.3	ug/L	159	Standard
>	**Ge**	72	459379.8	1.3				ug/L	474053	Standard
	As	75	30.4	143.6	**0.0532**	0.040	75.8	ug/L	-34	Standard
	Se	82	25.8	13.6	**0.0723**	0.035	48.4	ug/L	14	Standard
	Se-1	77	72.3	3.5	**0.2270**	0.021	9.3	ug/L	55	Standard
>	**Ga**	71	85.0	20.4				mg/L	50	Standard
	Rb	85	2591.9	3.3				ug/L	20	Standard
	Y	89	395811.5	2.1				ug/L	376602	Standard
>	**Rh**	103	21.7	48.0				ug/L	17	Standard
	Mo	98	145.0	5.9	**0.0524**	0.004	7.4	ug/L	8	Standard
	Ag	107	135.7	35.4	**0.0092**	0.008	85.2	ug/L	81	Standard
	Cd	111	32.4	102.6	**0.0126**	0.016	129.9	mg/L	3	Standard
	Cd	114	75.7	59.7	**0.0111**	0.009	81.1	ug/L	7	Standard
>	**In**	115	555911.8	0.9				ug/L	524722	Standard
	Sn	118	780.0	12.2	**0.0473**	0.018	37.9	ug/L	715	Standard
	Sb	123	369.0	35.2	**0.0651**	0.029	44.3	ug/L	201	Standard
	Ba	135	1717.1	2.7	**0.8366**	0.031	3.7	ug/L	108	Standard
	Ce	140	485.0	42.7				ug/L	30	Standard
>	**Tb**	159	813354.7	3.1				ug/L	792236	Standard
	Ho	165	18.3	87.7				ug/L	7	Standard
	Tl	203	138.7	62.7	**0.0153**	0.011	74.9	ug/L	9	Standard
	Tl	205	61.7	4.7	**0.0015**	0.001	38.9	ug/L	0	Standard
	Pb	206	674.3	7.5	**0.0868**	0.013	15.5	ug/L	216	Standard
	Pb	207	582.7	6.3	**0.0820**	0.010	12.7	ug/L	180	Standard
	Pb	208	2365.1	0.5	**0.0779**	0.003	3.7	ug/L	717	Standard
	U	238	97.7	25.6	**0.0079**	0.004	53.7	ug/L	4	Standard
>	**Bi**	209	470182.7	2.2				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1275.1	3.2	**1.6099**	0.030	1.9	mg/L	20	Standard
K	39	51.7	39.1	**0.1491**	0.148	99.3	mg/L	22	Standard
Ca	43	31.7	9.1	**-6.0988**	0.709	11.6	mg/L	47	Standard
Fe	54	199.5	21.2	**0.0405**	0.034	83.1	mg/L	151	Standard
Fe	57	250.0	6.0	**0.0939**	0.035	37.2	mg/L	195	Standard
> **Sc-1**	45	30959.9	1.5				mg/L	29647	Standard
Cl	35	180506.2	0.5				ug/L	154152	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	1983.5	10.4				ug/L	1607	Standard
P	31	26828.7	3.3				ug/L	22752	Standard
S	34	5309.3	3.4				ug/L	5049	Standard
Sr	88	65.0	13.3				ug/L	87	Standard
C	12	93.3	12.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	25.5	47.4				mg/L	10	Standard
Ho-1	165	18.3	87.7				mg/L	7	Standard
Er	166	23.3	49.5				mg/L	3	Standard
I	127	1906.8	3.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		147.548	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.905	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	105.944
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.137
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606061601
Sample Date/Time: Thursday, June 16, 2016 19:47:38
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76809.2	0.5				ug/L	51024	Standard
	Be	9	595.0	11.7	**0.4492**	0.056	12.5	ug/L	7	Standard
	Al	27	4369598.1	0.7	**20.3813**	0.060	0.3	ug/L	625	Standard
	Sc	45	31414.2	1.5				ug/L	29647	Standard
	Ti	47	432.0	2.5	**1.3649**	0.030	2.2	ug/L	57	Standard
	V	51	-3320.7	72.4	**-0.6635**	0.356	53.6	ug/L	1142	Standard
	Cr	52	750024.0	0.5	**107.4925**	0.659	0.6	ug/L	6628	Standard
	Cr	53	103144.9	1.1	**117.5491**	0.704	0.6	ug/L	430	Standard
	Mn	55	749735.1	1.9	**134.2073**	3.843	2.9	ug/L	603	Standard
	Co	59	100276.4	1.1	**16.5512**	0.155	0.9	ug/L	237	Standard
	Ni	60	309778.2	0.7	**170.7218**	1.330	0.8	ug/L	141	Standard
	Cu	65	7659.6	1.1	**4.2680**	0.087	2.0	ug/L	109	Standard
	Zn	66	11362.9	1.9	**10.6718**	0.281	2.6	ug/L	159	Standard
>	**Ge**	72	445665.4	0.9				ug/L	474053	Standard
	As	75	686.6	13.7	**0.6845**	0.089	13.0	ug/L	-34	Standard
	Se	82	286.4	5.1	**2.5855**	0.133	5.1	ug/L	14	Standard
	Se-1	77	537.0	3.8	**6.6929**	0.237	3.5	ug/L	55	Standard
>	**Ga**	71	176.7	15.6				mg/L	50	Standard
	Rb	85	2721.9	5.5				ug/L	20	Standard
	Y	89	383236.3	0.5				ug/L	376602	Standard
>	**Rh**	103	50.0	36.1				ug/L	17	Standard
	Mo	98	2500.1	3.0	**1.0779**	0.045	4.2	ug/L	8	Standard
	Ag	107	102.0	12.9	**0.0051**	0.002	37.3	ug/L	81	Standard
	Cd	111	267.3	12.2	**0.1375**	0.014	10.4	mg/L	3	Standard
	Cd	114	603.9	11.8	**0.1249**	0.014	11.6	ug/L	7	Standard
>	**In**	115	512847.6	2.1				ug/L	524722	Standard
	Sn	118	1035.0	6.1	**0.1070**	0.008	7.4	ug/L	715	Standard
	Sb	123	393.5	17.2	**0.0775**	0.017	21.9	ug/L	201	Standard
	Ba	135	97635.9	1.0	**55.0639**	0.765	1.4	ug/L	108	Standard
	Ce	140	12988.9	1.1				ug/L	30	Standard
>	**Tb**	159	771242.3	0.7				ug/L	792236	Standard
	Ho	165	400.0	11.9				ug/L	7	Standard
	Tl	203	321.0	11.6	**0.0421**	0.006	13.3	ug/L	9	Standard
	Tl	205	538.3	98.5	**0.0807**	0.088	108.8	ug/L	0	Standard
	Pb	206	832.7	2.1	**0.1353**	0.003	2.1	ug/L	216	Standard
	Pb	207	700.3	3.6	**0.1232**	0.007	5.6	ug/L	180	Standard
	Pb	208	3407.2	29.9	**0.1547**	0.065	42.3	ug/L	717	Standard
	U	238	614.7	59.9	**0.0979**	0.064	65.5	ug/L	4	Standard
>	**Bi**	209	433217.0	0.9				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.3851**	8.776	163.0	mg/L	0	Standard
Mg	24	53123.0	1.4	**67.9338**	1.263	1.9	mg/L	20	Standard
K	39	26.7	39.0	**-0.0366**	0.073	198.4	mg/L	22	Standard
Ca	43	46.7	27.0	**-2.9236**	2.617	89.5	mg/L	47	Standard
Fe	54	466.9	13.1	**0.2433**	0.047	19.5	mg/L	151	Standard
Fe	57	296.7	18.2	**0.2213**	0.168	75.8	mg/L	195	Standard
Sc-1	45	31414.2	1.5				mg/L	29647	Standard
Cl	35	180426.0	1.3				ug/L	154152	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	63948.0	2.0				ug/L	1607	Standard
P	31	35653.6	1.9				ug/L	22752	Standard
S	34	4944.1	4.8				ug/L	5049	Standard
Sr	88	168.3	28.8				ug/L	87	Standard
C	12	176.7	33.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	644.2	6.3				mg/L	10	Standard
Ho-1	165	400.0	11.9				mg/L	7	Standard
Er	166	330.0	18.9				mg/L	3	Standard
I	127	86114.1	2.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		150.535	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.012	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.737
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.107
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
V 51 Lower	V	51	
Cr 52 Upper, S, EEE	Cr	52	

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Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Ni 60 Upper, S, EEE	Ni	60

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Method 6020 - Summary Report

Sample ID: L1606061602
Sample Date/Time: Thursday, June 16, 2016 19:50:50
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75748.9	1.4				ug/L	51024	Standard
	Be	9	48.3	39.2	**0.0176**	0.015	86.0	ug/L	7	Standard
	Al	27	19995852.4	2.5	**94.6007**	1.188	1.3	ug/L	625	Standard
	Sc	45	30053.1	1.9				ug/L	29647	Standard
	Ti	47	826.4	6.6	**2.7223**	0.220	8.1	ug/L	57	Standard
	V	51	3891.9	11.8	**0.4057**	0.069	17.0	ug/L	1142	Standard
	Cr	52	13157.7	1.1	**0.9469**	0.019	2.0	ug/L	6628	Standard
	Cr	53	8188.9	18.5	**8.8148**	1.816	20.6	ug/L	430	Standard
	Mn	55	3666201.0	1.1	**647.3586**	10.609	1.6	ug/L	603	Standard
	Co	59	2221.5	3.8	**0.3212**	0.018	5.6	ug/L	237	Standard
	Ni	60	1892.5	1.4	**0.9508**	0.014	1.5	ug/L	141	Standard
	Cu	65	951.0	2.0	**0.4643**	0.013	2.7	ug/L	109	Standard
	Zn	66	2843.9	2.3	**2.4576**	0.033	1.3	ug/L	159	Standard
>	**Ge**	72	452100.4	1.1				ug/L	474053	Standard
	As	75	2291.3	4.3	**2.1952**	0.104	4.7	ug/L	-34	Standard
	Se	82	731.9	2.7	**6.7722**	0.229	3.4	ug/L	14	Standard
	Se-1	77	824.7	4.7	**10.5195**	0.619	5.9	ug/L	55	Standard
>	**Ga**	71	260.0	5.8				mg/L	50	Standard
	Rb	85	20994.5	2.7				ug/L	20	Standard
	Y	89	374644.2	1.4				ug/L	376602	Standard
>	**Rh**	103	175.0	2.9				ug/L	17	Standard
	Mo	98	1524.1	2.8	**0.6737**	0.024	3.5	ug/L	8	Standard
	Ag	107	85.0	16.3	**0.0027**	0.002	93.3	ug/L	81	Standard
	Cd	111	31.4	24.1	**0.0138**	0.004	30.8	mg/L	3	Standard
	Cd	114	85.3	56.7	**0.0150**	0.011	72.0	ug/L	7	Standard
>	**In**	115	498521.0	0.9				ug/L	524722	Standard
	Sn	118	2845.3	2.5	**0.4666**	0.019	4.0	ug/L	715	Standard
	Sb	123	273.4	5.3	**0.0511**	0.003	6.4	ug/L	201	Standard
	Ba	135	433999.4	0.6	**251.9694**	2.189	0.9	ug/L	108	Standard
	Ce	140	9039.4	2.4				ug/L	30	Standard
>	**Tb**	159	767594.4	2.3				ug/L	792236	Standard
	Ho	165	158.3	4.8				ug/L	7	Standard
	Tl	203	240.0	18.3	**0.0311**	0.007	21.8	ug/L	9	Standard
	Tl	205	225.0	23.4	**0.0292**	0.009	30.5	ug/L	0	Standard
	Pb	206	742.7	3.3	**0.1155**	0.009	7.8	ug/L	216	Standard
	Pb	207	635.7	4.8	**0.1077**	0.010	9.0	ug/L	180	Standard
	Pb	208	2598.4	5.5	**0.1049**	0.012	11.7	ug/L	717	Standard
	U	238	474.7	5.4	**0.0741**	0.006	7.6	ug/L	4	Standard
>	**Bi**	209	431218.2	2.1				ug/L	460343	Standard

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Na	23	3.3	86.6	**-0.3991**	9.400	2355.4	mg/L	0	Standard
Mg	24	98133.5	1.2	**131.2521**	3.929	3.0	mg/L	20	Standard
K	39	131.7	7.9	**0.7615**	0.060	7.9	mg/L	22	Standard
Ca	43	168.3	4.5	**25.6161**	1.859	7.3	mg/L	47	Standard
Fe	54	29671.0	1.6	**23.6871**	0.442	1.9	mg/L	151	Standard
Fe	57	7898.7	1.9	**23.4845**	0.677	2.9	mg/L	195	Standard
> **Sc-1**	45	30053.1	1.9				mg/L	29647	Standard
Cl	35	175045.0	2.3				ug/L	154152	Standard
Kr	83	2.7	43.3				ug/L	3	Standard
Br	81	182091.9	3.5				ug/L	1607	Standard
P	31	33082.7	1.0				ug/L	22752	Standard
S	34	5377.6	4.5				ug/L	5049	Standard
Sr	88	866.7	3.5				ug/L	87	Standard
C	12	170.0	42.4				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	258.0	17.6				mg/L	10	Standard
Ho-1	165	158.3	4.8				mg/L	7	Standard
Er	166	180.0	25.5				mg/L	3	Standard
I	127	271715.3	7.5				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		148.457	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.369	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.007
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.673
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606061604
Sample Date/Time: Thursday, June 16, 2016 19:54:01
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73209.8	0.9				ug/L	51024	Standard
	Be	9	28.3	50.9	**0.0025**	0.012	495.3	ug/L	7	Standard
	Al	27	1228067.5	0.3	**6.0032**	0.043	0.7	ug/L	625	Standard
	Sc	45	32386.3	3.3				ug/L	29647	Standard
	Ti	47	334.0	17.6	**0.9832**	0.212	21.6	ug/L	57	Standard
	V	51	1789.1	4.9	**0.0914**	0.018	19.4	ug/L	1142	Standard
	Cr	52	14674.8	1.1	**1.1301**	0.065	5.7	ug/L	6628	Standard
	Cr	53	2643.6	3.1	**2.5012**	0.083	3.3	ug/L	430	Standard
	Mn	55	705467.3	1.0	**122.4541**	1.381	1.1	ug/L	603	Standard
	Co	59	3430.7	0.7	**0.5095**	0.015	2.8	ug/L	237	Standard
	Ni	60	3839.5	0.3	**1.9758**	0.045	2.3	ug/L	141	Standard
	Cu	65	1168.4	5.1	**0.5751**	0.034	5.9	ug/L	109	Standard
	Zn	66	2259.5	2.7	**1.8718**	0.099	5.3	ug/L	159	Standard
>	**Ge**	72	459550.4	2.1				ug/L	474053	Standard
	As	75	131.8	16.1	**0.1477**	0.018	12.1	ug/L	-34	Standard
	Se	82	59.0	11.8	**0.3811**	0.061	16.1	ug/L	14	Standard
	Se-1	77	99.0	11.6	**0.5837**	0.132	22.6	ug/L	55	Standard
>	**Ga**	71	130.0	11.5				mg/L	50	Standard
	Rb	85	9683.1	3.7				ug/L	20	Standard
	Y	89	395829.7	1.7				ug/L	376602	Standard
>	**Rh**	103	50.0	26.5				ug/L	17	Standard
	Mo	98	129.8	4.6	**0.0461**	0.003	6.2	ug/L	8	Standard
	Ag	107	119.7	9.2	**0.0065**	0.002	28.9	ug/L	81	Standard
	Cd	111	317.1	3.2	**0.1502**	0.006	3.9	mg/L	3	Standard
	Cd	114	681.4	6.2	**0.1296**	0.010	7.4	ug/L	7	Standard
>	**In**	115	558854.3	1.4				ug/L	524722	Standard
	Sn	118	820.0	7.6	**0.0535**	0.012	21.9	ug/L	715	Standard
	Sb	123	282.5	7.4	**0.0459**	0.004	9.0	ug/L	201	Standard
	Ba	135	35268.3	1.2	**18.2144**	0.408	2.2	ug/L	108	Standard
	Ce	140	2163.5	3.8				ug/L	30	Standard
>	**Tb**	159	825700.5	0.4				ug/L	792236	Standard
	Ho	165	51.7	14.8				ug/L	7	Standard
	Tl	203	156.7	22.7	**0.0174**	0.005	26.5	ug/L	9	Standard
	Tl	205	173.3	46.6	**0.0182**	0.012	67.6	ug/L	0	Standard
	Pb	206	424.7	5.7	**0.0331**	0.006	16.7	ug/L	216	Standard
	Pb	207	356.0	3.9	**0.0286**	0.004	13.3	ug/L	180	Standard
	Pb	208	1553.0	4.6	**0.0306**	0.005	14.8	ug/L	717	Standard
	U	238	81.0	68.7	**0.0051**	0.009	171.7	ug/L	4	Standard
>	**Bi**	209	473355.3	0.7				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.6238**	8.363	148.7	mg/L	0	Standard
Mg	24	2843.6	1.0	**3.4857**	0.082	2.3	mg/L	20	Standard
K	39	78.3	14.7	**0.3207**	0.096	29.9	mg/L	22	Standard
Ca	43	50.0	20.0	**-2.4661**	2.354	95.5	mg/L	47	Standard
Fe	54	2460.3	3.7	**1.7187**	0.119	6.9	mg/L	151	Standard
Fe	57	721.7	11.5	**1.4022**	0.269	19.2	mg/L	195	Standard
Sc-1	45	32386.3	3.3				mg/L	29647	Standard
Cl	35	167245.3	0.7				ug/L	154152	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	10406.9	6.9				ug/L	1607	Standard
P	31	27868.9	1.7				ug/L	22752	Standard
S	34	4945.8	3.9				ug/L	5049	Standard
Sr	88	151.7	1.9				ug/L	87	Standard
C	12	130.0	26.6				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	93.0	49.2				mg/L	10	Standard
Ho-1	165	51.7	14.8				mg/L	7	Standard
Er	166	76.7	32.8				mg/L	3	Standard
I	127	108192.1	4.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		143.481	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.941	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	106.505
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.827
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606064901
Sample Date/Time: Thursday, June 16, 2016 19:57:13
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73899.8	1.9				ug/L	51024	Standard
	Be	9	28.3	20.4	**0.0021**	0.004	205.1	ug/L	7	Standard
	Al	27	17068640.1	0.5	**82.8031**	1.944	2.3	ug/L	625	Standard
	Sc	45	31098.6	0.8				ug/L	29647	Standard
	Ti	47	2220.5	15.6	**7.6952**	1.219	15.8	ug/L	57	Standard
	V	51	3330.6	5.2	**0.3294**	0.025	7.6	ug/L	1142	Standard
	Cr	52	12294.7	1.4	**0.8476**	0.021	2.5	ug/L	6628	Standard
	Cr	53	3545.4	12.3	**3.6195**	0.491	13.6	ug/L	430	Standard
	Mn	55	65149.4	0.9	**11.5346**	0.133	1.2	ug/L	603	Standard
	Co	59	1855.8	3.0	**0.2656**	0.010	3.6	ug/L	237	Standard
	Ni	60	2852.6	1.9	**1.4936**	0.030	2.0	ug/L	141	Standard
	Cu	65	55047.8	0.2	**31.0509**	0.094	0.3	ug/L	109	Standard
	Zn	66	20763.6	1.9	**19.6724**	0.380	1.9	ug/L	159	Standard
>	**Ge**	72	446059.8	0.2				ug/L	474053	Standard
	As	75	230.9	30.1	**0.2467**	0.067	27.2	ug/L	-34	Standard
	Se	82	114.1	10.5	**0.9274**	0.115	12.4	ug/L	14	Standard
	Se-1	77	255.7	12.3	**2.7929**	0.427	15.3	ug/L	55	Standard
>	**Ga**	71	203.3	6.2				mg/L	50	Standard
	Rb	85	64731.4	2.1				ug/L	20	Standard
	Y	89	406326.7	3.3				ug/L	376602	Standard
>	**Rh**	103	48.3	21.5				ug/L	17	Standard
	Mo	98	623.5	1.9	**0.2468**	0.013	5.5	ug/L	8	Standard
	Ag	107	134.0	13.8	**0.0091**	0.002	26.2	ug/L	81	Standard
	Cd	111	49.6	6.5	**0.0211**	0.001	3.6	mg/L	3	Standard
	Cd	114	143.2	27.3	**0.0245**	0.007	27.9	ug/L	7	Standard
>	**In**	115	549535.8	3.5				ug/L	524722	Standard
	Sn	118	1373.4	4.5	**0.1543**	0.017	10.8	ug/L	715	Standard
	Sb	123	311.5	9.8	**0.0535**	0.009	17.0	ug/L	201	Standard
	Ba	135	22377.2	0.2	**11.7401**	0.432	3.7	ug/L	108	Standard
	Ce	140	280.0	11.2				ug/L	30	Standard
>	**Tb**	159	815853.8	2.8				ug/L	792236	Standard
	Ho	165	18.3	95.8				ug/L	7	Standard
	Tl	203	193.0	9.7	**0.0237**	0.002	10.2	ug/L	9	Standard
	Tl	205	165.0	24.1	**0.0186**	0.007	36.0	ug/L	0	Standard
	Pb	206	1296.1	2.0	**0.2354**	0.004	1.8	ug/L	216	Standard
	Pb	207	1110.4	3.4	**0.2207**	0.006	2.5	ug/L	180	Standard
	Pb	208	4630.9	2.3	**0.2243**	0.008	3.6	ug/L	717	Standard
	U	238	1289.4	2.5	**0.2082**	0.002	1.1	ug/L	4	Standard
>	**Bi**	209	442943.4	2.1				ug/L	460343	Standard

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Na	23	6.7	86.6	**-10.3108**	17.983	174.4	mg/L	0	Standard
Mg	24	29769.2	2.1	**38.4319**	0.806	2.1	mg/L	20	Standard
K	39	731.7	8.5	**5.0889**	0.443	8.7	mg/L	22	Standard
Ca	43	196.7	13.0	**30.5875**	5.364	17.5	mg/L	47	Standard
Fe	54	365.7	3.5	**0.1685**	0.008	4.7	mg/L	151	Standard
Fe	57	391.7	14.9	**0.5082**	0.163	32.1	mg/L	195	Standard
> **Sc-1**	45	31098.6	0.8				mg/L	29647	Standard
Cl	35	222953.8	0.9				ug/L	154152	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	17977.3	3.7				ug/L	1607	Standard
P	31	27297.9	1.8				ug/L	22752	Standard
S	34	5117.5	2.7				ug/L	5049	Standard
Sr	88	170.0	7.8				ug/L	87	Standard
C	12	300.0	21.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	86.6				mg/L	0	Standard
Dy	164	34.9	61.4				mg/L	10	Standard
Ho-1	165	18.3	95.8				mg/L	7	Standard
Er	166	36.7	41.7				mg/L	3	Standard
I	127	36641.0	3.4				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		144.833	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		94.095	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	104.729	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.220	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606065001
Sample Date/Time: Thursday, June 16, 2016 20:00:24
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72946.9	1.0				ug/L	51024	Standard
	Be	9	18.3	31.5	**-0.0058**	0.005	85.0	ug/L	7	Standard
	Al	27	25893242.1	1.3	**127.2227**	1.176	0.9	ug/L	625	Standard
	Sc	45	31297.3	0.7				ug/L	29647	Standard
	Ti	47	363.0	6.9	**1.0820**	0.092	8.5	ug/L	57	Standard
	V	51	26598.7	23.4	**3.6881**	0.888	24.1	ug/L	1142	Standard
	Cr	52	3600275.3	0.7	**503.8543**	2.642	0.5	ug/L	6628	Standard
	Cr	53	441968.5	0.3	**489.9131**	0.755	0.2	ug/L	430	Standard
	Mn	55	3750356.5	0.6	**651.5298**	1.262	0.2	ug/L	603	Standard
	Co	59	140636.7	1.1	**22.5301**	0.278	1.2	ug/L	237	Standard
	Ni	60	1491493.6	1.2	**797.5118**	6.177	0.8	ug/L	141	Standard
	Cu	65	3267.0	3.0	**1.7266**	0.047	2.7	ug/L	109	Standard
	Zn	66	3425.7	1.8	**2.9563**	0.067	2.3	ug/L	159	Standard
>	**Ge**	72	459475.2	0.5				ug/L	474053	Standard
	As	75	556.7	15.6	**0.5440**	0.082	15.1	ug/L	-34	Standard
	Se	82	222.9	6.2	**1.9114**	0.137	7.2	ug/L	14	Standard
	Se-1	77	721.0	7.2	**8.9403**	0.656	7.3	ug/L	55	Standard
>	**Ga**	71	291.7	10.5				mg/L	50	Standard
	Rb	85	7967.1	5.2				ug/L	20	Standard
	Y	89	376366.8	3.1				ug/L	376602	Standard
>	**Rh**	103	188.3	17.7				ug/L	17	Standard
	Mo	98	4038.0	0.7	**1.7616**	0.010	0.6	ug/L	8	Standard
	Ag	107	92.0	19.6	**0.0036**	0.003	90.6	ug/L	81	Standard
	Cd	111	324.1	6.9	**0.1694**	0.013	7.5	mg/L	3	Standard
	Cd	114	819.8	8.2	**0.1728**	0.014	8.3	ug/L	7	Standard
>	**In**	115	507645.2	1.3				ug/L	524722	Standard
	Sn	118	691.7	9.8	**0.0432**	0.012	27.3	ug/L	715	Standard
	Sb	123	362.3	12.4	**0.0710**	0.011	16.1	ug/L	201	Standard
	Ba	135	933624.2	0.5	**532.4126**	8.811	1.7	ug/L	108	Standard
	Ce	140	3360.4	5.9				ug/L	30	Standard
>	**Tb**	159	768822.1	0.7				ug/L	792236	Standard
	Ho	165	56.7	48.6				ug/L	7	Standard
	Tl	203	246.7	11.1	**0.0318**	0.003	11.0	ug/L	9	Standard
	Tl	205	253.3	31.2	**0.0337**	0.013	38.1	ug/L	0	Standard
	Pb	206	530.7	3.2	**0.0660**	0.004	5.7	ug/L	216	Standard
	Pb	207	474.0	4.9	**0.0662**	0.005	7.1	ug/L	180	Standard
	Pb	208	1991.7	8.7	**0.0664**	0.011	16.6	ug/L	717	Standard
	U	238	2713.6	2.5	**0.4575**	0.014	3.0	ug/L	4	Standard
>	**Bi**	209	432460.1	1.2				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.2420**	9.024	172.2	mg/L	0	Standard
Mg	24	90814.7	0.4	**116.5891**	0.672	0.6	mg/L	20	Standard
K	39	136.7	18.8	**0.7598**	0.192	25.3	mg/L	22	Standard
Ca	43	113.3	24.3	**11.8769**	5.966	50.2	mg/L	47	Standard
Fe	54	8598.8	2.1	**6.5077**	0.130	2.0	mg/L	151	Standard
Fe	57	2420.2	4.0	**6.4526**	0.333	5.2	mg/L	195	Standard
> **Sc-1**	45	31297.3	0.7				mg/L	29647	Standard
Cl	35	172318.1	2.4				ug/L	154152	Standard
Kr	83	2.7	43.3				ug/L	3	Standard
Br	81	54798.9	1.9				ug/L	1607	Standard
P	31	33010.9	0.2				ug/L	22752	Standard
S	34	5099.2	1.3				ug/L	5049	Standard
Sr	88	600.0	8.0				ug/L	87	Standard
C	12	176.7	34.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	96.6	30.8				mg/L	10	Standard
Ho-1	165	56.7	48.6				mg/L	7	Standard
Er	166	70.0	14.3				mg/L	3	Standard
I	127	400706.8	6.8				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		142.965	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.925	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.746
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.943
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Cr 52 Upper, S, EEE	Cr	52	

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Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Ni 60 Upper, S, EEE	Ni	60
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606065002
Sample Date/Time: Thursday, June 16, 2016 20:03:36
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74923.1	0.9				ug/L	51024	Standard
	Be	9	10.0	86.6	**-0.0129**	0.007	54.5	ug/L	7	Standard
	Al	27	11445723.9	1.0	**54.7538**	1.040	1.9	ug/L	625	Standard
	Sc	45	33881.2	2.3				ug/L	29647	Standard
	Ti	47	432.3	7.3	**1.3384**	0.080	6.0	ug/L	57	Standard
	V	51	2150.8	34.9	**0.1495**	0.116	77.8	ug/L	1142	Standard
	Cr	52	17737.4	0.6	**1.5921**	0.067	4.2	ug/L	6628	Standard
	Cr	53	10231.8	13.3	**11.0925**	1.758	15.8	ug/L	430	Standard
	Mn	55	1115003.1	1.6	**196.2265**	7.080	3.6	ug/L	603	Standard
	Co	59	2902.3	1.7	**0.4307**	0.009	2.2	ug/L	237	Standard
	Ni	60	3566.1	4.1	**1.8534**	0.037	2.0	ug/L	141	Standard
	Cu	65	1206.0	1.3	**0.6044**	0.011	1.8	ug/L	109	Standard
	Zn	66	2690.2	1.2	**2.3054**	0.087	3.8	ug/L	159	Standard
>	**Ge**	72	453598.8	2.2				ug/L	474053	Standard
	As	75	280.7	13.7	**0.2904**	0.040	13.9	ug/L	-34	Standard
	Se	82	128.1	7.4	**1.0434**	0.112	10.7	ug/L	14	Standard
	Se-1	77	619.3	6.2	**7.6936**	0.694	9.0	ug/L	55	Standard
>	**Ga**	71	105.0	17.2				mg/L	50	Standard
	Rb	85	9451.3	1.9				ug/L	20	Standard
	Y	89	391791.6	1.5				ug/L	376602	Standard
>	**Rh**	103	140.0	6.2				ug/L	17	Standard
	Mo	98	235.6	9.4	**0.0929**	0.011	11.9	ug/L	8	Standard
	Ag	107	90.7	15.8	**0.0026**	0.002	86.9	ug/L	81	Standard
	Cd	111	142.6	5.5	**0.0692**	0.005	7.6	mg/L	3	Standard
	Cd	114	324.8	13.1	**0.0629**	0.009	15.1	ug/L	7	Standard
>	**In**	115	532666.5	2.0				ug/L	524722	Standard
	Sn	118	630.0	6.3	**0.0258**	0.009	33.7	ug/L	715	Standard
	Sb	123	425.3	4.8	**0.0811**	0.005	5.7	ug/L	201	Standard
	Ba	135	317814.3	1.2	**172.6789**	1.361	0.8	ug/L	108	Standard
	Ce	140	4260.6	3.9				ug/L	30	Standard
>	**Tb**	159	822106.7	0.8				ug/L	792236	Standard
	Ho	165	98.3	10.6				ug/L	7	Standard
	Tl	203	236.3	5.5	**0.0291**	0.002	5.8	ug/L	9	Standard
	Tl	205	180.0	7.3	**0.0206**	0.002	9.9	ug/L	0	Standard
	Pb	206	404.0	5.2	**0.0334**	0.005	14.3	ug/L	216	Standard
	Pb	207	342.3	3.2	**0.0297**	0.003	8.7	ug/L	180	Standard
	Pb	208	1396.4	3.4	**0.0260**	0.003	10.6	ug/L	717	Standard
	U	238	1612.4	1.0	**0.2586**	0.003	1.2	ug/L	4	Standard
>	**Bi**	209	449004.5	0.2				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	75132.5	1.7	**89.1275**	2.931	3.3	mg/L	20	Standard
K	39	103.3	14.8	**0.4601**	0.085	18.5	mg/L	22	Standard
Ca	43	118.3	6.5	**11.0359**	2.111	19.1	mg/L	47	Standard
Fe	54	299.8	4.4	**0.0986**	0.014	14.4	mg/L	151	Standard
Fe	57	295.0	19.5	**0.1539**	0.166	108.1	mg/L	195	Standard
Sc-1	45	33881.2	2.3				mg/L	29647	Standard
Cl	35	177255.5	0.3				ug/L	154152	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	27852.3	4.5				ug/L	1607	Standard
P	31	36888.2	1.8				ug/L	22752	Standard
S	34	5134.2	5.6				ug/L	5049	Standard
Sr	88	336.7	12.1				ug/L	87	Standard
C	12	236.7	6.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	125.5	16.3				mg/L	10	Standard
Ho-1	165	98.3	10.6				mg/L	7	Standard
Er	166	93.3	16.4				mg/L	3	Standard
I	127	795775.9	5.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		146.839	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.685	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.514	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.537	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606065003
Sample Date/Time: Thursday, June 16, 2016 20:06:47
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73049.1	2.8				ug/L	51024	Standard
	Be	9	56.7	53.2	**0.0258**	0.025	96.4	ug/L	7	Standard
	Al	27	6795723.2	1.7	**33.3429**	0.423	1.3	ug/L	625	Standard
	Sc	45	32349.5	2.7				ug/L	29647	Standard
	Ti	47	1362.4	1.5	**4.5490**	0.135	3.0	ug/L	57	Standard
	V	51	-1621.9	225.1	**-0.4056**	0.530	130.6	ug/L	1142	Standard
	Cr	52	1449129.7	0.3	**203.6270**	3.465	1.7	ug/L	6628	Standard
	Cr	53	186956.4	0.3	**208.3861**	2.811	1.3	ug/L	430	Standard
	Mn	55	969240.4	1.1	**169.4166**	2.152	1.3	ug/L	603	Standard
	Co	59	17799.4	0.3	**2.8346**	0.031	1.1	ug/L	237	Standard
	Ni	60	82918.9	0.7	**44.5655**	0.800	1.8	ug/L	141	Standard
	Cu	65	12426.8	2.2	**6.7981**	0.081	1.2	ug/L	109	Standard
	Zn	66	16815.7	1.7	**15.5225**	0.331	2.1	ug/L	159	Standard
>	**Ge**	72	456450.5	1.3				ug/L	474053	Standard
	As	75	1966.3	2.2	**1.8692**	0.017	0.9	ug/L	-34	Standard
	Se	82	293.5	2.7	**2.5875**	0.085	3.3	ug/L	14	Standard
	Se-1	77	432.0	3.1	**5.0994**	0.235	4.6	ug/L	55	Standard
>	**Ga**	71	736.7	9.9				mg/L	50	Standard
	Rb	85	15683.1	2.3				ug/L	20	Standard
	Y	89	407716.2	0.3				ug/L	376602	Standard
>	**Rh**	103	95.0	13.9				ug/L	17	Standard
	Mo	98	6403.0	2.3	**2.6056**	0.071	2.7	ug/L	8	Standard
	Ag	107	109.7	3.7	**0.0054**	0.001	15.4	ug/L	81	Standard
	Cd	111	1059.3	1.9	**0.5225**	0.015	2.8	mg/L	3	Standard
	Cd	114	2761.6	6.2	**0.5508**	0.040	7.3	ug/L	7	Standard
>	**In**	115	544816.8	1.1				ug/L	524722	Standard
	Sn	118	1191.7	7.7	**0.1237**	0.018	14.6	ug/L	715	Standard
	Sb	123	304.1	8.3	**0.0523**	0.006	10.7	ug/L	201	Standard
	Ba	135	110831.6	1.3	**58.8309**	0.136	0.2	ug/L	108	Standard
	Ce	140	24424.7	1.3				ug/L	30	Standard
>	**Tb**	159	809371.8	1.0				ug/L	792236	Standard
	Ho	165	351.7	3.0				ug/L	7	Standard
	Tl	203	219.0	7.6	**0.0268**	0.002	7.8	ug/L	9	Standard
	Tl	205	185.0	24.8	**0.0214**	0.007	34.0	ug/L	0	Standard
	Pb	206	2753.6	3.0	**0.5549**	0.011	2.0	ug/L	216	Standard
	Pb	207	2285.2	1.4	**0.5035**	0.014	2.7	ug/L	180	Standard
	Pb	208	9786.6	1.2	**0.5303**	0.014	2.6	ug/L	717	Standard
	U	238	353.7	1.7	**0.0508**	0.000	0.5	ug/L	4	Standard
>	**Bi**	209	449128.9	1.4				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	37974.2	2.9	**47.1394**	0.683	1.4	mg/L	20	Standard
K	39	91.7	3.1	**0.4128**	0.025	6.0	mg/L	22	Standard
Ca	43	75.0	26.7	**2.9551**	4.725	159.9	mg/L	47	Standard
Fe	54	5125.4	2.8	**3.7060**	0.149	4.0	mg/L	151	Standard
Fe	57	1555.1	4.8	**3.7648**	0.143	3.8	mg/L	195	Standard
Sc-1	45	32349.5	2.7				mg/L	29647	Standard
Cl	35	176741.0	1.5				ug/L	154152	Standard
Kr	83	1.3	86.6				ug/L	3	Standard
Br	81	69459.0	3.9				ug/L	1607	Standard
P	31	30123.3	2.4				ug/L	22752	Standard
S	34	4967.5	1.4				ug/L	5049	Standard
Sr	88	190.0	9.5				ug/L	87	Standard
C	12	126.7	12.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	637.1	0.5				mg/L	10	Standard
Ho-1	165	351.7	3.0				mg/L	7	Standard
Er	166	340.0	15.3				mg/L	3	Standard
I	127	176369.6	3.2				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		143.166	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.287	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.830	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.564	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
V 51 Lower	V	51	
Cr 52 Upper, S, EEE	Cr	52	

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Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55

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Method 6020 - Summary Report

Sample ID: L1606065008
Sample Date/Time: Thursday, June 16, 2016 20:12:57
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72941.9	1.7				ug/L	51024	Standard
	Be	9	75.0	11.5	**0.0413**	0.007	17.1	ug/L	7	Standard
	Al	27	2553806.5	1.0	**12.5408**	0.102	0.8	ug/L	625	Standard
	Sc	45	32038.9	2.8				ug/L	29647	Standard
	Ti	47	722.7	5.7	**2.2554**	0.110	4.9	ug/L	57	Standard
	V	51	3819.2	3.9	**0.3720**	0.024	6.3	ug/L	1142	Standard
	Cr	52	10926.9	1.1	**0.5663**	0.038	6.8	ug/L	6628	Standard
	Cr	53	5912.8	6.8	**5.9618**	0.341	5.7	ug/L	430	Standard
	Mn	55	1386219.7	0.5	**234.7938**	4.744	2.0	ug/L	603	Standard
	Co	59	5557.7	1.4	**0.8285**	0.006	0.8	ug/L	237	Standard
	Ni	60	17011.5	0.7	**8.7950**	0.195	2.2	ug/L	141	Standard
	Cu	65	1618.4	1.4	**0.8000**	0.013	1.6	ug/L	109	Standard
	Zn	66	33299.6	0.0	**29.9907**	0.453	1.5	ug/L	159	Standard
>	**Ge**	72	471205.0	1.5				ug/L	474053	Standard
	As	75	966.9	5.2	**0.9032**	0.033	3.6	ug/L	-34	Standard
	Se	82	311.0	2.5	**2.6600**	0.029	1.1	ug/L	14	Standard
	Se-1	77	329.3	6.4	**3.5702**	0.277	7.8	ug/L	55	Standard
>	**Ga**	71	258.3	15.5				mg/L	50	Standard
	Rb	85	8330.6	3.2				ug/L	20	Standard
	Y	89	401951.6	2.1				ug/L	376602	Standard
>	**Rh**	103	36.7	43.8				ug/L	17	Standard
	Mo	98	105.4	14.0	**0.0382**	0.006	14.8	ug/L	8	Standard
	Ag	107	90.7	18.0	**0.0026**	0.003	103.7	ug/L	81	Standard
	Cd	111	115.2	13.8	**0.0550**	0.008	14.6	mg/L	3	Standard
	Cd	114	259.1	8.3	**0.0492**	0.005	9.4	ug/L	7	Standard
>	**In**	115	535100.4	1.1				ug/L	524722	Standard
	Sn	118	718.4	7.1	**0.0413**	0.008	20.4	ug/L	715	Standard
	Sb	123	448.1	4.2	**0.0858**	0.005	5.4	ug/L	201	Standard
	Ba	135	68982.0	0.6	**37.2626**	0.244	0.7	ug/L	108	Standard
	Ce	140	25868.7	1.1				ug/L	30	Standard
>	**Tb**	159	806521.0	1.2				ug/L	792236	Standard
	Ho	165	500.0	12.5				ug/L	7	Standard
	Tl	203	215.0	12.2	**0.0260**	0.004	15.1	ug/L	9	Standard
	Tl	205	150.0	6.7	**0.0156**	0.002	10.9	ug/L	0	Standard
	Pb	206	509.0	3.9	**0.0556**	0.003	5.6	ug/L	216	Standard
	Pb	207	432.0	1.7	**0.0505**	0.001	2.1	ug/L	180	Standard
	Pb	208	1819.0	0.9	**0.0504**	0.002	3.5	ug/L	717	Standard
	U	238	230.0	2.3	**0.0300**	0.001	2.2	ug/L	4	Standard
>	**Bi**	209	453449.6	1.5				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	38452.1	0.8	**48.2252**	1.630	3.4	mg/L	20	Standard
K	39	58.3	38.7	**0.1852**	0.162	87.6	mg/L	22	Standard
Ca	43	35.0	51.5	**-5.6048**	3.899	69.6	mg/L	47	Standard
Fe	54	249.0	20.9	**0.0731**	0.044	60.8	mg/L	151	Standard
Fe	57	205.0	6.5	**-0.0599**	0.029	47.9	mg/L	195	Standard
> **Sc-1**	45	32038.9	2.8				mg/L	29647	Standard
Cl	35	205402.9	2.6				ug/L	154152	Standard
Kr	83	2.3	24.7				ug/L	3	Standard
Br	81	66452.1	2.3				ug/L	1607	Standard
P	31	28505.1	1.9				ug/L	22752	Standard
S	34	4827.4	1.0				ug/L	5049	Standard
Sr	88	103.3	7.4				ug/L	87	Standard
C	12	290.0	39.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	843.5	10.6				mg/L	10	Standard
Ho-1	165	500.0	12.5				mg/L	7	Standard
Er	166	483.3	20.9				mg/L	3	Standard
I	127	65771.0	5.3				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		142.956	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.399	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	101.978
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.503
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606072901
Sample Date/Time: Thursday, June 16, 2016 20:16:08
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71451.4	0.2				ug/L	51024	Standard
	Be	9	156.7	13.3	**0.1120**	0.018	15.8	ug/L	7	Standard
	Al	27	1783026.0	1.0	**8.9350**	0.113	1.3	ug/L	625	Standard
	Sc	45	33488.6	0.2				ug/L	29647	Standard
	Ti	47	3847.8	0.7	**12.4804**	0.276	2.2	ug/L	57	Standard
	V	51	20969.4	1.8	**2.7398**	0.019	0.7	ug/L	1142	Standard
	Cr	52	17305.9	0.3	**1.3919**	0.032	2.3	ug/L	6628	Standard
	Cr	53	2988.6	7.9	**2.7405**	0.281	10.3	ug/L	430	Standard
	Mn	55	363989.8	1.4	**60.3519**	1.596	2.6	ug/L	603	Standard
	Co	59	13842.7	0.2	**2.0829**	0.032	1.5	ug/L	237	Standard
	Ni	60	5649.1	2.1	**2.8101**	0.018	0.6	ug/L	141	Standard
	Cu	65	2744.6	2.9	**1.3736**	0.022	1.6	ug/L	109	Standard
	Zn	66	21962.9	1.2	**19.3089**	0.151	0.8	ug/L	159	Standard
>	**Ge**	72	480623.4	1.5				ug/L	474053	Standard
	As	75	604.0	4.6	**0.5630**	0.022	3.9	ug/L	-34	Standard
	Se	82	62.7	5.3	**0.3902**	0.037	9.5	ug/L	14	Standard
	Se-1	77	114.3	16.4	**0.7262**	0.260	35.8	ug/L	55	Standard
>	**Ga**	71	1213.4	6.6				mg/L	50	Standard
	Rb	85	49025.9	0.6				ug/L	20	Standard
	Y	89	427519.3	0.4				ug/L	376602	Standard
>	**Rh**	103	33.3	37.7				ug/L	17	Standard
	Mo	98	183.9	8.3	**0.0677**	0.006	8.8	ug/L	8	Standard
	Ag	107	84.7	15.9	**0.0010**	0.002	216.4	ug/L	81	Standard
	Cd	111	55.6	11.8	**0.0237**	0.003	13.7	mg/L	3	Standard
	Cd	114	123.4	16.9	**0.0204**	0.004	20.0	ug/L	7	Standard
>	**In**	115	557933.4	0.7				ug/L	524722	Standard
	Sn	118	618.3	8.9	**0.0185**	0.009	49.1	ug/L	715	Standard
	Sb	123	180.1	11.3	**0.0240**	0.004	17.3	ug/L	201	Standard
	Ba	135	83499.8	1.0	**43.2656**	0.170	0.4	ug/L	108	Standard
	Ce	140	144607.0	2.1				ug/L	30	Standard
>	**Tb**	159	830815.8	1.2				ug/L	792236	Standard
	Ho	165	2081.8	4.4				ug/L	7	Standard
	Tl	203	322.3	0.4	**0.0385**	0.000	1.0	ug/L	9	Standard
	Tl	205	275.0	3.6	**0.0334**	0.001	4.5	ug/L	0	Standard
	Pb	206	5048.5	0.5	**1.0085**	0.002	0.2	ug/L	216	Standard
	Pb	207	4178.9	1.8	**0.9144**	0.020	2.2	ug/L	180	Standard
	Pb	208	17525.7	1.4	**0.9427**	0.011	1.1	ug/L	717	Standard
	U	238	621.3	3.2	**0.0898**	0.003	3.0	ug/L	4	Standard
>	**Bi**	209	472687.9	0.6				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.6311**	8.350	148.3	mg/L	0	Standard
Mg	24	3158.7	1.3	**3.7460**	0.051	1.3	mg/L	20	Standard
K	39	215.0	8.1	**1.2230**	0.115	9.4	mg/L	22	Standard
Ca	43	38.3	27.2	**-5.2593**	2.154	41.0	mg/L	47	Standard
Fe	54	3415.5	7.7	**2.3435**	0.190	8.1	mg/L	151	Standard
Fe	57	1036.7	4.4	**2.1944**	0.121	5.5	mg/L	195	Standard
Sc-1	45	33488.6	0.2				mg/L	29647	Standard
Cl	35	164707.7	0.4				ug/L	154152	Standard
Kr	83	3.0	33.3				ug/L	3	Standard
Br	81	11457.7	7.7				ug/L	1607	Standard
P	31	28214.6	1.7				ug/L	22752	Standard
S	34	4967.5	1.9				ug/L	5049	Standard
Sr	88	113.3	6.7				ug/L	87	Standard
C	12	80.0	12.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	0	Standard
Dy	164	3722.9	5.4				mg/L	10	Standard
Ho-1	165	2081.8	4.4				mg/L	7	Standard
Er	166	1966.8	4.6				mg/L	3	Standard
I	127	28066.0	3.2				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		140.035	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.386	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.329
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.682
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 20:19:21
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	70359.7	1.3				ug/L	51024	Standard
	Be	9	53312.1	5.5	**45.9476**	1.930	4.2	ug/L	7	Standard
	Al	27	8077611.0	1.8	**41.1433**	0.785	1.9	ug/L	625	Standard
	Sc	45	32289.4	1.8				ug/L	29647	Standard
	Ti	47	30321.3	1.6	**100.0769**	1.272	1.3	ug/L	57	Standard
	V	51	360120.0	0.4	**50.0825**	0.106	0.2	ug/L	1142	Standard
	Cr	52	369947.6	1.5	**48.9622**	0.470	1.0	ug/L	6628	Standard
	Cr	53	47002.8	0.4	**49.7282**	0.165	0.3	ug/L	430	Standard
	Mn	55	317711.3	0.7	**52.9755**	0.531	1.0	ug/L	603	Standard
	Co	59	339862.8	0.3	**52.4255**	0.355	0.7	ug/L	237	Standard
	Ni	60	93112.6	1.0	**47.8173**	0.235	0.5	ug/L	141	Standard
	Cu	65	91542.1	0.9	**48.2534**	0.241	0.5	ug/L	109	Standard
	Zn	66	53846.5	0.5	**47.9689**	0.154	0.3	ug/L	159	Standard
>	Ge	72	477686.4	0.6				ug/L	474053	Standard
	As	75	53954.1	0.4	**48.3818**	0.469	1.0	ug/L	-34	Standard
	Se	82	5528.9	1.3	**49.4502**	0.921	1.9	ug/L	14	Standard
	Se-1	77	3768.1	3.4	**47.9498**	1.532	3.2	ug/L	55	Standard
>	Ga	71	96.7	3.0				mg/L	50	Standard
	Rb	85	860.0	3.6				ug/L	20	Standard
	Y	89	407805.9	2.6				ug/L	376602	Standard
>	Rh	103	38.3	19.9				ug/L	17	Standard
	Mo	98	251849.5	0.7	**99.5336**	0.343	0.3	ug/L	8	Standard
	Ag	107	302942.0	0.9	**47.3977**	0.787	1.7	ug/L	81	Standard
	Cd	111	100743.2	0.5	**48.4530**	0.464	1.0	mg/L	3	Standard
	Cd	114	243706.8	2.6	**47.4138**	1.351	2.8	ug/L	7	Standard
>	In	115	562084.3	0.9				ug/L	524722	Standard
	Sn	118	283917.6	1.7	**49.1130**	0.500	1.0	ug/L	715	Standard
	Sb	123	223152.0	0.8	**47.6804**	0.566	1.2	ug/L	201	Standard
	Ba	135	90693.3	1.2	**46.6526**	0.606	1.3	ug/L	108	Standard
	Ce	140	95.0	24.1				ug/L	30	Standard
>	Tb	159	823567.8	1.3				ug/L	792236	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	373875.5	0.8	**47.8522**	0.141	0.3	ug/L	9	Standard
	Tl	205	338247.8	1.5	**50.9083**	0.885	1.7	ug/L	0	Standard
	Pb	206	233315.4	0.7	**49.3532**	0.331	0.7	ug/L	216	Standard
	Pb	207	211841.0	0.3	**49.2260**	0.469	1.0	ug/L	180	Standard
	Pb	208	876269.3	0.6	**50.1725**	0.549	1.1	ug/L	717	Standard
	U	238	329535.1	0.3	**51.8676**	0.341	0.7	ug/L	4	Standard
>	Bi	209	470816.3	0.6				ug/L	460343	Standard

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Na	23	3.3	86.6	**0.5093**	8.613	1691.0	mg/L	0	Standard
Mg	24	4180.6	4.5	**5.1574**	0.149	2.9	mg/L	20	Standard
K	39	543.3	5.4	**3.5784**	0.272	7.6	mg/L	22	Standard
Ca	43	63.3	12.1	**0.3907**	1.523	389.8	mg/L	47	Standard
Fe	54	5922.9	1.4	**4.3077**	0.105	2.4	mg/L	151	Standard
Fe	57	1828.4	2.7	**4.5503**	0.051	1.1	mg/L	195	Standard
> **Sc-1**	45	32289.4	1.8				mg/L	29647	Standard
Cl	35	173385.8	0.9				ug/L	154152	Standard
Kr	83	1.3	114.6				ug/L	3	Standard
Br	81	2136.8	4.6				ug/L	1607	Standard
P	31	26322.9	2.1				ug/L	22752	Standard
S	34	5514.3	2.6				ug/L	5049	Standard
Sr	88	65.0	27.7				ug/L	87	Standard
C	12	70.0	24.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	23.3	89.2				mg/L	10	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	0.0					mg/L	3	Standard
I	127	3703.8	16.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	91.895		
Al	27	82.287		
Sc	45			
Ti	47	100.077		
V	51	100.165		
Cr	52	97.924		
Cr	53			
Mn	55	105.951		
Co	59	104.851		
Ni	60	95.635		
Cu	65	96.507		
Zn	66	95.938		
> Ge	72		100.766	
As	75	96.764		
Se	82	98.900		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	99.534		
Ag	107	94.795		
Cd	111	96.906		
Cd	114			
In	115		107.120	
Sn	118	98.226		
Sb	123	95.361		
Ba	135	93.305		
Ce	140			
Tb	159			
Ho	165			
Tl	203	95.704		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.345		
U	238	103.735		
Bi	209		102.275	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 20:22:32
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67637.3	2.1				ug/L	51024	Standard
	Be	9	18.3	83.3	**-0.0045**	0.014	309.1	ug/L	7	Standard
	Al	27	1391.7	16.0	**-0.0024**	0.001	50.0	ug/L	625	Standard
	Sc	45	30764.5	1.2				ug/L	29647	Standard
	Ti	47	37.3	15.2	**-0.0462**	0.017	37.4	ug/L	57	Standard
	V	51	1089.5	9.5	**-0.0208**	0.013	60.2	ug/L	1142	Standard
	Cr	52	6209.3	0.8	**-0.1150**	0.004	3.7	ug/L	6628	Standard
	Cr	53	621.7	6.5	**0.2124**	0.037	17.6	ug/L	430	Standard
	Mn	55	764.0	5.2	**-0.0024**	0.006	259.9	ug/L	603	Standard
	Co	59	234.0	4.1	**-0.0062**	0.002	27.4	ug/L	237	Standard
	Ni	60	152.7	14.0	**-0.0015**	0.011	728.7	ug/L	141	Standard
	Cu	65	133.0	12.1	**0.0021**	0.009	425.3	ug/L	109	Standard
	Zn	66	146.0	6.6	**-0.1051**	0.009	8.1	ug/L	159	Standard
>	**Ge**	72	492018.2	1.0				ug/L	474053	Standard
	As	75	-9.0	401.0	**0.0170**	0.032	186.2	ug/L	-34	Standard
	Se	82	25.4	15.9	**0.0523**	0.034	65.9	ug/L	14	Standard
	Se-1	77	66.3	19.1	**0.0882**	0.166	188.3	ug/L	55	Standard
>	**Ga**	71	71.7	20.1				mg/L	50	Standard
	Rb	85	26.7	43.3				ug/L	20	Standard
	Y	89	407999.6	2.7				ug/L	376602	Standard
>	**Rh**	103	20.0	50.0				ug/L	17	Standard
	Mo	98	257.9	34.0	**0.0988**	0.034	34.5	ug/L	8	Standard
	Ag	107	107.0	12.6	**0.0049**	0.002	46.8	ug/L	81	Standard
	Cd	111	7.2	23.1	**0.0003**	0.001	264.5	mg/L	3	Standard
	Cd	114	32.4	23.6	**0.0026**	0.001	54.7	ug/L	7	Standard
>	**In**	115	547642.1	1.6				ug/L	524722	Standard
	Sn	118	781.7	18.0	**0.0498**	0.026	53.2	ug/L	715	Standard
	Sb	123	445.8	26.8	**0.0832**	0.027	32.7	ug/L	201	Standard
	Ba	135	126.0	4.8	**0.0089**	0.003	29.7	ug/L	108	Standard
	Ce	140	16.7	34.6				ug/L	30	Standard
>	**Tb**	159	805057.6	1.1				ug/L	792236	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	50.7	17.0	**0.0040**	0.001	27.9	ug/L	9	Standard
	Tl	205	33.3	22.9	**-0.0027**	0.001	41.6	ug/L	0	Standard
	Pb	206	245.3	6.9	**-0.0038**	0.003	90.3	ug/L	216	Standard
	Pb	207	206.3	2.8	**-0.0052**	0.002	29.4	ug/L	180	Standard
	Pb	208	876.0	4.6	**-0.0071**	0.002	32.4	ug/L	717	Standard
	U	238	36.7	27.6	**-0.0017**	0.002	94.5	ug/L	4	Standard
>	**Bi**	209	464955.7	0.5				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.1330**	9.213	179.5	mg/L	0	Standard
Mg	24	40.0	21.7	**0.0070**	0.011	155.9	mg/L	20	Standard
K	39	16.7	69.3	**-0.1055**	0.085	80.5	mg/L	22	Standard
Ca	43	30.0	66.7	**-6.3982**	4.581	71.6	mg/L	47	Standard
Fe	54	159.4	19.4	**0.0098**	0.023	233.9	mg/L	151	Standard
Fe	57	178.3	15.9	**-0.1151**	0.084	72.7	mg/L	195	Standard
Sc-1	45	30764.5	1.2				mg/L	29647	Standard
Cl	35	172678.1	2.2				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	1756.8	6.0				ug/L	1607	Standard
P	31	26713.5	1.7				ug/L	22752	Standard
S	34	5486.0	1.1				ug/L	5049	Standard
Sr	88	68.3	25.7				ug/L	87	Standard
C	12	46.7	12.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	13.0	43.3				mg/L	10	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	2433.5	7.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.790	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.368
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.002
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606072902
Sample Date/Time: Thursday, June 16, 2016 20:26:38
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67597.1	1.4				ug/L	51024	Standard
	Be	9	58.3	13.1	**0.0313**	0.007	23.7	ug/L	7	Standard
	Al	27	1447794.1	2.6	**7.6674**	0.177	2.3	ug/L	625	Standard
	Sc	45	31928.7	4.9				ug/L	29647	Standard
	Ti	47	305.7	12.8	**0.8104**	0.145	17.9	ug/L	57	Standard
	V	51	1674.4	15.6	**0.0568**	0.033	58.1	ug/L	1142	Standard
	Cr	52	9700.4	2.0	**0.3335**	0.001	0.4	ug/L	6628	Standard
	Cr	53	1893.5	6.0	**1.5168**	0.108	7.1	ug/L	430	Standard
	Mn	55	246384.5	0.3	**39.5930**	0.878	2.2	ug/L	603	Standard
	Co	59	7588.2	2.4	**1.0889**	0.047	4.3	ug/L	237	Standard
	Ni	60	3526.1	1.5	**1.6717**	0.049	2.9	ug/L	141	Standard
	Cu	65	954.7	5.5	**0.4196**	0.020	4.8	ug/L	109	Standard
	Zn	66	5586.0	1.4	**4.5915**	0.148	3.2	ug/L	159	Standard
>	**Ge**	72	495383.3	1.9				ug/L	474053	Standard
	As	75	235.4	13.4	**0.2282**	0.025	10.7	ug/L	-34	Standard
	Se	82	130.5	4.3	**0.9599**	0.027	2.8	ug/L	14	Standard
	Se-1	77	93.7	12.4	**0.4210**	0.125	29.6	ug/L	55	Standard
>	**Ga**	71	108.3	13.3				mg/L	50	Standard
	Rb	85	27304.6	1.0				ug/L	20	Standard
	Y	89	392736.9	2.5				ug/L	376602	Standard
>	**Rh**	103	11.7	49.5				ug/L	17	Standard
	Mo	98	87.5	12.2	**0.0306**	0.004	14.1	ug/L	8	Standard
	Ag	107	101.0	6.0	**0.0042**	0.001	22.2	ug/L	81	Standard
	Cd	111	59.5	14.3	**0.0266**	0.004	15.1	mg/L	3	Standard
	Cd	114	114.2	30.2	**0.0194**	0.007	35.4	ug/L	7	Standard
>	**In**	115	538147.1	0.9				ug/L	524722	Standard
	Sn	118	776.7	8.0	**0.0512**	0.012	24.3	ug/L	715	Standard
	Sb	123	200.6	27.1	**0.0300**	0.012	40.3	ug/L	201	Standard
	Ba	135	61289.0	0.7	**32.9142**	0.504	1.5	ug/L	108	Standard
	Ce	140	11052.4	2.4				ug/L	30	Standard
>	**Tb**	159	799876.8	2.9				ug/L	792236	Standard
	Ho	165	190.0	13.9				ug/L	7	Standard
	Tl	203	282.0	7.3	**0.0338**	0.003	8.0	ug/L	9	Standard
	Tl	205	280.0	6.2	**0.0347**	0.004	10.5	ug/L	0	Standard
	Pb	206	401.7	3.5	**0.0294**	0.002	8.2	ug/L	216	Standard
	Pb	207	341.0	0.8	**0.0262**	0.002	6.1	ug/L	180	Standard
	Pb	208	1409.0	1.3	**0.0235**	0.001	4.4	ug/L	717	Standard
	U	238	76.0	25.2	**0.0044**	0.003	61.0	ug/L	4	Standard
>	**Bi**	209	466934.5	2.6				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3003.6	5.4	**3.7365**	0.119	3.2	mg/L	20	Standard
K	39	200.0	11.5	**1.1940**	0.224	18.7	mg/L	22	Standard
Ca	43	26.7	78.1	**-7.2758**	4.881	67.1	mg/L	47	Standard
Fe	54	197.9	11.4	**0.0352**	0.024	69.0	mg/L	151	Standard
Fe	57	201.7	10.0	**-0.0646**	0.087	134.0	mg/L	195	Standard
> **Sc-1**	45	31928.7	4.9				mg/L	29647	Standard
Cl	35	168064.3	0.8				ug/L	154152	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	30467.4	7.1				ug/L	1607	Standard
P	31	27221.1	1.9				ug/L	22752	Standard
S	34	4829.1	7.9				ug/L	5049	Standard
Sr	88	71.7	28.2				ug/L	87	Standard
C	12	70.0	24.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	346.6	23.4				mg/L	10	Standard
Ho-1	165	190.0	13.9				mg/L	7	Standard
Er	166	140.0	21.4				mg/L	3	Standard
I	127	19342.3	3.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.481	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.500	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.559
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.432
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606073001
Sample Date/Time: Thursday, June 16, 2016 20:29:50
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77603.4	4.1				ug/L	51024	Standard
	Be	9	23.3	32.7	**-0.0030**	0.005	179.3	ug/L	7	Standard
	Al	27	6597541.3	1.1	**30.4895**	0.983	3.2	ug/L	625	Standard
	Sc	45	30666.0	3.0				ug/L	29647	Standard
	Ti	47	203.3	18.0	**0.5694**	0.126	22.1	ug/L	57	Standard
	V	51	19344.1	1.4	**2.7880**	0.060	2.2	ug/L	1142	Standard
	Cr	52	223704.1	0.9	**32.1116**	0.253	0.8	ug/L	6628	Standard
	Cr	53	32680.2	2.6	**37.7577**	0.692	1.8	ug/L	430	Standard
	Mn	55	14764.2	0.6	**2.5761**	0.037	1.5	ug/L	603	Standard
	Co	59	8421.3	1.4	**1.3825**	0.016	1.2	ug/L	237	Standard
	Ni	60	8389.0	3.1	**4.6470**	0.087	1.9	ug/L	141	Standard
	Cu	65	2908.6	1.9	**1.6151**	0.017	1.1	ug/L	109	Standard
	Zn	66	3204.0	4.7	**2.9081**	0.114	3.9	ug/L	159	Standard
>	**Ge**	72	436204.2	1.2				ug/L	474053	Standard
	As	75	2688.1	1.6	**2.6639**	0.074	2.8	ug/L	-34	Standard
	Se	82	851.2	1.0	**8.1974**	0.187	2.3	ug/L	14	Standard
	Se-1	77	1137.0	6.7	**15.3552**	1.225	8.0	ug/L	55	Standard
>	**Ga**	71	1600.1	10.1				mg/L	50	Standard
	Rb	85	221561.7	1.4				ug/L	20	Standard
	Y	89	371828.3	2.0				ug/L	376602	Standard
>	**Rh**	103	3242.0	4.8				ug/L	17	Standard
	Mo	98	4562.5	2.6	**2.0314**	0.078	3.9	ug/L	8	Standard
	Ag	107	113.7	11.8	**0.0078**	0.003	32.8	ug/L	81	Standard
	Cd	111	55.8	15.1	**0.0271**	0.005	18.3	mg/L	3	Standard
	Cd	114	143.3	18.4	**0.0277**	0.006	20.9	ug/L	7	Standard
>	**In**	115	497749.4	1.4				ug/L	524722	Standard
	Sn	118	1183.4	2.0	**0.1421**	0.001	1.0	ug/L	715	Standard
	Sb	123	552.4	7.7	**0.1185**	0.008	7.1	ug/L	201	Standard
	Ba	135	1629969.1	1.1	**947.9397**	3.697	0.4	ug/L	108	Standard
	Ce	140	661.7	1.6				ug/L	30	Standard
>	**Tb**	159	768724.3	1.9				ug/L	792236	Standard
	Ho	165	30.0	0.0				ug/L	7	Standard
	Tl	203	273.3	11.0	**0.0373**	0.004	11.6	ug/L	9	Standard
	Tl	205	236.7	11.6	**0.0327**	0.005	13.9	ug/L	0	Standard
	Pb	206	593.0	4.8	**0.0867**	0.006	6.8	ug/L	216	Standard
	Pb	207	503.3	3.4	**0.0795**	0.004	4.6	ug/L	180	Standard
	Pb	208	2099.4	1.6	**0.0791**	0.001	1.5	ug/L	717	Standard
	U	238	272.3	8.1	**0.0412**	0.004	8.8	ug/L	4	Standard
>	**Bi**	209	413369.8	0.7				ug/L	460343	Standard

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Na	23	10.0	86.6	**-20.6958**	26.075	126.0	mg/L	0	Standard
Mg	24	97695.6	0.1	**128.0820**	3.805	3.0	mg/L	20	Standard
K	39	1235.1	6.0	**8.8773**	0.558	6.3	mg/L	22	Standard
Ca	43	1178.4	7.9	**253.1572**	23.304	9.2	mg/L	47	Standard
Fe	54	176.5	19.0	**0.0234**	0.022	95.0	mg/L	151	Standard
Fe	57	1151.7	8.5	**2.8063**	0.366	13.0	mg/L	195	Standard
> **Sc-1**	45	30666.0	3.0				mg/L	29647	Standard
Cl	35	183619.3	0.2				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	216976.2	1.6				ug/L	1607	Standard
P	31	27466.6	2.5				ug/L	22752	Standard
S	34	5401.0	3.5				ug/L	5049	Standard
Sr	88	13359.2	2.8				ug/L	87	Standard
C	12	236.7	14.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	16.2	35.8				mg/L	10	Standard
Ho-1	165	30.0	0.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	172255.5	10.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		152.092	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.016	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.860
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		89.796
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606073001
Report Date/Time: Thursday, June 16, 2016 20:32:06
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Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606073002
Sample Date/Time: Thursday, June 16, 2016 20:40:20
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72672.3	2.9				ug/L	51024	Standard
	Be	9	10.0	50.0	**-0.0128**	0.004	30.9	ug/L	7	Standard
	Al	27	6776653.7	2.4	**33.4181**	0.221	0.7	ug/L	625	Standard
	Sc	45	30878.1	3.6				ug/L	29647	Standard
	Ti	47	191.7	10.9	**0.5384**	0.079	14.6	ug/L	57	Standard
	V	51	18320.5	2.2	**2.6731**	0.088	3.3	ug/L	1142	Standard
	Cr	52	218082.0	0.6	**31.7558**	0.128	0.4	ug/L	6628	Standard
	Cr	53	32453.1	2.0	**38.0586**	0.990	2.6	ug/L	430	Standard
	Mn	55	14793.6	1.2	**2.6216**	0.060	2.3	ug/L	603	Standard
	Co	59	8007.4	2.3	**1.3327**	0.045	3.4	ug/L	237	Standard
	Ni	60	8064.8	0.9	**4.5323**	0.032	0.7	ug/L	141	Standard
	Cu	65	2976.0	2.0	**1.6794**	0.017	1.0	ug/L	109	Standard
	Zn	66	2008.5	3.5	**1.7659**	0.064	3.6	ug/L	159	Standard
>	**Ge**	72	429862.6	1.0				ug/L	474053	Standard
	As	75	2572.0	0.4	**2.5869**	0.037	1.4	ug/L	-34	Standard
	Se	82	825.8	3.3	**8.0685**	0.355	4.4	ug/L	14	Standard
	Se-1	77	1141.7	4.7	**15.6522**	0.781	5.0	ug/L	55	Standard
>	**Ga**	71	1611.8	8.9				mg/L	50	Standard
	Rb	85	218102.3	2.0				ug/L	20	Standard
	Y	89	377604.2	0.7				ug/L	376602	Standard
>	**Rh**	103	3075.3	2.3				ug/L	17	Standard
	Mo	98	4376.1	1.3	**1.9206**	0.018	0.9	ug/L	8	Standard
	Ag	107	101.3	11.9	**0.0053**	0.002	42.4	ug/L	81	Standard
	Cd	111	44.3	10.0	**0.0205**	0.002	10.6	mg/L	3	Standard
	Cd	114	101.2	2.7	**0.0181**	0.001	4.2	ug/L	7	Standard
>	**In**	115	504775.6	2.2				ug/L	524722	Standard
	Sn	118	1261.7	9.4	**0.1538**	0.018	12.0	ug/L	715	Standard
	Sb	123	527.5	2.2	**0.1107**	0.000	0.3	ug/L	201	Standard
	Ba	135	1636843.5	1.3	**938.7853**	9.854	1.0	ug/L	108	Standard
	Ce	140	583.3	14.6				ug/L	30	Standard
>	**Tb**	159	772745.6	1.2				ug/L	792236	Standard
	Ho	165	13.3	57.3				ug/L	7	Standard
	Tl	203	237.3	15.4	**0.0328**	0.005	15.8	ug/L	9	Standard
	Tl	205	210.0	10.4	**0.0290**	0.003	11.9	ug/L	0	Standard
	Pb	206	512.7	7.1	**0.0701**	0.008	10.9	ug/L	216	Standard
	Pb	207	440.7	8.2	**0.0656**	0.009	13.2	ug/L	180	Standard
	Pb	208	1827.0	4.1	**0.0642**	0.006	9.9	ug/L	717	Standard
	U	238	243.3	3.8	**0.0371**	0.002	4.2	ug/L	4	Standard
>	**Bi**	209	404002.1	1.1				ug/L	460343	Standard

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Na	23	10.0	86.6	**-20.5285**	26.005	126.7	mg/L	0	Standard
Mg	24	96717.8	1.8	**126.0145**	6.791	5.4	mg/L	20	Standard
K	39	1353.4	2.3	**9.6820**	0.217	2.2	mg/L	22	Standard
Ca	43	1160.0	11.2	**246.7324**	22.672	9.2	mg/L	47	Standard
Fe	54	173.0	8.5	**0.0201**	0.009	45.9	mg/L	151	Standard
Fe	57	1218.4	5.2	**2.9735**	0.072	2.4	mg/L	195	Standard
> **Sc-1**	45	30878.1	3.6				mg/L	29647	Standard
Cl	35	185979.3	1.4				ug/L	154152	Standard
Kr	83	2.7	43.3				ug/L	3	Standard
Br	81	209002.2	2.5				ug/L	1607	Standard
P	31	27092.5	3.1				ug/L	22752	Standard
S	34	5509.3	2.9				ug/L	5049	Standard
Sr	88	11921.4	3.3				ug/L	87	Standard
C	12	216.7	14.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	29.4	59.5				mg/L	10	Standard
Ho-1	165	13.3	57.3				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	173148.1	13.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		142.427	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.678	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606073002
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.199
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.761
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606073002
Report Date/Time: Thursday, June 16, 2016 20:42:37
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Method 6020 - Summary Report

Sample ID: L1606073003
Sample Date/Time: Thursday, June 16, 2016 20:43:31
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66295.0	5.6				ug/L	51024	Standard
	Be	9	56.7	36.7	**0.0315**	0.022	69.3	ug/L	7	Standard
	Al	27	140324062.6	0.9	**759.9749**	34.895	4.6	ug/L	625	Standard
	Sc	45	30973.3	2.2				ug/L	29647	Standard
	Ti	47	544.3	4.3	**1.8537**	0.066	3.6	ug/L	57	Standard
	V	51	5988.0	12.5	**0.7695**	0.117	15.2	ug/L	1142	Standard
	Cr	52	16952.1	2.7	**1.6378**	0.039	2.4	ug/L	6628	Standard
	Cr	53	39053.8	8.0	**46.3217**	3.179	6.9	ug/L	430	Standard
	Mn	55	1211107.1	0.8	**227.1129**	4.279	1.9	ug/L	603	Standard
	Co	59	15513.3	2.2	**2.6477**	0.097	3.6	ug/L	237	Standard
	Ni	60	11454.7	1.9	**6.5356**	0.059	0.9	ug/L	141	Standard
	Cu	65	2107.5	3.2	**1.1824**	0.030	2.5	ug/L	109	Standard
	Zn	66	3534.1	3.7	**3.3182**	0.082	2.5	ug/L	159	Standard
>	**Ge**	72	425577.5	1.4				ug/L	474053	Standard
	As	75	6875.0	1.9	**6.9431**	0.226	3.3	ug/L	-34	Standard
	Se	82	1838.5	2.4	**18.3557**	0.698	3.8	ug/L	14	Standard
	Se-1	77	5651.1	6.0	**81.1945**	3.892	4.8	ug/L	55	Standard
>	**Ga**	71	298.3	8.3				mg/L	50	Standard
	Rb	85	18603.1	3.0				ug/L	20	Standard
	Y	89	364931.5	1.6				ug/L	376602	Standard
>	**Rh**	103	1093.4	10.5				ug/L	17	Standard
	Mo	98	426.7	6.4	**0.1986**	0.013	6.7	ug/L	8	Standard
	Ag	107	75.7	8.8	**0.0020**	0.001	63.5	ug/L	81	Standard
	Cd	111	101.2	16.3	**0.0557**	0.010	17.5	mg/L	3	Standard
	Cd	114	239.7	20.6	**0.0526**	0.011	21.7	ug/L	7	Standard
>	**In**	115	464316.0	0.4				ug/L	524722	Standard
	Sn	118	820.0	6.0	**0.0826**	0.010	12.0	ug/L	715	Standard
	Sb	123	404.3	9.7	**0.0898**	0.011	11.7	ug/L	201	Standard
	Ba	135	7189623.7	0.9	**4482.5615**	58.524	1.3	ug/L	108	Standard
	Ce	140	11556.1	1.6				ug/L	30	Standard
>	**Tb**	159	738740.3	1.0				ug/L	792236	Standard
	Ho	165	163.3	8.8				ug/L	7	Standard
	Tl	203	154.3	14.2	**0.0220**	0.003	15.0	ug/L	9	Standard
	Tl	205	155.0	9.7	**0.0212**	0.003	13.2	ug/L	0	Standard
	Pb	206	489.3	5.2	**0.0725**	0.006	7.9	ug/L	216	Standard
	Pb	207	420.0	7.6	**0.0677**	0.009	13.2	ug/L	180	Standard
	Pb	208	1652.4	1.4	**0.0599**	0.003	5.3	ug/L	717	Standard
	U	238	9935.9	1.3	**1.9381**	0.028	1.4	ug/L	4	Standard
>	**Bi**	209	378492.4	1.3				ug/L	460343	Standard

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Na	23	20.0	43.3	**-51.8526**	25.479	49.1	mg/L	0	Standard
Mg	24	304205.5	1.3	**394.7766**	3.601	0.9	mg/L	20	Standard
K	39	283.3	22.2	**1.8451**	0.491	26.6	mg/L	22	Standard
Ca	43	1023.4	14.5	**216.1479**	37.325	17.3	mg/L	47	Standard
Fe	54	3507.0	4.8	**2.6133**	0.070	2.7	mg/L	151	Standard
Fe	57	2098.5	3.6	**5.5706**	0.094	1.7	mg/L	195	Standard
> **Sc-1**	45	30973.3	2.2				mg/L	29647	Standard
Cl	35	171200.0	3.8				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	477807.6	1.2				ug/L	1607	Standard
P	31	31030.1	3.4				ug/L	22752	Standard
S	34	5537.7	3.1				ug/L	5049	Standard
Sr	88	3852.2	4.1				ug/L	87	Standard
C	12	250.0	32.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	197.9	47.2				mg/L	10	Standard
Ho-1	165	163.3	8.8				mg/L	7	Standard
Er	166	183.3	6.3				mg/L	3	Standard
I	127	159354.2	8.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.929	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		89.774	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	88.488
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	82.220
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606073102
Sample Date/Time: Thursday, June 16, 2016 20:46:43
Number of Replicates: 3
Autosampler Position: 346
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	55473.1	2.7				ug/L	51024	Standard
	Be	9	55.0	36.4	**0.0390**	0.022	55.7	ug/L	7	Standard
	Al	27	942566.4	1.5	**6.0840**	0.204	3.4	ug/L	625	Standard
	Sc	45	34049.9	0.9				ug/L	29647	Standard
	Ti	47	5731.8	2.0	**18.2913**	0.196	1.1	ug/L	57	Standard
	V	51	32065.1	2.5	**4.1901**	0.107	2.6	ug/L	1142	Standard
	Cr	52	17242.5	0.8	**1.3371**	0.009	0.7	ug/L	6628	Standard
	Cr	53	5039.2	15.0	**4.8012**	0.726	15.1	ug/L	430	Standard
	Mn	55	115479.5	1.7	**18.6730**	0.120	0.6	ug/L	603	Standard
	Co	59	2037.1	3.8	**0.2650**	0.009	3.4	ug/L	237	Standard
	Ni	60	2031.8	4.8	**0.9400**	0.039	4.2	ug/L	141	Standard
	Cu	65	266456.7	0.9	**136.9469**	2.046	1.5	ug/L	109	Standard
	Zn	66	37165.9	1.0	**32.1770**	0.480	1.5	ug/L	159	Standard
>	Ge	72	490402.9	1.1				ug/L	474053	Standard
	As	75	12459.1	0.9	**10.9020**	0.085	0.8	ug/L	-34	Standard
	Se	82	127.6	3.2	**0.9465**	0.028	3.0	ug/L	14	Standard
	Se-1	77	270.0	15.8	**2.6503**	0.495	18.7	ug/L	55	Standard
>	Ga	71	1921.8	2.3				mg/L	50	Standard
	Rb	85	35595.1	1.8				ug/L	20	Standard
	Y	89	404147.8	1.0				ug/L	376602	Standard
>	Rh	103	85.0	15.6				ug/L	17	Standard
	Mo	98	4328.7	1.5	**1.8133**	0.020	1.1	ug/L	8	Standard
	Ag	107	869.7	0.1	**0.1324**	0.001	0.5	ug/L	81	Standard
	Cd	111	482.3	7.8	**0.2434**	0.019	8.0	mg/L	3	Standard
	Cd	114	1335.6	3.6	**0.2724**	0.009	3.3	ug/L	7	Standard
>	In	115	528691.1	0.6				ug/L	524722	Standard
	Sn	118	4765.7	3.3	**0.7887**	0.031	4.0	ug/L	715	Standard
	Sb	123	3183.9	1.5	**0.7087**	0.011	1.6	ug/L	201	Standard
	Ba	135	17225.1	3.1	**9.3751**	0.336	3.6	ug/L	108	Standard
	Ce	140	48213.3	1.0				ug/L	30	Standard
>	Tb	159	793657.4	1.6				ug/L	792236	Standard
	Ho	165	775.0	7.8				ug/L	7	Standard
	Tl	203	260.0	6.4	**0.0318**	0.003	8.6	ug/L	9	Standard
	Tl	205	233.3	20.4	**0.0285**	0.008	27.8	ug/L	0	Standard
	Pb	206	39704.6	1.2	**8.6323**	0.072	0.8	ug/L	216	Standard
	Pb	207	34342.9	1.0	**8.2030**	0.203	2.5	ug/L	180	Standard
	Pb	208	145934.1	1.3	**8.5861**	0.079	0.9	ug/L	717	Standard
	U	238	420.0	4.3	**0.0608**	0.004	7.1	ug/L	4	Standard
>	Bi	209	455671.4	2.1				ug/L	460343	Standard

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Na	23	3.3	173.2	**0.8644**	16.607	1921.3	mg/L	0	Standard
Mg	24	12667.0	1.0	**14.9085**	0.215	1.4	mg/L	20	Standard
K	39	335.0	19.1	**1.9967**	0.430	21.5	mg/L	22	Standard
Ca	43	88.3	18.2	**4.8010**	3.416	71.1	mg/L	47	Standard
Fe	54	995.1	5.6	**0.5893**	0.033	5.5	mg/L	151	Standard
Fe	57	445.0	16.6	**0.5516**	0.188	34.0	mg/L	195	Standard
Sc-1	45	34049.9	0.9				mg/L	29647	Standard
Cl	35	173758.3	2.1				ug/L	154152	Standard
Kr	83	3.3	91.7				ug/L	3	Standard
Br	81	6371.4	18.0				ug/L	1607	Standard
P	31	28039.3	2.8				ug/L	22752	Standard
S	34	5270.9	3.8				ug/L	5049	Standard
Sr	88	90.0	5.6				ug/L	87	Standard
C	12	76.7	58.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	56.8				mg/L	0	Standard
Dy	164	1215.7	9.2				mg/L	10	Standard
Ho-1	165	775.0	7.8				mg/L	7	Standard
Er	166	786.7	6.4				mg/L	3	Standard
I	127	21140.1	20.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		108.719	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.449	
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	100.756
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	98.985
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: L1606073102
Sample Date/Time: Thursday, June 16, 2016 20:49:54
Number of Replicates: 3
Autosampler Position: 347
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59153.6	1.2				ug/L	51024	Standard
	Be	9	8.3	34.6	**-0.0125**	0.003	23.9	ug/L	7	Standard
	Al	27	100448.6	1.0	**0.5989**	0.007	1.2	ug/L	625	Standard
	Sc	45	33126.2	1.2				ug/L	29647	Standard
	Ti	47	644.7	2.1	**2.0007**	0.071	3.6	ug/L	57	Standard
	V	51	4289.2	6.3	**0.4402**	0.044	10.0	ug/L	1142	Standard
	Cr	52	8064.5	2.5	**0.1771**	0.010	5.7	ug/L	6628	Standard
	Cr	53	1751.8	6.1	**1.4679**	0.099	6.8	ug/L	430	Standard
	Mn	55	12501.5	0.4	**1.9975**	0.048	2.4	ug/L	603	Standard
	Co	59	371.3	7.0	**0.0170**	0.003	18.0	ug/L	237	Standard
	Ni	60	380.0	10.9	**0.1207**	0.019	15.5	ug/L	141	Standard
	Cu	65	26879.2	2.3	**14.3517**	0.162	1.1	ug/L	109	Standard
	Zn	66	5034.5	0.7	**4.3493**	0.122	2.8	ug/L	159	Standard
>	Ge	72	470100.0	2.4				ug/L	474053	Standard
	As	75	1188.6	1.5	**1.1081**	0.042	3.8	ug/L	-34	Standard
	Se	82	31.1	20.0	**0.1142**	0.055	48.5	ug/L	14	Standard
	Se-1	77	110.7	11.2	**0.7077**	0.148	20.9	ug/L	55	Standard
>	Ga	71	223.3	5.6				mg/L	50	Standard
	Rb	85	3760.5	5.0				ug/L	20	Standard
	Y	89	401153.8	1.8				ug/L	376602	Standard
>	Rh	103	35.0	28.6				ug/L	17	Standard
	Mo	98	446.2	5.1	**0.1763**	0.012	6.9	ug/L	8	Standard
	Ag	107	132.3	3.7	**0.0090**	0.001	8.3	ug/L	81	Standard
	Cd	111	53.4	17.3	**0.0233**	0.005	21.5	mg/L	3	Standard
	Cd	114	111.5	28.2	**0.0185**	0.006	33.2	ug/L	7	Standard
>	In	115	545539.1	1.6				ug/L	524722	Standard
	Sn	118	1001.7	15.4	**0.0892**	0.025	28.5	ug/L	715	Standard
	Sb	123	390.2	5.8	**0.0711**	0.004	6.2	ug/L	201	Standard
	Ba	135	2004.1	4.2	**1.0056**	0.035	3.5	ug/L	108	Standard
	Ce	140	4912.5	3.1				ug/L	30	Standard
>	Tb	159	820295.3	0.5				ug/L	792236	Standard
	Ho	165	85.0	35.8				ug/L	7	Standard
	Tl	203	81.3	9.9	**0.0080**	0.001	12.7	ug/L	9	Standard
	Tl	205	81.7	7.1	**0.0047**	0.001	18.7	ug/L	0	Standard
	Pb	206	4339.0	0.8	**0.8817**	0.013	1.4	ug/L	216	Standard
	Pb	207	3847.8	0.9	**0.8599**	0.011	1.3	ug/L	180	Standard
	Pb	208	15987.3	1.8	**0.8776**	0.022	2.5	ug/L	717	Standard
	U	238	37.0	13.5	**-0.0016**	0.001	51.1	ug/L	4	Standard
>	Bi	209	461213.2	0.5				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1265.1	9.3	**1.4911**	0.161	10.8	mg/L	20	Standard
K	39	51.7	11.2	**0.1245**	0.037	30.0	mg/L	22	Standard
Ca	43	36.7	20.8	**-5.5323**	1.502	27.2	mg/L	47	Standard
Fe	54	272.3	11.9	**0.0834**	0.026	30.8	mg/L	151	Standard
Fe	57	213.3	13.3	**-0.0553**	0.084	152.6	mg/L	195	Standard
> **Sc-1**	45	33126.2	1.2				mg/L	29647	Standard
Cl	35	168674.4	1.0				ug/L	154152	Standard
Kr	83	2.7	57.3				ug/L	3	Standard
Br	81	3067.0	8.5				ug/L	1607	Standard
P	31	24656.7	3.1				ug/L	22752	Standard
S	34	5190.9	0.5				ug/L	5049	Standard
Sr	88	70.0	31.1				ug/L	87	Standard
C	12	56.7	40.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	128.2	29.2				mg/L	10	Standard
Ho-1	165	85.0	35.8				mg/L	7	Standard
Er	166	106.7	19.5				mg/L	3	Standard
I	127	4907.5	9.2				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.933	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.166	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.967
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.189
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606054009
Sample Date/Time: Thursday, June 16, 2016 20:53:06
Number of Replicates: 3
Autosampler Position: 348
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57167.7	1.8				ug/L	51024	Standard
	Be	9	16.7	34.6	**-0.0033**	0.006	191.0	ug/L	7	Standard
	Al	27	40703.4	11.7	**0.2452**	0.025	10.3	ug/L	625	Standard
	Sc	45	31935.3	3.8				ug/L	29647	Standard
	Ti	47	33.3	7.5	**-0.0541**	0.007	12.4	ug/L	57	Standard
	V	51	1267.4	7.9	**0.0110**	0.011	98.7	ug/L	1142	Standard
	Cr	52	6813.9	0.7	**0.0049**	0.027	550.7	ug/L	6628	Standard
	Cr	53	1183.4	2.1	**0.8507**	0.047	5.5	ug/L	430	Standard
	Mn	55	63841.2	0.9	**10.7040**	0.156	1.5	ug/L	603	Standard
	Co	59	241.7	8.6	**-0.0034**	0.003	78.7	ug/L	237	Standard
	Ni	60	170.7	5.3	**0.0113**	0.004	35.5	ug/L	141	Standard
	Cu	65	185.7	9.3	**0.0334**	0.011	32.3	ug/L	109	Standard
	Zn	66	1221.7	3.3	**0.8784**	0.051	5.8	ug/L	159	Standard
>	**Ge**	72	470712.9	2.2				ug/L	474053	Standard
	As	75	30.8	16.5	**0.0530**	0.004	7.8	ug/L	-34	Standard
	Se	82	25.1	14.7	**0.0591**	0.030	51.4	ug/L	14	Standard
	Se-1	77	77.3	7.8	**0.2686**	0.059	22.0	ug/L	55	Standard
>	**Ga**	71	51.7	31.1				mg/L	50	Standard
	Rb	85	646.7	20.2				ug/L	20	Standard
	Y	89	396670.0	2.0				ug/L	376602	Standard
>	**Rh**	103	36.7	47.9				ug/L	17	Standard
	Mo	98	41.6	28.6	**0.0117**	0.005	41.7	ug/L	8	Standard
	Ag	107	95.3	39.9	**0.0032**	0.006	177.8	ug/L	81	Standard
	Cd	111	10.6	141.7	**0.0020**	0.007	372.2	mg/L	3	Standard
	Cd	114	31.1	47.0	**0.0025**	0.003	110.7	ug/L	7	Standard
>	**In**	115	535879.5	3.0				ug/L	524722	Standard
	Sn	118	518.3	19.7	**0.0045**	0.016	347.9	ug/L	715	Standard
	Sb	123	86.0	15.9	**0.0044**	0.002	55.3	ug/L	201	Standard
	Ba	135	3179.4	70.5	**1.6371**	1.141	69.7	ug/L	108	Standard
	Ce	140	118.3	56.3				ug/L	30	Standard
>	**Tb**	159	791577.1	1.4				ug/L	792236	Standard
	Ho	165	16.7	62.4				ug/L	7	Standard
	Tl	203	82.0	86.0	**0.0083**	0.009	108.7	ug/L	9	Standard
	Tl	205	38.3	39.8	**-0.0018**	0.002	122.7	ug/L	0	Standard
	Pb	206	276.0	8.2	**0.0051**	0.003	58.8	ug/L	216	Standard
	Pb	207	225.0	9.4	**0.0012**	0.004	310.7	ug/L	180	Standard
	Pb	208	961.3	4.7	**0.0001**	0.001	957.0	ug/L	717	Standard
	U	238	50.7	3.0	**0.0008**	0.000	45.3	ug/L	4	Standard
>	**Bi**	209	447174.4	3.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	178.3	23.3	**0.1782**	0.044	24.8	mg/L	20	Standard
K	39	75.0	0.0	**0.3034**	0.020	6.6	mg/L	22	Standard
Ca	43	26.7	39.0	**-7.4067**	2.216	29.9	mg/L	47	Standard
Fe	54	296.0	2.0	**0.1085**	0.005	4.5	mg/L	151	Standard
Fe	57	203.3	7.1	**-0.0621**	0.045	71.7	mg/L	195	Standard
> **Sc-1**	45	31935.3	3.8				mg/L	29647	Standard
Cl	35	168415.6	1.0				ug/L	154152	Standard
Kr	83	1.0	0.0				ug/L	3	Standard
Br	81	2343.5	14.9				ug/L	1607	Standard
P	31	24079.1	0.8				ug/L	22752	Standard
S	34	5175.9	6.6				ug/L	5049	Standard
Sr	88	91.7	20.7				ug/L	87	Standard
C	12	60.0	28.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	7.9	115.0				mg/L	10	Standard
Ho-1	165	16.7	62.4				mg/L	7	Standard
Er	166	43.3	70.5				mg/L	3	Standard
I	127	3628.8	3.8				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.040	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.295	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.126
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.139
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606054010
Sample Date/Time: Thursday, June 16, 2016 20:57:27
Number of Replicates: 3
Autosampler Position: 349
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56434.9	2.3				ug/L	51024	Standard
	Be	9	8.3	34.6	**-0.0121**	0.003	26.4	ug/L	7	Standard
	Al	27	252906.9	1.5	**1.5971**	0.043	2.7	ug/L	625	Standard
	Sc	45	31920.3	2.1				ug/L	29647	Standard
	Ti	47	312.3	10.2	**0.8821**	0.111	12.6	ug/L	57	Standard
	V	51	2253.7	7.5	**0.1509**	0.028	18.3	ug/L	1142	Standard
	Cr	52	7388.1	1.0	**0.0829**	0.016	19.3	ug/L	6628	Standard
	Cr	53	1196.7	7.3	**0.8649**	0.109	12.6	ug/L	430	Standard
	Mn	55	73740.7	1.7	**12.3802**	0.357	2.9	ug/L	603	Standard
	Co	59	450.0	4.0	**0.0292**	0.003	10.6	ug/L	237	Standard
	Ni	60	555.0	6.8	**0.2120**	0.023	10.8	ug/L	141	Standard
	Cu	65	367.0	6.1	**0.1304**	0.011	8.6	ug/L	109	Standard
	Zn	66	2607.2	1.1	**2.1362**	0.049	2.3	ug/L	159	Standard
>	**Ge**	72	470838.7	1.1				ug/L	474053	Standard
	As	75	1057.7	4.9	**0.9866**	0.037	3.7	ug/L	-34	Standard
	Se	82	371.4	5.2	**3.2111**	0.141	4.4	ug/L	14	Standard
	Se-1	77	82.0	5.3	**0.3308**	0.069	21.0	ug/L	55	Standard
>	**Ga**	71	95.0	21.1				mg/L	50	Standard
	Rb	85	2080.1	6.3				ug/L	20	Standard
	Y	89	394550.0	1.4				ug/L	376602	Standard
>	**Rh**	103	40.0	12.5				ug/L	17	Standard
	Mo	98	432.1	5.5	**0.1778**	0.013	7.4	ug/L	8	Standard
	Ag	107	89.3	6.8	**0.0027**	0.001	34.2	ug/L	81	Standard
	Cd	111	10.8	29.5	**0.0024**	0.002	71.8	mg/L	3	Standard
	Cd	114	7.3	63.1	**-0.0023**	0.001	40.5	ug/L	7	Standard
>	**In**	115	524122.9	2.0				ug/L	524722	Standard
	Sn	118	475.0	16.9	**-0.0012**	0.015	1226.6	ug/L	715	Standard
	Sb	123	126.7	16.7	**0.0143**	0.005	37.6	ug/L	201	Standard
	Ba	135	6164.6	3.3	**3.3481**	0.133	4.0	ug/L	108	Standard
	Ce	140	2293.5	2.9				ug/L	30	Standard
>	**Tb**	159	771498.5	0.9				ug/L	792236	Standard
	Ho	165	40.0	33.1				ug/L	7	Standard
	Tl	203	178.3	6.6	**0.0218**	0.002	7.9	ug/L	9	Standard
	Tl	205	168.3	19.8	**0.0193**	0.006	28.8	ug/L	0	Standard
	Pb	206	424.0	1.9	**0.0396**	0.002	4.6	ug/L	216	Standard
	Pb	207	350.0	3.8	**0.0332**	0.004	10.7	ug/L	180	Standard
	Pb	208	1524.0	3.5	**0.0355**	0.004	11.4	ug/L	717	Standard
	U	238	1126.4	2.3	**0.1820**	0.006	3.2	ug/L	4	Standard
>	**Bi**	209	440459.4	0.9				ug/L	460343	Standard

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Na	23	3.3	86.6	**0.3515**	8.752	2490.2	mg/L	0	Standard
Mg	24	5054.2	1.6	**6.3217**	0.207	3.3	mg/L	20	Standard
K	39	60.0	38.2	**0.1962**	0.161	82.1	mg/L	22	Standard
Ca	43	58.3	27.6	**-0.5341**	3.483	652.1	mg/L	47	Standard
Fe	54	351.0	19.9	**0.1502**	0.054	35.8	mg/L	151	Standard
Fe	57	258.3	13.7	**0.0974**	0.116	119.4	mg/L	195	Standard
> **Sc-1**	45	31920.3	2.1				mg/L	29647	Standard
Cl	35	170598.8	2.4				ug/L	154152	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	89319.4	3.8				ug/L	1607	Standard
P	31	24377.9	0.5				ug/L	22752	Standard
S	34	5239.2	6.6				ug/L	5049	Standard
Sr	88	133.3	15.6				ug/L	87	Standard
C	12	30.0	33.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	52.1	28.7				mg/L	10	Standard
Ho-1	165	40.0	33.1				mg/L	7	Standard
Er	166	26.7	57.3				mg/L	3	Standard
I	127	17059.6	8.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.604	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.322	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.886
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.681
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606054011
Sample Date/Time: Thursday, June 16, 2016 21:00:39
Number of Replicates: 3
Autosampler Position: 350
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58251.8	0.7				ug/L	51024	Standard
	Be	9	10.0	100.0	**-0.0107**	0.010	96.5	ug/L	7	Standard
	Al	27	254779.3	0.3	**1.5580**	0.016	1.0	ug/L	625	Standard
	Sc	45	32790.5	2.0				ug/L	29647	Standard
	Ti	47	354.0	6.1	**1.0202**	0.064	6.3	ug/L	57	Standard
	V	51	2227.5	5.1	**0.1471**	0.023	15.7	ug/L	1142	Standard
	Cr	52	7531.2	1.8	**0.1020**	0.041	40.4	ug/L	6628	Standard
	Cr	53	1105.0	6.8	**0.7629**	0.054	7.1	ug/L	430	Standard
	Mn	55	71367.7	1.1	**11.9661**	0.226	1.9	ug/L	603	Standard
	Co	59	417.3	0.3	**0.0241**	0.001	5.5	ug/L	237	Standard
	Ni	60	538.0	5.0	**0.2029**	0.019	9.2	ug/L	141	Standard
	Cu	65	370.3	6.0	**0.1319**	0.008	6.1	ug/L	109	Standard
	Zn	66	2431.9	0.9	**1.9749**	0.035	1.8	ug/L	159	Standard
>	**Ge**	72	471306.4	2.3				ug/L	474053	Standard
	As	75	1059.1	3.3	**0.9871**	0.024	2.5	ug/L	-34	Standard
	Se	82	374.1	5.5	**3.2332**	0.174	5.4	ug/L	14	Standard
	Se-1	77	74.7	4.7	**0.2331**	0.038	16.2	ug/L	55	Standard
>	**Ga**	71	103.3	15.6				mg/L	50	Standard
	Rb	85	1920.1	7.2				ug/L	20	Standard
	Y	89	383902.2	1.9				ug/L	376602	Standard
>	**Rh**	103	25.0	87.2				ug/L	17	Standard
	Mo	98	436.7	9.1	**0.1748**	0.015	8.7	ug/L	8	Standard
	Ag	107	65.0	9.2	**-0.0017**	0.001	50.8	ug/L	81	Standard
	Cd	111	7.9	14.5	**0.0007**	0.001	83.6	mg/L	3	Standard
	Cd	114	24.6	49.4	**0.0012**	0.002	206.6	ug/L	7	Standard
>	**In**	115	537640.9	1.1				ug/L	524722	Standard
	Sn	118	573.3	39.0	**0.0145**	0.041	281.6	ug/L	715	Standard
	Sb	123	111.2	8.6	**0.0100**	0.002	20.8	ug/L	201	Standard
	Ba	135	6046.2	1.0	**3.1982**	0.060	1.9	ug/L	108	Standard
	Ce	140	2091.8	0.8				ug/L	30	Standard
>	**Tb**	159	809758.8	0.4				ug/L	792236	Standard
	Ho	165	41.7	18.3				ug/L	7	Standard
	Tl	203	180.3	6.1	**0.0211**	0.001	6.1	ug/L	9	Standard
	Tl	205	173.3	24.0	**0.0189**	0.006	33.1	ug/L	0	Standard
	Pb	206	420.3	5.1	**0.0350**	0.005	15.0	ug/L	216	Standard
	Pb	207	374.0	2.6	**0.0354**	0.003	8.0	ug/L	180	Standard
	Pb	208	1541.7	1.3	**0.0327**	0.002	5.1	ug/L	717	Standard
	U	238	1137.0	2.8	**0.1760**	0.006	3.3	ug/L	4	Standard
>	**Bi**	209	459070.7	0.7				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.4041**	8.743	161.8	mg/L	0	Standard
Mg	24	4977.5	2.7	**6.0561**	0.102	1.7	mg/L	20	Standard
K	39	71.7	10.7	**0.2668**	0.063	23.4	mg/L	22	Standard
Ca	43	53.3	10.8	**-1.9274**	1.113	57.7	mg/L	47	Standard
Fe	54	318.9	6.3	**0.1195**	0.015	12.9	mg/L	151	Standard
Fe	57	250.0	29.5	**0.0557**	0.223	399.4	mg/L	195	Standard
Sc-1	45	32790.5	2.0				mg/L	29647	Standard
Cl	35	169793.5	0.8				ug/L	154152	Standard
Kr	83	2.0	0.0				ug/L	3	Standard
Br	81	89396.4	2.9				ug/L	1607	Standard
P	31	24319.5	2.4				ug/L	22752	Standard
S	34	5012.5	5.2				ug/L	5049	Standard
Sr	88	106.7	17.7				ug/L	87	Standard
C	12	46.7	32.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	51.6	38.3				mg/L	10	Standard
Ho-1	165	41.7	18.3				mg/L	7	Standard
Er	166	36.7	63.0				mg/L	3	Standard
I	127	17585.2	6.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.165	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.421	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606054011
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.462	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.724	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606054014
Sample Date/Time: Thursday, June 16, 2016 21:03:50
Number of Replicates: 3
Autosampler Position: 351
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57943.9	0.3				ug/L	51024	Standard
	Be	9	10.0	50.0	**-0.0106**	0.005	49.0	ug/L	7	Standard
	Al	27	40494.2	7.5	**0.2408**	0.019	8.1	ug/L	625	Standard
	Sc	45	33099.4	0.9				ug/L	29647	Standard
	Ti	47	40.0	11.5	**-0.0319**	0.013	41.5	ug/L	57	Standard
	V	51	1267.4	3.9	**0.0110**	0.004	33.2	ug/L	1142	Standard
	Cr	52	6912.6	1.0	**0.0177**	0.023	132.2	ug/L	6628	Standard
	Cr	53	750.0	9.0	**0.3802**	0.071	18.6	ug/L	430	Standard
	Mn	55	124087.1	1.1	**20.9134**	0.521	2.5	ug/L	603	Standard
	Co	59	211.7	10.1	**-0.0081**	0.004	46.5	ug/L	237	Standard
	Ni	60	248.0	1.5	**0.0516**	0.002	4.7	ug/L	141	Standard
	Cu	65	221.0	10.6	**0.0522**	0.012	22.6	ug/L	109	Standard
	Zn	66	3791.1	1.2	**3.2112**	0.103	3.2	ug/L	159	Standard
>	**Ge**	72	470993.8	1.9				ug/L	474053	Standard
	As	75	110.5	40.9	**0.1251**	0.040	31.9	ug/L	-34	Standard
	Se	82	16.7	56.8	**-0.0174**	0.085	487.8	ug/L	14	Standard
	Se-1	77	66.3	16.1	**0.1259**	0.151	119.8	ug/L	55	Standard
>	**Ga**	71	63.3	27.7				mg/L	50	Standard
	Rb	85	276.7	10.3				ug/L	20	Standard
	Y	89	385833.8	2.0				ug/L	376602	Standard
>	**Rh**	103	31.7	50.8				ug/L	17	Standard
	Mo	98	31.0	14.9	**0.0074**	0.002	27.3	ug/L	8	Standard
	Ag	107	68.0	4.4	**-0.0012**	0.000	32.0	ug/L	81	Standard
	Cd	111	10.9	18.2	**0.0023**	0.001	41.2	mg/L	3	Standard
	Cd	114	35.3	7.7	**0.0034**	0.001	15.7	ug/L	7	Standard
>	**In**	115	534994.4	1.2				ug/L	524722	Standard
	Sn	118	486.7	6.0	**-0.0009**	0.004	488.6	ug/L	715	Standard
	Sb	123	88.5	13.6	**0.0050**	0.002	48.6	ug/L	201	Standard
	Ba	135	1149.4	10.0	**0.5638**	0.054	9.6	ug/L	108	Standard
	Ce	140	73.3	33.6				ug/L	30	Standard
>	**Tb**	159	801412.4	0.6				ug/L	792236	Standard
	Ho	165	16.7	17.3				ug/L	7	Standard
	Tl	203	39.7	22.9	**0.0026**	0.001	46.4	ug/L	9	Standard
	Tl	205	23.3	75.3	**-0.0042**	0.003	64.0	ug/L	0	Standard
	Pb	206	288.7	4.7	**0.0060**	0.003	43.9	ug/L	216	Standard
	Pb	207	232.0	1.6	**0.0012**	0.001	74.1	ug/L	180	Standard
	Pb	208	996.7	1.1	**0.0003**	0.001	274.4	ug/L	717	Standard
	U	238	6.3	48.2	**-0.0066**	0.000	7.5	ug/L	4	Standard
>	**Bi**	209	461918.2	0.5				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.5408**	8.507	153.5	mg/L	0	Standard
Mg	24	155.0	19.6	**0.1428**	0.035	24.6	mg/L	20	Standard
K	39	20.0	75.0	**-0.0919**	0.101	110.1	mg/L	22	Standard
Ca	43	28.3	36.7	**-7.2551**	2.201	30.3	mg/L	47	Standard
Fe	54	217.7	12.7	**0.0436**	0.021	47.7	mg/L	151	Standard
Fe	57	210.0	21.4	**-0.0640**	0.129	201.3	mg/L	195	Standard
> **Sc-1**	45	33099.4	0.9				mg/L	29647	Standard
Cl	35	168257.1	0.3				ug/L	154152	Standard
Kr	83	2.0	86.6				ug/L	3	Standard
Br	81	3430.4	12.2				ug/L	1607	Standard
P	31	24144.2	1.0				ug/L	22752	Standard
S	34	5209.2	2.8				ug/L	5049	Standard
Sr	88	75.0	43.7				ug/L	87	Standard
C	12	36.7	63.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.1	43.3				mg/L	10	Standard
Ho-1	165	16.7	17.3				mg/L	7	Standard
Er	166	26.7	43.3				mg/L	3	Standard
I	127	3078.6	10.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.562	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.355	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.958
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.342
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 21:07:02
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	57216.2	1.8				ug/L	51024	Standard
	Be	9	44266.2	0.8	**46.9448**	1.086	2.3	ug/L	7	Standard
	Al	27	7280291.9	1.0	**45.6137**	1.287	2.8	ug/L	625	Standard
	Sc	45	32309.4	1.7				ug/L	29647	Standard
	Ti	47	30197.4	0.3	**101.5240**	2.598	2.6	ug/L	57	Standard
	V	51	355347.4	0.9	**50.3294**	0.808	1.6	ug/L	1142	Standard
	Cr	52	370024.2	0.4	**49.8980**	1.109	2.2	ug/L	6628	Standard
	Cr	53	45872.7	0.6	**49.4285**	1.135	2.3	ug/L	430	Standard
	Mn	55	314239.7	1.6	**53.3617**	1.128	2.1	ug/L	603	Standard
	Co	59	314388.6	0.3	**49.3919**	1.176	2.4	ug/L	237	Standard
	Ni	60	94820.1	0.2	**49.5997**	1.101	2.2	ug/L	141	Standard
	Cu	65	92383.2	1.4	**49.5924**	0.629	1.3	ug/L	109	Standard
	Zn	66	54761.8	0.6	**49.6923**	0.878	1.8	ug/L	159	Standard
>	Ge	72	469160.5	2.3				ug/L	474053	Standard
	As	75	53380.1	0.9	**48.7528**	1.227	2.5	ug/L	-34	Standard
	Se	82	5320.4	1.7	**48.4684**	1.778	3.7	ug/L	14	Standard
	Se-1	77	3692.8	2.0	**47.8512**	0.716	1.5	ug/L	55	Standard
>	Ga	71	61.7	70.8				mg/L	50	Standard
	Rb	85	808.4	9.3				ug/L	20	Standard
	Y	89	383560.2	1.8				ug/L	376602	Standard
>	Rh	103	35.0	42.9				ug/L	17	Standard
	Mo	98	232242.3	1.1	**96.5061**	2.361	2.4	ug/L	8	Standard
	Ag	107	292582.7	0.8	**48.1206**	0.391	0.8	ug/L	81	Standard
	Cd	111	95603.2	0.1	**48.3402**	0.694	1.4	mg/L	3	Standard
	Cd	114	235634.1	0.2	**48.1942**	0.648	1.3	ug/L	7	Standard
>	In	115	534700.6	1.5				ug/L	524722	Standard
	Sn	118	264473.5	1.3	**48.1050**	1.306	2.7	ug/L	715	Standard
	Sb	123	215670.2	0.6	**48.4479**	0.874	1.8	ug/L	201	Standard
	Ba	135	88155.7	0.1	**47.6769**	0.763	1.6	ug/L	108	Standard
	Ce	140	101.7	19.9				ug/L	30	Standard
>	Tb	159	793079.8	1.0				ug/L	792236	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	358440.3	1.1	**47.4951**	0.142	0.3	ug/L	9	Standard
	Tl	205	312266.9	1.0	**48.6540**	0.130	0.3	ug/L	0	Standard
	Pb	206	224283.0	1.3	**49.1202**	0.907	1.8	ug/L	216	Standard
	Pb	207	204302.6	0.7	**49.1523**	0.806	1.6	ug/L	180	Standard
	Pb	208	833504.1	0.4	**49.4087**	0.646	1.3	ug/L	717	Standard
	U	238	304654.1	0.2	**49.6463**	0.682	1.4	ug/L	4	Standard
>	Bi	209	454777.5	1.2				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.3475**	8.842	165.3	mg/L	0	Standard
Mg	24	4015.5	1.7	**4.9520**	0.163	3.3	mg/L	20	Standard
K	39	633.3	0.9	**4.2037**	0.116	2.8	mg/L	22	Standard
Ca	43	71.7	28.2	**2.1962**	4.389	199.9	mg/L	47	Standard
Fe	54	5816.1	3.6	**4.2263**	0.216	5.1	mg/L	151	Standard
Fe	57	1691.8	3.9	**4.1585**	0.125	3.0	mg/L	195	Standard
> **Sc-1**	45	32309.4	1.7				mg/L	29647	Standard
Cl	35	165447.9	1.5				ug/L	154152	Standard
Kr	83	3.0	33.3				ug/L	3	Standard
Br	81	2063.5	3.6				ug/L	1607	Standard
P	31	25169.2	0.8				ug/L	22752	Standard
S	34	5737.8	0.7				ug/L	5049	Standard
Sr	88	55.0	15.7				ug/L	87	Standard
C	12	53.3	47.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.2	93.3				mg/L	10	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	10.0					mg/L	3	Standard
I	127	1655.1	3.8				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	93.890		
Al	27	91.227		
Sc	45			
Ti	47	101.524		
V	51	100.659		
Cr	52	99.796		
Cr	53			
Mn	55	106.723		
Co	59	98.784		
Ni	60	99.199		
Cu	65	99.185		
Zn	66	99.385		
> Ge	72		98.968	
As	75	97.506		
Se	82	96.937		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	96.506		
Ag	107	96.241		
Cd	111	96.680		
Cd	114			
> In	115			101.902
Sn	118	96.210		
Sb	123	96.896		
Ba	135	95.354		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	94.990		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.817		
U	238	99.293		
> Bi	209			98.791
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 21:10:14
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55944.8	2.0				ug/L	51024	Standard
	Be	9	16.7	34.6	**-0.0030**	0.006	212.8	ug/L	7	Standard
	Al	27	1526.8	38.2	**-0.0000**	0.004	16917.9	ug/L	625	Standard
	Sc	45	31897.0	7.4				ug/L	29647	Standard
	Ti	47	31.0	8.5	**-0.0586**	0.008	13.1	ug/L	57	Standard
	V	51	1141.1	6.7	**-0.0015**	0.010	648.2	ug/L	1142	Standard
	Cr	52	6326.0	1.2	**-0.0342**	0.003	8.9	ug/L	6628	Standard
	Cr	53	638.3	5.1	**0.2820**	0.027	9.6	ug/L	430	Standard
	Mn	55	672.3	5.7	**-0.0087**	0.006	71.9	ug/L	603	Standard
	Co	59	229.3	15.7	**-0.0042**	0.005	126.3	ug/L	237	Standard
	Ni	60	153.7	14.0	**0.0051**	0.012	235.2	ug/L	141	Standard
	Cu	65	131.3	12.6	**0.0065**	0.009	132.4	ug/L	109	Standard
	Zn	66	145.0	12.1	**-0.0961**	0.015	15.1	ug/L	159	Standard
>	**Ge**	72	455945.8	1.4				ug/L	474053	Standard
	As	75	-22.0	198.7	**0.0041**	0.041	1009.9	ug/L	-34	Standard
	Se	82	27.4	26.2	**0.0880**	0.066	75.2	ug/L	14	Standard
	Se-1	77	76.0	21.7	**0.2852**	0.231	80.9	ug/L	55	Standard
>	**Ga**	71	41.7	42.1				mg/L	50	Standard
	Rb	85	23.3	75.3				ug/L	20	Standard
	Y	89	400519.5	2.1				ug/L	376602	Standard
>	**Rh**	103	30.0	57.7				ug/L	17	Standard
	Mo	98	251.1	32.5	**0.0955**	0.032	33.2	ug/L	8	Standard
	Ag	107	99.3	31.3	**0.0035**	0.005	136.7	ug/L	81	Standard
	Cd	111	14.1	69.7	**0.0037**	0.005	129.5	mg/L	3	Standard
	Cd	114	31.9	76.8	**0.0025**	0.005	193.5	ug/L	7	Standard
>	**In**	115	550633.2	1.2				ug/L	524722	Standard
	Sn	118	735.0	12.4	**0.0407**	0.017	42.7	ug/L	715	Standard
	Sb	123	412.2	18.4	**0.0753**	0.017	23.2	ug/L	201	Standard
	Ba	135	126.7	6.0	**0.0089**	0.003	36.5	ug/L	108	Standard
	Ce	140	13.3	43.3				ug/L	30	Standard
>	**Tb**	159	804256.0	1.8				ug/L	792236	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	62.7	29.5	**0.0058**	0.002	40.2	ug/L	9	Standard
	Tl	205	55.0	15.7	**0.0008**	0.001	147.2	ug/L	0	Standard
	Pb	206	234.3	12.8	**-0.0047**	0.006	120.1	ug/L	216	Standard
	Pb	207	197.7	8.5	**-0.0059**	0.003	52.6	ug/L	180	Standard
	Pb	208	861.7	7.3	**-0.0064**	0.003	48.7	ug/L	717	Standard
	U	238	32.7	49.0	**-0.0022**	0.003	112.0	ug/L	4	Standard
>	**Bi**	209	451393.6	2.0				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.7600**	8.127	141.1	mg/L	0	Standard
Mg	24	66.7	18.9	**0.0383**	0.010	25.0	mg/L	20	Standard
K	39	15.0	66.7	**-0.1191**	0.074	61.9	mg/L	22	Standard
Ca	43	28.3	36.7	**-7.1219**	1.762	24.7	mg/L	47	Standard
Fe	54	147.9	22.4	**-0.0038**	0.019	492.3	mg/L	151	Standard
Fe	57	200.0	17.5	**-0.0677**	0.127	187.5	mg/L	195	Standard
> **Sc-1**	45	31897.0	7.4				mg/L	29647	Standard
Cl	35	166760.1	1.1				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	1793.4	4.2				ug/L	1607	Standard
P	31	26206.0	1.2				ug/L	22752	Standard
S	34	5832.8	0.3				ug/L	5049	Standard
Sr	88	61.7	26.1				ug/L	87	Standard
C	12	43.3	35.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.9	118.8				mg/L	10	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	10.0					mg/L	3	Standard
I	127	1290.1	6.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.180	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.938
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.056
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606061601
Sample Date/Time: Thursday, June 16, 2016 21:13:26
Number of Replicates: 3
Autosampler Position: 352
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57249.6	1.2				ug/L	51024	Standard
	Be	9	55.0	9.1	**0.0372**	0.006	15.0	ug/L	7	Standard
	Al	27	393587.4	1.7	**2.4548**	0.057	2.3	ug/L	625	Standard
	Sc	45	32406.3	3.0				ug/L	29647	Standard
	Ti	47	74.0	10.7	**0.0892**	0.028	31.0	ug/L	57	Standard
	V	51	636.6	76.8	**-0.0758**	0.071	93.6	ug/L	1142	Standard
	Cr	52	85601.8	0.6	**11.1086**	0.082	0.7	ug/L	6628	Standard
	Cr	53	11320.9	1.4	**12.1647**	0.172	1.4	ug/L	430	Standard
	Mn	55	80985.9	0.3	**13.9862**	0.035	0.3	ug/L	603	Standard
	Co	59	9834.2	0.6	**1.5416**	0.010	0.6	ug/L	237	Standard
	Ni	60	33446.9	0.3	**17.8603**	0.057	0.3	ug/L	141	Standard
	Cu	65	1052.4	3.7	**0.5130**	0.021	4.2	ug/L	109	Standard
	Zn	66	2617.6	1.1	**2.2110**	0.025	1.1	ug/L	159	Standard
>	**Ge**	72	458154.0	0.1				ug/L	474053	Standard
	As	75	49.8	49.2	**0.0716**	0.023	32.0	ug/L	-34	Standard
	Se	82	42.6	32.1	**0.2293**	0.128	56.0	ug/L	14	Standard
	Se-1	77	102.7	16.6	**0.6383**	0.227	35.6	ug/L	55	Standard
>	**Ga**	71	63.3	35.6				mg/L	50	Standard
	Rb	85	306.7	30.8				ug/L	20	Standard
	Y	89	402460.8	1.4				ug/L	376602	Standard
>	**Rh**	103	15.0	0.0				ug/L	17	Standard
	Mo	98	305.2	3.6	**0.1192**	0.004	3.0	ug/L	8	Standard
	Ag	107	82.0	8.5	**0.0009**	0.001	110.4	ug/L	81	Standard
	Cd	111	31.7	1.8	**0.0126**	0.000	1.7	mg/L	3	Standard
	Cd	114	86.0	11.3	**0.0135**	0.002	15.6	ug/L	7	Standard
>	**In**	115	543559.4	0.9				ug/L	524722	Standard
	Sn	118	521.7	5.3	**0.0040**	0.005	126.9	ug/L	715	Standard
	Sb	123	172.0	20.3	**0.0232**	0.008	34.4	ug/L	201	Standard
	Ba	135	10412.6	2.3	**5.4875**	0.099	1.8	ug/L	108	Standard
	Ce	140	1425.1	2.1				ug/L	30	Standard
>	**Tb**	159	802846.0	2.9				ug/L	792236	Standard
	Ho	165	38.3	49.4				ug/L	7	Standard
	Tl	203	181.0	5.8	**0.0217**	0.002	7.1	ug/L	9	Standard
	Tl	205	158.3	6.6	**0.0171**	0.002	12.3	ug/L	0	Standard
	Pb	206	323.7	3.9	**0.0154**	0.001	9.1	ug/L	216	Standard
	Pb	207	297.3	15.5	**0.0184**	0.010	54.3	ug/L	180	Standard
	Pb	208	1247.7	4.4	**0.0169**	0.002	11.0	ug/L	717	Standard
	U	238	59.7	21.2	**0.0022**	0.002	84.4	ug/L	4	Standard
>	**Bi**	209	449878.2	2.0				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	5219.2	4.5	**6.4369**	0.460	7.1	mg/L	20	Standard
K	39	20.0	25.0	**-0.0887**	0.033	37.4	mg/L	22	Standard
Ca	43	31.7	48.2	**-6.3893**	3.387	53.0	mg/L	47	Standard
Fe	54	173.5	30.0	**0.0146**	0.041	283.6	mg/L	151	Standard
Fe	57	193.3	26.5	**-0.1009**	0.133	132.3	mg/L	195	Standard
> **Sc-1**	45	32406.3	3.0				mg/L	29647	Standard
Cl	35	165598.8	1.0				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	7865.4	1.7				ug/L	1607	Standard
P	31	25877.1	1.5				ug/L	22752	Standard
S	34	5332.6	2.3				ug/L	5049	Standard
Sr	88	75.0	53.3				ug/L	87	Standard
C	12	26.7	86.6				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	38.2	28.0				mg/L	10	Standard
Ho-1	165	38.3	49.4				mg/L	7	Standard
Er	166	36.7	41.7				mg/L	3	Standard
I	127	9661.4	1.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.201	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.646	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.590	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.727	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606061602
Sample Date/Time: Thursday, June 16, 2016 21:16:38
Number of Replicates: 3
Autosampler Position: 353
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54740.4	1.6				ug/L	51024	Standard
	Be	9	13.3	78.1	**-0.0064**	0.011	174.7	ug/L	7	Standard
	Al	27	1805152.0	1.4	**11.8114**	0.177	1.5	ug/L	625	Standard
	Sc	45	31105.2	2.7				ug/L	29647	Standard
	Ti	47	145.3	36.9	**0.3297**	0.185	56.3	ug/L	57	Standard
	V	51	1187.4	9.5	**0.0023**	0.015	668.9	ug/L	1142	Standard
	Cr	52	6910.6	1.9	**0.0321**	0.023	70.2	ug/L	6628	Standard
	Cr	53	2121.8	8.3	**1.9016**	0.204	10.7	ug/L	430	Standard
	Mn	55	395363.0	1.6	**67.9452**	1.352	2.0	ug/L	603	Standard
	Co	59	396.7	9.1	**0.0219**	0.006	27.5	ug/L	237	Standard
	Ni	60	325.0	2.7	**0.0944**	0.004	4.0	ug/L	141	Standard
	Cu	65	328.0	3.2	**0.1122**	0.006	5.3	ug/L	109	Standard
	Zn	66	1614.8	2.3	**1.2569**	0.027	2.1	ug/L	159	Standard
>	**Ge**	72	463730.0	0.5				ug/L	474053	Standard
	As	75	191.5	27.2	**0.2018**	0.048	23.7	ug/L	-34	Standard
	Se	82	80.2	8.7	**0.5721**	0.064	11.1	ug/L	14	Standard
	Se-1	77	154.3	3.1	**1.3098**	0.068	5.2	ug/L	55	Standard
>	**Ga**	71	83.3	12.5				mg/L	50	Standard
	Rb	85	2255.2	4.8				ug/L	20	Standard
	Y	89	395085.6	4.8				ug/L	376602	Standard
>	**Rh**	103	30.0	44.1				ug/L	17	Standard
	Mo	98	187.4	6.4	**0.0739**	0.005	6.8	ug/L	8	Standard
	Ag	107	74.0	13.7	**0.0001**	0.002	2155.8	ug/L	81	Standard
	Cd	111	4.7	21.2	**-0.0008**	0.000	58.4	mg/L	3	Standard
	Cd	114	23.6	85.5	**0.0011**	0.004	381.8	ug/L	7	Standard
>	**In**	115	524300.8	1.8				ug/L	524722	Standard
	Sn	118	675.0	7.1	**0.0361**	0.011	30.7	ug/L	715	Standard
	Sb	123	147.3	26.2	**0.0191**	0.009	49.7	ug/L	201	Standard
	Ba	135	46098.7	0.3	**25.3994**	0.381	1.5	ug/L	108	Standard
	Ce	140	986.7	3.2				ug/L	30	Standard
>	**Tb**	159	774505.0	2.0				ug/L	792236	Standard
	Ho	165	13.3	94.4				ug/L	7	Standard
	Tl	203	220.3	5.0	**0.0280**	0.002	6.1	ug/L	9	Standard
	Tl	205	203.3	19.9	**0.0253**	0.006	25.4	ug/L	0	Standard
	Pb	206	323.3	2.8	**0.0179**	0.002	12.9	ug/L	216	Standard
	Pb	207	301.7	4.5	**0.0222**	0.003	14.6	ug/L	180	Standard
	Pb	208	1220.4	3.0	**0.0179**	0.003	14.6	ug/L	717	Standard
	U	238	72.3	70.3	**0.0048**	0.009	183.1	ug/L	4	Standard
>	**Bi**	209	434377.4	0.6				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	9573.0	1.2	**12.3290**	0.229	1.9	mg/L	20	Standard
K	39	33.3	22.9	**0.0143**	0.056	391.5	mg/L	22	Standard
Ca	43	41.7	42.1	**-3.8937**	4.020	103.2	mg/L	47	Standard
Fe	54	3391.5	3.3	**2.5135**	0.063	2.5	mg/L	151	Standard
Fe	57	1036.7	3.7	**2.4151**	0.178	7.4	mg/L	195	Standard
> **Sc-1**	45	31105.2	2.7				mg/L	29647	Standard
Cl	35	163124.3	2.0				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	18861.8	5.5				ug/L	1607	Standard
P	31	25780.2	1.2				ug/L	22752	Standard
S	34	5427.6	1.2				ug/L	5049	Standard
Sr	88	133.3	17.7				ug/L	87	Standard
C	12	63.3	48.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	29.4	2.5				mg/L	10	Standard
Ho-1	165	13.3	94.4				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	3	Standard
I	127	27164.5	9.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.283	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.822	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.920
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.360
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606061604
Sample Date/Time: Thursday, June 16, 2016 21:19:49
Number of Replicates: 3
Autosampler Position: 354
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54814.0	0.5				ug/L	51024	Standard
	Be	9	6.7	86.6	**-0.0137**	0.006	46.5	ug/L	7	Standard
	Al	27	110436.2	2.3	**0.7124**	0.018	2.6	ug/L	625	Standard
	Sc	45	32459.7	0.6				ug/L	29647	Standard
	Ti	47	55.7	9.0	**0.0154**	0.018	115.7	ug/L	57	Standard
	V	51	1190.0	8.3	**-0.0046**	0.017	376.0	ug/L	1142	Standard
	Cr	52	7226.1	2.7	**0.0323**	0.047	144.2	ug/L	6628	Standard
	Cr	53	801.7	5.0	**0.4109**	0.034	8.3	ug/L	430	Standard
	Mn	55	73546.8	1.3	**11.9804**	0.177	1.5	ug/L	603	Standard
	Co	59	487.0	1.6	**0.0328**	0.001	4.1	ug/L	237	Standard
	Ni	60	526.7	1.8	**0.1891**	0.010	5.0	ug/L	141	Standard
	Cu	65	380.0	8.6	**0.1312**	0.013	9.7	ug/L	109	Standard
	Zn	66	2004.8	2.3	**1.5353**	0.023	1.5	ug/L	159	Standard
>	**Ge**	72	485083.0	2.2				ug/L	474053	Standard
	As	75	-27.5	85.1	**0.0005**	0.021	4240.8	ug/L	-34	Standard
	Se	82	14.1	16.8	**-0.0441**	0.023	53.0	ug/L	14	Standard
	Se-1	77	56.3	6.2	**-0.0281**	0.039	138.2	ug/L	55	Standard
>	**Ga**	71	65.0	27.7				mg/L	50	Standard
	Rb	85	975.0	3.7				ug/L	20	Standard
	Y	89	385735.6	1.3				ug/L	376602	Standard
>	**Rh**	103	33.3	48.2				ug/L	17	Standard
	Mo	98	31.0	17.9	**0.0076**	0.002	32.0	ug/L	8	Standard
	Ag	107	69.3	9.6	**-0.0007**	0.001	178.9	ug/L	81	Standard
	Cd	111	35.6	7.1	**0.0152**	0.001	9.3	mg/L	3	Standard
	Cd	114	78.6	33.7	**0.0126**	0.006	43.8	ug/L	7	Standard
>	**In**	115	522479.0	0.6				ug/L	524722	Standard
	Sn	118	488.3	12.5	**0.0016**	0.012	727.2	ug/L	715	Standard
	Sb	123	114.8	19.9	**0.0116**	0.005	46.5	ug/L	201	Standard
	Ba	135	3662.8	1.7	**1.9717**	0.029	1.5	ug/L	108	Standard
	Ce	140	251.7	12.1				ug/L	30	Standard
>	**Tb**	159	792180.5	1.3				ug/L	792236	Standard
	Ho	165	13.3	21.7				ug/L	7	Standard
	Tl	203	47.3	14.4	**0.0036**	0.001	25.0	ug/L	9	Standard
	Tl	205	38.3	27.2	**-0.0019**	0.002	86.2	ug/L	0	Standard
	Pb	206	262.0	5.8	**0.0007**	0.003	518.6	ug/L	216	Standard
	Pb	207	237.7	10.4	**0.0030**	0.006	203.7	ug/L	180	Standard
	Pb	208	979.3	1.2	**-0.0002**	0.001	232.5	ug/L	717	Standard
	U	238	9.3	43.3	**-0.0061**	0.001	10.8	ug/L	4	Standard
>	**Bi**	209	458288.4	0.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	298.3	19.4	**0.3240**	0.070	21.6	mg/L	20	Standard
K	39	26.7	65.8	**-0.0419**	0.123	294.6	mg/L	22	Standard
Ca	43	43.3	52.0	**-3.9540**	4.787	121.1	mg/L	47	Standard
Fe	54	369.3	3.6	**0.1593**	0.010	6.3	mg/L	151	Standard
Fe	57	236.7	13.4	**0.0219**	0.086	394.4	mg/L	195	Standard
Sc-1	45	32459.7	0.6				mg/L	29647	Standard
Cl	35	161744.2	1.3				ug/L	154152	Standard
Kr	83	2.7	78.1				ug/L	3	Standard
Br	81	2450.2	3.6				ug/L	1607	Standard
P	31	25593.3	1.9				ug/L	22752	Standard
S	34	5534.3	4.3				ug/L	5049	Standard
Sr	88	81.7	34.8				ug/L	87	Standard
C	12	56.7	40.8				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.2	113.9				mg/L	10	Standard
Ho-1	165	13.3	21.7				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	3	Standard
I	127	11324.2	2.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.428	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.327	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606061604
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.573
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.554
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606065001
Sample Date/Time: Thursday, June 16, 2016 21:23:01
Number of Replicates: 3
Autosampler Position: 355
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56128.8	1.5				ug/L	51024	Standard
	Be	9	8.3	34.6	**-0.0121**	0.003	26.6	ug/L	7	Standard
	Al	27	482122.3	0.7	**3.0698**	0.068	2.2	ug/L	625	Standard
	Sc	45	32641.8	1.6				ug/L	29647	Standard
	Ti	47	45.3	15.0	**-0.0118**	0.021	178.3	ug/L	57	Standard
	V	51	499.2	13.7	**-0.0967**	0.009	9.3	ug/L	1142	Standard
	Cr	52	82458.1	0.9	**10.5208**	0.076	0.7	ug/L	6628	Standard
	Cr	53	10431.9	1.2	**11.0318**	0.293	2.7	ug/L	430	Standard
	Mn	55	79305.3	0.7	**13.5203**	0.175	1.3	ug/L	603	Standard
	Co	59	2974.6	1.7	**0.4315**	0.004	1.0	ug/L	237	Standard
	Ni	60	33369.4	1.4	**17.5928**	0.059	0.3	ug/L	141	Standard
	Cu	65	207.3	9.4	**0.0465**	0.009	20.2	ug/L	109	Standard
	Zn	66	1251.4	5.4	**0.9209**	0.049	5.4	ug/L	159	Standard
>	**Ge**	72	464010.1	1.4				ug/L	474053	Standard
	As	75	2.0	650.9	**0.0269**	0.012	45.0	ug/L	-34	Standard
	Se	82	23.1	30.3	**0.0449**	0.067	148.0	ug/L	14	Standard
	Se-1	77	78.7	3.2	**0.3022**	0.048	15.8	ug/L	55	Standard
>	**Ga**	71	63.3	32.9				mg/L	50	Standard
	Rb	85	220.0	4.5				ug/L	20	Standard
	Y	89	399793.1	1.3				ug/L	376602	Standard
>	**Rh**	103	18.3	103.3				ug/L	17	Standard
	Mo	98	108.7	5.3	**0.0384**	0.002	6.3	ug/L	8	Standard
	Ag	107	73.7	11.4	**-0.0005**	0.001	257.8	ug/L	81	Standard
	Cd	111	9.8	27.0	**0.0016**	0.001	82.1	mg/L	3	Standard
	Cd	114	29.3	22.9	**0.0020**	0.001	66.1	ug/L	7	Standard
>	**In**	115	548875.7	0.2				ug/L	524722	Standard
	Sn	118	460.0	8.7	**-0.0078**	0.007	89.3	ug/L	715	Standard
	Sb	123	86.5	15.7	**0.0041**	0.003	71.3	ug/L	201	Standard
	Ba	135	20540.6	0.3	**10.7757**	0.041	0.4	ug/L	108	Standard
	Ce	140	105.0	17.2				ug/L	30	Standard
>	**Tb**	159	820934.6	1.9				ug/L	792236	Standard
	Ho	165	20.0	25.0				ug/L	7	Standard
	Tl	203	96.0	11.0	**0.0101**	0.002	16.2	ug/L	9	Standard
	Tl	205	83.3	24.2	**0.0050**	0.003	58.6	ug/L	0	Standard
	Pb	206	282.0	1.9	**0.0050**	0.002	36.7	ug/L	216	Standard
	Pb	207	225.3	3.3	**-0.0000**	0.001	53500.0	ug/L	180	Standard
	Pb	208	968.3	3.8	**-0.0009**	0.003	322.0	ug/L	717	Standard
	U	238	52.7	14.0	**0.0010**	0.001	142.8	ug/L	4	Standard
>	**Bi**	209	458406.1	1.9				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1866.8	2.0	**2.2543**	0.080	3.6	mg/L	20	Standard
K	39	16.7	96.4	**-0.1137**	0.109	95.5	mg/L	22	Standard
Ca	43	30.0	44.1	**-6.8062**	2.881	42.3	mg/L	47	Standard
Fe	54	329.9	10.2	**0.1288**	0.026	20.3	mg/L	151	Standard
Fe	57	233.3	15.5	**0.0097**	0.106	1102.3	mg/L	195	Standard
> **Sc-1**	45	32641.8	1.6				mg/L	29647	Standard
Cl	35	163083.7	0.8				ug/L	154152	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	2766.9	2.7				ug/L	1607	Standard
P	31	25266.1	2.8				ug/L	22752	Standard
S	34	5369.3	3.4				ug/L	5049	Standard
Sr	88	88.3	8.6				ug/L	87	Standard
C	12	30.0	57.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.9	122.5				mg/L	10	Standard
Ho-1	165	20.0	25.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	9619.7	7.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.004	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.881	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.603
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.579
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606065002
Sample Date/Time: Thursday, June 16, 2016 21:26:12
Number of Replicates: 3
Autosampler Position: 356
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54365.7	1.4				ug/L	51024	Standard
	Be	9	15.0	57.7	**-0.0044**	0.010	217.8	ug/L	7	Standard
	Al	27	1025103.4	0.5	**6.7495**	0.066	1.0	ug/L	625	Standard
	Sc	45	32087.3	3.3				ug/L	29647	Standard
	Ti	47	91.0	58.5	**0.1440**	0.181	125.8	ug/L	57	Standard
	V	51	1237.3	4.1	**0.0097**	0.009	93.5	ug/L	1142	Standard
	Cr	52	7747.0	1.2	**0.1491**	0.005	3.5	ug/L	6628	Standard
	Cr	53	1525.1	10.3	**1.2446**	0.145	11.6	ug/L	430	Standard
	Mn	55	121524.7	0.0	**20.8162**	0.350	1.7	ug/L	603	Standard
	Co	59	489.3	10.2	**0.0367**	0.008	22.6	ug/L	237	Standard
	Ni	60	546.0	2.6	**0.2119**	0.012	5.8	ug/L	141	Standard
	Cu	65	411.0	3.0	**0.1575**	0.006	3.6	ug/L	109	Standard
	Zn	66	2195.8	1.8	**1.7944**	0.008	0.5	ug/L	159	Standard
>	**Ge**	72	463367.3	1.7				ug/L	474053	Standard
	As	75	18.1	195.3	**0.0420**	0.032	77.3	ug/L	-34	Standard
	Se	82	30.0	13.1	**0.1083**	0.035	32.1	ug/L	14	Standard
	Se-1	77	106.3	6.3	**0.6711**	0.066	9.8	ug/L	55	Standard
>	**Ga**	71	40.0	54.5				mg/L	50	Standard
	Rb	85	1018.4	11.8				ug/L	20	Standard
	Y	89	407107.2	1.0				ug/L	376602	Standard
>	**Rh**	103	23.3	12.4				ug/L	17	Standard
	Mo	98	59.9	56.3	**0.0195**	0.014	72.7	ug/L	8	Standard
	Ag	107	115.7	63.4	**0.0068**	0.012	179.6	ug/L	81	Standard
	Cd	111	19.6	16.6	**0.0067**	0.002	24.0	mg/L	3	Standard
	Cd	114	62.3	30.6	**0.0090**	0.004	42.7	ug/L	7	Standard
>	**In**	115	532203.3	2.6				ug/L	524722	Standard
	Sn	118	596.7	23.5	**0.0202**	0.028	136.6	ug/L	715	Standard
	Sb	123	167.7	43.4	**0.0231**	0.017	71.6	ug/L	201	Standard
	Ba	135	32786.1	2.0	**17.7838**	0.579	3.3	ug/L	108	Standard
	Ce	140	491.7	8.2				ug/L	30	Standard
>	**Tb**	159	779044.5	1.2				ug/L	792236	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	239.0	44.6	**0.0304**	0.015	49.0	ug/L	9	Standard
	Tl	205	176.7	20.9	**0.0208**	0.006	27.7	ug/L	0	Standard
	Pb	206	322.7	21.3	**0.0173**	0.016	92.8	ug/L	216	Standard
	Pb	207	291.0	18.0	**0.0192**	0.014	70.8	ug/L	180	Standard
	Pb	208	1188.0	5.2	**0.0154**	0.003	22.6	ug/L	717	Standard
	U	238	183.3	6.3	**0.0235**	0.002	9.7	ug/L	4	Standard
>	**Bi**	209	437003.3	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	7120.0	1.8	**8.8768**	0.151	1.7	mg/L	20	Standard
K	39	41.7	27.7	**0.0654**	0.079	121.4	mg/L	22	Standard
Ca	43	41.7	42.1	**-4.2187**	3.620	85.8	mg/L	47	Standard
Fe	54	137.5	7.6	**-0.0117**	0.005	43.2	mg/L	151	Standard
Fe	57	181.7	19.3	**-0.1275**	0.097	75.8	mg/L	195	Standard
> **Sc-1**	45	32087.3	3.3				mg/L	29647	Standard
Cl	35	166481.1	1.4				ug/L	154152	Standard
Kr	83	1.0	0.0				ug/L	3	Standard
Br	81	4110.6	4.2				ug/L	1607	Standard
P	31	25599.9	1.8				ug/L	22752	Standard
S	34	5374.3	5.2				ug/L	5049	Standard
Sr	88	101.7	24.3				ug/L	87	Standard
C	12	36.7	41.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.4	106.9				mg/L	10	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	76002.0	4.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.549	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.746	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.426
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.930
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606065003
Sample Date/Time: Thursday, June 16, 2016 21:29:23
Number of Replicates: 3
Autosampler Position: 357
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54541.3	1.2				ug/L	51024	Standard
	Be	9	8.3	124.9	**-0.0119**	0.012	97.1	ug/L	7	Standard
	Al	27	606559.5	1.5	**3.9772**	0.101	2.5	ug/L	625	Standard
	Sc	45	31063.5	1.7				ug/L	29647	Standard
	Ti	47	165.3	5.8	**0.3810**	0.031	8.1	ug/L	57	Standard
	V	51	733.0	77.1	**-0.0659**	0.079	120.2	ug/L	1142	Standard
	Cr	52	157074.9	2.2	**20.2677**	0.514	2.5	ug/L	6628	Standard
	Cr	53	20141.7	1.4	**21.0752**	0.347	1.6	ug/L	430	Standard
	Mn	55	101750.2	1.1	**16.8892**	0.212	1.3	ug/L	603	Standard
	Co	59	1910.5	3.6	**0.2538**	0.010	4.1	ug/L	237	Standard
	Ni	60	8863.6	2.0	**4.4841**	0.097	2.2	ug/L	141	Standard
	Cu	65	1674.4	2.3	**0.8182**	0.022	2.7	ug/L	109	Standard
	Zn	66	2740.2	2.8	**2.2224**	0.074	3.3	ug/L	159	Standard
>	**Ge**	72	477422.4	0.2				ug/L	474053	Standard
	As	75	139.6	40.2	**0.1503**	0.051	33.7	ug/L	-34	Standard
	Se	82	42.3	11.2	**0.2113**	0.043	20.3	ug/L	14	Standard
	Se-1	77	93.0	6.5	**0.4578**	0.081	17.7	ug/L	55	Standard
>	**Ga**	71	101.7	37.2				mg/L	50	Standard
	Rb	85	1565.1	2.0				ug/L	20	Standard
	Y	89	382720.6	3.5				ug/L	376602	Standard
>	**Rh**	103	20.0	66.1				ug/L	17	Standard
	Mo	98	639.1	4.3	**0.2676**	0.013	4.7	ug/L	8	Standard
	Ag	107	90.7	24.5	**0.0030**	0.004	127.1	ug/L	81	Standard
	Cd	111	110.9	7.8	**0.0545**	0.005	9.0	mg/L	3	Standard
	Cd	114	275.8	13.3	**0.0542**	0.008	14.0	ug/L	7	Standard
>	**In**	115	519830.3	1.0				ug/L	524722	Standard
	Sn	118	653.3	27.4	**0.0332**	0.035	105.0	ug/L	715	Standard
	Sb	123	127.7	28.4	**0.0147**	0.009	58.6	ug/L	201	Standard
	Ba	135	11175.1	0.7	**6.1659**	0.078	1.3	ug/L	108	Standard
	Ce	140	2495.2	5.2				ug/L	30	Standard
>	**Tb**	159	780545.7	0.5				ug/L	792236	Standard
	Ho	165	53.3	48.1				ug/L	7	Standard
	Tl	203	163.0	29.4	**0.0195**	0.006	33.3	ug/L	9	Standard
	Tl	205	135.0	9.8	**0.0137**	0.002	15.9	ug/L	0	Standard
	Pb	206	547.3	5.3	**0.0663**	0.008	11.4	ug/L	216	Standard
	Pb	207	444.0	2.8	**0.0555**	0.004	6.9	ug/L	180	Standard
	Pb	208	1903.7	3.0	**0.0576**	0.005	8.4	ug/L	717	Standard
	U	238	51.3	38.7	**0.0010**	0.003	341.9	ug/L	4	Standard
>	**Bi**	209	444975.8	1.2				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3707.1	1.1	**4.7531**	0.132	2.8	mg/L	20	Standard
K	39	33.3	17.3	**0.0146**	0.042	286.2	mg/L	22	Standard
Ca	43	30.0	57.7	**-6.5001**	3.854	59.3	mg/L	47	Standard
Fe	54	681.6	4.0	**0.4140**	0.022	5.2	mg/L	151	Standard
Fe	57	318.3	7.1	**0.2945**	0.082	27.9	mg/L	195	Standard
> **Sc-1**	45	31063.5	1.7				mg/L	29647	Standard
Cl	35	164261.1	1.5				ug/L	154152	Standard
Kr	83	2.0	86.6				ug/L	3	Standard
Br	81	7888.7	5.8				ug/L	1607	Standard
P	31	24920.5	3.3				ug/L	22752	Standard
S	34	5307.6	1.0				ug/L	5049	Standard
Sr	88	88.3	8.6				ug/L	87	Standard
C	12	40.0	25.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	74.8	18.4				mg/L	10	Standard
Ho-1	165	53.3	48.1				mg/L	7	Standard
Er	166	40.0	90.1				mg/L	3	Standard
I	127	17526.8	1.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.893	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.711	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.068
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.662
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606065008
Sample Date/Time: Thursday, June 16, 2016 21:32:35
Number of Replicates: 3
Autosampler Position: 358
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55971.5	1.2				ug/L	51024	Standard
	Be	9	16.7	121.2	**-0.0030**	0.022	732.0	ug/L	7	Standard
	Al	27	227217.9	1.2	**1.4454**	0.014	1.0	ug/L	625	Standard
	Sc	45	33091.1	0.4				ug/L	29647	Standard
	Ti	47	93.0	12.2	**0.1482**	0.035	23.3	ug/L	57	Standard
	V	51	1468.9	10.6	**0.0412**	0.020	48.4	ug/L	1142	Standard
	Cr	52	7242.7	0.8	**0.0709**	0.012	17.1	ug/L	6628	Standard
	Cr	53	1168.4	6.4	**0.8438**	0.086	10.2	ug/L	430	Standard
	Mn	55	143314.1	1.9	**24.3672**	0.286	1.2	ug/L	603	Standard
	Co	59	707.7	4.5	**0.0704**	0.004	5.3	ug/L	237	Standard
	Ni	60	1968.1	3.3	**0.9574**	0.026	2.8	ug/L	141	Standard
	Cu	65	534.7	8.0	**0.2223**	0.018	8.2	ug/L	109	Standard
	Zn	66	4633.0	0.1	**4.0098**	0.079	2.0	ug/L	159	Standard
>	**Ge**	72	467157.4	1.9				ug/L	474053	Standard
	As	75	68.4	19.1	**0.0878**	0.012	13.9	ug/L	-34	Standard
	Se	82	42.7	11.5	**0.2237**	0.049	22.1	ug/L	14	Standard
	Se-1	77	88.3	9.6	**0.4216**	0.095	22.5	ug/L	55	Standard
>	**Ga**	71	53.3	28.6				mg/L	50	Standard
	Rb	85	821.7	8.3				ug/L	20	Standard
	Y	89	390712.9	1.8				ug/L	376602	Standard
>	**Rh**	103	16.7	96.4				ug/L	17	Standard
	Mo	98	26.7	10.2	**0.0055**	0.001	23.5	ug/L	8	Standard
	Ag	107	72.3	16.0	**-0.0005**	0.002	422.0	ug/L	81	Standard
	Cd	111	13.3	4.3	**0.0034**	0.000	6.8	mg/L	3	Standard
	Cd	114	40.2	32.3	**0.0044**	0.003	63.9	ug/L	7	Standard
>	**In**	115	538841.7	2.0				ug/L	524722	Standard
	Sn	118	488.3	14.9	**-0.0013**	0.012	965.6	ug/L	715	Standard
	Sb	123	100.5	11.8	**0.0076**	0.002	30.8	ug/L	201	Standard
	Ba	135	7028.6	0.9	**3.7196**	0.097	2.6	ug/L	108	Standard
	Ce	140	2670.2	3.1				ug/L	30	Standard
>	**Tb**	159	805010.7	0.6				ug/L	792236	Standard
	Ho	165	43.3	40.5				ug/L	7	Standard
	Tl	203	119.0	4.4	**0.0131**	0.001	5.7	ug/L	9	Standard
	Tl	205	95.0	22.9	**0.0069**	0.003	48.8	ug/L	0	Standard
	Pb	206	254.0	2.5	**-0.0008**	0.002	244.2	ug/L	216	Standard
	Pb	207	226.3	9.4	**0.0004**	0.004	982.1	ug/L	180	Standard
	Pb	208	875.0	3.9	**-0.0061**	0.002	39.4	ug/L	717	Standard
	U	238	28.3	19.4	**-0.0030**	0.001	30.6	ug/L	4	Standard
>	**Bi**	209	456325.9	1.4				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3722.1	3.3	**4.4755**	0.132	3.0	mg/L	20	Standard
K	39	21.7	48.0	**-0.0800**	0.071	88.6	mg/L	22	Standard
Ca	43	38.3	49.4	**-5.1655**	3.960	76.7	mg/L	47	Standard
Fe	54	149.3	20.9	**-0.0062**	0.023	370.8	mg/L	151	Standard
Fe	57	191.7	19.2	**-0.1152**	0.104	90.0	mg/L	195	Standard
> **Sc-1**	45	33091.1	0.4				mg/L	29647	Standard
Cl	35	167461.1	1.4				ug/L	154152	Standard
Kr	83	2.3	49.5				ug/L	3	Standard
Br	81	7938.7	3.1				ug/L	1607	Standard
P	31	24910.5	1.2				ug/L	22752	Standard
S	34	5120.9	0.9				ug/L	5049	Standard
Sr	88	83.3	3.5				ug/L	87	Standard
C	12	63.3	48.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	67.9	15.4				mg/L	10	Standard
Ho-1	165	43.3	40.5				mg/L	7	Standard
Er	166	43.3	26.6				mg/L	3	Standard
I	127	7648.6	2.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.696	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.545	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.691	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.127	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606073001
Sample Date/Time: Thursday, June 16, 2016 21:35:46
Number of Replicates: 3
Autosampler Position: 359
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55371.0	2.2				ug/L	51024	Standard
	Be	9	11.7	65.5	**-0.0084**	0.008	97.7	ug/L	7	Standard
	Al	27	132096.8	1.8	**0.8455**	0.012	1.5	ug/L	625	Standard
	Sc	45	31868.5	4.0				ug/L	29647	Standard
	Ti	47	30.0	17.3	**-0.0614**	0.019	31.4	ug/L	57	Standard
	V	51	1455.6	7.2	**0.0453**	0.013	29.6	ug/L	1142	Standard
	Cr	52	11040.4	2.7	**0.6383**	0.023	3.6	ug/L	6628	Standard
	Cr	53	1623.4	8.3	**1.3902**	0.129	9.3	ug/L	430	Standard
	Mn	55	1201.0	0.7	**0.0848**	0.004	4.7	ug/L	603	Standard
	Co	59	375.7	2.3	**0.0198**	0.001	6.0	ug/L	237	Standard
	Ni	60	312.3	3.4	**0.0912**	0.004	4.7	ug/L	141	Standard
	Cu	65	236.3	2.7	**0.0651**	0.002	3.6	ug/L	109	Standard
	Zn	66	1941.8	2.7	**1.5970**	0.055	3.5	ug/L	159	Standard
>	**Ge**	72	454022.4	1.2				ug/L	474053	Standard
	As	75	11.9	146.3	**0.0364**	0.016	45.2	ug/L	-34	Standard
	Se	82	31.4	12.8	**0.1281**	0.041	32.3	ug/L	14	Standard
	Se-1	77	87.7	5.7	**0.4469**	0.060	13.4	ug/L	55	Standard
>	**Ga**	71	95.0	18.2				mg/L	50	Standard
	Rb	85	4872.5	2.9				ug/L	20	Standard
	Y	89	404770.5	0.6				ug/L	376602	Standard
>	**Rh**	103	80.0	22.5				ug/L	17	Standard
	Mo	98	116.6	2.8	**0.0416**	0.002	4.6	ug/L	8	Standard
	Ag	107	61.3	24.5	**-0.0025**	0.002	96.4	ug/L	81	Standard
	Cd	111	8.1	43.0	**0.0008**	0.002	229.5	mg/L	3	Standard
	Cd	114	29.0	53.2	**0.0020**	0.003	156.6	ug/L	7	Standard
>	**In**	115	550074.8	1.6				ug/L	524722	Standard
	Sn	118	596.7	39.8	**0.0158**	0.040	254.1	ug/L	715	Standard
	Sb	123	117.4	4.2	**0.0108**	0.001	9.0	ug/L	201	Standard
	Ba	135	36971.7	2.1	**19.3982**	0.128	0.7	ug/L	108	Standard
	Ce	140	30.0	16.7				ug/L	30	Standard
>	**Tb**	159	802021.2	1.6				ug/L	792236	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	154.7	7.4	**0.0182**	0.001	7.8	ug/L	9	Standard
	Tl	205	128.3	9.0	**0.0124**	0.002	14.8	ug/L	0	Standard
	Pb	206	255.7	10.1	**0.0005**	0.007	1256.9	ug/L	216	Standard
	Pb	207	236.0	8.3	**0.0037**	0.003	93.0	ug/L	180	Standard
	Pb	208	980.3	1.1	**0.0011**	0.002	149.5	ug/L	717	Standard
	U	238	28.0	18.9	**-0.0030**	0.001	29.7	ug/L	4	Standard
>	**Bi**	209	448836.9	2.3				ug/L	460343	Standard

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Na	23	5.0	100.0	**-5.1594**	15.986	309.8	mg/L	0	Standard
Mg	24	1993.5	3.8	**2.4733**	0.176	7.1	mg/L	20	Standard
K	39	58.3	21.6	**0.1865**	0.091	48.6	mg/L	22	Standard
Ca	43	45.0	19.2	**-3.3710**	2.098	62.2	mg/L	47	Standard
Fe	54	141.5	17.4	**-0.0075**	0.021	284.9	mg/L	151	Standard
Fe	57	231.7	13.9	**0.0185**	0.068	366.5	mg/L	195	Standard
> **Sc-1**	45	31868.5	4.0				mg/L	29647	Standard
Cl	35	162650.5	1.3				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	5611.0	3.8				ug/L	1607	Standard
P	31	25164.2	0.9				ug/L	22752	Standard
S	34	5320.9	2.9				ug/L	5049	Standard
Sr	88	361.7	6.2				ug/L	87	Standard
C	12	50.0	20.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.0	107.3				mg/L	10	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	3	Standard
I	127	5254.2	4.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.519	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.775	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.832
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.501
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606073002
Sample Date/Time: Thursday, June 16, 2016 21:38:59
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52860.4	2.3				ug/L	51024	Standard
	Be	9	10.0	50.0	**-0.0095**	0.006	63.2	ug/L	7	Standard
	Al	27	137711.4	1.6	**0.9241**	0.007	0.7	ug/L	625	Standard
	Sc	45	31095.2	1.2				ug/L	29647	Standard
	Ti	47	32.7	23.2	**-0.0560**	0.026	46.7	ug/L	57	Standard
	V	51	1546.7	3.7	**0.0511**	0.010	20.5	ug/L	1142	Standard
	Cr	52	11025.0	1.4	**0.5840**	0.055	9.5	ug/L	6628	Standard
	Cr	53	1463.4	4.0	**1.1555**	0.040	3.5	ug/L	430	Standard
	Mn	55	1410.7	11.5	**0.1137**	0.033	29.0	ug/L	603	Standard
	Co	59	359.7	1.9	**0.0152**	0.002	14.6	ug/L	237	Standard
	Ni	60	319.3	6.2	**0.0894**	0.014	15.7	ug/L	141	Standard
	Cu	65	200.0	1.3	**0.0412**	0.002	3.9	ug/L	109	Standard
	Zn	66	1969.1	2.4	**1.5596**	0.014	0.9	ug/L	159	Standard
>	**Ge**	72	469994.3	2.3				ug/L	474053	Standard
	As	75	0.5	7482.9	**0.0251**	0.035	138.8	ug/L	-34	Standard
	Se	82	28.5	7.3	**0.0908**	0.014	15.4	ug/L	14	Standard
	Se-1	77	88.7	18.3	**0.4207**	0.218	51.8	ug/L	55	Standard
>	**Ga**	71	73.3	28.4				mg/L	50	Standard
	Rb	85	4865.8	1.3				ug/L	20	Standard
	Y	89	399171.5	2.3				ug/L	376602	Standard
>	**Rh**	103	93.3	12.4				ug/L	17	Standard
	Mo	98	101.9	16.6	**0.0370**	0.006	16.6	ug/L	8	Standard
	Ag	107	61.3	18.0	**-0.0021**	0.002	98.0	ug/L	81	Standard
	Cd	111	6.5	18.0	**0.0001**	0.001	960.6	mg/L	3	Standard
	Cd	114	23.1	68.6	**0.0010**	0.003	344.6	ug/L	7	Standard
>	**In**	115	531069.9	2.8				ug/L	524722	Standard
	Sn	118	445.0	10.3	**-0.0078**	0.009	112.2	ug/L	715	Standard
	Sb	123	65.7	14.2	**0.0001**	0.002	2926.8	ug/L	201	Standard
	Ba	135	36371.9	1.1	**19.7762**	0.433	2.2	ug/L	108	Standard
	Ce	140	41.7	50.0				ug/L	30	Standard
>	**Tb**	159	774515.8	2.9				ug/L	792236	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	160.3	8.2	**0.0195**	0.002	8.6	ug/L	9	Standard
	Tl	205	130.0	21.4	**0.0133**	0.005	36.0	ug/L	0	Standard
	Pb	206	254.0	4.2	**0.0016**	0.003	201.3	ug/L	216	Standard
	Pb	207	204.3	4.4	**-0.0027**	0.002	57.9	ug/L	180	Standard
	Pb	208	941.7	3.4	**0.0002**	0.002	1048.9	ug/L	717	Standard
	U	238	8.3	85.1	**-0.0062**	0.001	19.1	ug/L	4	Standard
>	**Bi**	209	437592.9	1.4				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1953.5	4.1	**2.4795**	0.082	3.3	mg/L	20	Standard
K	39	41.7	13.9	**0.0748**	0.041	54.3	mg/L	22	Standard
Ca	43	46.7	6.2	**-2.7971**	0.513	18.3	mg/L	47	Standard
Fe	54	137.1	22.1	**-0.0088**	0.022	251.4	mg/L	151	Standard
Fe	57	218.3	25.5	**-0.0034**	0.160	4703.1	mg/L	195	Standard
> **Sc-1**	45	31095.2	1.2				mg/L	29647	Standard
Cl	35	164376.3	1.5				ug/L	154152	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	5667.7	1.8				ug/L	1607	Standard
P	31	24892.1	1.3				ug/L	22752	Standard
S	34	5330.9	2.9				ug/L	5049	Standard
Sr	88	315.0	7.3				ug/L	87	Standard
C	12	43.3	26.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.7	100.8				mg/L	10	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	5250.9	7.1				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.599	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.144	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.210
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.058
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606073003
Sample Date/Time: Thursday, June 16, 2016 21:42:10
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53594.6	1.1				ug/L	51024	Standard
	Be	9	3.3	86.6	**-0.0173**	0.003	18.9	ug/L	7	Standard
	Al	27	2979001.9	0.3	**19.9155**	0.253	1.3	ug/L	625	Standard
	Sc	45	31315.7	0.8				ug/L	29647	Standard
	Ti	47	43.0	24.6	**-0.0251**	0.035	139.3	ug/L	57	Standard
	V	51	1280.4	1.3	**0.0086**	0.002	24.3	ug/L	1142	Standard
	Cr	52	6976.3	2.4	**0.0037**	0.022	588.3	ug/L	6628	Standard
	Cr	53	1470.1	6.4	**1.1220**	0.096	8.5	ug/L	430	Standard
	Mn	55	27960.5	2.4	**4.5016**	0.120	2.7	ug/L	603	Standard
	Co	59	554.3	12.3	**0.0435**	0.010	24.1	ug/L	237	Standard
	Ni	60	395.0	5.1	**0.1235**	0.010	8.4	ug/L	141	Standard
	Cu	65	173.0	8.3	**0.0243**	0.008	31.2	ug/L	109	Standard
	Zn	66	1439.4	0.7	**1.0440**	0.007	0.7	ug/L	159	Standard
>	**Ge**	72	482360.2	0.2				ug/L	474053	Standard
	As	75	84.5	59.0	**0.1001**	0.044	44.2	ug/L	-34	Standard
	Se	82	47.5	19.6	**0.2529**	0.082	32.5	ug/L	14	Standard
	Se-1	77	132.0	7.2	**0.9443**	0.119	12.5	ug/L	55	Standard
>	**Ga**	71	60.0	14.4				mg/L	50	Standard
	Rb	85	475.0	12.1				ug/L	20	Standard
	Y	89	391203.2	1.3				ug/L	376602	Standard
>	**Rh**	103	55.0	9.1				ug/L	17	Standard
	Mo	98	37.9	67.6	**0.0106**	0.011	103.7	ug/L	8	Standard
	Ag	107	71.3	16.2	**-0.0003**	0.002	600.9	ug/L	81	Standard
	Cd	111	5.3	57.7	**-0.0005**	0.002	303.0	mg/L	3	Standard
	Cd	114	27.8	51.3	**0.0020**	0.003	149.5	ug/L	7	Standard
>	**In**	115	521847.0	1.7				ug/L	524722	Standard
	Sn	118	455.0	13.4	**-0.0046**	0.010	225.0	ug/L	715	Standard
	Sb	123	77.8	11.7	**0.0031**	0.002	74.2	ug/L	201	Standard
	Ba	135	148771.2	0.6	**82.4802**	0.932	1.1	ug/L	108	Standard
	Ce	140	300.0	8.7				ug/L	30	Standard
>	**Tb**	159	770703.6	1.1				ug/L	792236	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	215.7	6.2	**0.0270**	0.001	5.4	ug/L	9	Standard
	Tl	205	208.3	27.6	**0.0257**	0.009	34.8	ug/L	0	Standard
	Pb	206	272.0	3.0	**0.0054**	0.003	50.7	ug/L	216	Standard
	Pb	207	232.3	12.8	**0.0041**	0.008	195.9	ug/L	180	Standard
	Pb	208	1012.0	13.3	**0.0042**	0.007	176.0	ug/L	717	Standard
	U	238	232.3	16.7	**0.0315**	0.006	19.1	ug/L	4	Standard
>	**Bi**	209	439553.9	1.5				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	6086.2	1.7	**7.7675**	0.192	2.5	mg/L	20	Standard
K	39	18.3	56.8	**-0.0957**	0.075	77.9	mg/L	22	Standard
Ca	43	40.0	37.5	**-4.3545**	3.269	75.1	mg/L	47	Standard
Fe	54	265.9	15.1	**0.0898**	0.032	35.5	mg/L	151	Standard
Fe	57	201.7	20.0	**-0.0564**	0.115	204.5	mg/L	195	Standard
> **Sc-1**	45	31315.7	0.8				mg/L	29647	Standard
Cl	35	164992.2	0.7				ug/L	154152	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	10840.5	3.2				ug/L	1607	Standard
P	31	25164.2	3.4				ug/L	22752	Standard
S	34	5275.9	3.2				ug/L	5049	Standard
Sr	88	133.3	20.7				ug/L	87	Standard
C	12	53.3	57.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.2	49.6				mg/L	10	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	3	Standard
I	127	4810.8	4.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.038	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.752	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	99.452
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	95.484
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 21:45:23
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	52964.1	3.2				ug/L	51024	Standard
	Be	9	42168.6	0.7	**48.3246**	1.216	2.5	ug/L	7	Standard
	Al	27	7159091.1	2.4	**48.4492**	0.473	1.0	ug/L	625	Standard
	Sc	45	31200.4	3.4				ug/L	29647	Standard
	Ti	47	30099.2	0.4	**103.9852**	0.489	0.5	ug/L	57	Standard
	V	51	348173.2	0.9	**50.6797**	0.340	0.7	ug/L	1142	Standard
	Cr	52	366090.7	0.6	**50.7470**	0.566	1.1	ug/L	6628	Standard
	Cr	53	45820.9	1.2	**50.7491**	0.901	1.8	ug/L	430	Standard
	Mn	55	317011.4	2.2	**55.3295**	1.324	2.4	ug/L	603	Standard
	Co	59	316851.8	0.1	**51.1533**	0.313	0.6	ug/L	237	Standard
	Ni	60	93845.8	1.6	**50.4491**	1.080	2.1	ug/L	141	Standard
	Cu	65	91207.1	1.9	**50.3255**	1.210	2.4	ug/L	109	Standard
	Zn	66	53728.8	0.5	**50.1071**	0.516	1.0	ug/L	159	Standard
>	Ge	72	456409.0	0.5				ug/L	474053	Standard
	As	75	53094.6	1.6	**49.8317**	1.034	2.1	ug/L	-34	Standard
	Se	82	5335.2	1.1	**49.9428**	0.782	1.6	ug/L	14	Standard
	Se-1	77	3694.5	1.3	**49.2280**	0.868	1.8	ug/L	55	Standard
>	Ga	71	73.3	28.4				mg/L	50	Standard
	Rb	85	751.7	9.7				ug/L	20	Standard
	Y	89	395355.6	1.3				ug/L	376602	Standard
>	Rh	103	41.7	60.4				ug/L	17	Standard
	Mo	98	229935.7	1.0	**95.4610**	1.901	2.0	ug/L	8	Standard
	Ag	107	284501.2	0.4	**46.7556**	0.793	1.7	ug/L	81	Standard
	Cd	111	95579.3	0.6	**48.2915**	1.096	2.3	mg/L	3	Standard
	Cd	114	235319.3	0.3	**48.0921**	0.943	2.0	ug/L	7	Standard
>	In	115	535171.0	1.8				ug/L	524722	Standard
	Sn	118	268883.3	0.8	**48.8581**	0.478	1.0	ug/L	715	Standard
	Sb	123	213216.9	1.1	**47.8524**	0.650	1.4	ug/L	201	Standard
	Ba	135	88420.6	0.7	**47.7774**	0.620	1.3	ug/L	108	Standard
	Ce	140	60.0	52.0				ug/L	30	Standard
>	Tb	159	778568.6	0.9				ug/L	792236	Standard
	Ho	165	13.3	43.3				ug/L	7	Standard
	Tl	203	356552.0	0.9	**49.1981**	0.525	1.1	ug/L	9	Standard
	Tl	205	312384.5	1.4	**50.6927**	1.380	2.7	ug/L	0	Standard
	Pb	206	221782.7	0.3	**50.5795**	0.697	1.4	ug/L	216	Standard
	Pb	207	201563.9	0.5	**50.4967**	0.774	1.5	ug/L	180	Standard
	Pb	208	829379.7	0.4	**51.1985**	0.900	1.8	ug/L	717	Standard
	U	238	307681.0	0.4	**52.2118**	0.917	1.8	ug/L	4	Standard
>	Bi	209	436760.9	1.5				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.2513**	9.008	171.5	mg/L	0	Standard
Mg	24	3917.2	3.4	**5.0034**	0.184	3.7	mg/L	20	Standard
K	39	655.0	10.8	**4.5166**	0.488	10.8	mg/L	22	Standard
Ca	43	65.0	20.4	**1.3136**	3.422	260.5	mg/L	47	Standard
Fe	54	6192.2	4.0	**4.6769**	0.351	7.5	mg/L	151	Standard
Fe	57	1618.4	6.7	**4.1237**	0.452	11.0	mg/L	195	Standard
Sc-1	45	31200.4	3.4				mg/L	29647	Standard
Cl	35	163997.6	1.9				ug/L	154152	Standard
Kr	83	3.7	15.7				ug/L	3	Standard
Br	81	1766.8	4.0				ug/L	1607	Standard
P	31	25599.9	0.9				ug/L	22752	Standard
S	34	5862.8	2.2				ug/L	5049	Standard
Sr	88	68.3	41.6				ug/L	87	Standard
C	12	33.3	34.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	-1.0	50.0				mg/L	10	Standard
Ho-1	165	13.3	43.3				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	3	Standard
I	127	1488.4	8.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	96.649		
Al	27	96.898		
Sc	45			
Ti	47	103.985		
V	51	101.359		
Cr	52	101.494		
Cr	53			
Mn	55	110.659		
Co	59	102.307		
Ni	60	100.898		
Cu	65	100.651		
Zn	66	100.214		
Ge	72		96.278	
As	75	99.663		
Se	82	99.886		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	95.461		
Ag	107	93.511		
Cd	111	96.583		
Cd	114			
> In	115		101.991	
Sn	118	97.716		
Sb	123	95.705		
Ba	135	95.555		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.396		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.397		
U	238	104.424		
> Bi	209		94.877	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 21:48:35
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51738.2	1.1				ug/L	51024	Standard
	Be	9	8.3	91.7	**-0.0112**	0.009	80.5	ug/L	7	Standard
	Al	27	1365.1	16.8	**-0.0003**	0.002	478.2	ug/L	625	Standard
	Sc	45	32252.6	1.6				ug/L	29647	Standard
	Ti	47	29.0	17.2	**-0.0677**	0.018	26.3	ug/L	57	Standard
	V	51	928.8	10.2	**-0.0358**	0.012	34.3	ug/L	1142	Standard
	Cr	52	6199.9	1.6	**-0.0728**	0.006	8.7	ug/L	6628	Standard
	Cr	53	526.7	17.6	**0.1435**	0.102	70.8	ug/L	430	Standard
	Mn	55	679.7	4.7	**-0.0102**	0.006	62.4	ug/L	603	Standard
	Co	59	222.0	2.4	**-0.0062**	0.001	15.3	ug/L	237	Standard
	Ni	60	127.3	4.5	**-0.0108**	0.003	24.1	ug/L	141	Standard
	Cu	65	129.3	11.3	**0.0037**	0.008	218.4	ug/L	109	Standard
	Zn	66	156.3	8.5	**-0.0888**	0.012	14.0	ug/L	159	Standard
>	**Ge**	72	466990.8	0.9				ug/L	474053	Standard
	As	75	-31.2	100.9	**-0.0035**	0.029	815.0	ug/L	-34	Standard
	Se	82	18.5	27.4	**0.0013**	0.046	3640.7	ug/L	14	Standard
	Se-1	77	60.7	5.3	**0.0572**	0.045	77.9	ug/L	55	Standard
>	**Ga**	71	66.7	41.3				mg/L	50	Standard
	Rb	85	25.0	20.0				ug/L	20	Standard
	Y	89	391075.9	3.9				ug/L	376602	Standard
>	**Rh**	103	35.0	49.5				ug/L	17	Standard
	Mo	98	246.2	31.0	**0.0990**	0.031	31.0	ug/L	8	Standard
	Ag	107	92.0	11.3	**0.0032**	0.002	60.7	ug/L	81	Standard
	Cd	111	9.2	30.0	**0.0015**	0.001	89.3	mg/L	3	Standard
	Cd	114	8.4	58.3	**-0.0021**	0.001	50.3	ug/L	7	Standard
>	**In**	115	521304.7	2.1				ug/L	524722	Standard
	Sn	118	806.7	12.6	**0.0616**	0.022	35.5	ug/L	715	Standard
	Sb	123	413.8	23.7	**0.0808**	0.024	30.2	ug/L	201	Standard
	Ba	135	135.0	17.1	**0.0173**	0.012	72.2	ug/L	108	Standard
	Ce	140	18.3	78.7				ug/L	30	Standard
>	**Tb**	159	770403.7	2.0				ug/L	792236	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	53.3	21.7	**0.0047**	0.002	33.8	ug/L	9	Standard
	Tl	205	41.7	25.0	**-0.0011**	0.002	147.7	ug/L	0	Standard
	Pb	206	231.3	3.6	**-0.0040**	0.002	55.2	ug/L	216	Standard
	Pb	207	191.7	4.4	**-0.0062**	0.002	38.0	ug/L	180	Standard
	Pb	208	830.7	1.5	**-0.0071**	0.001	9.5	ug/L	717	Standard
	U	238	32.3	17.6	**-0.0021**	0.001	45.2	ug/L	4	Standard
>	**Bi**	209	440882.3	0.7				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	40.0	45.1	**0.0046**	0.022	483.5	mg/L	20	Standard
K	39	21.7	13.3	**-0.0762**	0.019	24.7	mg/L	22	Standard
Ca	43	16.7	62.4	**-9.5897**	2.277	23.7	mg/L	47	Standard
Fe	54	154.6	3.2	**0.0006**	0.004	679.4	mg/L	151	Standard
Fe	57	181.7	39.0	**-0.1287**	0.205	159.3	mg/L	195	Standard
> **Sc-1**	45	32252.6	1.6				mg/L	29647	Standard
Cl	35	162535.6	2.7				ug/L	154152	Standard
Kr	83	2.0	100.0				ug/L	3	Standard
Br	81	1583.4	15.5				ug/L	1607	Standard
P	31	25920.5	3.4				ug/L	22752	Standard
S	34	5491.0	2.1				ug/L	5049	Standard
Sr	88	78.3	13.3				ug/L	87	Standard
C	12	43.3	13.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	2.9	173.2				mg/L	10	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	10.0	173.2				mg/L	3	Standard
I	127	951.7	4.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.510	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.349
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.773
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, June 16, 2016 21:51:48
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51025.8	1.8				ug/L	51024	Standard
	Be	9	158.3	20.5	**0.1674**	0.039	23.3	ug/L	7	Standard
	Al	27	703.4	27.7	**-0.0048**	0.001	26.9	ug/L	625	Standard
	Sc	45	32324.5	3.0				ug/L	29647	Standard
	Ti	47	27.3	27.7	**-0.0704**	0.026	37.0	ug/L	57	Standard
	V	51	3596.4	1.1	**0.3627**	0.006	1.6	ug/L	1142	Standard
	Cr	52	11538.7	0.6	**0.7185**	0.004	0.5	ug/L	6628	Standard
	Cr	53	1191.7	2.4	**0.9142**	0.036	4.0	ug/L	430	Standard
	Mn	55	3452.4	2.2	**0.4841**	0.013	2.6	ug/L	603	Standard
	Co	59	2481.5	3.2	**0.3641**	0.012	3.2	ug/L	237	Standard
	Ni	60	2983.6	1.9	**1.5460**	0.025	1.6	ug/L	141	Standard
	Cu	65	1554.1	2.2	**0.8018**	0.018	2.3	ug/L	109	Standard
	Zn	66	6904.6	0.5	**6.3076**	0.040	0.6	ug/L	159	Standard
>	**Ge**	72	451469.6	0.4				ug/L	474053	Standard
	As	75	367.1	3.5	**0.3732**	0.012	3.2	ug/L	-34	Standard
	Se	82	52.6	5.1	**0.3307**	0.024	7.1	ug/L	14	Standard
	Se-1	77	86.0	19.2	**0.4314**	0.229	53.1	ug/L	55	Standard
>	**Ga**	71	36.7	56.8				mg/L	50	Standard
	Rb	85	15.0	145.3				ug/L	20	Standard
	Y	89	372929.0	2.6				ug/L	376602	Standard
>	**Rh**	103	21.7	58.1				ug/L	17	Standard
	Mo	98	53.2	25.4	**0.0175**	0.006	35.6	ug/L	8	Standard
	Ag	107	2191.8	2.9	**0.3621**	0.015	4.2	ug/L	81	Standard
	Cd	111	428.6	3.0	**0.2218**	0.010	4.4	mg/L	3	Standard
	Cd	114	1072.7	8.3	**0.2242**	0.022	10.0	ug/L	7	Standard
>	**In**	115	515022.5	1.7				ug/L	524722	Standard
	Sn	118	460.0	21.8	**-0.0026**	0.018	670.4	ug/L	715	Standard
	Sb	123	1687.6	0.2	**0.3789**	0.008	2.0	ug/L	201	Standard
	Ba	135	1278.4	5.4	**0.6611**	0.044	6.7	ug/L	108	Standard
	Ce	140	11.7	89.2				ug/L	30	Standard
>	**Tb**	159	775692.8	2.1				ug/L	792236	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	561.7	1.8	**0.0736**	0.001	1.5	ug/L	9	Standard
	Tl	205	431.7	7.1	**0.0610**	0.005	8.2	ug/L	0	Standard
	Pb	206	1089.0	2.6	**0.1879**	0.008	4.3	ug/L	216	Standard
	Pb	207	883.7	5.5	**0.1638**	0.011	6.9	ug/L	180	Standard
	Pb	208	3859.2	0.5	**0.1764**	0.003	1.5	ug/L	717	Standard
	U	238	2254.8	1.2	**0.3683**	0.007	1.9	ug/L	4	Standard
>	**Bi**	209	444599.6	0.7				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.3150**	8.898	167.4	mg/L	0	Standard
Mg	24	30.0	16.7	**-0.0079**	0.006	76.0	mg/L	20	Standard
K	39	21.7	66.6	**-0.0767**	0.101	131.3	mg/L	22	Standard
Ca	43	30.0	28.9	**-6.7278**	2.028	30.1	mg/L	47	Standard
Fe	54	87.5	4.0	**-0.0496**	0.004	9.0	mg/L	151	Standard
Fe	57	195.0	9.2	**-0.0929**	0.056	60.4	mg/L	195	Standard
Sc-1	45	32324.5	3.0				mg/L	29647	Standard
Cl	35	156288.7	1.2				ug/L	154152	Standard
Kr	83	3.3	17.3				ug/L	3	Standard
Br	81	1266.7	10.3				ug/L	1607	Standard
P	31	17852.2	2.6				ug/L	22752	Standard
S	34	5659.4	1.8				ug/L	5049	Standard
Sr	88	65.0	40.7				ug/L	87	Standard
C	12	20.0	0.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.2	100.1				mg/L	10	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	985.0	8.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	83.676		
Al	27			
Sc	45			
Ti	47			
V	51	90.668		
Cr	52	89.809		
Cr	53			
Mn	55	96.822		
Co	59	91.014		
Ni	60	96.626		
Cu	65	100.227		
Zn	66	100.922		
Ge	72		95.236	
As	75	93.291		
Se	82	82.669		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	90.533		
Cd	111	92.425		
Cd	114			
> In	115			98.152
Sn	118			
Sb	123	94.728		
Ba	135	88.151		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	91.941		
Tl	205			
Pb	206			
Pb	207			
Pb	208	88.177		
U	238	92.081		
> Bi	209			96.580
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
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Method 6020 - Summary Report

Sample ID: PBW 58 WG571964-02
Sample Date/Time: Thursday, June 16, 2016 21:55:00
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51882.0	0.7				ug/L	51024	Standard
	Be	9	8.3	91.7	**-0.0113**	0.009	79.6	ug/L	7	Standard
	Al	27	7225.1	1.7	**0.0402**	0.001	2.5	ug/L	625	Standard
	Sc	45	32848.9	2.3				ug/L	29647	Standard
	Ti	47	51.0	25.0	**0.0065**	0.044	672.4	ug/L	57	Standard
	V	51	1196.1	1.0	**0.0022**	0.004	185.3	ug/L	1142	Standard
	Cr	52	7726.6	1.1	**0.1365**	0.019	13.7	ug/L	6628	Standard
	Cr	53	648.3	14.3	**0.2747**	0.094	34.1	ug/L	430	Standard
	Mn	55	2688.6	3.0	**0.3326**	0.014	4.1	ug/L	603	Standard
	Co	59	223.3	5.2	**-0.0060**	0.001	19.7	ug/L	237	Standard
	Ni	60	306.7	5.4	**0.0833**	0.005	5.7	ug/L	141	Standard
	Cu	65	369.3	3.4	**0.1332**	0.011	8.3	ug/L	109	Standard
	Zn	66	1524.4	0.8	**1.1625**	0.045	3.9	ug/L	159	Standard
>	**Ge**	72	467701.0	2.5				ug/L	474053	Standard
	As	75	-29.1	18.5	**-0.0015**	0.005	304.8	ug/L	-34	Standard
	Se	82	20.2	33.1	**0.0162**	0.062	379.4	ug/L	14	Standard
	Se-1	77	49.0	28.8	**-0.1009**	0.171	169.5	ug/L	55	Standard
>	**Ga**	71	70.0	25.8				mg/L	50	Standard
	Rb	85	63.3	19.9				ug/L	20	Standard
	Y	89	385228.3	1.7				ug/L	376602	Standard
>	**Rh**	103	13.3	43.3				ug/L	17	Standard
	Mo	98	91.6	20.6	**0.0329**	0.008	25.1	ug/L	8	Standard
	Ag	107	70.0	10.3	**-0.0007**	0.001	169.4	ug/L	81	Standard
	Cd	111	7.2	21.3	**0.0004**	0.001	191.2	mg/L	3	Standard
	Cd	114	8.6	219.6	**-0.0020**	0.004	198.4	ug/L	7	Standard
>	**In**	115	529391.3	2.2				ug/L	524722	Standard
	Sn	118	1728.4	4.6	**0.2287**	0.017	7.5	ug/L	715	Standard
	Sb	123	139.5	23.6	**0.0168**	0.007	40.4	ug/L	201	Standard
	Ba	135	108.3	10.8	**0.0016**	0.007	433.3	ug/L	108	Standard
	Ce	140	70.0	18.9				ug/L	30	Standard
>	**Tb**	159	807450.9	1.8				ug/L	792236	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	22.0	12.0	**0.0003**	0.000	106.9	ug/L	9	Standard
	Tl	205	30.0	28.9	**-0.0032**	0.001	42.5	ug/L	0	Standard
	Pb	206	253.7	10.4	**-0.0009**	0.006	689.0	ug/L	216	Standard
	Pb	207	220.0	2.1	**-0.0010**	0.001	126.8	ug/L	180	Standard
	Pb	208	877.3	3.6	**-0.0060**	0.002	33.1	ug/L	717	Standard
	U	238	8.7	63.5	**-0.0062**	0.001	14.5	ug/L	4	Standard
>	**Bi**	209	455782.1	0.2				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.5393**	8.509	153.6	mg/L	0	Standard
Mg	24	36.7	7.9	**-0.0004**	0.003	710.4	mg/L	20	Standard
K	39	8.3	34.6	**-0.1703**	0.021	12.2	mg/L	22	Standard
Ca	43	33.3	8.7	**-6.1652**	0.476	7.7	mg/L	47	Standard
Fe	54	150.7	24.4	**-0.0047**	0.025	526.5	mg/L	151	Standard
Fe	57	176.7	14.2	**-0.1527**	0.076	49.6	mg/L	195	Standard
> **Sc-1**	45	32848.9	2.3				mg/L	29647	Standard
Cl	35	161385.0	1.1				ug/L	154152	Standard
Kr	83	3.3	34.6				ug/L	3	Standard
Br	81	1680.1	1.8				ug/L	1607	Standard
P	31	24029.0	2.1				ug/L	22752	Standard
S	34	5571.0	3.7				ug/L	5049	Standard
Sr	88	66.7	56.3				ug/L	87	Standard
C	12	53.3	94.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.2	100.1				mg/L	10	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	1201.7	0.5				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		101.681	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.660	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.890
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.009
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 58 WG571964-03
Sample Date/Time: Thursday, June 16, 2016 21:58:11
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53618.1	1.9				ug/L	51024	Standard
	Be	9	43223.2	1.9	**48.9062**	0.701	1.4	ug/L	7	Standard
	Al	27	16045.2	3.1	**0.0975**	0.001	1.5	ug/L	625	Standard
	Sc	45	33034.3	2.7				ug/L	29647	Standard
	Ti	47	54.7	14.9	**0.0208**	0.027	130.9	ug/L	57	Standard
	V	51	357626.2	0.2	**51.4076**	0.356	0.7	ug/L	1142	Standard
	Cr	52	377061.2	0.6	**51.6273**	0.257	0.5	ug/L	6628	Standard
	Cr	53	46803.9	1.6	**51.1933**	1.124	2.2	ug/L	430	Standard
	Mn	55	326931.8	1.1	**56.3462**	0.565	1.0	ug/L	603	Standard
	Co	59	321699.5	0.9	**51.2838**	0.209	0.4	ug/L	237	Standard
	Ni	60	96180.4	1.7	**51.0507**	0.482	0.9	ug/L	141	Standard
	Cu	65	95306.5	1.4	**51.9244**	0.344	0.7	ug/L	109	Standard
	Zn	66	56208.1	0.9	**51.7682**	0.278	0.5	ug/L	159	Standard
>	**Ge**	72	462203.6	0.8				ug/L	474053	Standard
	As	75	54677.4	1.3	**50.6686**	0.319	0.6	ug/L	-34	Standard
	Se	82	5471.8	2.6	**50.5742**	0.951	1.9	ug/L	14	Standard
	Se-1	77	3817.1	0.9	**50.2380**	0.317	0.6	ug/L	55	Standard
>	**Ga**	71	60.0	22.0				mg/L	50	Standard
	Rb	85	115.0	15.7				ug/L	20	Standard
	Y	89	401062.4	1.0				ug/L	376602	Standard
>	**Rh**	103	33.3	37.7				ug/L	17	Standard
	Mo	98	55.7	12.6	**0.0170**	0.003	16.7	ug/L	8	Standard
	Ag	107	298947.0	1.2	**47.9637**	0.316	0.7	ug/L	81	Standard
	Cd	111	99244.6	1.4	**48.9502**	0.549	1.1	mg/L	3	Standard
	Cd	114	239743.2	0.7	**47.8326**	0.248	0.5	ug/L	7	Standard
>	**In**	115	548071.7	0.8				ug/L	524722	Standard
	Sn	118	1466.7	2.8	**0.1712**	0.008	4.6	ug/L	715	Standard
	Sb	123	213065.5	1.1	**46.6859**	0.143	0.3	ug/L	201	Standard
	Ba	135	90504.9	1.1	**47.7484**	0.750	1.6	ug/L	108	Standard
	Ce	140	71.7	4.0				ug/L	30	Standard
>	**Tb**	159	809470.0	2.7				ug/L	792236	Standard
	Ho	165	10.0	100.0				ug/L	7	Standard
	Tl	203	363003.7	1.1	**48.3987**	0.635	1.3	ug/L	9	Standard
	Tl	205	319279.0	0.6	**50.0661**	1.366	2.7	ug/L	0	Standard
	Pb	206	230746.8	0.4	**50.8528**	1.062	2.1	ug/L	216	Standard
	Pb	207	202045.2	0.4	**48.9160**	1.313	2.7	ug/L	180	Standard
	Pb	208	862693.1	0.1	**51.4643**	1.296	2.5	ug/L	717	Standard
	U	238	307882.3	0.1	**50.4881**	1.234	2.4	ug/L	4	Standard
>	**Bi**	209	452058.0	2.3				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.4002**	8.750	162.0	mg/L	0	Standard
Mg	24	33.3	8.7	**-0.0046**	0.004	92.7	mg/L	20	Standard
K	39	38.3	32.8	**0.0349**	0.087	249.1	mg/L	22	Standard
Ca	43	31.7	48.2	**-6.5426**	3.175	48.5	mg/L	47	Standard
Fe	54	129.8	11.6	**-0.0203**	0.010	51.0	mg/L	151	Standard
Fe	57	178.3	5.8	**-0.1508**	0.042	28.0	mg/L	195	Standard
> **Sc-1**	45	33034.3	2.7				mg/L	29647	Standard
Cl	35	160489.1	2.1				ug/L	154152	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	1963.5	7.4				ug/L	1607	Standard
P	31	24446.4	2.0				ug/L	22752	Standard
S	34	5609.4	5.5				ug/L	5049	Standard
Sr	88	61.7	16.9				ug/L	87	Standard
C	12	83.3	59.2				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	16.2	127.9				mg/L	10	Standard
Ho-1	165	10.0	100.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	1580.1	4.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.084	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.500	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.450
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.200
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606042801 WG571964-01
Sample Date/Time: Thursday, June 16, 2016 22:01:23
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53056.1	0.8				ug/L	51024	Standard
	Be	9	15.0	120.2	**-0.0038**	0.021	544.4	ug/L	7	Standard
	Al	27	757403.8	1.6	**5.1075**	0.106	2.1	ug/L	625	Standard
	Sc	45	31754.9	2.5				ug/L	29647	Standard
	Ti	47	165.7	8.9	**0.3896**	0.046	11.7	ug/L	57	Standard
	V	51	1511.6	6.0	**0.0457**	0.014	31.1	ug/L	1142	Standard
	Cr	52	8164.9	0.8	**0.1892**	0.010	5.5	ug/L	6628	Standard
	Cr	53	1656.8	10.3	**1.3626**	0.187	13.8	ug/L	430	Standard
	Mn	55	17190.1	1.5	**2.7889**	0.065	2.3	ug/L	603	Standard
	Co	59	391.7	5.3	**0.0201**	0.004	18.4	ug/L	237	Standard
	Ni	60	11431.6	1.7	**5.8888**	0.134	2.3	ug/L	141	Standard
	Cu	65	74287.3	0.4	**39.7191**	0.286	0.7	ug/L	109	Standard
	Zn	66	6798.2	0.6	**5.9426**	0.080	1.3	ug/L	159	Standard
>	**Ge**	72	470820.2	0.8				ug/L	474053	Standard
	As	75	23.4	122.6	**0.0464**	0.026	56.6	ug/L	-34	Standard
	Se	82	24.3	11.2	**0.0524**	0.025	47.2	ug/L	14	Standard
	Se-1	77	121.0	4.3	**0.8414**	0.059	7.0	ug/L	55	Standard
>	**Ga**	71	111.7	6.8				mg/L	50	Standard
	Rb	85	8439.0	5.7				ug/L	20	Standard
	Y	89	394979.4	1.5				ug/L	376602	Standard
>	**Rh**	103	30.0	0.0				ug/L	17	Standard
	Mo	98	18900.0	0.6	**7.8902**	0.142	1.8	ug/L	8	Standard
	Ag	107	1050.7	1.6	**0.1614**	0.000	0.2	ug/L	81	Standard
	Cd	111	8.7	19.0	**0.0012**	0.001	76.4	mg/L	3	Standard
	Cd	114	173.0	66.1	**0.0315**	0.023	73.0	ug/L	7	Standard
>	**In**	115	531861.1	1.7				ug/L	524722	Standard
	Sn	118	33005.9	1.3	**5.9570**	0.142	2.4	ug/L	715	Standard
	Sb	123	2285.8	18.9	**0.5027**	0.106	21.1	ug/L	201	Standard
	Ba	135	21266.9	0.9	**11.5188**	0.132	1.1	ug/L	108	Standard
	Ce	140	228.3	16.1				ug/L	30	Standard
>	**Tb**	159	787998.7	1.7				ug/L	792236	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	150.7	22.9	**0.0182**	0.005	26.8	ug/L	9	Standard
	Tl	205	115.0	41.5	**0.0108**	0.008	72.2	ug/L	0	Standard
	Pb	206	32589.3	0.1	**7.3677**	0.062	0.8	ug/L	216	Standard
	Pb	207	27351.7	1.3	**6.7905**	0.113	1.7	ug/L	180	Standard
	Pb	208	116700.7	0.9	**7.1377**	0.028	0.4	ug/L	717	Standard
	U	238	60.7	30.6	**0.0027**	0.003	116.1	ug/L	4	Standard
>	**Bi**	209	437691.5	0.7				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.5017**	8.575	155.9	mg/L	0	Standard
Mg	24	12460.1	1.8	**15.7356**	0.595	3.8	mg/L	20	Standard
K	39	611.7	9.8	**4.1225**	0.361	8.8	mg/L	22	Standard
Ca	43	61.7	24.8	**0.2569**	3.325	1294.5	mg/L	47	Standard
Fe	54	123.9	25.0	**-0.0210**	0.023	110.5	mg/L	151	Standard
Fe	57	213.3	11.8	**-0.0300**	0.077	258.2	mg/L	195	Standard
Sc-1	45	31754.9	2.5				mg/L	29647	Standard
Cl	35	194533.7	1.6				ug/L	154152	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	3240.3	4.0				ug/L	1607	Standard
P	31	24090.8	3.3				ug/L	22752	Standard
S	34	5104.2	4.8				ug/L	5049	Standard
Sr	88	81.7	19.7				ug/L	87	Standard
C	12	96.7	6.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.5	179.6				mg/L	10	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	13282.5	4.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.982	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.318	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.361
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.079
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606042801S WG571964-05
Sample Date/Time: Thursday, June 16, 2016 22:04:34
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55394.4	1.8				ug/L	51024	Standard
	Be	9	8934.3	3.4	**9.7660**	0.194	2.0	ug/L	7	Standard
	Al	27	748355.5	1.6	**4.8346**	0.168	3.5	ug/L	625	Standard
	Sc	45	32691.9	1.0				ug/L	29647	Standard
	Ti	47	168.3	4.0	**0.3836**	0.024	6.2	ug/L	57	Standard
	V	51	72192.1	1.7	**9.7775**	0.188	1.9	ug/L	1142	Standard
	Cr	52	79707.4	0.5	**9.6848**	0.014	0.1	ug/L	6628	Standard
	Cr	53	10453.6	1.1	**10.5826**	0.158	1.5	ug/L	430	Standard
	Mn	55	79152.9	1.5	**12.9343**	0.146	1.1	ug/L	603	Standard
	Co	59	63320.4	0.7	**9.6094**	0.039	0.4	ug/L	237	Standard
	Ni	60	29840.4	0.9	**15.0769**	0.185	1.2	ug/L	141	Standard
	Cu	65	88796.8	0.4	**46.2088**	0.054	0.1	ug/L	109	Standard
	Zn	66	17201.8	0.7	**14.9707**	0.150	1.0	ug/L	159	Standard
>	**Ge**	72	483837.9	0.4				ug/L	474053	Standard
	As	75	10943.5	1.9	**9.7081**	0.171	1.8	ug/L	-34	Standard
	Se	82	1071.8	4.1	**9.3269**	0.380	4.1	ug/L	14	Standard
	Se-1	77	883.4	1.7	**10.5260**	0.205	1.9	ug/L	55	Standard
>	**Ga**	71	61.7	18.7				mg/L	50	Standard
	Rb	85	8238.9	4.0				ug/L	20	Standard
	Y	89	381877.6	0.5				ug/L	376602	Standard
>	**Rh**	103	51.7	55.9				ug/L	17	Standard
	Mo	98	18040.5	0.2	**7.6113**	0.126	1.7	ug/L	8	Standard
	Ag	107	57677.6	1.0	**9.6285**	0.084	0.9	ug/L	81	Standard
	Cd	111	18876.2	0.3	**9.6948**	0.114	1.2	mg/L	3	Standard
	Cd	114	46340.2	1.4	**9.6280**	0.249	2.6	ug/L	7	Standard
>	**In**	115	526253.2	1.5				ug/L	524722	Standard
	Sn	118	29871.1	0.9	**5.4406**	0.094	1.7	ug/L	715	Standard
	Sb	123	44200.6	1.7	**10.0749**	0.023	0.2	ug/L	201	Standard
	Ba	135	37005.8	1.2	**20.2992**	0.061	0.3	ug/L	108	Standard
	Ce	140	223.3	9.3				ug/L	30	Standard
>	**Tb**	159	800388.6	1.7				ug/L	792236	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	71293.7	0.6	**9.5115**	0.043	0.5	ug/L	9	Standard
	Tl	205	61241.9	1.8	**9.6035**	0.196	2.0	ug/L	0	Standard
	Pb	206	76986.8	0.6	**16.9419**	0.160	0.9	ug/L	216	Standard
	Pb	207	66311.8	0.8	**16.0284**	0.098	0.6	ug/L	180	Standard
	Pb	208	275320.9	0.6	**16.3962**	0.155	0.9	ug/L	717	Standard
	U	238	60579.2	0.6	**9.9347**	0.056	0.6	ug/L	4	Standard
>	**Bi**	209	451597.7	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	12333.4	0.5	**15.1192**	0.089	0.6	mg/L	20	Standard
K	39	615.0	5.3	**4.0231**	0.203	5.0	mg/L	22	Standard
Ca	43	28.3	10.2	**-7.1884**	0.556	7.7	mg/L	47	Standard
Fe	54	187.4	26.5	**0.0230**	0.035	154.6	mg/L	151	Standard
Fe	57	198.3	19.1	**-0.0900**	0.107	118.9	mg/L	195	Standard
> **Sc-1**	45	32691.9	1.0				mg/L	29647	Standard
Cl	35	191462.1	0.2				ug/L	154152	Standard
Kr	83	1.7	124.9				ug/L	3	Standard
Br	81	2590.2	10.5				ug/L	1607	Standard
P	31	24189.3	1.6				ug/L	22752	Standard
S	34	5244.2	0.9				ug/L	5049	Standard
Sr	88	83.3	24.2				ug/L	87	Standard
C	12	146.7	23.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	13.3	114.6				mg/L	10	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	0.0					mg/L	3	Standard
I	127	11335.9	2.7				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		108.565	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		102.064	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606042801S WG571964-05
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.292	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.100	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606042801SD WG571964-06
Sample Date/Time: Thursday, June 16, 2016 22:07:46
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56861.5	1.0				ug/L	51024	Standard
	Be	9	9379.6	0.6	**9.9907**	0.123	1.2	ug/L	7	Standard
	Al	27	791197.5	0.6	**4.9782**	0.076	1.5	ug/L	625	Standard
	Sc	45	33405.1	3.0				ug/L	29647	Standard
	Ti	47	189.0	15.7	**0.4621**	0.100	21.6	ug/L	57	Standard
	V	51	73275.8	0.5	**10.1068**	0.150	1.5	ug/L	1142	Standard
	Cr	52	82693.4	0.6	**10.2789**	0.155	1.5	ug/L	6628	Standard
	Cr	53	11009.0	1.3	**11.3764**	0.331	2.9	ug/L	430	Standard
	Mn	55	80077.1	1.3	**13.3217**	0.087	0.6	ug/L	603	Standard
	Co	59	64342.3	1.0	**9.9396**	0.081	0.8	ug/L	237	Standard
	Ni	60	30668.0	0.6	**15.7751**	0.244	1.5	ug/L	141	Standard
	Cu	65	102903.3	0.9	**54.5140**	0.360	0.7	ug/L	109	Standard
	Zn	66	17903.6	1.4	**15.8728**	0.283	1.8	ug/L	159	Standard
>	**Ge**	72	475415.3	1.6				ug/L	474053	Standard
	As	75	11042.5	1.9	**9.9692**	0.144	1.4	ug/L	-34	Standard
	Se	82	1111.2	2.5	**9.8543**	0.398	4.0	ug/L	14	Standard
	Se-1	77	817.4	1.4	**9.8699**	0.196	2.0	ug/L	55	Standard
>	**Ga**	71	86.7	39.3				mg/L	50	Standard
	Rb	85	8222.2	4.2				ug/L	20	Standard
	Y	89	394850.6	0.8				ug/L	376602	Standard
>	**Rh**	103	35.0	28.6				ug/L	17	Standard
	Mo	98	19398.6	1.2	**8.0048**	0.167	2.1	ug/L	8	Standard
	Ag	107	59697.4	0.4	**9.7470**	0.052	0.5	ug/L	81	Standard
	Cd	111	19317.1	0.2	**9.7032**	0.092	0.9	mg/L	3	Standard
	Cd	114	47826.5	0.6	**9.7171**	0.080	0.8	ug/L	7	Standard
>	**In**	115	538049.7	0.9				ug/L	524722	Standard
	Sn	118	39536.5	1.2	**7.0684**	0.038	0.5	ug/L	715	Standard
	Sb	123	45183.1	0.7	**10.0737**	0.100	1.0	ug/L	201	Standard
	Ba	135	43743.7	0.4	**23.4783**	0.172	0.7	ug/L	108	Standard
	Ce	140	316.7	16.7				ug/L	30	Standard
>	**Tb**	159	823661.0	0.7				ug/L	792236	Standard
	Ho	165	16.7	69.3				ug/L	7	Standard
	Tl	203	73870.7	1.0	**9.7275**	0.120	1.2	ug/L	9	Standard
	Tl	205	62943.8	1.2	**9.7425**	0.171	1.8	ug/L	0	Standard
	Pb	206	79783.5	0.3	**17.3303**	0.067	0.4	ug/L	216	Standard
	Pb	207	68152.3	0.6	**16.2608**	0.196	1.2	ug/L	180	Standard
	Pb	208	286237.0	1.1	**16.8270**	0.286	1.7	ug/L	717	Standard
	U	238	62126.1	0.8	**10.0567**	0.149	1.5	ug/L	4	Standard
>	**Bi**	209	457529.8	0.7				ug/L	460343	Standard

Sample ID: L1606042801SD WG571964-06
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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	13005.6	1.2	**15.6137**	0.541	3.5	mg/L	20	Standard
K	39	631.7	11.7	**4.0527**	0.574	14.2	mg/L	22	Standard
Ca	43	45.0	29.4	**-3.9018**	2.447	62.7	mg/L	47	Standard
Fe	54	151.2	21.8	**-0.0055**	0.026	477.7	mg/L	151	Standard
Fe	57	191.7	21.7	**-0.1180**	0.127	107.5	mg/L	195	Standard
Sc-1	45	33405.1	3.0				mg/L	29647	Standard
Cl	35	198754.5	0.5				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	2900.3	3.8				ug/L	1607	Standard
P	31	24661.7	2.9				ug/L	22752	Standard
S	34	5152.5	2.9				ug/L	5049	Standard
Sr	88	78.3	9.8				ug/L	87	Standard
C	12	96.7	43.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.9	187.9				mg/L	10	Standard
Ho-1	165	16.7	69.3				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	11145.8	3.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.440	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.287	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606042801SD WG571964-06
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.540	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.389	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606041103
Sample Date/Time: Thursday, June 16, 2016 22:10:57
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62574.0	2.3				ug/L	51024	Standard
	Be	9	160.0	11.3	**0.1339**	0.015	11.0	ug/L	7	Standard
	Al	27	3612417.3	0.5	**20.6888**	0.380	1.8	ug/L	625	Standard
	Sc	45	41445.0	4.1				ug/L	29647	Standard
	Ti	47	11430.0	1.2	**38.8931**	0.503	1.3	ug/L	57	Standard
	V	51	49465.6	5.9	**6.9654**	0.407	5.8	ug/L	1142	Standard
	Cr	52	278119.6	1.2	**37.8421**	0.634	1.7	ug/L	6628	Standard
	Cr	53	35835.7	1.3	**39.0973**	0.639	1.6	ug/L	430	Standard
	Mn	55	108739.8	1.1	**18.6585**	0.168	0.9	ug/L	603	Standard
	Co	59	16555.0	2.3	**2.6001**	0.043	1.6	ug/L	237	Standard
	Ni	60	172929.3	0.8	**91.8635**	0.500	0.5	ug/L	141	Standard
	Cu	65	6358.3	3.5	**3.4028**	0.118	3.5	ug/L	109	Standard
	Zn	66	15282.7	1.5	**13.9075**	0.137	1.0	ug/L	159	Standard
>	**Ge**	72	462157.8	0.7				ug/L	474053	Standard
	As	75	708.4	1.9	**0.6813**	0.015	2.2	ug/L	-34	Standard
	Se	82	305.6	0.9	**2.6661**	0.043	1.6	ug/L	14	Standard
	Se-1	77	262.0	4.6	**2.7550**	0.165	6.0	ug/L	55	Standard
>	**Ga**	71	6034.5	4.8				mg/L	50	Standard
	Rb	85	47790.3	0.2				ug/L	20	Standard
	Y	89	408920.9	2.9				ug/L	376602	Standard
>	**Rh**	103	41.7	34.6				ug/L	17	Standard
	Mo	98	2172.6	4.5	**0.8781**	0.030	3.5	ug/L	8	Standard
	Ag	107	219.7	70.0	**0.0229**	0.024	105.6	ug/L	81	Standard
	Cd	111	75.9	34.7	**0.0343**	0.013	36.7	mg/L	3	Standard
	Cd	114	241.8	20.0	**0.0446**	0.009	20.8	ug/L	7	Standard
>	**In**	115	546080.6	1.7				ug/L	524722	Standard
	Sn	118	1300.1	5.7	**0.1424**	0.011	7.6	ug/L	715	Standard
	Sb	123	571.3	25.0	**0.1106**	0.030	26.8	ug/L	201	Standard
	Ba	135	154749.6	0.9	**81.9842**	0.666	0.8	ug/L	108	Standard
	Ce	140	87014.2	1.0				ug/L	30	Standard
>	**Tb**	159	814427.9	0.6				ug/L	792236	Standard
	Ho	165	750.0	9.7				ug/L	7	Standard
	Tl	203	378.3	10.9	**0.0480**	0.006	11.9	ug/L	9	Standard
	Tl	205	368.3	33.6	**0.0501**	0.020	39.4	ug/L	0	Standard
	Pb	206	5985.2	3.5	**1.2661**	0.051	4.1	ug/L	216	Standard
	Pb	207	4992.8	4.4	**1.1580**	0.058	5.0	ug/L	180	Standard
	Pb	208	21391.6	3.3	**1.2214**	0.047	3.9	ug/L	717	Standard
	U	238	1095.4	14.1	**0.1724**	0.026	15.1	ug/L	4	Standard
>	**Bi**	209	451292.0	0.4				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	20841.0	1.9	**20.1926**	1.006	5.0	mg/L	20	Standard
K	39	73.3	37.6	**0.1715**	0.145	84.8	mg/L	22	Standard
Ca	43	58.3	64.9	**-3.6032**	6.066	168.3	mg/L	47	Standard
Fe	54	4110.0	2.2	**2.2769**	0.060	2.6	mg/L	151	Standard
Fe	57	1281.7	3.9	**2.1921**	0.046	2.1	mg/L	195	Standard
> **Sc-1**	45	41445.0	4.1				mg/L	29647	Standard
Cl	35	174319.7	0.6				ug/L	154152	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	22139.5	6.4				ug/L	1607	Standard
P	31	56868.2	1.9				ug/L	22752	Standard
S	34	4735.7	5.8				ug/L	5049	Standard
Sr	88	138.3	8.3				ug/L	87	Standard
C	12	140.0	24.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	71.3				mg/L	0	Standard
Dy	164	1332.7	14.4				mg/L	10	Standard
Ho-1	165	750.0	9.7				mg/L	7	Standard
Er	166	710.0	11.5				mg/L	3	Standard
I	127	202127.9	4.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		122.636	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.491	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606041103
Report Date/Time: Thursday, June 16, 2016 22:13:14
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	104.070	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.034	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606041104
Sample Date/Time: Thursday, June 16, 2016 22:14:09
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64240.9	1.6				ug/L	51024	Standard
	Be	9	136.7	22.1	**0.1078**	0.027	24.9	ug/L	7	Standard
	Al	27	3763925.2	1.3	**20.9934**	0.276	1.3	ug/L	625	Standard
	Sc	45	40464.0	1.9				ug/L	29647	Standard
	Ti	47	8699.5	0.7	**27.3016**	0.630	2.3	ug/L	57	Standard
	V	51	38467.6	1.3	**4.9573**	0.087	1.7	ug/L	1142	Standard
	Cr	52	284248.5	0.2	**35.6883**	1.177	3.3	ug/L	6628	Standard
	Cr	53	35927.6	2.1	**36.1893**	1.342	3.7	ug/L	430	Standard
	Mn	55	133272.7	1.8	**21.1444**	0.498	2.4	ug/L	603	Standard
	Co	59	18921.1	3.5	**2.7470**	0.050	1.8	ug/L	237	Standard
	Ni	60	221247.9	1.4	**108.5931**	1.677	1.5	ug/L	141	Standard
	Cu	65	5825.8	2.3	**2.8698**	0.029	1.0	ug/L	109	Standard
	Zn	66	12440.8	1.3	**10.4031**	0.253	2.4	ug/L	159	Standard
>	**Ge**	72	500409.8	2.9				ug/L	474053	Standard
	As	75	551.3	12.2	**0.4975**	0.064	12.9	ug/L	-34	Standard
	Se	82	300.3	5.4	**2.4053**	0.175	7.3	ug/L	14	Standard
	Se-1	77	256.7	3.5	**2.4250**	0.195	8.0	ug/L	55	Standard
>	**Ga**	71	4735.7	2.7				mg/L	50	Standard
	Rb	85	38717.8	2.3				ug/L	20	Standard
	Y	89	413643.0	2.8				ug/L	376602	Standard
>	**Rh**	103	26.7	28.6				ug/L	17	Standard
	Mo	98	7867.7	1.9	**3.2136**	0.028	0.9	ug/L	8	Standard
	Ag	107	99.3	12.1	**0.0038**	0.002	50.7	ug/L	81	Standard
	Cd	111	46.8	16.9	**0.0200**	0.004	18.8	mg/L	3	Standard
	Cd	114	206.0	6.6	**0.0377**	0.003	7.1	ug/L	7	Standard
>	**In**	115	542917.1	1.0				ug/L	524722	Standard
	Sn	118	1081.7	2.4	**0.1046**	0.003	3.0	ug/L	715	Standard
	Sb	123	436.3	12.1	**0.0817**	0.011	13.3	ug/L	201	Standard
	Ba	135	146593.2	1.4	**78.1037**	0.328	0.4	ug/L	108	Standard
	Ce	140	75445.7	1.8				ug/L	30	Standard
>	**Tb**	159	801118.6	3.0				ug/L	792236	Standard
	Ho	165	633.3	15.1				ug/L	7	Standard
	Tl	203	300.0	6.5	**0.0378**	0.003	8.4	ug/L	9	Standard
	Tl	205	321.7	21.6	**0.0433**	0.012	28.2	ug/L	0	Standard
	Pb	206	5087.9	2.5	**1.0767**	0.011	1.0	ug/L	216	Standard
	Pb	207	4144.6	1.8	**0.9603**	0.027	2.8	ug/L	180	Standard
	Pb	208	18065.6	1.4	**1.0314**	0.029	2.8	ug/L	717	Standard
	U	238	874.7	4.0	**0.1374**	0.011	7.8	ug/L	4	Standard
>	**Bi**	209	447824.2	3.4				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	22872.3	0.6	**22.6806**	0.473	2.1	mg/L	20	Standard
K	39	35.0	51.5	**-0.0329**	0.100	305.7	mg/L	22	Standard
Ca	43	48.3	31.6	**-4.9013**	2.699	55.1	mg/L	47	Standard
Fe	54	3361.7	4.8	**1.8885**	0.113	6.0	mg/L	151	Standard
Fe	57	1078.4	5.6	**1.8011**	0.173	9.6	mg/L	195	Standard
Sc-1	45	40464.0	1.9				mg/L	29647	Standard
Cl	35	177669.3	2.1				ug/L	154152	Standard
Kr	83	2.3	24.7				ug/L	3	Standard
Br	81	20991.2	6.6				ug/L	1607	Standard
P	31	55948.1	2.2				ug/L	22752	Standard
S	34	4435.6	2.7				ug/L	5049	Standard
Sr	88	156.7	18.7				ug/L	87	Standard
C	12	160.0	47.2				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	0	Standard
Dy	164	1259.3	5.9				mg/L	10	Standard
Ho-1	165	633.3	15.1				mg/L	7	Standard
Er	166	573.3	7.3				mg/L	3	Standard
I	127	221985.7	5.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		125.903	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.560	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.468	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.281	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ni 60 Upper, S, EEE	Ni	60	

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Method 6020 - Summary Report

Sample ID: L1606041104PS WG572085-03
Sample Date/Time: Thursday, June 16, 2016 22:17:20
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68479.5	2.8				ug/L	51024	Standard
	Be	9	53798.7	2.5	**47.6621**	0.433	0.9	ug/L	7	Standard
	Al	27	3774638.8	2.0	**19.7508**	0.180	0.9	ug/L	625	Standard
	Sc	45	41744.1	0.5				ug/L	29647	Standard
	Ti	47	8543.7	1.2	**27.1926**	0.351	1.3	ug/L	57	Standard
	V	51	416323.5	0.8	**56.1020**	0.898	1.6	ug/L	1142	Standard
	Cr	52	661415.5	1.7	**85.4827**	2.467	2.9	ug/L	6628	Standard
	Cr	53	82886.1	1.6	**85.2548**	2.351	2.8	ug/L	430	Standard
	Mn	55	455226.4	0.8	**73.5653**	0.461	0.6	ug/L	603	Standard
	Co	59	356626.6	0.3	**53.2845**	0.717	1.3	ug/L	237	Standard
	Ni	60	319608.9	1.5	**159.1819**	4.226	2.7	ug/L	141	Standard
	Cu	65	101931.1	1.4	**52.0544**	1.323	2.5	ug/L	109	Standard
	Zn	66	69708.7	0.9	**60.2129**	1.260	2.1	ug/L	159	Standard
>	**Ge**	72	493214.1	1.2				ug/L	474053	Standard
	As	75	57487.0	0.2	**49.9285**	0.540	1.1	ug/L	-34	Standard
	Se	82	5945.0	0.7	**51.5039**	0.559	1.1	ug/L	14	Standard
	Se-1	77	4052.2	2.0	**49.9708**	0.414	0.8	ug/L	55	Standard
>	**Ga**	71	4670.7	3.3				mg/L	50	Standard
	Rb	85	37354.3	0.9				ug/L	20	Standard
	Y	89	401490.0	0.7				ug/L	376602	Standard
>	**Rh**	103	51.7	24.4				ug/L	17	Standard
	Mo	98	7837.2	0.6	**3.1623**	0.111	3.5	ug/L	8	Standard
	Ag	107	304891.6	0.9	**48.7677**	0.989	2.0	ug/L	81	Standard
	Cd	111	99959.3	1.1	**49.1537**	1.231	2.5	mg/L	3	Standard
	Cd	114	244744.0	1.6	**48.6729**	0.677	1.4	ug/L	7	Standard
>	**In**	115	549981.7	2.9				ug/L	524722	Standard
	Sn	118	1156.7	4.0	**0.1154**	0.002	1.9	ug/L	715	Standard
	Sb	123	225529.7	0.1	**49.2752**	1.450	2.9	ug/L	201	Standard
	Ba	135	235280.0	1.6	**123.8168**	1.916	1.5	ug/L	108	Standard
	Ce	140	72287.1	1.8				ug/L	30	Standard
>	**Tb**	159	836927.2	1.6				ug/L	792236	Standard
	Ho	165	618.3	2.8				ug/L	7	Standard
	Tl	203	374508.5	1.3	**47.9478**	0.598	1.2	ug/L	9	Standard
	Tl	205	331693.7	1.7	**49.9323**	0.614	1.2	ug/L	0	Standard
	Pb	206	246855.7	0.5	**52.2356**	0.118	0.2	ug/L	216	Standard
	Pb	207	213815.1	0.2	**49.6985**	0.193	0.4	ug/L	180	Standard
	Pb	208	877795.6	1.2	**50.2714**	0.366	0.7	ug/L	717	Standard
	U	238	322334.9	1.2	**50.7465**	0.349	0.7	ug/L	4	Standard
>	**Bi**	209	470679.1	0.5				ug/L	460343	Standard

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Na	23	3.3	173.2	**2.6916**	13.442	499.4	mg/L	0	Standard
Mg	24	22820.5	2.3	**21.9277**	0.463	2.1	mg/L	20	Standard
K	39	55.0	32.8	**0.0700**	0.098	140.3	mg/L	22	Standard
Ca	43	53.3	28.6	**-4.3313**	2.572	59.4	mg/L	47	Standard
Fe	54	3487.5	4.4	**1.8989**	0.090	4.7	mg/L	151	Standard
Fe	57	1048.4	8.2	**1.6588**	0.199	12.0	mg/L	195	Standard
> **Sc-1**	45	41744.1	0.5				mg/L	29647	Standard
Cl	35	171137.1	0.1				ug/L	154152	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	19926.4	2.2				ug/L	1607	Standard
P	31	55093.4	2.6				ug/L	22752	Standard
S	34	4375.6	3.4				ug/L	5049	Standard
Sr	88	146.7	22.7				ug/L	87	Standard
C	12	130.0	35.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	69.3				mg/L	0	Standard
Dy	164	1135.3	6.0				mg/L	10	Standard
Ho-1	165	618.3	2.8				mg/L	7	Standard
Er	166	516.7	11.3				mg/L	3	Standard
I	127	228888.4	2.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		134.210	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.042	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.814
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.245
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ni 60 Upper, S, EEE	Ni	60	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606041104SDL WG572085-04
Sample Date/Time: Thursday, June 16, 2016 22:20:32
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64080.3	2.7				ug/L	51024	Standard
	Be	9	40.0	12.5	**0.0168**	0.005	27.3	ug/L	7	Standard
	Al	27	710132.3	2.2	**3.9635**	0.097	2.4	ug/L	625	Standard
	Sc	45	34213.6	1.2				ug/L	29647	Standard
	Ti	47	1665.1	3.3	**5.5149**	0.188	3.4	ug/L	57	Standard
	V	51	8406.9	2.7	**1.0425**	0.044	4.3	ug/L	1142	Standard
	Cr	52	60396.1	0.7	**7.4773**	0.032	0.4	ug/L	6628	Standard
	Cr	53	7433.5	0.9	**7.7546**	0.056	0.7	ug/L	430	Standard
	Mn	55	26233.4	1.3	**4.3983**	0.064	1.4	ug/L	603	Standard
	Co	59	3790.1	2.7	**0.5627**	0.022	4.0	ug/L	237	Standard
	Ni	60	42759.9	1.8	**22.6189**	0.287	1.3	ug/L	141	Standard
	Cu	65	1312.1	2.0	**0.6485**	0.012	1.8	ug/L	109	Standard
	Zn	66	4020.5	0.7	**3.4822**	0.054	1.5	ug/L	159	Standard
>	**Ge**	72	462909.1	1.0				ug/L	474053	Standard
	As	75	127.1	1.3	**0.1426**	0.002	1.2	ug/L	-34	Standard
	Se	82	76.1	4.5	**0.5359**	0.031	5.8	ug/L	14	Standard
	Se-1	77	88.7	7.5	**0.4371**	0.078	17.8	ug/L	55	Standard
>	**Ga**	71	933.4	4.3				mg/L	50	Standard
	Rb	85	7380.1	1.8				ug/L	20	Standard
	Y	89	399286.8	1.5				ug/L	376602	Standard
>	**Rh**	103	10.0	50.0				ug/L	17	Standard
	Mo	98	1500.2	2.7	**0.5970**	0.016	2.6	ug/L	8	Standard
	Ag	107	118.7	15.0	**0.0065**	0.003	41.2	ug/L	81	Standard
	Cd	111	28.9	34.9	**0.0109**	0.005	45.1	mg/L	3	Standard
	Cd	114	79.5	41.7	**0.0119**	0.007	55.5	ug/L	7	Standard
>	**In**	115	553072.6	0.8				ug/L	524722	Standard
	Sn	118	576.7	14.8	**0.0122**	0.016	129.0	ug/L	715	Standard
	Sb	123	2178.3	21.1	**0.4589**	0.103	22.5	ug/L	201	Standard
	Ba	135	28213.6	0.4	**14.7104**	0.164	1.1	ug/L	108	Standard
	Ce	140	14325.1	2.6				ug/L	30	Standard
>	**Tb**	159	808125.3	1.3				ug/L	792236	Standard
	Ho	165	128.3	18.0				ug/L	7	Standard
	Tl	203	157.0	14.8	**0.0183**	0.003	16.5	ug/L	9	Standard
	Tl	205	128.3	27.4	**0.0122**	0.005	43.6	ug/L	0	Standard
	Pb	206	1207.7	4.1	**0.2094**	0.008	3.9	ug/L	216	Standard
	Pb	207	969.0	2.2	**0.1805**	0.006	3.4	ug/L	180	Standard
	Pb	208	4243.2	2.0	**0.1949**	0.007	3.7	ug/L	717	Standard
	U	238	239.0	4.0	**0.0315**	0.002	6.6	ug/L	4	Standard
>	**Bi**	209	453005.7	1.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	4389.0	3.6	**5.1101**	0.132	2.6	mg/L	20	Standard
K	39	13.3	78.1	**-0.1402**	0.068	48.2	mg/L	22	Standard
Ca	43	36.7	43.8	**-5.7822**	3.171	54.8	mg/L	47	Standard
Fe	54	812.9	7.6	**0.4581**	0.050	11.0	mg/L	151	Standard
Fe	57	373.3	8.7	**0.3544**	0.083	23.5	mg/L	195	Standard
> **Sc-1**	45	34213.6	1.2				mg/L	29647	Standard
Cl	35	155114.0	1.0				ug/L	154152	Standard
Kr	83	1.3	114.6				ug/L	3	Standard
Br	81	5447.6	5.1				ug/L	1607	Standard
P	31	29535.4	3.0				ug/L	22752	Standard
S	34	4345.6	4.1				ug/L	5049	Standard
Sr	88	98.3	16.3				ug/L	87	Standard
C	12	66.7	69.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	223.5	3.8				mg/L	10	Standard
Ho-1	165	128.3	18.0				mg/L	7	Standard
Er	166	136.7	22.4				mg/L	3	Standard
I	127	47285.3	1.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		125.588	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.649	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	105.403	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.406	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606041104SDL WG572085-04
Sample Date/Time: Thursday, June 16, 2016 22:23:43
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60699.7	1.4				ug/L	51024	Standard
	Be	9	26.7	65.8	**0.0056**	0.018	312.0	ug/L	7	Standard
	Al	27	141309.4	1.9	**0.8247**	0.016	2.0	ug/L	625	Standard
	Sc	45	31491.0	2.2				ug/L	29647	Standard
	Ti	47	381.3	5.6	**1.1251**	0.055	4.9	ug/L	57	Standard
	V	51	2585.2	5.7	**0.2016**	0.028	14.1	ug/L	1142	Standard
	Cr	52	17170.4	0.5	**1.4445**	0.049	3.4	ug/L	6628	Standard
	Cr	53	1966.8	5.0	**1.7199**	0.140	8.1	ug/L	430	Standard
	Mn	55	5874.1	1.6	**0.8794**	0.018	2.1	ug/L	603	Standard
	Co	59	918.7	1.3	**0.1040**	0.001	1.4	ug/L	237	Standard
	Ni	60	8671.8	1.0	**4.4921**	0.067	1.5	ug/L	141	Standard
	Cu	65	375.3	1.5	**0.1368**	0.002	1.4	ug/L	109	Standard
	Zn	66	1553.7	2.6	**1.1927**	0.020	1.7	ug/L	159	Standard
>	**Ge**	72	466371.9	2.3				ug/L	474053	Standard
	As	75	-6.1	252.7	**0.0197**	0.014	72.2	ug/L	-34	Standard
	Se	82	31.9	14.9	**0.1250**	0.051	40.6	ug/L	14	Standard
	Se-1	77	67.3	8.6	**0.1479**	0.098	66.2	ug/L	55	Standard
>	**Ga**	71	236.7	12.4				mg/L	50	Standard
	Rb	85	1530.1	6.8				ug/L	20	Standard
	Y	89	398351.9	2.2				ug/L	376602	Standard
>	**Rh**	103	20.0	90.1				ug/L	17	Standard
	Mo	98	309.3	4.7	**0.1235**	0.007	5.8	ug/L	8	Standard
	Ag	107	82.7	3.5	**0.0013**	0.000	30.9	ug/L	81	Standard
	Cd	111	8.8	17.3	**0.0012**	0.001	68.5	mg/L	3	Standard
	Cd	114	33.8	15.5	**0.0031**	0.001	31.5	ug/L	7	Standard
>	**In**	115	532767.1	1.5				ug/L	524722	Standard
	Sn	118	478.3	5.3	**-0.0020**	0.004	179.1	ug/L	715	Standard
	Sb	123	535.3	25.6	**0.1062**	0.033	30.9	ug/L	201	Standard
	Ba	135	5770.1	0.9	**3.0781**	0.059	1.9	ug/L	108	Standard
	Ce	140	2811.9	5.2				ug/L	30	Standard
>	**Tb**	159	784308.2	0.8				ug/L	792236	Standard
	Ho	165	41.7	18.3				ug/L	7	Standard
	Tl	203	52.7	23.4	**0.0046**	0.002	36.5	ug/L	9	Standard
	Tl	205	35.0	14.3	**-0.0022**	0.001	34.5	ug/L	0	Standard
	Pb	206	411.7	5.6	**0.0360**	0.005	12.9	ug/L	216	Standard
	Pb	207	350.0	3.5	**0.0324**	0.003	8.3	ug/L	180	Standard
	Pb	208	1486.7	0.5	**0.0323**	0.001	2.8	ug/L	717	Standard
	U	238	58.7	16.8	**0.0022**	0.002	75.4	ug/L	4	Standard
>	**Bi**	209	444600.9	0.5				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.3313**	8.870	166.4	mg/L	0	Standard
Mg	24	840.0	10.8	**1.0281**	0.127	12.3	mg/L	20	Standard
K	39	15.0	88.2	**-0.1198**	0.096	80.2	mg/L	22	Standard
Ca	43	18.3	83.3	**-9.1765**	3.343	36.4	mg/L	47	Standard
Fe	54	272.4	14.1	**0.0939**	0.032	34.1	mg/L	151	Standard
Fe	57	256.7	4.9	**0.1011**	0.032	31.4	mg/L	195	Standard
Sc-1	45	31491.0	2.2				mg/L	29647	Standard
Cl	35	151247.9	1.3				ug/L	154152	Standard
Kr	83	3.3	69.3				ug/L	3	Standard
Br	81	2453.5	11.0				ug/L	1607	Standard
P	31	23077.6	3.5				ug/L	22752	Standard
S	34	4429.0	4.8				ug/L	5049	Standard
Sr	88	73.3	21.9				ug/L	87	Standard
C	12	63.3	24.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	47.6	24.3				mg/L	10	Standard
Ho-1	165	41.7	18.3				mg/L	7	Standard
Er	166	50.0	91.7				mg/L	3	Standard
I	127	10970.6	2.1				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.963	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.380	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.533	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.580	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 22:26:56
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59001.4	3.1				ug/L	51024	Standard
	Be	9	47251.9	1.9	**48.5958**	0.632	1.3	ug/L	7	Standard
	Al	27	7707900.4	0.6	**46.8442**	1.367	2.9	ug/L	625	Standard
	Sc	45	32042.2	2.5				ug/L	29647	Standard
	Ti	47	31108.6	0.8	**106.3533**	1.301	1.2	ug/L	57	Standard
	V	51	354930.5	0.4	**51.1260**	0.515	1.0	ug/L	1142	Standard
	Cr	52	373996.6	0.2	**51.3100**	0.429	0.8	ug/L	6628	Standard
	Cr	53	46528.0	1.9	**50.9890**	0.660	1.3	ug/L	430	Standard
	Mn	55	313560.0	0.4	**54.1496**	0.181	0.3	ug/L	603	Standard
	Co	59	324218.3	1.5	**51.7917**	0.391	0.8	ug/L	237	Standard
	Ni	60	95070.0	1.4	**50.5665**	0.352	0.7	ug/L	141	Standard
	Cu	65	93181.7	1.5	**50.8709**	0.430	0.8	ug/L	109	Standard
	Zn	66	54868.9	1.6	**50.6327**	0.507	1.0	ug/L	159	Standard
>	**Ge**	72	461242.2	0.7				ug/L	474053	Standard
	As	75	53786.6	0.6	**49.9506**	0.524	1.0	ug/L	-34	Standard
	Se	82	5398.5	1.3	**50.0080**	1.035	2.1	ug/L	14	Standard
	Se-1	77	3763.8	1.7	**49.6296**	0.770	1.6	ug/L	55	Standard
>	**Ga**	71	83.3	29.6				mg/L	50	Standard
	Rb	85	758.4	8.6				ug/L	20	Standard
	Y	89	392635.2	3.0				ug/L	376602	Standard
>	**Rh**	103	40.0	45.1				ug/L	17	Standard
	Mo	98	239363.5	0.3	**97.9544**	0.320	0.3	ug/L	8	Standard
	Ag	107	297613.5	1.2	**48.2150**	0.880	1.8	ug/L	81	Standard
	Cd	111	96257.9	0.7	**47.9363**	0.352	0.7	mg/L	3	Standard
	Cd	114	237569.3	0.8	**47.8568**	0.430	0.9	ug/L	7	Standard
>	**In**	115	542829.4	0.6				ug/L	524722	Standard
	Sn	118	271504.8	1.8	**48.6303**	0.573	1.2	ug/L	715	Standard
	Sb	123	221602.7	1.2	**49.0302**	0.874	1.8	ug/L	201	Standard
	Ba	135	89759.4	0.9	**47.8096**	0.296	0.6	ug/L	108	Standard
	Ce	140	83.3	15.1				ug/L	30	Standard
>	**Tb**	159	805068.8	1.3				ug/L	792236	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	366179.1	0.5	**49.0753**	0.770	1.6	ug/L	9	Standard
	Tl	205	320780.3	0.9	**50.5527**	0.981	1.9	ug/L	0	Standard
	Pb	206	226792.4	0.6	**50.2313**	0.545	1.1	ug/L	216	Standard
	Pb	207	206205.4	0.5	**50.1728**	0.804	1.6	ug/L	180	Standard
	Pb	208	828355.0	0.6	**49.6609**	0.844	1.7	ug/L	717	Standard
	U	238	311232.5	0.6	**51.2945**	0.952	1.9	ug/L	4	Standard
>	**Bi**	209	449694.2	1.3				ug/L	460343	Standard

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Na	23	3.3	173.2	**0.2298**	17.706	7704.3	mg/L	0	Standard
Mg	24	4013.9	1.6	**4.9932**	0.201	4.0	mg/L	20	Standard
K	39	691.7	2.2	**4.6523**	0.139	3.0	mg/L	22	Standard
Ca	43	66.7	18.9	**1.1897**	2.387	200.6	mg/L	47	Standard
Fe	54	5963.7	3.1	**4.3749**	0.232	5.3	mg/L	151	Standard
Fe	57	1775.1	6.5	**4.4411**	0.377	8.5	mg/L	195	Standard
> **Sc-1**	45	32042.2	2.5				mg/L	29647	Standard
Cl	35	154194.0	0.8				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	1553.4	2.0				ug/L	1607	Standard
P	31	22800.5	1.3				ug/L	22752	Standard
S	34	4925.8	3.9				ug/L	5049	Standard
Sr	88	71.7	8.1				ug/L	87	Standard
C	12	50.0	40.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.7	108.3				mg/L	10	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	3	Standard
I	127	1866.8	9.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	97.192		
Al	27	93.688		
Sc	45			
Ti	47	106.353		
V	51	102.252		
Cr	52	102.620		
Cr	53			
Mn	55	108.299		
Co	59	103.583		
Ni	60	101.133		
Cu	65	101.742		
Zn	66	101.265		
> Ge	72		97.298	
As	75	99.901		
Se	82	100.016		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
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Rb	85			
Y	89			
> Rh	103			
Mo	98	97.954		
Ag	107	96.430		
Cd	111	95.873		
Cd	114			
> In	115			103.451
Sn	118	97.261		
Sb	123	98.060		
Ba	135	95.619		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.151		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.322		
U	238	102.589		
> Bi	209			97.687
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 22:30:07
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57406.9	2.2				ug/L	51024	Standard
	Be	9	13.3	86.6	**-0.0071**	0.012	172.1	ug/L	7	Standard
	Al	27	1425.1	26.0	**-0.0009**	0.002	242.5	ug/L	625	Standard
	Sc	45	31355.8	2.5				ug/L	29647	Standard
	Ti	47	24.7	20.0	**-0.0813**	0.017	20.7	ug/L	57	Standard
	V	51	1120.2	2.3	**-0.0061**	0.006	100.1	ug/L	1142	Standard
	Cr	52	6392.0	0.4	**-0.0333**	0.015	44.8	ug/L	6628	Standard
	Cr	53	548.3	18.8	**0.1770**	0.124	70.1	ug/L	430	Standard
	Mn	55	724.0	4.6	**-0.0007**	0.008	1032.9	ug/L	603	Standard
	Co	59	242.7	2.3	**-0.0024**	0.000	19.9	ug/L	237	Standard
	Ni	60	130.3	12.7	**-0.0081**	0.010	124.4	ug/L	141	Standard
	Cu	65	128.7	7.9	**0.0044**	0.007	154.7	ug/L	109	Standard
	Zn	66	153.3	8.3	**-0.0894**	0.013	14.8	ug/L	159	Standard
>	**Ge**	72	460344.2	1.9				ug/L	474053	Standard
	As	75	-26.8	68.7	**0.0000**	0.017	51664.1	ug/L	-34	Standard
	Se	82	13.1	41.0	**-0.0473**	0.049	102.7	ug/L	14	Standard
	Se-1	77	56.7	10.8	**0.0148**	0.078	525.1	ug/L	55	Standard
>	**Ga**	71	50.0	36.1				mg/L	50	Standard
	Rb	85	33.3	8.7				ug/L	20	Standard
	Y	89	391660.9	0.1				ug/L	376602	Standard
>	**Rh**	103	21.7	58.1				ug/L	17	Standard
	Mo	98	296.5	33.7	**0.1177**	0.040	33.6	ug/L	8	Standard
	Ag	107	114.3	9.9	**0.0065**	0.002	24.1	ug/L	81	Standard
	Cd	111	13.8	22.3	**0.0038**	0.001	39.2	mg/L	3	Standard
	Cd	114	58.6	51.2	**0.0082**	0.006	72.9	ug/L	7	Standard
>	**In**	115	532413.4	1.7				ug/L	524722	Standard
	Sn	118	798.4	13.3	**0.0568**	0.021	36.2	ug/L	715	Standard
	Sb	123	522.7	25.9	**0.1035**	0.032	31.2	ug/L	201	Standard
	Ba	135	112.0	12.3	**0.0031**	0.006	206.8	ug/L	108	Standard
	Ce	140	18.3	63.0				ug/L	30	Standard
>	**Tb**	159	782152.3	0.6				ug/L	792236	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	55.3	28.1	**0.0050**	0.002	40.9	ug/L	9	Standard
	Tl	205	48.3	6.0	**-0.0000**	0.000	944.3	ug/L	0	Standard
	Pb	206	239.7	3.4	**-0.0020**	0.002	107.0	ug/L	216	Standard
	Pb	207	204.0	6.9	**-0.0031**	0.003	92.9	ug/L	180	Standard
	Pb	208	866.0	6.6	**-0.0048**	0.003	59.0	ug/L	717	Standard
	U	238	38.3	34.4	**-0.0011**	0.002	189.9	ug/L	4	Standard
>	**Bi**	209	440050.2	1.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	41.7	6.9	**0.0082**	0.003	39.8	mg/L	20	Standard
K	39	13.3	21.7	**-0.1321**	0.019	14.2	mg/L	22	Standard
Ca	43	21.7	53.3	**-8.4223**	2.469	29.3	mg/L	47	Standard
Fe	54	134.4	12.8	**-0.0117**	0.012	103.5	mg/L	151	Standard
Fe	57	178.3	16.9	**-0.1234**	0.101	82.1	mg/L	195	Standard
> **Sc-1**	45	31355.8	2.5				mg/L	29647	Standard
Cl	35	154796.2	1.9				ug/L	154152	Standard
Kr	83	1.3	86.6				ug/L	3	Standard
Br	81	1420.1	12.0				ug/L	1607	Standard
P	31	23807.0	1.6				ug/L	22752	Standard
S	34	4767.4	2.9				ug/L	5049	Standard
Sr	88	76.7	22.9				ug/L	87	Standard
C	12	50.0	60.0				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	6.5	179.6				mg/L	10	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	1236.7	11.5				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.108	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.466	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	95.592	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, June 16, 2016 22:32:24
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Method 6020 - Summary Report

Sample ID: PBW 41 WG571834-02
Sample Date/Time: Thursday, June 16, 2016 22:33:20
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57729.8	2.4				ug/L	51024	Standard
	Be	9	15.0	66.7	**-0.0052**	0.011	207.3	ug/L	7	Standard
	Al	27	10453.6	1.9	**0.0552**	0.003	5.0	ug/L	625	Standard
	Sc	45	33299.9	2.5				ug/L	29647	Standard
	Ti	47	35.7	25.1	**-0.0492**	0.028	57.5	ug/L	57	Standard
	V	51	1262.4	5.5	**0.0063**	0.008	133.6	ug/L	1142	Standard
	Cr	52	7466.2	1.6	**0.0706**	0.026	36.2	ug/L	6628	Standard
	Cr	53	643.3	12.9	**0.2497**	0.092	36.8	ug/L	430	Standard
	Mn	55	1616.1	2.8	**0.1414**	0.004	2.6	ug/L	603	Standard
	Co	59	253.0	6.6	**-0.0025**	0.002	79.5	ug/L	237	Standard
	Ni	60	378.3	5.2	**0.1151**	0.008	6.8	ug/L	141	Standard
	Cu	65	209.0	6.0	**0.0433**	0.007	15.3	ug/L	109	Standard
	Zn	66	1638.4	1.5	**1.2227**	0.044	3.6	ug/L	159	Standard
>	**Ge**	72	481770.3	1.5				ug/L	474053	Standard
	As	75	-7.3	61.8	**0.0186**	0.004	21.3	ug/L	-34	Standard
	Se	82	21.7	38.5	**0.0252**	0.078	309.4	ug/L	14	Standard
	Se-1	77	49.7	10.3	**-0.1081**	0.069	63.9	ug/L	55	Standard
>	**Ga**	71	81.7	19.7				mg/L	50	Standard
	Rb	85	50.0	17.3				ug/L	20	Standard
	Y	89	391456.0	1.0				ug/L	376602	Standard
>	**Rh**	103	15.0	33.3				ug/L	17	Standard
	Mo	98	98.4	20.8	**0.0355**	0.009	26.7	ug/L	8	Standard
	Ag	107	94.7	3.7	**0.0032**	0.001	16.1	ug/L	81	Standard
	Cd	111	15.5	31.8	**0.0046**	0.003	57.0	mg/L	3	Standard
	Cd	114	31.0	41.6	**0.0025**	0.003	104.4	ug/L	7	Standard
>	**In**	115	534892.9	2.4				ug/L	524722	Standard
	Sn	118	895.0	10.2	**0.0734**	0.014	18.9	ug/L	715	Standard
	Sb	123	243.3	24.4	**0.0397**	0.012	30.7	ug/L	201	Standard
	Ba	135	132.3	7.6	**0.0140**	0.006	42.8	ug/L	108	Standard
	Ce	140	126.7	2.3				ug/L	30	Standard
>	**Tb**	159	808648.5	2.5				ug/L	792236	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	39.3	24.7	**0.0026**	0.001	49.6	ug/L	9	Standard
	Tl	205	40.0	50.0	**-0.0017**	0.003	183.3	ug/L	0	Standard
	Pb	206	250.7	8.4	**-0.0022**	0.005	210.3	ug/L	216	Standard
	Pb	207	220.7	4.6	**-0.0015**	0.003	191.8	ug/L	180	Standard
	Pb	208	931.3	4.0	**-0.0035**	0.003	80.4	ug/L	717	Standard
	U	238	32.0	46.7	**-0.0024**	0.002	99.2	ug/L	4	Standard
>	**Bi**	209	461825.2	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	43.3	46.6	**0.0073**	0.026	347.9	mg/L	20	Standard
K	39	21.7	35.3	**-0.0805**	0.053	65.7	mg/L	22	Standard
Ca	43	33.3	31.2	**-6.2262**	2.322	37.3	mg/L	47	Standard
Fe	54	132.8	30.7	**-0.0183**	0.032	174.0	mg/L	151	Standard
Fe	57	186.7	24.3	**-0.1330**	0.122	92.1	mg/L	195	Standard
Sc-1	45	33299.9	2.5				mg/L	29647	Standard
Cl	35	150658.7	1.1				ug/L	154152	Standard
Kr	83	2.3	24.7				ug/L	3	Standard
Br	81	2026.8	3.8				ug/L	1607	Standard
P	31	21810.7	2.4				ug/L	22752	Standard
S	34	4620.7	1.9				ug/L	5049	Standard
Sr	88	70.0	14.3				ug/L	87	Standard
C	12	86.7	40.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.2	111.3				mg/L	10	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	3	Standard
I	127	2880.3	5.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.142	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.628	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.938
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.322
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: LCSW 41 WG571834-03
Sample Date/Time: Thursday, June 16, 2016 22:36:32
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58134.7	1.4				ug/L	51024	Standard
	Be	9	47481.0	1.2	**49.5549**	1.040	2.1	ug/L	7	Standard
	Al	27	11848.2	29.8	**0.0633**	0.022	34.2	ug/L	625	Standard
	Sc	45	33760.9	2.8				ug/L	29647	Standard
	Ti	47	60.7	19.3	**0.0386**	0.038	99.0	ug/L	57	Standard
	V	51	364743.8	0.9	**51.7833**	1.598	3.1	ug/L	1142	Standard
	Cr	52	384565.8	0.9	**52.0063**	1.376	2.6	ug/L	6628	Standard
	Cr	53	46865.7	2.2	**50.6129**	1.593	3.1	ug/L	430	Standard
	Mn	55	323505.6	0.5	**55.0551**	1.092	2.0	ug/L	603	Standard
	Co	59	330925.6	0.6	**52.1042**	1.547	3.0	ug/L	237	Standard
	Ni	60	98420.3	0.4	**51.5920**	1.168	2.3	ug/L	141	Standard
	Cu	65	96735.2	0.8	**52.0474**	1.195	2.3	ug/L	109	Standard
	Zn	66	60428.3	1.1	**54.9708**	1.052	1.9	ug/L	159	Standard
>	**Ge**	72	468206.5	2.5				ug/L	474053	Standard
	As	75	53251.7	1.1	**48.7274**	0.650	1.3	ug/L	-34	Standard
	Se	82	5558.2	1.1	**50.7386**	1.287	2.5	ug/L	14	Standard
	Se-1	77	3779.1	1.8	**49.0879**	0.350	0.7	ug/L	55	Standard
>	**Ga**	71	95.0	5.3				mg/L	50	Standard
	Rb	85	148.3	20.6				ug/L	20	Standard
	Y	89	410210.7	3.1				ug/L	376602	Standard
>	**Rh**	103	26.7	28.6				ug/L	17	Standard
	Mo	98	76.7	14.4	**0.0250**	0.004	16.4	ug/L	8	Standard
	Ag	107	306600.5	0.9	**48.2949**	0.124	0.3	ug/L	81	Standard
	Cd	111	98706.0	0.5	**47.7973**	0.198	0.4	mg/L	3	Standard
	Cd	114	240379.3	1.1	**47.0837**	0.284	0.6	ug/L	7	Standard
>	**In**	115	558260.1	0.9				ug/L	524722	Standard
	Sn	118	793.4	5.7	**0.0490**	0.008	17.0	ug/L	715	Standard
	Sb	123	217861.1	1.5	**46.8696**	0.887	1.9	ug/L	201	Standard
	Ba	135	91054.1	0.9	**47.1604**	0.551	1.2	ug/L	108	Standard
	Ce	140	330.0	6.6				ug/L	30	Standard
>	**Tb**	159	829912.3	0.8				ug/L	792236	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	372803.8	0.5	**48.2082**	0.596	1.2	ug/L	9	Standard
	Tl	205	323995.9	0.8	**49.2672**	0.912	1.9	ug/L	0	Standard
	Pb	206	236745.0	0.6	**50.5944**	0.255	0.5	ug/L	216	Standard
	Pb	207	206177.7	0.9	**48.4046**	0.929	1.9	ug/L	180	Standard
	Pb	208	859668.8	0.2	**49.7270**	0.479	1.0	ug/L	717	Standard
	U	238	310255.0	0.3	**49.3362**	0.627	1.3	ug/L	4	Standard
>	**Bi**	209	466041.0	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	161.7	12.9	**0.1477**	0.029	19.8	mg/L	20	Standard
K	39	16.7	17.3	**-0.1160**	0.022	19.3	mg/L	22	Standard
Ca	43	33.3	31.2	**-6.3847**	1.928	30.2	mg/L	47	Standard
Fe	54	164.9	14.3	**0.0027**	0.015	570.4	mg/L	151	Standard
Fe	57	196.7	21.3	**-0.1103**	0.128	116.3	mg/L	195	Standard
Sc-1	45	33760.9	2.8				mg/L	29647	Standard
Cl	35	149762.7	1.8				ug/L	154152	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	1560.1	10.1				ug/L	1607	Standard
P	31	22984.1	3.6				ug/L	22752	Standard
S	34	4315.6	2.6				ug/L	5049	Standard
Sr	88	53.3	28.6				ug/L	87	Standard
C	12	83.3	18.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	5.9	86.7				mg/L	10	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	16.7	91.7				mg/L	3	Standard
I	127	1323.4	9.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.936	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.767	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.392
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.238
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606033702 WG571834-01
Sample Date/Time: Thursday, June 16, 2016 22:39:43
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64441.8	2.3				ug/L	51024	Standard
	Be	9	20.0	25.0	**-0.0022**	0.005	232.0	ug/L	7	Standard
	Al	27	60114.2	4.5	**0.3246**	0.014	4.3	ug/L	625	Standard
	Sc	45	31512.8	4.2				ug/L	29647	Standard
	Ti	47	128.0	6.2	**0.2921**	0.031	10.5	ug/L	57	Standard
	V	51	53503.8	0.8	**7.9103**	0.048	0.6	ug/L	1142	Standard
	Cr	52	15505.3	1.8	**1.3346**	0.030	2.3	ug/L	6628	Standard
	Cr	53	2881.9	1.2	**2.8964**	0.027	0.9	ug/L	430	Standard
	Mn	55	1707.4	4.0	**0.1824**	0.014	7.5	ug/L	603	Standard
	Co	59	1839.8	1.0	**0.2661**	0.003	1.0	ug/L	237	Standard
	Ni	60	5162.5	5.3	**2.7953**	0.140	5.0	ug/L	141	Standard
	Cu	65	169344.1	2.3	**96.6524**	1.757	1.8	ug/L	109	Standard
	Zn	66	2344.5	2.7	**2.0388**	0.050	2.4	ug/L	159	Standard
>	**Ge**	72	441453.2	0.5				ug/L	474053	Standard
	As	75	1218.2	9.1	**1.2061**	0.101	8.4	ug/L	-34	Standard
	Se	82	116.0	12.5	**0.9573**	0.138	14.4	ug/L	14	Standard
	Se-1	77	201.7	7.0	**2.0760**	0.211	10.2	ug/L	55	Standard
>	**Ga**	71	926.7	11.5				mg/L	50	Standard
	Rb	85	12571.9	3.7				ug/L	20	Standard
	Y	89	399117.1	1.0				ug/L	376602	Standard
>	**Rh**	103	173.3	1.7				ug/L	17	Standard
	Mo	98	29352.9	0.6	**12.3636**	0.369	3.0	ug/L	8	Standard
	Ag	107	149.7	54.9	**0.0129**	0.015	112.8	ug/L	81	Standard
	Cd	111	24.8	238.3	**0.0100**	0.031	310.7	mg/L	3	Standard
	Cd	114	161.6	48.9	**0.0300**	0.017	58.2	ug/L	7	Standard
>	**In**	115	527437.4	2.5				ug/L	524722	Standard
	Sn	118	1430.1	3.9	**0.1747**	0.010	5.4	ug/L	715	Standard
	Sb	123	2404.5	19.4	**0.5345**	0.118	22.0	ug/L	201	Standard
	Ba	135	29634.3	0.9	**16.2125**	0.353	2.2	ug/L	108	Standard
	Ce	140	185.0	4.7				ug/L	30	Standard
>	**Tb**	159	786743.9	2.6				ug/L	792236	Standard
	Ho	165	16.7	105.4				ug/L	7	Standard
	Tl	203	226.3	39.8	**0.0295**	0.013	45.5	ug/L	9	Standard
	Tl	205	155.0	25.2	**0.0180**	0.007	37.6	ug/L	0	Standard
	Pb	206	685.3	11.7	**0.1039**	0.021	20.6	ug/L	216	Standard
	Pb	207	574.0	3.7	**0.0935**	0.008	8.7	ug/L	180	Standard
	Pb	208	2394.4	2.6	**0.0935**	0.004	4.7	ug/L	717	Standard
	U	238	81.3	17.9	**0.0066**	0.003	42.7	ug/L	4	Standard
>	**Bi**	209	426956.6	1.8				ug/L	460343	Standard

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Na	23	5.0	100.0	**-4.6650**	15.246	326.8	mg/L	0	Standard
Mg	24	23326.3	4.3	**29.7226**	1.184	4.0	mg/L	20	Standard
K	39	571.7	12.7	**3.8838**	0.629	16.2	mg/L	22	Standard
Ca	43	926.7	6.8	**191.1093**	22.294	11.7	mg/L	47	Standard
Fe	54	142.0	8.4	**-0.0064**	0.005	79.6	mg/L	151	Standard
Fe	57	988.4	6.7	**2.2303**	0.090	4.0	mg/L	195	Standard
> **Sc-1**	45	31512.8	4.2				mg/L	29647	Standard
Cl	35	486390.1	1.5				ug/L	154152	Standard
Kr	83	3.0	33.3				ug/L	3	Standard
Br	81	9422.9	2.9				ug/L	1607	Standard
P	31	23089.2	1.2				ug/L	22752	Standard
S	34	5072.5	3.6				ug/L	5049	Standard
Sr	88	663.3	3.8				ug/L	87	Standard
C	12	73.3	41.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	0	Standard
Dy	164	22.4	24.2				mg/L	10	Standard
Ho-1	165	16.7	105.4				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	3	Standard
I	127	47469.3	4.2				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		126.297	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		93.123	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.518
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.748
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606033702S WG571834-04
Sample Date/Time: Thursday, June 16, 2016 22:42:54
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68019.0	1.4				ug/L	51024	Standard
	Be	9	52452.3	2.6	**46.7932**	1.722	3.7	ug/L	7	Standard
	Al	27	59786.1	1.3	**0.3053**	0.006	2.1	ug/L	625	Standard
	Sc	45	30205.1	3.4				ug/L	29647	Standard
	Ti	47	100.0	14.5	**0.1859**	0.054	29.0	ug/L	57	Standard
	V	51	400824.3	1.2	**59.3044**	1.295	2.2	ug/L	1142	Standard
	Cr	52	361100.0	0.4	**50.8503**	0.412	0.8	ug/L	6628	Standard
	Cr	53	45675.4	2.3	**51.3868**	0.642	1.2	ug/L	430	Standard
	Mn	55	307080.3	1.9	**54.4520**	1.620	3.0	ug/L	603	Standard
	Co	59	323604.2	1.1	**53.0793**	1.177	2.2	ug/L	237	Standard
	Ni	60	93445.6	0.1	**51.0299**	0.526	1.0	ug/L	141	Standard
	Cu	65	247263.6	0.1	**138.7095**	1.722	1.2	ug/L	109	Standard
	Zn	66	54519.2	0.7	**51.6612**	0.952	1.8	ug/L	159	Standard
>	**Ge**	72	449299.9	1.1				ug/L	474053	Standard
	As	75	56719.6	0.9	**54.0778**	1.049	1.9	ug/L	-34	Standard
	Se	82	5785.5	2.0	**55.0413**	1.675	3.0	ug/L	14	Standard
	Se-1	77	3927.8	1.2	**53.2304**	1.135	2.1	ug/L	55	Standard
>	**Ga**	71	895.0	4.4				mg/L	50	Standard
	Rb	85	12290.0	5.9				ug/L	20	Standard
	Y	89	386361.5	1.5				ug/L	376602	Standard
>	**Rh**	103	176.7	6.5				ug/L	17	Standard
	Mo	98	28613.4	1.5	**12.4123**	0.434	3.5	ug/L	8	Standard
	Ag	107	279613.9	0.6	**48.0280**	1.230	2.6	ug/L	81	Standard
	Cd	111	93716.1	1.7	**49.4705**	0.238	0.5	mg/L	3	Standard
	Cd	114	229714.0	2.7	**49.0468**	0.741	1.5	ug/L	7	Standard
>	**In**	115	512129.2	2.1				ug/L	524722	Standard
	Sn	118	1266.7	5.0	**0.1514**	0.007	4.6	ug/L	715	Standard
	Sb	123	219270.1	0.1	**51.4357**	1.142	2.2	ug/L	201	Standard
	Ba	135	113634.2	0.4	**64.1909**	1.164	1.8	ug/L	108	Standard
	Ce	140	183.3	35.2				ug/L	30	Standard
>	**Tb**	159	767306.4	2.1				ug/L	792236	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	352266.3	0.4	**50.2886**	0.147	0.3	ug/L	9	Standard
	Tl	205	319230.0	1.5	**53.5879**	0.832	1.6	ug/L	0	Standard
	Pb	206	230082.1	0.2	**54.2895**	0.055	0.1	ug/L	216	Standard
	Pb	207	199935.5	0.5	**51.8202**	0.151	0.3	ug/L	180	Standard
	Pb	208	828887.7	1.4	**52.9349**	0.572	1.1	ug/L	717	Standard
	U	238	314710.8	1.3	**55.2472**	0.560	1.0	ug/L	4	Standard
>	**Bi**	209	422116.6	0.3				ug/L	460343	Standard

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Na	23	8.3	34.6	**-16.4613**	9.729	59.1	mg/L	0	Standard
Mg	24	22338.1	2.7	**29.6923**	0.787	2.7	mg/L	20	Standard
K	39	545.0	6.6	**3.8545**	0.326	8.5	mg/L	22	Standard
Ca	43	843.4	10.1	**180.3649**	20.489	11.4	mg/L	47	Standard
Fe	54	148.7	22.1	**0.0032**	0.023	711.1	mg/L	151	Standard
Fe	57	781.7	6.7	**1.7339**	0.242	13.9	mg/L	195	Standard
> **Sc-1**	45	30205.1	3.4				mg/L	29647	Standard
Cl	35	476373.7	2.1				ug/L	154152	Standard
Kr	83	2.3	89.2				ug/L	3	Standard
Br	81	9679.8	3.3				ug/L	1607	Standard
P	31	23531.6	1.5				ug/L	22752	Standard
S	34	4985.8	2.7				ug/L	5049	Standard
Sr	88	643.3	5.9				ug/L	87	Standard
C	12	83.3	54.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	100.0				mg/L	0	Standard
Dy	164	9.7	103.3				mg/L	10	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	46467.9	3.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		133.308	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.778	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.600
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	91.696
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: L1606033702SD WG571834-05
Sample Date/Time: Thursday, June 16, 2016 22:46:06
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69477.3	1.8				ug/L	51024	Standard
	Be	9	51502.4	2.4	**44.9684**	0.786	1.7	ug/L	7	Standard
	Al	27	70351.3	0.6	**0.3532**	0.005	1.3	ug/L	625	Standard
	Sc	45	29879.4	2.7				ug/L	29647	Standard
	Ti	47	116.3	8.0	**0.2444**	0.037	15.0	ug/L	57	Standard
	V	51	388223.7	1.2	**57.5908**	0.764	1.3	ug/L	1142	Standard
	Cr	52	347952.9	2.2	**49.1031**	1.033	2.1	ug/L	6628	Standard
	Cr	53	43768.2	2.9	**49.3632**	1.152	2.3	ug/L	430	Standard
	Mn	55	286009.9	1.4	**50.8380**	0.394	0.8	ug/L	603	Standard
	Co	59	307889.4	1.2	**50.6347**	0.555	1.1	ug/L	237	Standard
	Ni	60	89481.8	1.5	**48.9952**	0.439	0.9	ug/L	141	Standard
	Cu	65	241814.9	1.2	**136.0209**	1.038	0.8	ug/L	109	Standard
	Zn	66	51913.8	0.8	**49.3151**	0.405	0.8	ug/L	159	Standard
>	**Ge**	72	448036.8	0.9				ug/L	474053	Standard
	As	75	54590.9	0.7	**52.1892**	0.176	0.3	ug/L	-34	Standard
	Se	82	5464.5	2.1	**52.1104**	0.678	1.3	ug/L	14	Standard
	Se-1	77	3736.5	2.4	**50.7332**	0.775	1.5	ug/L	55	Standard
>	**Ga**	71	880.0	7.8				mg/L	50	Standard
	Rb	85	11956.4	0.5				ug/L	20	Standard
	Y	89	354548.8	0.8				ug/L	376602	Standard
>	**Rh**	103	176.7	9.9				ug/L	17	Standard
	Mo	98	28019.9	1.2	**12.5852**	0.199	1.6	ug/L	8	Standard
	Ag	107	268450.3	0.3	**47.7483**	0.458	1.0	ug/L	81	Standard
	Cd	111	88694.5	1.0	**48.4950**	0.379	0.8	mg/L	3	Standard
	Cd	114	219923.4	1.6	**48.6380**	0.413	0.8	ug/L	7	Standard
>	**In**	115	494421.9	1.1				ug/L	524722	Standard
	Sn	118	1316.7	9.7	**0.1699**	0.024	14.2	ug/L	715	Standard
	Sb	123	211754.6	0.6	**51.4377**	0.300	0.6	ug/L	201	Standard
	Ba	135	110652.9	0.5	**64.7326**	0.425	0.7	ug/L	108	Standard
	Ce	140	260.0	20.0				ug/L	30	Standard
>	**Tb**	159	762292.0	2.0				ug/L	792236	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	342694.3	1.4	**48.0097**	0.052	0.1	ug/L	9	Standard
	Tl	205	304091.9	1.8	**50.0920**	0.270	0.5	ug/L	0	Standard
	Pb	206	222070.0	1.1	**51.4209**	0.338	0.7	ug/L	216	Standard
	Pb	207	193776.6	0.8	**49.2893**	0.546	1.1	ug/L	180	Standard
	Pb	208	789689.1	0.4	**49.4955**	0.776	1.6	ug/L	717	Standard
	U	238	302421.4	0.6	**52.1051**	0.540	1.0	ug/L	4	Standard
>	**Bi**	209	430141.1	1.5				ug/L	460343	Standard

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Na	23	11.7	24.7	**-27.5524**	10.035	36.4	mg/L	0	Standard
Mg	24	22465.0	1.9	**30.1800**	0.330	1.1	mg/L	20	Standard
K	39	500.0	5.0	**3.5529**	0.109	3.1	mg/L	22	Standard
Ca	43	825.0	4.8	**178.0126**	5.766	3.2	mg/L	47	Standard
Fe	54	141.0	25.7	**-0.0008**	0.031	4097.7	mg/L	151	Standard
Fe	57	861.7	4.4	**2.0033**	0.182	9.1	mg/L	195	Standard
> **Sc-1**	45	29879.4	2.7				mg/L	29647	Standard
Cl	35	471095.3	0.9				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	9509.7	3.3				ug/L	1607	Standard
P	31	23573.3	1.7				ug/L	22752	Standard
S	34	4992.5	2.6				ug/L	5049	Standard
Sr	88	646.7	10.1				ug/L	87	Standard
C	12	96.7	31.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	41.7				mg/L	0	Standard
Dy	164	15.7	76.3				mg/L	10	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	3	Standard
I	127	49629.6	4.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		136.166	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.512	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.226
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.439
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: L1606030301
Sample Date/Time: Thursday, June 16, 2016 22:49:17
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75542.9	1.1				ug/L	51024	Standard
	Be	9	35.0	14.3	**0.0070**	0.004	53.8	ug/L	7	Standard
	Al	27	29747316.4	1.2	**141.1560**	2.929	2.1	ug/L	625	Standard
	Sc	45	33087.8	1.2				ug/L	29647	Standard
	Ti	47	864.4	0.5	**2.9151**	0.077	2.6	ug/L	57	Standard
	V	51	2646.8	15.2	**0.2300**	0.062	27.0	ug/L	1142	Standard
	Cr	52	10730.1	1.6	**0.6326**	0.065	10.2	ug/L	6628	Standard
	Cr	53	13055.7	9.8	**14.6159**	1.842	12.6	ug/L	430	Standard
	Mn	55	149866.6	1.0	**26.8754**	0.469	1.7	ug/L	603	Standard
	Co	59	3157.0	1.2	**0.4841**	0.012	2.4	ug/L	237	Standard
	Ni	60	2562.6	1.9	**1.3439**	0.063	4.7	ug/L	141	Standard
	Cu	65	1783.1	4.8	**0.9478**	0.026	2.7	ug/L	109	Standard
	Zn	66	4720.1	0.9	**4.3229**	0.088	2.0	ug/L	159	Standard
>	**Ge**	72	443259.0	2.7				ug/L	474053	Standard
	As	75	1196.5	7.5	**1.1797**	0.057	4.8	ug/L	-34	Standard
	Se	82	433.0	3.3	**4.0226**	0.239	5.9	ug/L	14	Standard
	Se-1	77	945.4	12.5	**12.4569**	1.980	15.9	ug/L	55	Standard
>	**Ga**	71	90.0	14.7				mg/L	50	Standard
	Rb	85	8912.6	1.9				ug/L	20	Standard
	Y	89	372910.9	1.8				ug/L	376602	Standard
>	**Rh**	103	138.3	9.1				ug/L	17	Standard
	Mo	98	418.3	6.0	**0.1743**	0.012	6.8	ug/L	8	Standard
	Ag	107	142.7	27.1	**0.0119**	0.006	53.9	ug/L	81	Standard
	Cd	111	58.8	59.4	**0.0275**	0.018	65.5	mg/L	3	Standard
	Cd	114	163.0	53.7	**0.0306**	0.018	59.7	ug/L	7	Standard
>	**In**	115	516818.9	0.6				ug/L	524722	Standard
	Sn	118	633.3	5.7	**0.0299**	0.006	20.2	ug/L	715	Standard
	Sb	123	884.4	13.0	**0.1907**	0.026	13.4	ug/L	201	Standard
	Ba	135	210091.9	0.7	**117.6212**	0.688	0.6	ug/L	108	Standard
	Ce	140	548.3	4.6				ug/L	30	Standard
>	**Tb**	159	797833.7	0.3				ug/L	792236	Standard
	Ho	165	23.3	68.9				ug/L	7	Standard
	Tl	203	225.3	33.3	**0.0286**	0.011	36.9	ug/L	9	Standard
	Tl	205	156.7	26.6	**0.0177**	0.007	39.2	ug/L	0	Standard
	Pb	206	343.3	6.6	**0.0221**	0.005	23.5	ug/L	216	Standard
	Pb	207	295.0	6.1	**0.0203**	0.005	24.8	ug/L	180	Standard
	Pb	208	1172.7	3.5	**0.0147**	0.003	21.3	ug/L	717	Standard
	U	238	2550.2	1.4	**0.4258**	0.006	1.3	ug/L	4	Standard
>	**Bi**	209	436094.8	0.8				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.5341**	8.518	153.9	mg/L	0	Standard
Mg	24	135567.2	1.0	**164.6662**	3.386	2.1	mg/L	20	Standard
K	39	101.7	25.2	**0.4668**	0.178	38.1	mg/L	22	Standard
Ca	43	143.3	8.8	**16.8014**	2.330	13.9	mg/L	47	Standard
Fe	54	210.5	7.2	**0.0385**	0.013	33.1	mg/L	151	Standard
Fe	57	346.7	4.4	**0.3147**	0.041	13.0	mg/L	195	Standard
> **Sc-1**	45	33087.8	1.2				mg/L	29647	Standard
Cl	35	252380.3	1.6				ug/L	154152	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	100794.6	4.5				ug/L	1607	Standard
P	31	32519.9	1.3				ug/L	22752	Standard
S	34	4837.4	4.7				ug/L	5049	Standard
Sr	88	436.7	6.9				ug/L	87	Standard
C	12	223.3	5.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	28.7	92.1				mg/L	10	Standard
Ho-1	165	23.3	68.9				mg/L	7	Standard
Er	166	26.7	57.3				mg/L	3	Standard
I	127	617066.8	8.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		148.053	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.504	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.494
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.733
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606030302
Sample Date/Time: Thursday, June 16, 2016 22:52:29
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73040.7	1.9				ug/L	51024	Standard
	Be	9	40.0	45.1	**0.0120**	0.014	119.9	ug/L	7	Standard
	Al	27	29071018.9	1.5	**142.6695**	1.976	1.4	ug/L	625	Standard
	Sc	45	31137.0	3.2				ug/L	29647	Standard
	Ti	47	896.0	0.6	**3.1347**	0.013	0.4	ug/L	57	Standard
	V	51	2628.5	16.8	**0.2400**	0.066	27.6	ug/L	1142	Standard
	Cr	52	11569.4	2.8	**0.8104**	0.048	5.9	ug/L	6628	Standard
	Cr	53	14446.9	3.6	**16.7439**	0.524	3.1	ug/L	430	Standard
	Mn	55	152328.9	0.4	**28.2404**	0.204	0.7	ug/L	603	Standard
	Co	59	3172.7	3.4	**0.5045**	0.021	4.1	ug/L	237	Standard
	Ni	60	2824.9	2.2	**1.5411**	0.022	1.4	ug/L	141	Standard
	Cu	65	1634.1	4.2	**0.8948**	0.038	4.3	ug/L	109	Standard
	Zn	66	5209.6	4.4	**4.9636**	0.220	4.4	ug/L	159	Standard
>	**Ge**	72	428745.2	1.0				ug/L	474053	Standard
	As	75	1258.8	1.9	**1.2822**	0.036	2.8	ug/L	-34	Standard
	Se	82	439.1	3.6	**4.2227**	0.199	4.7	ug/L	14	Standard
	Se-1	77	1078.4	5.9	**14.7842**	0.963	6.5	ug/L	55	Standard
>	**Ga**	71	70.0	25.8				mg/L	50	Standard
	Rb	85	9496.3	1.9				ug/L	20	Standard
	Y	89	380626.7	0.4				ug/L	376602	Standard
>	**Rh**	103	98.3	11.7				ug/L	17	Standard
	Mo	98	479.8	3.7	**0.2023**	0.007	3.6	ug/L	8	Standard
	Ag	107	174.0	68.0	**0.0174**	0.020	114.9	ug/L	81	Standard
	Cd	111	83.1	60.8	**0.0404**	0.026	64.8	mg/L	3	Standard
	Cd	114	224.6	76.7	**0.0439**	0.036	82.5	ug/L	7	Standard
>	**In**	115	512708.3	1.5				ug/L	524722	Standard
	Sn	118	761.7	9.5	**0.0552**	0.012	21.8	ug/L	715	Standard
	Sb	123	807.2	10.7	**0.1743**	0.019	11.1	ug/L	201	Standard
	Ba	135	209488.0	1.0	**118.2448**	2.471	2.1	ug/L	108	Standard
	Ce	140	541.7	9.3				ug/L	30	Standard
>	**Tb**	159	775209.0	3.4				ug/L	792236	Standard
	Ho	165	25.0	20.0				ug/L	7	Standard
	Tl	203	254.0	67.1	**0.0340**	0.024	70.2	ug/L	9	Standard
	Tl	205	180.0	38.9	**0.0228**	0.011	49.8	ug/L	0	Standard
	Pb	206	477.0	17.2	**0.0581**	0.017	29.8	ug/L	216	Standard
	Pb	207	417.0	19.6	**0.0560**	0.019	34.6	ug/L	180	Standard
	Pb	208	1674.7	14.6	**0.0509**	0.014	27.2	ug/L	717	Standard
	U	238	2253.2	2.5	**0.3950**	0.010	2.6	ug/L	4	Standard
>	**Bi**	209	414870.7	2.1				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.0844**	9.297	182.9	mg/L	0	Standard
Mg	24	134474.1	0.2	**173.6638**	5.440	3.1	mg/L	20	Standard
K	39	88.3	19.9	**0.4121**	0.119	28.8	mg/L	22	Standard
Ca	43	171.7	13.8	**24.9409**	4.511	18.1	mg/L	47	Standard
Fe	54	188.7	7.0	**0.0310**	0.006	19.6	mg/L	151	Standard
Fe	57	286.7	15.2	**0.1978**	0.124	62.9	mg/L	195	Standard
Sc-1	45	31137.0	3.2				mg/L	29647	Standard
Cl	35	236218.5	0.5				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	103082.9	2.1				ug/L	1607	Standard
P	31	32710.3	0.4				ug/L	22752	Standard
S	34	4897.5	3.2				ug/L	5049	Standard
Sr	88	453.3	14.0				ug/L	87	Standard
C	12	190.0	18.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	21.9	52.8				mg/L	10	Standard
Ho-1	165	25.0	20.0				mg/L	7	Standard
Er	166	30.0	33.3				mg/L	3	Standard
I	127	617957.6	6.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		143.149	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		90.442	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.710
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	90.122
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606030402
Sample Date/Time: Thursday, June 16, 2016 22:55:40
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71156.7	0.3				ug/L	51024	Standard
	Be	9	20.0	50.0	**-0.0040**	0.009	211.0	ug/L	7	Standard
	Al	27	27285286.1	1.5	**137.4375**	2.316	1.7	ug/L	625	Standard
	Sc	45	31798.3	2.5				ug/L	29647	Standard
	Ti	47	833.7	1.4	**2.8012**	0.055	2.0	ug/L	57	Standard
	V	51	2537.6	8.1	**0.2132**	0.036	16.9	ug/L	1142	Standard
	Cr	52	12018.1	1.3	**0.8169**	0.043	5.3	ug/L	6628	Standard
	Cr	53	14870.6	5.1	**16.6424**	0.566	3.4	ug/L	430	Standard
	Mn	55	153406.0	0.3	**27.4780**	0.629	2.3	ug/L	603	Standard
	Co	59	3042.6	1.6	**0.4644**	0.013	2.9	ug/L	237	Standard
	Ni	60	2834.9	0.9	**1.4924**	0.050	3.3	ug/L	141	Standard
	Cu	65	1512.4	1.9	**0.7934**	0.029	3.7	ug/L	109	Standard
	Zn	66	12243.6	1.2	**11.5661**	0.178	1.5	ug/L	159	Standard
>	**Ge**	72	443839.5	2.3				ug/L	474053	Standard
	As	75	1046.3	4.7	**1.0354**	0.070	6.7	ug/L	-34	Standard
	Se	82	370.0	2.6	**3.4056**	0.089	2.6	ug/L	14	Standard
	Se-1	77	1056.7	5.5	**13.9459**	0.499	3.6	ug/L	55	Standard
>	**Ga**	71	63.3	29.9				mg/L	50	Standard
	Rb	85	8789.2	0.9				ug/L	20	Standard
	Y	89	374101.9	2.2				ug/L	376602	Standard
>	**Rh**	103	100.0	39.7				ug/L	17	Standard
	Mo	98	414.8	3.1	**0.1799**	0.005	3.0	ug/L	8	Standard
	Ag	107	91.0	19.0	**0.0038**	0.003	80.6	ug/L	81	Standard
	Cd	111	38.9	24.2	**0.0179**	0.005	27.8	mg/L	3	Standard
	Cd	114	124.8	37.3	**0.0236**	0.010	41.9	ug/L	7	Standard
>	**In**	115	496787.9	1.5				ug/L	524722	Standard
	Sn	118	751.7	3.4	**0.0580**	0.007	12.3	ug/L	715	Standard
	Sb	123	699.9	9.2	**0.1546**	0.018	11.7	ug/L	201	Standard
	Ba	135	200966.0	0.6	**117.0693**	2.247	1.9	ug/L	108	Standard
	Ce	140	703.3	2.3				ug/L	30	Standard
>	**Tb**	159	757626.8	0.4				ug/L	792236	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	132.7	7.8	**0.0167**	0.001	8.9	ug/L	9	Standard
	Tl	205	95.0	31.6	**0.0084**	0.005	62.5	ug/L	0	Standard
	Pb	206	531.7	2.2	**0.0713**	0.003	3.6	ug/L	216	Standard
	Pb	207	455.3	6.2	**0.0663**	0.009	13.1	ug/L	180	Standard
	Pb	208	1923.0	1.8	**0.0670**	0.003	4.3	ug/L	717	Standard
	U	238	1986.8	1.8	**0.3469**	0.010	2.8	ug/L	4	Standard
>	**Bi**	209	415441.7	1.2				ug/L	460343	Standard

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Na	23	5.0	0.0	**-4.8155**	0.394	8.2	mg/L	0	Standard
Mg	24	122585.6	0.8	**154.9558**	2.818	1.8	mg/L	20	Standard
K	39	68.3	27.7	**0.2568**	0.128	49.9	mg/L	22	Standard
Ca	43	118.3	20.0	**12.5323**	4.646	37.1	mg/L	47	Standard
Fe	54	188.9	8.2	**0.0283**	0.012	41.6	mg/L	151	Standard
Fe	57	303.3	9.9	**0.2303**	0.108	46.9	mg/L	195	Standard
Sc-1	45	31798.3	2.5				mg/L	29647	Standard
Cl	35	229346.8	0.7				ug/L	154152	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	83539.7	2.1				ug/L	1607	Standard
P	31	32606.7	1.9				ug/L	22752	Standard
S	34	4827.4	4.1				ug/L	5049	Standard
Sr	88	453.3	10.5				ug/L	87	Standard
C	12	170.0	0.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	51.9	21.5				mg/L	10	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	30.0	33.3				mg/L	3	Standard
I	127	562279.3	5.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		139.457	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.627	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.676
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.246
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606030402PS WG572184-03
Sample Date/Time: Thursday, June 16, 2016 22:58:52
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73075.8	1.3				ug/L	51024	Standard
	Be	9	53890.7	1.6	**44.7456**	1.235	2.8	ug/L	7	Standard
	Al	27	27168938.9	0.8	**133.2737**	2.450	1.8	ug/L	625	Standard
	Sc	45	32783.8	3.0				ug/L	29647	Standard
	Ti	47	859.4	2.1	**2.8540**	0.076	2.7	ug/L	57	Standard
	V	51	356764.3	1.1	**52.7436**	0.694	1.3	ug/L	1142	Standard
	Cr	52	356493.8	0.1	**50.1744**	0.746	1.5	ug/L	6628	Standard
	Cr	53	58201.6	1.0	**65.5911**	1.486	2.3	ug/L	430	Standard
	Mn	55	450920.3	1.1	**79.9871**	1.948	2.4	ug/L	603	Standard
	Co	59	316431.5	0.7	**51.8775**	0.422	0.8	ug/L	237	Standard
	Ni	60	89734.3	1.3	**48.9891**	1.257	2.6	ug/L	141	Standard
	Cu	65	87088.6	0.9	**48.7984**	1.056	2.2	ug/L	109	Standard
	Zn	66	59430.7	0.2	**56.3137**	0.736	1.3	ug/L	159	Standard
>	**Ge**	72	449467.4	1.3				ug/L	474053	Standard
	As	75	54174.2	0.7	**51.6333**	0.928	1.8	ug/L	-34	Standard
	Se	82	5615.8	0.7	**53.3981**	0.963	1.8	ug/L	14	Standard
	Se-1	77	4643.7	1.4	**63.0355**	0.461	0.7	ug/L	55	Standard
>	**Ga**	71	86.7	6.7				mg/L	50	Standard
	Rb	85	8584.1	2.2				ug/L	20	Standard
	Y	89	362129.9	0.6				ug/L	376602	Standard
>	**Rh**	103	126.7	12.1				ug/L	17	Standard
	Mo	98	423.7	5.1	**0.1836**	0.012	6.4	ug/L	8	Standard
	Ag	107	266853.3	1.0	**47.1390**	0.674	1.4	ug/L	81	Standard
	Cd	111	91252.6	1.2	**49.5561**	0.951	1.9	mg/L	3	Standard
	Cd	114	222037.4	0.3	**48.7752**	0.696	1.4	ug/L	7	Standard
>	**In**	115	497860.4	1.7				ug/L	524722	Standard
	Sn	118	795.0	4.5	**0.0661**	0.005	7.0	ug/L	715	Standard
	Sb	123	212175.4	1.5	**51.1854**	0.593	1.2	ug/L	201	Standard
	Ba	135	282462.3	0.7	**164.2013**	1.778	1.1	ug/L	108	Standard
	Ce	140	631.7	10.3				ug/L	30	Standard
>	**Tb**	159	772720.2	0.9				ug/L	792236	Standard
	Ho	165	25.0	72.1				ug/L	7	Standard
	Tl	203	348021.0	0.8	**48.9171**	0.207	0.4	ug/L	9	Standard
	Tl	205	307292.3	1.9	**50.7847**	0.486	1.0	ug/L	0	Standard
	Pb	206	227366.6	0.7	**52.8212**	0.283	0.5	ug/L	216	Standard
	Pb	207	198570.4	0.5	**50.6733**	0.216	0.4	ug/L	180	Standard
	Pb	208	808970.2	1.0	**50.8658**	0.381	0.7	ug/L	717	Standard
	U	238	316899.9	0.9	**54.7755**	0.248	0.5	ug/L	4	Standard
>	**Bi**	209	428726.0	0.9				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.3595**	8.821	164.6	mg/L	0	Standard
Mg	24	124008.8	1.6	**152.0535**	3.346	2.2	mg/L	20	Standard
K	39	85.0	11.8	**0.3592**	0.081	22.7	mg/L	22	Standard
Ca	43	100.0	5.0	**7.9645**	1.532	19.2	mg/L	47	Standard
Fe	54	177.2	11.1	**0.0154**	0.015	95.9	mg/L	151	Standard
Fe	57	351.7	12.7	**0.3402**	0.148	43.6	mg/L	195	Standard
> **Sc-1**	45	32783.8	3.0				mg/L	29647	Standard
Cl	35	226771.8	0.7				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	82051.8	3.7				ug/L	1607	Standard
P	31	32553.3	0.7				ug/L	22752	Standard
S	34	4877.5	2.7				ug/L	5049	Standard
Sr	88	468.3	17.3				ug/L	87	Standard
C	12	143.3	17.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	28.9	106.4				mg/L	10	Standard
Ho-1	165	25.0	72.1				mg/L	7	Standard
Er	166	23.3	65.5				mg/L	3	Standard
I	127	560436.2	7.8				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		143.218	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.814	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.881
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.132
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606030402SDL WG572184-04
Sample Date/Time: Thursday, June 16, 2016 23:02:03
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70743.1	1.8				ug/L	51024	Standard
	Be	9	28.3	50.9	**0.0034**	0.013	384.2	ug/L	7	Standard
	Al	27	5919809.8	1.5	**29.9860**	0.193	0.6	ug/L	625	Standard
	Sc	45	33931.3	4.9				ug/L	29647	Standard
	Ti	47	210.3	4.5	**0.5323**	0.026	4.9	ug/L	57	Standard
	V	51	1736.1	7.7	**0.0751**	0.020	26.8	ug/L	1142	Standard
	Cr	52	8517.7	1.3	**0.2257**	0.018	7.8	ug/L	6628	Standard
	Cr	53	4512.3	4.3	**4.4067**	0.273	6.2	ug/L	430	Standard
	Mn	55	34493.9	0.5	**5.6636**	0.053	0.9	ug/L	603	Standard
	Co	59	857.0	3.0	**0.0916**	0.004	4.4	ug/L	237	Standard
	Ni	60	815.4	3.7	**0.3434**	0.013	3.8	ug/L	141	Standard
	Cu	65	609.0	2.8	**0.2567**	0.008	3.3	ug/L	109	Standard
	Zn	66	2631.2	2.5	**2.1339**	0.077	3.6	ug/L	159	Standard
>	**Ge**	72	475670.8	1.3				ug/L	474053	Standard
	As	75	259.9	19.5	**0.2591**	0.046	17.8	ug/L	-34	Standard
	Se	82	96.9	9.6	**0.7044**	0.090	12.8	ug/L	14	Standard
	Se-1	77	278.3	6.3	**2.8660**	0.190	6.6	ug/L	55	Standard
>	**Ga**	71	100.0	13.2				mg/L	50	Standard
	Rb	85	1971.8	2.2				ug/L	20	Standard
	Y	89	399368.2	0.1				ug/L	376602	Standard
>	**Rh**	103	31.7	55.5				ug/L	17	Standard
	Mo	98	97.2	8.5	**0.0330**	0.003	8.8	ug/L	8	Standard
	Ag	107	194.3	8.7	**0.0182**	0.002	12.0	ug/L	81	Standard
	Cd	111	22.8	26.6	**0.0078**	0.003	35.8	mg/L	3	Standard
	Cd	114	48.7	59.7	**0.0057**	0.006	99.0	ug/L	7	Standard
>	**In**	115	559725.5	1.9				ug/L	524722	Standard
	Sn	118	606.7	7.7	**0.0162**	0.009	56.8	ug/L	715	Standard
	Sb	123	2363.7	19.9	**0.4914**	0.092	18.7	ug/L	201	Standard
	Ba	135	43798.6	2.4	**22.5929**	0.145	0.6	ug/L	108	Standard
	Ce	140	198.3	9.5				ug/L	30	Standard
>	**Tb**	159	842868.7	1.3				ug/L	792236	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	155.3	20.7	**0.0174**	0.004	24.2	ug/L	9	Standard
	Tl	205	138.3	25.4	**0.0131**	0.005	41.5	ug/L	0	Standard
	Pb	206	331.7	5.4	**0.0143**	0.004	25.7	ug/L	216	Standard
	Pb	207	291.7	3.0	**0.0144**	0.002	12.4	ug/L	180	Standard
	Pb	208	1219.7	5.8	**0.0124**	0.004	35.2	ug/L	717	Standard
	U	238	456.0	5.1	**0.0646**	0.005	7.0	ug/L	4	Standard
>	**Bi**	209	468142.9	1.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	26463.1	2.5	**31.3785**	2.343	7.5	mg/L	20	Standard
K	39	26.7	78.1	**-0.0526**	0.134	255.5	mg/L	22	Standard
Ca	43	43.3	17.6	**-4.3735**	1.225	28.0	mg/L	47	Standard
Fe	54	169.2	3.0	**0.0053**	0.003	52.6	mg/L	151	Standard
Fe	57	196.7	11.5	**-0.1160**	0.038	32.8	mg/L	195	Standard
Sc-1	45	33931.3	4.9				mg/L	29647	Standard
Cl	35	196142.1	0.3				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	19616.0	5.5				ug/L	1607	Standard
P	31	27376.4	1.1				ug/L	22752	Standard
S	34	5225.9	4.8				ug/L	5049	Standard
Sr	88	161.7	12.5				ug/L	87	Standard
C	12	53.3	21.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	18.9	105.9				mg/L	10	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	23.3	24.7				mg/L	3	Standard
I	127	136986.5	1.1				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		138.646	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.341	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	106.671
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.694
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 23:05:16
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65141.5	3.2				ug/L	51024	Standard
	Be	9	52703.2	1.3	**49.1153**	1.764	3.6	ug/L	7	Standard
	Al	27	8228815.5	2.2	**45.2824**	0.920	2.0	ug/L	625	Standard
	Sc	45	32498.2	4.1				ug/L	29647	Standard
	Ti	47	31345.1	0.7	**103.5318**	1.343	1.3	ug/L	57	Standard
	V	51	367453.1	0.4	**51.1407**	0.777	1.5	ug/L	1142	Standard
	Cr	52	375913.5	0.3	**49.8070**	1.076	2.2	ug/L	6628	Standard
	Cr	53	47646.5	1.3	**50.4578**	1.488	2.9	ug/L	430	Standard
	Mn	55	329100.4	0.4	**54.9171**	0.971	1.8	ug/L	603	Standard
	Co	59	349269.0	1.0	**53.9203**	1.421	2.6	ug/L	237	Standard
	Ni	60	96531.2	0.8	**49.6170**	1.272	2.6	ug/L	141	Standard
	Cu	65	93924.6	0.9	**49.5504**	1.188	2.4	ug/L	109	Standard
	Zn	66	55518.9	0.1	**49.5011**	0.851	1.7	ug/L	159	Standard
>	Ge	72	477444.4	1.8				ug/L	474053	Standard
	As	75	55141.7	0.8	**49.4767**	0.656	1.3	ug/L	-34	Standard
	Se	82	5701.1	0.6	**51.0288**	1.000	2.0	ug/L	14	Standard
	Se-1	77	3881.8	1.1	**49.4608**	1.267	2.6	ug/L	55	Standard
>	Ga	71	65.0	13.3				mg/L	50	Standard
	Rb	85	788.4	3.5				ug/L	20	Standard
	Y	89	405958.4	2.3				ug/L	376602	Standard
>	Rh	103	46.7	6.2				ug/L	17	Standard
	Mo	98	255980.2	1.6	**104.9334**	3.174	3.0	ug/L	8	Standard
	Ag	107	304085.1	0.1	**49.3379**	0.777	1.6	ug/L	81	Standard
	Cd	111	100650.6	0.4	**50.2032**	0.894	1.8	mg/L	3	Standard
	Cd	114	247889.3	0.9	**50.0095**	0.397	0.8	ug/L	7	Standard
>	In	115	542056.8	1.5				ug/L	524722	Standard
	Sn	118	285272.3	0.9	**51.1841**	0.960	1.9	ug/L	715	Standard
	Sb	123	227314.1	0.8	**50.3702**	0.881	1.7	ug/L	201	Standard
	Ba	135	91208.0	0.4	**48.6598**	0.850	1.7	ug/L	108	Standard
	Ce	140	63.3	32.9				ug/L	30	Standard
>	Tb	159	789070.3	2.3				ug/L	792236	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	377602.8	0.5	**50.2279**	0.920	1.8	ug/L	9	Standard
	Tl	205	337371.9	1.4	**52.7729**	1.437	2.7	ug/L	0	Standard
	Pb	206	238042.0	0.2	**52.3320**	0.779	1.5	ug/L	216	Standard
	Pb	207	215459.6	1.1	**52.0360**	1.192	2.3	ug/L	180	Standard
	Pb	208	891326.9	0.5	**53.0399**	0.951	1.8	ug/L	717	Standard
	U	238	333407.3	1.0	**54.5375**	1.116	2.0	ug/L	4	Standard
>	Bi	209	453096.7	1.3				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.3907**	8.767	162.6	mg/L	0	Standard
Mg	24	4200.6	2.3	**5.1529**	0.111	2.2	mg/L	20	Standard
K	39	616.7	6.8	**4.0727**	0.447	11.0	mg/L	22	Standard
Ca	43	71.7	17.6	**2.1532**	3.105	144.2	mg/L	47	Standard
Fe	54	6037.6	3.3	**4.3664**	0.172	3.9	mg/L	151	Standard
Fe	57	1763.4	0.4	**4.3392**	0.195	4.5	mg/L	195	Standard
Sc-1	45	32498.2	4.1				mg/L	29647	Standard
Cl	35	179833.9	2.1				ug/L	154152	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	2146.8	4.2				ug/L	1607	Standard
P	31	26813.7	2.2				ug/L	22752	Standard
S	34	5724.4	0.6				ug/L	5049	Standard
Sr	88	70.0	14.3				ug/L	87	Standard
C	12	63.3	50.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.0	50.0				mg/L	10	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	3	Standard
I	127	9479.8	26.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	98.231		
Al	27	90.565		
Sc	45			
Ti	47	103.532		
V	51	102.281		
Cr	52	99.614		
Cr	53			
Mn	55	109.834		
Co	59	107.841		
Ni	60	99.234		
Cu	65	99.101		
Zn	66	99.002		
Ge	72		100.715	
As	75	98.953		
Se	82	102.058		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	104.933		
Ag	107	98.676		
Cd	111	100.406		
Cd	114			
> In	115		103.304	
Sn	118	102.368		
Sb	123	100.740		
Ba	135	97.320		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.456		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.080		
U	238	109.075		
> Bi	209		98.426	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 23:08:27
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65521.4	0.4				ug/L	51024	Standard
	Be	9	23.3	99.0	**0.0005**	0.021	4564.3	ug/L	7	Standard
	Al	27	5681.9	111.4	**0.0212**	0.034	162.2	ug/L	625	Standard
	Sc	45	34061.6	0.4				ug/L	29647	Standard
	Ti	47	31.0	31.1	**-0.0658**	0.030	46.1	ug/L	57	Standard
	V	51	1137.0	4.8	**-0.0132**	0.008	58.0	ug/L	1142	Standard
	Cr	52	6409.0	1.1	**-0.0829**	0.007	8.9	ug/L	6628	Standard
	Cr	53	666.7	9.6	**0.2639**	0.061	23.2	ug/L	430	Standard
	Mn	55	712.4	6.8	**-0.0100**	0.007	70.1	ug/L	603	Standard
	Co	59	233.0	15.5	**-0.0061**	0.005	85.2	ug/L	237	Standard
	Ni	60	159.3	10.8	**0.0024**	0.008	354.6	ug/L	141	Standard
	Cu	65	160.3	16.8	**0.0166**	0.013	81.1	ug/L	109	Standard
	Zn	66	162.7	11.7	**-0.0896**	0.016	17.5	ug/L	159	Standard
>	**Ge**	72	488521.2	0.7				ug/L	474053	Standard
	As	75	-18.2	245.0	**0.0090**	0.039	433.3	ug/L	-34	Standard
	Se	82	22.9	33.5	**0.0317**	0.066	209.0	ug/L	14	Standard
	Se-1	77	61.7	10.8	**0.0347**	0.088	253.1	ug/L	55	Standard
>	**Ga**	71	43.3	6.7				mg/L	50	Standard
	Rb	85	21.7	26.6				ug/L	20	Standard
	Y	89	392497.9	1.5				ug/L	376602	Standard
>	**Rh**	103	15.0	66.7				ug/L	17	Standard
	Mo	98	290.0	34.9	**0.1112**	0.040	35.6	ug/L	8	Standard
	Ag	107	124.3	21.0	**0.0075**	0.004	51.6	ug/L	81	Standard
	Cd	111	11.5	16.4	**0.0024**	0.001	34.9	mg/L	3	Standard
	Cd	114	37.6	64.7	**0.0036**	0.005	130.1	ug/L	7	Standard
>	**In**	115	550836.3	1.7				ug/L	524722	Standard
	Sn	118	835.0	15.5	**0.0583**	0.023	39.6	ug/L	715	Standard
	Sb	123	699.1	30.0	**0.1378**	0.046	33.4	ug/L	201	Standard
	Ba	135	132.0	3.9	**0.0117**	0.003	27.6	ug/L	108	Standard
	Ce	140	11.7	24.7				ug/L	30	Standard
>	**Tb**	159	819426.3	1.1				ug/L	792236	Standard
	Ho	165	6.7	86.6				ug/L	7	Standard
	Tl	203	74.7	34.7	**0.0068**	0.003	47.8	ug/L	9	Standard
	Tl	205	90.0	77.2	**0.0055**	0.010	186.7	ug/L	0	Standard
	Pb	206	270.7	9.3	**0.0000**	0.005	33114.8	ug/L	216	Standard
	Pb	207	219.0	11.0	**-0.0037**	0.006	150.6	ug/L	180	Standard
	Pb	208	961.7	14.2	**-0.0037**	0.008	206.3	ug/L	717	Standard
	U	238	71.3	83.4	**0.0035**	0.009	266.3	ug/L	4	Standard
>	**Bi**	209	478835.9	0.7				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.7236**	8.190	143.1	mg/L	0	Standard
Mg	24	78.3	36.3	**0.0471**	0.033	70.4	mg/L	20	Standard
K	39	20.0	50.0	**-0.0950**	0.067	70.5	mg/L	22	Standard
Ca	43	16.7	62.4	**-9.7998**	2.111	21.5	mg/L	47	Standard
Fe	54	162.8	19.9	**0.0003**	0.023	7301.8	mg/L	151	Standard
Fe	57	211.7	11.2	**-0.0764**	0.066	86.3	mg/L	195	Standard
> **Sc-1**	45	34061.6	0.4				mg/L	29647	Standard
Cl	35	176482.8	2.0				ug/L	154152	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	1700.1	5.3				ug/L	1607	Standard
P	31	27343.0	0.9				ug/L	22752	Standard
S	34	5614.4	3.8				ug/L	5049	Standard
Sr	88	68.3	27.7				ug/L	87	Standard
C	12	56.7	44.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	16.0	95.0				mg/L	10	Standard
Ho-1	165	6.7	86.6				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	4402.3	12.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.052	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.977
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.017
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, June 16, 2016 23:11:40
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62197.5	2.7				ug/L	51024	Standard
	Be	9	238.3	13.6	**0.2121**	0.037	17.6	ug/L	7	Standard
	Al	27	1466.7	24.6	**-0.0013**	0.002	173.1	ug/L	625	Standard
	Sc	45	31464.3	3.4				ug/L	29647	Standard
	Ti	47	25.0	41.8	**-0.0793**	0.036	45.5	ug/L	57	Standard
	V	51	3787.9	2.1	**0.3855**	0.011	2.8	ug/L	1142	Standard
	Cr	52	11607.4	0.4	**0.7122**	0.016	2.2	ug/L	6628	Standard
	Cr	53	1381.7	1.4	**1.1136**	0.035	3.1	ug/L	430	Standard
	Mn	55	3485.4	2.1	**0.4840**	0.015	3.1	ug/L	603	Standard
	Co	59	2688.9	0.3	**0.3937**	0.004	0.9	ug/L	237	Standard
	Ni	60	3045.6	2.3	**1.5635**	0.022	1.4	ug/L	141	Standard
	Cu	65	1580.4	3.3	**0.8079**	0.030	3.7	ug/L	109	Standard
	Zn	66	7167.0	0.7	**6.4903**	0.095	1.5	ug/L	159	Standard
>	**Ge**	72	455928.4	0.9				ug/L	474053	Standard
	As	75	370.6	7.7	**0.3732**	0.030	8.0	ug/L	-34	Standard
	Se	82	61.3	17.8	**0.4078**	0.107	26.4	ug/L	14	Standard
	Se-1	77	90.3	17.8	**0.4781**	0.216	45.1	ug/L	55	Standard
>	**Ga**	71	55.0	24.1				mg/L	50	Standard
	Rb	85	15.0	57.7				ug/L	20	Standard
	Y	89	401919.6	0.8				ug/L	376602	Standard
>	**Rh**	103	13.3	43.3				ug/L	17	Standard
	Mo	98	54.9	10.1	**0.0169**	0.002	11.0	ug/L	8	Standard
	Ag	107	2304.2	2.4	**0.3610**	0.011	3.1	ug/L	81	Standard
	Cd	111	463.2	4.6	**0.2274**	0.011	4.7	mg/L	3	Standard
	Cd	114	1100.0	5.3	**0.2180**	0.017	7.9	ug/L	7	Standard
>	**In**	115	543008.1	2.6				ug/L	524722	Standard
	Sn	118	436.7	6.3	**-0.0111**	0.004	33.6	ug/L	715	Standard
	Sb	123	1825.0	3.3	**0.3894**	0.024	6.1	ug/L	201	Standard
	Ba	135	1282.7	6.8	**0.6257**	0.032	5.1	ug/L	108	Standard
	Ce	140	18.3	41.7				ug/L	30	Standard
>	**Tb**	159	786449.8	2.4				ug/L	792236	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	625.7	5.7	**0.0805**	0.004	5.1	ug/L	9	Standard
	Tl	205	541.7	4.7	**0.0768**	0.002	3.0	ug/L	0	Standard
	Pb	206	1119.4	3.0	**0.1897**	0.004	2.2	ug/L	216	Standard
	Pb	207	980.4	3.9	**0.1828**	0.004	2.1	ug/L	180	Standard
	Pb	208	4169.9	1.1	**0.1903**	0.004	2.3	ug/L	717	Standard
	U	238	2499.2	1.6	**0.4009**	0.009	2.3	ug/L	4	Standard
>	**Bi**	209	453610.3	2.8				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	55.0	15.7	**0.0251**	0.011	43.4	mg/L	20	Standard
K	39	8.3	91.7	**-0.1668**	0.057	33.9	mg/L	22	Standard
Ca	43	21.7	66.6	**-8.4026**	3.204	38.1	mg/L	47	Standard
Fe	54	104.1	4.5	**-0.0352**	0.004	10.9	mg/L	151	Standard
Fe	57	183.3	11.0	**-0.1131**	0.042	36.8	mg/L	195	Standard
Sc-1	45	31464.3	3.4				mg/L	29647	Standard
Cl	35	173373.0	1.2				ug/L	154152	Standard
Kr	83	0.7	173.2				ug/L	3	Standard
Br	81	1516.7	7.1				ug/L	1607	Standard
P	31	19057.0	2.5				ug/L	22752	Standard
S	34	5394.3	1.5				ug/L	5049	Standard
Sr	88	70.0	24.7				ug/L	87	Standard
C	12	66.7	82.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	3.2	173.2				mg/L	10	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	3055.3	5.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	106.050		
Al	27			
Sc	45			
Ti	47			
V	51	96.369		
Cr	52	89.022		
Cr	53			
Mn	55	96.796		
Co	59	98.420		
Ni	60	97.718		
Cu	65	100.991		
Zn	66	103.844		
Ge	72		96.177	
As	75	93.302		
Se	82	101.945		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	90.256		
Cd	111	94.767		
Cd	114			
> In	115			103.485
Sn	118			
Sb	123	97.340		
Ba	135	83.430		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.678		
Tl	205			
Pb	206			
Pb	207			
Pb	208	95.126		
U	238	100.222		
> Bi	209			98.537
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Tuesday, June 21, 2016 12:07:41

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1329	2024	0.712	
Mg	23.985	23.975	4501	2020	0.694	
Co	58.933	58.925	11686	2022	0.702	
In	114.904	114.925	22861	2028	0.687	
U	238.050	238.075	47460	2043	0.684	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	6.556
5.575	2.909
5.625	3.124
5.675	4.542
5.725	2.516
5.775	3.133
5.825	3.034
5.875	2.659
5.925	3.116
5.975	0.663
6.025	3.021
6.075	4.431
6.125	3.101
6.175	3.302
6.225	9.989
6.275	25.913
6.325	61.237
6.375	37.268
6.425	95.831
6.475	39.218
6.525	13.045
6.575	6.056
6.625	3.694
6.675	1.639
6.725	2.760
6.775	1.475
6.825	2.174

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6.875	1.150
6.925	1.430
6.975	2.330
7.025	1.255
7.075	0.705
7.125	2.295
7.175	1.271
7.225	3.628
7.275	4.494
7.325	27.694
7.375	63.888
7.425	39.123
7.475	88.928
7.525	69.869
7.575	37.268
7.625	63.191
7.675	69.869
7.725	86.603
7.775	99.381
7.825	121.967
7.875	83.853
7.925	72.436
7.975	99.381
8.025	50.000
8.075	34.233
8.125	100.000
8.175	38.030
8.225	40.825
8.275	22.822
8.325	138.332
8.375	39.123
8.425	79.057
8.475	43.853
22.525	223.607
22.575	38.030
22.625	43.853
22.675	32.401
22.725	43.376
22.775	49.793
22.825	52.408
22.875	27.407
22.925	16.563
22.975	20.412
23.025	28.315
23.075	34.881
23.125	25.951
23.175	32.541

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23.225	14.650
23.275	27.809
23.325	19.174
23.375	43.122
23.425	29.487
23.475	18.506
23.525	5.966
23.575	3.055
23.625	1.534
23.675	1.817
23.725	1.183
23.775	0.960
23.825	1.298
23.875	1.103
23.925	0.675
23.975	1.038
24.025	1.417
24.075	0.260
24.125	0.656
24.175	1.631
24.225	1.863
24.275	3.146
24.325	28.710
24.375	26.307
24.425	30.292
24.475	13.327
24.525	4.037
24.575	1.007
24.625	3.057
24.675	2.129
24.725	1.137
24.775	1.370
24.825	1.603
24.875	1.801
24.925	0.625
24.975	1.310
25.025	1.635
25.075	1.412
25.125	1.115
25.175	1.388
25.225	1.212
25.275	14.200
25.325	57.334
25.375	84.265
25.425	42.127
25.475	10.037
57.525	5.453

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57.575	2.202
57.625	3.035
57.675	1.654
57.725	3.803
57.775	1.264
57.825	1.936
57.875	2.815
57.925	1.641
57.975	2.107
58.025	2.389
58.075	2.038
58.125	0.977
58.175	4.405
58.225	4.049
58.275	3.597
58.325	15.526
58.375	17.815
58.425	26.131
58.475	8.281
58.525	1.499
58.575	1.606
58.625	2.262
58.675	1.232
58.725	2.036
58.775	0.724
58.825	1.502
58.875	1.471
58.925	1.251
58.975	1.106
59.025	1.762
59.075	1.429
59.125	1.832
59.175	2.462
59.225	2.138
59.275	14.258
59.325	45.166
59.375	47.140
59.425	44.721
59.475	23.904
59.525	10.883
59.575	9.409
59.625	4.974
59.675	2.777
59.725	1.421
59.775	3.138
59.825	1.163
59.875	1.334

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59.925	3.822
59.975	1.863
60.025	1.945
60.075	2.122
60.125	3.418
60.175	2.126
60.225	8.067
60.275	17.408
60.325	50.619
60.375	35.355
60.425	52.705
60.475	30.842
113.525	13.070
113.575	7.506
113.625	5.331
113.675	1.010
113.725	3.027
113.775	2.098
113.825	2.123
113.875	2.206
113.925	2.127
113.975	2.183
114.025	0.695
114.075	2.493
114.125	1.430
114.175	1.596
114.225	3.899
114.275	3.770
114.325	17.743
114.375	38.065
114.425	24.241
114.475	10.721
114.525	4.779
114.575	3.301
114.625	1.042
114.675	2.599
114.725	2.253
114.775	2.049
114.825	0.960
114.875	1.817
114.925	1.355
114.975	1.378
115.025	1.472
115.075	1.260
115.125	2.051
115.175	2.855
115.225	2.482

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115.275	6.639
115.325	11.285
115.375	27.524
115.425	38.030
115.475	48.445
115.525	22.628
115.575	8.442
115.625	5.335
115.675	3.400
115.725	5.123
115.775	2.482
115.825	4.190
115.875	5.728
115.925	4.930
115.975	5.489
116.025	3.368
116.075	2.667
116.125	3.465
116.175	4.332
116.225	4.691
116.275	14.225
116.325	24.781
116.375	59.266
116.425	74.689
116.475	76.697
236.525	
236.575	42.229
236.625	43.069
236.675	30.822
236.725	19.846
236.775	17.801
236.825	35.067
236.875	14.286
236.925	33.026
236.975	31.044
237.025	23.207
237.075	28.152
237.125	38.870
237.175	48.879
237.225	33.159
237.275	29.116
237.325	14.542
237.375	23.458
237.425	19.563
237.475	25.573
237.525	41.592
237.575	22.988

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237.625	9.655
237.675	3.555
237.725	2.204
237.775	2.335
237.825	2.878
237.875	1.983
237.925	0.860
237.975	1.594
238.025	1.305
238.075	0.963
238.125	1.566
238.175	1.319
238.225	0.999
238.275	0.949
238.325	1.610
238.375	2.604
238.425	0.685
238.475	5.782
238.525	6.276
238.575	21.121
238.625	40.982
238.675	25.226
238.725	31.270
238.775	24.717
238.825	36.014
238.875	26.854
238.925	18.372
238.975	35.067
239.025	35.209
239.075	29.613
239.125	29.155
239.175	13.847
239.225	32.341
239.275	28.917
239.325	41.445
239.375	36.361
239.425	32.530
239.475	31.439

Approved: June 22, 2016

SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\ReportOutput\a.swz

Start Time: 6/21/2016 12:13:16 PM
End Time: 6/21/2016 12:15:43 PM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 4257.87
        Obtained Intensity (Mg 23.985): 91046.81
        Obtained Intensity (In 114.904): 67007.59
        Obtained Intensity (U 238.05): 138801.86
        Obtained Intensity (Bkgd 220): 0.27
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.018 (=3833.82 / 209522.60)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.006 (=1202.25 / 209522.60)
```


Approved: June 22, 2016

SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\ReportOutput\a.swz

Optimization Status

Start Time: 6/21/2016 12:13:16 PM

Daily Performance Check
        Optimization Settings:
                Method: Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 1
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 4257.87
                Obtained Intensity (Mg 23.985): 91046.81
                Obtained Intensity (In 114.904): 67007.59
                Obtained Intensity (U 238.05): 138801.86
                Obtained Intensity (Bkgd 220): 0.27
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.018 (=3833.82 / 209522.60)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.006 (=1202.25 / 209522.60)
[Passed]  Optimum value(s): N/A

End Time: 6/21/2016 12:15:43 PM
```


Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Tuesday, June 21, 2016 12:31:36
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60175.9	0.2				ug/L		Standard
	Be	9	5.0	0.0				ug/L		Standard
	Al	27	831.7	9.4				ug/L		Standard
	Sc	45	25065.7	2.2				ug/L		Standard
	Ti	47	37.7	15.6				ug/L		Standard
	V	51	974.0	7.7				ug/L		Standard
	Cr	52	5792.4	1.5				ug/L		Standard
	Cr	53	346.7	9.8				ug/L		Standard
	Mn	55	1164.0	4.2				ug/L		Standard
	Co	59	303.3	8.1				ug/L		Standard
	Ni	60	290.7	6.8				ug/L		Standard
	Cu	65	172.7	6.7				ug/L		Standard
	Zn	66	130.3	5.4				ug/L		Standard
>	Ge	72	491723.5	1.3				ug/L		Standard
	As	75	-24.7	79.1				ug/L		Standard
	Se	82	11.5	37.2				ug/L		Standard
	Se-1	77	57.0	6.3				ug/L		Standard
>	Ga	71	148.3	7.8				mg/L		Standard
	Rb	85	18.3	41.7				ug/L		Standard
	Y	89	401844.8	1.4				ug/L		Standard
>	Rh	103	10.0	50.0				ug/L		Standard
	Mo	98	11.9	33.1				ug/L		Standard
	Ag	107	97.7	16.8				ug/L		Standard
	Cd	111	10.7	42.3				mg/L		Standard
	Cd	114	21.3	80.2				ug/L		Standard
>	In	115	547486.6	2.6				ug/L		Standard
	Sn	118	450.0	16.8				ug/L		Standard
	Sb	123	105.2	26.0				ug/L		Standard
	Ba	135	111.3	14.6				ug/L		Standard
	Ce	140	106.7	44.3				ug/L		Standard
>	Tb	159	890342.4	1.4				ug/L		Standard
	Ho	165	10.0	50.0				ug/L		Standard
	Tl	203	19.3	72.5				ug/L		Standard
	Tl	205	16.7	62.4				ug/L		Standard
	Pb	206	247.0	5.1				ug/L		Standard
	Pb	207	215.0	4.1				ug/L		Standard
	Pb	208	770.0	5.2				ug/L		Standard
	U	238	13.3	42.6				ug/L		Standard
>	Bi	209	503142.7	1.4				ug/L		Standard

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Na	23	1.7	173.2	mg/L	Standard
Mg	24	35.0	14.3	mg/L	Standard
K	39	25.0	52.9	mg/L	Standard
Ca	43	38.3	19.9	mg/L	Standard
Fe	54	126.1	27.3	mg/L	Standard
Fe	57	245.0	30.1	mg/L	Standard
> **Sc-1**	45	25065.7	2.2	mg/L	Standard
Cl	35	125857.3	1.3	ug/L	Standard
Kr	83	1.0	100.0	ug/L	Standard
Br	81	1350.1	4.5	ug/L	Standard
P	31	18392.8	1.6	ug/L	Standard
S	34	3738.8	6.0	ug/L	Standard
Sr	88	78.3	24.2	ug/L	Standard
C	12	53.3	60.3	mg/L	Standard
N	14	0.0		mg/L	Standard
Hg	202	0.0		mg/L	Standard
Dy	164	2.2	286.4	mg/L	Standard
Ho-1	165	10.0	50.0	mg/L	Standard
Er	166	23.3	65.5	mg/L	Standard
I	127	1145.0	4.2	mg/L	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Blank
Report Date/Time: Tuesday, June 21, 2016 12:33:53
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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Tuesday, June 21, 2016 12:34:47
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60488.9	1.3				ug/L	60176	Standard
	Be	9	11.7	65.5				ug/L	5	Standard
	Al	27	836.7	4.8				ug/L	832	Standard
	Sc	45	24878.7	2.2				ug/L	25066	Standard
	Ti	47	35.3	20.5				ug/L	38	Standard
	V	51	1014.5	7.5				ug/L	974	Standard
	Cr	52	5913.2	2.9				ug/L	5792	Standard
	Cr	53	315.0	19.3				ug/L	347	Standard
	Mn	55	1207.0	3.4				ug/L	1164	Standard
	Co	59	269.3	1.8				ug/L	303	Standard
	Ni	60	292.0	1.9				ug/L	291	Standard
	Cu	65	155.7	6.3				ug/L	173	Standard
	Zn	66	143.3	11.1				ug/L	130	Standard
>	Ge	72	484278.1	1.8				ug/L	491724	Standard
	As	75	-25.5	164.8				ug/L	-25	Standard
	Se	82	11.6	54.6				ug/L	12	Standard
	Se-1	77	49.7	15.1				ug/L	57	Standard
>	Ga	71	168.3	18.1				mg/L	148	Standard
	Rb	85	21.7	48.0				ug/L	18	Standard
	Y	89	409346.3	1.0				ug/L	401845	Standard
>	Rh	103	26.7	10.8				ug/L	10	Standard
	Mo	98	8.3	17.9				ug/L	12	Standard
	Ag	107	92.7	12.5				ug/L	98	Standard
	Cd	111	9.3	34.5				mg/L	11	Standard
	Cd	114	15.1	46.6				ug/L	21	Standard
>	In	115	551450.0	0.7				ug/L	547487	Standard
	Sn	118	430.0	8.1				ug/L	450	Standard
	Sb	123	43.1	45.3				ug/L	105	Standard
	Ba	135	105.7	9.3				ug/L	111	Standard
	Ce	140	71.7	83.2				ug/L	107	Standard
>	Tb	159	897003.4	2.0				ug/L	890342	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	11.0	72.2				ug/L	19	Standard
	Tl	205	10.0	132.3				ug/L	17	Standard
	Pb	206	238.0	4.2				ug/L	247	Standard
	Pb	207	219.3	4.9				ug/L	215	Standard
	Pb	208	792.0	5.9				ug/L	770	Standard
	U	238	10.0	75.5				ug/L	13	Standard
>	Bi	209	496302.2	1.2				ug/L	503143	Standard

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	Na	23	0.0		mg/L	2	Standard
	Mg	24	31.7	24.1	mg/L	35	Standard
	K	39	33.3	43.3	mg/L	25	Standard
	Ca	43	26.7	10.8	mg/L	38	Standard
	Fe	54	132.9	5.9	mg/L	126	Standard
	Fe	57	250.0	24.0	mg/L	245	Standard
>	**Sc-1**	45	24878.7	2.2	mg/L	25066	Standard
	Cl	35	129128.6	0.4	ug/L	125857	Standard
	Kr	83	1.7	124.9	ug/L	1	Standard
	Br	81	1190.0	4.4	ug/L	1350	Standard
	P	31	18840.0	2.5	ug/L	18393	Standard
	S	34	3955.5	5.6	ug/L	3739	Standard
	Sr	88	98.3	22.9	ug/L	78	Standard
	C	12	73.3	28.4	mg/L	53	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	3.3	173.2	mg/L	0	Standard
	Dy	164	6.2	93.6	mg/L	2	Standard
	Ho-1	165	8.3	69.3	mg/L	10	Standard
	Er	166	10.0	100.0	mg/L	23	Standard
	I	127	1046.7	2.3	mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Tuesday, June 21, 2016 12:37:59
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	58902.6	2.2				ug/L	60176	Standard
	Be	9	41.7	36.7				ug/L	5	Standard
	Al	27	7506.9	2.0				ug/L	832	Standard
	Sc	45	24807.0	1.7				ug/L	25066	Standard
	Ti	47	57.3	17.5				ug/L	38	Standard
	V	51	1265.4	5.8				ug/L	974	Standard
	Cr	52	6084.9	2.1				ug/L	5792	Standard
	Cr	53	365.0	11.9				ug/L	347	Standard
	Mn	55	1636.8	0.3				ug/L	1164	Standard
	Co	59	583.0	6.7				ug/L	303	Standard
	Ni	60	417.3	3.9				ug/L	291	Standard
	Cu	65	254.7	1.5				ug/L	173	Standard
	Zn	66	285.3	6.4				ug/L	130	Standard
>	Ge	72	474091.1	0.6				ug/L	491724	Standard
	As	75	16.4	175.0				ug/L	-25	Standard
	Se	82	14.3	35.4				ug/L	12	Standard
	Se-1	77	47.7	3.2				ug/L	57	Standard
>	Ga	71	163.3	20.8				mg/L	148	Standard
	Rb	85	21.7	35.3				ug/L	18	Standard
	Y	89	421814.2	2.0				ug/L	401845	Standard
>	Rh	103	33.3	45.8				ug/L	10	Standard
	Mo	98	251.2	2.5				ug/L	12	Standard
	Ag	107	386.0	1.2				ug/L	98	Standard
	Cd	111	102.9	11.3				mg/L	11	Standard
	Cd	114	249.4	9.6				ug/L	21	Standard
>	In	115	548120.3	1.1				ug/L	547487	Standard
	Sn	118	645.0	5.6				ug/L	450	Standard
	Sb	123	245.0	3.3				ug/L	105	Standard
	Ba	135	194.0	3.9				ug/L	111	Standard
	Ce	140	15.0	57.7				ug/L	107	Standard
>	Tb	159	869696.1	0.6				ug/L	890342	Standard
	Ho	165	1.7	173.2				ug/L	10	Standard
	Tl	203	386.3	6.2				ug/L	19	Standard
	Tl	205	290.0	6.0				ug/L	17	Standard
	Pb	206	486.7	5.5				ug/L	247	Standard
	Pb	207	430.7	8.6				ug/L	215	Standard
	Pb	208	1734.7	2.5				ug/L	770	Standard
	U	238	291.0	3.0				ug/L	13	Standard
>	Bi	209	480303.9	0.6				ug/L	503143	Standard

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	Na	23	0.0		mg/L	2	Standard
	Mg	24	31.7	32.9	mg/L	35	Standard
	K	39	23.3	32.7	mg/L	25	Standard
	Ca	43	26.7	43.3	mg/L	38	Standard
	Fe	54	147.5	2.0	mg/L	126	Standard
	Fe	57	275.0	5.5	mg/L	245	Standard
>	**Sc-1**	45	24807.0	1.7	mg/L	25066	Standard
	Cl	35	127847.2	1.5	ug/L	125857	Standard
	Kr	83	2.0	0.0	ug/L	1	Standard
	Br	81	1250.1	12.9	ug/L	1350	Standard
	P	31	18074.1	2.7	ug/L	18393	Standard
	S	34	3720.5	1.6	ug/L	3739	Standard
	Sr	88	101.7	31.6	ug/L	78	Standard
	C	12	43.3	48.0	mg/L	53	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	0.0		mg/L	0	Standard
	Dy	164	22.2	64.8	mg/L	2	Standard
	Ho-1	165	1.7	173.2	mg/L	10	Standard
	Er	166	23.3	89.2	mg/L	23	Standard
	I	127	1036.7	8.6	mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 2
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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Tuesday, June 21, 2016 12:41:10
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56823.0	1.6				ug/L	60176	Standard
	Be	9	34135.1	0.9	**50.0000**	0.642	1.3	ug/L	5	Standard
	Al	27	6273208.6	1.1	**50.0000**	0.818	1.6	ug/L	832	Standard
	Sc	45	23723.6	2.6				ug/L	25066	Standard
	Ti	47	19074.3	0.3	**100.0000**	1.640	1.6	ug/L	38	Standard
	V	51	298222.0	1.3	**50.0000**	0.132	0.3	ug/L	974	Standard
	Cr	52	320017.6	0.3	**50.0000**	0.524	1.0	ug/L	5792	Standard
	Cr	53	40928.5	1.7	**50.0000**	0.225	0.4	ug/L	347	Standard
	Mn	55	319441.0	1.9	**50.0000**	0.827	1.7	ug/L	1164	Standard
	Co	59	304089.0	1.5	**50.0000**	1.058	2.1	ug/L	303	Standard
	Ni	60	89819.8	1.0	**50.0000**	0.212	0.4	ug/L	291	Standard
	Cu	65	88932.2	0.8	**50.0000**	0.449	0.9	ug/L	173	Standard
	Zn	66	51748.9	0.1	**50.0000**	0.578	1.2	ug/L	130	Standard
>	**Ge**	72	487193.0	1.3				ug/L	491724	Standard
	As	75	52343.3	1.1	**50.0000**	0.143	0.3	ug/L	-25	Standard
	Se	82	5108.3	0.1	**50.0000**	0.635	1.3	ug/L	12	Standard
	Se-1	77	3568.4	3.1	**50.0000**	1.152	2.3	ug/L	57	Standard
>	**Ga**	71	203.3	5.1				mg/L	148	Standard
	Rb	85	696.7	7.2				ug/L	18	Standard
	Y	89	396857.0	0.8				ug/L	401845	Standard
>	**Rh**	103	46.7	30.9				ug/L	10	Standard
	Mo	98	234863.2	0.4	**100.0000**	1.015	1.0	ug/L	12	Standard
	Ag	107	287635.1	1.1	**50.0000**	0.173	0.3	ug/L	98	Standard
	Cd	111	91412.4	1.2	**50.0000**	0.269	0.5	mg/L	11	Standard
	Cd	114	221759.1	0.4	**50.0000**	0.185	0.4	ug/L	21	Standard
>	**In**	115	526904.6	0.8				ug/L	547487	Standard
	Sn	118	252169.7	1.4	**50.0000**	0.512	1.0	ug/L	450	Standard
	Sb	123	207104.5	0.9	**50.0000**	0.294	0.6	ug/L	105	Standard
	Ba	135	89208.5	1.1	**50.0000**	0.205	0.4	ug/L	111	Standard
	Ce	140	53.3	43.3				ug/L	107	Standard
>	**Tb**	159	848207.6	0.5				ug/L	890342	Standard
	Ho	165	15.0	33.3				ug/L	10	Standard
	Tl	203	360672.2	1.4	**50.0000**	0.148	0.3	ug/L	19	Standard
	Tl	205	296087.7	2.3	**50.0000**	0.563	1.1	ug/L	17	Standard
	Pb	206	233966.3	0.1	**50.0000**	0.511	1.0	ug/L	247	Standard
	Pb	207	213337.5	0.5	**50.0000**	0.319	0.6	ug/L	215	Standard
	Pb	208	792528.2	1.3	**50.0000**	0.762	1.5	ug/L	770	Standard
	U	238	284703.0	1.6	**50.0000**	0.560	1.1	ug/L	13	Standard
>	**Bi**	209	474262.1	1.1				ug/L	503143	Standard

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Na	23	0.0					mg/L	2	Standard
Mg	24	3497.1	1.9	**5.0000**	0.218	4.4	mg/L	35	Standard
K	39	948.4	2.7	**5.0000**	0.233	4.7	mg/L	25	Standard
Ca	43	43.3	43.7	**5.0000**	5.602	112.0	mg/L	38	Standard
Fe	54	5101.0	4.4	**5.0000**	0.298	6.0	mg/L	126	Standard
Fe	57	1468.4	4.8	**5.0000**	0.320	6.4	mg/L	245	Standard
> **Sc-1**	45	23723.6	2.6				mg/L	25066	Standard
Cl	35	130578.9	0.5				ug/L	125857	Standard
Kr	83	3.3	45.8				ug/L	1	Standard
Br	81	1203.4	13.8				ug/L	1350	Standard
P	31	19414.1	1.7				ug/L	18393	Standard
S	34	4177.2	1.3				ug/L	3739	Standard
Sr	88	70.0	21.4				ug/L	78	Standard
C	12	46.7	53.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	15.9	37.5				mg/L	2	Standard
Ho-1	165	15.0	33.3				mg/L	10	Standard
Er	166	16.7	91.7				mg/L	23	Standard
I	127	1070.0	6.4				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Tuesday, June 21, 2016 12:44:22
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57683.0	3.4				ug/L	60176	Standard
	Be	9	68243.4	3.2	**99.2986**	6.394	6.4	ug/L	5	Standard
	Al	27	12435861.2	1.2	**98.8482**	4.005	4.1	ug/L	832	Standard
	Sc	45	23635.1	1.4				ug/L	25066	Standard
	Ti	47	37614.3	1.3	**201.0526**	7.758	3.9	ug/L	38	Standard
	V	51	571041.3	1.0	**99.0826**	2.797	2.8	ug/L	974	Standard
	Cr	52	622374.2	0.8	**100.2480**	3.517	3.5	ug/L	5792	Standard
	Cr	53	79243.4	1.4	**99.7703**	3.986	4.0	ug/L	347	Standard
	Mn	55	617908.9	0.6	**99.6157**	3.115	3.1	ug/L	1164	Standard
	Co	59	584748.3	1.1	**99.2336**	3.268	3.3	ug/L	303	Standard
	Ni	60	173682.2	0.7	**99.5871**	3.225	3.2	ug/L	291	Standard
	Cu	65	172904.7	0.9	**99.8122**	3.300	3.3	ug/L	173	Standard
	Zn	66	100294.9	0.4	**99.7166**	2.796	2.8	ug/L	130	Standard
>	**Ge**	72	476090.8	2.6				ug/L	491724	Standard
	As	75	100801.1	0.2	**99.2690**	2.816	2.8	ug/L	-25	Standard
	Se	82	10056.7	0.8	**100.4354**	3.397	3.4	ug/L	12	Standard
	Se-1	77	6841.5	0.8	**99.3844**	2.883	2.9	ug/L	57	Standard
>	**Ga**	71	273.3	16.9				mg/L	148	Standard
	Rb	85	1416.7	3.8				ug/L	18	Standard
	Y	89	395351.6	0.3				ug/L	401845	Standard
>	**Rh**	103	41.7	25.0				ug/L	10	Standard
	Mo	98	456031.3	1.3	**196.8782**	2.248	1.1	ug/L	12	Standard
	Ag	107	560896.5	1.5	**98.6698**	2.452	2.5	ug/L	98	Standard
	Cd	111	179284.5	0.8	**98.9447**	0.201	0.2	mg/L	11	Standard
	Cd	114	437441.6	1.4	**99.2289**	0.388	0.4	ug/L	21	Standard
>	**In**	115	527764.9	1.0				ug/L	547487	Standard
	Sn	118	497084.9	1.2	**99.2341**	1.596	1.6	ug/L	450	Standard
	Sb	123	404041.2	0.9	**98.6832**	1.399	1.4	ug/L	105	Standard
	Ba	135	175539.8	1.5	**99.1323**	0.709	0.7	ug/L	111	Standard
	Ce	140	116.7	19.8				ug/L	107	Standard
>	**Tb**	159	866248.1	0.4				ug/L	890342	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	705654.1	0.9	**98.7126**	1.568	1.6	ug/L	19	Standard
	Tl	205	578679.2	0.9	**98.6617**	1.804	1.8	ug/L	17	Standard
	Pb	206	450208.6	0.6	**97.9011**	1.428	1.5	ug/L	247	Standard
	Pb	207	407952.9	0.7	**97.5890**	1.592	1.6	ug/L	215	Standard
	Pb	208	1539751.2	0.8	**98.3858**	1.719	1.7	ug/L	770	Standard
	U	238	563509.1	0.5	**99.2888**	1.369	1.4	ug/L	13	Standard
>	**Bi**	209	476118.1	0.9				ug/L	503143	Standard

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Na	23	1.7	173.2	**19.9850**	34.606	173.2	mg/L	2	Standard
Mg	24	6833.2	0.7	**9.9179**	0.081	0.8	mg/L	35	Standard
K	39	1956.8	10.6	**10.2282**	1.035	10.1	mg/L	25	Standard
Ca	43	85.0	45.9	**12.4591**	8.230	66.1	mg/L	38	Standard
Fe	54	10109.9	3.0	**10.0367**	0.163	1.6	mg/L	126	Standard
Fe	57	2636.9	7.0	**9.9408**	0.844	8.5	mg/L	245	Standard
> **Sc-1**	45	23635.1	1.4				mg/L	25066	Standard
Cl	35	128334.7	1.7				ug/L	125857	Standard
Kr	83	2.0	132.3				ug/L	1	Standard
Br	81	1193.4	13.5				ug/L	1350	Standard
P	31	19429.1	2.9				ug/L	18393	Standard
S	34	4115.6	1.9				ug/L	3739	Standard
Sr	88	65.0	15.4				ug/L	78	Standard
C	12	73.3	67.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	18.7	93.3				mg/L	2	Standard
Ho-1	165	8.3	91.7				mg/L	10	Standard
Er	166	26.7	57.3				mg/L	23	Standard
I	127	1098.4	3.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998
Corr. Coef.	Ca	43	Correlation coefficient < 0.998

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Tuesday, June 21, 2016 12:47:35
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56476.7	1.6				ug/L	60176	Standard
	Be	9	33926.3	3.5	**50.3337**	0.983	2.0	ug/L	5	Standard
	Al	27	6239013.2	0.4	**50.6129**	1.022	2.0	ug/L	832	Standard
	Sc	45	23940.6	0.8				ug/L	25066	Standard
	Ti	47	19415.4	2.2	**101.8802**	1.438	1.4	ug/L	38	Standard
	V	51	297179.3	0.9	**50.6032**	0.136	0.3	ug/L	974	Standard
	Cr	52	318615.5	0.4	**49.9739**	0.554	1.1	ug/L	5792	Standard
	Cr	53	40926.9	0.9	**50.4413**	0.865	1.7	ug/L	347	Standard
	Mn	55	316181.4	1.9	**50.0005**	1.281	2.6	ug/L	1164	Standard
	Co	59	298771.6	1.9	**49.8177**	1.314	2.6	ug/L	303	Standard
	Ni	60	88672.0	0.3	**49.8796**	0.328	0.7	ug/L	291	Standard
	Cu	65	89405.3	0.8	**50.6805**	0.441	0.9	ug/L	173	Standard
	Zn	66	52396.1	1.0	**51.0914**	0.187	0.4	ug/L	130	Standard
>	**Ge**	72	484110.7	0.9				ug/L	491724	Standard
	As	75	52053.9	0.4	**50.4073**	0.437	0.9	ug/L	-25	Standard
	Se	82	5137.2	2.1	**50.3854**	1.416	2.8	ug/L	12	Standard
	Se-1	77	3484.7	1.5	**49.4329**	0.431	0.9	ug/L	57	Standard
>	**Ga**	71	218.3	24.7				mg/L	148	Standard
	Rb	85	558.3	1.9				ug/L	18	Standard
	Y	89	399672.1	1.8				ug/L	401845	Standard
>	**Rh**	103	33.3	45.8				ug/L	10	Standard
	Mo	98	243135.2	2.2	**103.9589**	3.579	3.4	ug/L	12	Standard
	Ag	107	285914.9	0.7	**49.7940**	0.941	1.9	ug/L	98	Standard
	Cd	111	90046.3	0.9	**49.2056**	0.320	0.7	mg/L	11	Standard
	Cd	114	222130.6	2.1	**49.8897**	0.705	1.4	ug/L	21	Standard
>	**In**	115	533007.6	1.2				ug/L	547487	Standard
	Sn	118	273659.7	1.6	**54.0588**	0.839	1.6	ug/L	450	Standard
	Sb	123	202430.4	0.7	**48.9552**	0.900	1.8	ug/L	105	Standard
	Ba	135	87724.9	0.8	**49.0309**	0.637	1.3	ug/L	111	Standard
	Ce	140	115.0	26.4				ug/L	107	Standard
>	**Tb**	159	857166.0	1.1				ug/L	890342	Standard
	Ho	165	13.3	43.3				ug/L	10	Standard
	Tl	203	356396.7	0.7	**49.1066**	0.742	1.5	ug/L	19	Standard
	Tl	205	297731.8	0.4	**49.9971**	0.245	0.5	ug/L	17	Standard
	Pb	206	236852.3	0.9	**50.7035**	0.443	0.9	ug/L	247	Standard
	Pb	207	206236.5	0.5	**48.5659**	0.259	0.5	ug/L	215	Standard
	Pb	208	787029.8	0.1	**49.5023**	0.368	0.7	ug/L	770	Standard
	U	238	277599.7	0.5	**48.1782**	0.616	1.3	ug/L	13	Standard
>	**Bi**	209	483361.7	0.8				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3418.7	4.6	**4.8797**	0.255	5.2	mg/L	35	Standard
K	39	995.0	4.8	**5.0805**	0.235	4.6	mg/L	25	Standard
Ca	43	51.7	43.6	**5.3124**	4.563	85.9	mg/L	38	Standard
Fe	54	5233.0	6.0	**5.0647**	0.353	7.0	mg/L	126	Standard
Fe	57	1536.7	1.5	**5.2538**	0.069	1.3	mg/L	245	Standard
> **Sc-1**	45	23940.6	0.8				mg/L	25066	Standard
Cl	35	125636.8	0.9				ug/L	125857	Standard
Kr	83	2.0	0.0				ug/L	1	Standard
Br	81	1126.7	10.0				ug/L	1350	Standard
P	31	18713.2	1.4				ug/L	18393	Standard
S	34	3855.5	6.1				ug/L	3739	Standard
Sr	88	63.3	32.9				ug/L	78	Standard
C	12	76.7	19.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	5.5	203.3				mg/L	2	Standard
Ho-1	165	13.3	43.3				mg/L	10	Standard
Er	166	23.3	49.5				mg/L	23	Standard
I	127	955.0	1.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	100.667		
Al	27	101.226		
Sc	45			
Ti	47	101.880		
V	51	101.206		
Cr	52	99.948		
Cr	53			
Mn	55	100.001		
Co	59	99.635		
Ni	60	99.759		
Cu	65	101.361		
Zn	66	102.183		
> Ge	72		98.452	
As	75	100.815		
Se	82	100.771		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	103.959		
Ag	107	99.588		
Cd	111	98.411		
Cd	114			
> In	115		97.355	
Sn	118	108.118		
Sb	123	97.910		
Ba	135	98.062		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.213		
Tl	205			
Pb	206	101.407		
Pb	207	97.132		
Pb	208	99.005		
U	238	96.356		
> Bi	209		96.069	
Na	23	0.100		
Mg	24	97.595		
K	39	101.610		
Ca	43	106.247		
Fe	54	101.294		
Fe	57	105.077		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Tuesday, June 21, 2016 12:50:48
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57199.5	1.7				ug/L	60176	Standard
	Be	9	16.7	75.5	**0.0155**	0.019	119.7	ug/L	5	Standard
	Al	27	2038.5	13.7	**0.0079**	0.002	25.0	ug/L	832	Standard
	Sc	45	24297.8	0.5				ug/L	25066	Standard
	Ti	47	32.3	12.5	**-0.0396**	0.023	58.6	ug/L	38	Standard
	V	51	922.0	9.4	**-0.0151**	0.016	107.2	ug/L	974	Standard
	Cr	52	5344.9	2.1	**-0.0994**	0.028	28.6	ug/L	5792	Standard
	Cr	53	318.3	8.7	**-0.0227**	0.028	125.4	ug/L	347	Standard
	Mn	55	1227.7	2.1	**-0.0229**	0.006	27.8	ug/L	1164	Standard
	Co	59	382.3	8.7	**0.0137**	0.006	44.1	ug/L	303	Standard
	Ni	60	312.0	6.8	**-0.0166**	0.014	83.6	ug/L	291	Standard
	Cu	65	170.3	13.8	**-0.0020**	0.015	715.5	ug/L	173	Standard
	Zn	66	185.7	7.5	**-0.0559**	0.012	21.0	ug/L	130	Standard
>	**Ge**	72	490344.5	1.5				ug/L	491724	Standard
	As	75	12.4	235.8	**0.0460**	0.028	60.7	ug/L	-25	Standard
	Se	82	19.0	38.1	**0.0914**	0.071	78.1	ug/L	12	Standard
	Se-1	77	55.0	15.5	**0.1320**	0.132	99.9	ug/L	57	Standard
>	**Ga**	71	143.3	7.3				mg/L	148	Standard
	Rb	85	13.3	43.3				ug/L	18	Standard
	Y	89	406629.8	1.3				ug/L	401845	Standard
>	**Rh**	103	30.0	33.3				ug/L	10	Standard
	Mo	98	318.1	10.6	**0.1300**	0.014	10.8	ug/L	12	Standard
	Ag	107	139.3	8.5	**0.0086**	0.002	23.1	ug/L	98	Standard
	Cd	111	28.1	12.1	**0.0105**	0.002	17.2	mg/L	11	Standard
	Cd	114	75.1	5.3	**0.0122**	0.001	6.8	ug/L	21	Standard
>	**In**	115	538890.5	0.3				ug/L	547487	Standard
	Sn	118	866.7	26.5	**0.0956**	0.046	47.6	ug/L	450	Standard
	Sb	123	1357.6	21.6	**0.3172**	0.071	22.4	ug/L	105	Standard
	Ba	135	122.7	6.5	**0.0123**	0.005	37.7	ug/L	111	Standard
	Ce	140	16.7	124.9				ug/L	107	Standard
>	**Tb**	159	856476.7	1.5				ug/L	890342	Standard
	Ho	165	11.7	107.9				ug/L	10	Standard
	Tl	203	98.3	24.6	**0.0099**	0.003	33.6	ug/L	19	Standard
	Tl	205	75.0	34.6	**0.0135**	0.004	31.4	ug/L	17	Standard
	Pb	206	275.0	3.1	**0.0038**	0.002	58.9	ug/L	247	Standard
	Pb	207	245.0	14.3	**0.0055**	0.009	157.6	ug/L	215	Standard
	Pb	208	917.0	5.8	**-0.0023**	0.004	151.0	ug/L	770	Standard
	U	238	60.7	16.0	**0.0097**	0.002	16.7	ug/L	13	Standard
>	**Bi**	209	484798.8	0.7				ug/L	503143	Standard

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Na	23	1.7	173.2	**19.2545**	33.341	173.2	mg/L	2	Standard
Mg	24	31.7	9.1	**0.0060**	0.004	64.4	mg/L	35	Standard
K	39	31.7	39.7	**0.0506**	0.065	128.8	mg/L	25	Standard
Ca	43	26.7	60.3	**0.0987**	3.281	3325.6	mg/L	38	Standard
Fe	54	137.7	14.6	**-0.0017**	0.019	1127.9	mg/L	126	Standard
Fe	57	235.0	2.1	**-0.1342**	0.025	18.7	mg/L	245	Standard
> **Sc-1**	45	24297.8	0.5				mg/L	25066	Standard
Cl	35	123923.5	2.0				ug/L	125857	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	1190.0	11.8				ug/L	1350	Standard
P	31	19601.0	4.8				ug/L	18393	Standard
S	34	3848.8	8.3				ug/L	3739	Standard
Sr	88	63.3	32.9				ug/L	78	Standard
C	12	46.7	32.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	19.4	53.0				mg/L	2	Standard
Ho-1	165	11.7	107.9				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	1073.4	5.6				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.720	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.430	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.354	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Na	23	
QC Std 2	Fe	57	

Sample ID: QC Std 2
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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Tuesday, June 21, 2016 12:54:01
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54655.2	5.0				ug/L	60176	Standard
	Be	9	166.7	9.2	**0.2464**	0.016	6.5	ug/L	5	Standard
	Al	27	3600.6	78.3	**0.0211**	0.022	102.5	ug/L	832	Standard
	Sc	45	22989.1	1.7				ug/L	25066	Standard
	Ti	47	44.3	25.7	**0.0370**	0.061	164.4	ug/L	38	Standard
	V	51	3236.7	8.3	**0.4098**	0.039	9.6	ug/L	974	Standard
	Cr	52	10252.8	1.1	**0.7782**	0.013	1.7	ug/L	5792	Standard
	Cr	53	963.4	10.4	**0.8456**	0.146	17.3	ug/L	347	Standard
	Mn	55	4198.9	8.1	**0.4847**	0.049	10.1	ug/L	1164	Standard
	Co	59	2734.9	12.7	**0.4297**	0.055	12.9	ug/L	303	Standard
	Ni	60	3023.6	2.6	**1.6026**	0.022	1.4	ug/L	291	Standard
	Cu	65	1528.7	5.1	**0.8141**	0.035	4.3	ug/L	173	Standard
	Zn	66	6997.6	1.0	**6.9667**	0.165	2.4	ug/L	130	Standard
>	**Ge**	72	460888.7	1.9				ug/L	491724	Standard
	As	75	390.1	8.4	**0.4307**	0.036	8.3	ug/L	-25	Standard
	Se	82	49.3	11.7	**0.4157**	0.051	12.3	ug/L	12	Standard
	Se-1	77	73.3	5.5	**0.4585**	0.082	18.0	ug/L	57	Standard
>	**Ga**	71	193.3	33.8				mg/L	148	Standard
	Rb	85	25.0	72.1				ug/L	18	Standard
	Y	89	391940.6	1.7				ug/L	401845	Standard
>	**Rh**	103	18.3	31.5				ug/L	10	Standard
	Mo	98	268.6	80.2	**0.1109**	0.092	82.8	ug/L	12	Standard
	Ag	107	2373.9	3.4	**0.4011**	0.013	3.1	ug/L	98	Standard
	Cd	111	418.7	2.5	**0.2258**	0.005	2.2	mg/L	11	Standard
	Cd	114	1058.7	2.4	**0.2351**	0.005	2.1	ug/L	21	Standard
>	**In**	115	529129.7	0.8				ug/L	547487	Standard
	Sn	118	546.7	13.3	**0.0350**	0.015	44.2	ug/L	450	Standard
	Sb	123	1860.1	4.7	**0.4457**	0.025	5.6	ug/L	105	Standard
	Ba	135	1306.7	5.0	**0.6811**	0.043	6.3	ug/L	111	Standard
	Ce	140	71.7	45.4				ug/L	107	Standard
>	**Tb**	159	840369.4	1.8				ug/L	890342	Standard
	Ho	165	3.3	86.6				ug/L	10	Standard
	Tl	203	677.3	13.0	**0.0915**	0.012	13.1	ug/L	19	Standard
	Tl	205	673.3	28.8	**0.1162**	0.033	28.2	ug/L	17	Standard
	Pb	206	1332.4	14.3	**0.2361**	0.041	17.4	ug/L	247	Standard
	Pb	207	1139.0	15.8	**0.2215**	0.042	19.1	ug/L	215	Standard
	Pb	208	4327.3	17.0	**0.2178**	0.046	21.3	ug/L	770	Standard
	U	238	2258.5	8.8	**0.3988**	0.036	8.9	ug/L	13	Standard
>	**Bi**	209	474166.4	1.0				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	13.3	**0.0260**	0.009	33.4	mg/L	35	Standard
K	39	35.0	14.3	**0.0782**	0.031	39.0	mg/L	25	Standard
Ca	43	33.3	45.8	**1.8021**	3.150	174.8	mg/L	38	Standard
Fe	54	89.0	20.5	**-0.0447**	0.017	38.6	mg/L	126	Standard
Fe	57	240.0	23.5	**-0.0557**	0.261	468.1	mg/L	245	Standard
> **Sc-1**	45	22989.1	1.7				mg/L	25066	Standard
Cl	35	119419.5	1.1				ug/L	125857	Standard
Kr	83	3.3	75.5				ug/L	1	Standard
Br	81	1160.0	4.6				ug/L	1350	Standard
P	31	12982.2	1.5				ug/L	18393	Standard
S	34	3700.5	6.7				ug/L	3739	Standard
Sr	88	70.0	7.1				ug/L	78	Standard
C	12	50.0	60.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.2	86.7				mg/L	2	Standard
Ho-1	165	3.3	86.6				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	760.0	5.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	123.200		
Al	27	2.108		
Sc	45			
Ti	47			
V	51	102.440		
Cr	52	97.277		
Cr	53			
Mn	55	96.934		
Co	59	107.430		
Ni	60	100.161		
Cu	65	101.757		
Zn	66	111.467		
> Ge	72		93.729	
As	75	107.669		
Se	82	103.926		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	100.275		
Cd	111	94.072		
Cd	114			
> In	115			96.647
Sn	118			
Sb	123	111.413		
Ba	135	90.816		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	114.430		
Tl	205			
Pb	206			
Pb	207			
Pb	208	108.881		
U	238	99.694		
> Bi	209			94.241
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Tuesday, June 21, 2016 12:57:12
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59928.3	1.0				ug/L	60176	Standard
	Be	9	13.3	78.1	**0.0097**	0.015	152.2	ug/L	5	Standard
	Al	27	6442669.1	1.9	**49.2453**	0.871	1.8	ug/L	832	Standard
	Sc	45	24813.6	2.8				ug/L	25066	Standard
	Ti	47	19998.2	2.1	**106.8973**	2.582	2.4	ug/L	38	Standard
	V	51	1246.2	25.8	**0.0465**	0.058	124.9	ug/L	974	Standard
	Cr	52	6657.1	2.4	**0.1405**	0.025	17.7	ug/L	5792	Standard
	Cr	53	1993.5	6.1	**2.1090**	0.143	6.8	ug/L	347	Standard
	Mn	55	1883.1	3.1	**0.0891**	0.008	8.9	ug/L	1164	Standard
	Co	59	559.7	6.4	**0.0458**	0.006	12.2	ug/L	303	Standard
	Ni	60	864.0	5.1	**0.3063**	0.026	8.5	ug/L	291	Standard
	Cu	65	667.0	6.9	**0.2880**	0.024	8.5	ug/L	173	Standard
	Zn	66	2146.2	5.5	**1.9055**	0.111	5.8	ug/L	130	Standard
>	Ge	72	475353.7	1.0				ug/L	491724	Standard
	As	75	-27.8	154.3	**0.0063**	0.042	673.6	ug/L	-25	Standard
	Se	82	18.3	27.0	**0.0905**	0.048	53.4	ug/L	12	Standard
	Se-1	77	292.0	12.5	**3.6225**	0.508	14.0	ug/L	57	Standard
>	Ga	71	251.7	1.1				mg/L	148	Standard
	Rb	85	916.7	3.2				ug/L	18	Standard
	Y	89	407553.9	0.9				ug/L	401845	Standard
>	Rh	103	21.7	13.3				ug/L	10	Standard
	Mo	98	227701.2	0.8	**95.9028**	0.590	0.6	ug/L	12	Standard
	Ag	107	287.3	17.5	**0.0339**	0.008	24.1	ug/L	98	Standard
	Cd	111	-145.8	9.1	**-0.0833**	0.008	9.6	mg/L	11	Standard
	Cd	114	464.9	14.1	**0.0986**	0.016	15.9	ug/L	21	Standard
>	In	115	540970.5	1.1				ug/L	547487	Standard
	Sn	118	813.4	12.5	**0.0844**	0.019	22.3	ug/L	450	Standard
	Sb	123	429.7	19.0	**0.0947**	0.019	20.0	ug/L	105	Standard
	Ba	135	438.7	7.4	**0.1861**	0.015	8.2	ug/L	111	Standard
	Ce	140	421.7	17.3				ug/L	107	Standard
>	Tb	159	869535.9	1.7				ug/L	890342	Standard
	Ho	165	25.0	72.1				ug/L	10	Standard
	Tl	203	354.0	26.0	**0.0461**	0.013	27.8	ug/L	19	Standard
	Tl	205	328.3	30.2	**0.0571**	0.017	29.2	ug/L	17	Standard
	Pb	206	641.0	8.2	**0.0850**	0.011	12.9	ug/L	247	Standard
	Pb	207	546.0	4.3	**0.0790**	0.005	6.1	ug/L	215	Standard
	Pb	208	2135.1	6.6	**0.0771**	0.009	11.7	ug/L	770	Standard
	U	238	92.3	51.3	**0.0155**	0.008	54.0	ug/L	13	Standard
>	Bi	209	474298.1	0.6				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.5792**	32.172	173.2	mg/L	2	Standard
Mg	24	8645.8	1.7	**11.9633**	0.233	1.9	mg/L	35	Standard
K	39	950.0	10.3	**4.6748**	0.512	11.0	mg/L	25	Standard
Ca	43	120.0	27.3	**18.4950**	6.097	33.0	mg/L	38	Standard
Fe	54	12543.1	1.5	**11.8952**	0.445	3.7	mg/L	126	Standard
Fe	57	3418.7	4.3	**12.5234**	0.241	1.9	mg/L	245	Standard
> **Sc-1**	45	24813.6	2.8				mg/L	25066	Standard
Cl	35	133729.6	1.1				ug/L	125857	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	1173.4	5.8				ug/L	1350	Standard
P	31	17748.7	0.7				ug/L	18393	Standard
S	34	3328.7	3.9				ug/L	3739	Standard
Sr	88	88.3	27.9				ug/L	78	Standard
C	12	106.7	14.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	33.3				mg/L	0	Standard
Dy	164	29.4	56.6				mg/L	2	Standard
Ho-1	165	25.0	72.1				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	1626.8	8.4				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27	0.985		
Sc	45			
Ti	47	106.897		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.671	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	95.903		
Ag	107			
Cd	111			
Cd	114			
> In	115			98.810
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209			94.267
Na	23	148.634		
Mg	24	239.267		
K	39	93.495		
Ca	43	123.300		
Fe	54	95.162		
Fe	57	100.187		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Tl	203	
QC Std 4	Na	23	

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QC Std 4	Mg	24
QC Std 4	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Tuesday, June 21, 2016 13:00:24
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	61313.8	1.9				ug/L	60176	Standard
	Be	9	72875.0	3.4	**99.6031**	1.781	1.8	ug/L	5	Standard
	Al	27	6936241.6	2.7	**51.8339**	1.804	3.5	ug/L	832	Standard
	Sc	45	23489.9	0.9				ug/L	25066	Standard
	Ti	47	21276.6	0.7	**110.0520**	2.192	2.0	ug/L	38	Standard
	V	51	582101.9	0.7	**97.8399**	1.870	1.9	ug/L	974	Standard
	Cr	52	624654.9	1.1	**97.4149**	0.832	0.9	ug/L	5792	Standard
	Cr	53	80558.6	0.3	**98.2182**	1.167	1.2	ug/L	347	Standard
	Mn	55	645844.3	0.9	**100.8477**	1.253	1.2	ug/L	1164	Standard
	Co	59	617389.8	0.7	**101.4766**	0.663	0.7	ug/L	303	Standard
	Ni	60	173011.2	0.8	**96.0705**	0.455	0.5	ug/L	291	Standard
	Cu	65	173942.1	0.9	**97.2491**	1.211	1.2	ug/L	173	Standard
	Zn	66	103580.5	0.6	**99.7581**	1.812	1.8	ug/L	130	Standard
>	Ge	72	491319.1	1.3				ug/L	491724	Standard
	As	75	106169.7	0.7	**101.2696**	0.638	0.6	ug/L	-25	Standard
	Se	82	10505.5	0.8	**101.6127**	0.832	0.8	ug/L	12	Standard
	Se-1	77	7353.1	1.7	**103.4898**	1.990	1.9	ug/L	57	Standard
>	Ga	71	335.0	6.5				mg/L	148	Standard
	Rb	85	808.4	4.6				ug/L	18	Standard
	Y	89	401288.7	1.4				ug/L	401845	Standard
>	Rh	103	43.3	24.0				ug/L	10	Standard
	Mo	98	244397.7	1.3	**106.0540**	1.465	1.4	ug/L	12	Standard
	Ag	107	538144.7	0.3	**95.1434**	0.773	0.8	ug/L	98	Standard
	Cd	111	185622.1	1.2	**102.9756**	1.700	1.7	mg/L	11	Standard
	Cd	114	445028.4	2.2	**101.4874**	3.011	3.0	ug/L	21	Standard
>	In	115	525063.0	0.9				ug/L	547487	Standard
	Sn	118	885.0	4.3	**0.1037**	0.009	8.6	ug/L	450	Standard
	Sb	123	410344.2	0.6	**100.7382**	1.315	1.3	ug/L	105	Standard
	Ba	135	176777.0	0.5	**100.3551**	1.267	1.3	ug/L	111	Standard
	Ce	140	53.3	5.4				ug/L	107	Standard
>	Tb	159	870528.1	1.1				ug/L	890342	Standard
	Ho	165	10.0	86.6				ug/L	10	Standard
	Tl	203	717855.7	0.6	**98.9861**	1.545	1.6	ug/L	19	Standard
	Tl	205	613661.1	1.7	**103.1465**	3.224	3.1	ug/L	17	Standard
	Pb	206	474569.5	1.2	**101.7199**	1.074	1.1	ug/L	247	Standard
	Pb	207	412085.1	0.4	**97.1656**	1.063	1.1	ug/L	215	Standard
	Pb	208	1621535.0	0.8	**102.1386**	2.136	2.1	ug/L	770	Standard
	U	238	576318.6	1.3	**100.1091**	2.735	2.7	ug/L	13	Standard
>	Bi	209	483038.3	1.5				ug/L	503143	Standard

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Na	23	1.7	173.2	**19.9124**	34.481	173.2	mg/L	2	Standard
Mg	24	9276.2	1.0	**13.5616**	0.245	1.8	mg/L	35	Standard
K	39	1035.0	5.9	**5.3939**	0.335	6.2	mg/L	25	Standard
Ca	43	95.0	18.2	**14.6391**	3.459	23.6	mg/L	38	Standard
Fe	54	13234.0	0.1	**13.2653**	0.121	0.9	mg/L	126	Standard
Fe	57	3633.8	1.9	**14.1986**	0.233	1.6	mg/L	245	Standard
> **Sc-1**	45	23489.9	0.9				mg/L	25066	Standard
Cl	35	135528.8	0.9				ug/L	125857	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	1296.7	11.2				ug/L	1350	Standard
P	31	17078.0	3.3				ug/L	18393	Standard
S	34	3508.7	2.5				ug/L	3739	Standard
Sr	88	66.7	8.7				ug/L	78	Standard
C	12	133.3	22.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.2	93.3				mg/L	2	Standard
Ho-1	165	10.0	86.6				mg/L	10	Standard
Er	166	10.0					mg/L	23	Standard
I	127	985.0	5.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	99.603		
Al	27	1.037		
Sc	45			
Ti	47	110.052		
V	51	97.840		
Cr	52	97.415		
Cr	53			
Mn	55	100.848		
Co	59	101.477		
Ni	60	96.070		
Cu	65	97.249		
Zn	66	99.758		
> Ge	72		99.918	
As	75	101.270		
Se	82	101.613		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	106.054		
Ag	107	95.143		
Cd	111	102.976		
Cd	114			
> In	115		95.904	
Sn	118			
Sb	123	100.738		
Ba	135	100.355		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.986		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.139		
U	238	100.109		
> Bi	209		96.004	
Na	23	159.300		
Mg	24	271.232		
K	39	107.878		
Ca	43	97.594		
Fe	54	106.123		
Fe	57	113.589		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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QC Std 5	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 13:03:37
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60077.3	2.7				ug/L	60176	Standard
	Be	9	36198.2	1.7	**50.5140**	1.282	2.5	ug/L	5	Standard
	Al	27	6376898.0	1.9	**48.6310**	0.871	1.8	ug/L	832	Standard
	Sc	45	23925.5	1.1				ug/L	25066	Standard
	Ti	47	18736.6	0.9	**98.5507**	0.836	0.8	ug/L	38	Standard
	V	51	296150.3	0.5	**50.5471**	0.213	0.4	ug/L	974	Standard
	Cr	52	313728.4	0.3	**49.3090**	0.221	0.4	ug/L	5792	Standard
	Cr	53	39496.4	3.0	**48.7745**	1.414	2.9	ug/L	347	Standard
	Mn	55	317457.2	0.2	**50.3163**	0.163	0.3	ug/L	1164	Standard
	Co	59	310517.1	1.0	**51.8939**	0.567	1.1	ug/L	303	Standard
	Ni	60	88251.3	0.9	**49.7584**	0.471	0.9	ug/L	291	Standard
	Cu	65	88383.0	0.6	**50.2173**	0.264	0.5	ug/L	173	Standard
	Zn	66	51386.7	1.3	**50.2219**	0.654	1.3	ug/L	130	Standard
>	**Ge**	72	482967.1	0.2				ug/L	491724	Standard
	As	75	51917.7	0.5	**50.3921**	0.181	0.4	ug/L	-25	Standard
	Se	82	5239.5	1.1	**51.5049**	0.485	0.9	ug/L	12	Standard
	Se-1	77	3545.7	2.3	**50.4312**	1.129	2.2	ug/L	57	Standard
>	**Ga**	71	213.3	29.9				mg/L	148	Standard
	Rb	85	683.3	10.3				ug/L	18	Standard
	Y	89	409717.0	1.9				ug/L	401845	Standard
>	**Rh**	103	31.7	50.8				ug/L	10	Standard
	Mo	98	232285.6	0.4	**98.2916**	1.691	1.7	ug/L	12	Standard
	Ag	107	285420.0	0.6	**49.1961**	0.526	1.1	ug/L	98	Standard
	Cd	111	92777.6	1.2	**50.1831**	0.862	1.7	mg/L	11	Standard
	Cd	114	226030.0	0.7	**50.2543**	0.780	1.6	ug/L	21	Standard
>	**In**	115	538520.1	1.5				ug/L	547487	Standard
	Sn	118	254569.4	1.6	**49.7699**	0.919	1.8	ug/L	450	Standard
	Sb	123	208380.8	0.8	**49.8815**	1.089	2.2	ug/L	105	Standard
	Ba	135	89491.5	0.9	**49.5071**	0.604	1.2	ug/L	111	Standard
	Ce	140	65.0	33.5				ug/L	107	Standard
>	**Tb**	159	844342.7	0.8				ug/L	890342	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	362962.1	0.5	**50.9927**	0.530	1.0	ug/L	19	Standard
	Tl	205	304433.0	0.1	**52.1279**	0.337	0.6	ug/L	17	Standard
	Pb	206	233807.2	0.0	**51.0365**	0.279	0.5	ug/L	247	Standard
	Pb	207	211565.2	0.5	**50.8037**	0.504	1.0	ug/L	215	Standard
	Pb	208	809571.0	0.8	**51.9240**	0.557	1.1	ug/L	770	Standard
	U	238	290163.7	1.3	**51.3453**	0.563	1.1	ug/L	13	Standard
>	**Bi**	209	474036.7	0.5				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3508.7	4.9	**5.0100**	0.196	3.9	mg/L	35	Standard
K	39	841.7	3.8	**4.2829**	0.143	3.3	mg/L	25	Standard
Ca	43	70.0	25.8	**9.1073**	3.560	39.1	mg/L	38	Standard
Fe	54	5170.4	1.1	**5.0040**	0.054	1.1	mg/L	126	Standard
Fe	57	1545.1	3.9	**5.2918**	0.217	4.1	mg/L	245	Standard
> **Sc-1**	45	23925.5	1.1				mg/L	25066	Standard
Cl	35	126968.4	0.5				ug/L	125857	Standard
Kr	83	2.7	21.7				ug/L	1	Standard
Br	81	1253.4	5.1				ug/L	1350	Standard
P	31	17353.3	2.1				ug/L	18393	Standard
S	34	3680.4	9.2				ug/L	3739	Standard
Sr	88	66.7	11.5				ug/L	78	Standard
C	12	53.3	10.8				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.5	86.7				mg/L	2	Standard
Ho-1	165	8.3	69.3				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	23	Standard
I	127	1191.7	5.6				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	101.028		
	Al	27	97.262		
	Sc	45			
	Ti	47	98.551		
	V	51	101.094		
	Cr	52	98.618		
	Cr	53			
	Mn	55	100.633		
	Co	59	103.788		
	Ni	60	99.517		
	Cu	65	100.435		
	Zn	66	100.444		
>	Ge	72		98.219	
	As	75	100.784		
	Se	82	103.010		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.292		
Ag	107	98.392		
Cd	111	100.366		
Cd	114			
> In	115			98.362
Sn	118	99.540		
Sb	123	99.763		
Ba	135	99.014		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.985		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.848		
U	238	102.691		
> Bi	209			94.215
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 13:06:48
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59220.5	2.2				ug/L	60176	Standard
	Be	9	21.7	113.8	**0.0219**	0.035	161.5	ug/L	5	Standard
	Al	27	2657.0	57.6	**0.0122**	0.012	99.2	ug/L	832	Standard
	Sc	45	23930.6	3.3				ug/L	25066	Standard
	Ti	47	35.7	25.9	**-0.0239**	0.047	197.1	ug/L	38	Standard
	V	51	1146.6	35.4	**0.0212**	0.067	317.9	ug/L	974	Standard
	Cr	52	5554.4	3.9	**-0.0728**	0.035	47.8	ug/L	5792	Standard
	Cr	53	378.3	10.0	**0.0477**	0.045	93.6	ug/L	347	Standard
	Mn	55	1370.7	12.3	**-0.0021**	0.026	1218.8	ug/L	1164	Standard
	Co	59	513.7	41.1	**0.0346**	0.034	98.9	ug/L	303	Standard
	Ni	60	343.7	8.0	**-0.0004**	0.015	3446.4	ug/L	291	Standard
	Cu	65	177.3	6.6	**0.0010**	0.006	620.6	ug/L	173	Standard
	Zn	66	178.7	18.3	**-0.0639**	0.031	48.4	ug/L	130	Standard
>	**Ge**	72	493877.2	0.3				ug/L	491724	Standard
	As	75	17.2	53.9	**0.0502**	0.009	17.4	ug/L	-25	Standard
	Se	82	20.0	19.9	**0.1000**	0.038	37.8	ug/L	12	Standard
	Se-1	77	45.3	7.1	**-0.0109**	0.047	434.0	ug/L	57	Standard
>	**Ga**	71	238.3	11.9				mg/L	148	Standard
	Rb	85	26.7	10.8				ug/L	18	Standard
	Y	89	397655.2	1.8				ug/L	401845	Standard
>	**Rh**	103	25.0	20.0				ug/L	10	Standard
	Mo	98	421.6	47.5	**0.1748**	0.084	48.3	ug/L	12	Standard
	Ag	107	433.3	112.5	**0.0596**	0.084	141.2	ug/L	98	Standard
	Cd	111	31.1	76.1	**0.0122**	0.013	105.0	mg/L	11	Standard
	Cd	114	71.1	92.6	**0.0114**	0.015	128.1	ug/L	21	Standard
>	**In**	115	535380.0	0.4				ug/L	547487	Standard
	Sn	118	765.0	11.6	**0.0766**	0.017	22.1	ug/L	450	Standard
	Sb	123	1104.8	53.2	**0.2581**	0.140	54.4	ug/L	105	Standard
	Ba	135	133.3	33.1	**0.0186**	0.024	130.4	ug/L	111	Standard
	Ce	140	16.7	17.3				ug/L	107	Standard
>	**Tb**	159	863928.7	0.9				ug/L	890342	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	400.0	138.2	**0.0504**	0.074	147.0	ug/L	19	Standard
	Tl	205	160.0	86.7	**0.0274**	0.022	81.9	ug/L	17	Standard
	Pb	206	498.3	73.3	**0.0503**	0.075	149.6	ug/L	247	Standard
	Pb	207	424.0	75.0	**0.0464**	0.072	155.4	ug/L	215	Standard
	Pb	208	1164.7	36.5	**0.0127**	0.025	198.3	ug/L	770	Standard
	U	238	130.0	106.6	**0.0213**	0.023	109.2	ug/L	13	Standard
>	**Bi**	209	486251.4	1.7				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	33.3	8.7	**0.0092**	0.006	61.0	mg/L	35	Standard
K	39	15.0	33.3	**-0.0334**	0.028	84.6	mg/L	25	Standard
Ca	43	26.7	39.0	**0.2255**	2.276	1009.5	mg/L	38	Standard
Fe	54	141.1	12.6	**0.0041**	0.021	506.6	mg/L	126	Standard
Fe	57	250.0	10.4	**-0.0592**	0.073	123.1	mg/L	245	Standard
> **Sc-1**	45	23930.6	3.3				mg/L	25066	Standard
Cl	35	125381.4	1.2				ug/L	125857	Standard
Kr	83	2.7	43.3				ug/L	1	Standard
Br	81	1060.0	3.8				ug/L	1350	Standard
P	31	17481.7	2.2				ug/L	18393	Standard
S	34	3750.5	3.0				ug/L	3739	Standard
Sr	88	66.7	8.7				ug/L	78	Standard
C	12	66.7	48.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	6.2	186.8				mg/L	2	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	1055.0	11.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.438	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.789
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.643
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	
QC Std 7	Tl	203	

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Method 6020 - Summary Report

Sample ID: PBW 7Q WG573483-02
Sample Date/Time: Tuesday, June 21, 2016 13:10:00
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58444.2	0.7				ug/L	60176	Standard
	Be	9	26.7	47.2	**0.0292**	0.018	60.9	ug/L	5	Standard
	Al	27	23049.2	3.8	**0.1723**	0.008	4.5	ug/L	832	Standard
	Sc	45	24202.7	2.5				ug/L	25066	Standard
	Ti	47	43.7	14.7	**0.0218**	0.034	156.7	ug/L	38	Standard
	V	51	1023.3	8.4	**0.0039**	0.014	347.8	ug/L	974	Standard
	Cr	52	7324.1	2.0	**0.2266**	0.020	8.6	ug/L	5792	Standard
	Cr	53	578.3	3.5	**0.3051**	0.025	8.2	ug/L	347	Standard
	Mn	55	2461.2	1.9	**0.1751**	0.005	2.7	ug/L	1164	Standard
	Co	59	428.7	8.1	**0.0221**	0.005	24.1	ug/L	303	Standard
	Ni	60	482.7	6.5	**0.0817**	0.017	21.3	ug/L	291	Standard
	Cu	65	326.0	2.1	**0.0873**	0.005	5.3	ug/L	173	Standard
	Zn	66	1189.0	5.1	**0.9283**	0.052	5.6	ug/L	130	Standard
>	**Ge**	72	484464.0	0.7				ug/L	491724	Standard
	As	75	-14.6	23.2	**0.0198**	0.003	16.3	ug/L	-25	Standard
	Se	82	17.0	20.8	**0.0742**	0.035	47.7	ug/L	12	Standard
	Se-1	77	51.3	11.4	**0.0873**	0.080	91.1	ug/L	57	Standard
>	**Ga**	71	196.7	5.9				mg/L	148	Standard
	Rb	85	100.0	27.8				ug/L	18	Standard
	Y	89	408879.8	3.6				ug/L	401845	Standard
>	**Rh**	103	25.0	52.9				ug/L	10	Standard
	Mo	98	122.8	14.6	**0.0481**	0.008	16.4	ug/L	12	Standard
	Ag	107	156.0	19.3	**0.0119**	0.005	46.1	ug/L	98	Standard
	Cd	111	26.1	40.8	**0.0096**	0.006	61.9	mg/L	11	Standard
	Cd	114	50.9	19.0	**0.0070**	0.002	32.2	ug/L	21	Standard
>	**In**	115	532128.9	0.9				ug/L	547487	Standard
	Sn	118	586.7	9.1	**0.0422**	0.011	26.5	ug/L	450	Standard
	Sb	123	401.0	34.8	**0.0897**	0.034	38.3	ug/L	105	Standard
	Ba	135	228.3	6.6	**0.0724**	0.009	12.2	ug/L	111	Standard
	Ce	140	110.0	22.7				ug/L	107	Standard
>	**Tb**	159	840904.1	1.3				ug/L	890342	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	87.0	51.2	**0.0084**	0.006	71.8	ug/L	19	Standard
	Tl	205	86.7	76.8	**0.0155**	0.011	71.5	ug/L	17	Standard
	Pb	206	333.0	6.3	**0.0167**	0.004	25.8	ug/L	247	Standard
	Pb	207	290.7	9.1	**0.0166**	0.006	33.9	ug/L	215	Standard
	Pb	208	1101.3	4.9	**0.0097**	0.003	31.1	ug/L	770	Standard
	U	238	73.3	48.0	**0.0119**	0.006	50.6	ug/L	13	Standard
>	**Bi**	209	481400.6	1.0				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	38.3	41.9	**0.0153**	0.022	142.7	mg/L	35	Standard
K	39	23.3	53.9	**0.0092**	0.068	740.5	mg/L	25	Standard
Ca	43	21.7	58.1	**-0.8598**	2.697	313.7	mg/L	38	Standard
Fe	54	130.8	28.3	**-0.0077**	0.038	495.4	mg/L	126	Standard
Fe	57	285.0	4.6	**0.0748**	0.079	105.8	mg/L	245	Standard
Sc-1	45	24202.7	2.5				mg/L	25066	Standard
Cl	35	126348.0	1.3				ug/L	125857	Standard
Kr	83	1.0	173.2				ug/L	1	Standard
Br	81	1470.1	6.5				ug/L	1350	Standard
P	31	16710.9	1.6				ug/L	18393	Standard
S	34	3748.8	2.6				ug/L	3739	Standard
Sr	88	75.0	11.5				ug/L	78	Standard
C	12	26.7	57.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.0	94.2				mg/L	2	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	656.7	5.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.122	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.524	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.195
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.679
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 7Q WG573483-03
Sample Date/Time: Tuesday, June 21, 2016 13:13:12
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59597.0	1.4				ug/L	60176	Standard
	Be	9	26.7	28.6	**0.0284**	0.010	36.7	ug/L	5	Standard
	Al	27	123378.7	0.8	**0.9401**	0.007	0.7	ug/L	832	Standard
	Sc	45	24184.3	4.6				ug/L	25066	Standard
	Ti	47	45.0	25.6	**0.0250**	0.057	229.9	ug/L	38	Standard
	V	51	1068.6	8.7	**0.0091**	0.015	170.4	ug/L	974	Standard
	Cr	52	7727.3	2.4	**0.2731**	0.024	8.9	ug/L	5792	Standard
	Cr	53	576.7	16.1	**0.2921**	0.109	37.2	ug/L	347	Standard
	Mn	55	3288.0	1.8	**0.2988**	0.009	3.0	ug/L	1164	Standard
	Co	59	442.3	9.5	**0.0233**	0.007	28.1	ug/L	303	Standard
	Ni	60	549.7	6.7	**0.1150**	0.019	16.8	ug/L	291	Standard
	Cu	65	1533.7	1.8	**0.7602**	0.018	2.4	ug/L	173	Standard
	Zn	66	3561.1	0.5	**3.2002**	0.053	1.7	ug/L	130	Standard
>	**Ge**	72	491613.1	1.0				ug/L	491724	Standard
	As	75	67.8	11.4	**0.0986**	0.008	8.2	ug/L	-25	Standard
	Se	82	49.8	19.1	**0.3887**	0.090	23.1	ug/L	12	Standard
	Se-1	77	49.0	15.9	**0.0445**	0.115	258.9	ug/L	57	Standard
>	**Ga**	71	185.0	23.4				mg/L	148	Standard
	Rb	85	243.3	21.6				ug/L	18	Standard
	Y	89	394619.8	1.0				ug/L	401845	Standard
>	**Rh**	103	30.0	44.1				ug/L	10	Standard
	Mo	98	108.2	38.9	**0.0419**	0.018	43.1	ug/L	12	Standard
	Ag	107	146.7	33.6	**0.0102**	0.009	84.7	ug/L	98	Standard
	Cd	111	29.5	45.9	**0.0114**	0.007	64.9	mg/L	11	Standard
	Cd	114	80.9	41.5	**0.0138**	0.008	55.0	ug/L	21	Standard
>	**In**	115	532617.2	0.2				ug/L	547487	Standard
	Sn	118	588.3	10.2	**0.0424**	0.012	28.7	ug/L	450	Standard
	Sb	123	334.8	20.5	**0.0734**	0.016	22.4	ug/L	105	Standard
	Ba	135	9299.9	0.5	**5.1515**	0.018	0.3	ug/L	111	Standard
	Ce	140	778.4	11.1				ug/L	107	Standard
>	**Tb**	159	856842.4	1.3				ug/L	890342	Standard
	Ho	165	25.0	20.0				ug/L	10	Standard
	Tl	203	92.3	45.4	**0.0091**	0.006	63.1	ug/L	19	Standard
	Tl	205	91.7	74.5	**0.0163**	0.011	69.8	ug/L	17	Standard
	Pb	206	607.0	7.8	**0.0743**	0.010	14.0	ug/L	247	Standard
	Pb	207	493.7	5.6	**0.0635**	0.006	9.8	ug/L	215	Standard
	Pb	208	1980.7	5.5	**0.0640**	0.007	10.5	ug/L	770	Standard
	U	238	71.0	67.4	**0.0114**	0.008	72.1	ug/L	13	Standard
>	**Bi**	209	486381.9	0.6				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.3778**	31.823	173.2	mg/L	2	Standard
Mg	24	1595.1	7.2	**2.2306**	0.060	2.7	mg/L	35	Standard
K	39	30.0	44.1	**0.0441**	0.075	168.9	mg/L	25	Standard
Ca	43	33.3	45.8	**1.5391**	3.367	218.8	mg/L	38	Standard
Fe	54	139.5	48.2	**-0.0011**	0.059	5464.9	mg/L	126	Standard
Fe	57	250.0	17.8	**-0.0719**	0.146	202.6	mg/L	245	Standard
> **Sc-1**	45	24184.3	4.6				mg/L	25066	Standard
Cl	35	130065.3	1.4				ug/L	125857	Standard
Kr	83	1.0	0.0				ug/L	1	Standard
Br	81	9623.1	5.0				ug/L	1350	Standard
P	31	16951.1	1.1				ug/L	18393	Standard
S	34	3743.8	4.5				ug/L	3739	Standard
Sr	88	116.7	20.3				ug/L	78	Standard
C	12	46.7	96.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.2	94.4				mg/L	2	Standard
Ho-1	165	25.0	20.0				mg/L	10	Standard
Er	166	10.0					mg/L	23	Standard
I	127	1343.4	6.5				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.038	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.978	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.284
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.669
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606096103 WG573483-01
Sample Date/Time: Tuesday, June 21, 2016 13:16:23
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61047.7	0.6				ug/L	60176	Standard
	Be	9	15.0	33.3	**0.0116**	0.007	59.6	ug/L	5	Standard
	Al	27	9341973.6	1.7	**70.1047**	1.594	2.3	ug/L	832	Standard
	Sc	45	24823.7	1.2				ug/L	25066	Standard
	Ti	47	196.3	14.4	**0.8437**	0.163	19.3	ug/L	38	Standard
	V	51	1520.3	9.2	**0.0937**	0.027	28.5	ug/L	974	Standard
	Cr	52	9129.1	2.7	**0.5414**	0.059	10.9	ug/L	5792	Standard
	Cr	53	738.4	5.5	**0.5207**	0.064	12.4	ug/L	347	Standard
	Mn	55	11081.1	1.1	**1.5747**	0.043	2.7	ug/L	1164	Standard
	Co	59	619.0	4.0	**0.0557**	0.005	8.5	ug/L	303	Standard
	Ni	60	1274.1	1.2	**0.5411**	0.006	1.2	ug/L	291	Standard
	Cu	65	459.3	3.5	**0.1677**	0.009	5.7	ug/L	173	Standard
	Zn	66	1745.8	2.8	**1.5038**	0.023	1.6	ug/L	130	Standard
>	**Ge**	72	475973.6	1.5				ug/L	491724	Standard
	As	75	98.0	38.5	**0.1307**	0.038	29.4	ug/L	-25	Standard
	Se	82	59.0	18.3	**0.4974**	0.116	23.2	ug/L	12	Standard
	Se-1	77	72.0	13.9	**0.4016**	0.131	32.6	ug/L	57	Standard
>	**Ga**	71	200.0	13.9				mg/L	148	Standard
	Rb	85	3465.4	3.7				ug/L	18	Standard
	Y	89	402121.2	2.1				ug/L	401845	Standard
>	**Rh**	103	56.7	44.4				ug/L	10	Standard
	Mo	98	1248.8	2.4	**0.5212**	0.009	1.6	ug/L	12	Standard
	Ag	107	87.0	10.2	**-0.0005**	0.001	301.6	ug/L	98	Standard
	Cd	111	21.3	35.2	**0.0068**	0.004	60.3	mg/L	11	Standard
	Cd	114	36.7	39.5	**0.0037**	0.003	87.9	ug/L	21	Standard
>	**In**	115	541289.4	0.8				ug/L	547487	Standard
	Sn	118	620.0	15.4	**0.0468**	0.019	41.6	ug/L	450	Standard
	Sb	123	250.2	30.2	**0.0519**	0.018	34.1	ug/L	105	Standard
	Ba	135	26997.7	0.3	**14.8192**	0.144	1.0	ug/L	111	Standard
	Ce	140	1078.4	4.8				ug/L	107	Standard
>	**Tb**	159	866683.9	0.6				ug/L	890342	Standard
	Ho	165	30.0	33.3				ug/L	10	Standard
	Tl	203	79.7	2.6	**0.0074**	0.000	3.9	ug/L	19	Standard
	Tl	205	76.7	3.8	**0.0139**	0.000	3.0	ug/L	17	Standard
	Pb	206	354.3	0.4	**0.0212**	0.001	5.4	ug/L	247	Standard
	Pb	207	308.0	4.4	**0.0207**	0.003	15.8	ug/L	215	Standard
	Pb	208	1235.0	2.9	**0.0181**	0.002	9.8	ug/L	770	Standard
	U	238	2800.3	1.8	**0.4867**	0.012	2.5	ug/L	13	Standard
>	**Bi**	209	481870.9	1.1				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3122.0	2.6	**4.2928**	0.138	3.2	mg/L	35	Standard
K	39	116.7	8.9	**0.4746**	0.046	9.7	mg/L	25	Standard
Ca	43	158.3	7.9	**26.2024**	2.672	10.2	mg/L	38	Standard
Fe	54	139.3	11.0	**-0.0029**	0.016	532.1	mg/L	126	Standard
Fe	57	351.7	4.3	**0.3106**	0.078	25.0	mg/L	245	Standard
> **Sc-1**	45	24823.7	1.2				mg/L	25066	Standard
Cl	35	140998.6	2.1				ug/L	125857	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	3500.4	2.8				ug/L	1350	Standard
P	31	19117.1	2.2				ug/L	18393	Standard
S	34	3825.5	3.2				ug/L	3739	Standard
Sr	88	203.3	12.4				ug/L	78	Standard
C	12	103.3	45.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	55.1	19.0				mg/L	2	Standard
Ho-1	165	30.0	33.3				mg/L	10	Standard
Er	166	33.3	75.5				mg/L	23	Standard
I	127	4417.3	4.0				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.449	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.797	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.868
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.772
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606096103S WG573483-04
Sample Date/Time: Tuesday, June 21, 2016 13:19:35
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60085.6	1.7				ug/L	60176	Standard
	Be	9	35418.0	1.7	**49.4123**	1.273	2.6	ug/L	5	Standard
	Al	27	9553806.1	0.1	**72.8510**	1.232	1.7	ug/L	832	Standard
	Sc	45	24382.9	1.2				ug/L	25066	Standard
	Ti	47	190.0	4.7	**0.8162**	0.021	2.5	ug/L	38	Standard
	V	51	287859.7	1.7	**50.2556**	0.599	1.2	ug/L	974	Standard
	Cr	52	311117.1	1.3	**50.0342**	0.746	1.5	ug/L	5792	Standard
	Cr	53	39177.3	2.9	**49.4856**	0.624	1.3	ug/L	347	Standard
	Mn	55	324372.6	0.9	**52.6072**	1.077	2.0	ug/L	1164	Standard
	Co	59	291577.0	1.6	**49.8422**	0.595	1.2	ug/L	303	Standard
	Ni	60	85207.9	1.0	**49.1473**	1.009	2.1	ug/L	291	Standard
	Cu	65	84645.8	0.5	**49.2054**	1.253	2.5	ug/L	173	Standard
	Zn	66	51645.2	1.3	**51.6401**	0.793	1.5	ug/L	130	Standard
>	**Ge**	72	472256.1	2.8				ug/L	491724	Standard
	As	75	51695.2	1.6	**51.3245**	0.593	1.2	ug/L	-25	Standard
	Se	82	5173.1	1.2	**52.0219**	0.822	1.6	ug/L	12	Standard
	Se-1	77	3476.7	1.4	**50.5984**	1.532	3.0	ug/L	57	Standard
>	**Ga**	71	260.0	28.7				mg/L	148	Standard
	Rb	85	3562.1	2.1				ug/L	18	Standard
	Y	89	407263.7	1.8				ug/L	401845	Standard
>	**Rh**	103	68.3	30.5				ug/L	10	Standard
	Mo	98	1317.0	3.1	**0.5537**	0.021	3.9	ug/L	12	Standard
	Ag	107	275415.2	1.3	**47.5488**	1.124	2.4	ug/L	98	Standard
	Cd	111	88696.0	0.6	**48.0474**	0.431	0.9	mg/L	11	Standard
	Cd	114	213461.1	1.2	**47.5387**	1.278	2.7	ug/L	21	Standard
>	**In**	115	537694.2	1.5				ug/L	547487	Standard
	Sn	118	585.0	5.9	**0.0407**	0.007	17.4	ug/L	450	Standard
	Sb	123	193980.1	0.3	**46.5021**	0.680	1.5	ug/L	105	Standard
	Ba	135	112772.5	1.0	**62.4946**	0.514	0.8	ug/L	111	Standard
	Ce	140	1368.4	17.9				ug/L	107	Standard
>	**Tb**	159	852959.3	0.9				ug/L	890342	Standard
	Ho	165	35.0	37.8				ug/L	10	Standard
	Tl	203	345111.3	0.9	**48.9395**	0.677	1.4	ug/L	19	Standard
	Tl	205	293390.1	0.8	**50.7100**	0.765	1.5	ug/L	17	Standard
	Pb	206	227814.4	1.2	**50.1915**	0.357	0.7	ug/L	247	Standard
	Pb	207	198202.5	1.7	**48.0341**	0.475	1.0	ug/L	215	Standard
	Pb	208	774653.3	0.9	**50.1464**	0.296	0.6	ug/L	770	Standard
	U	238	276162.4	0.2	**49.3292**	0.615	1.2	ug/L	13	Standard
>	**Bi**	209	469650.7	1.1				ug/L	503143	Standard

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Na	23	3.3	86.6	**38.0335**	32.935	86.6	mg/L	2	Standard
Mg	24	3283.7	5.8	**4.5981**	0.247	5.4	mg/L	35	Standard
K	39	128.3	19.2	**0.5454**	0.127	23.3	mg/L	25	Standard
Ca	43	110.0	16.4	**16.9725**	3.680	21.7	mg/L	38	Standard
Fe	54	154.7	12.2	**0.0146**	0.020	138.4	mg/L	126	Standard
Fe	57	370.0	1.4	**0.4097**	0.022	5.4	mg/L	245	Standard
> **Sc-1**	45	24382.9	1.2				mg/L	25066	Standard
Cl	35	147069.0	0.9				ug/L	125857	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	2353.5	2.8				ug/L	1350	Standard
P	31	18783.3	1.7				ug/L	18393	Standard
S	34	3680.4	2.3				ug/L	3739	Standard
Sr	88	195.0	15.4				ug/L	78	Standard
C	12	110.0	36.4				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	61.9	82.6				mg/L	2	Standard
Ho-1	165	35.0	37.8				mg/L	10	Standard
Er	166	30.0	57.7				mg/L	23	Standard
I	127	4779.1	3.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.850	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.041	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	98.211
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	93.343
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606096103S WG573483-04
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Method 6020 - Summary Report

Sample ID: L1606096103SD WG573483-05
Sample Date/Time: Tuesday, June 21, 2016 13:22:47
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61462.8	1.9				ug/L	60176	Standard
	Be	9	36453.8	2.4	**49.7327**	2.122	4.3	ug/L	5	Standard
	Al	27	9453301.8	0.8	**70.4658**	0.824	1.2	ug/L	832	Standard
	Sc	45	24409.6	0.4				ug/L	25066	Standard
	Ti	47	344.0	66.5	**1.5970**	1.182	74.0	ug/L	38	Standard
	V	51	289238.2	2.5	**49.3099**	0.828	1.7	ug/L	974	Standard
	Cr	52	318109.2	0.9	**49.9609**	0.437	0.9	ug/L	5792	Standard
	Cr	53	40479.0	3.1	**49.9452**	1.314	2.6	ug/L	347	Standard
	Mn	55	314057.7	2.4	**49.7210**	0.754	1.5	ug/L	1164	Standard
	Co	59	290318.9	2.9	**48.4610**	0.991	2.0	ug/L	303	Standard
	Ni	60	87273.0	1.1	**49.1559**	0.393	0.8	ug/L	291	Standard
	Cu	65	85527.1	2.3	**48.5400**	0.760	1.6	ug/L	173	Standard
	Zn	66	51755.6	2.3	**50.5302**	0.778	1.5	ug/L	130	Standard
>	**Ge**	72	483447.8	0.9				ug/L	491724	Standard
	As	75	51749.9	1.4	**50.1783**	0.327	0.7	ug/L	-25	Standard
	Se	82	5053.4	1.0	**49.6285**	0.930	1.9	ug/L	12	Standard
	Se-1	77	3472.4	4.6	**49.3184**	2.029	4.1	ug/L	57	Standard
>	**Ga**	71	256.7	20.0				mg/L	148	Standard
	Rb	85	3362.0	2.8				ug/L	18	Standard
	Y	89	401293.0	3.1				ug/L	401845	Standard
>	**Rh**	103	56.7	10.2				ug/L	10	Standard
	Mo	98	1289.5	8.7	**0.5470**	0.043	7.9	ug/L	12	Standard
	Ag	107	282626.7	0.7	**49.2593**	0.185	0.4	ug/L	98	Standard
	Cd	111	89595.6	1.1	**49.0014**	0.114	0.2	mg/L	11	Standard
	Cd	114	217595.8	1.3	**48.9159**	0.226	0.5	ug/L	21	Standard
>	**In**	115	532522.5	0.9				ug/L	547487	Standard
	Sn	118	533.3	7.5	**0.0316**	0.009	27.6	ug/L	450	Standard
	Sb	123	199986.0	1.4	**48.4014**	0.599	1.2	ug/L	105	Standard
	Ba	135	113635.9	0.8	**63.5855**	0.778	1.2	ug/L	111	Standard
	Ce	140	1038.4	8.3				ug/L	107	Standard
>	**Tb**	159	861213.7	0.8				ug/L	890342	Standard
	Ho	165	33.3	45.8				ug/L	10	Standard
	Tl	203	354994.0	0.6	**48.9345**	0.505	1.0	ug/L	19	Standard
	Tl	205	289401.6	1.8	**48.6253**	1.171	2.4	ug/L	17	Standard
	Pb	206	230028.8	1.2	**49.2668**	0.831	1.7	ug/L	247	Standard
	Pb	207	199754.3	1.2	**47.0633**	0.908	1.9	ug/L	215	Standard
	Pb	208	767538.1	0.5	**48.2969**	0.306	0.6	ug/L	770	Standard
	U	238	277842.3	0.1	**48.2419**	0.411	0.9	ug/L	13	Standard
>	**Bi**	209	483136.4	0.9				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3075.3	4.3	**4.3000**	0.197	4.6	mg/L	35	Standard
K	39	133.3	11.5	**0.5703**	0.080	14.0	mg/L	25	Standard
Ca	43	143.3	12.3	**23.6865**	3.499	14.8	mg/L	38	Standard
Fe	54	131.9	32.2	**-0.0079**	0.042	522.5	mg/L	126	Standard
Fe	57	375.0	17.0	**0.4278**	0.255	59.7	mg/L	245	Standard
> **Sc-1**	45	24409.6	0.4				mg/L	25066	Standard
Cl	35	148355.5	1.1				ug/L	125857	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	1950.1	13.4				ug/L	1350	Standard
P	31	18893.5	3.9				ug/L	18393	Standard
S	34	3878.8	5.1				ug/L	3739	Standard
Sr	88	180.0	4.8				ug/L	78	Standard
C	12	116.7	49.5				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	94.6	15.9				mg/L	2	Standard
Ho-1	165	33.3	45.8				mg/L	10	Standard
Er	166	43.3	13.3				mg/L	23	Standard
I	127	4419.0	9.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.138	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.317	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.267
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.024
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606073102
Sample Date/Time: Tuesday, June 21, 2016 13:25:58
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62050.2	2.7				ug/L	60176	Standard
	Be	9	105.0	8.2	**0.1327**	0.009	6.8	ug/L	5	Standard
	Al	27	1013016.4	2.3	**7.4716**	0.030	0.4	ug/L	832	Standard
	Sc	45	25413.0	0.7				ug/L	25066	Standard
	Ti	47	11689.2	3.8	**62.0270**	2.447	3.9	ug/L	38	Standard
	V	51	31514.4	0.8	**5.2807**	0.054	1.0	ug/L	974	Standard
	Cr	52	17882.9	0.9	**1.9504**	0.032	1.6	ug/L	5792	Standard
	Cr	53	2040.1	2.3	**2.1533**	0.055	2.6	ug/L	347	Standard
	Mn	55	131913.8	0.6	**20.9934**	0.153	0.7	ug/L	1164	Standard
	Co	59	2483.5	3.2	**0.3703**	0.015	3.9	ug/L	303	Standard
	Ni	60	2377.5	1.9	**1.1685**	0.022	1.9	ug/L	291	Standard
	Cu	65	255994.2	0.7	**147.1034**	1.372	0.9	ug/L	173	Standard
	Zn	66	18744.6	0.9	**18.3555**	0.182	1.0	ug/L	130	Standard
>	**Ge**	72	478159.2	0.3				ug/L	491724	Standard
	As	75	12450.5	0.9	**12.2318**	0.086	0.7	ug/L	-25	Standard
	Se	82	110.0	5.3	**1.0009**	0.058	5.8	ug/L	12	Standard
	Se-1	77	115.3	7.0	**1.0288**	0.120	11.7	ug/L	57	Standard
>	**Ga**	71	2798.6	0.4				mg/L	148	Standard
	Rb	85	49900.4	1.1				ug/L	18	Standard
	Y	89	416526.1	0.5				ug/L	401845	Standard
>	**Rh**	103	41.7	13.9				ug/L	10	Standard
	Mo	98	4437.9	0.6	**1.8377**	0.013	0.7	ug/L	12	Standard
	Ag	107	916.0	2.3	**0.1396**	0.005	3.7	ug/L	98	Standard
	Cd	111	512.1	2.9	**0.2671**	0.011	4.2	mg/L	11	Standard
	Cd	114	1211.6	3.0	**0.2598**	0.006	2.2	ug/L	21	Standard
>	**In**	115	548951.9	1.2				ug/L	547487	Standard
	Sn	118	5657.7	4.2	**1.0127**	0.047	4.7	ug/L	450	Standard
	Sb	123	4885.2	8.8	**1.1392**	0.095	8.3	ug/L	105	Standard
	Ba	135	19928.1	1.6	**10.7709**	0.169	1.6	ug/L	111	Standard
	Ce	140	57480.5	1.9				ug/L	107	Standard
>	**Tb**	159	878774.2	1.0				ug/L	890342	Standard
	Ho	165	1093.4	18.2				ug/L	10	Standard
	Tl	203	347.3	5.3	**0.0436**	0.002	4.8	ug/L	19	Standard
	Tl	205	276.7	3.8	**0.0468**	0.002	4.8	ug/L	17	Standard
	Pb	206	43154.7	0.9	**9.0669**	0.187	2.1	ug/L	247	Standard
	Pb	207	37803.4	1.8	**8.7363**	0.108	1.2	ug/L	215	Standard
	Pb	208	149908.5	0.2	**9.2509**	0.144	1.6	ug/L	770	Standard
	U	238	690.7	5.1	**0.1174**	0.005	4.3	ug/L	13	Standard
>	**Bi**	209	490138.0	1.5				ug/L	503143	Standard

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Na	23	3.3	86.6	**36.6395**	31.728	86.6	mg/L	2	Standard
Mg	24	11255.8	2.0	**15.2140**	0.309	2.0	mg/L	35	Standard
K	39	513.3	5.7	**2.4114**	0.137	5.7	mg/L	25	Standard
Ca	43	73.3	31.5	**8.9140**	4.383	49.2	mg/L	38	Standard
Fe	54	1193.7	6.4	**0.9809**	0.074	7.6	mg/L	126	Standard
Fe	57	501.7	10.9	**0.8612**	0.218	25.3	mg/L	245	Standard
> **Sc-1**	45	25413.0	0.7				mg/L	25066	Standard
Cl	35	147490.5	1.3				ug/L	125857	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	2373.5	6.5				ug/L	1350	Standard
P	31	25653.5	10.8				ug/L	18393	Standard
S	34	3847.2	1.9				ug/L	3739	Standard
Sr	88	95.0	22.9				ug/L	78	Standard
C	12	80.0	43.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	100.0				mg/L	0	Standard
Dy	164	1461.7	2.4				mg/L	2	Standard
Ho-1	165	1093.4	18.2				mg/L	10	Standard
Er	166	1010.0	4.3				mg/L	23	Standard
I	127	10345.2	3.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.115	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.241	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.268
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.415
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cu 65 Upper, S, EEE	Cu	65	

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606073102PS WG573557-01
Sample Date/Time: Tuesday, June 21, 2016 13:29:10
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62836.7	1.0				ug/L	60176	Standard
	Be	9	38405.3	1.0	**51.2242**	0.495	1.0	ug/L	5	Standard
	Al	27	986754.3	0.7	**7.1861**	0.032	0.4	ug/L	832	Standard
	Sc	45	25206.0	4.0				ug/L	25066	Standard
	Ti	47	12380.1	4.7	**64.5662**	3.180	4.9	ug/L	38	Standard
	V	51	336761.7	1.5	**57.0716**	0.650	1.1	ug/L	974	Standard
	Cr	52	338031.4	0.9	**52.7987**	0.435	0.8	ug/L	5792	Standard
	Cr	53	42471.1	2.2	**52.0846**	0.966	1.9	ug/L	347	Standard
	Mn	55	458391.3	1.7	**72.2107**	1.483	2.1	ug/L	1164	Standard
	Co	59	320824.6	0.9	**53.2201**	0.682	1.3	ug/L	303	Standard
	Ni	60	91216.4	1.1	**51.0539**	0.706	1.4	ug/L	291	Standard
	Cu	65	345800.3	0.7	**195.2967**	1.049	0.5	ug/L	173	Standard
	Zn	66	72342.6	1.4	**70.2705**	0.971	1.4	ug/L	130	Standard
>	**Ge**	72	486585.9	0.4				ug/L	491724	Standard
	As	75	66468.7	1.6	**64.0258**	0.932	1.5	ug/L	-25	Standard
	Se	82	5473.3	1.5	**53.4097**	0.960	1.8	ug/L	12	Standard
	Se-1	77	3758.5	2.1	**53.0932**	1.114	2.1	ug/L	57	Standard
>	**Ga**	71	2930.3	6.6				mg/L	148	Standard
	Rb	85	50851.9	2.6				ug/L	18	Standard
	Y	89	422665.5	2.8				ug/L	401845	Standard
>	**Rh**	103	43.3	13.3				ug/L	10	Standard
	Mo	98	4548.7	3.3	**1.9199**	0.104	5.4	ug/L	12	Standard
	Ag	107	291098.5	1.4	**50.1491**	1.656	3.3	ug/L	98	Standard
	Cd	111	96011.5	1.2	**51.8878**	0.482	0.9	mg/L	11	Standard
	Cd	114	228852.1	1.3	**50.8404**	0.872	1.7	ug/L	21	Standard
>	**In**	115	538990.3	2.1				ug/L	547487	Standard
	Sn	118	6059.6	11.2	**1.1120**	0.140	12.6	ug/L	450	Standard
	Sb	123	210648.2	0.5	**50.3883**	1.297	2.6	ug/L	105	Standard
	Ba	135	109800.4	0.6	**60.7142**	1.334	2.2	ug/L	111	Standard
	Ce	140	59162.4	7.7				ug/L	107	Standard
>	**Tb**	159	872877.7	0.3				ug/L	890342	Standard
	Ho	165	1188.4	22.2				ug/L	10	Standard
	Tl	203	368407.8	0.3	**49.7173**	0.416	0.8	ug/L	19	Standard
	Tl	205	314960.3	1.3	**51.8065**	0.923	1.8	ug/L	17	Standard
	Pb	206	286269.8	0.5	**60.0352**	0.497	0.8	ug/L	247	Standard
	Pb	207	250420.9	0.8	**57.7692**	0.376	0.7	ug/L	215	Standard
	Pb	208	977924.5	0.9	**60.2632**	1.112	1.8	ug/L	770	Standard
	U	238	292324.4	0.4	**49.6915**	0.547	1.1	ug/L	13	Standard
>	**Bi**	209	493501.4	1.0				ug/L	503143	Standard

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Na	23	3.3	86.6	**37.0547**	32.164	86.8	mg/L	2	Standard
Mg	24	11367.6	3.6	**15.5226**	1.170	7.5	mg/L	35	Standard
K	39	491.7	4.1	**2.3285**	0.165	7.1	mg/L	25	Standard
Ca	43	61.7	32.8	**6.7120**	3.782	56.4	mg/L	38	Standard
Fe	54	1050.3	3.7	**0.8567**	0.077	8.9	mg/L	126	Standard
Fe	57	553.3	6.8	**1.0850**	0.222	20.5	mg/L	245	Standard
> **Sc-1**	45	25206.0	4.0				mg/L	25066	Standard
Cl	35	141394.7	1.2				ug/L	125857	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	2206.8	11.9				ug/L	1350	Standard
P	31	23750.3	1.6				ug/L	18393	Standard
S	34	3492.1	3.7				ug/L	3739	Standard
Sr	88	91.7	19.2				ug/L	78	Standard
C	12	96.7	39.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	65.5				mg/L	0	Standard
Dy	164	1514.9	12.9				mg/L	2	Standard
Ho-1	165	1188.4	22.2				mg/L	10	Standard
Er	166	1083.4	11.0				mg/L	23	Standard
I	127	10306.8	3.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.422	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.955	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606073102PS WG573557-01
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.448
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.084
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cu 65 Upper, S, EEE	Cu	65	

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606073102SDL WG573557-02
Sample Date/Time: Tuesday, June 21, 2016 13:32:21
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62607.4	1.3				ug/L	60176	Standard
	Be	9	25.0	34.6	**0.0244**	0.011	45.5	ug/L	5	Standard
	Al	27	212439.0	0.9	**1.5464**	0.033	2.1	ug/L	832	Standard
	Sc	45	24628.3	0.4				ug/L	25066	Standard
	Ti	47	2784.9	3.0	**13.9086**	0.389	2.8	ug/L	38	Standard
	V	51	7566.4	0.8	**1.0756**	0.023	2.2	ug/L	974	Standard
	Cr	52	8980.0	0.9	**0.4405**	0.021	4.7	ug/L	5792	Standard
	Cr	53	745.0	5.8	**0.4791**	0.044	9.2	ug/L	347	Standard
	Mn	55	27746.4	1.2	**4.0322**	0.081	2.0	ug/L	1164	Standard
	Co	59	770.7	3.6	**0.0747**	0.006	7.8	ug/L	303	Standard
	Ni	60	728.0	3.3	**0.2056**	0.009	4.5	ug/L	291	Standard
	Cu	65	55112.7	1.2	**30.0755**	0.388	1.3	ug/L	173	Standard
	Zn	66	4901.5	0.7	**4.3932**	0.053	1.2	ug/L	130	Standard
>	**Ge**	72	502229.8	1.2				ug/L	491724	Standard
	As	75	2641.7	1.6	**2.4986**	0.070	2.8	ug/L	-25	Standard
	Se	82	37.4	7.9	**0.2610**	0.029	11.1	ug/L	12	Standard
	Se-1	77	65.3	16.9	**0.2568**	0.164	63.9	ug/L	57	Standard
>	**Ga**	71	860.0	7.0				mg/L	148	Standard
	Rb	85	10418.6	2.0				ug/L	18	Standard
	Y	89	399994.5	0.5				ug/L	401845	Standard
>	**Rh**	103	30.0	33.3				ug/L	10	Standard
	Mo	98	925.4	2.8	**0.3921**	0.014	3.7	ug/L	12	Standard
	Ag	107	297.0	13.1	**0.0365**	0.007	19.3	ug/L	98	Standard
	Cd	111	115.6	4.7	**0.0586**	0.003	5.9	mg/L	11	Standard
	Cd	114	279.1	9.6	**0.0584**	0.006	10.2	ug/L	21	Standard
>	**In**	115	531899.2	0.8				ug/L	547487	Standard
	Sn	118	1896.8	36.6	**0.3027**	0.141	46.7	ug/L	450	Standard
	Sb	123	2351.8	13.2	**0.5620**	0.071	12.7	ug/L	105	Standard
	Ba	135	4320.6	0.3	**2.3669**	0.016	0.7	ug/L	111	Standard
	Ce	140	11052.4	4.5				ug/L	107	Standard
>	**Tb**	159	858576.5	0.7				ug/L	890342	Standard
	Ho	165	216.7	10.7				ug/L	10	Standard
	Tl	203	116.0	17.5	**0.0123**	0.003	24.6	ug/L	19	Standard
	Tl	205	98.3	11.7	**0.0173**	0.002	12.0	ug/L	17	Standard
	Pb	206	9169.1	1.7	**1.8876**	0.041	2.2	ug/L	247	Standard
	Pb	207	7982.8	0.7	**1.8083**	0.035	1.9	ug/L	215	Standard
	Pb	208	31008.6	0.6	**1.8704**	0.021	1.1	ug/L	770	Standard
	U	238	168.3	3.3	**0.0281**	0.001	3.9	ug/L	13	Standard
>	**Bi**	209	489002.3	1.5				ug/L	503143	Standard

Sample ID: L1606073102SDL WG573557-02
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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	2341.8	1.1	**3.2356**	0.024	0.7	mg/L	35	Standard
K	39	118.3	20.0	**0.4878**	0.118	24.2	mg/L	25	Standard
Ca	43	43.3	17.6	**3.3707**	1.559	46.2	mg/L	38	Standard
Fe	54	377.4	16.5	**0.2279**	0.059	26.1	mg/L	126	Standard
Fe	57	345.0	9.5	**0.2940**	0.127	43.1	mg/L	245	Standard
> **Sc-1**	45	24628.3	0.4				mg/L	25066	Standard
Cl	35	138476.6	0.9				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	1490.1	4.7				ug/L	1350	Standard
P	31	19304.0	1.2				ug/L	18393	Standard
S	34	3498.7	5.5				ug/L	3739	Standard
Sr	88	68.3	18.4				ug/L	78	Standard
C	12	46.7	44.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	337.2	15.6				mg/L	2	Standard
Ho-1	165	216.7	10.7				mg/L	10	Standard
Er	166	196.7	28.9				mg/L	23	Standard
I	127	3045.3	3.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.041	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.137	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.153
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.190
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: FBLANK 7Q WG573662-01
Sample Date/Time: Tuesday, June 21, 2016 13:36:50
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60862.0	1.5				ug/L	60176	Standard
	Be	9	37583.2	1.6	**51.7542**	0.552	1.1	ug/L	5	Standard
	Al	27	21697.9	26.0	**0.1552**	0.044	28.5	ug/L	832	Standard
	Sc	45	23591.7	4.2				ug/L	25066	Standard
	Ti	47	83.7	108.0	**0.2200**	0.454	206.3	ug/L	38	Standard
	V	51	305889.4	1.3	**51.4535**	1.008	2.0	ug/L	974	Standard
	Cr	52	330929.6	0.4	**51.2983**	1.178	2.3	ug/L	5792	Standard
	Cr	53	41528.5	0.6	**50.5645**	1.478	2.9	ug/L	347	Standard
	Mn	55	328303.3	1.1	**51.2988**	1.820	3.5	ug/L	1164	Standard
	Co	59	315656.4	1.0	**52.0010**	1.804	3.5	ug/L	303	Standard
	Ni	60	91664.8	1.0	**50.9431**	1.373	2.7	ug/L	291	Standard
	Cu	65	92045.1	0.9	**51.5472**	1.356	2.6	ug/L	173	Standard
	Zn	66	54111.8	0.2	**52.1307**	1.195	2.3	ug/L	130	Standard
>	**Ge**	72	490225.8	2.5				ug/L	491724	Standard
	As	75	52438.9	0.3	**50.1639**	1.182	2.4	ug/L	-25	Standard
	Se	82	5295.6	0.8	**51.3116**	1.607	3.1	ug/L	12	Standard
	Se-1	77	3616.8	1.2	**50.6984**	1.048	2.1	ug/L	57	Standard
>	**Ga**	71	186.7	10.8				mg/L	148	Standard
	Rb	85	61.7	12.4				ug/L	18	Standard
	Y	89	408507.2	0.7				ug/L	401845	Standard
>	**Rh**	103	48.3	15.8				ug/L	10	Standard
	Mo	98	52.1	23.1	**0.0179**	0.005	29.8	ug/L	12	Standard
	Ag	107	297940.9	0.5	**51.9244**	0.468	0.9	ug/L	98	Standard
	Cd	111	93406.3	0.2	**51.0848**	0.731	1.4	mg/L	11	Standard
	Cd	114	226390.7	0.3	**50.8926**	0.677	1.3	ug/L	21	Standard
>	**In**	115	532598.8	1.2				ug/L	547487	Standard
	Sn	118	560.0	13.9	**0.0370**	0.017	45.0	ug/L	450	Standard
	Sb	123	206757.3	1.1	**50.0344**	0.431	0.9	ug/L	105	Standard
	Ba	135	90690.6	0.8	**50.7329**	0.993	2.0	ug/L	111	Standard
	Ce	140	146.7	19.4				ug/L	107	Standard
>	**Tb**	159	846206.7	1.1				ug/L	890342	Standard
	Ho	165	13.3	86.6				ug/L	10	Standard
	Tl	203	364672.7	1.1	**50.8514**	0.648	1.3	ug/L	19	Standard
	Tl	205	306373.3	0.5	**52.0688**	0.058	0.1	ug/L	17	Standard
	Pb	206	242442.7	0.5	**52.5299**	0.446	0.8	ug/L	247	Standard
	Pb	207	211276.6	0.7	**50.3548**	0.226	0.4	ug/L	215	Standard
	Pb	208	820675.9	0.4	**52.2445**	0.286	0.5	ug/L	770	Standard
	U	238	287466.1	0.1	**50.4910**	0.234	0.5	ug/L	13	Standard
>	**Bi**	209	477588.3	0.5				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	65.0	26.6	**0.0558**	0.025	43.9	mg/L	35	Standard
K	39	33.3	31.2	**0.0629**	0.047	74.5	mg/L	25	Standard
Ca	43	28.3	50.9	**0.5321**	2.713	509.8	mg/L	38	Standard
Fe	54	102.3	13.6	**-0.0329**	0.018	54.0	mg/L	126	Standard
Fe	57	231.7	21.8	**-0.1150**	0.242	210.0	mg/L	245	Standard
> **Sc-1**	45	23591.7	4.2				mg/L	25066	Standard
Cl	35	136517.0	1.3				ug/L	125857	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	1383.4	10.5				ug/L	1350	Standard
P	31	16972.8	0.8				ug/L	18393	Standard
S	34	3713.8	2.7				ug/L	3739	Standard
Sr	88	61.7	9.4				ug/L	78	Standard
C	12	53.3	47.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	19.8	49.2				mg/L	2	Standard
Ho-1	165	13.3	86.6				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	23	Standard
I	127	1001.7	6.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.140	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.695	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: FBLANK 7Q WG573662-01
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.281
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.921
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 13:40:03
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	61031.0	0.7				ug/L	60176	Standard
	Be	9	36594.2	3.2	**50.2545**	1.736	3.5	ug/L	5	Standard
	Al	27	6613287.8	2.3	**49.6387**	1.327	2.7	ug/L	832	Standard
	Sc	45	24596.6	1.9				ug/L	25066	Standard
	Ti	47	19478.9	2.3	**103.3937**	4.517	4.4	ug/L	38	Standard
	V	51	296612.7	2.3	**51.0859**	2.216	4.3	ug/L	974	Standard
	Cr	52	329696.2	2.1	**52.3442**	2.253	4.3	ug/L	5792	Standard
	Cr	53	41729.1	0.9	**52.0173**	1.592	3.1	ug/L	347	Standard
	Mn	55	310317.0	2.6	**49.6295**	2.343	4.7	ug/L	1164	Standard
	Co	59	303689.4	2.7	**51.2154**	2.491	4.9	ug/L	303	Standard
	Ni	60	90715.2	2.4	**51.6193**	2.335	4.5	ug/L	291	Standard
	Cu	65	89623.1	3.1	**51.3920**	2.693	5.2	ug/L	173	Standard
	Zn	66	52311.5	3.1	**51.6008**	2.673	5.2	ug/L	130	Standard
>	Ge	72	478918.3	2.1				ug/L	491724	Standard
	As	75	51909.7	2.4	**50.8415**	2.263	4.5	ug/L	-25	Standard
	Se	82	5184.4	2.6	**51.4278**	2.428	4.7	ug/L	12	Standard
	Se-1	77	3510.4	2.6	**50.3835**	2.410	4.8	ug/L	57	Standard
>	Ga	71	205.0	20.8				mg/L	148	Standard
	Rb	85	766.7	4.6				ug/L	18	Standard
	Y	89	405836.1	1.8				ug/L	401845	Standard
>	Rh	103	35.0	42.9				ug/L	10	Standard
	Mo	98	227649.5	2.0	**96.2656**	2.103	2.2	ug/L	12	Standard
	Ag	107	288372.2	1.1	**49.6724**	0.252	0.5	ug/L	98	Standard
	Cd	111	92130.2	0.9	**49.8016**	0.575	1.2	mg/L	11	Standard
	Cd	114	225554.0	0.3	**50.1162**	0.425	0.8	ug/L	21	Standard
>	In	115	538810.9	0.6				ug/L	547487	Standard
	Sn	118	247773.3	1.9	**48.4123**	1.160	2.4	ug/L	450	Standard
	Sb	123	211050.2	2.3	**50.4816**	1.038	2.1	ug/L	105	Standard
	Ba	135	89213.6	0.7	**49.3244**	0.656	1.3	ug/L	111	Standard
	Ce	140	93.3	16.4				ug/L	107	Standard
>	Tb	159	860595.9	0.4				ug/L	890342	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	362174.3	0.8	**49.8195**	1.053	2.1	ug/L	19	Standard
	Tl	205	305739.0	0.6	**51.2583**	0.985	1.9	ug/L	17	Standard
	Pb	206	230874.7	1.7	**49.3431**	1.266	2.6	ug/L	247	Standard
	Pb	207	208855.0	2.0	**49.1070**	1.530	3.1	ug/L	215	Standard
	Pb	208	795788.6	1.4	**49.9753**	1.375	2.8	ug/L	770	Standard
	U	238	286489.2	0.6	**49.6372**	0.898	1.8	ug/L	13	Standard
>	Bi	209	484221.4	1.4				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3497.1	3.8	**4.8581**	0.197	4.1	mg/L	35	Standard
K	39	931.7	4.0	**4.6234**	0.265	5.7	mg/L	25	Standard
Ca	43	35.0	62.3	**1.6854**	4.328	256.8	mg/L	38	Standard
Fe	54	5344.8	3.0	**5.0352**	0.242	4.8	mg/L	126	Standard
Fe	57	1481.7	2.1	**4.8642**	0.109	2.2	mg/L	245	Standard
Sc-1	45	24596.6	1.9				mg/L	25066	Standard
Cl	35	138959.7	0.4				ug/L	125857	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	1233.4	20.2				ug/L	1350	Standard
P	31	18719.9	0.8				ug/L	18393	Standard
S	34	4417.3	5.9				ug/L	3739	Standard
Sr	88	70.0	32.7				ug/L	78	Standard
C	12	46.7	53.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	-0.6	114.6				mg/L	2	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	1176.7	6.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	100.509		
Al	27	99.277		
Sc	45			
Ti	47	103.394		
V	51	102.172		
Cr	52	104.688		
Cr	53			
Mn	55	99.259		
Co	59	102.431		
Ni	60	103.239		
Cu	65	102.784		
Zn	66	103.202		
Ge	72		97.396	
As	75	101.683		
Se	82	102.856		
Se-1	77			
Ga	71			

Sample ID: QC Std 6
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Rb	85			
Y	89			
> Rh	103			
Mo	98	96.266		
Ag	107	99.345		
Cd	111	99.603		
Cd	114			
> In	115			98.415
Sn	118	96.825		
Sb	123	100.963		
Ba	135	98.649		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.639		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.951		
U	238	99.274		
> Bi	209			96.239
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 21, 2016 13:42:19
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Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 13:43:14
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59649.0	4.4				ug/L	60176	Standard
	Be	9	41.7	69.3	**0.0484**	0.037	76.6	ug/L	5	Standard
	Al	27	4266.0	98.6	**0.0235**	0.030	128.4	ug/L	832	Standard
	Sc	45	24342.9	3.0				ug/L	25066	Standard
	Ti	47	33.3	27.1	**-0.0321**	0.048	148.9	ug/L	38	Standard
	V	51	1086.3	15.0	**0.0151**	0.028	186.7	ug/L	974	Standard
	Cr	52	6084.9	2.7	**0.0304**	0.025	82.0	ug/L	5792	Standard
	Cr	53	316.7	20.3	**-0.0194**	0.077	400.2	ug/L	347	Standard
	Mn	55	1292.4	23.2	**-0.0102**	0.046	450.7	ug/L	1164	Standard
	Co	59	507.7	41.8	**0.0353**	0.035	98.0	ug/L	303	Standard
	Ni	60	317.3	24.7	**-0.0115**	0.043	371.7	ug/L	291	Standard
	Cu	65	214.0	56.1	**0.0236**	0.067	282.9	ug/L	173	Standard
	Zn	66	173.7	20.6	**-0.0653**	0.034	51.4	ug/L	130	Standard
>	**Ge**	72	483753.8	2.3				ug/L	491724	Standard
	As	75	6.9	624.5	**0.0407**	0.041	101.6	ug/L	-25	Standard
	Se	82	18.5	29.1	**0.0893**	0.056	62.8	ug/L	12	Standard
	Se-1	77	55.0	3.6	**0.1421**	0.045	31.6	ug/L	57	Standard
>	**Ga**	71	175.0	10.3				mg/L	148	Standard
	Rb	85	30.0	44.1				ug/L	18	Standard
	Y	89	416072.0	2.1				ug/L	401845	Standard
>	**Rh**	103	28.3	27.0				ug/L	10	Standard
	Mo	98	258.2	21.7	**0.1033**	0.023	21.8	ug/L	12	Standard
	Ag	107	212.0	65.6	**0.0205**	0.023	112.4	ug/L	98	Standard
	Cd	111	49.9	119.2	**0.0217**	0.031	143.8	mg/L	11	Standard
	Cd	114	138.9	94.3	**0.0258**	0.028	109.1	ug/L	21	Standard
>	**In**	115	545536.5	1.5				ug/L	547487	Standard
	Sn	118	786.7	5.1	**0.0781**	0.009	11.7	ug/L	450	Standard
	Sb	123	893.7	15.1	**0.2036**	0.032	15.8	ug/L	105	Standard
	Ba	135	155.0	26.2	**0.0290**	0.021	73.2	ug/L	111	Standard
	Ce	140	46.7	89.9				ug/L	107	Standard
>	**Tb**	159	851423.1	1.4				ug/L	890342	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	204.7	101.3	**0.0248**	0.028	114.4	ug/L	19	Standard
	Tl	205	236.7	112.3	**0.0410**	0.044	108.4	ug/L	17	Standard
	Pb	206	322.0	34.4	**0.0148**	0.023	155.8	ug/L	247	Standard
	Pb	207	278.7	40.6	**0.0143**	0.026	182.5	ug/L	215	Standard
	Pb	208	1396.0	53.4	**0.0288**	0.046	160.2	ug/L	770	Standard
	U	238	214.3	118.3	**0.0365**	0.044	119.9	ug/L	13	Standard
>	**Bi**	209	476880.3	2.0				ug/L	503143	Standard

Sample ID: QC Std 7
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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	25.0	52.9	**-0.0037**	0.018	500.1	mg/L	35	Standard
K	39	18.3	56.8	**-0.0172**	0.057	329.7	mg/L	25	Standard
Ca	43	26.7	47.2	**0.1406**	2.740	1948.1	mg/L	38	Standard
Fe	54	132.6	9.5	**-0.0068**	0.014	206.9	mg/L	126	Standard
Fe	57	211.7	5.5	**-0.2294**	0.073	31.8	mg/L	245	Standard
Sc-1	45	24342.9	3.0				mg/L	25066	Standard
Cl	35	143897.4	0.2				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	1373.4	16.1				ug/L	1350	Standard
P	31	19679.4	1.3				ug/L	18393	Standard
S	34	4449.0	1.1				ug/L	3739	Standard
Sr	88	78.3	19.5				ug/L	78	Standard
C	12	66.7	22.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.3	179.8				mg/L	2	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	23	Standard
I	127	996.7	2.4				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.379	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.644
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.780
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

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Method 6020 - Summary Report

Sample ID: L1606061601
Sample Date/Time: Tuesday, June 21, 2016 15:22:26
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61906.2	1.7				ug/L	60176	Standard
	Be	9	353.3	21.2	**0.4684**	0.095	20.2	ug/L	5	Standard
	Al	27	3358447.2	1.6	**24.8506**	0.581	2.3	ug/L	832	Standard
	Sc	45	24973.9	2.3				ug/L	25066	Standard
	Ti	47	298.0	14.4	**1.3564**	0.221	16.3	ug/L	38	Standard
	V	51	-5189.4	20.1	**-1.0574**	0.187	17.7	ug/L	974	Standard
	Cr	52	703390.4	0.3	**111.3019**	1.587	1.4	ug/L	5792	Standard
	Cr	53	93571.6	3.2	**115.6494**	2.048	1.8	ug/L	347	Standard
	Mn	55	821479.7	1.9	**130.0789**	4.283	3.3	ug/L	1164	Standard
	Co	59	94839.6	1.2	**15.7576**	0.403	2.6	ug/L	303	Standard
	Ni	60	304442.7	1.6	**171.4532**	1.376	0.8	ug/L	291	Standard
	Cu	65	7661.9	1.9	**4.2471**	0.033	0.8	ug/L	173	Standard
	Zn	66	10599.0	2.6	**10.1313**	0.186	1.8	ug/L	130	Standard
>	**Ge**	72	484843.6	1.4				ug/L	491724	Standard
	As	75	570.7	9.1	**0.5858**	0.057	9.7	ug/L	-25	Standard
	Se	82	251.1	0.8	**2.3709**	0.055	2.3	ug/L	12	Standard
	Se-1	77	415.7	8.5	**5.3115**	0.417	7.8	ug/L	57	Standard
>	**Ga**	71	288.3	8.9				mg/L	148	Standard
	Rb	85	2623.6	2.0				ug/L	18	Standard
	Y	89	398713.2	0.8				ug/L	401845	Standard
>	**Rh**	103	56.7	27.0				ug/L	10	Standard
	Mo	98	2419.6	2.5	**1.0703**	0.029	2.7	ug/L	12	Standard
	Ag	107	130.0	2.3	**0.0081**	0.001	10.1	ug/L	98	Standard
	Cd	111	262.1	7.2	**0.1442**	0.012	8.3	mg/L	11	Standard
	Cd	114	609.6	2.6	**0.1378**	0.003	2.4	ug/L	21	Standard
>	**In**	115	513017.2	1.6				ug/L	547487	Standard
	Sn	118	821.7	9.2	**0.0947**	0.014	14.3	ug/L	450	Standard
	Sb	123	733.0	25.0	**0.1761**	0.043	24.6	ug/L	105	Standard
	Ba	135	99016.2	1.6	**57.5032**	0.291	0.5	ug/L	111	Standard
	Ce	140	12887.1	3.7				ug/L	107	Standard
>	**Tb**	159	848478.4	1.1				ug/L	890342	Standard
	Ho	165	410.0	18.2				ug/L	10	Standard
	Tl	203	359.3	6.1	**0.0475**	0.004	8.4	ug/L	19	Standard
	Tl	205	305.0	1.6	**0.0538**	0.002	3.7	ug/L	17	Standard
	Pb	206	880.4	2.3	**0.1394**	0.005	3.8	ug/L	247	Standard
	Pb	207	741.7	1.8	**0.1280**	0.007	5.6	ug/L	215	Standard
	Pb	208	2788.1	1.1	**0.1210**	0.006	4.6	ug/L	770	Standard
	U	238	430.0	8.6	**0.0762**	0.008	10.9	ug/L	13	Standard
>	**Bi**	209	469289.0	2.2				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	44893.1	1.4	**61.8782**	1.088	1.8	mg/L	35	Standard
K	39	80.0	10.8	**0.2875**	0.036	12.5	mg/L	25	Standard
Ca	43	58.3	34.6	**6.1586**	3.723	60.4	mg/L	38	Standard
Fe	54	459.2	2.0	**0.3009**	0.006	1.9	mg/L	126	Standard
Fe	57	306.7	6.6	**0.1228**	0.057	46.4	mg/L	245	Standard
> **Sc-1**	45	24973.9	2.3				mg/L	25066	Standard
Cl	35	156643.7	1.7				ug/L	125857	Standard
Kr	83	2.7	43.3				ug/L	1	Standard
Br	81	58328.8	2.2				ug/L	1350	Standard
P	31	28678.8	2.1				ug/L	18393	Standard
S	34	4364.0	4.4				ug/L	3739	Standard
Sr	88	118.3	19.1				ug/L	78	Standard
C	12	100.0	72.1				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	613.2	2.5				mg/L	2	Standard
Ho-1	165	410.0	18.2				mg/L	10	Standard
Er	166	350.0	12.5				mg/L	23	Standard
I	127	70092.1	5.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.875	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.601	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.704
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.272
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Lower	V	51	
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	

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Mn 55 Upper, S, EEE	Mn	55
Ni 60 Upper, S, EEE	Ni	60

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Method 6020 - Summary Report

Sample ID: L1606061602
Sample Date/Time: Tuesday, June 21, 2016 15:25:38
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62282.9	3.9				ug/L	60176	Standard
	Be	9	13.3	78.1	**0.0089**	0.014	158.6	ug/L	5	Standard
	Al	27	17049432.7	0.9	**125.5063**	3.981	3.2	ug/L	832	Standard
	Sc	45	25169.2	3.4				ug/L	25066	Standard
	Ti	47	807.7	16.8	**4.0608**	0.742	18.3	ug/L	38	Standard
	V	51	2867.2	4.6	**0.3212**	0.020	6.3	ug/L	974	Standard
	Cr	52	13094.0	1.7	**1.1584**	0.021	1.8	ug/L	5792	Standard
	Cr	53	5707.8	16.6	**6.7038**	1.131	16.9	ug/L	347	Standard
	Mn	55	4214750.0	1.0	**671.9640**	7.527	1.1	ug/L	1164	Standard
	Co	59	2363.5	2.5	**0.3468**	0.009	2.6	ug/L	303	Standard
	Ni	60	2095.5	4.7	**0.9976**	0.054	5.4	ug/L	291	Standard
	Cu	65	827.0	5.3	**0.3740**	0.026	7.0	ug/L	173	Standard
	Zn	66	2898.6	2.7	**2.6166**	0.093	3.5	ug/L	130	Standard
>	**Ge**	72	482049.8	0.7				ug/L	491724	Standard
	As	75	2600.5	3.1	**2.5615**	0.093	3.7	ug/L	-25	Standard
	Se	82	880.4	1.9	**8.5951**	0.224	2.6	ug/L	12	Standard
	Se-1	77	853.7	1.5	**11.6729**	0.213	1.8	ug/L	57	Standard
>	**Ga**	71	506.7	6.6				mg/L	148	Standard
	Rb	85	23870.5	3.1				ug/L	18	Standard
	Y	89	394978.3	1.9				ug/L	401845	Standard
>	**Rh**	103	256.7	27.0				ug/L	10	Standard
	Mo	98	1604.0	4.5	**0.7016**	0.035	5.0	ug/L	12	Standard
	Ag	107	79.0	13.3	**-0.0012**	0.002	164.6	ug/L	98	Standard
	Cd	111	16.1	12.6	**0.0044**	0.001	27.5	mg/L	11	Standard
	Cd	114	59.0	10.1	**0.0092**	0.001	13.1	ug/L	21	Standard
>	**In**	115	517707.0	1.4				ug/L	547487	Standard
	Sn	118	2710.2	6.3	**0.4777**	0.029	6.0	ug/L	450	Standard
	Sb	123	297.7	21.5	**0.0665**	0.016	23.7	ug/L	105	Standard
	Ba	135	499345.8	0.5	**287.6104**	2.831	1.0	ug/L	111	Standard
	Ce	140	10685.4	3.5				ug/L	107	Standard
>	**Tb**	159	859857.7	0.6				ug/L	890342	Standard
	Ho	165	171.7	6.7				ug/L	10	Standard
	Tl	203	147.0	7.7	**0.0176**	0.002	10.6	ug/L	19	Standard
	Tl	205	131.7	9.6	**0.0241**	0.002	10.1	ug/L	17	Standard
	Pb	206	806.4	2.2	**0.1255**	0.005	3.9	ug/L	247	Standard
	Pb	207	665.0	1.0	**0.1116**	0.004	3.1	ug/L	215	Standard
	Pb	208	2632.8	1.6	**0.1132**	0.001	0.6	ug/L	770	Standard
	U	238	475.7	3.2	**0.0854**	0.003	3.7	ug/L	13	Standard
>	**Bi**	209	462865.3	1.2				ug/L	503143	Standard

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Na	23	5.0	100.0	**54.7235**	55.001	100.5	mg/L	2	Standard
Mg	24	92887.3	2.9	**127.2146**	7.642	6.0	mg/L	35	Standard
K	39	313.3	13.8	**1.4400**	0.167	11.6	mg/L	25	Standard
Ca	43	165.0	21.9	**27.2389**	8.231	30.2	mg/L	38	Standard
Fe	54	29519.0	1.0	**27.7809**	0.908	3.3	mg/L	126	Standard
Fe	57	8005.4	3.0	**30.3493**	0.303	1.0	mg/L	245	Standard
> **Sc-1**	45	25169.2	3.4				mg/L	25066	Standard
Cl	35	152557.1	2.2				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	221629.9	2.5				ug/L	1350	Standard
P	31	26778.6	1.5				ug/L	18393	Standard
S	34	4655.7	4.3				ug/L	3739	Standard
Sr	88	723.4	3.8				ug/L	78	Standard
C	12	93.3	22.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	0	Standard
Dy	164	336.0	12.3				mg/L	2	Standard
Ho-1	165	171.7	6.7				mg/L	10	Standard
Er	166	153.3	19.9				mg/L	23	Standard
I	127	284517.0	8.4				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.501	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.033	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.561
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.995
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606061604
Sample Date/Time: Tuesday, June 21, 2016 15:28:49
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57020.4	1.0				ug/L	60176	Standard
	Be	9	11.7	24.7	**0.0081**	0.004	51.2	ug/L	5	Standard
	Al	27	1079402.9	2.6	**8.6639**	0.184	2.1	ug/L	832	Standard
	Sc	45	25052.4	2.1				ug/L	25066	Standard
	Ti	47	402.3	58.5	**1.8535**	1.201	64.8	ug/L	38	Standard
	V	51	1463.1	9.7	**0.0731**	0.024	32.4	ug/L	974	Standard
	Cr	52	14139.6	1.7	**1.2608**	0.045	3.6	ug/L	5792	Standard
	Cr	53	2088.5	7.6	**2.1170**	0.178	8.4	ug/L	347	Standard
	Mn	55	835676.7	0.8	**129.2089**	1.084	0.8	ug/L	1164	Standard
	Co	59	3523.1	1.4	**0.5240**	0.006	1.1	ug/L	303	Standard
	Ni	60	4025.9	3.0	**2.0265**	0.074	3.6	ug/L	291	Standard
	Cu	65	706.3	1.2	**0.2935**	0.005	1.8	ug/L	173	Standard
	Zn	66	9224.1	1.2	**8.5777**	0.163	1.9	ug/L	130	Standard
>	**Ge**	72	496394.0	0.7				ug/L	491724	Standard
	As	75	111.7	16.0	**0.1393**	0.017	12.0	ug/L	-25	Standard
	Se	82	53.9	8.6	**0.4236**	0.046	10.9	ug/L	12	Standard
	Se-1	77	90.3	6.8	**0.6163**	0.078	12.7	ug/L	57	Standard
>	**Ga**	71	265.0	3.8				mg/L	148	Standard
	Rb	85	10645.4	6.1				ug/L	18	Standard
	Y	89	419565.3	1.2				ug/L	401845	Standard
>	**Rh**	103	76.7	21.0				ug/L	10	Standard
	Mo	98	94.8	4.8	**0.0348**	0.002	5.0	ug/L	12	Standard
	Ag	107	92.7	8.0	**0.0002**	0.001	504.2	ug/L	98	Standard
	Cd	111	330.1	5.6	**0.1699**	0.010	5.6	mg/L	11	Standard
	Cd	114	763.9	13.9	**0.1615**	0.022	13.6	ug/L	21	Standard
>	**In**	115	550787.3	1.4				ug/L	547487	Standard
	Sn	118	540.0	13.8	**0.0292**	0.013	44.4	ug/L	450	Standard
	Sb	123	257.9	10.5	**0.0527**	0.006	12.1	ug/L	105	Standard
	Ba	135	38973.7	1.1	**21.0479**	0.260	1.2	ug/L	111	Standard
	Ce	140	2586.9	4.8				ug/L	107	Standard
>	**Tb**	159	856869.1	0.8				ug/L	890342	Standard
	Ho	165	58.3	54.4				ug/L	10	Standard
	Tl	203	144.7	17.5	**0.0161**	0.003	20.9	ug/L	19	Standard
	Tl	205	115.0	28.5	**0.0201**	0.005	26.9	ug/L	17	Standard
	Pb	206	457.0	4.6	**0.0419**	0.005	10.8	ug/L	247	Standard
	Pb	207	362.3	5.9	**0.0324**	0.005	16.3	ug/L	215	Standard
	Pb	208	1499.7	3.6	**0.0335**	0.003	9.2	ug/L	770	Standard
	U	238	42.7	10.6	**0.0065**	0.001	11.8	ug/L	13	Standard
>	**Bi**	209	488736.5	0.4				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.7135**	32.404	173.2	mg/L	2	Standard
Mg	24	2508.5	0.8	**3.4105**	0.088	2.6	mg/L	35	Standard
K	39	146.7	2.0	**0.6192**	0.005	0.8	mg/L	25	Standard
Ca	43	36.7	47.9	**1.9276**	3.571	185.3	mg/L	38	Standard
Fe	54	2278.8	4.5	**2.0291**	0.142	7.0	mg/L	126	Standard
Fe	57	766.7	5.8	**1.9335**	0.140	7.2	mg/L	245	Standard
> **Sc-1**	45	25052.4	2.1				mg/L	25066	Standard
Cl	35	147914.5	0.4				ug/L	125857	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	9583.1	14.5				ug/L	1350	Standard
P	31	24017.4	7.0				ug/L	18393	Standard
S	34	4402.3	1.3				ug/L	3739	Standard
Sr	88	115.0	24.2				ug/L	78	Standard
C	12	110.0	15.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	111.3	9.5				mg/L	2	Standard
Ho-1	165	58.3	54.4				mg/L	10	Standard
Er	166	43.3	48.0				mg/L	23	Standard
I	127	122962.9	5.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.756	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.950	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.603
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.137
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606065001
Sample Date/Time: Tuesday, June 21, 2016 15:32:01
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	58737.0	2.5				ug/L	60176	Standard
	Be	9	13.3	78.1	**0.0099**	0.015	148.6	ug/L	5	Standard
	Al	27	20311195.1	0.7	**158.4647**	3.057	1.9	ug/L	832	Standard
	Sc	45	24576.6	0.4				ug/L	25066	Standard
	Ti	47	298.3	18.8	**1.3401**	0.257	19.2	ug/L	38	Standard
	V	51	-26804.6	32.1	**-4.7157**	1.536	32.6	ug/L	974	Standard
	Cr	52	3156638.5	1.5	**497.8823**	3.945	0.8	ug/L	5792	Standard
	Cr	53	406838.5	1.2	**499.5299**	10.508	2.1	ug/L	347	Standard
	Mn	55	3878787.1	0.6	**609.0624**	15.870	2.6	ug/L	1164	Standard
	Co	59	134308.5	1.9	**22.1248**	0.836	3.8	ug/L	303	Standard
	Ni	60	1500074.7	0.8	**837.5062**	11.813	1.4	ug/L	291	Standard
	Cu	65	3294.7	4.2	**1.7525**	0.064	3.7	ug/L	173	Standard
	Zn	66	3534.1	0.8	**3.1886**	0.054	1.7	ug/L	130	Standard
>	Ge	72	489585.9	2.0				ug/L	491724	Standard
	As	75	619.2	16.7	**0.6262**	0.096	15.3	ug/L	-25	Standard
	Se	82	219.8	7.3	**2.0451**	0.198	9.7	ug/L	12	Standard
	Se-1	77	661.7	6.7	**8.7481**	0.445	5.1	ug/L	57	Standard
>	Ga	71	480.0	18.8				mg/L	148	Standard
	Rb	85	7842.0	1.6				ug/L	18	Standard
	Y	89	401986.8	1.4				ug/L	401845	Standard
>	Rh	103	255.0	17.1				ug/L	10	Standard
	Mo	98	3790.0	2.1	**1.6493**	0.037	2.3	ug/L	12	Standard
	Ag	107	91.7	12.6	**0.0009**	0.002	229.9	ug/L	98	Standard
	Cd	111	318.1	9.7	**0.1728**	0.018	10.6	mg/L	11	Standard
	Cd	114	767.4	4.0	**0.1715**	0.006	3.7	ug/L	21	Standard
>	In	115	522178.8	0.8				ug/L	547487	Standard
	Sn	118	655.0	6.0	**0.0582**	0.008	14.0	ug/L	450	Standard
	Sb	123	316.3	5.2	**0.0705**	0.004	6.2	ug/L	105	Standard
	Ba	135	988361.5	1.0	**564.4491**	9.763	1.7	ug/L	111	Standard
	Ce	140	3193.7	1.3				ug/L	107	Standard
>	Tb	159	848147.8	2.2				ug/L	890342	Standard
	Ho	165	61.7	20.4				ug/L	10	Standard
	Tl	203	205.3	8.6	**0.0262**	0.002	9.4	ug/L	19	Standard
	Tl	205	211.7	4.9	**0.0383**	0.002	4.4	ug/L	17	Standard
	Pb	206	552.0	3.0	**0.0694**	0.003	3.8	ug/L	247	Standard
	Pb	207	484.3	2.7	**0.0679**	0.004	6.5	ug/L	215	Standard
	Pb	208	1839.4	3.4	**0.0618**	0.005	8.1	ug/L	770	Standard
	U	238	2510.9	1.9	**0.4572**	0.010	2.2	ug/L	13	Standard
>	Bi	209	459869.7	1.0				ug/L	503143	Standard

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Na	23	5.0	0.0	**56.9736**	0.236	0.4	mg/L	2	Standard
Mg	24	79633.7	1.2	**111.5486**	1.739	1.6	mg/L	35	Standard
K	39	216.7	13.5	**0.9891**	0.148	14.9	mg/L	25	Standard
Ca	43	143.3	11.2	**23.4985**	3.298	14.0	mg/L	38	Standard
Fe	54	8009.6	2.0	**7.6156**	0.141	1.9	mg/L	126	Standard
Fe	57	2330.2	7.0	**8.2796**	0.633	7.6	mg/L	245	Standard
> **Sc-1**	45	24576.6	0.4				mg/L	25066	Standard
Cl	35	147026.1	2.2				ug/L	125857	Standard
Kr	83	3.0	33.3				ug/L	1	Standard
Br	81	52694.8	2.4				ug/L	1350	Standard
P	31	26670.1	1.1				ug/L	18393	Standard
S	34	4514.0	2.6				ug/L	3739	Standard
Sr	88	530.0	12.0				ug/L	78	Standard
C	12	150.0	17.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	69.8	80.1				mg/L	2	Standard
Ho-1	165	61.7	20.4				mg/L	10	Standard
Er	166	73.3	47.9				mg/L	23	Standard
I	127	406278.2	6.2				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		97.609	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.565	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.377
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	91.399
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
V 51 Lower	V	51	
Cr 52 Upper, S, EEE	Cr	52	

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Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Ni 60 Upper, S, EEE	Ni	60
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606065002
Sample Date/Time: Tuesday, June 21, 2016 15:35:12
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60596.0	1.9				ug/L	60176	Standard
	Be	9	13.3	21.7	**0.0094**	0.004	40.0	ug/L	5	Standard
	Al	27	8739182.4	2.0	**66.0672**	0.799	1.2	ug/L	832	Standard
	Sc	45	26192.6	2.2				ug/L	25066	Standard
	Ti	47	278.7	7.4	**1.2062**	0.081	6.7	ug/L	38	Standard
	V	51	739.9	19.6	**-0.0487**	0.023	48.1	ug/L	974	Standard
	Cr	52	22061.4	0.9	**2.4614**	0.056	2.3	ug/L	5792	Standard
	Cr	53	7727.0	4.4	**8.8615**	0.540	6.1	ug/L	347	Standard
	Mn	55	1194045.7	2.0	**182.8701**	3.213	1.8	ug/L	1164	Standard
	Co	59	2942.3	2.7	**0.4247**	0.011	2.5	ug/L	303	Standard
	Ni	60	3788.5	1.5	**1.8749**	0.030	1.6	ug/L	291	Standard
	Cu	65	823.4	3.2	**0.3537**	0.007	2.1	ug/L	173	Standard
	Zn	66	2433.2	2.0	**2.0660**	0.023	1.1	ug/L	130	Standard
>	**Ge**	72	501409.8	1.7				ug/L	491724	Standard
	As	75	283.2	37.7	**0.2992**	0.102	34.0	ug/L	-25	Standard
	Se	82	131.4	7.4	**1.1550**	0.115	9.9	ug/L	12	Standard
	Se-1	77	578.0	3.8	**7.3693**	0.169	2.3	ug/L	57	Standard
>	**Ga**	71	285.0	6.3				mg/L	148	Standard
	Rb	85	8877.6	3.1				ug/L	18	Standard
	Y	89	394026.5	1.2				ug/L	401845	Standard
>	**Rh**	103	161.7	9.4				ug/L	10	Standard
	Mo	98	195.9	2.8	**0.0813**	0.003	4.3	ug/L	12	Standard
	Ag	107	96.7	5.1	**0.0018**	0.001	33.2	ug/L	98	Standard
	Cd	111	123.0	9.0	**0.0640**	0.005	8.5	mg/L	11	Standard
	Cd	114	254.1	11.5	**0.0540**	0.007	13.5	ug/L	21	Standard
>	**In**	115	520782.3	1.6				ug/L	547487	Standard
	Sn	118	470.0	9.1	**0.0211**	0.009	42.4	ug/L	450	Standard
	Sb	123	310.6	7.2	**0.0693**	0.007	9.8	ug/L	105	Standard
	Ba	135	314668.7	2.2	**180.1229**	1.150	0.6	ug/L	111	Standard
	Ce	140	4312.3	4.3				ug/L	107	Standard
>	**Tb**	159	863525.5	2.8				ug/L	890342	Standard
	Ho	165	90.0	9.6				ug/L	10	Standard
	Tl	203	216.7	3.1	**0.0269**	0.001	4.8	ug/L	19	Standard
	Tl	205	188.3	12.5	**0.0332**	0.005	14.2	ug/L	17	Standard
	Pb	206	400.0	2.1	**0.0323**	0.001	2.6	ug/L	247	Standard
	Pb	207	353.7	7.0	**0.0327**	0.004	13.3	ug/L	215	Standard
	Pb	208	1312.0	2.8	**0.0243**	0.004	16.7	ug/L	770	Standard
	U	238	1391.1	5.3	**0.2449**	0.008	3.4	ug/L	13	Standard
>	**Bi**	209	474675.7	2.0				ug/L	503143	Standard

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Na	23	5.0	100.0	**54.0687**	53.938	99.8	mg/L	2	Standard
Mg	24	62982.4	3.0	**82.7804**	2.551	3.1	mg/L	35	Standard
K	39	133.3	17.7	**0.5224**	0.099	18.9	mg/L	25	Standard
Ca	43	83.3	24.2	**10.4165**	3.976	38.2	mg/L	38	Standard
Fe	54	266.1	10.7	**0.1052**	0.027	25.7	mg/L	126	Standard
Fe	57	355.0	11.2	**0.2514**	0.173	69.0	mg/L	245	Standard
> **Sc-1**	45	26192.6	2.2				mg/L	25066	Standard
Cl	35	150054.1	0.8				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	29669.0	1.2				ug/L	1350	Standard
P	31	28545.2	2.4				ug/L	18393	Standard
S	34	4138.9	4.6				ug/L	3739	Standard
Sr	88	250.0	10.6				ug/L	78	Standard
C	12	156.7	19.5				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	133.3	30.3				mg/L	2	Standard
Ho-1	165	90.0	9.6				mg/L	10	Standard
Er	166	70.0	0.0				mg/L	23	Standard
I	127	661507.8	3.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.698	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.970	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.122
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.342
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606065003
Sample Date/Time: Tuesday, June 21, 2016 15:38:23
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63387.4	2.8				ug/L	60176	Standard
	Be	9	70.0	18.9	**0.0835**	0.017	20.0	ug/L	5	Standard
	Al	27	5157375.6	0.9	**37.2814**	0.808	2.2	ug/L	832	Standard
	Sc	45	26581.6	2.7				ug/L	25066	Standard
	Ti	47	1387.7	9.4	**6.8983**	0.595	8.6	ug/L	38	Standard
	V	51	-9213.7	17.6	**-1.7068**	0.290	17.0	ug/L	974	Standard
	Cr	52	1335310.3	0.9	**206.9695**	2.043	1.0	ug/L	5792	Standard
	Cr	53	177419.5	1.4	**214.3688**	2.599	1.2	ug/L	347	Standard
	Mn	55	997073.2	0.3	**154.0720**	2.167	1.4	ug/L	1164	Standard
	Co	59	16548.7	1.0	**2.6420**	0.067	2.5	ug/L	303	Standard
	Ni	60	80673.3	2.0	**44.1887**	0.256	0.6	ug/L	291	Standard
	Cu	65	12419.1	2.2	**6.7740**	0.077	1.1	ug/L	173	Standard
	Zn	66	5844.5	1.7	**5.3426**	0.029	0.5	ug/L	130	Standard
>	**Ge**	72	496879.0	1.5				ug/L	491724	Standard
	As	75	1809.6	8.9	**1.7401**	0.151	8.7	ug/L	-25	Standard
	Se	82	252.2	9.4	**2.3215**	0.229	9.8	ug/L	12	Standard
	Se-1	77	378.7	3.2	**4.6535**	0.175	3.8	ug/L	57	Standard
>	**Ga**	71	746.7	6.2				mg/L	148	Standard
	Rb	85	13919.7	1.1				ug/L	18	Standard
	Y	89	410755.2	2.3				ug/L	401845	Standard
>	**Rh**	103	111.7	5.2				ug/L	10	Standard
	Mo	98	5865.4	1.5	**2.4053**	0.027	1.1	ug/L	12	Standard
	Ag	107	135.7	10.3	**0.0074**	0.003	38.1	ug/L	98	Standard
	Cd	111	1056.6	4.0	**0.5506**	0.033	6.0	mg/L	11	Standard
	Cd	114	2556.7	1.3	**0.5477**	0.019	3.4	ug/L	21	Standard
>	**In**	115	554660.2	2.1				ug/L	547487	Standard
	Sn	118	1000.0	6.5	**0.1161**	0.012	10.2	ug/L	450	Standard
	Sb	123	402.1	12.9	**0.0857**	0.010	11.9	ug/L	105	Standard
	Ba	135	110239.6	0.8	**59.2270**	0.804	1.4	ug/L	111	Standard
	Ce	140	24279.4	2.4				ug/L	107	Standard
>	**Tb**	159	911640.4	0.6				ug/L	890342	Standard
	Ho	165	350.0	16.5				ug/L	10	Standard
	Tl	203	434.7	1.5	**0.0538**	0.001	1.7	ug/L	19	Standard
	Tl	205	305.0	7.5	**0.0500**	0.004	7.0	ug/L	17	Standard
	Pb	206	4440.3	0.9	**0.8568**	0.008	1.0	ug/L	247	Standard
	Pb	207	3810.8	1.1	**0.8086**	0.012	1.4	ug/L	215	Standard
	Pb	208	15060.6	1.4	**0.8488**	0.012	1.4	ug/L	770	Standard
	U	238	450.7	0.8	**0.0741**	0.001	0.7	ug/L	13	Standard
>	**Bi**	209	504464.9	0.3				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	31947.0	1.0	**41.3748**	1.485	3.6	mg/L	35	Standard
K	39	130.0	21.4	**0.4999**	0.137	27.3	mg/L	25	Standard
Ca	43	60.0		**5.8324**	0.297	5.1	mg/L	38	Standard
Fe	54	4403.4	0.3	**3.8059**	0.116	3.0	mg/L	126	Standard
Fe	57	1286.7	20.4	**3.6876**	0.933	25.3	mg/L	245	Standard
> **Sc-1**	45	26581.6	2.7				mg/L	25066	Standard
Cl	35	147975.1	1.2				ug/L	125857	Standard
Kr	83	2.7	43.3				ug/L	1	Standard
Br	81	55598.5	2.9				ug/L	1350	Standard
P	31	23972.3	2.6				ug/L	18393	Standard
S	34	4225.6	2.4				ug/L	3739	Standard
Sr	88	170.0	19.3				ug/L	78	Standard
C	12	100.0	10.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	656.9	13.7				mg/L	2	Standard
Ho-1	165	350.0	16.5				mg/L	10	Standard
Er	166	343.3	11.0				mg/L	23	Standard
I	127	145460.0	1.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.337	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.048	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.310	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.263	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Lower	V	51	
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	

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Mn 55 Upper, S, EEE	Mn	55

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Method 6020 - Summary Report

Sample ID: L1606065008
Sample Date/Time: Tuesday, June 21, 2016 15:41:35
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63802.5	2.9				ug/L	60176	Standard
	Be	9	36.7	28.4	**0.0391**	0.013	34.5	ug/L	5	Standard
	Al	27	2078545.0	1.4	**14.9291**	0.633	4.2	ug/L	832	Standard
	Sc	45	25579.9	3.4				ug/L	25066	Standard
	Ti	47	845.0	4.5	**4.1986**	0.233	5.6	ug/L	38	Standard
	V	51	3095.5	13.9	**0.3533**	0.071	20.0	ug/L	974	Standard
	Cr	52	11042.0	0.8	**0.8065**	0.028	3.5	ug/L	5792	Standard
	Cr	53	4624.0	3.3	**5.2817**	0.152	2.9	ug/L	347	Standard
	Mn	55	1458217.0	0.5	**229.3462**	1.807	0.8	ug/L	1164	Standard
	Co	59	5268.2	0.6	**0.8223**	0.014	1.7	ug/L	303	Standard
	Ni	60	16880.1	0.7	**9.2581**	0.054	0.6	ug/L	291	Standard
	Cu	65	1985.8	3.0	**1.0205**	0.041	4.0	ug/L	173	Standard
	Zn	66	32937.1	1.1	**31.7490**	0.128	0.4	ug/L	130	Standard
>	**Ge**	72	488364.0	1.2				ug/L	491724	Standard
	As	75	999.3	3.7	**0.9925**	0.031	3.1	ug/L	-25	Standard
	Se	82	345.9	2.6	**3.2758**	0.047	1.4	ug/L	12	Standard
	Se-1	77	334.7	3.8	**4.1184**	0.171	4.1	ug/L	57	Standard
>	**Ga**	71	493.3	14.2				mg/L	148	Standard
	Rb	85	9207.8	3.6				ug/L	18	Standard
	Y	89	437252.9	0.3				ug/L	401845	Standard
>	**Rh**	103	80.0	18.8				ug/L	10	Standard
	Mo	98	268.9	2.1	**0.1055**	0.004	3.8	ug/L	12	Standard
	Ag	107	76.3	10.0	**-0.0027**	0.001	41.6	ug/L	98	Standard
	Cd	111	118.8	3.8	**0.0574**	0.003	4.7	mg/L	11	Standard
	Cd	114	286.1	7.3	**0.0571**	0.005	9.4	ug/L	21	Standard
>	**In**	115	557575.9	1.6				ug/L	547487	Standard
	Sn	118	580.0	4.0	**0.0356**	0.003	9.3	ug/L	450	Standard
	Sb	123	413.5	12.2	**0.0880**	0.012	14.2	ug/L	105	Standard
	Ba	135	72473.6	0.8	**38.7111**	0.451	1.2	ug/L	111	Standard
	Ce	140	27496.6	2.4				ug/L	107	Standard
>	**Tb**	159	890154.3	0.6				ug/L	890342	Standard
	Ho	165	563.3	4.6				ug/L	10	Standard
	Tl	203	194.0	10.1	**0.0231**	0.003	13.1	ug/L	19	Standard
	Tl	205	155.0	11.6	**0.0269**	0.003	10.3	ug/L	17	Standard
	Pb	206	503.3	4.6	**0.0525**	0.006	12.2	ug/L	247	Standard
	Pb	207	451.7	4.0	**0.0538**	0.003	6.1	ug/L	215	Standard
	Pb	208	1721.0	1.3	**0.0480**	0.002	3.9	ug/L	770	Standard
	U	238	216.3	8.8	**0.0365**	0.003	7.7	ug/L	13	Standard
>	**Bi**	209	485551.6	1.6				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.8740**	30.950	173.2	mg/L	2	Standard
Mg	24	34632.9	0.6	**46.6189**	1.523	3.3	mg/L	35	Standard
K	39	138.3	25.6	**0.5602**	0.155	27.6	mg/L	25	Standard
Ca	43	65.0	13.3	**7.2572**	1.904	26.2	mg/L	38	Standard
Fe	54	279.3	17.0	**0.1243**	0.053	42.6	mg/L	126	Standard
Fe	57	271.7	11.8	**-0.0378**	0.151	397.7	mg/L	245	Standard
> **Sc-1**	45	25579.9	3.4				mg/L	25066	Standard
Cl	35	178666.6	0.8				ug/L	125857	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	80231.9	1.9				ug/L	1350	Standard
P	31	24055.7	0.9				ug/L	18393	Standard
S	34	3798.8	4.0				ug/L	3739	Standard
Sr	88	145.0	11.9				ug/L	78	Standard
C	12	176.7	22.9				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	130.0	23.1				mg/L	0	Standard
Dy	164	829.7	17.8				mg/L	2	Standard
Ho-1	165	563.3	4.6				mg/L	10	Standard
Er	166	563.3	12.6				mg/L	23	Standard
I	127	75514.5	3.5				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.027	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.317	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.843	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.504	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606072902
Sample Date/Time: Tuesday, June 21, 2016 15:44:46
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61000.9	2.3				ug/L	60176	Standard
	Be	9	48.3	31.6	**0.0571**	0.019	34.0	ug/L	5	Standard
	Al	27	1265197.3	0.4	**9.4968**	0.215	2.3	ug/L	832	Standard
	Sc	45	24843.7	5.1				ug/L	25066	Standard
	Ti	47	295.0	39.1	**1.2721**	0.610	48.0	ug/L	38	Standard
	V	51	1662.0	6.7	**0.0984**	0.013	12.9	ug/L	974	Standard
	Cr	52	9640.7	1.5	**0.5183**	0.014	2.7	ug/L	5792	Standard
	Cr	53	1788.4	7.9	**1.6929**	0.129	7.6	ug/L	347	Standard
	Mn	55	269286.4	1.8	**40.3553**	1.271	3.2	ug/L	1164	Standard
	Co	59	7695.6	2.0	**1.1688**	0.020	1.7	ug/L	303	Standard
	Ni	60	3736.8	1.2	**1.8110**	0.042	2.3	ug/L	291	Standard
	Cu	65	1102.4	3.8	**0.4960**	0.012	2.4	ug/L	173	Standard
	Zn	66	5766.8	0.8	**5.1234**	0.095	1.8	ug/L	130	Standard
>	**Ge**	72	510457.8	2.2				ug/L	491724	Standard
	As	75	81.7	14.6	**0.1091**	0.013	11.6	ug/L	-25	Standard
	Se	82	51.2	4.3	**0.3844**	0.013	3.3	ug/L	12	Standard
	Se-1	77	109.3	5.0	**0.8419**	0.100	11.9	ug/L	57	Standard
>	**Ga**	71	216.7	17.3				mg/L	148	Standard
	Rb	85	27894.0	1.5				ug/L	18	Standard
	Y	89	417086.1	2.1				ug/L	401845	Standard
>	**Rh**	103	31.7	24.1				ug/L	10	Standard
	Mo	98	60.3	14.2	**0.0209**	0.003	16.1	ug/L	12	Standard
	Ag	107	152.7	9.2	**0.0108**	0.003	25.1	ug/L	98	Standard
	Cd	111	73.5	21.7	**0.0349**	0.009	26.3	mg/L	11	Standard
	Cd	114	176.5	11.5	**0.0346**	0.004	11.6	ug/L	21	Standard
>	**In**	115	541515.1	1.4				ug/L	547487	Standard
	Sn	118	1061.7	1.2	**0.1327**	0.005	4.0	ug/L	450	Standard
	Sb	123	145.5	4.3	**0.0270**	0.002	7.3	ug/L	105	Standard
	Ba	135	64548.3	2.6	**35.5016**	1.269	3.6	ug/L	111	Standard
	Ce	140	11564.4	2.1				ug/L	107	Standard
>	**Tb**	159	870646.6	1.9				ug/L	890342	Standard
	Ho	165	225.0	10.2				ug/L	10	Standard
	Tl	203	276.7	4.4	**0.0339**	0.001	3.4	ug/L	19	Standard
	Tl	205	246.7	10.4	**0.0416**	0.004	8.7	ug/L	17	Standard
	Pb	206	518.0	0.8	**0.0540**	0.002	3.0	ug/L	247	Standard
	Pb	207	451.0	6.3	**0.0522**	0.006	10.7	ug/L	215	Standard
	Pb	208	1790.0	3.5	**0.0508**	0.006	11.7	ug/L	770	Standard
	U	238	117.7	5.0	**0.0192**	0.001	3.2	ug/L	13	Standard
>	**Bi**	209	492368.0	1.9				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	2613.6	7.0	**3.5946**	0.386	10.7	mg/L	35	Standard
K	39	313.3	2.4	**1.4668**	0.102	6.9	mg/L	25	Standard
Ca	43	40.0	12.5	**2.6700**	1.367	51.2	mg/L	38	Standard
Fe	54	172.6	19.4	**0.0297**	0.037	125.0	mg/L	126	Standard
Fe	57	250.0	16.4	**-0.0882**	0.218	247.4	mg/L	245	Standard
> **Sc-1**	45	24843.7	5.1				mg/L	25066	Standard
Cl	35	141007.2	1.2				ug/L	125857	Standard
Kr	83	3.7	68.6				ug/L	1	Standard
Br	81	8976.0	3.5				ug/L	1350	Standard
P	31	21415.1	1.0				ug/L	18393	Standard
S	34	3635.4	3.8				ug/L	3739	Standard
Sr	88	86.7	23.3				ug/L	78	Standard
C	12	93.3	55.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	321.7	9.0				mg/L	2	Standard
Ho-1	165	225.0	10.2				mg/L	10	Standard
Er	166	173.3	13.3				mg/L	23	Standard
I	127	27626.9	6.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.371	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.810	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.909
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.859
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606072903
Sample Date/Time: Tuesday, June 21, 2016 15:47:58
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65829.4	1.7				ug/L	60176	Standard
	Be	9	1091.7	7.9	**1.3819**	0.122	8.9	ug/L	5	Standard
	Al	27	9658460.6	2.5	**67.2033**	0.573	0.9	ug/L	832	Standard
	Sc	45	26962.3	1.0				ug/L	25066	Standard
	Ti	47	1161.4	44.0	**5.6242**	2.574	45.8	ug/L	38	Standard
	V	51	2955.0	3.3	**0.3108**	0.013	4.1	ug/L	974	Standard
	Cr	52	10847.2	2.6	**0.7108**	0.049	6.9	ug/L	5792	Standard
	Cr	53	1273.4	6.0	**1.0957**	0.073	6.6	ug/L	347	Standard
	Mn	55	2432059.6	0.8	**368.2427**	6.764	1.8	ug/L	1164	Standard
	Co	59	153183.5	0.7	**24.3375**	0.235	1.0	ug/L	303	Standard
	Ni	60	19503.2	0.5	**10.3155**	0.174	1.7	ug/L	291	Standard
	Cu	65	6676.5	1.4	**3.5201**	0.098	2.8	ug/L	173	Standard
	Zn	66	32319.1	1.0	**29.9680**	0.510	1.7	ug/L	130	Standard
>	**Ge**	72	507509.6	1.3				ug/L	491724	Standard
	As	75	65.2	90.0	**0.0946**	0.055	58.4	ug/L	-25	Standard
	Se	82	67.0	5.6	**0.5352**	0.041	7.6	ug/L	12	Standard
	Se-1	77	128.3	9.7	**1.1086**	0.151	13.6	ug/L	57	Standard
>	**Ga**	71	1310.1	5.3				mg/L	148	Standard
	Rb	85	17616.9	2.0				ug/L	18	Standard
	Y	89	727532.8	1.3				ug/L	401845	Standard
>	**Rh**	103	103.3	14.8				ug/L	10	Standard
	Mo	98	67.1	4.9	**0.0233**	0.001	5.8	ug/L	12	Standard
	Ag	107	109.7	4.3	**0.0031**	0.001	41.1	ug/L	98	Standard
	Cd	111	313.2	8.9	**0.1612**	0.018	11.3	mg/L	11	Standard
	Cd	114	738.1	10.6	**0.1561**	0.018	11.8	ug/L	21	Standard
>	**In**	115	550912.0	2.6				ug/L	547487	Standard
	Sn	118	630.0	11.0	**0.0468**	0.016	34.7	ug/L	450	Standard
	Sb	123	137.7	12.6	**0.0246**	0.003	13.1	ug/L	105	Standard
	Ba	135	39985.4	1.7	**21.5966**	0.536	2.5	ug/L	111	Standard
	Ce	140	1423873.1	0.8				ug/L	107	Standard
>	**Tb**	159	928141.2	1.7				ug/L	890342	Standard
	Ho	165	28324.8	1.1				ug/L	10	Standard
	Tl	203	290.7	5.4	**0.0344**	0.003	9.6	ug/L	19	Standard
	Tl	205	235.0	16.9	**0.0383**	0.006	14.9	ug/L	17	Standard
	Pb	206	5921.8	0.5	**1.1479**	0.039	3.4	ug/L	247	Standard
	Pb	207	4990.2	2.0	**1.0630**	0.048	4.5	ug/L	215	Standard
	Pb	208	19749.1	0.7	**1.1186**	0.030	2.7	ug/L	770	Standard
	U	238	2317.5	1.8	**0.3802**	0.005	1.4	ug/L	13	Standard
>	**Bi**	209	510317.8	3.2				ug/L	503143	Standard

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Na	23	5.0	100.0	**52.2757**	52.372	100.2	mg/L	2	Standard
Mg	24	2030.1	7.1	**2.5548**	0.200	7.8	mg/L	35	Standard
K	39	193.3	15.2	**0.7833**	0.132	16.9	mg/L	25	Standard
Ca	43	171.7	8.9	**26.1296**	2.684	10.3	mg/L	38	Standard
Fe	54	1645.5	6.5	**1.3153**	0.096	7.3	mg/L	126	Standard
Fe	57	753.4	12.5	**1.6728**	0.365	21.8	mg/L	245	Standard
> **Sc-1**	45	26962.3	1.0				mg/L	25066	Standard
Cl	35	255018.3	0.9				ug/L	125857	Standard
Kr	83	1.0	0.0				ug/L	1	Standard
Br	81	5220.9	5.0				ug/L	1350	Standard
P	31	21920.9	3.7				ug/L	18393	Standard
S	34	3950.5	6.9				ug/L	3739	Standard
Sr	88	301.7	3.8				ug/L	78	Standard
C	12	83.3	38.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	47352.9	1.1				mg/L	2	Standard
Ho-1	165	28324.8	1.1				mg/L	10	Standard
Er	166	25150.9	2.3				mg/L	23	Standard
I	127	224463.3	10.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.395	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.210	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.626
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.426
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606073001
Sample Date/Time: Tuesday, June 21, 2016 15:51:09
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73917.0	6.1				ug/L	60176	Standard
	Be	9	16.7	45.8	**0.0097**	0.008	79.3	ug/L	5	Standard
	Al	27	5652423.5	6.3	**35.0242**	0.471	1.3	ug/L	832	Standard
	Sc	45	24773.6	1.2				ug/L	25066	Standard
	Ti	47	116.3	10.9	**0.4405**	0.086	19.6	ug/L	38	Standard
	V	51	15193.9	3.1	**2.5748**	0.099	3.8	ug/L	974	Standard
	Cr	52	199468.5	0.9	**32.7681**	0.651	2.0	ug/L	5792	Standard
	Cr	53	29413.5	3.2	**38.2606**	2.147	5.6	ug/L	347	Standard
	Mn	55	16906.8	3.1	**2.6231**	0.046	1.8	ug/L	1164	Standard
	Co	59	8261.3	2.1	**1.4084**	0.013	0.9	ug/L	303	Standard
	Ni	60	7629.3	4.1	**4.3628**	0.068	1.6	ug/L	291	Standard
	Cu	65	2854.9	2.0	**1.6169**	0.031	1.9	ug/L	173	Standard
	Zn	66	2209.5	2.4	**2.0537**	0.064	3.1	ug/L	130	Standard
>	**Ge**	72	457885.1	2.6				ug/L	491724	Standard
	As	75	2538.0	5.5	**2.6341**	0.209	8.0	ug/L	-25	Standard
	Se	82	858.9	4.6	**8.8399**	0.642	7.3	ug/L	12	Standard
	Se-1	77	1191.0	2.5	**17.4647**	0.920	5.3	ug/L	57	Standard
>	**Ga**	71	1676.8	5.5				mg/L	148	Standard
	Rb	85	226016.7	0.7				ug/L	18	Standard
	Y	89	390113.6	0.9				ug/L	401845	Standard
>	**Rh**	103	3238.7	1.2				ug/L	10	Standard
	Mo	98	4439.9	1.2	**1.9618**	0.048	2.5	ug/L	12	Standard
	Ag	107	114.0	9.8	**0.0052**	0.002	36.0	ug/L	98	Standard
	Cd	111	49.0	20.1	**0.0230**	0.005	23.8	mg/L	11	Standard
	Cd	114	113.7	9.0	**0.0220**	0.002	11.3	ug/L	21	Standard
>	**In**	115	514604.2	1.3				ug/L	547487	Standard
	Sn	118	1230.1	8.0	**0.1780**	0.020	11.1	ug/L	450	Standard
	Sb	123	498.9	3.3	**0.1174**	0.004	3.7	ug/L	105	Standard
	Ba	135	1735936.7	1.5	**1005.9141**	2.820	0.3	ug/L	111	Standard
	Ce	140	845.0	14.5				ug/L	107	Standard
>	**Tb**	159	860331.0	2.6				ug/L	890342	Standard
	Ho	165	16.7	17.3				ug/L	10	Standard
	Tl	203	237.3	4.9	**0.0323**	0.002	6.7	ug/L	19	Standard
	Tl	205	226.7	26.3	**0.0425**	0.010	22.8	ug/L	17	Standard
	Pb	206	559.7	1.7	**0.0765**	0.002	3.2	ug/L	247	Standard
	Pb	207	477.3	6.9	**0.0710**	0.005	6.3	ug/L	215	Standard
	Pb	208	1797.7	2.6	**0.0642**	0.006	8.9	ug/L	770	Standard
	U	238	256.3	4.6	**0.0480**	0.003	7.3	ug/L	13	Standard
>	**Bi**	209	441187.4	3.3				ug/L	503143	Standard

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Na	23	6.7	114.6	**75.7212**	86.562	114.3	mg/L	2	Standard
Mg	24	90539.7	1.2	**125.8278**	2.144	1.7	mg/L	35	Standard
K	39	2236.8	7.2	**11.1766**	0.942	8.4	mg/L	25	Standard
Ca	43	748.4	12.6	**144.1070**	20.471	14.2	mg/L	38	Standard
Fe	54	142.0	15.6	**-0.0001**	0.022	16866.3	mg/L	126	Standard
Fe	57	1348.4	5.7	**4.2895**	0.312	7.3	mg/L	245	Standard
> **Sc-1**	45	24773.6	1.2				mg/L	25066	Standard
Cl	35	159146.8	0.8				ug/L	125857	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	209975.2	1.8				ug/L	1350	Standard
P	31	20949.5	2.8				ug/L	18393	Standard
S	34	4584.0	1.1				ug/L	3739	Standard
Sr	88	10782.2	5.2				ug/L	78	Standard
C	12	116.7	32.5				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	5.4	219.6				mg/L	2	Standard
Ho-1	165	16.7	17.3				mg/L	10	Standard
Er	166	26.7	43.3				mg/L	23	Standard
I	127	166779.4	5.0				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		122.835	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.118	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.994
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.686
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 15:54:22
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59968.5	1.3				ug/L	60176	Standard
	Be	9	36398.7	0.5	**50.8713**	0.403	0.8	ug/L	5	Standard
	Al	27	6548192.3	1.8	**50.0297**	1.523	3.0	ug/L	832	Standard
	Sc	45	25387.9	1.8				ug/L	25066	Standard
	Ti	47	20514.5	1.9	**104.3164**	2.213	2.1	ug/L	38	Standard
	V	51	309165.3	1.8	**51.0062**	0.680	1.3	ug/L	974	Standard
	Cr	52	340251.9	0.9	**51.7368**	0.210	0.4	ug/L	5792	Standard
	Cr	53	43082.8	0.7	**51.4506**	0.301	0.6	ug/L	347	Standard
	Mn	55	327886.5	1.7	**50.2320**	0.671	1.3	ug/L	1164	Standard
	Co	59	311341.2	1.1	**50.2912**	0.234	0.5	ug/L	303	Standard
	Ni	60	95005.0	1.3	**51.7832**	0.285	0.6	ug/L	291	Standard
	Cu	65	94085.6	1.9	**51.6732**	0.769	1.5	ug/L	173	Standard
	Zn	66	54162.3	1.8	**51.1699**	0.730	1.4	ug/L	130	Standard
>	Ge	72	499656.0	0.8				ug/L	491724	Standard
	As	75	53793.1	1.5	**50.4679**	0.579	1.1	ug/L	-25	Standard
	Se	82	5297.2	1.4	**50.3360**	1.022	2.0	ug/L	12	Standard
	Se-1	77	3753.1	2.9	**51.6078**	1.108	2.1	ug/L	57	Standard
>	Ga	71	116.7	31.0				mg/L	148	Standard
	Rb	85	846.7	4.4				ug/L	18	Standard
	Y	89	409237.0	1.3				ug/L	401845	Standard
>	Rh	103	43.3	24.0				ug/L	10	Standard
	Mo	98	236019.2	1.3	**98.9883**	1.916	1.9	ug/L	12	Standard
	Ag	107	301027.0	0.2	**51.4292**	0.425	0.8	ug/L	98	Standard
	Cd	111	95327.7	1.4	**51.1098**	1.090	2.1	mg/L	11	Standard
	Cd	114	232932.5	0.7	**51.3315**	0.699	1.4	ug/L	21	Standard
>	In	115	543279.3	0.7				ug/L	547487	Standard
	Sn	118	259515.7	1.7	**50.2935**	1.187	2.4	ug/L	450	Standard
	Sb	123	214686.9	1.2	**50.9350**	0.980	1.9	ug/L	105	Standard
	Ba	135	92608.2	0.1	**50.7811**	0.422	0.8	ug/L	111	Standard
	Ce	140	138.3	43.1				ug/L	107	Standard
>	Tb	159	879645.1	1.9				ug/L	890342	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	374242.2	0.3	**50.5043**	0.815	1.6	ug/L	19	Standard
	Tl	205	312151.2	0.8	**51.3434**	0.975	1.9	ug/L	17	Standard
	Pb	206	237883.3	0.7	**49.8803**	1.009	2.0	ug/L	247	Standard
	Pb	207	215064.7	1.2	**49.6101**	1.233	2.5	ug/L	215	Standard
	Pb	208	825294.1	0.6	**50.8408**	0.434	0.9	ug/L	770	Standard
	U	238	298401.1	0.3	**50.7212**	0.598	1.2	ug/L	13	Standard
>	Bi	209	493553.5	1.4				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3700.5	3.6	**4.9819**	0.214	4.3	mg/L	35	Standard
K	39	1016.7	7.6	**4.8957**	0.446	9.1	mg/L	25	Standard
Ca	43	56.7	13.5	**5.6936**	1.352	23.7	mg/L	38	Standard
Fe	54	5409.1	1.3	**4.9332**	0.148	3.0	mg/L	126	Standard
Fe	57	1620.1	7.8	**5.2229**	0.583	11.2	mg/L	245	Standard
> **Sc-1**	45	25387.9	1.8				mg/L	25066	Standard
Cl	35	151052.7	1.4				ug/L	125857	Standard
Kr	83	2.3	137.8				ug/L	1	Standard
Br	81	3390.4	24.1				ug/L	1350	Standard
P	31	21366.7	3.1				ug/L	18393	Standard
S	34	5074.2	4.4				ug/L	3739	Standard
Sr	88	91.7	22.0				ug/L	78	Standard
C	12	80.0	33.1				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.2	96.3				mg/L	2	Standard
Ho-1	165	8.3	34.6				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	8529.2	32.6				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	101.743		
	Al	27	100.059		
	Sc	45			
	Ti	47	104.316		
	V	51	102.012		
	Cr	52	103.474		
	Cr	53			
	Mn	55	100.464		
	Co	59	100.582		
	Ni	60	103.566		
	Cu	65	103.346		
	Zn	66	102.340		
>	Ge	72		101.613	
	As	75	100.936		
	Se	82	100.672		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	98.988		
Ag	107	102.858		
Cd	111	102.220		
Cd	114			
In	115			99.232
Sn	118	100.587		
Sb	123	101.870		
Ba	135	101.562		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.009		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.682		
U	238	101.442		
Bi	209			98.094
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 15:57:34
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59362.8	1.8				ug/L	60176	Standard
	Be	9	21.7	93.3	**0.0213**	0.028	130.6	ug/L	5	Standard
	Al	27	10005.1	126.3	**0.0677**	0.095	140.7	ug/L	832	Standard
	Sc	45	25473.1	2.6				ug/L	25066	Standard
	Ti	47	37.3	36.4	**-0.0109**	0.069	630.7	ug/L	38	Standard
	V	51	1039.9	1.7	**0.0080**	0.005	68.5	ug/L	974	Standard
	Cr	52	6459.7	10.1	**0.0942**	0.091	96.2	ug/L	5792	Standard
	Cr	53	603.3	18.3	**0.3396**	0.127	37.3	ug/L	347	Standard
	Mn	55	2162.5	62.6	**0.1280**	0.210	164.2	ug/L	1164	Standard
	Co	59	333.7	16.0	**0.0066**	0.008	124.3	ug/L	303	Standard
	Ni	60	322.7	48.2	**-0.0082**	0.085	1042.9	ug/L	291	Standard
	Cu	65	161.7	29.8	**-0.0056**	0.026	466.7	ug/L	173	Standard
	Zn	66	184.7	16.2	**-0.0537**	0.027	49.9	ug/L	130	Standard
>	**Ge**	72	481495.2	1.4				ug/L	491724	Standard
	As	75	-13.3	88.6	**0.0210**	0.012	54.8	ug/L	-25	Standard
	Se	82	22.2	8.5	**0.1261**	0.021	16.7	ug/L	12	Standard
	Se-1	77	62.0	2.8	**0.2463**	0.018	7.5	ug/L	57	Standard
>	**Ga**	71	106.7	9.8				mg/L	148	Standard
	Rb	85	63.3	43.5				ug/L	18	Standard
	Y	89	417621.1	1.2				ug/L	401845	Standard
>	**Rh**	103	40.0	45.1				ug/L	10	Standard
	Mo	98	240.6	46.2	**0.0925**	0.045	48.3	ug/L	12	Standard
	Ag	107	129.0	44.6	**0.0058**	0.009	162.4	ug/L	98	Standard
	Cd	111	26.5	116.9	**0.0090**	0.016	178.2	mg/L	11	Standard
	Cd	114	62.7	80.7	**0.0088**	0.011	121.2	ug/L	21	Standard
>	**In**	115	564731.0	1.2				ug/L	547487	Standard
	Sn	118	768.4	3.1	**0.0694**	0.006	8.4	ug/L	450	Standard
	Sb	123	399.1	17.4	**0.0835**	0.016	19.6	ug/L	105	Standard
	Ba	135	378.0	72.8	**0.1438**	0.145	100.9	ug/L	111	Standard
	Ce	140	128.3	104.6				ug/L	107	Standard
>	**Tb**	159	890002.5	2.1				ug/L	890342	Standard
	Ho	165	5.0	100.0				ug/L	10	Standard
	Tl	203	105.7	64.2	**0.0104**	0.008	81.6	ug/L	19	Standard
	Tl	205	133.3	103.5	**0.0222**	0.021	96.6	ug/L	17	Standard
	Pb	206	266.0	23.7	**0.0002**	0.011	6809.3	ug/L	247	Standard
	Pb	207	260.7	18.8	**0.0074**	0.009	126.1	ug/L	215	Standard
	Pb	208	1119.4	33.0	**0.0081**	0.020	245.9	ug/L	770	Standard
	U	238	112.3	126.2	**0.0176**	0.023	129.9	ug/L	13	Standard
>	**Bi**	209	497488.5	3.7				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	95.0	109.9	**0.0875**	0.137	156.5	mg/L	35	Standard
K	39	31.7	18.2	**0.0434**	0.031	72.1	mg/L	25	Standard
Ca	43	43.3	26.6	**3.1138**	2.393	76.8	mg/L	38	Standard
Fe	54	134.3	11.0	**-0.0112**	0.012	107.9	mg/L	126	Standard
Fe	57	253.3	12.5	**-0.1072**	0.121	112.7	mg/L	245	Standard
> **Sc-1**	45	25473.1	2.6				mg/L	25066	Standard
Cl	35	154720.7	1.0				ug/L	125857	Standard
Kr	83	2.7	78.1				ug/L	1	Standard
Br	81	2063.5	2.4				ug/L	1350	Standard
P	31	22254.7	2.6				ug/L	18393	Standard
S	34	4942.5	2.2				ug/L	3739	Standard
Sr	88	83.3	19.3				ug/L	78	Standard
C	12	40.0	25.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.5	88.7				mg/L	2	Standard
Ho-1	165	5.0	100.0				mg/L	10	Standard
Er	166	10.0					mg/L	23	Standard
I	127	3717.1	8.4				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.920	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.150
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.876
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606073002
Sample Date/Time: Tuesday, June 21, 2016 16:00:47
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69308.3	3.7				ug/L	60176	Standard
	Be	9	20.0	50.0	**0.0149**	0.011	75.7	ug/L	5	Standard
	Al	27	6126361.3	1.2	**40.5279**	1.700	4.2	ug/L	832	Standard
	Sc	45	24543.2	3.9				ug/L	25066	Standard
	Ti	47	125.3	13.2	**0.4695**	0.084	17.8	ug/L	38	Standard
	V	51	16629.0	4.3	**2.7512**	0.149	5.4	ug/L	974	Standard
	Cr	52	210588.5	2.1	**33.6543**	0.594	1.8	ug/L	5792	Standard
	Cr	53	31539.5	3.2	**39.8713**	0.997	2.5	ug/L	347	Standard
	Mn	55	23748.6	0.8	**3.6623**	0.062	1.7	ug/L	1164	Standard
	Co	59	8388.0	2.5	**1.3899**	0.039	2.8	ug/L	303	Standard
	Ni	60	8179.5	3.3	**4.5574**	0.124	2.7	ug/L	291	Standard
	Cu	65	2815.6	0.9	**1.5465**	0.029	1.9	ug/L	173	Standard
	Zn	66	2262.5	3.2	**2.0433**	0.069	3.4	ug/L	130	Standard
>	**Ge**	72	470862.5	0.8				ug/L	491724	Standard
	As	75	2905.3	0.7	**2.9245**	0.023	0.8	ug/L	-25	Standard
	Se	82	925.8	0.9	**9.2587**	0.060	0.6	ug/L	12	Standard
	Se-1	77	1310.7	2.5	**18.7167**	0.330	1.8	ug/L	57	Standard
>	**Ga**	71	1603.4	3.2				mg/L	148	Standard
	Rb	85	230305.6	1.1				ug/L	18	Standard
	Y	89	379545.1	0.6				ug/L	401845	Standard
>	**Rh**	103	3307.0	4.1				ug/L	10	Standard
	Mo	98	4638.8	1.0	**2.1857**	0.018	0.8	ug/L	12	Standard
	Ag	107	129.7	17.9	**0.0096**	0.005	47.2	ug/L	98	Standard
	Cd	111	47.1	19.5	**0.0237**	0.006	23.4	mg/L	11	Standard
	Cd	114	88.1	29.6	**0.0174**	0.007	37.3	ug/L	21	Standard
>	**In**	115	482582.3	0.3				ug/L	547487	Standard
	Sn	118	1188.4	1.3	**0.1856**	0.004	2.1	ug/L	450	Standard
	Sb	123	594.7	6.6	**0.1512**	0.010	6.6	ug/L	105	Standard
	Ba	135	1814565.7	1.4	**1121.2802**	14.912	1.3	ug/L	111	Standard
	Ce	140	778.4	4.7				ug/L	107	Standard
>	**Tb**	159	825227.5	1.6				ug/L	890342	Standard
	Ho	165	23.3	101.3				ug/L	10	Standard
	Tl	203	227.3	5.1	**0.0315**	0.002	7.2	ug/L	19	Standard
	Tl	205	193.3	12.2	**0.0374**	0.005	13.4	ug/L	17	Standard
	Pb	206	563.7	9.9	**0.0803**	0.015	18.7	ug/L	247	Standard
	Pb	207	484.3	4.2	**0.0757**	0.007	9.4	ug/L	215	Standard
	Pb	208	1753.4	1.0	**0.0637**	0.003	4.2	ug/L	770	Standard
	U	238	254.3	2.6	**0.0486**	0.002	4.1	ug/L	13	Standard
>	**Bi**	209	431889.8	1.5				ug/L	503143	Standard

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Na	23	15.0	66.7	**174.2413**	120.728	69.3	mg/L	2	Standard
Mg	24	93727.4	0.9	**131.5829**	4.471	3.4	mg/L	35	Standard
K	39	2483.5	4.9	**12.5508**	0.926	7.4	mg/L	25	Standard
Ca	43	885.0	14.1	**173.5278**	30.084	17.3	mg/L	38	Standard
Fe	54	139.9	31.8	**0.0000**	0.04(183799.3		mg/L	126	Standard
Fe	57	1356.7	6.6	**4.3695**	0.153	3.5	mg/L	245	Standard
> **Sc-1**	45	24543.2	3.9				mg/L	25066	Standard
Cl	35	157218.9	1.1				ug/L	125857	Standard
Kr	83	3.7	41.7				ug/L	1	Standard
Br	81	220692.4	1.0				ug/L	1350	Standard
P	31	22506.7	0.5				ug/L	18393	Standard
S	34	4602.4	5.2				ug/L	3739	Standard
Sr	88	10935.6	1.0				ug/L	78	Standard
C	12	216.7	20.8				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	12.9	48.5				mg/L	2	Standard
Ho-1	165	23.3	101.3				mg/L	10	Standard
Er	166	10.0	173.2				mg/L	23	Standard
I	127	172463.4	8.0				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.176	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.758	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		88.145
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		85.838
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606073003
Sample Date/Time: Tuesday, June 21, 2016 16:03:58
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64465.7	7.2				ug/L	60176	Standard
	Be	9	48.3	48.9	**0.0549**	0.035	63.6	ug/L	5	Standard
	Al	27	114115919.1	1.6	**813.1976**	46.881	5.8	ug/L	832	Standard
	Sc	45	25436.3	2.0				ug/L	25066	Standard
	Ti	47	345.7	4.6	**1.8234**	0.101	5.6	ug/L	38	Standard
	V	51	1068.5	35.2	**0.0334**	0.072	216.4	ug/L	974	Standard
	Cr	52	14799.2	0.9	**1.6994**	0.023	1.4	ug/L	5792	Standard
	Cr	53	29695.8	4.6	**40.8112**	1.956	4.8	ug/L	347	Standard
	Mn	55	1183452.9	1.0	**209.7588**	2.233	1.1	ug/L	1164	Standard
	Co	59	14597.4	0.2	**2.6724**	0.007	0.3	ug/L	303	Standard
	Ni	60	10363.9	2.1	**6.3478**	0.146	2.3	ug/L	291	Standard
	Cu	65	1987.5	3.5	**1.1635**	0.045	3.9	ug/L	173	Standard
	Zn	66	3577.8	1.3	**3.6805**	0.061	1.7	ug/L	130	Standard
>	**Ge**	72	433293.9	0.3				ug/L	491724	Standard
	As	75	5927.9	2.2	**6.4431**	0.152	2.4	ug/L	-25	Standard
	Se	82	1611.7	1.7	**17.5991**	0.335	1.9	ug/L	12	Standard
	Se-1	77	5107.5	5.2	**81.3703**	4.339	5.3	ug/L	57	Standard
>	**Ga**	71	338.3	13.7				mg/L	148	Standard
	Rb	85	17830.5	1.3				ug/L	18	Standard
	Y	89	379868.8	3.7				ug/L	401845	Standard
>	**Rh**	103	1205.0	3.7				ug/L	10	Standard
	Mo	98	436.0	6.7	**0.2020**	0.013	6.6	ug/L	12	Standard
	Ag	107	96.0	2.8	**0.0031**	0.001	17.0	ug/L	98	Standard
	Cd	111	101.5	4.0	**0.0568**	0.002	3.9	mg/L	11	Standard
	Cd	114	243.8	21.8	**0.0563**	0.013	23.9	ug/L	21	Standard
>	**In**	115	481162.5	1.1				ug/L	547487	Standard
	Sn	118	790.0	15.5	**0.0989**	0.025	25.1	ug/L	450	Standard
	Sb	123	455.4	4.8	**0.1144**	0.005	4.7	ug/L	105	Standard
	Ba	135	6828454.6	0.9	**4232.2396**	20.556	0.5	ug/L	111	Standard
	Ce	140	12164.9	2.3				ug/L	107	Standard
>	**Tb**	159	829521.0	0.4				ug/L	890342	Standard
	Ho	165	176.7	18.8				ug/L	10	Standard
	Tl	203	129.7	8.2	**0.0170**	0.002	9.5	ug/L	19	Standard
	Tl	205	95.0	19.0	**0.0193**	0.003	17.6	ug/L	17	Standard
	Pb	206	521.0	9.8	**0.0734**	0.012	16.5	ug/L	247	Standard
	Pb	207	417.0	5.1	**0.0609**	0.006	10.2	ug/L	215	Standard
	Pb	208	1676.4	1.8	**0.0615**	0.002	3.3	ug/L	770	Standard
	U	238	9099.4	1.6	**1.8151**	0.034	1.9	ug/L	13	Standard
>	**Bi**	209	420359.8	0.4				ug/L	503143	Standard

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Na	23	15.0	33.3	**164.4381**	51.833	31.5	mg/L	2	Standard
Mg	24	263283.1	1.4	**356.5075**	9.102	2.6	mg/L	35	Standard
K	39	456.7	16.0	**2.1312**	0.355	16.7	mg/L	25	Standard
Ca	43	700.0	3.7	**130.7182**	6.161	4.7	mg/L	38	Standard
Fe	54	3184.3	4.9	**2.8411**	0.129	4.5	mg/L	126	Standard
Fe	57	2041.8	5.4	**6.8401**	0.287	4.2	mg/L	245	Standard
> **Sc-1**	45	25436.3	2.0				mg/L	25066	Standard
Cl	35	151004.1	1.2				ug/L	125857	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	445209.8	0.6				ug/L	1350	Standard
P	31	26399.6	1.7				ug/L	18393	Standard
S	34	4885.8	2.7				ug/L	3739	Standard
Sr	88	3080.3	7.6				ug/L	78	Standard
C	12	203.3	19.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	194.4	40.3				mg/L	2	Standard
Ho-1	165	176.7	18.8				mg/L	10	Standard
Er	166	186.7	8.2				mg/L	23	Standard
I	127	130585.3	6.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.129	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		88.117	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		87.886
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		83.547
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606073003
Report Date/Time: Tuesday, June 21, 2016 16:06:15
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Method 6020 - Summary Report

Sample ID: L1606096101
Sample Date/Time: Tuesday, June 21, 2016 16:07:10
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51179.6	1.3				ug/L	60176	Standard
	Be	9	6.7	43.3	**0.0019**	0.005	248.3	ug/L	5	Standard
	Al	27	50980.9	25.3	**0.4489**	0.121	26.9	ug/L	832	Standard
	Sc	45	25962.2	3.5				ug/L	25066	Standard
	Ti	47	119.0	4.2	**0.4268**	0.032	7.4	ug/L	38	Standard
	V	51	1327.1	7.8	**0.0590**	0.015	25.5	ug/L	974	Standard
	Cr	52	10085.4	1.2	**0.6910**	0.038	5.5	ug/L	5792	Standard
	Cr	53	2786.9	12.0	**3.1009**	0.469	15.1	ug/L	347	Standard
	Mn	55	4068.2	4.6	**0.4397**	0.037	8.5	ug/L	1164	Standard
	Co	59	403.7	6.2	**0.0189**	0.004	21.3	ug/L	303	Standard
	Ni	60	539.0	3.3	**0.1179**	0.012	10.2	ug/L	291	Standard
	Cu	65	14898.0	0.8	**8.4790**	0.067	0.8	ug/L	173	Standard
	Zn	66	3517.4	1.5	**3.2574**	0.058	1.8	ug/L	130	Standard
>	**Ge**	72	477620.4	1.4				ug/L	491724	Standard
	As	75	1519.4	3.8	**1.5239**	0.036	2.3	ug/L	-25	Standard
	Se	82	49.8	7.3	**0.4026**	0.036	8.9	ug/L	12	Standard
	Se-1	77	174.7	19.2	**1.8996**	0.522	27.5	ug/L	57	Standard
>	**Ga**	71	81.7	12.7				mg/L	148	Standard
	Rb	85	1321.7	1.4				ug/L	18	Standard
	Y	89	409645.6	0.4				ug/L	401845	Standard
>	**Rh**	103	80.0	6.3				ug/L	10	Standard
	Mo	98	714.4	3.4	**0.3043**	0.009	3.0	ug/L	12	Standard
	Ag	107	102.7	8.3	**0.0027**	0.002	56.4	ug/L	98	Standard
	Cd	111	14.0	51.5	**0.0031**	0.004	131.5	mg/L	11	Standard
	Cd	114	24.8	60.7	**0.0012**	0.003	284.8	ug/L	21	Standard
>	**In**	115	527134.4	0.6				ug/L	547487	Standard
	Sn	118	2366.9	4.7	**0.3994**	0.023	5.8	ug/L	450	Standard
	Sb	123	152.2	11.5	**0.0296**	0.004	14.7	ug/L	105	Standard
	Ba	135	3191.0	19.6	**1.7498**	0.356	20.3	ug/L	111	Standard
	Ce	140	173.3	23.1				ug/L	107	Standard
>	**Tb**	159	840402.3	0.7				ug/L	890342	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	123.0	17.0	**0.0144**	0.003	21.3	ug/L	19	Standard
	Tl	205	116.7	31.0	**0.0217**	0.006	29.6	ug/L	17	Standard
	Pb	206	3120.0	3.9	**0.6516**	0.026	4.0	ug/L	247	Standard
	Pb	207	2680.2	1.7	**0.6156**	0.006	0.9	ug/L	215	Standard
	Pb	208	10994.6	2.0	**0.6718**	0.014	2.1	ug/L	770	Standard
	U	238	72.3	2.9	**0.0124**	0.000	2.0	ug/L	13	Standard
>	**Bi**	209	457373.4	1.0				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	35125.7	1.1	**46.5846**	1.473	3.2	mg/L	35	Standard
K	39	51.7	5.6	**0.1362**	0.007	5.1	mg/L	25	Standard
Ca	43	31.7	39.7	**0.6865**	2.370	345.2	mg/L	38	Standard
Fe	54	162.3	12.6	**0.0125**	0.021	169.6	mg/L	126	Standard
Fe	57	268.3	4.3	**-0.0679**	0.055	81.1	mg/L	245	Standard
> **Sc-1**	45	25962.2	3.5				mg/L	25066	Standard
Cl	35	155782.8	0.6				ug/L	125857	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	7928.7	7.4				ug/L	1350	Standard
P	31	21842.4	3.3				ug/L	18393	Standard
S	34	4624.0	1.7				ug/L	3739	Standard
Sr	88	61.7	4.7				ug/L	78	Standard
C	12	123.3	54.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	22.5	69.8				mg/L	2	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	16.7	124.9				mg/L	23	Standard
I	127	273253.9	9.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		85.050	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.132	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.283
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.903
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606096102
Sample Date/Time: Tuesday, June 21, 2016 16:10:21
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55466.4	1.7				ug/L	60176	Standard
	Be	9	10.0	50.0	**0.0061**	0.008	123.3	ug/L	5	Standard
	Al	27	3404100.9	2.1	**28.1074**	0.199	0.7	ug/L	832	Standard
	Sc	45	25237.7	1.7				ug/L	25066	Standard
	Ti	47	137.7	20.3	**0.5030**	0.133	26.4	ug/L	38	Standard
	V	51	1824.3	3.0	**0.1361**	0.015	10.9	ug/L	974	Standard
	Cr	52	9639.7	1.2	**0.5728**	0.021	3.6	ug/L	5792	Standard
	Cr	53	2536.9	7.6	**2.6926**	0.311	11.6	ug/L	347	Standard
	Mn	55	410336.5	3.0	**63.9418**	3.504	5.5	ug/L	1164	Standard
	Co	59	771.7	2.6	**0.0774**	0.003	4.5	ug/L	303	Standard
	Ni	60	1278.1	2.9	**0.5199**	0.037	7.2	ug/L	291	Standard
	Cu	65	956.4	1.4	**0.4368**	0.016	3.7	ug/L	173	Standard
	Zn	66	2255.5	3.4	**1.9395**	0.107	5.5	ug/L	130	Standard
>	**Ge**	72	492109.1	2.4				ug/L	491724	Standard
	As	75	628.2	9.2	**0.6327**	0.065	10.2	ug/L	-25	Standard
	Se	82	84.5	5.3	**0.7234**	0.031	4.3	ug/L	12	Standard
	Se-1	77	165.7	4.1	**1.6947**	0.142	8.4	ug/L	57	Standard
>	**Ga**	71	128.3	21.5				mg/L	148	Standard
	Rb	85	1845.1	8.3				ug/L	18	Standard
	Y	89	407649.4	2.2				ug/L	401845	Standard
>	**Rh**	103	66.7	17.3				ug/L	10	Standard
	Mo	98	795.9	1.4	**0.3389**	0.011	3.3	ug/L	12	Standard
	Ag	107	240.3	3.9	**0.0269**	0.002	9.1	ug/L	98	Standard
	Cd	111	25.8	4.4	**0.0095**	0.000	3.6	mg/L	11	Standard
	Cd	114	76.3	38.0	**0.0129**	0.007	53.5	ug/L	21	Standard
>	**In**	115	528415.2	2.1				ug/L	547487	Standard
	Sn	118	820.0	7.2	**0.0898**	0.015	17.0	ug/L	450	Standard
	Sb	123	374.4	4.7	**0.0837**	0.002	2.9	ug/L	105	Standard
	Ba	135	25131.8	1.1	**14.1323**	0.352	2.5	ug/L	111	Standard
	Ce	140	776.7	26.8				ug/L	107	Standard
>	**Tb**	159	852950.8	1.0				ug/L	890342	Standard
	Ho	165	40.0	12.5				ug/L	10	Standard
	Tl	203	322.3	8.3	**0.0415**	0.004	9.0	ug/L	19	Standard
	Tl	205	273.3	11.9	**0.0475**	0.005	11.3	ug/L	17	Standard
	Pb	206	550.0	3.4	**0.0646**	0.004	5.5	ug/L	247	Standard
	Pb	207	494.7	5.4	**0.0662**	0.007	10.5	ug/L	215	Standard
	Pb	208	1825.0	0.9	**0.0567**	0.001	1.9	ug/L	770	Standard
	U	238	550.3	3.0	**0.0961**	0.003	3.3	ug/L	13	Standard
>	**Bi**	209	476377.1	0.5				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	5382.6	8.6	**7.3029**	0.563	7.7	mg/L	35	Standard
K	39	113.3	10.2	**0.4482**	0.048	10.8	mg/L	25	Standard
Ca	43	105.0	23.8	**15.1842**	4.585	30.2	mg/L	38	Standard
Fe	54	182.7	18.3	**0.0355**	0.030	84.2	mg/L	126	Standard
Fe	57	376.7	12.3	**0.3841**	0.168	43.8	mg/L	245	Standard
> **Sc-1**	45	25237.7	1.7				mg/L	25066	Standard
Cl	35	165485.5	0.6				ug/L	125857	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	15875.0	3.1				ug/L	1350	Standard
P	31	18915.1	1.7				ug/L	18393	Standard
S	34	4484.0	2.4				ug/L	3739	Standard
Sr	88	145.0	6.0				ug/L	78	Standard
C	12	53.3	39.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	18.4	111.4				mg/L	2	Standard
Ho-1	165	40.0	12.5				mg/L	10	Standard
Er	166	33.3	75.5				mg/L	23	Standard
I	127	33351.8	7.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.174	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.078	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.517
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.680
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606099501
Sample Date/Time: Tuesday, June 21, 2016 16:13:33
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	168635.9	4.1				ug/L	60176	Standard
	Be	9	6.7	114.6	**-0.0058**	0.004	64.0	ug/L	5	Standard
	Al	27	18474058.8	4.7	**50.2007**	2.075	4.1	ug/L	832	Standard
	Sc	45	25611.7	6.8				ug/L	25066	Standard
	Ti	47	96.0	15.3	**0.3247**	0.061	18.9	ug/L	38	Standard
	V	51	329.6	160.1	**-0.1086**	0.096	88.6	ug/L	974	Standard
	Cr	52	8533.4	2.1	**0.5000**	0.036	7.3	ug/L	5792	Standard
	Cr	53	18279.4	4.6	**23.6005**	0.090	0.4	ug/L	347	Standard
	Mn	55	795230.1	6.4	**133.2539**	3.844	2.9	ug/L	1164	Standard
	Co	59	1757.4	10.4	**0.2603**	0.020	7.8	ug/L	303	Standard
	Ni	60	5918.8	6.2	**3.3415**	0.070	2.1	ug/L	291	Standard
	Cu	65	974.0	13.3	**0.4862**	0.060	12.3	ug/L	173	Standard
	Zn	66	25732.5	3.6	**26.4255**	0.290	1.1	ug/L	130	Standard
>	**Ge**	72	457809.6	4.2				ug/L	491724	Standard
	As	75	24304.8	12.7	**24.8619**	2.381	9.6	ug/L	-25	Standard
	Se	82	10353.3	13.1	**107.2820**	10.769	10.0	ug/L	12	Standard
	Se-1	77	3338.4	7.4	**50.0689**	2.631	5.3	ug/L	57	Standard
>	**Ga**	71	190.0	18.2				mg/L	148	Standard
	Rb	85	67272.7	5.9				ug/L	18	Standard
	Y	89	392267.7	7.8				ug/L	401845	Standard
>	**Rh**	103	6212.9	7.3				ug/L	10	Standard
	Mo	98	66.8	16.5	**0.0261**	0.003	10.8	ug/L	12	Standard
	Ag	107	141.7	8.0	**0.0112**	0.002	19.1	ug/L	98	Standard
	Cd	111	25.2	33.7	**0.0099**	0.004	38.5	mg/L	11	Standard
	Cd	114	42.8	22.6	**0.0058**	0.002	26.8	ug/L	21	Standard
>	**In**	115	495596.9	7.2				ug/L	547487	Standard
	Sn	118	453.3	8.9	**0.0231**	0.015	65.7	ug/L	450	Standard
	Sb	123	307.9	14.7	**0.0722**	0.006	8.8	ug/L	105	Standard
	Ba	135	1737649.7	4.8	**1046.7670**	27.756	2.7	ug/L	111	Standard
	Ce	140	60.0	22.0				ug/L	107	Standard
>	**Tb**	159	833968.6	4.3				ug/L	890342	Standard
	Ho	165	16.7	34.6				ug/L	10	Standard
	Tl	203	93.0	16.9	**0.0113**	0.003	22.9	ug/L	19	Standard
	Tl	205	90.0	16.7	**0.0185**	0.003	15.2	ug/L	17	Standard
	Pb	206	345.7	4.5	**0.0311**	0.007	21.6	ug/L	247	Standard
	Pb	207	301.0	3.7	**0.0302**	0.000	0.9	ug/L	215	Standard
	Pb	208	1072.7	2.8	**0.0184**	0.001	6.1	ug/L	770	Standard
	U	238	4.3	35.3	**0.0001**	0.000	664.3	ug/L	13	Standard
>	**Bi**	209	416771.5	4.0				ug/L	503143	Standard

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Na	23	8.3	91.7	**92.7162**	88.289	95.2	mg/L	2	Standard
Mg	24	248689.5	5.2	**334.6353**	8.738	2.6	mg/L	35	Standard
K	39	770.0	3.9	**3.6624**	0.402	11.0	mg/L	25	Standard
Ca	43	676.7	8.2	**125.1812**	3.636	2.9	mg/L	38	Standard
Fe	54	913.9	19.2	**0.7080**	0.107	15.2	mg/L	126	Standard
Fe	57	1341.7	7.5	**4.0874**	0.184	4.5	mg/L	245	Standard
> **Sc-1**	45	25611.7	6.8				mg/L	25066	Standard
Cl	35	163994.5	4.3				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	2535152.6	9.1				ug/L	1350	Standard
P	31	21693.9	7.1				ug/L	18393	Standard
S	34	5349.3	7.3				ug/L	3739	Standard
Sr	88	17340.0	7.2				ug/L	78	Standard
C	12	46.7	24.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.7	100.4				mg/L	2	Standard
Ho-1	165	16.7	34.6				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	23	Standard
I	127	915873.2	10.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		280.238	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.103	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.522
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		82.834
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Se 82 Upper, S, EEE	Se	82	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606099502
Sample Date/Time: Tuesday, June 21, 2016 16:16:44
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	161934.6	2.9				ug/L	60176	Standard
	Be	9	5.0	0.0	**-0.0064**	0.000	1.1	ug/L	5	Standard
	Al	27	18034095.9	1.2	**51.0410**	1.601	3.1	ug/L	832	Standard
	Sc	45	25640.0	0.6				ug/L	25066	Standard
	Ti	47	101.0	11.2	**0.3353**	0.057	17.0	ug/L	38	Standard
	V	51	557.0	72.8	**-0.0732**	0.071	97.4	ug/L	974	Standard
	Cr	52	8384.0	1.2	**0.4274**	0.017	4.0	ug/L	5792	Standard
	Cr	53	17313.2	4.7	**21.5821**	0.836	3.9	ug/L	347	Standard
	Mn	55	803112.8	0.5	**130.2269**	0.853	0.7	ug/L	1164	Standard
	Co	59	1799.1	3.0	**0.2578**	0.012	4.7	ug/L	303	Standard
	Ni	60	5982.8	1.8	**3.2648**	0.077	2.3	ug/L	291	Standard
	Cu	65	1150.7	3.3	**0.5706**	0.016	2.9	ug/L	173	Standard
	Zn	66	24866.4	0.7	**24.6790**	0.202	0.8	ug/L	130	Standard
>	**Ge**	72	473336.7	1.0				ug/L	491724	Standard
	As	75	25587.3	1.8	**25.3566**	0.273	1.1	ug/L	-25	Standard
	Se	82	10890.0	1.7	**109.3307**	1.159	1.1	ug/L	12	Standard
	Se-1	77	3343.0	3.9	**48.4872**	1.708	3.5	ug/L	57	Standard
>	**Ga**	71	181.7	12.7				mg/L	148	Standard
	Rb	85	66679.8	2.2				ug/L	18	Standard
	Y	89	414678.4	1.0				ug/L	401845	Standard
>	**Rh**	103	6289.6	5.0				ug/L	10	Standard
	Mo	98	37.1	14.9	**0.0122**	0.003	21.4	ug/L	12	Standard
	Ag	107	130.3	5.8	**0.0083**	0.002	18.8	ug/L	98	Standard
	Cd	111	31.2	14.4	**0.0131**	0.003	20.3	mg/L	11	Standard
	Cd	114	39.9	47.6	**0.0049**	0.004	88.5	ug/L	21	Standard
>	**In**	115	510227.1	2.2				ug/L	547487	Standard
	Sn	118	625.0	2.9	**0.0551**	0.005	8.2	ug/L	450	Standard
	Sb	123	301.2	2.3	**0.0685**	0.003	3.9	ug/L	105	Standard
	Ba	135	1706474.6	1.4	**997.5420**	18.016	1.8	ug/L	111	Standard
	Ce	140	70.0	39.8				ug/L	107	Standard
>	**Tb**	159	847245.8	1.6				ug/L	890342	Standard
	Ho	165	16.7	34.6				ug/L	10	Standard
	Tl	203	82.0	5.6	**0.0095**	0.001	7.4	ug/L	19	Standard
	Tl	205	63.3	19.9	**0.0132**	0.002	18.3	ug/L	17	Standard
	Pb	206	2104.8	3.5	**0.4651**	0.017	3.6	ug/L	247	Standard
	Pb	207	1755.4	1.6	**0.4250**	0.008	1.8	ug/L	215	Standard
	Pb	208	6586.6	2.3	**0.4183**	0.011	2.6	ug/L	770	Standard
	U	238	3.3	75.5	**-0.0002**	0.001	311.3	ug/L	13	Standard
>	**Bi**	209	419186.3	0.3				ug/L	503143	Standard

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Na	23	11.7	49.5	**127.1945**	62.567	49.2	mg/L	2	Standard
Mg	24	247534.5	2.1	**332.4511**	8.574	2.6	mg/L	35	Standard
K	39	821.7	11.6	**3.8912**	0.453	11.6	mg/L	25	Standard
Ca	43	693.3	9.8	**128.3410**	13.655	10.6	mg/L	38	Standard
Fe	54	995.6	6.1	**0.7869**	0.051	6.4	mg/L	126	Standard
Fe	57	1348.4	5.9	**4.1068**	0.292	7.1	mg/L	245	Standard
> **Sc-1**	45	25640.0	0.6				mg/L	25066	Standard
Cl	35	170844.7	1.8				ug/L	125857	Standard
Kr	83	3.0	66.7				ug/L	1	Standard
Br	81	2578824.0	0.0				ug/L	1350	Standard
P	31	21972.6	2.3				ug/L	18393	Standard
S	34	5225.9	2.7				ug/L	3739	Standard
Sr	88	16430.6	4.1				ug/L	78	Standard
C	12	46.7	32.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.0	111.0				mg/L	2	Standard
Ho-1	165	16.7	34.6				mg/L	10	Standard
Er	166	20.0	86.6				mg/L	23	Standard
I	127	815214.3	2.9				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		269.102	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.261	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.194
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		83.314
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Se 82 Upper, S, EEE	Se	82	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 16:19:57
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	53255.1	2.6				ug/L	60176	Standard
	Be	9	34201.9	0.2	**53.8492**	1.444	2.7	ug/L	5	Standard
	Al	27	6443317.1	1.2	**55.4427**	1.386	2.5	ug/L	832	Standard
	Sc	45	29281.6	1.0				ug/L	25066	Standard
	Ti	47	22756.4	2.7	**106.0921**	2.711	2.6	ug/L	38	Standard
	V	51	330023.3	1.9	**49.9178**	0.818	1.6	ug/L	974	Standard
	Cr	52	374935.6	2.1	**52.2804**	1.022	2.0	ug/L	5792	Standard
	Cr	53	48235.0	2.8	**52.8231**	1.387	2.6	ug/L	347	Standard
	Mn	55	352441.5	1.8	**49.5016**	0.742	1.5	ug/L	1164	Standard
	Co	59	322946.3	1.0	**47.8265**	0.311	0.7	ug/L	303	Standard
	Ni	60	103457.1	1.6	**51.7034**	0.790	1.5	ug/L	291	Standard
	Cu	65	102599.3	1.6	**51.6656**	0.731	1.4	ug/L	173	Standard
	Zn	66	58130.6	0.7	**50.3515**	0.428	0.9	ug/L	130	Standard
>	Ge	72	544960.4	0.5				ug/L	491724	Standard
	As	75	57215.3	2.2	**49.2169**	0.986	2.0	ug/L	-25	Standard
	Se	82	5680.0	0.8	**49.4814**	0.520	1.1	ug/L	12	Standard
	Se-1	77	4029.9	3.0	**50.7996**	1.419	2.8	ug/L	57	Standard
>	Ga	71	136.7	2.1				mg/L	148	Standard
	Rb	85	848.4	0.7				ug/L	18	Standard
	Y	89	441171.0	0.9				ug/L	401845	Standard
>	Rh	103	98.3	34.6				ug/L	10	Standard
	Mo	98	240530.6	0.1	**95.5654**	2.386	2.5	ug/L	12	Standard
	Ag	107	314903.2	0.7	**50.9642**	1.103	2.2	ug/L	98	Standard
	Cd	111	99040.2	2.0	**50.2851**	0.336	0.7	mg/L	11	Standard
	Cd	114	242003.9	1.6	**50.5109**	0.771	1.5	ug/L	21	Standard
>	In	115	573676.8	2.4				ug/L	547487	Standard
	Sn	118	268045.3	0.6	**49.2020**	0.945	1.9	ug/L	450	Standard
	Sb	123	224141.2	0.6	**50.3723**	1.071	2.1	ug/L	105	Standard
	Ba	135	96926.4	0.9	**50.3436**	0.859	1.7	ug/L	111	Standard
	Ce	140	86.7	38.4				ug/L	107	Standard
>	Tb	159	919162.1	0.7				ug/L	890342	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	383744.4	1.7	**49.4533**	0.202	0.4	ug/L	19	Standard
	Tl	205	316340.9	2.1	**49.6852**	0.346	0.7	ug/L	17	Standard
	Pb	206	242321.1	0.6	**48.5289**	1.001	2.1	ug/L	247	Standard
	Pb	207	218155.0	0.4	**48.0608**	0.946	2.0	ug/L	215	Standard
	Pb	208	851760.1	1.1	**50.1133**	0.387	0.8	ug/L	770	Standard
	U	238	300943.2	1.1	**48.8537**	0.383	0.8	ug/L	13	Standard
>	Bi	209	516771.8	1.8				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3847.2	2.3	**4.4854**	0.083	1.8	mg/L	35	Standard
K	39	1120.0	5.4	**4.6686**	0.296	6.3	mg/L	25	Standard
Ca	43	61.7	49.5	**5.0777**	5.123	100.9	mg/L	38	Standard
Fe	54	5797.8	2.5	**4.5733**	0.113	2.5	mg/L	126	Standard
Fe	57	1638.4	11.3	**4.4400**	0.621	14.0	mg/L	245	Standard
> **Sc-1**	45	29281.6	1.0				mg/L	25066	Standard
Cl	35	158279.8	0.9				ug/L	125857	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	7785.3	7.0				ug/L	1350	Standard
P	31	24633.3	2.3				ug/L	18393	Standard
S	34	5546.0	5.0				ug/L	3739	Standard
Sr	88	78.3	26.6				ug/L	78	Standard
C	12	36.7	83.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.9	217.0				mg/L	2	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	7436.9	29.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	107.698		
Al	27	110.885		
Sc	45			
Ti	47	106.092		
V	51	99.836		
Cr	52	104.561		
Cr	53			
Mn	55	99.003		
Co	59	95.653		
Ni	60	103.407		
Cu	65	103.331		
Zn	66	100.703		
> Ge	72		110.827	
As	75	98.434		
Se	82	98.963		
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98	95.565	
Ag	107	101.928	
Cd	111	100.570	
Cd	114		
> In	115		104.784
Sn	118	98.404	
Sb	123	100.745	
Ba	135	100.687	
Ce	140		
> Tb	159		
Ho	165		
Tl	203	98.907	
Tl	205		
Pb	206		
Pb	207		
Pb	208	100.227	
U	238	97.707	
> Bi	209		102.709
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 16:23:09
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56266.0	2.0				ug/L	60176	Standard
	Be	9	25.0	80.0	**0.0280**	0.030	105.7	ug/L	5	Standard
	Al	27	7918.3	94.7	**0.0560**	0.061	108.1	ug/L	832	Standard
	Sc	45	29356.8	5.8				ug/L	25066	Standard
	Ti	47	35.0	18.7	**-0.0382**	0.028	74.5	ug/L	38	Standard
	V	51	1134.6	16.5	**0.0083**	0.030	365.3	ug/L	974	Standard
	Cr	52	6818.2	1.1	**0.0629**	0.027	42.6	ug/L	5792	Standard
	Cr	53	1238.4	11.1	**1.0052**	0.129	12.8	ug/L	347	Standard
	Mn	55	1320.1	12.1	**-0.0219**	0.024	109.1	ug/L	1164	Standard
	Co	59	310.0	11.8	**-0.0016**	0.006	351.9	ug/L	303	Standard
	Ni	60	235.3	8.6	**-0.0679**	0.011	16.8	ug/L	291	Standard
	Cu	65	177.0	8.0	**-0.0049**	0.008	164.6	ug/L	173	Standard
	Zn	66	177.0	5.2	**-0.0754**	0.007	9.0	ug/L	130	Standard
>	**Ge**	72	524620.7	2.1				ug/L	491724	Standard
	As	75	-13.2	80.2	**0.0220**	0.010	43.5	ug/L	-25	Standard
	Se	82	28.7	3.3	**0.1675**	0.014	8.3	ug/L	12	Standard
	Se-1	77	113.7	8.9	**0.8568**	0.111	13.0	ug/L	57	Standard
>	**Ga**	71	91.7	13.7				mg/L	148	Standard
	Rb	85	53.3	84.0				ug/L	18	Standard
	Y	89	460825.3	1.3				ug/L	401845	Standard
>	**Rh**	103	101.7	25.2				ug/L	10	Standard
	Mo	98	249.0	15.8	**0.0890**	0.015	16.5	ug/L	12	Standard
	Ag	107	151.0	31.3	**0.0077**	0.007	94.9	ug/L	98	Standard
	Cd	111	24.8	83.9	**0.0072**	0.010	139.1	mg/L	11	Standard
	Cd	114	38.5	121.3	**0.0032**	0.009	291.6	ug/L	21	Standard
>	**In**	115	607357.0	0.3				ug/L	547487	Standard
	Sn	118	863.4	16.0	**0.0759**	0.024	32.0	ug/L	450	Standard
	Sb	123	252.1	31.9	**0.0459**	0.017	37.5	ug/L	105	Standard
	Ba	135	755.7	103.5	**0.3163**	0.386	122.0	ug/L	111	Standard
	Ce	140	33.3	70.9				ug/L	107	Standard
>	**Tb**	159	941140.6	1.6				ug/L	890342	Standard
	Ho	165	6.7	114.6				ug/L	10	Standard
	Tl	203	152.0	39.9	**0.0158**	0.008	49.6	ug/L	19	Standard
	Tl	205	98.3	43.8	**0.0163**	0.007	41.4	ug/L	17	Standard
	Pb	206	282.7	4.4	**0.0011**	0.002	198.8	ug/L	247	Standard
	Pb	207	255.7	7.2	**0.0036**	0.003	80.4	ug/L	215	Standard
	Pb	208	1014.3	8.8	**-0.0008**	0.006	712.2	ug/L	770	Standard
	U	238	74.0	54.7	**0.0111**	0.007	59.3	ug/L	13	Standard
>	**Bi**	209	522423.3	2.2				ug/L	503143	Standard

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Na	23	1.7	173.2	**15.5124**	26.860	173.1	mg/L	2	Standard
Mg	24	78.3	48.8	**0.0520**	0.042	80.2	mg/L	35	Standard
K	39	28.3	53.9	**0.0109**	0.074	678.3	mg/L	25	Standard
Ca	43	20.0	25.0	**-1.9217**	1.047	54.5	mg/L	38	Standard
Fe	54	152.7	6.9	**-0.0127**	0.009	69.1	mg/L	126	Standard
Fe	57	248.3	9.9	**-0.2512**	0.109	43.3	mg/L	245	Standard
> **Sc-1**	45	29356.8	5.8				mg/L	25066	Standard
Cl	35	163319.6	1.6				ug/L	125857	Standard
Kr	83	3.3	17.3				ug/L	1	Standard
Br	81	4450.7	3.2				ug/L	1350	Standard
P	31	25079.1	2.0				ug/L	18393	Standard
S	34	5581.0	3.4				ug/L	3739	Standard
Sr	88	80.0	25.0				ug/L	78	Standard
C	12	76.7	7.5				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.2	186.8				mg/L	2	Standard
Ho-1	165	6.7	114.6				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	3778.8	9.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.690	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.935
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.832
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW 17 WG573111-04
Sample Date/Time: Tuesday, June 21, 2016 17:12:00
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54402.5	1.6				ug/L	60176	Standard
	Be	9	5.0	100.0	**-0.0013**	0.008	610.8	ug/L	5	Standard
	Al	27	10618.7	0.6	**0.0810**	0.001	1.1	ug/L	832	Standard
	Sc	45	24893.8	1.7				ug/L	25066	Standard
	Ti	47	40.7	25.8	**0.0061**	0.051	846.2	ug/L	38	Standard
	V	51	1126.6	6.2	**0.0221**	0.007	33.6	ug/L	974	Standard
	Cr	52	8748.9	1.0	**0.4586**	0.027	6.0	ug/L	5792	Standard
	Cr	53	838.4	4.0	**0.6314**	0.050	8.0	ug/L	347	Standard
	Mn	55	1743.4	2.0	**0.0621**	0.003	4.4	ug/L	1164	Standard
	Co	59	260.3	10.0	**-0.0058**	0.005	78.5	ug/L	303	Standard
	Ni	60	358.3	2.1	**0.0122**	0.003	26.6	ug/L	291	Standard
	Cu	65	173.7	5.2	**0.0013**	0.007	572.1	ug/L	173	Standard
	Zn	66	1250.4	1.5	**0.9925**	0.026	2.6	ug/L	130	Standard
>	**Ge**	72	483042.7	2.3				ug/L	491724	Standard
	As	75	-21.6	45.1	**0.0130**	0.009	71.6	ug/L	-25	Standard
	Se	82	20.3	42.3	**0.1056**	0.079	74.7	ug/L	12	Standard
	Se-1	77	60.7	14.0	**0.2232**	0.110	49.2	ug/L	57	Standard
>	**Ga**	71	95.0	27.3				mg/L	148	Standard
	Rb	85	53.3	28.6				ug/L	18	Standard
	Y	89	406515.1	1.2				ug/L	401845	Standard
>	**Rh**	103	40.0	33.1				ug/L	10	Standard
	Mo	98	66.3	12.4	**0.0239**	0.004	16.1	ug/L	12	Standard
	Ag	107	76.0	9.9	**-0.0021**	0.001	70.0	ug/L	98	Standard
	Cd	111	4.2	59.6	**-0.0024**	0.001	56.9	mg/L	11	Standard
	Cd	114	16.2	34.0	**-0.0008**	0.001	148.3	ug/L	21	Standard
>	**In**	115	532744.5	1.4				ug/L	547487	Standard
	Sn	118	578.3	18.2	**0.0405**	0.021	51.9	ug/L	450	Standard
	Sb	123	112.7	14.7	**0.0197**	0.004	21.1	ug/L	105	Standard
	Ba	135	77.3	10.0	**-0.0123**	0.004	33.0	ug/L	111	Standard
	Ce	140	56.7	20.4				ug/L	107	Standard
>	**Tb**	159	863639.0	0.6				ug/L	890342	Standard
	Ho	165	10.0	86.6				ug/L	10	Standard
	Tl	203	20.7	12.2	**-0.0007**	0.000	46.3	ug/L	19	Standard
	Tl	205	13.3	57.3	**0.0032**	0.001	39.6	ug/L	17	Standard
	Pb	206	252.0	6.0	**-0.0014**	0.003	236.2	ug/L	247	Standard
	Pb	207	197.0	9.6	**-0.0061**	0.004	71.2	ug/L	215	Standard
	Pb	208	811.7	2.3	**-0.0092**	0.001	11.3	ug/L	770	Standard
	U	238	4.3	13.3	**-0.0001**	0.000	120.6	ug/L	13	Standard
>	**Bi**	209	487095.8	0.3				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	46.7	22.3	**0.0258**	0.015	59.6	mg/L	35	Standard
K	39	21.7	26.6	**-0.0039**	0.028	718.4	mg/L	25	Standard
Ca	43	25.0	0.0	**-0.3636**	0.085	23.3	mg/L	38	Standard
Fe	54	131.2	2.2	**-0.0111**	0.005	43.5	mg/L	126	Standard
Fe	57	268.3	15.6	**-0.0229**	0.182	793.2	mg/L	245	Standard
Sc-1	45	24893.8	1.7				mg/L	25066	Standard
Cl	35	153737.5	1.5				ug/L	125857	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	1480.1	4.7				ug/L	1350	Standard
P	31	20108.3	1.0				ug/L	18393	Standard
S	34	5007.5	3.6				ug/L	3739	Standard
Sr	88	75.0	24.0				ug/L	78	Standard
C	12	86.7	56.9				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.7	86.6				mg/L	2	Standard
Ho-1	165	10.0	86.6				mg/L	10	Standard
Er	166	0.0					mg/L	23	Standard
I	127	1100.0	6.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.406	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.235	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.307
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.811
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 17 WG573111-04
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Method 6020 - Summary Report

Sample ID: LCSW 17 WG573111-05
Sample Date/Time: Tuesday, June 21, 2016 17:15:12
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53402.3	2.8				ug/L	60176	Standard
	Be	9	32992.6	3.7	**51.7865**	1.692	3.3	ug/L	5	Standard
	Al	27	12198.2	3.5	**0.0963**	0.003	3.3	ug/L	832	Standard
	Sc	45	25010.7	4.4				ug/L	25066	Standard
	Ti	47	36.7	19.3	**-0.0127**	0.038	300.5	ug/L	38	Standard
	V	51	309717.1	0.7	**53.3313**	0.527	1.0	ug/L	974	Standard
	Cr	52	342937.1	0.8	**54.4644**	0.576	1.1	ug/L	5792	Standard
	Cr	53	43542.5	1.3	**54.2826**	0.411	0.8	ug/L	347	Standard
	Mn	55	351550.5	1.0	**56.2349**	1.195	2.1	ug/L	1164	Standard
	Co	59	316884.2	0.8	**53.4233**	1.002	1.9	ug/L	303	Standard
	Ni	60	94717.8	1.1	**53.8819**	0.368	0.7	ug/L	291	Standard
	Cu	65	94262.3	0.8	**54.0303**	0.520	1.0	ug/L	173	Standard
	Zn	66	54370.7	1.4	**53.6116**	0.241	0.4	ug/L	130	Standard
>	**Ge**	72	478860.5	1.7				ug/L	491724	Standard
	As	75	54535.7	0.7	**53.3915**	0.571	1.1	ug/L	-25	Standard
	Se	82	5489.3	0.8	**54.4366**	0.730	1.3	ug/L	12	Standard
	Se-1	77	3768.1	1.6	**54.1018**	0.084	0.2	ug/L	57	Standard
>	**Ga**	71	106.7	23.6				mg/L	148	Standard
	Rb	85	70.0	25.8				ug/L	18	Standard
	Y	89	420312.3	1.2				ug/L	401845	Standard
>	**Rh**	103	70.0	14.3				ug/L	10	Standard
	Mo	98	30.2	2.9	**0.0083**	0.001	6.6	ug/L	12	Standard
	Ag	107	9909.6	0.5	**1.6841**	0.042	2.5	ug/L	98	Standard
	Cd	111	95930.4	1.1	**51.6011**	0.537	1.0	mg/L	11	Standard
	Cd	114	231350.0	0.5	**51.1556**	0.846	1.7	ug/L	21	Standard
>	**In**	115	541530.1	2.0				ug/L	547487	Standard
	Sn	118	488.3	3.9	**0.0210**	0.003	13.6	ug/L	450	Standard
	Sb	123	205763.6	0.9	**48.9816**	0.890	1.8	ug/L	105	Standard
	Ba	135	93604.3	1.7	**51.4945**	0.191	0.4	ug/L	111	Standard
	Ce	140	73.3	20.8				ug/L	107	Standard
>	**Tb**	159	860719.0	2.3				ug/L	890342	Standard
	Ho	165	16.7	96.4				ug/L	10	Standard
	Tl	203	369565.4	1.5	**51.2366**	0.305	0.6	ug/L	19	Standard
	Tl	205	309835.9	0.4	**52.3608**	0.657	1.3	ug/L	17	Standard
	Pb	206	243588.1	0.4	**52.4792**	0.634	1.2	ug/L	247	Standard
	Pb	207	213081.9	0.8	**50.5043**	1.123	2.2	ug/L	215	Standard
	Pb	208	848492.0	0.7	**53.7161**	1.109	2.1	ug/L	770	Standard
	U	238	292643.2	0.8	**51.1091**	0.641	1.3	ug/L	13	Standard
>	**Bi**	209	480350.2	1.5				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	53.3	23.6	**0.0350**	0.020	55.8	mg/L	35	Standard
K	39	43.3	24.0	**0.1052**	0.059	55.9	mg/L	25	Standard
Ca	43	38.3	41.9	**2.3482**	3.443	146.6	mg/L	38	Standard
Fe	54	126.6	30.3	**-0.0161**	0.037	230.4	mg/L	126	Standard
Fe	57	250.0	12.5	**-0.1010**	0.134	132.3	mg/L	245	Standard
> **Sc-1**	45	25010.7	4.4				mg/L	25066	Standard
Cl	35	154303.8	1.1				ug/L	125857	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	1753.4	3.7				ug/L	1350	Standard
P	31	20824.3	0.3				ug/L	18393	Standard
S	34	4885.8	3.3				ug/L	3739	Standard
Sr	88	56.7	28.4				ug/L	78	Standard
C	12	36.7	15.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	8.9	8.2				mg/L	2	Standard
Ho-1	165	16.7	96.4				mg/L	10	Standard
Er	166	23.3	65.5				mg/L	23	Standard
I	127	1055.0	7.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.744	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.384	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.912
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.470
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606054006 WG573111-03
Sample Date/Time: Tuesday, June 21, 2016 17:18:23
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53768.6	1.8				ug/L	60176	Standard
	Be	9	223.3	5.2	**0.3390**	0.013	4.0	ug/L	5	Standard
	Al	27	1723479.9	1.0	**14.6779**	0.117	0.8	ug/L	832	Standard
	Sc	45	25968.9	1.0				ug/L	25066	Standard
	Ti	47	174.3	23.9	**0.6975**	0.209	30.0	ug/L	38	Standard
	V	51	3187.1	1.0	**0.3676**	0.007	1.8	ug/L	974	Standard
	Cr	52	9962.3	2.2	**0.6307**	0.032	5.0	ug/L	5792	Standard
	Cr	53	1050.0	15.7	**0.8771**	0.206	23.5	ug/L	347	Standard
	Mn	55	96644.7	2.5	**14.9562**	0.439	2.9	ug/L	1164	Standard
	Co	59	26099.5	1.4	**4.2561**	0.058	1.4	ug/L	303	Standard
	Ni	60	9094.4	0.4	**4.8855**	0.040	0.8	ug/L	291	Standard
	Cu	65	962.0	3.3	**0.4423**	0.013	3.0	ug/L	173	Standard
	Zn	66	4916.8	1.4	**4.5256**	0.053	1.2	ug/L	130	Standard
>	**Ge**	72	489760.3	0.8				ug/L	491724	Standard
	As	75	1211.7	3.7	**1.1931**	0.045	3.8	ug/L	-25	Standard
	Se	82	46.7	17.2	**0.3607**	0.079	21.9	ug/L	12	Standard
	Se-1	77	79.0	14.9	**0.4737**	0.176	37.2	ug/L	57	Standard
>	**Ga**	71	271.7	15.3				mg/L	148	Standard
	Rb	85	4263.9	3.2				ug/L	18	Standard
	Y	89	440770.7	2.7				ug/L	401845	Standard
>	**Rh**	103	63.3	12.1				ug/L	10	Standard
	Mo	98	195.2	3.2	**0.0786**	0.003	4.2	ug/L	12	Standard
	Ag	107	113.0	15.1	**0.0042**	0.003	72.0	ug/L	98	Standard
	Cd	111	262.6	11.3	**0.1381**	0.015	10.9	mg/L	11	Standard
	Cd	114	702.5	10.7	**0.1526**	0.016	10.3	ug/L	21	Standard
>	**In**	115	535297.3	0.8				ug/L	547487	Standard
	Sn	118	651.7	5.8	**0.0543**	0.006	11.8	ug/L	450	Standard
	Sb	123	1542.7	18.6	**0.3642**	0.071	19.6	ug/L	105	Standard
	Ba	135	39728.0	0.6	**22.0778**	0.170	0.8	ug/L	111	Standard
	Ce	140	141161.2	0.1				ug/L	107	Standard
>	**Tb**	159	862084.5	1.3				ug/L	890342	Standard
	Ho	165	2525.2	0.9				ug/L	10	Standard
	Tl	203	237.3	1.4	**0.0286**	0.000	1.4	ug/L	19	Standard
	Tl	205	215.0	12.9	**0.0365**	0.005	13.1	ug/L	17	Standard
	Pb	206	988.7	2.5	**0.1535**	0.005	2.9	ug/L	247	Standard
	Pb	207	865.0	0.8	**0.1485**	0.002	1.1	ug/L	215	Standard
	Pb	208	3337.8	2.7	**0.1469**	0.006	4.0	ug/L	770	Standard
	U	238	1870.8	2.8	**0.3187**	0.008	2.5	ug/L	13	Standard
>	**Bi**	209	491187.2	0.5				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.7819**	30.791	173.2	mg/L	2	Standard
Mg	24	1156.7	3.8	**1.4947**	0.043	2.9	mg/L	35	Standard
K	39	66.7	22.9	**0.2083**	0.073	35.0	mg/L	25	Standard
Ca	43	60.0	28.9	**6.0703**	3.171	52.2	mg/L	38	Standard
Fe	54	927.1	5.1	**0.7125**	0.036	5.1	mg/L	126	Standard
Fe	57	453.3	12.5	**0.6351**	0.217	34.1	mg/L	245	Standard
> **Sc-1**	45	25968.9	1.0				mg/L	25066	Standard
Cl	35	162179.5	1.3				ug/L	125857	Standard
Kr	83	1.7	124.9				ug/L	1	Standard
Br	81	3033.6	2.3				ug/L	1350	Standard
P	31	21506.9	0.4				ug/L	18393	Standard
S	34	4834.1	0.8				ug/L	3739	Standard
Sr	88	95.0	26.3				ug/L	78	Standard
C	12	80.0	25.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	3728.6	6.7				mg/L	2	Standard
Ho-1	165	2525.2	0.9				mg/L	10	Standard
Er	166	2266.8	4.7				mg/L	23	Standard
I	127	11339.3	11.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.352	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.601	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.774
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.624
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606054007S WG573111-09
Sample Date/Time: Tuesday, June 21, 2016 17:21:35
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55648.7	1.0				ug/L	60176	Standard
	Be	9	35439.7	1.0	**53.3747**	0.542	1.0	ug/L	5	Standard
	Al	27	1734040.1	1.3	**14.2679**	0.205	1.4	ug/L	832	Standard
	Sc	45	25546.5	2.5				ug/L	25066	Standard
	Ti	47	195.0	1.4	**0.7899**	0.031	3.9	ug/L	38	Standard
	V	51	309925.0	0.5	**51.3311**	0.675	1.3	ug/L	974	Standard
	Cr	52	343998.6	1.2	**52.5323**	1.556	3.0	ug/L	5792	Standard
	Cr	53	43246.7	4.8	**51.8802**	3.426	6.6	ug/L	347	Standard
	Mn	55	421085.3	0.6	**64.8270**	1.302	2.0	ug/L	1164	Standard
	Co	59	336029.8	0.8	**54.5018**	1.427	2.6	ug/L	303	Standard
	Ni	60	104045.4	1.6	**56.9634**	1.904	3.3	ug/L	291	Standard
	Cu	65	95190.8	1.4	**52.4843**	0.914	1.7	ug/L	173	Standard
	Zn	66	58975.9	0.8	**55.9583**	1.065	1.9	ug/L	130	Standard
>	**Ge**	72	497816.0	1.8				ug/L	491724	Standard
	As	75	56479.5	0.3	**53.1942**	0.942	1.8	ug/L	-25	Standard
	Se	82	5338.4	1.1	**50.9267**	1.343	2.6	ug/L	12	Standard
	Se-1	77	3721.8	0.2	**51.3788**	0.854	1.7	ug/L	57	Standard
>	**Ga**	71	246.7	20.3				mg/L	148	Standard
	Rb	85	4018.9	6.2				ug/L	18	Standard
	Y	89	438370.4	1.5				ug/L	401845	Standard
>	**Rh**	103	75.0	20.0				ug/L	10	Standard
	Mo	98	177.1	10.3	**0.0704**	0.007	9.6	ug/L	12	Standard
	Ag	107	25202.6	1.7	**4.3298**	0.014	0.3	ug/L	98	Standard
	Cd	111	95691.9	1.4	**51.7579**	0.175	0.3	mg/L	11	Standard
	Cd	114	231930.1	2.9	**51.5555**	0.701	1.4	ug/L	21	Standard
>	**In**	115	538493.9	1.7				ug/L	547487	Standard
	Sn	118	535.0	0.9	**0.0307**	0.002	8.0	ug/L	450	Standard
	Sb	123	208964.7	1.0	**50.0186**	0.580	1.2	ug/L	105	Standard
	Ba	135	133008.3	1.3	**73.6104**	0.853	1.2	ug/L	111	Standard
	Ce	140	144677.5	1.4				ug/L	107	Standard
>	**Tb**	159	870588.4	1.2				ug/L	890342	Standard
	Ho	165	2515.2	1.4				ug/L	10	Standard
	Tl	203	376132.5	1.2	**50.4480**	0.208	0.4	ug/L	19	Standard
	Tl	205	310457.8	2.2	**50.7488**	0.818	1.6	ug/L	17	Standard
	Pb	206	249489.7	0.6	**51.9992**	0.813	1.6	ug/L	247	Standard
	Pb	207	216108.6	0.2	**49.5458**	0.596	1.2	ug/L	215	Standard
	Pb	208	835970.7	1.9	**51.1849**	0.557	1.1	ug/L	770	Standard
	U	238	296500.2	1.1	**50.0915**	0.324	0.6	ug/L	13	Standard
>	**Bi**	209	496523.1	1.1				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	1253.4	1.0	**1.6514**	0.045	2.7	mg/L	35	Standard
K	39	90.0	24.2	**0.3274**	0.105	31.9	mg/L	25	Standard
Ca	43	50.0	0.0	**4.3487**	0.242	5.6	mg/L	38	Standard
Fe	54	828.2	6.8	**0.6342**	0.039	6.2	mg/L	126	Standard
Fe	57	453.3	3.4	**0.6651**	0.095	14.3	mg/L	245	Standard
> **Sc-1**	45	25546.5	2.5				mg/L	25066	Standard
Cl	35	160715.9	0.9				ug/L	125857	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	6278.0	7.6				ug/L	1350	Standard
P	31	21558.7	3.0				ug/L	18393	Standard
S	34	4647.4	1.5				ug/L	3739	Standard
Sr	88	96.7	16.6				ug/L	78	Standard
C	12	80.0	33.1				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	3942.4	3.7				mg/L	2	Standard
Ho-1	165	2515.2	1.4				mg/L	10	Standard
Er	166	2396.9	12.6				mg/L	23	Standard
I	127	13020.6	8.0				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.477	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.239	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.357
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.684
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606054008SD WG573111-10
Sample Date/Time: Tuesday, June 21, 2016 17:24:46
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55279.0	1.9				ug/L	60176	Standard
	Be	9	36627.6	1.2	**55.5439**	1.219	2.2	ug/L	5	Standard
	Al	27	1713238.5	1.0	**14.1936**	0.289	2.0	ug/L	832	Standard
	Sc	45	25197.6	2.6				ug/L	25066	Standard
	Ti	47	199.3	7.4	**0.8424**	0.087	10.4	ug/L	38	Standard
	V	51	309494.1	1.0	**52.7786**	0.658	1.2	ug/L	974	Standard
	Cr	52	347378.1	1.2	**54.6471**	1.197	2.2	ug/L	5792	Standard
	Cr	53	43514.1	2.2	**53.7328**	1.741	3.2	ug/L	347	Standard
	Mn	55	424846.4	0.6	**67.3400**	0.361	0.5	ug/L	1164	Standard
	Co	59	340025.8	0.7	**56.7736**	0.789	1.4	ug/L	303	Standard
	Ni	60	103607.1	1.5	**58.3956**	1.391	2.4	ug/L	291	Standard
	Cu	65	94948.3	1.4	**53.9039**	1.162	2.2	ug/L	173	Standard
	Zn	66	59000.7	0.9	**57.6432**	1.050	1.8	ug/L	130	Standard
>	**Ge**	72	483481.9	1.0				ug/L	491724	Standard
	As	75	55725.2	0.4	**54.0300**	0.345	0.6	ug/L	-25	Standard
	Se	82	5455.4	1.2	**53.5737**	0.261	0.5	ug/L	12	Standard
	Se-1	77	3687.1	2.8	**52.4054**	0.959	1.8	ug/L	57	Standard
>	**Ga**	71	291.7	5.5				mg/L	148	Standard
	Rb	85	3975.5	3.5				ug/L	18	Standard
	Y	89	437768.5	1.6				ug/L	401845	Standard
>	**Rh**	103	73.3	21.9				ug/L	10	Standard
	Mo	98	292.6	1.9	**0.1184**	0.004	3.1	ug/L	12	Standard
	Ag	107	6385.3	1.6	**1.0770**	0.028	2.6	ug/L	98	Standard
	Cd	111	98546.6	1.7	**52.8871**	1.151	2.2	mg/L	11	Standard
	Cd	114	241574.4	2.1	**53.2859**	1.073	2.0	ug/L	21	Standard
>	**In**	115	542760.7	1.3				ug/L	547487	Standard
	Sn	118	570.0	9.9	**0.0368**	0.012	33.4	ug/L	450	Standard
	Sb	123	210832.3	1.1	**50.0678**	0.730	1.5	ug/L	105	Standard
	Ba	135	135047.9	1.1	**74.1546**	1.297	1.7	ug/L	111	Standard
	Ce	140	141782.0	0.7				ug/L	107	Standard
>	**Tb**	159	865701.6	1.6				ug/L	890342	Standard
	Ho	165	2566.9	2.9				ug/L	10	Standard
	Tl	203	382403.7	0.7	**52.5418**	1.098	2.1	ug/L	19	Standard
	Tl	205	317463.1	0.8	**53.1627**	1.073	2.0	ug/L	17	Standard
	Pb	206	248494.2	0.2	**53.0491**	0.826	1.6	ug/L	247	Standard
	Pb	207	215899.1	1.2	**50.7054**	1.283	2.5	ug/L	215	Standard
	Pb	208	857334.8	1.1	**53.7766**	0.992	1.8	ug/L	770	Standard
	U	238	302840.8	1.0	**52.4120**	1.195	2.3	ug/L	13	Standard
>	**Bi**	209	484780.2	1.4				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	1276.7	8.6	**1.7042**	0.107	6.3	mg/L	35	Standard
K	39	51.7	49.7	**0.1459**	0.135	92.5	mg/L	25	Standard
Ca	43	55.0	9.1	**5.4513**	0.801	14.7	mg/L	38	Standard
Fe	54	811.1	8.4	**0.6307**	0.085	13.5	mg/L	126	Standard
Fe	57	461.7	3.8	**0.7224**	0.112	15.4	mg/L	245	Standard
> **Sc-1**	45	25197.6	2.6				mg/L	25066	Standard
Cl	35	161517.7	0.6				ug/L	125857	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	2850.3	4.7				ug/L	1350	Standard
P	31	22705.3	1.8				ug/L	18393	Standard
S	34	4462.3	4.8				ug/L	3739	Standard
Sr	88	113.3	17.8				ug/L	78	Standard
C	12	80.0	25.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	3943.7	6.5				mg/L	2	Standard
Ho-1	165	2566.9	2.9				mg/L	10	Standard
Er	166	2160.2	8.1				mg/L	23	Standard
I	127	12827.1	9.5				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.862	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.324	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	99.137
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	96.350
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606062401
Sample Date/Time: Tuesday, June 21, 2016 17:27:58
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58089.5	1.1				ug/L	60176	Standard
	Be	9	30.0	33.3	**0.0342**	0.014	41.0	ug/L	5	Standard
	Al	27	6143141.8	1.0	**48.4472**	0.944	1.9	ug/L	832	Standard
	Sc	45	25180.9	3.0				ug/L	25066	Standard
	Ti	47	164.0	25.9	**0.6648**	0.220	33.1	ug/L	38	Standard
	V	51	185031.3	1.5	**31.8430**	0.072	0.2	ug/L	974	Standard
	Cr	52	18607.9	15.7	**2.0656**	0.441	21.3	ug/L	5792	Standard
	Cr	53	3327.0	10.6	**3.7691**	0.381	10.1	ug/L	347	Standard
	Mn	55	46439.1	0.7	**7.2533**	0.079	1.1	ug/L	1164	Standard
	Co	59	5982.5	1.5	**0.9617**	0.001	0.1	ug/L	303	Standard
	Ni	60	16639.8	1.1	**9.3260**	0.213	2.3	ug/L	291	Standard
	Cu	65	8174.2	0.6	**4.6046**	0.102	2.2	ug/L	173	Standard
	Zn	66	49644.2	2.1	**49.0098**	0.387	0.8	ug/L	130	Standard
>	**Ge**	72	478054.7	1.6				ug/L	491724	Standard
	As	75	1224.7	7.5	**1.2333**	0.072	5.9	ug/L	-25	Standard
	Se	82	472.0	3.9	**4.6028**	0.133	2.9	ug/L	12	Standard
	Se-1	77	207.0	7.7	**2.3618**	0.199	8.4	ug/L	57	Standard
>	**Ga**	71	200.0	23.8				mg/L	148	Standard
	Rb	85	14974.1	2.7				ug/L	18	Standard
	Y	89	411795.2	1.6				ug/L	401845	Standard
>	**Rh**	103	106.7	9.8				ug/L	10	Standard
	Mo	98	231188.7	0.7	**98.5932**	1.267	1.3	ug/L	12	Standard
	Ag	107	131.7	7.2	**0.0075**	0.002	23.5	ug/L	98	Standard
	Cd	111	-78.0	39.1	**-0.0472**	0.016	34.7	mg/L	11	Standard
	Cd	114	617.4	6.3	**0.1339**	0.009	7.0	ug/L	21	Standard
>	**In**	115	534274.2	0.6				ug/L	547487	Standard
	Sn	118	656.7	7.2	**0.0556**	0.010	17.6	ug/L	450	Standard
	Sb	123	2302.2	22.5	**0.5481**	0.126	23.0	ug/L	105	Standard
	Ba	135	32140.4	1.2	**17.8854**	0.296	1.7	ug/L	111	Standard
	Ce	140	261.7	29.6				ug/L	107	Standard
>	**Tb**	159	856456.1	0.5				ug/L	890342	Standard
	Ho	165	20.0	25.0				ug/L	10	Standard
	Tl	203	426.7	20.5	**0.0564**	0.012	21.0	ug/L	19	Standard
	Tl	205	363.3	45.3	**0.0631**	0.028	43.7	ug/L	17	Standard
	Pb	206	788.4	5.3	**0.1175**	0.008	6.8	ug/L	247	Standard
	Pb	207	708.7	4.4	**0.1184**	0.006	5.2	ug/L	215	Standard
	Pb	208	2871.1	13.6	**0.1246**	0.024	18.9	ug/L	770	Standard
	U	238	398.7	34.3	**0.0697**	0.024	33.8	ug/L	13	Standard
>	**Bi**	209	473349.9	0.8				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	16877.7	3.1	**23.0643**	1.225	5.3	mg/L	35	Standard
K	39	280.0	25.0	**1.2812**	0.375	29.2	mg/L	25	Standard
Ca	43	126.7	8.2	**19.5068**	1.380	7.1	mg/L	38	Standard
Fe	54	143.3	6.8	**-0.0010**	0.012	1154.4	mg/L	126	Standard
Fe	57	358.3	9.3	**0.3188**	0.164	51.3	mg/L	245	Standard
> **Sc-1**	45	25180.9	3.0				mg/L	25066	Standard
Cl	35	205780.0	0.7				ug/L	125857	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	97895.4	2.7				ug/L	1350	Standard
P	31	21284.9	2.0				ug/L	18393	Standard
S	34	4504.0	2.9				ug/L	3739	Standard
Sr	88	191.7	4.0				ug/L	78	Standard
C	12	73.3	34.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	88.2				mg/L	0	Standard
Dy	164	29.4	101.4				mg/L	2	Standard
Ho-1	165	20.0	25.0				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	12732.0	2.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		96.533	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.220	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.587
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.079
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606062401PS WG573473-01
Sample Date/Time: Tuesday, June 21, 2016 17:31:09
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59555.2	1.6				ug/L	60176	Standard
	Be	9	38114.6	4.0	**53.6277**	1.538	2.9	ug/L	5	Standard
	Al	27	6236393.4	1.5	**47.9667**	0.190	0.4	ug/L	832	Standard
	Sc	45	25247.7	3.0				ug/L	25066	Standard
	Ti	47	149.7	6.7	**0.5489**	0.064	11.6	ug/L	38	Standard
	V	51	510919.3	1.1	**83.6813**	1.623	1.9	ug/L	974	Standard
	Cr	52	357055.0	1.4	**53.8592**	0.614	1.1	ug/L	5792	Standard
	Cr	53	46658.4	3.1	**55.2620**	1.342	2.4	ug/L	347	Standard
	Mn	55	386237.5	1.3	**58.7100**	1.701	2.9	ug/L	1164	Standard
	Co	59	326523.7	0.8	**52.2967**	1.090	2.1	ug/L	303	Standard
	Ni	60	110932.7	1.4	**59.9730**	0.773	1.3	ug/L	291	Standard
	Cu	65	103725.9	2.2	**56.4780**	0.362	0.6	ug/L	173	Standard
	Zn	66	105350.7	1.8	**98.8815**	0.625	0.6	ug/L	130	Standard
>	**Ge**	72	504099.0	2.3				ug/L	491724	Standard
	As	75	58925.6	0.8	**54.8077**	0.985	1.8	ug/L	-25	Standard
	Se	82	6143.8	2.0	**57.9003**	2.000	3.5	ug/L	12	Standard
	Se-1	77	4049.5	3.3	**55.2355**	0.588	1.1	ug/L	57	Standard
>	**Ga**	71	220.0	17.2				mg/L	148	Standard
	Rb	85	14929.0	0.6				ug/L	18	Standard
	Y	89	406274.5	1.9				ug/L	401845	Standard
>	**Rh**	103	120.0	21.7				ug/L	10	Standard
	Mo	98	233519.6	0.3	**99.7506**	0.946	0.9	ug/L	12	Standard
	Ag	107	294288.6	1.5	**51.2056**	0.387	0.8	ug/L	98	Standard
	Cd	111	97440.1	1.5	**53.2049**	0.652	1.2	mg/L	11	Standard
	Cd	114	237560.5	0.5	**53.3199**	0.438	0.8	ug/L	21	Standard
>	**In**	115	533397.7	0.7				ug/L	547487	Standard
	Sn	118	846.7	2.7	**0.0933**	0.004	4.2	ug/L	450	Standard
	Sb	123	217534.4	0.9	**52.5626**	0.359	0.7	ug/L	105	Standard
	Ba	135	126166.1	0.5	**70.4856**	0.674	1.0	ug/L	111	Standard
	Ce	140	221.7	9.1				ug/L	107	Standard
>	**Tb**	159	863996.7	1.6				ug/L	890342	Standard
	Ho	165	15.0	120.2				ug/L	10	Standard
	Tl	203	388142.4	1.0	**52.8512**	0.991	1.9	ug/L	19	Standard
	Tl	205	322436.9	1.5	**53.5061**	0.715	1.3	ug/L	17	Standard
	Pb	206	253353.0	2.2	**53.5909**	0.163	0.3	ug/L	247	Standard
	Pb	207	220862.2	1.1	**51.4007**	0.713	1.4	ug/L	215	Standard
	Pb	208	859792.8	1.1	**53.4462**	0.779	1.5	ug/L	770	Standard
	U	238	306380.9	1.7	**52.5395**	0.392	0.7	ug/L	13	Standard
>	**Bi**	209	489218.2	2.4				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.9600**	31.099	173.2	mg/L	2	Standard
Mg	24	16909.4	2.0	**23.0293**	0.226	1.0	mg/L	35	Standard
K	39	301.7	1.9	**1.3820**	0.071	5.1	mg/L	25	Standard
Ca	43	131.7	14.4	**20.3888**	3.034	14.9	mg/L	38	Standard
Fe	54	166.4	16.9	**0.0199**	0.023	114.5	mg/L	126	Standard
Fe	57	365.0	8.3	**0.3416**	0.157	46.0	mg/L	245	Standard
> **Sc-1**	45	25247.7	3.0				mg/L	25066	Standard
Cl	35	210532.0	1.1				ug/L	125857	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	100099.7	2.0				ug/L	1350	Standard
P	31	21987.6	1.4				ug/L	18393	Standard
S	34	4502.3	2.4				ug/L	3739	Standard
Sr	88	196.7	8.9				ug/L	78	Standard
C	12	86.7	24.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	70.0	37.8				mg/L	0	Standard
Dy	164	33.0	47.1				mg/L	2	Standard
Ho-1	165	15.0	120.2				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	23	Standard
I	127	13005.6	0.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.968	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.517	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.427
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.232
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606062401SDL WG573473-02
Sample Date/Time: Tuesday, June 21, 2016 17:34:21
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60477.2	2.3				ug/L	60176	Standard
	Be	9	20.0	25.0	**0.0187**	0.007	38.3	ug/L	5	Standard
	Al	27	1346077.1	1.4	**10.1901**	0.104	1.0	ug/L	832	Standard
	Sc	45	26165.9	1.8				ug/L	25066	Standard
	Ti	47	53.3	5.7	**0.0577**	0.020	34.3	ug/L	38	Standard
	V	51	40043.4	1.0	**6.2981**	0.105	1.7	ug/L	974	Standard
	Cr	52	9838.2	1.4	**0.5437**	0.034	6.2	ug/L	5792	Standard
	Cr	53	1326.7	4.2	**1.1460**	0.079	6.9	ug/L	347	Standard
	Mn	55	10769.8	1.7	**1.4023**	0.064	4.6	ug/L	1164	Standard
	Co	59	1559.7	6.1	**0.1970**	0.021	10.5	ug/L	303	Standard
	Ni	60	3793.5	0.5	**1.8350**	0.048	2.6	ug/L	291	Standard
	Cu	65	2218.5	2.2	**1.0935**	0.016	1.5	ug/L	173	Standard
	Zn	66	12058.5	0.3	**10.9344**	0.220	2.0	ug/L	130	Standard
>	**Ge**	72	512114.2	2.3				ug/L	491724	Standard
	As	75	280.0	6.4	**0.2900**	0.014	4.8	ug/L	-25	Standard
	Se	82	125.6	4.8	**1.0748**	0.079	7.4	ug/L	12	Standard
	Se-1	77	81.0	16.3	**0.4492**	0.161	35.8	ug/L	57	Standard
>	**Ga**	71	110.0	9.1				mg/L	148	Standard
	Rb	85	3283.7	4.5				ug/L	18	Standard
	Y	89	414186.7	0.7				ug/L	401845	Standard
>	**Rh**	103	43.3	17.6				ug/L	10	Standard
	Mo	98	48312.3	1.7	**19.6814**	0.770	3.9	ug/L	12	Standard
	Ag	107	449.0	12.1	**0.0592**	0.010	17.0	ug/L	98	Standard
	Cd	111	-5.5	192.0	**-0.0076**	0.005	71.9	mg/L	11	Standard
	Cd	114	194.3	6.1	**0.0372**	0.003	7.7	ug/L	21	Standard
>	**In**	115	559504.5	2.3				ug/L	547487	Standard
	Sn	118	523.3	5.3	**0.0246**	0.006	24.8	ug/L	450	Standard
	Sb	123	2078.0	20.6	**0.4699**	0.089	18.9	ug/L	105	Standard
	Ba	135	6769.2	2.6	**3.5550**	0.174	4.9	ug/L	111	Standard
	Ce	140	83.3	24.2				ug/L	107	Standard
>	**Tb**	159	903655.8	2.0				ug/L	890342	Standard
	Ho	165	10.0	132.3				ug/L	10	Standard
	Tl	203	191.7	11.3	**0.0211**	0.003	12.7	ug/L	19	Standard
	Tl	205	210.0	24.9	**0.0339**	0.008	25.0	ug/L	17	Standard
	Pb	206	458.3	5.1	**0.0367**	0.005	13.4	ug/L	247	Standard
	Pb	207	386.0	11.6	**0.0328**	0.010	31.6	ug/L	215	Standard
	Pb	208	1615.7	13.4	**0.0350**	0.013	38.0	ug/L	770	Standard
	U	238	122.3	50.4	**0.0190**	0.010	52.9	ug/L	13	Standard
>	**Bi**	209	518242.9	1.3				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3608.8	2.9	**4.7118**	0.175	3.7	mg/L	35	Standard
K	39	100.0	50.7	**0.3676**	0.247	67.2	mg/L	25	Standard
Ca	43	65.0	7.7	**6.9544**	1.038	14.9	mg/L	38	Standard
Fe	54	147.5	39.4	**-0.0029**	0.051	1721.0	mg/L	126	Standard
Fe	57	251.7	1.1	**-0.1393**	0.026	18.6	mg/L	245	Standard
> **Sc-1**	45	26165.9	1.8				mg/L	25066	Standard
Cl	35	182370.3	0.5				ug/L	125857	Standard
Kr	83	3.3	17.3				ug/L	1	Standard
Br	81	22266.3	0.9				ug/L	1350	Standard
P	31	21655.5	3.7				ug/L	18393	Standard
S	34	4839.1	3.8				ug/L	3739	Standard
Sr	88	88.3	14.2				ug/L	78	Standard
C	12	70.0	14.3				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.2	45.2				mg/L	2	Standard
Ho-1	165	10.0	132.3				mg/L	10	Standard
Er	166	23.3	49.5				mg/L	23	Standard
I	127	3850.5	6.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.501	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.147	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.195
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.001
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606062401SDL WG573473-02
Sample Date/Time: Tuesday, June 21, 2016 17:37:32
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60611.2	5.2				ug/L	60176	Standard
	Be	9	26.7	78.1	**0.0285**	0.030	104.7	ug/L	5	Standard
	Al	27	272431.0	1.2	**2.0536**	0.080	3.9	ug/L	832	Standard
	Sc	45	26581.7	4.6				ug/L	25066	Standard
	Ti	47	32.3	4.7	**-0.0400**	0.007	18.7	ug/L	38	Standard
	V	51	9199.9	0.5	**1.3799**	0.034	2.5	ug/L	974	Standard
	Cr	52	8009.8	1.0	**0.3197**	0.024	7.6	ug/L	5792	Standard
	Cr	53	745.0	1.3	**0.5003**	0.030	5.9	ug/L	347	Standard
	Mn	55	3074.3	2.9	**0.2662**	0.019	7.0	ug/L	1164	Standard
	Co	59	581.3	20.9	**0.0466**	0.022	46.9	ug/L	303	Standard
	Ni	60	942.0	2.2	**0.3340**	0.011	3.2	ug/L	291	Standard
	Cu	65	557.7	1.9	**0.2148**	0.011	5.0	ug/L	173	Standard
	Zn	66	3925.2	1.4	**3.5576**	0.086	2.4	ug/L	130	Standard
>	**Ge**	72	490874.3	1.9				ug/L	491724	Standard
	As	75	56.2	25.4	**0.0878**	0.015	16.7	ug/L	-25	Standard
	Se	82	43.0	3.7	**0.3232**	0.008	2.4	ug/L	12	Standard
	Se-1	77	62.7	10.3	**0.2398**	0.106	44.2	ug/L	57	Standard
>	**Ga**	71	86.7	3.3				mg/L	148	Standard
	Rb	85	633.3	8.9				ug/L	18	Standard
	Y	89	434053.3	1.1				ug/L	401845	Standard
>	**Rh**	103	58.3	43.1				ug/L	10	Standard
	Mo	98	9730.4	1.6	**3.7980**	0.056	1.5	ug/L	12	Standard
	Ag	107	110.7	14.6	**0.0022**	0.003	122.1	ug/L	98	Standard
	Cd	111	25.2	97.4	**0.0080**	0.012	156.2	mg/L	11	Standard
	Cd	114	100.0	105.0	**0.0162**	0.022	134.8	ug/L	21	Standard
>	**In**	115	583063.2	0.9				ug/L	547487	Standard
	Sn	118	498.3	15.0	**0.0160**	0.013	80.4	ug/L	450	Standard
	Sb	123	635.0	36.6	**0.1330**	0.052	39.5	ug/L	105	Standard
	Ba	135	1538.7	3.8	**0.7317**	0.038	5.1	ug/L	111	Standard
	Ce	140	56.7	43.5				ug/L	107	Standard
>	**Tb**	159	902775.5	1.1				ug/L	890342	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	138.3	68.1	**0.0148**	0.013	86.9	ug/L	19	Standard
	Tl	205	111.7	55.3	**0.0190**	0.010	54.2	ug/L	17	Standard
	Pb	206	376.0	13.9	**0.0221**	0.012	55.2	ug/L	247	Standard
	Pb	207	317.0	22.0	**0.0194**	0.017	88.5	ug/L	215	Standard
	Pb	208	1292.4	11.5	**0.0179**	0.010	58.6	ug/L	770	Standard
	U	238	68.7	96.5	**0.0107**	0.011	105.8	ug/L	13	Standard
>	**Bi**	209	506328.7	1.9				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	790.0	5.2	**0.9874**	0.095	9.7	mg/L	35	Standard
K	39	33.3	48.2	**0.0428**	0.071	166.5	mg/L	25	Standard
Ca	43	25.0	20.0	**-0.6943**	0.773	111.4	mg/L	38	Standard
Fe	54	139.1	10.5	**-0.0116**	0.017	151.0	mg/L	126	Standard
Fe	57	223.3	12.7	**-0.2573**	0.129	50.2	mg/L	245	Standard
> **Sc-1**	45	26581.7	4.6				mg/L	25066	Standard
Cl	35	175991.6	1.1				ug/L	125857	Standard
Kr	83	3.0	0.0				ug/L	1	Standard
Br	81	6047.9	4.6				ug/L	1350	Standard
P	31	21570.4	4.4				ug/L	18393	Standard
S	34	4842.4	5.1				ug/L	3739	Standard
Sr	88	105.0	12.6				ug/L	78	Standard
C	12	50.0	52.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	15.7	36.9				mg/L	2	Standard
Ho-1	165	8.3	91.7				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	23	Standard
I	127	1585.1	7.5				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.723	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.827	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.498
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.633
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 17:40:45
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59081.7	2.6				ug/L	60176	Standard
	Be	9	36702.7	2.3	**52.0769**	1.300	2.5	ug/L	5	Standard
	Al	27	6646200.9	1.1	**51.5434**	0.909	1.8	ug/L	832	Standard
	Sc	45	26020.7	3.8				ug/L	25066	Standard
	Ti	47	21214.8	1.7	**108.7289**	0.181	0.2	ug/L	38	Standard
	V	51	316864.2	1.4	**52.6965**	0.283	0.5	ug/L	974	Standard
	Cr	52	348817.6	0.6	**53.4950**	0.696	1.3	ug/L	5792	Standard
	Cr	53	43763.1	2.6	**52.6787**	0.604	1.1	ug/L	347	Standard
	Mn	55	340527.3	1.8	**52.5942**	0.923	1.8	ug/L	1164	Standard
	Co	59	326617.6	0.4	**53.1853**	0.746	1.4	ug/L	303	Standard
	Ni	60	96463.1	1.0	**53.0038**	0.733	1.4	ug/L	291	Standard
	Cu	65	95600.3	0.8	**52.9319**	0.992	1.9	ug/L	173	Standard
	Zn	66	54738.7	1.8	**52.1262**	0.134	0.3	ug/L	130	Standard
>	**Ge**	72	495763.5	1.8				ug/L	491724	Standard
	As	75	54512.5	0.4	**51.5524**	0.685	1.3	ug/L	-25	Standard
	Se	82	5543.1	2.2	**53.1106**	2.069	3.9	ug/L	12	Standard
	Se-1	77	3720.1	1.9	**51.5619**	0.639	1.2	ug/L	57	Standard
>	**Ga**	71	110.0	12.0				mg/L	148	Standard
	Rb	85	793.4	4.1				ug/L	18	Standard
	Y	89	412125.4	1.3				ug/L	401845	Standard
>	**Rh**	103	66.7	11.5				ug/L	10	Standard
	Mo	98	240736.8	1.1	**97.2447**	1.379	1.4	ug/L	12	Standard
	Ag	107	305628.4	1.4	**50.2975**	1.221	2.4	ug/L	98	Standard
	Cd	111	97888.8	1.5	**50.5420**	0.123	0.2	mg/L	11	Standard
	Cd	114	238935.5	1.4	**50.7107**	0.441	0.9	ug/L	21	Standard
>	**In**	115	564098.2	1.7				ug/L	547487	Standard
	Sn	118	268378.0	1.5	**50.0920**	0.857	1.7	ug/L	450	Standard
	Sb	123	219285.5	1.2	**50.1127**	1.176	2.3	ug/L	105	Standard
	Ba	135	94955.3	0.6	**50.1501**	0.552	1.1	ug/L	111	Standard
	Ce	140	105.0	45.4				ug/L	107	Standard
>	**Tb**	159	899441.1	1.5				ug/L	890342	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	387085.4	1.3	**50.9741**	0.552	1.1	ug/L	19	Standard
	Tl	205	323757.8	1.2	**51.9659**	0.790	1.5	ug/L	17	Standard
	Pb	206	244011.4	1.2	**49.9245**	0.191	0.4	ug/L	247	Standard
	Pb	207	221667.8	1.0	**49.8940**	0.499	1.0	ug/L	215	Standard
	Pb	208	859541.6	1.0	**51.6749**	0.448	0.9	ug/L	770	Standard
	U	238	309083.0	1.7	**51.2676**	0.733	1.4	ug/L	13	Standard
>	**Bi**	209	505715.2	0.9				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.6985**	32.378	173.2	mg/L	2	Standard
Mg	24	3983.9	6.0	**5.2438**	0.478	9.1	mg/L	35	Standard
K	39	1098.4	8.7	**5.1786**	0.659	12.7	mg/L	25	Standard
Ca	43	58.3	24.7	**5.7524**	2.702	47.0	mg/L	38	Standard
Fe	54	5616.8	2.9	**5.0026**	0.232	4.6	mg/L	126	Standard
Fe	57	1575.1	5.8	**4.9072**	0.583	11.9	mg/L	245	Standard
> **Sc-1**	45	26020.7	3.8				mg/L	25066	Standard
Cl	35	161905.2	1.1				ug/L	125857	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	1890.1	7.8				ug/L	1350	Standard
P	31	22423.3	2.7				ug/L	18393	Standard
S	34	5154.2	1.4				ug/L	3739	Standard
Sr	88	80.0	16.5				ug/L	78	Standard
C	12	60.0	28.9				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	15.7	132.5				mg/L	2	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	20.0	0.0				mg/L	23	Standard
I	127	1220.0	4.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	104.154		
Al	27	103.087		
Sc	45			
Ti	47	108.729		
V	51	105.393		
Cr	52	106.990		
Cr	53			
Mn	55	105.188		
Co	59	106.371		
Ni	60	106.008		
Cu	65	105.864		
Zn	66	104.252		
> Ge	72		100.822	
As	75	103.105		
Se	82	106.221		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	97.245		
Ag	107	100.595		
Cd	111	101.084		
Cd	114			
> In	115			103.034
Sn	118	100.184		
Sb	123	100.225		
Ba	135	100.300		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.948		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.350		
U	238	102.535		
> Bi	209			100.511
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 17:43:57
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56721.1	4.5				ug/L	60176	Standard
	Be	9	10.0	86.6	**0.0057**	0.013	221.6	ug/L	5	Standard
	Al	27	1560.1	22.0	**0.0041**	0.002	54.2	ug/L	832	Standard
	Sc	45	25518.2	4.3				ug/L	25066	Standard
	Ti	47	31.0	8.5	**-0.0455**	0.014	30.9	ug/L	38	Standard
	V	51	1025.7	2.6	**0.0036**	0.004	119.2	ug/L	974	Standard
	Cr	52	6145.2	1.0	**0.0342**	0.011	31.8	ug/L	5792	Standard
	Cr	53	456.7	16.4	**0.1515**	0.092	60.5	ug/L	347	Standard
	Mn	55	1042.7	1.9	**-0.0507**	0.003	6.1	ug/L	1164	Standard
	Co	59	294.3	14.4	**-0.0005**	0.007	1510.6	ug/L	303	Standard
	Ni	60	217.3	8.8	**-0.0685**	0.011	15.8	ug/L	291	Standard
	Cu	65	143.7	4.6	**-0.0165**	0.004	23.2	ug/L	173	Standard
	Zn	66	170.7	3.9	**-0.0690**	0.006	9.1	ug/L	130	Standard
>	**Ge**	72	486561.4	0.2				ug/L	491724	Standard
	As	75	-23.1	144.8	**0.0117**	0.032	276.8	ug/L	-25	Standard
	Se	82	19.3	43.3	**0.0963**	0.082	85.2	ug/L	12	Standard
	Se-1	77	61.7	9.5	**0.2322**	0.083	35.8	ug/L	57	Standard
>	**Ga**	71	91.7	11.4				mg/L	148	Standard
	Rb	85	30.0	33.3				ug/L	18	Standard
	Y	89	432565.5	1.6				ug/L	401845	Standard
>	**Rh**	103	56.7	13.5				ug/L	10	Standard
	Mo	98	283.8	18.7	**0.1104**	0.019	17.4	ug/L	12	Standard
	Ag	107	119.7	6.8	**0.0044**	0.001	22.8	ug/L	98	Standard
	Cd	111	7.8	28.1	**-0.0007**	0.001	162.1	mg/L	11	Standard
	Cd	114	30.1	75.3	**0.0019**	0.005	242.3	ug/L	21	Standard
>	**In**	115	561643.0	2.0				ug/L	547487	Standard
	Sn	118	805.0	28.2	**0.0777**	0.045	58.3	ug/L	450	Standard
	Sb	123	547.0	24.1	**0.1184**	0.033	27.7	ug/L	105	Standard
	Ba	135	127.0	2.8	**0.0118**	0.001	5.1	ug/L	111	Standard
	Ce	140	23.3	75.3				ug/L	107	Standard
>	**Tb**	159	876464.1	2.5				ug/L	890342	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	66.0	17.1	**0.0053**	0.001	26.5	ug/L	19	Standard
	Tl	205	63.3	53.7	**0.0113**	0.006	48.9	ug/L	17	Standard
	Pb	206	259.3	8.4	**-0.0008**	0.004	538.8	ug/L	247	Standard
	Pb	207	223.7	7.2	**-0.0007**	0.003	439.4	ug/L	215	Standard
	Pb	208	890.3	1.6	**-0.0052**	0.001	19.5	ug/L	770	Standard
	U	238	44.0	15.7	**0.0066**	0.001	16.4	ug/L	13	Standard
>	**Bi**	209	495284.3	1.2				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	30.0	28.9	**0.0015**	0.011	728.8	mg/L	35	Standard
K	39	26.7	43.3	**0.0178**	0.054	304.4	mg/L	25	Standard
Ca	43	45.0	22.2	**3.3451**	1.602	47.9	mg/L	38	Standard
Fe	54	122.5	43.7	**-0.0227**	0.048	210.0	mg/L	126	Standard
Fe	57	173.3	26.8	**-0.4223**	0.156	36.9	mg/L	245	Standard
Sc-1	45	25518.2	4.3				mg/L	25066	Standard
Cl	35	159927.0	1.4				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	1690.1	11.2				ug/L	1350	Standard
P	31	22770.5	4.5				ug/L	18393	Standard
S	34	5202.6	2.4				ug/L	3739	Standard
Sr	88	78.3	13.3				ug/L	78	Standard
C	12	43.3	35.3				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	-0.3	173.2				mg/L	2	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	6.7	173.2				mg/L	23	Standard
I	127	1065.0	12.4				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.950	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.586	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.438	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606053301
Sample Date/Time: Tuesday, June 21, 2016 17:47:10
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60448.7	2.1				ug/L	60176	Standard
	Be	9	18.3	68.6	**0.0166**	0.018	107.0	ug/L	5	Standard
	Al	27	6338152.4	1.3	**48.0500**	1.591	3.3	ug/L	832	Standard
	Sc	45	26546.6	1.7				ug/L	25066	Standard
	Ti	47	533.3	12.7	**2.5549**	0.399	15.6	ug/L	38	Standard
	V	51	2131.1	5.9	**0.1873**	0.019	10.0	ug/L	974	Standard
	Cr	52	10369.5	2.6	**0.6877**	0.071	10.4	ug/L	5792	Standard
	Cr	53	3198.7	11.9	**3.5005**	0.514	14.7	ug/L	347	Standard
	Mn	55	118129.1	0.7	**18.2372**	0.274	1.5	ug/L	1164	Standard
	Co	59	1318.1	2.7	**0.1671**	0.009	5.6	ug/L	303	Standard
	Ni	60	3116.7	1.4	**1.5404**	0.023	1.5	ug/L	291	Standard
	Cu	65	10605.0	1.7	**5.8283**	0.198	3.4	ug/L	173	Standard
	Zn	66	23001.4	1.8	**21.9280**	0.418	1.9	ug/L	130	Standard
>	**Ge**	72	492237.0	2.0				ug/L	491724	Standard
	As	75	3704.8	1.1	**3.5603**	0.041	1.1	ug/L	-25	Standard
	Se	82	134.6	8.4	**1.2098**	0.136	11.2	ug/L	12	Standard
	Se-1	77	313.3	8.9	**3.7853**	0.480	12.7	ug/L	57	Standard
>	**Ga**	71	193.3	12.2				mg/L	148	Standard
	Rb	85	29528.8	1.8				ug/L	18	Standard
	Y	89	410980.2	2.7				ug/L	401845	Standard
>	**Rh**	103	110.0	23.6				ug/L	10	Standard
	Mo	98	1672.2	1.4	**0.6833**	0.014	2.1	ug/L	12	Standard
	Ag	107	140.0	15.4	**0.0081**	0.004	49.8	ug/L	98	Standard
	Cd	111	117.6	8.0	**0.0571**	0.004	7.3	mg/L	11	Standard
	Cd	114	311.6	20.6	**0.0629**	0.014	22.1	ug/L	21	Standard
>	**In**	115	554117.5	1.9				ug/L	547487	Standard
	Sn	118	1430.1	5.5	**0.1980**	0.011	5.7	ug/L	450	Standard
	Sb	123	2644.4	2.3	**0.6075**	0.008	1.3	ug/L	105	Standard
	Ba	135	35642.9	0.4	**19.1319**	0.401	2.1	ug/L	111	Standard
	Ce	140	641.7	11.6				ug/L	107	Standard
>	**Tb**	159	896083.5	0.2				ug/L	890342	Standard
	Ho	165	56.7	18.4				ug/L	10	Standard
	Tl	203	219.3	9.7	**0.0257**	0.003	10.9	ug/L	19	Standard
	Tl	205	195.0	25.3	**0.0326**	0.008	24.4	ug/L	17	Standard
	Pb	206	1749.1	0.8	**0.3074**	0.003	0.8	ug/L	247	Standard
	Pb	207	1455.7	6.4	**0.2796**	0.021	7.4	ug/L	215	Standard
	Pb	208	5822.8	0.8	**0.2946**	0.003	0.9	ug/L	770	Standard
	U	238	208.3	11.2	**0.0341**	0.004	11.4	ug/L	13	Standard
>	**Bi**	209	499957.7	0.2				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	24221.0	1.0	**31.3840**	0.259	0.8	mg/L	35	Standard
K	39	728.4	13.1	**3.3171**	0.458	13.8	mg/L	25	Standard
Ca	43	125.0	12.0	**17.9391**	2.703	15.1	mg/L	38	Standard
Fe	54	160.7	6.4	**0.0076**	0.011	142.5	mg/L	126	Standard
Fe	57	373.3	9.9	**0.2993**	0.127	42.5	mg/L	245	Standard
> **Sc-1**	45	26546.6	1.7				mg/L	25066	Standard
Cl	35	196436.0	1.5				ug/L	125857	Standard
Kr	83	3.3	45.8				ug/L	1	Standard
Br	81	8072.2	1.9				ug/L	1350	Standard
P	31	22922.3	0.8				ug/L	18393	Standard
S	34	4750.7	1.5				ug/L	3739	Standard
Sr	88	181.7	3.2				ug/L	78	Standard
C	12	106.7	14.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	0	Standard
Dy	164	47.8	39.5				mg/L	2	Standard
Ho-1	165	56.7	18.4				mg/L	10	Standard
Er	166	46.7	68.9				mg/L	23	Standard
I	127	47392.4	2.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.453	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.104	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.211
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.367
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606078403
Sample Date/Time: Tuesday, June 21, 2016 17:50:21
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64282.8	1.4				ug/L	60176	Standard
	Be	9	16.7	45.8	**0.0128**	0.010	79.1	ug/L	5	Standard
	Al	27	9496901.0	1.4	**67.6751**	0.189	0.3	ug/L	832	Standard
	Sc	45	26276.1	3.6				ug/L	25066	Standard
	Ti	47	2632.9	0.5	**13.4149**	0.197	1.5	ug/L	38	Standard
	V	51	10654.6	5.7	**1.6202**	0.099	6.1	ug/L	974	Standard
	Cr	52	309449.4	0.1	**47.7126**	0.747	1.6	ug/L	5792	Standard
	Cr	53	43286.8	2.0	**52.4956**	0.461	0.9	ug/L	347	Standard
	Mn	55	415246.8	0.7	**64.6633**	0.642	1.0	ug/L	1164	Standard
	Co	59	14818.2	0.7	**2.3840**	0.050	2.1	ug/L	303	Standard
	Ni	60	13775.3	1.0	**7.4623**	0.106	1.4	ug/L	291	Standard
	Cu	65	2774.3	0.5	**1.4525**	0.017	1.2	ug/L	173	Standard
	Zn	66	6076.9	0.8	**5.6215**	0.043	0.8	ug/L	130	Standard
>	**Ge**	72	492081.5	1.5				ug/L	491724	Standard
	As	75	14825.6	0.7	**14.1492**	0.153	1.1	ug/L	-25	Standard
	Se	82	184.4	7.2	**1.6910**	0.151	8.9	ug/L	12	Standard
	Se-1	77	407.3	7.4	**5.1069**	0.343	6.7	ug/L	57	Standard
>	**Ga**	71	388.3	4.9				mg/L	148	Standard
	Rb	85	247976.3	1.2				ug/L	18	Standard
	Y	89	437835.7	1.8				ug/L	401845	Standard
>	**Rh**	103	111.7	11.3				ug/L	10	Standard
	Mo	98	768.6	2.7	**0.3040**	0.009	3.0	ug/L	12	Standard
	Ag	107	190.7	6.0	**0.0158**	0.002	12.3	ug/L	98	Standard
	Cd	111	45.2	11.2	**0.0185**	0.003	14.3	mg/L	11	Standard
	Cd	114	130.8	33.1	**0.0231**	0.009	39.2	ug/L	21	Standard
>	**In**	115	567817.1	0.2				ug/L	547487	Standard
	Sn	118	10468.6	2.5	**1.8698**	0.053	2.8	ug/L	450	Standard
	Sb	123	902.4	8.0	**0.1972**	0.016	8.2	ug/L	105	Standard
	Ba	135	51153.2	1.3	**26.8107**	0.405	1.5	ug/L	111	Standard
	Ce	140	2558.5	2.2				ug/L	107	Standard
>	**Tb**	159	907507.6	0.1				ug/L	890342	Standard
	Ho	165	388.3	9.3				ug/L	10	Standard
	Tl	203	96.3	26.1	**0.0096**	0.003	35.7	ug/L	19	Standard
	Tl	205	85.0	21.2	**0.0151**	0.003	19.8	ug/L	17	Standard
	Pb	206	1399.4	4.9	**0.2426**	0.015	6.0	ug/L	247	Standard
	Pb	207	1257.4	0.9	**0.2420**	0.003	1.1	ug/L	215	Standard
	Pb	208	4943.7	1.7	**0.2490**	0.006	2.2	ug/L	770	Standard
	U	238	308.0	0.9	**0.0522**	0.000	0.8	ug/L	13	Standard
>	**Bi**	209	487096.1	0.1				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.6640**	30.586	173.2	mg/L	2	Standard
Mg	24	54270.4	1.9	**71.1138**	1.170	1.6	mg/L	35	Standard
K	39	6009.5	3.1	**28.4763**	0.896	3.1	mg/L	25	Standard
Ca	43	55.0	36.4	**4.9932**	3.579	71.7	mg/L	38	Standard
Fe	54	345.1	11.2	**0.1762**	0.038	21.4	mg/L	126	Standard
Fe	57	351.7	7.8	**0.2357**	0.144	61.3	mg/L	245	Standard
> **Sc-1**	45	26276.1	3.6				mg/L	25066	Standard
Cl	35	189873.7	0.5				ug/L	125857	Standard
Kr	83	2.3	99.0				ug/L	1	Standard
Br	81	36477.2	3.1				ug/L	1350	Standard
P	31	23743.6	0.5				ug/L	18393	Standard
S	34	4889.1	0.7				ug/L	3739	Standard
Sr	88	155.0	16.1				ug/L	78	Standard
C	12	456.7	11.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	613.9	9.9				mg/L	2	Standard
Ho-1	165	388.3	9.3				mg/L	10	Standard
Er	166	336.7	6.2				mg/L	23	Standard
I	127	738935.3	7.0				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.825	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.073	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.713
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.811
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606078709 WG573111-01
Sample Date/Time: Tuesday, June 21, 2016 17:53:33
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60443.9	5.7				ug/L	60176	Standard
	Be	9	16.7	34.6	**0.0143**	0.009	61.5	ug/L	5	Standard
	Al	27	10305250.8	3.2	**78.3639**	7.053	9.0	ug/L	832	Standard
	Sc	45	26180.9	1.3				ug/L	25066	Standard
	Ti	47	492.3	16.0	**2.2835**	0.397	17.4	ug/L	38	Standard
	V	51	9886.7	1.4	**1.4559**	0.086	5.9	ug/L	974	Standard
	Cr	52	12993.9	3.4	**1.0581**	0.156	14.7	ug/L	5792	Standard
	Cr	53	1368.4	1.8	**1.2241**	0.083	6.8	ug/L	347	Standard
	Mn	55	29966.3	1.1	**4.3673**	0.250	5.7	ug/L	1164	Standard
	Co	59	1096.7	3.0	**0.1268**	0.007	5.7	ug/L	303	Standard
	Ni	60	1721.1	4.7	**0.7463**	0.085	11.4	ug/L	291	Standard
	Cu	65	2142.2	3.0	**1.0742**	0.079	7.3	ug/L	173	Standard
	Zn	66	4731.4	2.1	**4.2285**	0.265	6.3	ug/L	130	Standard
>	**Ge**	72	503481.4	4.3				ug/L	491724	Standard
	As	75	526.8	4.6	**0.5242**	0.012	2.2	ug/L	-25	Standard
	Se	82	62.5	5.9	**0.4971**	0.013	2.6	ug/L	12	Standard
	Se-1	77	73.0	10.9	**0.3585**	0.086	24.0	ug/L	57	Standard
>	**Ga**	71	216.7	13.9				mg/L	148	Standard
	Rb	85	2733.6	1.6				ug/L	18	Standard
	Y	89	422057.6	7.6				ug/L	401845	Standard
>	**Rh**	103	68.3	11.2				ug/L	10	Standard
	Mo	98	279.8	4.4	**0.1129**	0.008	6.7	ug/L	12	Standard
	Ag	107	97.0	11.9	**0.0012**	0.003	216.7	ug/L	98	Standard
	Cd	111	40.5	2.4	**0.0170**	0.000	2.5	mg/L	11	Standard
	Cd	114	71.0	35.0	**0.0113**	0.006	51.4	ug/L	21	Standard
>	**In**	115	544133.8	4.3				ug/L	547487	Standard
	Sn	118	2075.1	3.5	**0.3287**	0.027	8.2	ug/L	450	Standard
	Sb	123	255.1	11.7	**0.0530**	0.009	17.6	ug/L	105	Standard
	Ba	135	71686.9	1.7	**39.2991**	2.336	5.9	ug/L	111	Standard
	Ce	140	6308.0	3.7				ug/L	107	Standard
>	**Tb**	159	874247.6	3.5				ug/L	890342	Standard
	Ho	165	205.0	17.6				ug/L	10	Standard
	Tl	203	72.3	6.8	**0.0062**	0.001	9.3	ug/L	19	Standard
	Tl	205	71.7	24.5	**0.0128**	0.003	22.0	ug/L	17	Standard
	Pb	206	870.4	1.3	**0.1280**	0.008	6.2	ug/L	247	Standard
	Pb	207	718.4	2.5	**0.1139**	0.005	4.4	ug/L	215	Standard
	Pb	208	2829.8	1.2	**0.1148**	0.006	5.6	ug/L	770	Standard
	U	238	125.7	17.0	**0.0206**	0.004	19.0	ug/L	13	Standard
>	**Bi**	209	493218.4	3.0				ug/L	503143	Standard

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Na	23	3.3	173.2	**36.2151**	62.718	173.2	mg/L	2	Standard
Mg	24	1295.1	2.9	**1.6648**	0.058	3.5	mg/L	35	Standard
K	39	110.0	9.1	**0.4127**	0.048	11.7	mg/L	25	Standard
Ca	43	135.0	14.8	**20.1289**	3.508	17.4	mg/L	38	Standard
Fe	54	213.8	22.6	**0.0577**	0.043	74.6	mg/L	126	Standard
Fe	57	361.7	4.2	**0.2754**	0.064	23.3	mg/L	245	Standard
> **Sc-1**	45	26180.9	1.3				mg/L	25066	Standard
Cl	35	162260.9	0.6				ug/L	125857	Standard
Kr	83	2.7	78.1				ug/L	1	Standard
Br	81	10053.3	4.2				ug/L	1350	Standard
P	31	24678.4	1.7				ug/L	18393	Standard
S	34	4714.1	1.8				ug/L	3739	Standard
Sr	88	126.7	12.7				ug/L	78	Standard
C	12	166.7	24.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	368.2	19.7				mg/L	2	Standard
Ho-1	165	205.0	17.6				mg/L	10	Standard
Er	166	176.7	57.8				mg/L	23	Standard
I	127	20693.0	48.0				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.445	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.391	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		99.388
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		98.028
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078710
Sample Date/Time: Tuesday, June 21, 2016 17:56:44
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62773.1	1.4				ug/L	60176	Standard
	Be	9	21.7	35.3	**0.0200**	0.011	52.9	ug/L	5	Standard
	Al	27	10724930.9	3.4	**78.2963**	3.661	4.7	ug/L	832	Standard
	Sc	45	27798.8	3.2				ug/L	25066	Standard
	Ti	47	562.7	17.6	**2.6295**	0.538	20.5	ug/L	38	Standard
	V	51	10217.9	0.6	**1.5004**	0.021	1.4	ug/L	974	Standard
	Cr	52	13153.7	0.9	**1.0695**	0.051	4.8	ug/L	5792	Standard
	Cr	53	1371.7	5.1	**1.2177**	0.058	4.8	ug/L	347	Standard
	Mn	55	29369.4	1.6	**4.2499**	0.136	3.2	ug/L	1164	Standard
	Co	59	1080.7	2.1	**0.1233**	0.002	1.9	ug/L	303	Standard
	Ni	60	1737.1	3.4	**0.7483**	0.031	4.2	ug/L	291	Standard
	Cu	65	1924.5	4.8	**0.9481**	0.033	3.5	ug/L	173	Standard
	Zn	66	4372.0	2.4	**3.8638**	0.075	2.0	ug/L	130	Standard
>	**Ge**	72	505797.3	1.7				ug/L	491724	Standard
	As	75	458.2	3.8	**0.4582**	0.009	2.1	ug/L	-25	Standard
	Se	82	38.6	4.6	**0.2705**	0.020	7.4	ug/L	12	Standard
	Se-1	77	65.3	7.6	**0.2495**	0.074	29.7	ug/L	57	Standard
>	**Ga**	71	210.0	13.3				mg/L	148	Standard
	Rb	85	3273.7	1.4				ug/L	18	Standard
	Y	89	418878.8	2.6				ug/L	401845	Standard
>	**Rh**	103	35.0	37.8				ug/L	10	Standard
	Mo	98	238.7	3.0	**0.0929**	0.004	4.0	ug/L	12	Standard
	Ag	107	109.0	6.6	**0.0027**	0.001	44.0	ug/L	98	Standard
	Cd	111	30.9	30.1	**0.0114**	0.005	43.6	mg/L	11	Standard
	Cd	114	87.2	2.7	**0.0142**	0.001	3.7	ug/L	21	Standard
>	**In**	115	559019.1	0.9				ug/L	547487	Standard
	Sn	118	1906.8	4.3	**0.2855**	0.012	4.3	ug/L	450	Standard
	Sb	123	250.1	13.3	**0.0500**	0.007	14.2	ug/L	105	Standard
	Ba	135	73442.9	1.3	**39.1229**	0.172	0.4	ug/L	111	Standard
	Ce	140	6873.2	4.0				ug/L	107	Standard
>	**Tb**	159	901790.2	0.8				ug/L	890342	Standard
	Ho	165	200.0	9.0				ug/L	10	Standard
	Tl	203	57.3	31.4	**0.0039**	0.002	58.7	ug/L	19	Standard
	Tl	205	43.3	35.3	**0.0078**	0.002	30.1	ug/L	17	Standard
	Pb	206	822.7	3.5	**0.1108**	0.007	6.1	ug/L	247	Standard
	Pb	207	701.0	5.6	**0.1033**	0.010	9.4	ug/L	215	Standard
	Pb	208	2697.1	1.4	**0.0998**	0.003	3.5	ug/L	770	Standard
	U	238	127.0	11.9	**0.0199**	0.002	11.8	ug/L	13	Standard
>	**Bi**	209	514062.2	0.8				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.4295**	30.180	173.2	mg/L	2	Standard
Mg	24	1238.4	1.7	**1.4957**	0.025	1.7	mg/L	35	Standard
K	39	105.0	17.2	**0.3595**	0.078	21.6	mg/L	25	Standard
Ca	43	170.0	10.6	**24.9795**	4.201	16.8	mg/L	38	Standard
Fe	54	232.4	2.4	**0.0625**	0.006	9.3	mg/L	126	Standard
Fe	57	421.7	12.1	**0.4086**	0.168	41.1	mg/L	245	Standard
> **Sc-1**	45	27798.8	3.2				mg/L	25066	Standard
Cl	35	170177.7	0.9				ug/L	125857	Standard
Kr	83	2.3	89.2				ug/L	1	Standard
Br	81	3510.4	1.7				ug/L	1350	Standard
P	31	25923.8	0.8				ug/L	18393	Standard
S	34	5000.8	2.7				ug/L	3739	Standard
Sr	88	136.7	27.0				ug/L	78	Standard
C	12	120.0	16.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	299.1	9.0				mg/L	2	Standard
Ho-1	165	200.0	9.0				mg/L	10	Standard
Er	166	226.7	11.1				mg/L	23	Standard
I	127	8357.3	3.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.316	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.862	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.106
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.170
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078711S WG573111-06
Sample Date/Time: Tuesday, June 21, 2016 17:59:56
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61600.0	1.8				ug/L	60176	Standard
	Be	9	39351.1	3.1	**53.5432**	1.639	3.1	ug/L	5	Standard
	Al	27	10394779.5	1.5	**77.3073**	1.057	1.4	ug/L	832	Standard
	Sc	45	27065.8	3.5				ug/L	25066	Standard
	Ti	47	963.4	10.6	**4.7337**	0.549	11.6	ug/L	38	Standard
	V	51	322757.3	1.8	**53.6046**	1.325	2.5	ug/L	974	Standard
	Cr	52	347982.3	1.9	**53.2836**	1.385	2.6	ug/L	5792	Standard
	Cr	53	43507.5	4.5	**52.3076**	2.705	5.2	ug/L	347	Standard
	Mn	55	375081.4	0.9	**57.8666**	0.893	1.5	ug/L	1164	Standard
	Co	59	321619.4	0.7	**52.2874**	0.580	1.1	ug/L	303	Standard
	Ni	60	93916.6	2.0	**51.5228**	1.331	2.6	ug/L	291	Standard
	Cu	65	93528.8	1.2	**51.7010**	0.970	1.9	ug/L	173	Standard
	Zn	66	57176.0	0.7	**54.3806**	0.702	1.3	ug/L	130	Standard
>	**Ge**	72	496488.3	0.7				ug/L	491724	Standard
	As	75	55790.3	0.6	**52.6752**	0.114	0.2	ug/L	-25	Standard
	Se	82	5538.3	0.8	**52.9638**	0.537	1.0	ug/L	12	Standard
	Se-1	77	3804.5	1.5	**52.6667**	0.727	1.4	ug/L	57	Standard
>	**Ga**	71	466.7	30.8				mg/L	148	Standard
	Rb	85	5205.9	1.3				ug/L	18	Standard
	Y	89	431108.9	0.1				ug/L	401845	Standard
>	**Rh**	103	70.0	18.9				ug/L	10	Standard
	Mo	98	227.0	2.9	**0.0880**	0.002	2.8	ug/L	12	Standard
	Ag	107	10615.7	2.8	**1.7450**	0.050	2.9	ug/L	98	Standard
	Cd	111	99211.0	0.7	**51.6114**	0.445	0.9	mg/L	11	Standard
	Cd	114	241106.1	2.5	**51.5544**	1.220	2.4	ug/L	21	Standard
>	**In**	115	559879.4	0.9				ug/L	547487	Standard
	Sn	118	2130.1	3.8	**0.3270**	0.012	3.7	ug/L	450	Standard
	Sb	123	217940.1	0.9	**50.1700**	0.382	0.8	ug/L	105	Standard
	Ba	135	167521.4	1.0	**89.1738**	0.251	0.3	ug/L	111	Standard
	Ce	140	9182.8	2.4				ug/L	107	Standard
>	**Tb**	159	892825.7	1.7				ug/L	890342	Standard
	Ho	165	245.0	15.9				ug/L	10	Standard
	Tl	203	382126.3	1.7	**51.0936**	0.456	0.9	ug/L	19	Standard
	Tl	205	328005.7	0.3	**53.4587**	0.419	0.8	ug/L	17	Standard
	Pb	206	247016.4	0.8	**51.3212**	0.143	0.3	ug/L	247	Standard
	Pb	207	215416.9	0.8	**49.2334**	0.302	0.6	ug/L	215	Standard
	Pb	208	864247.6	0.1	**52.7618**	0.483	0.9	ug/L	770	Standard
	U	238	310732.3	0.2	**52.3391**	0.578	1.1	ug/L	13	Standard
>	**Bi**	209	498043.4	1.0				ug/L	503143	Standard

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Na	23	1.7	173.2	**16.7109**	28.936	173.2	mg/L	2	Standard
Mg	24	1233.4	1.0	**1.5318**	0.064	4.2	mg/L	35	Standard
K	39	148.3	7.8	**0.5718**	0.033	5.8	mg/L	25	Standard
Ca	43	170.0	28.4	**25.9171**	9.688	37.4	mg/L	38	Standard
Fe	54	322.0	9.5	**0.1473**	0.036	24.5	mg/L	126	Standard
Fe	57	403.3	22.9	**0.3789**	0.313	82.6	mg/L	245	Standard
> **Sc-1**	45	27065.8	3.5				mg/L	25066	Standard
Cl	35	170176.5	1.7				ug/L	125857	Standard
Kr	83	3.0	57.7				ug/L	1	Standard
Br	81	4414.0	4.5				ug/L	1350	Standard
P	31	26219.3	3.1				ug/L	18393	Standard
S	34	5044.2	5.2				ug/L	3739	Standard
Sr	88	135.0	9.8				ug/L	78	Standard
C	12	86.7	17.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	373.8	5.4				mg/L	2	Standard
Ho-1	165	245.0	15.9				mg/L	10	Standard
Er	166	200.0	13.2				mg/L	23	Standard
I	127	7025.0	4.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.367	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.969	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.264	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.987	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606078712SD WG573111-07
Sample Date/Time: Tuesday, June 21, 2016 18:03:07
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61029.3	0.4				ug/L	60176	Standard
	Be	9	38696.0	1.1	**53.1381**	0.388	0.7	ug/L	5	Standard
	Al	27	10635305.8	0.7	**79.8285**	0.406	0.5	ug/L	832	Standard
	Sc	45	27050.8	1.0				ug/L	25066	Standard
	Ti	47	1614.1	5.0	**7.8928**	0.372	4.7	ug/L	38	Standard
	V	51	334955.3	1.2	**54.4598**	1.088	2.0	ug/L	974	Standard
	Cr	52	351881.2	0.4	**52.7321**	0.628	1.2	ug/L	5792	Standard
	Cr	53	43774.8	1.5	**51.5065**	1.170	2.3	ug/L	347	Standard
	Mn	55	501871.8	1.6	**75.8606**	1.449	1.9	ug/L	1164	Standard
	Co	59	333145.1	1.3	**53.0208**	0.897	1.7	ug/L	303	Standard
	Ni	60	94669.2	0.6	**50.8362**	0.710	1.4	ug/L	291	Standard
	Cu	65	95052.6	1.5	**51.4370**	1.187	2.3	ug/L	173	Standard
	Zn	66	58277.2	0.4	**54.2587**	0.599	1.1	ug/L	130	Standard
>	**Ge**	72	507183.4	0.8				ug/L	491724	Standard
	As	75	57125.5	0.7	**52.8022**	0.788	1.5	ug/L	-25	Standard
	Se	82	5703.6	1.6	**53.3992**	1.190	2.2	ug/L	12	Standard
	Se-1	77	3834.5	0.9	**51.9576**	0.800	1.5	ug/L	57	Standard
>	**Ga**	71	908.4	9.4				mg/L	148	Standard
	Rb	85	10995.7	2.2				ug/L	18	Standard
	Y	89	422851.2	3.7				ug/L	401845	Standard
>	**Rh**	103	70.0	14.3				ug/L	10	Standard
	Mo	98	243.6	1.0	**0.0962**	0.001	1.5	ug/L	12	Standard
	Ag	107	9863.9	1.6	**1.6460**	0.047	2.9	ug/L	98	Standard
	Cd	111	99159.1	2.8	**52.3764**	0.965	1.8	mg/L	11	Standard
	Cd	114	235716.4	1.9	**51.1824**	0.756	1.5	ug/L	21	Standard
>	**In**	115	551348.1	1.3				ug/L	547487	Standard
	Sn	118	2651.9	2.8	**0.4332**	0.019	4.4	ug/L	450	Standard
	Sb	123	193703.2	1.2	**45.2835**	0.741	1.6	ug/L	105	Standard
	Ba	135	168991.9	2.6	**91.3544**	2.313	2.5	ug/L	111	Standard
	Ce	140	32860.6	2.6				ug/L	107	Standard
>	**Tb**	159	880118.4	0.8				ug/L	890342	Standard
	Ho	165	470.0	4.9				ug/L	10	Standard
	Tl	203	380545.4	1.6	**50.5209**	0.728	1.4	ug/L	19	Standard
	Tl	205	329715.6	2.7	**53.3513**	1.427	2.7	ug/L	17	Standard
	Pb	206	252108.4	1.5	**52.0068**	0.872	1.7	ug/L	247	Standard
	Pb	207	219746.2	1.1	**49.8641**	0.528	1.1	ug/L	215	Standard
	Pb	208	883612.2	0.6	**53.5586**	0.555	1.0	ug/L	770	Standard
	U	238	309715.2	1.9	**51.7947**	1.152	2.2	ug/L	13	Standard
>	**Bi**	209	501621.6	0.6				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.3130**	29.978	173.2	mg/L	2	Standard
Mg	24	1170.0	3.4	**1.4509**	0.059	4.0	mg/L	35	Standard
K	39	130.0	27.7	**0.4888**	0.170	34.7	mg/L	25	Standard
Ca	43	153.3	12.3	**22.6892**	3.519	15.5	mg/L	38	Standard
Fe	54	591.5	1.7	**0.3836**	0.008	2.1	mg/L	126	Standard
Fe	57	516.7	13.6	**0.7964**	0.241	30.3	mg/L	245	Standard
> **Sc-1**	45	27050.8	1.0				mg/L	25066	Standard
Cl	35	165809.3	2.3				ug/L	125857	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	2850.3	4.1				ug/L	1350	Standard
P	31	26767.0	3.2				ug/L	18393	Standard
S	34	4750.7	2.1				ug/L	3739	Standard
Sr	88	130.0	7.7				ug/L	78	Standard
C	12	126.7	18.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	835.0	2.5				mg/L	2	Standard
Ho-1	165	470.0	4.9				mg/L	10	Standard
Er	166	453.3	25.8				mg/L	23	Standard
I	127	6214.6	6.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.418	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.144	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.705
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.698
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078718
Sample Date/Time: Tuesday, June 21, 2016 18:06:19
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61345.6	1.0				ug/L	60176	Standard
	Be	9	36.7	28.4	**0.0411**	0.014	34.6	ug/L	5	Standard
	Al	27	13853606.9	0.9	**103.4648**	1.981	1.9	ug/L	832	Standard
	Sc	45	26648.4	1.5				ug/L	25066	Standard
	Ti	47	1471.7	1.8	**7.3873**	0.204	2.8	ug/L	38	Standard
	V	51	15922.0	1.1	**2.4991**	0.067	2.7	ug/L	974	Standard
	Cr	52	13836.7	2.0	**1.2265**	0.015	1.2	ug/L	5792	Standard
	Cr	53	1288.4	6.0	**1.1570**	0.071	6.1	ug/L	347	Standard
	Mn	55	329136.0	2.3	**51.0786**	1.557	3.0	ug/L	1164	Standard
	Co	59	3178.0	2.5	**0.4710**	0.005	1.1	ug/L	303	Standard
	Ni	60	3429.7	2.4	**1.7103**	0.073	4.2	ug/L	291	Standard
	Cu	65	2424.9	0.9	**1.2538**	0.023	1.8	ug/L	173	Standard
	Zn	66	21892.8	1.6	**20.8141**	0.673	3.2	ug/L	130	Standard
>	**Ge**	72	493399.5	1.6				ug/L	491724	Standard
	As	75	662.7	6.1	**0.6629**	0.029	4.3	ug/L	-25	Standard
	Se	82	30.1	21.2	**0.1969**	0.058	29.3	ug/L	12	Standard
	Se-1	77	65.0	20.4	**0.2652**	0.174	65.4	ug/L	57	Standard
>	**Ga**	71	763.4	6.3				mg/L	148	Standard
	Rb	85	11562.7	2.6				ug/L	18	Standard
	Y	89	414722.7	0.7				ug/L	401845	Standard
>	**Rh**	103	61.7	26.1				ug/L	10	Standard
	Mo	98	2202.2	2.7	**0.9051**	0.023	2.6	ug/L	12	Standard
	Ag	107	93.7	9.6	**0.0004**	0.002	405.8	ug/L	98	Standard
	Cd	111	36.0	24.1	**0.0143**	0.005	32.0	mg/L	11	Standard
	Cd	114	82.5	18.5	**0.0135**	0.003	24.8	ug/L	21	Standard
>	**In**	115	551654.9	0.3				ug/L	547487	Standard
	Sn	118	1025.0	2.0	**0.1219**	0.003	2.7	ug/L	450	Standard
	Sb	123	1356.4	22.3	**0.3093**	0.070	22.8	ug/L	105	Standard
	Ba	135	129981.5	0.7	**70.2106**	0.381	0.5	ug/L	111	Standard
	Ce	140	35964.3	1.5				ug/L	107	Standard
>	**Tb**	159	898275.8	1.4				ug/L	890342	Standard
	Ho	165	588.3	7.7				ug/L	10	Standard
	Tl	203	129.0	10.2	**0.0136**	0.002	11.4	ug/L	19	Standard
	Tl	205	128.3	28.2	**0.0218**	0.006	27.3	ug/L	17	Standard
	Pb	206	2292.8	1.9	**0.4195**	0.012	2.9	ug/L	247	Standard
	Pb	207	1882.5	1.6	**0.3763**	0.003	0.8	ug/L	215	Standard
	Pb	208	7667.1	0.4	**0.4062**	0.006	1.5	ug/L	770	Standard
	U	238	370.0	8.6	**0.0612**	0.005	8.6	ug/L	13	Standard
>	**Bi**	209	500668.3	1.1				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.6673**	30.592	173.2	mg/L	2	Standard
Mg	24	3412.1	3.5	**4.3714**	0.183	4.2	mg/L	35	Standard
K	39	153.3	13.2	**0.6068**	0.098	16.1	mg/L	25	Standard
Ca	43	170.0	16.4	**26.2488**	5.560	21.2	mg/L	38	Standard
Fe	54	683.7	6.3	**0.4734**	0.029	6.2	mg/L	126	Standard
Fe	57	593.3	9.3	**1.1125**	0.233	21.0	mg/L	245	Standard
> **Sc-1**	45	26648.4	1.5				mg/L	25066	Standard
Cl	35	162659.9	1.3				ug/L	125857	Standard
Kr	83	4.3	81.0				ug/L	1	Standard
Br	81	1856.8	15.6				ug/L	1350	Standard
P	31	25311.1	1.5				ug/L	18393	Standard
S	34	4550.7	1.1				ug/L	3739	Standard
Sr	88	181.7	9.7				ug/L	78	Standard
C	12	63.3	9.1				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	938.6	15.9				mg/L	2	Standard
Ho-1	165	588.3	7.7				mg/L	10	Standard
Er	166	516.7	15.6				mg/L	23	Standard
I	127	3795.5	3.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.944	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.341	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.761
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.508
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606086201 WG573111-02
Sample Date/Time: Tuesday, June 21, 2016 18:09:30
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70003.4	5.7				ug/L	60176	Standard
	Be	9	36.7	20.8	**0.0348**	0.009	24.5	ug/L	5	Standard
	Al	27	16610862.4	6.4	**108.6830**	1.728	1.6	ug/L	832	Standard
	Sc	45	26531.6	3.2				ug/L	25066	Standard
	Ti	47	79.3	22.9	**0.1919**	0.082	42.6	ug/L	38	Standard
	V	51	2014.4	26.0	**0.1599**	0.083	51.6	ug/L	974	Standard
	Cr	52	10191.1	1.8	**0.6236**	0.029	4.7	ug/L	5792	Standard
	Cr	53	1240.1	4.8	**1.0705**	0.108	10.1	ug/L	347	Standard
	Mn	55	135277.1	2.5	**20.4449**	0.338	1.7	ug/L	1164	Standard
	Co	59	3194.7	8.9	**0.4633**	0.042	9.0	ug/L	303	Standard
	Ni	60	4307.3	3.2	**2.1481**	0.040	1.8	ug/L	291	Standard
	Cu	65	2946.0	3.6	**1.5109**	0.014	0.9	ug/L	173	Standard
	Zn	66	4156.6	3.8	**3.6798**	0.081	2.2	ug/L	130	Standard
>	**Ge**	72	503442.9	2.8				ug/L	491724	Standard
	As	75	284.8	17.5	**0.2994**	0.050	16.6	ug/L	-25	Standard
	Se	82	101.4	8.8	**0.8650**	0.083	9.6	ug/L	12	Standard
	Se-1	77	87.0	7.2	**0.5544**	0.111	20.1	ug/L	57	Standard
>	**Ga**	71	96.7	15.8				mg/L	148	Standard
	Rb	85	10238.5	4.2				ug/L	18	Standard
	Y	89	429610.1	1.8				ug/L	401845	Standard
>	**Rh**	103	65.0	13.3				ug/L	10	Standard
	Mo	98	201.8	61.9	**0.0760**	0.048	63.5	ug/L	12	Standard
	Ag	107	138.7	53.9	**0.0071**	0.012	164.1	ug/L	98	Standard
	Cd	111	55.1	4.5	**0.0236**	0.002	6.5	mg/L	11	Standard
	Cd	114	127.5	35.8	**0.0224**	0.009	41.4	ug/L	21	Standard
>	**In**	115	568273.2	3.6				ug/L	547487	Standard
	Sn	118	590.0	11.4	**0.0352**	0.009	25.4	ug/L	450	Standard
	Sb	123	675.3	25.4	**0.1449**	0.035	24.0	ug/L	105	Standard
	Ba	135	11427.3	2.3	**5.9431**	0.086	1.4	ug/L	111	Standard
	Ce	140	1858.4	6.1				ug/L	107	Standard
>	**Tb**	159	912569.9	2.0				ug/L	890342	Standard
	Ho	165	186.7	6.7				ug/L	10	Standard
	Tl	203	338.7	64.0	**0.0413**	0.028	67.6	ug/L	19	Standard
	Tl	205	318.3	54.7	**0.0526**	0.027	52.2	ug/L	17	Standard
	Pb	206	619.3	45.9	**0.0728**	0.056	77.2	ug/L	247	Standard
	Pb	207	529.7	52.6	**0.0680**	0.061	89.6	ug/L	215	Standard
	Pb	208	1946.1	35.0	**0.0582**	0.039	67.2	ug/L	770	Standard
	U	238	472.3	32.1	**0.0784**	0.024	31.1	ug/L	13	Standard
>	**Bi**	209	499634.8	2.9				ug/L	503143	Standard

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Na	23	3.3	86.6	**35.1997**	30.527	86.7	mg/L	2	Standard
Mg	24	58866.0	4.8	**76.3418**	1.277	1.7	mg/L	35	Standard
K	39	203.3	22.3	**0.8502**	0.245	28.9	mg/L	25	Standard
Ca	43	263.3	12.6	**43.7969**	6.786	15.5	mg/L	38	Standard
Fe	54	172.6	3.6	**0.0183**	0.008	42.0	mg/L	126	Standard
Fe	57	565.0	6.2	**1.0188**	0.198	19.5	mg/L	245	Standard
> **Sc-1**	45	26531.6	3.2				mg/L	25066	Standard
Cl	35	528870.2	4.8				ug/L	125857	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	18100.9	11.2				ug/L	1350	Standard
P	31	22234.7	5.0				ug/L	18393	Standard
S	34	4849.1	0.7				ug/L	3739	Standard
Sr	88	275.0	7.3				ug/L	78	Standard
C	12	93.3	16.4				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	288.4	8.8				mg/L	2	Standard
Ho-1	165	186.7	6.7				mg/L	10	Standard
Er	166	103.3	22.3				mg/L	23	Standard
I	127	6759.8	6.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.331	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.383	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.797
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.303
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606086201 WG573111-02
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Method 6020 - Summary Report

Sample ID: L1606086201DP WG573111-08
Sample Date/Time: Tuesday, June 21, 2016 18:12:42
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77315.1	0.8				ug/L	60176	Standard
	Be	9	36.7	55.1	**0.0306**	0.022	70.8	ug/L	5	Standard
	Al	27	17227028.4	3.4	**102.0589**	2.703	2.6	ug/L	832	Standard
	Sc	45	26312.9	5.4				ug/L	25066	Standard
	Ti	47	92.7	6.6	**0.2625**	0.044	16.8	ug/L	38	Standard
	V	51	1770.2	7.4	**0.1214**	0.033	27.3	ug/L	974	Standard
	Cr	52	10246.5	1.8	**0.6348**	0.045	7.2	ug/L	5792	Standard
	Cr	53	1068.4	4.2	**0.8651**	0.006	0.7	ug/L	347	Standard
	Mn	55	134734.3	3.6	**20.3882**	0.086	0.4	ug/L	1164	Standard
	Co	59	2977.6	2.6	**0.4294**	0.015	3.5	ug/L	303	Standard
	Ni	60	4134.6	6.2	**2.0561**	0.052	2.5	ug/L	291	Standard
	Cu	65	2902.9	3.4	**1.4903**	0.037	2.5	ug/L	173	Standard
	Zn	66	4166.9	2.6	**3.6969**	0.093	2.5	ug/L	130	Standard
>	**Ge**	72	502766.3	3.9				ug/L	491724	Standard
	As	75	231.7	9.5	**0.2502**	0.026	10.3	ug/L	-25	Standard
	Se	82	82.9	12.5	**0.6918**	0.104	15.0	ug/L	12	Standard
	Se-1	77	92.7	5.9	**0.6360**	0.126	19.8	ug/L	57	Standard
>	**Ga**	71	116.7	13.1				mg/L	148	Standard
	Rb	85	10200.1	2.2				ug/L	18	Standard
	Y	89	445666.9	2.4				ug/L	401845	Standard
>	**Rh**	103	83.3	15.1				ug/L	10	Standard
	Mo	98	109.3	3.3	**0.0379**	0.001	2.8	ug/L	12	Standard
	Ag	107	78.3	5.3	**-0.0030**	0.001	22.0	ug/L	98	Standard
	Cd	111	32.1	9.6	**0.0112**	0.002	16.1	mg/L	11	Standard
	Cd	114	61.4	31.5	**0.0081**	0.004	52.2	ug/L	21	Standard
>	**In**	115	588323.0	2.0				ug/L	547487	Standard
	Sn	118	506.7	15.4	**0.0167**	0.013	77.1	ug/L	450	Standard
	Sb	123	391.2	12.5	**0.0783**	0.013	16.1	ug/L	105	Standard
	Ba	135	11417.0	3.2	**5.7308**	0.081	1.4	ug/L	111	Standard
	Ce	140	1880.1	4.4				ug/L	107	Standard
>	**Tb**	159	936011.4	2.7				ug/L	890342	Standard
	Ho	165	181.7	20.8				ug/L	10	Standard
	Tl	203	161.0	14.9	**0.0175**	0.004	20.0	ug/L	19	Standard
	Tl	205	160.0	27.8	**0.0266**	0.008	28.3	ug/L	17	Standard
	Pb	206	452.7	4.8	**0.0372**	0.007	18.1	ug/L	247	Standard
	Pb	207	379.3	5.9	**0.0328**	0.007	22.4	ug/L	215	Standard
	Pb	208	1520.0	3.7	**0.0310**	0.006	19.0	ug/L	770	Standard
	U	238	306.7	5.7	**0.0497**	0.003	6.7	ug/L	13	Standard
>	**Bi**	209	509399.4	2.7				ug/L	503143	Standard

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Na	23	3.3	86.6	**36.1951**	31.438	86.9	mg/L	2	Standard
Mg	24	59695.8	3.9	**78.1443**	2.085	2.7	mg/L	35	Standard
K	39	236.7	11.6	**1.0180**	0.191	18.8	mg/L	25	Standard
Ca	43	230.0	14.3	**37.7841**	4.654	12.3	mg/L	38	Standard
Fe	54	155.5	13.6	**0.0041**	0.017	424.3	mg/L	126	Standard
Fe	57	521.7	15.8	**0.8829**	0.414	46.9	mg/L	245	Standard
> **Sc-1**	45	26312.9	5.4				mg/L	25066	Standard
Cl	35	564291.5	2.7				ug/L	125857	Standard
Kr	83	1.0	0.0				ug/L	1	Standard
Br	81	11614.5	6.5				ug/L	1350	Standard
P	31	22116.2	5.6				ug/L	18393	Standard
S	34	4845.8	1.1				ug/L	3739	Standard
Sr	88	280.0	12.4				ug/L	78	Standard
C	12	113.3	18.4				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	262.8	27.6				mg/L	2	Standard
Ho-1	165	181.7	20.8				mg/L	10	Standard
Er	166	150.0	40.0				mg/L	23	Standard
I	127	6614.8	4.5				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.482	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.246	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.459
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.244
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606088302
Sample Date/Time: Tuesday, June 21, 2016 18:15:53
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72031.1	4.6				ug/L	60176	Standard
	Be	9	43.3	52.0	**0.0410**	0.025	59.9	ug/L	5	Standard
	Al	27	18877330.6	2.8	**120.1329**	2.878	2.4	ug/L	832	Standard
	Sc	45	26508.2	2.8				ug/L	25066	Standard
	Ti	47	1389.4	3.9	**6.9356**	0.221	3.2	ug/L	38	Standard
	V	51	10133.0	2.4	**1.5222**	0.036	2.4	ug/L	974	Standard
	Cr	52	17075.6	2.7	**1.7253**	0.058	3.4	ug/L	5792	Standard
	Cr	53	2106.8	4.1	**2.1475**	0.127	5.9	ug/L	347	Standard
	Mn	55	8659860.5	3.3	**1344.4292**	36.890	2.7	ug/L	1164	Standard
	Co	59	26955.7	4.2	**4.3488**	0.153	3.5	ug/L	303	Standard
	Ni	60	24380.9	3.0	**13.2700**	0.290	2.2	ug/L	291	Standard
	Cu	65	3102.3	3.6	**1.6250**	0.048	3.0	ug/L	173	Standard
	Zn	66	73890.8	2.7	**70.5385**	1.291	1.8	ug/L	130	Standard
>	**Ge**	72	495064.0	0.9				ug/L	491724	Standard
	As	75	7508.6	3.4	**7.1381**	0.186	2.6	ug/L	-25	Standard
	Se	82	88.8	5.6	**0.7604**	0.041	5.3	ug/L	12	Standard
	Se-1	77	104.3	8.0	**0.8163**	0.107	13.1	ug/L	57	Standard
>	**Ga**	71	1203.4	6.0				mg/L	148	Standard
	Rb	85	18631.5	4.9				ug/L	18	Standard
	Y	89	471499.9	4.5				ug/L	401845	Standard
>	**Rh**	103	68.3	23.5				ug/L	10	Standard
	Mo	98	16975.2	1.8	**6.8750**	0.095	1.4	ug/L	12	Standard
	Ag	107	124.7	8.1	**0.0052**	0.002	43.3	ug/L	98	Standard
	Cd	111	354.4	5.3	**0.1790**	0.013	7.3	mg/L	11	Standard
	Cd	114	927.6	4.1	**0.1930**	0.003	1.7	ug/L	21	Standard
>	**In**	115	562376.6	3.1				ug/L	547487	Standard
	Sn	118	4190.6	1.8	**0.7122**	0.033	4.6	ug/L	450	Standard
	Sb	123	1237.0	1.3	**0.2761**	0.009	3.1	ug/L	105	Standard
	Ba	135	323863.4	1.8	**171.7335**	2.697	1.6	ug/L	111	Standard
	Ce	140	34140.1	1.5				ug/L	107	Standard
>	**Tb**	159	897272.3	2.5				ug/L	890342	Standard
	Ho	165	3113.7	2.4				ug/L	10	Standard
	Tl	203	64.7	19.9	**0.0051**	0.002	33.0	ug/L	19	Standard
	Tl	205	68.3	15.2	**0.0121**	0.002	13.5	ug/L	17	Standard
	Pb	206	38821.3	1.4	**8.0108**	0.071	0.9	ug/L	247	Standard
	Pb	207	32359.9	2.0	**7.3434**	0.107	1.5	ug/L	215	Standard
	Pb	208	128351.5	2.3	**7.7758**	0.128	1.6	ug/L	770	Standard
	U	238	8442.7	2.9	**1.4196**	0.032	2.3	ug/L	13	Standard
>	**Bi**	209	498550.4	0.6				ug/L	503143	Standard

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Na	23	5.0	100.0	**53.3736**	52.932	99.2	mg/L	2	Standard
Mg	24	21398.5	5.6	**27.7596**	1.350	4.9	mg/L	35	Standard
K	39	1008.4	11.1	**4.6456**	0.585	12.6	mg/L	25	Standard
Ca	43	186.7	14.8	**29.4057**	4.377	14.9	mg/L	38	Standard
Fe	54	2908.8	2.8	**2.4754**	0.120	4.8	mg/L	126	Standard
Fe	57	1130.0	7.4	**3.1241**	0.310	9.9	mg/L	245	Standard
> **Sc-1**	45	26508.2	2.8				mg/L	25066	Standard
Cl	35	207996.3	4.3				ug/L	125857	Standard
Kr	83	2.7	78.1				ug/L	1	Standard
Br	81	11254.2	3.5				ug/L	1350	Standard
P	31	26543.2	2.6				ug/L	18393	Standard
S	34	4722.4	7.5				ug/L	3739	Standard
Sr	88	290.0	4.6				ug/L	78	Standard
C	12	550.0	9.1				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	4557.8	5.5				mg/L	2	Standard
Ho-1	165	3113.7	2.4				mg/L	10	Standard
Er	166	2983.6	2.5				mg/L	23	Standard
I	127	203725.5	6.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.701	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.679	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.720	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.087	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 18:19:06
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68241.8	3.0				ug/L	60176	Standard
	Be	9	42051.7	3.8	**51.6361**	0.537	1.0	ug/L	5	Standard
	Al	27	6971995.2	1.7	**46.8104**	0.719	1.5	ug/L	832	Standard
	Sc	45	24852.0	1.3				ug/L	25066	Standard
	Ti	47	20097.0	2.7	**107.8691**	2.722	2.5	ug/L	38	Standard
	V	51	307873.7	1.3	**53.6238**	0.489	0.9	ug/L	974	Standard
	Cr	52	328667.5	1.2	**52.7708**	0.685	1.3	ug/L	5792	Standard
	Cr	53	41331.3	2.5	**52.1074**	1.405	2.7	ug/L	347	Standard
	Mn	55	323878.6	1.2	**52.3860**	0.759	1.4	ug/L	1164	Standard
	Co	59	325002.9	1.5	**55.4186**	0.688	1.2	ug/L	303	Standard
	Ni	60	90037.4	0.9	**51.8053**	0.679	1.3	ug/L	291	Standard
	Cu	65	90581.0	1.5	**52.5134**	0.543	1.0	ug/L	173	Standard
	Zn	66	53001.9	0.8	**52.8632**	0.064	0.1	ug/L	130	Standard
>	Ge	72	473368.8	0.8				ug/L	491724	Standard
	As	75	53534.5	0.7	**53.0137**	0.077	0.1	ug/L	-25	Standard
	Se	82	5487.6	1.0	**55.0445**	0.192	0.3	ug/L	12	Standard
	Se-1	77	3650.1	0.8	**53.0021**	0.366	0.7	ug/L	57	Standard
>	Ga	71	215.0	9.3				mg/L	148	Standard
	Rb	85	910.0	6.2				ug/L	18	Standard
	Y	89	416501.3	1.6				ug/L	401845	Standard
>	Rh	103	51.7	20.1				ug/L	10	Standard
	Mo	98	242295.3	0.6	**98.0576**	1.644	1.7	ug/L	12	Standard
	Ag	107	299878.8	2.2	**49.4337**	1.074	2.2	ug/L	98	Standard
	Cd	111	98207.6	0.4	**50.8054**	0.675	1.3	mg/L	11	Standard
	Cd	114	240827.7	3.2	**51.1947**	0.841	1.6	ug/L	21	Standard
>	In	115	563072.6	1.7				ug/L	547487	Standard
	Sn	118	264056.2	0.9	**49.3801**	1.145	2.3	ug/L	450	Standard
	Sb	123	215333.2	1.5	**49.2924**	0.748	1.5	ug/L	105	Standard
	Ba	135	93099.8	1.2	**49.2664**	1.301	2.6	ug/L	111	Standard
	Ce	140	76.7	30.8				ug/L	107	Standard
>	Tb	159	879908.2	1.7				ug/L	890342	Standard
	Ho	165	3.3	173.2				ug/L	10	Standard
	Tl	203	383264.6	0.5	**51.4037**	0.933	1.8	ug/L	19	Standard
	Tl	205	335822.7	2.8	**54.8792**	0.706	1.3	ug/L	17	Standard
	Pb	206	245508.2	1.1	**51.1598**	0.909	1.8	ug/L	247	Standard
	Pb	207	222387.2	0.6	**50.9816**	0.958	1.9	ug/L	215	Standard
	Pb	208	870389.8	0.4	**53.3024**	1.410	2.6	ug/L	770	Standard
	U	238	316954.9	1.4	**53.5444**	1.099	2.1	ug/L	13	Standard
>	Bi	209	496674.2	2.3				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3777.1	3.0	**5.1944**	0.100	1.9	mg/L	35	Standard
K	39	940.0	7.7	**4.6131**	0.347	7.5	mg/L	25	Standard
Ca	43	46.7	27.0	**3.9480**	2.492	63.1	mg/L	38	Standard
Fe	54	5268.6	7.7	**4.9055**	0.368	7.5	mg/L	126	Standard
Fe	57	1598.4	5.2	**5.2665**	0.320	6.1	mg/L	245	Standard
Sc-1	45	24852.0	1.3				mg/L	25066	Standard
Cl	35	163793.4	1.6				ug/L	125857	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	1850.1	19.4				ug/L	1350	Standard
P	31	22236.3	2.1				ug/L	18393	Standard
S	34	4902.5	1.0				ug/L	3739	Standard
Sr	88	91.7	24.6				ug/L	78	Standard
C	12	70.0	0.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	18.9	49.2				mg/L	2	Standard
Ho-1	165	3.3	173.2				mg/L	10	Standard
Er	166	23.3	65.5				mg/L	23	Standard
I	127	5351.1	56.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	103.272		
Al	27	93.621		
Sc	45			
Ti	47	107.869		
V	51	107.248		
Cr	52	105.542		
Cr	53			
Mn	55	104.772		
Co	59	110.837		
Ni	60	103.611		
Cu	65	105.027		
Zn	66	105.726		
Ge	72		96.267	
As	75	106.027		
Se	82	110.089		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.058		
Ag	107	98.867		
Cd	111	101.611		
Cd	114			
> In	115		102.847	
Sn	118	98.760		
Sb	123	98.585		
Ba	135	98.533		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	102.807		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.605		
U	238	107.089		
> Bi	209		98.714	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Co	59	
QC Std 6	Se	82	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 18:22:18
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67175.3	1.0				ug/L	60176	Standard
	Be	9	20.0	25.0	**0.0159**	0.006	38.1	ug/L	5	Standard
	Al	27	2591.9	21.1	**0.0093**	0.004	40.6	ug/L	832	Standard
	Sc	45	25002.3	1.9				ug/L	25066	Standard
	Ti	47	26.3	8.8	**-0.0730**	0.015	21.1	ug/L	38	Standard
	V	51	1024.0	6.3	**-0.0008**	0.011	1434.1	ug/L	974	Standard
	Cr	52	6027.2	0.6	**-0.0071**	0.031	440.7	ug/L	5792	Standard
	Cr	53	448.3	17.4	**0.1301**	0.110	84.6	ug/L	347	Standard
	Mn	55	1540.7	13.4	**0.0229**	0.038	165.9	ug/L	1164	Standard
	Co	59	299.7	11.6	**-0.0007**	0.007	1063.7	ug/L	303	Standard
	Ni	60	216.7	14.8	**-0.0720**	0.016	21.7	ug/L	291	Standard
	Cu	65	161.7	10.9	**-0.0086**	0.009	106.2	ug/L	173	Standard
	Zn	66	175.3	6.1	**-0.0687**	0.005	7.4	ug/L	130	Standard
>	**Ge**	72	498606.4	3.0				ug/L	491724	Standard
	As	75	-26.7	98.4	**0.0088**	0.025	280.9	ug/L	-25	Standard
	Se	82	16.5	23.4	**0.0653**	0.041	63.0	ug/L	12	Standard
	Se-1	77	55.0	16.7	**0.1158**	0.104	89.8	ug/L	57	Standard
>	**Ga**	71	146.7	26.5				mg/L	148	Standard
	Rb	85	28.3	62.0				ug/L	18	Standard
	Y	89	424941.7	0.7				ug/L	401845	Standard
>	**Rh**	103	51.7	27.9				ug/L	10	Standard
	Mo	98	218.0	16.8	**0.0834**	0.015	17.7	ug/L	12	Standard
	Ag	107	103.3	10.3	**0.0016**	0.002	104.0	ug/L	98	Standard
	Cd	111	15.6	39.7	**0.0033**	0.003	97.5	mg/L	11	Standard
	Cd	114	35.3	50.3	**0.0030**	0.004	124.6	ug/L	21	Standard
>	**In**	115	565960.7	1.0				ug/L	547487	Standard
	Sn	118	921.7	38.3	**0.0980**	0.067	68.7	ug/L	450	Standard
	Sb	123	408.0	24.4	**0.0853**	0.023	26.8	ug/L	105	Standard
	Ba	135	123.7	12.1	**0.0096**	0.008	87.6	ug/L	111	Standard
	Ce	140	18.3	63.0				ug/L	107	Standard
>	**Tb**	159	883902.4	1.6				ug/L	890342	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	63.7	25.9	**0.0050**	0.002	46.4	ug/L	19	Standard
	Tl	205	55.0	39.6	**0.0100**	0.004	36.9	ug/L	17	Standard
	Pb	206	285.3	5.4	**0.0043**	0.004	96.3	ug/L	247	Standard
	Pb	207	231.7	13.5	**0.0008**	0.008	949.4	ug/L	215	Standard
	Pb	208	973.0	3.2	**-0.0006**	0.002	406.9	ug/L	770	Standard
	U	238	35.7	23.5	**0.0052**	0.002	29.1	ug/L	13	Standard
>	**Bi**	209	499145.6	2.0				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.6835**	32.352	173.2	mg/L	2	Standard
Mg	24	31.7	50.8	**0.0049**	0.023	465.6	mg/L	35	Standard
K	39	15.0	33.3	**-0.0372**	0.026	69.8	mg/L	25	Standard
Ca	43	28.3	20.4	**0.2868**	1.247	434.6	mg/L	38	Standard
Fe	54	104.1	41.5	**-0.0380**	0.040	104.4	mg/L	126	Standard
Fe	57	216.7	17.3	**-0.2352**	0.133	56.4	mg/L	245	Standard
> **Sc-1**	45	25002.3	1.9				mg/L	25066	Standard
Cl	35	165048.8	0.9				ug/L	125857	Standard
Kr	83	2.7	21.7				ug/L	1	Standard
Br	81	1623.4	12.1				ug/L	1350	Standard
P	31	22124.5	3.3				ug/L	18393	Standard
S	34	4804.1	3.4				ug/L	3739	Standard
Sr	88	68.3	27.7				ug/L	78	Standard
C	12	66.7	31.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.0	193.9				mg/L	2	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	1761.8	7.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.400	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.374	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.206	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606089601
Sample Date/Time: Tuesday, June 21, 2016 18:25:31
Number of Replicates: 3
Autosampler Position: 346
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70103.6	3.0				ug/L	60176	Standard
	Be	9	30.0	16.7	**0.0268**	0.005	18.6	ug/L	5	Standard
	Al	27	3685234.3	1.1	**24.0854**	0.545	2.3	ug/L	832	Standard
	Sc	45	27947.4	2.4				ug/L	25066	Standard
	Ti	47	382.0	70.3	**1.6605**	1.282	77.2	ug/L	38	Standard
	V	51	1685.0	2.5	**0.0990**	0.013	12.7	ug/L	974	Standard
	Cr	52	9250.2	0.4	**0.4417**	0.034	7.7	ug/L	5792	Standard
	Cr	53	1403.4	4.4	**1.2193**	0.042	3.4	ug/L	347	Standard
	Mn	55	19012124.1	0.6	**2827.7756**	74.302	2.6	ug/L	1164	Standard
	Co	59	222392.0	0.8	**34.7165**	1.037	3.0	ug/L	303	Standard
	Ni	60	2226.5	4.2	**0.9867**	0.048	4.9	ug/L	291	Standard
	Cu	65	381.0	0.5	**0.1050**	0.004	3.5	ug/L	173	Standard
	Zn	66	3054.6	2.1	**2.5666**	0.027	1.1	ug/L	130	Standard
>	**Ge**	72	517022.9	2.2				ug/L	491724	Standard
	As	75	3484.3	1.7	**3.1917**	0.073	2.3	ug/L	-25	Standard
	Se	82	132.5	2.0	**1.1265**	0.041	3.6	ug/L	12	Standard
	Se-1	77	106.3	7.5	**0.7815**	0.106	13.5	ug/L	57	Standard
>	**Ga**	71	960.0	20.1				mg/L	148	Standard
	Rb	85	23004.1	0.8				ug/L	18	Standard
	Y	89	437717.7	0.3				ug/L	401845	Standard
>	**Rh**	103	45.0	38.5				ug/L	10	Standard
	Mo	98	134.7	12.0	**0.0478**	0.006	13.5	ug/L	12	Standard
	Ag	107	109.0	10.4	**0.0018**	0.002	91.3	ug/L	98	Standard
	Cd	111	14.4	47.1	**0.0025**	0.003	137.0	mg/L	11	Standard
	Cd	114	41.9	23.5	**0.0041**	0.002	49.9	ug/L	21	Standard
>	**In**	115	587619.1	1.4				ug/L	547487	Standard
	Sn	118	860.0	5.8	**0.0802**	0.008	9.4	ug/L	450	Standard
	Sb	123	233.8	26.5	**0.0436**	0.013	29.9	ug/L	105	Standard
	Ba	135	48272.8	1.0	**24.4439**	0.117	0.5	ug/L	111	Standard
	Ce	140	18765.0	11.4				ug/L	107	Standard
>	**Tb**	159	938001.0	0.8				ug/L	890342	Standard
	Ho	165	298.3	19.3				ug/L	10	Standard
	Tl	203	150.3	4.3	**0.0152**	0.001	6.0	ug/L	19	Standard
	Tl	205	115.0	15.7	**0.0185**	0.003	14.4	ug/L	17	Standard
	Pb	206	534.3	3.6	**0.0487**	0.004	8.5	ug/L	247	Standard
	Pb	207	488.7	1.3	**0.0521**	0.002	4.0	ug/L	215	Standard
	Pb	208	1952.4	0.5	**0.0513**	0.000	0.7	ug/L	770	Standard
	U	238	255.0	5.1	**0.0392**	0.002	5.2	ug/L	13	Standard
>	**Bi**	209	534128.2	0.7				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	7298.4	1.4	**8.9592**	0.320	3.6	mg/L	35	Standard
K	39	96.7	31.6	**0.3179**	0.126	39.6	mg/L	25	Standard
Ca	43	46.7	16.4	**2.9434**	1.521	51.7	mg/L	38	Standard
Fe	54	23061.8	3.5	**19.5103**	1.160	5.9	mg/L	126	Standard
Fe	57	5869.5	4.4	**19.6834**	1.282	6.5	mg/L	245	Standard
> **Sc-1**	45	27947.4	2.4				mg/L	25066	Standard
Cl	35	163080.4	1.3				ug/L	125857	Standard
Kr	83	4.3	48.0				ug/L	1	Standard
Br	81	26733.6	2.6				ug/L	1350	Standard
P	31	26311.2	1.3				ug/L	18393	Standard
S	34	4997.5	0.8				ug/L	3739	Standard
Sr	88	113.3	12.7				ug/L	78	Standard
C	12	230.0	4.3				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	393.7	7.8				mg/L	2	Standard
Ho-1	165	298.3	19.3				mg/L	10	Standard
Er	166	270.0	19.2				mg/L	23	Standard
I	127	1056071.3	10.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.498	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.145	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.330
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.158
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606089602
Sample Date/Time: Tuesday, June 21, 2016 18:28:42
Number of Replicates: 3
Autosampler Position: 347
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66890.7	2.2				ug/L	60176	Standard
	Be	9	23.3	24.7	**0.0201**	0.007	32.5	ug/L	5	Standard
	Al	27	149805.7	3.0	**1.0175**	0.011	1.1	ug/L	832	Standard
	Sc	45	26154.2	3.3				ug/L	25066	Standard
	Ti	47	179.3	10.3	**0.7022**	0.105	15.0	ug/L	38	Standard
	V	51	1401.7	5.1	**0.0601**	0.011	18.8	ug/L	974	Standard
	Cr	52	10512.0	0.7	**0.6764**	0.028	4.1	ug/L	5792	Standard
	Cr	53	1416.7	9.0	**1.2841**	0.157	12.2	ug/L	347	Standard
	Mn	55	10409.3	6.2	**1.3787**	0.114	8.3	ug/L	1164	Standard
	Co	59	540.0	3.3	**0.0375**	0.003	8.6	ug/L	303	Standard
	Ni	60	844.0	0.2	**0.2688**	0.005	1.8	ug/L	291	Standard
	Cu	65	296.7	5.6	**0.0648**	0.011	17.1	ug/L	173	Standard
	Zn	66	1902.8	4.1	**1.5621**	0.096	6.1	ug/L	130	Standard
>	**Ge**	72	502257.1	1.3				ug/L	491724	Standard
	As	75	8.2	485.9	**0.0416**	0.037	88.7	ug/L	-25	Standard
	Se	82	33.9	33.4	**0.2274**	0.104	45.7	ug/L	12	Standard
	Se-1	77	70.7	24.9	**0.3292**	0.242	73.5	ug/L	57	Standard
>	**Ga**	71	326.7	26.3				mg/L	148	Standard
	Rb	85	8215.6	2.7				ug/L	18	Standard
	Y	89	444333.1	2.2				ug/L	401845	Standard
>	**Rh**	103	31.7	48.2				ug/L	10	Standard
	Mo	98	46.8	15.4	**0.0138**	0.002	17.7	ug/L	12	Standard
	Ag	107	73.3	4.4	**-0.0037**	0.000	8.2	ug/L	98	Standard
	Cd	111	8.2	45.8	**-0.0006**	0.002	305.8	mg/L	11	Standard
	Cd	114	19.1	24.5	**-0.0005**	0.001	199.0	ug/L	21	Standard
>	**In**	115	583126.7	2.0				ug/L	547487	Standard
	Sn	118	593.3	2.7	**0.0333**	0.003	10.0	ug/L	450	Standard
	Sb	123	144.2	19.6	**0.0243**	0.007	28.0	ug/L	105	Standard
	Ba	135	7469.5	3.8	**3.7635**	0.074	2.0	ug/L	111	Standard
	Ce	140	1718.4	6.1				ug/L	107	Standard
>	**Tb**	159	899867.4	0.7				ug/L	890342	Standard
	Ho	165	30.0	66.7				ug/L	10	Standard
	Tl	203	67.7	10.9	**0.0053**	0.001	16.4	ug/L	19	Standard
	Tl	205	71.7	22.4	**0.0124**	0.003	20.6	ug/L	17	Standard
	Pb	206	312.7	6.7	**0.0088**	0.004	47.7	ug/L	247	Standard
	Pb	207	252.0	2.7	**0.0044**	0.002	38.0	ug/L	215	Standard
	Pb	208	1132.0	3.9	**0.0079**	0.002	19.1	ug/L	770	Standard
	U	238	82.7	5.0	**0.0128**	0.001	6.4	ug/L	13	Standard
>	**Bi**	209	508030.6	1.7				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.2590**	31.617	173.2	mg/L	2	Standard
Mg	24	2870.3	3.9	**3.7404**	0.081	2.2	mg/L	35	Standard
K	39	155.0	5.6	**0.6292**	0.059	9.4	mg/L	25	Standard
Ca	43	26.7	28.6	**-0.2827**	1.489	526.7	mg/L	38	Standard
Fe	54	167.0	2.0	**0.0156**	0.008	50.9	mg/L	126	Standard
Fe	57	218.3	14.7	**-0.2671**	0.094	35.1	mg/L	245	Standard
> **Sc-1**	45	26154.2	3.3				mg/L	25066	Standard
Cl	35	154406.3	2.1				ug/L	125857	Standard
Kr	83	2.7	21.7				ug/L	1	Standard
Br	81	5824.5	3.9				ug/L	1350	Standard
P	31	26713.5	1.6				ug/L	18393	Standard
S	34	4210.6	7.3				ug/L	3739	Standard
Sr	88	103.3	42.3				ug/L	78	Standard
C	12	70.0	28.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	71.7	36.0				mg/L	2	Standard
Ho-1	165	30.0	66.7				mg/L	10	Standard
Er	166	33.3	75.5				mg/L	23	Standard
I	127	32674.7	51.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.159	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.142	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.510
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.971
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606089603
Sample Date/Time: Tuesday, June 21, 2016 18:31:54
Number of Replicates: 3
Autosampler Position: 348
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70073.3	1.0				ug/L	60176	Standard
	Be	9	81.7	39.4	**0.0886**	0.038	43.1	ug/L	5	Standard
	Al	27	1228150.4	2.6	**8.0209**	0.174	2.2	ug/L	832	Standard
	Sc	45	26367.9	1.0				ug/L	25066	Standard
	Ti	47	312.7	10.6	**1.3625**	0.172	12.6	ug/L	38	Standard
	V	51	2417.3	6.1	**0.2237**	0.026	11.6	ug/L	974	Standard
	Cr	52	10006.0	1.3	**0.5837**	0.012	2.0	ug/L	5792	Standard
	Cr	53	1740.1	6.8	**1.6504**	0.119	7.2	ug/L	347	Standard
	Mn	55	87073.6	2.8	**12.9889**	0.479	3.7	ug/L	1164	Standard
	Co	59	5750.4	2.7	**0.8671**	0.033	3.8	ug/L	303	Standard
	Ni	60	2238.5	3.1	**1.0160**	0.026	2.5	ug/L	291	Standard
	Cu	65	1573.1	4.2	**0.7551**	0.029	3.8	ug/L	173	Standard
	Zn	66	4274.9	3.8	**3.7627**	0.142	3.8	ug/L	130	Standard
>	**Ge**	72	507060.9	1.0				ug/L	491724	Standard
	As	75	114.4	32.4	**0.1397**	0.035	24.9	ug/L	-25	Standard
	Se	82	42.1	12.0	**0.3018**	0.050	16.5	ug/L	12	Standard
	Se-1	77	82.3	10.6	**0.4808**	0.128	26.6	ug/L	57	Standard
>	**Ga**	71	333.3	11.3				mg/L	148	Standard
	Rb	85	29852.7	2.6				ug/L	18	Standard
	Y	89	429423.7	0.4				ug/L	401845	Standard
>	**Rh**	103	41.7	6.9				ug/L	10	Standard
	Mo	98	55.7	3.8	**0.0175**	0.001	6.0	ug/L	12	Standard
	Ag	107	93.7	1.6	**-0.0003**	0.000	76.9	ug/L	98	Standard
	Cd	111	26.6	32.0	**0.0087**	0.004	50.4	mg/L	11	Standard
	Cd	114	73.0	10.0	**0.0107**	0.001	13.2	ug/L	21	Standard
>	**In**	115	577865.9	1.0				ug/L	547487	Standard
	Sn	118	510.0	18.7	**0.0191**	0.018	95.2	ug/L	450	Standard
	Sb	123	155.5	12.6	**0.0270**	0.004	15.1	ug/L	105	Standard
	Ba	135	59410.3	1.7	**30.6085**	0.771	2.5	ug/L	111	Standard
	Ce	140	19626.0	1.7				ug/L	107	Standard
>	**Tb**	159	917847.8	1.6				ug/L	890342	Standard
	Ho	165	385.0	3.4				ug/L	10	Standard
	Tl	203	165.0	14.8	**0.0175**	0.003	17.6	ug/L	19	Standard
	Tl	205	135.0	9.8	**0.0220**	0.002	9.0	ug/L	17	Standard
	Pb	206	734.4	1.2	**0.0910**	0.002	2.3	ug/L	247	Standard
	Pb	207	620.7	4.4	**0.0836**	0.007	8.5	ug/L	215	Standard
	Pb	208	2430.4	2.1	**0.0821**	0.004	5.1	ug/L	770	Standard
	U	238	108.0	7.6	**0.0166**	0.001	8.0	ug/L	13	Standard
>	**Bi**	209	520995.4	0.8				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.6640**	30.586	173.2	mg/L	2	Standard
Mg	24	2681.9	2.8	**3.4633**	0.064	1.8	mg/L	35	Standard
K	39	326.7	9.2	**1.4367**	0.158	11.0	mg/L	25	Standard
Ca	43	23.3	24.7	**-0.9469**	1.132	119.5	mg/L	38	Standard
Fe	54	1418.7	4.6	**1.1433**	0.057	5.0	mg/L	126	Standard
Fe	57	535.0	14.5	**0.9148**	0.284	31.1	mg/L	245	Standard
Sc-1	45	26367.9	1.0				mg/L	25066	Standard
Cl	35	152857.2	1.0				ug/L	125857	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	6364.7	4.2				ug/L	1350	Standard
P	31	24361.2	2.7				ug/L	18393	Standard
S	34	4130.6	1.9				ug/L	3739	Standard
Sr	88	91.7	13.7				ug/L	78	Standard
C	12	86.7	17.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	587.2	3.8				mg/L	2	Standard
Ho-1	165	385.0	3.4				mg/L	10	Standard
Er	166	406.7	11.4				mg/L	23	Standard
I	127	49898.9	6.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		116.447	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.119	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.549
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.548
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606089604
Sample Date/Time: Tuesday, June 21, 2016 18:35:05
Number of Replicates: 3
Autosampler Position: 349
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68337.1	1.8				ug/L	60176	Standard
	Be	9	20.0	50.0	**0.0155**	0.012	78.6	ug/L	5	Standard
	Al	27	4276567.2	0.3	**28.6693**	0.604	2.1	ug/L	832	Standard
	Sc	45	26610.0	1.8				ug/L	25066	Standard
	Ti	47	192.3	15.6	**0.7599**	0.169	22.2	ug/L	38	Standard
	V	51	1621.9	5.7	**0.0939**	0.019	19.8	ug/L	974	Standard
	Cr	52	9092.7	3.3	**0.4438**	0.038	8.7	ug/L	5792	Standard
	Cr	53	1545.1	7.7	**1.4179**	0.111	7.8	ug/L	347	Standard
	Mn	55	17973806.3	0.6	**2724.7615**	75.997	2.8	ug/L	1164	Standard
	Co	59	227528.7	0.7	**36.1992**	0.876	2.4	ug/L	303	Standard
	Ni	60	2730.6	3.7	**1.2807**	0.043	3.3	ug/L	291	Standard
	Cu	65	354.7	4.1	**0.0946**	0.010	10.1	ug/L	173	Standard
	Zn	66	3333.7	3.1	**2.8812**	0.076	2.6	ug/L	130	Standard
>	**Ge**	72	507285.0	2.2				ug/L	491724	Standard
	As	75	2855.6	3.6	**2.6720**	0.119	4.5	ug/L	-25	Standard
	Se	82	109.9	10.6	**0.9366**	0.098	10.5	ug/L	12	Standard
	Se-1	77	112.3	4.4	**0.8920**	0.086	9.6	ug/L	57	Standard
>	**Ga**	71	996.7	5.1				mg/L	148	Standard
	Rb	85	22107.8	1.5				ug/L	18	Standard
	Y	89	431397.8	1.6				ug/L	401845	Standard
>	**Rh**	103	48.3	74.8				ug/L	10	Standard
	Mo	98	71.9	10.1	**0.0241**	0.003	12.0	ug/L	12	Standard
	Ag	107	78.3	8.7	**-0.0027**	0.001	37.5	ug/L	98	Standard
	Cd	111	9.9	26.7	**0.0003**	0.001	431.1	mg/L	11	Standard
	Cd	114	28.2	29.3	**0.0014**	0.002	118.5	ug/L	21	Standard
>	**In**	115	573974.7	0.6				ug/L	547487	Standard
	Sn	118	751.7	10.6	**0.0641**	0.015	23.9	ug/L	450	Standard
	Sb	123	139.4	12.3	**0.0237**	0.004	16.5	ug/L	105	Standard
	Ba	135	41452.3	0.6	**21.4826**	0.241	1.1	ug/L	111	Standard
	Ce	140	20226.9	8.5				ug/L	107	Standard
>	**Tb**	159	913197.4	0.8				ug/L	890342	Standard
	Ho	165	323.3	19.1				ug/L	10	Standard
	Tl	203	108.7	8.7	**0.0105**	0.001	13.3	ug/L	19	Standard
	Tl	205	98.3	5.9	**0.0165**	0.001	6.6	ug/L	17	Standard
	Pb	206	497.3	2.2	**0.0452**	0.002	5.4	ug/L	247	Standard
	Pb	207	457.7	4.4	**0.0492**	0.003	6.7	ug/L	215	Standard
	Pb	208	1899.7	0.7	**0.0525**	0.001	2.6	ug/L	770	Standard
	U	238	173.0	11.0	**0.0274**	0.003	12.4	ug/L	13	Standard
>	**Bi**	209	514279.4	1.2				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.3614**	30.062	173.2	mg/L	2	Standard
Mg	24	6924.9	3.0	**8.9278**	0.424	4.8	mg/L	35	Standard
K	39	88.3	28.5	**0.3038**	0.126	41.5	mg/L	25	Standard
Ca	43	50.0	26.5	**3.9407**	2.346	59.5	mg/L	38	Standard
Fe	54	22062.2	6.3	**19.5992**	1.505	7.7	mg/L	126	Standard
Fe	57	5569.4	4.3	**19.5983**	0.911	4.6	mg/L	245	Standard
> **Sc-1**	45	26610.0	1.8				mg/L	25066	Standard
Cl	35	158607.9	0.7				ug/L	125857	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	25608.3	1.9				ug/L	1350	Standard
P	31	25134.2	0.8				ug/L	18393	Standard
S	34	4804.1	1.5				ug/L	3739	Standard
Sr	88	91.7	45.7				ug/L	78	Standard
C	12	170.0	11.8				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	416.4	11.7				mg/L	2	Standard
Ho-1	165	323.3	19.1				mg/L	10	Standard
Er	166	283.3	8.9				mg/L	23	Standard
I	127	1043280.7	9.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.562	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.165	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.838
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.213
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606089605
Sample Date/Time: Tuesday, June 21, 2016 18:38:17
Number of Replicates: 3
Autosampler Position: 350
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67501.7	0.2				ug/L	60176	Standard
	Be	9	70.0	12.4	**0.0779**	0.011	14.0	ug/L	5	Standard
	Al	27	1172906.0	1.5	**7.9523**	0.131	1.6	ug/L	832	Standard
	Sc	45	26443.1	2.2				ug/L	25066	Standard
	Ti	47	221.7	20.6	**0.9153**	0.226	24.7	ug/L	38	Standard
	V	51	1454.3	19.9	**0.0686**	0.046	67.3	ug/L	974	Standard
	Cr	52	9092.7	2.6	**0.4577**	0.038	8.3	ug/L	5792	Standard
	Cr	53	1685.1	8.0	**1.6053**	0.165	10.3	ug/L	347	Standard
	Mn	55	65030.3	1.6	**9.7392**	0.204	2.1	ug/L	1164	Standard
	Co	59	5197.2	1.5	**0.7866**	0.010	1.3	ug/L	303	Standard
	Ni	60	1995.5	3.6	**0.8953**	0.033	3.7	ug/L	291	Standard
	Cu	65	1224.4	4.2	**0.5725**	0.026	4.5	ug/L	173	Standard
	Zn	66	3995.9	1.1	**3.5378**	0.062	1.7	ug/L	130	Standard
>	**Ge**	72	502248.6	0.7				ug/L	491724	Standard
	As	75	42.4	33.0	**0.0736**	0.013	18.2	ug/L	-25	Standard
	Se	82	42.1	17.3	**0.3052**	0.067	21.9	ug/L	12	Standard
	Se-1	77	99.7	4.9	**0.7312**	0.071	9.7	ug/L	57	Standard
>	**Ga**	71	340.0	25.1				mg/L	148	Standard
	Rb	85	28431.7	1.0				ug/L	18	Standard
	Y	89	432391.4	0.5				ug/L	401845	Standard
>	**Rh**	103	25.0	0.0				ug/L	10	Standard
	Mo	98	25.1	12.7	**0.0054**	0.001	24.9	ug/L	12	Standard
	Ag	107	84.0	10.6	**-0.0020**	0.001	71.0	ug/L	98	Standard
	Cd	111	29.3	29.0	**0.0099**	0.004	41.4	mg/L	11	Standard
	Cd	114	82.1	22.2	**0.0125**	0.004	31.8	ug/L	21	Standard
>	**In**	115	582868.3	1.2				ug/L	547487	Standard
	Sn	118	541.7	7.4	**0.0239**	0.006	27.0	ug/L	450	Standard
	Sb	123	106.5	7.0	**0.0159**	0.002	12.1	ug/L	105	Standard
	Ba	135	57467.5	1.5	**29.3464**	0.109	0.4	ug/L	111	Standard
	Ce	140	10703.9	25.2				ug/L	107	Standard
>	**Tb**	159	910811.6	2.1				ug/L	890342	Standard
	Ho	165	225.0	13.5				ug/L	10	Standard
	Tl	203	137.0	7.6	**0.0141**	0.001	9.3	ug/L	19	Standard
	Tl	205	136.7	14.8	**0.0225**	0.003	13.7	ug/L	17	Standard
	Pb	206	419.0	1.3	**0.0293**	0.002	5.4	ug/L	247	Standard
	Pb	207	358.0	1.7	**0.0271**	0.002	6.9	ug/L	215	Standard
	Pb	208	1368.0	1.1	**0.0209**	0.001	6.4	ug/L	770	Standard
	U	238	55.7	17.4	**0.0082**	0.002	18.6	ug/L	13	Standard
>	**Bi**	209	515104.9	0.7				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	2638.6	3.2	**3.3993**	0.161	4.7	mg/L	35	Standard
K	39	276.7	19.3	**1.1956**	0.256	21.4	mg/L	25	Standard
Ca	43	21.7	48.0	**-1.2810**	1.922	150.1	mg/L	38	Standard
Fe	54	612.6	5.0	**0.4150**	0.036	8.6	mg/L	126	Standard
Fe	57	326.7	24.2	**0.1354**	0.321	237.0	mg/L	245	Standard
> **Sc-1**	45	26443.1	2.2				mg/L	25066	Standard
Cl	35	151770.4	0.9				ug/L	125857	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	6438.0	7.0				ug/L	1350	Standard
P	31	24865.4	2.6				ug/L	18393	Standard
S	34	4355.6	4.7				ug/L	3739	Standard
Sr	88	85.0	10.2				ug/L	78	Standard
C	12	100.0	20.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	393.3	8.6				mg/L	2	Standard
Ho-1	165	225.0	13.5				mg/L	10	Standard
Er	166	210.0	16.5				mg/L	23	Standard
I	127	49125.0	32.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.174	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.140	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.463
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.377
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606089607
Sample Date/Time: Tuesday, June 21, 2016 18:41:28
Number of Replicates: 3
Autosampler Position: 351
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64582.3	0.3				ug/L	60176	Standard
	Be	9	10.0	50.0	**0.0040**	0.007	164.6	ug/L	5	Standard
	Al	27	17276.5	1.9	**0.1142**	0.003	2.4	ug/L	832	Standard
	Sc	45	25347.9	2.5				ug/L	25066	Standard
	Ti	47	28.3	10.8	**-0.0659**	0.014	21.5	ug/L	38	Standard
	V	51	1082.8	8.0	**0.0054**	0.014	253.7	ug/L	974	Standard
	Cr	52	8423.3	1.6	**0.3388**	0.029	8.5	ug/L	5792	Standard
	Cr	53	728.4	2.2	**0.4488**	0.025	5.7	ug/L	347	Standard
	Mn	55	3248.4	11.3	**0.2760**	0.059	21.5	ug/L	1164	Standard
	Co	59	268.3	3.6	**-0.0067**	0.002	28.2	ug/L	303	Standard
	Ni	60	364.0	1.4	**0.0051**	0.004	75.7	ug/L	291	Standard
	Cu	65	796.4	1.2	**0.3329**	0.002	0.5	ug/L	173	Standard
	Zn	66	1386.7	3.7	**1.0581**	0.053	5.0	ug/L	130	Standard
>	**Ge**	72	508475.6	0.8				ug/L	491724	Standard
	As	75	-61.1	19.7	**-0.0224**	0.011	51.1	ug/L	-25	Standard
	Se	82	17.3	24.6	**0.0693**	0.041	59.1	ug/L	12	Standard
	Se-1	77	55.3	1.0	**0.1076**	0.014	12.8	ug/L	57	Standard
>	**Ga**	71	210.0	8.2				mg/L	148	Standard
	Rb	85	103.3	12.2				ug/L	18	Standard
	Y	89	417086.5	1.0				ug/L	401845	Standard
>	**Rh**	103	30.0	16.7				ug/L	10	Standard
	Mo	98	23.7	24.8	**0.0052**	0.002	45.5	ug/L	12	Standard
	Ag	107	74.0	14.1	**-0.0031**	0.002	58.5	ug/L	98	Standard
	Cd	111	3.6	42.1	**-0.0028**	0.001	28.2	mg/L	11	Standard
	Cd	114	4.0	390.1	**-0.0036**	0.003	93.1	ug/L	21	Standard
>	**In**	115	557380.8	0.4				ug/L	547487	Standard
	Sn	118	1653.4	11.4	**0.2386**	0.035	14.5	ug/L	450	Standard
	Sb	123	101.0	13.9	**0.0157**	0.003	21.0	ug/L	105	Standard
	Ba	135	275.0	12.7	**0.0916**	0.019	21.0	ug/L	111	Standard
	Ce	140	46.7	27.0				ug/L	107	Standard
>	**Tb**	159	881433.0	0.7				ug/L	890342	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	15.3	24.7	**-0.0015**	0.001	32.6	ug/L	19	Standard
	Tl	205	18.3	41.7	**0.0039**	0.001	30.9	ug/L	17	Standard
	Pb	206	260.7	4.2	**-0.0017**	0.002	99.9	ug/L	247	Standard
	Pb	207	227.7	1.7	**-0.0009**	0.001	146.9	ug/L	215	Standard
	Pb	208	867.3	2.7	**-0.0078**	0.002	22.4	ug/L	770	Standard
	U	238	4.7	24.7	**-0.0001**	0.000	377.0	ug/L	13	Standard
>	**Bi**	209	506624.8	1.1				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.8980**	30.992	173.2	mg/L	2	Standard
Mg	24	78.3	16.1	**0.0675**	0.017	24.9	mg/L	35	Standard
K	39	31.7	24.1	**0.0432**	0.033	77.4	mg/L	25	Standard
Ca	43	33.3	45.8	**1.2167**	3.121	256.5	mg/L	38	Standard
Fe	54	130.8	25.6	**-0.0136**	0.033	239.4	mg/L	126	Standard
Fe	57	228.3	19.7	**-0.1998**	0.177	88.7	mg/L	245	Standard
> **Sc-1**	45	25347.9	2.5				mg/L	25066	Standard
Cl	35	151435.7	0.5				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	1560.1	4.4				ug/L	1350	Standard
P	31	20533.9	2.0				ug/L	18393	Standard
S	34	4339.0	6.0				ug/L	3739	Standard
Sr	88	95.0	38.0				ug/L	78	Standard
C	12	73.3	34.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.4	106.9				mg/L	2	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	7471.9	14.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.323	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.407	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.807
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.692
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606091601
Sample Date/Time: Tuesday, June 21, 2016 18:44:40
Number of Replicates: 3
Autosampler Position: 352
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67190.3	1.4				ug/L	60176	Standard
	Be	9	13.3	57.3	**0.0077**	0.010	125.6	ug/L	5	Standard
	Al	27	4059977.7	0.1	**27.6783**	0.411	1.5	ug/L	832	Standard
	Sc	45	26110.8	1.4				ug/L	25066	Standard
	Ti	47	49.3	11.2	**0.0353**	0.029	83.4	ug/L	38	Standard
	V	51	1268.5	6.0	**0.0323**	0.015	45.0	ug/L	974	Standard
	Cr	52	9251.5	2.7	**0.4413**	0.053	12.0	ug/L	5792	Standard
	Cr	53	838.4	6.1	**0.5622**	0.063	11.2	ug/L	347	Standard
	Mn	55	71645.4	5.8	**10.4299**	0.498	4.8	ug/L	1164	Standard
	Co	59	506.7	18.5	**0.0297**	0.014	46.5	ug/L	303	Standard
	Ni	60	855.0	1.3	**0.2614**	0.011	4.1	ug/L	291	Standard
	Cu	65	780.7	0.8	**0.3173**	0.002	0.5	ug/L	173	Standard
	Zn	66	4612.7	3.9	**3.9937**	0.147	3.7	ug/L	130	Standard
>	**Ge**	72	517216.1	1.1				ug/L	491724	Standard
	As	75	82.9	23.2	**0.1089**	0.017	15.4	ug/L	-25	Standard
	Se	82	25.8	18.1	**0.1443**	0.045	31.4	ug/L	12	Standard
	Se-1	77	58.3	9.4	**0.1352**	0.074	54.8	ug/L	57	Standard
>	**Ga**	71	198.3	18.6				mg/L	148	Standard
	Rb	85	8013.8	3.9				ug/L	18	Standard
	Y	89	419780.8	0.6				ug/L	401845	Standard
>	**Rh**	103	95.0	13.9				ug/L	10	Standard
	Mo	98	354.8	11.3	**0.1391**	0.018	13.1	ug/L	12	Standard
	Ag	107	124.3	40.3	**0.0052**	0.009	167.0	ug/L	98	Standard
	Cd	111	42.3	55.1	**0.0173**	0.012	72.3	mg/L	11	Standard
	Cd	114	113.9	89.0	**0.0200**	0.022	110.6	ug/L	21	Standard
>	**In**	115	563906.1	1.5				ug/L	547487	Standard
	Sn	118	1531.7	4.6	**0.2123**	0.010	4.8	ug/L	450	Standard
	Sb	123	210.1	8.4	**0.0405**	0.005	11.6	ug/L	105	Standard
	Ba	135	162094.5	0.7	**85.6790**	1.283	1.5	ug/L	111	Standard
	Ce	140	216.7	26.5				ug/L	107	Standard
>	**Tb**	159	900794.6	1.8				ug/L	890342	Standard
	Ho	165	15.0	57.7				ug/L	10	Standard
	Tl	203	104.3	57.0	**0.0100**	0.008	79.7	ug/L	19	Standard
	Tl	205	83.3	27.1	**0.0141**	0.004	26.2	ug/L	17	Standard
	Pb	206	391.3	13.8	**0.0236**	0.012	51.7	ug/L	247	Standard
	Pb	207	338.7	17.1	**0.0227**	0.014	61.6	ug/L	215	Standard
	Pb	208	1279.0	4.7	**0.0155**	0.005	30.6	ug/L	770	Standard
	U	238	198.3	8.7	**0.0314**	0.003	10.7	ug/L	13	Standard
>	**Bi**	209	516668.6	1.7				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.8980**	30.992	173.2	mg/L	2	Standard
Mg	24	4872.5	2.7	**6.3892**	0.242	3.8	mg/L	35	Standard
K	39	126.7	27.7	**0.4955**	0.176	35.6	mg/L	25	Standard
Ca	43	53.3	5.4	**4.7635**	0.439	9.2	mg/L	38	Standard
Fe	54	177.6	14.5	**0.0254**	0.024	95.7	mg/L	126	Standard
Fe	57	276.7	15.4	**-0.0443**	0.146	329.7	mg/L	245	Standard
> **Sc-1**	45	26110.8	1.4				mg/L	25066	Standard
Cl	35	176149.6	1.9				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	3207.0	11.6				ug/L	1350	Standard
P	31	23131.2	13.3				ug/L	18393	Standard
S	34	4474.0	0.8				ug/L	3739	Standard
Sr	88	226.7	10.9				ug/L	78	Standard
C	12	83.3	25.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	16.2	38.3				mg/L	2	Standard
Ho-1	165	15.0	57.7				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	28196.2	4.0				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.657	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.184	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.999
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.688
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606091602
Sample Date/Time: Tuesday, June 21, 2016 18:47:51
Number of Replicates: 3
Autosampler Position: 353
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67906.9	1.3				ug/L	60176	Standard
	Be	9	10.0	50.0	**0.0033**	0.006	187.8	ug/L	5	Standard
	Al	27	2296072.1	1.5	**15.4843**	0.344	2.2	ug/L	832	Standard
	Sc	45	25872.1	5.5				ug/L	25066	Standard
	Ti	47	62.3	24.1	**0.1098**	0.081	73.9	ug/L	38	Standard
	V	51	1552.5	12.5	**0.0855**	0.031	36.6	ug/L	974	Standard
	Cr	52	9142.1	3.0	**0.4684**	0.023	4.9	ug/L	5792	Standard
	Cr	53	858.4	6.3	**0.6172**	0.055	8.8	ug/L	347	Standard
	Mn	55	243622.7	0.7	**37.1709**	0.798	2.1	ug/L	1164	Standard
	Co	59	1785.4	6.9	**0.2386**	0.020	8.4	ug/L	303	Standard
	Ni	60	1792.4	0.5	**0.7874**	0.016	2.0	ug/L	291	Standard
	Cu	65	962.4	1.2	**0.4305**	0.012	2.7	ug/L	173	Standard
	Zn	66	2184.5	1.1	**1.8327**	0.052	2.8	ug/L	130	Standard
>	**Ge**	72	501058.6	1.4				ug/L	491724	Standard
	As	75	100.6	11.3	**0.1281**	0.012	9.4	ug/L	-25	Standard
	Se	82	31.7	15.7	**0.2087**	0.052	24.7	ug/L	12	Standard
	Se-1	77	73.3	7.9	**0.3696**	0.094	25.6	ug/L	57	Standard
>	**Ga**	71	198.3	2.9				mg/L	148	Standard
	Rb	85	8319.0	2.0				ug/L	18	Standard
	Y	89	432620.5	1.7				ug/L	401845	Standard
>	**Rh**	103	35.0	14.3				ug/L	10	Standard
	Mo	98	238.4	19.0	**0.0874**	0.016	18.4	ug/L	12	Standard
	Ag	107	135.0	77.0	**0.0057**	0.016	279.8	ug/L	98	Standard
	Cd	111	47.6	114.6	**0.0185**	0.026	142.4	mg/L	11	Standard
	Cd	114	128.6	115.8	**0.0214**	0.030	138.7	ug/L	21	Standard
>	**In**	115	590384.4	2.1				ug/L	547487	Standard
	Sn	118	671.7	10.1	**0.0460**	0.013	27.4	ug/L	450	Standard
	Sb	123	237.2	55.9	**0.0439**	0.028	63.9	ug/L	105	Standard
	Ba	135	31177.4	0.9	**15.6954**	0.181	1.2	ug/L	111	Standard
	Ce	140	1276.7	10.5				ug/L	107	Standard
>	**Tb**	159	916339.4	2.6				ug/L	890342	Standard
	Ho	165	70.0	7.1				ug/L	10	Standard
	Tl	203	237.7	124.8	**0.0268**	0.038	140.4	ug/L	19	Standard
	Tl	205	80.0	33.1	**0.0135**	0.004	29.6	ug/L	17	Standard
	Pb	206	429.0	29.5	**0.0310**	0.024	78.2	ug/L	247	Standard
	Pb	207	341.7	30.1	**0.0231**	0.022	93.1	ug/L	215	Standard
	Pb	208	1332.4	10.6	**0.0186**	0.008	40.8	ug/L	770	Standard
	U	238	141.3	19.4	**0.0221**	0.004	18.5	ug/L	13	Standard
>	**Bi**	209	515955.1	1.9				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	2985.3	1.9	**3.9427**	0.232	5.9	mg/L	35	Standard
K	39	105.0	19.0	**0.3991**	0.123	30.7	mg/L	25	Standard
Ca	43	45.0	29.4	**3.3646**	2.869	85.3	mg/L	38	Standard
Fe	54	322.3	15.6	**0.1588**	0.032	20.1	mg/L	126	Standard
Fe	57	316.7	8.7	**0.1231**	0.144	117.2	mg/L	245	Standard
> **Sc-1**	45	25872.1	5.5				mg/L	25066	Standard
Cl	35	186002.7	0.3				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	3327.0	4.9				ug/L	1350	Standard
P	31	21338.4	3.1				ug/L	18393	Standard
S	34	4454.0	2.0				ug/L	3739	Standard
Sr	88	85.0	75.1				ug/L	78	Standard
C	12	86.7	40.5				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	102.7	23.6				mg/L	2	Standard
Ho-1	165	70.0	7.1				mg/L	10	Standard
Er	166	83.3	45.4				mg/L	23	Standard
I	127	15337.8	5.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.847	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.898	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.835
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.546
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 18:51:04
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63442.7	3.5				ug/L	60176	Standard
	Be	9	40860.0	2.2	**54.0020**	1.449	2.7	ug/L	5	Standard
	Al	27	6937882.5	1.0	**50.1277**	1.614	3.2	ug/L	832	Standard
	Sc	45	25438.0	2.5				ug/L	25066	Standard
	Ti	47	21024.9	0.5	**106.0299**	0.919	0.9	ug/L	38	Standard
	V	51	323750.5	1.3	**52.9773**	0.236	0.4	ug/L	974	Standard
	Cr	52	348011.5	1.4	**52.4939**	0.728	1.4	ug/L	5792	Standard
	Cr	53	43766.5	1.1	**51.8369**	0.281	0.5	ug/L	347	Standard
	Mn	55	333840.5	2.1	**50.7327**	1.510	3.0	ug/L	1164	Standard
	Co	59	335417.2	1.0	**53.7424**	1.033	1.9	ug/L	303	Standard
	Ni	60	95144.1	1.0	**51.4310**	0.379	0.7	ug/L	291	Standard
	Cu	65	94656.8	0.9	**51.5587**	0.282	0.5	ug/L	173	Standard
	Zn	66	55176.0	1.3	**51.7065**	1.118	2.2	ug/L	130	Standard
>	Ge	72	503835.9	1.3				ug/L	491724	Standard
	As	75	55580.2	0.8	**51.7148**	0.495	1.0	ug/L	-25	Standard
	Se	82	5649.2	1.5	**53.2452**	1.272	2.4	ug/L	12	Standard
	Se-1	77	3911.5	2.0	**53.3712**	1.215	2.3	ug/L	57	Standard
>	Ga	71	175.0	20.6				mg/L	148	Standard
	Rb	85	773.4	10.9				ug/L	18	Standard
	Y	89	413055.9	4.2				ug/L	401845	Standard
>	Rh	103	48.3	15.8				ug/L	10	Standard
	Mo	98	250127.2	1.6	**103.9799**	1.624	1.6	ug/L	12	Standard
	Ag	107	312907.8	0.6	**52.9908**	0.412	0.8	ug/L	98	Standard
	Cd	111	99454.2	0.8	**52.8512**	0.382	0.7	mg/L	11	Standard
	Cd	114	242360.3	0.7	**52.9421**	0.765	1.4	ug/L	21	Standard
>	In	115	548076.9	0.7				ug/L	547487	Standard
	Sn	118	267254.9	1.1	**51.3363**	0.470	0.9	ug/L	450	Standard
	Sb	123	224264.3	0.4	**52.7378**	0.174	0.3	ug/L	105	Standard
	Ba	135	94718.1	0.7	**51.4823**	0.153	0.3	ug/L	111	Standard
	Ce	140	61.7	16.9				ug/L	107	Standard
>	Tb	159	872886.8	0.5				ug/L	890342	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	392549.7	0.9	**52.0956**	0.443	0.9	ug/L	19	Standard
	Tl	205	335218.3	1.5	**54.2215**	0.823	1.5	ug/L	17	Standard
	Pb	206	250297.8	0.3	**51.6123**	0.097	0.2	ug/L	247	Standard
	Pb	207	226489.3	0.6	**51.3765**	0.302	0.6	ug/L	215	Standard
	Pb	208	880738.1	0.5	**53.3625**	0.244	0.5	ug/L	770	Standard
	U	238	319048.1	0.1	**53.3329**	0.065	0.1	ug/L	13	Standard
>	Bi	209	501806.7	0.2				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.2483**	31.598	173.2	mg/L	2	Standard
Mg	24	3748.8	3.4	**5.0383**	0.218	4.3	mg/L	35	Standard
K	39	870.0	3.5	**4.1632**	0.196	4.7	mg/L	25	Standard
Ca	43	66.7	30.3	**7.5630**	3.627	48.0	mg/L	38	Standard
Fe	54	5462.5	1.6	**4.9747**	0.206	4.1	mg/L	126	Standard
Fe	57	1633.4	3.9	**5.2565**	0.210	4.0	mg/L	245	Standard
> **Sc-1**	45	25438.0	2.5				mg/L	25066	Standard
Cl	35	159590.9	1.7				ug/L	125857	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	1526.7	9.8				ug/L	1350	Standard
P	31	21814.0	0.5				ug/L	18393	Standard
S	34	4879.1	3.9				ug/L	3739	Standard
Sr	88	73.3	10.4				ug/L	78	Standard
C	12	60.0	33.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.9	218.3				mg/L	2	Standard
Ho-1	165	8.3	91.7				mg/L	10	Standard
Er	166	10.0	173.2				mg/L	23	Standard
I	127	2962.0	13.4				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	108.004		
Al	27	100.255		
Sc	45			
Ti	47	106.030		
V	51	105.955		
Cr	52	104.988		
Cr	53			
Mn	55	101.465		
Co	59	107.485		
Ni	60	102.862		
Cu	65	103.117		
Zn	66	103.413		
> Ge	72		102.463	
As	75	103.430		
Se	82	106.490		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
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Rb	85			
Y	89			
> Rh	103			
Mo	98	103.980		
Ag	107	105.982		
Cd	111	105.702		
Cd	114			
> In	115		100.108	
Sn	118	102.673		
Sb	123	105.476		
Ba	135	102.965		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	104.191		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.725		
U	238	106.666		
> Bi	209		99.734	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 18:54:15
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65759.1	2.1				ug/L	60176	Standard
	Be	9	15.0	66.7	**0.0099**	0.012	124.3	ug/L	5	Standard
	Al	27	1593.4	26.8	**0.0027**	0.003	102.5	ug/L	832	Standard
	Sc	45	26474.8	1.5				ug/L	25066	Standard
	Ti	47	28.3	23.5	**-0.0655**	0.031	47.5	ug/L	38	Standard
	V	51	963.9	7.8	**-0.0130**	0.015	114.8	ug/L	974	Standard
	Cr	52	6015.5	0.7	**-0.0229**	0.022	97.4	ug/L	5792	Standard
	Cr	53	381.7	7.2	**0.0411**	0.039	93.9	ug/L	347	Standard
	Mn	55	1197.4	3.7	**-0.0335**	0.005	13.8	ug/L	1164	Standard
	Co	59	265.0	7.5	**-0.0071**	0.002	35.3	ug/L	303	Standard
	Ni	60	191.7	2.1	**-0.0870**	0.003	3.6	ug/L	291	Standard
	Cu	65	137.7	10.1	**-0.0230**	0.006	27.4	ug/L	173	Standard
	Zn	66	181.3	7.5	**-0.0653**	0.015	22.7	ug/L	130	Standard
>	**Ge**	72	506005.0	1.8				ug/L	491724	Standard
	As	75	-35.7	74.2	**0.0007**	0.025	3529.5	ug/L	-25	Standard
	Se	82	12.6	16.6	**0.0250**	0.018	72.8	ug/L	12	Standard
	Se-1	77	54.3	13.9	**0.0968**	0.095	97.8	ug/L	57	Standard
>	**Ga**	71	158.3	20.3				mg/L	148	Standard
	Rb	85	20.0	86.6				ug/L	18	Standard
	Y	89	416660.0	4.4				ug/L	401845	Standard
>	**Rh**	103	31.7	32.9				ug/L	10	Standard
	Mo	98	234.4	23.9	**0.0897**	0.024	26.8	ug/L	12	Standard
	Ag	107	96.7	10.2	**0.0004**	0.002	455.9	ug/L	98	Standard
	Cd	111	9.2	48.8	**0.0000**	0.002	5096.5	mg/L	11	Standard
	Cd	114	32.6	31.9	**0.0024**	0.002	93.4	ug/L	21	Standard
>	**In**	115	568592.5	1.7				ug/L	547487	Standard
	Sn	118	836.7	13.7	**0.0809**	0.019	23.3	ug/L	450	Standard
	Sb	123	401.8	23.4	**0.0833**	0.020	24.4	ug/L	105	Standard
	Ba	135	112.3	11.3	**0.0034**	0.008	222.2	ug/L	111	Standard
	Ce	140	18.3	63.0				ug/L	107	Standard
>	**Tb**	159	905312.2	2.3				ug/L	890342	Standard
	Ho	165	11.7	89.2				ug/L	10	Standard
	Tl	203	52.3	30.0	**0.0031**	0.002	64.6	ug/L	19	Standard
	Tl	205	41.7	48.5	**0.0075**	0.003	42.3	ug/L	17	Standard
	Pb	206	259.3	16.5	**-0.0033**	0.009	264.4	ug/L	247	Standard
	Pb	207	233.3	11.4	**-0.0010**	0.006	617.4	ug/L	215	Standard
	Pb	208	889.0	1.3	**-0.0079**	0.001	10.4	ug/L	770	Standard
	U	238	29.3	61.9	**0.0039**	0.003	75.3	ug/L	13	Standard
>	**Bi**	209	519697.2	0.3				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	35.0	89.2	**0.0068**	0.041	600.8	mg/L	35	Standard
K	39	33.3	31.2	**0.0452**	0.050	110.3	mg/L	25	Standard
Ca	43	33.3	34.6	**0.8931**	2.150	240.8	mg/L	38	Standard
Fe	54	140.9	5.6	**-0.0098**	0.009	91.5	mg/L	126	Standard
Fe	57	233.3	13.1	**-0.2195**	0.109	49.4	mg/L	245	Standard
Sc-1	45	26474.8	1.5				mg/L	25066	Standard
Cl	35	159066.0	0.9				ug/L	125857	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	1636.8	3.9				ug/L	1350	Standard
P	31	22371.5	1.8				ug/L	18393	Standard
S	34	4974.2	4.8				ug/L	3739	Standard
Sr	88	65.0	23.1				ug/L	78	Standard
C	12	46.7	44.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.8	2.8				mg/L	2	Standard
Ho-1	165	11.7	89.2				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	23	Standard
I	127	2216.8	9.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.904	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.855
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.290
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Tuesday, June 21, 2016 19:12:07
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61166.6	1.6				ug/L	60176	Standard
	Be	9	150.0	15.3	**0.1967**	0.033	16.9	ug/L	5	Standard
	Al	27	1561.8	56.4	**0.0032**	0.006	196.8	ug/L	832	Standard
	Sc	45	24875.4	2.5				ug/L	25066	Standard
	Ti	47	28.0	12.9	**-0.0630**	0.020	31.8	ug/L	38	Standard
	V	51	3300.5	1.2	**0.3830**	0.004	1.1	ug/L	974	Standard
	Cr	52	10916.3	1.5	**0.7699**	0.022	2.9	ug/L	5792	Standard
	Cr	53	1001.7	7.0	**0.8086**	0.075	9.2	ug/L	347	Standard
	Mn	55	4162.9	6.9	**0.4342**	0.055	12.7	ug/L	1164	Standard
	Co	59	2663.9	2.0	**0.3873**	0.016	4.1	ug/L	303	Standard
	Ni	60	2996.6	2.6	**1.4705**	0.019	1.3	ug/L	291	Standard
	Cu	65	1480.7	6.8	**0.7275**	0.043	6.0	ug/L	173	Standard
	Zn	66	7406.5	4.4	**6.8860**	0.205	3.0	ug/L	130	Standard
>	**Ge**	72	493083.1	1.6				ug/L	491724	Standard
	As	75	372.9	12.0	**0.3882**	0.043	11.0	ug/L	-25	Standard
	Se	82	55.9	23.6	**0.4460**	0.125	27.9	ug/L	12	Standard
	Se-1	77	84.3	6.0	**0.5409**	0.079	14.6	ug/L	57	Standard
>	**Ga**	71	103.3	2.8				mg/L	148	Standard
	Rb	85	41.7	13.9				ug/L	18	Standard
	Y	89	400269.9	3.2				ug/L	401845	Standard
>	**Rh**	103	43.3	17.6				ug/L	10	Standard
	Mo	98	42.1	20.5	**0.0135**	0.004	31.1	ug/L	12	Standard
	Ag	107	2361.9	2.4	**0.3942**	0.010	2.6	ug/L	98	Standard
	Cd	111	441.3	5.1	**0.2353**	0.012	5.1	mg/L	11	Standard
	Cd	114	1071.7	9.3	**0.2353**	0.024	10.2	ug/L	21	Standard
>	**In**	115	535559.2	2.7				ug/L	547487	Standard
	Sn	118	436.7	24.1	**0.0116**	0.019	163.3	ug/L	450	Standard
	Sb	123	1772.8	0.2	**0.4193**	0.011	2.7	ug/L	105	Standard
	Ba	135	1338.4	0.9	**0.6899**	0.014	2.0	ug/L	111	Standard
	Ce	140	35.0	28.6				ug/L	107	Standard
>	**Tb**	159	857160.6	2.1				ug/L	890342	Standard
	Ho	165	6.7	86.6				ug/L	10	Standard
	Tl	203	591.3	5.4	**0.0761**	0.006	7.9	ug/L	19	Standard
	Tl	205	471.7	10.6	**0.0783**	0.008	10.5	ug/L	17	Standard
	Pb	206	1188.7	1.6	**0.1938**	0.006	3.2	ug/L	247	Standard
	Pb	207	1022.4	5.0	**0.1831**	0.010	5.7	ug/L	215	Standard
	Pb	208	4003.9	0.8	**0.1862**	0.005	2.6	ug/L	770	Standard
	U	238	2368.9	2.6	**0.4007**	0.018	4.4	ug/L	13	Standard
>	**Bi**	209	495170.9	2.1				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	50.0	10.0	**0.0302**	0.005	18.0	mg/L	35	Standard
K	39	30.0	44.1	**0.0395**	0.069	175.4	mg/L	25	Standard
Ca	43	31.7	65.7	**1.0148**	4.252	419.0	mg/L	38	Standard
Fe	54	92.2	19.0	**-0.0485**	0.015	30.9	mg/L	126	Standard
Fe	57	215.0	14.5	**-0.2376**	0.102	43.0	mg/L	245	Standard
> **Sc-1**	45	24875.4	2.5				mg/L	25066	Standard
Cl	35	148704.8	0.2				ug/L	125857	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	1456.7	4.5				ug/L	1350	Standard
P	31	15039.1	1.7				ug/L	18393	Standard
S	34	4490.7	1.0				ug/L	3739	Standard
Sr	88	73.3	19.7				ug/L	78	Standard
C	12	26.7	21.7				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	2.9	202.3				mg/L	2	Standard
Ho-1	165	6.7	86.6				mg/L	10	Standard
Er	166	10.0					mg/L	23	Standard
I	127	996.7	4.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	98.360		
Al	27			
Sc	45			
Ti	47			
V	51	95.739		
Cr	52	96.237		
Cr	53			
Mn	55	86.841		
Co	59	96.822		
Ni	60	91.905		
Cu	65	90.940		
Zn	66	110.176		
> Ge	72		100.276	
As	75	97.059		
Se	82	111.510		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	98.538		
Cd	111	98.062		
Cd	114			
> In	115			97.821
Sn	118			
Sb	123	104.817		
Ba	135	91.990		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	95.070		
Tl	205			
Pb	206			
Pb	207			
Pb	208	93.123		
U	238	100.174		
> Bi	209			98.416
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
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Method 6020 - Summary Report

Sample ID: L1606099501
Sample Date/Time: Tuesday, June 21, 2016 19:34:57
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 500
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77633.4	0.8				ug/L	60176	Standard
	Be	9	6.7	43.3	**-0.0018**	0.003	172.4	ug/L	5	Standard
	Al	27	2026217.7	0.7	**11.9496**	0.150	1.3	ug/L	832	Standard
	Sc	45	26748.6	2.3				ug/L	25066	Standard
	Ti	47	31.7	17.4	**-0.0462**	0.030	65.2	ug/L	38	Standard
	V	51	1275.8	6.9	**0.0404**	0.016	40.4	ug/L	974	Standard
	Cr	52	6655.1	6.4	**0.0875**	0.082	93.8	ug/L	5792	Standard
	Cr	53	1963.5	8.8	**1.9476**	0.188	9.6	ug/L	347	Standard
	Mn	55	84988.4	1.3	**12.8494**	0.068	0.5	ug/L	1164	Standard
	Co	59	386.7	8.6	**0.0132**	0.006	45.9	ug/L	303	Standard
	Ni	60	675.3	7.4	**0.1784**	0.024	13.2	ug/L	291	Standard
	Cu	65	195.7	5.7	**0.0100**	0.008	78.4	ug/L	173	Standard
	Zn	66	3591.1	3.1	**3.1695**	0.063	2.0	ug/L	130	Standard
>	**Ge**	72	500114.1	1.6				ug/L	491724	Standard
	As	75	1657.7	10.0	**1.5886**	0.178	11.2	ug/L	-25	Standard
	Se	82	741.5	7.8	**6.9659**	0.657	9.4	ug/L	12	Standard
	Se-1	77	304.7	3.4	**3.5912**	0.205	5.7	ug/L	57	Standard
>	**Ga**	71	115.0	17.4				mg/L	148	Standard
	Rb	85	6904.9	3.3				ug/L	18	Standard
	Y	89	413732.9	0.8				ug/L	401845	Standard
>	**Rh**	103	540.0	15.3				ug/L	10	Standard
	Mo	98	33.8	20.7	**0.0095**	0.003	31.4	ug/L	12	Standard
	Ag	107	87.7	13.3	**-0.0007**	0.002	269.3	ug/L	98	Standard
	Cd	111	5.3	39.3	**-0.0019**	0.001	57.9	mg/L	11	Standard
	Cd	114	4.9	315.7	**-0.0034**	0.003	99.4	ug/L	21	Standard
>	**In**	115	553729.7	2.2				ug/L	547487	Standard
	Sn	118	500.0	18.4	**0.0210**	0.015	73.8	ug/L	450	Standard
	Sb	123	98.6	22.2	**0.0153**	0.005	30.1	ug/L	105	Standard
	Ba	135	188976.6	0.6	**101.7485**	2.043	2.0	ug/L	111	Standard
	Ce	140	20.0	25.0				ug/L	107	Standard
>	**Tb**	159	898084.0	1.2				ug/L	890342	Standard
	Ho	165	3.3	86.6				ug/L	10	Standard
	Tl	203	185.0	4.6	**0.0209**	0.001	6.4	ug/L	19	Standard
	Tl	205	168.3	27.6	**0.0281**	0.008	27.5	ug/L	17	Standard
	Pb	206	327.0	2.4	**0.0122**	0.002	14.3	ug/L	247	Standard
	Pb	207	273.3	4.9	**0.0096**	0.003	26.1	ug/L	215	Standard
	Pb	208	1042.0	2.7	**0.0030**	0.001	37.4	ug/L	770	Standard
	U	238	6.0	16.7	**0.0002**	0.000	92.5	ug/L	13	Standard
>	**Bi**	209	503950.2	0.9				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	24992.3	2.5	**32.1567**	1.409	4.4	mg/L	35	Standard
K	39	90.0	5.6	**0.3081**	0.023	7.4	mg/L	25	Standard
Ca	43	76.7	13.6	**8.8158**	1.657	18.8	mg/L	38	Standard
Fe	54	192.9	22.1	**0.0345**	0.034	98.8	mg/L	126	Standard
Fe	57	315.0	9.9	**0.0759**	0.141	185.8	mg/L	245	Standard
> **Sc-1**	45	26748.6	2.3				mg/L	25066	Standard
Cl	35	159695.2	0.9				ug/L	125857	Standard
Kr	83	2.3	107.9				ug/L	1	Standard
Br	81	185783.8	10.6				ug/L	1350	Standard
P	31	21602.1	2.2				ug/L	18393	Standard
S	34	4462.3	2.7				ug/L	3739	Standard
Sr	88	1885.1	4.1				ug/L	78	Standard
C	12	60.0	16.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	29.2	70.1				mg/L	2	Standard
Ho-1	165	3.3	86.6				mg/L	10	Standard
Er	166	16.7	69.3				mg/L	23	Standard
I	127	135026.1	16.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.011	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.706	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.140
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.160
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606099501
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Method 6020 - Summary Report

Sample ID: L1606099502
Sample Date/Time: Tuesday, June 21, 2016 19:38:09
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 500
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74226.4	2.4				ug/L	60176	Standard
	Be	9	8.3	34.6	**0.0004**	0.003	782.1	ug/L	5	Standard
	Al	27	1964045.2	2.9	**12.1146**	0.244	2.0	ug/L	832	Standard
	Sc	45	24970.6	3.4				ug/L	25066	Standard
	Ti	47	32.7	9.4	**-0.0368**	0.015	40.8	ug/L	38	Standard
	V	51	1262.9	8.3	**0.0439**	0.016	36.9	ug/L	974	Standard
	Cr	52	7258.4	0.5	**0.2111**	0.007	3.1	ug/L	5792	Standard
	Cr	53	1968.5	11.3	**2.0221**	0.300	14.8	ug/L	347	Standard
	Mn	55	84493.3	0.7	**13.1339**	0.146	1.1	ug/L	1164	Standard
	Co	59	367.0	1.6	**0.0116**	0.000	3.3	ug/L	303	Standard
	Ni	60	734.0	4.8	**0.2217**	0.019	8.5	ug/L	291	Standard
	Cu	65	234.0	5.0	**0.0345**	0.007	20.2	ug/L	173	Standard
	Zn	66	3577.4	1.6	**3.2515**	0.080	2.4	ug/L	130	Standard
>	**Ge**	72	486612.8	1.0				ug/L	491724	Standard
	As	75	1897.2	6.2	**1.8600**	0.104	5.6	ug/L	-25	Standard
	Se	82	847.2	4.6	**8.1876**	0.359	4.4	ug/L	12	Standard
	Se-1	77	299.3	6.6	**3.6325**	0.324	8.9	ug/L	57	Standard
>	**Ga**	71	111.7	23.0				mg/L	148	Standard
	Rb	85	6951.6	2.7				ug/L	18	Standard
	Y	89	428541.2	1.0				ug/L	401845	Standard
>	**Rh**	103	660.0	4.2				ug/L	10	Standard
	Mo	98	28.1	25.8	**0.0071**	0.003	41.3	ug/L	12	Standard
	Ag	107	72.0	3.7	**-0.0033**	0.000	11.5	ug/L	98	Standard
	Cd	111	5.6	20.7	**-0.0018**	0.001	33.9	mg/L	11	Standard
	Cd	114	12.2	78.3	**-0.0018**	0.002	112.9	ug/L	21	Standard
>	**In**	115	554225.0	0.6				ug/L	547487	Standard
	Sn	118	540.0	14.7	**0.0287**	0.015	53.8	ug/L	450	Standard
	Sb	123	76.2	13.8	**0.0101**	0.003	24.8	ug/L	105	Standard
	Ba	135	188355.6	0.6	**101.2959**	0.460	0.5	ug/L	111	Standard
	Ce	140	40.0	33.1				ug/L	107	Standard
>	**Tb**	159	890237.5	1.2				ug/L	890342	Standard
	Ho	165	21.7	35.3				ug/L	10	Standard
	Tl	203	179.7	2.8	**0.0212**	0.001	5.5	ug/L	19	Standard
	Tl	205	150.0	6.7	**0.0261**	0.001	4.6	ug/L	17	Standard
	Pb	206	498.3	4.9	**0.0517**	0.004	7.7	ug/L	247	Standard
	Pb	207	466.3	5.0	**0.0577**	0.006	10.6	ug/L	215	Standard
	Pb	208	1786.7	1.0	**0.0525**	0.002	3.4	ug/L	770	Standard
	U	238	3.0	33.3	**-0.0003**	0.000	60.1	ug/L	13	Standard
>	**Bi**	209	483891.9	2.0				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.7247**	32.424	173.2	mg/L	2	Standard
Mg	24	25317.8	3.2	**34.8845**	0.795	2.3	mg/L	35	Standard
K	39	93.3	22.3	**0.3528**	0.090	25.6	mg/L	25	Standard
Ca	43	91.7	8.3	**12.8496**	1.996	15.5	mg/L	38	Standard
Fe	54	224.3	18.2	**0.0779**	0.045	57.5	mg/L	126	Standard
Fe	57	341.7	9.5	**0.2646**	0.154	58.2	mg/L	245	Standard
> **Sc-1**	45	24970.6	3.4				mg/L	25066	Standard
Cl	35	171948.2	0.2				ug/L	125857	Standard
Kr	83	2.3	49.5				ug/L	1	Standard
Br	81	210718.6	1.3				ug/L	1350	Standard
P	31	22428.3	0.3				ug/L	18393	Standard
S	34	4655.7	1.8				ug/L	3739	Standard
Sr	88	1866.8	5.5				ug/L	78	Standard
C	12	56.7	36.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	45.9	45.5				mg/L	2	Standard
Ho-1	165	21.7	35.3				mg/L	10	Standard
Er	166	16.7	124.9				mg/L	23	Standard
I	127	109731.2	3.5				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.349	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.961	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.231	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.174	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 19:41:21
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60753.2	0.7				ug/L	60176	Standard
	Be	9	38719.4	2.5	**53.4127**	1.268	2.4	ug/L	5	Standard
	Al	27	6711778.9	2.1	**50.6033**	0.899	1.8	ug/L	832	Standard
	Sc	45	25728.5	2.1				ug/L	25066	Standard
	Ti	47	20982.5	0.5	**104.3242**	1.357	1.3	ug/L	38	Standard
	V	51	321053.2	1.0	**51.7981**	0.934	1.8	ug/L	974	Standard
	Cr	52	344201.5	0.6	**51.1636**	0.287	0.6	ug/L	5792	Standard
	Cr	53	44291.3	1.7	**51.7172**	0.682	1.3	ug/L	347	Standard
	Mn	55	339218.4	3.0	**50.8246**	1.874	3.7	ug/L	1164	Standard
	Co	59	329430.6	2.2	**52.0390**	1.531	2.9	ug/L	303	Standard
	Ni	60	95047.5	0.5	**50.6545**	0.643	1.3	ug/L	291	Standard
	Cu	65	94430.7	0.6	**50.7104**	0.485	1.0	ug/L	173	Standard
	Zn	66	54795.6	0.3	**50.6166**	0.334	0.7	ug/L	130	Standard
>	**Ge**	72	511027.8	0.9				ug/L	491724	Standard
	As	75	54737.8	0.8	**50.2171**	0.828	1.6	ug/L	-25	Standard
	Se	82	5522.7	2.1	**51.3173**	1.540	3.0	ug/L	12	Standard
	Se-1	77	3859.5	2.0	**51.9063**	1.447	2.8	ug/L	57	Standard
>	**Ga**	71	95.0	18.2				mg/L	148	Standard
	Rb	85	715.0	4.2				ug/L	18	Standard
	Y	89	414601.0	3.0				ug/L	401845	Standard
>	**Rh**	103	75.0	29.1				ug/L	10	Standard
	Mo	98	246703.9	0.8	**102.5745**	0.981	1.0	ug/L	12	Standard
	Ag	107	305467.2	1.3	**51.7401**	0.890	1.7	ug/L	98	Standard
	Cd	111	97736.3	0.7	**51.9469**	0.458	0.9	mg/L	11	Standard
	Cd	114	235851.4	0.5	**51.5266**	0.472	0.9	ug/L	21	Standard
>	**In**	115	547985.7	0.4				ug/L	547487	Standard
	Sn	118	265904.1	2.8	**51.0890**	1.611	3.2	ug/L	450	Standard
	Sb	123	218330.5	1.3	**51.3521**	0.839	1.6	ug/L	105	Standard
	Ba	135	93431.9	0.4	**50.7920**	0.422	0.8	ug/L	111	Standard
	Ce	140	66.7	18.9				ug/L	107	Standard
>	**Tb**	159	878645.9	1.2				ug/L	890342	Standard
	Ho	165	16.7	34.6				ug/L	10	Standard
	Tl	203	382593.3	0.6	**51.2166**	0.851	1.7	ug/L	19	Standard
	Tl	205	319855.9	0.2	**52.1860**	0.686	1.3	ug/L	17	Standard
	Pb	206	245809.9	0.3	**51.1253**	0.527	1.0	ug/L	247	Standard
	Pb	207	223379.0	0.7	**51.1100**	0.660	1.3	ug/L	215	Standard
	Pb	208	860209.0	0.8	**52.5732**	1.026	2.0	ug/L	770	Standard
	U	238	310063.3	0.9	**52.2791**	0.641	1.2	ug/L	13	Standard
>	**Bi**	209	497537.7	1.2				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.4323**	31.917	173.2	mg/L	2	Standard
Mg	24	3723.8	3.0	**4.9453**	0.109	2.2	mg/L	35	Standard
K	39	950.0	8.5	**4.5034**	0.416	9.2	mg/L	25	Standard
Ca	43	46.7	24.7	**3.6078**	2.004	55.6	mg/L	38	Standard
Fe	54	5363.4	1.0	**4.8229**	0.058	1.2	mg/L	126	Standard
Fe	57	1550.1	5.1	**4.8704**	0.425	8.7	mg/L	245	Standard
Sc-1	45	25728.5	2.1				mg/L	25066	Standard
Cl	35	153211.6	2.0				ug/L	125857	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	3267.0	14.6				ug/L	1350	Standard
P	31	22256.3	1.2				ug/L	18393	Standard
S	34	4787.4	1.1				ug/L	3739	Standard
Sr	88	73.3	34.3				ug/L	78	Standard
C	12	40.0	25.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	0.0					mg/L	2	Standard
Ho-1	165	16.7	34.6				mg/L	10	Standard
Er	166	0.0					mg/L	23	Standard
I	127	2020.1	11.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	106.825		
Al	27	101.207		
Sc	45			
Ti	47	104.324		
V	51	103.596		
Cr	52	102.327		
Cr	53			
Mn	55	101.649		
Co	59	104.078		
Ni	60	101.309		
Cu	65	101.421		
Zn	66	101.233		
Ge	72		103.926	
As	75	100.434		
Se	82	102.635		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	102.575		
Ag	107	103.480		
Cd	111	103.894		
Cd	114			
In	115		100.091	
Sn	118	102.178		
Sb	123	102.704		
Ba	135	101.584		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.433		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.146		
U	238	104.558		
Bi	209		98.886	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 19:44:33
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61186.7	3.6				ug/L	60176	Standard
	Be	9	33.3	121.2	**0.0354**	0.053	148.9	ug/L	5	Standard
	Al	27	5501.8	106.7	**0.0318**	0.042	131.0	ug/L	832	Standard
	Sc	45	26701.8	2.0				ug/L	25066	Standard
	Ti	47	30.3	33.2	**-0.0533**	0.048	90.9	ug/L	38	Standard
	V	51	1141.6	4.7	**0.0186**	0.005	28.0	ug/L	974	Standard
	Cr	52	6134.6	2.3	**0.0092**	0.003	30.8	ug/L	5792	Standard
	Cr	53	388.3	9.1	**0.0563**	0.051	89.9	ug/L	347	Standard
	Mn	55	1080.7	12.0	**-0.0490**	0.017	33.8	ug/L	1164	Standard
	Co	59	305.0	13.6	**0.0000**	0.006	21511.9	ug/L	303	Standard
	Ni	60	217.7	16.0	**-0.0715**	0.017	23.3	ug/L	291	Standard
	Cu	65	178.3	13.0	**0.0005**	0.011	2056.8	ug/L	173	Standard
	Zn	66	169.7	10.0	**-0.0741**	0.013	17.6	ug/L	130	Standard
>	**Ge**	72	498463.8	2.0				ug/L	491724	Standard
	As	75	-12.2	286.7	**0.0221**	0.033	148.3	ug/L	-25	Standard
	Se	82	23.6	25.6	**0.1314**	0.054	41.3	ug/L	12	Standard
	Se-1	77	53.0	11.3	**0.0906**	0.088	97.6	ug/L	57	Standard
>	**Ga**	71	131.7	28.5				mg/L	148	Standard
	Rb	85	18.3	15.7				ug/L	18	Standard
	Y	89	417929.1	0.8				ug/L	401845	Standard
>	**Rh**	103	38.3	41.9				ug/L	10	Standard
	Mo	98	257.5	28.1	**0.0990**	0.027	27.2	ug/L	12	Standard
	Ag	107	163.0	35.8	**0.0113**	0.009	79.0	ug/L	98	Standard
	Cd	111	38.5	98.3	**0.0148**	0.019	127.2	mg/L	11	Standard
	Cd	114	81.0	86.9	**0.0125**	0.014	115.3	ug/L	21	Standard
>	**In**	115	565101.8	2.2				ug/L	547487	Standard
	Sn	118	831.7	11.4	**0.0814**	0.021	25.5	ug/L	450	Standard
	Sb	123	393.5	15.0	**0.0823**	0.015	18.3	ug/L	105	Standard
	Ba	135	200.7	38.6	**0.0498**	0.038	76.8	ug/L	111	Standard
	Ce	140	16.7	45.8				ug/L	107	Standard
>	**Tb**	159	889533.7	0.9				ug/L	890342	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	149.3	78.6	**0.0159**	0.015	94.6	ug/L	19	Standard
	Tl	205	106.7	80.7	**0.0179**	0.013	75.0	ug/L	17	Standard
	Pb	206	292.0	13.2	**0.0046**	0.007	158.0	ug/L	247	Standard
	Pb	207	254.3	15.6	**0.0049**	0.008	166.3	ug/L	215	Standard
	Pb	208	1008.7	14.9	**0.0005**	0.008	1674.4	ug/L	770	Standard
	U	238	103.0	92.1	**0.0161**	0.015	95.6	ug/L	13	Standard
>	**Bi**	209	507542.0	1.3				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.1949**	29.774	173.2	mg/L	2	Standard
Mg	24	48.3	76.3	**0.0231**	0.046	200.6	mg/L	35	Standard
K	39	25.0	20.0	**0.0046**	0.023	492.5	mg/L	25	Standard
Ca	43	23.3	32.7	**-1.0097**	1.396	138.2	mg/L	38	Standard
Fe	54	150.9	27.6	**-0.0016**	0.040	2494.1	mg/L	126	Standard
Fe	57	210.0	10.9	**-0.3128**	0.084	26.9	mg/L	245	Standard
Sc-1	45	26701.8	2.0				mg/L	25066	Standard
Cl	35	151455.2	0.3				ug/L	125857	Standard
Kr	83	2.0	0.0				ug/L	1	Standard
Br	81	2233.5	7.9				ug/L	1350	Standard
P	31	22777.1	4.3				ug/L	18393	Standard
S	34	4777.4	2.0				ug/L	3739	Standard
Sr	88	61.7	4.7				ug/L	78	Standard
C	12	53.3	10.8				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.3	94.7				mg/L	2	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	23	Standard
I	127	1440.1	11.4				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.371	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.217
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.874
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: PBS M7 WG573333-03
Sample Date/Time: Tuesday, June 21, 2016 19:47:45
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60333.2	0.9				ug/L	60176	Standard
	Be	9	8.3	91.7	**0.0026**	0.011	413.6	ug/L	5	Standard
	Al	27	13747.9	0.9	**0.0960**	0.002	1.6	ug/L	832	Standard
	Sc	45	26165.9	1.6				ug/L	25066	Standard
	Ti	47	33.7	12.0	**-0.0319**	0.021	67.5	ug/L	38	Standard
	V	51	1023.7	5.2	**0.0030**	0.011	364.3	ug/L	974	Standard
	Cr	52	8476.0	2.1	**0.4019**	0.015	3.7	ug/L	5792	Standard
	Cr	53	670.0	10.4	**0.4130**	0.076	18.4	ug/L	347	Standard
	Mn	55	1695.4	1.7	**0.0519**	0.001	2.7	ug/L	1164	Standard
	Co	59	1288.1	1.7	**0.1641**	0.005	3.0	ug/L	303	Standard
	Ni	60	726.0	6.3	**0.2167**	0.030	13.9	ug/L	291	Standard
	Cu	65	492.3	1.6	**0.1799**	0.004	2.2	ug/L	173	Standard
	Zn	66	1621.4	0.7	**1.3419**	0.027	2.0	ug/L	130	Standard
>	**Ge**	72	487560.8	1.2				ug/L	491724	Standard
	As	75	-5.7	503.0	**0.0282**	0.028	98.0	ug/L	-25	Standard
	Se	82	31.9	19.2	**0.2175**	0.056	25.7	ug/L	12	Standard
	Se-1	77	56.0	15.9	**0.1503**	0.133	88.5	ug/L	57	Standard
>	**Ga**	71	95.0	13.9				mg/L	148	Standard
	Rb	85	66.7	31.2				ug/L	18	Standard
	Y	89	416805.6	1.1				ug/L	401845	Standard
>	**Rh**	103	40.0	45.1				ug/L	10	Standard
	Mo	98	145.3	0.5	**0.0548**	0.001	1.4	ug/L	12	Standard
	Ag	107	81.0	9.6	**-0.0019**	0.001	72.0	ug/L	98	Standard
	Cd	111	25.4	13.8	**0.0085**	0.002	23.0	mg/L	11	Standard
	Cd	114	59.1	56.7	**0.0083**	0.007	88.4	ug/L	21	Standard
>	**In**	115	559026.1	1.1				ug/L	547487	Standard
	Sn	118	593.3	6.4	**0.0378**	0.006	15.8	ug/L	450	Standard
	Sb	123	135.0	11.3	**0.0235**	0.003	13.5	ug/L	105	Standard
	Ba	135	280.0	9.7	**0.0939**	0.016	17.3	ug/L	111	Standard
	Ce	140	105.0	29.7				ug/L	107	Standard
>	**Tb**	159	875434.1	1.1				ug/L	890342	Standard
	Ho	165	11.7	49.5				ug/L	10	Standard
	Tl	203	36.0	5.6	**0.0012**	0.000	21.8	ug/L	19	Standard
	Tl	205	30.0	44.1	**0.0059**	0.002	36.7	ug/L	17	Standard
	Pb	206	339.0	5.6	**0.0154**	0.004	24.7	ug/L	247	Standard
	Pb	207	271.0	5.6	**0.0097**	0.003	34.8	ug/L	215	Standard
	Pb	208	1160.0	0.8	**0.0108**	0.001	6.7	ug/L	770	Standard
	U	238	14.3	35.8	**0.0016**	0.001	55.1	ug/L	13	Standard
>	**Bi**	209	499087.6	0.6				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	61.6	**0.0157**	0.033	209.3	mg/L	35	Standard
K	39	23.3	49.5	**-0.0010**	0.055	5424.9	mg/L	25	Standard
Ca	43	25.0	60.0	**-0.6344**	2.755	434.3	mg/L	38	Standard
Fe	54	119.2	14.8	**-0.0282**	0.015	51.5	mg/L	126	Standard
Fe	57	218.3	7.4	**-0.2659**	0.051	19.0	mg/L	245	Standard
> **Sc-1**	45	26165.9	1.6				mg/L	25066	Standard
Cl	35	151596.6	0.8				ug/L	125857	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	4757.4	26.7				ug/L	1350	Standard
P	31	21740.6	1.1				ug/L	18393	Standard
S	34	4795.8	1.6				ug/L	3739	Standard
Sr	88	51.7	5.6				ug/L	78	Standard
C	12	43.3	66.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	22.9	66.8				mg/L	2	Standard
Ho-1	165	11.7	49.5				mg/L	10	Standard
Er	166	10.0					mg/L	23	Standard
I	127	1155.0	7.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.261	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.153	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.108
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.194
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSS M7 WG573333-04
Sample Date/Time: Tuesday, June 21, 2016 19:50:57
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59225.5	1.2				ug/L	60176	Standard
	Be	9	19609.4	3.0	**27.7420**	0.614	2.2	ug/L	5	Standard
	Al	27	12795.4	2.0	**0.0906**	0.002	1.9	ug/L	832	Standard
	Sc	45	25735.2	2.3				ug/L	25066	Standard
	Ti	47	30.7	8.2	**-0.0502**	0.013	25.4	ug/L	38	Standard
	V	51	161756.0	0.9	**26.8215**	0.191	0.7	ug/L	974	Standard
	Cr	52	180807.8	1.0	**27.2779**	0.436	1.6	ug/L	5792	Standard
	Cr	53	22388.2	0.3	**26.7556**	0.203	0.8	ug/L	347	Standard
	Mn	55	175657.5	1.4	**27.0317**	0.594	2.2	ug/L	1164	Standard
	Co	59	169342.1	1.0	**27.5546**	0.491	1.8	ug/L	303	Standard
	Ni	60	48725.6	1.2	**26.6820**	0.407	1.5	ug/L	291	Standard
	Cu	65	49148.3	1.6	**27.1675**	0.617	2.3	ug/L	173	Standard
	Zn	66	29121.0	0.5	**27.6282**	0.375	1.4	ug/L	130	Standard
>	**Ge**	72	495668.9	0.8				ug/L	491724	Standard
	As	75	28447.7	0.7	**26.9212**	0.272	1.0	ug/L	-25	Standard
	Se	82	2857.7	1.2	**27.3299**	0.423	1.5	ug/L	12	Standard
	Se-1	77	1990.5	1.7	**27.2946**	0.705	2.6	ug/L	57	Standard
>	**Ga**	71	91.7	12.6				mg/L	148	Standard
	Rb	85	58.3	27.6				ug/L	18	Standard
	Y	89	417893.5	1.2				ug/L	401845	Standard
>	**Rh**	103	40.0	37.5				ug/L	10	Standard
	Mo	98	60.5	14.8	**0.0204**	0.004	18.1	ug/L	12	Standard
	Ag	107	157370.8	1.5	**26.3596**	0.160	0.6	ug/L	98	Standard
	Cd	111	50266.8	1.9	**26.4266**	0.395	1.5	mg/L	11	Standard
	Cd	114	119121.9	1.8	**25.7414**	0.327	1.3	ug/L	21	Standard
>	**In**	115	553936.9	1.0				ug/L	547487	Standard
	Sn	118	550.0	18.4	**0.0307**	0.020	63.7	ug/L	450	Standard
	Sb	123	113724.8	2.0	**26.4550**	0.324	1.2	ug/L	105	Standard
	Ba	135	48233.0	1.1	**25.9109**	0.064	0.2	ug/L	111	Standard
	Ce	140	93.3	12.4				ug/L	107	Standard
>	**Tb**	159	874780.4	1.3				ug/L	890342	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	196062.2	1.5	**26.2005**	0.206	0.8	ug/L	19	Standard
	Tl	205	168222.2	1.4	**27.4028**	0.377	1.4	ug/L	17	Standard
	Pb	206	128186.0	1.2	**26.5918**	0.160	0.6	ug/L	247	Standard
	Pb	207	111720.4	1.6	**25.4940**	0.201	0.8	ug/L	215	Standard
	Pb	208	451907.4	0.9	**27.5458**	0.346	1.3	ug/L	770	Standard
	U	238	157122.5	0.9	**26.4506**	0.287	1.1	ug/L	13	Standard
>	**Bi**	209	498294.3	0.9				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	30.0	60.1	**0.0016**	0.025	1578.9	mg/L	35	Standard
K	39	23.3	32.7	**0.0007**	0.036	5216.6	mg/L	25	Standard
Ca	43	21.7	48.0	**-1.1391**	2.056	180.5	mg/L	38	Standard
Fe	54	127.8	14.4	**-0.0186**	0.014	76.0	mg/L	126	Standard
Fe	57	258.3	19.9	**-0.0963**	0.212	219.9	mg/L	245	Standard
Sc-1	45	25735.2	2.3				mg/L	25066	Standard
Cl	35	150456.8	1.7				ug/L	125857	Standard
Kr	83	3.0	57.7				ug/L	1	Standard
Br	81	2710.2	6.8				ug/L	1350	Standard
P	31	21206.5	4.7				ug/L	18393	Standard
S	34	4460.7	1.3				ug/L	3739	Standard
Sr	88	63.3	9.1				ug/L	78	Standard
C	12	43.3	13.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.7	118.3				mg/L	2	Standard
Ho-1	165	8.3	91.7				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	998.4	16.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		98.421	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.802	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.178	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.036	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606105301 WG573333-02
Sample Date/Time: Tuesday, June 21, 2016 19:54:08
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59553.5	1.0				ug/L	60176	Standard
	Be	9	135.0	13.4	**0.1809**	0.024	13.0	ug/L	5	Standard
	Al	27	390493.3	0.9	**2.9960**	0.057	1.9	ug/L	832	Standard
	Sc	45	27242.8	2.6				ug/L	25066	Standard
	Ti	47	6465.0	1.2	**32.1311**	0.140	0.4	ug/L	38	Standard
	V	51	48073.7	0.3	**7.6430**	0.089	1.2	ug/L	974	Standard
	Cr	52	34364.9	0.8	**4.2815**	0.091	2.1	ug/L	5792	Standard
	Cr	53	4007.2	3.0	**4.3239**	0.170	3.9	ug/L	347	Standard
	Mn	55	232477.7	0.8	**34.9054**	0.509	1.5	ug/L	1164	Standard
	Co	59	7863.0	1.3	**1.1989**	0.016	1.3	ug/L	303	Standard
	Ni	60	6025.5	1.1	**3.0464**	0.076	2.5	ug/L	291	Standard
	Cu	65	4433.0	2.2	**2.2972**	0.044	1.9	ug/L	173	Standard
	Zn	66	19225.9	1.6	**17.6815**	0.348	2.0	ug/L	130	Standard
>	**Ge**	72	508937.9	1.5				ug/L	491724	Standard
	As	75	2936.1	0.9	**2.7370**	0.053	1.9	ug/L	-25	Standard
	Se	82	55.2	23.4	**0.4222**	0.115	27.2	ug/L	12	Standard
	Se-1	77	65.0	8.1	**0.2394**	0.078	32.6	ug/L	57	Standard
>	**Ga**	71	5164.2	2.6				mg/L	148	Standard
	Rb	85	19092.0	2.2				ug/L	18	Standard
	Y	89	428438.9	1.5				ug/L	401845	Standard
>	**Rh**	103	26.7	39.0				ug/L	10	Standard
	Mo	98	5911.8	1.7	**2.4389**	0.038	1.6	ug/L	12	Standard
	Ag	107	147.0	13.6	**0.0094**	0.003	37.1	ug/L	98	Standard
	Cd	111	206.9	4.5	**0.1046**	0.005	4.6	mg/L	11	Standard
	Cd	114	472.4	6.6	**0.0981**	0.006	6.3	ug/L	21	Standard
>	**In**	115	551287.4	0.7				ug/L	547487	Standard
	Sn	118	468.3	5.4	**0.0155**	0.005	29.4	ug/L	450	Standard
	Sb	123	357.0	11.8	**0.0759**	0.010	13.0	ug/L	105	Standard
	Ba	135	38678.0	0.4	**20.8682**	0.219	1.0	ug/L	111	Standard
	Ce	140	306495.9	1.2				ug/L	107	Standard
>	**Tb**	159	890380.5	0.6				ug/L	890342	Standard
	Ho	165	2116.8	9.4				ug/L	10	Standard
	Tl	203	519.3	6.1	**0.0646**	0.004	6.1	ug/L	19	Standard
	Tl	205	458.3	12.0	**0.0743**	0.009	11.8	ug/L	17	Standard
	Pb	206	124187.6	1.0	**25.2798**	0.148	0.6	ug/L	247	Standard
	Pb	207	103763.8	0.7	**23.2336**	0.104	0.4	ug/L	215	Standard
	Pb	208	419261.0	0.7	**25.0733**	0.105	0.4	ug/L	770	Standard
	U	238	1623.1	2.0	**0.2673**	0.004	1.6	ug/L	13	Standard
>	**Bi**	209	507748.9	0.4				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	18.3	**0.0137**	0.009	65.1	mg/L	35	Standard
K	39	28.3	27.0	**0.0171**	0.033	190.3	mg/L	25	Standard
Ca	43	28.3	62.0	**-0.2390**	3.080	1288.3	mg/L	38	Standard
Fe	54	3298.0	4.5	**2.7434**	0.115	4.2	mg/L	126	Standard
Fe	57	1085.0	10.1	**2.8415**	0.310	10.9	mg/L	245	Standard
> **Sc-1**	45	27242.8	2.6				mg/L	25066	Standard
Cl	35	140674.8	1.7				ug/L	125857	Standard
Kr	83	1.7	124.9				ug/L	1	Standard
Br	81	2630.2	14.1				ug/L	1350	Standard
P	31	19367.4	0.5				ug/L	18393	Standard
S	34	4402.3	3.5				ug/L	3739	Standard
Sr	88	81.7	12.7				ug/L	78	Standard
C	12	100.0	40.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	63.3	18.2				mg/L	0	Standard
Dy	164	3670.9	4.8				mg/L	2	Standard
Ho-1	165	2116.8	9.4				mg/L	10	Standard
Er	166	1800.1	7.0				mg/L	23	Standard
I	127	6793.2	6.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.966	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.501	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.694
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.915
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606105302S WG573333-07
Sample Date/Time: Tuesday, June 21, 2016 19:57:20
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60433.6	2.0				ug/L	60176	Standard
	Be	9	19427.5	2.3	**26.9397**	0.549	2.0	ug/L	5	Standard
	Al	27	396251.5	0.8	**2.9962**	0.054	1.8	ug/L	832	Standard
	Sc	45	27251.2	1.0				ug/L	25066	Standard
	Ti	47	7488.9	1.0	**38.3195**	0.066	0.2	ug/L	38	Standard
	V	51	191501.2	1.3	**31.8425**	0.616	1.9	ug/L	974	Standard
	Cr	52	197050.6	1.4	**29.8680**	0.710	2.4	ug/L	5792	Standard
	Cr	53	24456.4	1.3	**29.3202**	0.727	2.5	ug/L	347	Standard
	Mn	55	384294.1	1.4	**59.4969**	1.333	2.2	ug/L	1164	Standard
	Co	59	160969.3	2.7	**26.2367**	0.889	3.4	ug/L	303	Standard
	Ni	60	52090.7	1.5	**28.5899**	0.703	2.5	ug/L	291	Standard
	Cu	65	51279.0	0.4	**28.3978**	0.401	1.4	ug/L	173	Standard
	Zn	66	44812.5	1.1	**42.7178**	0.864	2.0	ug/L	130	Standard
>	**Ge**	72	494830.5	1.2				ug/L	491724	Standard
	As	75	25971.2	2.1	**24.6250**	0.687	2.8	ug/L	-25	Standard
	Se	82	2412.0	4.7	**23.0968**	1.223	5.3	ug/L	12	Standard
	Se-1	77	1649.1	1.6	**22.5387**	0.314	1.4	ug/L	57	Standard
>	**Ga**	71	4899.1	4.8				mg/L	148	Standard
	Rb	85	15933.4	0.2				ug/L	18	Standard
	Y	89	434672.4	2.3				ug/L	401845	Standard
>	**Rh**	103	26.7	57.3				ug/L	10	Standard
	Mo	98	16958.8	1.3	**6.8221**	0.110	1.6	ug/L	12	Standard
	Ag	107	140602.8	1.2	**23.0461**	0.295	1.3	ug/L	98	Standard
	Cd	111	48424.2	1.0	**24.9141**	0.334	1.3	mg/L	11	Standard
	Cd	114	117338.3	1.3	**24.8149**	0.406	1.6	ug/L	21	Standard
>	**In**	115	566048.4	0.4				ug/L	547487	Standard
	Sn	118	788.4	48.0	**0.0729**	0.071	97.4	ug/L	450	Standard
	Sb	123	59314.2	1.3	**13.4999**	0.209	1.5	ug/L	105	Standard
	Ba	135	85875.1	2.0	**45.1887**	1.009	2.2	ug/L	111	Standard
	Ce	140	311360.4	1.3				ug/L	107	Standard
>	**Tb**	159	893299.7	0.4				ug/L	890342	Standard
	Ho	165	1725.1	3.4				ug/L	10	Standard
	Tl	203	188251.6	0.6	**24.7136**	0.342	1.4	ug/L	19	Standard
	Tl	205	158225.3	1.5	**25.3203**	0.563	2.2	ug/L	17	Standard
	Pb	206	385483.0	0.9	**78.6614**	0.775	1.0	ug/L	247	Standard
	Pb	207	325540.1	1.2	**73.0713**	0.789	1.1	ug/L	215	Standard
	Pb	208	1297632.0	1.2	**77.8091**	1.554	2.0	ug/L	770	Standard
	U	238	149860.0	2.2	**24.7839**	0.724	2.9	ug/L	13	Standard
>	**Bi**	209	507277.4	0.8				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	53.3	21.7	**0.0285**	0.014	50.4	mg/L	35	Standard
K	39	40.0	33.1	**0.0713**	0.062	86.8	mg/L	25	Standard
Ca	43	30.0	60.1	**0.1178**	3.297	2798.2	mg/L	38	Standard
Fe	54	2785.6	1.9	**2.2951**	0.053	2.3	mg/L	126	Standard
Fe	57	871.7	5.6	**2.0708**	0.165	8.0	mg/L	245	Standard
> **Sc-1**	45	27251.2	1.0				mg/L	25066	Standard
Cl	35	136548.5	0.2				ug/L	125857	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	2690.2	5.6				ug/L	1350	Standard
P	31	18896.8	0.3				ug/L	18393	Standard
S	34	3938.8	2.0				ug/L	3739	Standard
Sr	88	90.0	36.4				ug/L	78	Standard
C	12	110.0					mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	12.4				mg/L	0	Standard
Dy	164	3247.3	7.3				mg/L	2	Standard
Ho-1	165	1725.1	3.4				mg/L	10	Standard
Er	166	1386.7	5.1				mg/L	23	Standard
I	127	5004.2	4.5				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.428	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.632	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.390
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.822
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606105303SD WG573333-08
Sample Date/Time: Tuesday, June 21, 2016 20:00:31
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60791.8	2.4				ug/L	60176	Standard
	Be	9	19442.5	1.7	**26.8023**	0.232	0.9	ug/L	5	Standard
	Al	27	432728.9	2.0	**3.2535**	0.080	2.4	ug/L	832	Standard
	Sc	45	26972.3	0.6				ug/L	25066	Standard
	Ti	47	8101.2	1.8	**41.8095**	0.489	1.2	ug/L	38	Standard
	V	51	194533.2	1.3	**32.6143**	0.536	1.6	ug/L	974	Standard
	Cr	52	196269.4	0.6	**29.9955**	0.469	1.6	ug/L	5792	Standard
	Cr	53	24483.1	0.2	**29.5930**	0.323	1.1	ug/L	347	Standard
	Mn	55	386351.2	0.3	**60.3048**	0.743	1.2	ug/L	1164	Standard
	Co	59	166196.9	0.5	**27.3090**	0.232	0.8	ug/L	303	Standard
	Ni	60	51605.4	0.6	**28.5533**	0.418	1.5	ug/L	291	Standard
	Cu	65	50075.0	1.9	**27.9529**	0.367	1.3	ug/L	173	Standard
	Zn	66	57353.7	1.8	**55.1795**	0.640	1.2	ug/L	130	Standard
>	**Ge**	72	490809.7	1.0				ug/L	491724	Standard
	As	75	25714.1	1.9	**24.5757**	0.229	0.9	ug/L	-25	Standard
	Se	82	2487.9	0.6	**24.0190**	0.366	1.5	ug/L	12	Standard
	Se-1	77	1747.8	2.5	**24.1314**	0.805	3.3	ug/L	57	Standard
>	**Ga**	71	5157.5	2.7				mg/L	148	Standard
	Rb	85	18523.0	3.1				ug/L	18	Standard
	Y	89	444017.8	1.4				ug/L	401845	Standard
>	**Rh**	103	46.7	16.4				ug/L	10	Standard
	Mo	98	5808.7	0.6	**2.3126**	0.026	1.1	ug/L	12	Standard
	Ag	107	143200.7	1.9	**23.2569**	0.246	1.1	ug/L	98	Standard
	Cd	111	48312.1	2.0	**24.6294**	0.423	1.7	mg/L	11	Standard
	Cd	114	117421.2	1.2	**24.6058**	0.205	0.8	ug/L	21	Standard
>	**In**	115	571242.8	0.9				ug/L	547487	Standard
	Sn	118	516.7	19.9	**0.0212**	0.018	86.9	ug/L	450	Standard
	Sb	123	58163.3	1.0	**13.1170**	0.064	0.5	ug/L	105	Standard
	Ba	135	91445.8	0.5	**47.6850**	0.197	0.4	ug/L	111	Standard
	Ce	140	283441.9	1.3				ug/L	107	Standard
>	**Tb**	159	890644.6	2.9				ug/L	890342	Standard
	Ho	165	1641.8	1.4				ug/L	10	Standard
	Tl	203	186726.4	1.3	**24.8727**	0.635	2.6	ug/L	19	Standard
	Tl	205	159870.8	1.7	**25.9629**	0.965	3.7	ug/L	17	Standard
	Pb	206	345180.0	0.3	**71.4786**	2.166	3.0	ug/L	247	Standard
	Pb	207	289788.0	0.4	**66.0118**	2.154	3.3	ug/L	215	Standard
	Pb	208	1193141.1	0.7	**72.6045**	2.586	3.6	ug/L	770	Standard
	U	238	151251.6	0.9	**25.3870**	0.985	3.9	ug/L	13	Standard
>	**Bi**	209	500148.8	3.1				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	29.0	**0.0164**	0.016	96.8	mg/L	35	Standard
K	39	21.7	35.3	**-0.0118**	0.036	304.9	mg/L	25	Standard
Ca	43	35.0	28.6	**1.0832**	1.815	167.6	mg/L	38	Standard
Fe	54	3124.4	3.6	**2.6191**	0.111	4.2	mg/L	126	Standard
Fe	57	1018.4	7.4	**2.6406**	0.258	9.8	mg/L	245	Standard
> **Sc-1**	45	26972.3	0.6				mg/L	25066	Standard
Cl	35	135993.6	0.3				ug/L	125857	Standard
Kr	83	2.3	49.5				ug/L	1	Standard
Br	81	2136.8	9.1				ug/L	1350	Standard
P	31	18498.0	3.5				ug/L	18393	Standard
S	34	3852.2	5.6				ug/L	3739	Standard
Sr	88	71.7	38.4				ug/L	78	Standard
C	12	123.3	4.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	66.7	52.7				mg/L	0	Standard
Dy	164	3021.0	3.5				mg/L	2	Standard
Ho-1	165	1641.8	1.4				mg/L	10	Standard
Er	166	1586.8	8.2				mg/L	23	Standard
I	127	4954.1	6.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.023	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.814	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.339
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.405
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606105401
Sample Date/Time: Tuesday, June 21, 2016 20:03:43
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61720.5	1.6				ug/L	60176	Standard
	Be	9	93.3	26.4	**0.1174**	0.032	27.0	ug/L	5	Standard
	Al	27	303416.2	0.1	**2.2442**	0.038	1.7	ug/L	832	Standard
	Sc	45	26598.3	1.8				ug/L	25066	Standard
	Ti	47	5974.5	1.1	**29.4612**	0.106	0.4	ug/L	38	Standard
	V	51	29615.8	0.7	**4.6079**	0.038	0.8	ug/L	974	Standard
	Cr	52	34301.5	0.5	**4.2336**	0.017	0.4	ug/L	5792	Standard
	Cr	53	4075.5	5.3	**4.3682**	0.220	5.0	ug/L	347	Standard
	Mn	55	67679.2	0.7	**9.9350**	0.149	1.5	ug/L	1164	Standard
	Co	59	5795.4	0.6	**0.8641**	0.012	1.4	ug/L	303	Standard
	Ni	60	7058.0	2.5	**3.5727**	0.066	1.8	ug/L	291	Standard
	Cu	65	1680.8	0.8	**0.8038**	0.014	1.8	ug/L	173	Standard
	Zn	66	13813.0	1.2	**12.5434**	0.154	1.2	ug/L	130	Standard
>	**Ge**	72	512622.2	0.8				ug/L	491724	Standard
	As	75	1326.1	3.7	**1.2458**	0.045	3.6	ug/L	-25	Standard
	Se	82	58.4	19.9	**0.4492**	0.112	25.0	ug/L	12	Standard
	Se-1	77	88.3	8.0	**0.5495**	0.098	17.9	ug/L	57	Standard
>	**Ga**	71	5431.0	3.2				mg/L	148	Standard
	Rb	85	11375.9	1.4				ug/L	18	Standard
	Y	89	433671.4	3.3				ug/L	401845	Standard
>	**Rh**	103	16.7	62.4				ug/L	10	Standard
	Mo	98	2147.6	0.7	**0.8712**	0.013	1.5	ug/L	12	Standard
	Ag	107	162.0	7.3	**0.0115**	0.002	16.1	ug/L	98	Standard
	Cd	111	42.4	7.2	**0.0174**	0.001	7.5	mg/L	11	Standard
	Cd	114	99.9	11.8	**0.0170**	0.002	13.5	ug/L	21	Standard
>	**In**	115	558893.7	1.3				ug/L	547487	Standard
	Sn	118	561.7	17.7	**0.0319**	0.019	59.1	ug/L	450	Standard
	Sb	123	749.1	15.9	**0.1654**	0.030	17.9	ug/L	105	Standard
	Ba	135	29348.7	0.5	**15.6055**	0.116	0.7	ug/L	111	Standard
	Ce	140	146646.3	1.1				ug/L	107	Standard
>	**Tb**	159	887966.0	1.1				ug/L	890342	Standard
	Ho	165	671.7	6.3				ug/L	10	Standard
	Tl	203	235.7	12.3	**0.0279**	0.004	14.4	ug/L	19	Standard
	Tl	205	173.3	14.5	**0.0291**	0.004	14.7	ug/L	17	Standard
	Pb	206	14922.0	0.9	**3.0381**	0.064	2.1	ug/L	247	Standard
	Pb	207	12398.4	1.3	**2.7752**	0.080	2.9	ug/L	215	Standard
	Pb	208	50203.5	0.7	**2.9980**	0.064	2.1	ug/L	770	Standard
	U	238	2316.2	1.5	**0.3880**	0.011	2.7	ug/L	13	Standard
>	**Bi**	209	499818.9	1.6				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	56.7	18.4	**0.0343**	0.012	35.9	mg/L	35	Standard
K	39	40.0	12.5	**0.0758**	0.026	33.7	mg/L	25	Standard
Ca	43	33.3	31.2	**0.8816**	2.026	229.8	mg/L	38	Standard
Fe	54	1087.4	2.8	**0.8360**	0.027	3.2	mg/L	126	Standard
Fe	57	525.0	12.5	**0.8590**	0.218	25.3	mg/L	245	Standard
> **Sc-1**	45	26598.3	1.8				mg/L	25066	Standard
Cl	35	134133.2	1.4				ug/L	125857	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	2273.5	6.1				ug/L	1350	Standard
P	31	19075.3	1.6				ug/L	18393	Standard
S	34	3665.4	1.3				ug/L	3739	Standard
Sr	88	76.7	10.0				ug/L	78	Standard
C	12	130.0	48.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	63.3	24.1				mg/L	0	Standard
Dy	164	1323.8	7.9				mg/L	2	Standard
Ho-1	165	671.7	6.3				mg/L	10	Standard
Er	166	686.7	8.0				mg/L	23	Standard
I	127	2676.9	2.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.567	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.250	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.084	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.339	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L160105401PS WG573475-01
Sample Date/Time: Tuesday, June 21, 2016 20:06:54
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62794.9	0.3				ug/L	60176	Standard
	Be	9	39553.2	1.1	**52.7892**	0.596	1.1	ug/L	5	Standard
	Al	27	307971.8	0.5	**2.2385**	0.019	0.8	ug/L	832	Standard
	Sc	45	26882.2	1.8				ug/L	25066	Standard
	Ti	47	6129.2	0.9	**30.0854**	0.443	1.5	ug/L	38	Standard
	V	51	350807.1	1.1	**56.1596**	0.484	0.9	ug/L	974	Standard
	Cr	52	380685.2	0.7	**56.2324**	0.702	1.2	ug/L	5792	Standard
	Cr	53	47479.3	2.5	**55.0311**	1.483	2.7	ug/L	347	Standard
	Mn	55	401711.5	2.2	**59.7429**	1.526	2.6	ug/L	1164	Standard
	Co	59	335117.7	1.9	**52.5149**	1.178	2.2	ug/L	303	Standard
	Ni	60	103584.6	0.9	**54.7808**	0.581	1.1	ug/L	291	Standard
	Cu	65	100044.2	0.8	**53.3041**	0.495	0.9	ug/L	173	Standard
	Zn	66	69784.7	1.2	**64.0109**	0.350	0.5	ug/L	130	Standard
>	**Ge**	72	515100.8	0.7				ug/L	491724	Standard
	As	75	57585.9	1.4	**52.4062**	0.728	1.4	ug/L	-25	Standard
	Se	82	5557.0	0.5	**51.2198**	0.370	0.7	ug/L	12	Standard
	Se-1	77	3824.8	2.7	**51.0178**	1.538	3.0	ug/L	57	Standard
>	**Ga**	71	5406.0	3.1				mg/L	148	Standard
	Rb	85	11310.9	0.9				ug/L	18	Standard
	Y	89	430615.8	1.3				ug/L	401845	Standard
>	**Rh**	103	35.0	14.3				ug/L	10	Standard
	Mo	98	2082.6	2.7	**0.8357**	0.016	1.9	ug/L	12	Standard
	Ag	107	313560.0	0.3	**51.5352**	0.570	1.1	ug/L	98	Standard
	Cd	111	99080.1	0.8	**51.0986**	0.459	0.9	mg/L	11	Standard
	Cd	114	240574.4	0.6	**50.9998**	0.581	1.1	ug/L	21	Standard
>	**In**	115	564766.8	1.3				ug/L	547487	Standard
	Sn	118	651.7	3.5	**0.0476**	0.003	5.8	ug/L	450	Standard
	Sb	123	219038.4	0.6	**49.9905**	0.624	1.2	ug/L	105	Standard
	Ba	135	122799.3	0.6	**64.7923**	0.643	1.0	ug/L	111	Standard
	Ce	140	145608.1	1.7				ug/L	107	Standard
>	**Tb**	159	891761.9	1.6				ug/L	890342	Standard
	Ho	165	680.0	5.1				ug/L	10	Standard
	Tl	203	390727.1	0.9	**51.0556**	0.307	0.6	ug/L	19	Standard
	Tl	205	332957.0	0.5	**53.0280**	0.386	0.7	ug/L	17	Standard
	Pb	206	268736.3	0.4	**54.5663**	0.473	0.9	ug/L	247	Standard
	Pb	207	234417.6	1.0	**52.3635**	1.055	2.0	ug/L	215	Standard
	Pb	208	909782.4	1.0	**54.2774**	0.756	1.4	ug/L	770	Standard
	U	238	311618.6	0.6	**51.2899**	0.366	0.7	ug/L	13	Standard
>	**Bi**	209	509666.6	1.1				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	56.7	67.4	**0.0334**	0.048	143.9	mg/L	35	Standard
K	39	28.3	88.8	**0.0206**	0.119	576.6	mg/L	25	Standard
Ca	43	23.3	68.9	**-1.0431**	2.962	283.9	mg/L	38	Standard
Fe	54	984.0	1.5	**0.7343**	0.012	1.7	mg/L	126	Standard
Fe	57	478.3	10.2	**0.6676**	0.161	24.2	mg/L	245	Standard
> **Sc-1**	45	26882.2	1.8				mg/L	25066	Standard
Cl	35	130277.0	0.6				ug/L	125857	Standard
Kr	83	3.3	45.8				ug/L	1	Standard
Br	81	2190.2	10.3				ug/L	1350	Standard
P	31	18941.8	1.3				ug/L	18393	Standard
S	34	3468.7	2.9				ug/L	3739	Standard
Sr	88	81.7	9.4				ug/L	78	Standard
C	12	83.3	6.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	60.0	16.7				mg/L	0	Standard
Dy	164	1430.7	6.9				mg/L	2	Standard
Ho-1	165	680.0	5.1				mg/L	10	Standard
Er	166	613.3	13.6				mg/L	23	Standard
I	127	2793.6	5.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.352	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.754	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.156
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.297
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606105401SDL WG573475-02
Sample Date/Time: Tuesday, June 21, 2016 20:10:06
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63462.7	2.8				ug/L	60176	Standard
	Be	9	43.3	6.7	**0.0483**	0.005	10.7	ug/L	5	Standard
	Al	27	62110.4	1.6	**0.4402**	0.014	3.1	ug/L	832	Standard
	Sc	45	27483.2	2.5				ug/L	25066	Standard
	Ti	47	1202.7	6.4	**5.8283**	0.361	6.2	ug/L	38	Standard
	V	51	6687.6	0.7	**0.9204**	0.038	4.1	ug/L	974	Standard
	Cr	52	11970.1	2.2	**0.8833**	0.051	5.8	ug/L	5792	Standard
	Cr	53	1118.4	3.2	**0.9142**	0.068	7.4	ug/L	347	Standard
	Mn	55	14114.2	2.6	**1.9239**	0.035	1.8	ug/L	1164	Standard
	Co	59	1371.4	3.2	**0.1692**	0.010	5.9	ug/L	303	Standard
	Ni	60	1550.7	0.7	**0.6455**	0.028	4.3	ug/L	291	Standard
	Cu	65	526.7	2.9	**0.1880**	0.015	7.9	ug/L	173	Standard
	Zn	66	4240.9	4.2	**3.7282**	0.034	0.9	ug/L	130	Standard
>	**Ge**	72	507330.3	3.4				ug/L	491724	Standard
	As	75	245.5	8.2	**0.2605**	0.014	5.3	ug/L	-25	Standard
	Se	82	25.7	28.8	**0.1499**	0.077	51.5	ug/L	12	Standard
	Se-1	77	61.3	9.3	**0.1936**	0.101	52.0	ug/L	57	Standard
>	**Ga**	71	1146.7	6.4				mg/L	148	Standard
	Rb	85	2321.8	7.4				ug/L	18	Standard
	Y	89	429962.5	1.2				ug/L	401845	Standard
>	**Rh**	103	40.0	66.1				ug/L	10	Standard
	Mo	98	429.5	5.0	**0.1645**	0.007	4.1	ug/L	12	Standard
	Ag	107	155.3	11.0	**0.0095**	0.003	29.8	ug/L	98	Standard
	Cd	111	24.9	56.2	**0.0078**	0.007	90.6	mg/L	11	Standard
	Cd	114	64.8	37.7	**0.0090**	0.005	57.8	ug/L	21	Standard
>	**In**	115	579213.8	1.2				ug/L	547487	Standard
	Sn	118	441.7	2.4	**0.0064**	0.003	44.2	ug/L	450	Standard
	Sb	123	1595.3	21.7	**0.3472**	0.075	21.7	ug/L	105	Standard
	Ba	135	5942.5	1.1	**3.0045**	0.068	2.3	ug/L	111	Standard
	Ce	140	29104.6	2.4				ug/L	107	Standard
>	**Tb**	159	919049.1	0.8				ug/L	890342	Standard
	Ho	165	130.0	6.7				ug/L	10	Standard
	Tl	203	140.3	32.1	**0.0144**	0.006	39.9	ug/L	19	Standard
	Tl	205	131.7	30.7	**0.0215**	0.006	29.1	ug/L	17	Standard
	Pb	206	3187.3	2.3	**0.5784**	0.013	2.3	ug/L	247	Standard
	Pb	207	2652.9	2.4	**0.5278**	0.013	2.5	ug/L	215	Standard
	Pb	208	10854.5	0.5	**0.5739**	0.002	0.3	ug/L	770	Standard
	U	238	529.3	8.9	**0.0844**	0.008	9.0	ug/L	13	Standard
>	**Bi**	209	521218.5	0.3				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	45.0	11.1	**0.0175**	0.006	35.9	mg/L	35	Standard
K	39	30.0	44.1	**0.0243**	0.061	252.8	mg/L	25	Standard
Ca	43	23.3	24.7	**-1.1467**	0.924	80.6	mg/L	38	Standard
Fe	54	317.1	0.9	**0.1380**	0.006	4.5	mg/L	126	Standard
Fe	57	253.3	19.5	**-0.1775**	0.188	106.2	mg/L	245	Standard
> **Sc-1**	45	27483.2	2.5				mg/L	25066	Standard
Cl	35	130060.6	1.2				ug/L	125857	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	1580.1	15.4				ug/L	1350	Standard
P	31	19601.0	6.2				ug/L	18393	Standard
S	34	3312.0	2.4				ug/L	3739	Standard
Sr	88	70.0	14.3				ug/L	78	Standard
C	12	53.3	57.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	173.2				mg/L	0	Standard
Dy	164	306.8	2.4				mg/L	2	Standard
Ho-1	165	130.0	6.7				mg/L	10	Standard
Er	166	136.7	23.5				mg/L	23	Standard
I	127	1430.1	5.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.462	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.174	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.795
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.593
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606105401SDL WG573475-02
Sample Date/Time: Tuesday, June 21, 2016 20:13:17
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62075.3	3.4				ug/L	60176	Standard
	Be	9	16.7	17.3	**0.0135**	0.004	29.0	ug/L	5	Standard
	Al	27	12923.8	2.2	**0.0871**	0.004	4.8	ug/L	832	Standard
	Sc	45	27139.3	3.8				ug/L	25066	Standard
	Ti	47	272.0	8.8	**1.1730**	0.126	10.8	ug/L	38	Standard
	V	51	2230.3	1.0	**0.1971**	0.010	5.1	ug/L	974	Standard
	Cr	52	7378.1	1.3	**0.1951**	0.026	13.6	ug/L	5792	Standard
	Cr	53	530.0	5.7	**0.2224**	0.032	14.3	ug/L	347	Standard
	Mn	55	4071.2	2.2	**0.4086**	0.019	4.6	ug/L	1164	Standard
	Co	59	492.0	9.6	**0.0300**	0.009	29.8	ug/L	303	Standard
	Ni	60	471.3	1.5	**0.0663**	0.008	11.5	ug/L	291	Standard
	Cu	65	217.0	2.6	**0.0213**	0.005	21.6	ug/L	173	Standard
	Zn	66	1805.8	2.4	**1.4723**	0.069	4.7	ug/L	130	Standard
>	**Ge**	72	501702.6	1.7				ug/L	491724	Standard
	As	75	24.3	87.9	**0.0566**	0.020	35.2	ug/L	-25	Standard
	Se	82	18.9	18.3	**0.0867**	0.033	37.9	ug/L	12	Standard
	Se-1	77	53.3	8.5	**0.0899**	0.058	64.7	ug/L	57	Standard
>	**Ga**	71	313.3	3.3				mg/L	148	Standard
	Rb	85	476.7	7.4				ug/L	18	Standard
	Y	89	438752.1	0.6				ug/L	401845	Standard
>	**Rh**	103	30.0	16.7				ug/L	10	Standard
	Mo	98	110.3	7.5	**0.0392**	0.004	9.8	ug/L	12	Standard
	Ag	107	108.0	10.5	**0.0020**	0.002	98.3	ug/L	98	Standard
	Cd	111	10.8	70.1	**0.0008**	0.004	499.4	mg/L	11	Standard
	Cd	114	43.9	46.7	**0.0047**	0.004	91.7	ug/L	21	Standard
>	**In**	115	576504.1	1.5				ug/L	547487	Standard
	Sn	118	475.0	15.9	**0.0128**	0.014	109.1	ug/L	450	Standard
	Sb	123	463.6	29.1	**0.0963**	0.031	32.6	ug/L	105	Standard
	Ba	135	1313.4	3.2	**0.6237**	0.012	1.9	ug/L	111	Standard
	Ce	140	5786.1	4.9				ug/L	107	Standard
>	**Tb**	159	898389.3	2.3				ug/L	890342	Standard
	Ho	165	30.0	16.7				ug/L	10	Standard
	Tl	203	55.0	70.9	**0.0037**	0.005	139.1	ug/L	19	Standard
	Tl	205	41.7	70.3	**0.0077**	0.005	61.7	ug/L	17	Standard
	Pb	206	916.0	4.2	**0.1339**	0.009	6.5	ug/L	247	Standard
	Pb	207	747.7	4.4	**0.1174**	0.008	6.7	ug/L	215	Standard
	Pb	208	3092.8	3.0	**0.1274**	0.006	5.0	ug/L	770	Standard
	U	238	143.3	18.2	**0.0231**	0.004	19.3	ug/L	13	Standard
>	**Bi**	209	502532.6	0.4				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	53.3	47.2	**0.0289**	0.033	114.0	mg/L	35	Standard
K	39	30.0	60.1	**0.0244**	0.079	325.6	mg/L	25	Standard
Ca	43	30.0	33.3	**0.1797**	1.980	1101.9	mg/L	38	Standard
Fe	54	180.9	6.6	**0.0219**	0.004	19.7	mg/L	126	Standard
Fe	57	280.0	8.2	**-0.0692**	0.099	143.2	mg/L	245	Standard
> **Sc-1**	45	27139.3	3.8				mg/L	25066	Standard
Cl	35	132798.2	1.3				ug/L	125857	Standard
Kr	83	2.7	78.1				ug/L	1	Standard
Br	81	1633.4	13.0				ug/L	1350	Standard
P	31	18716.6	3.2				ug/L	18393	Standard
S	34	3410.4	2.5				ug/L	3739	Standard
Sr	88	51.7	22.3				ug/L	78	Standard
C	12	60.0	57.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	91.1	51.3				mg/L	2	Standard
Ho-1	165	30.0	16.7				mg/L	10	Standard
Er	166	46.7	32.7				mg/L	23	Standard
I	127	1188.4	6.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.156	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.029	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606105401SDL WG573475-02
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.300
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.879
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 20:16:31
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	61809.3	4.5				ug/L	60176	Standard
	Be	9	36245.0	0.8	**49.1988**	1.805	3.7	ug/L	5	Standard
	Al	27	6582318.8	1.8	**48.8210**	1.363	2.8	ug/L	832	Standard
	Sc	45	26551.6	2.9				ug/L	25066	Standard
	Ti	47	20307.3	0.8	**104.7366**	0.864	0.8	ug/L	38	Standard
	V	51	307773.1	2.0	**51.5001**	0.172	0.3	ug/L	974	Standard
	Cr	52	332161.2	0.7	**51.2294**	1.226	2.4	ug/L	5792	Standard
	Cr	53	42405.9	1.2	**51.3640**	0.276	0.5	ug/L	347	Standard
	Mn	55	325172.6	1.2	**50.5298**	0.233	0.5	ug/L	1164	Standard
	Co	59	317920.3	2.4	**52.0831**	0.431	0.8	ug/L	303	Standard
	Ni	60	91403.9	0.5	**50.5335**	0.688	1.4	ug/L	291	Standard
	Cu	65	91169.5	0.8	**50.7905**	0.667	1.3	ug/L	173	Standard
	Zn	66	52960.1	1.1	**50.7498**	0.564	1.1	ug/L	130	Standard
>	Ge	72	492646.8	1.7				ug/L	491724	Standard
	As	75	53122.0	0.6	**50.5540**	0.557	1.1	ug/L	-25	Standard
	Se	82	5355.6	0.4	**51.6204**	0.769	1.5	ug/L	12	Standard
	Se-1	77	3659.1	2.5	**51.0370**	1.490	2.9	ug/L	57	Standard
>	Ga	71	103.3	24.8				mg/L	148	Standard
	Rb	85	821.7	11.1				ug/L	18	Standard
	Y	89	426804.9	1.0				ug/L	401845	Standard
>	Rh	103	46.7	62.8				ug/L	10	Standard
	Mo	98	240578.5	1.9	**95.7566**	1.752	1.8	ug/L	12	Standard
	Ag	107	293672.5	0.8	**47.6191**	0.728	1.5	ug/L	98	Standard
	Cd	111	97148.2	0.4	**49.4310**	0.396	0.8	mg/L	11	Standard
	Cd	114	238273.1	1.3	**49.8334**	0.670	1.3	ug/L	21	Standard
>	In	115	572423.0	0.8				ug/L	547487	Standard
	Sn	118	262319.8	0.9	**48.2447**	0.796	1.6	ug/L	450	Standard
	Sb	123	211959.4	1.1	**47.7258**	0.723	1.5	ug/L	105	Standard
	Ba	135	92131.9	0.5	**47.9464**	0.632	1.3	ug/L	111	Standard
	Ce	140	101.7	44.6				ug/L	107	Standard
>	Tb	159	884901.8	0.8				ug/L	890342	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	370454.0	0.8	**49.8033**	0.613	1.2	ug/L	19	Standard
	Tl	205	319179.0	1.6	**52.3013**	1.096	2.1	ug/L	17	Standard
	Pb	206	236235.7	0.3	**49.3439**	0.398	0.8	ug/L	247	Standard
	Pb	207	215467.7	0.9	**49.5115**	0.712	1.4	ug/L	215	Standard
	Pb	208	846194.0	1.4	**51.9369**	0.988	1.9	ug/L	770	Standard
	U	238	302895.4	0.7	**51.2919**	0.606	1.2	ug/L	13	Standard
>	Bi	209	495377.4	0.6				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3608.8	3.4	**4.6428**	0.152	3.3	mg/L	35	Standard
K	39	930.0	9.8	**4.2620**	0.368	8.6	mg/L	25	Standard
Ca	43	71.7	28.2	**7.9807**	3.539	44.3	mg/L	38	Standard
Fe	54	5416.4	5.0	**4.7205**	0.325	6.9	mg/L	126	Standard
Fe	57	1530.1	9.9	**4.6008**	0.459	10.0	mg/L	245	Standard
> **Sc-1**	45	26551.6	2.9				mg/L	25066	Standard
Cl	35	138136.9	1.0				ug/L	125857	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	1570.1	5.7				ug/L	1350	Standard
P	31	19352.4	2.2				ug/L	18393	Standard
S	34	4222.3	4.4				ug/L	3739	Standard
Sr	88	46.7	16.4				ug/L	78	Standard
C	12	56.7	36.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	2.5	222.5				mg/L	2	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	16.7	34.6				mg/L	23	Standard
I	127	1088.4	5.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	98.398		
Al	27	97.642		
Sc	45			
Ti	47	104.737		
V	51	103.000		
Cr	52	102.459		
Cr	53			
Mn	55	101.060		
Co	59	104.166		
Ni	60	101.067		
Cu	65	101.581		
Zn	66	101.500		
> Ge	72		100.188	
As	75	101.108		
Se	82	103.241		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	95.757		
Ag	107	95.238		
Cd	111	98.862		
Cd	114			
In	115		104.555	
Sn	118	96.489		
Sb	123	95.452		
Ba	135	95.893		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.607		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.874		
U	238	102.584		
Bi	209		98.457	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 20:19:42
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59004.7	2.4				ug/L	60176	Standard
	Be	9	15.0	33.3	**0.0123**	0.007	55.9	ug/L	5	Standard
	Al	27	1221.7	22.8	**0.0011**	0.002	184.4	ug/L	832	Standard
	Sc	45	26162.6	2.8				ug/L	25066	Standard
	Ti	47	22.7	22.2	**-0.0938**	0.025	26.7	ug/L	38	Standard
	V	51	1096.4	3.1	**0.0083**	0.006	72.4	ug/L	974	Standard
	Cr	52	6080.6	0.6	**-0.0141**	0.009	60.7	ug/L	5792	Standard
	Cr	53	428.3	8.2	**0.0958**	0.044	45.6	ug/L	347	Standard
	Mn	55	922.7	7.2	**-0.0753**	0.011	14.0	ug/L	1164	Standard
	Co	59	276.0	8.7	**-0.0053**	0.004	76.6	ug/L	303	Standard
	Ni	60	181.3	7.1	**-0.0927**	0.007	8.0	ug/L	291	Standard
	Cu	65	115.7	15.5	**-0.0349**	0.010	27.6	ug/L	173	Standard
	Zn	66	146.0	12.6	**-0.0986**	0.018	18.2	ug/L	130	Standard
>	Ge	72	506500.5	0.5				ug/L	491724	Standard
	As	75	-18.9	142.2	**0.0164**	0.025	151.4	ug/L	-25	Standard
	Se	82	22.3	20.3	**0.1163**	0.042	36.4	ug/L	12	Standard
	Se-1	77	50.7	8.0	**0.0466**	0.058	125.4	ug/L	57	Standard
>	Ga	71	98.3	22.9				mg/L	148	Standard
	Rb	85	25.0	34.6				ug/L	18	Standard
	Y	89	420472.2	1.7				ug/L	401845	Standard
>	Rh	103	21.7	35.3				ug/L	10	Standard
	Mo	98	215.9	20.5	**0.0836**	0.015	18.1	ug/L	12	Standard
	Ag	107	100.3	2.3	**0.0013**	0.000	16.9	ug/L	98	Standard
	Cd	111	12.6	20.4	**0.0019**	0.001	66.8	mg/L	11	Standard
	Cd	114	36.9	35.9	**0.0034**	0.003	76.6	ug/L	21	Standard
>	In	115	556898.8	3.2				ug/L	547487	Standard
	Sn	118	736.7	14.7	**0.0659**	0.025	37.6	ug/L	450	Standard
	Sb	123	429.7	33.8	**0.0926**	0.037	39.4	ug/L	105	Standard
	Ba	135	112.0	12.9	**0.0043**	0.007	160.0	ug/L	111	Standard
	Ce	140	35.0	14.3				ug/L	107	Standard
>	Tb	159	887182.6	2.1				ug/L	890342	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	50.3	23.7	**0.0032**	0.002	49.1	ug/L	19	Standard
	Tl	205	48.3	29.9	**0.0089**	0.002	26.7	ug/L	17	Standard
	Pb	206	283.7	6.5	**0.0042**	0.003	82.4	ug/L	247	Standard
	Pb	207	216.0	8.2	**-0.0026**	0.004	153.1	ug/L	215	Standard
	Pb	208	914.3	7.2	**-0.0039**	0.004	93.9	ug/L	770	Standard
	U	238	37.3	13.5	**0.0055**	0.001	14.8	ug/L	13	Standard
>	Bi	209	496398.1	0.7				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	48.5	**0.0163**	0.028	170.7	mg/L	35	Standard
K	39	28.3	36.7	**0.0223**	0.046	208.0	mg/L	25	Standard
Ca	43	28.3	36.7	**0.0638**	2.140	3353.3	mg/L	38	Standard
Fe	54	134.3	7.3	**-0.0145**	0.007	47.3	mg/L	126	Standard
Fe	57	193.3	4.0	**-0.3592**	0.042	11.6	mg/L	245	Standard
> **Sc-1**	45	26162.6	2.8				mg/L	25066	Standard
Cl	35	138431.0	1.7				ug/L	125857	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	1586.7	3.9				ug/L	1350	Standard
P	31	19664.4	2.7				ug/L	18393	Standard
S	34	4130.6	2.1				ug/L	3739	Standard
Sr	88	75.0	46.7				ug/L	78	Standard
C	12	43.3	26.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	16.0	75.7				mg/L	2	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	13.3	173.2				mg/L	23	Standard
I	127	915.0	6.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.005	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.719	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.659	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606078703 WG573333-01
Sample Date/Time: Tuesday, June 21, 2016 20:22:55
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61250.2	0.8				ug/L	60176	Standard
	Be	9	533.3	8.2	**0.7208**	0.059	8.2	ug/L	5	Standard
	Al	27	4739129.5	0.9	**35.4392**	0.186	0.5	ug/L	832	Standard
	Sc	45	29605.6	2.9				ug/L	25066	Standard
	Ti	47	1339.7	3.2	**6.7020**	0.132	2.0	ug/L	38	Standard
	V	51	71406.4	1.8	**11.7973**	0.190	1.6	ug/L	974	Standard
	Cr	52	50888.7	1.6	**7.0346**	0.128	1.8	ug/L	5792	Standard
	Cr	53	6126.2	1.1	**7.0553**	0.185	2.6	ug/L	347	Standard
	Mn	55	2507110.3	0.7	**390.3777**	5.993	1.5	ug/L	1164	Standard
	Co	59	38304.0	1.2	**6.2221**	0.122	2.0	ug/L	303	Standard
	Ni	60	20980.2	1.2	**11.4317**	0.218	1.9	ug/L	291	Standard
	Cu	65	14716.8	0.9	**8.1026**	0.157	1.9	ug/L	173	Standard
	Zn	66	18330.8	1.8	**17.3802**	0.302	1.7	ug/L	130	Standard
>	**Ge**	72	493512.5	1.4				ug/L	491724	Standard
	As	75	1782.0	5.4	**1.7250**	0.073	4.2	ug/L	-25	Standard
	Se	82	35.6	28.1	**0.2511**	0.099	39.3	ug/L	12	Standard
	Se-1	77	88.0	14.2	**0.5919**	0.186	31.4	ug/L	57	Standard
>	**Ga**	71	8470.7	1.2				mg/L	148	Standard
	Rb	85	77419.0	1.7				ug/L	18	Standard
	Y	89	632239.1	1.1				ug/L	401845	Standard
>	**Rh**	103	36.7	31.5				ug/L	10	Standard
	Mo	98	157.1	8.2	**0.0590**	0.005	8.3	ug/L	12	Standard
	Ag	107	274.7	4.4	**0.0299**	0.003	9.4	ug/L	98	Standard
	Cd	111	187.0	6.5	**0.0920**	0.008	8.8	mg/L	11	Standard
	Cd	114	444.1	15.9	**0.0897**	0.014	15.2	ug/L	21	Standard
>	**In**	115	563958.4	1.8				ug/L	547487	Standard
	Sn	118	591.7	12.1	**0.0367**	0.014	39.0	ug/L	450	Standard
	Sb	123	220.2	26.8	**0.0429**	0.014	33.7	ug/L	105	Standard
	Ba	135	144715.5	0.6	**76.4840**	1.276	1.7	ug/L	111	Standard
	Ce	140	988223.5	0.5				ug/L	107	Standard
>	**Tb**	159	908188.9	1.2				ug/L	890342	Standard
	Ho	165	17219.8	2.5				ug/L	10	Standard
	Tl	203	463.3	4.4	**0.0586**	0.002	4.2	ug/L	19	Standard
	Tl	205	378.3	13.4	**0.0628**	0.008	12.5	ug/L	17	Standard
	Pb	206	45384.9	0.3	**9.4112**	0.053	0.6	ug/L	247	Standard
	Pb	207	36832.4	1.0	**8.3986**	0.095	1.1	ug/L	215	Standard
	Pb	208	155922.4	1.7	**9.4964**	0.166	1.7	ug/L	770	Standard
	U	238	2728.6	1.4	**0.4601**	0.009	2.0	ug/L	13	Standard
>	**Bi**	209	496638.4	0.7				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	93.3	11.2	**0.0696**	0.011	15.8	mg/L	35	Standard
K	39	126.7	21.7	**0.4205**	0.104	24.7	mg/L	25	Standard
Ca	43	46.7	44.6	**2.5335**	3.744	147.8	mg/L	38	Standard
Fe	54	5828.7	1.9	**4.5504**	0.210	4.6	mg/L	126	Standard
Fe	57	1691.8	7.2	**4.5640**	0.493	10.8	mg/L	245	Standard
> **Sc-1**	45	29605.6	2.9				mg/L	25066	Standard
Cl	35	137167.4	0.3				ug/L	125857	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	1823.4	14.0				ug/L	1350	Standard
P	31	18519.7	3.3				ug/L	18393	Standard
S	34	4015.5	1.1				ug/L	3739	Standard
Sr	88	103.3	12.2				ug/L	78	Standard
C	12	66.7	31.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	100.0				mg/L	0	Standard
Dy	164	29188.4	3.4				mg/L	2	Standard
Ho-1	165	17219.8	2.5				mg/L	10	Standard
Er	166	15471.2	3.8				mg/L	23	Standard
I	127	8429.0	7.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.785	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.364	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.009
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.707
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606078704S WG573333-05
Sample Date/Time: Tuesday, June 21, 2016 20:26:07
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60795.1	1.7				ug/L	60176	Standard
	Be	9	19584.3	1.1	**26.9961**	0.342	1.3	ug/L	5	Standard
	Al	27	4567931.7	1.1	**34.4185**	0.489	1.4	ug/L	832	Standard
	Sc	45	29006.1	1.6				ug/L	25066	Standard
	Ti	47	3165.0	3.9	**15.7145**	0.722	4.6	ug/L	38	Standard
	V	51	242137.7	0.6	**39.4045**	0.713	1.8	ug/L	974	Standard
	Cr	52	226731.6	0.9	**33.7129**	0.272	0.8	ug/L	5792	Standard
	Cr	53	28276.4	2.1	**33.1977**	1.054	3.2	ug/L	347	Standard
	Mn	55	2051282.4	3.3	**311.4080**	12.009	3.9	ug/L	1164	Standard
	Co	59	195015.9	1.5	**31.0844**	0.761	2.4	ug/L	303	Standard
	Ni	60	65648.6	0.3	**35.2674**	0.363	1.0	ug/L	291	Standard
	Cu	65	58144.4	1.1	**31.4896**	0.412	1.3	ug/L	173	Standard
	Zn	66	44983.4	1.5	**41.9115**	0.217	0.5	ug/L	130	Standard
>	**Ge**	72	506139.8	1.3				ug/L	491724	Standard
	As	75	25341.1	0.4	**23.4909**	0.303	1.3	ug/L	-25	Standard
	Se	82	2045.3	2.1	**19.1312**	0.577	3.0	ug/L	12	Standard
	Se-1	77	1519.4	1.8	**20.2366**	0.146	0.7	ug/L	57	Standard
>	**Ga**	71	9184.5	4.0				mg/L	148	Standard
	Rb	85	70028.1	1.4				ug/L	18	Standard
	Y	89	627632.4	1.5				ug/L	401845	Standard
>	**Rh**	103	40.0	45.1				ug/L	10	Standard
	Mo	98	594.6	6.7	**0.2447**	0.017	7.1	ug/L	12	Standard
	Ag	107	147727.7	1.0	**25.2040**	0.390	1.5	ug/L	98	Standard
	Cd	111	48105.2	0.3	**25.7603**	0.320	1.2	mg/L	11	Standard
	Cd	114	117496.3	0.5	**25.8635**	0.442	1.7	ug/L	21	Standard
>	**In**	115	543890.8	1.3				ug/L	547487	Standard
	Sn	118	720.0	10.8	**0.0655**	0.015	23.0	ug/L	450	Standard
	Sb	123	21224.1	1.3	**5.0226**	0.049	1.0	ug/L	105	Standard
	Ba	135	168787.7	0.9	**92.5008**	1.371	1.5	ug/L	111	Standard
	Ce	140	900741.5	2.1				ug/L	107	Standard
>	**Tb**	159	881875.5	1.1				ug/L	890342	Standard
	Ho	165	17471.7	0.7				ug/L	10	Standard
	Tl	203	184074.8	0.7	**24.8291**	0.438	1.8	ug/L	19	Standard
	Tl	205	156804.0	1.7	**25.7832**	0.724	2.8	ug/L	17	Standard
	Pb	206	159776.4	0.6	**33.4695**	0.581	1.7	ug/L	247	Standard
	Pb	207	136948.1	0.2	**31.5548**	0.325	1.0	ug/L	215	Standard
	Pb	208	552723.2	0.9	**34.0190**	0.677	2.0	ug/L	770	Standard
	U	238	155414.7	0.8	**26.4072**	0.520	2.0	ug/L	13	Standard
>	**Bi**	209	493745.3	1.2				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	76.7	29.4	**0.0523**	0.028	52.7	mg/L	35	Standard
K	39	121.7	41.6	**0.4123**	0.220	53.4	mg/L	25	Standard
Ca	43	56.7	5.1	**4.3235**	0.342	7.9	mg/L	38	Standard
Fe	54	6910.1	1.7	**5.5303**	0.066	1.2	mg/L	126	Standard
Fe	57	2031.8	2.9	**5.8339**	0.224	3.8	mg/L	245	Standard
> **Sc-1**	45	29006.1	1.6				mg/L	25066	Standard
Cl	35	131188.4	2.4				ug/L	125857	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	1806.8	7.4				ug/L	1350	Standard
P	31	18918.5	1.6				ug/L	18393	Standard
S	34	3765.5	5.6				ug/L	3739	Standard
Sr	88	86.7	23.3				ug/L	78	Standard
C	12	36.7	83.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	28039.5	3.1				mg/L	2	Standard
Ho-1	165	17471.7	0.7				mg/L	10	Standard
Er	166	14914.0	2.5				mg/L	23	Standard
I	127	7893.7	1.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.029	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.932	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.343
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.132
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606078705SD WG573333-06
Sample Date/Time: Tuesday, June 21, 2016 20:29:18
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63216.6	1.8				ug/L	60176	Standard
	Be	9	19696.1	2.2	**26.1120**	0.714	2.7	ug/L	5	Standard
	Al	27	5659138.5	0.3	**41.0133**	0.799	1.9	ug/L	832	Standard
	Sc	45	30033.1	1.0				ug/L	25066	Standard
	Ti	47	2763.3	27.2	**13.8639**	4.139	29.9	ug/L	38	Standard
	V	51	237607.5	1.1	**38.9988**	0.497	1.3	ug/L	974	Standard
	Cr	52	248636.6	1.2	**37.3971**	0.891	2.4	ug/L	5792	Standard
	Cr	53	30921.5	0.6	**36.6639**	1.024	2.8	ug/L	347	Standard
	Mn	55	2410492.6	0.5	**369.1780**	8.479	2.3	ug/L	1164	Standard
	Co	59	185271.5	0.5	**29.7851**	0.497	1.7	ug/L	303	Standard
	Ni	60	67071.8	1.3	**36.3557**	0.915	2.5	ug/L	291	Standard
	Cu	65	60322.2	1.1	**32.9575**	0.383	1.2	ug/L	173	Standard
	Zn	66	45873.7	1.3	**43.1216**	0.385	0.9	ug/L	130	Standard
>	**Ge**	72	501820.8	2.1				ug/L	491724	Standard
	As	75	24039.7	1.9	**22.4789**	0.430	1.9	ug/L	-25	Standard
	Se	82	1972.7	2.1	**18.6056**	0.284	1.5	ug/L	12	Standard
	Se-1	77	1402.7	4.3	**18.8146**	1.203	6.4	ug/L	57	Standard
>	**Ga**	71	9417.9	5.5				mg/L	148	Standard
	Rb	85	66410.2	0.3				ug/L	18	Standard
	Y	89	617512.5	0.5				ug/L	401845	Standard
>	**Rh**	103	50.0	62.5				ug/L	10	Standard
	Mo	98	1524.5	3.3	**0.6151**	0.019	3.1	ug/L	12	Standard
	Ag	107	143879.3	0.9	**23.8137**	0.379	1.6	ug/L	98	Standard
	Cd	111	47710.7	0.7	**24.7847**	0.177	0.7	mg/L	11	Standard
	Cd	114	115961.3	1.6	**24.7605**	0.346	1.4	ug/L	21	Standard
>	**In**	115	560614.7	0.8				ug/L	547487	Standard
	Sn	118	1535.1	5.3	**0.2146**	0.013	6.3	ug/L	450	Standard
	Sb	123	23888.4	1.7	**5.4855**	0.117	2.1	ug/L	105	Standard
	Ba	135	184639.0	1.2	**98.1607**	0.543	0.6	ug/L	111	Standard
	Ce	140	908579.6	1.8				ug/L	107	Standard
>	**Tb**	159	921260.1	0.5				ug/L	890342	Standard
	Ho	165	17002.9	1.2				ug/L	10	Standard
	Tl	203	180601.4	1.1	**23.7143**	0.543	2.3	ug/L	19	Standard
	Tl	205	152330.3	0.3	**24.3789**	0.252	1.0	ug/L	17	Standard
	Pb	206	161923.0	0.9	**33.0139**	0.142	0.4	ug/L	247	Standard
	Pb	207	139326.0	1.1	**31.2477**	0.234	0.7	ug/L	215	Standard
	Pb	208	558215.4	0.7	**33.4396**	0.224	0.7	ug/L	770	Standard
	U	238	149906.9	0.4	**24.7925**	0.215	0.9	ug/L	13	Standard
>	**Bi**	209	507223.5	1.3				ug/L	503143	Standard

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Na	23	1.7	173.2	**15.4815**	26.806	173.1	mg/L	2	Standard
Mg	24	46.7	52.9	**0.0145**	0.028	192.1	mg/L	35	Standard
K	39	158.3	18.5	**0.5456**	0.116	21.3	mg/L	25	Standard
Ca	43	41.7	6.9	**1.5279**	0.454	29.7	mg/L	38	Standard
Fe	54	7213.6	3.5	**5.5758**	0.146	2.6	mg/L	126	Standard
Fe	57	1996.8	3.3	**5.4816**	0.233	4.3	mg/L	245	Standard
> **Sc-1**	45	30033.1	1.0				mg/L	25066	Standard
Cl	35	129762.7	0.8				ug/L	125857	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	1876.8	4.3				ug/L	1350	Standard
P	31	18274.3	0.2				ug/L	18393	Standard
S	34	3732.1	1.2				ug/L	3739	Standard
Sr	88	110.0	27.6				ug/L	78	Standard
C	12	66.7	37.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	29098.6	2.2				mg/L	2	Standard
Ho-1	165	17002.9	1.2				mg/L	10	Standard
Er	166	15394.5	3.5				mg/L	23	Standard
I	127	7451.8	4.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.053	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.053	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.398
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.811
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606078706
Sample Date/Time: Tuesday, June 21, 2016 20:32:30
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61503.1	4.4				ug/L	60176	Standard
	Be	9	190.0	11.5	**0.2498**	0.027	10.8	ug/L	5	Standard
	Al	27	2161096.6	2.0	**16.1023**	0.467	2.9	ug/L	832	Standard
	Sc	45	27194.4	2.9				ug/L	25066	Standard
	Ti	47	1729.4	29.8	**8.8301**	2.712	30.7	ug/L	38	Standard
	V	51	40719.4	1.5	**6.7406**	0.118	1.7	ug/L	974	Standard
	Cr	52	22743.1	1.4	**2.6675**	0.051	1.9	ug/L	5792	Standard
	Cr	53	2448.5	3.6	**2.6090**	0.103	4.0	ug/L	347	Standard
	Mn	55	1260041.1	0.2	**198.5616**	0.943	0.5	ug/L	1164	Standard
	Co	59	12600.6	0.8	**2.0396**	0.022	1.1	ug/L	303	Standard
	Ni	60	7512.5	0.9	**4.0234**	0.036	0.9	ug/L	291	Standard
	Cu	65	5352.3	2.1	**2.9221**	0.069	2.3	ug/L	173	Standard
	Zn	66	8532.4	1.5	**8.0679**	0.130	1.6	ug/L	130	Standard
>	**Ge**	72	487322.6	0.2				ug/L	491724	Standard
	As	75	1559.9	2.0	**1.5334**	0.026	1.7	ug/L	-25	Standard
	Se	82	35.2	29.3	**0.2510**	0.100	39.8	ug/L	12	Standard
	Se-1	77	72.7	4.2	**0.3880**	0.045	11.7	ug/L	57	Standard
>	**Ga**	71	2870.3	6.0				mg/L	148	Standard
	Rb	85	28276.4	2.7				ug/L	18	Standard
	Y	89	521144.4	0.3				ug/L	401845	Standard
>	**Rh**	103	45.0	19.2				ug/L	10	Standard
	Mo	98	116.0	7.3	**0.0415**	0.003	6.9	ug/L	12	Standard
	Ag	107	230.3	3.7	**0.0218**	0.002	8.7	ug/L	98	Standard
	Cd	111	115.8	1.7	**0.0540**	0.002	4.0	mg/L	11	Standard
	Cd	114	274.3	6.0	**0.0527**	0.005	8.7	ug/L	21	Standard
>	**In**	115	575128.8	2.3				ug/L	547487	Standard
	Sn	118	336.7	3.7	**-0.0123**	0.001	7.1	ug/L	450	Standard
	Sb	123	176.1	18.8	**0.0320**	0.008	25.7	ug/L	105	Standard
	Ba	135	86694.7	1.9	**44.9082**	1.004	2.2	ug/L	111	Standard
	Ce	140	436433.2	2.1				ug/L	107	Standard
>	**Tb**	159	887156.7	2.0				ug/L	890342	Standard
	Ho	165	7937.1	1.0				ug/L	10	Standard
	Tl	203	162.7	11.2	**0.0183**	0.003	15.7	ug/L	19	Standard
	Tl	205	140.0	3.6	**0.0238**	0.000	1.8	ug/L	17	Standard
	Pb	206	19692.8	1.3	**4.0500**	0.140	3.5	ug/L	247	Standard
	Pb	207	16290.1	1.3	**3.6832**	0.128	3.5	ug/L	215	Standard
	Pb	208	67765.1	1.3	**4.0908**	0.139	3.4	ug/L	770	Standard
	U	238	859.4	4.8	**0.1442**	0.009	5.9	ug/L	13	Standard
>	**Bi**	209	497164.1	2.1				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	45.0	19.2	**0.0180**	0.010	57.8	mg/L	35	Standard
K	39	71.7	24.5	**0.2186**	0.091	41.5	mg/L	25	Standard
Ca	43	31.7	65.7	**0.4222**	3.721	881.3	mg/L	38	Standard
Fe	54	2730.0	8.4	**2.2488**	0.134	6.0	mg/L	126	Standard
Fe	57	905.0	11.2	**2.1941**	0.285	13.0	mg/L	245	Standard
> **Sc-1**	45	27194.4	2.9				mg/L	25066	Standard
Cl	35	130552.0	0.6				ug/L	125857	Standard
Kr	83	3.7	83.3				ug/L	1	Standard
Br	81	1476.7	11.6				ug/L	1350	Standard
P	31	18608.1	3.2				ug/L	18393	Standard
S	34	3705.5	6.0				ug/L	3739	Standard
Sr	88	98.3	19.3				ug/L	78	Standard
C	12	70.0	14.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	13334.9	2.3				mg/L	2	Standard
Ho-1	165	7937.1	1.0				mg/L	10	Standard
Er	166	6914.9	5.3				mg/L	23	Standard
I	127	2945.3	1.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.205	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.105	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	105.049	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.812	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606078707
Sample Date/Time: Tuesday, June 21, 2016 20:35:41
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59709.1	1.3				ug/L	60176	Standard
	Be	9	200.0	10.9	**0.2718**	0.032	11.7	ug/L	5	Standard
	Al	27	1683075.1	1.4	**12.9055**	0.048	0.4	ug/L	832	Standard
	Sc	45	26478.1	4.1				ug/L	25066	Standard
	Ti	47	1140.4	8.0	**5.5902**	0.464	8.3	ug/L	38	Standard
	V	51	39686.8	0.8	**6.3850**	0.023	0.4	ug/L	974	Standard
	Cr	52	23499.9	2.1	**2.6878**	0.064	2.4	ug/L	5792	Standard
	Cr	53	2666.9	3.2	**2.7908**	0.107	3.8	ug/L	347	Standard
	Mn	55	420579.8	1.9	**64.3639**	1.562	2.4	ug/L	1164	Standard
	Co	59	13033.6	2.2	**2.0538**	0.057	2.8	ug/L	303	Standard
	Ni	60	7165.7	0.5	**3.7215**	0.035	0.9	ug/L	291	Standard
	Cu	65	5197.9	1.7	**2.7564**	0.034	1.2	ug/L	173	Standard
	Zn	66	9135.4	1.5	**8.4176**	0.173	2.1	ug/L	130	Standard
>	**Ge**	72	500708.0	0.5				ug/L	491724	Standard
	As	75	1463.5	3.3	**1.4032**	0.042	3.0	ug/L	-25	Standard
	Se	82	24.1	45.1	**0.1358**	0.103	76.2	ug/L	12	Standard
	Se-1	77	77.3	6.1	**0.4249**	0.062	14.6	ug/L	57	Standard
>	**Ga**	71	2593.6	3.7				mg/L	148	Standard
	Rb	85	26549.9	1.6				ug/L	18	Standard
	Y	89	508383.7	2.6				ug/L	401845	Standard
>	**Rh**	103	26.7	47.2				ug/L	10	Standard
	Mo	98	828.3	1.8	**0.3404**	0.004	1.3	ug/L	12	Standard
	Ag	107	171.0	8.6	**0.0136**	0.003	19.8	ug/L	98	Standard
	Cd	111	92.1	6.3	**0.0443**	0.003	7.2	mg/L	11	Standard
	Cd	114	165.6	20.7	**0.0318**	0.007	23.1	ug/L	21	Standard
>	**In**	115	547256.3	0.7				ug/L	547487	Standard
	Sn	118	725.0	5.0	**0.0656**	0.007	10.8	ug/L	450	Standard
	Sb	123	144.6	14.9	**0.0264**	0.005	18.6	ug/L	105	Standard
	Ba	135	55231.2	0.4	**30.0426**	0.229	0.8	ug/L	111	Standard
	Ce	140	414286.0	0.6				ug/L	107	Standard
>	**Tb**	159	881412.3	0.9				ug/L	890342	Standard
	Ho	165	7586.9	2.2				ug/L	10	Standard
	Tl	203	135.7	11.8	**0.0147**	0.002	16.0	ug/L	19	Standard
	Tl	205	110.0	20.8	**0.0190**	0.004	20.0	ug/L	17	Standard
	Pb	206	19007.2	0.5	**3.9191**	0.061	1.6	ug/L	247	Standard
	Pb	207	15601.7	1.7	**3.5366**	0.107	3.0	ug/L	215	Standard
	Pb	208	64611.6	1.1	**3.9100**	0.093	2.4	ug/L	770	Standard
	U	238	755.0	4.6	**0.1270**	0.005	3.6	ug/L	13	Standard
>	**Bi**	209	495487.3	1.3				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	35.0	14.3	**0.0067**	0.007	106.5	mg/L	35	Standard
K	39	83.3	21.1	**0.2797**	0.073	26.3	mg/L	25	Standard
Ca	43	25.0	20.0	**-0.6389**	1.092	170.9	mg/L	38	Standard
Fe	54	2467.8	3.0	**2.0838**	0.134	6.4	mg/L	126	Standard
Fe	57	820.0	4.2	**1.9775**	0.256	13.0	mg/L	245	Standard
> **Sc-1**	45	26478.1	4.1				mg/L	25066	Standard
Cl	35	128995.5	1.3				ug/L	125857	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	1503.4	13.0				ug/L	1350	Standard
P	31	17358.3	0.2				ug/L	18393	Standard
S	34	3645.4	0.9				ug/L	3739	Standard
Sr	88	81.7	14.1				ug/L	78	Standard
C	12	60.0	28.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	12318.4	0.4				mg/L	2	Standard
Ho-1	165	7586.9	2.2				mg/L	10	Standard
Er	166	6754.8	0.3				mg/L	23	Standard
I	127	2638.6	9.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.224	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.827	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.958
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.478
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078708
Sample Date/Time: Tuesday, June 21, 2016 20:38:53
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61146.5	1.9				ug/L	60176	Standard
	Be	9	295.0	11.1	**0.3957**	0.048	12.2	ug/L	5	Standard
	Al	27	10005765.0	2.2	**74.9914**	2.825	3.8	ug/L	832	Standard
	Sc	45	28378.2	1.3				ug/L	25066	Standard
	Ti	47	1581.7	9.8	**7.8186**	0.716	9.2	ug/L	38	Standard
	V	51	56293.6	0.1	**9.1158**	0.120	1.3	ug/L	974	Standard
	Cr	52	35520.9	2.0	**4.5387**	0.182	4.0	ug/L	5792	Standard
	Cr	53	4120.6	4.1	**4.5322**	0.272	6.0	ug/L	347	Standard
	Mn	55	2245242.9	0.6	**344.0555**	5.834	1.7	ug/L	1164	Standard
	Co	59	20048.6	2.0	**3.1815**	0.095	3.0	ug/L	303	Standard
	Ni	60	12750.7	0.7	**6.7615**	0.141	2.1	ug/L	291	Standard
	Cu	65	8350.6	0.8	**4.4816**	0.075	1.7	ug/L	173	Standard
	Zn	66	13186.1	1.0	**12.2373**	0.257	2.1	ug/L	130	Standard
>	**Ge**	72	501445.8	1.4				ug/L	491724	Standard
	As	75	1545.9	0.8	**1.4785**	0.032	2.1	ug/L	-25	Standard
	Se	82	27.4	13.1	**0.1674**	0.035	21.2	ug/L	12	Standard
	Se-1	77	71.0	5.1	**0.3358**	0.056	16.6	ug/L	57	Standard
>	**Ga**	71	4512.3	1.6				mg/L	148	Standard
	Rb	85	37980.9	3.4				ug/L	18	Standard
	Y	89	531850.3	0.5				ug/L	401845	Standard
>	**Rh**	103	33.3	31.2				ug/L	10	Standard
	Mo	98	272.4	0.4	**0.1086**	0.001	1.4	ug/L	12	Standard
	Ag	107	226.3	10.4	**0.0229**	0.005	19.8	ug/L	98	Standard
	Cd	111	165.5	1.0	**0.0831**	0.002	1.9	mg/L	11	Standard
	Cd	114	397.0	5.6	**0.0822**	0.006	7.3	ug/L	21	Standard
>	**In**	115	548993.1	1.6				ug/L	547487	Standard
	Sn	118	608.3	15.7	**0.0426**	0.017	39.0	ug/L	450	Standard
	Sb	123	116.3	12.7	**0.0197**	0.003	15.4	ug/L	105	Standard
	Ba	135	96057.9	1.5	**52.1296**	0.874	1.7	ug/L	111	Standard
	Ce	140	548131.6	1.4				ug/L	107	Standard
>	**Tb**	159	898753.5	0.5				ug/L	890342	Standard
	Ho	165	10386.9	3.9				ug/L	10	Standard
	Tl	203	211.0	1.6	**0.0248**	0.001	2.7	ug/L	19	Standard
	Tl	205	218.3	11.3	**0.0367**	0.005	12.3	ug/L	17	Standard
	Pb	206	25132.8	0.9	**5.1923**	0.133	2.6	ug/L	247	Standard
	Pb	207	20495.2	0.8	**4.6546**	0.102	2.2	ug/L	215	Standard
	Pb	208	84035.9	0.8	**5.0950**	0.088	1.7	ug/L	770	Standard
	U	238	1374.4	2.1	**0.2316**	0.009	3.8	ug/L	13	Standard
>	**Bi**	209	496285.1	1.7				ug/L	503143	Standard

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Na	23	3.3	86.6	**32.9382**	28.528	86.6	mg/L	2	Standard
Mg	24	73.3	41.7	**0.0503**	0.037	74.4	mg/L	35	Standard
K	39	123.3	26.1	**0.4304**	0.140	32.4	mg/L	25	Standard
Ca	43	121.7	6.3	**15.8707**	1.562	9.8	mg/L	38	Standard
Fe	54	4051.3	3.4	**3.2588**	0.079	2.4	mg/L	126	Standard
Fe	57	1385.1	8.4	**3.7369**	0.455	12.2	mg/L	245	Standard
> **Sc-1**	45	28378.2	1.3				mg/L	25066	Standard
Cl	35	136882.9	1.1				ug/L	125857	Standard
Kr	83	3.7	78.7				ug/L	1	Standard
Br	81	1383.4	11.9				ug/L	1350	Standard
P	31	18684.9	2.6				ug/L	18393	Standard
S	34	4252.3	2.8				ug/L	3739	Standard
Sr	88	103.3	17.0				ug/L	78	Standard
C	12	63.3	18.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	17242.5	4.5				mg/L	2	Standard
Ho-1	165	10386.9	3.9				mg/L	10	Standard
Er	166	9069.4	1.8				mg/L	23	Standard
I	127	2725.2	5.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.613	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.977	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.275
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.637
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606078713
Sample Date/Time: Tuesday, June 21, 2016 20:42:04
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60470.5	2.4				ug/L	60176	Standard
	Be	9	438.3	14.7	**0.5976**	0.076	12.8	ug/L	5	Standard
	Al	27	3860251.5	0.5	**29.2500**	0.787	2.7	ug/L	832	Standard
	Sc	45	28167.8	2.6				ug/L	25066	Standard
	Ti	47	839.4	7.8	**4.1705**	0.369	8.8	ug/L	38	Standard
	V	51	70285.4	1.1	**11.7386**	0.317	2.7	ug/L	974	Standard
	Cr	52	48052.7	0.7	**6.6720**	0.165	2.5	ug/L	5792	Standard
	Cr	53	5747.8	3.9	**6.6668**	0.221	3.3	ug/L	347	Standard
	Mn	55	997665.2	0.2	**156.8856**	2.297	1.5	ug/L	1164	Standard
	Co	59	33501.7	1.1	**5.4941**	0.026	0.5	ug/L	303	Standard
	Ni	60	15742.2	0.8	**8.6243**	0.198	2.3	ug/L	291	Standard
	Cu	65	11171.8	1.1	**6.1943**	0.139	2.2	ug/L	173	Standard
	Zn	66	15290.4	1.0	**14.6175**	0.267	1.8	ug/L	130	Standard
>	**Ge**	72	488278.2	1.6				ug/L	491724	Standard
	As	75	2112.2	1.3	**2.0606**	0.030	1.5	ug/L	-25	Standard
	Se	82	33.4	20.1	**0.2323**	0.063	27.1	ug/L	12	Standard
	Se-1	77	80.7	13.6	**0.4996**	0.152	30.5	ug/L	57	Standard
>	**Ga**	71	6092.9	3.0				mg/L	148	Standard
	Rb	85	50096.0	1.4				ug/L	18	Standard
	Y	89	562308.7	3.4				ug/L	401845	Standard
>	**Rh**	103	20.0	25.0				ug/L	10	Standard
	Mo	98	281.8	18.1	**0.1097**	0.019	17.6	ug/L	12	Standard
	Ag	107	279.0	13.7	**0.0307**	0.006	19.7	ug/L	98	Standard
	Cd	111	205.9	9.5	**0.1020**	0.009	9.3	mg/L	11	Standard
	Cd	114	469.4	17.1	**0.0956**	0.016	17.2	ug/L	21	Standard
>	**In**	115	561794.7	1.8				ug/L	547487	Standard
	Sn	118	1265.1	3.6	**0.1635**	0.012	7.3	ug/L	450	Standard
	Sb	123	114.2	20.1	**0.0186**	0.005	27.0	ug/L	105	Standard
	Ba	135	154704.2	1.6	**82.0962**	2.614	3.2	ug/L	111	Standard
	Ce	140	714982.4	2.2				ug/L	107	Standard
>	**Tb**	159	886704.0	1.2				ug/L	890342	Standard
	Ho	165	12760.4	3.9				ug/L	10	Standard
	Tl	203	335.3	19.3	**0.0422**	0.009	20.6	ug/L	19	Standard
	Tl	205	363.3	52.8	**0.0613**	0.032	51.4	ug/L	17	Standard
	Pb	206	36098.0	0.9	**7.6025**	0.113	1.5	ug/L	247	Standard
	Pb	207	29342.1	0.5	**6.7946**	0.072	1.1	ug/L	215	Standard
	Pb	208	123673.5	2.1	**7.6482**	0.125	1.6	ug/L	770	Standard
	U	238	1531.4	12.8	**0.2621**	0.032	12.3	ug/L	13	Standard
>	**Bi**	209	488339.2	0.8				ug/L	503143	Standard

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Na	23	3.3	86.6	**33.1333**	28.719	86.7	mg/L	2	Standard
Mg	24	66.7	18.9	**0.0424**	0.013	31.2	mg/L	35	Standard
K	39	120.0	27.3	**0.4177**	0.133	31.7	mg/L	25	Standard
Ca	43	43.3	24.0	**2.2723**	1.810	79.7	mg/L	38	Standard
Fe	54	5259.3	3.5	**4.3093**	0.268	6.2	mg/L	126	Standard
Fe	57	1548.4	3.1	**4.3481**	0.308	7.1	mg/L	245	Standard
> **Sc-1**	45	28167.8	2.6				mg/L	25066	Standard
Cl	35	136558.6	0.5				ug/L	125857	Standard
Kr	83	1.3	86.6				ug/L	1	Standard
Br	81	1756.8	8.8				ug/L	1350	Standard
P	31	20071.6	3.8				ug/L	18393	Standard
S	34	4248.9	1.9				ug/L	3739	Standard
Sr	88	81.7	3.5				ug/L	78	Standard
C	12	66.7	8.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	0	Standard
Dy	164	21009.1	0.9				mg/L	2	Standard
Ho-1	165	12760.4	3.9				mg/L	10	Standard
Er	166	11264.2	4.0				mg/L	23	Standard
I	127	3685.4	6.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.489	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.299	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.613
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.058
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606078713
Report Date/Time: Tuesday, June 21, 2016 20:44:21
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Method 6020 - Summary Report

Sample ID: L1606078714
Sample Date/Time: Tuesday, June 21, 2016 20:45:16
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59354.4	2.2				ug/L	60176	Standard
	Be	9	183.3	13.7	**0.2501**	0.038	15.2	ug/L	5	Standard
	Al	27	1653362.7	0.4	**12.7568**	0.239	1.9	ug/L	832	Standard
	Sc	45	26840.4	0.7				ug/L	25066	Standard
	Ti	47	1195.7	15.7	**5.8965**	0.875	14.8	ug/L	38	Standard
	V	51	41857.8	0.9	**6.7842**	0.171	2.5	ug/L	974	Standard
	Cr	52	24805.0	0.8	**2.9115**	0.058	2.0	ug/L	5792	Standard
	Cr	53	2718.6	7.9	**2.8685**	0.201	7.0	ug/L	347	Standard
	Mn	55	271171.7	1.9	**41.6625**	1.227	2.9	ug/L	1164	Standard
	Co	59	15078.2	2.2	**2.3974**	0.058	2.4	ug/L	303	Standard
	Ni	60	7281.1	1.4	**3.8071**	0.071	1.9	ug/L	291	Standard
	Cu	65	4899.5	2.2	**2.6079**	0.059	2.3	ug/L	173	Standard
	Zn	66	8848.9	2.1	**8.1949**	0.270	3.3	ug/L	130	Standard
>	**Ge**	72	497940.3	1.9				ug/L	491724	Standard
	As	75	1399.2	6.8	**1.3498**	0.075	5.6	ug/L	-25	Standard
	Se	82	26.2	42.1	**0.1563**	0.101	64.4	ug/L	12	Standard
	Se-1	77	61.7	13.8	**0.2133**	0.129	60.7	ug/L	57	Standard
>	**Ga**	71	2935.3	6.3				mg/L	148	Standard
	Rb	85	27302.9	4.2				ug/L	18	Standard
	Y	89	493083.8	2.1				ug/L	401845	Standard
>	**Rh**	103	30.0	57.7				ug/L	10	Standard
	Mo	98	274.8	4.9	**0.1086**	0.006	5.1	ug/L	12	Standard
	Ag	107	202.7	17.3	**0.0186**	0.006	33.7	ug/L	98	Standard
	Cd	111	68.6	11.9	**0.0313**	0.004	13.1	mg/L	11	Standard
	Cd	114	186.8	21.1	**0.0360**	0.009	24.8	ug/L	21	Standard
>	**In**	115	553874.2	2.5				ug/L	547487	Standard
	Sn	118	1548.4	4.9	**0.2207**	0.012	5.3	ug/L	450	Standard
	Sb	123	134.4	14.6	**0.0237**	0.005	22.2	ug/L	105	Standard
	Ba	135	62896.3	0.8	**33.8185**	0.569	1.7	ug/L	111	Standard
	Ce	140	379145.7	1.3				ug/L	107	Standard
>	**Tb**	159	877738.6	2.8				ug/L	890342	Standard
	Ho	165	6044.5	3.3				ug/L	10	Standard
	Tl	203	194.0	17.9	**0.0229**	0.005	21.1	ug/L	19	Standard
	Tl	205	156.7	23.5	**0.0270**	0.006	23.3	ug/L	17	Standard
	Pb	206	17434.0	1.8	**3.6406**	0.072	2.0	ug/L	247	Standard
	Pb	207	14230.3	0.5	**3.2661**	0.036	1.1	ug/L	215	Standard
	Pb	208	59458.2	1.1	**3.6438**	0.066	1.8	ug/L	770	Standard
	U	238	818.0	4.9	**0.1396**	0.007	5.0	ug/L	13	Standard
>	**Bi**	209	488685.1	0.9				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	78.3	31.5	**0.0617**	0.032	51.7	mg/L	35	Standard
K	39	63.3	44.9	**0.1830**	0.135	73.6	mg/L	25	Standard
Ca	43	26.7	10.8	**-0.4193**	0.505	120.5	mg/L	38	Standard
Fe	54	2855.0	4.8	**2.3943**	0.139	5.8	mg/L	126	Standard
Fe	57	875.0	9.5	**2.1335**	0.331	15.5	mg/L	245	Standard
> **Sc-1**	45	26840.4	0.7				mg/L	25066	Standard
Cl	35	130769.3	1.1				ug/L	125857	Standard
Kr	83	0.3	173.2				ug/L	1	Standard
Br	81	1500.1	12.5				ug/L	1350	Standard
P	31	18306.1	4.6				ug/L	18393	Standard
S	34	3878.8	1.9				ug/L	3739	Standard
Sr	88	100.0	8.7				ug/L	78	Standard
C	12	53.3	43.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	10446.8	2.5				mg/L	2	Standard
Ho-1	165	6044.5	3.3				mg/L	10	Standard
Er	166	5364.3	4.3				mg/L	23	Standard
I	127	2471.9	4.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.635	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.264	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.167	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.127	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078715
Sample Date/Time: Tuesday, June 21, 2016 20:48:27
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64098.6	1.3				ug/L	60176	Standard
	Be	9	823.4	5.6	**1.0673**	0.048	4.5	ug/L	5	Standard
	Al	27	10125297.3	0.4	**72.3681**	0.913	1.3	ug/L	832	Standard
	Sc	45	30844.7	0.4				ug/L	25066	Standard
	Ti	47	1823.8	2.8	**8.7940**	0.274	3.1	ug/L	38	Standard
	V	51	98074.0	0.7	**15.5570**	0.191	1.2	ug/L	974	Standard
	Cr	52	104674.3	0.6	**14.7577**	0.248	1.7	ug/L	5792	Standard
	Cr	53	12927.2	2.0	**14.6613**	0.237	1.6	ug/L	347	Standard
	Mn	55	2973780.0	0.5	**443.0559**	7.216	1.6	ug/L	1164	Standard
	Co	59	58943.8	0.5	**9.1837**	0.119	1.3	ug/L	303	Standard
	Ni	60	38767.5	1.4	**20.3577**	0.493	2.4	ug/L	291	Standard
	Cu	65	24378.9	0.7	**12.8976**	0.065	0.5	ug/L	173	Standard
	Zn	66	41125.4	0.4	**37.5786**	0.477	1.3	ug/L	130	Standard
>	**Ge**	72	515810.5	1.2				ug/L	491724	Standard
	As	75	2841.8	1.6	**2.6150**	0.042	1.6	ug/L	-25	Standard
	Se	82	45.8	14.7	**0.3299**	0.064	19.5	ug/L	12	Standard
	Se-1	77	92.3	7.0	**0.5967**	0.101	16.9	ug/L	57	Standard
>	**Ga**	71	16957.8	0.2				mg/L	148	Standard
	Rb	85	162914.6	1.1				ug/L	18	Standard
	Y	89	615099.4	2.7				ug/L	401845	Standard
>	**Rh**	103	20.0	43.3				ug/L	10	Standard
	Mo	98	203.9	5.6	**0.0800**	0.004	4.8	ug/L	12	Standard
	Ag	107	382.7	10.1	**0.0492**	0.007	13.9	ug/L	98	Standard
	Cd	111	298.0	2.2	**0.1531**	0.002	1.3	mg/L	11	Standard
	Cd	114	666.5	15.5	**0.1406**	0.023	16.0	ug/L	21	Standard
>	**In**	115	550118.7	1.2				ug/L	547487	Standard
	Sn	118	753.4	4.7	**0.0703**	0.007	9.3	ug/L	450	Standard
	Sb	123	98.5	12.2	**0.0154**	0.003	16.9	ug/L	105	Standard
	Ba	135	241514.0	0.7	**130.8807**	1.833	1.4	ug/L	111	Standard
	Ce	140	1155859.2	0.5				ug/L	107	Standard
>	**Tb**	159	899979.5	1.4				ug/L	890342	Standard
	Ho	165	17680.3	2.0				ug/L	10	Standard
	Tl	203	858.7	0.6	**0.1099**	0.001	1.0	ug/L	19	Standard
	Tl	205	755.0	8.0	**0.1226**	0.012	9.4	ug/L	17	Standard
	Pb	206	60941.6	0.3	**12.4665**	0.202	1.6	ug/L	247	Standard
	Pb	207	50135.5	0.2	**11.2791**	0.161	1.4	ug/L	215	Standard
	Pb	208	203300.5	0.7	**12.2136**	0.108	0.9	ug/L	770	Standard
	U	238	2361.2	2.6	**0.3920**	0.006	1.5	ug/L	13	Standard
>	**Bi**	209	504223.9	1.5				ug/L	503143	Standard

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Na	23	3.3	86.6	**30.2029**	26.152	86.6	mg/L	2	Standard
Mg	24	81.7	17.7	**0.0523**	0.016	31.2	mg/L	35	Standard
K	39	335.0	10.4	**1.2451**	0.147	11.8	mg/L	25	Standard
Ca	43	41.7	13.9	**1.3488**	0.931	69.0	mg/L	38	Standard
Fe	54	13937.7	1.7	**10.6123**	0.221	2.1	mg/L	126	Standard
Fe	57	3708.8	2.8	**10.7946**	0.379	3.5	mg/L	245	Standard
> **Sc-1**	45	30844.7	0.4				mg/L	25066	Standard
Cl	35	127408.8	0.7				ug/L	125857	Standard
Kr	83	2.3	49.5				ug/L	1	Standard
Br	81	1913.5	1.6				ug/L	1350	Standard
P	31	18252.7	1.0				ug/L	18393	Standard
S	34	3877.2	0.8				ug/L	3739	Standard
Sr	88	116.7	13.1				ug/L	78	Standard
C	12	63.3	24.1				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	0	Standard
Dy	164	29223.1	3.8				mg/L	2	Standard
Ho-1	165	17680.3	2.0				mg/L	10	Standard
Er	166	15514.6	3.9				mg/L	23	Standard
I	127	5479.3	4.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.519	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.898	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.481
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.215
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606078716
Sample Date/Time: Tuesday, June 21, 2016 20:51:39
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63156.4	1.5				ug/L	60176	Standard
	Be	9	671.7	2.1	**0.8826**	0.026	3.0	ug/L	5	Standard
	Al	27	8487404.7	1.9	**61.5729**	1.740	2.8	ug/L	832	Standard
	Sc	45	31963.7	1.0				ug/L	25066	Standard
	Ti	47	787.0	5.2	**3.8622**	0.259	6.7	ug/L	38	Standard
	V	51	41199.8	0.5	**6.7490**	0.110	1.6	ug/L	974	Standard
	Cr	52	73420.2	2.1	**10.5882**	0.090	0.9	ug/L	5792	Standard
	Cr	53	8865.9	1.6	**10.4143**	0.113	1.1	ug/L	347	Standard
	Mn	55	3069080.0	1.7	**478.8131**	2.454	0.5	ug/L	1164	Standard
	Co	59	44326.4	0.3	**7.2228**	0.137	1.9	ug/L	303	Standard
	Ni	60	28414.3	2.4	**15.5776**	0.153	1.0	ug/L	291	Standard
	Cu	65	26490.5	2.7	**14.6878**	0.116	0.8	ug/L	173	Standard
	Zn	66	29868.4	0.5	**28.5277**	0.483	1.7	ug/L	130	Standard
>	**Ge**	72	492563.3	2.0				ug/L	491724	Standard
	As	75	705.4	3.6	**0.7048**	0.021	3.0	ug/L	-25	Standard
	Se	82	43.0	1.8	**0.3227**	0.009	2.7	ug/L	12	Standard
	Se-1	77	107.0	6.1	**0.8613**	0.072	8.3	ug/L	57	Standard
>	**Ga**	71	11926.4	3.1				mg/L	148	Standard
	Rb	85	71819.9	2.8				ug/L	18	Standard
	Y	89	651603.7	2.1				ug/L	401845	Standard
>	**Rh**	103	30.0	0.0				ug/L	10	Standard
	Mo	98	68.5	8.4	**0.0231**	0.003	12.2	ug/L	12	Standard
	Ag	107	420.7	8.6	**0.0536**	0.006	11.6	ug/L	98	Standard
	Cd	111	560.2	2.6	**0.2833**	0.005	1.6	mg/L	11	Standard
	Cd	114	1323.3	4.1	**0.2753**	0.012	4.2	ug/L	21	Standard
>	**In**	115	566534.2	2.2				ug/L	547487	Standard
	Sn	118	563.3	6.8	**0.0309**	0.009	30.5	ug/L	450	Standard
	Sb	123	100.4	11.4	**0.0152**	0.002	14.0	ug/L	105	Standard
	Ba	135	283911.4	0.6	**149.4331**	2.900	1.9	ug/L	111	Standard
	Ce	140	1002744.9	0.8				ug/L	107	Standard
>	**Tb**	159	926505.2	0.9				ug/L	890342	Standard
	Ho	165	19863.0	1.4				ug/L	10	Standard
	Tl	203	430.7	7.9	**0.0532**	0.005	8.6	ug/L	19	Standard
	Tl	205	353.3	5.9	**0.0577**	0.003	4.9	ug/L	17	Standard
	Pb	206	69734.1	0.6	**14.2349**	0.089	0.6	ug/L	247	Standard
	Pb	207	57132.8	0.4	**12.8273**	0.185	1.4	ug/L	215	Standard
	Pb	208	238392.7	1.0	**14.2947**	0.123	0.9	ug/L	770	Standard
	U	238	2332.8	0.7	**0.3863**	0.003	0.7	ug/L	13	Standard
>	**Bi**	209	505510.9	1.2				ug/L	503143	Standard

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Na	23	1.7	173.2	**14.5012**	25.108	173.1	mg/L	2	Standard
Mg	24	86.7	20.3	**0.0546**	0.020	36.4	mg/L	35	Standard
K	39	190.0	17.3	**0.6305**	0.128	20.3	mg/L	25	Standard
Ca	43	63.3	24.1	**4.4800**	2.465	55.0	mg/L	38	Standard
Fe	54	5380.7	2.2	**3.8682**	0.114	2.9	mg/L	126	Standard
Fe	57	1575.1	5.6	**3.7787**	0.227	6.0	mg/L	245	Standard
> **Sc-1**	45	31963.7	1.0				mg/L	25066	Standard
Cl	35	132139.0	0.5				ug/L	125857	Standard
Kr	83	3.3	45.8				ug/L	1	Standard
Br	81	1810.1	9.6				ug/L	1350	Standard
P	31	17954.0	0.5				ug/L	18393	Standard
S	34	3857.2	2.7				ug/L	3739	Standard
Sr	88	100.0	20.0				ug/L	78	Standard
C	12	70.0	14.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	65.5				mg/L	0	Standard
Dy	164	33584.1	0.1				mg/L	2	Standard
Ho-1	165	19863.0	1.4				mg/L	10	Standard
Er	166	16942.8	1.2				mg/L	23	Standard
I	127	7925.4	6.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.953	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.171	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.479
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.471
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 20:54:52
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60883.8	1.2				ug/L	60176	Standard
	Be	9	37452.9	1.8	**51.5526**	0.424	0.8	ug/L	5	Standard
	Al	27	6689358.8	1.2	**50.3342**	1.000	2.0	ug/L	832	Standard
	Sc	45	26605.0	1.1				ug/L	25066	Standard
	Ti	47	21026.9	2.2	**105.9022**	3.978	3.8	ug/L	38	Standard
	V	51	311223.1	1.0	**50.8529**	1.359	2.7	ug/L	974	Standard
	Cr	52	341954.8	0.5	**51.4858**	0.949	1.8	ug/L	5792	Standard
	Cr	53	42792.0	0.9	**50.5973**	0.849	1.7	ug/L	347	Standard
	Mn	55	320340.3	1.3	**48.6001**	1.462	3.0	ug/L	1164	Standard
	Co	59	314843.1	1.0	**50.3634**	1.025	2.0	ug/L	303	Standard
	Ni	60	93552.6	1.1	**50.5030**	1.634	3.2	ug/L	291	Standard
	Cu	65	92967.7	0.8	**50.5704**	1.475	2.9	ug/L	173	Standard
	Zn	66	53414.3	0.4	**49.9687**	0.924	1.8	ug/L	130	Standard
>	Ge	72	504684.6	2.1				ug/L	491724	Standard
	As	75	53717.6	0.4	**49.9128**	1.219	2.4	ug/L	-25	Standard
	Se	82	5331.3	0.9	**50.1675**	1.278	2.5	ug/L	12	Standard
	Se-1	77	3711.8	3.5	**50.5254**	1.616	3.2	ug/L	57	Standard
>	Ga	71	126.7	4.6				mg/L	148	Standard
	Rb	85	895.0	15.1				ug/L	18	Standard
	Y	89	404245.1	2.3				ug/L	401845	Standard
>	Rh	103	30.0	72.6				ug/L	10	Standard
	Mo	98	234676.4	0.3	**98.0864**	1.853	1.9	ug/L	12	Standard
	Ag	107	298634.4	0.6	**50.8442**	0.767	1.5	ug/L	98	Standard
	Cd	111	95655.4	0.7	**51.1097**	1.126	2.2	mg/L	11	Standard
	Cd	114	231347.5	1.0	**50.8153**	1.523	3.0	ug/L	21	Standard
>	In	115	545250.3	2.0				ug/L	547487	Standard
	Sn	118	260351.2	0.6	**50.2848**	1.264	2.5	ug/L	450	Standard
	Sb	123	214346.2	0.6	**50.6758**	0.746	1.5	ug/L	105	Standard
	Ba	135	92176.2	0.3	**50.3714**	0.906	1.8	ug/L	111	Standard
	Ce	140	526.7	81.3				ug/L	107	Standard
>	Tb	159	882908.4	0.6				ug/L	890342	Standard
	Ho	165	28.3	27.0				ug/L	10	Standard
	Tl	203	374935.9	0.9	**50.1205**	0.165	0.3	ug/L	19	Standard
	Tl	205	318674.8	0.7	**51.9217**	0.204	0.4	ug/L	17	Standard
	Pb	206	235754.0	0.4	**48.9660**	0.280	0.6	ug/L	247	Standard
	Pb	207	213881.4	0.3	**48.8706**	0.570	1.2	ug/L	215	Standard
	Pb	208	834513.3	1.3	**50.9306**	0.866	1.7	ug/L	770	Standard
	U	238	300874.8	0.8	**50.6644**	0.698	1.4	ug/L	13	Standard
>	Bi	209	498178.2	0.8				ug/L	503143	Standard

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Na	23	3.3	86.6	**34.8841**	30.207	86.6	mg/L	2	Standard
Mg	24	3477.1	4.4	**4.4607**	0.153	3.4	mg/L	35	Standard
K	39	961.7	14.3	**4.4091**	0.698	15.8	mg/L	25	Standard
Ca	43	43.3	69.6	**2.7007**	5.576	206.5	mg/L	38	Standard
Fe	54	5435.3	1.5	**4.7229**	0.037	0.8	mg/L	126	Standard
Fe	57	1608.4	5.4	**4.8844**	0.305	6.2	mg/L	245	Standard
> **Sc-1**	45	26605.0	1.1				mg/L	25066	Standard
Cl	35	135935.1	1.3				ug/L	125857	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	1366.7	10.0				ug/L	1350	Standard
P	31	19796.3	3.2				ug/L	18393	Standard
S	34	4318.9	4.3				ug/L	3739	Standard
Sr	88	66.7	4.3				ug/L	78	Standard
C	12	60.0	66.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	36.0	84.1				mg/L	2	Standard
Ho-1	165	28.3	27.0				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	1233.4	10.1				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	103.105		
	Al	27	100.668		
	Sc	45			
	Ti	47	105.902		
	V	51	101.706		
	Cr	52	102.972		
	Cr	53			
	Mn	55	97.200		
	Co	59	100.727		
	Ni	60	101.006		
	Cu	65	101.141		
	Zn	66	99.937		
>	Ge	72		102.636	
	As	75	99.826		
	Se	82	100.335		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	98.086		
Ag	107	101.688		
Cd	111	102.219		
Cd	114			
In	115			99.592
Sn	118	100.570		
Sb	123	101.352		
Ba	135	100.743		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.241		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.861		
U	238	101.329		
Bi	209			99.013
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 20:58:03
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60304.9	3.7				ug/L	60176	Standard
	Be	9	20.0	25.0	**0.0187**	0.006	34.5	ug/L	5	Standard
	Al	27	2683.6	13.5	**0.0119**	0.002	17.0	ug/L	832	Standard
	Sc	45	27745.4	2.3				ug/L	25066	Standard
	Ti	47	26.3	7.9	**-0.0698**	0.006	9.1	ug/L	38	Standard
	V	51	1025.5	6.6	**0.0041**	0.015	373.0	ug/L	974	Standard
	Cr	52	5980.2	0.4	**0.0103**	0.035	341.4	ug/L	5792	Standard
	Cr	53	358.3	2.9	**0.0313**	0.025	80.8	ug/L	347	Standard
	Mn	55	1307.7	11.4	**-0.0089**	0.015	168.5	ug/L	1164	Standard
	Co	59	319.0	5.2	**0.0037**	0.001	16.8	ug/L	303	Standard
	Ni	60	213.7	10.1	**-0.0706**	0.007	10.2	ug/L	291	Standard
	Cu	65	176.0	45.3	**0.0009**	0.040	4571.7	ug/L	173	Standard
	Zn	66	197.3	32.7	**-0.0440**	0.055	125.2	ug/L	130	Standard
>	Ge	72	485859.0	4.1				ug/L	491724	Standard
	As	75	-7.9	564.3	**0.0257**	0.042	164.8	ug/L	-25	Standard
	Se	82	20.6	52.0	**0.1089**	0.105	96.6	ug/L	12	Standard
	Se-1	77	51.3	4.9	**0.0854**	0.006	7.0	ug/L	57	Standard
>	Ga	71	96.7	26.5				mg/L	148	Standard
	Rb	85	53.3	75.8				ug/L	18	Standard
	Y	89	428893.2	2.6				ug/L	401845	Standard
>	Rh	103	21.7	35.3				ug/L	10	Standard
	Mo	98	267.7	20.3	**0.1004**	0.022	21.8	ug/L	12	Standard
	Ag	107	154.3	36.0	**0.0093**	0.009	97.1	ug/L	98	Standard
	Cd	111	33.1	68.4	**0.0119**	0.011	96.1	mg/L	11	Standard
	Cd	114	72.5	60.2	**0.0105**	0.009	86.3	ug/L	21	Standard
>	In	115	582185.2	0.5				ug/L	547487	Standard
	Sn	118	775.0	15.8	**0.0663**	0.022	32.6	ug/L	450	Standard
	Sb	123	370.4	13.0	**0.0743**	0.010	13.7	ug/L	105	Standard
	Ba	135	185.0	36.1	**0.0393**	0.035	88.5	ug/L	111	Standard
	Ce	140	261.7	98.8				ug/L	107	Standard
>	Tb	159	909104.3	2.8				ug/L	890342	Standard
	Ho	165	13.3	21.7				ug/L	10	Standard
	Tl	203	110.3	66.1	**0.0108**	0.009	83.7	ug/L	19	Standard
	Tl	205	71.7	63.3	**0.0123**	0.007	55.7	ug/L	17	Standard
	Pb	206	312.7	18.6	**0.0088**	0.010	110.7	ug/L	247	Standard
	Pb	207	257.0	12.9	**0.0056**	0.006	101.8	ug/L	215	Standard
	Pb	208	984.0	5.5	**-0.0008**	0.002	247.7	ug/L	770	Standard
	U	238	62.3	31.4	**0.0094**	0.003	31.0	ug/L	13	Standard
>	Bi	209	506036.5	3.2				ug/L	503143	Standard

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Na	23	1.7	173.2	**16.4456**	28.476	173.2	mg/L	2	Standard
Mg	24	31.7	48.2	**0.0006**	0.019	3169.4	mg/L	35	Standard
K	39	28.3	44.4	**0.0148**	0.056	376.7	mg/L	25	Standard
Ca	43	30.0	16.7	**0.0246**	0.947	3845.4	mg/L	38	Standard
Fe	54	152.6	13.3	**-0.0059**	0.014	243.4	mg/L	126	Standard
Fe	57	205.0	29.6	**-0.3585**	0.221	61.6	mg/L	245	Standard
> **Sc-1**	45	27745.4	2.3				mg/L	25066	Standard
Cl	35	137127.8	1.4				ug/L	125857	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	1390.1	15.1				ug/L	1350	Standard
P	31	20685.8	4.9				ug/L	18393	Standard
S	34	4127.2	9.0				ug/L	3739	Standard
Sr	88	78.3	54.3				ug/L	78	Standard
C	12	46.7	12.4				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	13.0	115.8				mg/L	2	Standard
Ho-1	165	13.3	21.7				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	23	Standard
I	127	885.0	8.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.807	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.338
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.575
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078717
Sample Date/Time: Tuesday, June 21, 2016 21:01:16
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58967.9	1.9				ug/L	60176	Standard
	Be	9	248.3	8.1	**0.3438**	0.024	6.9	ug/L	5	Standard
	Al	27	2227874.3	0.9	**17.3042**	0.322	1.9	ug/L	832	Standard
	Sc	45	26897.2	2.2				ug/L	25066	Standard
	Ti	47	1431.7	18.6	**6.8597**	1.258	18.3	ug/L	38	Standard
	V	51	47458.5	2.5	**7.4476**	0.204	2.7	ug/L	974	Standard
	Cr	52	32459.4	0.3	**3.9305**	0.054	1.4	ug/L	5792	Standard
	Cr	53	3765.5	1.9	**3.9831**	0.119	3.0	ug/L	347	Standard
	Mn	55	1239543.3	1.8	**184.7250**	3.779	2.0	ug/L	1164	Standard
	Co	59	18572.0	2.0	**2.8625**	0.053	1.9	ug/L	303	Standard
	Ni	60	10124.4	1.0	**5.1808**	0.100	1.9	ug/L	291	Standard
	Cu	65	6785.9	0.8	**3.5234**	0.059	1.7	ug/L	173	Standard
	Zn	66	12295.0	0.6	**11.0803**	0.079	0.7	ug/L	130	Standard
>	**Ge**	72	515286.4	0.8				ug/L	491724	Standard
	As	75	1394.4	4.3	**1.3016**	0.051	3.9	ug/L	-25	Standard
	Se	82	20.2	35.8	**0.0940**	0.067	71.3	ug/L	12	Standard
	Se-1	77	68.7	3.7	**0.2777**	0.038	13.8	ug/L	57	Standard
>	**Ga**	71	3877.2	6.5				mg/L	148	Standard
	Rb	85	33081.1	0.9				ug/L	18	Standard
	Y	89	491266.4	1.3				ug/L	401845	Standard
>	**Rh**	103	30.0	50.0				ug/L	10	Standard
	Mo	98	552.0	0.6	**0.2299**	0.004	1.9	ug/L	12	Standard
	Ag	107	180.0	16.1	**0.0157**	0.005	31.4	ug/L	98	Standard
	Cd	111	82.7	5.7	**0.0401**	0.003	6.4	mg/L	11	Standard
	Cd	114	155.0	26.9	**0.0301**	0.009	30.6	ug/L	21	Standard
>	**In**	115	536864.3	1.3				ug/L	547487	Standard
	Sn	118	871.7	22.7	**0.0970**	0.038	39.0	ug/L	450	Standard
	Sb	123	155.5	16.1	**0.0297**	0.006	20.1	ug/L	105	Standard
	Ba	135	92951.9	0.7	**51.5816**	0.551	1.1	ug/L	111	Standard
	Ce	140	470743.1	1.1				ug/L	107	Standard
>	**Tb**	159	879768.9	2.5				ug/L	890342	Standard
	Ho	165	7800.3	2.1				ug/L	10	Standard
	Tl	203	213.0	5.0	**0.0249**	0.002	7.3	ug/L	19	Standard
	Tl	205	180.0	7.3	**0.0302**	0.002	7.1	ug/L	17	Standard
	Pb	206	22080.4	1.2	**4.5264**	0.114	2.5	ug/L	247	Standard
	Pb	207	18228.6	0.8	**4.1081**	0.080	1.9	ug/L	215	Standard
	Pb	208	74972.7	0.7	**4.5107**	0.075	1.7	ug/L	770	Standard
	U	238	864.0	6.8	**0.1443**	0.008	5.6	ug/L	13	Standard
>	**Bi**	209	499355.6	1.6				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.5774**	30.436	173.2	mg/L	2	Standard
Mg	24	61.7	40.0	**0.0403**	0.033	80.9	mg/L	35	Standard
K	39	90.0	19.2	**0.3053**	0.077	25.2	mg/L	25	Standard
Ca	43	26.7	43.3	**-0.4112**	2.189	532.4	mg/L	38	Standard
Fe	54	3684.8	2.8	**3.1243**	0.156	5.0	mg/L	126	Standard
Fe	57	1071.7	3.2	**2.8502**	0.193	6.8	mg/L	245	Standard
> **Sc-1**	45	26897.2	2.2				mg/L	25066	Standard
Cl	35	128581.4	1.9				ug/L	125857	Standard
Kr	83	3.3	69.3				ug/L	1	Standard
Br	81	1366.7	14.0				ug/L	1350	Standard
P	31	18504.6	2.4				ug/L	18393	Standard
S	34	3872.2	3.4				ug/L	3739	Standard
Sr	88	98.3	24.0				ug/L	78	Standard
C	12	83.3	13.9				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	0	Standard
Dy	164	13079.9	4.0				mg/L	2	Standard
Ho-1	165	7800.3	2.1				mg/L	10	Standard
Er	166	6874.9	2.4				mg/L	23	Standard
I	127	43099.7	5.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.992	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.792	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.060
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.247
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606096401
Sample Date/Time: Tuesday, June 21, 2016 21:04:28
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	61683.6	0.8				ug/L	60176	Standard
	Be	9	883.4	4.3	**1.1916**	0.058	4.9	ug/L	5	Standard
	Al	27	5178030.7	2.0	**38.4554**	1.068	2.8	ug/L	832	Standard
	Sc	45	30799.6	3.4				ug/L	25066	Standard
	Ti	47	4718.7	1.1	**24.0318**	0.395	1.6	ug/L	38	Standard
	V	51	114345.0	1.6	**18.9116**	0.174	0.9	ug/L	974	Standard
	Cr	52	105274.2	1.9	**15.4891**	0.252	1.6	ug/L	5792	Standard
	Cr	53	13055.6	1.4	**15.4331**	0.322	2.1	ug/L	347	Standard
	Mn	55	7305075.4	0.8	**1132.9355**	7.283	0.6	ug/L	1164	Standard
	Co	59	110053.3	1.1	**17.8911**	0.196	1.1	ug/L	303	Standard
	Ni	60	42512.6	2.1	**23.2560**	0.355	1.5	ug/L	291	Standard
	Cu	65	53072.8	1.3	**29.3454**	0.332	1.1	ug/L	173	Standard
	Zn	66	99122.2	1.6	**94.6103**	1.148	1.2	ug/L	130	Standard
>	Ge	72	495611.5	1.0				ug/L	491724	Standard
	As	75	7905.4	0.5	**7.5070**	0.111	1.5	ug/L	-25	Standard
	Se	82	123.9	10.0	**1.0965**	0.127	11.6	ug/L	12	Standard
	Se-1	77	121.7	4.5	**1.0589**	0.089	8.4	ug/L	57	Standard
>	Ga	71	15628.1	1.2				mg/L	148	Standard
	Rb	85	148601.9	0.8				ug/L	18	Standard
	Y	89	644139.5	2.1				ug/L	401845	Standard
>	Rh	103	43.3	26.6				ug/L	10	Standard
	Mo	98	2523.4	0.5	**1.0118**	0.017	1.7	ug/L	12	Standard
	Ag	107	592.0	2.4	**0.0817**	0.001	1.4	ug/L	98	Standard
	Cd	111	807.3	4.3	**0.4111**	0.024	5.8	mg/L	11	Standard
	Cd	114	1817.8	11.0	**0.3801**	0.041	10.8	ug/L	21	Standard
>	In	115	565837.8	1.4				ug/L	547487	Standard
	Sn	118	1080.0	6.1	**0.1273**	0.013	10.3	ug/L	450	Standard
	Sb	123	319.1	4.8	**0.0651**	0.004	6.6	ug/L	105	Standard
	Ba	135	459850.7	0.5	**242.3294**	2.872	1.2	ug/L	111	Standard
	Ce	140	772197.4	0.7				ug/L	107	Standard
>	Tb	159	924228.8	0.8				ug/L	890342	Standard
	Ho	165	18805.0	1.1				ug/L	10	Standard
	Tl	203	1334.1	2.6	**0.1715**	0.004	2.4	ug/L	19	Standard
	Tl	205	1121.7	11.7	**0.1804**	0.021	11.8	ug/L	17	Standard
	Pb	206	155702.0	1.1	**31.7305**	0.431	1.4	ug/L	247	Standard
	Pb	207	128499.6	0.8	**28.8036**	0.297	1.0	ug/L	215	Standard
	Pb	208	526834.4	0.3	**31.5436**	0.346	1.1	ug/L	770	Standard
	U	238	6774.5	2.8	**1.1193**	0.041	3.6	ug/L	13	Standard
>	Bi	209	507432.9	0.8				ug/L	503143	Standard

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Na	23	1.7	173.2	**14.5920**	25.265	173.1	mg/L	2	Standard
Mg	24	123.3	36.3	**0.0995**	0.052	52.6	mg/L	35	Standard
K	39	286.7	11.6	**1.0529**	0.157	14.9	mg/L	25	Standard
Ca	43	181.7	8.8	**23.8683**	3.171	13.3	mg/L	38	Standard
Fe	54	30681.9	0.6	**23.5794**	0.906	3.8	mg/L	126	Standard
Fe	57	7930.4	3.9	**24.3571**	0.437	1.8	mg/L	245	Standard
Sc-1	45	30799.6	3.4				mg/L	25066	Standard
Cl	35	140264.3	0.6				ug/L	125857	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	4600.7	5.6				ug/L	1350	Standard
P	31	20849.3	1.5				ug/L	18393	Standard
S	34	4297.3	6.2				ug/L	3739	Standard
Sr	88	158.3	6.6				ug/L	78	Standard
C	12	330.0	10.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	140.0	7.1				mg/L	0	Standard
Dy	164	30992.7	0.4				mg/L	2	Standard
Ho-1	165	18805.0	1.1				mg/L	10	Standard
Er	166	16085.2	2.6				mg/L	23	Standard
I	127	12078.2	5.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.506	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.791	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.352
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.853
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606096402
Sample Date/Time: Tuesday, June 21, 2016 21:07:39
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60443.7	2.3				ug/L	60176	Standard
	Be	9	858.4	6.1	**1.1817**	0.077	6.5	ug/L	5	Standard
	Al	27	6826154.4	0.3	**51.7504**	1.316	2.5	ug/L	832	Standard
	Sc	45	29154.7	2.0				ug/L	25066	Standard
	Ti	47	4436.6	0.7	**23.0756**	0.146	0.6	ug/L	38	Standard
	V	51	102185.5	0.5	**17.2535**	0.167	1.0	ug/L	974	Standard
	Cr	52	95353.4	0.7	**14.2638**	0.044	0.3	ug/L	5792	Standard
	Cr	53	11679.5	2.1	**14.0700**	0.355	2.5	ug/L	347	Standard
	Mn	55	7652551.6	0.6	**1212.6036**	11.003	0.9	ug/L	1164	Standard
	Co	59	114240.4	1.3	**18.9785**	0.353	1.9	ug/L	303	Standard
	Ni	60	37577.9	2.9	**20.9856**	0.630	3.0	ug/L	291	Standard
	Cu	65	36514.3	2.8	**20.5993**	0.606	2.9	ug/L	173	Standard
	Zn	66	77328.8	1.2	**75.3661**	1.101	1.5	ug/L	130	Standard
>	**Ge**	72	485083.6	0.6				ug/L	491724	Standard
	As	75	9274.5	0.6	**8.9907**	0.056	0.6	ug/L	-25	Standard
	Se	82	68.6	8.2	**0.5801**	0.058	10.0	ug/L	12	Standard
	Se-1	77	100.0	6.2	**0.7851**	0.097	12.4	ug/L	57	Standard
>	**Ga**	71	13681.2	0.5				mg/L	148	Standard
	Rb	85	107244.9	1.0				ug/L	18	Standard
	Y	89	606939.5	0.4				ug/L	401845	Standard
>	**Rh**	103	73.3	15.7				ug/L	10	Standard
	Mo	98	2763.0	0.4	**1.1251**	0.031	2.8	ug/L	12	Standard
	Ag	107	389.0	4.8	**0.0494**	0.004	8.4	ug/L	98	Standard
	Cd	111	497.8	7.0	**0.2554**	0.018	7.1	mg/L	11	Standard
	Cd	114	1250.0	4.5	**0.2640**	0.013	4.9	ug/L	21	Standard
>	**In**	115	557635.5	2.9				ug/L	547487	Standard
	Sn	118	808.4	8.9	**0.0790**	0.017	21.2	ug/L	450	Standard
	Sb	123	238.7	4.1	**0.0476**	0.003	6.2	ug/L	105	Standard
	Ba	135	379584.7	0.5	**203.0712**	6.745	3.3	ug/L	111	Standard
	Ce	140	697160.9	0.9				ug/L	107	Standard
>	**Tb**	159	886275.1	1.2				ug/L	890342	Standard
	Ho	165	14727.2	5.5				ug/L	10	Standard
	Tl	203	896.7	2.2	**0.1223**	0.004	3.1	ug/L	19	Standard
	Tl	205	745.0	8.4	**0.1283**	0.009	7.2	ug/L	17	Standard
	Pb	206	178412.3	0.6	**38.8786**	0.719	1.8	ug/L	247	Standard
	Pb	207	147399.5	0.7	**35.3313**	0.706	2.0	ug/L	215	Standard
	Pb	208	606573.9	0.8	**38.8359**	0.746	1.9	ug/L	770	Standard
	U	238	7105.3	1.3	**1.2549**	0.033	2.7	ug/L	13	Standard
>	**Bi**	209	474753.1	1.4				ug/L	503143	Standard

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Na	23	8.3	34.6	**79.6978**	26.468	33.2	mg/L	2	Standard
Mg	24	110.0	7.9	**0.0911**	0.012	13.1	mg/L	35	Standard
K	39	256.7	19.5	**0.9885**	0.219	22.1	mg/L	25	Standard
Ca	43	411.7	11.5	**64.4783**	8.203	12.7	mg/L	38	Standard
Fe	54	35968.6	1.2	**29.2125**	0.258	0.9	mg/L	126	Standard
Fe	57	9513.0	2.7	**31.1720**	1.290	4.1	mg/L	245	Standard
> **Sc-1**	45	29154.7	2.0				mg/L	25066	Standard
Cl	35	139874.1	1.4				ug/L	125857	Standard
Kr	83	2.3	107.9				ug/L	1	Standard
Br	81	2370.2	14.6				ug/L	1350	Standard
P	31	20196.8	1.6				ug/L	18393	Standard
S	34	4530.7	2.9				ug/L	3739	Standard
Sr	88	208.3	7.3				ug/L	78	Standard
C	12	226.7	16.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	76.7	52.7				mg/L	0	Standard
Dy	164	23848.2	0.8				mg/L	2	Standard
Ho-1	165	14727.2	5.5				mg/L	10	Standard
Er	166	12765.4	0.8				mg/L	23	Standard
I	127	5762.8	6.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.445	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.650	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	101.854
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.358
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606096403
Sample Date/Time: Tuesday, June 21, 2016 21:10:51
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59725.8	1.2				ug/L	60176	Standard
	Be	9	1065.0	7.1	**1.4856**	0.101	6.8	ug/L	5	Standard
	Al	27	6735770.9	2.1	**51.6724**	1.686	3.3	ug/L	832	Standard
	Sc	45	31080.2	2.4				ug/L	25066	Standard
	Ti	47	4731.4	2.9	**23.5917**	1.146	4.9	ug/L	38	Standard
	V	51	159656.7	1.1	**25.9167**	0.803	3.1	ug/L	974	Standard
	Cr	52	150620.2	2.4	**22.0767**	0.911	4.1	ug/L	5792	Standard
	Cr	53	18673.2	1.5	**21.7771**	0.815	3.7	ug/L	347	Standard
	Mn	55	23162167.1	2.5	**3518.0721**	158.797	4.5	ug/L	1164	Standard
	Co	59	153465.2	2.3	**24.4482**	1.075	4.4	ug/L	303	Standard
	Ni	60	66553.2	1.2	**35.7474**	1.066	3.0	ug/L	291	Standard
	Cu	65	62739.7	1.9	**33.9798**	1.174	3.5	ug/L	173	Standard
	Zn	66	111779.9	1.3	**104.4821**	3.185	3.0	ug/L	130	Standard
>	**Ge**	72	506423.5	2.2				ug/L	491724	Standard
	As	75	13400.8	1.3	**12.4352**	0.374	3.0	ug/L	-25	Standard
	Se	82	118.6	7.2	**1.0218**	0.099	9.7	ug/L	12	Standard
	Se-1	77	153.7	9.5	**1.4639**	0.226	15.5	ug/L	57	Standard
>	**Ga**	71	25104.1	4.5				mg/L	148	Standard
	Rb	85	212398.7	1.8				ug/L	18	Standard
	Y	89	707988.0	2.1				ug/L	401845	Standard
>	**Rh**	103	40.0	21.7				ug/L	10	Standard
	Mo	98	3597.9	2.4	**1.5414**	0.022	1.4	ug/L	12	Standard
	Ag	107	833.4	3.0	**0.1305**	0.003	2.1	ug/L	98	Standard
	Cd	111	780.1	2.5	**0.4239**	0.014	3.3	mg/L	11	Standard
	Cd	114	1837.3	7.4	**0.4101**	0.024	5.8	ug/L	21	Standard
>	**In**	115	530289.5	1.6				ug/L	547487	Standard
	Sn	118	726.7	5.9	**0.0704**	0.006	9.1	ug/L	450	Standard
	Sb	123	189.3	5.2	**0.0384**	0.003	7.9	ug/L	105	Standard
	Ba	135	438353.8	1.0	**246.4838**	2.881	1.2	ug/L	111	Standard
	Ce	140	990763.4	1.4				ug/L	107	Standard
>	**Tb**	159	873474.7	0.7				ug/L	890342	Standard
	Ho	165	24511.5	2.8				ug/L	10	Standard
	Tl	203	1762.8	2.6	**0.2422**	0.010	4.3	ug/L	19	Standard
	Tl	205	1573.4	6.4	**0.2681**	0.014	5.1	ug/L	17	Standard
	Pb	206	175441.6	1.0	**37.9831**	0.971	2.6	ug/L	247	Standard
	Pb	207	144605.2	1.4	**34.4368**	0.983	2.9	ug/L	215	Standard
	Pb	208	588641.2	1.8	**37.4440**	1.195	3.2	ug/L	770	Standard
	U	238	9588.7	2.3	**1.6828**	0.058	3.5	ug/L	13	Standard
>	**Bi**	209	477887.7	1.6				ug/L	503143	Standard

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Na	23	3.3	86.6	**29.6244**	25.651	86.6	mg/L	2	Standard
Mg	24	100.0	32.8	**0.0724**	0.039	53.5	mg/L	35	Standard
K	39	251.7	22.0	**0.8997**	0.220	24.5	mg/L	25	Standard
Ca	43	298.3	10.8	**42.0685**	4.357	10.4	mg/L	38	Standard
Fe	54	46609.4	1.9	**35.5544**	1.340	3.8	mg/L	126	Standard
Fe	57	12280.0	1.7	**37.9835**	1.542	4.1	mg/L	245	Standard
> **Sc-1**	45	31080.2	2.4				mg/L	25066	Standard
Cl	35	131632.1	1.5				ug/L	125857	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	2233.5	9.3				ug/L	1350	Standard
P	31	19908.1	1.2				ug/L	18393	Standard
S	34	4282.3	3.5				ug/L	3739	Standard
Sr	88	186.7	10.8				ug/L	78	Standard
C	12	196.7	7.8				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	28.4				mg/L	0	Standard
Dy	164	39222.5	1.3				mg/L	2	Standard
Ho-1	165	24511.5	2.8				mg/L	10	Standard
Er	166	21451.8	2.5				mg/L	23	Standard
I	127	11184.1	5.0				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.252	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.989	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.859
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.981
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606096404
Sample Date/Time: Tuesday, June 21, 2016 21:14:02
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65608.5	2.4				ug/L	60176	Standard
	Be	9	978.4	9.3	**1.2397**	0.091	7.3	ug/L	5	Standard
	Al	27	20276434.3	2.1	**141.6733**	6.192	4.4	ug/L	832	Standard
	Sc	45	32165.8	0.5				ug/L	25066	Standard
	Ti	47	4298.9	2.0	**22.5280**	0.481	2.1	ug/L	38	Standard
	V	51	146058.2	0.9	**24.9272**	0.315	1.3	ug/L	974	Standard
	Cr	52	151598.3	0.6	**23.4255**	0.607	2.6	ug/L	5792	Standard
	Cr	53	18476.3	1.4	**22.6814**	0.785	3.5	ug/L	347	Standard
	Mn	55	9420566.7	0.7	**1504.6626**	40.210	2.7	ug/L	1164	Standard
	Co	59	121066.1	1.2	**20.2709**	0.323	1.6	ug/L	303	Standard
	Ni	60	72261.9	0.3	**40.8509**	0.828	2.0	ug/L	291	Standard
	Cu	65	54807.6	0.9	**31.2098**	0.512	1.6	ug/L	173	Standard
	Zn	66	122838.6	0.9	**120.7890**	1.613	1.3	ug/L	130	Standard
>	**Ge**	72	481416.0	1.9				ug/L	491724	Standard
	As	75	16765.9	1.3	**16.3502**	0.164	1.0	ug/L	-25	Standard
	Se	82	200.1	3.3	**1.8846**	0.080	4.3	ug/L	12	Standard
	Se-1	77	165.3	6.7	**1.7419**	0.196	11.3	ug/L	57	Standard
>	**Ga**	71	21279.9	1.7				mg/L	148	Standard
	Rb	85	212211.0	1.6				ug/L	18	Standard
	Y	89	668598.8	3.4				ug/L	401845	Standard
>	**Rh**	103	146.7	13.8				ug/L	10	Standard
	Mo	98	6675.4	3.0	**2.8530**	0.135	4.7	ug/L	12	Standard
	Ag	107	751.4	7.2	**0.1157**	0.012	10.3	ug/L	98	Standard
	Cd	111	870.3	3.3	**0.4716**	0.024	5.2	mg/L	11	Standard
	Cd	114	2091.4	3.2	**0.4659**	0.020	4.4	ug/L	21	Standard
>	**In**	115	532573.7	1.9				ug/L	547487	Standard
	Sn	118	885.0	9.3	**0.1010**	0.014	13.8	ug/L	450	Standard
	Sb	123	194.5	1.0	**0.0395**	0.001	2.8	ug/L	105	Standard
	Ba	135	1163510.0	0.9	**651.5400**	6.396	1.0	ug/L	111	Standard
	Ce	140	906567.9	0.7				ug/L	107	Standard
>	**Tb**	159	883392.7	1.4				ug/L	890342	Standard
	Ho	165	22286.4	1.5				ug/L	10	Standard
	Tl	203	2482.5	0.8	**0.3521**	0.004	1.0	ug/L	19	Standard
	Tl	205	1881.8	2.0	**0.3296**	0.010	3.2	ug/L	17	Standard
	Pb	206	158091.9	0.8	**35.1738**	0.401	1.1	ug/L	247	Standard
	Pb	207	129834.2	0.5	**31.7739**	0.359	1.1	ug/L	215	Standard
	Pb	208	527254.9	0.3	**34.4662**	0.500	1.5	ug/L	770	Standard
	U	238	16067.5	1.1	**2.8987**	0.040	1.4	ug/L	13	Standard
>	**Bi**	209	464873.7	1.2				ug/L	503143	Standard

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Na	23	13.3	78.1	**115.9288**	90.093	77.7	mg/L	2	Standard
Mg	24	990.0	4.0	**1.0209**	0.038	3.7	mg/L	35	Standard
K	39	433.3	22.9	**1.5710**	0.385	24.5	mg/L	25	Standard
Ca	43	1288.4	2.4	**192.5985**	3.798	2.0	mg/L	38	Standard
Fe	54	42265.6	1.7	**31.1194**	0.570	1.8	mg/L	126	Standard
Fe	57	11794.6	0.9	**35.1500**	0.244	0.7	mg/L	245	Standard
> **Sc-1**	45	32165.8	0.5				mg/L	25066	Standard
Cl	35	147961.0	1.0				ug/L	125857	Standard
Kr	83	2.7	57.3				ug/L	1	Standard
Br	81	8902.6	11.5				ug/L	1350	Standard
P	31	19879.7	1.0				ug/L	18393	Standard
S	34	4369.0	3.9				ug/L	3739	Standard
Sr	88	638.3	9.0				ug/L	78	Standard
C	12	266.7	53.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	80.0	25.0				mg/L	0	Standard
Dy	164	35429.3	3.3				mg/L	2	Standard
Ho-1	165	22286.4	1.5				mg/L	10	Standard
Er	166	19993.2	2.6				mg/L	23	Standard
I	127	41665.6	4.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.028	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.904	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.276
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	92.394
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606096405
Sample Date/Time: Tuesday, June 21, 2016 21:17:14
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61603.3	1.5				ug/L	60176	Standard
	Be	9	600.0	13.8	**0.8067**	0.103	12.7	ug/L	5	Standard
	Al	27	6725691.5	0.7	**50.0139**	0.453	0.9	ug/L	832	Standard
	Sc	45	29426.9	0.5				ug/L	25066	Standard
	Ti	47	3385.7	1.8	**17.9264**	0.361	2.0	ug/L	38	Standard
	V	51	99171.8	1.0	**17.0872**	0.169	1.0	ug/L	974	Standard
	Cr	52	93106.5	0.5	**14.2111**	0.046	0.3	ug/L	5792	Standard
	Cr	53	11137.4	1.5	**13.6811**	0.187	1.4	ug/L	347	Standard
	Mn	55	4849349.2	0.5	**784.1366**	4.043	0.5	ug/L	1164	Standard
	Co	59	77636.7	0.7	**13.1472**	0.104	0.8	ug/L	303	Standard
	Ni	60	35771.2	0.8	**20.3821**	0.193	0.9	ug/L	291	Standard
	Cu	65	33083.4	0.4	**19.0401**	0.116	0.6	ug/L	173	Standard
	Zn	66	62395.9	0.5	**62.0204**	0.339	0.5	ug/L	130	Standard
>	**Ge**	72	475299.6	0.2				ug/L	491724	Standard
	As	75	7138.4	0.3	**7.0696**	0.031	0.4	ug/L	-25	Standard
	Se	82	72.9	6.9	**0.6363**	0.050	7.8	ug/L	12	Standard
	Se-1	77	94.7	8.2	**0.7362**	0.114	15.4	ug/L	57	Standard
>	**Ga**	71	13139.0	2.4				mg/L	148	Standard
	Rb	85	122434.4	1.4				ug/L	18	Standard
	Y	89	560272.6	0.4				ug/L	401845	Standard
>	**Rh**	103	85.0	10.2				ug/L	10	Standard
	Mo	98	2829.3	0.9	**1.2062**	0.019	1.6	ug/L	12	Standard
	Ag	107	451.3	3.3	**0.0633**	0.003	4.5	ug/L	98	Standard
	Cd	111	585.9	3.4	**0.3157**	0.009	2.8	mg/L	11	Standard
	Cd	114	1338.5	8.1	**0.2966**	0.027	9.2	ug/L	21	Standard
>	**In**	115	532548.5	0.9				ug/L	547487	Standard
	Sn	118	618.3	6.2	**0.0484**	0.008	15.8	ug/L	450	Standard
	Sb	123	149.8	7.0	**0.0287**	0.003	9.9	ug/L	105	Standard
	Ba	135	747435.4	0.3	**418.5133**	3.169	0.8	ug/L	111	Standard
	Ce	140	560557.9	2.3				ug/L	107	Standard
>	**Tb**	159	866879.8	2.2				ug/L	890342	Standard
	Ho	165	12675.3	1.6				ug/L	10	Standard
	Tl	203	1043.0	2.4	**0.1481**	0.005	3.4	ug/L	19	Standard
	Tl	205	948.4	1.9	**0.1690**	0.003	2.0	ug/L	17	Standard
	Pb	206	83575.9	1.0	**18.8379**	0.180	1.0	ug/L	247	Standard
	Pb	207	68735.9	0.3	**17.0411**	0.225	1.3	ug/L	215	Standard
	Pb	208	284935.0	0.5	**18.8685**	0.292	1.5	ug/L	770	Standard
	U	238	6592.4	0.9	**1.2061**	0.023	1.9	ug/L	13	Standard
>	**Bi**	209	458241.8	1.1				ug/L	503143	Standard

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Na	23	16.7	75.5	**158.9499**	120.668	75.9	mg/L	2	Standard
Mg	24	601.7	3.7	**0.6653**	0.030	4.4	mg/L	35	Standard
K	39	206.7	8.5	**0.7650**	0.071	9.3	mg/L	25	Standard
Ca	43	960.0	3.6	**155.9005**	6.175	4.0	mg/L	38	Standard
Fe	54	23834.6	0.7	**19.1304**	0.220	1.1	mg/L	126	Standard
Fe	57	7443.5	4.6	**23.9100**	1.153	4.8	mg/L	245	Standard
> **Sc-1**	45	29426.9	0.5				mg/L	25066	Standard
Cl	35	144441.3	1.4				ug/L	125857	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	2490.2	5.4				ug/L	1350	Standard
P	31	20085.0	2.1				ug/L	18393	Standard
S	34	4562.4	2.9				ug/L	3739	Standard
Sr	88	393.3	4.5				ug/L	78	Standard
C	12	153.3	3.8				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	75.0				mg/L	0	Standard
Dy	164	20473.5	4.3				mg/L	2	Standard
Ho-1	165	12675.3	1.6				mg/L	10	Standard
Er	166	10737.1	4.1				mg/L	23	Standard
I	127	13227.4	3.4				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.372	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.660	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.272
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	91.076
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606096406
Sample Date/Time: Tuesday, June 21, 2016 21:20:25
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60848.7	3.4				ug/L	60176	Standard
	Be	9	848.4	7.1	**1.1616**	0.108	9.3	ug/L	5	Standard
	Al	27	6018452.6	1.5	**45.3266**	0.962	2.1	ug/L	832	Standard
	Sc	45	29640.6	1.5				ug/L	25066	Standard
	Ti	47	4099.9	2.1	**21.1801**	0.616	2.9	ug/L	38	Standard
	V	51	132165.3	0.9	**22.2298**	0.427	1.9	ug/L	974	Standard
	Cr	52	138324.2	0.9	**20.9859**	0.510	2.4	ug/L	5792	Standard
	Cr	53	16679.2	2.2	**20.1440**	0.532	2.6	ug/L	347	Standard
	Mn	55	5769097.8	1.9	**908.7457**	30.297	3.3	ug/L	1164	Standard
	Co	59	130326.2	1.6	**21.5282**	0.614	2.9	ug/L	303	Standard
	Ni	60	50019.1	0.7	**27.8281**	0.578	2.1	ug/L	291	Standard
	Cu	65	47838.4	0.9	**26.8518**	0.165	0.6	ug/L	173	Standard
	Zn	66	97149.5	0.7	**94.1665**	1.182	1.3	ug/L	130	Standard
>	**Ge**	72	488085.6	1.5				ug/L	491724	Standard
	As	75	10945.8	1.2	**10.5404**	0.129	1.2	ug/L	-25	Standard
	Se	82	126.3	7.0	**1.1371**	0.072	6.3	ug/L	12	Standard
	Se-1	77	119.7	5.4	**1.0557**	0.069	6.6	ug/L	57	Standard
>	**Ga**	71	21567.0	2.2				mg/L	148	Standard
	Rb	85	186239.4	1.0				ug/L	18	Standard
	Y	89	601057.7	2.4				ug/L	401845	Standard
>	**Rh**	103	81.7	23.2				ug/L	10	Standard
	Mo	98	3186.2	0.9	**1.3649**	0.035	2.5	ug/L	12	Standard
	Ag	107	455.7	8.5	**0.0644**	0.006	9.6	ug/L	98	Standard
	Cd	111	524.0	6.4	**0.2832**	0.020	7.0	mg/L	11	Standard
	Cd	114	1252.9	3.3	**0.2784**	0.006	2.0	ug/L	21	Standard
>	**In**	115	530301.4	1.7				ug/L	547487	Standard
	Sn	118	516.7	6.3	**0.0287**	0.006	19.5	ug/L	450	Standard
	Sb	123	143.3	12.6	**0.0273**	0.005	17.6	ug/L	105	Standard
	Ba	135	1292682.2	0.4	**727.0559**	14.238	2.0	ug/L	111	Standard
	Ce	140	693916.1	1.8				ug/L	107	Standard
>	**Tb**	159	864495.5	2.4				ug/L	890342	Standard
	Ho	165	16118.6	0.6				ug/L	10	Standard
	Tl	203	1937.1	6.9	**0.2725**	0.018	6.6	ug/L	19	Standard
	Tl	205	1651.8	5.8	**0.2879**	0.017	5.8	ug/L	17	Standard
	Pb	206	129961.3	0.5	**28.7585**	0.109	0.4	ug/L	247	Standard
	Pb	207	107597.0	0.6	**26.1888**	0.063	0.2	ug/L	215	Standard
	Pb	208	436286.5	1.1	**28.3645**	0.441	1.6	ug/L	770	Standard
	U	238	5730.8	1.3	**1.0282**	0.019	1.9	ug/L	13	Standard
>	**Bi**	209	467215.7	0.6				ug/L	503143	Standard

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Na	23	5.0	100.0	**47.5230**	47.311	99.6	mg/L	2	Standard
Mg	24	1591.8	6.0	**1.8117**	0.138	7.6	mg/L	35	Standard
K	39	305.0	4.3	**1.1740**	0.072	6.1	mg/L	25	Standard
Ca	43	253.3	7.5	**36.8883**	2.607	7.1	mg/L	38	Standard
Fe	54	39612.5	0.8	**31.6600**	0.733	2.3	mg/L	126	Standard
Fe	57	9963.3	0.7	**32.1373**	0.629	2.0	mg/L	245	Standard
> **Sc-1**	45	29640.6	1.5				mg/L	25066	Standard
Cl	35	134083.4	1.7				ug/L	125857	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	10510.3	5.8				ug/L	1350	Standard
P	31	21156.4	3.0				ug/L	18393	Standard
S	34	4474.0	1.7				ug/L	3739	Standard
Sr	88	380.0	15.2				ug/L	78	Standard
C	12	116.7	24.7				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	50.0	87.2				mg/L	0	Standard
Dy	164	26535.5	1.2				mg/L	2	Standard
Ho-1	165	16118.6	0.6				mg/L	10	Standard
Er	166	14313.4	2.0				mg/L	23	Standard
I	127	12621.9	3.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.118	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.260	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.861
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.859
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606104801
Sample Date/Time: Tuesday, June 21, 2016 21:23:37
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59245.6	2.3				ug/L	60176	Standard
	Be	9	998.4	8.4	**1.4039**	0.121	8.6	ug/L	5	Standard
	Al	27	6367880.3	0.6	**49.2460**	0.840	1.7	ug/L	832	Standard
	Sc	45	32329.5	1.7				ug/L	25066	Standard
	Ti	47	1382.7	2.8	**6.7449**	0.291	4.3	ug/L	38	Standard
	V	51	119247.6	0.5	**19.3078**	0.442	2.3	ug/L	974	Standard
	Cr	52	109311.3	1.0	**15.7582**	0.462	2.9	ug/L	5792	Standard
	Cr	53	12982.2	1.5	**15.0048**	0.147	1.0	ug/L	347	Standard
	Mn	55	705485.5	0.6	**106.8784**	1.202	1.1	ug/L	1164	Standard
	Co	59	37775.0	1.2	**5.9772**	0.123	2.1	ug/L	303	Standard
	Ni	60	47756.8	1.1	**25.5883**	0.496	1.9	ug/L	291	Standard
	Cu	65	71575.7	0.3	**38.7654**	0.772	2.0	ug/L	173	Standard
	Zn	66	100398.2	0.5	**93.7869**	1.723	1.8	ug/L	130	Standard
>	**Ge**	72	506494.1	1.7				ug/L	491724	Standard
	As	75	1385.3	0.4	**1.3154**	0.019	1.4	ug/L	-25	Standard
	Se	82	173.9	2.4	**1.5403**	0.020	1.3	ug/L	12	Standard
	Se-1	77	199.0	5.6	**2.0859**	0.187	9.0	ug/L	57	Standard
>	**Ga**	71	14914.0	1.3				mg/L	148	Standard
	Rb	85	75430.7	1.8				ug/L	18	Standard
	Y	89	760970.7	1.5				ug/L	401845	Standard
>	**Rh**	103	35.0	42.9				ug/L	10	Standard
	Mo	98	1188.3	0.2	**0.4982**	0.006	1.3	ug/L	12	Standard
	Ag	107	1544.4	4.3	**0.2507**	0.008	3.1	ug/L	98	Standard
	Cd	111	2357.3	1.5	**1.2699**	0.003	0.2	mg/L	11	Standard
	Cd	114	5698.6	3.2	**1.2625**	0.055	4.3	ug/L	21	Standard
>	**In**	115	538711.6	1.4				ug/L	547487	Standard
	Sn	118	1520.1	9.1	**0.2236**	0.029	13.1	ug/L	450	Standard
	Sb	123	745.4	2.0	**0.1708**	0.006	3.3	ug/L	105	Standard
	Ba	135	233929.7	0.2	**129.4576**	1.611	1.2	ug/L	111	Standard
	Ce	140	1443759.2	1.4				ug/L	107	Standard
>	**Tb**	159	888846.2	1.9				ug/L	890342	Standard
	Ho	165	27959.1	1.2				ug/L	10	Standard
	Tl	203	902.7	2.9	**0.1193**	0.002	2.1	ug/L	19	Standard
	Tl	205	766.7	7.0	**0.1281**	0.008	6.1	ug/L	17	Standard
	Pb	206	138959.0	0.2	**29.3640**	0.336	1.1	ug/L	247	Standard
	Pb	207	113827.0	0.5	**26.4558**	0.247	0.9	ug/L	215	Standard
	Pb	208	467592.1	0.8	**29.0276**	0.195	0.7	ug/L	770	Standard
	U	238	27116.9	1.5	**4.6480**	0.064	1.4	ug/L	13	Standard
>	**Bi**	209	489310.6	0.9				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	71.7	14.5	**0.0373**	0.010	27.1	mg/L	35	Standard
K	39	178.3	19.1	**0.5783**	0.141	24.4	mg/L	25	Standard
Ca	43	95.0	10.5	**9.2082**	1.716	18.6	mg/L	38	Standard
Fe	54	10385.0	3.9	**7.5064**	0.345	4.6	mg/L	126	Standard
Fe	57	2965.3	4.1	**7.9807**	0.521	6.5	mg/L	245	Standard
> **Sc-1**	45	32329.5	1.7				mg/L	25066	Standard
Cl	35	130217.9	1.6				ug/L	125857	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	2376.9	10.6				ug/L	1350	Standard
P	31	19497.5	2.1				ug/L	18393	Standard
S	34	4082.2	1.2				ug/L	3739	Standard
Sr	88	118.3	16.0				ug/L	78	Standard
C	12	216.7	11.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	116.7	26.2				mg/L	0	Standard
Dy	164	44057.9	0.3				mg/L	2	Standard
Ho-1	165	27959.1	1.2				mg/L	10	Standard
Er	166	24553.2	1.7				mg/L	23	Standard
I	127	4534.0	1.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.454	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.004	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.397
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.251
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 21:26:49
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	58117.9	1.9				ug/L	60176	Standard
	Be	9	35621.8	0.6	**51.3767**	0.746	1.5	ug/L	5	Standard
	Al	27	6444420.2	2.2	**50.7919**	0.548	1.1	ug/L	832	Standard
	Sc	45	27070.9	3.8				ug/L	25066	Standard
	Ti	47	20949.1	1.3	**109.9419**	1.971	1.8	ug/L	38	Standard
	V	51	311526.8	1.1	**53.0494**	0.891	1.7	ug/L	974	Standard
	Cr	52	336768.4	1.0	**52.8658**	0.756	1.4	ug/L	5792	Standard
	Cr	53	42255.5	1.3	**52.0803**	0.758	1.5	ug/L	347	Standard
	Mn	55	329477.3	1.5	**52.0991**	0.877	1.7	ug/L	1164	Standard
	Co	59	312334.4	0.0	**52.0675**	0.408	0.8	ug/L	303	Standard
	Ni	60	91099.4	0.7	**51.2423**	0.593	1.2	ug/L	291	Standard
	Cu	65	91621.9	0.6	**51.9330**	0.724	1.4	ug/L	173	Standard
	Zn	66	52807.9	0.3	**51.4877**	0.269	0.5	ug/L	130	Standard
>	Ge	72	484191.6	0.8				ug/L	491724	Standard
	As	75	53524.2	1.1	**51.8184**	0.213	0.4	ug/L	-25	Standard
	Se	82	5349.2	1.5	**52.4511**	0.359	0.7	ug/L	12	Standard
	Se-1	77	3620.4	0.5	**51.3775**	0.420	0.8	ug/L	57	Standard
>	Ga	71	158.3	20.1				mg/L	148	Standard
	Rb	85	848.4	15.5				ug/L	18	Standard
	Y	89	427339.9	1.3				ug/L	401845	Standard
>	Rh	103	25.0	52.9				ug/L	10	Standard
	Mo	98	233982.7	0.9	**95.3240**	1.240	1.3	ug/L	12	Standard
	Ag	107	293588.5	0.2	**48.7224**	0.264	0.5	ug/L	98	Standard
	Cd	111	95530.5	0.8	**49.7490**	0.284	0.6	mg/L	11	Standard
	Cd	114	235659.9	1.2	**50.4432**	0.294	0.6	ug/L	21	Standard
>	In	115	559275.1	0.7				ug/L	547487	Standard
	Sn	118	260234.3	0.9	**48.9865**	0.748	1.5	ug/L	450	Standard
	Sb	123	209964.5	0.6	**48.3856**	0.196	0.4	ug/L	105	Standard
	Ba	135	91831.8	1.3	**48.9125**	0.680	1.4	ug/L	111	Standard
	Ce	140	770.0	93.3				ug/L	107	Standard
>	Tb	159	881548.3	1.4				ug/L	890342	Standard
	Ho	165	23.3	101.3				ug/L	10	Standard
	Tl	203	366327.0	0.5	**50.7112**	0.180	0.4	ug/L	19	Standard
	Tl	205	314340.8	1.0	**53.0357**	0.359	0.7	ug/L	17	Standard
	Pb	206	230993.2	0.2	**49.6830**	0.169	0.3	ug/L	247	Standard
	Pb	207	210145.0	1.0	**49.7218**	0.386	0.8	ug/L	215	Standard
	Pb	208	829897.6	0.4	**52.4503**	0.511	1.0	ug/L	770	Standard
	U	238	292600.4	0.9	**51.0190**	0.183	0.4	ug/L	13	Standard
>	Bi	209	481073.7	0.6				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3695.5	9.2	**4.6760**	0.585	12.5	mg/L	35	Standard
K	39	1030.0	1.3	**4.6474**	0.224	4.8	mg/L	25	Standard
Ca	43	45.0	50.9	**2.9507**	4.449	150.8	mg/L	38	Standard
Fe	54	5550.5	2.5	**4.7422**	0.063	1.3	mg/L	126	Standard
Fe	57	1498.4	8.9	**4.3770**	0.384	8.8	mg/L	245	Standard
> **Sc-1**	45	27070.9	3.8				mg/L	25066	Standard
Cl	35	132009.2	0.2				ug/L	125857	Standard
Kr	83	3.0	33.3				ug/L	1	Standard
Br	81	1363.4	15.7				ug/L	1350	Standard
P	31	20323.6	3.2				ug/L	18393	Standard
S	34	4162.2	3.1				ug/L	3739	Standard
Sr	88	85.0	27.0				ug/L	78	Standard
C	12	60.0	33.3				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	58.4	103.7				mg/L	2	Standard
Ho-1	165	23.3	101.3				mg/L	10	Standard
Er	166	33.3	17.3				mg/L	23	Standard
I	127	1211.7	9.1				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	102.753		
	Al	27	101.584		
	Sc	45			
	Ti	47	109.942		
	V	51	106.099		
	Cr	52	105.732		
	Cr	53			
	Mn	55	104.198		
	Co	59	104.135		
	Ni	60	102.485		
	Cu	65	103.866		
	Zn	66	102.975		
>	Ge	72		98.468	
	As	75	103.637		
	Se	82	104.902		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	95.324		
Ag	107	97.445		
Cd	111	99.498		
Cd	114			
> In	115		102.153	
Sn	118	97.973		
Sb	123	96.771		
Ba	135	97.825		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.422		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.901		
U	238	102.038		
> Bi	209		95.614	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 21:30:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57000.4	1.8				ug/L	60176	Standard
	Be	9	11.7	89.2	**0.0083**	0.015	186.0	ug/L	5	Standard
	Al	27	2620.3	47.2	**0.0127**	0.010	80.8	ug/L	832	Standard
	Sc	45	26027.3	2.6				ug/L	25066	Standard
	Ti	47	31.7	11.1	**-0.0438**	0.018	40.1	ug/L	38	Standard
	V	51	1068.5	10.9	**0.0089**	0.018	206.9	ug/L	974	Standard
	Cr	52	5732.8	2.3	**-0.0411**	0.022	53.1	ug/L	5792	Standard
	Cr	53	288.3	8.2	**-0.0602**	0.031	51.8	ug/L	347	Standard
	Mn	55	2013.2	47.5	**0.0986**	0.147	148.9	ug/L	1164	Standard
	Co	59	286.0	4.2	**-0.0024**	0.002	79.0	ug/L	303	Standard
	Ni	60	134.0	14.7	**-0.1162**	0.011	9.1	ug/L	291	Standard
	Cu	65	138.7	6.2	**-0.0202**	0.005	23.4	ug/L	173	Standard
	Zn	66	178.0	11.4	**-0.0638**	0.018	28.8	ug/L	130	Standard
>	**Ge**	72	491825.9	0.7				ug/L	491724	Standard
	As	75	-42.4	64.1	**-0.0065**	0.026	398.9	ug/L	-25	Standard
	Se	82	14.2	62.7	**0.0442**	0.085	192.5	ug/L	12	Standard
	Se-1	77	51.7	16.5	**0.0814**	0.121	148.7	ug/L	57	Standard
>	**Ga**	71	160.0	5.4				mg/L	148	Standard
	Rb	85	65.0	55.5				ug/L	18	Standard
	Y	89	420079.4	1.3				ug/L	401845	Standard
>	**Rh**	103	20.0	43.3				ug/L	10	Standard
	Mo	98	229.1	28.0	**0.0908**	0.025	27.9	ug/L	12	Standard
	Ag	107	121.7	14.1	**0.0053**	0.003	59.9	ug/L	98	Standard
	Cd	111	14.3	8.4	**0.0029**	0.001	24.4	mg/L	11	Standard
	Cd	114	32.1	64.9	**0.0026**	0.005	175.9	ug/L	21	Standard
>	**In**	115	546820.4	1.4				ug/L	547487	Standard
	Sn	118	666.7	23.3	**0.0548**	0.031	57.4	ug/L	450	Standard
	Sb	123	349.2	26.6	**0.0749**	0.023	30.5	ug/L	105	Standard
	Ba	135	222.0	49.7	**0.0657**	0.061	93.2	ug/L	111	Standard
	Ce	140	125.0	70.8				ug/L	107	Standard
>	**Tb**	159	852501.8	2.1				ug/L	890342	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	60.0	17.6	**0.0048**	0.001	29.7	ug/L	19	Standard
	Tl	205	38.3	39.8	**0.0075**	0.003	35.3	ug/L	17	Standard
	Pb	206	294.3	6.3	**0.0089**	0.003	35.8	ug/L	247	Standard
	Pb	207	245.7	12.3	**0.0066**	0.007	110.7	ug/L	215	Standard
	Pb	208	963.3	10.3	**0.0016**	0.007	416.4	ug/L	770	Standard
	U	238	48.0	16.7	**0.0076**	0.001	18.1	ug/L	13	Standard
>	**Bi**	209	476870.2	2.1				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	46.6	**0.0185**	0.027	145.6	mg/L	35	Standard
K	39	13.3	108.3	**-0.0485**	0.069	142.0	mg/L	25	Standard
Ca	43	36.7	20.8	**1.6572**	1.618	97.6	mg/L	38	Standard
Fe	54	138.9	10.0	**-0.0095**	0.014	151.2	mg/L	126	Standard
Fe	57	211.7	11.2	**-0.2847**	0.108	38.1	mg/L	245	Standard
> **Sc-1**	45	26027.3	2.6				mg/L	25066	Standard
Cl	35	131985.8	1.3				ug/L	125857	Standard
Kr	83	3.0	33.3				ug/L	1	Standard
Br	81	1333.4	5.0				ug/L	1350	Standard
P	31	20615.7	2.9				ug/L	18393	Standard
S	34	4127.2	2.0				ug/L	3739	Standard
Sr	88	78.3	32.8				ug/L	78	Standard
C	12	23.3	49.5				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.9	86.8				mg/L	2	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	10.0	173.2				mg/L	23	Standard
I	127	953.4	9.0				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.021	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85	
Y	89	
> Rh	103	
Mo	98	
Ag	107	
Cd	111	
Cd	114	
> In	115	99.878
Sn	118	
Sb	123	
Ba	135	
Ce	140	
> Tb	159	
Ho	165	
Tl	203	
Tl	205	
Pb	206	
Pb	207	
Pb	208	
U	238	
> Bi	209	94.778
Na	23	
Mg	24	
K	39	
Ca	43	
Fe	54	
Fe	57	
> Sc-1	45	
Cl	35	
Kr	83	
Br	81	
P	31	
S	34	
Sr	88	
C	12	
N	14	
Hg	202	
Dy	164	
Ho-1	165	
Er	166	
I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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2.3.3 Metals CVAA Data (Mercury)

2.3.3.1 Summary Data

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-01	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW8-060916	**Prep Method:**	7470A	**Prep Date:**	06/14/2016 10:23
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/16/2016 14:15
Workgroup #:	WG573072	**Analyst:**	PDM	**Run Date:**	06/16/2016 15:03
Collect Date:	06/09/2016 11:00	**Dilution:**	1	**File ID:**	M7.061616.150321
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-02	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18CPTMW26SW-060916	**Prep Method:**	7470A	**Prep Date:**	06/14/2016 10:23
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/16/2016 14:15
Workgroup #:	WG573072	**Analyst:**	PDM	**Run Date:**	06/16/2016 15:05
Collect Date:	06/09/2016 13:25	**Dilution:**	1	**File ID:**	M7.061616.150552
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060616-04	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW10F-060916	**Prep Method:**	7470A	**Prep Date:**	06/14/2016 10:23
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/16/2016 14:15
Workgroup #:	WG573072	**Analyst:**	PDM	**Run Date:**	06/16/2016 15:08
Collect Date:	06/09/2016 14:40	**Dilution:**	1	**File ID:**	M7.061616.150822
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16060616
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.3.3.2 QC Summary

Example Cold Vapor Mercury Calculations
Hydra AA Mercury Analyzer / CETAC M-7600 Quick Trace Mercury Analyzer

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and five standards.

2.0 Calculating the concentration (C) of an element in water using data from run log and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to Volume (mL)	40
Vi = Aliquot Volume (mL)	40
D = Manual dilution factor, if required (10X = 10)	1
Cx = Concentration of element in ppb (ug/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Ws} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to volume (mL)	40
Ws = Aliquot weight (g)	0.6
D = Manual dilution factor	1
Cx = Concentration of element in ug/kg	6.67

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

1 Cx = Concentration calculated as received (wet basis)	6.67
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	8.33

8.33 ug/kg = 0.00833 mg/kg

TCLP Non-Volatile

Analyst(s): AMA
Date: 06/13/16
Filter Lot #: 9486030
Microbac SOP: TCLP01 Rev #: 12

Analyst / Date		Analyst / Date	
AMA	6/13/16	CPD	6/14/16
Time On	Temp On °C	Time Off	Temp Off °C
1430	23.2	0817	21.9

Agitator Speed 30 ± 2 rpm ☑

Jug #	Sample #	Tests	Method	Fluid #	Matrix *	% Solid	Pretest pH Initial	Pretest pH Final	Int. Wt. (g)	Fluid Vol. (mL)	Final extract pH
14	06-0550-01	ME, SV, Pest, Herb	1311	FI-180	S	100	6.75	3.03	100.79	2016	5.23
D	06-0531-01	300	1312	SPLPF1 62			NA	NA	100.64	2012	9.60
	06-0532-01	300							50.77	1015	10.00
	-02	300							50.35	1007	9.95
	-03	300							50.70	1014	10.04
	-04	300							50.27	1005	9.95
25	06-0620-01	SV	1311	FI-180			8.84	1.86	100.78	2015	5.35
G-12	-02	SV		FI-180			10.25	1.96	100.48	2009	6.85
D	06-0633-01	ME		F2379			12.44	11.94	25.41	508	11.79
	06-0629-01	ME		FI-180			10.08	1.66	100.60	2012	5.14
NA	06-0537-01	ME, SV	1311	Fi 1	O	<0.5	NA	NA	100	100	6.00
NA	06-0535-01	ME, SV, Pest, Herb	1311	Fi 1	W	<0.5					10.00
NA	FBlk 1	ME, SV, Pest, Herb	1311	FI-180	NA	NA	NA	NA	100	100	4.88
	SPLPBlk 1	300	1312	SFI-62							4.22
	FBlk 2	ME	1311	F2-379							2.90

CPD 6/14/16

*Matrix Code: (S = solid, sand, soil or sludge) (P = paint) (O = organic) (W = water or aqueous waste)
D = Disposable plastic jug
TCLP Pretest weight will be 5.0 g (± 0.1) unless otherwise noted.
Temperature shall be maintained at 23° ± 2 for 18 ± 2 hours unless otherwise noted.

Comments: SX 06-0537-01 strong volatile odor, and 06-0535-01 soap odor.

Peer Review By: [signature]

Microbac Laboratories Inc.
Metals Digest Log

Workgroup: WG572607
Analyst: REK
Spike Analyst: REK
Method: 7470A
Run Date: 06/14/2016 10:23
Hotblock Start Temp: 94.98 @ 10:15
Hotblock End Temp: 94.9 @ 12:15
Instrument: HB2

SOP: ME404 Revison 17
Spike Solution: STD76587
Spike Witness: EMW
H2SO4 Lot #: COA18359
40 & 50 ML. DIGESTION TU COA18772
HNO3 Lot #: COA18905
KMnO4 1:1 Lot #: RGT37006
K2S2O8 1:1 Lot #: RGT37046
Mercury Water ICV Lot #: STD76589
HG H2O STDS 10PPM Lot #: STD76595

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Spike Amount	Due Date
1	WG572607-03	BLANK	1	40 mL	40 mL		
2	WG572434-01	FBLK1	17	4 mL	40 mL		
3	WG572434-02	FBLK2	17	4 mL	40 mL		
4	WG572607-04	LCS	1	40 mL	40 mL	4 mL	
5	L16060535-01	SAMP	17	4 mL	40 mL		06/20/16
6	L16060537-01	SAMP	17	1 mL	40 mL		06/20/16
7	L16060550-01	SAMP	17	4 mL	40 mL		06/16/16
8	WG572607-01	REF	1	40 mL	40 mL		
9	L16060564-01	RS01	1	40 mL	40 mL		06/20/16
10	L16060564-03	SAMP	1	40 mL	40 mL		06/20/16
11	WG572607-05	MS	1	36 mL	40 mL	4 mL	
12	L16060564-05	MS01	1	36 mL	40 mL	4 mL	06/20/16
13	WG572607-06	MSD	1	36 mL	40 mL	4 mL	
14	L16060564-07	SD01	1	36 mL	40 mL	4 mL	06/20/16
15	L16060616-01	SAMP	1	40 mL	40 mL		06/21/16
16	L16060616-02	SAMP	1	40 mL	40 mL		06/21/16
17	L16060616-04	SAMP	1	40 mL	40 mL		06/21/16
18	L16060629-01	SAMP	17	4 mL	40 mL		06/17/16
19	L16060633-01	SAMP	17	4 mL	40 mL		06/17/16
20	WG572607-02	REF	2	40 mL	40 mL		
21	L16060635-01	SAMP	2	40 mL	40 mL		06/21/16
22	L16060635-02	SAMP	2	40 mL	40 mL		06/21/16
23	L16060635-03	SAMP	2	40 mL	40 mL		06/21/16
24	L16060650-01	SAMP	1	40 mL	40 mL		06/24/16
25	L16060650-02	SAMP	1	40 mL	40 mL		06/24/16
26	L16060650-03	SAMP	1	40 mL	40 mL		06/24/16
27	L16060650-08	SAMP	1	40 mL	40 mL		06/24/16
28	WG572607-07	DUP	1	40 mL	40 mL		

L16060537-01	FILT. OIL

Analyst: REK

Reviewer: Erin Potter

HB_DIG - Modified 07/26/2012
PDF ID: 4807350
Report generated: 06/14/2016 14:08

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 061616B.CSV

Analyst1: PDM Analyst2: N/A

Method: 7470A/245.1 SOP: ME404 Rev: 17

Maintenance Log ID:

Calibration Std: STD76595 ICV Std: STD76589 Post Spike: STD76595

ICSA: N/A ICSAB: N/A Int. Std:

CCV: LLCCV: Tuning Sol :

Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 573072

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	M7.061616.140228	WG573073-01	Calibration Point		1		06/16/16 14:02
2	M7.061616.140459	WG573073-02	Calibration Point		1		06/16/16 14:04
3	M7.061616.140731	WG573073-03	Calibration Point		1		06/16/16 14:07
4	M7.061616.141003	WG573073-04	Calibration Point		1		06/16/16 14:10
5	M7.061616.141237	WG573073-05	Calibration Point		1		06/16/16 14:12
6	M7.061616.141510	WG573073-06	Calibration Point		1		06/16/16 14:15
7	M7.061616.141744	WG573073-07	Initial Calibration Verification		1		06/16/16 14:17
8	M7.061616.142015	WG573073-08	Initial Calib Blank		1		06/16/16 14:20
9	M7.061616.142248	WG573073-09	CCV		1		06/16/16 14:22
10	M7.061616.142518	WG573073-10	CCB		1		06/16/16 14:25
11	M7.061616.142749	WG572607-03	Method/Prep Blank	40/40	1		06/16/16 14:27
12	M7.061616.143020	WG572607-04	Laboratory Control S	40/40	1		06/16/16 14:30
13	M7.061616.143252	WG572434-01	Fluid Blank 1		1		06/16/16 14:32
14	M7.061616.143523	WG572434-02	Fluid Blank 2		1		06/16/16 14:35
15	M7.061616.143755	L16060535-01	FPL16027	4/40	1		06/16/16 14:37
16	M7.061616.144028	L16060537-01	FPL16026	1/40	1		06/16/16 14:40
17	M7.061616.144300	L16060550-01	J6F0362-01	4/40	1		06/16/16 14:43
18	M7.061616.144533	WG573072-01	Post Digestion Spike		1	L16060550-01	06/16/16 14:45
19	M7.061616.144806	WG572607-01	Reference Sample	40/40	1	L16060564-01	06/16/16 14:48
20	M7.061616.145040	L16060564-03	WBW-FD-06092016	40/40	1		06/16/16 14:50
21	M7.061616.145312	WG573073-11	CCV		1		06/16/16 14:53
22	M7.061616.145543	WG573073-12	CCB		1		06/16/16 14:55
23	M7.061616.145817	L16060564-05	WBW-MS-06092016	36/40	1	WG572607-05	06/16/16 14:58
24	M7.061616.150051	L16060564-07	WBW-MSD-06092016	36/40	1	WG572607-06	06/16/16 15:00
25	M7.061616.150321	L16060616-01	MW8-060916	40/40	1		06/16/16 15:03
26	M7.061616.150552	L16060616-02	18CPTMW26SW-060916	40/40	1		06/16/16 15:05
27	M7.061616.150822	L16060616-04	MW10F-060916	40/40	1		06/16/16 15:08
28	M7.061616.151053	L16060629-01	S6F0380-01	4/40	1		06/16/16 15:10
29	M7.061616.151325	L16060633-01	ALAN 17 BAGS	4/40	1		06/16/16 15:13
30	M7.061616.151557	WG572607-02	Reference Sample	40/40	1	L16060635-01	06/16/16 15:15
31	M7.061616.151829	WG572607-07	Duplicate	40/40	1	L16060635-01	06/16/16 15:18
32	M7.061616.152101	L16060635-02	OUTFALL 001	40/40	1		06/16/16 15:21
33	M7.061616.152333	WG573073-13	CCV		1		06/16/16 15:23
34	M7.061616.152604	WG573073-14	CCB		1		06/16/16 15:26

Page: 1 Approved: June 17, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 061616B.CSV

Analyst1: PDM Analyst2: N/A

Method: 7470A/245.1 SOP: ME404 Rev: 17

Maintenance Log ID:

Calibration Std: STD76595 ICV Std: STD76589 Post Spike: STD76595

ICSA: N/A ICSAB: N/A Int. Std:

CCV: LLCCV: Tuning Sol :

Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 573072

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	M7.061616.152837	L16060635-03	CATCH BASIN 29	40/40	1		06/16/16 15:28
36	M7.061616.153110	L16060650-01	MW1-061016	40/40	1		06/16/16 15:31
37	M7.061616.153343	L16060650-02	MW3-061016	40/40	1		06/16/16 15:33
38	M7.061616.153616	L16060650-03	17WW08-061016	40/40	1		06/16/16 15:36
39	M7.061616.153847	L16060650-08	18WW24F-061016	40/40	1		06/16/16 15:38
40	M7.061616.154405	WG573072-02	Post Digestion Spike		1	L16060650-08	06/16/16 15:44
41	M7.061616.154636	WG573072-03	Post Digestion Spike		1	L16060564-01	06/16/16 15:46
42	M7.061616.154908	WG573073-15	CCV		1		06/16/16 15:49
43	M7.061616.155139	WG573073-16	CCB		1		06/16/16 15:51

Page: 2 Approved: June 17, 2016

Kim H. Rhoden

Microbac Laboratories Inc.

Data Checklist

Date: 16-JUN-2016
Analyst: AMA
Analyst: NA
Method: 7470A/245.1
Instrument: CVAA1
Curve Workgroup: 573073
Runlog ID: 75732
Analytical Workgroups: 573072

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	0535, 0537, 0616, 0650
Client Forms	X
Level X	
Level 3	0535, 0537
Level 4	0616, 0650
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	AMA
Secondary Reviewer	KHR
Comments	

Primary Reviewer:
17-JUN-2016
Alexandra M. Alfred

Secondary Reviewer:
17-JUN-2016
Kym H. Rhoden

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-17-2016 14:46:02

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 7470A

AAB#: WG573072

Login Number: L16060616

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW8-060916	01	06/09/16					06/14/2016	5	28		06/16/16	7.2	28	
18CPTMW26SW-060916	02	06/09/16					06/14/2016	4.9	28		06/16/16	7.1	28	
MW10F-060916	04	06/09/16					06/14/2016	4.8	28		06/16/16	7	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4812741
Report generated 06/17/2016 13:48

METHOD BLANK SUMMARY

Login Number: L16060616
Blank File ID: M7.061616.142749
Prep Date: 06/14/16 10:23
Analyzed Date: 06/16/16 14:27
Analyst: PDM

Work Group: WG573072
Blank Sample ID: WG572607-03
Instrument ID: CVAA1
Method: 7470A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572607-04	M7.061616.143020	06/16/16 14:30	01
MW8-060916	L16060616-01	M7.061616.150321	06/16/16 15:03	01
18CPTMW26SW-060916	L16060616-02	M7.061616.150552	06/16/16 15:05	01
MW10F-060916	L16060616-04	M7.061616.150822	06/16/16 15:08	01
DUP	WG572607-07	M7.061616.151829	06/16/16 15:18	01

Report Name: BLANK_SUMMARY
PDF File ID: 4812742
Report generated 06/17/2016 13:48

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060616 Prep Date: 06/14/16 10:23 Sample ID: WG572607-03
Instrument ID: CVAA1 Run Date: 06/16/16 14:27 Prep Method: 7470A
File ID: M7.061616.142749 Analyst: PDM Method: 7470A
Workgroup (AAB#): WG573072 Matrix: Water Units: mg/L
Contract #: Cal ID: CVAA1-16-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Mercury	0.000100	0.000400	0.000100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4812743
17-JUN-2016 13:48

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060616 Run Date: 06/16/2016 Sample ID: WG572607-04
Instrument ID: CVAA1 Run Time: 14:30 Prep Method: 7470A
File ID: M7.061616.143020 Analyst: PDM Method: 7470A
Workgroup (AAB#): WG573072 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76587 Cal ID: CVAA1-16-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Mercury	0.00400	0.00443	111	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4812744
Report generated: 06/17/2016 13:48

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060616 Cal ID: CVAA1 - Worknum: WG573072
Instrument ID: CVAA1 Contract #: Method: 7470A
Parent ID: WG572607-01 File ID: M7.061616.144806 Dil: 1 Matrix: WATER
Sample ID: WG572607-05 MS File ID: M7.061616.145817 Dil: 1 Units: mg/L
Sample ID: WG572607-06 MSD File ID: M7.061616.150051 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Mercury	ND	0.00444	- 0.00000478	-0.108	0.00444	- 0.00000422	-0.0950	-12.3	80 - 120	20	*

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4812745
Report generated 06/17/2016 13:48

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060616 **Worknum:** WG573072
Instrument ID: CVAA1 **Method:** 7470A
Post Spike ID: WG573072-02 **File ID:** M7.061616.154405 **Dil:** 1 **Units:** ug/L
Sample ID: L16060650-08 **File ID:** M7.061616.153847 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MERCURY	1.04		0	U	1	103.9	85 - 115	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4812740
Report generated: 06/17/2016 13:48

Microbac Laboratories Inc.
INITIAL CALIBRATION SUMMARY

Login Number: L16060616
Analytical Method: 7470A
ICAL Worknum: WG573073

Workgroup (AAB#): WG573072
Instrument ID: CVAA1
Initial Calibration Date: 06/16/2016 14:15

Analyte	WG573073-01		WG573073-02		WG573073-03		WG573073-04		WG573073-05		WG573073-06	
	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT
Mercury	0	77.17	0.200	3002	1.00	14230	2.00	28260	5.00	69600	10.0	132600

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4812746
Report generated 06/17/2016 13:48

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060616
Analytical Method: 7470A
ICAL Worknum: WG573073

Workgroup (AAB#): WG573072
Instrument ID: CVAA1
Initial Calibration Date: 06/16/2016 14:15

Analyte	R	Q
Mercury	0.9995	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4812746
Report generated 06/17/2016 13:48

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060616
Instrument ID: CVAA1
File ID: M7.061616.142015
Workgroup (AAB#): WG573072
Matrix: WATER

Run Date: 06/16/2016
Run Time: 14:20
Analyst: PDM
Cal ID: CVAA1 - 16-JUN-16

Sample ID: WG573073-08
Method: 7470A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
MERCURY	.1	.4	.1	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4812748
Report generated 06/17/2016 13:48

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573073-10
Instrument ID: CVAA1
Run Time: 14:25
Method: 7470A
File ID: M7.061616.142518
Analyst: PDM
Units: ug/L
Workgroup (AAB#): WG573072
Cal ID: CVAA1 - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812750
Report generated 06/17/2016 13:48

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573073-12
Instrument ID: CVAA1
Run Time: 14:55
Method: 7470A
File ID: M7.061616.145543
Analyst: PDM
Units: ug/L
Workgroup (AAB#): WG573072
Cal ID: CVAA1 - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812750
Report generated 06/17/2016 13:48

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573073-14
Instrument ID: CVAA1
Run Time: 15:26
Method: 7470A
File ID: M7.061616.152604
Analyst: PDM
Units: ug/L
Workgroup (AAB#): WG573072
Cal ID: CVAA1 - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812750
Report generated 06/17/2016 13:48

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573073-16
Instrument ID: CVAA1
Run Time: 15:51
Method: 7470A
File ID: M7.061616.155139
Analyst: PDM
Units: ug/L
Workgroup (AAB#): WG573072
Cal ID: CVAA1 - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812750
Report generated 06/17/2016 13:48

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573073-07
Instrument ID: CVAA1
Run Time: 14:17
Method: 7470A
File ID: M7.061616.141744
Analyst: PDM
Units: ug/L
Workgroup (AAB#): WG573072
Cal ID: CVAA1 - 16-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Mercury		2	2.07	103	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4812747
Report generated 06/17/2016 13:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573073-09
Instrument ID: CVAA1
Run Time: 14:22
Method: 7470A
File ID: M7.061616.142248
Analyst: PDM
QC Key: DOD4
Workgroup (AAB#): WG573072
Cal ID: CVAA1 - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00205	mg/L	103	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812749
Report generated 06/17/2016 13:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573073-11
Instrument ID: CVAA1
Run Time: 14:53
Method: 7470A
File ID: M7.061616.145312
Analyst: PDM
QC Key: DOD4
Workgroup (AAB#): WG573072
Cal ID: CVAA1 - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00215	mg/L	107	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812749
Report generated 06/17/2016 13:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573073-13
Instrument ID: CVAA1
Run Time: 15:23
Method: 7470A
File ID: M7.061616.152333
Analyst: PDM
QC Key: DOD4
Workgroup (AAB#): WG573072
Cal ID: CVAA1 - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00195	mg/L	97.3	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812749
Report generated 06/17/2016 13:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060616
Run Date: 06/16/2016
Sample ID: WG573073-15
Instrument ID: CVAA1
Run Time: 15:49
Method: 7470A
File ID: M7.061616.154908
Analyst: PDM
QC Key: DOD4
Workgroup (AAB#): WG573072
Cal ID: CVAA1 - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00199	mg/L	99.5	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812749
Report generated 06/17/2016 13:48

2.3.3.3 Raw Data

PDM CVAA1 245.1/7470/7471

Report Generated By CETAC QuickTrace
Analyst: VOA
Worksheet file: C:\Program Files (x86)\QuickTrace\Worksheets\061616B.wsz
Date Started: 6/16/2016 1:56:48 PM
Comment:

Results

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
Standard #0					STD	06/16/16 02:02:28 pm	0.0000	77	17.70		1.00
Replicates	68.6	96.4	77.4	66.4							
Standard #1 (0.2 ug/L)					STD	06/16/16 02:04:59 pm	0.2000	3002	1.37		1.00
Replicates	2957.3	2985.0	3013.7	3053.4							
Standard #2 (1.0 ug/L)					STD	06/16/16 02:07:31 pm	1.0000	14233	2.74		1.00
Replicates	13767.0	14078.2	14436.7	14650.8							
Standard #3 (2.0 ug/L)					STD	06/16/16 02:10:03 pm	2.0000	28260	0.21		1.00
Replicates	28177.4	28303.2	28307.2	28254.1							
Standard #4 (5.0 ug/L)					STD	06/16/16 02:12:37 pm	5.0000	69596	0.17		1.00
Replicates	69421.7	69619.7	69676.5	69664.9							
Standard #5 (10.0 ug/L)					STD	06/16/16 02:15:10 pm	10.0000	132584	0.59		1.00
Replicates	131524.8	132472.7	133031.0	133307.0							

Calibration

Equation: A = 1014.787 + 13278.240C
R2: 0.99939
SEE: 1420.4820
Flags:

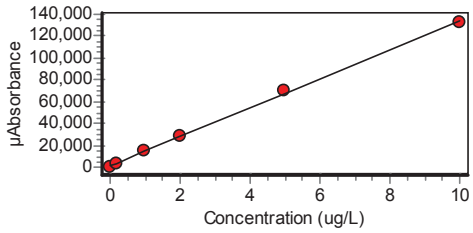

ICV					ICV	06/16/16 02:17:44 pm	2.0690	28486	0.15		1.00
Replicates	28443.8	28541.8	28496.7	28462.5							
% Recovery	103.45										

Approved: June 17, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
ICB					ICB	06/16/16 02:20:15 pm	-0.0754	13	100.37		1.00
Replicates	11.1	5.2	3.7	32.1							
CCV					CCV	06/16/16 02:22:48 pm	2.0500	28237	0.36		1.00
Replicates	28092.3	28241.2	28295.4	28317.5							
% Recovery	102.51										
CCB					CCB	06/16/16 02:25:18 pm	-0.0729	47	22.22		1.00
Replicates	35.9	47.2	61.2	44.7							
WG572607-03					MB	06/16/16 02:27:49 pm	-0.0727	49	17.41		1.00
Replicates	52.1	59.2	47.4	38.7							
WG572607-04					LCS	06/16/16 02:30:20 pm	4.4320	59866	0.24		1.00
Replicates	59655.9	59896.4	59975.4	59936.9							
% Recovery	110.80										
WG572434-01					UNK	06/16/16 02:32:52 pm	-0.0787	-31	48.70		1.00
Replicates	-39.9	-19.2	-46.4	-16.5							
WG572434-02					UNK	06/16/16 02:35:23 pm	-0.0744	27	34.73		1.00
Replicates	40.7	19.6	21.9	26.7							
L1606053501					UNK	06/16/16 02:37:55 pm	-0.0638	168	9.75		1.00
Replicates	151.8	185.4	157.1	179.1							
L1606053701					UNK	06/16/16 02:40:28 pm	0.1418	2897	5.42		1.00
Replicates	2705.0	2847.6	2967.3	3069.4							
L1606055001					UNK	06/16/16 02:43:00 pm	-0.0827	-83	19.72		1.00
Replicates	-81.4	-60.8	-98.4	-91.3							
WG572					SPK	06/16/16 02:45:33 pm	1.0590	15072	0.80		1.00
Replicates	15161.4	15167.3	15052.5	14908.7							
% Recovery	114.14										
L1606056401					UNK	06/16/16 02:48:06 pm	-0.0308	606	3.59		1.00
Replicates	581.4	597.1	612.3	632.5							

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Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1606056403					UNK	06/16/16 02:50:40 pm	-0.0344	558	1.89		1.00
Replicates	573.2	551.1	551.6	554.6							
CCV					CCV	06/16/16 02:53:12 pm	2.1450	29498	0.49		1.00
Replicates	29285.9	29529.8	29606.5	29570.2							
% Recovery	107.26										
CCB					CCB	06/16/16 02:55:43 pm	-0.0721	57	24.06		1.00
Replicates	59.0	41.5	75.0	54.5							
WG572607-05					MSK	06/16/16 02:58:17 pm	-0.0043	958	1.62	N	1.00
Replicates	945.6	946.5	962.0	978.5							
% Recovery	0.75										
WG572607-06					MSDUP	06/16/16 03:00:51 pm	-0.0038	964	1.56	D	1.00
Replicates	946.2	973.6	958.1	979.3							
% Recovery	0.77	RPD -11.47									
L1606061601					UNK	06/16/16 03:03:21 pm	-0.0689	99	17.37		1.00
Replicates	76.3	118.1	101.6	101.5							
L1606061602					UNK	06/16/16 03:05:52 pm	-0.0694	93	4.93		1.00
Replicates	99.1	94.7	91.2	88.4							
L1606061604					UNK	06/16/16 03:08:22 pm	-0.0715	65	21.79		1.00
Replicates	61.5	51.2	85.0	63.4							
L1606062901					UNK	06/16/16 03:10:53 pm	-0.0738	34	37.19		1.00
Replicates	41.7	26.8	47.8	20.4							
L1606063301					UNK	06/16/16 03:13:25 pm	-0.0700	85	13.73		1.00
Replicates	100.7	75.3	77.3	88.1							
L1606063501					UNK	06/16/16 03:15:57 pm	-0.0720	59	32.38		1.00
Replicates	53.2	53.4	85.8	41.8							
WG572607-07					DUP	06/16/16 03:18:29 pm	-0.0725	52	18.54		1.00
Replicates	49.4	44.9	46.9	65.9							
		RPD 0.00									

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Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1606063502					UNK	06/16/16 03:21:01 pm	-0.0713	68	28.27		1.00
Replicates	55.2	78.1	49.8	90.9							
CCV					CCV	06/16/16 03:23:33 pm	1.9450	26837	0.60		1.00
Replicates	26641.3	26776.5	26924.3	27006.6							
% Recovery	97.24										
CCB					CCB	06/16/16 03:26:04 pm	-0.0744	27	70.36		1.00
Replicates	22.1	47.2	3.0	35.4							
L1606063503					UNK	06/16/16 03:28:37 pm	-0.0667	129	5.00		1.00
Replicates	125.1	122.7	137.2	130.5							
L1606065001					UNK	06/16/16 03:31:10 pm	-0.0698	89	6.05		1.00
Replicates	86.0	84.9	96.5	87.0							
L1606065002					UNK	06/16/16 03:33:43 pm	-0.0674	120	12.89		1.00
Replicates	114.1	141.9	118.9	105.7							
L1606065003					UNK	06/16/16 03:36:16 pm	-0.0667	129	3.60		1.00
Replicates	131.1	132.7	122.2	128.3							
L1606065008					UNK	06/16/16 03:38:47 pm	-0.0732	42	37.91		1.00
Replicates	24.8	48.9	34.2	61.2							
WG572-02					SPK	06/16/16 03:44:05 pm	1.0390	14814	0.54		1.00
Replicates	14719.8	14774.9	14876.4	14885.8							
% Recovery	111.25										
WG572-02					SPK	06/16/16 03:46:36 pm	0.5972	8945	1.15	W	1.00
Replicates	8796.5	8955.3	9019.5	9007.8							
% Recovery	67.05										
CCV					CCV	06/16/16 03:49:08 pm	1.9900	27442	0.33		1.00
Replicates	27310.5	27453.2	27488.6	27515.4							
% Recovery	99.51										
CCB					CCB	06/16/16 03:51:39 pm	-0.0754	14	170.01		1.00
Replicates	21.6	41.6	-15.3	8.2							

Approved: June 17, 2016
Alexandra M. Alfred

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
June 27, 2016

001 - BIO-CHEM TESTING WVDEP 220	002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental	004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES	006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES	008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND	AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER	ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS	ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED	AWE - ANDREW W. ESSIG
AZH - AFTER HOURS	BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE	BLG - BRENDA L. GREENWALT
BRG - BRENDA R. GREGORY	CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS	CEB - CHAD E. BARNES
CJQ - Cameron J. Quick	CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD	CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS	CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL	DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE	DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON	DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE	DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR	ECL - ERIC C. LAWSON
EMW - ERIC M. WILKEN	ENY - EMILY N. YOAK
ERP - ERIN R. PORTER	FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY	JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH	JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS	JLD - JESSICA L. DELONG
JLL - JOHN L. LENT	JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON	JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES	JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON	KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH	KEB - KATIE E. BARNES
KHR - KIM H. RHODES	KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON	KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS	LEC - LAURA E. CARPENTER
LKN - LINDA K. NEDEFF	LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA	MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON	MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN	MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE	MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR	MSW - MATT S. WILSON
NPH - Natalie P. Hart	PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE	PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB	QX - QIN XU
RAH - ROY A. HALSTEAD	REK - BOB E. KYER
RLB - BOB BUCHANAN	RM - RAYMOND MALEKE
RNP - RICK N. PETTY	RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG	SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY	SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF	TB - TODD BOYLE
TGF - TIM G. FELTON	TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS	VC - VICKI COLLIER
WJB - WILL J. BEASLEY	WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG	XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
June 27, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
June 27, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Debra Richmann
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD	pH:	
Project Name/Location:	Longhorn		
Project Number:	60274185.0013BH 1824 MR10		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Total Metals	1,4 - DIOXANE					SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 18/24	MW8-060916			6/9/16	1100		✓	W	7	✓	✓	✓	✓									
	18CPTMW26SW-060916			6/9/16	1325		✓	W	7	✓	✓	✓	✓									
	MW10-060916			6/9/16	1430		✓	W	6	✓	✓		✓									
	MW10F-060916			6/9/16	1430		✓	W	1			✓										
	TRIP BLANK			6/9/16			✓	W	2	✓												

Comments: **STANDARD TAT**

Relinquished by: (Signature) Scott Beesinger	Date 6/9/16	Time 1545	Received by: (Signature)	Received by: (Signature)	Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	Received for Laboratory (Signature)		Remarks:

Microbac OVD
Received: 06/10/2016 10:46
By: BRENDA GREGORY
221000087048
Brenda Gregory

*Homogenize all composite samples prior to analysis

Distribution: QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060616
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 21-JUN-2016

Samplenum	Container ID	Products
L16060616-01	758415	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:09	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	
3	STORE	ORG4	A1	24-JUN-2016 07:32	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:09	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	
3	STORE	ORG4	A1	24-JUN-2016 07:32	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:09	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	
3	STORE	ORG4	A1	24-JUN-2016 07:32	CLS	AWE	

Samplenum	Container ID	Products
L16060616-01	758416	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	10-JUN-2016 15:09	CLS		
2	PREP	W1	EXT	13-JUN-2016 15:30	CPD	BRG	
3	SUBBED	EXT	DISP	14-JUN-2016 10:05	BJO	BJO	
4	ANALYZ*	EXT	SEMI	20-JUN-2016 12:17	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	10-JUN-2016 15:09	CLS		
2	STORE	W1	A1	24-JUN-2016 08:22	BRG	BRG	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060616
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 21-JUN-2016

Samplenum	Container ID	Products
L16060616-01	758417	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	10-JUN-2016 15:09	CLS		
2	ANALYZ	W1	SEM	11-JUN-2016 10:50	WTD	CLS	
3	STORE	SEM	A1	12-JUN-2016 22:06	AZH	WTD	

Samplenum	Container ID	Products
L16060616-01	758418	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	10-JUN-2016 15:09	CLS		
2	PREP	W1	DIG	10-JUN-2016 17:04	AC	BRG	
3	STORE	DIG	A1	15-JUN-2016 13:43	BRG	ERP	
4	ANALYZ*	DIG	METALS	16-JUN-2016 09:44	JYH	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060616-02	758419	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:09	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	
3	STORE	ORG4	A1	24-JUN-2016 07:32	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:09	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	
3	STORE	ORG4	A1	24-JUN-2016 07:32	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:09	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	
3	STORE	ORG4	A1	24-JUN-2016 07:32	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060616
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 21-JUN-2016

Samplenum	Container ID	Products
L16060616-02	758420	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	10-JUN-2016 15:09	CLS		
2	PREP	W1	EXT	13-JUN-2016 15:30	CPD	BRG	
3	SUBBED	EXT	DISP	14-JUN-2016 10:02	BJO	BJO	
4	ANALYZ*	EXT	SEMI	20-JUN-2016 12:17	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	10-JUN-2016 15:09	CLS		
2	STORE	W1	A1	24-JUN-2016 08:45	BRG	BRG	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060616-02	758421	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	10-JUN-2016 15:09	CLS		
2	ANALYZ	W1	SEM	11-JUN-2016 10:50	WTD	CLS	
3	STORE	SEM	A1	12-JUN-2016 22:05	AZH	WTD	

Samplenum	Container ID	Products
L16060616-02	758422	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	10-JUN-2016 15:09	CLS		
2	PREP	W1	DIG	10-JUN-2016 17:04	AC	BRG	
3	STORE	DIG	A1	15-JUN-2016 13:43	BRG	ERP	
4	ANALYZ*	DIG	METALS	16-JUN-2016 09:44	JYH	AC	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060616
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 21-JUN-2016

Samplenum	Container ID	Products
L16060616-03	758423	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:09	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	
3	STORE	ORG4	A1	24-JUN-2016 07:32	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:09	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	
3	STORE	ORG4	A1	24-JUN-2016 07:32	CLS	AWE	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:09	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	
3	STORE	ORG4	A1	24-JUN-2016 07:32	CLS	AWE	

Samplenum	Container ID	Products
L16060616-03	758424	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	10-JUN-2016 15:09	CLS		
2	PREP	W1	EXT	13-JUN-2016 15:30	CPD	BRG	
3	SUBBED	EXT	DISP	14-JUN-2016 10:03	BJO	BJO	
4	ANALYZ*	EXT	SEMI	20-JUN-2016 12:17	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	10-JUN-2016 15:09	CLS		
2	STORE	W1	A1	24-JUN-2016 08:23	BRG	BRG	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060616
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 21-JUN-2016

Samplenum	Container ID	Products
L16060616-03	758425	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	10-JUN-2016 15:09	CLS		
2	ANALYZ	W1	SEM	11-JUN-2016 10:50	WTD	CLS	
3	STORE	SEM	A1	12-JUN-2016 22:05	AZH	WTD	

Samplenum	Container ID	Products
L16060616-04	758426	CD-MS CO-MS CR-MS CU-MS FE HG K MG MN-MS NA NI

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	10-JUN-2016 15:09	CLS		
2	PREP	W1	DIG	10-JUN-2016 17:04	AC	BRG	
3	STORE	DIG	A1	15-JUN-2016 13:43	BRG	ERP	
4	ANALYZ*	DIG	METALS	16-JUN-2016 09:44	JYH	AC	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060616-05	758427	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:09	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	
3	STORE	ORG4	A1	24-JUN-2016 07:32	CLS	AWE	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	10-JUN-2016 15:09	CLS		
2	ANALYZ	V1	ORG4	10-JUN-2016 16:03	TMB	BRG	
3	STORE	ORG4	A1	24-JUN-2016 07:32	CLS	AWE	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16060650

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Michelle Taylor – Client Services Specialist
(740) 373-4071
Michelle.Taylor@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on July 01 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
0014197	H	4.0		J2317165045	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
MW1-061016	L16060650-01	06/10/2016 07:55	06/11/2016 11:18
MW3-061016	L16060650-02	06/10/2016 09:05	06/11/2016 11:18
17WW08-061016	L16060650-03	06/10/2016 10:10	06/11/2016 11:18
130-061016	L16060650-04	06/10/2016 11:05	06/11/2016 11:18
130FD-061016	L16060650-05	06/10/2016 11:05	06/11/2016 11:18
MW12-061016	L16060650-06	06/10/2016 13:30	06/11/2016 11:18
18WW24-061016	L16060650-07	06/10/2016 14:40	06/11/2016 11:18
18WW24F-061016	L16060650-08	06/10/2016 14:40	06/11/2016 11:18
TRIP BLANK	L16060650-09	06/10/2016 00:01	06/11/2016 11:18

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
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Microbac REPORT L16060650
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.0 Summary Data

1.1 Narratives

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	8260
Prep Batch Number(s):	572855, 573051, 573259	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-06-23 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden	Franci Bolden	Analyst I	2016-06-23 18:56:19

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	8260
Prep Batch Number(s):	572855, 573051, 573259	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-06-23 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	8260
Prep Batch Number(s):	572855, 573051, 573259	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-06-23 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	8260
Prep Batch Number(s):	572855, 573051, 573259	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-06-23 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	8260
Prep Batch Number(s):	572855, 573051, 573259	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-06-23 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	8260
Prep Batch Number(s):	572855, 573051, 573259	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-06-23 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1)2-Hexanone exceeded the UCL in the CCV analyzed 06/17/2016 on HPMS11.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG573791	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-24 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Wade DeLong	Wade DeLong	Chemist I	2016-06-24 15:07:27

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG573791	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-24 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG573791	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-24 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG573791	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-24 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG573791	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-24 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG573791	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-24 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572929	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-07-01 00:24:40

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572929	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?		X			ER#2
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572929	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572929	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			ER#1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572929	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572929	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - The low level continuing calibration verification analyzed on 23-Jun-2016 at 15:12 yielded a recovery for selenium that was above the acceptance criteria. However, all client samples yielded results for selenium that were below the reporting detection limit. With permission from project manager, no further action was taken.

ER#2 - Client sample 01 required dilution analysis in order to obtain results for calcium, iron, magnesium, and sodium within the calibration range. Client sample 02 required dilution analysis in order to obtain results for calcium and sodium within the calibration range. Client sample 03 required dilution analysis in order to obtain results for iron and sodium within the calibration range. Client sample 08 required dilution analysis in order to obtain a result for sodium within the calibration range.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG572730,WG573483	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-07-01 00:20:24

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG572730,WG573483	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?		X			ER#3
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?		X			ER#1
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG572730,WG573483	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		X			ER#2
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG572730,WG573483	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG572730,WG573483	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG572730,WG573483	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - The method blank on 16-JUN-2016 yielded results for arsenic and barium that exceeded the reporting detection limit. All QA/QC and client samples 03 and 08 were redigested and reanalyzed for arsenic and barium with a compliant method blank. The latter results were reported under WG573483.

ER#2 - The laboratory control sample analysis performed on 16-JUN-2016 yielded a noncompliant result for silver. All QA/QC and client samples were redigested and reanalyzed for silver with a compliant LCS. The latter results were reported under WG573483.

ER#3 - Client sample 01 required dilution analyses in order to obtain results for barium, chromium, manganese, and nickel within the calibration range. Client sample 02 required dilution analyses in order to obtain results for barium and manganese within the calibration range. Client sample 03 required dilution analyses in order to obtain results for chromium and manganese within the calibration range. Client sample 08 required dilution analysis in order to obtain a result for manganese within the calibration range.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572607	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-07-01 00:19:10

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572607	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572607	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572607	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572607	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060650
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572607	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	MW1-061016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG572855	**Analyst:**	JDS	**Run Date:**	06/16/2016 01:56
Collect Date:	06/10/2016 07:55	**Dilution:**	10	**File ID:**	11M12671
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	50.0	U	100	50.0	25.0
Benzene	71-43-2	2.09	J	10.0	2.50	1.25
Bromobenzene	108-86-1	2.50	U	10.0	2.50	1.25
Bromochloromethane	74-97-5	4.00	U	10.0	4.00	2.00
Bromodichloromethane	75-27-4	5.00	U	10.0	5.00	2.50
Bromoform	75-25-2	10.0	U	20.0	10.0	5.00
Bromomethane	74-83-9	10.0	U	20.0	10.0	5.00
2-Butanone	78-93-3	50.0	U	100	50.0	25.0
n-Butylbenzene	104-51-8	5.00	U	10.0	5.00	2.50
sec-Butylbenzene	135-98-8	5.00	U	10.0	5.00	2.50
tert-Butylbenzene	98-06-6	5.00	U	10.0	5.00	2.50
Carbon disulfide	75-15-0	10.0	U	20.0	10.0	5.00
Carbon tetrachloride	56-23-5	5.00	U	10.0	5.00	2.50
Chlorobenzene	108-90-7	2.50	U	10.0	2.50	1.25
Chlorodibromomethane	124-48-1	5.00	U	10.0	5.00	2.50
Chloroethane	75-00-3	10.0	U	20.0	10.0	5.00
Chloromethane	74-87-3	10.0	U	20.0	10.0	5.00
2-Chlorotoluene	95-49-8	2.50	U	10.0	2.50	1.25
4-Chlorotoluene	106-43-4	5.00	U	10.0	5.00	2.50
1,2-Dibromo-3-chloropropane	96-12-8	20.0	U	50.0	20.0	10.0
1,2-Dibromoethane	106-93-4	5.00	U	10.0	5.00	2.50
Dibromomethane	74-95-3	5.00	U	10.0	5.00	2.50
1,2-Dichlorobenzene	95-50-1	2.50	U	10.0	2.50	1.25
1,3-Dichlorobenzene	541-73-1	5.00	U	10.0	5.00	2.50
1,4-Dichlorobenzene	106-46-7	2.50	U	10.0	2.50	1.25
Dichlorodifluoromethane	75-71-8	5.00	U	10.0	5.00	2.50
1,1-Dichloroethane	75-34-3	2.50	U	10.0	2.50	1.25
1,2-Dichloroethane	107-06-2	138		10.0	5.00	2.50
1,1-Dichloroethene	75-35-4	7.50	J	20.0	10.0	5.00
cis-1,2-Dichloroethene	156-59-2	1120		10.0	5.00	2.50
trans-1,2-Dichloroethene	156-60-5	3.11	J	10.0	5.00	2.50
1,2-Dichloropropane	78-87-5	4.00	U	10.0	4.00	2.00

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,3-Dichloropropane	142-28-9	4.00	U	10.0	4.00	2.00
2,2-Dichloropropane	594-20-7	5.00	U	10.0	5.00	2.50
cis-1,3-Dichloropropene	10061-01-5	5.00	U	10.0	5.00	2.50
trans-1,3-Dichloropropene	10061-02-6	10.0	U	20.0	10.0	5.00
1,1-Dichloropropene	563-58-6	5.00	U	10.0	5.00	2.50
Ethylbenzene	100-41-4	5.00	U	10.0	5.00	2.50
2-Hexanone	591-78-6	50.0	U	100	50.0	25.0
Hexachlorobutadiene	87-68-3	5.00	U	10.0	5.00	2.50
Isopropylbenzene	98-82-8	5.00	U	10.0	5.00	2.50
p-Isopropyltoluene	99-87-6	5.00	U	10.0	5.00	2.50
4-Methyl-2-pentanone	108-10-1	50.0	U	100	50.0	25.0
Methylene chloride	75-09-2	5.00	U	10.0	5.00	2.50
Naphthalene	91-20-3	4.00	U	10.0	4.00	2.00
n-Propylbenzene	103-65-1	2.50	U	10.0	2.50	1.25
Styrene	100-42-5	2.50	U	10.0	2.50	1.25
1,1,1,2-Tetrachloroethane	630-20-6	5.00	U	10.0	5.00	2.50
1,1,2,2-Tetrachloroethane	79-34-5	4.00	U	10.0	4.00	2.00
Tetrachloroethene	127-18-4	5.00	U	10.0	5.00	2.50
Toluene	108-88-3	5.00	U	10.0	5.00	2.50
1,2,3-Trichlorobenzene	87-61-6	3.00	U	10.0	3.00	1.50
1,2,4-Trichlorobenzene	120-82-1	4.00	U	10.0	4.00	2.00
1,1,1-Trichloroethane	71-55-6	5.00	U	10.0	5.00	2.50
1,1,2-Trichloroethane	79-00-5	5.00	U	10.0	5.00	2.50
1,2,3-Trichloropropane	96-18-4	10.0	U	20.0	10.0	5.00
1,2,4-Trimethylbenzene	95-63-6	5.00	U	10.0	5.00	2.50
1,3,5-Trimethylbenzene	108-67-8	5.00	U	10.0	5.00	2.50
Vinyl chloride	75-01-4	6.08	J	10.0	5.00	2.50
o-Xylene	95-47-6	5.00	U	10.0	5.00	2.50
m-,p-Xylene	179601-23-1	10.0	U	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.8	85	115	
1,2-Dichloroethane-d4	93.0	70	120	
Toluene-d8	99.4	85	120	
4-Bromofluorobenzene	107	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	MW1-061016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573259	**Analyst:**	JDS	**Run Date:**	06/17/2016 19:33
Collect Date:	06/10/2016 07:55	**Dilution:**	20	**File ID:**	11M12724
Sample Tag:	DL02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloroform	67-66-3	5.62	J	20.0	5.00	2.50
Trichloroethene	79-01-6	3620		20.0	10.0	5.00
Trichlorofluoromethane	75-69-4	10.0	U	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.3	85	115	
1,2-Dichloroethane-d4	91.5	70	120	
Toluene-d8	95.5	85	120	
4-Bromofluorobenzene	102	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW1-061016	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/22/2016 20:16
Collect Date:	06/10/2016 07:55	**Dilution:**	10000	**File ID:**	1LM.LM35426
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	14800		4000	2000	1000

Certificate of Analysis

Sample #:	L16060650-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW1-061016	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 11:57
Collect Date:	06/10/2016 07:55	**Dilution:**	1	**File ID:**	T3.062316.115734
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.0763	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Potassium, Total	7440-09-7	3.24		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW1-061016	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 14:09
Collect Date:	06/10/2016 07:55	**Dilution:**	10	**File ID:**	T3.062316.140930
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	47.2		5.00	2.50	1.25
Iron, Total	7439-89-6	20.2		2.00	1.00	0.500
Magnesium, Total	7439-95-4	41.4		10.0	5.00	2.50
Sodium, Total	7440-23-5	299		10.0	5.00	2.50

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW1-061016	**Prep Method:**	3015	**Prep Date:**	06/21/2016 07:48
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/21/2016 12:44
Workgroup #:	WG573557	**Analyst:**	BKT	**Run Date:**	06/21/2016 15:32
Collect Date:	06/10/2016 07:55	**Dilution:**	1	**File ID:**	NI.062116.153201
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW1-061016	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 20:00
Collect Date:	06/10/2016 07:55	**Dilution:**	1	**File ID:**	NI.061616.200024
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00136	J	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000424	J	0.00120	0.000600	0.000300
Cobalt, Total	7440-48-4	0.0563		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00432		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00922		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW1-061016	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 21:23
Collect Date:	06/10/2016 07:55	**Dilution:**	50	**File ID:**	NI.061616.212301
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	1.35		0.300	0.150	0.0750
Chromium, Total	7440-47-3	1.32		0.200	0.100	0.0500
Manganese, Total	7439-96-5	1.69		0.200	0.100	0.0500
Nickel, Total	7440-02-0	2.20		0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-01	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW1-061016	**Prep Method:**	7470A	**Prep Date:**	06/14/2016 10:23
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/16/2016 14:15
Workgroup #:	WG573072	**Analyst:**	PDM	**Run Date:**	06/16/2016 15:31
Collect Date:	06/10/2016 07:55	**Dilution:**	1	**File ID:**	M7.061616.153110
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	MW3-061016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573259	**Analyst:**	JDS	**Run Date:**	06/17/2016 20:05
Collect Date:	06/10/2016 09:05	**Dilution:**	2.5	**File ID:**	11M12725
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	48.4		25.0	12.5	6.25
Benzene	71-43-2	0.626	U	2.50	0.626	0.313
Bromobenzene	108-86-1	0.626	U	2.50	0.626	0.313
Bromochloromethane	74-97-5	1.00	U	2.50	1.00	0.500
Bromodichloromethane	75-27-4	1.25	U	2.50	1.25	0.625
Bromoform	75-25-2	2.50	U	5.00	2.50	1.25
Bromomethane	74-83-9	2.50	U	5.00	2.50	1.25
2-Butanone	78-93-3	12.5	U	25.0	12.5	6.25
n-Butylbenzene	104-51-8	1.25	U	2.50	1.25	0.625
sec-Butylbenzene	135-98-8	1.25	U	2.50	1.25	0.625
tert-Butylbenzene	98-06-6	1.25	U	2.50	1.25	0.625
Carbon disulfide	75-15-0	2.50	U	5.00	2.50	1.25
Carbon tetrachloride	56-23-5	1.25	U	2.50	1.25	0.625
Chlorobenzene	108-90-7	0.626	U	2.50	0.626	0.313
Chlorodibromomethane	124-48-1	1.25	U	2.50	1.25	0.625
Chloroethane	75-00-3	2.50	U	5.00	2.50	1.25
Chloroform	67-66-3	1.96	J	2.50	0.626	0.313
Chloromethane	74-87-3	2.50	U	5.00	2.50	1.25
2-Chlorotoluene	95-49-8	0.626	U	2.50	0.626	0.313
4-Chlorotoluene	106-43-4	1.25	U	2.50	1.25	0.625
1,2-Dibromo-3-chloropropane	96-12-8	5.00	U	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	2.50	1.25	0.625
Dibromomethane	74-95-3	1.25	U	2.50	1.25	0.625
1,2-Dichlorobenzene	95-50-1	0.626	U	2.50	0.626	0.313
1,3-Dichlorobenzene	541-73-1	1.25	U	2.50	1.25	0.625
1,4-Dichlorobenzene	106-46-7	0.626	U	2.50	0.626	0.313
Dichlorodifluoromethane	75-71-8	2.56		2.50	1.25	0.625
1,1-Dichloroethane	75-34-3	4.57		2.50	0.626	0.313
1,2-Dichloroethane	107-06-2	1.25	U	2.50	1.25	0.625
1,1-Dichloroethene	75-35-4	32.8		5.00	2.50	1.25
cis-1,2-Dichloroethene	156-59-2	85.2		2.50	1.25	0.625

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	3.30		2.50	1.25	0.625
1,2-Dichloropropane	78-87-5	1.00	U	2.50	1.00	0.500
1,3-Dichloropropane	142-28-9	1.00	U	2.50	1.00	0.500
2,2-Dichloropropane	594-20-7	1.25	U	2.50	1.25	0.625
cis-1,3-Dichloropropene	10061-01-5	1.25	U	2.50	1.25	0.625
trans-1,3-Dichloropropene	10061-02-6	2.50	U	5.00	2.50	1.25
1,1-Dichloropropene	563-58-6	1.25	U	2.50	1.25	0.625
Ethylbenzene	100-41-4	1.25	U	2.50	1.25	0.625
2-Hexanone	591-78-6	12.5	Q	25.0	12.5	6.25
Hexachlorobutadiene	87-68-3	1.25	U	2.50	1.25	0.625
Isopropylbenzene	98-82-8	1.25	U	2.50	1.25	0.625
p-Isopropyltoluene	99-87-6	1.25	U	2.50	1.25	0.625
4-Methyl-2-pentanone	108-10-1	12.5	U	25.0	12.5	6.25
Methylene chloride	75-09-2	1.25	U	2.50	1.25	0.625
Naphthalene	91-20-3	1.00	U	2.50	1.00	0.500
n-Propylbenzene	103-65-1	0.626	U	2.50	0.626	0.313
Styrene	100-42-5	0.626	U	2.50	0.626	0.313
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	2.50	1.25	0.625
1,1,2,2-Tetrachloroethane	79-34-5	1.00	U	2.50	1.00	0.500
Tetrachloroethene	127-18-4	0.992	J	2.50	1.25	0.625
Toluene	108-88-3	1.25	U	2.50	1.25	0.625
1,2,3-Trichlorobenzene	87-61-6	0.750	U	2.50	0.750	0.375
1,2,4-Trichlorobenzene	120-82-1	1.00	U	2.50	1.00	0.500
1,1,1-Trichloroethane	71-55-6	1.25	U	2.50	1.25	0.625
1,1,2-Trichloroethane	79-00-5	1.25	U	2.50	1.25	0.625
Trichloroethene	79-01-6	491		2.50	1.25	0.625
Trichlorofluoromethane	75-69-4	0.740	J	2.50	1.25	0.625
1,2,3-Trichloropropane	96-18-4	2.50	U	5.00	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	2.50	1.25	0.625
1,3,5-Trimethylbenzene	108-67-8	1.25	U	2.50	1.25	0.625
Vinyl chloride	75-01-4	10.2		2.50	1.25	0.625
o-Xylene	95-47-6	1.25	U	2.50	1.25	0.625
m-,p-Xylene	179601-23-1	2.50	U	5.00	2.50	1.25

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.4	85	115	
1,2-Dichloroethane-d4	91.6	70	120	
Toluene-d8	95.8	85	120	
4-Bromofluorobenzene	103	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW3-061016	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/22/2016 20:35
Collect Date:	06/10/2016 09:05	**Dilution:**	10000	**File ID:**	1LM.LM35427
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	15400		4000	2000	1000

Certificate of Analysis

Sample #:	L16060650-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW3-061016	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 12:01
Collect Date:	06/10/2016 09:05	**Dilution:**	1	**File ID:**	T3.062316.120126
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.100	U	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	0.418		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	20.3		1.00	0.500	0.250
Potassium, Total	7440-09-7	2.10		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW3-061016	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 14:13
Collect Date:	06/10/2016 09:05	**Dilution:**	10	**File ID:**	T3.062316.141326
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	30.2		5.00	2.50	1.25
Sodium, Total	7440-23-5	260		10.0	5.00	2.50

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW3-061016	**Prep Method:**	3015	**Prep Date:**	06/21/2016 07:48
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/21/2016 12:44
Workgroup #:	WG573557	**Analyst:**	BKT	**Run Date:**	06/21/2016 15:35
Collect Date:	06/10/2016 09:05	**Dilution:**	1	**File ID:**	NI.062116.153512
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW3-061016	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 20:03
Collect Date:	06/10/2016 09:05	**Dilution:**	1	**File ID:**	NI.061616.200336
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.000726	J	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00398	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00108	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00151	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.00463	J	0.00800	0.00400	0.00200
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW3-061016	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 21:26
Collect Date:	06/10/2016 09:05	**Dilution:**	10	**File ID:**	NI.061616.212612
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.445		0.0600	0.0300	0.0150
Manganese, Total	7439-96-5	0.520		0.0400	0.0200	0.0100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-02	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW3-061016	**Prep Method:**	7470A	**Prep Date:**	06/14/2016 10:23
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/16/2016 14:15
Workgroup #:	WG573072	**Analyst:**	PDM	**Run Date:**	06/16/2016 15:33
Collect Date:	06/10/2016 09:05	**Dilution:**	1	**File ID:**	M7.061616.153343
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	17WW08-061016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573051	**Analyst:**	JDS	**Run Date:**	06/16/2016 19:42
Collect Date:	06/10/2016 10:10	**Dilution:**	1	**File ID:**	11M12693
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.321	B	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.3	85	115	
1,2-Dichloroethane-d4	88.3	70	120	
Toluene-d8	97.6	85	120	
4-Bromofluorobenzene	104	75	120	

B	The reported result is associated with a contaminated method blank.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	17WW08-061016	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/22/2016 21:50
Collect Date:	06/10/2016 10:10	**Dilution:**	1	**File ID:**	1LM.LM35431
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	7.13		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16060650-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	17WW08-061016	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 12:12
Collect Date:	06/10/2016 10:10	**Dilution:**	1	**File ID:**	T3.062316.121258
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	1.01		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	20.5		0.500	0.250	0.125
Magnesium, Total	7439-95-4	12.3		1.00	0.500	0.250
Potassium, Total	7440-09-7	1.94	J	2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	17WW08-061016	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 14:17
Collect Date:	06/10/2016 10:10	**Dilution:**	10	**File ID:**	T3.062316.141723
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	12.8		2.00	1.00	0.500
Sodium, Total	7440-23-5	136		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	17WW08-061016	**Prep Method:**	3015	**Prep Date:**	06/21/2016 07:48
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/21/2016 12:44
Workgroup #:	WG573557	**Analyst:**	BKT	**Run Date:**	06/21/2016 15:38
Collect Date:	06/10/2016 10:10	**Dilution:**	1	**File ID:**	NI.062116.153823
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Arsenic, Total	7440-38-2	0.00435		0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.148		0.00600	0.00300	0.00150
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	17WW08-061016	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 20:06
Collect Date:	06/10/2016 10:10	**Dilution:**	1	**File ID:**	NI.061616.200647
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.00131		0.00120	0.000600	0.000300
Cobalt, Total	7440-48-4	0.00709		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.0170		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00133	J	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.111		0.00800	0.00400	0.00200
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0388	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	17WW08-061016	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 21:29
Collect Date:	06/10/2016 10:10	**Dilution:**	10	**File ID:**	NI.061616.212923
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chromium, Total	7440-47-3	0.507		0.0400	0.0200	0.0100
Manganese, Total	7439-96-5	0.422		0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-03	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	17WW08-061016	**Prep Method:**	7470A	**Prep Date:**	06/14/2016 10:23
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/16/2016 14:15
Workgroup #:	WG573072	**Analyst:**	PDM	**Run Date:**	06/16/2016 15:36
Collect Date:	06/10/2016 10:10	**Dilution:**	1	**File ID:**	M7.061616.153616
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	130-061016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573051	**Analyst:**	JDS	**Run Date:**	06/16/2016 20:14
Collect Date:	06/10/2016 11:05	**Dilution:**	1	**File ID:**	11M12694
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	1.17		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.260	B	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.0	85	115	
1,2-Dichloroethane-d4	90.0	70	120	
Toluene-d8	98.3	85	120	
4-Bromofluorobenzene	104	75	120	

B	The reported result is associated with a contaminated method blank.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	130-061016	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/23/2016 12:46
Collect Date:	06/10/2016 11:05	**Dilution:**	50	**File ID:**	1LM.LM35452
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	64.5		20.0	10.0	5.00

Certificate of Analysis

Sample #:	L16060650-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	130FD-061016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573051	**Analyst:**	JDS	**Run Date:**	06/16/2016 20:46
Collect Date:	06/10/2016 11:05	**Dilution:**	1	**File ID:**	11M12695
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	1.19		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.301	B	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.2	85	115	
1,2-Dichloroethane-d4	89.0	70	120	
Toluene-d8	96.5	85	120	
4-Bromofluorobenzene	100	75	120	

B	The reported result is associated with a contaminated method blank.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	130FD-061016	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/23/2016 13:05
Collect Date:	06/10/2016 11:05	**Dilution:**	50	**File ID:**	1LM.LM35453
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	62.5		20.0	10.0	5.00

Certificate of Analysis

Sample #:	L16060650-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	MW12-061016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573051	**Analyst:**	JDS	**Run Date:**	06/17/2016 00:29
Collect Date:	06/10/2016 13:30	**Dilution:**	2	**File ID:**	11M12702
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	10.0	U	20.0	10.0	5.00
Benzene	71-43-2	0.500	U	2.00	0.500	0.250
Bromobenzene	108-86-1	0.500	U	2.00	0.500	0.250
Bromochloromethane	74-97-5	0.800	U	2.00	0.800	0.400
Bromodichloromethane	75-27-4	1.00	U	2.00	1.00	0.500
Bromoform	75-25-2	2.00	U	4.00	2.00	1.00
Bromomethane	74-83-9	2.00	U	4.00	2.00	1.00
2-Butanone	78-93-3	10.0	U	20.0	10.0	5.00
n-Butylbenzene	104-51-8	1.00	U	2.00	1.00	0.500
sec-Butylbenzene	135-98-8	1.00	U	2.00	1.00	0.500
tert-Butylbenzene	98-06-6	1.00	U	2.00	1.00	0.500
Carbon disulfide	75-15-0	2.00	U	4.00	2.00	1.00
Carbon tetrachloride	56-23-5	1.00	U	2.00	1.00	0.500
Chlorobenzene	108-90-7	0.500	U	2.00	0.500	0.250
Chlorodibromomethane	124-48-1	1.00	U	2.00	1.00	0.500
Chloroethane	75-00-3	2.00	U	4.00	2.00	1.00
Chloroform	67-66-3	0.500	U	2.00	0.500	0.250
Chloromethane	74-87-3	2.00	U	4.00	2.00	1.00
2-Chlorotoluene	95-49-8	0.500	U	2.00	0.500	0.250
4-Chlorotoluene	106-43-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	4.00	U	10.0	4.00	2.00
1,2-Dibromoethane	106-93-4	1.00	U	2.00	1.00	0.500
Dibromomethane	74-95-3	1.00	U	2.00	1.00	0.500
1,2-Dichlorobenzene	95-50-1	0.500	U	2.00	0.500	0.250
1,3-Dichlorobenzene	541-73-1	1.00	U	2.00	1.00	0.500
1,4-Dichlorobenzene	106-46-7	0.500	U	2.00	0.500	0.250
Dichlorodifluoromethane	75-71-8	1.00	U	2.00	1.00	0.500
1,1-Dichloroethane	75-34-3	1.71	J	2.00	0.500	0.250
1,2-Dichloroethane	107-06-2	1.82	J	2.00	1.00	0.500
1,1-Dichloroethene	75-35-4	3.41	J	4.00	2.00	1.00
cis-1,2-Dichloroethene	156-59-2	42.6		2.00	1.00	0.500
trans-1,2-Dichloroethene	156-60-5	0.758	J	2.00	1.00	0.500
1,2-Dichloropropane	78-87-5	0.800	U	2.00	0.800	0.400
1,3-Dichloropropane	142-28-9	0.800	U	2.00	0.800	0.400
2,2-Dichloropropane	594-20-7	1.00	U	2.00	1.00	0.500
cis-1,3-Dichloropropene	10061-01-5	1.00	U	2.00	1.00	0.500
trans-1,3-Dichloropropene	10061-02-6	2.00	U	4.00	2.00	1.00
1,1-Dichloropropene	563-58-6	1.00	U	2.00	1.00	0.500
Ethylbenzene	100-41-4	1.00	U	2.00	1.00	0.500
2-Hexanone	591-78-6	10.0	U	20.0	10.0	5.00
Hexachlorobutadiene	87-68-3	1.00	U	2.00	1.00	0.500
Isopropylbenzene	98-82-8	1.00	U	2.00	1.00	0.500
p-Isopropyltoluene	99-87-6	1.00	U	2.00	1.00	0.500
4-Methyl-2-pentanone	108-10-1	10.0	U	20.0	10.0	5.00
Methylene chloride	75-09-2	1.00	U	2.00	1.00	0.500
Naphthalene	91-20-3	0.800	U	2.00	0.800	0.400
n-Propylbenzene	103-65-1	0.500	U	2.00	0.500	0.250
Styrene	100-42-5	0.500	U	2.00	0.500	0.250
1,1,1,2-Tetrachloroethane	630-20-6	1.00	U	2.00	1.00	0.500
1,1,2,2-Tetrachloroethane	79-34-5	0.800	U	2.00	0.800	0.400
Tetrachloroethene	127-18-4	1.00	U	2.00	1.00	0.500
Toluene	108-88-3	1.00	U	2.00	1.00	0.500
1,2,3-Trichlorobenzene	87-61-6	0.600	U	2.00	0.600	0.300
1,2,4-Trichlorobenzene	120-82-1	0.800	U	2.00	0.800	0.400
1,1,1-Trichloroethane	71-55-6	1.00	U	2.00	1.00	0.500
1,1,2-Trichloroethane	79-00-5	1.00	U	2.00	1.00	0.500
Trichloroethene	79-01-6	294		2.00	1.00	0.500
Trichlorofluoromethane	75-69-4	0.598	B	2.00	1.00	0.500
1,2,3-Trichloropropane	96-18-4	2.00	U	4.00	2.00	1.00

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	1.00	U	2.00	1.00	0.500
1,3,5-Trimethylbenzene	108-67-8	1.00	U	2.00	1.00	0.500
Vinyl chloride	75-01-4	1.00	U	2.00	1.00	0.500
o-Xylene	95-47-6	1.00	U	2.00	1.00	0.500
m-,p-Xylene	179601-23-1	2.00	U	4.00	2.00	1.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.6	85	115	
1,2-Dichloroethane-d4	90.7	70	120	
Toluene-d8	95.7	85	120	
4-Bromofluorobenzene	102	75	120	

B	The reported result is associated with a contaminated method blank.
J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW12-061016	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/23/2016 13:23
Collect Date:	06/10/2016 13:30	**Dilution:**	1	**File ID:**	1LM.LM35454
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	18WW24-061016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573051	**Analyst:**	JDS	**Run Date:**	06/16/2016 21:18
Collect Date:	06/10/2016 14:40	**Dilution:**	1	**File ID:**	11M12696
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.9	85	115	
1,2-Dichloroethane-d4	90.6	70	120	
Toluene-d8	96.4	85	120	
4-Bromofluorobenzene	104	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW24-061016	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/22/2016 23:06
Collect Date:	06/10/2016 14:40	**Dilution:**	1	**File ID:**	1LM.LM35435
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.228	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW24F-061016	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 12:16
Collect Date:	06/10/2016 14:40	**Dilution:**	1	**File ID:**	T3.062316.121653
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.466		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	6.94		0.500	0.250	0.125
Iron, Total	7439-89-6	0.284		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	4.40		1.00	0.500	0.250
Potassium, Total	7440-09-7	1.58	J	2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW24F-061016	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 14:21
Collect Date:	06/10/2016 14:40	**Dilution:**	10	**File ID:**	T3.062316.142120
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sodium, Total	7440-23-5	131		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW24F-061016	**Prep Method:**	3015	**Prep Date:**	06/21/2016 07:48
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/21/2016 12:44
Workgroup #:	WG573557	**Analyst:**	BKT	**Run Date:**	06/21/2016 15:41
Collect Date:	06/10/2016 14:40	**Dilution:**	1	**File ID:**	NI.062116.154135
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Arsenic, Total	7440-38-2	0.00248		0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.0968		0.00600	0.00300	0.00150
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW24F-061016	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 20:12
Collect Date:	06/10/2016 14:40	**Dilution:**	1	**File ID:**	NI.061616.201257
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00142	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00207		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00200	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0220		0.00800	0.00400	0.00200
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.000930	J	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0750		0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW24F-061016	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 21:32
Collect Date:	06/10/2016 14:40	**Dilution:**	10	**File ID:**	NI.061616.213235
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Total	7439-96-5	0.609		0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-08	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18WW24F-061016	**Prep Method:**	7470A	**Prep Date:**	06/14/2016 10:23
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/16/2016 14:15
Workgroup #:	WG573072	**Analyst:**	PDM	**Run Date:**	06/16/2016 15:38
Collect Date:	06/10/2016 14:40	**Dilution:**	1	**File ID:**	M7.061616.153847
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573051	**Analyst:**	JDS	**Run Date:**	06/16/2016 18:38
Collect Date:	06/10/2016 00:01	**Dilution:**	1	**File ID:**	11M12691
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.251	B	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.3	85	115	
1,2-Dichloroethane-d4	88.0	70	120	
Toluene-d8	96.0	85	120	
4-Bromofluorobenzene	102	75	120	

B	The reported result is associated with a contaminated method blank.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	MW1-061016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG572855	**Analyst:**	JDS	**Run Date:**	06/16/2016 01:56
Collect Date:	06/10/2016 07:55	**Dilution:**	10	**File ID:**	11M12671
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	50.0	U	100	50.0	25.0
Benzene	71-43-2	2.09	J	10.0	2.50	1.25
Bromobenzene	108-86-1	2.50	U	10.0	2.50	1.25
Bromochloromethane	74-97-5	4.00	U	10.0	4.00	2.00
Bromodichloromethane	75-27-4	5.00	U	10.0	5.00	2.50
Bromoform	75-25-2	10.0	U	20.0	10.0	5.00
Bromomethane	74-83-9	10.0	U	20.0	10.0	5.00
2-Butanone	78-93-3	50.0	U	100	50.0	25.0
n-Butylbenzene	104-51-8	5.00	U	10.0	5.00	2.50
sec-Butylbenzene	135-98-8	5.00	U	10.0	5.00	2.50
tert-Butylbenzene	98-06-6	5.00	U	10.0	5.00	2.50
Carbon disulfide	75-15-0	10.0	U	20.0	10.0	5.00
Carbon tetrachloride	56-23-5	5.00	U	10.0	5.00	2.50
Chlorobenzene	108-90-7	2.50	U	10.0	2.50	1.25
Chlorodibromomethane	124-48-1	5.00	U	10.0	5.00	2.50
Chloroethane	75-00-3	10.0	U	20.0	10.0	5.00
Chloromethane	74-87-3	10.0	U	20.0	10.0	5.00
2-Chlorotoluene	95-49-8	2.50	U	10.0	2.50	1.25
4-Chlorotoluene	106-43-4	5.00	U	10.0	5.00	2.50
1,2-Dibromo-3-chloropropane	96-12-8	20.0	U	50.0	20.0	10.0
1,2-Dibromoethane	106-93-4	5.00	U	10.0	5.00	2.50
Dibromomethane	74-95-3	5.00	U	10.0	5.00	2.50
1,2-Dichlorobenzene	95-50-1	2.50	U	10.0	2.50	1.25
1,3-Dichlorobenzene	541-73-1	5.00	U	10.0	5.00	2.50
1,4-Dichlorobenzene	106-46-7	2.50	U	10.0	2.50	1.25
Dichlorodifluoromethane	75-71-8	5.00	U	10.0	5.00	2.50
1,1-Dichloroethane	75-34-3	2.50	U	10.0	2.50	1.25
1,2-Dichloroethane	107-06-2	138		10.0	5.00	2.50
1,1-Dichloroethene	75-35-4	7.50	J	20.0	10.0	5.00
cis-1,2-Dichloroethene	156-59-2	1120		10.0	5.00	2.50
trans-1,2-Dichloroethene	156-60-5	3.11	J	10.0	5.00	2.50
1,2-Dichloropropane	78-87-5	4.00	U	10.0	4.00	2.00

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,3-Dichloropropane	142-28-9	4.00	U	10.0	4.00	2.00
2,2-Dichloropropane	594-20-7	5.00	U	10.0	5.00	2.50
cis-1,3-Dichloropropene	10061-01-5	5.00	U	10.0	5.00	2.50
trans-1,3-Dichloropropene	10061-02-6	10.0	U	20.0	10.0	5.00
1,1-Dichloropropene	563-58-6	5.00	U	10.0	5.00	2.50
Ethylbenzene	100-41-4	5.00	U	10.0	5.00	2.50
2-Hexanone	591-78-6	50.0	U	100	50.0	25.0
Hexachlorobutadiene	87-68-3	5.00	U	10.0	5.00	2.50
Isopropylbenzene	98-82-8	5.00	U	10.0	5.00	2.50
p-Isopropyltoluene	99-87-6	5.00	U	10.0	5.00	2.50
4-Methyl-2-pentanone	108-10-1	50.0	U	100	50.0	25.0
Methylene chloride	75-09-2	5.00	U	10.0	5.00	2.50
Naphthalene	91-20-3	4.00	U	10.0	4.00	2.00
n-Propylbenzene	103-65-1	2.50	U	10.0	2.50	1.25
Styrene	100-42-5	2.50	U	10.0	2.50	1.25
1,1,1,2-Tetrachloroethane	630-20-6	5.00	U	10.0	5.00	2.50
1,1,2,2-Tetrachloroethane	79-34-5	4.00	U	10.0	4.00	2.00
Tetrachloroethene	127-18-4	5.00	U	10.0	5.00	2.50
Toluene	108-88-3	5.00	U	10.0	5.00	2.50
1,2,3-Trichlorobenzene	87-61-6	3.00	U	10.0	3.00	1.50
1,2,4-Trichlorobenzene	120-82-1	4.00	U	10.0	4.00	2.00
1,1,1-Trichloroethane	71-55-6	5.00	U	10.0	5.00	2.50
1,1,2-Trichloroethane	79-00-5	5.00	U	10.0	5.00	2.50
1,2,3-Trichloropropane	96-18-4	10.0	U	20.0	10.0	5.00
1,2,4-Trimethylbenzene	95-63-6	5.00	U	10.0	5.00	2.50
1,3,5-Trimethylbenzene	108-67-8	5.00	U	10.0	5.00	2.50
Vinyl chloride	75-01-4	6.08	J	10.0	5.00	2.50
o-Xylene	95-47-6	5.00	U	10.0	5.00	2.50
m-,p-Xylene	179601-23-1	10.0	U	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.8	85	115	
1,2-Dichloroethane-d4	93.0	70	120	
Toluene-d8	99.4	85	120	
4-Bromofluorobenzene	107	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	MW1-061016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573259	**Analyst:**	JDS	**Run Date:**	06/17/2016 19:33
Collect Date:	06/10/2016 07:55	**Dilution:**	20	**File ID:**	11M12724
Sample Tag:	DL02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chloroform	67-66-3	5.62	J	20.0	5.00	2.50
Trichloroethene	79-01-6	3620		20.0	10.0	5.00
Trichlorofluoromethane	75-69-4	10.0	U	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.3	85	115	
1,2-Dichloroethane-d4	91.5	70	120	
Toluene-d8	95.5	85	120	
4-Bromofluorobenzene	102	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	MW3-061016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573259	**Analyst:**	JDS	**Run Date:**	06/17/2016 20:05
Collect Date:	06/10/2016 09:05	**Dilution:**	2.5	**File ID:**	11M12725
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	48.4		25.0	12.5	6.25
Benzene	71-43-2	0.626	U	2.50	0.626	0.313
Bromobenzene	108-86-1	0.626	U	2.50	0.626	0.313
Bromochloromethane	74-97-5	1.00	U	2.50	1.00	0.500
Bromodichloromethane	75-27-4	1.25	U	2.50	1.25	0.625
Bromoform	75-25-2	2.50	U	5.00	2.50	1.25
Bromomethane	74-83-9	2.50	U	5.00	2.50	1.25
2-Butanone	78-93-3	12.5	U	25.0	12.5	6.25
n-Butylbenzene	104-51-8	1.25	U	2.50	1.25	0.625
sec-Butylbenzene	135-98-8	1.25	U	2.50	1.25	0.625
tert-Butylbenzene	98-06-6	1.25	U	2.50	1.25	0.625
Carbon disulfide	75-15-0	2.50	U	5.00	2.50	1.25
Carbon tetrachloride	56-23-5	1.25	U	2.50	1.25	0.625
Chlorobenzene	108-90-7	0.626	U	2.50	0.626	0.313
Chlorodibromomethane	124-48-1	1.25	U	2.50	1.25	0.625
Chloroethane	75-00-3	2.50	U	5.00	2.50	1.25
Chloroform	67-66-3	1.96	J	2.50	0.626	0.313
Chloromethane	74-87-3	2.50	U	5.00	2.50	1.25
2-Chlorotoluene	95-49-8	0.626	U	2.50	0.626	0.313
4-Chlorotoluene	106-43-4	1.25	U	2.50	1.25	0.625
1,2-Dibromo-3-chloropropane	96-12-8	5.00	U	12.5	5.00	2.50
1,2-Dibromoethane	106-93-4	1.25	U	2.50	1.25	0.625
Dibromomethane	74-95-3	1.25	U	2.50	1.25	0.625
1,2-Dichlorobenzene	95-50-1	0.626	U	2.50	0.626	0.313
1,3-Dichlorobenzene	541-73-1	1.25	U	2.50	1.25	0.625
1,4-Dichlorobenzene	106-46-7	0.626	U	2.50	0.626	0.313
Dichlorodifluoromethane	75-71-8	2.56		2.50	1.25	0.625
1,1-Dichloroethane	75-34-3	4.57		2.50	0.626	0.313
1,2-Dichloroethane	107-06-2	1.25	U	2.50	1.25	0.625
1,1-Dichloroethene	75-35-4	32.8		5.00	2.50	1.25
cis-1,2-Dichloroethene	156-59-2	85.2		2.50	1.25	0.625

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	3.30		2.50	1.25	0.625
1,2-Dichloropropane	78-87-5	1.00	U	2.50	1.00	0.500
1,3-Dichloropropane	142-28-9	1.00	U	2.50	1.00	0.500
2,2-Dichloropropane	594-20-7	1.25	U	2.50	1.25	0.625
cis-1,3-Dichloropropene	10061-01-5	1.25	U	2.50	1.25	0.625
trans-1,3-Dichloropropene	10061-02-6	2.50	U	5.00	2.50	1.25
1,1-Dichloropropene	563-58-6	1.25	U	2.50	1.25	0.625
Ethylbenzene	100-41-4	1.25	U	2.50	1.25	0.625
2-Hexanone	591-78-6	12.5	Q	25.0	12.5	6.25
Hexachlorobutadiene	87-68-3	1.25	U	2.50	1.25	0.625
Isopropylbenzene	98-82-8	1.25	U	2.50	1.25	0.625
p-Isopropyltoluene	99-87-6	1.25	U	2.50	1.25	0.625
4-Methyl-2-pentanone	108-10-1	12.5	U	25.0	12.5	6.25
Methylene chloride	75-09-2	1.25	U	2.50	1.25	0.625
Naphthalene	91-20-3	1.00	U	2.50	1.00	0.500
n-Propylbenzene	103-65-1	0.626	U	2.50	0.626	0.313
Styrene	100-42-5	0.626	U	2.50	0.626	0.313
1,1,1,2-Tetrachloroethane	630-20-6	1.25	U	2.50	1.25	0.625
1,1,2,2-Tetrachloroethane	79-34-5	1.00	U	2.50	1.00	0.500
Tetrachloroethene	127-18-4	0.992	J	2.50	1.25	0.625
Toluene	108-88-3	1.25	U	2.50	1.25	0.625
1,2,3-Trichlorobenzene	87-61-6	0.750	U	2.50	0.750	0.375
1,2,4-Trichlorobenzene	120-82-1	1.00	U	2.50	1.00	0.500
1,1,1-Trichloroethane	71-55-6	1.25	U	2.50	1.25	0.625
1,1,2-Trichloroethane	79-00-5	1.25	U	2.50	1.25	0.625
Trichloroethene	79-01-6	491		2.50	1.25	0.625
Trichlorofluoromethane	75-69-4	0.740	J	2.50	1.25	0.625
1,2,3-Trichloropropane	96-18-4	2.50	U	5.00	2.50	1.25
1,2,4-Trimethylbenzene	95-63-6	1.25	U	2.50	1.25	0.625
1,3,5-Trimethylbenzene	108-67-8	1.25	U	2.50	1.25	0.625
Vinyl chloride	75-01-4	10.2		2.50	1.25	0.625
o-Xylene	95-47-6	1.25	U	2.50	1.25	0.625
m-,p-Xylene	179601-23-1	2.50	U	5.00	2.50	1.25

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	97.4	85	115	
1,2-Dichloroethane-d4	91.6	70	120	
Toluene-d8	95.8	85	120	
4-Bromofluorobenzene	103	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	17WW08-061016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573051	**Analyst:**	JDS	**Run Date:**	06/16/2016 19:42
Collect Date:	06/10/2016 10:10	**Dilution:**	1	**File ID:**	11M12693
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.321	B	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	93.3	85	115	
1,2-Dichloroethane-d4	88.3	70	120	
Toluene-d8	97.6	85	120	
4-Bromofluorobenzene	104	75	120	

B	The reported result is associated with a contaminated method blank.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	130-061016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573051	**Analyst:**	JDS	**Run Date:**	06/16/2016 20:14
Collect Date:	06/10/2016 11:05	**Dilution:**	1	**File ID:**	11M12694
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	1.17		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.260	B	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	98.0	85	115	
1,2-Dichloroethane-d4	90.0	70	120	
Toluene-d8	98.3	85	120	
4-Bromofluorobenzene	104	75	120	

B	The reported result is associated with a contaminated method blank.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	130FD-061016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573051	**Analyst:**	JDS	**Run Date:**	06/16/2016 20:46
Collect Date:	06/10/2016 11:05	**Dilution:**	1	**File ID:**	11M12695
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	1.19		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.301	B	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.2	85	115	
1,2-Dichloroethane-d4	89.0	70	120	
Toluene-d8	96.5	85	120	
4-Bromofluorobenzene	100	75	120	

B	The reported result is associated with a contaminated method blank.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	MW12-061016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573051	**Analyst:**	JDS	**Run Date:**	06/17/2016 00:29
Collect Date:	06/10/2016 13:30	**Dilution:**	2	**File ID:**	11M12702
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	10.0	U	20.0	10.0	5.00
Benzene	71-43-2	0.500	U	2.00	0.500	0.250
Bromobenzene	108-86-1	0.500	U	2.00	0.500	0.250
Bromochloromethane	74-97-5	0.800	U	2.00	0.800	0.400
Bromodichloromethane	75-27-4	1.00	U	2.00	1.00	0.500
Bromoform	75-25-2	2.00	U	4.00	2.00	1.00
Bromomethane	74-83-9	2.00	U	4.00	2.00	1.00
2-Butanone	78-93-3	10.0	U	20.0	10.0	5.00
n-Butylbenzene	104-51-8	1.00	U	2.00	1.00	0.500
sec-Butylbenzene	135-98-8	1.00	U	2.00	1.00	0.500
tert-Butylbenzene	98-06-6	1.00	U	2.00	1.00	0.500
Carbon disulfide	75-15-0	2.00	U	4.00	2.00	1.00
Carbon tetrachloride	56-23-5	1.00	U	2.00	1.00	0.500
Chlorobenzene	108-90-7	0.500	U	2.00	0.500	0.250
Chlorodibromomethane	124-48-1	1.00	U	2.00	1.00	0.500
Chloroethane	75-00-3	2.00	U	4.00	2.00	1.00
Chloroform	67-66-3	0.500	U	2.00	0.500	0.250
Chloromethane	74-87-3	2.00	U	4.00	2.00	1.00
2-Chlorotoluene	95-49-8	0.500	U	2.00	0.500	0.250
4-Chlorotoluene	106-43-4	1.00	U	2.00	1.00	0.500
1,2-Dibromo-3-chloropropane	96-12-8	4.00	U	10.0	4.00	2.00
1,2-Dibromoethane	106-93-4	1.00	U	2.00	1.00	0.500
Dibromomethane	74-95-3	1.00	U	2.00	1.00	0.500
1,2-Dichlorobenzene	95-50-1	0.500	U	2.00	0.500	0.250
1,3-Dichlorobenzene	541-73-1	1.00	U	2.00	1.00	0.500
1,4-Dichlorobenzene	106-46-7	0.500	U	2.00	0.500	0.250
Dichlorodifluoromethane	75-71-8	1.00	U	2.00	1.00	0.500
1,1-Dichloroethane	75-34-3	1.71	J	2.00	0.500	0.250
1,2-Dichloroethane	107-06-2	1.82	J	2.00	1.00	0.500
1,1-Dichloroethene	75-35-4	3.41	J	4.00	2.00	1.00
cis-1,2-Dichloroethene	156-59-2	42.6		2.00	1.00	0.500

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.758	J	2.00	1.00	0.500
1,2-Dichloropropane	78-87-5	0.800	U	2.00	0.800	0.400
1,3-Dichloropropane	142-28-9	0.800	U	2.00	0.800	0.400
2,2-Dichloropropane	594-20-7	1.00	U	2.00	1.00	0.500
cis-1,3-Dichloropropene	10061-01-5	1.00	U	2.00	1.00	0.500
trans-1,3-Dichloropropene	10061-02-6	2.00	U	4.00	2.00	1.00
1,1-Dichloropropene	563-58-6	1.00	U	2.00	1.00	0.500
Ethylbenzene	100-41-4	1.00	U	2.00	1.00	0.500
2-Hexanone	591-78-6	10.0	U	20.0	10.0	5.00
Hexachlorobutadiene	87-68-3	1.00	U	2.00	1.00	0.500
Isopropylbenzene	98-82-8	1.00	U	2.00	1.00	0.500
p-Isopropyltoluene	99-87-6	1.00	U	2.00	1.00	0.500
4-Methyl-2-pentanone	108-10-1	10.0	U	20.0	10.0	5.00
Methylene chloride	75-09-2	1.00	U	2.00	1.00	0.500
Naphthalene	91-20-3	0.800	U	2.00	0.800	0.400
n-Propylbenzene	103-65-1	0.500	U	2.00	0.500	0.250
Styrene	100-42-5	0.500	U	2.00	0.500	0.250
1,1,1,2-Tetrachloroethane	630-20-6	1.00	U	2.00	1.00	0.500
1,1,2,2-Tetrachloroethane	79-34-5	0.800	U	2.00	0.800	0.400
Tetrachloroethene	127-18-4	1.00	U	2.00	1.00	0.500
Toluene	108-88-3	1.00	U	2.00	1.00	0.500
1,2,3-Trichlorobenzene	87-61-6	0.600	U	2.00	0.600	0.300
1,2,4-Trichlorobenzene	120-82-1	0.800	U	2.00	0.800	0.400
1,1,1-Trichloroethane	71-55-6	1.00	U	2.00	1.00	0.500
1,1,2-Trichloroethane	79-00-5	1.00	U	2.00	1.00	0.500
Trichloroethene	79-01-6	294		2.00	1.00	0.500
Trichlorofluoromethane	75-69-4	0.598	B	2.00	1.00	0.500
1,2,3-Trichloropropane	96-18-4	2.00	U	4.00	2.00	1.00
1,2,4-Trimethylbenzene	95-63-6	1.00	U	2.00	1.00	0.500
1,3,5-Trimethylbenzene	108-67-8	1.00	U	2.00	1.00	0.500
Vinyl chloride	75-01-4	1.00	U	2.00	1.00	0.500
o-Xylene	95-47-6	1.00	U	2.00	1.00	0.500
m-,p-Xylene	179601-23-1	2.00	U	4.00	2.00	1.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.6	85	115	
1,2-Dichloroethane-d4	90.7	70	120	
Toluene-d8	95.7	85	120	
4-Bromofluorobenzene	102	75	120	

B	The reported result is associated with a contaminated method blank.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	18WW24-061016	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573051	**Analyst:**	JDS	**Run Date:**	06/16/2016 21:18
Collect Date:	06/10/2016 14:40	**Dilution:**	1	**File ID:**	11M12696
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	95.9	85	115	
1,2-Dichloroethane-d4	90.6	70	120	
Toluene-d8	96.4	85	120	
4-Bromofluorobenzene	104	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-09	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573051	**Analyst:**	JDS	**Run Date:**	06/16/2016 18:38
Collect Date:	06/10/2016 00:01	**Dilution:**	1	**File ID:**	11M12691
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.251	B	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	94.3	85	115	
1,2-Dichloroethane-d4	88.0	70	120	
Toluene-d8	96.0	85	120	
4-Bromofluorobenzene	102	75	120	

B	The reported result is associated with a contaminated method blank.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 061415
Analyst1: TMB Analyst2: DLW
Method: 8260B SOP: MSV01 Rev: 22
Method: 624 SOP: MSV10 Rev: 13
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD70890 Surrogate Standard: STD70872
CCV: STD70883 LCS: STD70514 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG527475

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M08234	WG527475-01 50ng BFB STD	NA	1	1	STD70707	06/14/15 09:34
11M08235	WG527475-02 5ug/L STD8260	NA	1	1	STD70883	06/14/15 09:58
11M08236	WG527475-03 20ug/L STD8260	NA	1	1	STD70883	06/14/15 10:30
11M08237	WG527475-04 50ug/L STD8260	NA	1	1	STD70883	06/14/15 11:02
11M08238	WG527475-05 100ug/L STD8260	NA	1	1	STD70883	06/14/15 11:34
11M08239	WG527475-06 200ug/L STD8260	NA	1	1	STD70883	06/14/15 12:06
11M08240	WG527475-07 300ug/L STD8260	NA	1	1	STD70883	06/14/15 12:38
11M08241	WG527475-08 400ug/L STD8260	NA	1	1	STD70883	06/14/15 13:10
11M08242	WG527475-09 500ug/L STD8260	NA	1	1	STD70883	06/14/15 13:42
11M08243	RINSE	NA	1	1		06/14/15 14:14
11M08244	RINSE	NA	1	1		06/14/15 14:46
11M08245	WG527475-10 100ug/L ALT STD8260	NA	1	1	STD70514	06/14/15 15:18

Approved: September 15, 2015

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 051316
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 / OVAP MSV01 Rev: 23 / 0
Method: 5030B/5030C/5035A SOP: PAT01 / OVAP PAT01 Rev: 18 / 0
Method: 624 SOP: MSV10 Rev: 14
Maintenance Log ID:

Internal Standard: STD76110 Surrogate Standard: STD75929
CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG568769

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M11835	RINSE	NA	1	1		05/13/16 11:59
11M11836	WG568769-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 14:15
11M11837	WG568769-02 0.3ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 14:40
11M11838	WG568769-03 0.4ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 15:12
11M11839	WG568769-04 1.0ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 15:43
11M11840	WG568769-05 2.0ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 16:15
11M11841	WG568769-06 5.0ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 16:47
11M11842	WG568769-07 20ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 17:19
11M11843	WG568769-08 50ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 17:51
11M11844	WG568769-09 100ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 18:22
11M11845	WG568769-10 200ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 18:54
11M11846	WG568769-11 300ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 19:26
11M11847	RINSE	NA	1	1		05/13/16 19:58
11M11848	WG568769-12 50ug/L ALT SRC STD 8260	NA	1	1	STD76109	05/13/16 20:30
11M11849	RINSE	NA	1	1		05/13/16 21:02
11M11850	RINSE	NA	1	1		05/13/16 21:34

Approved: May 23, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 061516
Analyst1: JDS Analyst2: NA
Method: 8260 SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Method: 624 SOP: MSV10 Rev: 14
Maintenance Log ID:

Internal Standard: STD76597 Surrogate Standard: STD76383
CCV: STD76405 LCS: STD76540 MS/MSD: STD76540

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG572855

Comments: Samples 650-01, 830-02, 834-04, -05, -06, -07 all require dilution reanalysis for compounds over the calibration limit.
Sample 650-01 also has suspected carryover of trichlorofluoromethane and chloroform and is rerunning.
Samples 650-02, -03, -04, -05, -06, -07, 834-08, -09 have suspected carryover and are rerunning and are not reported from this workgroup.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M12650	WG572854-01 50ng BFB STD 8260	NA	1	1	STD76496	06/15/16 14:48
11M12651	WG572854-02 50ug/L CCV STD 8260	NA	1	1	STD76405	06/15/16 15:12
11M12652	WG572854-02 50ug/L CCV STD 8260	NA	1	1	STD76405	06/15/16 15:49
11M12653	WGXXXXXX-01 100ug/L A9-CCV STD 826	NA	1	1	STDXXXXX	06/15/16 16:21
11M12654	WG572855-01 BLANK STD 8260	NA	1	1		06/15/16 16:53
11M12655	WG572855-02 20ug/L LCS STD 8260	NA	1	1	STD76540	06/15/16 17:25
11M12656	L16060834-02 A MS 826-SPE	<2	1	1	STD76540	06/15/16 17:57
11M12657	L16060834-03 A MSD 826-SPE	<2	1	1	STD76540	06/15/16 18:29
11M12658	RINSE	NA	1	1	STD76540	06/15/16 19:01
11M12659	L16060834-01 A REF 826-SPE	<2	1	1		06/15/16 19:33
11M12660	L16060834-08 A TB 826-SPE	<2	1	1		06/15/16 20:05
11M12661	L16060650-03 A 826-LOW	<2	1	1		06/15/16 20:37
11M12662	L16060650-04 A 826-LOW	<2	1	1		06/15/16 21:09
11M12663	L16060650-05 A 826-LOW	<2	1	1		06/15/16 21:41
11M12664	L16060650-07 A 826-LOW	<2	1	1		06/15/16 22:13
11M12665	L16060834-04 A 826-SPE	<2	1	1	SED	06/15/16 22:45
11M12666	L16060834-05 A 826-SPE	<2	1	1	SED	06/15/16 23:16
11M12667	L16060834-06 A 826-SPE	<2	1	1		06/15/16 23:48
11M12668	L16060834-07 A 826-SPE	<2	1	1		06/16/16 00:20
11M12669	L16060834-09 A 826-SPE	<2	1	1		06/16/16 00:52
11M12670	L16060650-02 A 2.5X 826-LOW	<2	1	2.5		06/16/16 01:24
11M12671	L16060650-01 A 10X 826-LOW	<2	1	10		06/16/16 01:56
11M12672	L16060650-06 A 10X 826-LOW	<2	1	10		06/16/16 02:28
11M12673	RINSE	NA	1	1		06/16/16 03:00
11M12674	WG572855-06 BLANK2 STD 624	NA	2	1		06/16/16 03:31
11M12675	L16060828-01 A 624-SPE2	<2	2	1		06/16/16 04:03
11M12676	L16060828-02 A 624-SPE	<2	2	1		06/16/16 04:35
11M12677	L16060830-01 A 624-SPE	<2	2	1		06/16/16 05:07
11M12678	L16060830-02 A 624-SPE	<2	2	1		06/16/16 05:39
11M12679	CCV	NA	1	1		06/16/16 06:11

Approved: June 21, 2016
Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 061516

Analyst1: JDS Analyst2: NA

Method: 8260 SOP: MSV01 Rev: 23

Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Method: 624 SOP: MSV10 Rev: 14

Maintenance Log ID:

Internal Standard: STD76597 Surrogate Standard: STD76383

CCV: STD76405 LCS: STD76540 MS/MSD: STD76540

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG572855

Comments: Samples 650-01, 830-02, 834-04, -05, -06, -07 all require dilution reanalysis for compounds over the calibration limit.
Sample 650-01 also has suspected carryover of trichlorofluoromethane and chloroform and is rerunning.
Samples 650-02, -03, -04, -05, -06, -07, 834-08, -09 have suspected carryover and are rerunning and are not reported from this workgroup.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M12680	RINSE	NA	1	1		06/16/16 06:43
11M12681	RINSE	NA	1	1		06/16/16 07:15

Approved: June 21, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 061616
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID: 53787

Internal Standard: STD76597 Surrogate Standard: STD76383
CCV: STD76405 LCS: STD76540 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG573051

Comments: Samples 834-01, -04, -05, -06, -07 require further dilution.
Samples 650-01, -02 require reanalysis for carryover.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M12682	RINSE	NA	1	1		06/16/16 12:34
11M12683	WG573050-01 50ng BFB STD 8260	NA	1	1	STD76496	06/16/16 14:30
11M12684	WG573050-02 50ug/L CCV STD 8260	NA	1	1	STD76405	06/16/16 14:54
11M12685	WG573050-02 50ug/L CCV STD 8260	NA	1	1	STD76405	06/16/16 15:27
11M12686	WGXXXXXX-01 100ug/L A9-CCV STD 826	NA	1	1	STDXXXXX	06/16/16 15:59
11M12687	WG573051-01 BLANK STD 8260	NA	1	1		06/16/16 16:31
11M12688	WG573051-02 20ug/L LCS STD 8260	NA	1	1	STD76540	06/16/16 17:03
11M12689	WG573051-03 20ug/L LCS2 STD 8260	NA	1	1	STD76540	06/16/16 17:35
11M12690	RINSE	NA	1	1		06/16/16 18:07
11M12691	L16060650-09 A TB A1 826-LOW	<2	1	1		06/16/16 18:38
11M12692	L16060834-08 B TB A1 826-SPE	<2	1	1		06/16/16 19:10
11M12693	L16060650-03 B A1 826-LOW	<2	1	1		06/16/16 19:42
11M12694	L16060650-04 B A1 826-LOW	<2	1	1		06/16/16 20:14
11M12695	L16060650-05 B A1 826-LOW	<2	1	1		06/16/16 20:46
11M12696	L16060650-07 B A1 826-LOW	<2	1	1		06/16/16 21:18
11M12697	L16060834-09 B A1 826-SPE	<2	1	1		06/16/16 21:50
11M12698	L16060834-06 B D1 20X 826-SPE	<2	1	20		06/16/16 22:22
11M12699	L16060834-07 B D1 20X 826-SPE	<2	1	20		06/16/16 22:54
11M12700	L16060650-01 B D1 20X 826-LOW	<2	1	20		06/16/16 23:26
11M12701	L16060650-02 B D1 2.5X 826-LOW	<2	1	2.5		06/16/16 23:58
11M12702	L16060650-06 B D1 2X 826-LOW	<2	1	2		06/17/16 00:29
11M12703	L16060834-01 B D1 20X 826-SPE	<2	1	20		06/17/16 01:01
11M12704	L16060834-04 B D1 20X 826-SPE	<2	1	20		06/17/16 01:33
11M12705	L16060834-05 B D1 20X 826-SPE	<2	1	20		06/17/16 02:05
11M12706	RINSE	NA	1	1		06/17/16 02:37
11M12707	WG573051-04 BLANK2 STD 624	NA	2	1		06/17/16 03:09
11M12708	L16060830-02 B D1 10X 624-SPE	<2	2	10		06/17/16 03:41
11M12709	RINSE	NA	1	1		06/17/16 04:12
11M12710	L16060910-01 A 624-SPE	10	2	1		06/17/16 04:44
11M12711	L16060910-02 A 624-SPE	10	2	1		06/17/16 05:16
11M12712	L16060910-03 A 624-SPE	7	2	1		06/17/16 05:48
11M12713	L16060910-04 A 624-SPE	5	2	1		06/17/16 06:20
11M12714	CCV	NA	1	1		06/17/16 06:52

Approved: June 21, 2016
Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 061616

Analyst1: JDS Analyst2: NA

Method: 8260B SOP: MSV01 Rev: 23

Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID: 53787

Internal Standard: STD76597 Surrogate Standard: STD76383

CCV: STD76405 LCS: STD76540 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG573051

Comments: Samples 834-01, -04, -05, -06, -07 require further dilution.
Samples 650-01, -02 require reanalysis for carryover.

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M12715	RINSE	NA	1	1		06/17/16 07:24
11M12716	RINSE	NA	1	1		06/17/16 07:56

Approved: June 21, 2016

Sarah Vandenberg

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 061716
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD76597 Surrogate Standard: STD76383
CCV: STD76405 LCS: STD76540 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG573259

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M12717	WG573258-01 50ng BFB STD 8260	NA	1	1	STD76496	06/17/16 15:52
11M12718	WG573258-02 50ug/L CCV STD 8260	NA	1	1	STD76405	06/17/16 16:21
11M12719	WGXXXXXX-01 100ug/L A9-CCV STD 826	NA	1	1	STDXXXXX	06/17/16 16:53
11M12720	WG573259-01 BLANK STD 8260	NA	1	1		06/17/16 17:25
11M12721	WG573259-02 20ug/L LCS STD 8260	NA	1	1	STD76540	06/17/16 17:57
11M12722	WG573259-03 20ug/L LCS2 STD 8260	NA	1	1	STD76540	06/17/16 18:29
11M12723	L16060834-07 C D2 826-SPE	<2	1	100		06/17/16 19:01
11M12724	L16060650-01 C D1 20X 826-LOW	<2	1	20		06/17/16 19:33
11M12725	L16060650-02 C 00 2.5X 826-LOW	<2	1	2.5		06/17/16 20:05
11M12726	L16060834-06 C D2 500X 826-SPE	<2	1	500		06/17/16 20:37
11M12727	L16060834-01 C D2 200X 826-SPE	<2	1	200		06/17/16 21:09
11M12728	L16060834-04 C D2 200X 826-SPE	<2	1	200		06/17/16 21:41
11M12729	L16060834-05 C D2 200X 826-SPE	<2	1	200		06/17/16 22:13
11M12730	L16060900-04 A 826-SPE	<2	1	1		06/17/16 22:45
11M12731	L16060900-05 A 826-SPE	<2	1	1		06/17/16 23:16
11M12732	L16060900-06 A 826-SPE	<2	1	1		06/17/16 23:48
11M12733	L16060900-07 A 826-SPE	<2	1	1		06/18/16 00:20
11M12734	L16060900-08 A 826-SPE	<2	1	1		06/18/16 00:52
11M12735	L16060900-09 A 826-SPE	<2	1	1		06/18/16 01:24
11M12736	L16060787-10 A 826-SPE	<2	1	1		06/18/16 01:56
11M12737	L16060787-18 A 826-SPE	<2	1	1		06/18/16 02:28
11M12738	L16060787-19 A 826-SPE	<2	1	1		06/18/16 03:00
11M12739	L16060787-20 A 826-SPE	<2	1	1		06/18/16 03:31
11M12740	CCV	NA	1	1		06/18/16 04:03
11M12741	RINSE	NA	1	1		06/18/16 04:35
11M12742	RINSE	NA	1	1		06/18/16 05:07

Approved: June 23, 2016

Sarah Vandenberg

Page: 1

Microbac Laboratories Inc.

Data Checklist

Date: 14-JUN-2015
Analyst: TMB
Analyst: DLW
Method: 8260B/624
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 69930
Analytical Workgroups: WG527475

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
20-AUG-2015
Tiffany Bailey

Secondary Reviewer:
15-SEP-2015

CHECKLIST1 - Modified 03/05/2008
Generated: SEP-15-2015 14:33:53

Microbac Laboratories Inc.

Data Checklist

Date: 13-MAY-2016
Analyst: JDS
Analyst: NA
Method: 8260B
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 75133
Analytical Workgroups: WG568769

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	X
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
23-MAY-2016

Secondary Reviewer:
23-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-23-2016 15:39:32

Microbac Laboratories Inc.

Data Checklist

Date: 15-JUN-2016
Analyst: JDS
Analyst: NA
Method: 8260B/624
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 75734
Analytical Workgroups: WG572855

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	X
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	FJB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
21-JUN-2016

Secondary Reviewer:
21-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-21-2016 14:53:06

Microbac Laboratories Inc.

Data Checklist

Date: 16-JUN-2016
Analyst: JDS
Analyst: NA
Method: 8260B/624
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 75784
Analytical Workgroups: WG573051

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	FJB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	FJB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
21-JUN-2016

Secondary Reviewer:
21-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-21-2016 16:31:11

Microbac Laboratories Inc.

Data Checklist

Date: 17-JUN-2016
Analyst: JDS
Analyst: NA
Method: 8260B
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 75830
Analytical Workgroups: WG573259

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	FJB/WTD
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	FJB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
23-JUN-2016

Secondary Reviewer:
23-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-23-2016 14:53:12

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG572855

Login Number: L16060650

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW1-061016	01	06/10/16					06/16/2016	5.8	14		06/16/16	5.8	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4821289
Report generated 06/23/2016 14:51

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG573051

Login Number: L16060650

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
17WW08-061016	03	06/10/16					06/16/2016	6.4	14		06/16/16	6.4	14	
130-061016	04	06/10/16					06/16/2016	6.4	14		06/16/16	6.4	14	
130FD-061016	05	06/10/16					06/16/2016	6.4	14		06/16/16	6.4	14	
MW12-061016	06	06/10/16					06/17/2016	6.5	14		06/17/16	6.5	14	
18WW24-061016	07	06/10/16					06/16/2016	6.3	14		06/16/16	6.3	14	
TRIP BLANK	09	06/10/16					06/16/2016	6.8	14		06/16/16	6.8	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4821289
Report generated 06/23/2016 14:51

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG573259

Login Number: L16060650

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW1-061016	01	06/10/16					06/17/2016	7.5	14		06/17/16	7.5	14	
MW3-061016	02	06/10/16					06/17/2016	7.5	14		06/17/16	7.5	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4821289
Report generated 06/23/2016 14:51

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060650
Instrument Id: HPMS11
Workgroup (AAB#): WG573259

Method: 8260
CAL ID: HPMS11-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16060650-01	20.0	DL02	91.5	95.3	102	95.5
L16060650-02	2.50	DL01	91.6	97.4	103	95.8
WG573259-01	1.00	01	91.5	94.4	105	97.3
WG573259-02	1.00	01	95.1	99.3	102	99.5
WG573259-03	1.00	01	94.3	98.1	103	95.9

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4821297
Report generated: 06/23/2016 14:51

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060650
Instrument Id: HPMS11
Workgroup (AAB#): WG572855

Method: 8260
CAL ID: HPMS11-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16060650-01	10.0	DL01	93.0	98.8	107	99.4
WG572855-01	1.00	01	88.7	93.4	105	99.2
WG572855-02	1.00	01	90.0	97.5	102	98.2
WG572855-06	1.00	01	94.0	99.1	106	98.4

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4821297
Report generated: 06/23/2016 14:51

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060650
Instrument Id: HPMS11
Workgroup (AAB#): WG573051

Method: 8260
CAL ID: HPMS11-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16060650-03	1.00	01	88.3	93.3	104	97.6
L16060650-04	1.00	01	90.0	98.0	104	98.3
L16060650-05	1.00	01	89.0	95.2	100	96.5
L16060650-06	2.00	DL01	90.7	94.6	102	95.7
L16060650-07	1.00	01	90.6	95.9	104	96.4
L16060650-09	1.00	01	88.0	94.3	102	96.0
WG573051-01	1.00	01	90.3	94.2	104	98.2
WG573051-02	1.00	01	90.4	97.5	104	98.1
WG573051-03	1.00	01	90.4	96.7	99.9	98.5
WG573051-04	1.00	01	96.9	97.6	104	98.1

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4821297
Report generated: 06/23/2016 14:51

METHOD BLANK SUMMARY

Login Number: L16060650
Blank File ID: 11M12654
Prep Date: 06/15/16 16:53
Analyzed Date: 06/15/16 16:53
Analyst: JDS

Work Group: WG572855
Blank Sample ID: WG572855-01
Instrument ID: HPMS11
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572855-02	11M12655	06/15/16 17:25	01
MW1-061016	L16060650-01	11M12671	06/16/16 01:56	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4821290
Report generated 06/23/2016 14:51

METHOD BLANK SUMMARY

Login Number: L16060650
Blank File ID: 11M12687
Prep Date: 06/16/16 16:31
Analyzed Date: 06/16/16 16:31
Analyst: JDS

Work Group: WG573051
Blank Sample ID: WG573051-01
Instrument ID: HPMS11
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573051-02	11M12688	06/16/16 17:03	01
LCS2	WG573051-03	11M12689	06/16/16 17:35	01
TRIP BLANK	L16060650-09	11M12691	06/16/16 18:38	01
17WW08-061016	L16060650-03	11M12693	06/16/16 19:42	01
130-061016	L16060650-04	11M12694	06/16/16 20:14	01
130FD-061016	L16060650-05	11M12695	06/16/16 20:46	01
18WW24-061016	L16060650-07	11M12696	06/16/16 21:18	01
MW12-061016	L16060650-06	11M12702	06/17/16 00:29	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4821290
Report generated 06/23/2016 14:51

METHOD BLANK SUMMARY

Login Number: L16060650
Blank File ID: 11M12720
Prep Date: 06/17/16 17:25
Analyzed Date: 06/17/16 17:25
Analyst: JDS

Work Group: WG573259
Blank Sample ID: WG573259-01
Instrument ID: HPMS11
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573259-02	11M12721	06/17/16 17:57	01
LCS2	WG573259-03	11M12722	06/17/16 18:29	01
MW1-061016	L16060650-01	11M12724	06/17/16 19:33	DL02
MW3-061016	L16060650-02	11M12725	06/17/16 20:05	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4821290
Report generated 06/23/2016 14:51

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16060650 Prep Date: 06/15/16 16:53 Sample ID: WG572855-01
Instrument ID: HPMS11 Run Date: 06/15/16 16:53 Prep Method: 5030B/5030C/503
File ID: 11M12654 Analyst: JDS Method: 8260B
Workgroup (AAB#): WG572855 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.343	1	J
Isopropylbenzene	0.250	1.00	0.250	1	U
p-Isopropyltoluene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4821291
23-JUN-2016 14:51

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060650 Prep Date: 06/15/16 16:53 Sample ID: WG572855-01
Instrument ID: HPMS11 Run Date: 06/15/16 16:53 Prep Method: 5030B/5030C/503
File ID: 11M12654 Analyst: JDS Method: 8260B
Workgroup (AAB#): WG572855 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	93.4	85 - 115	PASS
1,2-Dichloroethane-d4	88.7	70 - 120	PASS
Toluene-d8	99.2	85 - 120	PASS
4-Bromofluorobenzene	105	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4821291
23-JUN-2016 14:51

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060650 Prep Date: 06/16/16 16:31 Sample ID: WG573051-01
Instrument ID: HPMS11 Run Date: 06/16/16 16:31 Prep Method: 5030B/5030C/503
File ID: 11M12687 Analyst: JDS Method: 8260B
Workgroup (AAB#): WG573051 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 4821291
23-JUN-2016 14:51

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060650 Prep Date: 06/16/16 16:31 Sample ID: WG573051-01
Instrument ID: HPMS11 Run Date: 06/16/16 16:31 Prep Method: 5030B/5030C/503
File ID: 11M12687 Analyst: JDS Method: 8260B
Workgroup (AAB#): WG573051 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.353	1	J
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	94.2	85 - 115	PASS
1,2-Dichloroethane-d4	90.3	70 - 120	PASS
Toluene-d8	98.2	85 - 120	PASS
4-Bromofluorobenzene	104	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4821291
23-JUN-2016 14:51

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16060650 Prep Date: 06/17/16 17:25 Sample ID: WG573259-01
Instrument ID: HPMS11 Run Date: 06/17/16 17:25 Prep Method: 5030B/5030C/503
File ID: 11M12720 Analyst: JDS Method: 8260B
Workgroup (AAB#): WG573259 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4821291
23-JUN-2016 14:51

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060650 Prep Date: 06/17/16 17:25 Sample ID: WG573259-01
Instrument ID: HPMS11 Run Date: 06/17/16 17:25 Prep Method: 5030B/5030C/503
File ID: 11M12720 Analyst: JDS Method: 8260B
Workgroup (AAB#): WG573259 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	94.4	85 - 115	PASS
1,2-Dichloroethane-d4	91.5	70 - 120	PASS
Toluene-d8	97.3	85 - 120	PASS
4-Bromofluorobenzene	105	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4821291
23-JUN-2016 14:51

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060650 | Run Date: 06/15/2016 | Sample ID: WG572855-02
Instrument ID: HPMS11 | Run Time: 17:25 | Prep Method: 5030B/5030C/503
File ID: 11M12655 | Analyst: JDS | Method: 8260B
Workgroup (AAB#): WG572855 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD76540 | Cal ID: HPMS11-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	18.7	93.7	40 - 140	
Benzene	20.0	18.9	94.6	80 - 120	
Bromobenzene	20.0	20.2	101	75 - 125	
Bromochloromethane	20.0	21.6	108	65 - 130	
Bromodichloromethane	20.0	20.0	100	75 - 120	
Bromoform	20.0	21.0	105	70 - 130	
Bromomethane	20.0	21.3	106	30 - 145	
2-Butanone	20.0	18.6	93.0	30 - 150	
n-Butylbenzene	20.0	18.0	90.1	70 - 135	
sec-Butylbenzene	20.0	19.6	97.8	70 - 125	
tert-Butylbenzene	20.0	21.0	105	70 - 130	
Carbon disulfide	20.0	17.5	87.5	35 - 160	
Carbon tetrachloride	20.0	19.2	96.0	65 - 140	
Chlorobenzene	20.0	20.9	104	80 - 120	
Chlorodibromomethane	20.0	21.6	108	60 - 135	
Chloroethane	20.0	20.2	101	60 - 135	
Chloromethane	20.0	16.9	84.4	40 - 125	
2-Chlorotoluene	20.0	19.9	99.7	75 - 125	
4-Chlorotoluene	20.0	20.6	103	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	18.1	90.6	50 - 130	
1,2-Dibromoethane	20.0	21.2	106	80 - 120	
Dibromomethane	20.0	19.8	98.9	75 - 125	
1,2-Dichlorobenzene	20.0	21.0	105	70 - 120	
1,3-Dichlorobenzene	20.0	20.5	102	75 - 125	
1,4-Dichlorobenzene	20.0	20.7	103	75 - 125	
Dichlorodifluoromethane	20.0	17.8	89.1	30 - 155	
1,1-Dichloroethane	20.0	17.9	89.7	70 - 135	
1,2-Dichloroethane	20.0	19.9	99.3	70 - 130	
1,1-Dichloroethene	20.0	17.4	87.2	70 - 130	
cis-1,2-Dichloroethene	20.0	19.9	99.6	70 - 125	
trans-1,2-Dichloroethene	20.0	19.6	98.0	60 - 140	
1,2-Dichloropropane	20.0	19.4	97.2	75 - 125	
1,3-Dichloropropane	20.0	22.0	110	75 - 125	
2,2-Dichloropropane	20.0	19.5	97.4	70 - 135	
cis-1,3-Dichloropropene	20.0	22.1	111	70 - 130	
trans-1,3-Dichloropropene	20.0	20.5	102	55 - 140	
1,1-Dichloropropene	20.0	18.8	93.9	75 - 130	
Ethylbenzene	20.0	20.6	103	75 - 125	
2-Hexanone	20.0	17.1	85.5	55 - 130	
Hexachlorobutadiene	20.0	16.5	82.7	50 - 140	
Isopropylbenzene	20.0	20.5	103	75 - 125	

LCS - Modified 03/06/2008
PDF File ID: 4821534
Report generated: 06/23/2016 15:00

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060650 | Run Date: 06/15/2016 | Sample ID: WG572855-02
Instrument ID: HPMS11 | Run Time: 17:25 | Prep Method: 5030B/5030C/503
File ID: 11M12655 | Analyst: JDS | Method: 8260B
Workgroup (AAB#): WG572855 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD76540 | Cal ID: HPMS11-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
p-Isopropyltoluene	20.0	19.8	99.0	75 - 130	
4-Methyl-2-pentanone	20.0	18.5	92.6	60 - 135	
Methylene chloride	20.0	19.4	97.2	55 - 140	
Naphthalene	20.0	17.7	88.5	55 - 140	
n-Propylbenzene	20.0	20.2	101	70 - 130	
Styrene	20.0	21.3	106	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	21.2	106	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	19.3	96.6	65 - 130	
Tetrachloroethene	20.0	20.2	101	45 - 150	
Toluene	20.0	20.2	101	75 - 120	
1,2,3-Trichlorobenzene	20.0	19.2	95.9	55 - 140	
1,2,4-Trichlorobenzene	20.0	19.3	96.5	65 - 135	
1,1,1-Trichloroethane	20.0	19.5	97.4	65 - 130	
1,1,2-Trichloroethane	20.0	21.0	105	75 - 125	
1,2,3-Trichloropropane	20.0	20.7	103	75 - 125	
1,2,4-Trimethylbenzene	20.0	20.3	102	75 - 130	
1,3,5-Trimethylbenzene	20.0	20.1	101	75 - 130	
Vinyl chloride	20.0	20.1	101	50 - 145	
o-Xylene	20.0	20.9	105	80 - 120	
m-,p-Xylene	40.0	41.1	103	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	97.5	85 - 115	PASS
1,2-Dichloroethane-d4	90.0	70 - 120	PASS
Toluene-d8	98.2	85 - 120	PASS
4-Bromofluorobenzene	102	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4821534
Report generated: 06/23/2016 15:00

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060650 Analyst: JDS Prep Method: 5030B/5030C/503
Instrument ID: HPMS11 Matrix: Water Method: 8260B
Workgroup (AAB#): WG573051 Units: ug/L
QC Key: DOD4 Lot #: STD76540

Sample ID: WG573051-02 LCS File ID: 11M12688 Run Date: 06/16/2016 17:03
Sample ID: WG573051-03 LCS2 File ID: 11M12689 Run Date: 06/16/2016 17:35

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	21.2	106	20.0	21.2	106	0.235	80 - 130	30	
1,1,1-Trichloroethane	20.0	19.9	99.7	20.0	19.4	97.0	2.74	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	19.1	95.5	20.0	19.3	96.4	0.905	65 - 130	30	
1,1,2-Trichloroethane	20.0	21.0	105	20.0	21.1	106	0.630	75 - 125	30	
1,1-Dichloroethane	20.0	18.4	91.9	20.0	18.2	91.0	0.924	70 - 135	30	
1,1-Dichloroethene	20.0	17.6	88.1	20.0	17.2	86.0	2.46	70 - 130	30	
1,1-Dichloropropene	20.0	19.7	98.4	20.0	18.9	94.7	3.86	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	20.6	103	20.0	20.4	102	0.512	55 - 140	30	
1,2,3-Trichloropropane	20.0	21.6	108	20.0	21.7	109	0.683	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	20.9	105	20.0	20.8	104	0.411	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	20.7	104	20.0	20.1	101	2.98	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	18.3	91.4	20.0	18.9	94.4	3.22	50 - 130	30	
1,2-Dibromoethane	20.0	21.3	106	20.0	21.6	108	1.38	80 - 120	30	
1,2-Dichlorobenzene	20.0	21.3	106	20.0	21.3	106	0.0894	70 - 120	30	
1,2-Dichloroethane	20.0	20.2	101	20.0	20.3	102	0.532	70 - 130	30	
1,2-Dichloropropane	20.0	19.4	97.2	20.0	19.2	95.8	1.48	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	20.7	104	20.0	20.3	101	2.08	75 - 130	30	
1,3-Dichlorobenzene	20.0	21.2	106	20.0	20.7	103	2.50	75 - 125	30	
1,3-Dichloropropane	20.0	21.7	108	20.0	22.2	111	2.41	75 - 125	30	
1,4-Dichlorobenzene	20.0	21.1	106	20.0	20.7	104	1.78	75 - 125	30	
2,2-Dichloropropane	20.0	20.0	99.8	20.0	19.2	96.2	3.66	70 - 135	30	
2-Butanone	20.0	18.8	93.9	20.0	19.7	98.5	4.78	30 - 150	30	
2-Chlorotoluene	20.0	20.2	101	20.0	19.7	98.6	2.66	75 - 125	30	
2-Hexanone	20.0	17.2	86.0	20.0	18.3	91.4	6.08	55 - 130	30	
4-Chlorotoluene	20.0	20.9	105	20.0	20.2	101	3.41	75 - 130	30	
4-Methyl-2-pentanone	20.0	19.1	95.7	20.0	19.4	97.0	1.38	60 - 135	30	
Acetone	20.0	18.9	94.6	20.0	20.5	102	7.97	40 - 140	30	
Benzene	20.0	19.2	95.8	20.0	18.9	94.3	1.64	80 - 120	30	
Bromobenzene	20.0	20.3	102	20.0	20.4	102	0.311	75 - 125	30	
Bromochloromethane	20.0	22.2	111	20.0	21.9	109	1.38	65 - 130	30	
Bromodichloromethane	20.0	20.2	101	20.0	20.4	102	1.16	75 - 120	30	
Bromoform	20.0	21.1	105	20.0	21.8	109	3.42	70 - 130	30	
Bromomethane	20.0	21.1	106	20.0	19.9	99.3	6.30	30 - 145	30	
Carbon disulfide	20.0	17.3	86.4	20.0	17.6	87.9	1.75	35 - 160	30	
Carbon tetrachloride	20.0	20.4	102	20.0	19.5	97.7	4.22	65 - 140	30	
Chlorobenzene	20.0	21.3	106	20.0	21.1	105	1.03	80 - 120	30	
Chloroethane	20.0	20.3	102	20.0	20.8	104	2.44	60 - 135	30	
Chloroform	20.0	19.2	95.9	20.0	19.1	95.7	0.173	65 - 135	30	
Chloromethane	20.0	18.7	93.4	20.0	18.8	94.0	0.663	40 - 125	30	
cis-1,2-Dichloroethene	20.0	20.3	102	20.0	19.7	98.7	2.78	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4821292
Report generated: 06/23/2016 14:51

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060650 Analyst: JDS Prep Method: 5030B/5030C/503
Instrument ID: HPMS11 Matrix: Water Method: 8260B
Workgroup (AAB#): WG573051 Units: ug/L
QC Key: DOD4 Lot #: STD76540

Sample ID: WG573051-02 LCS File ID: 11M12688 Run Date: 06/16/2016 17:03
Sample ID: WG573051-03 LCS2 File ID: 11M12689 Run Date: 06/16/2016 17:35

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	22.1	111	20.0	22.1	111	0.0207	70 - 130	30	
Chlorodibromomethane	20.0	22.0	110	20.0	21.9	110	0.217	60 - 135	30	
Dibromomethane	20.0	19.5	97.6	20.0	19.7	98.5	0.921	75 - 125	30	
Dichlorodifluoromethane	20.0	18.5	92.6	20.0	18.5	92.7	0.0933	30 - 155	30	
Ethylbenzene	20.0	20.1	101	20.0	20.4	102	1.26	75 - 125	30	
Hexachlorobutadiene	20.0	19.6	97.9	20.0	18.6	93.1	4.95	50 - 140	30	
Isopropylbenzene	20.0	21.3	107	20.0	21.0	105	1.57	75 - 125	30	
m-,p-Xylene	40.0	42.1	105	40.0	41.3	103	2.02	75 - 130	30	
Methylene chloride	20.0	19.0	95.1	20.0	19.3	96.4	1.44	55 - 140	30	
n-Butylbenzene	20.0	19.8	99.1	20.0	19.1	95.3	3.91	70 - 135	30	
n-Propylbenzene	20.0	21.2	106	20.0	20.5	103	3.21	70 - 130	30	
Naphthalene	20.0	19.0	94.9	20.0	19.8	98.9	4.11	55 - 140	30	
o-Xylene	20.0	21.1	106	20.0	21.3	107	1.05	80 - 120	30	
p-Isopropyltoluene	20.0	21.2	106	20.0	20.3	102	4.36	75 - 130	30	
sec-Butylbenzene	20.0	21.1	106	20.0	20.2	101	4.27	70 - 125	30	
Styrene	20.0	21.4	107	20.0	21.4	107	0.247	65 - 135	30	
tert-Butylbenzene	20.0	22.1	110	20.0	20.7	103	6.69	70 - 130	30	
Tetrachloroethene	20.0	21.0	105	20.0	21.0	105	0.198	45 - 150	30	
Toluene	20.0	20.4	102	20.0	20.2	101	1.02	75 - 120	30	
trans-1,2-Dichloroethene	20.0	20.1	101	20.0	19.4	96.8	3.93	60 - 140	30	
trans-1,3-Dichloropropene	20.0	20.5	103	20.0	20.5	103	0.0312	55 - 140	30	
Trichloroethene	20.0	21.7	108	20.0	21.7	109	0.207	70 - 125	30	
Trichlorofluoromethane	20.0	19.8	99.0	20.0	19.8	99.0	0.0045	60 - 145	30	
Vinyl chloride	20.0	21.0	105	20.0	21.4	107	1.57	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	90.4	90.4	70 - 120	PASS
Dibromofluoromethane	97.5	96.7	85 - 115	PASS
4-Bromofluorobenzene	104	99.9	75 - 120	PASS
Toluene-d8	98.1	98.5	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4821292
Report generated: 06/23/2016 14:51

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060650 Analyst: JDS Prep Method: 5030B/5030C/503
Instrument ID: HPMS11 Matrix: Water Method: 8260B
Workgroup (AAB#): WG573259 Units: ug/L
QC Key: DOD4 Lot #: STD76540

Sample ID: WG573259-02 LCS File ID: 11M12721 Run Date: 06/17/2016 17:57
Sample ID: WG573259-03 LCS2 File ID: 11M12722 Run Date: 06/17/2016 18:29

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	22.8	114	20.0	21.4	107	6.59	80 - 130	30	
1,1,1-Trichloroethane	20.0	21.5	108	20.0	20.6	103	4.39	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	18.8	94.1	20.0	19.9	99.5	5.54	65 - 130	30	
1,1,2-Trichloroethane	20.0	22.3	112	20.0	21.4	107	4.04	75 - 125	30	
1,1-Dichloroethane	20.0	18.8	93.8	20.0	18.1	90.4	3.62	70 - 135	30	
1,1-Dichloroethene	20.0	18.1	90.6	20.0	16.6	83.0	8.76	70 - 130	30	
1,1-Dichloropropene	20.0	19.6	97.9	20.0	19.0	95.1	2.85	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	21.6	108	20.0	21.2	106	1.75	55 - 140	30	
1,2,3-Trichloropropane	20.0	22.4	112	20.0	22.8	114	1.79	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	20.2	101	20.0	20.9	105	3.39	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	21.2	106	20.0	20.8	104	1.77	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	19.8	99.2	20.0	20.3	102	2.34	50 - 130	30	
1,2-Dibromoethane	20.0	22.2	111	20.0	22.2	111	0.251	80 - 120	30	
1,2-Dichlorobenzene	20.0	21.9	109	20.0	21.9	109	0.138	70 - 120	30	
1,2-Dichloroethane	20.0	22.3	112	20.0	22.1	110	1.15	70 - 130	30	
1,2-Dichloropropane	20.0	20.5	102	20.0	19.7	98.7	3.58	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	21.1	105	20.0	21.1	105	0.166	75 - 130	30	
1,3-Dichlorobenzene	20.0	21.3	107	20.0	21.2	106	0.808	75 - 125	30	
1,3-Dichloropropane	20.0	23.2	116	20.0	22.3	112	4.04	75 - 125	30	
1,4-Dichlorobenzene	20.0	21.4	107	20.0	21.2	106	0.988	75 - 125	30	
2,2-Dichloropropane	20.0	20.0	100	20.0	18.7	93.4	7.06	70 - 135	30	
2-Butanone	20.0	20.2	101	20.0	21.6	108	6.58	30 - 150	30	
2-Chlorotoluene	20.0	21.1	105	20.0	21.2	106	0.258	75 - 125	30	
2-Hexanone	20.0	18.5	92.5	20.0	18.7	93.5	1.01	55 - 130	30	
4-Chlorotoluene	20.0	20.3	102	20.0	20.4	102	0.468	75 - 130	30	
4-Methyl-2-pentanone	20.0	19.8	99.0	20.0	20.9	105	5.46	60 - 135	30	
Acetone	20.0	22.2	111	20.0	23.5	117	5.60	40 - 140	30	
Benzene	20.0	19.7	98.3	20.0	18.8	94.1	4.40	80 - 120	30	
Bromobenzene	20.0	20.7	103	20.0	20.6	103	0.179	75 - 125	30	
Bromochloromethane	20.0	23.4	117	20.0	22.2	111	5.21	65 - 130	30	
Bromodichloromethane	20.0	22.0	110	20.0	21.6	108	1.89	75 - 120	30	
Bromoform	20.0	23.4	117	20.0	23.1	116	1.13	70 - 130	30	
Bromomethane	20.0	21.0	105	20.0	19.3	96.7	8.27	30 - 145	30	
Carbon disulfide	20.0	17.7	88.3	20.0	17.1	85.6	3.18	35 - 160	30	
Carbon tetrachloride	20.0	22.2	111	20.0	21.0	105	5.66	65 - 140	30	
Chlorobenzene	20.0	22.2	111	20.0	21.0	105	5.53	80 - 120	30	
Chloroethane	20.0	20.5	103	20.0	20.2	101	1.61	60 - 135	30	
Chloroform	20.0	20.5	102	20.0	19.7	98.5	3.94	65 - 135	30	
Chloromethane	20.0	19.6	97.8	20.0	19.3	96.3	1.56	40 - 125	30	
cis-1,2-Dichloroethene	20.0	20.9	105	20.0	20.0	99.8	4.81	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4821292
Report generated: 06/23/2016 14:51

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060650 Analyst: JDS Prep Method: 5030B/5030C/503
Instrument ID: HPMS11 Matrix: Water Method: 8260B
Workgroup (AAB#): WG573259 Units: ug/L
QC Key: DOD4 Lot #: STD76540

Sample ID: WG573259-02 LCS File ID: 11M12721 Run Date: 06/17/2016 17:57
Sample ID: WG573259-03 LCS2 File ID: 11M12722 Run Date: 06/17/2016 18:29

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	22.6	113	20.0	21.5	108	5.08	70 - 130	30	
Chlorodibromomethane	20.0	23.4	117	20.0	23.3	116	0.551	60 - 135	30	
Dibromomethane	20.0	21.9	109	20.0	21.1	105	3.60	75 - 125	30	
Dichlorodifluoromethane	20.0	19.0	95.2	20.0	18.7	93.6	1.70	30 - 155	30	
Ethylbenzene	20.0	21.3	107	20.0	20.2	101	5.52	75 - 125	30	
Hexachlorobutadiene	20.0	19.8	98.8	20.0	19.6	98.2	0.529	50 - 140	30	
Isopropylbenzene	20.0	22.6	113	20.0	21.4	107	5.33	75 - 125	30	
m-,p-Xylene	40.0	43.2	108	40.0	41.4	104	4.24	75 - 130	30	
Methylene chloride	20.0	19.9	99.3	20.0	19.2	95.8	3.60	55 - 140	30	
n-Butylbenzene	20.0	19.8	99.1	20.0	19.8	99.0	0.160	70 - 135	30	
n-Propylbenzene	20.0	21.4	107	20.0	21.1	105	1.32	70 - 130	30	
Naphthalene	20.0	19.7	98.3	20.0	20.2	101	2.74	55 - 140	30	
o-Xylene	20.0	21.9	110	20.0	20.5	102	6.66	80 - 120	30	
p-Isopropyltoluene	20.0	21.4	107	20.0	21.3	107	0.449	75 - 130	30	
sec-Butylbenzene	20.0	21.3	107	20.0	21.0	105	1.26	70 - 125	30	
Styrene	20.0	22.4	112	20.0	21.5	107	4.26	65 - 135	30	
tert-Butylbenzene	20.0	21.9	110	20.0	22.2	111	1.28	70 - 130	30	
Tetrachloroethene	20.0	21.9	109	20.0	20.3	102	7.40	45 - 150	30	
Toluene	20.0	21.0	105	20.0	20.0	100	4.61	75 - 120	30	
trans-1,2-Dichloroethene	20.0	19.9	99.4	20.0	19.1	95.5	4.03	60 - 140	30	
trans-1,3-Dichloropropene	20.0	21.2	106	20.0	20.8	104	2.10	55 - 140	30	
Trichloroethene	20.0	23.5	117	20.0	22.4	112	4.65	70 - 125	30	
Trichlorofluoromethane	20.0	21.8	109	20.0	20.9	105	4.14	60 - 145	30	
Vinyl chloride	20.0	22.9	114	20.0	22.1	111	3.38	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	95.1	94.3	70 - 120	PASS
Dibromofluoromethane	99.3	98.1	85 - 115	PASS
4-Bromofluorobenzene	102	103	75 - 120	PASS
Toluene-d8	99.5	95.9	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4821292
Report generated: 06/23/2016 14:51

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060650
Instrument: HPMS11
Analyst: TMB /DLW
Workgroup: WG527475

Tune ID: WG527475-01
Run Date: 06/14/2015
Run Time: 09:34
File ID: 11M08234
Cal ID: HPMS11 - 14-JUN-15

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.9	7754	PASS
75.0	95.0	30.0	60.0	49.9	19472	PASS
95.0	95.0	100	100	100	38997	PASS
96.0	95.0	5.00	9.00	7.00	2731	PASS
173	174	0	2.00	0.338	111	PASS
174	95.0	50.0	100	84.2	32837	PASS
175	174	5.00	9.00	7.18	2357	PASS
176	174	95.0	101	97.9	32146	PASS
177	176	5.00	9.00	7.11	2284	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG527475-02	STD	01	06/14/2015 09:58	
WG527475-03	STD	01	06/14/2015 10:30	
WG527475-04	STD	01	06/14/2015 11:02	
WG527475-05	STD-CCV	01	06/14/2015 11:34	
WG527475-06	STD	01	06/14/2015 12:06	
WG527475-07	STD	01	06/14/2015 12:38	
WG527475-08	STD	01	06/14/2015 13:10	
WG527475-09	STD	01	06/14/2015 13:42	
WG527475-10	SSCV	01	06/14/2015 15:18	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4821294
Report generated 06/23/2016 14:51

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060650
Instrument: HPMS11
Analyst: JDS
Workgroup: WG568769

Tune ID: WG568769-01
Run Date: 05/13/2016
Run Time: 14:15
File ID: 11M11836
Cal ID: HPMS11 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	24.2	11638	PASS
75.0	95.0	30.0	60.0	50.2	24088	PASS
95.0	95.0	100	100	100	48016	PASS
96.0	95.0	5.00	9.00	6.26	3008	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	86.2	41402	PASS
175	174	5.00	9.00	8.26	3421	PASS
176	174	95.0	101	97.3	40288	PASS
177	176	5.00	9.00	6.92	2789	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG568769-02	STD	01	05/13/2016 14:40	
WG568769-03	STD	01	05/13/2016 15:12	
WG568769-04	STD	01	05/13/2016 15:43	
WG568769-05	STD	01	05/13/2016 16:15	
WG568769-06	STD	01	05/13/2016 16:47	
WG568769-07	STD	01	05/13/2016 17:19	
WG568769-08	STD-CCV	01	05/13/2016 17:51	
WG568769-09	STD	01	05/13/2016 18:22	
WG568769-10	STD	01	05/13/2016 18:54	
WG568769-11	STD	01	05/13/2016 19:26	
WG568769-12	SSCV	01	05/13/2016 20:30	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4821294
Report generated 06/23/2016 14:51

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060650
Instrument: HPMS11
Analyst: JDS
Workgroup: WG572854

Tune ID: WG572854-01
Run Date: 06/15/2016
Run Time: 14:48
File ID: 11M12650
Cal ID: HPMS11 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.6	10714	PASS
75.0	95.0	30.0	60.0	49.2	24408	PASS
95.0	95.0	100	100	100	49597	PASS
96.0	95.0	5.00	9.00	6.88	3414	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	88.1	43714	PASS
175	174	5.00	9.00	7.13	3117	PASS
176	174	95.0	101	97.9	42776	PASS
177	176	5.00	9.00	6.50	2781	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG572854-02	CCV	01	06/15/2016 15:49	
WG572855-01	BLANK	01	06/15/2016 16:53	
WG572855-02	LCS	01	06/15/2016 17:25	
L16060650-01	MW1-061016	DL01	06/16/2016 01:56	
WG572855-06	BLANK2	01	06/16/2016 03:31	*

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4821294
Report generated 06/23/2016 14:51

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060650
Instrument: HPMS11
Analyst: JDS
Workgroup: WG573050

Tune ID: WG573050-01
Run Date: 06/16/2016
Run Time: 14:30
File ID: 11M12683
Cal ID: HPMS11 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.8	5543	PASS
75.0	95.0	30.0	60.0	50.3	12778	PASS
95.0	95.0	100	100	100	25380	PASS
96.0	95.0	5.00	9.00	6.91	1754	PASS
173	174	0	2.00	0.423	107	PASS
174	95.0	50.0	100	99.6	25285	PASS
175	174	5.00	9.00	8.06	2037	PASS
176	174	95.0	101	96.6	24437	PASS
177	176	5.00	9.00	6.11	1493	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573050-02	CCV	01	06/16/2016 15:27	
WG573051-01	BLANK	01	06/16/2016 16:31	
WG573051-02	LCS	01	06/16/2016 17:03	
WG573051-03	LCS2	01	06/16/2016 17:35	
L16060650-09	TRIP BLANK	01	06/16/2016 18:38	
L16060650-03	17WW08-061016	01	06/16/2016 19:42	
L16060650-04	130-061016	01	06/16/2016 20:14	
L16060650-05	130FD-061016	01	06/16/2016 20:46	
L16060650-07	18WW24-061016	01	06/16/2016 21:18	
L16060650-06	MW12-061016	DL01	06/17/2016 00:29	
WG573051-04	BLANK2	01	06/17/2016 03:09	*

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4821294
Report generated 06/23/2016 14:51

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060650
Instrument: HPMS11
Analyst: JDS
Workgroup: WG573258

Tune ID: WG573258-01
Run Date: 06/17/2016
Run Time: 15:52
File ID: 11M12717
Cal ID: HPMS11 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.1	6774	PASS
75.0	95.0	30.0	60.0	49.8	16790	PASS
95.0	95.0	100	100	100	33736	PASS
96.0	95.0	5.00	9.00	6.67	2249	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	93.7	31597	PASS
175	174	5.00	9.00	7.80	2463	PASS
176	174	95.0	101	98.7	31186	PASS
177	176	5.00	9.00	6.80	2122	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573258-02	CCV	01	06/17/2016 16:21	
WG573259-01	BLANK	01	06/17/2016 17:25	
WG573259-02	LCS	01	06/17/2016 17:57	
WG573259-03	LCS2	01	06/17/2016 18:29	
L16060650-01	MW1-061016	DL02	06/17/2016 19:33	
L16060650-02	MW3-061016	DL01	06/17/2016 20:05	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4821294
Report generated 06/23/2016 14:51

Calibration Table Report
Method: A9FOOWT.M
Title: Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Calibration: Thu Aug 20 11:41:47 2015
Curve: WG527475
Calibration Files

	Compound	5 11M08235.D	20 11M08236.D	50 11M08237.D	100 11M08238.D	200 11M08239.D	300 11M08240.D	400 11M08241.D	500 11M08242.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD											
T	Acetonitrile	0.024	0.022	0.018	0.018	0.018	0.018	0.018	0.018	0.019	13.425		
T	3-Chloro-1-propene	0.380	0.372	0.371	0.380	0.375	0.379	0.368	0.385	0.376	1.470		
T	2-Chloro-1,3-butadiene	0.421	0.418	0.426	0.444	0.450	0.482	0.477	0.496	0.452	6.648		
T	Methacrylonitrile	0.124	0.115	0.112	0.114	0.112	0.114	0.120	0.119	0.116	3.530		
T	Isobutyl Alcohol		0.006	0.006	0.006	0.005	0.006	0.006	0.006	0.006	5.929		
T	1-Butanol			0.003	0.003	0.003	0.003	0.003	0.003	0.003	5.214		
T	Cyclohexanone		0.031	0.028	0.031	0.030	0.027	0.028	0.026	0.029	6.768		
T	2-Nitropropane			0.028	0.032	0.035	0.039	0.042	0.044	0.037	16.955	0.996	
T	Ethyl Acetate	0.133	0.145	0.133	0.140	0.137	0.136	0.141	0.139	0.138	3.039		
T	Methyl methacrylate	0.151	0.161	0.151	0.158	0.158	0.161	0.170	0.172	0.160	4.681		
I	Chlorobenzene-d5	ISTD											
I	1,4-Dichlorobenzene-d4	ISTD											

Thu Aug 20 11:49:17 2015

Calibration Table Report
Method: 8260WT.M
Title: 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Calibration: Sat May 14 18:45:57 2016
Curve: WG568769
Calibration Files

	Compound	0.3	0.4	1	2	5	20	50	100	200	300	Avg	%RSD	Linear	Quadratic
		11M11837.D	11M11838.D	11M11839.D	11M11840.D	11M11841.D	11M11842.D	11M11843.D	11M11844.D	11M11845.D	11M11846.D				
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.345	0.368	0.326	0.431	0.400	0.424	0.417	0.424	0.392	10.308		
P	Chloromethane			0.348	0.363	0.289	0.310	0.276	0.296	0.305	0.324	0.314	9.474		
C	Vinyl Chloride		0.275	0.241	0.249	0.244	0.268	0.250	0.271	0.271	0.276	0.261	5.458		
T	1,3-Butadiene					0.242	0.284	0.269	0.264	0.256	0.240	0.259	6.530		
T	Bromomethane			0.167	0.174	0.164	0.180	0.165	0.182	0.194	0.206	0.179	8.292		
T	Chloroethane			0.164	0.165	0.151	0.174	0.161	0.171	0.173	0.181	0.167	5.524		
T	Trichlorofluoromethane		0.514	0.523	0.537	0.496	0.552	0.498	0.524	0.514	0.514	0.519	3.376		
T	Diethyl ether			0.189	0.191	0.195	0.196	0.188	0.193		0.192	0.192	1.552		
T	Isoprene					0.299	0.331	0.317	0.323	0.325	0.325	0.320	3.522		
T	Acrolein			0.013	0.022	0.024	0.024	0.024	0.025		0.027	0.023	19.436	0.999	
T	1,1,2-Trichloro-1,2,2-Trifluor			0.261	0.245	0.234	0.268	0.245	0.252	0.254	0.257	0.252	4.225		
T	Acetone					0.063	0.067	0.058	0.057	0.057	0.054	0.059	7.931		
C	1,1-Dichloroethene		0.459	0.452	0.460	0.429	0.492	0.441	0.464	0.461	0.461	0.458	3.810		
T	Tert-Butyl Alcohol			0.014	0.015	0.017	0.018	0.017	0.017		0.017	0.016	9.673		
T	Dimethyl Sulfide					0.169	0.185	0.186	0.185	0.188	0.184	0.183	3.765		
T	Iodomethane				0.043	0.072	0.164	0.206	0.217	0.219	0.208	0.162	45.603		0.999
T	Methyl acetate				0.182	0.317	0.215	0.178	0.176	0.169	0.168	0.201	26.745		1.000
T	Methylene Chloride			0.239	0.256	0.230	0.243	0.224	0.232	0.234	0.238	0.237	4.076		
T	Carbon Disulfide			0.737	0.762	0.714	0.798	0.783	0.783	0.782	0.770	0.766	3.624		
T	Acrylonitrile			0.072	0.069	0.075	0.085	0.081	0.085		0.090	0.080	9.576		
T	Methyl Tert Butyl Ether			0.568	0.546	0.564	0.650	0.585	0.606	0.612	0.595	0.591	5.543		
T	trans-1,2-Dichloroethene		0.288	0.230	0.264	0.229	0.263	0.242	0.251	0.254	0.260	0.253	7.263		
T	n-Hexane				0.424	0.377	0.450	0.431	0.426	0.424	0.422	0.422	5.186		
T	Diisopropyl ether			1.034	1.075	1.083	1.055	1.046	1.062		1.015	1.053	2.218		
T	Vinyl Acetate					0.235	0.391	0.393	0.395	0.430	0.431	0.379	19.260	0.999	
P	1,1-Dichloroethane		0.463	0.517	0.527	0.505	0.535	0.495	0.513	0.511	0.508	0.508	4.023		
T	Ethyl-Tert-Butyl ether			0.815	0.854	0.881	0.876	0.855	0.873		0.844	0.857	2.667		
T	2-Butanone					0.079	0.097	0.087	0.092	0.092	0.091	0.090	6.720		
T	Propionitrile			0.023	0.025	0.026	0.029	0.027	0.027		0.027	0.026	7.381		
T	2,2-Dichloropropane		0.325	0.372	0.435	0.395	0.406	0.386	0.422	0.418	0.419	0.398	8.479		
T	cis-1,2-Dichloroethene		0.276	0.266	0.289	0.269	0.294	0.271	0.280	0.284	0.285	0.279	3.456		
C	Chloroform	0.587	0.483	0.491	0.514	0.480	0.509	0.470	0.486	0.489	0.482	0.499	6.767		
T	1-Bromopropane			0.014	0.041	0.045	0.047	0.048	0.049	0.050	0.050	0.043	28.190	1.000	
T	Bromochloromethane		0.115	0.140	0.169	0.167	0.188	0.172	0.179	0.180	0.181	0.166	14.065		
T	Tetrahydrofuran			0.074	0.061	0.058	0.067	0.061	0.062		0.059	0.063	8.769		
S	Dibromofluoromethane				0.251	0.266	0.284	0.268	0.284	0.285	0.278	0.274	4.605		
T	1,1,1-Trichloroethane		0.475	0.478	0.508	0.471	0.515	0.477	0.502	0.499	0.495	0.491	3.293		
T	Cyclohexane		0.477	0.485	0.547	0.509	0.574	0.551	0.560	0.558	0.556	0.535	6.606		
T	1,1-Dichloropropene		0.342	0.350	0.346	0.332	0.370	0.339	0.358	0.359	0.362	0.351	3.562		
T	Carbon Tetrachloride		0.409	0.457	0.522	0.465	0.518	0.473	0.496	0.492	0.486	0.480	7.177		
T	Tert-Amyl-Methyl ether			0.565	0.596	0.603	0.611	0.588	0.605		0.6	0.59537	2.5818		
S	1,2-Dichloroethane-d4			0.315	0.304	0.32	0.326	0.303	0.319	0.31	0.298	0.31197	3.15125		
T	1,2-Dichloroethane		0.388	0.391	0.419	0.395	0.441	0.402	0.413	0.409	0.391	0.40536	4.2274		
T	Benzene		1.058	0.952	1.016	0.923	0.996	0.908	0.943	0.931	0.914	0.96002	5.38884		
T	Trichloroethene		0.308	0.317	0.329	0.306	0.322	0.294	0.313	0.309	0.311	0.31204	3.21019		
T	Methylcyclohexane		0.332	0.37	0.389	0.35	0.411	0.401	0.4	0.405	0.407	0.3851	7.28708		
C	1,2-Dichloropropane		0.259	0.262	0.273	0.254	0.276	0.257	0.268	0.27	0.273	0.26575	2.95636		
T	1,4-Dioxane				0.001	0.001	0.002	0.001	0.002		0.002	0.0014	19.4617	0.999	
T	Bromodichloromethane		0.346	0.346	0.373	0.362	0.4	0.369	0.387	0.389	0.385	0.37307	5.09783		
T	Dibromomethane		0.118	0.136	0.135	0.137	0.149	0.137	0.146	0.145	0.144	0.13848	6.69192		
T	2-Chloroethyl Vinyl Ether					0.112	0.138	0.128	0.136	0.138	0.135	0.13098	7.7176		
T	4-Methyl-2-Pentanone					0.06	0.08	0.073	0.076	0.077	0.077	0.07387	9.67651		
T	cis-1,3-Dichloropropene		0.326	0.338	0.358	0.357	0.406	0.379	0.395	0.401	0.399	0.37315	7.91395		
T	Dimethyl Disulfide					0.185	0.229	0.227	0.233	0.238	0.235	0.22454	8.74309		

I	Chlorobenzene-d5	ISTD												
S	Toluene-d8				1.101	1.093	1.115	1.056	1.103	1.092	1.044	1.08625	2.42896	
C	Toluene		1.309	1.253	1.287	1.269	1.347	1.249	1.287	1.241	1.149	1.2656	4.33323	
T	Ethyl Methacrylate			0.234	0.233	0.25	0.299	0.285	0.289	0.291	0.281	0.27024	9.93745	
T	trans-1,3-Dichloropropene			0.335	0.388	0.387	0.448	0.418	0.432	0.43	0.412	0.40623	8.82781	
T	1,1,2-Trichloroethane		0.222	0.201	0.243	0.21	0.246	0.221	0.228	0.227	0.221	0.22442	6.30977	
T	2-Hexanone					0.137	0.179	0.165	0.172	0.172	0.165	0.16482	8.91224	
T	1,3-Dichloropropane		0.337	0.338	0.351	0.355	0.396	0.361	0.374	0.373	0.358	0.36039	5.16222	
T	Tetrachloroethene		0.274	0.287	0.317	0.286	0.306	0.286	0.3	0.299	0.294	0.29431	4.41886	
T	Dibromochloromethane		0.283	0.297	0.336	0.33	0.378	0.354	0.372	0.372	0.359	0.3423	9.88235	
T	1,2-Dibromoethane		0.232	0.182	0.228	0.214	0.243	0.224	0.233	0.235	0.232	0.22485	7.92714	
T	1-Chlorohexane		0.37	0.399	0.414	0.391	0.442	0.429	0.44	0.438	0.432	0.41726	6.09034	
P	Chlorobenzene		0.927	0.917	0.998	0.932	0.976	0.909	0.93	0.902	0.853	0.92715	4.48215	
T	1,1,1,2-Tetrachloroethane		0.341	0.361	0.405	0.366	0.388	0.371	0.384	0.385	0.376	0.37515	4.87731	
C	Ethylbenzene		0.453	0.457	0.512	0.463	0.495	0.466	0.482	0.479	0.472	0.47542	3.94078	
T	m-,p-Xylene		0.619	0.583	0.605	0.564	0.604	0.568	0.579	0.559	0.522	0.57798	5.08853	
T	o-Xylene		0.539	0.549	0.574	0.539	0.6	0.561	0.574	0.57	0.557	0.56249	3.43829	
T	Styrene		0.865	0.848	0.897	0.918	1.018	0.955	0.985	0.959	0.917	0.92933	5.96246	
P	Bromoform			0.172	0.189	0.185	0.226	0.21	0.225	0.226	0.228	0.20747	10.9157	
T	Isopropylbenzene		1.515	1.456	1.567	1.46	1.592	1.493	1.534	1.449	1.323	1.48754	5.34769	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.288	0.357	0.369	0.371	0.441	0.396	0.412	0.428	0.442	0.38931	12.6902	
S	p-Bromofluorobenzene				0.772	0.784	0.794	0.716	0.767	0.789	0.773	0.77065	3.38935	
T	1,2,3-Trichloropropane			0.087	0.129	0.138	0.151	0.137	0.142	0.148	0.148	0.13515	15.3522	0.999
T	trans-1,4-Dichloro-2-Butene			0.105	0.117	0.124	0.177	0.178	0.184	0.192	0.193	0.15883	23.0996	0.999
T	n-Propylbenzene		2.87	2.8	3.077	2.949	3.134	2.886	2.979	2.836	2.526	2.89527	6.10377	
T	Bromobenzene	0.663	0.778	0.81	0.798	0.765	0.784	0.718	0.752	0.769	0.76	0.75973	5.57443	
T	1,3,5-Trimethylbenzene		2.338	2.056	2.263	2.172	2.357	2.166	2.252	2.223	2.059	2.20939	4.86261	
T	2-Chlorotoluene		2.158	2.096	2.122	2.033	2.128	1.936	2.002	1.954	1.82	2.0279	5.4704	
T	4-Chlorotoluene		1.782	1.755	1.937	1.808	1.916	1.763	1.832	1.838	1.717	1.8165	4.03452	
T	a-Methylstyrene			1	1.066	1.101	1.241	1.231	1.235	1.242	1.208	1.16555	8.18507	
T	tert-Butylbenzene		0.378	0.44	0.48	0.489	0.498	0.458	0.483	0.49	0.497	0.46809	8.31778	
T	1,2,4-Trimethylbenzene		2.159	2.195	2.274	2.295	2.472	2.234	2.309	2.244	2.067	2.24981	4.97706	
T	sec-Butylbenzene			2.593	2.734	2.647	2.87	2.634	2.723	2.617	2.404	2.65291	5.05975	
T	p-Isopropyltoluene			2.247	2.592	2.45	2.641	2.43	2.506	2.404	2.226	2.43674	6.05243	
T	1,3-Dichlorobenzene		1.487	1.488	1.538	1.46	1.53	1.398	1.451	1.446	1.406	1.46732	3.33475	
T	1,4-Dichlorobenzene	1.482	1.601	1.511	1.569	1.484	1.538	1.404	1.456	1.434	1.395	1.4873	4.59741	
T	n-Butylbenzene		2.048	2.099	2.295	2.049	2.32	2.134	2.224	2.136	2.021	2.14721	5.09289	
T	1,2-Dichlorobenzene	1.33	1.26	1.333	1.432	1.33	1.406	1.296	1.343	1.326	1.31	1.33665	3.71841	
T	1,2-Dibromo-3-Chloropropane				0.057	0.079	0.096	0.081	0.086	0.087	0.091	0.08248	15.3444	0.999
T	1,2,4-Trichlorobenzene		0.927	0.903	0.957	0.956	1.042	0.972	0.998	1.002	1.047	0.97808	4.96993	
T	Hexachlorobutadiene		0.393	0.381	0.451	0.418	0.447	0.415	0.441	0.442	0.49	0.43089	7.64497	
T	Naphthalene		1.885	1.633	1.765	1.712	2.026	1.824	1.878	1.821	1.794	1.81543	6.15168	
T	1,2,3-Trichlorobenzene	0.854	0.957	0.865	0.918	0.834	0.946	0.86	0.889	0.912	0.943	0.89764	4.8559	

Tue May 17 13:57:02 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060650 Run Date: 05/13/2016 Sample ID: WG568769-12
Instrument ID: HPMS11 Run Time: 20:30 Method: 8260B
File ID: 11M11848 Analyst: JDS QC Key: DOD4
ICal Workgroup: WG568769 Cal ID: HPMS11 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.6	ug/L	0.475	4.80	20	
1,1-Dichloroethene	CCC	50.0	47.5	ug/L	0.435	4.90	20	
1,2-Dichloropropane	CCC	50.0	52.8	ug/L	0.281	5.60	20	
Ethylbenzene	CCC	50.0	52.4	ug/L	0.498	4.80	20	
Toluene	CCC	50.0	53.8	ug/L	1.36	7.50	20	
Vinyl Chloride	CCC	50.0	56.1	ug/L	0.292	12.2	20	
Bromoform	SPCC	50.0	49.8	ug/L	0.207	0.300	20	
Chlorobenzene	SPCC	50.0	53.3	ug/L	0.988	6.60	20	
Chloromethane	SPCC	50.0	55.1	ug/L	0.346	10.2	20	
1,1-Dichloroethane	SPCC	50.0	48.5	ug/L	0.493	3.00	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	54.9	ug/L	0.428	9.90	20	
Acetone		50.0	49.7	ug/L	0.0590	0.700	20	
Benzene		50.0	51.2	ug/L	0.983	2.40	20	
Bromobenzene		50.0	51.6	ug/L	0.785	3.30	20	
Bromochloromethane		50.0	53.9	ug/L	0.179	7.80	20	
Bromodichloromethane		50.0	49.5	ug/L	0.370	0.900	20	
Bromomethane		50.0	50.5	ug/L	0.181	1.00	20	
2-Butanone		50.0	50.3	ug/L	0.0904	0.700	20	
n-Butylbenzene		50.0	53.9	ug/L	2.31	7.80	20	
sec-Butylbenzene		50.0	55.9	ug/L	2.97	11.8	20	
tert-Butylbenzene		50.0	56.5	ug/L	0.529	13.1	20	
Carbon Disulfide		50.0	44.7	ug/L	0.685	10.6	20	
Carbon Tetrachloride		50.0	47.3	ug/L	0.454	5.30	20	
Dibromochloromethane		50.0	52.5	ug/L	0.360	5.10	20	
Chloroethane		50.0	58.9	ug/L	0.197	17.7	20	
2-Chlorotoluene		50.0	52.8	ug/L	2.14	5.50	20	
4-Chlorotoluene		50.0	55.4	ug/L	2.01	10.8	20	
1,2-Dibromo-3-Chloropropane		50.0	48.1	ug/L	0.0844	3.80	20	
1,2-Dibromoethane		50.0	52.6	ug/L	0.237	5.30	20	
Dibromomethane		50.0	48.0	ug/L	0.133	3.90	20	
1,2-Dichlorobenzene		50.0	53.6	ug/L	1.43	7.20	20	
1,3-Dichlorobenzene		50.0	52.7	ug/L	1.55	5.40	20	
1,4-Dichlorobenzene		50.0	53.0	ug/L	1.58	6.10	20	
Dichlorodifluoromethane		50.0	56.6	ug/L	0.443	13.2	20	
1,2-Dichloroethane		50.0	47.9	ug/L	0.388	4.20	20	
cis-1,2-Dichloroethene		50.0	53.2	ug/L	0.297	6.30	20	
trans-1,2-Dichloroethene		50.0	52.1	ug/L	0.264	4.30	20	
1,3-Dichloropropane		50.0	56.3	ug/L	0.406	12.6	20	
2,2-Dichloropropane		50.0	45.6	ug/L	0.362	8.90	20	
cis-1,3-Dichloropropene		50.0	57.6	ug/L	0.430	15.2	20	
trans-1,3-Dichloropropene		50.0	52.1	ug/L	0.423	4.20	20	
1,1-Dichloropropene		50.0	50.1	ug/L	0.352	0.200	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4821293
Report generated 06/23/2016 14:51

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060650 Run Date: 05/13/2016 Sample ID: WG568769-12
Instrument ID: HPMS11 Run Time: 20:30 Method: 8260B
File ID: 11M11848 Analyst: JDS QC Key: DOD4
ICal Workgroup: WG568769 Cal ID: HPMS11 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	52.2	ug/L	0.172	4.40	20	
Hexachlorobutadiene		50.0	55.9	ug/L	0.482	11.8	20	
Isopropylbenzene		50.0	54.2	ug/L	1.61	8.50	20	
p-Isopropyltoluene		50.0	54.7	ug/L	2.67	9.40	20	
4-Methyl-2-Pentanone		50.0	52.6	ug/L	0.0777	5.10	20	
Methylene Chloride		50.0	52.0	ug/L	0.246	4.00	20	
Naphthalene		50.0	51.1	ug/L	1.86	2.30	20	
n-Propylbenzene		50.0	56.6	ug/L	3.28	13.2	20	
Styrene		50.0	55.0	ug/L	1.02	9.90	20	
1,1,1,2-Tetrachloroethane		50.0	51.0	ug/L	0.383	2.10	20	
Tetrachloroethene		50.0	52.2	ug/L	0.307	4.40	20	
1,2,3-Trichlorobenzene		50.0	54.1	ug/L	0.971	8.10	20	
1,2,4-Trichlorobenzene		50.0	55.4	ug/L	1.08	10.9	20	
1,1,1-Trichloroethane		50.0	48.1	ug/L	0.472	3.90	20	
1,1,2-Trichloroethane		50.0	52.8	ug/L	0.237	5.50	20	
Trichloroethene		50.0	52.3	ug/L	0.327	4.60	20	
Trichlorofluoromethane		50.0	47.5	ug/L	0.494	4.90	20	
1,2,3-Trichloropropane		50.0	50.1	ug/L	0.147	0.300	20	
1,2,4-Trimethylbenzene		50.0	53.8	ug/L	2.42	7.70	20	
1,3,5-Trimethylbenzene		50.0	55.1	ug/L	2.44	10.3	20	
o-Xylene		50.0	54.7	ug/L	0.615	9.40	20	
m-,p-Xylene		100	107	ug/L	0.620	7.20	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
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Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650 Run Date: 06/15/2016 Sample ID: WG572854-02
Instrument ID: HPMS11 Run Time: 15:49 Method: 8260B
File ID: 11M12652 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG572855 Cal ID: HPMS11 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	46.4	ug/L	0.463	7.15	20	
1,1-Dichloroethene	CCC	50.0	46.3	ug/L	0.424	7.35	20	
1,2-Dichloropropane	CCC	50.0	46.2	ug/L	0.245	7.66	20	
Ethylbenzene	CCC	50.0	49.3	ug/L	0.469	1.40	20	
Toluene	CCC	50.0	49.6	ug/L	1.26	0.721	20	
Vinyl Chloride	CCC	50.0	48.1	ug/L	0.251	3.79	20	
Bromoform	SPCC	50.0	53.6	ug/L	0.222	7.10	20	
Chlorobenzene	SPCC	50.0	50.0	ug/L	0.928	0.0866	20	
Chloromethane	SPCC	50.0	42.8	ug/L	0.268	14.5	20	
1,1-Dichloroethane	SPCC	50.0	46.2	ug/L	0.470	7.63	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.3	ug/L	0.384	1.34	20	
Xylenes		150	149	ug/L	0.565	0.844	20	
Acetone		50.0	42.1	ug/L	0.0500	15.8	20	
Benzene		50.0	46.5	ug/L	0.893	7.02	20	
Bromobenzene		50.0	50.1	ug/L	0.761	0.177	20	
Bromochloromethane		50.0	54.5	ug/L	0.181	8.98	20	
Bromodichloromethane		50.0	48.2	ug/L	0.360	3.56	20	
Bromomethane		50.0	46.6	ug/L	0.167	6.81	20	
2-Butanone		50.0	42.8	ug/L	0.0769	14.3	20	
n-Butylbenzene		50.0	45.5	ug/L	1.96	8.93	20	
sec-Butylbenzene		50.0	47.5	ug/L	2.52	4.98	20	
tert-Butylbenzene		50.0	50.0	ug/L	0.468	0.0246	20	
Carbon Disulfide		50.0	46.6	ug/L	0.714	6.84	20	
Carbon Tetrachloride		50.0	49.9	ug/L	0.479	0.204	20	
Dibromochloromethane		50.0	53.1	ug/L	0.364	6.26	20	
Chloroethane		50.0	47.7	ug/L	0.160	4.66	20	
2-Chlorotoluene		50.0	48.0	ug/L	1.95	3.96	20	
4-Chlorotoluene		50.0	47.6	ug/L	1.73	4.71	20	
1,2-Dibromo-3-Chloropropane		50.0	43.1	ug/L	0.0755	13.8	20	
1,2-Dibromoethane		50.0	51.1	ug/L	0.230	2.20	20	
Dibromomethane		50.0	48.5	ug/L	0.134	3.06	20	
1,2-Dichlorobenzene		50.0	49.6	ug/L	1.33	0.841	20	
1,3-Dichlorobenzene		50.0	49.1	ug/L	1.44	1.85	20	
1,4-Dichlorobenzene		50.0	48.4	ug/L	1.44	3.12	20	
Dichlorodifluoromethane		50.0	46.5	ug/L	0.364	7.04	20	
1,2-Dichloroethane		50.0	47.0	ug/L	0.381	6.08	20	
cis-1,2-Dichloroethene		50.0	48.9	ug/L	0.273	2.11	20	
trans-1,2-Dichloroethene		50.0	48.0	ug/L	0.243	3.94	20	
1,3-Dichloropropane		50.0	49.5	ug/L	0.357	1.09	20	
2,2-Dichloropropane		50.0	50.0	ug/L	0.398	0.0792	20	
cis-1,3-Dichloropropene		50.0	49.9	ug/L	0.372	0.225	20	
trans-1,3-Dichloropropene		50.0	50.4	ug/L	0.410	0.860	20	

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650 Run Date: 06/15/2016 Sample ID: WG572854-02
Instrument ID: HPMS11 Run Time: 15:49 Method: 8260B
File ID: 11M12652 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG572855 Cal ID: HPMS11 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	48.6	ug/L	0.341	2.74	20	
2-Hexanone		50.0	43.2	ug/L	0.143	13.5	20	
Hexachlorobutadiene		50.0	42.5	ug/L	0.366	15.0	20	
Isopropylbenzene		50.0	50.1	ug/L	1.49	0.246	20	
p-Isopropyltoluene		50.0	48.6	ug/L	2.37	2.77	20	
4-Methyl-2-Pentanone		50.0	45.3	ug/L	0.0669	9.41	20	
Methylene Chloride		50.0	46.8	ug/L	0.222	6.45	20	
Naphthalene		50.0	47.9	ug/L	1.74	4.21	20	
n-Propylbenzene		50.0	48.9	ug/L	2.83	2.26	20	
Styrene		50.0	51.2	ug/L	0.951	2.30	20	
1,1,1,2-Tetrachloroethane		50.0	51.0	ug/L	0.383	2.08	20	
Tetrachloroethene		50.0	52.3	ug/L	0.308	4.52	20	
1,2,3-Trichlorobenzene		50.0	46.9	ug/L	0.843	6.11	20	
1,2,4-Trichlorobenzene		50.0	48.4	ug/L	0.948	3.13	20	
1,1,1-Trichloroethane		50.0	48.5	ug/L	0.477	2.92	20	
1,1,2-Trichloroethane		50.0	49.5	ug/L	0.222	0.973	20	
1,2,3-Trichloropropane		50.0	48.4	ug/L	0.142	3.11	20	
1,2,4-Trimethylbenzene		50.0	49.4	ug/L	2.22	1.13	20	
1,3,5-Trimethylbenzene		50.0	49.0	ug/L	2.16	2.04	20	
o-Xylene		50.0	49.4	ug/L	0.555	1.27	20	
m-,p-Xylene		100	99.4	ug/L	0.574	0.631	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

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Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650 Run Date: 06/16/2016 Sample ID: WG573050-02
Instrument ID: HPMS11 Run Time: 15:27 Method: 8260B
File ID: 11M12685 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG573051 Cal ID: HPMS11 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.8	ug/L	0.477	4.48	20	
1,1-Dichloroethene	CCC	50.0	46.5	ug/L	0.425	7.09	20	
1,2-Dichloropropane	CCC	50.0	45.7	ug/L	0.243	8.68	20	
Ethylbenzene	CCC	50.0	49.5	ug/L	0.471	0.971	20	
Toluene	CCC	50.0	48.9	ug/L	1.24	2.24	20	
Vinyl Chloride	CCC	50.0	50.3	ug/L	0.262	0.644	20	
Bromoform	SPCC	50.0	56.7	ug/L	0.235	13.4	20	
Chlorobenzene	SPCC	50.0	49.8	ug/L	0.924	0.303	20	
Chloromethane	SPCC	50.0	43.9	ug/L	0.276	12.2	20	
1,1-Dichloroethane	SPCC	50.0	46.7	ug/L	0.475	6.61	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.9	ug/L	0.388	0.280	20	
Xylenes		150	149	ug/L	0.565	0.990	20	
Acetone		50.0	45.7	ug/L	0.0543	8.58	20	
Benzene		50.0	46.0	ug/L	0.884	7.93	20	
Bromobenzene		50.0	49.7	ug/L	0.755	0.591	20	
Bromochloromethane		50.0	55.5	ug/L	0.184	11.0	20	
Bromodichloromethane		50.0	49.9	ug/L	0.373	0.144	20	
Bromomethane		50.0	46.3	ug/L	0.166	7.37	20	
2-Butanone		50.0	46.8	ug/L	0.0841	6.31	20	
n-Butylbenzene		50.0	46.7	ug/L	2.00	6.67	20	
sec-Butylbenzene		50.0	47.6	ug/L	2.52	4.88	20	
tert-Butylbenzene		50.0	50.3	ug/L	0.471	0.685	20	
Carbon Disulfide		50.0	46.0	ug/L	0.705	8.04	20	
Carbon Tetrachloride		50.0	51.5	ug/L	0.494	3.01	20	
Dibromochloromethane		50.0	55.5	ug/L	0.380	11.0	20	
Chloroethane		50.0	46.6	ug/L	0.156	6.70	20	
2-Chlorotoluene		50.0	46.3	ug/L	1.88	7.44	20	
4-Chlorotoluene		50.0	48.1	ug/L	1.75	3.74	20	
1,2-Dibromo-3-Chloropropane		50.0	49.5	ug/L	0.0869	0.924	20	
1,2-Dibromoethane		50.0	52.7	ug/L	0.237	5.37	20	
Dibromomethane		50.0	52.4	ug/L	0.145	4.81	20	
1,2-Dichlorobenzene		50.0	50.0	ug/L	1.34	0.0432	20	
1,3-Dichlorobenzene		50.0	49.4	ug/L	1.45	1.22	20	
1,4-Dichlorobenzene		50.0	48.4	ug/L	1.44	3.15	20	
Dichlorodifluoromethane		50.0	47.8	ug/L	0.374	4.44	20	
1,2-Dichloroethane		50.0	50.4	ug/L	0.408	0.724	20	
cis-1,2-Dichloroethene		50.0	49.3	ug/L	0.275	1.42	20	
trans-1,2-Dichloroethene		50.0	47.8	ug/L	0.242	4.41	20	
1,3-Dichloropropane		50.0	50.5	ug/L	0.364	1.07	20	
2,2-Dichloropropane		50.0	52.2	ug/L	0.415	4.33	20	
cis-1,3-Dichloropropene		50.0	50.7	ug/L	0.379	1.43	20	
trans-1,3-Dichloropropene		50.0	51.9	ug/L	0.422	3.78	20	

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650 Run Date: 06/16/2016 Sample ID: WG573050-02
Instrument ID: HPMS11 Run Time: 15:27 Method: 8260B
File ID: 11M12685 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG573051 Cal ID: HPMS11 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	48.3	ug/L	0.339	3.34	20	
2-Hexanone		50.0	45.6	ug/L	0.150	8.83	20	
Hexachlorobutadiene		50.0	45.0	ug/L	0.388	9.93	20	
Isopropylbenzene		50.0	50.7	ug/L	1.51	1.35	20	
p-Isopropyltoluene		50.0	49.2	ug/L	2.40	1.50	20	
4-Methyl-2-Pentanone		50.0	48.5	ug/L	0.0716	3.02	20	
Methylene Chloride		50.0	46.4	ug/L	0.220	7.11	20	
Naphthalene		50.0	53.1	ug/L	1.93	6.19	20	
n-Propylbenzene		50.0	48.3	ug/L	2.80	3.35	20	
Styrene		50.0	51.7	ug/L	0.962	3.48	20	
1,1,1,2-Tetrachloroethane		50.0	51.8	ug/L	0.389	3.60	20	
Tetrachloroethene		50.0	51.7	ug/L	0.304	3.39	20	
1,2,3-Trichlorobenzene		50.0	49.6	ug/L	0.890	0.884	20	
1,2,4-Trichlorobenzene		50.0	50.4	ug/L	0.986	0.818	20	
1,1,1-Trichloroethane		50.0	50.2	ug/L	0.493	0.443	20	
1,1,2-Trichloroethane		50.0	51.5	ug/L	0.231	3.01	20	
Trichloroethene		50.0	50.3	ug/L	0.314	0.673	20	
Trichlorofluoromethane		50.0	50.7	ug/L	0.526	1.33	20	
1,2,3-Trichloropropane		50.0	51.0	ug/L	0.149	2.02	20	
1,2,4-Trimethylbenzene		50.0	49.2	ug/L	2.21	1.68	20	
1,3,5-Trimethylbenzene		50.0	48.7	ug/L	2.15	2.69	20	
o-Xylene		50.0	49.6	ug/L	0.559	0.710	20	
m-,p-Xylene		100	98.9	ug/L	0.571	1.13	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

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Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650 Run Date: 06/17/2016 Sample ID: WG573258-02
Instrument ID: HPMS11 Run Time: 16:21 Method: 8260B
File ID: 11M12718 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG573259 Cal ID: HPMS11 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.0	ug/L	0.499	0.0116	20	
1,1-Dichloroethene	CCC	50.0	49.3	ug/L	0.452	1.35	20	
1,2-Dichloropropane	CCC	50.0	46.5	ug/L	0.247	7.00	20	
Ethylbenzene	CCC	50.0	49.7	ug/L	0.473	0.607	20	
Toluene	CCC	50.0	49.2	ug/L	1.25	1.63	20	
Vinyl Chloride	CCC	50.0	51.9	ug/L	0.271	3.85	20	
Bromoform	SPCC	50.0	53.4	ug/L	0.222	6.83	20	
Chlorobenzene	SPCC	50.0	50.5	ug/L	0.936	0.976	20	
Chloromethane	SPCC	50.0	45.6	ug/L	0.286	8.87	20	
1,1-Dichloroethane	SPCC	50.0	48.7	ug/L	0.495	2.67	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	42.8	ug/L	0.333	14.5	20	
Xylenes		150	150	ug/L	0.570	0.123	20	
Acetone		50.0	49.1	ug/L	0.0582	1.90	20	
Benzene		50.0	47.3	ug/L	0.909	5.36	20	
Bromobenzene		50.0	48.6	ug/L	0.738	2.84	20	
Bromochloromethane		50.0	56.7	ug/L	0.188	13.4	20	
Bromodichloromethane		50.0	52.0	ug/L	0.388	3.99	20	
Bromomethane		50.0	47.6	ug/L	0.171	4.81	20	
2-Butanone		50.0	42.8	ug/L	0.0768	14.4	20	
n-Butylbenzene		50.0	48.0	ug/L	2.06	4.02	20	
sec-Butylbenzene		50.0	49.0	ug/L	2.60	1.90	20	
tert-Butylbenzene		50.0	51.2	ug/L	0.479	2.35	20	
Carbon Disulfide		50.0	49.6	ug/L	0.760	0.844	20	
Carbon Tetrachloride		50.0	55.7	ug/L	0.534	11.3	20	
Dibromochloromethane		50.0	54.2	ug/L	0.371	8.49	20	
Chloroethane		50.0	47.4	ug/L	0.159	5.21	20	
2-Chlorotoluene		50.0	47.9	ug/L	1.94	4.29	20	
4-Chlorotoluene		50.0	47.2	ug/L	1.72	5.50	20	
1,2-Dibromo-3-Chloropropane		50.0	42.2	ug/L	0.0740	15.5	20	
1,2-Dibromoethane		50.0	49.7	ug/L	0.224	0.516	20	
Dibromomethane		50.0	51.4	ug/L	0.143	2.87	20	
1,2-Dichlorobenzene		50.0	49.4	ug/L	1.32	1.12	20	
1,3-Dichlorobenzene		50.0	49.1	ug/L	1.44	1.83	20	
1,4-Dichlorobenzene		50.0	48.5	ug/L	1.44	3.10	20	
Dichlorodifluoromethane		50.0	48.3	ug/L	0.379	3.37	20	
1,2-Dichloroethane		50.0	51.5	ug/L	0.418	3.09	20	
cis-1,2-Dichloroethene		50.0	49.7	ug/L	0.278	0.514	20	
trans-1,2-Dichloroethene		50.0	49.0	ug/L	0.248	1.96	20	
1,3-Dichloropropane		50.0	48.2	ug/L	0.348	3.53	20	
2,2-Dichloropropane		50.0	52.1	ug/L	0.414	4.13	20	
cis-1,3-Dichloropropene		50.0	50.5	ug/L	0.377	1.10	20	
trans-1,3-Dichloropropene		50.0	50.1	ug/L	0.407	0.226	20	

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650 Run Date: 06/17/2016 Sample ID: WG573258-02
Instrument ID: HPMS11 Run Time: 16:21 Method: 8260B
File ID: 11M12718 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG573259 Cal ID: HPMS11 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	50.3	ug/L	0.353	0.573	20	
2-Hexanone		50.0	39.3	ug/L	0.130	21.4	20	*
Hexachlorobutadiene		50.0	45.2	ug/L	0.389	9.64	20	
Isopropylbenzene		50.0	51.8	ug/L	1.54	3.53	20	
p-Isopropyltoluene		50.0	50.4	ug/L	2.46	0.801	20	
4-Methyl-2-Pentanone		50.0	42.2	ug/L	0.0623	15.6	20	
Methylene Chloride		50.0	47.9	ug/L	0.227	4.18	20	
Naphthalene		50.0	46.1	ug/L	1.67	7.75	20	
n-Propylbenzene		50.0	48.7	ug/L	2.82	2.69	20	
Styrene		50.0	51.9	ug/L	0.964	3.70	20	
1,1,1,2-Tetrachloroethane		50.0	53.2	ug/L	0.399	6.34	20	
Tetrachloroethene		50.0	51.8	ug/L	0.305	3.59	20	
1,2,3-Trichlorobenzene		50.0	47.3	ug/L	0.850	5.37	20	
1,2,4-Trichlorobenzene		50.0	48.6	ug/L	0.951	2.79	20	
1,1,1-Trichloroethane		50.0	52.9	ug/L	0.519	5.71	20	
1,1,2-Trichloroethane		50.0	48.9	ug/L	0.220	2.13	20	
Trichloroethene		50.0	52.8	ug/L	0.330	5.69	20	
Trichlorofluoromethane		50.0	57.8	ug/L	0.601	15.7	20	
1,2,3-Trichloropropane		50.0	45.9	ug/L	0.134	8.26	20	
1,2,4-Trimethylbenzene		50.0	49.8	ug/L	2.24	0.365	20	
1,3,5-Trimethylbenzene		50.0	49.2	ug/L	2.18	1.53	20	
o-Xylene		50.0	50.2	ug/L	0.565	0.471	20	
m-,p-Xylene		100	99.6	ug/L	0.576	0.419	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4821295
Report generated 06/23/2016 14:51

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060650
Instrument ID: HPMS11
Workgroup (AAB#): WG572855

ICAL CCV Number: WG568769-08
CAL ID: HPMS11-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568769-08	NA	NA	263885	438582	521583
Upper Limit	NA	NA	527770	877164	1043166
Lower Limit	NA	NA	131943	219291	260792
L16060650-01	10.0	DL01	253236	443298	520653
WG572855-01	1.00	01	317152	552203	665654
WG572855-02	1.00	01	339839	566282	665946

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4821296
Report generated 06/23/2016 14:51

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060650
Instrument ID: HPMS11
Workgroup (AAB#): WG573051

ICAL CCV Number: WG568769-08
CAL ID: HPMS11-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568769-08	NA	NA	263885	438582	521583
Upper Limit	NA	NA	527770	877164	1043166
Lower Limit	NA	NA	131943	219291	260792
L16060650-03	1.00	01	272718	466822	553146
L16060650-04	1.00	01	264811	451388	532841
L16060650-05	1.00	01	270373	450055	530657
L16060650-06	2.00	DL01	252727	439489	511766
L16060650-07	1.00	01	259575	446643	525360
L16060650-09	1.00	01	262354	452147	528256
WG573051-01	1.00	01	271231	464305	545582
WG573051-02	1.00	01	281763	469128	546376
WG573051-03	1.00	01	289001	475469	554739

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4821296
Report generated 06/23/2016 14:51

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060650
Instrument ID: HPMS11
Workgroup (AAB#): WG573259

ICAL CCV Number: WG568769-08
CAL ID: HPMS11-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568769-08	NA	NA	263885	438582	521583
Upper Limit	NA	NA	527770	877164	1043166
Lower Limit	NA	NA	131943	219291	260792
L16060650-01	20.0	DL02	247344	417858	491782
L16060650-02	2.50	DL01	240882	412545	485977
WG573259-01	1.00	01	245830	417622	495046
WG573259-02	1.00	01	271227	427304	493317
WG573259-03	1.00	01	262941	434135	496891

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4821296
Report generated 06/23/2016 14:51

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060650
Instrument ID: HPMS11
Workgroup (AAB#): WG572855

ICAL CCV Number: WG568769-08
CAL ID: HPMS11-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568769-08	NA	NA	17.06	14.25	10.61
Upper Limit	NA	NA	17.56	14.75	11.11
Lower Limit	NA	NA	16.56	13.75	10.11
L16060650-01	10.0	DL01	17.06	14.25	10.61
WG572855-01	1.00	01	17.06	14.25	10.61
WG572855-02	1.00	01	17.06	14.25	10.61

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4821298
Report generated: 06/23/2016 14:51

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060650
Instrument ID: HPMS11
Workgroup (AAB#): WG573051

ICAL CCV Number: WG568769-08
CAL ID: HPMS11-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568769-08	NA	NA	17.06	14.25	10.61
Upper Limit	NA	NA	17.56	14.75	11.11
Lower Limit	NA	NA	16.56	13.75	10.11
L16060650-03	1.00	01	17.06	14.25	10.61
L16060650-04	1.00	01	17.06	14.25	10.61
L16060650-05	1.00	01	17.06	14.25	10.61
L16060650-06	2.00	DL01	17.06	14.25	10.61
L16060650-07	1.00	01	17.06	14.25	10.61
L16060650-09	1.00	01	17.06	14.25	10.61
WG573051-01	1.00	01	17.06	14.25	10.61
WG573051-02	1.00	01	17.06	14.25	10.61
WG573051-03	1.00	01	17.06	14.25	10.61

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4821298
Report generated: 06/23/2016 14:51

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060650
Instrument ID: HPMS11
Workgroup (AAB#): WG573259

ICAL CCV Number: WG568769-08
CAL ID: HPMS11-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568769-08	NA	NA	17.06	14.25	10.61
Upper Limit	NA	NA	17.56	14.75	11.11
Lower Limit	NA	NA	16.56	13.75	10.11
L16060650-01	20.0	DL02	17.06	14.25	10.61
L16060650-02	2.50	DL01	17.06	14.25	10.61
WG573259-01	1.00	01	17.06	14.25	10.61
WG573259-02	1.00	01	17.06	14.25	10.61
WG573259-03	1.00	01	17.06	14.25	10.61

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4821298
Report generated: 06/23/2016 14:51

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061516\11M12671.D Vial: 22
Acq On : 16 Jun 2016 1:56 Operator: JDS
Sample : L16060650-01 A 10X 826-LOW Inst : hpms11
Misc : 1,10 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 14:39:07 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	520653	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	443298	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	253236	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	140814	24.7124 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.84%		
43) 1,2-Dichloroethane-d4	10.23	65	151033	23.2461 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 93.00%		
57) Toluene-d8	12.47	98	478563	24.8458 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.40%		
78) p-Bromofluorobenzene	15.64	95	208413	26.6982 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 106.80%		

Target Compounds

					Qvalue
4) Vinyl Chloride	3.95	62	3300	0.6082 ug/L	96
8) Trichlorofluoromethane	5.49	101	36453	3.3708 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	354231	67.5050 ug/L	94
13) Acetone	6.36	43	443	0.3583 ug/L #	49
14) 1,1-Dichloroethene	6.56	61	7148	0.7499 ug/L	95
23) trans-1,2-Dichloroethene	7.75	96	1642	0.3113 ug/L	79
32) cis-1,2-Dichloroethene	9.15	96	653194	112.3023 ug/L	80
33) Chloroform	9.35	83	9915	0.9539 ug/L	99
36) Tetrahydrofuran	9.58	42	1640	1.2426 ug/L #	59
44) 1,2-Dichloroethane	10.34	62	116134	13.7564 ug/L	90
45) Benzene	10.39	78	4172	0.2087 ug/L #	80
46) Trichloroethene	11.09	130	2268415	349.0598 ug/L	98
47) Methylcyclohexane	11.08	83	24980	3.1147 ug/L #	1

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061516\11M12671.D Vial: 22
Acq On : 16 Jun 2016 1:56 Operator: JDS
Sample : L16060650-01 A 10X 826-LOW Inst : hpms11
Misc : 1,10 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 14:39 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

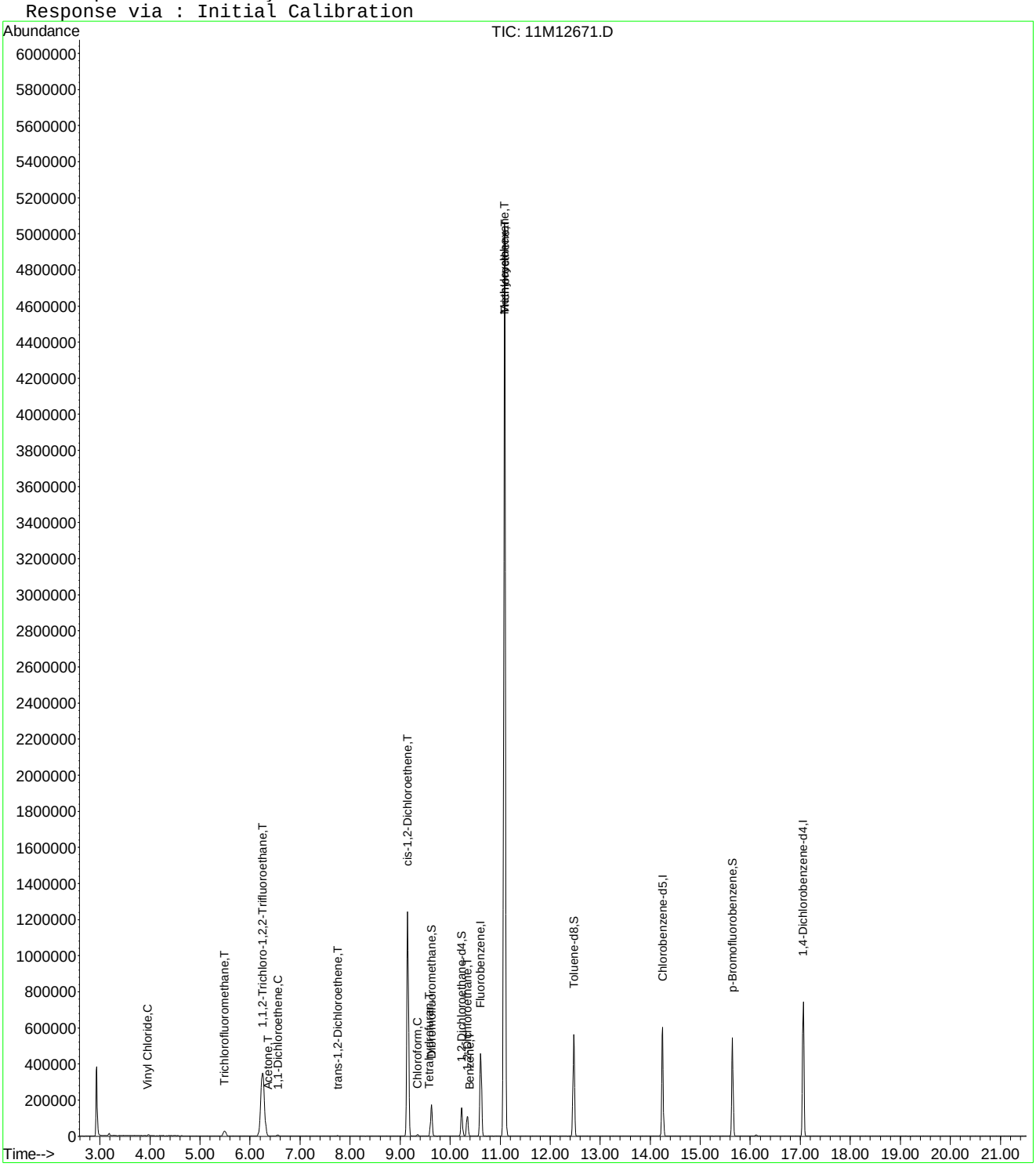

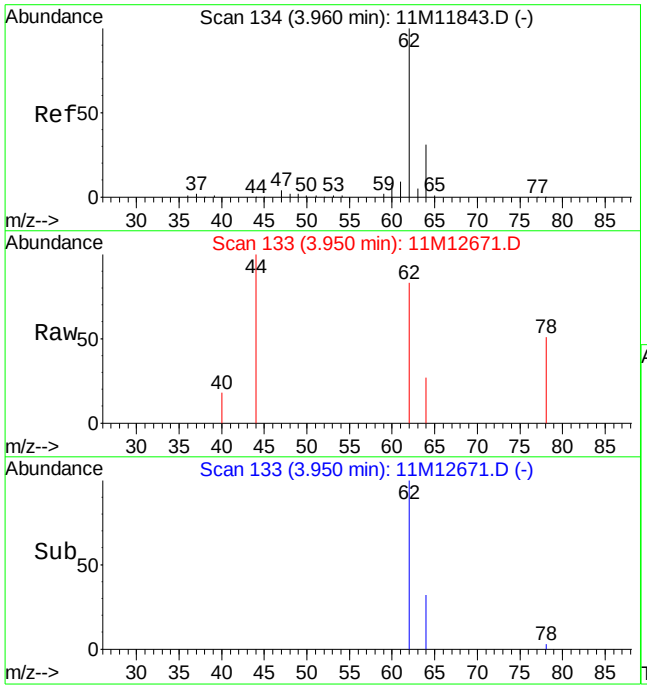

#4
Vinyl Chloride
Concen: 0.61 ug/L
RT: 3.95 min Scan# 133
Delta R.T. -0.01 min
Lab File: 11M12671.D
Acq: 16 Jun 2016 1:56

Tgt Ion: 62 Resp: 3300

Ion	Ratio	Lower	Upper
62	100		
64	28.3	18.4	43.0

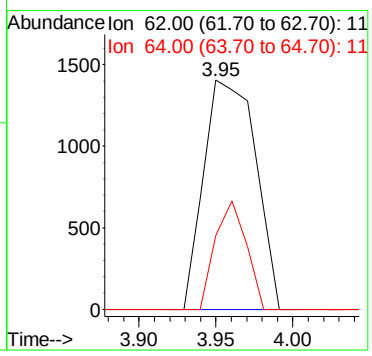

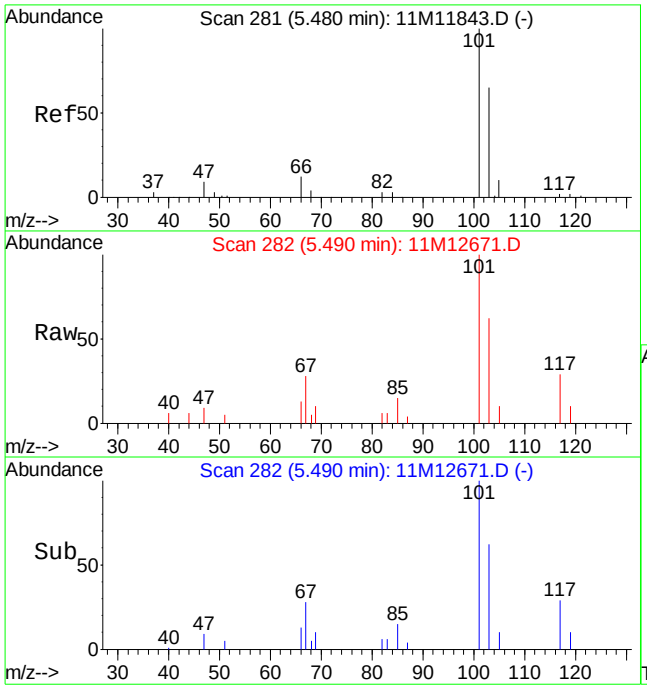

#8
Trichlorofluoromethane
Concen: 3.37 ug/L
RT: 5.49 min Scan# 282
Delta R.T. 0.01 min
Lab File: 11M12671.D
Acq: 16 Jun 2016 1:56

Tgt Ion:101 Resp: 36453

Ion	Ratio	Lower	Upper
101	100		
103	65.6	39.1	91.3

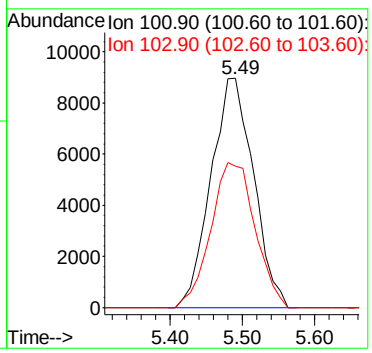

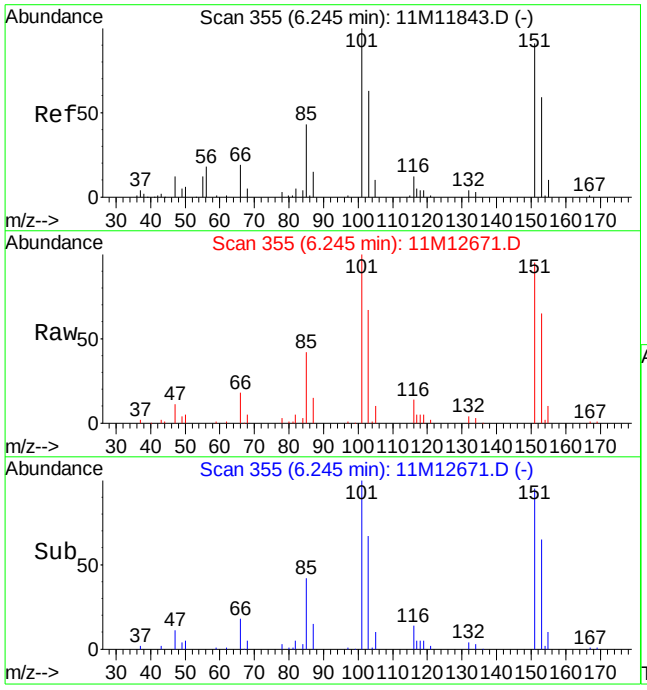

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 67.51 ug/L
RT: 6.25 min Scan# 355
Delta R.T. 0.00 min
Lab File: 11M12671.D
Acq: 16 Jun 2016 1:56

Tgt Ion:101 Resp: 354231

Ion	Ratio	Lower	Upper
101	100		
151	96.2	50.7	130.7

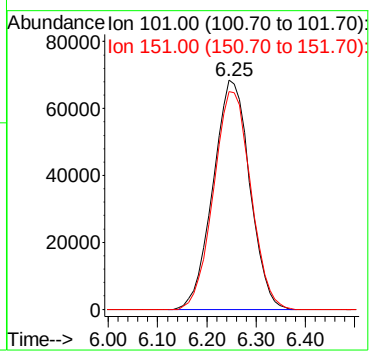

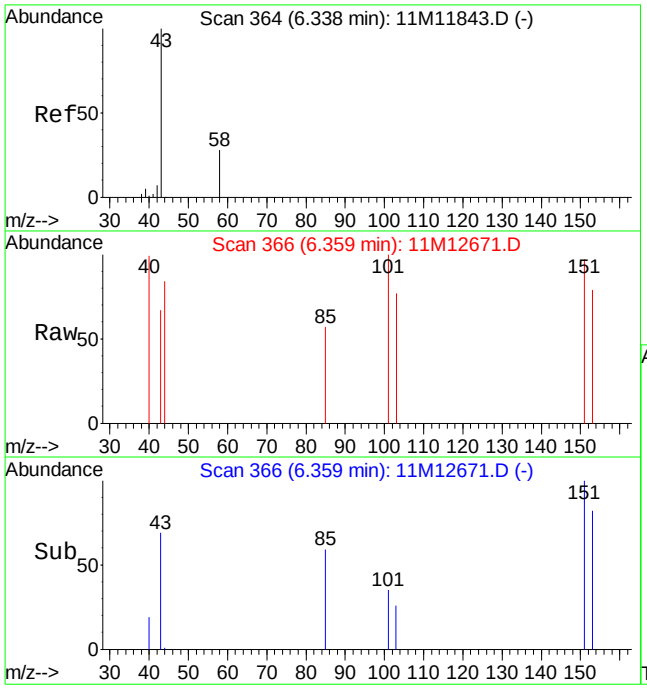

#13
Acetone
Concen: 0.36 ug/L
RT: 6.36 min Scan# 366
Delta R.T. 0.02 min
Lab File: 11M12671.D
Acq: 16 Jun 2016 1:56

Tgt Ion: 43 Resp: 443

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

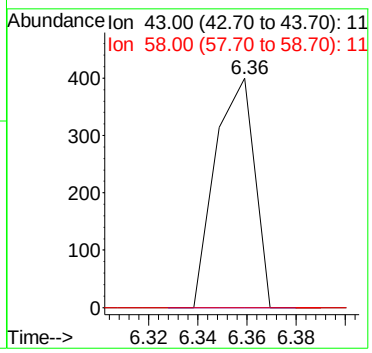

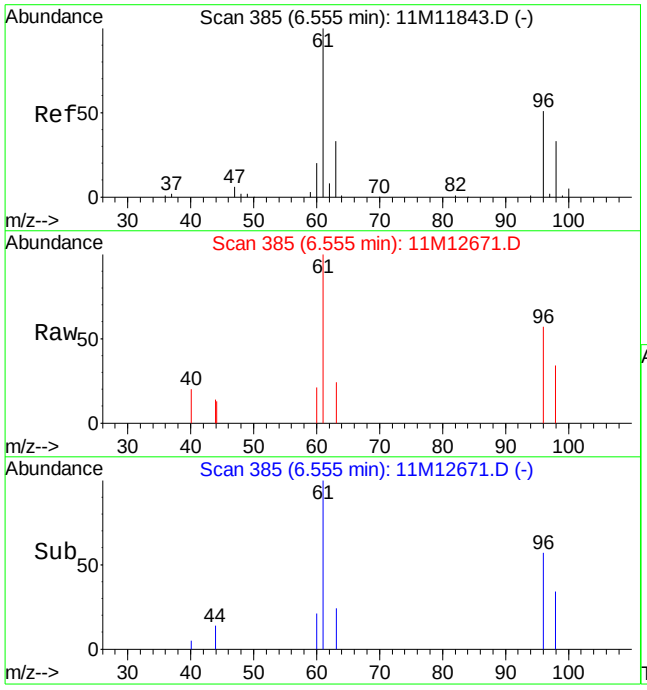

#14
1,1-Dichloroethene
Concen: 0.75 ug/L
RT: 6.56 min Scan# 385
Delta R.T. 0.00 min
Lab File: 11M12671.D
Acq: 16 Jun 2016 1:56

Tgt Ion: 61 Resp: 7148

Ion	Ratio	Lower	Upper
61	100		
96	47.0	30.1	70.3

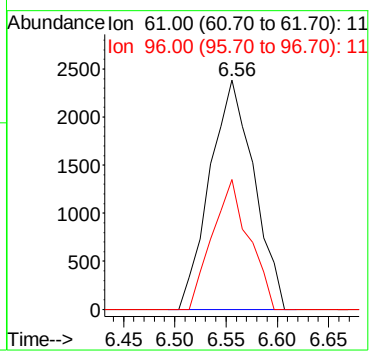

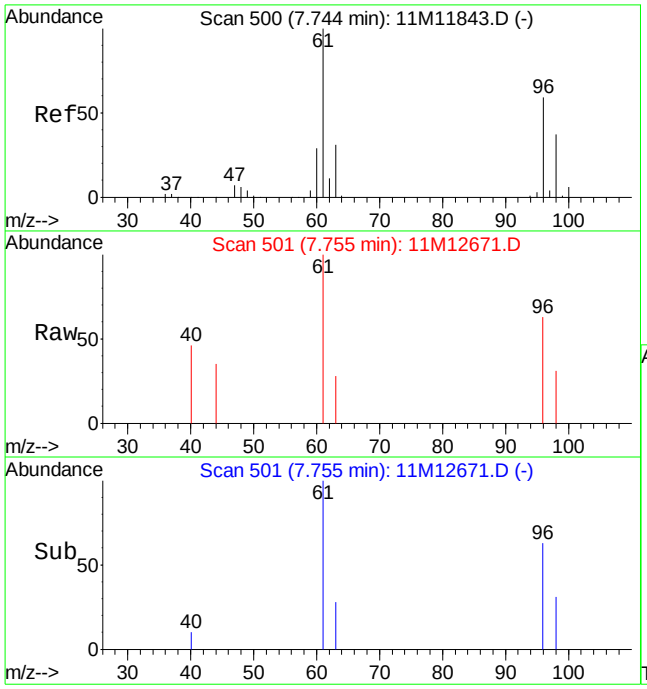

#23
trans-1,2-Dichloroethene
Concen: 0.31 ug/L
RT: 7.75 min Scan# 501
Delta R.T. 0.01 min
Lab File: 11M12671.D
Acq: 16 Jun 2016 1:56

Tgt Ion: 96 Resp: 1642

Ion	Ratio	Lower	Upper
96	100		
61	138.8	100.6	234.6

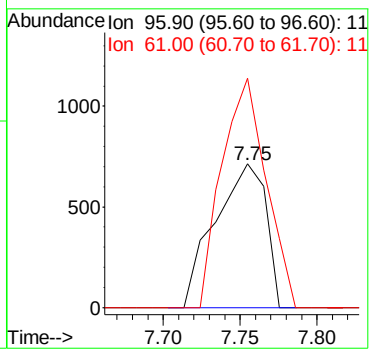

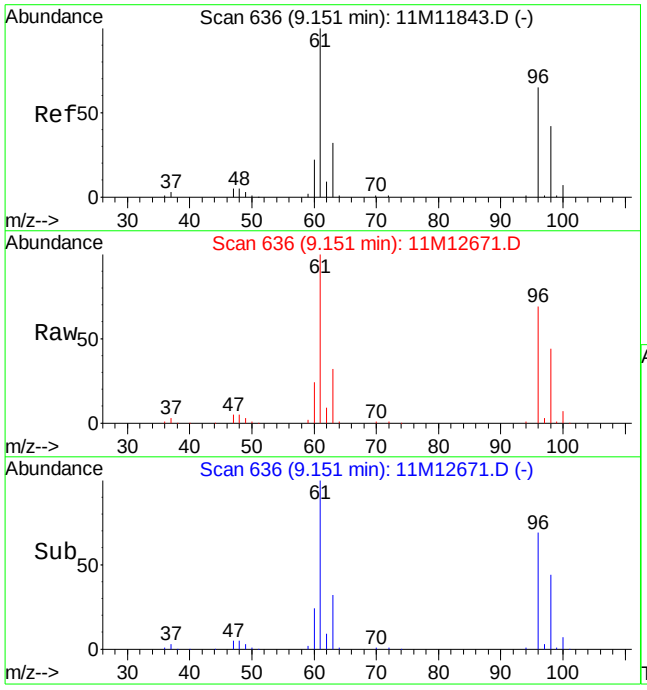

#32
cis-1,2-Dichloroethene
Concen: 112.30 ug/L
RT: 9.15 min Scan# 636
Delta R.T. 0.00 min
Lab File: 11M12671.D
Acq: 16 Jun 2016 1:56

Tgt Ion: 96 Resp: 653194

Ion	Ratio	Lower	Upper
96	100		
61	146.8	105.2	245.6

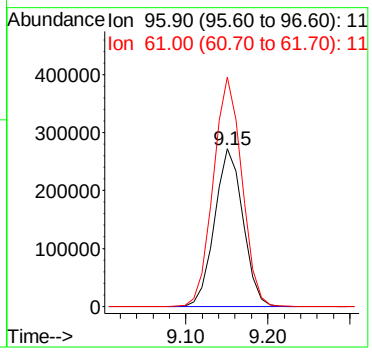

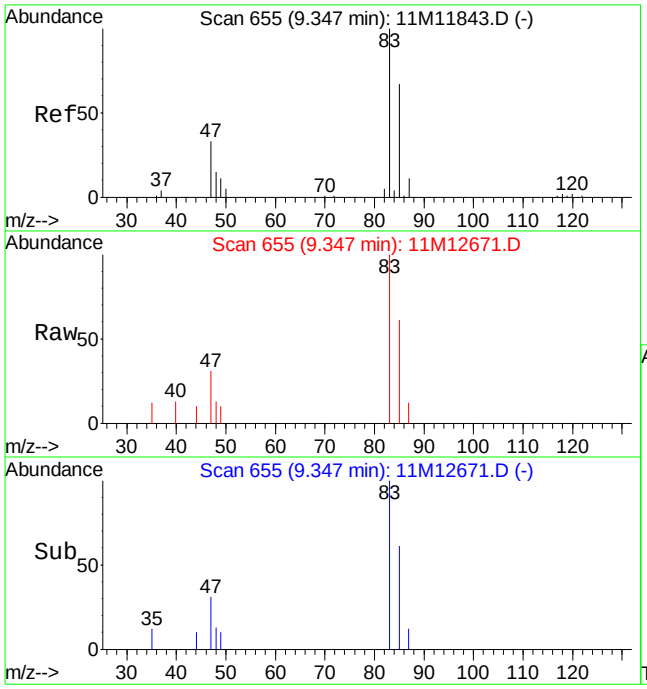

#33
Chloroform
Concen: 0.95 ug/L
RT: 9.35 min Scan# 655
Delta R.T. 0.00 min
Lab File: 11M12671.D
Acq: 16 Jun 2016 1:56

Tgt Ion: 83 Resp: 9915

Ion	Ratio	Lower	Upper
83	100		
85	64.3	39.2	91.4

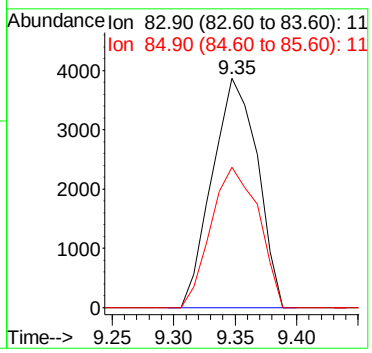

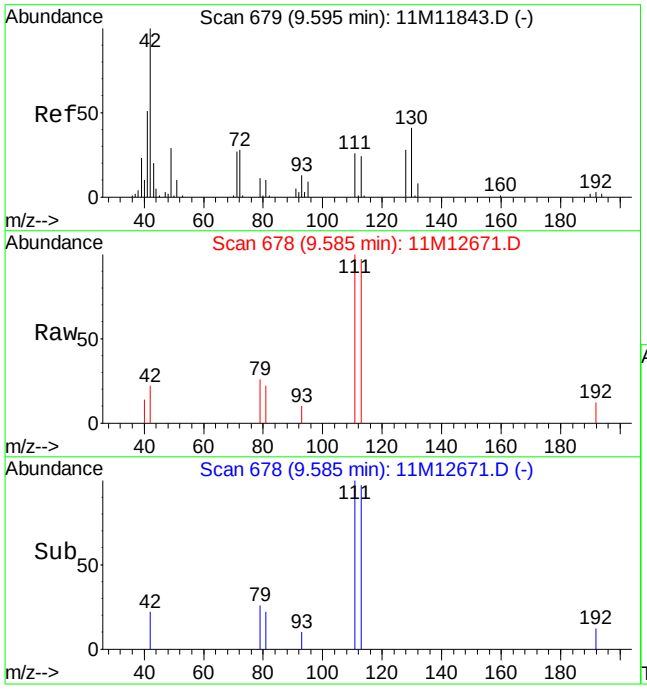

#36
Tetrahydrofuran
Concen: 1.24 ug/L
RT: 9.58 min Scan# 678
Delta R.T. -0.01 min
Lab File: 11M12671.D
Acq: 16 Jun 2016 1:56

Tgt Ion: 42 Resp: 1640

Ion	Ratio	Lower	Upper
42	100		
71	0.0	16.4	38.2#
72	12.0	16.6	38.8#

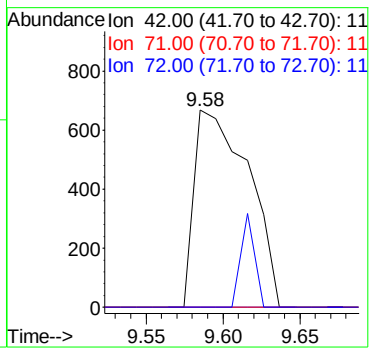

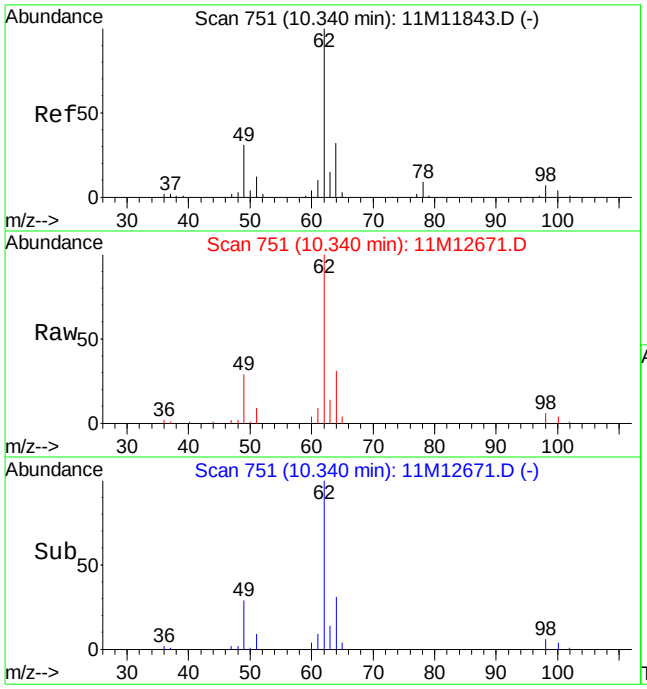

#44
1,2-Dichloroethane
Concen: 13.76 ug/L
RT: 10.34 min Scan# 751
Delta R.T. 0.00 min
Lab File: 11M12671.D
Acq: 16 Jun 2016 1:56

Tgt Ion: 62 Resp: 116134

Ion	Ratio	Lower	Upper
62	100		
64	32.4	18.7	43.7
49	27.8	22.3	52.1

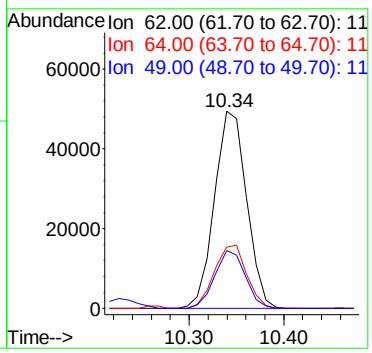

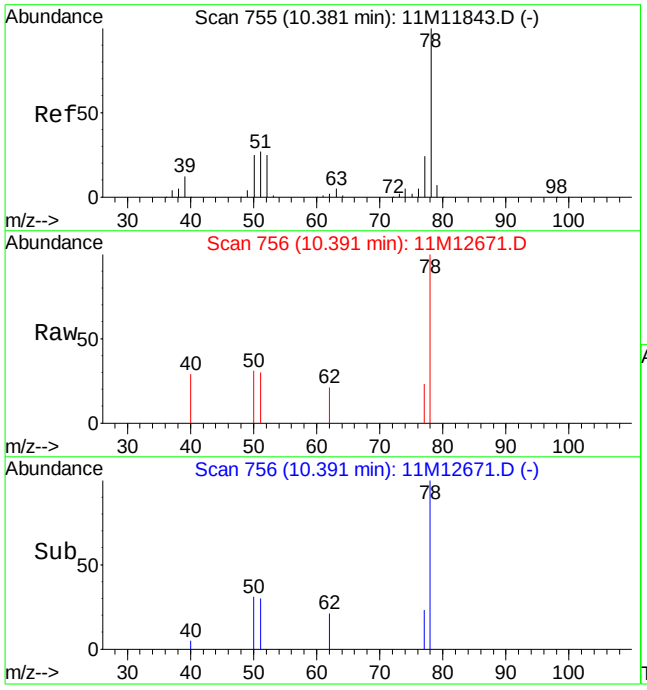

#45
Benzene
Concen: 0.21 ug/L
RT: 10.39 min Scan# 756
Delta R.T. 0.01 min
Lab File: 11M12671.D
Acq: 16 Jun 2016 1:56

Tgt Ion: 78 Resp: 4172

Ion	Ratio	Lower	Upper
78	100		
77	14.0	14.3	33.5#

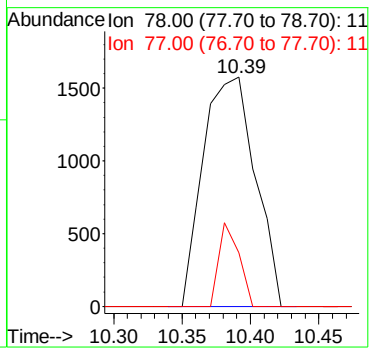

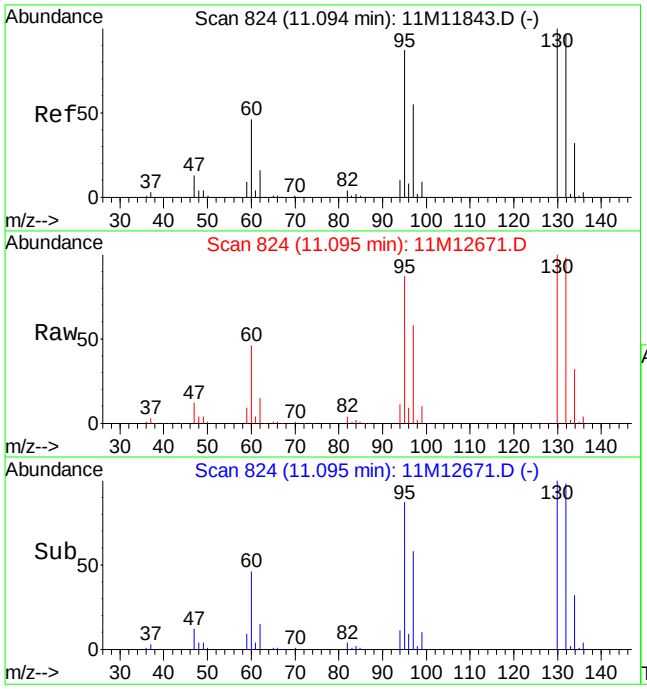

#46
Trichloroethene
Concen: 349.06 ug/L
RT: 11.09 min Scan# 824
Delta R.T. 0.00 min
Lab File: 11M12671.D
Acq: 16 Jun 2016 1:56

Tgt Ion:130 Resp: 2268415

Ion	Ratio	Lower	Upper
130	100		
132	97.6	58.3	136.1
95	90.0	55.6	129.8

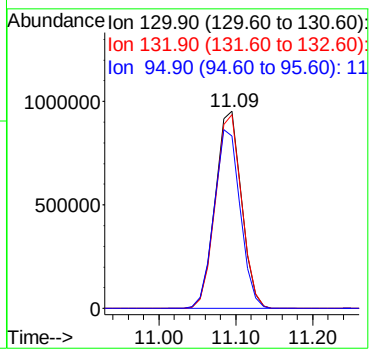

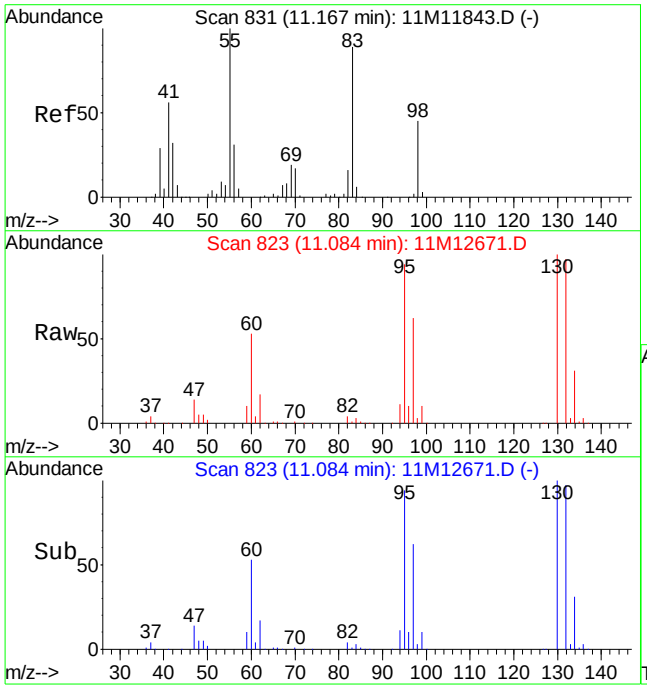

#47
Methylcyclohexane
Concen: 3.11 ug/L
RT: 11.08 min Scan# 823
Delta R.T. -0.08 min
Lab File: 11M12671.D
Acq: 16 Jun 2016 1:56

Tgt Ion: 83 Resp: 24980

Ion	Ratio	Lower	Upper
83	100		
55	0.0	66.5	155.1#
98	225.2	29.9	69.7#

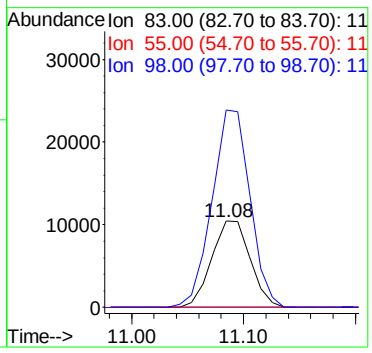

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061716\11M12724.D Vial: 8
Acq On : 17 Jun 2016 19:33 Operator: JDS
Sample : L16060650-01 C D1 20X 826-LOW Inst : hpms11
Misc : 1,20 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 20 11:34:49 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	491782	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	417858	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	247344	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	128170	23.8139 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.24%		
43) 1,2-Dichloroethane-d4	10.23	65	140401	22.8784 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 91.52%		
57) Toluene-d8	12.47	98	433524	23.8778 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 95.52%		
78) p-Bromofluorobenzene	15.64	95	195122	25.5910 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.36%		

Target Compounds

					Qvalue
3) Chloromethane	3.72	50	1294	0.2097 ug/L #	69
4) Vinyl Chloride	3.96	62	1872	0.3653 ug/L #	44
8) Trichlorofluoromethane	5.48	101	2151	0.2106 ug/L	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	170922	34.4844 ug/L	93
13) Acetone	6.25	43	1127	0.9651 ug/L #	49
14) 1,1-Dichloroethene	6.56	61	3205	0.3560 ug/L	90
32) cis-1,2-Dichloroethene	9.15	96	307640	55.9970 ug/L	80
33) Chloroform	9.36	83	2761	0.2812 ug/L	96
44) 1,2-Dichloroethane	10.34	62	57645	7.2291 ug/L	90
46) Trichloroethene	11.08	130	1111595	181.0922 ug/L	97
47) Methylcyclohexane	11.08	83	10779	1.4229 ug/L #	1

(#) = qualifier out of range (m) = manual integration
11M12724.D 8260WT.M Mon Jun 20 11:34:50 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061716\11M12724.D Vial: 8
Acq On : 17 Jun 2016 19:33 Operator: JDS
Sample : L16060650-01 C D1 20X 826-LOW Inst : hpms11
Misc : 1,20 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 20 11:34 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

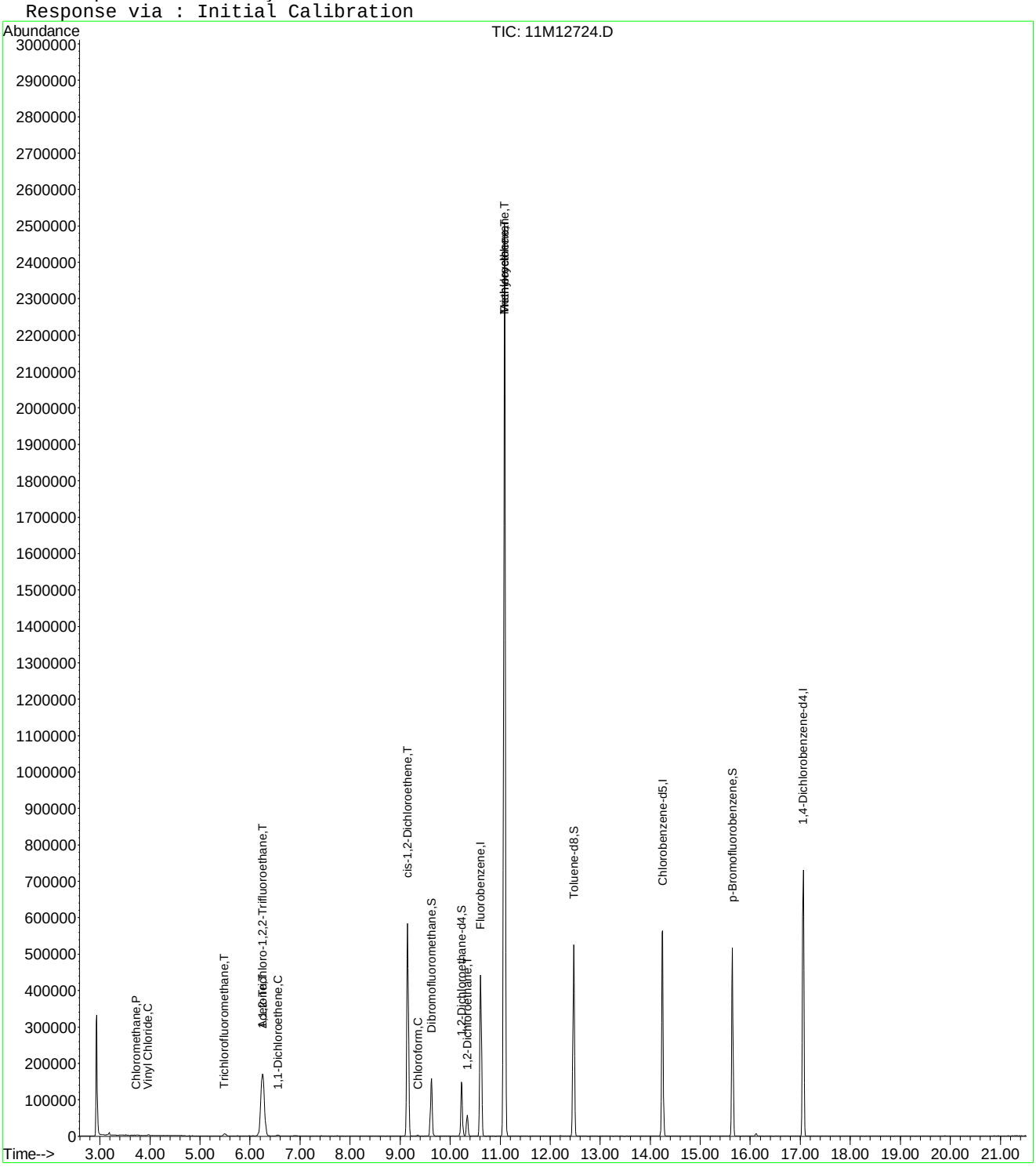

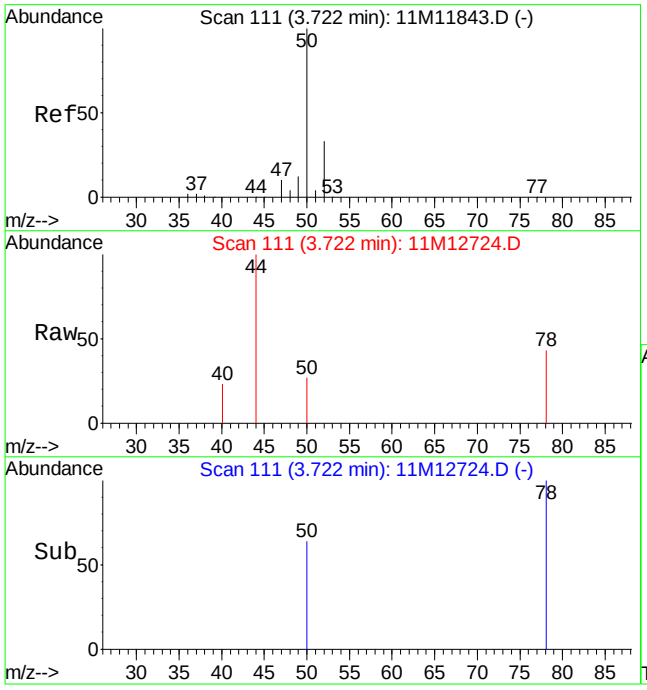

#3
Chloromethane
Concen: 0.21 ug/L
RT: 3.72 min Scan# 111
Delta R.T. -0.00 min
Lab File: 11M12724.D
Acq: 17 Jun 2016 19:33

Tgt Ion: 50 Resp: 1294

Ion	Ratio	Lower	Upper
50	100		
52	15.5	20.0	46.6#

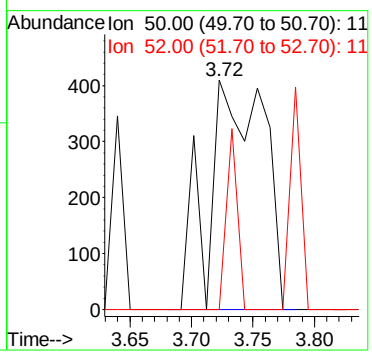

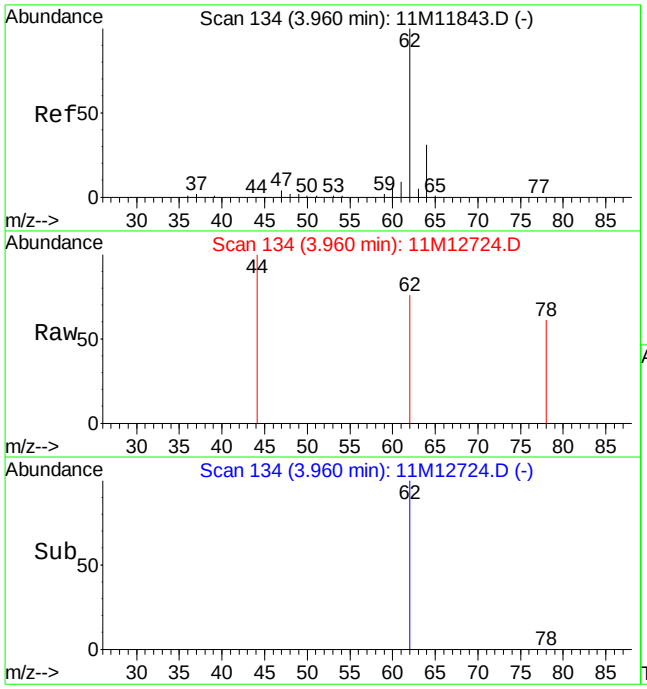

#4
Vinyl Chloride
Concen: 0.37 ug/L
RT: 3.96 min Scan# 134
Delta R.T. -0.00 min
Lab File: 11M12724.D
Acq: 17 Jun 2016 19:33

Tgt Ion: 62 Resp: 1872

Ion	Ratio	Lower	Upper
62	100		
64	0.0	18.4	43.0#

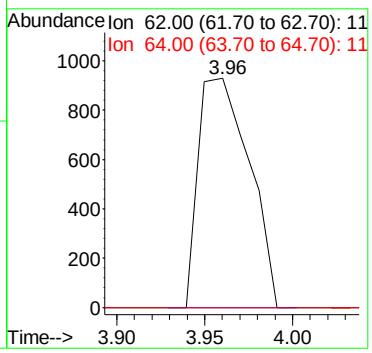

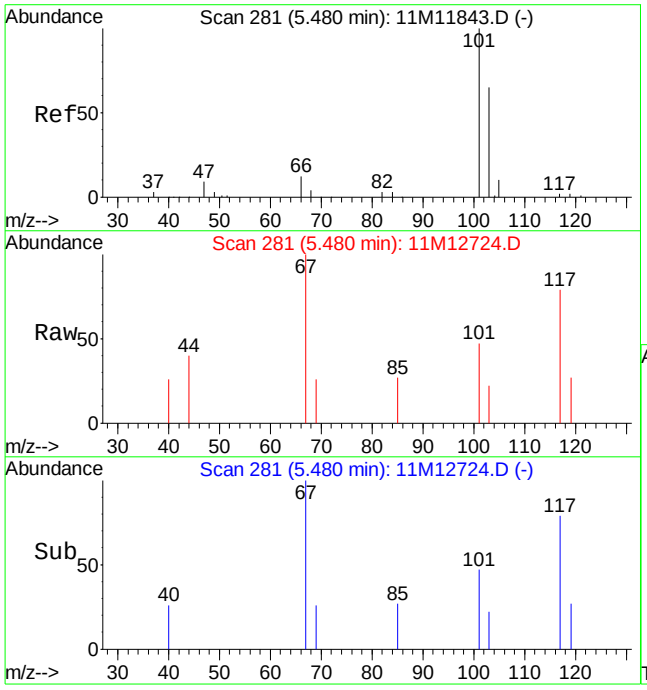

#8
Trichlorofluoromethane
Concen: 0.21 ug/L
RT: 5.48 min Scan# 281
Delta R.T. -0.00 min
Lab File: 11M12724.D
Acq: 17 Jun 2016 19:33

Tgt Ion:101 Resp: 2151

Ion	Ratio	Lower	Upper
101	100		
103	60.5	39.1	91.3

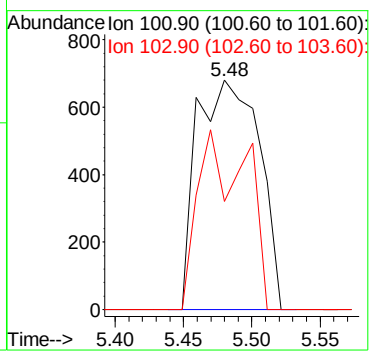

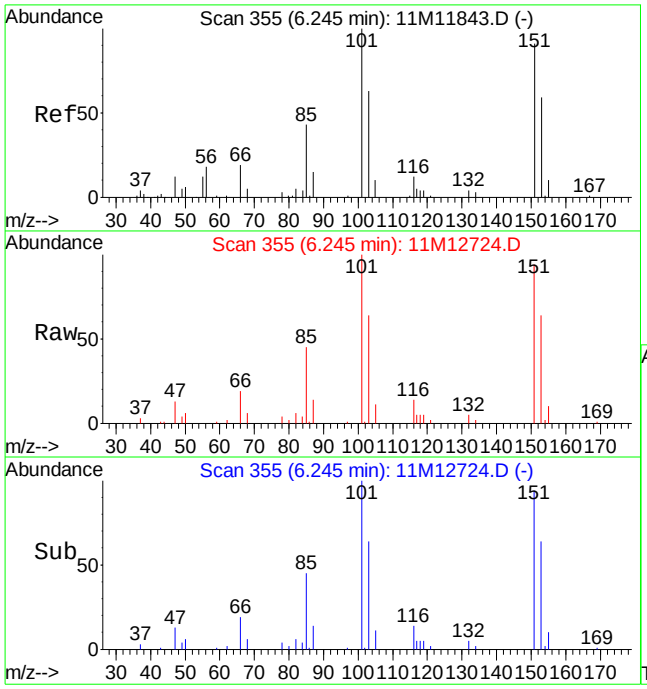

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 34.48 ug/L
RT: 6.25 min Scan# 355
Delta R.T. -0.00 min
Lab File: 11M12724.D
Acq: 17 Jun 2016 19:33

Tgt Ion:101 Resp: 170922

Ion	Ratio	Lower	Upper
101	100		
151	96.9	50.7	130.7

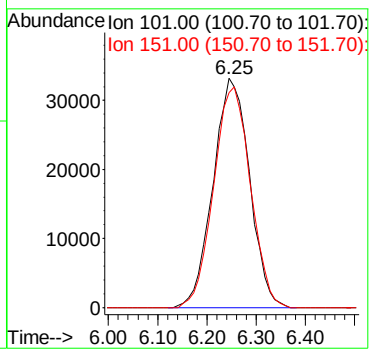

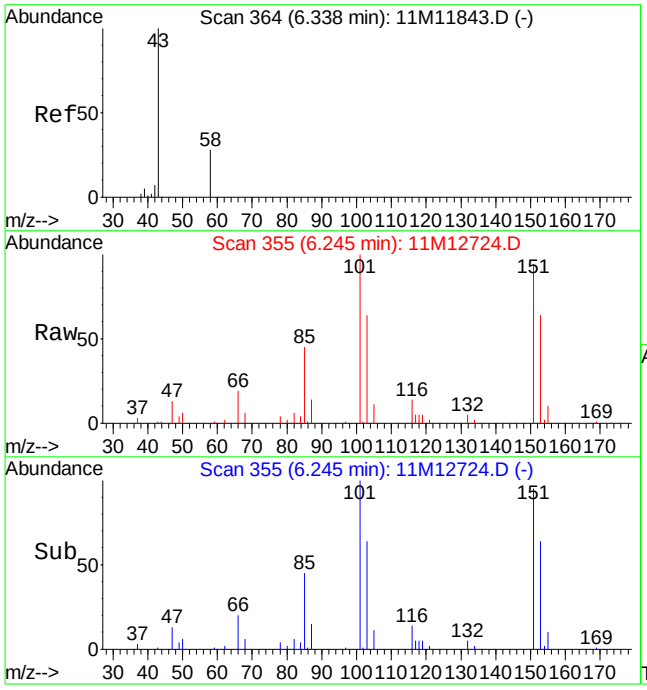

#13
Acetone
Concen: 0.97 ug/L
RT: 6.25 min Scan# 355
Delta R.T. -0.09 min
Lab File: 11M12724.D
Acq: 17 Jun 2016 19:33

Tgt Ion: 43 Resp: 1127

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

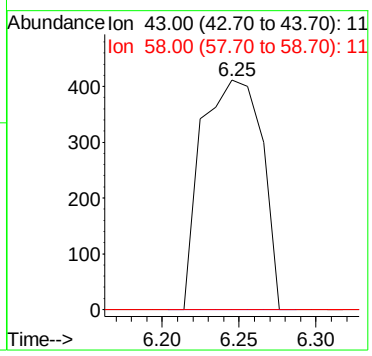

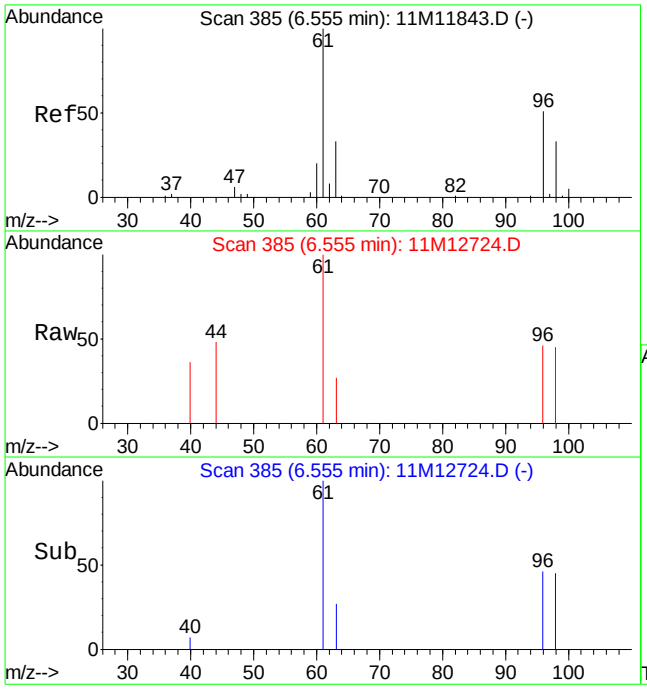

#14
1,1-Dichloroethene
Concen: 0.36 ug/L
RT: 6.56 min Scan# 385
Delta R.T. -0.00 min
Lab File: 11M12724.D
Acq: 17 Jun 2016 19:33

Tgt Ion: 61 Resp: 3205

Ion	Ratio	Lower	Upper
61	100		
96	43.3	30.1	70.3

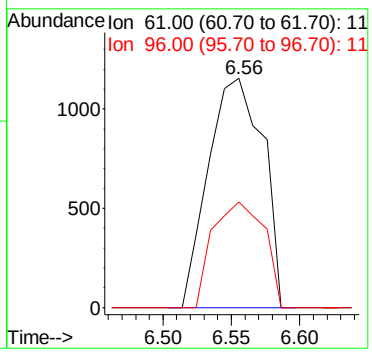

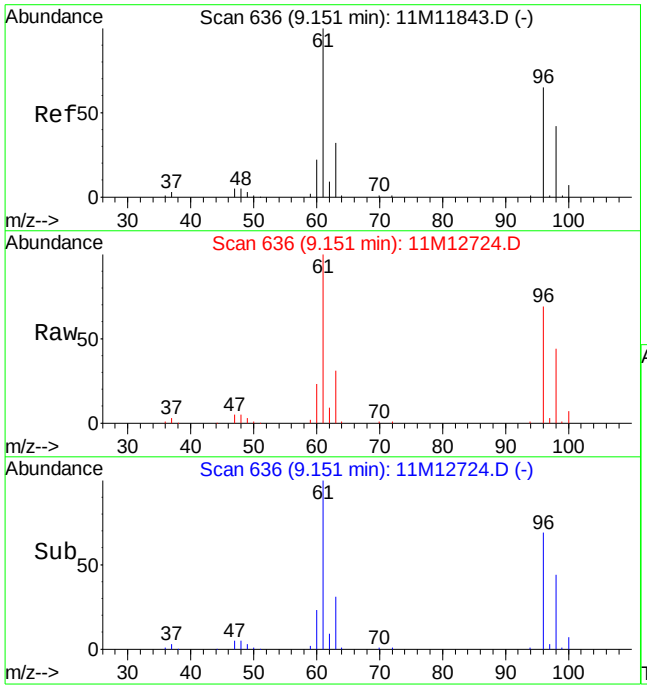

#32
cis-1,2-Dichloroethene
Concen: 56.00 ug/L
RT: 9.15 min Scan# 636
Delta R.T. -0.00 min
Lab File: 11M12724.D
Acq: 17 Jun 2016 19:33

Tgt Ion: 96 Resp: 307640

Ion	Ratio	Lower	Upper
96	100		
61	147.2	105.2	245.6

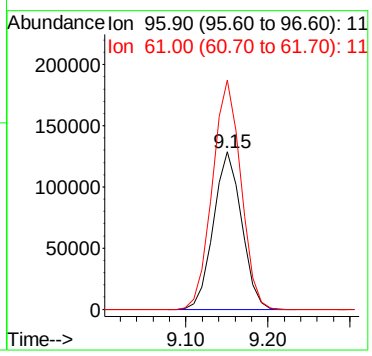

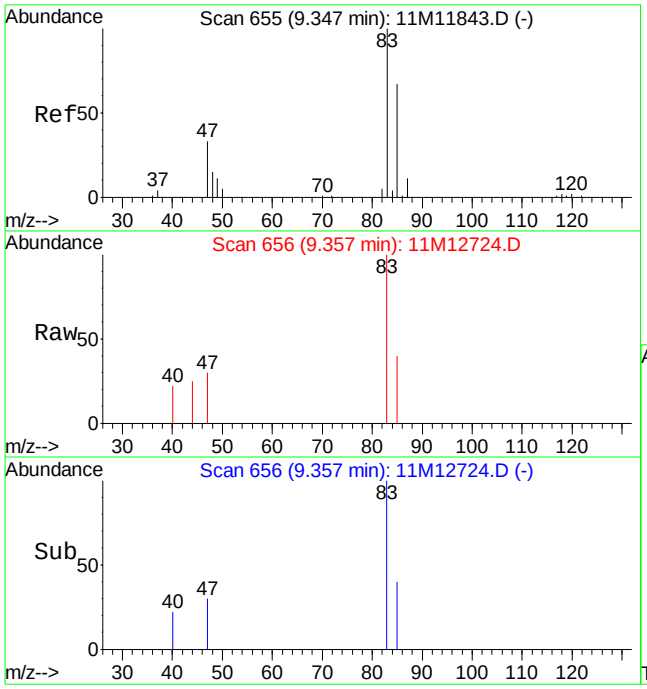

#33
Chloroform
Concen: 0.28 ug/L
RT: 9.36 min Scan# 656
Delta R.T. 0.01 min
Lab File: 11M12724.D
Acq: 17 Jun 2016 19:33

Tgt Ion: 83 Resp: 2761

Ion	Ratio	Lower	Upper
83	100		
85	62.3	39.2	91.4

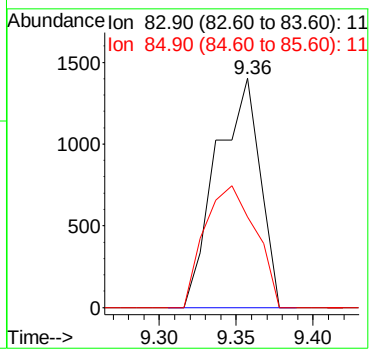

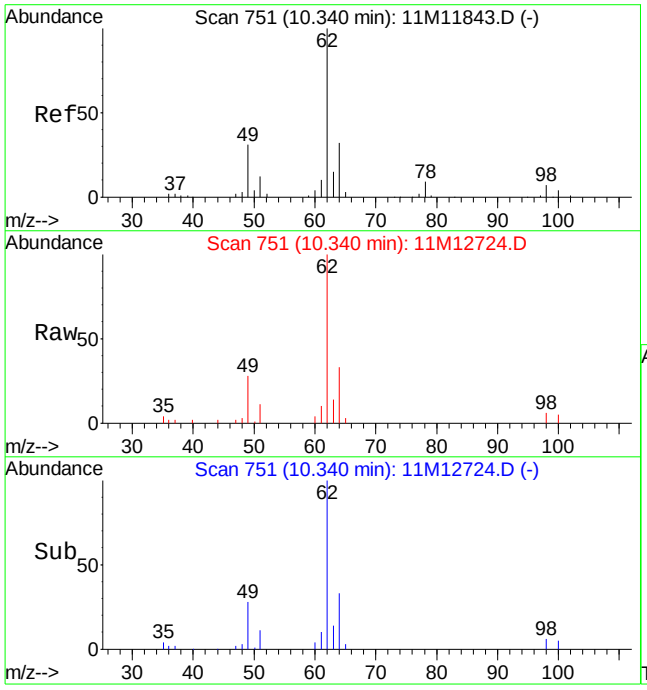

#44
1,2-Dichloroethane
Concen: 7.23 ug/L
RT: 10.34 min Scan# 751
Delta R.T. -0.00 min
Lab File: 11M12724.D
Acq: 17 Jun 2016 19:33

Tgt Ion: 62 Resp: 57645

Ion	Ratio	Lower	Upper
62	100		
64	31.3	18.7	43.7
49	26.6	22.3	52.1

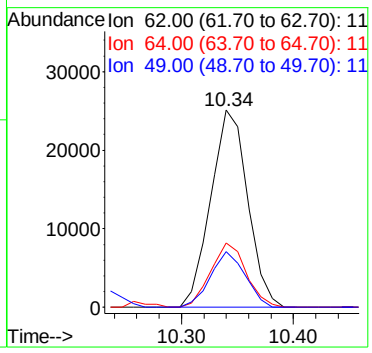

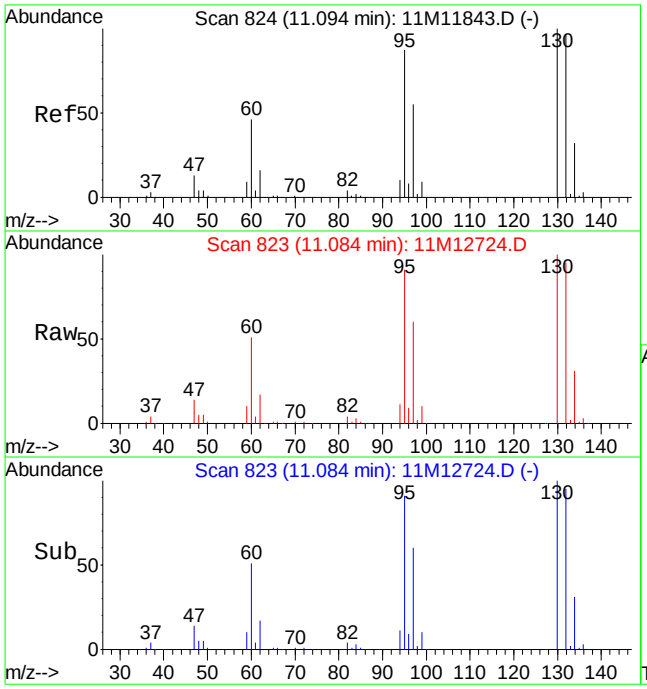

#46
Trichloroethene
Concen: 181.09 ug/L
RT: 11.08 min Scan# 823
Delta R.T. -0.01 min
Lab File: 11M12724.D
Acq: 17 Jun 2016 19:33

Tgt Ion:130 Resp: 1111595

Ion	Ratio	Lower	Upper
130	100		
132	95.9	58.3	136.1
95	88.7	55.6	129.8

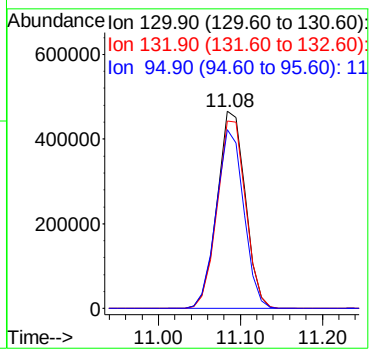

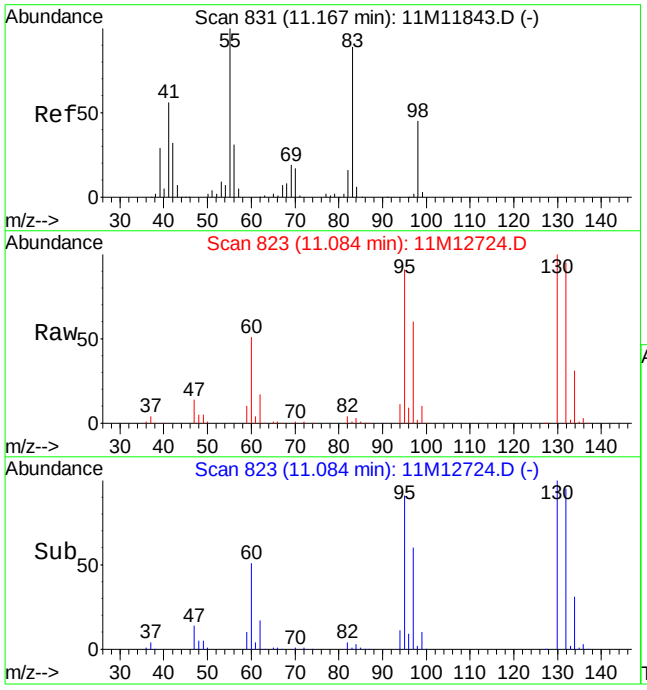

#47
Methylcyclohexane
Concen: 1.42 ug/L
RT: 11.08 min Scan# 823
Delta R.T. -0.08 min
Lab File: 11M12724.D
Acq: 17 Jun 2016 19:33

Tgt Ion: 83 Resp: 10779

Ion	Ratio	Lower	Upper
83	100		
55	0.0	66.5	155.1#
98	245.8	29.9	69.7#

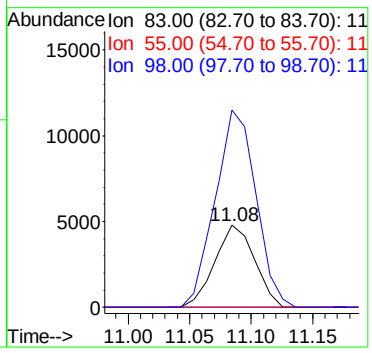

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061716\11M12725.D Vial: 9
Acq On : 17 Jun 2016 20:05 Operator: JDS
Sample : L16060650-02 C D1 2.5X 826-LOW Inst : hpms11
Misc : 1,2.5 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 20 11:34:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	485977	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	412545	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	240882	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	129484	24.3454 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.40%		
43) 1,2-Dichloroethane-d4	10.23	65	138832	22.8929 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 91.56%		
57) Toluene-d8	12.47	98	429441	23.9575 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 95.84%		
78) p-Bromofluorobenzene	15.64	95	191376	25.7731 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.08%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.18	85	7788	1.0228 ug/L #	48
3) Chloromethane	3.73	50	761	0.1248 ug/L	84
4) Vinyl Chloride	3.96	62	20748	4.0969 ug/L	97
8) Trichlorofluoromethane	5.47	101	2989	0.2961 ug/L	88
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	1818431	371.2607 ug/L	95
13) Acetone	6.25	43	22346	19.3643 ug/L #	78
14) 1,1-Dichloroethene	6.56	61	116842	13.1332 ug/L	97
15) Tert-Butyl Alcohol	6.57	59	4153	13.0108 ug/L #	56
23) trans-1,2-Dichloroethene	7.74	96	6495	1.3191 ug/L	97
27) 1,1-Dichloroethane	8.34	63	18062	1.8282 ug/L	98
32) cis-1,2-Dichloroethene	9.15	96	185057	34.0867 ug/L	83
33) Chloroform	9.35	83	7612	0.7846 ug/L	84
39) Cyclohexane	9.88	56	20868	2.0055 ug/L	97
46) Trichloroethene	11.08	130	1192005	196.5115 ug/L	99
47) Methylcyclohexane	11.08	83	12940	1.7286 ug/L #	1
64) Tetrachloroethene	13.33	164	1927	0.3968 ug/L	89

(#) = qualifier out of range (m) = manual integration
11M12725.D 8260WT.M Mon Jun 20 11:34:53 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061716\11M12725.D Vial: 9
Acq On : 17 Jun 2016 20:05 Operator: JDS
Sample : L16060650-02 C D1 2.5X 826-LOW Inst : hpms11
Misc : 1,2.5 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 20 11:34 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

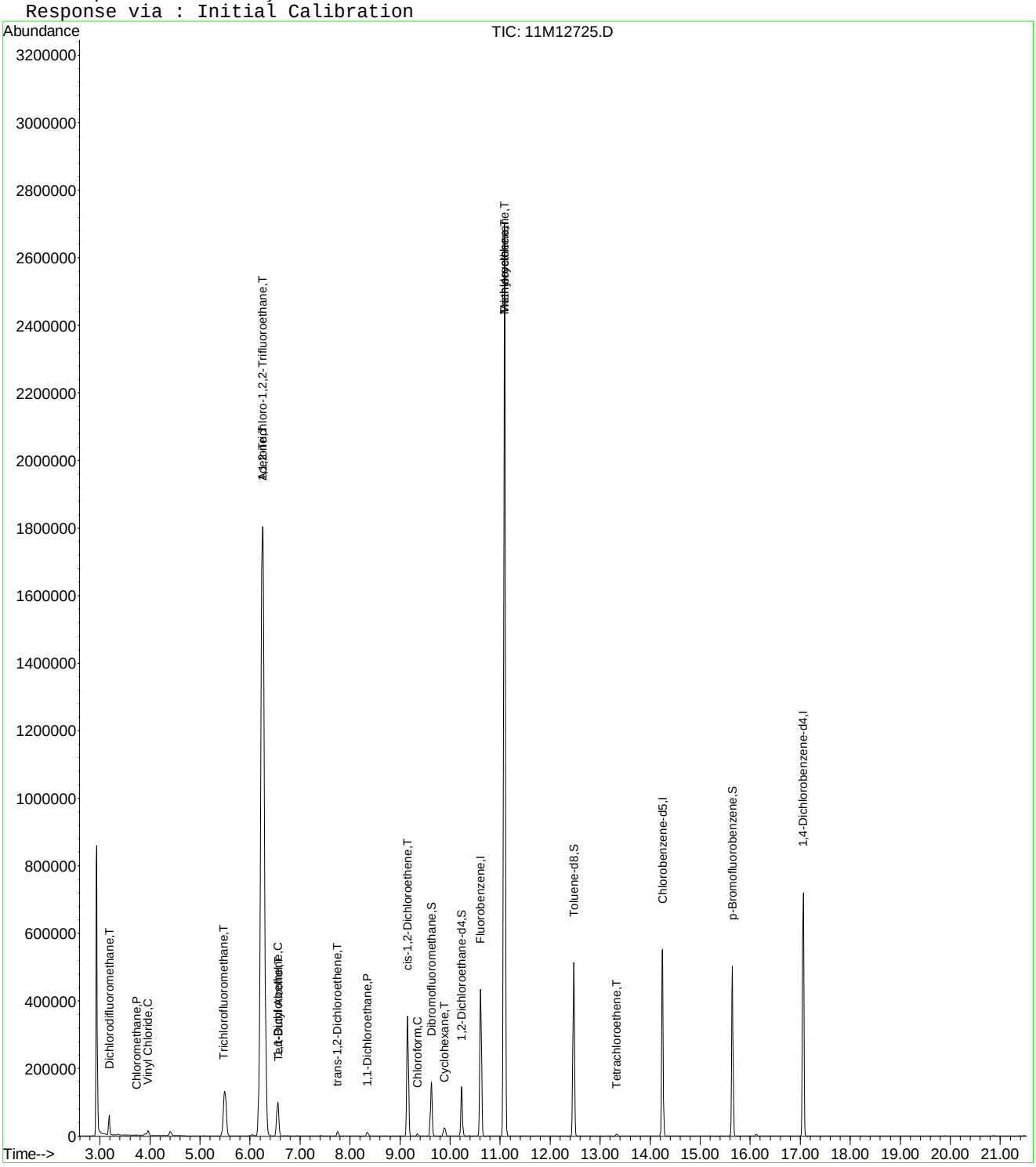

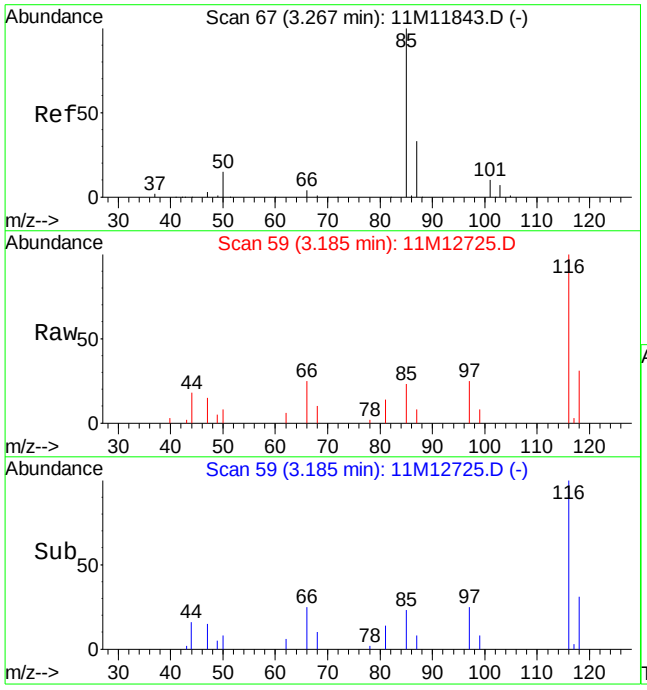

#2
Dichlorodifluoromethane
Concen: 1.02 ug/L
RT: 3.18 min Scan# 59
Delta R.T. -0.08 min
Lab File: 11M12725.D
Acq: 17 Jun 2016 20:05

Tgt Ion: 85 Resp: 7788

Ion	Ratio	Lower	Upper
85	100		
50	35.2	8.5	19.7#

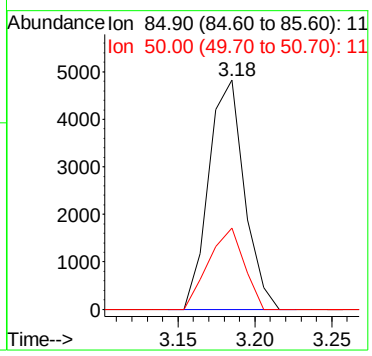

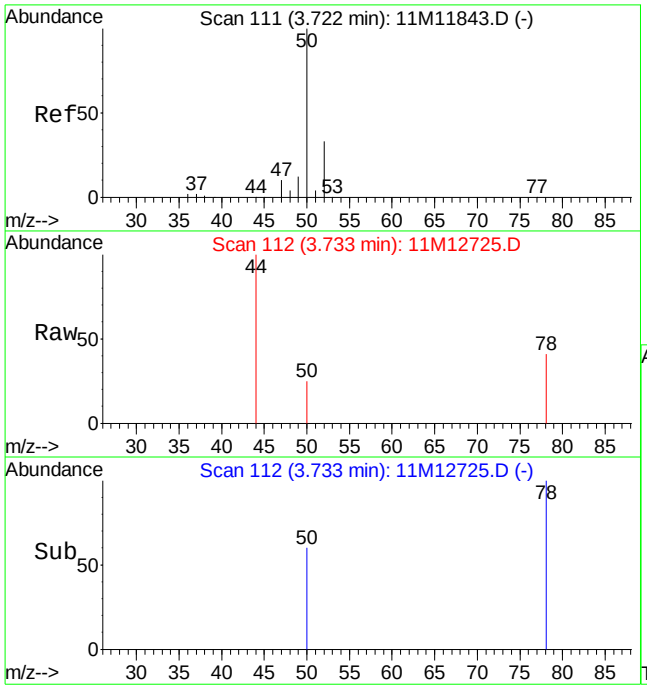

#3
Chloromethane
Concen: 0.12 ug/L
RT: 3.73 min Scan# 112
Delta R.T. 0.01 min
Lab File: 11M12725.D
Acq: 17 Jun 2016 20:05

Tgt Ion: 50 Resp: 761

Ion	Ratio	Lower	Upper
50	100		
52	24.4	20.0	46.6

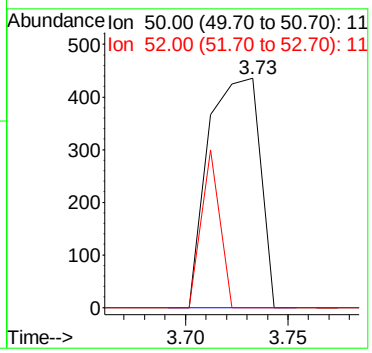

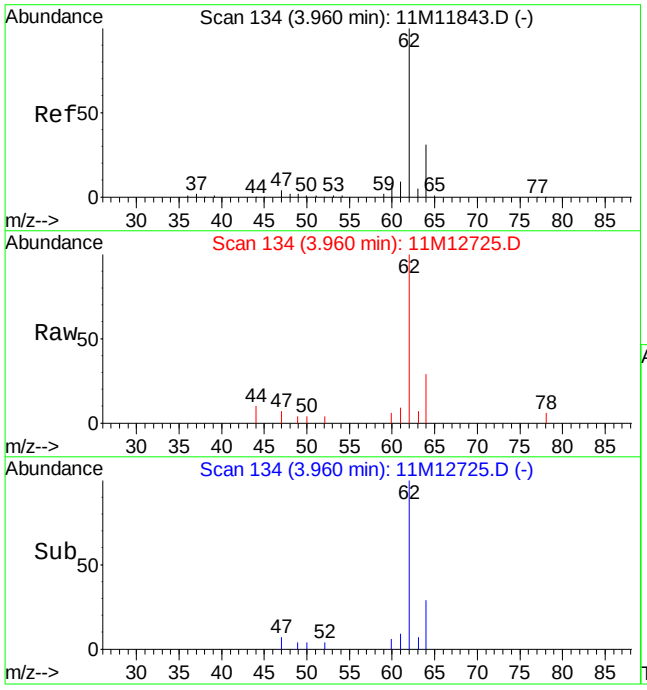

#4
Vinyl Chloride
Concen: 4.10 ug/L
RT: 3.96 min Scan# 134
Delta R.T. 0.00 min
Lab File: 11M12725.D
Acq: 17 Jun 2016 20:05

Tgt Ion: 62 Resp: 20748

Ion	Ratio	Lower	Upper
62	100		
64	32.5	18.4	43.0

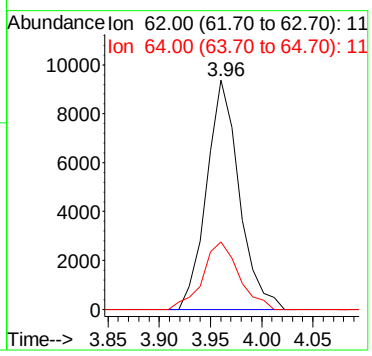

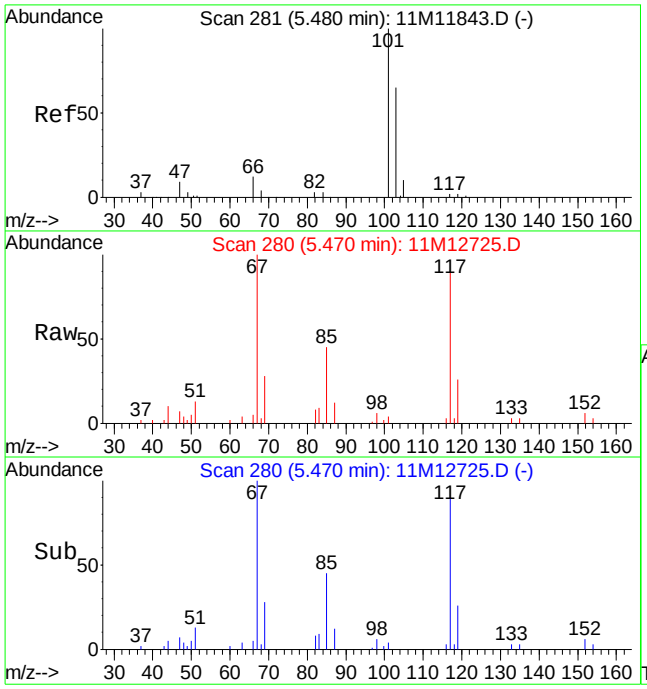

#8
Trichlorofluoromethane
Concen: 0.30 ug/L
RT: 5.47 min Scan# 280
Delta R.T. -0.01 min
Lab File: 11M12725.D
Acq: 17 Jun 2016 20:05

Tgt Ion:101 Resp: 2989

Ion	Ratio	Lower	Upper
101	100		
103	56.0	39.1	91.3

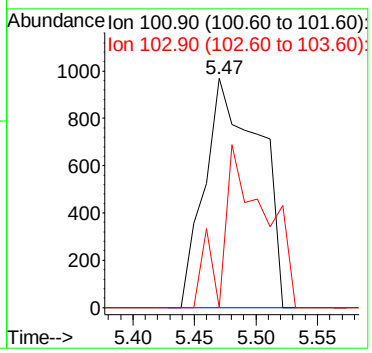

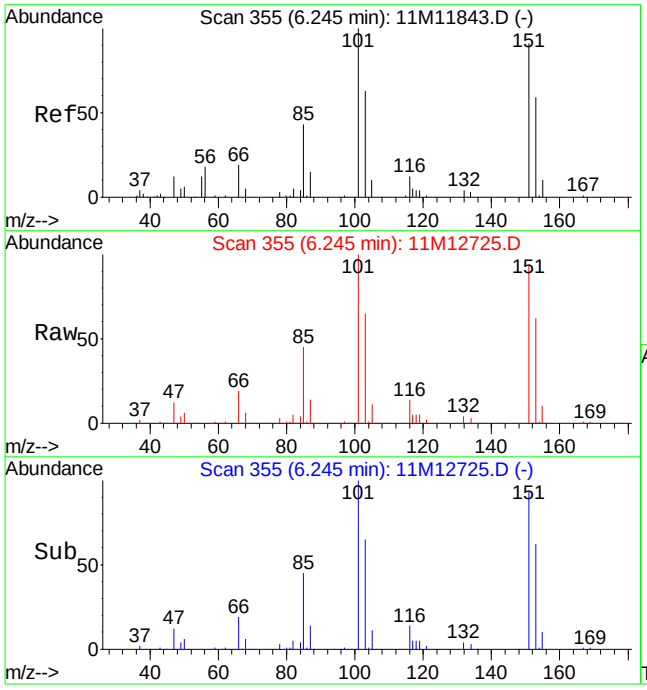

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 371.26 ug/L
RT: 6.25 min Scan# 355
Delta R.T. 0.00 min
Lab File: 11M12725.D
Acq: 17 Jun 2016 20:05

Tgt Ion:101 Resp: 1818431

Ion	Ratio	Lower	Upper
101	100		
151	95.2	50.7	130.7

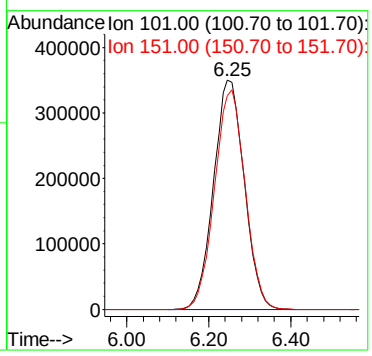

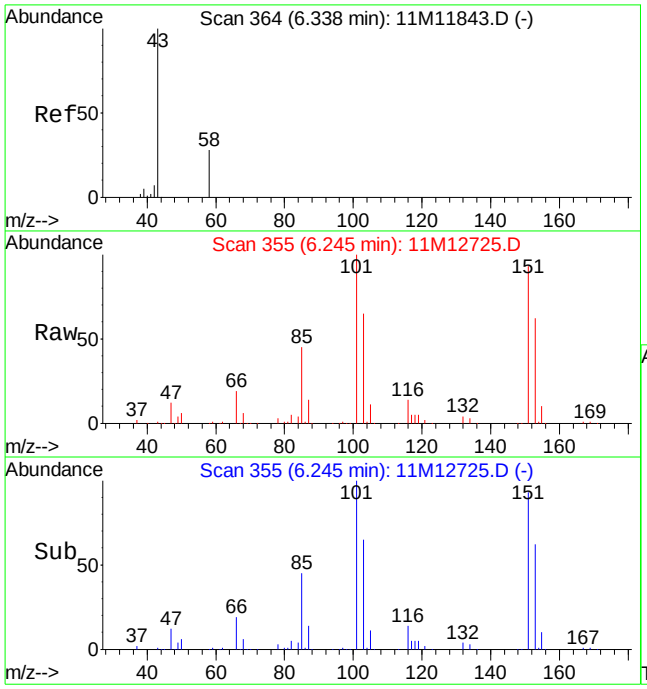

#13
Acetone
Concen: 19.36 ug/L
RT: 6.25 min Scan# 355
Delta R.T. -0.09 min
Lab File: 11M12725.D
Acq: 17 Jun 2016 20:05

Tgt Ion: 43 Resp: 22346

Ion	Ratio	Lower	Upper
43	100		
58	15.2	15.8	36.8#

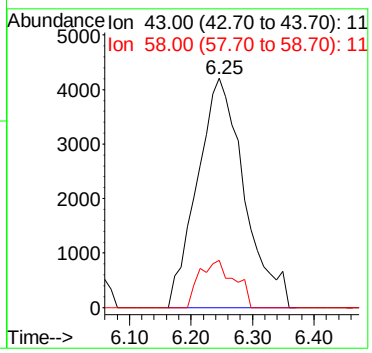

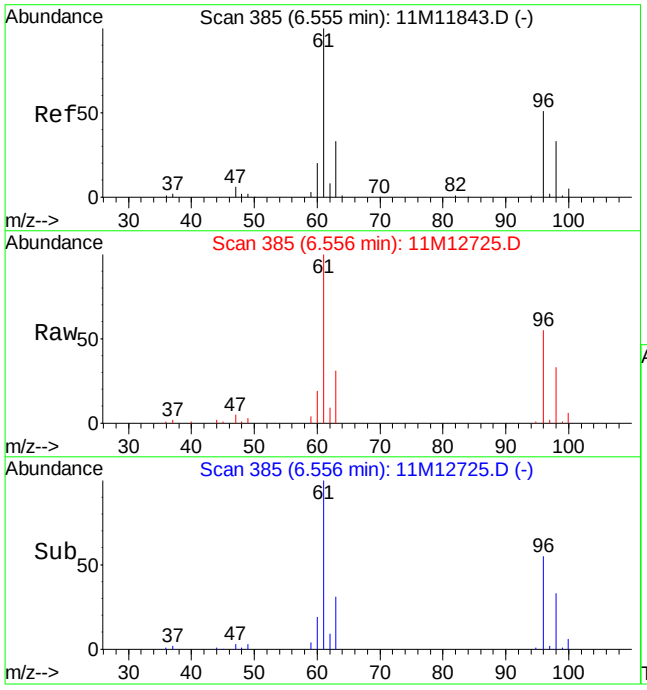

#14
1,1-Dichloroethene
Concen: 13.13 ug/L
RT: 6.56 min Scan# 385
Delta R.T. 0.00 min
Lab File: 11M12725.D
Acq: 17 Jun 2016 20:05

Tgt Ion: 61 Resp: 116842

Ion	Ratio	Lower	Upper
61	100		
96	52.0	30.1	70.3

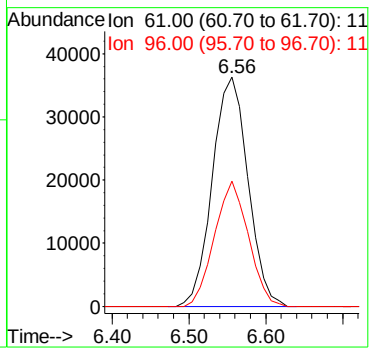

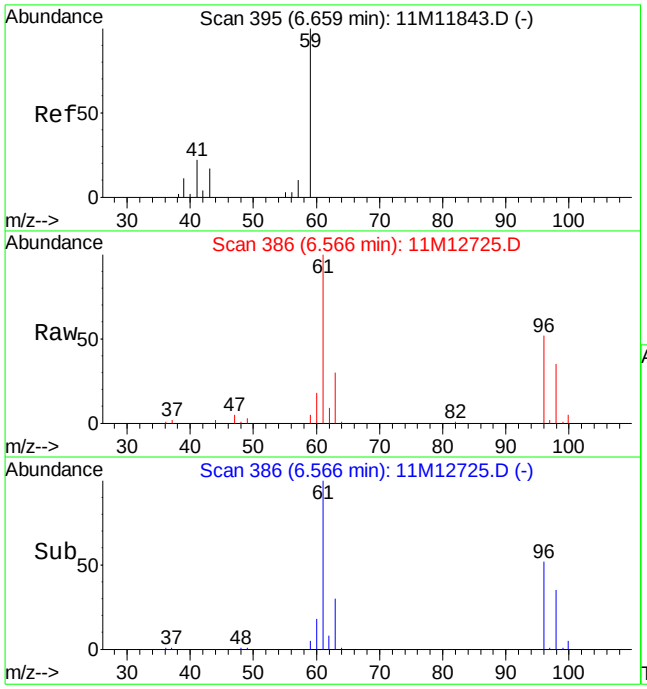

#15
Tert-Butyl Alcohol
Concen: 13.01 ug/L
RT: 6.57 min Scan# 386
Delta R.T. -0.09 min
Lab File: 11M12725.D
Acq: 17 Jun 2016 20:05

Tgt Ion: 59 Resp: 4153

Ion	Ratio	Lower	Upper
59	100		
41	0.0	15.3	35.7#
57	0.0	6.2	14.4#

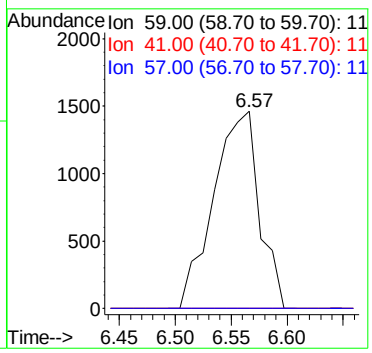

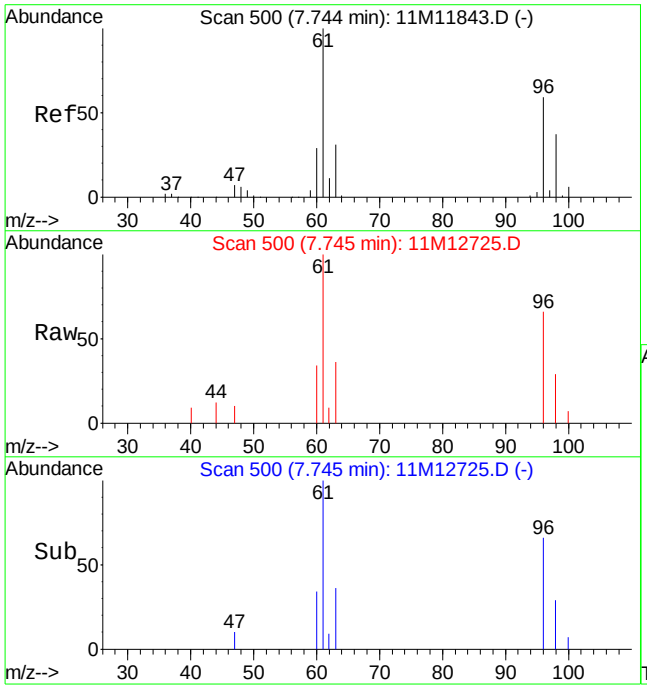

#23
trans-1,2-Dichloroethene
Concen: 1.32 ug/L
RT: 7.74 min Scan# 500
Delta R.T. 0.00 min
Lab File: 11M12725.D
Acq: 17 Jun 2016 20:05

Tgt Ion: 96 Resp: 6495

Ion	Ratio	Lower	Upper
96	100		
61	171.1	100.6	234.6

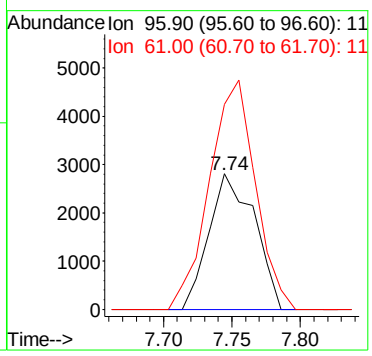

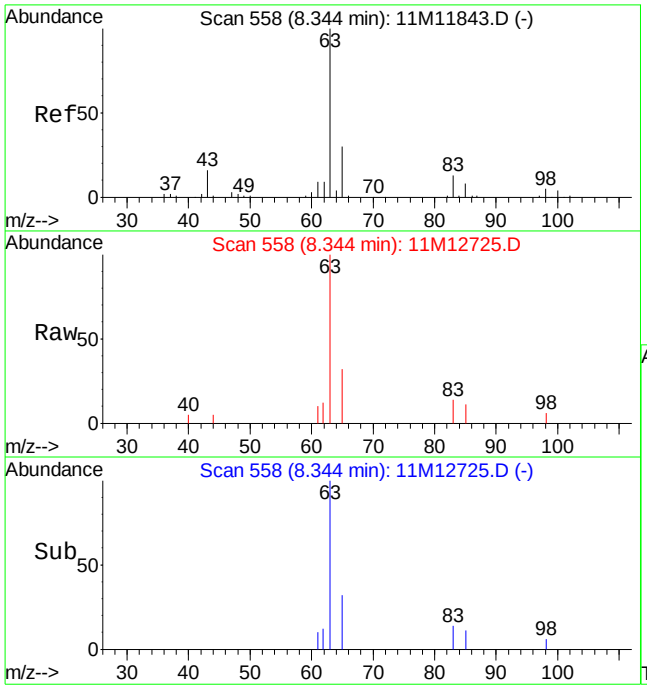

#27
1,1-Dichloroethane
Concen: 1.83 ug/L
RT: 8.34 min Scan# 558
Delta R.T. 0.00 min
Lab File: 11M12725.D
Acq: 17 Jun 2016 20:05

Tgt Ion: 63 Resp: 18062

Ion	Ratio	Lower	Upper
63	100		
65	31.3	17.8	41.6
83	12.6	7.4	17.4

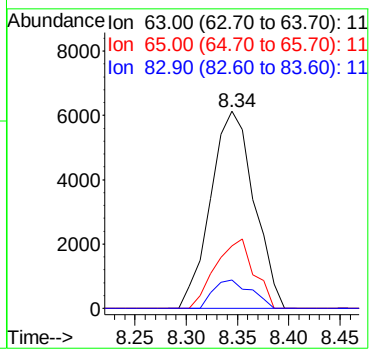

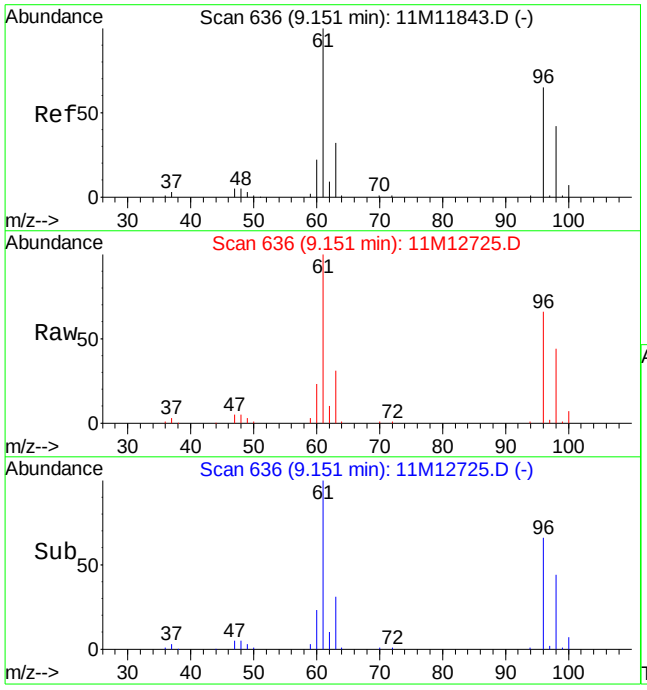

#32
cis-1,2-Dichloroethene
Concen: 34.09 ug/L
RT: 9.15 min Scan# 636
Delta R.T. 0.00 min
Lab File: 11M12725.D
Acq: 17 Jun 2016 20:05

Tgt Ion: 96 Resp: 185057

Ion	Ratio	Lower	Upper
96	100		
61	151.4	105.2	245.6

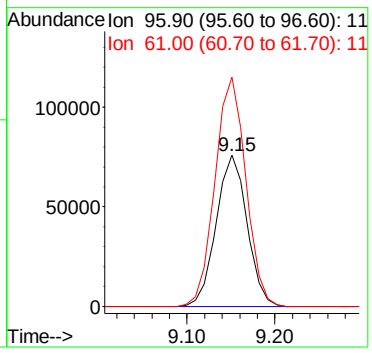

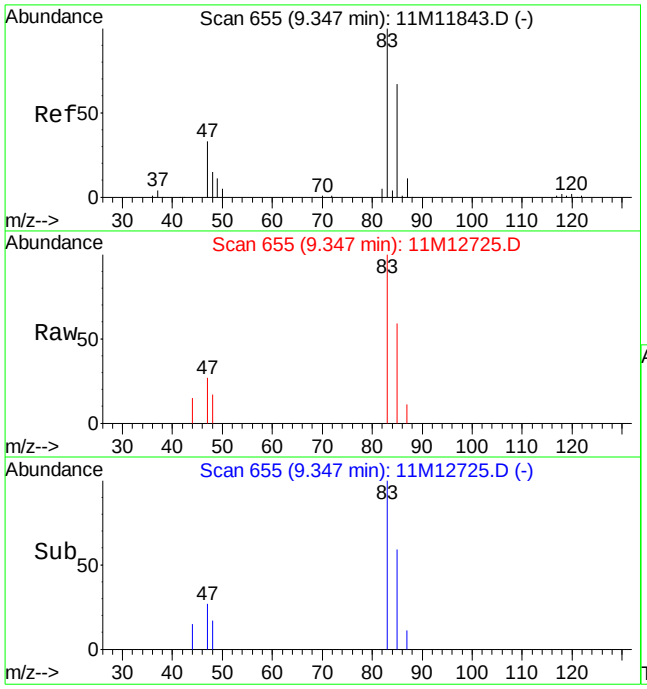

#33
Chloroform
Concen: 0.78 ug/L
RT: 9.35 min Scan# 655
Delta R.T. 0.00 min
Lab File: 11M12725.D
Acq: 17 Jun 2016 20:05

Tgt Ion: 83 Resp: 7612

Ion	Ratio	Lower	Upper
83	100		
85	52.3	39.2	91.4

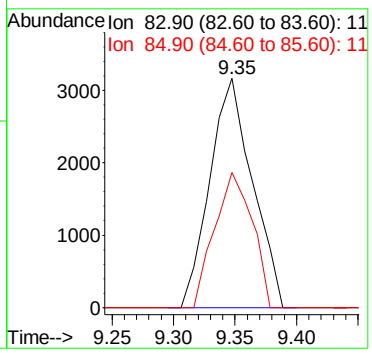

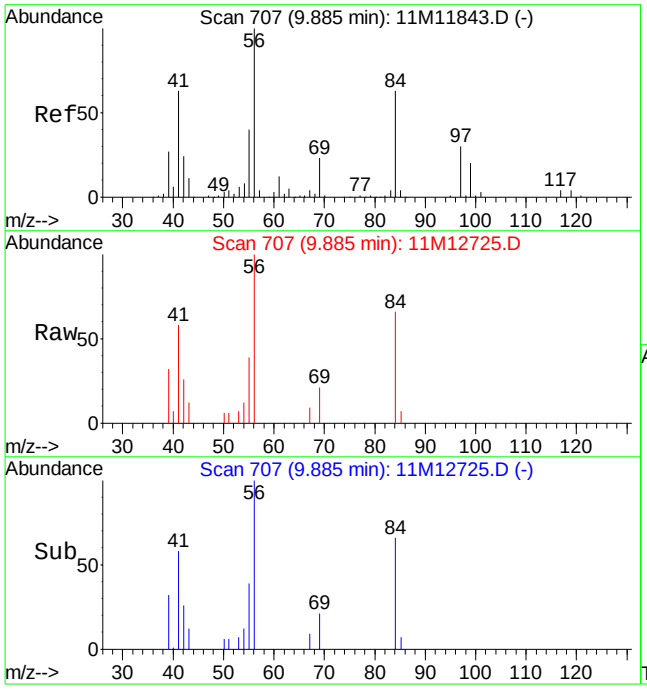

#39
Cyclohexane
Concen: 2.01 ug/L
RT: 9.88 min Scan# 707
Delta R.T. 0.00 min
Lab File: 11M12725.D
Acq: 17 Jun 2016 20:05

Tgt Ion: 56 Resp: 20868

Ion	Ratio	Lower	Upper
56	100		
69	21.1	13.7	31.9
84	61.7	38.5	89.7

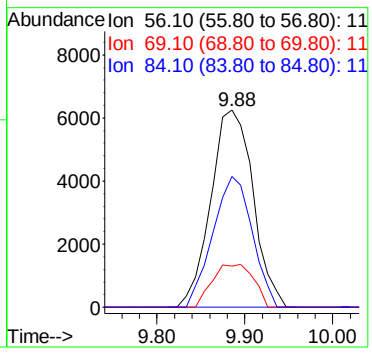

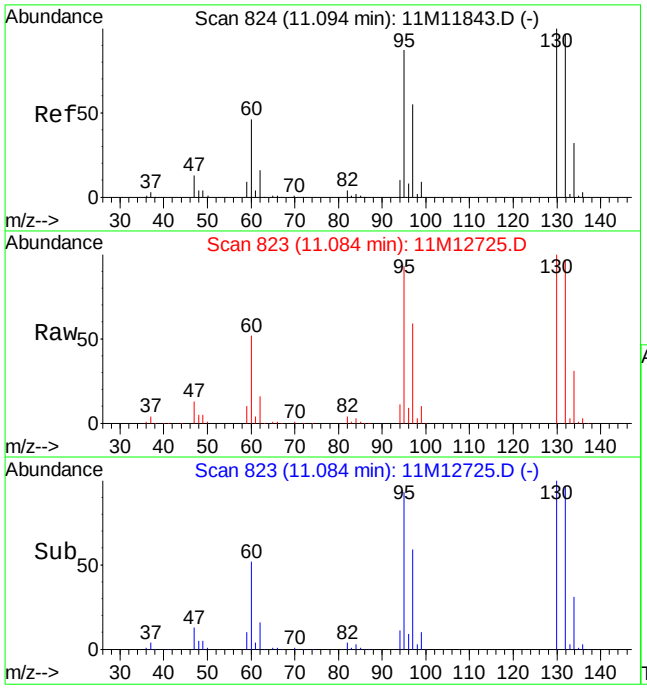

#46
Trichloroethene
Concen: 196.51 ug/L
RT: 11.08 min Scan# 823
Delta R.T. -0.01 min
Lab File: 11M12725.D
Acq: 17 Jun 2016 20:05

Tgt Ion:130 Resp: 1192005

Ion	Ratio	Lower	Upper
130	100		
132	97.3	58.3	136.1
95	89.9	55.6	129.8

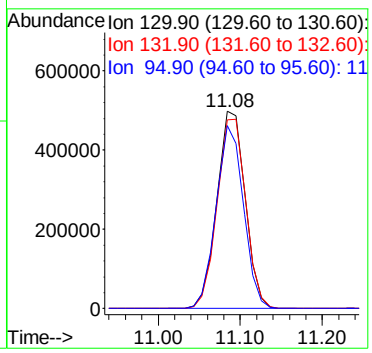

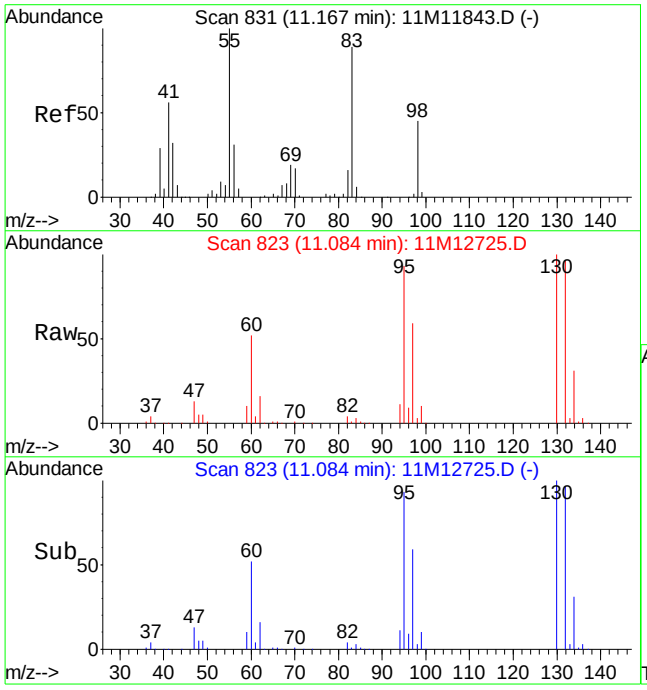

#47
Methylcyclohexane
Concen: 1.73 ug/L
RT: 11.08 min Scan# 823
Delta R.T. -0.08 min
Lab File: 11M12725.D
Acq: 17 Jun 2016 20:05

Tgt Ion: 83 Resp: 12940

Ion	Ratio	Lower	Upper
83	100		
55	0.0	66.5	155.1#
98	220.1	29.9	69.7#

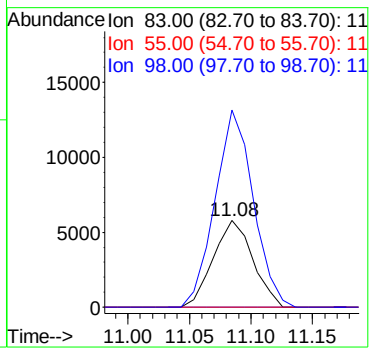

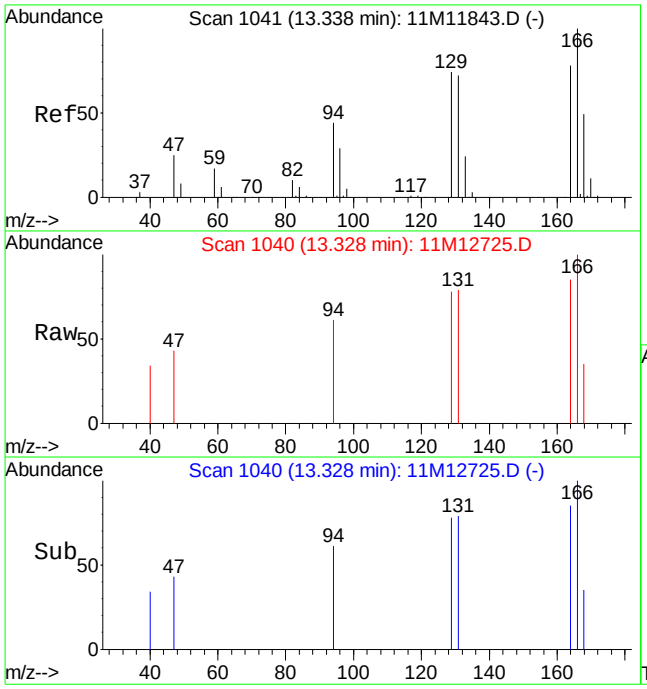

#64
Tetrachloroethene
Concen: 0.40 ug/L
RT: 13.33 min Scan# 1040
Delta R.T. -0.01 min
Lab File: 11M12725.D
Acq: 17 Jun 2016 20:05

Tgt Ion:164 Resp: 1927

Ion	Ratio	Lower	Upper
164	100		
129	107.5	57.9	135.1

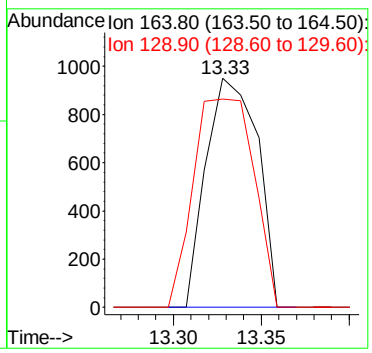

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12693.D Vial: 11
Acq On : 16 Jun 2016 19:42 Operator: JDS
Sample : L16060650-03 B A1 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 20 11:32:46 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	553146	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	466822	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	272718	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	141237	23.3306 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.32%		
43) 1,2-Dichloroethane-d4	10.23	65	152432	22.0833 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 88.32%		
57) Toluene-d8	12.47	98	494784	24.3935 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.56%		
78) p-Bromofluorobenzene	15.64	95	219622	26.1243 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.48%		

Target Compounds

					Qvalue
3) Chloromethane	3.73	50	1513	0.2180 ug/L #	69
8) Trichlorofluoromethane	5.48	101	3693	0.3214 ug/L	73
13) Acetone	6.33	43	2017	1.5356 ug/L #	49

(#) = qualifier out of range (m) = manual integration
11M12693.D 8260WT.M Mon Jun 20 11:32:47 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12693.D Vial: 11
Acq On : 16 Jun 2016 19:42 Operator: JDS
Sample : L16060650-03 B A1 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 20 11:32 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

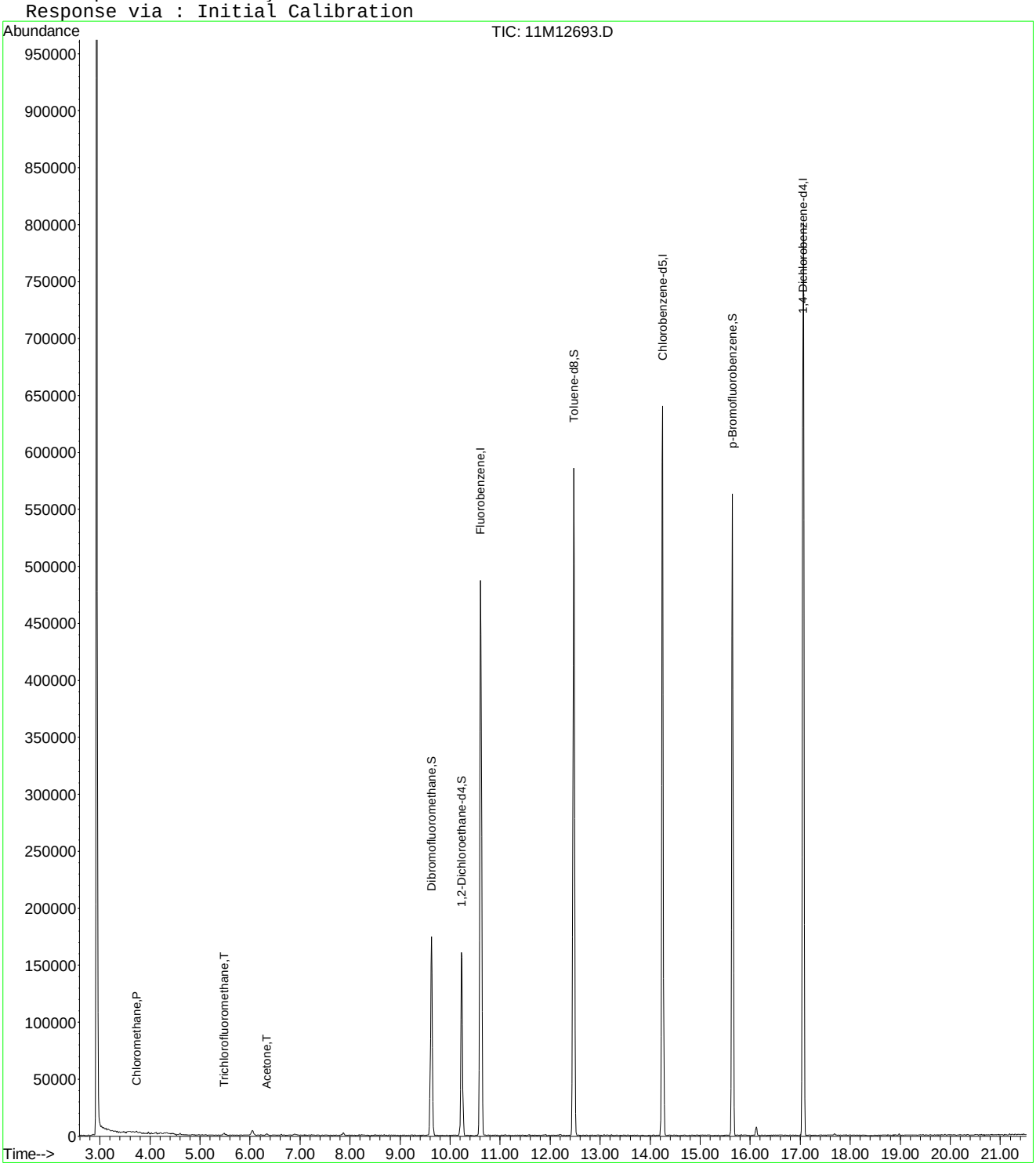

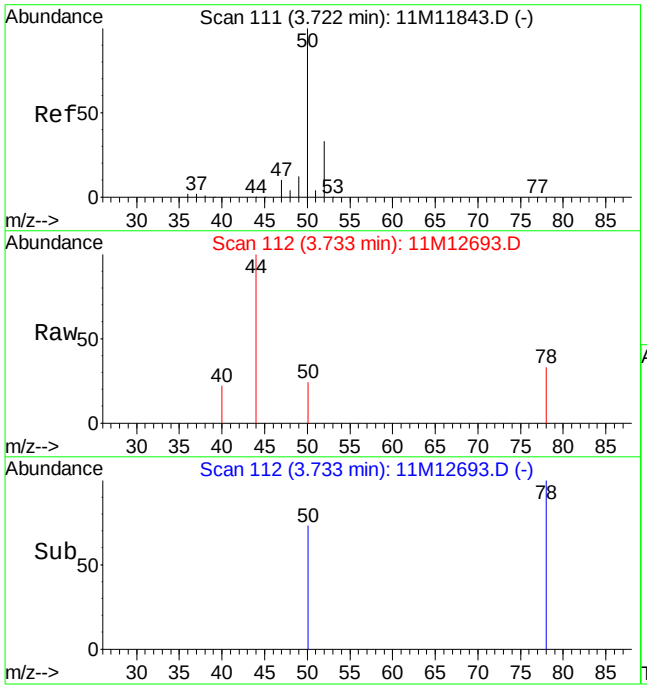

#3
Chloromethane
Concen: 0.22 ug/L
RT: 3.73 min Scan# 112
Delta R.T. 0.01 min
Lab File: 11M12693.D
Acq: 16 Jun 2016 19:42

Tgt Ion: 50 Resp: 1513

Ion	Ratio	Lower	Upper
50	100		
52	15.5	20.0	46.6#

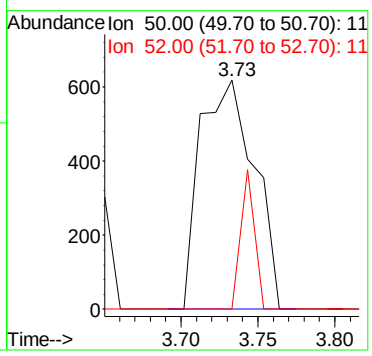

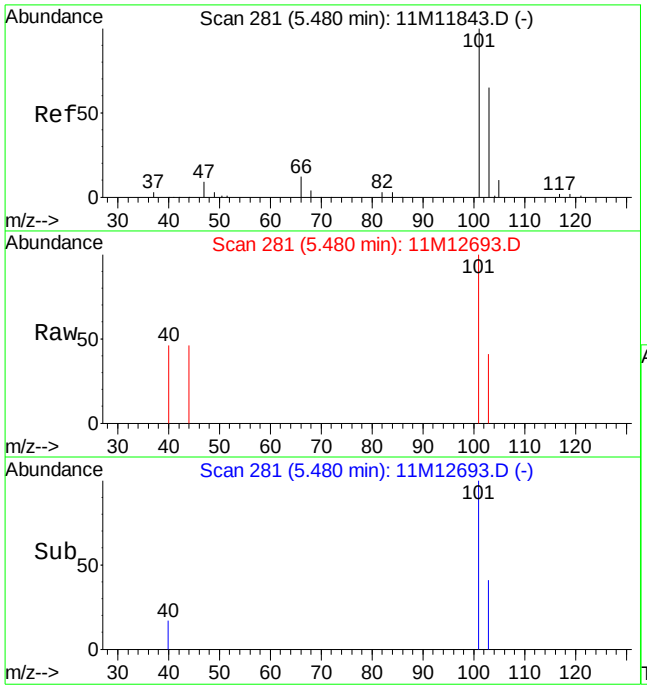

#8
Trichlorofluoromethane
Concen: 0.32 ug/L
RT: 5.48 min Scan# 281
Delta R.T. 0.00 min
Lab File: 11M12693.D
Acq: 16 Jun 2016 19:42

Tgt Ion:101 Resp: 3693

Ion	Ratio	Lower	Upper
101	100		
103	43.8	39.1	91.3

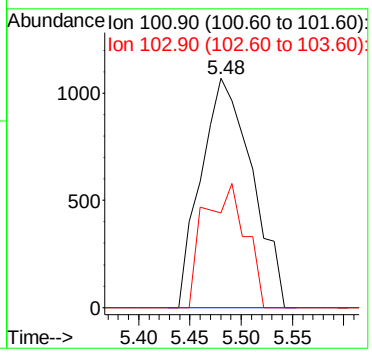

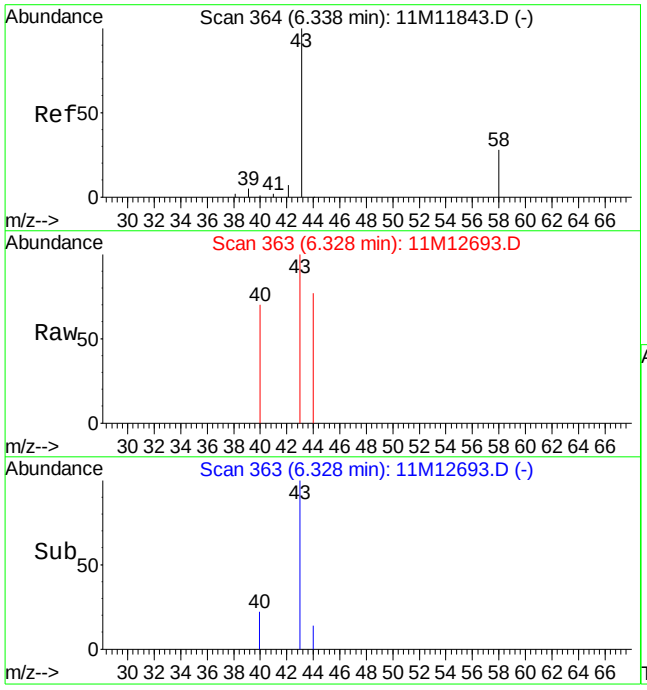

#13
Acetone
Concen: 1.54 ug/L
RT: 6.33 min Scan# 363
Delta R.T. -0.01 min
Lab File: 11M12693.D
Acq: 16 Jun 2016 19:42

Tgt Ion: 43 Resp: 2017

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

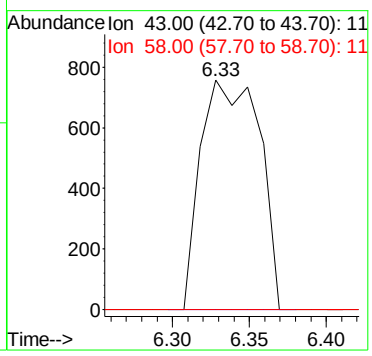

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12694.D Vial: 12
Acq On : 16 Jun 2016 20:14 Operator: JDS
Sample : L16060650-04 B A1 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 20 11:32:48 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	532841	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	451388	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	264811	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	142898	24.5045 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.00%		
43) 1,2-Dichloroethane-d4	10.23	65	149605	22.4997 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 90.00%		
57) Toluene-d8	12.47	98	481806	24.5659 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.28%		
78) p-Bromofluorobenzene	15.64	95	211939	25.9632 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.84%		

Target Compounds

					Qvalue
3) Chloromethane	3.72	50	1161	0.1736 ug/L #	71
8) Trichlorofluoromethane	5.48	101	2876	0.2599 ug/L	99
13) Acetone	6.34	43	1788	1.4131 ug/L #	49
36) Tetrahydrofuran	9.60	42	194	0.1436 ug/L #	47
46) Trichloroethene	11.09	130	7779	1.1696 ug/L	97

(#) = qualifier out of range (m) = manual integration
11M12694.D 8260WT.M Mon Jun 20 11:32:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12694.D Vial: 12
Acq On : 16 Jun 2016 20:14 Operator: JDS
Sample : L16060650-04 B A1 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 20 11:32 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

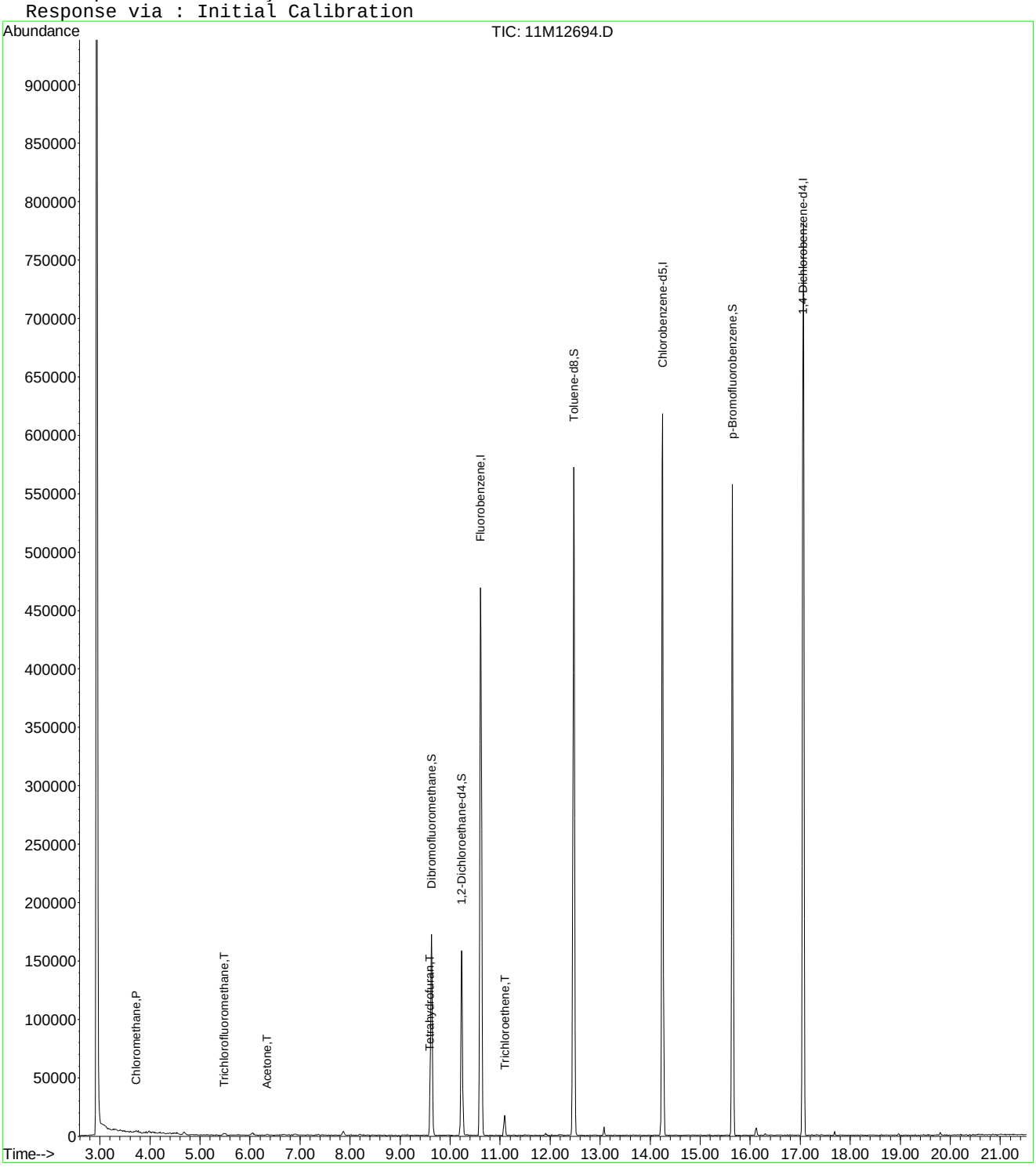

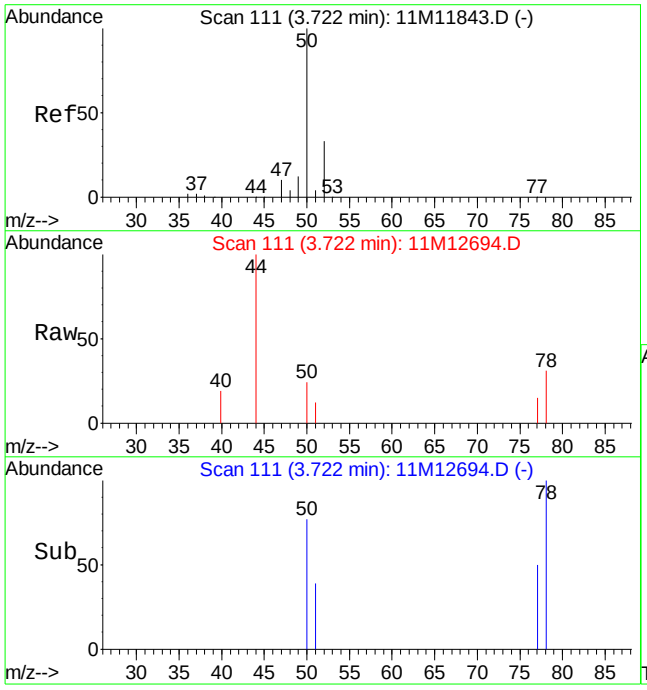

#3
Chloromethane
Concen: 0.17 ug/L
RT: 3.72 min Scan# 111
Delta R.T. 0.00 min
Lab File: 11M12694.D
Acq: 16 Jun 2016 20:14

Tgt Ion: 50 Resp: 1161

Ion	Ratio	Lower	Upper
50	100		
52	16.7	20.0	46.6#

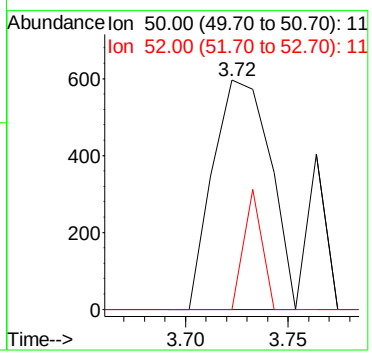

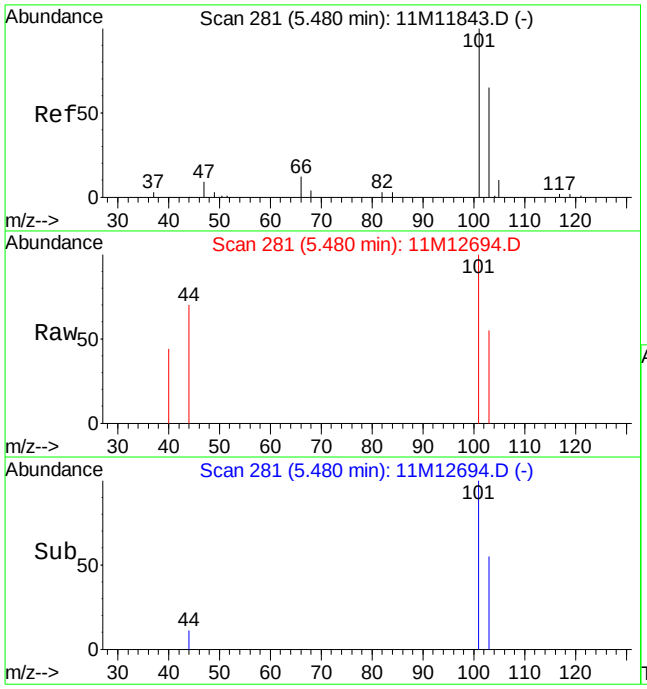

#8
Trichlorofluoromethane
Concen: 0.26 ug/L
RT: 5.48 min Scan# 281
Delta R.T. 0.00 min
Lab File: 11M12694.D
Acq: 16 Jun 2016 20:14

Tgt Ion:101 Resp: 2876

Ion	Ratio	Lower	Upper
101	100		
103	66.3	39.1	91.3

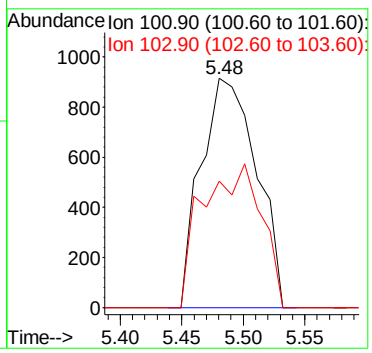

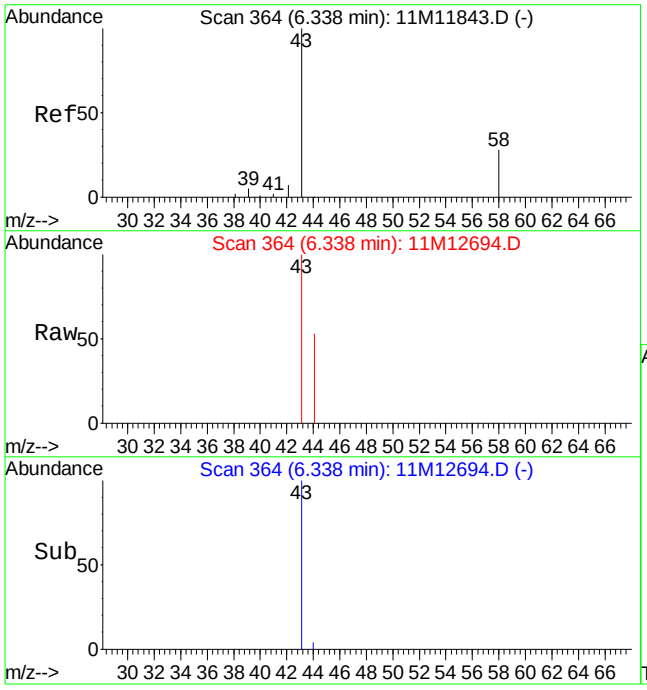

#13
Acetone
Concen: 1.41 ug/L
RT: 6.34 min Scan# 364
Delta R.T. 0.00 min
Lab File: 11M12694.D
Acq: 16 Jun 2016 20:14

Tgt Ion: 43 Resp: 1788

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

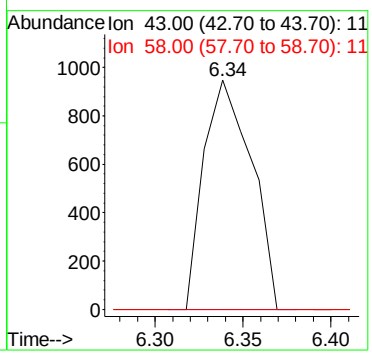

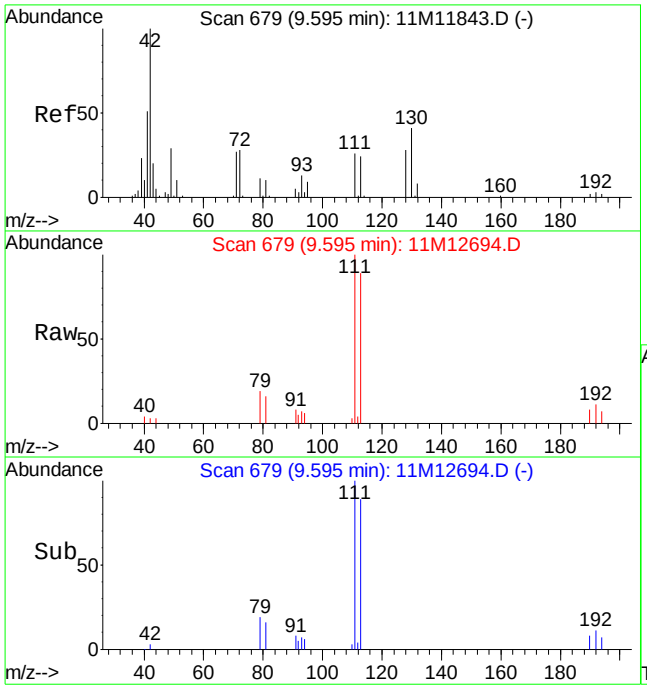

#36
Tetrahydrofuran
Concen: 0.14 ug/L
RT: 9.60 min Scan# 679
Delta R.T. 0.00 min
Lab File: 11M12694.D
Acq: 16 Jun 2016 20:14

Tgt Ion: 42 Resp: 194

Ion	Ratio	Lower	Upper
42	100		
71	0.0	16.4	38.2#
72	0.0	16.6	38.8#

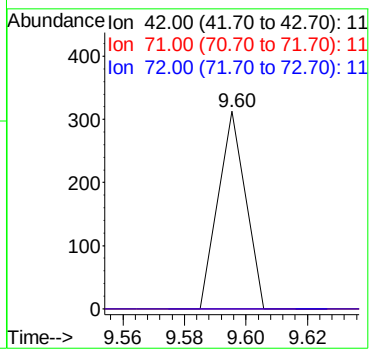

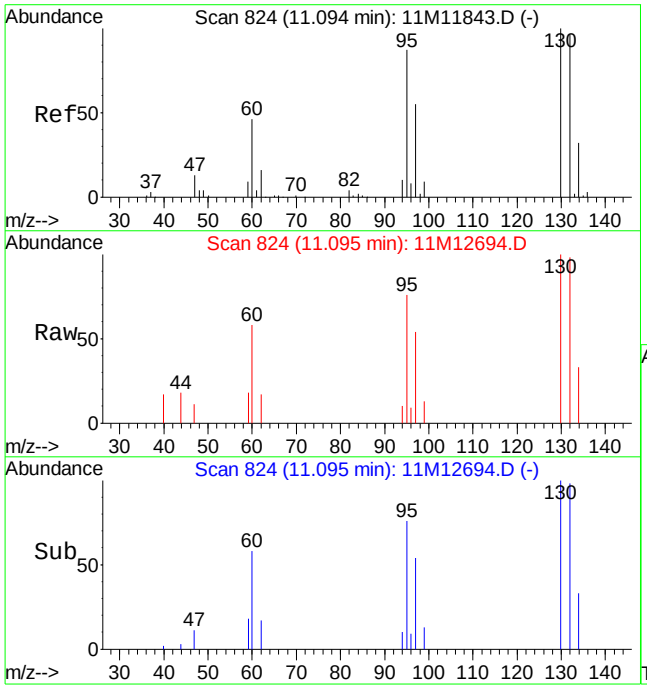

#46
Trichloroethene
Concen: 1.17 ug/L
RT: 11.09 min Scan# 824
Delta R.T. 0.00 min
Lab File: 11M12694.D
Acq: 16 Jun 2016 20:14

Tgt Ion:130 Resp: 7779

Ion	Ratio	Lower	Upper
130	100		
132	101.6	58.3	136.1
95	91.4	55.6	129.8

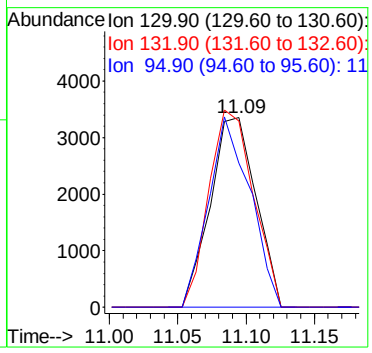

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12695.D Vial: 13
Acq On : 16 Jun 2016 20:46 Operator: JDS
Sample : L16060650-05 B A1 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 20 11:32:51 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	530657	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	450055	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	270373	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	138201	23.7966 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.20%		
43) 1,2-Dichloroethane-d4	10.24	65	147383	22.2567 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 89.04%		
57) Toluene-d8	12.47	98	471522	24.1127 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.44%		
78) p-Bromofluorobenzene	15.64	95	208431	25.0082 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.04%		

Target Compounds					Qvalue
8) Trichlorofluoromethane	5.50	101	3322	0.3014 ug/L	92
13) Acetone	6.34	43	1076	0.8539 ug/L #	49
36) Tetrahydrofuran	9.60	42	400	0.2974 ug/L #	47
46) Trichloroethene	11.08	130	7880	1.1897 ug/L	94

(#) = qualifier out of range (m) = manual integration
11M12695.D 8260WT.M Mon Jun 20 11:32:52 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12695.D Vial: 13
Acq On : 16 Jun 2016 20:46 Operator: JDS
Sample : L16060650-05 B A1 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 20 11:32 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

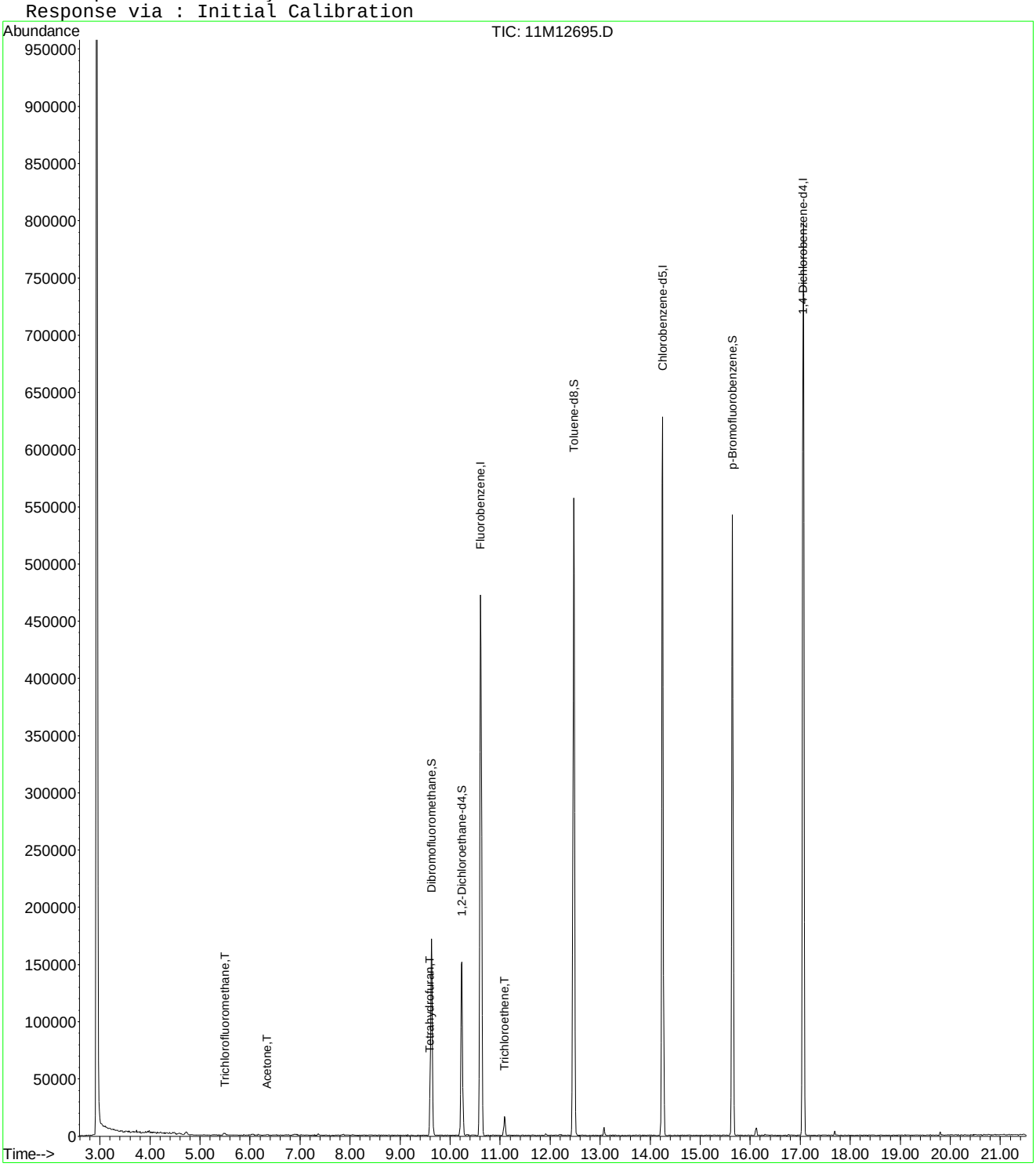

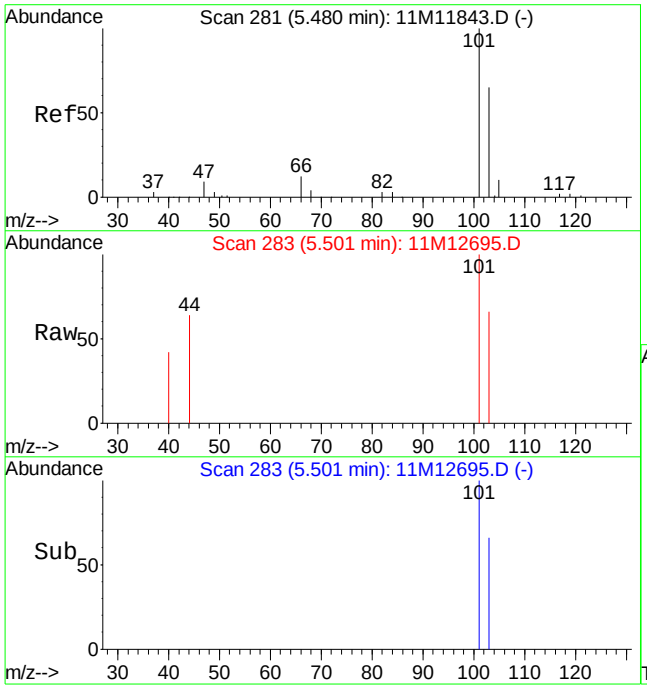

#8
Trichlorofluoromethane
Concen: 0.30 ug/L
RT: 5.50 min Scan# 283
Delta R.T. 0.02 min
Lab File: 11M12695.D
Acq: 16 Jun 2016 20:46

Tgt Ion:101 Resp: 3322

Ion	Ratio	Lower	Upper
101	100		
103	59.2	39.1	91.3

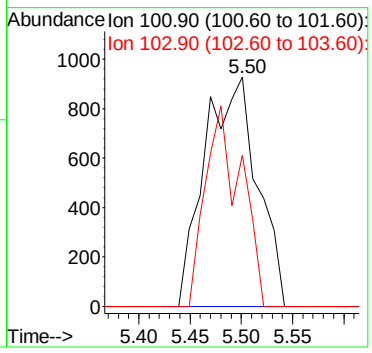

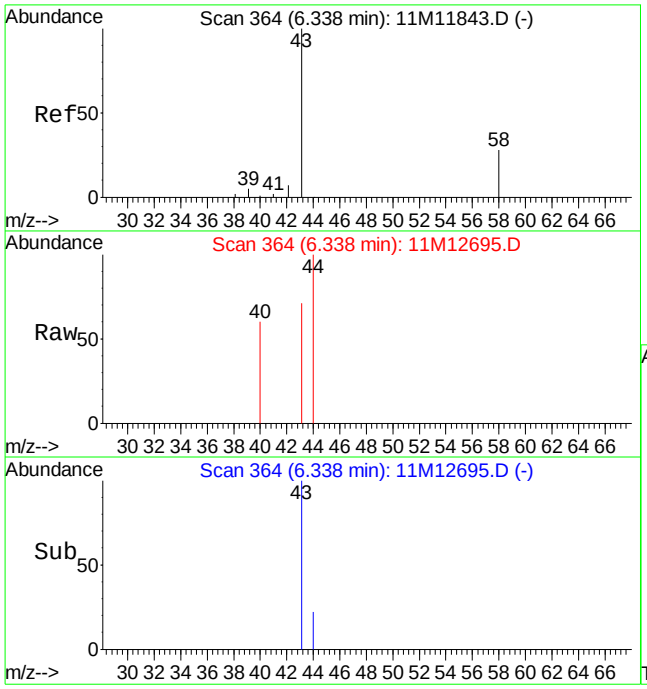

#13
Acetone
Concen: 0.85 ug/L
RT: 6.34 min Scan# 364
Delta R.T. 0.00 min
Lab File: 11M12695.D
Acq: 16 Jun 2016 20:46

Tgt Ion: 43 Resp: 1076

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

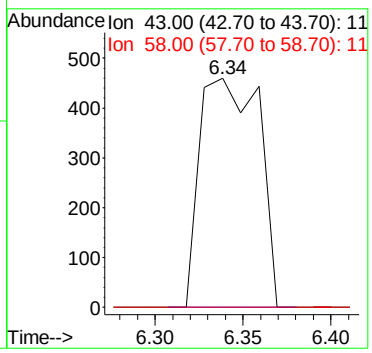

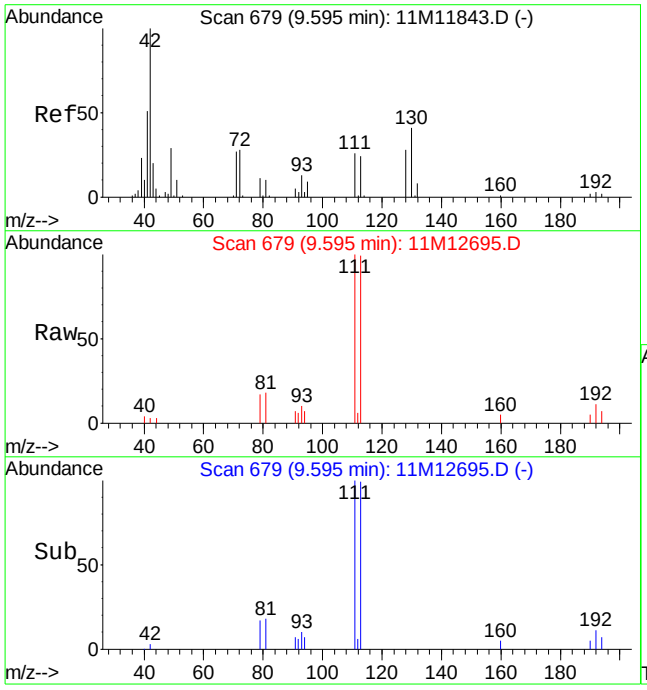

#36
Tetrahydrofuran
Concen: 0.30 ug/L
RT: 9.60 min Scan# 679
Delta R.T. 0.00 min
Lab File: 11M12695.D
Acq: 16 Jun 2016 20:46

Tgt Ion: 42 Resp: 400

Ion	Ratio	Lower	Upper
42	100		
71	0.0	16.4	38.2#
72	0.0	16.6	38.8#

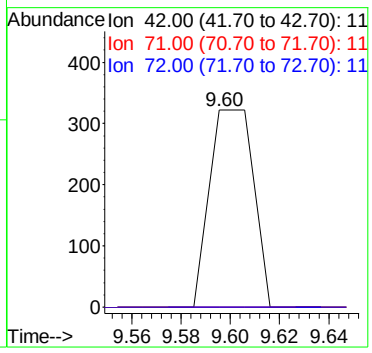

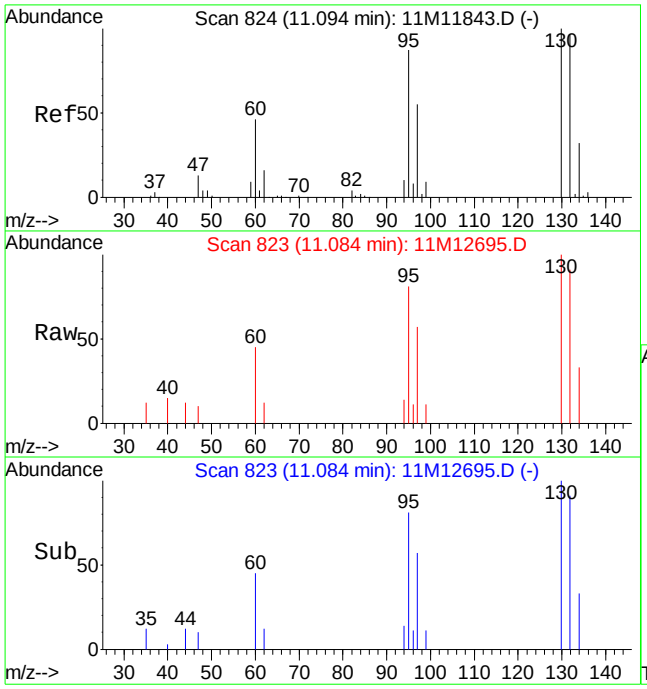

#46
Trichloroethene
Concen: 1.19 ug/L
RT: 11.08 min Scan# 823
Delta R.T. -0.01 min
Lab File: 11M12695.D
Acq: 16 Jun 2016 20:46

Tgt Ion:130 Resp: 7880

Ion	Ratio	Lower	Upper
130	100		
132	93.7	58.3	136.1
95	83.7	55.6	129.8

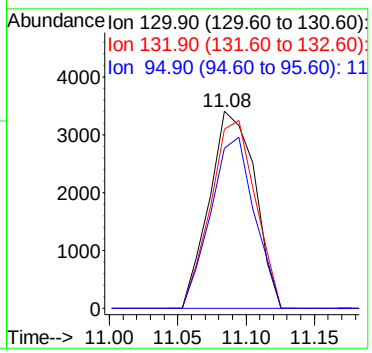

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12702.D Vial: 20
Acq On : 17 Jun 2016 00:29 Operator: JDS
Sample : L16060650-06 B D1 2X 826-LOW Inst : hpms11
Misc : 1,2 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 20 11:33:12 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	511766	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	439489	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	252727	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	132465	23.6509 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.60%		
43) 1,2-Dichloroethane-d4	10.24	65	144741	22.6646 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 90.64%		
57) Toluene-d8	12.47	98	456920	23.9278 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 95.72%		
78) p-Bromofluorobenzene	15.64	95	198595	25.4917 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.96%		

Target Compounds

					Qvalue
4) Vinyl Chloride	3.96	62	1320	0.2475 ug/L #	73
8) Trichlorofluoromethane	5.48	101	3180	0.2992 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	5140	0.9965 ug/L	94
13) Acetone	6.36	43	1029	0.8468 ug/L #	49
14) 1,1-Dichloroethene	6.56	61	15989	1.7066 ug/L	98
23) trans-1,2-Dichloroethene	7.77	96	1965	0.3790 ug/L	83
27) 1,1-Dichloroethane	8.34	63	8886	0.8541 ug/L #	95
32) cis-1,2-Dichloroethene	9.15	96	121710	21.2887 ug/L	81
44) 1,2-Dichloroethane	10.34	62	7566	0.9118 ug/L	87
46) Trichloroethene	11.09	130	937930	146.8333 ug/L	98
47) Methylcyclohexane	11.08	83	9485	1.2032 ug/L #	1
49) 1,4-Dioxane	11.56	88	537	38.7606 ug/L #	39

(#) = qualifier out of range (m) = manual integration
11M12702.D 8260WT.M Mon Jun 20 11:33:13 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12702.D Vial: 20
Acq On : 17 Jun 2016 00:29 Operator: JDS
Sample : L16060650-06 B D1 2X 826-LOW Inst : hpms11
Misc : 1,2 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 20 11:33 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

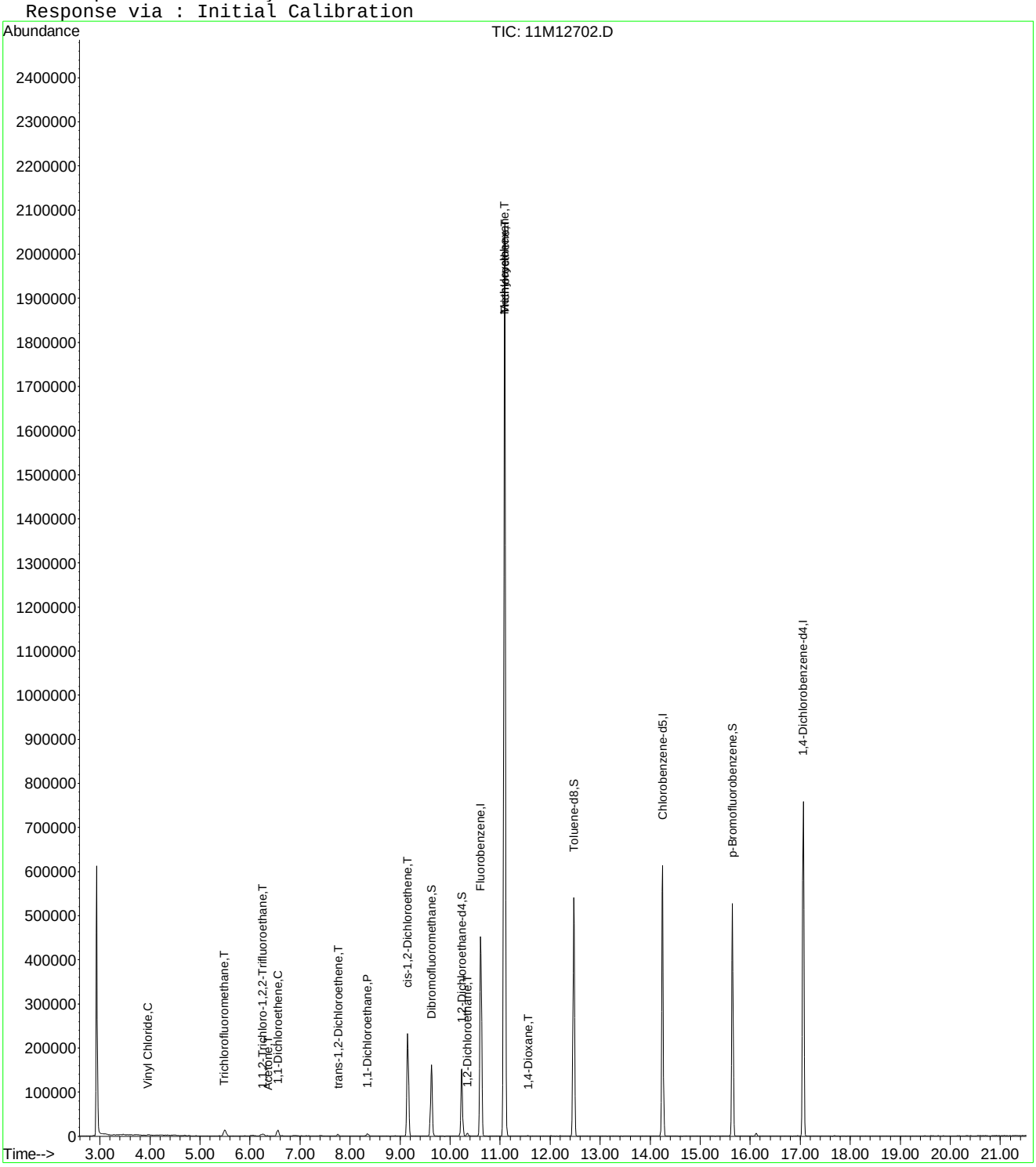

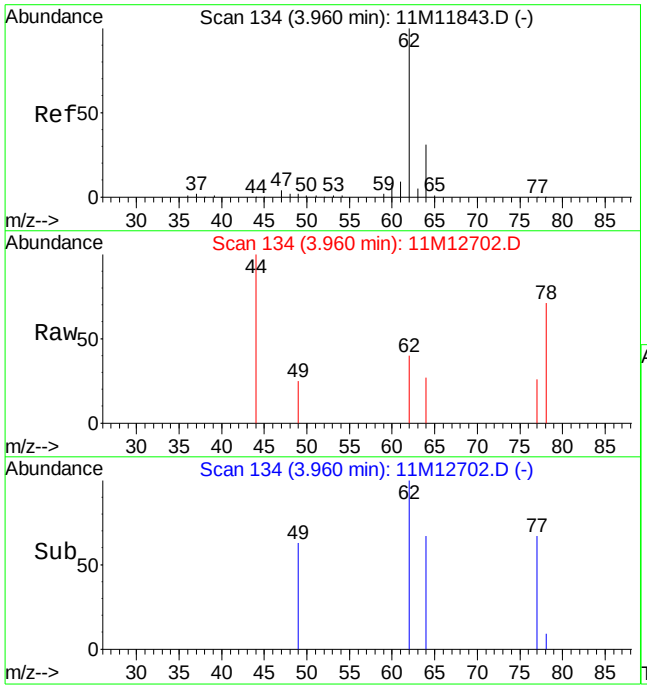

#4
Vinyl Chloride
Concen: 0.25 ug/L
RT: 3.96 min Scan# 134
Delta R.T. 0.00 min
Lab File: 11M12702.D
Acq: 17 Jun 2016 00:29

Tgt Ion: 62 Resp: 1320

Ion	Ratio	Lower	Upper
62	100		
64	15.9	18.4	43.0#

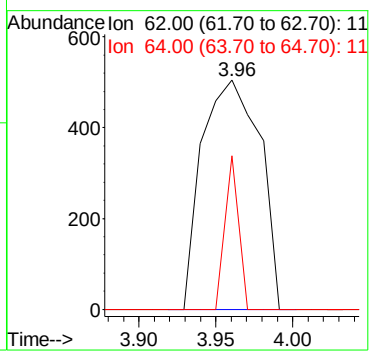

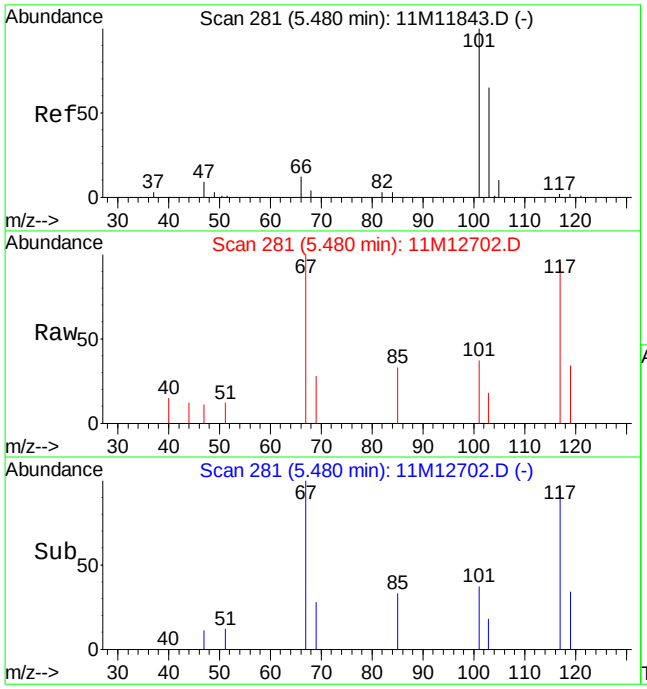

#8
Trichlorofluoromethane
Concen: 0.30 ug/L
RT: 5.48 min Scan# 281
Delta R.T. 0.00 min
Lab File: 11M12702.D
Acq: 17 Jun 2016 00:29

Tgt Ion:101 Resp: 3180

Ion	Ratio	Lower	Upper
101	100		
103	59.5	39.1	91.3

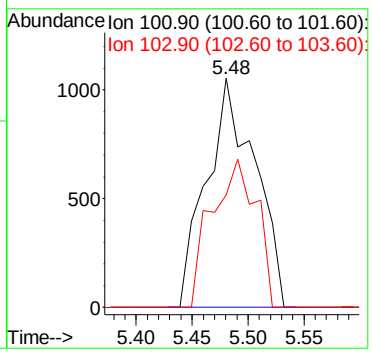

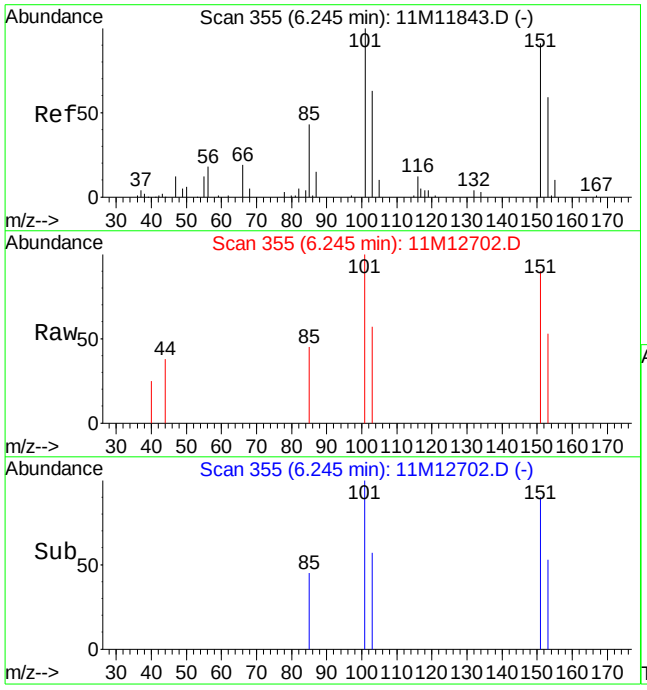

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 1.00 ug/L
RT: 6.25 min Scan# 355
Delta R.T. 0.00 min
Lab File: 11M12702.D
Acq: 17 Jun 2016 00:29

Tgt Ion:101 Resp: 5140

Ion	Ratio	Lower	Upper
101	100		
151	96.7	50.7	130.7

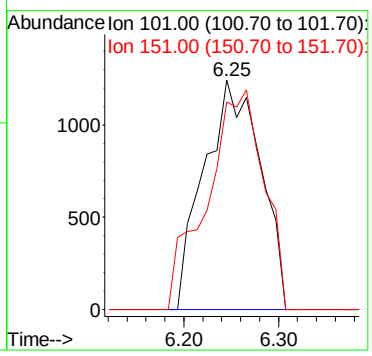

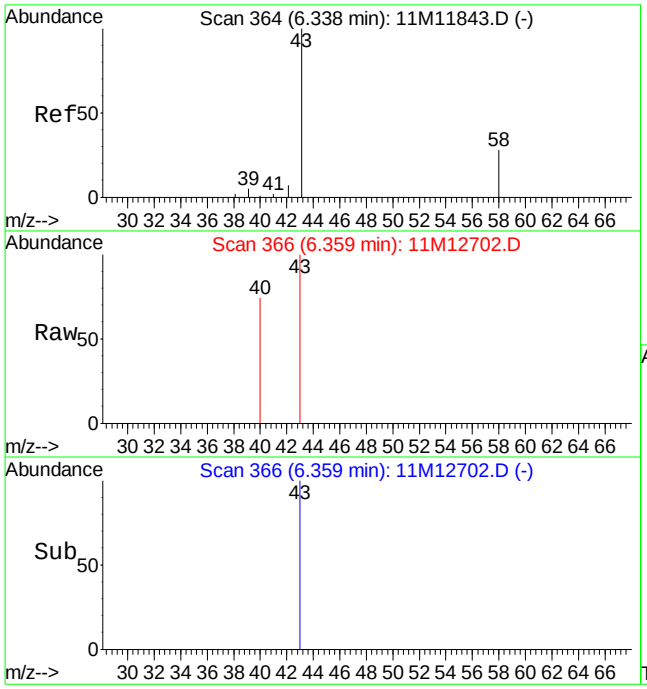

#13
Acetone
Concen: 0.85 ug/L
RT: 6.36 min Scan# 366
Delta R.T. 0.02 min
Lab File: 11M12702.D
Acq: 17 Jun 2016 00:29

Tgt Ion: 43 Resp: 1029

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

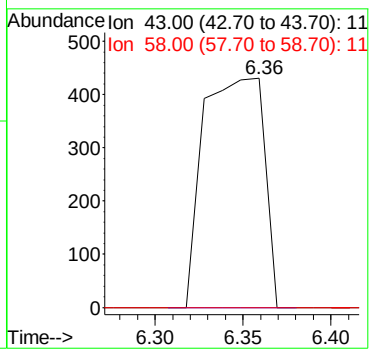

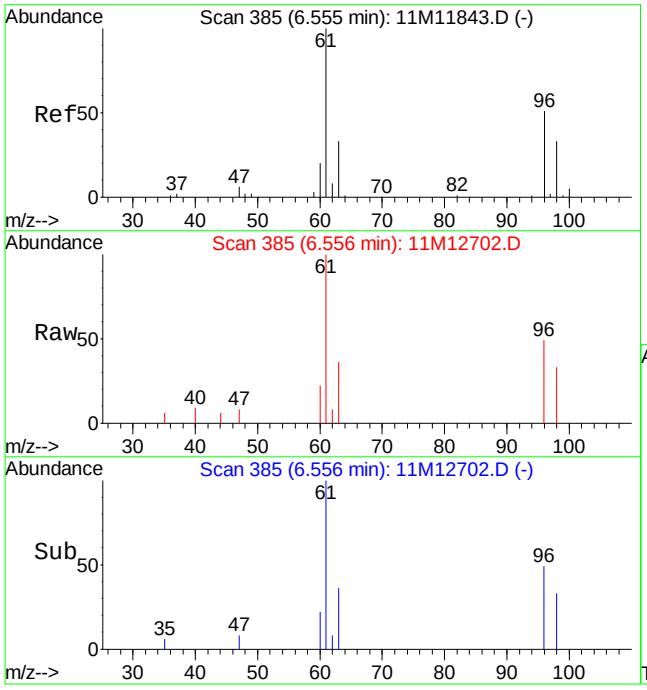

#14
1,1-Dichloroethene
Concen: 1.71 ug/L
RT: 6.56 min Scan# 385
Delta R.T. 0.00 min
Lab File: 11M12702.D
Acq: 17 Jun 2016 00:29

Tgt Ion: 61 Resp: 15989

Ion	Ratio	Lower	Upper
61	100		
96	51.3	30.1	70.3

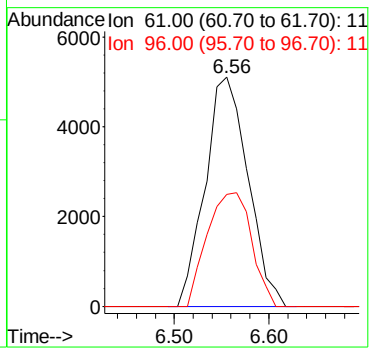

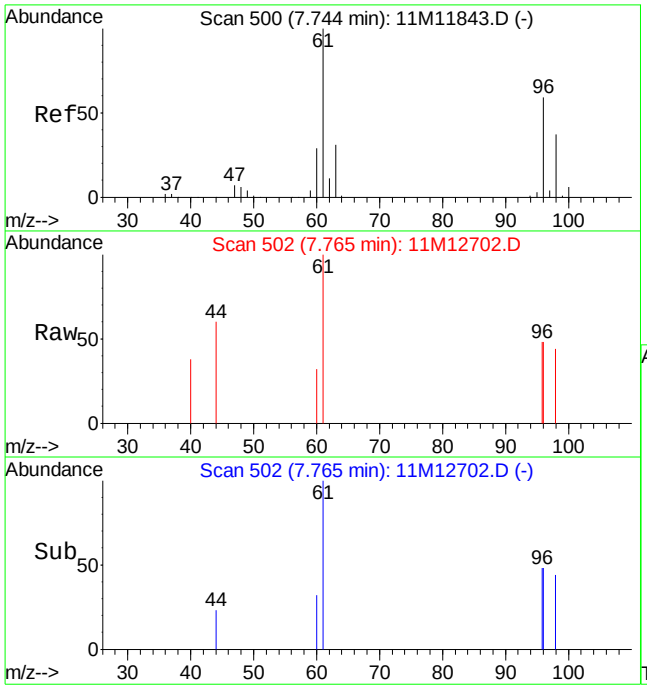

#23
trans-1,2-Dichloroethene
Concen: 0.38 ug/L
RT: 7.77 min Scan# 502
Delta R.T. 0.02 min
Lab File: 11M12702.D
Acq: 17 Jun 2016 00:29

Tgt Ion: 96 Resp: 1965

Ion	Ratio	Lower	Upper
96	100		
61	144.0	100.6	234.6

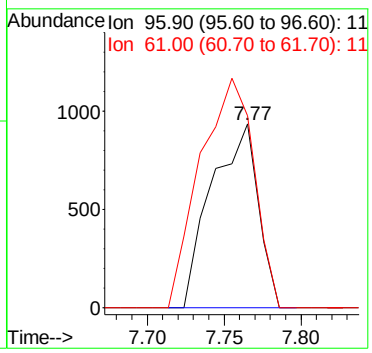

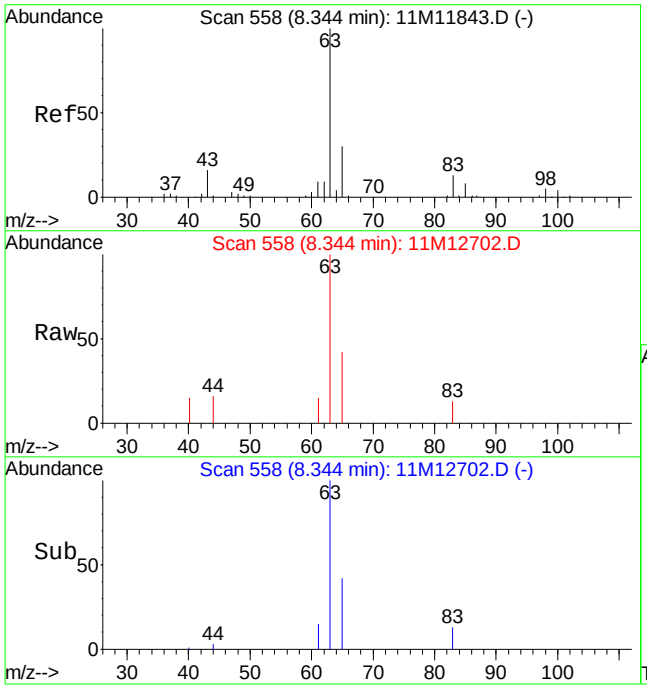

#27
1,1-Dichloroethane
Concen: 0.85 ug/L
RT: 8.34 min Scan# 558
Delta R.T. 0.00 min
Lab File: 11M12702.D
Acq: 17 Jun 2016 00:29

Tgt Ion: 63 Resp: 8886

Ion	Ratio	Lower	Upper
63	100		
65	30.9	17.8	41.6
83	7.3	7.4	17.4#

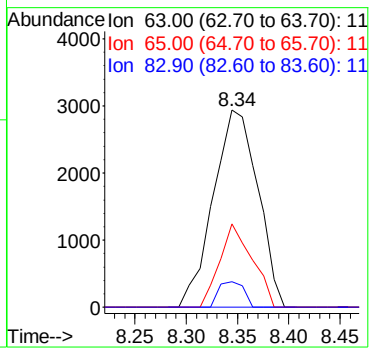

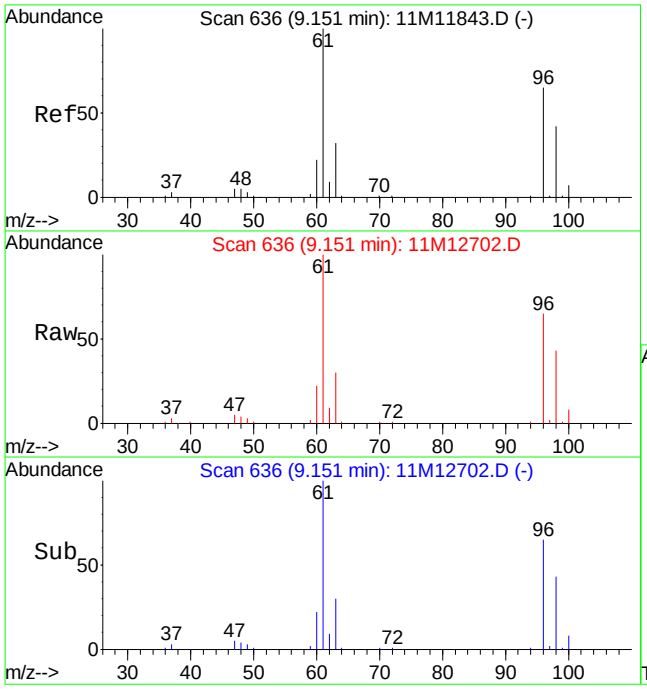

#32
cis-1,2-Dichloroethene
Concen: 21.29 ug/L
RT: 9.15 min Scan# 636
Delta R.T. 0.00 min
Lab File: 11M12702.D
Acq: 17 Jun 2016 00:29

Tgt Ion: 96 Resp: 121710

Ion	Ratio	Lower	Upper
96	100		
61	148.9	105.2	245.6

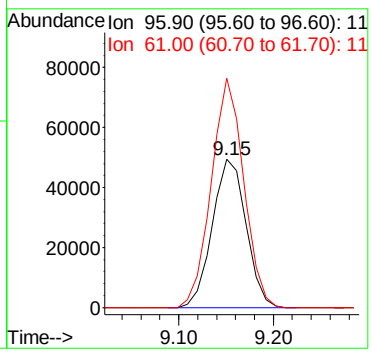

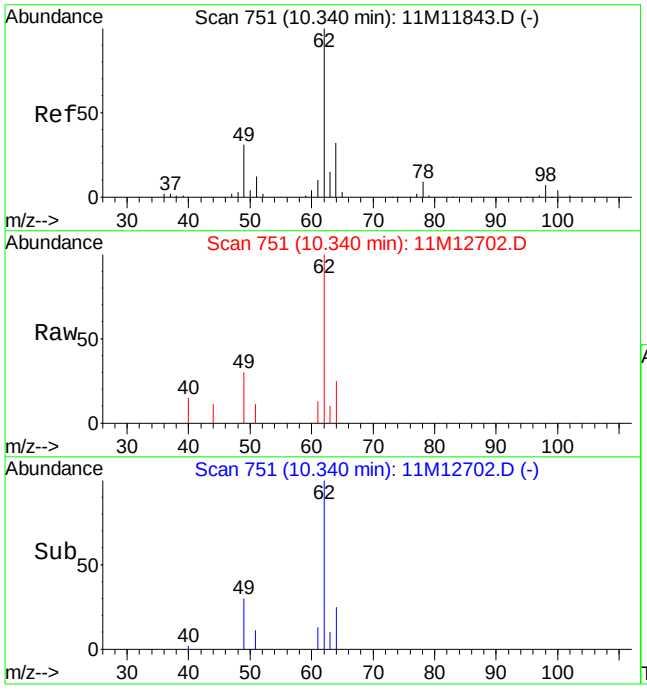

#44
1,2-Dichloroethane
Concen: 0.91 ug/L
RT: 10.34 min Scan# 751
Delta R.T. 0.00 min
Lab File: 11M12702.D
Acq: 17 Jun 2016 00:29

Tgt Ion: 62 Resp: 7566

Ion	Ratio	Lower	Upper
62	100		
64	30.7	18.7	43.7
49	22.9	22.3	52.1

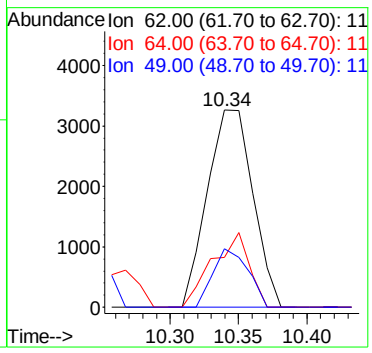

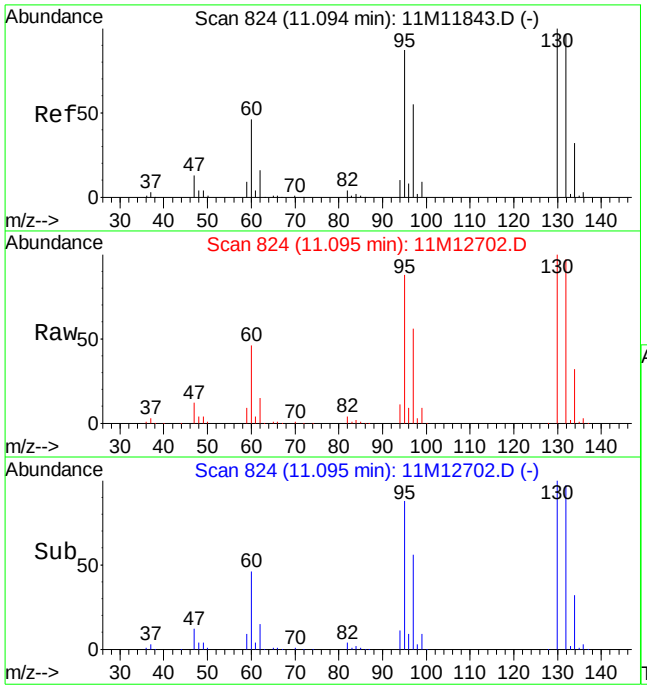

#46
Trichloroethene
Concen: 146.83 ug/L
RT: 11.09 min Scan# 824
Delta R.T. 0.00 min
Lab File: 11M12702.D
Acq: 17 Jun 2016 00:29

Tgt Ion:130 Resp: 937930

Ion	Ratio	Lower	Upper
130	100		
132	97.6	58.3	136.1
95	89.6	55.6	129.8

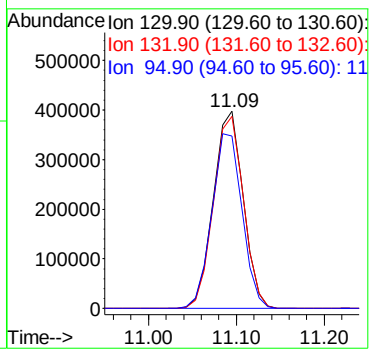

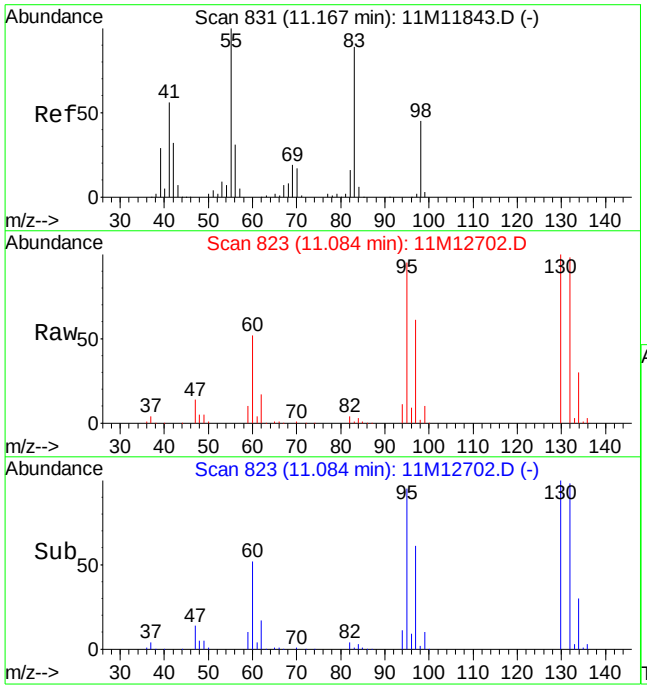

#47
Methylcyclohexane
Concen: 1.20 ug/L
RT: 11.08 min Scan# 823
Delta R.T. -0.08 min
Lab File: 11M12702.D
Acq: 17 Jun 2016 00:29

Tgt Ion: 83 Resp: 9485

Ion	Ratio	Lower	Upper
83	100		
55	0.0	66.5	155.1#
98	246.7	29.9	69.7#

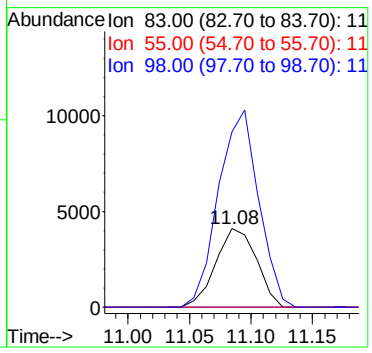

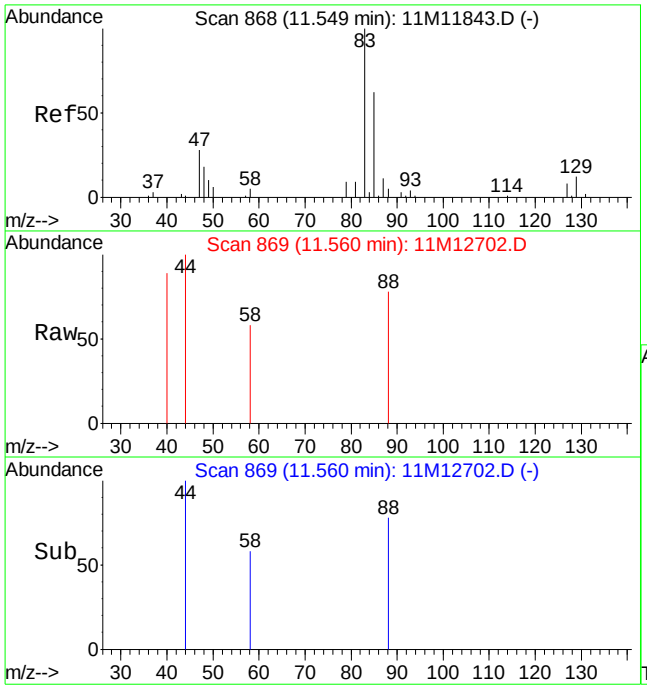

#49
1,4-Dioxane
Concen: 38.76 ug/L
RT: 11.56 min Scan# 869
Delta R.T. 0.01 min
Lab File: 11M12702.D
Acq: 17 Jun 2016 00:29

Tgt Ion: 88 Resp: 537

Ion	Ratio	Lower	Upper
88	100		
58	137.4	49.7	116.1#

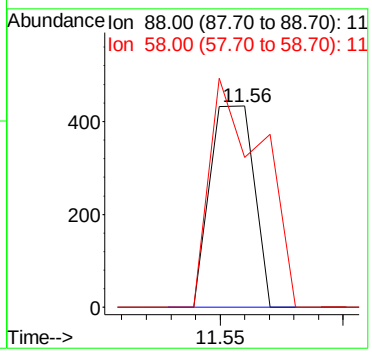

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12696.D Vial: 14
Acq On : 16 Jun 2016 21:18 Operator: JDS
Sample : L16060650-07 B A1 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 20 11:32:53 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	525360	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	446643	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	259575	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	137789	23.9649 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 95.84%		
43) 1,2-Dichloroethane-d4	10.23	65	148510	22.6530 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 90.60%		
57) Toluene-d8	12.47	98	467586	24.0941 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.36%		
78) p-Bromofluorobenzene	15.64	95	207982	25.9924 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.96%		

Target Compounds

					Qvalue
3) Chloromethane	3.74	50	1214	0.1841 ug/L #	71
8) Trichlorofluoromethane	5.48	101	2618	0.2399 ug/L	69
13) Acetone	6.36	43	1625	1.3026 ug/L #	71

(#) = qualifier out of range (m) = manual integration
11M12696.D 8260WT.M Mon Jun 20 11:32:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12696.D Vial: 14
Acq On : 16 Jun 2016 21:18 Operator: JDS
Sample : L16060650-07 B A1 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 20 11:32 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

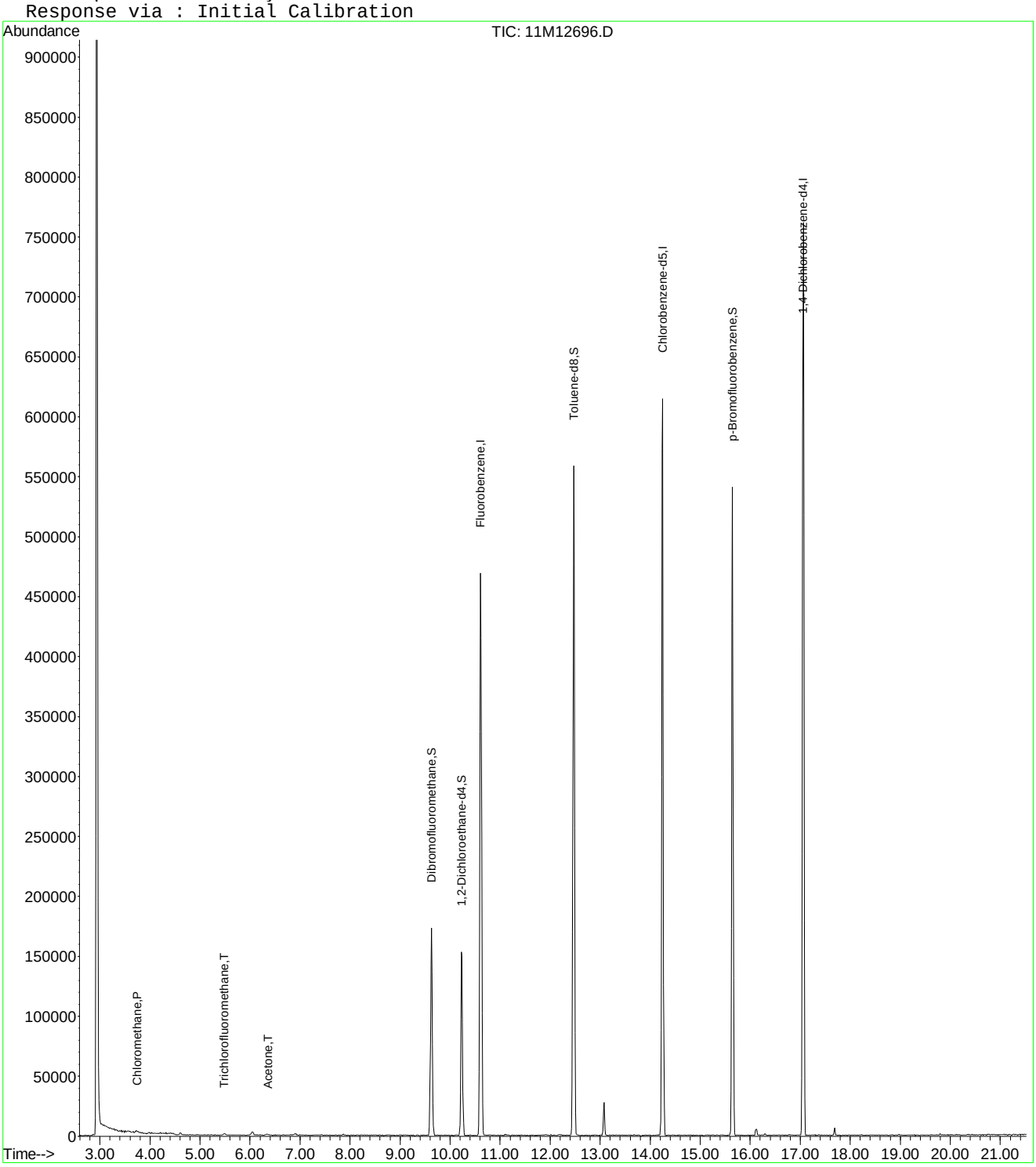

11M12696.D 8260WT.M Mon Jun 20 11:32:54 2016 Page 2

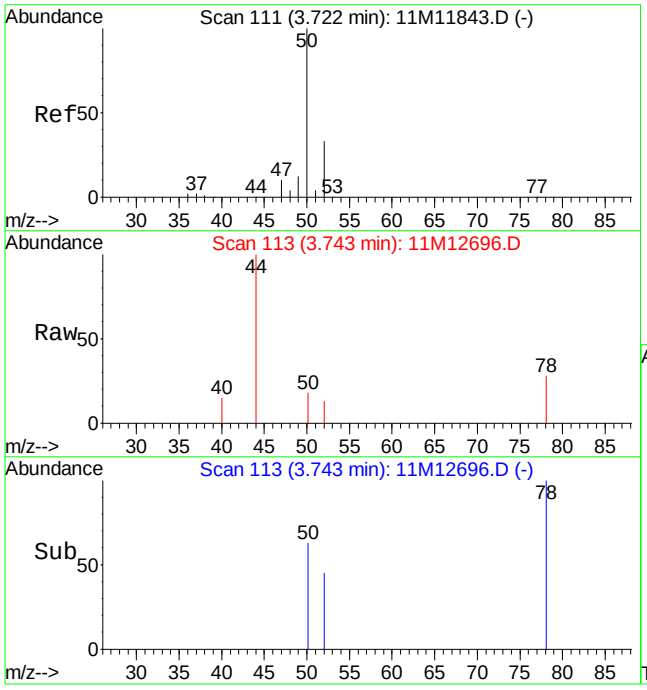

#3
Chloromethane
Concen: 0.18 ug/L
RT: 3.74 min Scan# 113
Delta R.T. 0.02 min
Lab File: 11M12696.D
Acq: 16 Jun 2016 21:18

Tgt Ion: 50 Resp: 1214

Ion	Ratio	Lower	Upper
50	100		
52	50.0	20.0	46.6#

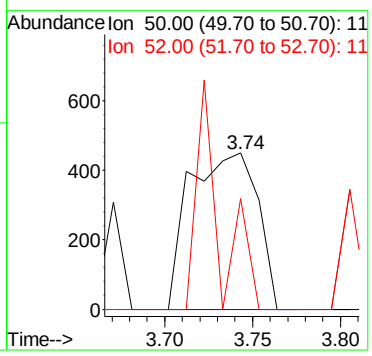

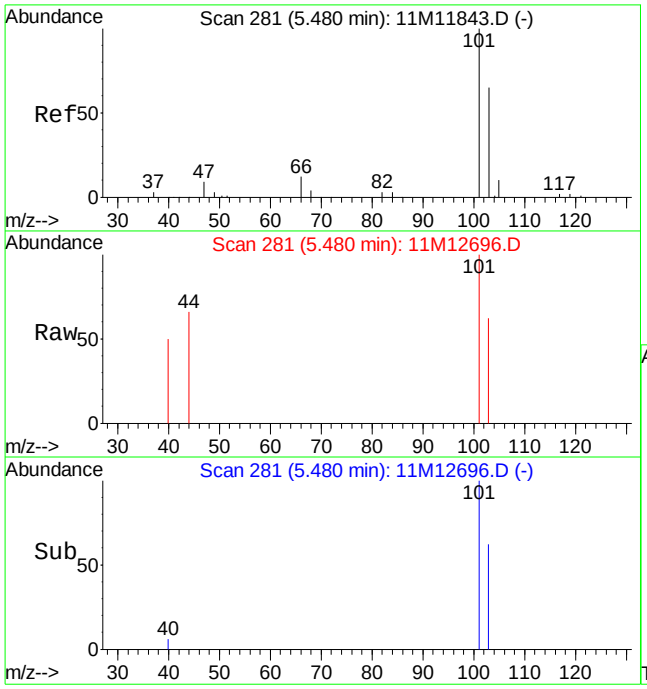

#8
Trichlorofluoromethane
Concen: 0.24 ug/L
RT: 5.48 min Scan# 281
Delta R.T. 0.00 min
Lab File: 11M12696.D
Acq: 16 Jun 2016 21:18

Tgt Ion:101 Resp: 2618

Ion	Ratio	Lower	Upper
101	100		
103	40.5	39.1	91.3

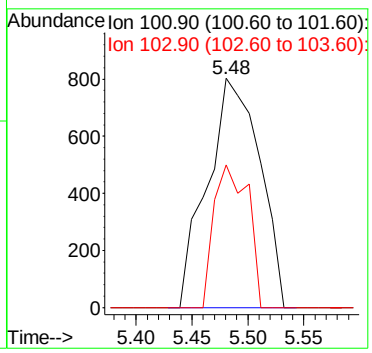

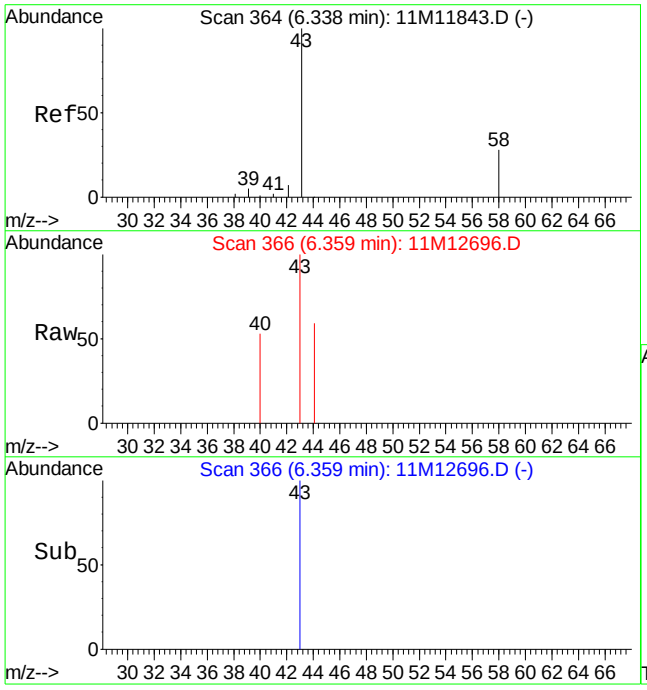

#13
Acetone
Concen: 1.30 ug/L
RT: 6.36 min Scan# 366
Delta R.T. 0.02 min
Lab File: 11M12696.D
Acq: 16 Jun 2016 21:18

Tgt Ion: 43 Resp: 1625

Ion	Ratio	Lower	Upper
43	100		
58	41.1	15.8	36.8#

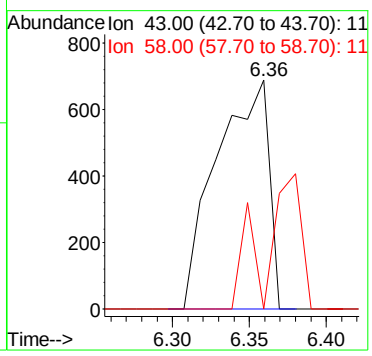

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12691.D Vial: 9
Acq On : 16 Jun 2016 18:38 Operator: JDS
Sample : L16060650-09 A TB A1 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 20 11:32:42 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	528256	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	452147	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	262354	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	136330	23.5811 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.32%		
43) 1,2-Dichloroethane-d4	10.23	65	144991	21.9950 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 88.00%		
57) Toluene-d8	12.47	98	471607	24.0055 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.04%		
78) p-Bromofluorobenzene	15.64	95	205723	25.4377 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.76%		

Target Compounds					Qvalue
8) Trichlorofluoromethane	5.49	101	2751	0.2507 ug/L	87
13) Acetone	6.34	43	694	0.5533 ug/L #	49
36) Tetrahydrofuran	9.61	42	2212	1.6518 ug/L #	65

(#) = qualifier out of range (m) = manual integration
11M12691.D 8260WT.M Mon Jun 20 11:32:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12691.D Vial: 9
Acq On : 16 Jun 2016 18:38 Operator: JDS
Sample : L16060650-09 A TB A1 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 20 11:32 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

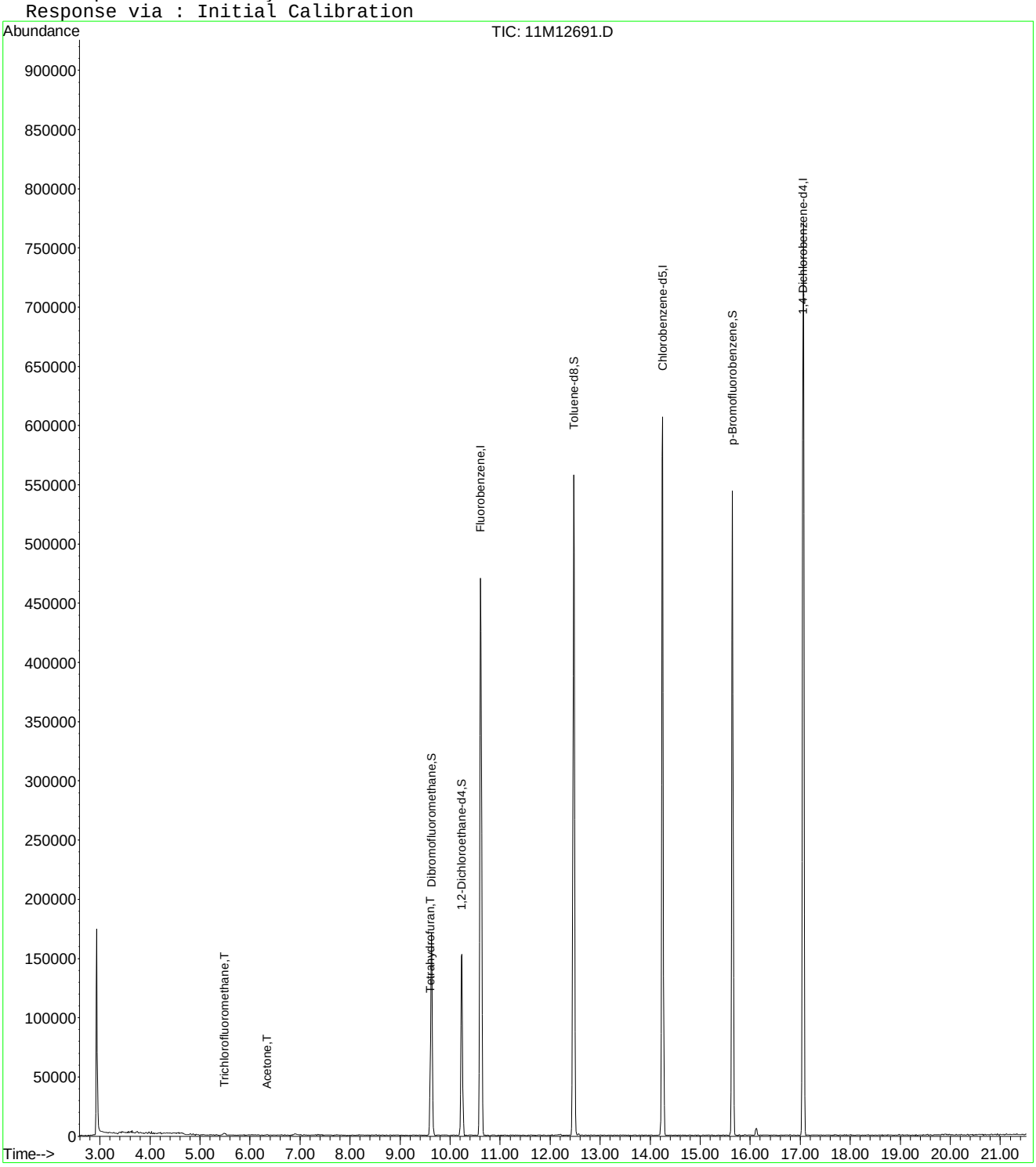

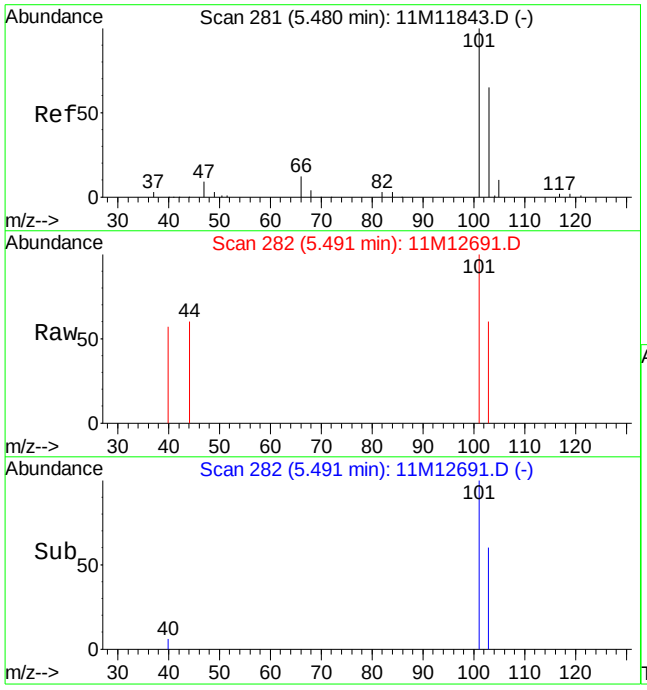

#8
Trichlorofluoromethane
Concen: 0.25 ug/L
RT: 5.49 min Scan# 282
Delta R.T. 0.01 min
Lab File: 11M12691.D
Acq: 16 Jun 2016 18:38

Tgt Ion:101 Resp: 2751

Ion	Ratio	Lower	Upper
101	100		
103	75.6	39.1	91.3

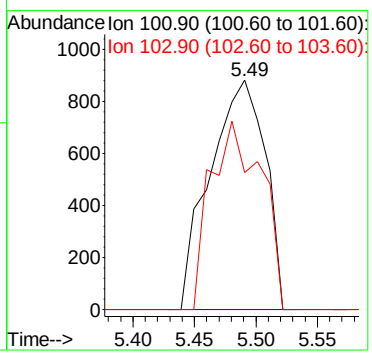

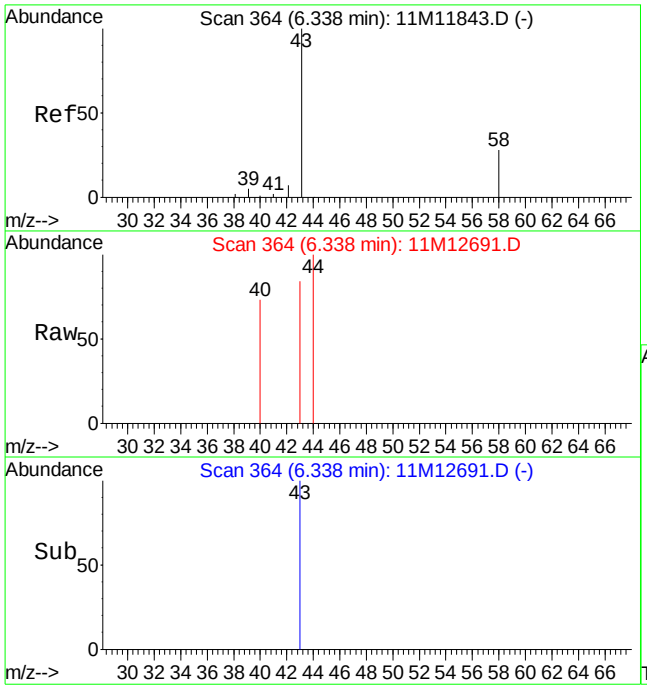

#13
Acetone
Concen: 0.55 ug/L
RT: 6.34 min Scan# 364
Delta R.T. 0.00 min
Lab File: 11M12691.D
Acq: 16 Jun 2016 18:38

Tgt Ion: 43 Resp: 694

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

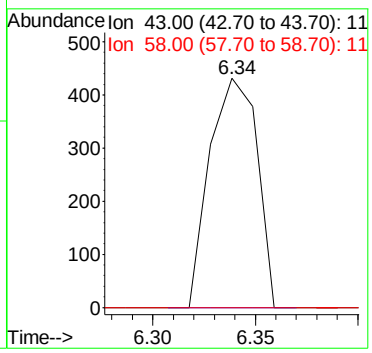

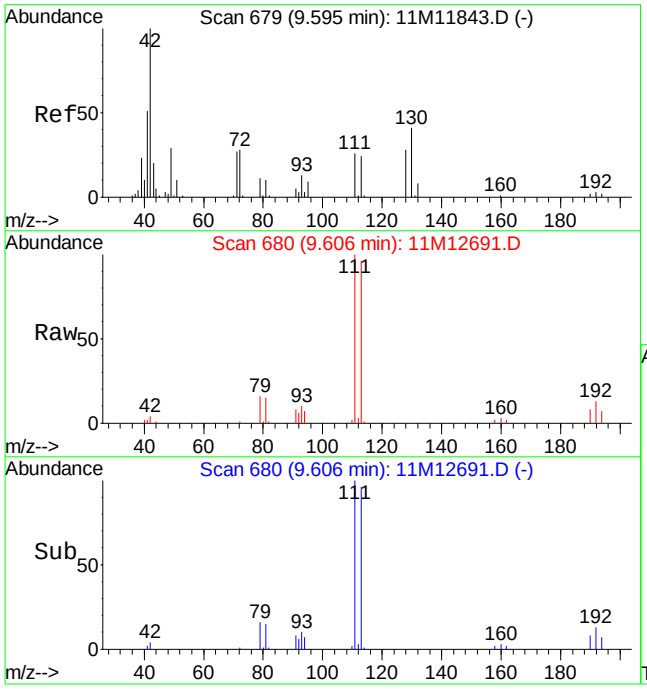

#36
Tetrahydrofuran
Concen: 1.65 ug/L
RT: 9.61 min Scan# 680
Delta R.T. 0.01 min
Lab File: 11M12691.D
Acq: 16 Jun 2016 18:38

Tgt Ion: 42 Resp: 2212

Ion	Ratio	Lower	Upper
42	100		
71	0.0	16.4	38.2#
72	18.4	16.6	38.8

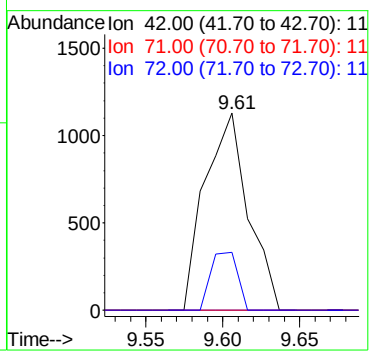

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 10:20:26 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	665958	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.19	117	486224	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.01	152	252862	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	169215	22.8906 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 91.56%		
43) 1,2-Dichloroethane-d4	10.17	65	154962	19.2999 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 77.20%#		
57) Toluene-d8	12.42	98	584744	28.4742 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 113.88%#		
78) p-Bromofluorobenzene	15.58	95	202664	25.0472 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.20%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.23	85	8067	0.8041 ug/L #	81
3) Chloromethane	3.68	50	5797	0.5011 ug/L	91
4) Vinyl Chloride	3.91	62	15554	1.9132 ug/L	97
5) 1,3-Butadiene	3.96	54	11402	1.8745 ug/L	83
6) Bromomethane	4.80	94	1566	0.4085 ug/L	98
7) Chloroethane	4.96	64	1797	0.3015 ug/L #	43
8) Trichlorofluoromethane	5.43	101	4457	0.3306 ug/L	92
10) Isoprene	5.99	67	2109	0.2044 ug/L #	51
12) 1,1,2-Trichloro-1,2,2-Trif	6.23	101	1597	0.2057 ug/L	98
13) Acetone	6.30	43	3590	1.8309 ug/L #	60
14) 1,1-Dichloroethene	6.50	61	4933	0.3633 ug/L	96
19) Methylene Chloride	7.28	84	2287	0.2902 ug/L	89
20) Carbon Disulfide	7.31	76	24059	1.0619 ug/L	98
23) trans-1,2-Dichloroethene	7.69	96	3973	0.5072 ug/L	81
24) n-Hexane	7.78	57	5925	0.4871 ug/L #	85
32) cis-1,2-Dichloroethene	9.10	96	2970	0.3509 ug/L	71
33) Chloroform	9.30	83	1689	0.1200 ug/L	78
35) Bromochloromethane	9.51	130	597	0.1244 ug/L #	66
36) Tetrahydrofuran	9.56	42	405	0.1826 ug/L #	44
39) Cyclohexane	9.83	56	2167	0.1307 ug/L	90
40) 1,1-Dichloropropene	9.99	75	3207	0.2986 ug/L	86
45) Benzene	10.32	78	3922	0.1286 ug/L	88
46) Trichloroethene	11.03	130	3473	0.3872 ug/L	90
47) Methylcyclohexane	11.10	83	2708	0.2333 ug/L #	77
51) Dibromomethane	11.60	93	782	0.1870 ug/L	62
54) cis-1,3-Dichloropropene	12.11	75	1452	0.1277 ug/L #	41
58) Toluene	12.51	91	4350	0.1662 ug/L	83
60) trans-1,3-Dichloropropene	12.68	75	1450	0.1811 ug/L #	47
64) Tetrachloroethene	13.28	164	1514	0.2507 ug/L	75
66) 1,2-Dibromoethane	13.77	107	783	0.1520 ug/L	82
67) 1-Chlorohexane	13.83	91	2267	0.2766 ug/L	67
68) Chlorobenzene	14.24	112	4044	0.2287 ug/L	88
70) Ethylbenzene	14.25	106	1461	0.1464 ug/L	62
71) m-,p-Xylene	14.34	106	3596	0.3050 ug/L #	47
73) Styrene	14.90	104	2784	0.1479 ug/L	80
75) Isopropylbenzene	15.25	105	4163	0.1408 ug/L #	74
81) n-Propylbenzene	15.73	91	6395	0.2079 ug/L #	73
82) Bromobenzene	15.86	156	1681	0.2112 ug/L	100
83) 1,3,5-Trimethylbenzene	15.90	105	3253	0.1356 ug/L	100
84) 2-Chlorotoluene	16.00	91	3395	0.1597 ug/L	86

(#) = qualifier out of range (m) = manual integration
11M08235.D 8260WTR.M Sun Jun 14 10:20:27 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 10:20:26 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
85)	4-Chlorotoluene	16.03	91	4746	0.2598 ug/L	84
86)	a-Methylstyrene	16.27	118	1776	0.1452 ug/L	76
88)	1,2,4-Trimethylbenzene	16.39	105	3776	0.1571 ug/L	77
89)	sec-Butylbenzene	16.58	105	5834	0.2044 ug/L #	77
90)	p-Isopropyltoluene	16.73	119	5149	0.2137 ug/L	87
91)	1,3-Dichlorobenzene	16.93	146	3649	0.2531 ug/L	97
92)	1,4-Dichlorobenzene	17.04	146	5213	0.3507 ug/L #	7
93)	n-Butylbenzene	17.23	91	5778	0.3036 ug/L #	78
94)	1,2-Dichlorobenzene	17.51	146	2232	0.1581 ug/L	92
96)	1,2,4-Trichlorobenzene	19.49	180	1750	0.2281 ug/L #	64
97)	Hexachlorobutadiene	19.62	225	1771	0.4493 ug/L	86
98)	Naphthalene	19.84	128	2058	0.1572 ug/L #	63
99)	1,2,3-Trichlorobenzene	20.13	180	1072	0.1483 ug/L #	40

(#) = qualifier out of range (m) = manual integration
11M08235.D 8260WTR.M Sun Jun 14 10:20:27 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 10:20 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration

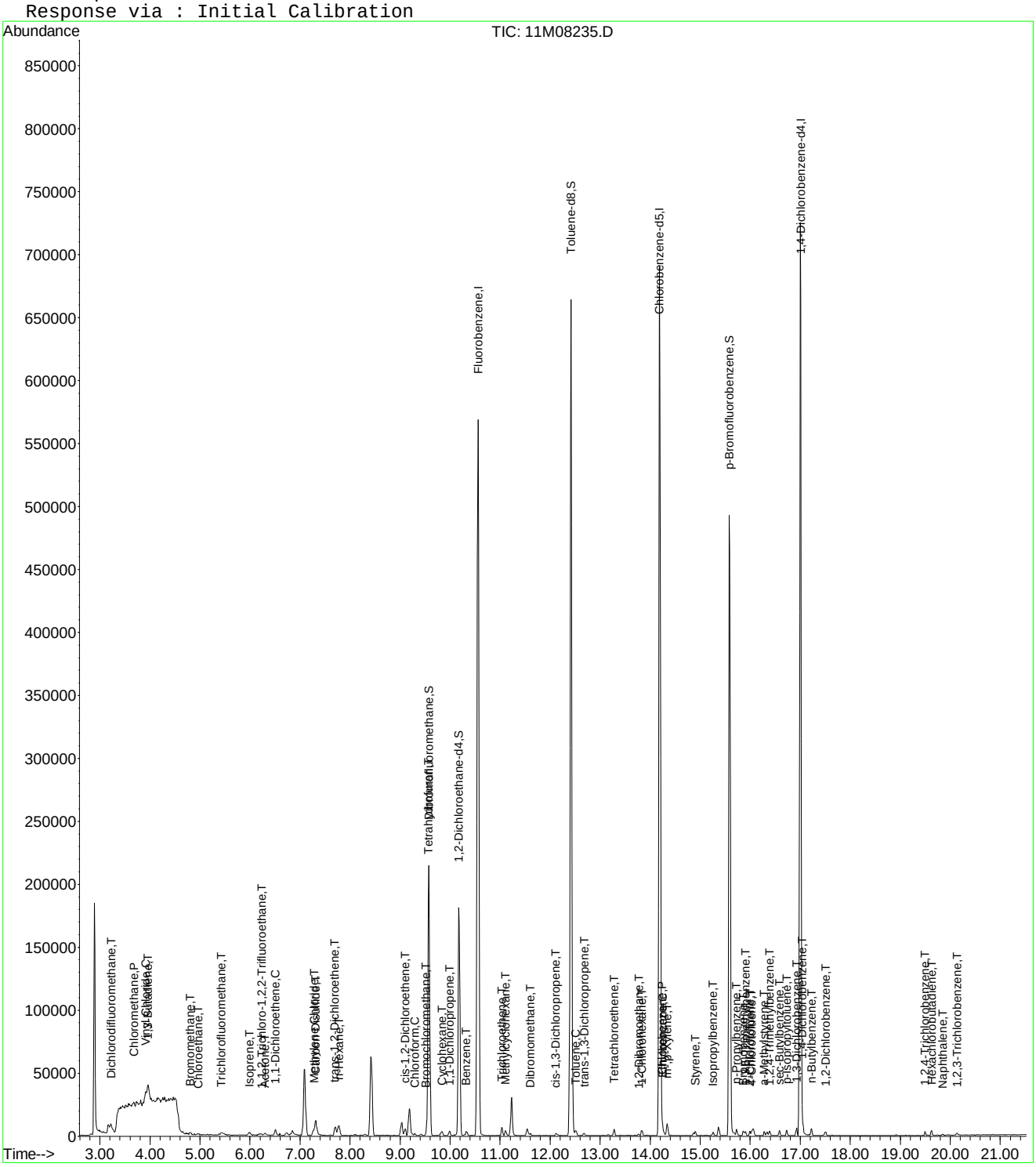

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 09:43:53 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	665958	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	486224	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.01	152	252862	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	6.73	41	3211	6.0366 ug/L	70
3) 3-Chloro-1-propene	7.08	41	50601	4.3748 ug/L	86
4) 2-Chloro-1,3-butadiene	8.42	53	56035	4.7289 ug/L	97
5) Methacrylonitrile	9.18	41	16495	5.1749 ug/L	91
6) Isobutyl Alcohol	9.21	43	2014	16.4797 ug/L #	1
8) Cyclohexanone	15.36	55	3979	4.5232 ug/L	98
9) 2-Nitropropane	11.54	43	3915	3.2057 ug/L #	72
10) Ethyl Acetate	9.03	43	17657	4.5044 ug/L	95
11) Methyl methacrylate	11.22	41	20122	4.7597 ug/L	95

(#) = qualifier out of range (m) = manual integration
11M08235.D A9FOOWT.M Tue Jun 16 09:43:53 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 9:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration

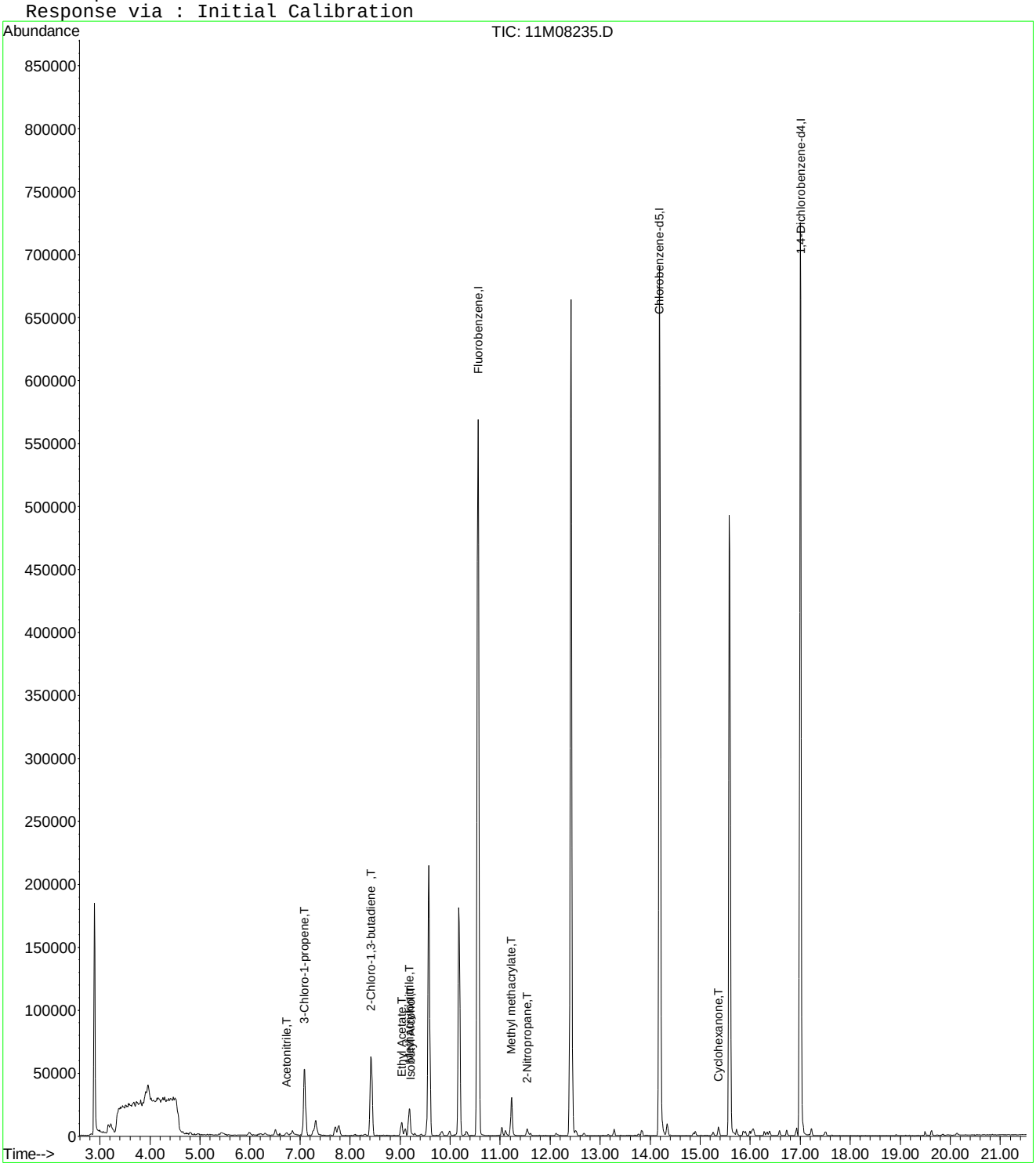

11M08235.D A9FOOWT.M Tue Jun 16 09:43:53 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28:04 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	665958	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	486224	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.01	152	252862	25.00 ug/L	-0.02

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M08235.D A9FOOWT.M Thu Aug 20 11:28:04 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration

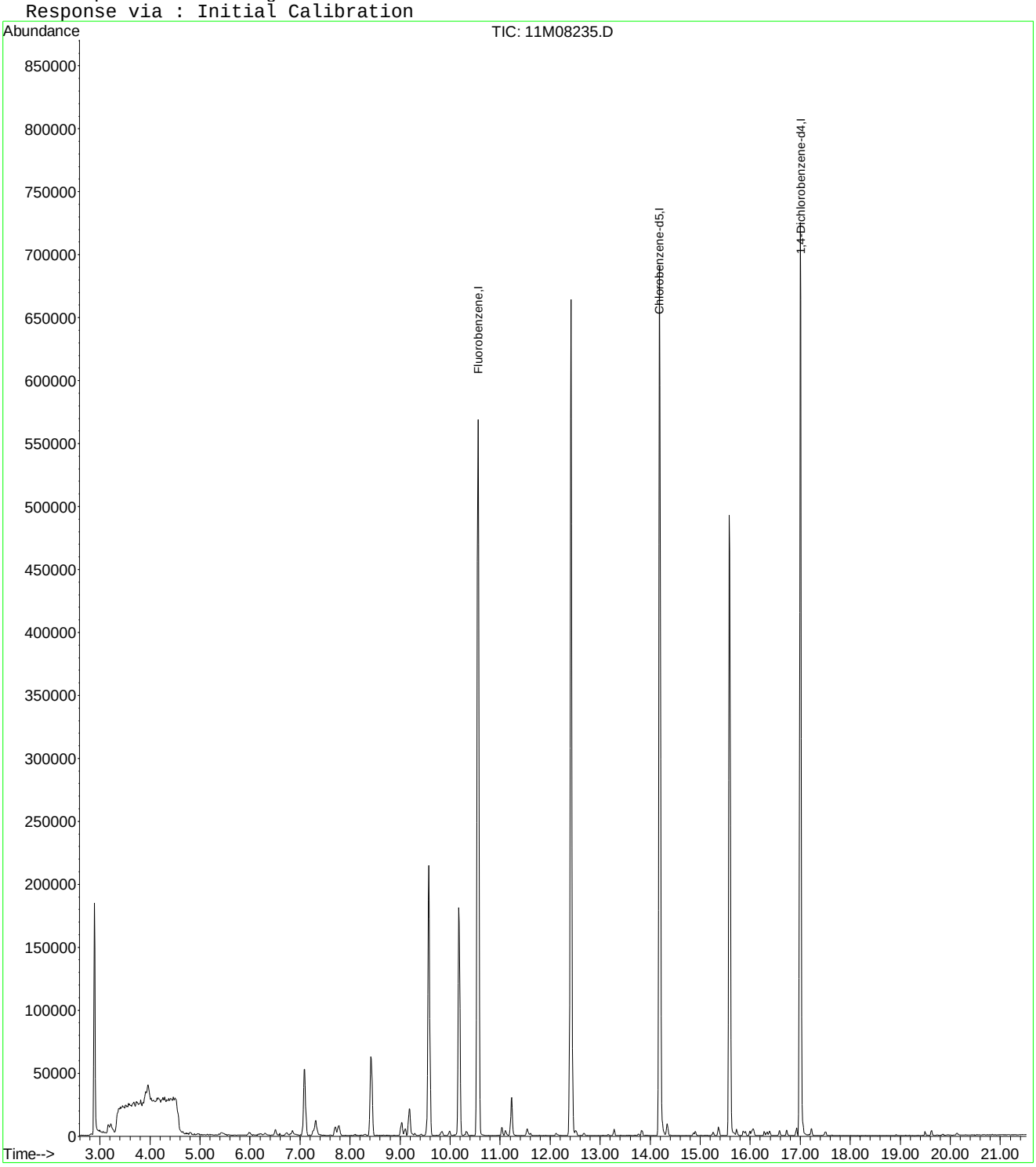

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43:46 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	665958	25.00 ug/L	0.00
12) Chlorobenzene-d5	14.19	117	486224	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.01	152	252862	25.00 ug/L	0.01

Target Compounds					Qvalue
2) Acetonitrile	6.73	41	3211	6.2865 ug/L	70
3) 3-Chloro-1-propene	7.08	41	50601	5.0485 ug/L	86
4) 2-Chloro-1,3-butadiene	8.42	53	56035	4.6571 ug/L	97
5) Methacrylonitrile	9.18	41	16495	5.3246 ug/L	91
6) Isobutyl Alcohol	9.21	43	2014	12.6338 ug/L #	1
7) 1-Butanol	9.83	56	2167	25.6978 ug/L #	47
8) Cyclohexanone	15.36	55	3979	5.1947 ug/L	98
9) 2-Nitropropane	11.54	43	3915	35.7530 ug/L #	72
10) Ethyl Acetate	9.03	43	17657	4.8057 ug/L	95
11) Methyl methacrylate	11.22	41	20122	4.7099 ug/L	95

(#) = qualifier out of range (m) = manual integration
11M08235.D A9FOOWT.M Thu Aug 20 11:43:47 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration

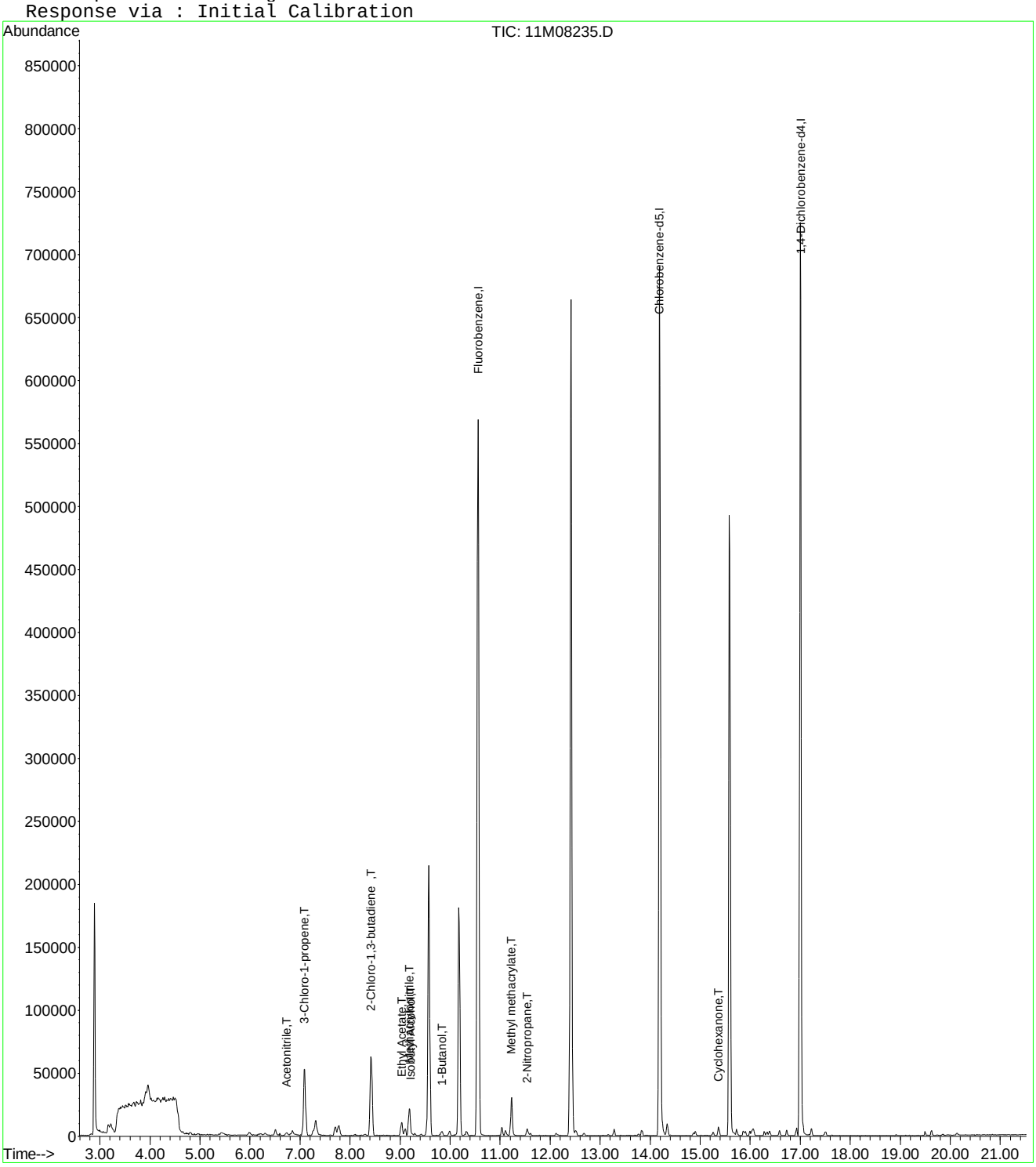

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061415\11M08235.D Vial: 2
Acq On : 14 Jun 2015 9:58 Operator: TMB /DLW
Sample : WG527475-02 5ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	5.0000	6.2866	-25.7	100	0.01
3	T	3-Chloro-1-propene	5.0000	5.0485	-1.0	100	-0.01
4	T	2-Chloro-1,3-butadiene	5.0000	4.6571	6.9	100	0.00
5	T	Methacrylonitrile	5.0000	5.3246	-6.5	100	0.00
6	T	Isobutyl Alcohol	-1.0000	12.6338	0.0	100	0.02
7	T	1-Butanol	-1.0000	25.6978	0.0	0	-0.24
8	T	Cyclohexanone	-1.0000	5.1947	0.0	100	0.00
9	T	2-Nitropropane	-1.0000	35.7530	0.0	0	0.00
10	T	Ethyl Acetate	5.0000	4.8057	3.9	100	0.00
11	T	Methyl methacrylate	5.0000	4.7099	5.8	100	0.00
12	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
13	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M08235.D A9FOOWT.M Thu Aug 20 11:44:19 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08236.D Vial: 3
Acq On : 14 Jun 2015 10:30 Operator: TMB /DLW
Sample : WG527475-03 20ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 10:52:27 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	610715	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.19	117	451165	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.00	152	232233	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	159209	23.4852 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.96%		
43) 1,2-Dichloroethane-d4	10.17	65	149549	20.3105 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 81.24%		
57) Toluene-d8	12.42	98	551790	28.9575 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 115.84%#		
78) p-Bromofluorobenzene	15.58	95	193663	26.0609 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.24%		

Target Compounds					Qvalue
3) Chloromethane	3.68	50	2560	0.2413 ug/L	85
5) 1,3-Butadiene	3.94	54	1485	0.2662 ug/L #	60
13) Acetone	6.30	43	3499	1.9459 ug/L #	49

(#) = qualifier out of range (m) = manual integration
11M08236.D 8260WTR.M Sun Jun 14 10:52:28 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08236.D Vial: 3
Acq On : 14 Jun 2015 10:30 Operator: TMB /DLW
Sample : WG527475-03 20ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 10:52 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration

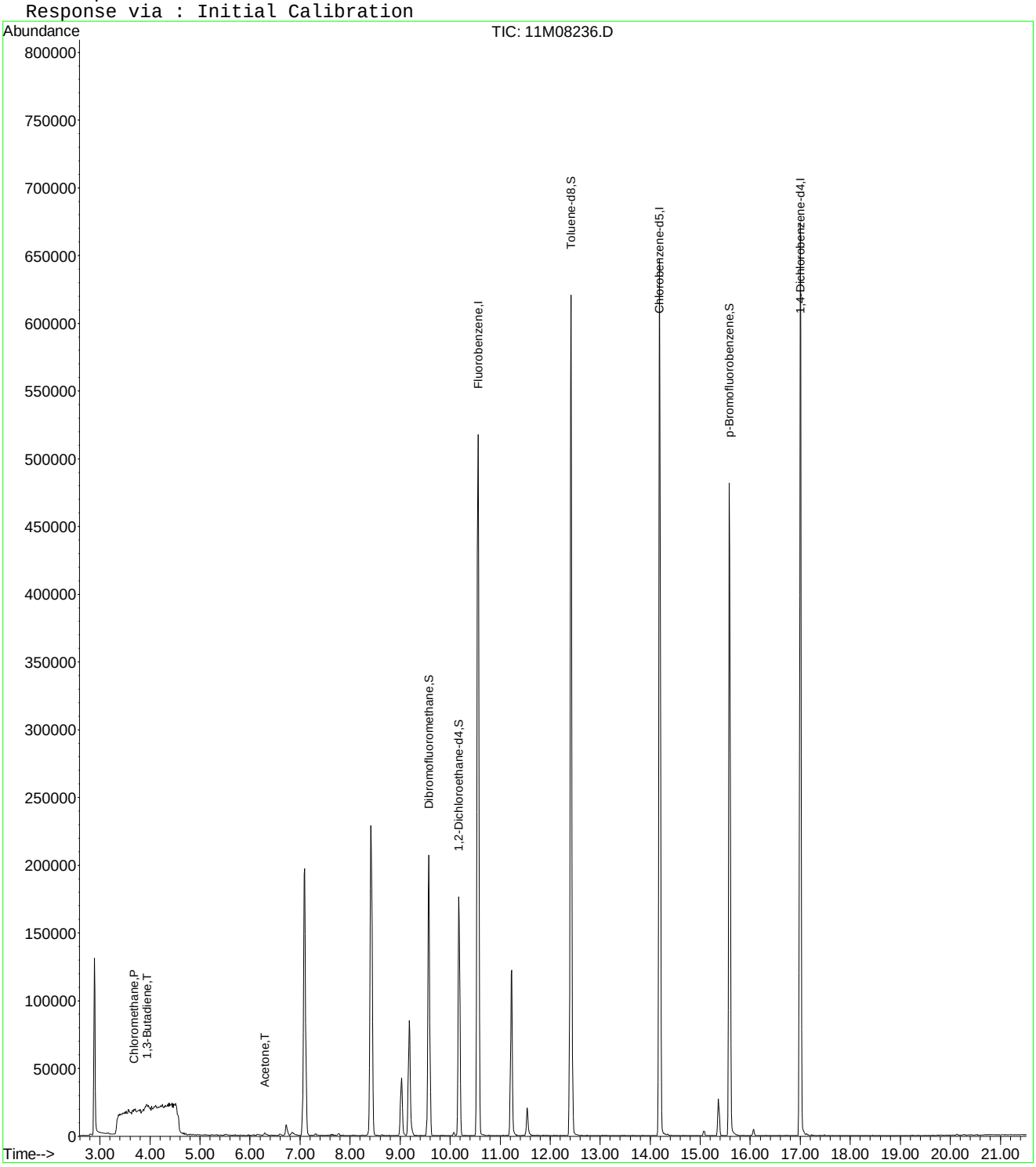

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08236.D Vial: 3
Acq On : 14 Jun 2015 10:30 Operator: TMB /DLW
Sample : WG527475-03 20ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 09:43:55 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	610715	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	451165	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	232233	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	10965	22.4787 ug/L	99
3) 3-Chloro-1-propene	7.09	41	181745	17.1344 ug/L	86
4) 2-Chloro-1,3-butadiene	8.42	53	204133	18.7856 ug/L	96
5) Methacrylonitrile	9.18	41	56411	19.2984 ug/L	84
6) Isobutyl Alcohol	9.19	43	6275	55.9901 ug/L	85
7) 1-Butanol	10.07	56	1474	31.3751 ug/L	93
8) Cyclohexanone	15.36	55	15226	18.8740 ug/L	98
9) 2-Nitropropane	11.54	43	14015	12.5138 ug/L #	72
10) Ethyl Acetate	9.03	43	70834	19.7046 ug/L	96
11) Methyl methacrylate	11.22	41	78843	20.3367 ug/L	93

(#) = qualifier out of range (m) = manual integration
11M08236.D A9FOOWT.M Tue Jun 16 09:43:55 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08236.D Vial: 3
Acq On : 14 Jun 2015 10:30 Operator: TMB /DLW
Sample : WG527475-03 20ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 9:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration

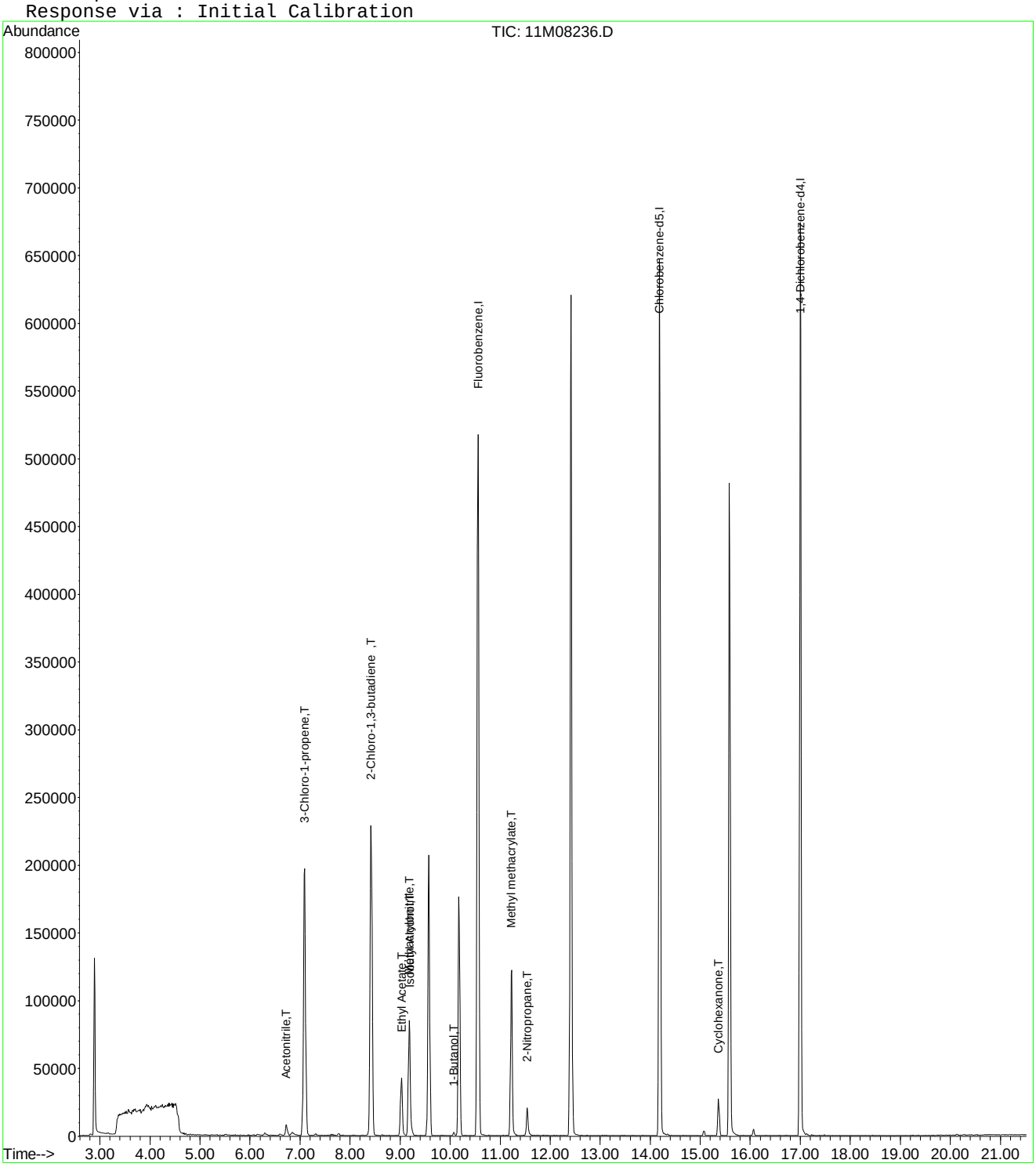

11M08236.D A9FOOWT.M Tue Jun 16 09:43:56 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08236.D Vial: 3
Acq On : 14 Jun 2015 10:30 Operator: TMB /DLW
Sample : WG527475-03 20ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28:06 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	610715	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	451165	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	232233	25.00 ug/L	-0.03

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M08236.D A9FOOWT.M Thu Aug 20 11:28:07 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08236.D Vial: 3
Acq On : 14 Jun 2015 10:30 Operator: TMB /DLW
Sample : WG527475-03 20ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration

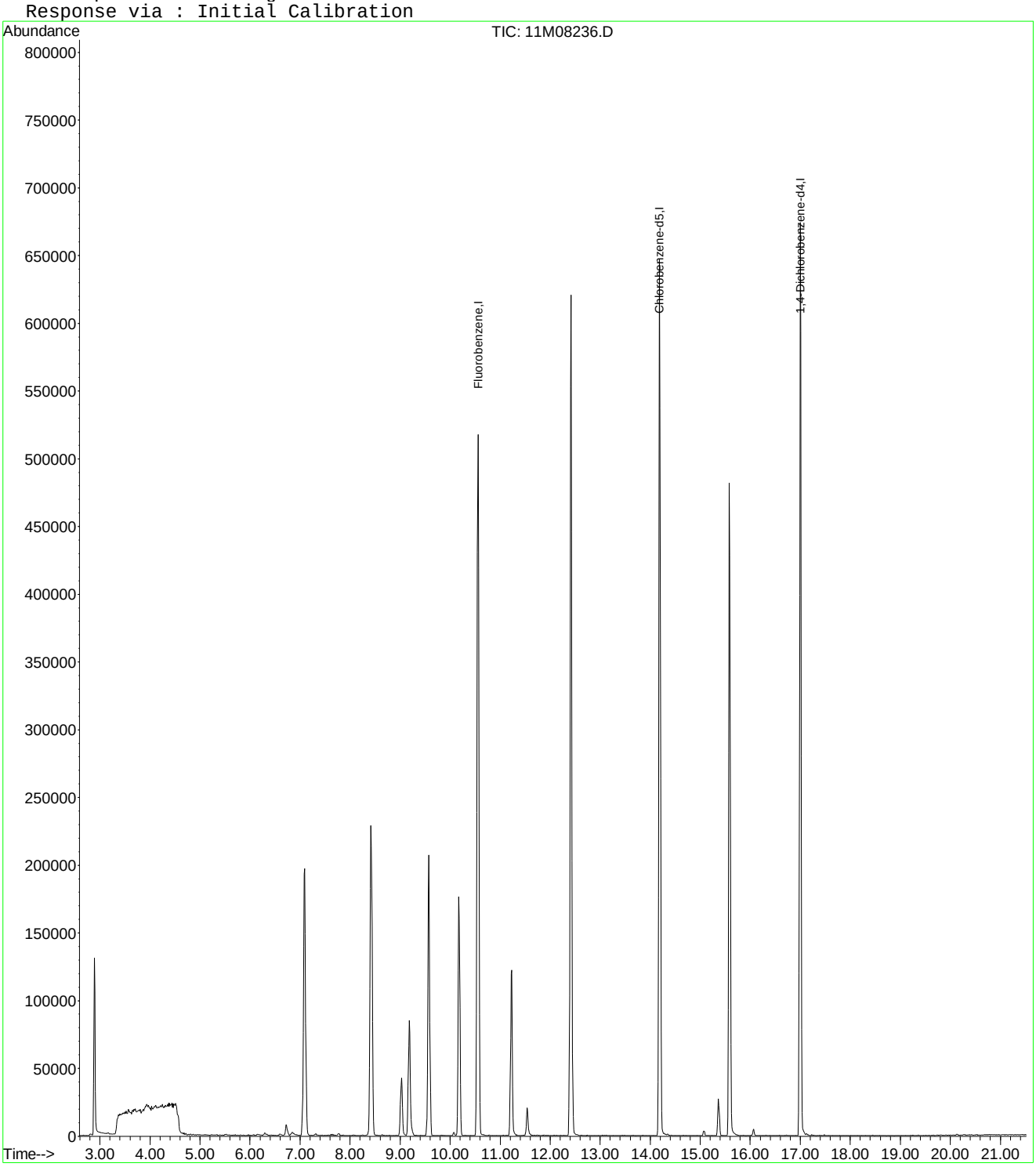

11M08236.D A9FOOWT.M Thu Aug 20 11:28:07 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08236.D Vial: 3
Acq On : 14 Jun 2015 10:30 Operator: TMB /DLW
Sample : WG527475-03 20ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43:48 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	610715	25.00 ug/L	0.00
12) Chlorobenzene-d5	14.19	117	451165	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.00	152	232233	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	10965	23.4093 ug/L	99
3) 3-Chloro-1-propene	7.09	41	181745	19.7730 ug/L	86
4) 2-Chloro-1,3-butadiene	8.42	53	204133	18.5003 ug/L	96
5) Methacrylonitrile	9.18	41	56411	19.8567 ug/L	84
6) Isobutyl Alcohol	9.19	43	6275	42.9238 ug/L	85
7) 1-Butanol	10.07	56	1474	19.0608 ug/L	93
8) Cyclohexanone	15.36	55	15226	21.6762 ug/L	98
9) 2-Nitropropane	11.54	43	14015	45.0214 ug/L #	72
10) Ethyl Acetate	9.03	43	70834	21.0227 ug/L	96
11) Methyl methacrylate	11.22	41	78843	20.1239 ug/L	93

(#) = qualifier out of range (m) = manual integration
11M08236.D A9FOOWT.M Thu Aug 20 11:43:48 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08236.D Vial: 3
Acq On : 14 Jun 2015 10:30 Operator: TMB /DLW
Sample : WG527475-03 20ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration

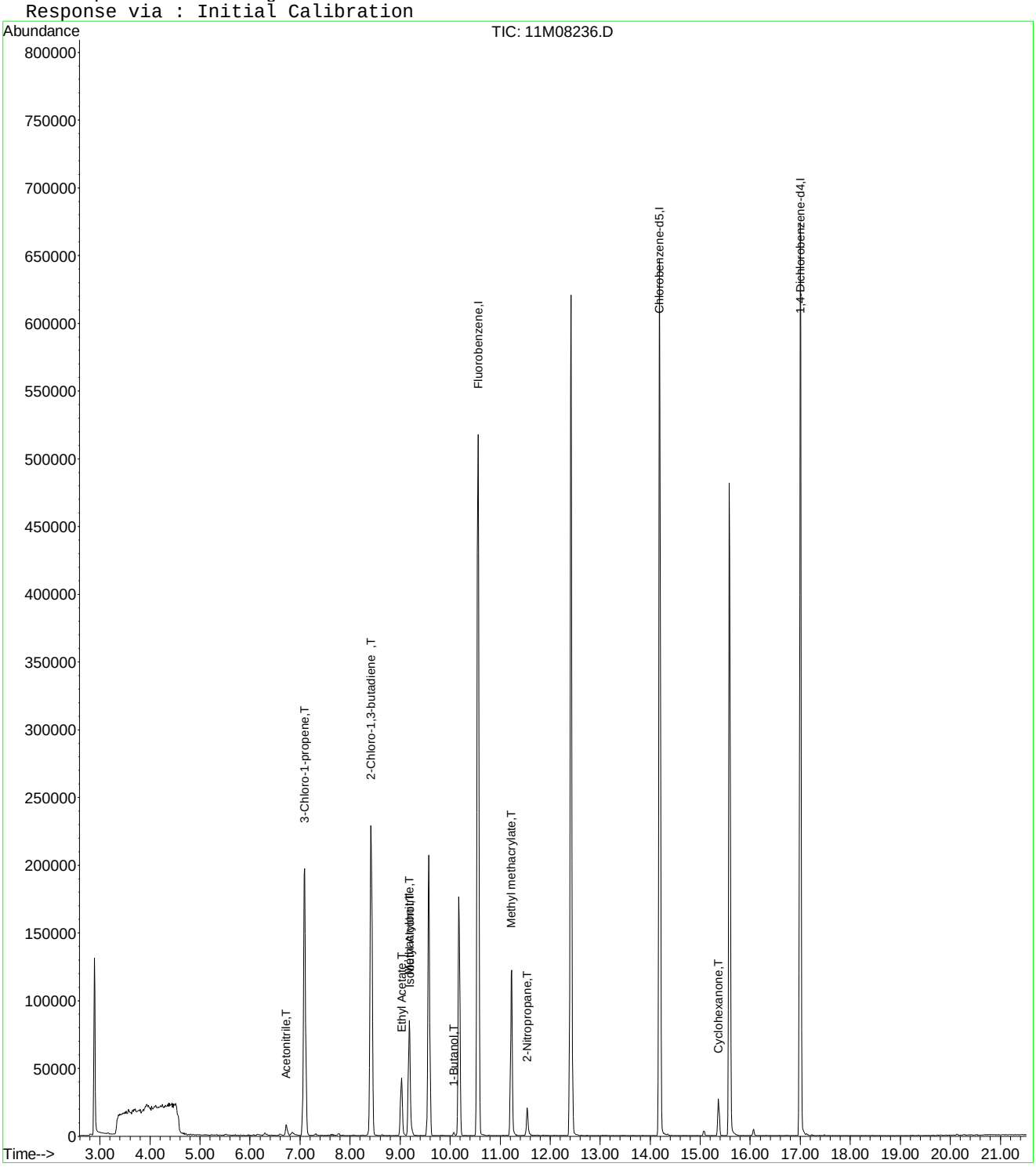

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061415\11M08236.D Vial: 3
Acq On : 14 Jun 2015 10:30 Operator: TMB /DLW
Sample : WG527475-03 20ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	23.4093	-17.0	100	0.00
3	T	3-Chloro-1-propene	20.0000	19.7730	1.1	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	18.5003	7.5	100	0.00
5	T	Methacrylonitrile	20.0000	19.8567	0.7	100	0.00
6	T	Isobutyl Alcohol	40.0000	42.9238	-7.3	100	0.00
7	T	1-Butanol	-1.0000	19.0608	0.0	100	0.00
8	T	Cyclohexanone	20.0000	21.6762	-8.4	100	0.00
9	T	2-Nitropropane	-1.0000	45.0214	0.0	0	0.00
10	T	Ethyl Acetate	20.0000	21.0227	-5.1	100	0.00
11	T	Methyl methacrylate	20.0000	20.1239	-0.6	100	0.00
12	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
13	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M08236.D A9FOOWT.M Thu Aug 20 11:44:30 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08237.D Vial: 4
Acq On : 14 Jun 2015 11:02 Operator: TMB /DLW
Sample : WG527475-04 50ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 11:24:26 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	593911	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.19	117	439398	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.00	152	227606	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	153812	23.3311 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.32%		
43) 1,2-Dichloroethane-d4	10.17	65	141347	19.7397 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 78.96%#		
57) Toluene-d8	12.42	98	530398	28.5803 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 114.32%#		
78) p-Bromofluorobenzene	15.58	95	184116	25.2799 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.12%		

Target Compounds					Qvalue
3) Chloromethane	3.68	50	1722	0.1669 ug/L #	66
13) Acetone	6.30	43	6340	3.6256 ug/L	95

(#) = qualifier out of range (m) = manual integration
11M08237.D 8260WTR.M Sun Jun 14 11:24:27 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08237.D Vial: 4
Acq On : 14 Jun 2015 11:02 Operator: TMB /DLW
Sample : WG527475-04 50ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 11:24 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration

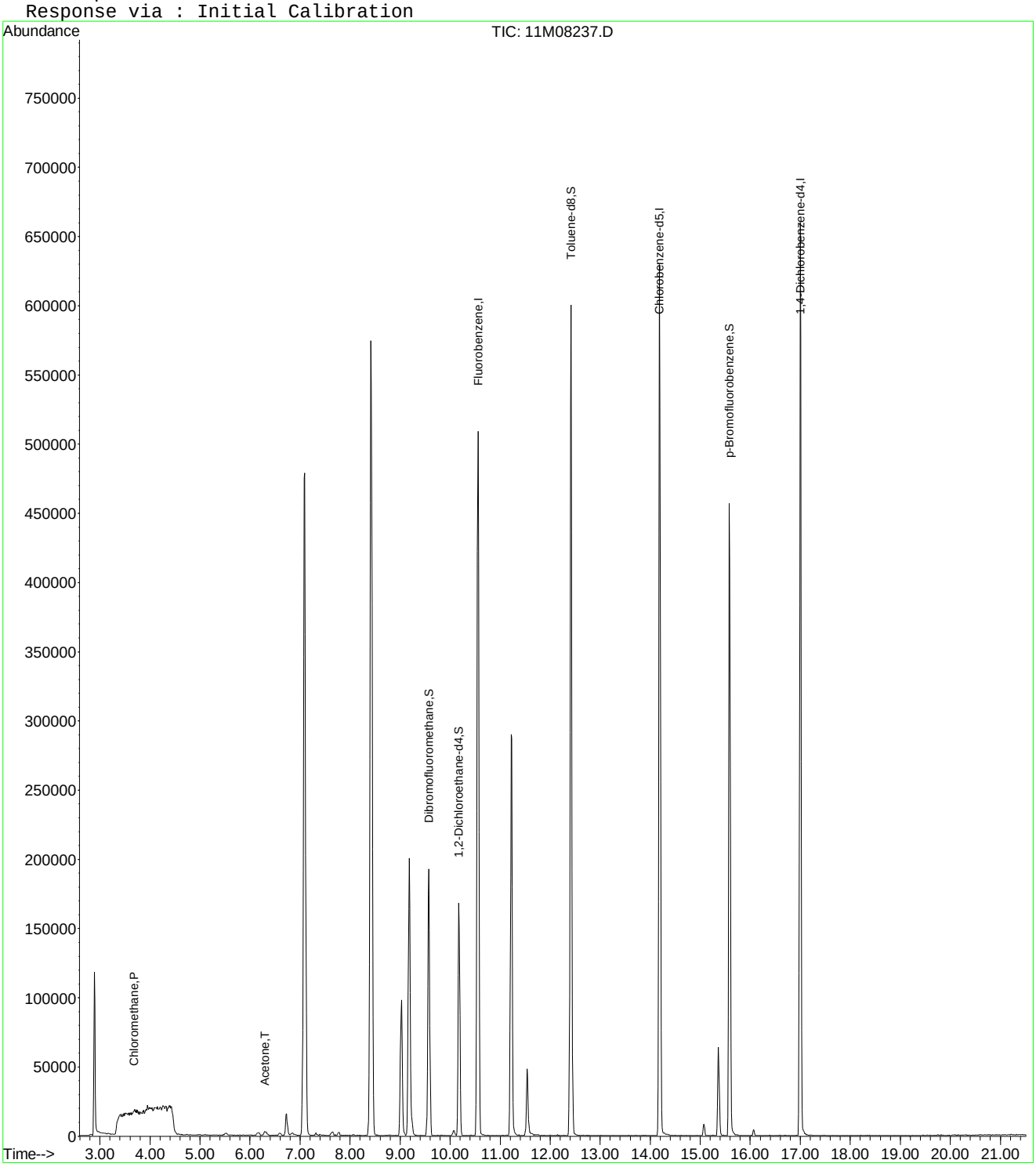

11M08237.D 8260WTR.M Sun Jun 14 11:24:27 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08237.D Vial: 4
Acq On : 14 Jun 2015 11:02 Operator: TMB /DLW
Sample : WG527475-04 50ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 09:43:56 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	593911	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	439398	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	227606	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	6.73	41	21370	45.0489 ug/L	93
3) 3-Chloro-1-propene	7.08	41	441208	42.7727 ug/L	85
4) 2-Chloro-1,3-butadiene	8.42	53	506427	47.9232 ug/L	96
5) Methacrylonitrile	9.18	41	133439	46.9416 ug/L	86
6) Isobutyl Alcohol	9.19	43	13722	125.9019 ug/L	88
7) 1-Butanol	10.06	56	3449	75.4914 ug/L #	8
8) Cyclohexanone	15.36	55	33575	42.7968 ug/L	96
9) 2-Nitropropane	11.54	43	32837	30.1492 ug/L #	75
10) Ethyl Acetate	9.03	43	158260	45.2705 ug/L	95
11) Methyl methacrylate	11.22	41	179947	47.7287 ug/L	89

(#) = qualifier out of range (m) = manual integration
11M08237.D A9FOOWT.M Tue Jun 16 09:43:57 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08237.D Vial: 4
Acq On : 14 Jun 2015 11:02 Operator: TMB /DLW
Sample : WG527475-04 50ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 9:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration

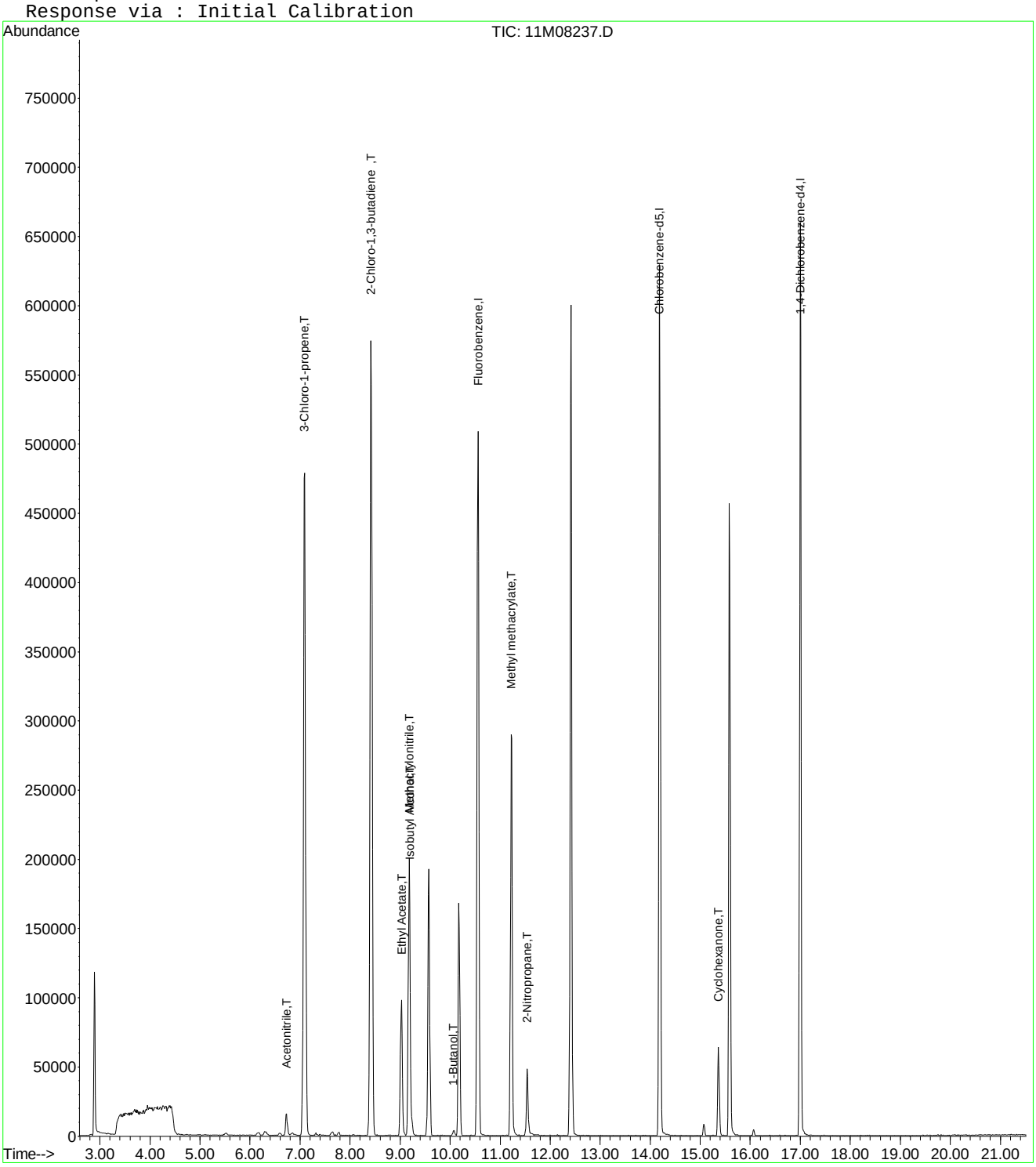

11M08237.D A9FOOWT.M Tue Jun 16 09:43:57 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08237.D Vial: 4
Acq On : 14 Jun 2015 11:02 Operator: TMB /DLW
Sample : WG527475-04 50ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28:07 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	593911	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	439398	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	227606	25.00 ug/L	-0.03

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M08237.D A9FOOWT.M Thu Aug 20 11:28:08 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08237.D Vial: 4
Acq On : 14 Jun 2015 11:02 Operator: TMB /DLW
Sample : WG527475-04 50ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration

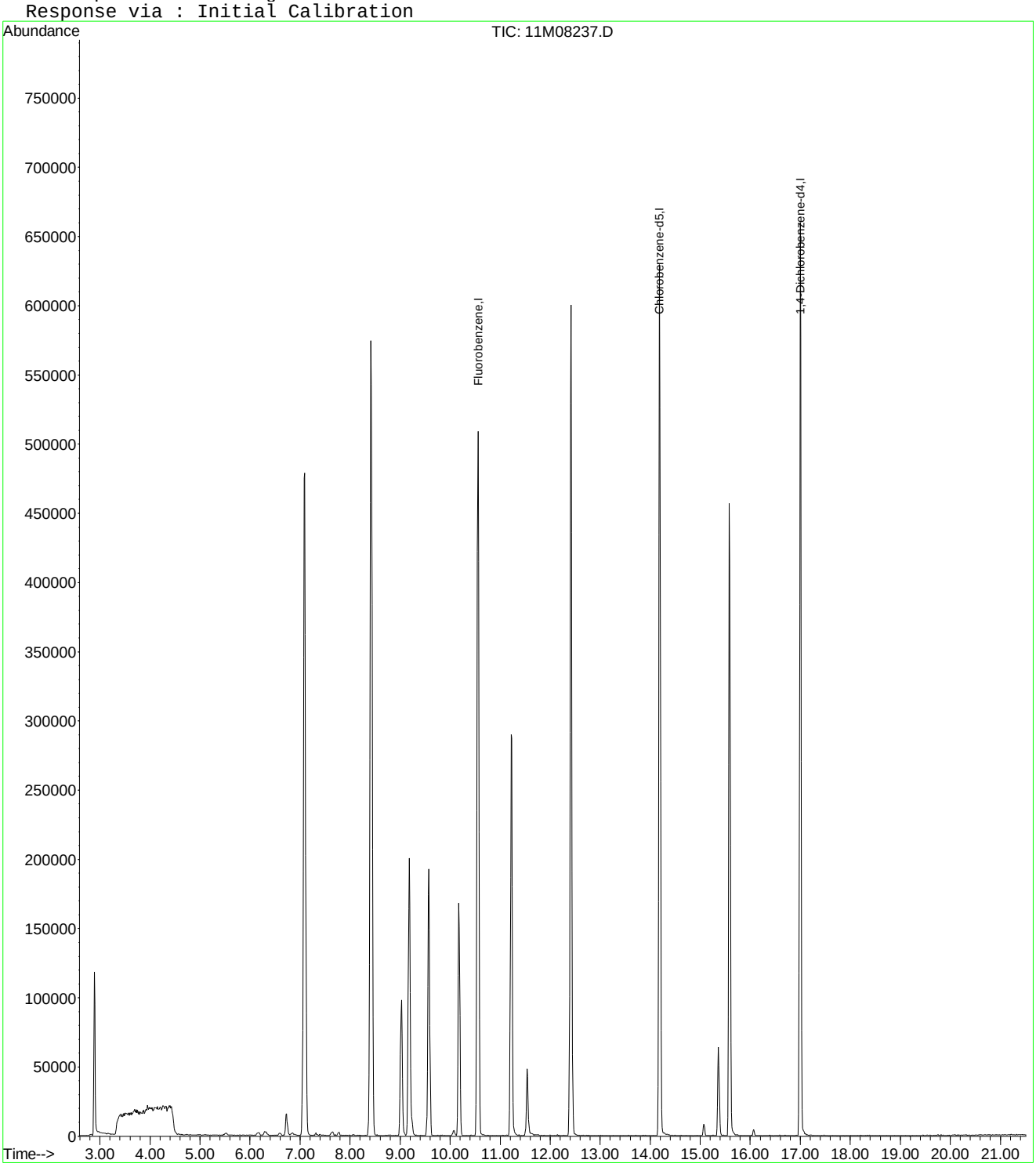

11M08237.D A9FOOWT.M Thu Aug 20 11:28:08 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08237.D Vial: 4
Acq On : 14 Jun 2015 11:02 Operator: TMB /DLW
Sample : WG527475-04 50ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43:49 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	593911	25.00 ug/L	0.00
12) Chlorobenzene-d5	14.19	117	439398	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.00	152	227606	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.73	41	21370	46.9139 ug/L	93
3) 3-Chloro-1-propene	7.08	41	441208	49.3594 ug/L	85
4) 2-Chloro-1,3-butadiene	8.42	53	506427	47.1955 ug/L	96
5) Methacrylonitrile	9.18	41	133439	48.2996 ug/L	86
6) Isobutyl Alcohol	9.19	43	13722	96.5203 ug/L	88
7) 1-Butanol	10.06	56	3449	45.8622 ug/L #	8
8) Cyclohexanone	15.36	55	33575	49.1507 ug/L	96
9) 2-Nitropropane	11.54	43	32837	62.5818 ug/L #	75
10) Ethyl Acetate	9.03	43	158260	48.2986 ug/L	95
11) Methyl methacrylate	11.22	41	179947	47.2293 ug/L	89

(#) = qualifier out of range (m) = manual integration
11M08237.D A9FOOWT.M Thu Aug 20 11:43:49 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08237.D Vial: 4
Acq On : 14 Jun 2015 11:02 Operator: TMB /DLW
Sample : WG527475-04 50ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration

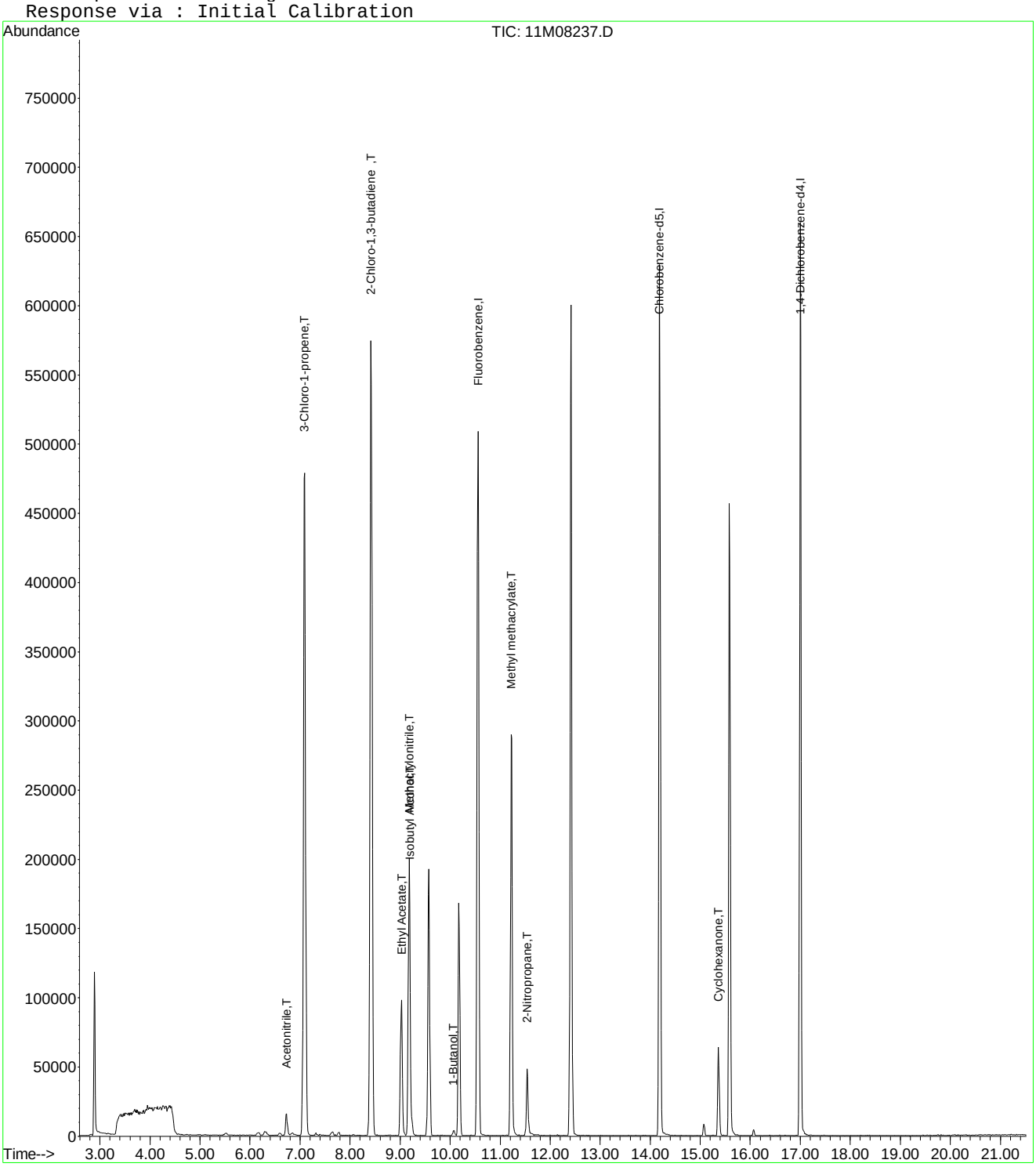

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061415\11M08237.D Vial: 4
Acq On : 14 Jun 2015 11:02 Operator: TMB /DLW
Sample : WG527475-04 50ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	46.9140	6.2	100	0.01
3	T	3-Chloro-1-propene	50.0000	49.3594	1.3	100	-0.01
4	T	2-Chloro-1,3-butadiene	50.0000	47.1955	5.6	100	0.00
5	T	Methacrylonitrile	50.0000	48.2996	3.4	100	0.00
6	T	Isobutyl Alcohol	100.0000	96.5203	3.5	100	0.00
7	T	1-Butanol	50.0000	45.8622	8.3	100	-0.01
8	T	Cyclohexanone	50.0000	49.1508	1.7	100	0.00
9	T	2-Nitropropane	50.0000	62.5818	-25.2	100	0.00
10	T	Ethyl Acetate	50.0000	48.2986	3.4	100	0.00
11	T	Methyl methacrylate	50.0000	47.2293	5.5	100	0.00
12	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
13	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M08237.D A9FOOWT.M Thu Aug 20 11:44:41 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08238.D Vial: 5
Acq On : 14 Jun 2015 11:34 Operator: TMB /DLW
Sample : WG527475-05 100ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 11:56:24 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	593660	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.19	117	435951	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.00	152	224898	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	154015	23.3717 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.48%		
43) 1,2-Dichloroethane-d4	10.17	65	141727	19.8012 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 79.20%#		
57) Toluene-d8	12.42	98	525710	28.5517 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery = 114.20%#		
78) p-Bromofluorobenzene	15.58	95	182017	25.2926 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.16%		

Target Compounds					Qvalue
3) Chloromethane	3.68	50	2521	0.2445 ug/L	100
13) Acetone	6.30	43	8631	4.9378 ug/L	80
24) n-Hexane	7.78	57	2688	0.2479 ug/L #	72
29) 2-Butanone	8.85	43	412	0.1450 ug/L #	77

(#) = qualifier out of range (m) = manual integration
11M08238.D 8260WTR.M Sun Jun 14 11:56:26 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08238.D Vial: 5
Acq On : 14 Jun 2015 11:34 Operator: TMB /DLW
Sample : WG527475-05 100ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 11:56 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration

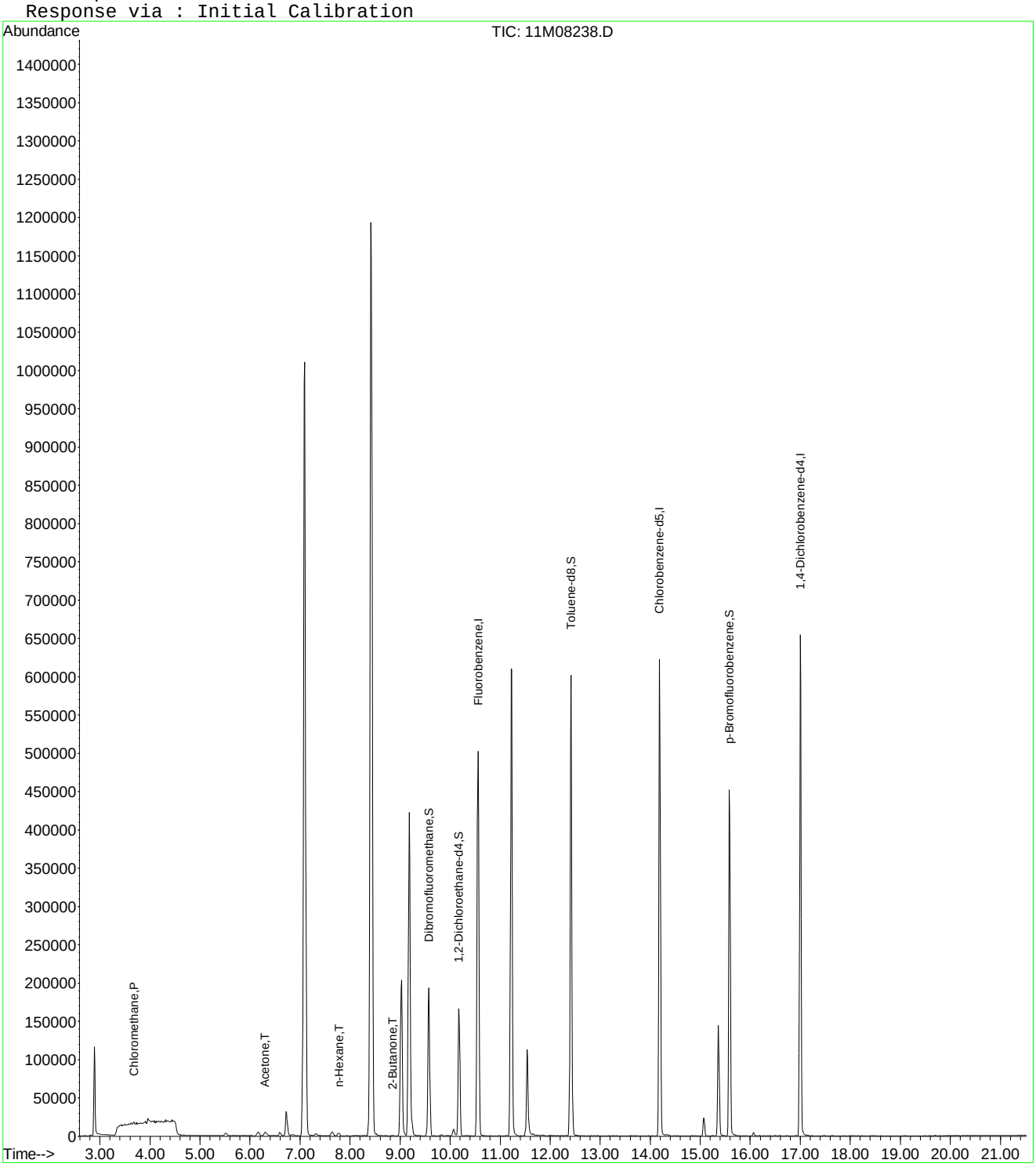

11M08238.D 8260WTR.M Sun Jun 14 11:56:26 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08238.D Vial: 5
Acq On : 14 Jun 2015 11:34 Operator: TMB /DLW
Sample : WG527475-05 100ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 09:43:58 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	593660	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	435951	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	224898	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	41783	88.1177 ug/L	97
3) 3-Chloro-1-propene	7.09	41	901667	87.4486 ug/L	84
4) 2-Chloro-1,3-butadiene	8.42	53	1055196	99.8955 ug/L	96
5) Methacrylonitrile	9.18	41	269812	94.9555 ug/L	83
6) Isobutyl Alcohol	9.19	43	28965	265.8717 ug/L	87
7) 1-Butanol	10.07	56	7719	169.0243 ug/L	87
8) Cyclohexanone	15.36	55	72878	92.9342 ug/L	95
9) 2-Nitropropane	11.54	43	76568	70.3304 ug/L	82
10) Ethyl Acetate	9.03	43	331707	94.9253 ug/L	95
11) Methyl methacrylate	11.22	41	375863	99.7350 ug/L	89

(#) = qualifier out of range (m) = manual integration
11M08238.D A9FOOWT.M Tue Jun 16 09:43:58 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08238.D Vial: 5
Acq On : 14 Jun 2015 11:34 Operator: TMB /DLW
Sample : WG527475-05 100ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 9:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration

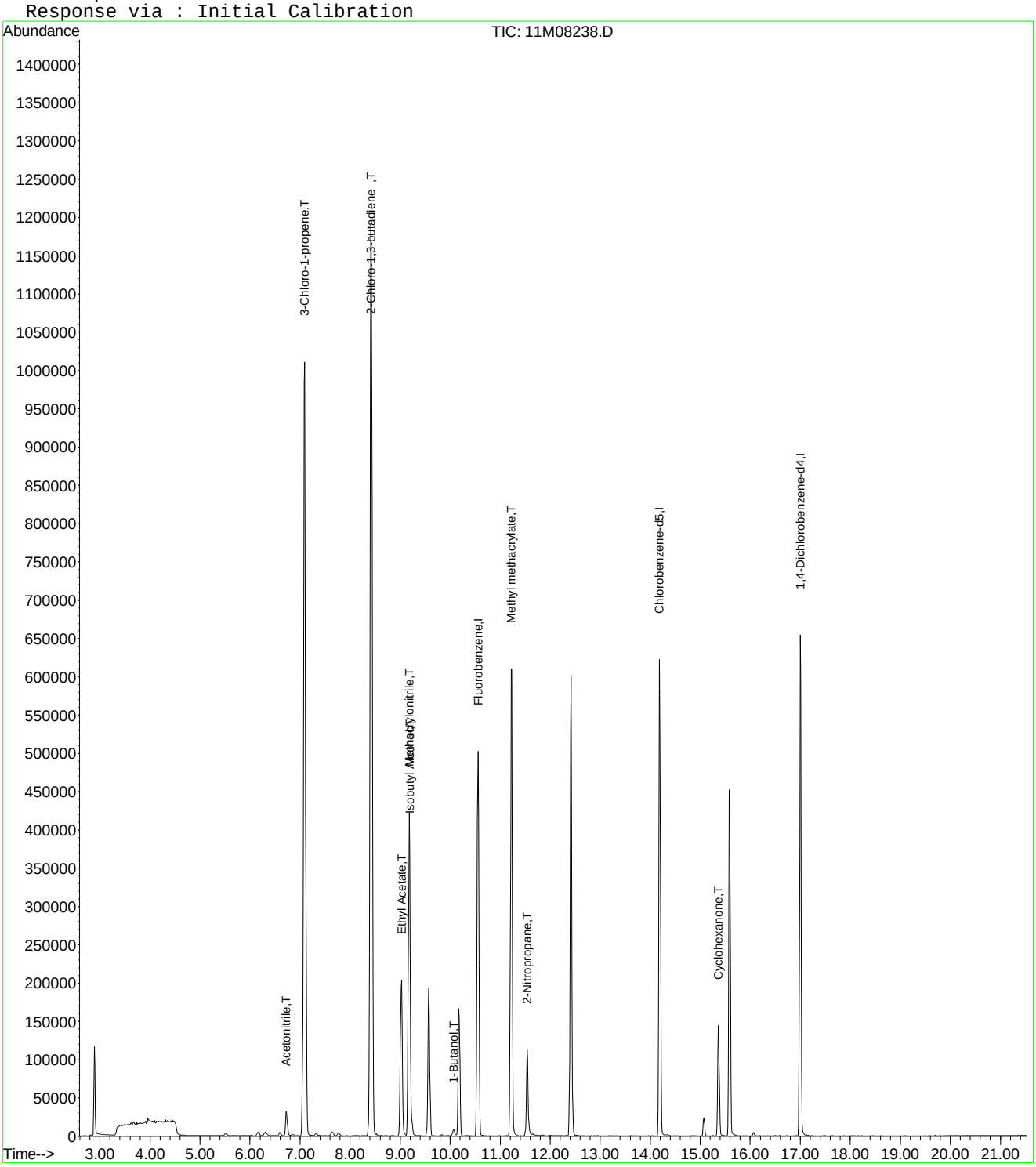

11M08238.D A9FOOWT.M Tue Jun 16 09:43:58 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08238.D Vial: 5
Acq On : 14 Jun 2015 11:34 Operator: TMB /DLW
Sample : WG527475-05 100ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28:09 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	593660	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	435951	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	224898	25.00 ug/L	-0.03

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M08238.D A9FOOWT.M Thu Aug 20 11:28:10 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08238.D Vial: 5
Acq On : 14 Jun 2015 11:34 Operator: TMB /DLW
Sample : WG527475-05 100ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration

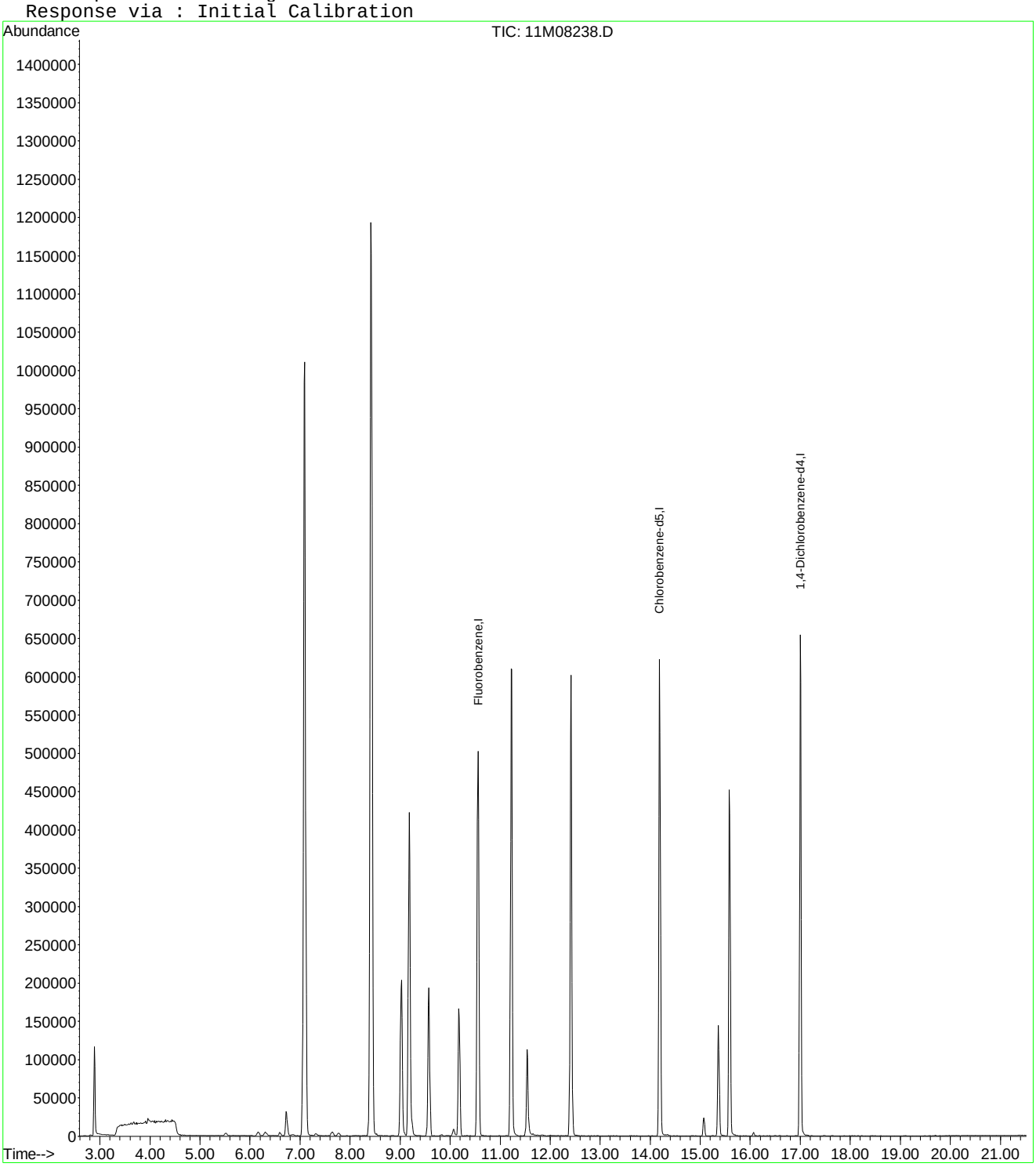

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08238.D Vial: 5
Acq On : 14 Jun 2015 11:34 Operator: TMB /DLW
Sample : WG527475-05 100ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43:50 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	593660	25.00 ug/L	0.00
12) Chlorobenzene-d5	14.19	117	435951	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.00	152	224898	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	41783	91.7658 ug/L	97
3) 3-Chloro-1-propene	7.09	41	901667	100.9151 ug/L	84
4) 2-Chloro-1,3-butadiene	8.42	53	1055196	98.3785 ug/L	96
5) Methacrylonitrile	9.18	41	269812	97.7026 ug/L	83
6) Isobutyl Alcohol	9.19	43	28965	203.8255 ug/L	87
7) 1-Butanol	10.07	56	7719	102.6849 ug/L	87
8) Cyclohexanone	15.36	55	72878	106.7319 ug/L	95
9) 2-Nitropropane	11.54	43	76568	102.5921 ug/L	82
10) Ethyl Acetate	9.03	43	331707	101.2749 ug/L	95
11) Methyl methacrylate	11.22	41	375863	98.6916 ug/L	89

(#) = qualifier out of range (m) = manual integration
11M08238.D A9FOOWT.M Thu Aug 20 11:43:50 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08238.D Vial: 5
Acq On : 14 Jun 2015 11:34 Operator: TMB /DLW
Sample : WG527475-05 100ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration

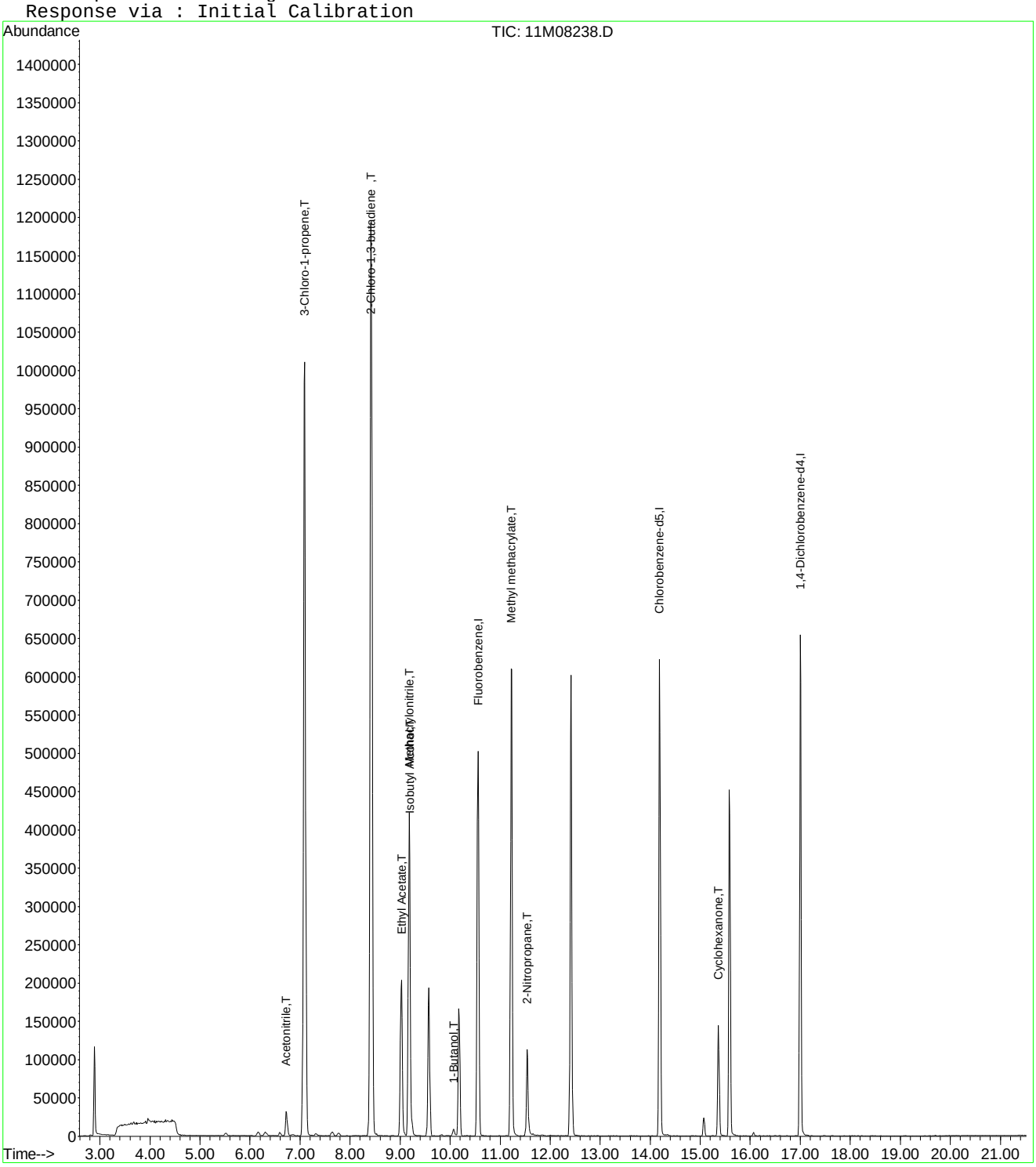

11M08238.D A9FOOWT.M Thu Aug 20 11:43:51 2015 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061415\11M08238.D Vial: 5
Acq On : 14 Jun 2015 11:34 Operator: TMB /DLW
Sample : WG527475-05 100ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	91.7658	8.2	100	0.00
3	T	3-Chloro-1-propene	100.0000	100.9152	-0.9	100	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	98.3785	1.6	100	0.00
5	T	Methacrylonitrile	100.0000	97.7026	2.3	100	0.00
6	T	Isobutyl Alcohol	200.0000	203.8255	-1.9	100	0.00
7	T	1-Butanol	100.0000	102.6849	-2.7	100	0.00
8	T	Cyclohexanone	100.0000	106.7319	-6.7	100	0.00
9	T	2-Nitropropane	100.0000	102.5921	-2.6	100	0.00
10	T	Ethyl Acetate	100.0000	101.2749	-1.3	100	0.00
11	T	Methyl methacrylate	100.0000	98.6916	1.3	100	0.00
12	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
13	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M08238.D A9FOOWT.M Thu Aug 20 11:44:51 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08239.D Vial: 6
Acq On : 14 Jun 2015 12:06 Operator: TMB /DLW
Sample : WG527475-06 200ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 12:28:24 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	594644	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.19	117	435974	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.00	152	229058	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	154998	23.4820 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.92%		
43) 1,2-Dichloroethane-d4	10.17	65	140981	19.6644 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 78.64%#		
57) Toluene-d8	12.42	98	523704	28.4412 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 113.76%#		
78) p-Bromofluorobenzene	15.58	95	185106	25.2547 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.00%		

Target Compounds

					Qvalue
3) Chloromethane	3.68	50	2432	0.2354 ug/L #	41
6) Bromomethane	4.80	94	741	0.2165 ug/L	88
13) Acetone	6.30	43	14437	8.2458 ug/L	88
24) n-Hexane	7.78	57	4836	0.4453 ug/L #	80
29) 2-Butanone	8.84	43	1521	0.5342 ug/L #	77
39) Cyclohexane	9.83	56	2702	0.1826 ug/L #	90
47) Methylcyclohexane	11.23	83	2411	0.2326 ug/L #	1
70) Ethylbenzene	14.34	106	1287	0.1439 ug/L	84
71) m-,p-Xylene	14.34	106	1287	0.1218 ug/L #	4

(#) = qualifier out of range (m) = manual integration
11M08239.D 8260WTR.M Sun Jun 14 12:28:25 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08239.D Vial: 6
Acq On : 14 Jun 2015 12:06 Operator: TMB /DLW
Sample : WG527475-06 200ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 12:28 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration

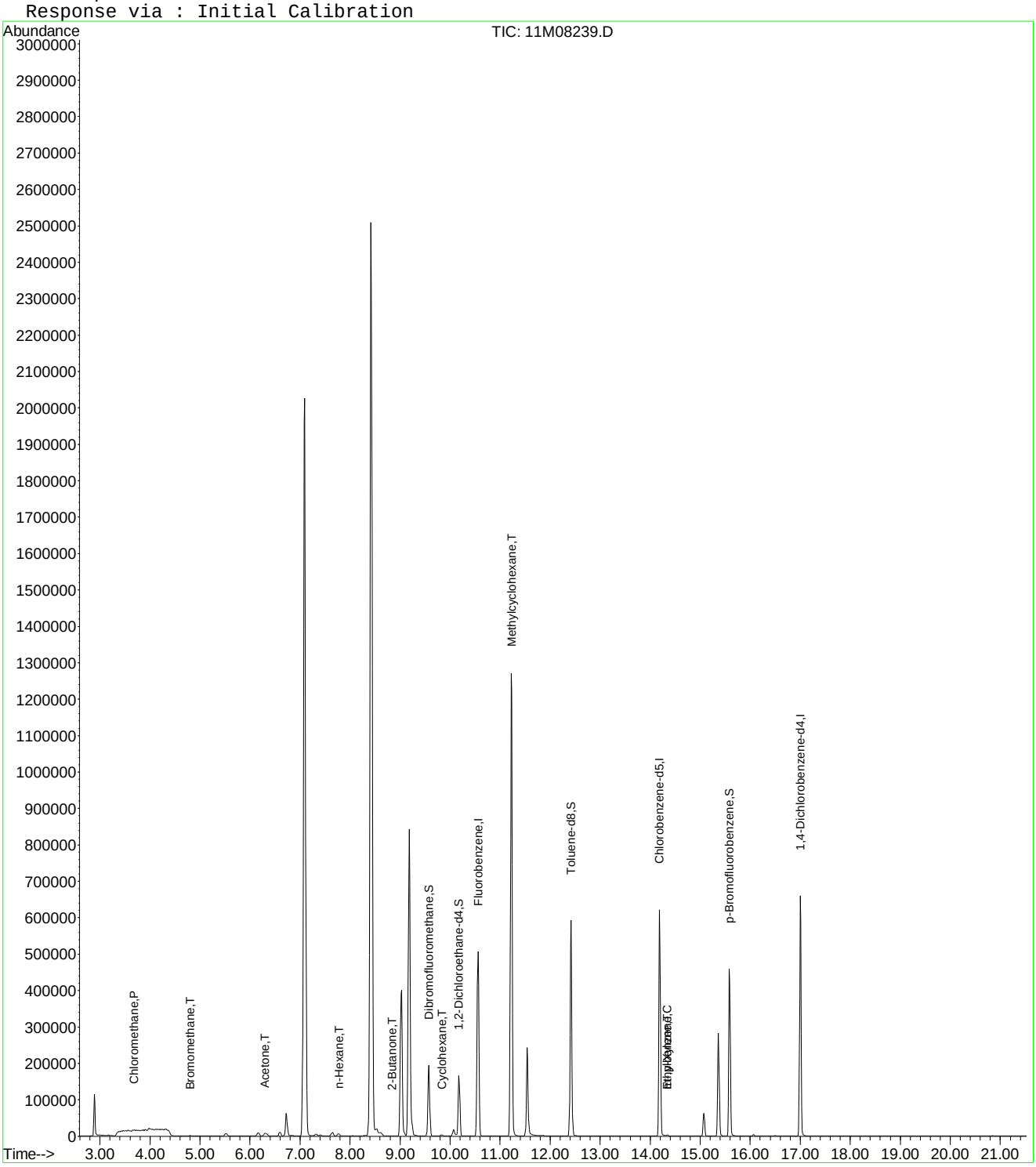

11M08239.D 8260WTR.M Sun Jun 14 12:28:25 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08239.D Vial: 6
Acq On : 14 Jun 2015 12:06 Operator: TMB /DLW
Sample : WG527475-06 200ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 09:43:59 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.56	96	594644	25.00	ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	435974	25.00	ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	229058	25.00	ug/L	-0.03

Target Compounds						Qvalue
2) Acetonitrile	6.72	41	84573	178.0639	ug/L	99
3) 3-Chloro-1-propene	7.09	41	1784664	172.8000	ug/L	83
4) 2-Chloro-1,3-butadiene	8.42	53	2139008	202.1651	ug/L	95
5) Methacrylonitrile	9.18	41	534300	187.7261	ug/L	82
6) Isobutyl Alcohol	9.19	43	51366	470.7117	ug/L	98
7) 1-Butanol	10.07	56	15596	340.9432	ug/L #	87
8) Cyclohexanone	15.36	55	142194	181.0260	ug/L	95
9) 2-Nitropropane	11.54	43	168554	154.5666	ug/L	84
10) Ethyl Acetate	9.03	43	649446	185.5458	ug/L	94
11) Methyl methacrylate	11.22	41	751654	199.1209	ug/L	88

(#) = qualifier out of range (m) = manual integration
11M08239.D A9FOOWT.M Tue Jun 16 09:43:59 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08239.D Vial: 6
Acq On : 14 Jun 2015 12:06 Operator: TMB /DLW
Sample : WG527475-06 200ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 9:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration

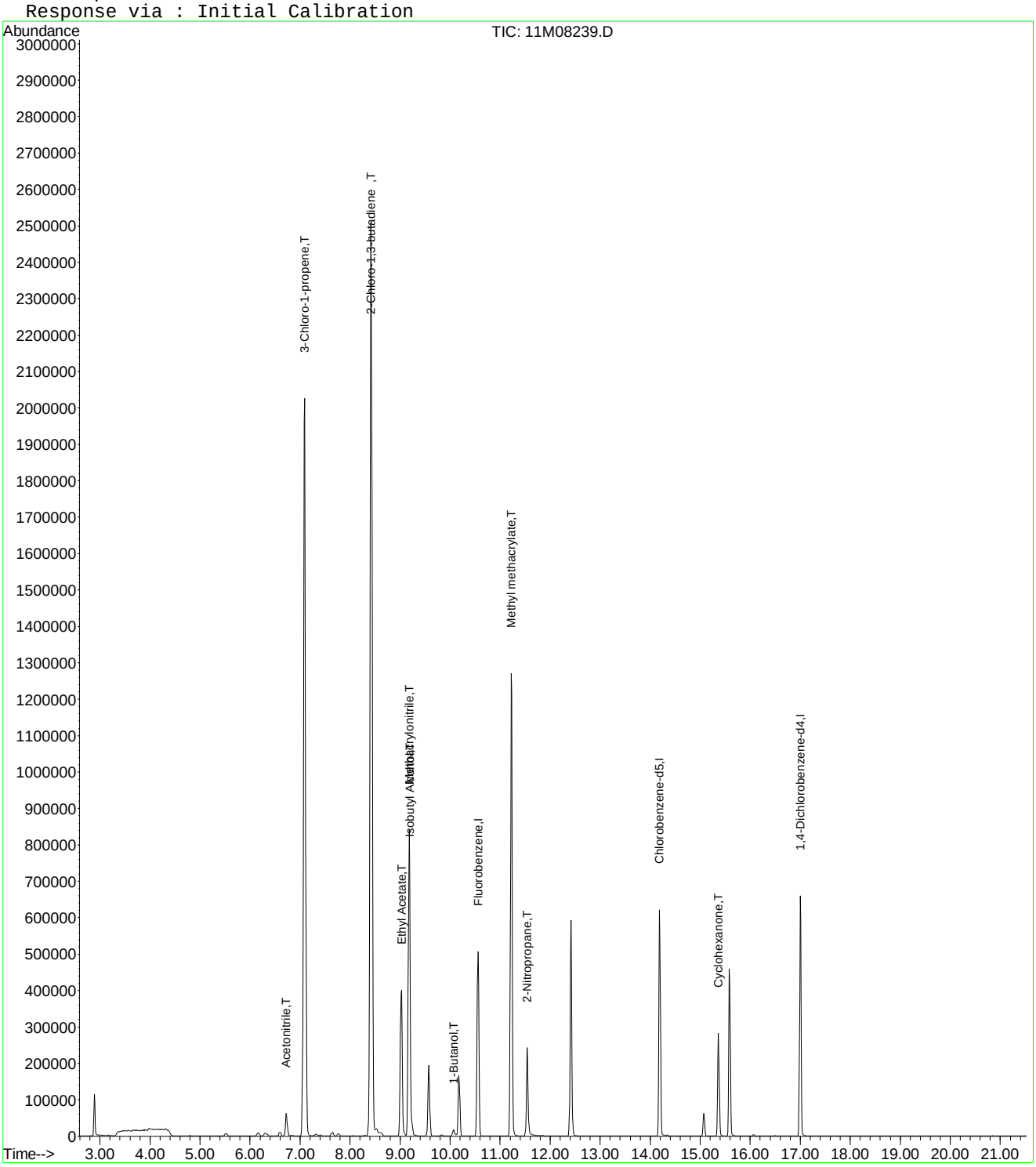

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08239.D Vial: 6
Acq On : 14 Jun 2015 12:06 Operator: TMB /DLW
Sample : WG527475-06 200ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28:11 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	594644	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	435974	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	229058	25.00 ug/L	-0.03

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M08239.D A9FOOWT.M Thu Aug 20 11:28:11 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08239.D Vial: 6
Acq On : 14 Jun 2015 12:06 Operator: TMB /DLW
Sample : WG527475-06 200ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration

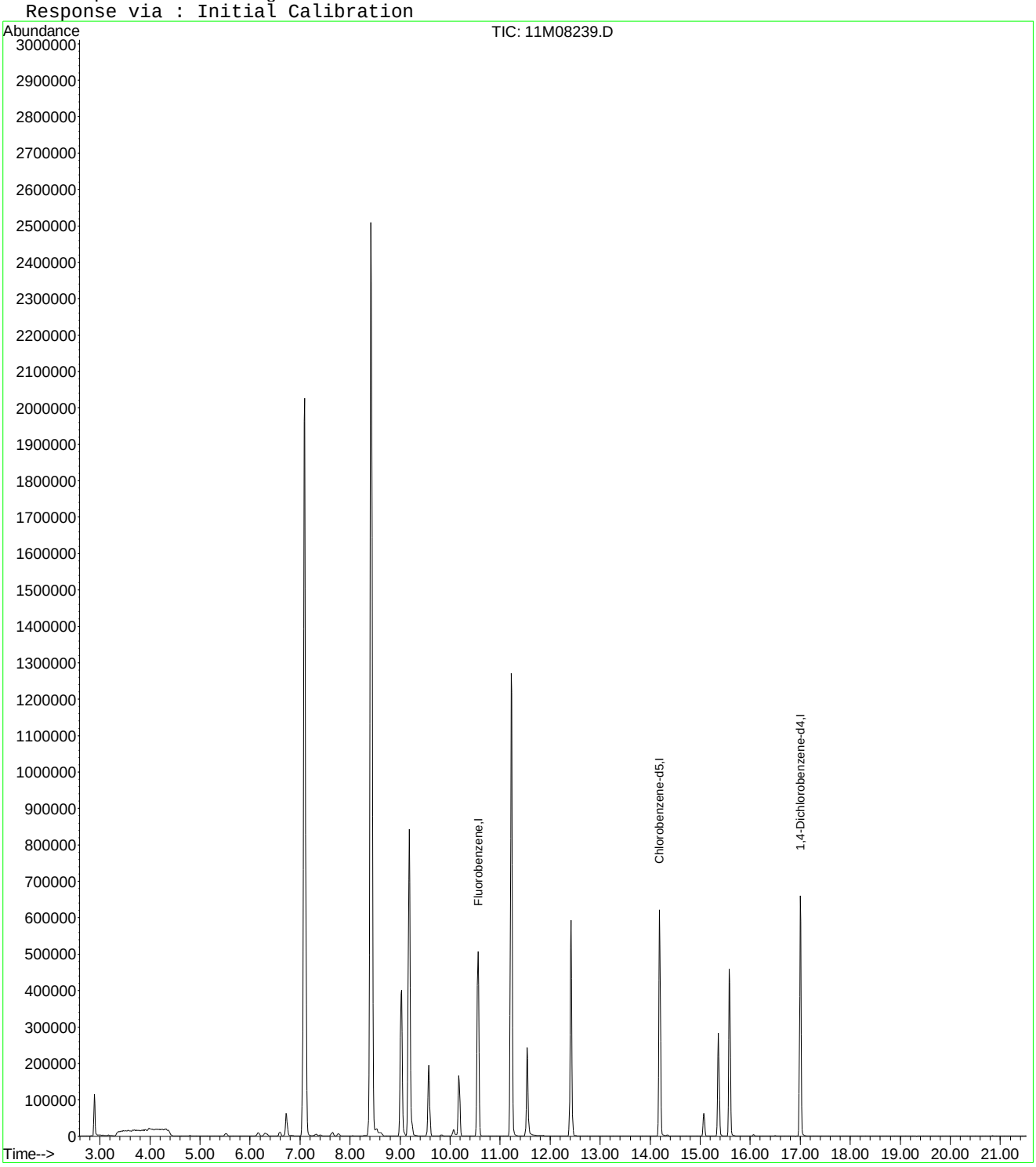

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08239.D Vial: 6
Acq On : 14 Jun 2015 12:06 Operator: TMB /DLW
Sample : WG527475-06 200ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43:51 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.56	96	594644	25.00	ug/L	0.00
12) Chlorobenzene-d5	14.19	117	435974	25.00	ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.00	152	229058	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.72	41	84573	185.4358	ug/L	99
3) 3-Chloro-1-propene	7.09	41	1784664	199.4102	ug/L	83
4) 2-Chloro-1,3-butadiene	8.42	53	2139008	199.0949	ug/L	95
5) Methacrylonitrile	9.18	41	534300	193.1571	ug/L	82
6) Isobutyl Alcohol	9.19	43	51337	360.6585	ug/L	98
7) 1-Butanol	10.07	56	15596	207.1283	ug/L #	87
8) Cyclohexanone	15.36	55	142194	207.9025	ug/L	95
9) 2-Nitropropane	11.54	43	168554	186.4698	ug/L	84
10) Ethyl Acetate	9.03	43	649446	197.9570	ug/L	94
11) Methyl methacrylate	11.22	41	751654	197.0377	ug/L	88

(#) = qualifier out of range (m) = manual integration
11M08239.D A9FOOWT.M Thu Aug 20 11:43:51 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08239.D Vial: 6
Acq On : 14 Jun 2015 12:06 Operator: TMB /DLW
Sample : WG527475-06 200ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration

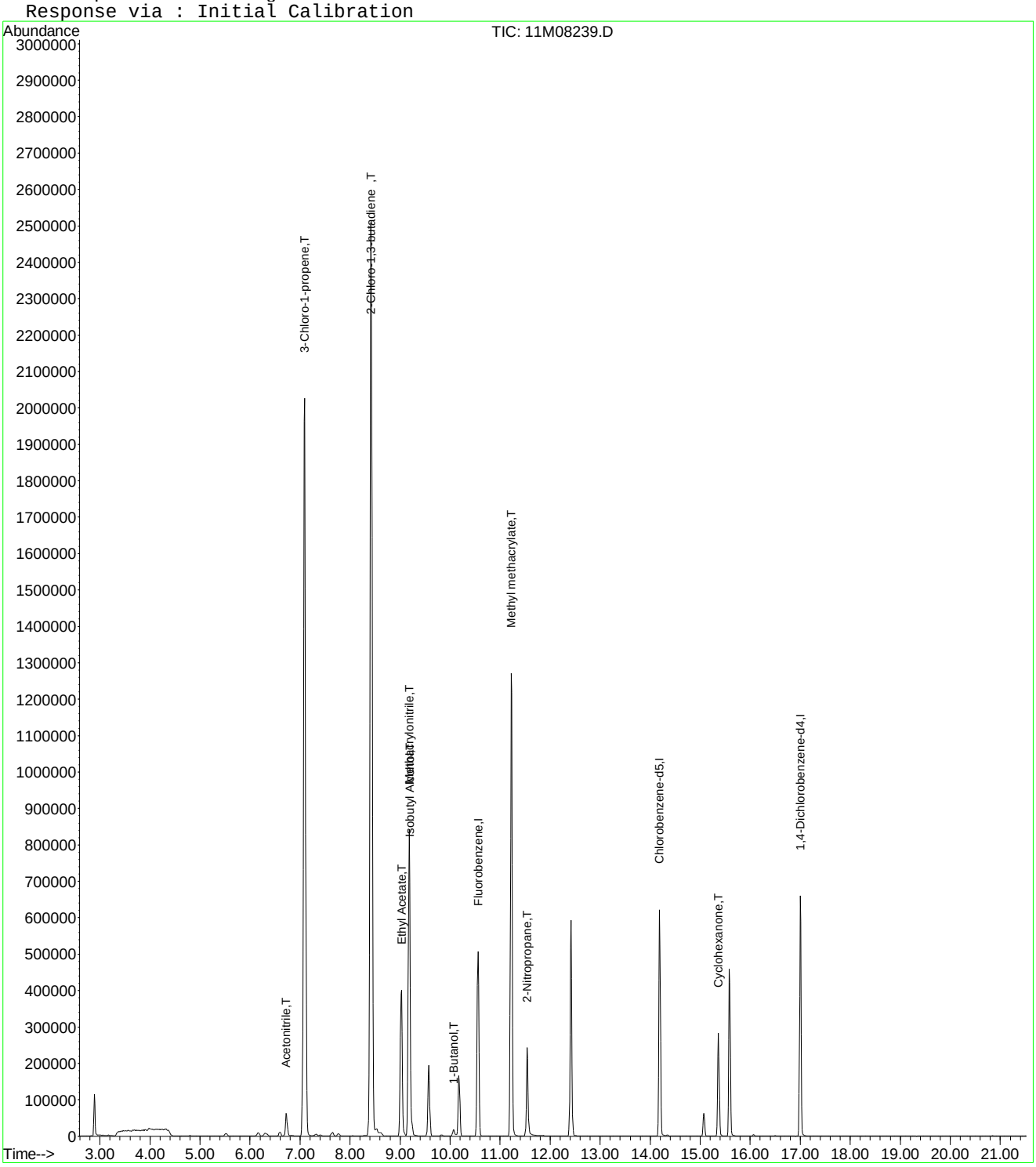

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08240.D Vial: 7
Acq On : 14 Jun 2015 12:38 Operator: TMB /DLW
Sample : WG527475-07 300ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 13:00:23 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	590021	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.19	117	427539	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.00	152	226251	25.00 ug/L	-0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	154989	23.6646 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.64%		
43) 1,2-Dichloroethane-d4	10.17	65	137616	19.3454 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 77.40%#		
57) Toluene-d8	12.42	98	526940	29.1815 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 116.72%#		
78) p-Bromofluorobenzene	15.58	95	183651	25.3670 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.48%		

Target Compounds

					Qvalue
3) Chloromethane	3.68	50	4067	0.3968 ug/L	98
6) Bromomethane	4.81	94	1456	0.4286 ug/L	94
11) Acrolein	6.23	56	2665	2.6647 ug/L #	63
13) Acetone	6.30	43	17405	10.0188 ug/L	87
18) Methyl acetate	7.03	43	1109	0.1829 ug/L #	67
20) Carbon Disulfide	7.31	76	3126	0.1557 ug/L #	88
24) n-Hexane	7.78	57	7639	0.7089 ug/L #	89
29) 2-Butanone	8.84	43	1699	0.6014 ug/L #	77
30) Propionitrile	9.00	54	221	0.2481 ug/L #	1
39) Cyclohexane	9.84	56	3351	0.2282 ug/L #	68
71) m-,p-Xylene	14.34	106	1591	0.1535 ug/L #	17

(#) = qualifier out of range (m) = manual integration
11M08240.D 8260WTR.M Sun Jun 14 13:00:23 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08240.D Vial: 7
Acq On : 14 Jun 2015 12:38 Operator: TMB /DLW
Sample : WG527475-07 300ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 13:00 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration

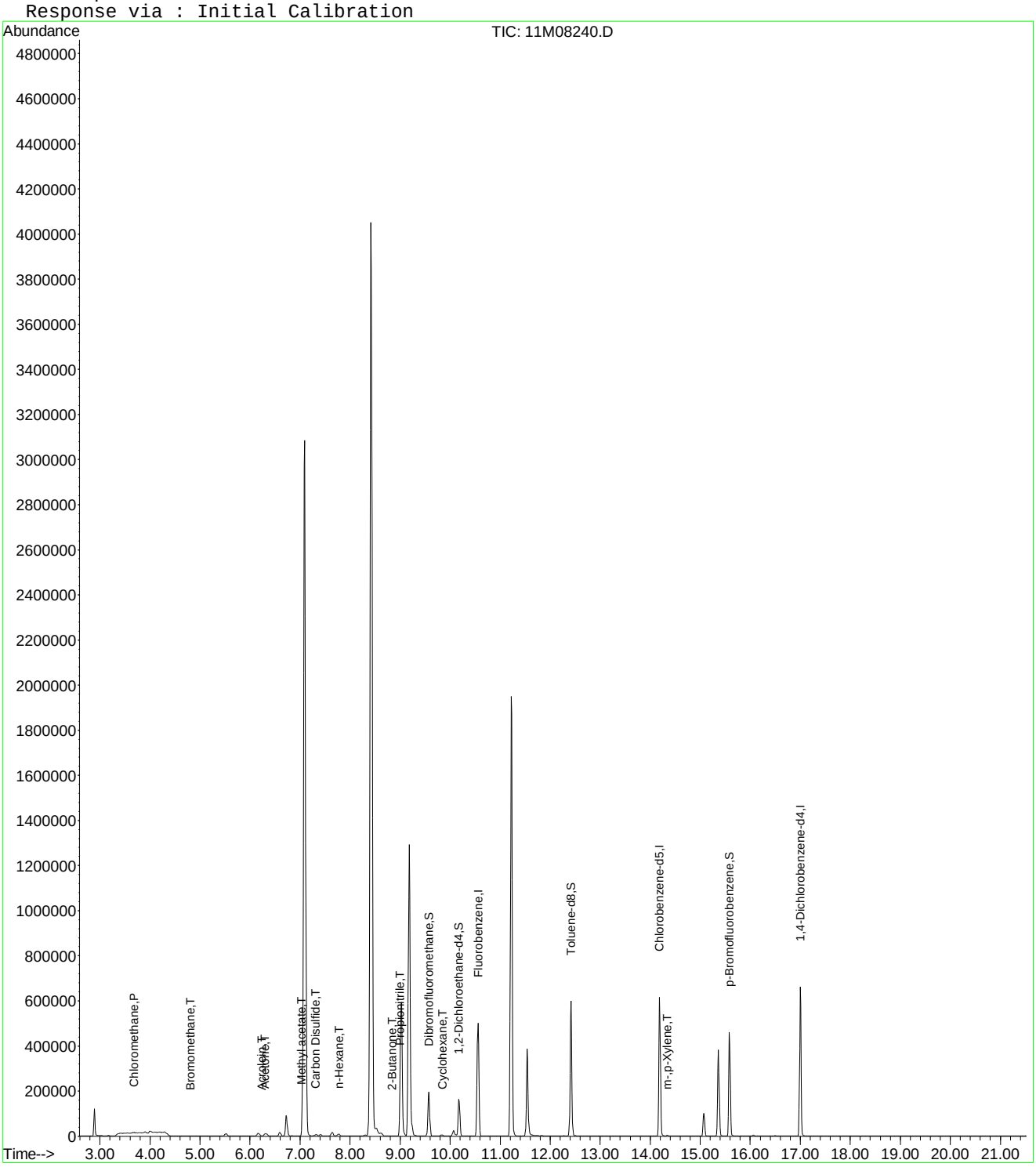

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08240.D Vial: 7
Acq On : 14 Jun 2015 12:38 Operator: TMB /DLW
Sample : WG527475-07 300ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 09:44:00 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.56	96	590021	25.00	ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	427539	25.00	ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	226251	25.00	ug/L	-0.03

Target Compounds						Qvalue
2) Acetonitrile	6.72	41	124797	264.8121	ug/L	99
3) 3-Chloro-1-propene	7.09	41	2683921	261.9067	ug/L	83
4) 2-Chloro-1,3-butadiene	8.42	53	3409409	324.7599	ug/L	95
5) Methacrylonitrile	9.18	41	809195	286.5380	ug/L	82
6) Isobutyl Alcohol	9.19	43	83440	770.6251	ug/L	88
7) 1-Butanol	10.07	56	21640	476.7773	ug/L	91
8) Cyclohexanone	15.36	55	191378	245.5507	ug/L	95
9) 2-Nitropropane	11.54	43	277273	256.2558	ug/L	85
10) Ethyl Acetate	9.03	43	962378	277.1043	ug/L #	93
11) Methyl methacrylate	11.22	41	1142167	304.9426	ug/L	88

(#) = qualifier out of range (m) = manual integration
11M08240.D A9FOOWT.M Tue Jun 16 09:44:01 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08240.D Vial: 7
Acq On : 14 Jun 2015 12:38 Operator: TMB /DLW
Sample : WG527475-07 300ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 9:44 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration

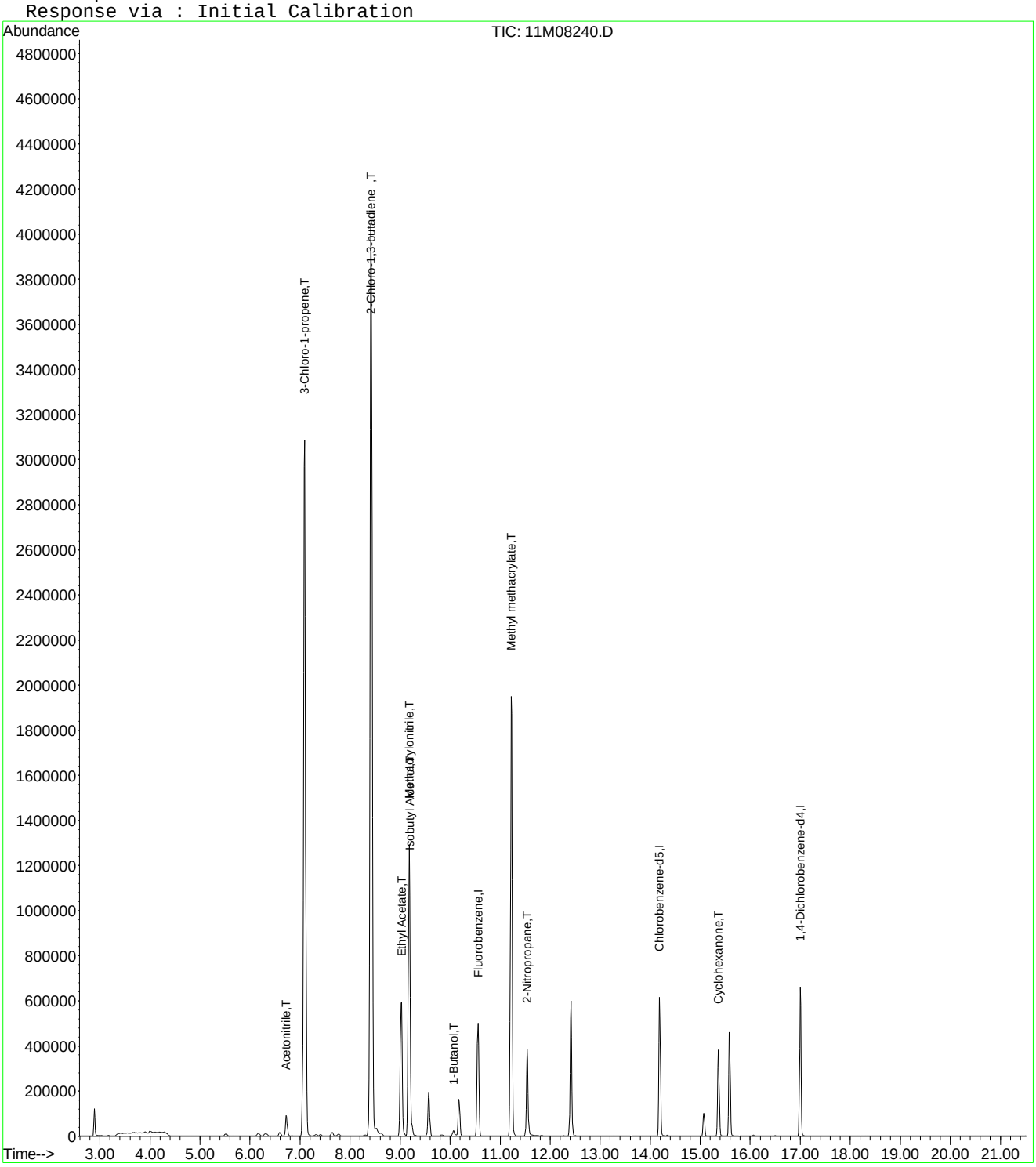

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08240.D Vial: 7
Acq On : 14 Jun 2015 12:38 Operator: TMB /DLW
Sample : WG527475-07 300ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28:12 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	590021	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	427539	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	226251	25.00 ug/L	-0.03

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M08240.D A9FOOWT.M Thu Aug 20 11:28:12 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08240.D Vial: 7
Acq On : 14 Jun 2015 12:38 Operator: TMB /DLW
Sample : WG527475-07 300ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration

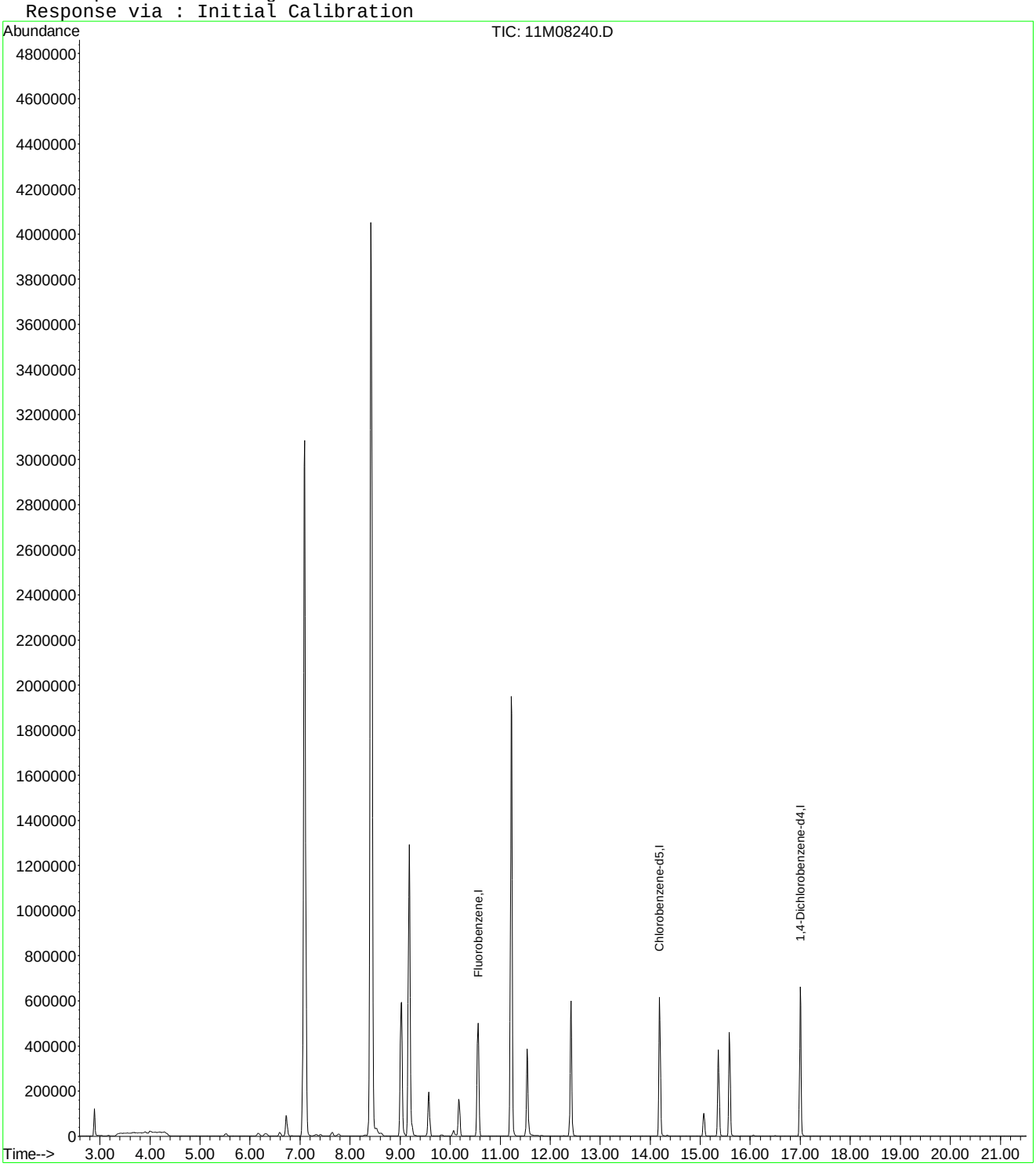

11M08240.D A9FOOWT.M Thu Aug 20 11:28:13 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08240.D Vial: 7
Acq On : 14 Jun 2015 12:38 Operator: TMB /DLW
Sample : WG527475-07 300ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43:52 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	590021	25.00 ug/L	0.00
12) Chlorobenzene-d5	14.19	117	427539	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.00	152	226251	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	124797	275.7754 ug/L	99
3) 3-Chloro-1-propene	7.09	41	2683921	302.2388 ug/L	83
4) 2-Chloro-1,3-butadiene	8.42	53	3409409	319.8280 ug/L	95
5) Methacrylonitrile	9.18	41	809195	294.8276 ug/L	82
6) Isobutyl Alcohol	9.19	43	83440	590.7851 ug/L	88
7) 1-Butanol	10.07	56	21640	289.6496 ug/L	91
8) Cyclohexanone	15.36	55	191378	282.0071 ug/L	95
9) 2-Nitropropane	11.54	43	277273	287.7263 ug/L	85
10) Ethyl Acetate	9.03	43	962378	295.6400 ug/L #	93
11) Methyl methacrylate	11.22	41	1142167	301.7522 ug/L	88

(#) = qualifier out of range (m) = manual integration
11M08240.D A9FOOWT.M Thu Aug 20 11:43:53 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08240.D Vial: 7
Acq On : 14 Jun 2015 12:38 Operator: TMB /DLW
Sample : WG527475-07 300ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration

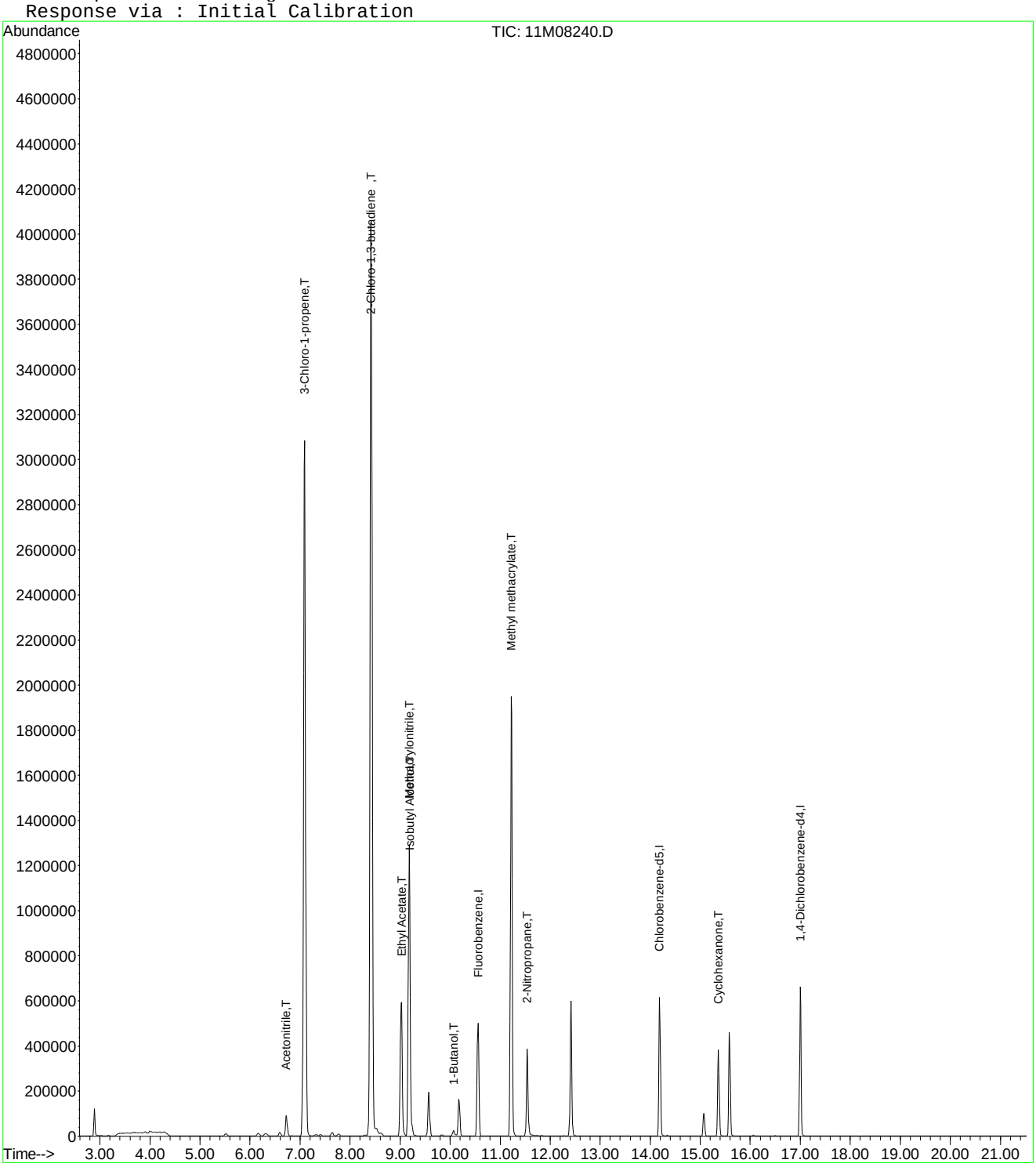

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08241.D Vial: 8
Acq On : 14 Jun 2015 13:10 Operator: TMB /DLW
Sample : WG527475-08 400ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 13:32:12 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	602921	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.19	117	438769	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.00	152	234608	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	157490	23.5320 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.12%		
43) 1,2-Dichloroethane-d4	10.17	65	142445	19.5958 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 78.40%#		
57) Toluene-d8	12.42	98	529319	28.5630 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 114.24%#		
78) p-Bromofluorobenzene	15.58	95	184124	24.5264 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.12%		

Target Compounds

					Qvalue
3) Chloromethane	3.67	50	5951	0.5682 ug/L	86
4) Vinyl Chloride	3.90	62	1145	0.1556 ug/L #	42
6) Bromomethane	4.81	94	1631	0.4699 ug/L #	56
11) Acrolein	6.25	56	3616	3.5382 ug/L #	49
13) Acetone	6.30	43	20681	11.6499 ug/L	94
18) Methyl acetate	7.02	43	2450	0.3954 ug/L #	67
19) Methylene Chloride	7.28	84	869	0.1218 ug/L #	49
20) Carbon Disulfide	7.31	76	4210	0.2052 ug/L	97
24) n-Hexane	7.77	57	9223	0.8376 ug/L #	93
29) 2-Butanone	8.83	43	2572	0.8910 ug/L #	77
31) 2,2-Dichloropropane	9.03	77	1535	0.1632 ug/L #	41
39) Cyclohexane	9.83	56	5053	0.3367 ug/L	91
71) m-,p-Xylene	14.34	106	2254	0.2119 ug/L #	36

(#) = qualifier out of range (m) = manual integration
11M08241.D 8260WTR.M Sun Jun 14 13:32:14 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08241.D Vial: 8
Acq On : 14 Jun 2015 13:10 Operator: TMB /DLW
Sample : WG527475-08 400ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 13:32 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration

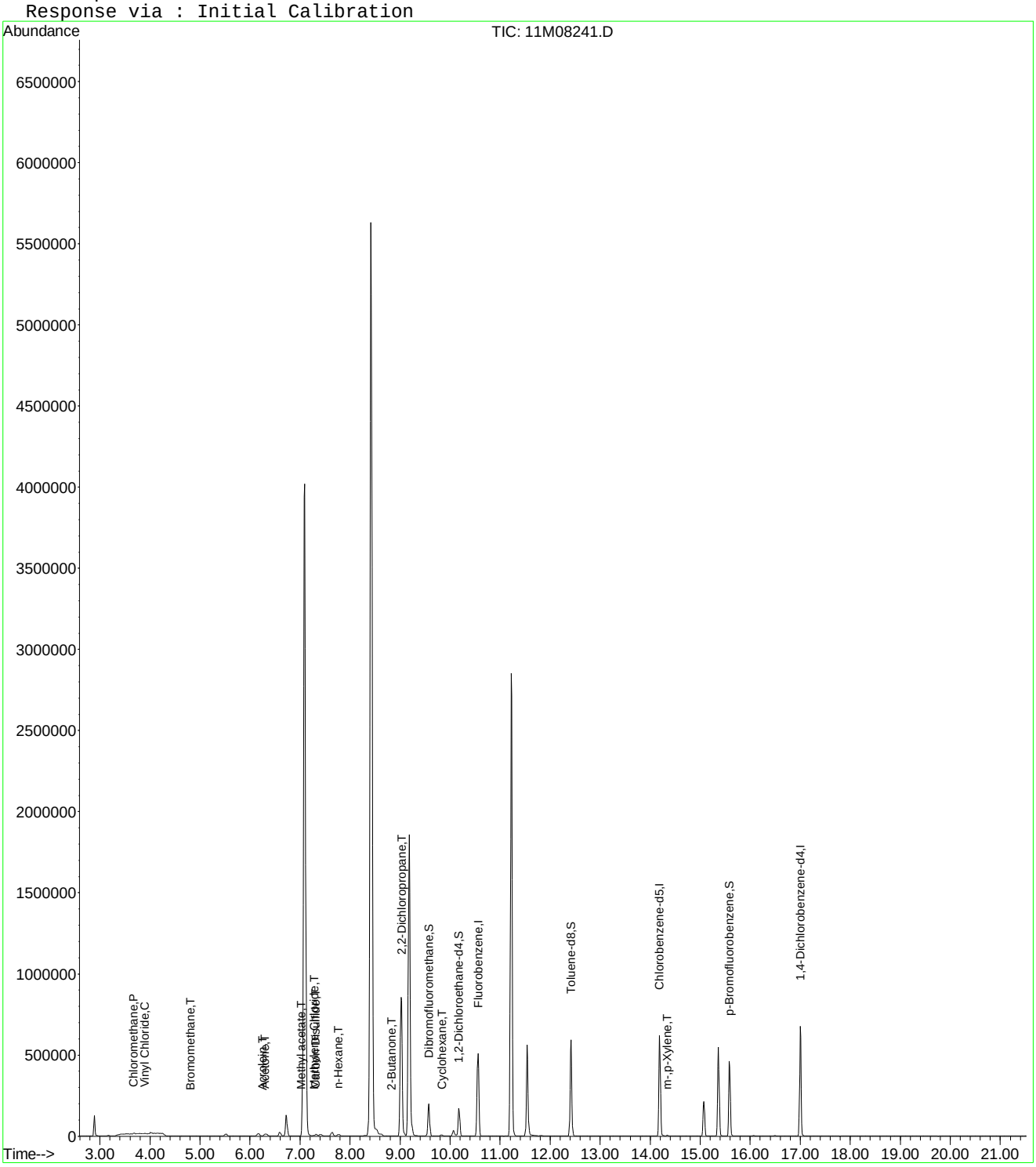

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08241.D Vial: 8
Acq On : 14 Jun 2015 13:10 Operator: TMB /DLW
Sample : WG527475-08 400ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 09:44:01 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.56	96	602921	25.00	ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	438769	25.00	ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	234608	25.00	ug/L	-0.03

Target Compounds						Qvalue
2) Acetonitrile	6.72	41	173440	360.1555	ug/L	100
3) 3-Chloro-1-propene	7.09	41	3550959	339.1014	ug/L	82
4) 2-Chloro-1,3-butadiene	8.42	53	4600620	428.8513	ug/L	94
5) Methacrylonitrile	9.18	41	1153886	399.8518	ug/L	82
6) Isobutyl Alcohol	9.19	43	123004	1111.7192	ug/L	89
7) 1-Butanol	10.07	56	32355	697.6005	ug/L #	86
8) Cyclohexanone	15.36	55	274055	344.1074	ug/L	95
9) 2-Nitropropane	11.54	43	405951	367.1528	ug/L	87
10) Ethyl Acetate	9.02	43	1363919	384.3202	ug/L #	93
11) Methyl methacrylate	11.22	41	1637406	427.8110	ug/L	87

(#) = qualifier out of range (m) = manual integration
11M08241.D A9FOOWT.M Tue Jun 16 09:44:02 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08241.D Vial: 8
Acq On : 14 Jun 2015 13:10 Operator: TMB /DLW
Sample : WG527475-08 400ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 9:44 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration

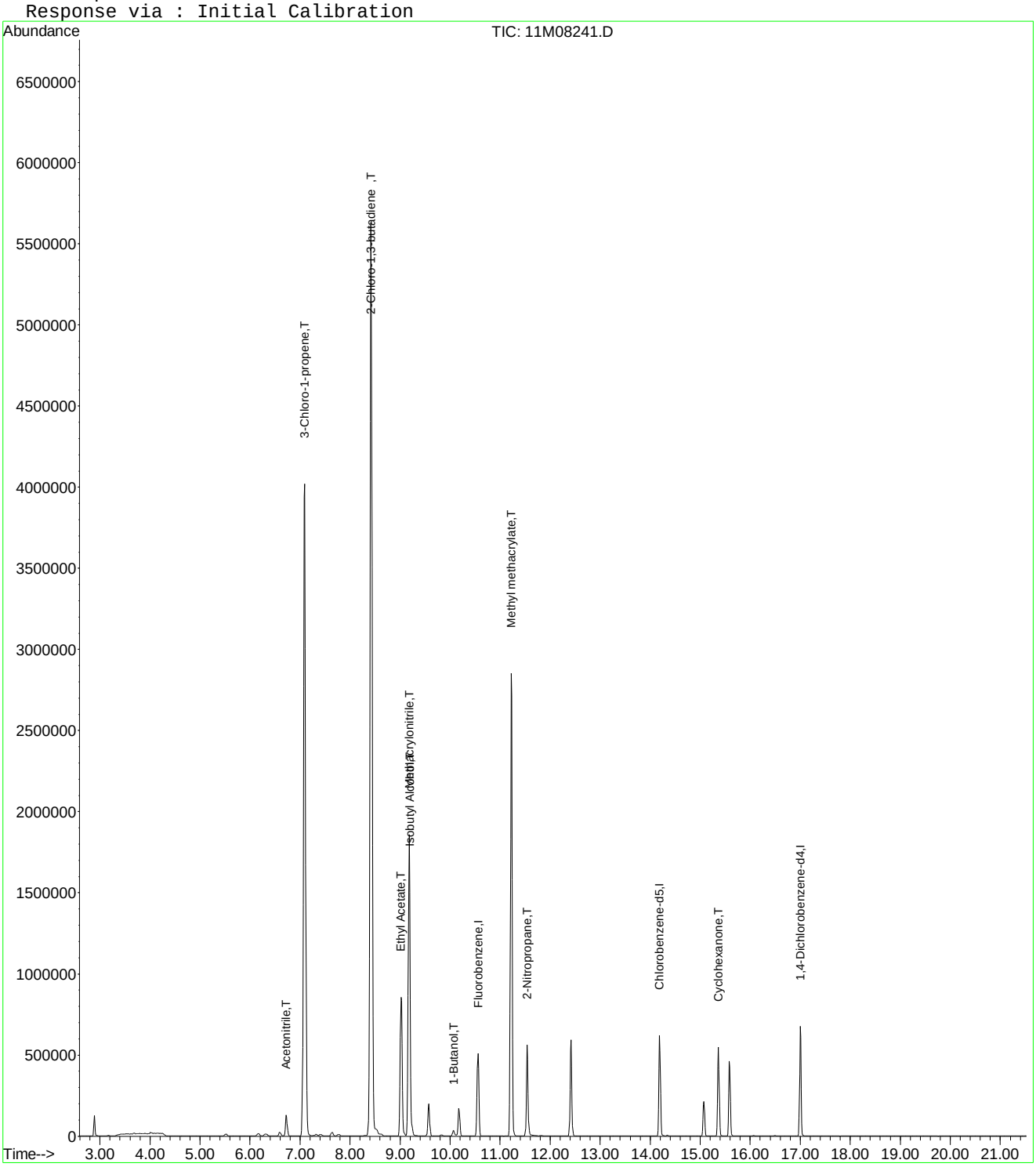

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08241.D Vial: 8
Acq On : 14 Jun 2015 13:10 Operator: TMB /DLW
Sample : WG527475-08 400ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28:13 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	602921	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	438769	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	234608	25.00 ug/L	-0.03

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M08241.D A9FOOWT.M Thu Aug 20 11:28:14 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08241.D Vial: 8
Acq On : 14 Jun 2015 13:10 Operator: TMB /DLW
Sample : WG527475-08 400ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration

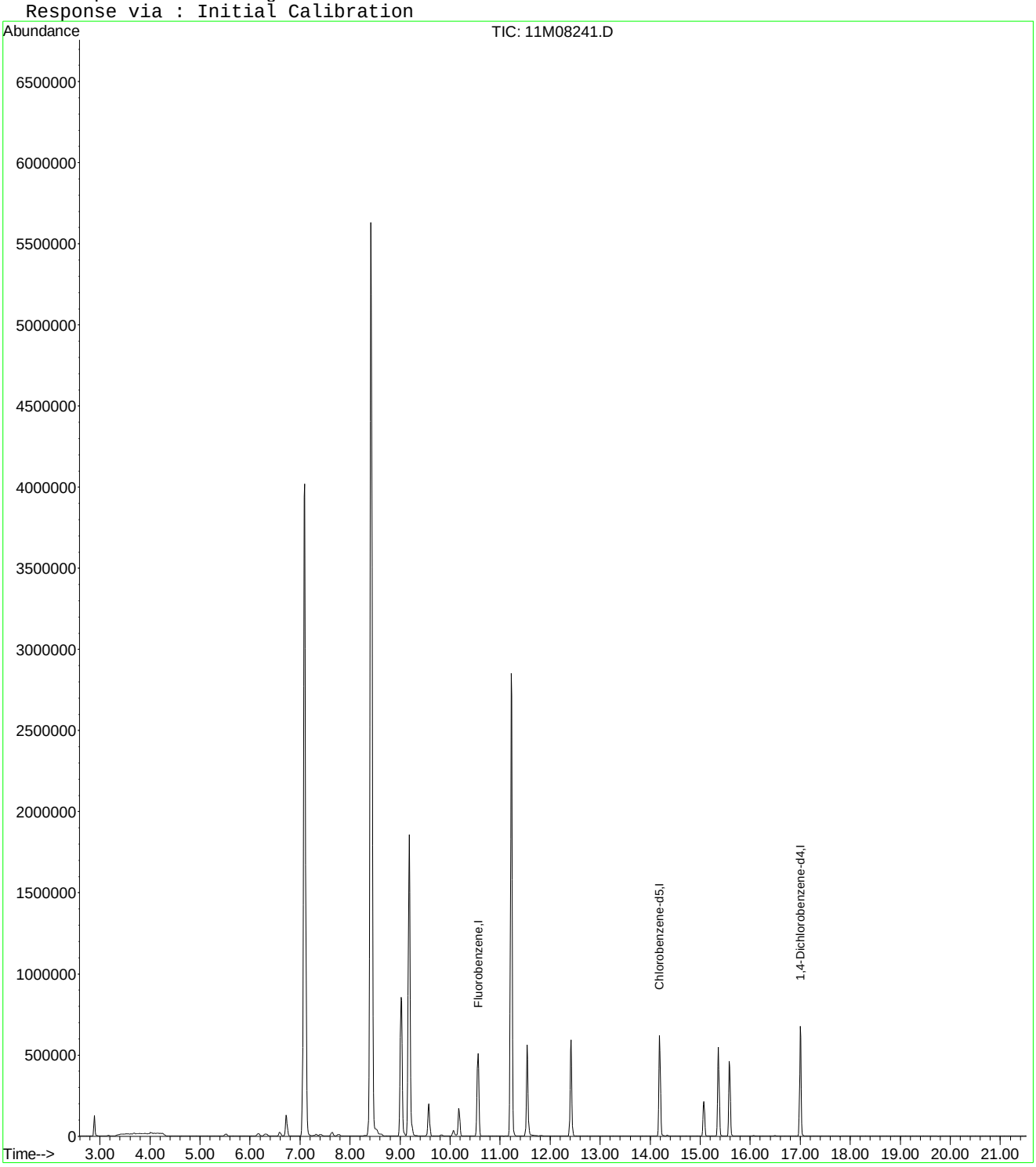

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08241.D Vial: 8
Acq On : 14 Jun 2015 13:10 Operator: TMB /DLW
Sample : WG527475-08 400ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43:53 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	602921	25.00 ug/L	0.00
12) Chlorobenzene-d5	14.19	117	438769	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.00	152	234608	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	173440	375.0660 ug/L	100
3) 3-Chloro-1-propene	7.09	41	3550959	391.3211 ug/L	82
4) 2-Chloro-1,3-butadiene	8.42	53	4600620	422.3386 ug/L	94
5) Methacrylonitrile	9.18	41	1153886	411.4196 ug/L	82
6) Isobutyl Alcohol	9.19	43	123004	852.2785 ug/L	89
7) 1-Butanol	10.07	56	32355	423.8032 ug/L #	86
8) Cyclohexanone	15.36	55	274055	395.1962 ug/L	95
9) 2-Nitropropane	11.54	43	405951	398.1514 ug/L	87
10) Ethyl Acetate	9.02	43	1363919	410.0276 ug/L #	93
11) Methyl methacrylate	11.22	41	1637406	423.3352 ug/L	87

(#) = qualifier out of range (m) = manual integration
11M08241.D A9FOOWT.M Thu Aug 20 11:43:54 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08241.D Vial: 8
Acq On : 14 Jun 2015 13:10 Operator: TMB /DLW
Sample : WG527475-08 400ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration

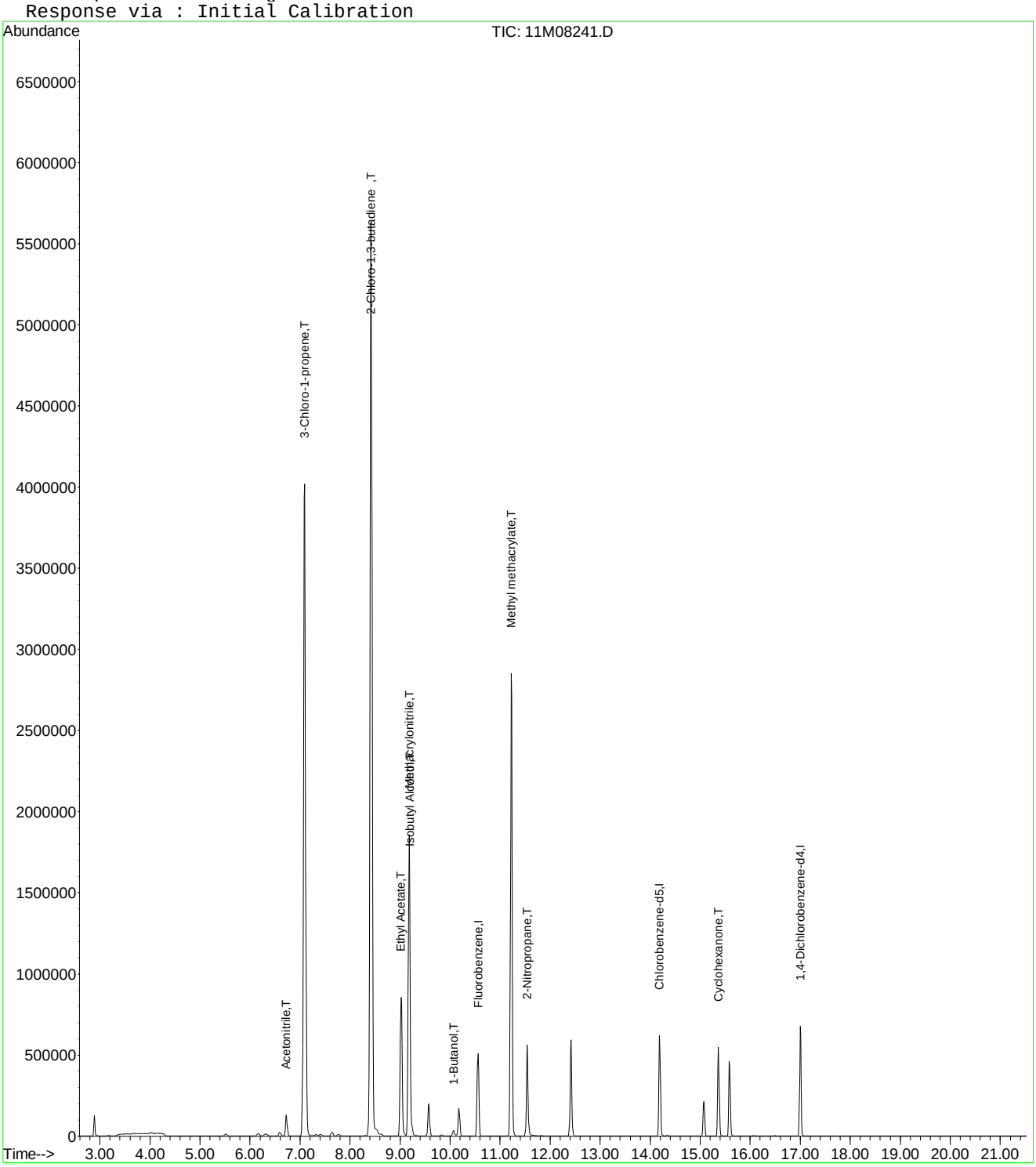

11M08241.D A9FOOWT.M Thu Aug 20 11:43:54 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08242.D Vial: 9
Acq On : 14 Jun 2015 13:42 Operator: TMB /DLW
Sample : WG527475-09 500ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 14:04:11 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	597347	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.19	117	436979	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.00	152	232858	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	155779	23.4935 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.96%		
43) 1,2-Dichloroethane-d4	10.17	65	141894	19.7022 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 78.80%#		
57) Toluene-d8	12.42	98	528602	28.6412 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 114.56%#		
78) p-Bromofluorobenzene	15.58	95	185769	24.9315 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.72%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.22	85	1211	0.1346 ug/L #	65
3) Chloromethane	3.68	50	8612	0.8299 ug/L	97
4) Vinyl Chloride	3.90	62	1110	0.1522 ug/L #	42
6) Bromomethane	4.80	94	872	0.2536 ug/L	68
11) Acrolein	6.25	56	4513	4.4571 ug/L	75
13) Acetone	6.30	43	20816	11.8354 ug/L	98
18) Methyl acetate	7.02	43	2826	0.4604 ug/L #	67
19) Methylene Chloride	7.26	84	1446	0.2045 ug/L	95
20) Carbon Disulfide	7.31	76	5502	0.2707 ug/L #	81
24) n-Hexane	7.77	57	12135	1.1123 ug/L #	96
29) 2-Butanone	8.83	43	2711	0.9479 ug/L #	77
30) Propionitrile	9.00	54	625	0.6931 ug/L #	1
31) 2,2-Dichloropropane	9.03	77	1917	0.2057 ug/L #	41
39) Cyclohexane	9.84	56	6427	0.4323 ug/L	96
71) m-,p-Xylene	14.34	106	3239	0.3057 ug/L	58

(#) = qualifier out of range (m) = manual integration
11M08242.D 8260WTR.M Sun Jun 14 14:04:12 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08242.D Vial: 9
Acq On : 14 Jun 2015 13:42 Operator: TMB /DLW
Sample : WG527475-09 500ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 14:04 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration

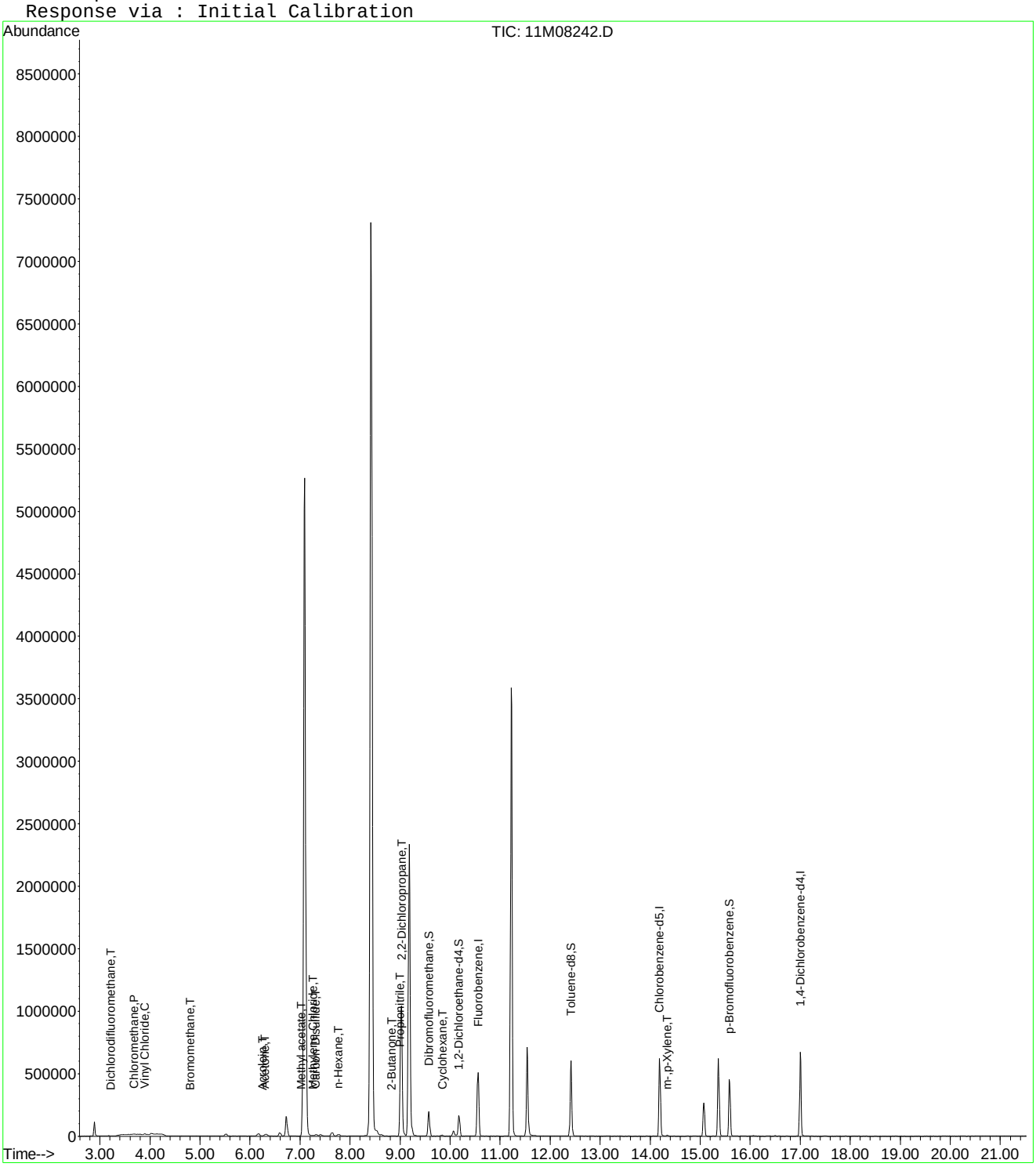

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08242.D Vial: 9
Acq On : 14 Jun 2015 13:42 Operator: TMB /DLW
Sample : WG527475-09 500ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 09:44:02 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.56	96	597347	25.00	ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	436979	25.00	ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	232858	25.00	ug/L	-0.03

Target Compounds						Qvalue
2) Acetonitrile	6.72	41	213542	447.5667	ug/L	100
3) 3-Chloro-1-propene	7.09	41	4596340	443.0265	ug/L	80
4) 2-Chloro-1,3-butadiene	8.42	53	5927514	557.6949	ug/L	92
5) Methacrylonitrile	9.18	41	1420105	496.6956	ug/L	79
6) Isobutyl Alcohol	9.19	43	141621	1291.9249	ug/L	95
7) 1-Butanol	10.07	56	37640	819.1222	ug/L	86
8) Cyclohexanone	15.36	55	308601	391.0996	ug/L	95
9) 2-Nitropropane	11.54	43	527973	481.9685	ug/L	88
10) Ethyl Acetate	9.03	43	1662142	472.7227	ug/L #	93
11) Methyl methacrylate	11.22	41	2052004	541.1374	ug/L	86

(#) = qualifier out of range (m) = manual integration
11M08242.D A9FOOWT.M Tue Jun 16 09:44:03 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08242.D Vial: 9
Acq On : 14 Jun 2015 13:42 Operator: TMB /DLW
Sample : WG527475-09 500ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 9:44 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Fri Jun 05 12:09:09 2015
Response via : Initial Calibration

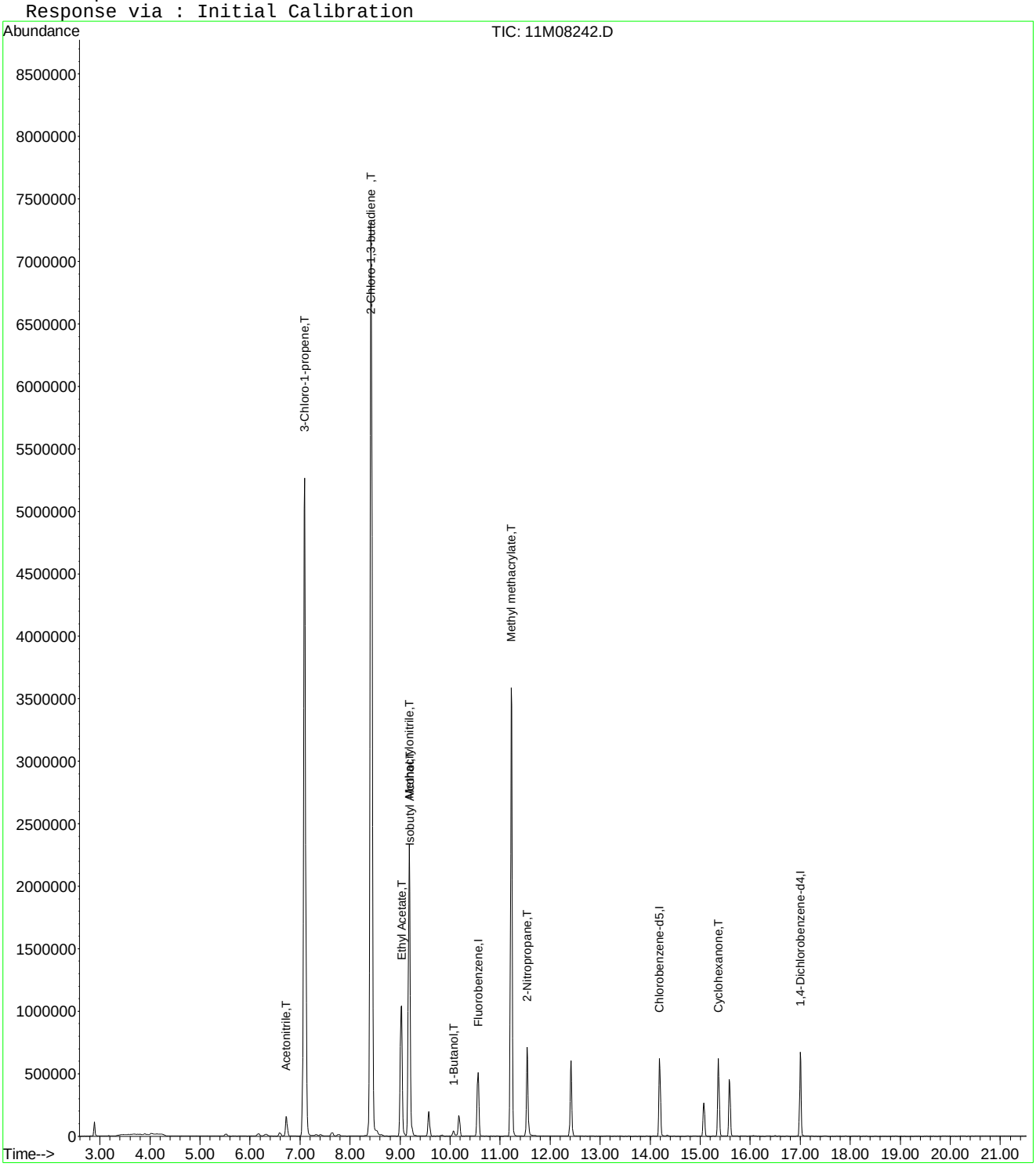

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08242.D Vial: 9
Acq On : 14 Jun 2015 13:42 Operator: TMB /DLW
Sample : WG527475-09 500ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28:15 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.56	96	597347	25.00	ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	436979	25.00	ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.00	152	232858	25.00	ug/L	-0.03

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M08242.D A9FOOWT.M Thu Aug 20 11:28:15 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08242.D Vial: 9
Acq On : 14 Jun 2015 13:42 Operator: TMB /DLW
Sample : WG527475-09 500ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration

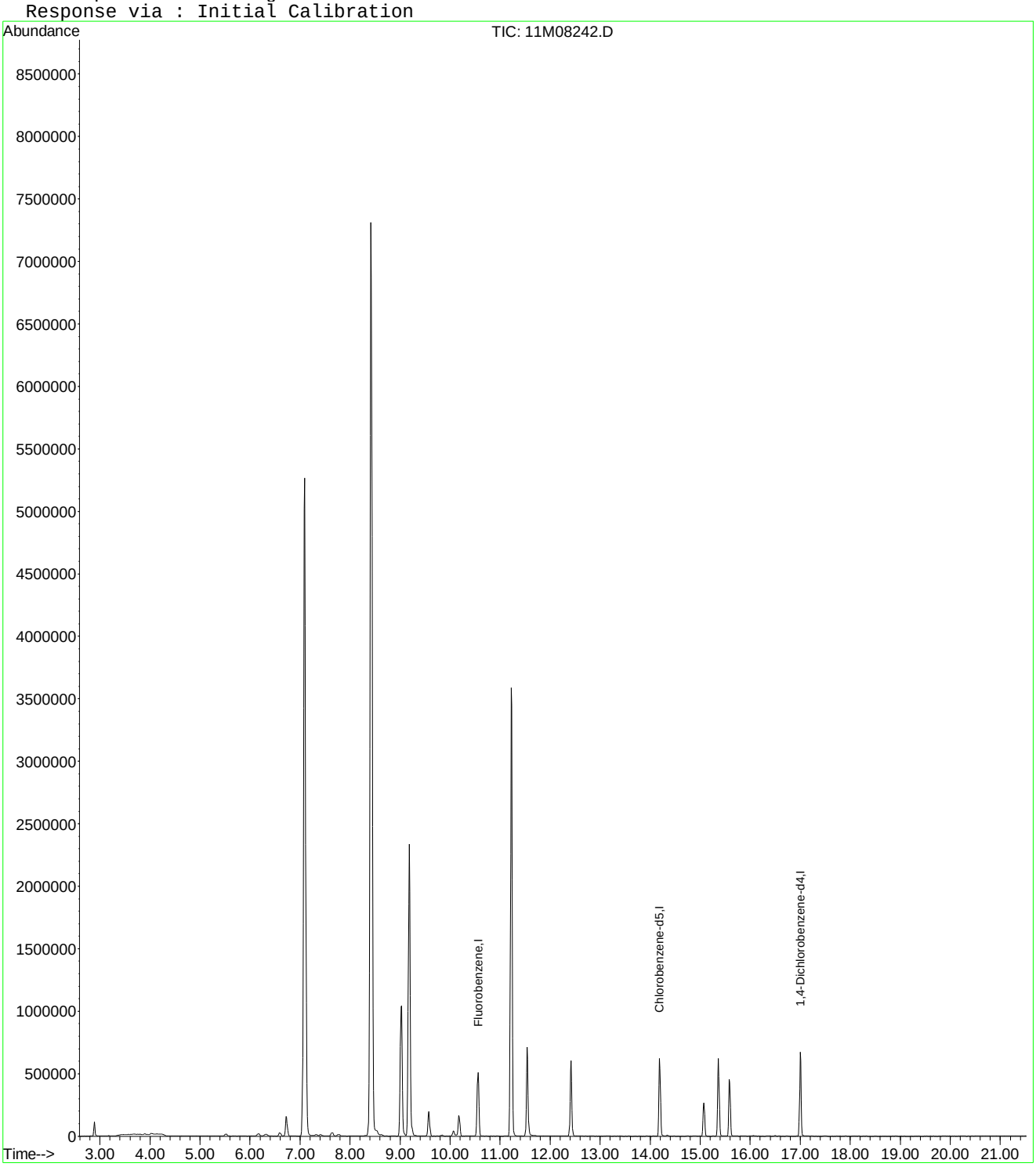

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08242.D Vial: 9
Acq On : 14 Jun 2015 13:42 Operator: TMB /DLW
Sample : WG527475-09 500ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43:54 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.56	96	597347	25.00	ug/L	0.00
12) Chlorobenzene-d5	14.19	117	436979	25.00	ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.00	152	232858	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.72	41	213542	466.0961	ug/L	100
3) 3-Chloro-1-propene	7.09	41	4596340	511.2501	ug/L	80
4) 2-Chloro-1,3-butadiene	8.42	53	5927514	549.2255	ug/L	92
5) Methacrylonitrile	9.18	41	1420105	511.0651	ug/L	79
6) Isobutyl Alcohol	9.19	43	141574	990.1011	ug/L	95
7) 1-Butanol	10.07	56	37640	497.6295	ug/L	86
8) Cyclohexanone	15.36	55	308601	449.1652	ug/L	95
9) 2-Nitropropane	11.54	43	527973	512.4786	ug/L	88
10) Ethyl Acetate	9.03	43	1662142	504.3435	ug/L #	93
11) Methyl methacrylate	11.22	41	2052004	535.4759	ug/L	86

(#) = qualifier out of range (m) = manual integration
11M08242.D A9FOOWT.M Thu Aug 20 11:43:55 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08242.D Vial: 9
Acq On : 14 Jun 2015 13:42 Operator: TMB /DLW
Sample : WG527475-09 500ug/L STD8260 Inst : hpms11
Misc : 1,1 STD70883 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration

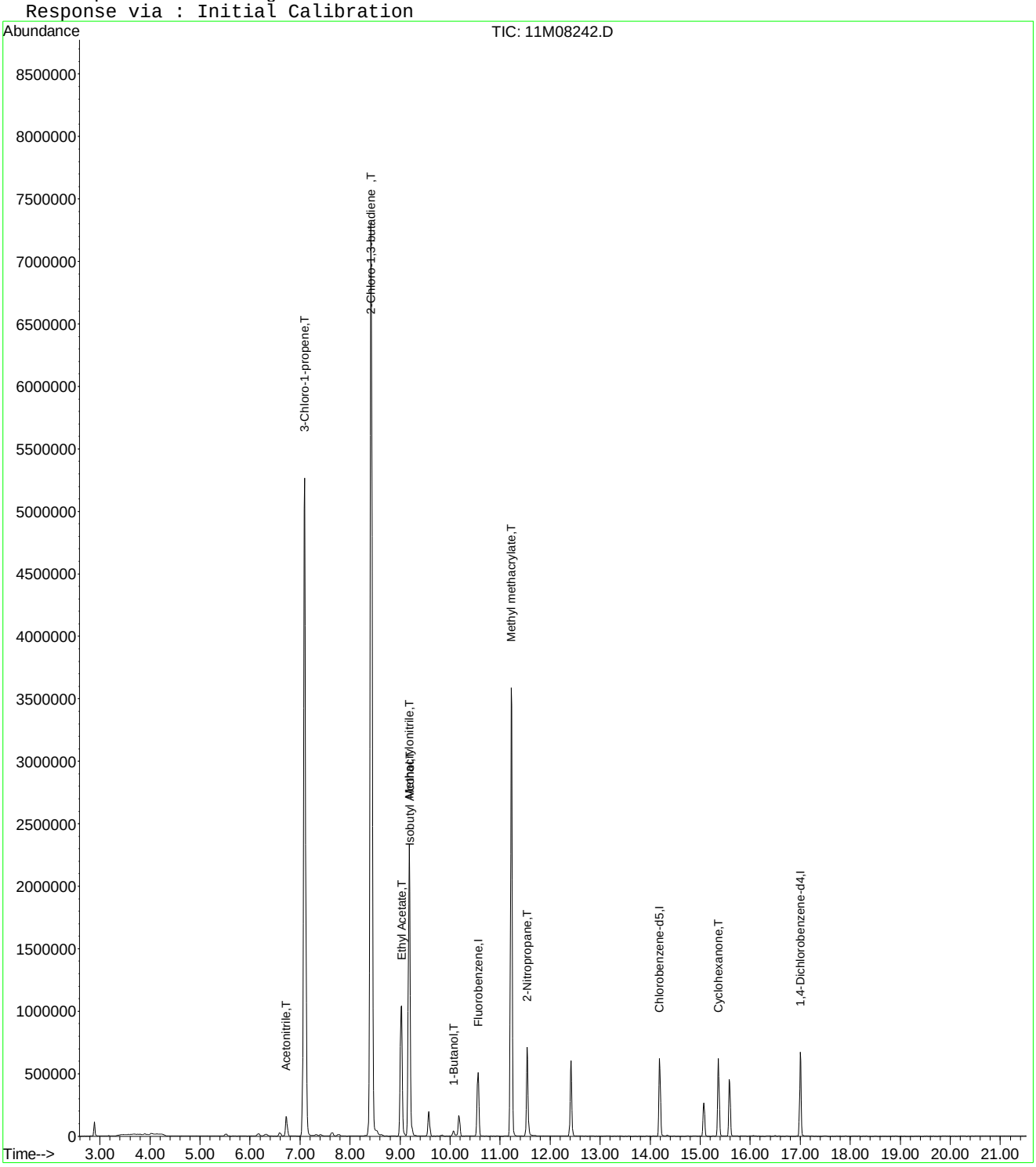

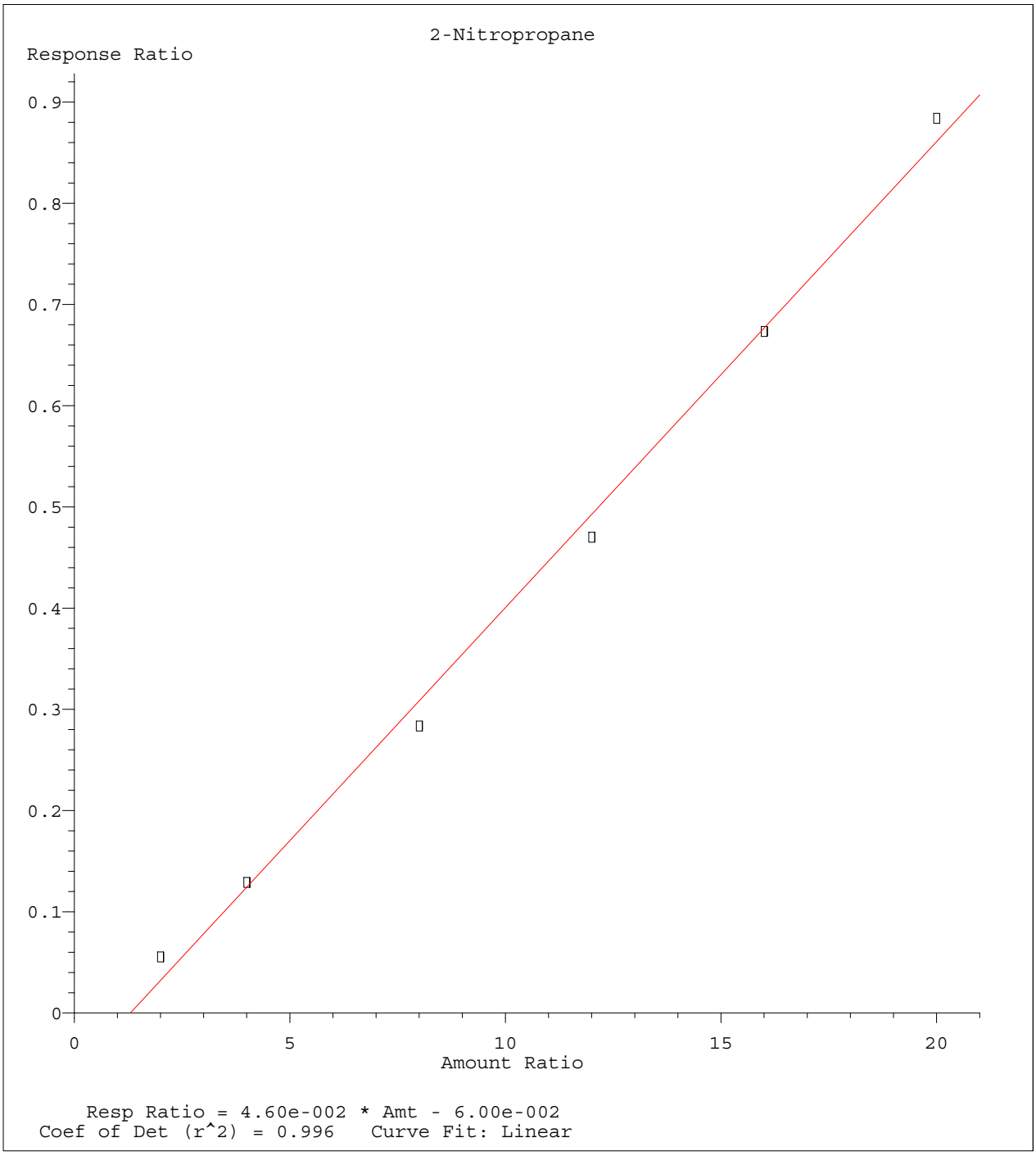

Method Name: C:\MSDCHEM\1\METHODS\A9FOOWT.M
Calibration Table Last Updated: Thu Aug 20 11:44:55 2015

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08245.D Vial: 12
Acq On : 14 Jun 2015 15:18 Operator: TMB /DLW
Sample : WG527475-10 100ug/L ALT STD8260 Inst : hpms11
Misc : 1,1 STD70514 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 15:40:10 2015 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	543635	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.19	117	396503	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.01	152	206025	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.57	111	140300	23.2496 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.00%		
43) 1,2-Dichloroethane-d4	10.17	65	129308	19.7285 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 78.92%#		
57) Toluene-d8	12.42	98	479748	28.6477 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 114.60%#		
78) p-Bromofluorobenzene	15.58	95	164471	24.9480 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.80%		

Target Compounds					Qvalue
3) Chloromethane	3.67	50	1708	0.1809 ug/L #	64
5) 1,3-Butadiene	3.96	54	337713	68.0129 ug/L	95
9) Diethyl ether	5.96	59	421860	68.0021 ug/L	82
13) Acetone	6.30	43	8473	5.2935 ug/L	79
29) 2-Butanone	8.83	43	2399	0.9217 ug/L #	77
30) Propionitrile	8.93	54	45537	55.4849 ug/L	96
49) 1,4-Dioxane	11.51	88	6417	143.4316 ug/L	93
77) 1,1,2,2-Tetrachloroethane	15.38	83	1792	0.4132 ug/L #	17

(#) = qualifier out of range (m) = manual integration
11M08245.D 8260WTR.M Sun Jun 14 15:40:11 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061415\11M08245.D Vial: 12
Acq On : 14 Jun 2015 15:18 Operator: TMB /DLW
Sample : WG527475-10 100ug/L ALT STD8260 Inst : hpms11
Misc : 1,1 STD70514 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 14 15:40 2015 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
Last Update : Sat Jun 13 12:38:34 2015
Response via : Initial Calibration

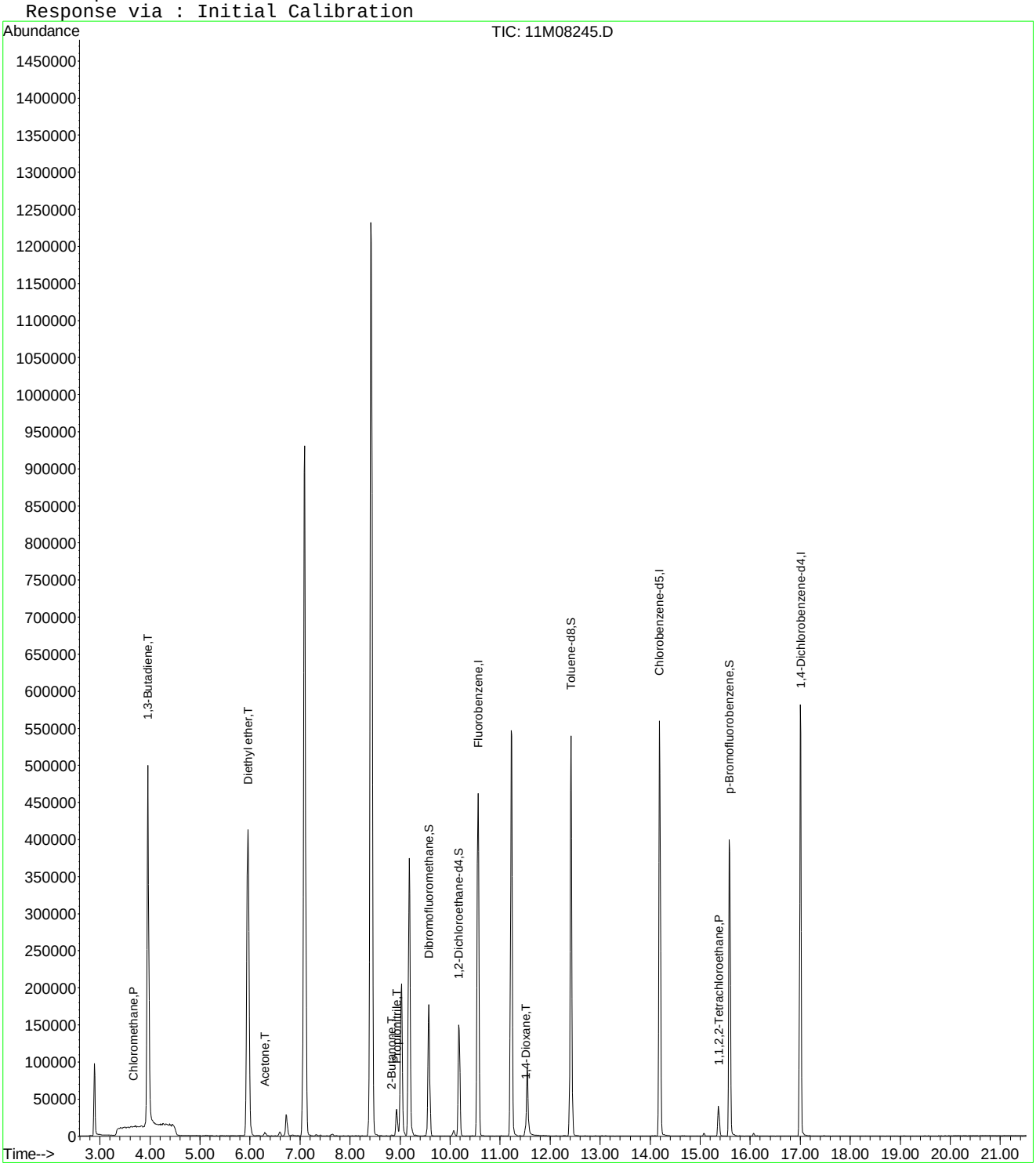

11M08245.D 8260WTR.M Sun Jun 14 15:40:11 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08245.D Vial: 12
Acq On : 14 Jun 2015 15:18 Operator: TMB /DLW
Sample : WG527475-10 100ug/L ALT STD8260 Inst : hpms11
Misc : 1,1 STD70514 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28:16 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	543635	25.00 ug/L	-0.03
12) Chlorobenzene-d5	14.19	117	396503	25.00 ug/L	-0.03
13) 1,4-Dichlorobenzene-d4	17.01	152	206025	25.00 ug/L	-0.02

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
11M08245.D A9FOOWT.M Thu Aug 20 11:28:17 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08245.D Vial: 12
Acq On : 14 Jun 2015 15:18 Operator: TMB /DLW
Sample : WG527475-10 100ug/L ALT STD8260 Inst : hpms11
Misc : 1,1 STD70514 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:28 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:27:18 2015
Response via : Initial Calibration

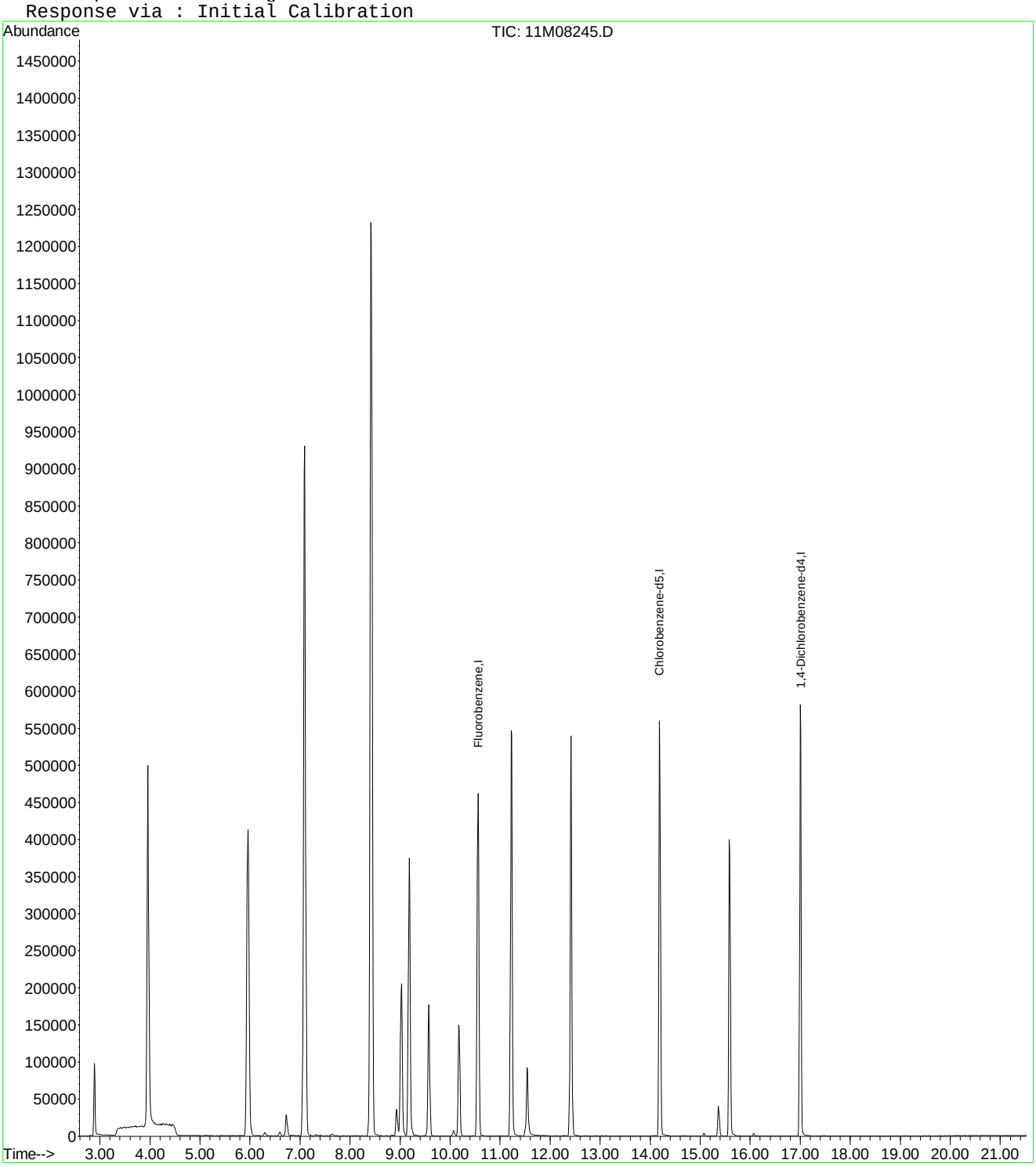

11M08245.D A9FOOWT.M Thu Aug 20 11:28:17 2015 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08245.D Vial: 12
Acq On : 14 Jun 2015 15:18 Operator: TMB /DLW
Sample : WG527475-10 100ug/L ALT STD8260 Inst : hpms11
Misc : 1,1 STD70514 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43:56 2015 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.56	96	543635	25.00 ug/L	0.00
12) Chlorobenzene-d5	14.19	117	396503	25.00 ug/L	0.00
13) 1,4-Dichlorobenzene-d4	17.01	152	206025	25.00 ug/L	0.01

Target Compounds					Qvalue
2) Acetonitrile	6.72	41	38243	91.7199 ug/L	100
3) 3-Chloro-1-propene	7.09	41	808581	98.8244 ug/L	82
4) 2-Chloro-1,3-butadiene	8.42	53	1078924	109.8470 ug/L	94
5) Methacrylonitrile	9.18	41	233249	92.2348 ug/L	79
6) Isobutyl Alcohol	9.19	43	24110	185.2732 ug/L	90
7) 1-Butanol	10.07	56	6038	87.7140 ug/L #	79
8) Cyclohexanone	15.36	55	22693	36.2928 ug/L	98
9) 2-Nitropropane	11.54	43	62961	95.4458 ug/L	82
10) Ethyl Acetate	9.03	43	328836	109.6369 ug/L #	93
11) Methyl methacrylate	11.22	41	327033	93.7719 ug/L	87

(#) = qualifier out of range (m) = manual integration
11M08245.D A9FOOWT.M Thu Aug 20 11:43:56 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061415\11M08245.D Vial: 12
Acq On : 14 Jun 2015 15:18 Operator: TMB /DLW
Sample : WG527475-10 100ug/L ALT STD8260 Inst : hpms11
Misc : 1,1 STD70514 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Aug 20 11:43 2015 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Initial Calibration

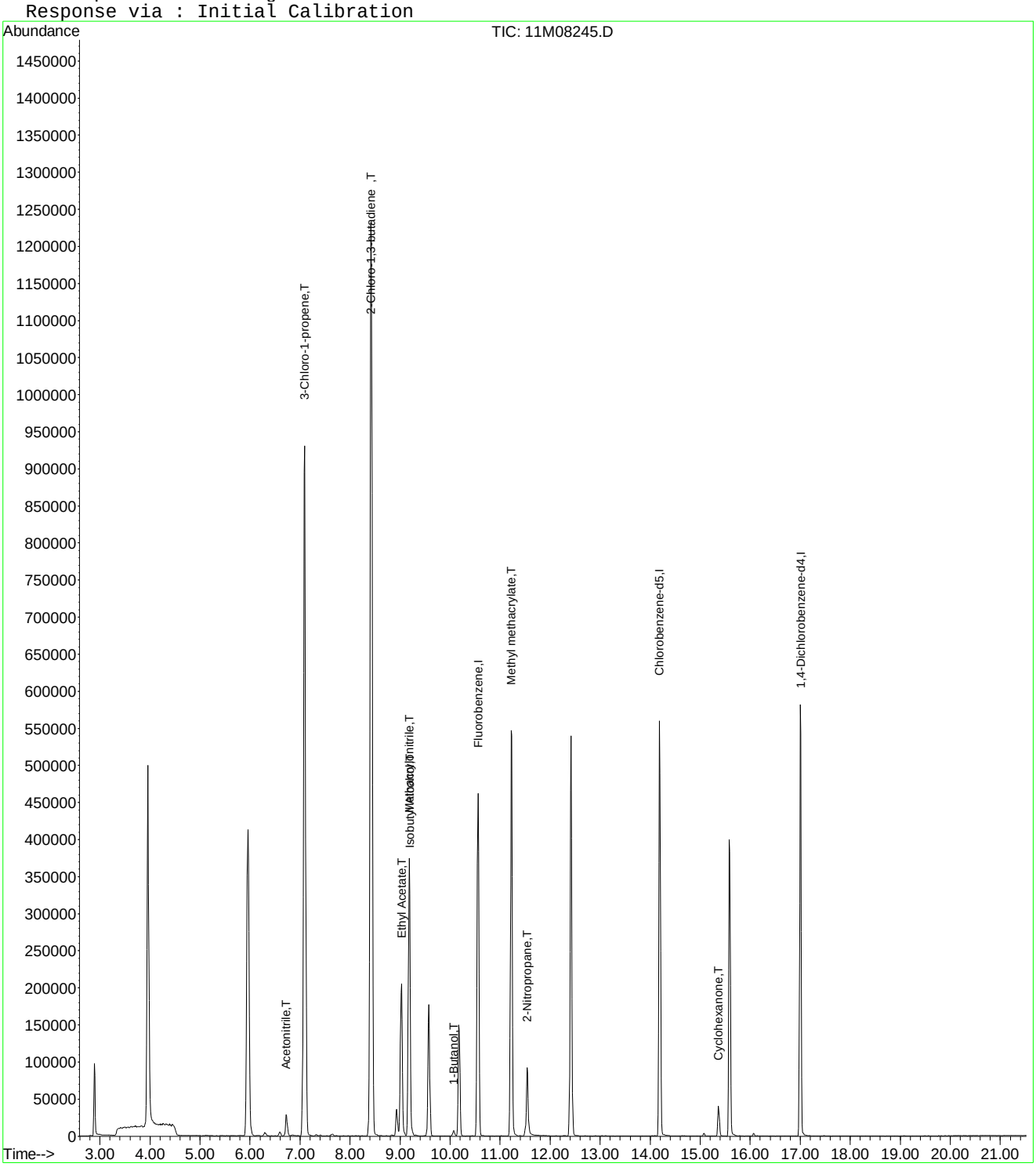

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061415\11M08245.D Vial: 12
Acq On : 14 Jun 2015 15:18 Operator: TMB /DLW
Sample : WG527475-10 100ug/L ALT STD8260 Inst : hpms11
Misc : 1,1 STD70514 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : Appendix IX (SOP:OVL MSV01) Water 061415 HPMS11
Last Update : Thu Aug 20 11:41:47 2015
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	92	0.00
2	T	Acetonitrile	100.0000	91.7199	8.3	92	0.00
3	T	3-Chloro-1-propene	100.0000	98.8244	1.2	90	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	109.8470	-9.8	102	0.00
5	T	Methacrylonitrile	100.0000	92.2348	7.8	86	0.00
6	T	Isobutyl Alcohol	200.0000	185.2732	7.4	83	0.00
7	T	1-Butanol	100.0000	87.7140	12.3	78	0.00
8	T	Cyclohexanone	100.0000	36.2928	63.7	31	0.00
9	T	2-Nitropropane	100.0000	95.4458	4.6	82	0.00
10	T	Ethyl Acetate	100.0000	109.6369	-9.6	99	0.00
11	T	Methyl methacrylate	100.0000	93.7719	6.2	87	0.00
12	I	Chlorobenzene-d5	25.0000	25.0000	0.0	91	0.00
13	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	92	0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M08245.D A9FOOWT.M Thu Aug 20 11:45:26 2015 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:20 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	538041	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	450050	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	251600	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
57) Toluene-d8	12.47	98	210	0.0099 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.04%#	
78) p-Bromofluorobenzene	15.64	95	566	0.0689 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	2475	0.3135 ug/L #	66
3) Chloromethane	3.72	50	4639	0.6471 ug/L	91
4) Vinyl Chloride	3.96	62	1882	0.3288 ug/L #	44
5) 1,3-Butadiene	4.01	54	1564	0.2900 ug/L #	19
6) Bromomethane	4.84	94	1717	0.4723 ug/L	83
7) Chloroethane	5.00	64	616	0.1589 ug/L #	45
8) Trichlorofluoromethane	5.49	101	3531	0.3330 ug/L	97
10) Isoprene	6.04	67	1746	0.2381 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	1344	0.2515 ug/L	96
13) Acetone	6.34	43	2389	1.4850 ug/L #	45
14) 1,1-Dichloroethene	6.56	61	3780	0.3817 ug/L	78
16) Dimethyl Sulfide	6.80	62	762	0.1697 ug/L	78
18) Methyl acetate	7.02	43	24685	4.4975 ug/L #	70
19) Methylene Chloride	7.31	84	1766	0.3184 ug/L	74
20) Carbon Disulfide	7.36	76	5848	0.3373 ug/L	92
22) Methyl Tert Butyl Ether	7.54	73	3068	0.2131 ug/L #	48
23) trans-1,2-Dichloroethene	7.75	96	1449	0.2556 ug/L	91
24) n-Hexane	7.82	57	3745	0.4031 ug/L #	73
26) Vinyl Acetate	8.30	43	2410	0.6995 ug/L #	78
27) 1,1-Dichloroethane	8.35	63	3312	0.2969 ug/L #	76
31) 2,2-Dichloropropane	9.10	77	2449	0.3040 ug/L #	42
32) cis-1,2-Dichloroethene	9.15	96	1729	0.2748 ug/L	96
33) Chloroform	9.35	83	3792	0.3639 ug/L	92
35) Bromochloromethane	9.56	130	948	0.2355 ug/L #	68
38) 1,1,1-Trichloroethane	9.85	97	3449	0.3423 ug/L #	79
39) Cyclohexane	9.88	56	3639	0.2986 ug/L #	84
40) 1,1-Dichloropropene	10.04	75	2365	0.3106 ug/L #	53
41) Carbon Tetrachloride	10.17	117	2613	0.2748 ug/L	87
44) 1,2-Dichloroethane	10.35	62	2493	0.2788 ug/L #	73
45) Benzene	10.38	78	7133	0.3275 ug/L	99
46) Trichloroethene	11.09	130	1973	0.2780 ug/L	93
47) Methylcyclohexane	11.17	83	2570	0.2986 ug/L	84
48) 1,2-Dichloropropane	11.29	63	1665	0.2692 ug/L	87
50) Bromodichloromethane	11.57	83	2418	0.2950 ug/L #	82
51) Dibromomethane	11.65	93	756	0.2331 ug/L	88
54) cis-1,3-Dichloropropene	12.17	75	1869	0.2166 ug/L #	82
55) Dimethyl Disulfide	12.42	79	1028	0.1910 ug/L	95
58) Toluene	12.57	91	7355	0.3156 ug/L	91
59) Ethyl Methacrylate	12.64	69	1041	0.1887 ug/L	88
60) trans-1,3-Dichloropropene	12.72	75	1951	0.2556 ug/L #	51

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:20 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
61) 1,1,2-Trichloroethane	12.92	97	1087	0.2492 ug/L	87
62) 2-Hexanone	12.86	43	687	0.1910 ug/L #	29
63) 1,3-Dichloropropane	13.21	76	1673	0.2309 ug/L	94
64) Tetrachloroethene	13.34	164	1703	0.3238 ug/L	94
65) Dibromochloromethane	13.59	129	1515	0.2406 ug/L	92
66) 1,2-Dibromoethane	13.82	107	966	0.2181 ug/L	98
67) 1-Chlorohexane	13.89	91	2128	0.2784 ug/L	97
68) Chlorobenzene	14.29	112	5248	0.3062 ug/L	99
69) 1,1,1,2-Tetrachloroethane	14.32	131	2025	0.3082 ug/L	98
70) Ethylbenzene	14.31	106	2602	0.2992 ug/L	88
71) m-,p-Xylene	14.40	106	6296	0.6083 ug/L	82
72) o-Xylene	14.92	106	3032	0.2937 ug/L	95
73) Styrene	14.95	104	4953	0.2828 ug/L	95
75) Isopropylbenzene	15.31	105	7848	0.3006 ug/L	93
77) 1,1,2,2-Tetrachloroethane	15.52	83	1145	0.2759 ug/L	68
81) n-Propylbenzene	15.79	91	9421	0.3332 ug/L	94
82) Bromobenzene	15.92	156	2002	0.2551 ug/L	66
83) 1,3,5-Trimethylbenzene	15.95	105	6742	0.3138 ug/L	91
84) 2-Chlorotoluene	16.05	91	6735	0.3228 ug/L	96
85) 4-Chlorotoluene	16.09	91	6023	0.3518 ug/L	99
86) a-Methylstyrene	16.34	118	2850	0.2387 ug/L	95
87) tert-Butylbenzene	16.39	134	1197	0.2539 ug/L	64
88) 1,2,4-Trimethylbenzene	16.44	105	6992	0.3180 ug/L	88
89) sec-Butylbenzene	16.65	105	8335	0.3278 ug/L	97
90) p-Isopropyltoluene	16.79	119	7094	0.3065 ug/L	96
91) 1,3-Dichlorobenzene	16.98	146	4505	0.3090 ug/L	96
92) 1,4-Dichlorobenzene	17.10	146	4475	0.3006 ug/L #	1
93) n-Butylbenzene	17.28	91	7076	0.3396 ug/L #	93
94) 1,2-Dichlorobenzene	17.56	146	4016	0.2922 ug/L	100
96) 1,2,4-Trichlorobenzene	19.55	180	2964	0.2902 ug/L	99
97) Hexachlorobutadiene	19.69	225	1160	0.2796 ug/L #	71
98) Naphthalene	19.90	128	4679	0.2394 ug/L #	93
99) 1,2,3-Trichlorobenzene	20.19	180	2578	0.2696 ug/L	87

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration

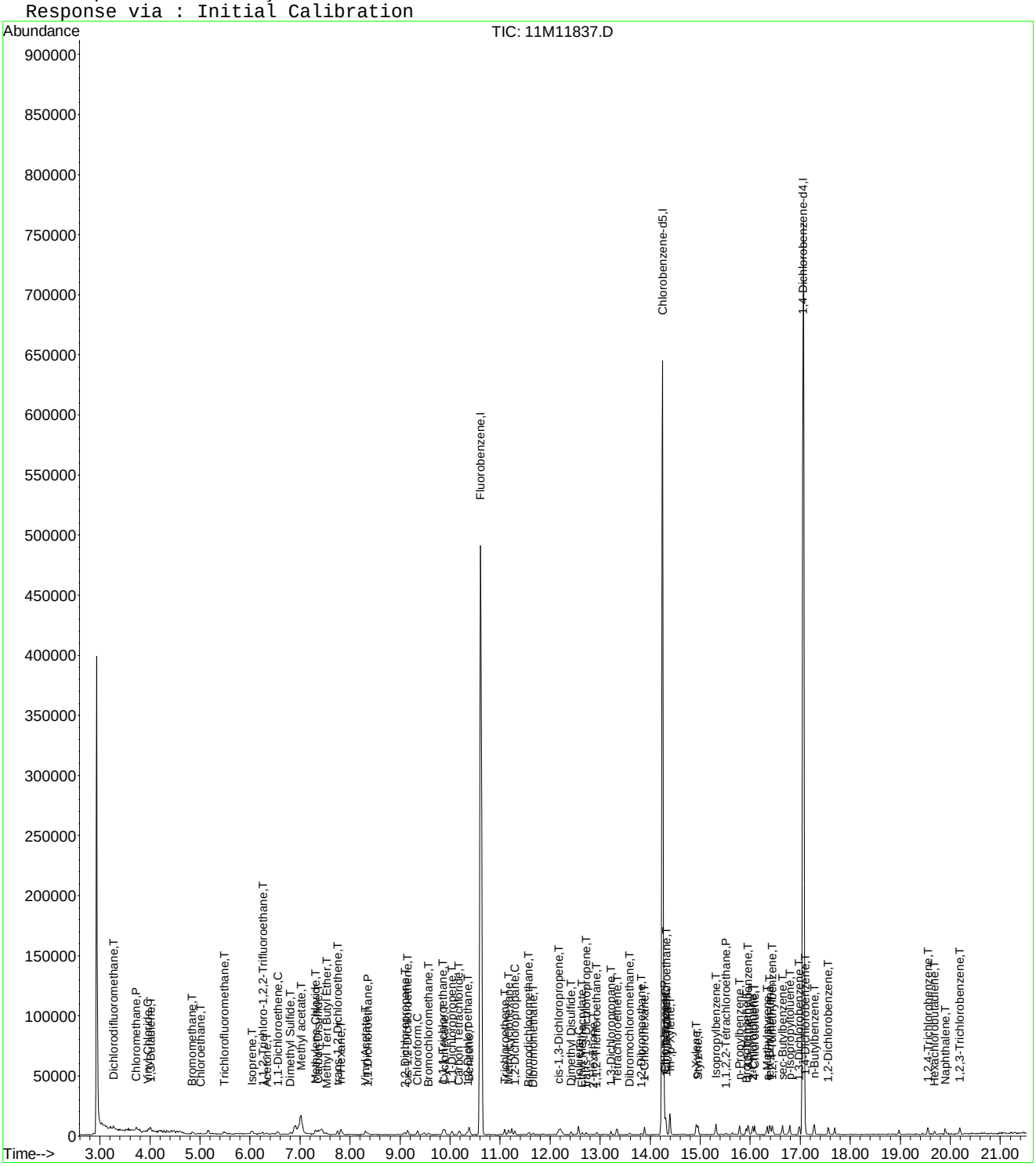

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:40:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2936	0.0	0	0.00
3	P	Chloromethane	-1.0000	0.6871	0.0	0	0.00
4	C	Vinyl Chloride	-1.0000	0.3357	0.0	0	0.00
5	T	1,3-Butadiene	-1.0000	0.2805	0.0	0	0.01
6	T	Bromomethane	-1.0000	0.4454	0.0	0	-0.01
7	T	Chloroethane	-1.0000	0.1710	0.0	0	0.00
8	T	Trichlorofluoromethane	-1.0000	0.3160	0.0	0	0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.01#
10	T	Isoprene	-1.0000	0.2535	0.0	0	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.23#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2478	0.0	0	0.01
13	T	Acetone	-1.0000	1.8699	0.0	0	0.00
14	C	1,1-Dichloroethene	-1.0000	0.3838	0.0	0	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.66#
16	T	Dimethyl Sulfide	-1.0000	0.1937	0.0	0	-0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.06#
18	T	Methyl acetate	-1.0000	5.1442	0.0	0	-0.04
19	T	Methylene Chloride	-1.0000	0.3464	0.0	0	0.00
20	T	Carbon Disulfide	-1.0000	0.3546	0.0	0	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.49#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2413	0.0	0	0.02
23	T	trans-1,2-Dichloroethene	-1.0000	0.2658	0.0	0	0.01
24	T	n-Hexane	-1.0000	0.4125	0.0	0	0.00
25	T	Diisopropyl ether	-1.0000	0.0083	0.0	0	0.08
26	T	Vinyl Acetate	-1.0000	2.6933	0.0	0	-0.01
27	P	1,1-Dichloroethane	-1.0000	0.3028	0.0	0	0.01
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.70#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.87#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.97#
31	T	2,2-Dichloropropane	-1.0000	0.2862	0.0	0	0.01
32	T	cis-1,2-Dichloroethene	-1.0000	0.2877	0.0	0	0.00
33	C	Chloroform	0.3000	0.3530	-17.7	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.48#
35	T	Bromochloromethane	-1.0000	0.2656	0.0	0	-0.01
36	T	Tetrahydrofuran	-1.0000	0.0000	0.0	0	-9.60#
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.63#
38	T	1,1,1-Trichloroethane	-1.0000	0.3263	0.0	0	0.00
39	T	Cyclohexane	-1.0000	0.3159	0.0	0	0.00
40	T	1,1-Dichloropropene	-1.0000	0.3134	0.0	0	0.00
41	T	Carbon Tetrachloride	-1.0000	0.2532	0.0	0	-0.01
42	T	Tert-Amyl-Methyl ether	-1.0000	0.0152	0.0	0	-0.09
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.23#
44	T	1,2-Dichloroethane	-1.0000	0.2858	0.0	0	0.01
45	T	Benzene	-1.0000	0.3452	0.0	0	0.00
46	T	Trichloroethene	-1.0000	0.2938	0.0	0	0.00
47	T	Methylcyclohexane	-1.0000	0.3101	0.0	0	0.00
48	C	1,2-Dichloropropane	-1.0000	0.2911	0.0	0	0.00
49	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.55#
50	T	Bromodichloromethane	-1.0000	0.3012	0.0	0	0.00
51	T	Dibromomethane	-1.0000	0.2537	0.0	0	0.00
52	T	2-Chloroethyl Vinyl Ether	-1.0000	0.0000	0.0	0	-11.84#
53	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-11.87#
54	T	cis-1,3-Dichloropropene	-1.0000	0.2327	0.0	0	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:40:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	-1.0000	0.2127	0.0	0	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	-1.0000	0.0107	0.0	0	0.00
58	C	Toluene	-1.0000	0.3228	0.0	0	0.01
59	T	Ethyl Methacrylate	-1.0000	0.2140	0.0	0	-0.01
60	T	trans-1,3-Dichloropropene	-1.0000	0.2668	0.0	0	-0.01
61	T	1,1,2-Trichloroethane	-1.0000	0.2691	0.0	0	-0.01
62	T	2-Hexanone	-1.0000	0.2315	0.0	0	0.00
63	T	1,3-Dichloropropane	-1.0000	0.2579	0.0	0	0.00
64	T	Tetrachloroethene	-1.0000	0.3214	0.0	0	0.00
65	T	Dibromochloromethane	-1.0000	0.2459	0.0	0	0.00
66	T	1,2-Dibromoethane	-1.0000	0.2387	0.0	0	0.00
67	T	1-Chlorohexane	-1.0000	0.2833	0.0	0	0.00
68	P	Chlorobenzene	-1.0000	0.3144	0.0	0	0.00
69	T	1,1,1,2-Tetrachloroethane	-1.0000	0.2998	0.0	0	0.00
70	C	Ethylbenzene	-1.0000	0.3040	0.0	0	0.00
71	T	m-,p-Xylene	-1.0000	0.6051	0.0	0	0.01
72	T	o-Xylene	-1.0000	0.2994	0.0	0	0.00
73	T	Styrene	-1.0000	0.2961	0.0	0	0.00
74	P	Bromoform	-1.0000	0.0798	0.0	0	-0.01
75	T	Isopropylbenzene	-1.0000	0.2931	0.0	0	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2922	0.0	0	0.00
78	S	p-Bromofluorobenzene	-1.0000	0.0730	0.0	0	0.00
79	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-15.70#
80	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-15.74#
81	T	n-Propylbenzene	-1.0000	0.3233	0.0	0	0.00
82	T	Bromobenzene	0.3000	0.2618	12.7	100	0.00
83	T	1,3,5-Trimethylbenzene	-1.0000	0.3032	0.0	0	-0.01
84	T	2-Chlorotoluene	-1.0000	0.3300	0.0	0	0.00
85	T	4-Chlorotoluene	-1.0000	0.3295	0.0	0	0.00
86	T	a-Methylstyrene	-1.0000	0.2430	0.0	0	0.00
87	T	tert-Butylbenzene	-1.0000	0.2541	0.0	0	-0.01
88	T	1,2,4-Trimethylbenzene	-1.0000	0.3088	0.0	0	0.00
89	T	sec-Butylbenzene	-1.0000	0.3122	0.0	0	0.00
90	T	p-Isopropyltoluene	-1.0000	0.2893	0.0	0	0.00
91	T	1,3-Dichlorobenzene	-1.0000	0.3051	0.0	0	0.00
92	T	1,4-Dichlorobenzene	0.3000	0.2990	0.3	100	0.00
93	T	n-Butylbenzene	-1.0000	0.3274	0.0	0	0.00
94	T	1,2-Dichlorobenzene	0.3000	0.2985	0.5	100	-0.01
95	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-18.49#
96	T	1,2,4-Trichlorobenzene	-1.0000	0.3011	0.0	0	0.00
97	T	Hexachlorobutadiene	-1.0000	0.2675	0.0	0	0.00
98	T	Naphthalene	-1.0000	0.2561	0.0	0	0.00
99	T	1,2,3-Trichlorobenzene	0.3000	0.2854	4.9	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11837.D 8260WT.M Sat May 14 18:41:07 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11838.D Vial: 4
Acq On : 13 May 2016 15:12 Operator: JDS
Sample : WG568769-03 0.4ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:23 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	515473	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	435266	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	244818	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
57) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
78) p-Bromofluorobenzene	15.64	95	236	0.0295 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	2765	0.3656 ug/L #	66
3) Chloromethane	3.72	50	4021	0.5854 ug/L #	77
4) Vinyl Chloride	3.96	62	2267	0.4134 ug/L #	64
5) 1,3-Butadiene	4.01	54	2044	0.3956 ug/L #	18
6) Bromomethane	4.85	94	1571	0.4511 ug/L	89
7) Chloroethane	5.01	64	1496	0.4029 ug/L #	45
8) Trichlorofluoromethane	5.49	101	4241	0.4175 ug/L	96
10) Isoprene	6.03	67	2394	0.3408 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	1439	0.2811 ug/L #	23
13) Acetone	6.33	43	1125	0.7299 ug/L #	45
14) 1,1-Dichloroethene	6.56	61	3786	0.3990 ug/L	77
16) Dimethyl Sulfide	6.80	62	1622	0.3769 ug/L	59
18) Methyl acetate	7.01	43	21364	4.0629 ug/L #	70
19) Methylene Chloride	7.32	84	2266	0.4265 ug/L	97
20) Carbon Disulfide	7.35	76	6628	0.3991 ug/L #	82
22) Methyl Tert Butyl Ether	7.52	73	4808	0.3486 ug/L #	74
23) trans-1,2-Dichloroethene	7.74	96	2372	0.4368 ug/L	93
24) n-Hexane	7.83	57	4212	0.4732 ug/L #	73
26) Vinyl Acetate	8.34	43	434	0.1315 ug/L #	78
27) 1,1-Dichloroethane	8.34	63	3822	0.3576 ug/L #	89
29) 2-Butanone	8.88	43	484	0.2099 ug/L #	60
31) 2,2-Dichloropropane	9.09	77	2680	0.3472 ug/L #	55
32) cis-1,2-Dichloroethene	9.15	96	2277	0.3777 ug/L	91
33) Chloroform	9.35	83	3981	0.3988 ug/L	89
35) Bromochloromethane	9.57	130	952	0.2468 ug/L	57
36) Tetrahydrofuran	9.59	42	212	0.1340 ug/L #	46
38) 1,1,1-Trichloroethane	9.85	97	3917	0.4058 ug/L #	84
39) Cyclohexane	9.88	56	3935	0.3371 ug/L #	80
40) 1,1-Dichloropropene	10.04	75	2817	0.3862 ug/L	82
41) Carbon Tetrachloride	10.18	117	3373	0.3702 ug/L #	88
44) 1,2-Dichloroethane	10.35	62	3201	0.3737 ug/L #	78
45) Benzene	10.39	78	8729	0.4184 ug/L	90
46) Trichloroethene	11.08	130	2537	0.3731 ug/L	93
47) Methylcyclohexane	11.17	83	2742	0.3325 ug/L	90
48) 1,2-Dichloropropane	11.29	63	2133	0.3600 ug/L	84
50) Bromodichloromethane	11.58	83	2857	0.3638 ug/L #	84
51) Dibromomethane	11.65	93	972	0.3128 ug/L	81
52) 2-Chloroethyl Vinyl Ether	11.85	63	791	0.2560 ug/L #	50
54) cis-1,3-Dichloropropene	12.17	75	2689	0.3253 ug/L	99
55) Dimethyl Disulfide	12.42	79	1113	0.2158 ug/L	74

(#) = qualifier out of range (m) = manual integration
11M11838.D 8260WT.M Fri May 13 17:04:23 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11838.D Vial: 4
Acq On : 13 May 2016 15:12 Operator: JDS
Sample : WG568769-03 0.4ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:23 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
58)	Toluene	12.56	91	9113	0.4043 ug/L		99
59)	Ethyl Methacrylate	12.65	69	1556	0.2916 ug/L		96
60)	trans-1,3-Dichloropropene	12.73	75	2303	0.3119 ug/L		86
61)	1,1,2-Trichloroethane	12.94	97	1549	0.3672 ug/L		85
62)	2-Hexanone	12.86	43	840	0.2415 ug/L	#	11
63)	1,3-Dichloropropane	13.21	76	2345	0.3346 ug/L		82
64)	Tetrachloroethene	13.34	164	1905	0.3745 ug/L		88
65)	Dibromochloromethane	13.59	129	1972	0.3238 ug/L		89
66)	1,2-Dibromoethane	13.82	107	1617	0.3776 ug/L		69
67)	1-Chlorohexane	13.89	91	2578	0.3487 ug/L		77
68)	Chlorobenzene	14.29	112	6458	0.3896 ug/L		93
69)	1,1,1,2-Tetrachloroethane	14.31	131	2374	0.3736 ug/L		98
70)	Ethylbenzene	14.31	106	3158	0.3754 ug/L		79
71)	m-,p-Xylene	14.39	106	8621	0.8613 ug/L		93
72)	o-Xylene	14.93	106	3752	0.3758 ug/L		96
73)	Styrene	14.95	104	6027	0.3558 ug/L		90
74)	Bromoform	15.44	173	931	0.2454 ug/L		87
75)	Isopropylbenzene	15.31	105	10551	0.4179 ug/L		95
77)	1,1,2,2-Tetrachloroethane	15.52	83	1129	0.2796 ug/L		84
79)	1,2,3-Trichloropropane	15.71	110	200	0.1341 ug/L	#	28
81)	n-Propylbenzene	15.79	91	11244	0.4087 ug/L		98
82)	Bromobenzene	15.91	156	3048	0.3991 ug/L		95
83)	1,3,5-Trimethylbenzene	15.96	105	9158	0.4381 ug/L		92
84)	2-Chlorotoluene	16.05	91	8455	0.4164 ug/L		96
85)	4-Chlorotoluene	16.09	91	6979	0.4189 ug/L		92
86)	a-Methylstyrene	16.34	118	4052	0.3488 ug/L		74
87)	tert-Butylbenzene	16.40	134	1479	0.3224 ug/L		63
88)	1,2,4-Trimethylbenzene	16.45	105	8457	0.3953 ug/L		95
89)	sec-Butylbenzene	16.65	105	10479	0.4236 ug/L		93
90)	p-Isopropyltoluene	16.79	119	9613	0.4269 ug/L		93
91)	1,3-Dichlorobenzene	16.98	146	5826	0.4107 ug/L		93
92)	1,4-Dichlorobenzene	17.10	146	6273	0.4331 ug/L	#	74
93)	n-Butylbenzene	17.28	91	8021	0.3956 ug/L	#	91
94)	1,2-Dichlorobenzene	17.57	146	4937	0.3691 ug/L		97
96)	1,2,4-Trichlorobenzene	19.55	180	3632	0.3655 ug/L		95
97)	Hexachlorobutadiene	19.69	225	1539	0.3812 ug/L		96
98)	Naphthalene	19.90	128	7383	0.3882 ug/L		97
99)	1,2,3-Trichlorobenzene	20.19	180	3748	0.4028 ug/L		84

(#) = qualifier out of range (m) = manual integration
11M11838.D 8260WT.M Fri May 13 17:04:24 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11838.D Vial: 4
Acq On : 13 May 2016 15:12 Operator: JDS
Sample : WG568769-03 0.4ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration

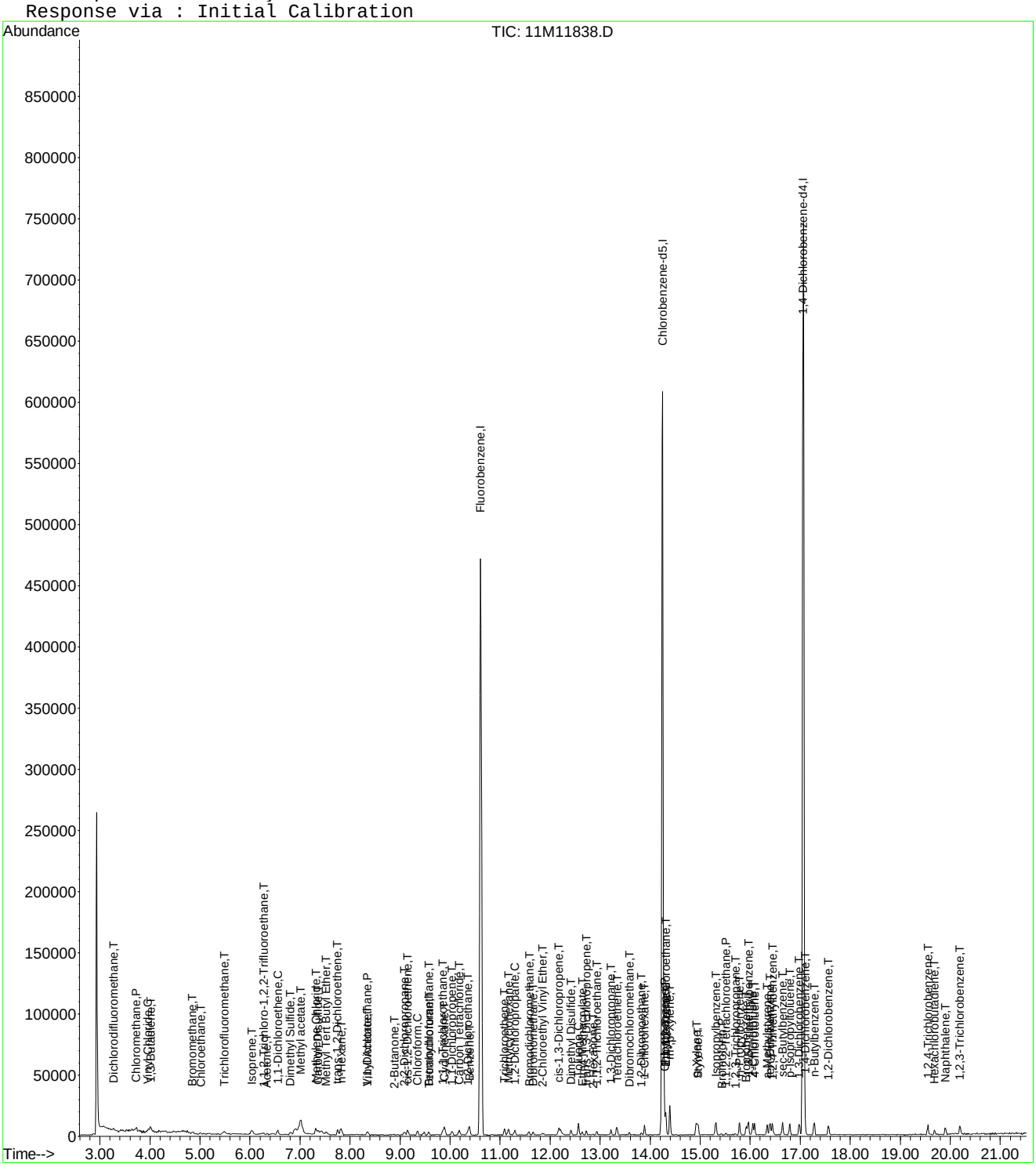

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:25 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	523425	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	440574	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	249989	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	1729	0.2910 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.16%#	
43) 1,2-Dichloroethane-d4	10.23	65	3301	0.4585 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	1.84%#	
57) Toluene-d8	12.47	98	9307	0.4494 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	1.80%#	
78) p-Bromofluorobenzene	15.64	95	4047	0.4956 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	7215	0.9394 ug/L	98
3) Chloromethane	3.72	50	7292	1.0455 ug/L	80
4) Vinyl Chloride	3.96	62	5040	0.9051 ug/L	92
5) 1,3-Butadiene	4.02	54	5876	1.1198 ug/L #	76
6) Bromomethane	4.85	94	3488	0.9862 ug/L	94
7) Chloroethane	4.99	64	3425	0.9083 ug/L #	57
8) Trichlorofluoromethane	5.49	101	10960	1.0625 ug/L	95
9) Diethyl ether	6.01	59	19830	4.2253 ug/L	90
10) Isoprene	6.04	67	6121	0.8582 ug/L	94
11) Acrolein	6.25	56	697	1.2730 ug/L	65
12) 1,1,2-Trichloro-1,2,2-Trif	6.27	101	5456	1.0497 ug/L	90
13) Acetone	6.34	43	1782	1.1386 ug/L #	45
14) 1,1-Dichloroethene	6.55	61	9456	0.9814 ug/L	91
15) Tert-Butyl Alcohol	6.67	59	2848	6.8484 ug/L #	67
16) Dimethyl Sulfide	6.80	62	3631	0.8310 ug/L	93
18) Methyl acetate	7.01	43	20953	3.9242 ug/L #	70
19) Methylene Chloride	7.31	84	5001	0.9270 ug/L	97
20) Carbon Disulfide	7.36	76	15438	0.9154 ug/L	99
21) Acrylonitrile	7.50	53	3780	1.8795 ug/L	89
22) Methyl Tert Butyl Ether	7.53	73	11891	0.8490 ug/L	90
23) trans-1,2-Dichloroethene	7.75	96	4815	0.8732 ug/L	95
24) n-Hexane	7.82	57	9213	1.0194 ug/L #	81
25) Diisopropyl ether	8.15	45	108233	4.5267 ug/L	99
26) Vinyl Acetate	8.31	43	1723	0.5141 ug/L #	78
27) 1,1-Dichloroethane	8.34	63	10818	0.9968 ug/L	95
28) Ethyl-Tert-Butyl ether	8.70	59	85288	4.3548 ug/L	99
29) 2-Butanone	8.88	43	1368	0.5844 ug/L #	60
30) Propionitrile	8.99	54	2406	3.5185 ug/L #	60
31) 2,2-Dichloropropane	9.09	77	7787	0.9935 ug/L	90
32) cis-1,2-Dichloroethene	9.15	96	5567	0.9095 ug/L	94
33) Chloroform	9.35	83	10278	1.0139 ug/L	96
34) 1-Bromopropane	9.48	122	295	0.2934 ug/L	49
35) Bromochloromethane	9.57	130	2941	0.7509 ug/L	88
36) Tetrahydrofuran	9.60	42	7790	4.8493 ug/L	92
38) 1,1,1-Trichloroethane	9.85	97	10000	1.0202 ug/L #	90
39) Cyclohexane	9.88	56	10164	0.8574 ug/L	98
40) 1,1-Dichloropropene	10.04	75	7321	0.9884 ug/L	92
41) Carbon Tetrachloride	10.18	117	9558	1.0331 ug/L	98
42) Tert-Amyl-Methyl ether	10.13	73	59107	4.2417 ug/L	97
44) 1,2-Dichloroethane	10.34	62	8181	0.9406 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:25 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	Benzene	10.38	78	19924	0.9404 ug/L		95
46)	Trichloroethene	11.08	130	6636	0.9611 ug/L		92
47)	Methylcyclohexane	11.18	83	7740	0.9243 ug/L		94
48)	1,2-Dichloropropane	11.29	63	5477	0.9103 ug/L		99
49)	1,4-Dioxane	11.55	88	187	5.1264 ug/L	#	10
50)	Bromodichloromethane	11.57	83	7238	0.9076 ug/L		94
51)	Dibromomethane	11.65	93	2839	0.8997 ug/L		97
52)	2-Chloroethyl Vinyl Ether	11.84	63	1934	0.6164 ug/L	#	72
53)	4-Methyl-2-Pentanone	11.87	58	1016	0.5282 ug/L	#	42
54)	cis-1,3-Dichloropropene	12.17	75	7078	0.8432 ug/L		99
55)	Dimethyl Disulfide	12.42	79	3514	0.6710 ug/L		93
58)	Toluene	12.56	91	22074	0.9676 ug/L		96
59)	Ethyl Methacrylate	12.64	69	4130	0.7646 ug/L		88
60)	trans-1,3-Dichloropropene	12.73	75	5897	0.7891 ug/L		90
61)	1,1,2-Trichloroethane	12.94	97	3547	0.8307 ug/L		96
62)	2-Hexanone	12.87	43	2461	0.6990 ug/L	#	63
63)	1,3-Dichloropropane	13.21	76	5965	0.8410 ug/L		87
64)	Tetrachloroethene	13.34	164	5050	0.9809 ug/L		94
65)	Dibromochloromethane	13.59	129	5237	0.8497 ug/L		90
66)	1,2-Dibromoethane	13.82	107	3214	0.7414 ug/L		91
67)	1-Chlorohexane	13.89	91	7025	0.9387 ug/L		91
68)	Chlorobenzene	14.29	112	16160	0.9630 ug/L		95
69)	1,1,1,2-Tetrachloroethane	14.32	131	6361	0.9889 ug/L		97
70)	Ethylbenzene	14.31	106	8050	0.9455 ug/L		93
71)	m-,p-Xylene	14.39	106	20545	2.0278 ug/L		95
72)	o-Xylene	14.92	106	9683	0.9581 ug/L		96
73)	Styrene	14.96	104	14946	0.8716 ug/L		98
74)	Bromoform	15.43	173	3024	0.7876 ug/L		97
75)	Isopropylbenzene	15.31	105	25656	1.0039 ug/L		92
77)	1,1,2,2-Tetrachloroethane	15.52	83	3569	0.8655 ug/L		89
79)	1,2,3-Trichloropropane	15.71	110	872	0.5724 ug/L		84
80)	trans-1,4-Dichloro-2-Buten	15.74	53	1048	0.6163 ug/L	#	44
81)	n-Propylbenzene	15.79	91	27998	0.9967 ug/L		98
82)	Bromobenzene	15.92	156	8101	1.0388 ug/L		89
83)	1,3,5-Trimethylbenzene	15.96	105	20563	0.9633 ug/L		98
84)	2-Chlorotoluene	16.05	91	20962	1.0111 ug/L		96
85)	4-Chlorotoluene	16.09	91	17553	1.0318 ug/L		100
86)	a-Methylstyrene	16.34	118	10002	0.8431 ug/L		97
87)	tert-Butylbenzene	16.40	134	4396	0.9384 ug/L		84
88)	1,2,4-Trimethylbenzene	16.44	105	21945	1.0045 ug/L		96
89)	sec-Butylbenzene	16.65	105	25927	1.0263 ug/L		100
90)	p-Isopropyltoluene	16.79	119	22467	0.9771 ug/L		96
91)	1,3-Dichlorobenzene	16.98	146	14883	1.0274 ug/L		96
92)	1,4-Dichlorobenzene	17.10	146	15106	1.0213 ug/L	#	67
93)	n-Butylbenzene	17.28	91	20991	1.0139 ug/L		98
94)	1,2-Dichlorobenzene	17.57	146	13331	0.9762 ug/L		99
95)	1,2-Dibromo-3-Chloropropan	18.49	75	493	0.5750 ug/L		75
96)	1,2,4-Trichlorobenzene	19.55	180	9030	0.8899 ug/L		96
97)	Hexachlorobutadiene	19.69	225	3810	0.9242 ug/L		95
98)	Naphthalene	19.90	128	16333	0.8410 ug/L		99
99)	1,2,3-Trichlorobenzene	20.19	180	8645	0.9098 ug/L		88

(#) = qualifier out of range (m) = manual integration
11M11839.D 8260WT.M Fri May 13 17:04:25 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration

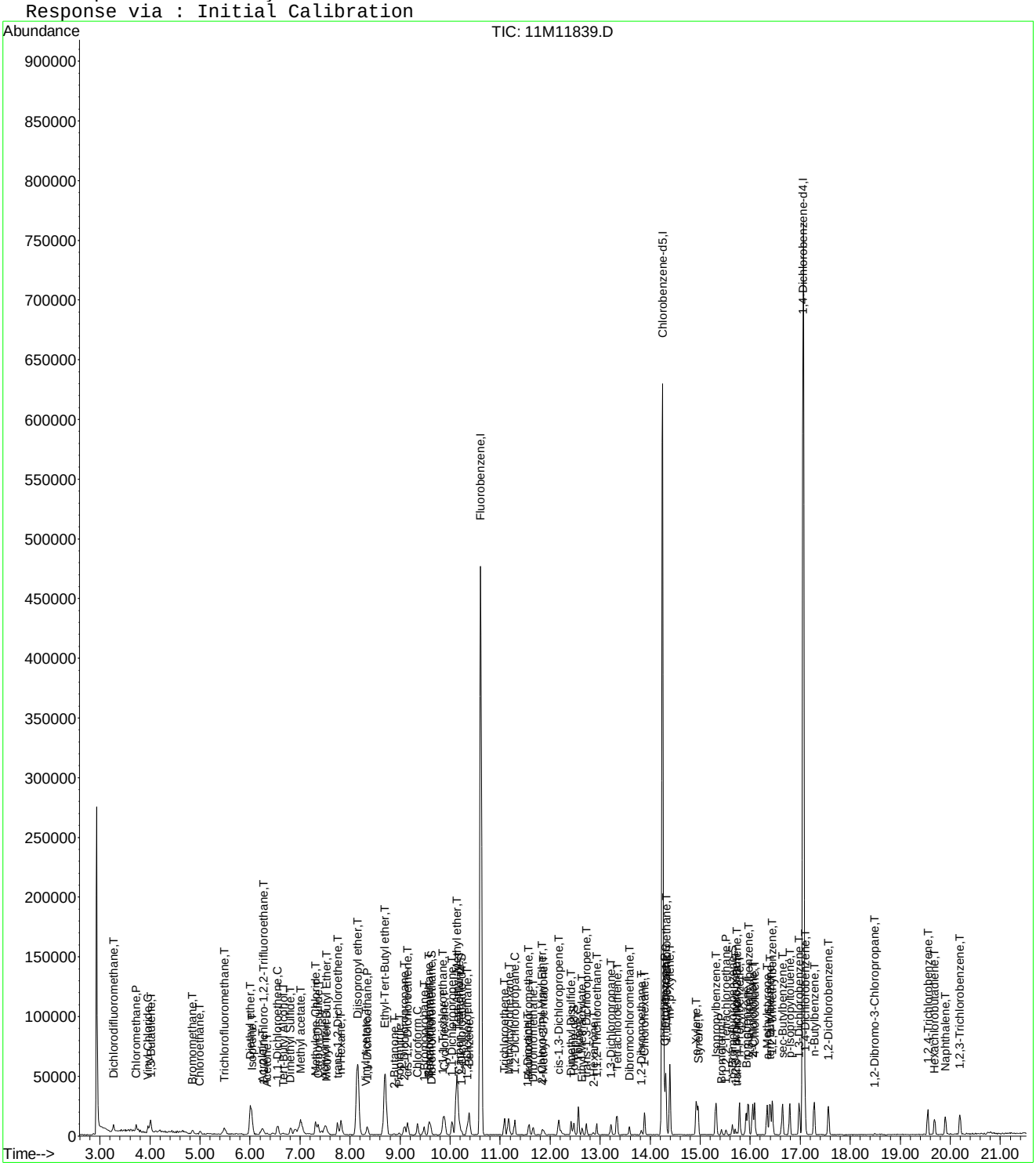

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:40:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.8798	12.0	100	0.00
3	P	Chloromethane	1.0000	1.1102	-11.0	100	0.00
4	C	Vinyl Chloride	1.0000	0.9240	7.6	100	0.00
5	T	1,3-Butadiene	-1.0000	1.0834	0.0	100	0.02
6	T	Bromomethane	1.0000	0.9301	7.0	100	0.00
7	T	Chloroethane	1.0000	0.9773	2.3	100	-0.01
8	T	Trichlorofluoromethane	1.0000	1.0081	-0.8	100	0.01
9	T	Diethyl ether	5.0000	4.9318	1.4	100	0.00
10	T	Isoprene	-1.0000	0.9134	0.0	100	0.00
11	T	Acrolein	2.5000	2.7854	-11.4	100	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0342	-3.4	100	0.02
13	T	Acetone	-1.0000	1.4337	0.0	0	0.00
14	C	1,1-Dichloroethene	1.0000	0.9868	1.3	100	-0.01
15	T	Tert-Butyl Alcohol	10.0000	8.2841	17.2	100	0.01
16	T	Dimethyl Sulfide	-1.0000	0.9488	0.0	100	-0.01
17	T	Iodomethane	-1.0000	2.2962	0.0	0	0.01
18	T	Methyl acetate	-1.0000	4.2835	0.0	0	-0.05
19	T	Methylene Chloride	1.0000	1.0084	-0.8	100	0.00
20	T	Carbon Disulfide	1.0000	0.9624	3.8	100	0.00
21	T	Acrylonitrile	2.5000	2.2683	9.3	100	0.01
22	T	Methyl Tert Butyl Ether	1.0000	0.9614	3.9	100	0.01
23	T	trans-1,2-Dichloroethene	1.0000	0.9079	9.2	100	0.01
24	T	n-Hexane	-1.0000	1.0430	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	4.9106	1.8	100	0.00
26	T	Vinyl Acetate	-1.0000	2.6242	0.0	0	0.00
27	P	1,1-Dichloroethane	1.0000	1.0166	-1.7	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.7543	4.9	100	0.00
29	T	2-Butanone	-1.0000	0.7280	0.0	0	0.01
30	T	Propionitrile	5.0000	4.3718	12.6	100	0.01
31	T	2,2-Dichloropropane	1.0000	0.9353	6.5	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	0.9520	4.8	100	0.00
33	C	Chloroform	1.0000	0.9836	1.6	100	0.00
34	T	1-Bromopropane	1.0000	0.9106	8.9	100	0.00
35	T	Bromochloromethane	1.0000	0.8469	15.3	100	0.00
36	T	Tetrahydrofuran	5.0000	5.8710	-17.4	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.3018	0.0	100	0.00
38	T	1,1,1-Trichloroethane	1.0000	0.9725	2.8	100	0.00
39	T	Cyclohexane	1.0000	0.9069	9.3	100	0.00
40	T	1,1-Dichloropropene	1.0000	0.9971	0.3	100	0.00
41	T	Carbon Tetrachloride	1.0000	0.9518	4.8	100	0.00
42	T	Tert-Amyl-Methyl ether	5.0000	4.7417	5.2	100	0.00
43	S	1,2-Dichloroethane-d4	0.5000	0.5054	-1.1	100	0.00
44	T	1,2-Dichloroethane	1.0000	0.9639	3.6	100	0.00
45	T	Benzene	1.0000	0.9912	0.9	100	0.00
46	T	Trichloroethene	1.0000	1.0157	-1.6	100	-0.01
47	T	Methylcyclohexane	1.0000	0.9600	4.0	100	0.01
48	C	1,2-Dichloropropane	1.0000	0.9844	1.6	100	0.00
49	T	1,4-Dioxane	-1.0000	28.5532	0.0	0	0.00
50	T	Bromodichloromethane	1.0000	0.9266	7.3	100	0.00
51	T	Dibromomethane	1.0000	0.9792	2.1	100	0.00
52	T	2-Chloroethyl Vinyl Ether	-1.0000	0.7053	0.0	100	0.00
53	T	4-Methyl-2-Pentanone	-1.0000	0.6569	0.0	0	0.00
54	T	cis-1,3-Dichloropropene	1.0000	0.9060	9.4	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:40:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	-1.0000	0.7475	0.0	100	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	-1.0000	0.4862	0.0	100	0.00
58	C	Toluene	1.0000	0.9897	1.0	100	0.00
59	T	Ethyl Methacrylate	1.0000	0.8672	13.3	100	-0.01
60	T	trans-1,3-Dichloropropene	1.0000	0.8237	17.6	100	0.00
61	T	1,1,2-Trichloroethane	1.0000	0.8969	10.3	100	0.00
62	T	2-Hexanone	-1.0000	0.8473	0.0	100	0.01
63	T	1,3-Dichloropropane	1.0000	0.9392	6.1	100	0.00
64	T	Tetrachloroethene	1.0000	0.9737	2.6	100	0.00
65	T	Dibromochloromethane	1.0000	0.8681	13.2	100	0.00
66	T	1,2-Dibromoethane	1.0000	0.8111	18.9	100	0.00
67	T	1-Chlorohexane	1.0000	0.9554	4.5	100	0.00
68	P	Chlorobenzene	1.0000	0.9890	1.1	100	0.00
69	T	1,1,1,2-Tetrachloroethane	1.0000	0.9621	3.8	100	0.00
70	C	Ethylbenzene	1.0000	0.9608	3.9	100	0.00
71	T	m-,p-Xylene	2.0000	2.0170	-0.9	100	0.00
72	T	o-Xylene	1.0000	0.9768	2.3	100	0.00
73	T	Styrene	1.0000	0.9126	8.7	100	0.01
74	P	Bromoform	1.0000	0.8271	17.3	100	0.00
75	T	Isopropylbenzene	1.0000	0.9787	2.1	100	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	1.0000	0.9168	8.3	100	0.00
78	S	p-Bromofluorobenzene	-1.0000	0.5252	0.0	100	0.00
79	T	1,2,3-Trichloropropane	1.0000	0.9573	4.3	100	0.01
80	T	trans-1,4-Dichloro-2-Butene	1.0000	1.2934	-29.3#	100	0.00
81	T	n-Propylbenzene	1.0000	0.9671	3.3	100	0.00
82	T	Bromobenzene	1.0000	1.0663	-6.6	100	0.00
83	T	1,3,5-Trimethylbenzene	1.0000	0.9307	6.9	100	0.00
84	T	2-Chlorotoluene	1.0000	1.0337	-3.4	100	0.00
85	T	4-Chlorotoluene	1.0000	0.9664	3.4	100	0.00
86	T	a-Methylstyrene	1.0000	0.8582	14.2	100	0.00
87	T	tert-Butylbenzene	1.0000	0.9392	6.1	100	0.00
88	T	1,2,4-Trimethylbenzene	1.0000	0.9755	2.5	100	0.00
89	T	sec-Butylbenzene	1.0000	0.9774	2.3	100	0.00
90	T	p-Isopropyltoluene	1.0000	0.9221	7.8	100	0.00
91	T	1,3-Dichlorobenzene	1.0000	1.0144	-1.4	100	0.00
92	T	1,4-Dichlorobenzene	1.0000	1.0157	-1.6	100	0.00
93	T	n-Butylbenzene	1.0000	0.9776	2.2	100	0.00
94	T	1,2-Dichlorobenzene	1.0000	0.9974	0.3	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.1961	0.0	100	0.00
96	T	1,2,4-Trichlorobenzene	1.0000	0.9233	7.7	100	0.00
97	T	Hexachlorobutadiene	1.0000	0.8843	11.6	100	0.00
98	T	Naphthalene	1.0000	0.8997	10.0	100	0.00
99	T	1,2,3-Trichlorobenzene	1.0000	0.9631	3.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11839.D 8260WT.M Sat May 14 18:41:49 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:26 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	504626	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	418265	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	241104	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	5067	0.8846 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.52%#	
43) 1,2-Dichloroethane-d4	10.23	65	6143	0.8851 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.56%#	
57) Toluene-d8	12.47	98	18425	0.9371 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	3.76%#	
78) p-Bromofluorobenzene	15.64	95	7442	0.9449 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	3.76%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	14866	2.0077 ug/L	98
3) Chloromethane	3.72	50	14641	2.1775 ug/L	94
4) Vinyl Chloride	3.96	62	10045	1.8711 ug/L	99
5) 1,3-Butadiene	4.01	54	10590	2.0934 ug/L	82
6) Bromomethane	4.85	94	7024	2.0600 ug/L	94
7) Chloroethane	4.99	64	6661	1.8324 ug/L	97
8) Trichlorofluoromethane	5.49	101	21690	2.1811 ug/L	99
9) Diethyl ether	6.01	59	96350	21.2945 ug/L	97
10) Isoprene	6.04	67	12682	1.8443 ug/L	94
11) Acrolein	6.23	56	5531	10.4784 ug/L	91
12) 1,1,2-Trichloro-1,2,2-Trif	6.23	101	9909	1.9774 ug/L	96
13) Acetone	6.35	43	3346	2.2176 ug/L #	68
14) 1,1-Dichloroethene	6.56	61	18584	2.0007 ug/L	98
15) Tert-Butyl Alcohol	6.66	59	15203	37.9194 ug/L #	93
16) Dimethyl Sulfide	6.81	62	7308	1.7348 ug/L	98
17) Iodomethane	7.06	142	1747	0.4335 ug/L #	49
18) Methyl acetate	7.01	43	17794	3.4567 ug/L #	75
19) Methylene Chloride	7.31	84	10330	1.9861 ug/L	99
20) Carbon Disulfide	7.36	76	30745	1.8910 ug/L	99
21) Acrylonitrile	7.49	53	17499	9.0252 ug/L	91
22) Methyl Tert Butyl Ether	7.52	73	22031	1.6315 ug/L	97
23) trans-1,2-Dichloroethene	7.74	96	10660	2.0051 ug/L	95
24) n-Hexane	7.82	57	17125	1.9654 ug/L #	94
25) Diisopropyl ether	8.15	45	542272	23.5246 ug/L	99
26) Vinyl Acetate	8.31	43	6813	2.1084 ug/L #	84
27) 1,1-Dichloroethane	8.34	63	21278	2.0336 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	431080	22.8311 ug/L	100
29) 2-Butanone	8.87	43	3175	1.4068 ug/L #	60
30) Propionitrile	8.99	54	12529	19.0049 ug/L	98
31) 2,2-Dichloropropane	9.09	77	17576	2.3259 ug/L	94
32) cis-1,2-Dichloroethene	9.15	96	11652	1.9746 ug/L	96
33) Chloroform	9.35	83	20769	2.1252 ug/L	96
34) 1-Bromopropane	9.48	122	1648	1.7003 ug/L	70
35) Bromochloromethane	9.57	130	6812	1.8040 ug/L	100
36) Tetrahydrofuran	9.60	42	30834	19.9093 ug/L	96
38) 1,1,1-Trichloroethane	9.84	97	20518	2.1713 ug/L #	94
39) Cyclohexane	9.88	56	22087	1.9325 ug/L	98
40) 1,1-Dichloropropene	10.04	75	13954	1.9542 ug/L	98
41) Carbon Tetrachloride	10.18	117	21054	2.3604 ug/L	98
42) Tert-Amyl-Methyl ether	10.13	73	300593	22.3753 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M11840.D 8260WT.M Fri May 13 17:04:27 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:26 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
44)	1,2-Dichloroethane	10.34	62	16928	2.0188 ug/L		98
45)	Benzene	10.38	78	41004	2.0075 ug/L		97
46)	Trichloroethene	11.08	130	13283	1.9954 ug/L		96
47)	Methylcyclohexane	11.17	83	15711	1.9461 ug/L		95
48)	1,2-Dichloropropane	11.29	63	11010	1.8980 ug/L		91
49)	1,4-Dioxane	11.55	88	898	25.5347 ug/L		88
50)	Bromodichloromethane	11.57	83	15058	1.9584 ug/L		100
51)	Dibromomethane	11.66	93	5461	1.7952 ug/L		97
52)	2-Chloroethyl Vinyl Ether	11.84	63	4894	1.6180 ug/L		83
53)	4-Methyl-2-Pentanone	11.87	58	2173	1.1717 ug/L	#	65
54)	cis-1,3-Dichloropropene	12.17	75	14440	1.7842 ug/L		91
55)	Dimethyl Disulfide	12.42	79	7378	1.4613 ug/L		97
58)	Toluene	12.56	91	43051	1.9877 ug/L		98
59)	Ethyl Methacrylate	12.64	69	7792	1.5195 ug/L		95
60)	trans-1,3-Dichloropropene	12.73	75	12991	1.8310 ug/L		98
61)	1,1,2-Trichloroethane	12.93	97	8138	2.0075 ug/L		91
62)	2-Hexanone	12.86	43	4715	1.4106 ug/L	#	61
63)	1,3-Dichloropropane	13.21	76	11740	1.7434 ug/L		95
64)	Tetrachloroethene	13.34	164	10610	2.1708 ug/L		90
65)	Dibromochloromethane	13.59	129	11236	1.9202 ug/L		96
66)	1,2-Dibromoethane	13.82	107	7613	1.8499 ug/L		99
67)	1-Chlorohexane	13.89	91	13853	1.9499 ug/L		96
68)	Chlorobenzene	14.29	112	33381	2.0954 ug/L		99
69)	1,1,1,2-Tetrachloroethane	14.32	131	13541	2.2175 ug/L		97
70)	Ethylbenzene	14.31	106	17116	2.1175 ug/L		98
71)	m-,p-Xylene	14.39	106	40469	4.2073 ug/L		95
72)	o-Xylene	14.92	106	19196	2.0006 ug/L		99
73)	Styrene	14.96	104	30019	1.8440 ug/L		92
74)	Bromoform	15.43	173	6309	1.7308 ug/L		96
75)	Isopropylbenzene	15.31	105	52419	2.1605 ug/L		98
77)	1,1,2,2-Tetrachloroethane	15.51	83	7118	1.7898 ug/L		100
79)	1,2,3-Trichloropropane	15.70	110	2487	1.6927 ug/L		98
80)	trans-1,4-Dichloro-2-Buten	15.74	53	2265	1.3810 ug/L		68
81)	n-Propylbenzene	15.79	91	59353	2.1908 ug/L		100
82)	Bromobenzene	15.91	156	15393	2.0465 ug/L		97
83)	1,3,5-Trimethylbenzene	15.95	105	43641	2.1197 ug/L		98
84)	2-Chlorotoluene	16.05	91	40923	2.0467 ug/L		96
85)	4-Chlorotoluene	16.09	91	37360	2.2771 ug/L		97
86)	a-Methylstyrene	16.34	118	20567	1.7976 ug/L		92
87)	tert-Butylbenzene	16.40	134	9253	2.0481 ug/L		89
88)	1,2,4-Trimethylbenzene	16.44	105	43857	2.0815 ug/L		99
89)	sec-Butylbenzene	16.65	105	52733	2.1643 ug/L		99
90)	p-Isopropyltoluene	16.79	119	49990	2.2541 ug/L		98
91)	1,3-Dichlorobenzene	16.98	146	29674	2.1240 ug/L		99
92)	1,4-Dichlorobenzene	17.10	146	30258	2.1211 ug/L		87
93)	n-Butylbenzene	17.28	91	44260	2.2167 ug/L		98
94)	1,2-Dichlorobenzene	17.57	146	27619	2.0969 ug/L		95
95)	1,2-Dibromo-3-Chloropropan	18.49	75	1094	1.3229 ug/L		60
96)	1,2,4-Trichlorobenzene	19.55	180	18455	1.8857 ug/L		98
97)	Hexachlorobutadiene	19.69	225	8691	2.1858 ug/L		89
98)	Naphthalene	19.90	128	34041	1.8174 ug/L	#	95
99)	1,2,3-Trichlorobenzene	20.19	180	17703	1.9318 ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration

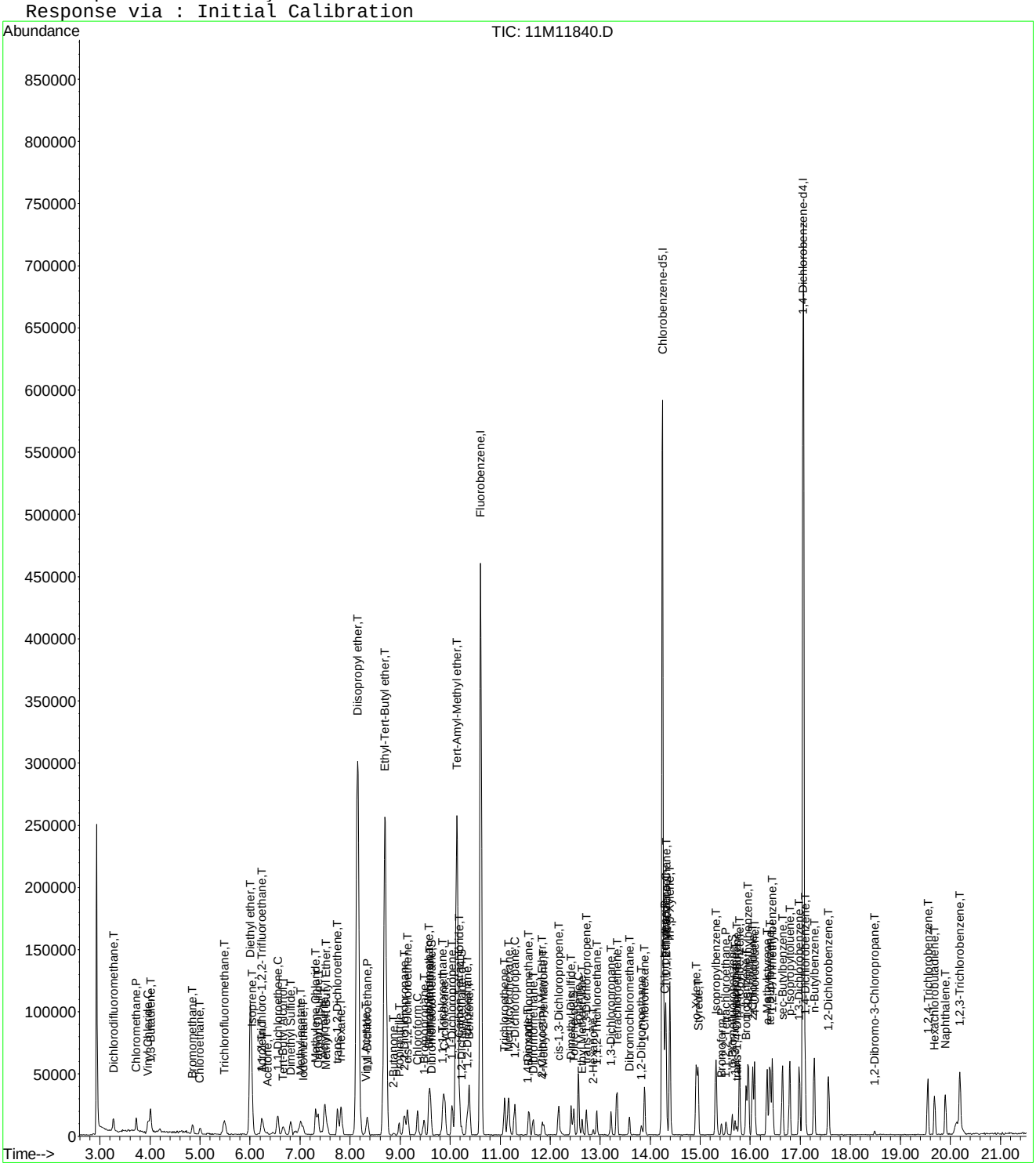

11M11840.D 8260WT.M Fri May 13 17:04:28 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.8802	6.0	100	0.00
3	P	Chloromethane	2.0000	2.3121	-15.6	100	0.00
4	C	Vinyl Chloride	2.0000	1.9102	4.5	100	0.00
5	T	1,3-Butadiene	-1.0000	2.0253	0.0	100	0.01
6	T	Bromomethane	2.0000	1.9427	2.9	100	0.00
7	T	Chloroethane	2.0000	1.9714	1.4	100	-0.01
8	T	Trichlorofluoromethane	2.0000	2.0694	-3.5	100	0.01
9	T	Diethyl ether	25.0000	24.8555	0.6	100	0.00
10	T	Isoprene	-1.0000	1.9630	0.0	100	0.00
11	T	Acrolein	12.5000	12.0322	3.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.9483	2.6	100	-0.01
13	T	Acetone	-1.0000	2.7924	0.0	100	0.01
14	C	1,1-Dichloroethene	2.0000	2.0117	-0.6	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	45.8688	8.3	100	0.00
16	T	Dimethyl Sulfide	-1.0000	1.9809	0.0	100	0.00
17	T	Iodomethane	2.0000	2.6580	-32.9#	100	0.00
18	T	Methyl acetate	2.0000	0.8555	57.2#	100	0.00
19	T	Methylene Chloride	2.0000	2.1606	-8.0	100	0.00
20	T	Carbon Disulfide	2.0000	1.9879	0.6	100	0.00
21	T	Acrylonitrile	12.5000	10.8919	12.9	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.8475	7.6	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	2.0850	-4.2	100	0.00
24	T	n-Hexane	2.0000	2.0110	-0.6	100	0.00
25	T	Diisopropyl ether	25.0000	25.5200	-2.1	100	0.00
26	T	Vinyl Acetate	-1.0000	3.2184	0.0	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.0741	-3.7	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	24.9254	0.3	100	0.00
29	T	2-Butanone	-1.0000	1.7527	0.0	0	0.00
30	T	Propionitrile	25.0000	23.6140	5.5	100	0.01
31	T	2,2-Dichloropropane	2.0000	2.1897	-9.5	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0669	-3.3	100	0.00
33	C	Chloroform	2.0000	2.0616	-3.1	100	0.00
34	T	1-Bromopropane	2.0000	2.2551	-12.8	100	0.00
35	T	Bromochloromethane	2.0000	2.0347	-1.7	100	0.00
36	T	Tetrahydrofuran	25.0000	24.1040	3.6	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9175	8.3	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	2.0696	-3.5	100	-0.01
39	T	Cyclohexane	2.0000	2.0442	-2.2	100	0.00
40	T	1,1-Dichloropropene	2.0000	1.9713	1.4	100	0.00
41	T	Carbon Tetrachloride	2.0000	2.1748	-8.7	100	0.00
42	T	Tert-Amyl-Methyl ether	25.0000	25.0128	-0.1	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	0.9755	2.4	100	0.00
44	T	1,2-Dichloroethane	2.0000	2.0689	-3.4	100	0.00
45	T	Benzene	2.0000	2.1160	-5.8	100	0.00
46	T	Trichloroethene	2.0000	2.1089	-5.4	100	-0.01
47	T	Methylcyclohexane	2.0000	2.0212	-1.1	100	0.00
48	C	1,2-Dichloropropane	2.0000	2.0525	-2.6	100	0.00
49	T	1,4-Dioxane	50.0000	49.5313	0.9	100	0.00
50	T	Bromodichloromethane	2.0000	1.9996	0.0	100	0.00
51	T	Dibromomethane	2.0000	1.9537	2.3	100	0.01
52	T	2-Chloroethyl Vinyl Ether	-1.0000	1.8512	0.0	100	0.00
53	T	4-Methyl-2-Pentanone	-1.0000	1.4573	0.0	100	0.00
54	T	cis-1,3-Dichloropropene	2.0000	1.9172	4.1	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	-1.0000	1.6278	0.0	100	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	1.0000	1.0138	-1.4	100	0.00
58	C	Toluene	2.0000	2.0332	-1.7	100	0.00
59	T	Ethyl Methacrylate	2.0000	1.7234	13.8	100	-0.01
60	T	trans-1,3-Dichloropropene	2.0000	1.9114	4.4	100	0.00
61	T	1,1,2-Trichloroethane	2.0000	2.1674	-8.4	100	0.00
62	T	2-Hexanone	-1.0000	1.7098	0.0	100	0.00
63	T	1,3-Dichloropropane	2.0000	1.9471	2.6	100	0.00
64	T	Tetrachloroethene	2.0000	2.1547	-7.7	100	0.00
65	T	Dibromochloromethane	2.0000	1.9620	1.9	100	0.00
66	T	1,2-Dibromoethane	2.0000	2.0238	-1.2	100	0.00
67	T	1-Chlorohexane	2.0000	1.9844	0.8	100	0.00
68	P	Chlorobenzene	2.0000	2.1520	-7.6	100	0.00
69	T	1,1,1,2-Tetrachloroethane	2.0000	2.1574	-7.9	100	0.00
70	C	Ethylbenzene	2.0000	2.1518	-7.6	100	0.00
71	T	m-,p-Xylene	4.0000	4.1851	-4.6	100	0.00
72	T	o-Xylene	2.0000	2.0398	-2.0	100	0.00
73	T	Styrene	2.0000	1.9307	3.5	100	0.01
74	P	Bromoform	2.0000	1.8176	9.1	100	0.00
75	T	Isopropylbenzene	2.0000	2.1063	-5.3	100	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	2.0000	1.8958	5.2	100	-0.01
78	S	p-Bromofluorobenzene	1.0000	1.0013	-0.1	100	0.00
79	T	1,2,3-Trichloropropane	2.0000	2.1172	-5.9	100	0.00
80	T	trans-1,4-Dichloro-2-Butene	2.0000	1.9762	1.2	100	0.00
81	T	n-Propylbenzene	2.0000	2.1256	-6.3	100	0.00
82	T	Bromobenzene	2.0000	2.1009	-5.0	100	-0.01
83	T	1,3,5-Trimethylbenzene	2.0000	2.0481	-2.4	100	-0.01
84	T	2-Chlorotoluene	2.0000	2.0925	-4.6	100	0.00
85	T	4-Chlorotoluene	2.0000	2.1326	-6.6	100	0.00
86	T	a-Methylstyrene	2.0000	1.8297	8.5	100	0.00
87	T	tert-Butylbenzene	2.0000	2.0497	-2.5	100	0.00
88	T	1,2,4-Trimethylbenzene	2.0000	2.0213	-1.1	100	0.00
89	T	sec-Butylbenzene	2.0000	2.0611	-3.1	100	0.00
90	T	p-Isopropyltoluene	2.0000	2.1272	-6.4	100	0.00
91	T	1,3-Dichlorobenzene	2.0000	2.0970	-4.8	100	0.00
92	T	1,4-Dichlorobenzene	2.0000	2.1095	-5.5	100	0.00
93	T	n-Butylbenzene	2.0000	2.1373	-6.9	100	0.00
94	T	1,2-Dichlorobenzene	2.0000	2.1425	-7.1	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	2.0000	1.9175	4.1	100	0.00
96	T	1,2,4-Trichlorobenzene	2.0000	1.9565	2.2	100	0.00
97	T	Hexachlorobutadiene	2.0000	2.0914	-4.6	100	0.00
98	T	Naphthalene	2.0000	1.9443	2.8	100	0.00
99	T	1,2,3-Trichlorobenzene	2.0000	2.0449	-2.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11840.D 8260WT.M Sat May 14 18:46:53 2016 Page 2

Quantitation Report (Qedit)

```
Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D          Vial: 6
Acq On    : 13 May 2016  16:15                       Operator: JDS
Sample    : WG568769-05 2.0ug/L ICAL STD 8260        Inst    : hpms11
Misc      : 1,1 STD76127                             Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:46 2016              Quant Results File: temp.res

Method       : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title        : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update  : Sat May 14 18:45:57 2016
Response via : Single Level Calibration
```

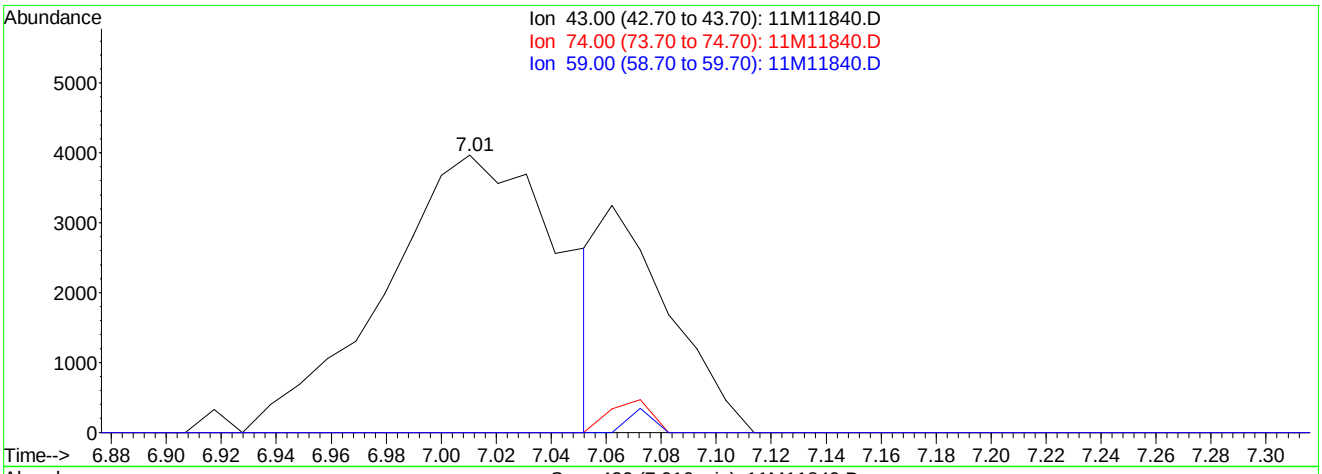

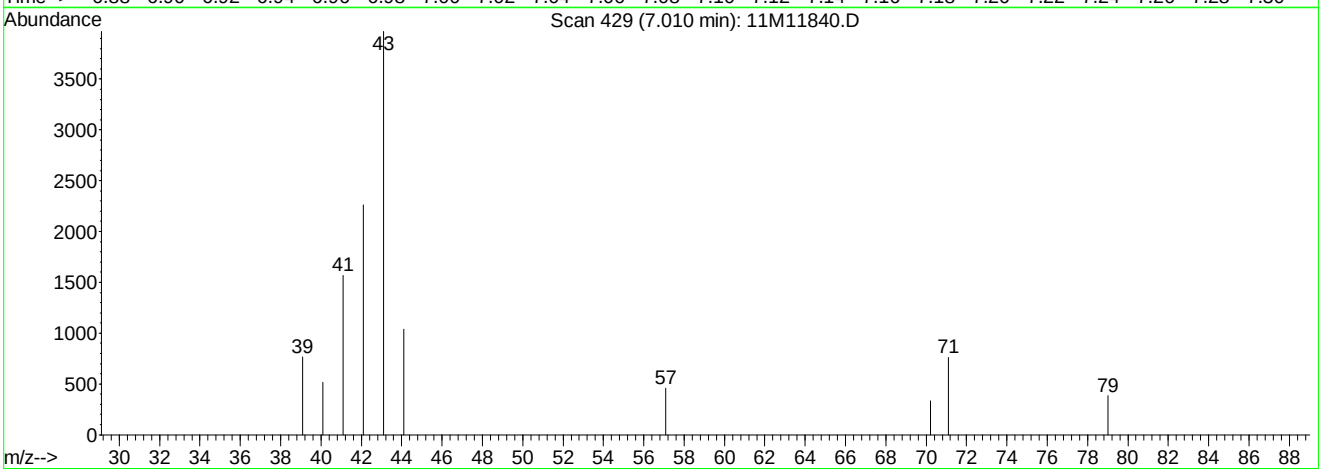

TIC: 11M11840.D

(18) Methyl acetate (T)

7.01min 3.69ug/L

response 17794

Ion	Exp%	Act%
43.00	100	100
74.00	13.60	2.82#
59.00	6.50	1.21#
0.00	0.00	0.00

11M11840.D 8260WT.M Sat May 14 18:46:34 2016

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:46 2016 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Single Level Calibration

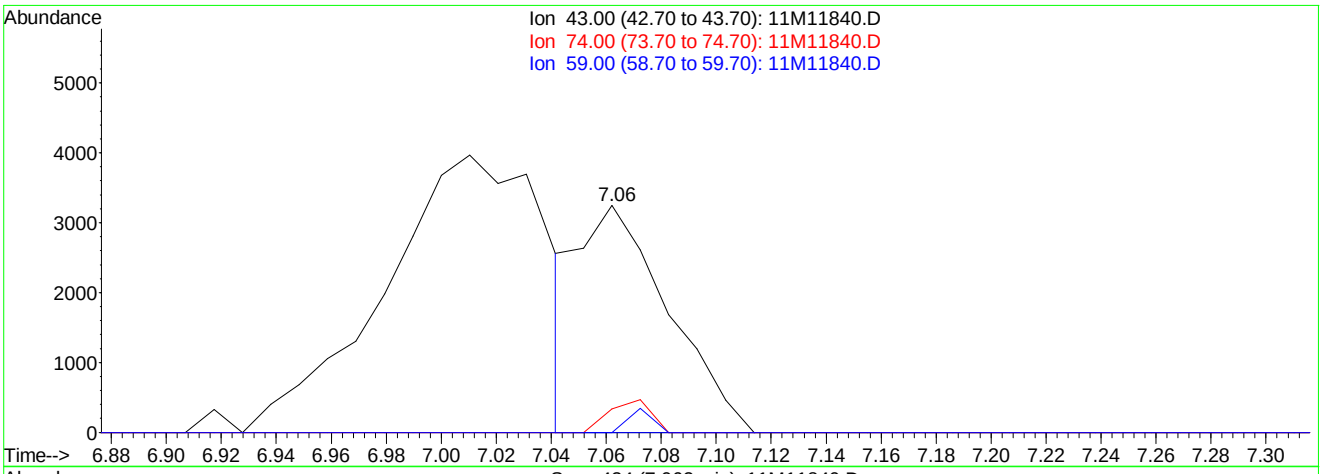

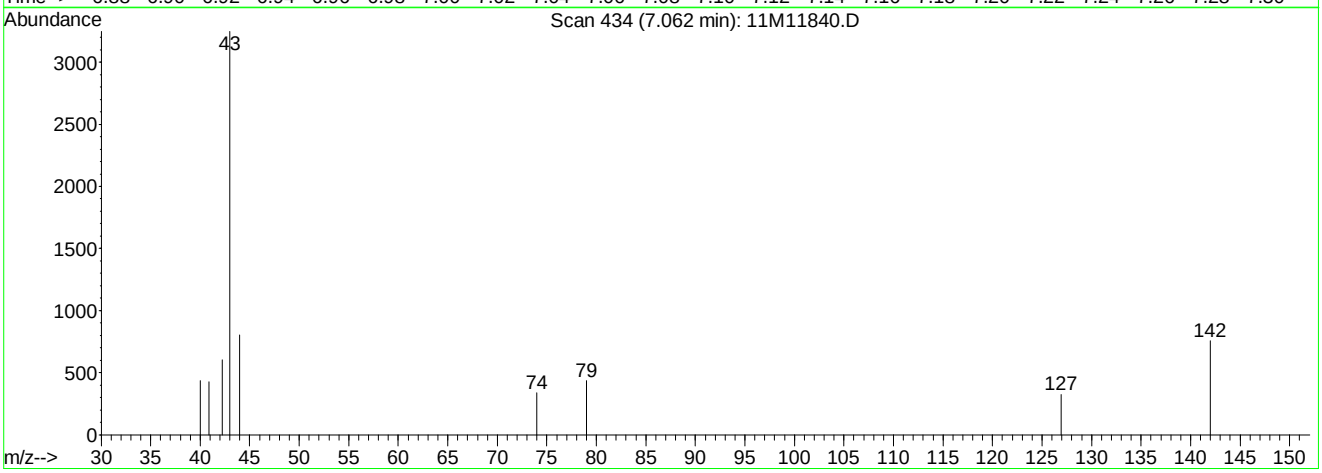

TIC: 11M11840.D

(18) Methyl acetate (T)

7.06min 0.86ug/L mint

response 7344

Ion	Exp%	Act%
43.00	100	100
74.00	13.60	6.84#
59.00	6.50	2.93#
0.00	0.00	0.00

11M11840.D 8260WT.M Sat May 14 18:46:39 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:12:58 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 17:07:56 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	510485	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	424113	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	244127	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	13577	2.3093 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	9.24%#	
43) 1,2-Dichloroethane-d4	10.23	65	16340	2.3640 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	9.44%#	
57) Toluene-d8	12.47	98	46369	2.3570 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	9.44%#	
78) p-Bromofluorobenzene	15.64	95	19139	2.4218 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	9.68%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	33260	4.2909 ug/L	97
3) Chloromethane	3.72	50	29484	4.2588 ug/L	100
4) Vinyl Chloride	3.96	62	24947	4.6446 ug/L	98
5) 1,3-Butadiene	4.00	54	24704	4.8274 ug/L	87
6) Bromomethane	4.85	94	16794	4.7876 ug/L	96
7) Chloroethane	5.00	64	15417	4.1982 ug/L	96
8) Trichlorofluoromethane	5.48	101	50663	4.8750 ug/L	98
9) Diethyl ether	6.01	59	199353	45.0064 ug/L	100
10) Isoprene	6.04	67	30513	4.3864 ug/L	99
11) Acrolein	6.25	56	12345	23.3877 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	23865	4.5585 ug/L	97
13) Acetone	6.35	43	6439	4.2186 ug/L	86
14) 1,1-Dichloroethene	6.56	61	43769	4.6158 ug/L	96
15) Tert-Butyl Alcohol	6.66	59	34212	87.4805 ug/L	100
16) Dimethyl Sulfide	6.81	62	17251	4.0482 ug/L	99
17) Iodomethane	7.06	142	7385	2.0684 ug/L	94
18) Methyl acetate	7.06	43	32363	5.4250 ug/L #	83
19) Methylene Chloride	7.31	84	23476	4.4707 ug/L	98
20) Carbon Disulfide	7.36	76	72931	4.4715 ug/L	98
21) Acrylonitrile	7.49	53	38039	20.0847 ug/L	96
22) Methyl Tert Butyl Ether	7.52	73	57597	4.3071 ug/L	98
23) trans-1,2-Dichloroethene	7.74	96	23369	4.3390 ug/L	99
24) n-Hexane	7.82	57	38507	4.3615 ug/L	99
25) Diisopropyl ether	8.15	45	1105208	48.2180 ug/L	99
26) Vinyl Acetate	8.31	43	24007	7.3442 ug/L	97
27) 1,1-Dichloroethane	8.34	63	51535	4.8316 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	899266	48.1312 ug/L	99
29) 2-Butanone	8.88	43	8098	3.5469 ug/L	98
30) Propionitrile	8.98	54	26204	41.2561 ug/L	97
31) 2,2-Dichloropropane	9.09	77	40285	5.2526 ug/L	97
32) cis-1,2-Dichloroethene	9.15	96	27456	4.6081 ug/L	91
33) Chloroform	9.35	83	48958	4.7306 ug/L	97
34) 1-Bromopropane	9.47	122	4632	4.9482 ug/L	88
35) Bromochloromethane	9.57	130	17073	4.6807 ug/L	99
36) Tetrahydrofuran	9.60	42	59638	39.6839 ug/L	99
38) 1,1,1-Trichloroethane	9.85	97	48123	4.8983 ug/L	100
39) Cyclohexane	9.88	56	51945	4.5931 ug/L	98
40) 1,1-Dichloropropene	10.04	75	33867	4.6344 ug/L	99
41) Carbon Tetrachloride	10.17	117	47434	5.0851 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	615710	46.3601 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:12:58 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 17:07:56 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	40281	4.6727 ug/L	99
45)	Benzene	10.38	78	94223	4.6151 ug/L	99
46)	Trichloroethene	11.08	130	31195	4.7740 ug/L	96
47)	Methylcyclohexane	11.17	83	35731	4.4100 ug/L	96
48)	1,2-Dichloropropane	11.29	63	25973	4.4921 ug/L	93
49)	1,4-Dioxane	11.56	88	2747	80.2363 ug/L	93
50)	Bromodichloromethane	11.57	83	36997	4.7467 ug/L	99
51)	Dibromomethane	11.65	93	13963	4.5774 ug/L	97
52)	2-Chloroethyl Vinyl Ether	11.84	63	11417	3.7313 ug/L	95
53)	4-Methyl-2-Pentanone	11.87	58	6133	3.2690 ug/L	90
54)	cis-1,3-Dichloropropene	12.17	75	36461	4.5343 ug/L	100
55)	Dimethyl Disulfide	12.42	79	18914	3.7032 ug/L	99
58)	Toluene	12.56	91	107617	4.9467 ug/L	100
59)	Ethyl Methacrylate	12.65	69	21187	4.1021 ug/L	99
60)	trans-1,3-Dichloropropene	12.73	75	32824	4.5778 ug/L	99
61)	1,1,2-Trichloroethane	12.94	97	17791	4.3060 ug/L	98
62)	2-Hexanone	12.86	43	11606	3.4244 ug/L	99
63)	1,3-Dichloropropane	13.21	76	30121	4.5460 ug/L	97
64)	Tetrachloroethene	13.33	164	24241	4.8819 ug/L	95
65)	Dibromochloromethane	13.59	129	27989	4.7024 ug/L	95
66)	1,2-Dibromoethane	13.82	107	18147	4.4382 ug/L	96
67)	1-Chlorohexane	13.89	91	33195	4.6591 ug/L	97
68)	Chlorobenzene	14.29	112	79059	4.9583 ug/L	98
69)	1,1,1,2-Tetrachloroethane	14.32	131	31047	4.8956 ug/L	97
70)	Ethylbenzene	14.31	106	39304	4.8168 ug/L	95
71)	m-,p-Xylene	14.39	106	95751	9.7273 ug/L	95
72)	o-Xylene	14.92	106	45759	4.7228 ug/L	96
73)	Styrene	14.95	104	77900	4.8227 ug/L	98
74)	Bromoform	15.43	173	15663	4.1856 ug/L	97
75)	Isopropylbenzene	15.31	105	123883	4.9827 ug/L	99
77)	1,1,2,2-Tetrachloroethane	15.51	83	18105	4.4049 ug/L	100
79)	1,2,3-Trichloropropane	15.70	110	6717	4.7266 ug/L	85
80)	trans-1,4-Dichloro-2-Buten	15.74	53	6067	3.6507 ug/L	69
81)	n-Propylbenzene	15.79	91	143972	5.2435 ug/L	99
82)	Bromobenzene	15.92	156	37345	4.9800 ug/L	93
83)	1,3,5-Trimethylbenzene	15.95	105	106030	5.0309 ug/L	100
84)	2-Chlorotoluene	16.05	91	99279	4.9734 ug/L	100
85)	4-Chlorotoluene	16.09	91	88275	5.1992 ug/L	98
86)	a-Methylstyrene	16.34	118	53766	4.7153 ug/L	98
87)	tert-Butylbenzene	16.39	134	23868	5.2956 ug/L	97
88)	1,2,4-Trimethylbenzene	16.44	105	112072	5.2401 ug/L	99
89)	sec-Butylbenzene	16.65	105	129249	5.1810 ug/L	99
90)	p-Isopropyltoluene	16.79	119	119605	5.2524 ug/L	98
91)	1,3-Dichlorobenzene	16.98	146	71265	5.0271 ug/L	99
92)	1,4-Dichlorobenzene	17.10	146	72437	5.0122 ug/L	96
93)	n-Butylbenzene	17.28	91	100062	4.9277 ug/L	99
94)	1,2-Dichlorobenzene	17.57	146	64925	4.9520 ug/L	98
95)	1,2-Dibromo-3-Chloropropan	18.49	75	3875	4.6567 ug/L	87
96)	1,2,4-Trichlorobenzene	19.55	180	46664	4.8629 ug/L	97
97)	Hexachlorobutadiene	19.69	225	20419	5.1319 ug/L	96
98)	Naphthalene	19.90	128	83612	4.4869 ug/L	99
99)	1,2,3-Trichlorobenzene	20.19	180	40714	4.5323 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M11841.D 8260WT.M Fri May 13 17:12:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:12 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 17:07:56 2016
Response via : Initial Calibration

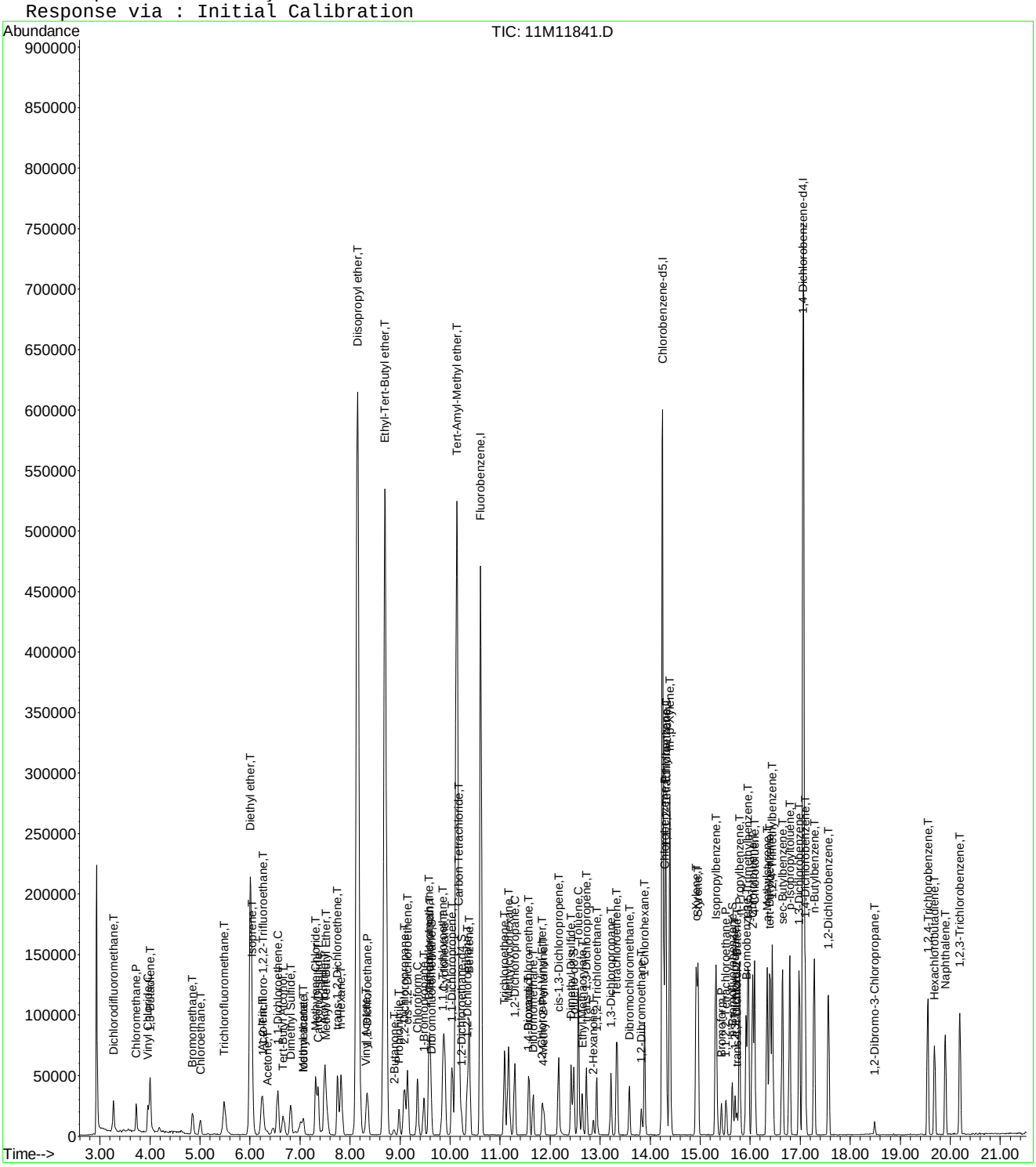

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.1584	16.8	100	0.00
3	P	Chloromethane	5.0000	4.6027	7.9	100	0.00
4	C	Vinyl Chloride	5.0000	4.6895	6.2	100	0.00
5	T	1,3-Butadiene	5.0000	4.6702	6.6	100	0.00
6	T	Bromomethane	5.0000	4.5915	8.2	100	0.00
7	T	Chloroethane	5.0000	4.5105	9.8	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.7781	4.4	100	0.00
9	T	Diethyl ether	50.0000	50.8371	-1.7	100	0.00
10	T	Isoprene	5.0000	4.6688	6.6	100	0.00
11	T	Acrolein	25.0000	24.7297	1.1	100	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.6385	7.2	100	0.01
13	T	Acetone	5.0000	5.3120	-6.2	100	0.01
14	C	1,1-Dichloroethene	5.0000	4.6835	6.3	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	102.0360	-2.0	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.6223	7.6	100	0.00
17	T	Iodomethane	5.0000	3.9124	21.8	100	0.00
18	T	Methyl acetate	5.0000	7.5474	-50.9#	100	0.00
19	T	Methylene Chloride	5.0000	4.8539	2.9	100	0.00
20	T	Carbon Disulfide	5.0000	4.6615	6.8	100	0.00
21	T	Acrylonitrile	25.0000	23.4049	6.4	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.7747	4.5	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.5182	9.6	100	0.00
24	T	n-Hexane	5.0000	4.4700	10.6	100	0.00
25	T	Diisopropyl ether	50.0000	51.4154	-2.8	100	0.00
26	T	Vinyl Acetate	5.0000	5.1698	-3.4	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.9658	0.7	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	51.3996	-2.8	100	0.00
29	T	2-Butanone	5.0000	4.4190	11.6	100	0.01
30	T	Propionitrile	50.0000	48.8210	2.4	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.9614	0.8	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.8145	3.7	100	0.00
33	C	Chloroform	5.0000	4.8039	3.9	100	0.00
34	T	1-Bromopropane	5.0000	5.1449	-2.9	100	0.00
35	T	Bromochloromethane	5.0000	5.0410	-0.8	100	0.00
36	T	Tetrahydrofuran	50.0000	46.0861	7.8	100	0.00
37	S	Dibromofluoromethane	2.5000	2.4302	2.8	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.7984	4.0	100	0.00
39	T	Cyclohexane	5.0000	4.7526	4.9	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.7295	5.4	100	0.00
41	T	Carbon Tetrachloride	5.0000	4.8435	3.1	100	-0.01
42	T	Tert-Amyl-Methyl ether	50.0000	50.6462	-1.3	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.5650	-2.6	100	0.00
44	T	1,2-Dichloroethane	5.0000	4.8665	2.7	100	0.00
45	T	Benzene	5.0000	4.8065	3.9	100	0.00
46	T	Trichloroethene	5.0000	4.8959	2.1	100	-0.01
47	T	Methylcyclohexane	5.0000	4.5439	9.1	100	0.00
48	C	1,2-Dichloropropane	5.0000	4.7864	4.3	100	0.00
49	T	1,4-Dioxane	100.0000	102.6541	-2.7	100	0.01
50	T	Bromodichloromethane	5.0000	4.8566	2.9	100	0.00
51	T	Dibromomethane	5.0000	4.9379	1.2	100	0.00
52	T	2-Chloroethyl Vinyl Ether	5.0000	4.2689	14.6	100	0.00
53	T	4-Methyl-2-Pentanone	5.0000	4.0658	18.7	100	0.00
54	T	cis-1,3-Dichloropropene	5.0000	4.7853	4.3	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	5.0000	4.1252	17.5	100	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	2.5000	2.5163	-0.7	100	0.00
58	C	Toluene	5.0000	5.0124	-0.2	100	0.00
59	T	Ethyl Methacrylate	5.0000	4.6214	7.6	100	0.00
60	T	trans-1,3-Dichloropropene	5.0000	4.7629	4.7	100	0.00
61	T	1,1,2-Trichloroethane	5.0000	4.6730	6.5	100	0.00
62	T	2-Hexanone	5.0000	4.1507	17.0	100	0.00
63	T	1,3-Dichloropropane	5.0000	4.9267	1.5	100	0.00
64	T	Tetrachloroethene	5.0000	4.8551	2.9	100	-0.01
65	T	Dibromochloromethane	5.0000	4.8199	3.6	100	0.00
66	T	1,2-Dibromoethane	5.0000	4.7575	4.8	100	0.00
67	T	1-Chlorohexane	5.0000	4.6895	6.2	100	0.00
68	P	Chlorobenzene	5.0000	5.0264	-0.5	100	0.00
69	T	1,1,1,2-Tetrachloroethane	5.0000	4.8783	2.4	100	0.00
70	C	Ethylbenzene	5.0000	4.8732	2.5	100	0.00
71	T	m-,p-Xylene	10.0000	9.7654	2.3	100	0.00
72	T	o-Xylene	5.0000	4.7954	4.1	100	0.00
73	T	Styrene	5.0000	4.9411	1.2	100	0.00
74	P	Bromoform	5.0000	4.4503	11.0	100	0.00
75	T	Isopropylbenzene	5.0000	4.9091	1.8	100	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	5.0000	4.7624	4.8	100	-0.01
78	S	p-Bromofluorobenzene	2.5000	2.5432	-1.7	100	0.00
79	T	1,2,3-Trichloropropane	5.0000	5.0393	-0.8	100	0.00
80	T	trans-1,4-Dichloro-2-Butene	5.0000	4.0050	19.9	100	0.00
81	T	n-Propylbenzene	5.0000	5.0923	-1.8	100	0.00
82	T	Bromobenzene	5.0000	5.0338	-0.7	100	0.00
83	T	1,3,5-Trimethylbenzene	5.0000	4.9145	1.7	100	-0.01
84	T	2-Chlorotoluene	5.0000	5.0134	-0.3	100	0.00
85	T	4-Chlorotoluene	5.0000	4.9765	0.5	100	0.00
86	T	a-Methylstyrene	5.0000	4.7239	5.5	100	0.00
87	T	tert-Butylbenzene	5.0000	5.2217	-4.4	100	-0.01
88	T	1,2,4-Trimethylbenzene	5.0000	5.1012	-2.0	100	0.00
89	T	sec-Butylbenzene	5.0000	4.9892	0.2	100	0.00
90	T	p-Isopropyltoluene	5.0000	5.0265	-0.5	100	0.00
91	T	1,3-Dichlorobenzene	5.0000	4.9737	0.5	100	0.00
92	T	1,4-Dichlorobenzene	5.0000	4.9875	0.2	100	0.00
93	T	n-Butylbenzene	5.0000	4.7722	4.6	100	0.00
94	T	1,2-Dichlorobenzene	5.0000	4.9741	0.5	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	5.0000	5.1051	-2.1	100	0.00
96	T	1,2,4-Trichlorobenzene	5.0000	4.8858	2.3	100	0.00
97	T	Hexachlorobutadiene	5.0000	4.8528	2.9	100	0.00
98	T	Naphthalene	5.0000	4.7164	5.7	100	0.00
99	T	1,2,3-Trichlorobenzene	5.0000	4.6448	7.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11841.D 8260WT.M Sat May 14 18:48:20 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11842.D Vial: 7
Acq On : 13 May 2016 17:19 Operator: JDS
Sample : WG568769-07 20ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:53 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	512017	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	433937	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	255524	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	58089	10.3664 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 41.48%#		
43) 1,2-Dichloroethane-d4	10.23	65	66804	10.4555 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 41.84%#		
57) Toluene-d8	12.47	98	193532	10.2645 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 41.04%#		
78) p-Bromofluorobenzene	15.64	95	81186	10.3070 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 41.24%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	176636	22.0179 ug/L	99
3) Chloromethane	3.72	50	126901	19.7510 ug/L	98
4) Vinyl Chloride	3.96	62	109592	20.5394 ug/L	98
5) 1,3-Butadiene	4.00	54	116317	21.9237 ug/L	96
6) Bromomethane	4.85	94	73878	20.1380 ug/L	93
7) Chloroethane	5.00	64	71103	20.7401 ug/L	100
8) Trichlorofluoromethane	5.49	101	225913	21.2425 ug/L	99
9) Diethyl ether	6.01	59	321203	81.6650 ug/L	99
10) Isoprene	6.04	67	135641	20.6925 ug/L	98
11) Acrolein	6.24	56	19366	37.8284 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	109792	21.2757 ug/L	99
13) Acetone	6.34	43	27399	22.5356 ug/L	96
14) 1,1-Dichloroethene	6.56	61	201658	21.5139 ug/L	98
15) Tert-Butyl Alcohol	6.67	59	60081	178.6532 ug/L	99
16) Dimethyl Sulfide	6.81	62	75759	20.2383 ug/L	97
17) Iodomethane	7.06	142	67280	17.2594 ug/L	97
18) Methyl acetate	7.07	43	87945	22.4983 ug/L	96
19) Methylene Chloride	7.31	84	99453	20.5013 ug/L	100
20) Carbon Disulfide	7.36	76	327043	20.8410 ug/L	100
21) Acrylonitrile	7.49	53	69618	42.7070 ug/L	95
22) Methyl Tert Butyl Ether	7.52	73	266288	22.0086 ug/L	99
23) trans-1,2-Dichloroethene	7.75	96	107858	20.7912 ug/L	99
24) n-Hexane	7.82	57	184135	21.3111 ug/L	99
25) Diisopropyl ether	8.15	45	1729257	80.2062 ug/L	99
26) Vinyl Acetate	8.31	43	160029	20.6235 ug/L	99
27) 1,1-Dichloroethane	8.34	63	218994	21.0387 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1435318	81.7933 ug/L	100
29) 2-Butanone	8.87	43	39878	21.6958 ug/L	99
30) Propionitrile	8.97	54	47221	87.7149 ug/L	99
31) 2,2-Dichloropropane	9.09	77	166427	20.4352 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	120620	21.0877 ug/L	99
33) Chloroform	9.35	83	208615	20.4085 ug/L	99
34) 1-Bromopropane	9.48	122	19153	19.2424 ug/L	96
35) Bromochloromethane	9.57	130	77189	22.7226 ug/L	99
36) Tetrahydrofuran	9.60	42	109362	84.2581 ug/L	100
38) 1,1,1-Trichloroethane	9.85	97	210871	20.9631 ug/L	98
39) Cyclohexane	9.88	56	235071	21.4428 ug/L	99
40) 1,1-Dichloropropene	10.04	75	151682	21.1188 ug/L	99
41) Carbon Tetrachloride	10.17	117	212111	21.5941 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	1001790	82.1572 ug/L	100

(#) = qualifier out of range (m) = manual integration
11M11842.D 8260WT.M Sat May 14 18:50:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11842.D Vial: 7
Acq On : 13 May 2016 17:19 Operator: JDS
Sample : WG568769-07 20ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:53 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	180438	21.7339	ug/L	99
45)	Benzene	10.38	78	407777	20.7394	ug/L	100
46)	Trichloroethene	11.08	130	132094	20.6692	ug/L	99
47)	Methylcyclohexane	11.17	83	168355	21.3455	ug/L	98
48)	1,2-Dichloropropane	11.29	63	112875	20.7388	ug/L	99
49)	1,4-Dioxane	11.56	88	4948	165.8209	ug/L	99
50)	Bromodichloromethane	11.57	83	163762	21.4329	ug/L	98
51)	Dibromomethane	11.65	93	61028	21.5174	ug/L	98
52)	2-Chloroethyl Vinyl Ether	11.84	63	56664	21.1238	ug/L	99
53)	4-Methyl-2-Pentanone	11.87	58	32621	21.5609	ug/L	99
54)	cis-1,3-Dichloropropene	12.17	75	166399	21.7735	ug/L	100
55)	Dimethyl Disulfide	12.42	79	93808	20.3984	ug/L	99
58)	Toluene	12.56	91	467769	21.2936	ug/L	99
59)	Ethyl Methacrylate	12.64	69	103892	22.1484	ug/L	98
60)	trans-1,3-Dichloropropene	12.73	75	155661	22.0759	ug/L	100
61)	1,1,2-Trichloroethane	12.94	97	85297	21.8971	ug/L	100
62)	2-Hexanone	12.86	43	62113	21.7109	ug/L	99
63)	1,3-Dichloropropane	13.21	76	137448	21.9726	ug/L	98
64)	Tetrachloroethene	13.34	164	106368	20.8217	ug/L	99
65)	Dibromochloromethane	13.59	129	131143	22.0723	ug/L	99
66)	1,2-Dibromoethane	13.82	107	84381	21.6209	ug/L	99
67)	1-Chlorohexane	13.89	91	153420	21.1830	ug/L	100
68)	Chlorobenzene	14.29	112	338669	21.0446	ug/L	99
69)	1,1,1,2-Tetrachloroethane	14.32	131	134571	20.6660	ug/L	98
70)	Ethylbenzene	14.31	106	171752	20.8130	ug/L	97
71)	m-,p-Xylene	14.39	106	419228	41.7882	ug/L	99
72)	o-Xylene	14.92	106	208125	21.3170	ug/L	99
73)	Styrene	14.95	104	353452	21.9116	ug/L	98
74)	Bromoform	15.43	173	78592	21.8247	ug/L	100
75)	Isopropylbenzene	15.31	105	552747	21.4078	ug/L	99
77)	1,1,2,2-Tetrachloroethane	15.52	83	90122	22.6486	ug/L	98
79)	1,2,3-Trichloropropane	15.70	110	30969	20.9562	ug/L	97
80)	trans-1,4-Dichloro-2-Buten	15.74	53	36190	19.3325	ug/L	86
81)	n-Propylbenzene	15.79	91	640711	21.6512	ug/L	100
82)	Bromobenzene	15.92	156	160227	20.6340	ug/L	100
83)	1,3,5-Trimethylbenzene	15.95	105	481759	21.3337	ug/L	100
84)	2-Chlorotoluene	16.05	91	435100	20.9919	ug/L	99
85)	4-Chlorotoluene	16.09	91	391759	21.1004	ug/L	100
86)	a-Methylstyrene	16.34	118	253642	21.2911	ug/L	99
87)	tert-Butylbenzene	16.39	134	101859	21.2903	ug/L	99
88)	1,2,4-Trimethylbenzene	16.44	105	505239	21.9714	ug/L	98
89)	sec-Butylbenzene	16.65	105	586770	21.6398	ug/L	100
90)	p-Isopropyltoluene	16.79	119	539795	21.6735	ug/L	100
91)	1,3-Dichlorobenzene	16.98	146	312832	20.8591	ug/L	99
92)	1,4-Dichlorobenzene	17.10	146	314339	20.6779	ug/L	99
93)	n-Butylbenzene	17.28	91	474312	21.6121	ug/L	99
94)	1,2-Dichlorobenzene	17.57	146	287316	21.0305	ug/L	100
95)	1,2-Dibromo-3-Chloropropan	18.49	75	19607	22.2193	ug/L	89
96)	1,2,4-Trichlorobenzene	19.55	180	212916	21.2982	ug/L	100
97)	Hexachlorobutadiene	19.69	225	91388	20.7507	ug/L	99
98)	Naphthalene	19.90	128	414073	22.3154	ug/L	99
99)	1,2,3-Trichlorobenzene	20.19	180	193437	21.0836	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11842.D Vial: 7
Acq On : 13 May 2016 17:19 Operator: JDS
Sample : WG568769-07 20ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

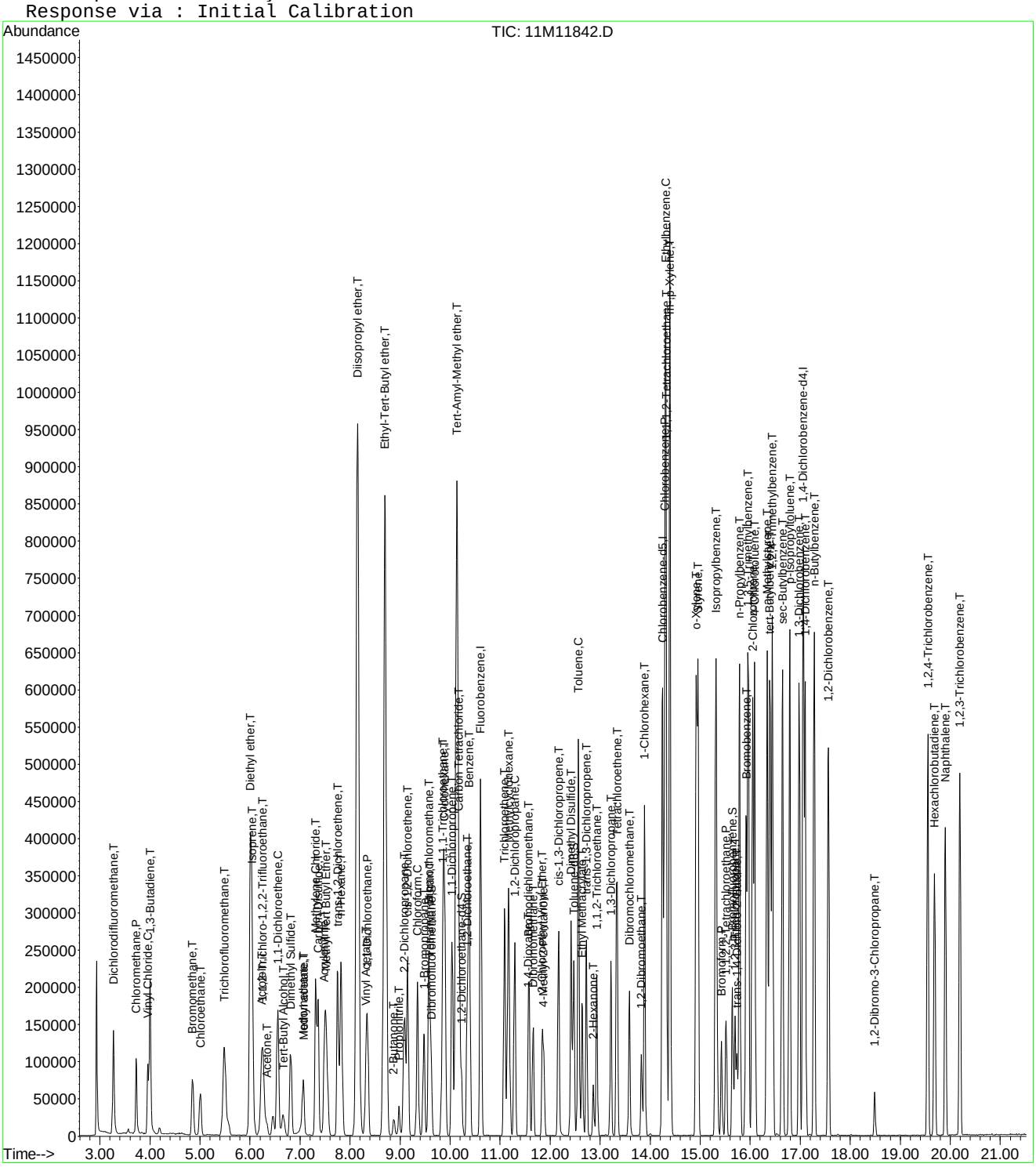

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11843.D Vial: 8
Acq On : 13 May 2016 17:51 Operator: JDS
Sample : WG568769-08 50ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:56 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	521583	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	438582	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	263885	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	139784	24.4879 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.96%		
43) 1,2-Dichloroethane-d4	10.23	65	158200	24.3058 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.24%		
57) Toluene-d8	12.47	98	462969	24.2947 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.16%		
78) p-Bromofluorobenzene	15.64	95	188875	23.2189 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.88%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	416971	51.0228 ug/L	100
3) Chloromethane	3.72	50	287508	43.9273 ug/L	100
4) Vinyl Chloride	3.96	62	261024	48.0232 ug/L	100
5) 1,3-Butadiene	4.00	54	280913	51.9760 ug/L	100
6) Bromomethane	4.85	94	172294	46.1032 ug/L	100
7) Chloroethane	5.00	64	167978	48.0991 ug/L	100
8) Trichlorofluoromethane	5.48	101	519806	47.9806 ug/L	100
9) Diethyl ether	6.01	59	391891	97.8098 ug/L	100
10) Isoprene	6.04	67	331169	49.5943 ug/L	100
11) Acrolein	6.23	56	25228	47.9550 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	255341	48.5730 ug/L	100
13) Acetone	6.34	43	57896	46.7459 ug/L	98
14) 1,1-Dichloroethene	6.56	61	459793	48.1534 ug/L	100
15) Tert-Butyl Alcohol	6.66	59	69395	202.5643 ug/L	100
16) Dimethyl Sulfide	6.81	62	193959	50.8640 ug/L	100
17) Iodomethane	7.06	142	214554	49.3519 ug/L	100
18) Methyl acetate	7.06	43	185465	48.1983 ug/L	100
19) Methylene Chloride	7.31	84	233601	47.2715 ug/L	100
20) Carbon Disulfide	7.36	76	816514	51.0786 ug/L	100
21) Acrylonitrile	7.49	53	84821	51.0789 ug/L	100
22) Methyl Tert Butyl Ether	7.52	73	610666	49.5457 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	252405	47.7624 ug/L	100
24) n-Hexane	7.82	57	449694	51.0913 ug/L	100
25) Diisopropyl ether	8.15	45	2181723	99.3365 ug/L	100
26) Vinyl Acetate	8.31	43	410275	48.2141 ug/L	100
27) 1,1-Dichloroethane	8.34	63	516691	48.7281 ug/L	100
28) Ethyl-Tert-Butyl ether	8.70	59	1783350	99.7625 ug/L	100
29) 2-Butanone	8.87	43	91238	48.7281 ug/L	100
30) Propionitrile	8.97	54	56538	103.0954 ug/L	100
31) 2,2-Dichloropropane	9.09	77	402511	48.5170 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	282222	48.4353 ug/L	100
33) Chloroform	9.35	83	489993	47.0562 ug/L	100
34) 1-Bromopropane	9.48	122	50180	48.4991 ug/L	100
35) Bromochloromethane	9.57	130	179921	51.9932 ug/L	100
36) Tetrahydrofuran	9.60	42	127999	96.8083 ug/L	100
38) 1,1,1-Trichloroethane	9.85	97	497667	48.5667 ug/L	100
39) Cyclohexane	9.88	56	575045	51.4928 ug/L	100
40) 1,1-Dichloropropene	10.04	75	353148	48.2674 ug/L	100
41) Carbon Tetrachloride	10.18	117	493225	49.2921 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	1227500	98.8215 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11843.D Vial: 8
Acq On : 13 May 2016 17:51 Operator: JDS
Sample : WG568769-08 50ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:56 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.34	62	419000	49.5434 ug/L	100
45) Benzene	10.38	78	947514	47.3064 ug/L	100
46) Trichloroethene	11.09	130	307211	47.1888 ug/L	100
47) Methylcyclohexane	11.17	83	418631	52.1043 ug/L	100
48) 1,2-Dichloropropane	11.29	63	268423	48.4136 ug/L	100
49) 1,4-Dioxane	11.55	88	5866	189.1665 ug/L	100
50) Bromodichloromethane	11.57	83	385292	49.5015 ug/L	100
51) Dibromomethane	11.65	93	142910	49.4635 ug/L	100
52) 2-Chloroethyl Vinyl Ether	11.84	63	133225	48.7541 ug/L	100
53) 4-Methyl-2-Pentanone	11.87	58	75720	49.1295 ug/L	100
54) cis-1,3-Dichloropropene	12.17	75	394857	50.7199 ug/L	100
55) Dimethyl Disulfide	12.42	79	236984	50.5867 ug/L	100
58) Toluene	12.56	91	1095397	49.3360 ug/L	100
59) Ethyl Methacrylate	12.65	69	249821	52.6944 ug/L	100
60) trans-1,3-Dichloropropene	12.73	75	366443	51.4187 ug/L	100
61) 1,1,2-Trichloroethane	12.93	97	194150	49.3135 ug/L	100
62) 2-Hexanone	12.86	43	144364	49.9264 ug/L	100
63) 1,3-Dichloropropane	13.21	76	316783	50.1049 ug/L	100
64) Tetrachloroethene	13.34	164	251037	48.6205 ug/L	100
65) Dibromochloromethane	13.59	129	310662	51.7330 ug/L	100
66) 1,2-Dibromoethane	13.82	107	196704	49.8676 ug/L	100
67) 1-Chlorohexane	13.89	91	376690	51.4596 ug/L	100
68) Chlorobenzene	14.29	112	797442	49.0276 ug/L	100
69) 1,1,1,2-Tetrachloroethane	14.32	131	325801	49.5033 ug/L	100
70) Ethylbenzene	14.31	106	408749	49.0078 ug/L	100
71) m-,p-Xylene	14.39	106	996141	98.2427 ug/L	100
72) o-Xylene	14.92	106	492043	49.8632 ug/L	100
73) Styrene	14.95	104	838125	51.4077 ug/L	100
74) Bromoform	15.43	173	184100	50.5823 ug/L	100
75) Isopropylbenzene	15.31	105	1309383	50.1751 ug/L	100
77) 1,1,2,2-Tetrachloroethane	15.52	83	208930	50.8426 ug/L	100
79) 1,2,3-Trichloropropane	15.70	110	72411	46.9859 ug/L	100
80) trans-1,4-Dichloro-2-Buten	15.74	53	94075	47.5347 ug/L	100
81) n-Propylbenzene	15.79	91	1522917	49.8325 ug/L	100
82) Bromobenzene	15.92	156	379178	47.2834 ug/L	100
83) 1,3,5-Trimethylbenzene	15.96	105	1143246	49.0221 ug/L	100
84) 2-Chlorotoluene	16.05	91	1021921	47.7415 ug/L	100
85) 4-Chlorotoluene	16.09	91	930690	48.5394 ug/L	100
86) a-Methylstyrene	16.34	118	649847	52.8208 ug/L	100
87) tert-Butylbenzene	16.40	134	241955	48.9705 ug/L	100
88) 1,2,4-Trimethylbenzene	16.44	105	1178963	49.6454 ug/L	100
89) sec-Butylbenzene	16.65	105	1390388	49.6522 ug/L	100
90) p-Isopropyltoluene	16.79	119	1282252	49.8529 ug/L	100
91) 1,3-Dichlorobenzene	16.98	146	737967	47.6473 ug/L	100
92) 1,4-Dichlorobenzene	17.10	146	740977	47.1987 ug/L	100
93) n-Butylbenzene	17.28	91	1126170	49.6883 ug/L	100
94) 1,2-Dichlorobenzene	17.57	146	684016	48.4812 ug/L	100
95) 1,2-Dibromo-3-Chloropropan	18.49	75	42848	46.3023 ug/L	100
96) 1,2,4-Trichlorobenzene	19.55	180	512927	49.6830 ug/L	100
97) Hexachlorobutadiene	19.69	225	219129	48.1793 ug/L	100
98) Naphthalene	19.90	128	962852	50.2463 ug/L	100
99) 1,2,3-Trichlorobenzene	20.19	180	453828	47.8975 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11843.D Vial: 8
Acq On : 13 May 2016 17:51 Operator: JDS
Sample : WG568769-08 50ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

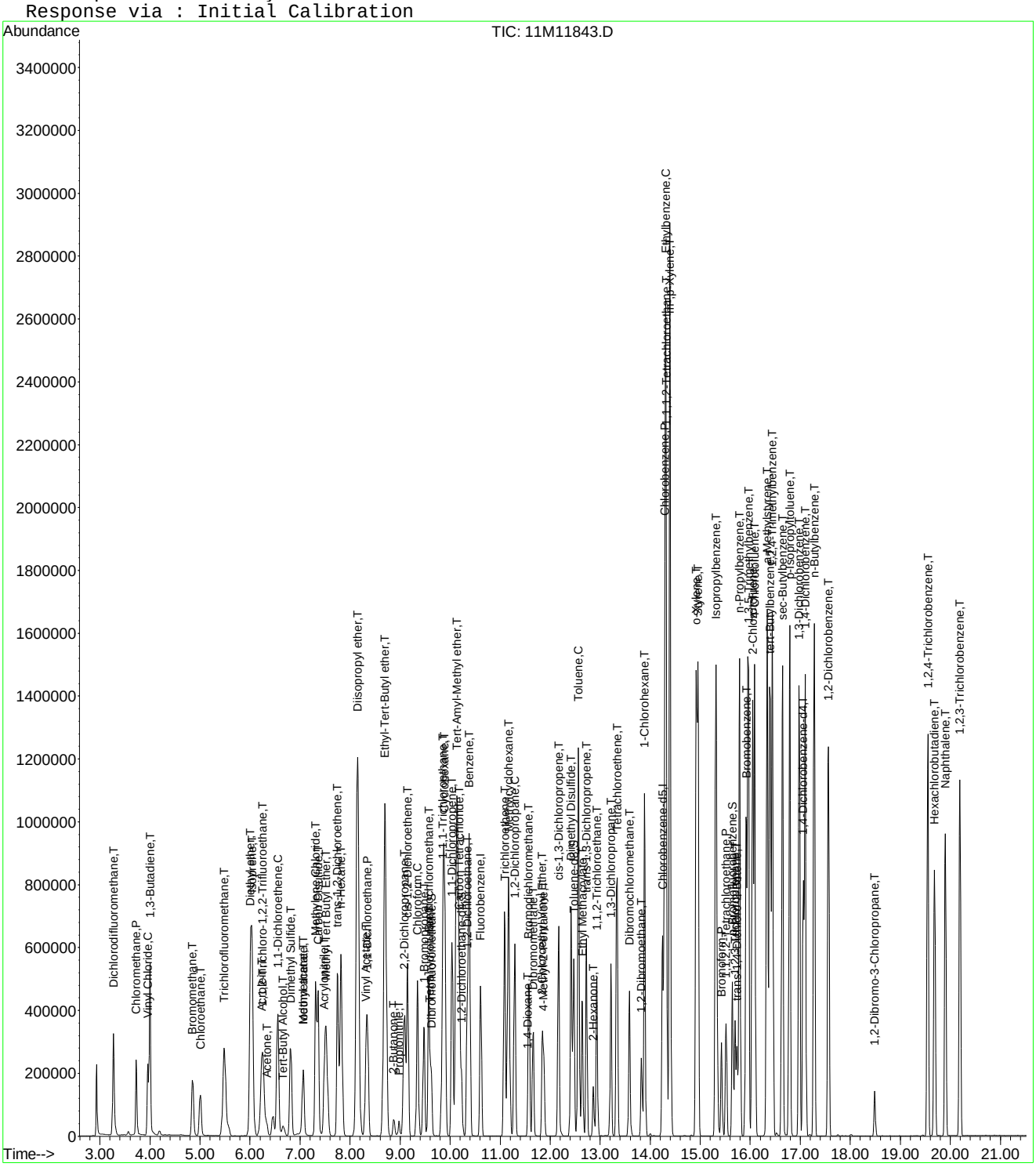

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11844.D Vial: 9
Acq On : 13 May 2016 18:22 Operator: JDS
Sample : WG568769-09 100ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:57 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	541540	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	458522	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	275719	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	307700	51.9175 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 207.68%#		
43) 1,2-Dichloroethane-d4	10.23	65	345779	51.1676 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 204.68%#		
57) Toluene-d8	12.47	98	1011334	50.7627 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 203.04%#		
78) p-Bromofluorobenzene	15.64	95	423157	49.7872 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 199.16%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	918088	108.2020 ug/L	100
3) Chloromethane	3.72	50	641242	94.3625 ug/L	99
4) Vinyl Chloride	3.95	62	586615	103.9481 ug/L	100
5) 1,3-Butadiene	3.99	54	571156	101.7838 ug/L	99
6) Bromomethane	4.85	94	394826	101.7560 ug/L	99
7) Chloroethane	5.00	64	370541	102.1913 ug/L	99
8) Trichlorofluoromethane	5.48	101	1135647	100.9627 ug/L	98
9) Diethyl ether	6.01	59	836495	201.0821 ug/L	99
10) Isoprene	6.04	67	699724	100.9257 ug/L	100
11) Acrolein	6.24	56	55228	99.4421 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	545013	99.8560 ug/L	100
13) Acetone	6.34	43	123799	96.2731 ug/L	95
14) 1,1-Dichloroethene	6.56	61	1004294	101.3022 ug/L	100
15) Tert-Butyl Alcohol	6.66	59	148134	416.4687 ug/L	98
16) Dimethyl Sulfide	6.81	62	401237	101.3432 ug/L	100
17) Iodomethane	7.06	142	471112	102.3553 ug/L	100
18) Methyl acetate	7.07	43	381031	98.0957 ug/L	99
19) Methylene Chloride	7.31	84	501609	97.7649 ug/L	99
20) Carbon Disulfide	7.36	76	1695322	102.1458 ug/L	100
21) Acrylonitrile	7.49	53	184461	106.9881 ug/L	99
22) Methyl Tert Butyl Ether	7.52	73	1312901	102.5951 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	542907	98.9478 ug/L	98
24) n-Hexane	7.82	57	921942	100.8849 ug/L	99
25) Diisopropyl ether	8.15	45	4599625	201.7086 ug/L	99
26) Vinyl Acetate	8.31	43	855488	94.3763 ug/L	99
27) 1,1-Dichloroethane	8.34	63	1111115	100.9254 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	3780769	203.7060 ug/L	100
29) 2-Butanone	8.87	43	198511	102.1130 ug/L	100
30) Propionitrile	8.98	54	118699	208.4678 ug/L	97
31) 2,2-Dichloropropane	9.09	77	914695	106.1904 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	606774	100.2977 ug/L	99
33) Chloroform	9.35	83	1053766	97.4685 ug/L	100
34) 1-Bromopropane	9.48	122	106914	98.8615 ug/L	100
35) Bromochloromethane	9.57	130	387239	107.7795 ug/L	100
36) Tetrahydrofuran	9.60	42	270148	196.7890 ug/L	99
38) 1,1,1-Trichloroethane	9.85	97	1088263	102.2884 ug/L	99
39) Cyclohexane	9.88	56	1213186	104.6320 ug/L	100
40) 1,1-Dichloropropene	10.04	75	775674	102.1101 ug/L	98
41) Carbon Tetrachloride	10.18	117	1074698	103.4456 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	2619501	203.1147 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11844.D Vial: 9
Acq On : 13 May 2016 18:22 Operator: JDS
Sample : WG568769-09 100ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:57 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	895394	101.9714	ug/L	100
45)	Benzene	10.38	78	2041856	98.1867	ug/L	100
46)	Trichloroethene	11.08	130	677193	100.1861	ug/L	99
47)	Methylcyclohexane	11.17	83	867487	103.9915	ug/L	100
48)	1,2-Dichloropropane	11.29	63	580562	100.8530	ug/L	98
49)	1,4-Dioxane	11.56	88	13651	395.0901	ug/L	100
50)	Bromodichloromethane	11.57	83	837797	103.6717	ug/L	99
51)	Dibromomethane	11.65	93	315786	105.2707	ug/L	99
52)	2-Chloroethyl Vinyl Ether	11.84	63	293822	103.5626	ug/L	100
53)	4-Methyl-2-Pentanone	11.87	58	164890	103.0430	ug/L	98
54)	cis-1,3-Dichloropropene	12.17	75	854611	105.7305	ug/L	99
55)	Dimethyl Disulfide	12.42	79	505463	103.9202	ug/L	99
58)	Toluene	12.56	91	2361378	101.7300	ug/L	100
59)	Ethyl Methacrylate	12.65	69	529740	106.8782	ug/L	98
60)	trans-1,3-Dichloropropene	12.73	75	793063	106.4420	ug/L	99
61)	1,1,2-Trichloroethane	12.94	97	418327	101.6330	ug/L	99
62)	2-Hexanone	12.86	43	314588	104.0648	ug/L	99
63)	1,3-Dichloropropane	13.21	76	685844	103.7610	ug/L	100
64)	Tetrachloroethene	13.34	164	550335	101.9528	ug/L	99
65)	Dibromochloromethane	13.59	129	681591	108.5659	ug/L	100
66)	1,2-Dibromoethane	13.82	107	427945	103.7729	ug/L	99
67)	1-Chlorohexane	13.89	91	807177	105.4730	ug/L	98
68)	Chlorobenzene	14.29	112	1705646	100.3046	ug/L	99
69)	1,1,1,2-Tetrachloroethane	14.32	131	704959	102.4557	ug/L	100
70)	Ethylbenzene	14.31	106	883839	101.3614	ug/L	99
71)	m-,p-Xylene	14.39	106	2123651	200.3333	ug/L	98
72)	o-Xylene	14.92	106	1053682	102.1356	ug/L	100
73)	Styrene	14.95	104	1807222	106.0282	ug/L	99
74)	Bromoform	15.43	173	412378	108.3755	ug/L	100
75)	Isopropylbenzene	15.31	105	2813193	103.1127	ug/L	99
77)	1,1,2,2-Tetrachloroethane	15.52	83	454052	105.7501	ug/L	99
79)	1,2,3-Trichloropropane	15.70	110	156532	96.8210	ug/L	100
80)	trans-1,4-Dichloro-2-Buten	15.74	53	203327	97.5343	ug/L	96
81)	n-Propylbenzene	15.79	91	3285915	102.9061	ug/L	99
82)	Bromobenzene	15.92	156	828973	98.9359	ug/L	99
83)	1,3,5-Trimethylbenzene	15.96	105	2483230	101.9102	ug/L	100
84)	2-Chlorotoluene	16.05	91	2208423	98.7437	ug/L	100
85)	4-Chlorotoluene	16.09	91	2020827	100.8710	ug/L	100
86)	a-Methylstyrene	16.34	118	1361545	105.9190	ug/L	99
87)	tert-Butylbenzene	16.40	134	532522	103.1540	ug/L	98
88)	1,2,4-Trimethylbenzene	16.44	105	2546912	102.6457	ug/L	100
89)	sec-Butylbenzene	16.65	105	3003570	102.6569	ug/L	99
90)	p-Isopropyltoluene	16.79	119	2763313	102.8241	ug/L	99
91)	1,3-Dichlorobenzene	16.98	146	1600684	98.9134	ug/L	100
92)	1,4-Dichlorobenzene	17.10	146	1605475	97.8762	ug/L	100
93)	n-Butylbenzene	17.28	91	2452438	103.5609	ug/L	100
94)	1,2-Dichlorobenzene	17.57	146	1481276	100.4827	ug/L	100
95)	1,2-Dibromo-3-Chloropropan	18.49	75	95062	97.5959	ug/L	99
96)	1,2,4-Trichlorobenzene	19.55	180	1100416	102.0133	ug/L	100
97)	Hexachlorobutadiene	19.69	225	486893	102.4572	ug/L	100
98)	Naphthalene	19.90	128	2071229	103.4477	ug/L	100
99)	1,2,3-Trichlorobenzene	20.19	180	980181	99.0092	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11844.D Vial: 9
Acq On : 13 May 2016 18:22 Operator: JDS
Sample : WG568769-09 100ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

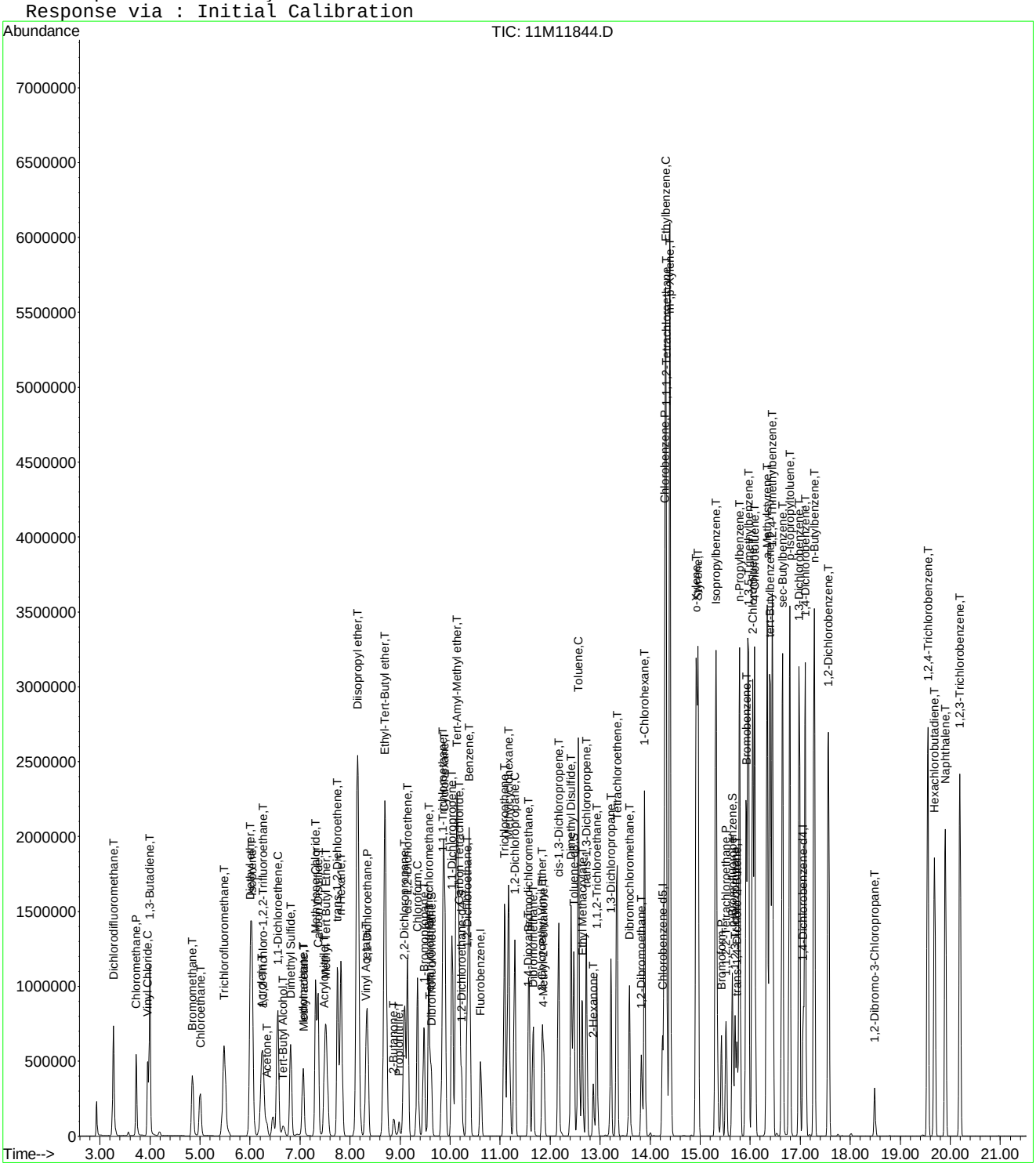

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11845.D Vial: 10
Acq On : 13 May 2016 18:54 Operator: JDS
Sample : WG568769-10 200ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:59 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	552905	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	473364	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	274188	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	629894	104.0960 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 416.40%#		
43) 1,2-Dichloroethane-d4	10.23	65	684792	99.2511 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 397.00%#		
57) Toluene-d8	12.47	98	2068111	100.5516 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 402.20%#		
78) p-Bromofluorobenzene	15.64	95	864999	102.3411 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 409.36%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	1843265	212.7741 ug/L	99
3) Chloromethane	3.72	50	1346993	194.1434 ug/L	100
4) Vinyl Chloride	3.95	62	1199147	208.1209 ug/L	100
5) 1,3-Butadiene	3.99	54	1131910	197.5677 ug/L	97
6) Bromomethane	4.85	94	859963	217.0771 ug/L	100
7) Chloroethane	5.00	64	764060	206.3883 ug/L	100
8) Trichlorofluoromethane	5.48	101	2275404	198.1327 ug/L	100
9) Diethyl ether	6.03	59	2592	0.6103 ug/L #	21
10) Isoprene	6.04	67	1435794	202.8369 ug/L	97
11) Acrolein	6.25	56	3061	6.8231 ug/L	88
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	1123889	201.6837 ug/L	99
13) Acetone	6.34	43	254053	193.5049 ug/L	96
14) 1,1-Dichloroethene	6.56	61	2040432	201.5858 ug/L	99
15) Tert-Butyl Alcohol	6.67	59	7729	21.2829 ug/L #	82
16) Dimethyl Sulfide	6.81	62	830179	205.3739 ug/L	99
17) Iodomethane	7.06	142	969857	206.1133 ug/L	99
18) Methyl acetate	7.07	43	749575	196.5068 ug/L	97
19) Methylene Chloride	7.31	84	1035656	197.7029 ug/L	97
20) Carbon Disulfide	7.36	76	3459748	204.1704 ug/L	99
21) Acrylonitrile	7.52	53	35662	20.2589 ug/L #	39
22) Methyl Tert Butyl Ether	7.52	73	2706665	207.1616 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	1121963	200.2808 ug/L	99
24) n-Hexane	7.82	57	1873652	200.8128 ug/L	99
25) Diisopropyl ether	8.16	45	16567	0.7116 ug/L #	87
26) Vinyl Acetate	8.31	43	1904053	202.8645 ug/L	100
27) 1,1-Dichloroethane	8.34	63	2261904	201.2314 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	9063	0.4783 ug/L	90
29) 2-Butanone	8.87	43	407543	205.3288 ug/L	99
30) Propionitrile	8.97	54	4182	7.1938 ug/L #	60
31) 2,2-Dichloropropane	9.09	77	1850091	210.3692 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	1257477	203.5843 ug/L	100
33) Chloroform	9.35	83	2160999	195.7739 ug/L	100
34) 1-Bromopropane	9.48	122	222798	201.1267 ug/L	98
35) Bromochloromethane	9.57	130	798076	217.5612 ug/L	99
36) Tetrahydrofuran	9.60	42	9110	6.4998 ug/L	97
38) 1,1,1-Trichloroethane	9.85	97	2208198	203.2875 ug/L	99
39) Cyclohexane	9.88	56	2467804	208.4625 ug/L	100
40) 1,1-Dichloropropene	10.04	75	1587009	204.6205 ug/L	99
41) Carbon Tetrachloride	10.18	117	2174730	205.0269 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	6538	0.4965 ug/L #	83

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11845.D Vial: 10
Acq On : 13 May 2016 18:54 Operator: JDS
Sample : WG568769-10 200ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:59 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
44)	1,2-Dichloroethane	10.34	62	1808450	201.7209 ug/L		99
45)	Benzene	10.38	78	4119227	194.0096 ug/L		99
46)	Trichloroethene	11.09	130	1367103	198.0963 ug/L		100
47)	Methylcyclohexane	11.17	83	1789256	210.0812 ug/L		99
48)	1,2-Dichloropropane	11.29	63	1196100	203.5109 ug/L		99
49)	1,4-Dioxane	11.57	88	2656	94.1370 ug/L	#	31
50)	Bromodichloromethane	11.58	83	1721733	208.6734 ug/L		99
51)	Dibromomethane	11.66	93	641583	209.4825 ug/L		100
52)	2-Chloroethyl Vinyl Ether	11.84	63	608231	209.9748 ug/L		99
53)	4-Methyl-2-Pentanone	11.87	58	342251	209.4831 ug/L		99
54)	cis-1,3-Dichloropropene	12.17	75	1772737	214.8108 ug/L		100
55)	Dimethyl Disulfide	12.42	79	1052498	211.9395 ug/L		98
58)	Toluene	12.56	91	4699240	196.0993 ug/L		98
59)	Ethyl Methacrylate	12.65	69	1101451	215.2567 ug/L		97
60)	trans-1,3-Dichloropropene	12.73	75	1627488	211.5866 ug/L		99
61)	1,1,2-Trichloroethane	12.93	97	860113	202.4133 ug/L		99
62)	2-Hexanone	12.86	43	651287	208.6888 ug/L		99
63)	1,3-Dichloropropane	13.21	76	1412360	206.9756 ug/L		99
64)	Tetrachloroethene	13.34	164	1133410	203.3874 ug/L		99
65)	Dibromochloromethane	13.59	129	1409248	217.4313 ug/L		99
66)	1,2-Dibromoethane	13.82	107	889951	209.0389 ug/L		99
67)	1-Chlorohexane	13.89	91	1659272	210.0173 ug/L		97
68)	Chlorobenzene	14.29	112	3416597	194.6214 ug/L		98
69)	1,1,1,2-Tetrachloroethane	14.32	131	1457008	205.1158 ug/L		100
70)	Ethylbenzene	14.31	106	1814385	201.5551 ug/L		91
71)	m-,p-Xylene	14.39	106	4230307	386.5510 ug/L		85
72)	o-Xylene	14.92	106	2156790	202.5071 ug/L		96
73)	Styrene	14.96	104	3630570	206.3240 ug/L		98
74)	Bromoform	15.43	173	854308	217.4778 ug/L		100
75)	Isopropylbenzene	15.31	105	5485636	194.7621 ug/L		97
77)	1,1,2,2-Tetrachloroethane	15.52	83	939708	220.0830 ug/L		98
79)	1,2,3-Trichloropropane	15.70	110	325518	202.0716 ug/L		99
80)	trans-1,4-Dichloro-2-Buten	15.74	53	421012	202.2796 ug/L		97
81)	n-Propylbenzene	15.79	91	6220435	195.8952 ug/L		95
82)	Bromobenzene	15.92	156	1685980	202.3412 ug/L		99
83)	1,3,5-Trimethylbenzene	15.96	105	4875063	201.1866 ug/L		97
84)	2-Chlorotoluene	16.05	91	4287026	192.7532 ug/L		98
85)	4-Chlorotoluene	16.09	91	4030756	202.3214 ug/L		98
86)	a-Methylstyrene	16.34	118	2724122	213.1015 ug/L		98
87)	tert-Butylbenzene	16.40	134	1075661	209.5280 ug/L		96
88)	1,2,4-Trimethylbenzene	16.44	105	4921395	199.4496 ug/L		97
89)	sec-Butylbenzene	16.65	105	5740919	197.3104 ug/L		97
90)	p-Isopropyltoluene	16.79	119	5274037	197.3451 ug/L		95
91)	1,3-Dichlorobenzene	16.98	146	3171808	197.0945 ug/L		99
92)	1,4-Dichlorobenzene	17.10	146	3145357	192.8244 ug/L		99
93)	n-Butylbenzene	17.28	91	4684496	198.9203 ug/L		97
94)	1,2-Dichlorobenzene	17.57	146	2909224	198.4498 ug/L		99
95)	1,2-Dibromo-3-Chloropropan	18.49	75	191088	196.6217 ug/L		99
96)	1,2,4-Trichlorobenzene	19.55	180	2198003	204.9021 ug/L		99
97)	Hexachlorobutadiene	19.69	225	969160	205.0797 ug/L		99
98)	Naphthalene	19.90	128	3994903	200.6399 ug/L		98
99)	1,2,3-Trichlorobenzene	20.19	180	1999949	203.1452 ug/L		99

(#) = qualifier out of range (m) = manual integration
11M11845.D 8260WT.M Sat May 14 18:51:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11845.D Vial: 10
Acq On : 13 May 2016 18:54 Operator: JDS
Sample : WG568769-10 200ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

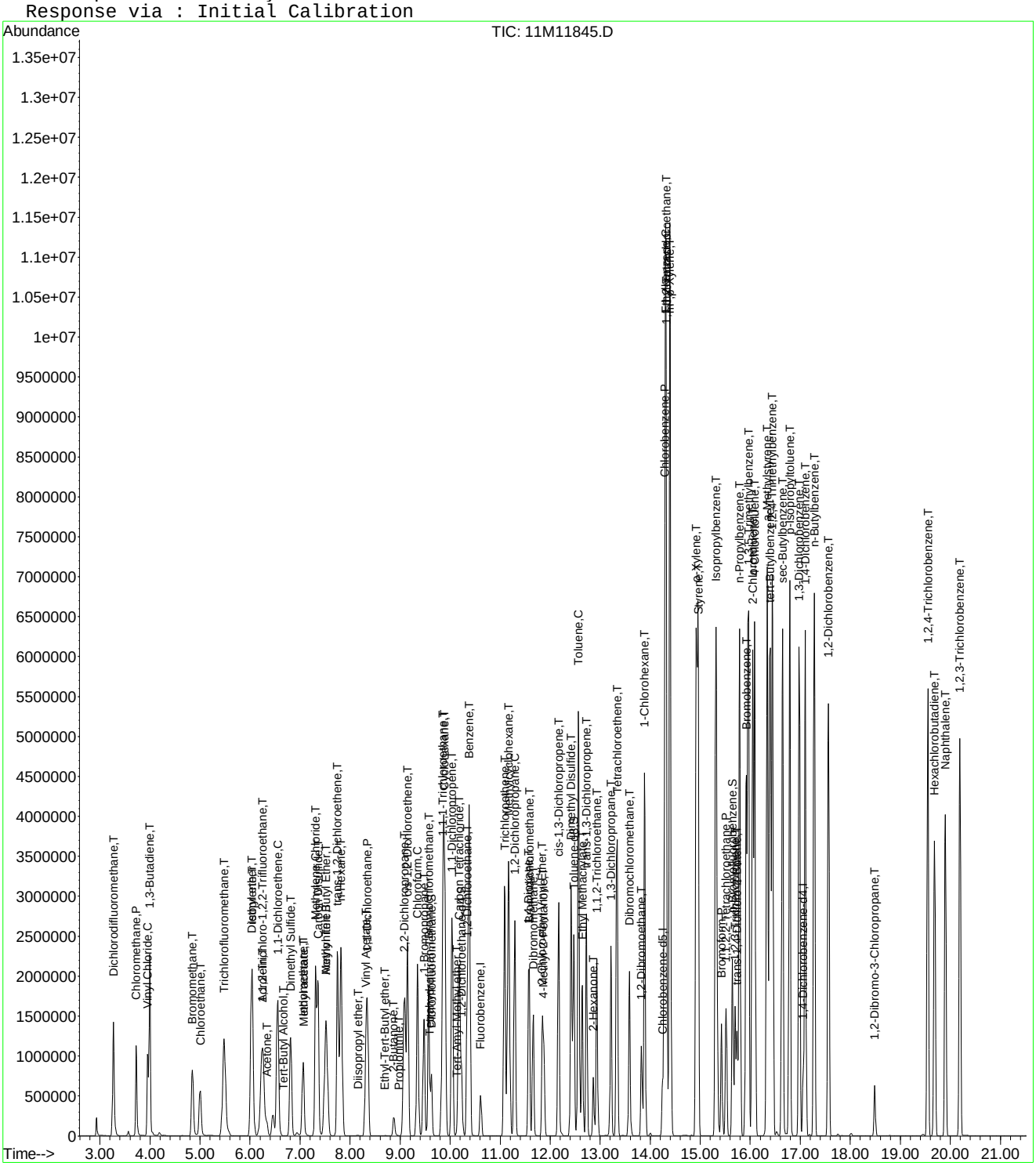

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11846.D Vial: 11
Acq On : 13 May 2016 19:26 Operator: JDS
Sample : WG568769-11 300ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:51:01 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	543599	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	479542	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	277309	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	905755	152.2472 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 609.00%#		
43) 1,2-Dichloroethane-d4	10.23	65	970758	143.1066 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 572.44%#		
57) Toluene-d8	12.47	98	3002456	144.0987 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 576.40%#		
78) p-Bromofluorobenzene	15.64	95	1285822	150.4179 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 601.68%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	2762707	324.3678 ug/L	99
3) Chloromethane	3.72	50	2113477	309.8323 ug/L	100
4) Vinyl Chloride	3.95	62	1802126	318.1269 ug/L	100
5) 1,3-Butadiene	3.99	54	1562377	277.3715 ug/L	98
6) Bromomethane	4.85	94	1341865	344.5204 ug/L	100
7) Chloroethane	5.00	64	1181546	324.6236 ug/L	100
8) Trichlorofluoromethane	5.48	101	3351045	296.7904 ug/L	99
9) Diethyl ether	6.01	59	1250668	299.5049 ug/L	97
10) Isoprene	6.04	67	2121830	304.8859 ug/L	97
11) Acrolein	6.23	56	87016	155.2272 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	1679276	306.5076 ug/L	99
13) Acetone	6.34	43	352141	272.8074 ug/L	95
14) 1,1-Dichloroethene	6.56	61	3009080	302.3733 ug/L	98
15) Tert-Butyl Alcohol	6.67	59	227782	637.9680 ug/L	97
16) Dimethyl Sulfide	6.81	62	1199487	301.8151 ug/L	96
17) Iodomethane	7.06	142	1359092	295.3515 ug/L	96
18) Methyl acetate	7.07	43	1093862	303.3719 ug/L	97
19) Methylene Chloride	7.31	84	1550974	301.1438 ug/L	91
20) Carbon Disulfide	7.36	76	5025219	301.6304 ug/L	99
21) Acrylonitrile	7.49	53	292311	168.8994 ug/L	94
22) Methyl Tert Butyl Ether	7.52	73	3880019	302.0512 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	1693308	307.4459 ug/L	98
24) n-Hexane	7.82	57	2752540	300.0599 ug/L	99
25) Diisopropyl ether	8.15	45	6621718	289.2841 ug/L	99
26) Vinyl Acetate	8.31	43	2814279	303.7518 ug/L	99
27) 1,1-Dichloroethane	8.34	63	3313473	299.8312 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	5508427	295.6672 ug/L	99
29) 2-Butanone	8.87	43	590742	302.7235 ug/L	97
30) Propionitrile	8.99	54	177454	310.4771 ug/L	98
31) 2,2-Dichloropropane	9.09	77	2735421	316.3626 ug/L	99
32) cis-1,2-Dichloroethene	9.15	96	1856543	305.7181 ug/L	98
33) Chloroform	9.35	83	3144758	289.7739 ug/L	100
34) 1-Bromopropane	9.48	122	329211	301.9597 ug/L	98
35) Bromochloromethane	9.57	130	1179409	327.0194 ug/L	97
36) Tetrahydrofuran	9.60	42	386389	280.3985 ug/L	96
38) 1,1,1-Trichloroethane	9.85	97	3227247	302.1877 ug/L	99
39) Cyclohexane	9.88	56	3625895	311.5332 ug/L	99
40) 1,1-Dichloropropene	10.04	75	2360605	309.5743 ug/L	100
41) Carbon Tetrachloride	10.18	117	3172921	304.2542 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	3912691	302.2388 ug/L	97

(#) = qualifier out of range (m) = manual integration
11M11846.D 8260WT.M Sat May 14 18:51:02 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11846.D Vial: 11
Acq On : 13 May 2016 19:26 Operator: JDS
Sample : WG568769-11 300ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:51:01 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
44)	1,2-Dichloroethane	10.34	62	2551762	289.5052 ug/L		98
45)	Benzene	10.38	78	5961793	285.5987 ug/L		97
46)	Trichloroethene	11.09	130	2025948	298.5901 ug/L		99
47)	Methylcyclohexane	11.17	83	2657028	317.3092 ug/L		98
48)	1,2-Dichloropropane	11.29	63	1781372	308.2809 ug/L		96
49)	1,4-Dioxane	11.56	88	21540	607.7372 ug/L		100
50)	Bromodichloromethane	11.57	83	2511276	309.5762 ug/L		100
51)	Dibromomethane	11.65	93	939605	312.0413 ug/L		99
52)	2-Chloroethyl Vinyl Ether	11.84	63	879534	308.8327 ug/L		100
53)	4-Methyl-2-Pentanone	11.87	58	505191	314.5081 ug/L		99
54)	cis-1,3-Dichloropropene	12.17	75	2604960	321.0589 ug/L		99
55)	Dimethyl Disulfide	12.42	79	1529785	313.3234 ug/L		99
58)	Toluene	12.56	91	6613670	272.4329 ug/L		95
59)	Ethyl Methacrylate	12.65	69	1618015	312.1351 ug/L		94
60)	trans-1,3-Dichloropropene	12.73	75	2369133	304.0383 ug/L		98
61)	1,1,2-Trichloroethane	12.93	97	1271039	295.2644 ug/L		98
62)	2-Hexanone	12.86	43	950079	300.5074 ug/L		97
63)	1,3-Dichloropropane	13.21	76	2062188	298.3119 ug/L		97
64)	Tetrachloroethene	13.34	164	1691190	299.5697 ug/L		98
65)	Dibromochloromethane	13.59	129	2065480	314.5750 ug/L		100
66)	1,2-Dibromoethane	13.82	107	1334668	309.4588 ug/L		99
67)	1-Chlorohexane	13.89	91	2483371	310.2757 ug/L		95
68)	Chlorobenzene	14.29	112	4911463	276.1698 ug/L		96
69)	1,1,1,2-Tetrachloroethane	14.32	131	2161701	300.4009 ug/L		100
70)	Ethylbenzene	14.31	106	2715675	297.7904 ug/L		79
71)	m-,p-Xylene	14.39	106	6004062	541.5626 ug/L		73
72)	o-Xylene	14.92	106	3202500	296.8179 ug/L		90
73)	Styrene	14.96	104	5278134	296.0902 ug/L		96
74)	Bromoform	15.43	173	1313245	330.0007 ug/L		100
75)	Isopropylbenzene	15.31	105	7610374	266.7178 ug/L		92
77)	1,1,2,2-Tetrachloroethane	15.52	83	1470787	340.5868 ug/L		97
79)	1,2,3-Trichloropropane	15.70	110	494041	303.0514 ug/L		98
80)	trans-1,4-Dichloro-2-Buten	15.74	53	640812	304.0444 ug/L		94
81)	n-Propylbenzene	15.79	91	8405785	261.7374 ug/L		88
82)	Bromobenzene	15.92	156	2530711	300.3025 ug/L		98
83)	1,3,5-Trimethylbenzene	15.96	105	6851753	279.5793 ug/L		93
84)	2-Chlorotoluene	16.05	91	6055423	269.1996 ug/L		95
85)	4-Chlorotoluene	16.09	91	5712933	283.5299 ug/L		94
86)	a-Methylstyrene	16.34	118	4020347	310.9625 ug/L		96
87)	tert-Butylbenzene	16.40	134	1654009	318.5583 ug/L		89
88)	1,2,4-Trimethylbenzene	16.44	105	6879061	275.6504 ug/L		91
89)	sec-Butylbenzene	16.65	105	7999374	271.8373 ug/L		92
90)	p-Isopropyltoluene	16.79	119	7406083	274.0036 ug/L		90
91)	1,3-Dichlorobenzene	16.98	146	4679194	287.4903 ug/L		97
92)	1,4-Dichlorobenzene	17.10	146	4642399	281.3967 ug/L		96
93)	n-Butylbenzene	17.28	91	6723928	282.3084 ug/L		93
94)	1,2-Dichlorobenzene	17.57	146	4360022	294.0672 ug/L		96
95)	1,2-Dibromo-3-Chloropropan	18.49	75	302346	307.2381 ug/L		100
96)	1,2,4-Trichlorobenzene	19.55	180	3482946	321.0328 ug/L		97
97)	Hexachlorobutadiene	19.69	225	1629665	340.9652 ug/L		98
98)	Naphthalene	19.90	128	5970381	296.4815 ug/L	#	96
99)	1,2,3-Trichlorobenzene	20.19	180	3137470	315.1025 ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11846.D Vial: 11
Acq On : 13 May 2016 19:26 Operator: JDS
Sample : WG568769-11 300ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:51 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

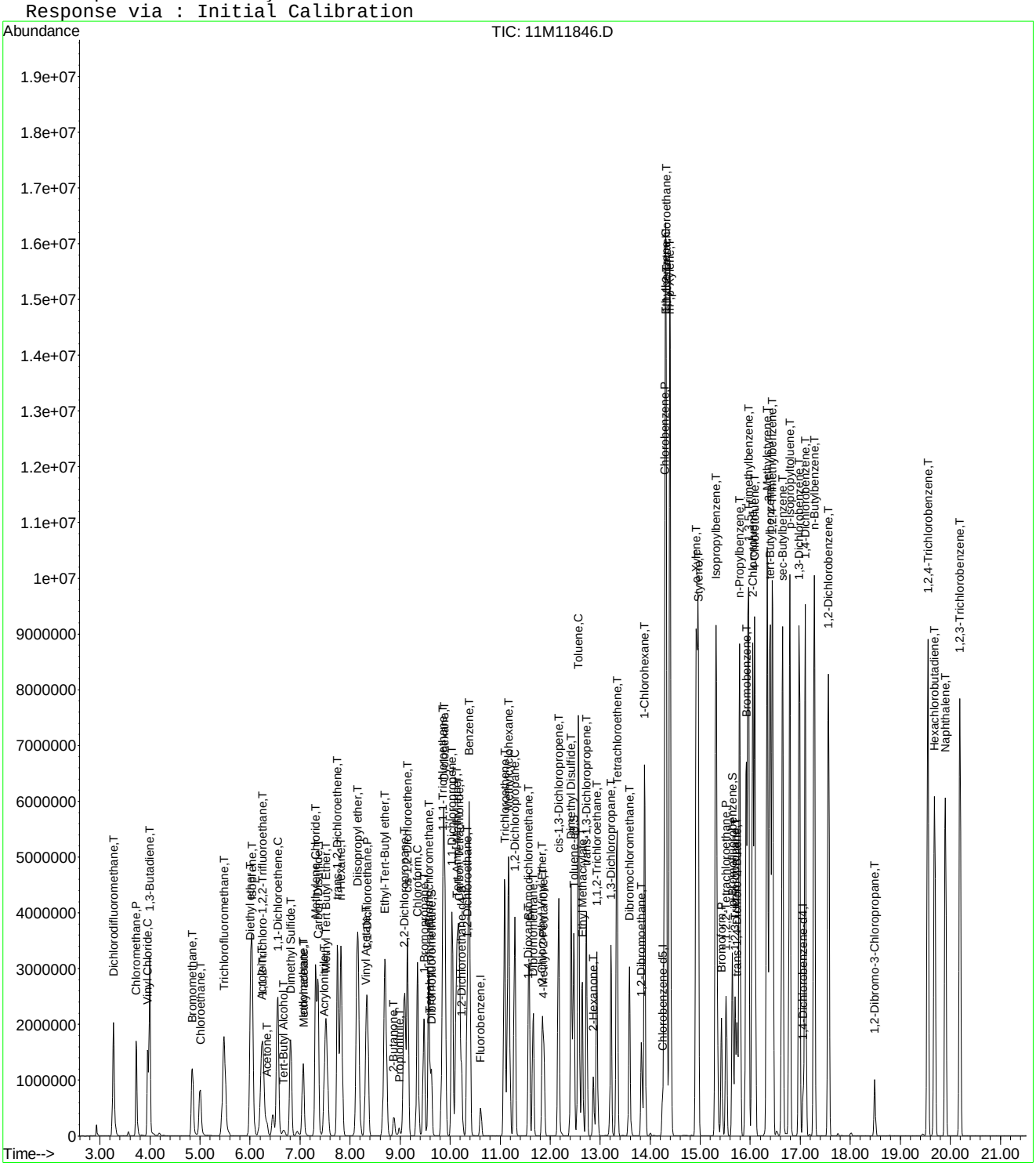

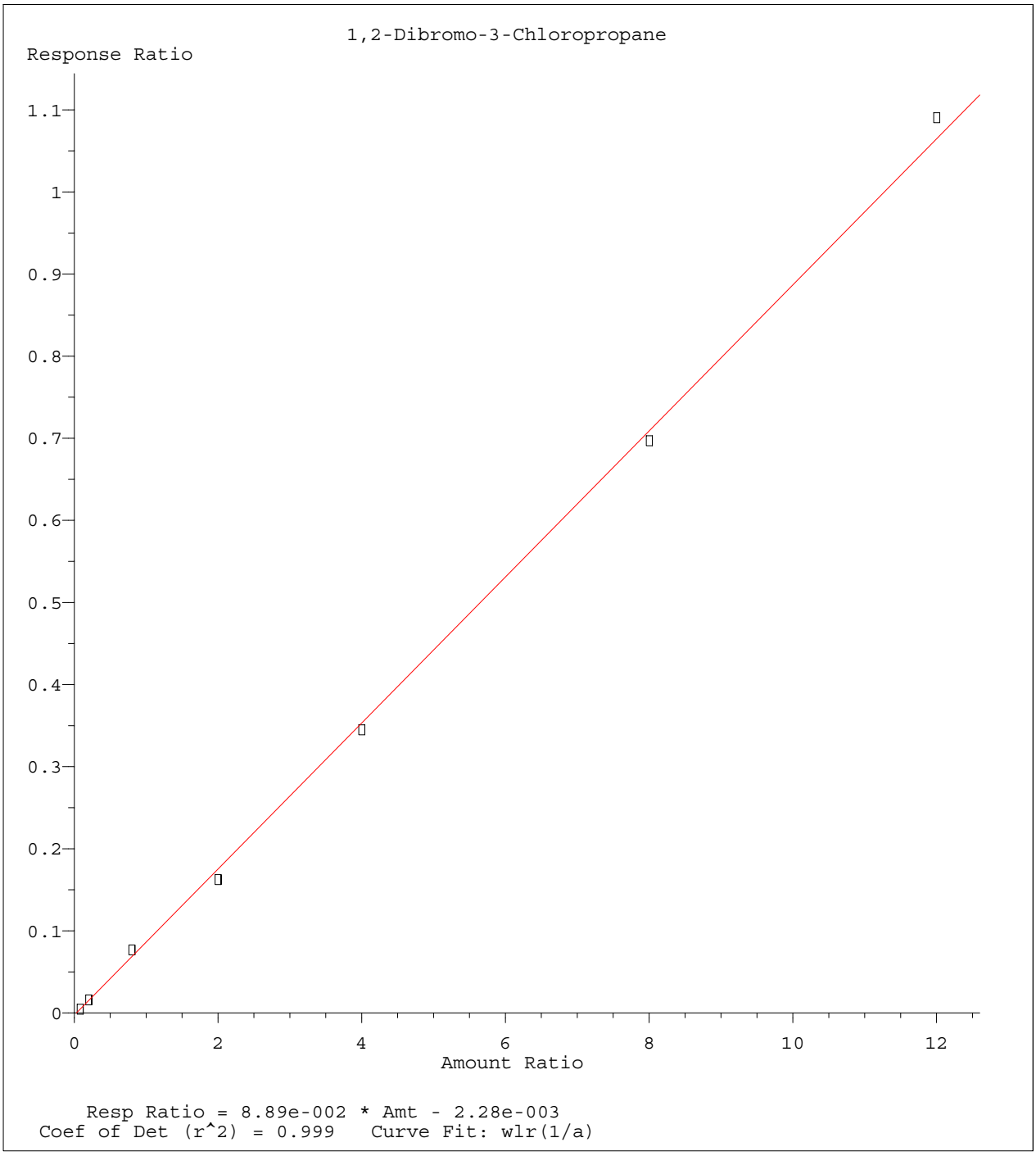

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

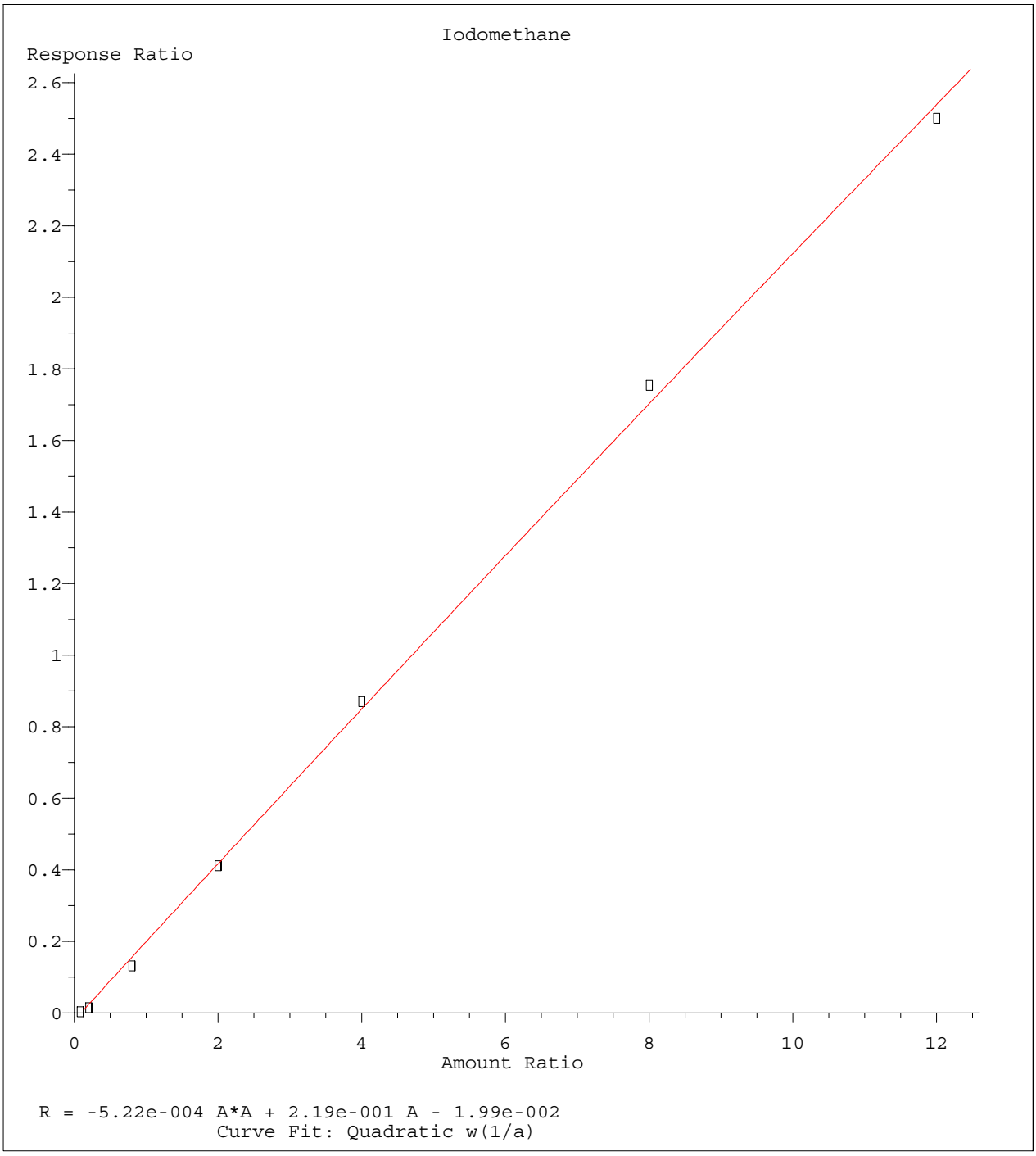

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

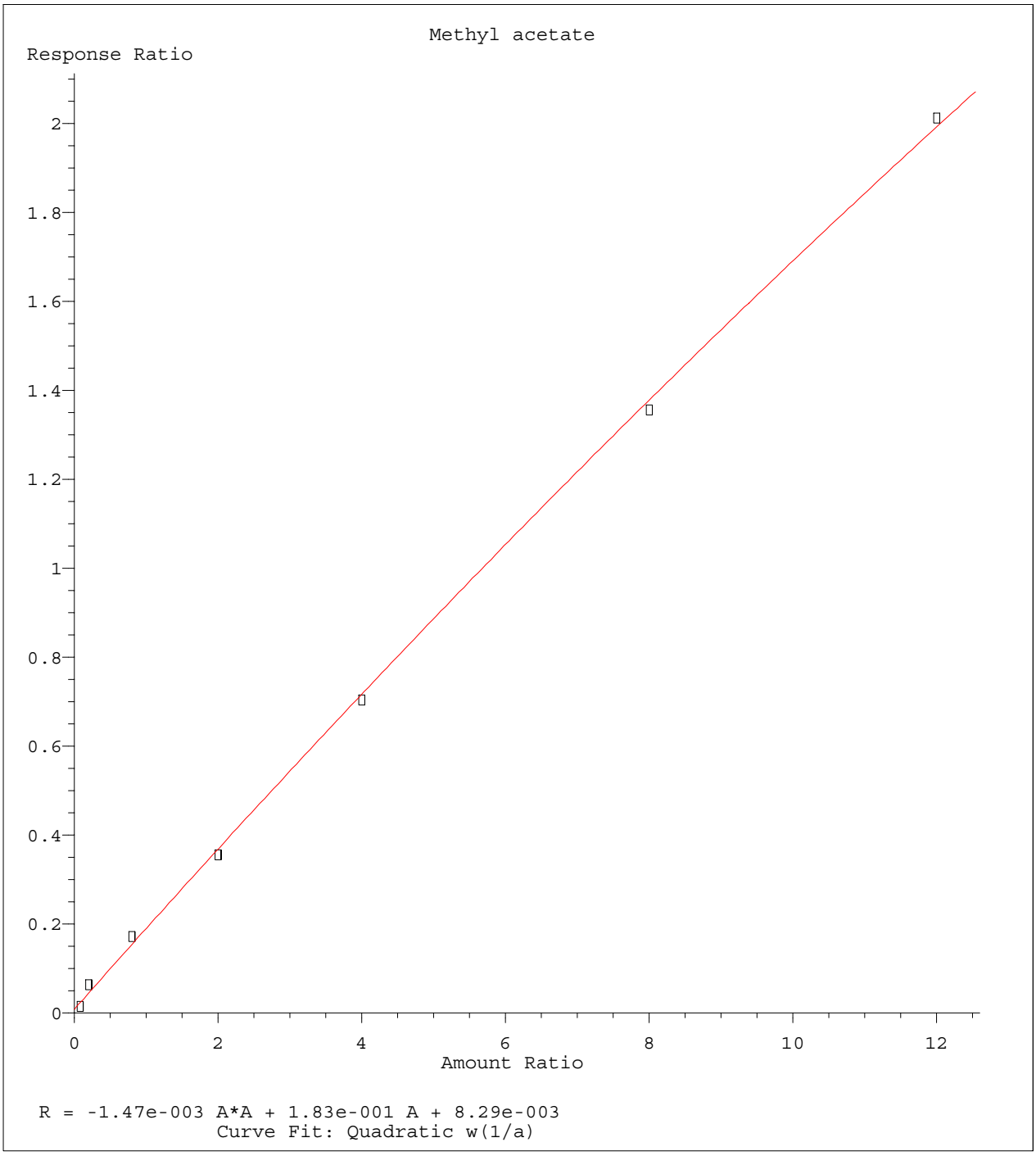

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

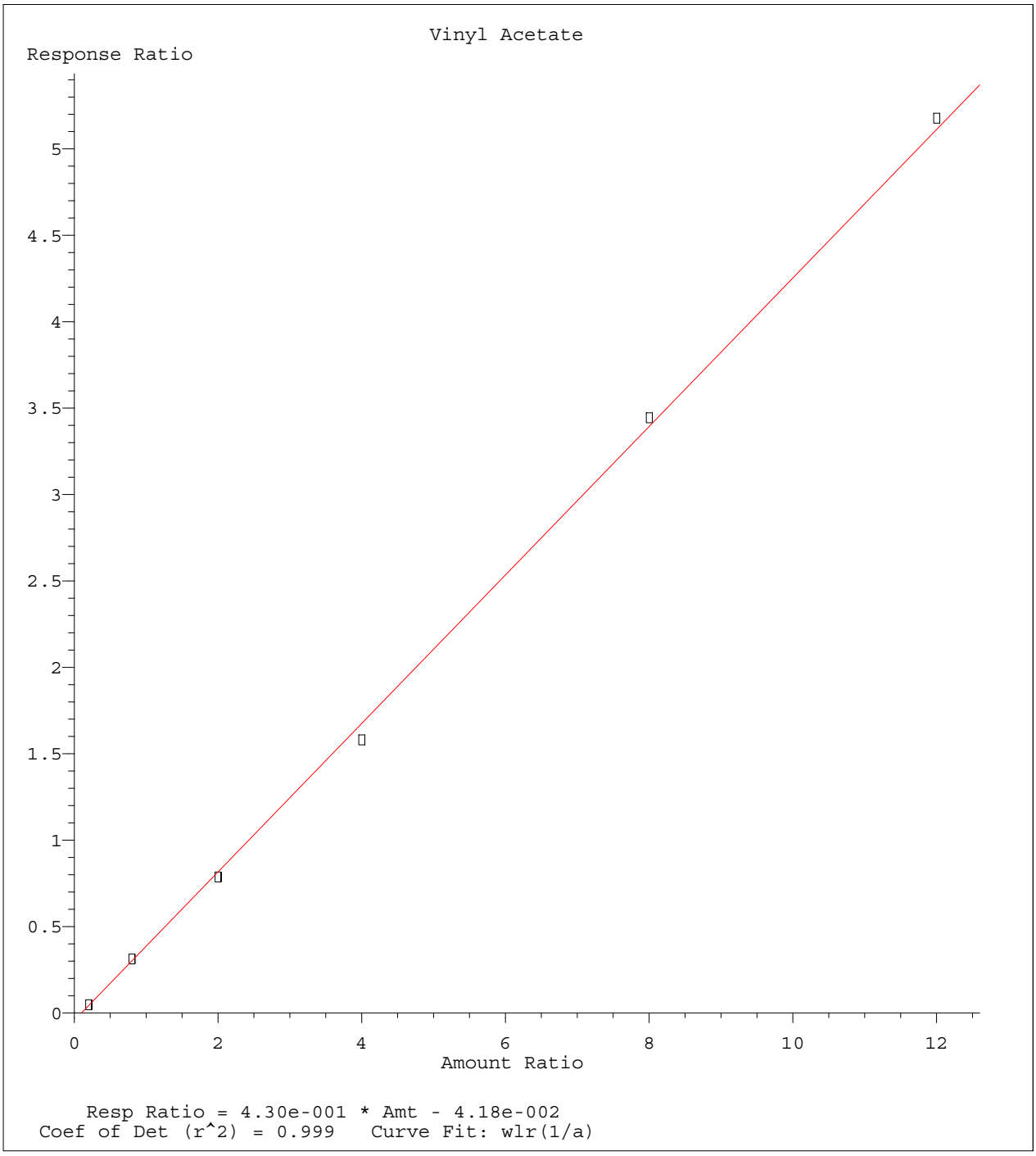

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

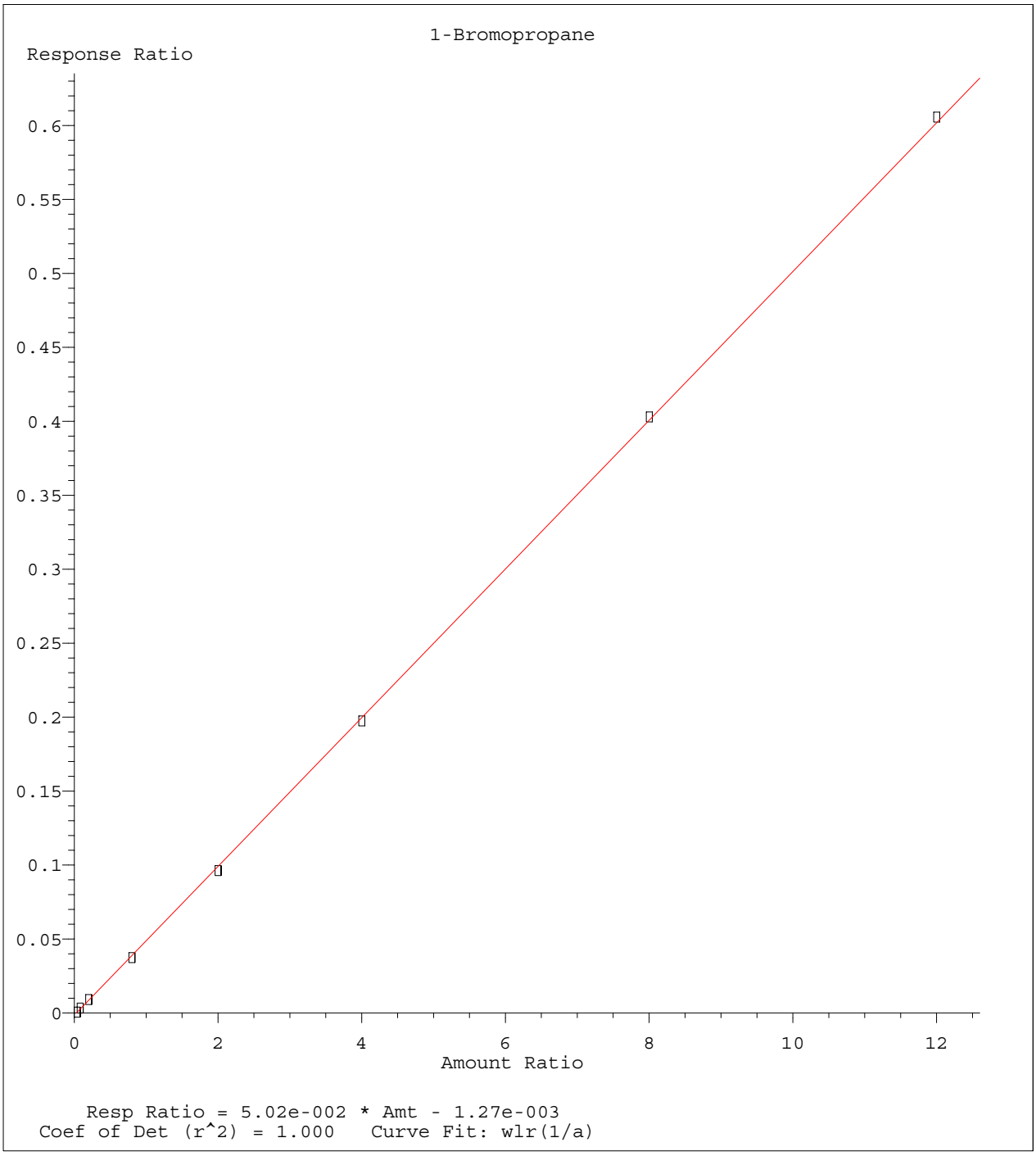

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

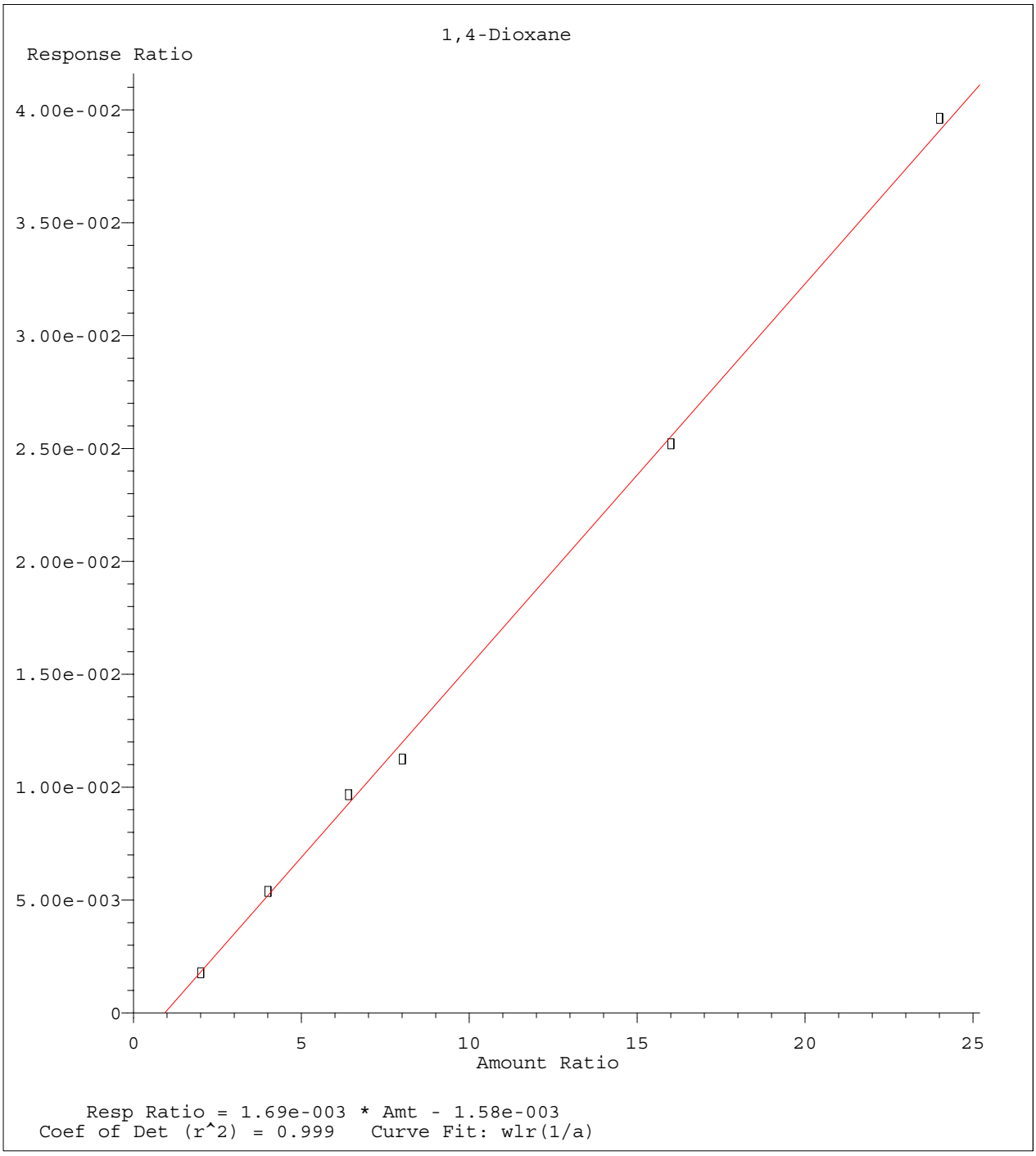

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

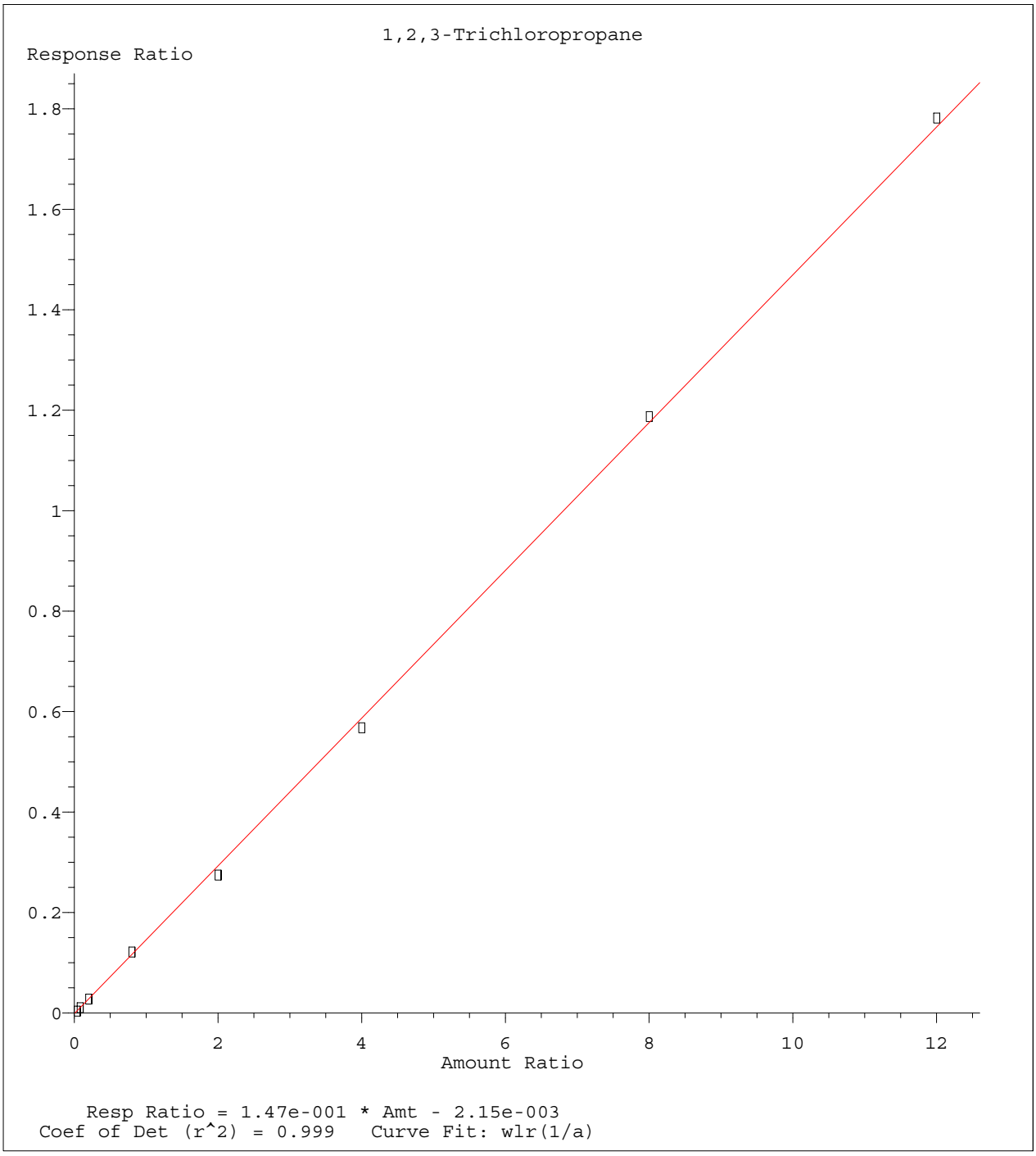

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

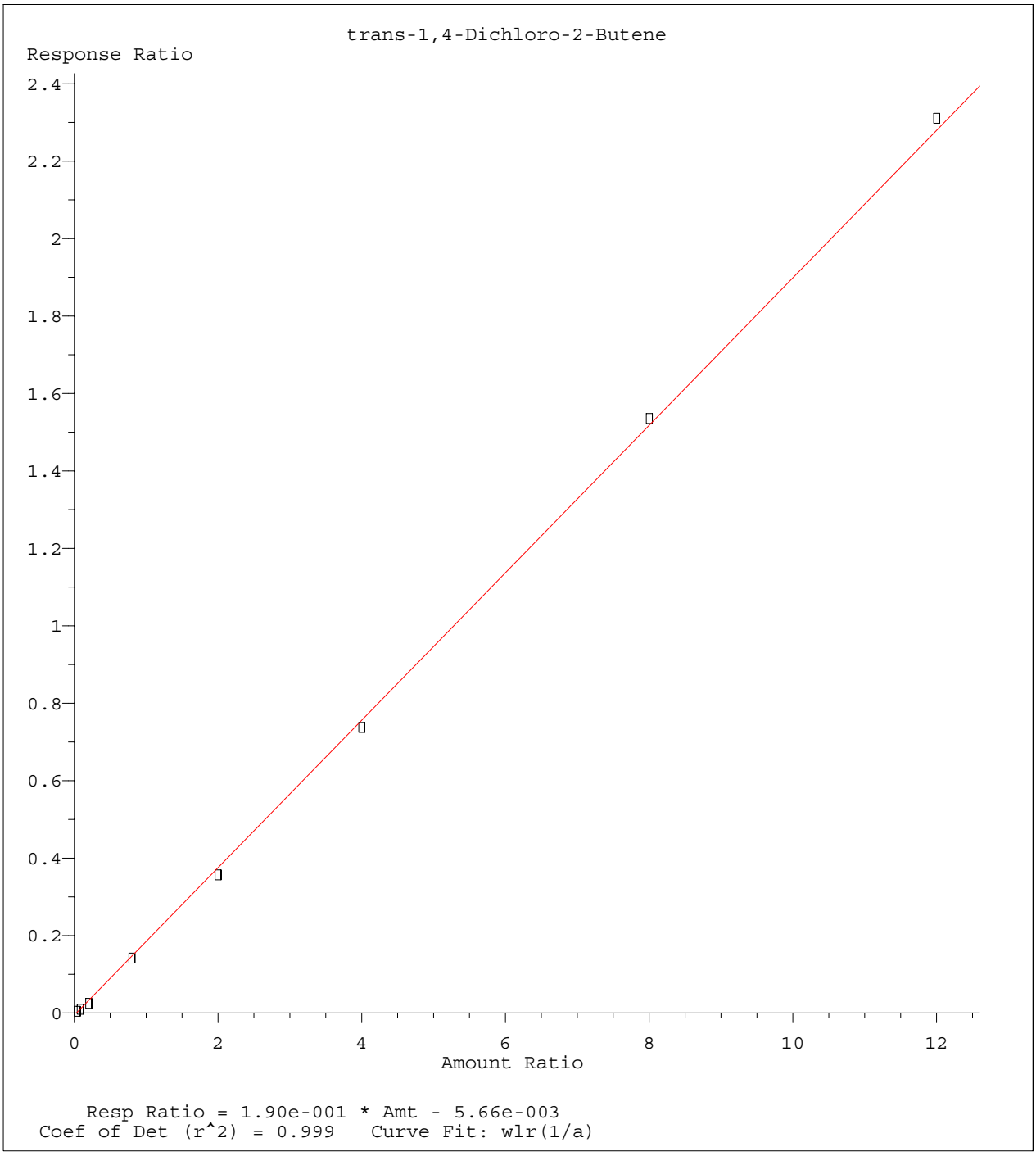

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

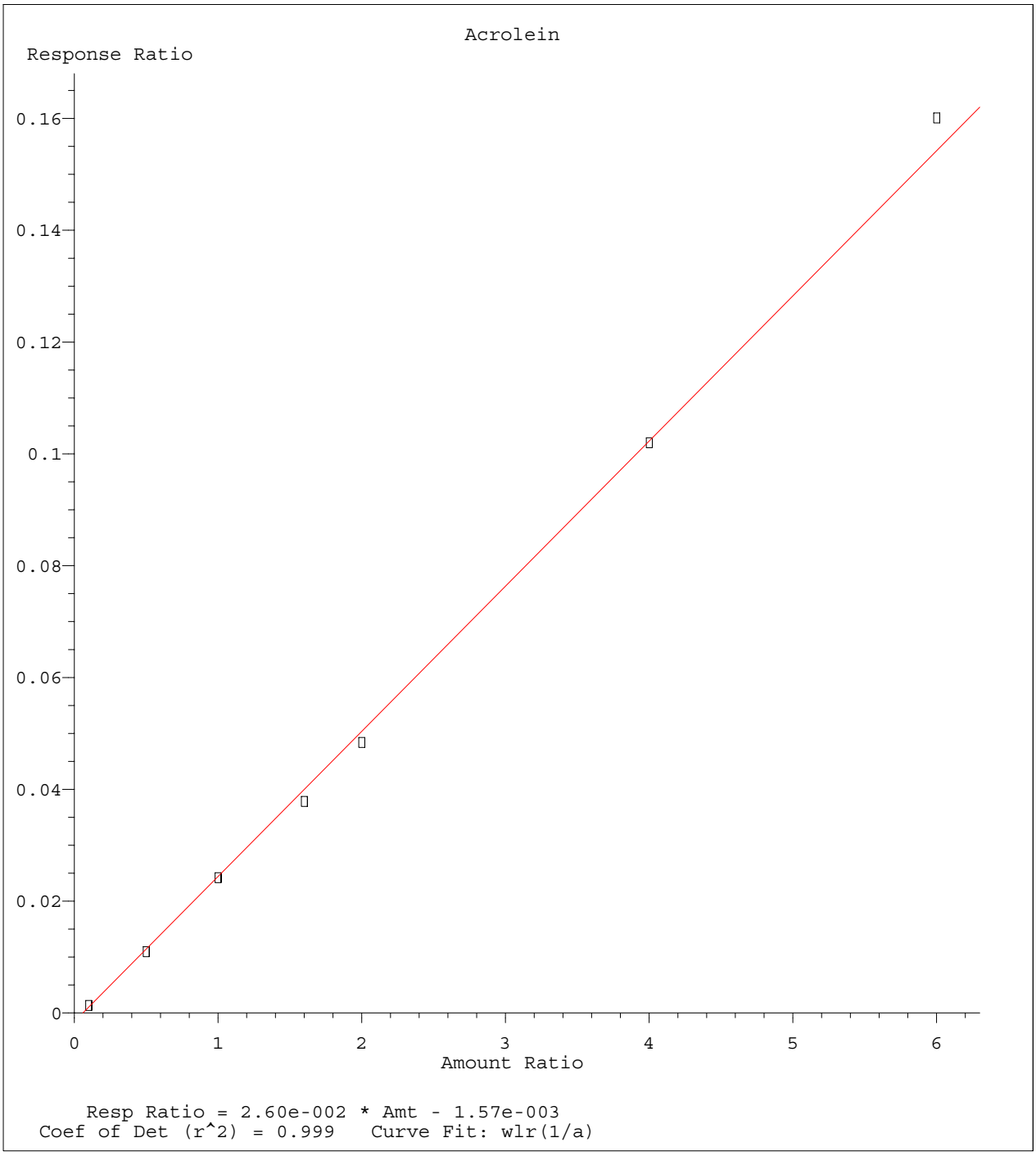

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:47:09 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	559172	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	461765	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	267551	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	155853	25.4675 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.88%		
43) 1,2-Dichloroethane-d4	10.23	65	160000	22.9299 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 91.72%		
57) Toluene-d8	12.47	98	531547	26.4930 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.96%		
78) p-Bromofluorobenzene	15.64	95	203747	24.7040 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.80%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	495777	56.5878 ug/L	98
3) Chloromethane	3.72	50	386673	55.1069 ug/L	100
4) Vinyl Chloride	3.95	62	326996	56.1165 ug/L	100
5) 1,3-Butadiene	3.99	54	212443	36.6650 ug/L	98
6) Bromomethane	4.84	94	202280	50.4885 ug/L	99
7) Chloroethane	5.00	64	220373	58.8601 ug/L	99
8) Trichlorofluoromethane	5.48	101	552017	47.5286 ug/L	99
9) Diethyl ether	6.01	59	453011	105.4639 ug/L	97
10) Isoprene	6.04	67	388108	54.2141 ug/L	93
11) Acrolein	6.23	56	56029	97.7296 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	292836	51.9609 ug/L	99
13) Acetone	6.35	43	65954	49.6723 ug/L	97
14) 1,1-Dichloroethene	6.55	61	486567	47.5319 ug/L	96
15) Tert-Butyl Alcohol	6.67	59	79387	216.1534 ug/L	96
16) Dimethyl Sulfide	6.81	62	290204	70.9875 ug/L	94
17) Iodomethane	7.06	142	176766	38.4128 ug/L	92
18) Methyl acetate	7.07	43	200985	48.7416 ug/L	98
19) Methylene Chloride	7.31	84	275442	51.9916 ug/L	91
20) Carbon Disulfide	7.35	76	765803	44.6859 ug/L	99
21) Acrylonitrile	7.49	53	93674	52.6181 ug/L	100
22) Methyl Tert Butyl Ether	7.52	73	687029	51.9942 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	295337	52.1295 ug/L	97
24) n-Hexane	7.82	57	420811	44.5959 ug/L	99
25) Diisopropyl ether	8.15	45	2449232	104.0201 ug/L	98
26) Vinyl Acetate	8.31	43	395913	43.6417 ug/L	99
27) 1,1-Dichloroethane	8.34	63	551372	48.5033 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1884917	98.3560 ug/L	99
29) 2-Butanone	8.87	43	101045	50.3380 ug/L	98
30) Propionitrile	8.99	54	62190	105.7785 ug/L	98
31) 2,2-Dichloropropane	9.09	77	405332	45.5727 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	332086	53.1618 ug/L	94
33) Chloroform	9.35	83	531122	47.5773 ug/L	100
34) 1-Bromopropane	9.48	122	76460	68.6656 ug/L	96
35) Bromochloromethane	9.57	130	199933	53.8923 ug/L	96
36) Tetrahydrofuran	9.60	42	131835	93.0068 ug/L	96
38) 1,1,1-Trichloroethane	9.85	97	527857	48.0501 ug/L	99
39) Cyclohexane	9.88	56	601180	50.2142 ug/L	99
40) 1,1-Dichloropropene	10.04	75	393057	50.1107 ug/L	100
41) Carbon Tetrachloride	10.18	117	507914	47.3479 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	1406419	105.6143 ug/L	97

(#) = qualifier out of range (m) = manual integration
11M11848.D 8260WT.M Sat May 14 18:47:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:47:09 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	434117	47.8802	ug/L	99
45)	Benzene	10.38	78	1098993	51.1808	ug/L	100
46)	Trichloroethene	11.08	130	365193	52.3242	ug/L	99
47)	Methylcyclohexane	11.17	83	450581	52.3110	ug/L	97
48)	1,2-Dichloropropane	11.29	63	313901	52.8102	ug/L	94
49)	1,4-Dioxane	11.56	88	6366	191.2043	ug/L	95
50)	Bromodichloromethane	11.57	83	413329	49.5339	ug/L	99
51)	Dibromomethane	11.65	93	148822	48.0471	ug/L	97
52)	2-Chloroethyl Vinyl Ether	11.84	63	152083	51.9140	ug/L	99
53)	4-Methyl-2-Pentanone	11.87	58	86849	52.5623	ug/L	99
54)	cis-1,3-Dichloropropene	12.17	75	480729	57.5993	ug/L	99
55)	Dimethyl Disulfide	12.42	79	261188	52.0055	ug/L	96
58)	Toluene	12.56	91	1256481	53.7500	ug/L	100
59)	Ethyl Methacrylate	12.65	69	284944	57.0854	ug/L	90
60)	trans-1,3-Dichloropropene	12.73	75	391013	52.1118	ug/L	97
61)	1,1,2-Trichloroethane	12.93	97	218717	52.7643	ug/L	99
62)	2-Hexanone	12.86	43	158873	52.1857	ug/L	98
63)	1,3-Dichloropropane	13.21	76	374611	56.2767	ug/L	95
64)	Tetrachloroethene	13.34	164	283714	52.1906	ug/L	97
65)	Dibromochloromethane	13.59	129	332092	52.5252	ug/L	99
66)	1,2-Dibromoethane	13.82	107	218604	52.6373	ug/L	99
67)	1-Chlorohexane	13.89	91	420217	54.5237	ug/L	92
68)	Chlorobenzene	14.29	112	912650	53.2936	ug/L	100
69)	1,1,1,2-Tetrachloroethane	14.32	131	353663	51.0389	ug/L	98
70)	Ethylbenzene	14.31	106	460093	52.3943	ug/L	99
71)	m-,p-Xylene	14.39	106	1144896	107.2445	ug/L	98
72)	o-Xylene	14.92	106	568307	54.7003	ug/L	100
73)	Styrene	14.95	104	943635	54.9735	ug/L	98
74)	Bromoform	15.43	173	190959	49.8328	ug/L	99
75)	Isopropylbenzene	15.31	105	1490416	54.2449	ug/L	100
77)	1,1,2,2-Tetrachloroethane	15.52	83	228913	54.9422	ug/L	100
79)	1,2,3-Trichloropropane	15.70	110	78385	50.1407	ug/L	92
80)	trans-1,4-Dichloro-2-Buten	15.74	53	73730	36.9129	ug/L	62
81)	n-Propylbenzene	15.79	91	1753049	56.5769	ug/L	99
82)	Bromobenzene	15.92	156	419932	51.6479	ug/L	99
83)	1,3,5-Trimethylbenzene	15.95	105	1303495	55.1277	ug/L	99
84)	2-Chlorotoluene	16.05	91	1145029	52.7599	ug/L	99
85)	4-Chlorotoluene	16.09	91	1077116	55.4064	ug/L	99
86)	a-Methylstyrene	16.34	118	741671	59.4584	ug/L	99
87)	tert-Butylbenzene	16.40	134	283244	56.5417	ug/L	95
88)	1,2,4-Trimethylbenzene	16.44	105	1296091	53.8297	ug/L	99
89)	sec-Butylbenzene	16.65	105	1586978	55.8961	ug/L	100
90)	p-Isopropyltoluene	16.79	119	1426648	54.7069	ug/L	99
91)	1,3-Dichlorobenzene	16.98	146	827515	52.6969	ug/L	98
92)	1,4-Dichlorobenzene	17.10	146	844174	53.0354	ug/L	98
93)	n-Butylbenzene	17.28	91	1238500	53.8957	ug/L	99
94)	1,2-Dichlorobenzene	17.57	146	766416	53.5772	ug/L	98
95)	1,2-Dibromo-3-Chloropropan	18.49	75	45158	48.1046	ug/L	97
96)	1,2,4-Trichlorobenzene	19.55	180	580278	55.4365	ug/L	99
97)	Hexachlorobutadiene	19.69	225	257859	55.9180	ug/L	98
98)	Naphthalene	19.90	128	993390	51.1296	ug/L	100
99)	1,2,3-Trichlorobenzene	20.19	180	519374	54.0642	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:47 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

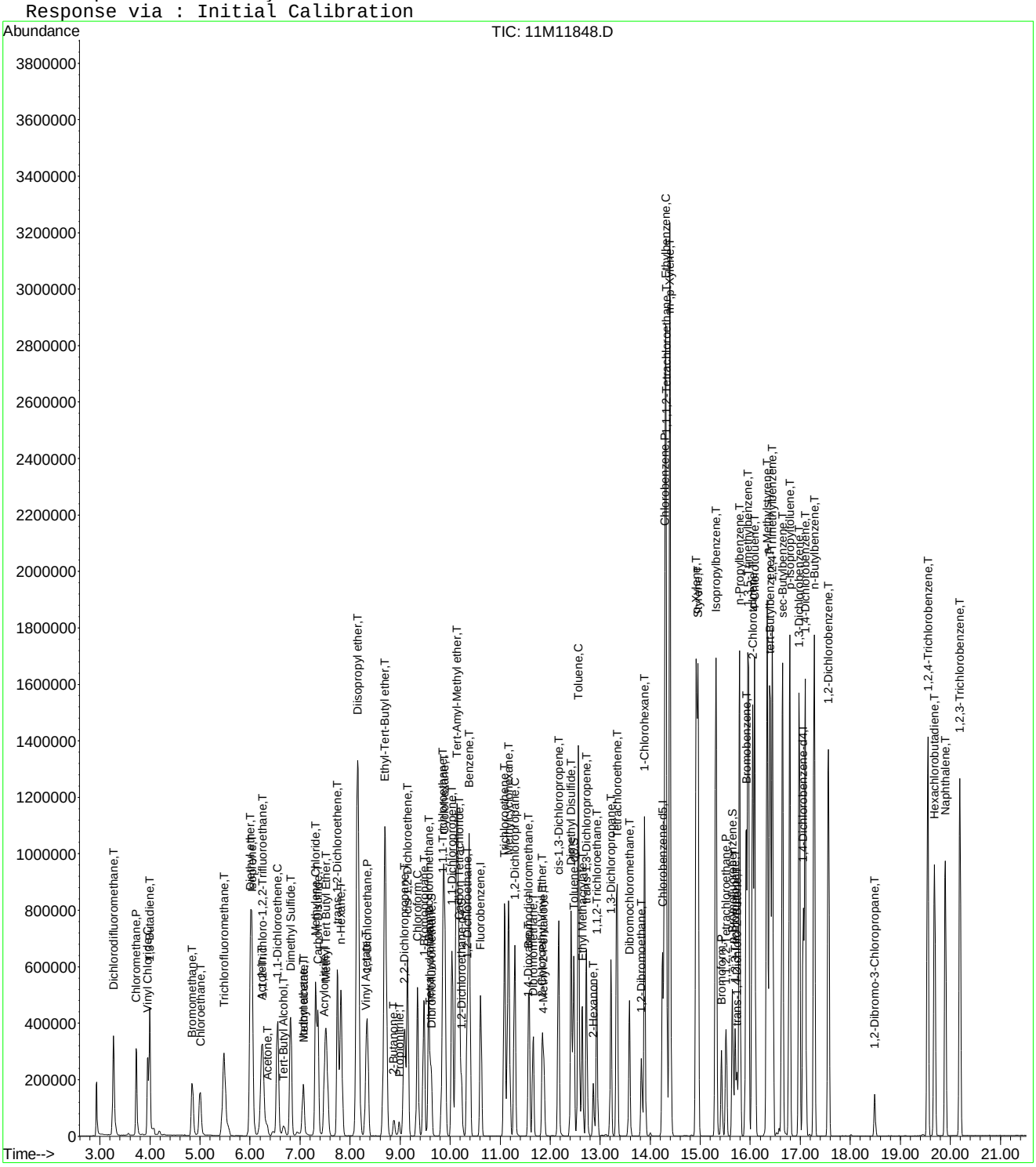

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	107	0.00
2	T	Dichlorodifluoromethane	50.0000	56.5878	-13.2	119	0.00
3	P	Chloromethane	50.0000	55.1069	-10.2	134	0.00
4	C	Vinyl Chloride	50.0000	56.1165	-12.2	125	-0.01
5	T	1,3-Butadiene	50.0000	36.6650	26.7#	76	-0.01
6	T	Bromomethane	50.0000	50.4885	-1.0	117	-0.01
7	T	Chloroethane	50.0000	58.8601	-17.7	131	0.00
8	T	Trichlorofluoromethane	50.0000	47.5286	4.9	106	0.00
9	T	Diethyl ether	100.0000	105.4639	-5.5	116	0.00
10	T	Isoprene	50.0000	54.2141	-8.4	117	0.00
11	T	Acrolein	50.0000	97.7296	-95.5#	222	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	51.9609	-3.9	115	0.00
13	T	Acetone	50.0000	49.6723	0.7	110	0.01
14	C	1,1-Dichloroethene	50.0000	47.5320	4.9	106	-0.01
15	T	Tert-Butyl Alcohol	200.0000	216.1534	-8.1	114	0.01
16	T	Dimethyl Sulfide	50.0000	70.9875	-42.0#	150	0.00
17	T	Iodomethane	50.0000	38.4128	23.2	82	0.00
18	T	Methyl acetate	50.0000	48.7416	2.5	108	0.01
19	T	Methylene Chloride	50.0000	51.9916	-4.0	118	0.00
20	T	Carbon Disulfide	50.0000	44.6859	10.6	94	-0.01
21	T	Acrylonitrile	50.0000	52.6181	-5.2	110	0.00
22	T	Methyl Tert Butyl Ether	50.0000	51.9942	-4.0	113	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.1295	-4.3	117	0.00
24	T	n-Hexane	50.0000	44.5959	10.8	94	0.00
25	T	Diisopropyl ether	100.0000	104.0201	-4.0	112	0.00
26	T	Vinyl Acetate	50.0000	43.6417	12.7	96	0.00
27	P	1,1-Dichloroethane	50.0000	48.5033	3.0	107	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.3560	1.6	106	0.00
29	T	2-Butanone	50.0000	50.3381	-0.7	111	0.00
30	T	Propionitrile	100.0000	105.7786	-5.8	110	0.01
31	T	2,2-Dichloropropane	50.0000	45.5727	8.9	101	0.00
32	T	cis-1,2-Dichloroethene	50.0000	53.1618	-6.3	118	0.00
33	C	Chloroform	50.0000	47.5773	4.8	108	0.00
34	T	1-Bromopropane	50.0000	68.6656	-37.3#	152	0.00
35	T	Bromochloromethane	50.0000	53.8923	-7.8	111	0.00
36	T	Tetrahydrofuran	100.0000	93.0068	7.0	103	0.00
37	S	Dibromofluoromethane	25.0000	25.4675	-1.9	111	0.00
38	T	1,1,1-Trichloroethane	50.0000	48.0501	3.9	106	0.00
39	T	Cyclohexane	50.0000	50.2142	-0.4	105	0.00
40	T	1,1-Dichloropropene	50.0000	50.1107	-0.2	111	0.00
41	T	Carbon Tetrachloride	50.0000	47.3479	5.3	103	0.00
42	T	Tert-Amyl-Methyl ether	100.0000	105.6143	-5.6	115	0.00
43	S	1,2-Dichloroethane-d4	25.0000	22.9299	8.3	101	0.00
44	T	1,2-Dichloroethane	50.0000	47.8802	4.2	104	0.00
45	T	Benzene	50.0000	51.1809	-2.4	116	0.00
46	T	Trichloroethene	50.0000	52.3242	-4.6	119	-0.01
47	T	Methylcyclohexane	50.0000	52.3110	-4.6	108	0.00
48	C	1,2-Dichloropropane	50.0000	52.8102	-5.6	117	0.00
49	T	1,4-Dioxane	200.0000	191.2043	4.4	109	0.01
50	T	Bromodichloromethane	50.0000	49.5339	0.9	107	0.00
51	T	Dibromomethane	50.0000	48.0471	3.9	104	0.00
52	T	2-Chloroethyl Vinyl Ether	50.0000	51.9140	-3.8	114	0.00
53	T	4-Methyl-2-Pentanone	50.0000	52.5623	-5.1	115	0.00
54	T	cis-1,3-Dichloropropene	50.0000	57.5993	-15.2	122	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	50.0000	52.0055	-4.0	110	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	105	0.00
57	S	Toluene-d8	25.0000	26.4930	-6.0	115	0.00
58	C	Toluene	50.0000	53.7500	-7.5	115	0.00
59	T	Ethyl Methacrylate	50.0000	57.0854	-14.2	114	0.00
60	T	trans-1,3-Dichloropropene	50.0000	52.1118	-4.2	107	0.00
61	T	1,1,2-Trichloroethane	50.0000	52.7643	-5.5	113	0.00
62	T	2-Hexanone	50.0000	52.1857	-4.4	110	0.00
63	T	1,3-Dichloropropane	50.0000	56.2767	-12.6	118	0.00
64	T	Tetrachloroethene	50.0000	52.1906	-4.4	113	0.00
65	T	Dibromochloromethane	50.0000	52.5251	-5.1	107	0.00
66	T	1,2-Dibromoethane	50.0000	52.6373	-5.3	111	0.00
67	T	1-Chlorohexane	50.0000	54.5237	-9.0	112	0.00
68	P	Chlorobenzene	50.0000	53.2936	-6.6	114	0.00
69	T	1,1,1,2-Tetrachloroethane	50.0000	51.0388	-2.1	109	0.00
70	C	Ethylbenzene	50.0000	52.3943	-4.8	113	0.00
71	T	m-,p-Xylene	100.0000	107.2445	-7.2	115	0.00
72	T	o-Xylene	50.0000	54.7003	-9.4	115	0.00
73	T	Styrene	50.0000	54.9735	-9.9	113	0.00
74	P	Bromoform	50.0000	49.8327	0.3	104	0.00
75	T	Isopropylbenzene	50.0000	54.2449	-8.5	114	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	101	0.00
77	P	1,1,2,2-Tetrachloroethane	50.0000	54.9422	-9.9	110	0.00
78	S	p-Bromofluorobenzene	25.0000	24.7040	1.2	108	0.00
79	T	1,2,3-Trichloropropane	50.0000	50.1407	-0.3	108	0.00
80	T	trans-1,4-Dichloro-2-Butene	50.0000	36.9129	26.2#	78	0.00
81	T	n-Propylbenzene	50.0000	56.5769	-13.2	115	0.00
82	T	Bromobenzene	50.0000	51.6479	-3.3	111	0.00
83	T	1,3,5-Trimethylbenzene	50.0000	55.1277	-10.3	114	-0.01
84	T	2-Chlorotoluene	50.0000	52.7599	-5.5	112	0.00
85	T	4-Chlorotoluene	50.0000	55.4064	-10.8	116	0.00
86	T	a-Methylstyrene	50.0000	59.4584	-18.9	114	0.00
87	T	tert-Butylbenzene	50.0000	56.5417	-13.1	117	0.00
88	T	1,2,4-Trimethylbenzene	50.0000	53.8297	-7.7	110	0.00
89	T	sec-Butylbenzene	50.0000	55.8961	-11.8	114	0.00
90	T	p-Isopropyltoluene	50.0000	54.7069	-9.4	111	0.00
91	T	1,3-Dichlorobenzene	50.0000	52.6969	-5.4	112	0.00
92	T	1,4-Dichlorobenzene	50.0000	53.0354	-6.1	114	0.00
93	T	n-Butylbenzene	50.0000	53.8957	-7.8	110	0.00
94	T	1,2-Dichlorobenzene	50.0000	53.5772	-7.2	112	0.00
95	T	1,2-Dibromo-3-Chloropropane	50.0000	48.1046	3.8	105	0.00
96	T	1,2,4-Trichlorobenzene	50.0000	55.4365	-10.9	113	0.00
97	T	Hexachlorobutadiene	50.0000	55.9180	-11.8	118	0.00
98	T	Naphthalene	50.0000	51.1296	-2.3	103	0.00
99	T	1,2,3-Trichlorobenzene	50.0000	54.0642	-8.1	114	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061516\11M12652.D Vial: 3
Acq On : 15 Jun 2016 15:49 Operator: JDS
Sample : WG572854-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 15 16:29:19 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	728374	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	610875	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	361229	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	193464	24.2696 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.08%		
43) 1,2-Dichloroethane-d4	10.23	65	200571	22.0669 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 88.28%		
57) Toluene-d8	12.47	98	660650	24.8903 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.56%		
78) p-Bromofluorobenzene	15.64	95	289414	25.9908 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.96%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	530465	46.4819 ug/L	96
3) Chloromethane	3.72	50	390778	42.7547 ug/L	98
4) Vinyl Chloride	3.96	62	365127	48.1042 ug/L	99
5) 1,3-Butadiene	4.00	54	349561	46.3152 ug/L	99
6) Bromomethane	4.85	94	243178	46.5966 ug/L	99
7) Chloroethane	5.00	64	232491	47.6716 ug/L	99
8) Trichlorofluoromethane	5.48	101	741449	49.0089 ug/L	99
9) Diethyl ether	6.01	59	539085	96.3482 ug/L	93
10) Isoprene	6.04	67	403994	43.3237 ug/L	93
11) Acrolein	6.23	56	38648	52.4613 ug/L	93
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	358741	48.8680 ug/L	95
13) Acetone	6.34	43	72829	42.1083 ug/L	94
14) 1,1-Dichloroethene	6.56	61	617692	46.3240 ug/L	96
15) Tert-Butyl Alcohol	6.67	59	89952	188.0245 ug/L	98
16) Dimethyl Sulfide	6.81	62	229028	43.0089 ug/L	89
17) Iodomethane	7.06	142	280881	46.3947 ug/L	95
18) Methyl acetate	7.07	43	200568	36.9296 ug/L	94
19) Methylene Chloride	7.31	84	322798	46.7762 ug/L	83
20) Carbon Disulfide	7.36	76	1039759	46.5776 ug/L	100
21) Acrylonitrile	7.49	53	108769	46.9043 ug/L	99
22) Methyl Tert Butyl Ether	7.52	73	838375	48.7090 ug/L	96
23) trans-1,2-Dichloroethene	7.75	96	354437	48.0282 ug/L	94
24) n-Hexane	7.82	57	513401	41.7691 ug/L	98
25) Diisopropyl ether	8.15	45	2591481	84.4941 ug/L	97
26) Vinyl Acetate	8.31	43	544679	45.9562 ug/L	98
27) 1,1-Dichloroethane	8.34	63	683913	46.1869 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	2345132	93.9436 ug/L	98
29) 2-Butanone	8.88	43	112031	42.8460 ug/L	93
30) Propionitrile	8.97	54	69817	91.1652 ug/L	100
31) 2,2-Dichloropropane	9.09	77	579734	50.0396 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	398270	48.9461 ug/L	92
33) Chloroform	9.35	83	675051	46.4230 ug/L	99
34) 1-Bromopropane	9.48	122	68579	47.4773 ug/L	98
35) Bromochloromethane	9.57	130	263325	54.4911 ug/L	86
36) Tetrahydrofuran	9.60	42	150410	81.4614 ug/L	90
38) 1,1,1-Trichloroethane	9.85	97	694594	48.5400 ug/L	96
39) Cyclohexane	9.88	56	668521	42.8675 ug/L	94
40) 1,1-Dichloropropene	10.04	75	496855	48.6290 ug/L	98
41) Carbon Tetrachloride	10.18	117	697237	49.8979 ug/L	98
42) Tert-Amyl-Methyl ether	10.13	73	1703991	98.2350 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061516\11M12652.D Vial: 3
Acq On : 15 Jun 2016 15:49 Operator: JDS
Sample : WG572854-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 15 16:29:19 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	554618	46.9607 ug/L	96
45)	Benzene	10.38	78	1300385	46.4917 ug/L	99
46)	Trichloroethene	11.09	130	449619	49.4556 ug/L	98
47)	Methylcyclohexane	11.17	83	503406	44.8672 ug/L	94
48)	1,2-Dichloropropane	11.29	63	357476	46.1703 ug/L	100
49)	1,4-Dioxane	11.56	88	8485	195.1063 ug/L	88
50)	Bromodichloromethane	11.58	83	524120	48.2201 ug/L	99
51)	Dibromomethane	11.65	93	195558	48.4693 ug/L	94
52)	2-Chloroethyl Vinyl Ether	11.84	63	164867	43.2045 ug/L	96
53)	4-Methyl-2-Pentanone	11.87	58	97492	45.2970 ug/L	93
54)	cis-1,3-Dichloropropene	12.17	75	542356	49.8876 ug/L	100
55)	Dimethyl Disulfide	12.42	79	303299	46.3615 ug/L	97
58)	Toluene	12.56	91	1535102	49.6396 ug/L	99
59)	Ethyl Methacrylate	12.65	69	329139	49.8441 ug/L	86
60)	trans-1,3-Dichloropropene	12.73	75	500583	50.4300 ug/L	98
61)	1,1,2-Trichloroethane	12.93	97	271518	49.5137 ug/L	98
62)	2-Hexanone	12.86	43	174093	43.2266 ug/L	93
63)	1,3-Dichloropropane	13.21	76	435523	49.4570 ug/L	88
64)	Tetrachloroethene	13.34	164	375823	52.2593 ug/L	97
65)	Dibromochloromethane	13.59	129	444371	53.1280 ug/L	100
66)	1,2-Dibromoethane	13.82	107	280754	51.1011 ug/L	99
67)	1-Chlorohexane	13.89	91	476032	46.6892 ug/L	91
68)	Chlorobenzene	14.29	112	1133722	50.0433 ug/L	100
69)	1,1,1,2-Tetrachloroethane	14.32	131	467858	51.0380 ug/L	100
70)	Ethylbenzene	14.31	106	572726	49.3008 ug/L	99
71)	m-,p-Xylene	14.39	106	1403367	99.3686 ug/L	96
72)	o-Xylene	14.92	106	678505	49.3660 ug/L	100
73)	Styrene	14.95	104	1161554	51.1514 ug/L	98
74)	Bromoform	15.43	173	271472	53.5511 ug/L	99
75)	Isopropylbenzene	15.31	105	1821861	50.1228 ug/L	99
77)	1,1,2,2-Tetrachloroethane	15.52	83	277499	49.3311 ug/L	99
79)	1,2,3-Trichloropropane	15.70	110	102230	48.4475 ug/L	90
80)	trans-1,4-Dichloro-2-Buten	15.74	53	93892	34.8588 ug/L	64
81)	n-Propylbenzene	15.79	91	2044412	48.8694 ug/L	98
82)	Bromobenzene	15.92	156	549844	50.0884 ug/L	90
83)	1,3,5-Trimethylbenzene	15.95	105	1563604	48.9792 ug/L	99
84)	2-Chlorotoluene	16.05	91	1407005	48.0183 ug/L	97
85)	4-Chlorotoluene	16.09	91	1250524	47.6445 ug/L	98
86)	a-Methylstyrene	16.34	118	811742	48.1996 ug/L	97
87)	tert-Butylbenzene	16.39	134	338089	49.9877 ug/L	93
88)	1,2,4-Trimethylbenzene	16.44	105	1607021	49.4347 ug/L	99
89)	sec-Butylbenzene	16.65	105	1821208	47.5110 ug/L	98
90)	p-Isopropyltoluene	16.79	119	1711733	48.6166 ug/L	98
91)	1,3-Dichlorobenzene	16.98	146	1040467	49.0752 ug/L	98
92)	1,4-Dichlorobenzene	17.10	146	1040998	48.4404 ug/L	99
93)	n-Butylbenzene	17.28	91	1412673	45.5327 ug/L	97
94)	1,2-Dichlorobenzene	17.57	146	957557	49.5797 ug/L	98
95)	1,2-Dibromo-3-Chloropropan	18.49	75	54526	43.0887 ug/L	97
96)	1,2,4-Trichlorobenzene	19.55	180	684533	48.4371 ug/L	99
97)	Hexachlorobutadiene	19.69	225	264617	42.5021 ug/L	97
98)	Naphthalene	19.90	128	1256393	47.8964 ug/L	100
99)	1,2,3-Trichlorobenzene	20.19	180	608912	46.9470 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M12652.D 8260WT.M Wed Jun 15 16:29:20 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061516\11M12652.D Vial: 3
Acq On : 15 Jun 2016 15:49 Operator: JDS
Sample : WG572854-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 15 16:29 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

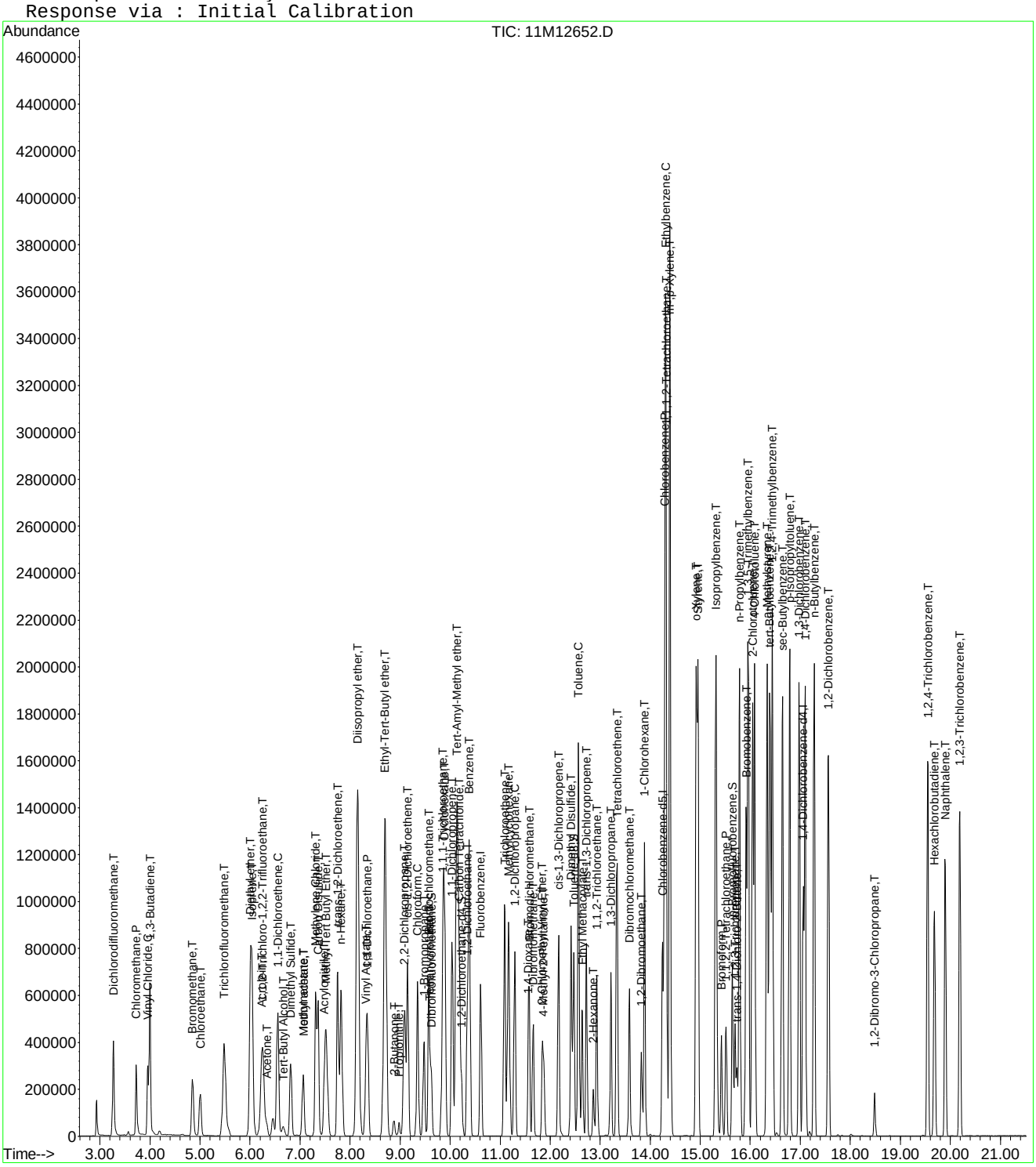

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061516\11M12652.D Vial: 3
Acq On : 15 Jun 2016 15:49 Operator: JDS
Sample : WG572854-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	140	0.00
2	T	Dichlorodifluoromethane	0.3917	0.3641	7.0	127	0.00
3	P	Chloromethane	0.3137	0.2682	14.5	136	0.00
4	C	Vinyl Chloride	0.2605	0.2506	3.8	140	0.00
5	T	1,3-Butadiene	0.2591	0.2400	7.4	124	0.00
6	T	Bromomethane	0.1791	0.1669	6.8	141	0.00
7	T	Chloroethane	0.1674	0.1596	4.7	138	0.00
8	T	Trichlorofluoromethane	0.5193	0.5090	2.0	143	0.00
9	T	Diethyl ether	0.1920	0.1850	3.7	138	0.00
10	T	Isoprene	0.3201	0.2773	13.4	122	0.00
11	T	Acrolein	0.0228	0.0265	-16.5	153#	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2520	0.2463	2.3	140	0.00
13	T	Acetone	0.0594	0.0500	15.8	121	0.00
14	C	1,1-Dichloroethene	0.4577	0.4240	7.4	134	0.00
15	T	Tert-Butyl Alcohol	0.0164	0.0154	6.0	130	0.01
16	T	Dimethyl Sulfide	0.1828	0.1572	14.0	118	0.00
17	T	Iodomethane	0.1615	0.1928	-19.4	131	0.00
18	T	Methyl acetate	0.2006	0.1377	31.4#	108	0.01
19	T	Methylene Chloride	0.2369	0.2216	6.4	138	0.00
20	T	Carbon Disulfide	0.7662	0.7138	6.8	127	0.00
21	T	Acrylonitrile	0.0796	0.0747	6.2	128	0.00
22	T	Methyl Tert Butyl Ether	0.5908	0.5755	2.6	137	0.00
23	T	trans-1,2-Dichloroethene	0.2533	0.2433	3.9	140	0.01
24	T	n-Hexane	0.4219	0.3524	16.5	114	0.00
25	T	Diisopropyl ether	1.0527	0.8895	15.5	119	0.00
26	T	Vinyl Acetate	0.3793	0.3739	1.4	133	0.00
27	P	1,1-Dichloroethane	0.5082	0.4695	7.6	132	0.00
28	T	Ethyl-Tert-Butyl ether	0.8568	0.8049	6.1	132	0.00
29	T	2-Butanone	0.0897	0.0769	14.3	123	0.01
30	T	Propionitrile	0.0263	0.0240	8.9	123	0.00
31	T	2,2-Dichloropropane	0.3977	0.3980	-0.1	144	0.00
32	T	cis-1,2-Dichloroethene	0.2793	0.2734	2.1	141	0.00
33	C	Chloroform	0.4991	0.4634	7.2	138	0.00
34	T	1-Bromopropane	0.0432	0.0471	-9.1	137	0.00
35	T	Bromochloromethane	0.1659	0.1808	-9.0	146	0.00
36	T	Tetrahydrofuran	0.0634	0.0516	18.5	118	0.00
37	S	Dibromofluoromethane	0.2736	0.2656	2.9	138	0.00
38	T	1,1,1-Trichloroethane	0.4911	0.4768	2.9	140	0.00
39	T	Cyclohexane	0.5353	0.4589	14.3	116	0.00
40	T	1,1-Dichloropropene	0.3507	0.3411	2.7	141	0.00
41	T	Carbon Tetrachloride	0.4796	0.4786	0.2	141	0.00
42	T	Tert-Amyl-Methyl ether	0.5954	0.5849	1.8	139	0.00
43	S	1,2-Dichloroethane-d4	0.3120	0.2754	11.7	127	0.00
44	T	1,2-Dichloroethane	0.4054	0.3807	6.1	132	0.00
45	T	Benzene	0.9600	0.8927	7.0	137	0.00
46	T	Trichloroethene	0.3120	0.3086	1.1	146	0.00
47	T	Methylcyclohexane	0.3851	0.3456	10.3	120	0.00
48	C	1,2-Dichloropropane	0.2657	0.2454	7.7	133	0.00
49	T	1,4-Dioxane	0.0014	0.0015	-4.3	145	0.01
50	T	Bromodichloromethane	0.3731	0.3598	3.6	136	0.01
51	T	Dibromomethane	0.1385	0.1342	3.1	137	0.00
52	T	2-Chloroethyl Vinyl Ether	0.1310	0.1132	13.6	124	0.00
53	T	4-Methyl-2-Pentanone	0.0739	0.0669	9.4	129	0.00
54	T	cis-1,3-Dichloropropene	0.3731	0.3723	0.2	137	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061516\11M12652.D Vial: 3
Acq On : 15 Jun 2016 15:49 Operator: JDS
Sample : WG572854-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	0.2245	0.2082	7.3	128	0.00
56	I	Chlorobenzene-d5	1.0000	1.0000	0.0	139	0.00
57	S	Toluene-d8	1.0862	1.0815	0.4	143	0.00
58	C	Toluene	1.2656	1.2565	0.7	140	0.00
59	T	Ethyl Methacrylate	0.2702	0.2694	0.3	132	0.00
60	T	trans-1,3-Dichloropropene	0.4062	0.4097	-0.9	137	0.00
61	T	1,1,2-Trichloroethane	0.2244	0.2222	1.0	140	0.00
62	T	2-Hexanone	0.1648	0.1425	13.5	121	0.00
63	T	1,3-Dichloropropane	0.3604	0.3565	1.1	137	0.00
64	T	Tetrachloroethene	0.2943	0.3076	-4.5	150	0.00
65	T	Dibromochloromethane	0.3423	0.3637	-6.3	143	0.00
66	T	1,2-Dibromoethane	0.2248	0.2298	-2.2	143	0.00
67	T	1-Chlorohexane	0.4173	0.3896	6.6	126	0.00
68	P	Chlorobenzene	0.9272	0.9280	-0.1	142	0.00
69	T	1,1,1,2-Tetrachloroethane	0.3751	0.3829	-2.1	144	0.00
70	C	Ethylbenzene	0.4754	0.4688	1.4	140	0.00
71	T	m-,p-Xylene	0.5780	0.5743	0.6	141	0.00
72	T	o-Xylene	0.5625	0.5554	1.3	138	0.00
73	T	Styrene	0.9293	0.9507	-2.3	139	0.00
74	P	Bromoform	0.2075	0.2222	-7.1	147	0.00
75	T	Isopropylbenzene	1.4875	1.4912	-0.2	139	0.00
76	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	137	0.00
77	P	1,1,2,2-Tetrachloroethane	0.3893	0.3841	1.3	133	0.00
78	S	p-Bromofluorobenzene	0.7706	0.8012	-4.0	153#	0.00
79	T	1,2,3-Trichloropropane	0.1351	0.1415	-4.7	141	0.00
80	T	trans-1,4-Dichloro-2-Butene	0.1588	0.1300	18.2	100	0.00
81	T	n-Propylbenzene	2.8953	2.8298	2.3	134	0.00
82	T	Bromobenzene	0.7597	0.7611	-0.2	145	0.00
83	T	1,3,5-Trimethylbenzene	2.2094	2.1643	2.0	137	-0.01
84	T	2-Chlorotoluene	2.0279	1.9475	4.0	138	0.00
85	T	4-Chlorotoluene	1.8165	1.7309	4.7	134	0.00
86	T	a-Methylstyrene	1.1656	1.1236	3.6	125	0.00
87	T	tert-Butylbenzene	0.4681	0.4680	0.0	140	-0.01
88	T	1,2,4-Trimethylbenzene	2.2498	2.2244	1.1	136	0.00
89	T	sec-Butylbenzene	2.6529	2.5208	5.0	131	0.00
90	T	p-Isopropyltoluene	2.4367	2.3693	2.8	133	0.00
91	T	1,3-Dichlorobenzene	1.4673	1.4402	1.8	141	0.00
92	T	1,4-Dichlorobenzene	1.4873	1.4409	3.1	140	0.00
93	T	n-Butylbenzene	2.1472	1.9554	8.9	125	0.00
94	T	1,2-Dichlorobenzene	1.3366	1.3254	0.8	140	0.00
95	T	1,2-Dibromo-3-Chloropropane	0.0825	0.0755	8.5	127	0.00
96	T	1,2,4-Trichlorobenzene	0.9781	0.9475	3.1	133	0.00
97	T	Hexachlorobutadiene	0.4309	0.3663	15.0	121	0.00
98	T	Naphthalene	1.8154	1.7391	4.2	130	0.00
99	T	1,2,3-Trichlorobenzene	0.8976	0.8428	6.1	134	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M12652.D 8260WT.M Wed Jun 15 16:29:27 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061516\11M12652.D Vial: 3
Acq On : 15 Jun 2016 15:49 Operator: JDS
Sample : WG572854-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	140	0.00
2	T	Dichlorodifluoromethane	50.0000	46.4819	7.0	127	0.00
3	P	Chloromethane	50.0000	42.7547	14.5	136	0.00
4	C	Vinyl Chloride	50.0000	48.1042	3.8	140	0.00
5	T	1,3-Butadiene	50.0000	46.3152	7.4	124	0.00
6	T	Bromomethane	50.0000	46.5966	6.8	141	0.00
7	T	Chloroethane	50.0000	47.6716	4.7	138	0.00
8	T	Trichlorofluoromethane	50.0000	49.0089	2.0	143	0.00
9	T	Diethyl ether	100.0000	96.3482	3.7	138	0.00
10	T	Isoprene	50.0000	43.3237	13.4	122	0.00
11	T	Acrolein	50.0000	52.4613	-4.9	153	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	48.8680	2.3	140	0.00
13	T	Acetone	50.0000	42.1083	15.8	121	0.00
14	C	1,1-Dichloroethene	50.0000	46.3240	7.4	134	0.00
15	T	Tert-Butyl Alcohol	200.0000	188.0245	6.0	130	0.01
16	T	Dimethyl Sulfide	50.0000	43.0089	14.0	118	0.00
17	T	Iodomethane	50.0000	46.3947	7.2	131	0.00
18	T	Methyl acetate	50.0000	36.9297	26.1#	108	0.01
19	T	Methylene Chloride	50.0000	46.7762	6.4	138	0.00
20	T	Carbon Disulfide	50.0000	46.5776	6.8	127	0.00
21	T	Acrylonitrile	50.0000	46.9043	6.2	128	0.00
22	T	Methyl Tert Butyl Ether	50.0000	48.7090	2.6	137	0.00
23	T	trans-1,2-Dichloroethene	50.0000	48.0282	3.9	140	0.01
24	T	n-Hexane	50.0000	41.7691	16.5	114	0.00
25	T	Diisopropyl ether	100.0000	84.4941	15.5	119	0.00
26	T	Vinyl Acetate	50.0000	45.9562	8.1	133	0.00
27	P	1,1-Dichloroethane	50.0000	46.1869	7.6	132	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	93.9436	6.1	132	0.00
29	T	2-Butanone	50.0000	42.8460	14.3	123	0.01
30	T	Propionitrile	100.0000	91.1652	8.8	123	0.00
31	T	2,2-Dichloropropane	50.0000	50.0396	-0.1	144	0.00
32	T	cis-1,2-Dichloroethene	50.0000	48.9461	2.1	141	0.00
33	C	Chloroform	50.0000	46.4230	7.2	138	0.00
34	T	1-Bromopropane	50.0000	47.4773	5.0	137	0.00
35	T	Bromochloromethane	50.0000	54.4911	-9.0	146	0.00
36	T	Tetrahydrofuran	100.0000	81.4614	18.5	118	0.00
37	S	Dibromofluoromethane	25.0000	24.2696	2.9	138	0.00
38	T	1,1,1-Trichloroethane	50.0000	48.5400	2.9	140	0.00
39	T	Cyclohexane	50.0000	42.8675	14.3	116	0.00
40	T	1,1-Dichloropropene	50.0000	48.6290	2.7	141	0.00
41	T	Carbon Tetrachloride	50.0000	49.8979	0.2	141	0.00
42	T	Tert-Amyl-Methyl ether	100.0000	98.2350	1.8	139	0.00
43	S	1,2-Dichloroethane-d4	25.0000	22.0669	11.7	127	0.00
44	T	1,2-Dichloroethane	50.0000	46.9607	6.1	132	0.00
45	T	Benzene	50.0000	46.4917	7.0	137	0.00
46	T	Trichloroethene	50.0000	49.4556	1.1	146	0.00
47	T	Methylcyclohexane	50.0000	44.8672	10.3	120	0.00
48	C	1,2-Dichloropropane	50.0000	46.1703	7.7	133	0.00
49	T	1,4-Dioxane	200.0000	195.1063	2.4	145	0.01
50	T	Bromodichloromethane	50.0000	48.2201	3.6	136	0.01
51	T	Dibromomethane	50.0000	48.4693	3.1	137	0.00
52	T	2-Chloroethyl Vinyl Ether	50.0000	43.2045	13.6	124	0.00
53	T	4-Methyl-2-Pentanone	50.0000	45.2970	9.4	129	0.00
54	T	cis-1,3-Dichloropropene	50.0000	49.8876	0.2	137	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061516\11M12652.D Vial: 3
Acq On : 15 Jun 2016 15:49 Operator: JDS
Sample : WG572854-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	50.0000	46.3615	7.3	128	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	139	0.00
57	S	Toluene-d8	25.0000	24.8903	0.4	143	0.00
58	C	Toluene	50.0000	49.6396	0.7	140	0.00
59	T	Ethyl Methacrylate	50.0000	49.8441	0.3	132	0.00
60	T	trans-1,3-Dichloropropene	50.0000	50.4300	-0.9	137	0.00
61	T	1,1,2-Trichloroethane	50.0000	49.5137	1.0	140	0.00
62	T	2-Hexanone	50.0000	43.2266	13.5	121	0.00
63	T	1,3-Dichloropropane	50.0000	49.4570	1.1	137	0.00
64	T	Tetrachloroethene	50.0000	52.2593	-4.5	150	0.00
65	T	Dibromochloromethane	50.0000	53.1280	-6.3	143	0.00
66	T	1,2-Dibromoethane	50.0000	51.1011	-2.2	143	0.00
67	T	1-Chlorohexane	50.0000	46.6892	6.6	126	0.00
68	P	Chlorobenzene	50.0000	50.0433	-0.1	142	0.00
69	T	1,1,1,2-Tetrachloroethane	50.0000	51.0380	-2.1	144	0.00
70	C	Ethylbenzene	50.0000	49.3008	1.4	140	0.00
71	T	m-,p-Xylene	100.0000	99.3686	0.6	141	0.00
72	T	o-Xylene	50.0000	49.3660	1.3	138	0.00
73	T	Styrene	50.0000	51.1514	-2.3	139	0.00
74	P	Bromoform	50.0000	53.5511	-7.1	147	0.00
75	T	Isopropylbenzene	50.0000	50.1228	-0.2	139	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	137	0.00
77	P	1,1,2,2-Tetrachloroethane	50.0000	49.3311	1.3	133	0.00
78	S	p-Bromofluorobenzene	25.0000	25.9908	-4.0	153	0.00
79	T	1,2,3-Trichloropropane	50.0000	48.4475	3.1	141	0.00
80	T	trans-1,4-Dichloro-2-Butene	50.0000	34.8588	30.3#	100	0.00
81	T	n-Propylbenzene	50.0000	48.8694	2.3	134	0.00
82	T	Bromobenzene	50.0000	50.0884	-0.2	145	0.00
83	T	1,3,5-Trimethylbenzene	50.0000	48.9792	2.0	137	-0.01
84	T	2-Chlorotoluene	50.0000	48.0183	4.0	138	0.00
85	T	4-Chlorotoluene	50.0000	47.6446	4.7	134	0.00
86	T	a-Methylstyrene	50.0000	48.1996	3.6	125	0.00
87	T	tert-Butylbenzene	50.0000	49.9877	0.0	140	-0.01
88	T	1,2,4-Trimethylbenzene	50.0000	49.4348	1.1	136	0.00
89	T	sec-Butylbenzene	50.0000	47.5110	5.0	131	0.00
90	T	p-Isopropyltoluene	50.0000	48.6167	2.8	133	0.00
91	T	1,3-Dichlorobenzene	50.0000	49.0752	1.8	141	0.00
92	T	1,4-Dichlorobenzene	50.0000	48.4404	3.1	140	0.00
93	T	n-Butylbenzene	50.0000	45.5327	8.9	125	0.00
94	T	1,2-Dichlorobenzene	50.0000	49.5797	0.8	140	0.00
95	T	1,2-Dibromo-3-Chloropropane	50.0000	43.0887	13.8	127	0.00
96	T	1,2,4-Trichlorobenzene	50.0000	48.4371	3.1	133	0.00
97	T	Hexachlorobutadiene	50.0000	42.5021	15.0	121	0.00
98	T	Naphthalene	50.0000	47.8963	4.2	130	0.00
99	T	1,2,3-Trichlorobenzene	50.0000	46.9470	6.1	134	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M12652.D 8260WT.M Wed Jun 15 16:29:30 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12685.D Vial: 3
Acq On : 16 Jun 2016 15:27 Operator: JDS
Sample : WG573050-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 17:35:27 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	543662	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	464956	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	284484	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	146149	24.5632 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.24%		
43) 1,2-Dichloroethane-d4	10.24	65	155086	22.8597 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 91.44%		
57) Toluene-d8	12.47	98	503584	24.9270 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.72%		
78) p-Bromofluorobenzene	15.64	95	224375	25.5858 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.36%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	406987	47.7786 ug/L	96
3) Chloromethane	3.72	50	299554	43.9090 ug/L	99
4) Vinyl Chloride	3.96	62	285096	50.3218 ug/L	99
5) 1,3-Butadiene	4.00	54	271351	48.1678 ug/L	98
6) Bromomethane	4.85	94	180415	46.3157 ug/L	99
7) Chloroethane	5.00	64	169812	46.6496 ug/L	99
8) Trichlorofluoromethane	5.49	101	572102	50.6632 ug/L	100
9) Diethyl ether	6.01	59	410565	98.3091 ug/L	93
10) Isoprene	6.04	67	299151	42.9800 ug/L	95
11) Acrolein	6.25	56	28306	51.5056 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	263199	48.0345 ug/L	94
13) Acetone	6.34	43	59010	45.7104 ug/L	95
14) 1,1-Dichloroethene	6.56	61	462355	46.4553 ug/L	98
15) Tert-Butyl Alcohol	6.66	59	76547	214.3667 ug/L	97
16) Dimethyl Sulfide	6.81	62	169483	42.6404 ug/L	95
17) Iodomethane	7.06	142	210406	46.5543 ug/L	98
18) Methyl acetate	7.07	43	162363	40.1917 ug/L	94
19) Methylene Chloride	7.31	84	239243	46.4471 ug/L	86
20) Carbon Disulfide	7.36	76	766152	45.9817 ug/L	100
21) Acrylonitrile	7.49	53	86599	50.0317 ug/L	99
22) Methyl Tert Butyl Ether	7.52	73	653454	50.8641 ug/L	95
23) trans-1,2-Dichloroethene	7.75	96	263265	47.7942 ug/L	95
24) n-Hexane	7.82	57	387169	42.2012 ug/L	98
25) Diisopropyl ether	8.15	45	2018844	88.1874 ug/L	98
26) Vinyl Acetate	8.31	43	415107	46.8722 ug/L	98
27) 1,1-Dichloroethane	8.34	63	516114	46.6970 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1816721	97.5020 ug/L	98
29) 2-Butanone	8.87	43	91425	46.8450 ug/L	95
30) Propionitrile	8.99	54	57427	100.4638 ug/L	97
31) 2,2-Dichloropropane	9.09	77	451088	52.1641 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	299366	49.2911 ug/L	94
33) Chloroform	9.35	83	518393	47.7618 ug/L	99
34) 1-Bromopropane	9.48	122	51025	47.3284 ug/L	99
35) Bromochloromethane	9.57	130	200256	55.5193 ug/L	88
36) Tetrahydrofuran	9.60	42	123167	89.3707 ug/L	90
38) 1,1,1-Trichloroethane	9.85	97	536409	50.2216 ug/L	96
39) Cyclohexane	9.88	56	510666	43.8708 ug/L	96
40) 1,1-Dichloropropene	10.04	75	368569	48.3292 ug/L	99
41) Carbon Tetrachloride	10.18	117	537204	51.5070 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	1318788	101.8590 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M12685.D 8260WT.M Thu Jun 16 17:35:27 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12685.D Vial: 3
Acq On : 16 Jun 2016 15:27 Operator: JDS
Sample : WG573050-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 17:35:27 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.35	62	443952	50.3619 ug/L	97
45) Benzene	10.38	78	961058	46.0340 ug/L	100
46) Trichloroethene	11.09	130	341574	50.3363 ug/L	98
47) Methylcyclohexane	11.17	83	382542	45.6789 ug/L	95
48) 1,2-Dichloropropane	11.29	63	263883	45.6618 ug/L	95
49) 1,4-Dioxane	11.56	88	7030	214.0094 ug/L	95
50) Bromodichloromethane	11.58	83	405061	49.9279 ug/L	99
51) Dibromomethane	11.66	93	157825	52.4073 ug/L	97
52) 2-Chloroethyl Vinyl Ether	11.84	63	136375	47.8801 ug/L	97
53) 4-Methyl-2-Pentanone	11.87	58	77895	48.4881 ug/L	94
54) cis-1,3-Dichloropropene	12.17	75	411519	50.7135 ug/L	99
55) Dimethyl Disulfide	12.42	79	235698	48.2690 ug/L	97
58) Toluene	12.56	91	1150518	48.8793 ug/L	99
59) Ethyl Methacrylate	12.65	69	253948	50.5265 ug/L	91
60) trans-1,3-Dichloropropene	12.73	75	392046	51.8908 ug/L	97
61) 1,1,2-Trichloroethane	12.93	97	214974	51.5054 ug/L	96
62) 2-Hexanone	12.86	43	139732	45.5833 ug/L #	97
63) 1,3-Dichloropropane	13.21	76	338700	50.5327 ug/L	90
64) Tetrachloroethene	13.34	164	282961	51.6948 ug/L	97
65) Dibromochloromethane	13.59	129	353385	55.5094 ug/L	99
66) 1,2-Dibromoethane	13.82	107	220306	52.6830 ug/L	98
67) 1-Chlorohexane	13.89	91	365423	47.0887 ug/L	92
68) Chlorobenzene	14.29	112	859549	49.8484 ug/L	99
69) 1,1,1,2-Tetrachloroethane	14.32	131	361414	51.7995 ug/L	98
70) Ethylbenzene	14.31	106	437811	49.5147 ug/L	98
71) m-,p-Xylene	14.39	106	1062784	98.8697 ug/L	99
72) o-Xylene	14.92	106	519351	49.6451 ug/L	100
73) Styrene	14.96	104	894238	51.7382 ug/L	98
74) Bromoform	15.43	173	218771	56.6988 ug/L	98
75) Isopropylbenzene	15.31	105	1401984	50.6762 ug/L	100
77) 1,1,2,2-Tetrachloroethane	15.52	83	220886	49.8600 ug/L	99
79) 1,2,3-Trichloropropane	15.70	110	84799	51.0086 ug/L	87
80) trans-1,4-Dichloro-2-Buten	15.74	53	83254	39.1541 ug/L	76
81) n-Propylbenzene	15.79	91	1592055	48.3228 ug/L	98
82) Bromobenzene	15.92	156	429706	49.7043 ug/L	90
83) 1,3,5-Trimethylbenzene	15.96	105	1223270	48.6555 ug/L	100
84) 2-Chlorotoluene	16.05	91	1068016	46.2822 ug/L	98
85) 4-Chlorotoluene	16.09	91	994885	48.1303 ug/L	98
86) a-Methylstyrene	16.34	118	623971	47.0452 ug/L	99
87) tert-Butylbenzene	16.40	134	268151	50.3427 ug/L	91
88) 1,2,4-Trimethylbenzene	16.44	105	1258537	49.1588 ug/L	99
89) sec-Butylbenzene	16.65	105	1435723	47.5587 ug/L	98
90) p-Isopropyltoluene	16.79	119	1365569	49.2479 ug/L	99
91) 1,3-Dichlorobenzene	16.98	146	824640	49.3881 ug/L	98
92) 1,4-Dichlorobenzene	17.10	146	819532	48.4226 ug/L	99
93) n-Butylbenzene	17.28	91	1140151	46.6626 ug/L	98
94) 1,2-Dichlorobenzene	17.57	146	760183	49.9784 ug/L	99
95) 1,2-Dibromo-3-Chloropropan	18.49	75	49466	49.5379 ug/L	98
96) 1,2,4-Trichlorobenzene	19.55	180	561045	50.4088 ug/L	100
97) Hexachlorobutadiene	19.69	225	220828	45.0373 ug/L	98
98) Naphthalene	19.90	128	1096836	53.0938 ug/L	100
99) 1,2,3-Trichlorobenzene	20.19	180	506218	49.5582 ug/L	100

(#) = qualifier out of range (m) = manual integration
11M12685.D 8260WT.M Thu Jun 16 17:35:28 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12685.D Vial: 3
Acq On : 16 Jun 2016 15:27 Operator: JDS
Sample : WG573050-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 17:35 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

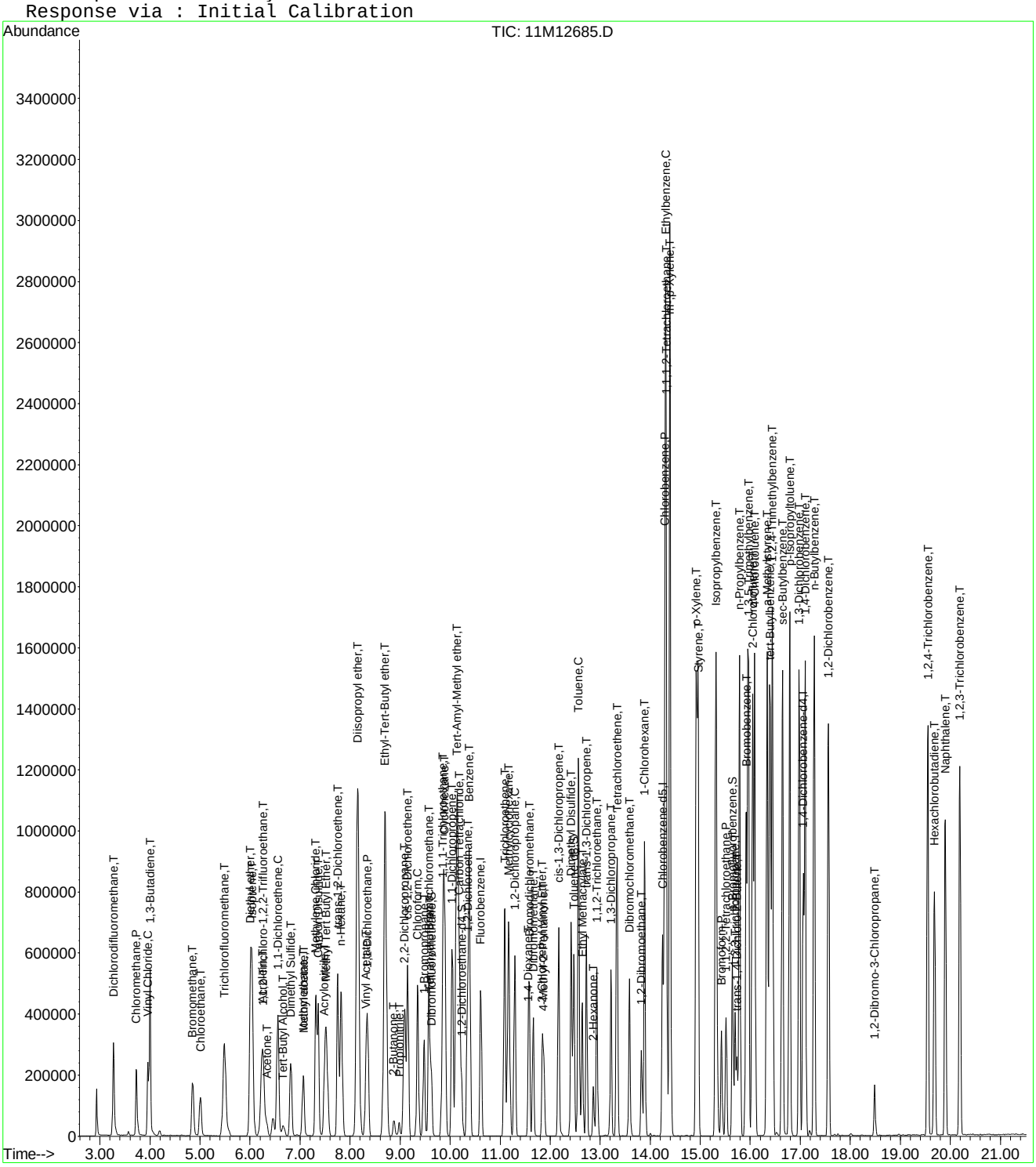

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061616\11M12685.D Vial: 3
Acq On : 16 Jun 2016 15:27 Operator: JDS
Sample : WG573050-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	104	0.00
2	T	Dichlorodifluoromethane	0.3917	0.3743	4.4	98	0.00
3	P	Chloromethane	0.3137	0.2755	12.2	104	0.00
4	C	Vinyl Chloride	0.2605	0.2622	-0.6	109	0.00
5	T	1,3-Butadiene	0.2591	0.2496	3.7	97	0.00
6	T	Bromomethane	0.1791	0.1659	7.4	105	0.00
7	T	Chloroethane	0.1674	0.1562	6.7	101	0.00
8	T	Trichlorofluoromethane	0.5193	0.5262	-1.3	110	0.01
9	T	Diethyl ether	0.1920	0.1888	1.7	105	0.00
10	T	Isoprene	0.3201	0.2751	14.0	90	0.00
11	T	Acrolein	0.0228	0.0260	-14.3	112	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2520	0.2421	3.9	103	0.01
13	T	Acetone	0.0594	0.0543	8.6	98	0.00
14	C	1,1-Dichloroethene	0.4577	0.4252	7.1	101	0.00
15	T	Tert-Butyl Alcohol	0.0164	0.0176	-7.2	110	0.00
16	T	Dimethyl Sulfide	0.1828	0.1559	14.7	87	0.00
17	T	Iodomethane	0.1615	0.1935	-19.8	98	0.00
18	T	Methyl acetate	0.2006	0.1493	25.6#	88	0.01
19	T	Methylene Chloride	0.2369	0.2200	7.1	102	0.00
20	T	Carbon Disulfide	0.7662	0.7046	8.0	94	0.00
21	T	Acrylonitrile	0.0796	0.0796	-0.1	102	0.00
22	T	Methyl Tert Butyl Ether	0.5908	0.6010	-1.7	107	0.00
23	T	trans-1,2-Dichloroethene	0.2533	0.2421	4.4	104	0.01
24	T	n-Hexane	0.4219	0.3561	15.6	86	0.00
25	T	Diisopropyl ether	1.0527	0.9284	11.8	93	0.00
26	T	Vinyl Acetate	0.3793	0.3818	-0.6	101	0.00
27	P	1,1-Dichloroethane	0.5082	0.4747	6.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	0.8568	0.8354	2.5	102	0.00
29	T	2-Butanone	0.0897	0.0841	6.3	100	0.00
30	T	Propionitrile	0.0263	0.0264	-0.5	102	0.01
31	T	2,2-Dichloropropane	0.3977	0.4149	-4.3	112	0.00
32	T	cis-1,2-Dichloroethene	0.2793	0.2753	1.4	106	0.00
33	C	Chloroform	0.4991	0.4768	4.5	106	0.00
34	T	1-Bromopropane	0.0432	0.0469	-8.7	102	0.00
35	T	Bromochloromethane	0.1659	0.1842	-11.0	111	0.00
36	T	Tetrahydrofuran	0.0634	0.0566	10.6	96	0.00
37	S	Dibromofluoromethane	0.2736	0.2688	1.7	105	0.00
38	T	1,1,1-Trichloroethane	0.4911	0.4933	-0.4	108	0.00
39	T	Cyclohexane	0.5353	0.4697	12.3	89	0.00
40	T	1,1-Dichloropropene	0.3507	0.3390	3.3	104	0.00
41	T	Carbon Tetrachloride	0.4796	0.4941	-3.0	109	0.00
42	T	Tert-Amyl-Methyl ether	0.5954	0.6064	-1.9	107	0.00
43	S	1,2-Dichloroethane-d4	0.3120	0.2853	8.6	98	0.01
44	T	1,2-Dichloroethane	0.4054	0.4083	-0.7	106	0.01
45	T	Benzene	0.9600	0.8839	7.9	101	0.00
46	T	Trichloroethene	0.3120	0.3141	-0.7	111	0.00
47	T	Methylcyclohexane	0.3851	0.3518	8.6	91	0.00
48	C	1,2-Dichloropropane	0.2657	0.2427	8.7	98	0.00
49	T	1,4-Dioxane	0.0014	0.0016	-15.7	120	0.01
50	T	Bromodichloromethane	0.3731	0.3725	0.1	105	0.01
51	T	Dibromomethane	0.1385	0.1452	-4.8	110	0.01
52	T	2-Chloroethyl Vinyl Ether	0.1310	0.1254	4.2	102	0.00
53	T	4-Methyl-2-Pentanone	0.0739	0.0716	3.0	103	0.00
54	T	cis-1,3-Dichloropropene	0.3731	0.3785	-1.4	104	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061616\11M12685.D Vial: 3
Acq On : 16 Jun 2016 15:27 Operator: JDS
Sample : WG573050-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	0.2245	0.2168	3.5	99	0.00
56	I	Chlorobenzene-d5	1.0000	1.0000	0.0	106	0.00
57	S	Toluene-d8	1.0862	1.0831	0.3	109	0.00
58	C	Toluene	1.2656	1.2372	2.2	105	0.00
59	T	Ethyl Methacrylate	0.2702	0.2731	-1.1	102	0.00
60	T	trans-1,3-Dichloropropene	0.4062	0.4216	-3.8	107	0.00
61	T	1,1,2-Trichloroethane	0.2244	0.2312	-3.0	111	0.00
62	T	2-Hexanone	0.1648	0.1503	8.8	97	0.00
63	T	1,3-Dichloropropane	0.3604	0.3642	-1.1	107	0.00
64	T	Tetrachloroethene	0.2943	0.3043	-3.4	113	0.00
65	T	Dibromochloromethane	0.3423	0.3800	-11.0	114	0.00
66	T	1,2-Dibromoethane	0.2248	0.2369	-5.4	112	0.00
67	T	1-Chlorohexane	0.4173	0.3930	5.8	97	0.00
68	P	Chlorobenzene	0.9272	0.9243	0.3	108	0.00
69	T	1,1,1,2-Tetrachloroethane	0.3751	0.3887	-3.6	111	0.00
70	C	Ethylbenzene	0.4754	0.4708	1.0	107	0.00
71	T	m-,p-Xylene	0.5780	0.5714	1.1	107	0.00
72	T	o-Xylene	0.5625	0.5585	0.7	106	0.00
73	T	Styrene	0.9293	0.9616	-3.5	107	0.01
74	P	Bromoform	0.2075	0.2353	-13.4	119	0.00
75	T	Isopropylbenzene	1.4875	1.5076	-1.4	107	0.00
76	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	108	0.00
77	P	1,1,2,2-Tetrachloroethane	0.3893	0.3882	0.3	106	0.00
78	S	p-Bromofluorobenzene	0.7706	0.7887	-2.3	119	0.00
79	T	1,2,3-Trichloropropane	0.1351	0.1490	-10.3	117	0.00
80	T	trans-1,4-Dichloro-2-Butene	0.1588	0.1463	7.9	88	0.00
81	T	n-Propylbenzene	2.8953	2.7982	3.4	105	0.00
82	T	Bromobenzene	0.7597	0.7552	0.6	113	0.00
83	T	1,3,5-Trimethylbenzene	2.2094	2.1500	2.7	107	0.00
84	T	2-Chlorotoluene	2.0279	1.8771	7.4	105	0.00
85	T	4-Chlorotoluene	1.8165	1.7486	3.7	107	0.00
86	T	a-Methylstyrene	1.1656	1.0967	5.9	96	0.00
87	T	tert-Butylbenzene	0.4681	0.4713	-0.7	111	0.00
88	T	1,2,4-Trimethylbenzene	2.2498	2.2120	1.7	107	0.00
89	T	sec-Butylbenzene	2.6529	2.5234	4.9	103	0.00
90	T	p-Isopropyltoluene	2.4367	2.4001	1.5	106	0.00
91	T	1,3-Dichlorobenzene	1.4673	1.4494	1.2	112	0.00
92	T	1,4-Dichlorobenzene	1.4873	1.4404	3.2	111	0.00
93	T	n-Butylbenzene	2.1472	2.0039	6.7	101	0.00
94	T	1,2-Dichlorobenzene	1.3366	1.3361	0.0	111	0.00
95	T	1,2-Dibromo-3-Chloropropane	0.0825	0.0869	-5.4	115	0.00
96	T	1,2,4-Trichlorobenzene	0.9781	0.9861	-0.8	109	0.00
97	T	Hexachlorobutadiene	0.4309	0.3881	9.9	101	0.00
98	T	Naphthalene	1.8154	1.9278	-6.2	114	0.00
99	T	1,2,3-Trichlorobenzene	0.8976	0.8897	0.9	112	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M12685.D 8260WT.M Thu Jun 16 17:38:01 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061616\11M12685.D Vial: 3
Acq On : 16 Jun 2016 15:27 Operator: JDS
Sample : WG573050-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	104	0.00
2	T	Dichlorodifluoromethane	50.0000	47.7786	4.4	98	0.00
3	P	Chloromethane	50.0000	43.9090	12.2	104	0.00
4	C	Vinyl Chloride	50.0000	50.3218	-0.6	109	0.00
5	T	1,3-Butadiene	50.0000	48.1678	3.7	97	0.00
6	T	Bromomethane	50.0000	46.3157	7.4	105	0.00
7	T	Chloroethane	50.0000	46.6496	6.7	101	0.00
8	T	Trichlorofluoromethane	50.0000	50.6632	-1.3	110	0.01
9	T	Diethyl ether	100.0000	98.3091	1.7	105	0.00
10	T	Isoprene	50.0000	42.9800	14.0	90	0.00
11	T	Acrolein	50.0000	51.5056	-3.0	112	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	48.0345	3.9	103	0.01
13	T	Acetone	50.0000	45.7104	8.6	98	0.00
14	C	1,1-Dichloroethene	50.0000	46.4553	7.1	101	0.00
15	T	Tert-Butyl Alcohol	200.0000	214.3667	-7.2	110	0.00
16	T	Dimethyl Sulfide	50.0000	42.6404	14.7	87	0.00
17	T	Iodomethane	50.0000	46.5543	6.9	98	0.00
18	T	Methyl acetate	50.0000	40.1917	19.6	88	0.01
19	T	Methylene Chloride	50.0000	46.4471	7.1	102	0.00
20	T	Carbon Disulfide	50.0000	45.9817	8.0	94	0.00
21	T	Acrylonitrile	50.0000	50.0317	-0.1	102	0.00
22	T	Methyl Tert Butyl Ether	50.0000	50.8641	-1.7	107	0.00
23	T	trans-1,2-Dichloroethene	50.0000	47.7942	4.4	104	0.01
24	T	n-Hexane	50.0000	42.2012	15.6	86	0.00
25	T	Diisopropyl ether	100.0000	88.1874	11.8	93	0.00
26	T	Vinyl Acetate	50.0000	46.8722	6.3	101	0.00
27	P	1,1-Dichloroethane	50.0000	46.6970	6.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	97.5020	2.5	102	0.00
29	T	2-Butanone	50.0000	46.8450	6.3	100	0.00
30	T	Propionitrile	100.0000	100.4638	-0.5	102	0.01
31	T	2,2-Dichloropropane	50.0000	52.1641	-4.3	112	0.00
32	T	cis-1,2-Dichloroethene	50.0000	49.2911	1.4	106	0.00
33	C	Chloroform	50.0000	47.7618	4.5	106	0.00
34	T	1-Bromopropane	50.0000	47.3284	5.3	102	0.00
35	T	Bromochloromethane	50.0000	55.5193	-11.0	111	0.00
36	T	Tetrahydrofuran	100.0000	89.3706	10.6	96	0.00
37	S	Dibromofluoromethane	25.0000	24.5632	1.7	105	0.00
38	T	1,1,1-Trichloroethane	50.0000	50.2216	-0.4	108	0.00
39	T	Cyclohexane	50.0000	43.8708	12.3	89	0.00
40	T	1,1-Dichloropropene	50.0000	48.3293	3.3	104	0.00
41	T	Carbon Tetrachloride	50.0000	51.5070	-3.0	109	0.00
42	T	Tert-Amyl-Methyl ether	100.0000	101.8590	-1.9	107	0.00
43	S	1,2-Dichloroethane-d4	25.0000	22.8597	8.6	98	0.01
44	T	1,2-Dichloroethane	50.0000	50.3619	-0.7	106	0.01
45	T	Benzene	50.0000	46.0340	7.9	101	0.00
46	T	Trichloroethene	50.0000	50.3363	-0.7	111	0.00
47	T	Methylcyclohexane	50.0000	45.6789	8.6	91	0.00
48	C	1,2-Dichloropropane	50.0000	45.6618	8.7	98	0.00
49	T	1,4-Dioxane	200.0000	214.0094	-7.0	120	0.01
50	T	Bromodichloromethane	50.0000	49.9279	0.1	105	0.01
51	T	Dibromomethane	50.0000	52.4074	-4.8	110	0.01
52	T	2-Chloroethyl Vinyl Ether	50.0000	47.8801	4.2	102	0.00
53	T	4-Methyl-2-Pentanone	50.0000	48.4881	3.0	103	0.00
54	T	cis-1,3-Dichloropropene	50.0000	50.7135	-1.4	104	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061616\11M12685.D Vial: 3
Acq On : 16 Jun 2016 15:27 Operator: JDS
Sample : WG573050-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	50.0000	48.2690	3.5	99	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	106	0.00
57	S	Toluene-d8	25.0000	24.9270	0.3	109	0.00
58	C	Toluene	50.0000	48.8793	2.2	105	0.00
59	T	Ethyl Methacrylate	50.0000	50.5266	-1.1	102	0.00
60	T	trans-1,3-Dichloropropene	50.0000	51.8908	-3.8	107	0.00
61	T	1,1,2-Trichloroethane	50.0000	51.5054	-3.0	111	0.00
62	T	2-Hexanone	50.0000	45.5833	8.8	97	0.00
63	T	1,3-Dichloropropane	50.0000	50.5327	-1.1	107	0.00
64	T	Tetrachloroethene	50.0000	51.6948	-3.4	113	0.00
65	T	Dibromochloromethane	50.0000	55.5093	-11.0	114	0.00
66	T	1,2-Dibromoethane	50.0000	52.6830	-5.4	112	0.00
67	T	1-Chlorohexane	50.0000	47.0887	5.8	97	0.00
68	P	Chlorobenzene	50.0000	49.8484	0.3	108	0.00
69	T	1,1,1,2-Tetrachloroethane	50.0000	51.7995	-3.6	111	0.00
70	C	Ethylbenzene	50.0000	49.5147	1.0	107	0.00
71	T	m-,p-Xylene	100.0000	98.8697	1.1	107	0.00
72	T	o-Xylene	50.0000	49.6451	0.7	106	0.00
73	T	Styrene	50.0000	51.7382	-3.5	107	0.01
74	P	Bromoform	50.0000	56.6988	-13.4	119	0.00
75	T	Isopropylbenzene	50.0000	50.6762	-1.4	107	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	108	0.00
77	P	1,1,2,2-Tetrachloroethane	50.0000	49.8600	0.3	106	0.00
78	S	p-Bromofluorobenzene	25.0000	25.5858	-2.3	119	0.00
79	T	1,2,3-Trichloropropane	50.0000	51.0086	-2.0	117	0.00
80	T	trans-1,4-Dichloro-2-Butene	50.0000	39.1541	21.7	88	0.00
81	T	n-Propylbenzene	50.0000	48.3228	3.4	105	0.00
82	T	Bromobenzene	50.0000	49.7043	0.6	113	0.00
83	T	1,3,5-Trimethylbenzene	50.0000	48.6555	2.7	107	0.00
84	T	2-Chlorotoluene	50.0000	46.2822	7.4	105	0.00
85	T	4-Chlorotoluene	50.0000	48.1303	3.7	107	0.00
86	T	a-Methylstyrene	50.0000	47.0452	5.9	96	0.00
87	T	tert-Butylbenzene	50.0000	50.3427	-0.7	111	0.00
88	T	1,2,4-Trimethylbenzene	50.0000	49.1588	1.7	107	0.00
89	T	sec-Butylbenzene	50.0000	47.5587	4.9	103	0.00
90	T	p-Isopropyltoluene	50.0000	49.2479	1.5	106	0.00
91	T	1,3-Dichlorobenzene	50.0000	49.3881	1.2	112	0.00
92	T	1,4-Dichlorobenzene	50.0000	48.4226	3.2	111	0.00
93	T	n-Butylbenzene	50.0000	46.6626	6.7	101	0.00
94	T	1,2-Dichlorobenzene	50.0000	49.9784	0.0	111	0.00
95	T	1,2-Dibromo-3-Chloropropane	50.0000	49.5379	0.9	115	0.00
96	T	1,2,4-Trichlorobenzene	50.0000	50.4088	-0.8	109	0.00
97	T	Hexachlorobutadiene	50.0000	45.0373	9.9	101	0.00
98	T	Naphthalene	50.0000	53.0938	-6.2	114	0.00
99	T	1,2,3-Trichlorobenzene	50.0000	49.5582	0.9	112	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M12685.D 8260WT.M Thu Jun 16 17:38:04 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061716\11M12718.D Vial: 2
Acq On : 17 Jun 2016 16:21 Operator: JDS
Sample : WG573258-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 17 16:52:21 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	544296	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	473466	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	295714	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	146304	24.5606 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.24%		
43) 1,2-Dichloroethane-d4	10.23	65	152286	22.4209 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 89.68%		
57) Toluene-d8	12.47	98	494497	24.0373 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 96.16%		
78) p-Bromofluorobenzene	15.64	95	226814	24.8817 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.52%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	412040	48.3154 ug/L	98
3) Chloromethane	3.72	50	311199	45.5628 ug/L	99
4) Vinyl Chloride	3.96	62	294517	51.9241 ug/L	99
5) 1,3-Butadiene	4.00	54	306050	54.2640 ug/L	97
6) Bromomethane	4.85	94	185623	47.5972 ug/L	98
7) Chloroethane	5.00	64	172728	47.3954 ug/L	100
8) Trichlorofluoromethane	5.48	101	653864	57.8363 ug/L	99
9) Diethyl ether	6.01	59	395897	94.6864 ug/L	94
10) Isoprene	6.04	67	312555	44.8535 ug/L	98
11) Acrolein	6.23	56	25261	46.0750 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	275447	50.2112 ug/L	94
13) Acetone	6.34	43	63397	49.0514 ug/L	98
14) 1,1-Dichloroethene	6.56	61	491469	49.3230 ug/L	100
15) Tert-Butyl Alcohol	6.65	59	64337	179.9632 ug/L	100
16) Dimethyl Sulfide	6.81	62	184944	46.4760 ug/L	95
17) Iodomethane	7.06	142	222472	49.0508 ug/L	99
18) Methyl acetate	7.06	43	154165	38.0320 ug/L	95
19) Methylene Chloride	7.31	84	247079	47.9125 ug/L	88
20) Carbon Disulfide	7.36	76	827034	49.5778 ug/L	99
21) Acrylonitrile	7.49	53	79149	45.6743 ug/L	98
22) Methyl Tert Butyl Ether	7.52	73	619117	48.1352 ug/L	96
23) trans-1,2-Dichloroethene	7.75	96	270345	49.0224 ug/L	96
24) n-Hexane	7.82	57	410069	44.6452 ug/L	98
25) Diisopropyl ether	8.15	45	2046608	89.2960 ug/L	97
26) Vinyl Acetate	8.31	43	323874	37.0648 ug/L	98
27) 1,1-Dichloroethane	8.34	63	538487	48.6645 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1785514	95.7155 ug/L	98
29) 2-Butanone	8.87	43	83601	42.7862 ug/L	94
30) Propionitrile	8.97	54	51990	90.8463 ug/L	99
31) 2,2-Dichloropropane	9.09	77	450752	52.0646 ug/L	99
32) cis-1,2-Dichloroethene	9.15	96	302463	49.7430 ug/L	97
33) Chloroform	9.35	83	543256	49.9942 ug/L	99
34) 1-Bromopropane	9.48	122	55874	51.7066 ug/L	98
35) Bromochloromethane	9.57	130	204706	56.6870 ug/L	87
36) Tetrahydrofuran	9.60	42	108791	78.8474 ug/L	94
38) 1,1,1-Trichloroethane	9.85	97	565202	52.8557 ug/L	97
39) Cyclohexane	9.88	56	543260	46.6166 ug/L	96
40) 1,1-Dichloropropene	10.04	75	383943	50.2865 ug/L	100
41) Carbon Tetrachloride	10.18	117	581106	55.6514 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	1249609	96.4034 ug/L	100

(#) = qualifier out of range (m) = manual integration
11M12718.D 8260WT.M Fri Jun 17 16:52:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061716\11M12718.D Vial: 2
Acq On : 17 Jun 2016 16:21 Operator: JDS
Sample : WG573258-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 17 16:52:21 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.34	62	454904	51.5442 ug/L	97
45) Benzene	10.38	78	989063	47.3202 ug/L	99
46) Trichloroethene	11.08	130	359003	52.8431 ug/L	97
47) Methylcyclohexane	11.17	83	411562	49.0869 ug/L	96
48) 1,2-Dichloropropane	11.29	63	269038	46.4996 ug/L	92
49) 1,4-Dioxane	11.57	88	6782	207.0668 ug/L	85
50) Bromodichloromethane	11.57	83	422303	51.9925 ug/L	99
51) Dibromomethane	11.65	93	155080	51.4359 ug/L	97
52) 2-Chloroethyl Vinyl Ether	11.84	63	127065	44.5595 ug/L	97
53) 4-Methyl-2-Pentanone	11.87	58	67833	42.1755 ug/L	92
54) cis-1,3-Dichloropropene	12.17	75	410658	50.5484 ug/L	100
55) Dimethyl Disulfide	12.42	79	239908	49.0739 ug/L	98
58) Toluene	12.56	91	1178913	49.1854 ug/L	99
59) Ethyl Methacrylate	12.65	69	238887	46.6757 ug/L	92
60) trans-1,3-Dichloropropene	12.73	75	385543	50.1129 ug/L	99
61) 1,1,2-Trichloroethane	12.93	97	207988	48.9360 ug/L	96
62) 2-Hexanone	12.86	43	122602	39.2763 ug/L	97
63) 1,3-Dichloropropane	13.21	76	329205	48.2333 ug/L	92
64) Tetrachloroethene	13.34	164	288691	51.7937 ug/L	99
65) Dibromochloromethane	13.59	129	351670	54.2471 ug/L	99
66) 1,2-Dibromoethane	13.82	107	211814	49.7419 ug/L	100
67) 1-Chlorohexane	13.89	91	387462	49.0313 ug/L	96
68) Chlorobenzene	14.29	112	886511	50.4879 ug/L	99
69) 1,1,1,2-Tetrachloroethane	14.32	131	377753	53.1681 ug/L	100
70) Ethylbenzene	14.31	106	447460	49.6964 ug/L	100
71) m-,p-Xylene	14.39	106	1090017	99.5806 ug/L	100
72) o-Xylene	14.92	106	535146	50.2355 ug/L	100
73) Styrene	14.95	104	912597	51.8514 ug/L	100
74) Bromoform	15.43	173	209874	53.4153 ug/L	99
75) Isopropylbenzene	15.31	105	1458375	51.7670 ug/L	99
77) 1,1,2,2-Tetrachloroethane	15.52	83	196911	42.7602 ug/L	98
79) 1,2,3-Trichloropropane	15.70	110	79205	45.8713 ug/L	88
80) trans-1,4-Dichloro-2-Buten	15.74	53	76179	34.5551 ug/L	75
81) n-Propylbenzene	15.79	91	1666258	48.6544 ug/L	99
82) Bromobenzene	15.92	156	436557	48.5791 ug/L	91
83) 1,3,5-Trimethylbenzene	15.95	105	1286704	49.2350 ug/L	100
84) 2-Chlorotoluene	16.05	91	1147889	47.8544 ug/L	98
85) 4-Chlorotoluene	16.09	91	1015215	47.2487 ug/L	98
86) a-Methylstyrene	16.34	118	674861	48.9498 ug/L	97
87) tert-Butylbenzene	16.40	134	283341	51.1744 ug/L	92
88) 1,2,4-Trimethylbenzene	16.44	105	1325740	49.8173 ug/L	99
89) sec-Butylbenzene	16.65	105	1539177	49.0494 ug/L	99
90) p-Isopropyltoluene	16.79	119	1452692	50.4003 ug/L	99
91) 1,3-Dichlorobenzene	16.98	146	851925	49.0846 ug/L	98
92) 1,4-Dichlorobenzene	17.10	146	852381	48.4510 ug/L	99
93) n-Butylbenzene	17.28	91	1218876	47.9902 ug/L	97
94) 1,2-Dichlorobenzene	17.57	146	781660	49.4388 ug/L	99
95) 1,2-Dibromo-3-Chloropropan	18.49	75	43738	42.2340 ug/L	99
96) 1,2,4-Trichlorobenzene	19.55	180	562345	48.6069 ug/L	99
97) Hexachlorobutadiene	19.69	225	230283	45.1820 ug/L	99
98) Naphthalene	19.89	128	990505	46.1258 ug/L	100
99) 1,2,3-Trichlorobenzene	20.19	180	502390	47.3157 ug/L	100

(#) = qualifier out of range (m) = manual integration
11M12718.D 8260WT.M Fri Jun 17 16:52:22 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061716\11M12718.D Vial: 2
Acq On : 17 Jun 2016 16:21 Operator: JDS
Sample : WG573258-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 17 16:52 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

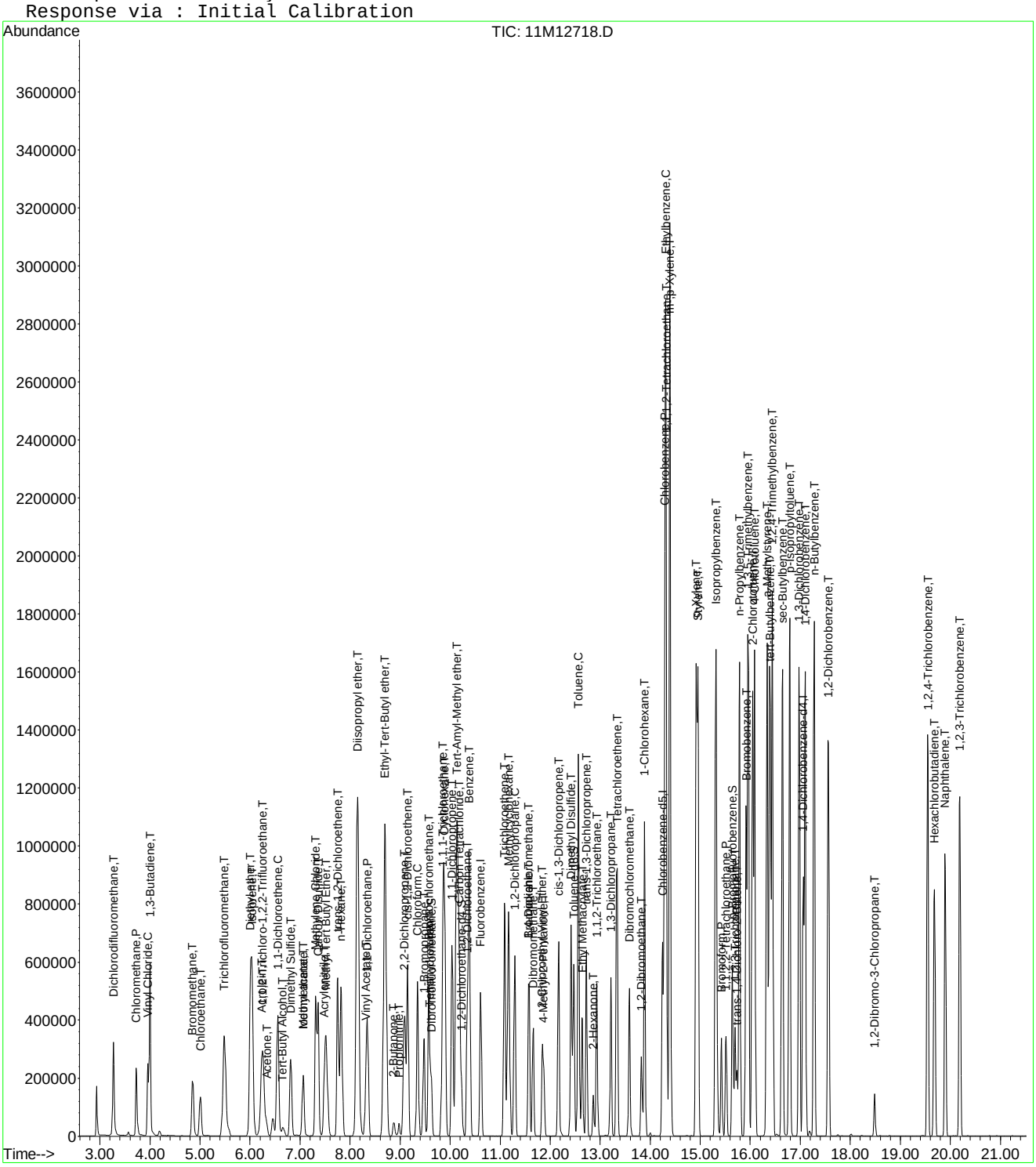

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061716\11M12718.D Vial: 2
Acq On : 17 Jun 2016 16:21 Operator: JDS
Sample : WG573258-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	104	0.00
2	T	Dichlorodifluoromethane	0.3917	0.3785	3.4	99	0.00
3	P	Chloromethane	0.3137	0.2859	8.9	108	0.00
4	C	Vinyl Chloride	0.2605	0.2706	-3.8	113	0.00
5	T	1,3-Butadiene	0.2591	0.2811	-8.5	109	0.00
6	T	Bromomethane	0.1791	0.1705	4.8	108	0.00
7	T	Chloroethane	0.1674	0.1587	5.2	103	0.00
8	T	Trichlorofluoromethane	0.5193	0.6007	-15.7	126	0.00
9	T	Diethyl ether	0.1920	0.1818	5.3	101	0.00
10	T	Isoprene	0.3201	0.2871	10.3	94	0.00
11	T	Acrolein	0.0228	0.0232	-1.9	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2520	0.2530	-0.4	108	0.00
13	T	Acetone	0.0594	0.0582	1.9	105	0.00
14	C	1,1-Dichloroethene	0.4577	0.4515	1.4	107	0.00
15	T	Tert-Butyl Alcohol	0.0164	0.0148	10.0	93	-0.01
16	T	Dimethyl Sulfide	0.1828	0.1699	7.0	95	0.00
17	T	Iodomethane	0.1615	0.2044	-26.5#	104	0.00
18	T	Methyl acetate	0.2006	0.1416	29.4#	83	0.00
19	T	Methylene Chloride	0.2369	0.2270	4.2	106	0.00
20	T	Carbon Disulfide	0.7662	0.7597	0.8	101	0.00
21	T	Acrylonitrile	0.0796	0.0727	8.6	93	0.00
22	T	Methyl Tert Butyl Ether	0.5908	0.5687	3.7	101	0.00
23	T	trans-1,2-Dichloroethene	0.2533	0.2483	2.0	107	0.01
24	T	n-Hexane	0.4219	0.3767	10.7	91	0.00
25	T	Diisopropyl ether	1.0527	0.9400	10.7	94	0.00
26	T	Vinyl Acetate	0.3793	0.2975	21.6	79	0.00
27	P	1,1-Dichloroethane	0.5082	0.4947	2.7	104	0.00
28	T	Ethyl-Tert-Butyl ether	0.8568	0.8201	4.3	100	0.00
29	T	2-Butanone	0.0897	0.0768	14.4	92	0.00
30	T	Propionitrile	0.0263	0.0239	9.2	92	0.00
31	T	2,2-Dichloropropane	0.3977	0.4141	-4.1	112	0.00
32	T	cis-1,2-Dichloroethene	0.2793	0.2778	0.5	107	0.00
33	C	Chloroform	0.4991	0.4990	0.0	111	0.00
34	T	1-Bromopropane	0.0432	0.0513	-18.9	111	0.00
35	T	Bromochloromethane	0.1659	0.1880	-13.4	114	0.00
36	T	Tetrahydrofuran	0.0634	0.0500	21.1	85	0.00
37	S	Dibromofluoromethane	0.2736	0.2688	1.8	105	0.00
38	T	1,1,1-Trichloroethane	0.4911	0.5192	-5.7	114	0.00
39	T	Cyclohexane	0.5353	0.4990	6.8	94	0.00
40	T	1,1-Dichloropropene	0.3507	0.3527	-0.6	109	0.00
41	T	Carbon Tetrachloride	0.4796	0.5338	-11.3	118	0.00
42	T	Tert-Amyl-Methyl ether	0.5954	0.5740	3.6	102	0.00
43	S	1,2-Dichloroethane-d4	0.3120	0.2798	10.3	96	0.00
44	T	1,2-Dichloroethane	0.4054	0.4179	-3.1	109	0.00
45	T	Benzene	0.9600	0.9086	5.4	104	0.00
46	T	Trichloroethene	0.3120	0.3298	-5.7	117	-0.01
47	T	Methylcyclohexane	0.3851	0.3781	1.8	98	0.00
48	C	1,2-Dichloropropane	0.2657	0.2471	7.0	100	0.00
49	T	1,4-Dioxane	0.0014	0.0016	-11.4	116	0.02
50	T	Bromodichloromethane	0.3731	0.3879	-4.0	110	0.00
51	T	Dibromomethane	0.1385	0.1425	-2.9	109	0.00
52	T	2-Chloroethyl Vinyl Ether	0.1310	0.1167	10.9	95	0.00
53	T	4-Methyl-2-Pentanone	0.0739	0.0623	15.6	90	0.00
54	T	cis-1,3-Dichloropropene	0.3731	0.3772	-1.1	104	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061716\11M12718.D Vial: 2
Acq On : 17 Jun 2016 16:21 Operator: JDS
Sample : WG573258-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	0.2245	0.2204	1.9	101	0.00
56	I	Chlorobenzene-d5	1.0000	1.0000	0.0	108	0.00
57	S	Toluene-d8	1.0862	1.0444	3.9	107	0.00
58	C	Toluene	1.2656	1.2450	1.6	108	0.00
59	T	Ethyl Methacrylate	0.2702	0.2523	6.6	96	0.00
60	T	trans-1,3-Dichloropropene	0.4062	0.4072	-0.2	105	0.00
61	T	1,1,2-Trichloroethane	0.2244	0.2196	2.1	107	0.00
62	T	2-Hexanone	0.1648	0.1295	21.4	85	0.00
63	T	1,3-Dichloropropane	0.3604	0.3477	3.5	104	0.00
64	T	Tetrachloroethene	0.2943	0.3049	-3.6	115	0.00
65	T	Dibromochloromethane	0.3423	0.3714	-8.5	113	0.00
66	T	1,2-Dibromoethane	0.2248	0.2237	0.5	108	0.00
67	T	1-Chlorohexane	0.4173	0.4092	1.9	103	0.00
68	P	Chlorobenzene	0.9272	0.9362	-1.0	111	0.00
69	T	1,1,1,2-Tetrachloroethane	0.3751	0.3989	-6.3	116	0.00
70	C	Ethylbenzene	0.4754	0.4725	0.6	109	0.00
71	T	m-,p-Xylene	0.5780	0.5756	0.4	109	0.00
72	T	o-Xylene	0.5625	0.5651	-0.5	109	0.00
73	T	Styrene	0.9293	0.9637	-3.7	109	0.00
74	P	Bromoform	0.2075	0.2216	-6.8	114	0.00
75	T	Isopropylbenzene	1.4875	1.5401	-3.5	111	0.00
76	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	112	0.00
77	P	1,1,2,2-Tetrachloroethane	0.3893	0.3329	14.5	94	0.00
78	S	p-Bromofluorobenzene	0.7706	0.7670	0.5	120	0.00
79	T	1,2,3-Trichloropropane	0.1351	0.1339	0.9	109	0.00
80	T	trans-1,4-Dichloro-2-Butene	0.1588	0.1288	18.9	81	0.00
81	T	n-Propylbenzene	2.8953	2.8173	2.7	109	0.00
82	T	Bromobenzene	0.7597	0.7381	2.8	115	0.00
83	T	1,3,5-Trimethylbenzene	2.2094	2.1756	1.5	113	-0.01
84	T	2-Chlorotoluene	2.0279	1.9409	4.3	112	0.00
85	T	4-Chlorotoluene	1.8165	1.7166	5.5	109	0.00
86	T	a-Methylstyrene	1.1656	1.1411	2.1	104	0.00
87	T	tert-Butylbenzene	0.4681	0.4791	-2.3	117	0.00
88	T	1,2,4-Trimethylbenzene	2.2498	2.2416	0.4	112	0.00
89	T	sec-Butylbenzene	2.6529	2.6025	1.9	111	0.00
90	T	p-Isopropyltoluene	2.4367	2.4562	-0.8	113	0.00
91	T	1,3-Dichlorobenzene	1.4673	1.4405	1.8	115	0.00
92	T	1,4-Dichlorobenzene	1.4873	1.4412	3.1	115	0.00
93	T	n-Butylbenzene	2.1472	2.0609	4.0	108	0.00
94	T	1,2-Dichlorobenzene	1.3366	1.3217	1.1	114	0.00
95	T	1,2-Dibromo-3-Chloropropane	0.0825	0.0740	10.3	102	0.00
96	T	1,2,4-Trichlorobenzene	0.9781	0.9508	2.8	110	0.00
97	T	Hexachlorobutadiene	0.4309	0.3894	9.6	105	0.00
98	T	Naphthalene	1.8154	1.6748	7.7	103	-0.01
99	T	1,2,3-Trichlorobenzene	0.8976	0.8495	5.4	111	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M12718.D 8260WT.M Fri Jun 17 16:52:35 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061716\11M12718.D Vial: 2
Acq On : 17 Jun 2016 16:21 Operator: JDS
Sample : WG573258-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	104	0.00
2	T	Dichlorodifluoromethane	50.0000	48.3154	3.4	99	0.00
3	P	Chloromethane	50.0000	45.5628	8.9	108	0.00
4	C	Vinyl Chloride	50.0000	51.9241	-3.8	113	0.00
5	T	1,3-Butadiene	50.0000	54.2640	-8.5	109	0.00
6	T	Bromomethane	50.0000	47.5972	4.8	108	0.00
7	T	Chloroethane	50.0000	47.3954	5.2	103	0.00
8	T	Trichlorofluoromethane	50.0000	57.8363	-15.7	126	0.00
9	T	Diethyl ether	100.0000	94.6864	5.3	101	0.00
10	T	Isoprene	50.0000	44.8535	10.3	94	0.00
11	T	Acrolein	50.0000	46.0750	7.8	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	50.2112	-0.4	108	0.00
13	T	Acetone	50.0000	49.0514	1.9	105	0.00
14	C	1,1-Dichloroethene	50.0000	49.3230	1.4	107	0.00
15	T	Tert-Butyl Alcohol	200.0000	179.9632	10.0	93	-0.01
16	T	Dimethyl Sulfide	50.0000	46.4760	7.0	95	0.00
17	T	Iodomethane	50.0000	49.0508	1.9	104	0.00
18	T	Methyl acetate	50.0000	38.0320	23.9	83	0.00
19	T	Methylene Chloride	50.0000	47.9125	4.2	106	0.00
20	T	Carbon Disulfide	50.0000	49.5778	0.8	101	0.00
21	T	Acrylonitrile	50.0000	45.6743	8.7	93	0.00
22	T	Methyl Tert Butyl Ether	50.0000	48.1352	3.7	101	0.00
23	T	trans-1,2-Dichloroethene	50.0000	49.0224	2.0	107	0.01
24	T	n-Hexane	50.0000	44.6452	10.7	91	0.00
25	T	Diisopropyl ether	100.0000	89.2960	10.7	94	0.00
26	T	Vinyl Acetate	50.0000	37.0648	25.9#	79	0.00
27	P	1,1-Dichloroethane	50.0000	48.6645	2.7	104	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	95.7155	4.3	100	0.00
29	T	2-Butanone	50.0000	42.7862	14.4	92	0.00
30	T	Propionitrile	100.0000	90.8463	9.2	92	0.00
31	T	2,2-Dichloropropane	50.0000	52.0646	-4.1	112	0.00
32	T	cis-1,2-Dichloroethene	50.0000	49.7430	0.5	107	0.00
33	C	Chloroform	50.0000	49.9943	0.0	111	0.00
34	T	1-Bromopropane	50.0000	51.7066	-3.4	111	0.00
35	T	Bromochloromethane	50.0000	56.6870	-13.4	114	0.00
36	T	Tetrahydrofuran	100.0000	78.8474	21.2	85	0.00
37	S	Dibromofluoromethane	25.0000	24.5606	1.8	105	0.00
38	T	1,1,1-Trichloroethane	50.0000	52.8557	-5.7	114	0.00
39	T	Cyclohexane	50.0000	46.6166	6.8	94	0.00
40	T	1,1-Dichloropropene	50.0000	50.2865	-0.6	109	0.00
41	T	Carbon Tetrachloride	50.0000	55.6514	-11.3	118	0.00
42	T	Tert-Amyl-Methyl ether	100.0000	96.4034	3.6	102	0.00
43	S	1,2-Dichloroethane-d4	25.0000	22.4209	10.3	96	0.00
44	T	1,2-Dichloroethane	50.0000	51.5442	-3.1	109	0.00
45	T	Benzene	50.0000	47.3202	5.4	104	0.00
46	T	Trichloroethene	50.0000	52.8431	-5.7	117	-0.01
47	T	Methylcyclohexane	50.0000	49.0869	1.8	98	0.00
48	C	1,2-Dichloropropane	50.0000	46.4996	7.0	100	0.00
49	T	1,4-Dioxane	200.0000	207.0668	-3.5	116	0.02
50	T	Bromodichloromethane	50.0000	51.9925	-4.0	110	0.00
51	T	Dibromomethane	50.0000	51.4359	-2.9	109	0.00
52	T	2-Chloroethyl Vinyl Ether	50.0000	44.5595	10.9	95	0.00
53	T	4-Methyl-2-Pentanone	50.0000	42.1755	15.6	90	0.00
54	T	cis-1,3-Dichloropropene	50.0000	50.5484	-1.1	104	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\061716\11M12718.D Vial: 2
Acq On : 17 Jun 2016 16:21 Operator: JDS
Sample : WG573258-02 50ug/L CCV STD 8260 Inst : hpms11
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	50.0000	49.0739	1.9	101	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	108	0.00
57	S	Toluene-d8	25.0000	24.0373	3.9	107	0.00
58	C	Toluene	50.0000	49.1854	1.6	108	0.00
59	T	Ethyl Methacrylate	50.0000	46.6757	6.6	96	0.00
60	T	trans-1,3-Dichloropropene	50.0000	50.1129	-0.2	105	0.00
61	T	1,1,2-Trichloroethane	50.0000	48.9360	2.1	107	0.00
62	T	2-Hexanone	50.0000	39.2763	21.4	85	0.00
63	T	1,3-Dichloropropane	50.0000	48.2332	3.5	104	0.00
64	T	Tetrachloroethene	50.0000	51.7937	-3.6	115	0.00
65	T	Dibromochloromethane	50.0000	54.2471	-8.5	113	0.00
66	T	1,2-Dibromoethane	50.0000	49.7419	0.5	108	0.00
67	T	1-Chlorohexane	50.0000	49.0313	1.9	103	0.00
68	P	Chlorobenzene	50.0000	50.4879	-1.0	111	0.00
69	T	1,1,1,2-Tetrachloroethane	50.0000	53.1681	-6.3	116	0.00
70	C	Ethylbenzene	50.0000	49.6964	0.6	109	0.00
71	T	m-,p-Xylene	100.0000	99.5806	0.4	109	0.00
72	T	o-Xylene	50.0000	50.2355	-0.5	109	0.00
73	T	Styrene	50.0000	51.8514	-3.7	109	0.00
74	P	Bromoform	50.0000	53.4153	-6.8	114	0.00
75	T	Isopropylbenzene	50.0000	51.7670	-3.5	111	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	112	0.00
77	P	1,1,2,2-Tetrachloroethane	50.0000	42.7602	14.5	94	0.00
78	S	p-Bromofluorobenzene	25.0000	24.8817	0.5	120	0.00
79	T	1,2,3-Trichloropropane	50.0000	45.8713	8.3	109	0.00
80	T	trans-1,4-Dichloro-2-Butene	50.0000	34.5551	30.9#	81	0.00
81	T	n-Propylbenzene	50.0000	48.6544	2.7	109	0.00
82	T	Bromobenzene	50.0000	48.5791	2.8	115	0.00
83	T	1,3,5-Trimethylbenzene	50.0000	49.2350	1.5	113	-0.01
84	T	2-Chlorotoluene	50.0000	47.8544	4.3	112	0.00
85	T	4-Chlorotoluene	50.0000	47.2487	5.5	109	0.00
86	T	a-Methylstyrene	50.0000	48.9498	2.1	104	0.00
87	T	tert-Butylbenzene	50.0000	51.1744	-2.3	117	0.00
88	T	1,2,4-Trimethylbenzene	50.0000	49.8173	0.4	112	0.00
89	T	sec-Butylbenzene	50.0000	49.0494	1.9	111	0.00
90	T	p-Isopropyltoluene	50.0000	50.4003	-0.8	113	0.00
91	T	1,3-Dichlorobenzene	50.0000	49.0846	1.8	115	0.00
92	T	1,4-Dichlorobenzene	50.0000	48.4509	3.1	115	0.00
93	T	n-Butylbenzene	50.0000	47.9902	4.0	108	0.00
94	T	1,2-Dichlorobenzene	50.0000	49.4388	1.1	114	0.00
95	T	1,2-Dibromo-3-Chloropropane	50.0000	42.2340	15.5	102	0.00
96	T	1,2,4-Trichlorobenzene	50.0000	48.6069	2.8	110	0.00
97	T	Hexachlorobutadiene	50.0000	45.1820	9.6	105	0.00
98	T	Naphthalene	50.0000	46.1259	7.7	103	-0.01
99	T	1,2,3-Trichlorobenzene	50.0000	47.3157	5.4	111	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M12718.D 8260WT.M Fri Jun 17 16:52:37 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\1\DATA\061415\11M08234.D          Vial: 1
Acq On    : 14 Jun 2015   9:34                        Operator: TMB /DLW
Sample    : WG527475-01 50ng BFB STD                  Inst    : hpms11
Misc      : 1,1 STD70707                              Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title     : 8260B/624 (SOP: OVL MSV01) Water 06/13/15 HPMS11
```

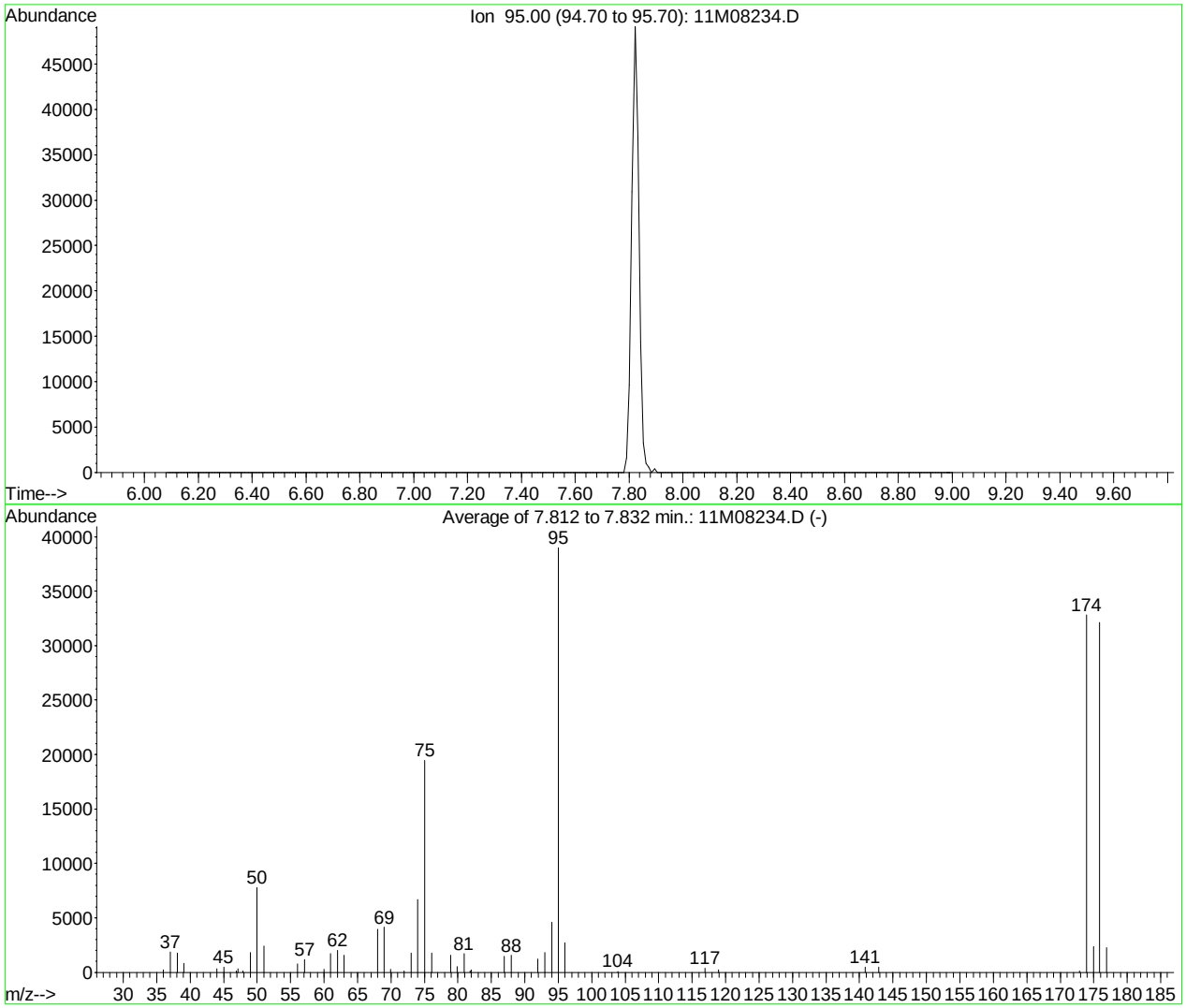

AutoFind: Scans 168, 169, 170; Background Corrected with Scan 163

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.9	7754	PASS
75	95	30	60	49.9	19472	PASS
95	95	100	100	100.0	38997	PASS
96	95	5	9	7.0	2731	PASS
173	174	0.00	2	0.3	111	PASS
174	95	50	100	84.2	32837	PASS
175	174	5	9	7.2	2357	PASS
176	174	95	101	97.9	32146	PASS
177	176	5	9	7.1	2284	PASS

11M08234.D 8260WTR.M Sun Jun 14 09:44:09 2015

BFB

```
Data File : C:\MSDCHEM\1\DATA\051316\11M11836.D          Vial: 2
Acq On    : 13 May 2016  14:15                        Operator: JDS
Sample    : WG568769-01 50ng BFB STD 8260             Inst    : hpms11
Misc      : 1,1 STD76034                              Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title     : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
```

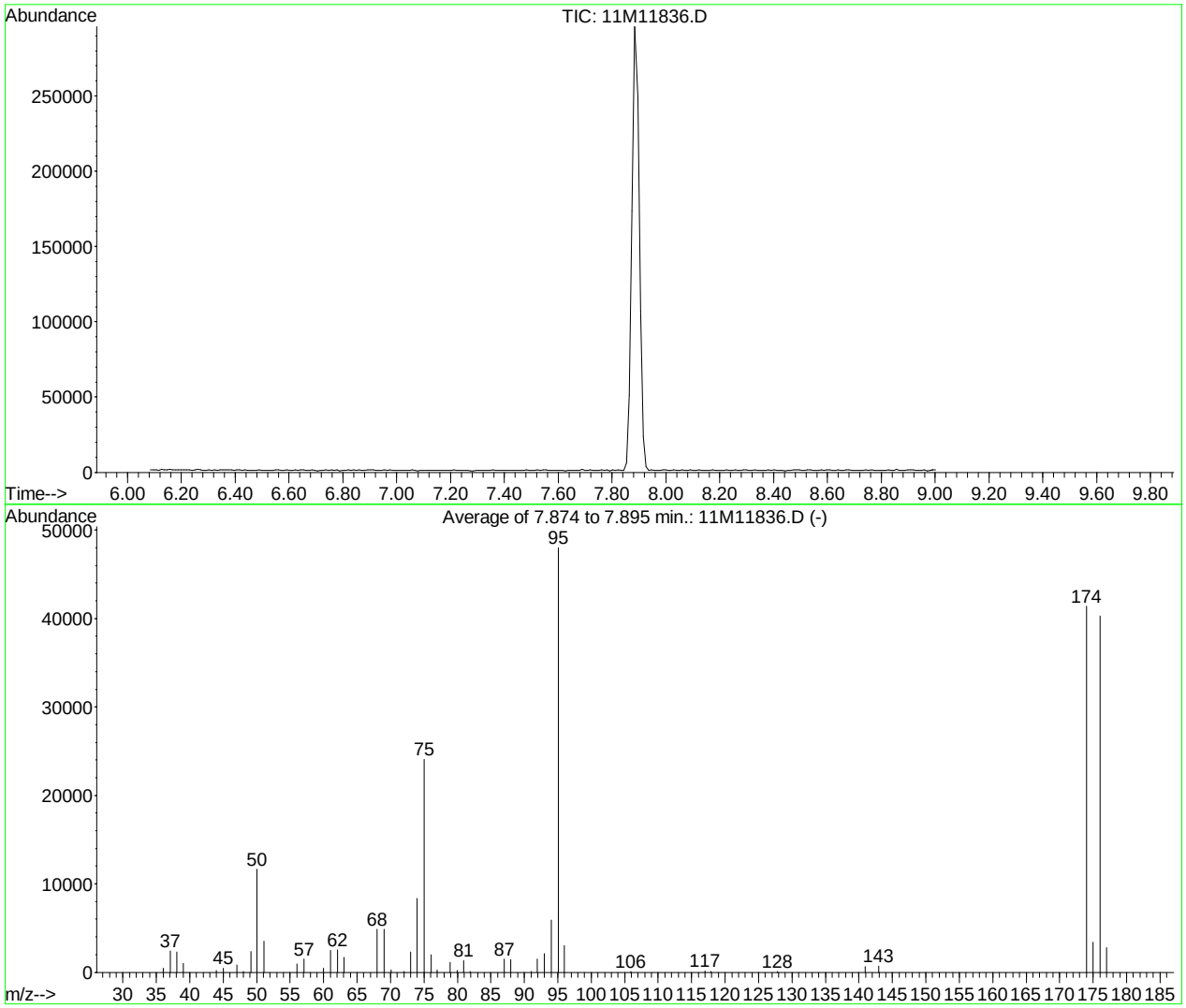

AutoFind: Scans 174, 175, 176; Background Corrected with Scan 169

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	24.2	11638	PASS
75	95	30	60	50.2	24088	PASS
95	95	100	100	100.0	48016	PASS
96	95	5	9	6.3	3008	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	86.2	41402	PASS
175	174	5	9	8.3	3421	PASS
176	174	95	101	97.3	40288	PASS
177	176	5	9	6.9	2789	PASS

11M11836.D 8260WT.M Tue May 17 14:18:03 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\061516\11M12650.D          Vial: 1
Acq On    : 15 Jun 2016  14:48                       Operator: JDS
Sample    : WG572854-01 50ng BFB STD 8260            Inst    : hpms11
Misc      : 1,1 STD76496                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title     : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
```

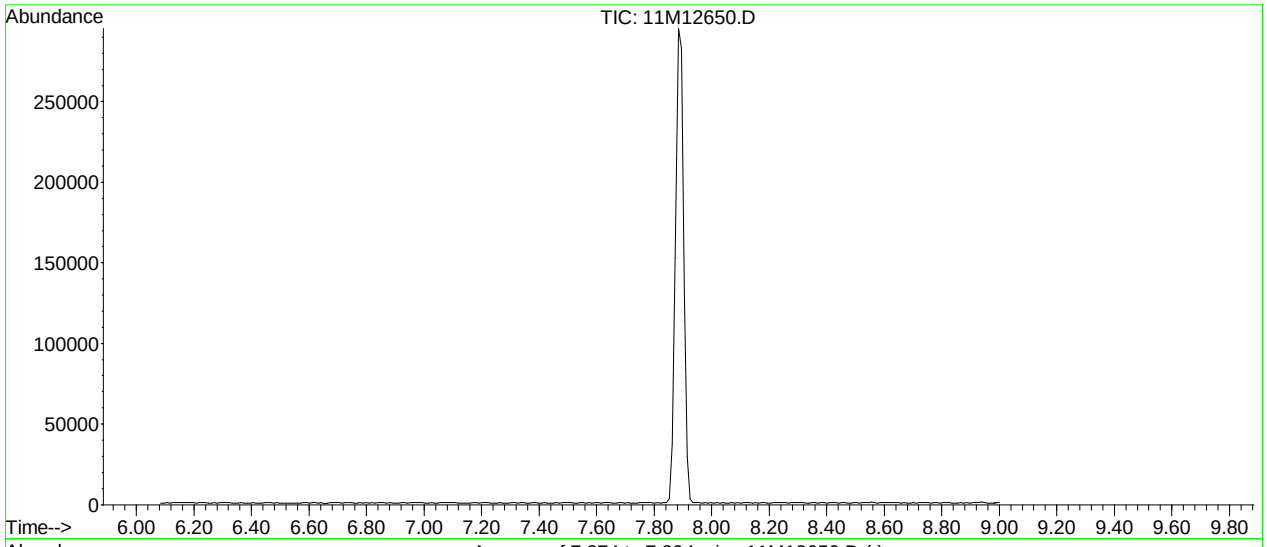

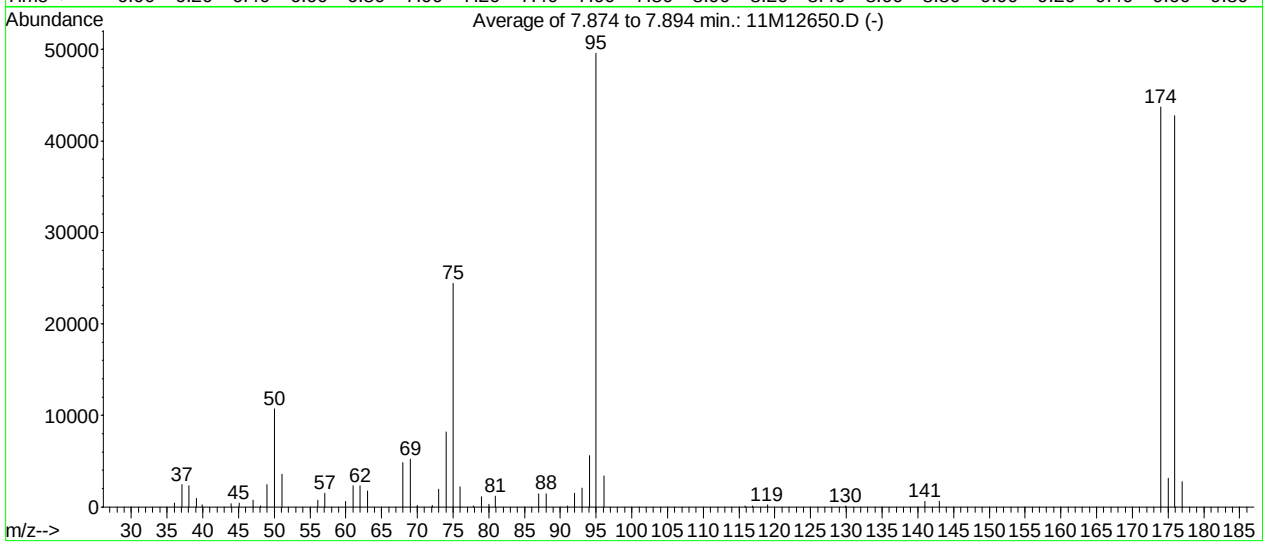

AutoFind: Scans 174, 175, 176; Background Corrected with Scan 169

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.6	10714	PASS
75	95	30	60	49.2	24408	PASS
95	95	100	100	100.0	49597	PASS
96	95	5	9	6.9	3414	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	88.1	43714	PASS
175	174	5	9	7.1	3117	PASS
176	174	95	101	97.9	42776	PASS
177	176	5	9	6.5	2781	PASS

11M12650.D 8260WT.M Wed Jun 15 16:07:37 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\061616\11M12683.D          Vial: 1
Acq On    : 16 Jun 2016  14:30                       Operator: JDS
Sample    : WG573050-01 50ng BFB STD 8260            Inst    : hpms11
Misc      : 1,1 STD76496                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title     : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
```

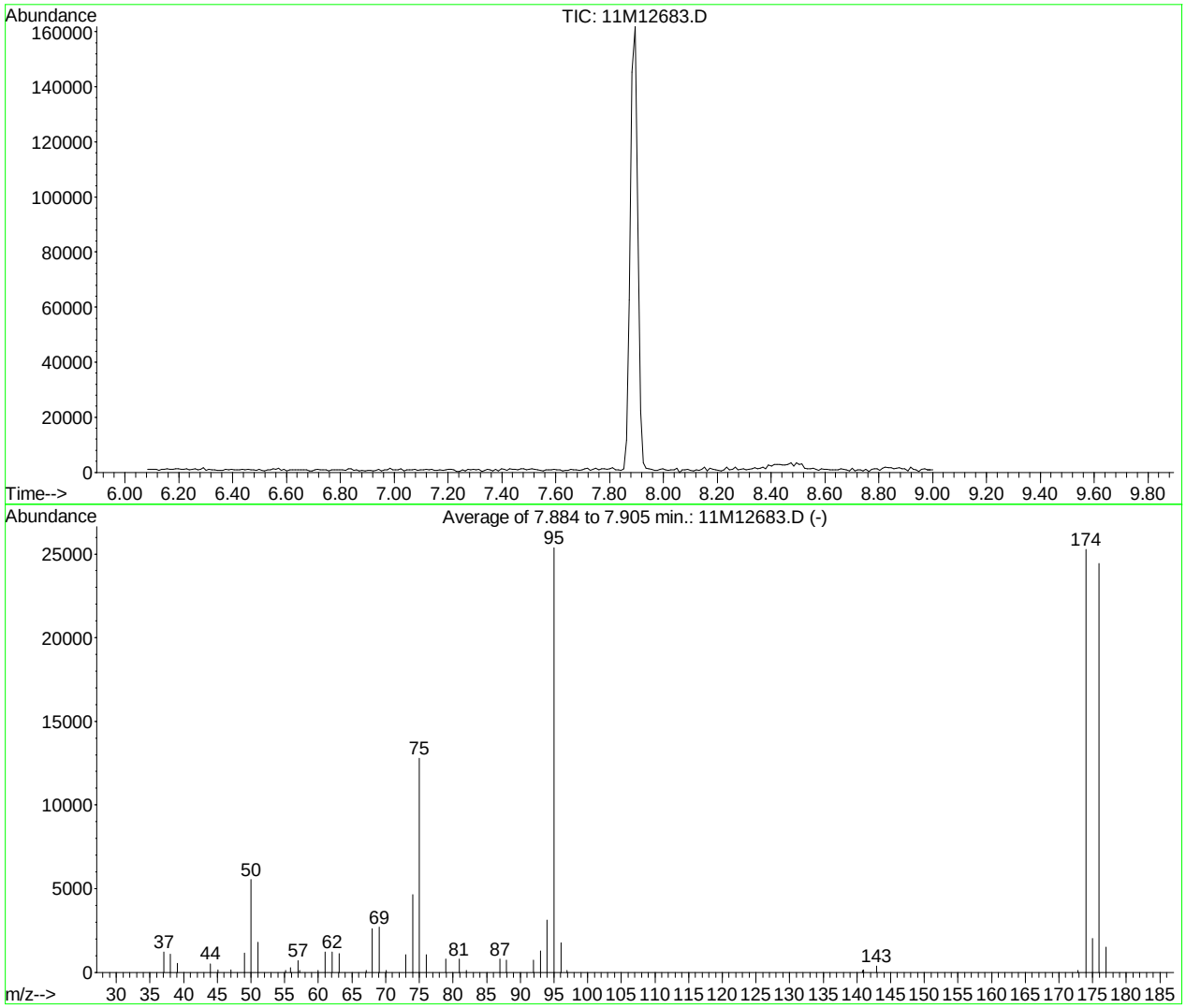

AutoFind: Scans 175, 176, 177; Background Corrected with Scan 169

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.8	5543	PASS
75	95	30	60	50.3	12778	PASS
95	95	100	100	100.0	25380	PASS
96	95	5	9	6.9	1754	PASS
173	174	0.00	2	0.4	107	PASS
174	95	50	100	99.6	25285	PASS
175	174	5	9	8.1	2037	PASS
176	174	95	101	96.6	24437	PASS
177	176	5	9	6.1	1493	PASS

11M12683.D 8260WT.M Thu Jun 16 14:40:12 2016

BFB

Data File : C:\MSDCHEM\1\DATA\061716\11M12717.D Vial: 1
Acq On : 17 Jun 2016 15:52 Operator: JDS
Sample : WG573258-01 50ng BFB STD 8260 Inst : hpms11
Misc : 1,1 STD76496 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11

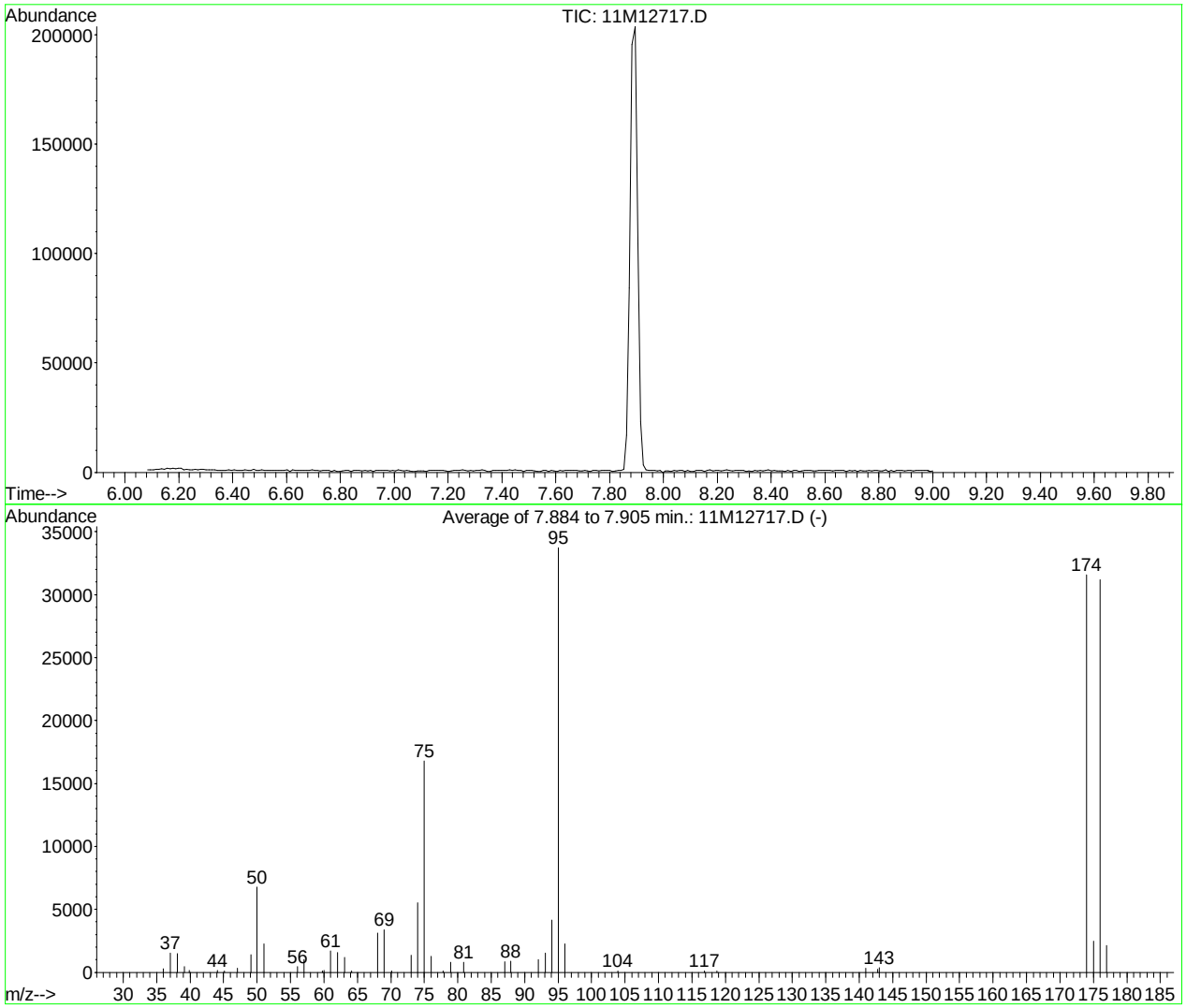

AutoFind: Scans 175, 176, 177; Background Corrected with Scan 169

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	20.1	6774	PASS
75	95	30	60	49.8	16790	PASS
95	95	100	100	100.0	33736	PASS
96	95	5	9	6.7	2249	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	93.7	31597	PASS
175	174	5	9	7.8	2463	PASS
176	174	95	101	98.7	31186	PASS
177	176	5	9	6.8	2122	PASS

11M12717.D 8260WT.M Mon Jun 20 09:57:36 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061516\11M12654.D Vial: 5
Acq On : 15 Jun 2016 16:53 Operator: JDS
Sample : WG572855-01 BLANK STD 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 14:38:05 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	665654	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	552203	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	317152	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	170062	23.3440 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 93.36%		
43) 1,2-Dichloroethane-d4	10.23	65	184271	22.1838 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 88.72%		
57) Toluene-d8	12.47	98	595082	24.8021 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.20%		
78) p-Bromofluorobenzene	15.64	95	256495	26.2358 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.96%		

Target Compounds

					Qvalue
3) Chloromethane	3.74	50	1314	0.1573 ug/L	78
6) Bromomethane	4.86	94	1103	0.2313 ug/L	99
17) Iodomethane	7.06	142	214	2.3001 ug/L #	29
36) Tetrahydrofuran	9.60	42	2106	1.2481 ug/L #	67
97) Hexachlorobutadiene	19.69	225	1875	0.3430 ug/L	95

(#) = qualifier out of range (m) = manual integration
11M12654.D 8260WT.M Thu Jun 16 14:38:07 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061516\11M12654.D Vial: 5
Acq On : 15 Jun 2016 16:53 Operator: JDS
Sample : WG572855-01 BLANK STD 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 14:38 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

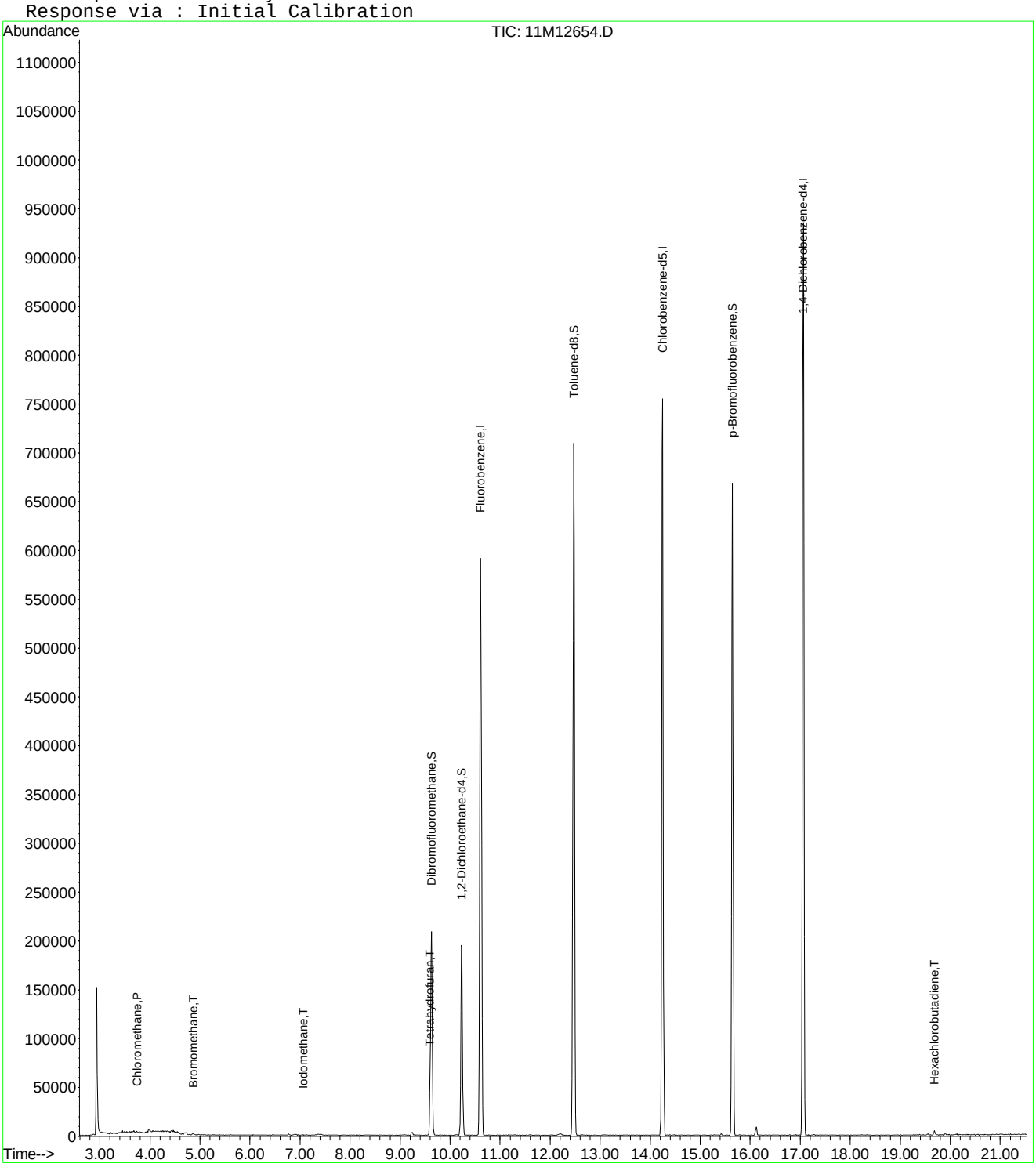

11M12654.D 8260WT.M Thu Jun 16 14:38:07 2016 Page 2

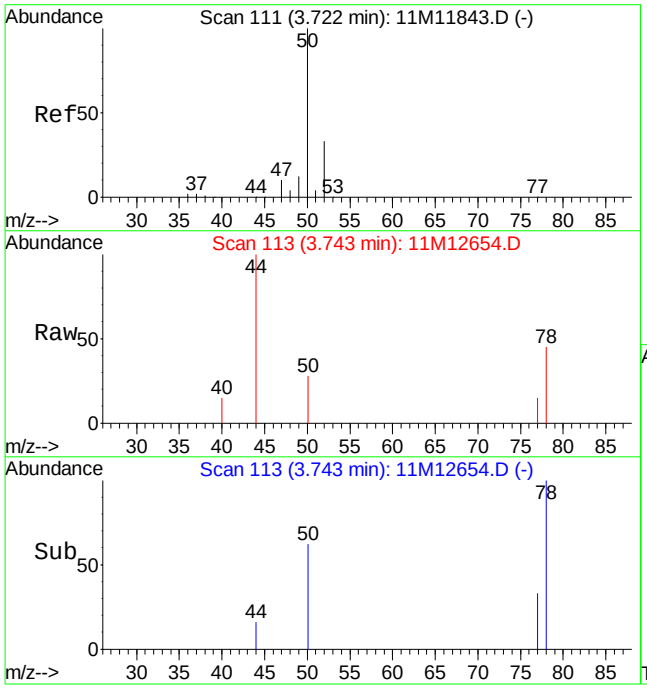

#3
Chloromethane
Concen: 0.16 ug/L
RT: 3.74 min Scan# 113
Delta R.T. 0.02 min
Lab File: 11M12654.D
Acq: 15 Jun 2016 16:53

Tgt Ion: 50 Resp: 1314

Ion	Ratio	Lower	Upper
50	100		
52	21.0	20.0	46.6

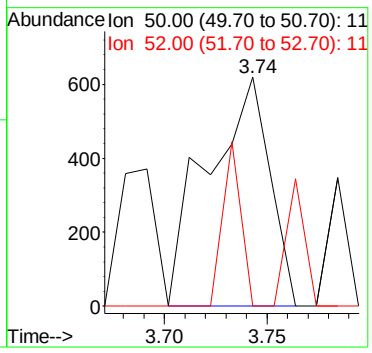

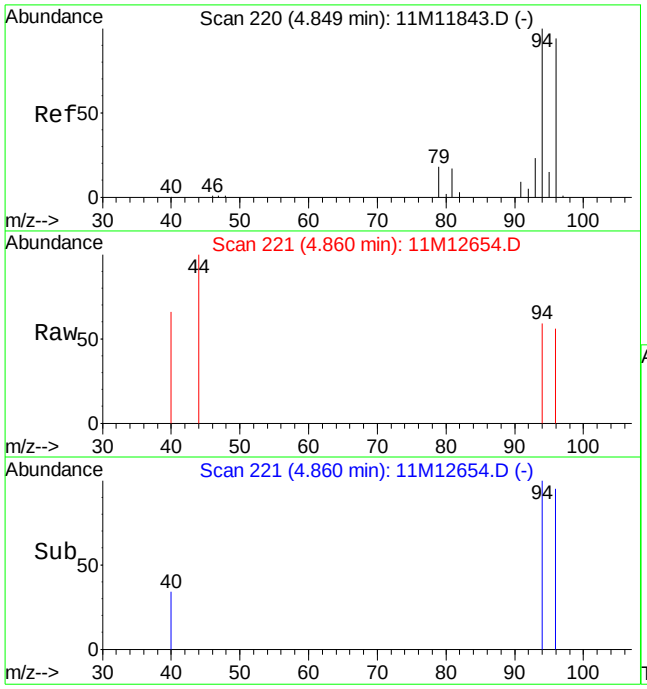

#6
Bromomethane
Concen: 0.23 ug/L
RT: 4.86 min Scan# 221
Delta R.T. 0.01 min
Lab File: 11M12654.D
Acq: 15 Jun 2016 16:53

Tgt Ion: 94 Resp: 1103

Ion	Ratio	Lower	Upper
94	100		
96	94.8	56.5	131.9

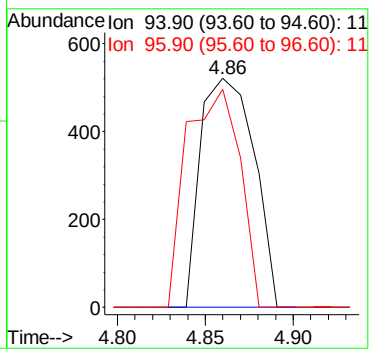

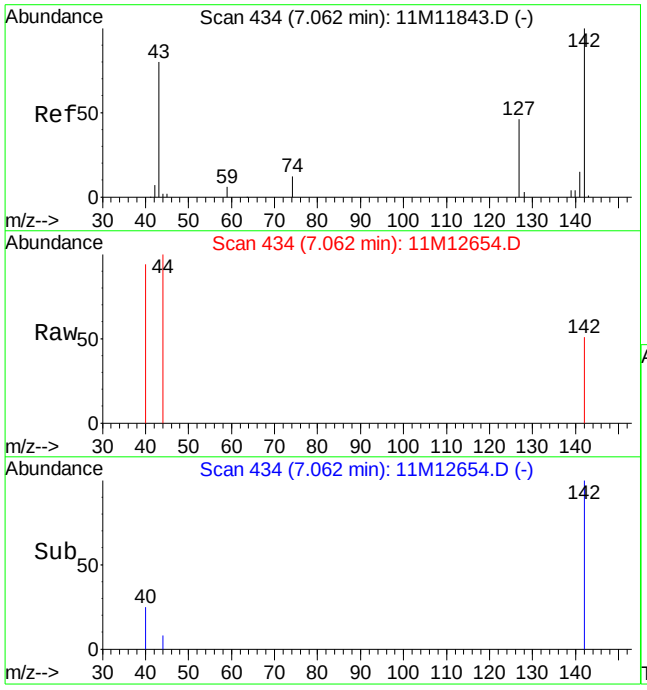

#17
Iodomethane
Concen: 2.30 ug/L
RT: 7.06 min Scan# 434
Delta R.T. 0.00 min
Lab File: 11M12654.D
Acq: 15 Jun 2016 16:53

Tgt Ion:142 Resp: 214

Ion	Ratio	Lower	Upper
142	100		
127	0.0	29.0	67.6#

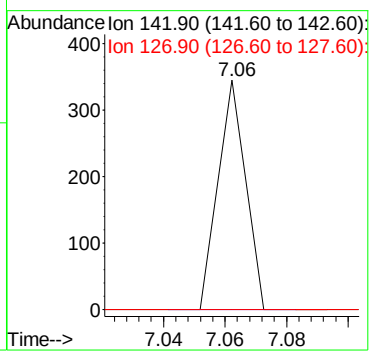

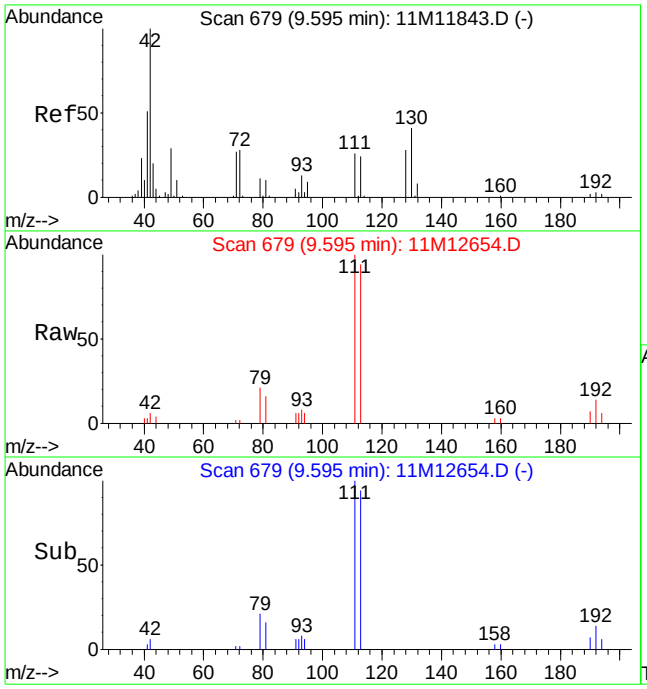

#36
Tetrahydrofuran
Concen: 1.25 ug/L
RT: 9.60 min Scan# 679
Delta R.T. 0.00 min
Lab File: 11M12654.D
Acq: 15 Jun 2016 16:53

Tgt Ion: 42 Resp: 2106

Ion	Ratio	Lower	Upper
42	100		
71	9.7	16.4	38.2#
72	10.5	16.6	38.8#

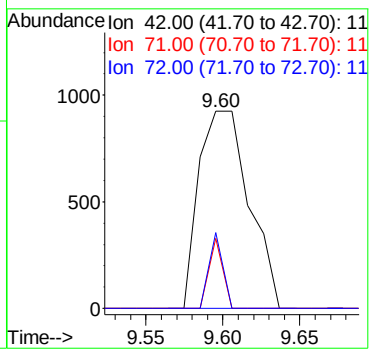

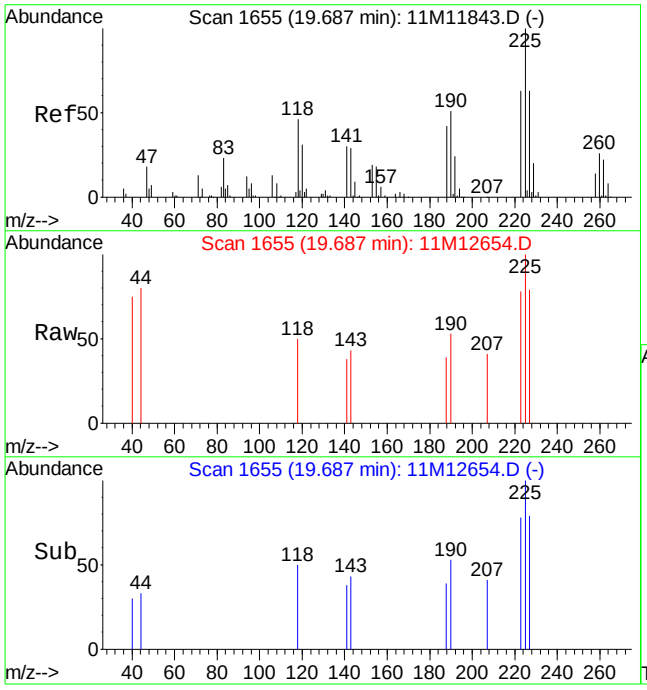

#97
Hexachlorobutadiene
Concen: 0.34 ug/L
RT: 19.69 min Scan# 1655
Delta R.T. 0.00 min
Lab File: 11M12654.D
Acq: 15 Jun 2016 16:53

Tgt Ion:225 Resp: 1875

Ion	Ratio	Lower	Upper
225	100		
227	60.3	38.3	89.3
118	44.0	28.7	66.9

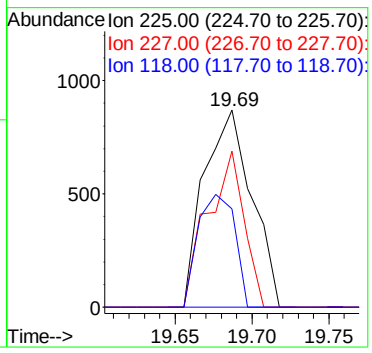

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12687.D Vial: 5
Acq On : 16 Jun 2016 16:31 Operator: JDS
Sample : WG573051-01 BLANK STD 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 20 11:32:39 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	545582	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	464305	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	271231	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	140634	23.5531 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.20%		
43) 1,2-Dichloroethane-d4	10.24	65	153715	22.5779 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 90.32%		
57) Toluene-d8	12.47	98	495127	24.5428 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.16%		
78) p-Bromofluorobenzene	15.64	95	217414	26.0034 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.00%		

Target Compounds

					Qvalue
3) Chloromethane	3.72	50	1438	0.2100 ug/L #	68
6) Bromomethane	4.86	94	758	0.1939 ug/L	88
8) Trichlorofluoromethane	5.49	101	4003	0.3532 ug/L	98
13) Acetone	6.34	43	210	0.1621 ug/L #	49
36) Tetrahydrofuran	9.61	42	1887	1.3644 ug/L #	58

(#) = qualifier out of range (m) = manual integration
11M12687.D 8260WT.M Mon Jun 20 11:32:40 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12687.D Vial: 5
Acq On : 16 Jun 2016 16:31 Operator: JDS
Sample : WG573051-01 BLANK STD 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 20 11:32 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

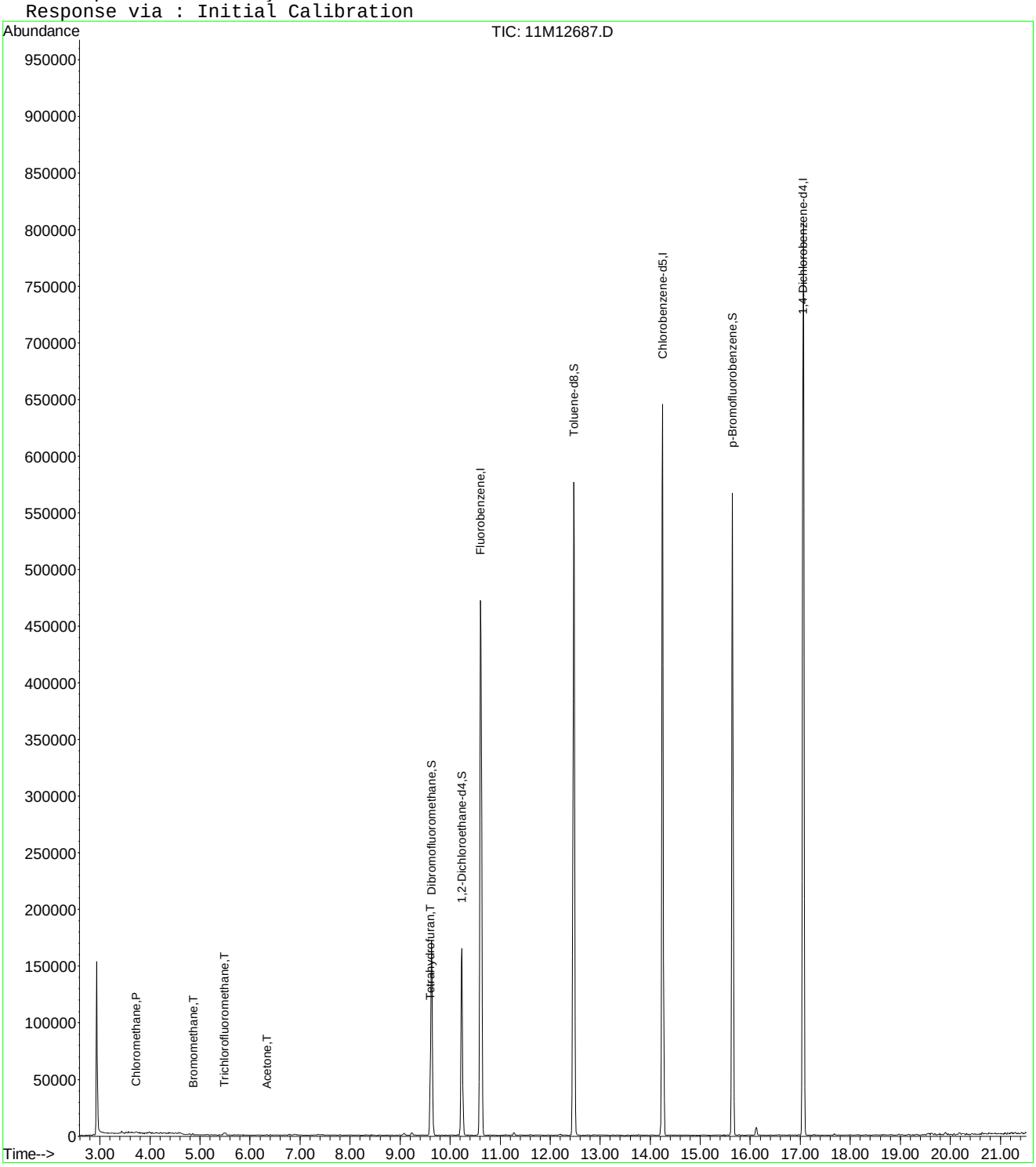

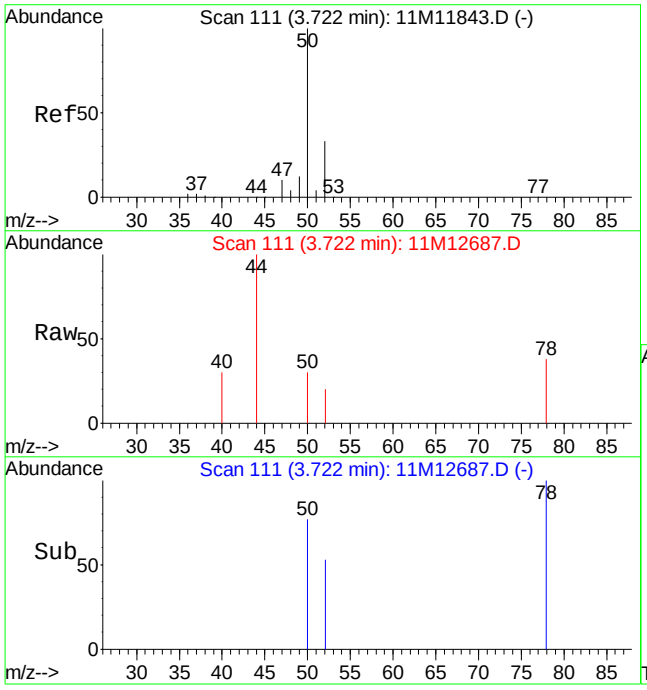

#3
Chloromethane
Concen: 0.21 ug/L
RT: 3.72 min Scan# 111
Delta R.T. -0.00 min
Lab File: 11M12687.D
Acq: 16 Jun 2016 16:31

Tgt Ion: 50 Resp: 1438

Ion	Ratio	Lower	Upper
50	100		
52	15.1	20.0	46.6#

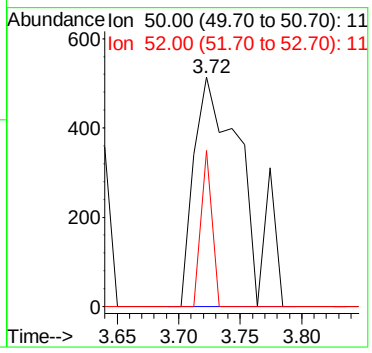

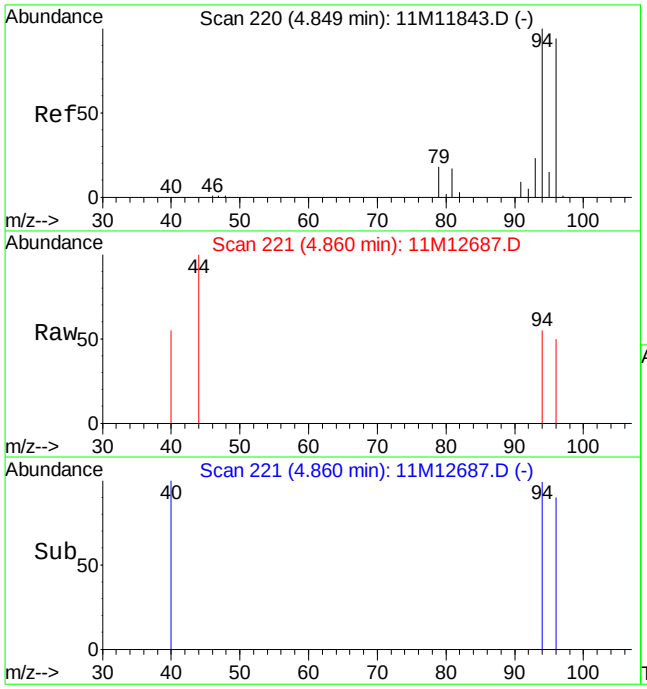

#6
Bromomethane
Concen: 0.19 ug/L
RT: 4.86 min Scan# 221
Delta R.T. 0.01 min
Lab File: 11M12687.D
Acq: 16 Jun 2016 16:31

Tgt Ion: 94 Resp: 758

Ion	Ratio	Lower	Upper
94	100		
96	82.3	56.5	131.9

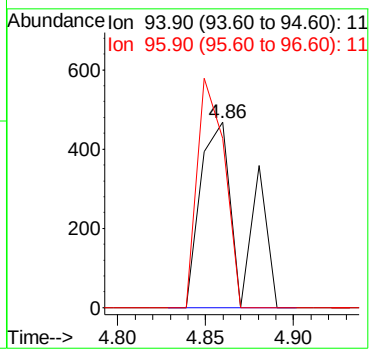

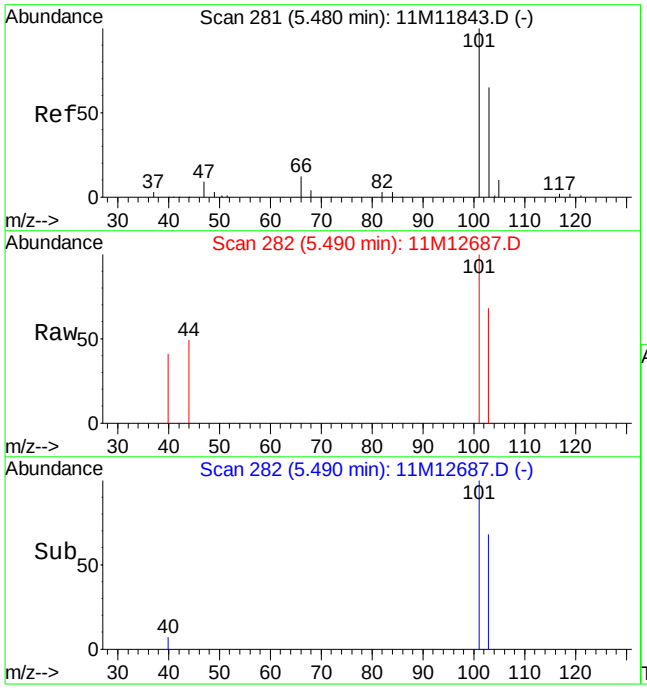

#8
Trichlorofluoromethane
Concen: 0.35 ug/L
RT: 5.49 min Scan# 282
Delta R.T. 0.01 min
Lab File: 11M12687.D
Acq: 16 Jun 2016 16:31

Tgt Ion:101 Resp: 4003

Ion	Ratio	Lower	Upper
101	100		
103	66.9	39.1	91.3

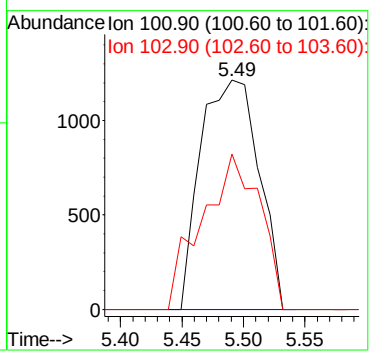

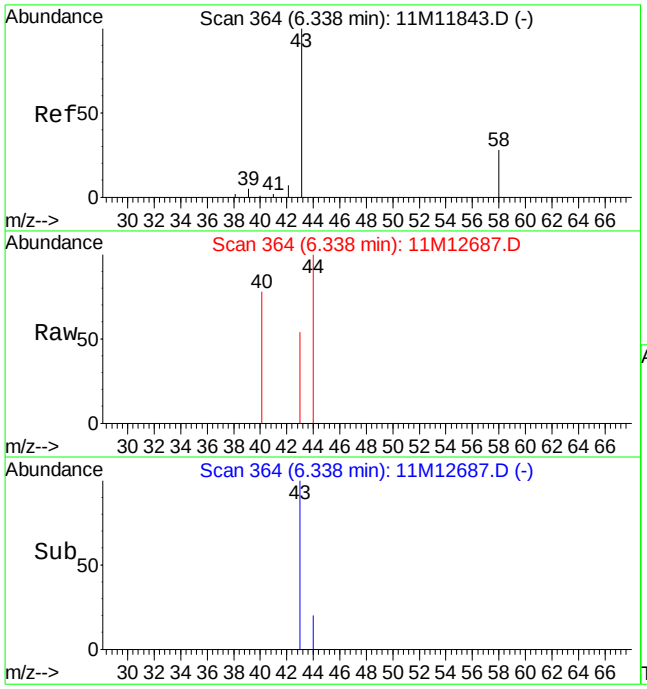

#13
Acetone
Concen: 0.16 ug/L
RT: 6.34 min Scan# 364
Delta R.T. -0.00 min
Lab File: 11M12687.D
Acq: 16 Jun 2016 16:31

Tgt Ion: 43 Resp: 210

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

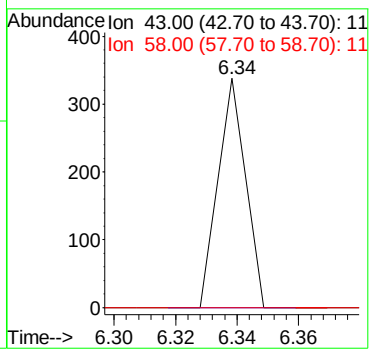

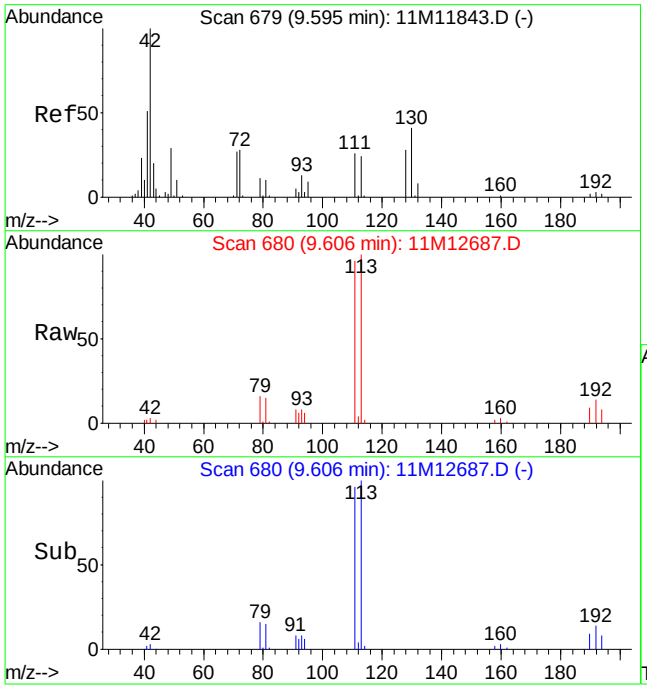

#36
Tetrahydrofuran
Concen: 1.36 ug/L
RT: 9.61 min Scan# 680
Delta R.T. 0.01 min
Lab File: 11M12687.D
Acq: 16 Jun 2016 16:31

Tgt Ion: 42 Resp: 1887

Ion	Ratio	Lower	Upper
42	100		
71	0.0	16.4	38.2#
72	10.7	16.6	38.8#

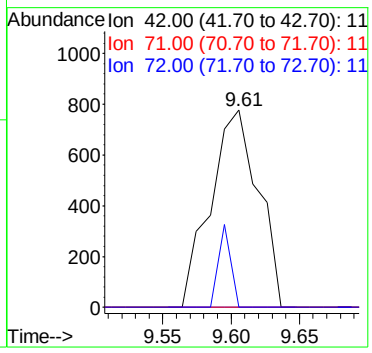

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061716\11M12720.D Vial: 4
Acq On : 17 Jun 2016 17:25 Operator: JDS
Sample : WG573259-01 BLANK STD 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 20 11:34:43 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	495046	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	417622	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	245830	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	127859	23.5995 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.40%		
43) 1,2-Dichloroethane-d4	10.23	65	141322	22.8766 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 91.52%		
57) Toluene-d8	12.47	98	441428	24.3269 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.32%		
78) p-Bromofluorobenzene	15.64	95	198254	26.1619 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.64%		

Target Compounds					Qvalue
6) Bromomethane	4.86	94	772	0.2176 ug/L #	53
19) Methylene Chloride	7.31	84	1021	0.2177 ug/L	92
36) Tetrahydrofuran	9.60	42	1297	1.0335 ug/L #	63

(#) = qualifier out of range (m) = manual integration
11M12720.D 8260WT.M Mon Jun 20 11:34:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061716\11M12720.D Vial: 4
Acq On : 17 Jun 2016 17:25 Operator: JDS
Sample : WG573259-01 BLANK STD 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 20 11:34 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

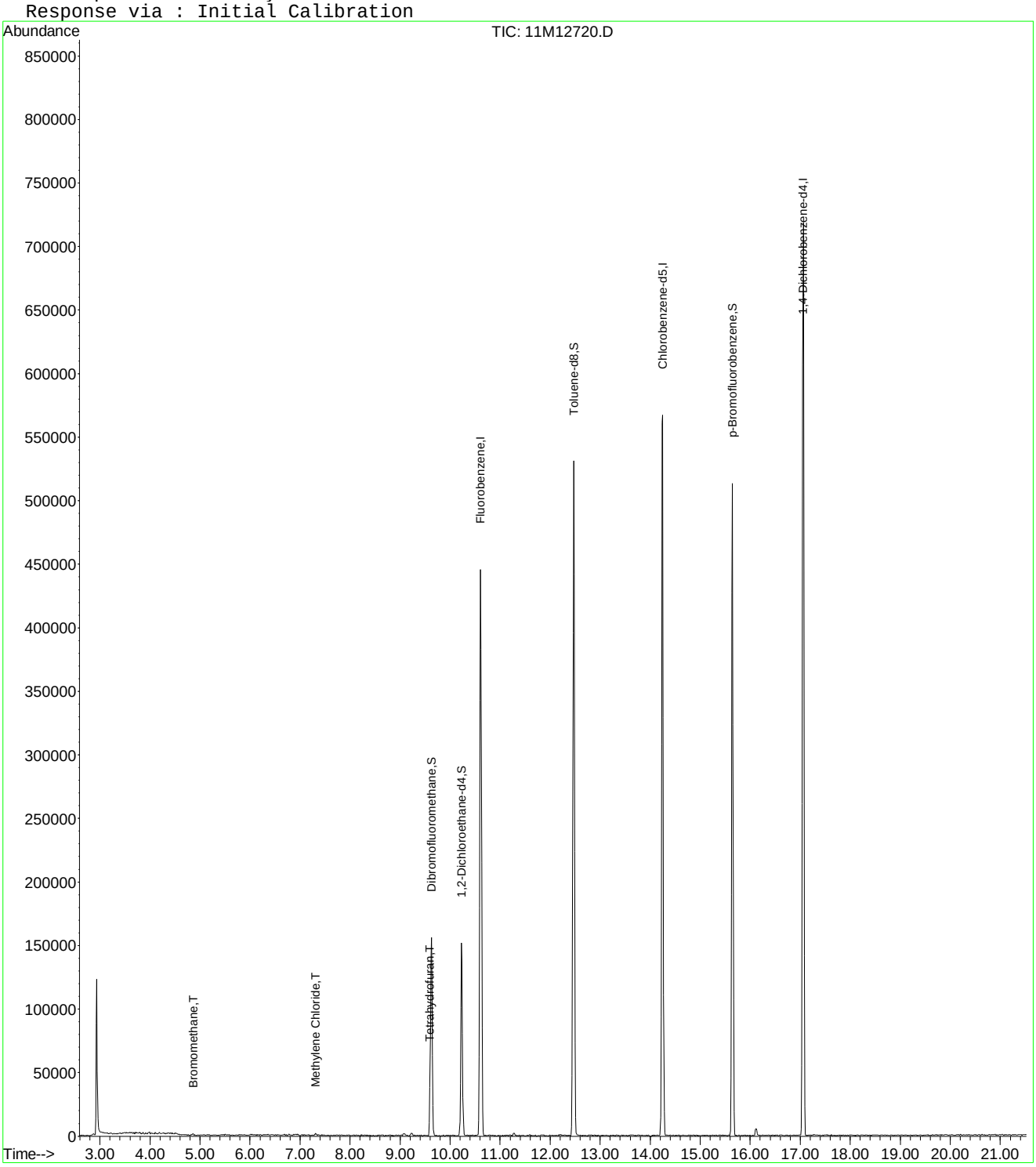

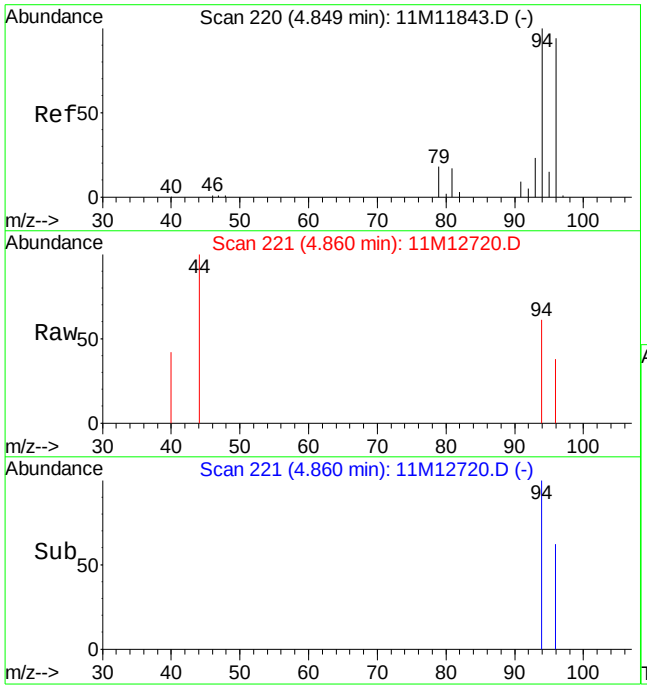

#6
Bromomethane
Concen: 0.22 ug/L
RT: 4.86 min Scan# 221
Delta R.T. 0.01 min
Lab File: 11M12720.D
Acq: 17 Jun 2016 17:25

Tgt Ion: 94 Resp: 772

Ion	Ratio	Lower	Upper
94	100		
96	49.2	56.5	131.9#

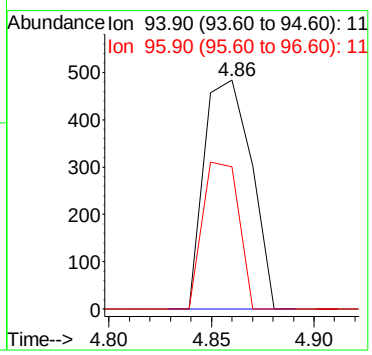

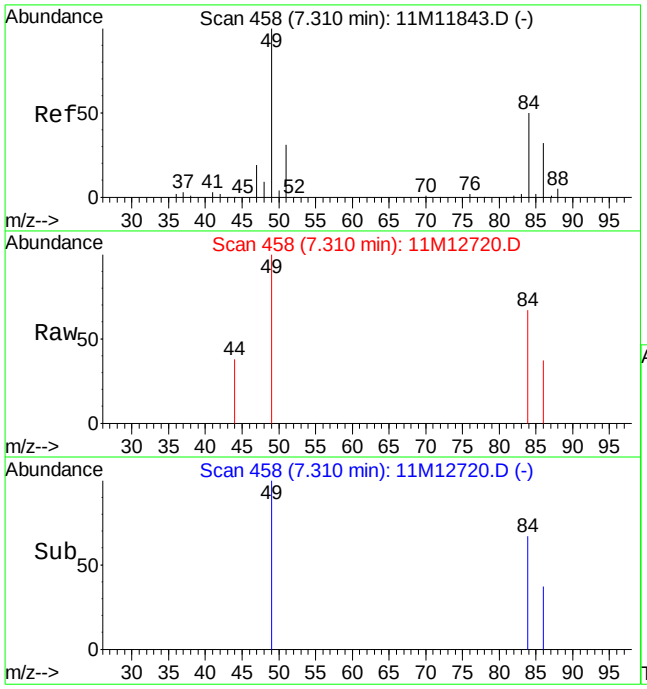

#19
Methylene Chloride
Concen: 0.22 ug/L
RT: 7.31 min Scan# 458
Delta R.T. 0.00 min
Lab File: 11M12720.D
Acq: 17 Jun 2016 17:25

Tgt Ion: 84 Resp: 1021

Ion	Ratio	Lower	Upper
84	100		
49	182.2	116.9	272.7

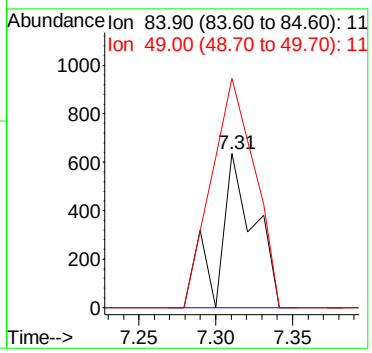

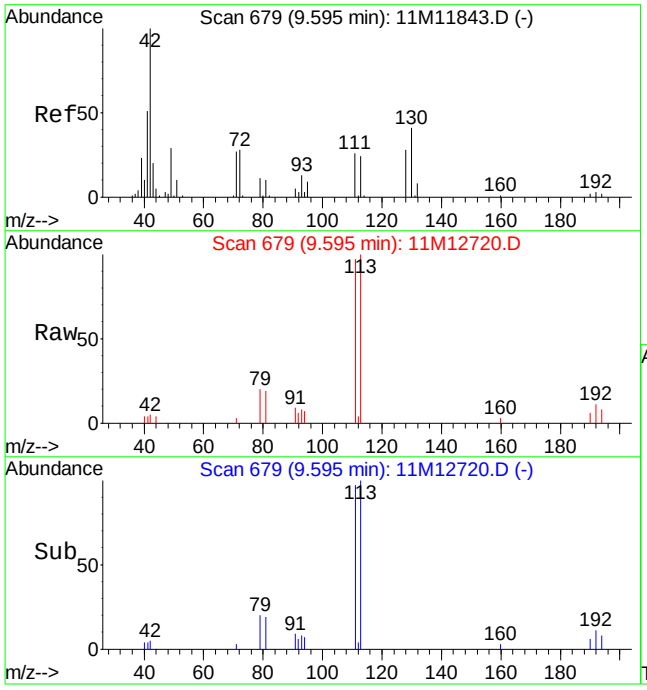

#36
Tetrahydrofuran
Concen: 1.03 ug/L
RT: 9.60 min Scan# 679
Delta R.T. 0.00 min
Lab File: 11M12720.D
Acq: 17 Jun 2016 17:25

Tgt Ion: 42 Resp: 1297

Ion	Ratio	Lower	Upper
42	100		
71	16.4	16.4	38.2
72	0.0	16.6	38.8#

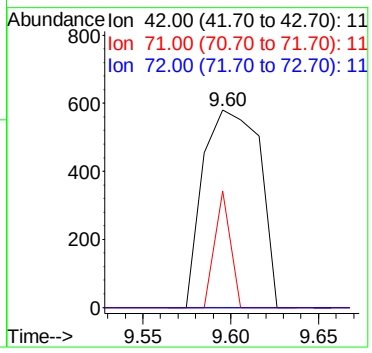

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061516\11M12674.D Vial: 25
Acq On : 16 Jun 2016 3:31 Operator: JDS
Sample : WG572855-06 BLANK2 STD 624 Inst : hpms11
Misc : 2,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 14:39:15 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	484151	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	415058	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	236874	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	131299	24.7798 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.12%		
43) 1,2-Dichloroethane-d4	10.24	65	141906	23.4881 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 93.96%		
57) Toluene-d8	12.47	98	443498	24.5920 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.36%		
78) p-Bromofluorobenzene	15.64	95	192928	26.4217 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 105.68%		

Target Compounds

					Qvalue
8) Trichlorofluoromethane	5.48	101	17914	1.7814 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	2724	0.5582 ug/L	89
33) Chloroform	9.35	83	1636	0.1693 ug/L	88
36) Tetrahydrofuran	9.60	42	1136	0.9256 ug/L #	47

(#) = qualifier out of range (m) = manual integration
11M12674.D 8260WT.M Thu Jun 16 14:39:16 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061516\11M12674.D Vial: 25
Acq On : 16 Jun 2016 3:31 Operator: JDS
Sample : WG572855-06 BLANK2 STD 624 Inst : hpms11
Misc : 2,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 14:39 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

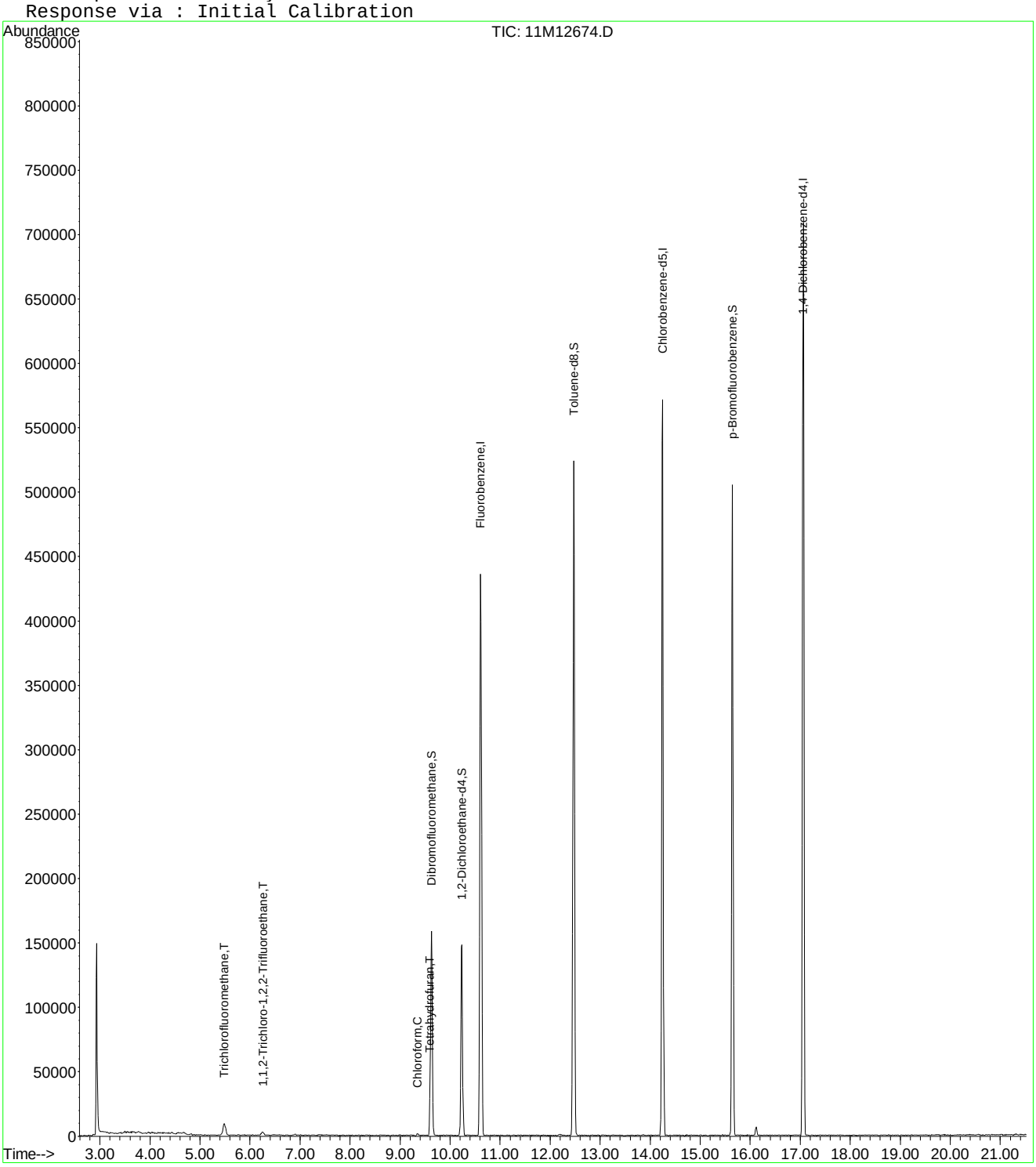

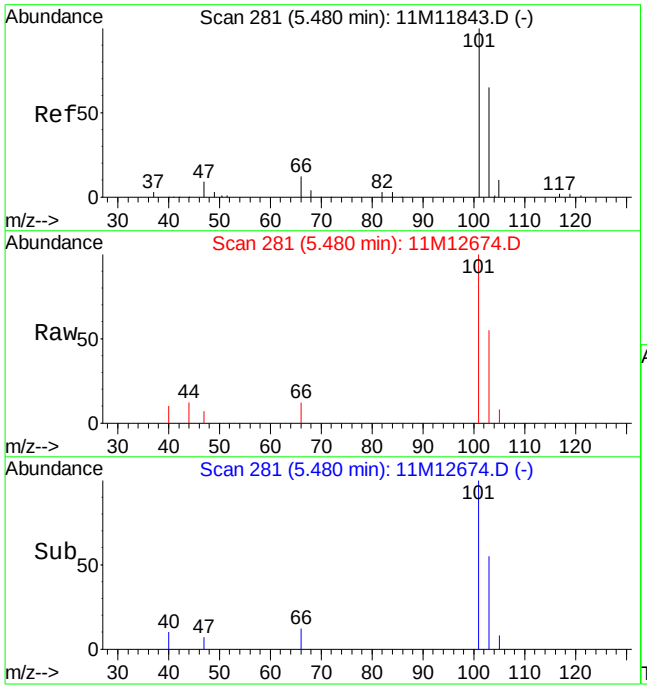

#8
Trichlorofluoromethane
Concen: 1.78 ug/L
RT: 5.48 min Scan# 281
Delta R.T. 0.00 min
Lab File: 11M12674.D
Acq: 16 Jun 2016 3:31

Tgt Ion:101 Resp: 17914

Ion	Ratio	Lower	Upper
101	100		
103	62.4	39.1	91.3

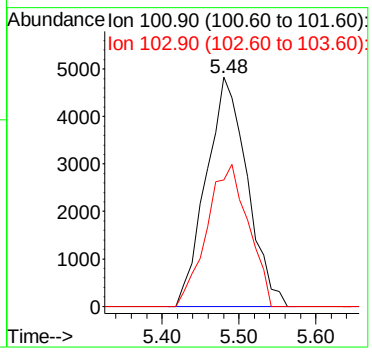

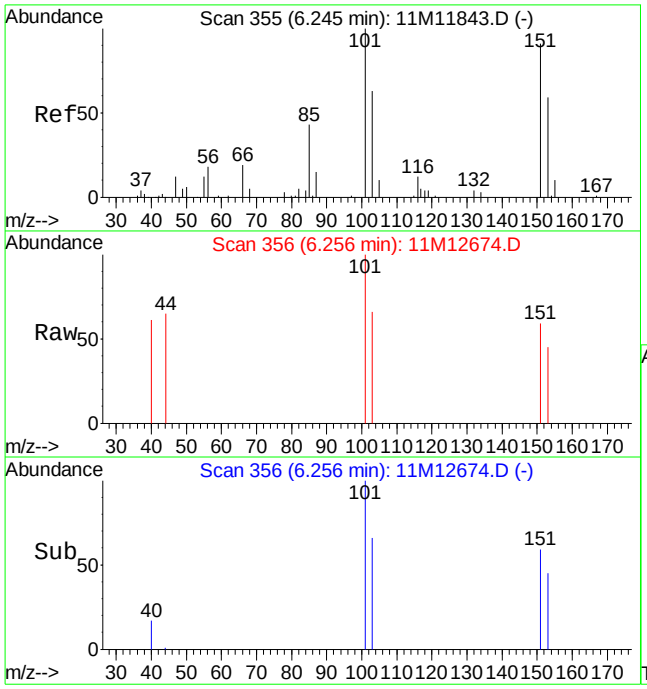

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 0.56 ug/L
RT: 6.26 min Scan# 356
Delta R.T. 0.01 min
Lab File: 11M12674.D
Acq: 16 Jun 2016 3:31

Tgt Ion:101 Resp: 2724

Ion	Ratio	Lower	Upper
101	100		
151	80.7	50.7	130.7

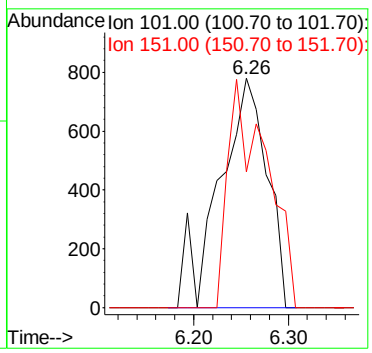

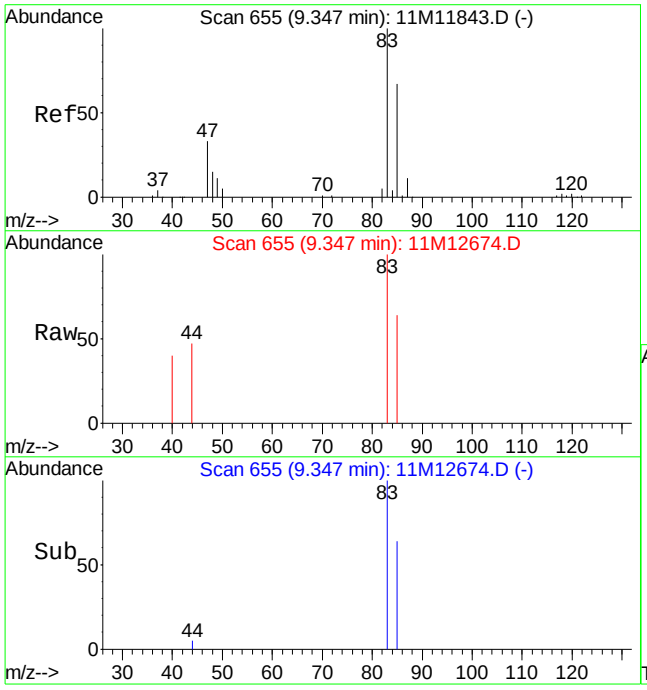

#33
Chloroform
Concen: 0.17 ug/L
RT: 9.35 min Scan# 655
Delta R.T. 0.00 min
Lab File: 11M12674.D
Acq: 16 Jun 2016 3:31

Tgt Ion: 83 Resp: 1636

Ion	Ratio	Lower	Upper
83	100		
85	55.6	39.2	91.4

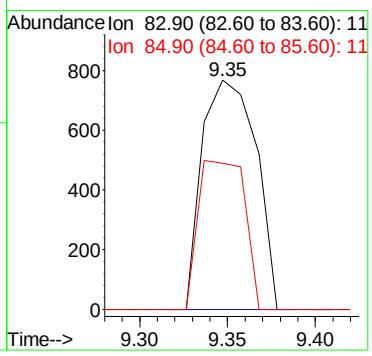

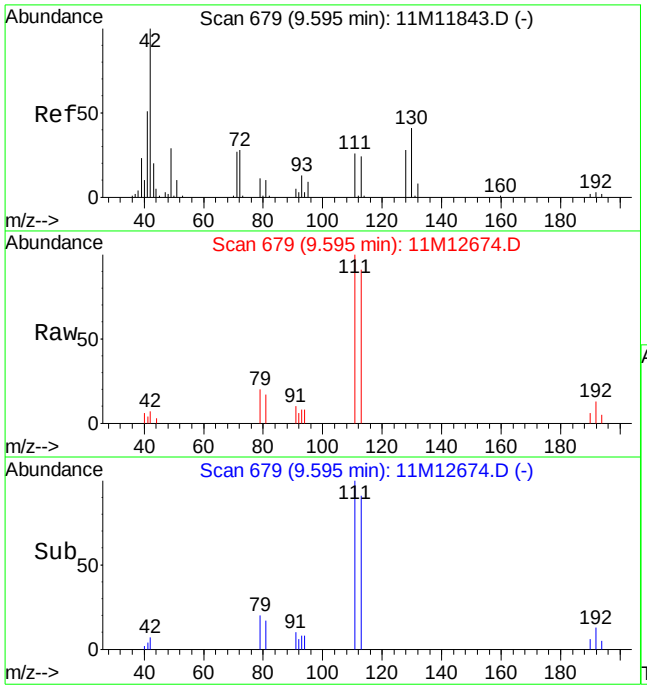

#36
Tetrahydrofuran
Concen: 0.93 ug/L
RT: 9.60 min Scan# 679
Delta R.T. 0.00 min
Lab File: 11M12674.D
Acq: 16 Jun 2016 3:31

Tgt Ion: 42 Resp: 1136

Ion	Ratio	Lower	Upper
42	100		
71	0.0	16.4	38.2#
72	0.0	16.6	38.8#

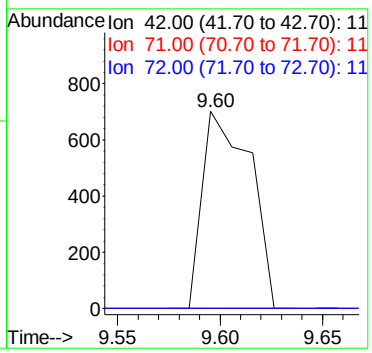

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12707.D Vial: 25
Acq On : 17 Jun 2016 3:09 Operator: JDS
Sample : WG573051-04 BLANK2 STD 624 Inst : hpms11
Misc : 2,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 20 11:33:26 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	475798	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	409939	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	242107	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	127074	24.4035 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.60%		
43) 1,2-Dichloroethane-d4	10.24	65	143783	24.2166 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 96.88%		
57) Toluene-d8	12.47	98	436632	24.5136 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.04%		
78) p-Bromofluorobenzene	15.64	95	194410	26.0492 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.20%		

Target Compounds

					Qvalue
8) Trichlorofluoromethane	5.48	101	4298	0.4349 ug/L	85
36) Tetrahydrofuran	9.61	42	1504	1.2470 ug/L #	60

(#) = qualifier out of range (m) = manual integration
11M12707.D 8260WT.M Mon Jun 20 11:33:27 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12707.D Vial: 25
Acq On : 17 Jun 2016 3:09 Operator: JDS
Sample : WG573051-04 BLANK2 STD 624 Inst : hpms11
Misc : 2,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 20 11:33 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

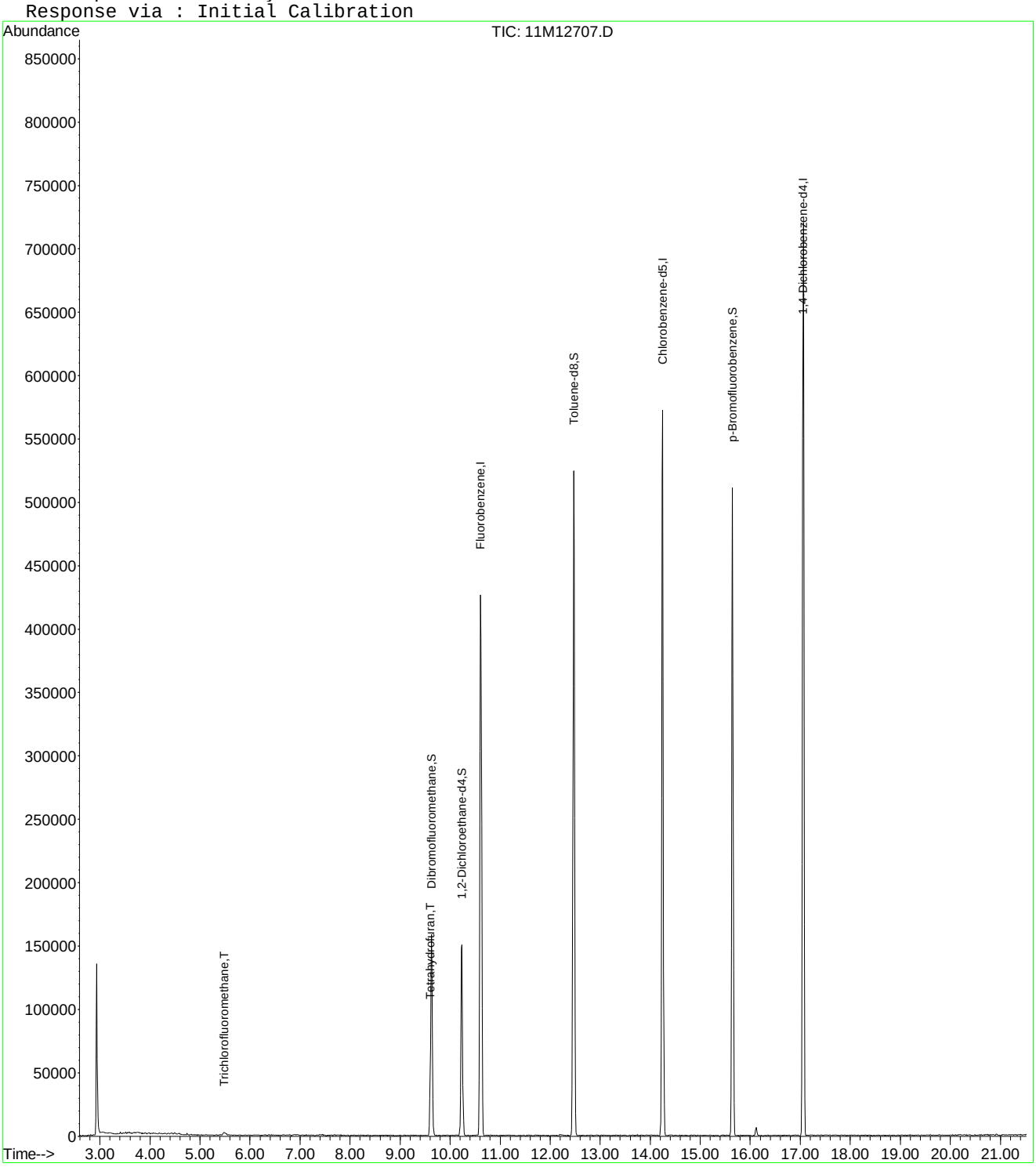

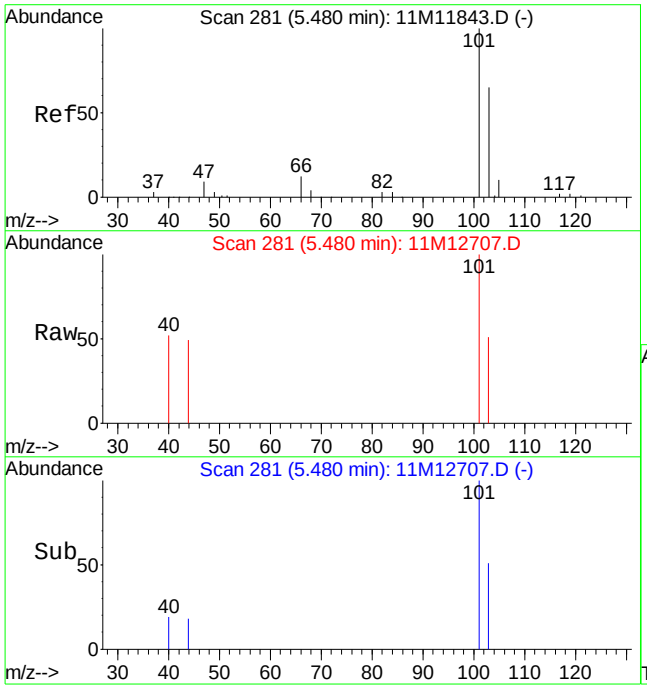

#8
Trichlorofluoromethane
Concen: 0.43 ug/L
RT: 5.48 min Scan# 281
Delta R.T. 0.00 min
Lab File: 11M12707.D
Acq: 17 Jun 2016 3:09

Tgt Ion:101 Resp: 4298

Ion	Ratio	Lower	Upper
101	100		
103	77.4	39.1	91.3

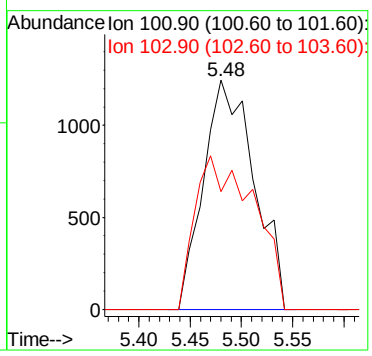

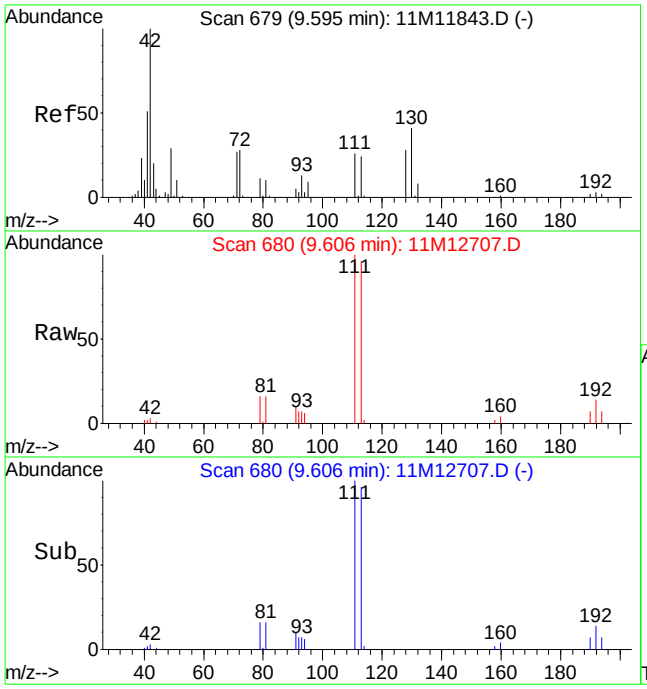

#36
Tetrahydrofuran
Concen: 1.25 ug/L
RT: 9.61 min Scan# 680
Delta R.T. 0.01 min
Lab File: 11M12707.D
Acq: 17 Jun 2016 3:09

Tgt Ion: 42 Resp: 1504

Ion	Ratio	Lower	Upper
42	100		
71	0.0	16.4	38.2#
72	13.2	16.6	38.8#

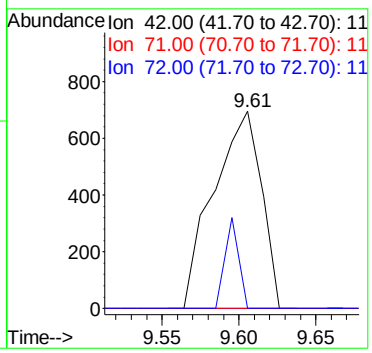

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061516\11M12655.D Vial: 6
Acq On : 15 Jun 2016 17:25 Operator: JDS
Sample : WG572855-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 09:53:48 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	665946	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	566282	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	339839	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	177601	24.3682 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.48%		
43) 1,2-Dichloroethane-d4	10.24	65	187008	22.5034 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 90.00%		
57) Toluene-d8	12.47	98	604279	24.5592 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.24%		
78) p-Bromofluorobenzene	15.64	95	266614	25.4503 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.80%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	186035	17.8294 ug/L	96
3) Chloromethane	3.72	50	141000	16.8728 ug/L	98
4) Vinyl Chloride	3.95	62	139568	20.1113 ug/L	99
5) 1,3-Butadiene	3.99	54	4753	0.6888 ug/L #	60
6) Bromomethane	4.85	94	101517	21.2757 ug/L	100
7) Chloroethane	5.00	64	90120	20.2111 ug/L	98
8) Trichlorofluoromethane	5.48	101	267889	19.3671 ug/L	99
9) Diethyl ether	6.01	59	516783	101.0206 ug/L	93
10) Isoprene	6.04	67	166540	19.5337 ug/L	96
11) Acrolein	6.23	56	70678	103.4260 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	135865	20.2426 ug/L	96
13) Acetone	6.35	43	29630	18.7375 ug/L	95
14) 1,1-Dichloroethene	6.56	61	212517	17.4318 ug/L	96
15) Tert-Butyl Alcohol	6.67	59	76302	174.4436 ug/L	94
16) Dimethyl Sulfide	6.81	62	163509	33.5836 ug/L	91
17) Iodomethane	7.06	142	139989	26.2739 ug/L	93
18) Methyl acetate	7.07	43	87048	16.8179 ug/L	93
19) Methylene Chloride	7.31	84	122669	19.4421 ug/L	84
20) Carbon Disulfide	7.36	76	357149	17.4988 ug/L	100
21) Acrylonitrile	7.50	53	40275	18.9958 ug/L	99
22) Methyl Tert Butyl Ether	7.52	73	336431	21.3787 ug/L	94
23) trans-1,2-Dichloroethene	7.75	96	132194	19.5922 ug/L	93
24) n-Hexane	7.82	57	180602	16.0708 ug/L	97
25) Diisopropyl ether	8.15	45	2542402	90.6646 ug/L	97
26) Vinyl Acetate	8.31	43	102724	11.4105 ug/L	97
27) 1,1-Dichloroethane	8.34	63	242942	17.9447 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	2161236	94.6929 ug/L	98
29) 2-Butanone	8.87	43	44476	18.6043 ug/L	97
30) Propionitrile	8.97	54	64183	91.6650 ug/L	100
31) 2,2-Dichloropropane	9.09	77	206338	19.4796 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	148163	19.9157 ug/L	94
33) Chloroform	9.35	83	250844	18.8675 ug/L	100
34) 1-Bromopropane	9.48	122	36044	27.5604 ug/L	98
35) Bromochloromethane	9.57	130	95595	21.6363 ug/L	87
36) Tetrahydrofuran	9.60	42	134431	79.6324 ug/L	91
38) 1,1,1-Trichloroethane	9.85	97	254854	19.4794 ug/L	96
39) Cyclohexane	9.88	56	253938	17.8097 ug/L	95
40) 1,1-Dichloropropene	10.04	75	175359	18.7719 ug/L	98
41) Carbon Tetrachloride	10.18	117	245260	19.1975 ug/L	98
42) Tert-Amyl-Methyl ether	10.13	73	1647069	103.8547 ug/L	97

(#) = qualifier out of range (m) = manual integration
11M12655.D 8260WT.M Thu Jun 16 09:53:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061516\11M12655.D Vial: 6
Acq On : 15 Jun 2016 17:25 Operator: JDS
Sample : WG572855-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 09:53:48 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	214412	19.8566 ug/L	97
45)	Benzene	10.38	78	483612	18.9111 ug/L	100
46)	Trichloroethene	11.09	130	174608	21.0064 ug/L	98
47)	Methylcyclohexane	11.17	83	197221	19.2256 ug/L	93
48)	1,2-Dichloropropane	11.29	63	137592	19.4368 ug/L	97
49)	1,4-Dioxane	11.57	88	4192	116.1301 ug/L	91
50)	Bromodichloromethane	11.58	83	199181	20.0429 ug/L	98
51)	Dibromomethane	11.65	93	72983	19.7846 ug/L	93
52)	2-Chloroethyl Vinyl Ether	11.85	63	61392	17.5963 ug/L	94
53)	4-Methyl-2-Pentanone	11.87	58	36458	18.5272 ug/L	92
54)	cis-1,3-Dichloropropene	12.17	75	220107	22.1441 ug/L	99
55)	Dimethyl Disulfide	12.42	79	117601	19.6613 ug/L	92
58)	Toluene	12.56	91	578472	20.1787 ug/L	99
59)	Ethyl Methacrylate	12.65	69	129855	21.2135 ug/L	83
60)	trans-1,3-Dichloropropene	12.73	75	188370	20.4713 ug/L	99
61)	1,1,2-Trichloroethane	12.93	97	106903	21.0298 ug/L	97
62)	2-Hexanone	12.86	43	63879	17.1099 ug/L #	96
63)	1,3-Dichloropropane	13.21	76	179735	22.0175 ug/L	88
64)	Tetrachloroethene	13.34	164	134774	20.2165 ug/L	97
65)	Dibromochloromethane	13.59	129	167228	21.5678 ug/L	100
66)	1,2-Dibromoethane	13.82	107	108159	21.2367 ug/L	99
67)	1-Chlorohexane	13.89	91	185684	19.6460 ug/L	89
68)	Chlorobenzene	14.29	112	438419	20.8761 ug/L	99
69)	1,1,1,2-Tetrachloroethane	14.32	131	179895	21.1699 ug/L	99
70)	Ethylbenzene	14.31	106	221410	20.5600 ug/L	95
71)	m-,p-Xylene	14.39	106	537885	41.0853 ug/L	99
72)	o-Xylene	14.92	106	266340	20.9041 ug/L	100
73)	Styrene	14.95	104	447756	21.2706 ug/L	97
74)	Bromoform	15.43	173	98591	20.9797 ug/L	99
75)	Isopropylbenzene	15.31	105	690943	20.5061 ug/L	99
77)	1,1,2,2-Tetrachloroethane	15.52	83	102287	19.3281 ug/L	95
79)	1,2,3-Trichloropropane	15.70	110	40595	20.6599 ug/L	86
80)	trans-1,4-Dichloro-2-Buten	15.74	53	25731	10.6810 ug/L #	23
81)	n-Propylbenzene	15.79	91	796824	20.2461 ug/L	98
82)	Bromobenzene	15.92	156	208214	20.1612 ug/L	91
83)	1,3,5-Trimethylbenzene	15.95	105	604417	20.1248 ug/L	99
84)	2-Chlorotoluene	16.05	91	549511	19.9341 ug/L	98
85)	4-Chlorotoluene	16.09	91	509257	20.6237 ug/L	100
86)	a-Methylstyrene	16.34	118	343882	21.7042 ug/L	99
87)	tert-Butylbenzene	16.40	134	133726	21.0164 ug/L	93
88)	1,2,4-Trimethylbenzene	16.44	105	622297	20.3478 ug/L	99
89)	sec-Butylbenzene	16.65	105	705095	19.5520 ug/L	99
90)	p-Isopropyltoluene	16.79	119	656165	19.8094 ug/L	99
91)	1,3-Dichlorobenzene	16.98	146	408809	20.4957 ug/L	98
92)	1,4-Dichlorobenzene	17.10	146	417722	20.6612 ug/L	99
93)	n-Butylbenzene	17.28	91	526165	18.0266 ug/L	98
94)	1,2-Dichlorobenzene	17.57	146	381065	20.9724 ug/L	99
95)	1,2-Dibromo-3-Chloropropan	18.49	75	21125	18.1219 ug/L	99
96)	1,2,4-Trichlorobenzene	19.55	180	256701	19.3073 ug/L	100
97)	Hexachlorobutadiene	19.69	225	96910	16.5452 ug/L	97
98)	Naphthalene	19.90	128	436771	17.6986 ug/L	100
99)	1,2,3-Trichlorobenzene	20.19	180	233969	19.1744 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061516\11M12655.D Vial: 6
Acq On : 15 Jun 2016 17:25 Operator: JDS
Sample : WG572855-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 16 9:53 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

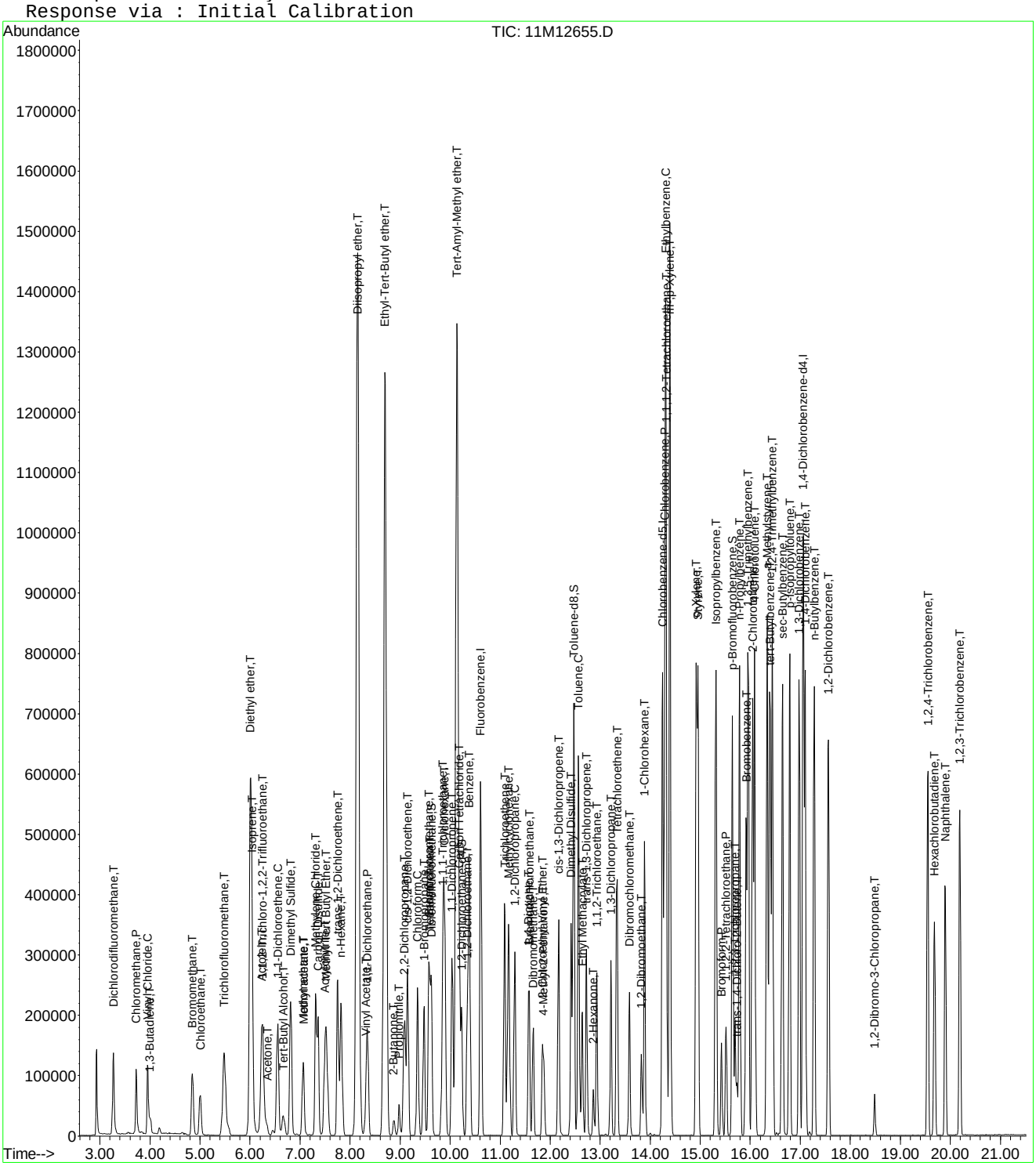

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12688.D Vial: 6
Acq On : 16 Jun 2016 17:03 Operator: JDS
Sample : WG573051-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 17 09:16:11 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	546376	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	469128	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	281763	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	145745	24.3736 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.48%		
43) 1,2-Dichloroethane-d4	10.23	65	154170	22.6118 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 90.44%		
57) Toluene-d8	12.47	98	500024	24.5307 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.12%		
78) p-Bromofluorobenzene	15.64	95	224851	25.8877 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.56%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	158548	18.5204 ug/L	97
3) Chloromethane	3.73	50	128025	18.6729 ug/L	99
4) Vinyl Chloride	3.96	62	119772	21.0357 ug/L	98
5) 1,3-Butadiene	3.99	54	3414	0.6030 ug/L #	68
6) Bromomethane	4.85	94	82794	21.1491 ug/L	99
7) Chloroethane	5.00	64	74318	20.3147 ug/L	99
8) Trichlorofluoromethane	5.48	101	224786	19.8073 ug/L	99
9) Diethyl ether	6.01	59	424001	101.0220 ug/L	93
10) Isoprene	6.04	67	142753	20.4079 ug/L	94
11) Acrolein	6.24	56	56088	100.0868 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	112026	20.3435 ug/L	91
13) Acetone	6.34	43	24555	18.9263 ug/L	98
14) 1,1-Dichloroethene	6.56	61	176244	17.6202 ug/L	96
15) Tert-Butyl Alcohol	6.67	59	75912	211.5324 ug/L	95
16) Dimethyl Sulfide	6.81	62	132207	33.0969 ug/L	93
17) Iodomethane	7.06	142	103010	23.7928 ug/L	96
18) Methyl acetate	7.07	43	70981	16.7072 ug/L	93
19) Methylene Chloride	7.31	84	98420	19.0125 ug/L	85
20) Carbon Disulfide	7.36	76	289353	17.2797 ug/L	99
21) Acrylonitrile	7.50	53	35430	20.3677 ug/L	98
22) Methyl Tert Butyl Ether	7.52	73	267737	20.7368 ug/L	96
23) trans-1,2-Dichloroethene	7.75	96	111519	20.1451 ug/L	91
24) n-Hexane	7.82	57	154725	16.7812 ug/L	98
25) Diisopropyl ether	8.15	45	2098207	91.1988 ug/L	97
26) Vinyl Acetate	8.31	43	68151	9.6923 ug/L	98
27) 1,1-Dichloroethane	8.34	63	204146	18.3790 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1770174	94.5319 ug/L	98
29) 2-Butanone	8.87	43	36822	18.7734 ug/L	95
30) Propionitrile	8.99	54	57022	99.2598 ug/L	99
31) 2,2-Dichloropropane	9.09	77	173464	19.9599 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	123923	20.3028 ug/L	93
33) Chloroform	9.35	83	209223	19.1809 ug/L	100
34) 1-Bromopropane	9.48	122	30265	28.1912 ug/L	96
35) Bromochloromethane	9.57	130	80319	22.1572 ug/L	86
36) Tetrahydrofuran	9.60	42	114277	82.5081 ug/L	91
38) 1,1,1-Trichloroethane	9.85	97	214061	19.9420 ug/L	97
39) Cyclohexane	9.88	56	210661	18.0078 ug/L	94
40) 1,1-Dichloropropene	10.04	75	150804	19.6762 ug/L	99
41) Carbon Tetrachloride	10.18	117	213637	20.3817 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	1343090	103.2207 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12688.D Vial: 6
Acq On : 16 Jun 2016 17:03 Operator: JDS
Sample : WG573051-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 17 09:16:11 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.34	62	179201	20.2276 ug/L	97
45) Benzene	10.38	78	402174	19.1682 ug/L	99
46) Trichloroethene	11.09	130	147970	21.6974 ug/L	98
47) Methylcyclohexane	11.17	83	166777	19.8157 ug/L	94
48) 1,2-Dichloropropane	11.29	63	112924	19.4431 ug/L	96
49) 1,4-Dioxane	11.56	88	6571	200.6711 ug/L	90
50) Bromodichloromethane	11.58	83	164478	20.1729 ug/L	99
51) Dibromomethane	11.66	93	59100	19.5273 ug/L	91
52) 2-Chloroethyl Vinyl Ether	11.84	63	50787	17.7423 ug/L	95
53) 4-Methyl-2-Pentanone	11.87	58	30890	19.1329 ug/L	94
54) cis-1,3-Dichloropropene	12.17	75	180319	22.1112 ug/L	100
55) Dimethyl Disulfide	12.42	79	96353	19.6343 ug/L	91
58) Toluene	12.56	91	484632	20.4063 ug/L	98
59) Ethyl Methacrylate	12.65	69	102055	20.1247 ug/L	88
60) trans-1,3-Dichloropropene	12.73	75	156505	20.5306 ug/L	99
61) 1,1,2-Trichloroethane	12.94	97	88431	20.9987 ug/L	97
62) 2-Hexanone	12.86	43	53189	17.1970 ug/L	94
63) 1,3-Dichloropropane	13.21	76	146706	21.6933 ug/L	90
64) Tetrachloroethene	13.34	164	116239	21.0471 ug/L	97
65) Dibromochloromethane	13.59	129	141187	21.9803 ug/L	98
66) 1,2-Dibromoethane	13.82	107	89772	21.2768 ug/L	99
67) 1-Chlorohexane	13.89	91	152409	19.4649 ug/L	92
68) Chlorobenzene	14.29	112	370073	21.2710 ug/L	100
69) 1,1,1,2-Tetrachloroethane	14.32	131	149013	21.1673 ug/L	99
70) Ethylbenzene	14.31	106	179565	20.1275 ug/L	99
71) m-,p-Xylene	14.39	106	456695	42.1080 ug/L	99
72) o-Xylene	14.92	106	222762	21.1046 ug/L	99
73) Styrene	14.95	104	372965	21.3869 ug/L	99
74) Bromoform	15.43	173	82099	21.0883 ug/L	100
75) Isopropylbenzene	15.31	105	595239	21.3242 ug/L	100
77) 1,1,2,2-Tetrachloroethane	15.52	83	83806	19.1000 ug/L	98
79) 1,2,3-Trichloropropane	15.70	110	35141	21.5543 ug/L	82
80) trans-1,4-Dichloro-2-Buten	15.74	53	23202	11.5512 ug/L #	33
81) n-Propylbenzene	15.79	91	691363	21.1872 ug/L	99
82) Bromobenzene	15.92	156	173923	20.3120 ug/L	93
83) 1,3,5-Trimethylbenzene	15.96	105	515882	20.7173 ug/L	98
84) 2-Chlorotoluene	16.05	91	462816	20.2497 ug/L	98
85) 4-Chlorotoluene	16.09	91	428111	20.9111 ug/L	98
86) a-Methylstyrene	16.34	118	284640	21.6681 ug/L	99
87) tert-Butylbenzene	16.40	134	116566	22.0955 ug/L	92
88) 1,2,4-Trimethylbenzene	16.44	105	525483	20.7237 ug/L	98
89) sec-Butylbenzene	16.65	105	631798	21.1306 ug/L	98
90) p-Isopropyltoluene	16.79	119	582415	21.2070 ug/L	100
91) 1,3-Dichlorobenzene	16.98	146	350679	21.2052 ug/L	97
92) 1,4-Dichlorobenzene	17.10	146	353761	21.1041 ug/L	99
93) n-Butylbenzene	17.28	91	479614	19.8186 ug/L	98
94) 1,2-Dichlorobenzene	17.57	146	320528	21.2767 ug/L	99
95) 1,2-Dibromo-3-Chloropropan	18.49	75	17683	18.2897 ug/L	92
96) 1,2,4-Trichlorobenzene	19.55	180	230735	20.9313 ug/L	100
97) Hexachlorobutadiene	19.69	225	95052	19.5728 ug/L	98
98) Naphthalene	19.90	128	388435	18.9843 ug/L	100
99) 1,2,3-Trichlorobenzene	20.19	180	207930	20.5527 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M12688.D 8260WT.M Fri Jun 17 09:16:12 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12688.D Vial: 6
Acq On : 16 Jun 2016 17:03 Operator: JDS
Sample : WG573051-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 17 9:16 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

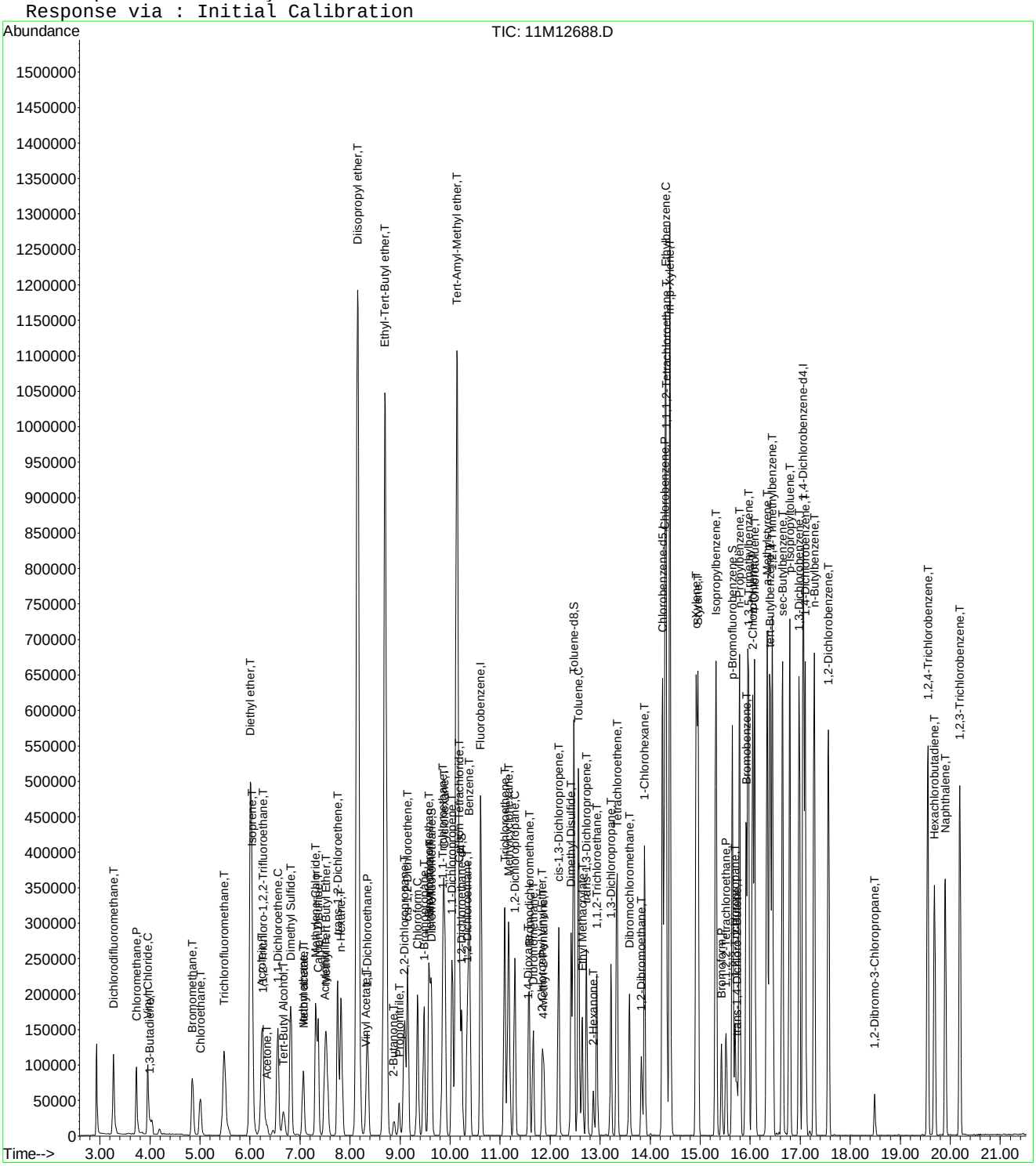

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061716\11M12721.D Vial: 5
Acq On : 17 Jun 2016 17:57 Operator: JDS
Sample : WG573259-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 17 18:19:40 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	493317	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	427304	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	271227	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	134050	24.8289 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 99.32%		
43) 1,2-Dichloroethane-d4	10.23	65	146396	23.7810 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 95.12%		
57) Toluene-d8	12.47	98	461778	24.8718 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.48%		
78) p-Bromofluorobenzene	15.64	95	213241	25.5047 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.00%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	147125	19.0345 ug/L	97
3) Chloromethane	3.72	50	121099	19.5624 ug/L	100
4) Vinyl Chloride	3.95	62	117564	22.8687 ug/L	99
5) 1,3-Butadiene	3.99	54	3689	0.7217 ug/L #	72
6) Bromomethane	4.85	94	74231	21.0012 ug/L	99
7) Chloroethane	5.00	64	67736	20.5070 ug/L	99
8) Trichlorofluoromethane	5.48	101	223540	21.8161 ug/L	98
9) Diethyl ether	6.01	59	430467	113.5937 ug/L	95
10) Isoprene	6.04	67	130319	20.6342 ug/L	99
11) Acrolein	6.24	56	54163	106.9424 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	108698	21.8622 ug/L	97
13) Acetone	6.34	43	26002	22.1972 ug/L	99
14) 1,1-Dichloroethene	6.56	61	163656	18.1215 ug/L	100
15) Tert-Butyl Alcohol	6.67	59	75451	232.8612 ug/L	98
16) Dimethyl Sulfide	6.81	62	124194	34.4349 ug/L	96
17) Iodomethane	7.06	142	106522	26.9287 ug/L	99
18) Methyl acetate	7.07	43	71594	18.8102 ug/L	93
19) Methylene Chloride	7.31	84	92824	19.8601 ug/L	88
20) Carbon Disulfide	7.36	76	267060	17.6637 ug/L	99
21) Acrylonitrile	7.49	53	33644	21.4212 ug/L	98
22) Methyl Tert Butyl Ether	7.52	73	259354	22.2481 ug/L	96
23) trans-1,2-Dichloroethene	7.74	96	99390	19.8851 ug/L	96
24) n-Hexane	7.82	57	141397	16.9851 ug/L	97
25) Diisopropyl ether	8.15	45	2160907	104.0262 ug/L	97
26) Vinyl Acetate	8.31	43	47795	8.0715 ug/L	98
27) 1,1-Dichloroethane	8.34	63	188097	18.7555 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	1817551	107.5016 ug/L	98
29) 2-Butanone	8.87	43	35761	20.1935 ug/L	97
30) Propionitrile	8.98	54	57873	111.5764 ug/L	98
31) 2,2-Dichloropropane	9.09	77	157313	20.0483 ug/L	99
32) cis-1,2-Dichloroethene	9.15	96	115425	20.9444 ug/L	95
33) Chloroform	9.35	83	201737	20.4838 ug/L	99
34) 1-Bromopropane	9.48	122	28246	29.1192 ug/L	96
35) Bromochloromethane	9.57	130	76574	23.3961 ug/L	89
36) Tetrahydrofuran	9.60	42	120387	96.2682 ug/L	94
38) 1,1,1-Trichloroethane	9.85	97	208517	21.5149 ug/L	98
39) Cyclohexane	9.88	56	199507	18.8886 ug/L	95
40) 1,1-Dichloropropene	10.04	75	135487	19.5791 ug/L	99
41) Carbon Tetrachloride	10.18	117	210074	22.1974 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	1374636	117.0078 ug/L	100

(#) = qualifier out of range (m) = manual integration
11M12721.D 8260WT.M Fri Jun 17 18:19:41 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061716\11M12721.D Vial: 5
Acq On : 17 Jun 2016 17:57 Operator: JDS
Sample : WG573259-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 17 18:19:40 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	178622	22.3308 ug/L	96
45)	Benzene	10.38	78	372400	19.6581 ug/L	99
46)	Trichloroethene	11.08	130	144419	23.4544 ug/L	96
47)	Methylcyclohexane	11.17	83	151100	19.8840 ug/L	96
48)	1,2-Dichloropropane	11.29	63	107327	20.4670 ug/L	95
49)	1,4-Dioxane	11.55	88	5995	202.5282 ug/L	97
50)	Bromodichloromethane	11.57	83	162073	22.0159 ug/L	100
51)	Dibromomethane	11.65	93	59759	21.8687 ug/L	96
52)	2-Chloroethyl Vinyl Ether	11.84	63	50927	19.7048 ug/L	97
53)	4-Methyl-2-Pentanone	11.87	58	28850	19.7913 ug/L	96
54)	cis-1,3-Dichloropropene	12.17	75	166700	22.6398 ug/L	100
55)	Dimethyl Disulfide	12.42	79	90200	20.3574 ug/L	89
58)	Toluene	12.56	91	453247	20.9528 ug/L	99
59)	Ethyl Methacrylate	12.64	69	98486	21.3218 ug/L	91
60)	trans-1,3-Dichloropropene	12.73	75	147245	21.2065 ug/L	100
61)	1,1,2-Trichloroethane	12.94	97	85540	22.3003 ug/L	99
62)	2-Hexanone	12.86	43	52139	18.5075 ug/L	97
63)	1,3-Dichloropropane	13.21	76	143053	23.2236 ug/L	93
64)	Tetrachloroethene	13.34	164	110039	21.8747 ug/L	98
65)	Dibromochloromethane	13.59	129	136824	23.3860 ug/L	99
66)	1,2-Dibromoethane	13.82	107	85373	22.2147 ug/L	100
67)	1-Chlorohexane	13.89	91	143357	20.1009 ug/L	94
68)	Chlorobenzene	14.29	112	352329	22.2333 ug/L	99
69)	1,1,1,2-Tetrachloroethane	14.32	131	146367	22.8265 ug/L	99
70)	Ethylbenzene	14.31	106	173433	21.3429 ug/L	100
71)	m-,p-Xylene	14.39	106	427203	43.2442 ug/L	99
72)	o-Xylene	14.92	106	210566	21.9018 ug/L	97
73)	Styrene	14.95	104	355717	22.3943 ug/L	100
74)	Bromoform	15.43	173	83012	23.4099 ug/L	96
75)	Isopropylbenzene	15.31	105	574442	22.5934 ug/L	100
77)	1,1,2,2-Tetrachloroethane	15.52	83	79518	18.8267 ug/L	100
79)	1,2,3-Trichloropropane	15.70	110	35232	22.4345 ug/L	79
80)	trans-1,4-Dichloro-2-Buten	15.73	53	21237	11.0202 ug/L #	23
81)	n-Propylbenzene	15.79	91	670818	21.3562 ug/L	99
82)	Bromobenzene	15.92	156	170399	20.6735 ug/L	92
83)	1,3,5-Trimethylbenzene	15.95	105	505585	21.0925 ug/L	99
84)	2-Chlorotoluene	16.05	91	464173	21.0980 ug/L	99
85)	4-Chlorotoluene	16.09	91	400662	20.3305 ug/L	98
86)	a-Methylstyrene	16.34	118	271092	21.4384 ug/L	98
87)	tert-Butylbenzene	16.39	134	111298	21.9164 ug/L	97
88)	1,2,4-Trimethylbenzene	16.44	105	516795	21.1728 ug/L	99
89)	sec-Butylbenzene	16.65	105	613153	21.3036 ug/L	99
90)	p-Isopropyltoluene	16.79	119	566273	21.4202 ug/L	99
91)	1,3-Dichlorobenzene	16.98	146	339431	21.3223 ug/L	98
92)	1,4-Dichlorobenzene	17.10	146	344996	21.3807 ug/L	100
93)	n-Butylbenzene	17.28	91	461811	19.8242 ug/L	98
94)	1,2-Dichlorobenzene	17.57	146	317375	21.8858 ug/L	98
95)	1,2-Dibromo-3-Chloropropan	18.49	75	18525	19.8482 ug/L	100
96)	1,2,4-Trichlorobenzene	19.55	180	214750	20.2380 ug/L	99
97)	Hexachlorobutadiene	19.69	225	92338	19.7525 ug/L	99
98)	Naphthalene	19.90	128	387137	19.6558 ug/L	99
99)	1,2,3-Trichlorobenzene	20.19	180	210340	21.5986 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M12721.D 8260WT.M Fri Jun 17 18:19:41 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061716\11M12721.D Vial: 5
Acq On : 17 Jun 2016 17:57 Operator: JDS
Sample : WG573259-02 20ug/L LCS STD 8260 Inst : hpms11
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 17 18:19 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

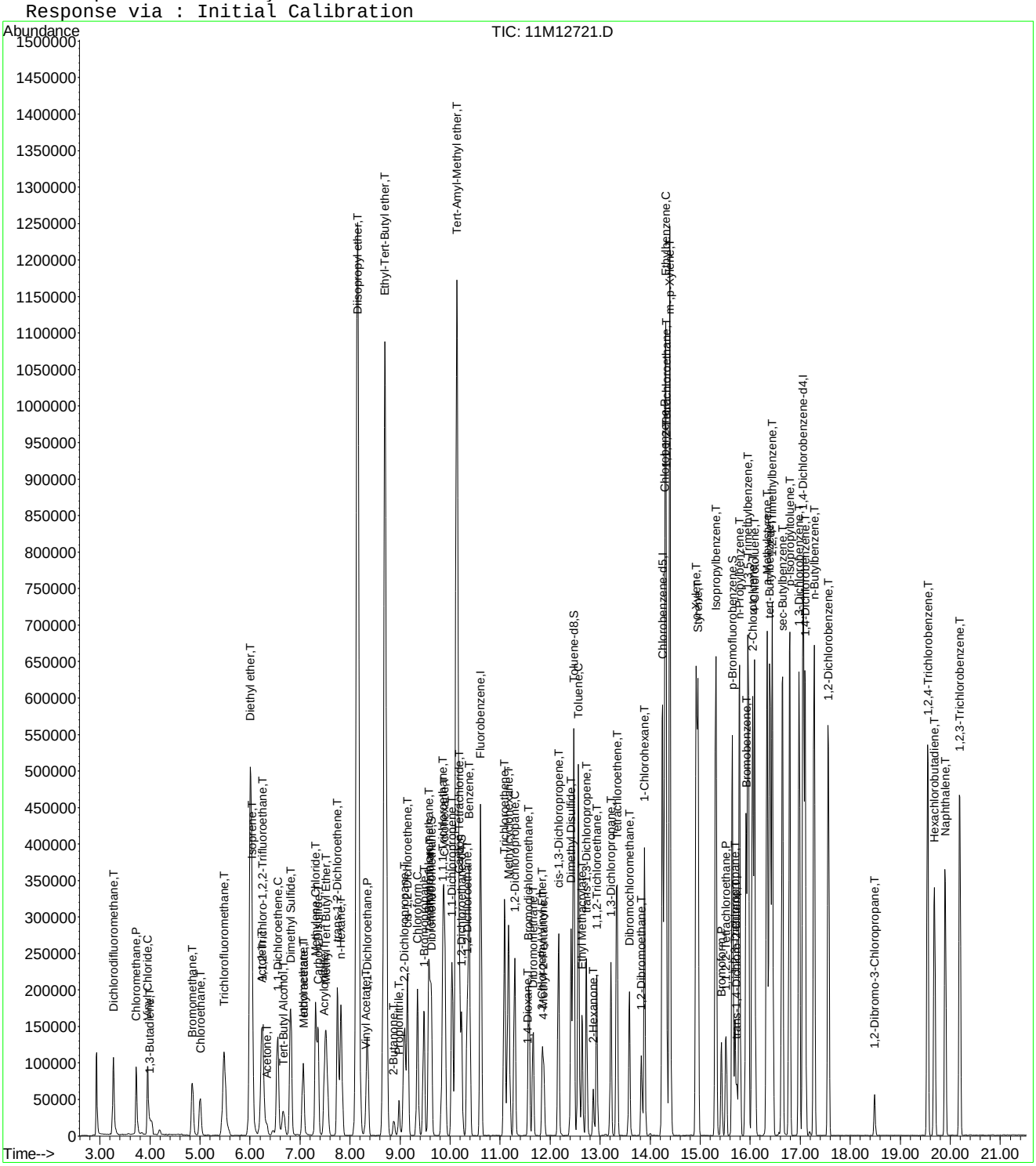

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12689.D Vial: 7
Acq On : 16 Jun 2016 17:35 Operator: JDS
Sample : WG573051-03 20ug/L LCS2 STD 8260 Inst : hpms11
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 17 09:16:12 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	554739	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	475469	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	289001	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	146748	24.1713 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 96.68%		
43) 1,2-Dichloroethane-d4	10.24	65	156506	22.6084 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 90.44%		
57) Toluene-d8	12.47	98	508606	24.6189 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.48%		
78) p-Bromofluorobenzene	15.64	95	222522	24.9779 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.92%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	161125	18.5377 ug/L	95
3) Chloromethane	3.73	50	130849	18.7970 ug/L	98
4) Vinyl Chloride	3.96	62	123530	21.3687 ug/L	99
5) 1,3-Butadiene	3.99	54	3075	0.5349 ug/L #	48
6) Bromomethane	4.85	94	78926	19.8571 ug/L	98
7) Chloroethane	5.00	64	77322	20.8172 ug/L	99
8) Trichlorofluoromethane	5.48	101	228237	19.8082 ug/L	99
9) Diethyl ether	6.01	59	440955	103.4776 ug/L	93
10) Isoprene	6.04	67	144262	20.3127 ug/L	93
11) Acrolein	6.23	56	62191	109.1656 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	113596	20.3176 ug/L	92
13) Acetone	6.34	43	26999	20.4964 ug/L	98
14) 1,1-Dichloroethene	6.56	61	174598	17.1925 ug/L	96
15) Tert-Butyl Alcohol	6.67	59	84838	232.8412 ug/L	97
16) Dimethyl Sulfide	6.81	62	138489	34.1468 ug/L	91
17) Iodomethane	7.06	142	137573	30.6014 ug/L	95
18) Methyl acetate	7.07	43	77062	17.9513 ug/L	91
19) Methylene Chloride	7.31	84	101378	19.2887 ug/L	84
20) Carbon Disulfide	7.36	76	298974	17.5850 ug/L	99
21) Acrylonitrile	7.50	53	37121	21.0181 ug/L	97
22) Methyl Tert Butyl Ether	7.52	73	283615	21.6354 ug/L	94
23) trans-1,2-Dichloroethene	7.75	96	108863	19.3688 ug/L	94
24) n-Hexane	7.82	57	157784	16.8549 ug/L	98
25) Diisopropyl ether	8.15	45	2161141	92.5182 ug/L	97
26) Vinyl Acetate	8.31	43	73457	10.1396 ug/L	97
27) 1,1-Dichloroethane	8.34	63	205365	18.2100 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1831916	96.3543 ug/L	98
29) 2-Butanone	8.87	43	39215	19.6920 ug/L	96
30) Propionitrile	8.99	54	61530	105.4923 ug/L	98
31) 2,2-Dichloropropane	9.09	77	169784	19.2419 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	122364	19.7451 ug/L	94
33) Chloroform	9.35	83	212058	19.1477 ug/L	99
34) 1-Bromopropane	9.48	122	30373	27.8725 ug/L	96
35) Bromochloromethane	9.57	130	80432	21.8538 ug/L	86
36) Tetrahydrofuran	9.60	42	124650	88.6407 ug/L	91
38) 1,1,1-Trichloroethane	9.85	97	211454	19.4022 ug/L	96
39) Cyclohexane	9.88	56	216470	18.2254 ug/L	94
40) 1,1-Dichloropropene	10.04	75	147314	18.9311 ug/L	100
41) Carbon Tetrachloride	10.18	117	207950	19.5401 ug/L	98
42) Tert-Amyl-Methyl ether	10.13	73	1414650	107.0813 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M12689.D 8260WT.M Fri Jun 17 09:16:13 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12689.D Vial: 7
Acq On : 16 Jun 2016 17:35 Operator: JDS
Sample : WG573051-03 20ug/L LCS2 STD 8260 Inst : hpms11
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 17 09:16:12 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.34	62	182915	20.3355 ug/L	97
45) Benzene	10.38	78	401671	18.8556 ug/L	98
46) Trichloroethene	11.09	130	150546	21.7423 ug/L	96
47) Methylcyclohexane	11.17	83	169145	19.7941 ug/L	95
48) 1,2-Dichloropropane	11.29	63	112973	19.1583 ug/L	97
49) 1,4-Dioxane	11.56	88	6947	207.9941 ug/L	99
50) Bromodichloromethane	11.58	83	168945	20.4084 ug/L	99
51) Dibromomethane	11.66	93	60560	19.7080 ug/L	93
52) 2-Chloroethyl Vinyl Ether	11.85	63	55905	19.2358 ug/L	94
53) 4-Methyl-2-Pentanone	11.87	58	31798	19.3984 ug/L	93
54) cis-1,3-Dichloropropene	12.17	75	183117	22.1158 ug/L	99
55) Dimethyl Disulfide	12.42	79	98060	19.6809 ug/L	88
58) Toluene	12.56	91	486203	20.1994 ug/L	99
59) Ethyl Methacrylate	12.65	69	109037	21.2148 ug/L	87
60) trans-1,3-Dichloropropene	12.73	75	158571	20.5242 ug/L	99
61) 1,1,2-Trichloroethane	12.93	97	90193	21.1315 ug/L	99
62) 2-Hexanone	12.86	43	57287	18.2749 ug/L	95
63) 1,3-Dichloropropane	13.21	76	152317	22.2226 ug/L	89
64) Tetrachloroethene	13.34	164	117577	21.0055 ug/L	94
65) Dibromochloromethane	13.59	129	142785	21.9326 ug/L	100
66) 1,2-Dibromoethane	13.82	107	92248	21.5720 ug/L	100
67) 1-Chlorohexane	13.89	91	157121	19.7991 ug/L	90
68) Chlorobenzene	14.29	112	371247	21.0539 ug/L	100
69) 1,1,1,2-Tetrachloroethane	14.32	131	151383	21.2172 ug/L	100
70) Ethylbenzene	14.31	106	184299	20.3826 ug/L	98
71) m-,p-Xylene	14.39	106	453631	41.2677 ug/L	100
72) o-Xylene	14.92	106	228165	21.3282 ug/L	97
73) Styrene	14.95	104	378940	21.4397 ug/L	97
74) Bromoform	15.43	173	86102	21.8216 ug/L	100
75) Isopropylbenzene	15.31	105	593863	20.9912 ug/L	99
77) 1,1,2,2-Tetrachloroethane	15.52	83	86740	19.2736 ug/L	97
79) 1,2,3-Trichloropropane	15.70	110	36295	21.7021 ug/L	89
80) trans-1,4-Dichloro-2-Buten	15.74	53	23953	11.6216 ug/L #	16
81) n-Propylbenzene	15.79	91	686733	20.5182 ug/L	97
82) Bromobenzene	15.92	156	178947	20.3754 ug/L	90
83) 1,3,5-Trimethylbenzene	15.95	105	518224	20.2902 ug/L	99
84) 2-Chlorotoluene	16.05	91	462239	19.7179 ug/L	97
85) 4-Chlorotoluene	16.09	91	424382	20.2098 ug/L	98
86) a-Methylstyrene	16.34	118	287578	21.3435 ug/L	100
87) tert-Butylbenzene	16.40	134	111823	20.6655 ug/L	98
88) 1,2,4-Trimethylbenzene	16.44	105	523177	20.1160 ug/L	98
89) sec-Butylbenzene	16.65	105	620913	20.2464 ug/L	98
90) p-Isopropyltoluene	16.79	119	571877	20.3018 ug/L	99
91) 1,3-Dichlorobenzene	16.98	146	350811	20.6819 ug/L	98
92) 1,4-Dichlorobenzene	17.10	146	356440	20.7313 ug/L	99
93) n-Butylbenzene	17.28	91	473060	19.0582 ug/L	98
94) 1,2-Dichlorobenzene	17.57	146	328468	21.2577 ug/L	99
95) 1,2-Dibromo-3-Chloropropan	18.49	75	18753	18.8889 ug/L	89
96) 1,2,4-Trichlorobenzene	19.55	180	235691	20.8454 ug/L	99
97) Hexachlorobutadiene	19.69	225	92784	18.6273 ug/L	97
98) Naphthalene	19.90	128	415146	19.7816 ug/L	100
99) 1,2,3-Trichlorobenzene	20.19	180	212183	20.4478 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M12689.D 8260WT.M Fri Jun 17 09:16:13 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\061616\11M12689.D Vial: 7
Acq On : 16 Jun 2016 17:35 Operator: JDS
Sample : WG573051-03 20ug/L LCS2 STD 8260 Inst : hpms11
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 17 9:16 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

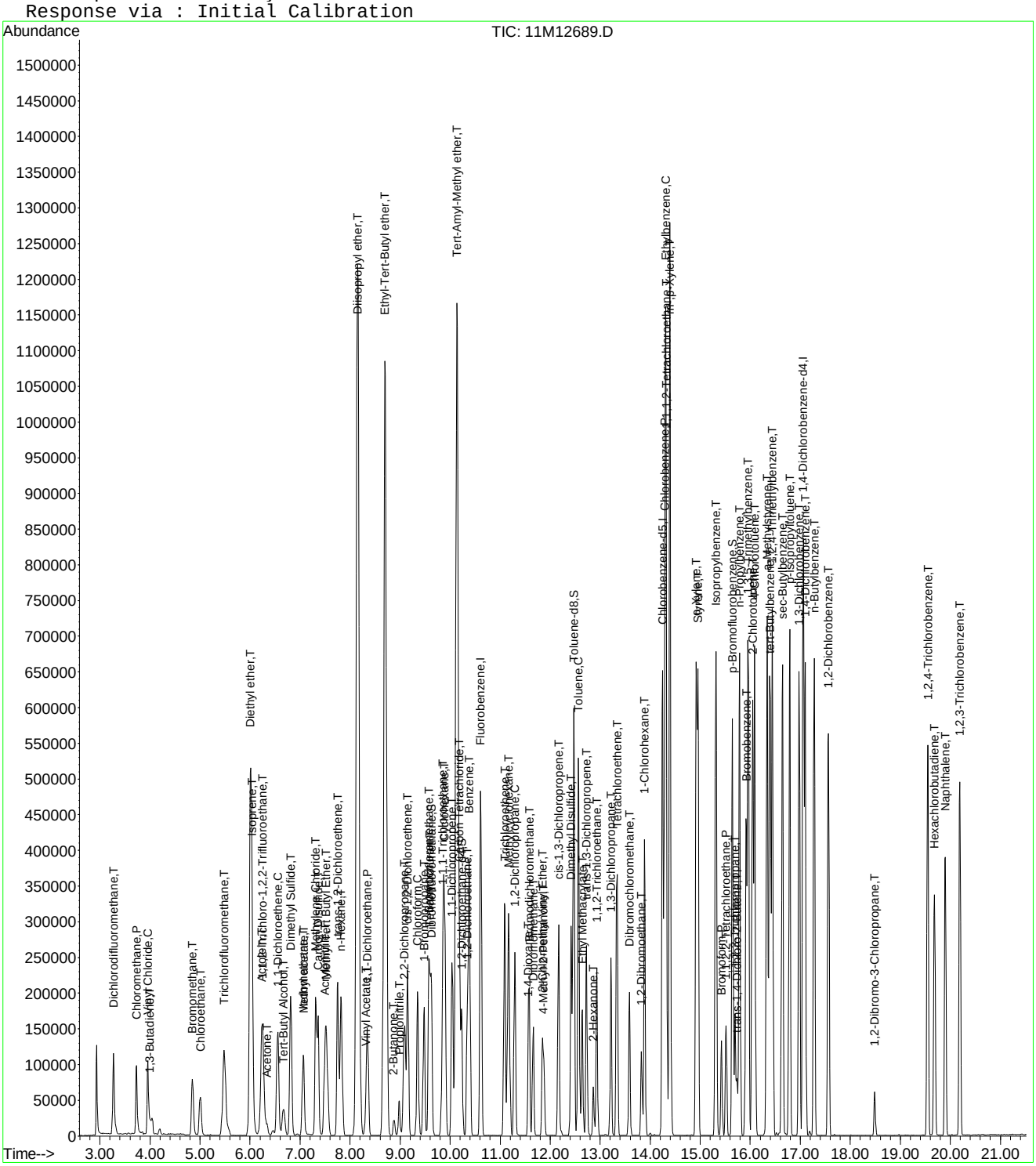

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061716\11M12722.D Vial: 6
Acq On : 17 Jun 2016 18:29 Operator: JDS
Sample : WG573259-03 20ug/L LCS2 STD 8260 Inst : hpms11
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 17 18:51:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	496891	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	434135	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	262941	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	133349	24.5214 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 98.08%		
43) 1,2-Dichloroethane-d4	10.23	65	146133	23.5676 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.28%		
57) Toluene-d8	12.47	98	452400	23.9832 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 95.92%		
78) p-Bromofluorobenzene	15.64	95	209462	25.8422 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.36%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	145695	18.7139 ug/L	96
3) Chloromethane	3.72	50	120090	19.2599 ug/L	100
4) Vinyl Chloride	3.96	62	114478	22.1083 ug/L	99
5) 1,3-Butadiene	3.99	54	3533	0.6862 ug/L #	71
6) Bromomethane	4.85	94	68832	19.3337 ug/L	100
7) Chloroethane	5.00	64	67135	20.1788 ug/L	98
8) Trichlorofluoromethane	5.48	101	216020	20.9306 ug/L	98
9) Diethyl ether	6.01	59	399130	104.5668 ug/L	95
10) Isoprene	6.04	67	126213	19.8403 ug/L	99
11) Acrolein	6.24	56	53300	104.5162 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	101957	20.3589 ug/L	92
13) Acetone	6.34	43	27700	23.4767 ug/L	99
14) 1,1-Dichloroethene	6.56	61	151010	16.6010 ug/L	99
15) Tert-Butyl Alcohol	6.67	59	77514	237.5074 ug/L	100
16) Dimethyl Sulfide	6.81	62	121109	33.3380 ug/L	98
17) Iodomethane	7.06	142	127650	31.6214 ug/L	99
18) Methyl acetate	7.07	43	74329	19.4272 ug/L	95
19) Methylene Chloride	7.31	84	90194	19.1586 ug/L	86
20) Carbon Disulfide	7.36	76	260582	17.1113 ug/L	99
21) Acrylonitrile	7.49	53	34501	21.8088 ug/L	99
22) Methyl Tert Butyl Ether	7.52	73	261552	22.2752 ug/L	95
23) trans-1,2-Dichloroethene	7.74	96	96160	19.1005 ug/L	96
24) n-Hexane	7.82	57	134522	16.0430 ug/L	98
25) Diisopropyl ether	8.15	45	1992360	95.2224 ug/L	97
26) Vinyl Acetate	8.31	43	50677	8.3686 ug/L	99
27) 1,1-Dichloroethane	8.34	63	182725	18.0888 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	1681318	98.7286 ug/L	98
29) 2-Butanone	8.87	43	38469	21.5664 ug/L	95
30) Propionitrile	8.98	54	57987	110.9921 ug/L	98
31) 2,2-Dichloropropane	9.09	77	147643	18.6806 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	110798	19.9602 ug/L	97
33) Chloroform	9.35	83	195344	19.6920 ug/L	100
34) 1-Bromopropane	9.48	122	27137	27.8037 ug/L	98
35) Bromochloromethane	9.57	130	73215	22.2089 ug/L	88
36) Tetrahydrofuran	9.60	42	117072	92.9440 ug/L	93
38) 1,1,1-Trichloroethane	9.85	97	201011	20.5912 ug/L	98
39) Cyclohexane	9.88	56	194415	18.2741 ug/L	97
40) 1,1-Dichloropropene	10.04	75	132628	19.0280 ug/L	100
41) Carbon Tetrachloride	10.17	117	199959	20.9766 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	1286096	108.6840 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M12722.D 8260WT.M Fri Jun 17 18:51:37 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061716\11M12722.D Vial: 6
Acq On : 17 Jun 2016 18:29 Operator: JDS
Sample : WG573259-03 20ug/L LCS2 STD 8260 Inst : hpms11
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 17 18:51:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.34	62	177864	22.0761 ug/L	96
45) Benzene	10.38	78	358965	18.8126 ug/L	100
46) Trichloroethene	11.08	130	138858	22.3890 ug/L	97
47) Methylcyclohexane	11.17	83	148646	19.4204 ug/L	95
48) 1,2-Dichloropropane	11.29	63	104304	19.7474 ug/L	94
49) 1,4-Dioxane	11.56	88	6211	207.6507 ug/L	97
50) Bromodichloromethane	11.57	83	160196	21.6044 ug/L	98
51) Dibromomethane	11.65	93	58063	21.0952 ug/L	97
52) 2-Chloroethyl Vinyl Ether	11.84	63	50309	19.3256 ug/L	100
53) 4-Methyl-2-Pentanone	11.87	58	30690	20.9021 ug/L	94
54) cis-1,3-Dichloropropene	12.17	75	159593	21.5186 ug/L	98
55) Dimethyl Disulfide	12.42	79	89206	19.9882 ug/L	91
58) Toluene	12.56	91	439744	20.0087 ug/L	99
59) Ethyl Methacrylate	12.64	69	100351	21.3837 ug/L	91
60) trans-1,3-Dichloropropene	12.73	75	146484	20.7650 ug/L	97
61) 1,1,2-Trichloroethane	12.94	97	83470	21.4183 ug/L	99
62) 2-Hexanone	12.86	43	53509	18.6949 ug/L	95
63) 1,3-Dichloropropane	13.21	76	139578	22.3029 ug/L	93
64) Tetrachloroethene	13.34	164	103821	20.3139 ug/L	100
65) Dibromochloromethane	13.59	129	138247	23.2574 ug/L	98
66) 1,2-Dibromoethane	13.82	107	86520	22.1589 ug/L	99
67) 1-Chlorohexane	13.89	91	138818	19.1582 ug/L	97
68) Chlorobenzene	14.29	112	338710	21.0376 ug/L	100
69) 1,1,1,2-Tetrachloroethane	14.32	131	139216	21.3696 ug/L	98
70) Ethylbenzene	14.31	106	166732	20.1955 ug/L	99
71) m-,p-Xylene	14.39	106	415997	41.4472 ug/L	100
72) o-Xylene	14.92	106	200134	20.4891 ug/L	96
73) Styrene	14.95	104	346336	21.4607 ug/L	98
74) Bromoform	15.43	173	83395	23.1479 ug/L	96
75) Isopropylbenzene	15.31	105	553337	21.4209 ug/L	99
77) 1,1,2,2-Tetrachloroethane	15.52	83	81485	19.9004 ug/L	99
79) 1,2,3-Trichloropropane	15.70	110	34783	22.8398 ug/L	84
80) trans-1,4-Dichloro-2-Buten	15.73	53	23614	12.5306 ug/L #	42
81) n-Propylbenzene	15.79	91	641818	21.0768 ug/L	98
82) Bromobenzene	15.91	156	164898	20.6366 ug/L	91
83) 1,3,5-Trimethylbenzene	15.95	105	489325	21.0575 ug/L	100
84) 2-Chlorotoluene	16.05	91	451156	21.1525 ug/L	98
85) 4-Chlorotoluene	16.09	91	390243	20.4259 ug/L	99
86) a-Methylstyrene	16.34	118	260859	21.2792 ug/L	98
87) tert-Butylbenzene	16.39	134	109289	22.1990 ug/L	94
88) 1,2,4-Trimethylbenzene	16.44	105	492211	20.8011 ug/L	98
89) sec-Butylbenzene	16.65	105	586961	21.0362 ug/L	100
90) p-Isopropyltoluene	16.79	119	546514	21.3243 ug/L	98
91) 1,3-Dichlorobenzene	16.98	146	326412	21.1507 ug/L	98
92) 1,4-Dichlorobenzene	17.10	146	331169	21.1705 ug/L	99
93) n-Butylbenzene	17.28	91	446987	19.7925 ug/L	98
94) 1,2-Dichlorobenzene	17.57	146	307254	21.8555 ug/L	100
95) 1,2-Dibromo-3-Chloropropan	18.49	75	18399	20.3187 ug/L	98
96) 1,2,4-Trichlorobenzene	19.55	180	215370	20.9360 ug/L	99
97) Hexachlorobutadiene	19.69	225	89045	19.6484 ug/L	98
98) Naphthalene	19.90	128	385753	20.2028 ug/L	99
99) 1,2,3-Trichlorobenzene	20.19	180	200386	21.2249 ug/L	100

(#) = qualifier out of range (m) = manual integration
11M12722.D 8260WT.M Fri Jun 17 18:51:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\1\data\061716\11M12722.D Vial: 6
Acq On : 17 Jun 2016 18:29 Operator: JDS
Sample : WG573259-03 20ug/L LCS2 STD 8260 Inst : hpms11
Misc : 1,1 STD76540 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 17 18:51 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

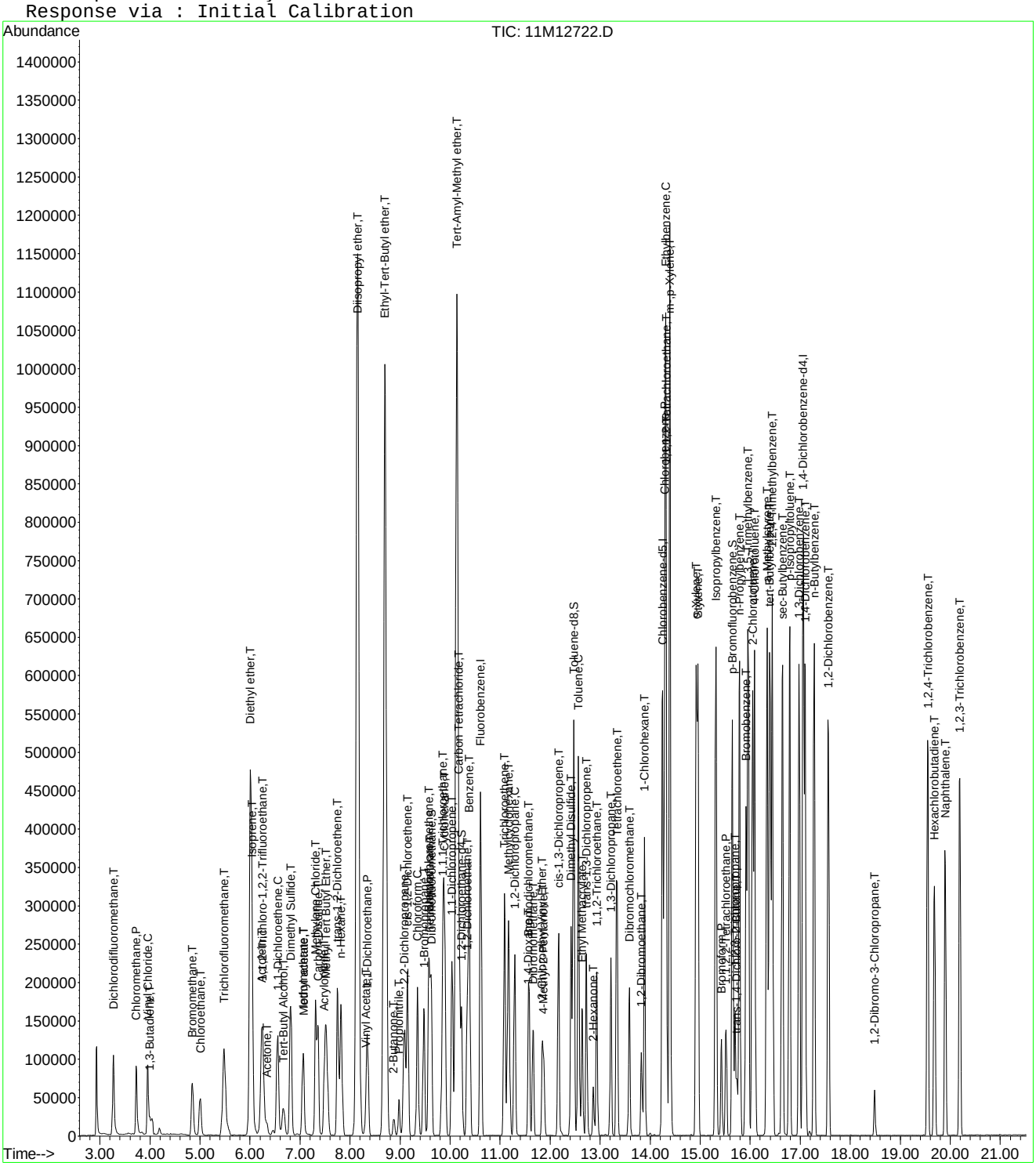

2.2 General Chromatography Data

2.2.1 6850 LC/MS Data

2.2.1.1 Summary Data

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW1-061016	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/22/2016 20:16
Collect Date:	06/10/2016 07:55	**Dilution:**	10000	**File ID:**	1LM.LM35426
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	14800		4000	2000	1000

Certificate of Analysis

Sample #:	L16060650-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW3-061016	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/22/2016 20:35
Collect Date:	06/10/2016 09:05	**Dilution:**	10000	**File ID:**	1LM.LM35427
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	15400		4000	2000	1000

Certificate of Analysis

Sample #:	L16060650-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	17WW08-061016	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/22/2016 21:50
Collect Date:	06/10/2016 10:10	**Dilution:**	1	**File ID:**	1LM.LM35431
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	7.13		0.400	0.200	0.100

Certificate of Analysis

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Sample #:	L16060650-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	130-061016	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/23/2016 12:46
Collect Date:	06/10/2016 11:05	**Dilution:**	50	**File ID:**	1LM.LM35452
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	64.5		20.0	10.0	5.00

Certificate of Analysis

Sample #:	L16060650-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	130FD-061016	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/23/2016 13:05
Collect Date:	06/10/2016 11:05	**Dilution:**	50	**File ID:**	1LM.LM35453
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	62.5		20.0	10.0	5.00

Certificate of Analysis

Sample #:	L16060650-06	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	MW12-061016	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/23/2016 13:23
Collect Date:	06/10/2016 13:30	**Dilution:**	1	**File ID:**	1LM.LM35454
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW24-061016	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/22/2016 23:06
Collect Date:	06/10/2016 14:40	**Dilution:**	1	**File ID:**	1LM.LM35435
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.228	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.2.1.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1401 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG573791-01 MCT	9,940.	
-02 Blank	0.34	
-03 LCS	0.41	
-04 LCS2	0.42	
L16060650-01	2,500.	
-02	1,505.	
-03	839.	
-04	1,830.	
-05	1,832.	
-06	1,104.	
-07	711.	
L16060730-01	4,900.	
-02	4,930.	
-03	10,050.	
L16060732-01	3,060.	
-02	2,940.	
L16060822-01	627.	
-03	1,199.	
-04	901.	
-05	899.	
L16060854-01	3,040.	
L16061180-01	3,020.	

Analyst: John Richards

Date/Time: 06/23/16 13:33

DCN#119262

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

Page: 2 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 062216_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG573791 (waters)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments: All samples were initially analyzed neat or at dilutions based on their historical results.
Samples tagged with (NR) did not conform to their historical results. These samples were reanalyzed on the end of the sequence, either neat or at a dilution, based on the results of their initial analysis.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35415	WG573797-01 CCB	1	1		06/22/16 16:48
2	1LM.LM35416	WG573797-02 CCV (1.0ug/L)	1	1	STD75510	06/22/16 17:06
3	1LM.LM35417	WG573791-05 MRL (0.2ug/L)	1	1	STD75510	06/22/16 17:25
4	1LM.LM35418	WG573791-01 MCT (0.2ug/L)	1	1	STD75512	06/22/16 17:44
5	1LM.LM35419	WG573791-02 BLANK	1	1		06/22/16 18:03
6	1LM.LM35420	WG573791-03 LCS (0.2ug/L)	1	1	STD75512	06/22/16 18:22
7	1LM.LM35421	WG573791-04 LCS2 (0.2ug/L)	1	1	STD75512	06/22/16 18:41
8	1LM.LM35422	L16061180-01	1	1		06/22/16 19:00
9	1LM.LM35423	L16060732-01	1	1		06/22/16 19:19
10	1LM.LM35424	L16060732-02	1	1		06/22/16 19:38
11	1LM.LM35425	L16060854-01	1	1		06/22/16 19:57
12	1LM.LM35426	L16060650-01 (10,000x)	1	10000		06/22/16 20:16
13	1LM.LM35427	L16060650-02 (10,000x)	1	10000		06/22/16 20:35
14	1LM.LM35428	WG573797-03 CCV (1.0ug/L)	1	1	STD75510	06/22/16 20:54
15	1LM.LM35429	WG573791-06 MRL (0.2ug/L)	1	1	STD75510	06/22/16 21:13
16	1LM.LM35430	WG573797-04 CCB	1	1		06/22/16 21:31
17	1LM.LM35431	L16060650-03	1	1		06/22/16 21:50
18	1LM.LM35432	L16060650-04 (5,000x) (NR)	1	5000		06/22/16 22:09
19	1LM.LM35433	L16060650-05 (5,000x) (NR)	1	5000		06/22/16 22:28
20	1LM.LM35434	L16060650-06 (100x) (NR)	1	100		06/22/16 22:47
21	1LM.LM35435	L16060650-07	1	1		06/22/16 23:06
22	1LM.LM35436	L16060730-01 (50x) (NR)	1	50		06/22/16 23:25
23	1LM.LM35437	L16060730-02 (50x) (NR)	1	50		06/22/16 23:44
24	1LM.LM35438	L16060730-03 (50x)	1	50		06/23/16 00:03
25	1LM.LM35439	WG573797-05 CCV (1.0ug/L)	1	1	STD75510	06/23/16 00:22
26	1LM.LM35440	WG573791-07 MRL (0.2ug/L)	1	1	STD75510	06/23/16 00:41
27	1LM.LM35441	WG573797-06 CCB	1	1		06/23/16 01:00
28	1LM.LM35442	L16060822-01	1	1		06/23/16 01:19
29	1LM.LM35443	L16060822-03	1	1		06/23/16 01:38
30	1LM.LM35444	L16060822-04 (NR)	1	1		06/23/16 01:57
31	1LM.LM35445	L16060822-05 (NR)	1	1		06/23/16 02:16
32	1LM.LM35446	WG573797-07 CCV (1.0ug/L)	1	1	STD75510	06/23/16 02:34
33	1LM.LM35447	WG573791-08 MRL (0.2ug/L)	1	1	STD75510	06/23/16 02:53

Page: 1 Approved: 24-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 062216_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG573791 (waters)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 NA

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM35448	WG573797-08 CCB	1	1		06/23/16 03:12
35	1LM.LM35449	WG573797-09 CCV (1.0ug/L)	1	1	STD75510	06/23/16 11:49
36	1LM.LM35450	WG573791-09 MRL (0.2ug/L)	1	1	STD75510	06/23/16 12:08
37	1LM.LM35451	WG573797-10 CCB	1	1		06/23/16 12:27
38	1LM.LM35452	L16060650-04 (RR 50x)	1	50		06/23/16 12:46
39	1LM.LM35453	L16060650-05 (RR 50x)	1	50		06/23/16 13:05
40	1LM.LM35454	L16060650-06 (RR Neat)	1	1		06/23/16 13:23
41	1LM.LM35455	L16060730-01 (RR 500x)	1	500		06/23/16 13:42
42	1LM.LM35456	L16060730-02 (RR 500x)	1	500		06/23/16 14:01
43	1LM.LM35457	L16060822-04 (RR 1000x)	1	1000		06/23/16 14:20
44	1LM.LM35458	L16060822-05 (RR 1000x)	1	1000		06/23/16 14:39
45	1LM.LM35459	WG573797-11 CCV (1.0ug/L)	1	1	STD75510	06/23/16 14:58
46	1LM.LM35460	WG573791-10 MRL (0.2ug/L)	1	1	STD75510	06/23/16 15:17
47	1LM.LM35461	WG573797-12 CCB	1	1		06/23/16 15:36

Comments

Seq.	Rerun	Dil.	Reason	Analytes

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Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 04-MAY-2016 John Richards

Secondary Reviewer: 05-MAY-2016 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 22-JUN-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 75891
Analytical Workgroups: L16060650, 0730, 0732, 0822, 0854, 1180

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 24-JUN-2016 John Richards

Secondary Reviewer: 24-JUN-2016 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-24-2016 11:54:16

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG573791

Login Number: L16060650

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW1-061016	01	06/10/16					06/22/2016	12.3	28		06/22/16	.2	28	
MW3-061016	02	06/10/16					06/22/2016	12.3	28		06/22/16	.2	28	
17WW08-061016	03	06/10/16					06/22/2016	12.2	28		06/22/16	.2	28	
130-061016	04	06/10/16					06/22/2016	12.2	28		06/23/16	.9	28	
130FD-061016	05	06/10/16					06/22/2016	12.2	28		06/23/16	.9	28	
MW12-061016	06	06/10/16					06/22/2016	12.1	28		06/23/16	.9	28	
18WW24-061016	07	06/10/16					06/22/2016	12.1	28		06/22/16	.3	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4822411
Report generated 06/27/2016 15:51

METHOD BLANK SUMMARY

Login Number: L16060650
Blank File ID: 1LM.LM35419
Prep Date: 06/22/16 16:00
Analyzed Date: 06/22/16 18:03
Analyst: JWR

Work Group: WG573791
Blank Sample ID: WG573791-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG573791-05	1LM.LM35417	06/22/16 17:25	01
MCT	WG573791-01	1LM.LM35418	06/22/16 17:44	01
LCS	WG573791-03	1LM.LM35420	06/22/16 18:22	01
LCS2	WG573791-04	1LM.LM35421	06/22/16 18:41	01
MW1-061016	L16060650-01	1LM.LM35426	06/22/16 20:16	DL01
MW3-061016	L16060650-02	1LM.LM35427	06/22/16 20:35	DL01
QCMRL	WG573791-06	1LM.LM35429	06/22/16 21:13	01
17WW08-061016	L16060650-03	1LM.LM35431	06/22/16 21:50	01
18WW24-061016	L16060650-07	1LM.LM35435	06/22/16 23:06	01
QCMRL	WG573791-07	1LM.LM35440	06/23/16 00:41	01
QCMRL	WG573791-08	1LM.LM35447	06/23/16 02:53	01
QCMRL	WG573791-09	1LM.LM35450	06/23/16 12:08	01
130-061016	L16060650-04	1LM.LM35452	06/23/16 12:46	DL01
130FD-061016	L16060650-05	1LM.LM35453	06/23/16 13:05	DL01
MW12-061016	L16060650-06	1LM.LM35454	06/23/16 13:23	01
QCMRL	WG573791-10	1LM.LM35460	06/23/16 15:17	01

Report Name: BLANK_SUMMARY
PDF File ID: 4822412
Report generated 06/27/2016 15:51

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060650 Prep Date: 06/22/16 16:00 Sample ID: WG573791-02
Instrument ID: LCMS1 Run Date: 06/22/16 18:03 Prep Method: 6850
File ID: 1LM.LM35419 Analyst: JWR Method: 6850
Workgroup (AAB#): WG573791 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4822413
27-JUN-2016 15:51

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060650 Analyst: JWR Prep Method: 6850
Instrument ID: LCMS1 Matrix: Water Method: 6850
Workgroup (AAB#): WG573791 Units: ug/L
QC Key: DOD4 Lot #: STD75512

Sample ID: WG573791-03 LCS File ID: 1LM.LM35420 Run Date: 06/22/2016 18:22
Sample ID: WG573791-04 LCS2 File ID: 1LM.LM35421 Run Date: 06/22/2016 18:41

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Perchlorate	0.200	0.201	101	0.200	0.215	108	6.73	80 - 120	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4822414
Report generated: 06/27/2016 15:51

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060650
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4822543
Report generated 06/27/2016 15:51

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060650

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4822543
Report generated 06/27/2016 15:51

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060650

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4822543
Report generated 06/27/2016 15:51

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060650

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008

PDF File ID: 4822543

Report generated 06/27/2016 15:51

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060650 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4822544
Report generated 06/27/2016 15:52

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/22/2016
Sample ID: WG573797-01
Instrument ID: LCMS1
Run Time: 16:48
Method: 6850
File ID: 1LM.LM35415
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822417
Report generated 06/27/2016 15:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/22/2016
Sample ID: WG573797-04
Instrument ID: LCMS1
Run Time: 21:31
Method: 6850
File ID: 1LM.LM35430
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822417
Report generated 06/27/2016 15:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573797-06
Instrument ID: LCMS1
Run Time: 01:00
Method: 6850
File ID: 1LM.LM35441
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822417
Report generated 06/27/2016 15:52

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573797-08
Instrument ID: LCMS1
Run Time: 03:12
Method: 6850
File ID: 1LM.LM35448
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822417
Report generated 06/27/2016 15:52

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573797-10
Instrument ID: LCMS1
Run Time: 12:27
Method: 6850
File ID: 1LM.LM35451
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822417
Report generated 06/27/2016 15:52

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573797-12
Instrument ID: LCMS1
Run Time: 15:36
Method: 6850
File ID: 1LM.LM35461
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822417
Report generated 06/27/2016 15:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/22/2016
Sample ID: WG573797-02
Instrument ID: LCMS1
Run Time: 17:06
Method: 6850
File ID: 1LM.LM35416
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.997	ug/L	1.68	0.300	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822416
Report generated 06/27/2016 15:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/22/2016
Sample ID: WG573797-03
Instrument ID: LCMS1
Run Time: 20:54
Method: 6850
File ID: 1LM.LM35428
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.75	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822416
Report generated 06/27/2016 15:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573797-05
Instrument ID: LCMS1
Run Time: 00:22
Method: 6850
File ID: 1LM.LM35439
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.74	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822416
Report generated 06/27/2016 15:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573797-07
Instrument ID: LCMS1
Run Time: 02:34
Method: 6850
File ID: 1LM.LM35446
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.75	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822416
Report generated 06/27/2016 15:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573797-09
Instrument ID: LCMS1
Run Time: 11:49
Method: 6850
File ID: 1LM.LM35449
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.71	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822416
Report generated 06/27/2016 15:52

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573797-11
Instrument ID: LCMS1
Run Time: 14:58
Method: 6850
File ID: 1LM.LM35459
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.05	ug/L	1.77	5.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822416
Report generated 06/27/2016 15:52

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060650 Run Date: 06/22/2016 Sample ID: WG573791-05
Instrument ID: LCMS1 Run Time: 17:25 Prep Method: 6850
File ID: 1LM.LM35417 Analyst: JWR Method: 6850
Workgroup (AAB#): WG573791 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4822415
Report generated 06/27/2016 15:51

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060650 Run Date: 06/22/2016 Sample ID: WG573791-06
Instrument ID: LCMS1 Run Time: 21:13 Prep Method: 6850
File ID: 1LM.LM35429 Analyst: JWR Method: 6850
Workgroup (AAB#): WG573791 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.204	102	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4822415
Report generated 06/27/2016 15:51

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060650 Run Date: 06/23/2016 Sample ID: WG573791-07
Instrument ID: LCMS1 Run Time: 00:41 Prep Method: 6850
File ID: 1LM.LM35440 Analyst: JWR Method: 6850
Workgroup (AAB#): WG573791 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.210	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4822415
Report generated 06/27/2016 15:51

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060650 Run Date: 06/23/2016 Sample ID: WG573791-08
Instrument ID: LCMS1 Run Time: 02:53 Prep Method: 6850
File ID: 1LM.LM35447 Analyst: JWR Method: 6850
Workgroup (AAB#): WG573791 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.214	107	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4822415
Report generated 06/27/2016 15:51

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060650 Run Date: 06/23/2016 Sample ID: WG573791-09
Instrument ID: LCMS1 Run Time: 12:08 Prep Method: 6850
File ID: 1LM.LM35450 Analyst: JWR Method: 6850
Workgroup (AAB#): WG573791 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.209	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4822415
Report generated 06/27/2016 15:51

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060650 Run Date: 06/23/2016 Sample ID: WG573791-10
Instrument ID: LCMS1 Run Time: 15:17 Prep Method: 6850
File ID: 1LM.LM35460 Analyst: JWR Method: 6850
Workgroup (AAB#): WG573791 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.201	101	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4822415
Report generated 06/27/2016 15:51

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16060650
Instrument ID: LCMS1
Workgroup (AAB#): WG573791

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16060650-01	10000	DL01	440000
L16060650-02	10000	DL01	461000
L16060650-03	1.00	01	375000
L16060650-04	50.0	DL01	418000
L16060650-05	50.0	DL01	430000
L16060650-06	1.00	01	354000
L16060650-07	1.00	01	472000
WG573791-02	1.00	01	436000
WG573791-03	1.00	01	440000
WG573791-04	1.00	01	435000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4822418
Report generated 06/27/2016 15:52

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**	6850	**Samplenum:**	L16060650-01
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35426
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 20:16	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	219000	77900	2.81	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**	6850	**Samplenum:**	L16060650-02
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35427
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 20:35	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	239000	83100	2.88	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**	6850	**Samplenum:**	L16060650-03
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35431
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 21:50	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	901000	310000	2.91	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**	6850	**Samplenum:**	L16060650-04
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35452
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 12:46	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	182000	62800	2.90	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**	6850	**Samplenum:**	L16060650-05
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35453
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 13:05	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	181000	61000	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**	6850	**Samplenum:**	L16060650-06
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35454
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 13:23	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	24200	9100	2.66	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**	6850	**Samplenum:**	L16060650-07
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35435
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 23:06	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36800	12400	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**	6850	**Samplenum:**	WG573791-01
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35418
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 17:44	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	28500	10000	2.85	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**	6850	**Samplenum:**	WG573791-02
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35419
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 18:03	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	505	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**	6850	**Samplenum:**	WG573791-03
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35420
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 18:22	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	30300	11500	2.63	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**	6850	**Samplenum:**	WG573791-04
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35421
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 18:41	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32000	11500	2.78	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**	6850	**Samplenum:**	WG573791-05
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35417
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 17:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	31200	11200	2.79	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**	6850	**Samplenum:**	WG573791-06
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35429
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 21:13	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34500	12500	2.76	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**	6850	**Samplenum:**	WG573791-07
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35440
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 00:41	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36700	12900	2.84	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**	6850	**Samplenum:**	WG573791-08
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35447
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 02:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34800	11700	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**	6850	**Samplenum:**	WG573791-09
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35450
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 12:08	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	30500	11000	2.77	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**	6850	**Samplenum:**	WG573791-10
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35460
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 15:17	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32000	12700	2.52	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**		**Samplenum:**	WG573797-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35415
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 16:48	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	583	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**		**Samplenum:**	WG573797-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35416
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 17:06	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	151000	54200	2.79	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**		**Samplenum:**	WG573797-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35428
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 20:54	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	172000	61400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**		**Samplenum:**	WG573797-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35430
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 21:31	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	223	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**		**Samplenum:**	WG573797-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35439
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 00:22	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	176000	61500	2.86	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**		**Samplenum:**	WG573797-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35441
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 01:00	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**		**Samplenum:**	WG573797-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35446
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 02:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	58500	2.89	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**		**Samplenum:**	WG573797-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35448
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 03:12	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**		**Samplenum:**	WG573797-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35449
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 11:49	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	142000	50700	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**		**Samplenum:**	WG573797-10
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35451
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 12:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	560	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**		**Samplenum:**	WG573797-11
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35459
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 14:58	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	167000	56000	2.98	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060650	**Prep Method:**		**Samplenum:**	WG573797-12
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35461
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 15:36	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

2.2.1.3 Sample Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/23/2016 4:56 PM

Data File	LM35426.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 8:16:15 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060650-01 (10,000x)	**Injection Vial**	12.00
Data File	LM35426.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 8:16:15 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	L16060650-01	**Dilution Factor**	1.00
Sample Comment	1,10000 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.400e+05	9.42	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.190e+05	9.43	N/A	1.48
Perchlorate conf	7.790e+04	9.41	N/A	1.57

O18LP (Internal Standard)

RT (Exp. RT): 9.42(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

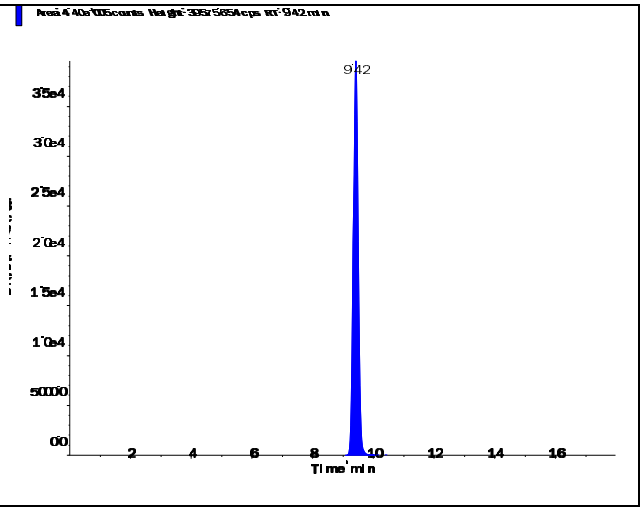

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/23/2016 4:56 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.43 (9.84) min
Calculated conc:	1.48 ng/ml
Area Ratio:	0.498
Sample Type:	(Unknown)

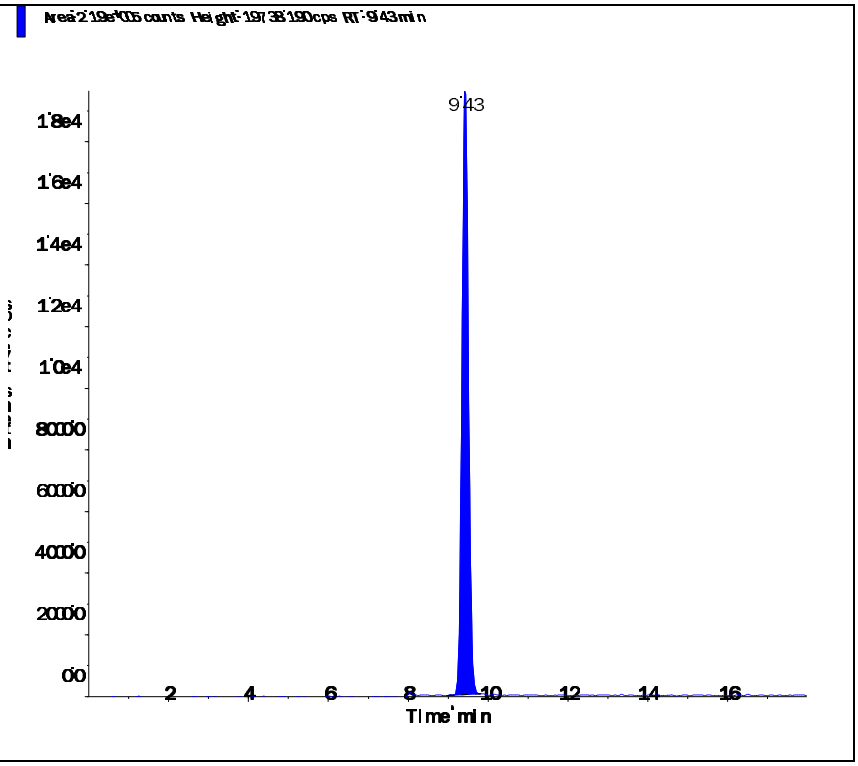

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.41 (9.84) min
Calculated conc:	1.57 ng/ml
Area Ratio:	0.177
Sample Type:	(Unknown)

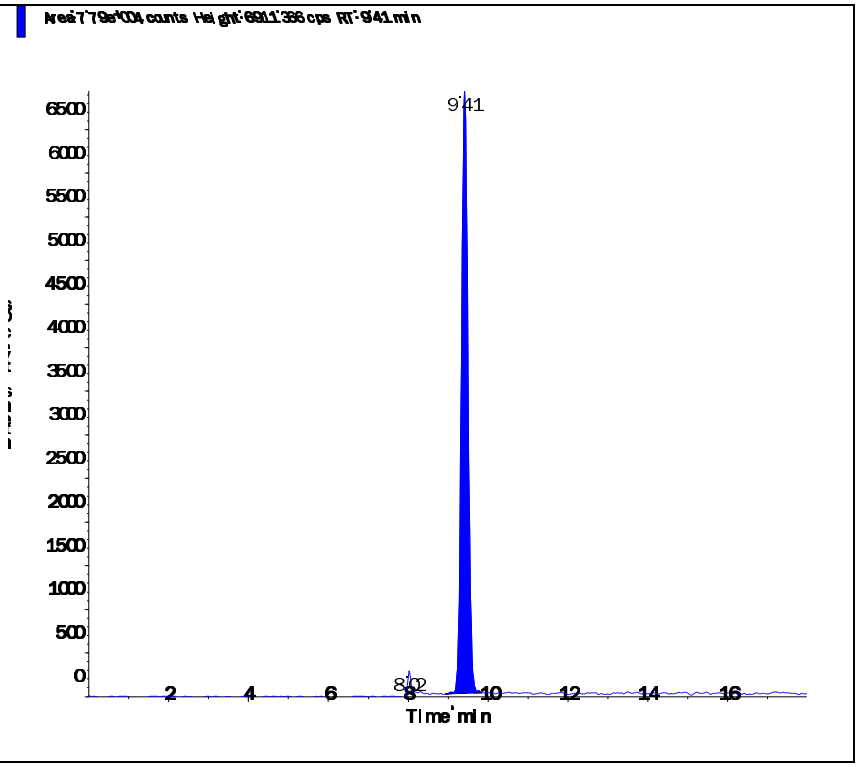

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/23/2016 4:57 PM

Data File	LM35427.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 8:35:11 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060650-02 (10,000x)	**Injection Vial**	13.00
Data File	LM35427.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 8:35:11 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	L16060650-02	**Dilution Factor**	1.00
Sample Comment	1,10000 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.610e+05	9.42	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.390e+05	9.44	N/A	1.54
Perchlorate conf	8.310e+04	9.42	N/A	1.60

O18LP (Internal Standard)

RT (Exp. RT): 9.42(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

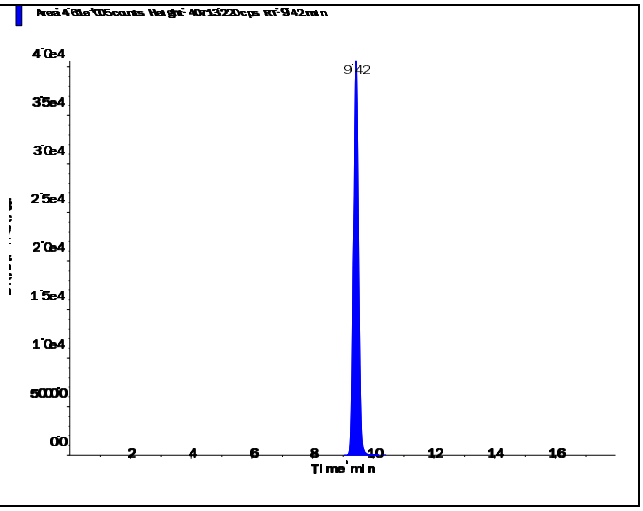

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.44 (9.84) min
Calculated conc:	1.54 ng/ml
Area Ratio:	0.52
Sample Type:	(Unknown)

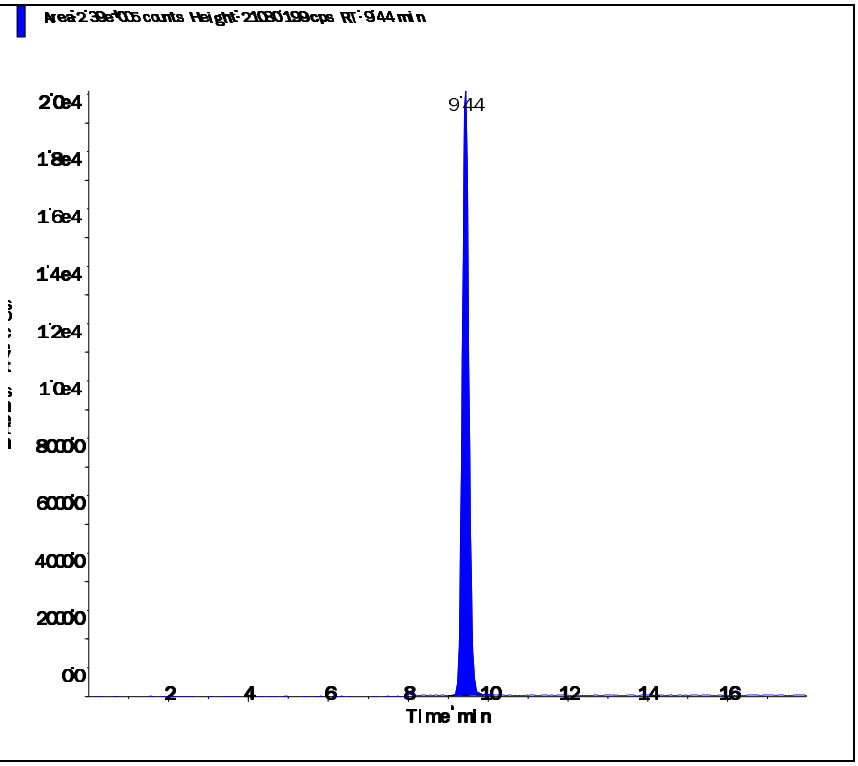

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.42 (9.84) min
Calculated conc:	1.60 ng/ml
Area Ratio:	0.18
Sample Type:	(Unknown)

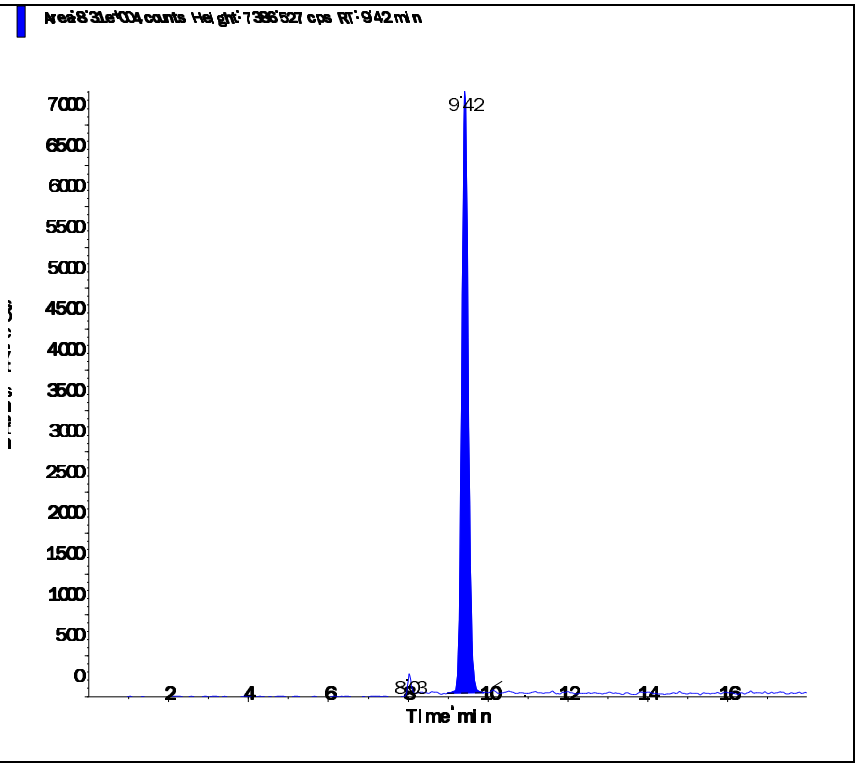

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Data File	LM35431.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 9:50:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060650-03	**Injection Vial**	14.00
Data File	LM35431.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 9:50:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	L16060650-03	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.750e+05	9.17	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	9.010e+05	9.18	N/A	7.13
Perchlorate conf	3.100e+05	9.17	N/A	7.38

O18LP (Internal Standard)

RT (Exp. RT): 9.17(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

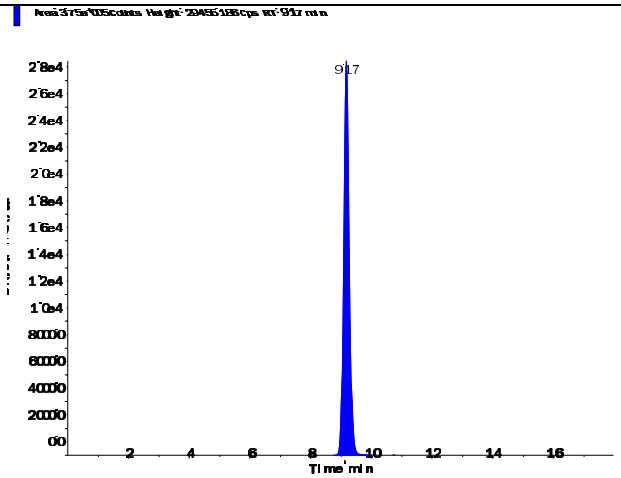

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.18 (9.84) min Calculated conc: 7.13 ng/ml Area Ratio: 2.401 Sample Type: (Unknown)	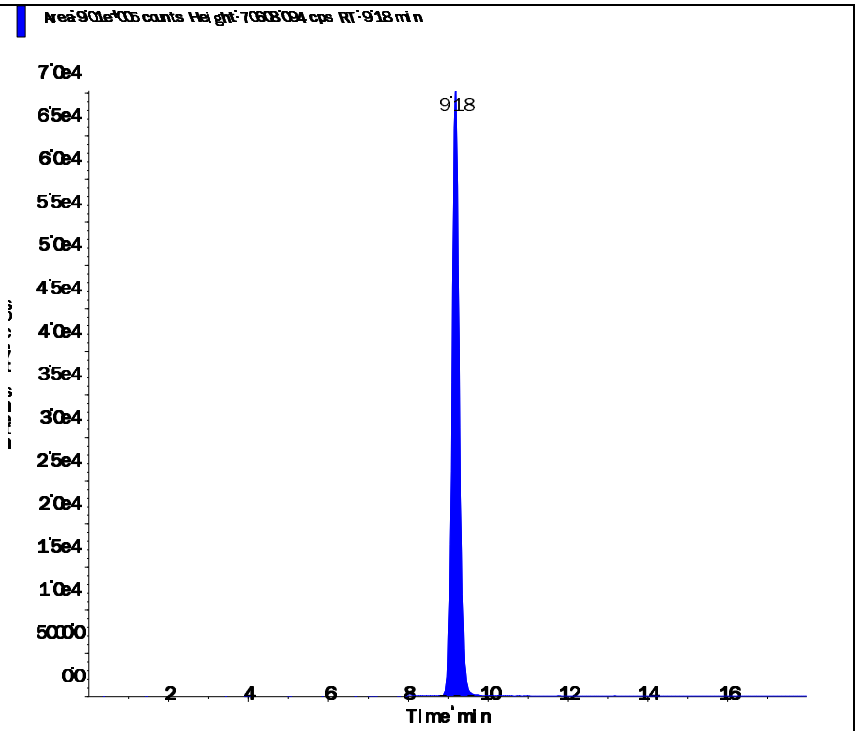
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.17 (9.84) min Calculated conc: 7.38 ng/ml Area Ratio: 0.826 Sample Type: (Unknown)	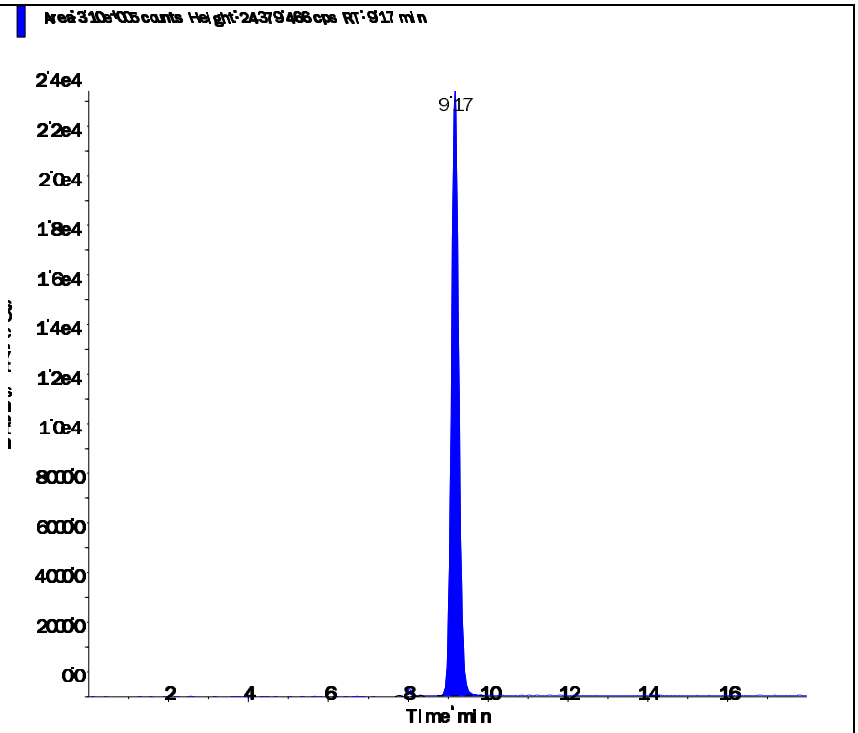

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Data File	LM35452.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 12:46:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060650-04 (RR 50x)	**Injection Vial**	26.00
Data File	LM35452.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 12:46:06 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	L16060650-04	**Dilution Factor**	1.00
Sample Comment	150.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.180e+05	9.50	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.820e+05	9.51	N/A	1.29
Perchlorate conf	6.280e+04	9.49	N/A	1.33

O18LP (Internal Standard)

RT (Exp. RT): 9.50(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

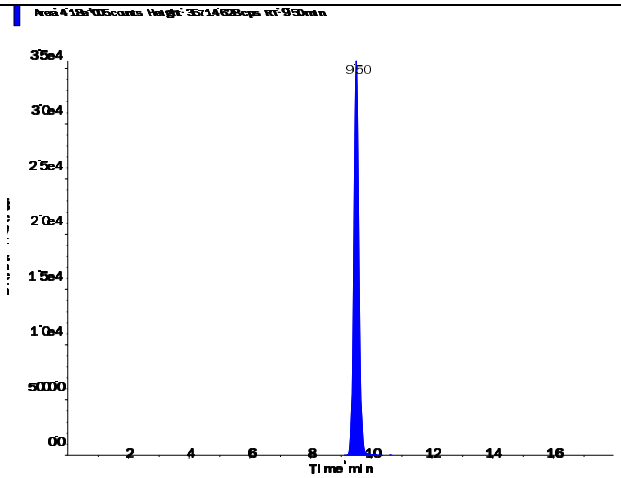

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.51 (9.84) min
Calculated conc:	1.29 ng/ml
Area Ratio:	0.435
Sample Type:	(Unknown)

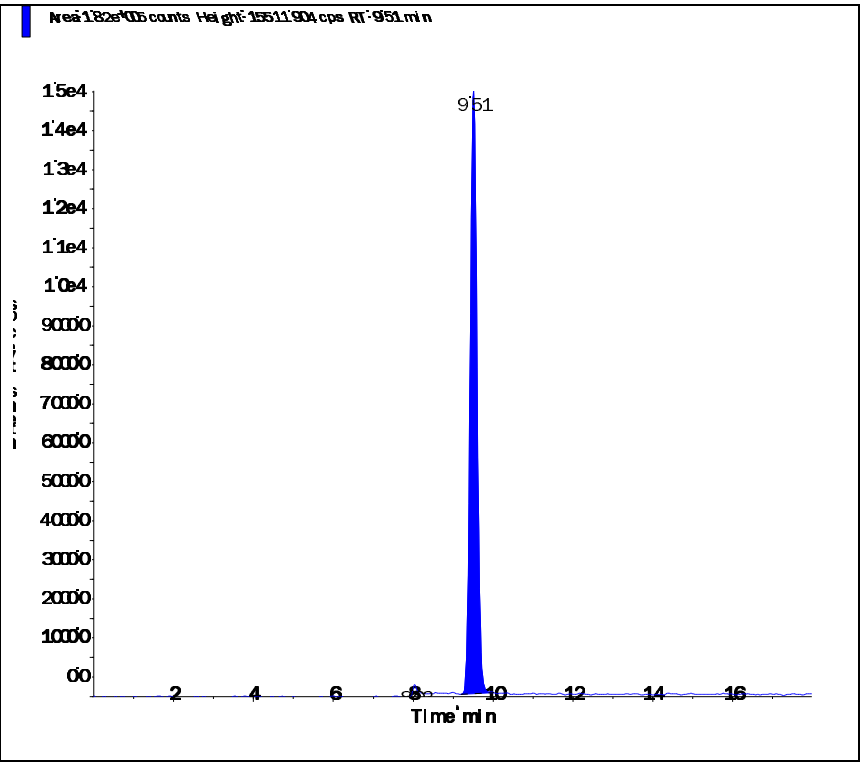

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.49 (9.84) min
Calculated conc:	1.33 ng/ml
Area Ratio:	0.15
Sample Type:	(Unknown)

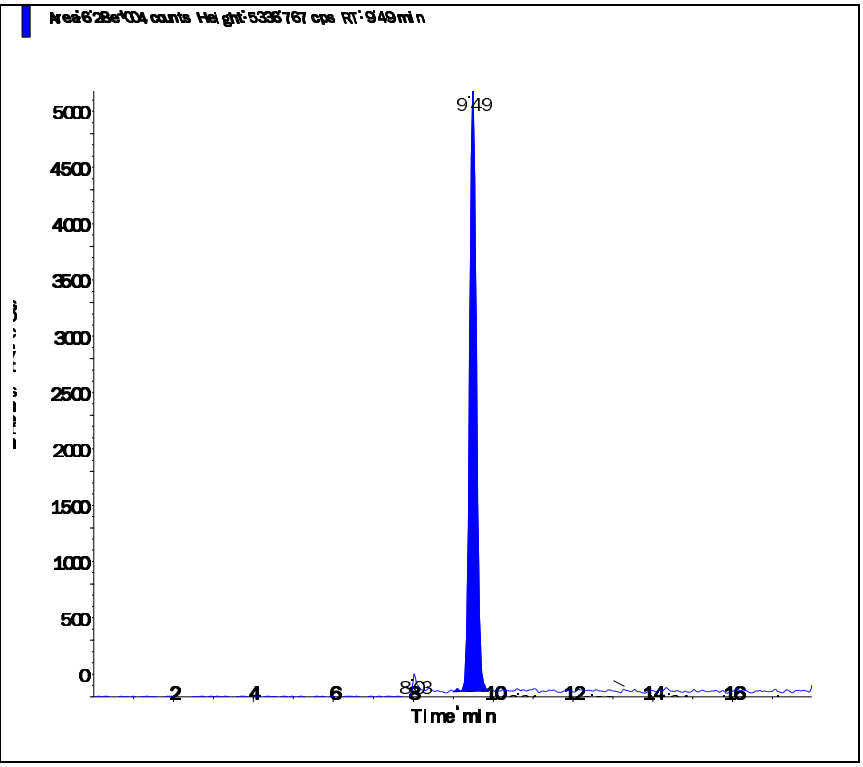

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Data File	LM35453.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 1:05:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060650-05 (RR 50x)	**Injection Vial**	27.00
Data File	LM35453.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 1:05:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	L16060650-05	**Dilution Factor**	1.00
Sample Comment	150.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.300e+05	9.50	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.810e+05	9.51	N/A	1.25
Perchlorate conf	6.100e+04	9.50	N/A	1.25

O18LP (Internal Standard)

RT (Exp. RT): 9.50(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

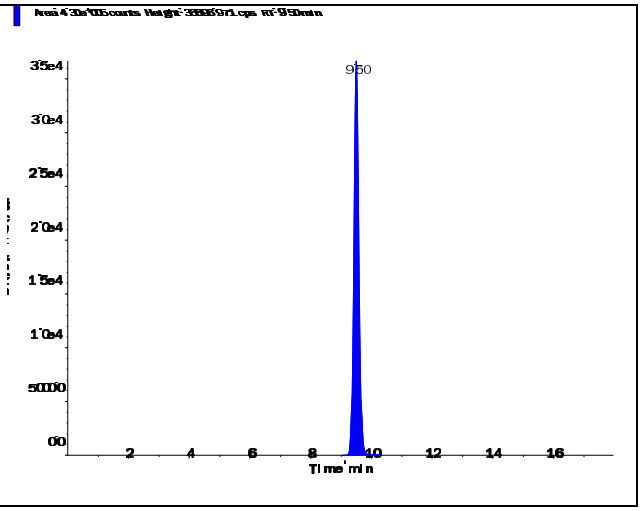

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.51 (9.84) min
Calculated conc:	1.25 ng/ml
Area Ratio:	0.42
Sample Type:	(Unknown)

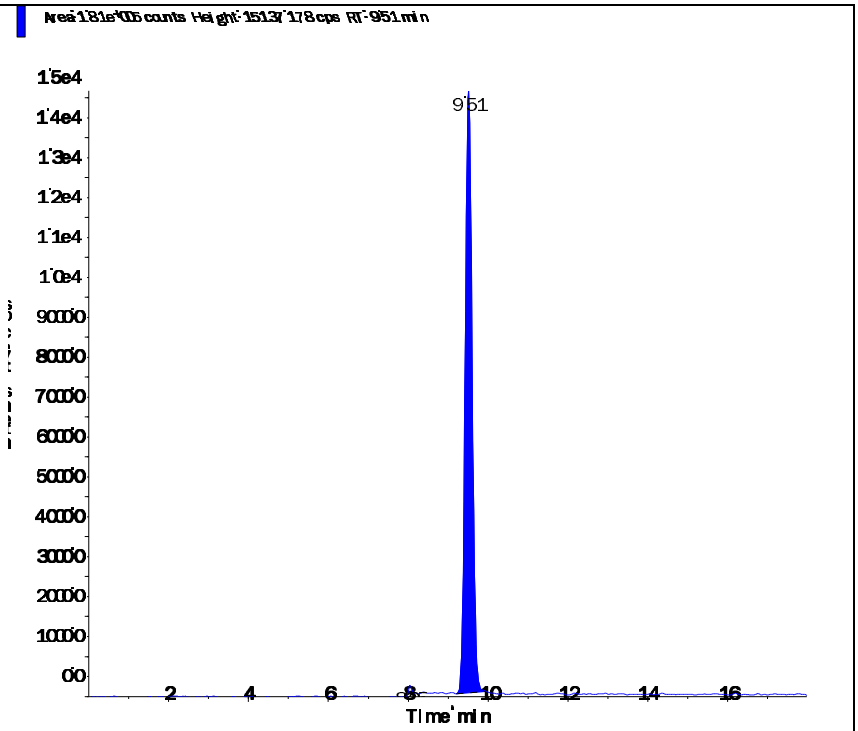

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.50 (9.84) min
Calculated conc:	1.25 ng/ml
Area Ratio:	0.142
Sample Type:	(Unknown)

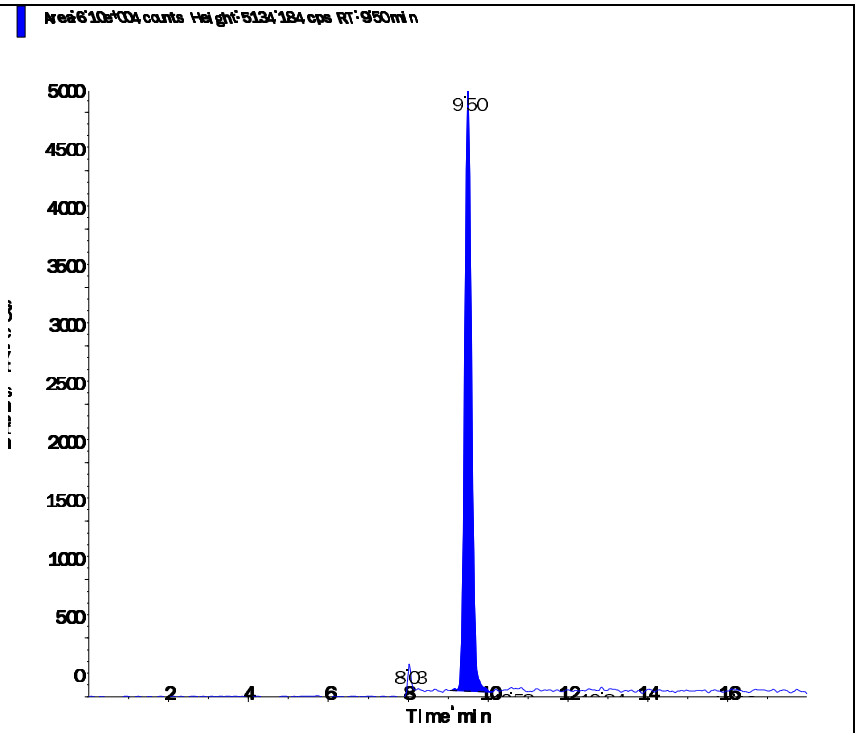

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Data File	LM35454.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 1:23:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060650-06 (RR Neat)	**Injection Vial**	28.00
Data File	LM35454.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 1:23:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	L16060650-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.540e+05	9.20	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.420e+04	9.22	N/A	0.20
Perchlorate conf	9.100e+03	9.20	N/A	0.21

O18LP (Internal Standard)

RT (Exp. RT): 9.20(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

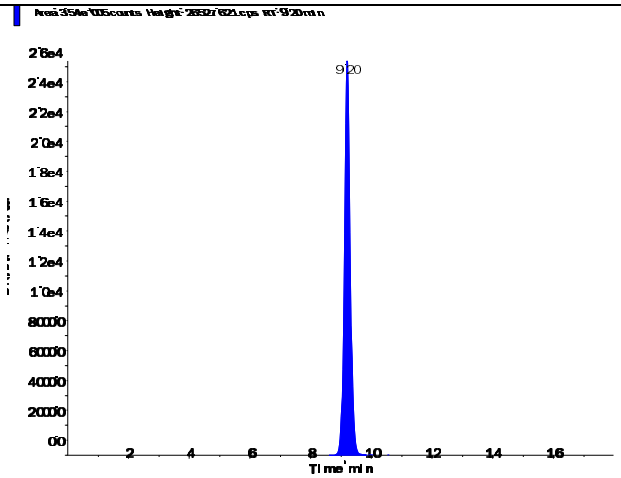

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.22 (9.84) min
Calculated conc:	0.20 ng/ml
Area Ratio:	0.068
Sample Type:	(Unknown)

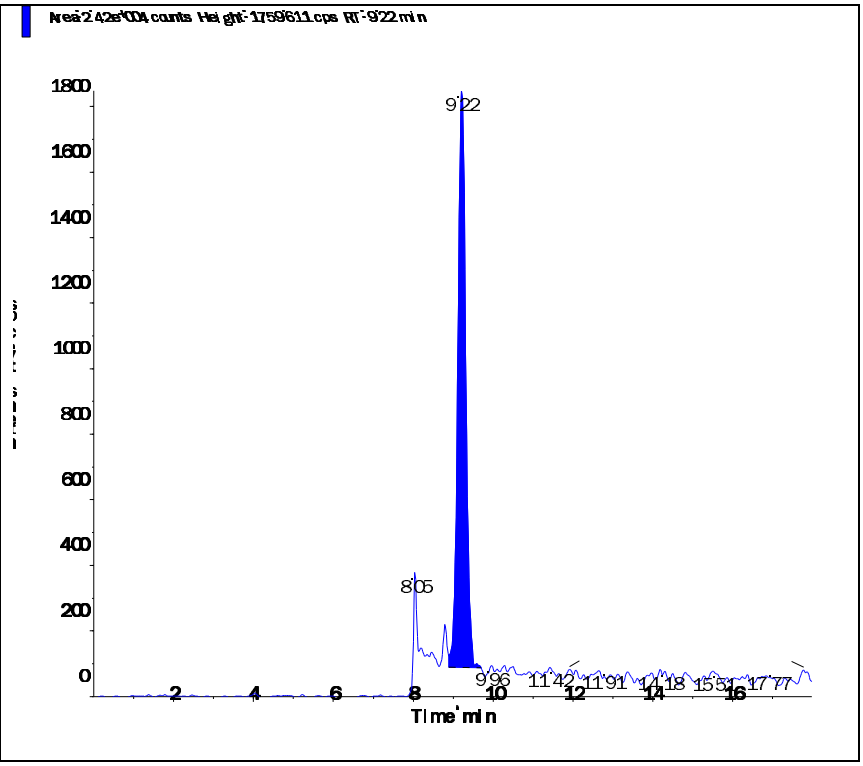

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.20 (9.84) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

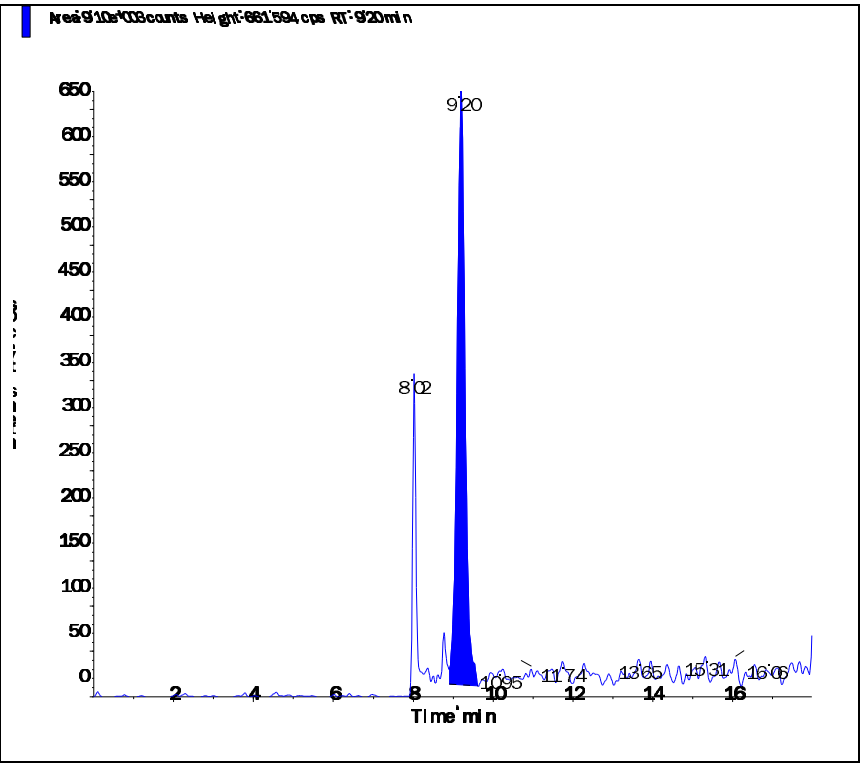

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Data File	LM35435.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 11:06:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060650-07	**Injection Vial**	18.00
Data File	LM35435.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 11:06:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	L16060650-07	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.720e+05	9.29	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.680e+04	9.31	N/A	0.228
Perchlorate conf	1.240e+04	9.29	N/A	0.216

O18LP (Internal Standard)

RT (Exp. RT): 9.29(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

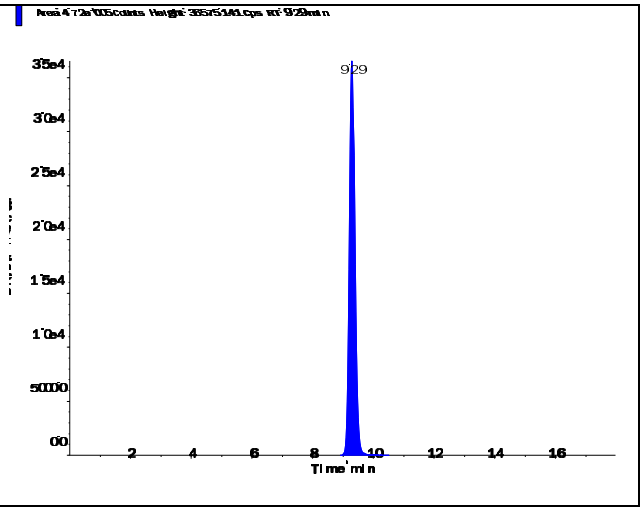

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.31 (9.84) min
Calculated conc:	0.228 ng/ml
Area Ratio:	0.078
Sample Type:	(Unknown)

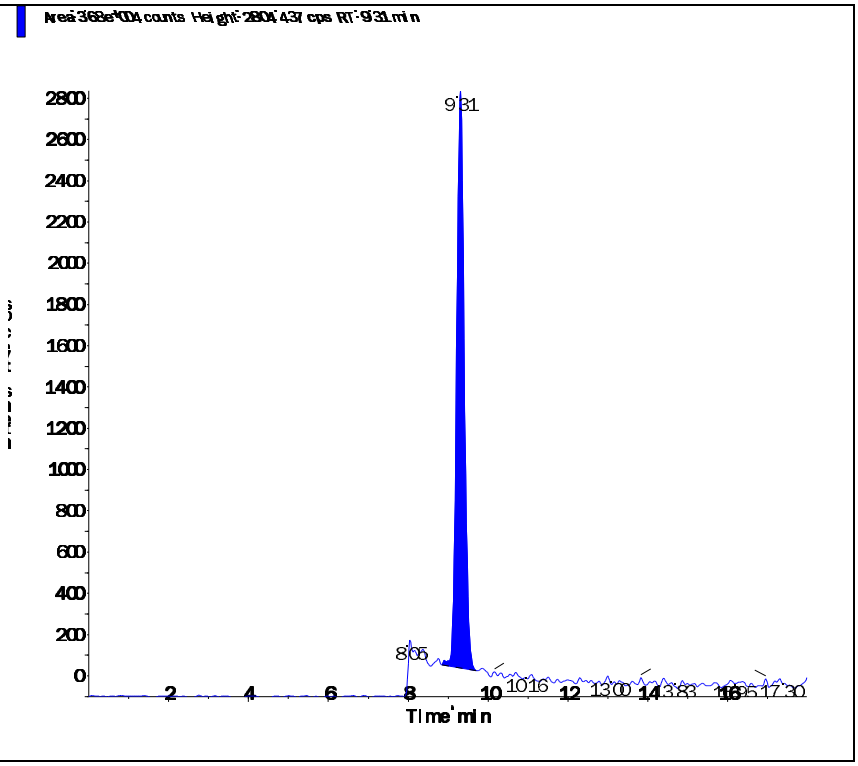

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.29 (9.84) min
Calculated conc:	0.216 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

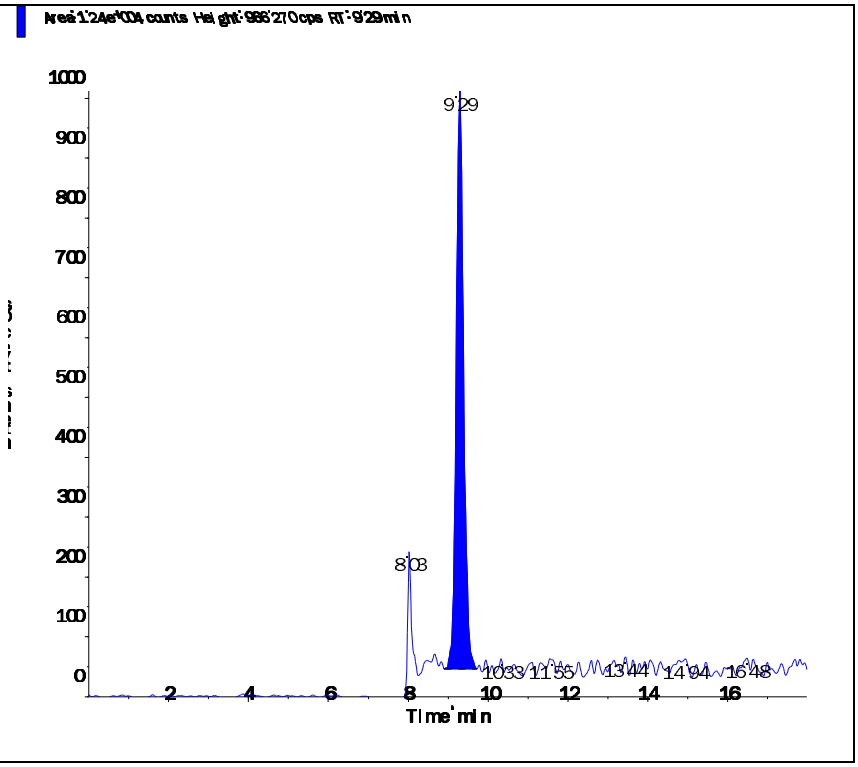

2.2.1.4 Standards Data

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Data File	LM34686.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

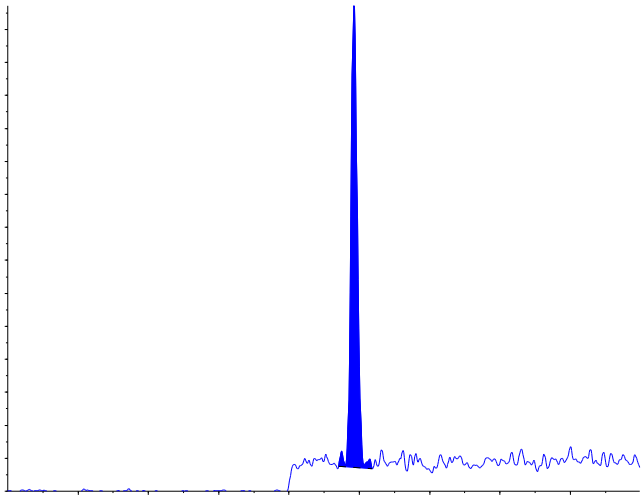

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

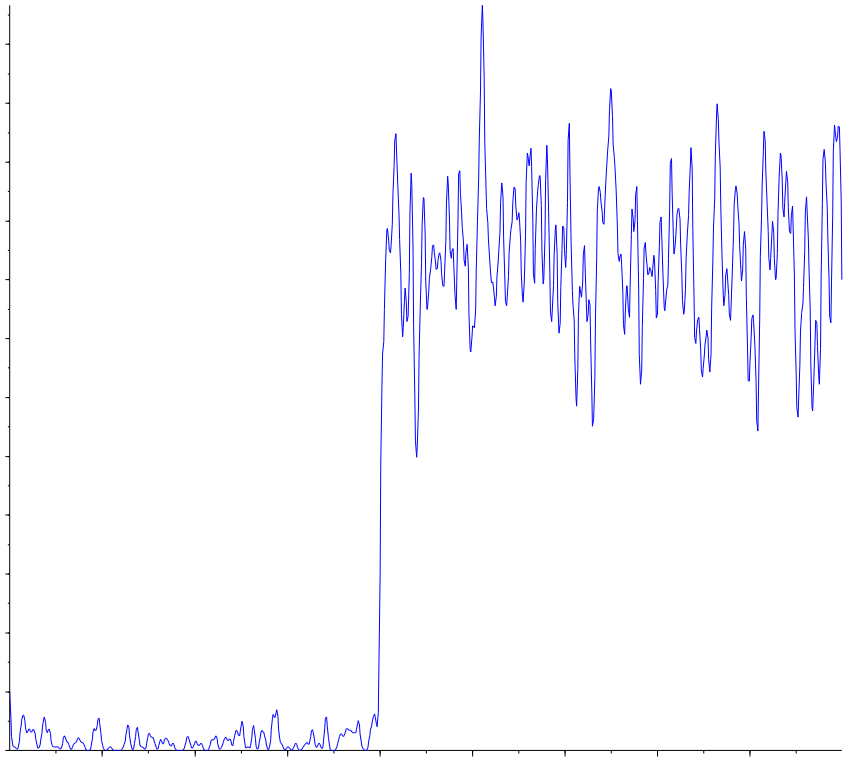

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

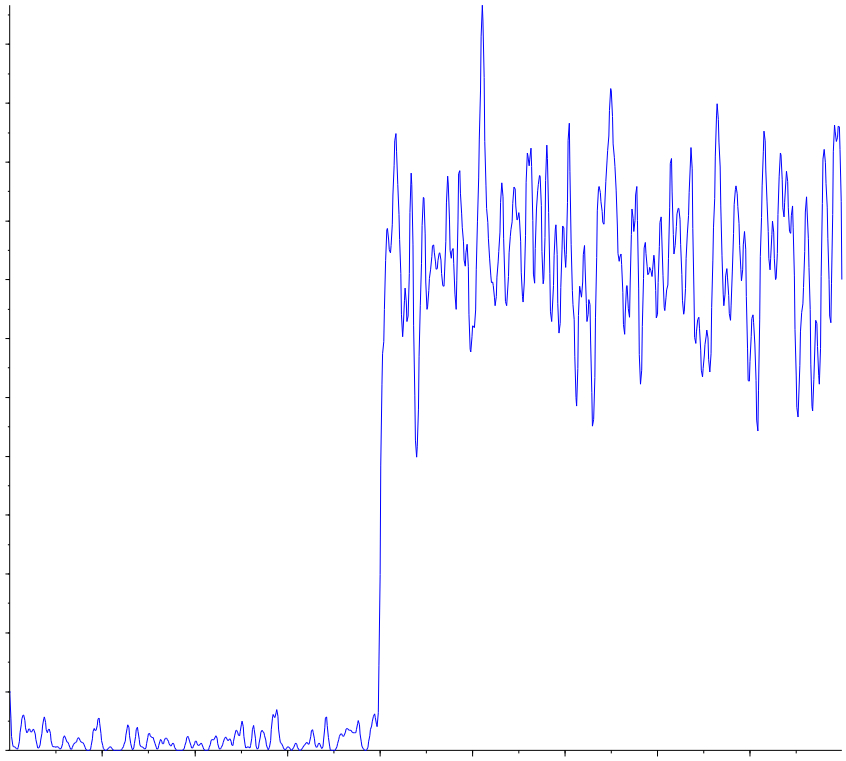

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Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

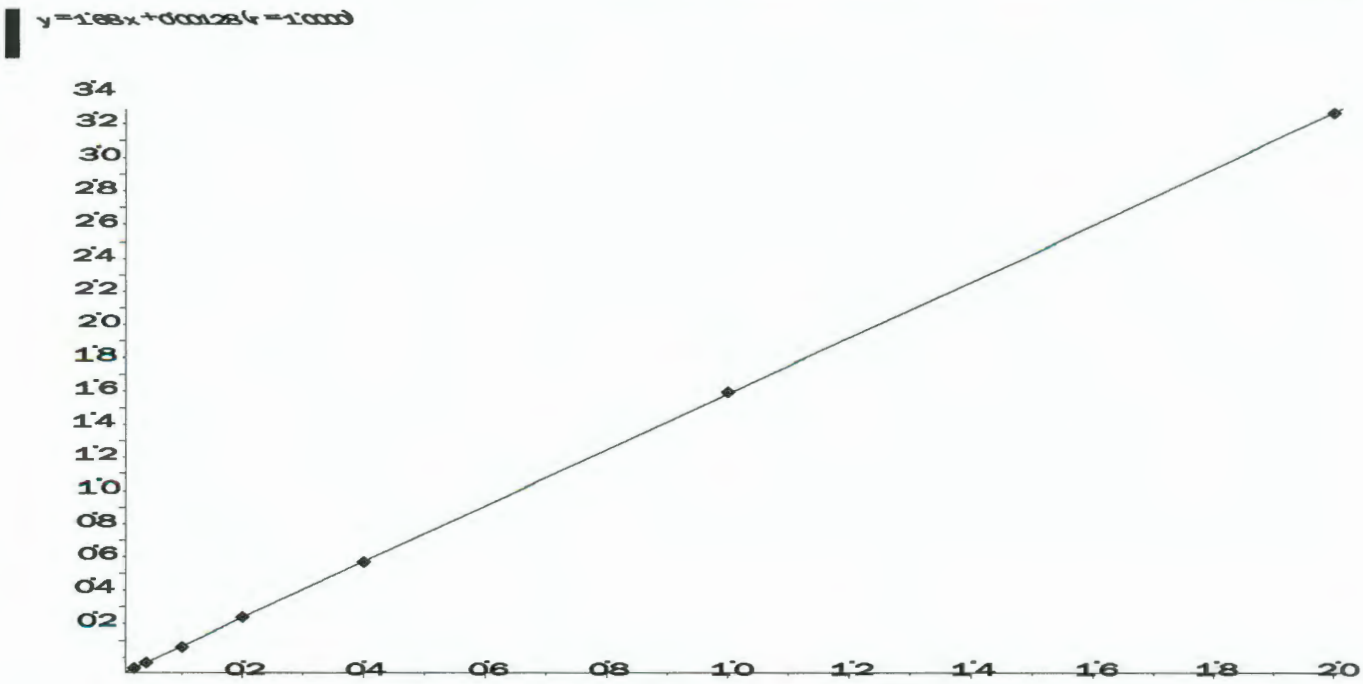

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Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

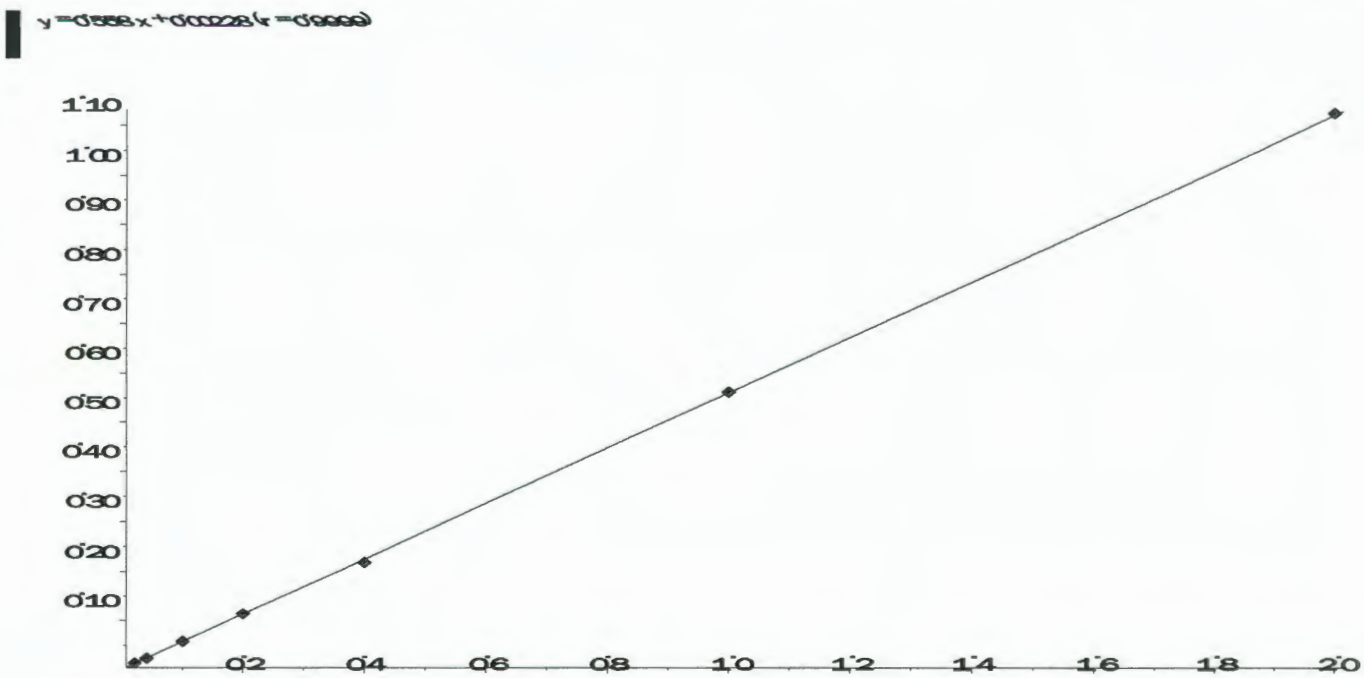

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Data File	LM34687.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

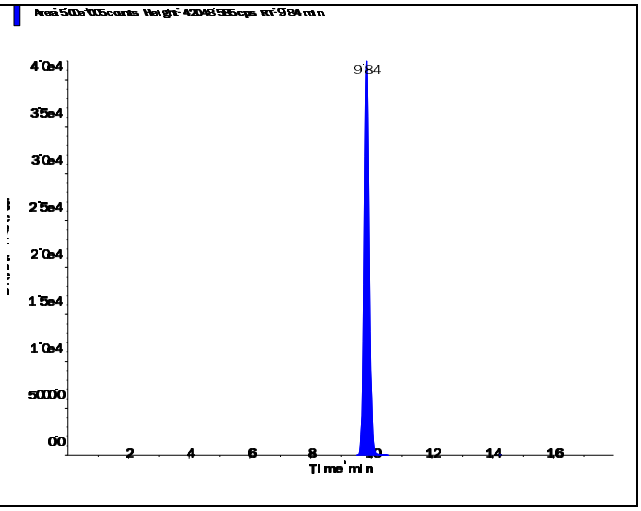

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.103 ng/ml
Area Ratio:	0.036
Sample Type:	(Standard)

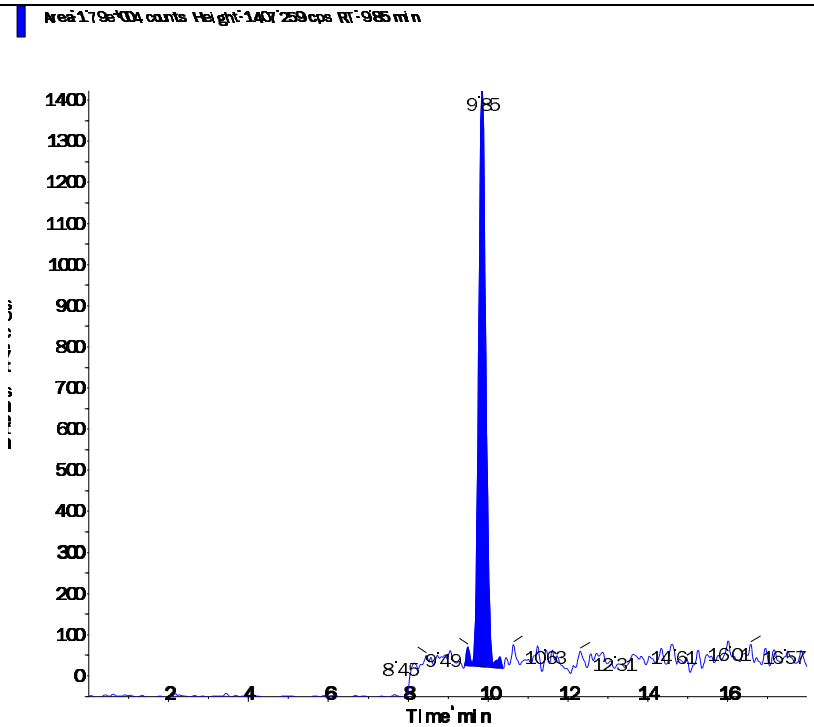

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.104 ng/ml
Area Ratio:	0.014
Sample Type:	(Standard)

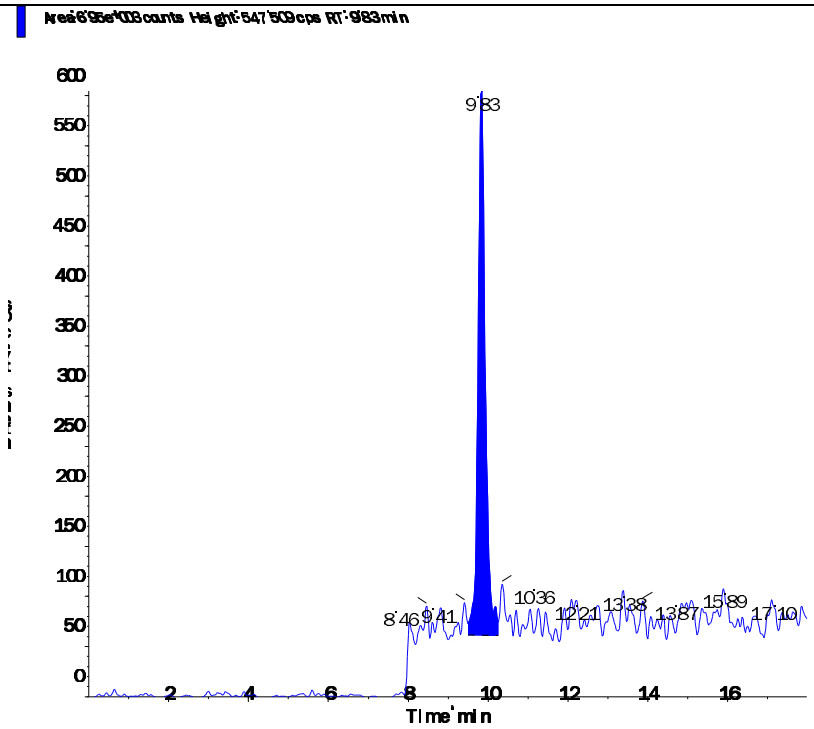

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Data File	LM34688.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

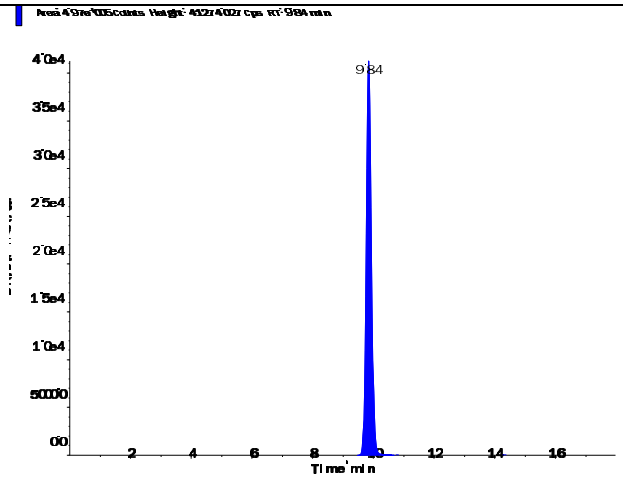

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

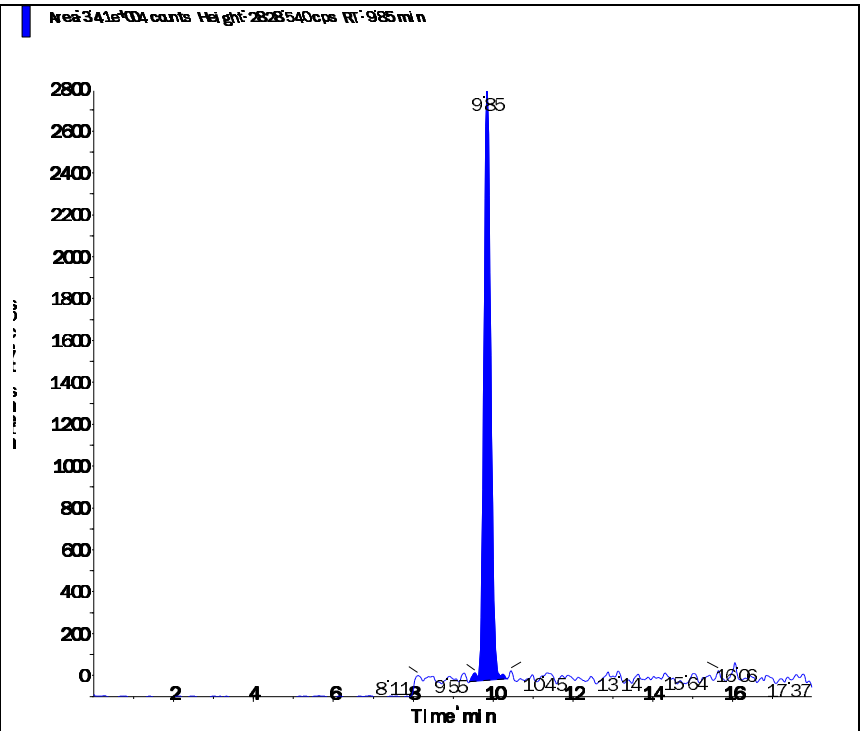

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

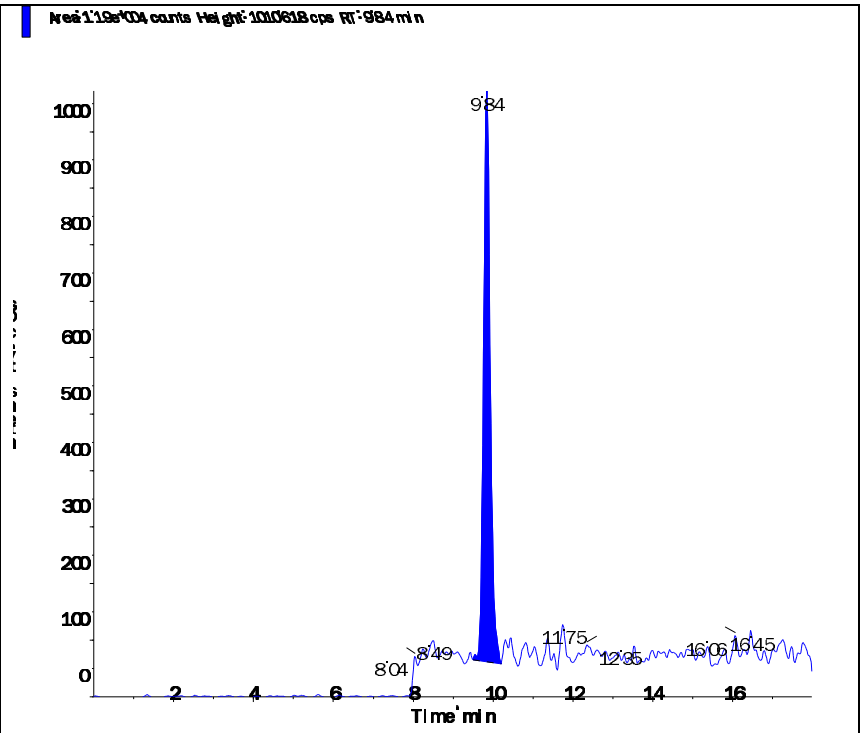

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Data File	LM34689.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

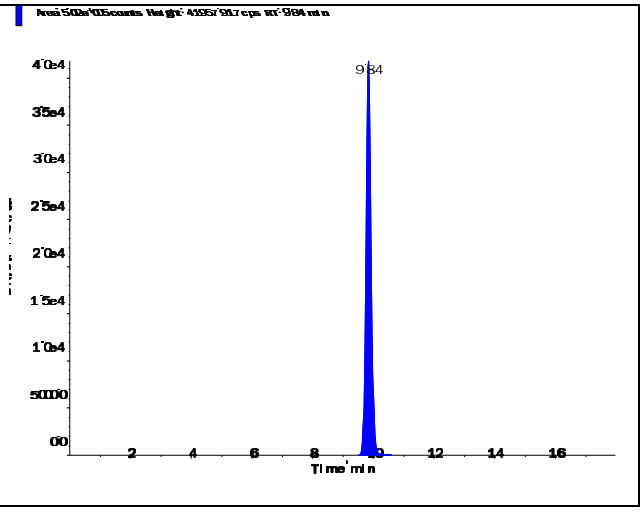

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.483 ng/ml
Area Ratio:	0.164
Sample Type:	(Standard)

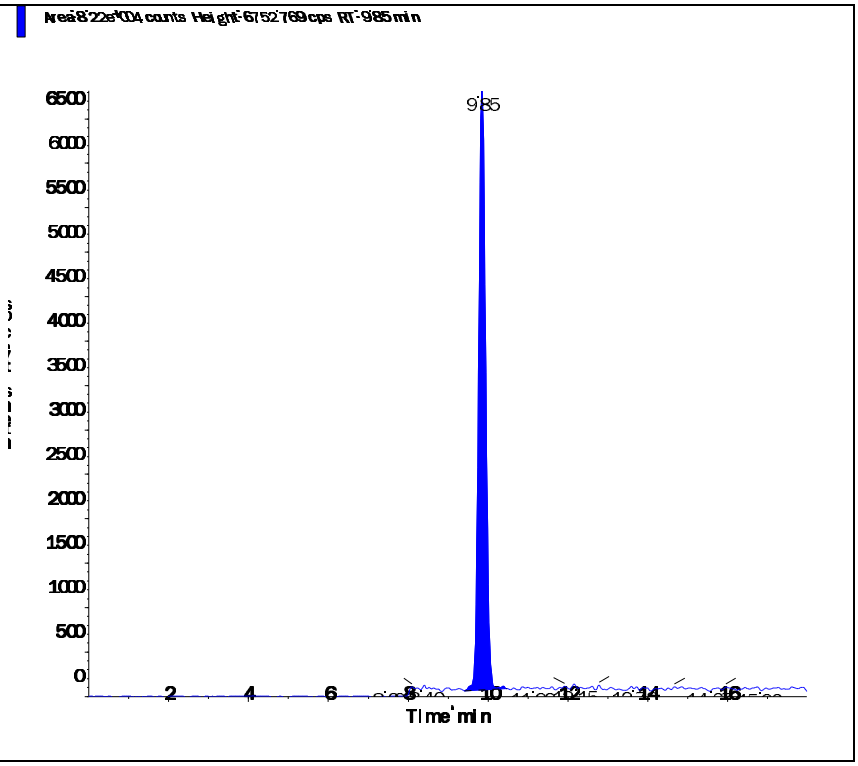

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.503 ng/ml
Area Ratio:	0.058
Sample Type:	(Standard)

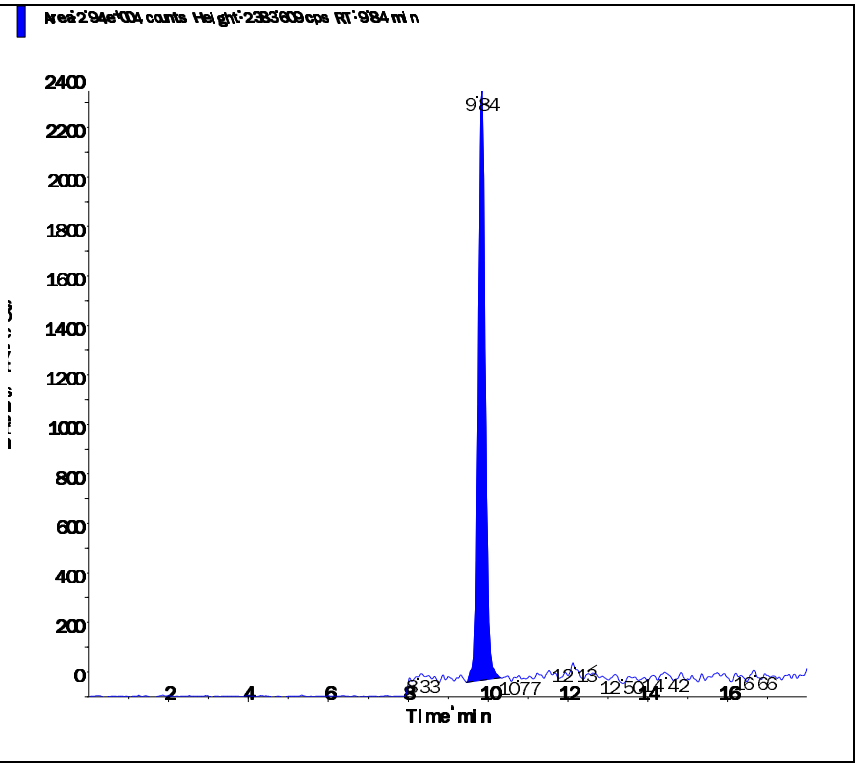

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Data File	LM34690.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

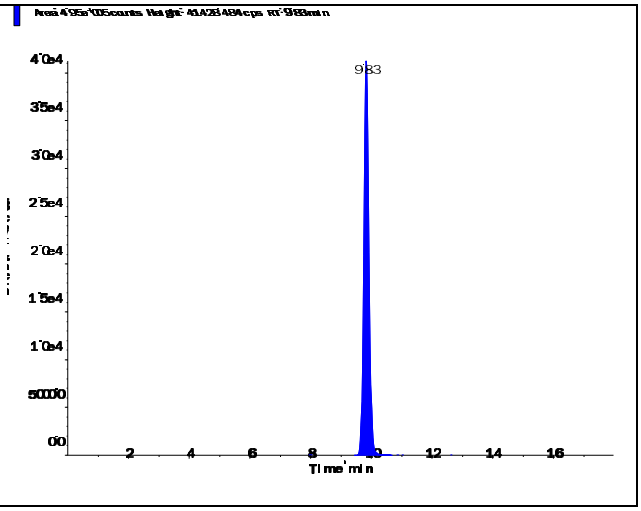

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

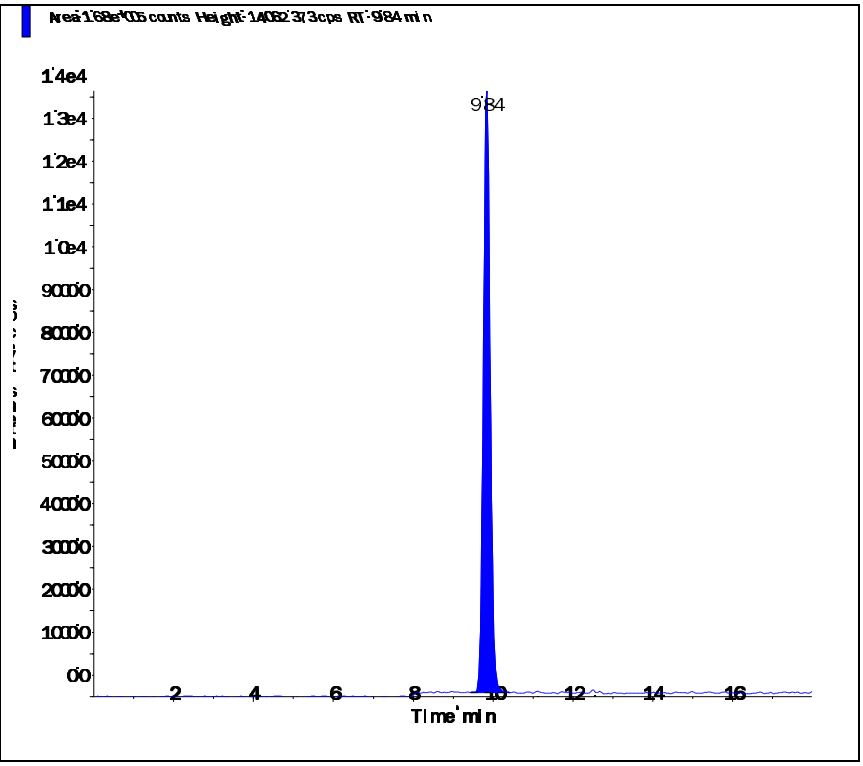

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

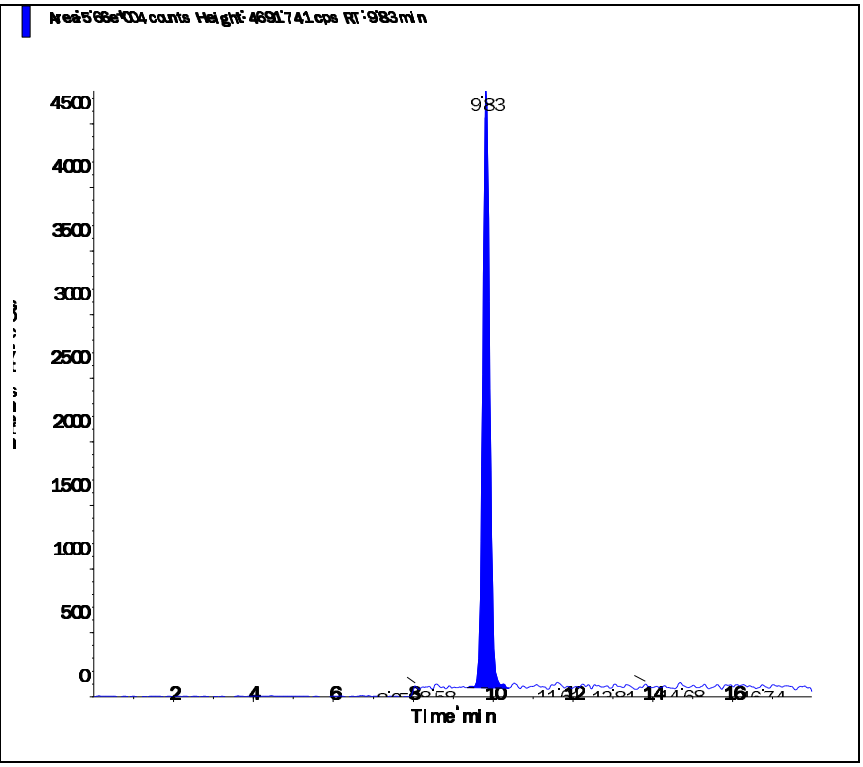

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Data File	LM34691.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

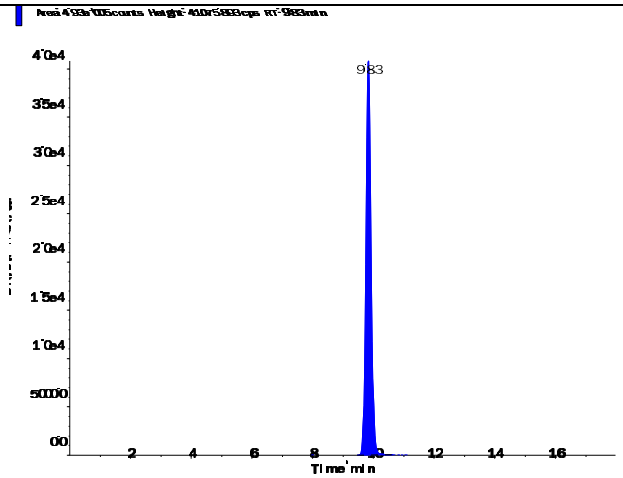

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 1.99 ng/ml Area Ratio: 0.669 Sample Type: (Standard)	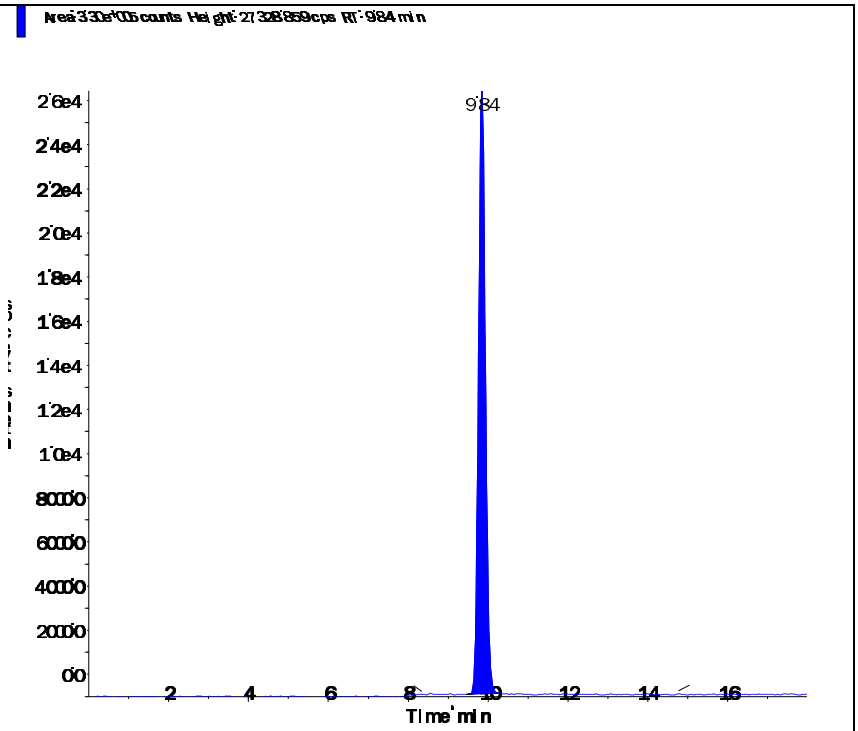
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 1.94 ng/ml Area Ratio: 0.219 Sample Type: (Standard)	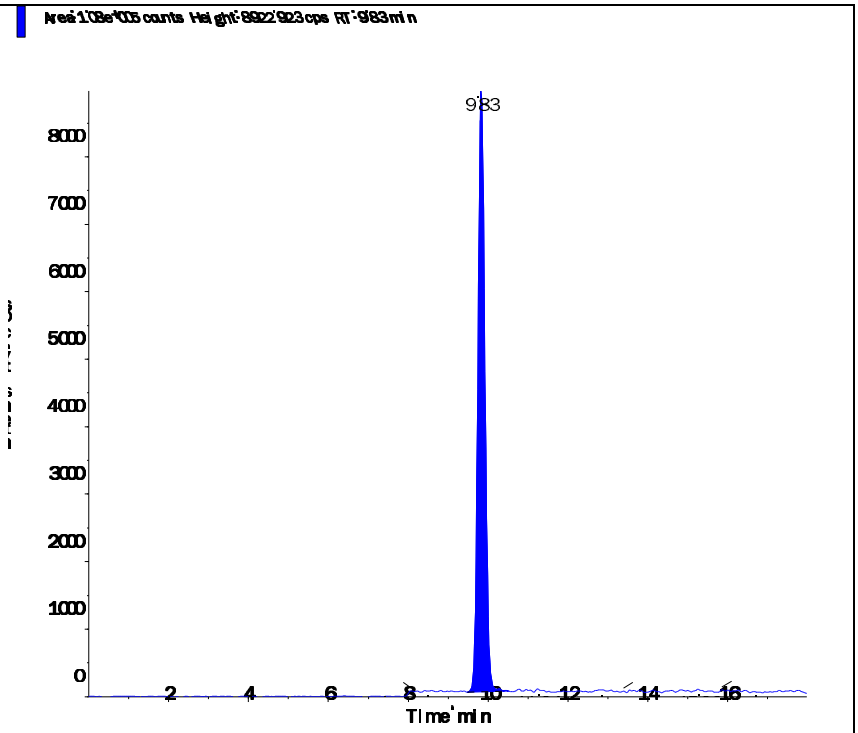

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Data File	LM34692.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

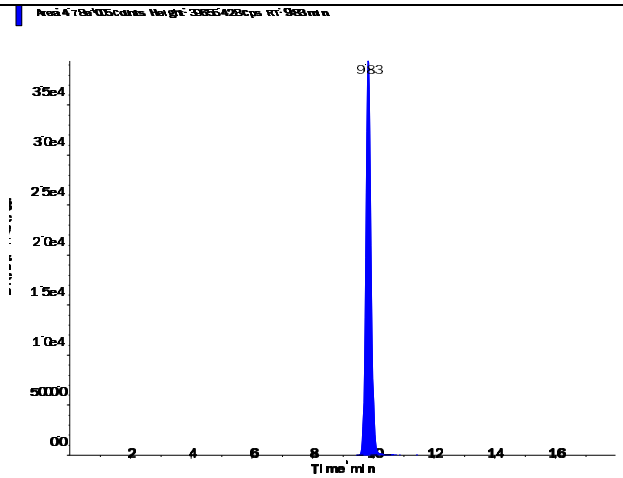

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

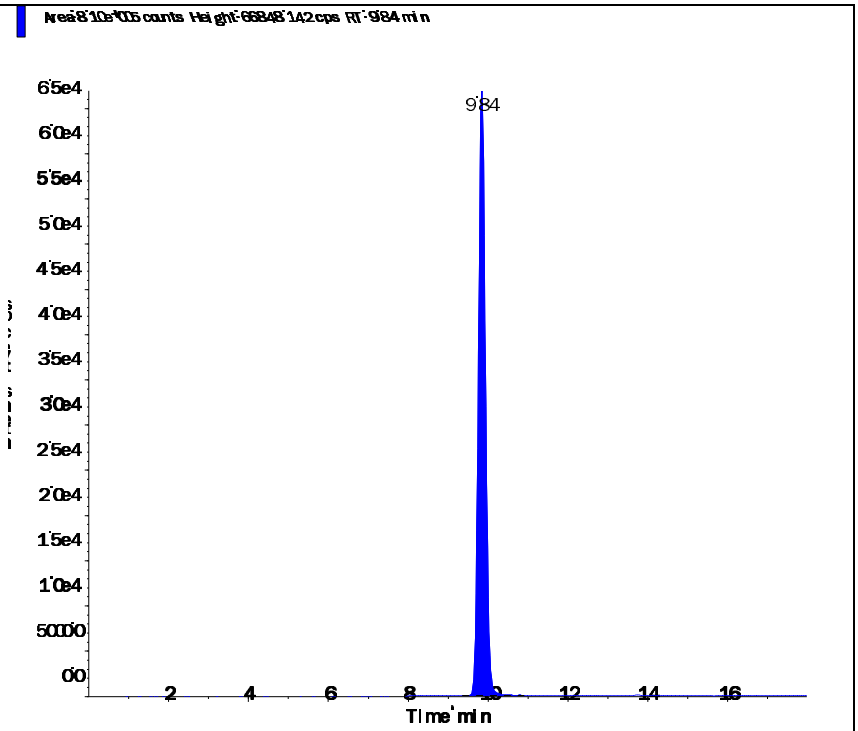

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

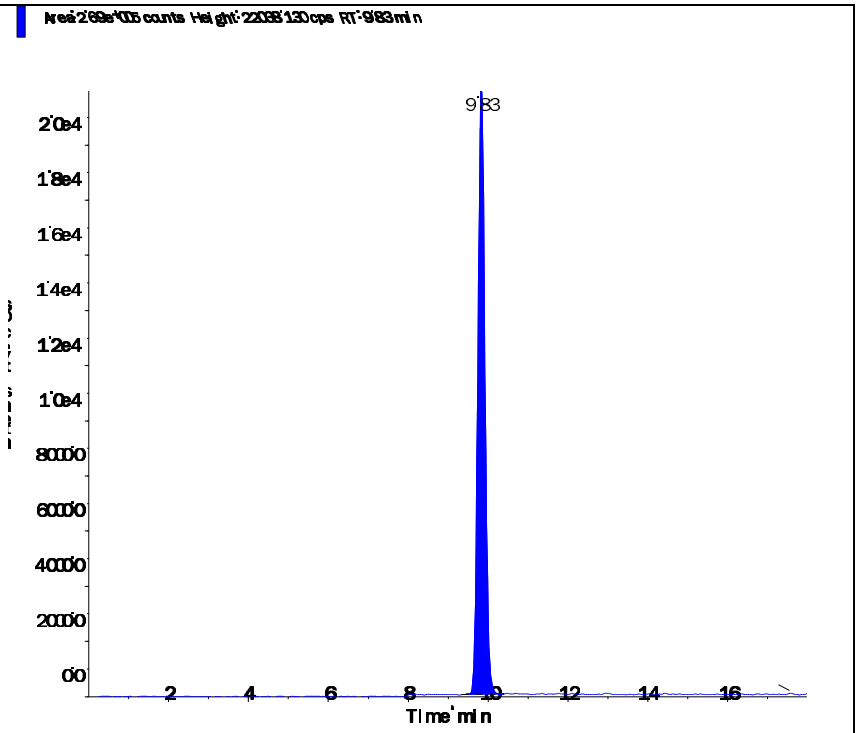

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Data File	LM34693.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

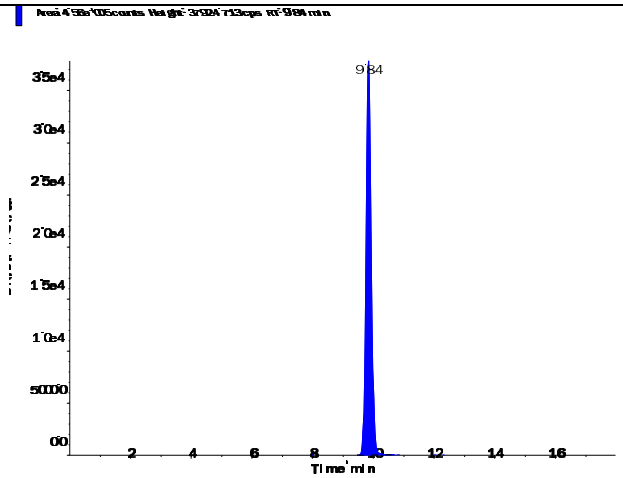

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 9.99 ng/ml Area Ratio: 3.36 Sample Type: (Standard)	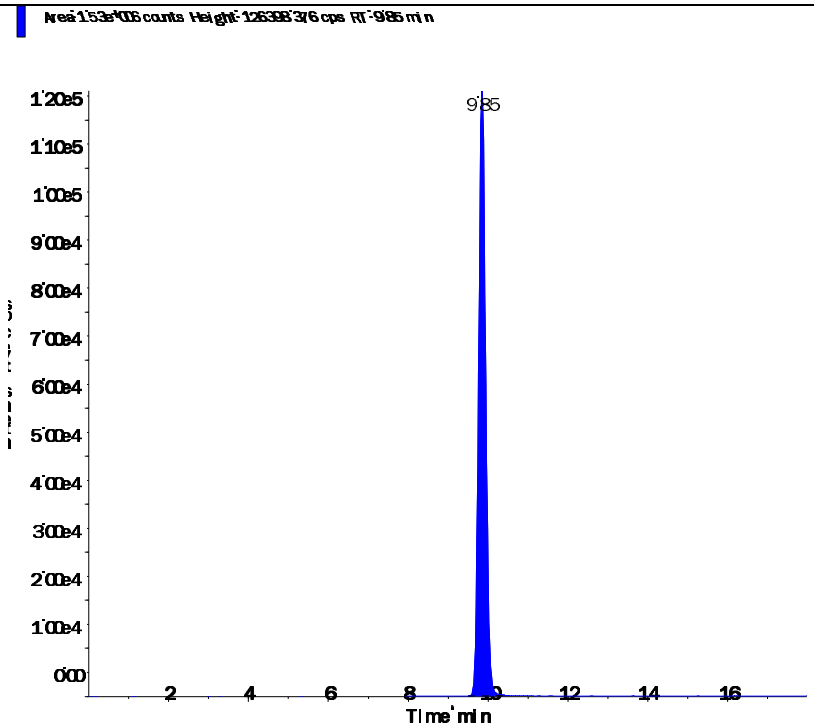
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 10.00 ng/ml Area Ratio: 1.122 Sample Type: (Standard)	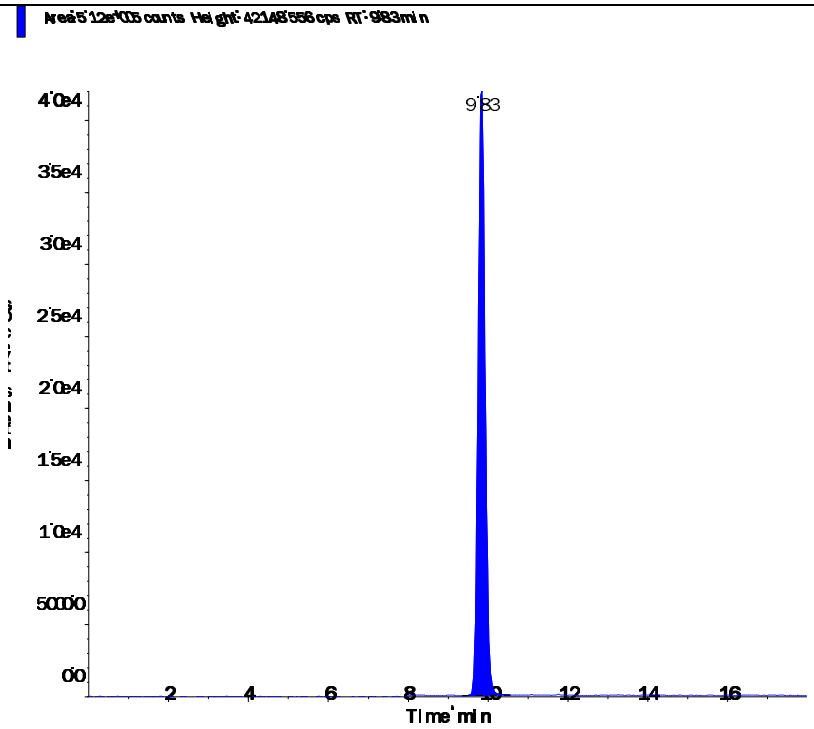

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Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

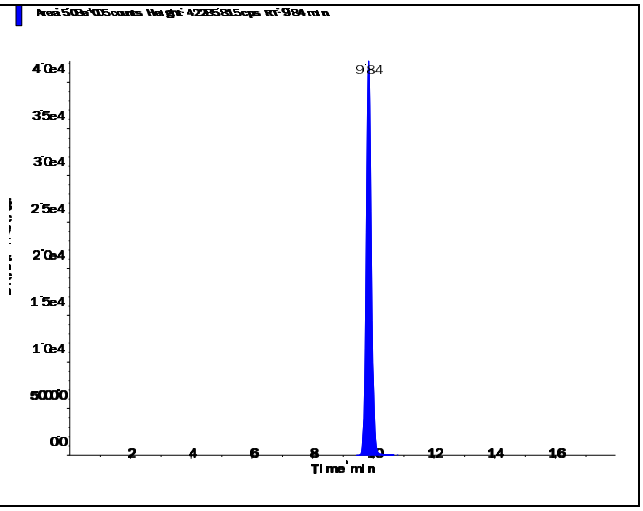

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.332
Sample Type:	(Quality Control)

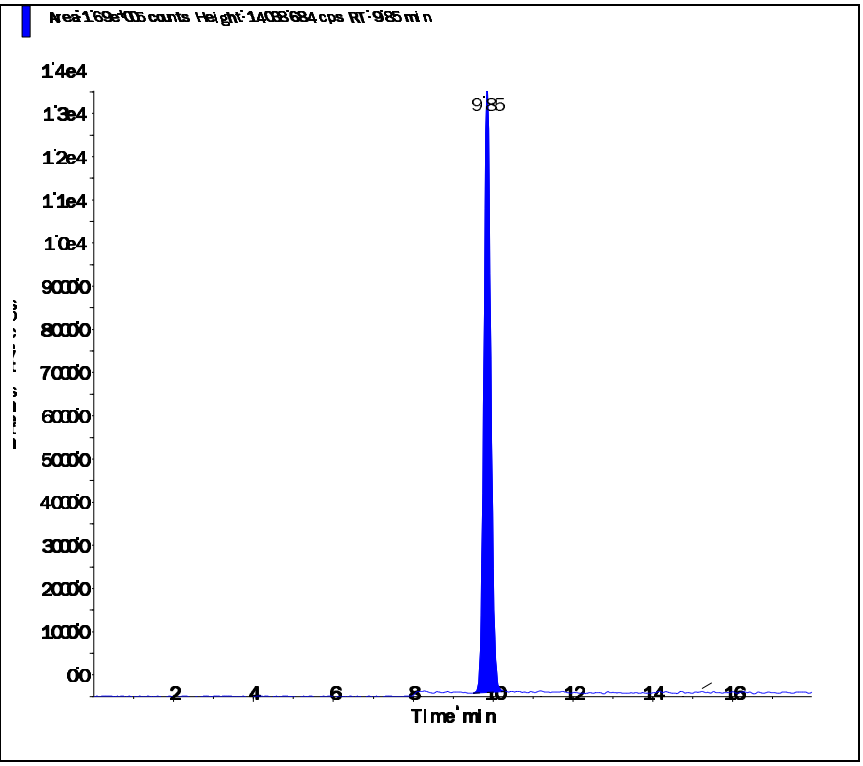

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

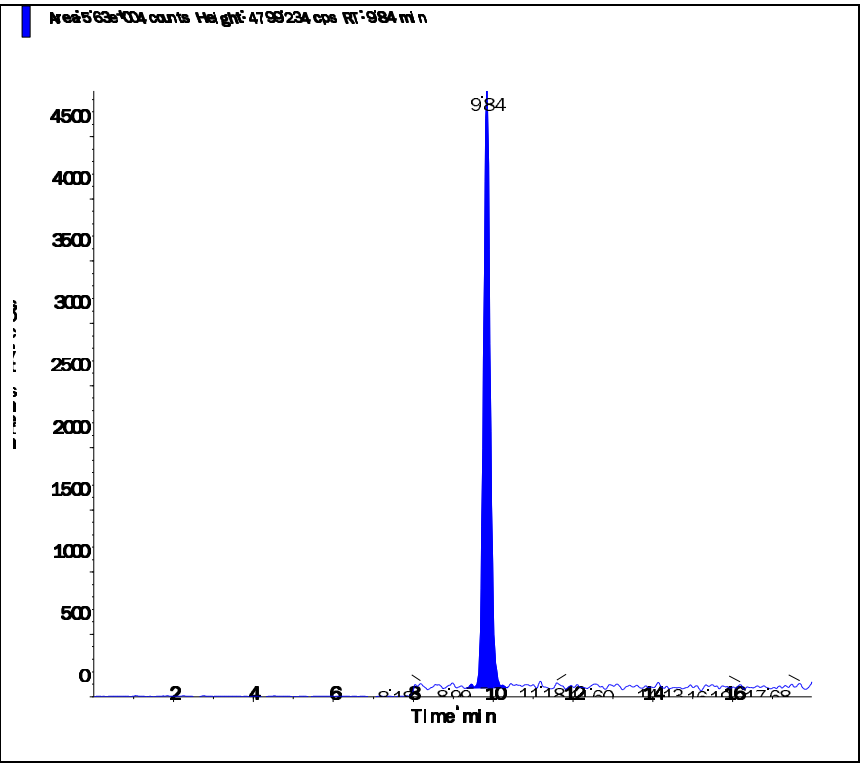

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Data File	LM35416.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 5:06:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35416.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 5:06:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.480e+05	9.13	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.510e+05	9.14	1.00	0.997
Perchlorate conf	5.420e+04	9.13	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 9.13(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

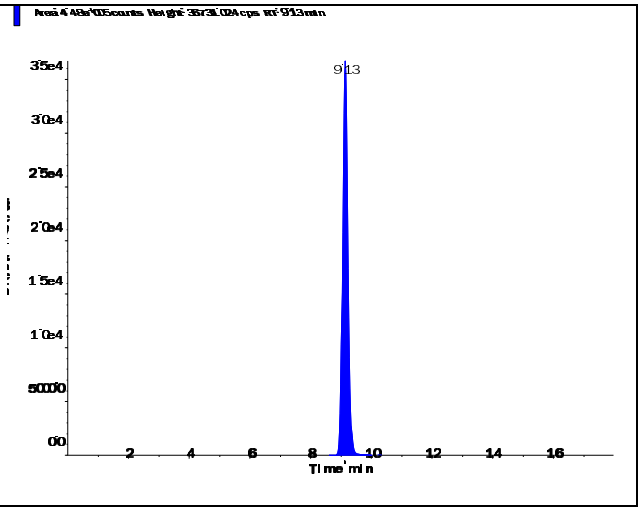

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.14 (9.84) min
Calculated conc:	0.997 ng/ml
Area Ratio:	0.336
Sample Type:	(Quality Control)

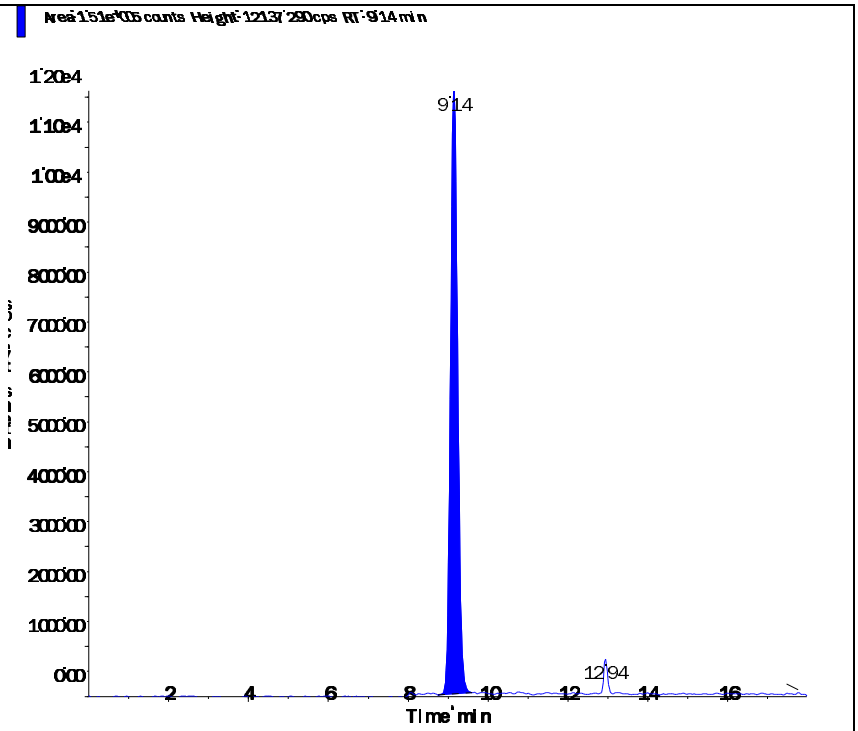

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.13 (9.84) min
Calculated conc:	1.07 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

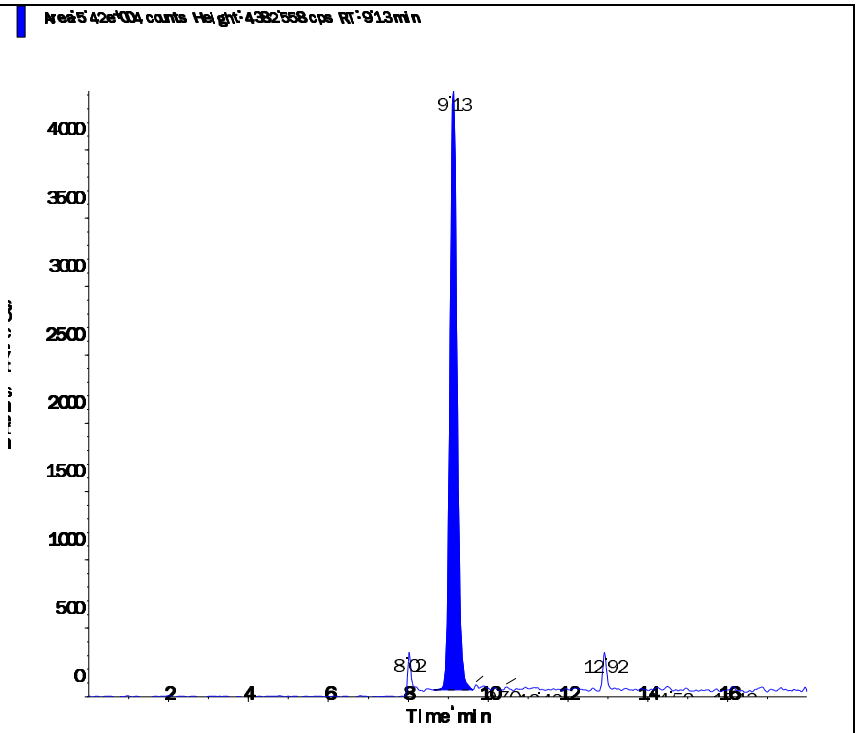

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Data File	LM35428.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 8:54:07 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35428.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 8:54:07 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.900e+05	9.17	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.720e+05	9.18	1.00	1.04
Perchlorate conf	6.140e+04	9.16	1.00	1.10

O18LP (Internal Standard)

RT (Exp. RT): 9.17(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

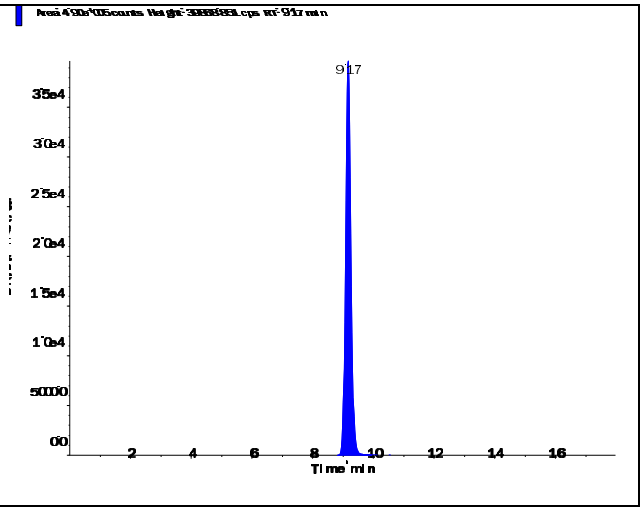

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.18 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.351
Sample Type:	(Quality Control)

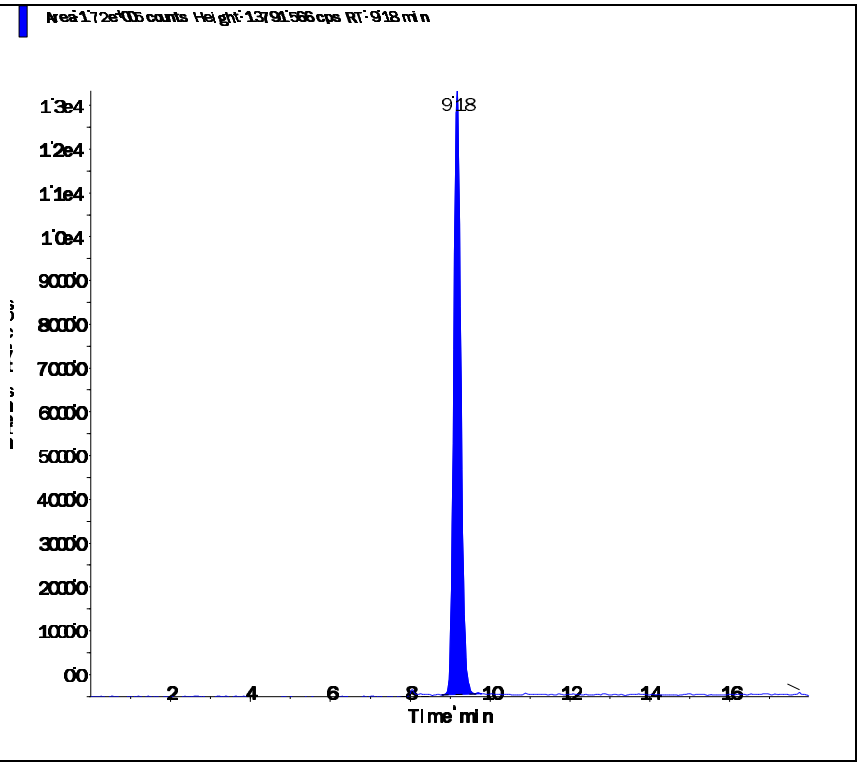

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.16 (9.84) min
Calculated conc:	1.10 ng/ml
Area Ratio:	0.125
Sample Type:	(Quality Control)

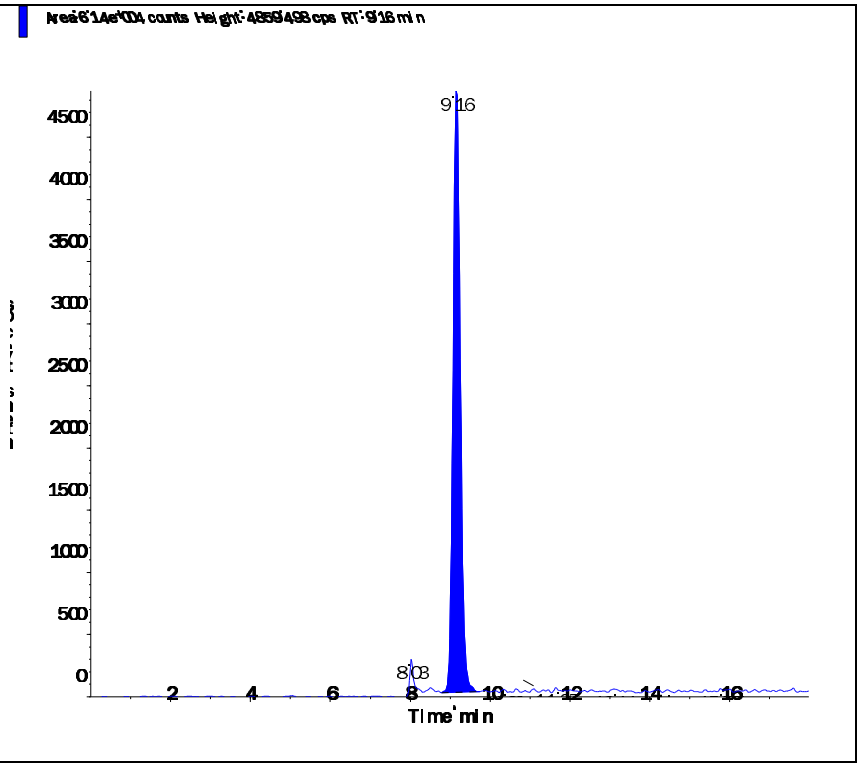

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Data File	LM35439.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 12:22:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35439.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 12:22:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.20	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.760e+05	9.22	1.00	1.03
Perchlorate conf	6.150e+04	9.20	1.00	1.06

O18LP (Internal Standard)

RT (Exp. RT): 9.20(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

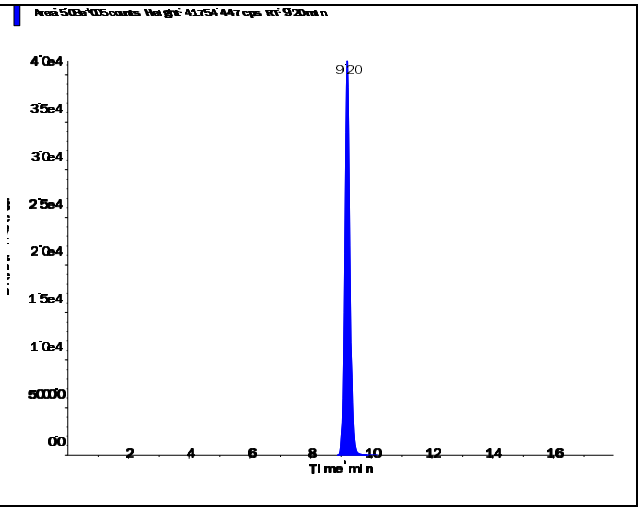

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.22 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.347
Sample Type:	(Quality Control)

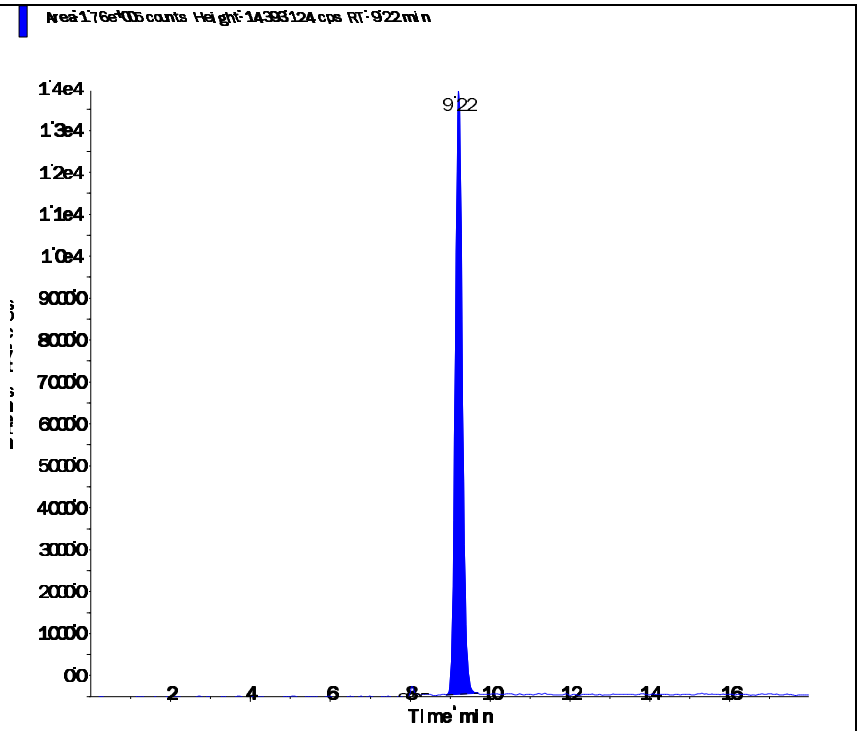

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.20 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

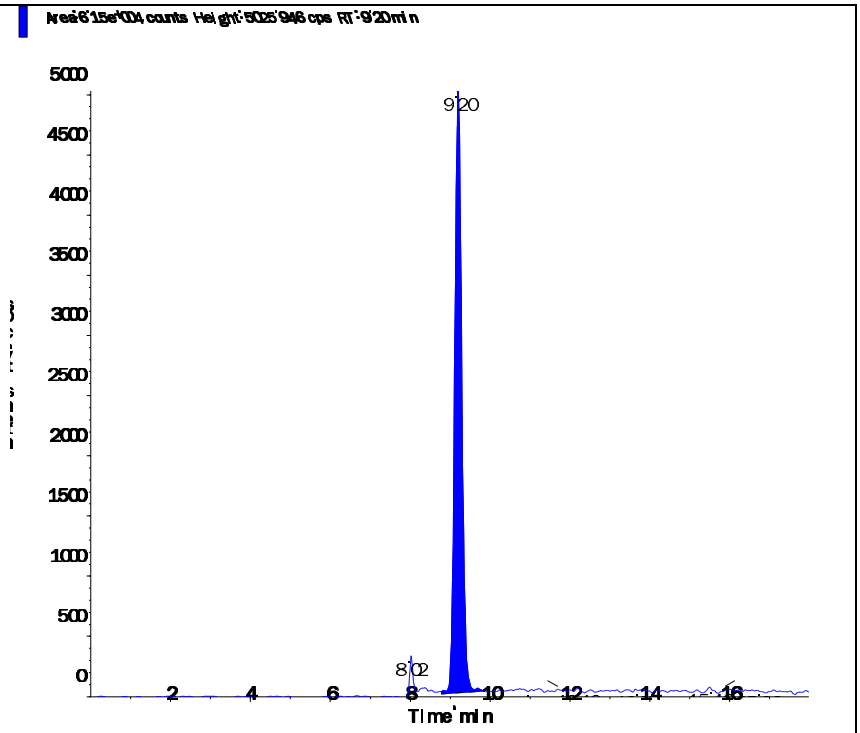

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Data File	LM35446.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 2:34:57 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35446.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 2:34:57 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.820e+05	9.22	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.23	1.00	1.04
Perchlorate conf	5.850e+04	9.22	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 9.22(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

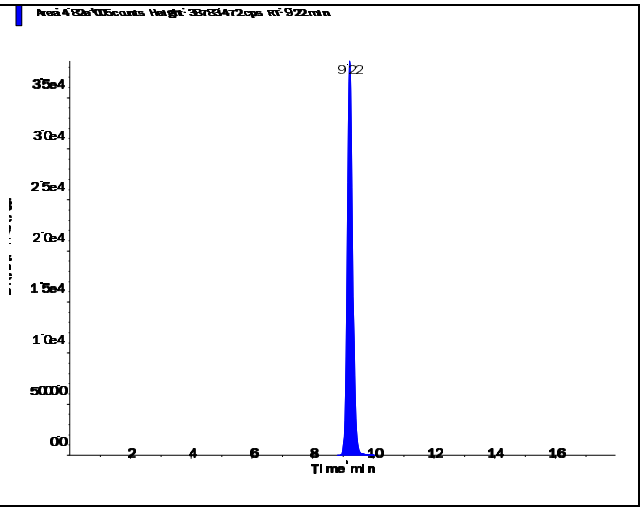

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.23 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.351
Sample Type:	(Quality Control)

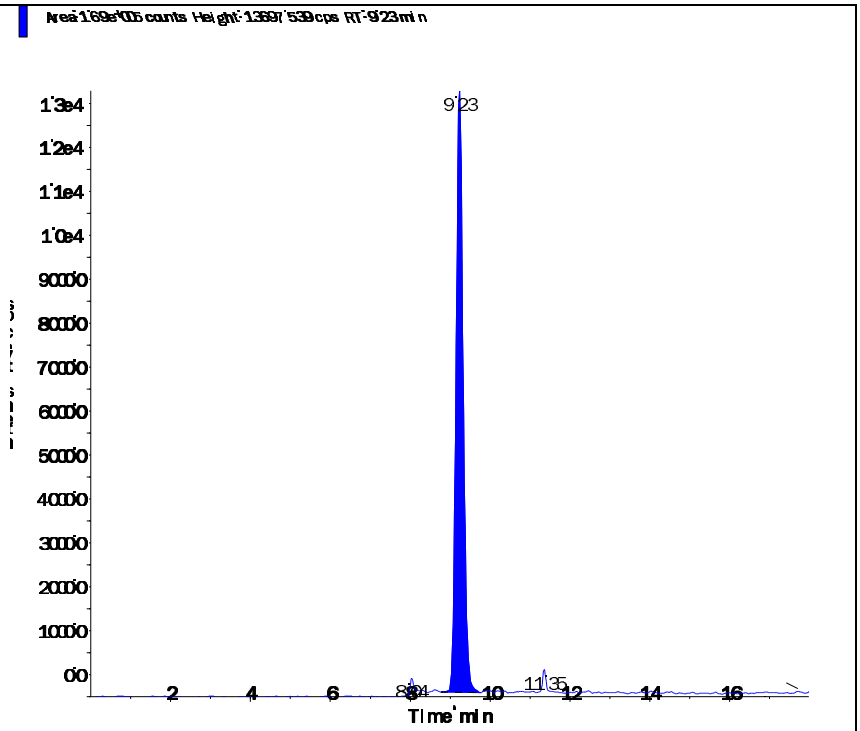

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.22 (9.84) min
Calculated conc:	1.07 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

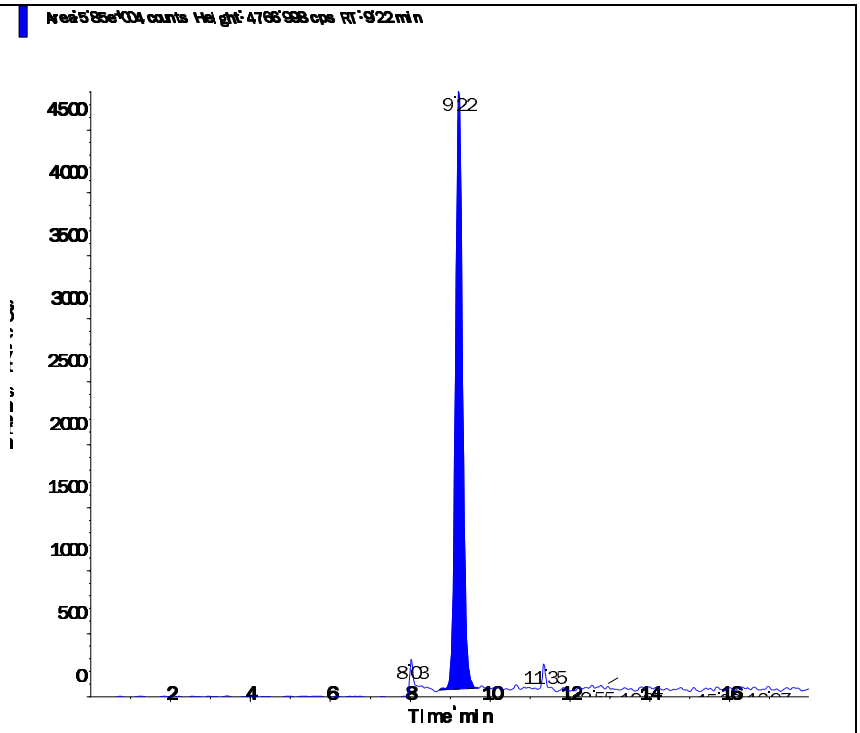

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Data File	LM35449.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 11:49:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35449.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 11:49:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.170e+05	9.26	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.420e+05	9.27	1.00	1.01
Perchlorate conf	5.070e+04	9.25	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 9.26(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

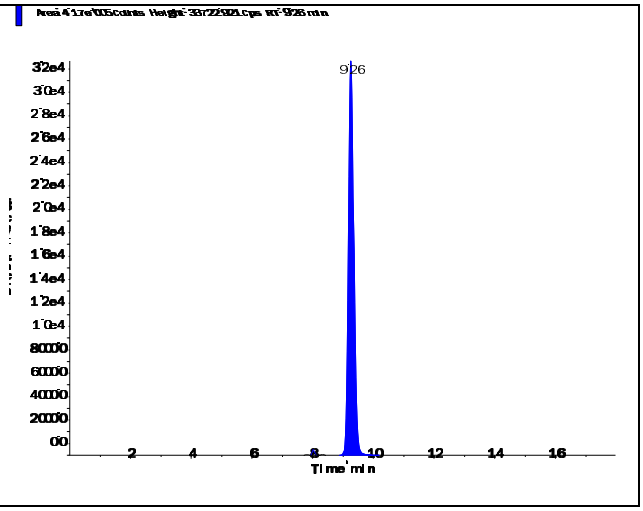

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.27 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.341
Sample Type:	(Quality Control)

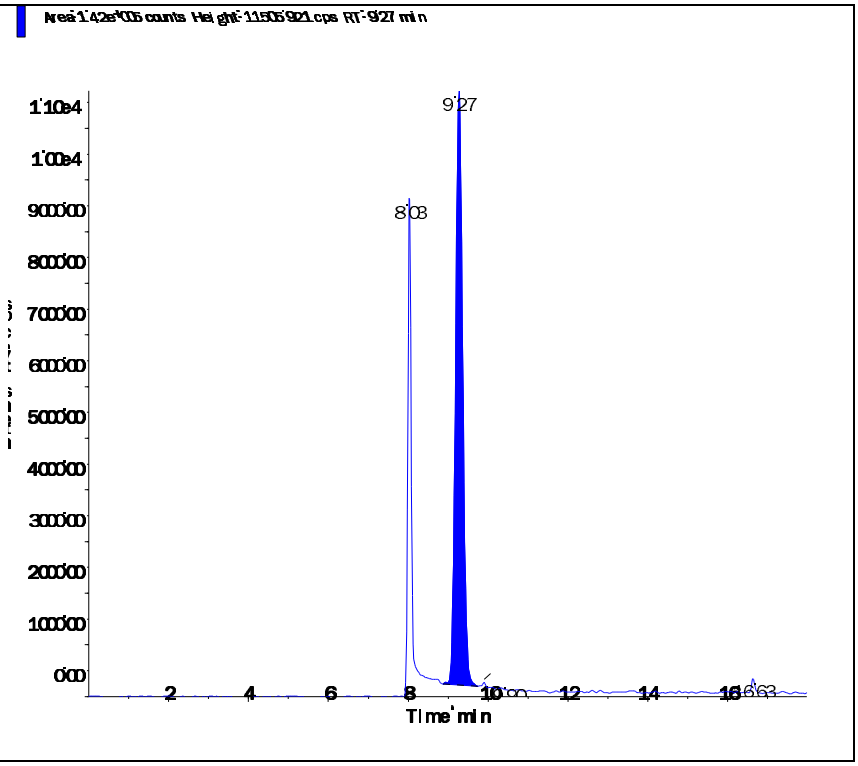

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.25 (9.84) min
Calculated conc:	1.07 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

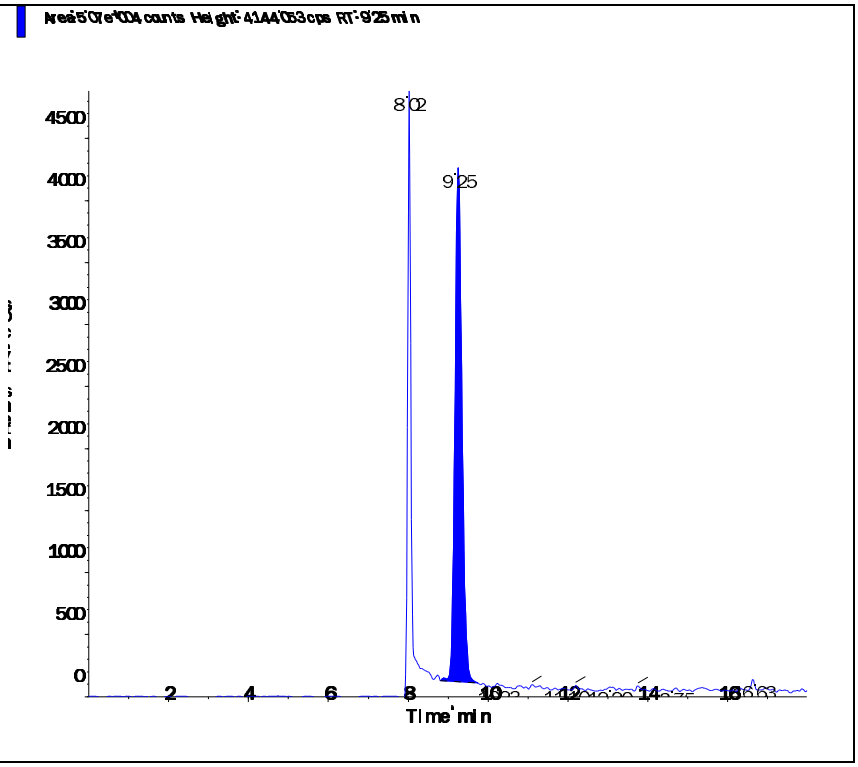

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Data File	LM35459.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 2:58:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-11 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35459.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 2:58:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.720e+05	9.28	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.670e+05	9.29	1.00	1.05
Perchlorate conf	5.600e+04	9.28	1.00	1.04

O18LP (Internal Standard)

RT (Exp. RT): 9.28(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

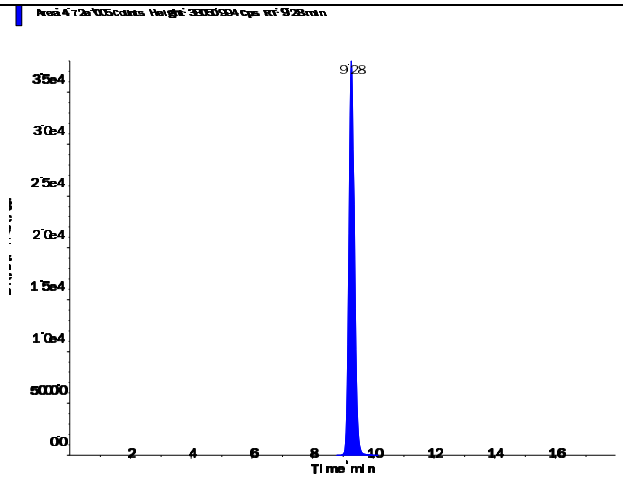

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.29 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.354
Sample Type:	(Quality Control)

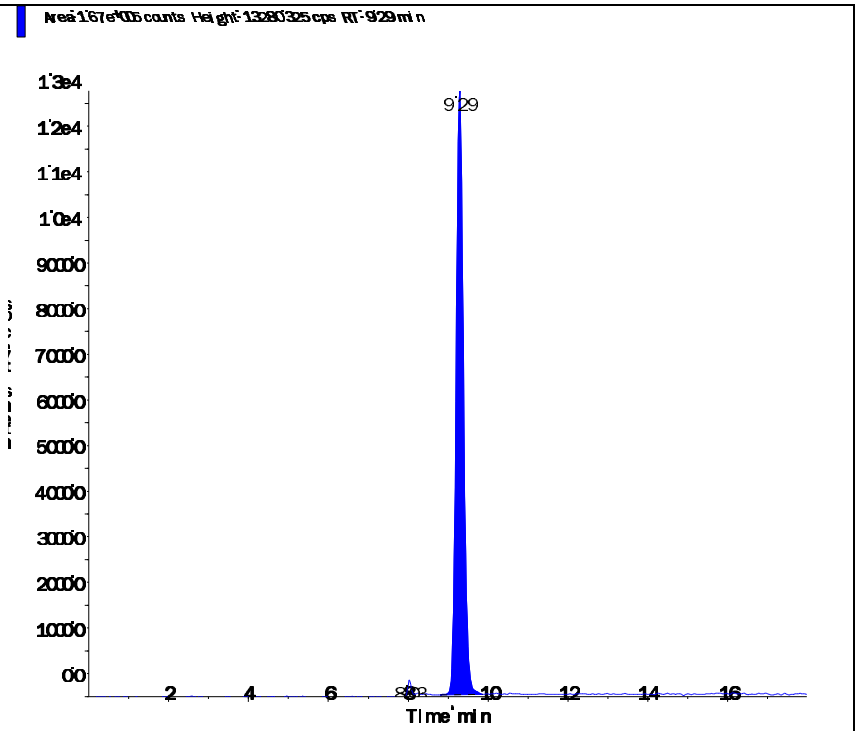

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.28 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

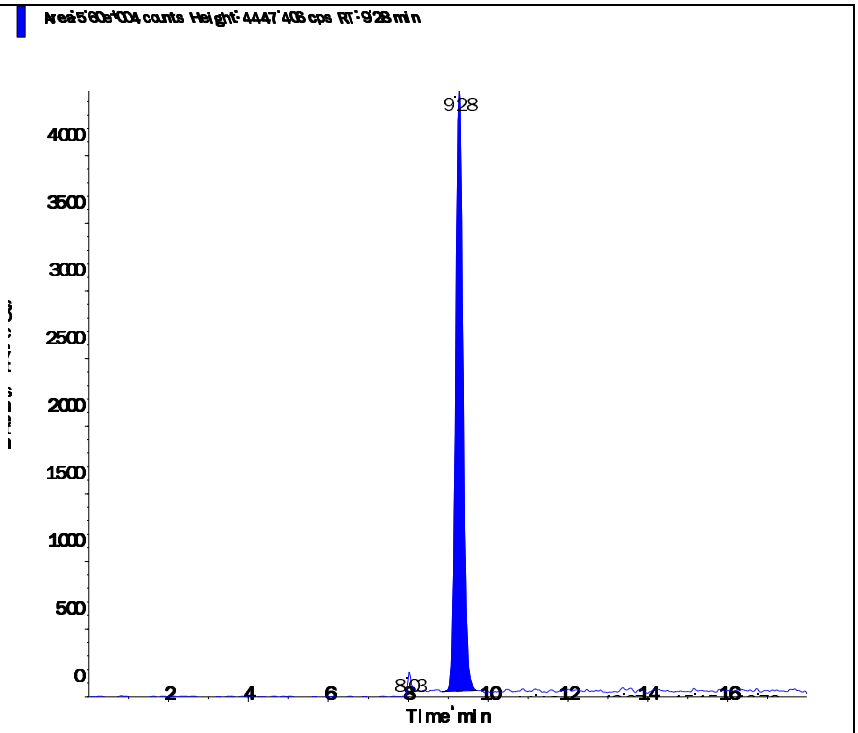

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Data File	LM35417.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 5:25:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-05 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35417.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 5:25:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.430e+05	9.19	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.120e+04	9.20	N/A	0.206
Perchlorate conf	1.120e+04	9.20	N/A	0.206

O18LP (Internal Standard)

RT (Exp. RT): 9.19(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

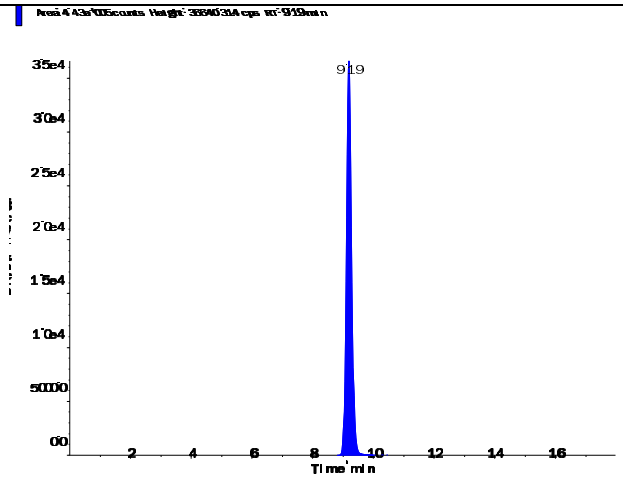

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.20 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

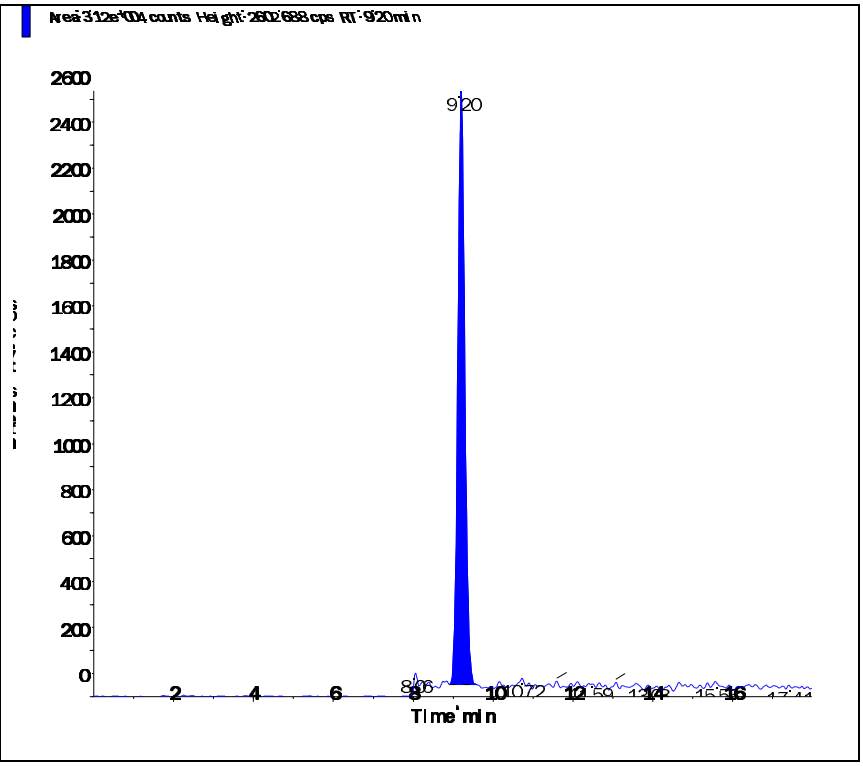

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.20 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

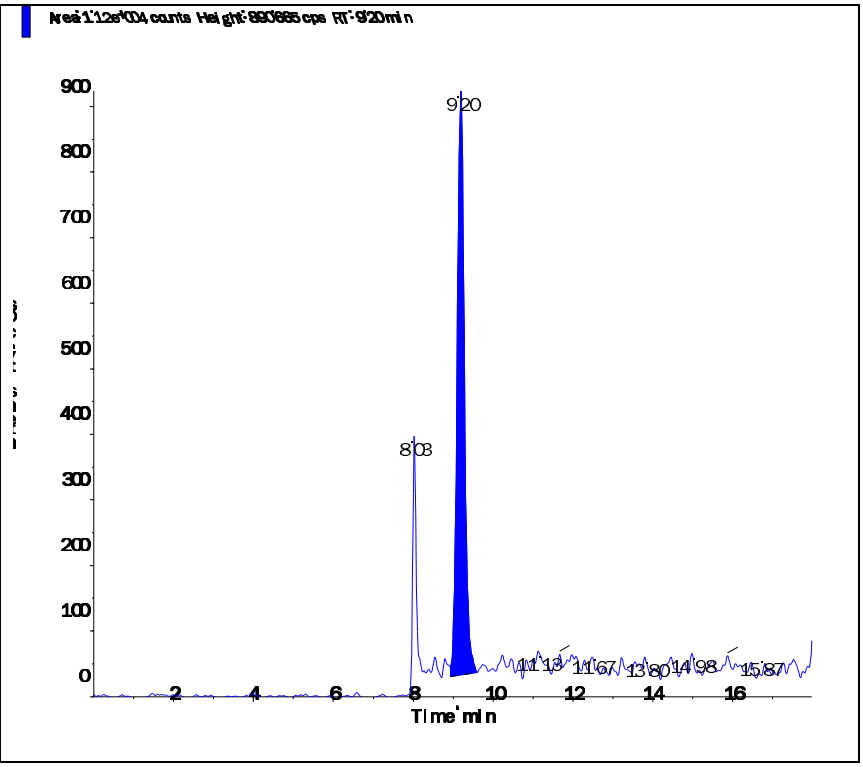

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Data File	LM35429.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 9:13:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-06 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35429.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 9:13:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.940e+05	9.23	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.450e+04	9.24	N/A	0.204
Perchlorate conf	1.250e+04	9.22	N/A	0.206

O18LP (Internal Standard)

RT (Exp. RT): 9.23(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

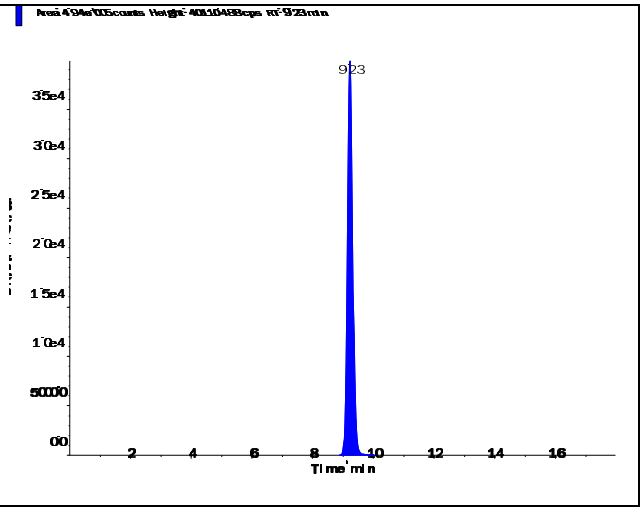

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.24 (9.84) min
Calculated conc:	0.204 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

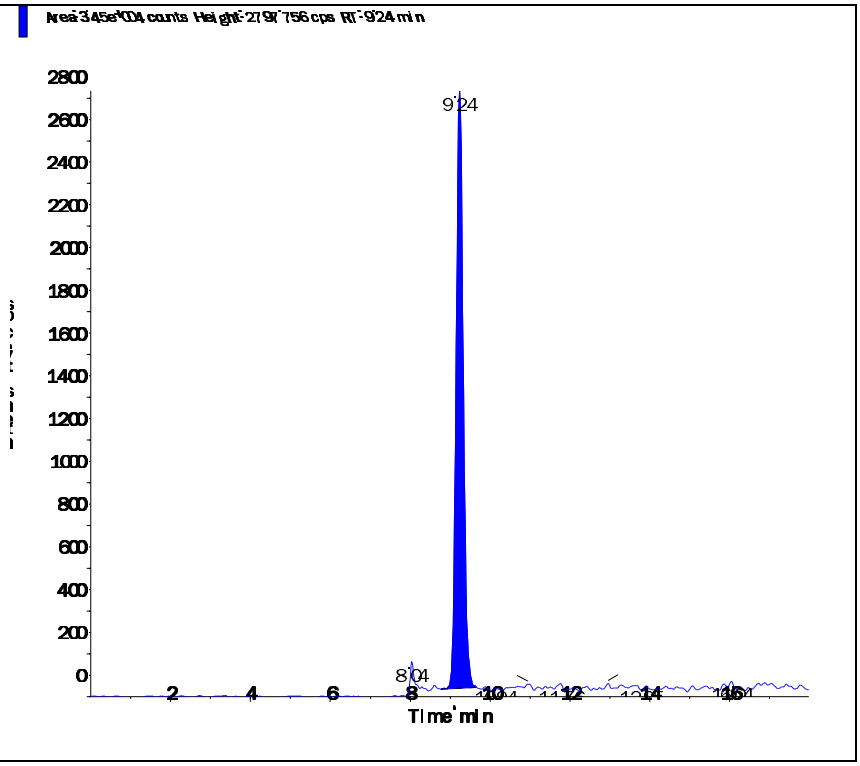

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.22 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

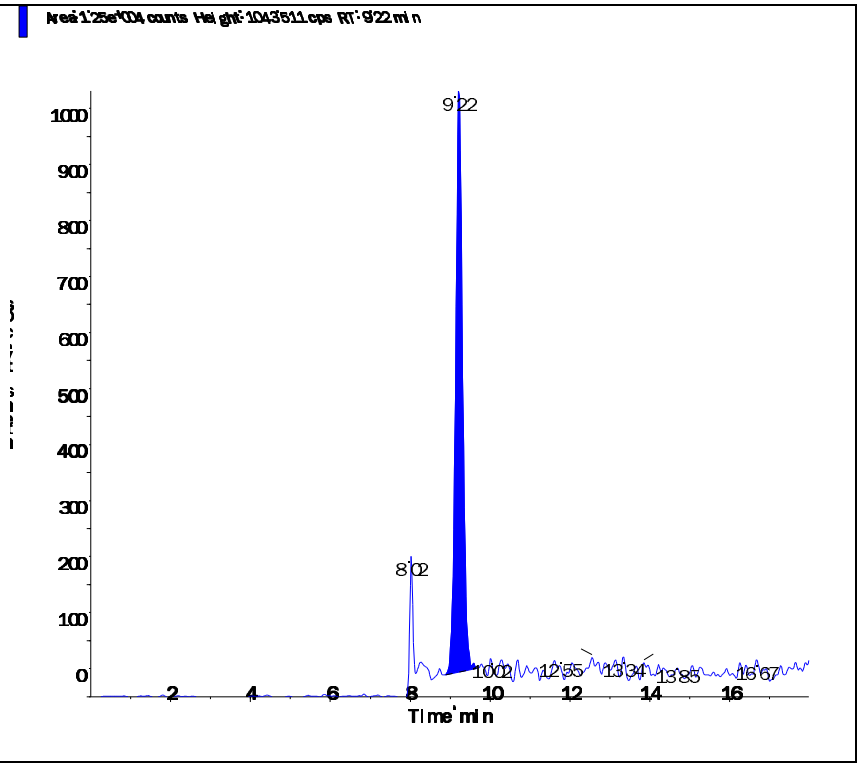

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Data File	LM35440.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 12:41:19 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35440.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 12:41:19 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.090e+05	9.26	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.670e+04	9.27	N/A	0.21
Perchlorate conf	1.290e+04	9.24	N/A	0.207

O18LP (Internal Standard)

RT (Exp. RT): 9.26(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

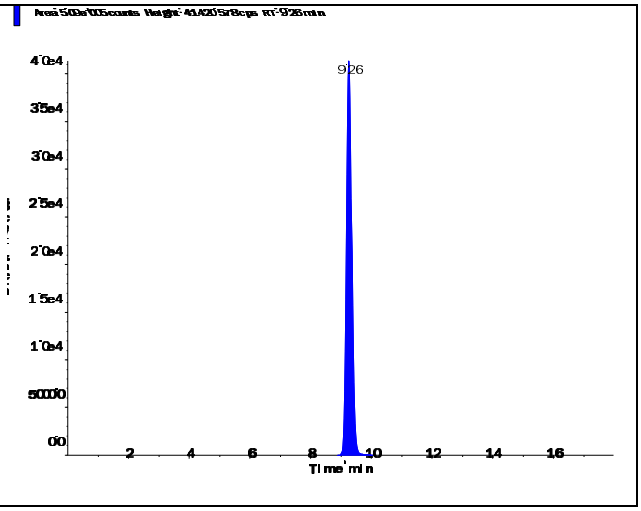

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.27 (9.84) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

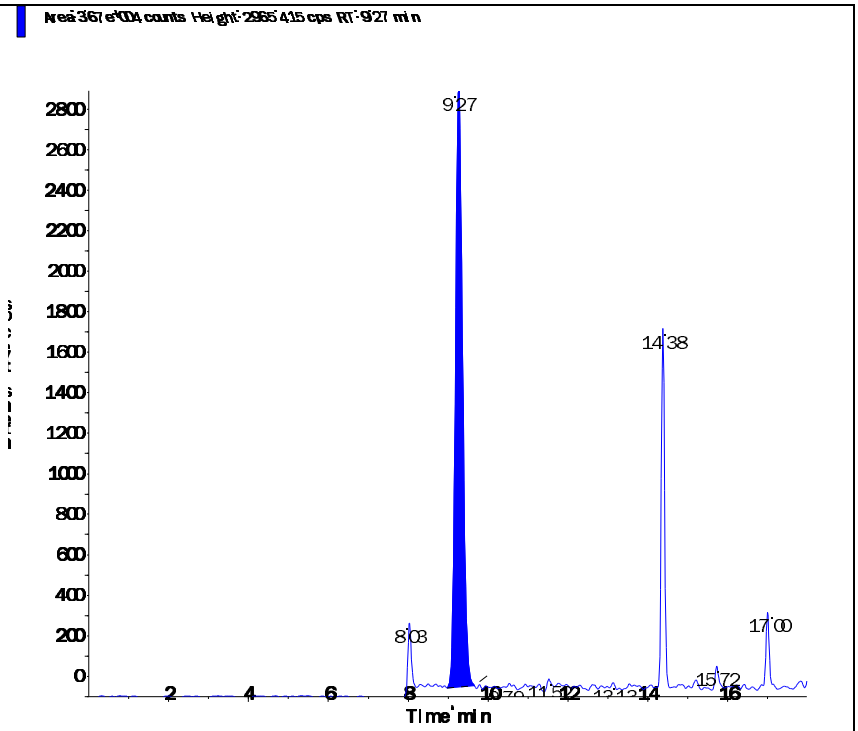

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.24 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

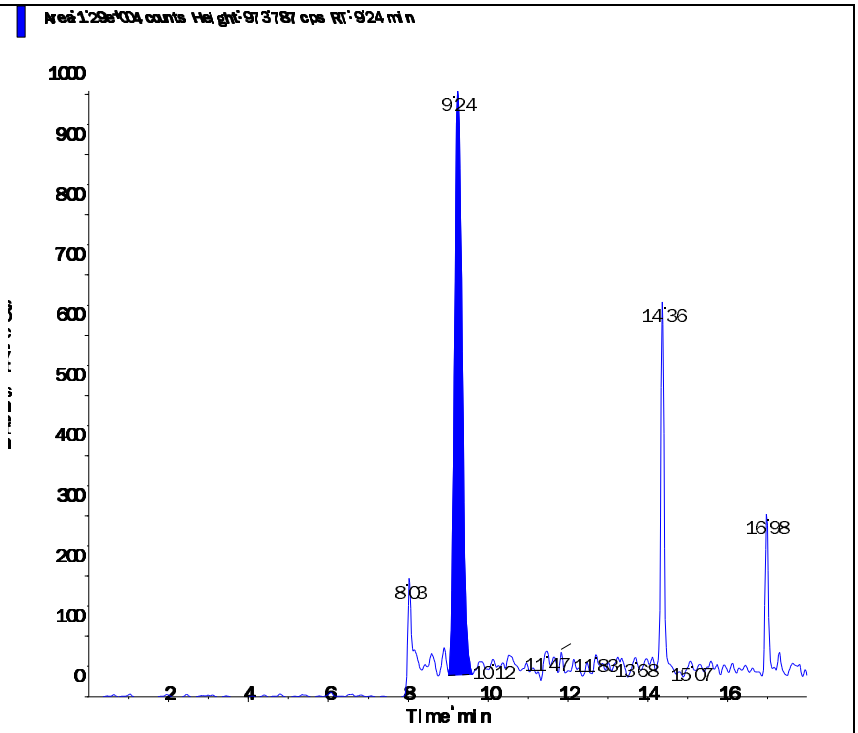

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Data File	LM35447.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 2:53:53 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-08 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35447.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 2:53:53 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.770e+05	9.27	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.480e+04	9.28	N/A	0.214
Perchlorate conf	1.170e+04	9.27	N/A	0.20

O18LP (Internal Standard)

RT (Exp. RT): 9.27(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

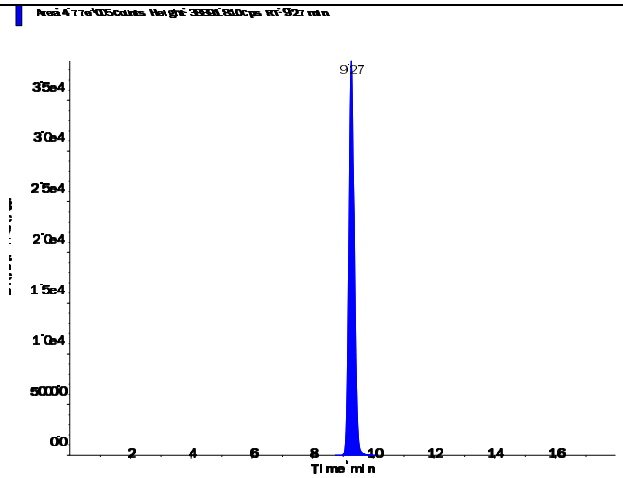

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.28 (9.84) min Calculated conc: 0.214 ng/ml Area Ratio: 0.073 Sample Type: (Unknown)	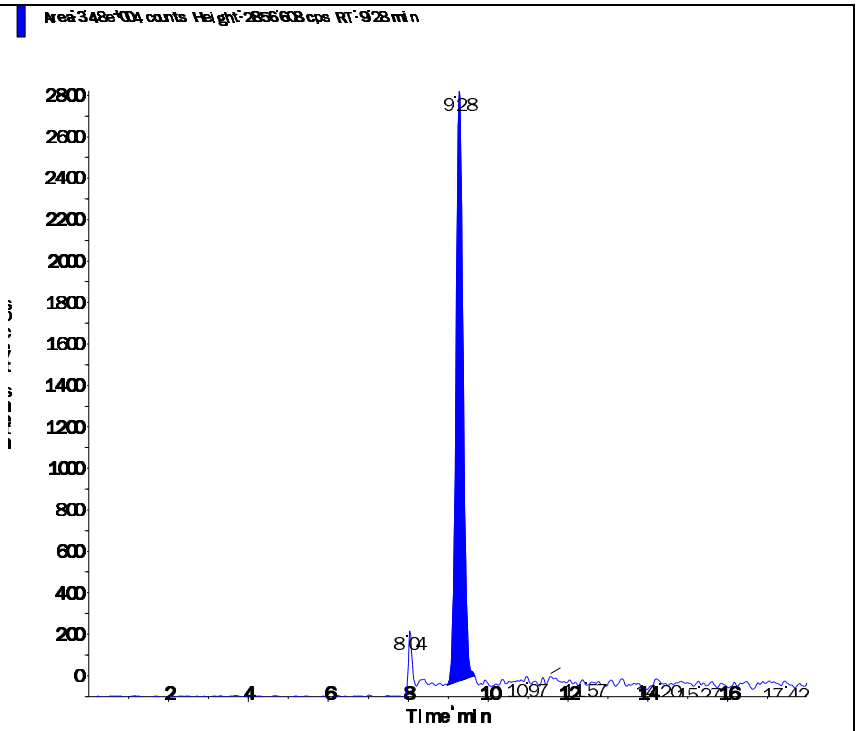
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.27 (9.84) min Calculated conc: 0.20 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	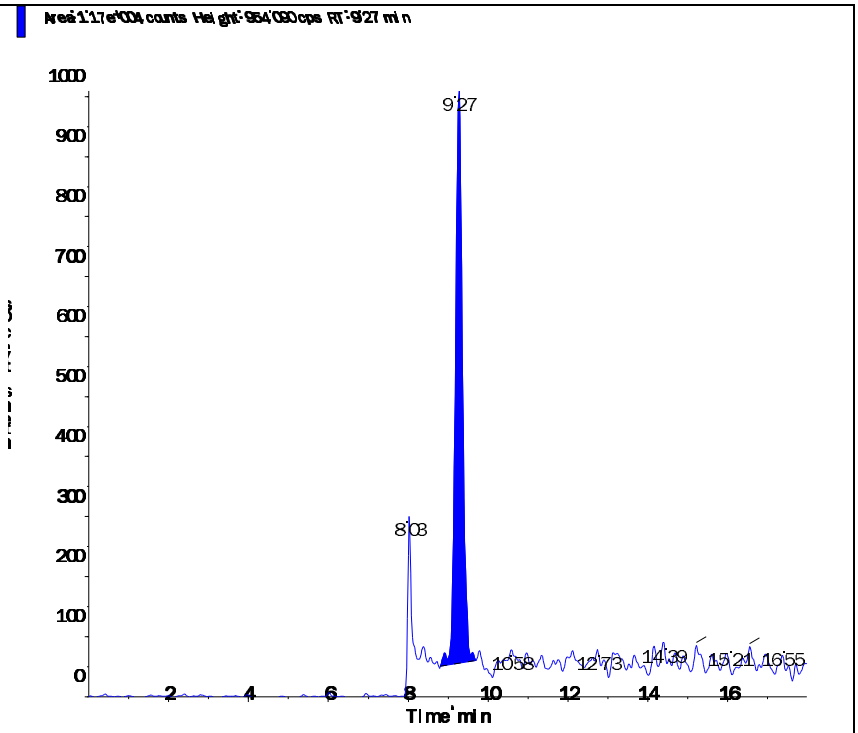

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Data File	LM35450.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 12:08:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-09 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35450.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 12:08:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.250e+05	9.31	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.050e+04	9.32	N/A	0.209
Perchlorate conf	1.100e+04	9.31	N/A	0.211

O18LP (Internal Standard)

RT (Exp. RT): 9.31(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

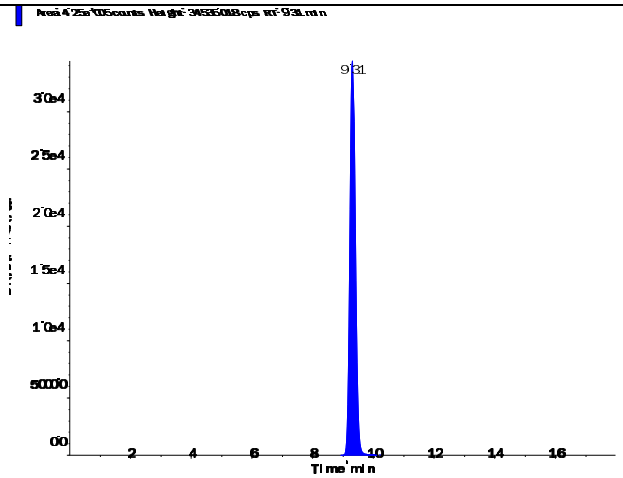

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.32 (9.84) min
Calculated conc:	0.209 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

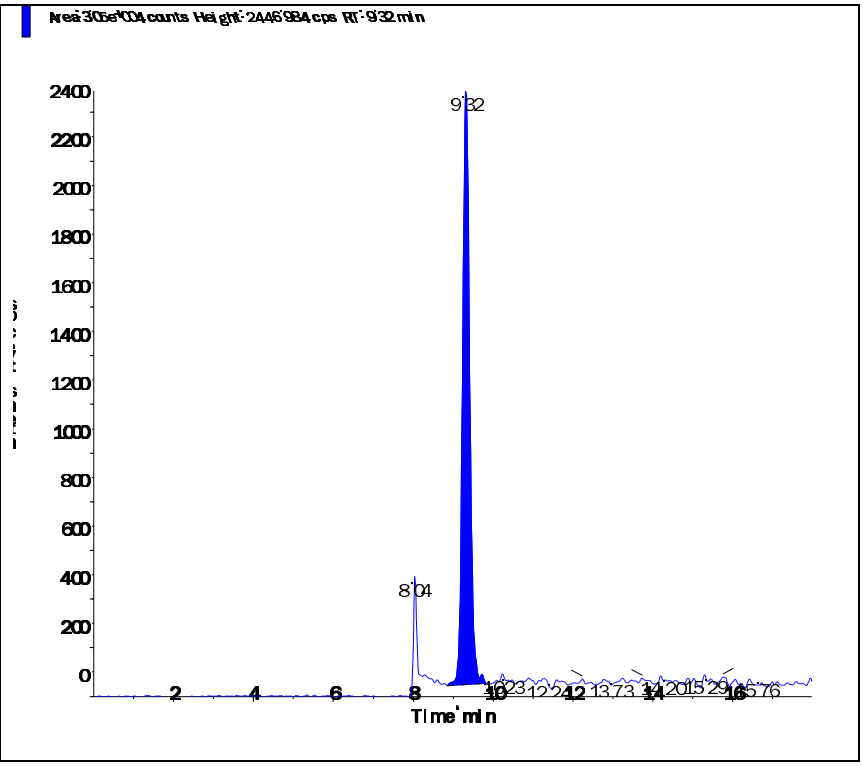

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.31 (9.84) min
Calculated conc:	0.211 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

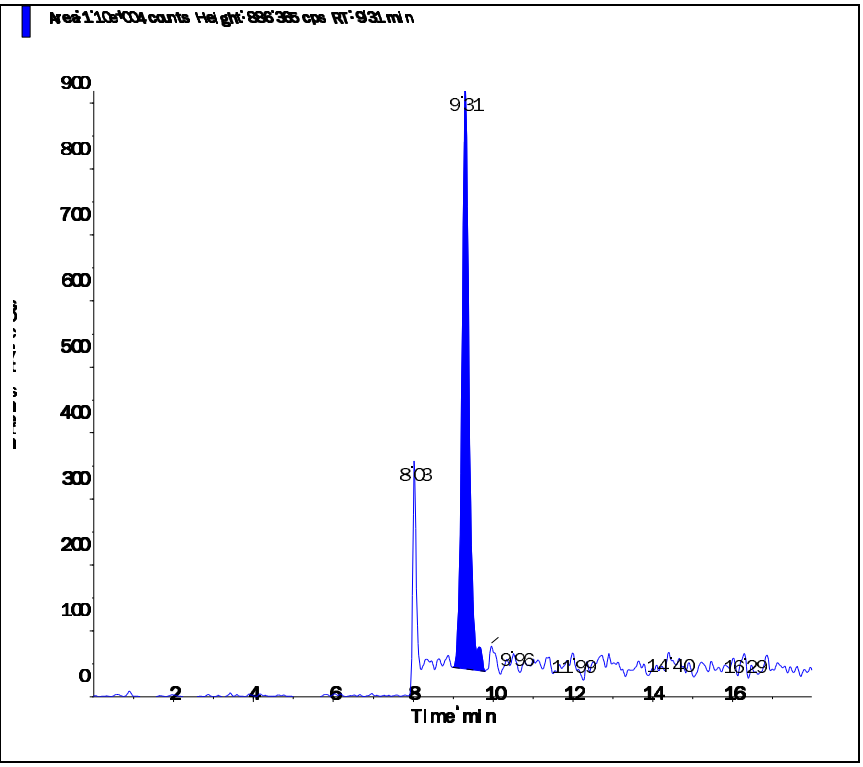

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Data File	LM35460.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 3:17:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-10 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35460.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 3:17:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-10	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.650e+05	9.33	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.200e+04	9.35	N/A	0.201
Perchlorate conf	1.270e+04	9.33	N/A	0.224

O18LP (Internal Standard)

RT (Exp. RT): 9.33(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

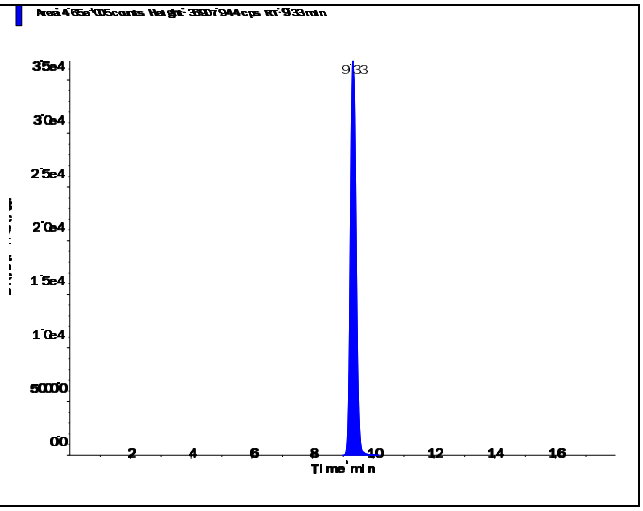

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

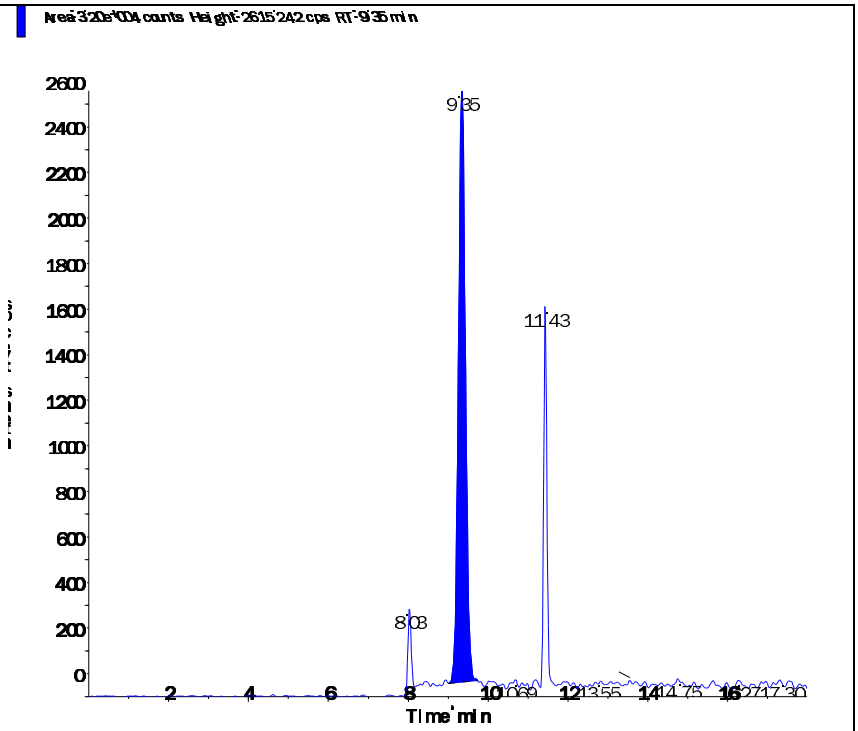

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.33 (9.84) min
Calculated conc:	0.224 ng/ml
Area Ratio:	0.027
Sample Type:	(Unknown)

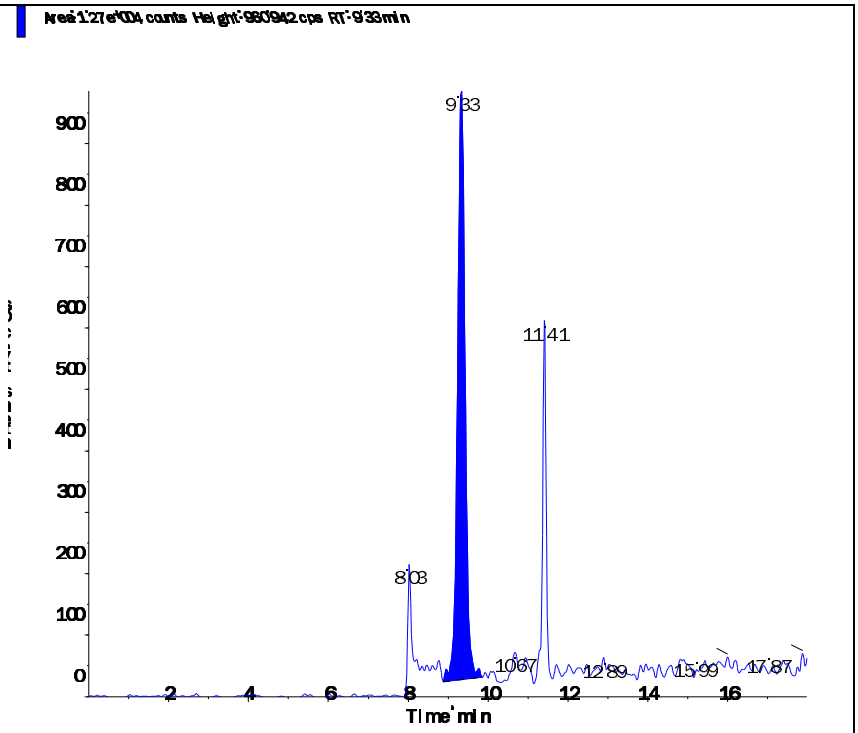

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Data File	LM35415.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 4:48:02 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-01 CCB	**Injection Vial**	1.00
Data File	LM35415.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 4:48:02 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.750e+05	9.37	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	5.830e+02	9.37	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.37(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

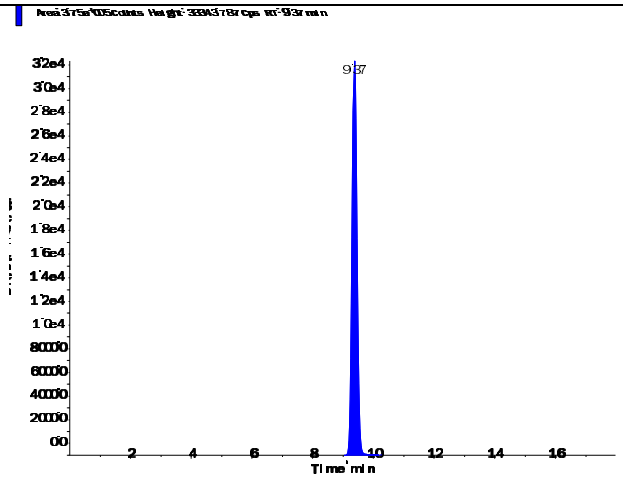

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

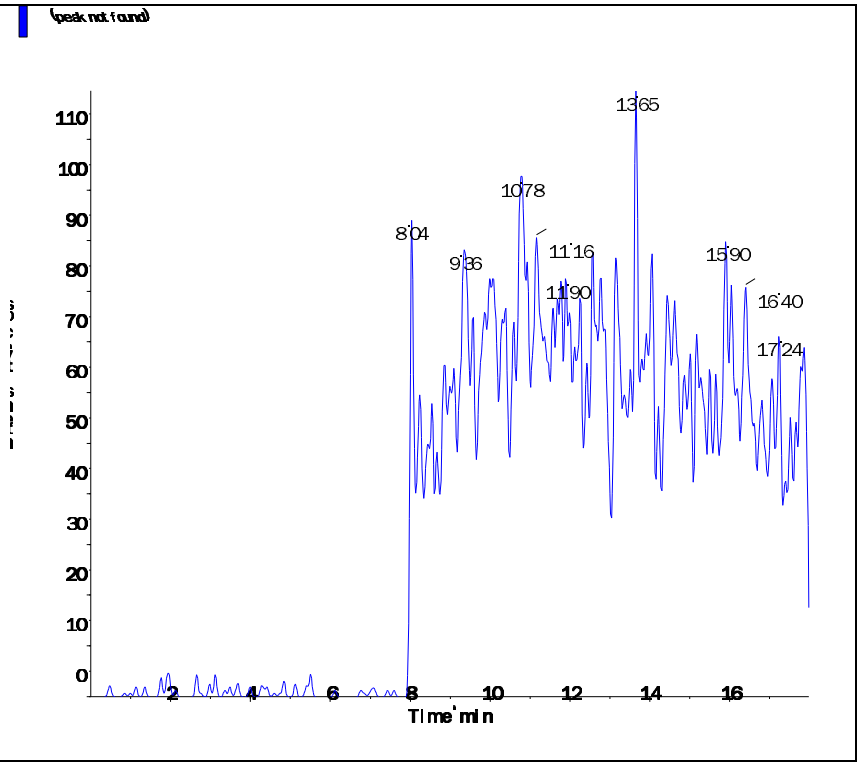

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.37 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

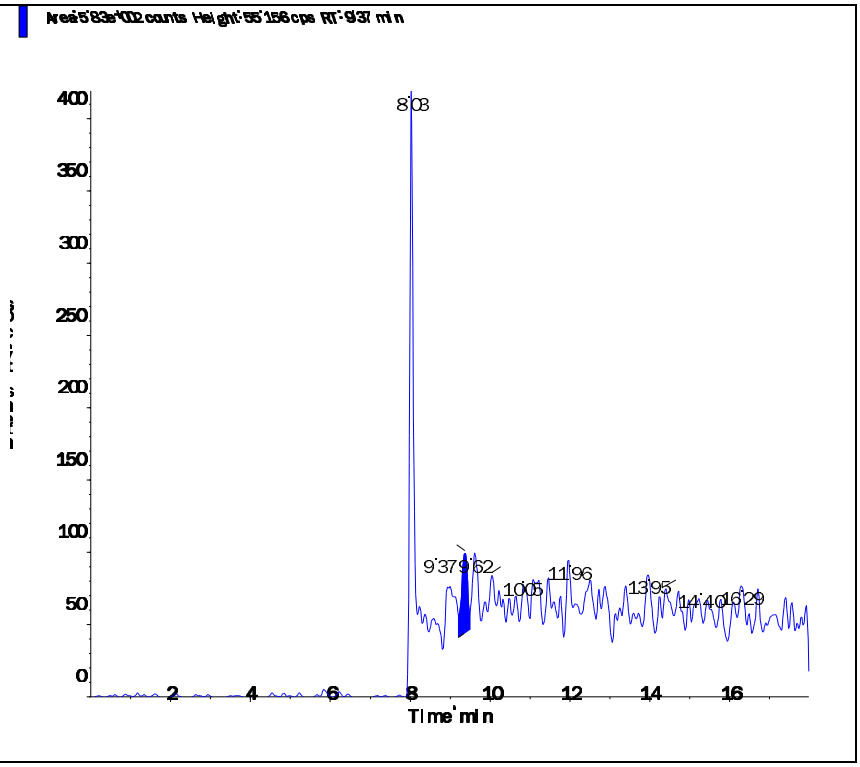

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Data File	LM35430.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 9:31:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-04 CCB	**Injection Vial**	1.00
Data File	LM35430.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 9:31:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.890e+05	9.42	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	2.230e+02	9.45	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.42(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

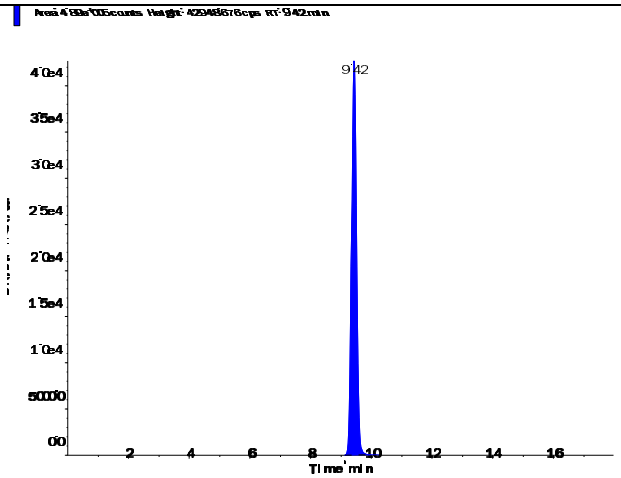

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

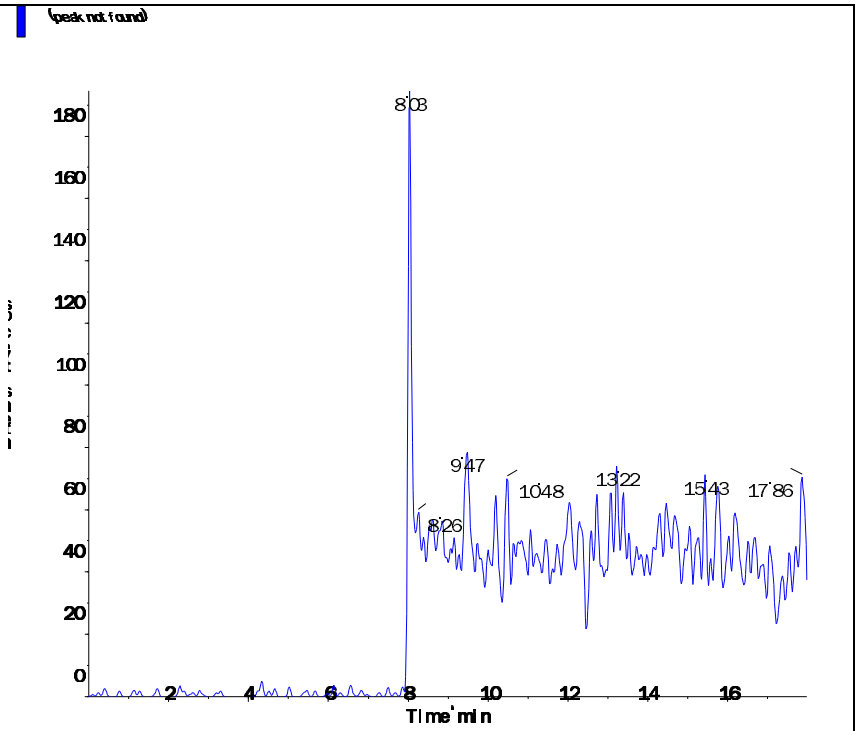

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.45 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

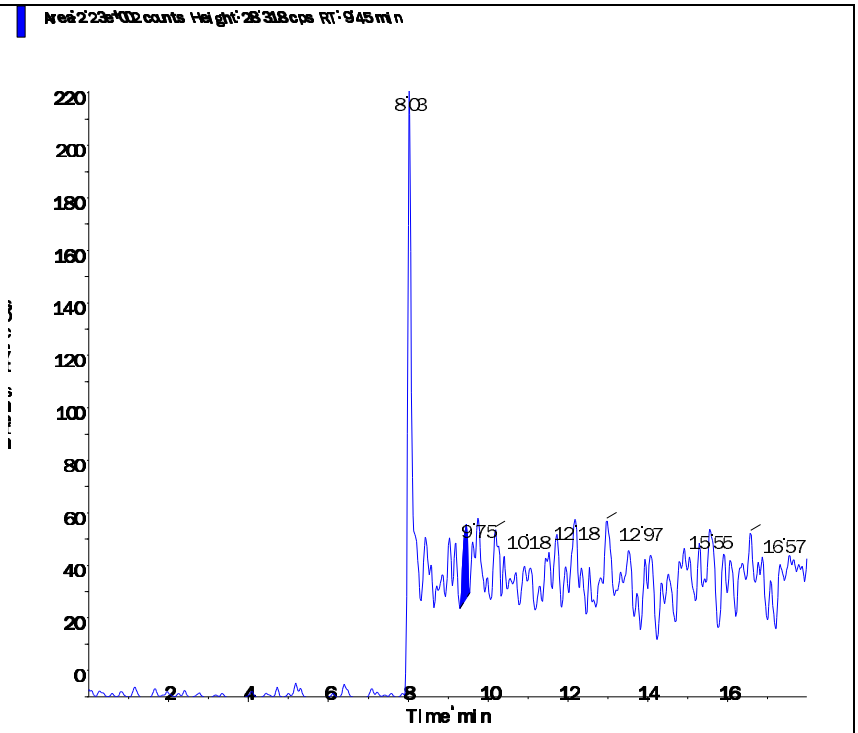

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Data File	LM35441.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 1:00:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-06 CCB	**Injection Vial**	1.00
Data File	LM35441.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 1:00:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.040e+05	9.46	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.46(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

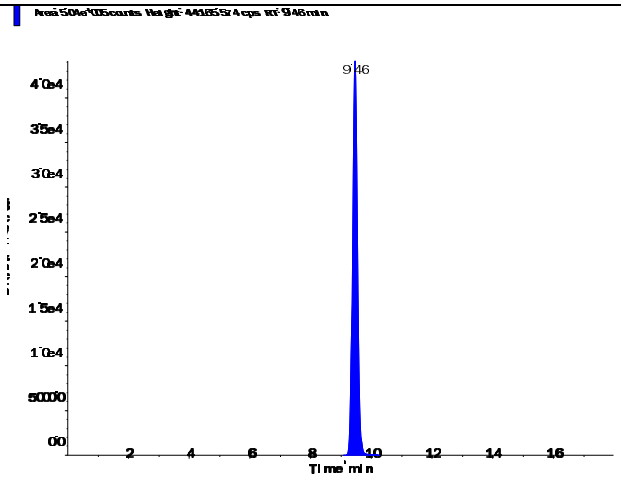

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

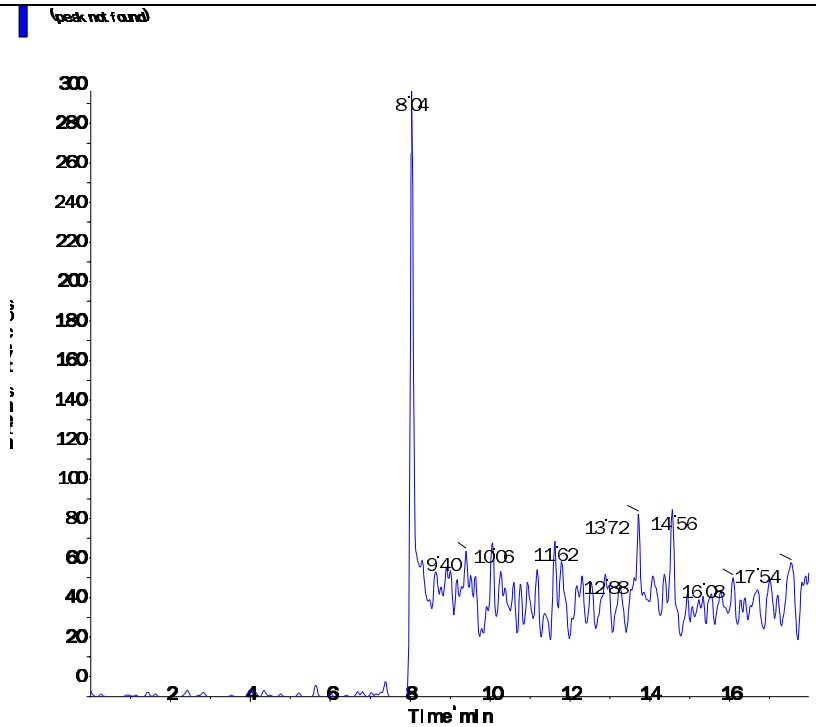

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

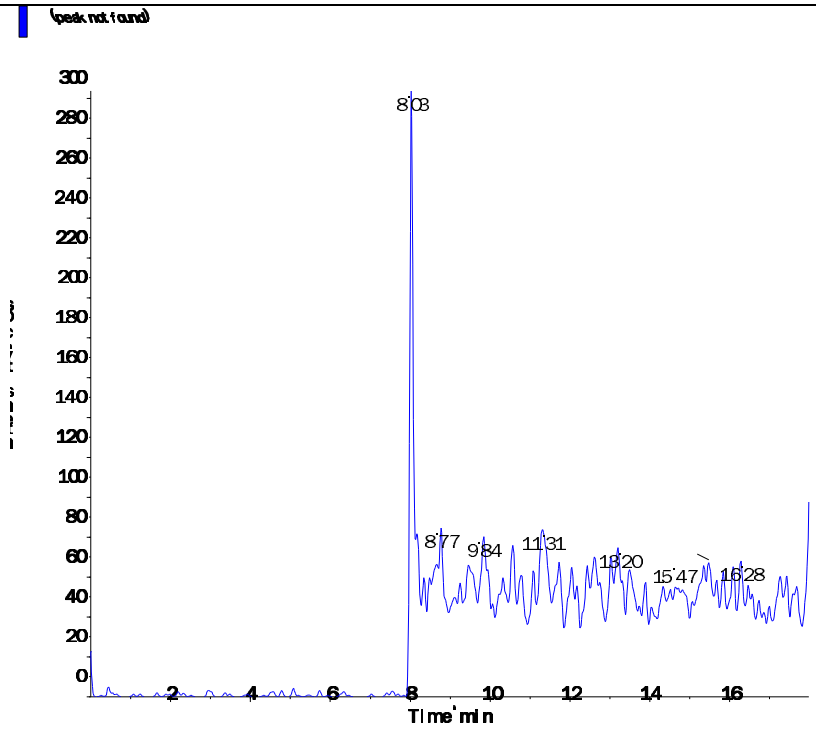

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Printed: 6/23/2016 5:04 PM

Data File	LM35448.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 3:12:48 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-08 CCB	**Injection Vial**	1.00
Data File	LM35448.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 3:12:48 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.850e+05	9.47	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.47(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

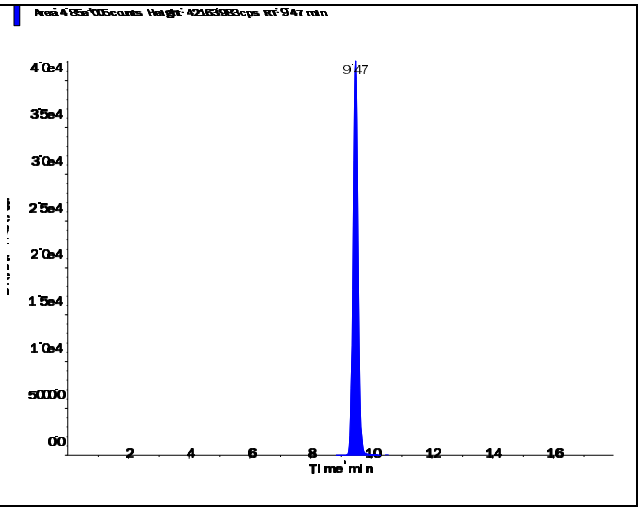

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Printed: 6/23/2016 5:04 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

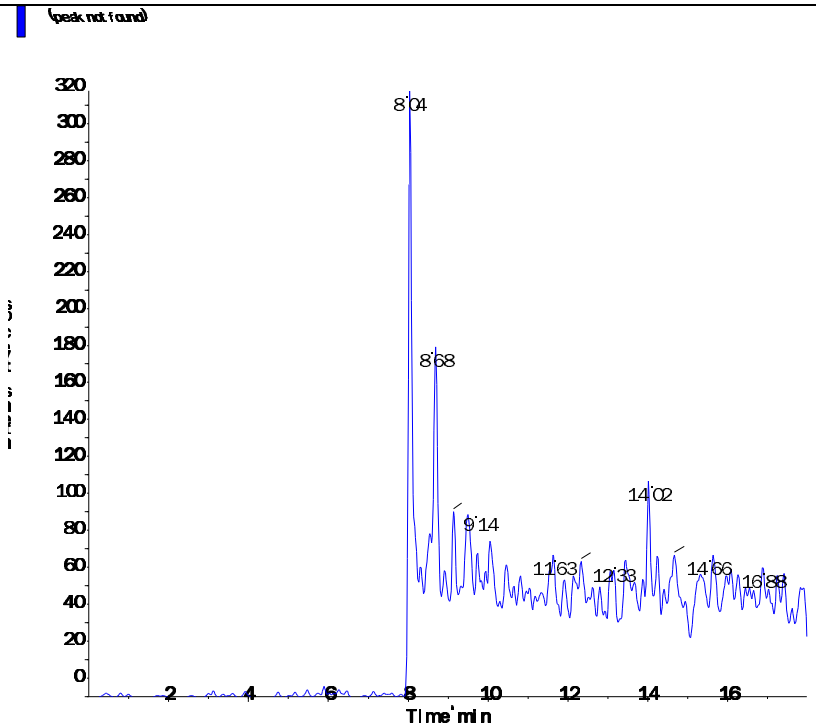

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

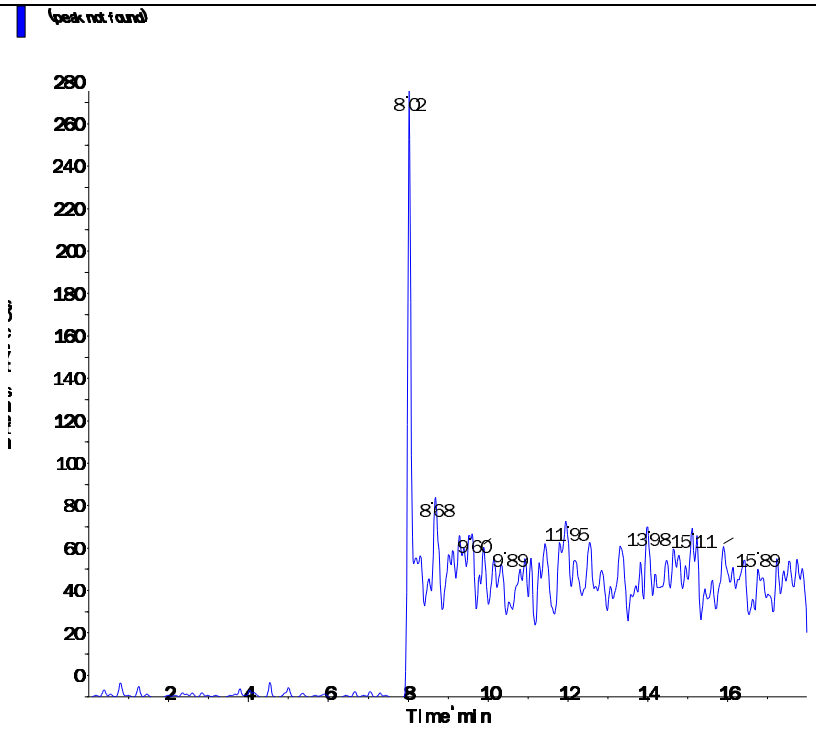

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/23/2016 5:05 PM

Data File	LM35451.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 12:27:11 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-10 CCB	**Injection Vial**	1.00
Data File	LM35451.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 12:27:11 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.370e+05	9.51	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	5.600e+02	9.50	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.51(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

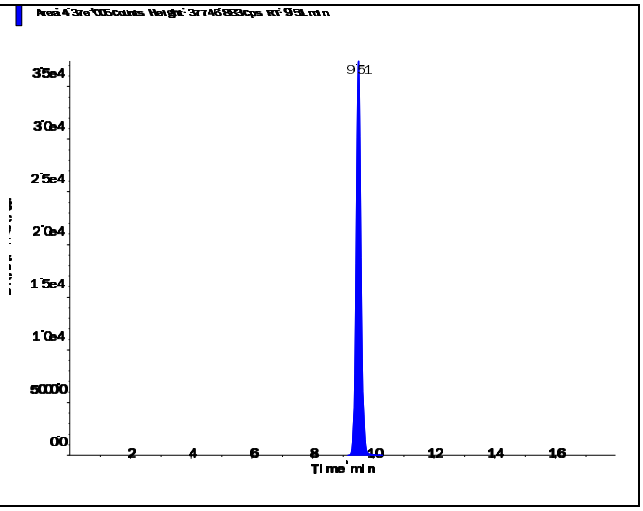

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Printed: 6/23/2016 5:05 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	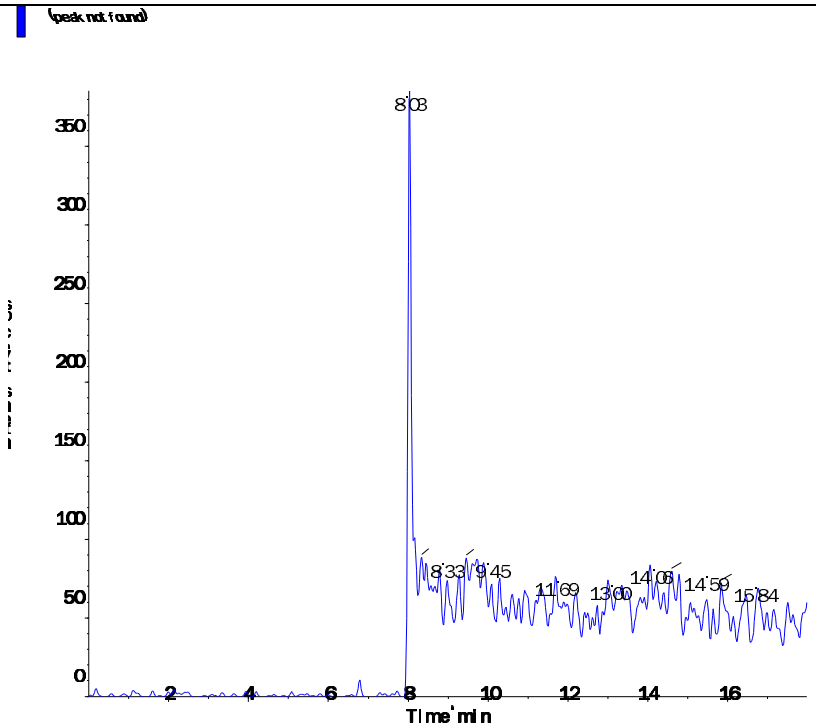
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.50 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	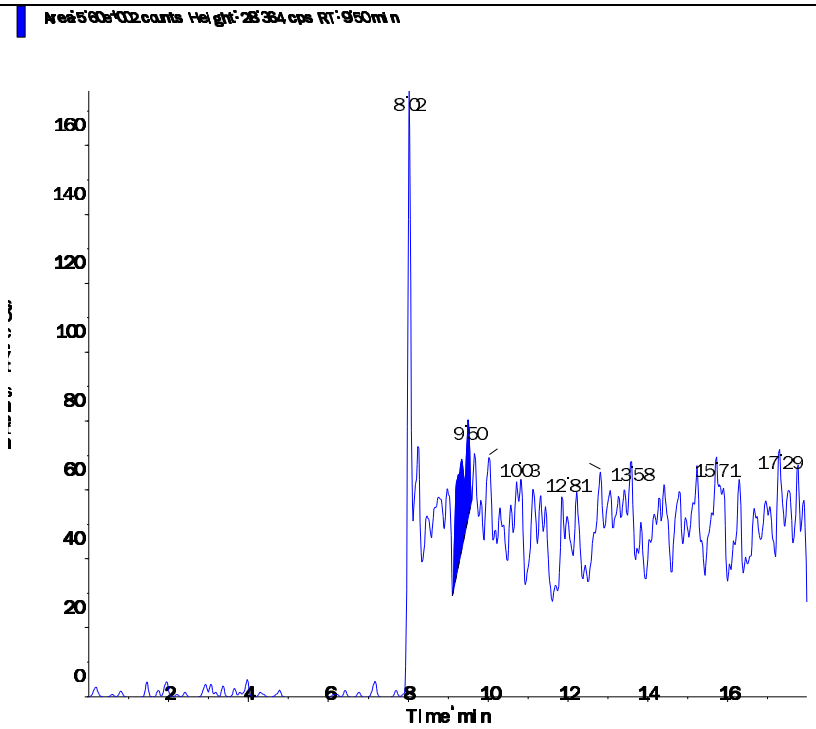

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Created with Analyst Reporter
Printed: 6/23/2016 5:08 PM

Data File	LM35461.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 3:36:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-12 CCB	**Injection Vial**	1.00
Data File	LM35461.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 3:36:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-12	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.660e+05	9.52	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.52(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

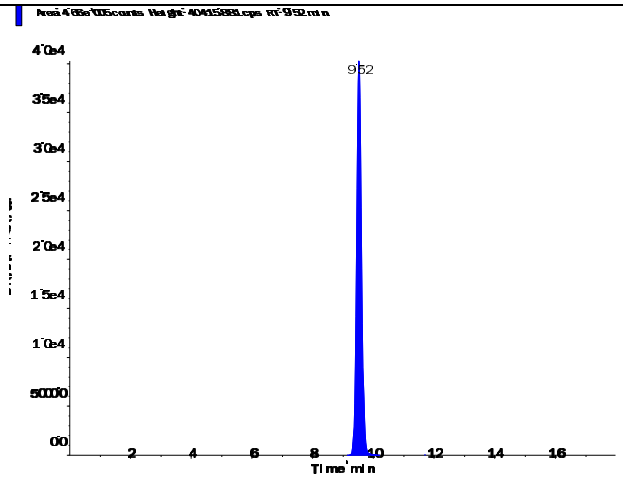

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

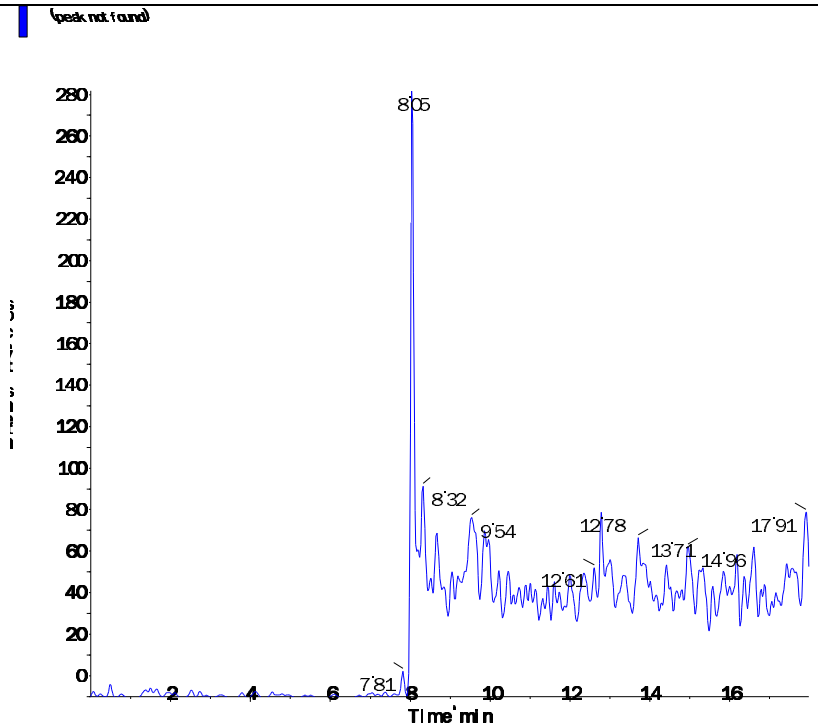

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

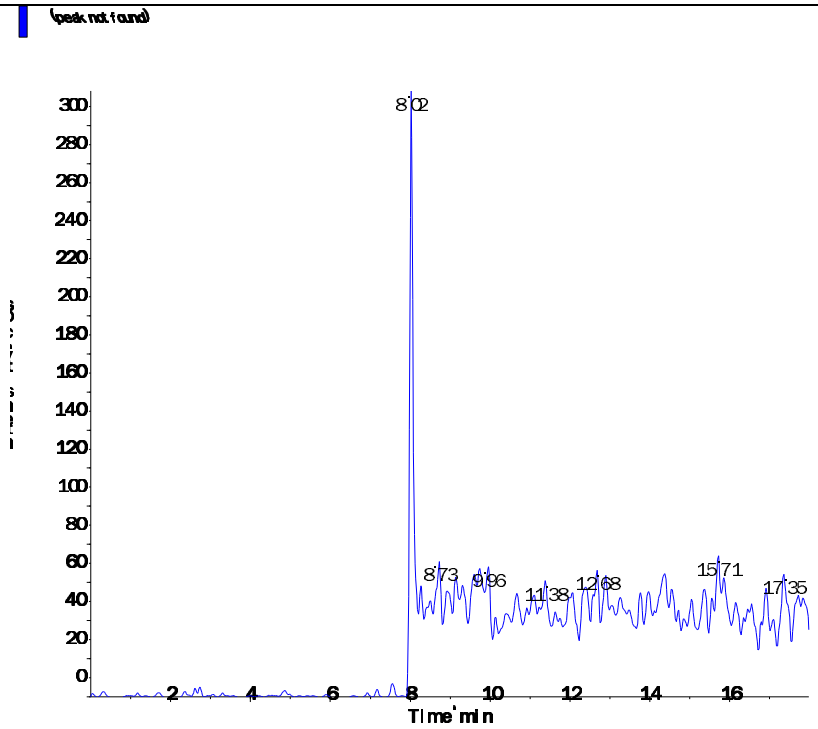

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Created with Analyst Reporter
Printed: 6/23/2016 4:53 PM

Data File	LM35418.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 5:44:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM35418.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 5:44:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.330e+05	8.77	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.850e+04	8.77	N/A	0.192
Perchlorate conf	1.000e+04	8.76	N/A	0.187

O18LP (Internal Standard)

RT (Exp. RT): 8.77(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

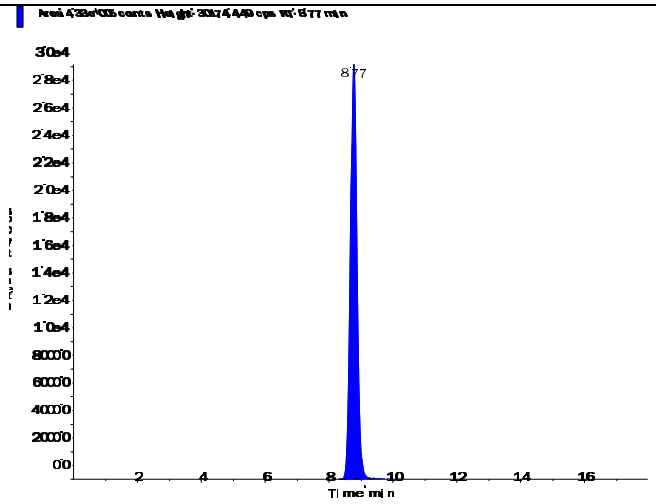

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Printed: 6/23/2016 4:53 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	8.77 (9.84) min
Calculated conc:	0.192 ng/ml
Area Ratio:	0.066
Sample Type:	(Unknown)

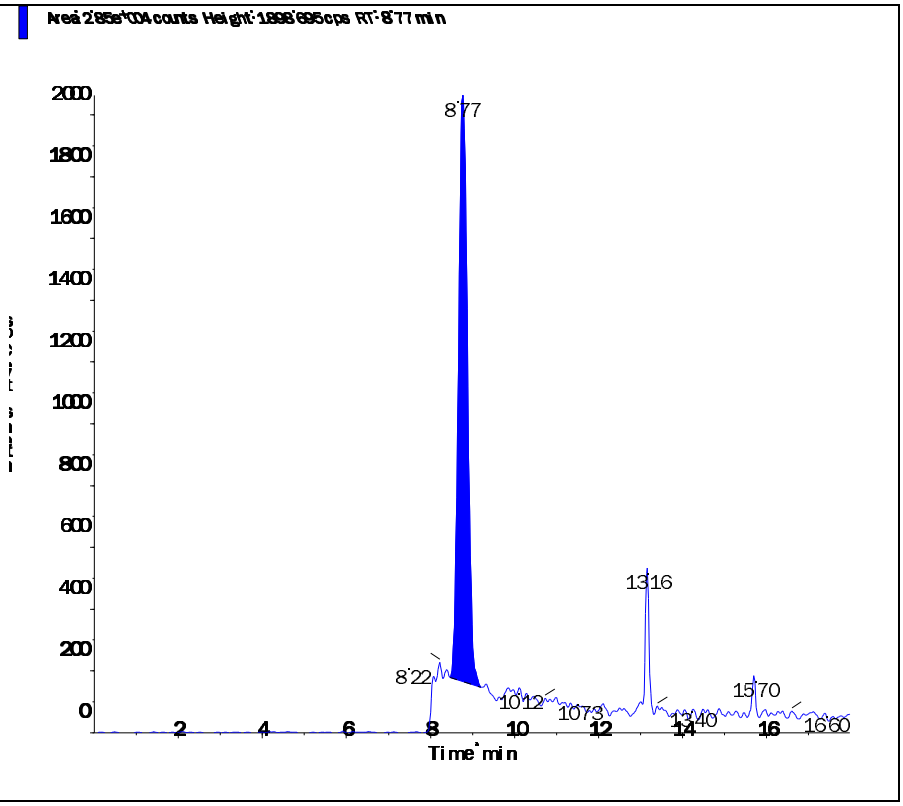

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	8.76 (9.84) min
Calculated conc:	0.187 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

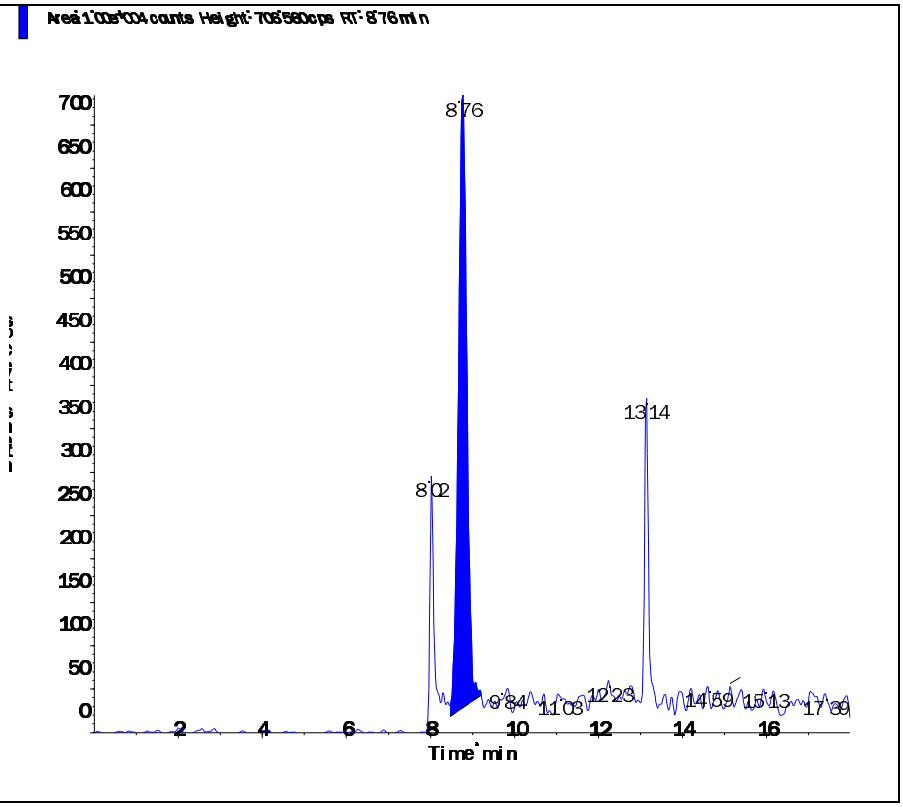

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Printing Time: 6:50:16 PM
Printing Date: Wednesday, June 22, 2016

Sample Name: "WG573791-01 MCT (0.2ug/L)" Sample ID: "WG573791-01" File: "LM35418.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index: 1
Sample Type: Unknown
Concentration: N/A
Calculated Conc: 0.230 ug/L
Acq. Date: 6/22/2016
Acq. Time: 5:44:45 PM

Modified: No
Proc. Algorithm: Analyst Classic
Smoothing Factor: 2
Noise Threshold: 18.48 cps
Area Threshold: 92.40 cps
Num. Smooths: 5
Sep. Width: 0.20
Sep. Height: 0.01
Exp. Peak Ratio: 5.00
Exp. Adj. Ratio: 4.00
Exp. Val. Ratio: 3.00
RT Window: 30.000 sec
Expected RT: 9.84 min
Use Relative RT: Yes

Int. Type: Valley
Retention Time: 8.77 min
Area: 3.40e+004 counts
Height: 1990.014 cps
Start Time: 8.303 min
End Time: 9.417 min

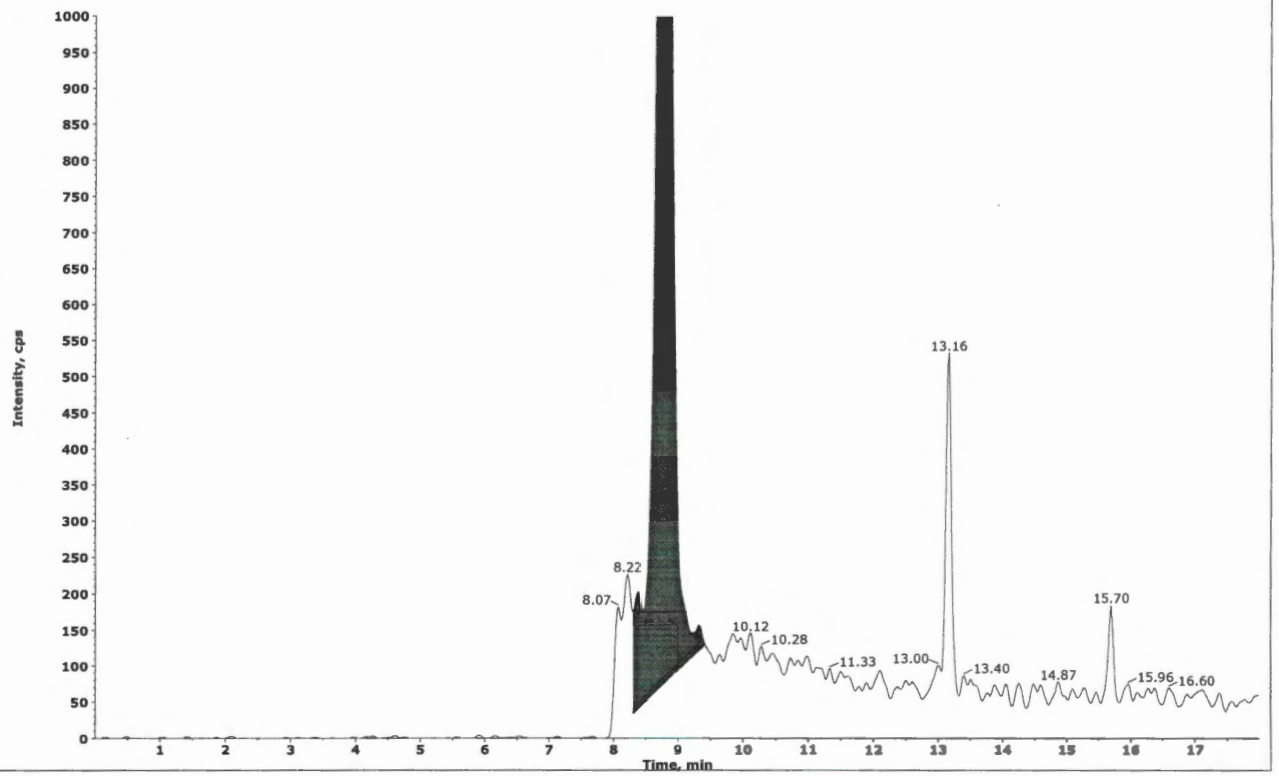

Collected by: N/A
Electronic Signature: no
Operator: lcmsl

Printing Time: 6:52:29 PM
Printing Date: Wednesday, June 22, 2016

Sample Name: "WG573791-01 MCT (0.2ug/L)" Sample ID: "WG573791-01" File: "LM35418.wiff"
Peak Name: "Perchlorate" Mass(es): "98.6/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.192 ug/L
Acq. Date:	6/22/2016
Acq. Time:	5:44:45 PM
Modified:	Yes
Proc. Algorithm:	Analyst Classic
Smoothing Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Sep. Width:	0.20
Sep. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Manual
Retention Time:	8.77 min
Area:	2.85e+004 counts
Height:	1898.695 cps
Start Time:	8.465 min
End Time:	9.194 min

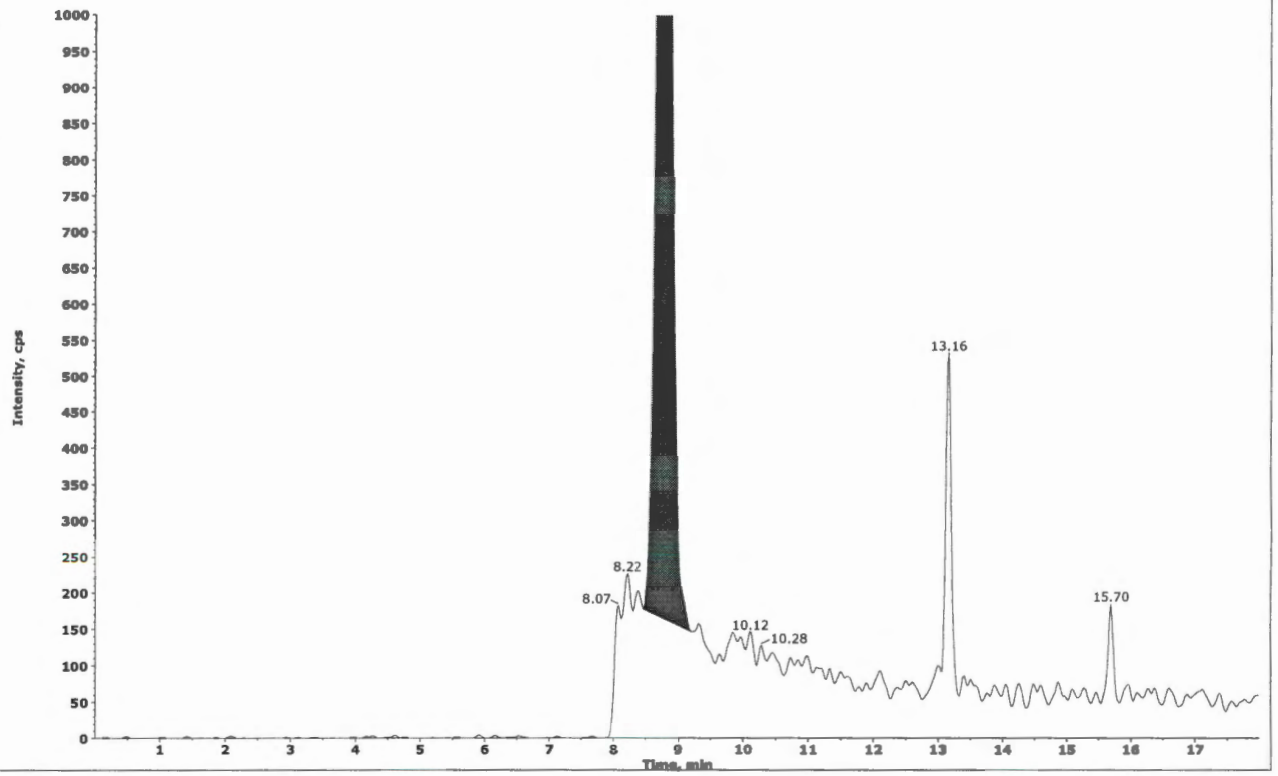

#4
JWR 06/22/16

✓ WD
6-24-16

Collected by: N/A
Electronic Signature: no
Operator: lcms1

2.2.1.5 Raw QC Data

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Printed: 6/23/2016 4:54 PM

Data File	LM35419.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 6:03:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-02 BLANK	**Injection Vial**	5.00
Data File	LM35419.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 6:03:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.360e+05	9.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	5.050e+02	9.25	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.30(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

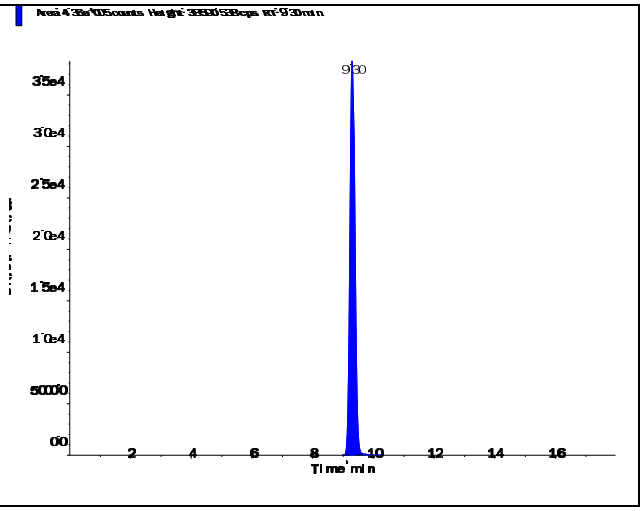

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Printed: 6/23/2016 4:54 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

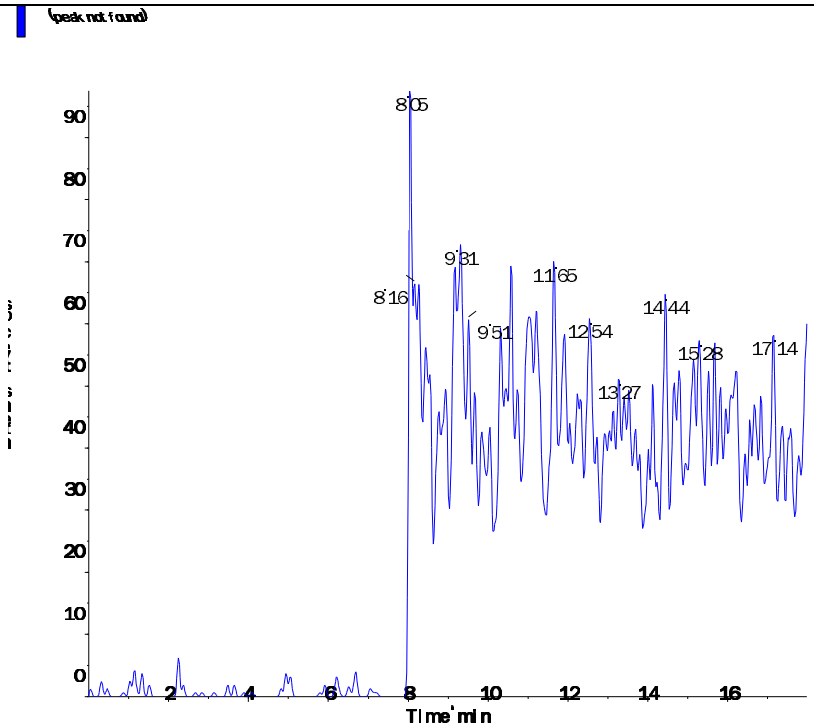

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.25 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

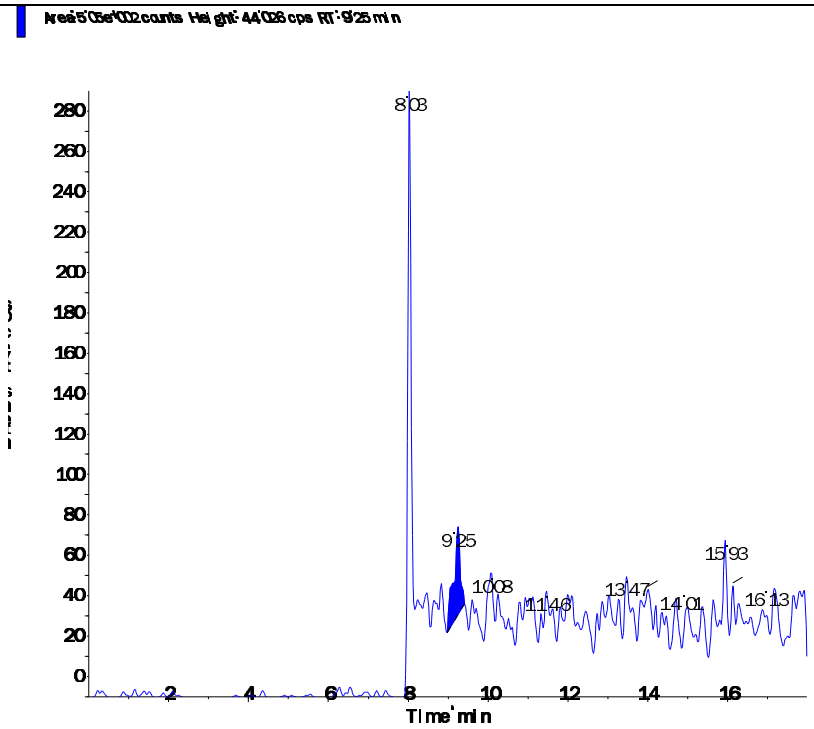

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Data File	LM35420.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 6:22:36 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM35420.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 6:22:36 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.400e+05	9.33	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.030e+04	9.35	N/A	0.201
Perchlorate conf	1.150e+04	9.33	N/A	0.213

O18LP (Internal Standard)

RT (Exp. RT): 9.33(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

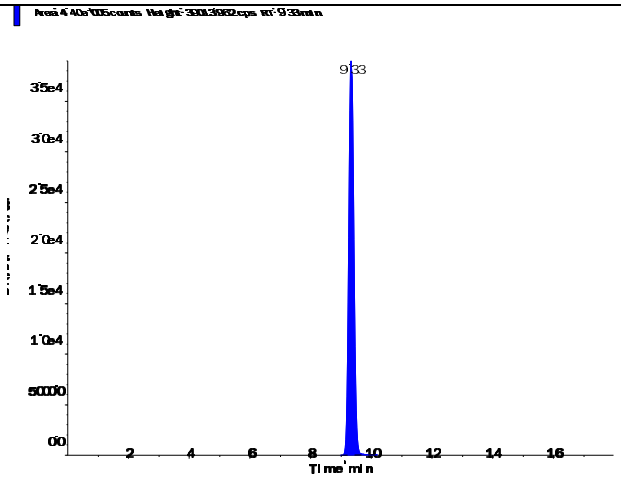

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

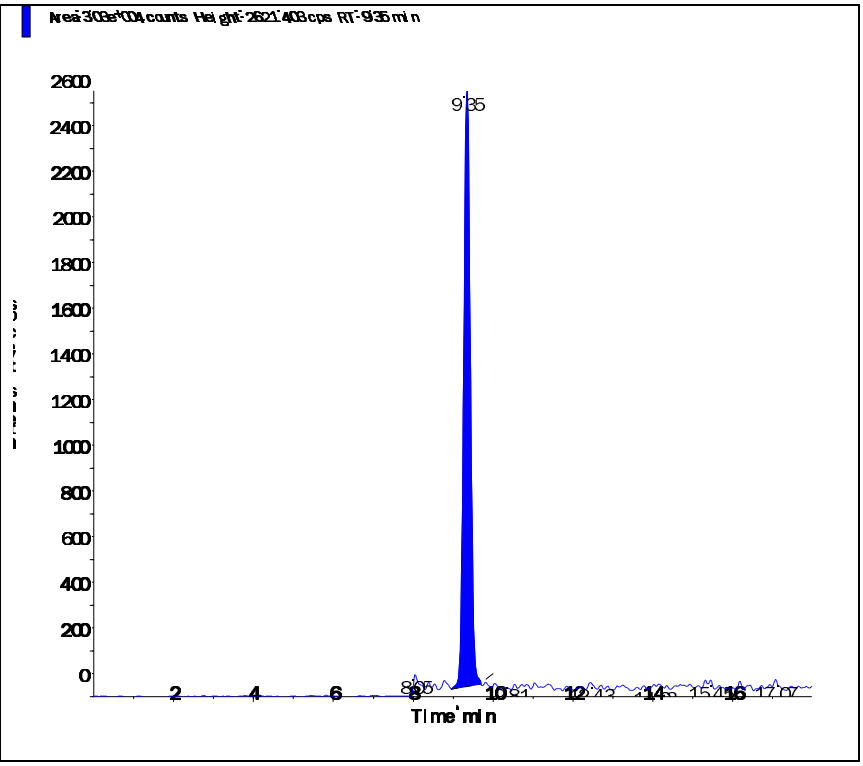

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.33 (9.84) min
Calculated conc:	0.213 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

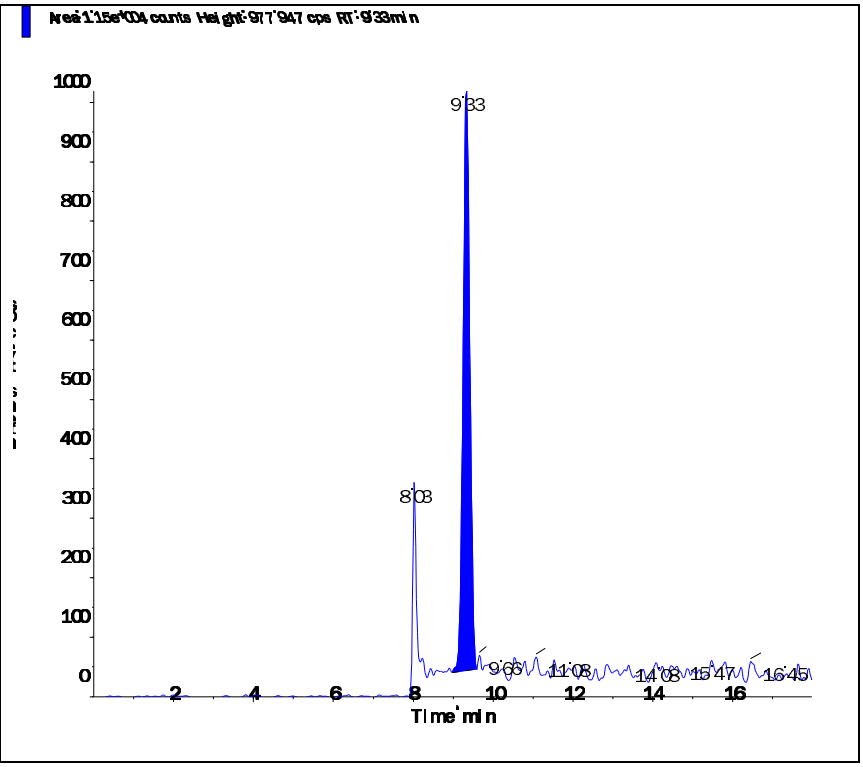

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Printed: 6/23/2016 4:55 PM

Data File	LM35421.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 6:41:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-04 LCS2 (0.2ug/L)	**Injection Vial**	7.00
Data File	LM35421.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 6:41:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.350e+05	9.36	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.200e+04	9.38	N/A	0.215
Perchlorate conf	1.150e+04	9.36	N/A	0.216

O18LP (Internal Standard)

RT (Exp. RT): 9.36(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

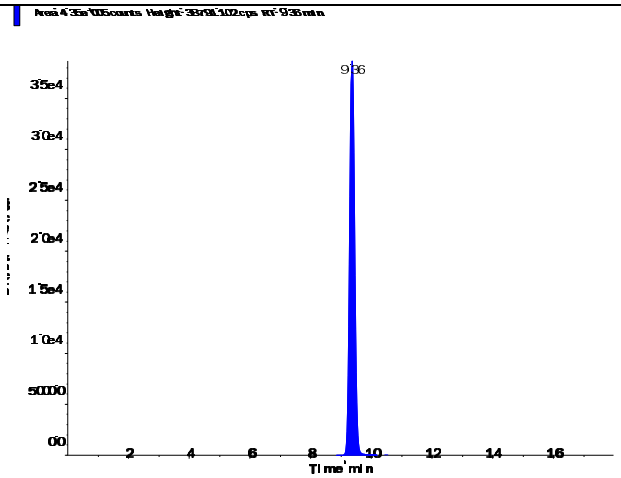

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Printed: 6/23/2016 4:55 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	0.215 ng/ml
Area Ratio:	0.074
Sample Type:	(Unknown)

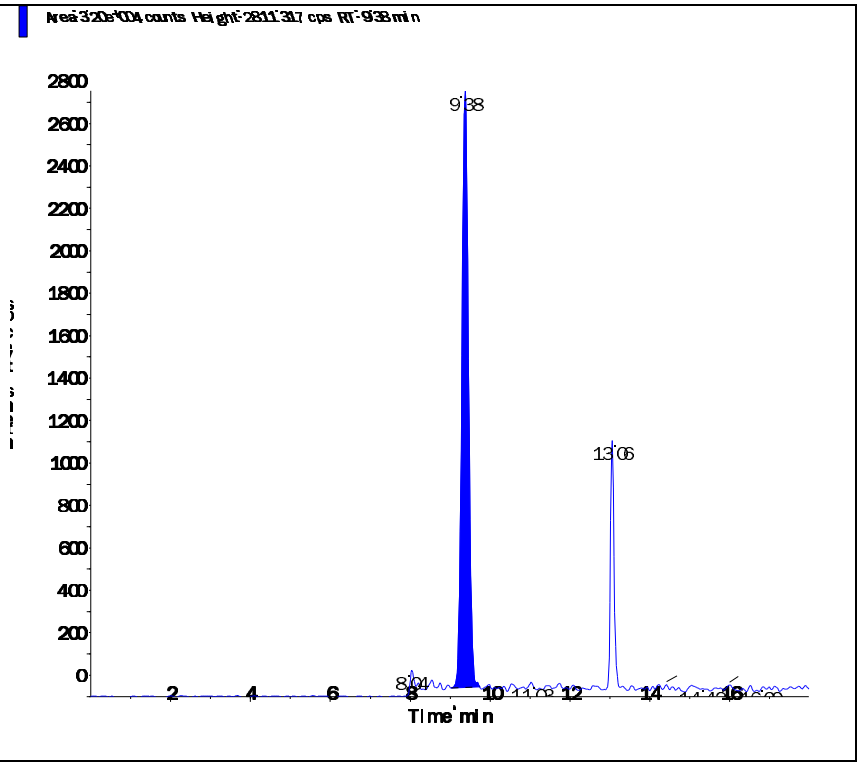

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.36 (9.84) min
Calculated conc:	0.216 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

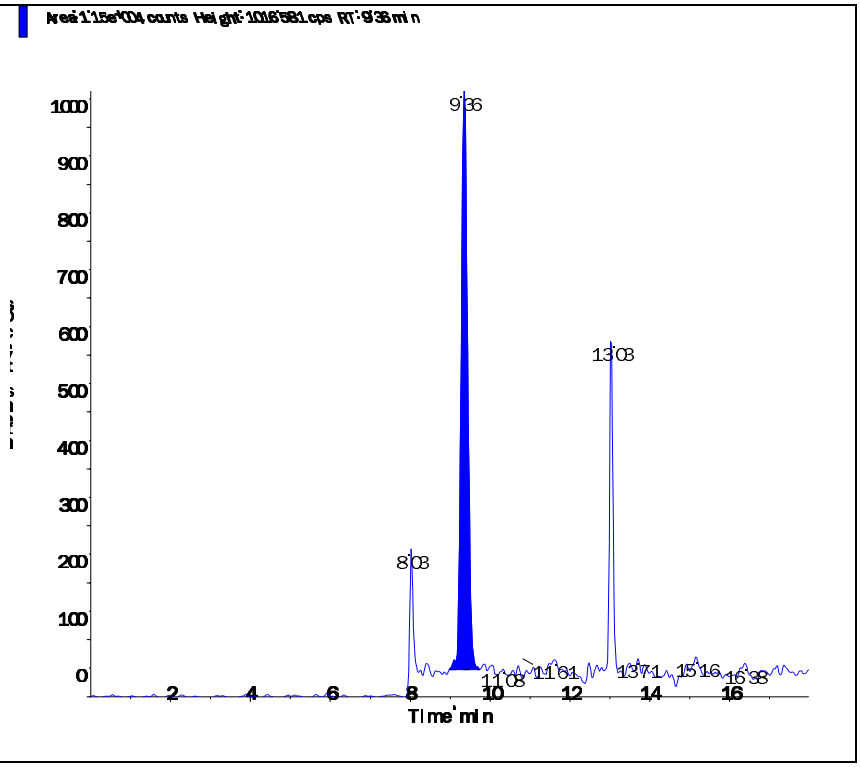

s.dataFile Page 2 of 2

2.3 Metals Data

2.3.1 Metals I C P Data

2.3.1.1 Summary Data

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW1-061016	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 11:57
Collect Date:	06/10/2016 07:55	**Dilution:**	1	**File ID:**	T3.062316.115734
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.0763	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Potassium, Total	7440-09-7	3.24		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW1-061016	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 14:09
Collect Date:	06/10/2016 07:55	**Dilution:**	10	**File ID:**	T3.062316.140930
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	47.2		5.00	2.50	1.25
Iron, Total	7439-89-6	20.2		2.00	1.00	0.500
Magnesium, Total	7439-95-4	41.4		10.0	5.00	2.50
Sodium, Total	7440-23-5	299		10.0	5.00	2.50

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW3-061016	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 12:01
Collect Date:	06/10/2016 09:05	**Dilution:**	1	**File ID:**	T3.062316.120126
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.100	U	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	0.418		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	20.3		1.00	0.500	0.250
Potassium, Total	7440-09-7	2.10		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	MW3-061016	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 14:13
Collect Date:	06/10/2016 09:05	**Dilution:**	10	**File ID:**	T3.062316.141326
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	30.2		5.00	2.50	1.25
Sodium, Total	7440-23-5	260		10.0	5.00	2.50

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	17WW08-061016	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 12:12
Collect Date:	06/10/2016 10:10	**Dilution:**	1	**File ID:**	T3.062316.121258
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	1.01		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	20.5		0.500	0.250	0.125
Magnesium, Total	7439-95-4	12.3		1.00	0.500	0.250
Potassium, Total	7440-09-7	1.94	J	2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	17WW08-061016	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 14:17
Collect Date:	06/10/2016 10:10	**Dilution:**	10	**File ID:**	T3.062316.141723
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Iron, Total	7439-89-6	12.8		2.00	1.00	0.500
Sodium, Total	7440-23-5	136		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW24F-061016	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 12:16
Collect Date:	06/10/2016 14:40	**Dilution:**	1	**File ID:**	T3.062316.121653
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.466		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	6.94		0.500	0.250	0.125
Iron, Total	7439-89-6	0.284		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	4.40		1.00	0.500	0.250
Potassium, Total	7440-09-7	1.58	J	2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW24F-061016	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 14:21
Collect Date:	06/10/2016 14:40	**Dilution:**	10	**File ID:**	T3.062316.142120
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sodium, Total	7440-23-5	131		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.1.2 QC Summary Data

Example 6010 Calculations
Thermo Scientific iCAP

1.0 Initial Calibration (ICAL) Parameters
For a multi-point calibration, the system performs linear regression from data consisting of a blank and four standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG572929
Analyst: AC
Spike Analyst: AC
Run Date: 06/16/2016 09:15
Method: 3015
Balance: BAL019
Instrument: MW-1
Instrument Start: 06/16/2016 09:15

SOP: ME407 Revison 19
Spike Solution: STD76576
Spike Witness: VC
HNO3 Lot #: COA18905
HCL Lot #: COA18769
ICP Filters- fisher-Lot# RGT35619
40 & 50 ML. DIGESTION TU COA18772

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG572929-02	BLANK	1	40 mL	50 mL	206.938 g	206.935 g		
2	WG572929-03	LCS	1	40 mL	50 mL	210.153 g	210.151 g	5 mL	
3	L16060643-01	SAMP	1	40 mL	50 mL	207.856 g	207.852 g		06/20/16
4	L16060643-02	SAMP	1	40 mL	50 mL	204.497 g	204.494 g		06/20/16
5	L16060643-03	SAMP	1	40 mL	50 mL	207.772 g	207.768 g		06/20/16
6	L16060643-04	SAMP	1	40 mL	50 mL	207.139 g	207.134 g		06/20/16
7	L16060643-05	SAMP	1	40 mL	50 mL	205.74 g	205.731 g		06/20/16
8	L16060643-06	SAMP	1	40 mL	50 mL	208.714 g	208.698 g		06/20/16
9	L16060643-07	SAMP	1	40 mL	50 mL	206.348 g	206.336 g		06/20/16
10	L16060643-08	SAMP	1	40 mL	50 mL	207.957 g	207.944 g		06/20/16
11	L16060643-09	SAMP	1	40 mL	50 mL	206.486 g	206.475 g		06/20/16
12	L16060650-01	SAMP	1	40 mL	50 mL	205.084 g	205.057 g		06/24/16
13	L16060650-02	SAMP	1	40 mL	50 mL	208.779 g	208.757 g		06/24/16
14	L16060650-03	SAMP	1	40 mL	50 mL	209.27 g	209.262 g		06/24/16
15	L16060650-08	SAMP	1	40 mL	50 mL	206.678 g	206.659 g		06/24/16
16	L16060729-01	SAMP	1	40 mL	50 mL	207.286 g	207.265 g		06/24/16
17	L16060729-02	SAMP	1	40 mL	50 mL	207.115 g	207.107 g		06/24/16
18	L16060729-03	SAMP	1	40 mL	50 mL	207.445 g	207.43 g		06/24/16
19	L16060730-01	SAMP	1	40 mL	50 mL	206.076 g	206.069 g		06/24/16
20	L16060730-02	SAMP	1	40 mL	50 mL	209.237 g	209.22 g		06/24/16
21	L16060730-03	SAMP	1	40 mL	50 mL	208.764 g	208.758 g		06/24/16
22	WG572929-01	REF	1	40 mL	50 mL	206.882 g	206.875 g		
23	L16060806-01	RS01	1	40 mL	50 mL	206.882 g	206.875 g		06/24/16
24	WG572929-04	MS	1	40 mL	50 mL	213.169 g	213.153 g	5 mL	
25	L16060806-03	MS01	1	40 mL	50 mL	213.169 g	213.153 g	5 mL	06/24/16
26	WG572929-05	MSD	1	40 mL	50 mL	215.158 g	215.146 g	5 mL	
27	L16060806-04	SD01	1	40 mL	50 mL	215.158 g	215.146 g	5 mL	06/24/16

L16060729-01	filtered digestate

Analyst: Andre R Cochrel

Reviewer:

MW_DIG - Modified 09/30/2009
PDF ID: 4809574
Report generated: 06/16/2016 10:09

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062316T3.1R.TXT

Analyst1: JYH Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 573560,573561

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.062316.094745	WG573930-01	Calibration Point		1		06/23/16 09:47
2	T3.062316.095145	WG573930-02	Calibration Point		1		06/23/16 09:51
3	T3.062316.095544	WG573930-03	Calibration Point		1		06/23/16 09:55
4	T3.062316.095942	WG573930-04	Calibration Point		1		06/23/16 09:59
5	T3.062316.100322	WG573930-05	Calibration Point		1		06/23/16 10:03
6	T3.062316.100658	WG573930-06	Initial Calibration Verification		1		06/23/16 10:06
7	T3.062316.101036	WG573930-07	Initial Calib Blank		1		06/23/16 10:10
8	T3.062316.101434	WG573930-08	Low Level Initial Calibration V		1		06/23/16 10:14
9	T3.062316.101833	WG573930-09	Low Level Initial Calibration V		1		06/23/16 10:18
10	T3.062316.102228	WG573930-10	Interference Check		1		06/23/16 10:22
11	T3.062316.102622	WG573930-11	Interference Check		1		06/23/16 10:26
12	T3.062316.103007	WG573930-12	CCV		1		06/23/16 10:30
13	T3.062316.103346	WG573930-13	CCB		1		06/23/16 10:33
14	T3.062316.103746	WG572929-02	Method/Prep Blank	40/50	1		06/23/16 10:37
15	T3.062316.104808	WG572929-03	Laboratory Control S	40/50	1		06/23/16 10:48
16	T3.062316.105149	WG572929-01	Reference Sample		1	L16060806-01	06/23/16 10:51
17	T3.062316.105545	WG572929-04	Matrix Spike	40/50	1	L16060806-01	06/23/16 10:55
18	T3.062316.105925	WG572929-05	Matrix Spike Duplica	40/50	1	L16060806-01	06/23/16 10:59
19	T3.062316.110304	L16060643-01	15-13-8 S1	40/50	1		06/23/16 11:03
20	T3.062316.110701	WG573560-01	Post Digestion Spike		1	L16060643-01	06/23/16 11:07
21	T3.062316.111031	WG573560-02	Serial Dilution		5	L16060643-01	06/23/16 11:10
22	T3.062316.111429	WG573560-02	Serial Dilution		25	L16060643-01	06/23/16 11:14
23	T3.062316.111829	WG573930-14	CCV		1		06/23/16 11:18
24	T3.062316.112207	WG573930-15	CCB		1		06/23/16 11:22
25	T3.062316.112606	L16060643-02	15-13-8 S2	40/50	1		06/23/16 11:26
26	T3.062316.113003	L16060643-03	15-13-8 S3	40/50	1		06/23/16 11:30
27	T3.062316.113358	L16060643-04	15-11-1 S1	40/50	1		06/23/16 11:33
28	T3.062316.113754	L16060643-05	2208-118 W2	40/50	1		06/23/16 11:37
29	T3.062316.114150	L16060643-06	2208-118 W1	40/50	1		06/23/16 11:41
30	T3.062316.114545	L16060643-07	2208-118 S1	40/50	1		06/23/16 11:45
31	T3.062316.114943	L16060643-08	2208-118 S2	40/50	1		06/23/16 11:49
32	T3.062316.115338	L16060643-09	2208-118 S3	40/50	1		06/23/16 11:53
33	T3.062316.115734	L16060650-01	MW1-061016	40/50	1		06/23/16 11:57
34	T3.062316.120126	L16060650-02	MW3-061016	40/50	1		06/23/16 12:01

Page: 1 Approved: June 24, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062316T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573560,573561

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.062316.120521	WG573930-16	CCV		1		06/23/16 12:05
36	T3.062316.120859	WG573930-17	CCB		1		06/23/16 12:08
37	T3.062316.121258	L16060650-03	17WW08-061016	40/50	1		06/23/16 12:12
38	T3.062316.121653	L16060650-08	18WW24F-061016	40/50	1		06/23/16 12:16
39	T3.062316.122048	WG573930-18	CCV		1		06/23/16 12:20
40	T3.062316.122427	WG573930-19	CCB		1		06/23/16 12:24
41	T3.062316.122826	WG573102-02	Method/Prep Blank	40/50	1		06/23/16 12:28
42	T3.062316.123225	WG573102-03	Laboratory Control S	40/50	1		06/23/16 12:32
43	T3.062316.123606	WG573102-04	Filter Blank		1		06/23/16 12:36
44	T3.062316.124005	WG573102-01	Reference Sample		1	L16060787-09	06/23/16 12:40
45	T3.062316.124400	WG573102-05	Matrix Spike	40/50	1	L16060787-09	06/23/16 12:44
46	T3.062316.124740	WG573102-06	Matrix Spike Duplica	40/50	1	L16060787-09	06/23/16 12:47
47	T3.062316.125119	L16060947-02	\#2 (EAST END)	40/50	1		06/23/16 12:51
48	T3.062316.125512	WG573561-01	Post Digestion Spike		1	L16060947-02	06/23/16 12:55
49	T3.062316.125851	WG573561-02	Serial Dilution		5	L16060947-02	06/23/16 12:58
50	T3.062316.130248	WG573561-02	Serial Dilution		25	L16060947-02	06/23/16 13:02
51	T3.062316.130647	WG573930-20	CCV		1		06/23/16 13:06
52	T3.062316.131025	WG573930-21	CCB		1		06/23/16 13:10
53	T3.062316.131425	L16060947-05	\#5 (WEST END)	40/50	1		06/23/16 13:14
54	T3.062316.131818	L16060947-08	\#8 (RAILROAD CULVERT)	40/50	1		06/23/16 13:18
55	T3.062316.132213	L16060763-01	WVOG	40/50	100		06/23/16 13:22
56	T3.062316.132618	L16060837-02	INS-WL01-061316	40/50	1		06/23/16 13:26
57	T3.062316.133005	L16060857-01	2204-129A RW2 (B)	40/50	1		06/23/16 13:30
58	T3.062316.133402	L16060857-02	2204-129A RW2 (U)	40/50	1		06/23/16 13:34
59	T3.062316.133759	WG573930-22	CCV		1		06/23/16 13:37
60	T3.062316.134137	WG573930-23	CCB		1		06/23/16 13:41
61	T3.062316.134536	L16060729-01	A09-MW10-Y1S2	40/50	1		06/23/16 13:45
62	T3.062316.134934	L16060729-02	A09-MW11-Y1S2	40/50	1		06/23/16 13:49
63	T3.062316.135331	L16060729-03	A09-MW12-Y1S2	40/50	1		06/23/16 13:53
64	T3.062316.135724	L16060730-01	18CPTMW14-061316	40/50	1		06/23/16 13:57
65	T3.062316.140125	L16060730-02	18CPTMW14FD-061316	40/50	1		06/23/16 14:01
66	T3.062316.140527	L16060730-03	18CPTMW24-061316	40/50	1		06/23/16 14:05
67	T3.062316.140930	L16060650-01	MW1-061016	40/50	10		06/23/16 14:09
68	T3.062316.141326	L16060650-02	MW3-061016	40/50	10		06/23/16 14:13

Page: 2 Approved: June 24, 2016

Kim H. Rhoden

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062316T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573560,573561

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.062316.141723	L16060650-03	17WW08-061016	40/50	10		06/23/16 14:17
70	T3.062316.142120	L16060650-08	18WW24F-061016	40/50	10		06/23/16 14:21
71	T3.062316.142518	WG573930-24	CCV		1		06/23/16 14:25
72	T3.062316.142857	WG573930-25	CCB		1		06/23/16 14:28
73	T3.062316.143257	L16060729-01	A09-MW10-Y1S2	40/50	10		06/23/16 14:32
74	T3.062316.143655	L16060729-03	A09-MW12-Y1S2	40/50	10		06/23/16 14:36
75	T3.062316.144053	L16060730-01	18CPTMW14-061316	40/50	100		06/23/16 14:40
76	T3.062316.144451	L16060730-02	18CPTMW14FD-061316	40/50	100		06/23/16 14:44
77	T3.062316.144849	L16060730-03	18CPTMW24-061316	40/50	100		06/23/16 14:48
78	T3.062316.145248	L16060798-06	N. DOCK FLUME	1/50	1		06/23/16 14:52
79	T3.062316.145646	L16060837-02	INS-WL01-061316	40/50	1		06/23/16 14:56
80	T3.062316.150032	L16060763-01	WVOG	40/50	2000		06/23/16 15:00
81	T3.062316.150429	WG573930-26	CCV		1		06/23/16 15:04
82	T3.062316.150809	WG573930-27	CCB		1		06/23/16 15:08
83	T3.062316.151209	WG573930-28	Low Level Continuing Calibra		1		06/23/16 15:12
84	T3.062316.151607	L16060724-01	ABW_06142016	40/50	100		06/23/16 15:16
85	T3.062316.152011	L16060762-01	MW-24-001	40/50	1		06/23/16 15:20
86	T3.062316.152407	L16060779-18	477-TS02-W0001	40/50	1		06/23/16 15:24
87	T3.062316.152807	L16060787-01	EB04	40/50	1		06/23/16 15:28
88	T3.062316.153205	L16060787-10	U517TW006C	40/50	1		06/23/16 15:32
89	T3.062316.153601	L16060724-02	ABW_06142016	40/50	100		06/23/16 15:36
90	T3.062316.154005	L16060787-18	U517TW008A	40/50	1		06/23/16 15:40
91	T3.062316.154401	L16060787-19	EB05	40/50	1		06/23/16 15:44
92	T3.062316.154800	L16060798-02	PERMEATE	1/50	1		06/23/16 15:48
93	T3.062316.155157	L16060798-04	BLEED	1/50	2		06/23/16 15:51
94	T3.062316.155553	WG573930-29	CCV		1		06/23/16 15:55
95	T3.062316.155920	WG573930-30	CCB		1		06/23/16 15:59
96	T3.062316.160319	WG573930-31	Interference Check		1		06/23/16 16:03
97	T3.062316.160713	WG573930-32	Interference Check		1		06/23/16 16:07
98	T3.062316.161057	WG573930-33	CCV		1		06/23/16 16:10
99	T3.062316.161435	WG573930-34	CCB		1		06/23/16 16:14
100	T3.062316.162045	WG573930-35	Low Level Continuing Calibra		1		06/23/16 16:20

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Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062716T3.5R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573560,574476

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.062716.162728	WG574461-01	Calibration Point		1		06/27/16 16:27
2	T3.062716.163125	WG574461-02	Calibration Point		1		06/27/16 16:31
3	T3.062716.163522	WG574461-03	Calibration Point		1		06/27/16 16:35
4	T3.062716.163919	WG574461-04	Calibration Point		1		06/27/16 16:39
5	T3.062716.164256	WG574461-05	Calibration Point		1		06/27/16 16:42
6	T3.062716.164633	WG574461-06	Initial Calibration Verification		1		06/27/16 16:46
7	T3.062716.165010	WG574461-07	Initial Calib Blank		1		06/27/16 16:50
8	T3.062716.165407	WG574461-08	Low Level Initial Calibration V		1		06/27/16 16:54
9	T3.062716.165800	WG574461-09	Interference Check		1		06/27/16 16:58
10	T3.062716.170150	WG574461-10	Interference Check		1		06/27/16 17:01
11	T3.062716.170532	WG574461-11	CCV		1		06/27/16 17:05
12	T3.062716.170909	WG574461-12	CCB		1		06/27/16 17:09
13	T3.062716.171308	WG572929-02	Method/Prep Blank	40/50	1		06/27/16 17:13
14	T3.062716.171707	WG572929-03	Laboratory Control S	40/50	1		06/27/16 17:17
15	T3.062716.172046	WG572929-01	Reference Sample		1	L16060806-01	06/27/16 17:20
16	T3.062716.172440	WG572929-04	Matrix Spike	40/50	1	L16060806-01	06/27/16 17:24
17	T3.062716.172819	WG572929-05	Matrix Spike Duplica	40/50	1	L16060806-01	06/27/16 17:28
18	T3.062716.173158	L16060729-01	A09-MW10-Y1S2	40/50	1		06/27/16 17:31
19	T3.062716.173552	L16060729-02	A09-MW11-Y1S2	40/50	1		06/27/16 17:35
20	T3.062716.173946	L16060729-03	A09-MW12-Y1S2	40/50	1		06/27/16 17:39
21	T3.062716.174337	L16060643-03	15-13-8 S3	40/50	1		06/27/16 17:43
22	T3.062716.174728	WG573560-04	Serial Dilution		5	L16060643-03	06/27/16 17:47
23	T3.062716.175126	WG574461-13	CCV		1		06/27/16 17:51
24	T3.062716.175503	WG574461-14	CCB		1		06/27/16 17:55
25	T3.062716.175902	WG573560-03	Post Digestion Spike		1	L16060643-03	06/27/16 17:59
26	T3.062716.180241	WG574461-15	CCV		1		06/27/16 18:02
27	T3.062716.180618	WG574461-16	CCB		1		06/27/16 18:06
28	T3.062716.181016	WG573869-02	Method/Prep Blank	40/50	1		06/27/16 18:10
29	T3.062716.181413	WG573869-03	Laboratory Control S	40/50	1		06/27/16 18:14
30	T3.062716.181752	WG573699-01	Fluid Blank 1		1		06/27/16 18:17
31	T3.062716.182149	L16061068-04	C01-061716	40/50	1		06/27/16 18:21
32	T3.062716.182543	L16061068-05	C01FD-061716	40/50	1		06/27/16 18:25
33	T3.062716.182935	L16061068-11	MW19F-061716	40/50	1		06/27/16 18:29
34	T3.062716.183322	L16061068-13	MW18F-061716		1	WG573869-01	06/27/16 18:33

Page: 1 Approved: June 29, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062716T3.5R.TXT

Analyst1: JYH Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 573560,574476

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.062716.183713	L16061068-15	MW18FMS-061716	40/50	1	WG573869-04	06/27/16 18:37
36	T3.062716.184051	L16061068-17	MW18FMSD-061716	40/50	1	WG573869-05	06/27/16 18:40
37	T3.062716.184428	L16061130-01	MW-23-012	40/50	1		06/27/16 18:44
38	T3.062716.184824	WG574461-17	CCV		1		06/27/16 18:48
39	T3.062716.185157	WG574461-18	CCB		1		06/27/16 18:51
40	T3.062716.185555	L16061130-02	MW-23-003	40/50	1		06/27/16 18:55
41	T3.062716.185947	L16061130-03	MW-23-013	40/50	1		06/27/16 18:59
42	T3.062716.190341	L16061130-04	MW-23-001	40/50	1		06/27/16 19:03
43	T3.062716.190734	L16061130-05	EB (1) WATER A	40/50	1		06/27/16 19:07
44	T3.062716.191132	L16061161-01	062116-PS-CB021	40/50	1		06/27/16 19:11
45	T3.062716.191527	L16061161-02	062116-PS-CB021	40/50	1		06/27/16 19:15
46	T3.062716.191921	L16061161-03	062116-PS-OF2BS	40/50	1		06/27/16 19:19
47	T3.062716.192313	L16061161-04	062116-PS-OF2BS	40/50	1		06/27/16 19:23
48	T3.062716.192706	L16061161-05	062116-PS-CB022	40/50	1		06/27/16 19:27
49	T3.062716.193100	L16061161-06	062116-PS-CB022	40/50	1		06/27/16 19:31
50	T3.062716.193453	WG574461-19	CCV		1		06/27/16 19:34
51	T3.062716.193831	WG574461-20	CCB		1		06/27/16 19:38
52	T3.062716.194227	L16061190-01	USDA / 04/07/16	40/50	1		06/27/16 19:42
53	T3.062716.194623	L16061190-02	USDA / 05/06/16	40/50	1		06/27/16 19:46
54	T3.062716.195012	L16061252-01	35006822000-W-1-06-22-16	40/50	1		06/27/16 19:50
55	T3.062716.195404	L16061164-11	16F1336-11	5/50	1		06/27/16 19:54
56	T3.062716.195756	WG574276-01	Post Digestion Spike		1	L16061130-05	06/27/16 19:57
57	T3.062716.200134	WG574276-02	Serial Dilution		5	L16061130-05	06/27/16 20:01
58	T3.062716.200528	WG574276-02	Serial Dilution		25	L16061130-05	06/27/16 20:05
59	T3.062716.200924	WG574461-21	CCV		1		06/27/16 20:09
60	T3.062716.201301	WG574461-22	CCB		1		06/27/16 20:13
61	T3.062716.201659	WG574461-23	Low Level Continuing Calibra		1		06/27/16 20:16

Page: 2 Approved: June 29, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 23-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 573930
Runlog ID: 75880
Analytical Workgroups: 573560,573561

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	806,762,837
Level 4	650,729,730.779,787
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer:

Secondary Reviewer:
24-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-24-2016 11:23:59

Microbac Laboratories Inc.

Data Checklist

Date: 27-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 574461
Runlog ID: 75972
Analytical Workgroups: 573560,574476

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1130
Level 4	1068,729
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer:

Secondary Reviewer:
29-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-29-2016 13:55:52

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010C

AAB#: WG573560

Login Number: L16060650

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW1-061016	01	06/10/16					06/16/2016	6.1	180		06/23/16	13.2	180	
MW1-061016	01	06/10/16					06/16/2016	6.1	180		06/23/16	13.3	180	
MW3-061016	02	06/10/16					06/16/2016	6	180		06/23/16	13.2	180	
MW3-061016	02	06/10/16					06/16/2016	6	180		06/23/16	13.1	180	
17WW08-061016	03	06/10/16					06/16/2016	6	180		06/23/16	13.2	180	
17WW08-061016	03	06/10/16					06/16/2016	6	180		06/23/16	13.1	180	
18WW24F-061016	08	06/10/16					06/16/2016	5.8	180		06/23/16	13	180	
18WW24F-061016	08	06/10/16					06/16/2016	5.8	180		06/23/16	12.9	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4822227
Report generated 06/24/2016 09:05

METHOD BLANK SUMMARY

Login Number: L16060650
Blank File ID: T3.062316.103746
Prep Date: 06/16/16 09:15
Analyzed Date: 06/23/16 10:37
Analyst: JYH

Work Group: WG573560
Blank Sample ID: WG572929-02
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572929-03	T3.062316.104808	06/23/16 10:48	01
MW1-061016	L16060650-01	T3.062316.115734	06/23/16 11:57	01
MW3-061016	L16060650-02	T3.062316.120126	06/23/16 12:01	01
17WW08-061016	L16060650-03	T3.062316.121258	06/23/16 12:12	01
18WW24F-061016	L16060650-08	T3.062316.121653	06/23/16 12:16	01
MW1-061016	L16060650-01	T3.062316.140930	06/23/16 14:09	DL01
MW3-061016	L16060650-02	T3.062316.141326	06/23/16 14:13	DL01
17WW08-061016	L16060650-03	T3.062316.141723	06/23/16 14:17	DL01
18WW24F-061016	L16060650-08	T3.062316.142120	06/23/16 14:21	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4822228
Report generated 06/24/2016 09:16

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060650 Prep Date: 06/16/16 09:15 Sample ID: WG572929-02
Instrument ID: ICP-THERMO3 Run Date: 06/23/16 10:37 Prep Method: 3015
File ID: T3.062316.103746 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG573560 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-23-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Aluminum, Total	0.0500	0.200	0.0500	1	U
Beryllium, Total	0.00500	0.0200	0.00500	1	U
Calcium, Total	0.125	0.500	0.125	1	U
Iron, Total	0.0500	0.200	0.0500	1	U
Magnesium, Total	0.250	1.00	0.250	1	U
Potassium, Total	0.500	2.00	0.500	1	U
Selenium, Total	0.00500	0.0200	0.00500	1	U
Sodium, Total	0.250	1.00	0.250	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4822229
24-JUN-2016 09:16

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060650 Run Date: 06/23/2016 Sample ID: WG572929-03
Instrument ID: ICP-THERMO3 Run Time: 10:48 Prep Method: 3015
File ID: T3.062316.104808 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG573560 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76576 Cal ID: ICP-TH-23-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Aluminum, Total	6.25	6.69	107	80 - 120	
Beryllium, Total	0.0313	0.0330	106	80 - 120	
Calcium, Total	6.25	6.88	110	80 - 120	
Iron, Total	2.50	2.70	108	80 - 120	
Magnesium, Total	6.25	6.70	107	80 - 120	
Potassium, Total	31.3	33.3	107	80 - 120	
Selenium, Total	0.250	0.256	102	80 - 120	
Sodium, Total	31.3	33.9	108	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4822230
Report generated: 06/24/2016 09:16

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060650 Cal ID: ICP-THERMO3 - Worknum: WG573560
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG572929-01 File ID: T3.062316.105149 Dil: 1 Matrix: WATER
Sample ID: WG572929-04 MS File ID: T3.062316.105545 Dil: 1 Units: mg/L
Sample ID: WG572929-05 MSD File ID: T3.062316.105925 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Aluminum	0.0598	6.25	6.57	104	6.25	6.63	105	0.820	80 - 120	20	
Beryllium	ND	0.0313	0.0323	103	0.0313	0.0327	104	1.04	80 - 120	20	
Calcium	53.8	6.25	58.6	77.4	6.25	59.6	93.0	1.65	80 - 120	20	*
Iron	0.504	2.50	3.14	106	2.50	3.29	112	4.66	80 - 120	20	
Magnesium	9.46	6.25	16.0	105	6.25	15.9	103	0.721	80 - 120	20	
Potassium	3.10	31.3	35.9	105	31.3	36.1	106	0.475	80 - 120	20	
Selenium	ND	0.250	0.254	102	0.250	0.246	98.4	3.13	80 - 120	20	
Sodium	11.0	31.3	44.0	106	31.3	43.1	103	1.97	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4822231
Report generated 06/24/2016 09:16

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16060650 **Worknum:** WG573560
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG573560-02 **File ID:** T3.062316.111031 **Dil:** 5 **Units:** ug/L
Sample: L16060643-01 **File ID:** T3.062316.110304 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	66.2		90.5		36.80	E
Beryllium	ND	U	ND	U		
Calcium	38300		35600		6.95	
Iron	55.1		ND	U		
Magnesium	6970		6480		7.03	
Potassium	822		881		7.15	
Selenium	0.460		33.6		7200.00	E
Sodium	5220		5030		3.52	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4822225
06/24/2016 09:16

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060650 **Worknum:** WG573560
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG573560-01 **File ID:** T3.062316.110701 **Dil:** 1 **Units:** ug/L
Sample ID: L16060643-01 **File ID:** T3.062316.110304 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	5350		66.2	F	5000	105.8	75 - 125	
BERYLLIUM	26.1		0	U	25	104.2	75 - 125	
CALCIUM	39500		38300		5000	100.0	75 - 125	
IRON	2170		55.1	F	2000	106.2	75 - 125	
MAGNESIUM	11700		6970		5000	107.6	75 - 125	
POTASSIUM	27200		822	F	25000	106.0	75 - 125	
SELENIUM	205		0	U	200	102.4	75 - 125	
SODIUM	31300		5220		25000	106.5	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4822226
Report generated: 06/24/2016 09:16

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16060650	Workgroup (AAB#):	WG573560
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG573930	Initial Calibration Date:	23-JUN-2016 10:03

	WG573930-01		WG573930-02		WG573930-03		WG573930-04		WG573930-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.00118	.1	0.00193	.2	0.00268	10	0.0882	20	0.173	.999945	
BERYLLIUM	0	0.000880	.0005	0.00136	.001	0.00170	.05	0.0518	.1	0.101	.999922	
CALCIUM	0	0.00189	.1	0.00547	.2	0.00991	10	0.469	20	0.927	.999971	
IRON	0	-0.0000300	.04	0.000460	.08	0.00112	4	0.0936	8	0.185	.999683	
MAGNESIUM	0	-0.000540	NA	NA	.2	0.000940	10	0.0909	20	0.178	.99993	
POTASSIUM	0	-0.0110	.5	0.0234	1	0.0462	50	3.24	100	6.39	.999797	
SELENIUM	0	-0.000340	NA	NA	.008	-0.000260	.4	0.00638	.8	0.0127	.999812	
SODIUM	0	-0.0674	.5	0.00897	1	0.0787	50	8.98	100	17.7	.999966	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4822234
Report generated: 24-JUN-2016 09:05

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573930-07
Instrument ID: ICP-THERMO3
Run Time: 10:10
Method: 6010C
File ID: T3.062316.101036
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573560
Cal ID: ICP-THERI - 23-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	.004	U
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4822236
Report generated 06/24/2016 09:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573930-13
Instrument ID: ICP-THERMO3
Run Time: 10:33
Method: 6010C
File ID: T3.062316.103346
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822239
Report generated 06/24/2016 09:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573930-15
Instrument ID: ICP-THERMO3
Run Time: 11:22
Method: 6010C
File ID: T3.062316.112207
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822239
Report generated 06/24/2016 09:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573930-17
Instrument ID: ICP-THERMO3
Run Time: 12:08
Method: 6010C
File ID: T3.062316.120859
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00440	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822239
Report generated 06/24/2016 09:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573930-19
Instrument ID: ICP-THERMO3
Run Time: 12:24
Method: 6010C
File ID: T3.062316.122427
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822239
Report generated 06/24/2016 09:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573930-23
Instrument ID: ICP-THERMO3
Run Time: 13:41
Method: 6010C
File ID: T3.062316.134137
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822239
Report generated 06/24/2016 09:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573930-25
Instrument ID: ICP-THERMO3
Run Time: 14:28
Method: 6010C
File ID: T3.062316.142857
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00482	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822239
Report generated 06/24/2016 09:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573930-30
Instrument ID: ICP-THERMO3
Run Time: 15:59
Method: 6010C
File ID: T3.062316.155920
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822239
Report generated 06/24/2016 09:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573930-34
Instrument ID: ICP-THERMO3
Run Time: 16:14
Method: 6010C
File ID: T3.062316.161435
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0440	F
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	-0.00590	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822239
Report generated 06/24/2016 09:05

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573930-06
Instrument ID: ICP-THERMO3
Run Time: 10:06
Method: 6010C
File ID: T3.062316.100658
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	10.1	101	90 - 110	
Beryllium		.05	0.0506	101	90 - 110	
Calcium		10	10.1	101	90 - 110	
Iron		4	4.02	100	90 - 110	
Magnesium		10	10.0	100	90 - 110	
Potassium		50	50.3	101	90 - 110	
Selenium		.4	0.401	100	90 - 110	
Sodium		50	50.2	100	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4822235
Report generated 06/24/2016 09:05

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573930-12
Instrument ID: ICP-THERMO3
Run Time: 10:30
Method: 6010C
File ID: T3.062316.103007
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.0	mg/L	100	90 - 110		
Beryllium		0.0500	0.0499	mg/L	99.7	90 - 110		
Calcium		10.0	10.1	mg/L	101	90 - 110		
Iron		4.00	4.06	mg/L	101	90 - 110		
Magnesium		10.0	9.95	mg/L	99.5	90 - 110		
Potassium		50.0	50.4	mg/L	101	90 - 110		
Selenium		0.400	0.406	mg/L	101	90 - 110		
Sodium		50.0	50.4	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822238
Report generated 06/24/2016 09:05

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573930-14
Instrument ID: ICP-THERMO3
Run Time: 11:18
Method: 6010C
File ID: T3.062316.111829
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.0	mg/L	100	90 - 110		
Beryllium		0.0500	0.0501	mg/L	100	90 - 110		
Calcium		10.0	10.0	mg/L	100	90 - 110		
Iron		4.00	4.02	mg/L	100	90 - 110		
Magnesium		10.0	9.96	mg/L	99.6	90 - 110		
Potassium		50.0	50.3	mg/L	101	90 - 110		
Selenium		0.400	0.404	mg/L	101	90 - 110		
Sodium		50.0	50.3	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822238
Report generated 06/24/2016 09:05

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573930-16
Instrument ID: ICP-THERMO3
Run Time: 12:05
Method: 6010C
File ID: T3.062316.120521
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.7	mg/L	107	90 - 110		
Beryllium		0.0500	0.0526	mg/L	105	90 - 110		
Calcium		10.0	10.8	mg/L	108	90 - 110		
Iron		4.00	4.37	mg/L	109	90 - 110		
Magnesium		10.0	10.8	mg/L	108	90 - 110		
Potassium		50.0	54.3	mg/L	109	90 - 110		
Selenium		0.400	0.422	mg/L	106	90 - 110		
Sodium		50.0	54.7	mg/L	109	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822238
Report generated 06/24/2016 09:05

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573930-18
Instrument ID: ICP-THERMO3
Run Time: 12:20
Method: 6010C
File ID: T3.062316.122048
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.4	mg/L	104	90 - 110		
Beryllium		0.0500	0.0510	mg/L	102	90 - 110		
Calcium		10.0	10.4	mg/L	104	90 - 110		
Iron		4.00	4.15	mg/L	104	90 - 110		
Magnesium		10.0	10.4	mg/L	104	90 - 110		
Potassium		50.0	52.2	mg/L	104	90 - 110		
Selenium		0.400	0.416	mg/L	104	90 - 110		
Sodium		50.0	52.4	mg/L	105	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822238
Report generated 06/24/2016 09:05

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573930-22
Instrument ID: ICP-THERMO3
Run Time: 13:37
Method: 6010C
File ID: T3.062316.133759
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.8	mg/L	108	90 - 110		
Beryllium		0.0500	0.0531	mg/L	106	90 - 110		
Calcium		10.0	10.7	mg/L	107	90 - 110		
Iron		4.00	4.33	mg/L	108	90 - 110		
Magnesium		10.0	10.7	mg/L	107	90 - 110		
Potassium		50.0	54.0	mg/L	108	90 - 110		
Selenium		0.400	0.431	mg/L	108	90 - 110		
Sodium		50.0	54.3	mg/L	109	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822238
Report generated 06/24/2016 09:05

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573930-24
Instrument ID: ICP-THERMO3
Run Time: 14:25
Method: 6010C
File ID: T3.062316.142518
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.3	mg/L	103	90 - 110		
Beryllium		0.0500	0.0508	mg/L	102	90 - 110		
Calcium		10.0	10.2	mg/L	102	90 - 110		
Iron		4.00	4.15	mg/L	104	90 - 110		
Magnesium		10.0	10.4	mg/L	104	90 - 110		
Potassium		50.0	51.8	mg/L	104	90 - 110		
Selenium		0.400	0.408	mg/L	102	90 - 110		
Sodium		50.0	52.0	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573930-29
Instrument ID: ICP-THERMO3
Run Time: 15:55
Method: 6010C
File ID: T3.062316.155553
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.3	mg/L	103	90 - 110		
Beryllium		0.0500	0.0508	mg/L	102	90 - 110		
Calcium		10.0	10.2	mg/L	102	90 - 110		
Iron		4.00	4.08	mg/L	102	90 - 110		
Magnesium		10.0	10.2	mg/L	102	90 - 110		
Potassium		50.0	51.4	mg/L	103	90 - 110		
Selenium		0.400	0.399	mg/L	99.7	90 - 110		
Sodium		50.0	51.6	mg/L	103	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573930-33
Instrument ID: ICP-THERMO3
Run Time: 16:10
Method: 6010C
File ID: T3.062316.161057
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.5	mg/L	105	90 - 110		
Beryllium		0.0500	0.0509	mg/L	102	90 - 110		
Calcium		10.0	10.4	mg/L	104	90 - 110		
Iron		4.00	4.26	mg/L	106	90 - 110		
Magnesium		10.0	10.6	mg/L	106	90 - 110		
Potassium		50.0	51.6	mg/L	103	90 - 110		
Selenium		0.400	0.416	mg/L	104	90 - 110		
Sodium		50.0	52.1	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Report generated 06/24/2016 09:05

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573930-08
Instrument ID: ICP-THERMO3
Run Time: 10:14
Method: 6010C
File ID: T3.062316.101434
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.167	mg/L	104	70 - 130		
Beryllium		0.00160	0.00152	mg/L	95.0	70 - 130		
Calcium		0.400	0.381	mg/L	95.2	70 - 130		
Iron		0.0800	0.0709	mg/L	88.6	70 - 130		
Magnesium		0.400	0.366	mg/L	91.5	70 - 130		
Potassium		1.00	0.792	mg/L	79.2	70 - 130		
Selenium		0.0160	0.0185	mg/L	115	70 - 130		
Sodium		0.400	0.457	mg/L	114	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4822240
Report generated 06/24/2016 11:53

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060650
Run Date: 06/23/2016
Sample ID: WG573930-28
Instrument ID: ICP-THERMO3
Run Time: 15:12
Method: 6010C
File ID: T3.062316.151209
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.191	mg/L	119	70 - 130		
Beryllium		0.00160	0.00164	mg/L	103	70 - 130		
Calcium		0.400	0.374	mg/L	93.5	70 - 130		
Iron		0.0800	0.0850	mg/L	106	70 - 130		
Magnesium		0.400	0.426	mg/L	106	70 - 130		
Potassium		0.800	0.951	mg/L	119	70 - 130		
Selenium		0.0160	0.0211	mg/L	132	70 - 130		*
Sodium		0.400	0.505	mg/L	126	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4822240
Report generated 06/24/2016 11:53

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060650
Instrument ID: ICP-THERMO3
Sol. A : WG573930-10 **File ID:** T3.062316.102228
Sol. AB : WG573930-11 **File ID:** T3.062316.102622

Workgroup (AAB#): WG573560
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	271	108	250	261	104	
Beryllium	NS	-0.0000600	NS	0.250	0.239	95.6	
Calcium	250	260	104	250	250	100	
Iron	100	102	102	100	97.3	97.3	
Magnesium	250	257	103	250	245	98.0	
Potassium	NS	0.0710	NS	5.00	5.20	104	
Selenium	NS	0.00407	NS	0.250	0.253	101	
Sodium	NS	0.00909	NS	5.00	5.24	105	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4822237
Report generated 06/24/2016 09:05

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060650
Instrument ID: ICP-THERMO3
Sol. A : WG573930-31 **File ID:** T3.062316.160319
Sol. AB : WG573930-32 **File ID:** T3.062316.160713

Workgroup (AAB#): WG573560
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	296	118	250	296	118	
Beryllium	NS	0.000100	NS	0.250	0.272	109	
Calcium	250	274	110	250	276	110	
Iron	100	110	110	100	108	108	
Magnesium	250	276	110	250	272	109	
Potassium	NS	0.0525	NS	5.00	5.80	116	
Selenium	NS	0.00521	NS	0.250	0.281	112	
Sodium	NS	0.128	NS	5.00	5.96	119	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4822237
Report generated 06/24/2016 09:05

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060650 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	AG	AL	AS	B	BA
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000410	0	0	0
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0.0115	0	-0.0000800
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0.000260	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	-0.000289	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	-0.0000490	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.0000120	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0.0000300	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4822233
Report generated: 06/24/2016 09:05

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060650 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	BE	CA	CD	CO	CR
ALUMINUM	308.20	0	0	0	-0.000820	0
ANTIMONY	206.80	0	0	0	0	0.0200
ARSENIC	189.00	0	0	0	0	-0.00190
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0.00343	0
CADMIUM	228.80	0	0	0	-0.00390	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	-0.000200
COPPER	224.70	0	0	0	0.0000770	-0.00100
IRON	261.10	0	0	0	0	-0.00100
LEAD	220.30	0	0	0	-0.0000130	-0.000132
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.0000500
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	-0.000860	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0.00000500	0	0	0
THALLIUM	190.80	0	0	0	0.00240	0.000276
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	-0.00480
ZINC	206.20	0	0	0	0	-0.00180
ZIRCONIUM	339.10	0	0	0	0	0

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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060650 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	CU	FE	K	LI	MG
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000560	0	0	0
ARSENIC	189.00	0	-0.0000500	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0.000300	0	0	0
CADMIUM	228.80	0	-0.0000190	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000500	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0.00160	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0.000609	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.00000300
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0.0000420	0	0	0
PHOSPHORUS	214.90	-0.323	0.000900	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000270	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000400	0	0	0
VANADIUM	292.40	0	0.00000700	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	-0.0000300	0	0	0

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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060650 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	MN	MO	NA	NI	P
ALUMINUM	308.20	0	0.0163	0	0	0
ANTIMONY	206.80	0	-0.00310	0	-0.00350	0
ARSENIC	189.00	0	0.00120	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	-0.00190	0	0	0
CADMIUM	228.80	0	0.0000320	0	-0.000770	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0.000360	0	0	0	0
COBALT	228.60	0	-0.00200	0	0.000100	0
COPPER	224.70	0	0.00160	0	-0.0123	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	-0.00210	0	0.000110	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	-0.00290	-0.0230	0	0	0
MANGANESE	257.60	0	0.0000300	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0.00710	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0.000600	0.000580	0	0	0
SILICON	212.40	0	0.0187	0	0	0
SILVER	328.00	0	-0.0000430	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0.00100	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000153	0	0	0
VANADIUM	292.40	-0.000200	-0.00830	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060650 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	PB	SB	SE	SI	SN
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0	0	0	-0.0220
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0.00440	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060650 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	SR	TI	TL	V	ZN
ALUMINUM	308.20	0	0	0	0.0950	0
ANTIMONY	206.80	0	0.00110	0	-0.00360	0
ARSENIC	189.00	0	0	0	0.000107	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	-0.00000700	0	0.000990	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0.000102	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000550	0	0	0
COBALT	228.60	0	0.00210	0	0.0000200	0
COPPER	224.70	0	0.000269	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	-0.000126	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	-0.00290	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	-0.000110	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	-0.00100	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000720	0	-0.000260	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.000800	0	-0.00490	0
TIN	189.90	0	-0.00190	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0.000820	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4822233
Report generated: 06/24/2016 09:05

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060650 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	ZR
ALUMINUM	308.20	0
ANTIMONY	206.80	0
ARSENIC	189.00	0
BARIUM	455.40	0
BERYLLIUM	313.10	0
BORON	249.60	0
CADMIUM	228.80	0
CALCIUM	422.60	0
CHROMIUM	267.70	0
COBALT	228.60	0
COPPER	224.70	0
IRON	261.10	0
LEAD	220.30	0
LITHIUM	670.70	0
MAGNESIUM	279.00	0
MANGANESE	257.60	0
MOLYBDENUM	202.00	0
NICKEL	231.60	0
PHOSPHORUS	214.90	0
POTASSIUM	766.40	0
SELENIUM	196.00	0
SILICON	212.40	0
SILVER	328.00	0
SODIUM	589.50	0
STRONTIUM	407.70	0
THALLIUM	190.80	0
TIN	189.90	0
TITANIUM	337.20	0
VANADIUM	292.40	0
ZINC	206.20	0
ZIRCONIUM	339.10	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4822233
Report generated: 06/24/2016 09:05

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16060650 **Date:** 04/29/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	900.0
Antimony	20.00	45.0
Arsenic	10.00	45.0
Barium	10.00	45.0
Beryllium	10.00	1.8
Boron	20.00	45.0
Cadmium	20.00	4.5
Calcium	5.00	270.0
Chromium	20.00	36.0
Cobalt	20.00	45.0
Copper	20.00	180.0
Iron	5.00	720.0
Lead	20.00	225.0
Lithium	5.00	36.0
Magnesium	5.00	900.0
Manganese	10.00	36.0
Molybdenum	20.00	27.0
Nickel	20.00	90.0
Phosphorus	20.00	180.0
Potassium	5.00	450.0
Selenium	20.00	90.0
Silicon	20.00	36.0
Silver	10.00	9.0
Sodium	5.00	270.0
Strontium	5.00	9.0
Thallium	20.00	18.0
Tin	20.00	45.0
Titanium	5.00	36.0
Vanadium	20.00	27.0
Zinc	20.00	45.0
Zirconium	10.00	45.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4822232
Report generated: 06/24/2016 09:05

2.3.1.3 Raw Data

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000327	0.050519	0.000000	1.000000
Al 308.215 {109}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.001184	0.008547	0.000000	1.000000
As 189.042 {478}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000022	0.024758	0.000000	1.000000
B 249.678 {135}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.000018	0.023238	0.000000	1.000000
Ba 455.403 { 74}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.027822	2.182359	0.000000	1.000000
Be 313.107 {108}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.000884	0.988895	0.000000	1.000000
Ca 422.673 { 80}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.001888	0.046400	0.000000	1.000000
Cd 228.802 {447}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000259	0.601556	0.000000	1.000000
Co 228.616 {447}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000232	0.375758	0.000000	1.000000
Cr 267.716 {126}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.000258	0.061893	0.000000	1.000000
Cu 224.700 {450}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000097	0.130708	0.000000	1.000000
Fe 261.187 {129}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000026	0.023142	0.000000	1.000000
K 766.490 { 44}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.010983	0.064443	0.000000	1.000000
Li 670.784 { 50}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.012386	1.550598	0.000000	1.000000
Mg 279.079 {121}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000540	0.009018	0.000000	1.000000
Mn 257.610 {131}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.000084	0.292837	0.000000	1.000000
Mo 202.030 {467}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000041	0.187450	0.000000	1.000000
Na 589.592 { 57}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.067361	0.179038	0.000000	1.000000
Ni 231.604 {446}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000824	0.142104	0.000000	1.000000
P 214.914 {457}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000276	0.013786	0.000000	1.000000
Pb 220.353 {453}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000879	0.064979	0.000000	1.000000
Sb 206.833 {463}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.000126	0.031435	0.000000	1.000000
Se 196.090 {472}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000341	0.016453	0.000000	1.000000
Si 212.412 {459}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.001289	0.040464	0.000000	1.000000
Sn 189.989 {477}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.000003	0.072384	0.000000	1.000000
Sr 407.771 { 83}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.002752	3.677062	0.000000	1.000000
Ti 337.280 {100}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.004029	0.126515	0.000000	1.000000
Tl 190.856 {477}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000471	0.029978	0.000000	1.000000
V 292.402 {115}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.000027	0.073239	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.000283	0.432003	0.000000	1.000000
Zr 339.198 { 99}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.017932	0.006978	0.000000	1.000000

Approved: June 24, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.998445	0.000007	0.003073	0.010242	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999945	0.000006	0.012393	0.041310	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999934	0.000001	0.004231	0.014103	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999002	0.000005	0.003935	0.013116	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999924	0.000171	0.001407	0.004691	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999922	0.000004	0.000127	0.000425	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999971	0.000022	0.054850	0.182833	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.998853	0.000010	0.000352	0.001173	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999920	0.000006	0.000541	0.001803	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999763	0.000004	0.001598	0.005328	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999857	0.000007	0.001832	0.006106	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999683	0.000015	0.029884	0.099612	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999797	0.000412	0.125648	0.418826	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999917	0.000196	0.005174	0.017246	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999930	0.000010	0.103664	0.345547	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999861	0.000015	0.003328	0.011094	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999976	0.000008	0.000575	0.001918	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999966	0.000467	0.041906	0.139686	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999837	0.000008	0.001517	0.005055	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999993	0.000003	0.009729	0.032429	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999313	0.000008	0.004814	0.016047	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999370	0.000008	0.005878	0.019595	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999812	0.000001	0.009227	0.030755	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999941	0.000014	0.003128	0.010426	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999956	0.000004	0.001186	0.003953	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999941	0.000254	0.000576	0.001919	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999409	0.000028	0.009099	0.030331	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999772	0.000003	0.004130	0.013767	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999945	0.000005	0.001306	0.004353	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999933	0.000032	0.000269	0.000895	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.532572	0.000070	0.349536	1.165120	OK.	1.000000	0.000000	1	0

Approved: June 24, 2016

Sample Name: S0 Acquired: 6/23/2016 9:47:45 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00033**	**.00118**	**-.00002**	**.00002**	**.02782**	**.00088**	**.00189**
Stddev	.00010	.00002	.00004	.00004	.00180	.00010	.00037
%RSD	30.084	1.4700	181.28	191.91	6.4574	11.181	19.686
#1	-.00044	.00117	-.00006	.00001	.02575	.00088	.00156
#2	-.00029	.00120	.00002	-.00001	.02884	.00079	.00229
#3	-.00025	.00118	-.00002	.00006	.02887	.00098	.00181

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00026**	**-.00023**	**.00026**	**-.00010**	**-.00003**	**-.01099**	**-.01238**
Stddev	.00008	.00017	.00006	.00021	.00051	.00547	.00240
%RSD	31.523	72.312	22.460	216.26	1964.6	49.768	19.397
#1	-.00035	-.00043	.00026	.00013	-.00053	-.01572	-.00962
#2	-.00018	-.00012	.00032	-.00028	-.00004	-.01227	-.01358
#3	-.00025	-.00015	.00020	-.00014	.00049	-.00500	-.01395

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00054**	**.00008**	**-.00004**	**-.06737**	**-.00082**	**-.00028**	**-.00088**
Stddev	.00016	.00103	.00002	.00237	.00014	.00005	.00011
%RSD	30.180	1239.0	43.179	3.5134	16.845	19.474	12.307
#1	-.00053	.00101	-.00002	-.06969	-.00098	-.00024	-.00080
#2	-.00038	-.00103	-.00005	-.06495	-.00077	-.00034	-.00084
#3	-.00071	.00027	-.00005	-.06746	-.00072	-.00025	-.00100

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00013**	**-.00034**	**.00129**	**.00000**	**.00275**	**-.00403**	**-.00047**
Stddev	.00009	.00012	.00012	.00007	.00094	.00048	.00005
%RSD	74.764	35.234	9.2690	2174.4	34.350	11.992	11.038
#1	.00002	-.00027	.00122	.00008	.00316	-.00353	-.00050
#2	.00021	-.00048	.00143	.00000	.00342	-.00407	-.00050
#3	.00014	-.00027	.00122	-.00007	.00167	-.00449	-.00041

Approved: June 24, 2016

Sample Name: S0 Acquired: 6/23/2016 9:47:45 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00003	.00028	-.01793
Stddev	.00001	.00000	.00048
%RSD	29.396	1.4571	2.6643
#1	.00003	.00028	-.01841
#2	.00002	.00029	-.01792
#3	.00003	.00028	-.01745
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7062.2	43492.	2217.3
Stddev	13.5	299.	17.6
%RSD	.19180	.68708	.79492
#1	7077.5	43152.	2210.9
#2	7057.6	43609.	2203.8
#3	7051.6	43714.	2237.3

Approved: June 24, 2016

Sample Name: S1 Acquired: 6/23/2016 9:51:45 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00007	.00193	.04472	.00136	.00547	.00005	.00043
Stddev	.00004	.00003	.00207	.00006	.00204	.00008	.00007
%RSD	56.524	1.3065	4.6190	4.0730	37.359	159.01	16.558
#1	-.00003	.00191	.04691	.00130	.00781	.00011	.00047
#2	-.00008	.00196	.04281	.00138	.00410	-.00004	.00046
#3	-.00011	.00193	.04443	.00141	.00449	.00009	.00034

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00059	.00032	.00046	.02342	.00155	.00151	.00897
Stddev	.00007	.00009	.00056	.00787	.00023	.00007	.00270
%RSD	11.404	26.424	121.46	33.618	14.624	4.5319	30.104
#1	.00058	.00023	.00096	.02094	.00129	.00152	.00901
#2	.00053	.00038	.00056	.01709	.00170	.00144	.01166
#3	.00066	.00037	-.00014	.03224	.00167	.00158	.00625

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00040	.00082	-.00049	.00022	.00287	.00063	.03432
Stddev	.00009	.00018	.00005	.00001	.00008	.00005	.00075
%RSD	22.758	21.588	10.902	6.3689	2.8319	7.2878	2.1904
#1	-.00029	.00077	-.00049	.00024	.00282	.00066	.03350
#2	-.00044	.00068	-.00043	.00023	.00283	.00065	.03448
#3	-.00046	.00102	-.00054	.00021	.00297	.00058	.03498

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00266	.00054	.00367	-.01945
Stddev	.00038	.00007	.00006	.00123
%RSD	14.429	13.089	1.5774	6.3329
#1	-.00239	.00061	.00371	-.01936
#2	-.00310	.00055	.00360	-.01826
#3	-.00250	.00047	.00369	-.02072

Approved: June 24, 2016

Sample Name: S1 Acquired: 6/23/2016 9:51:45 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7054.0**	**43388.**	**2199.2**
Stddev	62.0	91.	19.7
%RSD	.87863	.20992	.89612
#1	6984.1	43368.	2196.9
#2	7102.3	43308.	2180.7
#3	7075.6	43487.	2219.9

Approved: June 24, 2016

Sample Name: S2 Acquired: 6/23/2016 9:55:44 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00012**	**.00268**	**.00011**	**.00031**	**.06640**	**.00170**	**.00991**
Stddev	.00004	.00003	.00010	.00004	.00183	.00007	.00177
%RSD	36.212	1.1391	90.972	12.373	2.7523	3.8893	17.859
#1	.00016	.00268	.00007	.00036	.06434	.00170	.01185
#2	.00007	.00271	.00023	.00029	.06706	.00164	.00838
#3	.00014	.00265	.00004	.00029	.06781	.00177	.00951

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00059**	**.00085**	**.00081**	**.00087**	**.00112**	**.04623**	**.01110**
Stddev	.00016	.00020	.00005	.00008	.00089	.00284	.00869
%RSD	27.552	23.577	6.6457	8.7488	79.065	6.1346	78.236
#1	.00064	.00098	.00079	.00091	.00182	.04508	.01496
#2	.00040	.00096	.00078	.00078	.00142	.04946	.00116
#3	.00071	.00062	.00088	.00092	.00012	.04415	.01719

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00094**	**.00246**	**.00297**	**.07870**	**.00040**	**.00192**	**-.00019**
Stddev	.00041	.00089	.00002	.00483	.00006	.00008	.00022
%RSD	43.863	36.036	.64370	6.1334	16.212	4.2436	118.69
#1	.00052	.00149	.00298	.07468	.00045	.00184	.00001
#2	.00095	.00264	.00298	.08405	.00032	.00200	-.00014
#3	.00134	.00324	.00295	.07737	.00042	.00192	-.00043

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00066**	**-.00026**	**.00459**	**.00125**	**.06450**	**-.00121**	**-.00029**
Stddev	.00013	.00008	.00004	.00004	.00129	.00119	.00010
%RSD	19.457	29.683	.78499	3.1517	1.9941	98.413	34.606
#1	.00051	-.00017	.00462	.00123	.06318	-.00004	-.00021
#2	.00075	-.00030	.00455	.00130	.06457	-.00241	-.00026
#3	.00071	-.00030	.00459	.00123	.06575	-.00117	-.00040

Approved: June 24, 2016

Sample Name: S2 Acquired: 6/23/2016 9:55:44 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00118	.00728	-.01880
Stddev	.00006	.00002	.00401
%RSD	5.2111	.25538	21.324
#1	.00123	.00729	-.01658
#2	.00119	.00729	-.01639
#3	.00111	.00726	-.02343
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7107.4	43682.	2201.4
Stddev	34.8	155.	7.4
%RSD	.49001	.35466	.33601
#1	7078.9	43832.	2207.7
#2	7097.0	43694.	2193.3
#3	7146.2	43522.	2203.3

Approved: June 24, 2016

Sample Name: S3 Acquired: 6/23/2016 9:59:42 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.02081	.08821	.00989	.01171	2.2386	.05183	.46857
Stddev	.00017	.00024	.00010	.00001	.0026	.00010	.00097
%RSD	.83671	.27202	1.0425	.08059	.11782	.19029	.20689
#1	.02061	.08793	.00989	.01171	2.2374	.05180	.46784
#2	.02091	.08835	.00979	.01170	2.2369	.05194	.46820
#3	.02092	.08834	.01000	.01171	2.2417	.05175	.46967

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.03287	.07581	.03164	.06652	.09364	3.2368	1.5657
Stddev	.00024	.00015	.00015	.00023	.00074	.0078	.0054
%RSD	.72813	.20127	.46858	.35008	.78498	.23962	.34576
#1	.03272	.07591	.03147	.06677	.09289	3.2281	1.5662
#2	.03276	.07563	.03172	.06647	.09367	3.2431	1.5600
#3	.03315	.07588	.03173	.06631	.09436	3.2393	1.5708

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.09086	.14859	.18912	8.9754	.07142	.13612	.03223
Stddev	.00042	.00056	.00056	.0162	.00020	.00025	.00019
%RSD	.46733	.37813	.29665	.18036	.28541	.18100	.60348
#1	.09126	.14905	.18974	8.9567	.07119	.13585	.03240
#2	.09042	.14875	.18898	8.9850	.07154	.13616	.03226
#3	.09090	.14797	.18865	8.9845	.07154	.13634	.03202

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.03750	.00638	.20745	.07283	3.7282	.12240	.01360
Stddev	.00016	.00015	.00035	.00003	.0056	.00020	.00017
%RSD	.41622	2.3451	.16934	.03924	.14969	.16109	1.2349
#1	.03757	.00651	.20734	.07280	3.7223	.12235	.01340
#2	.03761	.00641	.20784	.07286	3.7289	.12224	.01369
#3	.03732	.00621	.20717	.07284	3.7334	.12262	.01370

Approved: June 24, 2016

Sample Name: S3 Acquired: 6/23/2016 9:59:42 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.07398	.43911	-.01037
Stddev	.00019	.00017	.00164
%RSD	.25546	.03885	15.815
#1	.07379	.43894	-.01027
#2	.07416	.43911	-.01205
#3	.07399	.43928	-.00878
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7072.0	43259.	2224.1
Stddev	14.8	398.	27.4
%RSD	.20991	.91929	1.2319
#1	7082.8	43351.	2233.7
#2	7055.1	43603.	2193.1
#3	7078.2	42824.	2245.4

Approved: June 24, 2016

Sample Name: S4 Acquired: 6/23/2016 10:03:22 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.03877	.17265	.01961	.02296	4.3610	.10110	.92672
Stddev	.00008	.00014	.00002	.00010	.0067	.00020	.00216
%RSD	.20818	.08155	.08575	.43952	.15282	.19359	.23349
#1	.03869	.17274	.01961	.02300	4.3606	.10112	.92440
#2	.03885	.17273	.01960	.02304	4.3545	.10128	.92708
#3	.03877	.17249	.01963	.02285	4.3678	.10089	.92868

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.06477	.14887	.06165	.12967	.18456	6.3934	3.0627
Stddev	.00016	.00033	.00010	.00044	.00066	.0064	.0061
%RSD	.25220	.22294	.15869	.33572	.35572	.09992	.20036
#1	.06467	.14868	.06175	.12936	.18461	6.3967	3.0674
#2	.06468	.14925	.06164	.13017	.18519	6.3860	3.0649
#3	.06496	.14868	.06156	.12949	.18388	6.3974	3.0558

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.17782	.29064	.37302	17.738	.14014	.27047	.06376
Stddev	.00285	.00058	.00143	.015	.00041	.00041	.00046
%RSD	1.6033	.19826	.38353	.08733	.29065	.15216	.72211
#1	.17453	.29011	.37413	17.754	.14007	.27030	.06405
#2	.17968	.29055	.37352	17.723	.14058	.27094	.06323
#3	.17923	.29126	.37140	17.737	.13978	.27016	.06399

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.07413	.01273	.40435	.14378	7.3040	.24741	.02669
Stddev	.00038	.00018	.00048	.00027	.0055	.00191	.00012
%RSD	.50593	1.4245	.11988	.19085	.07511	.77196	.46475
#1	.07456	.01277	.40450	.14408	7.2977	.24715	.02667
#2	.07399	.01288	.40474	.14369	7.3077	.24565	.02658
#3	.07385	.01253	.40380	.14356	7.3065	.24944	.02682

Approved: June 24, 2016

Sample Name: S4 Acquired: 6/23/2016 10:03:22 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.14535	.85675	-.00201
Stddev	.00022	.00106	.00208
%RSD	.14897	.12329	103.46
#1	.14559	.85650	-.00367
#2	.14528	.85790	-.00268
#3	.14518	.85583	.00032

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7025.2	42809.	2247.9
Stddev	16.9	188.	24.0
%RSD	.24090	.44025	1.0680
#1	7039.6	42965.	2221.1
#2	7006.5	42863.	2267.3
#3	7029.4	42600.	2255.4

Approved: June 24, 2016

Sample Name: ICV Acquired: 6/23/2016 10:06:58 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .42174	10.074	.40229	.50598	1.0063	.05063	10.063
Stddev	.00302	.012	.00036	.00324	.0012	.00028	.027
%RSD	.71491	.12338	.09016	.63984	.11621	.54378	.26390
#1	.41978	10.077	.40200	.50965	1.0062	.05031	10.058
#2	.42521	10.061	.40269	.50355	1.0074	.05083	10.039
#3	.42022	10.085	.40217	.50473	1.0051	.05074	10.091
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	.40000						
Range	5.0000%						

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05009	.20240	.50800	.50888	4.0175	50.261	1.0143
Stddev	.00040	.00056	.00279	.00221	.0049	.216	.0029
%RSD	.79974	.27632	.54852	.43436	.12247	.43006	.28626
#1	.04978	.20259	.50648	.50656	4.0165	50.225	1.0113
#2	.04996	.20177	.50630	.51096	4.0228	50.065	1.0171
#3	.05054	.20283	.51122	.50911	4.0132	50.492	1.0143
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.029	.50479	1.0180	50.178	.50855	10.012	.50742
Stddev	.068	.00560	.0013	.103	.00125	.021	.00677
%RSD	.67615	1.1094	.12869	.20500	.24556	.20476	1.3336
#1	9.9507	.49880	1.0193	50.067	.50868	10.009	.51030
#2	10.071	.50989	1.0181	50.197	.50972	10.034	.51227
#3	10.065	.50568	1.0167	50.269	.50723	9.9938	.49969
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 24, 2016

Sample Name: ICV Acquired: 6/23/2016 10:06:58 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2144**	**.40080**	**5.0742**	**1.0050**	**1.0071**	**.99391**	**.50847**
Stddev	.0044	.00712	.0014	.0021	.0017	.00711	.00066
%RSD	.36603	1.7766	.02857	.20562	.16965	.71494	.13049
#1	1.2140	.40749	5.0728	1.0062	1.0051	.99195	.50860
#2	1.2101	.40159	5.0757	1.0062	1.0080	1.0018	.50775
#3	1.2190	.39332	5.0743	1.0026	1.0081	.98799	.50906
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0155**	**1.0131**	F **.12125**
Stddev	.0036	.0007	.25829
%RSD	.34912	.07339	213.01
#1	1.0114	1.0137	.27856
#2	1.0171	1.0134	-.17684
#3	1.0179	1.0123	.26204
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-5.0000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7063.9**	**43324.**	**2262.6**
Stddev	26.9	275.	33.0
%RSD	.38052	.63544	1.4576
#1	7089.7	43277.	2289.4
#2	7065.8	43619.	2272.6
#3	7036.1	43074.	2225.7

Approved: June 24, 2016

Sample Name: ICB Acquired: 6/23/2016 10:10:36 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00017**	**.01239**	**.00168**	**.00784**	**.00108**	**-.00005**	**.01547**
Stddev	.00127	.00323	.00365	.00240	.00081	.00013	.03150
%RSD	761.85	26.074	217.60	30.609	74.419	238.60	203.55
#1	-.00111	.01021	-.00250	.00684	.00033	.00009	.00370
#2	.00143	.01085	.00327	.00609	.00194	-.00008	.05117
#3	.00018	.01610	.00427	.01057	.00098	-.00016	-.00844
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00017**	**-.00011**	**.00215**	**-.00040**	**.00514**	**.14107**	**.00031**
Stddev	.00018	.00062	.00088	.00176	.00928	.02657	.00101
%RSD	104.46	548.40	40.681	436.49	180.68	18.833	322.01
#1	-.00003	-.00011	.00293	-.00229	.01533	.11729	-.00065
#2	.00032	.00051	.00233	.00120	-.00283	.16974	.00136
#3	.00022	-.00074	.00120	-.00012	.00291	.13619	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.01369**	**-.00036**	**.00556**	**.06424**	**-.00091**	**.00285**	**-.00073**
Stddev	.01771	.00468	.00084	.01730	.00010	.01137	.00348
%RSD	129.35	1308.3	15.177	26.932	10.872	399.00	478.06
#1	-.03386	-.00180	.00466	.08422	-.00089	.00224	-.00360
#2	-.00656	-.00415	.00566	.05400	-.00102	-.00820	-.00173
#3	-.00066	.00487	.00634	.05451	-.00082	.01452	.00314
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: ICB Acquired: 6/23/2016 10:10:36 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00450**	**.00319**	**.00546**	**.00160**	**.00011**	**.00807**	**-.00078**
Stddev	.00442	.00503	.00259	.00177	.00005	.00279	.00085
%RSD	98.273	157.51	47.403	111.10	47.857	34.558	108.58
#1	.00423	.00106	.00505	.00225	.00017	.01129	-.00165
#2	.00905	-.00042	.00824	.00295	.00010	.00635	-.00076
#3	.00022	.00893	.00311	-.00041	.00007	.00657	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00061**	**.00048**	F **-.08910**
Stddev	.00075	.00021	.06733
%RSD	122.01	43.386	75.566
#1	.00025	.00070	-.02326
#2	-.00099	.00030	-.08622
#3	-.00109	.00043	-.15783
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7168.4**	**44479.**	**2251.6**
Stddev	29.8	69.	20.9
%RSD	.41618	.15552	.92660
#1	7152.0	44539.	2258.2
#2	7150.4	44494.	2268.3
#3	7202.8	44403.	2228.2

Approved: June 24, 2016

Sample Name: LLICV Acquired: 6/23/2016 10:14:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00871	.16697	.00827	.08217	.00866	.00152	.38076	.00112
Stddev	.00156	.00657	.00044	.00102	.00032	.00007	.06191	.00032
%RSD	17.931	3.9351	5.3040	1.2445	3.7469	4.3059	16.258	28.573
#1	.01035	.17443	.00778	.08312	.00851	.00145	.31159	.00084
#2	.00724	.16440	.00839	.08109	.00903	.00156	.39972	.00146
#3	.00855	.16207	.00864	.08229	.00844	.00156	.43097	.00104
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00394	.00592	.00329	.07090	.79173	.08265	.36584	.00927
Stddev	.00047	.00114	.00160	.01384	.02303	.00937	.05302	.00519
%RSD	12.002	19.186	48.539	19.517	2.9090	11.331	14.493	55.960
#1	.00439	.00498	.00379	.07490	.81829	.09313	.30462	.00415
#2	.00345	.00560	.00150	.08230	.77965	.07511	.39718	.00914
#3	.00398	.00718	.00458	.05550	.77726	.07971	.39573	.01453
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00929	.45743	.01489	.78319	.01009	.07954	.01845	.79603
Stddev	.00043	.03314	.00060	.01825	.00222	.00564	.00326	.00509
%RSD	4.6307	7.2446	4.0153	2.3296	21.973	7.0958	17.681	.63940
#1	.00903	.41933	.01553	.77767	.01192	.08338	.01946	.80191
#2	.00906	.47958	.01480	.80356	.01072	.07306	.02110	.79293
#3	.00979	.47338	.01434	.76834	.00762	.08218	.01481	.79326
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: LLICV Acquired: 6/23/2016 10:14:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39699	.04007	.02977	.14695	.00735	.01649	18.209
Stddev	.00063	.00024	.00357	.00246	.00036	.00018	.750
%RSD	.15976	.60040	11.988	1.6760	4.8581	1.0904	4.1175
#1	.39689	.04033	.03374	.14514	.00762	.01640	19.047
#2	.39766	.04002	.02683	.14975	.00695	.01638	17.976
#3	.39640	.03986	.02874	.14596	.00750	.01670	17.602
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7227.1	44664.	2257.6
Stddev	42.6	520.	1.8
%RSD	.58953	1.1634	.08124
#1	7268.9	45241.	2255.5
#2	7228.6	44516.	2258.4
#3	7183.7	44234.	2258.8

Approved: June 24, 2016

Sample Name: LLICV Acquired: 6/23/2016 10:18:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02171	.39362	.01983	.19823	.01984	.00378	.98794
Stddev	.00126	.00193	.00080	.00319	.00015	.00007	.03627
%RSD	5.8133	.49006	4.0133	1.6108	.73269	1.8430	3.6708
#1	.02039	.39161	.01959	.20114	.01975	.00370	1.0191
#2	.02183	.39546	.02072	.19872	.02001	.00380	.99656
#3	.02291	.39380	.01919	.19482	.01977	.00383	.94814
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00252	.01000	.01184	.01043	.17737	1.9880	.19918
Stddev	.00013	.00031	.00088	.00057	.01113	.0700	.00144
%RSD	5.1534	3.0882	7.4088	5.4266	6.2724	3.5205	.72403
#1	.00266	.01021	.01239	.01023	.18480	2.0647	.20052
#2	.00248	.01015	.01231	.01107	.16458	1.9716	.19765
#3	.00241	.00964	.01083	.01000	.18273	1.9276	.19937
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.1505	.02028	.02021	1.0786	.04040	1.9285	.02515
Stddev	.0090	.00213	.00036	.0105	.00040	.0076	.00902
%RSD	.77857	10.486	1.7929	.97378	.98140	.39154	35.846
#1	1.1570	.02252	.01981	1.0904	.04017	1.9199	.01676
#2	1.1403	.01829	.02029	1.0752	.04017	1.9323	.02401
#3	1.1543	.02002	.02052	1.0702	.04085	1.9335	.03469
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: LLICV Acquired: 6/23/2016 10:18:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21009	.04460	1.9712	.98749	.09965	.06198	.36922
Stddev	.00337	.00699	.0053	.00228	.00021	.00569	.00142
%RSD	1.6035	15.669	.27005	.23094	.20676	9.1750	.38432
#1	.21342	.04410	1.9701	.98953	.09951	.05610	.36818
#2	.21016	.05183	1.9770	.98791	.09956	.06745	.37084
#3	.20668	.03788	1.9665	.98503	.09989	.06237	.36865
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.01894	.04026	F 47.513
Stddev	.00073	.00018	.199
%RSD	3.8495	.44845	.41793
#1	.01826	.04006	47.723
#2	.01884	.04039	47.328
#3	.01971	.04034	47.487
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7163.5	44550.	2290.7
Stddev	23.5	177.	32.2
%RSD	.32766	.39713	1.4074
#1	7153.2	44670.	2264.8
#2	7190.4	44347.	2326.8
#3	7147.1	44633.	2280.6

Approved: June 24, 2016

Sample Name: ICSA Acquired: 6/23/2016 10:22:28 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00351**	**271.49**	**-.00407**	**.01552**	**.00191**	**-.00006**	**259.57**
Stddev	.00173	.32	.00149	.00100	.00131	.00002	.24
%RSD	49.261	.11797	36.681	6.4247	68.399	32.662	.09253
#1	.00498	271.21	-.00491	.01579	.00056	-.00008	259.30
#2	.00393	271.84	-.00495	.01636	.00317	-.00005	259.62
#3	.00161	271.43	-.00235	.01442	.00201	-.00005	259.78
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00073**	**-.00118**	**.00013**	**-.00016**	**102.11**	**.07096**	**.01023**
Stddev	.00043	.00034	.00149	.00197	.27	.10061	.00810
%RSD	59.851	28.800	1110.3	1223.6	.26622	141.78	79.115
#1	.00040	-.00155	.00018	-.00175	102.00	.03056	.01779
#2	.00056	-.00088	.00160	-.00076	101.90	-.00317	.00169
#3	.00122	-.00112	-.00138	.00204	102.42	.18550	.01122
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**257.21**	**-.00249**	**-.00019**	**.00909**	**.00061**	**.04214**	**.00307**
Stddev	.74	.00315	.00022	.02391	.00155	.00873	.00083
%RSD	.28577	126.41	113.88	262.88	255.31	20.716	27.122
#1	256.58	.00103	.00006	.01060	-.00109	.03399	.00215
#2	257.04	-.00505	-.00035	.03221	.00094	.04107	.00329
#3	258.02	-.00345	-.00029	-.01553	.00197	.05136	.00377
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: ICSA Acquired: 6/23/2016 10:22:28 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.01225**	**.00407**	**.01963**	**.00083**	**.00063**	**.00292**	**-.00060**
Stddev	.00264	.01019	.00271	.00011	.00019	.00730	.00391
%RSD	21.585	250.49	13.788	13.141	29.260	250.52	650.88
#1	-.01403	.01308	.02032	.00071	.00052	.00569	.00121
#2	-.00921	-.00698	.01664	.00086	.00053	-.00537	.00208
#3	-.01350	.00610	.02192	.00092	.00085	.00842	-.00509
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00779**	**-.00550**	F **-.47797**
Stddev	.00107	.00025	.21460
%RSD	13.733	4.4540	44.897
#1	-.00663	-.00578	-.66798
#2	-.00800	-.00535	-.52071
#3	-.00874	-.00537	-.24522
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02000
Low Limit			-.02000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6553.6**	**40388.**	**2145.8**
Stddev	12.6	118.	22.2
%RSD	.19296	.29225	1.0362
#1	6564.3	40521.	2171.0
#2	6539.6	40297.	2129.0
#3	6556.7	40345.	2137.4

Approved: June 24, 2016

Sample Name: ICSAB Acquired: 6/23/2016 10:26:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.54642	261.25	.24491	.01461	.25091	.23890	249.80
Stddev	.00252	.21	.00115	.00263	.00040	.00013	.92
%RSD	.46133	.07960	.46840	18.008	.15906	.05602	.36945
#1	.54352	261.03	.24362	.01303	.25053	.23905	249.38
#2	.54809	261.29	.24581	.01315	.25133	.23882	250.86
#3	.54765	261.43	.24530	.01764	.25088	.23882	249.16
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49188	.23744	.24847	.24603	97.291	5.1952	.01399
Stddev	.00064	.00054	.00296	.00107	.562	.0586	.00583
%RSD	.12989	.22676	1.1915	.43492	.57726	1.1288	41.675
#1	.49222	.23763	.24669	.24496	96.756	5.1630	.02072
#2	.49115	.23683	.24683	.24603	97.876	5.1597	.01083
#3	.49229	.23785	.25188	.24710	97.239	5.2629	.01042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	245.45	.24547	-.00016	5.2391	.47688	.02967	.49137
Stddev	.56	.00407	.00020	.0305	.00126	.00679	.00397
%RSD	.22733	1.6582	126.27	.58302	.26435	22.869	.80836
#1	245.09	.24118	.00001	5.2340	.47587	.03596	.48700
#2	246.09	.24596	-.00011	5.2718	.47829	.02248	.49476
#3	245.16	.24927	-.00039	5.2114	.47649	.03058	.49235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: ICSAB Acquired: 6/23/2016 10:26:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49041**	**.25262**	**.01058**	**.00080**	**.00095**	**-.00253**	**.46155**
Stddev	.00461	.00205	.00274	.00118	.00028	.00344	.00419
%RSD	.94074	.81253	25.938	147.62	29.252	135.58	.90806
#1	.49574	.25026	.00741	.00083	.00108	-.00511	.45692
#2	.48787	.25359	.01204	.00197	.00063	.00137	.46508
#3	.48763	.25401	.01228	-.00040	.00114	-.00386	.46266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.24277**	**.47990**	F **-.55726**
Stddev	.00211	.00039	.17760
%RSD	.87023	.08099	31.870
#1	.24037	.47959	-.50386
#2	.24434	.47976	-.75543
#3	.24360	.48033	-.41249
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02500
Low Limit			-.02500

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6867.2**	**42131.**	**2229.4**
Stddev	30.3	59.	27.6
%RSD	.44128	.13923	1.2390
#1	6862.7	42197.	2251.0
#2	6899.5	42109.	2239.0
#3	6839.4	42086.	2198.3

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 10:30:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41972**	**10.006**	**.40325**	**.49964**	**1.0111**	**.04985**	**10.067**
Stddev	.00435	.016	.00112	.00580	.0052	.00034	.068
%RSD	1.0364	.16389	.27665	1.1604	.51834	.67480	.67879
#1	.42011	9.9983	.40199	.50246	1.0058	.05014	10.015
#2	.41519	9.9944	.40364	.50348	1.0162	.04993	10.144
#3	.42386	10.025	.40411	.49297	1.0113	.04948	10.041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05024**	**.20223**	**.50131**	**.50749**	**4.0553**	**50.377**	**1.0226**
Stddev	.00028	.00067	.00274	.00104	.0420	.183	.0017
%RSD	.56269	.33341	.54611	.20417	1.0345	.36293	.16260
#1	.05043	.20278	.50296	.50646	4.0254	50.317	1.0219
#2	.04992	.20244	.50282	.50853	4.0372	50.582	1.0245
#3	.05037	.20148	.49815	.50748	4.1032	50.231	1.0214
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.9528**	**.50477**	**1.0077**	**50.394**	**.50575**	**10.041**	**.50277**
Stddev	.0960	.00398	.0034	.164	.00126	.013	.00300
%RSD	.96419	.78931	.33712	.32583	.24862	.12624	.59574
#1	9.9093	.50065	1.0114	50.208	.50700	10.027	.50104
#2	10.063	.50505	1.0070	50.519	.50448	10.051	.50104
#3	9.8862	.50860	1.0048	50.454	.50576	10.046	.50622
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 10:30:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2122**	**.40567**	**5.0769**	**1.0044**	**1.0093**	**.99371**	**.51032**
Stddev	.0058	.00436	.0044	.0017	.0042	.00390	.00026
%RSD	.47789	1.0749	.08648	.16760	.41078	.39271	.05189
#1	1.2179	.40121	5.0794	1.0059	1.0071	.98947	.51004
#2	1.2063	.40587	5.0795	1.0026	1.0141	.99715	.51035
#3	1.2126	.40993	5.0719	1.0046	1.0067	.99452	.51057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0014**	**1.0107**	F **.71299**
Stddev	.0067	.0004	.23489
%RSD	.66944	.04203	32.944
#1	1.0039	1.0108	.53231
#2	1.0066	1.0110	.97851
#3	.99386	1.0102	.62814
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7133.2**	**43787.**	**2246.1**
Stddev	18.4	184.	8.5
%RSD	.25841	.41964	.37924
#1	7124.4	43972.	2255.6
#2	7154.4	43605.	2239.0
#3	7120.8	43783.	2243.7

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 10:33:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00297**	**-.00189**	**.00289**	**.00380**	**.00027**	**-.00003**	**.02225**
Stddev	.00079	.00779	.00159	.00210	.00139	.00004	.03753
%RSD	26.593	413.32	55.111	55.251	514.31	136.58	168.66
#1	.00334	-.00786	.00273	.00334	.00168	-.00001	-.00921
#2	.00350	.00693	.00139	.00609	.00023	-.00000	.06379
#3	.00206	-.00473	.00457	.00197	-.00110	-.00008	.01218
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00012**	**-.00000**	**.00131**	**.00018**	**-.03277**	**.04923**	**-.00040**
Stddev	.00014	.00031	.00102	.00083	.02068	.05258	.00151
%RSD	114.48	23177.	77.426	468.65	63.118	106.80	379.45
#1	.00007	.00021	.00045	-.00049	-.03402	.00596	.00130
#2	.00028	.00015	.00105	-.00008	-.01149	.03398	-.00091
#3	.00002	-.00036	.00243	.00110	-.05280	.10775	-.00158
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00472**	**-.00040**	**.00398**	**.04186**	**.00037**	**.00183**	**.00092**
Stddev	.07151	.00169	.00086	.03433	.00046	.01093	.00506
%RSD	1514.3	422.40	21.740	82.001	123.50	599.09	550.15
#1	.06340	.00145	.00330	.07571	-.00014	-.00531	.00400
#2	.00162	-.00078	.00368	.00708	.00074	.01441	.00368
#3	-.07919	-.00188	.00495	.04280	.00051	-.00362	-.00492
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 10:33:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.00397**	**.00703**	**.00090**	**.00049**	**-.00046**	**-.00277**
Stddev	.00449	.00153	.00249	.00076	.00019	.00531	.00268
%RSD	1177.2	38.496	35.437	84.023	38.599	1160.2	96.770
#1	-.00383	.00290	.00990	.00168	.00070	-.00540	-.00548
#2	.00470	.00572	.00539	.00016	.00039	.00516	-.00013
#3	-.00201	.00329	.00581	.00086	.00037	-.00113	-.00269
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00047**	**.00010**	F **-.23448**
Stddev	.00129	.00031	.19803
%RSD	273.56	297.44	84.455
#1	-.00071	-.00016	-.44342
#2	.00092	.00044	-.21046
#3	-.00163	.00002	-.04956
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7198.5**	**44410.**	**2298.3**
Stddev	13.1	128.	10.8
%RSD	.18130	.28902	.47010
#1	7213.3	44273.	2294.3
#2	7188.5	44528.	2310.6
#3	7193.7	44429.	2290.1

Approved: June 24, 2016

Sample Name: PBW 02 Acquired: 6/23/2016 10:37:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00243	.01289	-.00238	.00215	.00059	.00001	.00064	.00027
Stddev	.00241	.00507	.00138	.00467	.00018	.00007	.03803	.00006
%RSD	99.217	39.320	57.920	217.09	29.967	855.05	5917.2	21.093
#1	-.00031	.01133	-.00397	.00515	.00054	-.00004	-.00920	.00024
#2	.00421	.01856	-.00155	.00453	.00079	-.00003	-.03149	.00033
#3	.00340	.00879	-.00162	-.00323	.00045	.00009	.04262	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	.00191	-.00100	.00249	.04815	.00220	-.00515	-.00126
Stddev	.00015	.00073	.00043	.01361	.09597	.00221	.11951	.00238
%RSD	73.207	38.022	42.787	546.34	199.31	100.78	2321.3	189.95
#1	-.00025	.00137	-.00123	.01660	-.05245	.00010	.03750	-.00019
#2	-.00003	.00273	-.00051	-.01057	.13870	.00199	-.14013	.00041
#3	-.00031	.00163	-.00126	.00145	.05820	.00451	.08719	-.00399
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00121	.04263	-.00108	-.00736	.00241	-.00353	.00285	.00836
Stddev	.00026	.02816	.00116	.00127	.00261	.00137	.00741	.00138
%RSD	21.618	66.044	107.01	17.201	108.31	38.784	259.67	16.477
#1	.00092	.01185	.00018	-.00596	.00167	-.00350	-.00460	.00969
#2	.00128	.06707	-.00134	-.00769	.00530	-.00218	.01021	.00694
#3	.00142	.04898	-.00208	-.00843	.00025	-.00492	.00294	.00846
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: PBW 02 Acquired: 6/23/2016 10:37:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00109	-.00009	.01096	-.00098	-.00023	.00040	.03142
Stddev	.00065	.00030	.00703	.00449	.00148	.00015	.35769
%RSD	59.540	324.77	64.152	456.40	635.29	36.948	1138.4
#1	.00065	.00022	.01902	.00189	-.00170	.00048	.18768
#2	.00079	-.00037	.00777	-.00616	-.00024	.00050	-.37782
#3	.00184	-.00013	.00609	.00132	.00125	.00023	.28440
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7056.8	44113.	2291.0
Stddev	55.6	316.	27.4
%RSD	.78762	.71710	1.1965
#1	7118.4	44456.	2259.3
#2	7041.7	43832.	2306.7
#3	7010.4	44053.	2306.9

Approved: June 24, 2016

Sample Name: LCSW 02 Acquired: 6/23/2016 10:48:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.22850**	**5.3524**	**.21516**	**1.0428**	**.54496**	**.02642**	**5.5039**	**.02684**
Stddev	.00330	.0076	.00251	.0020	.00025	.00010	.0620	.00020
%RSD	1.4451	.14203	1.1655	.19167	.04529	.37359	1.1259	.73257
#1	.22591	5.3512	.21360	1.0405	.54519	.02650	5.4405	.02701
#2	.23222	5.3454	.21805	1.0440	.54499	.02631	5.5067	.02662
#3	.22739	5.3605	.21382	1.0440	.54470	.02644	5.5644	.02689
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10911**	**.27097**	**.27491**	**2.1584**	**26.630**	**.54834**	**5.3637**	**.26968**
Stddev	.00035	.00159	.00152	.0163	.041	.00364	.0151	.00278
%RSD	.31852	.58817	.55193	.75658	.15361	.66310	.28212	1.0312
#1	.10906	.27197	.27357	2.1714	26.592	.55090	5.3742	.27283
#2	.10880	.26913	.27656	2.1401	26.625	.54418	5.3705	.26757
#3	.10949	.27181	.27460	2.1637	26.673	.54993	5.3463	.26864
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.55353**	**27.101**	**.27454**	**5.1950**	**.27137**	**.65400**	**.20493**	**2.7480**
Stddev	.00112	.080	.00191	.0060	.00219	.00254	.00409	.0055
%RSD	.20253	.29526	.69567	.11494	.80702	.38851	1.9961	.20068
#1	.55266	27.180	.27670	5.1938	.27139	.65193	.20099	2.7458
#2	.55314	27.020	.27307	5.1896	.26916	.65683	.20465	2.7440
#3	.55480	27.102	.27383	5.2014	.27354	.65323	.20916	2.7543
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: LCSW 02 Acquired: 6/23/2016 10:48:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.54136**	**.54956**	**.53774**	**.26798**	**.53756**	**.53807**	**.52263**
Stddev	.00124	.00284	.00655	.00160	.00065	.00111	.08625
%RSD	.22963	.51687	1.2184	.59886	.12008	.20681	16.502
#1	.54178	.55283	.53336	.26631	.53698	.53720	.47858
#2	.53996	.54779	.54527	.26810	.53744	.53770	.62201
#3	.54233	.54805	.53459	.26951	.53826	.53933	.46730
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6751.0**	**41595.**	**2147.5**
Stddev	16.5	417.	15.8
%RSD	.24497	1.0037	.73785
#1	6750.9	41122.	2157.2
#2	6734.6	41910.	2156.0
#3	6767.6	41755.	2129.2

Approved: June 24, 2016

Sample Name: L1606080601 Acquired: 6/23/2016 10:51:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00332	.04783	-.00051	.02919	.02316	-.00001	43.010	.00030
Stddev	.00229	.01237	.00173	.00366	.00041	.00006	.052	.00045
%RSD	69.212	25.855	341.87	12.521	1.7488	512.34	.12116	151.99
#1	.00527	.04741	-.00003	.03341	.02305	.00001	43.043	.00037
#2	.00390	.03568	-.00243	.02723	.02361	.00004	42.950	.00071
#3	.00079	.06040	.00094	.02694	.02283	-.00008	43.037	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.00082	.00144	.40311	2.4797	-.00382	7.5681	.03103
Stddev	.00013	.00101	.00278	.00772	.0470	.00214	.0970	.00130
%RSD	74.032	123.26	193.44	1.9146	1.8949	56.013	1.2820	4.2001
#1	-.00014	.00001	.00047	.41089	2.4255	-.00177	7.5891	.03208
#2	-.00031	.00050	-.00073	.39545	2.5043	-.00366	7.6528	.03142
#3	-.00006	.00195	.00457	.40300	2.5092	-.00604	7.4622	.02957
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00181	8.7753	.00096	-.00180	-.00112	-.00294	.00044	2.4583
Stddev	.00051	.0335	.00050	.00217	.00243	.00750	.00595	.0091
%RSD	27.981	.38181	52.318	121.11	217.36	255.25	1360.5	.36984
#1	.00170	8.7390	.00121	-.00156	.00092	-.00259	.00525	2.4480
#2	.00237	8.7818	.00038	.00025	-.00047	.00438	-.00622	2.4617
#3	.00137	8.8051	.00129	-.00408	-.00381	-.01060	.00229	2.4652
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606080601 Acquired: 6/23/2016 10:51:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00095	.15971	.00244	.00018	-.00142	.00421	.06591
Stddev	.00050	.00036	.01050	.00258	.00131	.00020	.08417
%RSD	52.557	.22648	430.07	1452.4	91.782	4.6676	127.70
#1	.00048	.15994	-.00770	-.00278	-.00014	.00424	.10987
#2	.00148	.15929	.00175	.00136	-.00137	.00439	-.03114
#3	.00090	.15990	.01328	.00196	-.00275	.00400	.11899
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6810.6	42146.	2192.1
Stddev	25.2	266.	18.6
%RSD	.36933	.63096	.84850
#1	6802.0	42073.	2178.6
#2	6790.9	41924.	2184.4
#3	6838.9	42440.	2213.3

Approved: June 24, 2016

Sample Name: L1606080603S Acquired: 6/23/2016 10:55:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.22292**	**5.2580**	**.21233**	**1.0506**	**.56122**	**.02585**	**46.880**	**.02653**
Stddev	.00125	.0051	.00435	.0034	.00394	.00006	.174	.00017
%RSD	.56117	.09779	2.0482	.32163	.70242	.22036	.37102	.65401
#1	.22331	5.2556	.21640	1.0468	.56286	.02591	47.040	.02643
#2	.22392	5.2639	.20775	1.0517	.55673	.02583	46.695	.02642
#3	.22152	5.2545	.21283	1.0533	.56408	.02580	46.905	.02673
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10658**	**.26462**	**.26636**	**2.5134**	**28.758**	**.54406**	**12.811**	**.30027**
Stddev	.00029	.00181	.00051	.0405	.213	.00394	.014	.00457
%RSD	.27356	.68391	.18983	1.6130	.74146	.72467	.10931	1.5227
#1	.10631	.26358	.26675	2.5028	28.880	.54429	12.814	.30476
#2	.10654	.26671	.26655	2.4792	28.512	.54000	12.796	.29562
#3	.10689	.26358	.26579	2.5582	28.882	.54788	12.823	.30041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.55170**	**35.165**	**.26531**	**5.2323**	**.26719**	**.65049**	**.20303**	**5.1631**
Stddev	.00113	.187	.00228	.0061	.00196	.00181	.00446	.0029
%RSD	.20429	.53311	.85843	.11604	.73356	.27771	2.1946	.05639
#1	.55286	35.340	.26794	5.2303	.26915	.64881	.20042	5.1665
#2	.55060	34.967	.26407	5.2275	.26523	.65240	.20818	5.1612
#3	.55165	35.189	.26391	5.2391	.26720	.65026	.20050	5.1617
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606080603S Acquired: 6/23/2016 10:55:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53484**	**.70111**	**.52936**	**.26439**	**.52736**	**.52795**	**.54980**
Stddev	.00124	.00139	.00278	.00080	.00211	.00104	.46028
%RSD	.23260	.19809	.52607	.30199	.39931	.19788	83.718
#1	.53546	.70248	.52994	.26380	.52862	.52807	.30765
#2	.53566	.69970	.52632	.26530	.52854	.52685	.26115
#3	.53341	.70117	.53180	.26408	.52493	.52893	1.0806
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6736.2**	**41946.**	**2187.8**
Stddev	5.1	20.	14.7
%RSD	.07591	.04740	.67015
#1	6730.4	41949.	2172.7
#2	6737.9	41964.	2188.8
#3	6740.2	41924.	2201.9

Approved: June 24, 2016

Sample Name: L1606080604SD Acquired: 6/23/2016 10:59:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.22494**	**5.3013**	**.21407**	**1.0628**	**.56365**	**.02612**	**47.662**	**.02643**
Stddev	.00131	.0093	.00129	.0020	.00234	.00011	.148	.00049
%RSD	.58037	.17470	.60415	.18460	.41544	.41243	.31045	1.8605
#1	.22580	5.3020	.21515	1.0606	.56620	.02606	47.808	.02611
#2	.22344	5.3102	.21442	1.0642	.56160	.02624	47.512	.02700
#3	.22559	5.2917	.21263	1.0637	.56315	.02605	47.665	.02619
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10674**	**.26724**	**.26524**	**2.6333**	**28.895**	**.54557**	**12.719**	**.30439**
Stddev	.00058	.00062	.00038	.0330	.106	.00090	.094	.00619
%RSD	.54609	.23196	.14207	1.2527	.36519	.16505	.74234	2.0338
#1	.10638	.26678	.26533	2.6696	28.991	.54627	12.772	.31139
#2	.10741	.26794	.26557	2.6252	28.782	.54456	12.610	.30217
#3	.10642	.26698	.26483	2.6052	28.913	.54588	12.776	.29962
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.55418**	**34.480**	**.26678**	**5.2501**	**.26985**	**.65141**	**.19677**	**5.1827**
Stddev	.00050	.067	.00127	.0075	.00459	.00504	.00312	.0057
%RSD	.08994	.19311	.47791	.14252	1.7002	.77356	1.5871	.10959
#1	.55380	34.540	.26578	5.2415	.27196	.65020	.19384	5.1876
#2	.55474	34.408	.26821	5.2542	.26459	.64709	.19641	5.1765
#3	.55399	34.491	.26635	5.2546	.27301	.65695	.20005	5.1841
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606080604SD Acquired: 6/23/2016 10:59:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53983**	**.70207**	**.53595**	**.26631**	**.53443**	**.53118**	**.44263**
Stddev	.00237	.00250	.00231	.00541	.00162	.00068	.38887
%RSD	.43894	.35572	.43187	2.0329	.30357	.12798	87.854
#1	.54163	.70459	.53352	.26243	.53589	.53106	.10258
#2	.54071	.69960	.53620	.27250	.53268	.53191	.86662
#3	.53715	.70202	.53813	.26401	.53473	.53057	.35870
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6749.7**	**41983.**	**2189.9**
Stddev	23.3	132.	6.1
%RSD	.34593	.31400	.28075
#1	6735.6	41949.	2183.1
#2	6776.6	41872.	2195.2
#3	6736.8	42129.	2191.3

Approved: June 24, 2016

Sample Name: L1606064301 Acquired: 6/23/2016 11:03:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00122	.06615	-.00143	.02593	.03006	-.00006	38.280	.00032
Stddev	.00204	.01101	.00114	.00145	.00109	.00010	.072	.00020
%RSD	168.05	16.644	79.877	5.6031	3.6139	160.24	.18846	60.547
#1	-.00114	.06914	-.00036	.02742	.03123	.00004	38.219	.00022
#2	.00222	.05395	-.00264	.02452	.02986	-.00006	38.359	.00055
#3	.00256	.07536	-.00129	.02585	.02908	-.00016	38.261	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.00230	.00108	.05505	.82182	.00036	6.9671	.00298
Stddev	.00067	.00063	.00204	.02247	.04972	.00219	.1563	.00230
%RSD	948.74	27.362	188.95	40.824	6.0505	601.29	2.2439	77.255
#1	-.00016	.00300	-.00033	.07041	.79866	.00194	6.8403	.00562
#2	-.00069	.00179	.00342	.06549	.87890	-.00214	7.1417	.00149
#3	.00064	.00211	.00015	.02926	.78791	.00129	6.9192	.00182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	5.2162	-.00040	.00723	.00244	-.00396	.00046	4.1726
Stddev	.00051	.0203	.00014	.00259	.00459	.00187	.00839	.0123
%RSD	44.166	.38819	33.920	35.779	188.07	47.157	1810.3	.29505
#1	.00058	5.2125	-.00024	.00977	-.00208	-.00520	-.00153	4.1806
#2	.00139	5.2380	-.00049	.00460	.00709	-.00487	-.00675	4.1789
#3	.00153	5.1980	-.00046	.00731	.00230	-.00181	.00967	4.1585
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606064301 Acquired: 6/23/2016 11:03:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00078**	**.20451**	**.00530**	**-.00469**	**-.00006**	**.00110**	**.14863**
Stddev	.00121	.00048	.00792	.00091	.00063	.00030	.13987
%RSD	154.61	.23532	149.42	19.355	996.61	27.576	94.109
#1	.00207	.20397	.00166	-.00442	-.00057	.00145	.23839
#2	.00061	.20490	.01439	-.00395	-.00026	.00092	-.01253
#3	-.00033	.20466	-.00014	-.00571	.00064	.00093	.22003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6830.4**	**42508.**	**2171.6**
Stddev	8.5	112.	27.2
%RSD	.12431	.26329	1.2518
#1	6822.3	42542.	2152.2
#2	6839.3	42598.	2160.0
#3	6829.7	42382.	2202.7

Approved: June 24, 2016

Sample Name: L1606064301PS Acquired: 6/23/2016 11:07:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573560-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.22725**	**5.3504**	**.21699**	**1.0586**	**.56235**	**.02606**	**39.453**	**.02652**
Stddev	.00177	.0067	.00179	.0027	.00155	.00012	.197	.00023
%RSD	.77717	.12503	.82531	.25428	.27486	.46212	.49837	.88589
#1	.22925	5.3465	.21509	1.0575	.56204	.02619	39.648	.02660
#2	.22656	5.3582	.21864	1.0616	.56403	.02598	39.456	.02625
#3	.22593	5.3466	.21724	1.0566	.56099	.02599	39.255	.02669
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10707**	**.26636**	**.26786**	**2.1734**	**27.243**	**.54647**	**11.652**	**.26618**
Stddev	.00054	.00055	.00272	.0119	.213	.00192	.041	.00881
%RSD	.50398	.20739	1.0148	.54748	.78325	.35141	.35108	3.3092
#1	.10730	.26671	.26949	2.1869	27.405	.54632	11.608	.27572
#2	.10746	.26572	.26937	2.1646	27.322	.54463	11.688	.26445
#3	.10645	.26665	.26472	2.1686	27.001	.54846	11.659	.25836
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.54977**	**31.311**	**.26618**	**5.2709**	**.26415**	**.65246**	**.20473**	**6.5222**
Stddev	.00116	.147	.00099	.0077	.00299	.00202	.00237	.0133
%RSD	.21115	.46806	.37140	.14598	1.1311	.30884	1.1586	.20363
#1	.55015	31.346	.26545	5.2795	.26421	.65014	.20272	6.5165
#2	.55069	31.436	.26579	5.2647	.26113	.65378	.20735	6.5374
#3	.54846	31.150	.26730	5.2685	.26710	.65345	.20414	6.5128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606064301PS Acquired: 6/23/2016 11:07:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573560-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53985	.72655	.53558	.26570	.53178	.53125	.33122
Stddev	.00086	.00309	.00331	.00043	.00075	.00054	.05932
%RSD	.15906	.42561	.61803	.16301	.14059	.10232	17.910
#1	.53907	.72896	.53270	.26521	.53252	.53085	.28877
#2	.54077	.72764	.53485	.26582	.53103	.53187	.30588
#3	.53972	.72307	.53920	.26605	.53179	.53103	.39900
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6757.9	41916.	2182.6
Stddev	34.8	107.	23.2
%RSD	.51560	.25636	1.0623
#1	6728.7	41855.	2187.7
#2	6796.5	42040.	2157.3
#3	6748.6	41853.	2202.8

Approved: June 24, 2016

Sample Name: L1606064301SDL Acquired: 6/23/2016 11:10:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573560-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00070**	**.01810**	**-.00492**	**.01185**	**.00631**	**-.00000**	**7.1236**
Stddev	.00274	.00839	.00252	.00391	.00222	.00007	.1325
%RSD	392.94	46.334	51.249	32.975	35.103	3513.5	1.8603
#1	-.00235	.00864	-.00244	.01427	.00517	.00007	6.9946
#2	.00149	.02106	-.00747	.01394	.00887	-.00001	7.2594
#3	.00296	.02462	-.00483	.00734	.00490	-.00006	7.1166
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**.00002**	**.00232**	**-.00095**	**-.00610**	**.17611**	**-.00235**
Stddev	.00025	.00059	.00130	.00129	.02126	.10548	.00501
%RSD	155.98	3337.0	56.059	136.53	348.65	59.896	212.68
#1	.00039	.00038	.00248	-.00038	-.02017	.14177	.00306
#2	-.00011	-.00067	.00095	-.00242	-.01648	.29448	-.00331
#3	.00021	.00034	.00353	-.00003	.01836	.09207	-.00681
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2954**	**.00077**	**.00079**	**1.0065**	**-.00075**	**.00450**	**.00141**
Stddev	.1344	.00192	.00039	.0274	.00071	.00539	.00486
%RSD	10.379	247.98	49.311	2.7240	94.064	119.85	344.90
#1	1.2316	-.00060	.00040	1.0091	-.00103	.00495	-.00378
#2	1.4498	.00297	.00118	1.0325	.00005	.00964	.00586
#3	1.2047	-.00004	.00078	.97783	-.00128	-.00111	.00215
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606064301SDL Acquired: 6/23/2016 11:10:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573560-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00658	.00672	.79406	.00083	.03798	.01408	-.00117
Stddev	.00316	.00321	.00147	.00103	.00094	.01087	.00246
%RSD	48.021	47.777	.18462	123.89	2.4756	77.174	209.17
#1	-.00294	.00985	.79575	.00155	.03738	.01337	-.00372
#2	-.00825	.00344	.79333	-.00035	.03907	.00359	.00119
#3	-.00856	.00686	.79311	.00130	.03751	.02529	-.00099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00049	.00087	F -.20818
Stddev	.00030	.00009	.00447
%RSD	61.635	10.403	2.1493
#1	-.00050	.00094	-.20536
#2	-.00079	.00091	-.21334
#3	-.00019	.00077	-.20585
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7139.5	44441.	2238.0
Stddev	50.1	436.	9.4
%RSD	.70115	.98188	.41959
#1	7082.7	44722.	2247.5
#2	7158.3	43938.	2228.7
#3	7177.3	44663.	2237.9

Approved: June 24, 2016

Sample Name: L1606064301SDL Acquired: 6/23/2016 11:14:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573560-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00261	.00791	-.00004	.00376	.00049	.00002	1.3594	.00023
Stddev	.00120	.00238	.00074	.00093	.00141	.00007	.0314	.00034
%RSD	45.945	30.141	1664.4	24.870	290.88	378.58	2.3106	150.85
#1	.00358	.00988	-.00069	.00277	.00038	-.00005	1.3505	.00050
#2	.00297	.00526	.00076	.00387	-.00087	.00008	1.3943	-.00016
#3	.00127	.00858	-.00021	.00463	.00195	.00002	1.3334	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	.00078	-.00032	-.01191	.06875	-.00169	.28703	-.00226
Stddev	.00009	.00052	.00249	.01602	.11639	.00434	.08030	.00304
%RSD	20.872	66.349	784.39	134.58	169.31	257.07	27.975	134.96
#1	.00037	.00028	.00241	-.01207	.19064	.00305	.35886	.00125
#2	.00043	.00131	-.00246	.00420	-.04124	-.00547	.20034	-.00380
#3	.00055	.00075	-.00090	-.02785	.05685	-.00264	.30188	-.00422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	.26228	-.00128	.00562	.00251	-.00194	.00134	.17660
Stddev	.00028	.01679	.00122	.00155	.00558	.00069	.00224	.00148
%RSD	62.629	6.4019	95.033	27.643	222.32	35.685	167.54	.83658
#1	.00015	.27136	-.00120	.00432	.00095	-.00169	.00300	.17609
#2	.00048	.24290	-.00011	.00520	.00870	-.00273	.00222	.17545
#3	.00071	.27258	-.00253	.00734	-.00213	-.00141	-.00121	.17827
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606064301SDL Acquired: 6/23/2016 11:14:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573560-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.00771	.00924	.00187	-.00212	.00023	.10361
Stddev	.00110	.00046	.00454	.00261	.00099	.00022	.04989
%RSD	590.32	5.9848	49.119	139.27	46.532	92.023	48.149
#1	.00142	.00743	.00743	-.00027	-.00305	.00007	.15002
#2	-.00018	.00824	.01440	.00111	-.00224	.00048	.10996
#3	-.00069	.00745	.00588	.00478	-.00108	.00016	.05085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6961.0	42861.	2262.2
Stddev	19.0	128.	28.0
%RSD	.27352	.29900	1.2383
#1	6966.6	42842.	2290.8
#2	6976.7	42744.	2234.8
#3	6939.9	42998.	2261.1

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 11:18:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.42208**	**10.026**	**.40440**	**.50274**	**1.0079**	**.05013**	**10.009**
Stddev	.00403	.034	.00230	.00696	.0010	.00017	.055
%RSD	.95372	.34303	.56808	1.3853	.10403	.33377	.55336
#1	.41788	9.9874	.40287	.49470	1.0087	.04997	10.060
#2	.42245	10.054	.40705	.50702	1.0082	.05030	10.019
#3	.42590	10.037	.40329	.50649	1.0067	.05012	9.9500
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05023**	**.20256**	**.50302**	**.50725**	**4.0199**	**50.275**	**1.0209**
Stddev	.00011	.00027	.00258	.00083	.0198	.052	.0040
%RSD	.22018	.13367	.51361	.16325	.49293	.10377	.39074
#1	.05036	.20253	.50114	.50692	4.0081	50.322	1.0175
#2	.05016	.20231	.50596	.50664	4.0428	50.219	1.0253
#3	.05017	.20285	.50195	.50819	4.0088	50.282	1.0199
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.9566**	**.50840**	**1.0090**	**50.346**	**.50788**	**10.008**	**.50433**
Stddev	.0526	.00612	.0027	.132	.00211	.011	.00390
%RSD	.52863	1.2043	.27275	.26241	.41570	.11030	.77248
#1	9.9739	.51083	1.0117	50.491	.50814	9.9964	.50363
#2	9.9984	.50144	1.0092	50.313	.50565	10.010	.50083
#3	9.8975	.51294	1.0062	50.233	.50985	10.018	.50853
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 11:18:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2091**	**.40397**	**5.0887**	**1.0011**	**1.0108**	**.99757**	**.51228**
Stddev	.0044	.00601	.0108	.0007	.0040	.01110	.00232
%RSD	.36159	1.4875	.21143	.06763	.39423	1.1124	.45377
#1	1.2140	.40998	5.0829	1.0007	1.0113	.98553	.51248
#2	1.2059	.40395	5.0820	1.0019	1.0145	1.0074	.50986
#3	1.2073	.39797	5.1011	1.0007	1.0066	.99981	.51449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0073**	**1.0103**	F **-.07667**
Stddev	.0043	.0010	.16401
%RSD	.42507	.09626	213.92
#1	1.0026	1.0099	.11242
#2	1.0085	1.0096	-.16212
#3	1.0109	1.0114	-.18030
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7112.5**	**44059.**	**2267.2**
Stddev	29.9	13.	7.7
%RSD	.42011	.02930	.33758
#1	7083.9	44050.	2270.1
#2	7143.5	44074.	2273.0
#3	7110.0	44053.	2258.5

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 11:22:07 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00189**	**.01317**	**-.00014**	**.00695**	**-.00071**	**.00002**	**.05005**
Stddev	.00207	.00751	.00124	.00172	.00046	.00003	.03317
%RSD	109.38	57.025	881.13	24.753	65.131	192.61	66.278
#1	.00097	.02150	.00128	.00894	-.00027	-.00002	.01183
#2	.00044	.01111	-.00070	.00597	-.00119	.00003	.07135
#3	.00426	.00691	-.00101	.00594	-.00067	.00004	.06697
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00033**	**.00016**	**.00124**	**-.00052**	**-.01915**	**.11943**	**.00219**
Stddev	.00022	.00035	.00068	.00139	.00890	.05118	.00124
%RSD	66.393	219.43	54.732	264.88	46.485	42.852	56.612
#1	.00009	-.00001	.00069	-.00028	-.01341	.09118	.00192
#2	.00052	.00056	.00200	-.00202	-.02941	.08860	.00111
#3	.00038	-.00008	.00103	.00073	-.01464	.17850	.00355
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00380**	**-.00012**	**.00453**	**.04304**	**.00039**	**.00349**	F **.00609**
Stddev	.12926	.00178	.00020	.00496	.00064	.00646	.00128
%RSD	3404.8	1473.3	4.5001	11.533	165.65	184.97	21.041
#1	-.01541	.00096	.00430	.04248	.00001	.00020	.00607
#2	-.11479	-.00217	.00460	.04826	.00002	.01093	.00482
#3	.14158	.00085	.00469	.03838	.00113	-.00066	.00738
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							.00500
Low Limit							-.00500

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 11:22:07 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00227	.00206	.00558	.00044	.00024	.00228	-.00124
Stddev	.00104	.01111	.00105	.00112	.00019	.00747	.00491
%RSD	45.890	538.56	18.813	256.59	76.427	327.13	397.12
#1	.00114	.01300	.00502	.00065	.00003	.01091	.00178
#2	.00249	-.00921	.00679	.00143	.00031	-.00219	-.00690
#3	.00318	.00239	.00492	-.00077	.00039	-.00187	.00141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00174	.00003	F .09081
Stddev	.00025	.00043	.08933
%RSD	14.138	1286.3	98.377
#1	-.00177	-.00004	.02370
#2	-.00148	-.00035	.05651
#3	-.00197	.00049	.19220
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7200.1	44649.	2270.6
Stddev	37.7	32.	39.2
%RSD	.52300	.07113	1.7243
#1	7240.4	44677.	2277.9
#2	7194.1	44614.	2228.3
#3	7165.8	44655.	2305.6

Approved: June 24, 2016

Sample Name: L1606064302 Acquired: 6/23/2016 11:26:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	.26747	-.00009	.02484	.04254	-.00005	43.396	.00022
Stddev	.00197	.00413	.00272	.00027	.00060	.00012	.324	.00013
%RSD	261.93	1.5424	2949.9	1.0811	1.4178	232.10	.74631	58.986
#1	-.00150	.26752	-.00205	.02509	.04264	-.00019	43.509	.00035
#2	.00218	.26332	.00301	.02456	.04309	.00004	43.649	.00023
#3	.00157	.27158	-.00123	.02486	.04189	-.00000	43.031	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.00266	.00081	.32785	.96194	.00079	5.1860	.01617
Stddev	.00029	.00025	.00240	.01532	.08177	.00339	.1255	.00084
%RSD	88.646	9.5763	296.94	4.6741	8.5002	427.83	2.4202	5.1909
#1	.00048	.00271	-.00046	.32168	1.0234	-.00276	5.2270	.01561
#2	-.00001	.00289	.00357	.31657	.99334	.00400	5.0451	.01713
#3	.00051	.00238	-.00069	.34529	.86913	.00115	5.2859	.01577
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00206	5.2001	.00017	.04611	.00359	-.00067	-.00054	4.1105
Stddev	.00042	.0405	.00053	.00238	.00353	.00387	.00445	.0061
%RSD	20.472	.77885	304.22	5.1573	98.382	575.44	822.83	.14753
#1	.00157	5.1727	-.00037	.04386	.00542	.00182	.00165	4.1139
#2	.00228	5.2466	.00069	.04587	.00581	.00130	-.00566	4.1141
#3	.00232	5.1809	.00021	.04860	-.00048	-.00513	.00239	4.1035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606064302 Acquired: 6/23/2016 11:26:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.15100	-.00290	-.00074	-.00060	.00253	.02492
Stddev	.00012	.00127	.00397	.00016	.00041	.00023	.28447
%RSD	14.883	.83854	137.08	21.805	67.554	9.2827	1141.4
#1	.00091	.14977	-.00056	-.00070	-.00066	.00264	.35267
#2	.00068	.15230	-.00748	-.00091	-.00098	.00269	-.15784
#3	.00086	.15094	-.00065	-.00060	-.00017	.00226	-.12006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6794.5	42752.	2192.4
Stddev	30.7	54.	19.1
%RSD	.45171	.12704	.86965
#1	6781.9	42692.	2170.4
#2	6829.5	42766.	2202.2
#3	6772.1	42798.	2204.6

Approved: June 24, 2016

Sample Name: L1606064303 Acquired: 6/23/2016 11:30:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00032**	**.06602**	**-.00261**	**.01285**	**.08166**	**-.00002**	**70.478**
Stddev	.00222	.00884	.00362	.00367	.00098	.00003	.278
%RSD	699.98	13.390	138.45	28.517	1.2008	166.64	.39496
#1	.00122	.07324	-.00461	.00955	.08278	.00001	70.795
#2	.00069	.05616	.00156	.01680	.08122	-.00005	70.361
#3	-.00286	.06867	-.00478	.01221	.08098	-.00001	70.277
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00043**	**-.00007**	**.00271**	**.00017**	**.04905**	**.61723**	**.00329**
Stddev	.00030	.00015	.00141	.00138	.01853	.06231	.00259
%RSD	71.212	206.71	52.030	794.77	37.781	10.096	78.525
#1	.00025	.00010	.00274	.00099	.03029	.64631	.00522
#2	.00025	-.00017	.00410	-.00142	.06734	.54569	.00035
#3	.00078	-.00014	.00128	.00095	.04951	.65969	.00431
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**6.5197**	**.00210**	**.00114**	**2.3160**	**-.00214**	**.00652**	**.00322**
Stddev	.0292	.00379	.00024	.0359	.00068	.00269	.00233
%RSD	.44719	180.73	20.594	1.5492	31.730	41.293	72.581
#1	6.5530	.00221	.00134	2.3485	-.00249	.00417	.00531
#2	6.5068	.00583	.00121	2.3220	-.00136	.00593	.00363
#3	6.4992	-.00175	.00088	2.2775	-.00258	.00946	.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606064303 Acquired: 6/23/2016 11:30:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00123	.00062	4.1539	.00045	.17219	-.00442	.00006
Stddev	.00291	.01044	.0062	.00093	.00121	.00598	.00245
%RSD	237.16	1677.3	.14820	204.40	.70469	135.24	4374.1
#1	.00370	.00751	4.1602	.00043	.17312	.00044	-.00181
#2	-.00198	-.01139	4.1479	.00139	.17265	-.01110	.00282
#3	.00197	.00575	4.1535	-.00046	.17082	-.00261	-.00084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00098	.00130	F -.24913
Stddev	.00104	.00037	.16574
%RSD	106.16	28.501	66.527
#1	-.00218	.00173	-.34490
#2	-.00050	.00113	-.34473
#3	-.00027	.00105	-.05775
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6742.6	42153.	2187.5
Stddev	20.5	148.	11.5
%RSD	.30347	.35129	.52481
#1	6758.7	42081.	2174.4
#2	6749.4	42054.	2192.3
#3	6719.6	42323.	2195.8

Approved: June 24, 2016

Sample Name: L1606064304 Acquired: 6/23/2016 11:33:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00117**	**.04057**	**-.00439**	**.03066**	**.04299**	**.00000**	**34.940**
Stddev	.00339	.00478	.00245	.00191	.00060	.00005	.093
%RSD	290.05	11.772	55.836	6.2346	1.3895	9400.1	.26617
#1	-.00268	.03688	-.00325	.02912	.04367	.00003	34.964
#2	.00250	.03887	-.00272	.03280	.04255	.00003	34.838
#3	.00369	.04596	-.00721	.03006	.04274	-.00006	35.019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**.00024**	**.00105**	**.00014**	**.00854**	**.93624**	**.00350**
Stddev	.00026	.00041	.00147	.00134	.02324	.10226	.00098
%RSD	120.80	169.78	140.19	932.26	272.26	10.922	27.945
#1	-.00008	.00003	-.00057	.00167	.03444	1.0540	.00407
#2	.00043	-.00002	.00230	-.00086	.00162	.87036	.00237
#3	.00030	.00072	.00143	-.00038	-.01046	.88433	.00405
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.1691**	**.00284**	**.00082**	**5.3323**	**.00048**	**.04039**	**.00314**
Stddev	.1006	.00320	.00036	.0155	.00048	.00723	.00588
%RSD	1.4038	112.52	43.945	.29013	100.08	17.911	186.90
#1	7.1974	.00652	.00120	5.3463	-.00005	.04875	.00442
#2	7.2526	.00128	.00078	5.3157	.00059	.03626	.00828
#3	7.0574	.00073	.00048	5.3349	.00088	.03617	-.00327
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606064304 Acquired: 6/23/2016 11:33:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00317**	**.00206**	**4.2290**	**.00011**	**.18686**	**.00008**	**-.00047**
Stddev	.00292	.00547	.0074	.00020	.00078	.00312	.00056
%RSD	92.220	265.53	.17548	181.78	.41674	3781.1	120.08
#1	-.00439	.00616	4.2261	-.00003	.18732	.00329	-.00032
#2	-.00528	.00417	4.2374	.00002	.18596	-.00294	-.00108
#3	.00017	-.00415	4.2234	.00034	.18729	-.00010	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00060**	**.00082**	F **-.17008**
Stddev	.00049	.00010	.27354
%RSD	82.787	12.582	160.83
#1	-.00060	.00070	-.07497
#2	-.00109	.00087	.04322
#3	-.00010	.00088	-.47848
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6776.1**	**42494.**	**2204.9**
Stddev	17.1	133.	21.4
%RSD	.25303	.31335	.97208
#1	6795.0	42645.	2183.8
#2	6771.9	42444.	2226.6
#3	6761.5	42394.	2204.4

Approved: June 24, 2016

Sample Name: L1606064305 Acquired: 6/23/2016 11:37:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	.53186	-.00214	.02175	.03601	-.00010	14.722	.00055
Stddev	.00228	.00247	.00445	.00230	.00094	.00005	.126	.00022
%RSD	421.53	.46389	208.04	10.587	2.6199	44.933	.85596	40.022
#1	.00316	.53012	-.00077	.02401	.03640	-.00014	14.685	.00039
#2	-.00105	.53469	-.00712	.01940	.03493	-.00005	14.619	.00081
#3	-.00048	.53078	.00146	.02185	.03669	-.00011	14.863	.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00006	.00230	.00548	.76832	2.3392	.00621	2.5504	.01694
Stddev	.00042	.00048	.00129	.01630	.0828	.00232	.0808	.00496
%RSD	702.55	20.753	23.604	2.1212	3.5411	37.306	3.1691	29.304
#1	-.00052	.00176	.00693	.75108	2.2935	.00388	2.4729	.01653
#2	.00003	.00248	.00444	.78348	2.4348	.00851	2.5441	.01220
#3	.00031	.00267	.00508	.77041	2.2892	.00625	2.6342	.02210
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	2.3848	.00454	.26337	.00504	-.00323	.00041	3.5594
Stddev	.00025	.0113	.00058	.00316	.00307	.00618	.00461	.0030
%RSD	40.210	.47407	12.866	1.1998	60.786	191.51	1127.1	.08456
#1	.00053	2.3726	.00503	.26642	.00155	-.00695	-.00306	3.5582
#2	.00043	2.3950	.00389	.26358	.00631	.00391	-.00135	3.5572
#3	.00091	2.3868	.00469	.26011	.00728	-.00664	.00563	3.5629
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606064305 Acquired: 6/23/2016 11:37:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00103	.06157	.01102	.00080	.00021	.06676	.17696
Stddev	.00038	.00058	.00530	.00336	.00041	.00009	.30311
%RSD	36.515	.93995	48.116	418.46	190.39	.14087	171.29
#1	.00068	.06155	.01291	.00467	.00037	.06668	-.11953
#2	.00098	.06100	.00503	-.00096	.00052	.06675	.48629
#3	.00143	.06216	.01513	-.00131	-.00025	.06686	.16411
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6948.0	43351.	2270.5
Stddev	24.8	156.	17.3
%RSD	.35679	.35939	.76126
#1	6945.4	43469.	2251.5
#2	6924.6	43410.	2274.7
#3	6973.9	43175.	2285.3

Approved: June 24, 2016

Sample Name: L1606064306 Acquired: 6/23/2016 11:41:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00187	.02354	.00138	.02630	.06121	-.00008	71.332	.00064
Stddev	.00122	.00905	.00134	.00013	.00195	.00003	.346	.00019
%RSD	65.350	38.437	97.369	.47954	3.1785	41.406	.48481	30.029
#1	.00046	.01310	.00189	.02632	.06190	-.00011	71.409	.00076
#2	.00257	.02853	.00239	.02617	.05901	-.00005	71.633	.00073
#3	.00258	.02900	-.00014	.02642	.06272	-.00007	70.954	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.00059	.00886	1.1481	2.4731	.02039	10.652	1.0194
Stddev	.00049	.00045	.00003	.0078	.1060	.00516	.108	.0029
%RSD	101.33	75.377	.29783	.68117	4.2846	25.297	1.0171	.28156
#1	.00039	.00035	.00888	1.1433	2.4250	.01560	10.708	1.0222
#2	.00005	.00111	.00886	1.1572	2.3998	.02585	10.527	1.0197
#3	.00102	.00032	.00883	1.1439	2.5946	.01972	10.720	1.0165
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00199	8.2539	.00024	.00303	.00651	-.00357	.00566	6.8739
Stddev	.00062	.0799	.00153	.00444	.00110	.00639	.00190	.0186
%RSD	31.027	.96777	643.77	146.27	16.949	178.95	33.597	.27005
#1	.00160	8.3389	-.00019	.00365	.00621	.00234	.00382	6.8912
#2	.00167	8.2427	.00194	-.00168	.00558	-.00269	.00762	6.8762
#3	.00270	8.1803	-.00103	.00713	.00773	-.01035	.00554	6.8543
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606064306 Acquired: 6/23/2016 11:41:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	.29195	-.00902	-.00150	-.00167	.02587	-.01653
Stddev	.00023	.00130	.00517	.00042	.00082	.00004	.37226
%RSD	81.741	.44447	57.341	28.330	49.121	.15361	2251.5
#1	.00030	.29340	-.00360	-.00101	-.00198	.02590	-.43514
#2	.00051	.29092	-.00957	-.00177	-.00074	.02587	.10816
#3	.00004	.29152	-.01390	-.00172	-.00228	.02582	.27737
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6886.1	42877.	2263.4
Stddev	11.4	248.	22.5
%RSD	.16521	.57737	.99518
#1	6899.1	43012.	2243.8
#2	6878.0	42591.	2258.4
#3	6881.3	43027.	2288.0

Approved: June 24, 2016

Sample Name: L1606064307 Acquired: 6/23/2016 11:45:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00027**	**.46732**	**-.00367**	**.03634**	**.03450**	**-.00001**	**48.188**
Stddev	.00117	.00622	.00300	.00353	.00021	.00003	.411
%RSD	430.98	1.3308	81.768	9.7232	.60957	380.82	.85283
#1	-.00110	.46077	-.00519	.03387	.03473	-.00002	48.611
#2	.00107	.47315	-.00021	.04039	.03431	.00003	48.163
#3	-.00078	.46803	-.00562	.03477	.03447	-.00003	47.791
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00049**	**-.00006**	**.00258**	**.00189**	**.46248**	**1.2468**	**.00637**
Stddev	.00032	.00044	.00041	.00037	.01357	.0192	.00270
%RSD	64.989	744.12	16.031	19.615	2.9342	1.5408	42.427
#1	.00085	-.00054	.00222	.00176	.46783	1.2648	.00616
#2	.00036	.00033	.00303	.00230	.47255	1.2265	.00378
#3	.00025	.00003	.00249	.00159	.44705	1.2490	.00917
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**11.690**	**.00808**	**.00138**	**11.004**	**-.00087**	**.04505**	**.00560**
Stddev	.220	.00278	.00009	.159	.00078	.00925	.00188
%RSD	1.8858	34.421	6.2970	1.4424	90.051	20.521	33.511
#1	11.824	.01029	.00138	11.101	.00003	.03848	.00352
#2	11.435	.00496	.00146	10.820	-.00139	.05563	.00610
#3	11.810	.00900	.00129	11.090	-.00126	.04106	.00718
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606064307 Acquired: 6/23/2016 11:45:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00150	-.00572	4.5875	.00033	.43303	.00532	-.00050
Stddev	.00456	.00884	.0072	.00047	.00154	.00872	.00190
%RSD	304.22	154.57	.15713	143.25	.35558	164.00	377.95
#1	-.00440	.00284	4.5857	.00014	.43366	.01418	-.00160
#2	-.00386	-.00518	4.5813	.00086	.43127	-.00326	.00169
#3	.00376	-.01481	4.5954	-.00002	.43415	.00503	-.00160
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00018	.00281	F -.24796
Stddev	.00061	.00016	.09171
%RSD	331.24	5.7704	36.987
#1	-.00078	.00270	-.33680
#2	-.00022	.00300	-.15362
#3	.00044	.00274	-.25345
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6781.2	42216.	2186.7
Stddev	33.5	59.	32.2
%RSD	.49353	.14055	1.4733
#1	6753.0	42285.	2149.7
#2	6772.5	42188.	2208.2
#3	6818.2	42177.	2202.2

Approved: June 24, 2016

Sample Name: L1606064308 Acquired: 6/23/2016 11:49:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00281	.28274	-.00295	.04314	.05239	-.00005	45.551	.00021
Stddev	.00212	.00598	.00239	.00293	.00113	.00003	.432	.00040
%RSD	75.574	2.1150	81.250	6.7892	2.1640	68.363	.94927	190.87
#1	.00246	.27651	-.00108	.04005	.05186	-.00008	46.037	.00028
#2	.00088	.28328	-.00564	.04350	.05369	-.00006	45.208	.00058
#3	.00508	.28843	-.00211	.04588	.05161	-.00001	45.407	-.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	.00251	-.00039	.27914	1.0523	.00350	9.9548	.00822
Stddev	.00011	.00220	.00108	.00276	.0768	.00421	.0849	.00471
%RSD	51.782	87.665	276.22	.98965	7.2950	120.45	.85241	57.326
#1	.00030	.00492	-.00140	.27833	.96686	.00383	10.029	.00571
#2	.00009	.00201	-.00053	.27688	1.0745	.00754	9.9737	.01366
#3	.00023	.00060	.00075	.28222	1.1155	-.00087	9.8620	.00530
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00143	28.849	.00034	.01859	.00004	-.00158	-.00433	4.2971
Stddev	.00035	.282	.00020	.00238	.00212	.00343	.00783	.0027
%RSD	24.593	.97651	59.389	12.791	4881.5	217.91	180.83	.06385
#1	.00106	29.162	.00024	.02134	-.00032	.00109	.00011	4.2940
#2	.00176	28.616	.00057	.01734	.00232	-.00545	-.01337	4.2982
#3	.00146	28.768	.00020	.01710	-.00187	-.00037	.00027	4.2992
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606064308 Acquired: 6/23/2016 11:49:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00126	.24347	.00339	-.00154	-.00045	.00217	.14987
Stddev	.00049	.00220	.00280	.00105	.00060	.00011	.32468
%RSD	39.037	.90382	82.553	68.121	135.39	4.8880	216.64
#1	.00073	.24601	.00642	-.00066	.00024	.00206	-.08894
#2	.00136	.24221	.00092	-.00270	-.00088	.00228	.51957
#3	.00170	.24219	.00281	-.00126	-.00070	.00217	.01899
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6738.5	42037.	2168.6
Stddev	30.1	232.	22.7
%RSD	.44688	.55143	1.0458
#1	6773.1	41803.	2143.6
#2	6718.5	42041.	2187.9
#3	6723.9	42267.	2174.3

Approved: June 24, 2016

Sample Name: L1606064309 Acquired: 6/23/2016 11:53:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00160	.15661	.00013	.04545	.04682	-.00000	35.419	.00033
Stddev	.00119	.00708	.00146	.00254	.00106	.00005	.240	.00028
%RSD	74.477	4.5233	1123.7	5.5867	2.2675	2104.2	.67865	85.873
#1	.00217	.15152	.00060	.04537	.04715	.00006	35.626	.00060
#2	.00240	.16470	-.00150	.04803	.04768	-.00004	35.476	.00033
#3	.00023	.15362	.00129	.04295	.04564	-.00003	35.155	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	.00123	.00024	.15532	.80097	.00097	6.9091	.00278
Stddev	.00049	.00097	.00034	.01614	.06209	.00454	.1107	.00175
%RSD	317.05	78.958	139.68	10.394	7.7519	469.66	1.6020	63.186
#1	-.00031	.00012	.00055	.17250	.73834	-.00386	6.9993	.00471
#2	.00039	.00163	.00029	.14047	.80205	.00159	6.7856	.00232
#3	-.00055	.00194	-.00012	.15300	.86251	.00516	6.9425	.00129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00431	36.718	-.00063	.01439	.00498	.00086	.00491	3.5590
Stddev	.00071	.056	.00104	.00557	.00152	.00128	.00282	.0044
%RSD	16.376	.15337	164.46	38.729	30.498	148.41	57.449	.12483
#1	.00432	36.703	-.00058	.02081	.00665	.00233	.00794	3.5641
#2	.00361	36.671	.00038	.01159	.00460	-.00005	.00237	3.5559
#3	.00502	36.780	-.00170	.01077	.00369	.00032	.00441	3.5570
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606064309 Acquired: 6/23/2016 11:53:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	.21143	-.00049	-.00473	-.00081	.00436	-.03117
Stddev	.00101	.00052	.00261	.00291	.00072	.00002	.28307
%RSD	133.37	.24546	537.03	61.538	89.522	.51462	908.26
#1	.00054	.21158	-.00030	-.00579	-.00149	.00436	.28801
#2	.00187	.21086	.00202	-.00697	-.00005	.00433	-.12971
#3	-.00012	.21186	-.00319	-.00144	-.00087	.00437	-.25179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6756.8	42049.	2196.1
Stddev	2.9	297.	15.9
%RSD	.04298	.70626	.72401
#1	6759.4	42356.	2177.8
#2	6757.4	41764.	2203.9
#3	6753.6	42028.	2206.5

Approved: June 24, 2016

Sample Name: L1606065001 Acquired: 6/23/2016 11:57:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00189**	**.06102**	**.00775**	**.01249**	**1.2363**	**.00005**	**40.010**
Stddev	.00078	.00679	.00307	.00259	.0071	.00016	.172
%RSD	41.259	11.125	39.598	20.763	.57164	292.34	.43096
#1	.00127	.05450	.01048	.01533	1.2439	.00018	40.193
#2	.00276	.06052	.00443	.01188	1.2353	.00011	39.988
#3	.00162	.06805	.00833	.01025	1.2299	-.00012	39.850
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00106**	**.04734**	**1.1335**	**.02781**	**17.038**	**2.5926**	**.01356**
Stddev	.00024	.00012	.0049	.00083	.057	.1423	.00643
%RSD	22.902	.25671	.43407	2.9805	.33217	5.4883	47.388
#1	.00108	.04721	1.1300	.02697	17.098	2.7070	.00680
#2	.00081	.04745	1.1391	.02863	17.031	2.4333	.01959
#3	.00129	.04736	1.1313	.02782	16.986	2.6375	.01430
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**34.850**	**1.3390**	**.00398**	**248.16**	**1.8950**	**.02385**	**.00496**
Stddev	.281	.0074	.00009	1.41	.0047	.00515	.00238
%RSD	.80752	.55545	2.2572	.56977	.24691	21.589	47.930
#1	35.099	1.3471	.00399	249.72	1.8962	.01848	.00456
#2	34.906	1.3375	.00406	247.80	1.8898	.02433	.00751
#3	34.545	1.3325	.00388	246.96	1.8989	.02874	.00281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606065001 Acquired: 6/23/2016 11:57:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.01117**	**-.00066**	**13.554**	**.00005**	**.88403**	**.00483**	**-.00261**
Stddev	.00331	.00370	.031	.00079	.00508	.00193	.00683
%RSD	29.635	565.13	.22672	1633.3	.57500	39.908	261.28
#1	-.00741	-.00127	13.581	-.00068	.88877	.00490	-.00463
#2	-.01242	.00332	13.521	-.00007	.88464	.00672	.00500
#3	-.01367	-.00401	13.560	.00090	.87866	.00287	-.00820
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00250**	**.00586**	F **-.23790**
Stddev	.00044	.00008	.31093
%RSD	17.584	1.3809	130.70
#1	.00210	.00596	-.30620
#2	.00297	.00581	.10150
#3	.00244	.00582	-.50901
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6603.7**	**40805.**	**2163.3**
Stddev	14.6	102.	41.7
%RSD	.22048	.24875	1.9297
#1	6587.1	40899.	2117.7
#2	6609.4	40818.	2172.3
#3	6614.4	40697.	2199.7

Approved: June 24, 2016

Sample Name: L1606065002 Acquired: 6/23/2016 12:01:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.02489	-.00287	.01411	.43644	.00011	25.711	.00088
Stddev	.00364	.00573	.00631	.00070	.00286	.00008	.186	.00056
%RSD	1038.5	23.031	220.06	4.9786	.65436	74.454	.72154	63.369
#1	-.00031	.03150	.00020	.01409	.43459	.00021	25.499	.00071
#2	-.00291	.02178	-.01012	.01482	.43973	.00004	25.845	.00151
#3	.00428	.02138	.00132	.01341	.43501	.00010	25.789	.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00144	.00464	-.00035	.33432	1.6832	.02333	16.223	.45100
Stddev	.00038	.00058	.00206	.02492	.0621	.00804	.060	.00508
%RSD	26.480	12.537	584.16	7.4533	3.6873	34.445	.36916	1.1259
#1	.00136	.00469	.00094	.34179	1.7336	.01773	16.240	.44555
#2	.00111	.00520	-.00272	.35464	1.7021	.03254	16.273	.45559
#3	.00186	.00404	.00072	.30652	1.6139	.01972	16.157	.45185
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	215.70	.00198	.01638	.00394	-.00086	-.00158	21.449
Stddev	.00010	1.30	.00093	.00175	.00302	.00337	.00400	.049
%RSD	19.360	.60478	47.194	10.688	76.721	393.11	253.30	.22739
#1	.00046	214.20	.00219	.01443	.00078	-.00439	-.00479	21.421
#2	.00062	216.54	.00278	.01781	.00680	.00233	-.00284	21.506
#3	.00045	216.35	.00096	.01689	.00423	-.00052	.00290	21.421
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606065002 Acquired: 6/23/2016 12:01:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00135	.47255	.00420	-.00295	-.00075	.00414	-.00270
Stddev	.00119	.00434	.00287	.00338	.00038	.00035	.37159
%RSD	88.287	.91926	68.478	114.54	51.374	8.5564	13768.
#1	.00241	.46832	.00697	.00051	-.00091	.00441	.12398
#2	.00156	.47234	.00440	-.00312	-.00031	.00428	-.42106
#3	.00006	.47700	.00123	-.00625	-.00102	.00374	.28898
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6563.7	40866.	2174.9
Stddev	21.3	148.	21.1
%RSD	.32412	.36219	.97234
#1	6544.5	40970.	2172.5
#2	6586.6	40931.	2155.1
#3	6560.1	40696.	2197.2

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 12:05:21 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .44831	10.703	.43168	.53573	1.0911	.05263	10.796
Stddev	.00175	.017	.00230	.00775	.0043	.00042	.054
%RSD	.39004	.15465	.53180	1.4463	.39478	.79021	.50197
#1	.44828	10.721	.43341	.54048	1.0870	.05303	10.796
#2	.44658	10.689	.42908	.52679	1.0956	.05220	10.850
#3	.45007	10.698	.43256	.53993	1.0905	.05265	10.741
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	.40000						
Range	10.000%						

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05416	.21667	.53159	.54518	4.3683	54.317	1.0928
Stddev	.00040	.00029	.00253	.00167	.0262	.148	.0073
%RSD	.73561	.13516	.47580	.30570	.59939	.27161	.67268
#1	.05371	.21640	.53279	.54635	4.3590	54.209	1.0857
#2	.05447	.21665	.52868	.54327	4.3978	54.485	1.0922
#3	.05430	.21698	.53329	.54592	4.3480	54.255	1.1004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.810	.54923	1.0837	54.737	.54364	10.749	.54374
Stddev	.058	.00364	.0022	.052	.00153	.032	.00832
%RSD	.53876	.66352	.20765	.09464	.28227	.30158	1.5305
#1	10.744	.54558	1.0861	54.703	.54348	10.742	.55291
#2	10.829	.55287	1.0816	54.797	.54220	10.721	.53666
#3	10.856	.54925	1.0832	54.712	.54525	10.784	.54166
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 12:05:21 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.3058**	**.42212**	**5.4532**	**1.0751**	**1.0918**	**1.0815**	**.54219**
Stddev	.0030	.00832	.0055	.0028	.0024	.0066	.00333
%RSD	.22701	1.9705	.10048	.25831	.21941	.61474	.61478
#1	1.3084	.43050	5.4492	1.0747	1.0913	1.0807	.54087
#2	1.3026	.41386	5.4509	1.0725	1.0944	1.0753	.53971
#3	1.3063	.42201	5.4594	1.0780	1.0897	1.0885	.54598
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0620**	**1.0850**	F **.06906**
Stddev	.0098	.0015	.29136
%RSD	.92653	.13908	421.86
#1	1.0688	1.0865	-.26582
#2	1.0507	1.0835	.20859
#3	1.0665	1.0851	.26442
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6761.2**	**42170.**	**2135.6**
Stddev	30.4	254.	38.5
%RSD	.45025	.60227	1.8034
#1	6745.3	42171.	2097.5
#2	6742.0	41916.	2134.8
#3	6796.3	42424.	2174.6

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 12:08:59 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00138	.00939	.00126	.00156	-.00034	.00001	.02965	-.00007
Stddev	.00293	.00768	.00491	.00136	.00065	.00010	.04568	.00027
%RSD	212.42	81.850	390.17	87.175	192.88	1033.2	154.04	411.15
#1	.00109	.01823	-.00438	.00279	-.00065	-.00008	.02210	-.00003
#2	.00444	.00563	.00455	.00010	.00041	.00011	.07863	.00018
#3	-.00140	.00431	.00361	.00180	-.00077	-.00000	-.01178	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00044	-.00193	-.00150	.04686	-.00321	-.04218	.00070
Stddev	.00023	.00045	.00177	.02531	.06645	.00382	.02089	.00303
%RSD	191.66	103.40	91.906	1685.8	141.79	119.02	49.541	434.91
#1	.00034	.00011	-.00127	.02678	-.00514	-.00396	-.05130	.00224
#2	.00012	.00024	-.00058	-.00927	.02400	-.00661	-.05695	.00264
#3	-.00011	.00095	-.00393	-.02201	.12172	.00093	-.01827	-.00279
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00437	.11699	-.00061	.00269	.00423	.00051	.00440	.00901
Stddev	.00070	.02428	.00128	.00780	.00466	.00512	.00537	.00090
%RSD	15.940	20.756	211.37	290.47	110.16	1005.7	122.02	9.9508
#1	.00357	.11912	.00043	.00283	.00310	-.00541	.01043	.00798
#2	.00471	.09171	-.00204	-.00519	.00936	.00342	.00264	.00957
#3	.00483	.14013	-.00021	.01042	.00024	.00351	.00013	.00949
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 12:08:59 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00104	.00007	.00479	-.00426	-.00086	-.00007	-.03636
Stddev	.00150	.00005	.00475	.00529	.00041	.00006	.17918
%RSD	144.40	81.653	99.036	124.26	48.035	88.430	492.84
#1	.00274	.00004	.00301	.00106	-.00121	-.00001	.10971
#2	.00049	.00013	.01017	-.00952	-.00040	-.00006	.01751
#3	-.00011	.00004	.00120	-.00432	-.00097	-.00013	-.23629
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6787.7	42559.	2189.0
Stddev	42.9	357.	32.2
%RSD	.63217	.83804	1.4713
#1	6836.5	42970.	2162.6
#2	6755.7	42330.	2179.6
#3	6771.0	42377.	2224.9

Approved: June 24, 2016

Sample Name: L1606065003 Acquired: 6/23/2016 12:12:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00370	.80939	.00267	.03223	.15152	.00003	16.410	.00200
Stddev	.00030	.00550	.00231	.00157	.00143	.00010	.167	.00026
%RSD	8.1591	.67996	86.365	4.8792	.94244	399.37	1.0195	13.059
#1	.00343	.80457	.00076	.03228	.15213	-.00008	16.600	.00230
#2	.00403	.81539	.00524	.03063	.14989	.00012	16.345	.00182
#3	.00363	.80821	.00203	.03377	.15254	.00003	16.285	.00188
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00674	.49819	.01602	10.808	1.5538	.01896	9.8126	.38868
Stddev	.00032	.00140	.00090	.095	.1322	.00275	.0110	.00294
%RSD	4.7724	.28078	5.6391	.88079	8.5094	14.512	.11155	.75614
#1	.00646	.49798	.01681	10.917	1.4017	.01883	9.8202	.38995
#2	.00667	.49691	.01621	10.740	1.6187	.01628	9.8000	.38532
#3	.00709	.49968	.01504	10.768	1.6411	.02178	9.8176	.39076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00725	109.71	.11187	.09046	.00426	.00012	-.00167	10.244
Stddev	.00018	.52	.00059	.00282	.00268	.00533	.00876	.010
%RSD	2.4336	.47677	.52734	3.1220	62.780	4272.0	525.12	.09876
#1	.00723	110.29	.11247	.09372	.00362	-.00576	.00638	10.232
#2	.00708	109.28	.11184	.08876	.00720	.00462	-.00039	10.250
#3	.00743	109.56	.11129	.08890	.00196	.00152	-.01099	10.249
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606065003 Acquired: 6/23/2016 12:12:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00113	.28838	.01481	.00147	.00293	.01681	.05048
Stddev	.00051	.00065	.00364	.00241	.00118	.00020	.02831
%RSD	45.019	.22666	24.569	163.44	40.265	1.2003	56.077
#1	.00092	.28836	.01790	.00214	.00241	.01669	.07419
#2	.00172	.28774	.01080	.00348	.00427	.01704	.01914
#3	.00077	.28905	.01573	-.00120	.00209	.01669	.05812
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6730.4	42248.	2219.4
Stddev	36.5	334.	5.6
%RSD	.54199	.79170	.25173
#1	6743.2	42234.	2213.5
#2	6758.8	42590.	2220.1
#3	6689.3	41921.	2224.6

Approved: June 24, 2016

Sample Name: L1606065008 Acquired: 6/23/2016 12:16:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.37295	-.00050	.01100	.08991	.00014	5.5551
Stddev	.00216	.00586	.00030	.00247	.00137	.00007	.0211
%RSD	231.27	1.5701	60.725	22.464	1.5229	48.760	.37958
#1	-.00155	.37972	-.00076	.00961	.09094	.00017	5.5696
#2	.00239	.36962	-.00058	.00954	.08836	.00019	5.5648
#3	.00197	.36953	-.00016	.01385	.09043	.00006	5.5309
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	.00183	.00276	-.00009	.22715	1.2637	.01968
Stddev	.00019	.00020	.00006	.00175	.01231	.1251	.00398
%RSD	42.655	10.871	2.0726	2042.1	5.4197	9.9030	20.221
#1	.00028	.00168	.00280	.00015	.21454	1.2211	.01991
#2	.00042	.00177	.00269	-.00194	.23914	1.4046	.01559
#3	.00066	.00206	.00277	.00153	.22778	1.1654	.02354
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.5219	.51901	.00085	107.29	.02015	.05313	.00169
Stddev	.1150	.00477	.00050	.21	.00058	.00814	.00069
%RSD	3.2666	.91942	58.338	.19407	2.8910	15.322	41.005
#1	3.3891	.51379	.00032	107.25	.02066	.04374	.00247
#2	3.5920	.52011	.00129	107.52	.02027	.05752	.00113
#3	3.5845	.52314	.00094	107.12	.01952	.05813	.00149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606065008 Acquired: 6/23/2016 12:16:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00073**	**-.00197**	**8.8487**	**.00069**	**.11069**	**.00926**	**-.00445**
Stddev	.00134	.00306	.0099	.00012	.00023	.00236	.00053
%RSD	182.00	155.09	.11148	17.201	.20833	25.534	11.807
#1	-.00192	-.00166	8.8443	.00082	.11048	.00698	-.00505
#2	-.00099	-.00517	8.8600	.00068	.11065	.00910	-.00423
#3	.00071	.00092	8.8417	.00058	.11093	.01170	-.00408
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00059**	**.06839**	F **-.19029**
Stddev	.00037	.00033	.03412
%RSD	61.583	.48036	17.929
#1	-.00097	.06802	-.15444
#2	-.00057	.06860	-.22235
#3	-.00024	.06857	-.19407
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6652.3**	**41744.**	**2157.8**
Stddev	13.8	125.	26.3
%RSD	.20808	.30032	1.2206
#1	6636.5	41605.	2128.7
#2	6661.9	41780.	2164.7
#3	6658.6	41848.	2180.0

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 12:20:48 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.43349**	**10.353**	**.41577**	**.50994**	**1.0482**	**.05096**	**10.384**
Stddev	.00485	.010	.00570	.00299	.0008	.00033	.107
%RSD	1.1187	.09724	1.3717	.58537	.07978	.64838	1.0295
#1	.42886	10.350	.41404	.50989	1.0486	.05109	10.397
#2	.43308	10.345	.41113	.51295	1.0488	.05121	10.483
#3	.43854	10.364	.42213	.50698	1.0473	.05059	10.271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05233**	**.21095**	**.51702**	**.52714**	**4.1456**	**52.157**	**1.0519**
Stddev	.00026	.00011	.00231	.00225	.0219	.071	.0095
%RSD	.49939	.05441	.44715	.42771	.52838	.13576	.90262
#1	.05254	.21106	.51692	.52834	4.1708	52.147	1.0521
#2	.05203	.21083	.51937	.52454	4.1342	52.092	1.0614
#3	.05240	.21096	.51475	.52854	4.1317	52.232	1.0424
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.434**	**.52121**	**1.0492**	**52.414**	**.52654**	**10.396**	**.52092**
Stddev	.126	.00385	.0056	.098	.00103	.025	.00769
%RSD	1.2092	.73822	.53418	.18692	.19506	.24476	1.4771
#1	10.317	.51677	1.0555	52.460	.52766	10.404	.52824
#2	10.568	.52362	1.0474	52.480	.52564	10.368	.51290
#3	10.417	.52323	1.0447	52.301	.52632	10.417	.52161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 12:20:48 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2647**	**.41582**	**5.2897**	**1.0426**	**1.0474**	**1.0316**	**.52421**
Stddev	.0085	.00081	.0192	.0024	.0031	.0076	.00494
%RSD	.67132	.19539	.36255	.23353	.29112	.73907	.94263
#1	1.2718	.41524	5.2962	1.0431	1.0449	1.0253	.52700
#2	1.2553	.41547	5.2682	1.0400	1.0508	1.0294	.52712
#3	1.2670	.41675	5.3049	1.0448	1.0466	1.0400	.51850
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0286**	**1.0463**	F **.06116**
Stddev	.0063	.0019	.57133
%RSD	.60756	.18676	934.11
#1	1.0326	1.0469	-.55556
#2	1.0317	1.0441	.57239
#3	1.0214	1.0478	.16666
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6823.1**	**42205.**	**2180.8**
Stddev	45.2	76.	38.1
%RSD	.66310	.18083	1.7449
#1	6824.7	42291.	2143.4
#2	6867.5	42174.	2219.5
#3	6777.1	42148.	2179.5

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 12:24:27 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00060**	**.01492**	**.00161**	**.00461**	**.00327**	**.00005**	**.00493**
Stddev	.00124	.00546	.00218	.00168	.00084	.00006	.03046
%RSD	205.49	36.566	135.28	36.366	25.661	137.48	617.42
#1	-.00032	.00875	-.00044	.00277	.00418	.00002	-.02974
#2	.00047	.01693	.00390	.00501	.00309	.00000	.01715
#3	-.00195	.01909	.00137	.00605	.00253	.00012	.02738
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00044**	**.00010**	**.00142**	**-.00176**	**-.01069**	**.06773**	**-.00268**
Stddev	.00041	.00031	.00160	.00098	.01615	.07990	.00427
%RSD	92.565	296.93	112.74	55.809	151.09	117.97	159.16
#1	.00010	-.00004	.00076	-.00065	.00519	.15988	.00187
#2	.00090	.00046	.00324	-.00253	-.02710	.02546	-.00659
#3	.00034	-.00011	.00025	-.00210	-.01015	.01784	-.00333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.19200**	**.00252**	**.00474**	**.07698**	**-.00084**	**.00528**	**.00057**
Stddev	.12403	.00084	.00094	.02220	.00131	.00743	.00445
%RSD	64.597	33.209	19.832	28.835	155.82	140.76	776.29
#1	-.15567	.00334	.00378	.08323	-.00038	.01004	-.00293
#2	-.33014	.00167	.00566	.09539	.00018	.00907	-.00094
#3	-.09020	.00254	.00476	.05233	-.00233	-.00328	.00559
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 12:24:27 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	.00330	.01008	.00122	.00049	.00291	-.00103
Stddev	.00887	.00211	.00243	.00082	.00040	.00265	.00189
%RSD	1339.0	63.868	24.056	67.357	81.347	91.128	183.66
#1	-.00210	.00463	.00977	.00028	.00054	-.00004	-.00303
#2	.01058	.00087	.01265	.00182	.00007	.00369	.00073
#3	-.00650	.00440	.00783	.00157	.00085	.00509	-.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00060	-.00001	F -.22691
Stddev	.00066	.00012	.26976
%RSD	109.33	1826.7	118.88
#1	-.00062	.00005	-.50673
#2	.00007	-.00014	.03151
#3	-.00125	.00007	-.20552
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6792.2	42764.	2142.0
Stddev	4.5	206.	11.5
%RSD	.06579	.48263	.53538
#1	6797.0	42989.	2133.7
#2	6788.2	42584.	2155.1
#3	6791.3	42720.	2137.4

Approved: June 24, 2016

Sample Name: PBW 9A Acquired: 6/23/2016 12:28:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00105**	**.02171**	**.00244**	**.00673**	**.00126**	**-.00003**	**-.05439**
Stddev	.00150	.00352	.00258	.00309	.00128	.00008	.04093
%RSD	143.33	16.201	105.76	45.867	102.12	293.70	75.246
#1	-.00069	.02375	.00128	.00392	.00151	.00000	-.08805
#2	.00189	.01765	.00539	.01003	.00240	.00003	-.06629
#3	.00193	.02373	.00064	.00624	-.00013	-.00012	-.00883
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00035**	**.00023**	**.00158**	**-.00096**	**.00709**	**-.07719**	**.00102**
Stddev	.00000	.00019	.00089	.00068	.03049	.03016	.00222
%RSD	.83206	82.958	56.456	70.362	430.31	39.069	216.53
#1	.00035	.00032	.00226	-.00086	.01702	-.04271	.00135
#2	.00035	.00001	.00190	-.00034	.03137	-.09023	.00306
#3	.00036	.00035	.00057	-.00169	-.02713	-.09865	-.00134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03686**	**.00230**	**.00136**	**.11675**	**-.00185**	**-.00459**	**.00215**
Stddev	.08180	.00124	.00032	.02730	.00032	.00543	.00135
%RSD	221.89	54.095	23.684	23.386	17.191	118.48	62.717
#1	.12721	.00089	.00140	.08528	-.00149	-.00676	.00368
#2	.01555	.00324	.00102	.13093	-.00204	.00160	.00111
#3	-.03217	.00276	.00166	.13405	-.00204	-.00860	.00166
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: PBW 9A Acquired: 6/23/2016 12:28:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00174	-.00430	.00801	.00106	.00047	.01231	-.00171
Stddev	.00278	.00332	.00038	.00032	.00078	.00274	.00288
%RSD	160.19	77.122	4.7825	29.796	167.01	22.301	168.53
#1	.00487	-.00373	.00845	.00141	.00114	.01343	-.00071
#2	-.00042	-.00131	.00773	.00098	-.00038	.00918	.00054
#3	.00076	-.00787	.00785	.00079	.00064	.01432	-.00495
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00020	.00177	F -.42567
Stddev	.00050	.00016	.27822
%RSD	254.67	8.9618	65.360
#1	-.00062	.00175	-.67922
#2	-.00032	.00163	-.12805
#3	.00035	.00194	-.46974
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6735.9	42461.	2142.9
Stddev	23.8	190.	19.6
%RSD	.35284	.44797	.91669
#1	6756.3	42258.	2130.8
#2	6741.6	42489.	2132.3
#3	6709.8	42635.	2165.5

Approved: June 24, 2016

Sample Name: LCSW 9A Acquired: 6/23/2016 12:32:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21862	5.1749	.20706	1.0059	.52790	.02511	5.3259	.02625
Stddev	.00105	.0138	.00142	.0053	.00145	.00005	.0730	.00042
%RSD	.47858	.26622	.68661	.52250	.27422	.20554	1.3710	1.6039
#1	.21748	5.1595	.20682	1.0119	.52887	.02505	5.3723	.02617
#2	.21883	5.1861	.20578	1.0037	.52624	.02514	5.2417	.02587
#3	.21954	5.1791	.20859	1.0021	.52860	.02514	5.3636	.02670
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10579	.25981	.26650	2.1153	25.949	.52615	5.2296	.26267
Stddev	.00017	.00166	.00050	.0412	.208	.00546	.1321	.00383
%RSD	.16358	.63829	.18798	1.9496	.80266	1.0377	2.5264	1.4585
#1	.10598	.26003	.26617	2.0972	25.958	.53066	5.1307	.26398
#2	.10575	.26135	.26625	2.0863	25.736	.52008	5.1784	.26568
#3	.10564	.25806	.26708	2.1626	26.152	.52771	5.3796	.25836
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53809	26.382	.26602	5.0505	.26442	.63942	.19862	2.6942
Stddev	.00217	.107	.00132	.0129	.00389	.00289	.00602	.0099
%RSD	.40327	.40576	.49728	.25504	1.4726	.45272	3.0327	.36655
#1	.54058	26.505	.26742	5.0651	.26838	.64232	.20378	2.7053
#2	.53711	26.319	.26585	5.0454	.26059	.63653	.19200	2.6864
#3	.53658	26.320	.26479	5.0409	.26429	.63940	.20007	2.6909
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: LCSW 9A Acquired: 6/23/2016 12:32:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52664	.53638	.53249	.26160	.51512	.52639	.07644
Stddev	.00197	.00221	.00973	.00257	.00134	.00186	.23401
%RSD	.37460	.41251	1.8268	.98264	.26011	.35402	306.16
#1	.52890	.53538	.53798	.26390	.51583	.52848	.32243
#2	.52526	.53485	.52126	.26208	.51596	.52489	-.14341
#3	.52576	.53892	.53824	.25882	.51357	.52581	.05029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6718.1	42029.	2146.1
Stddev	16.8	197.	23.7
%RSD	.24960	.46881	1.1059
#1	6729.4	41993.	2126.8
#2	6726.0	41853.	2138.9
#3	6698.8	42242.	2172.6

Approved: June 24, 2016

Sample Name: F BLANK Acquired: 6/23/2016 12:36:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00169**	**.01329**	**.00117**	**.00521**	**.00090**	**.00004**	**.01184**
Stddev	.00118	.01449	.00247	.00116	.00111	.00005	.05441
%RSD	69.720	109.00	211.84	22.232	123.24	115.17	459.72
#1	.00067	.02586	-.00106	.00446	-.00014	.00007	-.05079
#2	.00143	-.00256	.00382	.00464	.00077	-.00001	.04749
#3	.00299	.01658	.00073	.00655	.00207	.00007	.03881
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00030**	**-.00030**	**.00180**	**-.00037**	F **-.03210**	**.02396**	**.00164**
Stddev	.00007	.00028	.00162	.00173	.01094	.07024	.00113
%RSD	22.944	95.859	89.912	468.65	34.099	293.15	68.927
#1	.00032	-.00035	.00011	.00030	-.01979	.07357	.00037
#2	.00023	.00001	.00195	.00093	-.04072	.05472	.00201
#3	.00037	-.00055	.00335	-.00234	-.03578	-.05641	.00253
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.03159**	**-.00119**	**.00127**	**.14348**	**-.00017**	**-.00302**	**.00279**
Stddev	.05268	.00112	.00015	.00668	.00022	.01538	.00239
%RSD	166.73	93.930	12.134	4.6553	124.39	508.76	85.383
#1	-.06723	-.00247	.00111	.15005	-.00016	-.01729	.00135
#2	.02891	-.00065	.00141	.13670	-.00040	.01327	.00555
#3	-.05646	-.00044	.00131	.14370	.00003	-.00504	.00148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: F BLANK Acquired: 6/23/2016 12:36:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00429**	**.00520**	**.01018**	**.00070**	**.00304**	**.00711**	**-.00371**
Stddev	.00171	.00663	.00080	.00222	.00057	.00751	.00309
%RSD	39.956	127.55	7.8886	317.56	18.898	105.60	83.235
#1	-.00383	.00412	.01000	.00203	.00239	.00988	-.00016
#2	-.00619	-.00083	.00948	.00194	.00326	-.00139	-.00580
#3	-.00286	.01231	.01106	-.00187	.00347	.01285	-.00517
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00052**	**.00247**	**.20188**
Stddev	.00067	.00028	.15109
%RSD	128.14	11.399	74.843
#1	-.00000	.00266	.12763
#2	-.00029	.00260	.10227
#3	-.00128	.00214	.37573
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6848.0**	**43129.**	**2203.6**
Stddev	17.0	116.	40.3
%RSD	.24788	.26822	1.8285
#1	6840.0	43254.	2237.6
#2	6836.5	43026.	2159.1
#3	6867.5	43107.	2214.2

Approved: June 24, 2016

Sample Name: L1606078709 Acquired: 6/23/2016 12:40:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00229	.34423	-.00164	.04501	.09329	-.00010	56.919	.00038
Stddev	.00043	.01247	.00379	.00153	.00209	.00009	.746	.00006
%RSD	18.600	3.6226	230.35	3.4051	2.2355	91.391	1.3098	15.382
#1	.00278	.35810	.00261	.04367	.09569	-.00010	57.776	.00044
#2	.00205	.33394	-.00291	.04468	.09195	-.00001	56.556	.00036
#3	.00205	.34066	-.00463	.04668	.09223	-.00019	56.425	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.00331	.00226	.32551	1.2191	.01307	18.463	.01384
Stddev	.00024	.00045	.00113	.02821	.0343	.00579	.294	.00288
%RSD	163.96	13.717	50.047	8.6673	2.8163	44.290	1.5898	20.829
#1	.00006	.00370	.00148	.35802	1.2200	.00909	18.613	.01575
#2	.00042	.00343	.00356	.31107	1.2530	.01970	18.125	.01052
#3	-.00004	.00281	.00175	.30744	1.1843	.01041	18.651	.01525
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	3.8679	-.00006	.19112	.00273	.00016	.00316	9.5319
Stddev	.00017	.0832	.00169	.00281	.00222	.00426	.01169	.0215
%RSD	33.645	2.1507	2767.7	1.4686	81.412	2635.4	369.49	.22498
#1	.00048	3.9597	.00168	.19419	.00029	-.00139	.00141	9.5100
#2	.00069	3.8464	-.00169	.18868	.00326	-.00310	-.00755	9.5529
#3	.00035	3.7975	-.00017	.19050	.00464	.00498	.01564	9.5328
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606078709 Acquired: 6/23/2016 12:40:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00114	.15008	.00611	.00006	.00208	.01394	.12651
Stddev	.00029	.00282	.00671	.00130	.00048	.00024	.10058
%RSD	25.142	1.8804	109.74	2091.4	22.807	1.6929	79.498
#1	.00101	.15329	.00841	.00056	.00197	.01393	.23030
#2	.00147	.14797	-.00144	.00104	.00261	.01418	.11976
#3	.00094	.14899	.01136	-.00142	.00168	.01371	.02949
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7008.6	44037.	2274.6
Stddev	58.7	90.	58.1
%RSD	.83811	.20335	2.5527
#1	7040.7	44061.	2210.8
#2	6940.8	43938.	2288.9
#3	7044.3	44112.	2324.2

Approved: June 24, 2016

Sample Name: L1606078711S Acquired: 6/23/2016 12:44:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21444**	**5.4597**	**.20422**	**1.0297**	**.60086**	**.02444**	**59.136**	**.02564**
Stddev	.00107	.0321	.00448	.0059	.00240	.00026	.342	.00031
%RSD	.50108	.58738	2.1942	.57168	.39981	1.0599	.57766	1.1894
#1	.21336	5.4646	.19913	1.0298	.60082	.02453	58.978	.02599
#2	.21551	5.4255	.20758	1.0238	.60329	.02415	59.528	.02540
#3	.21444	5.4890	.20595	1.0356	.59848	.02465	58.901	.02554
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10099**	**.25246**	**.25408**	**2.3914**	**26.238**	**.52509**	**22.671**	**.26957**
Stddev	.00096	.00240	.00204	.0378	.190	.00248	.097	.00069
%RSD	.95542	.94955	.80099	1.5812	.72578	.47192	.42611	.25486
#1	.10204	.25175	.25493	2.4019	26.290	.52317	22.742	.26878
#2	.10014	.25050	.25176	2.4230	26.396	.52789	22.561	.27007
#3	.10080	.25513	.25556	2.3495	26.027	.52422	22.709	.26985
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52400**	**29.173**	**.25206**	**5.2009**	**.25684**	**.62111**	**.19336**	**12.135**
Stddev	.00226	.184	.00153	.0264	.00562	.00252	.00475	.045
%RSD	.43200	.63202	.60780	.50841	2.1877	.40638	2.4564	.37093
#1	.52661	29.078	.25383	5.2253	.26309	.62401	.19051	12.187
#2	.52273	29.385	.25133	5.2045	.25220	.61993	.19072	12.105
#3	.52266	29.055	.25104	5.1728	.25523	.61940	.19884	12.114
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606078711S Acquired: 6/23/2016 12:44:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50899**	**.66145**	**.51197**	**.11737**	**.50542**	**.51776**	**.38550**
Stddev	.00093	.00353	.00830	.00250	.00346	.00270	.16244
%RSD	.18257	.53437	1.6211	2.1327	.68550	.52078	42.137
#1	.50929	.65987	.50403	.12026	.50405	.52085	.44171
#2	.50794	.66550	.52059	.11582	.50284	.51657	.20242
#3	.50973	.65898	.51129	.11603	.50936	.51586	.51236
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6896.6**	**43117.**	**2256.9**
Stddev	23.4	149.	25.7
%RSD	.33903	.34585	1.1384
#1	6870.8	43289.	2227.3
#2	6902.4	43043.	2272.5
#3	6916.4	43021.	2271.0

Approved: June 24, 2016

Sample Name: L1606078712SD Acquired: 6/23/2016 12:47:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.22222**	**6.9091**	**.21902**	**1.0835**	**.63705**	**.02557**	**61.949**	**.02711**
Stddev	.00054	.0778	.00270	.0119	.00654	.00033	.627	.00049
%RSD	.24497	1.1267	1.2310	1.0998	1.0260	1.2886	1.0120	1.8122
#1	.22159	6.8203	.22150	1.0711	.64423	.02521	62.665	.02667
#2	.22252	6.9419	.21942	1.0845	.63145	.02585	61.499	.02702
#3	.22255	6.9652	.21615	1.0948	.63547	.02566	61.683	.02764
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10799**	**.26553**	**.27324**	**3.5530**	**27.834**	**.54656**	**24.046**	**.31995**
Stddev	.00068	.00298	.00075	.0652	.258	.00986	.319	.00232
%RSD	.63148	1.1216	.27535	1.8345	.92801	1.8040	1.3284	.72573
#1	.10770	.26210	.27379	3.6282	28.112	.54919	24.403	.32247
#2	.10750	.26697	.27238	3.5140	27.602	.53565	23.948	.31949
#3	.10877	.26750	.27354	3.5167	27.788	.55483	23.787	.31790
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.55768**	**30.666**	**.26947**	**5.5531**	**.27503**	**.65875**	**.20965**	**15.500**
Stddev	.00211	.309	.00314	.0329	.00634	.00222	.00306	.082
%RSD	.37890	1.0085	1.1651	.59314	2.3050	.33734	1.4581	.52959
#1	.55544	31.019	.26645	5.5261	.26776	.65625	.21162	15.429
#2	.55796	30.445	.26924	5.5434	.27796	.66048	.20613	15.482
#3	.55964	30.533	.27272	5.5898	.27938	.65954	.21121	15.590
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606078712SD Acquired: 6/23/2016 12:47:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.54487	.69273	.54313	.20068	.52663	.55357	.81516
Stddev	.00401	.00802	.00413	.00570	.00642	.00315	.20013
%RSD	.73565	1.1579	.75965	2.8389	1.2184	.56876	24.551
#1	.54171	.70191	.54694	.19419	.51929	.55044	.73031
#2	.54352	.68922	.54371	.20484	.52944	.55353	.67143
#3	.54938	.68707	.53875	.20302	.53116	.55674	1.0437
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6712.3	42493.	2227.8
Stddev	15.8	439.	27.4
%RSD	.23544	1.0332	1.2303
#1	6721.1	42996.	2205.4
#2	6721.6	42185.	2219.6
#3	6694.0	42299.	2258.4

Approved: June 24, 2016

Sample Name: L1606094702 Acquired: 6/23/2016 12:51:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00161**	**.72329**	**.00024**	**.04257**	**.02726**	**.00093**	**71.363**
Stddev	.00172	.00564	.00259	.00289	.00077	.00009	.357
%RSD	107.13	.78037	1071.7	6.7912	2.8393	9.5513	.49984
#1	.00263	.72125	.00050	.03924	.02748	.00083	71.550
#2	-.00038	.71895	.00269	.04449	.02790	.00099	71.588
#3	.00257	.72967	-.00247	.04397	.02640	.00097	70.952
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00065**	**.01705**	**.00536**	**.00360**	**.48801**	**4.4714**	**.08505**
Stddev	.00017	.00041	.00004	.00180	.01606	.0806	.00293
%RSD	26.336	2.4191	.69244	50.107	3.2903	1.8030	3.4402
#1	.00062	.01749	.00532	.00198	.49690	4.3787	.08246
#2	.00084	.01697	.00535	.00328	.49765	4.5098	.08447
#3	.00050	.01668	.00540	.00554	.46947	4.5256	.08822
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**49.963**	**2.6850**	**.00051**	**2.6407**	**.10126**	**.02363**	**.00021**
Stddev	.390	.0188	.00060	.0576	.00091	.00614	.00130
%RSD	.78147	.69880	116.71	2.1803	.89694	25.990	626.25
#1	50.021	2.6947	.00017	2.6107	.10203	.01758	.00168
#2	50.320	2.6969	.00120	2.6044	.10149	.02985	-.00027
#3	49.546	2.6634	.00017	2.7071	.10026	.02345	-.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606094702 Acquired: 6/23/2016 12:51:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00117**	**.00780**	**9.0826**	**.00035**	**.15068**	**-.00633**	**-.00126**
Stddev	.00263	.00037	.0069	.00043	.00086	.00191	.00207
%RSD	224.74	4.7068	.07622	124.87	.56783	30.257	164.67
#1	-.00051	.00762	9.0850	-.00014	.15125	-.00686	.00098
#2	.00107	.00823	9.0748	.00049	.15110	-.00792	-.00164
#3	-.00406	.00757	9.0880	.00069	.14970	-.00420	-.00311
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00160**	**.09771**	F **-.16778**
Stddev	.00119	.00040	.51040
%RSD	73.987	.41151	304.20
#1	-.00195	.09817	-.75124
#2	-.00028	.09753	.19603
#3	-.00258	.09742	.05186
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6766.6**	**42365.**	**2163.4**
Stddev	9.2	146.	15.3
%RSD	.13637	.34463	.70577
#1	6775.0	42444.	2166.8
#2	6768.2	42197.	2146.8
#3	6756.7	42455.	2176.8

Approved: June 24, 2016

Sample Name: L1606094702PS Acquired: 6/23/2016 12:55:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573561-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.23131**	**6.0776**	**.22198**	**1.0949**	**.57783**	**.02707**	**68.881**	**.02745**
Stddev	.00261	.0118	.00368	.0042	.00396	.00014	.349	.00034
%RSD	1.1293	.19488	1.6573	.38166	.68564	.52400	.50731	1.2383
#1	.23191	6.0677	.22245	1.0989	.58171	.02694	69.284	.02712
#2	.23358	6.0907	.22540	1.0952	.57379	.02722	68.656	.02780
#3	.22846	6.0743	.21808	1.0905	.57800	.02705	68.704	.02742
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.12357**	**.27001**	**.27410**	**2.6713**	**31.343**	**.63792**	**50.109**	**2.6662**
Stddev	.00057	.00132	.00049	.0829	.141	.00571	.478	.0042
%RSD	.46382	.48739	.18035	3.1046	.45067	.89520	.95447	.15755
#1	.12291	.26993	.27402	2.7447	31.454	.64241	50.655	2.6687
#2	.12395	.26874	.27464	2.5813	31.391	.63149	49.762	2.6614
#3	.12384	.27137	.27366	2.6879	31.184	.63985	49.911	2.6685
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.56440**	**30.139**	**.35952**	**5.4625**	**.27321**	**.67168**	**.20646**	**10.951**
Stddev	.00177	.207	.00084	.0146	.00396	.00325	.00903	.012
%RSD	.31433	.68626	.23364	.26735	1.4480	.48353	4.3731	.11161
#1	.56510	30.360	.35967	5.4483	.26967	.66886	.19608	10.941
#2	.56572	29.950	.36028	5.4775	.27248	.67095	.21077	10.965
#3	.56239	30.107	.35862	5.4616	.27748	.67523	.21252	10.949
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606094702PS Acquired: 6/23/2016 12:55:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573561-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.55207	.69512	.54416	.27151	.53992	.62316	.33455
Stddev	.00111	.00297	.00646	.00259	.00233	.00135	.21435
%RSD	.20021	.42717	1.1871	.95282	.43173	.21709	64.072
#1	.55091	.69855	.54132	.27429	.53723	.62231	.56787
#2	.55311	.69332	.55155	.27110	.54122	.62472	.28942
#3	.55220	.69350	.53960	.26916	.54131	.62246	.14635
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6701.8	41790.	2191.5
Stddev	33.8	212.	30.8
%RSD	.50413	.50847	1.4072
#1	6738.9	41963.	2159.3
#2	6693.9	41855.	2194.4
#3	6672.8	41553.	2220.7

Approved: June 24, 2016

Sample Name: L1606094702SDL Acquired: 6/23/2016 12:58:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573561-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	.14607	-.00240	.01522	.00533	.00018	13.829
Stddev	.00072	.00173	.00155	.00294	.00088	.00007	.014
%RSD	166.60	1.1836	64.638	19.298	16.495	36.775	.10097
#1	.00110	.14802	-.00090	.01555	.00630	.00012	13.821
#2	.00052	.14545	-.00230	.01213	.00459	.00025	13.845
#3	-.00033	.14473	-.00399	.01798	.00509	.00017	13.821
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	.00301	.00202	-.00034	.09184	.97478	.01267
Stddev	.00032	.00048	.00120	.00215	.01151	.12899	.00579
%RSD	79.310	15.784	59.069	637.47	12.537	13.232	45.699
#1	.00047	.00356	.00068	-.00130	.09769	.95678	.00661
#2	.00068	.00280	.00298	.00212	.07858	1.1118	.01326
#3	.00005	.00268	.00241	-.00183	.09927	.85574	.01815
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.9348	.52152	.00068	.59140	.01937	.00797	.00486
Stddev	.0620	.00623	.00032	.02814	.00066	.00973	.00294
%RSD	.62431	1.1951	47.005	4.7580	3.4076	121.96	60.573
#1	9.8700	.51435	.00105	.60058	.01907	.01776	.00762
#2	9.9936	.52460	.00045	.61381	.01892	-.00169	.00177
#3	9.9409	.52561	.00055	.55982	.02013	.00786	.00517
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606094702SDL Acquired: 6/23/2016 12:58:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573561-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00111**	**.00210**	**1.8002**	**.00040**	**.02959**	**.00055**	**-.00159**
Stddev	.00327	.00710	.0136	.00093	.00013	.00562	.00187
%RSD	293.76	338.69	.75754	236.18	.44358	1015.7	117.61
#1	-.00190	.00513	1.7939	.00073	.02952	.00262	.00008
#2	-.00392	-.00601	1.7909	-.00066	.02974	-.00581	-.00361
#3	.00248	.00718	1.8159	.00112	.02950	.00484	-.00124
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00035**	**.01973**	F **-.13864**
Stddev	.00102	.00027	.24407
%RSD	289.01	1.3729	176.04
#1	.00075	.01955	.08331
#2	-.00055	.02004	-.09920
#3	-.00127	.01961	-.40003
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6855.2**	**43109.**	**2187.1**
Stddev	32.0	303.	16.2
%RSD	.46723	.70314	.73913
#1	6819.8	43433.	2193.1
#2	6882.1	43061.	2199.5
#3	6863.8	42833.	2168.8

Approved: June 24, 2016

Sample Name: L1606094702SDL Acquired: 6/23/2016 13:02:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573561-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00232**	**.02993**	**.00197**	**.00512**	**.00114**	**.00015**	**2.8120**
Stddev	.00313	.00891	.00181	.00244	.00183	.00007	.0500
%RSD	135.12	29.779	91.937	47.607	160.57	48.153	1.7778
#1	-.00063	.02792	.00148	.00724	.00306	.00014	2.7564
#2	.00198	.03967	.00046	.00246	-.00058	.00008	2.8532
#3	.00561	.02219	.00398	.00564	.00094	.00022	2.8264
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**.00072**	**.00245**	**-.00169**	**.00207**	**.15449**	**.00188**
Stddev	.00040	.00049	.00241	.00183	.01789	.14437	.00389
%RSD	284.13	68.360	98.576	108.23	863.70	93.452	207.06
#1	-.00007	.00018	-.00005	-.00315	.01687	.27627	.00638
#2	-.00011	.00115	.00262	-.00229	.00716	-.00499	-.00030
#3	.00060	.00082	.00477	.00036	-.01782	.19218	-.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.8882**	**.10521**	**.00022**	**.13787**	**.00377**	**.01679**	**.00215**
Stddev	.0526	.00189	.00010	.02493	.00067	.01082	.00238
%RSD	2.7846	1.7994	46.937	18.080	17.824	64.431	110.71
#1	1.8378	.10506	.00020	.10917	.00363	.02905	.00396
#2	1.9428	.10340	.00033	.15032	.00318	.01271	-.00055
#3	1.8841	.10717	.00013	.15412	.00450	.00860	.00303
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606094702SDL Acquired: 6/23/2016 13:02:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573561-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00088**	**.00528**	**.39801**	**-.00045**	**.00623**	**.00559**	**-.00232**
Stddev	.00473	.00204	.01013	.00049	.00041	.00837	.00290
%RSD	536.31	38.691	2.5457	109.74	6.5228	149.79	124.78
#1	-.00591	.00761	.38714	-.00061	.00612	.01019	-.00518
#2	-.00021	.00380	.39971	-.00083	.00589	.01064	.00062
#3	.00348	.00443	.40719	.00010	.00668	-.00407	-.00241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00052**	**.00442**	F **-.13647**
Stddev	.00130	.00031	.33809
%RSD	251.32	7.0031	247.74
#1	.00098	.00407	.17426
#2	-.00137	.00451	-.08717
#3	-.00117	.00467	-.49650
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6876.1**	**42408.**	**2136.2**
Stddev	29.1	201.	14.2
%RSD	.42340	.47409	.66281
#1	6864.1	42374.	2128.3
#2	6855.0	42226.	2152.5
#3	6909.3	42624.	2127.7

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 13:06:47 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41931	9.9537	.39878	.50263	1.0085	.04939	10.034
Stddev	.00164	.0353	.00377	.00336	.0014	.00017	.082
%RSD	.39206	.35430	.94451	.66913	.14275	.35114	.81498
#1	.41760	9.9153	.40299	.50583	1.0078	.04928	9.9769
#2	.42087	9.9846	.39571	.50292	1.0075	.04930	10.128
#3	.41947	9.9613	.39765	.49913	1.0101	.04959	9.9974
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05036	.20153	.50072	.50474	4.0678	50.366	1.0214
Stddev	.00065	.00037	.00022	.00087	.0271	.102	.0072
%RSD	1.2912	.18249	.04296	.17151	.66491	.20209	.70465
#1	.04968	.20117	.50070	.50536	4.0371	50.471	1.0215
#2	.05045	.20152	.50094	.50375	4.0880	50.359	1.0141
#3	.05097	.20191	.50052	.50511	4.0784	50.267	1.0285
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.079	.50366	1.0023	50.473	.50280	9.9624	.50077
Stddev	.093	.00324	.0039	.115	.00207	.0072	.00211
%RSD	.92173	.64314	.38539	.22799	.41224	.07221	.42157
#1	10.093	.50472	1.0065	50.555	.50200	9.9547	.50253
#2	9.9799	.50003	1.0015	50.342	.50124	9.9690	.49843
#3	10.164	.50624	.99889	50.523	.50515	9.9635	.50133
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 13:06:47 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2042**	**.41075**	**5.0693**	**.99619**	**1.0092**	**1.0079**	**.50475**
Stddev	.0025	.00642	.0043	.00145	.0003	.0022	.00299
%RSD	.20940	1.5623	.08445	.14552	.02557	.21789	.59179
#1	1.2050	.41242	5.0716	.99657	1.0089	1.0078	.50470
#2	1.2061	.40366	5.0643	.99459	1.0094	1.0101	.50180
#3	1.2013	.41616	5.0719	.99741	1.0093	1.0057	.50777
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.99675**	**1.0031**	F **.29620**
Stddev	.00360	.0019	.08449
%RSD	.36160	.18852	28.526
#1	.99318	1.0044	.28950
#2	.99668	1.0009	.21526
#3	1.0004	1.0040	.38384
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7020.3**	**43456.**	**2261.9**
Stddev	43.3	359.	17.6
%RSD	.61673	.82524	.77983
#1	6973.3	43726.	2266.4
#2	7058.5	43594.	2276.9
#3	7029.1	43049.	2242.5

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 13:10:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00055**	**.00613**	**-.00044**	**.00485**	**.00148**	**-.00004**	**.00904**
Stddev	.00241	.01049	.00350	.00063	.00079	.00007	.03049
%RSD	433.80	171.08	799.41	13.078	53.619	184.29	337.38
#1	-.00199	-.00292	-.00005	.00421	.00232	-.00011	.00926
#2	.00280	.01763	.00285	.00487	.00075	-.00002	.03942
#3	.00085	.00369	-.00411	.00548	.00136	.00002	-.02156
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**.00004**	**.00060**	**.00022**	**-.00957**	**.04485**	**-.00298**
Stddev	.00016	.00039	.00104	.00109	.01163	.02561	.00513
%RSD	223.78	1017.8	171.83	492.97	121.56	57.110	171.96
#1	-.00011	-.00030	-.00058	.00117	.00113	.06139	.00197
#2	.00019	-.00006	.00135	-.00097	-.02194	.01535	-.00827
#3	.00013	.00047	.00104	.00046	-.00789	.05781	-.00265
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.02645**	**-.00131**	**.00436**	**.08359**	**-.00037**	**.00422**	**.00149**
Stddev	.14321	.00098	.00060	.01032	.00168	.00190	.00276
%RSD	541.38	74.508	13.758	12.343	448.02	44.982	185.09
#1	.05023	-.00131	.00393	.08391	-.00111	.00494	.00032
#2	-.19168	-.00033	.00411	.09375	.00154	.00207	-.00049
#3	.06209	-.00229	.00504	.07312	-.00156	.00566	.00464
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 13:10:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00132**	**.00696**	**.00966**	**.00061**	**.00020**	**.00914**	**.00001**
Stddev	.00299	.00629	.00189	.00100	.00058	.00341	.00099
%RSD	227.17	90.310	19.527	162.70	288.56	37.372	8812.9
#1	-.00215	.00080	.01034	.00060	-.00047	.00937	.00002
#2	.00200	.00671	.00753	.00162	.00050	.00561	-.00099
#3	-.00380	.01337	.01111	-.00038	.00057	.01243	.00100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00102**	**-.00026**	F **-.17576**
Stddev	.00081	.00011	.20815
%RSD	79.559	41.267	118.43
#1	-.00149	-.00038	-.14101
#2	-.00149	-.00024	-.39909
#3	-.00008	-.00017	.01284
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7064.6**	**44034.**	**2255.7**
Stddev	48.2	228.	34.9
%RSD	.68253	.51684	1.5489
#1	7013.3	43791.	2215.4
#2	7071.5	44242.	2278.1
#3	7109.0	44070.	2273.5

Approved: June 24, 2016

Sample Name: L1606094705 Acquired: 6/23/2016 13:14:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00161**	**.82187**	**-.00408**	**.03630**	**.02684**	**.00085**	**72.205**
Stddev	.00173	.01481	.00130	.00534	.00064	.00005	.308
%RSD	107.81	1.8022	31.834	14.720	2.3986	5.8394	.42674
#1	-.00022	.80686	-.00282	.03020	.02758	.00091	72.165
#2	.00323	.82228	-.00541	.03856	.02651	.00081	72.531
#3	.00181	.83648	-.00400	.04015	.02642	.00085	71.919
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00064**	**.01817**	**.00093**	**.00185**	**1.6458**	**4.6897**	**.09158**
Stddev	.00025	.00062	.00101	.00048	.0446	.0964	.00336
%RSD	38.480	3.3997	108.34	25.910	2.7105	2.0559	3.6734
#1	.00077	.01886	.00173	.00135	1.5994	4.6337	.09260
#2	.00079	.01766	.00125	.00189	1.6495	4.6344	.09432
#3	.00036	.01800	-.00020	.00230	1.6884	4.8010	.08783
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**50.658**	**2.7986**	**.00127**	**2.6354**	**.09959**	**.02662**	**.00491**
Stddev	.427	.0103	.00085	.0371	.00198	.00455	.00524
%RSD	.84271	.36614	66.753	1.4074	1.9871	17.099	106.80
#1	50.468	2.7956	.00072	2.6766	.09863	.02137	.00295
#2	51.146	2.8100	.00085	2.6046	.10186	.02939	.00092
#3	50.358	2.7901	.00225	2.6249	.09827	.02912	.01085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606094705 Acquired: 6/23/2016 13:14:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.00381	9.4129	.00054	.15051	.00190	-.00354
Stddev	.00250	.00519	.0092	.00074	.00019	.00454	.00281
%RSD	1434.8	136.33	.09823	136.03	.12621	239.54	79.161
#1	-.00288	.00904	9.4198	-.00014	.15064	-.00000	-.00187
#2	.00032	.00371	9.4024	.00044	.15061	.00708	-.00678
#3	.00204	-.00133	9.4164	.00133	.15030	-.00139	-.00198
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00068	.07173	F -.37347
Stddev	.00049	.00031	.18302
%RSD	72.278	.43135	49.004
#1	-.00045	.07207	-.56086
#2	-.00124	.07162	-.19516
#3	-.00034	.07148	-.36439
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6758.8	42075.	2180.1
Stddev	19.3	166.	25.7
%RSD	.28529	.39440	1.1777
#1	6737.6	42257.	2166.1
#2	6763.5	42034.	2164.6
#3	6775.3	41933.	2209.8

Approved: June 24, 2016

Sample Name: L1606094708 Acquired: 6/23/2016 13:18:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00164	.06268	-.00080	.04013	.00822	-.00003	60.992	.00016
Stddev	.00030	.00800	.00219	.00082	.00098	.00002	.228	.00037
%RSD	18.102	12.756	272.89	2.0475	11.889	94.254	.37380	237.07
#1	.00189	.06933	.00137	.04011	.00734	-.00001	61.184	-.00008
#2	.00173	.05381	-.00301	.04096	.00805	-.00005	61.053	.00058
#3	.00131	.06491	-.00077	.03932	.00927	-.00001	60.740	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	.00259	.00012	.09008	2.7645	.02265	30.254	.13310
Stddev	.00013	.00099	.00044	.02365	.0093	.00490	.212	.00117
%RSD	25.250	38.264	366.51	26.251	.33582	21.630	.70194	.87906
#1	.00063	.00359	.00008	.09591	2.7684	.02272	30.452	.13445
#2	.00038	.00161	-.00029	.11026	2.7711	.02751	30.282	.13248
#3	.00059	.00256	.00057	.06406	2.7539	.01771	30.030	.13238
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	4.9855	.00127	.00314	.00298	-.00189	-.00265	2.6611
Stddev	.00045	.0199	.00123	.01354	.00332	.00518	.00200	.0079
%RSD	67.573	.39826	96.334	430.54	111.66	274.01	75.517	.29649
#1	.00015	4.9673	.00107	.01537	-.00028	.00407	-.00034	2.6680
#2	.00085	5.0067	.00016	.00547	.00284	-.00527	-.00378	2.6630
#3	.00098	4.9825	.00259	-.01141	.00636	-.00447	-.00382	2.6525
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606094708 Acquired: 6/23/2016 13:18:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.29525	-.00362	-.00167	-.00101	.00597	.05225
Stddev	.00035	.00175	.00389	.00187	.00032	.00015	.18866
%RSD	198.39	.59327	107.39	112.11	31.885	2.5356	361.09
#1	.00059	.29710	-.00450	-.00362	-.00076	.00607	.26218
#2	-.00000	.29505	-.00700	.00012	-.00138	.00604	-.10311
#3	-.00005	.29362	.00063	-.00151	-.00091	.00580	-.00232
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6816.2	42457.	2186.9
Stddev	19.1	323.	21.6
%RSD	.27982	.76080	.98620
#1	6816.0	42426.	2162.1
#2	6835.4	42150.	2201.0
#3	6797.3	42794.	2197.6

Approved: June 24, 2016

Sample Name: L1606076301 Acquired: 6/23/2016 13:22:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00194**	**.02208**	**.02568**	**.43236**	**9.4855**	**-.00003**	**137.11**
Stddev	.00189	.00829	.00398	.00360	.0365	.00003	.72
%RSD	97.559	37.532	15.506	.83185	.38489	98.288	.52423
#1	.00262	.01725	.02946	.42833	9.5136	-.00001	137.41
#2	-.00020	.03164	.02605	.43352	9.4987	-.00002	137.63
#3	.00340	.01734	.02153	.43523	9.4443	-.00007	136.29
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00053**	**.00163**	**.00105**	**.00139**	**1.5590**	**7.9988**	**.72684**
Stddev	.00021	.00016	.00122	.00073	.0278	.0357	.00746
%RSD	39.106	9.9424	116.16	52.795	1.7846	.44566	1.0265
#1	.00076	.00145	.00161	.00122	1.5818	8.0399	.72260
#2	.00035	.00173	-.00035	.00220	1.5671	7.9808	.73546
#3	.00049	.00173	.00189	.00076	1.5280	7.9758	.72247
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**14.574**	**.07725**	**.00038**	F **366.35**	**-.00162**	**.09780**	**.00176**
Stddev	.049	.00319	.00015	1.74	.00116	.00383	.00483
%RSD	.33920	4.1257	40.701	.47471	71.599	3.9136	275.19
#1	14.616	.07580	.00021	367.63	-.00032	.10141	.00318
#2	14.520	.07504	.00050	367.06	-.00199	.09379	.00571
#3	14.587	.08091	.00042	364.37	-.00255	.09822	-.00363
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 24, 2016

Sample Name: L1606076301 Acquired: 6/23/2016 13:22:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00397	-.00149	.10084	.00027	F 24.369	-.01330	.00299
Stddev	.00063	.00465	.00184	.00125	.396	.00152	.00530
%RSD	15.977	312.53	1.8206	463.89	1.6252	11.429	177.27
#1	.00431	-.00566	.10152	.00089	24.651	-.01201	.00898
#2	.00323	-.00233	.09876	.00108	24.539	-.01292	.00105
#3	.00435	.00353	.10223	-.00117	23.916	-.01498	-.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00040	.00607	.08263
Stddev	.00114	.00037	.16823
%RSD	283.06	6.0904	203.59
#1	.00067	.00564	.26003
#2	-.00159	.00627	-.07461
#3	-.00029	.00630	.06248
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6689.4	41180.	2146.8
Stddev	11.2	70.	2.5
%RSD	.16807	.16995	.11474
#1	6693.8	41192.	2144.5
#2	6676.6	41244.	2146.6
#3	6697.7	41105.	2149.4

Approved: June 24, 2016

Sample Name: L1606083702 Acquired: 6/23/2016 13:26:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00431	33.801	.01724	.09854	.41741	.00265	60.826
Stddev	.00281	.289	.00257	.00140	.00133	.00011	.364
%RSD	65.115	.85604	14.900	1.4221	.31977	3.9646	.59912
#1	.00738	33.583	.01584	.09704	.41851	.00273	61.102
#2	.00187	33.691	.02021	.09878	.41592	.00270	60.413
#3	.00369	34.130	.01567	.09981	.41779	.00253	60.962
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00162	.03572	.24908	.16782	92.318	11.517	.04115
Stddev	.00019	.00013	.00143	.00172	.620	.067	.00381
%RSD	11.832	.36436	.57531	1.0249	.67118	.58564	9.2558
#1	.00174	.03587	.24747	.16611	92.764	11.553	.03804
#2	.00172	.03567	.24955	.16781	91.610	11.439	.04540
#3	.00140	.03563	.25022	.16955	92.580	11.558	.04002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	17.028	1.2901	.09338	14.567	.12343	1.5590	.05321
Stddev	.186	.0069	.00072	.078	.00126	.0107	.00374
%RSD	1.0941	.53832	.76698	.53245	1.0197	.68610	7.0268
#1	17.029	1.2886	.09348	14.610	.12229	1.5476	.05746
#2	16.842	1.2841	.09405	14.477	.12322	1.5688	.05046
#3	17.215	1.2977	.09262	14.613	.12478	1.5607	.05169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606083702 Acquired: 6/23/2016 13:26:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00197	.00383	F 49.208	.00874	.24272	.69278	.00268
Stddev	.00187	.00439	.228	.00096	.00102	.00808	.00504
%RSD	94.757	114.53	.46427	10.948	.42123	1.1659	188.15
#1	.00014	.00501	48.946	.00793	.24335	.69156	.00539
#2	-.00342	-.00103	49.367	.00849	.24154	.68538	.00578
#3	-.00263	.00751	49.310	.00980	.24327	.70140	-.00313
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-1.0000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.08021	1.6367	4.1823
Stddev	.00064	.0106	.2507
%RSD	.80102	.64459	5.9933
#1	.07948	1.6246	4.0835
#2	.08071	1.6413	3.9961
#3	.08043	1.6441	4.4673
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6974.3	43179.	2263.8
Stddev	63.4	499.	11.4
%RSD	.90879	1.1550	.50270
#1	7031.6	43179.	2250.8
#2	6985.2	43677.	2268.4
#3	6906.2	42680.	2272.1

Approved: June 24, 2016

Sample Name: L1606085701 Acquired: 6/23/2016 13:30:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00105**	**.01551**	**-.00313**	**.11826**	**.00818**	**-.00000**	**2.0275**
Stddev	.00070	.00234	.00310	.00767	.00196	.00006	.0370
%RSD	66.752	15.097	99.267	6.4869	23.923	1367.3	1.8270
#1	.00059	.01377	-.00395	.11540	.00595	-.00005	1.9946
#2	.00185	.01458	.00031	.11242	.00898	.00006	2.0676
#3	.00071	.01817	-.00574	.12695	.00960	-.00003	2.0203
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00055**	**.00014**	**.00223**	**-.00232**	**-.00256**	**.40790**	**-.00322**
Stddev	.00041	.00028	.00121	.00125	.01666	.12678	.00659
%RSD	74.729	200.06	54.281	54.124	650.75	31.082	205.00
#1	.00103	.00003	.00355	-.00094	.01552	.30288	.00155
#2	.00028	-.00007	.00117	-.00261	-.01729	.37208	-.01074
#3	.00035	.00045	.00197	-.00340	-.00591	.54874	-.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.70908**	**.00231**	**.00078**	**28.050**	**.00489**	**.05231**	**.00240**
Stddev	.08177	.00221	.00088	.079	.00053	.00501	.00051
%RSD	11.531	95.612	113.58	.28080	10.812	9.5863	21.339
#1	.78336	.00106	.00002	28.135	.00550	.05582	.00192
#2	.72241	.00485	.00057	28.034	.00462	.05454	.00234
#3	.62147	.00100	.00175	27.980	.00455	.04656	.00294
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606085701 Acquired: 6/23/2016 13:30:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00069	.00604	.93518	.00155	.06238	-.00090	-.00177
Stddev	.00289	.00426	.00365	.00027	.00056	.00405	.00079
%RSD	416.59	70.572	.39073	17.233	.90476	450.45	44.755
#1	.00258	.00177	.93304	.00161	.06186	-.00521	-.00087
#2	-.00174	.00606	.93311	.00179	.06230	-.00032	-.00237
#3	-.00292	.01029	.93940	.00126	.06298	.00283	-.00205
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00004	.03465	F -.25289
Stddev	.00070	.00017	.21558
%RSD	1777.2	.48633	85.245
#1	.00072	.03457	-.04792
#2	.00009	.03454	-.47771
#3	-.00069	.03485	-.23306
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6771.2	42793.	2185.7
Stddev	16.2	557.	12.6
%RSD	.23870	1.3012	.57582
#1	6760.8	42567.	2172.1
#2	6789.8	43427.	2188.0
#3	6762.9	42385.	2197.0

Approved: June 24, 2016

Sample Name: L1606085702 Acquired: 6/23/2016 13:34:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00033	.07270	-.00203	.14026	.07278	.00001	1.8420
Stddev	.00276	.01164	.00125	.00065	.00057	.00018	.0327
%RSD	841.02	16.017	61.792	.46587	.78910	3297.7	1.7766
#1	-.00316	.07004	-.00091	.14030	.07212	.00019	1.8290
#2	.00236	.06261	-.00179	.13959	.07316	-.00001	1.8178
#3	-.00019	.08544	-.00338	.14090	.07306	-.00016	1.8792
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00058	.00049	.00229	.00175	.01354	.82547	.00707
Stddev	.00023	.00070	.00094	.00097	.02857	.04036	.00543
%RSD	39.415	144.45	40.924	55.606	211.01	4.8891	76.883
#1	.00077	.00036	.00132	.00068	-.01924	.84400	.01011
#2	.00033	-.00015	.00319	.00257	.02674	.77917	.01030
#3	.00063	.00124	.00236	.00201	.03312	.85323	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51491	.00195	.00449	F 275.14	-.00069	.03509	-.00069
Stddev	.09772	.00296	.00024	.76	.00123	.00164	.00476
%RSD	18.977	151.69	5.4308	.27666	177.16	4.6788	690.35
#1	.41497	.00336	.00448	275.95	.00072	.03463	.00474
#2	.61024	.00394	.00425	274.44	-.00134	.03372	-.00420
#3	.51952	-.00145	.00474	275.04	-.00146	.03691	-.00261
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 24, 2016

Sample Name: L1606085702 Acquired: 6/23/2016 13:34:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00460	-.00060	3.0002	.00006	.09445	.00506	-.00228
Stddev	.00222	.00516	.0036	.00068	.00055	.00431	.00386
%RSD	48.324	853.07	.11830	1137.5	.58448	85.182	169.08
#1	-.00698	-.00204	3.0021	-.00036	.09414	.00516	-.00490
#2	-.00424	.00512	3.0025	-.00031	.09412	.00070	-.00411
#3	-.00258	-.00489	2.9961	.00085	.09509	.00931	.00215
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00051	.00248	F -.05261
Stddev	.00144	.00019	.29783
%RSD	282.24	7.6734	566.10
#1	.00067	.00238	-.32296
#2	-.00211	.00270	-.10151
#3	-.00009	.00236	.26664
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6545.6	40539.	2141.5
Stddev	22.7	279.	19.5
%RSD	.34678	.68833	.90844
#1	6540.8	40596.	2119.8
#2	6570.4	40236.	2147.6
#3	6525.8	40786.	2157.3

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 13:37:59 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .45134	10.807	.43069	.53551	1.0873	.05306	10.734
Stddev	.00120	.042	.00127	.00658	.0048	.00054	.109
%RSD	.26661	.38935	.29560	1.2285	.44392	1.0118	1.0192
#1	.45043	10.780	.43162	.52920	1.0877	.05245	10.843
#2	.45270	10.855	.42924	.53499	1.0919	.05345	10.736
#3	.45088	10.785	.43121	.54233	1.0823	.05328	10.624
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	.40000						
Range	10.000%						

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05377	.21778	.53858	.54577	4.3294	53.973	1.0995
Stddev	.00038	.00023	.00492	.00029	.0324	.101	.0034
%RSD	.70417	.10643	.91354	.05369	.74928	.18648	.31286
#1	.05336	.21804	.53402	.54544	4.2921	53.955	1.0956
#2	.05383	.21761	.54380	.54590	4.3510	54.082	1.1020
#3	.05411	.21768	.53792	.54598	4.3450	53.883	1.1008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.676	.54210	1.0831	54.317	.54570	10.765	.54231
Stddev	.144	.00268	.0045	.237	.00054	.017	.00789
%RSD	1.3465	.49516	.41592	.43723	.09840	.15367	1.4551
#1	10.841	.54173	1.0860	54.234	.54581	10.748	.54167
#2	10.605	.53962	1.0854	54.585	.54511	10.768	.55050
#3	10.581	.54495	1.0779	54.132	.54617	10.781	.53475
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 13:37:59 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.3154**	**.43131**	**5.4716**	**1.0779**	**1.0816**	**1.0682**	**.54041**
Stddev	.0100	.01288	.0063	.0008	.0051	.0038	.00148
%RSD	.76033	2.9867	.11483	.07203	.47288	.35443	.27465
#1	1.3264	.42222	5.4703	1.0779	1.0791	1.0696	.54165
#2	1.3068	.42566	5.4661	1.0786	1.0874	1.0639	.53876
#3	1.3129	.44605	5.4784	1.0771	1.0782	1.0710	.54081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0737**	**1.0856**	F **.15193**
Stddev	.0085	.0016	.28587
%RSD	.79069	.14554	188.16
#1	1.0640	1.0847	.18724
#2	1.0798	1.0846	-.14996
#3	1.0773	1.0874	.41850
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6619.5**	**40889.**	**2120.6**
Stddev	22.8	56.	15.1
%RSD	.34376	.13697	.71393
#1	6636.9	40858.	2120.9
#2	6627.9	40856.	2105.4
#3	6593.8	40954.	2135.6

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 13:41:37 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00158**	**.01770**	**-.00290**	**.00420**	**.00296**	**.00008**	**.00768**
Stddev	.00238	.01297	.00182	.00442	.00097	.00006	.03100
%RSD	150.72	73.266	62.817	105.42	32.973	74.730	403.53
#1	-.00078	.02309	-.00093	.00783	.00184	.00014	-.01510
#2	.00397	.00291	-.00452	.00548	.00340	.00005	-.00484
#3	.00154	.02711	-.00326	-.00073	.00363	.00003	.04298
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00046**	**.00012**	**.00248**	**-.00061**	**-.00542**	**.10552**	**.00074**
Stddev	.00020	.00062	.00070	.00053	.02692	.07766	.00351
%RSD	43.624	499.77	28.448	85.995	496.30	73.597	477.45
#1	.00063	-.00055	.00323	-.00038	-.00888	.03365	.00151
#2	.00024	.00026	.00236	-.00122	-.03045	.09501	.00379
#3	.00052	.00066	.00184	-.00024	.02305	.18790	-.00310
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04199**	**.00149**	**.00473**	**.07384**	**-.00091**	F **.01440**	**.00237**
Stddev	.03372	.00533	.00067	.02566	.00057	.00186	.00194
%RSD	80.305	359.18	14.065	34.748	62.773	12.937	82.124
#1	.06837	.00627	.00403	.06546	-.00149	.01277	.00039
#2	.05361	.00246	.00480	.10263	-.00091	.01643	.00427
#3	.00400	-.00427	.00536	.05341	-.00034	.01399	.00244
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						.01000	
Low Limit						-.01000	

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 13:41:37 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00149**	**.00301**	**.01027**	**.00140**	**.00008**	**.00320**	**.00031**
Stddev	.00130	.00950	.00052	.00086	.00053	.00649	.00310
%RSD	87.162	315.28	5.0885	61.563	705.61	202.89	987.14
#1	.00285	.00014	.00977	.00239	.00066	.00051	.00035
#2	.00026	-.00472	.01081	.00106	-.00039	.01060	-.00281
#3	.00135	.01362	.01022	.00076	-.00004	-.00151	.00340
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00103**	**-.00008**	F **-.23953**
Stddev	.00169	.00028	.04048
%RSD	163.72	371.39	16.899
#1	-.00118	-.00003	-.26217
#2	-.00264	.00018	-.26362
#3	.00073	-.00037	-.19280
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6630.2**	**41602.**	**2070.3**
Stddev	4.8	212.	18.8
%RSD	.07287	.50936	.90799
#1	6631.2	41452.	2049.7
#2	6625.0	41845.	2074.7
#3	6634.5	41510.	2086.6

Approved: June 24, 2016

Sample Name: L1606072901 Acquired: 6/23/2016 13:45:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	1.9022	-.00033	.01275	.10878	.00027	3.3748
Stddev	.00218	.0080	.00247	.00210	.00122	.00005	.0521
%RSD	390.51	.41881	752.84	16.492	1.1199	19.165	1.5437
#1	-.00143	1.9097	.00166	.01339	.10869	.00021	3.3553
#2	.00290	1.9031	-.00310	.01447	.10760	.00029	3.3352
#3	.00021	1.8938	.00045	.01041	.11004	.00031	3.4338
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00070	.00686	.00502	.00274	8.7296	4.0858	.00187
Stddev	.00049	.00031	.00079	.00095	.1044	.1587	.00572
%RSD	70.901	4.5508	15.682	34.818	1.1959	3.8848	306.19
#1	.00013	.00699	.00492	.00271	8.7332	4.1453	-.00456
#2	.00097	.00708	.00585	.00180	8.6235	3.9059	.00638
#3	.00100	.00650	.00428	.00370	8.8322	4.2062	.00378
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.5279	.18987	.00146	8.8883	.00643	.07669	.00585
Stddev	.0806	.00418	.00002	.0264	.00132	.00989	.00345
%RSD	3.1886	2.2032	1.4553	.29688	20.582	12.899	59.068
#1	2.6115	.18525	.00145	8.8787	.00728	.08764	.00219
#2	2.4507	.19098	.00145	8.8681	.00491	.06839	.00629
#3	2.5215	.19340	.00149	8.9182	.00711	.07404	.00906
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606072901 Acquired: 6/23/2016 13:45:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00422**	**.00114**	**7.7009**	**.00094**	**.04165**	**.04528**	**-.00124**
Stddev	.00105	.00887	.0106	.00031	.00116	.00750	.00474
%RSD	24.977	779.78	.13780	33.440	2.7765	16.566	383.19
#1	-.00314	.00770	7.7122	.00125	.04034	.05338	-.00668
#2	-.00426	-.00895	7.6912	.00063	.04213	.04390	.00093
#3	-.00525	.00466	7.6993	.00093	.04250	.03857	.00204
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00695**	**.03769**	F **-.07426**
Stddev	.00021	.00010	.25506
%RSD	3.0434	.26201	343.45
#1	.00719	.03759	-.17879
#2	.00685	.03770	.21646
#3	.00679	.03778	-.26046
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6663.7**	**41447.**	**2124.9**
Stddev	31.4	101.	8.5
%RSD	.47053	.24398	.40015
#1	6635.9	41409.	2127.4
#2	6657.5	41369.	2115.5
#3	6697.7	41561.	2131.9

Approved: June 24, 2016

Sample Name: L1606072902 Acquired: 6/23/2016 13:49:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.08436	-.00231	.01162	.09500	.00024	3.2071	.00025
Stddev	.00068	.00795	.00473	.00261	.00117	.00003	.0288	.00030
%RSD	140.03	9.4206	204.37	22.450	1.2279	13.019	.89891	120.44
#1	.00085	.08971	-.00104	.01189	.09406	.00022	3.1880	.00059
#2	-.00030	.08814	-.00754	.01408	.09631	.00022	3.1929	.00004
#3	.00091	.07523	.00164	.00888	.09463	.00027	3.2402	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00258	.00169	.00001	.09122	4.0554	.00554	2.1514	.10164
Stddev	.00036	.00098	.00083	.01409	.0725	.00749	.0915	.00166
%RSD	13.810	58.028	9389.3	15.450	1.7870	135.26	4.2536	1.6371
#1	.00228	.00185	-.00094	.08293	4.0962	-.00132	2.2029	.09978
#2	.00297	.00064	.00036	.10750	3.9717	.01352	2.0457	.10217
#3	.00249	.00258	.00061	.08324	4.0982	.00441	2.2055	.10298
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00107	9.3347	.00534	-.00760	.00262	-.00247	-.00071	5.8284
Stddev	.00067	.0017	.00059	.00657	.00192	.00656	.00734	.0047
%RSD	62.899	.01851	11.082	86.434	73.407	265.29	1036.5	.08050
#1	.00073	9.3339	.00595	-.01085	.00076	.00233	.00419	5.8231
#2	.00063	9.3335	.00477	-.01192	.00459	.00021	.00283	5.8300
#3	.00184	9.3367	.00529	-.00004	.00250	-.00996	-.00914	5.8320
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606072902 Acquired: 6/23/2016 13:49:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	.04455	.00383	-.00158	-.00117	.01067	.01977
Stddev	.00091	.00048	.00462	.00107	.00115	.00017	.19686
%RSD	195.27	1.0877	120.59	67.563	97.637	1.6384	995.89
#1	.00011	.04507	-.00045	-.00119	-.00123	.01066	.06131
#2	.00150	.04411	.00321	-.00077	-.00229	.01086	-.19455
#3	-.00021	.04447	.00873	-.00279	-.00000	.01051	.19254
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6679.4	41883.	2140.8
Stddev	19.5	115.	21.9
%RSD	.29209	.27528	1.0253
#1	6687.8	41773.	2148.4
#2	6693.3	41873.	2116.0
#3	6657.1	42003.	2157.9

Approved: June 24, 2016

Sample Name: L1606072903 Acquired: 6/23/2016 13:53:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00121	3.1940	-.00317	.05585	.05128	.00272	55.198	.00092
Stddev	.00190	.0150	.00311	.00265	.00071	.00005	.533	.00026
%RSD	157.00	.46804	98.051	4.7403	1.3804	2.0101	.96560	28.456
#1	-.00098	3.2101	-.00297	.05354	.05052	.00274	54.599	.00105
#2	.00226	3.1805	-.00017	.05528	.05192	.00276	55.376	.00062
#3	.00234	3.1916	-.00638	.05874	.05142	.00265	55.619	.00109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05365	.00268	.00557	3.4652	2.3690	.00136	16.189	.87450
Stddev	.00041	.00184	.00156	.0341	.0787	.00738	.191	.00113
%RSD	.76801	68.642	27.990	.98414	3.3240	542.12	1.1778	.12910
#1	.05412	.00147	.00733	3.4487	2.4341	-.00716	16.303	.87482
#2	.05346	.00480	.00435	3.5044	2.2815	.00562	15.968	.87543
#3	.05336	.00178	.00504	3.4424	2.3914	.00562	16.295	.87324
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	6.4254	.02173	.00157	.00749	.00178	.00259	5.9642
Stddev	.00053	.0272	.00078	.00506	.00256	.00308	.00359	.0225
%RSD	256.99	.42327	3.5957	323.06	34.182	173.34	138.86	.37668
#1	-.00034	6.4199	.02259	.00740	.00733	.00347	.00639	5.9884
#2	.00025	6.4014	.02152	-.00148	.00502	-.00178	.00211	5.9601
#3	.00072	6.4549	.02107	-.00122	.01014	.00364	-.00075	5.9440
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606072903 Acquired: 6/23/2016 13:53:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.50021	.00294	-.00570	-.00006	.06538	.14572
Stddev	.00142	.00223	.00346	.00366	.00105	.00038	.27662
%RSD	475.50	.44540	117.77	64.085	1811.6	.58637	189.83
#1	.00193	.49771	.00052	-.00185	-.00105	.06577	-.10106
#2	-.00032	.50094	.00139	-.00614	-.00017	.06537	.09350
#3	-.00070	.50198	.00690	-.00913	.00104	.06500	.44473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6815.5	42583.	2186.5
Stddev	19.4	255.	20.2
%RSD	.28450	.59973	.92196
#1	6828.0	42494.	2188.2
#2	6793.2	42385.	2205.8
#3	6825.4	42871.	2165.6

Approved: June 24, 2016

Sample Name: L1606073001 Acquired: 6/23/2016 13:57:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00256	.31997	.00369	.01015	2.4447	-.00002	F 391.57
Stddev	.00124	.00976	.00345	.00235	.0050	.00008	.92
%RSD	48.609	3.0496	93.533	23.200	.20351	460.90	.23566
#1	.00128	.30999	-.00013	.01225	2.4390	-.00011	390.52
#2	.00376	.32043	.00659	.01060	2.4484	.00003	391.93
#3	.00264	.32949	.00461	.00760	2.4465	.00003	392.25
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	.00332	.07503	.00241	.04789	26.816	.16164
Stddev	.00006	.00025	.00123	.00077	.02971	.128	.00555
%RSD	13.649	7.5530	1.6428	31.776	62.037	.47549	3.4306
#1	.00051	.00360	.07369	.00185	.02298	26.708	.16210
#2	.00039	.00313	.07526	.00328	.03991	26.784	.16695
#3	.00050	.00322	.07612	.00210	.08077	26.957	.15589
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.9869	.00807	.00500	F 300.26	-.00001	.00977	.00319
Stddev	.0805	.00347	.00030	.50	.00088	.00901	.00538
%RSD	.80645	42.987	6.0910	.16764	16745.	92.216	168.62
#1	9.9524	.00517	.00524	299.73	.00074	.00083	.00794
#2	9.9294	.00714	.00465	300.32	.00023	.00962	.00428
#3	10.079	.01192	.00510	300.74	-.00098	.01885	-.00265
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 24, 2016

Sample Name: L1606073001 Acquired: 6/23/2016 13:57:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00030**	**-.00121**	**6.9753**	**.00042**	F **24.468**	F **-.04746**	**-.00176**
Stddev	.00142	.00818	.0038	.00053	.196	.01075	.00131
%RSD	471.93	673.71	.05469	126.13	.80146	22.649	74.343
#1	-.00042	.00785	6.9714	.00042	24.521	-.03746	-.00146
#2	.00194	-.00344	6.9790	-.00011	24.631	-.05883	-.00063
#3	-.00061	-.00804	6.9754	.00096	24.250	-.04608	-.00320
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Pass
High Limit					9.0000	36.000	
Low Limit					-.01000	-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00483**	**.00304**	F **-.25994**
Stddev	.00095	.00011	.47028
%RSD	19.772	3.5436	180.92
#1	.00584	.00296	-.78106
#2	.00471	.00316	.13285
#3	.00394	.00300	-.13161
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6405.8**	**39923.**	**2130.5**
Stddev	43.1	179.	24.3
%RSD	.67309	.44763	1.1394
#1	6423.5	39842.	2147.8
#2	6437.2	39799.	2102.8
#3	6356.6	40127.	2140.9

Approved: June 24, 2016

Sample Name: L1606073002 Acquired: 6/23/2016 14:01:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**.30159**	**.00192**	**.00855**	**2.4572**	**-.00005**	F **391.13**
Stddev	.00178	.00597	.00175	.00180	.0121	.00005	1.72
%RSD	1582.0	1.9801	91.272	21.054	.49021	108.20	.43917
#1	-.00072	.30830	.00395	.00732	2.4525	-.00000	390.34
#2	-.00151	.29959	.00093	.00772	2.4483	-.00011	389.95
#3	.00189	.29687	.00089	.01062	2.4709	-.00004	393.10
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00083**	**.00328**	**.07488**	**.00378**	**.06045**	**26.884**	**.15804**
Stddev	.00045	.00088	.00139	.00327	.02010	.168	.00401
%RSD	53.690	26.823	1.8521	86.444	33.259	.62310	2.5398
#1	.00040	.00331	.07575	.00650	.08326	26.768	.16070
#2	.00129	.00414	.07328	.00469	.04533	26.808	.15342
#3	.00080	.00239	.07560	.00015	.05274	27.076	.15999
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.834**	**.00242**	**.00478**	F **302.91**	**-.00114**	**-.00268**	**.00268**
Stddev	.163	.00322	.00063	1.34	.00044	.00170	.00128
%RSD	1.5067	133.12	13.189	.44217	38.961	63.359	47.782
#1	10.905	-.00130	.00456	302.40	-.00129	-.00108	.00361
#2	10.647	.00422	.00549	301.91	-.00064	-.00447	.00321
#3	10.950	.00435	.00429	304.43	-.00149	-.00251	.00122
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 24, 2016

Sample Name: L1606073002 Acquired: 6/23/2016 14:01:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00058**	**-.00081**	**7.0233**	**.00053**	F **24.522**	F **-.05058**	**-.00421**
Stddev	.00221	.00364	.0004	.00034	.334	.00928	.00168
%RSD	381.72	447.00	.00560	64.571	1.3621	18.354	39.774
#1	-.00268	.00184	7.0238	.00033	24.364	-.04360	-.00542
#2	-.00079	.00069	7.0231	.00033	24.905	-.04702	-.00492
#3	.00173	-.00497	7.0231	.00092	24.296	-.06112	-.00230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Pass
High Limit					9.0000	36.000	
Low Limit					-.01000	-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00622**	**.00213**	F **-.10401**
Stddev	.00097	.00020	.39318
%RSD	15.584	9.3584	378.01
#1	.00524	.00203	.33604
#2	.00625	.00236	-.42076
#3	.00718	.00200	-.22731
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6399.2**	**39605.**	**2125.8**
Stddev	37.9	110.	18.5
%RSD	.59190	.27845	.86813
#1	6440.2	39489.	2146.1
#2	6391.9	39620.	2121.4
#3	6365.5	39708.	2110.0

Approved: June 24, 2016

Sample Name: L1606073003 Acquired: 6/23/2016 14:05:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00163	.08741	.00459	.00740	9.5652	.00021	F 359.97
Stddev	.00290	.01125	.00113	.00556	.0602	.00005	2.32
%RSD	177.98	12.875	24.619	75.211	.62908	22.498	.64513
#1	-.00023	.08788	.00519	.01075	9.5821	.00025	360.68
#2	.00496	.09842	.00329	.01047	9.4984	.00023	357.37
#3	.00015	.07593	.00529	.00098	9.6152	.00016	361.85
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	.00733	.00421	.00132	7.6968	4.6889	.05502
Stddev	.00016	.00040	.00043	.00230	.0700	.1346	.00192
%RSD	17.239	5.4950	10.244	173.72	.90938	2.8698	3.4965
#1	.00083	.00700	.00459	-.00074	7.7485	4.5651	.05658
#2	.00080	.00721	.00429	.00091	7.6172	4.6694	.05560
#3	.00109	.00778	.00374	.00380	7.7248	4.8321	.05287
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	222.02	.46392	.00100	F 907.17	.00310	.02957	.00359
Stddev	1.03	.00590	.00045	6.20	.00060	.00708	.00191
%RSD	.46426	1.2720	45.476	.68347	19.251	23.934	53.290
#1	221.59	.46076	.00151	909.32	.00379	.02554	.00305
#2	221.27	.46028	.00064	912.02	.00275	.02542	.00572
#3	223.20	.47073	.00084	900.19	.00276	.03774	.00201
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 24, 2016

Sample Name: L1606073003 Acquired: 6/23/2016 14:05:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00269	-.00290	15.510	.00105	7.7454	F -.03815	-.00190
Stddev	.00374	.00479	.014	.00060	.0520	.00404	.00349
%RSD	138.83	165.18	.09191	57.186	.67173	10.600	183.63
#1	.00695	-.00093	15.517	.00160	7.7532	-.03745	.00130
#2	-.00005	-.00836	15.493	.00114	7.6899	-.04250	-.00563
#3	.00117	.00059	15.519	.00041	7.7931	-.03451	-.00138
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00223	.00565	.20878
Stddev	.00149	.00017	.22493
%RSD	66.807	3.0725	107.73
#1	-.00382	.00583	-.02471
#2	-.00199	.00565	.22702
#3	-.00087	.00548	.42404
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6192.6	37959.	2074.6
Stddev	8.6	172.	6.3
%RSD	.13852	.45191	.30587
#1	6200.5	37983.	2079.7
#2	6183.5	37777.	2076.7
#3	6193.6	38118.	2067.5

Approved: June 24, 2016

Sample Name: L1606065001 Acquired: 6/23/2016 14:09:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00101**	**.02086**	**.00078**	**.00392**	**.11798**	**.00010**	**3.7797**
Stddev	.00330	.00981	.00259	.00188	.00093	.00009	.0253
%RSD	325.36	47.024	330.21	48.042	.79125	91.343	.67047
#1	-.00269	.01004	.00280	.00180	.11849	.00006	3.7511
#2	.00211	.02918	.00169	.00456	.11854	.00004	3.7886
#3	.00363	.02335	-.00214	.00540	.11690	.00021	3.7994
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00039**	**.00473**	**.11075**	**.00254**	**1.6128**	**.36399**	**.00052**
Stddev	.00015	.00028	.00247	.00153	.0205	.13250	.00682
%RSD	39.437	5.8376	2.2265	59.990	1.2685	36.403	1305.8
#1	.00043	.00442	.10829	.00126	1.6215	.50232	.00839
#2	.00052	.00494	.11323	.00423	1.5894	.35143	-.00365
#3	.00022	.00484	.11072	.00213	1.6275	.23821	-.00317
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.3114**	**.12820**	**.00059**	**23.908**	**.19913**	**.01143**	**.00693**
Stddev	.0612	.00234	.00031	.193	.00371	.00816	.00284
%RSD	1.8496	1.8238	52.171	.80626	1.8611	71.384	41.001
#1	3.3128	.13027	.00090	23.692	.19516	.00780	.00543
#2	3.2495	.12566	.00028	24.064	.19975	.00572	.00515
#3	3.3720	.12866	.00059	23.967	.20249	.02078	.01021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606065001 Acquired: 6/23/2016 14:09:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00112**	**.00322**	**1.4139**	**.00021**	**.08513**	**.01184**	**-.00134**
Stddev	.00332	.00894	.0290	.00109	.00058	.00972	.00180
%RSD	295.41	277.65	2.0534	506.07	.67723	82.127	134.05
#1	-.00422	.01348	1.3849	.00054	.08447	.00066	-.00038
#2	.00238	-.00289	1.4138	-.00100	.08552	.01829	-.00023
#3	-.00152	-.00093	1.4430	.00110	.08541	.01657	-.00342
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00159**	**.00105**	F **-.37996**
Stddev	.00053	.00021	.11946
%RSD	33.537	19.605	31.441
#1	-.00120	.00087	-.38083
#2	-.00220	.00100	-.26007
#3	-.00137	.00127	-.49899
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6890.2**	**43019.**	**2167.8**
Stddev	63.1	99.	28.1
%RSD	.91638	.23029	1.2947
#1	6934.3	42909.	2177.8
#2	6918.4	43046.	2136.2
#3	6817.9	43101.	2189.6

Approved: June 24, 2016

Sample Name: L1606065002 Acquired: 6/23/2016 14:13:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00119**	**.00619**	**.00053**	**.00242**	**.04050**	**.00005**	**2.4175**
Stddev	.00153	.00568	.00140	.00436	.00121	.00004	.0565
%RSD	128.35	91.662	266.78	179.97	2.9976	95.253	2.3370
#1	.00059	.00843	.00063	.00739	.04165	.00010	2.4475
#2	.00005	.01040	-.00093	.00068	.04062	.00002	2.3523
#3	.00292	-.00026	.00187	-.00080	.03923	.00002	2.4527
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00018**	**.00062**	**.00128**	**-.00132**	**.01627**	**.11917**	**.00122**
Stddev	.00027	.00046	.00064	.00184	.03317	.08838	.00191
%RSD	149.87	75.230	50.288	139.76	203.80	74.161	156.79
#1	-.00011	.00016	.00101	-.00254	.04806	.14500	.00296
#2	.00022	.00109	.00201	.00080	.01888	.02075	.00151
#3	.00042	.00060	.00081	-.00222	-.01812	.19175	-.00082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.5446**	**.04594**	**.00017**	**20.766**	**.00047**	**.00485**	**.00051**
Stddev	.0763	.00146	.00033	.149	.00143	.00885	.00349
%RSD	4.9423	3.1762	199.14	.71702	303.54	182.41	681.91
#1	1.4640	.04664	-.00012	20.654	.00209	.00163	-.00344
#2	1.6158	.04427	.00054	20.710	-.00006	.01486	.00319
#3	1.5540	.04692	.00009	20.935	-.00062	-.00194	.00178
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606065002 Acquired: 6/23/2016 14:13:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00098**	**-.00033**	**2.1606**	**.00059**	**.04583**	**.00531**	**-.00032**
Stddev	.00451	.00336	.0261	.00086	.00032	.01016	.00354
%RSD	460.69	1017.1	1.2061	145.66	.69478	191.19	1094.5
#1	-.00324	.00342	2.1358	.00154	.04555	.00482	-.00398
#2	.00045	-.00306	2.1582	.00037	.04577	.01571	-.00006
#3	.00573	-.00135	2.1877	-.00014	.04618	-.00459	.00307
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00011**	**.00081**	F **-.25970**
Stddev	.00182	.00018	.14592
%RSD	1638.0	22.380	56.190
#1	.00114	.00078	-.23795
#2	-.00221	.00100	-.41527
#3	.00073	.00064	-.12587
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6847.2**	**42507.**	**2206.5**
Stddev	7.7	174.	27.0
%RSD	.11197	.40941	1.2214
#1	6848.1	42368.	2181.6
#2	6839.1	42451.	2203.0
#3	6854.3	42702.	2235.1

Approved: June 24, 2016

Sample Name: L1606065003 Acquired: 6/23/2016 14:17:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00067	.08910	.00038	.00141	.01681	.00007	1.5698	.00071
Stddev	.00142	.00383	.00422	.00345	.00071	.00002	.0515	.00016
%RSD	211.03	4.2965	1109.5	244.57	4.2236	27.061	3.2785	22.773
#1	.00003	.09101	.00022	.00166	.01758	.00009	1.5296	.00090
#2	-.00230	.08469	-.00376	.00473	.01666	.00008	1.5520	.00061
#3	.00026	.09160	.00468	-.00216	.01619	.00005	1.6278	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00113	.05077	.00085	1.0203	.30376	-.00498	.99295	.03616
Stddev	.00058	.00147	.00210	.0205	.07272	.00068	.07738	.00181
%RSD	51.340	2.8981	247.26	2.0115	23.941	13.727	7.7929	5.0090
#1	.00132	.04948	.00273	.99875	.34266	-.00450	1.0062	.03804
#2	.00048	.05047	.00125	1.0396	.21986	-.00467	.90982	.03602
#3	.00159	.05237	-.00142	1.0224	.34877	-.00576	1.0629	.03443
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	10.870	.01041	.02046	.00421	-.00251	-.00096	1.0575
Stddev	.00071	.065	.00096	.00304	.00222	.00307	.00294	.0121
%RSD	118.73	.59889	9.1817	14.859	52.652	122.13	304.81	1.1477
#1	.00120	10.813	.00941	.02356	.00283	-.00575	.00065	1.0435
#2	.00077	10.857	.01132	.02033	.00676	.00035	-.00435	1.0643
#3	-.00018	10.941	.01050	.01748	.00303	-.00214	.00081	1.0648
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606065003 Acquired: 6/23/2016 14:17:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00018**	**.02812**	**.00927**	**-.00234**	**.00055**	**.00136**	**.26713**
Stddev	.00044	.00045	.01111	.00135	.00029	.00018	.11649
%RSD	247.67	1.5998	119.83	57.833	53.067	13.216	43.608
#1	-.00029	.02761	-.00352	-.00390	.00030	.00141	.14323
#2	.00031	.02844	.01649	-.00165	.00048	.00116	.37443
#3	-.00055	.02832	.01484	-.00148	.00086	.00151	.28371
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6858.1**	**42494.**	**2175.3**
Stddev	42.7	209.	26.7
%RSD	.62293	.49294	1.2285
#1	6902.9	42252.	2201.8
#2	6817.9	42604.	2175.9
#3	6853.5	42625.	2148.4

Approved: June 24, 2016

Sample Name: L1606065008 Acquired: 6/23/2016 14:21:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00167	.05295	-.00138	.00258	.01026	.00007	.47962	.00043
Stddev	.00382	.00591	.00487	.00427	.00085	.00006	.02685	.00034
%RSD	228.87	11.159	352.65	165.38	8.2961	86.535	5.5975	78.751
#1	.00493	.04838	-.00184	.00341	.00986	.00008	.50825	.00064
#2	.00262	.05085	.00370	-.00204	.01124	.00013	.47558	.00004
#3	-.00254	.05962	-.00601	.00637	.00969	.00001	.45502	.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	.00105	.00052	.01114	.23594	.00258	.32831	.04867
Stddev	.00048	.00065	.00211	.02304	.15716	.00476	.03457	.00107
%RSD	72.667	62.238	405.10	206.92	66.612	184.28	10.530	2.1978
#1	.00121	.00147	-.00090	.03051	.27011	.00744	.32906	.04762
#2	.00035	.00030	-.00048	-.01435	.37320	.00238	.29337	.04976
#3	.00041	.00139	.00294	.01725	.06450	-.00207	.36250	.04864
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	10.506	.00237	.01642	.00213	-.00348	-.00290	.95589
Stddev	.00033	.102	.00127	.00194	.00052	.00334	.00341	.02057
%RSD	80.143	.97506	53.506	11.825	24.406	96.118	117.83	2.1518
#1	.00038	10.423	.00381	.01546	.00262	-.00214	.00087	.93512
#2	.00074	10.474	.00146	.01866	.00158	-.00728	-.00579	.95628
#3	.00009	10.620	.00183	.01515	.00217	-.00101	-.00377	.97625
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606065008 Acquired: 6/23/2016 14:21:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**.01016**	**.01408**	**-.00180**	**.00034**	**.00780**	**-.02250**
Stddev	.00029	.00090	.00037	.00226	.00082	.00018	.41195
%RSD	114.07	8.8585	2.5924	125.83	238.75	2.2653	1831.1
#1	.00001	.00914	.01377	-.00283	.00079	.00783	.44684
#2	-.00021	.01085	.01448	.00080	.00083	.00796	-.19010
#3	-.00057	.01049	.01399	-.00336	-.00060	.00761	-.32423
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6841.7**	**42195.**	**2159.0**
Stddev	30.1	205.	11.8
%RSD	.44004	.48548	.54660
#1	6815.4	42021.	2145.6
#2	6874.6	42142.	2163.1
#3	6835.2	42421.	2168.1

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 14:25:18 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.42857**	**10.259**	**.41459**	**.51312**	**1.0377**	**.05083**	**10.240**
Stddev	.00145	.042	.00240	.00208	.0005	.00026	.035
%RSD	.33767	.40774	.57876	.40627	.05142	.51677	.34610
#1	.42691	10.262	.41492	.51075	1.0371	.05053	10.280
#2	.42953	10.299	.41680	.51396	1.0378	.05103	10.216
#3	.42927	10.216	.41204	.51467	1.0381	.05092	10.222
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05153**	**.20713**	**.51313**	**.52122**	**4.1496**	**51.824**	**1.0450**
Stddev	.00053	.00038	.00040	.00239	.0217	.086	.0064
%RSD	1.0374	.18497	.07884	.45778	.52422	.16565	.60961
#1	.05201	.20708	.51297	.51947	4.1602	51.775	1.0391
#2	.05164	.20754	.51283	.52394	4.1246	51.773	1.0517
#3	.05096	.20678	.51359	.52026	4.1640	51.923	1.0442
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.365**	**.51748**	**1.0289**	**52.020**	**.52164**	**10.278**	**.51633**
Stddev	.087	.00146	.0058	.056	.00105	.029	.00388
%RSD	.84013	.28224	.56032	.10741	.20123	.27986	.75206
#1	10.444	.51915	1.0335	51.957	.52178	10.279	.51436
#2	10.378	.51684	1.0308	52.062	.52261	10.306	.52080
#3	10.271	.51645	1.0225	52.042	.52052	10.249	.51381
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 14:25:18 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2446**	**.40802**	**5.2183**	**1.0274**	**1.0363**	**1.0285**	**.51759**
Stddev	.0023	.00604	.0089	.0012	.0017	.0067	.00261
%RSD	.18445	1.4800	.17081	.11732	.16361	.65413	.50434
#1	1.2468	.40186	5.2137	1.0272	1.0367	1.0216	.51819
#2	1.2449	.41392	5.2286	1.0286	1.0377	1.0289	.51985
#3	1.2422	.40829	5.2127	1.0262	1.0344	1.0351	.51473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0241**	**1.0338**	F **-.06192**
Stddev	.0027	.0025	.13680
%RSD	.26305	.23934	220.92
#1	1.0256	1.0347	-.12891
#2	1.0256	1.0357	-.15233
#3	1.0210	1.0310	.09546
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6790.5**	**41937.**	**2171.8**
Stddev	14.3	237.	31.3
%RSD	.21009	.56402	1.4431
#1	6793.6	42002.	2142.6
#2	6774.9	41675.	2204.9
#3	6802.9	42135.	2167.9

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 14:28:57 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00068**	**.00684**	**.00039**	**.00405**	**-.00014**	**-.00001**	**.01111**
Stddev	.00139	.00533	.00047	.00294	.00042	.00014	.05193
%RSD	204.27	77.917	119.96	72.476	307.90	1309.0	467.61
#1	.00203	.00321	.00027	.00312	.00020	.00006	.02540
#2	-.00074	.00435	-.00001	.00734	-.00061	-.00017	.05439
#3	.00075	.01296	.00090	.00169	-.00000	.00008	-.04648
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00006**	**.00013**	**.00175**	**-.00169**	**-.03481**	**.03957**	**-.00259**
Stddev	.00015	.00019	.00125	.00122	.01045	.07332	.00926
%RSD	234.29	139.55	71.393	71.935	30.013	185.30	357.55
#1	.00015	.00011	.00272	-.00149	-.03890	.12238	-.01323
#2	-.00011	-.00004	.00034	-.00059	-.02294	-.01707	.00367
#3	.00015	.00033	.00220	-.00299	-.04259	.01338	.00179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00762**	**.00145**	**.00451**	**.09184**	**.00017**	**-.00187**	**.00393**
Stddev	.06220	.00270	.00068	.03009	.00063	.00768	.00289
%RSD	816.14	186.07	15.116	32.766	369.41	409.76	73.613
#1	.05398	.00182	.00387	.11465	-.00014	-.00570	.00494
#2	-.07042	-.00142	.00443	.05773	-.00024	-.00688	.00067
#3	-.00642	.00395	.00522	.10312	.00090	.00697	.00619
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 14:28:57 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00279**	**.00482**	**.00847**	**.00053**	**.00006**	**.00257**	**-.00411**
Stddev	.00278	.00681	.00116	.00085	.00055	.00504	.00289
%RSD	99.442	141.35	13.644	158.61	926.38	195.66	70.433
#1	-.00026	.01020	.00758	.00147	.00031	.00784	-.00566
#2	.00347	-.00284	.00978	.00031	.00045	.00209	-.00589
#3	.00516	.00708	.00806	-.00018	-.00058	-.00220	-.00077
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00079**	**.00006**	F **-.39260**
Stddev	.00035	.00021	.05919
%RSD	44.671	327.48	15.076
#1	-.00108	.00012	-.33568
#2	-.00040	.00024	-.38830
#3	-.00090	-.00017	-.45382
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6873.8**	**43066.**	**2219.3**
Stddev	24.2	262.	10.6
%RSD	.35168	.60922	.47776
#1	6894.9	42910.	2212.4
#2	6847.5	43369.	2213.9
#3	6879.2	42920.	2231.5

Approved: June 24, 2016

Sample Name: L1606072901 Acquired: 6/23/2016 14:32:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00103**	**.20477**	**-.00132**	**.00218**	**.01021**	**.00012**	**.30745**	**.00047**
Stddev	.00053	.01327	.00471	.00232	.00114	.00003	.02774	.00015
%RSD	51.996	6.4798	356.90	106.25	11.138	25.468	9.0221	31.167
#1	.00051	.19008	.00260	-.00050	.01138	.00015	.32209	.00059
#2	.00157	.20831	-.00655	.00356	.00911	.00010	.32479	.00031
#3	.00100	.21590	-.00002	.00349	.01015	.00010	.27546	.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00053**	**.00267**	**-.00085**	**.77824**	**.42499**	**-.00305**	**.23675**	**.02029**
Stddev	.00027	.00103	.00058	.02700	.08780	.00861	.05586	.00118
%RSD	50.518	38.540	68.845	3.4690	20.660	282.38	23.595	5.8114
#1	.00022	.00290	-.00136	.75084	.33202	.00511	.29331	.01914
#2	.00068	.00356	-.00098	.80482	.50650	-.01205	.18162	.02149
#3	.00070	.00154	-.00021	.77905	.43645	-.00220	.23531	.02024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00083**	**.86266**	**.00042**	**.01404**	**.00097**	**-.00077**	**-.00134**	**.76395**
Stddev	.00051	.02574	.00063	.00375	.00275	.00513	.00230	.00735
%RSD	61.366	2.9839	148.39	26.677	282.93	667.71	172.38	.96211
#1	.00134	.88860	-.00030	.00973	-.00211	.00442	-.00008	.75683
#2	.00082	.86224	.00077	.01648	.00317	-.00089	.00007	.76352
#3	.00032	.83713	.00080	.01592	.00186	-.00583	-.00399	.77151
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606072901 Acquired: 6/23/2016 14:32:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	.00368	.00790	.00091	.00042	.00382	.00650
Stddev	.00078	.00018	.01121	.00106	.00050	.00012	.11639
%RSD	100.57	5.0167	141.79	116.57	120.43	3.0763	1791.7
#1	-.00009	.00388	-.00377	.00178	.00087	.00368	.14066
#2	.00143	.00363	.01857	.00120	-.00012	.00388	-.06741
#3	.00097	.00352	.00891	-.00027	.00049	.00389	-.05376
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6901.1	42979.	2151.2
Stddev	19.2	285.	20.3
%RSD	.27820	.66224	.94575
#1	6910.1	42716.	2144.7
#2	6879.1	42940.	2174.0
#3	6914.2	43281.	2134.9

Approved: June 24, 2016

Sample Name: L1606072903 Acquired: 6/23/2016 14:36:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00094	.33608	-.00131	.00564	.00616	.00028	5.3240	.00024
Stddev	.00198	.00768	.00306	.00252	.00005	.00002	.0535	.00020
%RSD	210.97	2.2849	233.73	44.693	.84156	5.9585	1.0055	83.951
#1	-.00250	.34457	-.00041	.00677	.00622	.00030	5.3370	.00012
#2	-.00160	.33405	.00120	.00275	.00614	.00027	5.2651	.00012
#3	.00129	.32962	-.00472	.00739	.00612	.00029	5.3698	.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00548	.00093	.00024	.32576	.22463	-.00164	1.5833	.08416
Stddev	.00028	.00184	.00153	.03169	.09456	.00642	.0663	.00253
%RSD	5.0708	199.26	630.81	9.7265	42.093	390.50	4.1863	3.0039
#1	.00547	.00063	-.00138	.32125	.31484	-.00892	1.6253	.08128
#2	.00576	-.00075	.00164	.29657	.12626	.00078	1.5069	.08600
#3	.00520	.00290	.00047	.35946	.23280	.00321	1.6177	.08520
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.67183	.00202	.00827	.00144	-.00380	-.00466	.60971
Stddev	.00034	.01528	.00167	.00684	.00325	.00501	.00541	.00733
%RSD	171.43	2.2750	82.664	82.772	226.43	132.11	116.12	1.2017
#1	-.00013	.68370	.00049	.01582	-.00007	-.00544	-.01091	.60649
#2	.00017	.65459	.00380	.00649	.00517	-.00778	-.00164	.60453
#3	.00055	.67721	.00176	.00249	-.00079	.00184	-.00144	.61809
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606072903 Acquired: 6/23/2016 14:36:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	.04758	.01193	-.00049	-.00069	.00682	.19864
Stddev	.00020	.00030	.00301	.00156	.00048	.00021	.25703
%RSD	23.011	.62722	25.235	318.54	70.477	3.0551	129.40
#1	.00102	.04760	.01334	-.00168	-.00078	.00688	-.08790
#2	.00096	.04787	.00847	.00128	-.00112	.00658	.27491
#3	.00065	.04727	.01398	-.00107	-.00016	.00698	.40890
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6965.2	43094.	2177.3
Stddev	15.3	76.	32.6
%RSD	.21966	.17684	1.4974
#1	6962.6	43145.	2141.8
#2	6981.7	43006.	2184.2
#3	6951.4	43131.	2205.9

Approved: June 24, 2016

Sample Name: L1606073001 Acquired: 6/23/2016 14:40:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.00616	.00037	.00349	.02625	.00006	3.9162
Stddev	.00335	.00482	.00309	.00065	.00035	.00006	.0556
%RSD	564.87	78.283	834.66	18.491	1.3216	106.85	1.4210
#1	.00444	.01164	-.00103	.00328	.02619	.00005	3.8953
#2	-.00105	.00259	-.00177	.00422	.02663	.00013	3.8741
#3	-.00161	.00425	.00392	.00298	.02594	.00000	3.9793
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	-.00033	.00192	-.00122	-.01907	.37213	-.00062
Stddev	.00029	.00023	.00070	.00142	.03046	.01397	.00645
%RSD	73.054	68.840	36.466	116.28	159.68	3.7528	1041.9
#1	.00063	-.00043	.00172	-.00275	.00425	.36288	.00114
#2	.00007	-.00007	.00269	.00006	-.05353	.36531	-.00777
#3	.00050	-.00048	.00134	-.00098	-.00794	.38819	.00477
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09432	.00289	.00055	3.0211	-.00098	.01000	.00131
Stddev	.14378	.00050	.00029	.0512	.00050	.00813	.00252
%RSD	152.43	17.247	51.863	1.6958	50.999	81.317	192.75
#1	.19256	.00246	.00087	2.9729	-.00134	.01243	.00264
#2	-.07070	.00277	.00046	3.0155	-.00041	.01663	.00288
#3	.16111	.00343	.00032	3.0749	-.00119	.00093	-.00160
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606073001 Acquired: 6/23/2016 14:40:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00098	.00138	.09081	.00094	.24565	.00908	.00018
Stddev	.00150	.01124	.00206	.00054	.00245	.00487	.00266
%RSD	153.60	812.48	2.2711	57.604	.99651	53.609	1475.0
#1	-.00029	-.00680	.09067	.00035	.24300	.00356	-.00259
#2	.00059	.01419	.08882	.00108	.24613	.01277	.00272
#3	.00264	-.00325	.09294	.00141	.24782	.01091	.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00029	.00054	F -.09488
Stddev	.00071	.00025	.31939
%RSD	242.69	45.791	336.63
#1	-.00028	.00030	.08622
#2	-.00102	.00079	-.46366
#3	.00041	.00053	.09280
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6849.4	42570.	2167.2
Stddev	35.5	125.	28.6
%RSD	.51829	.29286	1.3210
#1	6875.7	42440.	2198.6
#2	6863.4	42689.	2160.4
#3	6809.0	42580.	2142.5

Approved: June 24, 2016

Sample Name: L1606073002 Acquired: 6/23/2016 14:44:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00017**	**.01083**	**-.00205**	**.00068**	**.02540**	**.00015**	**3.8128**
Stddev	.00133	.00120	.00144	.00218	.00124	.00005	.0165
%RSD	768.03	11.069	69.997	322.04	4.8845	32.561	.43336
#1	-.00136	.01193	-.00368	.00286	.02637	.00011	3.8166
#2	.00089	.00955	-.00148	-.00151	.02400	.00020	3.7948
#3	.00099	.01100	-.00099	.00068	.02582	.00013	3.8271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00027**	**.00024**	**.00238**	**-.00072**	**-.00102**	**.33240**	**-.00150**
Stddev	.00031	.00067	.00070	.00078	.03059	.08106	.00543
%RSD	116.50	277.35	29.547	107.87	2985.6	24.386	362.53
#1	.00046	.00097	.00198	-.00007	-.03428	.42140	.00454
#2	-.00009	.00009	.00197	-.00158	.00527	.31296	-.00598
#3	.00042	-.00034	.00320	-.00052	.02593	.26282	-.00305
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.08263**	**-.00127**	**.00011**	**2.9817**	**-.00201**	**.00849**	**.00399**
Stddev	.10700	.00354	.00040	.0541	.00161	.01034	.00729
%RSD	129.49	278.60	368.84	1.8148	80.212	121.72	182.85
#1	.12830	-.00124	.00054	3.0211	-.00070	.02020	-.00010
#2	-.03962	-.00483	-.00026	2.9200	-.00381	.00062	.01240
#3	.15921	.00225	.00005	3.0039	-.00151	.00466	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606073002 Acquired: 6/23/2016 14:44:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00184**	**.00620**	**.08953**	**.00070**	**.24109**	**.00037**	**-.00136**
Stddev	.00446	.00364	.00198	.00084	.00389	.00307	.00210
%RSD	242.07	58.803	2.2141	119.60	1.6120	831.83	154.38
#1	-.00677	.00350	.08733	.00005	.24147	.00226	-.00229
#2	.00192	.01034	.09119	.00040	.23703	.00202	-.00284
#3	-.00067	.00474	.09006	.00164	.24478	-.00317	.00105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00051**	**.00070**	F **-.24102**
Stddev	.00283	.00010	.11806
%RSD	551.12	14.785	48.982
#1	.00158	.00072	-.15363
#2	.00061	.00079	-.19411
#3	-.00373	.00059	-.37532
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6840.3**	**42417.**	**2160.9**
Stddev	59.2	242.	14.5
%RSD	.86491	.56950	.67170
#1	6867.8	42609.	2155.8
#2	6772.3	42497.	2177.3
#3	6880.6	42146.	2149.7

Approved: June 24, 2016

Sample Name: L1606073003 Acquired: 6/23/2016 14:48:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00055**	**.01128**	**-.00360**	**.00095**	**.09229**	**.00002**	**3.4454**
Stddev	.00294	.01174	.00423	.00193	.00276	.00001	.0759
%RSD	534.98	104.10	117.37	203.76	2.9914	63.105	2.2014
#1	.00353	.01187	-.00535	.00225	.08912	.00002	3.3587
#2	-.00235	-.00075	.00122	-.00127	.09417	.00004	3.4781
#3	.00047	.02271	-.00667	.00188	.09358	.00001	3.4994
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00047**	**.00032**	**.00060**	**.00028**	**.05676**	**.04348**	**.00010**
Stddev	.00029	.00040	.00086	.00135	.01517	.10320	.00444
%RSD	60.846	126.16	142.92	481.42	26.736	237.38	4312.3
#1	.00069	.00062	-.00010	.00179	.05340	.16110	-.00312
#2	.00015	.00047	.00034	-.00012	.04354	.00124	.00516
#3	.00058	-.00014	.00157	-.00082	.07333	-.03191	-.00174
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.1211**	**.00612**	**.00035**	**8.7390**	**-.00056**	**.00954**	**.00317**
Stddev	.0586	.00084	.00008	.1820	.00126	.01316	.00361
%RSD	2.7622	13.667	23.949	2.0828	224.18	138.03	114.02
#1	2.0534	.00679	.00028	8.5296	.00086	-.00088	.00724
#2	2.1559	.00518	.00045	8.8598	-.00102	.02433	.00034
#3	2.1538	.00638	.00034	8.8275	-.00152	.00516	.00193
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606073003 Acquired: 6/23/2016 14:48:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00137**	**.00017**	**.16478**	**-.00039**	**.07546**	**.00790**	**-.00140**
Stddev	.00416	.00381	.00381	.00111	.00268	.00448	.00325
%RSD	303.81	2305.1	2.3143	282.95	3.5523	56.785	231.19
#1	.00324	.00456	.16046	-.00122	.07236	.00467	.00171
#2	-.00483	-.00216	.16767	.00087	.07707	.01302	-.00115
#3	-.00252	-.00190	.16622	-.00083	.07693	.00600	-.00477
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00080**	**.00049**	F **-.49766**
Stddev	.00035	.00012	.27901
%RSD	43.847	24.954	56.065
#1	-.00120	.00048	-.66239
#2	-.00070	.00061	-.65508
#3	-.00052	.00037	-.17551
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6909.4**	**42385.**	**2199.2**
Stddev	85.6	560.	44.7
%RSD	1.2389	1.3218	2.0328
#1	6964.9	42416.	2245.9
#2	6810.8	42929.	2156.9
#3	6952.4	41810.	2194.7

Approved: June 24, 2016

Sample Name: L1606079806 Acquired: 6/23/2016 14:52:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00172	.03292	-.00480	.00673	-.00023	.00008	4.1415
Stddev	.00289	.00555	.00057	.00215	.00045	.00003	.0589
%RSD	167.55	16.855	11.845	31.992	189.92	35.476	1.4213
#1	.00229	.02652	-.00539	.00560	-.00013	.00010	4.1840
#2	-.00141	.03586	-.00476	.00921	-.00072	.00005	4.0743
#3	.00429	.03639	-.00425	.00538	.00015	.00009	4.1662
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.00029	.00067	.00027	.03525	.95621	-.00238
Stddev	.00022	.00037	.00038	.00048	.02860	.05109	.00098
%RSD	68.237	128.88	56.635	179.92	81.137	5.3431	41.163
#1	.00025	.00026	.00057	-.00014	.04638	.89722	-.00177
#2	.00015	-.00007	.00109	.00080	.00276	.98490	-.00351
#3	.00057	.00068	.00035	.00015	.05661	.98650	-.00186
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.22291	.04167	.00051	1.6649	-.00058	.11093	.00427
Stddev	.03032	.00317	.00005	.0494	.00129	.00517	.00167
%RSD	13.600	7.6072	9.5760	2.9645	223.14	4.6572	39.196
#1	.19841	.04523	.00053	1.7187	-.00196	.11261	.00621
#2	.25681	.03916	.00045	1.6218	-.00037	.11505	.00330
#3	.21351	.04061	.00054	1.6542	.00060	.10514	.00331
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606079806 Acquired: 6/23/2016 14:52:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00090	.00853	.10041	.00029	.00840	.00456	-.00331
Stddev	.00606	.00547	.00496	.00066	.00076	.00979	.00385
%RSD	670.85	64.066	4.9419	223.71	9.0388	214.73	116.40
#1	-.00610	.01332	.09874	.00104	.00908	-.00436	-.00335
#2	.00445	.00258	.09649	-.00019	.00758	.01504	-.00714
#3	.00436	.00969	.10599	.00003	.00852	.00300	.00056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00108	.00379	F -.12134
Stddev	.00143	.00002	.45676
%RSD	132.69	.64499	376.42
#1	.00048	.00382	-.46260
#2	-.00232	.00377	.39755
#3	-.00139	.00380	-.29898
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6843.0	42928.	2203.1
Stddev	10.6	399.	20.9
%RSD	.15555	.92941	.94688
#1	6853.1	43236.	2180.6
#2	6844.0	42477.	2221.8
#3	6831.9	43070.	2207.0

Approved: June 24, 2016

Sample Name: L1606083702 Acquired: 6/23/2016 14:56:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00103	33.857	.01885	.09424	.42276	.00271	61.580
Stddev	.00116	.523	.00142	.00266	.00475	.00005	.605
%RSD	112.59	1.5444	7.5406	2.8236	1.1243	1.9678	.98167
#1	.00045	33.254	.02049	.09497	.42332	.00273	62.020
#2	.00028	34.133	.01796	.09647	.42721	.00276	61.828
#3	.00236	34.185	.01811	.09129	.41775	.00266	60.890
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00158	.03539	.25107	.16869	93.694	11.512	.04006
Stddev	.00031	.00035	.00308	.00084	1.110	.087	.00415
%RSD	19.902	1.0004	1.2276	.49779	1.1849	.75934	10.368
#1	.00164	.03511	.24822	.16866	94.581	11.593	.03794
#2	.00124	.03527	.25434	.16955	94.053	11.523	.04485
#3	.00185	.03578	.25064	.16787	92.449	11.420	.03740
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	17.243	1.3068	.09317	14.697	.12633	1.5684	.05340
Stddev	.403	.0150	.00071	.155	.00154	.0065	.00035
%RSD	2.3401	1.1447	.75952	1.0519	1.2191	.41297	.66412
#1	17.343	1.3237	.09309	14.771	.12800	1.5724	.05368
#2	17.586	1.3015	.09391	14.799	.12602	1.5719	.05300
#3	16.798	1.2953	.09251	14.519	.12497	1.5609	.05351
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606083702 Acquired: 6/23/2016 14:56:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00468	.00688	F 49.401	.00852	.24330	.70184	-.00081
Stddev	.00376	.00767	.188	.00007	.00135	.00911	.00079
%RSD	80.452	111.46	.38077	.81926	.55626	1.2982	97.258
#1	-.00342	.00621	49.502	.00844	.24396	.69824	.00000
#2	-.00171	-.00043	49.517	.00857	.24419	.71220	-.00157
#3	-.00891	.01487	49.184	.00853	.24174	.69507	-.00086
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-1.0000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.07972	1.6548	4.0068
Stddev	.00275	.0052	.2116
%RSD	3.4445	.31177	5.2802
#1	.07661	1.6562	4.1269
#2	.08074	1.6591	4.1310
#3	.08181	1.6490	3.7625
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7040.4	43524.	2280.2
Stddev	23.2	392.	46.0
%RSD	.32915	.90067	2.0194
#1	7044.1	43916.	2252.6
#2	7015.6	43132.	2254.7
#3	7061.5	43525.	2333.4

Approved: June 24, 2016

Sample Name: L1606076301 Acquired: 6/23/2016 15:00:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 2000 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00209	.00627	.00216	.02527	.48529	.00009	6.9887
Stddev	.00272	.01885	.00159	.00167	.00114	.00009	.0306
%RSD	129.86	300.66	73.428	6.6226	.23547	97.727	.43743
#1	-.00051	.00191	.00231	.02362	.48659	.00008	6.9546
#2	.00491	.02692	.00051	.02696	.48443	.00001	7.0136
#3	.00188	-.01002	.00368	.02522	.48485	.00018	6.9981
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	-.00007	.00164	-.00209	.05206	.55309	.03828
Stddev	.00039	.00053	.00064	.00068	.03153	.15560	.00148
%RSD	147.80	766.58	39.062	32.660	60.562	28.132	3.8546
#1	.00002	-.00006	.00153	-.00135	.08578	.50218	.03687
#2	.00072	.00046	.00106	-.00270	.04705	.72777	.03816
#3	.00005	-.00060	.00232	-.00221	.02333	.42933	.03981
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.80937	.00615	.00011	18.432	-.00084	.01113	.00495
Stddev	.07243	.00368	.00028	.051	.00072	.00634	.00126
%RSD	8.9487	59.847	241.18	.27432	85.170	57.003	25.523
#1	.74808	.00514	.00035	18.483	-.00005	.01420	.00640
#2	.88929	.00308	-.00019	18.382	-.00145	.01535	.00415
#3	.79073	.01023	.00018	18.430	-.00103	.00383	.00429
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606076301 Acquired: 6/23/2016 15:00:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 2000 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00303**	**.00197**	**.01915**	**.00072**	**1.2567**	**.00585**	**-.00090**
Stddev	.00426	.00853	.00295	.00087	.0008	.00852	.00356
%RSD	140.49	432.89	15.427	121.09	.05936	145.65	397.05
#1	.00172	.00221	.01973	.00139	1.2559	-.00393	.00299
#2	-.00650	.01037	.01595	.00103	1.2573	.01163	-.00169
#3	-.00432	-.00668	.02178	-.00026	1.2570	.00985	-.00399
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00051**	**.00049**	F **-.04104**
Stddev	.00064	.00013	.38903
%RSD	125.10	27.351	948.00
#1	-.00100	.00058	-.48337
#2	.00021	.00033	.24794
#3	-.00075	.00055	.11232
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6956.6**	**43183.**	**2199.2**
Stddev	54.4	430.	23.1
%RSD	.78258	.99497	1.0493
#1	6897.1	43389.	2175.5
#2	7003.8	42689.	2221.6
#3	6969.0	43471.	2200.5

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 15:04:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.42738	10.225	.42355	.51012	1.0244	.05065	10.091
Stddev	.00539	.091	.00940	.00307	.0059	.00037	.032
%RSD	1.2616	.89220	2.2182	.60127	.57526	.72572	.31685
#1	.43352	10.304	.41275	.51099	1.0233	.05098	10.124
#2	.42518	10.125	.42814	.51265	1.0307	.05026	10.090
#3	.42343	10.245	.42977	.50671	1.0191	.05072	10.060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05206	.21028	.51417	.52677	4.1200	51.074	1.0411
Stddev	.00053	.00344	.00348	.01016	.0524	.111	.0062
%RSD	1.0133	1.6372	.67695	1.9286	1.2706	.21701	.59918
#1	.05150	.20662	.51607	.51557	4.0788	51.072	1.0407
#2	.05215	.21077	.51015	.52936	4.1789	51.186	1.0475
#3	.05254	.21346	.51628	.53538	4.1023	50.964	1.0351
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.113	.51188	1.0430	51.213	.52516	10.399	.52247
Stddev	.033	.00526	.0152	.231	.01144	.198	.01294
%RSD	.32155	1.0286	1.4605	.45051	2.1789	1.9024	2.4764
#1	10.090	.51095	1.0261	51.190	.51316	10.183	.51032
#2	10.100	.51755	1.0473	51.454	.52639	10.443	.52101
#3	10.151	.50715	1.0556	50.995	.53595	10.572	.53607
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 15:04:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2622**	**.41756**	**5.2863**	**1.0398**	**1.0224**	**1.0081**	**.52620**
Stddev	.0172	.01202	.1013	.0212	.0050	.0168	.01061
%RSD	1.3628	2.8782	1.9163	2.0349	.48725	1.6684	2.0157
#1	1.2445	.40471	5.1785	1.0162	1.0221	.99826	.51546
#2	1.2633	.42852	5.3008	1.0459	1.0276	1.0275	.52647
#3	1.2788	.41945	5.3795	1.0572	1.0176	.99852	.53667
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0245**	**1.0446**	F **.30237**
Stddev	.0058	.0191	.11177
%RSD	.56950	1.8236	36.966
#1	1.0294	1.0239	.21395
#2	1.0181	1.0484	.42800
#3	1.0259	1.0614	.26515
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6742.0**	**42317.**	**2192.6**
Stddev	87.2	372.	30.2
%RSD	1.2933	.87896	1.3758
#1	6830.2	42166.	2173.3
#2	6739.8	42741.	2177.1
#3	6655.9	42044.	2227.3

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 15:08:09 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00165**	**.01698**	**.00203**	**.00543**	**.00119**	**.00012**	**-.02429**
Stddev	.00195	.00654	.00152	.00145	.00127	.00007	.00281
%RSD	118.20	38.505	75.033	26.749	107.33	59.090	11.574
#1	-.00044	.01513	.00183	.00559	.00162	.00008	-.02105
#2	.00342	.01157	.00363	.00390	-.00025	.00009	-.02611
#3	.00196	.02425	.00061	.00679	.00218	.00021	-.02570
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.00021**	**.00208**	**-.00115**	**-.00919**	**.13134**	**-.00257**
Stddev	.00022	.00023	.00133	.00177	.02889	.16842	.00681
%RSD	385.67	112.78	63.704	153.40	314.27	128.23	265.13
#1	-.00015	-.00001	.00141	.00076	.02413	.31843	-.00487
#2	-.00022	.00045	.00361	-.00149	-.02726	-.00819	.00509
#3	.00020	.00018	.00123	-.00273	-.02444	.08379	-.00793
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03703**	**.00048**	**.00464**	**.04952**	**-.00087**	**-.00385**	F **.00550**
Stddev	.05363	.00205	.00051	.02064	.00055	.00333	.00438
%RSD	144.81	427.88	10.944	41.670	63.582	86.433	79.629
#1	-.02401	-.00081	.00408	.07276	-.00099	-.00608	.00137
#2	.05854	-.00060	.00478	.04248	-.00135	-.00546	.00504
#3	.07657	.00284	.00507	.03333	-.00027	-.00002	.01010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							.00500
Low Limit							-.00500

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 15:08:09 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00190**	**.00960**	**.00918**	**.00035**	**.00048**	**.00265**	**-.00074**
Stddev	.00634	.00369	.00360	.00070	.00044	.00545	.00148
%RSD	334.41	38.448	39.161	198.03	92.306	205.78	199.13
#1	.00543	.01383	.00505	.00076	.00032	.00705	.00096
#2	-.00566	.00709	.01162	-.00045	.00097	-.00344	-.00148
#3	-.00545	.00786	.01087	.00076	.00014	.00434	-.00171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00082**	**-.00017**	F **-.48223**
Stddev	.00142	.00006	.08088
%RSD	173.58	35.228	16.772
#1	-.00234	-.00022	-.41477
#2	.00049	-.00010	-.46001
#3	-.00061	-.00017	-.57189
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6825.4**	**42257.**	**2184.3**
Stddev	15.3	2149.	8.4
%RSD	.22359	5.0854	.38501
#1	6842.1	43585.	2177.3
#2	6821.7	43408.	2193.6
#3	6812.3	39777.	2182.1

Approved: June 24, 2016

Sample Name: LLCCV Acquired: 6/23/2016 15:12:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00900**	**.19078**	**.00767**	**.08599**	**.00976**	**.00164**	**.37400**	**.00143**
Stddev	.00038	.00658	.00428	.00071	.00082	.00004	.02888	.00026
%RSD	4.2583	3.4477	55.791	.82106	8.4373	2.4498	7.7231	18.189
#1	.00920	.19742	.01158	.08642	.00935	.00167	.34688	.00165
#2	.00925	.18427	.00832	.08637	.00922	.00160	.40437	.00149
#3	.00856	.19065	.00310	.08517	.01071	.00167	.37075	.00114
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00437**	**.00454**	**.00423**	**.08499**	**.95099**	**.08309**	**.42598**	**.00933**
Stddev	.00026	.00120	.00118	.02252	.18201	.00250	.04612	.00260
%RSD	5.9228	26.460	27.815	26.494	19.139	3.0129	10.828	27.902
#1	.00437	.00540	.00558	.10931	.94621	.08030	.47657	.00727
#2	.00411	.00505	.00373	.06486	.77142	.08381	.41507	.00846
#3	.00463	.00317	.00339	.08082	1.1353	.08515	.38628	.01225
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00906**	**.50543**	**.01575**	**.83822**	**.01206**	**.08796**	**.02110**	**.86437**
Stddev	.00045	.01423	.00111	.00843	.00061	.00300	.00981	.00437
%RSD	4.9498	2.8156	7.0712	1.0058	5.0700	3.4062	46.487	.50596
#1	.00855	.48956	.01609	.83135	.01163	.08885	.02568	.86154
#2	.00934	.51706	.01664	.84763	.01276	.09042	.00984	.86217
#3	.00930	.50965	.01450	.83568	.01180	.08462	.02778	.86941
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: LLCCV Acquired: 6/23/2016 15:12:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.42833**	**.04265**	**.02782**	**.15622**	**.00760**	**.01768**	**19.398**
Stddev	.00202	.00078	.00320	.00149	.00082	.00018	.364
%RSD	.47120	1.8184	11.486	.95612	10.759	1.0376	1.8748
#1	.43055	.04189	.02625	.15477	.00737	.01787	19.046
#2	.42783	.04344	.03150	.15612	.00850	.01767	19.773
#3	.42661	.04262	.02572	.15776	.00692	.01750	19.376
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6741.4**	**42149.**	**2154.7**
Stddev	40.7	448.	3.9
%RSD	.60444	1.0621	.18286
#1	6739.4	41643.	2153.9
#2	6701.8	42314.	2159.0
#3	6783.2	42491.	2151.2

Approved: June 24, 2016

Sample Name: L1606072401 Acquired: 6/23/2016 15:16:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00277	.01879	.00029	.96014	2.4170	.00001	173.53
Stddev	.00234	.00416	.00093	.00391	.0133	.00011	.98
%RSD	84.467	22.118	321.95	.40684	.55081	1049.3	.56425
#1	.00226	.02192	.00135	.95713	2.4039	.00010	172.57
#2	.00533	.01408	-.00038	.95873	2.4305	.00004	174.53
#3	.00073	.02039	-.00011	.96455	2.4166	-.00011	173.50
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	.00105	.00268	-.00010	.88444	14.199	.57377
Stddev	.00030	.00019	.00115	.00121	.03836	.163	.00568
%RSD	60.201	18.370	42.910	1155.9	4.3367	1.1492	.98942
#1	.00039	.00127	.00146	.00113	.88346	14.011	.56748
#2	.00027	.00096	.00284	-.00016	.92327	14.311	.57853
#3	.00084	.00091	.00374	-.00128	.84658	14.273	.57529
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	16.994	.07845	.00033	F 412.25	-.00165	.00224	.00196
Stddev	.190	.00271	.00048	2.14	.00067	.00447	.00418
%RSD	1.1178	3.4582	144.78	.51818	40.333	199.28	213.26
#1	16.808	.07648	-.00014	409.89	-.00181	.00740	.00030
#2	16.986	.08154	.00032	414.05	-.00223	-.00047	.00672
#3	17.188	.07731	.00081	412.81	-.00092	-.00020	-.00113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 24, 2016

Sample Name: L1606072401 Acquired: 6/23/2016 15:16:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00083	.00344	.10306	.00025	F 33.286	-.01719	.00197
Stddev	.00660	.01147	.00129	.00070	.662	.00384	.00073
%RSD	796.07	333.14	1.2495	284.34	1.9888	22.354	37.258
#1	.00514	-.00975	.10450	-.00055	33.434	-.01505	.00161
#2	-.00677	.01101	.10202	.00075	32.563	-.02162	.00281
#3	.00412	.00907	.10266	.00054	33.862	-.01489	.00148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00083	.00418	F -.23243
Stddev	.00050	.00012	.29004
%RSD	59.630	2.9539	124.79
#1	-.00137	.00405	-.37729
#2	-.00039	.00420	.10151
#3	-.00074	.00429	-.42150
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6723.1	41417.	2153.6
Stddev	21.6	497.	27.2
%RSD	.32089	1.1995	1.2626
#1	6746.3	40877.	2166.1
#2	6703.6	41854.	2172.4
#3	6719.4	41522.	2122.5

Approved: June 24, 2016

Sample Name: L1606076201 Acquired: 6/23/2016 15:20:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.02536	-.00249	.01844	.00535	.00003	13.112	.00023
Stddev	.00127	.01968	.00199	.00200	.00076	.00010	.093	.00036
%RSD	1210.9	77.601	79.841	10.824	14.251	352.87	.70940	158.39
#1	-.00133	.03591	-.00453	.02010	.00610	.00006	13.202	.00020
#2	.00108	.00266	-.00239	.01899	.00537	.00011	13.118	.00059
#3	.00057	.03753	-.00056	.01623	.00458	-.00009	13.016	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.00194	-.00001	.01450	1.0331	.00146	1.8703	.00269
Stddev	.00018	.00175	.00196	.01085	.0976	.00077	.1297	.00116
%RSD	179.15	90.064	25521.	74.817	9.4452	53.000	6.9359	42.985
#1	-.00008	.00349	.00137	.01074	1.1059	.00167	1.9776	.00278
#2	.00007	.00229	-.00225	.00603	.92218	.00060	1.7261	.00380
#3	-.00029	.00005	.00086	.02673	1.0711	.00210	1.9073	.00149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00119	1.9239	-.00066	-.00546	.00006	-.00042	.00466	2.2221
Stddev	.00030	.0280	.00136	.00908	.00267	.00575	.00011	.0019
%RSD	25.010	1.4533	206.81	166.34	4184.1	1357.9	2.3851	.08626
#1	.00148	1.9518	-.00109	.00488	-.00200	-.00344	.00454	2.2236
#2	.00121	1.8959	-.00174	-.01213	.00308	-.00405	.00474	2.2227
#3	.00089	1.9239	.00086	-.00913	-.00089	.00621	.00472	2.2199
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606076201 Acquired: 6/23/2016 15:20:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00040**	**.04721**	**.00638**	**.00000**	**-.00085**	**.00130**	**.50415**
Stddev	.00136	.00033	.00533	.00127	.00101	.00013	.13507
%RSD	341.17	.70394	83.621	32921.	119.58	10.205	26.791
#1	.00187	.04759	.00544	-.00091	.00031	.00144	.65988
#2	.00015	.04708	.00158	-.00053	-.00127	.00129	.41889
#3	-.00082	.04697	.01212	.00145	-.00158	.00117	.43368
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6705.8**	**41937.**	**2141.7**
Stddev	7.3	291.	9.9
%RSD	.10956	.69290	.46000
#1	6707.2	41673.	2137.5
#2	6697.9	41888.	2134.7
#3	6712.4	42248.	2153.0

Approved: June 24, 2016

Sample Name: L1606077918 Acquired: 6/23/2016 15:24:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00167	.01863	-.00253	.02217	.00148	.00003	.01869	.00029
Stddev	.00214	.00655	.00149	.00110	.00241	.00005	.08144	.00024
%RSD	128.32	35.170	59.064	4.9626	162.98	181.98	435.85	82.700
#1	.00243	.01329	-.00293	.02326	-.00126	.00009	.02943	.00045
#2	-.00075	.02594	-.00088	.02220	.00327	-.00002	.09422	.00001
#3	.00332	.01665	-.00378	.02106	.00243	.00002	-.06760	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	.00192	.00078	-.01653	-.02200	-.00394	-.01131	-.00011
Stddev	.00029	.00013	.00054	.01402	.10641	.00102	.07303	.00282
%RSD	164.29	6.8552	69.534	84.801	483.77	25.969	645.89	2502.9
#1	-.00050	.00178	.00029	-.01912	.09171	-.00295	.07302	-.00190
#2	-.00010	.00204	.00136	-.00140	-.03853	-.00500	-.05410	.00314
#3	.00007	.00193	.00070	-.02907	-.11917	-.00387	-.05284	-.00157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	2.0695	-.00008	-.00529	.00154	-.00212	.00188	.14025
Stddev	.00033	.0606	.00084	.00055	.00138	.00317	.00994	.00166
%RSD	44.530	2.9288	1113.0	10.468	89.385	149.30	528.79	1.1848
#1	.00102	2.1357	.00074	-.00465	.00046	-.00572	.00864	.14193
#2	.00079	2.0167	-.00094	-.00563	.00107	.00028	.00653	.14022
#3	.00038	2.0563	-.00003	-.00558	.00309	-.00094	-.00953	.13861
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606077918 Acquired: 6/23/2016 15:24:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.00126	.00815	-.00353	-.00074	.00157	.11270
Stddev	.00035	.00043	.01205	.00082	.00125	.00009	.15849
%RSD	67.954	34.228	147.85	23.195	169.72	6.0212	140.63
#1	.00087	.00176	-.00539	-.00440	.00069	.00167	-.04429
#2	.00053	.00100	.01768	-.00277	-.00127	.00150	.10974
#3	.00016	.00103	.01216	-.00342	-.00163	.00153	.27265
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6730.2	41984.	2122.6
Stddev	9.9	392.	7.1
%RSD	.14640	.93343	.33457
#1	6723.8	41604.	2115.9
#2	6741.6	41961.	2130.1
#3	6725.4	42387.	2121.9

Approved: June 24, 2016

Sample Name: L1606078701 Acquired: 6/23/2016 15:28:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00134**	**.02016**	**-.00184**	**.00404**	**.00137**	**-.00001**	**.12352**
Stddev	.00329	.00145	.00162	.00051	.00066	.00012	.03646
%RSD	244.80	7.1928	87.867	12.618	48.048	1036.7	29.515
#1	-.00242	.01849	-.00198	.00347	.00108	.00002	.12792
#2	.00278	.02084	-.00338	.00444	.00212	.00009	.08506
#3	.00367	.02114	-.00016	.00420	.00091	-.00014	.15758
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00058**	**.00005**	**.00229**	**.00086**	**-.00893**	**.04033**	**.00067**
Stddev	.00021	.00060	.00129	.00091	.05697	.07103	.00112
%RSD	35.316	1231.2	56.527	104.93	637.77	176.11	168.56
#1	.00081	-.00042	.00094	-.00018	-.06783	.07929	-.00038
#2	.00052	.00072	.00242	.00145	-.00485	.08335	.00053
#3	.00042	-.00015	.00351	.00132	.04588	-.04165	.00185
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00079**	**.00355**	**.00016**	**.51805**	**-.00054**	**-.00239**	**-.00291**
Stddev	.04525	.00184	.00024	.02678	.00082	.01066	.00180
%RSD	5714.9	51.848	157.11	5.1696	151.92	446.68	61.810
#1	.02267	.00374	.00029	.54478	.00032	-.00520	-.00089
#2	-.05296	.00529	-.00013	.51816	-.00062	.00940	-.00435
#3	.02792	.00162	.00030	.49122	-.00131	-.01136	-.00349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606078701 Acquired: 6/23/2016 15:28:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00239**	**.00772**	**.13349**	**.00103**	**.00107**	**.00346**	**-.00334**
Stddev	.00234	.00402	.00019	.00058	.00048	.00641	.00040
%RSD	97.989	52.060	.14358	56.048	44.671	185.55	12.008
#1	-.00270	.00313	.13368	.00129	.00156	.00140	-.00288
#2	.00009	.00942	.13350	.00144	.00060	-.00168	-.00355
#3	-.00456	.01060	.13329	.00037	.00105	.01065	-.00360
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00117**	**.00491**	F **-.21371**
Stddev	.00101	.00036	.39855
%RSD	86.018	7.3434	186.50
#1	-.00212	.00530	.20425
#2	-.00129	.00459	-.25586
#3	-.00011	.00483	-.58951
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6740.9**	**42203.**	**2144.6**
Stddev	38.3	203.	23.0
%RSD	.56823	.48091	1.0724
#1	6770.7	42025.	2119.8
#2	6754.4	42161.	2165.3
#3	6697.7	42424.	2148.7

Approved: June 24, 2016

Sample Name: L1606078710 Acquired: 6/23/2016 15:32:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00084**	**.27296**	**-.00343**	**.04542**	**.09618**	**-.00003**	**57.392**
Stddev	.00117	.00475	.00186	.00269	.00132	.00003	.461
%RSD	138.82	1.7388	54.215	5.9151	1.3771	97.809	.80344
#1	-.00034	.27840	-.00365	.04242	.09771	-.00002	57.856
#2	.00087	.26969	-.00518	.04761	.09539	-.00001	57.384
#3	.00200	.27079	-.00147	.04623	.09544	-.00006	56.934
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00064**	**.00033**	**.00402**	**.00290**	**.23383**	**1.0771**	**.00900**
Stddev	.00017	.00013	.00208	.00129	.01456	.0457	.00428
%RSD	26.807	40.705	51.843	44.530	6.2269	4.2470	47.527
#1	.00083	.00031	.00175	.00376	.24955	1.0260	.00837
#2	.00058	.00047	.00585	.00354	.22081	1.1143	.01355
#3	.00051	.00020	.00444	.00142	.23113	1.0909	.00507
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**18.842**	**.01135**	**.00060**	**3.8640**	**-.00095**	**.19470**	**.00196**
Stddev	.177	.00110	.00029	.0359	.00078	.00332	.00221
%RSD	.93834	9.6581	48.710	.92870	82.442	1.7074	113.18
#1	18.724	.01117	.00027	3.8945	-.00012	.19396	.00367
#2	19.045	.01253	.00081	3.8731	-.00105	.19833	.00275
#3	18.757	.01036	.00074	3.8244	-.00167	.19180	-.00054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606078710 Acquired: 6/23/2016 15:32:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00214**	**.00030**	**9.5395**	**.00090**	**.15048**	**.00322**	**-.00111**
Stddev	.00331	.00448	.0053	.00019	.00007	.00950	.00409
%RSD	154.82	1486.1	.05501	20.991	.04682	294.96	367.19
#1	.00049	-.00485	9.5347	.00098	.15055	-.00075	-.00438
#2	-.00002	.00249	9.5451	.00068	.15047	.01406	-.00244
#3	.00595	.00326	9.5386	.00104	.15041	-.00365	.00348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00310**	**.00611**	F **-.09613**
Stddev	.00083	.00018	.38193
%RSD	26.810	2.9005	397.32
#1	.00381	.00625	.21134
#2	.00329	.00618	-.52366
#3	.00218	.00591	.02394
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6716.0**	**41811.**	**2141.5**
Stddev	20.0	38.	38.3
%RSD	.29820	.09082	1.7907
#1	6697.9	41817.	2120.8
#2	6712.8	41845.	2118.0
#3	6737.5	41770.	2185.8

Approved: June 24, 2016

Sample Name: L1606072402 Acquired: 6/23/2016 15:36:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.02429	.00126	1.0001	2.4553	.00011	175.12
Stddev	.00172	.00751	.00369	.0073	.0182	.00006	1.38
%RSD	1268.7	30.918	292.44	.72550	.74042	57.336	.79024
#1	.00202	.03260	.00295	.99250	2.4346	.00017	173.60
#2	-.00134	.01798	-.00297	1.0008	2.4623	.00013	175.43
#3	-.00027	.02231	.00381	1.0070	2.4689	.00004	176.32
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	.00144	.00224	.00109	.88917	14.331	.57927
Stddev	.00026	.00062	.00123	.00028	.02013	.196	.00713
%RSD	50.087	43.164	55.139	26.047	2.2642	1.3673	1.2310
#1	.00027	.00131	.00262	.00136	.90097	14.105	.57116
#2	.00052	.00089	.00323	.00112	.90061	14.456	.58209
#3	.00080	.00212	.00086	.00079	.86592	14.431	.58456
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	17.314	.07801	.00008	F 417.81	-.00090	.00661	.00485
Stddev	.333	.00169	.00032	3.43	.00062	.00486	.00222
%RSD	1.9225	2.1614	387.14	.82124	68.692	73.506	45.764
#1	16.937	.07635	.00046	413.93	-.00126	.00102	.00356
#2	17.437	.07972	-.00012	419.03	-.00019	.00986	.00358
#3	17.567	.07797	-.00009	420.46	-.00127	.00895	.00741
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 24, 2016

Sample Name: L1606072402 Acquired: 6/23/2016 15:36:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00480**	**-.00067**	**.10759**	**-.00027**	F **33.118**	**-.02215**	**.00020**
Stddev	.00242	.00358	.00424	.00098	.241	.01018	.00271
%RSD	50.361	531.89	3.9427	362.00	.72774	45.960	1351.6
#1	-.00308	.00251	.10307	-.00000	33.152	-.01317	.00188
#2	-.00757	-.00455	.11148	-.00135	33.340	-.02006	-.00293
#3	-.00376	.00003	.10821	.00055	32.862	-.03321	.00165
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00126**	**.00524**	F **-.35646**
Stddev	.00018	.00006	.36766
%RSD	13.956	1.1266	103.14
#1	-.00124	.00517	-.66560
#2	-.00110	.00528	.05011
#3	-.00145	.00527	-.45387
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6700.2**	**41500.**	**2177.0**
Stddev	45.1	267.	16.8
%RSD	.67280	.64386	.77022
#1	6649.2	41642.	2175.9
#2	6734.7	41192.	2160.8
#3	6716.7	41667.	2194.2

Approved: June 24, 2016

Sample Name: L1606078718 Acquired: 6/23/2016 15:40:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00182	1.3663	-.00099	.08602	.17005	.00003	59.339	.00041
Stddev	.00205	.0062	.00401	.00049	.00175	.00016	.521	.00016
%RSD	112.70	.45392	402.94	.56785	1.0290	592.47	.87774	39.098
#1	.00101	1.3731	.00134	.08564	.17098	.00020	59.613	.00026
#2	.00030	1.3649	.00129	.08586	.17113	-.00011	59.666	.00039
#3	.00416	1.3610	-.00562	.08657	.16803	-.00000	58.739	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00139	.00460	.00180	1.4597	1.5559	.01180	24.176	.12500
Stddev	.00034	.00106	.00032	.0390	.1298	.00641	.117	.00150
%RSD	24.411	23.098	17.578	2.6741	8.3397	54.300	.48391	1.1984
#1	.00116	.00569	.00160	1.4736	1.5769	.00880	24.113	.12424
#2	.00123	.00452	.00216	1.4899	1.4170	.01916	24.311	.12672
#3	.00178	.00357	.00163	1.4156	1.6739	.00745	24.105	.12403
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00247	10.893	.00215	.17889	.00449	-.00364	.00139	10.448
Stddev	.00018	.216	.00011	.00508	.00265	.00289	.00135	.018
%RSD	7.2484	1.9792	4.9404	2.8394	59.034	79.479	97.200	.17603
#1	.00258	11.133	.00215	.17389	.00534	-.00034	.00294	10.467
#2	.00258	10.830	.00205	.17875	.00152	-.00482	.00047	10.447
#3	.00227	10.716	.00226	.18404	.00661	-.00574	.00076	10.430
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606078718 Acquired: 6/23/2016 15:40:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00169**	**.24340**	**.01315**	**-.00297**	**.00401**	**.00904**	**.48814**
Stddev	.00049	.00237	.01040	.00495	.00132	.00024	.22160
%RSD	29.225	.97535	79.136	166.53	32.895	2.7044	45.397
#1	.00129	.24607	.02200	-.00597	.00252	.00883	.25296
#2	.00154	.24264	.00169	.00274	.00448	.00931	.69305
#3	.00224	.24151	.01575	-.00569	.00503	.00898	.51840
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6702.6**	**41482.**	**2156.8**
Stddev	7.1	311.	17.9
%RSD	.10622	.74978	.83036
#1	6710.2	41132.	2152.2
#2	6701.7	41728.	2141.6
#3	6696.0	41585.	2176.6

Approved: June 24, 2016

Sample Name: L1606078719 Acquired: 6/23/2016 15:44:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00153**	**.01414**	**-.00427**	**.00486**	**.00226**	**.00005**	**.15369**
Stddev	.00114	.00804	.00087	.00166	.00023	.00001	.02440
%RSD	74.831	56.853	20.359	34.032	10.239	25.333	15.878
#1	.00057	.00685	-.00525	.00587	.00249	.00006	.17540
#2	.00122	.02277	-.00358	.00577	.00203	.00004	.12728
#3	.00280	.01281	-.00399	.00295	.00226	.00006	.15840
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00024**	**.00009**	**.00104**	**.00368**	F **-.03550**	**.01454**	**-.00410**
Stddev	.00019	.00020	.00141	.00160	.02523	.01783	.00666
%RSD	79.976	213.68	135.45	43.472	71.078	122.60	162.48
#1	.00014	-.00002	.00040	.00186	-.05512	-.00480	-.00325
#2	.00046	-.00002	.00006	.00430	-.00703	.01812	.00210
#3	.00012	.00033	.00266	.00487	-.04436	.03031	-.01114
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01439**	**.00113**	**.00041**	**.38527**	**-.00105**	**-.00827**	**.00290**
Stddev	.04149	.00426	.00020	.02060	.00044	.00472	.00131
%RSD	288.35	378.69	48.693	5.3456	41.861	57.039	45.127
#1	-.02539	-.00342	.00053	.37602	-.00131	-.00665	.00229
#2	.05740	.00504	.00053	.40887	-.00054	-.01358	.00201
#3	.01115	.00176	.00018	.37092	-.00129	-.00457	.00440
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606078719 Acquired: 6/23/2016 15:44:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00257	.00690	.07841	.00066	.00220	.00871	-.00196
Stddev	.00414	.01188	.00070	.00073	.00015	.00294	.00454
%RSD	161.26	172.25	.88662	111.70	6.9362	33.794	231.14
#1	-.00606	-.00682	.07920	.00142	.00205	.01122	-.00256
#2	.00201	.01408	.07788	-.00004	.00218	.00943	.00284
#3	-.00366	.01344	.07815	.00059	.00235	.00547	-.00617
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00067	.00557	.08340
Stddev	.00077	.00005	.21806
%RSD	115.62	.88962	261.46
#1	.00022	.00562	.20466
#2	-.00113	.00553	-.16833
#3	-.00110	.00554	.21388
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6728.6	42173.	2145.0
Stddev	41.6	57.	33.9
%RSD	.61795	.13424	1.5810
#1	6776.6	42109.	2106.1
#2	6704.9	42215.	2160.0
#3	6704.4	42195.	2168.8

Approved: June 24, 2016

Sample Name: L1606079802 Acquired: 6/23/2016 15:48:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00144	.03243	-.00074	.01231	.00010	.00002	1.1630	.00027
Stddev	.00109	.01416	.00372	.00189	.00037	.00003	.0162	.00019
%RSD	75.901	43.667	501.02	15.351	392.72	145.15	1.3948	69.324
#1	.00136	.04726	-.00472	.01055	-.00032	.00001	1.1621	.00007
#2	.00258	.03100	.00265	.01431	.00021	-.00000	1.1473	.00030
#3	.00039	.01904	-.00016	.01208	.00040	.00005	1.1797	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.00286	.00149	-.00261	17.582	-.00293	.47862	.00440
Stddev	.00027	.00101	.00088	.00368	.094	.00238	.08717	.00440
%RSD	141.67	35.178	58.815	140.96	.53503	81.061	18.212	99.937
#1	.00006	.00398	.00049	.00163	17.679	-.00560	.55068	.00147
#2	.00001	.00203	.00190	-.00493	17.575	-.00104	.50345	.00946
#3	.00050	.00258	.00210	-.00453	17.491	-.00215	.38174	.00227
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00219	36.621	.00066	2.4466	.00301	.00041	.00081	.25089
Stddev	.00044	.385	.00146	.0064	.00179	.00359	.00845	.00206
%RSD	20.233	1.0507	219.59	.26158	59.557	866.11	1046.1	.82160
#1	.00171	37.035	.00190	2.4473	.00481	.00455	.00656	.25256
#2	.00226	36.553	.00104	2.4526	.00123	-.00173	.00477	.25153
#3	.00259	36.275	-.00094	2.4399	.00298	-.00158	-.00890	.24859
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606079802 Acquired: 6/23/2016 15:48:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00167	.00120	.00799	-.00172	-.00016	.01069	.29290
Stddev	.00023	.00009	.00245	.00171	.00081	.00016	.28737
%RSD	13.614	7.7584	30.718	99.218	509.00	1.4511	98.111
#1	.00185	.00111	.00516	-.00311	.00029	.01070	.29578
#2	.00142	.00129	.00922	-.00223	-.00109	.01053	.00410
#3	.00176	.00121	.00958	.00018	.00032	.01084	.57883
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6875.8	42924.	2217.4
Stddev	18.1	343.	31.5
%RSD	.26359	.79954	1.4211
#1	6874.1	42569.	2185.0
#2	6894.7	43254.	2248.0
#3	6858.5	42948.	2219.2

Approved: June 24, 2016

Sample Name: L1606079804 Acquired: 6/23/2016 15:51:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00292	.06016	-.00090	.00843	.00749	-.00019	45.159	.00037
Stddev	.00241	.00107	.00203	.00073	.00119	.00004	.339	.00018
%RSD	82.468	1.7811	226.97	8.6615	15.818	18.253	.75060	47.525
#1	.00166	.06132	-.00161	.00799	.00886	-.00021	44.779	.00055
#2	.00569	.05995	-.00248	.00928	.00687	-.00015	45.430	.00020
#3	.00140	.05921	.00140	.00803	.00675	-.00022	45.268	.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00296	.00937	.17564	8.4244	.00238	2.2221	.09641
Stddev	.00021	.00105	.00039	.02162	.0287	.00549	.0421	.00186
%RSD	241.35	35.503	4.1089	12.307	.34054	230.82	1.8934	1.9315
#1	.00033	.00354	.00975	.19448	8.4123	.00370	2.2235	.09437
#2	-.00005	.00175	.00939	.18040	8.4572	-.00365	2.1794	.09686
#3	-.00002	.00359	.00898	.15204	8.4038	.00709	2.2635	.09802
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00217	17.774	.00302	26.483	.00590	-.00008	.01034	.16124
Stddev	.00050	.097	.00068	.043	.00269	.00227	.00953	.00054
%RSD	22.837	.54315	22.502	.16325	45.484	2730.6	92.186	.33287
#1	.00202	17.666	.00316	26.440	.00849	.00019	.00360	.16097
#2	.00177	17.854	.00228	26.526	.00313	-.00248	.02125	.16186
#3	.00272	17.800	.00361	26.483	.00609	.00204	.00617	.16089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606079804 Acquired: 6/23/2016 15:51:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	.03109	.00099	.00459	.00006	.08912	.51232
Stddev	.00066	.00080	.00670	.00258	.00048	.00020	.12801
%RSD	85.536	2.5649	674.85	56.182	788.63	.22881	24.986
#1	.00069	.03017	-.00154	.00507	-.00038	.08911	.57216
#2	.00147	.03152	-.00407	.00180	.00057	.08892	.36535
#3	.00016	.03157	.00859	.00690	-.00001	.08933	.59945
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7950.5	48692.	2535.1
Stddev	32.4	365.	7.3
%RSD	.40779	.75001	.28802
#1	7923.5	48270.	2535.8
#2	7986.5	48901.	2542.1
#3	7941.6	48905.	2527.5

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 15:55:53 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.42646	10.279	.41356	.51175	1.0306	.05076	10.205
Stddev	.00204	.051	.00199	.00426	.0086	.00025	.126
%RSD	.47932	.49909	.48079	.83170	.83457	.49984	1.2349
#1	.42434	10.238	.41525	.51584	1.0212	.05048	10.064
#2	.42664	10.336	.41407	.51205	1.0326	.05081	10.244
#3	.42841	10.262	.41137	.50735	1.0380	.05098	10.306
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05186	.20878	.51384	.52434	4.0815	51.382	1.0440
Stddev	.00027	.00087	.00306	.00302	.0649	.432	.0097
%RSD	.52657	.41503	.59534	.57578	1.5889	.84015	.92985
#1	.05202	.20802	.51042	.52115	4.0401	50.884	1.0353
#2	.05201	.20972	.51630	.52716	4.0482	51.628	1.0422
#3	.05154	.20860	.51480	.52470	4.1563	51.635	1.0545
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.201	.51297	1.0355	51.634	.52512	10.356	.52060
Stddev	.133	.00911	.0052	.288	.00329	.031	.00278
%RSD	1.3081	1.7758	.49793	.55755	.62569	.29937	.53373
#1	10.058	.50248	1.0351	51.315	.52328	10.327	.52371
#2	10.223	.51766	1.0408	51.710	.52891	10.389	.51975
#3	10.322	.51879	1.0306	51.876	.52316	10.353	.51835
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 15:55:53 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2590**	**.39898**	**5.2574**	**1.0340**	**1.0272**	**1.0156**	**.52194**
Stddev	.0159	.00202	.0311	.0050	.0078	.0129	.00221
%RSD	1.2636	.50630	.59143	.48329	.76072	1.2706	.42268
#1	1.2594	.39666	5.2283	1.0307	1.0187	1.0008	.51942
#2	1.2746	.40033	5.2902	1.0397	1.0290	1.0249	.52354
#3	1.2428	.39996	5.2537	1.0315	1.0340	1.0209	.52286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0272**	**1.0395**	F **.76977**
Stddev	.0059	.0029	.39400
%RSD	.57455	.27998	51.184
#1	1.0219	1.0379	.54911
#2	1.0336	1.0428	.53555
#3	1.0261	1.0377	1.2247
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6768.6**	**42010.**	**2153.6**
Stddev	37.5	259.	15.3
%RSD	.55402	.61595	.71163
#1	6809.7	41923.	2137.5
#2	6736.2	41806.	2155.3
#3	6760.0	42301.	2168.0

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 15:59:20 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00114	.01588	.00002	.00629	.00234	.00000	.01938
Stddev	.00137	.00887	.00130	.00592	.00077	.00004	.02910
%RSD	120.04	55.880	5265.1	94.076	32.785	916.73	150.13
#1	-.00044	.02525	-.00001	.00358	.00243	-.00002	-.00373
#2	-.00027	.00761	-.00126	.01308	.00307	.00005	.00982
#3	-.00271	.01478	.00134	.00221	.00154	-.00002	.05206
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00039	.00009	.00109	.00045	-.01096	.05826	-.00107
Stddev	.00009	.00043	.00020	.00134	.05378	.12671	.00316
%RSD	22.643	485.10	18.341	295.38	490.89	217.49	293.68
#1	.00048	-.00040	.00113	-.00109	-.03258	-.08772	-.00007
#2	.00037	.00043	.00126	.00134	.05027	.12270	.00146
#3	.00031	.00024	.00087	.00110	-.05055	.13981	-.00461
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.01399	-.00049	.00462	.09808	.00018	.00588	.00220
Stddev	.01908	.00229	.00022	.02974	.00154	.00621	.00597
%RSD	136.32	468.16	4.8140	30.323	833.68	105.64	271.60
#1	.00803	-.00312	.00472	.13145	-.00103	.00102	.00713
#2	-.02479	.00056	.00436	.08842	.00192	.00373	-.00444
#3	-.02522	.00109	.00477	.07438	-.00034	.01288	.00391
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 15:59:20 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00449	.00077	.01037	.00119	.00117	.00814	-.00292
Stddev	.00414	.00612	.00397	.00019	.00046	.00274	.00050
%RSD	92.254	796.98	38.225	16.402	38.885	33.649	17.217
#1	.00912	.00523	.01435	.00110	.00170	.00638	-.00346
#2	.00112	.00328	.01035	.00105	.00095	.01130	-.00286
#3	.00323	-.00621	.00642	.00141	.00087	.00675	-.00246
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00013	.00000	F -.15928
Stddev	.00082	.00025	.25243
%RSD	624.25	8432.5	158.48
#1	-.00065	.00025	-.37693
#2	-.00056	.00001	-.21836
#3	.00082	-.00025	.11745
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6764.3	42214.	2158.6
Stddev	9.8	206.	11.6
%RSD	.14426	.48768	.53511
#1	6758.9	42034.	2168.0
#2	6758.3	42168.	2162.1
#3	6775.5	42439.	2145.7

Approved: June 24, 2016

Sample Name: ICSA Acquired: 6/23/2016 16:03:19 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00208**	**295.58**	**-.00325**	**.00908**	**.00322**	**.00010**	**273.70**
Stddev	.00236	.85	.00199	.00346	.00101	.00006	.86
%RSD	113.23	.28674	61.144	38.103	31.523	65.751	.31303
#1	.00087	294.66	-.00312	.00644	.00421	.00014	272.77
#2	.00058	296.32	-.00531	.01300	.00326	.00002	273.88
#3	.00480	295.77	-.00133	.00781	.00219	.00012	274.45
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **.00108**	**-.00082**	**.00022**	**.00233**	**109.50**	**.05250**	**.01009**
Stddev	.00041	.00021	.00182	.00181	.40	.12252	.00125
%RSD	38.111	25.991	813.25	77.633	.36960	233.38	12.428
#1	.00063	-.00102	.00055	.00411	109.23	.16966	.01044
#2	.00119	-.00085	.00185	.00240	109.30	.06259	.01113
#3	.00143	-.00059	-.00174	.00049	109.96	-.07475	.00869
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.00080						
Low Limit	-.00080						

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**275.93**	**-.00030**	**.00008**	**.12765**	**-.00145**	**.04923**	**-.00110**
Stddev	1.32	.00231	.00021	.02109	.00124	.00453	.00380
%RSD	.47822	758.84	259.08	16.521	85.657	9.2005	344.88
#1	275.22	-.00113	-.00014	.12709	-.00019	.05367	-.00530
#2	275.12	-.00209	.00012	.10685	-.00149	.04941	.00209
#3	277.45	.00230	.00027	.14901	-.00267	.04462	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: ICSA Acquired: 6/23/2016 16:03:19 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00743	.00521	.02728	.00048	-.00001	-.00737	-.00248
Stddev	.00821	.01356	.00232	.00057	.00068	.00415	.00352
%RSD	110.59	260.10	8.4896	119.75	7500.7	56.273	141.97
#1	-.01603	-.01035	.02586	-.00018	.00063	-.00272	-.00224
#2	-.00656	.01449	.02603	.00085	-.00072	-.01069	-.00611
#3	.00032	.01150	.02995	.00076	.00006	-.00870	.00092
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00690	-.00237	F -.97047
Stddev	.00125	.00006	.13443
%RSD	18.064	2.5689	13.852
#1	-.00564	-.00236	-.99205
#2	-.00813	-.00244	-.82655
#3	-.00692	-.00232	-1.0928
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02000
Low Limit			-.02000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6096.7	36985.	2032.0
Stddev	12.3	450.	10.8
%RSD	.20106	1.2158	.52965
#1	6103.4	37299.	2022.3
#2	6104.2	36470.	2043.6
#3	6082.6	37186.	2030.0

Approved: June 24, 2016

Sample Name: ICSAB Acquired: 6/23/2016 16:07:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .61513	295.58	.27616	.01273	.28137	.27182	275.51
Stddev	.00198	.38	.00201	.00218	.00168	.00055	1.53
%RSD	.32189	.12856	.72891	17.114	.59730	.20172	.55467
#1	.61497	295.92	.27748	.01189	.28331	.27245	275.46
#2	.61718	295.65	.27385	.01520	.28043	.27144	277.05
#3	.61323	295.17	.27716	.01109	.28038	.27158	274.00
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.60000						
Low Limit	.40000						

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.55626	.27017	.28219	.28373	108.00	5.8031	.00521
Stddev	.00061	.00065	.00106	.00040	.65	.1899	.00170
%RSD	.11032	.23929	.37563	.14179	.60589	3.2730	32.651
#1	.55696	.26965	.28228	.28330	107.97	6.0146	.00625
#2	.55595	.27089	.28320	.28380	108.66	5.6472	.00613
#3	.55585	.26995	.28108	.28409	107.35	5.7474	.00325
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	271.98	.27321	-.00023	5.9645	.54441	.04388	.55597
Stddev	2.18	.00652	.00054	.0491	.00210	.01228	.00315
%RSD	.80074	2.3850	241.03	.82254	.38502	27.985	.56724
#1	272.14	.26889	-.00078	5.9321	.54658	.05666	.55621
#2	274.08	.28070	-.00020	6.0209	.54240	.04283	.55270
#3	269.73	.27002	.00030	5.9405	.54426	.03216	.55899
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: ICSAB Acquired: 6/23/2016 16:07:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.57108**	**.28123**	**.01867**	**.00174**	**.00066**	**-.00797**	**.51622**
Stddev	.00496	.00708	.00561	.00106	.00040	.00629	.00401
%RSD	.86857	2.5171	30.040	61.006	60.094	78.897	.77665
#1	.57104	.28924	.01660	.00101	.00062	-.00170	.51236
#2	.57607	.27580	.01440	.00296	.00029	-.00794	.51594
#3	.56615	.27865	.02503	.00126	.00108	-.01427	.52036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.27940**	**.53906**	F **-.81686**
Stddev	.00128	.00109	.34524
%RSD	.45637	.20272	42.264
#1	.27986	.54025	-1.1980
#2	.28038	.53883	-.52512
#3	.27796	.53810	-.72746
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02500
Low Limit			-.02500

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6104.6**	**37638.**	**2051.0**
Stddev	15.8	242.	6.9
%RSD	.25938	.64230	.33869
#1	6108.4	37412.	2052.5
#2	6087.2	37610.	2043.5
#3	6118.1	37893.	2057.1

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 16:10:57 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.43129	10.465	.41985	.51183	1.0374	.05092	10.407
Stddev	.00445	.028	.00287	.00388	.0073	.00042	.026
%RSD	1.0329	.26646	.68377	.75830	.70356	.82022	.24998
#1	.42682	10.482	.41977	.51138	1.0308	.05130	10.385
#2	.43573	10.433	.42276	.50819	1.0362	.05047	10.436
#3	.43133	10.481	.41702	.51591	1.0453	.05100	10.400
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05246	.21061	.51727	.52836	4.2555	51.648	1.0430
Stddev	.00029	.00045	.00402	.00070	.0398	.269	.0074
%RSD	.55057	.21557	.77762	.13161	.93496	.52018	.70576
#1	.05215	.21014	.51884	.52835	4.2096	51.387	1.0369
#2	.05272	.21105	.51270	.52767	4.2768	51.634	1.0410
#3	.05250	.21063	.52027	.52906	4.2800	51.924	1.0512
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.577	.51661	1.0426	52.094	.52783	10.433	.52665
Stddev	.150	.00290	.0022	.352	.00290	.019	.00347
%RSD	1.4156	.56079	.21295	.67529	.54945	.18081	.65799
#1	10.619	.51942	1.0445	51.788	.52449	10.416	.52747
#2	10.411	.51363	1.0430	52.016	.52940	10.454	.52285
#3	10.702	.51679	1.0402	52.478	.52961	10.429	.52963
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 16:10:57 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2640**	**.41613**	**5.2942**	**1.0415**	**1.0304**	**1.0283**	**.52107**
Stddev	.0044	.01334	.0124	.0017	.0086	.0107	.00377
%RSD	.35114	3.2062	.23333	.16484	.83471	1.0423	.72377
#1	1.2686	.40846	5.2802	1.0399	1.0214	1.0160	.51721
#2	1.2597	.43154	5.2989	1.0413	1.0313	1.0359	.52475
#3	1.2639	.40840	5.3034	1.0433	1.0385	1.0329	.52124
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0304**	**1.0488**	F **.29466**
Stddev	.0079	.0015	.06908
%RSD	.76862	.14614	23.443
#1	1.0334	1.0473	.27743
#2	1.0214	1.0504	.37072
#3	1.0364	1.0487	.23582
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6660.8**	**41217.**	**2108.1**
Stddev	24.6	274.	21.9
%RSD	.36920	.66571	1.0385
#1	6682.2	40900.	2084.4
#2	6666.3	41370.	2127.6
#3	6633.9	41380.	2112.3

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 16:14:35 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00225**	**.04402**	**.00120**	**.00288**	**.00212**	**.00005**	**.04105**
Stddev	.00247	.00546	.00401	.00265	.00105	.00005	.01088
%RSD	109.69	12.401	335.85	91.781	49.695	106.37	26.511
#1	.00264	.03779	-.00184	.00082	.00333	.00011	.04148
#2	-.00039	.04798	.00575	.00587	.00163	.00003	.02996
#3	.00452	.04628	-.00032	.00196	.00140	.00001	.05171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00025**	**-.00042**	**.00226**	**-.00066**	**.00784**	**.06373**	**-.00051**
Stddev	.00005	.00021	.00058	.00060	.02162	.10751	.00583
%RSD	20.013	50.707	25.816	91.619	275.57	168.69	1147.8
#1	.00030	-.00043	.00166	-.00039	.01889	.18696	.00620
#2	.00022	-.00062	.00283	-.00023	-.01706	-.01092	-.00339
#3	.00021	-.00020	.00228	-.00134	.02170	.01516	-.00434
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04546**	**.00321**	**.00476**	**.11079**	**-.00088**	F **.01576**	**.00302**
Stddev	.04418	.00204	.00076	.03712	.00083	.00331	.00267
%RSD	97.174	63.563	15.884	33.504	94.324	21.016	88.554
#1	-.00366	.00528	.00394	.15162	-.00140	.01748	.00600
#2	.08192	.00317	.00491	.07909	-.00132	.01194	.00083
#3	.05813	.00119	.00544	.10165	.00008	.01785	.00223
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						.01000	
Low Limit						-.01000	

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 16:14:35 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00279	-.00590	.01388	.00065	.00123	.00606	-.00259
Stddev	.00212	.00283	.00309	.00091	.00070	.00181	.00112
%RSD	76.170	48.036	22.277	139.45	57.067	29.854	43.106
#1	.00170	-.00623	.01064	.00170	.00200	.00788	-.00300
#2	.00143	-.00291	.01422	.00003	.00104	.00602	-.00344
#3	.00524	-.00855	.01680	.00024	.00064	.00427	-.00133
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00022	.00017	F .06648
Stddev	.00100	.00012	.34706
%RSD	463.52	73.720	522.02
#1	-.00068	.00013	-.10679
#2	.00003	.00007	-.15982
#3	.00130	.00030	.46606
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6703.4	41700.	2173.4
Stddev	27.2	93.	18.4
%RSD	.40511	.22371	.84726
#1	6715.0	41593.	2190.3
#2	6672.4	41748.	2176.3
#3	6722.9	41760.	2153.8

Approved: June 24, 2016

Sample Name: LLCCV Acquired: 6/23/2016 16:20:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01226	.19306	.00822	.08713	.00934	.00170	.37434	.00095
Stddev	.00226	.00994	.00221	.00050	.00037	.00009	.04623	.00012
%RSD	18.429	5.1483	26.863	.57673	4.0055	5.3752	12.349	12.607
#1	.01082	.20416	.01018	.08727	.00945	.00181	.33947	.00090
#2	.01110	.18498	.00583	.08754	.00964	.00166	.35679	.00108
#3	.01487	.19005	.00866	.08657	.00892	.00164	.42678	.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00443	.00621	.00343	.09684	.99841	.08574	.39422	.00845
Stddev	.00015	.00101	.00090	.02371	.01980	.00431	.04579	.00352
%RSD	3.4357	16.173	26.179	24.486	1.9832	5.0254	11.615	41.733
#1	.00426	.00573	.00262	.11113	1.0142	.08076	.38626	.00758
#2	.00456	.00737	.00329	.06947	.97621	.08821	.44347	.01232
#3	.00447	.00555	.00440	.10992	1.0048	.08824	.35294	.00543
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00955	.49049	.01642	.85294	.00895	.08691	.01959	.86370
Stddev	.00058	.01009	.00122	.01011	.00086	.00285	.00820	.00122
%RSD	6.1041	2.0577	7.4378	1.1851	9.5578	3.2817	41.869	.14090
#1	.01021	.48064	.01558	.85568	.00909	.08424	.02576	.86506
#2	.00910	.50081	.01782	.84175	.00972	.08991	.01028	.86335
#3	.00933	.49002	.01586	.86141	.00803	.08657	.02274	.86270
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: LLCCV Acquired: 6/23/2016 16:20:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.42813**	**.04307**	**.03712**	**.15993**	**.00773**	**.01869**	**19.866**
Stddev	.00098	.00025	.00768	.00135	.00073	.00033	.441
%RSD	.22912	.58060	20.685	.84107	9.4794	1.7749	2.2219
#1	.42871	.04302	.03075	.15935	.00749	.01905	19.528
#2	.42868	.04335	.04565	.16146	.00715	.01864	20.366
#3	.42700	.04285	.03498	.15896	.00855	.01839	19.706
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6737.1**	**42185.**	**2135.3**
Stddev	26.5	284.	28.1
%RSD	.39354	.67345	1.3174
#1	6718.8	41884.	2154.3
#2	6767.5	42448.	2103.0
#3	6725.1	42222.	2148.5

Approved: June 24, 2016

2.3.2 Metals ICP-MS Data

2.3.2.1 Summary Data

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW1-061016	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 20:00
Collect Date:	06/10/2016 07:55	**Dilution:**	1	**File ID:**	NI.061616.200024
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00136	J	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000424	J	0.00120	0.000600	0.000300
Cobalt, Total	7440-48-4	0.0563		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00432		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00922		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW1-061016	**Prep Method:**	3015	**Prep Date:**	06/21/2016 07:48
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/21/2016 12:44
Workgroup #:	WG573557	**Analyst:**	BKT	**Run Date:**	06/21/2016 15:32
Collect Date:	06/10/2016 07:55	**Dilution:**	1	**File ID:**	NI.062116.153201
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW1-061016	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 21:23
Collect Date:	06/10/2016 07:55	**Dilution:**	50	**File ID:**	NI.061616.212301
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	1.35		0.300	0.150	0.0750
Chromium, Total	7440-47-3	1.32		0.200	0.100	0.0500
Manganese, Total	7439-96-5	1.69		0.200	0.100	0.0500
Nickel, Total	7440-02-0	2.20		0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW3-061016	**Prep Method:**	3015	**Prep Date:**	06/21/2016 07:48
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/21/2016 12:44
Workgroup #:	WG573557	**Analyst:**	BKT	**Run Date:**	06/21/2016 15:35
Collect Date:	06/10/2016 09:05	**Dilution:**	1	**File ID:**	NI.062116.153512
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW3-061016	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 20:03
Collect Date:	06/10/2016 09:05	**Dilution:**	1	**File ID:**	NI.061616.200336
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.000726	J	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00398	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00108	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00151	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.00463	J	0.00800	0.00400	0.00200
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	MW3-061016	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 21:26
Collect Date:	06/10/2016 09:05	**Dilution:**	10	**File ID:**	NI.061616.212612
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.445		0.0600	0.0300	0.0150
Manganese, Total	7439-96-5	0.520		0.0400	0.0200	0.0100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	17WW08-061016	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 20:06
Collect Date:	06/10/2016 10:10	**Dilution:**	1	**File ID:**	NI.061616.200647
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.00131		0.00120	0.000600	0.000300
Cobalt, Total	7440-48-4	0.00709		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.0170		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00133	J	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.111		0.00800	0.00400	0.00200
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0388	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	17WW08-061016	**Prep Method:**	3015	**Prep Date:**	06/21/2016 07:48
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/21/2016 12:44
Workgroup #:	WG573557	**Analyst:**	BKT	**Run Date:**	06/21/2016 15:38
Collect Date:	06/10/2016 10:10	**Dilution:**	1	**File ID:**	NI.062116.153823
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Arsenic, Total	7440-38-2	0.00435		0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.148		0.00600	0.00300	0.00150
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	17WW08-061016	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 21:29
Collect Date:	06/10/2016 10:10	**Dilution:**	10	**File ID:**	NI.061616.212923
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chromium, Total	7440-47-3	0.507		0.0400	0.0200	0.0100
Manganese, Total	7439-96-5	0.422		0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW24F-061016	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 20:12
Collect Date:	06/10/2016 14:40	**Dilution:**	1	**File ID:**	NI.061616.201257
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00142	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00207		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00200	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0220		0.00800	0.00400	0.00200
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.000930	J	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0750		0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW24F-061016	**Prep Method:**	3015	**Prep Date:**	06/21/2016 07:48
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/21/2016 12:44
Workgroup #:	WG573557	**Analyst:**	BKT	**Run Date:**	06/21/2016 15:41
Collect Date:	06/10/2016 14:40	**Dilution:**	1	**File ID:**	NI.062116.154135
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Arsenic, Total	7440-38-2	0.00248		0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.0968		0.00600	0.00300	0.00150
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-08	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW24F-061016	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 21:32
Collect Date:	06/10/2016 14:40	**Dilution:**	10	**File ID:**	NI.061616.213235
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Manganese, Total	7439-96-5	0.609		0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer NexION 300X

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	100
Vi = Initial volume	40
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/L)	0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	200
Vi = Initial volume	0.5
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/kg)	40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	40
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	50

50 ug/kg = 0.050 mg/kg

Perkin Elmer NexION ICP/MS

STANDARDS KEY

QC Std 1 - ICV
QC Std 2 - ICB
QC Std 3 - LLICV
QC Std 4 - ICSA
QC Std 5 - ICSAB
QC Std 6 - CCV
QC Std 7 - CCB
QC Std 8 - LLCCV

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.00005	0.05	0.1
Sb	10	0	0.00005	0.05	0.1
As	10	0	0.00005	0.05	0.1
Ba	10	0	0.00005	0.05	0.1
Be	10	0	0.00005	0.05	0.1
Ca	1000	0	0.005	5	10
Cd	10	0	0.0005	0.05	0.1
Cr	10	0	0.0005	0.05	0.1
Co	10	0	0.0005	0.05	0.1
Cu	10	0	0.0005	0.05	0.1
Fe	1000	0	0.005	5	10
Pb	10	0	0.00005	0.05	0.1
Mg	1000	0	0.005	5	10
Mn	10	0	0.00005	0.05	0.1
Ni	10	0	0.00005	0.05	0.1
K	1000	0	0.005	5	10
Se	10	0	0.00005	0.05	0.1
Ag	10	0	0.00005	0.05	0.1
Na	1000	0	0.005	5	10
Tl	10	0	0.00005	0.05	0.1
V	10	0	0.00005	0.05	0.1
U	1000	0	0.00005	0.05	0.1
Zn	10	0	0.00005	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG573483
Analyst: VC
Spike Analyst: VC
Run Date: 06/21/2016 07:48
Method: 3015
Balance: BAL016
Instrument: MW-4
Instrument Start: 06/21/2016 08:19

SOP: ME407 Revison 19
Spike Solution: STD75998
Spike Witness: ERP
40 & 50 ML. DIGESTION TU COA18987
MS Filters- fisher-Lot#R RGT35621
HNO3 Lot #: COA18905

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG573483-02	BLANK	1	20 mL	50 mL	184.315 g	184.299 g		
2	WG572662-01	FBLK2	18	20 mL	50 mL	182.12 g	182.115 g		
3	WG573483-03	LCS	1	20 mL	50 mL	182.488 g	182.467 g	.25 mL	
4	L16060616-01	SAMP	1	20 mL	50 mL	183.726 g	183.7 g		06/21/16
5	L16060616-02	SAMP	1	20 mL	50 mL	182.782 g	182.769 g		06/21/16
6	L16060616-04	SAMP	1	20 mL	50 mL	182.01 g	181.989 g		06/21/16
7	L16060650-01	SAMP	1	20 mL	50 mL	182.593 g	182.584 g		06/24/16
8	L16060650-02	SAMP	1	20 mL	50 mL	182.881 g	182.855 g		06/24/16
9	L16060650-03	SAMP	1	20 mL	50 mL	182.342 g	182.296 g		06/24/16
10	L16060650-08	SAMP	1	20 mL	50 mL	182.009 g	181.997 g		06/24/16
11	L16060729-02	SAMP	1	20 mL	50 mL	183.948 g	183.941 g		06/24/16
12	L16060729-03	SAMP	1	20 mL	50 mL	180.366 g	180.368 g		06/24/16
13	L16060730-01	SAMP	1	20 mL	50 mL	180.5 g	180.493 g		06/24/16
14	L16060730-02	SAMP	1	20 mL	50 mL	182.181 g	182.183 g		06/24/16
15	L16060730-03	SAMP	1	20 mL	50 mL	181.455 g	181.446 g		06/24/16
16	L16060731-02	SAMP	18	20 mL	50 mL	183.631 g	183.62 g		06/17/16
17	L16060961-01	SAMP	1	20 mL	50 mL	184.464 g	184.461 g		06/24/16
18	L16060961-02	SAMP	1	20 mL	50 mL	182.66 g	182.651 g		06/24/16
19	WG573483-01	REF	1	20 mL	50 mL	181.648 g	181.642 g		
20	L16060961-03	SAMP	1	20 mL	50 mL	181.648 g	181.642 g		06/24/16
21	L16060995-01	SAMP	1	20 mL	50 mL	183.365 g	183.359 g		06/24/16
22	L16060995-02	SAMP	1	20 mL	50 mL	185.146 g	185.151 g		06/24/16
23	WG573483-04	MS	1	20 mL	50 mL	181.067 g	181.054 g	.25 mL	
24	WG573483-05	MSD	1	20 mL	50 mL	183.356 g	183.356 g	.25 mL	

L16060995-01	ph adj
L16060995-02	ph adj

Analyst: Vicki Collins

Reviewer: Erin Potter

MW_DIG - Modified 09/30/2009
PDF ID: 4815639
Report generated: 06/21/2016 09:07

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG572730
Analyst: VC
Spike Analyst: VC
Run Date: 06/15/2016 07:54
Method: 3015
Balance: BAL016
Instrument: MW-3
Instrument Start: 06/15/2016 07:59

SOP: ME407 Revison 19
Spike Solution: STD75998
Spike Witness: ERP
40 & 50 ML. DIGESTION TU COA18772
HNO3 Lot #: COA18905
MS Filters- fisher-Lot#R RGT35621

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG572730-03	BLANK	1	20 mL	50 mL	182.294 g	182.284 g		
2	WG572662-01	FBLK2	18	20 mL	50 mL	180.913 g	180.919 g		
3	WG572730-04	LCS	1	20 mL	50 mL	182.621 g	182.604 g	.25 mL	
4	L16060616-01	SAMP	1	20 mL	50 mL	181.592 g	181.591 g		06/21/16
5	L16060616-02	SAMP	1	20 mL	50 mL	183.537 g	183.546 g		06/21/16
6	L16060616-04	SAMP	1	20 mL	50 mL	183.852 g	183.819 g		06/21/16
7	L16060649-01	SAMP	2	20 mL	50 mL	183.221 g	183.203 g		06/20/16
8	L16060650-01	SAMP	1	20 mL	50 mL	182.311 g	182.309 g		06/24/16
9	L16060650-02	SAMP	1	20 mL	50 mL	183.087 g	183.085 g		06/24/16
10	L16060650-03	SAMP	1	20 mL	50 mL	181.652 g	181.65 g		06/24/16
11	L16060650-08	SAMP	1	20 mL	50 mL	184.579 g	184.558 g		06/24/16
12	WG572730-01	REF	2	20 mL	50 mL	182.936 g	182.92 g		
13	L16060664-01	SAMP	2	20 mL	50 mL	182.936 g	182.92 g		06/17/16
14	L16060724-01	SAMP	1	20 mL	50 mL	187.236 g	187.232 g		06/24/16
15	L16060729-01	SAMP	1	20 mL	50 mL	182.146 g	182.149 g		06/24/16
16	L16060729-02	SAMP	1	20 mL	50 mL	181.631 g	181.644 g		06/24/16
17	WG572730-02	REF	1	20 mL	50 mL	183.736 g	183.731 g		
18	L16060729-03	SAMP	1	20 mL	50 mL	183.736 g	183.731 g		06/24/16
19	L16060730-01	SAMP	1	20 mL	50 mL	184.668 g	184.674 g		06/24/16
20	L16060730-02	SAMP	1	20 mL	50 mL	182.686 g	182.675 g		06/24/16
21	L16060730-03	SAMP	1	20 mL	50 mL	181.928 g	181.933 g		06/24/16
22	L16060731-02	SAMP	18	20 mL	50 mL	183.292 g	183.277 g		06/17/16
23	L16060754-01	SAMP	2	20 mL	50 mL	182.824 g	182.823 g		06/21/16
24	WG572730-05	DUP	1	20 mL	50 mL	181.184 g	181.19 g		
25	WG572730-06	MS	1	20 mL	50 mL	183.99 g	183.994 g	.25 mL	
26	WG572730-07	MSD	1	20 mL	50 mL	183.548 g	183.523 g	.25 mL	

L16060650-03	FILTERED DIGESTATE
L16060729-01	FILTERED DIGESTATE
L16060754-01	FILTERED DIGESTATE
L16060731-02	FILTERED DIGESTATE

Analyst: Vicki Collins

Reviewer: Erin Potter

MW_DIG - Modified 09/30/2009
PDF ID: 4807920
Report generated: 06/15/2016 11:11

TCLP Non-Volatile

Analyst(s): AMA/CPD
Date: 06/14/2016
Filter Lot #: 94860030
Microbac SOP: TCLP01 Rev #: 12

Analyst / Date		Analyst / Date	
CPD 6/14/16		AMA 6/15/16	
Time On	Temp On °C	Time Off	Temp Off °C
1427	23.8	0827	21.9

Agitator Speed 30 ± 2 rpm ☑

Jug #	Sample #	Tests	Method	Fluid #	Matrix *	% Solid	Pretest pH Initial	Pretest pH Final	Int. Wt. (g)	Fluid Vol. (mL)	Final extract pH
D	06-0670-01	ME	1311	F1-181	S	100	8.12	2.08	7.67	153	5.19
↓	-02	↓	↓	↓	↓	↓	8.98	2.06	100.27	2005	5.79
↓	-03	↓	↓	↓	↓	↓	10.07	4.79	100.14	2003	7.34
↓	-04	↓	↓	↓	↓	↓	9.53	1.65	100.72	2014	5.13
↓	-05	↓	↓	↓	↓	↓	8.98	2.69	100.32	2006	6.67
↓	-06	↓	↓	↓	↓	↓	9.43	1.94	40.43	807	6.79
↓	-07	↓	↓	F2-379	↓	↓	8.10	7.75	25.70	514	8.08
D	06-0731-01	ME pH-L	1311	F2-379	S	100	8.47	5.86	50.46	1009	4.32
↓	-02	↓ ↓	1312	SPLP F2-326	↓	↓	NA	NA	100.62	2012	8.44
NA	FBIK1	ME	1311	F1-181	NA	NA	NA	NA	100	100	4.93
↓	FBIK2	↓ COD pH-L ~~ME~~	↓	F2-379	↓	↓	↓	↓	↓	↓	2.88
↓	SPLP F2-	↓ pH-L	1312	SPLP F2-326	↓	↓	↓	↓	↓	↓	5.05

CPD 6/14/16

*Matrix Code: (S = solid, sand, soil or sludge) (P = paint) (O = organic) (W = water or aqueous waste)
D = Disposable plastic jug
TCLP Pretest weight will be 5.0 g (± 0.1) unless otherwise noted.
Temperature shall be maintained at 23° ± 2 for 18 ± 2 hours unless otherwise noted.

Comments: 5x 06-0670-01 recieved with limited volume.

Peer Review By: [signature]

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 061616A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573083,572869,572085,572184

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.061616.153014	Blank	Blank		1		06/16/16 15:30
2	NI.061616.153326	WG573095-01	Calibration Point		1		06/16/16 15:33
3	NI.061616.153637	WG573095-02	Calibration Point		1		06/16/16 15:36
4	NI.061616.153949	WG573095-03	Calibration Point		1		06/16/16 15:39
5	NI.061616.154300	WG573095-04	Calibration Point		1		06/16/16 15:43
6	NI.061616.154613	WG573095-05	ICV		1		06/16/16 15:46
7	NI.061616.154926	WG573095-06	ICB		1		06/16/16 15:49
8	NI.061616.155239	WG573095-07	Low Level Initial Calibration V		1		06/16/16 15:52
9	NI.061616.155746	WG573095-08	Initial Calibration Verification		1		06/16/16 15:57
10	NI.061616.160355	WG573095-09	Initial Calib Blank		1		06/16/16 16:03
11	NI.061616.160740	WG573095-10	Interference Check		1		06/16/16 16:07
12	NI.061616.162201	WG573095-11	Interference Check		1		06/16/16 16:22
13	NI.061616.162516	WG573095-12	CCV		1		06/16/16 16:25
14	NI.061616.163850	WG573095-13	CCB		1		06/16/16 16:38
15	NI.061616.173543	WG572432-04	Method/Prep Blank	20/50	1		06/16/16 17:35
16	NI.061616.173854	WG572432-05	Laboratory Control S	20/50	1		06/16/16 17:38
17	NI.061616.174206	WG572432-01	Reference Sample		1	L16060540-06	06/16/16 17:42
18	NI.061616.174517	WG572432-06	Matrix Spike	20/50	1	L16060540-06	06/16/16 17:45
19	NI.061616.174829	WG572432-07	Matrix Spike Duplica	20/50	1	L16060540-06	06/16/16 17:48
20	NI.061616.175140	L16060533-01	16F0399-01	20/50	1		06/16/16 17:51
21	NI.061616.175452	L16060540-03	AG4573	20/50	1		06/16/16 17:54
22	NI.061616.175803	WG573083-01	Post Digestion Spike		1	L16060540-03	06/16/16 17:58
23	NI.061616.180115	WG573083-02	Serial Dilution		5	L16060540-03	06/16/16 18:01
24	NI.061616.180426	WG573083-02	Serial Dilution		25	L16060540-03	06/16/16 18:04
25	NI.061616.180739	WG573095-14	CCV		1		06/16/16 18:07
26	NI.061616.181051	WG573095-15	CCB		1		06/16/16 18:10
27	NI.061616.181404	L16060540-09	AG4578	20/50	1		06/16/16 18:14
28	NI.061616.181715	L16060540-10	AG4579	20/50	1		06/16/16 18:17
29	NI.061616.182027	L16060540-11	AG4580	20/50	1		06/16/16 18:20
30	NI.061616.182338	L16060540-14	AG4584	20/50	1		06/16/16 18:23
31	NI.061616.182650	L16060540-15	AG4587	20/50	1		06/16/16 18:26
32	NI.061616.183001	L16060540-16	AG4589	20/50	1		06/16/16 18:30
33	NI.061616.183313	L16060549-01	J6F0164-01	20/50	1		06/16/16 18:33
34	NI.061616.183624	L16060614-01	WATER PLANT B/W	20/50	1		06/16/16 18:36

Page: 1 Approved: June 20, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 061616A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573083,572869,572085,572184

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.061616.183936	L16060624-01	16F1312-03	20/50	1		06/16/16 18:39
36	NI.061616.184247	WG572432-03	Reference Sample		1	L16060630-01	06/16/16 18:42
37	NI.061616.184600	WG573095-16	CCV		1		06/16/16 18:46
38	NI.061616.184912	WG573095-17	CCB		1		06/16/16 18:49
39	NI.061616.185225	WG572432-10	Duplicate	20/50	1	L16060630-01	06/16/16 18:52
40	NI.061616.185538	WG573095-18	CCV		1		06/16/16 18:55
41	NI.061616.185850	WG573095-19	CCB		1		06/16/16 18:58
42	NI.061616.190202	WG573095-20	Low Level Continuing Calibra		1		06/16/16 19:02
43	NI.061616.190516	WG572730-03	Method/Prep Blank	20/50	1		06/16/16 19:05
44	NI.061616.190828	WG572730-04	Laboratory Control S	20/50	1		06/16/16 19:08
45	NI.061616.191230	WG572730-01	Reference Sample		1	L16060664-01	06/16/16 19:12
46	NI.061616.191541	WG572730-05	Duplicate	20/50	1	L16060664-01	06/16/16 19:15
47	NI.061616.191852	WG572730-02	Reference Sample		1	L16060729-03	06/16/16 19:18
48	NI.061616.192204	WG572730-06	Matrix Spike	20/50	1	L16060729-03	06/16/16 19:22
49	NI.061616.192515	WG572730-07	Matrix Spike Duplica	20/50	1	L16060729-03	06/16/16 19:25
50	NI.061616.192827	L16060754-01	V6F0103-02	20/50	1		06/16/16 19:28
51	NI.061616.193138	WG572869-01	Post Digestion Spike		1	L16060754-01	06/16/16 19:31
52	NI.061616.193450	L16060754-01	V6F0103-02		5		06/16/16 19:34
53	NI.061616.193803	WG573095-21	CCV		1		06/16/16 19:38
54	NI.061616.194114	WG573095-22	CCB		1		06/16/16 19:41
55	NI.061616.194427	WG572869-02	Serial Dilution		25	L16060754-01	06/16/16 19:44
56	NI.061616.194738	L16060616-01	MW8-060916	20/50	1		06/16/16 19:47
57	NI.061616.195050	L16060616-02	18CPTMW26SW-060916	20/50	1		06/16/16 19:50
58	NI.061616.195401	L16060616-04	MW10F-060916	20/50	1		06/16/16 19:54
59	NI.061616.195713	L16060649-01	V6F0102-02	20/50	1		06/16/16 19:57
60	NI.061616.200024	L16060650-01	MW1-061016	20/50	1		06/16/16 20:00
61	NI.061616.200336	L16060650-02	MW3-061016	20/50	1		06/16/16 20:03
62	NI.061616.200647	L16060650-03	17WW08-061016	20/50	1		06/16/16 20:06
63	NI.061616.201257	L16060650-08	18WW24F-061016	20/50	1		06/16/16 20:12
64	NI.061616.201608	L16060729-01	A09-MW10-Y1S2	20/50	1		06/16/16 20:16
65	NI.061616.201921	WG573095-23	CCV		1		06/16/16 20:19
66	NI.061616.202232	WG573095-24	CCB		1		06/16/16 20:22
67	NI.061616.202638	L16060729-02	A09-MW11-Y1S2	20/50	1		06/16/16 20:26
68	NI.061616.202950	L16060730-01	18CPTMW14-061316	20/50	1		06/16/16 20:29

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Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 061616A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573083,572869,572085,572184

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.061616.204020	L16060730-02	18CPTMW14FD-061316	20/50	1		06/16/16 20:40
70	NI.061616.204331	L16060730-03	18CPTMW24-061316	20/50	1		06/16/16 20:43
71	NI.061616.204643	L16060731-02	60500-SSP0041-SSP0041	20/50	1		06/16/16 20:46
72	NI.061616.204954	L16060731-02	60500-SSP0041-SSP0041	20/50	10		06/16/16 20:49
73	NI.061616.205306	L16060540-09	AG4578	20/50	100		06/16/16 20:53
74	NI.061616.205727	L16060540-10	AG4579	20/50	10		06/16/16 20:57
75	NI.061616.210039	L16060540-11	AG4580	20/50	10		06/16/16 21:00
76	NI.061616.210350	L16060540-14	AG4584	20/50	100		06/16/16 21:03
77	NI.061616.210702	WG573095-25	CCV		1		06/16/16 21:07
78	NI.061616.211014	WG573095-26	CCB		1		06/16/16 21:10
79	NI.061616.211326	L16060616-01	MW8-060916	20/50	10		06/16/16 21:13
80	NI.061616.211638	L16060616-02	18CPTMW26SW-060916	20/50	10		06/16/16 21:16
81	NI.061616.211949	L16060616-04	MW10F-060916	20/50	10		06/16/16 21:19
82	NI.061616.212301	L16060650-01	MW1-061016	20/50	50		06/16/16 21:23
83	NI.061616.212612	L16060650-02	MW3-061016	20/50	10		06/16/16 21:26
84	NI.061616.212923	L16060650-03	17WW08-061016	20/50	10		06/16/16 21:29
85	NI.061616.213235	L16060650-08	18WW24F-061016	20/50	10		06/16/16 21:32
86	NI.061616.213546	L16060730-01	18CPTMW14-061316	20/50	50		06/16/16 21:35
87	NI.061616.213859	L16060730-02	18CPTMW14FD-061316	20/50	50		06/16/16 21:38
88	NI.061616.214210	L16060730-03	18CPTMW24-061316	20/50	50		06/16/16 21:42
89	NI.061616.214523	WG573095-27	CCV		1		06/16/16 21:45
90	NI.061616.214835	WG573095-28	CCB		1		06/16/16 21:48
91	NI.061616.215148	WG573095-29	Low Level Continuing Calibra		1		06/16/16 21:51
92	NI.061616.215500	WG571964-02	Method/Prep Blank	20/50	1		06/16/16 21:55
93	NI.061616.215811	WG571964-03	Laboratory Control S	20/50	1		06/16/16 21:58
94	NI.061616.220123	WG571964-01	Reference Sample		5	L16060428-01	06/16/16 22:01
95	NI.061616.220434	WG571964-05	Matrix Spike	20/50	5	L16060428-01	06/16/16 22:04
96	NI.061616.220746	WG571964-06	Matrix Spike Duplica	20/50	5	L16060428-01	06/16/16 22:07
97	NI.061616.221057	L16060411-03	AWD4T-060716	20/50	1		06/16/16 22:10
98	NI.061616.221409	L16060411-04	AWD4B-060716	20/50	1		06/16/16 22:14
99	NI.061616.221720	WG572085-03	Post Digestion Spike		1	L16060411-04	06/16/16 22:17
100	NI.061616.222032	L16060411-04	AWD4B-060716		5		06/16/16 22:20
101	NI.061616.222343	WG572085-04	Serial Dilution		25	L16060411-04	06/16/16 22:23
102	NI.061616.222656	WG573095-30	CCV		1		06/16/16 22:26

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Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 061616A.REP

Analyst1: BKT Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705

ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607

CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345

Stannous : Hydroxylamine :

Workgroups: 573083,572869,572085,572184

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.061616.223007	WG573095-31	CCB		1		06/16/16 22:30
104	NI.061616.223320	WG571834-02	Method/Prep Blank	20/50	1		06/16/16 22:33
105	NI.061616.223632	WG571834-03	Laboratory Control S	20/50	1		06/16/16 22:36
106	NI.061616.223943	WG571834-01	Reference Sample		1	L16060337-02	06/16/16 22:39
107	NI.061616.224254	WG571834-04	Matrix Spike	20/50	1	L16060337-02	06/16/16 22:42
108	NI.061616.224606	WG571834-05	Matrix Spike Duplica	20/50	1	L16060337-02	06/16/16 22:46
109	NI.061616.224917	L16060303-01	LH18/24-SP650-6368-GRAB	20/50	1		06/16/16 22:49
110	NI.061616.225229	L16060303-02	LH18/24-SP650-6368-COMP	20/50	1		06/16/16 22:52
111	NI.061616.225540	L16060304-02	LH18/24-SP650-6369-GRAB	20/50	1		06/16/16 22:55
112	NI.061616.225852	WG572184-03	Post Digestion Spike		1	L16060304-02	06/16/16 22:58
113	NI.061616.230203	WG572184-04	Serial Dilution		5	L16060304-02	06/16/16 23:02
114	NI.061616.230516	WG573095-32	CCV		1		06/16/16 23:05
115	NI.061616.230827	WG573095-33	CCB		1		06/16/16 23:08
116	NI.061616.231140	WG573095-34	Low Level Continuing Calibra		1		06/16/16 23:11

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Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062116A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573557,573473,573475

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.062116.123136	Blank	Blank		1		06/21/16 12:31
2	NI.062116.123447	WG573631-01	Calibration Point		1		06/21/16 12:34
3	NI.062116.123759	WG573631-02	Calibration Point		1		06/21/16 12:37
4	NI.062116.124110	WG573631-03	Calibration Point		1		06/21/16 12:41
5	NI.062116.124422	WG573631-04	Calibration Point		1		06/21/16 12:44
6	NI.062116.124735	WG573631-05	Initial Calibration Verification		1		06/21/16 12:47
7	NI.062116.125048	WG573631-06	Initial Calib Blank		1		06/21/16 12:50
8	NI.062116.125401	WG573631-07	Low Level Initial Calibration V		1		06/21/16 12:54
9	NI.062116.125712	WG573631-08	Interference Check		1		06/21/16 12:57
10	NI.062116.130024	WG573631-09	Interference Check		1		06/21/16 13:00
11	NI.062116.130337	WG573631-10	CCV		1		06/21/16 13:03
12	NI.062116.130648	WG573631-11	CCB		1		06/21/16 13:06
13	NI.062116.131000	WG573483-02	Method/Prep Blank	20/50	1		06/21/16 13:10
14	NI.062116.131312	WG573483-03	Laboratory Control S		1		06/21/16 13:13
15	NI.062116.131623	WG573483-01	Reference Sample		1	L16060961-03	06/21/16 13:16
16	NI.062116.131935	WG573483-04	Matrix Spike	20/50	1	L16060961-03	06/21/16 13:19
17	NI.062116.132247	WG573483-05	Matrix Spike Duplica	20/50	1	L16060961-03	06/21/16 13:22
18	NI.062116.132558	L16060731-02	60500-SSP0041-SSP0041	20/50	1		06/21/16 13:25
19	NI.062116.132910	WG573557-01	Post Digestion Spike		1	L16060731-02	06/21/16 13:29
20	NI.062116.133221	WG573557-02	Serial Dilution		5	L16060731-02	06/21/16 13:32
21	NI.062116.133650	WG573662-01	Reference Sample	20/50	1	L16060907-14	06/21/16 13:36
22	NI.062116.134003	WG573631-12	CCV		1		06/21/16 13:40
23	NI.062116.134314	WG573631-13	CCB		1		06/21/16 13:43
24	NI.062116.152226	L16060616-01	MW8-060916	20/50	1		06/21/16 15:22
25	NI.062116.152538	L16060616-02	18CPTMW26SW-060916	20/50	1		06/21/16 15:25
26	NI.062116.152849	L16060616-04	MW10F-060916	20/50	1		06/21/16 15:28
27	NI.062116.153201	L16060650-01	MW1-061016	20/50	1		06/21/16 15:32
28	NI.062116.153512	L16060650-02	MW3-061016	20/50	1		06/21/16 15:35
29	NI.062116.153823	L16060650-03	17WW08-061016	20/50	1		06/21/16 15:38
30	NI.062116.154135	L16060650-08	18WW24F-061016	20/50	1		06/21/16 15:41
31	NI.062116.154446	L16060729-02	A09-MW11-Y1S2	20/50	1		06/21/16 15:44
32	NI.062116.154758	L16060729-03	A09-MW12-Y1S2	20/50	1	WG572730-02	06/21/16 15:47
33	NI.062116.155109	L16060730-01	18CPTMW14-061316	20/50	1		06/21/16 15:51
34	NI.062116.155422	WG573631-14	CCV		1		06/21/16 15:54

Page: 1 Approved: June 22, 2016

Maren Berry

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Instrument Run Log

Instrument: ICP-MS2 Dataset: 062116A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573557,573473,573475

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.062116.155734	WG573631-15	CCB		1		06/21/16 15:57
36	NI.062116.160047	L16060730-02	18CPTMW14FD-061316	20/50	1		06/21/16 16:00
37	NI.062116.160358	L16060730-03	18CPTMW24-061316	20/50	1		06/21/16 16:03
38	NI.062116.160710	L16060961-01	GH58HS_MELZER_03-03-0	20/50	1		06/21/16 16:07
39	NI.062116.161021	L16060961-02	GH58HS_MELZER_03-03-0	20/50	1		06/21/16 16:10
40	NI.062116.161333	L16060995-01	UNTREATED	20/50	50		06/21/16 16:13
41	NI.062116.161644	L16060995-02	AFTER	20/50	50		06/21/16 16:16
42	NI.062116.161957	WG573631-16	CCV		1		06/21/16 16:19
43	NI.062116.162309	WG573631-17	CCB		1		06/21/16 16:23
44	NI.062116.171200	WG573111-04	Method/Prep Blank	20/50	1		06/21/16 17:12
45	NI.062116.171512	WG573111-05	Laboratory Control S	20/50	1		06/21/16 17:15
46	NI.062116.171823	WG573111-03	Reference Sample		1	L16060540-06	06/21/16 17:18
47	NI.062116.172135	WG573111-09	Matrix Spike	20/50	1	L16060540-06	06/21/16 17:21
48	NI.062116.172446	WG573111-10	Matrix Spike Duplica	20/50	1	L16060540-06	06/21/16 17:24
49	NI.062116.172758	L16060624-01	16F1312-03	20/50	1		06/21/16 17:27
50	NI.062116.173109	WG573473-01	Post Digestion Spike		1	L16060624-01	06/21/16 17:31
51	NI.062116.173421	WG573473-02	Serial Dilution		5	L16060624-01	06/21/16 17:34
52	NI.062116.173732	WG573473-02	Serial Dilution		25	L16060624-01	06/21/16 17:37
53	NI.062116.174045	WG573631-18	CCV		1		06/21/16 17:40
54	NI.062116.174357	WG573631-19	CCB		1		06/21/16 17:43
55	NI.062116.174710	L16060533-01	16F0399-01	20/50	1		06/21/16 17:47
56	NI.062116.175021	L16060784-03	J6E1050-02	20/50	5		06/21/16 17:50
57	NI.062116.175333	WG573111-01	Reference Sample		1	L16060787-09	06/21/16 17:53
58	NI.062116.175644	L16060787-10	U517TW006C	20/50	1		06/21/16 17:56
59	NI.062116.175956	WG573111-06	Matrix Spike	20/50	1	L16060787-09	06/21/16 17:59
60	NI.062116.180307	WG573111-07	Matrix Spike Duplica	20/50	1	L16060787-09	06/21/16 18:03
61	NI.062116.180619	L16060787-18	U517TW008A	20/50	1		06/21/16 18:06
62	NI.062116.180930	WG573111-02	Reference Sample		1	L16060862-01	06/21/16 18:09
63	NI.062116.181242	WG573111-08	Duplicate	20/50	1	L16060862-01	06/21/16 18:12
64	NI.062116.181553	L16060883-02	WC02	20/50	1		06/21/16 18:15
65	NI.062116.181906	WG573631-20	CCV		1		06/21/16 18:19
66	NI.062116.182218	WG573631-21	CCB		1		06/21/16 18:22
67	NI.062116.182531	L16060896-01	A08-MW02-Y1S2	20/50	1		06/21/16 18:25
68	NI.062116.182842	L16060896-02	A08-MW03-Y1S2	20/50	1		06/21/16 18:28

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Instrument Run Log

Instrument: ICP-MS2 Dataset: 062116A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573557,573473,573475

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.062116.183154	L16060896-03	A08-MW10-Y1S2	20/50	1		06/21/16 18:31
70	NI.062116.183505	L16060896-04	FD-01	20/50	1		06/21/16 18:35
71	NI.062116.183817	L16060896-05	FD-03	20/50	1		06/21/16 18:38
72	NI.062116.184128	L16060896-07	RB01-06-15-16	20/50	1		06/21/16 18:41
73	NI.062116.184440	L16060916-01	PHL 1 FRESHWATER IMPO	20/50	1		06/21/16 18:44
74	NI.062116.184751	L16060916-02	DS TYGERT RIVER	20/50	1		06/21/16 18:47
75	NI.062116.185104	WG573631-22	CCV		1		06/21/16 18:51
76	NI.062116.185415	WG573631-23	CCB		1		06/21/16 18:54
77	NI.062116.191207	WG573631-24	Low Level Continuing Calibra		1		06/21/16 19:12
78	NI.062116.193457	L16060995-01	UNTREATED	20/50	500		06/21/16 19:34
79	NI.062116.193809	L16060995-02	AFTER	20/50	500		06/21/16 19:38
80	NI.062116.194121	WG573631-25	CCV		1		06/21/16 19:41
81	NI.062116.194433	WG573631-26	CCB		1		06/21/16 19:44
82	NI.062116.194745	WG573333-03	Method/Prep Blank	.25/100	1		06/21/16 19:47
83	NI.062116.195057	WG573333-04	Laboratory Control S	.25/100	1		06/21/16 19:50
84	NI.062116.195408	L16061053-01	GS042QDCF01SB061716S-I		1	WG573333-02	06/21/16 19:54
85	NI.062116.195720	L16061053-02	GS042QDCF01SB061716S-I	.253/100	1	WG573333-07	06/21/16 19:57
86	NI.062116.200031	L16061053-03	GS042QDCF01SB061716S-I	.252/100	1	WG573333-08	06/21/16 20:00
87	NI.062116.200343	L16061054-01	GS037QBCF01XB061616S-I	.254/100	1		06/21/16 20:03
88	NI.062116.200654	WG573475-01	Post Digestion Spike		1	L16061054-01	06/21/16 20:06
89	NI.062116.201006	WG573475-02	Serial Dilution		5	L16061054-01	06/21/16 20:10
90	NI.062116.201317	WG573475-02	Serial Dilution		25	L16061054-01	06/21/16 20:13
91	NI.062116.201631	WG573631-27	CCV		1		06/21/16 20:16
92	NI.062116.201942	WG573631-28	CCB		1		06/21/16 20:19
93	NI.062116.202255	L16060787-03	U517SS00510A		1	WG573333-01	06/21/16 20:22
94	NI.062116.202607	L16060787-04	U517SS00510MS	.256/100	1	WG573333-05	06/21/16 20:26
95	NI.062116.202918	L16060787-05	U517SS00510MSD	.253/100	1	WG573333-06	06/21/16 20:29
96	NI.062116.203230	L16060787-06	U517SS00512A	.256/100	1		06/21/16 20:32
97	NI.062116.203541	L16060787-07	U517SS006010A	.256/100	1		06/21/16 20:35
98	NI.062116.203853	L16060787-08	U517SS00612A	.254/100	1		06/21/16 20:38
99	NI.062116.204204	L16060787-13	U517SS00708A	.252/100	1		06/21/16 20:42
100	NI.062116.204516	L16060787-14	U517SS00710A	.259/100	1		06/21/16 20:45
101	NI.062116.204827	L16060787-15	U517SS00808A	.257/100	1		06/21/16 20:48
102	NI.062116.205139	L16060787-16	U517SS00808C	.255/100	1		06/21/16 20:51

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062116A.REP

Analyst1: BKT Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76279 Post Spike: STD73705

ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607

CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345

Stannous : Hydroxylamine :

Workgroups: 573557,573473,573475

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.062116.205452	WG573631-29	CCV		1		06/21/16 20:54
104	NI.062116.205803	WG573631-30	CCB		1		06/21/16 20:58
105	NI.062116.210116	L16060787-17	U517SS00810A	.259/100	1		06/21/16 21:01
106	NI.062116.210428	L16060964-01	GH5-01	.252/100	1		06/21/16 21:04
107	NI.062116.210739	L16060964-02	GH5-02	.259/100	1		06/21/16 21:07
108	NI.062116.211051	L16060964-03	GH5-03	.254/100	1		06/21/16 21:10
109	NI.062116.211402	L16060964-04	GH5-04	.249/100	1		06/21/16 21:14
110	NI.062116.211714	L16060964-05	GH5-05	.252/100	1		06/21/16 21:17
111	NI.062116.212025	L16060964-06	GH5-06	.258/100	1		06/21/16 21:20
112	NI.062116.212337	L16061048-01	TR0062	.252/100	1		06/21/16 21:23
113	NI.062116.212649	WG573631-31	CCV		1		06/21/16 21:26
114	NI.062116.213001	WG573631-32	CCB		1		06/21/16 21:30

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Data Checklist

Date: 16-JUN-2016
Analyst: BKT
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 573095
Runlog ID: 75740
Analytical Workgroups: 573083,572869,572085,572184

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	
Level 4	303,304,411,540,616,650,729,730,731
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BKT
Secondary Reviewer	KHR
Comments	

Primary Reviewer:
20-JUN-2016

Secondary Reviewer:
20-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-20-2016 14:36:34

Microbac Laboratories Inc.

Data Checklist

Date: 21-JUN-2016
Analyst: BKT
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 573631
Runlog ID: 75827
Analytical Workgroups: 573557,573473,573475

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	
Level 4	540,616,624,650,729,730,731,787
Level 4	883,896,1053,1054
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BKT
Secondary Reviewer	MMB
Comments	

Primary Reviewer:
21-JUN-2016

Secondary Reviewer:
22-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-22-2016 13:22:13

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG572869

Login Number: L16060650

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW1-061016	01	06/10/16					06/15/2016	5	180		06/16/16	6.5	180	
MW1-061016	01	06/10/16					06/15/2016	5	180		06/16/16	6.6	180	
MW3-061016	02	06/10/16					06/15/2016	5	180		06/16/16	6.5	180	
MW3-061016	02	06/10/16					06/15/2016	5	180		06/16/16	6.5	180	
17WW08-061016	03	06/10/16					06/15/2016	4.9	180		06/16/16	6.5	180	
17WW08-061016	03	06/10/16					06/15/2016	4.9	180		06/16/16	6.4	180	
18WW24F-061016	08	06/10/16					06/15/2016	4.7	180		06/16/16	6.3	180	
18WW24F-061016	08	06/10/16					06/15/2016	4.7	180		06/16/16	6.2	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4812147
Report generated 06/21/2016 18:21

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG573557

Login Number: L16060650

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW1-061016	01	06/10/16					06/21/2016	11	180		06/21/16	11.3	180	
MW3-061016	02	06/10/16					06/21/2016	10.9	180		06/21/16	11.3	180	
17WW08-061016	03	06/10/16					06/21/2016	10.9	180		06/21/16	11.2	180	
18WW24F-061016	08	06/10/16					06/21/2016	10.7	180		06/21/16	11	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4812147
Report generated 06/21/2016 18:21

METHOD BLANK SUMMARY

Login Number: L16060650
Blank File ID: NI.061616.190516
Prep Date: 06/15/16 07:54
Analyzed Date: 06/16/16 19:05
Analyst: BKT

Work Group: WG572869
Blank Sample ID: WG572730-03
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572730-04	NI.061616.190828	06/16/16 19:08	01
DUP	WG572730-05	NI.061616.191541	06/16/16 19:15	01
MW1-061016	L16060650-01	NI.061616.200024	06/16/16 20:00	01
MW3-061016	L16060650-02	NI.061616.200336	06/16/16 20:03	01
17WW08-061016	L16060650-03	NI.061616.200647	06/16/16 20:06	01
18WW24F-061016	L16060650-08	NI.061616.201257	06/16/16 20:12	01
MW1-061016	L16060650-01	NI.061616.212301	06/16/16 21:23	DL01
MW3-061016	L16060650-02	NI.061616.212612	06/16/16 21:26	DL01
17WW08-061016	L16060650-03	NI.061616.212923	06/16/16 21:29	DL01
18WW24F-061016	L16060650-08	NI.061616.213235	06/16/16 21:32	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4812148
Report generated 06/21/2016 18:21

METHOD BLANK SUMMARY

Login Number: L16060650
Blank File ID: NI.062116.131000
Prep Date: 06/21/16 07:48
Analyzed Date: 06/21/16 13:10
Analyst: BKT

Work Group: WG573557
Blank Sample ID: WG573483-02
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573483-03	NI.062116.133650	06/21/16 13:36	01
MW1-061016	L16060650-01	NI.062116.153201	06/21/16 15:32	02
MW3-061016	L16060650-02	NI.062116.153512	06/21/16 15:35	02
17WW08-061016	L16060650-03	NI.062116.153823	06/21/16 15:38	02
18WW24F-061016	L16060650-08	NI.062116.154135	06/21/16 15:41	02

Report Name: BLANK_SUMMARY
PDF File ID: 4812148
Report generated 06/21/2016 18:21

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060650 Prep Date: 06/15/16 07:54 Sample ID: WG572730-03
Instrument ID: ICP-MS2 Run Date: 06/16/16 19:05 Prep Method: 3015
File ID: NI.061616.190516 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG572869 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-16-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Antimony, Total	0.000500	0.00200	0.000500	1	U
Arsenic, Total	0.000500	0.00200	0.00354	1	*
Barium, Total	0.00150	0.00600	0.0283	1	*
Cadmium, Total	0.000300	0.00120	0.000300	1	U
Chromium, Total	0.00100	0.00400	0.00100	1	U
Cobalt, Total	0.000500	0.00200	0.000500	1	U
Copper, Total	0.00100	0.00400	0.00100	1	U
Lead, Total	0.000500	0.00200	0.000500	1	U
Manganese, Total	0.00100	0.00400	0.00100	1	U
Nickel, Total	0.00200	0.00800	0.00200	1	U
Thallium, Total	0.000100	0.000400	0.000100	1	U
Vanadium, Total	0.000500	0.00200	0.000500	1	U
Zinc, Total	0.0125	0.0500	0.0125	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4812149
21-JUN-2016 18:22

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060650 Prep Date: 06/21/16 07:48 Sample ID: WG573483-02
Instrument ID: ICP-MS2 Run Date: 06/21/16 13:10 Prep Method: 3015
File ID: NI.062116.131000 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG573557 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-21-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Arsenic, Total	0.000500	0.00200	0.000500	1	U
Barium, Total	0.00150	0.00600	0.00150	1	U
Silver, Total	0.000500	0.00200	0.000500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4812149
21-JUN-2016 18:22

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060650 Run Date: 06/16/2016 Sample ID: WG572730-04
Instrument ID: ICP-MS2 Run Time: 19:08 Prep Method: 3015
File ID: NI.061616.190828 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG572869 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD75998 Cal ID: ICP-MS-16-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Antimony, Total	0.125	0.118	94.6	80 - 120	
Arsenic, Total	0.125	0.122	97.8	80 - 120	
Barium, Total	0.125	0.122	97.3	80 - 120	
Cadmium, Total	0.125	0.122	97.9	80 - 120	
Chromium, Total	0.125	0.126	100	80 - 120	
Cobalt, Total	0.125	0.133	106	80 - 120	
Copper, Total	0.125	0.124	99.5	80 - 120	
Lead, Total	0.125	0.124	99.2	80 - 120	
Manganese, Total	0.125	0.136	109	80 - 120	
Nickel, Total	0.125	0.124	99.1	80 - 120	
Thallium, Total	0.125	0.118	94.7	80 - 120	
Vanadium, Total	0.125	0.127	102	80 - 120	
Zinc, Total	0.125	0.126	101	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4812150
Report generated: 06/21/2016 18:22

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060650 Run Date: 06/21/2016 Sample ID: WG573483-03
Instrument ID: ICP-MS2 Run Time: 13:36 Prep Method: 3015
File ID: NI.062116.133650 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG573557 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD75998 Cal ID: ICP-MS-21-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Arsenic, Total	0.125	0.125	100	80 - 120	
Barium, Total	0.125	0.127	101	80 - 120	
Silver, Total	0.125	0.130	104	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4812150
Report generated: 06/21/2016 18:22

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060650 Cal ID: ICP-MS2- Worknum: WG572869
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG572730-02 File ID: NI.061616.191852 Dil: 1 Matrix: WATER
Sample ID: WG572730-06 MS File ID: NI.061616.192204 Dil: 1 Units: mg/L
Sample ID: WG572730-07 MSD File ID: NI.061616.192515 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Antimony	0.000748	0.125	0.117	93.0	0.125	0.120	95.4	2.48	80 - 120	20	
Arsenic	ND	0.125	0.124	99.1	0.125	0.135	108	8.40	80 - 120	20	
Barium	0.0532	0.125	0.163	87.8	0.125	0.360	246	75.4	80 - 120	20	*#
Cadmium	0.000380	0.125	0.118	94.3	0.125	0.118	94.5	0.202	80 - 120	20	
Chromium	0.00126	0.125	0.122	96.2	0.125	0.128	101	5.15	80 - 120	20	
Cobalt	0.0627	0.125	0.194	105	0.125	0.210	118	8.06	80 - 120	20	
Copper	0.00880	0.125	0.129	96.3	0.125	0.134	100	3.48	80 - 120	20	
Lead	0.00276	0.125	0.122	95.5	0.125	0.128	100	4.87	80 - 120	20	
Manganese	0.984	0.125	1.12	108	0.125	1.21	177	7.43	80 - 120	20	*
Nickel	0.0243	0.125	0.144	95.7	0.125	0.150	100	4.07	80 - 120	20	
Thallium	ND	0.125	0.117	93.4	0.125	0.122	97.3	4.07	80 - 120	20	
Vanadium	ND	0.125	0.127	101	0.125	0.135	108	6.40	80 - 120	20	
Zinc	0.0715	0.125	0.193	97.4	0.125	0.203	105	4.74	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4812151
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060650 Cal ID: ICP-MS2- Worknum: WG573557
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG573483-01 File ID: NI.062116.131623 Dil: 1 Matrix: WATER
Sample ID: WG573483-04 MS File ID: NI.062116.131935 Dil: 1 Units: mg/L
Sample ID: WG573483-05 MSD File ID: NI.062116.132247 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Arsenic	ND	0.125	0.128	103	0.125	0.125	100	2.26	80 - 120	20	
Barium	0.0370	0.125	0.156	95.4	0.125	0.159	97.5	1.73	80 - 120	20	
Silver	ND	0.125	0.119	95.1	0.125	0.123	98.5	3.53	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4812151
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16060650 **Worknum:** WG573557
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG573557-02 **File ID:** NI.062116.133221 **Dil:** 5 **Units:** ug/L
Sample: L16060731-02 **File ID:** NI.062116.132558 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	1.14		ND			
Arsenic	12.2	X	12.5	X	2.14	
Barium	10.8	X	11.8	F	9.87	
Cadmium	0.267		ND			
Chromium	1.95		ND			
Cobalt	0.370		ND			
Copper	147		ND			
Lead	9.25		ND			
Manganese	21.0		ND			
Nickel	1.17		ND			
Silver	ND	U	ND	U		
Thallium	0.0436		ND			
Vanadium	5.28		ND			
Zinc	18.4		ND			

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4812145
06/21/2016 18:21

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16060650 **Worknum:** WG572869
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG572869-02 **File ID:** NI.061616.193450 **Dil:** 5 **Units:** ug/L
Sample: L16060754-01 **File ID:** NI.061616.192827 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	ND	U	2.27	F	1100.00	
Arsenic	0.304	F	ND	U		
Barium	21.4	X	20.8	X	2.86	
Cadmium	ND	U	ND	U		
Chromium	1.95	X	2.11	F	8.12	
Cobalt	0.616	F	ND	U		
Copper	104		107		2.99	
Lead	1.81	X	1.85	F	2.23	
Manganese	18.1	X	17.9	X	0.86	
Nickel	2.91	F	ND	U		
Silver	ND	U	ND	U		
Thallium	ND	U	ND	U		
Vanadium	1.81	X	2.04	F	12.90	
Zinc	97.6	X	100	X	2.53	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4812145
06/21/2016 18:21

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16060650 **Worknum:** WG572869
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG572869-02 **File ID:** NI.061616.194427 **Dil:** 25 **Units:** ug/L
Sample: L16060754-01 **File ID:** NI.061616.193450 **Dil:** 5

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	2.27	F	ND	U		
Arsenic	ND	U	ND	U		
Barium	20.8	X	20.9	F	0.70	
Cadmium	ND	U	ND	U		
Chromium	2.11	F	ND	U		
Cobalt	ND	U	ND	U		
Copper	107	X	110	X	2.54	
Lead	1.85	F	ND	U		
Manganese	17.9	X	18.9	F	5.54	
Nickel	ND	U	ND	U		
Silver	ND	U	ND	U		
Thallium	ND	U	ND	U		
Vanadium	2.04	F	ND	U		
Zinc	100	X	ND	U		

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4812145
06/21/2016 18:21

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060650 **Worknum:** WG572869
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG572869-01 **File ID:** NI.061616.193138 **Dil:** 1 **Units:** ug/L
Sample ID: L16060754-01 **File ID:** NI.061616.192827 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	51.2		0	U	50	102.4	75 - 125	
ARSENIC	49.9		0.304	F	50	99.2	75 - 125	
BARIUM	70.7		21.4		50	98.7	75 - 125	
CADMIUM	50.8		0	U	50	101.5	75 - 125	
CHROMIUM	49.7		1.95		50	95.5	75 - 125	
COBALT	53.8		0.616	F	50	106.4	75 - 125	
COPPER	146		104		50	84.8	75 - 125	
LEAD	47.6		1.81		50	91.6	75 - 125	
MANGANESE	68.2		18.1		50	100.2	75 - 125	
NICKEL	49.4		2.91	F	50	92.9	75 - 125	
SILVER	50.6		0	U	50	101.2	75 - 125	
THALLIUM	44.4		0	U	50	88.7	75 - 125	
VANADIUM	53.4		1.81		50	103.2	75 - 125	
ZINC	139		97.6		50	83.0	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4812146
Report generated: 06/21/2016 18:21

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060650 **Worknum:** WG573557
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG573557-01 **File ID:** NI.062116.132910 **Dil:** 1 **Units:** ug/L
Sample ID: L16060731-02 **File ID:** NI.062116.132558 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	50.4		1.14		50	98.5	75 - 125	
ARSENIC	64.0		12.2		50	103.6	75 - 125	
BARIUM	60.7		10.8		50	99.9	75 - 125	
CADMIUM	51.9		0.267	F	50	103.2	75 - 125	
CHROMIUM	52.8		1.95		50	101.7	75 - 125	
COBALT	53.2		0.370	F	50	105.7	75 - 125	
COPPER	195		147		50	96.4	75 - 125	
LEAD	60.3		9.25		50	102.0	75 - 125	
MANGANESE	72.2		21.0		50	102.4	75 - 125	
NICKEL	51.1		1.17	F	50	99.8	75 - 125	
SILVER	50.1		0	U	50	100.3	75 - 125	
THALLIUM	49.7		0.0436	F	50	99.4	75 - 125	
VANADIUM	57.1		5.28		50	103.6	75 - 125	
ZINC	70.3		18.4	F	50	103.8	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4812146
Report generated: 06/21/2016 18:21

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16060650	Workgroup (AAB#):	WG572869
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG573095	Initial Calibration Date:	16-JUN-2016 15:43

	WG573095-01		WG573095-02		WG573095-03		WG573095-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	44.3	.4	294	50	219000	100	429000	.999808	
ARSENIC	0	72.1	.4	27.4	50	55400	100	107000	.999975	
BARIUM	0	17.0	.4	202	50	90500	100	179000	.999915	
CADMIUM	0	3.70	.4	107	50	96700	100	192000	.999929	
CHROMIUM	0	2890	.4	7150	50	370000	100	726000	.999966	
COBALT	0	263	.4	583	50	321000	100	621000	.999989	
COPPER	0	79.7	.4	217	50	93700	100	182000	.999999	
LEAD	0	828	.4	1800	50	831000	100	1630000	.999997	
MANGANESE	0	613	.4	1040	50	296000	100	576000	1	
NICKEL	0	108	.4	245	50	96000	100	187000	1	
SILVER	0	82.7	.4	386	50	301000	100	584000	.999738	
THALLIUM	0	10.0	.4	392	50	373000	100	729000	.999991	
VANADIUM	0	581	.4	1540	50	356000	100	688000	.999992	
ZINC	0	145	.4	311	50	55400	100	108000	1	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4812154
Report generated: 21-JUN-2016 18:22

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16060650	Workgroup (AAB#):	WG573557
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG573631	Initial Calibration Date:	21-JUN-2016 12:44

	WG573631-01		WG573631-02		WG573631-03		WG573631-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	43.1	.4	245	50	207000	100	404000	.999913	
ARSENIC	0	-25.5	.4	16.4	50	52300	100	101000	.999973	
BARIUM	0	106	.4	194	50	89200	100	176000	.999962	
CADMIUM	0	9.30	.4	103	50	91400	100	179000	.999944	
CHROMIUM	0	5910	.4	6080	50	320000	100	622000	.999997	
COBALT	0	269	.4	583	50	304000	100	585000	.999971	
COPPER	0	156	.4	255	50	88900	100	173000	.999998	
LEAD	0	792	.4	1730	50	793000	100	1540000	.999869	
MANGANESE	0	1210	.4	1640	50	319000	100	618000	.999993	
NICKEL	0	292	.4	417	50	89800	100	174000	.999991	
SILVER	0	92.7	.4	386	50	288000	100	561000	.999911	
THALLIUM	0	11.0	.4	386	50	361000	100	706000	.999917	
VANADIUM	0	1010	.4	1270	50	298000	100	571000	.999958	
ZINC	0	143	.4	285	50	51700	100	100000	.999996	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4812154
Report generated: 21-JUN-2016 18:22

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573095-09
Instrument ID: ICP-MS2
Run Time: 16:03
Method: 6020A
File ID: NI.061616.160355
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572869
Cal ID: ICP-MS2 - 16-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
COPPER	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.268	F
THALLIUM	.04	.16	.04	U
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4812156
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060650
Instrument ID: ICP-MS2
File ID: NI.062116.125048
Workgroup (AAB#): WG573557
Matrix: WATER

Run Date: 06/21/2016
Run Time: 12:50
Analyst: BKT
Cal ID: ICP-MS2 - 21-JUN-16

Sample ID: WG573631-06
Method: 6020A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U

U = Result is less than 2 x MDL
F = Result is between MDL and 2 x MDL
* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4812156
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573095-13
Instrument ID: ICP-MS2
Run Time: 16:38
Method: 6020A
File ID: NI.061616.163850
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812159
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573095-19
Instrument ID: ICP-MS2
Run Time: 18:58
Method: 6020A
File ID: NI.061616.185850
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812159
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573095-22
Instrument ID: ICP-MS2
Run Time: 19:41
Method: 6020A
File ID: NI.061616.194114
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812159
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573095-24
Instrument ID: ICP-MS2
Run Time: 20:22
Method: 6020A
File ID: NI.061616.202232
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812159
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573095-26
Instrument ID: ICP-MS2
Run Time: 21:10
Method: 6020A
File ID: NI.061616.211014
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573095-28
Instrument ID: ICP-MS2
Run Time: 21:48
Method: 6020A
File ID: NI.061616.214835
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/21/2016
Sample ID: WG573631-11
Instrument ID: ICP-MS2
Run Time: 13:06
Method: 6020A
File ID: NI.062116.130648
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Silver	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/21/2016
Sample ID: WG573631-13
Instrument ID: ICP-MS2
Run Time: 13:43
Method: 6020A
File ID: NI.062116.134314
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Silver	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/21/2016
Sample ID: WG573631-15
Instrument ID: ICP-MS2
Run Time: 15:57
Method: 6020A
File ID: NI.062116.155734
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Silver	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573095-08
Instrument ID: ICP-MS2
Run Time: 15:57
Method: 6020A
File ID: NI.061616.155746
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	46.9	93.8	90 - 110	
Arsenic		50	49.9	99.8	90 - 110	
Barium		50	47.7	95.3	90 - 110	
Cadmium		50	48.1	96.2	90 - 110	
Chromium		50	50.4	101	90 - 110	
Cobalt		50	49.2	98.4	90 - 110	
Copper		50	50.2	100	90 - 110	
Lead		50	48.5	96.9	90 - 110	
Manganese		50	51.6	103	90 - 110	
Nickel		50	50.1	100	90 - 110	
Thallium		50	47.8	95.7	90 - 110	
Vanadium		50	48.7	97.3	90 - 110	
Zinc		50	50.0	100	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4812155
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060650
Run Date: 06/21/2016
Sample ID: WG573631-05
Instrument ID: ICP-MS2
Run Time: 12:47
Method: 6020A
File ID: NI.062116.124735
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Arsenic		50	50.4	101	90 - 110	
Barium		50	49.0	98.1	90 - 110	
Silver		50	49.8	99.6	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4812155
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573095-12
Instrument ID: ICP-MS2
Run Time: 16:25
Method: 6020A
File ID: NI.061616.162516
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0492	mg/L	98.4	90 - 110		
Arsenic		0.0500	0.0498	mg/L	99.6	90 - 110		
Barium		0.0500	0.0480	mg/L	96.0	90 - 110		
Cadmium		0.0500	0.0483	mg/L	96.7	90 - 110		
Chromium		0.0500	0.0497	mg/L	99.4	90 - 110		
Cobalt		0.0500	0.0504	mg/L	101	90 - 110		
Copper		0.0500	0.0502	mg/L	100	90 - 110		
Lead		0.0500	0.0490	mg/L	98.0	90 - 110		
Manganese		0.0500	0.0514	mg/L	103	90 - 110		
Nickel		0.0500	0.0501	mg/L	100	90 - 110		
Thallium		0.0500	0.0491	mg/L	98.2	90 - 110		
Vanadium		0.0500	0.0497	mg/L	99.3	90 - 110		
Zinc		0.0500	0.0499	mg/L	99.7	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812158
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573095-18
Instrument ID: ICP-MS2
Run Time: 18:55
Method: 6020A
File ID: NI.061616.185538
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0494	mg/L	98.8	90 - 110		
Arsenic		0.0500	0.0496	mg/L	99.2	90 - 110		
Barium		0.0500	0.0486	mg/L	97.2	90 - 110		
Cadmium		0.0500	0.0500	mg/L	100	90 - 110		
Chromium		0.0500	0.0500	mg/L	100	90 - 110		
Cobalt		0.0500	0.0532	mg/L	106	90 - 110		
Copper		0.0500	0.0496	mg/L	99.2	90 - 110		
Lead		0.0500	0.0501	mg/L	100	90 - 110		
Manganese		0.0500	0.0540	mg/L	108	90 - 110		
Nickel		0.0500	0.0492	mg/L	98.5	90 - 110		
Thallium		0.0500	0.0493	mg/L	98.6	90 - 110		
Vanadium		0.0500	0.0506	mg/L	101	90 - 110		
Zinc		0.0500	0.0496	mg/L	99.2	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573095-21
Instrument ID: ICP-MS2
Run Time: 19:38
Method: 6020A
File ID: NI.061616.193803
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0512	mg/L	102	90 - 110		
Arsenic		0.0500	0.0488	mg/L	97.6	90 - 110		
Barium		0.0500	0.0486	mg/L	97.1	90 - 110		
Cadmium		0.0500	0.0503	mg/L	101	90 - 110		
Chromium		0.0500	0.0490	mg/L	98.0	90 - 110		
Cobalt		0.0500	0.0548	mg/L	110	90 - 110		
Copper		0.0500	0.0486	mg/L	97.2	90 - 110		
Lead		0.0500	0.0517	mg/L	103	90 - 110		
Manganese		0.0500	0.0527	mg/L	105	90 - 110		
Nickel		0.0500	0.0487	mg/L	97.4	90 - 110		
Thallium		0.0500	0.0499	mg/L	99.9	90 - 110		
Vanadium		0.0500	0.0515	mg/L	103	90 - 110		
Zinc		0.0500	0.0495	mg/L	98.9	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573095-23
Instrument ID: ICP-MS2
Run Time: 20:19
Method: 6020A
File ID: NI.061616.201921
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0477	mg/L	95.4	90 - 110		
Arsenic		0.0500	0.0484	mg/L	96.8	90 - 110		
Barium		0.0500	0.0467	mg/L	93.3	90 - 110		
Cadmium		0.0500	0.0485	mg/L	96.9	90 - 110		
Chromium		0.0500	0.0490	mg/L	97.9	90 - 110		
Cobalt		0.0500	0.0524	mg/L	105	90 - 110		
Copper		0.0500	0.0483	mg/L	96.5	90 - 110		
Lead		0.0500	0.0502	mg/L	100	90 - 110		
Manganese		0.0500	0.0530	mg/L	106	90 - 110		
Nickel		0.0500	0.0478	mg/L	95.6	90 - 110		
Thallium		0.0500	0.0479	mg/L	95.7	90 - 110		
Vanadium		0.0500	0.0501	mg/L	100	90 - 110		
Zinc		0.0500	0.0480	mg/L	95.9	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573095-25
Instrument ID: ICP-MS2
Run Time: 21:07
Method: 6020A
File ID: NI.061616.210702
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0484	mg/L	96.9	90 - 110		
Arsenic		0.0500	0.0488	mg/L	97.5	90 - 110		
Barium		0.0500	0.0477	mg/L	95.4	90 - 110		
Cadmium		0.0500	0.0483	mg/L	96.7	90 - 110		
Chromium		0.0500	0.0499	mg/L	99.8	90 - 110		
Cobalt		0.0500	0.0494	mg/L	98.8	90 - 110		
Copper		0.0500	0.0496	mg/L	99.2	90 - 110		
Lead		0.0500	0.0494	mg/L	98.8	90 - 110		
Manganese		0.0500	0.0534	mg/L	107	90 - 110		
Nickel		0.0500	0.0496	mg/L	99.2	90 - 110		
Thallium		0.0500	0.0475	mg/L	95.0	90 - 110		
Vanadium		0.0500	0.0503	mg/L	101	90 - 110		
Zinc		0.0500	0.0497	mg/L	99.4	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573095-27
Instrument ID: ICP-MS2
Run Time: 21:45
Method: 6020A
File ID: NI.061616.214523
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0479	mg/L	95.7	90 - 110		
Arsenic		0.0500	0.0498	mg/L	99.7	90 - 110		
Barium		0.0500	0.0478	mg/L	95.6	90 - 110		
Cadmium		0.0500	0.0483	mg/L	96.6	90 - 110		
Chromium		0.0500	0.0507	mg/L	101	90 - 110		
Cobalt		0.0500	0.0512	mg/L	102	90 - 110		
Copper		0.0500	0.0503	mg/L	101	90 - 110		
Lead		0.0500	0.0512	mg/L	102	90 - 110		
Manganese		0.0500	0.0553	mg/L	111	90 - 110		*
Nickel		0.0500	0.0504	mg/L	101	90 - 110		
Thallium		0.0500	0.0492	mg/L	98.4	90 - 110		
Vanadium		0.0500	0.0507	mg/L	101	90 - 110		
Zinc		0.0500	0.0501	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/21/2016
Sample ID: WG573631-10
Instrument ID: ICP-MS2
Run Time: 13:03
Method: 6020A
File ID: NI.062116.130337
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Arsenic		0.0500	0.0504	mg/L	101	90 - 110		
Barium		0.0500	0.0495	mg/L	99.0	90 - 110		
Silver		0.0500	0.0492	mg/L	98.4	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/21/2016
Sample ID: WG573631-12
Instrument ID: ICP-MS2
Run Time: 13:40
Method: 6020A
File ID: NI.062116.134003
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Arsenic		0.0500	0.0508	mg/L	102	90 - 110		
Barium		0.0500	0.0493	mg/L	98.6	90 - 110		
Silver		0.0500	0.0497	mg/L	99.3	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/21/2016
Sample ID: WG573631-14
Instrument ID: ICP-MS2
Run Time: 15:54
Method: 6020A
File ID: NI.062116.155422
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Arsenic		0.0500	0.0505	mg/L	101	90 - 110		
Barium		0.0500	0.0508	mg/L	102	90 - 110		
Silver		0.0500	0.0514	mg/L	103	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573095-07
Instrument ID: ICP-MS2
Run Time: 15:52
Method: 6020A
File ID: NI.061616.155239
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.437	ug/L	109	70 - 130		
Arsenic		0.400	0.412	ug/L	103	70 - 130		
Barium		0.750	0.670	ug/L	89.4	70 - 130		
Cadmium		0.240	0.237	ug/L	98.6	70 - 130		
Chromium		0.800	0.723	ug/L	90.4	70 - 130		
Cobalt		0.400	0.380	ug/L	95.0	70 - 130		
Copper		0.800	0.790	ug/L	98.7	70 - 130		
Lead		0.200	0.183	ug/L	91.4	70 - 130		
Manganese		0.500	0.452	ug/L	90.4	70 - 130		
Nickel		1.60	1.54	ug/L	96.1	70 - 130		
Thallium		0.0800	0.0818	ug/L	102	70 - 130		
Vanadium		0.400	0.354	ug/L	88.5	70 - 130		
Zinc		6.25	6.72	ug/L	107	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4812160
Report generated 06/22/2016 13:43

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573095-20
Instrument ID: ICP-MS2
Run Time: 19:02
Method: 6020A
File ID: NI.061616.190202
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.394	ug/L	98.5	70 - 130		
Arsenic		0.400	0.383	ug/L	95.8	70 - 130		
Barium		0.750	0.633	ug/L	84.4	70 - 130		
Cadmium		0.240	0.238	ug/L	99.0	70 - 130		
Chromium		0.800	0.710	ug/L	88.8	70 - 130		
Cobalt		0.400	0.391	ug/L	97.6	70 - 130		
Copper		0.800	0.779	ug/L	97.4	70 - 130		
Lead		0.200	0.185	ug/L	92.4	70 - 130		
Manganese		0.500	0.600	ug/L	120	70 - 130		
Nickel		1.60	1.49	ug/L	93.1	70 - 130		
Thallium		0.0800	0.0829	ug/L	104	70 - 130		
Vanadium		0.400	0.360	ug/L	90.1	70 - 130		
Zinc		6.25	6.68	ug/L	107	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4812160
Report generated 06/22/2016 13:43

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573095-29
Instrument ID: ICP-MS2
Run Time: 21:51
Method: 6020A
File ID: NI.061616.215148
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.379	ug/L	94.7	70 - 130		
Arsenic		0.400	0.373	ug/L	93.3	70 - 130		
Barium		0.750	0.661	ug/L	88.1	70 - 130		
Cadmium		0.240	0.222	ug/L	92.4	70 - 130		
Chromium		0.800	0.719	ug/L	89.8	70 - 130		
Cobalt		0.400	0.364	ug/L	91.0	70 - 130		
Copper		0.800	0.802	ug/L	100	70 - 130		
Lead		0.200	0.176	ug/L	88.2	70 - 130		
Manganese		0.500	0.484	ug/L	96.8	70 - 130		
Nickel		1.60	1.55	ug/L	96.6	70 - 130		
Thallium		0.0800	0.0736	ug/L	92.0	70 - 130		
Vanadium		0.400	0.363	ug/L	90.7	70 - 130		
Zinc		6.25	6.31	ug/L	101	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4812160
Report generated 06/22/2016 13:43

Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060650
Run Date: 06/21/2016
Sample ID: WG573631-07
Instrument ID: ICP-MS2
Run Time: 12:54
Method: 6020A
File ID: NI.062116.125401
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Arsenic		0.400	0.431	ug/L	108	70 - 130		
Barium		0.750	0.681	ug/L	90.8	70 - 130		
Silver		0.400	0.401	ug/L	100	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4812160
Report generated 06/22/2016 13:43

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060650
Run Date: 06/21/2016
Sample ID: WG573631-24
Instrument ID: ICP-MS2
Run Time: 19:12
Method: 6020A
File ID: NI.062116.191207
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Arsenic		0.400	0.388	ug/L	97.1	70 - 130		
Barium		0.750	0.690	ug/L	92.0	70 - 130		
Silver		0.400	0.394	ug/L	98.6	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4812160
Report generated 06/22/2016 13:43

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060650
Instrument ID: ICP-MS2
Sol. A : WG573095-10 **File ID:** NI.061616.160740
Sol. AB : WG573095-11 **File ID:** NI.061616.162201

Workgroup (AAB#): WG572869
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.0793	NS	100	94.6	94.6	
Arsenic	NS	-0.0113	NS	100	102	102	
Barium	NS	0.0676	NS	100	94.7	94.7	
Cadmium	NS	-0.0599	NS	100	96.1	96.1	
Chromium	NS	0.0900	NS	100	99.8	99.8	
Cobalt	NS	0.0224	NS	100	104	104	
Copper	NS	0.277	NS	100	99.9	99.9	
Lead	NS	0.0928	NS	100	98.9	98.9	
Manganese	NS	0.0620	NS	100	106	106	
Nickel	NS	0.326	NS	100	99.4	99.4	
Thallium	NS	0.113	NS	100	98.0	98.0	
Vanadium	NS	0.00810	NS	100	100	100	
Zinc	NS	1.37	NS	100	102	102	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4812157
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060650
Instrument ID: ICP-MS2
Sol. A : WG573631-08 **File ID:** NI.062116.125712
Sol. AB : WG573631-09 **File ID:** NI.062116.130024

Workgroup (AAB#): WG573557
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Arsenic	NS	0.00630	NS	100	101	101	
Barium	NS	0.186	NS	100	100	100	
Silver	NS	0.0339	NS	100	95.1	95.1	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4812157
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060650 **Analytical Method:** 6020
Analytical Workgroup: WG572869 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 16-JUN-2016 15:33

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060650-01	SAMP	16-JUN-2016 20:00	93.943	96.925	96.746
L16060650-01	SAMP	16-JUN-2016 21:23	99.579	97.881	104.603
L16060650-02	SAMP	16-JUN-2016 20:03	97.537	95.685	101.514
L16060650-02	SAMP	16-JUN-2016 21:26	94.93	97.746	101.426
L16060650-03	SAMP	16-JUN-2016 20:06	97.564	96.287	103.83
L16060650-03	SAMP	16-JUN-2016 21:29	96.662	100.711	99.068
L16060650-08	SAMP	16-JUN-2016 20:12	98.503	99.399	101.978
L16060650-08	SAMP	16-JUN-2016 21:32	99.127	98.545	102.691
WG572730-03	BLANK	16-JUN-2016 19:05	100.216	99.081	102.939
WG572730-04	LCS	16-JUN-2016 19:08	101.421	99.849	103.204
WG572869-01	PSPK	16-JUN-2016 19:31	112.105	100.336	99.705
WG572869-02	SERIAL	16-JUN-2016 19:34	109.035	99.586	107.45
WG572869-02	SERIAL	16-JUN-2016 19:44	102.137	96.905	105.944
WG573095-07	LLICV	16-JUN-2016 15:52	96.13	93.157	96.318
WG573095-08	ICV	16-JUN-2016 15:57	97.13	96.114	99.927
WG573095-09	ICB	16-JUN-2016 16:03	97.661	96.107	100.676
WG573095-10	ICS	16-JUN-2016 16:07	96.606	97.591	98.938
WG573095-11	ICS	16-JUN-2016 16:22	96.039	94.231	101.38
WG573095-12	CCV	16-JUN-2016 16:25	96.818	96.058	101.069
WG573095-13	CCB	16-JUN-2016 16:38	95.395	96.878	98.817
WG573095-18	CCV	16-JUN-2016 18:55	100.879	98.942	103.257
WG573095-19	CCB	16-JUN-2016 18:58	100.363	100.186	103.213
WG573095-20	LLCCV	16-JUN-2016 19:02	98.621	96.559	99.934
WG573095-21	CCV	16-JUN-2016 19:38	99.655	98.678	100.997
WG573095-22	CCB	16-JUN-2016 19:41	103.251	98.035	102.526
WG573095-23	CCV	16-JUN-2016 20:19	102.275	100.766	107.12
WG573095-24	CCB	16-JUN-2016 20:22	101.002	103.79	104.368
WG573095-25	CCV	16-JUN-2016 21:07	98.791	98.968	101.902
WG573095-26	CCB	16-JUN-2016 21:10	98.056	96.18	104.938
WG573095-27	CCV	16-JUN-2016 21:45	94.877	96.278	101.991
WG573095-28	CCB	16-JUN-2016 21:48	95.773	98.51	99.349
WG573095-29	LLCCV	16-JUN-2016 21:51	96.58	95.236	98.152

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4812153
Report generated: 06/21/2016 18:22

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060650 **Analytical Method:** 6020
Analytical Workgroup: WG572869 **Matrix:** 18
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 16-JUN-2016 15:33

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060731-02	SAMP	16-JUN-2016 20:46	98.985	103.449	100.756
L16060731-02	SAMP	16-JUN-2016 20:49	100.189	99.166	103.967

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4812153
Report generated: 06/21/2016 18:22

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060650 **Analytical Method:** 6020
Analytical Workgroup: WG572869 **Matrix:** 2
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 16-JUN-2016 15:33

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060754-01	SAMP	16-JUN-2016 19:28	110.371	97.831	102.475
L16060754-01	SAMP	16-JUN-2016 19:34	109.035	99.586	107.45

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4812153
Report generated: 06/21/2016 18:22

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060650 **Analytical Method:** 6020
Analytical Workgroup: WG573557 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 21-JUN-2016 12:34

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060650-01	SAMP	21-JUN-2016 15:32	91.399	99.565	95.377
L16060650-02	SAMP	21-JUN-2016 15:35	94.342	101.97	95.122
L16060650-03	SAMP	21-JUN-2016 15:38	100.263	101.048	101.31
L16060650-08	SAMP	21-JUN-2016 15:41	96.504	99.317	101.843
WG573483-02	BLANK	21-JUN-2016 13:10	95.679	98.524	97.195
WG573483-03	LCS	21-JUN-2016 13:36	94.921	99.695	97.281
WG573557-01	PSPK	21-JUN-2016 13:29	98.084	98.955	98.448
WG573557-02	SERIAL	21-JUN-2016 13:32	97.19	102.137	97.153
WG573631-05	ICV	21-JUN-2016 12:47	96.069	98.452	97.355
WG573631-06	ICB	21-JUN-2016 12:50	96.354	99.72	98.43
WG573631-07	LLICV	21-JUN-2016 12:54	94.241	93.729	96.647
WG573631-08	ICS	21-JUN-2016 12:57	94.267	96.671	98.81
WG573631-09	ICS	21-JUN-2016 13:00	96.004	99.918	95.904
WG573631-10	CCV	21-JUN-2016 13:03	94.215	98.219	98.362
WG573631-11	CCB	21-JUN-2016 13:06	96.643	100.438	97.789
WG573631-12	CCV	21-JUN-2016 13:40	96.239	97.396	98.415
WG573631-13	CCB	21-JUN-2016 13:43	94.78	98.379	99.644
WG573631-14	CCV	21-JUN-2016 15:54	98.094	101.613	99.232
WG573631-15	CCB	21-JUN-2016 15:57	98.876	97.92	103.15

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
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Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060650 **Analytical Method:** 6020
Analytical Workgroup: WG573557 **Matrix:** 18
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 21-JUN-2016 12:34

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060731-02	SAMP	21-JUN-2016 13:25	97.415	97.241	100.268
WG572662-01	FBLK2	21-JUN-2016 13:13	96.669	99.978	97.284

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4812153
Report generated: 06/21/2016 18:22

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16060650 **Date:** 04/19/2016
Insturment ID: ICP-MS2 **Method:** 6020A

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Uranium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4812152
Report generated: 06/21/2016 18:22

2.3.2.3 Raw Data

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Thursday, June 16, 2016 14:07:39

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1326	2024	0.708	
Mg	23.985	23.975	4498	2020	0.704	
Co	58.933	58.975	11692	2022	0.692	
In	114.904	114.875	22859	2028	0.691	
U	238.050	238.075	47457	2043	0.702	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	7.436
5.575	8.287
5.625	3.892
5.675	4.802
5.725	2.185
5.775	3.031
5.825	4.638
5.875	2.806
5.925	2.266
5.975	4.757
6.025	3.190
6.075	3.669
6.125	3.622
6.175	3.148
6.225	8.886
6.275	33.166
6.325	46.481
6.375	46.566
6.425	40.745
6.475	56.845
6.525	15.768
6.575	18.835
6.625	3.774
6.675	4.099
6.725	2.150
6.775	4.632
6.825	1.659

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6.875	4.657
6.925	1.715
6.975	2.467
7.025	2.458
7.075	2.433
7.125	2.586
7.175	4.875
7.225	1.268
7.275	2.064
7.325	10.536
7.375	54.398
7.425	60.990
7.475	63.888
7.525	51.618
7.575	39.529
7.625	69.722
7.675	47.507
7.725	16.110
7.775	58.685
7.825	58.330
7.875	66.667
7.925	61.450
7.975	55.902
8.025	102.740
8.075	55.902
8.125	38.401
8.175	63.949
8.225	43.853
8.275	60.858
8.325	45.079
8.375	40.074
8.425	40.074
8.475	54.149
22.525	
22.575	50.619
22.625	33.641
22.675	51.618
22.725	55.902
22.775	25.951
22.825	27.809
22.875	40.946
22.925	49.701
22.975	18.923
23.025	32.442
23.075	23.055
23.125	25.635
23.175	20.888

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23.225	21.374
23.275	25.000
23.325	45.400
23.375	27.285
23.425	30.987
23.475	25.476
23.525	13.045
23.575	6.296
23.625	2.182
23.675	2.995
23.725	2.713
23.775	2.035
23.825	1.176
23.875	0.613
23.925	0.955
23.975	1.904
24.025	1.612
24.075	1.077
24.125	1.787
24.175	1.904
24.225	1.298
24.275	1.635
24.325	13.413
24.375	39.123
24.425	39.529
24.475	21.077
24.525	2.911
24.575	3.152
24.625	1.254
24.675	1.656
24.725	1.429
24.775	1.818
24.825	1.348
24.875	0.955
24.925	1.650
24.975	0.624
25.025	1.148
25.075	1.394
25.125	0.398
25.175	1.878
25.225	3.006
25.275	5.326
25.325	42.950
25.375	30.619
25.425	70.613
25.475	32.723
57.525	12.330

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57.575	7.587
57.625	2.112
57.675	3.255
57.725	2.490
57.775	2.165
57.825	1.108
57.875	2.141
57.925	2.456
57.975	1.875
58.025	3.007
58.075	2.288
58.125	0.909
58.175	2.980
58.225	2.412
58.275	3.761
58.325	25.824
58.375	36.748
58.425	23.570
58.475	18.248
58.525	7.221
58.575	2.071
58.625	1.712
58.675	1.278
58.725	1.414
58.775	1.870
58.825	1.537
58.875	1.904
58.925	2.989
58.975	2.279
59.025	1.504
59.075	1.307
59.125	2.089
59.175	2.055
59.225	1.826
59.275	4.437
59.325	13.359
59.375	41.110
59.425	58.736
59.475	26.307
59.525	11.352
59.575	4.879
59.625	5.862
59.675	3.367
59.725	2.650
59.775	4.079
59.825	1.668
59.875	2.310

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59.925	1.238
59.975	3.774
60.025	3.677
60.075	1.742
60.125	2.822
60.175	4.864
60.225	4.103
60.275	3.750
60.325	18.054
60.375	31.623
60.425	49.739
60.475	56.723
113.525	6.653
113.575	1.927
113.625	2.838
113.675	2.697
113.725	2.195
113.775	4.236
113.825	2.523
113.875	1.968
113.925	2.426
113.975	2.953
114.025	1.676
114.075	1.976
114.125	1.813
114.175	2.440
114.225	7.942
114.275	11.452
114.325	42.061
114.375	20.163
114.425	13.593
114.475	1.983
114.525	1.683
114.575	2.531
114.625	0.874
114.675	1.279
114.725	0.891
114.775	1.779
114.825	1.186
114.875	1.029
114.925	1.564
114.975	0.950
115.025	1.530
115.075	1.114
115.125	2.208
115.175	3.123
115.225	4.486

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115.275	7.177
115.325	14.172
115.375	54.799
115.425	53.420
115.475	16.011
115.525	12.692
115.575	2.883
115.625	6.251
115.675	4.509
115.725	4.245
115.775	1.283
115.825	4.008
115.875	1.211
115.925	2.114
115.975	7.687
116.025	5.271
116.075	5.578
116.125	4.248
116.175	11.979
116.225	16.277
116.275	30.596
116.325	24.845
116.375	28.284
116.425	54.149
116.475	40.000
236.525	
236.575	23.855
236.625	34.401
236.675	27.422
236.725	35.668
236.775	39.989
236.825	18.757
236.875	23.077
236.925	20.761
236.975	14.650
237.025	36.943
237.075	27.109
237.125	25.586
237.175	42.799
237.225	24.325
237.275	21.429
237.325	30.129
237.375	15.267
237.425	4.597
237.475	48.577
237.525	19.963
237.575	13.238

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237.625	6.730
237.675	7.800
237.725	2.904
237.775	1.428
237.825	2.396
237.875	1.255
237.925	0.555
237.975	1.682
238.025	0.745
238.075	0.906
238.125	0.901
238.175	0.264
238.225	0.953
238.275	0.886
238.325	1.395
238.375	2.556
238.425	2.763
238.475	2.183
238.525	12.890
238.575	14.452
238.625	38.797
238.675	16.933
238.725	6.952
238.775	20.328
238.825	29.472
238.875	37.989
238.925	27.140
238.975	18.731
239.025	17.049
239.075	5.454
239.125	29.410
239.175	29.569
239.225	22.608
239.275	13.847
239.325	15.978
239.375	4.980
239.425	11.111
239.475	34.914

Approved: June 20, 2016

SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\ReportOutput\a.swz

Start Time: 6/16/2016 3:04:36 PM
End Time: 6/16/2016 3:07:03 PM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 4248.80
        Obtained Intensity (Mg 23.985): 62852.37
        Obtained Intensity (In 114.904): 59263.95
        Obtained Intensity (U 238.05): 123631.92
        Obtained Intensity (Bkgd 220): 0.53
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.020 (=3505.01 / 175287.61)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.005 (=894.29 / 175287.61)
```


Approved: June 20, 2016

SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\ReportOutput\a.swz

Optimization Status

Start Time: 6/16/2016 3:04:36 PM

Daily Performance Check
        Optimization Settings:
                Method: Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 1
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 4248.80
                Obtained Intensity (Mg 23.985): 62852.37
                Obtained Intensity (In 114.904): 59263.95
                Obtained Intensity (U 238.05): 123631.92
                Obtained Intensity (Bkgd 220): 0.53
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.020 (=3505.01 / 175287.61)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.005 (=894.29 / 175287.61)
[Passed]  Optimum value(s): N/A

End Time: 6/16/2016 3:07:03 PM
```


Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Thursday, June 16, 2016 15:30:14
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51024.1	2.3				ug/L		Standard
	Be	9	6.7	43.3				ug/L		Standard
	Al	27	625.0	8.5				ug/L		Standard
	Sc	45	29647.3	3.2				ug/L		Standard
	Ti	47	57.3	8.1				ug/L		Standard
	V	51	1141.9	1.8				ug/L		Standard
	Cr	52	6628.1	1.7				ug/L		Standard
	Cr	53	430.0	9.1				ug/L		Standard
	Mn	55	603.3	5.5				ug/L		Standard
	Co	59	237.3	7.6				ug/L		Standard
	Ni	60	141.0	3.9				ug/L		Standard
	Cu	65	109.0	10.8				ug/L		Standard
	Zn	66	159.0	8.8				ug/L		Standard
>	**Ge**	72	474053.1	1.2				ug/L		Standard
	As	75	-34.2	89.8				ug/L		Standard
	Se	82	14.4	39.0				ug/L		Standard
	Se-1	77	55.3	3.8				ug/L		Standard
>	**Ga**	71	50.0	36.1				mg/L		Standard
	Rb	85	20.0	43.3				ug/L		Standard
	Y	89	376601.7	1.2				ug/L		Standard
>	**Rh**	103	16.7	69.3				ug/L		Standard
	Mo	98	8.0	17.7				ug/L		Standard
	Ag	107	80.7	16.9				ug/L		Standard
	Cd	111	3.0	0.1				mg/L		Standard
	Cd	114	7.5	153.9				ug/L		Standard
>	**In**	115	524721.8	2.2				ug/L		Standard
	Sn	118	715.0	18.5				ug/L		Standard
	Sb	123	200.9	30.1				ug/L		Standard
	Ba	135	107.7	7.0				ug/L		Standard
	Ce	140	30.0	0.0				ug/L		Standard
>	**Tb**	159	792236.5	1.3				ug/L		Standard
	Ho	165	6.7	43.3				ug/L		Standard
	Tl	203	9.0	50.9				ug/L		Standard
	Tl	205	0.0					ug/L		Standard
	Pb	206	216.0	6.4				ug/L		Standard
	Pb	207	179.7	5.8				ug/L		Standard
	Pb	208	717.3	4.2				ug/L		Standard
	U	238	3.7	15.7				ug/L		Standard
>	**Bi**	209	460342.9	1.5				ug/L		Standard

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	Na	23	0.0		mg/L	Standard
	Mg	24	20.0	50.0	mg/L	Standard
	K	39	21.7	26.6	mg/L	Standard
	Ca	43	46.7	27.0	mg/L	Standard
	Fe	54	151.0	18.9	mg/L	Standard
	Fe	57	195.0	11.2	mg/L	Standard
>	**Sc-1**	45	29647.3	3.2	mg/L	Standard
	Cl	35	154151.6	0.9	ug/L	Standard
	Kr	83	3.3	17.3	ug/L	Standard
	Br	81	1606.8	11.7	ug/L	Standard
	P	31	22752.1	1.8	ug/L	Standard
	S	34	5049.2	1.8	ug/L	Standard
	Sr	88	86.7	6.7	ug/L	Standard
	C	12	46.7	24.7	mg/L	Standard
	N	14	0.0		mg/L	Standard
	Hg	202	0.0		mg/L	Standard
	Dy	164	9.8	99.2	mg/L	Standard
	Ho-1	165	6.7	43.3	mg/L	Standard
	Er	166	3.3	173.2	mg/L	Standard
	I	127	841.7	10.5	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Blank
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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Thursday, June 16, 2016 15:33:26
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61336.5	17.7				ug/L	51024	Standard
	Be	9	5.0	100.0				ug/L	7	Standard
	Al	27	221.7	31.9				ug/L	625	Standard
	Sc	45	28802.5	9.9				ug/L	29647	Standard
	Ti	47	62.3	33.0				ug/L	57	Standard
	V	51	580.8	14.0				ug/L	1142	Standard
	Cr	52	2885.9	3.7				ug/L	6628	Standard
	Cr	53	203.3	7.5				ug/L	430	Standard
	Mn	55	613.3	37.8				ug/L	603	Standard
	Co	59	262.7	10.4				ug/L	237	Standard
	Ni	60	108.3	5.6				ug/L	141	Standard
	Cu	65	79.7	10.1				ug/L	109	Standard
	Zn	66	145.3	10.1				ug/L	159	Standard
>	**Ge**	72	493610.1	8.2				ug/L	474053	Standard
	As	75	72.1	70.6				ug/L	-34	Standard
	Se	82	46.9	37.4				ug/L	14	Standard
	Se-1	77	47.7	12.6				ug/L	55	Standard
>	**Ga**	71	35.0	37.8				mg/L	50	Standard
	Rb	85	20.0	0.0				ug/L	20	Standard
	Y	89	401482.6	6.9				ug/L	376602	Standard
>	**Rh**	103	11.7	107.9				ug/L	17	Standard
	Mo	98	7.8	54.6				ug/L	8	Standard
	Ag	107	82.7	18.8				ug/L	81	Standard
	Cd	111	3.7	15.8				mg/L	3	Standard
	Cd	114	6.4	91.9				ug/L	7	Standard
>	**In**	115	555148.6	6.0				ug/L	524722	Standard
	Sn	118	256.7	2.2				ug/L	715	Standard
	Sb	123	44.3	25.6				ug/L	201	Standard
	Ba	135	17.0	5.9				ug/L	108	Standard
	Ce	140	18.3	15.7				ug/L	30	Standard
>	**Tb**	159	901198.6	13.9				ug/L	792236	Standard
	Ho	165	1.7	173.2				ug/L	7	Standard
	Tl	203	10.0	75.5				ug/L	9	Standard
	Tl	205	8.3	124.9				ug/L	0	Standard
	Pb	206	256.7	23.8				ug/L	216	Standard
	Pb	207	208.0	18.4				ug/L	180	Standard
	Pb	208	827.7	17.4				ug/L	717	Standard
	U	238	2.7	21.7				ug/L	4	Standard
>	**Bi**	209	546132.2	18.5				ug/L	460343	Standard

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	Na	23	0.0		mg/L	0	Standard
	Mg	24	28.3	10.2	mg/L	20	Standard
	K	39	15.0	33.3	mg/L	22	Standard
	Ca	43	50.0	17.3	mg/L	47	Standard
	Fe	54	136.0	58.3	mg/L	151	Standard
	Fe	57	195.0	23.5	mg/L	195	Standard
>	**Sc-1**	45	28802.5	9.9	mg/L	29647	Standard
	Cl	35	67826.3	3.7	ug/L	154152	Standard
	Kr	83	1.7	34.6	ug/L	3	Standard
	Br	81	586.7	16.8	ug/L	1607	Standard
	P	31	15342.0	42.1	ug/L	22752	Standard
	S	34	2116.8	1.5	ug/L	5049	Standard
	Sr	88	106.7	39.0	ug/L	87	Standard
	C	12	23.3	24.7	mg/L	47	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	3.3	173.2	mg/L	0	Standard
	Dy	164	9.5	5.0	mg/L	10	Standard
	Ho-1	165	1.7	173.2	mg/L	7	Standard
	Er	166	10.0	100.0	mg/L	3	Standard
	I	127	316.7	10.7	mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 1
Report Date/Time: Thursday, June 16, 2016 15:35:43
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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Thursday, June 16, 2016 15:36:37
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48482.4	0.7				ug/L	51024	Standard
	Be	9	56.7	51.7				ug/L	7	Standard
	Al	27	8083.8	2.1				ug/L	625	Standard
	Sc	45	30706.1	1.7				ug/L	29647	Standard
	Ti	47	79.3	15.6				ug/L	57	Standard
	V	51	1543.2	4.3				ug/L	1142	Standard
	Cr	52	7153.0	1.0				ug/L	6628	Standard
	Cr	53	445.0	12.2				ug/L	430	Standard
	Mn	55	1041.0	0.8				ug/L	603	Standard
	Co	59	583.0	7.0				ug/L	237	Standard
	Ni	60	245.0	4.3				ug/L	141	Standard
	Cu	65	217.0	8.3				ug/L	109	Standard
	Zn	66	310.7	2.1				ug/L	159	Standard
>	**Ge**	72	471168.8	0.1				ug/L	474053	Standard
	As	75	27.4	88.1				ug/L	-34	Standard
	Se	82	24.1	10.8				ug/L	14	Standard
	Se-1	77	60.7	6.2				ug/L	55	Standard
>	**Ga**	71	60.0	28.9				mg/L	50	Standard
	Rb	85	21.7	26.6				ug/L	20	Standard
	Y	89	408481.5	2.2				ug/L	376602	Standard
>	**Rh**	103	23.3	24.7				ug/L	17	Standard
	Mo	98	258.4	4.9				ug/L	8	Standard
	Ag	107	385.7	3.9				ug/L	81	Standard
	Cd	111	107.2	4.8				mg/L	3	Standard
	Cd	114	267.5	8.7				ug/L	7	Standard
>	**In**	115	544133.0	1.6				ug/L	524722	Standard
	Sn	118	778.4	8.1				ug/L	715	Standard
	Sb	123	293.5	11.5				ug/L	201	Standard
	Ba	135	202.3	5.5				ug/L	108	Standard
	Ce	140	46.7	80.4				ug/L	30	Standard
>	**Tb**	159	788761.6	1.1				ug/L	792236	Standard
	Ho	165	18.3	56.8				ug/L	7	Standard
	Tl	203	392.3	6.9				ug/L	9	Standard
	Tl	205	366.7	20.5				ug/L	0	Standard
	Pb	206	479.7	4.5				ug/L	216	Standard
	Pb	207	426.3	6.0				ug/L	180	Standard
	Pb	208	1798.4	0.2				ug/L	717	Standard
	U	238	349.3	5.8				ug/L	4	Standard
>	**Bi**	209	449760.6	0.7				ug/L	460343	Standard

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Na	23	3.3	86.6	mg/L	0	Standard
Mg	24	38.3	27.2	mg/L	20	Standard
K	39	31.7	24.1	mg/L	22	Standard
Ca	43	58.3	21.6	mg/L	47	Standard
Fe	54	152.6	18.2	mg/L	151	Standard
Fe	57	218.3	10.3	mg/L	195	Standard
> **Sc-1**	45	30706.1	1.7	mg/L	29647	Standard
Cl	35	159978.9	1.3	ug/L	154152	Standard
Kr	83	1.3	43.3	ug/L	3	Standard
Br	81	1600.1	10.1	ug/L	1607	Standard
P	31	22997.4	1.5	ug/L	22752	Standard
S	34	5302.6	1.3	ug/L	5049	Standard
Sr	88	58.3	27.6	ug/L	87	Standard
C	12	23.3	65.5	mg/L	47	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	0.0		mg/L	0	Standard
Dy	164	2.7	234.8	mg/L	10	Standard
Ho-1	165	18.3	56.8	mg/L	7	Standard
Er	166	13.3	86.6	mg/L	3	Standard
I	127	928.4	11.9	mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: Standard 2
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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 2
Report Date/Time: Thursday, June 16, 2016 15:38:54
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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Thursday, June 16, 2016 15:39:49
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50565.9	1.8				ug/L	51024	Standard
	Be	9	42044.9	2.0	**50.0000**	1.656	3.3	ug/L	7	Standard
	Al	27	7094492.1	1.7	**50.0000**	0.240	0.5	ug/L	625	Standard
	Sc	45	29363.4	3.4				ug/L	29647	Standard
	Ti	47	29759.2	1.6	**100.0000**	1.722	1.7	ug/L	57	Standard
	V	51	356139.2	0.8	**50.0000**	0.331	0.7	ug/L	1142	Standard
	Cr	52	369550.1	0.3	**50.0000**	0.347	0.7	ug/L	6628	Standard
	Cr	53	46382.6	2.2	**50.0000**	0.884	1.8	ug/L	430	Standard
	Mn	55	295860.1	0.8	**50.0000**	0.768	1.5	ug/L	603	Standard
	Co	59	321303.4	0.4	**50.0000**	0.569	1.1	ug/L	237	Standard
	Ni	60	95975.7	0.7	**50.0000**	0.220	0.4	ug/L	141	Standard
	Cu	65	93739.7	0.2	**50.0000**	0.238	0.5	ug/L	109	Standard
	Zn	66	55396.4	0.5	**50.0000**	0.181	0.4	ug/L	159	Standard
>	**Ge**	72	471316.6	0.7				ug/L	474053	Standard
	As	75	55401.6	1.7	**50.0000**	1.157	2.3	ug/L	-34	Standard
	Se	82	5512.4	2.0	**50.0000**	1.370	2.7	ug/L	14	Standard
	Se-1	77	3915.5	0.9	**50.0000**	0.786	1.6	ug/L	55	Standard
>	**Ga**	71	120.0	8.3				mg/L	50	Standard
	Rb	85	818.4	2.5				ug/L	20	Standard
	Y	89	383423.6	1.9				ug/L	376602	Standard
>	**Rh**	103	26.7	39.0				ug/L	17	Standard
	Mo	98	238525.6	1.7	**100.0000**	2.248	2.2	ug/L	8	Standard
	Ag	107	300586.5	1.0	**50.0000**	0.931	1.9	ug/L	81	Standard
	Cd	111	96734.5	0.7	**50.0000**	0.446	0.9	mg/L	3	Standard
	Cd	114	239222.4	0.8	**50.0000**	0.320	0.6	ug/L	7	Standard
>	**In**	115	516883.8	1.3				ug/L	524722	Standard
	Sn	118	269170.5	1.9	**50.0000**	0.357	0.7	ug/L	715	Standard
	Sb	123	219395.1	0.6	**50.0000**	0.615	1.2	ug/L	201	Standard
	Ba	135	90538.0	0.9	**50.0000**	0.240	0.5	ug/L	108	Standard
	Ce	140	98.3	33.1				ug/L	30	Standard
>	**Tb**	159	780626.5	1.3				ug/L	792236	Standard
	Ho	165	5.0	0.0				ug/L	7	Standard
	Tl	203	372504.5	0.5	**50.0000**	0.339	0.7	ug/L	9	Standard
	Tl	205	316386.0	0.8	**50.0000**	0.414	0.8	ug/L	0	Standard
	Pb	206	225338.3	0.7	**50.0000**	0.467	0.9	ug/L	216	Standard
	Pb	207	205697.6	0.7	**50.0000**	0.491	1.0	ug/L	180	Standard
	Pb	208	831229.4	0.5	**50.0000**	0.375	0.7	ug/L	717	Standard
	U	238	300295.4	0.8	**50.0000**	0.316	0.6	ug/L	4	Standard
>	**Bi**	209	447053.1	1.0				ug/L	460343	Standard

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	Na	23	1.7	173.2	**5.0000**	10.302	206.0	mg/L	0	Standard
	Mg	24	3705.5	6.1	**5.0000**	0.367	7.3	mg/L	20	Standard
	K	39	671.7	7.3	**5.0000**	0.265	5.3	mg/L	22	Standard
	Ca	43	63.3	43.5	**5.0000**	18.565	371.3	mg/L	47	Standard
	Fe	54	6334.8	3.3	**5.0000**	0.319	6.4	mg/L	151	Standard
	Fe	57	1861.8	5.0	**5.0000**	0.466	9.3	mg/L	195	Standard
>	**Sc-1**	45	29363.4	3.4				mg/L	29647	Standard
	Cl	35	161698.3	1.0				ug/L	154152	Standard
	Kr	83	2.7	21.7				ug/L	3	Standard
	Br	81	1496.7	10.1				ug/L	1607	Standard
	P	31	25361.3	5.9				ug/L	22752	Standard
	S	34	5722.8	8.3				ug/L	5049	Standard
	Sr	88	76.7	13.6				ug/L	87	Standard
	C	12	36.7	41.7				mg/L	47	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	0.0					mg/L	0	Standard
	Dy	164	16.3	126.2				mg/L	10	Standard
	Ho-1	165	5.0	0.0				mg/L	7	Standard
	Er	166	6.7	86.6				mg/L	3	Standard
	I	127	6142.9	1.3				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Thursday, June 16, 2016 15:43:00
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	50435.5	1.6				ug/L	51024	Standard
	Be	9	82346.5	1.2	**99.0819**	1.677	1.7	ug/L	7	Standard
	Al	27	13992181.1	1.0	**99.4387**	0.736	0.7	ug/L	625	Standard
	Sc	45	30006.4	2.8				ug/L	29647	Standard
	Ti	47	58505.4	1.0	**200.8925**	5.085	2.5	ug/L	57	Standard
	V	51	687977.3	0.6	**99.6029**	0.871	0.9	ug/L	1142	Standard
	Cr	52	725902.3	0.9	**100.8293**	2.361	2.3	ug/L	6628	Standard
	Cr	53	91049.5	2.4	**100.5343**	1.118	1.1	ug/L	430	Standard
	Mn	55	576461.1	0.2	**100.0121**	1.485	1.5	ug/L	603	Standard
	Co	59	620596.3	0.4	**99.5359**	1.816	1.8	ug/L	237	Standard
	Ni	60	187359.0	1.0	**100.0839**	1.180	1.2	ug/L	141	Standard
	Cu	65	182121.9	1.8	**99.8326**	0.584	0.6	ug/L	109	Standard
	Zn	66	107693.4	1.7	**99.9466**	0.229	0.2	ug/L	159	Standard
>	Ge	72	459665.5	1.5				ug/L	474053	Standard
	As	75	106571.4	0.3	**99.2933**	1.200	1.2	ug/L	-34	Standard
	Se	82	10745.6	0.0	**100.0548**	1.484	1.5	ug/L	14	Standard
	Se-1	77	7418.5	2.3	**98.9131**	3.363	3.4	ug/L	55	Standard
>	Ga	71	103.3	32.2				mg/L	50	Standard
	Rb	85	1393.4	13.3				ug/L	20	Standard
	Y	89	377187.2	0.3				ug/L	376602	Standard
>	Rh	103	38.3	45.8				ug/L	17	Standard
	Mo	98	461069.8	0.9	**194.9574**	1.968	1.0	ug/L	8	Standard
	Ag	107	583703.5	0.6	**97.7109**	0.535	0.5	ug/L	81	Standard
	Cd	111	192033.7	0.5	**98.8117**	0.100	0.1	mg/L	3	Standard
	Cd	114	474593.2	1.8	**98.7794**	1.465	1.5	ug/L	7	Standard
>	In	115	525374.3	0.4				ug/L	524722	Standard
	Sn	118	532965.7	1.1	**98.7299**	1.022	1.0	ug/L	715	Standard
	Sb	123	428817.2	1.1	**98.0404**	1.345	1.4	ug/L	201	Standard
	Ba	135	179232.3	1.1	**98.7001**	1.049	1.1	ug/L	108	Standard
	Ce	140	138.3	11.0				ug/L	30	Standard
>	Tb	159	777561.5	1.7				ug/L	792236	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	728897.3	1.0	**99.5734**	0.952	1.0	ug/L	9	Standard
	Tl	205	620686.4	2.0	**99.7030**	1.645	1.6	ug/L	0	Standard
	Pb	206	440868.6	1.2	**99.5956**	1.751	1.8	ug/L	216	Standard
	Pb	207	400234.3	1.0	**99.3185**	1.537	1.5	ug/L	180	Standard
	Pb	208	1631531.3	1.4	**99.7532**	0.911	0.9	ug/L	717	Standard
	U	238	597917.2	1.3	**100.4447**	0.594	0.6	ug/L	4	Standard
>	Bi	209	441150.8	1.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	7450.2	2.2	**9.9373**	0.220	2.2	mg/L	20	Standard
K	39	1375.1	15.8	**10.1223**	1.524	15.1	mg/L	22	Standard
Ca	43	130.0	15.4	**16.7571**	3.894	23.2	mg/L	47	Standard
Fe	54	12357.9	4.2	**9.8157**	0.430	4.4	mg/L	151	Standard
Fe	57	3355.4	5.1	**9.6321**	0.814	8.4	mg/L	195	Standard
Sc-1	45	30006.4	2.8				mg/L	29647	Standard
Cl	35	163219.8	1.1				ug/L	154152	Standard
Kr	83	2.3	99.0				ug/L	3	Standard
Br	81	1446.7	4.9				ug/L	1607	Standard
P	31	26878.8	3.1				ug/L	22752	Standard
S	34	5969.5	3.7				ug/L	5049	Standard
Sr	88	53.3	21.7				ug/L	87	Standard
C	12	56.7	36.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	16.2	33.1				mg/L	10	Standard
Ho-1	165	8.3	69.3				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	6194.6	1.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998
Corr. Coef.	Ca	43	Correlation coefficient < 0.998

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Thursday, June 16, 2016 15:46:13
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	48900.5	1.4				ug/L	51024	Standard
	Be	9	40029.5	1.7	**49.6695**	1.322	2.7	ug/L	7	Standard
	Al	27	6807595.1	1.1	**49.8931**	0.613	1.2	ug/L	625	Standard
	Sc	45	29859.4	2.2				ug/L	29647	Standard
	Ti	47	30234.8	0.9	**101.5179**	0.557	0.5	ug/L	57	Standard
	V	51	345968.9	0.4	**48.9414**	0.135	0.3	ug/L	1142	Standard
	Cr	52	361268.5	1.4	**48.6339**	0.583	1.2	ug/L	6628	Standard
	Cr	53	44796.1	1.2	**48.2008**	0.799	1.7	ug/L	430	Standard
	Mn	55	290150.7	1.7	**49.2058**	0.854	1.7	ug/L	603	Standard
	Co	59	308353.8	2.9	**48.3820**	1.390	2.9	ug/L	237	Standard
	Ni	60	93264.8	0.6	**48.7266**	0.581	1.2	ug/L	141	Standard
	Cu	65	92121.6	1.1	**49.4021**	0.815	1.6	ug/L	109	Standard
	Zn	66	55388.4	1.1	**50.2077**	0.826	1.6	ug/L	159	Standard
>	Ge	72	469579.4	0.6				ug/L	474053	Standard
	As	75	54025.0	1.0	**49.2819**	0.719	1.5	ug/L	-34	Standard
	Se	82	5305.3	2.4	**48.2613**	1.119	2.3	ug/L	14	Standard
	Se-1	77	3733.1	1.8	**48.3299**	0.600	1.2	ug/L	55	Standard
>	Ga	71	121.7	8.6				mg/L	50	Standard
	Rb	85	516.7	11.5				ug/L	20	Standard
	Y	89	375718.4	2.6				ug/L	376602	Standard
>	Rh	103	33.3	67.6				ug/L	17	Standard
	Mo	98	242646.9	2.2	**104.6905**	2.943	2.8	ug/L	8	Standard
	Ag	107	289971.5	0.6	**49.5201**	0.189	0.4	ug/L	81	Standard
	Cd	111	93046.4	0.5	**48.8483**	0.170	0.3	mg/L	3	Standard
	Cd	114	230715.9	0.2	**48.9961**	0.373	0.8	ug/L	7	Standard
>	In	115	514920.2	0.6				ug/L	524722	Standard
	Sn	118	284710.7	1.9	**53.7768**	1.357	2.5	ug/L	715	Standard
	Sb	123	208688.7	0.3	**48.6728**	0.184	0.4	ug/L	201	Standard
	Ba	135	85799.9	0.5	**48.1785**	0.093	0.2	ug/L	108	Standard
	Ce	140	120.0	21.7				ug/L	30	Standard
>	Tb	159	776088.7	0.5				ug/L	792236	Standard
	Ho	165	16.7	45.8				ug/L	7	Standard
	Tl	203	358537.1	1.1	**48.0462**	0.455	0.9	ug/L	9	Standard
	Tl	205	307552.3	1.7	**48.4612**	0.738	1.5	ug/L	0	Standard
	Pb	206	224129.9	0.7	**49.6400**	0.561	1.1	ug/L	216	Standard
	Pb	207	195303.0	0.4	**47.5147**	0.574	1.2	ug/L	180	Standard
	Pb	208	802915.7	0.1	**48.1309**	0.507	1.1	ug/L	717	Standard
	U	238	288986.2	0.3	**47.6224**	0.342	0.7	ug/L	4	Standard
>	Bi	209	449693.2	1.0				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3802.1	3.0	**5.0768**	0.262	5.2	mg/L	20	Standard
K	39	675.0	17.5	**4.8950**	0.999	20.4	mg/L	22	Standard
Ca	43	53.3	10.8	**-0.7985**	1.553	194.4	mg/L	47	Standard
Fe	54	5993.9	4.1	**4.7227**	0.110	2.3	mg/L	151	Standard
Fe	57	1776.8	6.7	**4.8135**	0.313	6.5	mg/L	195	Standard
Sc-1	45	29859.4	2.2				mg/L	29647	Standard
Cl	35	159749.2	1.5				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	1490.1	3.7				ug/L	1607	Standard
P	31	25977.3	1.4				ug/L	22752	Standard
S	34	5996.2	1.4				ug/L	5049	Standard
Sr	88	60.0	22.0				ug/L	87	Standard
C	12	80.0	66.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	13.3	43.3				mg/L	10	Standard
Ho-1	165	16.7	45.8				mg/L	7	Standard
Er	166	0.0					mg/L	3	Standard
I	127	935.0	3.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	99.339		
Al	27	99.786		
Sc	45			
Ti	47	101.518		
V	51	97.883		
Cr	52	97.268		
Cr	53			
Mn	55	98.412		
Co	59	96.764		
Ni	60	97.453		
Cu	65	98.804		
Zn	66	100.415		
Ge	72		99.056	
As	75	98.564		
Se	82	96.523		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	104.691		
Ag	107	99.040		
Cd	111	97.697		
Cd	114			
> In	115		98.132	
Sn	118	107.554		
Sb	123	97.346		
Ba	135	96.357		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	96.092		
Tl	205			
Pb	206	99.280		
Pb	207	95.029		
Pb	208	96.262		
U	238	95.245		
> Bi	209		97.687	
Na	23	209.044		
Mg	24	101.535		
K	39	97.901		
Ca	43	-15.971		
Fe	54	94.453		
Fe	57	96.269		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	K	39	
QC Std 1	Ca	43	

Sample ID: QC Std 1
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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Thursday, June 16, 2016 15:49:26
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48778.4	0.5				ug/L	51024	Standard
	Be	9	35.0	28.6	**0.0225**	0.013	56.3	ug/L	7	Standard
	Al	27	2908.6	43.3	**0.0116**	0.009	80.6	ug/L	625	Standard
	Sc	45	29670.7	2.3				ug/L	29647	Standard
	Ti	47	66.7	16.0	**0.0643**	0.036	55.5	ug/L	57	Standard
	V	51	1072.6	10.6	**-0.0119**	0.017	142.0	ug/L	1142	Standard
	Cr	52	6126.6	0.6	**-0.0646**	0.004	6.2	ug/L	6628	Standard
	Cr	53	356.7	16.1	**-0.0336**	0.065	194.5	ug/L	430	Standard
	Mn	55	698.3	6.8	**-0.0044**	0.009	209.1	ug/L	603	Standard
	Co	59	364.0	15.3	**0.0175**	0.009	54.1	ug/L	237	Standard
	Ni	60	154.7	17.5	**0.0055**	0.015	280.7	ug/L	141	Standard
	Cu	65	145.3	17.7	**0.0141**	0.015	104.9	ug/L	109	Standard
	Zn	66	148.7	11.8	**-0.0929**	0.016	17.2	ug/L	159	Standard
>	**Ge**	72	457105.8	0.9				ug/L	474053	Standard
	As	75	54.4	52.5	**0.0762**	0.027	35.8	ug/L	-34	Standard
	Se	82	25.8	22.3	**0.0738**	0.056	76.3	ug/L	14	Standard
	Se-1	77	51.3	21.0	**-0.0508**	0.151	296.8	ug/L	55	Standard
>	**Ga**	71	53.3	14.3				mg/L	50	Standard
	Rb	85	23.3	65.5				ug/L	20	Standard
	Y	89	386808.9	0.9				ug/L	376602	Standard
>	**Rh**	103	15.0	88.2				ug/L	17	Standard
	Mo	98	421.2	15.5	**0.1736**	0.026	15.2	ug/L	8	Standard
	Ag	107	183.0	26.0	**0.0185**	0.008	41.8	ug/L	81	Standard
	Cd	111	25.9	54.3	**0.0101**	0.007	70.6	mg/L	3	Standard
	Cd	114	76.1	40.9	**0.0121**	0.006	52.7	ug/L	7	Standard
>	**In**	115	521804.6	1.0				ug/L	524722	Standard
	Sn	118	1013.4	16.6	**0.0999**	0.033	32.7	ug/L	715	Standard
	Sb	123	1969.5	19.3	**0.4392**	0.092	20.9	ug/L	201	Standard
	Ba	135	122.3	18.3	**0.0101**	0.012	117.5	ug/L	108	Standard
	Ce	140	26.7	10.8				ug/L	30	Standard
>	**Tb**	159	767907.3	1.3				ug/L	792236	Standard
	Ho	165	6.7	173.2				ug/L	7	Standard
	Tl	203	152.0	42.0	**0.0183**	0.009	47.5	ug/L	9	Standard
	Tl	205	141.7	44.8	**0.0150**	0.010	67.4	ug/L	0	Standard
	Pb	206	285.3	8.6	**0.0085**	0.005	61.9	ug/L	216	Standard
	Pb	207	228.0	15.9	**0.0031**	0.009	284.7	ug/L	180	Standard
	Pb	208	1006.0	13.7	**0.0040**	0.008	208.4	ug/L	717	Standard
	U	238	107.3	30.4	**0.0105**	0.005	51.5	ug/L	4	Standard
>	**Bi**	209	438481.4	0.6				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	33.3	31.2	**-0.0002**	0.013	6870.4	mg/L	20	Standard
K	39	25.0	20.0	**-0.0379**	0.034	91.0	mg/L	22	Standard
Ca	43	46.7	37.6	**-2.2322**	4.367	195.6	mg/L	47	Standard
Fe	54	197.5	14.9	**0.0458**	0.026	57.7	mg/L	151	Standard
Fe	57	191.7	16.8	**-0.0529**	0.109	205.7	mg/L	195	Standard
Sc-1	45	29670.7	2.3				mg/L	29647	Standard
Cl	35	161750.4	2.1				ug/L	154152	Standard
Kr	83	2.7	21.7				ug/L	3	Standard
Br	81	1533.4	11.2				ug/L	1607	Standard
P	31	25499.8	1.3				ug/L	22752	Standard
S	34	5937.8	4.1				ug/L	5049	Standard
Sr	88	66.7	35.4				ug/L	87	Standard
C	12	33.3	75.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.0	187.0				mg/L	10	Standard
Ho-1	165	6.7	173.2				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	1050.0	3.1				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.425	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.444
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.251
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Na	23	
QC Std 2	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Thursday, June 16, 2016 15:52:39
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	47293.7	2.4				ug/L	51024	Standard
	Be	9	145.0	20.7	**0.1655**	0.042	25.4	ug/L	7	Standard
	Al	27	1435.1	31.2	**0.0012**	0.004	314.1	ug/L	625	Standard
	Sc	45	28264.7	3.0				ug/L	29647	Standard
	Ti	47	62.3	15.2	**0.0569**	0.033	58.3	ug/L	57	Standard
	V	51	3460.4	3.6	**0.3540**	0.018	5.2	ug/L	1142	Standard
	Cr	52	11315.9	0.6	**0.7230**	0.033	4.5	ug/L	6628	Standard
	Cr	53	1030.0	4.2	**0.7573**	0.039	5.1	ug/L	430	Standard
	Mn	55	3199.7	2.3	**0.4520**	0.007	1.5	ug/L	603	Standard
	Co	59	2520.2	3.3	**0.3798**	0.019	5.0	ug/L	237	Standard
	Ni	60	2902.6	0.9	**1.5376**	0.034	2.2	ug/L	141	Standard
	Cu	65	1498.7	1.3	**0.7897**	0.019	2.5	ug/L	109	Standard
	Zn	66	7175.7	0.5	**6.7167**	0.069	1.0	ug/L	159	Standard
>	**Ge**	72	441612.7	1.4				ug/L	474053	Standard
	As	75	399.1	9.4	**0.4120**	0.037	8.9	ug/L	-34	Standard
	Se	82	50.3	13.1	**0.3188**	0.059	18.5	ug/L	14	Standard
	Se-1	77	79.7	18.1	**0.3705**	0.214	57.7	ug/L	55	Standard
>	**Ga**	71	46.7	22.3				mg/L	50	Standard
	Rb	85	16.7	96.4				ug/L	20	Standard
	Y	89	357595.4	2.3				ug/L	376602	Standard
>	**Rh**	103	11.7	49.5				ug/L	17	Standard
	Mo	98	140.4	6.4	**0.0562**	0.004	6.6	ug/L	8	Standard
	Ag	107	2290.2	1.1	**0.3863**	0.009	2.4	ug/L	81	Standard
	Cd	111	448.4	2.4	**0.2366**	0.001	0.5	mg/L	3	Standard
	Cd	114	1122.4	5.7	**0.2391**	0.015	6.2	ug/L	7	Standard
>	**In**	115	505402.5	2.0				ug/L	524722	Standard
	Sn	118	471.7	16.6	**0.0014**	0.014	1036.4	ug/L	715	Standard
	Sb	123	1900.7	8.3	**0.4366**	0.030	6.9	ug/L	201	Standard
	Ba	135	1270.4	2.8	**0.6703**	0.033	4.9	ug/L	108	Standard
	Ce	140	16.7	62.4				ug/L	30	Standard
>	**Tb**	159	761635.7	0.6				ug/L	792236	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	619.3	5.8	**0.0818**	0.004	5.4	ug/L	9	Standard
	Tl	205	548.3	4.7	**0.0800**	0.003	4.2	ug/L	0	Standard
	Pb	206	1103.4	2.4	**0.1922**	0.004	2.3	ug/L	216	Standard
	Pb	207	900.7	2.9	**0.1691**	0.006	3.6	ug/L	180	Standard
	Pb	208	3946.5	2.5	**0.1828**	0.006	3.5	ug/L	717	Standard
	U	238	2295.5	1.9	**0.3769**	0.006	1.5	ug/L	4	Standard
>	**Bi**	209	442529.2	1.0				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	23.3	12.4	**-0.0120**	0.004	34.9	mg/L	20	Standard
K	39	20.0	25.0	**-0.0675**	0.043	63.8	mg/L	22	Standard
Ca	43	46.7	52.9	**-1.7510**	6.062	346.2	mg/L	47	Standard
Fe	54	119.0	25.4	**-0.0137**	0.024	175.0	mg/L	151	Standard
Fe	57	175.0	35.1	**-0.0751**	0.210	280.1	mg/L	195	Standard
Sc-1	45	28264.7	3.0				mg/L	29647	Standard
Cl	35	154177.8	0.4				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	1336.7	4.9				ug/L	1607	Standard
P	31	17880.5	2.1				ug/L	22752	Standard
S	34	5776.1	4.1				ug/L	5049	Standard
Sr	88	76.7	43.4				ug/L	87	Standard
C	12	16.7	69.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.4	191.0				mg/L	10	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	3	Standard
I	127	743.4	2.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	82.727		
Al	27	0.117		
Sc	45			
Ti	47			
V	51	88.501		
Cr	52	90.378		
Cr	53			
Mn	55	90.403		
Co	59	94.938		
Ni	60	96.097		
Cu	65	98.718		
Zn	66	107.467		
Ge	72		93.157	
As	75	103.009		
Se	82	79.699		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	96.587		
Cd	111	98.585		
Cd	114			
> In	115			96.318
Sn	118			
Sb	123	109.162		
Ba	135	89.380		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	102.188		
Tl	205			
Pb	206			
Pb	207			
Pb	208	91.390		
U	238	94.214		
> Bi	209			96.130
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Thursday, June 16, 2016 15:57:46
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	49537.5	0.6				ug/L	51024	Standard
	Be	9	39588.3	1.2	**48.4820**	0.764	1.6	ug/L	7	Standard
	Al	27	6811607.5	1.0	**49.2765**	0.287	0.6	ug/L	625	Standard
	Sc	45	29944.6	0.9				ug/L	29647	Standard
	Ti	47	30600.5	1.8	**105.9033**	0.546	0.5	ug/L	57	Standard
	V	51	333819.4	1.0	**48.6741**	0.557	1.1	ug/L	1142	Standard
	Cr	52	362624.9	0.8	**50.3521**	0.653	1.3	ug/L	6628	Standard
	Cr	53	44669.1	0.6	**49.5578**	1.018	2.1	ug/L	430	Standard
	Mn	55	295010.7	1.9	**51.5679**	0.147	0.3	ug/L	603	Standard
	Co	59	304256.6	2.3	**49.2031**	0.778	1.6	ug/L	237	Standard
	Ni	60	92980.9	2.3	**50.0643**	0.335	0.7	ug/L	141	Standard
	Cu	65	90826.1	1.2	**50.2022**	0.411	0.8	ug/L	109	Standard
	Zn	66	53553.2	3.1	**50.0191**	0.561	1.1	ug/L	159	Standard
>	Ge	72	455630.4	2.0				ug/L	474053	Standard
	As	75	53060.3	1.3	**49.8858**	0.388	0.8	ug/L	-34	Standard
	Se	82	5361.3	1.9	**50.2739**	0.522	1.0	ug/L	14	Standard
	Se-1	77	3719.8	1.8	**49.6698**	1.476	3.0	ug/L	55	Standard
>	Ga	71	106.7	19.5				mg/L	50	Standard
	Rb	85	516.7	9.1				ug/L	20	Standard
	Y	89	378420.4	2.1				ug/L	376602	Standard
>	Rh	103	21.7	74.2				ug/L	17	Standard
	Mo	98	235943.4	1.8	**99.9874**	3.042	3.0	ug/L	8	Standard
	Ag	107	287193.3	1.4	**48.1797**	1.433	3.0	ug/L	81	Standard
	Cd	111	93247.5	0.8	**48.0828**	0.885	1.8	mg/L	3	Standard
	Cd	114	229861.4	1.2	**47.9476**	1.147	2.4	ug/L	7	Standard
>	In	115	524337.5	1.6				ug/L	524722	Standard
	Sn	118	280407.9	1.2	**52.0144**	1.090	2.1	ug/L	715	Standard
	Sb	123	204641.1	2.4	**46.8900**	1.860	4.0	ug/L	201	Standard
	Ba	135	86406.7	0.9	**47.6572**	1.015	2.1	ug/L	108	Standard
	Ce	140	135.0	7.4				ug/L	30	Standard
>	Tb	159	786784.4	0.3				ug/L	792236	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	354843.5	0.6	**47.8254**	0.499	1.0	ug/L	9	Standard
	Tl	205	306407.3	0.5	**48.5592**	0.423	0.9	ug/L	0	Standard
	Pb	206	218264.7	1.4	**48.6127**	0.167	0.3	ug/L	216	Standard
	Pb	207	191093.3	1.2	**46.7522**	0.112	0.2	ug/L	180	Standard
	Pb	208	804010.8	0.5	**48.4716**	0.281	0.6	ug/L	717	Standard
	U	238	288392.8	0.3	**47.7978**	0.457	1.0	ug/L	4	Standard
>	Bi	209	447132.2	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3715.5	2.1	**4.9417**	0.061	1.2	mg/L	20	Standard
K	39	701.7	9.7	**5.0672**	0.500	9.9	mg/L	22	Standard
Ca	43	61.7	24.8	**1.0552**	3.413	323.4	mg/L	47	Standard
Fe	54	6212.5	1.3	**4.8866**	0.105	2.2	mg/L	151	Standard
Fe	57	1778.4	8.4	**4.8076**	0.510	10.6	mg/L	195	Standard
Sc-1	45	29944.6	0.9				mg/L	29647	Standard
Cl	35	161455.3	2.4				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	1416.7	8.8				ug/L	1607	Standard
P	31	25623.3	0.9				ug/L	22752	Standard
S	34	5979.5	3.9				ug/L	5049	Standard
Sr	88	73.3	41.7				ug/L	87	Standard
C	12	33.3	69.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.0	37.7				mg/L	10	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	1055.0	6.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	96.964		
Al	27	98.553		
Sc	45			
Ti	47	105.903		
V	51	97.348		
Cr	52	100.704		
Cr	53			
Mn	55	103.136		
Co	59	98.406		
Ni	60	100.129		
Cu	65	100.404		
Zn	66	100.038		
Ge	72		96.114	
As	75	99.772		
Se	82	100.548		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	99.987		
Ag	107	96.359		
Cd	111	96.166		
Cd	114			
> In	115			99.927
Sn	118	104.029		
Sb	123	93.780		
Ba	135	95.314		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	95.651		
Tl	205			
Pb	206	97.225		
Pb	207	93.504		
Pb	208	96.943		
U	238	95.596		
> Bi	209			97.130
Na	23	209.044		
Mg	24	98.834		
K	39	101.344		
Ca	43	21.103		
Fe	54	97.732		
Fe	57	96.152		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	

Sample ID: QC Std 1
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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Thursday, June 16, 2016 16:03:55
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48694.8	0.2				ug/L	51024	Standard
	Be	9	11.7	24.7	**-0.0065**	0.004	55.1	ug/L	7	Standard
	Al	27	941.7	10.9	**-0.0028**	0.001	26.9	ug/L	625	Standard
	Sc	45	29877.8	0.9				ug/L	29647	Standard
	Ti	47	54.3	5.3	**0.0224**	0.010	44.8	ug/L	57	Standard
	V	51	957.2	10.4	**-0.0283**	0.014	48.1	ug/L	1142	Standard
	Cr	52	6138.9	3.0	**-0.0600**	0.025	41.4	ug/L	6628	Standard
	Cr	53	340.0	7.8	**-0.0510**	0.030	59.6	ug/L	430	Standard
	Mn	55	634.3	2.6	**-0.0152**	0.003	19.9	ug/L	603	Standard
	Co	59	238.0	8.6	**-0.0027**	0.004	132.9	ug/L	237	Standard
	Ni	60	130.0	7.3	**-0.0077**	0.005	63.8	ug/L	141	Standard
	Cu	65	103.7	15.4	**-0.0087**	0.009	107.0	ug/L	109	Standard
	Zn	66	127.0	5.2	**-0.1127**	0.007	6.0	ug/L	159	Standard
>	**Ge**	72	455597.3	0.8				ug/L	474053	Standard
	As	75	-43.2	74.2	**-0.0157**	0.030	193.2	ug/L	-34	Standard
	Se	82	18.2	18.4	**0.0019**	0.030	1563.3	ug/L	14	Standard
	Se-1	77	53.3	8.5	**-0.0219**	0.067	305.9	ug/L	55	Standard
>	**Ga**	71	65.0	20.4				mg/L	50	Standard
	Rb	85	26.7	39.0				ug/L	20	Standard
	Y	89	385670.5	2.5				ug/L	376602	Standard
>	**Rh**	103	21.7	48.0				ug/L	17	Standard
	Mo	98	109.5	11.0	**0.0404**	0.004	10.6	ug/L	8	Standard
	Ag	107	89.3	19.3	**0.0026**	0.003	126.0	ug/L	81	Standard
	Cd	111	7.4	34.0	**0.0006**	0.001	222.3	mg/L	3	Standard
	Cd	114	19.0	7.1	**0.0001**	0.000	161.5	ug/L	7	Standard
>	**In**	115	528269.6	2.4				ug/L	524722	Standard
	Sn	118	783.4	18.1	**0.0547**	0.023	42.9	ug/L	715	Standard
	Sb	123	1248.5	31.3	**0.2679**	0.083	31.1	ug/L	201	Standard
	Ba	135	101.3	11.9	**-0.0020**	0.008	395.1	ug/L	108	Standard
	Ce	140	18.3	56.8				ug/L	30	Standard
>	**Tb**	159	789316.7	0.7				ug/L	792236	Standard
	Ho	165	3.3	173.2				ug/L	7	Standard
	Tl	203	34.3	9.4	**0.0020**	0.000	19.3	ug/L	9	Standard
	Tl	205	23.3	61.9	**-0.0042**	0.002	53.7	ug/L	0	Standard
	Pb	206	215.0	9.3	**-0.0087**	0.004	50.2	ug/L	216	Standard
	Pb	207	177.7	3.1	**-0.0106**	0.001	10.4	ug/L	180	Standard
	Pb	208	745.3	3.0	**-0.0132**	0.001	9.1	ug/L	717	Standard
	U	238	19.7	20.5	**-0.0043**	0.001	15.7	ug/L	4	Standard
>	**Bi**	209	449575.7	0.9				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	26.7	60.3	**-0.0094**	0.021	228.0	mg/L	20	Standard
K	39	16.7	45.8	**-0.1015**	0.059	58.3	mg/L	22	Standard
Ca	43	35.0	0.0	**-5.0734**	0.077	1.5	mg/L	47	Standard
Fe	54	139.4	7.2	**-0.0024**	0.009	374.1	mg/L	151	Standard
Fe	57	198.3	8.1	**-0.0375**	0.053	141.8	mg/L	195	Standard
Sc-1	45	29877.8	0.9				mg/L	29647	Standard
Cl	35	160882.5	1.9				ug/L	154152	Standard
Kr	83	1.0	0.0				ug/L	3	Standard
Br	81	1510.1	12.6				ug/L	1607	Standard
P	31	25673.4	1.5				ug/L	22752	Standard
S	34	5894.5	3.2				ug/L	5049	Standard
Sr	88	76.7	32.2				ug/L	87	Standard
C	12	23.3	49.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.4	107.5				mg/L	10	Standard
Ho-1	165	3.3	173.2				mg/L	7	Standard
Er	166	13.3	173.2				mg/L	3	Standard
I	127	965.0	3.2				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.107	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.676	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.661	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Na	23	
QC Std 2	K	39	

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QC Std 2	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Thursday, June 16, 2016 16:07:40
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	55474.7	2.1				ug/L	51024	Standard
	Be	9	18.3	15.7	**-0.0010**	0.003	338.2	ug/L	7	Standard
	Al	27	6905396.8	2.8	**44.6071**	0.703	1.6	ug/L	625	Standard
	Sc	45	29577.2	0.8				ug/L	29647	Standard
	Ti	47	31418.2	1.3	**107.0966**	1.877	1.8	ug/L	57	Standard
	V	51	1222.8	22.4	**0.0081**	0.041	507.7	ug/L	1142	Standard
	Cr	52	7310.1	0.7	**0.0900**	0.007	8.1	ug/L	6628	Standard
	Cr	53	3288.7	9.3	**3.1897**	0.292	9.2	ug/L	430	Standard
	Mn	55	1091.7	3.2	**0.0620**	0.006	9.4	ug/L	603	Standard
	Co	59	399.3	5.7	**0.0224**	0.003	12.6	ug/L	237	Standard
	Ni	60	759.0	2.6	**0.3255**	0.016	4.9	ug/L	141	Standard
	Cu	65	628.7	2.7	**0.2766**	0.010	3.8	ug/L	109	Standard
	Zn	66	1729.4	2.6	**1.3663**	0.021	1.6	ug/L	159	Standard
>	Ge	72	462633.9	1.3				ug/L	474053	Standard
	As	75	-39.5	207.4	**-0.0113**	0.076	672.8	ug/L	-34	Standard
	Se	82	21.1	40.5	**0.0261**	0.078	299.6	ug/L	14	Standard
	Se-1	77	277.0	14.2	**2.9476**	0.479	16.2	ug/L	55	Standard
>	Ga	71	155.0	16.8				mg/L	50	Standard
	Rb	85	810.0	10.2				ug/L	20	Standard
	Y	89	382532.7	1.4				ug/L	376602	Standard
>	Rh	103	13.3	57.3				ug/L	17	Standard
	Mo	98	234826.0	1.7	**100.4857**	2.149	2.1	ug/L	8	Standard
	Ag	107	169.0	8.6	**0.0163**	0.002	15.1	ug/L	81	Standard
	Cd	111	-108.8	6.6	**-0.0599**	0.004	5.9	mg/L	3	Standard
	Cd	114	586.7	17.3	**0.1197**	0.021	17.4	ug/L	7	Standard
>	In	115	519149.4	0.5				ug/L	524722	Standard
	Sn	118	681.7	7.9	**0.0385**	0.011	27.7	ug/L	715	Standard
	Sb	123	406.1	34.2	**0.0793**	0.032	41.0	ug/L	201	Standard
	Ba	135	224.7	3.6	**0.0676**	0.005	7.3	ug/L	108	Standard
	Ce	140	145.0	18.2				ug/L	30	Standard
>	Tb	159	796726.8	0.9				ug/L	792236	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	851.7	23.5	**0.1131**	0.029	25.4	ug/L	9	Standard
	Tl	205	813.4	19.5	**0.1220**	0.027	21.9	ug/L	0	Standard
	Pb	206	671.0	13.8	**0.0943**	0.023	24.1	ug/L	216	Standard
	Pb	207	610.0	7.6	**0.0965**	0.013	13.8	ug/L	180	Standard
	Pb	208	2481.7	5.9	**0.0928**	0.011	11.7	ug/L	717	Standard
	U	238	11.0	24.1	**-0.0057**	0.000	8.1	ug/L	4	Standard
>	Bi	209	444717.2	1.3				ug/L	460343	Standard

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Na	23	1.7	173.2	**4.9320**	9.561	193.9	mg/L	0	Standard
Mg	24	9214.5	2.3	**12.4761**	0.188	1.5	mg/L	20	Standard
K	39	665.0	6.6	**4.8546**	0.351	7.2	mg/L	22	Standard
Ca	43	148.3	13.6	**21.5299**	4.516	21.0	mg/L	47	Standard
Fe	54	14427.7	3.0	**11.6428**	0.306	2.6	mg/L	151	Standard
Fe	57	3798.8	1.5	**11.1428**	0.194	1.7	mg/L	195	Standard
> **Sc-1**	45	29577.2	0.8				mg/L	29647	Standard
Cl	35	176475.5	2.2				ug/L	154152	Standard
Kr	83	2.0	86.6				ug/L	3	Standard
Br	81	1553.4	2.3				ug/L	1607	Standard
P	31	23887.2	3.9				ug/L	22752	Standard
S	34	5340.9	1.7				ug/L	5049	Standard
Sr	88	58.3	9.9				ug/L	87	Standard
C	12	96.7	58.8				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	30.0	0.0				mg/L	0	Standard
Dy	164	2.4	262.3				mg/L	10	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	3	Standard
I	127	1410.1	5.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27	0.892		
Sc	45			
Ti	47	107.097		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.591	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	100.486		
Ag	107			
Cd	111			
Cd	114			
> In	115			98.938
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209			96.606
Na	23	39.456		
Mg	24	249.521		
K	39	97.091		
Ca	43	143.533		
Fe	54	93.142		
Fe	57	89.142		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Tl	203	
QC Std 4	Na	23	

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QC Std 4	Mg	24
QC Std 4	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Thursday, June 16, 2016 16:22:01
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	58477.6	0.2				ug/L	51024	Standard
	Be	9	88548.0	0.3	**91.8774**	0.469	0.5	ug/L	7	Standard
	Al	27	7648485.8	0.8	**46.8715**	0.352	0.8	ug/L	625	Standard
	Sc	45	29133.0	2.0				ug/L	29647	Standard
	Ti	47	33470.3	2.4	**118.1657**	2.723	2.3	ug/L	57	Standard
	V	51	673843.7	0.9	**100.3884**	1.672	1.7	ug/L	1142	Standard
	Cr	52	698679.1	1.4	**99.8305**	1.037	1.0	ug/L	6628	Standard
	Cr	53	90290.0	2.1	**102.5975**	1.386	1.4	ug/L	430	Standard
	Mn	55	596300.3	1.2	**106.4457**	0.466	0.4	ug/L	603	Standard
	Co	59	629938.1	1.8	**103.9511**	1.908	1.8	ug/L	237	Standard
	Ni	60	180922.1	0.3	**99.4431**	0.584	0.6	ug/L	141	Standard
	Cu	65	177067.3	0.6	**99.8815**	0.324	0.3	ug/L	109	Standard
	Zn	66	106852.8	0.0	**102.0554**	0.902	0.9	ug/L	159	Standard
>	Ge	72	446706.3	0.8				ug/L	474053	Standard
	As	75	106615.2	0.2	**102.2086**	1.049	1.0	ug/L	-34	Standard
	Se	82	10642.5	1.1	**101.9658**	1.771	1.7	ug/L	14	Standard
	Se-1	77	7567.2	2.1	**103.8353**	2.380	2.3	ug/L	55	Standard
>	Ga	71	153.3	10.5				mg/L	50	Standard
	Rb	85	808.4	8.9				ug/L	20	Standard
	Y	89	396492.9	1.1				ug/L	376602	Standard
>	Rh	103	48.3	15.8				ug/L	17	Standard
	Mo	98	245151.1	0.7	**102.3761**	1.234	1.2	ug/L	8	Standard
	Ag	107	517251.9	0.7	**85.5144**	0.680	0.8	ug/L	81	Standard
	Cd	111	189019.4	1.2	**96.0637**	1.742	1.8	mg/L	3	Standard
	Cd	114	457330.5	1.6	**94.0204**	2.156	2.3	ug/L	7	Standard
>	In	115	531964.2	0.7				ug/L	524722	Standard
	Sn	118	896.7	15.7	**0.0749**	0.027	35.8	ug/L	715	Standard
	Sb	123	419181.5	1.0	**94.6488**	1.016	1.1	ug/L	201	Standard
	Ba	135	174129.5	0.2	**94.7022**	0.497	0.5	ug/L	108	Standard
	Ce	140	123.3	45.2				ug/L	30	Standard
>	Tb	159	792285.1	1.1				ug/L	792236	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	718957.1	0.3	**98.0117**	1.579	1.6	ug/L	9	Standard
	Tl	205	627537.4	1.6	**100.6124**	3.065	3.0	ug/L	0	Standard
	Pb	206	453228.9	0.3	**102.1662**	1.141	1.1	ug/L	216	Standard
	Pb	207	393799.0	0.5	**97.5071**	0.924	0.9	ug/L	180	Standard
	Pb	208	1620914.8	1.9	**98.9101**	2.956	3.0	ug/L	717	Standard
	U	238	599569.3	0.5	**100.5173**	1.718	1.7	ug/L	4	Standard
>	Bi	209	442109.9	1.4				ug/L	460343	Standard

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Na	23	1.7	173.2	**4.7867**	9.813	205.0	mg/L	0	Standard
Mg	24	10183.4	1.3	**14.0071**	0.241	1.7	mg/L	20	Standard
K	39	573.3	13.1	**4.2150**	0.510	12.1	mg/L	22	Standard
Ca	43	138.3	13.7	**19.6561**	3.893	19.8	mg/L	47	Standard
Fe	54	15280.5	1.4	**12.5337**	0.416	3.3	mg/L	151	Standard
Fe	57	4085.6	2.5	**12.2326**	0.552	4.5	mg/L	195	Standard
> **Sc-1**	45	29133.0	2.0				mg/L	29647	Standard
Cl	35	179327.8	1.3				ug/L	154152	Standard
Kr	83	1.3	114.6				ug/L	3	Standard
Br	81	1623.4	4.9				ug/L	1607	Standard
P	31	23591.7	0.4				ug/L	22752	Standard
S	34	5254.2	2.3				ug/L	5049	Standard
Sr	88	70.0	42.9				ug/L	87	Standard
C	12	133.3	4.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	15.9	94.6				mg/L	10	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	3	Standard
I	127	930.0	5.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	91.877		
Al	27	0.937		
Sc	45			
Ti	47	118.166		
V	51	100.388		
Cr	52	99.830		
Cr	53			
Mn	55	106.446		
Co	59	103.951		
Ni	60	99.443		
Cu	65	99.882		
Zn	66	102.055		
> Ge	72		94.231	
As	75	102.209		
Se	82	101.966		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	102.376		
Ag	107	85.514		
Cd	111	96.064		
Cd	114			
In	115		101.380	
Sn	118			
Sb	123	94.649		
Ba	135	94.702		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.012		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.910		
U	238	100.517		
Bi	209		96.039	
Na	23	38.294		
Mg	24	280.142		
K	39	84.299		
Ca	43	131.041		
Fe	54	100.269		
Fe	57	97.861		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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QC Std 5	Ca	43

Sample ID: QC Std 5
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 16:25:16
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	55603.6	4.4				ug/L	51024	Standard
	Be	9	43453.9	2.4	**47.4947**	3.006	6.3	ug/L	7	Standard
	Al	27	7054078.0	1.0	**45.5100**	1.586	3.5	ug/L	625	Standard
	Sc	45	29373.5	1.7				ug/L	29647	Standard
	Ti	47	28713.9	1.4	**99.4855**	3.895	3.9	ug/L	57	Standard
	V	51	340364.3	1.3	**49.6680**	0.932	1.9	ug/L	1142	Standard
	Cr	52	357828.9	0.7	**49.7225**	1.608	3.2	ug/L	6628	Standard
	Cr	53	43806.6	0.8	**48.6374**	1.665	3.4	ug/L	430	Standard
	Mn	55	293651.9	1.1	**51.3908**	1.852	3.6	ug/L	603	Standard
	Co	59	311248.9	1.6	**50.3908**	1.771	3.5	ug/L	237	Standard
	Ni	60	92893.9	1.1	**50.0647**	1.079	2.2	ug/L	141	Standard
	Cu	65	90724.2	1.5	**50.1802**	0.633	1.3	ug/L	109	Standard
	Zn	66	53344.1	1.6	**49.8682**	0.504	1.0	ug/L	159	Standard
>	Ge	72	455364.8	2.6				ug/L	474053	Standard
	As	75	52938.3	1.1	**49.8092**	0.820	1.6	ug/L	-34	Standard
	Se	82	5329.6	1.7	**50.0105**	0.490	1.0	ug/L	14	Standard
	Se-1	77	3723.8	2.6	**49.7421**	0.784	1.6	ug/L	55	Standard
>	Ga	71	95.0	22.9				mg/L	50	Standard
	Rb	85	726.7	4.9				ug/L	20	Standard
	Y	89	384472.0	0.6				ug/L	376602	Standard
>	Rh	103	16.7	62.4				ug/L	17	Standard
	Mo	98	232118.8	0.3	**97.2358**	1.022	1.1	ug/L	8	Standard
	Ag	107	290638.3	1.3	**48.1940**	0.630	1.3	ug/L	81	Standard
	Cd	111	94793.4	0.9	**48.3272**	1.004	2.1	mg/L	3	Standard
	Cd	114	234828.4	1.3	**48.4291**	1.209	2.5	ug/L	7	Standard
>	In	115	530331.4	1.3				ug/L	524722	Standard
	Sn	118	263139.7	2.6	**48.2596**	1.845	3.8	ug/L	715	Standard
	Sb	123	217327.7	1.3	**49.2164**	0.579	1.2	ug/L	201	Standard
	Ba	135	88067.5	0.7	**48.0226**	0.952	2.0	ug/L	108	Standard
	Ce	140	81.7	18.7				ug/L	30	Standard
>	Tb	159	794129.5	1.0				ug/L	792236	Standard
	Ho	165	6.7	86.6				ug/L	7	Standard
	Tl	203	362843.1	1.0	**49.0795**	1.497	3.1	ug/L	9	Standard
	Tl	205	310212.2	1.3	**49.3427**	1.712	3.5	ug/L	0	Standard
	Pb	206	222989.0	0.9	**49.8435**	1.206	2.4	ug/L	216	Standard
	Pb	207	201083.3	0.8	**49.3722**	1.064	2.2	ug/L	180	Standard
	Pb	208	809454.4	0.8	**48.9759**	1.413	2.9	ug/L	717	Standard
	U	238	299066.7	0.4	**49.7396**	1.132	2.3	ug/L	4	Standard
>	Bi	209	445696.2	2.2				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3647.1	3.0	**4.9460**	0.155	3.1	mg/L	20	Standard
K	39	621.7	4.7	**4.5576**	0.277	6.1	mg/L	22	Standard
Ca	43	53.3	19.5	**-0.5868**	2.635	449.0	mg/L	47	Standard
Fe	54	5858.9	4.9	**4.6943**	0.261	5.6	mg/L	151	Standard
Fe	57	1763.4	1.3	**4.8648**	0.124	2.5	mg/L	195	Standard
> **Sc-1**	45	29373.5	1.7				mg/L	29647	Standard
Cl	35	157950.4	0.4				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	1363.4	1.1				ug/L	1607	Standard
P	31	23531.6	2.3				ug/L	22752	Standard
S	34	5542.7	3.1				ug/L	5049	Standard
Sr	88	65.0	38.5				ug/L	87	Standard
C	12	56.7	71.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.4	50.3				mg/L	10	Standard
Ho-1	165	6.7	86.6				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	3	Standard
I	127	1150.0	8.7				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	94.989		
	Al	27	91.020		
	Sc	45			
	Ti	47	99.485		
	V	51	99.336		
	Cr	52	99.445		
	Cr	53			
	Mn	55	102.782		
	Co	59	100.782		
	Ni	60	100.129		
	Cu	65	100.360		
	Zn	66	99.736		
>	Ge	72		96.058	
	As	75	99.618		
	Se	82	100.021		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	97.236		
Ag	107	96.388		
Cd	111	96.654		
Cd	114			
> In	115			101.069
Sn	118	96.519		
Sb	123	98.433		
Ba	135	96.045		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.159		
Tl	205			
Pb	206			
Pb	207			
Pb	208	97.952		
U	238	99.479		
> Bi	209			96.818
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 16:38:50
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52378.7	2.1				ug/L	51024	Standard
	Be	9	15.0	120.2	**-0.0040**	0.020	512.1	ug/L	7	Standard
	Al	27	540.0	3.7	**-0.0061**	0.000	3.2	ug/L	625	Standard
	Sc	45	28712.2	1.8				ug/L	29647	Standard
	Ti	47	44.7	11.0	**-0.0123**	0.017	140.3	ug/L	57	Standard
	V	51	1065.6	4.8	**-0.0136**	0.008	61.5	ug/L	1142	Standard
	Cr	52	6160.3	1.0	**-0.0638**	0.013	21.0	ug/L	6628	Standard
	Cr	53	386.7	19.4	**-0.0026**	0.081	3156.3	ug/L	430	Standard
	Mn	55	621.0	4.1	**-0.0185**	0.004	21.4	ug/L	603	Standard
	Co	59	231.0	6.0	**-0.0042**	0.002	52.0	ug/L	237	Standard
	Ni	60	109.7	8.8	**-0.0191**	0.005	25.2	ug/L	141	Standard
	Cu	65	97.3	15.8	**-0.0127**	0.008	65.1	ug/L	109	Standard
	Zn	66	133.3	9.4	**-0.1078**	0.012	11.3	ug/L	159	Standard
>	**Ge**	72	459252.1	0.6				ug/L	474053	Standard
	As	75	-47.4	46.6	**-0.0192**	0.021	107.9	ug/L	-34	Standard
	Se	82	15.8	37.3	**-0.0216**	0.055	252.4	ug/L	14	Standard
	Se-1	77	46.7	11.0	**-0.1173**	0.072	61.6	ug/L	55	Standard
>	**Ga**	71	35.0	14.3				mg/L	50	Standard
	Rb	85	20.0	43.3				ug/L	20	Standard
	Y	89	388770.9	2.1				ug/L	376602	Standard
>	**Rh**	103	16.7	62.4				ug/L	17	Standard
	Mo	98	68.1	14.3	**0.0237**	0.004	18.9	ug/L	8	Standard
	Ag	107	85.7	13.7	**0.0022**	0.002	97.9	ug/L	81	Standard
	Cd	111	2.9	60.6	**-0.0017**	0.001	51.5	mg/L	3	Standard
	Cd	114	9.5	115.0	**-0.0018**	0.002	124.6	ug/L	7	Standard
>	**In**	115	518516.6	1.3				ug/L	524722	Standard
	Sn	118	641.7	18.0	**0.0313**	0.023	74.8	ug/L	715	Standard
	Sb	123	920.4	35.2	**0.1991**	0.078	39.0	ug/L	201	Standard
	Ba	135	100.7	10.0	**-0.0014**	0.006	433.1	ug/L	108	Standard
	Ce	140	18.3	78.7				ug/L	30	Standard
>	**Tb**	159	769102.4	0.6				ug/L	792236	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	15.7	25.8	**-0.0004**	0.001	125.3	ug/L	9	Standard
	Tl	205	10.0	50.0	**-0.0062**	0.001	13.5	ug/L	0	Standard
	Pb	206	207.3	13.7	**-0.0092**	0.007	79.6	ug/L	216	Standard
	Pb	207	175.3	4.3	**-0.0101**	0.002	22.2	ug/L	180	Standard
	Pb	208	743.7	4.7	**-0.0122**	0.003	22.5	ug/L	717	Standard
	U	238	8.7	35.3	**-0.0061**	0.000	8.0	ug/L	4	Standard
>	**Bi**	209	439141.9	1.8				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	28.3	66.8	**-0.0053**	0.027	522.2	mg/L	20	Standard
K	39	10.0	86.6	**-0.1489**	0.068	45.9	mg/L	22	Standard
Ca	43	36.7	47.9	**-4.3876**	4.095	93.3	mg/L	47	Standard
Fe	54	152.8	18.0	**0.0136**	0.026	187.8	mg/L	151	Standard
Fe	57	166.7	14.2	**-0.1136**	0.080	70.6	mg/L	195	Standard
Sc-1	45	28712.2	1.8				mg/L	29647	Standard
Cl	35	160111.2	2.5				ug/L	154152	Standard
Kr	83	2.3	89.2				ug/L	3	Standard
Br	81	1460.1	8.4				ug/L	1607	Standard
P	31	22964.1	2.3				ug/L	22752	Standard
S	34	5249.2	1.7				ug/L	5049	Standard
Sr	88	68.3	27.7				ug/L	87	Standard
C	12	40.0	66.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	13.0	113.4				mg/L	10	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	3	Standard
I	127	923.4	1.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.878	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.817
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.395
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW B7 WG572432-04
Sample Date/Time: Thursday, June 16, 2016 17:35:43
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50888.7	1.4				ug/L	51024	Standard
	Be	9	10.0	50.0	**-0.0092**	0.006	65.8	ug/L	7	Standard
	Al	27	7250.1	1.6	**0.0413**	0.001	3.2	ug/L	625	Standard
	Sc	45	27620.2	1.5				ug/L	29647	Standard
	Ti	47	62.3	15.4	**0.0529**	0.035	66.0	ug/L	57	Standard
	V	51	1096.4	11.0	**-0.0060**	0.018	297.3	ug/L	1142	Standard
	Cr	52	7148.7	0.7	**0.0949**	0.009	9.1	ug/L	6628	Standard
	Cr	53	635.0	13.1	**0.2873**	0.091	31.7	ug/L	430	Standard
	Mn	55	19861.3	0.9	**3.3957**	0.050	1.5	ug/L	603	Standard
	Co	59	181.7	9.8	**-0.0115**	0.003	26.7	ug/L	237	Standard
	Ni	60	180.7	8.3	**0.0208**	0.008	36.7	ug/L	141	Standard
	Cu	65	122.3	7.7	**0.0024**	0.006	234.7	ug/L	109	Standard
	Zn	66	1100.0	2.9	**0.8128**	0.032	3.9	ug/L	159	Standard
>	**Ge**	72	450229.5	0.6				ug/L	474053	Standard
	As	75	-42.0	42.9	**-0.0149**	0.017	113.9	ug/L	-34	Standard
	Se	82	9.3	47.0	**-0.0801**	0.042	52.5	ug/L	14	Standard
	Se-1	77	64.0	16.5	**0.1328**	0.147	110.5	ug/L	55	Standard
>	**Ga**	71	50.0	26.5				mg/L	50	Standard
	Rb	85	73.3	20.8				ug/L	20	Standard
	Y	89	383468.8	0.7				ug/L	376602	Standard
>	**Rh**	103	13.3	21.7				ug/L	17	Standard
	Mo	98	675.4	5.9	**0.2913**	0.019	6.7	ug/L	8	Standard
	Ag	107	79.3	11.9	**0.0015**	0.002	113.9	ug/L	81	Standard
	Cd	111	2.4	24.1	**-0.0019**	0.000	15.9	mg/L	3	Standard
	Cd	114	32.5	70.3	**0.0032**	0.005	153.9	ug/L	7	Standard
>	**In**	115	505606.7	0.8				ug/L	524722	Standard
	Sn	118	778.4	13.1	**0.0606**	0.021	34.0	ug/L	715	Standard
	Sb	123	423.2	31.6	**0.0859**	0.032	37.8	ug/L	201	Standard
	Ba	135	197.0	6.6	**0.0551**	0.008	14.5	ug/L	108	Standard
	Ce	140	71.7	20.1				ug/L	30	Standard
>	**Tb**	159	761176.8	0.6				ug/L	792236	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	45.0	11.1	**0.0037**	0.001	19.6	ug/L	9	Standard
	Tl	205	38.3	27.2	**-0.0016**	0.002	107.0	ug/L	0	Standard
	Pb	206	207.0	9.6	**-0.0086**	0.005	56.9	ug/L	216	Standard
	Pb	207	183.0	3.8	**-0.0075**	0.002	22.0	ug/L	180	Standard
	Pb	208	773.7	0.5	**-0.0097**	0.001	6.3	ug/L	717	Standard
	U	238	7.0	14.3	**-0.0064**	0.000	2.5	ug/L	4	Standard
>	**Bi**	209	432877.1	0.8				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	46.7	37.6	**0.0228**	0.026	113.0	mg/L	20	Standard
K	39	25.0	20.0	**-0.0231**	0.042	181.8	mg/L	22	Standard
Ca	43	38.3	19.9	**-3.5551**	2.049	57.6	mg/L	47	Standard
Fe	54	166.0	7.2	**0.0299**	0.009	28.8	mg/L	151	Standard
Fe	57	193.3	5.4	**-0.0042**	0.043	1021.8	mg/L	195	Standard
> **Sc-1**	45	27620.2	1.5				mg/L	29647	Standard
Cl	35	157510.0	2.0				ug/L	154152	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	1796.8	8.2				ug/L	1607	Standard
P	31	21511.9	1.4				ug/L	22752	Standard
S	34	4927.5	1.4				ug/L	5049	Standard
Sr	88	76.7	10.0				ug/L	87	Standard
C	12	53.3	47.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	18.7	50.9				mg/L	10	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	26.7	57.3				mg/L	3	Standard
I	127	1125.0	8.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.734	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.974	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.357
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.034
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW B7 WG572432-04
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Method 6020 - Summary Report

Sample ID: LCSW B7 WG572432-05
Sample Date/Time: Thursday, June 16, 2016 17:38:54
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51783.3	1.2				ug/L	51024	Standard
	Be	9	41423.2	1.3	**48.5300**	0.724	1.5	ug/L	7	Standard
	Al	27	8105.5	5.6	**0.0464**	0.004	7.6	ug/L	625	Standard
	Sc	45	29290.0	1.1				ug/L	29647	Standard
	Ti	47	66.0	28.8	**0.0608**	0.069	114.0	ug/L	57	Standard
	V	51	347988.7	1.1	**50.1052**	0.398	0.8	ug/L	1142	Standard
	Cr	52	363767.8	1.3	**49.8723**	1.265	2.5	ug/L	6628	Standard
	Cr	53	46272.2	1.3	**50.7068**	1.549	3.1	ug/L	430	Standard
	Mn	55	322059.4	1.1	**55.6120**	1.299	2.3	ug/L	603	Standard
	Co	59	318198.3	0.5	**50.8192**	0.688	1.4	ug/L	237	Standard
	Ni	60	95145.8	1.0	**50.6010**	1.153	2.3	ug/L	141	Standard
	Cu	65	93949.4	0.3	**51.2847**	1.031	2.0	ug/L	109	Standard
	Zn	66	55650.7	0.4	**51.3490**	0.838	1.6	ug/L	159	Standard
>	**Ge**	72	461424.2	1.8				ug/L	474053	Standard
	As	75	53752.8	0.6	**49.9059**	0.739	1.5	ug/L	-34	Standard
	Se	82	5332.6	1.0	**49.3792**	0.829	1.7	ug/L	14	Standard
	Se-1	77	3747.5	1.7	**49.4072**	1.506	3.0	ug/L	55	Standard
>	**Ga**	71	81.7	30.2				mg/L	50	Standard
	Rb	85	53.3	23.6				ug/L	20	Standard
	Y	89	377535.8	0.4				ug/L	376602	Standard
>	**Rh**	103	36.7	31.5				ug/L	17	Standard
	Mo	98	750.8	4.4	**0.3174**	0.017	5.4	ug/L	8	Standard
	Ag	107	297266.0	1.0	**50.6052**	0.925	1.8	ug/L	81	Standard
	Cd	111	95234.0	1.1	**49.8345**	0.593	1.2	mg/L	3	Standard
	Cd	114	234836.7	1.4	**49.7088**	0.798	1.6	ug/L	7	Standard
>	**In**	115	516621.5	1.2				ug/L	524722	Standard
	Sn	118	736.7	13.8	**0.0494**	0.018	37.2	ug/L	715	Standard
	Sb	123	208987.1	0.3	**48.5849**	0.463	1.0	ug/L	201	Standard
	Ba	135	88485.0	1.6	**49.5270**	0.847	1.7	ug/L	108	Standard
	Ce	140	93.3	22.3				ug/L	30	Standard
>	**Tb**	159	786575.0	1.5				ug/L	792236	Standard
	Ho	165	15.0	120.2				ug/L	7	Standard
	Tl	203	367143.4	1.3	**48.6717**	0.655	1.3	ug/L	9	Standard
	Tl	205	311332.9	0.6	**48.5309**	0.337	0.7	ug/L	0	Standard
	Pb	206	233648.2	1.0	**51.1920**	0.365	0.7	ug/L	216	Standard
	Pb	207	204781.6	0.5	**49.2852**	0.113	0.2	ug/L	180	Standard
	Pb	208	826562.7	0.6	**49.0156**	0.301	0.6	ug/L	717	Standard
	U	238	299484.9	0.7	**48.8217**	0.244	0.5	ug/L	4	Standard
>	**Bi**	209	454561.3	0.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	50.0	17.3	**0.0233**	0.011	48.4	mg/L	20	Standard
K	39	26.7	28.6	**-0.0218**	0.061	278.8	mg/L	22	Standard
Ca	43	35.0	75.6	**-4.9193**	6.254	127.1	mg/L	47	Standard
Fe	54	111.6	12.4	**-0.0232**	0.011	46.2	mg/L	151	Standard
Fe	57	160.0	10.8	**-0.1456**	0.055	37.5	mg/L	195	Standard
> **Sc-1**	45	29290.0	1.1				mg/L	29647	Standard
Cl	35	154390.7	1.3				ug/L	154152	Standard
Kr	83	3.3	45.8				ug/L	3	Standard
Br	81	1633.4	8.8				ug/L	1607	Standard
P	31	21568.7	2.2				ug/L	22752	Standard
S	34	5032.5	1.0				ug/L	5049	Standard
Sr	88	65.0	15.4				ug/L	87	Standard
C	12	66.7	17.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	23.2	25.5				mg/L	10	Standard
Ho-1	165	15.0	120.2				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	1071.7	9.3				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		101.488	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.336	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.456
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.744
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606054006 WG572432-01
Sample Date/Time: Thursday, June 16, 2016 17:42:06
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52547.6	1.2				ug/L	51024	Standard
	Be	9	281.7	11.8	**0.3044**	0.040	13.2	ug/L	7	Standard
	Al	27	1816487.4	0.8	**12.3812**	0.043	0.4	ug/L	625	Standard
	Sc	45	29675.7	4.3				ug/L	29647	Standard
	Ti	47	527.0	16.5	**1.6748**	0.301	18.0	ug/L	57	Standard
	V	51	3476.6	2.8	**0.3441**	0.007	2.0	ug/L	1142	Standard
	Cr	52	8938.3	3.6	**0.3455**	0.039	11.3	ug/L	6628	Standard
	Cr	53	901.7	9.0	**0.5864**	0.111	18.9	ug/L	430	Standard
	Mn	55	80134.4	1.0	**14.0253**	0.252	1.8	ug/L	603	Standard
	Co	59	25491.1	1.0	**4.1165**	0.049	1.2	ug/L	237	Standard
	Ni	60	8570.8	3.1	**4.5794**	0.092	2.0	ug/L	141	Standard
	Cu	65	650.0	5.0	**0.2962**	0.012	4.0	ug/L	109	Standard
	Zn	66	3464.7	2.4	**3.0444**	0.035	1.2	ug/L	159	Standard
>	**Ge**	72	452166.6	1.8				ug/L	474053	Standard
	As	75	1182.5	5.5	**1.1442**	0.046	4.0	ug/L	-34	Standard
	Se	82	46.0	21.8	**0.2663**	0.087	32.8	ug/L	14	Standard
	Se-1	77	85.7	5.5	**0.4258**	0.086	20.3	ug/L	55	Standard
>	**Ga**	71	278.3	3.7				mg/L	50	Standard
	Rb	85	4193.9	3.2				ug/L	20	Standard
	Y	89	416460.7	2.0				ug/L	376602	Standard
>	**Rh**	103	23.3	12.4				ug/L	17	Standard
	Mo	98	357.6	5.0	**0.1457**	0.008	5.8	ug/L	8	Standard
	Ag	107	158.3	24.9	**0.0142**	0.007	47.6	ug/L	81	Standard
	Cd	111	270.7	5.4	**0.1360**	0.007	5.2	mg/L	3	Standard
	Cd	114	622.1	11.8	**0.1257**	0.017	13.1	ug/L	7	Standard
>	**In**	115	525525.2	1.0				ug/L	524722	Standard
	Sn	118	728.4	8.0	**0.0455**	0.009	20.8	ug/L	715	Standard
	Sb	123	2010.9	21.8	**0.4446**	0.099	22.2	ug/L	201	Standard
	Ba	135	37719.2	0.5	**20.7210**	0.204	1.0	ug/L	108	Standard
	Ce	140	135002.2	1.6				ug/L	30	Standard
>	**Tb**	159	783120.3	1.3				ug/L	792236	Standard
	Ho	165	2456.9	1.5				ug/L	7	Standard
	Tl	203	253.7	10.2	**0.0320**	0.003	10.8	ug/L	9	Standard
	Tl	205	226.7	16.3	**0.0285**	0.006	20.3	ug/L	0	Standard
	Pb	206	765.0	5.7	**0.1161**	0.008	6.7	ug/L	216	Standard
	Pb	207	652.7	5.5	**0.1078**	0.008	7.7	ug/L	180	Standard
	Pb	208	2766.1	3.6	**0.1109**	0.007	6.4	ug/L	717	Standard
	U	238	1954.1	0.9	**0.3200**	0.006	1.9	ug/L	4	Standard
>	**Bi**	209	442196.1	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1238.4	6.5	**1.6323**	0.087	5.4	mg/L	20	Standard
K	39	41.7	36.7	**0.0889**	0.112	125.7	mg/L	22	Standard
Ca	43	68.3	11.2	**2.8122**	2.229	79.3	mg/L	47	Standard
Fe	54	837.8	5.1	**0.5655**	0.012	2.1	mg/L	151	Standard
Fe	57	411.7	13.3	**0.6277**	0.175	27.9	mg/L	195	Standard
Sc-1	45	29675.7	4.3				mg/L	29647	Standard
Cl	35	169997.1	1.0				ug/L	154152	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	5057.5	1.3				ug/L	1607	Standard
P	31	24386.3	0.9				ug/L	22752	Standard
S	34	5092.5	0.4				ug/L	5049	Standard
Sr	88	103.3	7.4				ug/L	87	Standard
C	12	76.7	60.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	3712.9	1.1				mg/L	10	Standard
Ho-1	165	2456.9	1.5				mg/L	7	Standard
Er	166	2246.8	5.2				mg/L	3	Standard
I	127	9703.1	8.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.986	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.383	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.153
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.058
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606054007S WG572432-06
Sample Date/Time: Thursday, June 16, 2016 17:45:17
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53706.7	0.9				ug/L	51024	Standard
	Be	9	43749.7	1.2	**49.4168**	0.266	0.5	ug/L	7	Standard
	Al	27	1932307.9	0.8	**12.8870**	0.144	1.1	ug/L	625	Standard
	Sc	45	29268.3	2.3				ug/L	29647	Standard
	Ti	47	482.3	20.5	**1.5217**	0.334	21.9	ug/L	57	Standard
	V	51	343151.9	1.8	**50.5559**	1.238	2.4	ug/L	1142	Standard
	Cr	52	356598.9	0.1	**50.0133**	0.323	0.6	ug/L	6628	Standard
	Cr	53	44079.0	0.2	**49.3948**	0.256	0.5	ug/L	430	Standard
	Mn	55	413833.9	0.6	**73.1363**	0.045	0.1	ug/L	603	Standard
	Co	59	348825.8	0.4	**56.9989**	0.424	0.7	ug/L	237	Standard
	Ni	60	100519.4	0.8	**54.6907**	0.393	0.7	ug/L	141	Standard
	Cu	65	91430.0	0.8	**51.0559**	0.663	1.3	ug/L	109	Standard
	Zn	66	56968.2	0.3	**53.7844**	0.273	0.5	ug/L	159	Standard
>	**Ge**	72	450975.6	0.7				ug/L	474053	Standard
	As	75	55730.0	0.9	**52.9297**	0.224	0.4	ug/L	-34	Standard
	Se	82	5454.0	1.2	**51.6747**	0.725	1.4	ug/L	14	Standard
	Se-1	77	3763.1	1.1	**50.7665**	0.264	0.5	ug/L	55	Standard
>	**Ga**	71	263.3	20.3				mg/L	50	Standard
	Rb	85	4255.6	2.8				ug/L	20	Standard
	Y	89	417195.5	2.9				ug/L	376602	Standard
>	**Rh**	103	30.0	16.7				ug/L	17	Standard
	Mo	98	249.7	0.8	**0.1017**	0.004	4.1	ug/L	8	Standard
	Ag	107	291868.5	0.9	**49.6480**	2.126	4.3	ug/L	81	Standard
	Cd	111	96723.0	1.0	**50.5615**	1.461	2.9	mg/L	3	Standard
	Cd	114	235539.9	2.1	**49.7930**	0.984	2.0	ug/L	7	Standard
>	**In**	115	517505.1	3.8				ug/L	524722	Standard
	Sn	118	1476.7	5.3	**0.1884**	0.005	2.4	ug/L	715	Standard
	Sb	123	206896.8	0.8	**48.0521**	1.564	3.3	ug/L	201	Standard
	Ba	135	127540.2	0.0	**71.3559**	2.754	3.9	ug/L	108	Standard
	Ce	140	139925.0	2.0				ug/L	30	Standard
>	**Tb**	159	770775.9	3.8				ug/L	792236	Standard
	Ho	165	2476.9	1.1				ug/L	7	Standard
	Tl	203	360327.5	0.9	**50.2317**	2.202	4.4	ug/L	9	Standard
	Tl	205	316813.0	0.1	**51.9255**	1.944	3.7	ug/L	0	Standard
	Pb	206	230620.2	0.3	**53.1250**	1.777	3.3	ug/L	216	Standard
	Pb	207	202090.2	0.6	**51.1482**	2.204	4.3	ug/L	180	Standard
	Pb	208	841767.9	0.1	**52.4861**	1.864	3.6	ug/L	717	Standard
	U	238	302598.3	0.9	**51.8585**	1.621	3.1	ug/L	4	Standard
>	**Bi**	209	432715.9	3.6				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1251.7	2.3	**1.6745**	0.059	3.5	mg/L	20	Standard
K	39	36.7	20.8	**0.0560**	0.065	115.4	mg/L	22	Standard
Ca	43	53.3	32.9	**-0.5302**	4.352	820.7	mg/L	47	Standard
Fe	54	1026.3	1.7	**0.7308**	0.034	4.6	mg/L	151	Standard
Fe	57	418.3	7.7	**0.6667**	0.128	19.3	mg/L	195	Standard
Sc-1	45	29268.3	2.3				mg/L	29647	Standard
Cl	35	169666.9	1.9				ug/L	154152	Standard
Kr	83	2.0	100.0				ug/L	3	Standard
Br	81	2960.3	5.9				ug/L	1607	Standard
P	31	24135.9	2.5				ug/L	22752	Standard
S	34	4849.1	3.1				ug/L	5049	Standard
Sr	88	106.7	33.9				ug/L	87	Standard
C	12	40.0	50.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	0	Standard
Dy	164	3819.4	7.1				mg/L	10	Standard
Ho-1	165	2476.9	1.1				mg/L	7	Standard
Er	166	2390.2	5.9				mg/L	3	Standard
I	127	12700.3	5.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.257	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.132	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.625
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.999
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606054008SD WG572432-07
Sample Date/Time: Thursday, June 16, 2016 17:48:29
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54998.0	2.9				ug/L	51024	Standard
	Be	9	42282.3	1.6	**46.6702**	1.847	4.0	ug/L	7	Standard
	Al	27	1853346.2	1.8	**12.0720**	0.192	1.6	ug/L	625	Standard
	Sc	45	28618.7	1.6				ug/L	29647	Standard
	Ti	47	438.7	18.4	**1.3101**	0.274	20.9	ug/L	57	Standard
	V	51	339071.1	1.2	**47.9811**	0.898	1.9	ug/L	1142	Standard
	Cr	52	348951.5	0.9	**46.9627**	0.693	1.5	ug/L	6628	Standard
	Cr	53	43296.8	2.2	**46.5875**	1.128	2.4	ug/L	430	Standard
	Mn	55	386934.9	1.9	**65.6847**	1.414	2.2	ug/L	603	Standard
	Co	59	342375.5	0.7	**53.7459**	0.809	1.5	ug/L	237	Standard
	Ni	60	97792.2	0.5	**51.1109**	0.332	0.6	ug/L	141	Standard
	Cu	65	89033.2	0.9	**47.7559**	0.143	0.3	ug/L	109	Standard
	Zn	66	55887.9	0.5	**50.6770**	0.331	0.7	ug/L	159	Standard
>	**Ge**	72	469439.2	1.1				ug/L	474053	Standard
	As	75	54484.6	0.9	**49.7143**	0.277	0.6	ug/L	-34	Standard
	Se	82	5325.5	1.9	**48.4642**	1.024	2.1	ug/L	14	Standard
	Se-1	77	3702.8	2.9	**47.9415**	0.927	1.9	ug/L	55	Standard
>	**Ga**	71	271.7	17.7				mg/L	50	Standard
	Rb	85	4088.9	2.2				ug/L	20	Standard
	Y	89	413416.3	1.0				ug/L	376602	Standard
>	**Rh**	103	41.7	30.2				ug/L	17	Standard
	Mo	98	249.2	1.7	**0.1026**	0.001	1.4	ug/L	8	Standard
	Ag	107	286615.9	0.3	**49.2507**	0.777	1.6	ug/L	81	Standard
	Cd	111	93885.9	0.7	**49.5954**	0.904	1.8	mg/L	3	Standard
	Cd	114	226454.5	0.3	**48.3871**	0.650	1.3	ug/L	7	Standard
>	**In**	115	511810.4	1.2				ug/L	524722	Standard
	Sn	118	701.7	6.8	**0.0441**	0.009	19.5	ug/L	715	Standard
	Sb	123	206600.1	0.8	**48.4856**	0.964	2.0	ug/L	201	Standard
	Ba	135	122408.2	0.7	**69.1850**	1.061	1.5	ug/L	108	Standard
	Ce	140	131819.3	0.1				ug/L	30	Standard
>	**Tb**	159	776885.2	2.2				ug/L	792236	Standard
	Ho	165	2331.8	5.4				ug/L	7	Standard
	Tl	203	352123.1	0.6	**47.6812**	0.707	1.5	ug/L	9	Standard
	Tl	205	309331.5	1.9	**49.2466**	0.608	1.2	ug/L	0	Standard
	Pb	206	228474.4	0.6	**51.1335**	0.852	1.7	ug/L	216	Standard
	Pb	207	200368.2	0.3	**49.2580**	0.755	1.5	ug/L	180	Standard
	Pb	208	813075.7	0.6	**49.2521**	0.923	1.9	ug/L	717	Standard
	U	238	295399.0	1.0	**49.1860**	0.564	1.1	ug/L	4	Standard
>	**Bi**	209	445087.6	1.7				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1281.7	3.9	**1.7556**	0.088	5.0	mg/L	20	Standard
K	39	31.7	63.8	**0.0238**	0.162	681.6	mg/L	22	Standard
Ca	43	90.0	29.4	**8.6263**	6.605	76.6	mg/L	47	Standard
Fe	54	882.7	7.0	**0.6290**	0.061	9.7	mg/L	151	Standard
Fe	57	415.0	3.6	**0.6838**	0.030	4.4	mg/L	195	Standard
Sc-1	45	28618.7	1.6				mg/L	29647	Standard
Cl	35	164516.5	1.8				ug/L	154152	Standard
Kr	83	2.7	78.1				ug/L	3	Standard
Br	81	3177.0	4.4				ug/L	1607	Standard
P	31	23216.1	2.6				ug/L	22752	Standard
S	34	4752.4	2.2				ug/L	5049	Standard
Sr	88	88.3	40.2				ug/L	87	Standard
C	12	76.7	30.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	3671.9	4.0				mg/L	10	Standard
Ho-1	165	2331.8	5.4				mg/L	7	Standard
Er	166	2266.8	11.6				mg/L	3	Standard
I	127	12179.9	5.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.788	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.027	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.539
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.686
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606053301
Sample Date/Time: Thursday, June 16, 2016 17:51:40
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60559.2	3.2				ug/L	51024	Standard
	Be	9	28.3	10.2	**0.0074**	0.004	49.8	ug/L	7	Standard
	Al	27	7003612.2	2.3	**41.4514**	0.476	1.1	ug/L	625	Standard
	Sc	45	30053.2	5.5				ug/L	29647	Standard
	Ti	47	795.7	5.5	**2.5457**	0.146	5.8	ug/L	57	Standard
	V	51	2693.3	6.1	**0.2191**	0.025	11.3	ug/L	1142	Standard
	Cr	52	8930.0	3.3	**0.3138**	0.057	18.2	ug/L	6628	Standard
	Cr	53	2155.2	15.7	**1.9427**	0.407	21.0	ug/L	430	Standard
	Mn	55	115337.0	0.2	**19.7464**	0.327	1.7	ug/L	603	Standard
	Co	59	1383.4	9.3	**0.1788**	0.018	10.2	ug/L	237	Standard
	Ni	60	2905.3	1.7	**1.4630**	0.043	2.9	ug/L	141	Standard
	Cu	65	10476.6	1.4	**5.6346**	0.098	1.7	ug/L	109	Standard
	Zn	66	21460.2	1.0	**19.5697**	0.101	0.5	ug/L	159	Standard
>	**Ge**	72	463434.7	1.4				ug/L	474053	Standard
	As	75	3767.1	1.6	**3.5052**	0.045	1.3	ug/L	-34	Standard
	Se	82	163.8	10.0	**1.3482**	0.174	12.9	ug/L	14	Standard
	Se-1	77	257.3	5.7	**2.6846**	0.227	8.5	ug/L	55	Standard
>	**Ga**	71	133.3	15.6				mg/L	50	Standard
	Rb	85	28246.3	1.8				ug/L	20	Standard
	Y	89	371509.9	1.1				ug/L	376602	Standard
>	**Rh**	103	53.3	54.1				ug/L	17	Standard
	Mo	98	1868.0	0.8	**0.7966**	0.012	1.5	ug/L	8	Standard
	Ag	107	323.0	60.8	**0.0424**	0.033	77.8	ug/L	81	Standard
	Cd	111	115.7	21.0	**0.0572**	0.012	21.6	mg/L	3	Standard
	Cd	114	360.8	28.5	**0.0723**	0.021	29.2	ug/L	7	Standard
>	**In**	115	517402.5	1.9				ug/L	524722	Standard
	Sn	118	1711.8	7.1	**0.2327**	0.020	8.5	ug/L	715	Standard
	Sb	123	4614.0	12.3	**1.0551**	0.113	10.7	ug/L	201	Standard
	Ba	135	35141.4	1.4	**19.6067**	0.326	1.7	ug/L	108	Standard
	Ce	140	703.4	25.4				ug/L	30	Standard
>	**Tb**	159	794129.4	2.7				ug/L	792236	Standard
	Ho	165	41.7	38.6				ug/L	7	Standard
	Tl	203	449.0	60.2	**0.0569**	0.035	62.3	ug/L	9	Standard
	Tl	205	276.7	17.7	**0.0354**	0.008	22.9	ug/L	0	Standard
	Pb	206	1738.1	4.6	**0.3254**	0.021	6.4	ug/L	216	Standard
	Pb	207	1473.7	6.2	**0.3016**	0.022	7.3	ug/L	180	Standard
	Pb	208	5917.1	2.4	**0.2937**	0.008	2.7	ug/L	717	Standard
	U	238	273.7	21.5	**0.0370**	0.009	24.9	ug/L	4	Standard
>	**Bi**	209	454186.9	1.7				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.2936**	8.935	168.8	mg/L	0	Standard
Mg	24	24845.4	1.6	**33.2336**	1.348	4.1	mg/L	20	Standard
K	39	435.0	8.7	**3.0600**	0.462	15.1	mg/L	22	Standard
Ca	43	158.3	13.1	**23.4759**	6.234	26.6	mg/L	47	Standard
Fe	54	199.1	33.0	**0.0465**	0.059	127.4	mg/L	151	Standard
Fe	57	291.7	13.3	**0.2501**	0.172	68.9	mg/L	195	Standard
> **Sc-1**	45	30053.2	5.5				mg/L	29647	Standard
Cl	35	199161.9	1.2				ug/L	154152	Standard
Kr	83	2.3	49.5				ug/L	3	Standard
Br	81	12578.6	3.0				ug/L	1607	Standard
P	31	24539.9	2.1				ug/L	22752	Standard
S	34	5079.2	4.0				ug/L	5049	Standard
Sr	88	208.3	14.7				ug/L	87	Standard
C	12	96.7	36.3				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	0	Standard
Dy	164	61.3	25.3				mg/L	10	Standard
Ho-1	165	41.7	38.6				mg/L	7	Standard
Er	166	43.3	13.3				mg/L	3	Standard
I	127	46957.7	3.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.687	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.760	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.605
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.663
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606054003
Sample Date/Time: Thursday, June 16, 2016 17:54:52
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69060.4	2.1				ug/L	51024	Standard
	Be	9	195.0	15.6	**0.1507**	0.030	20.2	ug/L	7	Standard
	Al	27	5538034.2	2.1	**28.7382**	0.596	2.1	ug/L	625	Standard
	Sc	45	34442.5	3.5				ug/L	29647	Standard
	Ti	47	14518.0	3.2	**50.5821**	0.898	1.8	ug/L	57	Standard
	V	51	33577.2	0.6	**4.7869**	0.070	1.5	ug/L	1142	Standard
	Cr	52	33773.6	0.6	**3.8889**	0.037	1.0	ug/L	6628	Standard
	Cr	53	7016.6	2.1	**7.4876**	0.191	2.6	ug/L	430	Standard
	Mn	55	504059.4	0.9	**88.9661**	0.527	0.6	ug/L	603	Standard
	Co	59	17512.8	1.2	**2.8178**	0.022	0.8	ug/L	237	Standard
	Ni	60	10317.5	0.9	**5.5347**	0.034	0.6	ug/L	141	Standard
	Cu	65	2208.5	1.2	**1.1669**	0.032	2.7	ug/L	109	Standard
	Zn	66	8517.7	1.0	**7.8315**	0.096	1.2	ug/L	159	Standard
>	**Ge**	72	451723.4	1.4				ug/L	474053	Standard
	As	75	12920.2	3.5	**12.2750**	0.581	4.7	ug/L	-34	Standard
	Se	82	2961.0	4.8	**27.9437**	1.699	6.1	ug/L	14	Standard
	Se-1	77	326.3	1.4	**3.7149**	0.003	0.1	ug/L	55	Standard
>	**Ga**	71	2480.2	6.2				mg/L	50	Standard
	Rb	85	38117.9	1.8				ug/L	20	Standard
	Y	89	421962.4	2.5				ug/L	376602	Standard
>	**Rh**	103	78.3	24.2				ug/L	17	Standard
	Mo	98	3944.4	0.7	**1.6261**	0.009	0.6	ug/L	8	Standard
	Ag	107	112.0	6.7	**0.0060**	0.001	21.5	ug/L	81	Standard
	Cd	111	53.6	6.7	**0.0237**	0.002	7.8	mg/L	3	Standard
	Cd	114	133.4	41.0	**0.0233**	0.011	47.5	ug/L	7	Standard
>	**In**	115	537036.3	0.3				ug/L	524722	Standard
	Sn	118	2543.5	1.4	**0.3719**	0.007	2.0	ug/L	715	Standard
	Sb	123	798.0	25.2	**0.1636**	0.044	27.1	ug/L	201	Standard
	Ba	135	340692.9	0.8	**183.5929**	1.953	1.1	ug/L	108	Standard
	Ce	140	164779.7	1.7				ug/L	30	Standard
>	**Tb**	159	813065.5	1.9				ug/L	792236	Standard
	Ho	165	2875.3	7.5				ug/L	7	Standard
	Tl	203	422.0	6.7	**0.0538**	0.003	6.1	ug/L	9	Standard
	Tl	205	353.3	13.4	**0.0477**	0.007	15.2	ug/L	0	Standard
	Pb	206	3737.8	1.9	**0.7699**	0.010	1.3	ug/L	216	Standard
	Pb	207	3100.7	1.2	**0.6991**	0.004	0.6	ug/L	180	Standard
	Pb	208	12994.2	0.7	**0.7197**	0.013	1.8	ug/L	717	Standard
	U	238	1498.4	1.2	**0.2387**	0.006	2.5	ug/L	4	Standard
>	**Bi**	209	451028.7	1.3				ug/L	460343	Standard

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Na	23	6.7	114.6	**-8.8575**	22.422	253.1	mg/L	0	Standard
Mg	24	23361.3	1.7	**27.2407**	1.080	4.0	mg/L	20	Standard
K	39	78.3	19.5	**0.2883**	0.117	40.4	mg/L	22	Standard
Ca	43	363.3	8.7	**59.9201**	6.518	10.9	mg/L	47	Standard
Fe	54	6234.3	4.5	**4.2529**	0.273	6.4	mg/L	151	Standard
Fe	57	2021.8	6.4	**4.7439**	0.351	7.4	mg/L	195	Standard
> **Sc-1**	45	34442.5	3.5				mg/L	29647	Standard
Cl	35	236460.3	1.1				ug/L	154152	Standard
Kr	83	2.0	0.0				ug/L	3	Standard
Br	81	708935.6	4.3				ug/L	1607	Standard
P	31	40141.4	0.8				ug/L	22752	Standard
S	34	5004.2	5.7				ug/L	5049	Standard
Sr	88	448.3	5.6				ug/L	87	Standard
C	12	160.0	16.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	4859.0	3.9				mg/L	10	Standard
Ho-1	165	2875.3	7.5				mg/L	7	Standard
Er	166	2543.5	9.9				mg/L	3	Standard
I	127	141220.9	4.3				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		135.349	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.290	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.347	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.977	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606054003PS WG573083-01
Sample Date/Time: Thursday, June 16, 2016 17:58:03
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70691.2	0.9				ug/L	51024	Standard
	Be	9	50693.0	1.7	**43.5062**	1.094	2.5	ug/L	7	Standard
	Al	27	5657732.1	0.5	**28.6796**	0.340	1.2	ug/L	625	Standard
	Sc	45	32850.6	4.5				ug/L	29647	Standard
	Ti	47	14458.2	2.7	**49.6930**	1.695	3.4	ug/L	57	Standard
	V	51	385117.2	0.8	**55.8774**	0.585	1.0	ug/L	1142	Standard
	Cr	52	382916.9	0.3	**52.9297**	0.331	0.6	ug/L	6628	Standard
	Cr	53	51097.7	0.4	**56.4380**	0.261	0.5	ug/L	430	Standard
	Mn	55	810895.8	0.8	**141.2253**	1.951	1.4	ug/L	603	Standard
	Co	59	346570.3	0.8	**55.7548**	0.081	0.1	ug/L	237	Standard
	Ni	60	100953.5	0.6	**54.0794**	0.195	0.4	ug/L	141	Standard
	Cu	65	91462.3	1.6	**50.2871**	1.080	2.1	ug/L	109	Standard
	Zn	66	61341.3	0.6	**57.0367**	0.769	1.3	ug/L	159	Standard
>	**Ge**	72	458036.5	0.7				ug/L	474053	Standard
	As	75	68674.9	0.5	**64.2143**	0.182	0.3	ug/L	-34	Standard
	Se	82	8569.6	1.8	**80.0280**	0.981	1.2	ug/L	14	Standard
	Se-1	77	4022.5	4.5	**53.4821**	2.795	5.2	ug/L	55	Standard
>	**Ga**	71	2441.9	7.4				mg/L	50	Standard
	Rb	85	38290.0	2.9				ug/L	20	Standard
	Y	89	428743.2	0.3				ug/L	376602	Standard
>	**Rh**	103	91.7	35.1				ug/L	17	Standard
	Mo	98	3923.8	0.2	**1.6525**	0.023	1.4	ug/L	8	Standard
	Ag	107	276547.4	3.6	**46.2633**	2.008	4.3	ug/L	81	Standard
	Cd	111	96223.0	0.5	**49.4786**	0.725	1.5	mg/L	3	Standard
	Cd	114	238042.9	1.3	**49.5078**	0.331	0.7	ug/L	7	Standard
>	**In**	115	525777.0	1.3				ug/L	524722	Standard
	Sn	118	2560.2	3.5	**0.3851**	0.023	6.0	ug/L	715	Standard
	Sb	123	215296.5	0.5	**49.1839**	0.834	1.7	ug/L	201	Standard
	Ba	135	428635.4	1.2	**235.9452**	0.924	0.4	ug/L	108	Standard
	Ce	140	165650.7	1.3				ug/L	30	Standard
>	**Tb**	159	801648.7	1.5				ug/L	792236	Standard
	Ho	165	2957.0	2.0				ug/L	7	Standard
	Tl	203	362265.3	0.3	**49.7124**	0.432	0.9	ug/L	9	Standard
	Tl	205	324753.6	0.8	**52.4032**	0.722	1.4	ug/L	0	Standard
	Pb	206	240535.6	0.4	**54.5563**	0.254	0.5	ug/L	216	Standard
	Pb	207	210550.9	0.8	**52.4580**	0.578	1.1	ug/L	180	Standard
	Pb	208	845714.1	0.6	**51.9167**	0.481	0.9	ug/L	717	Standard
	U	238	316985.2	0.3	**53.4916**	0.510	1.0	ug/L	4	Standard
>	**Bi**	209	439144.9	0.6				ug/L	460343	Standard

Sample ID: L1606054003PS WG573083-01
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Na	23	1.7	173.2	**5.2953**	8.932	168.7	mg/L	0	Standard
Mg	24	23556.6	1.1	**28.8162**	1.308	4.5	mg/L	20	Standard
K	39	103.3	22.9	**0.4849**	0.170	35.0	mg/L	22	Standard
Ca	43	350.0	13.1	**60.9958**	12.902	21.2	mg/L	47	Standard
Fe	54	6036.8	1.7	**4.3211**	0.223	5.2	mg/L	151	Standard
Fe	57	2113.5	3.5	**5.2621**	0.189	3.6	mg/L	195	Standard
Sc-1	45	32850.6	4.5				mg/L	29647	Standard
Cl	35	237983.9	1.1				ug/L	154152	Standard
Kr	83	0.0					ug/L	3	Standard
Br	81	723069.8	1.3				ug/L	1607	Standard
P	31	40273.5	4.5				ug/L	22752	Standard
S	34	4915.8	1.6				ug/L	5049	Standard
Sr	88	436.7	3.5				ug/L	87	Standard
C	12	133.3	4.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	4443.9	9.4				mg/L	10	Standard
Ho-1	165	2957.0	2.0				mg/L	7	Standard
Er	166	2646.9	6.4				mg/L	3	Standard
I	127	140910.6	0.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		138.545	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.621	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.201	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	95.395	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606054003SDL WG573083-02
Sample Date/Time: Thursday, June 16, 2016 18:01:15
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67421.4	2.2				ug/L	51024	Standard
	Be	9	65.0	23.1	**0.0373**	0.012	33.1	ug/L	7	Standard
	Al	27	1133068.0	1.4	**6.0172**	0.214	3.6	ug/L	625	Standard
	Sc	45	29907.8	2.2				ug/L	29647	Standard
	Ti	47	2896.9	2.4	**9.4986**	0.237	2.5	ug/L	57	Standard
	V	51	8118.9	1.6	**0.9749**	0.019	2.0	ug/L	1142	Standard
	Cr	52	11547.7	1.7	**0.6435**	0.029	4.5	ug/L	6628	Standard
	Cr	53	2378.5	3.7	**2.1298**	0.095	4.5	ug/L	430	Standard
	Mn	55	103741.0	1.9	**17.3694**	0.315	1.8	ug/L	603	Standard
	Co	59	3838.8	2.5	**0.5567**	0.015	2.6	ug/L	237	Standard
	Ni	60	2235.5	2.6	**1.0826**	0.031	2.9	ug/L	141	Standard
	Cu	65	647.7	4.8	**0.2788**	0.016	5.8	ug/L	109	Standard
	Zn	66	2803.6	0.9	**2.3005**	0.025	1.1	ug/L	159	Standard
>	**Ge**	72	473393.6	0.2				ug/L	474053	Standard
	As	75	2692.6	2.6	**2.4601**	0.062	2.5	ug/L	-34	Standard
	Se	82	639.2	5.1	**5.6193**	0.300	5.3	ug/L	14	Standard
	Se-1	77	131.7	10.1	**0.9721**	0.173	17.8	ug/L	55	Standard
>	**Ga**	71	563.3	2.9				mg/L	50	Standard
	Rb	85	7626.9	1.4				ug/L	20	Standard
	Y	89	387376.2	0.4				ug/L	376602	Standard
>	**Rh**	103	25.0	34.6				ug/L	17	Standard
	Mo	98	784.5	4.4	**0.3255**	0.017	5.2	ug/L	8	Standard
	Ag	107	1243.4	2.6	**0.1954**	0.006	3.2	ug/L	81	Standard
	Cd	111	29.9	54.1	**0.0121**	0.008	67.3	mg/L	3	Standard
	Cd	114	69.0	67.7	**0.0105**	0.010	91.0	ug/L	7	Standard
>	**In**	115	526626.8	0.9				ug/L	524722	Standard
	Sn	118	845.0	11.0	**0.0669**	0.018	26.5	ug/L	715	Standard
	Sb	123	2277.2	24.6	**0.5055**	0.132	26.2	ug/L	201	Standard
	Ba	135	69797.7	0.8	**38.3133**	0.615	1.6	ug/L	108	Standard
	Ce	140	34238.6	1.3				ug/L	30	Standard
>	**Tb**	159	801692.0	0.8				ug/L	792236	Standard
	Ho	165	618.3	9.3				ug/L	7	Standard
	Tl	203	344.7	8.1	**0.0429**	0.004	8.5	ug/L	9	Standard
	Tl	205	311.7	8.8	**0.0405**	0.004	10.8	ug/L	0	Standard
	Pb	206	1064.0	3.5	**0.1759**	0.009	4.9	ug/L	216	Standard
	Pb	207	867.0	6.7	**0.1540**	0.013	8.6	ug/L	180	Standard
	Pb	208	3581.5	3.9	**0.1537**	0.009	6.2	ug/L	717	Standard
	U	238	339.0	2.5	**0.0474**	0.001	2.9	ug/L	4	Standard
>	**Bi**	209	456914.2	0.6				ug/L	460343	Standard

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Na	23	5.0	173.2	**-5.5106**	27.648	501.7	mg/L	0	Standard
Mg	24	4740.7	2.0	**6.3283**	0.198	3.1	mg/L	20	Standard
K	39	31.7	32.9	**0.0103**	0.074	719.1	mg/L	22	Standard
Ca	43	96.7	10.8	**9.2099**	2.490	27.0	mg/L	47	Standard
Fe	54	1310.9	5.1	**0.9427**	0.077	8.2	mg/L	151	Standard
Fe	57	518.3	4.8	**0.9451**	0.104	11.0	mg/L	195	Standard
Sc-1	45	29907.8	2.2				mg/L	29647	Standard
Cl	35	171537.6	0.9				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	154143.7	2.2				ug/L	1607	Standard
P	31	26042.4	2.9				ug/L	22752	Standard
S	34	4889.1	5.0				ug/L	5049	Standard
Sr	88	148.3	17.0				ug/L	87	Standard
C	12	73.3	47.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	929.7	4.3				mg/L	10	Standard
Ho-1	165	618.3	9.3				mg/L	7	Standard
Er	166	563.3	6.2				mg/L	3	Standard
I	127	30853.1	2.8				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.136	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.861	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.363
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.255
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606054003SDL WG573083-02
Sample Date/Time: Thursday, June 16, 2016 18:04:26
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65921.5	1.7				ug/L	51024	Standard
	Be	9	28.3	10.2	**0.0050**	0.002	49.4	ug/L	7	Standard
	Al	27	234588.9	1.0	**1.2659**	0.010	0.8	ug/L	625	Standard
	Sc	45	29675.7	0.4				ug/L	29647	Standard
	Ti	47	693.0	13.8	**2.1806**	0.270	12.4	ug/L	57	Standard
	V	51	2547.4	1.6	**0.1965**	0.004	2.1	ug/L	1142	Standard
	Cr	52	7577.9	0.6	**0.1209**	0.025	20.3	ug/L	6628	Standard
	Cr	53	1020.0	10.6	**0.6861**	0.125	18.2	ug/L	430	Standard
	Mn	55	22549.8	0.3	**3.7420**	0.091	2.4	ug/L	603	Standard
	Co	59	941.7	6.4	**0.1080**	0.010	9.7	ug/L	237	Standard
	Ni	60	563.3	5.9	**0.2199**	0.025	11.2	ug/L	141	Standard
	Cu	65	269.3	8.9	**0.0800**	0.016	20.5	ug/L	109	Standard
	Zn	66	1451.4	2.3	**1.1019**	0.057	5.2	ug/L	159	Standard
>	**Ge**	72	465567.5	2.4				ug/L	474053	Standard
	As	75	572.2	6.7	**0.5515**	0.039	7.1	ug/L	-34	Standard
	Se	82	153.8	5.1	**1.2486**	0.091	7.3	ug/L	14	Standard
	Se-1	77	80.7	9.5	**0.3264**	0.123	37.8	ug/L	55	Standard
>	**Ga**	71	155.0	27.6				mg/L	50	Standard
	Rb	85	1620.1	5.6				ug/L	20	Standard
	Y	89	390804.2	2.3				ug/L	376602	Standard
>	**Rh**	103	10.0	50.0				ug/L	17	Standard
	Mo	98	177.1	5.2	**0.0674**	0.004	5.5	ug/L	8	Standard
	Ag	107	160.0	23.9	**0.0138**	0.006	46.0	ug/L	81	Standard
	Cd	111	25.4	77.5	**0.0095**	0.010	103.8	mg/L	3	Standard
	Cd	114	52.9	101.2	**0.0069**	0.011	156.6	ug/L	7	Standard
>	**In**	115	539456.4	0.6				ug/L	524722	Standard
	Sn	118	513.3	2.8	**0.0033**	0.003	95.9	ug/L	715	Standard
	Sb	123	668.0	33.5	**0.1338**	0.049	36.9	ug/L	201	Standard
	Ba	135	14458.9	2.3	**7.7012**	0.163	2.1	ug/L	108	Standard
	Ce	140	7036.6	6.6				ug/L	30	Standard
>	**Tb**	159	818023.3	1.0				ug/L	792236	Standard
	Ho	165	115.0	27.2				ug/L	7	Standard
	Tl	203	200.0	22.5	**0.0231**	0.006	25.9	ug/L	9	Standard
	Tl	205	161.7	23.6	**0.0166**	0.006	35.1	ug/L	0	Standard
	Pb	206	434.7	9.5	**0.0360**	0.009	24.6	ug/L	216	Standard
	Pb	207	375.3	3.2	**0.0337**	0.004	10.7	ug/L	180	Standard
	Pb	208	1515.7	5.1	**0.0292**	0.005	17.5	ug/L	717	Standard
	U	238	114.7	29.0	**0.0105**	0.005	51.2	ug/L	4	Standard
>	**Bi**	209	469475.2	1.0				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1023.4	7.3	**1.3409**	0.102	7.6	mg/L	20	Standard
K	39	6.7	43.3	**-0.1772**	0.022	12.3	mg/L	22	Standard
Ca	43	43.3	46.6	**-3.0610**	4.758	155.5	mg/L	47	Standard
Fe	54	379.2	10.8	**0.1931**	0.034	17.8	mg/L	151	Standard
Fe	57	256.7	21.5	**0.1469**	0.171	116.2	mg/L	195	Standard
Sc-1	45	29675.7	0.4				mg/L	29647	Standard
Cl	35	160581.2	1.2				ug/L	154152	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	34599.5	0.7				ug/L	1607	Standard
P	31	23708.5	0.9				ug/L	22752	Standard
S	34	4770.8	0.4				ug/L	5049	Standard
Sr	88	63.3	39.7				ug/L	87	Standard
C	12	46.7	44.6				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	195.8	8.2				mg/L	10	Standard
Ho-1	165	115.0	27.2				mg/L	7	Standard
Er	166	156.7	19.5				mg/L	3	Standard
I	127	7458.5	3.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.197	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.210	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.808
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.984
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 18:07:39
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64746.4	0.3				ug/L	51024	Standard
	Be	9	46935.9	0.9	**43.9752**	0.492	1.1	ug/L	7	Standard
	Al	27	7535309.9	1.9	**41.7048**	0.653	1.6	ug/L	625	Standard
	Sc	45	31043.5	4.7				ug/L	29647	Standard
	Ti	47	28772.6	0.9	**96.6294**	1.169	1.2	ug/L	57	Standard
	V	51	348687.3	1.9	**49.3361**	0.535	1.1	ug/L	1142	Standard
	Cr	52	360685.6	0.1	**48.5749**	1.035	2.1	ug/L	6628	Standard
	Cr	53	45317.7	1.7	**48.7728**	0.185	0.4	ug/L	430	Standard
	Mn	55	312229.0	0.7	**52.9756**	0.740	1.4	ug/L	603	Standard
	Co	59	328785.3	1.7	**51.5998**	0.220	0.4	ug/L	237	Standard
	Ni	60	92818.4	0.9	**48.5066**	0.760	1.6	ug/L	141	Standard
	Cu	65	91019.6	1.6	**48.8181**	0.503	1.0	ug/L	109	Standard
	Zn	66	54227.6	1.6	**49.1583**	0.511	1.0	ug/L	159	Standard
>	Ge	72	469521.9	2.1				ug/L	474053	Standard
	As	75	53936.9	1.2	**49.2114**	0.450	0.9	ug/L	-34	Standard
	Se	82	5505.5	2.6	**50.0972**	0.955	1.9	ug/L	14	Standard
	Se-1	77	3726.1	1.9	**48.2480**	0.384	0.8	ug/L	55	Standard
>	Ga	71	78.3	14.7				mg/L	50	Standard
	Rb	85	671.7	4.5				ug/L	20	Standard
	Y	89	383452.4	1.6				ug/L	376602	Standard
>	Rh	103	25.0	0.0				ug/L	17	Standard
	Mo	98	247423.8	2.1	**101.1140**	2.305	2.3	ug/L	8	Standard
	Ag	107	299585.0	1.0	**48.4657**	0.725	1.5	ug/L	81	Standard
	Cd	111	97195.1	1.0	**48.3387**	0.865	1.8	mg/L	3	Standard
	Cd	114	237825.0	2.4	**47.8442**	1.314	2.7	ug/L	7	Standard
>	In	115	543596.8	0.8				ug/L	524722	Standard
	Sn	118	268878.5	1.5	**48.0977**	1.025	2.1	ug/L	715	Standard
	Sb	123	216173.0	0.7	**47.7614**	0.695	1.5	ug/L	201	Standard
	Ba	135	89328.2	0.9	**47.5171**	0.807	1.7	ug/L	108	Standard
	Ce	140	83.3	25.0				ug/L	30	Standard
>	Tb	159	826706.5	0.3				ug/L	792236	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	368647.9	0.4	**47.0636**	0.889	1.9	ug/L	9	Standard
	Tl	205	321431.2	2.0	**48.2447**	0.798	1.7	ug/L	0	Standard
	Pb	206	230222.8	1.5	**48.5740**	1.152	2.4	ug/L	216	Standard
	Pb	207	209229.9	1.3	**48.4917**	1.019	2.1	ug/L	180	Standard
	Pb	208	835767.1	0.5	**47.7236**	0.588	1.2	ug/L	717	Standard
	U	238	311255.6	0.4	**48.8622**	0.739	1.5	ug/L	4	Standard
>	Bi	209	472106.5	1.5				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3973.9	4.2	**5.1144**	0.463	9.1	mg/L	20	Standard
K	39	603.3	5.9	**4.1749**	0.393	9.4	mg/L	22	Standard
Ca	43	58.3	34.6	**-0.2925**	4.036	1380.2	mg/L	47	Standard
Fe	54	5929.6	4.5	**4.5027**	0.427	9.5	mg/L	151	Standard
Fe	57	1646.8	4.1	**4.2259**	0.199	4.7	mg/L	195	Standard
Sc-1	45	31043.5	4.7				mg/L	29647	Standard
Cl	35	162653.1	0.8				ug/L	154152	Standard
Kr	83	1.0	0.0				ug/L	3	Standard
Br	81	4067.2	17.6				ug/L	1607	Standard
P	31	24251.1	1.7				ug/L	22752	Standard
S	34	5482.7	3.7				ug/L	5049	Standard
Sr	88	45.0	33.3				ug/L	87	Standard
C	12	60.0	28.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	22.5	26.8				mg/L	10	Standard
Ho-1	165	8.3	69.3				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	3	Standard
I	127	1428.4	5.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	87.950		
Al	27	83.410		
Sc	45			
Ti	47	96.629		
V	51	98.672		
Cr	52	97.150		
Cr	53			
Mn	55	105.951		
Co	59	103.200		
Ni	60	97.013		
Cu	65	97.636		
Zn	66	98.317		
Ge	72		99.044	
As	75	98.423		
Se	82	100.194		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.114		
Ag	107	96.931		
Cd	111	96.677		
Cd	114			
In	115		103.597	
Sn	118	96.195		
Sb	123	95.523		
Ba	135	95.034		
Ce	140			
Tb	159			
Ho	165			
Tl	203	94.127		
Tl	205			
Pb	206			
Pb	207			
Pb	208	95.447		
U	238	97.724		
Bi	209		102.555	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 18:10:51
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61896.2	1.1				ug/L	51024	Standard
	Be	9	18.3	56.8	**-0.0031**	0.010	331.6	ug/L	7	Standard
	Al	27	1523.4	19.5	**-0.0009**	0.002	172.8	ug/L	625	Standard
	Sc	45	30746.2	4.2				ug/L	29647	Standard
	Ti	47	48.7	24.0	**0.0041**	0.040	983.7	ug/L	57	Standard
	V	51	1096.5	7.2	**-0.0066**	0.011	164.7	ug/L	1142	Standard
	Cr	52	6114.9	1.9	**-0.0559**	0.020	35.8	ug/L	6628	Standard
	Cr	53	420.0	14.4	**0.0427**	0.071	166.6	ug/L	430	Standard
	Mn	55	696.3	8.0	**-0.0034**	0.009	280.9	ug/L	603	Standard
	Co	59	257.0	3.7	**0.0007**	0.001	190.7	ug/L	237	Standard
	Ni	60	98.3	19.1	**-0.0243**	0.010	42.2	ug/L	141	Standard
	Cu	65	138.3	15.9	**0.0111**	0.013	114.3	ug/L	109	Standard
	Zn	66	155.0	9.1	**-0.0853**	0.013	14.8	ug/L	159	Standard
>	**Ge**	72	451752.5	0.6				ug/L	474053	Standard
	As	75	-25.7	89.3	**0.0007**	0.022	2895.4	ug/L	-34	Standard
	Se	82	22.8	34.8	**0.0475**	0.075	158.2	ug/L	14	Standard
	Se-1	77	56.0	11.7	**0.0207**	0.094	453.1	ug/L	55	Standard
>	**Ga**	71	41.7	18.3				mg/L	50	Standard
	Rb	85	23.3	32.7				ug/L	20	Standard
	Y	89	396184.8	0.8				ug/L	376602	Standard
>	**Rh**	103	16.7	45.8				ug/L	17	Standard
	Mo	98	276.1	23.5	**0.1082**	0.027	25.2	ug/L	8	Standard
	Ag	107	114.0	9.8	**0.0063**	0.002	31.9	ug/L	81	Standard
	Cd	111	11.2	11.3	**0.0024**	0.001	28.4	mg/L	3	Standard
	Cd	114	27.7	73.8	**0.0018**	0.004	228.8	ug/L	7	Standard
>	**In**	115	539405.0	1.3				ug/L	524722	Standard
	Sn	118	770.0	23.8	**0.0496**	0.033	67.2	ug/L	715	Standard
	Sb	123	621.2	30.2	**0.1235**	0.042	34.0	ug/L	201	Standard
	Ba	135	117.7	23.5	**0.0055**	0.015	275.0	ug/L	108	Standard
	Ce	140	10.0	50.0				ug/L	30	Standard
>	**Tb**	159	804197.7	0.7				ug/L	792236	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	67.0	31.6	**0.0062**	0.003	43.0	ug/L	9	Standard
	Tl	205	75.0	13.3	**0.0038**	0.001	37.5	ug/L	0	Standard
	Pb	206	240.0	10.9	**-0.0040**	0.005	132.8	ug/L	216	Standard
	Pb	207	198.7	7.7	**-0.0062**	0.004	60.3	ug/L	180	Standard
	Pb	208	866.3	5.4	**-0.0067**	0.003	50.1	ug/L	717	Standard
	U	238	48.0	12.7	**0.0002**	0.001	508.3	ug/L	4	Standard
>	**Bi**	209	456732.7	1.5				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	38.3	82.8	**0.0048**	0.041	858.7	mg/L	20	Standard
K	39	21.7	87.4	**-0.0684**	0.138	202.1	mg/L	22	Standard
Ca	43	51.7	45.7	**-1.4837**	5.565	375.1	mg/L	47	Standard
Fe	54	127.7	12.6	**-0.0146**	0.015	100.1	mg/L	151	Standard
Fe	57	163.3	30.7	**-0.1626**	0.130	79.6	mg/L	195	Standard
> **Sc-1**	45	30746.2	4.2				mg/L	29647	Standard
Cl	35	165606.2	1.3				ug/L	154152	Standard
Kr	83	3.0	57.7				ug/L	3	Standard
Br	81	2933.6	13.2				ug/L	1607	Standard
P	31	25216.0	5.8				ug/L	22752	Standard
S	34	5477.7	2.3				ug/L	5049	Standard
Sr	88	56.7	33.4				ug/L	87	Standard
C	12	36.7	41.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.9	86.8				mg/L	10	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	10.0	173.2				mg/L	3	Standard
I	127	1125.0	7.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.296	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.798	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.216	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606054009
Sample Date/Time: Thursday, June 16, 2016 18:14:04
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62868.5	2.1				ug/L	51024	Standard
	Be	9	25.0	40.0	**0.0030**	0.010	320.4	ug/L	7	Standard
	Al	27	3263361.8	1.6	**18.5978**	0.187	1.0	ug/L	625	Standard
	Sc	45	30816.3	0.3				ug/L	29647	Standard
	Ti	47	176.7	8.1	**0.4336**	0.054	12.4	ug/L	57	Standard
	V	51	2352.6	1.3	**0.1685**	0.004	2.6	ug/L	1142	Standard
	Cr	52	8208.2	0.8	**0.2076**	0.006	3.1	ug/L	6628	Standard
	Cr	53	778.4	12.3	**0.4216**	0.115	27.4	ug/L	430	Standard
	Mn	55	6000883.1	1.3	**1028.9465**	25.297	2.5	ug/L	603	Standard
	Co	59	5272.3	0.9	**0.7938**	0.018	2.3	ug/L	237	Standard
	Ni	60	2681.9	0.9	**1.3375**	0.018	1.4	ug/L	141	Standard
	Cu	65	979.4	2.5	**0.4642**	0.012	2.6	ug/L	109	Standard
	Zn	66	3790.8	1.0	**3.2497**	0.077	2.4	ug/L	159	Standard
>	**Ge**	72	465659.8	1.3				ug/L	474053	Standard
	As	75	5887.6	1.1	**5.4382**	0.057	1.1	ug/L	-34	Standard
	Se	82	141.8	7.0	**1.1369**	0.108	9.5	ug/L	14	Standard
	Se-1	77	74.7	2.0	**0.2451**	0.023	9.4	ug/L	55	Standard
>	**Ga**	71	296.7	5.1				mg/L	50	Standard
	Rb	85	53373.9	1.9				ug/L	20	Standard
	Y	89	385477.9	2.9				ug/L	376602	Standard
>	**Rh**	103	46.7	16.4				ug/L	17	Standard
	Mo	98	1798.6	2.7	**0.7471**	0.020	2.7	ug/L	8	Standard
	Ag	107	110.0	13.7	**0.0059**	0.003	44.0	ug/L	81	Standard
	Cd	111	71.5	14.9	**0.0332**	0.006	17.6	mg/L	3	Standard
	Cd	114	137.0	6.5	**0.0244**	0.002	7.2	ug/L	7	Standard
>	**In**	115	530892.7	1.2				ug/L	524722	Standard
	Sn	118	731.7	10.0	**0.0448**	0.013	28.2	ug/L	715	Standard
	Sb	123	625.1	16.6	**0.1265**	0.022	17.3	ug/L	201	Standard
	Ba	135	131604.4	0.3	**71.7085**	0.676	0.9	ug/L	108	Standard
	Ce	140	6654.8	2.0				ug/L	30	Standard
>	**Tb**	159	816377.9	1.5				ug/L	792236	Standard
	Ho	165	238.3	11.6				ug/L	7	Standard
	Tl	203	76.0	23.3	**0.0075**	0.002	32.6	ug/L	9	Standard
	Tl	205	63.3	64.3	**0.0021**	0.006	310.8	ug/L	0	Standard
	Pb	206	386.0	5.1	**0.0283**	0.005	18.8	ug/L	216	Standard
	Pb	207	347.0	4.2	**0.0297**	0.005	15.2	ug/L	180	Standard
	Pb	208	1437.7	3.0	**0.0274**	0.003	12.5	ug/L	717	Standard
	U	238	4379.0	0.5	**0.7057**	0.012	1.8	ug/L	4	Standard
>	**Bi**	209	455069.1	1.2				ug/L	460343	Standard

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Na	23	5.0	100.0	**-5.2765**	15.737	298.3	mg/L	0	Standard
Mg	24	9816.5	6.9	**12.7603**	0.918	7.2	mg/L	20	Standard
K	39	4015.5	6.3	**29.2188**	1.778	6.1	mg/L	22	Standard
Ca	43	165.0	35.7	**23.9101**	13.280	55.5	mg/L	47	Standard
Fe	54	13256.8	2.9	**10.2548**	0.305	3.0	mg/L	151	Standard
Fe	57	3875.5	1.1	**10.8966**	0.106	1.0	mg/L	195	Standard
> **Sc-1**	45	30816.3	0.3				mg/L	29647	Standard
Cl	35	225833.9	0.4				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	25945.6	7.7				ug/L	1607	Standard
P	31	26763.6	2.0				ug/L	22752	Standard
S	34	5200.9	3.2				ug/L	5049	Standard
Sr	88	240.0	9.1				ug/L	87	Standard
C	12	193.3	18.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	262.1	17.3				mg/L	10	Standard
Ho-1	165	238.3	11.6				mg/L	7	Standard
Er	166	303.3	18.2				mg/L	3	Standard
I	127	75002.8	8.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.213	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.229	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.176	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.854	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606054010
Sample Date/Time: Thursday, June 16, 2016 18:17:15
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65588.3	0.4				ug/L	51024	Standard
	Be	9	30.0	60.1	**0.0066**	0.017	249.6	ug/L	7	Standard
	Al	27	2526422.5	0.3	**13.7972**	0.064	0.5	ug/L	625	Standard
	Sc	45	30417.2	3.2				ug/L	29647	Standard
	Ti	47	2810.3	3.2	**9.9401**	0.380	3.8	ug/L	57	Standard
	V	51	10857.2	0.9	**1.4795**	0.027	1.9	ug/L	1142	Standard
	Cr	52	13448.6	1.8	**1.0447**	0.048	4.6	ug/L	6628	Standard
	Cr	53	1738.4	6.6	**1.5855**	0.118	7.5	ug/L	430	Standard
	Mn	55	662471.2	0.9	**120.2964**	1.474	1.2	ug/L	603	Standard
	Co	59	2699.2	0.2	**0.4120**	0.004	0.9	ug/L	237	Standard
	Ni	60	3377.4	1.2	**1.8118**	0.036	2.0	ug/L	141	Standard
	Cu	65	1366.7	4.1	**0.7187**	0.039	5.4	ug/L	109	Standard
	Zn	66	9779.2	1.9	**9.2895**	0.243	2.6	ug/L	159	Standard
>	Ge	72	439226.0	0.9				ug/L	474053	Standard
	As	75	11053.2	2.0	**10.7998**	0.276	2.6	ug/L	-34	Standard
	Se	82	3723.6	2.4	**36.1764**	1.076	3.0	ug/L	14	Standard
	Se-1	77	120.3	17.9	**0.9478**	0.313	33.0	ug/L	55	Standard
>	Ga	71	653.3	7.7				mg/L	50	Standard
	Rb	85	17974.0	0.9				ug/L	20	Standard
	Y	89	392749.3	1.5				ug/L	376602	Standard
>	Rh	103	83.3	30.2				ug/L	17	Standard
	Mo	98	4323.3	0.4	**1.8596**	0.045	2.4	ug/L	8	Standard
	Ag	107	99.7	3.2	**0.0047**	0.001	17.3	ug/L	81	Standard
	Cd	111	51.2	16.5	**0.0236**	0.004	17.1	mg/L	3	Standard
	Cd	114	147.6	10.0	**0.0276**	0.004	13.0	ug/L	7	Standard
>	In	115	515115.8	2.2				ug/L	524722	Standard
	Sn	118	1333.4	7.7	**0.1626**	0.017	10.4	ug/L	715	Standard
	Sb	123	590.9	5.0	**0.1232**	0.010	8.0	ug/L	201	Standard
	Ba	135	57030.1	1.1	**31.9969**	0.347	1.1	ug/L	108	Standard
	Ce	140	21293.3	3.8				ug/L	30	Standard
>	Tb	159	786053.3	2.1				ug/L	792236	Standard
	Ho	165	341.7	14.7				ug/L	7	Standard
	Tl	203	337.7	6.2	**0.0450**	0.003	7.2	ug/L	9	Standard
	Tl	205	321.7	3.2	**0.0455**	0.003	5.8	ug/L	0	Standard
	Pb	206	1862.1	0.7	**0.3774**	0.005	1.2	ug/L	216	Standard
	Pb	207	1577.4	0.7	**0.3498**	0.004	1.2	ug/L	180	Standard
	Pb	208	6669.9	1.5	**0.3627**	0.014	3.8	ug/L	717	Standard
	U	238	10873.6	0.3	**1.8752**	0.033	1.8	ug/L	4	Standard
>	Bi	209	428106.7	1.8				ug/L	460343	Standard

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Na	23	6.7	114.6	**-10.3208**	23.457	227.3	mg/L	0	Standard
Mg	24	48188.2	2.0	**63.6943**	3.015	4.7	mg/L	20	Standard
K	39	553.3	6.8	**3.8849**	0.281	7.2	mg/L	22	Standard
Ca	43	321.7	16.0	**60.3557**	13.874	23.0	mg/L	47	Standard
Fe	54	1808.8	3.2	**1.3200**	0.080	6.1	mg/L	151	Standard
Fe	57	981.7	5.4	**2.3180**	0.200	8.6	mg/L	195	Standard
> **Sc-1**	45	30417.2	3.2				mg/L	29647	Standard
Cl	35	209372.7	0.6				ug/L	154152	Standard
Kr	83	0.7	173.2				ug/L	3	Standard
Br	81	933072.6	1.4				ug/L	1607	Standard
P	31	28264.7	0.7				ug/L	22752	Standard
S	34	4879.1	1.2				ug/L	5049	Standard
Sr	88	365.0	15.8				ug/L	87	Standard
C	12	160.0	28.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	522.9	18.7				mg/L	10	Standard
Ho-1	165	341.7	14.7				mg/L	7	Standard
Er	166	356.7	9.8				mg/L	3	Standard
I	127	158946.5	8.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.544	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.653	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.169
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	92.997
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606054011
Sample Date/Time: Thursday, June 16, 2016 18:20:27
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66415.2	0.8				ug/L	51024	Standard
	Be	9	31.7	92.5	**0.0080**	0.027	339.9	ug/L	7	Standard
	Al	27	2599405.0	0.8	**14.0190**	0.029	0.2	ug/L	625	Standard
	Sc	45	30612.6	1.1				ug/L	29647	Standard
	Ti	47	3388.4	4.8	**11.4676**	0.712	6.2	ug/L	57	Standard
	V	51	11365.4	1.1	**1.4778**	0.020	1.3	ug/L	1142	Standard
	Cr	52	14126.6	0.8	**1.0496**	0.030	2.9	ug/L	6628	Standard
	Cr	53	1888.5	10.3	**1.6589**	0.194	11.7	ug/L	430	Standard
	Mn	55	683276.7	0.4	**118.4238**	2.389	2.0	ug/L	603	Standard
	Co	59	2752.6	2.0	**0.3999**	0.015	3.8	ug/L	237	Standard
	Ni	60	3356.7	1.2	**1.7147**	0.043	2.5	ug/L	141	Standard
	Cu	65	1350.7	3.3	**0.6741**	0.033	5.0	ug/L	109	Standard
	Zn	66	8668.5	0.7	**7.8234**	0.178	2.3	ug/L	159	Standard
>	**Ge**	72	460253.4	1.6				ug/L	474053	Standard
	As	75	11667.3	1.2	**10.8800**	0.252	2.3	ug/L	-34	Standard
	Se	82	3942.6	1.6	**36.5587**	0.912	2.5	ug/L	14	Standard
	Se-1	77	129.7	8.5	**0.9935**	0.130	13.1	ug/L	55	Standard
>	**Ga**	71	686.7	16.0				mg/L	50	Standard
	Rb	85	19050.3	3.1				ug/L	20	Standard
	Y	89	381859.4	1.4				ug/L	376602	Standard
>	**Rh**	103	103.3	43.9				ug/L	17	Standard
	Mo	98	4373.4	1.2	**1.9146**	0.031	1.6	ug/L	8	Standard
	Ag	107	74.0	18.9	**0.0005**	0.002	456.1	ug/L	81	Standard
	Cd	111	45.0	20.2	**0.0208**	0.005	23.5	mg/L	3	Standard
	Cd	114	116.5	10.2	**0.0214**	0.003	12.0	ug/L	7	Standard
>	**In**	115	506011.1	0.4				ug/L	524722	Standard
	Sn	118	1185.0	3.8	**0.1387**	0.010	6.9	ug/L	715	Standard
	Sb	123	571.9	4.2	**0.1210**	0.005	4.2	ug/L	201	Standard
	Ba	135	57088.3	0.4	**32.6025**	0.223	0.7	ug/L	108	Standard
	Ce	140	20652.4	1.0				ug/L	30	Standard
>	**Tb**	159	785323.2	1.2				ug/L	792236	Standard
	Ho	165	306.7	8.0				ug/L	7	Standard
	Tl	203	332.3	7.5	**0.0441**	0.003	7.8	ug/L	9	Standard
	Tl	205	303.3	2.5	**0.0423**	0.001	2.9	ug/L	0	Standard
	Pb	206	1906.8	2.4	**0.3865**	0.007	1.8	ug/L	216	Standard
	Pb	207	1585.1	0.2	**0.3506**	0.006	1.6	ug/L	180	Standard
	Pb	208	6566.9	1.1	**0.3550**	0.006	1.8	ug/L	717	Standard
	U	238	10922.6	1.0	**1.8784**	0.027	1.4	ug/L	4	Standard
>	**Bi**	209	429255.9	1.2				ug/L	460343	Standard

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Na	23	10.0		**-21.2549**	0.358	1.7	mg/L	0	Standard
Mg	24	49766.6	0.9	**65.3028**	0.773	1.2	mg/L	20	Standard
K	39	513.3	10.0	**3.5605**	0.354	9.9	mg/L	22	Standard
Ca	43	375.0	2.3	**71.6613**	1.832	2.6	mg/L	47	Standard
Fe	54	1685.6	3.3	**1.2127**	0.057	4.7	mg/L	151	Standard
Fe	57	868.4	4.3	**1.9576**	0.137	7.0	mg/L	195	Standard
> **Sc-1**	45	30612.6	1.1				mg/L	29647	Standard
Cl	35	212698.7	1.3				ug/L	154152	Standard
Kr	83	1.3	114.6				ug/L	3	Standard
Br	81	930543.4	1.3				ug/L	1607	Standard
P	31	28647.1	1.3				ug/L	22752	Standard
S	34	4877.5	1.7				ug/L	5049	Standard
Sr	88	360.0	7.7				ug/L	87	Standard
C	12	163.3	18.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	0	Standard
Dy	164	512.3	22.5				mg/L	10	Standard
Ho-1	165	306.7	8.0				mg/L	7	Standard
Er	166	300.0	28.9				mg/L	3	Standard
I	127	165895.7	6.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		130.164	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.089	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.434
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.247
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606054014
Sample Date/Time: Thursday, June 16, 2016 18:23:38
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68457.7	1.1				ug/L	51024	Standard
	Be	9	223.3	18.0	**0.1767**	0.033	18.9	ug/L	7	Standard
	Al	27	3707488.9	1.7	**19.4017**	0.122	0.6	ug/L	625	Standard
	Sc	45	30515.7	3.4				ug/L	29647	Standard
	Ti	47	294.7	2.2	**0.8253**	0.029	3.5	ug/L	57	Standard
	V	51	3410.3	2.9	**0.3157**	0.010	3.3	ug/L	1142	Standard
	Cr	52	8854.9	2.4	**0.2871**	0.040	14.1	ug/L	6628	Standard
	Cr	53	1000.0	7.8	**0.6537**	0.075	11.4	ug/L	430	Standard
	Mn	55	12117646.4	0.4	**2060.2552**	13.775	0.7	ug/L	603	Standard
	Co	59	1473.7	1.2	**0.1902**	0.002	1.2	ug/L	237	Standard
	Ni	60	5603.4	1.0	**2.8548**	0.061	2.1	ug/L	141	Standard
	Cu	65	1122.7	1.8	**0.5367**	0.010	1.8	ug/L	109	Standard
	Zn	66	11386.6	1.1	**10.1370**	0.058	0.6	ug/L	159	Standard
>	**Ge**	72	469570.6	1.1				ug/L	474053	Standard
	As	75	14849.9	0.4	**13.5649**	0.144	1.1	ug/L	-34	Standard
	Se	82	356.9	5.3	**3.0899**	0.192	6.2	ug/L	14	Standard
	Se-1	77	81.7	2.5	**0.3287**	0.021	6.5	ug/L	55	Standard
>	**Ga**	71	528.3	9.7				mg/L	50	Standard
	Rb	85	19908.1	1.7				ug/L	20	Standard
	Y	89	397696.3	3.0				ug/L	376602	Standard
>	**Rh**	103	73.3	28.4				ug/L	17	Standard
	Mo	98	1099.6	1.0	**0.4465**	0.011	2.4	ug/L	8	Standard
	Ag	107	113.3	53.3	**0.0062**	0.010	164.1	ug/L	81	Standard
	Cd	111	46.4	117.1	**0.0203**	0.028	137.1	mg/L	3	Standard
	Cd	114	110.7	115.4	**0.0188**	0.026	140.1	ug/L	7	Standard
>	**In**	115	540492.7	1.5				ug/L	524722	Standard
	Sn	118	843.4	3.6	**0.0625**	0.003	5.4	ug/L	715	Standard
	Sb	123	260.9	5.7	**0.0432**	0.004	9.7	ug/L	201	Standard
	Ba	135	85652.2	2.1	**45.8145**	0.326	0.7	ug/L	108	Standard
	Ce	140	2418.5	4.8				ug/L	30	Standard
>	**Tb**	159	825063.1	0.9				ug/L	792236	Standard
	Ho	165	370.0	15.3				ug/L	7	Standard
	Tl	203	165.0	77.7	**0.0187**	0.017	89.0	ug/L	9	Standard
	Tl	205	83.3	48.9	**0.0048**	0.006	129.6	ug/L	0	Standard
	Pb	206	781.7	2.4	**0.1102**	0.005	4.7	ug/L	216	Standard
	Pb	207	661.7	6.1	**0.1011**	0.010	10.0	ug/L	180	Standard
	Pb	208	2756.1	3.9	**0.1010**	0.006	6.3	ug/L	717	Standard
	U	238	69.7	29.4	**0.0035**	0.003	95.7	ug/L	4	Standard
>	**Bi**	209	467941.3	0.6				ug/L	460343	Standard

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Na	23	1.7	173.2	**4.9367**	9.553	193.5	mg/L	0	Standard
Mg	24	7730.3	2.8	**10.1412**	0.303	3.0	mg/L	20	Standard
K	39	158.3	7.9	**0.9473**	0.128	13.5	mg/L	22	Standard
Ca	43	168.3	19.8	**24.8759**	6.392	25.7	mg/L	47	Standard
Fe	54	6384.0	2.9	**4.9326**	0.253	5.1	mg/L	151	Standard
Fe	57	1760.1	6.1	**4.6585**	0.505	10.8	mg/L	195	Standard
> **Sc-1**	45	30515.7	3.4				mg/L	29647	Standard
Cl	35	207881.0	0.4				ug/L	154152	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	77943.4	2.4				ug/L	1607	Standard
P	31	27538.3	2.1				ug/L	22752	Standard
S	34	5344.3	4.3				ug/L	5049	Standard
Sr	88	228.3	5.5				ug/L	87	Standard
C	12	153.3	22.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	364.7	19.0				mg/L	10	Standard
Ho-1	165	370.0	15.3				mg/L	7	Standard
Er	166	390.0	7.7				mg/L	3	Standard
I	127	96865.7	4.2				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		134.167	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.054	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.006
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.651
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606054015
Sample Date/Time: Thursday, June 16, 2016 18:26:50
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70212.3	1.0				ug/L	51024	Standard
	Be	9	93.3	11.2	**0.0596**	0.009	14.8	ug/L	7	Standard
	Al	27	2156794.6	1.5	**11.0022**	0.244	2.2	ug/L	625	Standard
	Sc	45	32787.1	2.8				ug/L	29647	Standard
	Ti	47	872.7	1.5	**2.8741**	0.038	1.3	ug/L	57	Standard
	V	51	4953.3	2.7	**0.5601**	0.025	4.5	ug/L	1142	Standard
	Cr	52	12535.5	0.5	**0.8533**	0.007	0.8	ug/L	6628	Standard
	Cr	53	3772.1	6.1	**3.8114**	0.290	7.6	ug/L	430	Standard
	Mn	55	223713.2	0.6	**39.2731**	0.557	1.4	ug/L	603	Standard
	Co	59	2453.9	1.1	**0.3579**	0.004	1.1	ug/L	237	Standard
	Ni	60	3886.2	1.3	**2.0286**	0.038	1.9	ug/L	141	Standard
	Cu	65	32893.7	0.8	**18.2296**	0.262	1.4	ug/L	109	Standard
	Zn	66	61284.4	0.6	**57.5727**	0.568	1.0	ug/L	159	Standard
>	**Ge**	72	453357.9	0.8				ug/L	474053	Standard
	As	75	5903.1	1.9	**5.6002**	0.148	2.6	ug/L	-34	Standard
	Se	82	1422.0	3.2	**13.2789**	0.537	4.0	ug/L	14	Standard
	Se-1	77	189.7	16.8	**1.8389**	0.442	24.1	ug/L	55	Standard
>	**Ga**	71	225.0	13.5				mg/L	50	Standard
	Rb	85	13973.1	2.8				ug/L	20	Standard
	Y	89	404441.3	1.8				ug/L	376602	Standard
>	**Rh**	103	65.0	38.5				ug/L	17	Standard
	Mo	98	294.7	2.2	**0.1146**	0.002	2.0	ug/L	8	Standard
	Ag	107	105.0	9.1	**0.0046**	0.002	33.3	ug/L	81	Standard
	Cd	111	122.5	4.2	**0.0575**	0.003	4.7	mg/L	3	Standard
	Cd	114	252.7	21.3	**0.0469**	0.011	22.8	ug/L	7	Standard
>	**In**	115	544955.5	0.5				ug/L	524722	Standard
	Sn	118	895.0	4.4	**0.0706**	0.008	11.3	ug/L	715	Standard
	Sb	123	270.4	10.2	**0.0448**	0.006	14.2	ug/L	201	Standard
	Ba	135	146088.3	0.9	**77.5484**	1.011	1.3	ug/L	108	Standard
	Ce	140	17523.5	3.1				ug/L	30	Standard
>	**Tb**	159	819658.6	1.6				ug/L	792236	Standard
	Ho	165	628.3	0.5				ug/L	7	Standard
	Tl	203	235.3	10.6	**0.0288**	0.003	9.6	ug/L	9	Standard
	Tl	205	200.0	25.0	**0.0236**	0.008	34.4	ug/L	0	Standard
	Pb	206	6489.4	1.2	**1.3771**	0.042	3.0	ug/L	216	Standard
	Pb	207	5497.7	0.5	**1.2800**	0.026	2.0	ug/L	180	Standard
	Pb	208	22985.2	1.3	**1.3164**	0.041	3.1	ug/L	717	Standard
	U	238	227.3	4.1	**0.0298**	0.002	7.0	ug/L	4	Standard
>	**Bi**	209	451512.8	1.8				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.4796**	8.613	157.2	mg/L	0	Standard
Mg	24	16031.8	1.4	**19.6235**	0.803	4.1	mg/L	20	Standard
K	39	240.0	3.6	**1.4284**	0.103	7.2	mg/L	22	Standard
Ca	43	188.3	18.1	**26.5601**	6.775	25.5	mg/L	47	Standard
Fe	54	2702.3	1.1	**1.8725**	0.045	2.4	mg/L	151	Standard
Fe	57	970.0	7.1	**2.0665**	0.116	5.6	mg/L	195	Standard
> **Sc-1**	45	32787.1	2.8				mg/L	29647	Standard
Cl	35	187497.7	0.8				ug/L	154152	Standard
Kr	83	2.3	49.5				ug/L	3	Standard
Br	81	349533.5	4.1				ug/L	1607	Standard
P	31	41573.8	6.0				ug/L	22752	Standard
S	34	4967.5	2.6				ug/L	5049	Standard
Sr	88	208.3	5.5				ug/L	87	Standard
C	12	116.7	26.2				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	870.5	12.8				mg/L	10	Standard
Ho-1	165	628.3	0.5				mg/L	7	Standard
Er	166	616.7	28.8				mg/L	3	Standard
I	127	319694.7	6.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		137.606	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.634	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.856	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.082	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606054016
Sample Date/Time: Thursday, June 16, 2016 18:30:01
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68176.4	1.2				ug/L	51024	Standard
	Be	9	21.7	13.3	**-0.0018**	0.003	143.7	ug/L	7	Standard
	Al	27	2075359.9	0.4	**10.9025**	0.136	1.2	ug/L	625	Standard
	Sc	45	31050.1	1.7				ug/L	29647	Standard
	Ti	47	887.4	5.3	**2.8528**	0.151	5.3	ug/L	57	Standard
	V	51	3806.8	2.6	**0.3783**	0.010	2.7	ug/L	1142	Standard
	Cr	52	10637.4	1.5	**0.5485**	0.036	6.6	ug/L	6628	Standard
	Cr	53	1405.1	2.8	**1.1115**	0.040	3.6	ug/L	430	Standard
	Mn	55	486178.5	1.9	**83.5032**	2.235	2.7	ug/L	603	Standard
	Co	59	1054.7	3.8	**0.1263**	0.008	6.2	ug/L	237	Standard
	Ni	60	11529.4	0.9	**6.0257**	0.114	1.9	ug/L	141	Standard
	Cu	65	2707.2	1.0	**1.4044**	0.012	0.8	ug/L	109	Standard
	Zn	66	9083.1	1.3	**8.1357**	0.169	2.1	ug/L	159	Standard
>	**Ge**	72	464207.3	1.0				ug/L	474053	Standard
	As	75	2758.8	3.0	**2.5691**	0.059	2.3	ug/L	-34	Standard
	Se	82	1024.4	2.4	**9.2906**	0.197	2.1	ug/L	14	Standard
	Se-1	77	98.0	6.2	**0.5580**	0.071	12.7	ug/L	55	Standard
>	**Ga**	71	195.0	23.5				mg/L	50	Standard
	Rb	85	7673.6	3.9				ug/L	20	Standard
	Y	89	397515.6	2.3				ug/L	376602	Standard
>	**Rh**	103	68.3	30.5				ug/L	17	Standard
	Mo	98	786.7	1.9	**0.3292**	0.014	4.4	ug/L	8	Standard
	Ag	107	78.0	2.6	**0.0008**	0.000	5.5	ug/L	81	Standard
	Cd	111	30.9	35.5	**0.0127**	0.005	42.9	mg/L	3	Standard
	Cd	114	65.2	1.1	**0.0098**	0.000	2.0	ug/L	7	Standard
>	**In**	115	522465.9	2.4				ug/L	524722	Standard
	Sn	118	738.4	3.7	**0.0483**	0.008	17.1	ug/L	715	Standard
	Sb	123	275.0	16.0	**0.0486**	0.012	23.8	ug/L	201	Standard
	Ba	135	25240.0	1.7	**13.9295**	0.222	1.6	ug/L	108	Standard
	Ce	140	3872.2	6.3				ug/L	30	Standard
>	**Tb**	159	782878.6	0.7				ug/L	792236	Standard
	Ho	165	290.0	15.0				ug/L	7	Standard
	Tl	203	118.7	19.0	**0.0136**	0.003	22.8	ug/L	9	Standard
	Tl	205	133.3	20.7	**0.0136**	0.004	32.8	ug/L	0	Standard
	Pb	206	2356.5	1.5	**0.4750**	0.007	1.6	ug/L	216	Standard
	Pb	207	2055.5	1.9	**0.4553**	0.008	1.8	ug/L	180	Standard
	Pb	208	8501.6	2.4	**0.4610**	0.013	2.9	ug/L	717	Standard
	U	238	331.0	4.1	**0.0479**	0.002	5.0	ug/L	4	Standard
>	**Bi**	209	442159.2	0.2				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.1730**	9.144	176.8	mg/L	0	Standard
Mg	24	10690.4	1.9	**13.7935**	0.084	0.6	mg/L	20	Standard
K	39	96.7	13.0	**0.4748**	0.079	16.7	mg/L	22	Standard
Ca	43	233.3	8.9	**38.9201**	5.419	13.9	mg/L	47	Standard
Fe	54	3334.2	1.9	**2.4739**	0.064	2.6	mg/L	151	Standard
Fe	57	1251.7	5.3	**3.0560**	0.253	8.3	mg/L	195	Standard
> **Sc-1**	45	31050.1	1.7				mg/L	29647	Standard
Cl	35	170093.6	1.6				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	245182.8	3.5				ug/L	1607	Standard
P	31	32394.6	2.5				ug/L	22752	Standard
S	34	5009.2	1.9				ug/L	5049	Standard
Sr	88	261.7	17.8				ug/L	87	Standard
C	12	140.0	12.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	323.0	18.5				mg/L	10	Standard
Ho-1	165	290.0	15.0				mg/L	7	Standard
Er	166	216.7	25.4				mg/L	3	Standard
I	127	55511.6	2.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		133.616	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.923	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.570
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.050
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606054901
Sample Date/Time: Thursday, June 16, 2016 18:33:13
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72709.1	1.6				ug/L	51024	Standard
	Be	9	15.0	88.2	**-0.0087**	0.011	126.1	ug/L	7	Standard
	Al	27	11667015.3	1.5	**57.5082**	0.540	0.9	ug/L	625	Standard
	Sc	45	28668.8	2.1				ug/L	29647	Standard
	Ti	47	148.7	19.1	**0.3823**	0.104	27.3	ug/L	57	Standard
	V	51	2595.6	16.9	**0.2356**	0.067	28.4	ug/L	1142	Standard
	Cr	52	17123.0	0.8	**1.6486**	0.049	3.0	ug/L	6628	Standard
	Cr	53	9336.3	15.0	**10.6848**	1.682	15.7	ug/L	430	Standard
	Mn	55	18549.3	0.3	**3.3327**	0.052	1.6	ug/L	603	Standard
	Co	59	5007.8	1.9	**0.8213**	0.019	2.4	ug/L	237	Standard
	Ni	60	15512.9	1.9	**8.8253**	0.199	2.3	ug/L	141	Standard
	Cu	65	297329.3	1.3	**175.0473**	3.650	2.1	ug/L	109	Standard
	Zn	66	4856.4	2.5	**4.6181**	0.121	2.6	ug/L	159	Standard
>	**Ge**	72	428183.3	1.3				ug/L	474053	Standard
	As	75	2686.3	8.7	**2.7111**	0.235	8.7	ug/L	-34	Standard
	Se	82	880.4	5.1	**8.6464**	0.479	5.5	ug/L	14	Standard
	Se-1	77	1273.7	6.1	**17.6237**	1.226	7.0	ug/L	55	Standard
>	**Ga**	71	535.0	8.9				mg/L	50	Standard
	Rb	85	254257.5	1.2				ug/L	20	Standard
	Y	89	359721.9	0.6				ug/L	376602	Standard
>	**Rh**	103	140.0	9.4				ug/L	17	Standard
	Mo	98	3488.6	3.7	**1.5905**	0.067	4.2	ug/L	8	Standard
	Ag	107	123.7	2.8	**0.0101**	0.001	6.2	ug/L	81	Standard
	Cd	111	15.6	26.6	**0.0055**	0.002	42.5	mg/L	3	Standard
	Cd	114	44.2	40.8	**0.0061**	0.004	65.8	ug/L	7	Standard
>	**In**	115	485628.6	0.5				ug/L	524722	Standard
	Sn	118	1148.4	1.8	**0.1409**	0.005	3.6	ug/L	715	Standard
	Sb	123	1921.7	1.1	**0.4606**	0.007	1.6	ug/L	201	Standard
	Ba	135	96043.1	1.3	**57.1923**	0.511	0.9	ug/L	108	Standard
	Ce	140	93.3	49.8				ug/L	30	Standard
>	**Tb**	159	766976.5	0.2				ug/L	792236	Standard
	Ho	165	5.0	173.2				ug/L	7	Standard
	Tl	203	328.3	20.2	**0.0463**	0.010	21.2	ug/L	9	Standard
	Tl	205	263.3	14.0	**0.0383**	0.006	16.9	ug/L	0	Standard
	Pb	206	413.7	9.2	**0.0455**	0.009	20.2	ug/L	216	Standard
	Pb	207	380.0	6.3	**0.0489**	0.006	12.7	ug/L	180	Standard
	Pb	208	1519.7	11.6	**0.0434**	0.011	26.5	ug/L	717	Standard
	U	238	31.3	49.5	**-0.0018**	0.003	153.2	ug/L	4	Standard
>	**Bi**	209	404872.2	0.7				ug/L	460343	Standard

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Na	23	10.0	86.6	**-23.4566**	29.384	125.3	mg/L	0	Standard
Mg	24	267948.6	0.7	**375.7604**	9.820	2.6	mg/L	20	Standard
K	39	5807.8	3.4	**45.5805**	2.203	4.8	mg/L	22	Standard
Ca	43	638.3	3.5	**141.1529**	8.616	6.1	mg/L	47	Standard
Fe	54	146.9	19.8	**0.0083**	0.022	270.3	mg/L	151	Standard
Fe	57	816.7	4.9	**1.9694**	0.159	8.1	mg/L	195	Standard
> **Sc-1**	45	28668.8	2.1				mg/L	29647	Standard
Cl	35	417643.9	1.4				ug/L	154152	Standard
Kr	83	3.0	57.7				ug/L	3	Standard
Br	81	229759.6	2.4				ug/L	1607	Standard
P	31	23254.5	2.6				ug/L	22752	Standard
S	34	4967.5	4.2				ug/L	5049	Standard
Sr	88	355.0	7.8				ug/L	87	Standard
C	12	183.3	32.0				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	56.7	27.0				mg/L	0	Standard
Dy	164	9.8	2.8				mg/L	10	Standard
Ho-1	165	5.0	173.2				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	1031517.8	6.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		142.499	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.324	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		92.550
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.950
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

Sample ID: L1606054901
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Method 6020 - Summary Report

Sample ID: L1606061401
Sample Date/Time: Thursday, June 16, 2016 18:36:24
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67849.9	1.1				ug/L	51024	Standard
	Be	9	10.0	100.0	**-0.0122**	0.009	72.4	ug/L	7	Standard
	Al	27	7374370.7	1.4	**38.9545**	0.953	2.4	ug/L	625	Standard
	Sc	45	31795.0	3.3				ug/L	29647	Standard
	Ti	47	313.7	6.8	**0.9174**	0.076	8.3	ug/L	57	Standard
	V	51	2621.7	2.2	**0.2138**	0.007	3.4	ug/L	1142	Standard
	Cr	52	11091.1	1.0	**0.6343**	0.009	1.4	ug/L	6628	Standard
	Cr	53	2283.5	15.4	**2.1128**	0.383	18.1	ug/L	430	Standard
	Mn	55	22885192.4	0.4	**3995.0920**	30.113	0.8	ug/L	603	Standard
	Co	59	1232.4	2.0	**0.1575**	0.003	2.1	ug/L	237	Standard
	Ni	60	2098.5	2.4	**1.0496**	0.022	2.1	ug/L	141	Standard
	Cu	65	1216.4	7.2	**0.6044**	0.045	7.4	ug/L	109	Standard
	Zn	66	2288.2	0.5	**1.9075**	0.018	1.0	ug/L	159	Standard
>	Ge	72	457333.9	0.5				ug/L	474053	Standard
	As	75	909.5	3.9	**0.8764**	0.032	3.6	ug/L	-34	Standard
	Se	82	87.0	7.9	**0.6466**	0.066	10.1	ug/L	14	Standard
	Se-1	77	157.0	28.6	**1.3726**	0.597	43.5	ug/L	55	Standard
>	Ga	71	960.0	12.3				mg/L	50	Standard
	Rb	85	5015.8	1.4				ug/L	20	Standard
	Y	89	394642.7	2.8				ug/L	376602	Standard
>	Rh	103	63.3	16.4				ug/L	17	Standard
	Mo	98	105.8	7.3	**0.0386**	0.003	8.5	ug/L	8	Standard
	Ag	107	76.0	8.0	**0.0002**	0.001	446.5	ug/L	81	Standard
	Cd	111	105.5	11.4	**0.0504**	0.007	13.1	mg/L	3	Standard
	Cd	114	217.3	8.1	**0.0408**	0.003	7.9	ug/L	7	Standard
>	In	115	532134.8	0.9				ug/L	524722	Standard
	Sn	118	536.7	2.8	**0.0088**	0.003	34.6	ug/L	715	Standard
	Sb	123	277.5	10.8	**0.0479**	0.007	15.3	ug/L	201	Standard
	Ba	135	159442.6	1.1	**86.6865**	1.387	1.6	ug/L	108	Standard
	Ce	140	1033.4	5.7				ug/L	30	Standard
>	Tb	159	812600.2	1.7				ug/L	792236	Standard
	Ho	165	136.7	12.8				ug/L	7	Standard
	Tl	203	148.0	12.8	**0.0171**	0.003	14.9	ug/L	9	Standard
	Tl	205	111.7	14.4	**0.0097**	0.003	26.2	ug/L	0	Standard
	Pb	206	315.7	1.6	**0.0132**	0.001	8.8	ug/L	216	Standard
	Pb	207	263.7	2.5	**0.0100**	0.002	15.2	ug/L	180	Standard
	Pb	208	1172.4	3.4	**0.0120**	0.002	19.7	ug/L	717	Standard
	U	238	803.7	2.6	**0.1241**	0.003	2.8	ug/L	4	Standard
>	Bi	209	452405.5	0.1				ug/L	460343	Standard

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Na	23	10.0	50.0	**-19.9609**	15.153	75.9	mg/L	0	Standard
Mg	24	11375.9	2.6	**14.3383**	0.138	1.0	mg/L	20	Standard
K	39	516.7	6.4	**3.4516**	0.346	10.0	mg/L	22	Standard
Ca	43	308.3	25.1	**54.1698**	18.153	33.5	mg/L	47	Standard
Fe	54	4619.7	1.0	**3.3894**	0.094	2.8	mg/L	151	Standard
Fe	57	1538.4	4.2	**3.7997**	0.290	7.6	mg/L	195	Standard
> **Sc-1**	45	31795.0	3.3				mg/L	29647	Standard
Cl	35	183919.6	1.0				ug/L	154152	Standard
Kr	83	2.3	89.2				ug/L	3	Standard
Br	81	17553.5	2.0				ug/L	1607	Standard
P	31	29355.1	2.7				ug/L	22752	Standard
S	34	5200.9	1.9				ug/L	5049	Standard
Sr	88	190.0	11.5				ug/L	87	Standard
C	12	103.3	53.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	152.8	48.1				mg/L	10	Standard
Ho-1	165	136.7	12.8				mg/L	7	Standard
Er	166	150.0	34.6				mg/L	3	Standard
I	127	70208.0	15.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.976	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.473	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.413	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.276	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606062401
Sample Date/Time: Thursday, June 16, 2016 18:39:36
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69110.6	0.2				ug/L	51024	Standard
	Be	9	15.0	33.3	**-0.0079**	0.004	55.0	ug/L	7	Standard
	Al	27	7936210.1	0.6	**41.1512**	0.274	0.7	ug/L	625	Standard
	Sc	45	30823.0	3.2				ug/L	29647	Standard
	Ti	47	221.7	9.7	**0.5979**	0.081	13.6	ug/L	57	Standard
	V	51	218784.0	0.6	**31.6314**	0.474	1.5	ug/L	1142	Standard
	Cr	52	16406.2	1.4	**1.3767**	0.046	3.3	ug/L	6628	Standard
	Cr	53	3238.7	7.2	**3.1676**	0.244	7.7	ug/L	430	Standard
	Mn	55	47582.7	4.0	**8.1574**	0.347	4.3	ug/L	603	Standard
	Co	59	6337.0	0.6	**0.9777**	0.004	0.4	ug/L	237	Standard
	Ni	60	16455.3	0.3	**8.7388**	0.105	1.2	ug/L	141	Standard
	Cu	65	7946.8	1.2	**4.3032**	0.079	1.8	ug/L	109	Standard
	Zn	66	49099.1	1.5	**45.5445**	0.480	1.1	ug/L	159	Standard
>	**Ge**	72	458635.0	1.0				ug/L	474053	Standard
	As	75	1613.9	2.7	**1.5315**	0.033	2.1	ug/L	-34	Standard
	Se	82	632.2	1.0	**5.7396**	0.015	0.3	ug/L	14	Standard
	Se-1	77	198.0	8.1	**1.9191**	0.191	10.0	ug/L	55	Standard
>	**Ga**	71	478.3	12.6				mg/L	50	Standard
	Rb	85	15694.8	4.0				ug/L	20	Standard
	Y	89	402857.7	1.3				ug/L	376602	Standard
>	**Rh**	103	55.0	41.7				ug/L	17	Standard
	Mo	98	250973.6	0.6	**101.4589**	1.305	1.3	ug/L	8	Standard
	Ag	107	107.3	16.2	**0.0049**	0.003	57.8	ug/L	81	Standard
	Cd	111	-120.2	20.3	**-0.0625**	0.013	20.5	mg/L	3	Standard
	Cd	114	568.4	5.3	**0.1093**	0.006	5.7	ug/L	7	Standard
>	**In**	115	549544.5	1.2				ug/L	524722	Standard
	Sn	118	805.0	7.3	**0.0532**	0.009	16.5	ug/L	715	Standard
	Sb	123	561.0	5.0	**0.1078**	0.005	5.0	ug/L	201	Standard
	Ba	135	33980.1	2.6	**17.8424**	0.439	2.5	ug/L	108	Standard
	Ce	140	471.7	1.2				ug/L	30	Standard
>	**Tb**	159	820522.7	2.1				ug/L	792236	Standard
	Ho	165	20.0	25.0				ug/L	7	Standard
	Tl	203	251.3	7.2	**0.0306**	0.002	5.8	ug/L	9	Standard
	Tl	205	235.0	7.7	**0.0286**	0.002	7.0	ug/L	0	Standard
	Pb	206	1733.1	4.4	**0.3220**	0.019	5.8	ug/L	216	Standard
	Pb	207	1553.1	3.0	**0.3188**	0.020	6.4	ug/L	180	Standard
	Pb	208	6433.5	1.7	**0.3223**	0.016	4.9	ug/L	717	Standard
	U	238	255.3	11.3	**0.0338**	0.004	11.1	ug/L	4	Standard
>	**Bi**	209	456920.5	2.4				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.0019**	9.440	188.7	mg/L	0	Standard
Mg	24	19250.6	2.3	**25.0636**	0.292	1.2	mg/L	20	Standard
K	39	168.3	17.4	**1.0102**	0.242	24.0	mg/L	22	Standard
Ca	43	145.0	18.2	**19.2916**	5.015	26.0	mg/L	47	Standard
Fe	54	151.8	11.3	**0.0041**	0.017	409.5	mg/L	151	Standard
Fe	57	315.0	7.3	**0.2903**	0.041	14.1	mg/L	195	Standard
Sc-1	45	30823.0	3.2				mg/L	29647	Standard
Cl	35	228215.4	1.2				ug/L	154152	Standard
Kr	83	1.7	124.9				ug/L	3	Standard
Br	81	147558.5	1.4				ug/L	1607	Standard
P	31	26561.6	1.8				ug/L	22752	Standard
S	34	5117.5	2.5				ug/L	5049	Standard
Sr	88	270.0	14.7				ug/L	87	Standard
C	12	100.0	17.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	70.0	24.7				mg/L	0	Standard
Dy	164	58.9	45.9				mg/L	10	Standard
Ho-1	165	20.0	25.0				mg/L	7	Standard
Er	166	23.3	49.5				mg/L	3	Standard
I	127	16912.8	6.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		135.447	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.748	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.731
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.257
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	

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Method 6020 - Summary Report

Sample ID: L1606063001 WG572432-03
Sample Date/Time: Thursday, June 16, 2016 18:42:47
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69631.3	1.0				ug/L	51024	Standard
	Be	9	8.3	34.6	**-0.0138**	0.003	18.5	ug/L	7	Standard
	Al	27	1739354.1	0.6	**8.9445**	0.105	1.2	ug/L	625	Standard
	Sc	45	30928.2	2.9				ug/L	29647	Standard
	Ti	47	665.7	3.5	**2.0953**	0.107	5.1	ug/L	57	Standard
	V	51	2109.1	2.9	**0.1339**	0.005	3.7	ug/L	1142	Standard
	Cr	52	7651.6	0.5	**0.1320**	0.020	15.0	ug/L	6628	Standard
	Cr	53	2638.6	11.3	**2.4577**	0.289	11.8	ug/L	430	Standard
	Mn	55	27736.7	1.0	**4.6358**	0.114	2.5	ug/L	603	Standard
	Co	59	815.4	0.8	**0.0880**	0.002	1.9	ug/L	237	Standard
	Ni	60	1350.7	2.9	**0.6359**	0.022	3.4	ug/L	141	Standard
	Cu	65	5230.6	1.3	**2.7695**	0.021	0.8	ug/L	109	Standard
	Zn	66	9220.1	0.6	**8.2452**	0.069	0.8	ug/L	159	Standard
>	**Ge**	72	465111.5	1.4				ug/L	474053	Standard
	As	75	269.2	8.8	**0.2730**	0.025	9.0	ug/L	-34	Standard
	Se	82	49.8	13.6	**0.2903**	0.068	23.4	ug/L	14	Standard
	Se-1	77	173.0	5.2	**1.5506**	0.090	5.8	ug/L	55	Standard
>	**Ga**	71	241.7	10.4				mg/L	50	Standard
	Rb	85	36829.7	1.3				ug/L	20	Standard
	Y	89	384374.8	2.5				ug/L	376602	Standard
>	**Rh**	103	41.7	25.0				ug/L	17	Standard
	Mo	98	728.3	12.5	**0.3031**	0.038	12.6	ug/L	8	Standard
	Ag	107	82.0	10.4	**0.0014**	0.002	110.2	ug/L	81	Standard
	Cd	111	14.7	18.3	**0.0044**	0.001	34.2	mg/L	3	Standard
	Cd	114	39.2	43.5	**0.0044**	0.004	82.7	ug/L	7	Standard
>	**In**	115	524227.9	1.2				ug/L	524722	Standard
	Sn	118	960.0	3.9	**0.0890**	0.009	10.3	ug/L	715	Standard
	Sb	123	670.5	6.9	**0.1389**	0.011	8.0	ug/L	201	Standard
	Ba	135	8761.5	1.0	**4.7811**	0.086	1.8	ug/L	108	Standard
	Ce	140	878.4	8.1				ug/L	30	Standard
>	**Tb**	159	793064.4	3.2				ug/L	792236	Standard
	Ho	165	38.3	19.9				ug/L	7	Standard
	Tl	203	150.0	18.8	**0.0177**	0.004	22.6	ug/L	9	Standard
	Tl	205	133.3	15.6	**0.0133**	0.003	25.5	ug/L	0	Standard
	Pb	206	508.3	5.7	**0.0571**	0.007	12.3	ug/L	216	Standard
	Pb	207	414.7	10.5	**0.0477**	0.010	21.1	ug/L	180	Standard
	Pb	208	1771.7	0.4	**0.0490**	0.001	1.6	ug/L	717	Standard
	U	238	19.0	24.1	**-0.0044**	0.001	16.6	ug/L	4	Standard
>	**Bi**	209	447050.8	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	28164.5	1.9	**36.5804**	1.386	3.8	mg/L	20	Standard
K	39	385.0	0.0	**2.5870**	0.080	3.1	mg/L	22	Standard
Ca	43	85.0	20.4	**5.9218**	4.410	74.5	mg/L	47	Standard
Fe	54	182.6	15.8	**0.0273**	0.022	80.2	mg/L	151	Standard
Fe	57	225.0	0.0	**0.0211**	0.019	90.5	mg/L	195	Standard
Sc-1	45	30928.2	2.9				mg/L	29647	Standard
Cl	35	213453.3	1.7				ug/L	154152	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	8942.7	8.2				ug/L	1607	Standard
P	31	31840.1	1.6				ug/L	22752	Standard
S	34	5007.5	0.9				ug/L	5049	Standard
Sr	88	131.7	11.6				ug/L	87	Standard
C	12	73.3	34.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	40.5	49.2				mg/L	10	Standard
Ho-1	165	38.3	19.9				mg/L	7	Standard
Er	166	60.0	33.3				mg/L	3	Standard
I	127	51039.4	6.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		136.467	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.114	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.906
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.113
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 18:46:00
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68225.0	3.2				ug/L	51024	Standard
	Be	9	50708.1	3.5	**45.0847**	0.435	1.0	ug/L	7	Standard
	Al	27	7858332.7	1.5	**41.2907**	0.687	1.7	ug/L	625	Standard
	Sc	45	30560.8	2.3				ug/L	29647	Standard
	Ti	47	29370.1	1.8	**100.7639**	1.653	1.6	ug/L	57	Standard
	V	51	355260.2	0.6	**51.3611**	0.501	1.0	ug/L	1142	Standard
	Cr	52	364134.0	1.1	**50.1157**	0.189	0.4	ug/L	6628	Standard
	Cr	53	45359.5	2.1	**49.8880**	1.306	2.6	ug/L	430	Standard
	Mn	55	315438.4	1.3	**54.6794**	1.132	2.1	ug/L	603	Standard
	Co	59	335779.3	1.2	**53.8409**	0.832	1.5	ug/L	237	Standard
	Ni	60	93086.4	0.8	**49.6929**	0.140	0.3	ug/L	141	Standard
	Cu	65	91127.3	1.4	**49.9327**	0.679	1.4	ug/L	109	Standard
	Zn	66	54195.8	1.1	**50.1944**	0.353	0.7	ug/L	159	Standard
>	Ge	72	459562.3	0.8				ug/L	474053	Standard
	As	75	53571.2	0.7	**49.9335**	0.666	1.3	ug/L	-34	Standard
	Se	82	5527.7	0.4	**51.3922**	0.186	0.4	ug/L	14	Standard
	Se-1	77	3740.1	0.8	**49.4994**	0.726	1.5	ug/L	55	Standard
>	Ga	71	238.3	8.5				mg/L	50	Standard
	Rb	85	728.4	8.0				ug/L	20	Standard
	Y	89	403863.1	2.0				ug/L	376602	Standard
>	Rh	103	30.0	16.7				ug/L	17	Standard
	Mo	98	249432.2	1.4	**100.2684**	1.541	1.5	ug/L	8	Standard
	Ag	107	296071.6	1.7	**47.1134**	0.851	1.8	ug/L	81	Standard
	Cd	111	98641.2	1.4	**48.2538**	0.726	1.5	mg/L	3	Standard
	Cd	114	241419.7	2.8	**47.7722**	1.408	2.9	ug/L	7	Standard
>	In	115	552610.2	0.1				ug/L	524722	Standard
	Sn	118	274943.9	0.8	**48.3767**	0.444	0.9	ug/L	715	Standard
	Sb	123	217314.9	1.3	**47.2274**	0.669	1.4	ug/L	201	Standard
	Ba	135	89302.7	0.5	**46.7236**	0.287	0.6	ug/L	108	Standard
	Ce	140	61.7	32.8				ug/L	30	Standard
>	Tb	159	816119.0	0.8				ug/L	792236	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	369419.3	1.5	**48.6376**	0.510	1.0	ug/L	9	Standard
	Tl	205	333866.9	0.9	**51.6890**	0.388	0.8	ug/L	0	Standard
	Pb	206	232126.7	1.0	**50.5119**	0.450	0.9	ug/L	216	Standard
	Pb	207	210545.8	0.6	**50.3290**	0.336	0.7	ug/L	180	Standard
	Pb	208	855972.8	0.6	**50.4191**	0.795	1.6	ug/L	717	Standard
	U	238	320948.2	1.1	**51.9636**	0.277	0.5	ug/L	4	Standard
>	Bi	209	457695.0	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	4200.6	2.8	**5.4815**	0.198	3.6	mg/L	20	Standard
K	39	558.3	18.4	**3.8970**	0.711	18.2	mg/L	22	Standard
Ca	43	60.0	25.0	**0.3745**	3.188	851.1	mg/L	47	Standard
Fe	54	6005.7	4.5	**4.6268**	0.322	7.0	mg/L	151	Standard
Fe	57	1721.8	7.2	**4.5229**	0.315	7.0	mg/L	195	Standard
> **Sc-1**	45	30560.8	2.3				mg/L	29647	Standard
Cl	35	169117.3	1.2				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	2713.6	7.9				ug/L	1607	Standard
P	31	25114.1	2.9				ug/L	22752	Standard
S	34	5354.3	6.7				ug/L	5049	Standard
Sr	88	73.3	32.2				ug/L	87	Standard
C	12	66.7	67.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	23.0	67.5				mg/L	10	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	3423.7	23.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	90.169		
Al	27	82.581		
Sc	45			
Ti	47	100.764		
V	51	102.722		
Cr	52	100.231		
Cr	53			
Mn	55	109.359		
Co	59	107.682		
Ni	60	99.386		
Cu	65	99.865		
Zn	66	100.389		
> Ge	72		96.943	
As	75	99.867		
Se	82	102.784		
Se-1	77			
> Ga	71			

Sample ID: QC Std 6
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Rb	85			
Y	89			
Rh	103			
Mo	98	100.268		
Ag	107	94.227		
Cd	111	96.508		
Cd	114			
In	115		105.315	
Sn	118	96.753		
Sb	123	94.455		
Ba	135	93.447		
Ce	140			
Tb	159			
Ho	165			
Tl	203	97.275		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.838		
U	238	103.927		
Bi	209		99.425	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 18:49:12
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64312.9	1.7				ug/L	51024	Standard
	Be	9	10.0	100.0	**-0.0116**	0.009	81.0	ug/L	7	Standard
	Al	27	1253.4	11.0	**-0.0028**	0.001	25.9	ug/L	625	Standard
	Sc	45	30213.4	2.2				ug/L	29647	Standard
	Ti	47	46.7	13.1	**-0.0109**	0.022	201.6	ug/L	57	Standard
	V	51	1033.9	3.5	**-0.0234**	0.008	34.0	ug/L	1142	Standard
	Cr	52	6122.9	0.9	**-0.0987**	0.025	25.4	ug/L	6628	Standard
	Cr	53	575.0	8.8	**0.1852**	0.063	34.2	ug/L	430	Standard
	Mn	55	1171.4	5.3	**0.0703**	0.014	19.8	ug/L	603	Standard
	Co	59	202.3	7.7	**-0.0099**	0.003	28.8	ug/L	237	Standard
	Ni	60	113.3	11.9	**-0.0193**	0.006	33.6	ug/L	141	Standard
	Cu	65	139.7	5.5	**0.0080**	0.006	71.9	ug/L	109	Standard
	Zn	66	162.0	9.1	**-0.0865**	0.010	11.9	ug/L	159	Standard
>	**Ge**	72	475844.7	2.3				ug/L	474053	Standard
	As	75	5.3	48.7	**0.0299**	0.002	7.8	ug/L	-34	Standard
	Se	82	21.3	16.5	**0.0231**	0.034	148.8	ug/L	14	Standard
	Se-1	77	70.7	7.0	**0.1723**	0.070	40.6	ug/L	55	Standard
>	**Ga**	71	140.0	34.1				mg/L	50	Standard
	Rb	85	38.3	49.4				ug/L	20	Standard
	Y	89	392359.8	3.0				ug/L	376602	Standard
>	**Rh**	103	15.0	57.7				ug/L	17	Standard
	Mo	98	303.5	29.0	**0.1205**	0.035	28.8	ug/L	8	Standard
	Ag	107	88.3	9.9	**0.0022**	0.001	58.2	ug/L	81	Standard
	Cd	111	9.2	17.1	**0.0014**	0.001	58.9	mg/L	3	Standard
	Cd	114	26.1	34.4	**0.0015**	0.002	118.0	ug/L	7	Standard
>	**In**	115	533517.8	1.4				ug/L	524722	Standard
	Sn	118	766.7	17.2	**0.0508**	0.026	51.1	ug/L	715	Standard
	Sb	123	454.0	26.6	**0.0877**	0.028	32.4	ug/L	201	Standard
	Ba	135	106.0	9.4	**-0.0001**	0.006	3944.8	ug/L	108	Standard
	Ce	140	23.3	44.6				ug/L	30	Standard
>	**Tb**	159	792169.2	1.1				ug/L	792236	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	62.3	2.5	**0.0057**	0.000	2.0	ug/L	9	Standard
	Tl	205	51.7	49.7	**0.0003**	0.004	1341.8	ug/L	0	Standard
	Pb	206	226.7	8.4	**-0.0062**	0.005	76.5	ug/L	216	Standard
	Pb	207	203.3	4.0	**-0.0045**	0.002	40.0	ug/L	180	Standard
	Pb	208	845.7	5.1	**-0.0073**	0.002	33.6	ug/L	717	Standard
	U	238	36.0	10.0	**-0.0017**	0.001	31.3	ug/L	4	Standard
>	**Bi**	209	451238.0	1.2				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	41.7	38.6	**0.0104**	0.022	211.4	mg/L	20	Standard
K	39	10.0	50.0	**-0.1532**	0.037	24.4	mg/L	22	Standard
Ca	43	38.3	32.8	**-4.4370**	2.704	60.9	mg/L	47	Standard
Fe	54	137.9	7.6	**-0.0050**	0.006	124.9	mg/L	151	Standard
Fe	57	133.3	7.8	**-0.2416**	0.038	15.5	mg/L	195	Standard
Sc-1	45	30213.4	2.2				mg/L	29647	Standard
Cl	35	167592.0	1.8				ug/L	154152	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	2426.9	7.0				ug/L	1607	Standard
P	31	25579.9	2.0				ug/L	22752	Standard
S	34	5439.3	0.7				ug/L	5049	Standard
Sr	88	61.7	9.4				ug/L	87	Standard
C	12	56.7	56.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.0	93.6				mg/L	10	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	2145.2	8.8				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.378	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.676	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.022	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, June 16, 2016 18:51:29
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Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606063001DP WG572432-10
Sample Date/Time: Thursday, June 16, 2016 18:52:25
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68712.2	2.1				ug/L	51024	Standard
	Be	9	13.3	57.3	**-0.0092**	0.007	74.2	ug/L	7	Standard
	Al	27	1694606.4	2.1	**8.8301**	0.029	0.3	ug/L	625	Standard
	Sc	45	32870.6	1.4				ug/L	29647	Standard
	Ti	47	632.0	2.3	**1.9902**	0.036	1.8	ug/L	57	Standard
	V	51	2183.1	15.2	**0.1462**	0.049	33.7	ug/L	1142	Standard
	Cr	52	8437.7	0.6	**0.2463**	0.014	5.5	ug/L	6628	Standard
	Cr	53	3582.1	45.8	**3.5137**	1.806	51.4	ug/L	430	Standard
	Mn	55	25959.2	3.5	**4.3517**	0.184	4.2	ug/L	603	Standard
	Co	59	780.0	4.2	**0.0830**	0.005	6.3	ug/L	237	Standard
	Ni	60	1265.7	3.1	**0.5941**	0.019	3.2	ug/L	141	Standard
	Cu	65	4964.1	2.1	**2.6377**	0.034	1.3	ug/L	109	Standard
	Zn	66	7744.6	0.4	**6.9226**	0.090	1.3	ug/L	159	Standard
>	**Ge**	72	462903.9	0.9				ug/L	474053	Standard
	As	75	268.6	20.8	**0.2737**	0.054	19.7	ug/L	-34	Standard
	Se	82	41.2	34.5	**0.2137**	0.136	63.4	ug/L	14	Standard
	Se-1	77	155.7	4.3	**1.3316**	0.104	7.8	ug/L	55	Standard
>	**Ga**	71	160.0	9.4				mg/L	50	Standard
	Rb	85	36001.1	1.5				ug/L	20	Standard
	Y	89	387483.8	2.3				ug/L	376602	Standard
>	**Rh**	103	38.3	41.9				ug/L	17	Standard
	Mo	98	602.0	7.2	**0.2407**	0.015	6.4	ug/L	8	Standard
	Ag	107	97.7	12.0	**0.0035**	0.002	49.5	ug/L	81	Standard
	Cd	111	14.9	82.6	**0.0042**	0.006	147.6	mg/L	3	Standard
	Cd	114	54.8	20.5	**0.0072**	0.002	30.8	ug/L	7	Standard
>	**In**	115	542940.9	1.2				ug/L	524722	Standard
	Sn	118	1003.4	7.5	**0.0905**	0.011	12.7	ug/L	715	Standard
	Sb	123	760.6	4.7	**0.1535**	0.006	4.0	ug/L	201	Standard
	Ba	135	8458.7	1.6	**4.4523**	0.053	1.2	ug/L	108	Standard
	Ce	140	761.7	12.9				ug/L	30	Standard
>	**Tb**	159	813941.2	0.6				ug/L	792236	Standard
	Ho	165	46.7	60.9				ug/L	7	Standard
	Tl	203	213.3	5.0	**0.0252**	0.001	4.7	ug/L	9	Standard
	Tl	205	173.3	1.7	**0.0188**	0.000	1.2	ug/L	0	Standard
	Pb	206	486.7	2.6	**0.0486**	0.003	6.9	ug/L	216	Standard
	Pb	207	410.0	4.9	**0.0433**	0.005	11.5	ug/L	180	Standard
	Pb	208	1804.7	2.7	**0.0475**	0.003	5.4	ug/L	717	Standard
	U	238	45.0	13.3	**-0.0004**	0.001	279.8	ug/L	4	Standard
>	**Bi**	209	462206.0	0.8				ug/L	460343	Standard

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Na	23	5.0	100.0	**-4.2590**	14.576	342.2	mg/L	0	Standard
Mg	24	26429.7	2.8	**32.2858**	1.354	4.2	mg/L	20	Standard
K	39	396.7	3.9	**2.4991**	0.082	3.3	mg/L	22	Standard
Ca	43	96.7	7.9	**7.1952**	1.844	25.6	mg/L	47	Standard
Fe	54	180.8	15.4	**0.0178**	0.022	121.6	mg/L	151	Standard
Fe	57	203.3	16.0	**-0.0787**	0.096	122.2	mg/L	195	Standard
> **Sc-1**	45	32870.6	1.4				mg/L	29647	Standard
Cl	35	203581.4	1.3				ug/L	154152	Standard
Kr	83	2.0	0.0				ug/L	3	Standard
Br	81	6207.9	4.2				ug/L	1607	Standard
P	31	32229.2	1.5				ug/L	22752	Standard
S	34	4830.8	4.5				ug/L	5049	Standard
Sr	88	108.3	30.0				ug/L	87	Standard
C	12	86.7	6.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	47.3	42.6				mg/L	10	Standard
Ho-1	165	46.7	60.9				mg/L	7	Standard
Er	166	56.7	81.5				mg/L	3	Standard
I	127	39314.5	7.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		134.666	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.648	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.472
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.405
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 18:55:38
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67264.1	3.2				ug/L	51024	Standard
	Be	9	51087.7	3.5	**46.0740**	0.786	1.7	ug/L	7	Standard
	Al	27	7974693.7	0.5	**42.5107**	1.182	2.8	ug/L	625	Standard
	Sc	45	31289.0	2.9				ug/L	29647	Standard
	Ti	47	29983.3	1.5	**100.8099**	2.621	2.6	ug/L	57	Standard
	V	51	356976.4	1.6	**50.5633**	0.626	1.2	ug/L	1142	Standard
	Cr	52	371000.0	2.2	**50.0293**	1.004	2.0	ug/L	6628	Standard
	Cr	53	45682.1	3.1	**49.2179**	1.406	2.9	ug/L	430	Standard
	Mn	55	318039.5	1.1	**54.0099**	0.158	0.3	ug/L	603	Standard
	Co	59	338391.0	1.1	**53.1626**	0.493	0.9	ug/L	237	Standard
	Ni	60	94145.4	2.5	**49.2417**	1.028	2.1	ug/L	141	Standard
	Cu	65	92379.1	1.4	**49.5948**	0.289	0.6	ug/L	109	Standard
	Zn	66	54668.5	1.5	**49.6081**	0.589	1.2	ug/L	159	Standard
>	Ge	72	469038.3	1.3				ug/L	474053	Standard
	As	75	54293.6	1.3	**49.5816**	0.207	0.4	ug/L	-34	Standard
	Se	82	5559.0	0.1	**50.6424**	0.722	1.4	ug/L	14	Standard
	Se-1	77	3786.5	1.3	**49.0965**	0.931	1.9	ug/L	55	Standard
>	Ga	71	158.3	25.7				mg/L	50	Standard
	Rb	85	761.7	7.0				ug/L	20	Standard
	Y	89	395591.6	1.3				ug/L	376602	Standard
>	Rh	103	25.0	80.0				ug/L	17	Standard
	Mo	98	251383.1	0.4	**103.0718**	1.215	1.2	ug/L	8	Standard
	Ag	107	306968.8	0.5	**49.8241**	0.634	1.3	ug/L	81	Standard
	Cd	111	100215.1	0.7	**50.0041**	0.742	1.5	mg/L	3	Standard
	Cd	114	243336.5	2.3	**49.1181**	1.543	3.1	ug/L	7	Standard
>	In	115	541813.2	0.8				ug/L	524722	Standard
	Sn	118	281669.0	0.4	**50.5528**	0.296	0.6	ug/L	715	Standard
	Sb	123	222839.5	0.9	**49.3972**	0.805	1.6	ug/L	201	Standard
	Ba	135	91045.1	0.4	**48.5895**	0.562	1.2	ug/L	108	Standard
	Ce	140	61.7	12.4				ug/L	30	Standard
>	Tb	159	817844.5	0.4				ug/L	792236	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	379786.0	0.6	**49.2821**	0.368	0.7	ug/L	9	Standard
	Tl	205	336318.4	0.5	**51.3165**	0.323	0.6	ug/L	0	Standard
	Pb	206	235111.2	1.0	**50.4225**	0.567	1.1	ug/L	216	Standard
	Pb	207	213294.2	0.5	**50.2491**	0.369	0.7	ug/L	180	Standard
	Pb	208	862915.5	0.7	**50.0892**	0.286	0.6	ug/L	717	Standard
	U	238	324915.2	0.1	**51.8469**	0.100	0.2	ug/L	4	Standard
>	Bi	209	464391.0	0.2				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	4073.9	4.4	**5.1949**	0.373	7.2	mg/L	20	Standard
K	39	616.7	11.0	**4.2379**	0.622	14.7	mg/L	22	Standard
Ca	43	71.7	38.4	**2.7208**	6.257	230.0	mg/L	47	Standard
Fe	54	6184.7	3.6	**4.6538**	0.266	5.7	mg/L	151	Standard
Fe	57	1603.4	6.3	**4.0588**	0.310	7.6	mg/L	195	Standard
> **Sc-1**	45	31289.0	2.9				mg/L	29647	Standard
Cl	35	168092.6	0.3				ug/L	154152	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	1803.4	11.3				ug/L	1607	Standard
P	31	25418.0	3.0				ug/L	22752	Standard
S	34	5476.0	0.8				ug/L	5049	Standard
Sr	88	68.3	36.1				ug/L	87	Standard
C	12	76.7	30.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.5	122.8				mg/L	10	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	3	Standard
I	127	2120.2	19.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	92.148		
Al	27	85.021		
Sc	45			
Ti	47	100.810		
V	51	101.127		
Cr	52	100.059		
Cr	53			
Mn	55	108.020		
Co	59	106.325		
Ni	60	98.483		
Cu	65	99.190		
Zn	66	99.216		
> Ge	72		98.942	
As	75	99.163		
Se	82	101.285		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	103.072		
Ag	107	99.648		
Cd	111	100.008		
Cd	114			
> In	115		103.257	
Sn	118	101.106		
Sb	123	98.794		
Ba	135	97.179		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.564		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.178		
U	238	103.694		
> Bi	209		100.879	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 18:58:50
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65086.2	2.0				ug/L	51024	Standard
	Be	9	21.7	58.1	**-0.0010**	0.011	1171.7	ug/L	7	Standard
	Al	27	2008.5	34.3	**0.0013**	0.004	284.1	ug/L	625	Standard
	Sc	45	30751.2	2.4				ug/L	29647	Standard
	Ti	47	41.3	24.7	**-0.0285**	0.034	119.2	ug/L	57	Standard
	V	51	1096.5	3.2	**-0.0144**	0.004	27.7	ug/L	1142	Standard
	Cr	52	6076.9	0.1	**-0.1037**	0.008	7.3	ug/L	6628	Standard
	Cr	53	488.3	13.0	**0.0929**	0.070	75.6	ug/L	430	Standard
	Mn	55	1470.4	24.5	**0.1211**	0.063	51.8	ug/L	603	Standard
	Co	59	206.0	14.6	**-0.0092**	0.005	53.2	ug/L	237	Standard
	Ni	60	120.7	4.2	**-0.0153**	0.002	15.6	ug/L	141	Standard
	Cu	65	142.0	16.7	**0.0093**	0.013	141.3	ug/L	109	Standard
	Zn	66	152.7	7.5	**-0.0944**	0.011	12.1	ug/L	159	Standard
>	**Ge**	72	474934.0	0.8				ug/L	474053	Standard
	As	75	-45.5	82.0	**-0.0158**	0.033	212.2	ug/L	-34	Standard
	Se	82	16.2	50.9	**-0.0227**	0.076	333.7	ug/L	14	Standard
	Se-1	77	66.0	6.9	**0.1132**	0.063	55.7	ug/L	55	Standard
>	**Ga**	71	136.7	9.2				mg/L	50	Standard
	Rb	85	30.0	28.9				ug/L	20	Standard
	Y	89	402114.5	0.5				ug/L	376602	Standard
>	**Rh**	103	21.7	35.3				ug/L	17	Standard
	Mo	98	281.3	33.4	**0.1095**	0.037	34.1	ug/L	8	Standard
	Ag	107	96.3	13.1	**0.0033**	0.002	62.1	ug/L	81	Standard
	Cd	111	10.2	38.2	**0.0019**	0.002	104.1	mg/L	3	Standard
	Cd	114	23.6	19.2	**0.0010**	0.001	99.3	ug/L	7	Standard
>	**In**	115	541583.6	1.8				ug/L	524722	Standard
	Sn	118	860.0	27.1	**0.0652**	0.041	63.3	ug/L	715	Standard
	Sb	123	479.5	22.9	**0.0918**	0.026	27.9	ug/L	201	Standard
	Ba	135	123.3	8.3	**0.0082**	0.005	60.8	ug/L	108	Standard
	Ce	140	23.3	65.5				ug/L	30	Standard
>	**Tb**	159	792193.7	1.1				ug/L	792236	Standard
	Ho	165	13.3	78.1				ug/L	7	Standard
	Tl	203	66.0	21.2	**0.0060**	0.002	29.5	ug/L	9	Standard
	Tl	205	46.7	12.4	**-0.0007**	0.001	132.6	ug/L	0	Standard
	Pb	206	228.3	5.2	**-0.0071**	0.002	32.1	ug/L	216	Standard
	Pb	207	200.3	2.5	**-0.0063**	0.001	19.4	ug/L	180	Standard
	Pb	208	858.7	6.2	**-0.0078**	0.003	36.1	ug/L	717	Standard
	U	238	38.3	37.5	**-0.0014**	0.002	161.1	ug/L	4	Standard
>	**Bi**	209	462016.2	0.6				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	36.7	70.0	**0.0029**	0.034	1195.5	mg/L	20	Standard
K	39	18.3	56.8	**-0.0943**	0.072	76.9	mg/L	22	Standard
Ca	43	45.0	22.2	**-3.0781**	2.040	66.3	mg/L	47	Standard
Fe	54	114.4	7.6	**-0.0252**	0.008	31.9	mg/L	151	Standard
Fe	57	173.3	9.3	**-0.1300**	0.041	31.6	mg/L	195	Standard
Sc-1	45	30751.2	2.4				mg/L	29647	Standard
Cl	35	167486.4	2.8				ug/L	154152	Standard
Kr	83	2.0	86.6				ug/L	3	Standard
Br	81	1856.8	2.2				ug/L	1607	Standard
P	31	26229.4	1.8				ug/L	22752	Standard
S	34	5394.3	3.3				ug/L	5049	Standard
Sr	88	46.7	37.6				ug/L	87	Standard
C	12	50.0	20.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.9	187.9				mg/L	10	Standard
Ho-1	165	13.3	78.1				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	1466.7	5.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.186	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.213
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.363
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, June 16, 2016 19:02:02
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62105.4	2.6				ug/L	51024	Standard
	Be	9	230.0	20.7	**0.2030**	0.041	20.0	ug/L	7	Standard
	Al	27	2411.9	57.3	**0.0040**	0.008	188.2	ug/L	625	Standard
	Sc	45	29320.0	1.0				ug/L	29647	Standard
	Ti	47	44.0	15.9	**-0.0143**	0.023	160.1	ug/L	57	Standard
	V	51	3629.6	1.0	**0.3604**	0.013	3.7	ug/L	1142	Standard
	Cr	52	11639.8	0.7	**0.7104**	0.026	3.6	ug/L	6628	Standard
	Cr	53	1218.4	6.6	**0.9247**	0.069	7.5	ug/L	430	Standard
	Mn	55	4165.6	11.2	**0.6000**	0.079	13.2	ug/L	603	Standard
	Co	59	2679.2	3.3	**0.3905**	0.015	4.0	ug/L	237	Standard
	Ni	60	2918.9	1.9	**1.4896**	0.048	3.2	ug/L	141	Standard
	Cu	65	1533.7	1.1	**0.7788**	0.010	1.3	ug/L	109	Standard
	Zn	66	7393.8	1.4	**6.6758**	0.118	1.8	ug/L	159	Standard
>	**Ge**	72	457738.9	1.6				ug/L	474053	Standard
	As	75	382.8	8.7	**0.3830**	0.030	7.9	ug/L	-34	Standard
	Se	82	57.3	9.5	**0.3683**	0.054	14.6	ug/L	14	Standard
	Se-1	77	79.7	6.9	**0.3297**	0.074	22.6	ug/L	55	Standard
>	**Ga**	71	103.3	23.9				mg/L	50	Standard
	Rb	85	18.3	41.7				ug/L	20	Standard
	Y	89	375631.5	1.4				ug/L	376602	Standard
>	**Rh**	103	10.0	86.6				ug/L	17	Standard
	Mo	98	122.4	54.4	**0.0465**	0.029	61.8	ug/L	8	Standard
	Ag	107	2330.2	1.4	**0.3786**	0.008	2.1	ug/L	81	Standard
	Cd	111	467.2	1.7	**0.2376**	0.006	2.6	mg/L	3	Standard
	Cd	114	1116.8	1.3	**0.2291**	0.004	1.8	ug/L	7	Standard
>	**In**	115	524377.5	1.0				ug/L	524722	Standard
	Sn	118	430.0	17.1	**-0.0096**	0.013	134.4	ug/L	715	Standard
	Sb	123	1783.9	4.5	**0.3940**	0.022	5.6	ug/L	201	Standard
	Ba	135	1250.7	1.9	**0.6328**	0.015	2.4	ug/L	108	Standard
	Ce	140	8.3	91.7				ug/L	30	Standard
>	**Tb**	159	782327.7	0.6				ug/L	792236	Standard
	Ho	165	11.7	107.9				ug/L	7	Standard
	Tl	203	644.0	4.6	**0.0829**	0.005	5.6	ug/L	9	Standard
	Tl	205	603.3	8.3	**0.0864**	0.009	9.9	ug/L	0	Standard
	Pb	206	1176.0	6.8	**0.2020**	0.018	8.8	ug/L	216	Standard
	Pb	207	1021.4	8.8	**0.1927**	0.023	12.1	ug/L	180	Standard
	Pb	208	4081.2	6.5	**0.1848**	0.017	9.4	ug/L	717	Standard
	U	238	2503.2	1.2	**0.4011**	0.007	1.8	ug/L	4	Standard
>	**Bi**	209	453995.6	0.8				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	40.0	25.0	**0.0095**	0.013	138.3	mg/L	20	Standard
K	39	13.3	43.3	**-0.1249**	0.045	36.2	mg/L	22	Standard
Ca	43	35.0	28.6	**-4.9048**	2.432	49.6	mg/L	47	Standard
Fe	54	120.6	31.6	**-0.0158**	0.032	201.6	mg/L	151	Standard
Fe	57	148.3	13.6	**-0.1825**	0.065	35.6	mg/L	195	Standard
Sc-1	45	29320.0	1.0				mg/L	29647	Standard
Cl	35	160593.3	0.6				ug/L	154152	Standard
Kr	83	0.3	173.2				ug/L	3	Standard
Br	81	1753.4	6.3				ug/L	1607	Standard
P	31	18406.2	0.9				ug/L	22752	Standard
S	34	5287.6	2.4				ug/L	5049	Standard
Sr	88	66.7	18.9				ug/L	87	Standard
C	12	56.7	36.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	13.0	46.6				mg/L	10	Standard
Ho-1	165	11.7	107.9				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	3	Standard
I	127	1111.7	9.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	101.480		
Al	27			
Sc	45			
Ti	47			
V	51	90.091		
Cr	52	88.800		
Cr	53			
Mn	55	120.007		
Co	59	97.613		
Ni	60	93.098		
Cu	65	97.350		
Zn	66	106.813		
Ge	72		96.559	
As	75	95.761		
Se	82	92.069		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	94.641		
Cd	111	99.021		
Cd	114			
> In	115			99.934
Sn	118			
Sb	123	98.503		
Ba	135	84.376		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	103.666		
Tl	205			
Pb	206			
Pb	207			
Pb	208	92.383		
U	238	100.273		
> Bi	209			98.621
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
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Method 6020 - Summary Report

Sample ID: PBW 42 WG572730-03
Sample Date/Time: Thursday, June 16, 2016 19:05:16
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62749.7	0.4				ug/L	51024	Standard
	Be	9	18.3	95.8	**-0.0034**	0.017	498.2	ug/L	7	Standard
	Al	27	45563.5	4.1	**0.2505**	0.010	4.1	ug/L	625	Standard
	Sc	45	30499.0	0.2				ug/L	29647	Standard
	Ti	47	51.3	19.1	**0.0066**	0.033	492.2	ug/L	57	Standard
	V	51	1097.4	4.3	**-0.0126**	0.007	55.7	ug/L	1142	Standard
	Cr	52	7963.4	1.0	**0.1642**	0.013	7.9	ug/L	6628	Standard
	Cr	53	896.7	4.5	**0.5418**	0.048	8.8	ug/L	430	Standard
	Mn	55	2548.5	1.6	**0.3068**	0.006	2.0	ug/L	603	Standard
	Co	59	285.7	3.7	**0.0036**	0.002	42.0	ug/L	237	Standard
	Ni	60	410.7	8.1	**0.1371**	0.018	13.2	ug/L	141	Standard
	Cu	65	253.3	2.8	**0.0699**	0.004	5.6	ug/L	109	Standard
	Zn	66	1271.7	3.2	**0.9258**	0.037	4.0	ug/L	159	Standard
>	**Ge**	72	469694.2	0.4				ug/L	474053	Standard
	As	75	1524.9	4.2	**1.4151**	0.063	4.5	ug/L	-34	Standard
	Se	82	670.0	3.5	**5.9461**	0.237	4.0	ug/L	14	Standard
	Se-1	77	66.0	18.4	**0.1230**	0.163	132.4	ug/L	55	Standard
>	**Ga**	71	123.3	16.4				mg/L	50	Standard
	Rb	85	295.0	3.4				ug/L	20	Standard
	Y	89	394476.0	3.2				ug/L	376602	Standard
>	**Rh**	103	20.0	66.1				ug/L	17	Standard
	Mo	98	84.7	10.3	**0.0293**	0.004	12.7	ug/L	8	Standard
	Ag	107	83.0	7.9	**0.0012**	0.001	88.8	ug/L	81	Standard
	Cd	111	13.9	21.7	**0.0037**	0.001	39.9	mg/L	3	Standard
	Cd	114	54.3	34.3	**0.0072**	0.004	52.7	ug/L	7	Standard
>	**In**	115	540141.2	0.4				ug/L	524722	Standard
	Sn	118	648.3	6.2	**0.0275**	0.007	26.0	ug/L	715	Standard
	Sb	123	144.9	16.0	**0.0174**	0.005	30.4	ug/L	201	Standard
	Ba	135	21260.9	1.4	**11.3366**	0.117	1.0	ug/L	108	Standard
	Ce	140	155.0	8.5				ug/L	30	Standard
>	**Tb**	159	801981.8	0.8				ug/L	792236	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	205.7	5.0	**0.0243**	0.001	5.5	ug/L	9	Standard
	Tl	205	185.0	17.7	**0.0206**	0.005	24.4	ug/L	0	Standard
	Pb	206	277.0	10.2	**0.0035**	0.006	164.3	ug/L	216	Standard
	Pb	207	230.3	3.9	**0.0008**	0.002	210.4	ug/L	180	Standard
	Pb	208	975.0	1.4	**-0.0009**	0.000	49.0	ug/L	717	Standard
	U	238	16.3	25.5	**-0.0050**	0.001	13.9	ug/L	4	Standard
>	**Bi**	209	461335.7	0.7				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	403.3	18.0	**0.4864**	0.096	19.7	mg/L	20	Standard
K	39	18.3	56.8	**-0.0922**	0.077	83.3	mg/L	22	Standard
Ca	43	38.3	27.2	**-4.4783**	2.388	53.3	mg/L	47	Standard
Fe	54	151.1	15.7	**0.0044**	0.018	419.9	mg/L	151	Standard
Fe	57	180.0	9.6	**-0.1053**	0.052	49.8	mg/L	195	Standard
> **Sc-1**	45	30499.0	0.2				mg/L	29647	Standard
Cl	35	167221.1	1.1				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	161399.3	3.9				ug/L	1607	Standard
P	31	23832.1	1.6				ug/L	22752	Standard
S	34	5314.3	4.0				ug/L	5049	Standard
Sr	88	105.0	12.6				ug/L	87	Standard
C	12	53.3	43.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.5	177.6				mg/L	10	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	4855.8	5.9				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		122.980	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.081	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.939
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.216
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: PBW 42 WG572730-03
Report Date/Time: Thursday, June 16, 2016 19:07:33
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Method 6020 - Summary Report

Sample ID: LCSW 42 WG572730-04
Sample Date/Time: Thursday, June 16, 2016 19:08:28
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62985.7	0.9				ug/L	51024	Standard
	Be	9	48407.2	1.0	**46.6239**	0.599	1.3	ug/L	7	Standard
	Al	27	15242.7	3.1	**0.0770**	0.003	4.2	ug/L	625	Standard
	Sc	45	31167.0	1.6				ug/L	29647	Standard
	Ti	47	51.0	3.9	**0.0042**	0.006	137.2	ug/L	57	Standard
	V	51	362150.1	1.2	**50.8470**	1.498	2.9	ug/L	1142	Standard
	Cr	52	375631.9	0.2	**50.2056**	0.853	1.7	ug/L	6628	Standard
	Cr	53	46496.2	1.5	**49.6449**	0.253	0.5	ug/L	430	Standard
	Mn	55	324366.5	2.3	**54.5814**	0.385	0.7	ug/L	603	Standard
	Co	59	341108.8	1.8	**53.1006**	0.301	0.6	ug/L	237	Standard
	Ni	60	95614.1	1.0	**49.5608**	0.383	0.8	ug/L	141	Standard
	Cu	65	93513.4	0.6	**49.7560**	0.725	1.5	ug/L	109	Standard
	Zn	66	55921.0	0.3	**50.2961**	0.929	1.8	ug/L	159	Standard
>	**Ge**	72	473336.6	1.7				ug/L	474053	Standard
	As	75	54052.4	0.1	**48.9231**	0.858	1.8	ug/L	-34	Standard
	Se	82	5549.3	0.5	**50.0944**	0.667	1.3	ug/L	14	Standard
	Se-1	77	3851.2	1.4	**49.4942**	1.249	2.5	ug/L	55	Standard
>	**Ga**	71	148.3	5.1				mg/L	50	Standard
	Rb	85	50.0	45.8				ug/L	20	Standard
	Y	89	393664.1	1.4				ug/L	376602	Standard
>	**Rh**	103	30.0	66.7				ug/L	17	Standard
	Mo	98	67.7	16.2	**0.0222**	0.004	19.7	ug/L	8	Standard
	Ag	107	9538.7	1.3	**1.5370**	0.009	0.6	ug/L	81	Standard
	Cd	111	98094.4	0.8	**48.9748**	0.877	1.8	mg/L	3	Standard
	Cd	114	242274.5	1.2	**48.9293**	1.051	2.1	ug/L	7	Standard
>	**In**	115	541531.8	1.4				ug/L	524722	Standard
	Sn	118	718.4	12.9	**0.0399**	0.018	44.4	ug/L	715	Standard
	Sb	123	213208.4	0.4	**47.2901**	0.830	1.8	ug/L	201	Standard
	Ba	135	91061.5	0.2	**48.6273**	0.710	1.5	ug/L	108	Standard
	Ce	140	75.0	30.6				ug/L	30	Standard
>	**Tb**	159	801949.7	1.3				ug/L	792236	Standard
	Ho	165	15.0	66.7				ug/L	7	Standard
	Tl	203	366890.3	0.3	**47.3558**	0.332	0.7	ug/L	9	Standard
	Tl	205	325136.0	2.3	**49.3487**	1.280	2.6	ug/L	0	Standard
	Pb	206	237911.3	0.3	**50.7518**	0.233	0.5	ug/L	216	Standard
	Pb	207	208877.0	1.0	**48.9436**	0.182	0.4	ug/L	180	Standard
	Pb	208	858938.6	1.3	**49.5964**	0.972	2.0	ug/L	717	Standard
	U	238	311185.8	0.3	**49.3920**	0.274	0.6	ug/L	4	Standard
>	**Bi**	209	466882.1	0.8				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	43.3	37.1	**0.0108**	0.021	197.0	mg/L	20	Standard
K	39	21.7	26.6	**-0.0712**	0.040	55.8	mg/L	22	Standard
Ca	43	35.0	37.8	**-5.4027**	2.947	54.5	mg/L	47	Standard
Fe	54	122.0	30.6	**-0.0208**	0.028	132.3	mg/L	151	Standard
Fe	57	123.3	18.3	**-0.2836**	0.067	23.8	mg/L	195	Standard
Sc-1	45	31167.0	1.6				mg/L	29647	Standard
Cl	35	163506.3	1.5				ug/L	154152	Standard
Kr	83	0.3	173.2				ug/L	3	Standard
Br	81	5531.1	27.3				ug/L	1607	Standard
P	31	23947.2	1.0				ug/L	22752	Standard
S	34	5137.5	2.8				ug/L	5049	Standard
Sr	88	76.7	46.3				ug/L	87	Standard
C	12	70.0	14.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	13.2	44.9				mg/L	10	Standard
Ho-1	165	15.0	66.7				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	1283.4	6.1				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.443	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.849	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.204
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.421
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606066401 WG572730-01
Sample Date/Time: Thursday, June 16, 2016 19:12:30
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75454.2	2.8				ug/L	51024	Standard
	Be	9	20.0	90.1	**-0.0048**	0.015	318.2	ug/L	7	Standard
	Al	27	11047678.0	1.9	**52.4883**	1.233	2.3	ug/L	625	Standard
	Sc	45	29264.9	1.3				ug/L	29647	Standard
	Ti	47	190.7	4.0	**0.5084**	0.037	7.3	ug/L	57	Standard
	V	51	1712.7	18.3	**0.0872**	0.046	52.6	ug/L	1142	Standard
	Cr	52	16604.1	1.9	**1.4659**	0.021	1.4	ug/L	6628	Standard
	Cr	53	9623.1	1.9	**10.5512**	0.372	3.5	ug/L	430	Standard
	Mn	55	18349.1	1.7	**3.1531**	0.090	2.8	ug/L	603	Standard
	Co	59	837.4	4.2	**0.0969**	0.005	4.7	ug/L	237	Standard
	Ni	60	47686.6	1.9	**26.1478**	0.400	1.5	ug/L	141	Standard
	Cu	65	35936.9	2.3	**20.2125**	0.174	0.9	ug/L	109	Standard
	Zn	66	7845.4	2.5	**7.2754**	0.080	1.1	ug/L	159	Standard
>	**Ge**	72	446804.8	1.5				ug/L	474053	Standard
	As	75	226.8	62.9	**0.2410**	0.135	55.9	ug/L	-34	Standard
	Se	82	88.3	14.1	**0.6770**	0.108	16.0	ug/L	14	Standard
	Se-1	77	1010.0	4.4	**13.2164**	0.770	5.8	ug/L	55	Standard
>	**Ga**	71	121.7	4.7				mg/L	50	Standard
	Rb	85	9374.6	1.9				ug/L	20	Standard
	Y	89	379651.4	1.2				ug/L	376602	Standard
>	**Rh**	103	176.7	43.0				ug/L	17	Standard
	Mo	98	6942.1	1.1	**3.0258**	0.008	0.3	ug/L	8	Standard
	Ag	107	107.7	10.4	**0.0063**	0.002	31.0	ug/L	81	Standard
	Cd	111	16.0	28.8	**0.0053**	0.002	45.3	mg/L	3	Standard
	Cd	114	155.3	55.3	**0.0296**	0.019	62.9	ug/L	7	Standard
>	**In**	115	508746.6	0.9				ug/L	524722	Standard
	Sn	118	32234.3	2.4	**6.0825**	0.133	2.2	ug/L	715	Standard
	Sb	123	2505.0	15.1	**0.5762**	0.084	14.6	ug/L	201	Standard
	Ba	135	56364.3	0.3	**32.0167**	0.382	1.2	ug/L	108	Standard
	Ce	140	273.3	12.5				ug/L	30	Standard
>	**Tb**	159	786168.7	0.3				ug/L	792236	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	162.7	17.5	**0.0211**	0.005	21.6	ug/L	9	Standard
	Tl	205	136.7	17.3	**0.0156**	0.004	27.5	ug/L	0	Standard
	Pb	206	51660.3	0.9	**12.3691**	0.134	1.1	ug/L	216	Standard
	Pb	207	43372.0	1.0	**11.4048**	0.082	0.7	ug/L	180	Standard
	Pb	208	183979.7	0.6	**11.9203**	0.168	1.4	ug/L	717	Standard
	U	238	40.0	22.9	**-0.0004**	0.002	429.9	ug/L	4	Standard
>	**Bi**	209	414575.6	1.7				ug/L	460343	Standard

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Na	23	3.3	173.2	**-0.6680**	19.261	2883.4	mg/L	0	Standard
Mg	24	393015.0	2.1	**539.7437**	8.154	1.5	mg/L	20	Standard
K	39	755.0	20.2	**5.6021**	1.177	21.0	mg/L	22	Standard
Ca	43	273.3	16.4	**51.4216**	9.712	18.9	mg/L	47	Standard
Fe	54	153.2	8.8	**0.0113**	0.013	111.5	mg/L	151	Standard
Fe	57	410.0	9.5	**0.6384**	0.113	17.7	mg/L	195	Standard
> **Sc-1**	45	29264.9	1.3				mg/L	29647	Standard
Cl	35	947330.3	0.6				ug/L	154152	Standard
Kr	83	2.7	86.6				ug/L	3	Standard
Br	81	16345.5	3.0				ug/L	1607	Standard
P	31	24364.6	0.6				ug/L	22752	Standard
S	34	5329.3	1.4				ug/L	5049	Standard
Sr	88	195.0	4.4				ug/L	87	Standard
C	12	283.3	24.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	0	Standard
Dy	164	16.0	130.4				mg/L	10	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	339108.5	7.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		147.879	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.252	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.955
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.058
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606066401DP WG572730-05
Sample Date/Time: Thursday, June 16, 2016 19:15:41
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82599.5	0.8				ug/L	51024	Standard
	Be	9	18.3	31.5	**-0.0076**	0.004	53.8	ug/L	7	Standard
	Al	27	12101738.6	2.4	**52.5022**	0.943	1.8	ug/L	625	Standard
	Sc	45	29381.8	2.9				ug/L	29647	Standard
	Ti	47	224.3	6.3	**0.6337**	0.051	8.1	ug/L	57	Standard
	V	51	1757.9	10.9	**0.0962**	0.030	31.3	ug/L	1142	Standard
	Cr	52	17254.5	0.4	**1.5806**	0.019	1.2	ug/L	6628	Standard
	Cr	53	9484.6	4.9	**10.4776**	0.447	4.3	ug/L	430	Standard
	Mn	55	18275.7	1.8	**3.1668**	0.077	2.4	ug/L	603	Standard
	Co	59	934.4	2.3	**0.1143**	0.005	4.1	ug/L	237	Standard
	Ni	60	50219.4	0.9	**27.7712**	0.300	1.1	ug/L	141	Standard
	Cu	65	38180.1	1.8	**21.6588**	0.226	1.0	ug/L	109	Standard
	Zn	66	9011.3	2.3	**8.4634**	0.126	1.5	ug/L	159	Standard
>	**Ge**	72	443106.2	0.8				ug/L	474053	Standard
	As	75	276.8	42.6	**0.2919**	0.111	38.1	ug/L	-34	Standard
	Se	82	109.2	13.4	**0.8866**	0.132	14.9	ug/L	14	Standard
	Se-1	77	1030.4	1.0	**13.6099**	0.054	0.4	ug/L	55	Standard
>	**Ga**	71	125.0	10.6				mg/L	50	Standard
	Rb	85	9914.9	0.9				ug/L	20	Standard
	Y	89	378132.1	0.5				ug/L	376602	Standard
>	**Rh**	103	276.7	11.8				ug/L	17	Standard
	Mo	98	7350.8	1.1	**3.1941**	0.056	1.8	ug/L	8	Standard
	Ag	107	113.3	9.2	**0.0072**	0.002	27.2	ug/L	81	Standard
	Cd	111	7.2	44.2	**0.0006**	0.002	301.0	mg/L	3	Standard
	Cd	114	112.0	53.6	**0.0203**	0.013	64.2	ug/L	7	Standard
>	**In**	115	510414.8	1.0				ug/L	524722	Standard
	Sn	118	31860.1	0.6	**5.9914**	0.071	1.2	ug/L	715	Standard
	Sb	123	1301.1	10.9	**0.2913**	0.031	10.6	ug/L	201	Standard
	Ba	135	58474.3	1.0	**33.1066**	0.180	0.5	ug/L	108	Standard
	Ce	140	143.3	4.0				ug/L	30	Standard
>	**Tb**	159	793633.3	0.5				ug/L	792236	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	126.3	11.6	**0.0156**	0.002	13.8	ug/L	9	Standard
	Tl	205	108.3	7.1	**0.0105**	0.001	12.1	ug/L	0	Standard
	Pb	206	55773.5	1.1	**13.2134**	0.113	0.9	ug/L	216	Standard
	Pb	207	47080.7	0.8	**12.2506**	0.066	0.5	ug/L	180	Standard
	Pb	208	190215.8	0.7	**12.1921**	0.079	0.7	ug/L	717	Standard
	U	238	29.3	17.2	**-0.0024**	0.001	37.4	ug/L	4	Standard
>	**Bi**	209	419055.7	0.3				ug/L	460343	Standard

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Na	23	10.0	50.0	**-22.7084**	17.142	75.5	mg/L	0	Standard
Mg	24	418232.9	1.5	**572.3635**	15.570	2.7	mg/L	20	Standard
K	39	648.3	17.8	**4.7577**	0.876	18.4	mg/L	22	Standard
Ca	43	226.7	8.4	**40.2176**	3.679	9.1	mg/L	47	Standard
Fe	54	135.1	14.9	**-0.0042**	0.016	368.6	mg/L	151	Standard
Fe	57	428.3	6.4	**0.6912**	0.080	11.6	mg/L	195	Standard
> **Sc-1**	45	29381.8	2.9				mg/L	29647	Standard
Cl	35	974394.4	0.6				ug/L	154152	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	16325.5	4.8				ug/L	1607	Standard
P	31	25179.2	0.8				ug/L	22752	Standard
S	34	5427.6	0.7				ug/L	5049	Standard
Sr	88	171.7	19.8				ug/L	87	Standard
C	12	336.7	27.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	12.9	93.1				mg/L	10	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	345162.2	8.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		161.883	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.472	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.273
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.031
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: L1606066401DP WG572730-05
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Method 6020 - Summary Report

Sample ID: L1606072903 WG572730-02
Sample Date/Time: Thursday, June 16, 2016 19:18:52
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83167.6	0.4				ug/L	51024	Standard
	Be	9	1595.1	11.9	**1.1433**	0.143	12.5	ug/L	7	Standard
	Al	27	12508760.9	0.4	**53.9014**	0.277	0.5	ug/L	625	Standard
	Sc	45	32636.8	2.2				ug/L	29647	Standard
	Ti	47	734.7	25.1	**2.2005**	0.603	27.4	ug/L	57	Standard
	V	51	2647.4	9.7	**0.1914**	0.035	18.3	ug/L	1142	Standard
	Cr	52	10901.3	2.2	**0.5035**	0.035	7.0	ug/L	6628	Standard
	Cr	53	1756.8	5.0	**1.3940**	0.093	6.7	ug/L	430	Standard
	Mn	55	2418538.1	0.3	**393.4562**	2.564	0.7	ug/L	603	Standard
	Co	59	167227.2	1.2	**25.0953**	0.408	1.6	ug/L	237	Standard
	Ni	60	19549.3	0.9	**9.7135**	0.121	1.2	ug/L	141	Standard
	Cu	65	6980.3	2.4	**3.5215**	0.098	2.8	ug/L	109	Standard
	Zn	66	33084.1	0.4	**28.6038**	0.229	0.8	ug/L	159	Standard
>	**Ge**	72	490606.8	0.4				ug/L	474053	Standard
	As	75	126.0	22.9	**0.1350**	0.026	18.9	ug/L	-34	Standard
	Se	82	91.9	23.2	**0.6344**	0.188	29.7	ug/L	14	Standard
	Se-1	77	154.7	9.2	**1.2017**	0.186	15.5	ug/L	55	Standard
>	**Ga**	71	938.4	4.7				mg/L	50	Standard
	Rb	85	17583.5	1.7				ug/L	20	Standard
	Y	89	717044.0	1.5				ug/L	376602	Standard
>	**Rh**	103	161.7	28.1				ug/L	17	Standard
	Mo	98	55.5	8.7	**0.0173**	0.002	11.5	ug/L	8	Standard
	Ag	107	113.0	9.4	**0.0061**	0.002	26.4	ug/L	81	Standard
	Cd	111	309.2	2.3	**0.1520**	0.004	2.4	mg/L	3	Standard
	Cd	114	755.2	14.7	**0.1496**	0.023	15.3	ug/L	7	Standard
>	**In**	115	538550.6	0.6				ug/L	524722	Standard
	Sn	118	861.7	3.5	**0.0664**	0.005	7.2	ug/L	715	Standard
	Sb	123	1408.2	6.3	**0.2992**	0.018	6.0	ug/L	201	Standard
	Ba	135	39659.2	1.6	**21.2618**	0.456	2.1	ug/L	108	Standard
	Ce	140	1381297.9	0.5				ug/L	30	Standard
>	**Tb**	159	851012.3	2.0				ug/L	792236	Standard
	Ho	165	27889.0	1.7				ug/L	7	Standard
	Tl	203	294.7	3.0	**0.0347**	0.002	6.0	ug/L	9	Standard
	Tl	205	265.0	1.9	**0.0316**	0.001	3.8	ug/L	0	Standard
	Pb	206	5868.1	0.6	**1.1726**	0.027	2.3	ug/L	216	Standard
	Pb	207	4864.8	1.2	**1.0656**	0.042	4.0	ug/L	180	Standard
	Pb	208	20514.5	1.0	**1.1052**	0.038	3.5	ug/L	717	Standard
	U	238	2495.2	0.6	**0.3809**	0.010	2.6	ug/L	4	Standard
>	**Bi**	209	476253.4	2.7				ug/L	460343	Standard

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Na	23	11.7	24.7	**-24.3418**	9.212	37.8	mg/L	0	Standard
Mg	24	2530.2	1.8	**3.0712**	0.030	1.0	mg/L	20	Standard
K	39	120.0	8.3	**0.6043**	0.087	14.3	mg/L	22	Standard
Ca	43	210.0	28.9	**31.2136**	11.780	37.7	mg/L	47	Standard
Fe	54	1764.1	4.7	**1.1881**	0.059	5.0	mg/L	151	Standard
Fe	57	758.4	15.5	**1.4817**	0.281	18.9	mg/L	195	Standard
> **Sc-1**	45	32636.8	2.2				mg/L	29647	Standard
Cl	35	300327.3	0.4				ug/L	154152	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	5971.2	0.5				ug/L	1607	Standard
P	31	27339.7	3.0				ug/L	22752	Standard
S	34	4589.0	1.4				ug/L	5049	Standard
Sr	88	426.7	18.4				ug/L	87	Standard
C	12	223.3	9.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	48154.5	2.6				mg/L	10	Standard
Ho-1	165	27889.0	1.7				mg/L	7	Standard
Er	166	24125.9	1.2				mg/L	3	Standard
I	127	233033.3	7.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		162.997	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.492	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.635
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.456
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606072903S WG572730-06
Sample Date/Time: Thursday, June 16, 2016 19:22:04
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84593.9	1.7				ug/L	51024	Standard
	Be	9	63747.2	1.4	**45.7285**	1.409	3.1	ug/L	7	Standard
	Al	27	12163442.1	0.7	**51.5412**	1.132	2.2	ug/L	625	Standard
	Sc	45	33602.2	1.6				ug/L	29647	Standard
	Ti	47	659.7	12.0	**2.0785**	0.257	12.4	ug/L	57	Standard
	V	51	353641.1	0.6	**50.6609**	2.238	4.4	ug/L	1142	Standard
	Cr	52	356717.6	1.1	**48.6215**	2.101	4.3	ug/L	6628	Standard
	Cr	53	45185.6	0.4	**49.2470**	2.494	5.1	ug/L	430	Standard
	Mn	55	2601278.5	0.7	**447.6689**	18.661	4.2	ug/L	603	Standard
	Co	59	487177.6	1.1	**77.4106**	2.935	3.8	ug/L	237	Standard
	Ni	60	108783.5	0.6	**57.5580**	2.469	4.3	ug/L	141	Standard
	Cu	65	95167.6	1.2	**51.6700**	2.084	4.0	ug/L	109	Standard
	Zn	66	84097.8	1.1	**77.2971**	3.015	3.9	ug/L	159	Standard
>	**Ge**	72	464397.8	4.8				ug/L	474053	Standard
	As	75	53679.2	1.0	**49.5736**	2.027	4.1	ug/L	-34	Standard
	Se	82	5551.8	0.7	**51.1533**	2.421	4.7	ug/L	14	Standard
	Se-1	77	3791.1	3.4	**49.6831**	1.424	2.9	ug/L	55	Standard
>	**Ga**	71	958.4	5.4				mg/L	50	Standard
	Rb	85	16624.1	3.0				ug/L	20	Standard
	Y	89	707625.8	0.5				ug/L	376602	Standard
>	**Rh**	103	125.0	8.0				ug/L	17	Standard
	Mo	98	62.1	4.6	**0.0194**	0.002	8.1	ug/L	8	Standard
	Ag	107	8913.6	1.8	**1.4061**	0.009	0.7	ug/L	81	Standard
	Cd	111	96671.0	1.6	**47.2862**	1.085	2.3	mg/L	3	Standard
	Cd	114	237983.0	1.9	**47.0816**	0.696	1.5	ug/L	7	Standard
>	**In**	115	552753.1	1.8				ug/L	524722	Standard
	Sn	118	638.3	15.9	**0.0231**	0.018	79.7	ug/L	715	Standard
	Sb	123	215408.0	1.4	**46.8023**	0.239	0.5	ug/L	201	Standard
	Ba	135	124502.1	0.5	**65.1569**	0.974	1.5	ug/L	108	Standard
	Ce	140	1314417.9	1.3				ug/L	30	Standard
>	**Tb**	159	881280.8	1.9				ug/L	792236	Standard
	Ho	165	27413.1	3.0				ug/L	7	Standard
	Tl	203	374882.9	0.8	**46.6863**	0.358	0.8	ug/L	9	Standard
	Tl	205	338218.3	0.5	**49.5337**	0.988	2.0	ug/L	0	Standard
	Pb	206	247963.0	0.9	**51.0419**	0.964	1.9	ug/L	216	Standard
	Pb	207	216265.5	0.6	**48.8980**	0.689	1.4	ug/L	180	Standard
	Pb	208	876968.0	0.5	**48.8596**	0.973	2.0	ug/L	717	Standard
	U	238	329321.5	0.3	**50.4388**	0.916	1.8	ug/L	4	Standard
>	**Bi**	209	483914.0	1.5				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.7187**	8.199	143.4	mg/L	0	Standard
Mg	24	2360.2	1.3	**2.7784**	0.056	2.0	mg/L	20	Standard
K	39	110.0	31.5	**0.5143**	0.242	47.0	mg/L	22	Standard
Ca	43	180.0	27.4	**23.8358**	9.598	40.3	mg/L	47	Standard
Fe	54	1737.6	2.8	**1.1314**	0.022	1.9	mg/L	151	Standard
Fe	57	686.7	6.3	**1.2285**	0.107	8.7	mg/L	195	Standard
Sc-1	45	33602.2	1.6				mg/L	29647	Standard
Cl	35	293323.6	1.0				ug/L	154152	Standard
Kr	83	1.7	124.9				ug/L	3	Standard
Br	81	5094.2	9.2				ug/L	1607	Standard
P	31	27336.3	1.5				ug/L	22752	Standard
S	34	4702.4	5.5				ug/L	5049	Standard
Sr	88	400.0	11.5				ug/L	87	Standard
C	12	270.0	13.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	45484.4	2.9				mg/L	10	Standard
Ho-1	165	27413.1	3.0				mg/L	7	Standard
Er	166	23461.5	1.2				mg/L	3	Standard
I	127	221641.3	5.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		165.792	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.963	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.342
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.120
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606072903S WG572730-06
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Method 6020 - Summary Report

Sample ID: L1606072903SD WG572730-07
Sample Date/Time: Thursday, June 16, 2016 19:25:15
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86461.0	1.0				ug/L	51024	Standard
	Be	9	64063.5	1.0	**44.9486**	0.413	0.9	ug/L	7	Standard
	Al	27	12456061.3	1.7	**51.6274**	0.457	0.9	ug/L	625	Standard
	Sc	45	32062.2	2.4				ug/L	29647	Standard
	Ti	47	858.4	8.8	**2.9028**	0.272	9.4	ug/L	57	Standard
	V	51	359033.7	1.5	**54.0078**	1.033	1.9	ug/L	1142	Standard
	Cr	52	357394.7	0.2	**51.1915**	0.354	0.7	ug/L	6628	Standard
	Cr	53	45598.6	3.3	**52.1815**	1.498	2.9	ug/L	430	Standard
	Mn	55	2668759.8	1.0	**482.1929**	4.954	1.0	ug/L	603	Standard
	Co	59	502894.6	1.2	**83.9097**	1.409	1.7	ug/L	237	Standard
	Ni	60	107927.8	1.4	**59.9510**	0.489	0.8	ug/L	141	Standard
	Cu	65	93853.1	1.2	**53.5019**	0.490	0.9	ug/L	109	Standard
	Zn	66	83974.7	0.9	**81.0494**	0.217	0.3	ug/L	159	Standard
>	**Ge**	72	441763.7	0.6				ug/L	474053	Standard
	As	75	55613.6	0.2	**53.9212**	0.243	0.5	ug/L	-34	Standard
	Se	82	6086.3	0.3	**58.8898**	0.200	0.3	ug/L	14	Standard
	Se-1	77	3831.8	0.4	**52.8020**	0.183	0.3	ug/L	55	Standard
>	**Ga**	71	981.7	7.0				mg/L	50	Standard
	Rb	85	19140.4	1.5				ug/L	20	Standard
	Y	89	713271.6	1.4				ug/L	376602	Standard
>	**Rh**	103	201.7	43.7				ug/L	17	Standard
	Mo	98	570.8	5.1	**0.2183**	0.009	3.9	ug/L	8	Standard
	Ag	107	9150.1	1.0	**1.4089**	0.031	2.2	ug/L	81	Standard
	Cd	111	99261.8	1.0	**47.3819**	0.778	1.6	mg/L	3	Standard
	Cd	114	244188.0	1.4	**47.1444**	0.226	0.5	ug/L	7	Standard
>	**In**	115	566399.8	1.8				ug/L	524722	Standard
	Sn	118	1108.4	1.6	**0.1012**	0.003	3.2	ug/L	715	Standard
	Sb	123	226221.3	0.0	**47.9756**	0.857	1.8	ug/L	201	Standard
	Ba	135	281949.2	0.1	**144.0743**	2.519	1.7	ug/L	108	Standard
	Ce	140	1344322.7	0.7				ug/L	30	Standard
>	**Tb**	159	856521.4	0.5				ug/L	792236	Standard
	Ho	165	27917.4	1.4				ug/L	7	Standard
	Tl	203	379214.9	0.1	**48.6259**	0.229	0.5	ug/L	9	Standard
	Tl	205	341701.9	0.7	**51.5229**	0.634	1.2	ug/L	0	Standard
	Pb	206	250400.5	0.4	**53.0698**	0.469	0.9	ug/L	216	Standard
	Pb	207	218768.7	0.4	**50.9304**	0.424	0.8	ug/L	180	Standard
	Pb	208	894325.1	0.6	**51.3006**	0.445	0.9	ug/L	717	Standard
	U	238	333573.8	0.7	**52.6006**	0.628	1.2	ug/L	4	Standard
>	**Bi**	209	469954.5	0.6				ug/L	460343	Standard

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Na	23	3.3	173.2	**0.1020**	17.927	17574.6	mg/L	0	Standard
Mg	24	6119.6	7.0	**7.6313**	0.602	7.9	mg/L	20	Standard
K	39	128.3	31.7	**0.6738**	0.269	39.8	mg/L	22	Standard
Ca	43	203.3	13.5	**30.6746**	5.036	16.4	mg/L	47	Standard
Fe	54	1790.2	1.0	**1.2312**	0.019	1.5	mg/L	151	Standard
Fe	57	780.0	10.9	**1.5831**	0.191	12.1	mg/L	195	Standard
Sc-1	45	32062.2	2.4				mg/L	29647	Standard
Cl	35	296539.1	0.3				ug/L	154152	Standard
Kr	83	1.0	0.0				ug/L	3	Standard
Br	81	116096.7	2.9				ug/L	1607	Standard
P	31	27080.9	1.8				ug/L	22752	Standard
S	34	4614.0	1.1				ug/L	5049	Standard
Sr	88	778.4	3.2				ug/L	87	Standard
C	12	196.7	22.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	46630.2	1.4				mg/L	10	Standard
Ho-1	165	27917.4	1.4				mg/L	7	Standard
Er	166	24322.8	2.2				mg/L	3	Standard
I	127	176317.1	2.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		169.451	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.189	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	107.943
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.088
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606072903SD WG572730-07
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Method 6020 - Summary Report

Sample ID: L1606075401
Sample Date/Time: Thursday, June 16, 2016 19:28:27
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82366.7	2.1				ug/L	51024	Standard
	Be	9	51.7	14.8	**0.0170**	0.006	32.8	ug/L	7	Standard
	Al	27	17891826.3	2.7	**77.8692**	2.435	3.1	ug/L	625	Standard
	Sc	45	30427.2	1.9				ug/L	29647	Standard
	Ti	47	2820.9	1.0	**9.4421**	0.167	1.8	ug/L	57	Standard
	V	51	13745.3	1.6	**1.8076**	0.041	2.3	ug/L	1142	Standard
	Cr	52	20733.8	0.8	**1.9525**	0.033	1.7	ug/L	6628	Standard
	Cr	53	4984.2	5.0	**5.0448**	0.169	3.3	ug/L	430	Standard
	Mn	55	105692.4	1.8	**18.0774**	0.683	3.8	ug/L	603	Standard
	Co	59	4134.2	4.3	**0.6164**	0.033	5.4	ug/L	237	Standard
	Ni	60	5645.1	0.8	**2.9135**	0.034	1.2	ug/L	141	Standard
	Cu	65	191176.6	0.9	**103.9111**	2.891	2.8	ug/L	109	Standard
	Zn	66	106024.3	0.8	**97.5572**	2.630	2.7	ug/L	159	Standard
>	**Ge**	72	463769.1	2.0				ug/L	474053	Standard
	As	75	301.2	25.5	**0.3039**	0.075	24.6	ug/L	-34	Standard
	Se	82	127.3	9.6	**1.0095**	0.134	13.3	ug/L	14	Standard
	Se-1	77	289.7	4.6	**3.1103**	0.134	4.3	ug/L	55	Standard
>	**Ga**	71	440.0	5.9				mg/L	50	Standard
	Rb	85	66395.2	1.7				ug/L	20	Standard
	Y	89	407745.6	2.4				ug/L	376602	Standard
>	**Rh**	103	96.7	20.9				ug/L	17	Standard
	Mo	98	1561.5	1.4	**0.6398**	0.014	2.1	ug/L	8	Standard
	Ag	107	747.4	3.8	**0.1101**	0.008	7.2	ug/L	81	Standard
	Cd	111	185.0	11.1	**0.0900**	0.013	14.1	mg/L	3	Standard
	Cd	114	453.1	6.4	**0.0885**	0.009	9.7	ug/L	7	Standard
>	**In**	115	537707.7	3.1				ug/L	524722	Standard
	Sn	118	4545.7	5.8	**0.7338**	0.032	4.3	ug/L	715	Standard
	Sb	123	909.7	21.3	**0.1892**	0.048	25.1	ug/L	201	Standard
	Ba	135	39811.9	1.6	**21.3825**	0.338	1.6	ug/L	108	Standard
	Ce	140	8849.3	2.5				ug/L	30	Standard
>	**Tb**	159	810136.1	3.5				ug/L	792236	Standard
	Ho	165	230.0	24.5				ug/L	7	Standard
	Tl	203	286.7	27.5	**0.0315**	0.010	30.7	ug/L	9	Standard
	Tl	205	228.3	32.9	**0.0241**	0.011	44.8	ug/L	0	Standard
	Pb	206	10175.4	0.5	**1.9406**	0.024	1.2	ug/L	216	Standard
	Pb	207	8305.3	0.7	**1.7365**	0.026	1.5	ug/L	180	Standard
	Pb	208	35130.3	0.9	**1.8082**	0.024	1.3	ug/L	717	Standard
	U	238	1915.5	3.0	**0.2719**	0.010	3.6	ug/L	4	Standard
>	**Bi**	209	508087.3	0.9				ug/L	460343	Standard

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Na	23	3.3	86.6	**-0.2885**	9.302	3224.4	mg/L	0	Standard
Mg	24	30961.6	1.7	**40.8617**	0.835	2.0	mg/L	20	Standard
K	39	656.7	18.1	**4.6487**	0.870	18.7	mg/L	22	Standard
Ca	43	158.3	34.8	**22.7292**	12.064	53.1	mg/L	47	Standard
Fe	54	990.1	10.0	**0.6701**	0.088	13.2	mg/L	151	Standard
Fe	57	505.0	3.4	**0.8773**	0.078	8.8	mg/L	195	Standard
Sc-1	45	30427.2	1.9				mg/L	29647	Standard
Cl	35	217230.9	2.7				ug/L	154152	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	12551.9	10.7				ug/L	1607	Standard
P	31	26334.5	1.0				ug/L	22752	Standard
S	34	4555.7	2.6				ug/L	5049	Standard
Sr	88	170.0	8.8				ug/L	87	Standard
C	12	793.4	8.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	96.7	15.8				mg/L	0	Standard
Dy	164	343.6	11.4				mg/L	10	Standard
Ho-1	165	230.0	24.5				mg/L	7	Standard
Er	166	203.3	15.0				mg/L	3	Standard
I	127	19776.3	5.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		161.427	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.831	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.475	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	110.371	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: L1606075401PS WG572869-01
Sample Date/Time: Thursday, June 16, 2016 19:31:38
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83402.3	0.7				ug/L	51024	Standard
	Be	9	63124.6	1.4	**45.9169**	0.909	2.0	ug/L	7	Standard
	Al	27	17971744.4	2.8	**77.2382**	2.615	3.4	ug/L	625	Standard
	Sc	45	30682.7	4.2				ug/L	29647	Standard
	Ti	47	2792.9	5.6	**9.1051**	0.451	5.0	ug/L	57	Standard
	V	51	382253.4	0.5	**53.4006**	0.320	0.6	ug/L	1142	Standard
	Cr	52	373919.2	1.3	**49.7147**	0.405	0.8	ug/L	6628	Standard
	Cr	53	49711.5	2.7	**52.8478**	1.467	2.8	ug/L	430	Standard
	Mn	55	406935.5	0.9	**68.1780**	0.090	0.1	ug/L	603	Standard
	Co	59	347435.1	1.8	**53.8207**	0.541	1.0	ug/L	237	Standard
	Ni	60	95683.2	0.8	**49.3519**	0.338	0.7	ug/L	141	Standard
	Cu	65	276145.4	0.3	**146.3258**	0.986	0.7	ug/L	109	Standard
	Zn	66	154951.3	0.2	**139.0713**	0.812	0.6	ug/L	159	Standard
>	Ge	72	475646.5	0.8				ug/L	474053	Standard
	As	75	55395.2	0.9	**49.8846**	0.262	0.5	ug/L	-34	Standard
	Se	82	5840.3	1.9	**52.4634**	0.711	1.4	ug/L	14	Standard
	Se-1	77	4138.2	1.9	**52.9629**	0.853	1.6	ug/L	55	Standard
>	Ga	71	441.7	10.5				mg/L	50	Standard
	Rb	85	63605.0	2.6				ug/L	20	Standard
	Y	89	384934.5	2.9				ug/L	376602	Standard
>	Rh	103	75.0	30.6				ug/L	17	Standard
	Mo	98	1506.0	0.6	**0.6341**	0.012	1.9	ug/L	8	Standard
	Ag	107	301051.6	0.9	**50.6101**	0.914	1.8	ug/L	81	Standard
	Cd	111	98227.5	0.6	**50.7616**	0.701	1.4	mg/L	3	Standard
	Cd	114	243020.5	0.8	**50.8000**	0.654	1.3	ug/L	7	Standard
>	In	115	523174.3	1.7				ug/L	524722	Standard
	Sn	118	4532.3	4.2	**0.7549**	0.047	6.3	ug/L	715	Standard
	Sb	123	222938.5	1.8	**51.1866**	1.325	2.6	ug/L	201	Standard
	Ba	135	127885.1	0.6	**70.7164**	1.199	1.7	ug/L	108	Standard
	Ce	140	8752.5	5.4				ug/L	30	Standard
>	Tb	159	809108.6	3.0				ug/L	792236	Standard
	Ho	165	236.7	12.0				ug/L	7	Standard
	Tl	203	379894.9	0.9	**44.3716**	1.016	2.3	ug/L	9	Standard
	Tl	205	341979.7	0.7	**46.9709**	1.246	2.7	ug/L	0	Standard
	Pb	206	255943.3	0.4	**49.4070**	1.138	2.3	ug/L	216	Standard
	Pb	207	222866.5	0.7	**47.2585**	1.195	2.5	ug/L	180	Standard
	Pb	208	910678.1	0.7	**47.5815**	1.216	2.6	ug/L	717	Standard
	U	238	341419.2	0.1	**49.0368**	0.922	1.9	ug/L	4	Standard
>	Bi	209	516066.4	2.0				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.2328**	9.040	172.8	mg/L	0	Standard
Mg	24	30580.8	0.9	**40.0684**	1.906	4.8	mg/L	20	Standard
K	39	683.3	11.4	**4.8016**	0.478	10.0	mg/L	22	Standard
Ca	43	166.7	18.3	**24.6755**	8.602	34.9	mg/L	47	Standard
Fe	54	991.6	6.4	**0.6639**	0.031	4.7	mg/L	151	Standard
Fe	57	553.3	10.9	**1.0152**	0.249	24.5	mg/L	195	Standard
> **Sc-1**	45	30682.7	4.2				mg/L	29647	Standard
Cl	35	218863.4	0.6				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	11077.4	2.3				ug/L	1607	Standard
P	31	26757.0	3.2				ug/L	22752	Standard
S	34	4704.1	1.5				ug/L	5049	Standard
Sr	88	165.0	10.9				ug/L	87	Standard
C	12	693.3	9.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	90.0	50.9				mg/L	0	Standard
Dy	164	284.7	30.5				mg/L	10	Standard
Ho-1	165	236.7	12.0				mg/L	7	Standard
Er	166	180.0	22.2				mg/L	3	Standard
I	127	17368.3	4.1				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		163.456	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.336	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.705
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	112.105
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1606075401SDL WG572869-02
Sample Date/Time: Thursday, June 16, 2016 19:34:50
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84174.9	1.5				ug/L	51024	Standard
	Be	9	35.0	14.3	**0.0042**	0.004	88.5	ug/L	7	Standard
	Al	27	3660235.8	1.3	**15.5808**	0.435	2.8	ug/L	625	Standard
	Sc	45	32820.5	2.8				ug/L	29647	Standard
	Ti	47	607.7	5.7	**1.8669**	0.107	5.7	ug/L	57	Standard
	V	51	4082.9	1.0	**0.4082**	0.006	1.6	ug/L	1142	Standard
	Cr	52	9894.2	1.7	**0.4222**	0.007	1.6	ug/L	6628	Standard
	Cr	53	1803.4	1.6	**1.5160**	0.013	0.8	ug/L	430	Standard
	Mn	55	21935.9	0.6	**3.5843**	0.077	2.1	ug/L	603	Standard
	Co	59	994.0	3.5	**0.1140**	0.003	2.9	ug/L	237	Standard
	Ni	60	1361.1	4.8	**0.6305**	0.026	4.2	ug/L	141	Standard
	Cu	65	40184.2	0.6	**21.4035**	0.546	2.6	ug/L	109	Standard
	Zn	66	22341.5	1.6	**20.0059**	0.236	1.2	ug/L	159	Standard
>	**Ge**	72	472090.7	2.0				ug/L	474053	Standard
	As	75	70.8	22.3	**0.0894**	0.015	16.6	ug/L	-34	Standard
	Se	82	38.3	18.3	**0.1793**	0.069	38.5	ug/L	14	Standard
	Se-1	77	126.7	16.1	**0.9154**	0.302	33.0	ug/L	55	Standard
>	**Ga**	71	170.0	15.6				mg/L	50	Standard
	Rb	85	13192.4	0.8				ug/L	20	Standard
	Y	89	392636.4	3.5				ug/L	376602	Standard
>	**Rh**	103	25.0	69.3				ug/L	17	Standard
	Mo	98	328.6	6.7	**0.1240**	0.011	8.7	ug/L	8	Standard
	Ag	107	258.3	8.0	**0.0280**	0.003	12.2	ug/L	81	Standard
	Cd	111	44.1	38.1	**0.0179**	0.008	45.4	mg/L	3	Standard
	Cd	114	91.6	47.0	**0.0140**	0.009	61.0	ug/L	7	Standard
>	**In**	115	563812.4	1.7				ug/L	524722	Standard
	Sn	118	1306.7	7.2	**0.1365**	0.020	14.5	ug/L	715	Standard
	Sb	123	2201.6	19.8	**0.4534**	0.085	18.8	ug/L	201	Standard
	Ba	135	8201.6	0.8	**4.1541**	0.077	1.9	ug/L	108	Standard
	Ce	140	1823.4	12.4				ug/L	30	Standard
>	**Tb**	159	855756.3	0.3				ug/L	792236	Standard
	Ho	165	45.0	11.1				ug/L	7	Standard
	Tl	203	135.3	4.5	**0.0137**	0.001	4.2	ug/L	9	Standard
	Tl	205	115.0	7.5	**0.0084**	0.001	13.4	ug/L	0	Standard
	Pb	206	2315.2	1.8	**0.4035**	0.003	0.8	ug/L	216	Standard
	Pb	207	1893.5	0.7	**0.3593**	0.003	0.7	ug/L	180	Standard
	Pb	208	7952.2	1.5	**0.3697**	0.005	1.4	ug/L	717	Standard
	U	238	417.0	3.9	**0.0540**	0.002	3.2	ug/L	4	Standard
>	**Bi**	209	501935.6	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	6119.6	2.2	**7.4516**	0.184	2.5	mg/L	20	Standard
K	39	163.3	26.0	**0.8923**	0.268	30.1	mg/L	22	Standard
Ca	43	58.3	13.1	**-0.8716**	1.621	186.0	mg/L	47	Standard
Fe	54	338.9	14.2	**0.1347**	0.043	31.9	mg/L	151	Standard
Fe	57	201.7	14.9	**-0.0843**	0.069	82.1	mg/L	195	Standard
> **Sc-1**	45	32820.5	2.8				mg/L	29647	Standard
Cl	35	191817.3	0.7				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	3760.5	5.3				ug/L	1607	Standard
P	31	26361.2	0.5				ug/L	22752	Standard
S	34	5075.9	2.0				ug/L	5049	Standard
Sr	88	91.7	22.0				ug/L	87	Standard
C	12	203.3	19.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	124.9				mg/L	0	Standard
Dy	164	57.6	17.4				mg/L	10	Standard
Ho-1	165	45.0	11.1				mg/L	7	Standard
Er	166	50.0	34.6				mg/L	3	Standard
I	127	5225.9	3.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		164.971	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.586	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.450
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.035
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 19:38:03
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75524.5	1.6				ug/L	51024	Standard
	Be	9	58757.1	2.5	**47.1905**	0.427	0.9	ug/L	7	Standard
	Al	27	8592238.6	0.7	**40.7782**	0.896	2.2	ug/L	625	Standard
	Sc	45	30089.9	1.6				ug/L	29647	Standard
	Ti	47	29681.7	0.7	**100.0625**	1.696	1.7	ug/L	57	Standard
	V	51	362295.0	0.1	**51.4700**	1.097	2.1	ug/L	1142	Standard
	Cr	52	362530.7	0.7	**49.0151**	1.305	2.7	ug/L	6628	Standard
	Cr	53	44988.4	1.6	**48.6083**	1.321	2.7	ug/L	430	Standard
	Mn	55	309292.7	1.9	**52.6874**	2.042	3.9	ug/L	603	Standard
	Co	59	348007.0	1.3	**54.8425**	1.822	3.3	ug/L	237	Standard
	Ni	60	92789.3	1.3	**48.6823**	1.578	3.2	ug/L	141	Standard
	Cu	65	90263.4	0.9	**48.6062**	1.434	3.0	ug/L	109	Standard
	Zn	66	54352.7	0.8	**49.4652**	1.123	2.3	ug/L	159	Standard
>	Ge	72	467786.9	2.0				ug/L	474053	Standard
	As	75	53262.0	0.4	**48.7810**	0.849	1.7	ug/L	-34	Standard
	Se	82	5640.4	1.6	**51.5356**	1.525	3.0	ug/L	14	Standard
	Se-1	77	3823.8	0.2	**49.7310**	1.059	2.1	ug/L	55	Standard
>	Ga	71	100.0	10.0				mg/L	50	Standard
	Rb	85	738.4	4.8				ug/L	20	Standard
	Y	89	389211.3	4.2				ug/L	376602	Standard
>	Rh	103	41.7	45.4				ug/L	17	Standard
	Mo	98	258410.6	0.4	**108.3200**	0.551	0.5	ug/L	8	Standard
	Ag	107	305258.5	0.7	**50.6525**	0.191	0.4	ug/L	81	Standard
	Cd	111	98577.0	0.6	**50.2856**	0.543	1.1	mg/L	3	Standard
	Cd	114	240956.8	0.8	**49.7198**	0.544	1.1	ug/L	7	Standard
>	In	115	529955.9	0.8				ug/L	524722	Standard
	Sn	118	279031.2	1.4	**51.1979**	0.292	0.6	ug/L	715	Standard
	Sb	123	225733.2	0.6	**51.1556**	0.269	0.5	ug/L	201	Standard
	Ba	135	88992.9	0.5	**48.5568**	0.564	1.2	ug/L	108	Standard
	Ce	140	98.3	54.8				ug/L	30	Standard
>	Tb	159	792501.9	1.8				ug/L	792236	Standard
	Ho	165	15.0	57.7				ug/L	7	Standard
	Tl	203	380190.8	0.8	**49.9446**	0.519	1.0	ug/L	9	Standard
	Tl	205	340670.7	0.6	**52.6256**	0.733	1.4	ug/L	0	Standard
	Pb	206	240176.7	0.8	**52.1541**	1.146	2.2	ug/L	216	Standard
	Pb	207	218112.4	0.3	**52.0255**	0.882	1.7	ug/L	180	Standard
	Pb	208	878933.8	0.7	**51.6572**	1.015	2.0	ug/L	717	Standard
	U	238	331188.2	0.5	**53.5069**	0.993	1.9	ug/L	4	Standard
>	Bi	209	458755.1	1.5				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	4233.9	2.0	**5.6123**	0.183	3.3	mg/L	20	Standard
K	39	481.7	4.2	**3.3891**	0.102	3.0	mg/L	22	Standard
Ca	43	51.7	40.3	**-1.3433**	4.578	340.8	mg/L	47	Standard
Fe	54	6013.8	2.7	**4.7022**	0.066	1.4	mg/L	151	Standard
Fe	57	1661.8	4.6	**4.4228**	0.232	5.3	mg/L	195	Standard
> **Sc-1**	45	30089.9	1.6				mg/L	29647	Standard
Cl	35	174583.8	2.5				ug/L	154152	Standard
Kr	83	2.7	108.3				ug/L	3	Standard
Br	81	1656.8	6.5				ug/L	1607	Standard
P	31	26137.5	2.6				ug/L	22752	Standard
S	34	5366.0	2.6				ug/L	5049	Standard
Sr	88	61.7	56.9				ug/L	87	Standard
C	12	73.3	56.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.5	105.0				mg/L	10	Standard
Ho-1	165	15.0	57.7				mg/L	7	Standard
Er	166	10.0					mg/L	3	Standard
I	127	1988.5	11.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	94.381		
Al	27	81.556		
Sc	45			
Ti	47	100.063		
V	51	102.940		
Cr	52	98.030		
Cr	53			
Mn	55	105.375		
Co	59	109.685		
Ni	60	97.365		
Cu	65	97.212		
Zn	66	98.930		
> Ge	72		98.678	
As	75	97.562		
Se	82	103.071		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	108.320		
Ag	107	101.305		
Cd	111	100.571		
Cd	114			
In	115		100.997	
Sn	118	102.396		
Sb	123	102.311		
Ba	135	97.114		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.889		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.314		
U	238	107.014		
Bi	209		99.655	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 19:41:14
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75737.2	0.8				ug/L	51024	Standard
	Be	9	36.7	64.4	**0.0082**	0.019	228.1	ug/L	7	Standard
	Al	27	2361.9	43.7	**0.0014**	0.005	343.6	ug/L	625	Standard
	Sc	45	30985.0	1.8				ug/L	29647	Standard
	Ti	47	35.3	4.3	**-0.0458**	0.006	13.8	ug/L	57	Standard
	V	51	1037.4	10.2	**-0.0196**	0.013	66.8	ug/L	1142	Standard
	Cr	52	6028.9	1.0	**-0.0922**	0.013	14.2	ug/L	6628	Standard
	Cr	53	500.0	1.7	**0.1170**	0.007	5.6	ug/L	430	Standard
	Mn	55	801.0	1.0	**0.0112**	0.003	28.0	ug/L	603	Standard
	Co	59	242.3	16.2	**-0.0028**	0.006	218.5	ug/L	237	Standard
	Ni	60	194.3	2.8	**0.0250**	0.004	15.2	ug/L	141	Standard
	Cu	65	159.3	5.3	**0.0203**	0.005	24.2	ug/L	109	Standard
	Zn	66	178.7	4.3	**-0.0675**	0.009	14.0	ug/L	159	Standard
>	**Ge**	72	464739.5	1.5				ug/L	474053	Standard
	As	75	7.6	225.8	**0.0322**	0.016	48.9	ug/L	-34	Standard
	Se	82	25.4	8.4	**0.0649**	0.020	31.4	ug/L	14	Standard
	Se-1	77	61.7	15.6	**0.0734**	0.117	159.7	ug/L	55	Standard
>	**Ga**	71	83.3	36.7				mg/L	50	Standard
	Rb	85	23.3	44.6				ug/L	20	Standard
	Y	89	383264.6	3.0				ug/L	376602	Standard
>	**Rh**	103	33.3	8.7				ug/L	17	Standard
	Mo	98	271.3	23.3	**0.1065**	0.026	24.6	ug/L	8	Standard
	Ag	107	117.3	15.5	**0.0068**	0.003	41.5	ug/L	81	Standard
	Cd	111	10.2	68.0	**0.0019**	0.003	183.2	mg/L	3	Standard
	Cd	114	44.5	65.5	**0.0053**	0.006	115.1	ug/L	7	Standard
>	**In**	115	537976.2	1.6				ug/L	524722	Standard
	Sn	118	825.0	17.9	**0.0600**	0.027	44.4	ug/L	715	Standard
	Sb	123	661.4	27.1	**0.1329**	0.040	29.8	ug/L	201	Standard
	Ba	135	101.0	9.8	**-0.0033**	0.006	183.9	ug/L	108	Standard
	Ce	140	31.7	79.5				ug/L	30	Standard
>	**Tb**	159	808787.7	0.7				ug/L	792236	Standard
	Ho	165	10.0					ug/L	7	Standard
	Tl	203	70.0	26.5	**0.0063**	0.002	37.5	ug/L	9	Standard
	Tl	205	83.3	42.1	**0.0046**	0.005	114.0	ug/L	0	Standard
	Pb	206	238.3	5.7	**-0.0064**	0.003	45.5	ug/L	216	Standard
	Pb	207	219.3	6.5	**-0.0033**	0.003	100.2	ug/L	180	Standard
	Pb	208	893.7	3.3	**-0.0072**	0.002	24.1	ug/L	717	Standard
	U	238	52.0	44.7	**0.0005**	0.004	686.7	ug/L	4	Standard
>	**Bi**	209	475308.5	0.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	48.3	26.0	**0.0174**	0.016	91.5	mg/L	20	Standard
K	39	13.3	114.6	**-0.1319**	0.110	83.1	mg/L	22	Standard
Ca	43	30.0	33.3	**-6.4628**	2.334	36.1	mg/L	47	Standard
Fe	54	156.0	6.5	**0.0065**	0.010	153.3	mg/L	151	Standard
Fe	57	171.7	23.4	**-0.1375**	0.125	91.1	mg/L	195	Standard
Sc-1	45	30985.0	1.8				mg/L	29647	Standard
Cl	35	175790.7	1.2				ug/L	154152	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	1680.1	2.7				ug/L	1607	Standard
P	31	26980.7	1.7				ug/L	22752	Standard
S	34	5335.9	0.5				ug/L	5049	Standard
Sr	88	53.3	19.5				ug/L	87	Standard
C	12	106.7	44.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.8	173.2				mg/L	10	Standard
Ho-1	165	10.0					mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	1423.4	7.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.035	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.526
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.251
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606075401SDL WG572869-02
Sample Date/Time: Thursday, June 16, 2016 19:44:27
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75285.0	2.4				ug/L	51024	Standard
	Be	9	28.3	27.0	**0.0018**	0.006	349.7	ug/L	7	Standard
	Al	27	678933.6	1.5	**3.2237**	0.074	2.3	ug/L	625	Standard
	Sc	45	30959.9	1.5				ug/L	29647	Standard
	Ti	47	147.0	11.8	**0.3390**	0.053	15.6	ug/L	57	Standard
	V	51	1608.8	3.2	**0.0651**	0.007	11.5	ug/L	1142	Standard
	Cr	52	6858.9	5.4	**0.0335**	0.040	118.0	ug/L	6628	Standard
	Cr	53	711.7	14.1	**0.3581**	0.110	30.8	ug/L	430	Standard
	Mn	55	5081.9	4.1	**0.7566**	0.025	3.3	ug/L	603	Standard
	Co	59	396.3	6.0	**0.0224**	0.003	13.2	ug/L	237	Standard
	Ni	60	495.3	27.9	**0.1866**	0.070	37.6	ug/L	141	Standard
	Cu	65	8119.8	4.3	**4.3896**	0.136	3.1	ug/L	109	Standard
	Zn	66	5396.3	4.5	**4.7897**	0.160	3.3	ug/L	159	Standard
>	**Ge**	72	459379.8	1.3				ug/L	474053	Standard
	As	75	30.4	143.6	**0.0532**	0.040	75.8	ug/L	-34	Standard
	Se	82	25.8	13.6	**0.0723**	0.035	48.4	ug/L	14	Standard
	Se-1	77	72.3	3.5	**0.2270**	0.021	9.3	ug/L	55	Standard
>	**Ga**	71	85.0	20.4				mg/L	50	Standard
	Rb	85	2591.9	3.3				ug/L	20	Standard
	Y	89	395811.5	2.1				ug/L	376602	Standard
>	**Rh**	103	21.7	48.0				ug/L	17	Standard
	Mo	98	145.0	5.9	**0.0524**	0.004	7.4	ug/L	8	Standard
	Ag	107	135.7	35.4	**0.0092**	0.008	85.2	ug/L	81	Standard
	Cd	111	32.4	102.6	**0.0126**	0.016	129.9	mg/L	3	Standard
	Cd	114	75.7	59.7	**0.0111**	0.009	81.1	ug/L	7	Standard
>	**In**	115	555911.8	0.9				ug/L	524722	Standard
	Sn	118	780.0	12.2	**0.0473**	0.018	37.9	ug/L	715	Standard
	Sb	123	369.0	35.2	**0.0651**	0.029	44.3	ug/L	201	Standard
	Ba	135	1717.1	2.7	**0.8366**	0.031	3.7	ug/L	108	Standard
	Ce	140	485.0	42.7				ug/L	30	Standard
>	**Tb**	159	813354.7	3.1				ug/L	792236	Standard
	Ho	165	18.3	87.7				ug/L	7	Standard
	Tl	203	138.7	62.7	**0.0153**	0.011	74.9	ug/L	9	Standard
	Tl	205	61.7	4.7	**0.0015**	0.001	38.9	ug/L	0	Standard
	Pb	206	674.3	7.5	**0.0868**	0.013	15.5	ug/L	216	Standard
	Pb	207	582.7	6.3	**0.0820**	0.010	12.7	ug/L	180	Standard
	Pb	208	2365.1	0.5	**0.0779**	0.003	3.7	ug/L	717	Standard
	U	238	97.7	25.6	**0.0079**	0.004	53.7	ug/L	4	Standard
>	**Bi**	209	470182.7	2.2				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1275.1	3.2	**1.6099**	0.030	1.9	mg/L	20	Standard
K	39	51.7	39.1	**0.1491**	0.148	99.3	mg/L	22	Standard
Ca	43	31.7	9.1	**-6.0988**	0.709	11.6	mg/L	47	Standard
Fe	54	199.5	21.2	**0.0405**	0.034	83.1	mg/L	151	Standard
Fe	57	250.0	6.0	**0.0939**	0.035	37.2	mg/L	195	Standard
> **Sc-1**	45	30959.9	1.5				mg/L	29647	Standard
Cl	35	180506.2	0.5				ug/L	154152	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	1983.5	10.4				ug/L	1607	Standard
P	31	26828.7	3.3				ug/L	22752	Standard
S	34	5309.3	3.4				ug/L	5049	Standard
Sr	88	65.0	13.3				ug/L	87	Standard
C	12	93.3	12.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	25.5	47.4				mg/L	10	Standard
Ho-1	165	18.3	87.7				mg/L	7	Standard
Er	166	23.3	49.5				mg/L	3	Standard
I	127	1906.8	3.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		147.548	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.905	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.944
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.137
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606061601
Sample Date/Time: Thursday, June 16, 2016 19:47:38
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76809.2	0.5				ug/L	51024	Standard
	Be	9	595.0	11.7	**0.4492**	0.056	12.5	ug/L	7	Standard
	Al	27	4369598.1	0.7	**20.3813**	0.060	0.3	ug/L	625	Standard
	Sc	45	31414.2	1.5				ug/L	29647	Standard
	Ti	47	432.0	2.5	**1.3649**	0.030	2.2	ug/L	57	Standard
	V	51	-3320.7	72.4	**-0.6635**	0.356	53.6	ug/L	1142	Standard
	Cr	52	750024.0	0.5	**107.4925**	0.659	0.6	ug/L	6628	Standard
	Cr	53	103144.9	1.1	**117.5491**	0.704	0.6	ug/L	430	Standard
	Mn	55	749735.1	1.9	**134.2073**	3.843	2.9	ug/L	603	Standard
	Co	59	100276.4	1.1	**16.5512**	0.155	0.9	ug/L	237	Standard
	Ni	60	309778.2	0.7	**170.7218**	1.330	0.8	ug/L	141	Standard
	Cu	65	7659.6	1.1	**4.2680**	0.087	2.0	ug/L	109	Standard
	Zn	66	11362.9	1.9	**10.6718**	0.281	2.6	ug/L	159	Standard
>	**Ge**	72	445665.4	0.9				ug/L	474053	Standard
	As	75	686.6	13.7	**0.6845**	0.089	13.0	ug/L	-34	Standard
	Se	82	286.4	5.1	**2.5855**	0.133	5.1	ug/L	14	Standard
	Se-1	77	537.0	3.8	**6.6929**	0.237	3.5	ug/L	55	Standard
>	**Ga**	71	176.7	15.6				mg/L	50	Standard
	Rb	85	2721.9	5.5				ug/L	20	Standard
	Y	89	383236.3	0.5				ug/L	376602	Standard
>	**Rh**	103	50.0	36.1				ug/L	17	Standard
	Mo	98	2500.1	3.0	**1.0779**	0.045	4.2	ug/L	8	Standard
	Ag	107	102.0	12.9	**0.0051**	0.002	37.3	ug/L	81	Standard
	Cd	111	267.3	12.2	**0.1375**	0.014	10.4	mg/L	3	Standard
	Cd	114	603.9	11.8	**0.1249**	0.014	11.6	ug/L	7	Standard
>	**In**	115	512847.6	2.1				ug/L	524722	Standard
	Sn	118	1035.0	6.1	**0.1070**	0.008	7.4	ug/L	715	Standard
	Sb	123	393.5	17.2	**0.0775**	0.017	21.9	ug/L	201	Standard
	Ba	135	97635.9	1.0	**55.0639**	0.765	1.4	ug/L	108	Standard
	Ce	140	12988.9	1.1				ug/L	30	Standard
>	**Tb**	159	771242.3	0.7				ug/L	792236	Standard
	Ho	165	400.0	11.9				ug/L	7	Standard
	Tl	203	321.0	11.6	**0.0421**	0.006	13.3	ug/L	9	Standard
	Tl	205	538.3	98.5	**0.0807**	0.088	108.8	ug/L	0	Standard
	Pb	206	832.7	2.1	**0.1353**	0.003	2.1	ug/L	216	Standard
	Pb	207	700.3	3.6	**0.1232**	0.007	5.6	ug/L	180	Standard
	Pb	208	3407.2	29.9	**0.1547**	0.065	42.3	ug/L	717	Standard
	U	238	614.7	59.9	**0.0979**	0.064	65.5	ug/L	4	Standard
>	**Bi**	209	433217.0	0.9				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.3851**	8.776	163.0	mg/L	0	Standard
Mg	24	53123.0	1.4	**67.9338**	1.263	1.9	mg/L	20	Standard
K	39	26.7	39.0	**-0.0366**	0.073	198.4	mg/L	22	Standard
Ca	43	46.7	27.0	**-2.9236**	2.617	89.5	mg/L	47	Standard
Fe	54	466.9	13.1	**0.2433**	0.047	19.5	mg/L	151	Standard
Fe	57	296.7	18.2	**0.2213**	0.168	75.8	mg/L	195	Standard
> **Sc-1**	45	31414.2	1.5				mg/L	29647	Standard
Cl	35	180426.0	1.3				ug/L	154152	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	63948.0	2.0				ug/L	1607	Standard
P	31	35653.6	1.9				ug/L	22752	Standard
S	34	4944.1	4.8				ug/L	5049	Standard
Sr	88	168.3	28.8				ug/L	87	Standard
C	12	176.7	33.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	644.2	6.3				mg/L	10	Standard
Ho-1	165	400.0	11.9				mg/L	7	Standard
Er	166	330.0	18.9				mg/L	3	Standard
I	127	86114.1	2.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		150.535	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.012	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.737
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.107
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
V 51 Lower	V	51	
Cr 52 Upper, S, EEE	Cr	52	

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Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Ni 60 Upper, S, EEE	Ni	60

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Method 6020 - Summary Report

Sample ID: L1606061602
Sample Date/Time: Thursday, June 16, 2016 19:50:50
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75748.9	1.4				ug/L	51024	Standard
	Be	9	48.3	39.2	**0.0176**	0.015	86.0	ug/L	7	Standard
	Al	27	19995852.4	2.5	**94.6007**	1.188	1.3	ug/L	625	Standard
	Sc	45	30053.1	1.9				ug/L	29647	Standard
	Ti	47	826.4	6.6	**2.7223**	0.220	8.1	ug/L	57	Standard
	V	51	3891.9	11.8	**0.4057**	0.069	17.0	ug/L	1142	Standard
	Cr	52	13157.7	1.1	**0.9469**	0.019	2.0	ug/L	6628	Standard
	Cr	53	8188.9	18.5	**8.8148**	1.816	20.6	ug/L	430	Standard
	Mn	55	3666201.0	1.1	**647.3586**	10.609	1.6	ug/L	603	Standard
	Co	59	2221.5	3.8	**0.3212**	0.018	5.6	ug/L	237	Standard
	Ni	60	1892.5	1.4	**0.9508**	0.014	1.5	ug/L	141	Standard
	Cu	65	951.0	2.0	**0.4643**	0.013	2.7	ug/L	109	Standard
	Zn	66	2843.9	2.3	**2.4576**	0.033	1.3	ug/L	159	Standard
>	**Ge**	72	452100.4	1.1				ug/L	474053	Standard
	As	75	2291.3	4.3	**2.1952**	0.104	4.7	ug/L	-34	Standard
	Se	82	731.9	2.7	**6.7722**	0.229	3.4	ug/L	14	Standard
	Se-1	77	824.7	4.7	**10.5195**	0.619	5.9	ug/L	55	Standard
>	**Ga**	71	260.0	5.8				mg/L	50	Standard
	Rb	85	20994.5	2.7				ug/L	20	Standard
	Y	89	374644.2	1.4				ug/L	376602	Standard
>	**Rh**	103	175.0	2.9				ug/L	17	Standard
	Mo	98	1524.1	2.8	**0.6737**	0.024	3.5	ug/L	8	Standard
	Ag	107	85.0	16.3	**0.0027**	0.002	93.3	ug/L	81	Standard
	Cd	111	31.4	24.1	**0.0138**	0.004	30.8	mg/L	3	Standard
	Cd	114	85.3	56.7	**0.0150**	0.011	72.0	ug/L	7	Standard
>	**In**	115	498521.0	0.9				ug/L	524722	Standard
	Sn	118	2845.3	2.5	**0.4666**	0.019	4.0	ug/L	715	Standard
	Sb	123	273.4	5.3	**0.0511**	0.003	6.4	ug/L	201	Standard
	Ba	135	433999.4	0.6	**251.9694**	2.189	0.9	ug/L	108	Standard
	Ce	140	9039.4	2.4				ug/L	30	Standard
>	**Tb**	159	767594.4	2.3				ug/L	792236	Standard
	Ho	165	158.3	4.8				ug/L	7	Standard
	Tl	203	240.0	18.3	**0.0311**	0.007	21.8	ug/L	9	Standard
	Tl	205	225.0	23.4	**0.0292**	0.009	30.5	ug/L	0	Standard
	Pb	206	742.7	3.3	**0.1155**	0.009	7.8	ug/L	216	Standard
	Pb	207	635.7	4.8	**0.1077**	0.010	9.0	ug/L	180	Standard
	Pb	208	2598.4	5.5	**0.1049**	0.012	11.7	ug/L	717	Standard
	U	238	474.7	5.4	**0.0741**	0.006	7.6	ug/L	4	Standard
>	**Bi**	209	431218.2	2.1				ug/L	460343	Standard

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Na	23	3.3	86.6	**-0.3991**	9.400	2355.4	mg/L	0	Standard
Mg	24	98133.5	1.2	**131.2521**	3.929	3.0	mg/L	20	Standard
K	39	131.7	7.9	**0.7615**	0.060	7.9	mg/L	22	Standard
Ca	43	168.3	4.5	**25.6161**	1.859	7.3	mg/L	47	Standard
Fe	54	29671.0	1.6	**23.6871**	0.442	1.9	mg/L	151	Standard
Fe	57	7898.7	1.9	**23.4845**	0.677	2.9	mg/L	195	Standard
> **Sc-1**	45	30053.1	1.9				mg/L	29647	Standard
Cl	35	175045.0	2.3				ug/L	154152	Standard
Kr	83	2.7	43.3				ug/L	3	Standard
Br	81	182091.9	3.5				ug/L	1607	Standard
P	31	33082.7	1.0				ug/L	22752	Standard
S	34	5377.6	4.5				ug/L	5049	Standard
Sr	88	866.7	3.5				ug/L	87	Standard
C	12	170.0	42.4				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	258.0	17.6				mg/L	10	Standard
Ho-1	165	158.3	4.8				mg/L	7	Standard
Er	166	180.0	25.5				mg/L	3	Standard
I	127	271715.3	7.5				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		148.457	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.369	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.007
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.673
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606061604
Sample Date/Time: Thursday, June 16, 2016 19:54:01
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73209.8	0.9				ug/L	51024	Standard
	Be	9	28.3	50.9	**0.0025**	0.012	495.3	ug/L	7	Standard
	Al	27	1228067.5	0.3	**6.0032**	0.043	0.7	ug/L	625	Standard
	Sc	45	32386.3	3.3				ug/L	29647	Standard
	Ti	47	334.0	17.6	**0.9832**	0.212	21.6	ug/L	57	Standard
	V	51	1789.1	4.9	**0.0914**	0.018	19.4	ug/L	1142	Standard
	Cr	52	14674.8	1.1	**1.1301**	0.065	5.7	ug/L	6628	Standard
	Cr	53	2643.6	3.1	**2.5012**	0.083	3.3	ug/L	430	Standard
	Mn	55	705467.3	1.0	**122.4541**	1.381	1.1	ug/L	603	Standard
	Co	59	3430.7	0.7	**0.5095**	0.015	2.8	ug/L	237	Standard
	Ni	60	3839.5	0.3	**1.9758**	0.045	2.3	ug/L	141	Standard
	Cu	65	1168.4	5.1	**0.5751**	0.034	5.9	ug/L	109	Standard
	Zn	66	2259.5	2.7	**1.8718**	0.099	5.3	ug/L	159	Standard
>	**Ge**	72	459550.4	2.1				ug/L	474053	Standard
	As	75	131.8	16.1	**0.1477**	0.018	12.1	ug/L	-34	Standard
	Se	82	59.0	11.8	**0.3811**	0.061	16.1	ug/L	14	Standard
	Se-1	77	99.0	11.6	**0.5837**	0.132	22.6	ug/L	55	Standard
>	**Ga**	71	130.0	11.5				mg/L	50	Standard
	Rb	85	9683.1	3.7				ug/L	20	Standard
	Y	89	395829.7	1.7				ug/L	376602	Standard
>	**Rh**	103	50.0	26.5				ug/L	17	Standard
	Mo	98	129.8	4.6	**0.0461**	0.003	6.2	ug/L	8	Standard
	Ag	107	119.7	9.2	**0.0065**	0.002	28.9	ug/L	81	Standard
	Cd	111	317.1	3.2	**0.1502**	0.006	3.9	mg/L	3	Standard
	Cd	114	681.4	6.2	**0.1296**	0.010	7.4	ug/L	7	Standard
>	**In**	115	558854.3	1.4				ug/L	524722	Standard
	Sn	118	820.0	7.6	**0.0535**	0.012	21.9	ug/L	715	Standard
	Sb	123	282.5	7.4	**0.0459**	0.004	9.0	ug/L	201	Standard
	Ba	135	35268.3	1.2	**18.2144**	0.408	2.2	ug/L	108	Standard
	Ce	140	2163.5	3.8				ug/L	30	Standard
>	**Tb**	159	825700.5	0.4				ug/L	792236	Standard
	Ho	165	51.7	14.8				ug/L	7	Standard
	Tl	203	156.7	22.7	**0.0174**	0.005	26.5	ug/L	9	Standard
	Tl	205	173.3	46.6	**0.0182**	0.012	67.6	ug/L	0	Standard
	Pb	206	424.7	5.7	**0.0331**	0.006	16.7	ug/L	216	Standard
	Pb	207	356.0	3.9	**0.0286**	0.004	13.3	ug/L	180	Standard
	Pb	208	1553.0	4.6	**0.0306**	0.005	14.8	ug/L	717	Standard
	U	238	81.0	68.7	**0.0051**	0.009	171.7	ug/L	4	Standard
>	**Bi**	209	473355.3	0.7				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.6238**	8.363	148.7	mg/L	0	Standard
Mg	24	2843.6	1.0	**3.4857**	0.082	2.3	mg/L	20	Standard
K	39	78.3	14.7	**0.3207**	0.096	29.9	mg/L	22	Standard
Ca	43	50.0	20.0	**-2.4661**	2.354	95.5	mg/L	47	Standard
Fe	54	2460.3	3.7	**1.7187**	0.119	6.9	mg/L	151	Standard
Fe	57	721.7	11.5	**1.4022**	0.269	19.2	mg/L	195	Standard
Sc-1	45	32386.3	3.3				mg/L	29647	Standard
Cl	35	167245.3	0.7				ug/L	154152	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	10406.9	6.9				ug/L	1607	Standard
P	31	27868.9	1.7				ug/L	22752	Standard
S	34	4945.8	3.9				ug/L	5049	Standard
Sr	88	151.7	1.9				ug/L	87	Standard
C	12	130.0	26.6				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	93.0	49.2				mg/L	10	Standard
Ho-1	165	51.7	14.8				mg/L	7	Standard
Er	166	76.7	32.8				mg/L	3	Standard
I	127	108192.1	4.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		143.481	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.941	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	106.505
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.827
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606064901
Sample Date/Time: Thursday, June 16, 2016 19:57:13
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73899.8	1.9				ug/L	51024	Standard
	Be	9	28.3	20.4	**0.0021**	0.004	205.1	ug/L	7	Standard
	Al	27	17068640.1	0.5	**82.8031**	1.944	2.3	ug/L	625	Standard
	Sc	45	31098.6	0.8				ug/L	29647	Standard
	Ti	47	2220.5	15.6	**7.6952**	1.219	15.8	ug/L	57	Standard
	V	51	3330.6	5.2	**0.3294**	0.025	7.6	ug/L	1142	Standard
	Cr	52	12294.7	1.4	**0.8476**	0.021	2.5	ug/L	6628	Standard
	Cr	53	3545.4	12.3	**3.6195**	0.491	13.6	ug/L	430	Standard
	Mn	55	65149.4	0.9	**11.5346**	0.133	1.2	ug/L	603	Standard
	Co	59	1855.8	3.0	**0.2656**	0.010	3.6	ug/L	237	Standard
	Ni	60	2852.6	1.9	**1.4936**	0.030	2.0	ug/L	141	Standard
	Cu	65	55047.8	0.2	**31.0509**	0.094	0.3	ug/L	109	Standard
	Zn	66	20763.6	1.9	**19.6724**	0.380	1.9	ug/L	159	Standard
>	**Ge**	72	446059.8	0.2				ug/L	474053	Standard
	As	75	230.9	30.1	**0.2467**	0.067	27.2	ug/L	-34	Standard
	Se	82	114.1	10.5	**0.9274**	0.115	12.4	ug/L	14	Standard
	Se-1	77	255.7	12.3	**2.7929**	0.427	15.3	ug/L	55	Standard
>	**Ga**	71	203.3	6.2				mg/L	50	Standard
	Rb	85	64731.4	2.1				ug/L	20	Standard
	Y	89	406326.7	3.3				ug/L	376602	Standard
>	**Rh**	103	48.3	21.5				ug/L	17	Standard
	Mo	98	623.5	1.9	**0.2468**	0.013	5.5	ug/L	8	Standard
	Ag	107	134.0	13.8	**0.0091**	0.002	26.2	ug/L	81	Standard
	Cd	111	49.6	6.5	**0.0211**	0.001	3.6	mg/L	3	Standard
	Cd	114	143.2	27.3	**0.0245**	0.007	27.9	ug/L	7	Standard
>	**In**	115	549535.8	3.5				ug/L	524722	Standard
	Sn	118	1373.4	4.5	**0.1543**	0.017	10.8	ug/L	715	Standard
	Sb	123	311.5	9.8	**0.0535**	0.009	17.0	ug/L	201	Standard
	Ba	135	22377.2	0.2	**11.7401**	0.432	3.7	ug/L	108	Standard
	Ce	140	280.0	11.2				ug/L	30	Standard
>	**Tb**	159	815853.8	2.8				ug/L	792236	Standard
	Ho	165	18.3	95.8				ug/L	7	Standard
	Tl	203	193.0	9.7	**0.0237**	0.002	10.2	ug/L	9	Standard
	Tl	205	165.0	24.1	**0.0186**	0.007	36.0	ug/L	0	Standard
	Pb	206	1296.1	2.0	**0.2354**	0.004	1.8	ug/L	216	Standard
	Pb	207	1110.4	3.4	**0.2207**	0.006	2.5	ug/L	180	Standard
	Pb	208	4630.9	2.3	**0.2243**	0.008	3.6	ug/L	717	Standard
	U	238	1289.4	2.5	**0.2082**	0.002	1.1	ug/L	4	Standard
>	**Bi**	209	442943.4	2.1				ug/L	460343	Standard

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Na	23	6.7	86.6	**-10.3108**	17.983	174.4	mg/L	0	Standard
Mg	24	29769.2	2.1	**38.4319**	0.806	2.1	mg/L	20	Standard
K	39	731.7	8.5	**5.0889**	0.443	8.7	mg/L	22	Standard
Ca	43	196.7	13.0	**30.5875**	5.364	17.5	mg/L	47	Standard
Fe	54	365.7	3.5	**0.1685**	0.008	4.7	mg/L	151	Standard
Fe	57	391.7	14.9	**0.5082**	0.163	32.1	mg/L	195	Standard
> **Sc-1**	45	31098.6	0.8				mg/L	29647	Standard
Cl	35	222953.8	0.9				ug/L	154152	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	17977.3	3.7				ug/L	1607	Standard
P	31	27297.9	1.8				ug/L	22752	Standard
S	34	5117.5	2.7				ug/L	5049	Standard
Sr	88	170.0	7.8				ug/L	87	Standard
C	12	300.0	21.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	86.6				mg/L	0	Standard
Dy	164	34.9	61.4				mg/L	10	Standard
Ho-1	165	18.3	95.8				mg/L	7	Standard
Er	166	36.7	41.7				mg/L	3	Standard
I	127	36641.0	3.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		144.833	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.095	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	104.729	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.220	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606065001
Sample Date/Time: Thursday, June 16, 2016 20:00:24
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72946.9	1.0				ug/L	51024	Standard
	Be	9	18.3	31.5	**-0.0058**	0.005	85.0	ug/L	7	Standard
	Al	27	25893242.1	1.3	**127.2227**	1.176	0.9	ug/L	625	Standard
	Sc	45	31297.3	0.7				ug/L	29647	Standard
	Ti	47	363.0	6.9	**1.0820**	0.092	8.5	ug/L	57	Standard
	V	51	26598.7	23.4	**3.6881**	0.888	24.1	ug/L	1142	Standard
	Cr	52	3600275.3	0.7	**503.8543**	2.642	0.5	ug/L	6628	Standard
	Cr	53	441968.5	0.3	**489.9131**	0.755	0.2	ug/L	430	Standard
	Mn	55	3750356.5	0.6	**651.5298**	1.262	0.2	ug/L	603	Standard
	Co	59	140636.7	1.1	**22.5301**	0.278	1.2	ug/L	237	Standard
	Ni	60	1491493.6	1.2	**797.5118**	6.177	0.8	ug/L	141	Standard
	Cu	65	3267.0	3.0	**1.7266**	0.047	2.7	ug/L	109	Standard
	Zn	66	3425.7	1.8	**2.9563**	0.067	2.3	ug/L	159	Standard
>	**Ge**	72	459475.2	0.5				ug/L	474053	Standard
	As	75	556.7	15.6	**0.5440**	0.082	15.1	ug/L	-34	Standard
	Se	82	222.9	6.2	**1.9114**	0.137	7.2	ug/L	14	Standard
	Se-1	77	721.0	7.2	**8.9403**	0.656	7.3	ug/L	55	Standard
>	**Ga**	71	291.7	10.5				mg/L	50	Standard
	Rb	85	7967.1	5.2				ug/L	20	Standard
	Y	89	376366.8	3.1				ug/L	376602	Standard
>	**Rh**	103	188.3	17.7				ug/L	17	Standard
	Mo	98	4038.0	0.7	**1.7616**	0.010	0.6	ug/L	8	Standard
	Ag	107	92.0	19.6	**0.0036**	0.003	90.6	ug/L	81	Standard
	Cd	111	324.1	6.9	**0.1694**	0.013	7.5	mg/L	3	Standard
	Cd	114	819.8	8.2	**0.1728**	0.014	8.3	ug/L	7	Standard
>	**In**	115	507645.2	1.3				ug/L	524722	Standard
	Sn	118	691.7	9.8	**0.0432**	0.012	27.3	ug/L	715	Standard
	Sb	123	362.3	12.4	**0.0710**	0.011	16.1	ug/L	201	Standard
	Ba	135	933624.2	0.5	**532.4126**	8.811	1.7	ug/L	108	Standard
	Ce	140	3360.4	5.9				ug/L	30	Standard
>	**Tb**	159	768822.1	0.7				ug/L	792236	Standard
	Ho	165	56.7	48.6				ug/L	7	Standard
	Tl	203	246.7	11.1	**0.0318**	0.003	11.0	ug/L	9	Standard
	Tl	205	253.3	31.2	**0.0337**	0.013	38.1	ug/L	0	Standard
	Pb	206	530.7	3.2	**0.0660**	0.004	5.7	ug/L	216	Standard
	Pb	207	474.0	4.9	**0.0662**	0.005	7.1	ug/L	180	Standard
	Pb	208	1991.7	8.7	**0.0664**	0.011	16.6	ug/L	717	Standard
	U	238	2713.6	2.5	**0.4575**	0.014	3.0	ug/L	4	Standard
>	**Bi**	209	432460.1	1.2				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.2420**	9.024	172.2	mg/L	0	Standard
Mg	24	90814.7	0.4	**116.5891**	0.672	0.6	mg/L	20	Standard
K	39	136.7	18.8	**0.7598**	0.192	25.3	mg/L	22	Standard
Ca	43	113.3	24.3	**11.8769**	5.966	50.2	mg/L	47	Standard
Fe	54	8598.8	2.1	**6.5077**	0.130	2.0	mg/L	151	Standard
Fe	57	2420.2	4.0	**6.4526**	0.333	5.2	mg/L	195	Standard
> **Sc-1**	45	31297.3	0.7				mg/L	29647	Standard
Cl	35	172318.1	2.4				ug/L	154152	Standard
Kr	83	2.7	43.3				ug/L	3	Standard
Br	81	54798.9	1.9				ug/L	1607	Standard
P	31	33010.9	0.2				ug/L	22752	Standard
S	34	5099.2	1.3				ug/L	5049	Standard
Sr	88	600.0	8.0				ug/L	87	Standard
C	12	176.7	34.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	96.6	30.8				mg/L	10	Standard
Ho-1	165	56.7	48.6				mg/L	7	Standard
Er	166	70.0	14.3				mg/L	3	Standard
I	127	400706.8	6.8				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		142.965	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.925	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.746
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.943
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Cr 52 Upper, S, EEE	Cr	52	

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Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Ni 60 Upper, S, EEE	Ni	60
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606065002
Sample Date/Time: Thursday, June 16, 2016 20:03:36
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74923.1	0.9				ug/L	51024	Standard
	Be	9	10.0	86.6	**-0.0129**	0.007	54.5	ug/L	7	Standard
	Al	27	11445723.9	1.0	**54.7538**	1.040	1.9	ug/L	625	Standard
	Sc	45	33881.2	2.3				ug/L	29647	Standard
	Ti	47	432.3	7.3	**1.3384**	0.080	6.0	ug/L	57	Standard
	V	51	2150.8	34.9	**0.1495**	0.116	77.8	ug/L	1142	Standard
	Cr	52	17737.4	0.6	**1.5921**	0.067	4.2	ug/L	6628	Standard
	Cr	53	10231.8	13.3	**11.0925**	1.758	15.8	ug/L	430	Standard
	Mn	55	1115003.1	1.6	**196.2265**	7.080	3.6	ug/L	603	Standard
	Co	59	2902.3	1.7	**0.4307**	0.009	2.2	ug/L	237	Standard
	Ni	60	3566.1	4.1	**1.8534**	0.037	2.0	ug/L	141	Standard
	Cu	65	1206.0	1.3	**0.6044**	0.011	1.8	ug/L	109	Standard
	Zn	66	2690.2	1.2	**2.3054**	0.087	3.8	ug/L	159	Standard
>	**Ge**	72	453598.8	2.2				ug/L	474053	Standard
	As	75	280.7	13.7	**0.2904**	0.040	13.9	ug/L	-34	Standard
	Se	82	128.1	7.4	**1.0434**	0.112	10.7	ug/L	14	Standard
	Se-1	77	619.3	6.2	**7.6936**	0.694	9.0	ug/L	55	Standard
>	**Ga**	71	105.0	17.2				mg/L	50	Standard
	Rb	85	9451.3	1.9				ug/L	20	Standard
	Y	89	391791.6	1.5				ug/L	376602	Standard
>	**Rh**	103	140.0	6.2				ug/L	17	Standard
	Mo	98	235.6	9.4	**0.0929**	0.011	11.9	ug/L	8	Standard
	Ag	107	90.7	15.8	**0.0026**	0.002	86.9	ug/L	81	Standard
	Cd	111	142.6	5.5	**0.0692**	0.005	7.6	mg/L	3	Standard
	Cd	114	324.8	13.1	**0.0629**	0.009	15.1	ug/L	7	Standard
>	**In**	115	532666.5	2.0				ug/L	524722	Standard
	Sn	118	630.0	6.3	**0.0258**	0.009	33.7	ug/L	715	Standard
	Sb	123	425.3	4.8	**0.0811**	0.005	5.7	ug/L	201	Standard
	Ba	135	317814.3	1.2	**172.6789**	1.361	0.8	ug/L	108	Standard
	Ce	140	4260.6	3.9				ug/L	30	Standard
>	**Tb**	159	822106.7	0.8				ug/L	792236	Standard
	Ho	165	98.3	10.6				ug/L	7	Standard
	Tl	203	236.3	5.5	**0.0291**	0.002	5.8	ug/L	9	Standard
	Tl	205	180.0	7.3	**0.0206**	0.002	9.9	ug/L	0	Standard
	Pb	206	404.0	5.2	**0.0334**	0.005	14.3	ug/L	216	Standard
	Pb	207	342.3	3.2	**0.0297**	0.003	8.7	ug/L	180	Standard
	Pb	208	1396.4	3.4	**0.0260**	0.003	10.6	ug/L	717	Standard
	U	238	1612.4	1.0	**0.2586**	0.003	1.2	ug/L	4	Standard
>	**Bi**	209	449004.5	0.2				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	75132.5	1.7	**89.1275**	2.931	3.3	mg/L	20	Standard
K	39	103.3	14.8	**0.4601**	0.085	18.5	mg/L	22	Standard
Ca	43	118.3	6.5	**11.0359**	2.111	19.1	mg/L	47	Standard
Fe	54	299.8	4.4	**0.0986**	0.014	14.4	mg/L	151	Standard
Fe	57	295.0	19.5	**0.1539**	0.166	108.1	mg/L	195	Standard
> **Sc-1**	45	33881.2	2.3				mg/L	29647	Standard
Cl	35	177255.5	0.3				ug/L	154152	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	27852.3	4.5				ug/L	1607	Standard
P	31	36888.2	1.8				ug/L	22752	Standard
S	34	5134.2	5.6				ug/L	5049	Standard
Sr	88	336.7	12.1				ug/L	87	Standard
C	12	236.7	6.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	125.5	16.3				mg/L	10	Standard
Ho-1	165	98.3	10.6				mg/L	7	Standard
Er	166	93.3	16.4				mg/L	3	Standard
I	127	795775.9	5.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		146.839	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.685	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.514	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.537	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606065002
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Method 6020 - Summary Report

Sample ID: L1606065003
Sample Date/Time: Thursday, June 16, 2016 20:06:47
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73049.1	2.8				ug/L	51024	Standard
	Be	9	56.7	53.2	**0.0258**	0.025	96.4	ug/L	7	Standard
	Al	27	6795723.2	1.7	**33.3429**	0.423	1.3	ug/L	625	Standard
	Sc	45	32349.5	2.7				ug/L	29647	Standard
	Ti	47	1362.4	1.5	**4.5490**	0.135	3.0	ug/L	57	Standard
	V	51	-1621.9	225.1	**-0.4056**	0.530	130.6	ug/L	1142	Standard
	Cr	52	1449129.7	0.3	**203.6270**	3.465	1.7	ug/L	6628	Standard
	Cr	53	186956.4	0.3	**208.3861**	2.811	1.3	ug/L	430	Standard
	Mn	55	969240.4	1.1	**169.4166**	2.152	1.3	ug/L	603	Standard
	Co	59	17799.4	0.3	**2.8346**	0.031	1.1	ug/L	237	Standard
	Ni	60	82918.9	0.7	**44.5655**	0.800	1.8	ug/L	141	Standard
	Cu	65	12426.8	2.2	**6.7981**	0.081	1.2	ug/L	109	Standard
	Zn	66	16815.7	1.7	**15.5225**	0.331	2.1	ug/L	159	Standard
>	**Ge**	72	456450.5	1.3				ug/L	474053	Standard
	As	75	1966.3	2.2	**1.8692**	0.017	0.9	ug/L	-34	Standard
	Se	82	293.5	2.7	**2.5875**	0.085	3.3	ug/L	14	Standard
	Se-1	77	432.0	3.1	**5.0994**	0.235	4.6	ug/L	55	Standard
>	**Ga**	71	736.7	9.9				mg/L	50	Standard
	Rb	85	15683.1	2.3				ug/L	20	Standard
	Y	89	407716.2	0.3				ug/L	376602	Standard
>	**Rh**	103	95.0	13.9				ug/L	17	Standard
	Mo	98	6403.0	2.3	**2.6056**	0.071	2.7	ug/L	8	Standard
	Ag	107	109.7	3.7	**0.0054**	0.001	15.4	ug/L	81	Standard
	Cd	111	1059.3	1.9	**0.5225**	0.015	2.8	mg/L	3	Standard
	Cd	114	2761.6	6.2	**0.5508**	0.040	7.3	ug/L	7	Standard
>	**In**	115	544816.8	1.1				ug/L	524722	Standard
	Sn	118	1191.7	7.7	**0.1237**	0.018	14.6	ug/L	715	Standard
	Sb	123	304.1	8.3	**0.0523**	0.006	10.7	ug/L	201	Standard
	Ba	135	110831.6	1.3	**58.8309**	0.136	0.2	ug/L	108	Standard
	Ce	140	24424.7	1.3				ug/L	30	Standard
>	**Tb**	159	809371.8	1.0				ug/L	792236	Standard
	Ho	165	351.7	3.0				ug/L	7	Standard
	Tl	203	219.0	7.6	**0.0268**	0.002	7.8	ug/L	9	Standard
	Tl	205	185.0	24.8	**0.0214**	0.007	34.0	ug/L	0	Standard
	Pb	206	2753.6	3.0	**0.5549**	0.011	2.0	ug/L	216	Standard
	Pb	207	2285.2	1.4	**0.5035**	0.014	2.7	ug/L	180	Standard
	Pb	208	9786.6	1.2	**0.5303**	0.014	2.6	ug/L	717	Standard
	U	238	353.7	1.7	**0.0508**	0.000	0.5	ug/L	4	Standard
>	**Bi**	209	449128.9	1.4				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	37974.2	2.9	**47.1394**	0.683	1.4	mg/L	20	Standard
K	39	91.7	3.1	**0.4128**	0.025	6.0	mg/L	22	Standard
Ca	43	75.0	26.7	**2.9551**	4.725	159.9	mg/L	47	Standard
Fe	54	5125.4	2.8	**3.7060**	0.149	4.0	mg/L	151	Standard
Fe	57	1555.1	4.8	**3.7648**	0.143	3.8	mg/L	195	Standard
> **Sc-1**	45	32349.5	2.7				mg/L	29647	Standard
Cl	35	176741.0	1.5				ug/L	154152	Standard
Kr	83	1.3	86.6				ug/L	3	Standard
Br	81	69459.0	3.9				ug/L	1607	Standard
P	31	30123.3	2.4				ug/L	22752	Standard
S	34	4967.5	1.4				ug/L	5049	Standard
Sr	88	190.0	9.5				ug/L	87	Standard
C	12	126.7	12.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	637.1	0.5				mg/L	10	Standard
Ho-1	165	351.7	3.0				mg/L	7	Standard
Er	166	340.0	15.3				mg/L	3	Standard
I	127	176369.6	3.2				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		143.166	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.287	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.830	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.564	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
V 51 Lower	V	51	
Cr 52 Upper, S, EEE	Cr	52	

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Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55

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Method 6020 - Summary Report

Sample ID: L1606065008
Sample Date/Time: Thursday, June 16, 2016 20:12:57
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72941.9	1.7				ug/L	51024	Standard
	Be	9	75.0	11.5	**0.0413**	0.007	17.1	ug/L	7	Standard
	Al	27	2553806.5	1.0	**12.5408**	0.102	0.8	ug/L	625	Standard
	Sc	45	32038.9	2.8				ug/L	29647	Standard
	Ti	47	722.7	5.7	**2.2554**	0.110	4.9	ug/L	57	Standard
	V	51	3819.2	3.9	**0.3720**	0.024	6.3	ug/L	1142	Standard
	Cr	52	10926.9	1.1	**0.5663**	0.038	6.8	ug/L	6628	Standard
	Cr	53	5912.8	6.8	**5.9618**	0.341	5.7	ug/L	430	Standard
	Mn	55	1386219.7	0.5	**234.7938**	4.744	2.0	ug/L	603	Standard
	Co	59	5557.7	1.4	**0.8285**	0.006	0.8	ug/L	237	Standard
	Ni	60	17011.5	0.7	**8.7950**	0.195	2.2	ug/L	141	Standard
	Cu	65	1618.4	1.4	**0.8000**	0.013	1.6	ug/L	109	Standard
	Zn	66	33299.6	0.0	**29.9907**	0.453	1.5	ug/L	159	Standard
>	**Ge**	72	471205.0	1.5				ug/L	474053	Standard
	As	75	966.9	5.2	**0.9032**	0.033	3.6	ug/L	-34	Standard
	Se	82	311.0	2.5	**2.6600**	0.029	1.1	ug/L	14	Standard
	Se-1	77	329.3	6.4	**3.5702**	0.277	7.8	ug/L	55	Standard
>	**Ga**	71	258.3	15.5				mg/L	50	Standard
	Rb	85	8330.6	3.2				ug/L	20	Standard
	Y	89	401951.6	2.1				ug/L	376602	Standard
>	**Rh**	103	36.7	43.8				ug/L	17	Standard
	Mo	98	105.4	14.0	**0.0382**	0.006	14.8	ug/L	8	Standard
	Ag	107	90.7	18.0	**0.0026**	0.003	103.7	ug/L	81	Standard
	Cd	111	115.2	13.8	**0.0550**	0.008	14.6	mg/L	3	Standard
	Cd	114	259.1	8.3	**0.0492**	0.005	9.4	ug/L	7	Standard
>	**In**	115	535100.4	1.1				ug/L	524722	Standard
	Sn	118	718.4	7.1	**0.0413**	0.008	20.4	ug/L	715	Standard
	Sb	123	448.1	4.2	**0.0858**	0.005	5.4	ug/L	201	Standard
	Ba	135	68982.0	0.6	**37.2626**	0.244	0.7	ug/L	108	Standard
	Ce	140	25868.7	1.1				ug/L	30	Standard
>	**Tb**	159	806521.0	1.2				ug/L	792236	Standard
	Ho	165	500.0	12.5				ug/L	7	Standard
	Tl	203	215.0	12.2	**0.0260**	0.004	15.1	ug/L	9	Standard
	Tl	205	150.0	6.7	**0.0156**	0.002	10.9	ug/L	0	Standard
	Pb	206	509.0	3.9	**0.0556**	0.003	5.6	ug/L	216	Standard
	Pb	207	432.0	1.7	**0.0505**	0.001	2.1	ug/L	180	Standard
	Pb	208	1819.0	0.9	**0.0504**	0.002	3.5	ug/L	717	Standard
	U	238	230.0	2.3	**0.0300**	0.001	2.2	ug/L	4	Standard
>	**Bi**	209	453449.6	1.5				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	38452.1	0.8	**48.2252**	1.630	3.4	mg/L	20	Standard
K	39	58.3	38.7	**0.1852**	0.162	87.6	mg/L	22	Standard
Ca	43	35.0	51.5	**-5.6048**	3.899	69.6	mg/L	47	Standard
Fe	54	249.0	20.9	**0.0731**	0.044	60.8	mg/L	151	Standard
Fe	57	205.0	6.5	**-0.0599**	0.029	47.9	mg/L	195	Standard
> **Sc-1**	45	32038.9	2.8				mg/L	29647	Standard
Cl	35	205402.9	2.6				ug/L	154152	Standard
Kr	83	2.3	24.7				ug/L	3	Standard
Br	81	66452.1	2.3				ug/L	1607	Standard
P	31	28505.1	1.9				ug/L	22752	Standard
S	34	4827.4	1.0				ug/L	5049	Standard
Sr	88	103.3	7.4				ug/L	87	Standard
C	12	290.0	39.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	843.5	10.6				mg/L	10	Standard
Ho-1	165	500.0	12.5				mg/L	7	Standard
Er	166	483.3	20.9				mg/L	3	Standard
I	127	65771.0	5.3				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		142.956	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.399	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.978	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.503	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606072901
Sample Date/Time: Thursday, June 16, 2016 20:16:08
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71451.4	0.2				ug/L	51024	Standard
	Be	9	156.7	13.3	**0.1120**	0.018	15.8	ug/L	7	Standard
	Al	27	1783026.0	1.0	**8.9350**	0.113	1.3	ug/L	625	Standard
	Sc	45	33488.6	0.2				ug/L	29647	Standard
	Ti	47	3847.8	0.7	**12.4804**	0.276	2.2	ug/L	57	Standard
	V	51	20969.4	1.8	**2.7398**	0.019	0.7	ug/L	1142	Standard
	Cr	52	17305.9	0.3	**1.3919**	0.032	2.3	ug/L	6628	Standard
	Cr	53	2988.6	7.9	**2.7405**	0.281	10.3	ug/L	430	Standard
	Mn	55	363989.8	1.4	**60.3519**	1.596	2.6	ug/L	603	Standard
	Co	59	13842.7	0.2	**2.0829**	0.032	1.5	ug/L	237	Standard
	Ni	60	5649.1	2.1	**2.8101**	0.018	0.6	ug/L	141	Standard
	Cu	65	2744.6	2.9	**1.3736**	0.022	1.6	ug/L	109	Standard
	Zn	66	21962.9	1.2	**19.3089**	0.151	0.8	ug/L	159	Standard
>	**Ge**	72	480623.4	1.5				ug/L	474053	Standard
	As	75	604.0	4.6	**0.5630**	0.022	3.9	ug/L	-34	Standard
	Se	82	62.7	5.3	**0.3902**	0.037	9.5	ug/L	14	Standard
	Se-1	77	114.3	16.4	**0.7262**	0.260	35.8	ug/L	55	Standard
>	**Ga**	71	1213.4	6.6				mg/L	50	Standard
	Rb	85	49025.9	0.6				ug/L	20	Standard
	Y	89	427519.3	0.4				ug/L	376602	Standard
>	**Rh**	103	33.3	37.7				ug/L	17	Standard
	Mo	98	183.9	8.3	**0.0677**	0.006	8.8	ug/L	8	Standard
	Ag	107	84.7	15.9	**0.0010**	0.002	216.4	ug/L	81	Standard
	Cd	111	55.6	11.8	**0.0237**	0.003	13.7	mg/L	3	Standard
	Cd	114	123.4	16.9	**0.0204**	0.004	20.0	ug/L	7	Standard
>	**In**	115	557933.4	0.7				ug/L	524722	Standard
	Sn	118	618.3	8.9	**0.0185**	0.009	49.1	ug/L	715	Standard
	Sb	123	180.1	11.3	**0.0240**	0.004	17.3	ug/L	201	Standard
	Ba	135	83499.8	1.0	**43.2656**	0.170	0.4	ug/L	108	Standard
	Ce	140	144607.0	2.1				ug/L	30	Standard
>	**Tb**	159	830815.8	1.2				ug/L	792236	Standard
	Ho	165	2081.8	4.4				ug/L	7	Standard
	Tl	203	322.3	0.4	**0.0385**	0.000	1.0	ug/L	9	Standard
	Tl	205	275.0	3.6	**0.0334**	0.001	4.5	ug/L	0	Standard
	Pb	206	5048.5	0.5	**1.0085**	0.002	0.2	ug/L	216	Standard
	Pb	207	4178.9	1.8	**0.9144**	0.020	2.2	ug/L	180	Standard
	Pb	208	17525.7	1.4	**0.9427**	0.011	1.1	ug/L	717	Standard
	U	238	621.3	3.2	**0.0898**	0.003	3.0	ug/L	4	Standard
>	**Bi**	209	472687.9	0.6				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.6311**	8.350	148.3	mg/L	0	Standard
Mg	24	3158.7	1.3	**3.7460**	0.051	1.3	mg/L	20	Standard
K	39	215.0	8.1	**1.2230**	0.115	9.4	mg/L	22	Standard
Ca	43	38.3	27.2	**-5.2593**	2.154	41.0	mg/L	47	Standard
Fe	54	3415.5	7.7	**2.3435**	0.190	8.1	mg/L	151	Standard
Fe	57	1036.7	4.4	**2.1944**	0.121	5.5	mg/L	195	Standard
> **Sc-1**	45	33488.6	0.2				mg/L	29647	Standard
Cl	35	164707.7	0.4				ug/L	154152	Standard
Kr	83	3.0	33.3				ug/L	3	Standard
Br	81	11457.7	7.7				ug/L	1607	Standard
P	31	28214.6	1.7				ug/L	22752	Standard
S	34	4967.5	1.9				ug/L	5049	Standard
Sr	88	113.3	6.7				ug/L	87	Standard
C	12	80.0	12.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	0	Standard
Dy	164	3722.9	5.4				mg/L	10	Standard
Ho-1	165	2081.8	4.4				mg/L	7	Standard
Er	166	1966.8	4.6				mg/L	3	Standard
I	127	28066.0	3.2				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		140.035	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.386	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.329
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.682
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 20:19:21
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	70359.7	1.3				ug/L	51024	Standard
	Be	9	53312.1	5.5	**45.9476**	1.930	4.2	ug/L	7	Standard
	Al	27	8077611.0	1.8	**41.1433**	0.785	1.9	ug/L	625	Standard
	Sc	45	32289.4	1.8				ug/L	29647	Standard
	Ti	47	30321.3	1.6	**100.0769**	1.272	1.3	ug/L	57	Standard
	V	51	360120.0	0.4	**50.0825**	0.106	0.2	ug/L	1142	Standard
	Cr	52	369947.6	1.5	**48.9622**	0.470	1.0	ug/L	6628	Standard
	Cr	53	47002.8	0.4	**49.7282**	0.165	0.3	ug/L	430	Standard
	Mn	55	317711.3	0.7	**52.9755**	0.531	1.0	ug/L	603	Standard
	Co	59	339862.8	0.3	**52.4255**	0.355	0.7	ug/L	237	Standard
	Ni	60	93112.6	1.0	**47.8173**	0.235	0.5	ug/L	141	Standard
	Cu	65	91542.1	0.9	**48.2534**	0.241	0.5	ug/L	109	Standard
	Zn	66	53846.5	0.5	**47.9689**	0.154	0.3	ug/L	159	Standard
>	Ge	72	477686.4	0.6				ug/L	474053	Standard
	As	75	53954.1	0.4	**48.3818**	0.469	1.0	ug/L	-34	Standard
	Se	82	5528.9	1.3	**49.4502**	0.921	1.9	ug/L	14	Standard
	Se-1	77	3768.1	3.4	**47.9498**	1.532	3.2	ug/L	55	Standard
>	Ga	71	96.7	3.0				mg/L	50	Standard
	Rb	85	860.0	3.6				ug/L	20	Standard
	Y	89	407805.9	2.6				ug/L	376602	Standard
>	Rh	103	38.3	19.9				ug/L	17	Standard
	Mo	98	251849.5	0.7	**99.5336**	0.343	0.3	ug/L	8	Standard
	Ag	107	302942.0	0.9	**47.3977**	0.787	1.7	ug/L	81	Standard
	Cd	111	100743.2	0.5	**48.4530**	0.464	1.0	mg/L	3	Standard
	Cd	114	243706.8	2.6	**47.4138**	1.351	2.8	ug/L	7	Standard
>	In	115	562084.3	0.9				ug/L	524722	Standard
	Sn	118	283917.6	1.7	**49.1130**	0.500	1.0	ug/L	715	Standard
	Sb	123	223152.0	0.8	**47.6804**	0.566	1.2	ug/L	201	Standard
	Ba	135	90693.3	1.2	**46.6526**	0.606	1.3	ug/L	108	Standard
	Ce	140	95.0	24.1				ug/L	30	Standard
>	Tb	159	823567.8	1.3				ug/L	792236	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	373875.5	0.8	**47.8522**	0.141	0.3	ug/L	9	Standard
	Tl	205	338247.8	1.5	**50.9083**	0.885	1.7	ug/L	0	Standard
	Pb	206	233315.4	0.7	**49.3532**	0.331	0.7	ug/L	216	Standard
	Pb	207	211841.0	0.3	**49.2260**	0.469	1.0	ug/L	180	Standard
	Pb	208	876269.3	0.6	**50.1725**	0.549	1.1	ug/L	717	Standard
	U	238	329535.1	0.3	**51.8676**	0.341	0.7	ug/L	4	Standard
>	Bi	209	470816.3	0.6				ug/L	460343	Standard

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Na	23	3.3	86.6	**0.5093**	8.613	1691.0	mg/L	0	Standard
Mg	24	4180.6	4.5	**5.1574**	0.149	2.9	mg/L	20	Standard
K	39	543.3	5.4	**3.5784**	0.272	7.6	mg/L	22	Standard
Ca	43	63.3	12.1	**0.3907**	1.523	389.8	mg/L	47	Standard
Fe	54	5922.9	1.4	**4.3077**	0.105	2.4	mg/L	151	Standard
Fe	57	1828.4	2.7	**4.5503**	0.051	1.1	mg/L	195	Standard
> **Sc-1**	45	32289.4	1.8				mg/L	29647	Standard
Cl	35	173385.8	0.9				ug/L	154152	Standard
Kr	83	1.3	114.6				ug/L	3	Standard
Br	81	2136.8	4.6				ug/L	1607	Standard
P	31	26322.9	2.1				ug/L	22752	Standard
S	34	5514.3	2.6				ug/L	5049	Standard
Sr	88	65.0	27.7				ug/L	87	Standard
C	12	70.0	24.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	23.3	89.2				mg/L	10	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	0.0					mg/L	3	Standard
I	127	3703.8	16.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	91.895		
Al	27	82.287		
Sc	45			
Ti	47	100.077		
V	51	100.165		
Cr	52	97.924		
Cr	53			
Mn	55	105.951		
Co	59	104.851		
Ni	60	95.635		
Cu	65	96.507		
Zn	66	95.938		
> Ge	72		100.766	
As	75	96.764		
Se	82	98.900		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	99.534		
Ag	107	94.795		
Cd	111	96.906		
Cd	114			
In	115		107.120	
Sn	118	98.226		
Sb	123	95.361		
Ba	135	93.305		
Ce	140			
Tb	159			
Ho	165			
Tl	203	95.704		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.345		
U	238	103.735		
Bi	209		102.275	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 20:22:32
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67637.3	2.1				ug/L	51024	Standard
	Be	9	18.3	83.3	**-0.0045**	0.014	309.1	ug/L	7	Standard
	Al	27	1391.7	16.0	**-0.0024**	0.001	50.0	ug/L	625	Standard
	Sc	45	30764.5	1.2				ug/L	29647	Standard
	Ti	47	37.3	15.2	**-0.0462**	0.017	37.4	ug/L	57	Standard
	V	51	1089.5	9.5	**-0.0208**	0.013	60.2	ug/L	1142	Standard
	Cr	52	6209.3	0.8	**-0.1150**	0.004	3.7	ug/L	6628	Standard
	Cr	53	621.7	6.5	**0.2124**	0.037	17.6	ug/L	430	Standard
	Mn	55	764.0	5.2	**-0.0024**	0.006	259.9	ug/L	603	Standard
	Co	59	234.0	4.1	**-0.0062**	0.002	27.4	ug/L	237	Standard
	Ni	60	152.7	14.0	**-0.0015**	0.011	728.7	ug/L	141	Standard
	Cu	65	133.0	12.1	**0.0021**	0.009	425.3	ug/L	109	Standard
	Zn	66	146.0	6.6	**-0.1051**	0.009	8.1	ug/L	159	Standard
>	**Ge**	72	492018.2	1.0				ug/L	474053	Standard
	As	75	-9.0	401.0	**0.0170**	0.032	186.2	ug/L	-34	Standard
	Se	82	25.4	15.9	**0.0523**	0.034	65.9	ug/L	14	Standard
	Se-1	77	66.3	19.1	**0.0882**	0.166	188.3	ug/L	55	Standard
>	**Ga**	71	71.7	20.1				mg/L	50	Standard
	Rb	85	26.7	43.3				ug/L	20	Standard
	Y	89	407999.6	2.7				ug/L	376602	Standard
>	**Rh**	103	20.0	50.0				ug/L	17	Standard
	Mo	98	257.9	34.0	**0.0988**	0.034	34.5	ug/L	8	Standard
	Ag	107	107.0	12.6	**0.0049**	0.002	46.8	ug/L	81	Standard
	Cd	111	7.2	23.1	**0.0003**	0.001	264.5	mg/L	3	Standard
	Cd	114	32.4	23.6	**0.0026**	0.001	54.7	ug/L	7	Standard
>	**In**	115	547642.1	1.6				ug/L	524722	Standard
	Sn	118	781.7	18.0	**0.0498**	0.026	53.2	ug/L	715	Standard
	Sb	123	445.8	26.8	**0.0832**	0.027	32.7	ug/L	201	Standard
	Ba	135	126.0	4.8	**0.0089**	0.003	29.7	ug/L	108	Standard
	Ce	140	16.7	34.6				ug/L	30	Standard
>	**Tb**	159	805057.6	1.1				ug/L	792236	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	50.7	17.0	**0.0040**	0.001	27.9	ug/L	9	Standard
	Tl	205	33.3	22.9	**-0.0027**	0.001	41.6	ug/L	0	Standard
	Pb	206	245.3	6.9	**-0.0038**	0.003	90.3	ug/L	216	Standard
	Pb	207	206.3	2.8	**-0.0052**	0.002	29.4	ug/L	180	Standard
	Pb	208	876.0	4.6	**-0.0071**	0.002	32.4	ug/L	717	Standard
	U	238	36.7	27.6	**-0.0017**	0.002	94.5	ug/L	4	Standard
>	**Bi**	209	464955.7	0.5				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.1330**	9.213	179.5	mg/L	0	Standard
Mg	24	40.0	21.7	**0.0070**	0.011	155.9	mg/L	20	Standard
K	39	16.7	69.3	**-0.1055**	0.085	80.5	mg/L	22	Standard
Ca	43	30.0	66.7	**-6.3982**	4.581	71.6	mg/L	47	Standard
Fe	54	159.4	19.4	**0.0098**	0.023	233.9	mg/L	151	Standard
Fe	57	178.3	15.9	**-0.1151**	0.084	72.7	mg/L	195	Standard
Sc-1	45	30764.5	1.2				mg/L	29647	Standard
Cl	35	172678.1	2.2				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	1756.8	6.0				ug/L	1607	Standard
P	31	26713.5	1.7				ug/L	22752	Standard
S	34	5486.0	1.1				ug/L	5049	Standard
Sr	88	68.3	25.7				ug/L	87	Standard
C	12	46.7	12.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	13.0	43.3				mg/L	10	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	2433.5	7.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.790	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.368
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.002
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606072902
Sample Date/Time: Thursday, June 16, 2016 20:26:38
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67597.1	1.4				ug/L	51024	Standard
	Be	9	58.3	13.1	**0.0313**	0.007	23.7	ug/L	7	Standard
	Al	27	1447794.1	2.6	**7.6674**	0.177	2.3	ug/L	625	Standard
	Sc	45	31928.7	4.9				ug/L	29647	Standard
	Ti	47	305.7	12.8	**0.8104**	0.145	17.9	ug/L	57	Standard
	V	51	1674.4	15.6	**0.0568**	0.033	58.1	ug/L	1142	Standard
	Cr	52	9700.4	2.0	**0.3335**	0.001	0.4	ug/L	6628	Standard
	Cr	53	1893.5	6.0	**1.5168**	0.108	7.1	ug/L	430	Standard
	Mn	55	246384.5	0.3	**39.5930**	0.878	2.2	ug/L	603	Standard
	Co	59	7588.2	2.4	**1.0889**	0.047	4.3	ug/L	237	Standard
	Ni	60	3526.1	1.5	**1.6717**	0.049	2.9	ug/L	141	Standard
	Cu	65	954.7	5.5	**0.4196**	0.020	4.8	ug/L	109	Standard
	Zn	66	5586.0	1.4	**4.5915**	0.148	3.2	ug/L	159	Standard
>	**Ge**	72	495383.3	1.9				ug/L	474053	Standard
	As	75	235.4	13.4	**0.2282**	0.025	10.7	ug/L	-34	Standard
	Se	82	130.5	4.3	**0.9599**	0.027	2.8	ug/L	14	Standard
	Se-1	77	93.7	12.4	**0.4210**	0.125	29.6	ug/L	55	Standard
>	**Ga**	71	108.3	13.3				mg/L	50	Standard
	Rb	85	27304.6	1.0				ug/L	20	Standard
	Y	89	392736.9	2.5				ug/L	376602	Standard
>	**Rh**	103	11.7	49.5				ug/L	17	Standard
	Mo	98	87.5	12.2	**0.0306**	0.004	14.1	ug/L	8	Standard
	Ag	107	101.0	6.0	**0.0042**	0.001	22.2	ug/L	81	Standard
	Cd	111	59.5	14.3	**0.0266**	0.004	15.1	mg/L	3	Standard
	Cd	114	114.2	30.2	**0.0194**	0.007	35.4	ug/L	7	Standard
>	**In**	115	538147.1	0.9				ug/L	524722	Standard
	Sn	118	776.7	8.0	**0.0512**	0.012	24.3	ug/L	715	Standard
	Sb	123	200.6	27.1	**0.0300**	0.012	40.3	ug/L	201	Standard
	Ba	135	61289.0	0.7	**32.9142**	0.504	1.5	ug/L	108	Standard
	Ce	140	11052.4	2.4				ug/L	30	Standard
>	**Tb**	159	799876.8	2.9				ug/L	792236	Standard
	Ho	165	190.0	13.9				ug/L	7	Standard
	Tl	203	282.0	7.3	**0.0338**	0.003	8.0	ug/L	9	Standard
	Tl	205	280.0	6.2	**0.0347**	0.004	10.5	ug/L	0	Standard
	Pb	206	401.7	3.5	**0.0294**	0.002	8.2	ug/L	216	Standard
	Pb	207	341.0	0.8	**0.0262**	0.002	6.1	ug/L	180	Standard
	Pb	208	1409.0	1.3	**0.0235**	0.001	4.4	ug/L	717	Standard
	U	238	76.0	25.2	**0.0044**	0.003	61.0	ug/L	4	Standard
>	**Bi**	209	466934.5	2.6				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3003.6	5.4	**3.7365**	0.119	3.2	mg/L	20	Standard
K	39	200.0	11.5	**1.1940**	0.224	18.7	mg/L	22	Standard
Ca	43	26.7	78.1	**-7.2758**	4.881	67.1	mg/L	47	Standard
Fe	54	197.9	11.4	**0.0352**	0.024	69.0	mg/L	151	Standard
Fe	57	201.7	10.0	**-0.0646**	0.087	134.0	mg/L	195	Standard
> **Sc-1**	45	31928.7	4.9				mg/L	29647	Standard
Cl	35	168064.3	0.8				ug/L	154152	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	30467.4	7.1				ug/L	1607	Standard
P	31	27221.1	1.9				ug/L	22752	Standard
S	34	4829.1	7.9				ug/L	5049	Standard
Sr	88	71.7	28.2				ug/L	87	Standard
C	12	70.0	24.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	346.6	23.4				mg/L	10	Standard
Ho-1	165	190.0	13.9				mg/L	7	Standard
Er	166	140.0	21.4				mg/L	3	Standard
I	127	19342.3	3.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.481	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.500	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.559
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.432
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606073001
Sample Date/Time: Thursday, June 16, 2016 20:29:50
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77603.4	4.1				ug/L	51024	Standard
	Be	9	23.3	32.7	**-0.0030**	0.005	179.3	ug/L	7	Standard
	Al	27	6597541.3	1.1	**30.4895**	0.983	3.2	ug/L	625	Standard
	Sc	45	30666.0	3.0				ug/L	29647	Standard
	Ti	47	203.3	18.0	**0.5694**	0.126	22.1	ug/L	57	Standard
	V	51	19344.1	1.4	**2.7880**	0.060	2.2	ug/L	1142	Standard
	Cr	52	223704.1	0.9	**32.1116**	0.253	0.8	ug/L	6628	Standard
	Cr	53	32680.2	2.6	**37.7577**	0.692	1.8	ug/L	430	Standard
	Mn	55	14764.2	0.6	**2.5761**	0.037	1.5	ug/L	603	Standard
	Co	59	8421.3	1.4	**1.3825**	0.016	1.2	ug/L	237	Standard
	Ni	60	8389.0	3.1	**4.6470**	0.087	1.9	ug/L	141	Standard
	Cu	65	2908.6	1.9	**1.6151**	0.017	1.1	ug/L	109	Standard
	Zn	66	3204.0	4.7	**2.9081**	0.114	3.9	ug/L	159	Standard
>	**Ge**	72	436204.2	1.2				ug/L	474053	Standard
	As	75	2688.1	1.6	**2.6639**	0.074	2.8	ug/L	-34	Standard
	Se	82	851.2	1.0	**8.1974**	0.187	2.3	ug/L	14	Standard
	Se-1	77	1137.0	6.7	**15.3552**	1.225	8.0	ug/L	55	Standard
>	**Ga**	71	1600.1	10.1				mg/L	50	Standard
	Rb	85	221561.7	1.4				ug/L	20	Standard
	Y	89	371828.3	2.0				ug/L	376602	Standard
>	**Rh**	103	3242.0	4.8				ug/L	17	Standard
	Mo	98	4562.5	2.6	**2.0314**	0.078	3.9	ug/L	8	Standard
	Ag	107	113.7	11.8	**0.0078**	0.003	32.8	ug/L	81	Standard
	Cd	111	55.8	15.1	**0.0271**	0.005	18.3	mg/L	3	Standard
	Cd	114	143.3	18.4	**0.0277**	0.006	20.9	ug/L	7	Standard
>	**In**	115	497749.4	1.4				ug/L	524722	Standard
	Sn	118	1183.4	2.0	**0.1421**	0.001	1.0	ug/L	715	Standard
	Sb	123	552.4	7.7	**0.1185**	0.008	7.1	ug/L	201	Standard
	Ba	135	1629969.1	1.1	**947.9397**	3.697	0.4	ug/L	108	Standard
	Ce	140	661.7	1.6				ug/L	30	Standard
>	**Tb**	159	768724.3	1.9				ug/L	792236	Standard
	Ho	165	30.0	0.0				ug/L	7	Standard
	Tl	203	273.3	11.0	**0.0373**	0.004	11.6	ug/L	9	Standard
	Tl	205	236.7	11.6	**0.0327**	0.005	13.9	ug/L	0	Standard
	Pb	206	593.0	4.8	**0.0867**	0.006	6.8	ug/L	216	Standard
	Pb	207	503.3	3.4	**0.0795**	0.004	4.6	ug/L	180	Standard
	Pb	208	2099.4	1.6	**0.0791**	0.001	1.5	ug/L	717	Standard
	U	238	272.3	8.1	**0.0412**	0.004	8.8	ug/L	4	Standard
>	**Bi**	209	413369.8	0.7				ug/L	460343	Standard

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Na	23	10.0	86.6	**-20.6958**	26.075	126.0	mg/L	0	Standard
Mg	24	97695.6	0.1	**128.0820**	3.805	3.0	mg/L	20	Standard
K	39	1235.1	6.0	**8.8773**	0.558	6.3	mg/L	22	Standard
Ca	43	1178.4	7.9	**253.1572**	23.304	9.2	mg/L	47	Standard
Fe	54	176.5	19.0	**0.0234**	0.022	95.0	mg/L	151	Standard
Fe	57	1151.7	8.5	**2.8063**	0.366	13.0	mg/L	195	Standard
> **Sc-1**	45	30666.0	3.0				mg/L	29647	Standard
Cl	35	183619.3	0.2				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	216976.2	1.6				ug/L	1607	Standard
P	31	27466.6	2.5				ug/L	22752	Standard
S	34	5401.0	3.5				ug/L	5049	Standard
Sr	88	13359.2	2.8				ug/L	87	Standard
C	12	236.7	14.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	16.2	35.8				mg/L	10	Standard
Ho-1	165	30.0	0.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	172255.5	10.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		152.092	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.016	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.860
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	89.796
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606073002
Sample Date/Time: Thursday, June 16, 2016 20:40:20
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72672.3	2.9				ug/L	51024	Standard
	Be	9	10.0	50.0	**-0.0128**	0.004	30.9	ug/L	7	Standard
	Al	27	6776653.7	2.4	**33.4181**	0.221	0.7	ug/L	625	Standard
	Sc	45	30878.1	3.6				ug/L	29647	Standard
	Ti	47	191.7	10.9	**0.5384**	0.079	14.6	ug/L	57	Standard
	V	51	18320.5	2.2	**2.6731**	0.088	3.3	ug/L	1142	Standard
	Cr	52	218082.0	0.6	**31.7558**	0.128	0.4	ug/L	6628	Standard
	Cr	53	32453.1	2.0	**38.0586**	0.990	2.6	ug/L	430	Standard
	Mn	55	14793.6	1.2	**2.6216**	0.060	2.3	ug/L	603	Standard
	Co	59	8007.4	2.3	**1.3327**	0.045	3.4	ug/L	237	Standard
	Ni	60	8064.8	0.9	**4.5323**	0.032	0.7	ug/L	141	Standard
	Cu	65	2976.0	2.0	**1.6794**	0.017	1.0	ug/L	109	Standard
	Zn	66	2008.5	3.5	**1.7659**	0.064	3.6	ug/L	159	Standard
>	**Ge**	72	429862.6	1.0				ug/L	474053	Standard
	As	75	2572.0	0.4	**2.5869**	0.037	1.4	ug/L	-34	Standard
	Se	82	825.8	3.3	**8.0685**	0.355	4.4	ug/L	14	Standard
	Se-1	77	1141.7	4.7	**15.6522**	0.781	5.0	ug/L	55	Standard
>	**Ga**	71	1611.8	8.9				mg/L	50	Standard
	Rb	85	218102.3	2.0				ug/L	20	Standard
	Y	89	377604.2	0.7				ug/L	376602	Standard
>	**Rh**	103	3075.3	2.3				ug/L	17	Standard
	Mo	98	4376.1	1.3	**1.9206**	0.018	0.9	ug/L	8	Standard
	Ag	107	101.3	11.9	**0.0053**	0.002	42.4	ug/L	81	Standard
	Cd	111	44.3	10.0	**0.0205**	0.002	10.6	mg/L	3	Standard
	Cd	114	101.2	2.7	**0.0181**	0.001	4.2	ug/L	7	Standard
>	**In**	115	504775.6	2.2				ug/L	524722	Standard
	Sn	118	1261.7	9.4	**0.1538**	0.018	12.0	ug/L	715	Standard
	Sb	123	527.5	2.2	**0.1107**	0.000	0.3	ug/L	201	Standard
	Ba	135	1636843.5	1.3	**938.7853**	9.854	1.0	ug/L	108	Standard
	Ce	140	583.3	14.6				ug/L	30	Standard
>	**Tb**	159	772745.6	1.2				ug/L	792236	Standard
	Ho	165	13.3	57.3				ug/L	7	Standard
	Tl	203	237.3	15.4	**0.0328**	0.005	15.8	ug/L	9	Standard
	Tl	205	210.0	10.4	**0.0290**	0.003	11.9	ug/L	0	Standard
	Pb	206	512.7	7.1	**0.0701**	0.008	10.9	ug/L	216	Standard
	Pb	207	440.7	8.2	**0.0656**	0.009	13.2	ug/L	180	Standard
	Pb	208	1827.0	4.1	**0.0642**	0.006	9.9	ug/L	717	Standard
	U	238	243.3	3.8	**0.0371**	0.002	4.2	ug/L	4	Standard
>	**Bi**	209	404002.1	1.1				ug/L	460343	Standard

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Na	23	10.0	86.6	**-20.5285**	26.005	126.7	mg/L	0	Standard
Mg	24	96717.8	1.8	**126.0145**	6.791	5.4	mg/L	20	Standard
K	39	1353.4	2.3	**9.6820**	0.217	2.2	mg/L	22	Standard
Ca	43	1160.0	11.2	**246.7324**	22.672	9.2	mg/L	47	Standard
Fe	54	173.0	8.5	**0.0201**	0.009	45.9	mg/L	151	Standard
Fe	57	1218.4	5.2	**2.9735**	0.072	2.4	mg/L	195	Standard
> **Sc-1**	45	30878.1	3.6				mg/L	29647	Standard
Cl	35	185979.3	1.4				ug/L	154152	Standard
Kr	83	2.7	43.3				ug/L	3	Standard
Br	81	209002.2	2.5				ug/L	1607	Standard
P	31	27092.5	3.1				ug/L	22752	Standard
S	34	5509.3	2.9				ug/L	5049	Standard
Sr	88	11921.4	3.3				ug/L	87	Standard
C	12	216.7	14.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	29.4	59.5				mg/L	10	Standard
Ho-1	165	13.3	57.3				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	173148.1	13.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		142.427	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.678	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.199
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.761
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606073003
Sample Date/Time: Thursday, June 16, 2016 20:43:31
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66295.0	5.6				ug/L	51024	Standard
	Be	9	56.7	36.7	**0.0315**	0.022	69.3	ug/L	7	Standard
	Al	27	140324062.6	0.9	**759.9749**	34.895	4.6	ug/L	625	Standard
	Sc	45	30973.3	2.2				ug/L	29647	Standard
	Ti	47	544.3	4.3	**1.8537**	0.066	3.6	ug/L	57	Standard
	V	51	5988.0	12.5	**0.7695**	0.117	15.2	ug/L	1142	Standard
	Cr	52	16952.1	2.7	**1.6378**	0.039	2.4	ug/L	6628	Standard
	Cr	53	39053.8	8.0	**46.3217**	3.179	6.9	ug/L	430	Standard
	Mn	55	1211107.1	0.8	**227.1129**	4.279	1.9	ug/L	603	Standard
	Co	59	15513.3	2.2	**2.6477**	0.097	3.6	ug/L	237	Standard
	Ni	60	11454.7	1.9	**6.5356**	0.059	0.9	ug/L	141	Standard
	Cu	65	2107.5	3.2	**1.1824**	0.030	2.5	ug/L	109	Standard
	Zn	66	3534.1	3.7	**3.3182**	0.082	2.5	ug/L	159	Standard
>	**Ge**	72	425577.5	1.4				ug/L	474053	Standard
	As	75	6875.0	1.9	**6.9431**	0.226	3.3	ug/L	-34	Standard
	Se	82	1838.5	2.4	**18.3557**	0.698	3.8	ug/L	14	Standard
	Se-1	77	5651.1	6.0	**81.1945**	3.892	4.8	ug/L	55	Standard
>	**Ga**	71	298.3	8.3				mg/L	50	Standard
	Rb	85	18603.1	3.0				ug/L	20	Standard
	Y	89	364931.5	1.6				ug/L	376602	Standard
>	**Rh**	103	1093.4	10.5				ug/L	17	Standard
	Mo	98	426.7	6.4	**0.1986**	0.013	6.7	ug/L	8	Standard
	Ag	107	75.7	8.8	**0.0020**	0.001	63.5	ug/L	81	Standard
	Cd	111	101.2	16.3	**0.0557**	0.010	17.5	mg/L	3	Standard
	Cd	114	239.7	20.6	**0.0526**	0.011	21.7	ug/L	7	Standard
>	**In**	115	464316.0	0.4				ug/L	524722	Standard
	Sn	118	820.0	6.0	**0.0826**	0.010	12.0	ug/L	715	Standard
	Sb	123	404.3	9.7	**0.0898**	0.011	11.7	ug/L	201	Standard
	Ba	135	7189623.7	0.9	**4482.5615**	58.524	1.3	ug/L	108	Standard
	Ce	140	11556.1	1.6				ug/L	30	Standard
>	**Tb**	159	738740.3	1.0				ug/L	792236	Standard
	Ho	165	163.3	8.8				ug/L	7	Standard
	Tl	203	154.3	14.2	**0.0220**	0.003	15.0	ug/L	9	Standard
	Tl	205	155.0	9.7	**0.0212**	0.003	13.2	ug/L	0	Standard
	Pb	206	489.3	5.2	**0.0725**	0.006	7.9	ug/L	216	Standard
	Pb	207	420.0	7.6	**0.0677**	0.009	13.2	ug/L	180	Standard
	Pb	208	1652.4	1.4	**0.0599**	0.003	5.3	ug/L	717	Standard
	U	238	9935.9	1.3	**1.9381**	0.028	1.4	ug/L	4	Standard
>	**Bi**	209	378492.4	1.3				ug/L	460343	Standard

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Na	23	20.0	43.3	**-51.8526**	25.479	49.1	mg/L	0	Standard
Mg	24	304205.5	1.3	**394.7766**	3.601	0.9	mg/L	20	Standard
K	39	283.3	22.2	**1.8451**	0.491	26.6	mg/L	22	Standard
Ca	43	1023.4	14.5	**216.1479**	37.325	17.3	mg/L	47	Standard
Fe	54	3507.0	4.8	**2.6133**	0.070	2.7	mg/L	151	Standard
Fe	57	2098.5	3.6	**5.5706**	0.094	1.7	mg/L	195	Standard
> **Sc-1**	45	30973.3	2.2				mg/L	29647	Standard
Cl	35	171200.0	3.8				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	477807.6	1.2				ug/L	1607	Standard
P	31	31030.1	3.4				ug/L	22752	Standard
S	34	5537.7	3.1				ug/L	5049	Standard
Sr	88	3852.2	4.1				ug/L	87	Standard
C	12	250.0	32.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	197.9	47.2				mg/L	10	Standard
Ho-1	165	163.3	8.8				mg/L	7	Standard
Er	166	183.3	6.3				mg/L	3	Standard
I	127	159354.2	8.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.929	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		89.774	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	88.488
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	82.220
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606073102
Sample Date/Time: Thursday, June 16, 2016 20:46:43
Number of Replicates: 3
Autosampler Position: 346
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55473.1	2.7				ug/L	51024	Standard
	Be	9	55.0	36.4	**0.0390**	0.022	55.7	ug/L	7	Standard
	Al	27	942566.4	1.5	**6.0840**	0.204	3.4	ug/L	625	Standard
	Sc	45	34049.9	0.9				ug/L	29647	Standard
	Ti	47	5731.8	2.0	**18.2913**	0.196	1.1	ug/L	57	Standard
	V	51	32065.1	2.5	**4.1901**	0.107	2.6	ug/L	1142	Standard
	Cr	52	17242.5	0.8	**1.3371**	0.009	0.7	ug/L	6628	Standard
	Cr	53	5039.2	15.0	**4.8012**	0.726	15.1	ug/L	430	Standard
	Mn	55	115479.5	1.7	**18.6730**	0.120	0.6	ug/L	603	Standard
	Co	59	2037.1	3.8	**0.2650**	0.009	3.4	ug/L	237	Standard
	Ni	60	2031.8	4.8	**0.9400**	0.039	4.2	ug/L	141	Standard
	Cu	65	266456.7	0.9	**136.9469**	2.046	1.5	ug/L	109	Standard
	Zn	66	37165.9	1.0	**32.1770**	0.480	1.5	ug/L	159	Standard
>	**Ge**	72	490402.9	1.1				ug/L	474053	Standard
	As	75	12459.1	0.9	**10.9020**	0.085	0.8	ug/L	-34	Standard
	Se	82	127.6	3.2	**0.9465**	0.028	3.0	ug/L	14	Standard
	Se-1	77	270.0	15.8	**2.6503**	0.495	18.7	ug/L	55	Standard
>	**Ga**	71	1921.8	2.3				mg/L	50	Standard
	Rb	85	35595.1	1.8				ug/L	20	Standard
	Y	89	404147.8	1.0				ug/L	376602	Standard
>	**Rh**	103	85.0	15.6				ug/L	17	Standard
	Mo	98	4328.7	1.5	**1.8133**	0.020	1.1	ug/L	8	Standard
	Ag	107	869.7	0.1	**0.1324**	0.001	0.5	ug/L	81	Standard
	Cd	111	482.3	7.8	**0.2434**	0.019	8.0	mg/L	3	Standard
	Cd	114	1335.6	3.6	**0.2724**	0.009	3.3	ug/L	7	Standard
>	**In**	115	528691.1	0.6				ug/L	524722	Standard
	Sn	118	4765.7	3.3	**0.7887**	0.031	4.0	ug/L	715	Standard
	Sb	123	3183.9	1.5	**0.7087**	0.011	1.6	ug/L	201	Standard
	Ba	135	17225.1	3.1	**9.3751**	0.336	3.6	ug/L	108	Standard
	Ce	140	48213.3	1.0				ug/L	30	Standard
>	**Tb**	159	793657.4	1.6				ug/L	792236	Standard
	Ho	165	775.0	7.8				ug/L	7	Standard
	Tl	203	260.0	6.4	**0.0318**	0.003	8.6	ug/L	9	Standard
	Tl	205	233.3	20.4	**0.0285**	0.008	27.8	ug/L	0	Standard
	Pb	206	39704.6	1.2	**8.6323**	0.072	0.8	ug/L	216	Standard
	Pb	207	34342.9	1.0	**8.2030**	0.203	2.5	ug/L	180	Standard
	Pb	208	145934.1	1.3	**8.5861**	0.079	0.9	ug/L	717	Standard
	U	238	420.0	4.3	**0.0608**	0.004	7.1	ug/L	4	Standard
>	**Bi**	209	455671.4	2.1				ug/L	460343	Standard

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Na	23	3.3	173.2	**0.8644**	16.607	1921.3	mg/L	0	Standard
Mg	24	12667.0	1.0	**14.9085**	0.215	1.4	mg/L	20	Standard
K	39	335.0	19.1	**1.9967**	0.430	21.5	mg/L	22	Standard
Ca	43	88.3	18.2	**4.8010**	3.416	71.1	mg/L	47	Standard
Fe	54	995.1	5.6	**0.5893**	0.033	5.5	mg/L	151	Standard
Fe	57	445.0	16.6	**0.5516**	0.188	34.0	mg/L	195	Standard
Sc-1	45	34049.9	0.9				mg/L	29647	Standard
Cl	35	173758.3	2.1				ug/L	154152	Standard
Kr	83	3.3	91.7				ug/L	3	Standard
Br	81	6371.4	18.0				ug/L	1607	Standard
P	31	28039.3	2.8				ug/L	22752	Standard
S	34	5270.9	3.8				ug/L	5049	Standard
Sr	88	90.0	5.6				ug/L	87	Standard
C	12	76.7	58.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	56.8				mg/L	0	Standard
Dy	164	1215.7	9.2				mg/L	10	Standard
Ho-1	165	775.0	7.8				mg/L	7	Standard
Er	166	786.7	6.4				mg/L	3	Standard
I	127	21140.1	20.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		108.719	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.449	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.756
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.985
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: L1606073102
Sample Date/Time: Thursday, June 16, 2016 20:49:54
Number of Replicates: 3
Autosampler Position: 347
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59153.6	1.2				ug/L	51024	Standard
	Be	9	8.3	34.6	**-0.0125**	0.003	23.9	ug/L	7	Standard
	Al	27	100448.6	1.0	**0.5989**	0.007	1.2	ug/L	625	Standard
	Sc	45	33126.2	1.2				ug/L	29647	Standard
	Ti	47	644.7	2.1	**2.0007**	0.071	3.6	ug/L	57	Standard
	V	51	4289.2	6.3	**0.4402**	0.044	10.0	ug/L	1142	Standard
	Cr	52	8064.5	2.5	**0.1771**	0.010	5.7	ug/L	6628	Standard
	Cr	53	1751.8	6.1	**1.4679**	0.099	6.8	ug/L	430	Standard
	Mn	55	12501.5	0.4	**1.9975**	0.048	2.4	ug/L	603	Standard
	Co	59	371.3	7.0	**0.0170**	0.003	18.0	ug/L	237	Standard
	Ni	60	380.0	10.9	**0.1207**	0.019	15.5	ug/L	141	Standard
	Cu	65	26879.2	2.3	**14.3517**	0.162	1.1	ug/L	109	Standard
	Zn	66	5034.5	0.7	**4.3493**	0.122	2.8	ug/L	159	Standard
>	**Ge**	72	470100.0	2.4				ug/L	474053	Standard
	As	75	1188.6	1.5	**1.1081**	0.042	3.8	ug/L	-34	Standard
	Se	82	31.1	20.0	**0.1142**	0.055	48.5	ug/L	14	Standard
	Se-1	77	110.7	11.2	**0.7077**	0.148	20.9	ug/L	55	Standard
>	**Ga**	71	223.3	5.6				mg/L	50	Standard
	Rb	85	3760.5	5.0				ug/L	20	Standard
	Y	89	401153.8	1.8				ug/L	376602	Standard
>	**Rh**	103	35.0	28.6				ug/L	17	Standard
	Mo	98	446.2	5.1	**0.1763**	0.012	6.9	ug/L	8	Standard
	Ag	107	132.3	3.7	**0.0090**	0.001	8.3	ug/L	81	Standard
	Cd	111	53.4	17.3	**0.0233**	0.005	21.5	mg/L	3	Standard
	Cd	114	111.5	28.2	**0.0185**	0.006	33.2	ug/L	7	Standard
>	**In**	115	545539.1	1.6				ug/L	524722	Standard
	Sn	118	1001.7	15.4	**0.0892**	0.025	28.5	ug/L	715	Standard
	Sb	123	390.2	5.8	**0.0711**	0.004	6.2	ug/L	201	Standard
	Ba	135	2004.1	4.2	**1.0056**	0.035	3.5	ug/L	108	Standard
	Ce	140	4912.5	3.1				ug/L	30	Standard
>	**Tb**	159	820295.3	0.5				ug/L	792236	Standard
	Ho	165	85.0	35.8				ug/L	7	Standard
	Tl	203	81.3	9.9	**0.0080**	0.001	12.7	ug/L	9	Standard
	Tl	205	81.7	7.1	**0.0047**	0.001	18.7	ug/L	0	Standard
	Pb	206	4339.0	0.8	**0.8817**	0.013	1.4	ug/L	216	Standard
	Pb	207	3847.8	0.9	**0.8599**	0.011	1.3	ug/L	180	Standard
	Pb	208	15987.3	1.8	**0.8776**	0.022	2.5	ug/L	717	Standard
	U	238	37.0	13.5	**-0.0016**	0.001	51.1	ug/L	4	Standard
>	**Bi**	209	461213.2	0.5				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1265.1	9.3	**1.4911**	0.161	10.8	mg/L	20	Standard
K	39	51.7	11.2	**0.1245**	0.037	30.0	mg/L	22	Standard
Ca	43	36.7	20.8	**-5.5323**	1.502	27.2	mg/L	47	Standard
Fe	54	272.3	11.9	**0.0834**	0.026	30.8	mg/L	151	Standard
Fe	57	213.3	13.3	**-0.0553**	0.084	152.6	mg/L	195	Standard
> **Sc-1**	45	33126.2	1.2				mg/L	29647	Standard
Cl	35	168674.4	1.0				ug/L	154152	Standard
Kr	83	2.7	57.3				ug/L	3	Standard
Br	81	3067.0	8.5				ug/L	1607	Standard
P	31	24656.7	3.1				ug/L	22752	Standard
S	34	5190.9	0.5				ug/L	5049	Standard
Sr	88	70.0	31.1				ug/L	87	Standard
C	12	56.7	40.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	128.2	29.2				mg/L	10	Standard
Ho-1	165	85.0	35.8				mg/L	7	Standard
Er	166	106.7	19.5				mg/L	3	Standard
I	127	4907.5	9.2				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.933	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.166	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.967
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.189
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606054009
Sample Date/Time: Thursday, June 16, 2016 20:53:06
Number of Replicates: 3
Autosampler Position: 348
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57167.7	1.8				ug/L	51024	Standard
	Be	9	16.7	34.6	**-0.0033**	0.006	191.0	ug/L	7	Standard
	Al	27	40703.4	11.7	**0.2452**	0.025	10.3	ug/L	625	Standard
	Sc	45	31935.3	3.8				ug/L	29647	Standard
	Ti	47	33.3	7.5	**-0.0541**	0.007	12.4	ug/L	57	Standard
	V	51	1267.4	7.9	**0.0110**	0.011	98.7	ug/L	1142	Standard
	Cr	52	6813.9	0.7	**0.0049**	0.027	550.7	ug/L	6628	Standard
	Cr	53	1183.4	2.1	**0.8507**	0.047	5.5	ug/L	430	Standard
	Mn	55	63841.2	0.9	**10.7040**	0.156	1.5	ug/L	603	Standard
	Co	59	241.7	8.6	**-0.0034**	0.003	78.7	ug/L	237	Standard
	Ni	60	170.7	5.3	**0.0113**	0.004	35.5	ug/L	141	Standard
	Cu	65	185.7	9.3	**0.0334**	0.011	32.3	ug/L	109	Standard
	Zn	66	1221.7	3.3	**0.8784**	0.051	5.8	ug/L	159	Standard
>	**Ge**	72	470712.9	2.2				ug/L	474053	Standard
	As	75	30.8	16.5	**0.0530**	0.004	7.8	ug/L	-34	Standard
	Se	82	25.1	14.7	**0.0591**	0.030	51.4	ug/L	14	Standard
	Se-1	77	77.3	7.8	**0.2686**	0.059	22.0	ug/L	55	Standard
>	**Ga**	71	51.7	31.1				mg/L	50	Standard
	Rb	85	646.7	20.2				ug/L	20	Standard
	Y	89	396670.0	2.0				ug/L	376602	Standard
>	**Rh**	103	36.7	47.9				ug/L	17	Standard
	Mo	98	41.6	28.6	**0.0117**	0.005	41.7	ug/L	8	Standard
	Ag	107	95.3	39.9	**0.0032**	0.006	177.8	ug/L	81	Standard
	Cd	111	10.6	141.7	**0.0020**	0.007	372.2	mg/L	3	Standard
	Cd	114	31.1	47.0	**0.0025**	0.003	110.7	ug/L	7	Standard
>	**In**	115	535879.5	3.0				ug/L	524722	Standard
	Sn	118	518.3	19.7	**0.0045**	0.016	347.9	ug/L	715	Standard
	Sb	123	86.0	15.9	**0.0044**	0.002	55.3	ug/L	201	Standard
	Ba	135	3179.4	70.5	**1.6371**	1.141	69.7	ug/L	108	Standard
	Ce	140	118.3	56.3				ug/L	30	Standard
>	**Tb**	159	791577.1	1.4				ug/L	792236	Standard
	Ho	165	16.7	62.4				ug/L	7	Standard
	Tl	203	82.0	86.0	**0.0083**	0.009	108.7	ug/L	9	Standard
	Tl	205	38.3	39.8	**-0.0018**	0.002	122.7	ug/L	0	Standard
	Pb	206	276.0	8.2	**0.0051**	0.003	58.8	ug/L	216	Standard
	Pb	207	225.0	9.4	**0.0012**	0.004	310.7	ug/L	180	Standard
	Pb	208	961.3	4.7	**0.0001**	0.001	957.0	ug/L	717	Standard
	U	238	50.7	3.0	**0.0008**	0.000	45.3	ug/L	4	Standard
>	**Bi**	209	447174.4	3.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	178.3	23.3	**0.1782**	0.044	24.8	mg/L	20	Standard
K	39	75.0	0.0	**0.3034**	0.020	6.6	mg/L	22	Standard
Ca	43	26.7	39.0	**-7.4067**	2.216	29.9	mg/L	47	Standard
Fe	54	296.0	2.0	**0.1085**	0.005	4.5	mg/L	151	Standard
Fe	57	203.3	7.1	**-0.0621**	0.045	71.7	mg/L	195	Standard
> **Sc-1**	45	31935.3	3.8				mg/L	29647	Standard
Cl	35	168415.6	1.0				ug/L	154152	Standard
Kr	83	1.0	0.0				ug/L	3	Standard
Br	81	2343.5	14.9				ug/L	1607	Standard
P	31	24079.1	0.8				ug/L	22752	Standard
S	34	5175.9	6.6				ug/L	5049	Standard
Sr	88	91.7	20.7				ug/L	87	Standard
C	12	60.0	28.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	7.9	115.0				mg/L	10	Standard
Ho-1	165	16.7	62.4				mg/L	7	Standard
Er	166	43.3	70.5				mg/L	3	Standard
I	127	3628.8	3.8				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.040	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.295	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.126
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.139
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606054010
Sample Date/Time: Thursday, June 16, 2016 20:57:27
Number of Replicates: 3
Autosampler Position: 349
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56434.9	2.3				ug/L	51024	Standard
	Be	9	8.3	34.6	**-0.0121**	0.003	26.4	ug/L	7	Standard
	Al	27	252906.9	1.5	**1.5971**	0.043	2.7	ug/L	625	Standard
	Sc	45	31920.3	2.1				ug/L	29647	Standard
	Ti	47	312.3	10.2	**0.8821**	0.111	12.6	ug/L	57	Standard
	V	51	2253.7	7.5	**0.1509**	0.028	18.3	ug/L	1142	Standard
	Cr	52	7388.1	1.0	**0.0829**	0.016	19.3	ug/L	6628	Standard
	Cr	53	1196.7	7.3	**0.8649**	0.109	12.6	ug/L	430	Standard
	Mn	55	73740.7	1.7	**12.3802**	0.357	2.9	ug/L	603	Standard
	Co	59	450.0	4.0	**0.0292**	0.003	10.6	ug/L	237	Standard
	Ni	60	555.0	6.8	**0.2120**	0.023	10.8	ug/L	141	Standard
	Cu	65	367.0	6.1	**0.1304**	0.011	8.6	ug/L	109	Standard
	Zn	66	2607.2	1.1	**2.1362**	0.049	2.3	ug/L	159	Standard
>	**Ge**	72	470838.7	1.1				ug/L	474053	Standard
	As	75	1057.7	4.9	**0.9866**	0.037	3.7	ug/L	-34	Standard
	Se	82	371.4	5.2	**3.2111**	0.141	4.4	ug/L	14	Standard
	Se-1	77	82.0	5.3	**0.3308**	0.069	21.0	ug/L	55	Standard
>	**Ga**	71	95.0	21.1				mg/L	50	Standard
	Rb	85	2080.1	6.3				ug/L	20	Standard
	Y	89	394550.0	1.4				ug/L	376602	Standard
>	**Rh**	103	40.0	12.5				ug/L	17	Standard
	Mo	98	432.1	5.5	**0.1778**	0.013	7.4	ug/L	8	Standard
	Ag	107	89.3	6.8	**0.0027**	0.001	34.2	ug/L	81	Standard
	Cd	111	10.8	29.5	**0.0024**	0.002	71.8	mg/L	3	Standard
	Cd	114	7.3	63.1	**-0.0023**	0.001	40.5	ug/L	7	Standard
>	**In**	115	524122.9	2.0				ug/L	524722	Standard
	Sn	118	475.0	16.9	**-0.0012**	0.015	1226.6	ug/L	715	Standard
	Sb	123	126.7	16.7	**0.0143**	0.005	37.6	ug/L	201	Standard
	Ba	135	6164.6	3.3	**3.3481**	0.133	4.0	ug/L	108	Standard
	Ce	140	2293.5	2.9				ug/L	30	Standard
>	**Tb**	159	771498.5	0.9				ug/L	792236	Standard
	Ho	165	40.0	33.1				ug/L	7	Standard
	Tl	203	178.3	6.6	**0.0218**	0.002	7.9	ug/L	9	Standard
	Tl	205	168.3	19.8	**0.0193**	0.006	28.8	ug/L	0	Standard
	Pb	206	424.0	1.9	**0.0396**	0.002	4.6	ug/L	216	Standard
	Pb	207	350.0	3.8	**0.0332**	0.004	10.7	ug/L	180	Standard
	Pb	208	1524.0	3.5	**0.0355**	0.004	11.4	ug/L	717	Standard
	U	238	1126.4	2.3	**0.1820**	0.006	3.2	ug/L	4	Standard
>	**Bi**	209	440459.4	0.9				ug/L	460343	Standard

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Na	23	3.3	86.6	**0.3515**	8.752	2490.2	mg/L	0	Standard
Mg	24	5054.2	1.6	**6.3217**	0.207	3.3	mg/L	20	Standard
K	39	60.0	38.2	**0.1962**	0.161	82.1	mg/L	22	Standard
Ca	43	58.3	27.6	**-0.5341**	3.483	652.1	mg/L	47	Standard
Fe	54	351.0	19.9	**0.1502**	0.054	35.8	mg/L	151	Standard
Fe	57	258.3	13.7	**0.0974**	0.116	119.4	mg/L	195	Standard
> **Sc-1**	45	31920.3	2.1				mg/L	29647	Standard
Cl	35	170598.8	2.4				ug/L	154152	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	89319.4	3.8				ug/L	1607	Standard
P	31	24377.9	0.5				ug/L	22752	Standard
S	34	5239.2	6.6				ug/L	5049	Standard
Sr	88	133.3	15.6				ug/L	87	Standard
C	12	30.0	33.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	52.1	28.7				mg/L	10	Standard
Ho-1	165	40.0	33.1				mg/L	7	Standard
Er	166	26.7	57.3				mg/L	3	Standard
I	127	17059.6	8.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.604	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.322	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.886
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.681
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606054011
Sample Date/Time: Thursday, June 16, 2016 21:00:39
Number of Replicates: 3
Autosampler Position: 350
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58251.8	0.7				ug/L	51024	Standard
	Be	9	10.0	100.0	**-0.0107**	0.010	96.5	ug/L	7	Standard
	Al	27	254779.3	0.3	**1.5580**	0.016	1.0	ug/L	625	Standard
	Sc	45	32790.5	2.0				ug/L	29647	Standard
	Ti	47	354.0	6.1	**1.0202**	0.064	6.3	ug/L	57	Standard
	V	51	2227.5	5.1	**0.1471**	0.023	15.7	ug/L	1142	Standard
	Cr	52	7531.2	1.8	**0.1020**	0.041	40.4	ug/L	6628	Standard
	Cr	53	1105.0	6.8	**0.7629**	0.054	7.1	ug/L	430	Standard
	Mn	55	71367.7	1.1	**11.9661**	0.226	1.9	ug/L	603	Standard
	Co	59	417.3	0.3	**0.0241**	0.001	5.5	ug/L	237	Standard
	Ni	60	538.0	5.0	**0.2029**	0.019	9.2	ug/L	141	Standard
	Cu	65	370.3	6.0	**0.1319**	0.008	6.1	ug/L	109	Standard
	Zn	66	2431.9	0.9	**1.9749**	0.035	1.8	ug/L	159	Standard
>	**Ge**	72	471306.4	2.3				ug/L	474053	Standard
	As	75	1059.1	3.3	**0.9871**	0.024	2.5	ug/L	-34	Standard
	Se	82	374.1	5.5	**3.2332**	0.174	5.4	ug/L	14	Standard
	Se-1	77	74.7	4.7	**0.2331**	0.038	16.2	ug/L	55	Standard
>	**Ga**	71	103.3	15.6				mg/L	50	Standard
	Rb	85	1920.1	7.2				ug/L	20	Standard
	Y	89	383902.2	1.9				ug/L	376602	Standard
>	**Rh**	103	25.0	87.2				ug/L	17	Standard
	Mo	98	436.7	9.1	**0.1748**	0.015	8.7	ug/L	8	Standard
	Ag	107	65.0	9.2	**-0.0017**	0.001	50.8	ug/L	81	Standard
	Cd	111	7.9	14.5	**0.0007**	0.001	83.6	mg/L	3	Standard
	Cd	114	24.6	49.4	**0.0012**	0.002	206.6	ug/L	7	Standard
>	**In**	115	537640.9	1.1				ug/L	524722	Standard
	Sn	118	573.3	39.0	**0.0145**	0.041	281.6	ug/L	715	Standard
	Sb	123	111.2	8.6	**0.0100**	0.002	20.8	ug/L	201	Standard
	Ba	135	6046.2	1.0	**3.1982**	0.060	1.9	ug/L	108	Standard
	Ce	140	2091.8	0.8				ug/L	30	Standard
>	**Tb**	159	809758.8	0.4				ug/L	792236	Standard
	Ho	165	41.7	18.3				ug/L	7	Standard
	Tl	203	180.3	6.1	**0.0211**	0.001	6.1	ug/L	9	Standard
	Tl	205	173.3	24.0	**0.0189**	0.006	33.1	ug/L	0	Standard
	Pb	206	420.3	5.1	**0.0350**	0.005	15.0	ug/L	216	Standard
	Pb	207	374.0	2.6	**0.0354**	0.003	8.0	ug/L	180	Standard
	Pb	208	1541.7	1.3	**0.0327**	0.002	5.1	ug/L	717	Standard
	U	238	1137.0	2.8	**0.1760**	0.006	3.3	ug/L	4	Standard
>	**Bi**	209	459070.7	0.7				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.4041**	8.743	161.8	mg/L	0	Standard
Mg	24	4977.5	2.7	**6.0561**	0.102	1.7	mg/L	20	Standard
K	39	71.7	10.7	**0.2668**	0.063	23.4	mg/L	22	Standard
Ca	43	53.3	10.8	**-1.9274**	1.113	57.7	mg/L	47	Standard
Fe	54	318.9	6.3	**0.1195**	0.015	12.9	mg/L	151	Standard
Fe	57	250.0	29.5	**0.0557**	0.223	399.4	mg/L	195	Standard
> **Sc-1**	45	32790.5	2.0				mg/L	29647	Standard
Cl	35	169793.5	0.8				ug/L	154152	Standard
Kr	83	2.0	0.0				ug/L	3	Standard
Br	81	89396.4	2.9				ug/L	1607	Standard
P	31	24319.5	2.4				ug/L	22752	Standard
S	34	5012.5	5.2				ug/L	5049	Standard
Sr	88	106.7	17.7				ug/L	87	Standard
C	12	46.7	32.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	51.6	38.3				mg/L	10	Standard
Ho-1	165	41.7	18.3				mg/L	7	Standard
Er	166	36.7	63.0				mg/L	3	Standard
I	127	17585.2	6.5				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		114.165	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.421	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.462
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.724
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606054014
Sample Date/Time: Thursday, June 16, 2016 21:03:50
Number of Replicates: 3
Autosampler Position: 351
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57943.9	0.3				ug/L	51024	Standard
	Be	9	10.0	50.0	**-0.0106**	0.005	49.0	ug/L	7	Standard
	Al	27	40494.2	7.5	**0.2408**	0.019	8.1	ug/L	625	Standard
	Sc	45	33099.4	0.9				ug/L	29647	Standard
	Ti	47	40.0	11.5	**-0.0319**	0.013	41.5	ug/L	57	Standard
	V	51	1267.4	3.9	**0.0110**	0.004	33.2	ug/L	1142	Standard
	Cr	52	6912.6	1.0	**0.0177**	0.023	132.2	ug/L	6628	Standard
	Cr	53	750.0	9.0	**0.3802**	0.071	18.6	ug/L	430	Standard
	Mn	55	124087.1	1.1	**20.9134**	0.521	2.5	ug/L	603	Standard
	Co	59	211.7	10.1	**-0.0081**	0.004	46.5	ug/L	237	Standard
	Ni	60	248.0	1.5	**0.0516**	0.002	4.7	ug/L	141	Standard
	Cu	65	221.0	10.6	**0.0522**	0.012	22.6	ug/L	109	Standard
	Zn	66	3791.1	1.2	**3.2112**	0.103	3.2	ug/L	159	Standard
>	**Ge**	72	470993.8	1.9				ug/L	474053	Standard
	As	75	110.5	40.9	**0.1251**	0.040	31.9	ug/L	-34	Standard
	Se	82	16.7	56.8	**-0.0174**	0.085	487.8	ug/L	14	Standard
	Se-1	77	66.3	16.1	**0.1259**	0.151	119.8	ug/L	55	Standard
>	**Ga**	71	63.3	27.7				mg/L	50	Standard
	Rb	85	276.7	10.3				ug/L	20	Standard
	Y	89	385833.8	2.0				ug/L	376602	Standard
>	**Rh**	103	31.7	50.8				ug/L	17	Standard
	Mo	98	31.0	14.9	**0.0074**	0.002	27.3	ug/L	8	Standard
	Ag	107	68.0	4.4	**-0.0012**	0.000	32.0	ug/L	81	Standard
	Cd	111	10.9	18.2	**0.0023**	0.001	41.2	mg/L	3	Standard
	Cd	114	35.3	7.7	**0.0034**	0.001	15.7	ug/L	7	Standard
>	**In**	115	534994.4	1.2				ug/L	524722	Standard
	Sn	118	486.7	6.0	**-0.0009**	0.004	488.6	ug/L	715	Standard
	Sb	123	88.5	13.6	**0.0050**	0.002	48.6	ug/L	201	Standard
	Ba	135	1149.4	10.0	**0.5638**	0.054	9.6	ug/L	108	Standard
	Ce	140	73.3	33.6				ug/L	30	Standard
>	**Tb**	159	801412.4	0.6				ug/L	792236	Standard
	Ho	165	16.7	17.3				ug/L	7	Standard
	Tl	203	39.7	22.9	**0.0026**	0.001	46.4	ug/L	9	Standard
	Tl	205	23.3	75.3	**-0.0042**	0.003	64.0	ug/L	0	Standard
	Pb	206	288.7	4.7	**0.0060**	0.003	43.9	ug/L	216	Standard
	Pb	207	232.0	1.6	**0.0012**	0.001	74.1	ug/L	180	Standard
	Pb	208	996.7	1.1	**0.0003**	0.001	274.4	ug/L	717	Standard
	U	238	6.3	48.2	**-0.0066**	0.000	7.5	ug/L	4	Standard
>	**Bi**	209	461918.2	0.5				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.5408**	8.507	153.5	mg/L	0	Standard
Mg	24	155.0	19.6	**0.1428**	0.035	24.6	mg/L	20	Standard
K	39	20.0	75.0	**-0.0919**	0.101	110.1	mg/L	22	Standard
Ca	43	28.3	36.7	**-7.2551**	2.201	30.3	mg/L	47	Standard
Fe	54	217.7	12.7	**0.0436**	0.021	47.7	mg/L	151	Standard
Fe	57	210.0	21.4	**-0.0640**	0.129	201.3	mg/L	195	Standard
> **Sc-1**	45	33099.4	0.9				mg/L	29647	Standard
Cl	35	168257.1	0.3				ug/L	154152	Standard
Kr	83	2.0	86.6				ug/L	3	Standard
Br	81	3430.4	12.2				ug/L	1607	Standard
P	31	24144.2	1.0				ug/L	22752	Standard
S	34	5209.2	2.8				ug/L	5049	Standard
Sr	88	75.0	43.7				ug/L	87	Standard
C	12	36.7	63.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.1	43.3				mg/L	10	Standard
Ho-1	165	16.7	17.3				mg/L	7	Standard
Er	166	26.7	43.3				mg/L	3	Standard
I	127	3078.6	10.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.562	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.355	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.958
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.342
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 21:07:02
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57216.2	1.8				ug/L	51024	Standard
	Be	9	44266.2	0.8	**46.9448**	1.086	2.3	ug/L	7	Standard
	Al	27	7280291.9	1.0	**45.6137**	1.287	2.8	ug/L	625	Standard
	Sc	45	32309.4	1.7				ug/L	29647	Standard
	Ti	47	30197.4	0.3	**101.5240**	2.598	2.6	ug/L	57	Standard
	V	51	355347.4	0.9	**50.3294**	0.808	1.6	ug/L	1142	Standard
	Cr	52	370024.2	0.4	**49.8980**	1.109	2.2	ug/L	6628	Standard
	Cr	53	45872.7	0.6	**49.4285**	1.135	2.3	ug/L	430	Standard
	Mn	55	314239.7	1.6	**53.3617**	1.128	2.1	ug/L	603	Standard
	Co	59	314388.6	0.3	**49.3919**	1.176	2.4	ug/L	237	Standard
	Ni	60	94820.1	0.2	**49.5997**	1.101	2.2	ug/L	141	Standard
	Cu	65	92383.2	1.4	**49.5924**	0.629	1.3	ug/L	109	Standard
	Zn	66	54761.8	0.6	**49.6923**	0.878	1.8	ug/L	159	Standard
>	**Ge**	72	469160.5	2.3				ug/L	474053	Standard
	As	75	53380.1	0.9	**48.7528**	1.227	2.5	ug/L	-34	Standard
	Se	82	5320.4	1.7	**48.4684**	1.778	3.7	ug/L	14	Standard
	Se-1	77	3692.8	2.0	**47.8512**	0.716	1.5	ug/L	55	Standard
>	**Ga**	71	61.7	70.8				mg/L	50	Standard
	Rb	85	808.4	9.3				ug/L	20	Standard
	Y	89	383560.2	1.8				ug/L	376602	Standard
>	**Rh**	103	35.0	42.9				ug/L	17	Standard
	Mo	98	232242.3	1.1	**96.5061**	2.361	2.4	ug/L	8	Standard
	Ag	107	292582.7	0.8	**48.1206**	0.391	0.8	ug/L	81	Standard
	Cd	111	95603.2	0.1	**48.3402**	0.694	1.4	mg/L	3	Standard
	Cd	114	235634.1	0.2	**48.1942**	0.648	1.3	ug/L	7	Standard
>	**In**	115	534700.6	1.5				ug/L	524722	Standard
	Sn	118	264473.5	1.3	**48.1050**	1.306	2.7	ug/L	715	Standard
	Sb	123	215670.2	0.6	**48.4479**	0.874	1.8	ug/L	201	Standard
	Ba	135	88155.7	0.1	**47.6769**	0.763	1.6	ug/L	108	Standard
	Ce	140	101.7	19.9				ug/L	30	Standard
>	**Tb**	159	793079.8	1.0				ug/L	792236	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	358440.3	1.1	**47.4951**	0.142	0.3	ug/L	9	Standard
	Tl	205	312266.9	1.0	**48.6540**	0.130	0.3	ug/L	0	Standard
	Pb	206	224283.0	1.3	**49.1202**	0.907	1.8	ug/L	216	Standard
	Pb	207	204302.6	0.7	**49.1523**	0.806	1.6	ug/L	180	Standard
	Pb	208	833504.1	0.4	**49.4087**	0.646	1.3	ug/L	717	Standard
	U	238	304654.1	0.2	**49.6463**	0.682	1.4	ug/L	4	Standard
>	**Bi**	209	454777.5	1.2				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.3475**	8.842	165.3	mg/L	0	Standard
Mg	24	4015.5	1.7	**4.9520**	0.163	3.3	mg/L	20	Standard
K	39	633.3	0.9	**4.2037**	0.116	2.8	mg/L	22	Standard
Ca	43	71.7	28.2	**2.1962**	4.389	199.9	mg/L	47	Standard
Fe	54	5816.1	3.6	**4.2263**	0.216	5.1	mg/L	151	Standard
Fe	57	1691.8	3.9	**4.1585**	0.125	3.0	mg/L	195	Standard
> **Sc-1**	45	32309.4	1.7				mg/L	29647	Standard
Cl	35	165447.9	1.5				ug/L	154152	Standard
Kr	83	3.0	33.3				ug/L	3	Standard
Br	81	2063.5	3.6				ug/L	1607	Standard
P	31	25169.2	0.8				ug/L	22752	Standard
S	34	5737.8	0.7				ug/L	5049	Standard
Sr	88	55.0	15.7				ug/L	87	Standard
C	12	53.3	47.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.2	93.3				mg/L	10	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	10.0					mg/L	3	Standard
I	127	1655.1	3.8				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	93.890		
Al	27	91.227		
Sc	45			
Ti	47	101.524		
V	51	100.659		
Cr	52	99.796		
Cr	53			
Mn	55	106.723		
Co	59	98.784		
Ni	60	99.199		
Cu	65	99.185		
Zn	66	99.385		
> Ge	72		98.968	
As	75	97.506		
Se	82	96.937		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	96.506		
Ag	107	96.241		
Cd	111	96.680		
Cd	114			
In	115			101.902
Sn	118	96.210		
Sb	123	96.896		
Ba	135	95.354		
Ce	140			
Tb	159			
Ho	165			
Tl	203	94.990		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.817		
U	238	99.293		
Bi	209			98.791
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 21:10:14
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55944.8	2.0				ug/L	51024	Standard
	Be	9	16.7	34.6	**-0.0030**	0.006	212.8	ug/L	7	Standard
	Al	27	1526.8	38.2	**-0.0000**	0.004	16917.9	ug/L	625	Standard
	Sc	45	31897.0	7.4				ug/L	29647	Standard
	Ti	47	31.0	8.5	**-0.0586**	0.008	13.1	ug/L	57	Standard
	V	51	1141.1	6.7	**-0.0015**	0.010	648.2	ug/L	1142	Standard
	Cr	52	6326.0	1.2	**-0.0342**	0.003	8.9	ug/L	6628	Standard
	Cr	53	638.3	5.1	**0.2820**	0.027	9.6	ug/L	430	Standard
	Mn	55	672.3	5.7	**-0.0087**	0.006	71.9	ug/L	603	Standard
	Co	59	229.3	15.7	**-0.0042**	0.005	126.3	ug/L	237	Standard
	Ni	60	153.7	14.0	**0.0051**	0.012	235.2	ug/L	141	Standard
	Cu	65	131.3	12.6	**0.0065**	0.009	132.4	ug/L	109	Standard
	Zn	66	145.0	12.1	**-0.0961**	0.015	15.1	ug/L	159	Standard
>	**Ge**	72	455945.8	1.4				ug/L	474053	Standard
	As	75	-22.0	198.7	**0.0041**	0.041	1009.9	ug/L	-34	Standard
	Se	82	27.4	26.2	**0.0880**	0.066	75.2	ug/L	14	Standard
	Se-1	77	76.0	21.7	**0.2852**	0.231	80.9	ug/L	55	Standard
>	**Ga**	71	41.7	42.1				mg/L	50	Standard
	Rb	85	23.3	75.3				ug/L	20	Standard
	Y	89	400519.5	2.1				ug/L	376602	Standard
>	**Rh**	103	30.0	57.7				ug/L	17	Standard
	Mo	98	251.1	32.5	**0.0955**	0.032	33.2	ug/L	8	Standard
	Ag	107	99.3	31.3	**0.0035**	0.005	136.7	ug/L	81	Standard
	Cd	111	14.1	69.7	**0.0037**	0.005	129.5	mg/L	3	Standard
	Cd	114	31.9	76.8	**0.0025**	0.005	193.5	ug/L	7	Standard
>	**In**	115	550633.2	1.2				ug/L	524722	Standard
	Sn	118	735.0	12.4	**0.0407**	0.017	42.7	ug/L	715	Standard
	Sb	123	412.2	18.4	**0.0753**	0.017	23.2	ug/L	201	Standard
	Ba	135	126.7	6.0	**0.0089**	0.003	36.5	ug/L	108	Standard
	Ce	140	13.3	43.3				ug/L	30	Standard
>	**Tb**	159	804256.0	1.8				ug/L	792236	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	62.7	29.5	**0.0058**	0.002	40.2	ug/L	9	Standard
	Tl	205	55.0	15.7	**0.0008**	0.001	147.2	ug/L	0	Standard
	Pb	206	234.3	12.8	**-0.0047**	0.006	120.1	ug/L	216	Standard
	Pb	207	197.7	8.5	**-0.0059**	0.003	52.6	ug/L	180	Standard
	Pb	208	861.7	7.3	**-0.0064**	0.003	48.7	ug/L	717	Standard
	U	238	32.7	49.0	**-0.0022**	0.003	112.0	ug/L	4	Standard
>	**Bi**	209	451393.6	2.0				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.7600**	8.127	141.1	mg/L	0	Standard
Mg	24	66.7	18.9	**0.0383**	0.010	25.0	mg/L	20	Standard
K	39	15.0	66.7	**-0.1191**	0.074	61.9	mg/L	22	Standard
Ca	43	28.3	36.7	**-7.1219**	1.762	24.7	mg/L	47	Standard
Fe	54	147.9	22.4	**-0.0038**	0.019	492.3	mg/L	151	Standard
Fe	57	200.0	17.5	**-0.0677**	0.127	187.5	mg/L	195	Standard
Sc-1	45	31897.0	7.4				mg/L	29647	Standard
Cl	35	166760.1	1.1				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	1793.4	4.2				ug/L	1607	Standard
P	31	26206.0	1.2				ug/L	22752	Standard
S	34	5832.8	0.3				ug/L	5049	Standard
Sr	88	61.7	26.1				ug/L	87	Standard
C	12	43.3	35.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.9	118.8				mg/L	10	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	10.0					mg/L	3	Standard
I	127	1290.1	6.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.180	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.938
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.056
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606061601
Sample Date/Time: Thursday, June 16, 2016 21:13:26
Number of Replicates: 3
Autosampler Position: 352
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57249.6	1.2				ug/L	51024	Standard
	Be	9	55.0	9.1	**0.0372**	0.006	15.0	ug/L	7	Standard
	Al	27	393587.4	1.7	**2.4548**	0.057	2.3	ug/L	625	Standard
	Sc	45	32406.3	3.0				ug/L	29647	Standard
	Ti	47	74.0	10.7	**0.0892**	0.028	31.0	ug/L	57	Standard
	V	51	636.6	76.8	**-0.0758**	0.071	93.6	ug/L	1142	Standard
	Cr	52	85601.8	0.6	**11.1086**	0.082	0.7	ug/L	6628	Standard
	Cr	53	11320.9	1.4	**12.1647**	0.172	1.4	ug/L	430	Standard
	Mn	55	80985.9	0.3	**13.9862**	0.035	0.3	ug/L	603	Standard
	Co	59	9834.2	0.6	**1.5416**	0.010	0.6	ug/L	237	Standard
	Ni	60	33446.9	0.3	**17.8603**	0.057	0.3	ug/L	141	Standard
	Cu	65	1052.4	3.7	**0.5130**	0.021	4.2	ug/L	109	Standard
	Zn	66	2617.6	1.1	**2.2110**	0.025	1.1	ug/L	159	Standard
>	**Ge**	72	458154.0	0.1				ug/L	474053	Standard
	As	75	49.8	49.2	**0.0716**	0.023	32.0	ug/L	-34	Standard
	Se	82	42.6	32.1	**0.2293**	0.128	56.0	ug/L	14	Standard
	Se-1	77	102.7	16.6	**0.6383**	0.227	35.6	ug/L	55	Standard
>	**Ga**	71	63.3	35.6				mg/L	50	Standard
	Rb	85	306.7	30.8				ug/L	20	Standard
	Y	89	402460.8	1.4				ug/L	376602	Standard
>	**Rh**	103	15.0	0.0				ug/L	17	Standard
	Mo	98	305.2	3.6	**0.1192**	0.004	3.0	ug/L	8	Standard
	Ag	107	82.0	8.5	**0.0009**	0.001	110.4	ug/L	81	Standard
	Cd	111	31.7	1.8	**0.0126**	0.000	1.7	mg/L	3	Standard
	Cd	114	86.0	11.3	**0.0135**	0.002	15.6	ug/L	7	Standard
>	**In**	115	543559.4	0.9				ug/L	524722	Standard
	Sn	118	521.7	5.3	**0.0040**	0.005	126.9	ug/L	715	Standard
	Sb	123	172.0	20.3	**0.0232**	0.008	34.4	ug/L	201	Standard
	Ba	135	10412.6	2.3	**5.4875**	0.099	1.8	ug/L	108	Standard
	Ce	140	1425.1	2.1				ug/L	30	Standard
>	**Tb**	159	802846.0	2.9				ug/L	792236	Standard
	Ho	165	38.3	49.4				ug/L	7	Standard
	Tl	203	181.0	5.8	**0.0217**	0.002	7.1	ug/L	9	Standard
	Tl	205	158.3	6.6	**0.0171**	0.002	12.3	ug/L	0	Standard
	Pb	206	323.7	3.9	**0.0154**	0.001	9.1	ug/L	216	Standard
	Pb	207	297.3	15.5	**0.0184**	0.010	54.3	ug/L	180	Standard
	Pb	208	1247.7	4.4	**0.0169**	0.002	11.0	ug/L	717	Standard
	U	238	59.7	21.2	**0.0022**	0.002	84.4	ug/L	4	Standard
>	**Bi**	209	449878.2	2.0				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	5219.2	4.5	**6.4369**	0.460	7.1	mg/L	20	Standard
K	39	20.0	25.0	**-0.0887**	0.033	37.4	mg/L	22	Standard
Ca	43	31.7	48.2	**-6.3893**	3.387	53.0	mg/L	47	Standard
Fe	54	173.5	30.0	**0.0146**	0.041	283.6	mg/L	151	Standard
Fe	57	193.3	26.5	**-0.1009**	0.133	132.3	mg/L	195	Standard
> **Sc-1**	45	32406.3	3.0				mg/L	29647	Standard
Cl	35	165598.8	1.0				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	7865.4	1.7				ug/L	1607	Standard
P	31	25877.1	1.5				ug/L	22752	Standard
S	34	5332.6	2.3				ug/L	5049	Standard
Sr	88	75.0	53.3				ug/L	87	Standard
C	12	26.7	86.6				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	38.2	28.0				mg/L	10	Standard
Ho-1	165	38.3	49.4				mg/L	7	Standard
Er	166	36.7	41.7				mg/L	3	Standard
I	127	9661.4	1.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.201	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.646	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.590	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.727	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606061601
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Method 6020 - Summary Report

Sample ID: L1606061602
Sample Date/Time: Thursday, June 16, 2016 21:16:38
Number of Replicates: 3
Autosampler Position: 353
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54740.4	1.6				ug/L	51024	Standard
	Be	9	13.3	78.1	**-0.0064**	0.011	174.7	ug/L	7	Standard
	Al	27	1805152.0	1.4	**11.8114**	0.177	1.5	ug/L	625	Standard
	Sc	45	31105.2	2.7				ug/L	29647	Standard
	Ti	47	145.3	36.9	**0.3297**	0.185	56.3	ug/L	57	Standard
	V	51	1187.4	9.5	**0.0023**	0.015	668.9	ug/L	1142	Standard
	Cr	52	6910.6	1.9	**0.0321**	0.023	70.2	ug/L	6628	Standard
	Cr	53	2121.8	8.3	**1.9016**	0.204	10.7	ug/L	430	Standard
	Mn	55	395363.0	1.6	**67.9452**	1.352	2.0	ug/L	603	Standard
	Co	59	396.7	9.1	**0.0219**	0.006	27.5	ug/L	237	Standard
	Ni	60	325.0	2.7	**0.0944**	0.004	4.0	ug/L	141	Standard
	Cu	65	328.0	3.2	**0.1122**	0.006	5.3	ug/L	109	Standard
	Zn	66	1614.8	2.3	**1.2569**	0.027	2.1	ug/L	159	Standard
>	**Ge**	72	463730.0	0.5				ug/L	474053	Standard
	As	75	191.5	27.2	**0.2018**	0.048	23.7	ug/L	-34	Standard
	Se	82	80.2	8.7	**0.5721**	0.064	11.1	ug/L	14	Standard
	Se-1	77	154.3	3.1	**1.3098**	0.068	5.2	ug/L	55	Standard
>	**Ga**	71	83.3	12.5				mg/L	50	Standard
	Rb	85	2255.2	4.8				ug/L	20	Standard
	Y	89	395085.6	4.8				ug/L	376602	Standard
>	**Rh**	103	30.0	44.1				ug/L	17	Standard
	Mo	98	187.4	6.4	**0.0739**	0.005	6.8	ug/L	8	Standard
	Ag	107	74.0	13.7	**0.0001**	0.002	2155.8	ug/L	81	Standard
	Cd	111	4.7	21.2	**-0.0008**	0.000	58.4	mg/L	3	Standard
	Cd	114	23.6	85.5	**0.0011**	0.004	381.8	ug/L	7	Standard
>	**In**	115	524300.8	1.8				ug/L	524722	Standard
	Sn	118	675.0	7.1	**0.0361**	0.011	30.7	ug/L	715	Standard
	Sb	123	147.3	26.2	**0.0191**	0.009	49.7	ug/L	201	Standard
	Ba	135	46098.7	0.3	**25.3994**	0.381	1.5	ug/L	108	Standard
	Ce	140	986.7	3.2				ug/L	30	Standard
>	**Tb**	159	774505.0	2.0				ug/L	792236	Standard
	Ho	165	13.3	94.4				ug/L	7	Standard
	Tl	203	220.3	5.0	**0.0280**	0.002	6.1	ug/L	9	Standard
	Tl	205	203.3	19.9	**0.0253**	0.006	25.4	ug/L	0	Standard
	Pb	206	323.3	2.8	**0.0179**	0.002	12.9	ug/L	216	Standard
	Pb	207	301.7	4.5	**0.0222**	0.003	14.6	ug/L	180	Standard
	Pb	208	1220.4	3.0	**0.0179**	0.003	14.6	ug/L	717	Standard
	U	238	72.3	70.3	**0.0048**	0.009	183.1	ug/L	4	Standard
>	**Bi**	209	434377.4	0.6				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	9573.0	1.2	**12.3290**	0.229	1.9	mg/L	20	Standard
K	39	33.3	22.9	**0.0143**	0.056	391.5	mg/L	22	Standard
Ca	43	41.7	42.1	**-3.8937**	4.020	103.2	mg/L	47	Standard
Fe	54	3391.5	3.3	**2.5135**	0.063	2.5	mg/L	151	Standard
Fe	57	1036.7	3.7	**2.4151**	0.178	7.4	mg/L	195	Standard
> **Sc-1**	45	31105.2	2.7				mg/L	29647	Standard
Cl	35	163124.3	2.0				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	18861.8	5.5				ug/L	1607	Standard
P	31	25780.2	1.2				ug/L	22752	Standard
S	34	5427.6	1.2				ug/L	5049	Standard
Sr	88	133.3	17.7				ug/L	87	Standard
C	12	63.3	48.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	29.4	2.5				mg/L	10	Standard
Ho-1	165	13.3	94.4				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	3	Standard
I	127	27164.5	9.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.283	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.822	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.920
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.360
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606061604
Sample Date/Time: Thursday, June 16, 2016 21:19:49
Number of Replicates: 3
Autosampler Position: 354
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54814.0	0.5				ug/L	51024	Standard
	Be	9	6.7	86.6	**-0.0137**	0.006	46.5	ug/L	7	Standard
	Al	27	110436.2	2.3	**0.7124**	0.018	2.6	ug/L	625	Standard
	Sc	45	32459.7	0.6				ug/L	29647	Standard
	Ti	47	55.7	9.0	**0.0154**	0.018	115.7	ug/L	57	Standard
	V	51	1190.0	8.3	**-0.0046**	0.017	376.0	ug/L	1142	Standard
	Cr	52	7226.1	2.7	**0.0323**	0.047	144.2	ug/L	6628	Standard
	Cr	53	801.7	5.0	**0.4109**	0.034	8.3	ug/L	430	Standard
	Mn	55	73546.8	1.3	**11.9804**	0.177	1.5	ug/L	603	Standard
	Co	59	487.0	1.6	**0.0328**	0.001	4.1	ug/L	237	Standard
	Ni	60	526.7	1.8	**0.1891**	0.010	5.0	ug/L	141	Standard
	Cu	65	380.0	8.6	**0.1312**	0.013	9.7	ug/L	109	Standard
	Zn	66	2004.8	2.3	**1.5353**	0.023	1.5	ug/L	159	Standard
>	**Ge**	72	485083.0	2.2				ug/L	474053	Standard
	As	75	-27.5	85.1	**0.0005**	0.021	4240.8	ug/L	-34	Standard
	Se	82	14.1	16.8	**-0.0441**	0.023	53.0	ug/L	14	Standard
	Se-1	77	56.3	6.2	**-0.0281**	0.039	138.2	ug/L	55	Standard
>	**Ga**	71	65.0	27.7				mg/L	50	Standard
	Rb	85	975.0	3.7				ug/L	20	Standard
	Y	89	385735.6	1.3				ug/L	376602	Standard
>	**Rh**	103	33.3	48.2				ug/L	17	Standard
	Mo	98	31.0	17.9	**0.0076**	0.002	32.0	ug/L	8	Standard
	Ag	107	69.3	9.6	**-0.0007**	0.001	178.9	ug/L	81	Standard
	Cd	111	35.6	7.1	**0.0152**	0.001	9.3	mg/L	3	Standard
	Cd	114	78.6	33.7	**0.0126**	0.006	43.8	ug/L	7	Standard
>	**In**	115	522479.0	0.6				ug/L	524722	Standard
	Sn	118	488.3	12.5	**0.0016**	0.012	727.2	ug/L	715	Standard
	Sb	123	114.8	19.9	**0.0116**	0.005	46.5	ug/L	201	Standard
	Ba	135	3662.8	1.7	**1.9717**	0.029	1.5	ug/L	108	Standard
	Ce	140	251.7	12.1				ug/L	30	Standard
>	**Tb**	159	792180.5	1.3				ug/L	792236	Standard
	Ho	165	13.3	21.7				ug/L	7	Standard
	Tl	203	47.3	14.4	**0.0036**	0.001	25.0	ug/L	9	Standard
	Tl	205	38.3	27.2	**-0.0019**	0.002	86.2	ug/L	0	Standard
	Pb	206	262.0	5.8	**0.0007**	0.003	518.6	ug/L	216	Standard
	Pb	207	237.7	10.4	**0.0030**	0.006	203.7	ug/L	180	Standard
	Pb	208	979.3	1.2	**-0.0002**	0.001	232.5	ug/L	717	Standard
	U	238	9.3	43.3	**-0.0061**	0.001	10.8	ug/L	4	Standard
>	**Bi**	209	458288.4	0.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	298.3	19.4	**0.3240**	0.070	21.6	mg/L	20	Standard
K	39	26.7	65.8	**-0.0419**	0.123	294.6	mg/L	22	Standard
Ca	43	43.3	52.0	**-3.9540**	4.787	121.1	mg/L	47	Standard
Fe	54	369.3	3.6	**0.1593**	0.010	6.3	mg/L	151	Standard
Fe	57	236.7	13.4	**0.0219**	0.086	394.4	mg/L	195	Standard
Sc-1	45	32459.7	0.6				mg/L	29647	Standard
Cl	35	161744.2	1.3				ug/L	154152	Standard
Kr	83	2.7	78.1				ug/L	3	Standard
Br	81	2450.2	3.6				ug/L	1607	Standard
P	31	25593.3	1.9				ug/L	22752	Standard
S	34	5534.3	4.3				ug/L	5049	Standard
Sr	88	81.7	34.8				ug/L	87	Standard
C	12	56.7	40.8				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.2	113.9				mg/L	10	Standard
Ho-1	165	13.3	21.7				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	3	Standard
I	127	11324.2	2.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		107.428	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.327	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.573
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.554
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606065001
Sample Date/Time: Thursday, June 16, 2016 21:23:01
Number of Replicates: 3
Autosampler Position: 355
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56128.8	1.5				ug/L	51024	Standard
	Be	9	8.3	34.6	**-0.0121**	0.003	26.6	ug/L	7	Standard
	Al	27	482122.3	0.7	**3.0698**	0.068	2.2	ug/L	625	Standard
	Sc	45	32641.8	1.6				ug/L	29647	Standard
	Ti	47	45.3	15.0	**-0.0118**	0.021	178.3	ug/L	57	Standard
	V	51	499.2	13.7	**-0.0967**	0.009	9.3	ug/L	1142	Standard
	Cr	52	82458.1	0.9	**10.5208**	0.076	0.7	ug/L	6628	Standard
	Cr	53	10431.9	1.2	**11.0318**	0.293	2.7	ug/L	430	Standard
	Mn	55	79305.3	0.7	**13.5203**	0.175	1.3	ug/L	603	Standard
	Co	59	2974.6	1.7	**0.4315**	0.004	1.0	ug/L	237	Standard
	Ni	60	33369.4	1.4	**17.5928**	0.059	0.3	ug/L	141	Standard
	Cu	65	207.3	9.4	**0.0465**	0.009	20.2	ug/L	109	Standard
	Zn	66	1251.4	5.4	**0.9209**	0.049	5.4	ug/L	159	Standard
>	**Ge**	72	464010.1	1.4				ug/L	474053	Standard
	As	75	2.0	650.9	**0.0269**	0.012	45.0	ug/L	-34	Standard
	Se	82	23.1	30.3	**0.0449**	0.067	148.0	ug/L	14	Standard
	Se-1	77	78.7	3.2	**0.3022**	0.048	15.8	ug/L	55	Standard
>	**Ga**	71	63.3	32.9				mg/L	50	Standard
	Rb	85	220.0	4.5				ug/L	20	Standard
	Y	89	399793.1	1.3				ug/L	376602	Standard
>	**Rh**	103	18.3	103.3				ug/L	17	Standard
	Mo	98	108.7	5.3	**0.0384**	0.002	6.3	ug/L	8	Standard
	Ag	107	73.7	11.4	**-0.0005**	0.001	257.8	ug/L	81	Standard
	Cd	111	9.8	27.0	**0.0016**	0.001	82.1	mg/L	3	Standard
	Cd	114	29.3	22.9	**0.0020**	0.001	66.1	ug/L	7	Standard
>	**In**	115	548875.7	0.2				ug/L	524722	Standard
	Sn	118	460.0	8.7	**-0.0078**	0.007	89.3	ug/L	715	Standard
	Sb	123	86.5	15.7	**0.0041**	0.003	71.3	ug/L	201	Standard
	Ba	135	20540.6	0.3	**10.7757**	0.041	0.4	ug/L	108	Standard
	Ce	140	105.0	17.2				ug/L	30	Standard
>	**Tb**	159	820934.6	1.9				ug/L	792236	Standard
	Ho	165	20.0	25.0				ug/L	7	Standard
	Tl	203	96.0	11.0	**0.0101**	0.002	16.2	ug/L	9	Standard
	Tl	205	83.3	24.2	**0.0050**	0.003	58.6	ug/L	0	Standard
	Pb	206	282.0	1.9	**0.0050**	0.002	36.7	ug/L	216	Standard
	Pb	207	225.3	3.3	**-0.0000**	0.001	53500.0	ug/L	180	Standard
	Pb	208	968.3	3.8	**-0.0009**	0.003	322.0	ug/L	717	Standard
	U	238	52.7	14.0	**0.0010**	0.001	142.8	ug/L	4	Standard
>	**Bi**	209	458406.1	1.9				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1866.8	2.0	**2.2543**	0.080	3.6	mg/L	20	Standard
K	39	16.7	96.4	**-0.1137**	0.109	95.5	mg/L	22	Standard
Ca	43	30.0	44.1	**-6.8062**	2.881	42.3	mg/L	47	Standard
Fe	54	329.9	10.2	**0.1288**	0.026	20.3	mg/L	151	Standard
Fe	57	233.3	15.5	**0.0097**	0.106	1102.3	mg/L	195	Standard
> **Sc-1**	45	32641.8	1.6				mg/L	29647	Standard
Cl	35	163083.7	0.8				ug/L	154152	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	2766.9	2.7				ug/L	1607	Standard
P	31	25266.1	2.8				ug/L	22752	Standard
S	34	5369.3	3.4				ug/L	5049	Standard
Sr	88	88.3	8.6				ug/L	87	Standard
C	12	30.0	57.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.9	122.5				mg/L	10	Standard
Ho-1	165	20.0	25.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	9619.7	7.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.004	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.881	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.603
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.579
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606065002
Sample Date/Time: Thursday, June 16, 2016 21:26:12
Number of Replicates: 3
Autosampler Position: 356
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54365.7	1.4				ug/L	51024	Standard
	Be	9	15.0	57.7	**-0.0044**	0.010	217.8	ug/L	7	Standard
	Al	27	1025103.4	0.5	**6.7495**	0.066	1.0	ug/L	625	Standard
	Sc	45	32087.3	3.3				ug/L	29647	Standard
	Ti	47	91.0	58.5	**0.1440**	0.181	125.8	ug/L	57	Standard
	V	51	1237.3	4.1	**0.0097**	0.009	93.5	ug/L	1142	Standard
	Cr	52	7747.0	1.2	**0.1491**	0.005	3.5	ug/L	6628	Standard
	Cr	53	1525.1	10.3	**1.2446**	0.145	11.6	ug/L	430	Standard
	Mn	55	121524.7	0.0	**20.8162**	0.350	1.7	ug/L	603	Standard
	Co	59	489.3	10.2	**0.0367**	0.008	22.6	ug/L	237	Standard
	Ni	60	546.0	2.6	**0.2119**	0.012	5.8	ug/L	141	Standard
	Cu	65	411.0	3.0	**0.1575**	0.006	3.6	ug/L	109	Standard
	Zn	66	2195.8	1.8	**1.7944**	0.008	0.5	ug/L	159	Standard
>	**Ge**	72	463367.3	1.7				ug/L	474053	Standard
	As	75	18.1	195.3	**0.0420**	0.032	77.3	ug/L	-34	Standard
	Se	82	30.0	13.1	**0.1083**	0.035	32.1	ug/L	14	Standard
	Se-1	77	106.3	6.3	**0.6711**	0.066	9.8	ug/L	55	Standard
>	**Ga**	71	40.0	54.5				mg/L	50	Standard
	Rb	85	1018.4	11.8				ug/L	20	Standard
	Y	89	407107.2	1.0				ug/L	376602	Standard
>	**Rh**	103	23.3	12.4				ug/L	17	Standard
	Mo	98	59.9	56.3	**0.0195**	0.014	72.7	ug/L	8	Standard
	Ag	107	115.7	63.4	**0.0068**	0.012	179.6	ug/L	81	Standard
	Cd	111	19.6	16.6	**0.0067**	0.002	24.0	mg/L	3	Standard
	Cd	114	62.3	30.6	**0.0090**	0.004	42.7	ug/L	7	Standard
>	**In**	115	532203.3	2.6				ug/L	524722	Standard
	Sn	118	596.7	23.5	**0.0202**	0.028	136.6	ug/L	715	Standard
	Sb	123	167.7	43.4	**0.0231**	0.017	71.6	ug/L	201	Standard
	Ba	135	32786.1	2.0	**17.7838**	0.579	3.3	ug/L	108	Standard
	Ce	140	491.7	8.2				ug/L	30	Standard
>	**Tb**	159	779044.5	1.2				ug/L	792236	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	239.0	44.6	**0.0304**	0.015	49.0	ug/L	9	Standard
	Tl	205	176.7	20.9	**0.0208**	0.006	27.7	ug/L	0	Standard
	Pb	206	322.7	21.3	**0.0173**	0.016	92.8	ug/L	216	Standard
	Pb	207	291.0	18.0	**0.0192**	0.014	70.8	ug/L	180	Standard
	Pb	208	1188.0	5.2	**0.0154**	0.003	22.6	ug/L	717	Standard
	U	238	183.3	6.3	**0.0235**	0.002	9.7	ug/L	4	Standard
>	**Bi**	209	437003.3	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	7120.0	1.8	**8.8768**	0.151	1.7	mg/L	20	Standard
K	39	41.7	27.7	**0.0654**	0.079	121.4	mg/L	22	Standard
Ca	43	41.7	42.1	**-4.2187**	3.620	85.8	mg/L	47	Standard
Fe	54	137.5	7.6	**-0.0117**	0.005	43.2	mg/L	151	Standard
Fe	57	181.7	19.3	**-0.1275**	0.097	75.8	mg/L	195	Standard
> **Sc-1**	45	32087.3	3.3				mg/L	29647	Standard
Cl	35	166481.1	1.4				ug/L	154152	Standard
Kr	83	1.0	0.0				ug/L	3	Standard
Br	81	4110.6	4.2				ug/L	1607	Standard
P	31	25599.9	1.8				ug/L	22752	Standard
S	34	5374.3	5.2				ug/L	5049	Standard
Sr	88	101.7	24.3				ug/L	87	Standard
C	12	36.7	41.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.4	106.9				mg/L	10	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	76002.0	4.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.549	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.746	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.426
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.930
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606065003
Sample Date/Time: Thursday, June 16, 2016 21:29:23
Number of Replicates: 3
Autosampler Position: 357
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54541.3	1.2				ug/L	51024	Standard
	Be	9	8.3	124.9	**-0.0119**	0.012	97.1	ug/L	7	Standard
	Al	27	606559.5	1.5	**3.9772**	0.101	2.5	ug/L	625	Standard
	Sc	45	31063.5	1.7				ug/L	29647	Standard
	Ti	47	165.3	5.8	**0.3810**	0.031	8.1	ug/L	57	Standard
	V	51	733.0	77.1	**-0.0659**	0.079	120.2	ug/L	1142	Standard
	Cr	52	157074.9	2.2	**20.2677**	0.514	2.5	ug/L	6628	Standard
	Cr	53	20141.7	1.4	**21.0752**	0.347	1.6	ug/L	430	Standard
	Mn	55	101750.2	1.1	**16.8892**	0.212	1.3	ug/L	603	Standard
	Co	59	1910.5	3.6	**0.2538**	0.010	4.1	ug/L	237	Standard
	Ni	60	8863.6	2.0	**4.4841**	0.097	2.2	ug/L	141	Standard
	Cu	65	1674.4	2.3	**0.8182**	0.022	2.7	ug/L	109	Standard
	Zn	66	2740.2	2.8	**2.2224**	0.074	3.3	ug/L	159	Standard
>	**Ge**	72	477422.4	0.2				ug/L	474053	Standard
	As	75	139.6	40.2	**0.1503**	0.051	33.7	ug/L	-34	Standard
	Se	82	42.3	11.2	**0.2113**	0.043	20.3	ug/L	14	Standard
	Se-1	77	93.0	6.5	**0.4578**	0.081	17.7	ug/L	55	Standard
>	**Ga**	71	101.7	37.2				mg/L	50	Standard
	Rb	85	1565.1	2.0				ug/L	20	Standard
	Y	89	382720.6	3.5				ug/L	376602	Standard
>	**Rh**	103	20.0	66.1				ug/L	17	Standard
	Mo	98	639.1	4.3	**0.2676**	0.013	4.7	ug/L	8	Standard
	Ag	107	90.7	24.5	**0.0030**	0.004	127.1	ug/L	81	Standard
	Cd	111	110.9	7.8	**0.0545**	0.005	9.0	mg/L	3	Standard
	Cd	114	275.8	13.3	**0.0542**	0.008	14.0	ug/L	7	Standard
>	**In**	115	519830.3	1.0				ug/L	524722	Standard
	Sn	118	653.3	27.4	**0.0332**	0.035	105.0	ug/L	715	Standard
	Sb	123	127.7	28.4	**0.0147**	0.009	58.6	ug/L	201	Standard
	Ba	135	11175.1	0.7	**6.1659**	0.078	1.3	ug/L	108	Standard
	Ce	140	2495.2	5.2				ug/L	30	Standard
>	**Tb**	159	780545.7	0.5				ug/L	792236	Standard
	Ho	165	53.3	48.1				ug/L	7	Standard
	Tl	203	163.0	29.4	**0.0195**	0.006	33.3	ug/L	9	Standard
	Tl	205	135.0	9.8	**0.0137**	0.002	15.9	ug/L	0	Standard
	Pb	206	547.3	5.3	**0.0663**	0.008	11.4	ug/L	216	Standard
	Pb	207	444.0	2.8	**0.0555**	0.004	6.9	ug/L	180	Standard
	Pb	208	1903.7	3.0	**0.0576**	0.005	8.4	ug/L	717	Standard
	U	238	51.3	38.7	**0.0010**	0.003	341.9	ug/L	4	Standard
>	**Bi**	209	444975.8	1.2				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3707.1	1.1	**4.7531**	0.132	2.8	mg/L	20	Standard
K	39	33.3	17.3	**0.0146**	0.042	286.2	mg/L	22	Standard
Ca	43	30.0	57.7	**-6.5001**	3.854	59.3	mg/L	47	Standard
Fe	54	681.6	4.0	**0.4140**	0.022	5.2	mg/L	151	Standard
Fe	57	318.3	7.1	**0.2945**	0.082	27.9	mg/L	195	Standard
> **Sc-1**	45	31063.5	1.7				mg/L	29647	Standard
Cl	35	164261.1	1.5				ug/L	154152	Standard
Kr	83	2.0	86.6				ug/L	3	Standard
Br	81	7888.7	5.8				ug/L	1607	Standard
P	31	24920.5	3.3				ug/L	22752	Standard
S	34	5307.6	1.0				ug/L	5049	Standard
Sr	88	88.3	8.6				ug/L	87	Standard
C	12	40.0	25.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	74.8	18.4				mg/L	10	Standard
Ho-1	165	53.3	48.1				mg/L	7	Standard
Er	166	40.0	90.1				mg/L	3	Standard
I	127	17526.8	1.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.893	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.711	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.068
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.662
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606065008
Sample Date/Time: Thursday, June 16, 2016 21:32:35
Number of Replicates: 3
Autosampler Position: 358
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55971.5	1.2				ug/L	51024	Standard
	Be	9	16.7	121.2	**-0.0030**	0.022	732.0	ug/L	7	Standard
	Al	27	227217.9	1.2	**1.4454**	0.014	1.0	ug/L	625	Standard
	Sc	45	33091.1	0.4				ug/L	29647	Standard
	Ti	47	93.0	12.2	**0.1482**	0.035	23.3	ug/L	57	Standard
	V	51	1468.9	10.6	**0.0412**	0.020	48.4	ug/L	1142	Standard
	Cr	52	7242.7	0.8	**0.0709**	0.012	17.1	ug/L	6628	Standard
	Cr	53	1168.4	6.4	**0.8438**	0.086	10.2	ug/L	430	Standard
	Mn	55	143314.1	1.9	**24.3672**	0.286	1.2	ug/L	603	Standard
	Co	59	707.7	4.5	**0.0704**	0.004	5.3	ug/L	237	Standard
	Ni	60	1968.1	3.3	**0.9574**	0.026	2.8	ug/L	141	Standard
	Cu	65	534.7	8.0	**0.2223**	0.018	8.2	ug/L	109	Standard
	Zn	66	4633.0	0.1	**4.0098**	0.079	2.0	ug/L	159	Standard
>	**Ge**	72	467157.4	1.9				ug/L	474053	Standard
	As	75	68.4	19.1	**0.0878**	0.012	13.9	ug/L	-34	Standard
	Se	82	42.7	11.5	**0.2237**	0.049	22.1	ug/L	14	Standard
	Se-1	77	88.3	9.6	**0.4216**	0.095	22.5	ug/L	55	Standard
>	**Ga**	71	53.3	28.6				mg/L	50	Standard
	Rb	85	821.7	8.3				ug/L	20	Standard
	Y	89	390712.9	1.8				ug/L	376602	Standard
>	**Rh**	103	16.7	96.4				ug/L	17	Standard
	Mo	98	26.7	10.2	**0.0055**	0.001	23.5	ug/L	8	Standard
	Ag	107	72.3	16.0	**-0.0005**	0.002	422.0	ug/L	81	Standard
	Cd	111	13.3	4.3	**0.0034**	0.000	6.8	mg/L	3	Standard
	Cd	114	40.2	32.3	**0.0044**	0.003	63.9	ug/L	7	Standard
>	**In**	115	538841.7	2.0				ug/L	524722	Standard
	Sn	118	488.3	14.9	**-0.0013**	0.012	965.6	ug/L	715	Standard
	Sb	123	100.5	11.8	**0.0076**	0.002	30.8	ug/L	201	Standard
	Ba	135	7028.6	0.9	**3.7196**	0.097	2.6	ug/L	108	Standard
	Ce	140	2670.2	3.1				ug/L	30	Standard
>	**Tb**	159	805010.7	0.6				ug/L	792236	Standard
	Ho	165	43.3	40.5				ug/L	7	Standard
	Tl	203	119.0	4.4	**0.0131**	0.001	5.7	ug/L	9	Standard
	Tl	205	95.0	22.9	**0.0069**	0.003	48.8	ug/L	0	Standard
	Pb	206	254.0	2.5	**-0.0008**	0.002	244.2	ug/L	216	Standard
	Pb	207	226.3	9.4	**0.0004**	0.004	982.1	ug/L	180	Standard
	Pb	208	875.0	3.9	**-0.0061**	0.002	39.4	ug/L	717	Standard
	U	238	28.3	19.4	**-0.0030**	0.001	30.6	ug/L	4	Standard
>	**Bi**	209	456325.9	1.4				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3722.1	3.3	**4.4755**	0.132	3.0	mg/L	20	Standard
K	39	21.7	48.0	**-0.0800**	0.071	88.6	mg/L	22	Standard
Ca	43	38.3	49.4	**-5.1655**	3.960	76.7	mg/L	47	Standard
Fe	54	149.3	20.9	**-0.0062**	0.023	370.8	mg/L	151	Standard
Fe	57	191.7	19.2	**-0.1152**	0.104	90.0	mg/L	195	Standard
> **Sc-1**	45	33091.1	0.4				mg/L	29647	Standard
Cl	35	167461.1	1.4				ug/L	154152	Standard
Kr	83	2.3	49.5				ug/L	3	Standard
Br	81	7938.7	3.1				ug/L	1607	Standard
P	31	24910.5	1.2				ug/L	22752	Standard
S	34	5120.9	0.9				ug/L	5049	Standard
Sr	88	83.3	3.5				ug/L	87	Standard
C	12	63.3	48.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	67.9	15.4				mg/L	10	Standard
Ho-1	165	43.3	40.5				mg/L	7	Standard
Er	166	43.3	26.6				mg/L	3	Standard
I	127	7648.6	2.6				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		109.696	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.545	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.691	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.127	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606073001
Sample Date/Time: Thursday, June 16, 2016 21:35:46
Number of Replicates: 3
Autosampler Position: 359
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55371.0	2.2				ug/L	51024	Standard
	Be	9	11.7	65.5	**-0.0084**	0.008	97.7	ug/L	7	Standard
	Al	27	132096.8	1.8	**0.8455**	0.012	1.5	ug/L	625	Standard
	Sc	45	31868.5	4.0				ug/L	29647	Standard
	Ti	47	30.0	17.3	**-0.0614**	0.019	31.4	ug/L	57	Standard
	V	51	1455.6	7.2	**0.0453**	0.013	29.6	ug/L	1142	Standard
	Cr	52	11040.4	2.7	**0.6383**	0.023	3.6	ug/L	6628	Standard
	Cr	53	1623.4	8.3	**1.3902**	0.129	9.3	ug/L	430	Standard
	Mn	55	1201.0	0.7	**0.0848**	0.004	4.7	ug/L	603	Standard
	Co	59	375.7	2.3	**0.0198**	0.001	6.0	ug/L	237	Standard
	Ni	60	312.3	3.4	**0.0912**	0.004	4.7	ug/L	141	Standard
	Cu	65	236.3	2.7	**0.0651**	0.002	3.6	ug/L	109	Standard
	Zn	66	1941.8	2.7	**1.5970**	0.055	3.5	ug/L	159	Standard
>	**Ge**	72	454022.4	1.2				ug/L	474053	Standard
	As	75	11.9	146.3	**0.0364**	0.016	45.2	ug/L	-34	Standard
	Se	82	31.4	12.8	**0.1281**	0.041	32.3	ug/L	14	Standard
	Se-1	77	87.7	5.7	**0.4469**	0.060	13.4	ug/L	55	Standard
>	**Ga**	71	95.0	18.2				mg/L	50	Standard
	Rb	85	4872.5	2.9				ug/L	20	Standard
	Y	89	404770.5	0.6				ug/L	376602	Standard
>	**Rh**	103	80.0	22.5				ug/L	17	Standard
	Mo	98	116.6	2.8	**0.0416**	0.002	4.6	ug/L	8	Standard
	Ag	107	61.3	24.5	**-0.0025**	0.002	96.4	ug/L	81	Standard
	Cd	111	8.1	43.0	**0.0008**	0.002	229.5	mg/L	3	Standard
	Cd	114	29.0	53.2	**0.0020**	0.003	156.6	ug/L	7	Standard
>	**In**	115	550074.8	1.6				ug/L	524722	Standard
	Sn	118	596.7	39.8	**0.0158**	0.040	254.1	ug/L	715	Standard
	Sb	123	117.4	4.2	**0.0108**	0.001	9.0	ug/L	201	Standard
	Ba	135	36971.7	2.1	**19.3982**	0.128	0.7	ug/L	108	Standard
	Ce	140	30.0	16.7				ug/L	30	Standard
>	**Tb**	159	802021.2	1.6				ug/L	792236	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	154.7	7.4	**0.0182**	0.001	7.8	ug/L	9	Standard
	Tl	205	128.3	9.0	**0.0124**	0.002	14.8	ug/L	0	Standard
	Pb	206	255.7	10.1	**0.0005**	0.007	1256.9	ug/L	216	Standard
	Pb	207	236.0	8.3	**0.0037**	0.003	93.0	ug/L	180	Standard
	Pb	208	980.3	1.1	**0.0011**	0.002	149.5	ug/L	717	Standard
	U	238	28.0	18.9	**-0.0030**	0.001	29.7	ug/L	4	Standard
>	**Bi**	209	448836.9	2.3				ug/L	460343	Standard

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Na	23	5.0	100.0	**-5.1594**	15.986	309.8	mg/L	0	Standard
Mg	24	1993.5	3.8	**2.4733**	0.176	7.1	mg/L	20	Standard
K	39	58.3	21.6	**0.1865**	0.091	48.6	mg/L	22	Standard
Ca	43	45.0	19.2	**-3.3710**	2.098	62.2	mg/L	47	Standard
Fe	54	141.5	17.4	**-0.0075**	0.021	284.9	mg/L	151	Standard
Fe	57	231.7	13.9	**0.0185**	0.068	366.5	mg/L	195	Standard
> **Sc-1**	45	31868.5	4.0				mg/L	29647	Standard
Cl	35	162650.5	1.3				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	5611.0	3.8				ug/L	1607	Standard
P	31	25164.2	0.9				ug/L	22752	Standard
S	34	5320.9	2.9				ug/L	5049	Standard
Sr	88	361.7	6.2				ug/L	87	Standard
C	12	50.0	20.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.0	107.3				mg/L	10	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	3	Standard
I	127	5254.2	4.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.519	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.775	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606073001
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.832
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.501
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606073001
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Method 6020 - Summary Report

Sample ID: L1606073002
Sample Date/Time: Thursday, June 16, 2016 21:38:59
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52860.4	2.3				ug/L	51024	Standard
	Be	9	10.0	50.0	**-0.0095**	0.006	63.2	ug/L	7	Standard
	Al	27	137711.4	1.6	**0.9241**	0.007	0.7	ug/L	625	Standard
	Sc	45	31095.2	1.2				ug/L	29647	Standard
	Ti	47	32.7	23.2	**-0.0560**	0.026	46.7	ug/L	57	Standard
	V	51	1546.7	3.7	**0.0511**	0.010	20.5	ug/L	1142	Standard
	Cr	52	11025.0	1.4	**0.5840**	0.055	9.5	ug/L	6628	Standard
	Cr	53	1463.4	4.0	**1.1555**	0.040	3.5	ug/L	430	Standard
	Mn	55	1410.7	11.5	**0.1137**	0.033	29.0	ug/L	603	Standard
	Co	59	359.7	1.9	**0.0152**	0.002	14.6	ug/L	237	Standard
	Ni	60	319.3	6.2	**0.0894**	0.014	15.7	ug/L	141	Standard
	Cu	65	200.0	1.3	**0.0412**	0.002	3.9	ug/L	109	Standard
	Zn	66	1969.1	2.4	**1.5596**	0.014	0.9	ug/L	159	Standard
>	**Ge**	72	469994.3	2.3				ug/L	474053	Standard
	As	75	0.5	7482.9	**0.0251**	0.035	138.8	ug/L	-34	Standard
	Se	82	28.5	7.3	**0.0908**	0.014	15.4	ug/L	14	Standard
	Se-1	77	88.7	18.3	**0.4207**	0.218	51.8	ug/L	55	Standard
>	**Ga**	71	73.3	28.4				mg/L	50	Standard
	Rb	85	4865.8	1.3				ug/L	20	Standard
	Y	89	399171.5	2.3				ug/L	376602	Standard
>	**Rh**	103	93.3	12.4				ug/L	17	Standard
	Mo	98	101.9	16.6	**0.0370**	0.006	16.6	ug/L	8	Standard
	Ag	107	61.3	18.0	**-0.0021**	0.002	98.0	ug/L	81	Standard
	Cd	111	6.5	18.0	**0.0001**	0.001	960.6	mg/L	3	Standard
	Cd	114	23.1	68.6	**0.0010**	0.003	344.6	ug/L	7	Standard
>	**In**	115	531069.9	2.8				ug/L	524722	Standard
	Sn	118	445.0	10.3	**-0.0078**	0.009	112.2	ug/L	715	Standard
	Sb	123	65.7	14.2	**0.0001**	0.002	2926.8	ug/L	201	Standard
	Ba	135	36371.9	1.1	**19.7762**	0.433	2.2	ug/L	108	Standard
	Ce	140	41.7	50.0				ug/L	30	Standard
>	**Tb**	159	774515.8	2.9				ug/L	792236	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	160.3	8.2	**0.0195**	0.002	8.6	ug/L	9	Standard
	Tl	205	130.0	21.4	**0.0133**	0.005	36.0	ug/L	0	Standard
	Pb	206	254.0	4.2	**0.0016**	0.003	201.3	ug/L	216	Standard
	Pb	207	204.3	4.4	**-0.0027**	0.002	57.9	ug/L	180	Standard
	Pb	208	941.7	3.4	**0.0002**	0.002	1048.9	ug/L	717	Standard
	U	238	8.3	85.1	**-0.0062**	0.001	19.1	ug/L	4	Standard
>	**Bi**	209	437592.9	1.4				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1953.5	4.1	**2.4795**	0.082	3.3	mg/L	20	Standard
K	39	41.7	13.9	**0.0748**	0.041	54.3	mg/L	22	Standard
Ca	43	46.7	6.2	**-2.7971**	0.513	18.3	mg/L	47	Standard
Fe	54	137.1	22.1	**-0.0088**	0.022	251.4	mg/L	151	Standard
Fe	57	218.3	25.5	**-0.0034**	0.160	4703.1	mg/L	195	Standard
> **Sc-1**	45	31095.2	1.2				mg/L	29647	Standard
Cl	35	164376.3	1.5				ug/L	154152	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	5667.7	1.8				ug/L	1607	Standard
P	31	24892.1	1.3				ug/L	22752	Standard
S	34	5330.9	2.9				ug/L	5049	Standard
Sr	88	315.0	7.3				ug/L	87	Standard
C	12	43.3	26.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.7	100.8				mg/L	10	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	5250.9	7.1				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.599	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.144	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.210
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.058
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606073003
Sample Date/Time: Thursday, June 16, 2016 21:42:10
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	53594.6	1.1				ug/L	51024	Standard
	Be	9	3.3	86.6	**-0.0173**	0.003	18.9	ug/L	7	Standard
	Al	27	2979001.9	0.3	**19.9155**	0.253	1.3	ug/L	625	Standard
	Sc	45	31315.7	0.8				ug/L	29647	Standard
	Ti	47	43.0	24.6	**-0.0251**	0.035	139.3	ug/L	57	Standard
	V	51	1280.4	1.3	**0.0086**	0.002	24.3	ug/L	1142	Standard
	Cr	52	6976.3	2.4	**0.0037**	0.022	588.3	ug/L	6628	Standard
	Cr	53	1470.1	6.4	**1.1220**	0.096	8.5	ug/L	430	Standard
	Mn	55	27960.5	2.4	**4.5016**	0.120	2.7	ug/L	603	Standard
	Co	59	554.3	12.3	**0.0435**	0.010	24.1	ug/L	237	Standard
	Ni	60	395.0	5.1	**0.1235**	0.010	8.4	ug/L	141	Standard
	Cu	65	173.0	8.3	**0.0243**	0.008	31.2	ug/L	109	Standard
	Zn	66	1439.4	0.7	**1.0440**	0.007	0.7	ug/L	159	Standard
>	Ge	72	482360.2	0.2				ug/L	474053	Standard
	As	75	84.5	59.0	**0.1001**	0.044	44.2	ug/L	-34	Standard
	Se	82	47.5	19.6	**0.2529**	0.082	32.5	ug/L	14	Standard
	Se-1	77	132.0	7.2	**0.9443**	0.119	12.5	ug/L	55	Standard
>	Ga	71	60.0	14.4				mg/L	50	Standard
	Rb	85	475.0	12.1				ug/L	20	Standard
	Y	89	391203.2	1.3				ug/L	376602	Standard
>	Rh	103	55.0	9.1				ug/L	17	Standard
	Mo	98	37.9	67.6	**0.0106**	0.011	103.7	ug/L	8	Standard
	Ag	107	71.3	16.2	**-0.0003**	0.002	600.9	ug/L	81	Standard
	Cd	111	5.3	57.7	**-0.0005**	0.002	303.0	mg/L	3	Standard
	Cd	114	27.8	51.3	**0.0020**	0.003	149.5	ug/L	7	Standard
>	In	115	521847.0	1.7				ug/L	524722	Standard
	Sn	118	455.0	13.4	**-0.0046**	0.010	225.0	ug/L	715	Standard
	Sb	123	77.8	11.7	**0.0031**	0.002	74.2	ug/L	201	Standard
	Ba	135	148771.2	0.6	**82.4802**	0.932	1.1	ug/L	108	Standard
	Ce	140	300.0	8.7				ug/L	30	Standard
>	Tb	159	770703.6	1.1				ug/L	792236	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	215.7	6.2	**0.0270**	0.001	5.4	ug/L	9	Standard
	Tl	205	208.3	27.6	**0.0257**	0.009	34.8	ug/L	0	Standard
	Pb	206	272.0	3.0	**0.0054**	0.003	50.7	ug/L	216	Standard
	Pb	207	232.3	12.8	**0.0041**	0.008	195.9	ug/L	180	Standard
	Pb	208	1012.0	13.3	**0.0042**	0.007	176.0	ug/L	717	Standard
	U	238	232.3	16.7	**0.0315**	0.006	19.1	ug/L	4	Standard
>	Bi	209	439553.9	1.5				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	6086.2	1.7	**7.7675**	0.192	2.5	mg/L	20	Standard
K	39	18.3	56.8	**-0.0957**	0.075	77.9	mg/L	22	Standard
Ca	43	40.0	37.5	**-4.3545**	3.269	75.1	mg/L	47	Standard
Fe	54	265.9	15.1	**0.0898**	0.032	35.5	mg/L	151	Standard
Fe	57	201.7	20.0	**-0.0564**	0.115	204.5	mg/L	195	Standard
> **Sc-1**	45	31315.7	0.8				mg/L	29647	Standard
Cl	35	164992.2	0.7				ug/L	154152	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	10840.5	3.2				ug/L	1607	Standard
P	31	25164.2	3.4				ug/L	22752	Standard
S	34	5275.9	3.2				ug/L	5049	Standard
Sr	88	133.3	20.7				ug/L	87	Standard
C	12	53.3	57.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.2	49.6				mg/L	10	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	3	Standard
I	127	4810.8	4.4				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		105.038	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.752	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.452
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.484
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 21:45:23
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	52964.1	3.2				ug/L	51024	Standard
	Be	9	42168.6	0.7	**48.3246**	1.216	2.5	ug/L	7	Standard
	Al	27	7159091.1	2.4	**48.4492**	0.473	1.0	ug/L	625	Standard
	Sc	45	31200.4	3.4				ug/L	29647	Standard
	Ti	47	30099.2	0.4	**103.9852**	0.489	0.5	ug/L	57	Standard
	V	51	348173.2	0.9	**50.6797**	0.340	0.7	ug/L	1142	Standard
	Cr	52	366090.7	0.6	**50.7470**	0.566	1.1	ug/L	6628	Standard
	Cr	53	45820.9	1.2	**50.7491**	0.901	1.8	ug/L	430	Standard
	Mn	55	317011.4	2.2	**55.3295**	1.324	2.4	ug/L	603	Standard
	Co	59	316851.8	0.1	**51.1533**	0.313	0.6	ug/L	237	Standard
	Ni	60	93845.8	1.6	**50.4491**	1.080	2.1	ug/L	141	Standard
	Cu	65	91207.1	1.9	**50.3255**	1.210	2.4	ug/L	109	Standard
	Zn	66	53728.8	0.5	**50.1071**	0.516	1.0	ug/L	159	Standard
>	Ge	72	456409.0	0.5				ug/L	474053	Standard
	As	75	53094.6	1.6	**49.8317**	1.034	2.1	ug/L	-34	Standard
	Se	82	5335.2	1.1	**49.9428**	0.782	1.6	ug/L	14	Standard
	Se-1	77	3694.5	1.3	**49.2280**	0.868	1.8	ug/L	55	Standard
>	Ga	71	73.3	28.4				mg/L	50	Standard
	Rb	85	751.7	9.7				ug/L	20	Standard
	Y	89	395355.6	1.3				ug/L	376602	Standard
>	Rh	103	41.7	60.4				ug/L	17	Standard
	Mo	98	229935.7	1.0	**95.4610**	1.901	2.0	ug/L	8	Standard
	Ag	107	284501.2	0.4	**46.7556**	0.793	1.7	ug/L	81	Standard
	Cd	111	95579.3	0.6	**48.2915**	1.096	2.3	mg/L	3	Standard
	Cd	114	235319.3	0.3	**48.0921**	0.943	2.0	ug/L	7	Standard
>	In	115	535171.0	1.8				ug/L	524722	Standard
	Sn	118	268883.3	0.8	**48.8581**	0.478	1.0	ug/L	715	Standard
	Sb	123	213216.9	1.1	**47.8524**	0.650	1.4	ug/L	201	Standard
	Ba	135	88420.6	0.7	**47.7774**	0.620	1.3	ug/L	108	Standard
	Ce	140	60.0	52.0				ug/L	30	Standard
>	Tb	159	778568.6	0.9				ug/L	792236	Standard
	Ho	165	13.3	43.3				ug/L	7	Standard
	Tl	203	356552.0	0.9	**49.1981**	0.525	1.1	ug/L	9	Standard
	Tl	205	312384.5	1.4	**50.6927**	1.380	2.7	ug/L	0	Standard
	Pb	206	221782.7	0.3	**50.5795**	0.697	1.4	ug/L	216	Standard
	Pb	207	201563.9	0.5	**50.4967**	0.774	1.5	ug/L	180	Standard
	Pb	208	829379.7	0.4	**51.1985**	0.900	1.8	ug/L	717	Standard
	U	238	307681.0	0.4	**52.2118**	0.917	1.8	ug/L	4	Standard
>	Bi	209	436760.9	1.5				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.2513**	9.008	171.5	mg/L	0	Standard
Mg	24	3917.2	3.4	**5.0034**	0.184	3.7	mg/L	20	Standard
K	39	655.0	10.8	**4.5166**	0.488	10.8	mg/L	22	Standard
Ca	43	65.0	20.4	**1.3136**	3.422	260.5	mg/L	47	Standard
Fe	54	6192.2	4.0	**4.6769**	0.351	7.5	mg/L	151	Standard
Fe	57	1618.4	6.7	**4.1237**	0.452	11.0	mg/L	195	Standard
Sc-1	45	31200.4	3.4				mg/L	29647	Standard
Cl	35	163997.6	1.9				ug/L	154152	Standard
Kr	83	3.7	15.7				ug/L	3	Standard
Br	81	1766.8	4.0				ug/L	1607	Standard
P	31	25599.9	0.9				ug/L	22752	Standard
S	34	5862.8	2.2				ug/L	5049	Standard
Sr	88	68.3	41.6				ug/L	87	Standard
C	12	33.3	34.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	-1.0	50.0				mg/L	10	Standard
Ho-1	165	13.3	43.3				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	3	Standard
I	127	1488.4	8.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	96.649		
Al	27	96.898		
Sc	45			
Ti	47	103.985		
V	51	101.359		
Cr	52	101.494		
Cr	53			
Mn	55	110.659		
Co	59	102.307		
Ni	60	100.898		
Cu	65	100.651		
Zn	66	100.214		
Ge	72		96.278	
As	75	99.663		
Se	82	99.886		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	95.461		
Ag	107	93.511		
Cd	111	96.583		
Cd	114			
In	115		101.991	
Sn	118	97.716		
Sb	123	95.705		
Ba	135	95.555		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.396		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.397		
U	238	104.424		
Bi	209		94.877	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Mn	55	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 21:48:35
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51738.2	1.1				ug/L	51024	Standard
	Be	9	8.3	91.7	**-0.0112**	0.009	80.5	ug/L	7	Standard
	Al	27	1365.1	16.8	**-0.0003**	0.002	478.2	ug/L	625	Standard
	Sc	45	32252.6	1.6				ug/L	29647	Standard
	Ti	47	29.0	17.2	**-0.0677**	0.018	26.3	ug/L	57	Standard
	V	51	928.8	10.2	**-0.0358**	0.012	34.3	ug/L	1142	Standard
	Cr	52	6199.9	1.6	**-0.0728**	0.006	8.7	ug/L	6628	Standard
	Cr	53	526.7	17.6	**0.1435**	0.102	70.8	ug/L	430	Standard
	Mn	55	679.7	4.7	**-0.0102**	0.006	62.4	ug/L	603	Standard
	Co	59	222.0	2.4	**-0.0062**	0.001	15.3	ug/L	237	Standard
	Ni	60	127.3	4.5	**-0.0108**	0.003	24.1	ug/L	141	Standard
	Cu	65	129.3	11.3	**0.0037**	0.008	218.4	ug/L	109	Standard
	Zn	66	156.3	8.5	**-0.0888**	0.012	14.0	ug/L	159	Standard
>	**Ge**	72	466990.8	0.9				ug/L	474053	Standard
	As	75	-31.2	100.9	**-0.0035**	0.029	815.0	ug/L	-34	Standard
	Se	82	18.5	27.4	**0.0013**	0.046	3640.7	ug/L	14	Standard
	Se-1	77	60.7	5.3	**0.0572**	0.045	77.9	ug/L	55	Standard
>	**Ga**	71	66.7	41.3				mg/L	50	Standard
	Rb	85	25.0	20.0				ug/L	20	Standard
	Y	89	391075.9	3.9				ug/L	376602	Standard
>	**Rh**	103	35.0	49.5				ug/L	17	Standard
	Mo	98	246.2	31.0	**0.0990**	0.031	31.0	ug/L	8	Standard
	Ag	107	92.0	11.3	**0.0032**	0.002	60.7	ug/L	81	Standard
	Cd	111	9.2	30.0	**0.0015**	0.001	89.3	mg/L	3	Standard
	Cd	114	8.4	58.3	**-0.0021**	0.001	50.3	ug/L	7	Standard
>	**In**	115	521304.7	2.1				ug/L	524722	Standard
	Sn	118	806.7	12.6	**0.0616**	0.022	35.5	ug/L	715	Standard
	Sb	123	413.8	23.7	**0.0808**	0.024	30.2	ug/L	201	Standard
	Ba	135	135.0	17.1	**0.0173**	0.012	72.2	ug/L	108	Standard
	Ce	140	18.3	78.7				ug/L	30	Standard
>	**Tb**	159	770403.7	2.0				ug/L	792236	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	53.3	21.7	**0.0047**	0.002	33.8	ug/L	9	Standard
	Tl	205	41.7	25.0	**-0.0011**	0.002	147.7	ug/L	0	Standard
	Pb	206	231.3	3.6	**-0.0040**	0.002	55.2	ug/L	216	Standard
	Pb	207	191.7	4.4	**-0.0062**	0.002	38.0	ug/L	180	Standard
	Pb	208	830.7	1.5	**-0.0071**	0.001	9.5	ug/L	717	Standard
	U	238	32.3	17.6	**-0.0021**	0.001	45.2	ug/L	4	Standard
>	**Bi**	209	440882.3	0.7				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	40.0	45.1	**0.0046**	0.022	483.5	mg/L	20	Standard
K	39	21.7	13.3	**-0.0762**	0.019	24.7	mg/L	22	Standard
Ca	43	16.7	62.4	**-9.5897**	2.277	23.7	mg/L	47	Standard
Fe	54	154.6	3.2	**0.0006**	0.004	679.4	mg/L	151	Standard
Fe	57	181.7	39.0	**-0.1287**	0.205	159.3	mg/L	195	Standard
> **Sc-1**	45	32252.6	1.6				mg/L	29647	Standard
Cl	35	162535.6	2.7				ug/L	154152	Standard
Kr	83	2.0	100.0				ug/L	3	Standard
Br	81	1583.4	15.5				ug/L	1607	Standard
P	31	25920.5	3.4				ug/L	22752	Standard
S	34	5491.0	2.1				ug/L	5049	Standard
Sr	88	78.3	13.3				ug/L	87	Standard
C	12	43.3	13.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	2.9	173.2				mg/L	10	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	10.0	173.2				mg/L	3	Standard
I	127	951.7	4.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.510	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.349
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.773
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, June 16, 2016 21:51:48
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51025.8	1.8				ug/L	51024	Standard
	Be	9	158.3	20.5	**0.1674**	0.039	23.3	ug/L	7	Standard
	Al	27	703.4	27.7	**-0.0048**	0.001	26.9	ug/L	625	Standard
	Sc	45	32324.5	3.0				ug/L	29647	Standard
	Ti	47	27.3	27.7	**-0.0704**	0.026	37.0	ug/L	57	Standard
	V	51	3596.4	1.1	**0.3627**	0.006	1.6	ug/L	1142	Standard
	Cr	52	11538.7	0.6	**0.7185**	0.004	0.5	ug/L	6628	Standard
	Cr	53	1191.7	2.4	**0.9142**	0.036	4.0	ug/L	430	Standard
	Mn	55	3452.4	2.2	**0.4841**	0.013	2.6	ug/L	603	Standard
	Co	59	2481.5	3.2	**0.3641**	0.012	3.2	ug/L	237	Standard
	Ni	60	2983.6	1.9	**1.5460**	0.025	1.6	ug/L	141	Standard
	Cu	65	1554.1	2.2	**0.8018**	0.018	2.3	ug/L	109	Standard
	Zn	66	6904.6	0.5	**6.3076**	0.040	0.6	ug/L	159	Standard
>	**Ge**	72	451469.6	0.4				ug/L	474053	Standard
	As	75	367.1	3.5	**0.3732**	0.012	3.2	ug/L	-34	Standard
	Se	82	52.6	5.1	**0.3307**	0.024	7.1	ug/L	14	Standard
	Se-1	77	86.0	19.2	**0.4314**	0.229	53.1	ug/L	55	Standard
>	**Ga**	71	36.7	56.8				mg/L	50	Standard
	Rb	85	15.0	145.3				ug/L	20	Standard
	Y	89	372929.0	2.6				ug/L	376602	Standard
>	**Rh**	103	21.7	58.1				ug/L	17	Standard
	Mo	98	53.2	25.4	**0.0175**	0.006	35.6	ug/L	8	Standard
	Ag	107	2191.8	2.9	**0.3621**	0.015	4.2	ug/L	81	Standard
	Cd	111	428.6	3.0	**0.2218**	0.010	4.4	mg/L	3	Standard
	Cd	114	1072.7	8.3	**0.2242**	0.022	10.0	ug/L	7	Standard
>	**In**	115	515022.5	1.7				ug/L	524722	Standard
	Sn	118	460.0	21.8	**-0.0026**	0.018	670.4	ug/L	715	Standard
	Sb	123	1687.6	0.2	**0.3789**	0.008	2.0	ug/L	201	Standard
	Ba	135	1278.4	5.4	**0.6611**	0.044	6.7	ug/L	108	Standard
	Ce	140	11.7	89.2				ug/L	30	Standard
>	**Tb**	159	775692.8	2.1				ug/L	792236	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	561.7	1.8	**0.0736**	0.001	1.5	ug/L	9	Standard
	Tl	205	431.7	7.1	**0.0610**	0.005	8.2	ug/L	0	Standard
	Pb	206	1089.0	2.6	**0.1879**	0.008	4.3	ug/L	216	Standard
	Pb	207	883.7	5.5	**0.1638**	0.011	6.9	ug/L	180	Standard
	Pb	208	3859.2	0.5	**0.1764**	0.003	1.5	ug/L	717	Standard
	U	238	2254.8	1.2	**0.3683**	0.007	1.9	ug/L	4	Standard
>	**Bi**	209	444599.6	0.7				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.3150**	8.898	167.4	mg/L	0	Standard
Mg	24	30.0	16.7	**-0.0079**	0.006	76.0	mg/L	20	Standard
K	39	21.7	66.6	**-0.0767**	0.101	131.3	mg/L	22	Standard
Ca	43	30.0	28.9	**-6.7278**	2.028	30.1	mg/L	47	Standard
Fe	54	87.5	4.0	**-0.0496**	0.004	9.0	mg/L	151	Standard
Fe	57	195.0	9.2	**-0.0929**	0.056	60.4	mg/L	195	Standard
Sc-1	45	32324.5	3.0				mg/L	29647	Standard
Cl	35	156288.7	1.2				ug/L	154152	Standard
Kr	83	3.3	17.3				ug/L	3	Standard
Br	81	1266.7	10.3				ug/L	1607	Standard
P	31	17852.2	2.6				ug/L	22752	Standard
S	34	5659.4	1.8				ug/L	5049	Standard
Sr	88	65.0	40.7				ug/L	87	Standard
C	12	20.0	0.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.2	100.1				mg/L	10	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	985.0	8.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	83.676		
Al	27			
Sc	45			
Ti	47			
V	51	90.668		
Cr	52	89.809		
Cr	53			
Mn	55	96.822		
Co	59	91.014		
Ni	60	96.626		
Cu	65	100.227		
Zn	66	100.922		
Ge	72		95.236	
As	75	93.291		
Se	82	82.669		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	90.533		
Cd	111	92.425		
Cd	114			
> In	115			98.152
Sn	118			
Sb	123	94.728		
Ba	135	88.151		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	91.941		
Tl	205			
Pb	206			
Pb	207			
Pb	208	88.177		
U	238	92.081		
> Bi	209			96.580
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW 58 WG571964-02
Sample Date/Time: Thursday, June 16, 2016 21:55:00
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51882.0	0.7				ug/L	51024	Standard
	Be	9	8.3	91.7	**-0.0113**	0.009	79.6	ug/L	7	Standard
	Al	27	7225.1	1.7	**0.0402**	0.001	2.5	ug/L	625	Standard
	Sc	45	32848.9	2.3				ug/L	29647	Standard
	Ti	47	51.0	25.0	**0.0065**	0.044	672.4	ug/L	57	Standard
	V	51	1196.1	1.0	**0.0022**	0.004	185.3	ug/L	1142	Standard
	Cr	52	7726.6	1.1	**0.1365**	0.019	13.7	ug/L	6628	Standard
	Cr	53	648.3	14.3	**0.2747**	0.094	34.1	ug/L	430	Standard
	Mn	55	2688.6	3.0	**0.3326**	0.014	4.1	ug/L	603	Standard
	Co	59	223.3	5.2	**-0.0060**	0.001	19.7	ug/L	237	Standard
	Ni	60	306.7	5.4	**0.0833**	0.005	5.7	ug/L	141	Standard
	Cu	65	369.3	3.4	**0.1332**	0.011	8.3	ug/L	109	Standard
	Zn	66	1524.4	0.8	**1.1625**	0.045	3.9	ug/L	159	Standard
>	**Ge**	72	467701.0	2.5				ug/L	474053	Standard
	As	75	-29.1	18.5	**-0.0015**	0.005	304.8	ug/L	-34	Standard
	Se	82	20.2	33.1	**0.0162**	0.062	379.4	ug/L	14	Standard
	Se-1	77	49.0	28.8	**-0.1009**	0.171	169.5	ug/L	55	Standard
>	**Ga**	71	70.0	25.8				mg/L	50	Standard
	Rb	85	63.3	19.9				ug/L	20	Standard
	Y	89	385228.3	1.7				ug/L	376602	Standard
>	**Rh**	103	13.3	43.3				ug/L	17	Standard
	Mo	98	91.6	20.6	**0.0329**	0.008	25.1	ug/L	8	Standard
	Ag	107	70.0	10.3	**-0.0007**	0.001	169.4	ug/L	81	Standard
	Cd	111	7.2	21.3	**0.0004**	0.001	191.2	mg/L	3	Standard
	Cd	114	8.6	219.6	**-0.0020**	0.004	198.4	ug/L	7	Standard
>	**In**	115	529391.3	2.2				ug/L	524722	Standard
	Sn	118	1728.4	4.6	**0.2287**	0.017	7.5	ug/L	715	Standard
	Sb	123	139.5	23.6	**0.0168**	0.007	40.4	ug/L	201	Standard
	Ba	135	108.3	10.8	**0.0016**	0.007	433.3	ug/L	108	Standard
	Ce	140	70.0	18.9				ug/L	30	Standard
>	**Tb**	159	807450.9	1.8				ug/L	792236	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	22.0	12.0	**0.0003**	0.000	106.9	ug/L	9	Standard
	Tl	205	30.0	28.9	**-0.0032**	0.001	42.5	ug/L	0	Standard
	Pb	206	253.7	10.4	**-0.0009**	0.006	689.0	ug/L	216	Standard
	Pb	207	220.0	2.1	**-0.0010**	0.001	126.8	ug/L	180	Standard
	Pb	208	877.3	3.6	**-0.0060**	0.002	33.1	ug/L	717	Standard
	U	238	8.7	63.5	**-0.0062**	0.001	14.5	ug/L	4	Standard
>	**Bi**	209	455782.1	0.2				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.5393**	8.509	153.6	mg/L	0	Standard
Mg	24	36.7	7.9	**-0.0004**	0.003	710.4	mg/L	20	Standard
K	39	8.3	34.6	**-0.1703**	0.021	12.2	mg/L	22	Standard
Ca	43	33.3	8.7	**-6.1652**	0.476	7.7	mg/L	47	Standard
Fe	54	150.7	24.4	**-0.0047**	0.025	526.5	mg/L	151	Standard
Fe	57	176.7	14.2	**-0.1527**	0.076	49.6	mg/L	195	Standard
> **Sc-1**	45	32848.9	2.3				mg/L	29647	Standard
Cl	35	161385.0	1.1				ug/L	154152	Standard
Kr	83	3.3	34.6				ug/L	3	Standard
Br	81	1680.1	1.8				ug/L	1607	Standard
P	31	24029.0	2.1				ug/L	22752	Standard
S	34	5571.0	3.7				ug/L	5049	Standard
Sr	88	66.7	56.3				ug/L	87	Standard
C	12	53.3	94.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.2	100.1				mg/L	10	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	1201.7	0.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.681	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.660	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.890
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.009
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 58 WG571964-03
Sample Date/Time: Thursday, June 16, 2016 21:58:11
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53618.1	1.9				ug/L	51024	Standard
	Be	9	43223.2	1.9	**48.9062**	0.701	1.4	ug/L	7	Standard
	Al	27	16045.2	3.1	**0.0975**	0.001	1.5	ug/L	625	Standard
	Sc	45	33034.3	2.7				ug/L	29647	Standard
	Ti	47	54.7	14.9	**0.0208**	0.027	130.9	ug/L	57	Standard
	V	51	357626.2	0.2	**51.4076**	0.356	0.7	ug/L	1142	Standard
	Cr	52	377061.2	0.6	**51.6273**	0.257	0.5	ug/L	6628	Standard
	Cr	53	46803.9	1.6	**51.1933**	1.124	2.2	ug/L	430	Standard
	Mn	55	326931.8	1.1	**56.3462**	0.565	1.0	ug/L	603	Standard
	Co	59	321699.5	0.9	**51.2838**	0.209	0.4	ug/L	237	Standard
	Ni	60	96180.4	1.7	**51.0507**	0.482	0.9	ug/L	141	Standard
	Cu	65	95306.5	1.4	**51.9244**	0.344	0.7	ug/L	109	Standard
	Zn	66	56208.1	0.9	**51.7682**	0.278	0.5	ug/L	159	Standard
>	**Ge**	72	462203.6	0.8				ug/L	474053	Standard
	As	75	54677.4	1.3	**50.6686**	0.319	0.6	ug/L	-34	Standard
	Se	82	5471.8	2.6	**50.5742**	0.951	1.9	ug/L	14	Standard
	Se-1	77	3817.1	0.9	**50.2380**	0.317	0.6	ug/L	55	Standard
>	**Ga**	71	60.0	22.0				mg/L	50	Standard
	Rb	85	115.0	15.7				ug/L	20	Standard
	Y	89	401062.4	1.0				ug/L	376602	Standard
>	**Rh**	103	33.3	37.7				ug/L	17	Standard
	Mo	98	55.7	12.6	**0.0170**	0.003	16.7	ug/L	8	Standard
	Ag	107	298947.0	1.2	**47.9637**	0.316	0.7	ug/L	81	Standard
	Cd	111	99244.6	1.4	**48.9502**	0.549	1.1	mg/L	3	Standard
	Cd	114	239743.2	0.7	**47.8326**	0.248	0.5	ug/L	7	Standard
>	**In**	115	548071.7	0.8				ug/L	524722	Standard
	Sn	118	1466.7	2.8	**0.1712**	0.008	4.6	ug/L	715	Standard
	Sb	123	213065.5	1.1	**46.6859**	0.143	0.3	ug/L	201	Standard
	Ba	135	90504.9	1.1	**47.7484**	0.750	1.6	ug/L	108	Standard
	Ce	140	71.7	4.0				ug/L	30	Standard
>	**Tb**	159	809470.0	2.7				ug/L	792236	Standard
	Ho	165	10.0	100.0				ug/L	7	Standard
	Tl	203	363003.7	1.1	**48.3987**	0.635	1.3	ug/L	9	Standard
	Tl	205	319279.0	0.6	**50.0661**	1.366	2.7	ug/L	0	Standard
	Pb	206	230746.8	0.4	**50.8528**	1.062	2.1	ug/L	216	Standard
	Pb	207	202045.2	0.4	**48.9160**	1.313	2.7	ug/L	180	Standard
	Pb	208	862693.1	0.1	**51.4643**	1.296	2.5	ug/L	717	Standard
	U	238	307882.3	0.1	**50.4881**	1.234	2.4	ug/L	4	Standard
>	**Bi**	209	452058.0	2.3				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.4002**	8.750	162.0	mg/L	0	Standard
Mg	24	33.3	8.7	**-0.0046**	0.004	92.7	mg/L	20	Standard
K	39	38.3	32.8	**0.0349**	0.087	249.1	mg/L	22	Standard
Ca	43	31.7	48.2	**-6.5426**	3.175	48.5	mg/L	47	Standard
Fe	54	129.8	11.6	**-0.0203**	0.010	51.0	mg/L	151	Standard
Fe	57	178.3	5.8	**-0.1508**	0.042	28.0	mg/L	195	Standard
Sc-1	45	33034.3	2.7				mg/L	29647	Standard
Cl	35	160489.1	2.1				ug/L	154152	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	1963.5	7.4				ug/L	1607	Standard
P	31	24446.4	2.0				ug/L	22752	Standard
S	34	5609.4	5.5				ug/L	5049	Standard
Sr	88	61.7	16.9				ug/L	87	Standard
C	12	83.3	59.2				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	16.2	127.9				mg/L	10	Standard
Ho-1	165	10.0	100.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	1580.1	4.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.084	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.500	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.450
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.200
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606042801 WG571964-01
Sample Date/Time: Thursday, June 16, 2016 22:01:23
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53056.1	0.8				ug/L	51024	Standard
	Be	9	15.0	120.2	**-0.0038**	0.021	544.4	ug/L	7	Standard
	Al	27	757403.8	1.6	**5.1075**	0.106	2.1	ug/L	625	Standard
	Sc	45	31754.9	2.5				ug/L	29647	Standard
	Ti	47	165.7	8.9	**0.3896**	0.046	11.7	ug/L	57	Standard
	V	51	1511.6	6.0	**0.0457**	0.014	31.1	ug/L	1142	Standard
	Cr	52	8164.9	0.8	**0.1892**	0.010	5.5	ug/L	6628	Standard
	Cr	53	1656.8	10.3	**1.3626**	0.187	13.8	ug/L	430	Standard
	Mn	55	17190.1	1.5	**2.7889**	0.065	2.3	ug/L	603	Standard
	Co	59	391.7	5.3	**0.0201**	0.004	18.4	ug/L	237	Standard
	Ni	60	11431.6	1.7	**5.8888**	0.134	2.3	ug/L	141	Standard
	Cu	65	74287.3	0.4	**39.7191**	0.286	0.7	ug/L	109	Standard
	Zn	66	6798.2	0.6	**5.9426**	0.080	1.3	ug/L	159	Standard
>	**Ge**	72	470820.2	0.8				ug/L	474053	Standard
	As	75	23.4	122.6	**0.0464**	0.026	56.6	ug/L	-34	Standard
	Se	82	24.3	11.2	**0.0524**	0.025	47.2	ug/L	14	Standard
	Se-1	77	121.0	4.3	**0.8414**	0.059	7.0	ug/L	55	Standard
>	**Ga**	71	111.7	6.8				mg/L	50	Standard
	Rb	85	8439.0	5.7				ug/L	20	Standard
	Y	89	394979.4	1.5				ug/L	376602	Standard
>	**Rh**	103	30.0	0.0				ug/L	17	Standard
	Mo	98	18900.0	0.6	**7.8902**	0.142	1.8	ug/L	8	Standard
	Ag	107	1050.7	1.6	**0.1614**	0.000	0.2	ug/L	81	Standard
	Cd	111	8.7	19.0	**0.0012**	0.001	76.4	mg/L	3	Standard
	Cd	114	173.0	66.1	**0.0315**	0.023	73.0	ug/L	7	Standard
>	**In**	115	531861.1	1.7				ug/L	524722	Standard
	Sn	118	33005.9	1.3	**5.9570**	0.142	2.4	ug/L	715	Standard
	Sb	123	2285.8	18.9	**0.5027**	0.106	21.1	ug/L	201	Standard
	Ba	135	21266.9	0.9	**11.5188**	0.132	1.1	ug/L	108	Standard
	Ce	140	228.3	16.1				ug/L	30	Standard
>	**Tb**	159	787998.7	1.7				ug/L	792236	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	150.7	22.9	**0.0182**	0.005	26.8	ug/L	9	Standard
	Tl	205	115.0	41.5	**0.0108**	0.008	72.2	ug/L	0	Standard
	Pb	206	32589.3	0.1	**7.3677**	0.062	0.8	ug/L	216	Standard
	Pb	207	27351.7	1.3	**6.7905**	0.113	1.7	ug/L	180	Standard
	Pb	208	116700.7	0.9	**7.1377**	0.028	0.4	ug/L	717	Standard
	U	238	60.7	30.6	**0.0027**	0.003	116.1	ug/L	4	Standard
>	**Bi**	209	437691.5	0.7				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.5017**	8.575	155.9	mg/L	0	Standard
Mg	24	12460.1	1.8	**15.7356**	0.595	3.8	mg/L	20	Standard
K	39	611.7	9.8	**4.1225**	0.361	8.8	mg/L	22	Standard
Ca	43	61.7	24.8	**0.2569**	3.325	1294.5	mg/L	47	Standard
Fe	54	123.9	25.0	**-0.0210**	0.023	110.5	mg/L	151	Standard
Fe	57	213.3	11.8	**-0.0300**	0.077	258.2	mg/L	195	Standard
Sc-1	45	31754.9	2.5				mg/L	29647	Standard
Cl	35	194533.7	1.6				ug/L	154152	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	3240.3	4.0				ug/L	1607	Standard
P	31	24090.8	3.3				ug/L	22752	Standard
S	34	5104.2	4.8				ug/L	5049	Standard
Sr	88	81.7	19.7				ug/L	87	Standard
C	12	96.7	6.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.5	179.6				mg/L	10	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	13282.5	4.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.982	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.318	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.361
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.079
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606042801S WG571964-05
Sample Date/Time: Thursday, June 16, 2016 22:04:34
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55394.4	1.8				ug/L	51024	Standard
	Be	9	8934.3	3.4	**9.7660**	0.194	2.0	ug/L	7	Standard
	Al	27	748355.5	1.6	**4.8346**	0.168	3.5	ug/L	625	Standard
	Sc	45	32691.9	1.0				ug/L	29647	Standard
	Ti	47	168.3	4.0	**0.3836**	0.024	6.2	ug/L	57	Standard
	V	51	72192.1	1.7	**9.7775**	0.188	1.9	ug/L	1142	Standard
	Cr	52	79707.4	0.5	**9.6848**	0.014	0.1	ug/L	6628	Standard
	Cr	53	10453.6	1.1	**10.5826**	0.158	1.5	ug/L	430	Standard
	Mn	55	79152.9	1.5	**12.9343**	0.146	1.1	ug/L	603	Standard
	Co	59	63320.4	0.7	**9.6094**	0.039	0.4	ug/L	237	Standard
	Ni	60	29840.4	0.9	**15.0769**	0.185	1.2	ug/L	141	Standard
	Cu	65	88796.8	0.4	**46.2088**	0.054	0.1	ug/L	109	Standard
	Zn	66	17201.8	0.7	**14.9707**	0.150	1.0	ug/L	159	Standard
>	**Ge**	72	483837.9	0.4				ug/L	474053	Standard
	As	75	10943.5	1.9	**9.7081**	0.171	1.8	ug/L	-34	Standard
	Se	82	1071.8	4.1	**9.3269**	0.380	4.1	ug/L	14	Standard
	Se-1	77	883.4	1.7	**10.5260**	0.205	1.9	ug/L	55	Standard
>	**Ga**	71	61.7	18.7				mg/L	50	Standard
	Rb	85	8238.9	4.0				ug/L	20	Standard
	Y	89	381877.6	0.5				ug/L	376602	Standard
>	**Rh**	103	51.7	55.9				ug/L	17	Standard
	Mo	98	18040.5	0.2	**7.6113**	0.126	1.7	ug/L	8	Standard
	Ag	107	57677.6	1.0	**9.6285**	0.084	0.9	ug/L	81	Standard
	Cd	111	18876.2	0.3	**9.6948**	0.114	1.2	mg/L	3	Standard
	Cd	114	46340.2	1.4	**9.6280**	0.249	2.6	ug/L	7	Standard
>	**In**	115	526253.2	1.5				ug/L	524722	Standard
	Sn	118	29871.1	0.9	**5.4406**	0.094	1.7	ug/L	715	Standard
	Sb	123	44200.6	1.7	**10.0749**	0.023	0.2	ug/L	201	Standard
	Ba	135	37005.8	1.2	**20.2992**	0.061	0.3	ug/L	108	Standard
	Ce	140	223.3	9.3				ug/L	30	Standard
>	**Tb**	159	800388.6	1.7				ug/L	792236	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	71293.7	0.6	**9.5115**	0.043	0.5	ug/L	9	Standard
	Tl	205	61241.9	1.8	**9.6035**	0.196	2.0	ug/L	0	Standard
	Pb	206	76986.8	0.6	**16.9419**	0.160	0.9	ug/L	216	Standard
	Pb	207	66311.8	0.8	**16.0284**	0.098	0.6	ug/L	180	Standard
	Pb	208	275320.9	0.6	**16.3962**	0.155	0.9	ug/L	717	Standard
	U	238	60579.2	0.6	**9.9347**	0.056	0.6	ug/L	4	Standard
>	**Bi**	209	451597.7	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	12333.4	0.5	**15.1192**	0.089	0.6	mg/L	20	Standard
K	39	615.0	5.3	**4.0231**	0.203	5.0	mg/L	22	Standard
Ca	43	28.3	10.2	**-7.1884**	0.556	7.7	mg/L	47	Standard
Fe	54	187.4	26.5	**0.0230**	0.035	154.6	mg/L	151	Standard
Fe	57	198.3	19.1	**-0.0900**	0.107	118.9	mg/L	195	Standard
> **Sc-1**	45	32691.9	1.0				mg/L	29647	Standard
Cl	35	191462.1	0.2				ug/L	154152	Standard
Kr	83	1.7	124.9				ug/L	3	Standard
Br	81	2590.2	10.5				ug/L	1607	Standard
P	31	24189.3	1.6				ug/L	22752	Standard
S	34	5244.2	0.9				ug/L	5049	Standard
Sr	88	83.3	24.2				ug/L	87	Standard
C	12	146.7	23.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	13.3	114.6				mg/L	10	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	0.0					mg/L	3	Standard
I	127	11335.9	2.7				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		108.565	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		102.064	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.292
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.100
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606042801S WG571964-05
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Method 6020 - Summary Report

Sample ID: L1606042801SD WG571964-06
Sample Date/Time: Thursday, June 16, 2016 22:07:46
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56861.5	1.0				ug/L	51024	Standard
	Be	9	9379.6	0.6	**9.9907**	0.123	1.2	ug/L	7	Standard
	Al	27	791197.5	0.6	**4.9782**	0.076	1.5	ug/L	625	Standard
	Sc	45	33405.1	3.0				ug/L	29647	Standard
	Ti	47	189.0	15.7	**0.4621**	0.100	21.6	ug/L	57	Standard
	V	51	73275.8	0.5	**10.1068**	0.150	1.5	ug/L	1142	Standard
	Cr	52	82693.4	0.6	**10.2789**	0.155	1.5	ug/L	6628	Standard
	Cr	53	11009.0	1.3	**11.3764**	0.331	2.9	ug/L	430	Standard
	Mn	55	80077.1	1.3	**13.3217**	0.087	0.6	ug/L	603	Standard
	Co	59	64342.3	1.0	**9.9396**	0.081	0.8	ug/L	237	Standard
	Ni	60	30668.0	0.6	**15.7751**	0.244	1.5	ug/L	141	Standard
	Cu	65	102903.3	0.9	**54.5140**	0.360	0.7	ug/L	109	Standard
	Zn	66	17903.6	1.4	**15.8728**	0.283	1.8	ug/L	159	Standard
>	**Ge**	72	475415.3	1.6				ug/L	474053	Standard
	As	75	11042.5	1.9	**9.9692**	0.144	1.4	ug/L	-34	Standard
	Se	82	1111.2	2.5	**9.8543**	0.398	4.0	ug/L	14	Standard
	Se-1	77	817.4	1.4	**9.8699**	0.196	2.0	ug/L	55	Standard
>	**Ga**	71	86.7	39.3				mg/L	50	Standard
	Rb	85	8222.2	4.2				ug/L	20	Standard
	Y	89	394850.6	0.8				ug/L	376602	Standard
>	**Rh**	103	35.0	28.6				ug/L	17	Standard
	Mo	98	19398.6	1.2	**8.0048**	0.167	2.1	ug/L	8	Standard
	Ag	107	59697.4	0.4	**9.7470**	0.052	0.5	ug/L	81	Standard
	Cd	111	19317.1	0.2	**9.7032**	0.092	0.9	mg/L	3	Standard
	Cd	114	47826.5	0.6	**9.7171**	0.080	0.8	ug/L	7	Standard
>	**In**	115	538049.7	0.9				ug/L	524722	Standard
	Sn	118	39536.5	1.2	**7.0684**	0.038	0.5	ug/L	715	Standard
	Sb	123	45183.1	0.7	**10.0737**	0.100	1.0	ug/L	201	Standard
	Ba	135	43743.7	0.4	**23.4783**	0.172	0.7	ug/L	108	Standard
	Ce	140	316.7	16.7				ug/L	30	Standard
>	**Tb**	159	823661.0	0.7				ug/L	792236	Standard
	Ho	165	16.7	69.3				ug/L	7	Standard
	Tl	203	73870.7	1.0	**9.7275**	0.120	1.2	ug/L	9	Standard
	Tl	205	62943.8	1.2	**9.7425**	0.171	1.8	ug/L	0	Standard
	Pb	206	79783.5	0.3	**17.3303**	0.067	0.4	ug/L	216	Standard
	Pb	207	68152.3	0.6	**16.2608**	0.196	1.2	ug/L	180	Standard
	Pb	208	286237.0	1.1	**16.8270**	0.286	1.7	ug/L	717	Standard
	U	238	62126.1	0.8	**10.0567**	0.149	1.5	ug/L	4	Standard
>	**Bi**	209	457529.8	0.7				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	13005.6	1.2	**15.6137**	0.541	3.5	mg/L	20	Standard
K	39	631.7	11.7	**4.0527**	0.574	14.2	mg/L	22	Standard
Ca	43	45.0	29.4	**-3.9018**	2.447	62.7	mg/L	47	Standard
Fe	54	151.2	21.8	**-0.0055**	0.026	477.7	mg/L	151	Standard
Fe	57	191.7	21.7	**-0.1180**	0.127	107.5	mg/L	195	Standard
> **Sc-1**	45	33405.1	3.0				mg/L	29647	Standard
Cl	35	198754.5	0.5				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	2900.3	3.8				ug/L	1607	Standard
P	31	24661.7	2.9				ug/L	22752	Standard
S	34	5152.5	2.9				ug/L	5049	Standard
Sr	88	78.3	9.8				ug/L	87	Standard
C	12	96.7	43.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.9	187.9				mg/L	10	Standard
Ho-1	165	16.7	69.3				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	11145.8	3.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.440	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.287	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.540	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.389	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606041103
Sample Date/Time: Thursday, June 16, 2016 22:10:57
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62574.0	2.3				ug/L	51024	Standard
	Be	9	160.0	11.3	**0.1339**	0.015	11.0	ug/L	7	Standard
	Al	27	3612417.3	0.5	**20.6888**	0.380	1.8	ug/L	625	Standard
	Sc	45	41445.0	4.1				ug/L	29647	Standard
	Ti	47	11430.0	1.2	**38.8931**	0.503	1.3	ug/L	57	Standard
	V	51	49465.6	5.9	**6.9654**	0.407	5.8	ug/L	1142	Standard
	Cr	52	278119.6	1.2	**37.8421**	0.634	1.7	ug/L	6628	Standard
	Cr	53	35835.7	1.3	**39.0973**	0.639	1.6	ug/L	430	Standard
	Mn	55	108739.8	1.1	**18.6585**	0.168	0.9	ug/L	603	Standard
	Co	59	16555.0	2.3	**2.6001**	0.043	1.6	ug/L	237	Standard
	Ni	60	172929.3	0.8	**91.8635**	0.500	0.5	ug/L	141	Standard
	Cu	65	6358.3	3.5	**3.4028**	0.118	3.5	ug/L	109	Standard
	Zn	66	15282.7	1.5	**13.9075**	0.137	1.0	ug/L	159	Standard
>	**Ge**	72	462157.8	0.7				ug/L	474053	Standard
	As	75	708.4	1.9	**0.6813**	0.015	2.2	ug/L	-34	Standard
	Se	82	305.6	0.9	**2.6661**	0.043	1.6	ug/L	14	Standard
	Se-1	77	262.0	4.6	**2.7550**	0.165	6.0	ug/L	55	Standard
>	**Ga**	71	6034.5	4.8				mg/L	50	Standard
	Rb	85	47790.3	0.2				ug/L	20	Standard
	Y	89	408920.9	2.9				ug/L	376602	Standard
>	**Rh**	103	41.7	34.6				ug/L	17	Standard
	Mo	98	2172.6	4.5	**0.8781**	0.030	3.5	ug/L	8	Standard
	Ag	107	219.7	70.0	**0.0229**	0.024	105.6	ug/L	81	Standard
	Cd	111	75.9	34.7	**0.0343**	0.013	36.7	mg/L	3	Standard
	Cd	114	241.8	20.0	**0.0446**	0.009	20.8	ug/L	7	Standard
>	**In**	115	546080.6	1.7				ug/L	524722	Standard
	Sn	118	1300.1	5.7	**0.1424**	0.011	7.6	ug/L	715	Standard
	Sb	123	571.3	25.0	**0.1106**	0.030	26.8	ug/L	201	Standard
	Ba	135	154749.6	0.9	**81.9842**	0.666	0.8	ug/L	108	Standard
	Ce	140	87014.2	1.0				ug/L	30	Standard
>	**Tb**	159	814427.9	0.6				ug/L	792236	Standard
	Ho	165	750.0	9.7				ug/L	7	Standard
	Tl	203	378.3	10.9	**0.0480**	0.006	11.9	ug/L	9	Standard
	Tl	205	368.3	33.6	**0.0501**	0.020	39.4	ug/L	0	Standard
	Pb	206	5985.2	3.5	**1.2661**	0.051	4.1	ug/L	216	Standard
	Pb	207	4992.8	4.4	**1.1580**	0.058	5.0	ug/L	180	Standard
	Pb	208	21391.6	3.3	**1.2214**	0.047	3.9	ug/L	717	Standard
	U	238	1095.4	14.1	**0.1724**	0.026	15.1	ug/L	4	Standard
>	**Bi**	209	451292.0	0.4				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	20841.0	1.9	**20.1926**	1.006	5.0	mg/L	20	Standard
K	39	73.3	37.6	**0.1715**	0.145	84.8	mg/L	22	Standard
Ca	43	58.3	64.9	**-3.6032**	6.066	168.3	mg/L	47	Standard
Fe	54	4110.0	2.2	**2.2769**	0.060	2.6	mg/L	151	Standard
Fe	57	1281.7	3.9	**2.1921**	0.046	2.1	mg/L	195	Standard
> **Sc-1**	45	41445.0	4.1				mg/L	29647	Standard
Cl	35	174319.7	0.6				ug/L	154152	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	22139.5	6.4				ug/L	1607	Standard
P	31	56868.2	1.9				ug/L	22752	Standard
S	34	4735.7	5.8				ug/L	5049	Standard
Sr	88	138.3	8.3				ug/L	87	Standard
C	12	140.0	24.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	71.3				mg/L	0	Standard
Dy	164	1332.7	14.4				mg/L	10	Standard
Ho-1	165	750.0	9.7				mg/L	7	Standard
Er	166	710.0	11.5				mg/L	3	Standard
I	127	202127.9	4.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		122.636	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.491	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	104.070	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.034	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606041104
Sample Date/Time: Thursday, June 16, 2016 22:14:09
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64240.9	1.6				ug/L	51024	Standard
	Be	9	136.7	22.1	**0.1078**	0.027	24.9	ug/L	7	Standard
	Al	27	3763925.2	1.3	**20.9934**	0.276	1.3	ug/L	625	Standard
	Sc	45	40464.0	1.9				ug/L	29647	Standard
	Ti	47	8699.5	0.7	**27.3016**	0.630	2.3	ug/L	57	Standard
	V	51	38467.6	1.3	**4.9573**	0.087	1.7	ug/L	1142	Standard
	Cr	52	284248.5	0.2	**35.6883**	1.177	3.3	ug/L	6628	Standard
	Cr	53	35927.6	2.1	**36.1893**	1.342	3.7	ug/L	430	Standard
	Mn	55	133272.7	1.8	**21.1444**	0.498	2.4	ug/L	603	Standard
	Co	59	18921.1	3.5	**2.7470**	0.050	1.8	ug/L	237	Standard
	Ni	60	221247.9	1.4	**108.5931**	1.677	1.5	ug/L	141	Standard
	Cu	65	5825.8	2.3	**2.8698**	0.029	1.0	ug/L	109	Standard
	Zn	66	12440.8	1.3	**10.4031**	0.253	2.4	ug/L	159	Standard
>	**Ge**	72	500409.8	2.9				ug/L	474053	Standard
	As	75	551.3	12.2	**0.4975**	0.064	12.9	ug/L	-34	Standard
	Se	82	300.3	5.4	**2.4053**	0.175	7.3	ug/L	14	Standard
	Se-1	77	256.7	3.5	**2.4250**	0.195	8.0	ug/L	55	Standard
>	**Ga**	71	4735.7	2.7				mg/L	50	Standard
	Rb	85	38717.8	2.3				ug/L	20	Standard
	Y	89	413643.0	2.8				ug/L	376602	Standard
>	**Rh**	103	26.7	28.6				ug/L	17	Standard
	Mo	98	7867.7	1.9	**3.2136**	0.028	0.9	ug/L	8	Standard
	Ag	107	99.3	12.1	**0.0038**	0.002	50.7	ug/L	81	Standard
	Cd	111	46.8	16.9	**0.0200**	0.004	18.8	mg/L	3	Standard
	Cd	114	206.0	6.6	**0.0377**	0.003	7.1	ug/L	7	Standard
>	**In**	115	542917.1	1.0				ug/L	524722	Standard
	Sn	118	1081.7	2.4	**0.1046**	0.003	3.0	ug/L	715	Standard
	Sb	123	436.3	12.1	**0.0817**	0.011	13.3	ug/L	201	Standard
	Ba	135	146593.2	1.4	**78.1037**	0.328	0.4	ug/L	108	Standard
	Ce	140	75445.7	1.8				ug/L	30	Standard
>	**Tb**	159	801118.6	3.0				ug/L	792236	Standard
	Ho	165	633.3	15.1				ug/L	7	Standard
	Tl	203	300.0	6.5	**0.0378**	0.003	8.4	ug/L	9	Standard
	Tl	205	321.7	21.6	**0.0433**	0.012	28.2	ug/L	0	Standard
	Pb	206	5087.9	2.5	**1.0767**	0.011	1.0	ug/L	216	Standard
	Pb	207	4144.6	1.8	**0.9603**	0.027	2.8	ug/L	180	Standard
	Pb	208	18065.6	1.4	**1.0314**	0.029	2.8	ug/L	717	Standard
	U	238	874.7	4.0	**0.1374**	0.011	7.8	ug/L	4	Standard
>	**Bi**	209	447824.2	3.4				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	22872.3	0.6	**22.6806**	0.473	2.1	mg/L	20	Standard
K	39	35.0	51.5	**-0.0329**	0.100	305.7	mg/L	22	Standard
Ca	43	48.3	31.6	**-4.9013**	2.699	55.1	mg/L	47	Standard
Fe	54	3361.7	4.8	**1.8885**	0.113	6.0	mg/L	151	Standard
Fe	57	1078.4	5.6	**1.8011**	0.173	9.6	mg/L	195	Standard
Sc-1	45	40464.0	1.9				mg/L	29647	Standard
Cl	35	177669.3	2.1				ug/L	154152	Standard
Kr	83	2.3	24.7				ug/L	3	Standard
Br	81	20991.2	6.6				ug/L	1607	Standard
P	31	55948.1	2.2				ug/L	22752	Standard
S	34	4435.6	2.7				ug/L	5049	Standard
Sr	88	156.7	18.7				ug/L	87	Standard
C	12	160.0	47.2				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	0	Standard
Dy	164	1259.3	5.9				mg/L	10	Standard
Ho-1	165	633.3	15.1				mg/L	7	Standard
Er	166	573.3	7.3				mg/L	3	Standard
I	127	221985.7	5.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		125.903	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.560	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.468	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.281	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ni 60 Upper, S, EEE	Ni	60	

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606041104PS WG572085-03
Sample Date/Time: Thursday, June 16, 2016 22:17:20
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68479.5	2.8				ug/L	51024	Standard
	Be	9	53798.7	2.5	**47.6621**	0.433	0.9	ug/L	7	Standard
	Al	27	3774638.8	2.0	**19.7508**	0.180	0.9	ug/L	625	Standard
	Sc	45	41744.1	0.5				ug/L	29647	Standard
	Ti	47	8543.7	1.2	**27.1926**	0.351	1.3	ug/L	57	Standard
	V	51	416323.5	0.8	**56.1020**	0.898	1.6	ug/L	1142	Standard
	Cr	52	661415.5	1.7	**85.4827**	2.467	2.9	ug/L	6628	Standard
	Cr	53	82886.1	1.6	**85.2548**	2.351	2.8	ug/L	430	Standard
	Mn	55	455226.4	0.8	**73.5653**	0.461	0.6	ug/L	603	Standard
	Co	59	356626.6	0.3	**53.2845**	0.717	1.3	ug/L	237	Standard
	Ni	60	319608.9	1.5	**159.1819**	4.226	2.7	ug/L	141	Standard
	Cu	65	101931.1	1.4	**52.0544**	1.323	2.5	ug/L	109	Standard
	Zn	66	69708.7	0.9	**60.2129**	1.260	2.1	ug/L	159	Standard
>	**Ge**	72	493214.1	1.2				ug/L	474053	Standard
	As	75	57487.0	0.2	**49.9285**	0.540	1.1	ug/L	-34	Standard
	Se	82	5945.0	0.7	**51.5039**	0.559	1.1	ug/L	14	Standard
	Se-1	77	4052.2	2.0	**49.9708**	0.414	0.8	ug/L	55	Standard
>	**Ga**	71	4670.7	3.3				mg/L	50	Standard
	Rb	85	37354.3	0.9				ug/L	20	Standard
	Y	89	401490.0	0.7				ug/L	376602	Standard
>	**Rh**	103	51.7	24.4				ug/L	17	Standard
	Mo	98	7837.2	0.6	**3.1623**	0.111	3.5	ug/L	8	Standard
	Ag	107	304891.6	0.9	**48.7677**	0.989	2.0	ug/L	81	Standard
	Cd	111	99959.3	1.1	**49.1537**	1.231	2.5	mg/L	3	Standard
	Cd	114	244744.0	1.6	**48.6729**	0.677	1.4	ug/L	7	Standard
>	**In**	115	549981.7	2.9				ug/L	524722	Standard
	Sn	118	1156.7	4.0	**0.1154**	0.002	1.9	ug/L	715	Standard
	Sb	123	225529.7	0.1	**49.2752**	1.450	2.9	ug/L	201	Standard
	Ba	135	235280.0	1.6	**123.8168**	1.916	1.5	ug/L	108	Standard
	Ce	140	72287.1	1.8				ug/L	30	Standard
>	**Tb**	159	836927.2	1.6				ug/L	792236	Standard
	Ho	165	618.3	2.8				ug/L	7	Standard
	Tl	203	374508.5	1.3	**47.9478**	0.598	1.2	ug/L	9	Standard
	Tl	205	331693.7	1.7	**49.9323**	0.614	1.2	ug/L	0	Standard
	Pb	206	246855.7	0.5	**52.2356**	0.118	0.2	ug/L	216	Standard
	Pb	207	213815.1	0.2	**49.6985**	0.193	0.4	ug/L	180	Standard
	Pb	208	877795.6	1.2	**50.2714**	0.366	0.7	ug/L	717	Standard
	U	238	322334.9	1.2	**50.7465**	0.349	0.7	ug/L	4	Standard
>	**Bi**	209	470679.1	0.5				ug/L	460343	Standard

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Na	23	3.3	173.2	**2.6916**	13.442	499.4	mg/L	0	Standard
Mg	24	22820.5	2.3	**21.9277**	0.463	2.1	mg/L	20	Standard
K	39	55.0	32.8	**0.0700**	0.098	140.3	mg/L	22	Standard
Ca	43	53.3	28.6	**-4.3313**	2.572	59.4	mg/L	47	Standard
Fe	54	3487.5	4.4	**1.8989**	0.090	4.7	mg/L	151	Standard
Fe	57	1048.4	8.2	**1.6588**	0.199	12.0	mg/L	195	Standard
> **Sc-1**	45	41744.1	0.5				mg/L	29647	Standard
Cl	35	171137.1	0.1				ug/L	154152	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	19926.4	2.2				ug/L	1607	Standard
P	31	55093.4	2.6				ug/L	22752	Standard
S	34	4375.6	3.4				ug/L	5049	Standard
Sr	88	146.7	22.7				ug/L	87	Standard
C	12	130.0	35.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	69.3				mg/L	0	Standard
Dy	164	1135.3	6.0				mg/L	10	Standard
Ho-1	165	618.3	2.8				mg/L	7	Standard
Er	166	516.7	11.3				mg/L	3	Standard
I	127	228888.4	2.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		134.210	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.042	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.814
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.245
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ni 60 Upper, S, EEE	Ni	60	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606041104SDL WG572085-04
Sample Date/Time: Thursday, June 16, 2016 22:20:32
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64080.3	2.7				ug/L	51024	Standard
	Be	9	40.0	12.5	**0.0168**	0.005	27.3	ug/L	7	Standard
	Al	27	710132.3	2.2	**3.9635**	0.097	2.4	ug/L	625	Standard
	Sc	45	34213.6	1.2				ug/L	29647	Standard
	Ti	47	1665.1	3.3	**5.5149**	0.188	3.4	ug/L	57	Standard
	V	51	8406.9	2.7	**1.0425**	0.044	4.3	ug/L	1142	Standard
	Cr	52	60396.1	0.7	**7.4773**	0.032	0.4	ug/L	6628	Standard
	Cr	53	7433.5	0.9	**7.7546**	0.056	0.7	ug/L	430	Standard
	Mn	55	26233.4	1.3	**4.3983**	0.064	1.4	ug/L	603	Standard
	Co	59	3790.1	2.7	**0.5627**	0.022	4.0	ug/L	237	Standard
	Ni	60	42759.9	1.8	**22.6189**	0.287	1.3	ug/L	141	Standard
	Cu	65	1312.1	2.0	**0.6485**	0.012	1.8	ug/L	109	Standard
	Zn	66	4020.5	0.7	**3.4822**	0.054	1.5	ug/L	159	Standard
>	**Ge**	72	462909.1	1.0				ug/L	474053	Standard
	As	75	127.1	1.3	**0.1426**	0.002	1.2	ug/L	-34	Standard
	Se	82	76.1	4.5	**0.5359**	0.031	5.8	ug/L	14	Standard
	Se-1	77	88.7	7.5	**0.4371**	0.078	17.8	ug/L	55	Standard
>	**Ga**	71	933.4	4.3				mg/L	50	Standard
	Rb	85	7380.1	1.8				ug/L	20	Standard
	Y	89	399286.8	1.5				ug/L	376602	Standard
>	**Rh**	103	10.0	50.0				ug/L	17	Standard
	Mo	98	1500.2	2.7	**0.5970**	0.016	2.6	ug/L	8	Standard
	Ag	107	118.7	15.0	**0.0065**	0.003	41.2	ug/L	81	Standard
	Cd	111	28.9	34.9	**0.0109**	0.005	45.1	mg/L	3	Standard
	Cd	114	79.5	41.7	**0.0119**	0.007	55.5	ug/L	7	Standard
>	**In**	115	553072.6	0.8				ug/L	524722	Standard
	Sn	118	576.7	14.8	**0.0122**	0.016	129.0	ug/L	715	Standard
	Sb	123	2178.3	21.1	**0.4589**	0.103	22.5	ug/L	201	Standard
	Ba	135	28213.6	0.4	**14.7104**	0.164	1.1	ug/L	108	Standard
	Ce	140	14325.1	2.6				ug/L	30	Standard
>	**Tb**	159	808125.3	1.3				ug/L	792236	Standard
	Ho	165	128.3	18.0				ug/L	7	Standard
	Tl	203	157.0	14.8	**0.0183**	0.003	16.5	ug/L	9	Standard
	Tl	205	128.3	27.4	**0.0122**	0.005	43.6	ug/L	0	Standard
	Pb	206	1207.7	4.1	**0.2094**	0.008	3.9	ug/L	216	Standard
	Pb	207	969.0	2.2	**0.1805**	0.006	3.4	ug/L	180	Standard
	Pb	208	4243.2	2.0	**0.1949**	0.007	3.7	ug/L	717	Standard
	U	238	239.0	4.0	**0.0315**	0.002	6.6	ug/L	4	Standard
>	**Bi**	209	453005.7	1.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	4389.0	3.6	**5.1101**	0.132	2.6	mg/L	20	Standard
K	39	13.3	78.1	**-0.1402**	0.068	48.2	mg/L	22	Standard
Ca	43	36.7	43.8	**-5.7822**	3.171	54.8	mg/L	47	Standard
Fe	54	812.9	7.6	**0.4581**	0.050	11.0	mg/L	151	Standard
Fe	57	373.3	8.7	**0.3544**	0.083	23.5	mg/L	195	Standard
> **Sc-1**	45	34213.6	1.2				mg/L	29647	Standard
Cl	35	155114.0	1.0				ug/L	154152	Standard
Kr	83	1.3	114.6				ug/L	3	Standard
Br	81	5447.6	5.1				ug/L	1607	Standard
P	31	29535.4	3.0				ug/L	22752	Standard
S	34	4345.6	4.1				ug/L	5049	Standard
Sr	88	98.3	16.3				ug/L	87	Standard
C	12	66.7	69.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	223.5	3.8				mg/L	10	Standard
Ho-1	165	128.3	18.0				mg/L	7	Standard
Er	166	136.7	22.4				mg/L	3	Standard
I	127	47285.3	1.6				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		125.588	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.649	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	105.403	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.406	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606041104SDL WG572085-04
Sample Date/Time: Thursday, June 16, 2016 22:23:43
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60699.7	1.4				ug/L	51024	Standard
	Be	9	26.7	65.8	**0.0056**	0.018	312.0	ug/L	7	Standard
	Al	27	141309.4	1.9	**0.8247**	0.016	2.0	ug/L	625	Standard
	Sc	45	31491.0	2.2				ug/L	29647	Standard
	Ti	47	381.3	5.6	**1.1251**	0.055	4.9	ug/L	57	Standard
	V	51	2585.2	5.7	**0.2016**	0.028	14.1	ug/L	1142	Standard
	Cr	52	17170.4	0.5	**1.4445**	0.049	3.4	ug/L	6628	Standard
	Cr	53	1966.8	5.0	**1.7199**	0.140	8.1	ug/L	430	Standard
	Mn	55	5874.1	1.6	**0.8794**	0.018	2.1	ug/L	603	Standard
	Co	59	918.7	1.3	**0.1040**	0.001	1.4	ug/L	237	Standard
	Ni	60	8671.8	1.0	**4.4921**	0.067	1.5	ug/L	141	Standard
	Cu	65	375.3	1.5	**0.1368**	0.002	1.4	ug/L	109	Standard
	Zn	66	1553.7	2.6	**1.1927**	0.020	1.7	ug/L	159	Standard
>	**Ge**	72	466371.9	2.3				ug/L	474053	Standard
	As	75	-6.1	252.7	**0.0197**	0.014	72.2	ug/L	-34	Standard
	Se	82	31.9	14.9	**0.1250**	0.051	40.6	ug/L	14	Standard
	Se-1	77	67.3	8.6	**0.1479**	0.098	66.2	ug/L	55	Standard
>	**Ga**	71	236.7	12.4				mg/L	50	Standard
	Rb	85	1530.1	6.8				ug/L	20	Standard
	Y	89	398351.9	2.2				ug/L	376602	Standard
>	**Rh**	103	20.0	90.1				ug/L	17	Standard
	Mo	98	309.3	4.7	**0.1235**	0.007	5.8	ug/L	8	Standard
	Ag	107	82.7	3.5	**0.0013**	0.000	30.9	ug/L	81	Standard
	Cd	111	8.8	17.3	**0.0012**	0.001	68.5	mg/L	3	Standard
	Cd	114	33.8	15.5	**0.0031**	0.001	31.5	ug/L	7	Standard
>	**In**	115	532767.1	1.5				ug/L	524722	Standard
	Sn	118	478.3	5.3	**-0.0020**	0.004	179.1	ug/L	715	Standard
	Sb	123	535.3	25.6	**0.1062**	0.033	30.9	ug/L	201	Standard
	Ba	135	5770.1	0.9	**3.0781**	0.059	1.9	ug/L	108	Standard
	Ce	140	2811.9	5.2				ug/L	30	Standard
>	**Tb**	159	784308.2	0.8				ug/L	792236	Standard
	Ho	165	41.7	18.3				ug/L	7	Standard
	Tl	203	52.7	23.4	**0.0046**	0.002	36.5	ug/L	9	Standard
	Tl	205	35.0	14.3	**-0.0022**	0.001	34.5	ug/L	0	Standard
	Pb	206	411.7	5.6	**0.0360**	0.005	12.9	ug/L	216	Standard
	Pb	207	350.0	3.5	**0.0324**	0.003	8.3	ug/L	180	Standard
	Pb	208	1486.7	0.5	**0.0323**	0.001	2.8	ug/L	717	Standard
	U	238	58.7	16.8	**0.0022**	0.002	75.4	ug/L	4	Standard
>	**Bi**	209	444600.9	0.5				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.3313**	8.870	166.4	mg/L	0	Standard
Mg	24	840.0	10.8	**1.0281**	0.127	12.3	mg/L	20	Standard
K	39	15.0	88.2	**-0.1198**	0.096	80.2	mg/L	22	Standard
Ca	43	18.3	83.3	**-9.1765**	3.343	36.4	mg/L	47	Standard
Fe	54	272.4	14.1	**0.0939**	0.032	34.1	mg/L	151	Standard
Fe	57	256.7	4.9	**0.1011**	0.032	31.4	mg/L	195	Standard
Sc-1	45	31491.0	2.2				mg/L	29647	Standard
Cl	35	151247.9	1.3				ug/L	154152	Standard
Kr	83	3.3	69.3				ug/L	3	Standard
Br	81	2453.5	11.0				ug/L	1607	Standard
P	31	23077.6	3.5				ug/L	22752	Standard
S	34	4429.0	4.8				ug/L	5049	Standard
Sr	88	73.3	21.9				ug/L	87	Standard
C	12	63.3	24.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	47.6	24.3				mg/L	10	Standard
Ho-1	165	41.7	18.3				mg/L	7	Standard
Er	166	50.0	91.7				mg/L	3	Standard
I	127	10970.6	2.1				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.963	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.380	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.533	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.580	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 22:26:56
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59001.4	3.1				ug/L	51024	Standard
	Be	9	47251.9	1.9	**48.5958**	0.632	1.3	ug/L	7	Standard
	Al	27	7707900.4	0.6	**46.8442**	1.367	2.9	ug/L	625	Standard
	Sc	45	32042.2	2.5				ug/L	29647	Standard
	Ti	47	31108.6	0.8	**106.3533**	1.301	1.2	ug/L	57	Standard
	V	51	354930.5	0.4	**51.1260**	0.515	1.0	ug/L	1142	Standard
	Cr	52	373996.6	0.2	**51.3100**	0.429	0.8	ug/L	6628	Standard
	Cr	53	46528.0	1.9	**50.9890**	0.660	1.3	ug/L	430	Standard
	Mn	55	313560.0	0.4	**54.1496**	0.181	0.3	ug/L	603	Standard
	Co	59	324218.3	1.5	**51.7917**	0.391	0.8	ug/L	237	Standard
	Ni	60	95070.0	1.4	**50.5665**	0.352	0.7	ug/L	141	Standard
	Cu	65	93181.7	1.5	**50.8709**	0.430	0.8	ug/L	109	Standard
	Zn	66	54868.9	1.6	**50.6327**	0.507	1.0	ug/L	159	Standard
>	Ge	72	461242.2	0.7				ug/L	474053	Standard
	As	75	53786.6	0.6	**49.9506**	0.524	1.0	ug/L	-34	Standard
	Se	82	5398.5	1.3	**50.0080**	1.035	2.1	ug/L	14	Standard
	Se-1	77	3763.8	1.7	**49.6296**	0.770	1.6	ug/L	55	Standard
>	Ga	71	83.3	29.6				mg/L	50	Standard
	Rb	85	758.4	8.6				ug/L	20	Standard
	Y	89	392635.2	3.0				ug/L	376602	Standard
>	Rh	103	40.0	45.1				ug/L	17	Standard
	Mo	98	239363.5	0.3	**97.9544**	0.320	0.3	ug/L	8	Standard
	Ag	107	297613.5	1.2	**48.2150**	0.880	1.8	ug/L	81	Standard
	Cd	111	96257.9	0.7	**47.9363**	0.352	0.7	mg/L	3	Standard
	Cd	114	237569.3	0.8	**47.8568**	0.430	0.9	ug/L	7	Standard
>	In	115	542829.4	0.6				ug/L	524722	Standard
	Sn	118	271504.8	1.8	**48.6303**	0.573	1.2	ug/L	715	Standard
	Sb	123	221602.7	1.2	**49.0302**	0.874	1.8	ug/L	201	Standard
	Ba	135	89759.4	0.9	**47.8096**	0.296	0.6	ug/L	108	Standard
	Ce	140	83.3	15.1				ug/L	30	Standard
>	Tb	159	805068.8	1.3				ug/L	792236	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	366179.1	0.5	**49.0753**	0.770	1.6	ug/L	9	Standard
	Tl	205	320780.3	0.9	**50.5527**	0.981	1.9	ug/L	0	Standard
	Pb	206	226792.4	0.6	**50.2313**	0.545	1.1	ug/L	216	Standard
	Pb	207	206205.4	0.5	**50.1728**	0.804	1.6	ug/L	180	Standard
	Pb	208	828355.0	0.6	**49.6609**	0.844	1.7	ug/L	717	Standard
	U	238	311232.5	0.6	**51.2945**	0.952	1.9	ug/L	4	Standard
>	Bi	209	449694.2	1.3				ug/L	460343	Standard

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Na	23	3.3	173.2	**0.2298**	17.706	7704.3	mg/L	0	Standard
Mg	24	4013.9	1.6	**4.9932**	0.201	4.0	mg/L	20	Standard
K	39	691.7	2.2	**4.6523**	0.139	3.0	mg/L	22	Standard
Ca	43	66.7	18.9	**1.1897**	2.387	200.6	mg/L	47	Standard
Fe	54	5963.7	3.1	**4.3749**	0.232	5.3	mg/L	151	Standard
Fe	57	1775.1	6.5	**4.4411**	0.377	8.5	mg/L	195	Standard
Sc-1	45	32042.2	2.5				mg/L	29647	Standard
Cl	35	154194.0	0.8				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	1553.4	2.0				ug/L	1607	Standard
P	31	22800.5	1.3				ug/L	22752	Standard
S	34	4925.8	3.9				ug/L	5049	Standard
Sr	88	71.7	8.1				ug/L	87	Standard
C	12	50.0	40.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.7	108.3				mg/L	10	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	3	Standard
I	127	1866.8	9.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	97.192		
Al	27	93.688		
Sc	45			
Ti	47	106.353		
V	51	102.252		
Cr	52	102.620		
Cr	53			
Mn	55	108.299		
Co	59	103.583		
Ni	60	101.133		
Cu	65	101.742		
Zn	66	101.265		
Ge	72		97.298	
As	75	99.901		
Se	82	100.016		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	97.954		
Ag	107	96.430		
Cd	111	95.873		
Cd	114			
> In	115		103.451	
Sn	118	97.261		
Sb	123	98.060		
Ba	135	95.619		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.151		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.322		
U	238	102.589		
> Bi	209		97.687	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 22:30:07
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57406.9	2.2				ug/L	51024	Standard
	Be	9	13.3	86.6	**-0.0071**	0.012	172.1	ug/L	7	Standard
	Al	27	1425.1	26.0	**-0.0009**	0.002	242.5	ug/L	625	Standard
	Sc	45	31355.8	2.5				ug/L	29647	Standard
	Ti	47	24.7	20.0	**-0.0813**	0.017	20.7	ug/L	57	Standard
	V	51	1120.2	2.3	**-0.0061**	0.006	100.1	ug/L	1142	Standard
	Cr	52	6392.0	0.4	**-0.0333**	0.015	44.8	ug/L	6628	Standard
	Cr	53	548.3	18.8	**0.1770**	0.124	70.1	ug/L	430	Standard
	Mn	55	724.0	4.6	**-0.0007**	0.008	1032.9	ug/L	603	Standard
	Co	59	242.7	2.3	**-0.0024**	0.000	19.9	ug/L	237	Standard
	Ni	60	130.3	12.7	**-0.0081**	0.010	124.4	ug/L	141	Standard
	Cu	65	128.7	7.9	**0.0044**	0.007	154.7	ug/L	109	Standard
	Zn	66	153.3	8.3	**-0.0894**	0.013	14.8	ug/L	159	Standard
>	**Ge**	72	460344.2	1.9				ug/L	474053	Standard
	As	75	-26.8	68.7	**0.0000**	0.017	51664.1	ug/L	-34	Standard
	Se	82	13.1	41.0	**-0.0473**	0.049	102.7	ug/L	14	Standard
	Se-1	77	56.7	10.8	**0.0148**	0.078	525.1	ug/L	55	Standard
>	**Ga**	71	50.0	36.1				mg/L	50	Standard
	Rb	85	33.3	8.7				ug/L	20	Standard
	Y	89	391660.9	0.1				ug/L	376602	Standard
>	**Rh**	103	21.7	58.1				ug/L	17	Standard
	Mo	98	296.5	33.7	**0.1177**	0.040	33.6	ug/L	8	Standard
	Ag	107	114.3	9.9	**0.0065**	0.002	24.1	ug/L	81	Standard
	Cd	111	13.8	22.3	**0.0038**	0.001	39.2	mg/L	3	Standard
	Cd	114	58.6	51.2	**0.0082**	0.006	72.9	ug/L	7	Standard
>	**In**	115	532413.4	1.7				ug/L	524722	Standard
	Sn	118	798.4	13.3	**0.0568**	0.021	36.2	ug/L	715	Standard
	Sb	123	522.7	25.9	**0.1035**	0.032	31.2	ug/L	201	Standard
	Ba	135	112.0	12.3	**0.0031**	0.006	206.8	ug/L	108	Standard
	Ce	140	18.3	63.0				ug/L	30	Standard
>	**Tb**	159	782152.3	0.6				ug/L	792236	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	55.3	28.1	**0.0050**	0.002	40.9	ug/L	9	Standard
	Tl	205	48.3	6.0	**-0.0000**	0.000	944.3	ug/L	0	Standard
	Pb	206	239.7	3.4	**-0.0020**	0.002	107.0	ug/L	216	Standard
	Pb	207	204.0	6.9	**-0.0031**	0.003	92.9	ug/L	180	Standard
	Pb	208	866.0	6.6	**-0.0048**	0.003	59.0	ug/L	717	Standard
	U	238	38.3	34.4	**-0.0011**	0.002	189.9	ug/L	4	Standard
>	**Bi**	209	440050.2	1.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	41.7	6.9	**0.0082**	0.003	39.8	mg/L	20	Standard
K	39	13.3	21.7	**-0.1321**	0.019	14.2	mg/L	22	Standard
Ca	43	21.7	53.3	**-8.4223**	2.469	29.3	mg/L	47	Standard
Fe	54	134.4	12.8	**-0.0117**	0.012	103.5	mg/L	151	Standard
Fe	57	178.3	16.9	**-0.1234**	0.101	82.1	mg/L	195	Standard
Sc-1	45	31355.8	2.5				mg/L	29647	Standard
Cl	35	154796.2	1.9				ug/L	154152	Standard
Kr	83	1.3	86.6				ug/L	3	Standard
Br	81	1420.1	12.0				ug/L	1607	Standard
P	31	23807.0	1.6				ug/L	22752	Standard
S	34	4767.4	2.9				ug/L	5049	Standard
Sr	88	76.7	22.9				ug/L	87	Standard
C	12	50.0	60.0				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	6.5	179.6				mg/L	10	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	1236.7	11.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.108	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.466	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	95.592	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW 41 WG571834-02
Sample Date/Time: Thursday, June 16, 2016 22:33:20
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57729.8	2.4				ug/L	51024	Standard
	Be	9	15.0	66.7	**-0.0052**	0.011	207.3	ug/L	7	Standard
	Al	27	10453.6	1.9	**0.0552**	0.003	5.0	ug/L	625	Standard
	Sc	45	33299.9	2.5				ug/L	29647	Standard
	Ti	47	35.7	25.1	**-0.0492**	0.028	57.5	ug/L	57	Standard
	V	51	1262.4	5.5	**0.0063**	0.008	133.6	ug/L	1142	Standard
	Cr	52	7466.2	1.6	**0.0706**	0.026	36.2	ug/L	6628	Standard
	Cr	53	643.3	12.9	**0.2497**	0.092	36.8	ug/L	430	Standard
	Mn	55	1616.1	2.8	**0.1414**	0.004	2.6	ug/L	603	Standard
	Co	59	253.0	6.6	**-0.0025**	0.002	79.5	ug/L	237	Standard
	Ni	60	378.3	5.2	**0.1151**	0.008	6.8	ug/L	141	Standard
	Cu	65	209.0	6.0	**0.0433**	0.007	15.3	ug/L	109	Standard
	Zn	66	1638.4	1.5	**1.2227**	0.044	3.6	ug/L	159	Standard
>	**Ge**	72	481770.3	1.5				ug/L	474053	Standard
	As	75	-7.3	61.8	**0.0186**	0.004	21.3	ug/L	-34	Standard
	Se	82	21.7	38.5	**0.0252**	0.078	309.4	ug/L	14	Standard
	Se-1	77	49.7	10.3	**-0.1081**	0.069	63.9	ug/L	55	Standard
>	**Ga**	71	81.7	19.7				mg/L	50	Standard
	Rb	85	50.0	17.3				ug/L	20	Standard
	Y	89	391456.0	1.0				ug/L	376602	Standard
>	**Rh**	103	15.0	33.3				ug/L	17	Standard
	Mo	98	98.4	20.8	**0.0355**	0.009	26.7	ug/L	8	Standard
	Ag	107	94.7	3.7	**0.0032**	0.001	16.1	ug/L	81	Standard
	Cd	111	15.5	31.8	**0.0046**	0.003	57.0	mg/L	3	Standard
	Cd	114	31.0	41.6	**0.0025**	0.003	104.4	ug/L	7	Standard
>	**In**	115	534892.9	2.4				ug/L	524722	Standard
	Sn	118	895.0	10.2	**0.0734**	0.014	18.9	ug/L	715	Standard
	Sb	123	243.3	24.4	**0.0397**	0.012	30.7	ug/L	201	Standard
	Ba	135	132.3	7.6	**0.0140**	0.006	42.8	ug/L	108	Standard
	Ce	140	126.7	2.3				ug/L	30	Standard
>	**Tb**	159	808648.5	2.5				ug/L	792236	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	39.3	24.7	**0.0026**	0.001	49.6	ug/L	9	Standard
	Tl	205	40.0	50.0	**-0.0017**	0.003	183.3	ug/L	0	Standard
	Pb	206	250.7	8.4	**-0.0022**	0.005	210.3	ug/L	216	Standard
	Pb	207	220.7	4.6	**-0.0015**	0.003	191.8	ug/L	180	Standard
	Pb	208	931.3	4.0	**-0.0035**	0.003	80.4	ug/L	717	Standard
	U	238	32.0	46.7	**-0.0024**	0.002	99.2	ug/L	4	Standard
>	**Bi**	209	461825.2	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	43.3	46.6	**0.0073**	0.026	347.9	mg/L	20	Standard
K	39	21.7	35.3	**-0.0805**	0.053	65.7	mg/L	22	Standard
Ca	43	33.3	31.2	**-6.2262**	2.322	37.3	mg/L	47	Standard
Fe	54	132.8	30.7	**-0.0183**	0.032	174.0	mg/L	151	Standard
Fe	57	186.7	24.3	**-0.1330**	0.122	92.1	mg/L	195	Standard
Sc-1	45	33299.9	2.5				mg/L	29647	Standard
Cl	35	150658.7	1.1				ug/L	154152	Standard
Kr	83	2.3	24.7				ug/L	3	Standard
Br	81	2026.8	3.8				ug/L	1607	Standard
P	31	21810.7	2.4				ug/L	22752	Standard
S	34	4620.7	1.9				ug/L	5049	Standard
Sr	88	70.0	14.3				ug/L	87	Standard
C	12	86.7	40.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.2	111.3				mg/L	10	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	3	Standard
I	127	2880.3	5.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.142	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.628	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.938
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.322
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 41 WG571834-03
Sample Date/Time: Thursday, June 16, 2016 22:36:32
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58134.7	1.4				ug/L	51024	Standard
	Be	9	47481.0	1.2	**49.5549**	1.040	2.1	ug/L	7	Standard
	Al	27	11848.2	29.8	**0.0633**	0.022	34.2	ug/L	625	Standard
	Sc	45	33760.9	2.8				ug/L	29647	Standard
	Ti	47	60.7	19.3	**0.0386**	0.038	99.0	ug/L	57	Standard
	V	51	364743.8	0.9	**51.7833**	1.598	3.1	ug/L	1142	Standard
	Cr	52	384565.8	0.9	**52.0063**	1.376	2.6	ug/L	6628	Standard
	Cr	53	46865.7	2.2	**50.6129**	1.593	3.1	ug/L	430	Standard
	Mn	55	323505.6	0.5	**55.0551**	1.092	2.0	ug/L	603	Standard
	Co	59	330925.6	0.6	**52.1042**	1.547	3.0	ug/L	237	Standard
	Ni	60	98420.3	0.4	**51.5920**	1.168	2.3	ug/L	141	Standard
	Cu	65	96735.2	0.8	**52.0474**	1.195	2.3	ug/L	109	Standard
	Zn	66	60428.3	1.1	**54.9708**	1.052	1.9	ug/L	159	Standard
>	**Ge**	72	468206.5	2.5				ug/L	474053	Standard
	As	75	53251.7	1.1	**48.7274**	0.650	1.3	ug/L	-34	Standard
	Se	82	5558.2	1.1	**50.7386**	1.287	2.5	ug/L	14	Standard
	Se-1	77	3779.1	1.8	**49.0879**	0.350	0.7	ug/L	55	Standard
>	**Ga**	71	95.0	5.3				mg/L	50	Standard
	Rb	85	148.3	20.6				ug/L	20	Standard
	Y	89	410210.7	3.1				ug/L	376602	Standard
>	**Rh**	103	26.7	28.6				ug/L	17	Standard
	Mo	98	76.7	14.4	**0.0250**	0.004	16.4	ug/L	8	Standard
	Ag	107	306600.5	0.9	**48.2949**	0.124	0.3	ug/L	81	Standard
	Cd	111	98706.0	0.5	**47.7973**	0.198	0.4	mg/L	3	Standard
	Cd	114	240379.3	1.1	**47.0837**	0.284	0.6	ug/L	7	Standard
>	**In**	115	558260.1	0.9				ug/L	524722	Standard
	Sn	118	793.4	5.7	**0.0490**	0.008	17.0	ug/L	715	Standard
	Sb	123	217861.1	1.5	**46.8696**	0.887	1.9	ug/L	201	Standard
	Ba	135	91054.1	0.9	**47.1604**	0.551	1.2	ug/L	108	Standard
	Ce	140	330.0	6.6				ug/L	30	Standard
>	**Tb**	159	829912.3	0.8				ug/L	792236	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	372803.8	0.5	**48.2082**	0.596	1.2	ug/L	9	Standard
	Tl	205	323995.9	0.8	**49.2672**	0.912	1.9	ug/L	0	Standard
	Pb	206	236745.0	0.6	**50.5944**	0.255	0.5	ug/L	216	Standard
	Pb	207	206177.7	0.9	**48.4046**	0.929	1.9	ug/L	180	Standard
	Pb	208	859668.8	0.2	**49.7270**	0.479	1.0	ug/L	717	Standard
	U	238	310255.0	0.3	**49.3362**	0.627	1.3	ug/L	4	Standard
>	**Bi**	209	466041.0	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	161.7	12.9	**0.1477**	0.029	19.8	mg/L	20	Standard
K	39	16.7	17.3	**-0.1160**	0.022	19.3	mg/L	22	Standard
Ca	43	33.3	31.2	**-6.3847**	1.928	30.2	mg/L	47	Standard
Fe	54	164.9	14.3	**0.0027**	0.015	570.4	mg/L	151	Standard
Fe	57	196.7	21.3	**-0.1103**	0.128	116.3	mg/L	195	Standard
Sc-1	45	33760.9	2.8				mg/L	29647	Standard
Cl	35	149762.7	1.8				ug/L	154152	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	1560.1	10.1				ug/L	1607	Standard
P	31	22984.1	3.6				ug/L	22752	Standard
S	34	4315.6	2.6				ug/L	5049	Standard
Sr	88	53.3	28.6				ug/L	87	Standard
C	12	83.3	18.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	5.9	86.7				mg/L	10	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	16.7	91.7				mg/L	3	Standard
I	127	1323.4	9.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.936	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.767	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.392
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.238
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606033702 WG571834-01
Sample Date/Time: Thursday, June 16, 2016 22:39:43
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64441.8	2.3				ug/L	51024	Standard
	Be	9	20.0	25.0	**-0.0022**	0.005	232.0	ug/L	7	Standard
	Al	27	60114.2	4.5	**0.3246**	0.014	4.3	ug/L	625	Standard
	Sc	45	31512.8	4.2				ug/L	29647	Standard
	Ti	47	128.0	6.2	**0.2921**	0.031	10.5	ug/L	57	Standard
	V	51	53503.8	0.8	**7.9103**	0.048	0.6	ug/L	1142	Standard
	Cr	52	15505.3	1.8	**1.3346**	0.030	2.3	ug/L	6628	Standard
	Cr	53	2881.9	1.2	**2.8964**	0.027	0.9	ug/L	430	Standard
	Mn	55	1707.4	4.0	**0.1824**	0.014	7.5	ug/L	603	Standard
	Co	59	1839.8	1.0	**0.2661**	0.003	1.0	ug/L	237	Standard
	Ni	60	5162.5	5.3	**2.7953**	0.140	5.0	ug/L	141	Standard
	Cu	65	169344.1	2.3	**96.6524**	1.757	1.8	ug/L	109	Standard
	Zn	66	2344.5	2.7	**2.0388**	0.050	2.4	ug/L	159	Standard
>	**Ge**	72	441453.2	0.5				ug/L	474053	Standard
	As	75	1218.2	9.1	**1.2061**	0.101	8.4	ug/L	-34	Standard
	Se	82	116.0	12.5	**0.9573**	0.138	14.4	ug/L	14	Standard
	Se-1	77	201.7	7.0	**2.0760**	0.211	10.2	ug/L	55	Standard
>	**Ga**	71	926.7	11.5				mg/L	50	Standard
	Rb	85	12571.9	3.7				ug/L	20	Standard
	Y	89	399117.1	1.0				ug/L	376602	Standard
>	**Rh**	103	173.3	1.7				ug/L	17	Standard
	Mo	98	29352.9	0.6	**12.3636**	0.369	3.0	ug/L	8	Standard
	Ag	107	149.7	54.9	**0.0129**	0.015	112.8	ug/L	81	Standard
	Cd	111	24.8	238.3	**0.0100**	0.031	310.7	mg/L	3	Standard
	Cd	114	161.6	48.9	**0.0300**	0.017	58.2	ug/L	7	Standard
>	**In**	115	527437.4	2.5				ug/L	524722	Standard
	Sn	118	1430.1	3.9	**0.1747**	0.010	5.4	ug/L	715	Standard
	Sb	123	2404.5	19.4	**0.5345**	0.118	22.0	ug/L	201	Standard
	Ba	135	29634.3	0.9	**16.2125**	0.353	2.2	ug/L	108	Standard
	Ce	140	185.0	4.7				ug/L	30	Standard
>	**Tb**	159	786743.9	2.6				ug/L	792236	Standard
	Ho	165	16.7	105.4				ug/L	7	Standard
	Tl	203	226.3	39.8	**0.0295**	0.013	45.5	ug/L	9	Standard
	Tl	205	155.0	25.2	**0.0180**	0.007	37.6	ug/L	0	Standard
	Pb	206	685.3	11.7	**0.1039**	0.021	20.6	ug/L	216	Standard
	Pb	207	574.0	3.7	**0.0935**	0.008	8.7	ug/L	180	Standard
	Pb	208	2394.4	2.6	**0.0935**	0.004	4.7	ug/L	717	Standard
	U	238	81.3	17.9	**0.0066**	0.003	42.7	ug/L	4	Standard
>	**Bi**	209	426956.6	1.8				ug/L	460343	Standard

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Na	23	5.0	100.0	**-4.6650**	15.246	326.8	mg/L	0	Standard
Mg	24	23326.3	4.3	**29.7226**	1.184	4.0	mg/L	20	Standard
K	39	571.7	12.7	**3.8838**	0.629	16.2	mg/L	22	Standard
Ca	43	926.7	6.8	**191.1093**	22.294	11.7	mg/L	47	Standard
Fe	54	142.0	8.4	**-0.0064**	0.005	79.6	mg/L	151	Standard
Fe	57	988.4	6.7	**2.2303**	0.090	4.0	mg/L	195	Standard
> **Sc-1**	45	31512.8	4.2				mg/L	29647	Standard
Cl	35	486390.1	1.5				ug/L	154152	Standard
Kr	83	3.0	33.3				ug/L	3	Standard
Br	81	9422.9	2.9				ug/L	1607	Standard
P	31	23089.2	1.2				ug/L	22752	Standard
S	34	5072.5	3.6				ug/L	5049	Standard
Sr	88	663.3	3.8				ug/L	87	Standard
C	12	73.3	41.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	0	Standard
Dy	164	22.4	24.2				mg/L	10	Standard
Ho-1	165	16.7	105.4				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	3	Standard
I	127	47469.3	4.2				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		126.297	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		93.123	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.518
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.748
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606033702S WG571834-04
Sample Date/Time: Thursday, June 16, 2016 22:42:54
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68019.0	1.4				ug/L	51024	Standard
	Be	9	52452.3	2.6	**46.7932**	1.722	3.7	ug/L	7	Standard
	Al	27	59786.1	1.3	**0.3053**	0.006	2.1	ug/L	625	Standard
	Sc	45	30205.1	3.4				ug/L	29647	Standard
	Ti	47	100.0	14.5	**0.1859**	0.054	29.0	ug/L	57	Standard
	V	51	400824.3	1.2	**59.3044**	1.295	2.2	ug/L	1142	Standard
	Cr	52	361100.0	0.4	**50.8503**	0.412	0.8	ug/L	6628	Standard
	Cr	53	45675.4	2.3	**51.3868**	0.642	1.2	ug/L	430	Standard
	Mn	55	307080.3	1.9	**54.4520**	1.620	3.0	ug/L	603	Standard
	Co	59	323604.2	1.1	**53.0793**	1.177	2.2	ug/L	237	Standard
	Ni	60	93445.6	0.1	**51.0299**	0.526	1.0	ug/L	141	Standard
	Cu	65	247263.6	0.1	**138.7095**	1.722	1.2	ug/L	109	Standard
	Zn	66	54519.2	0.7	**51.6612**	0.952	1.8	ug/L	159	Standard
>	**Ge**	72	449299.9	1.1				ug/L	474053	Standard
	As	75	56719.6	0.9	**54.0778**	1.049	1.9	ug/L	-34	Standard
	Se	82	5785.5	2.0	**55.0413**	1.675	3.0	ug/L	14	Standard
	Se-1	77	3927.8	1.2	**53.2304**	1.135	2.1	ug/L	55	Standard
>	**Ga**	71	895.0	4.4				mg/L	50	Standard
	Rb	85	12290.0	5.9				ug/L	20	Standard
	Y	89	386361.5	1.5				ug/L	376602	Standard
>	**Rh**	103	176.7	6.5				ug/L	17	Standard
	Mo	98	28613.4	1.5	**12.4123**	0.434	3.5	ug/L	8	Standard
	Ag	107	279613.9	0.6	**48.0280**	1.230	2.6	ug/L	81	Standard
	Cd	111	93716.1	1.7	**49.4705**	0.238	0.5	mg/L	3	Standard
	Cd	114	229714.0	2.7	**49.0468**	0.741	1.5	ug/L	7	Standard
>	**In**	115	512129.2	2.1				ug/L	524722	Standard
	Sn	118	1266.7	5.0	**0.1514**	0.007	4.6	ug/L	715	Standard
	Sb	123	219270.1	0.1	**51.4357**	1.142	2.2	ug/L	201	Standard
	Ba	135	113634.2	0.4	**64.1909**	1.164	1.8	ug/L	108	Standard
	Ce	140	183.3	35.2				ug/L	30	Standard
>	**Tb**	159	767306.4	2.1				ug/L	792236	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	352266.3	0.4	**50.2886**	0.147	0.3	ug/L	9	Standard
	Tl	205	319230.0	1.5	**53.5879**	0.832	1.6	ug/L	0	Standard
	Pb	206	230082.1	0.2	**54.2895**	0.055	0.1	ug/L	216	Standard
	Pb	207	199935.5	0.5	**51.8202**	0.151	0.3	ug/L	180	Standard
	Pb	208	828887.7	1.4	**52.9349**	0.572	1.1	ug/L	717	Standard
	U	238	314710.8	1.3	**55.2472**	0.560	1.0	ug/L	4	Standard
>	**Bi**	209	422116.6	0.3				ug/L	460343	Standard

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Na	23	8.3	34.6	**-16.4613**	9.729	59.1	mg/L	0	Standard
Mg	24	22338.1	2.7	**29.6923**	0.787	2.7	mg/L	20	Standard
K	39	545.0	6.6	**3.8545**	0.326	8.5	mg/L	22	Standard
Ca	43	843.4	10.1	**180.3649**	20.489	11.4	mg/L	47	Standard
Fe	54	148.7	22.1	**0.0032**	0.023	711.1	mg/L	151	Standard
Fe	57	781.7	6.7	**1.7339**	0.242	13.9	mg/L	195	Standard
> **Sc-1**	45	30205.1	3.4				mg/L	29647	Standard
Cl	35	476373.7	2.1				ug/L	154152	Standard
Kr	83	2.3	89.2				ug/L	3	Standard
Br	81	9679.8	3.3				ug/L	1607	Standard
P	31	23531.6	1.5				ug/L	22752	Standard
S	34	4985.8	2.7				ug/L	5049	Standard
Sr	88	643.3	5.9				ug/L	87	Standard
C	12	83.3	54.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	100.0				mg/L	0	Standard
Dy	164	9.7	103.3				mg/L	10	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	46467.9	3.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		133.308	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.778	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.600
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.696
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

Sample ID: L1606033702S WG571834-04
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Method 6020 - Summary Report

Sample ID: L1606033702SD WG571834-05
Sample Date/Time: Thursday, June 16, 2016 22:46:06
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69477.3	1.8				ug/L	51024	Standard
	Be	9	51502.4	2.4	**44.9684**	0.786	1.7	ug/L	7	Standard
	Al	27	70351.3	0.6	**0.3532**	0.005	1.3	ug/L	625	Standard
	Sc	45	29879.4	2.7				ug/L	29647	Standard
	Ti	47	116.3	8.0	**0.2444**	0.037	15.0	ug/L	57	Standard
	V	51	388223.7	1.2	**57.5908**	0.764	1.3	ug/L	1142	Standard
	Cr	52	347952.9	2.2	**49.1031**	1.033	2.1	ug/L	6628	Standard
	Cr	53	43768.2	2.9	**49.3632**	1.152	2.3	ug/L	430	Standard
	Mn	55	286009.9	1.4	**50.8380**	0.394	0.8	ug/L	603	Standard
	Co	59	307889.4	1.2	**50.6347**	0.555	1.1	ug/L	237	Standard
	Ni	60	89481.8	1.5	**48.9952**	0.439	0.9	ug/L	141	Standard
	Cu	65	241814.9	1.2	**136.0209**	1.038	0.8	ug/L	109	Standard
	Zn	66	51913.8	0.8	**49.3151**	0.405	0.8	ug/L	159	Standard
>	**Ge**	72	448036.8	0.9				ug/L	474053	Standard
	As	75	54590.9	0.7	**52.1892**	0.176	0.3	ug/L	-34	Standard
	Se	82	5464.5	2.1	**52.1104**	0.678	1.3	ug/L	14	Standard
	Se-1	77	3736.5	2.4	**50.7332**	0.775	1.5	ug/L	55	Standard
>	**Ga**	71	880.0	7.8				mg/L	50	Standard
	Rb	85	11956.4	0.5				ug/L	20	Standard
	Y	89	354548.8	0.8				ug/L	376602	Standard
>	**Rh**	103	176.7	9.9				ug/L	17	Standard
	Mo	98	28019.9	1.2	**12.5852**	0.199	1.6	ug/L	8	Standard
	Ag	107	268450.3	0.3	**47.7483**	0.458	1.0	ug/L	81	Standard
	Cd	111	88694.5	1.0	**48.4950**	0.379	0.8	mg/L	3	Standard
	Cd	114	219923.4	1.6	**48.6380**	0.413	0.8	ug/L	7	Standard
>	**In**	115	494421.9	1.1				ug/L	524722	Standard
	Sn	118	1316.7	9.7	**0.1699**	0.024	14.2	ug/L	715	Standard
	Sb	123	211754.6	0.6	**51.4377**	0.300	0.6	ug/L	201	Standard
	Ba	135	110652.9	0.5	**64.7326**	0.425	0.7	ug/L	108	Standard
	Ce	140	260.0	20.0				ug/L	30	Standard
>	**Tb**	159	762292.0	2.0				ug/L	792236	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	342694.3	1.4	**48.0097**	0.052	0.1	ug/L	9	Standard
	Tl	205	304091.9	1.8	**50.0920**	0.270	0.5	ug/L	0	Standard
	Pb	206	222070.0	1.1	**51.4209**	0.338	0.7	ug/L	216	Standard
	Pb	207	193776.6	0.8	**49.2893**	0.546	1.1	ug/L	180	Standard
	Pb	208	789689.1	0.4	**49.4955**	0.776	1.6	ug/L	717	Standard
	U	238	302421.4	0.6	**52.1051**	0.540	1.0	ug/L	4	Standard
>	**Bi**	209	430141.1	1.5				ug/L	460343	Standard

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Na	23	11.7	24.7	**-27.5524**	10.035	36.4	mg/L	0	Standard
Mg	24	22465.0	1.9	**30.1800**	0.330	1.1	mg/L	20	Standard
K	39	500.0	5.0	**3.5529**	0.109	3.1	mg/L	22	Standard
Ca	43	825.0	4.8	**178.0126**	5.766	3.2	mg/L	47	Standard
Fe	54	141.0	25.7	**-0.0008**	0.031	4097.7	mg/L	151	Standard
Fe	57	861.7	4.4	**2.0033**	0.182	9.1	mg/L	195	Standard
> **Sc-1**	45	29879.4	2.7				mg/L	29647	Standard
Cl	35	471095.3	0.9				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	9509.7	3.3				ug/L	1607	Standard
P	31	23573.3	1.7				ug/L	22752	Standard
S	34	4992.5	2.6				ug/L	5049	Standard
Sr	88	646.7	10.1				ug/L	87	Standard
C	12	96.7	31.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	41.7				mg/L	0	Standard
Dy	164	15.7	76.3				mg/L	10	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	3	Standard
I	127	49629.6	4.5				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		136.166	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		94.512	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.226
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.439
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: L1606030301
Sample Date/Time: Thursday, June 16, 2016 22:49:17
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75542.9	1.1				ug/L	51024	Standard
	Be	9	35.0	14.3	**0.0070**	0.004	53.8	ug/L	7	Standard
	Al	27	29747316.4	1.2	**141.1560**	2.929	2.1	ug/L	625	Standard
	Sc	45	33087.8	1.2				ug/L	29647	Standard
	Ti	47	864.4	0.5	**2.9151**	0.077	2.6	ug/L	57	Standard
	V	51	2646.8	15.2	**0.2300**	0.062	27.0	ug/L	1142	Standard
	Cr	52	10730.1	1.6	**0.6326**	0.065	10.2	ug/L	6628	Standard
	Cr	53	13055.7	9.8	**14.6159**	1.842	12.6	ug/L	430	Standard
	Mn	55	149866.6	1.0	**26.8754**	0.469	1.7	ug/L	603	Standard
	Co	59	3157.0	1.2	**0.4841**	0.012	2.4	ug/L	237	Standard
	Ni	60	2562.6	1.9	**1.3439**	0.063	4.7	ug/L	141	Standard
	Cu	65	1783.1	4.8	**0.9478**	0.026	2.7	ug/L	109	Standard
	Zn	66	4720.1	0.9	**4.3229**	0.088	2.0	ug/L	159	Standard
>	**Ge**	72	443259.0	2.7				ug/L	474053	Standard
	As	75	1196.5	7.5	**1.1797**	0.057	4.8	ug/L	-34	Standard
	Se	82	433.0	3.3	**4.0226**	0.239	5.9	ug/L	14	Standard
	Se-1	77	945.4	12.5	**12.4569**	1.980	15.9	ug/L	55	Standard
>	**Ga**	71	90.0	14.7				mg/L	50	Standard
	Rb	85	8912.6	1.9				ug/L	20	Standard
	Y	89	372910.9	1.8				ug/L	376602	Standard
>	**Rh**	103	138.3	9.1				ug/L	17	Standard
	Mo	98	418.3	6.0	**0.1743**	0.012	6.8	ug/L	8	Standard
	Ag	107	142.7	27.1	**0.0119**	0.006	53.9	ug/L	81	Standard
	Cd	111	58.8	59.4	**0.0275**	0.018	65.5	mg/L	3	Standard
	Cd	114	163.0	53.7	**0.0306**	0.018	59.7	ug/L	7	Standard
>	**In**	115	516818.9	0.6				ug/L	524722	Standard
	Sn	118	633.3	5.7	**0.0299**	0.006	20.2	ug/L	715	Standard
	Sb	123	884.4	13.0	**0.1907**	0.026	13.4	ug/L	201	Standard
	Ba	135	210091.9	0.7	**117.6212**	0.688	0.6	ug/L	108	Standard
	Ce	140	548.3	4.6				ug/L	30	Standard
>	**Tb**	159	797833.7	0.3				ug/L	792236	Standard
	Ho	165	23.3	68.9				ug/L	7	Standard
	Tl	203	225.3	33.3	**0.0286**	0.011	36.9	ug/L	9	Standard
	Tl	205	156.7	26.6	**0.0177**	0.007	39.2	ug/L	0	Standard
	Pb	206	343.3	6.6	**0.0221**	0.005	23.5	ug/L	216	Standard
	Pb	207	295.0	6.1	**0.0203**	0.005	24.8	ug/L	180	Standard
	Pb	208	1172.7	3.5	**0.0147**	0.003	21.3	ug/L	717	Standard
	U	238	2550.2	1.4	**0.4258**	0.006	1.3	ug/L	4	Standard
>	**Bi**	209	436094.8	0.8				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.5341**	8.518	153.9	mg/L	0	Standard
Mg	24	135567.2	1.0	**164.6662**	3.386	2.1	mg/L	20	Standard
K	39	101.7	25.2	**0.4668**	0.178	38.1	mg/L	22	Standard
Ca	43	143.3	8.8	**16.8014**	2.330	13.9	mg/L	47	Standard
Fe	54	210.5	7.2	**0.0385**	0.013	33.1	mg/L	151	Standard
Fe	57	346.7	4.4	**0.3147**	0.041	13.0	mg/L	195	Standard
> **Sc-1**	45	33087.8	1.2				mg/L	29647	Standard
Cl	35	252380.3	1.6				ug/L	154152	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	100794.6	4.5				ug/L	1607	Standard
P	31	32519.9	1.3				ug/L	22752	Standard
S	34	4837.4	4.7				ug/L	5049	Standard
Sr	88	436.7	6.9				ug/L	87	Standard
C	12	223.3	5.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	28.7	92.1				mg/L	10	Standard
Ho-1	165	23.3	68.9				mg/L	7	Standard
Er	166	26.7	57.3				mg/L	3	Standard
I	127	617066.8	8.9				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		148.053	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		93.504	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.494
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.733
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606030302
Sample Date/Time: Thursday, June 16, 2016 22:52:29
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73040.7	1.9				ug/L	51024	Standard
	Be	9	40.0	45.1	**0.0120**	0.014	119.9	ug/L	7	Standard
	Al	27	29071018.9	1.5	**142.6695**	1.976	1.4	ug/L	625	Standard
	Sc	45	31137.0	3.2				ug/L	29647	Standard
	Ti	47	896.0	0.6	**3.1347**	0.013	0.4	ug/L	57	Standard
	V	51	2628.5	16.8	**0.2400**	0.066	27.6	ug/L	1142	Standard
	Cr	52	11569.4	2.8	**0.8104**	0.048	5.9	ug/L	6628	Standard
	Cr	53	14446.9	3.6	**16.7439**	0.524	3.1	ug/L	430	Standard
	Mn	55	152328.9	0.4	**28.2404**	0.204	0.7	ug/L	603	Standard
	Co	59	3172.7	3.4	**0.5045**	0.021	4.1	ug/L	237	Standard
	Ni	60	2824.9	2.2	**1.5411**	0.022	1.4	ug/L	141	Standard
	Cu	65	1634.1	4.2	**0.8948**	0.038	4.3	ug/L	109	Standard
	Zn	66	5209.6	4.4	**4.9636**	0.220	4.4	ug/L	159	Standard
>	**Ge**	72	428745.2	1.0				ug/L	474053	Standard
	As	75	1258.8	1.9	**1.2822**	0.036	2.8	ug/L	-34	Standard
	Se	82	439.1	3.6	**4.2227**	0.199	4.7	ug/L	14	Standard
	Se-1	77	1078.4	5.9	**14.7842**	0.963	6.5	ug/L	55	Standard
>	**Ga**	71	70.0	25.8				mg/L	50	Standard
	Rb	85	9496.3	1.9				ug/L	20	Standard
	Y	89	380626.7	0.4				ug/L	376602	Standard
>	**Rh**	103	98.3	11.7				ug/L	17	Standard
	Mo	98	479.8	3.7	**0.2023**	0.007	3.6	ug/L	8	Standard
	Ag	107	174.0	68.0	**0.0174**	0.020	114.9	ug/L	81	Standard
	Cd	111	83.1	60.8	**0.0404**	0.026	64.8	mg/L	3	Standard
	Cd	114	224.6	76.7	**0.0439**	0.036	82.5	ug/L	7	Standard
>	**In**	115	512708.3	1.5				ug/L	524722	Standard
	Sn	118	761.7	9.5	**0.0552**	0.012	21.8	ug/L	715	Standard
	Sb	123	807.2	10.7	**0.1743**	0.019	11.1	ug/L	201	Standard
	Ba	135	209488.0	1.0	**118.2448**	2.471	2.1	ug/L	108	Standard
	Ce	140	541.7	9.3				ug/L	30	Standard
>	**Tb**	159	775209.0	3.4				ug/L	792236	Standard
	Ho	165	25.0	20.0				ug/L	7	Standard
	Tl	203	254.0	67.1	**0.0340**	0.024	70.2	ug/L	9	Standard
	Tl	205	180.0	38.9	**0.0228**	0.011	49.8	ug/L	0	Standard
	Pb	206	477.0	17.2	**0.0581**	0.017	29.8	ug/L	216	Standard
	Pb	207	417.0	19.6	**0.0560**	0.019	34.6	ug/L	180	Standard
	Pb	208	1674.7	14.6	**0.0509**	0.014	27.2	ug/L	717	Standard
	U	238	2253.2	2.5	**0.3950**	0.010	2.6	ug/L	4	Standard
>	**Bi**	209	414870.7	2.1				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.0844**	9.297	182.9	mg/L	0	Standard
Mg	24	134474.1	0.2	**173.6638**	5.440	3.1	mg/L	20	Standard
K	39	88.3	19.9	**0.4121**	0.119	28.8	mg/L	22	Standard
Ca	43	171.7	13.8	**24.9409**	4.511	18.1	mg/L	47	Standard
Fe	54	188.7	7.0	**0.0310**	0.006	19.6	mg/L	151	Standard
Fe	57	286.7	15.2	**0.1978**	0.124	62.9	mg/L	195	Standard
Sc-1	45	31137.0	3.2				mg/L	29647	Standard
Cl	35	236218.5	0.5				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	103082.9	2.1				ug/L	1607	Standard
P	31	32710.3	0.4				ug/L	22752	Standard
S	34	4897.5	3.2				ug/L	5049	Standard
Sr	88	453.3	14.0				ug/L	87	Standard
C	12	190.0	18.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	21.9	52.8				mg/L	10	Standard
Ho-1	165	25.0	20.0				mg/L	7	Standard
Er	166	30.0	33.3				mg/L	3	Standard
I	127	617957.6	6.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		143.149	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		90.442	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.710
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.122
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606030302
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Method 6020 - Summary Report

Sample ID: L1606030402
Sample Date/Time: Thursday, June 16, 2016 22:55:40
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71156.7	0.3				ug/L	51024	Standard
	Be	9	20.0	50.0	**-0.0040**	0.009	211.0	ug/L	7	Standard
	Al	27	27285286.1	1.5	**137.4375**	2.316	1.7	ug/L	625	Standard
	Sc	45	31798.3	2.5				ug/L	29647	Standard
	Ti	47	833.7	1.4	**2.8012**	0.055	2.0	ug/L	57	Standard
	V	51	2537.6	8.1	**0.2132**	0.036	16.9	ug/L	1142	Standard
	Cr	52	12018.1	1.3	**0.8169**	0.043	5.3	ug/L	6628	Standard
	Cr	53	14870.6	5.1	**16.6424**	0.566	3.4	ug/L	430	Standard
	Mn	55	153406.0	0.3	**27.4780**	0.629	2.3	ug/L	603	Standard
	Co	59	3042.6	1.6	**0.4644**	0.013	2.9	ug/L	237	Standard
	Ni	60	2834.9	0.9	**1.4924**	0.050	3.3	ug/L	141	Standard
	Cu	65	1512.4	1.9	**0.7934**	0.029	3.7	ug/L	109	Standard
	Zn	66	12243.6	1.2	**11.5661**	0.178	1.5	ug/L	159	Standard
>	**Ge**	72	443839.5	2.3				ug/L	474053	Standard
	As	75	1046.3	4.7	**1.0354**	0.070	6.7	ug/L	-34	Standard
	Se	82	370.0	2.6	**3.4056**	0.089	2.6	ug/L	14	Standard
	Se-1	77	1056.7	5.5	**13.9459**	0.499	3.6	ug/L	55	Standard
>	**Ga**	71	63.3	29.9				mg/L	50	Standard
	Rb	85	8789.2	0.9				ug/L	20	Standard
	Y	89	374101.9	2.2				ug/L	376602	Standard
>	**Rh**	103	100.0	39.7				ug/L	17	Standard
	Mo	98	414.8	3.1	**0.1799**	0.005	3.0	ug/L	8	Standard
	Ag	107	91.0	19.0	**0.0038**	0.003	80.6	ug/L	81	Standard
	Cd	111	38.9	24.2	**0.0179**	0.005	27.8	mg/L	3	Standard
	Cd	114	124.8	37.3	**0.0236**	0.010	41.9	ug/L	7	Standard
>	**In**	115	496787.9	1.5				ug/L	524722	Standard
	Sn	118	751.7	3.4	**0.0580**	0.007	12.3	ug/L	715	Standard
	Sb	123	699.9	9.2	**0.1546**	0.018	11.7	ug/L	201	Standard
	Ba	135	200966.0	0.6	**117.0693**	2.247	1.9	ug/L	108	Standard
	Ce	140	703.3	2.3				ug/L	30	Standard
>	**Tb**	159	757626.8	0.4				ug/L	792236	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	132.7	7.8	**0.0167**	0.001	8.9	ug/L	9	Standard
	Tl	205	95.0	31.6	**0.0084**	0.005	62.5	ug/L	0	Standard
	Pb	206	531.7	2.2	**0.0713**	0.003	3.6	ug/L	216	Standard
	Pb	207	455.3	6.2	**0.0663**	0.009	13.1	ug/L	180	Standard
	Pb	208	1923.0	1.8	**0.0670**	0.003	4.3	ug/L	717	Standard
	U	238	1986.8	1.8	**0.3469**	0.010	2.8	ug/L	4	Standard
>	**Bi**	209	415441.7	1.2				ug/L	460343	Standard

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Na	23	5.0	0.0	**-4.8155**	0.394	8.2	mg/L	0	Standard
Mg	24	122585.6	0.8	**154.9558**	2.818	1.8	mg/L	20	Standard
K	39	68.3	27.7	**0.2568**	0.128	49.9	mg/L	22	Standard
Ca	43	118.3	20.0	**12.5323**	4.646	37.1	mg/L	47	Standard
Fe	54	188.9	8.2	**0.0283**	0.012	41.6	mg/L	151	Standard
Fe	57	303.3	9.9	**0.2303**	0.108	46.9	mg/L	195	Standard
> **Sc-1**	45	31798.3	2.5				mg/L	29647	Standard
Cl	35	229346.8	0.7				ug/L	154152	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	83539.7	2.1				ug/L	1607	Standard
P	31	32606.7	1.9				ug/L	22752	Standard
S	34	4827.4	4.1				ug/L	5049	Standard
Sr	88	453.3	10.5				ug/L	87	Standard
C	12	170.0	0.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	51.9	21.5				mg/L	10	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	30.0	33.3				mg/L	3	Standard
I	127	562279.3	5.4				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		139.457	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		93.627	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.676
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.246
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606030402PS WG572184-03
Sample Date/Time: Thursday, June 16, 2016 22:58:52
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73075.8	1.3				ug/L	51024	Standard
	Be	9	53890.7	1.6	**44.7456**	1.235	2.8	ug/L	7	Standard
	Al	27	27168938.9	0.8	**133.2737**	2.450	1.8	ug/L	625	Standard
	Sc	45	32783.8	3.0				ug/L	29647	Standard
	Ti	47	859.4	2.1	**2.8540**	0.076	2.7	ug/L	57	Standard
	V	51	356764.3	1.1	**52.7436**	0.694	1.3	ug/L	1142	Standard
	Cr	52	356493.8	0.1	**50.1744**	0.746	1.5	ug/L	6628	Standard
	Cr	53	58201.6	1.0	**65.5911**	1.486	2.3	ug/L	430	Standard
	Mn	55	450920.3	1.1	**79.9871**	1.948	2.4	ug/L	603	Standard
	Co	59	316431.5	0.7	**51.8775**	0.422	0.8	ug/L	237	Standard
	Ni	60	89734.3	1.3	**48.9891**	1.257	2.6	ug/L	141	Standard
	Cu	65	87088.6	0.9	**48.7984**	1.056	2.2	ug/L	109	Standard
	Zn	66	59430.7	0.2	**56.3137**	0.736	1.3	ug/L	159	Standard
>	**Ge**	72	449467.4	1.3				ug/L	474053	Standard
	As	75	54174.2	0.7	**51.6333**	0.928	1.8	ug/L	-34	Standard
	Se	82	5615.8	0.7	**53.3981**	0.963	1.8	ug/L	14	Standard
	Se-1	77	4643.7	1.4	**63.0355**	0.461	0.7	ug/L	55	Standard
>	**Ga**	71	86.7	6.7				mg/L	50	Standard
	Rb	85	8584.1	2.2				ug/L	20	Standard
	Y	89	362129.9	0.6				ug/L	376602	Standard
>	**Rh**	103	126.7	12.1				ug/L	17	Standard
	Mo	98	423.7	5.1	**0.1836**	0.012	6.4	ug/L	8	Standard
	Ag	107	266853.3	1.0	**47.1390**	0.674	1.4	ug/L	81	Standard
	Cd	111	91252.6	1.2	**49.5561**	0.951	1.9	mg/L	3	Standard
	Cd	114	222037.4	0.3	**48.7752**	0.696	1.4	ug/L	7	Standard
>	**In**	115	497860.4	1.7				ug/L	524722	Standard
	Sn	118	795.0	4.5	**0.0661**	0.005	7.0	ug/L	715	Standard
	Sb	123	212175.4	1.5	**51.1854**	0.593	1.2	ug/L	201	Standard
	Ba	135	282462.3	0.7	**164.2013**	1.778	1.1	ug/L	108	Standard
	Ce	140	631.7	10.3				ug/L	30	Standard
>	**Tb**	159	772720.2	0.9				ug/L	792236	Standard
	Ho	165	25.0	72.1				ug/L	7	Standard
	Tl	203	348021.0	0.8	**48.9171**	0.207	0.4	ug/L	9	Standard
	Tl	205	307292.3	1.9	**50.7847**	0.486	1.0	ug/L	0	Standard
	Pb	206	227366.6	0.7	**52.8212**	0.283	0.5	ug/L	216	Standard
	Pb	207	198570.4	0.5	**50.6733**	0.216	0.4	ug/L	180	Standard
	Pb	208	808970.2	1.0	**50.8658**	0.381	0.7	ug/L	717	Standard
	U	238	316899.9	0.9	**54.7755**	0.248	0.5	ug/L	4	Standard
>	**Bi**	209	428726.0	0.9				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.3595**	8.821	164.6	mg/L	0	Standard
Mg	24	124008.8	1.6	**152.0535**	3.346	2.2	mg/L	20	Standard
K	39	85.0	11.8	**0.3592**	0.081	22.7	mg/L	22	Standard
Ca	43	100.0	5.0	**7.9645**	1.532	19.2	mg/L	47	Standard
Fe	54	177.2	11.1	**0.0154**	0.015	95.9	mg/L	151	Standard
Fe	57	351.7	12.7	**0.3402**	0.148	43.6	mg/L	195	Standard
Sc-1	45	32783.8	3.0				mg/L	29647	Standard
Cl	35	226771.8	0.7				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	82051.8	3.7				ug/L	1607	Standard
P	31	32553.3	0.7				ug/L	22752	Standard
S	34	4877.5	2.7				ug/L	5049	Standard
Sr	88	468.3	17.3				ug/L	87	Standard
C	12	143.3	17.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	28.9	106.4				mg/L	10	Standard
Ho-1	165	25.0	72.1				mg/L	7	Standard
Er	166	23.3	65.5				mg/L	3	Standard
I	127	560436.2	7.8				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		143.218	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.814	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.881
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.132
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606030402SDL WG572184-04
Sample Date/Time: Thursday, June 16, 2016 23:02:03
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70743.1	1.8				ug/L	51024	Standard
	Be	9	28.3	50.9	**0.0034**	0.013	384.2	ug/L	7	Standard
	Al	27	5919809.8	1.5	**29.9860**	0.193	0.6	ug/L	625	Standard
	Sc	45	33931.3	4.9				ug/L	29647	Standard
	Ti	47	210.3	4.5	**0.5323**	0.026	4.9	ug/L	57	Standard
	V	51	1736.1	7.7	**0.0751**	0.020	26.8	ug/L	1142	Standard
	Cr	52	8517.7	1.3	**0.2257**	0.018	7.8	ug/L	6628	Standard
	Cr	53	4512.3	4.3	**4.4067**	0.273	6.2	ug/L	430	Standard
	Mn	55	34493.9	0.5	**5.6636**	0.053	0.9	ug/L	603	Standard
	Co	59	857.0	3.0	**0.0916**	0.004	4.4	ug/L	237	Standard
	Ni	60	815.4	3.7	**0.3434**	0.013	3.8	ug/L	141	Standard
	Cu	65	609.0	2.8	**0.2567**	0.008	3.3	ug/L	109	Standard
	Zn	66	2631.2	2.5	**2.1339**	0.077	3.6	ug/L	159	Standard
>	**Ge**	72	475670.8	1.3				ug/L	474053	Standard
	As	75	259.9	19.5	**0.2591**	0.046	17.8	ug/L	-34	Standard
	Se	82	96.9	9.6	**0.7044**	0.090	12.8	ug/L	14	Standard
	Se-1	77	278.3	6.3	**2.8660**	0.190	6.6	ug/L	55	Standard
>	**Ga**	71	100.0	13.2				mg/L	50	Standard
	Rb	85	1971.8	2.2				ug/L	20	Standard
	Y	89	399368.2	0.1				ug/L	376602	Standard
>	**Rh**	103	31.7	55.5				ug/L	17	Standard
	Mo	98	97.2	8.5	**0.0330**	0.003	8.8	ug/L	8	Standard
	Ag	107	194.3	8.7	**0.0182**	0.002	12.0	ug/L	81	Standard
	Cd	111	22.8	26.6	**0.0078**	0.003	35.8	mg/L	3	Standard
	Cd	114	48.7	59.7	**0.0057**	0.006	99.0	ug/L	7	Standard
>	**In**	115	559725.5	1.9				ug/L	524722	Standard
	Sn	118	606.7	7.7	**0.0162**	0.009	56.8	ug/L	715	Standard
	Sb	123	2363.7	19.9	**0.4914**	0.092	18.7	ug/L	201	Standard
	Ba	135	43798.6	2.4	**22.5929**	0.145	0.6	ug/L	108	Standard
	Ce	140	198.3	9.5				ug/L	30	Standard
>	**Tb**	159	842868.7	1.3				ug/L	792236	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	155.3	20.7	**0.0174**	0.004	24.2	ug/L	9	Standard
	Tl	205	138.3	25.4	**0.0131**	0.005	41.5	ug/L	0	Standard
	Pb	206	331.7	5.4	**0.0143**	0.004	25.7	ug/L	216	Standard
	Pb	207	291.7	3.0	**0.0144**	0.002	12.4	ug/L	180	Standard
	Pb	208	1219.7	5.8	**0.0124**	0.004	35.2	ug/L	717	Standard
	U	238	456.0	5.1	**0.0646**	0.005	7.0	ug/L	4	Standard
>	**Bi**	209	468142.9	1.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	26463.1	2.5	**31.3785**	2.343	7.5	mg/L	20	Standard
K	39	26.7	78.1	**-0.0526**	0.134	255.5	mg/L	22	Standard
Ca	43	43.3	17.6	**-4.3735**	1.225	28.0	mg/L	47	Standard
Fe	54	169.2	3.0	**0.0053**	0.003	52.6	mg/L	151	Standard
Fe	57	196.7	11.5	**-0.1160**	0.038	32.8	mg/L	195	Standard
> **Sc-1**	45	33931.3	4.9				mg/L	29647	Standard
Cl	35	196142.1	0.3				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	19616.0	5.5				ug/L	1607	Standard
P	31	27376.4	1.1				ug/L	22752	Standard
S	34	5225.9	4.8				ug/L	5049	Standard
Sr	88	161.7	12.5				ug/L	87	Standard
C	12	53.3	21.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	18.9	105.9				mg/L	10	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	23.3	24.7				mg/L	3	Standard
I	127	136986.5	1.1				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		138.646	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.341	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.671
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.694
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 23:05:16
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65141.5	3.2				ug/L	51024	Standard
	Be	9	52703.2	1.3	**49.1153**	1.764	3.6	ug/L	7	Standard
	Al	27	8228815.5	2.2	**45.2824**	0.920	2.0	ug/L	625	Standard
	Sc	45	32498.2	4.1				ug/L	29647	Standard
	Ti	47	31345.1	0.7	**103.5318**	1.343	1.3	ug/L	57	Standard
	V	51	367453.1	0.4	**51.1407**	0.777	1.5	ug/L	1142	Standard
	Cr	52	375913.5	0.3	**49.8070**	1.076	2.2	ug/L	6628	Standard
	Cr	53	47646.5	1.3	**50.4578**	1.488	2.9	ug/L	430	Standard
	Mn	55	329100.4	0.4	**54.9171**	0.971	1.8	ug/L	603	Standard
	Co	59	349269.0	1.0	**53.9203**	1.421	2.6	ug/L	237	Standard
	Ni	60	96531.2	0.8	**49.6170**	1.272	2.6	ug/L	141	Standard
	Cu	65	93924.6	0.9	**49.5504**	1.188	2.4	ug/L	109	Standard
	Zn	66	55518.9	0.1	**49.5011**	0.851	1.7	ug/L	159	Standard
>	Ge	72	477444.4	1.8				ug/L	474053	Standard
	As	75	55141.7	0.8	**49.4767**	0.656	1.3	ug/L	-34	Standard
	Se	82	5701.1	0.6	**51.0288**	1.000	2.0	ug/L	14	Standard
	Se-1	77	3881.8	1.1	**49.4608**	1.267	2.6	ug/L	55	Standard
>	Ga	71	65.0	13.3				mg/L	50	Standard
	Rb	85	788.4	3.5				ug/L	20	Standard
	Y	89	405958.4	2.3				ug/L	376602	Standard
>	Rh	103	46.7	6.2				ug/L	17	Standard
	Mo	98	255980.2	1.6	**104.9334**	3.174	3.0	ug/L	8	Standard
	Ag	107	304085.1	0.1	**49.3379**	0.777	1.6	ug/L	81	Standard
	Cd	111	100650.6	0.4	**50.2032**	0.894	1.8	mg/L	3	Standard
	Cd	114	247889.3	0.9	**50.0095**	0.397	0.8	ug/L	7	Standard
>	In	115	542056.8	1.5				ug/L	524722	Standard
	Sn	118	285272.3	0.9	**51.1841**	0.960	1.9	ug/L	715	Standard
	Sb	123	227314.1	0.8	**50.3702**	0.881	1.7	ug/L	201	Standard
	Ba	135	91208.0	0.4	**48.6598**	0.850	1.7	ug/L	108	Standard
	Ce	140	63.3	32.9				ug/L	30	Standard
>	Tb	159	789070.3	2.3				ug/L	792236	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	377602.8	0.5	**50.2279**	0.920	1.8	ug/L	9	Standard
	Tl	205	337371.9	1.4	**52.7729**	1.437	2.7	ug/L	0	Standard
	Pb	206	238042.0	0.2	**52.3320**	0.779	1.5	ug/L	216	Standard
	Pb	207	215459.6	1.1	**52.0360**	1.192	2.3	ug/L	180	Standard
	Pb	208	891326.9	0.5	**53.0399**	0.951	1.8	ug/L	717	Standard
	U	238	333407.3	1.0	**54.5375**	1.116	2.0	ug/L	4	Standard
>	Bi	209	453096.7	1.3				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.3907**	8.767	162.6	mg/L	0	Standard
Mg	24	4200.6	2.3	**5.1529**	0.111	2.2	mg/L	20	Standard
K	39	616.7	6.8	**4.0727**	0.447	11.0	mg/L	22	Standard
Ca	43	71.7	17.6	**2.1532**	3.105	144.2	mg/L	47	Standard
Fe	54	6037.6	3.3	**4.3664**	0.172	3.9	mg/L	151	Standard
Fe	57	1763.4	0.4	**4.3392**	0.195	4.5	mg/L	195	Standard
Sc-1	45	32498.2	4.1				mg/L	29647	Standard
Cl	35	179833.9	2.1				ug/L	154152	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	2146.8	4.2				ug/L	1607	Standard
P	31	26813.7	2.2				ug/L	22752	Standard
S	34	5724.4	0.6				ug/L	5049	Standard
Sr	88	70.0	14.3				ug/L	87	Standard
C	12	63.3	50.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.0	50.0				mg/L	10	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	3	Standard
I	127	9479.8	26.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	98.231		
Al	27	90.565		
Sc	45			
Ti	47	103.532		
V	51	102.281		
Cr	52	99.614		
Cr	53			
Mn	55	109.834		
Co	59	107.841		
Ni	60	99.234		
Cu	65	99.101		
Zn	66	99.002		
Ge	72		100.715	
As	75	98.953		
Se	82	102.058		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	104.933		
Ag	107	98.676		
Cd	111	100.406		
Cd	114			
> In	115		103.304	
Sn	118	102.368		
Sb	123	100.740		
Ba	135	97.320		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.456		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.080		
U	238	109.075		
> Bi	209		98.426	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 23:08:27
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65521.4	0.4				ug/L	51024	Standard
	Be	9	23.3	99.0	**0.0005**	0.021	4564.3	ug/L	7	Standard
	Al	27	5681.9	111.4	**0.0212**	0.034	162.2	ug/L	625	Standard
	Sc	45	34061.6	0.4				ug/L	29647	Standard
	Ti	47	31.0	31.1	**-0.0658**	0.030	46.1	ug/L	57	Standard
	V	51	1137.0	4.8	**-0.0132**	0.008	58.0	ug/L	1142	Standard
	Cr	52	6409.0	1.1	**-0.0829**	0.007	8.9	ug/L	6628	Standard
	Cr	53	666.7	9.6	**0.2639**	0.061	23.2	ug/L	430	Standard
	Mn	55	712.4	6.8	**-0.0100**	0.007	70.1	ug/L	603	Standard
	Co	59	233.0	15.5	**-0.0061**	0.005	85.2	ug/L	237	Standard
	Ni	60	159.3	10.8	**0.0024**	0.008	354.6	ug/L	141	Standard
	Cu	65	160.3	16.8	**0.0166**	0.013	81.1	ug/L	109	Standard
	Zn	66	162.7	11.7	**-0.0896**	0.016	17.5	ug/L	159	Standard
>	**Ge**	72	488521.2	0.7				ug/L	474053	Standard
	As	75	-18.2	245.0	**0.0090**	0.039	433.3	ug/L	-34	Standard
	Se	82	22.9	33.5	**0.0317**	0.066	209.0	ug/L	14	Standard
	Se-1	77	61.7	10.8	**0.0347**	0.088	253.1	ug/L	55	Standard
>	**Ga**	71	43.3	6.7				mg/L	50	Standard
	Rb	85	21.7	26.6				ug/L	20	Standard
	Y	89	392497.9	1.5				ug/L	376602	Standard
>	**Rh**	103	15.0	66.7				ug/L	17	Standard
	Mo	98	290.0	34.9	**0.1112**	0.040	35.6	ug/L	8	Standard
	Ag	107	124.3	21.0	**0.0075**	0.004	51.6	ug/L	81	Standard
	Cd	111	11.5	16.4	**0.0024**	0.001	34.9	mg/L	3	Standard
	Cd	114	37.6	64.7	**0.0036**	0.005	130.1	ug/L	7	Standard
>	**In**	115	550836.3	1.7				ug/L	524722	Standard
	Sn	118	835.0	15.5	**0.0583**	0.023	39.6	ug/L	715	Standard
	Sb	123	699.1	30.0	**0.1378**	0.046	33.4	ug/L	201	Standard
	Ba	135	132.0	3.9	**0.0117**	0.003	27.6	ug/L	108	Standard
	Ce	140	11.7	24.7				ug/L	30	Standard
>	**Tb**	159	819426.3	1.1				ug/L	792236	Standard
	Ho	165	6.7	86.6				ug/L	7	Standard
	Tl	203	74.7	34.7	**0.0068**	0.003	47.8	ug/L	9	Standard
	Tl	205	90.0	77.2	**0.0055**	0.010	186.7	ug/L	0	Standard
	Pb	206	270.7	9.3	**0.0000**	0.005	33114.8	ug/L	216	Standard
	Pb	207	219.0	11.0	**-0.0037**	0.006	150.6	ug/L	180	Standard
	Pb	208	961.7	14.2	**-0.0037**	0.008	206.3	ug/L	717	Standard
	U	238	71.3	83.4	**0.0035**	0.009	266.3	ug/L	4	Standard
>	**Bi**	209	478835.9	0.7				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.7236**	8.190	143.1	mg/L	0	Standard
Mg	24	78.3	36.3	**0.0471**	0.033	70.4	mg/L	20	Standard
K	39	20.0	50.0	**-0.0950**	0.067	70.5	mg/L	22	Standard
Ca	43	16.7	62.4	**-9.7998**	2.111	21.5	mg/L	47	Standard
Fe	54	162.8	19.9	**0.0003**	0.023	7301.8	mg/L	151	Standard
Fe	57	211.7	11.2	**-0.0764**	0.066	86.3	mg/L	195	Standard
> **Sc-1**	45	34061.6	0.4				mg/L	29647	Standard
Cl	35	176482.8	2.0				ug/L	154152	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	1700.1	5.3				ug/L	1607	Standard
P	31	27343.0	0.9				ug/L	22752	Standard
S	34	5614.4	3.8				ug/L	5049	Standard
Sr	88	68.3	27.7				ug/L	87	Standard
C	12	56.7	44.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	16.0	95.0				mg/L	10	Standard
Ho-1	165	6.7	86.6				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	4402.3	12.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.052	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.977
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.017
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, June 16, 2016 23:11:40
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62197.5	2.7				ug/L	51024	Standard
	Be	9	238.3	13.6	**0.2121**	0.037	17.6	ug/L	7	Standard
	Al	27	1466.7	24.6	**-0.0013**	0.002	173.1	ug/L	625	Standard
	Sc	45	31464.3	3.4				ug/L	29647	Standard
	Ti	47	25.0	41.8	**-0.0793**	0.036	45.5	ug/L	57	Standard
	V	51	3787.9	2.1	**0.3855**	0.011	2.8	ug/L	1142	Standard
	Cr	52	11607.4	0.4	**0.7122**	0.016	2.2	ug/L	6628	Standard
	Cr	53	1381.7	1.4	**1.1136**	0.035	3.1	ug/L	430	Standard
	Mn	55	3485.4	2.1	**0.4840**	0.015	3.1	ug/L	603	Standard
	Co	59	2688.9	0.3	**0.3937**	0.004	0.9	ug/L	237	Standard
	Ni	60	3045.6	2.3	**1.5635**	0.022	1.4	ug/L	141	Standard
	Cu	65	1580.4	3.3	**0.8079**	0.030	3.7	ug/L	109	Standard
	Zn	66	7167.0	0.7	**6.4903**	0.095	1.5	ug/L	159	Standard
>	**Ge**	72	455928.4	0.9				ug/L	474053	Standard
	As	75	370.6	7.7	**0.3732**	0.030	8.0	ug/L	-34	Standard
	Se	82	61.3	17.8	**0.4078**	0.107	26.4	ug/L	14	Standard
	Se-1	77	90.3	17.8	**0.4781**	0.216	45.1	ug/L	55	Standard
>	**Ga**	71	55.0	24.1				mg/L	50	Standard
	Rb	85	15.0	57.7				ug/L	20	Standard
	Y	89	401919.6	0.8				ug/L	376602	Standard
>	**Rh**	103	13.3	43.3				ug/L	17	Standard
	Mo	98	54.9	10.1	**0.0169**	0.002	11.0	ug/L	8	Standard
	Ag	107	2304.2	2.4	**0.3610**	0.011	3.1	ug/L	81	Standard
	Cd	111	463.2	4.6	**0.2274**	0.011	4.7	mg/L	3	Standard
	Cd	114	1100.0	5.3	**0.2180**	0.017	7.9	ug/L	7	Standard
>	**In**	115	543008.1	2.6				ug/L	524722	Standard
	Sn	118	436.7	6.3	**-0.0111**	0.004	33.6	ug/L	715	Standard
	Sb	123	1825.0	3.3	**0.3894**	0.024	6.1	ug/L	201	Standard
	Ba	135	1282.7	6.8	**0.6257**	0.032	5.1	ug/L	108	Standard
	Ce	140	18.3	41.7				ug/L	30	Standard
>	**Tb**	159	786449.8	2.4				ug/L	792236	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	625.7	5.7	**0.0805**	0.004	5.1	ug/L	9	Standard
	Tl	205	541.7	4.7	**0.0768**	0.002	3.0	ug/L	0	Standard
	Pb	206	1119.4	3.0	**0.1897**	0.004	2.2	ug/L	216	Standard
	Pb	207	980.4	3.9	**0.1828**	0.004	2.1	ug/L	180	Standard
	Pb	208	4169.9	1.1	**0.1903**	0.004	2.3	ug/L	717	Standard
	U	238	2499.2	1.6	**0.4009**	0.009	2.3	ug/L	4	Standard
>	**Bi**	209	453610.3	2.8				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	55.0	15.7	**0.0251**	0.011	43.4	mg/L	20	Standard
K	39	8.3	91.7	**-0.1668**	0.057	33.9	mg/L	22	Standard
Ca	43	21.7	66.6	**-8.4026**	3.204	38.1	mg/L	47	Standard
Fe	54	104.1	4.5	**-0.0352**	0.004	10.9	mg/L	151	Standard
Fe	57	183.3	11.0	**-0.1131**	0.042	36.8	mg/L	195	Standard
Sc-1	45	31464.3	3.4				mg/L	29647	Standard
Cl	35	173373.0	1.2				ug/L	154152	Standard
Kr	83	0.7	173.2				ug/L	3	Standard
Br	81	1516.7	7.1				ug/L	1607	Standard
P	31	19057.0	2.5				ug/L	22752	Standard
S	34	5394.3	1.5				ug/L	5049	Standard
Sr	88	70.0	24.7				ug/L	87	Standard
C	12	66.7	82.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	3.2	173.2				mg/L	10	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	3055.3	5.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	106.050		
Al	27			
Sc	45			
Ti	47			
V	51	96.369		
Cr	52	89.022		
Cr	53			
Mn	55	96.796		
Co	59	98.420		
Ni	60	97.718		
Cu	65	100.991		
Zn	66	103.844		
Ge	72		96.177	
As	75	93.302		
Se	82	101.945		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	90.256		
Cd	111	94.767		
Cd	114			
> In	115			103.485
Sn	118			
Sb	123	97.340		
Ba	135	83.430		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.678		
Tl	205			
Pb	206			
Pb	207			
Pb	208	95.126		
U	238	100.222		
> Bi	209			98.537
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Tuesday, June 21, 2016 12:07:41

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1329	2024	0.712	
Mg	23.985	23.975	4501	2020	0.694	
Co	58.933	58.925	11686	2022	0.702	
In	114.904	114.925	22861	2028	0.687	
U	238.050	238.075	47460	2043	0.684	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	6.556
5.575	2.909
5.625	3.124
5.675	4.542
5.725	2.516
5.775	3.133
5.825	3.034
5.875	2.659
5.925	3.116
5.975	0.663
6.025	3.021
6.075	4.431
6.125	3.101
6.175	3.302
6.225	9.989
6.275	25.913
6.325	61.237
6.375	37.268
6.425	95.831
6.475	39.218
6.525	13.045
6.575	6.056
6.625	3.694
6.675	1.639
6.725	2.760
6.775	1.475
6.825	2.174

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6.875	1.150
6.925	1.430
6.975	2.330
7.025	1.255
7.075	0.705
7.125	2.295
7.175	1.271
7.225	3.628
7.275	4.494
7.325	27.694
7.375	63.888
7.425	39.123
7.475	88.928
7.525	69.869
7.575	37.268
7.625	63.191
7.675	69.869
7.725	86.603
7.775	99.381
7.825	121.967
7.875	83.853
7.925	72.436
7.975	99.381
8.025	50.000
8.075	34.233
8.125	100.000
8.175	38.030
8.225	40.825
8.275	22.822
8.325	138.332
8.375	39.123
8.425	79.057
8.475	43.853
22.525	223.607
22.575	38.030
22.625	43.853
22.675	32.401
22.725	43.376
22.775	49.793
22.825	52.408
22.875	27.407
22.925	16.563
22.975	20.412
23.025	28.315
23.075	34.881
23.125	25.951
23.175	32.541

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23.225	14.650
23.275	27.809
23.325	19.174
23.375	43.122
23.425	29.487
23.475	18.506
23.525	5.966
23.575	3.055
23.625	1.534
23.675	1.817
23.725	1.183
23.775	0.960
23.825	1.298
23.875	1.103
23.925	0.675
23.975	1.038
24.025	1.417
24.075	0.260
24.125	0.656
24.175	1.631
24.225	1.863
24.275	3.146
24.325	28.710
24.375	26.307
24.425	30.292
24.475	13.327
24.525	4.037
24.575	1.007
24.625	3.057
24.675	2.129
24.725	1.137
24.775	1.370
24.825	1.603
24.875	1.801
24.925	0.625
24.975	1.310
25.025	1.635
25.075	1.412
25.125	1.115
25.175	1.388
25.225	1.212
25.275	14.200
25.325	57.334
25.375	84.265
25.425	42.127
25.475	10.037
57.525	5.453

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57.575	2.202
57.625	3.035
57.675	1.654
57.725	3.803
57.775	1.264
57.825	1.936
57.875	2.815
57.925	1.641
57.975	2.107
58.025	2.389
58.075	2.038
58.125	0.977
58.175	4.405
58.225	4.049
58.275	3.597
58.325	15.526
58.375	17.815
58.425	26.131
58.475	8.281
58.525	1.499
58.575	1.606
58.625	2.262
58.675	1.232
58.725	2.036
58.775	0.724
58.825	1.502
58.875	1.471
58.925	1.251
58.975	1.106
59.025	1.762
59.075	1.429
59.125	1.832
59.175	2.462
59.225	2.138
59.275	14.258
59.325	45.166
59.375	47.140
59.425	44.721
59.475	23.904
59.525	10.883
59.575	9.409
59.625	4.974
59.675	2.777
59.725	1.421
59.775	3.138
59.825	1.163
59.875	1.334

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59.925	3.822
59.975	1.863
60.025	1.945
60.075	2.122
60.125	3.418
60.175	2.126
60.225	8.067
60.275	17.408
60.325	50.619
60.375	35.355
60.425	52.705
60.475	30.842
113.525	13.070
113.575	7.506
113.625	5.331
113.675	1.010
113.725	3.027
113.775	2.098
113.825	2.123
113.875	2.206
113.925	2.127
113.975	2.183
114.025	0.695
114.075	2.493
114.125	1.430
114.175	1.596
114.225	3.899
114.275	3.770
114.325	17.743
114.375	38.065
114.425	24.241
114.475	10.721
114.525	4.779
114.575	3.301
114.625	1.042
114.675	2.599
114.725	2.253
114.775	2.049
114.825	0.960
114.875	1.817
114.925	1.355
114.975	1.378
115.025	1.472
115.075	1.260
115.125	2.051
115.175	2.855
115.225	2.482

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115.275	6.639
115.325	11.285
115.375	27.524
115.425	38.030
115.475	48.445
115.525	22.628
115.575	8.442
115.625	5.335
115.675	3.400
115.725	5.123
115.775	2.482
115.825	4.190
115.875	5.728
115.925	4.930
115.975	5.489
116.025	3.368
116.075	2.667
116.125	3.465
116.175	4.332
116.225	4.691
116.275	14.225
116.325	24.781
116.375	59.266
116.425	74.689
116.475	76.697
236.525	
236.575	42.229
236.625	43.069
236.675	30.822
236.725	19.846
236.775	17.801
236.825	35.067
236.875	14.286
236.925	33.026
236.975	31.044
237.025	23.207
237.075	28.152
237.125	38.870
237.175	48.879
237.225	33.159
237.275	29.116
237.325	14.542
237.375	23.458
237.425	19.563
237.475	25.573
237.525	41.592
237.575	22.988

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237.625	9.655
237.675	3.555
237.725	2.204
237.775	2.335
237.825	2.878
237.875	1.983
237.925	0.860
237.975	1.594
238.025	1.305
238.075	0.963
238.125	1.566
238.175	1.319
238.225	0.999
238.275	0.949
238.325	1.610
238.375	2.604
238.425	0.685
238.475	5.782
238.525	6.276
238.575	21.121
238.625	40.982
238.675	25.226
238.725	31.270
238.775	24.717
238.825	36.014
238.875	26.854
238.925	18.372
238.975	35.067
239.025	35.209
239.075	29.613
239.125	29.155
239.175	13.847
239.225	32.341
239.275	28.917
239.325	41.445
239.375	36.361
239.425	32.530
239.475	31.439

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SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\ReportOutput\a.swz

Start Time: 6/21/2016 12:13:16 PM
End Time: 6/21/2016 12:15:43 PM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 4257.87
        Obtained Intensity (Mg 23.985): 91046.81
        Obtained Intensity (In 114.904): 67007.59
        Obtained Intensity (U 238.05): 138801.86
        Obtained Intensity (Bkgd 220): 0.27
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.018 (=3833.82 / 209522.60)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.006 (=1202.25 / 209522.60)
```


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SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\ReportOutput\a.swz

Optimization Status

Start Time: 6/21/2016 12:13:16 PM

Daily Performance Check
        Optimization Settings:
                Method: Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 1
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 4257.87
                Obtained Intensity (Mg 23.985): 91046.81
                Obtained Intensity (In 114.904): 67007.59
                Obtained Intensity (U 238.05): 138801.86
                Obtained Intensity (Bkgd 220): 0.27
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.018 (=3833.82 / 209522.60)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.006 (=1202.25 / 209522.60)
[Passed]  Optimum value(s): N/A

End Time: 6/21/2016 12:15:43 PM
```


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Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Tuesday, June 21, 2016 12:31:36
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60175.9	0.2				ug/L		Standard
	Be	9	5.0	0.0				ug/L		Standard
	Al	27	831.7	9.4				ug/L		Standard
	Sc	45	25065.7	2.2				ug/L		Standard
	Ti	47	37.7	15.6				ug/L		Standard
	V	51	974.0	7.7				ug/L		Standard
	Cr	52	5792.4	1.5				ug/L		Standard
	Cr	53	346.7	9.8				ug/L		Standard
	Mn	55	1164.0	4.2				ug/L		Standard
	Co	59	303.3	8.1				ug/L		Standard
	Ni	60	290.7	6.8				ug/L		Standard
	Cu	65	172.7	6.7				ug/L		Standard
	Zn	66	130.3	5.4				ug/L		Standard
>	Ge	72	491723.5	1.3				ug/L		Standard
	As	75	-24.7	79.1				ug/L		Standard
	Se	82	11.5	37.2				ug/L		Standard
	Se-1	77	57.0	6.3				ug/L		Standard
>	Ga	71	148.3	7.8				mg/L		Standard
	Rb	85	18.3	41.7				ug/L		Standard
	Y	89	401844.8	1.4				ug/L		Standard
>	Rh	103	10.0	50.0				ug/L		Standard
	Mo	98	11.9	33.1				ug/L		Standard
	Ag	107	97.7	16.8				ug/L		Standard
	Cd	111	10.7	42.3				mg/L		Standard
	Cd	114	21.3	80.2				ug/L		Standard
>	In	115	547486.6	2.6				ug/L		Standard
	Sn	118	450.0	16.8				ug/L		Standard
	Sb	123	105.2	26.0				ug/L		Standard
	Ba	135	111.3	14.6				ug/L		Standard
	Ce	140	106.7	44.3				ug/L		Standard
>	Tb	159	890342.4	1.4				ug/L		Standard
	Ho	165	10.0	50.0				ug/L		Standard
	Tl	203	19.3	72.5				ug/L		Standard
	Tl	205	16.7	62.4				ug/L		Standard
	Pb	206	247.0	5.1				ug/L		Standard
	Pb	207	215.0	4.1				ug/L		Standard
	Pb	208	770.0	5.2				ug/L		Standard
	U	238	13.3	42.6				ug/L		Standard
>	Bi	209	503142.7	1.4				ug/L		Standard

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	Na	23	1.7	173.2	mg/L	Standard
	Mg	24	35.0	14.3	mg/L	Standard
	K	39	25.0	52.9	mg/L	Standard
	Ca	43	38.3	19.9	mg/L	Standard
	Fe	54	126.1	27.3	mg/L	Standard
	Fe	57	245.0	30.1	mg/L	Standard
>	**Sc-1**	45	25065.7	2.2	mg/L	Standard
	Cl	35	125857.3	1.3	ug/L	Standard
	Kr	83	1.0	100.0	ug/L	Standard
	Br	81	1350.1	4.5	ug/L	Standard
	P	31	18392.8	1.6	ug/L	Standard
	S	34	3738.8	6.0	ug/L	Standard
	Sr	88	78.3	24.2	ug/L	Standard
	C	12	53.3	60.3	mg/L	Standard
	N	14	0.0		mg/L	Standard
	Hg	202	0.0		mg/L	Standard
	Dy	164	2.2	286.4	mg/L	Standard
	Ho-1	165	10.0	50.0	mg/L	Standard
	Er	166	23.3	65.5	mg/L	Standard
	I	127	1145.0	4.2	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Blank
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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Tuesday, June 21, 2016 12:34:47
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60488.9	1.3				ug/L	60176	Standard
	Be	9	11.7	65.5				ug/L	5	Standard
	Al	27	836.7	4.8				ug/L	832	Standard
	Sc	45	24878.7	2.2				ug/L	25066	Standard
	Ti	47	35.3	20.5				ug/L	38	Standard
	V	51	1014.5	7.5				ug/L	974	Standard
	Cr	52	5913.2	2.9				ug/L	5792	Standard
	Cr	53	315.0	19.3				ug/L	347	Standard
	Mn	55	1207.0	3.4				ug/L	1164	Standard
	Co	59	269.3	1.8				ug/L	303	Standard
	Ni	60	292.0	1.9				ug/L	291	Standard
	Cu	65	155.7	6.3				ug/L	173	Standard
	Zn	66	143.3	11.1				ug/L	130	Standard
>	**Ge**	72	484278.1	1.8				ug/L	491724	Standard
	As	75	-25.5	164.8				ug/L	-25	Standard
	Se	82	11.6	54.6				ug/L	12	Standard
	Se-1	77	49.7	15.1				ug/L	57	Standard
>	**Ga**	71	168.3	18.1				mg/L	148	Standard
	Rb	85	21.7	48.0				ug/L	18	Standard
	Y	89	409346.3	1.0				ug/L	401845	Standard
>	**Rh**	103	26.7	10.8				ug/L	10	Standard
	Mo	98	8.3	17.9				ug/L	12	Standard
	Ag	107	92.7	12.5				ug/L	98	Standard
	Cd	111	9.3	34.5				mg/L	11	Standard
	Cd	114	15.1	46.6				ug/L	21	Standard
>	**In**	115	551450.0	0.7				ug/L	547487	Standard
	Sn	118	430.0	8.1				ug/L	450	Standard
	Sb	123	43.1	45.3				ug/L	105	Standard
	Ba	135	105.7	9.3				ug/L	111	Standard
	Ce	140	71.7	83.2				ug/L	107	Standard
>	**Tb**	159	897003.4	2.0				ug/L	890342	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	11.0	72.2				ug/L	19	Standard
	Tl	205	10.0	132.3				ug/L	17	Standard
	Pb	206	238.0	4.2				ug/L	247	Standard
	Pb	207	219.3	4.9				ug/L	215	Standard
	Pb	208	792.0	5.9				ug/L	770	Standard
	U	238	10.0	75.5				ug/L	13	Standard
>	**Bi**	209	496302.2	1.2				ug/L	503143	Standard

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	Na	23	0.0		mg/L	2	Standard
	Mg	24	31.7	24.1	mg/L	35	Standard
	K	39	33.3	43.3	mg/L	25	Standard
	Ca	43	26.7	10.8	mg/L	38	Standard
	Fe	54	132.9	5.9	mg/L	126	Standard
	Fe	57	250.0	24.0	mg/L	245	Standard
>	**Sc-1**	45	24878.7	2.2	mg/L	25066	Standard
	Cl	35	129128.6	0.4	ug/L	125857	Standard
	Kr	83	1.7	124.9	ug/L	1	Standard
	Br	81	1190.0	4.4	ug/L	1350	Standard
	P	31	18840.0	2.5	ug/L	18393	Standard
	S	34	3955.5	5.6	ug/L	3739	Standard
	Sr	88	98.3	22.9	ug/L	78	Standard
	C	12	73.3	28.4	mg/L	53	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	3.3	173.2	mg/L	0	Standard
	Dy	164	6.2	93.6	mg/L	2	Standard
	Ho-1	165	8.3	69.3	mg/L	10	Standard
	Er	166	10.0	100.0	mg/L	23	Standard
	I	127	1046.7	2.3	mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 1
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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Tuesday, June 21, 2016 12:37:59
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	58902.6	2.2				ug/L	60176	Standard
	Be	9	41.7	36.7				ug/L	5	Standard
	Al	27	7506.9	2.0				ug/L	832	Standard
	Sc	45	24807.0	1.7				ug/L	25066	Standard
	Ti	47	57.3	17.5				ug/L	38	Standard
	V	51	1265.4	5.8				ug/L	974	Standard
	Cr	52	6084.9	2.1				ug/L	5792	Standard
	Cr	53	365.0	11.9				ug/L	347	Standard
	Mn	55	1636.8	0.3				ug/L	1164	Standard
	Co	59	583.0	6.7				ug/L	303	Standard
	Ni	60	417.3	3.9				ug/L	291	Standard
	Cu	65	254.7	1.5				ug/L	173	Standard
	Zn	66	285.3	6.4				ug/L	130	Standard
>	Ge	72	474091.1	0.6				ug/L	491724	Standard
	As	75	16.4	175.0				ug/L	-25	Standard
	Se	82	14.3	35.4				ug/L	12	Standard
	Se-1	77	47.7	3.2				ug/L	57	Standard
>	Ga	71	163.3	20.8				mg/L	148	Standard
	Rb	85	21.7	35.3				ug/L	18	Standard
	Y	89	421814.2	2.0				ug/L	401845	Standard
>	Rh	103	33.3	45.8				ug/L	10	Standard
	Mo	98	251.2	2.5				ug/L	12	Standard
	Ag	107	386.0	1.2				ug/L	98	Standard
	Cd	111	102.9	11.3				mg/L	11	Standard
	Cd	114	249.4	9.6				ug/L	21	Standard
>	In	115	548120.3	1.1				ug/L	547487	Standard
	Sn	118	645.0	5.6				ug/L	450	Standard
	Sb	123	245.0	3.3				ug/L	105	Standard
	Ba	135	194.0	3.9				ug/L	111	Standard
	Ce	140	15.0	57.7				ug/L	107	Standard
>	Tb	159	869696.1	0.6				ug/L	890342	Standard
	Ho	165	1.7	173.2				ug/L	10	Standard
	Tl	203	386.3	6.2				ug/L	19	Standard
	Tl	205	290.0	6.0				ug/L	17	Standard
	Pb	206	486.7	5.5				ug/L	247	Standard
	Pb	207	430.7	8.6				ug/L	215	Standard
	Pb	208	1734.7	2.5				ug/L	770	Standard
	U	238	291.0	3.0				ug/L	13	Standard
>	Bi	209	480303.9	0.6				ug/L	503143	Standard

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	Na	23	0.0		mg/L	2	Standard
	Mg	24	31.7	32.9	mg/L	35	Standard
	K	39	23.3	32.7	mg/L	25	Standard
	Ca	43	26.7	43.3	mg/L	38	Standard
	Fe	54	147.5	2.0	mg/L	126	Standard
	Fe	57	275.0	5.5	mg/L	245	Standard
>	**Sc-1**	45	24807.0	1.7	mg/L	25066	Standard
	Cl	35	127847.2	1.5	ug/L	125857	Standard
	Kr	83	2.0	0.0	ug/L	1	Standard
	Br	81	1250.1	12.9	ug/L	1350	Standard
	P	31	18074.1	2.7	ug/L	18393	Standard
	S	34	3720.5	1.6	ug/L	3739	Standard
	Sr	88	101.7	31.6	ug/L	78	Standard
	C	12	43.3	48.0	mg/L	53	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	0.0		mg/L	0	Standard
	Dy	164	22.2	64.8	mg/L	2	Standard
	Ho-1	165	1.7	173.2	mg/L	10	Standard
	Er	166	23.3	89.2	mg/L	23	Standard
	I	127	1036.7	8.6	mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Tuesday, June 21, 2016 12:41:10
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	56823.0	1.6				ug/L	60176	Standard
	Be	9	34135.1	0.9	**50.0000**	0.642	1.3	ug/L	5	Standard
	Al	27	6273208.6	1.1	**50.0000**	0.818	1.6	ug/L	832	Standard
	Sc	45	23723.6	2.6				ug/L	25066	Standard
	Ti	47	19074.3	0.3	**100.0000**	1.640	1.6	ug/L	38	Standard
	V	51	298222.0	1.3	**50.0000**	0.132	0.3	ug/L	974	Standard
	Cr	52	320017.6	0.3	**50.0000**	0.524	1.0	ug/L	5792	Standard
	Cr	53	40928.5	1.7	**50.0000**	0.225	0.4	ug/L	347	Standard
	Mn	55	319441.0	1.9	**50.0000**	0.827	1.7	ug/L	1164	Standard
	Co	59	304089.0	1.5	**50.0000**	1.058	2.1	ug/L	303	Standard
	Ni	60	89819.8	1.0	**50.0000**	0.212	0.4	ug/L	291	Standard
	Cu	65	88932.2	0.8	**50.0000**	0.449	0.9	ug/L	173	Standard
	Zn	66	51748.9	0.1	**50.0000**	0.578	1.2	ug/L	130	Standard
>	Ge	72	487193.0	1.3				ug/L	491724	Standard
	As	75	52343.3	1.1	**50.0000**	0.143	0.3	ug/L	-25	Standard
	Se	82	5108.3	0.1	**50.0000**	0.635	1.3	ug/L	12	Standard
	Se-1	77	3568.4	3.1	**50.0000**	1.152	2.3	ug/L	57	Standard
>	Ga	71	203.3	5.1				mg/L	148	Standard
	Rb	85	696.7	7.2				ug/L	18	Standard
	Y	89	396857.0	0.8				ug/L	401845	Standard
>	Rh	103	46.7	30.9				ug/L	10	Standard
	Mo	98	234863.2	0.4	**100.0000**	1.015	1.0	ug/L	12	Standard
	Ag	107	287635.1	1.1	**50.0000**	0.173	0.3	ug/L	98	Standard
	Cd	111	91412.4	1.2	**50.0000**	0.269	0.5	mg/L	11	Standard
	Cd	114	221759.1	0.4	**50.0000**	0.185	0.4	ug/L	21	Standard
>	In	115	526904.6	0.8				ug/L	547487	Standard
	Sn	118	252169.7	1.4	**50.0000**	0.512	1.0	ug/L	450	Standard
	Sb	123	207104.5	0.9	**50.0000**	0.294	0.6	ug/L	105	Standard
	Ba	135	89208.5	1.1	**50.0000**	0.205	0.4	ug/L	111	Standard
	Ce	140	53.3	43.3				ug/L	107	Standard
>	Tb	159	848207.6	0.5				ug/L	890342	Standard
	Ho	165	15.0	33.3				ug/L	10	Standard
	Tl	203	360672.2	1.4	**50.0000**	0.148	0.3	ug/L	19	Standard
	Tl	205	296087.7	2.3	**50.0000**	0.563	1.1	ug/L	17	Standard
	Pb	206	233966.3	0.1	**50.0000**	0.511	1.0	ug/L	247	Standard
	Pb	207	213337.5	0.5	**50.0000**	0.319	0.6	ug/L	215	Standard
	Pb	208	792528.2	1.3	**50.0000**	0.762	1.5	ug/L	770	Standard
	U	238	284703.0	1.6	**50.0000**	0.560	1.1	ug/L	13	Standard
>	Bi	209	474262.1	1.1				ug/L	503143	Standard

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Na	23	0.0					mg/L	2	Standard
Mg	24	3497.1	1.9	**5.0000**	0.218	4.4	mg/L	35	Standard
K	39	948.4	2.7	**5.0000**	0.233	4.7	mg/L	25	Standard
Ca	43	43.3	43.7	**5.0000**	5.602	112.0	mg/L	38	Standard
Fe	54	5101.0	4.4	**5.0000**	0.298	6.0	mg/L	126	Standard
Fe	57	1468.4	4.8	**5.0000**	0.320	6.4	mg/L	245	Standard
> **Sc-1**	45	23723.6	2.6				mg/L	25066	Standard
Cl	35	130578.9	0.5				ug/L	125857	Standard
Kr	83	3.3	45.8				ug/L	1	Standard
Br	81	1203.4	13.8				ug/L	1350	Standard
P	31	19414.1	1.7				ug/L	18393	Standard
S	34	4177.2	1.3				ug/L	3739	Standard
Sr	88	70.0	21.4				ug/L	78	Standard
C	12	46.7	53.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	15.9	37.5				mg/L	2	Standard
Ho-1	165	15.0	33.3				mg/L	10	Standard
Er	166	16.7	91.7				mg/L	23	Standard
I	127	1070.0	6.4				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Tuesday, June 21, 2016 12:44:22
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57683.0	3.4				ug/L	60176	Standard
	Be	9	68243.4	3.2	**99.2986**	6.394	6.4	ug/L	5	Standard
	Al	27	12435861.2	1.2	**98.8482**	4.005	4.1	ug/L	832	Standard
	Sc	45	23635.1	1.4				ug/L	25066	Standard
	Ti	47	37614.3	1.3	**201.0526**	7.758	3.9	ug/L	38	Standard
	V	51	571041.3	1.0	**99.0826**	2.797	2.8	ug/L	974	Standard
	Cr	52	622374.2	0.8	**100.2480**	3.517	3.5	ug/L	5792	Standard
	Cr	53	79243.4	1.4	**99.7703**	3.986	4.0	ug/L	347	Standard
	Mn	55	617908.9	0.6	**99.6157**	3.115	3.1	ug/L	1164	Standard
	Co	59	584748.3	1.1	**99.2336**	3.268	3.3	ug/L	303	Standard
	Ni	60	173682.2	0.7	**99.5871**	3.225	3.2	ug/L	291	Standard
	Cu	65	172904.7	0.9	**99.8122**	3.300	3.3	ug/L	173	Standard
	Zn	66	100294.9	0.4	**99.7166**	2.796	2.8	ug/L	130	Standard
>	**Ge**	72	476090.8	2.6				ug/L	491724	Standard
	As	75	100801.1	0.2	**99.2690**	2.816	2.8	ug/L	-25	Standard
	Se	82	10056.7	0.8	**100.4354**	3.397	3.4	ug/L	12	Standard
	Se-1	77	6841.5	0.8	**99.3844**	2.883	2.9	ug/L	57	Standard
>	**Ga**	71	273.3	16.9				mg/L	148	Standard
	Rb	85	1416.7	3.8				ug/L	18	Standard
	Y	89	395351.6	0.3				ug/L	401845	Standard
>	**Rh**	103	41.7	25.0				ug/L	10	Standard
	Mo	98	456031.3	1.3	**196.8782**	2.248	1.1	ug/L	12	Standard
	Ag	107	560896.5	1.5	**98.6698**	2.452	2.5	ug/L	98	Standard
	Cd	111	179284.5	0.8	**98.9447**	0.201	0.2	mg/L	11	Standard
	Cd	114	437441.6	1.4	**99.2289**	0.388	0.4	ug/L	21	Standard
>	**In**	115	527764.9	1.0				ug/L	547487	Standard
	Sn	118	497084.9	1.2	**99.2341**	1.596	1.6	ug/L	450	Standard
	Sb	123	404041.2	0.9	**98.6832**	1.399	1.4	ug/L	105	Standard
	Ba	135	175539.8	1.5	**99.1323**	0.709	0.7	ug/L	111	Standard
	Ce	140	116.7	19.8				ug/L	107	Standard
>	**Tb**	159	866248.1	0.4				ug/L	890342	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	705654.1	0.9	**98.7126**	1.568	1.6	ug/L	19	Standard
	Tl	205	578679.2	0.9	**98.6617**	1.804	1.8	ug/L	17	Standard
	Pb	206	450208.6	0.6	**97.9011**	1.428	1.5	ug/L	247	Standard
	Pb	207	407952.9	0.7	**97.5890**	1.592	1.6	ug/L	215	Standard
	Pb	208	1539751.2	0.8	**98.3858**	1.719	1.7	ug/L	770	Standard
	U	238	563509.1	0.5	**99.2888**	1.369	1.4	ug/L	13	Standard
>	**Bi**	209	476118.1	0.9				ug/L	503143	Standard

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Na	23	1.7	173.2	**19.9850**	34.606	173.2	mg/L	2	Standard
Mg	24	6833.2	0.7	**9.9179**	0.081	0.8	mg/L	35	Standard
K	39	1956.8	10.6	**10.2282**	1.035	10.1	mg/L	25	Standard
Ca	43	85.0	45.9	**12.4591**	8.230	66.1	mg/L	38	Standard
Fe	54	10109.9	3.0	**10.0367**	0.163	1.6	mg/L	126	Standard
Fe	57	2636.9	7.0	**9.9408**	0.844	8.5	mg/L	245	Standard
> **Sc-1**	45	23635.1	1.4				mg/L	25066	Standard
Cl	35	128334.7	1.7				ug/L	125857	Standard
Kr	83	2.0	132.3				ug/L	1	Standard
Br	81	1193.4	13.5				ug/L	1350	Standard
P	31	19429.1	2.9				ug/L	18393	Standard
S	34	4115.6	1.9				ug/L	3739	Standard
Sr	88	65.0	15.4				ug/L	78	Standard
C	12	73.3	67.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	18.7	93.3				mg/L	2	Standard
Ho-1	165	8.3	91.7				mg/L	10	Standard
Er	166	26.7	57.3				mg/L	23	Standard
I	127	1098.4	3.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998
Corr. Coef.	Ca	43	Correlation coefficient < 0.998

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Tuesday, June 21, 2016 12:47:35
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	56476.7	1.6				ug/L	60176	Standard
	Be	9	33926.3	3.5	**50.3337**	0.983	2.0	ug/L	5	Standard
	Al	27	6239013.2	0.4	**50.6129**	1.022	2.0	ug/L	832	Standard
	Sc	45	23940.6	0.8				ug/L	25066	Standard
	Ti	47	19415.4	2.2	**101.8802**	1.438	1.4	ug/L	38	Standard
	V	51	297179.3	0.9	**50.6032**	0.136	0.3	ug/L	974	Standard
	Cr	52	318615.5	0.4	**49.9739**	0.554	1.1	ug/L	5792	Standard
	Cr	53	40926.9	0.9	**50.4413**	0.865	1.7	ug/L	347	Standard
	Mn	55	316181.4	1.9	**50.0005**	1.281	2.6	ug/L	1164	Standard
	Co	59	298771.6	1.9	**49.8177**	1.314	2.6	ug/L	303	Standard
	Ni	60	88672.0	0.3	**49.8796**	0.328	0.7	ug/L	291	Standard
	Cu	65	89405.3	0.8	**50.6805**	0.441	0.9	ug/L	173	Standard
	Zn	66	52396.1	1.0	**51.0914**	0.187	0.4	ug/L	130	Standard
>	Ge	72	484110.7	0.9				ug/L	491724	Standard
	As	75	52053.9	0.4	**50.4073**	0.437	0.9	ug/L	-25	Standard
	Se	82	5137.2	2.1	**50.3854**	1.416	2.8	ug/L	12	Standard
	Se-1	77	3484.7	1.5	**49.4329**	0.431	0.9	ug/L	57	Standard
>	Ga	71	218.3	24.7				mg/L	148	Standard
	Rb	85	558.3	1.9				ug/L	18	Standard
	Y	89	399672.1	1.8				ug/L	401845	Standard
>	Rh	103	33.3	45.8				ug/L	10	Standard
	Mo	98	243135.2	2.2	**103.9589**	3.579	3.4	ug/L	12	Standard
	Ag	107	285914.9	0.7	**49.7940**	0.941	1.9	ug/L	98	Standard
	Cd	111	90046.3	0.9	**49.2056**	0.320	0.7	mg/L	11	Standard
	Cd	114	222130.6	2.1	**49.8897**	0.705	1.4	ug/L	21	Standard
>	In	115	533007.6	1.2				ug/L	547487	Standard
	Sn	118	273659.7	1.6	**54.0588**	0.839	1.6	ug/L	450	Standard
	Sb	123	202430.4	0.7	**48.9552**	0.900	1.8	ug/L	105	Standard
	Ba	135	87724.9	0.8	**49.0309**	0.637	1.3	ug/L	111	Standard
	Ce	140	115.0	26.4				ug/L	107	Standard
>	Tb	159	857166.0	1.1				ug/L	890342	Standard
	Ho	165	13.3	43.3				ug/L	10	Standard
	Tl	203	356396.7	0.7	**49.1066**	0.742	1.5	ug/L	19	Standard
	Tl	205	297731.8	0.4	**49.9971**	0.245	0.5	ug/L	17	Standard
	Pb	206	236852.3	0.9	**50.7035**	0.443	0.9	ug/L	247	Standard
	Pb	207	206236.5	0.5	**48.5659**	0.259	0.5	ug/L	215	Standard
	Pb	208	787029.8	0.1	**49.5023**	0.368	0.7	ug/L	770	Standard
	U	238	277599.7	0.5	**48.1782**	0.616	1.3	ug/L	13	Standard
>	Bi	209	483361.7	0.8				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3418.7	4.6	**4.8797**	0.255	5.2	mg/L	35	Standard
K	39	995.0	4.8	**5.0805**	0.235	4.6	mg/L	25	Standard
Ca	43	51.7	43.6	**5.3124**	4.563	85.9	mg/L	38	Standard
Fe	54	5233.0	6.0	**5.0647**	0.353	7.0	mg/L	126	Standard
Fe	57	1536.7	1.5	**5.2538**	0.069	1.3	mg/L	245	Standard
> **Sc-1**	45	23940.6	0.8				mg/L	25066	Standard
Cl	35	125636.8	0.9				ug/L	125857	Standard
Kr	83	2.0	0.0				ug/L	1	Standard
Br	81	1126.7	10.0				ug/L	1350	Standard
P	31	18713.2	1.4				ug/L	18393	Standard
S	34	3855.5	6.1				ug/L	3739	Standard
Sr	88	63.3	32.9				ug/L	78	Standard
C	12	76.7	19.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	5.5	203.3				mg/L	2	Standard
Ho-1	165	13.3	43.3				mg/L	10	Standard
Er	166	23.3	49.5				mg/L	23	Standard
I	127	955.0	1.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	100.667		
Al	27	101.226		
Sc	45			
Ti	47	101.880		
V	51	101.206		
Cr	52	99.948		
Cr	53			
Mn	55	100.001		
Co	59	99.635		
Ni	60	99.759		
Cu	65	101.361		
Zn	66	102.183		
> Ge	72		98.452	
As	75	100.815		
Se	82	100.771		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	103.959		
Ag	107	99.588		
Cd	111	98.411		
Cd	114			
In	115		97.355	
Sn	118	108.118		
Sb	123	97.910		
Ba	135	98.062		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.213		
Tl	205			
Pb	206	101.407		
Pb	207	97.132		
Pb	208	99.005		
U	238	96.356		
Bi	209		96.069	
Na	23	0.100		
Mg	24	97.595		
K	39	101.610		
Ca	43	106.247		
Fe	54	101.294		
Fe	57	105.077		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Tuesday, June 21, 2016 12:50:48
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57199.5	1.7				ug/L	60176	Standard
	Be	9	16.7	75.5	**0.0155**	0.019	119.7	ug/L	5	Standard
	Al	27	2038.5	13.7	**0.0079**	0.002	25.0	ug/L	832	Standard
	Sc	45	24297.8	0.5				ug/L	25066	Standard
	Ti	47	32.3	12.5	**-0.0396**	0.023	58.6	ug/L	38	Standard
	V	51	922.0	9.4	**-0.0151**	0.016	107.2	ug/L	974	Standard
	Cr	52	5344.9	2.1	**-0.0994**	0.028	28.6	ug/L	5792	Standard
	Cr	53	318.3	8.7	**-0.0227**	0.028	125.4	ug/L	347	Standard
	Mn	55	1227.7	2.1	**-0.0229**	0.006	27.8	ug/L	1164	Standard
	Co	59	382.3	8.7	**0.0137**	0.006	44.1	ug/L	303	Standard
	Ni	60	312.0	6.8	**-0.0166**	0.014	83.6	ug/L	291	Standard
	Cu	65	170.3	13.8	**-0.0020**	0.015	715.5	ug/L	173	Standard
	Zn	66	185.7	7.5	**-0.0559**	0.012	21.0	ug/L	130	Standard
>	**Ge**	72	490344.5	1.5				ug/L	491724	Standard
	As	75	12.4	235.8	**0.0460**	0.028	60.7	ug/L	-25	Standard
	Se	82	19.0	38.1	**0.0914**	0.071	78.1	ug/L	12	Standard
	Se-1	77	55.0	15.5	**0.1320**	0.132	99.9	ug/L	57	Standard
>	**Ga**	71	143.3	7.3				mg/L	148	Standard
	Rb	85	13.3	43.3				ug/L	18	Standard
	Y	89	406629.8	1.3				ug/L	401845	Standard
>	**Rh**	103	30.0	33.3				ug/L	10	Standard
	Mo	98	318.1	10.6	**0.1300**	0.014	10.8	ug/L	12	Standard
	Ag	107	139.3	8.5	**0.0086**	0.002	23.1	ug/L	98	Standard
	Cd	111	28.1	12.1	**0.0105**	0.002	17.2	mg/L	11	Standard
	Cd	114	75.1	5.3	**0.0122**	0.001	6.8	ug/L	21	Standard
>	**In**	115	538890.5	0.3				ug/L	547487	Standard
	Sn	118	866.7	26.5	**0.0956**	0.046	47.6	ug/L	450	Standard
	Sb	123	1357.6	21.6	**0.3172**	0.071	22.4	ug/L	105	Standard
	Ba	135	122.7	6.5	**0.0123**	0.005	37.7	ug/L	111	Standard
	Ce	140	16.7	124.9				ug/L	107	Standard
>	**Tb**	159	856476.7	1.5				ug/L	890342	Standard
	Ho	165	11.7	107.9				ug/L	10	Standard
	Tl	203	98.3	24.6	**0.0099**	0.003	33.6	ug/L	19	Standard
	Tl	205	75.0	34.6	**0.0135**	0.004	31.4	ug/L	17	Standard
	Pb	206	275.0	3.1	**0.0038**	0.002	58.9	ug/L	247	Standard
	Pb	207	245.0	14.3	**0.0055**	0.009	157.6	ug/L	215	Standard
	Pb	208	917.0	5.8	**-0.0023**	0.004	151.0	ug/L	770	Standard
	U	238	60.7	16.0	**0.0097**	0.002	16.7	ug/L	13	Standard
>	**Bi**	209	484798.8	0.7				ug/L	503143	Standard

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Na	23	1.7	173.2	**19.2545**	33.341	173.2	mg/L	2	Standard
Mg	24	31.7	9.1	**0.0060**	0.004	64.4	mg/L	35	Standard
K	39	31.7	39.7	**0.0506**	0.065	128.8	mg/L	25	Standard
Ca	43	26.7	60.3	**0.0987**	3.281	3325.6	mg/L	38	Standard
Fe	54	137.7	14.6	**-0.0017**	0.019	1127.9	mg/L	126	Standard
Fe	57	235.0	2.1	**-0.1342**	0.025	18.7	mg/L	245	Standard
> **Sc-1**	45	24297.8	0.5				mg/L	25066	Standard
Cl	35	123923.5	2.0				ug/L	125857	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	1190.0	11.8				ug/L	1350	Standard
P	31	19601.0	4.8				ug/L	18393	Standard
S	34	3848.8	8.3				ug/L	3739	Standard
Sr	88	63.3	32.9				ug/L	78	Standard
C	12	46.7	32.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	19.4	53.0				mg/L	2	Standard
Ho-1	165	11.7	107.9				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	1073.4	5.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.720	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.430	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.354	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Na	23	
QC Std 2	Fe	57	

Sample ID: QC Std 2
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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Tuesday, June 21, 2016 12:54:01
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54655.2	5.0				ug/L	60176	Standard
	Be	9	166.7	9.2	**0.2464**	0.016	6.5	ug/L	5	Standard
	Al	27	3600.6	78.3	**0.0211**	0.022	102.5	ug/L	832	Standard
	Sc	45	22989.1	1.7				ug/L	25066	Standard
	Ti	47	44.3	25.7	**0.0370**	0.061	164.4	ug/L	38	Standard
	V	51	3236.7	8.3	**0.4098**	0.039	9.6	ug/L	974	Standard
	Cr	52	10252.8	1.1	**0.7782**	0.013	1.7	ug/L	5792	Standard
	Cr	53	963.4	10.4	**0.8456**	0.146	17.3	ug/L	347	Standard
	Mn	55	4198.9	8.1	**0.4847**	0.049	10.1	ug/L	1164	Standard
	Co	59	2734.9	12.7	**0.4297**	0.055	12.9	ug/L	303	Standard
	Ni	60	3023.6	2.6	**1.6026**	0.022	1.4	ug/L	291	Standard
	Cu	65	1528.7	5.1	**0.8141**	0.035	4.3	ug/L	173	Standard
	Zn	66	6997.6	1.0	**6.9667**	0.165	2.4	ug/L	130	Standard
>	**Ge**	72	460888.7	1.9				ug/L	491724	Standard
	As	75	390.1	8.4	**0.4307**	0.036	8.3	ug/L	-25	Standard
	Se	82	49.3	11.7	**0.4157**	0.051	12.3	ug/L	12	Standard
	Se-1	77	73.3	5.5	**0.4585**	0.082	18.0	ug/L	57	Standard
>	**Ga**	71	193.3	33.8				mg/L	148	Standard
	Rb	85	25.0	72.1				ug/L	18	Standard
	Y	89	391940.6	1.7				ug/L	401845	Standard
>	**Rh**	103	18.3	31.5				ug/L	10	Standard
	Mo	98	268.6	80.2	**0.1109**	0.092	82.8	ug/L	12	Standard
	Ag	107	2373.9	3.4	**0.4011**	0.013	3.1	ug/L	98	Standard
	Cd	111	418.7	2.5	**0.2258**	0.005	2.2	mg/L	11	Standard
	Cd	114	1058.7	2.4	**0.2351**	0.005	2.1	ug/L	21	Standard
>	**In**	115	529129.7	0.8				ug/L	547487	Standard
	Sn	118	546.7	13.3	**0.0350**	0.015	44.2	ug/L	450	Standard
	Sb	123	1860.1	4.7	**0.4457**	0.025	5.6	ug/L	105	Standard
	Ba	135	1306.7	5.0	**0.6811**	0.043	6.3	ug/L	111	Standard
	Ce	140	71.7	45.4				ug/L	107	Standard
>	**Tb**	159	840369.4	1.8				ug/L	890342	Standard
	Ho	165	3.3	86.6				ug/L	10	Standard
	Tl	203	677.3	13.0	**0.0915**	0.012	13.1	ug/L	19	Standard
	Tl	205	673.3	28.8	**0.1162**	0.033	28.2	ug/L	17	Standard
	Pb	206	1332.4	14.3	**0.2361**	0.041	17.4	ug/L	247	Standard
	Pb	207	1139.0	15.8	**0.2215**	0.042	19.1	ug/L	215	Standard
	Pb	208	4327.3	17.0	**0.2178**	0.046	21.3	ug/L	770	Standard
	U	238	2258.5	8.8	**0.3988**	0.036	8.9	ug/L	13	Standard
>	**Bi**	209	474166.4	1.0				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	13.3	**0.0260**	0.009	33.4	mg/L	35	Standard
K	39	35.0	14.3	**0.0782**	0.031	39.0	mg/L	25	Standard
Ca	43	33.3	45.8	**1.8021**	3.150	174.8	mg/L	38	Standard
Fe	54	89.0	20.5	**-0.0447**	0.017	38.6	mg/L	126	Standard
Fe	57	240.0	23.5	**-0.0557**	0.261	468.1	mg/L	245	Standard
> **Sc-1**	45	22989.1	1.7				mg/L	25066	Standard
Cl	35	119419.5	1.1				ug/L	125857	Standard
Kr	83	3.3	75.5				ug/L	1	Standard
Br	81	1160.0	4.6				ug/L	1350	Standard
P	31	12982.2	1.5				ug/L	18393	Standard
S	34	3700.5	6.7				ug/L	3739	Standard
Sr	88	70.0	7.1				ug/L	78	Standard
C	12	50.0	60.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.2	86.7				mg/L	2	Standard
Ho-1	165	3.3	86.6				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	760.0	5.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	123.200		
Al	27	2.108		
Sc	45			
Ti	47			
V	51	102.440		
Cr	52	97.277		
Cr	53			
Mn	55	96.934		
Co	59	107.430		
Ni	60	100.161		
Cu	65	101.757		
Zn	66	111.467		
> Ge	72		93.729	
As	75	107.669		
Se	82	103.926		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	100.275		
Cd	111	94.072		
Cd	114			
> In	115			96.647
Sn	118			
Sb	123	111.413		
Ba	135	90.816		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	114.430		
Tl	205			
Pb	206			
Pb	207			
Pb	208	108.881		
U	238	99.694		
> Bi	209			94.241
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Tuesday, June 21, 2016 12:57:12
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59928.3	1.0				ug/L	60176	Standard
	Be	9	13.3	78.1	**0.0097**	0.015	152.2	ug/L	5	Standard
	Al	27	6442669.1	1.9	**49.2453**	0.871	1.8	ug/L	832	Standard
	Sc	45	24813.6	2.8				ug/L	25066	Standard
	Ti	47	19998.2	2.1	**106.8973**	2.582	2.4	ug/L	38	Standard
	V	51	1246.2	25.8	**0.0465**	0.058	124.9	ug/L	974	Standard
	Cr	52	6657.1	2.4	**0.1405**	0.025	17.7	ug/L	5792	Standard
	Cr	53	1993.5	6.1	**2.1090**	0.143	6.8	ug/L	347	Standard
	Mn	55	1883.1	3.1	**0.0891**	0.008	8.9	ug/L	1164	Standard
	Co	59	559.7	6.4	**0.0458**	0.006	12.2	ug/L	303	Standard
	Ni	60	864.0	5.1	**0.3063**	0.026	8.5	ug/L	291	Standard
	Cu	65	667.0	6.9	**0.2880**	0.024	8.5	ug/L	173	Standard
	Zn	66	2146.2	5.5	**1.9055**	0.111	5.8	ug/L	130	Standard
>	Ge	72	475353.7	1.0				ug/L	491724	Standard
	As	75	-27.8	154.3	**0.0063**	0.042	673.6	ug/L	-25	Standard
	Se	82	18.3	27.0	**0.0905**	0.048	53.4	ug/L	12	Standard
	Se-1	77	292.0	12.5	**3.6225**	0.508	14.0	ug/L	57	Standard
>	Ga	71	251.7	1.1				mg/L	148	Standard
	Rb	85	916.7	3.2				ug/L	18	Standard
	Y	89	407553.9	0.9				ug/L	401845	Standard
>	Rh	103	21.7	13.3				ug/L	10	Standard
	Mo	98	227701.2	0.8	**95.9028**	0.590	0.6	ug/L	12	Standard
	Ag	107	287.3	17.5	**0.0339**	0.008	24.1	ug/L	98	Standard
	Cd	111	-145.8	9.1	**-0.0833**	0.008	9.6	mg/L	11	Standard
	Cd	114	464.9	14.1	**0.0986**	0.016	15.9	ug/L	21	Standard
>	In	115	540970.5	1.1				ug/L	547487	Standard
	Sn	118	813.4	12.5	**0.0844**	0.019	22.3	ug/L	450	Standard
	Sb	123	429.7	19.0	**0.0947**	0.019	20.0	ug/L	105	Standard
	Ba	135	438.7	7.4	**0.1861**	0.015	8.2	ug/L	111	Standard
	Ce	140	421.7	17.3				ug/L	107	Standard
>	Tb	159	869535.9	1.7				ug/L	890342	Standard
	Ho	165	25.0	72.1				ug/L	10	Standard
	Tl	203	354.0	26.0	**0.0461**	0.013	27.8	ug/L	19	Standard
	Tl	205	328.3	30.2	**0.0571**	0.017	29.2	ug/L	17	Standard
	Pb	206	641.0	8.2	**0.0850**	0.011	12.9	ug/L	247	Standard
	Pb	207	546.0	4.3	**0.0790**	0.005	6.1	ug/L	215	Standard
	Pb	208	2135.1	6.6	**0.0771**	0.009	11.7	ug/L	770	Standard
	U	238	92.3	51.3	**0.0155**	0.008	54.0	ug/L	13	Standard
>	Bi	209	474298.1	0.6				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.5792**	32.172	173.2	mg/L	2	Standard
Mg	24	8645.8	1.7	**11.9633**	0.233	1.9	mg/L	35	Standard
K	39	950.0	10.3	**4.6748**	0.512	11.0	mg/L	25	Standard
Ca	43	120.0	27.3	**18.4950**	6.097	33.0	mg/L	38	Standard
Fe	54	12543.1	1.5	**11.8952**	0.445	3.7	mg/L	126	Standard
Fe	57	3418.7	4.3	**12.5234**	0.241	1.9	mg/L	245	Standard
> **Sc-1**	45	24813.6	2.8				mg/L	25066	Standard
Cl	35	133729.6	1.1				ug/L	125857	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	1173.4	5.8				ug/L	1350	Standard
P	31	17748.7	0.7				ug/L	18393	Standard
S	34	3328.7	3.9				ug/L	3739	Standard
Sr	88	88.3	27.9				ug/L	78	Standard
C	12	106.7	14.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	33.3				mg/L	0	Standard
Dy	164	29.4	56.6				mg/L	2	Standard
Ho-1	165	25.0	72.1				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	1626.8	8.4				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27	0.985		
	Sc	45			
	Ti	47	106.897		
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.671	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	95.903		
Ag	107			
Cd	111			
Cd	114			
> In	115			98.810
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209			94.267
Na	23	148.634		
Mg	24	239.267		
K	39	93.495		
Ca	43	123.300		
Fe	54	95.162		
Fe	57	100.187		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Tl	203	
QC Std 4	Na	23	

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QC Std 4	Mg	24
QC Std 4	Ca	43

Sample ID: QC Std 4
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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Tuesday, June 21, 2016 13:00:24
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	61313.8	1.9				ug/L	60176	Standard
	Be	9	72875.0	3.4	**99.6031**	1.781	1.8	ug/L	5	Standard
	Al	27	6936241.6	2.7	**51.8339**	1.804	3.5	ug/L	832	Standard
	Sc	45	23489.9	0.9				ug/L	25066	Standard
	Ti	47	21276.6	0.7	**110.0520**	2.192	2.0	ug/L	38	Standard
	V	51	582101.9	0.7	**97.8399**	1.870	1.9	ug/L	974	Standard
	Cr	52	624654.9	1.1	**97.4149**	0.832	0.9	ug/L	5792	Standard
	Cr	53	80558.6	0.3	**98.2182**	1.167	1.2	ug/L	347	Standard
	Mn	55	645844.3	0.9	**100.8477**	1.253	1.2	ug/L	1164	Standard
	Co	59	617389.8	0.7	**101.4766**	0.663	0.7	ug/L	303	Standard
	Ni	60	173011.2	0.8	**96.0705**	0.455	0.5	ug/L	291	Standard
	Cu	65	173942.1	0.9	**97.2491**	1.211	1.2	ug/L	173	Standard
	Zn	66	103580.5	0.6	**99.7581**	1.812	1.8	ug/L	130	Standard
>	Ge	72	491319.1	1.3				ug/L	491724	Standard
	As	75	106169.7	0.7	**101.2696**	0.638	0.6	ug/L	-25	Standard
	Se	82	10505.5	0.8	**101.6127**	0.832	0.8	ug/L	12	Standard
	Se-1	77	7353.1	1.7	**103.4898**	1.990	1.9	ug/L	57	Standard
>	Ga	71	335.0	6.5				mg/L	148	Standard
	Rb	85	808.4	4.6				ug/L	18	Standard
	Y	89	401288.7	1.4				ug/L	401845	Standard
>	Rh	103	43.3	24.0				ug/L	10	Standard
	Mo	98	244397.7	1.3	**106.0540**	1.465	1.4	ug/L	12	Standard
	Ag	107	538144.7	0.3	**95.1434**	0.773	0.8	ug/L	98	Standard
	Cd	111	185622.1	1.2	**102.9756**	1.700	1.7	mg/L	11	Standard
	Cd	114	445028.4	2.2	**101.4874**	3.011	3.0	ug/L	21	Standard
>	In	115	525063.0	0.9				ug/L	547487	Standard
	Sn	118	885.0	4.3	**0.1037**	0.009	8.6	ug/L	450	Standard
	Sb	123	410344.2	0.6	**100.7382**	1.315	1.3	ug/L	105	Standard
	Ba	135	176777.0	0.5	**100.3551**	1.267	1.3	ug/L	111	Standard
	Ce	140	53.3	5.4				ug/L	107	Standard
>	Tb	159	870528.1	1.1				ug/L	890342	Standard
	Ho	165	10.0	86.6				ug/L	10	Standard
	Tl	203	717855.7	0.6	**98.9861**	1.545	1.6	ug/L	19	Standard
	Tl	205	613661.1	1.7	**103.1465**	3.224	3.1	ug/L	17	Standard
	Pb	206	474569.5	1.2	**101.7199**	1.074	1.1	ug/L	247	Standard
	Pb	207	412085.1	0.4	**97.1656**	1.063	1.1	ug/L	215	Standard
	Pb	208	1621535.0	0.8	**102.1386**	2.136	2.1	ug/L	770	Standard
	U	238	576318.6	1.3	**100.1091**	2.735	2.7	ug/L	13	Standard
>	Bi	209	483038.3	1.5				ug/L	503143	Standard

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Na	23	1.7	173.2	**19.9124**	34.481	173.2	mg/L	2	Standard
Mg	24	9276.2	1.0	**13.5616**	0.245	1.8	mg/L	35	Standard
K	39	1035.0	5.9	**5.3939**	0.335	6.2	mg/L	25	Standard
Ca	43	95.0	18.2	**14.6391**	3.459	23.6	mg/L	38	Standard
Fe	54	13234.0	0.1	**13.2653**	0.121	0.9	mg/L	126	Standard
Fe	57	3633.8	1.9	**14.1986**	0.233	1.6	mg/L	245	Standard
> **Sc-1**	45	23489.9	0.9				mg/L	25066	Standard
Cl	35	135528.8	0.9				ug/L	125857	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	1296.7	11.2				ug/L	1350	Standard
P	31	17078.0	3.3				ug/L	18393	Standard
S	34	3508.7	2.5				ug/L	3739	Standard
Sr	88	66.7	8.7				ug/L	78	Standard
C	12	133.3	22.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.2	93.3				mg/L	2	Standard
Ho-1	165	10.0	86.6				mg/L	10	Standard
Er	166	10.0					mg/L	23	Standard
I	127	985.0	5.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	99.603		
Al	27	1.037		
Sc	45			
Ti	47	110.052		
V	51	97.840		
Cr	52	97.415		
Cr	53			
Mn	55	100.848		
Co	59	101.477		
Ni	60	96.070		
Cu	65	97.249		
Zn	66	99.758		
> Ge	72		99.918	
As	75	101.270		
Se	82	101.613		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	106.054		
Ag	107	95.143		
Cd	111	102.976		
Cd	114			
> In	115		95.904	
Sn	118			
Sb	123	100.738		
Ba	135	100.355		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.986		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.139		
U	238	100.109		
> Bi	209		96.004	
Na	23	159.300		
Mg	24	271.232		
K	39	107.878		
Ca	43	97.594		
Fe	54	106.123		
Fe	57	113.589		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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QC Std 5	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 13:03:37
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60077.3	2.7				ug/L	60176	Standard
	Be	9	36198.2	1.7	**50.5140**	1.282	2.5	ug/L	5	Standard
	Al	27	6376898.0	1.9	**48.6310**	0.871	1.8	ug/L	832	Standard
	Sc	45	23925.5	1.1				ug/L	25066	Standard
	Ti	47	18736.6	0.9	**98.5507**	0.836	0.8	ug/L	38	Standard
	V	51	296150.3	0.5	**50.5471**	0.213	0.4	ug/L	974	Standard
	Cr	52	313728.4	0.3	**49.3090**	0.221	0.4	ug/L	5792	Standard
	Cr	53	39496.4	3.0	**48.7745**	1.414	2.9	ug/L	347	Standard
	Mn	55	317457.2	0.2	**50.3163**	0.163	0.3	ug/L	1164	Standard
	Co	59	310517.1	1.0	**51.8939**	0.567	1.1	ug/L	303	Standard
	Ni	60	88251.3	0.9	**49.7584**	0.471	0.9	ug/L	291	Standard
	Cu	65	88383.0	0.6	**50.2173**	0.264	0.5	ug/L	173	Standard
	Zn	66	51386.7	1.3	**50.2219**	0.654	1.3	ug/L	130	Standard
>	Ge	72	482967.1	0.2				ug/L	491724	Standard
	As	75	51917.7	0.5	**50.3921**	0.181	0.4	ug/L	-25	Standard
	Se	82	5239.5	1.1	**51.5049**	0.485	0.9	ug/L	12	Standard
	Se-1	77	3545.7	2.3	**50.4312**	1.129	2.2	ug/L	57	Standard
>	Ga	71	213.3	29.9				mg/L	148	Standard
	Rb	85	683.3	10.3				ug/L	18	Standard
	Y	89	409717.0	1.9				ug/L	401845	Standard
>	Rh	103	31.7	50.8				ug/L	10	Standard
	Mo	98	232285.6	0.4	**98.2916**	1.691	1.7	ug/L	12	Standard
	Ag	107	285420.0	0.6	**49.1961**	0.526	1.1	ug/L	98	Standard
	Cd	111	92777.6	1.2	**50.1831**	0.862	1.7	mg/L	11	Standard
	Cd	114	226030.0	0.7	**50.2543**	0.780	1.6	ug/L	21	Standard
>	In	115	538520.1	1.5				ug/L	547487	Standard
	Sn	118	254569.4	1.6	**49.7699**	0.919	1.8	ug/L	450	Standard
	Sb	123	208380.8	0.8	**49.8815**	1.089	2.2	ug/L	105	Standard
	Ba	135	89491.5	0.9	**49.5071**	0.604	1.2	ug/L	111	Standard
	Ce	140	65.0	33.5				ug/L	107	Standard
>	Tb	159	844342.7	0.8				ug/L	890342	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	362962.1	0.5	**50.9927**	0.530	1.0	ug/L	19	Standard
	Tl	205	304433.0	0.1	**52.1279**	0.337	0.6	ug/L	17	Standard
	Pb	206	233807.2	0.0	**51.0365**	0.279	0.5	ug/L	247	Standard
	Pb	207	211565.2	0.5	**50.8037**	0.504	1.0	ug/L	215	Standard
	Pb	208	809571.0	0.8	**51.9240**	0.557	1.1	ug/L	770	Standard
	U	238	290163.7	1.3	**51.3453**	0.563	1.1	ug/L	13	Standard
>	Bi	209	474036.7	0.5				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3508.7	4.9	**5.0100**	0.196	3.9	mg/L	35	Standard
K	39	841.7	3.8	**4.2829**	0.143	3.3	mg/L	25	Standard
Ca	43	70.0	25.8	**9.1073**	3.560	39.1	mg/L	38	Standard
Fe	54	5170.4	1.1	**5.0040**	0.054	1.1	mg/L	126	Standard
Fe	57	1545.1	3.9	**5.2918**	0.217	4.1	mg/L	245	Standard
> **Sc-1**	45	23925.5	1.1				mg/L	25066	Standard
Cl	35	126968.4	0.5				ug/L	125857	Standard
Kr	83	2.7	21.7				ug/L	1	Standard
Br	81	1253.4	5.1				ug/L	1350	Standard
P	31	17353.3	2.1				ug/L	18393	Standard
S	34	3680.4	9.2				ug/L	3739	Standard
Sr	88	66.7	11.5				ug/L	78	Standard
C	12	53.3	10.8				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.5	86.7				mg/L	2	Standard
Ho-1	165	8.3	69.3				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	23	Standard
I	127	1191.7	5.6				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	101.028		
	Al	27	97.262		
	Sc	45			
	Ti	47	98.551		
	V	51	101.094		
	Cr	52	98.618		
	Cr	53			
	Mn	55	100.633		
	Co	59	103.788		
	Ni	60	99.517		
	Cu	65	100.435		
	Zn	66	100.444		
>	Ge	72		98.219	
	As	75	100.784		
	Se	82	103.010		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	98.292		
Ag	107	98.392		
Cd	111	100.366		
Cd	114			
In	115			98.362
Sn	118	99.540		
Sb	123	99.763		
Ba	135	99.014		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.985		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.848		
U	238	102.691		
Bi	209			94.215
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 13:06:48
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59220.5	2.2				ug/L	60176	Standard
	Be	9	21.7	113.8	**0.0219**	0.035	161.5	ug/L	5	Standard
	Al	27	2657.0	57.6	**0.0122**	0.012	99.2	ug/L	832	Standard
	Sc	45	23930.6	3.3				ug/L	25066	Standard
	Ti	47	35.7	25.9	**-0.0239**	0.047	197.1	ug/L	38	Standard
	V	51	1146.6	35.4	**0.0212**	0.067	317.9	ug/L	974	Standard
	Cr	52	5554.4	3.9	**-0.0728**	0.035	47.8	ug/L	5792	Standard
	Cr	53	378.3	10.0	**0.0477**	0.045	93.6	ug/L	347	Standard
	Mn	55	1370.7	12.3	**-0.0021**	0.026	1218.8	ug/L	1164	Standard
	Co	59	513.7	41.1	**0.0346**	0.034	98.9	ug/L	303	Standard
	Ni	60	343.7	8.0	**-0.0004**	0.015	3446.4	ug/L	291	Standard
	Cu	65	177.3	6.6	**0.0010**	0.006	620.6	ug/L	173	Standard
	Zn	66	178.7	18.3	**-0.0639**	0.031	48.4	ug/L	130	Standard
>	**Ge**	72	493877.2	0.3				ug/L	491724	Standard
	As	75	17.2	53.9	**0.0502**	0.009	17.4	ug/L	-25	Standard
	Se	82	20.0	19.9	**0.1000**	0.038	37.8	ug/L	12	Standard
	Se-1	77	45.3	7.1	**-0.0109**	0.047	434.0	ug/L	57	Standard
>	**Ga**	71	238.3	11.9				mg/L	148	Standard
	Rb	85	26.7	10.8				ug/L	18	Standard
	Y	89	397655.2	1.8				ug/L	401845	Standard
>	**Rh**	103	25.0	20.0				ug/L	10	Standard
	Mo	98	421.6	47.5	**0.1748**	0.084	48.3	ug/L	12	Standard
	Ag	107	433.3	112.5	**0.0596**	0.084	141.2	ug/L	98	Standard
	Cd	111	31.1	76.1	**0.0122**	0.013	105.0	mg/L	11	Standard
	Cd	114	71.1	92.6	**0.0114**	0.015	128.1	ug/L	21	Standard
>	**In**	115	535380.0	0.4				ug/L	547487	Standard
	Sn	118	765.0	11.6	**0.0766**	0.017	22.1	ug/L	450	Standard
	Sb	123	1104.8	53.2	**0.2581**	0.140	54.4	ug/L	105	Standard
	Ba	135	133.3	33.1	**0.0186**	0.024	130.4	ug/L	111	Standard
	Ce	140	16.7	17.3				ug/L	107	Standard
>	**Tb**	159	863928.7	0.9				ug/L	890342	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	400.0	138.2	**0.0504**	0.074	147.0	ug/L	19	Standard
	Tl	205	160.0	86.7	**0.0274**	0.022	81.9	ug/L	17	Standard
	Pb	206	498.3	73.3	**0.0503**	0.075	149.6	ug/L	247	Standard
	Pb	207	424.0	75.0	**0.0464**	0.072	155.4	ug/L	215	Standard
	Pb	208	1164.7	36.5	**0.0127**	0.025	198.3	ug/L	770	Standard
	U	238	130.0	106.6	**0.0213**	0.023	109.2	ug/L	13	Standard
>	**Bi**	209	486251.4	1.7				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	33.3	8.7	**0.0092**	0.006	61.0	mg/L	35	Standard
K	39	15.0	33.3	**-0.0334**	0.028	84.6	mg/L	25	Standard
Ca	43	26.7	39.0	**0.2255**	2.276	1009.5	mg/L	38	Standard
Fe	54	141.1	12.6	**0.0041**	0.021	506.6	mg/L	126	Standard
Fe	57	250.0	10.4	**-0.0592**	0.073	123.1	mg/L	245	Standard
> **Sc-1**	45	23930.6	3.3				mg/L	25066	Standard
Cl	35	125381.4	1.2				ug/L	125857	Standard
Kr	83	2.7	43.3				ug/L	1	Standard
Br	81	1060.0	3.8				ug/L	1350	Standard
P	31	17481.7	2.2				ug/L	18393	Standard
S	34	3750.5	3.0				ug/L	3739	Standard
Sr	88	66.7	8.7				ug/L	78	Standard
C	12	66.7	48.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	6.2	186.8				mg/L	2	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	1055.0	11.6				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.438	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.789
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.643
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	
QC Std 7	Tl	203	

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Method 6020 - Summary Report

Sample ID: PBW 7Q WG573483-02
Sample Date/Time: Tuesday, June 21, 2016 13:10:00
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58444.2	0.7				ug/L	60176	Standard
	Be	9	26.7	47.2	**0.0292**	0.018	60.9	ug/L	5	Standard
	Al	27	23049.2	3.8	**0.1723**	0.008	4.5	ug/L	832	Standard
	Sc	45	24202.7	2.5				ug/L	25066	Standard
	Ti	47	43.7	14.7	**0.0218**	0.034	156.7	ug/L	38	Standard
	V	51	1023.3	8.4	**0.0039**	0.014	347.8	ug/L	974	Standard
	Cr	52	7324.1	2.0	**0.2266**	0.020	8.6	ug/L	5792	Standard
	Cr	53	578.3	3.5	**0.3051**	0.025	8.2	ug/L	347	Standard
	Mn	55	2461.2	1.9	**0.1751**	0.005	2.7	ug/L	1164	Standard
	Co	59	428.7	8.1	**0.0221**	0.005	24.1	ug/L	303	Standard
	Ni	60	482.7	6.5	**0.0817**	0.017	21.3	ug/L	291	Standard
	Cu	65	326.0	2.1	**0.0873**	0.005	5.3	ug/L	173	Standard
	Zn	66	1189.0	5.1	**0.9283**	0.052	5.6	ug/L	130	Standard
>	**Ge**	72	484464.0	0.7				ug/L	491724	Standard
	As	75	-14.6	23.2	**0.0198**	0.003	16.3	ug/L	-25	Standard
	Se	82	17.0	20.8	**0.0742**	0.035	47.7	ug/L	12	Standard
	Se-1	77	51.3	11.4	**0.0873**	0.080	91.1	ug/L	57	Standard
>	**Ga**	71	196.7	5.9				mg/L	148	Standard
	Rb	85	100.0	27.8				ug/L	18	Standard
	Y	89	408879.8	3.6				ug/L	401845	Standard
>	**Rh**	103	25.0	52.9				ug/L	10	Standard
	Mo	98	122.8	14.6	**0.0481**	0.008	16.4	ug/L	12	Standard
	Ag	107	156.0	19.3	**0.0119**	0.005	46.1	ug/L	98	Standard
	Cd	111	26.1	40.8	**0.0096**	0.006	61.9	mg/L	11	Standard
	Cd	114	50.9	19.0	**0.0070**	0.002	32.2	ug/L	21	Standard
>	**In**	115	532128.9	0.9				ug/L	547487	Standard
	Sn	118	586.7	9.1	**0.0422**	0.011	26.5	ug/L	450	Standard
	Sb	123	401.0	34.8	**0.0897**	0.034	38.3	ug/L	105	Standard
	Ba	135	228.3	6.6	**0.0724**	0.009	12.2	ug/L	111	Standard
	Ce	140	110.0	22.7				ug/L	107	Standard
>	**Tb**	159	840904.1	1.3				ug/L	890342	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	87.0	51.2	**0.0084**	0.006	71.8	ug/L	19	Standard
	Tl	205	86.7	76.8	**0.0155**	0.011	71.5	ug/L	17	Standard
	Pb	206	333.0	6.3	**0.0167**	0.004	25.8	ug/L	247	Standard
	Pb	207	290.7	9.1	**0.0166**	0.006	33.9	ug/L	215	Standard
	Pb	208	1101.3	4.9	**0.0097**	0.003	31.1	ug/L	770	Standard
	U	238	73.3	48.0	**0.0119**	0.006	50.6	ug/L	13	Standard
>	**Bi**	209	481400.6	1.0				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	38.3	41.9	**0.0153**	0.022	142.7	mg/L	35	Standard
K	39	23.3	53.9	**0.0092**	0.068	740.5	mg/L	25	Standard
Ca	43	21.7	58.1	**-0.8598**	2.697	313.7	mg/L	38	Standard
Fe	54	130.8	28.3	**-0.0077**	0.038	495.4	mg/L	126	Standard
Fe	57	285.0	4.6	**0.0748**	0.079	105.8	mg/L	245	Standard
Sc-1	45	24202.7	2.5				mg/L	25066	Standard
Cl	35	126348.0	1.3				ug/L	125857	Standard
Kr	83	1.0	173.2				ug/L	1	Standard
Br	81	1470.1	6.5				ug/L	1350	Standard
P	31	16710.9	1.6				ug/L	18393	Standard
S	34	3748.8	2.6				ug/L	3739	Standard
Sr	88	75.0	11.5				ug/L	78	Standard
C	12	26.7	57.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.0	94.2				mg/L	2	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	656.7	5.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.122	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.524	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.195
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.679
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 7Q WG573483-03
Sample Date/Time: Tuesday, June 21, 2016 13:13:12
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59597.0	1.4				ug/L	60176	Standard
	Be	9	26.7	28.6	**0.0284**	0.010	36.7	ug/L	5	Standard
	Al	27	123378.7	0.8	**0.9401**	0.007	0.7	ug/L	832	Standard
	Sc	45	24184.3	4.6				ug/L	25066	Standard
	Ti	47	45.0	25.6	**0.0250**	0.057	229.9	ug/L	38	Standard
	V	51	1068.6	8.7	**0.0091**	0.015	170.4	ug/L	974	Standard
	Cr	52	7727.3	2.4	**0.2731**	0.024	8.9	ug/L	5792	Standard
	Cr	53	576.7	16.1	**0.2921**	0.109	37.2	ug/L	347	Standard
	Mn	55	3288.0	1.8	**0.2988**	0.009	3.0	ug/L	1164	Standard
	Co	59	442.3	9.5	**0.0233**	0.007	28.1	ug/L	303	Standard
	Ni	60	549.7	6.7	**0.1150**	0.019	16.8	ug/L	291	Standard
	Cu	65	1533.7	1.8	**0.7602**	0.018	2.4	ug/L	173	Standard
	Zn	66	3561.1	0.5	**3.2002**	0.053	1.7	ug/L	130	Standard
>	**Ge**	72	491613.1	1.0				ug/L	491724	Standard
	As	75	67.8	11.4	**0.0986**	0.008	8.2	ug/L	-25	Standard
	Se	82	49.8	19.1	**0.3887**	0.090	23.1	ug/L	12	Standard
	Se-1	77	49.0	15.9	**0.0445**	0.115	258.9	ug/L	57	Standard
>	**Ga**	71	185.0	23.4				mg/L	148	Standard
	Rb	85	243.3	21.6				ug/L	18	Standard
	Y	89	394619.8	1.0				ug/L	401845	Standard
>	**Rh**	103	30.0	44.1				ug/L	10	Standard
	Mo	98	108.2	38.9	**0.0419**	0.018	43.1	ug/L	12	Standard
	Ag	107	146.7	33.6	**0.0102**	0.009	84.7	ug/L	98	Standard
	Cd	111	29.5	45.9	**0.0114**	0.007	64.9	mg/L	11	Standard
	Cd	114	80.9	41.5	**0.0138**	0.008	55.0	ug/L	21	Standard
>	**In**	115	532617.2	0.2				ug/L	547487	Standard
	Sn	118	588.3	10.2	**0.0424**	0.012	28.7	ug/L	450	Standard
	Sb	123	334.8	20.5	**0.0734**	0.016	22.4	ug/L	105	Standard
	Ba	135	9299.9	0.5	**5.1515**	0.018	0.3	ug/L	111	Standard
	Ce	140	778.4	11.1				ug/L	107	Standard
>	**Tb**	159	856842.4	1.3				ug/L	890342	Standard
	Ho	165	25.0	20.0				ug/L	10	Standard
	Tl	203	92.3	45.4	**0.0091**	0.006	63.1	ug/L	19	Standard
	Tl	205	91.7	74.5	**0.0163**	0.011	69.8	ug/L	17	Standard
	Pb	206	607.0	7.8	**0.0743**	0.010	14.0	ug/L	247	Standard
	Pb	207	493.7	5.6	**0.0635**	0.006	9.8	ug/L	215	Standard
	Pb	208	1980.7	5.5	**0.0640**	0.007	10.5	ug/L	770	Standard
	U	238	71.0	67.4	**0.0114**	0.008	72.1	ug/L	13	Standard
>	**Bi**	209	486381.9	0.6				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.3778**	31.823	173.2	mg/L	2	Standard
Mg	24	1595.1	7.2	**2.2306**	0.060	2.7	mg/L	35	Standard
K	39	30.0	44.1	**0.0441**	0.075	168.9	mg/L	25	Standard
Ca	43	33.3	45.8	**1.5391**	3.367	218.8	mg/L	38	Standard
Fe	54	139.5	48.2	**-0.0011**	0.059	5464.9	mg/L	126	Standard
Fe	57	250.0	17.8	**-0.0719**	0.146	202.6	mg/L	245	Standard
Sc-1	45	24184.3	4.6				mg/L	25066	Standard
Cl	35	130065.3	1.4				ug/L	125857	Standard
Kr	83	1.0	0.0				ug/L	1	Standard
Br	81	9623.1	5.0				ug/L	1350	Standard
P	31	16951.1	1.1				ug/L	18393	Standard
S	34	3743.8	4.5				ug/L	3739	Standard
Sr	88	116.7	20.3				ug/L	78	Standard
C	12	46.7	96.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.2	94.4				mg/L	2	Standard
Ho-1	165	25.0	20.0				mg/L	10	Standard
Er	166	10.0					mg/L	23	Standard
I	127	1343.4	6.5				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.038	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.978	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.284
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.669
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606096103 WG573483-01
Sample Date/Time: Tuesday, June 21, 2016 13:16:23
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61047.7	0.6				ug/L	60176	Standard
	Be	9	15.0	33.3	**0.0116**	0.007	59.6	ug/L	5	Standard
	Al	27	9341973.6	1.7	**70.1047**	1.594	2.3	ug/L	832	Standard
	Sc	45	24823.7	1.2				ug/L	25066	Standard
	Ti	47	196.3	14.4	**0.8437**	0.163	19.3	ug/L	38	Standard
	V	51	1520.3	9.2	**0.0937**	0.027	28.5	ug/L	974	Standard
	Cr	52	9129.1	2.7	**0.5414**	0.059	10.9	ug/L	5792	Standard
	Cr	53	738.4	5.5	**0.5207**	0.064	12.4	ug/L	347	Standard
	Mn	55	11081.1	1.1	**1.5747**	0.043	2.7	ug/L	1164	Standard
	Co	59	619.0	4.0	**0.0557**	0.005	8.5	ug/L	303	Standard
	Ni	60	1274.1	1.2	**0.5411**	0.006	1.2	ug/L	291	Standard
	Cu	65	459.3	3.5	**0.1677**	0.009	5.7	ug/L	173	Standard
	Zn	66	1745.8	2.8	**1.5038**	0.023	1.6	ug/L	130	Standard
>	**Ge**	72	475973.6	1.5				ug/L	491724	Standard
	As	75	98.0	38.5	**0.1307**	0.038	29.4	ug/L	-25	Standard
	Se	82	59.0	18.3	**0.4974**	0.116	23.2	ug/L	12	Standard
	Se-1	77	72.0	13.9	**0.4016**	0.131	32.6	ug/L	57	Standard
>	**Ga**	71	200.0	13.9				mg/L	148	Standard
	Rb	85	3465.4	3.7				ug/L	18	Standard
	Y	89	402121.2	2.1				ug/L	401845	Standard
>	**Rh**	103	56.7	44.4				ug/L	10	Standard
	Mo	98	1248.8	2.4	**0.5212**	0.009	1.6	ug/L	12	Standard
	Ag	107	87.0	10.2	**-0.0005**	0.001	301.6	ug/L	98	Standard
	Cd	111	21.3	35.2	**0.0068**	0.004	60.3	mg/L	11	Standard
	Cd	114	36.7	39.5	**0.0037**	0.003	87.9	ug/L	21	Standard
>	**In**	115	541289.4	0.8				ug/L	547487	Standard
	Sn	118	620.0	15.4	**0.0468**	0.019	41.6	ug/L	450	Standard
	Sb	123	250.2	30.2	**0.0519**	0.018	34.1	ug/L	105	Standard
	Ba	135	26997.7	0.3	**14.8192**	0.144	1.0	ug/L	111	Standard
	Ce	140	1078.4	4.8				ug/L	107	Standard
>	**Tb**	159	866683.9	0.6				ug/L	890342	Standard
	Ho	165	30.0	33.3				ug/L	10	Standard
	Tl	203	79.7	2.6	**0.0074**	0.000	3.9	ug/L	19	Standard
	Tl	205	76.7	3.8	**0.0139**	0.000	3.0	ug/L	17	Standard
	Pb	206	354.3	0.4	**0.0212**	0.001	5.4	ug/L	247	Standard
	Pb	207	308.0	4.4	**0.0207**	0.003	15.8	ug/L	215	Standard
	Pb	208	1235.0	2.9	**0.0181**	0.002	9.8	ug/L	770	Standard
	U	238	2800.3	1.8	**0.4867**	0.012	2.5	ug/L	13	Standard
>	**Bi**	209	481870.9	1.1				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3122.0	2.6	**4.2928**	0.138	3.2	mg/L	35	Standard
K	39	116.7	8.9	**0.4746**	0.046	9.7	mg/L	25	Standard
Ca	43	158.3	7.9	**26.2024**	2.672	10.2	mg/L	38	Standard
Fe	54	139.3	11.0	**-0.0029**	0.016	532.1	mg/L	126	Standard
Fe	57	351.7	4.3	**0.3106**	0.078	25.0	mg/L	245	Standard
> **Sc-1**	45	24823.7	1.2				mg/L	25066	Standard
Cl	35	140998.6	2.1				ug/L	125857	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	3500.4	2.8				ug/L	1350	Standard
P	31	19117.1	2.2				ug/L	18393	Standard
S	34	3825.5	3.2				ug/L	3739	Standard
Sr	88	203.3	12.4				ug/L	78	Standard
C	12	103.3	45.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	55.1	19.0				mg/L	2	Standard
Ho-1	165	30.0	33.3				mg/L	10	Standard
Er	166	33.3	75.5				mg/L	23	Standard
I	127	4417.3	4.0				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.449	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.797	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606096103 WG573483-01
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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	98.868
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	95.772
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606096103S WG573483-04
Sample Date/Time: Tuesday, June 21, 2016 13:19:35
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60085.6	1.7				ug/L	60176	Standard
	Be	9	35418.0	1.7	**49.4123**	1.273	2.6	ug/L	5	Standard
	Al	27	9553806.1	0.1	**72.8510**	1.232	1.7	ug/L	832	Standard
	Sc	45	24382.9	1.2				ug/L	25066	Standard
	Ti	47	190.0	4.7	**0.8162**	0.021	2.5	ug/L	38	Standard
	V	51	287859.7	1.7	**50.2556**	0.599	1.2	ug/L	974	Standard
	Cr	52	311117.1	1.3	**50.0342**	0.746	1.5	ug/L	5792	Standard
	Cr	53	39177.3	2.9	**49.4856**	0.624	1.3	ug/L	347	Standard
	Mn	55	324372.6	0.9	**52.6072**	1.077	2.0	ug/L	1164	Standard
	Co	59	291577.0	1.6	**49.8422**	0.595	1.2	ug/L	303	Standard
	Ni	60	85207.9	1.0	**49.1473**	1.009	2.1	ug/L	291	Standard
	Cu	65	84645.8	0.5	**49.2054**	1.253	2.5	ug/L	173	Standard
	Zn	66	51645.2	1.3	**51.6401**	0.793	1.5	ug/L	130	Standard
>	**Ge**	72	472256.1	2.8				ug/L	491724	Standard
	As	75	51695.2	1.6	**51.3245**	0.593	1.2	ug/L	-25	Standard
	Se	82	5173.1	1.2	**52.0219**	0.822	1.6	ug/L	12	Standard
	Se-1	77	3476.7	1.4	**50.5984**	1.532	3.0	ug/L	57	Standard
>	**Ga**	71	260.0	28.7				mg/L	148	Standard
	Rb	85	3562.1	2.1				ug/L	18	Standard
	Y	89	407263.7	1.8				ug/L	401845	Standard
>	**Rh**	103	68.3	30.5				ug/L	10	Standard
	Mo	98	1317.0	3.1	**0.5537**	0.021	3.9	ug/L	12	Standard
	Ag	107	275415.2	1.3	**47.5488**	1.124	2.4	ug/L	98	Standard
	Cd	111	88696.0	0.6	**48.0474**	0.431	0.9	mg/L	11	Standard
	Cd	114	213461.1	1.2	**47.5387**	1.278	2.7	ug/L	21	Standard
>	**In**	115	537694.2	1.5				ug/L	547487	Standard
	Sn	118	585.0	5.9	**0.0407**	0.007	17.4	ug/L	450	Standard
	Sb	123	193980.1	0.3	**46.5021**	0.680	1.5	ug/L	105	Standard
	Ba	135	112772.5	1.0	**62.4946**	0.514	0.8	ug/L	111	Standard
	Ce	140	1368.4	17.9				ug/L	107	Standard
>	**Tb**	159	852959.3	0.9				ug/L	890342	Standard
	Ho	165	35.0	37.8				ug/L	10	Standard
	Tl	203	345111.3	0.9	**48.9395**	0.677	1.4	ug/L	19	Standard
	Tl	205	293390.1	0.8	**50.7100**	0.765	1.5	ug/L	17	Standard
	Pb	206	227814.4	1.2	**50.1915**	0.357	0.7	ug/L	247	Standard
	Pb	207	198202.5	1.7	**48.0341**	0.475	1.0	ug/L	215	Standard
	Pb	208	774653.3	0.9	**50.1464**	0.296	0.6	ug/L	770	Standard
	U	238	276162.4	0.2	**49.3292**	0.615	1.2	ug/L	13	Standard
>	**Bi**	209	469650.7	1.1				ug/L	503143	Standard

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Na	23	3.3	86.6	**38.0335**	32.935	86.6	mg/L	2	Standard
Mg	24	3283.7	5.8	**4.5981**	0.247	5.4	mg/L	35	Standard
K	39	128.3	19.2	**0.5454**	0.127	23.3	mg/L	25	Standard
Ca	43	110.0	16.4	**16.9725**	3.680	21.7	mg/L	38	Standard
Fe	54	154.7	12.2	**0.0146**	0.020	138.4	mg/L	126	Standard
Fe	57	370.0	1.4	**0.4097**	0.022	5.4	mg/L	245	Standard
> **Sc-1**	45	24382.9	1.2				mg/L	25066	Standard
Cl	35	147069.0	0.9				ug/L	125857	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	2353.5	2.8				ug/L	1350	Standard
P	31	18783.3	1.7				ug/L	18393	Standard
S	34	3680.4	2.3				ug/L	3739	Standard
Sr	88	195.0	15.4				ug/L	78	Standard
C	12	110.0	36.4				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	61.9	82.6				mg/L	2	Standard
Ho-1	165	35.0	37.8				mg/L	10	Standard
Er	166	30.0	57.7				mg/L	23	Standard
I	127	4779.1	3.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.850	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.041	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.211
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.343
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606096103S WG573483-04
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Method 6020 - Summary Report

Sample ID: L1606096103SD WG573483-05
Sample Date/Time: Tuesday, June 21, 2016 13:22:47
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61462.8	1.9				ug/L	60176	Standard
	Be	9	36453.8	2.4	**49.7327**	2.122	4.3	ug/L	5	Standard
	Al	27	9453301.8	0.8	**70.4658**	0.824	1.2	ug/L	832	Standard
	Sc	45	24409.6	0.4				ug/L	25066	Standard
	Ti	47	344.0	66.5	**1.5970**	1.182	74.0	ug/L	38	Standard
	V	51	289238.2	2.5	**49.3099**	0.828	1.7	ug/L	974	Standard
	Cr	52	318109.2	0.9	**49.9609**	0.437	0.9	ug/L	5792	Standard
	Cr	53	40479.0	3.1	**49.9452**	1.314	2.6	ug/L	347	Standard
	Mn	55	314057.7	2.4	**49.7210**	0.754	1.5	ug/L	1164	Standard
	Co	59	290318.9	2.9	**48.4610**	0.991	2.0	ug/L	303	Standard
	Ni	60	87273.0	1.1	**49.1559**	0.393	0.8	ug/L	291	Standard
	Cu	65	85527.1	2.3	**48.5400**	0.760	1.6	ug/L	173	Standard
	Zn	66	51755.6	2.3	**50.5302**	0.778	1.5	ug/L	130	Standard
>	**Ge**	72	483447.8	0.9				ug/L	491724	Standard
	As	75	51749.9	1.4	**50.1783**	0.327	0.7	ug/L	-25	Standard
	Se	82	5053.4	1.0	**49.6285**	0.930	1.9	ug/L	12	Standard
	Se-1	77	3472.4	4.6	**49.3184**	2.029	4.1	ug/L	57	Standard
>	**Ga**	71	256.7	20.0				mg/L	148	Standard
	Rb	85	3362.0	2.8				ug/L	18	Standard
	Y	89	401293.0	3.1				ug/L	401845	Standard
>	**Rh**	103	56.7	10.2				ug/L	10	Standard
	Mo	98	1289.5	8.7	**0.5470**	0.043	7.9	ug/L	12	Standard
	Ag	107	282626.7	0.7	**49.2593**	0.185	0.4	ug/L	98	Standard
	Cd	111	89595.6	1.1	**49.0014**	0.114	0.2	mg/L	11	Standard
	Cd	114	217595.8	1.3	**48.9159**	0.226	0.5	ug/L	21	Standard
>	**In**	115	532522.5	0.9				ug/L	547487	Standard
	Sn	118	533.3	7.5	**0.0316**	0.009	27.6	ug/L	450	Standard
	Sb	123	199986.0	1.4	**48.4014**	0.599	1.2	ug/L	105	Standard
	Ba	135	113635.9	0.8	**63.5855**	0.778	1.2	ug/L	111	Standard
	Ce	140	1038.4	8.3				ug/L	107	Standard
>	**Tb**	159	861213.7	0.8				ug/L	890342	Standard
	Ho	165	33.3	45.8				ug/L	10	Standard
	Tl	203	354994.0	0.6	**48.9345**	0.505	1.0	ug/L	19	Standard
	Tl	205	289401.6	1.8	**48.6253**	1.171	2.4	ug/L	17	Standard
	Pb	206	230028.8	1.2	**49.2668**	0.831	1.7	ug/L	247	Standard
	Pb	207	199754.3	1.2	**47.0633**	0.908	1.9	ug/L	215	Standard
	Pb	208	767538.1	0.5	**48.2969**	0.306	0.6	ug/L	770	Standard
	U	238	277842.3	0.1	**48.2419**	0.411	0.9	ug/L	13	Standard
>	**Bi**	209	483136.4	0.9				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3075.3	4.3	**4.3000**	0.197	4.6	mg/L	35	Standard
K	39	133.3	11.5	**0.5703**	0.080	14.0	mg/L	25	Standard
Ca	43	143.3	12.3	**23.6865**	3.499	14.8	mg/L	38	Standard
Fe	54	131.9	32.2	**-0.0079**	0.042	522.5	mg/L	126	Standard
Fe	57	375.0	17.0	**0.4278**	0.255	59.7	mg/L	245	Standard
> **Sc-1**	45	24409.6	0.4				mg/L	25066	Standard
Cl	35	148355.5	1.1				ug/L	125857	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	1950.1	13.4				ug/L	1350	Standard
P	31	18893.5	3.9				ug/L	18393	Standard
S	34	3878.8	5.1				ug/L	3739	Standard
Sr	88	180.0	4.8				ug/L	78	Standard
C	12	116.7	49.5				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	94.6	15.9				mg/L	2	Standard
Ho-1	165	33.3	45.8				mg/L	10	Standard
Er	166	43.3	13.3				mg/L	23	Standard
I	127	4419.0	9.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.138	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.317	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.267
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.024
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606073102
Sample Date/Time: Tuesday, June 21, 2016 13:25:58
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	62050.2	2.7				ug/L	60176	Standard
	Be	9	105.0	8.2	**0.1327**	0.009	6.8	ug/L	5	Standard
	Al	27	1013016.4	2.3	**7.4716**	0.030	0.4	ug/L	832	Standard
	Sc	45	25413.0	0.7				ug/L	25066	Standard
	Ti	47	11689.2	3.8	**62.0270**	2.447	3.9	ug/L	38	Standard
	V	51	31514.4	0.8	**5.2807**	0.054	1.0	ug/L	974	Standard
	Cr	52	17882.9	0.9	**1.9504**	0.032	1.6	ug/L	5792	Standard
	Cr	53	2040.1	2.3	**2.1533**	0.055	2.6	ug/L	347	Standard
	Mn	55	131913.8	0.6	**20.9934**	0.153	0.7	ug/L	1164	Standard
	Co	59	2483.5	3.2	**0.3703**	0.015	3.9	ug/L	303	Standard
	Ni	60	2377.5	1.9	**1.1685**	0.022	1.9	ug/L	291	Standard
	Cu	65	255994.2	0.7	**147.1034**	1.372	0.9	ug/L	173	Standard
	Zn	66	18744.6	0.9	**18.3555**	0.182	1.0	ug/L	130	Standard
>	Ge	72	478159.2	0.3				ug/L	491724	Standard
	As	75	12450.5	0.9	**12.2318**	0.086	0.7	ug/L	-25	Standard
	Se	82	110.0	5.3	**1.0009**	0.058	5.8	ug/L	12	Standard
	Se-1	77	115.3	7.0	**1.0288**	0.120	11.7	ug/L	57	Standard
>	Ga	71	2798.6	0.4				mg/L	148	Standard
	Rb	85	49900.4	1.1				ug/L	18	Standard
	Y	89	416526.1	0.5				ug/L	401845	Standard
>	Rh	103	41.7	13.9				ug/L	10	Standard
	Mo	98	4437.9	0.6	**1.8377**	0.013	0.7	ug/L	12	Standard
	Ag	107	916.0	2.3	**0.1396**	0.005	3.7	ug/L	98	Standard
	Cd	111	512.1	2.9	**0.2671**	0.011	4.2	mg/L	11	Standard
	Cd	114	1211.6	3.0	**0.2598**	0.006	2.2	ug/L	21	Standard
>	In	115	548951.9	1.2				ug/L	547487	Standard
	Sn	118	5657.7	4.2	**1.0127**	0.047	4.7	ug/L	450	Standard
	Sb	123	4885.2	8.8	**1.1392**	0.095	8.3	ug/L	105	Standard
	Ba	135	19928.1	1.6	**10.7709**	0.169	1.6	ug/L	111	Standard
	Ce	140	57480.5	1.9				ug/L	107	Standard
>	Tb	159	878774.2	1.0				ug/L	890342	Standard
	Ho	165	1093.4	18.2				ug/L	10	Standard
	Tl	203	347.3	5.3	**0.0436**	0.002	4.8	ug/L	19	Standard
	Tl	205	276.7	3.8	**0.0468**	0.002	4.8	ug/L	17	Standard
	Pb	206	43154.7	0.9	**9.0669**	0.187	2.1	ug/L	247	Standard
	Pb	207	37803.4	1.8	**8.7363**	0.108	1.2	ug/L	215	Standard
	Pb	208	149908.5	0.2	**9.2509**	0.144	1.6	ug/L	770	Standard
	U	238	690.7	5.1	**0.1174**	0.005	4.3	ug/L	13	Standard
>	Bi	209	490138.0	1.5				ug/L	503143	Standard

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Na	23	3.3	86.6	**36.6395**	31.728	86.6	mg/L	2	Standard
Mg	24	11255.8	2.0	**15.2140**	0.309	2.0	mg/L	35	Standard
K	39	513.3	5.7	**2.4114**	0.137	5.7	mg/L	25	Standard
Ca	43	73.3	31.5	**8.9140**	4.383	49.2	mg/L	38	Standard
Fe	54	1193.7	6.4	**0.9809**	0.074	7.6	mg/L	126	Standard
Fe	57	501.7	10.9	**0.8612**	0.218	25.3	mg/L	245	Standard
> **Sc-1**	45	25413.0	0.7				mg/L	25066	Standard
Cl	35	147490.5	1.3				ug/L	125857	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	2373.5	6.5				ug/L	1350	Standard
P	31	25653.5	10.8				ug/L	18393	Standard
S	34	3847.2	1.9				ug/L	3739	Standard
Sr	88	95.0	22.9				ug/L	78	Standard
C	12	80.0	43.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	100.0				mg/L	0	Standard
Dy	164	1461.7	2.4				mg/L	2	Standard
Ho-1	165	1093.4	18.2				mg/L	10	Standard
Er	166	1010.0	4.3				mg/L	23	Standard
I	127	10345.2	3.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.115	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.241	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.268
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.415
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cu 65 Upper, S, EEE	Cu	65	

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606073102PS WG573557-01
Sample Date/Time: Tuesday, June 21, 2016 13:29:10
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	62836.7	1.0				ug/L	60176	Standard
	Be	9	38405.3	1.0	**51.2242**	0.495	1.0	ug/L	5	Standard
	Al	27	986754.3	0.7	**7.1861**	0.032	0.4	ug/L	832	Standard
	Sc	45	25206.0	4.0				ug/L	25066	Standard
	Ti	47	12380.1	4.7	**64.5662**	3.180	4.9	ug/L	38	Standard
	V	51	336761.7	1.5	**57.0716**	0.650	1.1	ug/L	974	Standard
	Cr	52	338031.4	0.9	**52.7987**	0.435	0.8	ug/L	5792	Standard
	Cr	53	42471.1	2.2	**52.0846**	0.966	1.9	ug/L	347	Standard
	Mn	55	458391.3	1.7	**72.2107**	1.483	2.1	ug/L	1164	Standard
	Co	59	320824.6	0.9	**53.2201**	0.682	1.3	ug/L	303	Standard
	Ni	60	91216.4	1.1	**51.0539**	0.706	1.4	ug/L	291	Standard
	Cu	65	345800.3	0.7	**195.2967**	1.049	0.5	ug/L	173	Standard
	Zn	66	72342.6	1.4	**70.2705**	0.971	1.4	ug/L	130	Standard
>	Ge	72	486585.9	0.4				ug/L	491724	Standard
	As	75	66468.7	1.6	**64.0258**	0.932	1.5	ug/L	-25	Standard
	Se	82	5473.3	1.5	**53.4097**	0.960	1.8	ug/L	12	Standard
	Se-1	77	3758.5	2.1	**53.0932**	1.114	2.1	ug/L	57	Standard
>	Ga	71	2930.3	6.6				mg/L	148	Standard
	Rb	85	50851.9	2.6				ug/L	18	Standard
	Y	89	422665.5	2.8				ug/L	401845	Standard
>	Rh	103	43.3	13.3				ug/L	10	Standard
	Mo	98	4548.7	3.3	**1.9199**	0.104	5.4	ug/L	12	Standard
	Ag	107	291098.5	1.4	**50.1491**	1.656	3.3	ug/L	98	Standard
	Cd	111	96011.5	1.2	**51.8878**	0.482	0.9	mg/L	11	Standard
	Cd	114	228852.1	1.3	**50.8404**	0.872	1.7	ug/L	21	Standard
>	In	115	538990.3	2.1				ug/L	547487	Standard
	Sn	118	6059.6	11.2	**1.1120**	0.140	12.6	ug/L	450	Standard
	Sb	123	210648.2	0.5	**50.3883**	1.297	2.6	ug/L	105	Standard
	Ba	135	109800.4	0.6	**60.7142**	1.334	2.2	ug/L	111	Standard
	Ce	140	59162.4	7.7				ug/L	107	Standard
>	Tb	159	872877.7	0.3				ug/L	890342	Standard
	Ho	165	1188.4	22.2				ug/L	10	Standard
	Tl	203	368407.8	0.3	**49.7173**	0.416	0.8	ug/L	19	Standard
	Tl	205	314960.3	1.3	**51.8065**	0.923	1.8	ug/L	17	Standard
	Pb	206	286269.8	0.5	**60.0352**	0.497	0.8	ug/L	247	Standard
	Pb	207	250420.9	0.8	**57.7692**	0.376	0.7	ug/L	215	Standard
	Pb	208	977924.5	0.9	**60.2632**	1.112	1.8	ug/L	770	Standard
	U	238	292324.4	0.4	**49.6915**	0.547	1.1	ug/L	13	Standard
>	Bi	209	493501.4	1.0				ug/L	503143	Standard

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Na	23	3.3	86.6	**37.0547**	32.164	86.8	mg/L	2	Standard
Mg	24	11367.6	3.6	**15.5226**	1.170	7.5	mg/L	35	Standard
K	39	491.7	4.1	**2.3285**	0.165	7.1	mg/L	25	Standard
Ca	43	61.7	32.8	**6.7120**	3.782	56.4	mg/L	38	Standard
Fe	54	1050.3	3.7	**0.8567**	0.077	8.9	mg/L	126	Standard
Fe	57	553.3	6.8	**1.0850**	0.222	20.5	mg/L	245	Standard
> **Sc-1**	45	25206.0	4.0				mg/L	25066	Standard
Cl	35	141394.7	1.2				ug/L	125857	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	2206.8	11.9				ug/L	1350	Standard
P	31	23750.3	1.6				ug/L	18393	Standard
S	34	3492.1	3.7				ug/L	3739	Standard
Sr	88	91.7	19.2				ug/L	78	Standard
C	12	96.7	39.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	65.5				mg/L	0	Standard
Dy	164	1514.9	12.9				mg/L	2	Standard
Ho-1	165	1188.4	22.2				mg/L	10	Standard
Er	166	1083.4	11.0				mg/L	23	Standard
I	127	10306.8	3.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.422	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.955	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.448
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.084
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: L1606073102SDL WG573557-02
Sample Date/Time: Tuesday, June 21, 2016 13:32:21
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62607.4	1.3				ug/L	60176	Standard
	Be	9	25.0	34.6	**0.0244**	0.011	45.5	ug/L	5	Standard
	Al	27	212439.0	0.9	**1.5464**	0.033	2.1	ug/L	832	Standard
	Sc	45	24628.3	0.4				ug/L	25066	Standard
	Ti	47	2784.9	3.0	**13.9086**	0.389	2.8	ug/L	38	Standard
	V	51	7566.4	0.8	**1.0756**	0.023	2.2	ug/L	974	Standard
	Cr	52	8980.0	0.9	**0.4405**	0.021	4.7	ug/L	5792	Standard
	Cr	53	745.0	5.8	**0.4791**	0.044	9.2	ug/L	347	Standard
	Mn	55	27746.4	1.2	**4.0322**	0.081	2.0	ug/L	1164	Standard
	Co	59	770.7	3.6	**0.0747**	0.006	7.8	ug/L	303	Standard
	Ni	60	728.0	3.3	**0.2056**	0.009	4.5	ug/L	291	Standard
	Cu	65	55112.7	1.2	**30.0755**	0.388	1.3	ug/L	173	Standard
	Zn	66	4901.5	0.7	**4.3932**	0.053	1.2	ug/L	130	Standard
>	**Ge**	72	502229.8	1.2				ug/L	491724	Standard
	As	75	2641.7	1.6	**2.4986**	0.070	2.8	ug/L	-25	Standard
	Se	82	37.4	7.9	**0.2610**	0.029	11.1	ug/L	12	Standard
	Se-1	77	65.3	16.9	**0.2568**	0.164	63.9	ug/L	57	Standard
>	**Ga**	71	860.0	7.0				mg/L	148	Standard
	Rb	85	10418.6	2.0				ug/L	18	Standard
	Y	89	399994.5	0.5				ug/L	401845	Standard
>	**Rh**	103	30.0	33.3				ug/L	10	Standard
	Mo	98	925.4	2.8	**0.3921**	0.014	3.7	ug/L	12	Standard
	Ag	107	297.0	13.1	**0.0365**	0.007	19.3	ug/L	98	Standard
	Cd	111	115.6	4.7	**0.0586**	0.003	5.9	mg/L	11	Standard
	Cd	114	279.1	9.6	**0.0584**	0.006	10.2	ug/L	21	Standard
>	**In**	115	531899.2	0.8				ug/L	547487	Standard
	Sn	118	1896.8	36.6	**0.3027**	0.141	46.7	ug/L	450	Standard
	Sb	123	2351.8	13.2	**0.5620**	0.071	12.7	ug/L	105	Standard
	Ba	135	4320.6	0.3	**2.3669**	0.016	0.7	ug/L	111	Standard
	Ce	140	11052.4	4.5				ug/L	107	Standard
>	**Tb**	159	858576.5	0.7				ug/L	890342	Standard
	Ho	165	216.7	10.7				ug/L	10	Standard
	Tl	203	116.0	17.5	**0.0123**	0.003	24.6	ug/L	19	Standard
	Tl	205	98.3	11.7	**0.0173**	0.002	12.0	ug/L	17	Standard
	Pb	206	9169.1	1.7	**1.8876**	0.041	2.2	ug/L	247	Standard
	Pb	207	7982.8	0.7	**1.8083**	0.035	1.9	ug/L	215	Standard
	Pb	208	31008.6	0.6	**1.8704**	0.021	1.1	ug/L	770	Standard
	U	238	168.3	3.3	**0.0281**	0.001	3.9	ug/L	13	Standard
>	**Bi**	209	489002.3	1.5				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	2341.8	1.1	**3.2356**	0.024	0.7	mg/L	35	Standard
K	39	118.3	20.0	**0.4878**	0.118	24.2	mg/L	25	Standard
Ca	43	43.3	17.6	**3.3707**	1.559	46.2	mg/L	38	Standard
Fe	54	377.4	16.5	**0.2279**	0.059	26.1	mg/L	126	Standard
Fe	57	345.0	9.5	**0.2940**	0.127	43.1	mg/L	245	Standard
> **Sc-1**	45	24628.3	0.4				mg/L	25066	Standard
Cl	35	138476.6	0.9				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	1490.1	4.7				ug/L	1350	Standard
P	31	19304.0	1.2				ug/L	18393	Standard
S	34	3498.7	5.5				ug/L	3739	Standard
Sr	88	68.3	18.4				ug/L	78	Standard
C	12	46.7	44.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	337.2	15.6				mg/L	2	Standard
Ho-1	165	216.7	10.7				mg/L	10	Standard
Er	166	196.7	28.9				mg/L	23	Standard
I	127	3045.3	3.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.041	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.137	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	97.153
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	97.190
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: FBLANK 7Q WG573662-01
Sample Date/Time: Tuesday, June 21, 2016 13:36:50
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60862.0	1.5				ug/L	60176	Standard
	Be	9	37583.2	1.6	**51.7542**	0.552	1.1	ug/L	5	Standard
	Al	27	21697.9	26.0	**0.1552**	0.044	28.5	ug/L	832	Standard
	Sc	45	23591.7	4.2				ug/L	25066	Standard
	Ti	47	83.7	108.0	**0.2200**	0.454	206.3	ug/L	38	Standard
	V	51	305889.4	1.3	**51.4535**	1.008	2.0	ug/L	974	Standard
	Cr	52	330929.6	0.4	**51.2983**	1.178	2.3	ug/L	5792	Standard
	Cr	53	41528.5	0.6	**50.5645**	1.478	2.9	ug/L	347	Standard
	Mn	55	328303.3	1.1	**51.2988**	1.820	3.5	ug/L	1164	Standard
	Co	59	315656.4	1.0	**52.0010**	1.804	3.5	ug/L	303	Standard
	Ni	60	91664.8	1.0	**50.9431**	1.373	2.7	ug/L	291	Standard
	Cu	65	92045.1	0.9	**51.5472**	1.356	2.6	ug/L	173	Standard
	Zn	66	54111.8	0.2	**52.1307**	1.195	2.3	ug/L	130	Standard
>	**Ge**	72	490225.8	2.5				ug/L	491724	Standard
	As	75	52438.9	0.3	**50.1639**	1.182	2.4	ug/L	-25	Standard
	Se	82	5295.6	0.8	**51.3116**	1.607	3.1	ug/L	12	Standard
	Se-1	77	3616.8	1.2	**50.6984**	1.048	2.1	ug/L	57	Standard
>	**Ga**	71	186.7	10.8				mg/L	148	Standard
	Rb	85	61.7	12.4				ug/L	18	Standard
	Y	89	408507.2	0.7				ug/L	401845	Standard
>	**Rh**	103	48.3	15.8				ug/L	10	Standard
	Mo	98	52.1	23.1	**0.0179**	0.005	29.8	ug/L	12	Standard
	Ag	107	297940.9	0.5	**51.9244**	0.468	0.9	ug/L	98	Standard
	Cd	111	93406.3	0.2	**51.0848**	0.731	1.4	mg/L	11	Standard
	Cd	114	226390.7	0.3	**50.8926**	0.677	1.3	ug/L	21	Standard
>	**In**	115	532598.8	1.2				ug/L	547487	Standard
	Sn	118	560.0	13.9	**0.0370**	0.017	45.0	ug/L	450	Standard
	Sb	123	206757.3	1.1	**50.0344**	0.431	0.9	ug/L	105	Standard
	Ba	135	90690.6	0.8	**50.7329**	0.993	2.0	ug/L	111	Standard
	Ce	140	146.7	19.4				ug/L	107	Standard
>	**Tb**	159	846206.7	1.1				ug/L	890342	Standard
	Ho	165	13.3	86.6				ug/L	10	Standard
	Tl	203	364672.7	1.1	**50.8514**	0.648	1.3	ug/L	19	Standard
	Tl	205	306373.3	0.5	**52.0688**	0.058	0.1	ug/L	17	Standard
	Pb	206	242442.7	0.5	**52.5299**	0.446	0.8	ug/L	247	Standard
	Pb	207	211276.6	0.7	**50.3548**	0.226	0.4	ug/L	215	Standard
	Pb	208	820675.9	0.4	**52.2445**	0.286	0.5	ug/L	770	Standard
	U	238	287466.1	0.1	**50.4910**	0.234	0.5	ug/L	13	Standard
>	**Bi**	209	477588.3	0.5				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	65.0	26.6	**0.0558**	0.025	43.9	mg/L	35	Standard
K	39	33.3	31.2	**0.0629**	0.047	74.5	mg/L	25	Standard
Ca	43	28.3	50.9	**0.5321**	2.713	509.8	mg/L	38	Standard
Fe	54	102.3	13.6	**-0.0329**	0.018	54.0	mg/L	126	Standard
Fe	57	231.7	21.8	**-0.1150**	0.242	210.0	mg/L	245	Standard
> **Sc-1**	45	23591.7	4.2				mg/L	25066	Standard
Cl	35	136517.0	1.3				ug/L	125857	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	1383.4	10.5				ug/L	1350	Standard
P	31	16972.8	0.8				ug/L	18393	Standard
S	34	3713.8	2.7				ug/L	3739	Standard
Sr	88	61.7	9.4				ug/L	78	Standard
C	12	53.3	47.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	19.8	49.2				mg/L	2	Standard
Ho-1	165	13.3	86.6				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	23	Standard
I	127	1001.7	6.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.140	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.695	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: FBLANK 7Q WG573662-01
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.281
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.921
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 13:40:03
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61031.0	0.7				ug/L	60176	Standard
	Be	9	36594.2	3.2	**50.2545**	1.736	3.5	ug/L	5	Standard
	Al	27	6613287.8	2.3	**49.6387**	1.327	2.7	ug/L	832	Standard
	Sc	45	24596.6	1.9				ug/L	25066	Standard
	Ti	47	19478.9	2.3	**103.3937**	4.517	4.4	ug/L	38	Standard
	V	51	296612.7	2.3	**51.0859**	2.216	4.3	ug/L	974	Standard
	Cr	52	329696.2	2.1	**52.3442**	2.253	4.3	ug/L	5792	Standard
	Cr	53	41729.1	0.9	**52.0173**	1.592	3.1	ug/L	347	Standard
	Mn	55	310317.0	2.6	**49.6295**	2.343	4.7	ug/L	1164	Standard
	Co	59	303689.4	2.7	**51.2154**	2.491	4.9	ug/L	303	Standard
	Ni	60	90715.2	2.4	**51.6193**	2.335	4.5	ug/L	291	Standard
	Cu	65	89623.1	3.1	**51.3920**	2.693	5.2	ug/L	173	Standard
	Zn	66	52311.5	3.1	**51.6008**	2.673	5.2	ug/L	130	Standard
>	**Ge**	72	478918.3	2.1				ug/L	491724	Standard
	As	75	51909.7	2.4	**50.8415**	2.263	4.5	ug/L	-25	Standard
	Se	82	5184.4	2.6	**51.4278**	2.428	4.7	ug/L	12	Standard
	Se-1	77	3510.4	2.6	**50.3835**	2.410	4.8	ug/L	57	Standard
>	**Ga**	71	205.0	20.8				mg/L	148	Standard
	Rb	85	766.7	4.6				ug/L	18	Standard
	Y	89	405836.1	1.8				ug/L	401845	Standard
>	**Rh**	103	35.0	42.9				ug/L	10	Standard
	Mo	98	227649.5	2.0	**96.2656**	2.103	2.2	ug/L	12	Standard
	Ag	107	288372.2	1.1	**49.6724**	0.252	0.5	ug/L	98	Standard
	Cd	111	92130.2	0.9	**49.8016**	0.575	1.2	mg/L	11	Standard
	Cd	114	225554.0	0.3	**50.1162**	0.425	0.8	ug/L	21	Standard
>	**In**	115	538810.9	0.6				ug/L	547487	Standard
	Sn	118	247773.3	1.9	**48.4123**	1.160	2.4	ug/L	450	Standard
	Sb	123	211050.2	2.3	**50.4816**	1.038	2.1	ug/L	105	Standard
	Ba	135	89213.6	0.7	**49.3244**	0.656	1.3	ug/L	111	Standard
	Ce	140	93.3	16.4				ug/L	107	Standard
>	**Tb**	159	860595.9	0.4				ug/L	890342	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	362174.3	0.8	**49.8195**	1.053	2.1	ug/L	19	Standard
	Tl	205	305739.0	0.6	**51.2583**	0.985	1.9	ug/L	17	Standard
	Pb	206	230874.7	1.7	**49.3431**	1.266	2.6	ug/L	247	Standard
	Pb	207	208855.0	2.0	**49.1070**	1.530	3.1	ug/L	215	Standard
	Pb	208	795788.6	1.4	**49.9753**	1.375	2.8	ug/L	770	Standard
	U	238	286489.2	0.6	**49.6372**	0.898	1.8	ug/L	13	Standard
>	**Bi**	209	484221.4	1.4				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3497.1	3.8	**4.8581**	0.197	4.1	mg/L	35	Standard
K	39	931.7	4.0	**4.6234**	0.265	5.7	mg/L	25	Standard
Ca	43	35.0	62.3	**1.6854**	4.328	256.8	mg/L	38	Standard
Fe	54	5344.8	3.0	**5.0352**	0.242	4.8	mg/L	126	Standard
Fe	57	1481.7	2.1	**4.8642**	0.109	2.2	mg/L	245	Standard
Sc-1	45	24596.6	1.9				mg/L	25066	Standard
Cl	35	138959.7	0.4				ug/L	125857	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	1233.4	20.2				ug/L	1350	Standard
P	31	18719.9	0.8				ug/L	18393	Standard
S	34	4417.3	5.9				ug/L	3739	Standard
Sr	88	70.0	32.7				ug/L	78	Standard
C	12	46.7	53.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	-0.6	114.6				mg/L	2	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	1176.7	6.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	100.509		
Al	27	99.277		
Sc	45			
Ti	47	103.394		
V	51	102.172		
Cr	52	104.688		
Cr	53			
Mn	55	99.259		
Co	59	102.431		
Ni	60	103.239		
Cu	65	102.784		
Zn	66	103.202		
Ge	72		97.396	
As	75	101.683		
Se	82	102.856		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	96.266		
Ag	107	99.345		
Cd	111	99.603		
Cd	114			
> In	115			98.415
Sn	118	96.825		
Sb	123	100.963		
Ba	135	98.649		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.639		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.951		
U	238	99.274		
> Bi	209			96.239
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 13:43:14
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59649.0	4.4				ug/L	60176	Standard
	Be	9	41.7	69.3	**0.0484**	0.037	76.6	ug/L	5	Standard
	Al	27	4266.0	98.6	**0.0235**	0.030	128.4	ug/L	832	Standard
	Sc	45	24342.9	3.0				ug/L	25066	Standard
	Ti	47	33.3	27.1	**-0.0321**	0.048	148.9	ug/L	38	Standard
	V	51	1086.3	15.0	**0.0151**	0.028	186.7	ug/L	974	Standard
	Cr	52	6084.9	2.7	**0.0304**	0.025	82.0	ug/L	5792	Standard
	Cr	53	316.7	20.3	**-0.0194**	0.077	400.2	ug/L	347	Standard
	Mn	55	1292.4	23.2	**-0.0102**	0.046	450.7	ug/L	1164	Standard
	Co	59	507.7	41.8	**0.0353**	0.035	98.0	ug/L	303	Standard
	Ni	60	317.3	24.7	**-0.0115**	0.043	371.7	ug/L	291	Standard
	Cu	65	214.0	56.1	**0.0236**	0.067	282.9	ug/L	173	Standard
	Zn	66	173.7	20.6	**-0.0653**	0.034	51.4	ug/L	130	Standard
>	**Ge**	72	483753.8	2.3				ug/L	491724	Standard
	As	75	6.9	624.5	**0.0407**	0.041	101.6	ug/L	-25	Standard
	Se	82	18.5	29.1	**0.0893**	0.056	62.8	ug/L	12	Standard
	Se-1	77	55.0	3.6	**0.1421**	0.045	31.6	ug/L	57	Standard
>	**Ga**	71	175.0	10.3				mg/L	148	Standard
	Rb	85	30.0	44.1				ug/L	18	Standard
	Y	89	416072.0	2.1				ug/L	401845	Standard
>	**Rh**	103	28.3	27.0				ug/L	10	Standard
	Mo	98	258.2	21.7	**0.1033**	0.023	21.8	ug/L	12	Standard
	Ag	107	212.0	65.6	**0.0205**	0.023	112.4	ug/L	98	Standard
	Cd	111	49.9	119.2	**0.0217**	0.031	143.8	mg/L	11	Standard
	Cd	114	138.9	94.3	**0.0258**	0.028	109.1	ug/L	21	Standard
>	**In**	115	545536.5	1.5				ug/L	547487	Standard
	Sn	118	786.7	5.1	**0.0781**	0.009	11.7	ug/L	450	Standard
	Sb	123	893.7	15.1	**0.2036**	0.032	15.8	ug/L	105	Standard
	Ba	135	155.0	26.2	**0.0290**	0.021	73.2	ug/L	111	Standard
	Ce	140	46.7	89.9				ug/L	107	Standard
>	**Tb**	159	851423.1	1.4				ug/L	890342	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	204.7	101.3	**0.0248**	0.028	114.4	ug/L	19	Standard
	Tl	205	236.7	112.3	**0.0410**	0.044	108.4	ug/L	17	Standard
	Pb	206	322.0	34.4	**0.0148**	0.023	155.8	ug/L	247	Standard
	Pb	207	278.7	40.6	**0.0143**	0.026	182.5	ug/L	215	Standard
	Pb	208	1396.0	53.4	**0.0288**	0.046	160.2	ug/L	770	Standard
	U	238	214.3	118.3	**0.0365**	0.044	119.9	ug/L	13	Standard
>	**Bi**	209	476880.3	2.0				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	25.0	52.9	**-0.0037**	0.018	500.1	mg/L	35	Standard
K	39	18.3	56.8	**-0.0172**	0.057	329.7	mg/L	25	Standard
Ca	43	26.7	47.2	**0.1406**	2.740	1948.1	mg/L	38	Standard
Fe	54	132.6	9.5	**-0.0068**	0.014	206.9	mg/L	126	Standard
Fe	57	211.7	5.5	**-0.2294**	0.073	31.8	mg/L	245	Standard
Sc-1	45	24342.9	3.0				mg/L	25066	Standard
Cl	35	143897.4	0.2				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	1373.4	16.1				ug/L	1350	Standard
P	31	19679.4	1.3				ug/L	18393	Standard
S	34	4449.0	1.1				ug/L	3739	Standard
Sr	88	78.3	19.5				ug/L	78	Standard
C	12	66.7	22.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.3	179.8				mg/L	2	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	23	Standard
I	127	996.7	2.4				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.379	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.644
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.780
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

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Method 6020 - Summary Report

Sample ID: L1606061601
Sample Date/Time: Tuesday, June 21, 2016 15:22:26
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61906.2	1.7				ug/L	60176	Standard
	Be	9	353.3	21.2	**0.4684**	0.095	20.2	ug/L	5	Standard
	Al	27	3358447.2	1.6	**24.8506**	0.581	2.3	ug/L	832	Standard
	Sc	45	24973.9	2.3				ug/L	25066	Standard
	Ti	47	298.0	14.4	**1.3564**	0.221	16.3	ug/L	38	Standard
	V	51	-5189.4	20.1	**-1.0574**	0.187	17.7	ug/L	974	Standard
	Cr	52	703390.4	0.3	**111.3019**	1.587	1.4	ug/L	5792	Standard
	Cr	53	93571.6	3.2	**115.6494**	2.048	1.8	ug/L	347	Standard
	Mn	55	821479.7	1.9	**130.0789**	4.283	3.3	ug/L	1164	Standard
	Co	59	94839.6	1.2	**15.7576**	0.403	2.6	ug/L	303	Standard
	Ni	60	304442.7	1.6	**171.4532**	1.376	0.8	ug/L	291	Standard
	Cu	65	7661.9	1.9	**4.2471**	0.033	0.8	ug/L	173	Standard
	Zn	66	10599.0	2.6	**10.1313**	0.186	1.8	ug/L	130	Standard
>	**Ge**	72	484843.6	1.4				ug/L	491724	Standard
	As	75	570.7	9.1	**0.5858**	0.057	9.7	ug/L	-25	Standard
	Se	82	251.1	0.8	**2.3709**	0.055	2.3	ug/L	12	Standard
	Se-1	77	415.7	8.5	**5.3115**	0.417	7.8	ug/L	57	Standard
>	**Ga**	71	288.3	8.9				mg/L	148	Standard
	Rb	85	2623.6	2.0				ug/L	18	Standard
	Y	89	398713.2	0.8				ug/L	401845	Standard
>	**Rh**	103	56.7	27.0				ug/L	10	Standard
	Mo	98	2419.6	2.5	**1.0703**	0.029	2.7	ug/L	12	Standard
	Ag	107	130.0	2.3	**0.0081**	0.001	10.1	ug/L	98	Standard
	Cd	111	262.1	7.2	**0.1442**	0.012	8.3	mg/L	11	Standard
	Cd	114	609.6	2.6	**0.1378**	0.003	2.4	ug/L	21	Standard
>	**In**	115	513017.2	1.6				ug/L	547487	Standard
	Sn	118	821.7	9.2	**0.0947**	0.014	14.3	ug/L	450	Standard
	Sb	123	733.0	25.0	**0.1761**	0.043	24.6	ug/L	105	Standard
	Ba	135	99016.2	1.6	**57.5032**	0.291	0.5	ug/L	111	Standard
	Ce	140	12887.1	3.7				ug/L	107	Standard
>	**Tb**	159	848478.4	1.1				ug/L	890342	Standard
	Ho	165	410.0	18.2				ug/L	10	Standard
	Tl	203	359.3	6.1	**0.0475**	0.004	8.4	ug/L	19	Standard
	Tl	205	305.0	1.6	**0.0538**	0.002	3.7	ug/L	17	Standard
	Pb	206	880.4	2.3	**0.1394**	0.005	3.8	ug/L	247	Standard
	Pb	207	741.7	1.8	**0.1280**	0.007	5.6	ug/L	215	Standard
	Pb	208	2788.1	1.1	**0.1210**	0.006	4.6	ug/L	770	Standard
	U	238	430.0	8.6	**0.0762**	0.008	10.9	ug/L	13	Standard
>	**Bi**	209	469289.0	2.2				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	44893.1	1.4	**61.8782**	1.088	1.8	mg/L	35	Standard
K	39	80.0	10.8	**0.2875**	0.036	12.5	mg/L	25	Standard
Ca	43	58.3	34.6	**6.1586**	3.723	60.4	mg/L	38	Standard
Fe	54	459.2	2.0	**0.3009**	0.006	1.9	mg/L	126	Standard
Fe	57	306.7	6.6	**0.1228**	0.057	46.4	mg/L	245	Standard
> **Sc-1**	45	24973.9	2.3				mg/L	25066	Standard
Cl	35	156643.7	1.7				ug/L	125857	Standard
Kr	83	2.7	43.3				ug/L	1	Standard
Br	81	58328.8	2.2				ug/L	1350	Standard
P	31	28678.8	2.1				ug/L	18393	Standard
S	34	4364.0	4.4				ug/L	3739	Standard
Sr	88	118.3	19.1				ug/L	78	Standard
C	12	100.0	72.1				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	613.2	2.5				mg/L	2	Standard
Ho-1	165	410.0	18.2				mg/L	10	Standard
Er	166	350.0	12.5				mg/L	23	Standard
I	127	70092.1	5.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.875	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.601	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	93.704
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.272
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Lower	V	51	
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	

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Mn 55 Upper, S, EEE	Mn	55
Ni 60 Upper, S, EEE	Ni	60

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Method 6020 - Summary Report

Sample ID: L1606061602
Sample Date/Time: Tuesday, June 21, 2016 15:25:38
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62282.9	3.9				ug/L	60176	Standard
	Be	9	13.3	78.1	**0.0089**	0.014	158.6	ug/L	5	Standard
	Al	27	17049432.7	0.9	**125.5063**	3.981	3.2	ug/L	832	Standard
	Sc	45	25169.2	3.4				ug/L	25066	Standard
	Ti	47	807.7	16.8	**4.0608**	0.742	18.3	ug/L	38	Standard
	V	51	2867.2	4.6	**0.3212**	0.020	6.3	ug/L	974	Standard
	Cr	52	13094.0	1.7	**1.1584**	0.021	1.8	ug/L	5792	Standard
	Cr	53	5707.8	16.6	**6.7038**	1.131	16.9	ug/L	347	Standard
	Mn	55	4214750.0	1.0	**671.9640**	7.527	1.1	ug/L	1164	Standard
	Co	59	2363.5	2.5	**0.3468**	0.009	2.6	ug/L	303	Standard
	Ni	60	2095.5	4.7	**0.9976**	0.054	5.4	ug/L	291	Standard
	Cu	65	827.0	5.3	**0.3740**	0.026	7.0	ug/L	173	Standard
	Zn	66	2898.6	2.7	**2.6166**	0.093	3.5	ug/L	130	Standard
>	**Ge**	72	482049.8	0.7				ug/L	491724	Standard
	As	75	2600.5	3.1	**2.5615**	0.093	3.7	ug/L	-25	Standard
	Se	82	880.4	1.9	**8.5951**	0.224	2.6	ug/L	12	Standard
	Se-1	77	853.7	1.5	**11.6729**	0.213	1.8	ug/L	57	Standard
>	**Ga**	71	506.7	6.6				mg/L	148	Standard
	Rb	85	23870.5	3.1				ug/L	18	Standard
	Y	89	394978.3	1.9				ug/L	401845	Standard
>	**Rh**	103	256.7	27.0				ug/L	10	Standard
	Mo	98	1604.0	4.5	**0.7016**	0.035	5.0	ug/L	12	Standard
	Ag	107	79.0	13.3	**-0.0012**	0.002	164.6	ug/L	98	Standard
	Cd	111	16.1	12.6	**0.0044**	0.001	27.5	mg/L	11	Standard
	Cd	114	59.0	10.1	**0.0092**	0.001	13.1	ug/L	21	Standard
>	**In**	115	517707.0	1.4				ug/L	547487	Standard
	Sn	118	2710.2	6.3	**0.4777**	0.029	6.0	ug/L	450	Standard
	Sb	123	297.7	21.5	**0.0665**	0.016	23.7	ug/L	105	Standard
	Ba	135	499345.8	0.5	**287.6104**	2.831	1.0	ug/L	111	Standard
	Ce	140	10685.4	3.5				ug/L	107	Standard
>	**Tb**	159	859857.7	0.6				ug/L	890342	Standard
	Ho	165	171.7	6.7				ug/L	10	Standard
	Tl	203	147.0	7.7	**0.0176**	0.002	10.6	ug/L	19	Standard
	Tl	205	131.7	9.6	**0.0241**	0.002	10.1	ug/L	17	Standard
	Pb	206	806.4	2.2	**0.1255**	0.005	3.9	ug/L	247	Standard
	Pb	207	665.0	1.0	**0.1116**	0.004	3.1	ug/L	215	Standard
	Pb	208	2632.8	1.6	**0.1132**	0.001	0.6	ug/L	770	Standard
	U	238	475.7	3.2	**0.0854**	0.003	3.7	ug/L	13	Standard
>	**Bi**	209	462865.3	1.2				ug/L	503143	Standard

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Na	23	5.0	100.0	**54.7235**	55.001	100.5	mg/L	2	Standard
Mg	24	92887.3	2.9	**127.2146**	7.642	6.0	mg/L	35	Standard
K	39	313.3	13.8	**1.4400**	0.167	11.6	mg/L	25	Standard
Ca	43	165.0	21.9	**27.2389**	8.231	30.2	mg/L	38	Standard
Fe	54	29519.0	1.0	**27.7809**	0.908	3.3	mg/L	126	Standard
Fe	57	8005.4	3.0	**30.3493**	0.303	1.0	mg/L	245	Standard
> **Sc-1**	45	25169.2	3.4				mg/L	25066	Standard
Cl	35	152557.1	2.2				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	221629.9	2.5				ug/L	1350	Standard
P	31	26778.6	1.5				ug/L	18393	Standard
S	34	4655.7	4.3				ug/L	3739	Standard
Sr	88	723.4	3.8				ug/L	78	Standard
C	12	93.3	22.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	0	Standard
Dy	164	336.0	12.3				mg/L	2	Standard
Ho-1	165	171.7	6.7				mg/L	10	Standard
Er	166	153.3	19.9				mg/L	23	Standard
I	127	284517.0	8.4				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.501	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.033	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.561
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	91.995
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606061604
Sample Date/Time: Tuesday, June 21, 2016 15:28:49
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57020.4	1.0				ug/L	60176	Standard
	Be	9	11.7	24.7	**0.0081**	0.004	51.2	ug/L	5	Standard
	Al	27	1079402.9	2.6	**8.6639**	0.184	2.1	ug/L	832	Standard
	Sc	45	25052.4	2.1				ug/L	25066	Standard
	Ti	47	402.3	58.5	**1.8535**	1.201	64.8	ug/L	38	Standard
	V	51	1463.1	9.7	**0.0731**	0.024	32.4	ug/L	974	Standard
	Cr	52	14139.6	1.7	**1.2608**	0.045	3.6	ug/L	5792	Standard
	Cr	53	2088.5	7.6	**2.1170**	0.178	8.4	ug/L	347	Standard
	Mn	55	835676.7	0.8	**129.2089**	1.084	0.8	ug/L	1164	Standard
	Co	59	3523.1	1.4	**0.5240**	0.006	1.1	ug/L	303	Standard
	Ni	60	4025.9	3.0	**2.0265**	0.074	3.6	ug/L	291	Standard
	Cu	65	706.3	1.2	**0.2935**	0.005	1.8	ug/L	173	Standard
	Zn	66	9224.1	1.2	**8.5777**	0.163	1.9	ug/L	130	Standard
>	**Ge**	72	496394.0	0.7				ug/L	491724	Standard
	As	75	111.7	16.0	**0.1393**	0.017	12.0	ug/L	-25	Standard
	Se	82	53.9	8.6	**0.4236**	0.046	10.9	ug/L	12	Standard
	Se-1	77	90.3	6.8	**0.6163**	0.078	12.7	ug/L	57	Standard
>	**Ga**	71	265.0	3.8				mg/L	148	Standard
	Rb	85	10645.4	6.1				ug/L	18	Standard
	Y	89	419565.3	1.2				ug/L	401845	Standard
>	**Rh**	103	76.7	21.0				ug/L	10	Standard
	Mo	98	94.8	4.8	**0.0348**	0.002	5.0	ug/L	12	Standard
	Ag	107	92.7	8.0	**0.0002**	0.001	504.2	ug/L	98	Standard
	Cd	111	330.1	5.6	**0.1699**	0.010	5.6	mg/L	11	Standard
	Cd	114	763.9	13.9	**0.1615**	0.022	13.6	ug/L	21	Standard
>	**In**	115	550787.3	1.4				ug/L	547487	Standard
	Sn	118	540.0	13.8	**0.0292**	0.013	44.4	ug/L	450	Standard
	Sb	123	257.9	10.5	**0.0527**	0.006	12.1	ug/L	105	Standard
	Ba	135	38973.7	1.1	**21.0479**	0.260	1.2	ug/L	111	Standard
	Ce	140	2586.9	4.8				ug/L	107	Standard
>	**Tb**	159	856869.1	0.8				ug/L	890342	Standard
	Ho	165	58.3	54.4				ug/L	10	Standard
	Tl	203	144.7	17.5	**0.0161**	0.003	20.9	ug/L	19	Standard
	Tl	205	115.0	28.5	**0.0201**	0.005	26.9	ug/L	17	Standard
	Pb	206	457.0	4.6	**0.0419**	0.005	10.8	ug/L	247	Standard
	Pb	207	362.3	5.9	**0.0324**	0.005	16.3	ug/L	215	Standard
	Pb	208	1499.7	3.6	**0.0335**	0.003	9.2	ug/L	770	Standard
	U	238	42.7	10.6	**0.0065**	0.001	11.8	ug/L	13	Standard
>	**Bi**	209	488736.5	0.4				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.7135**	32.404	173.2	mg/L	2	Standard
Mg	24	2508.5	0.8	**3.4105**	0.088	2.6	mg/L	35	Standard
K	39	146.7	2.0	**0.6192**	0.005	0.8	mg/L	25	Standard
Ca	43	36.7	47.9	**1.9276**	3.571	185.3	mg/L	38	Standard
Fe	54	2278.8	4.5	**2.0291**	0.142	7.0	mg/L	126	Standard
Fe	57	766.7	5.8	**1.9335**	0.140	7.2	mg/L	245	Standard
> **Sc-1**	45	25052.4	2.1				mg/L	25066	Standard
Cl	35	147914.5	0.4				ug/L	125857	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	9583.1	14.5				ug/L	1350	Standard
P	31	24017.4	7.0				ug/L	18393	Standard
S	34	4402.3	1.3				ug/L	3739	Standard
Sr	88	115.0	24.2				ug/L	78	Standard
C	12	110.0	15.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	111.3	9.5				mg/L	2	Standard
Ho-1	165	58.3	54.4				mg/L	10	Standard
Er	166	43.3	48.0				mg/L	23	Standard
I	127	122962.9	5.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.756	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.950	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.603
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.137
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606065001
Sample Date/Time: Tuesday, June 21, 2016 15:32:01
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58737.0	2.5				ug/L	60176	Standard
	Be	9	13.3	78.1	**0.0099**	0.015	148.6	ug/L	5	Standard
	Al	27	20311195.1	0.7	**158.4647**	3.057	1.9	ug/L	832	Standard
	Sc	45	24576.6	0.4				ug/L	25066	Standard
	Ti	47	298.3	18.8	**1.3401**	0.257	19.2	ug/L	38	Standard
	V	51	-26804.6	32.1	**-4.7157**	1.536	32.6	ug/L	974	Standard
	Cr	52	3156638.5	1.5	**497.8823**	3.945	0.8	ug/L	5792	Standard
	Cr	53	406838.5	1.2	**499.5299**	10.508	2.1	ug/L	347	Standard
	Mn	55	3878787.1	0.6	**609.0624**	15.870	2.6	ug/L	1164	Standard
	Co	59	134308.5	1.9	**22.1248**	0.836	3.8	ug/L	303	Standard
	Ni	60	1500074.7	0.8	**837.5062**	11.813	1.4	ug/L	291	Standard
	Cu	65	3294.7	4.2	**1.7525**	0.064	3.7	ug/L	173	Standard
	Zn	66	3534.1	0.8	**3.1886**	0.054	1.7	ug/L	130	Standard
>	**Ge**	72	489585.9	2.0				ug/L	491724	Standard
	As	75	619.2	16.7	**0.6262**	0.096	15.3	ug/L	-25	Standard
	Se	82	219.8	7.3	**2.0451**	0.198	9.7	ug/L	12	Standard
	Se-1	77	661.7	6.7	**8.7481**	0.445	5.1	ug/L	57	Standard
>	**Ga**	71	480.0	18.8				mg/L	148	Standard
	Rb	85	7842.0	1.6				ug/L	18	Standard
	Y	89	401986.8	1.4				ug/L	401845	Standard
>	**Rh**	103	255.0	17.1				ug/L	10	Standard
	Mo	98	3790.0	2.1	**1.6493**	0.037	2.3	ug/L	12	Standard
	Ag	107	91.7	12.6	**0.0009**	0.002	229.9	ug/L	98	Standard
	Cd	111	318.1	9.7	**0.1728**	0.018	10.6	mg/L	11	Standard
	Cd	114	767.4	4.0	**0.1715**	0.006	3.7	ug/L	21	Standard
>	**In**	115	522178.8	0.8				ug/L	547487	Standard
	Sn	118	655.0	6.0	**0.0582**	0.008	14.0	ug/L	450	Standard
	Sb	123	316.3	5.2	**0.0705**	0.004	6.2	ug/L	105	Standard
	Ba	135	988361.5	1.0	**564.4491**	9.763	1.7	ug/L	111	Standard
	Ce	140	3193.7	1.3				ug/L	107	Standard
>	**Tb**	159	848147.8	2.2				ug/L	890342	Standard
	Ho	165	61.7	20.4				ug/L	10	Standard
	Tl	203	205.3	8.6	**0.0262**	0.002	9.4	ug/L	19	Standard
	Tl	205	211.7	4.9	**0.0383**	0.002	4.4	ug/L	17	Standard
	Pb	206	552.0	3.0	**0.0694**	0.003	3.8	ug/L	247	Standard
	Pb	207	484.3	2.7	**0.0679**	0.004	6.5	ug/L	215	Standard
	Pb	208	1839.4	3.4	**0.0618**	0.005	8.1	ug/L	770	Standard
	U	238	2510.9	1.9	**0.4572**	0.010	2.2	ug/L	13	Standard
>	**Bi**	209	459869.7	1.0				ug/L	503143	Standard

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Na	23	5.0	0.0	**56.9736**	0.236	0.4	mg/L	2	Standard
Mg	24	79633.7	1.2	**111.5486**	1.739	1.6	mg/L	35	Standard
K	39	216.7	13.5	**0.9891**	0.148	14.9	mg/L	25	Standard
Ca	43	143.3	11.2	**23.4985**	3.298	14.0	mg/L	38	Standard
Fe	54	8009.6	2.0	**7.6156**	0.141	1.9	mg/L	126	Standard
Fe	57	2330.2	7.0	**8.2796**	0.633	7.6	mg/L	245	Standard
> **Sc-1**	45	24576.6	0.4				mg/L	25066	Standard
Cl	35	147026.1	2.2				ug/L	125857	Standard
Kr	83	3.0	33.3				ug/L	1	Standard
Br	81	52694.8	2.4				ug/L	1350	Standard
P	31	26670.1	1.1				ug/L	18393	Standard
S	34	4514.0	2.6				ug/L	3739	Standard
Sr	88	530.0	12.0				ug/L	78	Standard
C	12	150.0	17.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	69.8	80.1				mg/L	2	Standard
Ho-1	165	61.7	20.4				mg/L	10	Standard
Er	166	73.3	47.9				mg/L	23	Standard
I	127	406278.2	6.2				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		97.609	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.565	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.377
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	91.399
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
V 51 Lower	V	51	
Cr 52 Upper, S, EEE	Cr	52	

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Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Ni 60 Upper, S, EEE	Ni	60
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606065002
Sample Date/Time: Tuesday, June 21, 2016 15:35:12
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60596.0	1.9				ug/L	60176	Standard
	Be	9	13.3	21.7	**0.0094**	0.004	40.0	ug/L	5	Standard
	Al	27	8739182.4	2.0	**66.0672**	0.799	1.2	ug/L	832	Standard
	Sc	45	26192.6	2.2				ug/L	25066	Standard
	Ti	47	278.7	7.4	**1.2062**	0.081	6.7	ug/L	38	Standard
	V	51	739.9	19.6	**-0.0487**	0.023	48.1	ug/L	974	Standard
	Cr	52	22061.4	0.9	**2.4614**	0.056	2.3	ug/L	5792	Standard
	Cr	53	7727.0	4.4	**8.8615**	0.540	6.1	ug/L	347	Standard
	Mn	55	1194045.7	2.0	**182.8701**	3.213	1.8	ug/L	1164	Standard
	Co	59	2942.3	2.7	**0.4247**	0.011	2.5	ug/L	303	Standard
	Ni	60	3788.5	1.5	**1.8749**	0.030	1.6	ug/L	291	Standard
	Cu	65	823.4	3.2	**0.3537**	0.007	2.1	ug/L	173	Standard
	Zn	66	2433.2	2.0	**2.0660**	0.023	1.1	ug/L	130	Standard
>	**Ge**	72	501409.8	1.7				ug/L	491724	Standard
	As	75	283.2	37.7	**0.2992**	0.102	34.0	ug/L	-25	Standard
	Se	82	131.4	7.4	**1.1550**	0.115	9.9	ug/L	12	Standard
	Se-1	77	578.0	3.8	**7.3693**	0.169	2.3	ug/L	57	Standard
>	**Ga**	71	285.0	6.3				mg/L	148	Standard
	Rb	85	8877.6	3.1				ug/L	18	Standard
	Y	89	394026.5	1.2				ug/L	401845	Standard
>	**Rh**	103	161.7	9.4				ug/L	10	Standard
	Mo	98	195.9	2.8	**0.0813**	0.003	4.3	ug/L	12	Standard
	Ag	107	96.7	5.1	**0.0018**	0.001	33.2	ug/L	98	Standard
	Cd	111	123.0	9.0	**0.0640**	0.005	8.5	mg/L	11	Standard
	Cd	114	254.1	11.5	**0.0540**	0.007	13.5	ug/L	21	Standard
>	**In**	115	520782.3	1.6				ug/L	547487	Standard
	Sn	118	470.0	9.1	**0.0211**	0.009	42.4	ug/L	450	Standard
	Sb	123	310.6	7.2	**0.0693**	0.007	9.8	ug/L	105	Standard
	Ba	135	314668.7	2.2	**180.1229**	1.150	0.6	ug/L	111	Standard
	Ce	140	4312.3	4.3				ug/L	107	Standard
>	**Tb**	159	863525.5	2.8				ug/L	890342	Standard
	Ho	165	90.0	9.6				ug/L	10	Standard
	Tl	203	216.7	3.1	**0.0269**	0.001	4.8	ug/L	19	Standard
	Tl	205	188.3	12.5	**0.0332**	0.005	14.2	ug/L	17	Standard
	Pb	206	400.0	2.1	**0.0323**	0.001	2.6	ug/L	247	Standard
	Pb	207	353.7	7.0	**0.0327**	0.004	13.3	ug/L	215	Standard
	Pb	208	1312.0	2.8	**0.0243**	0.004	16.7	ug/L	770	Standard
	U	238	1391.1	5.3	**0.2449**	0.008	3.4	ug/L	13	Standard
>	**Bi**	209	474675.7	2.0				ug/L	503143	Standard

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Na	23	5.0	100.0	**54.0687**	53.938	99.8	mg/L	2	Standard
Mg	24	62982.4	3.0	**82.7804**	2.551	3.1	mg/L	35	Standard
K	39	133.3	17.7	**0.5224**	0.099	18.9	mg/L	25	Standard
Ca	43	83.3	24.2	**10.4165**	3.976	38.2	mg/L	38	Standard
Fe	54	266.1	10.7	**0.1052**	0.027	25.7	mg/L	126	Standard
Fe	57	355.0	11.2	**0.2514**	0.173	69.0	mg/L	245	Standard
> **Sc-1**	45	26192.6	2.2				mg/L	25066	Standard
Cl	35	150054.1	0.8				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	29669.0	1.2				ug/L	1350	Standard
P	31	28545.2	2.4				ug/L	18393	Standard
S	34	4138.9	4.6				ug/L	3739	Standard
Sr	88	250.0	10.6				ug/L	78	Standard
C	12	156.7	19.5				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	133.3	30.3				mg/L	2	Standard
Ho-1	165	90.0	9.6				mg/L	10	Standard
Er	166	70.0	0.0				mg/L	23	Standard
I	127	661507.8	3.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.698	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.970	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.122
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.342
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606065003
Sample Date/Time: Tuesday, June 21, 2016 15:38:23
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63387.4	2.8				ug/L	60176	Standard
	Be	9	70.0	18.9	**0.0835**	0.017	20.0	ug/L	5	Standard
	Al	27	5157375.6	0.9	**37.2814**	0.808	2.2	ug/L	832	Standard
	Sc	45	26581.6	2.7				ug/L	25066	Standard
	Ti	47	1387.7	9.4	**6.8983**	0.595	8.6	ug/L	38	Standard
	V	51	-9213.7	17.6	**-1.7068**	0.290	17.0	ug/L	974	Standard
	Cr	52	1335310.3	0.9	**206.9695**	2.043	1.0	ug/L	5792	Standard
	Cr	53	177419.5	1.4	**214.3688**	2.599	1.2	ug/L	347	Standard
	Mn	55	997073.2	0.3	**154.0720**	2.167	1.4	ug/L	1164	Standard
	Co	59	16548.7	1.0	**2.6420**	0.067	2.5	ug/L	303	Standard
	Ni	60	80673.3	2.0	**44.1887**	0.256	0.6	ug/L	291	Standard
	Cu	65	12419.1	2.2	**6.7740**	0.077	1.1	ug/L	173	Standard
	Zn	66	5844.5	1.7	**5.3426**	0.029	0.5	ug/L	130	Standard
>	**Ge**	72	496879.0	1.5				ug/L	491724	Standard
	As	75	1809.6	8.9	**1.7401**	0.151	8.7	ug/L	-25	Standard
	Se	82	252.2	9.4	**2.3215**	0.229	9.8	ug/L	12	Standard
	Se-1	77	378.7	3.2	**4.6535**	0.175	3.8	ug/L	57	Standard
>	**Ga**	71	746.7	6.2				mg/L	148	Standard
	Rb	85	13919.7	1.1				ug/L	18	Standard
	Y	89	410755.2	2.3				ug/L	401845	Standard
>	**Rh**	103	111.7	5.2				ug/L	10	Standard
	Mo	98	5865.4	1.5	**2.4053**	0.027	1.1	ug/L	12	Standard
	Ag	107	135.7	10.3	**0.0074**	0.003	38.1	ug/L	98	Standard
	Cd	111	1056.6	4.0	**0.5506**	0.033	6.0	mg/L	11	Standard
	Cd	114	2556.7	1.3	**0.5477**	0.019	3.4	ug/L	21	Standard
>	**In**	115	554660.2	2.1				ug/L	547487	Standard
	Sn	118	1000.0	6.5	**0.1161**	0.012	10.2	ug/L	450	Standard
	Sb	123	402.1	12.9	**0.0857**	0.010	11.9	ug/L	105	Standard
	Ba	135	110239.6	0.8	**59.2270**	0.804	1.4	ug/L	111	Standard
	Ce	140	24279.4	2.4				ug/L	107	Standard
>	**Tb**	159	911640.4	0.6				ug/L	890342	Standard
	Ho	165	350.0	16.5				ug/L	10	Standard
	Tl	203	434.7	1.5	**0.0538**	0.001	1.7	ug/L	19	Standard
	Tl	205	305.0	7.5	**0.0500**	0.004	7.0	ug/L	17	Standard
	Pb	206	4440.3	0.9	**0.8568**	0.008	1.0	ug/L	247	Standard
	Pb	207	3810.8	1.1	**0.8086**	0.012	1.4	ug/L	215	Standard
	Pb	208	15060.6	1.4	**0.8488**	0.012	1.4	ug/L	770	Standard
	U	238	450.7	0.8	**0.0741**	0.001	0.7	ug/L	13	Standard
>	**Bi**	209	504464.9	0.3				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	31947.0	1.0	**41.3748**	1.485	3.6	mg/L	35	Standard
K	39	130.0	21.4	**0.4999**	0.137	27.3	mg/L	25	Standard
Ca	43	60.0		**5.8324**	0.297	5.1	mg/L	38	Standard
Fe	54	4403.4	0.3	**3.8059**	0.116	3.0	mg/L	126	Standard
Fe	57	1286.7	20.4	**3.6876**	0.933	25.3	mg/L	245	Standard
> **Sc-1**	45	26581.6	2.7				mg/L	25066	Standard
Cl	35	147975.1	1.2				ug/L	125857	Standard
Kr	83	2.7	43.3				ug/L	1	Standard
Br	81	55598.5	2.9				ug/L	1350	Standard
P	31	23972.3	2.6				ug/L	18393	Standard
S	34	4225.6	2.4				ug/L	3739	Standard
Sr	88	170.0	19.3				ug/L	78	Standard
C	12	100.0	10.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	656.9	13.7				mg/L	2	Standard
Ho-1	165	350.0	16.5				mg/L	10	Standard
Er	166	343.3	11.0				mg/L	23	Standard
I	127	145460.0	1.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.337	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.048	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.310	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.263	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Lower	V	51	
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	

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Mn 55 Upper, S, EEE	Mn	55

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Method 6020 - Summary Report

Sample ID: L1606065008
Sample Date/Time: Tuesday, June 21, 2016 15:41:35
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63802.5	2.9				ug/L	60176	Standard
	Be	9	36.7	28.4	**0.0391**	0.013	34.5	ug/L	5	Standard
	Al	27	2078545.0	1.4	**14.9291**	0.633	4.2	ug/L	832	Standard
	Sc	45	25579.9	3.4				ug/L	25066	Standard
	Ti	47	845.0	4.5	**4.1986**	0.233	5.6	ug/L	38	Standard
	V	51	3095.5	13.9	**0.3533**	0.071	20.0	ug/L	974	Standard
	Cr	52	11042.0	0.8	**0.8065**	0.028	3.5	ug/L	5792	Standard
	Cr	53	4624.0	3.3	**5.2817**	0.152	2.9	ug/L	347	Standard
	Mn	55	1458217.0	0.5	**229.3462**	1.807	0.8	ug/L	1164	Standard
	Co	59	5268.2	0.6	**0.8223**	0.014	1.7	ug/L	303	Standard
	Ni	60	16880.1	0.7	**9.2581**	0.054	0.6	ug/L	291	Standard
	Cu	65	1985.8	3.0	**1.0205**	0.041	4.0	ug/L	173	Standard
	Zn	66	32937.1	1.1	**31.7490**	0.128	0.4	ug/L	130	Standard
>	**Ge**	72	488364.0	1.2				ug/L	491724	Standard
	As	75	999.3	3.7	**0.9925**	0.031	3.1	ug/L	-25	Standard
	Se	82	345.9	2.6	**3.2758**	0.047	1.4	ug/L	12	Standard
	Se-1	77	334.7	3.8	**4.1184**	0.171	4.1	ug/L	57	Standard
>	**Ga**	71	493.3	14.2				mg/L	148	Standard
	Rb	85	9207.8	3.6				ug/L	18	Standard
	Y	89	437252.9	0.3				ug/L	401845	Standard
>	**Rh**	103	80.0	18.8				ug/L	10	Standard
	Mo	98	268.9	2.1	**0.1055**	0.004	3.8	ug/L	12	Standard
	Ag	107	76.3	10.0	**-0.0027**	0.001	41.6	ug/L	98	Standard
	Cd	111	118.8	3.8	**0.0574**	0.003	4.7	mg/L	11	Standard
	Cd	114	286.1	7.3	**0.0571**	0.005	9.4	ug/L	21	Standard
>	**In**	115	557575.9	1.6				ug/L	547487	Standard
	Sn	118	580.0	4.0	**0.0356**	0.003	9.3	ug/L	450	Standard
	Sb	123	413.5	12.2	**0.0880**	0.012	14.2	ug/L	105	Standard
	Ba	135	72473.6	0.8	**38.7111**	0.451	1.2	ug/L	111	Standard
	Ce	140	27496.6	2.4				ug/L	107	Standard
>	**Tb**	159	890154.3	0.6				ug/L	890342	Standard
	Ho	165	563.3	4.6				ug/L	10	Standard
	Tl	203	194.0	10.1	**0.0231**	0.003	13.1	ug/L	19	Standard
	Tl	205	155.0	11.6	**0.0269**	0.003	10.3	ug/L	17	Standard
	Pb	206	503.3	4.6	**0.0525**	0.006	12.2	ug/L	247	Standard
	Pb	207	451.7	4.0	**0.0538**	0.003	6.1	ug/L	215	Standard
	Pb	208	1721.0	1.3	**0.0480**	0.002	3.9	ug/L	770	Standard
	U	238	216.3	8.8	**0.0365**	0.003	7.7	ug/L	13	Standard
>	**Bi**	209	485551.6	1.6				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.8740**	30.950	173.2	mg/L	2	Standard
Mg	24	34632.9	0.6	**46.6189**	1.523	3.3	mg/L	35	Standard
K	39	138.3	25.6	**0.5602**	0.155	27.6	mg/L	25	Standard
Ca	43	65.0	13.3	**7.2572**	1.904	26.2	mg/L	38	Standard
Fe	54	279.3	17.0	**0.1243**	0.053	42.6	mg/L	126	Standard
Fe	57	271.7	11.8	**-0.0378**	0.151	397.7	mg/L	245	Standard
> **Sc-1**	45	25579.9	3.4				mg/L	25066	Standard
Cl	35	178666.6	0.8				ug/L	125857	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	80231.9	1.9				ug/L	1350	Standard
P	31	24055.7	0.9				ug/L	18393	Standard
S	34	3798.8	4.0				ug/L	3739	Standard
Sr	88	145.0	11.9				ug/L	78	Standard
C	12	176.7	22.9				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	130.0	23.1				mg/L	0	Standard
Dy	164	829.7	17.8				mg/L	2	Standard
Ho-1	165	563.3	4.6				mg/L	10	Standard
Er	166	563.3	12.6				mg/L	23	Standard
I	127	75514.5	3.5				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.027	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.317	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.843	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.504	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606072902
Sample Date/Time: Tuesday, June 21, 2016 15:44:46
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61000.9	2.3				ug/L	60176	Standard
	Be	9	48.3	31.6	**0.0571**	0.019	34.0	ug/L	5	Standard
	Al	27	1265197.3	0.4	**9.4968**	0.215	2.3	ug/L	832	Standard
	Sc	45	24843.7	5.1				ug/L	25066	Standard
	Ti	47	295.0	39.1	**1.2721**	0.610	48.0	ug/L	38	Standard
	V	51	1662.0	6.7	**0.0984**	0.013	12.9	ug/L	974	Standard
	Cr	52	9640.7	1.5	**0.5183**	0.014	2.7	ug/L	5792	Standard
	Cr	53	1788.4	7.9	**1.6929**	0.129	7.6	ug/L	347	Standard
	Mn	55	269286.4	1.8	**40.3553**	1.271	3.2	ug/L	1164	Standard
	Co	59	7695.6	2.0	**1.1688**	0.020	1.7	ug/L	303	Standard
	Ni	60	3736.8	1.2	**1.8110**	0.042	2.3	ug/L	291	Standard
	Cu	65	1102.4	3.8	**0.4960**	0.012	2.4	ug/L	173	Standard
	Zn	66	5766.8	0.8	**5.1234**	0.095	1.8	ug/L	130	Standard
>	**Ge**	72	510457.8	2.2				ug/L	491724	Standard
	As	75	81.7	14.6	**0.1091**	0.013	11.6	ug/L	-25	Standard
	Se	82	51.2	4.3	**0.3844**	0.013	3.3	ug/L	12	Standard
	Se-1	77	109.3	5.0	**0.8419**	0.100	11.9	ug/L	57	Standard
>	**Ga**	71	216.7	17.3				mg/L	148	Standard
	Rb	85	27894.0	1.5				ug/L	18	Standard
	Y	89	417086.1	2.1				ug/L	401845	Standard
>	**Rh**	103	31.7	24.1				ug/L	10	Standard
	Mo	98	60.3	14.2	**0.0209**	0.003	16.1	ug/L	12	Standard
	Ag	107	152.7	9.2	**0.0108**	0.003	25.1	ug/L	98	Standard
	Cd	111	73.5	21.7	**0.0349**	0.009	26.3	mg/L	11	Standard
	Cd	114	176.5	11.5	**0.0346**	0.004	11.6	ug/L	21	Standard
>	**In**	115	541515.1	1.4				ug/L	547487	Standard
	Sn	118	1061.7	1.2	**0.1327**	0.005	4.0	ug/L	450	Standard
	Sb	123	145.5	4.3	**0.0270**	0.002	7.3	ug/L	105	Standard
	Ba	135	64548.3	2.6	**35.5016**	1.269	3.6	ug/L	111	Standard
	Ce	140	11564.4	2.1				ug/L	107	Standard
>	**Tb**	159	870646.6	1.9				ug/L	890342	Standard
	Ho	165	225.0	10.2				ug/L	10	Standard
	Tl	203	276.7	4.4	**0.0339**	0.001	3.4	ug/L	19	Standard
	Tl	205	246.7	10.4	**0.0416**	0.004	8.7	ug/L	17	Standard
	Pb	206	518.0	0.8	**0.0540**	0.002	3.0	ug/L	247	Standard
	Pb	207	451.0	6.3	**0.0522**	0.006	10.7	ug/L	215	Standard
	Pb	208	1790.0	3.5	**0.0508**	0.006	11.7	ug/L	770	Standard
	U	238	117.7	5.0	**0.0192**	0.001	3.2	ug/L	13	Standard
>	**Bi**	209	492368.0	1.9				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	2613.6	7.0	**3.5946**	0.386	10.7	mg/L	35	Standard
K	39	313.3	2.4	**1.4668**	0.102	6.9	mg/L	25	Standard
Ca	43	40.0	12.5	**2.6700**	1.367	51.2	mg/L	38	Standard
Fe	54	172.6	19.4	**0.0297**	0.037	125.0	mg/L	126	Standard
Fe	57	250.0	16.4	**-0.0882**	0.218	247.4	mg/L	245	Standard
> **Sc-1**	45	24843.7	5.1				mg/L	25066	Standard
Cl	35	141007.2	1.2				ug/L	125857	Standard
Kr	83	3.7	68.6				ug/L	1	Standard
Br	81	8976.0	3.5				ug/L	1350	Standard
P	31	21415.1	1.0				ug/L	18393	Standard
S	34	3635.4	3.8				ug/L	3739	Standard
Sr	88	86.7	23.3				ug/L	78	Standard
C	12	93.3	55.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	321.7	9.0				mg/L	2	Standard
Ho-1	165	225.0	10.2				mg/L	10	Standard
Er	166	173.3	13.3				mg/L	23	Standard
I	127	27626.9	6.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.371	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.810	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.909
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.859
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606072903
Sample Date/Time: Tuesday, June 21, 2016 15:47:58
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65829.4	1.7				ug/L	60176	Standard
	Be	9	1091.7	7.9	**1.3819**	0.122	8.9	ug/L	5	Standard
	Al	27	9658460.6	2.5	**67.2033**	0.573	0.9	ug/L	832	Standard
	Sc	45	26962.3	1.0				ug/L	25066	Standard
	Ti	47	1161.4	44.0	**5.6242**	2.574	45.8	ug/L	38	Standard
	V	51	2955.0	3.3	**0.3108**	0.013	4.1	ug/L	974	Standard
	Cr	52	10847.2	2.6	**0.7108**	0.049	6.9	ug/L	5792	Standard
	Cr	53	1273.4	6.0	**1.0957**	0.073	6.6	ug/L	347	Standard
	Mn	55	2432059.6	0.8	**368.2427**	6.764	1.8	ug/L	1164	Standard
	Co	59	153183.5	0.7	**24.3375**	0.235	1.0	ug/L	303	Standard
	Ni	60	19503.2	0.5	**10.3155**	0.174	1.7	ug/L	291	Standard
	Cu	65	6676.5	1.4	**3.5201**	0.098	2.8	ug/L	173	Standard
	Zn	66	32319.1	1.0	**29.9680**	0.510	1.7	ug/L	130	Standard
>	**Ge**	72	507509.6	1.3				ug/L	491724	Standard
	As	75	65.2	90.0	**0.0946**	0.055	58.4	ug/L	-25	Standard
	Se	82	67.0	5.6	**0.5352**	0.041	7.6	ug/L	12	Standard
	Se-1	77	128.3	9.7	**1.1086**	0.151	13.6	ug/L	57	Standard
>	**Ga**	71	1310.1	5.3				mg/L	148	Standard
	Rb	85	17616.9	2.0				ug/L	18	Standard
	Y	89	727532.8	1.3				ug/L	401845	Standard
>	**Rh**	103	103.3	14.8				ug/L	10	Standard
	Mo	98	67.1	4.9	**0.0233**	0.001	5.8	ug/L	12	Standard
	Ag	107	109.7	4.3	**0.0031**	0.001	41.1	ug/L	98	Standard
	Cd	111	313.2	8.9	**0.1612**	0.018	11.3	mg/L	11	Standard
	Cd	114	738.1	10.6	**0.1561**	0.018	11.8	ug/L	21	Standard
>	**In**	115	550912.0	2.6				ug/L	547487	Standard
	Sn	118	630.0	11.0	**0.0468**	0.016	34.7	ug/L	450	Standard
	Sb	123	137.7	12.6	**0.0246**	0.003	13.1	ug/L	105	Standard
	Ba	135	39985.4	1.7	**21.5966**	0.536	2.5	ug/L	111	Standard
	Ce	140	1423873.1	0.8				ug/L	107	Standard
>	**Tb**	159	928141.2	1.7				ug/L	890342	Standard
	Ho	165	28324.8	1.1				ug/L	10	Standard
	Tl	203	290.7	5.4	**0.0344**	0.003	9.6	ug/L	19	Standard
	Tl	205	235.0	16.9	**0.0383**	0.006	14.9	ug/L	17	Standard
	Pb	206	5921.8	0.5	**1.1479**	0.039	3.4	ug/L	247	Standard
	Pb	207	4990.2	2.0	**1.0630**	0.048	4.5	ug/L	215	Standard
	Pb	208	19749.1	0.7	**1.1186**	0.030	2.7	ug/L	770	Standard
	U	238	2317.5	1.8	**0.3802**	0.005	1.4	ug/L	13	Standard
>	**Bi**	209	510317.8	3.2				ug/L	503143	Standard

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Na	23	5.0	100.0	**52.2757**	52.372	100.2	mg/L	2	Standard
Mg	24	2030.1	7.1	**2.5548**	0.200	7.8	mg/L	35	Standard
K	39	193.3	15.2	**0.7833**	0.132	16.9	mg/L	25	Standard
Ca	43	171.7	8.9	**26.1296**	2.684	10.3	mg/L	38	Standard
Fe	54	1645.5	6.5	**1.3153**	0.096	7.3	mg/L	126	Standard
Fe	57	753.4	12.5	**1.6728**	0.365	21.8	mg/L	245	Standard
> **Sc-1**	45	26962.3	1.0				mg/L	25066	Standard
Cl	35	255018.3	0.9				ug/L	125857	Standard
Kr	83	1.0	0.0				ug/L	1	Standard
Br	81	5220.9	5.0				ug/L	1350	Standard
P	31	21920.9	3.7				ug/L	18393	Standard
S	34	3950.5	6.9				ug/L	3739	Standard
Sr	88	301.7	3.8				ug/L	78	Standard
C	12	83.3	38.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	47352.9	1.1				mg/L	2	Standard
Ho-1	165	28324.8	1.1				mg/L	10	Standard
Er	166	25150.9	2.3				mg/L	23	Standard
I	127	224463.3	10.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.395	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.210	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.626
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.426
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606073001
Sample Date/Time: Tuesday, June 21, 2016 15:51:09
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73917.0	6.1				ug/L	60176	Standard
	Be	9	16.7	45.8	**0.0097**	0.008	79.3	ug/L	5	Standard
	Al	27	5652423.5	6.3	**35.0242**	0.471	1.3	ug/L	832	Standard
	Sc	45	24773.6	1.2				ug/L	25066	Standard
	Ti	47	116.3	10.9	**0.4405**	0.086	19.6	ug/L	38	Standard
	V	51	15193.9	3.1	**2.5748**	0.099	3.8	ug/L	974	Standard
	Cr	52	199468.5	0.9	**32.7681**	0.651	2.0	ug/L	5792	Standard
	Cr	53	29413.5	3.2	**38.2606**	2.147	5.6	ug/L	347	Standard
	Mn	55	16906.8	3.1	**2.6231**	0.046	1.8	ug/L	1164	Standard
	Co	59	8261.3	2.1	**1.4084**	0.013	0.9	ug/L	303	Standard
	Ni	60	7629.3	4.1	**4.3628**	0.068	1.6	ug/L	291	Standard
	Cu	65	2854.9	2.0	**1.6169**	0.031	1.9	ug/L	173	Standard
	Zn	66	2209.5	2.4	**2.0537**	0.064	3.1	ug/L	130	Standard
>	**Ge**	72	457885.1	2.6				ug/L	491724	Standard
	As	75	2538.0	5.5	**2.6341**	0.209	8.0	ug/L	-25	Standard
	Se	82	858.9	4.6	**8.8399**	0.642	7.3	ug/L	12	Standard
	Se-1	77	1191.0	2.5	**17.4647**	0.920	5.3	ug/L	57	Standard
>	**Ga**	71	1676.8	5.5				mg/L	148	Standard
	Rb	85	226016.7	0.7				ug/L	18	Standard
	Y	89	390113.6	0.9				ug/L	401845	Standard
>	**Rh**	103	3238.7	1.2				ug/L	10	Standard
	Mo	98	4439.9	1.2	**1.9618**	0.048	2.5	ug/L	12	Standard
	Ag	107	114.0	9.8	**0.0052**	0.002	36.0	ug/L	98	Standard
	Cd	111	49.0	20.1	**0.0230**	0.005	23.8	mg/L	11	Standard
	Cd	114	113.7	9.0	**0.0220**	0.002	11.3	ug/L	21	Standard
>	**In**	115	514604.2	1.3				ug/L	547487	Standard
	Sn	118	1230.1	8.0	**0.1780**	0.020	11.1	ug/L	450	Standard
	Sb	123	498.9	3.3	**0.1174**	0.004	3.7	ug/L	105	Standard
	Ba	135	1735936.7	1.5	**1005.9141**	2.820	0.3	ug/L	111	Standard
	Ce	140	845.0	14.5				ug/L	107	Standard
>	**Tb**	159	860331.0	2.6				ug/L	890342	Standard
	Ho	165	16.7	17.3				ug/L	10	Standard
	Tl	203	237.3	4.9	**0.0323**	0.002	6.7	ug/L	19	Standard
	Tl	205	226.7	26.3	**0.0425**	0.010	22.8	ug/L	17	Standard
	Pb	206	559.7	1.7	**0.0765**	0.002	3.2	ug/L	247	Standard
	Pb	207	477.3	6.9	**0.0710**	0.005	6.3	ug/L	215	Standard
	Pb	208	1797.7	2.6	**0.0642**	0.006	8.9	ug/L	770	Standard
	U	238	256.3	4.6	**0.0480**	0.003	7.3	ug/L	13	Standard
>	**Bi**	209	441187.4	3.3				ug/L	503143	Standard

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Na	23	6.7	114.6	**75.7212**	86.562	114.3	mg/L	2	Standard
Mg	24	90539.7	1.2	**125.8278**	2.144	1.7	mg/L	35	Standard
K	39	2236.8	7.2	**11.1766**	0.942	8.4	mg/L	25	Standard
Ca	43	748.4	12.6	**144.1070**	20.471	14.2	mg/L	38	Standard
Fe	54	142.0	15.6	**-0.0001**	0.022	16866.3	mg/L	126	Standard
Fe	57	1348.4	5.7	**4.2895**	0.312	7.3	mg/L	245	Standard
Sc-1	45	24773.6	1.2				mg/L	25066	Standard
Cl	35	159146.8	0.8				ug/L	125857	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	209975.2	1.8				ug/L	1350	Standard
P	31	20949.5	2.8				ug/L	18393	Standard
S	34	4584.0	1.1				ug/L	3739	Standard
Sr	88	10782.2	5.2				ug/L	78	Standard
C	12	116.7	32.5				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	5.4	219.6				mg/L	2	Standard
Ho-1	165	16.7	17.3				mg/L	10	Standard
Er	166	26.7	43.3				mg/L	23	Standard
I	127	166779.4	5.0				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		122.835	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		93.118	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.994
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.686
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 15:54:22
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59968.5	1.3				ug/L	60176	Standard
	Be	9	36398.7	0.5	**50.8713**	0.403	0.8	ug/L	5	Standard
	Al	27	6548192.3	1.8	**50.0297**	1.523	3.0	ug/L	832	Standard
	Sc	45	25387.9	1.8				ug/L	25066	Standard
	Ti	47	20514.5	1.9	**104.3164**	2.213	2.1	ug/L	38	Standard
	V	51	309165.3	1.8	**51.0062**	0.680	1.3	ug/L	974	Standard
	Cr	52	340251.9	0.9	**51.7368**	0.210	0.4	ug/L	5792	Standard
	Cr	53	43082.8	0.7	**51.4506**	0.301	0.6	ug/L	347	Standard
	Mn	55	327886.5	1.7	**50.2320**	0.671	1.3	ug/L	1164	Standard
	Co	59	311341.2	1.1	**50.2912**	0.234	0.5	ug/L	303	Standard
	Ni	60	95005.0	1.3	**51.7832**	0.285	0.6	ug/L	291	Standard
	Cu	65	94085.6	1.9	**51.6732**	0.769	1.5	ug/L	173	Standard
	Zn	66	54162.3	1.8	**51.1699**	0.730	1.4	ug/L	130	Standard
>	Ge	72	499656.0	0.8				ug/L	491724	Standard
	As	75	53793.1	1.5	**50.4679**	0.579	1.1	ug/L	-25	Standard
	Se	82	5297.2	1.4	**50.3360**	1.022	2.0	ug/L	12	Standard
	Se-1	77	3753.1	2.9	**51.6078**	1.108	2.1	ug/L	57	Standard
>	Ga	71	116.7	31.0				mg/L	148	Standard
	Rb	85	846.7	4.4				ug/L	18	Standard
	Y	89	409237.0	1.3				ug/L	401845	Standard
>	Rh	103	43.3	24.0				ug/L	10	Standard
	Mo	98	236019.2	1.3	**98.9883**	1.916	1.9	ug/L	12	Standard
	Ag	107	301027.0	0.2	**51.4292**	0.425	0.8	ug/L	98	Standard
	Cd	111	95327.7	1.4	**51.1098**	1.090	2.1	mg/L	11	Standard
	Cd	114	232932.5	0.7	**51.3315**	0.699	1.4	ug/L	21	Standard
>	In	115	543279.3	0.7				ug/L	547487	Standard
	Sn	118	259515.7	1.7	**50.2935**	1.187	2.4	ug/L	450	Standard
	Sb	123	214686.9	1.2	**50.9350**	0.980	1.9	ug/L	105	Standard
	Ba	135	92608.2	0.1	**50.7811**	0.422	0.8	ug/L	111	Standard
	Ce	140	138.3	43.1				ug/L	107	Standard
>	Tb	159	879645.1	1.9				ug/L	890342	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	374242.2	0.3	**50.5043**	0.815	1.6	ug/L	19	Standard
	Tl	205	312151.2	0.8	**51.3434**	0.975	1.9	ug/L	17	Standard
	Pb	206	237883.3	0.7	**49.8803**	1.009	2.0	ug/L	247	Standard
	Pb	207	215064.7	1.2	**49.6101**	1.233	2.5	ug/L	215	Standard
	Pb	208	825294.1	0.6	**50.8408**	0.434	0.9	ug/L	770	Standard
	U	238	298401.1	0.3	**50.7212**	0.598	1.2	ug/L	13	Standard
>	Bi	209	493553.5	1.4				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3700.5	3.6	**4.9819**	0.214	4.3	mg/L	35	Standard
K	39	1016.7	7.6	**4.8957**	0.446	9.1	mg/L	25	Standard
Ca	43	56.7	13.5	**5.6936**	1.352	23.7	mg/L	38	Standard
Fe	54	5409.1	1.3	**4.9332**	0.148	3.0	mg/L	126	Standard
Fe	57	1620.1	7.8	**5.2229**	0.583	11.2	mg/L	245	Standard
> **Sc-1**	45	25387.9	1.8				mg/L	25066	Standard
Cl	35	151052.7	1.4				ug/L	125857	Standard
Kr	83	2.3	137.8				ug/L	1	Standard
Br	81	3390.4	24.1				ug/L	1350	Standard
P	31	21366.7	3.1				ug/L	18393	Standard
S	34	5074.2	4.4				ug/L	3739	Standard
Sr	88	91.7	22.0				ug/L	78	Standard
C	12	80.0	33.1				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.2	96.3				mg/L	2	Standard
Ho-1	165	8.3	34.6				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	8529.2	32.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	101.743		
Al	27	100.059		
Sc	45			
Ti	47	104.316		
V	51	102.012		
Cr	52	103.474		
Cr	53			
Mn	55	100.464		
Co	59	100.582		
Ni	60	103.566		
Cu	65	103.346		
Zn	66	102.340		
> Ge	72		101.613	
As	75	100.936		
Se	82	100.672		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	98.988		
Ag	107	102.858		
Cd	111	102.220		
Cd	114			
In	115			99.232
Sn	118	100.587		
Sb	123	101.870		
Ba	135	101.562		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.009		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.682		
U	238	101.442		
Bi	209			98.094
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 15:57:34
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59362.8	1.8				ug/L	60176	Standard
	Be	9	21.7	93.3	**0.0213**	0.028	130.6	ug/L	5	Standard
	Al	27	10005.1	126.3	**0.0677**	0.095	140.7	ug/L	832	Standard
	Sc	45	25473.1	2.6				ug/L	25066	Standard
	Ti	47	37.3	36.4	**-0.0109**	0.069	630.7	ug/L	38	Standard
	V	51	1039.9	1.7	**0.0080**	0.005	68.5	ug/L	974	Standard
	Cr	52	6459.7	10.1	**0.0942**	0.091	96.2	ug/L	5792	Standard
	Cr	53	603.3	18.3	**0.3396**	0.127	37.3	ug/L	347	Standard
	Mn	55	2162.5	62.6	**0.1280**	0.210	164.2	ug/L	1164	Standard
	Co	59	333.7	16.0	**0.0066**	0.008	124.3	ug/L	303	Standard
	Ni	60	322.7	48.2	**-0.0082**	0.085	1042.9	ug/L	291	Standard
	Cu	65	161.7	29.8	**-0.0056**	0.026	466.7	ug/L	173	Standard
	Zn	66	184.7	16.2	**-0.0537**	0.027	49.9	ug/L	130	Standard
>	**Ge**	72	481495.2	1.4				ug/L	491724	Standard
	As	75	-13.3	88.6	**0.0210**	0.012	54.8	ug/L	-25	Standard
	Se	82	22.2	8.5	**0.1261**	0.021	16.7	ug/L	12	Standard
	Se-1	77	62.0	2.8	**0.2463**	0.018	7.5	ug/L	57	Standard
>	**Ga**	71	106.7	9.8				mg/L	148	Standard
	Rb	85	63.3	43.5				ug/L	18	Standard
	Y	89	417621.1	1.2				ug/L	401845	Standard
>	**Rh**	103	40.0	45.1				ug/L	10	Standard
	Mo	98	240.6	46.2	**0.0925**	0.045	48.3	ug/L	12	Standard
	Ag	107	129.0	44.6	**0.0058**	0.009	162.4	ug/L	98	Standard
	Cd	111	26.5	116.9	**0.0090**	0.016	178.2	mg/L	11	Standard
	Cd	114	62.7	80.7	**0.0088**	0.011	121.2	ug/L	21	Standard
>	**In**	115	564731.0	1.2				ug/L	547487	Standard
	Sn	118	768.4	3.1	**0.0694**	0.006	8.4	ug/L	450	Standard
	Sb	123	399.1	17.4	**0.0835**	0.016	19.6	ug/L	105	Standard
	Ba	135	378.0	72.8	**0.1438**	0.145	100.9	ug/L	111	Standard
	Ce	140	128.3	104.6				ug/L	107	Standard
>	**Tb**	159	890002.5	2.1				ug/L	890342	Standard
	Ho	165	5.0	100.0				ug/L	10	Standard
	Tl	203	105.7	64.2	**0.0104**	0.008	81.6	ug/L	19	Standard
	Tl	205	133.3	103.5	**0.0222**	0.021	96.6	ug/L	17	Standard
	Pb	206	266.0	23.7	**0.0002**	0.011	6809.3	ug/L	247	Standard
	Pb	207	260.7	18.8	**0.0074**	0.009	126.1	ug/L	215	Standard
	Pb	208	1119.4	33.0	**0.0081**	0.020	245.9	ug/L	770	Standard
	U	238	112.3	126.2	**0.0176**	0.023	129.9	ug/L	13	Standard
>	**Bi**	209	497488.5	3.7				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	95.0	109.9	**0.0875**	0.137	156.5	mg/L	35	Standard
K	39	31.7	18.2	**0.0434**	0.031	72.1	mg/L	25	Standard
Ca	43	43.3	26.6	**3.1138**	2.393	76.8	mg/L	38	Standard
Fe	54	134.3	11.0	**-0.0112**	0.012	107.9	mg/L	126	Standard
Fe	57	253.3	12.5	**-0.1072**	0.121	112.7	mg/L	245	Standard
> **Sc-1**	45	25473.1	2.6				mg/L	25066	Standard
Cl	35	154720.7	1.0				ug/L	125857	Standard
Kr	83	2.7	78.1				ug/L	1	Standard
Br	81	2063.5	2.4				ug/L	1350	Standard
P	31	22254.7	2.6				ug/L	18393	Standard
S	34	4942.5	2.2				ug/L	3739	Standard
Sr	88	83.3	19.3				ug/L	78	Standard
C	12	40.0	25.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.5	88.7				mg/L	2	Standard
Ho-1	165	5.0	100.0				mg/L	10	Standard
Er	166	10.0					mg/L	23	Standard
I	127	3717.1	8.4				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.920	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.150
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.876
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606073002
Sample Date/Time: Tuesday, June 21, 2016 16:00:47
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69308.3	3.7				ug/L	60176	Standard
	Be	9	20.0	50.0	**0.0149**	0.011	75.7	ug/L	5	Standard
	Al	27	6126361.3	1.2	**40.5279**	1.700	4.2	ug/L	832	Standard
	Sc	45	24543.2	3.9				ug/L	25066	Standard
	Ti	47	125.3	13.2	**0.4695**	0.084	17.8	ug/L	38	Standard
	V	51	16629.0	4.3	**2.7512**	0.149	5.4	ug/L	974	Standard
	Cr	52	210588.5	2.1	**33.6543**	0.594	1.8	ug/L	5792	Standard
	Cr	53	31539.5	3.2	**39.8713**	0.997	2.5	ug/L	347	Standard
	Mn	55	23748.6	0.8	**3.6623**	0.062	1.7	ug/L	1164	Standard
	Co	59	8388.0	2.5	**1.3899**	0.039	2.8	ug/L	303	Standard
	Ni	60	8179.5	3.3	**4.5574**	0.124	2.7	ug/L	291	Standard
	Cu	65	2815.6	0.9	**1.5465**	0.029	1.9	ug/L	173	Standard
	Zn	66	2262.5	3.2	**2.0433**	0.069	3.4	ug/L	130	Standard
>	**Ge**	72	470862.5	0.8				ug/L	491724	Standard
	As	75	2905.3	0.7	**2.9245**	0.023	0.8	ug/L	-25	Standard
	Se	82	925.8	0.9	**9.2587**	0.060	0.6	ug/L	12	Standard
	Se-1	77	1310.7	2.5	**18.7167**	0.330	1.8	ug/L	57	Standard
>	**Ga**	71	1603.4	3.2				mg/L	148	Standard
	Rb	85	230305.6	1.1				ug/L	18	Standard
	Y	89	379545.1	0.6				ug/L	401845	Standard
>	**Rh**	103	3307.0	4.1				ug/L	10	Standard
	Mo	98	4638.8	1.0	**2.1857**	0.018	0.8	ug/L	12	Standard
	Ag	107	129.7	17.9	**0.0096**	0.005	47.2	ug/L	98	Standard
	Cd	111	47.1	19.5	**0.0237**	0.006	23.4	mg/L	11	Standard
	Cd	114	88.1	29.6	**0.0174**	0.007	37.3	ug/L	21	Standard
>	**In**	115	482582.3	0.3				ug/L	547487	Standard
	Sn	118	1188.4	1.3	**0.1856**	0.004	2.1	ug/L	450	Standard
	Sb	123	594.7	6.6	**0.1512**	0.010	6.6	ug/L	105	Standard
	Ba	135	1814565.7	1.4	**1121.2802**	14.912	1.3	ug/L	111	Standard
	Ce	140	778.4	4.7				ug/L	107	Standard
>	**Tb**	159	825227.5	1.6				ug/L	890342	Standard
	Ho	165	23.3	101.3				ug/L	10	Standard
	Tl	203	227.3	5.1	**0.0315**	0.002	7.2	ug/L	19	Standard
	Tl	205	193.3	12.2	**0.0374**	0.005	13.4	ug/L	17	Standard
	Pb	206	563.7	9.9	**0.0803**	0.015	18.7	ug/L	247	Standard
	Pb	207	484.3	4.2	**0.0757**	0.007	9.4	ug/L	215	Standard
	Pb	208	1753.4	1.0	**0.0637**	0.003	4.2	ug/L	770	Standard
	U	238	254.3	2.6	**0.0486**	0.002	4.1	ug/L	13	Standard
>	**Bi**	209	431889.8	1.5				ug/L	503143	Standard

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Na	23	15.0	66.7	**174.2413**	120.728	69.3	mg/L	2	Standard
Mg	24	93727.4	0.9	**131.5829**	4.471	3.4	mg/L	35	Standard
K	39	2483.5	4.9	**12.5508**	0.926	7.4	mg/L	25	Standard
Ca	43	885.0	14.1	**173.5278**	30.084	17.3	mg/L	38	Standard
Fe	54	139.9	31.8	**0.0000**	0.04(183799.3		mg/L	126	Standard
Fe	57	1356.7	6.6	**4.3695**	0.153	3.5	mg/L	245	Standard
> **Sc-1**	45	24543.2	3.9				mg/L	25066	Standard
Cl	35	157218.9	1.1				ug/L	125857	Standard
Kr	83	3.7	41.7				ug/L	1	Standard
Br	81	220692.4	1.0				ug/L	1350	Standard
P	31	22506.7	0.5				ug/L	18393	Standard
S	34	4602.4	5.2				ug/L	3739	Standard
Sr	88	10935.6	1.0				ug/L	78	Standard
C	12	216.7	20.8				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	12.9	48.5				mg/L	2	Standard
Ho-1	165	23.3	101.3				mg/L	10	Standard
Er	166	10.0	173.2				mg/L	23	Standard
I	127	172463.4	8.0				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.176	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.758	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		88.145
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		85.838
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606073003
Sample Date/Time: Tuesday, June 21, 2016 16:03:58
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64465.7	7.2				ug/L	60176	Standard
	Be	9	48.3	48.9	**0.0549**	0.035	63.6	ug/L	5	Standard
	Al	27	114115919.1	1.6	**813.1976**	46.881	5.8	ug/L	832	Standard
	Sc	45	25436.3	2.0				ug/L	25066	Standard
	Ti	47	345.7	4.6	**1.8234**	0.101	5.6	ug/L	38	Standard
	V	51	1068.5	35.2	**0.0334**	0.072	216.4	ug/L	974	Standard
	Cr	52	14799.2	0.9	**1.6994**	0.023	1.4	ug/L	5792	Standard
	Cr	53	29695.8	4.6	**40.8112**	1.956	4.8	ug/L	347	Standard
	Mn	55	1183452.9	1.0	**209.7588**	2.233	1.1	ug/L	1164	Standard
	Co	59	14597.4	0.2	**2.6724**	0.007	0.3	ug/L	303	Standard
	Ni	60	10363.9	2.1	**6.3478**	0.146	2.3	ug/L	291	Standard
	Cu	65	1987.5	3.5	**1.1635**	0.045	3.9	ug/L	173	Standard
	Zn	66	3577.8	1.3	**3.6805**	0.061	1.7	ug/L	130	Standard
>	**Ge**	72	433293.9	0.3				ug/L	491724	Standard
	As	75	5927.9	2.2	**6.4431**	0.152	2.4	ug/L	-25	Standard
	Se	82	1611.7	1.7	**17.5991**	0.335	1.9	ug/L	12	Standard
	Se-1	77	5107.5	5.2	**81.3703**	4.339	5.3	ug/L	57	Standard
>	**Ga**	71	338.3	13.7				mg/L	148	Standard
	Rb	85	17830.5	1.3				ug/L	18	Standard
	Y	89	379868.8	3.7				ug/L	401845	Standard
>	**Rh**	103	1205.0	3.7				ug/L	10	Standard
	Mo	98	436.0	6.7	**0.2020**	0.013	6.6	ug/L	12	Standard
	Ag	107	96.0	2.8	**0.0031**	0.001	17.0	ug/L	98	Standard
	Cd	111	101.5	4.0	**0.0568**	0.002	3.9	mg/L	11	Standard
	Cd	114	243.8	21.8	**0.0563**	0.013	23.9	ug/L	21	Standard
>	**In**	115	481162.5	1.1				ug/L	547487	Standard
	Sn	118	790.0	15.5	**0.0989**	0.025	25.1	ug/L	450	Standard
	Sb	123	455.4	4.8	**0.1144**	0.005	4.7	ug/L	105	Standard
	Ba	135	6828454.6	0.9	**4232.2396**	20.556	0.5	ug/L	111	Standard
	Ce	140	12164.9	2.3				ug/L	107	Standard
>	**Tb**	159	829521.0	0.4				ug/L	890342	Standard
	Ho	165	176.7	18.8				ug/L	10	Standard
	Tl	203	129.7	8.2	**0.0170**	0.002	9.5	ug/L	19	Standard
	Tl	205	95.0	19.0	**0.0193**	0.003	17.6	ug/L	17	Standard
	Pb	206	521.0	9.8	**0.0734**	0.012	16.5	ug/L	247	Standard
	Pb	207	417.0	5.1	**0.0609**	0.006	10.2	ug/L	215	Standard
	Pb	208	1676.4	1.8	**0.0615**	0.002	3.3	ug/L	770	Standard
	U	238	9099.4	1.6	**1.8151**	0.034	1.9	ug/L	13	Standard
>	**Bi**	209	420359.8	0.4				ug/L	503143	Standard

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Na	23	15.0	33.3	**164.4381**	51.833	31.5	mg/L	2	Standard
Mg	24	263283.1	1.4	**356.5075**	9.102	2.6	mg/L	35	Standard
K	39	456.7	16.0	**2.1312**	0.355	16.7	mg/L	25	Standard
Ca	43	700.0	3.7	**130.7182**	6.161	4.7	mg/L	38	Standard
Fe	54	3184.3	4.9	**2.8411**	0.129	4.5	mg/L	126	Standard
Fe	57	2041.8	5.4	**6.8401**	0.287	4.2	mg/L	245	Standard
> **Sc-1**	45	25436.3	2.0				mg/L	25066	Standard
Cl	35	151004.1	1.2				ug/L	125857	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	445209.8	0.6				ug/L	1350	Standard
P	31	26399.6	1.7				ug/L	18393	Standard
S	34	4885.8	2.7				ug/L	3739	Standard
Sr	88	3080.3	7.6				ug/L	78	Standard
C	12	203.3	19.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	194.4	40.3				mg/L	2	Standard
Ho-1	165	176.7	18.8				mg/L	10	Standard
Er	166	186.7	8.2				mg/L	23	Standard
I	127	130585.3	6.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.129	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		88.117	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		87.886
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		83.547
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606096101
Sample Date/Time: Tuesday, June 21, 2016 16:07:10
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51179.6	1.3				ug/L	60176	Standard
	Be	9	6.7	43.3	**0.0019**	0.005	248.3	ug/L	5	Standard
	Al	27	50980.9	25.3	**0.4489**	0.121	26.9	ug/L	832	Standard
	Sc	45	25962.2	3.5				ug/L	25066	Standard
	Ti	47	119.0	4.2	**0.4268**	0.032	7.4	ug/L	38	Standard
	V	51	1327.1	7.8	**0.0590**	0.015	25.5	ug/L	974	Standard
	Cr	52	10085.4	1.2	**0.6910**	0.038	5.5	ug/L	5792	Standard
	Cr	53	2786.9	12.0	**3.1009**	0.469	15.1	ug/L	347	Standard
	Mn	55	4068.2	4.6	**0.4397**	0.037	8.5	ug/L	1164	Standard
	Co	59	403.7	6.2	**0.0189**	0.004	21.3	ug/L	303	Standard
	Ni	60	539.0	3.3	**0.1179**	0.012	10.2	ug/L	291	Standard
	Cu	65	14898.0	0.8	**8.4790**	0.067	0.8	ug/L	173	Standard
	Zn	66	3517.4	1.5	**3.2574**	0.058	1.8	ug/L	130	Standard
>	**Ge**	72	477620.4	1.4				ug/L	491724	Standard
	As	75	1519.4	3.8	**1.5239**	0.036	2.3	ug/L	-25	Standard
	Se	82	49.8	7.3	**0.4026**	0.036	8.9	ug/L	12	Standard
	Se-1	77	174.7	19.2	**1.8996**	0.522	27.5	ug/L	57	Standard
>	**Ga**	71	81.7	12.7				mg/L	148	Standard
	Rb	85	1321.7	1.4				ug/L	18	Standard
	Y	89	409645.6	0.4				ug/L	401845	Standard
>	**Rh**	103	80.0	6.3				ug/L	10	Standard
	Mo	98	714.4	3.4	**0.3043**	0.009	3.0	ug/L	12	Standard
	Ag	107	102.7	8.3	**0.0027**	0.002	56.4	ug/L	98	Standard
	Cd	111	14.0	51.5	**0.0031**	0.004	131.5	mg/L	11	Standard
	Cd	114	24.8	60.7	**0.0012**	0.003	284.8	ug/L	21	Standard
>	**In**	115	527134.4	0.6				ug/L	547487	Standard
	Sn	118	2366.9	4.7	**0.3994**	0.023	5.8	ug/L	450	Standard
	Sb	123	152.2	11.5	**0.0296**	0.004	14.7	ug/L	105	Standard
	Ba	135	3191.0	19.6	**1.7498**	0.356	20.3	ug/L	111	Standard
	Ce	140	173.3	23.1				ug/L	107	Standard
>	**Tb**	159	840402.3	0.7				ug/L	890342	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	123.0	17.0	**0.0144**	0.003	21.3	ug/L	19	Standard
	Tl	205	116.7	31.0	**0.0217**	0.006	29.6	ug/L	17	Standard
	Pb	206	3120.0	3.9	**0.6516**	0.026	4.0	ug/L	247	Standard
	Pb	207	2680.2	1.7	**0.6156**	0.006	0.9	ug/L	215	Standard
	Pb	208	10994.6	2.0	**0.6718**	0.014	2.1	ug/L	770	Standard
	U	238	72.3	2.9	**0.0124**	0.000	2.0	ug/L	13	Standard
>	**Bi**	209	457373.4	1.0				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	35125.7	1.1	**46.5846**	1.473	3.2	mg/L	35	Standard
K	39	51.7	5.6	**0.1362**	0.007	5.1	mg/L	25	Standard
Ca	43	31.7	39.7	**0.6865**	2.370	345.2	mg/L	38	Standard
Fe	54	162.3	12.6	**0.0125**	0.021	169.6	mg/L	126	Standard
Fe	57	268.3	4.3	**-0.0679**	0.055	81.1	mg/L	245	Standard
> **Sc-1**	45	25962.2	3.5				mg/L	25066	Standard
Cl	35	155782.8	0.6				ug/L	125857	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	7928.7	7.4				ug/L	1350	Standard
P	31	21842.4	3.3				ug/L	18393	Standard
S	34	4624.0	1.7				ug/L	3739	Standard
Sr	88	61.7	4.7				ug/L	78	Standard
C	12	123.3	54.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	22.5	69.8				mg/L	2	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	16.7	124.9				mg/L	23	Standard
I	127	273253.9	9.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		85.050	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.132	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.283
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.903
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606096102
Sample Date/Time: Tuesday, June 21, 2016 16:10:21
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55466.4	1.7				ug/L	60176	Standard
	Be	9	10.0	50.0	**0.0061**	0.008	123.3	ug/L	5	Standard
	Al	27	3404100.9	2.1	**28.1074**	0.199	0.7	ug/L	832	Standard
	Sc	45	25237.7	1.7				ug/L	25066	Standard
	Ti	47	137.7	20.3	**0.5030**	0.133	26.4	ug/L	38	Standard
	V	51	1824.3	3.0	**0.1361**	0.015	10.9	ug/L	974	Standard
	Cr	52	9639.7	1.2	**0.5728**	0.021	3.6	ug/L	5792	Standard
	Cr	53	2536.9	7.6	**2.6926**	0.311	11.6	ug/L	347	Standard
	Mn	55	410336.5	3.0	**63.9418**	3.504	5.5	ug/L	1164	Standard
	Co	59	771.7	2.6	**0.0774**	0.003	4.5	ug/L	303	Standard
	Ni	60	1278.1	2.9	**0.5199**	0.037	7.2	ug/L	291	Standard
	Cu	65	956.4	1.4	**0.4368**	0.016	3.7	ug/L	173	Standard
	Zn	66	2255.5	3.4	**1.9395**	0.107	5.5	ug/L	130	Standard
>	**Ge**	72	492109.1	2.4				ug/L	491724	Standard
	As	75	628.2	9.2	**0.6327**	0.065	10.2	ug/L	-25	Standard
	Se	82	84.5	5.3	**0.7234**	0.031	4.3	ug/L	12	Standard
	Se-1	77	165.7	4.1	**1.6947**	0.142	8.4	ug/L	57	Standard
>	**Ga**	71	128.3	21.5				mg/L	148	Standard
	Rb	85	1845.1	8.3				ug/L	18	Standard
	Y	89	407649.4	2.2				ug/L	401845	Standard
>	**Rh**	103	66.7	17.3				ug/L	10	Standard
	Mo	98	795.9	1.4	**0.3389**	0.011	3.3	ug/L	12	Standard
	Ag	107	240.3	3.9	**0.0269**	0.002	9.1	ug/L	98	Standard
	Cd	111	25.8	4.4	**0.0095**	0.000	3.6	mg/L	11	Standard
	Cd	114	76.3	38.0	**0.0129**	0.007	53.5	ug/L	21	Standard
>	**In**	115	528415.2	2.1				ug/L	547487	Standard
	Sn	118	820.0	7.2	**0.0898**	0.015	17.0	ug/L	450	Standard
	Sb	123	374.4	4.7	**0.0837**	0.002	2.9	ug/L	105	Standard
	Ba	135	25131.8	1.1	**14.1323**	0.352	2.5	ug/L	111	Standard
	Ce	140	776.7	26.8				ug/L	107	Standard
>	**Tb**	159	852950.8	1.0				ug/L	890342	Standard
	Ho	165	40.0	12.5				ug/L	10	Standard
	Tl	203	322.3	8.3	**0.0415**	0.004	9.0	ug/L	19	Standard
	Tl	205	273.3	11.9	**0.0475**	0.005	11.3	ug/L	17	Standard
	Pb	206	550.0	3.4	**0.0646**	0.004	5.5	ug/L	247	Standard
	Pb	207	494.7	5.4	**0.0662**	0.007	10.5	ug/L	215	Standard
	Pb	208	1825.0	0.9	**0.0567**	0.001	1.9	ug/L	770	Standard
	U	238	550.3	3.0	**0.0961**	0.003	3.3	ug/L	13	Standard
>	**Bi**	209	476377.1	0.5				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	5382.6	8.6	**7.3029**	0.563	7.7	mg/L	35	Standard
K	39	113.3	10.2	**0.4482**	0.048	10.8	mg/L	25	Standard
Ca	43	105.0	23.8	**15.1842**	4.585	30.2	mg/L	38	Standard
Fe	54	182.7	18.3	**0.0355**	0.030	84.2	mg/L	126	Standard
Fe	57	376.7	12.3	**0.3841**	0.168	43.8	mg/L	245	Standard
> **Sc-1**	45	25237.7	1.7				mg/L	25066	Standard
Cl	35	165485.5	0.6				ug/L	125857	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	15875.0	3.1				ug/L	1350	Standard
P	31	18915.1	1.7				ug/L	18393	Standard
S	34	4484.0	2.4				ug/L	3739	Standard
Sr	88	145.0	6.0				ug/L	78	Standard
C	12	53.3	39.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	18.4	111.4				mg/L	2	Standard
Ho-1	165	40.0	12.5				mg/L	10	Standard
Er	166	33.3	75.5				mg/L	23	Standard
I	127	33351.8	7.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.174	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.078	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.517
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.680
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606099501
Sample Date/Time: Tuesday, June 21, 2016 16:13:33
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	168635.9	4.1				ug/L	60176	Standard
	Be	9	6.7	114.6	**-0.0058**	0.004	64.0	ug/L	5	Standard
	Al	27	18474058.8	4.7	**50.2007**	2.075	4.1	ug/L	832	Standard
	Sc	45	25611.7	6.8				ug/L	25066	Standard
	Ti	47	96.0	15.3	**0.3247**	0.061	18.9	ug/L	38	Standard
	V	51	329.6	160.1	**-0.1086**	0.096	88.6	ug/L	974	Standard
	Cr	52	8533.4	2.1	**0.5000**	0.036	7.3	ug/L	5792	Standard
	Cr	53	18279.4	4.6	**23.6005**	0.090	0.4	ug/L	347	Standard
	Mn	55	795230.1	6.4	**133.2539**	3.844	2.9	ug/L	1164	Standard
	Co	59	1757.4	10.4	**0.2603**	0.020	7.8	ug/L	303	Standard
	Ni	60	5918.8	6.2	**3.3415**	0.070	2.1	ug/L	291	Standard
	Cu	65	974.0	13.3	**0.4862**	0.060	12.3	ug/L	173	Standard
	Zn	66	25732.5	3.6	**26.4255**	0.290	1.1	ug/L	130	Standard
>	**Ge**	72	457809.6	4.2				ug/L	491724	Standard
	As	75	24304.8	12.7	**24.8619**	2.381	9.6	ug/L	-25	Standard
	Se	82	10353.3	13.1	**107.2820**	10.769	10.0	ug/L	12	Standard
	Se-1	77	3338.4	7.4	**50.0689**	2.631	5.3	ug/L	57	Standard
>	**Ga**	71	190.0	18.2				mg/L	148	Standard
	Rb	85	67272.7	5.9				ug/L	18	Standard
	Y	89	392267.7	7.8				ug/L	401845	Standard
>	**Rh**	103	6212.9	7.3				ug/L	10	Standard
	Mo	98	66.8	16.5	**0.0261**	0.003	10.8	ug/L	12	Standard
	Ag	107	141.7	8.0	**0.0112**	0.002	19.1	ug/L	98	Standard
	Cd	111	25.2	33.7	**0.0099**	0.004	38.5	mg/L	11	Standard
	Cd	114	42.8	22.6	**0.0058**	0.002	26.8	ug/L	21	Standard
>	**In**	115	495596.9	7.2				ug/L	547487	Standard
	Sn	118	453.3	8.9	**0.0231**	0.015	65.7	ug/L	450	Standard
	Sb	123	307.9	14.7	**0.0722**	0.006	8.8	ug/L	105	Standard
	Ba	135	1737649.7	4.8	**1046.7670**	27.756	2.7	ug/L	111	Standard
	Ce	140	60.0	22.0				ug/L	107	Standard
>	**Tb**	159	833968.6	4.3				ug/L	890342	Standard
	Ho	165	16.7	34.6				ug/L	10	Standard
	Tl	203	93.0	16.9	**0.0113**	0.003	22.9	ug/L	19	Standard
	Tl	205	90.0	16.7	**0.0185**	0.003	15.2	ug/L	17	Standard
	Pb	206	345.7	4.5	**0.0311**	0.007	21.6	ug/L	247	Standard
	Pb	207	301.0	3.7	**0.0302**	0.000	0.9	ug/L	215	Standard
	Pb	208	1072.7	2.8	**0.0184**	0.001	6.1	ug/L	770	Standard
	U	238	4.3	35.3	**0.0001**	0.000	664.3	ug/L	13	Standard
>	**Bi**	209	416771.5	4.0				ug/L	503143	Standard

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Na	23	8.3	91.7	**92.7162**	88.289	95.2	mg/L	2	Standard
Mg	24	248689.5	5.2	**334.6353**	8.738	2.6	mg/L	35	Standard
K	39	770.0	3.9	**3.6624**	0.402	11.0	mg/L	25	Standard
Ca	43	676.7	8.2	**125.1812**	3.636	2.9	mg/L	38	Standard
Fe	54	913.9	19.2	**0.7080**	0.107	15.2	mg/L	126	Standard
Fe	57	1341.7	7.5	**4.0874**	0.184	4.5	mg/L	245	Standard
> **Sc-1**	45	25611.7	6.8				mg/L	25066	Standard
Cl	35	163994.5	4.3				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	2535152.6	9.1				ug/L	1350	Standard
P	31	21693.9	7.1				ug/L	18393	Standard
S	34	5349.3	7.3				ug/L	3739	Standard
Sr	88	17340.0	7.2				ug/L	78	Standard
C	12	46.7	24.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.7	100.4				mg/L	2	Standard
Ho-1	165	16.7	34.6				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	23	Standard
I	127	915873.2	10.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		280.238	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.103	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.522
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		82.834
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Se 82 Upper, S, EEE	Se	82	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606099502
Sample Date/Time: Tuesday, June 21, 2016 16:16:44
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	161934.6	2.9				ug/L	60176	Standard
	Be	9	5.0	0.0	**-0.0064**	0.000	1.1	ug/L	5	Standard
	Al	27	18034095.9	1.2	**51.0410**	1.601	3.1	ug/L	832	Standard
	Sc	45	25640.0	0.6				ug/L	25066	Standard
	Ti	47	101.0	11.2	**0.3353**	0.057	17.0	ug/L	38	Standard
	V	51	557.0	72.8	**-0.0732**	0.071	97.4	ug/L	974	Standard
	Cr	52	8384.0	1.2	**0.4274**	0.017	4.0	ug/L	5792	Standard
	Cr	53	17313.2	4.7	**21.5821**	0.836	3.9	ug/L	347	Standard
	Mn	55	803112.8	0.5	**130.2269**	0.853	0.7	ug/L	1164	Standard
	Co	59	1799.1	3.0	**0.2578**	0.012	4.7	ug/L	303	Standard
	Ni	60	5982.8	1.8	**3.2648**	0.077	2.3	ug/L	291	Standard
	Cu	65	1150.7	3.3	**0.5706**	0.016	2.9	ug/L	173	Standard
	Zn	66	24866.4	0.7	**24.6790**	0.202	0.8	ug/L	130	Standard
>	**Ge**	72	473336.7	1.0				ug/L	491724	Standard
	As	75	25587.3	1.8	**25.3566**	0.273	1.1	ug/L	-25	Standard
	Se	82	10890.0	1.7	**109.3307**	1.159	1.1	ug/L	12	Standard
	Se-1	77	3343.0	3.9	**48.4872**	1.708	3.5	ug/L	57	Standard
>	**Ga**	71	181.7	12.7				mg/L	148	Standard
	Rb	85	66679.8	2.2				ug/L	18	Standard
	Y	89	414678.4	1.0				ug/L	401845	Standard
>	**Rh**	103	6289.6	5.0				ug/L	10	Standard
	Mo	98	37.1	14.9	**0.0122**	0.003	21.4	ug/L	12	Standard
	Ag	107	130.3	5.8	**0.0083**	0.002	18.8	ug/L	98	Standard
	Cd	111	31.2	14.4	**0.0131**	0.003	20.3	mg/L	11	Standard
	Cd	114	39.9	47.6	**0.0049**	0.004	88.5	ug/L	21	Standard
>	**In**	115	510227.1	2.2				ug/L	547487	Standard
	Sn	118	625.0	2.9	**0.0551**	0.005	8.2	ug/L	450	Standard
	Sb	123	301.2	2.3	**0.0685**	0.003	3.9	ug/L	105	Standard
	Ba	135	1706474.6	1.4	**997.5420**	18.016	1.8	ug/L	111	Standard
	Ce	140	70.0	39.8				ug/L	107	Standard
>	**Tb**	159	847245.8	1.6				ug/L	890342	Standard
	Ho	165	16.7	34.6				ug/L	10	Standard
	Tl	203	82.0	5.6	**0.0095**	0.001	7.4	ug/L	19	Standard
	Tl	205	63.3	19.9	**0.0132**	0.002	18.3	ug/L	17	Standard
	Pb	206	2104.8	3.5	**0.4651**	0.017	3.6	ug/L	247	Standard
	Pb	207	1755.4	1.6	**0.4250**	0.008	1.8	ug/L	215	Standard
	Pb	208	6586.6	2.3	**0.4183**	0.011	2.6	ug/L	770	Standard
	U	238	3.3	75.5	**-0.0002**	0.001	311.3	ug/L	13	Standard
>	**Bi**	209	419186.3	0.3				ug/L	503143	Standard

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Na	23	11.7	49.5	**127.1945**	62.567	49.2	mg/L	2	Standard
Mg	24	247534.5	2.1	**332.4511**	8.574	2.6	mg/L	35	Standard
K	39	821.7	11.6	**3.8912**	0.453	11.6	mg/L	25	Standard
Ca	43	693.3	9.8	**128.3410**	13.655	10.6	mg/L	38	Standard
Fe	54	995.6	6.1	**0.7869**	0.051	6.4	mg/L	126	Standard
Fe	57	1348.4	5.9	**4.1068**	0.292	7.1	mg/L	245	Standard
> **Sc-1**	45	25640.0	0.6				mg/L	25066	Standard
Cl	35	170844.7	1.8				ug/L	125857	Standard
Kr	83	3.0	66.7				ug/L	1	Standard
Br	81	2578824.0	0.0				ug/L	1350	Standard
P	31	21972.6	2.3				ug/L	18393	Standard
S	34	5225.9	2.7				ug/L	3739	Standard
Sr	88	16430.6	4.1				ug/L	78	Standard
C	12	46.7	32.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.0	111.0				mg/L	2	Standard
Ho-1	165	16.7	34.6				mg/L	10	Standard
Er	166	20.0	86.6				mg/L	23	Standard
I	127	815214.3	2.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		269.102	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.261	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.194
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		83.314
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Se 82 Upper, S, EEE	Se	82	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 16:19:57
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53255.1	2.6				ug/L	60176	Standard
	Be	9	34201.9	0.2	**53.8492**	1.444	2.7	ug/L	5	Standard
	Al	27	6443317.1	1.2	**55.4427**	1.386	2.5	ug/L	832	Standard
	Sc	45	29281.6	1.0				ug/L	25066	Standard
	Ti	47	22756.4	2.7	**106.0921**	2.711	2.6	ug/L	38	Standard
	V	51	330023.3	1.9	**49.9178**	0.818	1.6	ug/L	974	Standard
	Cr	52	374935.6	2.1	**52.2804**	1.022	2.0	ug/L	5792	Standard
	Cr	53	48235.0	2.8	**52.8231**	1.387	2.6	ug/L	347	Standard
	Mn	55	352441.5	1.8	**49.5016**	0.742	1.5	ug/L	1164	Standard
	Co	59	322946.3	1.0	**47.8265**	0.311	0.7	ug/L	303	Standard
	Ni	60	103457.1	1.6	**51.7034**	0.790	1.5	ug/L	291	Standard
	Cu	65	102599.3	1.6	**51.6656**	0.731	1.4	ug/L	173	Standard
	Zn	66	58130.6	0.7	**50.3515**	0.428	0.9	ug/L	130	Standard
>	**Ge**	72	544960.4	0.5				ug/L	491724	Standard
	As	75	57215.3	2.2	**49.2169**	0.986	2.0	ug/L	-25	Standard
	Se	82	5680.0	0.8	**49.4814**	0.520	1.1	ug/L	12	Standard
	Se-1	77	4029.9	3.0	**50.7996**	1.419	2.8	ug/L	57	Standard
>	**Ga**	71	136.7	2.1				mg/L	148	Standard
	Rb	85	848.4	0.7				ug/L	18	Standard
	Y	89	441171.0	0.9				ug/L	401845	Standard
>	**Rh**	103	98.3	34.6				ug/L	10	Standard
	Mo	98	240530.6	0.1	**95.5654**	2.386	2.5	ug/L	12	Standard
	Ag	107	314903.2	0.7	**50.9642**	1.103	2.2	ug/L	98	Standard
	Cd	111	99040.2	2.0	**50.2851**	0.336	0.7	mg/L	11	Standard
	Cd	114	242003.9	1.6	**50.5109**	0.771	1.5	ug/L	21	Standard
>	**In**	115	573676.8	2.4				ug/L	547487	Standard
	Sn	118	268045.3	0.6	**49.2020**	0.945	1.9	ug/L	450	Standard
	Sb	123	224141.2	0.6	**50.3723**	1.071	2.1	ug/L	105	Standard
	Ba	135	96926.4	0.9	**50.3436**	0.859	1.7	ug/L	111	Standard
	Ce	140	86.7	38.4				ug/L	107	Standard
>	**Tb**	159	919162.1	0.7				ug/L	890342	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	383744.4	1.7	**49.4533**	0.202	0.4	ug/L	19	Standard
	Tl	205	316340.9	2.1	**49.6852**	0.346	0.7	ug/L	17	Standard
	Pb	206	242321.1	0.6	**48.5289**	1.001	2.1	ug/L	247	Standard
	Pb	207	218155.0	0.4	**48.0608**	0.946	2.0	ug/L	215	Standard
	Pb	208	851760.1	1.1	**50.1133**	0.387	0.8	ug/L	770	Standard
	U	238	300943.2	1.1	**48.8537**	0.383	0.8	ug/L	13	Standard
>	**Bi**	209	516771.8	1.8				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3847.2	2.3	**4.4854**	0.083	1.8	mg/L	35	Standard
K	39	1120.0	5.4	**4.6686**	0.296	6.3	mg/L	25	Standard
Ca	43	61.7	49.5	**5.0777**	5.123	100.9	mg/L	38	Standard
Fe	54	5797.8	2.5	**4.5733**	0.113	2.5	mg/L	126	Standard
Fe	57	1638.4	11.3	**4.4400**	0.621	14.0	mg/L	245	Standard
> **Sc-1**	45	29281.6	1.0				mg/L	25066	Standard
Cl	35	158279.8	0.9				ug/L	125857	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	7785.3	7.0				ug/L	1350	Standard
P	31	24633.3	2.3				ug/L	18393	Standard
S	34	5546.0	5.0				ug/L	3739	Standard
Sr	88	78.3	26.6				ug/L	78	Standard
C	12	36.7	83.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.9	217.0				mg/L	2	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	7436.9	29.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	107.698		
Al	27	110.885		
Sc	45			
Ti	47	106.092		
V	51	99.836		
Cr	52	104.561		
Cr	53			
Mn	55	99.003		
Co	59	95.653		
Ni	60	103.407		
Cu	65	103.331		
Zn	66	100.703		
> Ge	72		110.827	
As	75	98.434		
Se	82	98.963		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	95.565		
Ag	107	101.928		
Cd	111	100.570		
Cd	114			
> In	115		104.784	
Sn	118	98.404		
Sb	123	100.745		
Ba	135	100.687		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.907		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.227		
U	238	97.707		
> Bi	209		102.709	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 16:23:09
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56266.0	2.0				ug/L	60176	Standard
	Be	9	25.0	80.0	**0.0280**	0.030	105.7	ug/L	5	Standard
	Al	27	7918.3	94.7	**0.0560**	0.061	108.1	ug/L	832	Standard
	Sc	45	29356.8	5.8				ug/L	25066	Standard
	Ti	47	35.0	18.7	**-0.0382**	0.028	74.5	ug/L	38	Standard
	V	51	1134.6	16.5	**0.0083**	0.030	365.3	ug/L	974	Standard
	Cr	52	6818.2	1.1	**0.0629**	0.027	42.6	ug/L	5792	Standard
	Cr	53	1238.4	11.1	**1.0052**	0.129	12.8	ug/L	347	Standard
	Mn	55	1320.1	12.1	**-0.0219**	0.024	109.1	ug/L	1164	Standard
	Co	59	310.0	11.8	**-0.0016**	0.006	351.9	ug/L	303	Standard
	Ni	60	235.3	8.6	**-0.0679**	0.011	16.8	ug/L	291	Standard
	Cu	65	177.0	8.0	**-0.0049**	0.008	164.6	ug/L	173	Standard
	Zn	66	177.0	5.2	**-0.0754**	0.007	9.0	ug/L	130	Standard
>	**Ge**	72	524620.7	2.1				ug/L	491724	Standard
	As	75	-13.2	80.2	**0.0220**	0.010	43.5	ug/L	-25	Standard
	Se	82	28.7	3.3	**0.1675**	0.014	8.3	ug/L	12	Standard
	Se-1	77	113.7	8.9	**0.8568**	0.111	13.0	ug/L	57	Standard
>	**Ga**	71	91.7	13.7				mg/L	148	Standard
	Rb	85	53.3	84.0				ug/L	18	Standard
	Y	89	460825.3	1.3				ug/L	401845	Standard
>	**Rh**	103	101.7	25.2				ug/L	10	Standard
	Mo	98	249.0	15.8	**0.0890**	0.015	16.5	ug/L	12	Standard
	Ag	107	151.0	31.3	**0.0077**	0.007	94.9	ug/L	98	Standard
	Cd	111	24.8	83.9	**0.0072**	0.010	139.1	mg/L	11	Standard
	Cd	114	38.5	121.3	**0.0032**	0.009	291.6	ug/L	21	Standard
>	**In**	115	607357.0	0.3				ug/L	547487	Standard
	Sn	118	863.4	16.0	**0.0759**	0.024	32.0	ug/L	450	Standard
	Sb	123	252.1	31.9	**0.0459**	0.017	37.5	ug/L	105	Standard
	Ba	135	755.7	103.5	**0.3163**	0.386	122.0	ug/L	111	Standard
	Ce	140	33.3	70.9				ug/L	107	Standard
>	**Tb**	159	941140.6	1.6				ug/L	890342	Standard
	Ho	165	6.7	114.6				ug/L	10	Standard
	Tl	203	152.0	39.9	**0.0158**	0.008	49.6	ug/L	19	Standard
	Tl	205	98.3	43.8	**0.0163**	0.007	41.4	ug/L	17	Standard
	Pb	206	282.7	4.4	**0.0011**	0.002	198.8	ug/L	247	Standard
	Pb	207	255.7	7.2	**0.0036**	0.003	80.4	ug/L	215	Standard
	Pb	208	1014.3	8.8	**-0.0008**	0.006	712.2	ug/L	770	Standard
	U	238	74.0	54.7	**0.0111**	0.007	59.3	ug/L	13	Standard
>	**Bi**	209	522423.3	2.2				ug/L	503143	Standard

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Na	23	1.7	173.2	**15.5124**	26.860	173.1	mg/L	2	Standard
Mg	24	78.3	48.8	**0.0520**	0.042	80.2	mg/L	35	Standard
K	39	28.3	53.9	**0.0109**	0.074	678.3	mg/L	25	Standard
Ca	43	20.0	25.0	**-1.9217**	1.047	54.5	mg/L	38	Standard
Fe	54	152.7	6.9	**-0.0127**	0.009	69.1	mg/L	126	Standard
Fe	57	248.3	9.9	**-0.2512**	0.109	43.3	mg/L	245	Standard
> **Sc-1**	45	29356.8	5.8				mg/L	25066	Standard
Cl	35	163319.6	1.6				ug/L	125857	Standard
Kr	83	3.3	17.3				ug/L	1	Standard
Br	81	4450.7	3.2				ug/L	1350	Standard
P	31	25079.1	2.0				ug/L	18393	Standard
S	34	5581.0	3.4				ug/L	3739	Standard
Sr	88	80.0	25.0				ug/L	78	Standard
C	12	76.7	7.5				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.2	186.8				mg/L	2	Standard
Ho-1	165	6.7	114.6				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	3778.8	9.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.690	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.935
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.832
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW 17 WG573111-04
Sample Date/Time: Tuesday, June 21, 2016 17:12:00
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54402.5	1.6				ug/L	60176	Standard
	Be	9	5.0	100.0	**-0.0013**	0.008	610.8	ug/L	5	Standard
	Al	27	10618.7	0.6	**0.0810**	0.001	1.1	ug/L	832	Standard
	Sc	45	24893.8	1.7				ug/L	25066	Standard
	Ti	47	40.7	25.8	**0.0061**	0.051	846.2	ug/L	38	Standard
	V	51	1126.6	6.2	**0.0221**	0.007	33.6	ug/L	974	Standard
	Cr	52	8748.9	1.0	**0.4586**	0.027	6.0	ug/L	5792	Standard
	Cr	53	838.4	4.0	**0.6314**	0.050	8.0	ug/L	347	Standard
	Mn	55	1743.4	2.0	**0.0621**	0.003	4.4	ug/L	1164	Standard
	Co	59	260.3	10.0	**-0.0058**	0.005	78.5	ug/L	303	Standard
	Ni	60	358.3	2.1	**0.0122**	0.003	26.6	ug/L	291	Standard
	Cu	65	173.7	5.2	**0.0013**	0.007	572.1	ug/L	173	Standard
	Zn	66	1250.4	1.5	**0.9925**	0.026	2.6	ug/L	130	Standard
>	**Ge**	72	483042.7	2.3				ug/L	491724	Standard
	As	75	-21.6	45.1	**0.0130**	0.009	71.6	ug/L	-25	Standard
	Se	82	20.3	42.3	**0.1056**	0.079	74.7	ug/L	12	Standard
	Se-1	77	60.7	14.0	**0.2232**	0.110	49.2	ug/L	57	Standard
>	**Ga**	71	95.0	27.3				mg/L	148	Standard
	Rb	85	53.3	28.6				ug/L	18	Standard
	Y	89	406515.1	1.2				ug/L	401845	Standard
>	**Rh**	103	40.0	33.1				ug/L	10	Standard
	Mo	98	66.3	12.4	**0.0239**	0.004	16.1	ug/L	12	Standard
	Ag	107	76.0	9.9	**-0.0021**	0.001	70.0	ug/L	98	Standard
	Cd	111	4.2	59.6	**-0.0024**	0.001	56.9	mg/L	11	Standard
	Cd	114	16.2	34.0	**-0.0008**	0.001	148.3	ug/L	21	Standard
>	**In**	115	532744.5	1.4				ug/L	547487	Standard
	Sn	118	578.3	18.2	**0.0405**	0.021	51.9	ug/L	450	Standard
	Sb	123	112.7	14.7	**0.0197**	0.004	21.1	ug/L	105	Standard
	Ba	135	77.3	10.0	**-0.0123**	0.004	33.0	ug/L	111	Standard
	Ce	140	56.7	20.4				ug/L	107	Standard
>	**Tb**	159	863639.0	0.6				ug/L	890342	Standard
	Ho	165	10.0	86.6				ug/L	10	Standard
	Tl	203	20.7	12.2	**-0.0007**	0.000	46.3	ug/L	19	Standard
	Tl	205	13.3	57.3	**0.0032**	0.001	39.6	ug/L	17	Standard
	Pb	206	252.0	6.0	**-0.0014**	0.003	236.2	ug/L	247	Standard
	Pb	207	197.0	9.6	**-0.0061**	0.004	71.2	ug/L	215	Standard
	Pb	208	811.7	2.3	**-0.0092**	0.001	11.3	ug/L	770	Standard
	U	238	4.3	13.3	**-0.0001**	0.000	120.6	ug/L	13	Standard
>	**Bi**	209	487095.8	0.3				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	46.7	22.3	**0.0258**	0.015	59.6	mg/L	35	Standard
K	39	21.7	26.6	**-0.0039**	0.028	718.4	mg/L	25	Standard
Ca	43	25.0	0.0	**-0.3636**	0.085	23.3	mg/L	38	Standard
Fe	54	131.2	2.2	**-0.0111**	0.005	43.5	mg/L	126	Standard
Fe	57	268.3	15.6	**-0.0229**	0.182	793.2	mg/L	245	Standard
Sc-1	45	24893.8	1.7				mg/L	25066	Standard
Cl	35	153737.5	1.5				ug/L	125857	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	1480.1	4.7				ug/L	1350	Standard
P	31	20108.3	1.0				ug/L	18393	Standard
S	34	5007.5	3.6				ug/L	3739	Standard
Sr	88	75.0	24.0				ug/L	78	Standard
C	12	86.7	56.9				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.7	86.6				mg/L	2	Standard
Ho-1	165	10.0	86.6				mg/L	10	Standard
Er	166	0.0					mg/L	23	Standard
I	127	1100.0	6.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.406	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.235	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.307
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.811
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 17 WG573111-05
Sample Date/Time: Tuesday, June 21, 2016 17:15:12
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53402.3	2.8				ug/L	60176	Standard
	Be	9	32992.6	3.7	**51.7865**	1.692	3.3	ug/L	5	Standard
	Al	27	12198.2	3.5	**0.0963**	0.003	3.3	ug/L	832	Standard
	Sc	45	25010.7	4.4				ug/L	25066	Standard
	Ti	47	36.7	19.3	**-0.0127**	0.038	300.5	ug/L	38	Standard
	V	51	309717.1	0.7	**53.3313**	0.527	1.0	ug/L	974	Standard
	Cr	52	342937.1	0.8	**54.4644**	0.576	1.1	ug/L	5792	Standard
	Cr	53	43542.5	1.3	**54.2826**	0.411	0.8	ug/L	347	Standard
	Mn	55	351550.5	1.0	**56.2349**	1.195	2.1	ug/L	1164	Standard
	Co	59	316884.2	0.8	**53.4233**	1.002	1.9	ug/L	303	Standard
	Ni	60	94717.8	1.1	**53.8819**	0.368	0.7	ug/L	291	Standard
	Cu	65	94262.3	0.8	**54.0303**	0.520	1.0	ug/L	173	Standard
	Zn	66	54370.7	1.4	**53.6116**	0.241	0.4	ug/L	130	Standard
>	**Ge**	72	478860.5	1.7				ug/L	491724	Standard
	As	75	54535.7	0.7	**53.3915**	0.571	1.1	ug/L	-25	Standard
	Se	82	5489.3	0.8	**54.4366**	0.730	1.3	ug/L	12	Standard
	Se-1	77	3768.1	1.6	**54.1018**	0.084	0.2	ug/L	57	Standard
>	**Ga**	71	106.7	23.6				mg/L	148	Standard
	Rb	85	70.0	25.8				ug/L	18	Standard
	Y	89	420312.3	1.2				ug/L	401845	Standard
>	**Rh**	103	70.0	14.3				ug/L	10	Standard
	Mo	98	30.2	2.9	**0.0083**	0.001	6.6	ug/L	12	Standard
	Ag	107	9909.6	0.5	**1.6841**	0.042	2.5	ug/L	98	Standard
	Cd	111	95930.4	1.1	**51.6011**	0.537	1.0	mg/L	11	Standard
	Cd	114	231350.0	0.5	**51.1556**	0.846	1.7	ug/L	21	Standard
>	**In**	115	541530.1	2.0				ug/L	547487	Standard
	Sn	118	488.3	3.9	**0.0210**	0.003	13.6	ug/L	450	Standard
	Sb	123	205763.6	0.9	**48.9816**	0.890	1.8	ug/L	105	Standard
	Ba	135	93604.3	1.7	**51.4945**	0.191	0.4	ug/L	111	Standard
	Ce	140	73.3	20.8				ug/L	107	Standard
>	**Tb**	159	860719.0	2.3				ug/L	890342	Standard
	Ho	165	16.7	96.4				ug/L	10	Standard
	Tl	203	369565.4	1.5	**51.2366**	0.305	0.6	ug/L	19	Standard
	Tl	205	309835.9	0.4	**52.3608**	0.657	1.3	ug/L	17	Standard
	Pb	206	243588.1	0.4	**52.4792**	0.634	1.2	ug/L	247	Standard
	Pb	207	213081.9	0.8	**50.5043**	1.123	2.2	ug/L	215	Standard
	Pb	208	848492.0	0.7	**53.7161**	1.109	2.1	ug/L	770	Standard
	U	238	292643.2	0.8	**51.1091**	0.641	1.3	ug/L	13	Standard
>	**Bi**	209	480350.2	1.5				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	53.3	23.6	**0.0350**	0.020	55.8	mg/L	35	Standard
K	39	43.3	24.0	**0.1052**	0.059	55.9	mg/L	25	Standard
Ca	43	38.3	41.9	**2.3482**	3.443	146.6	mg/L	38	Standard
Fe	54	126.6	30.3	**-0.0161**	0.037	230.4	mg/L	126	Standard
Fe	57	250.0	12.5	**-0.1010**	0.134	132.3	mg/L	245	Standard
> **Sc-1**	45	25010.7	4.4				mg/L	25066	Standard
Cl	35	154303.8	1.1				ug/L	125857	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	1753.4	3.7				ug/L	1350	Standard
P	31	20824.3	0.3				ug/L	18393	Standard
S	34	4885.8	3.3				ug/L	3739	Standard
Sr	88	56.7	28.4				ug/L	78	Standard
C	12	36.7	15.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	8.9	8.2				mg/L	2	Standard
Ho-1	165	16.7	96.4				mg/L	10	Standard
Er	166	23.3	65.5				mg/L	23	Standard
I	127	1055.0	7.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.744	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.384	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.912
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.470
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 17 WG573111-05
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Method 6020 - Summary Report

Sample ID: L1606054006 WG573111-03
Sample Date/Time: Tuesday, June 21, 2016 17:18:23
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53768.6	1.8				ug/L	60176	Standard
	Be	9	223.3	5.2	**0.3390**	0.013	4.0	ug/L	5	Standard
	Al	27	1723479.9	1.0	**14.6779**	0.117	0.8	ug/L	832	Standard
	Sc	45	25968.9	1.0				ug/L	25066	Standard
	Ti	47	174.3	23.9	**0.6975**	0.209	30.0	ug/L	38	Standard
	V	51	3187.1	1.0	**0.3676**	0.007	1.8	ug/L	974	Standard
	Cr	52	9962.3	2.2	**0.6307**	0.032	5.0	ug/L	5792	Standard
	Cr	53	1050.0	15.7	**0.8771**	0.206	23.5	ug/L	347	Standard
	Mn	55	96644.7	2.5	**14.9562**	0.439	2.9	ug/L	1164	Standard
	Co	59	26099.5	1.4	**4.2561**	0.058	1.4	ug/L	303	Standard
	Ni	60	9094.4	0.4	**4.8855**	0.040	0.8	ug/L	291	Standard
	Cu	65	962.0	3.3	**0.4423**	0.013	3.0	ug/L	173	Standard
	Zn	66	4916.8	1.4	**4.5256**	0.053	1.2	ug/L	130	Standard
>	**Ge**	72	489760.3	0.8				ug/L	491724	Standard
	As	75	1211.7	3.7	**1.1931**	0.045	3.8	ug/L	-25	Standard
	Se	82	46.7	17.2	**0.3607**	0.079	21.9	ug/L	12	Standard
	Se-1	77	79.0	14.9	**0.4737**	0.176	37.2	ug/L	57	Standard
>	**Ga**	71	271.7	15.3				mg/L	148	Standard
	Rb	85	4263.9	3.2				ug/L	18	Standard
	Y	89	440770.7	2.7				ug/L	401845	Standard
>	**Rh**	103	63.3	12.1				ug/L	10	Standard
	Mo	98	195.2	3.2	**0.0786**	0.003	4.2	ug/L	12	Standard
	Ag	107	113.0	15.1	**0.0042**	0.003	72.0	ug/L	98	Standard
	Cd	111	262.6	11.3	**0.1381**	0.015	10.9	mg/L	11	Standard
	Cd	114	702.5	10.7	**0.1526**	0.016	10.3	ug/L	21	Standard
>	**In**	115	535297.3	0.8				ug/L	547487	Standard
	Sn	118	651.7	5.8	**0.0543**	0.006	11.8	ug/L	450	Standard
	Sb	123	1542.7	18.6	**0.3642**	0.071	19.6	ug/L	105	Standard
	Ba	135	39728.0	0.6	**22.0778**	0.170	0.8	ug/L	111	Standard
	Ce	140	141161.2	0.1				ug/L	107	Standard
>	**Tb**	159	862084.5	1.3				ug/L	890342	Standard
	Ho	165	2525.2	0.9				ug/L	10	Standard
	Tl	203	237.3	1.4	**0.0286**	0.000	1.4	ug/L	19	Standard
	Tl	205	215.0	12.9	**0.0365**	0.005	13.1	ug/L	17	Standard
	Pb	206	988.7	2.5	**0.1535**	0.005	2.9	ug/L	247	Standard
	Pb	207	865.0	0.8	**0.1485**	0.002	1.1	ug/L	215	Standard
	Pb	208	3337.8	2.7	**0.1469**	0.006	4.0	ug/L	770	Standard
	U	238	1870.8	2.8	**0.3187**	0.008	2.5	ug/L	13	Standard
>	**Bi**	209	491187.2	0.5				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.7819**	30.791	173.2	mg/L	2	Standard
Mg	24	1156.7	3.8	**1.4947**	0.043	2.9	mg/L	35	Standard
K	39	66.7	22.9	**0.2083**	0.073	35.0	mg/L	25	Standard
Ca	43	60.0	28.9	**6.0703**	3.171	52.2	mg/L	38	Standard
Fe	54	927.1	5.1	**0.7125**	0.036	5.1	mg/L	126	Standard
Fe	57	453.3	12.5	**0.6351**	0.217	34.1	mg/L	245	Standard
> **Sc-1**	45	25968.9	1.0				mg/L	25066	Standard
Cl	35	162179.5	1.3				ug/L	125857	Standard
Kr	83	1.7	124.9				ug/L	1	Standard
Br	81	3033.6	2.3				ug/L	1350	Standard
P	31	21506.9	0.4				ug/L	18393	Standard
S	34	4834.1	0.8				ug/L	3739	Standard
Sr	88	95.0	26.3				ug/L	78	Standard
C	12	80.0	25.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	3728.6	6.7				mg/L	2	Standard
Ho-1	165	2525.2	0.9				mg/L	10	Standard
Er	166	2266.8	4.7				mg/L	23	Standard
I	127	11339.3	11.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.352	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.601	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.774
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.624
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606054007S WG573111-09
Sample Date/Time: Tuesday, June 21, 2016 17:21:35
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55648.7	1.0				ug/L	60176	Standard
	Be	9	35439.7	1.0	**53.3747**	0.542	1.0	ug/L	5	Standard
	Al	27	1734040.1	1.3	**14.2679**	0.205	1.4	ug/L	832	Standard
	Sc	45	25546.5	2.5				ug/L	25066	Standard
	Ti	47	195.0	1.4	**0.7899**	0.031	3.9	ug/L	38	Standard
	V	51	309925.0	0.5	**51.3311**	0.675	1.3	ug/L	974	Standard
	Cr	52	343998.6	1.2	**52.5323**	1.556	3.0	ug/L	5792	Standard
	Cr	53	43246.7	4.8	**51.8802**	3.426	6.6	ug/L	347	Standard
	Mn	55	421085.3	0.6	**64.8270**	1.302	2.0	ug/L	1164	Standard
	Co	59	336029.8	0.8	**54.5018**	1.427	2.6	ug/L	303	Standard
	Ni	60	104045.4	1.6	**56.9634**	1.904	3.3	ug/L	291	Standard
	Cu	65	95190.8	1.4	**52.4843**	0.914	1.7	ug/L	173	Standard
	Zn	66	58975.9	0.8	**55.9583**	1.065	1.9	ug/L	130	Standard
>	**Ge**	72	497816.0	1.8				ug/L	491724	Standard
	As	75	56479.5	0.3	**53.1942**	0.942	1.8	ug/L	-25	Standard
	Se	82	5338.4	1.1	**50.9267**	1.343	2.6	ug/L	12	Standard
	Se-1	77	3721.8	0.2	**51.3788**	0.854	1.7	ug/L	57	Standard
>	**Ga**	71	246.7	20.3				mg/L	148	Standard
	Rb	85	4018.9	6.2				ug/L	18	Standard
	Y	89	438370.4	1.5				ug/L	401845	Standard
>	**Rh**	103	75.0	20.0				ug/L	10	Standard
	Mo	98	177.1	10.3	**0.0704**	0.007	9.6	ug/L	12	Standard
	Ag	107	25202.6	1.7	**4.3298**	0.014	0.3	ug/L	98	Standard
	Cd	111	95691.9	1.4	**51.7579**	0.175	0.3	mg/L	11	Standard
	Cd	114	231930.1	2.9	**51.5555**	0.701	1.4	ug/L	21	Standard
>	**In**	115	538493.9	1.7				ug/L	547487	Standard
	Sn	118	535.0	0.9	**0.0307**	0.002	8.0	ug/L	450	Standard
	Sb	123	208964.7	1.0	**50.0186**	0.580	1.2	ug/L	105	Standard
	Ba	135	133008.3	1.3	**73.6104**	0.853	1.2	ug/L	111	Standard
	Ce	140	144677.5	1.4				ug/L	107	Standard
>	**Tb**	159	870588.4	1.2				ug/L	890342	Standard
	Ho	165	2515.2	1.4				ug/L	10	Standard
	Tl	203	376132.5	1.2	**50.4480**	0.208	0.4	ug/L	19	Standard
	Tl	205	310457.8	2.2	**50.7488**	0.818	1.6	ug/L	17	Standard
	Pb	206	249489.7	0.6	**51.9992**	0.813	1.6	ug/L	247	Standard
	Pb	207	216108.6	0.2	**49.5458**	0.596	1.2	ug/L	215	Standard
	Pb	208	835970.7	1.9	**51.1849**	0.557	1.1	ug/L	770	Standard
	U	238	296500.2	1.1	**50.0915**	0.324	0.6	ug/L	13	Standard
>	**Bi**	209	496523.1	1.1				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	1253.4	1.0	**1.6514**	0.045	2.7	mg/L	35	Standard
K	39	90.0	24.2	**0.3274**	0.105	31.9	mg/L	25	Standard
Ca	43	50.0	0.0	**4.3487**	0.242	5.6	mg/L	38	Standard
Fe	54	828.2	6.8	**0.6342**	0.039	6.2	mg/L	126	Standard
Fe	57	453.3	3.4	**0.6651**	0.095	14.3	mg/L	245	Standard
> **Sc-1**	45	25546.5	2.5				mg/L	25066	Standard
Cl	35	160715.9	0.9				ug/L	125857	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	6278.0	7.6				ug/L	1350	Standard
P	31	21558.7	3.0				ug/L	18393	Standard
S	34	4647.4	1.5				ug/L	3739	Standard
Sr	88	96.7	16.6				ug/L	78	Standard
C	12	80.0	33.1				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	3942.4	3.7				mg/L	2	Standard
Ho-1	165	2515.2	1.4				mg/L	10	Standard
Er	166	2396.9	12.6				mg/L	23	Standard
I	127	13020.6	8.0				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.477	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.239	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.357
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.684
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606054008SD WG573111-10
Sample Date/Time: Tuesday, June 21, 2016 17:24:46
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55279.0	1.9				ug/L	60176	Standard
	Be	9	36627.6	1.2	**55.5439**	1.219	2.2	ug/L	5	Standard
	Al	27	1713238.5	1.0	**14.1936**	0.289	2.0	ug/L	832	Standard
	Sc	45	25197.6	2.6				ug/L	25066	Standard
	Ti	47	199.3	7.4	**0.8424**	0.087	10.4	ug/L	38	Standard
	V	51	309494.1	1.0	**52.7786**	0.658	1.2	ug/L	974	Standard
	Cr	52	347378.1	1.2	**54.6471**	1.197	2.2	ug/L	5792	Standard
	Cr	53	43514.1	2.2	**53.7328**	1.741	3.2	ug/L	347	Standard
	Mn	55	424846.4	0.6	**67.3400**	0.361	0.5	ug/L	1164	Standard
	Co	59	340025.8	0.7	**56.7736**	0.789	1.4	ug/L	303	Standard
	Ni	60	103607.1	1.5	**58.3956**	1.391	2.4	ug/L	291	Standard
	Cu	65	94948.3	1.4	**53.9039**	1.162	2.2	ug/L	173	Standard
	Zn	66	59000.7	0.9	**57.6432**	1.050	1.8	ug/L	130	Standard
>	**Ge**	72	483481.9	1.0				ug/L	491724	Standard
	As	75	55725.2	0.4	**54.0300**	0.345	0.6	ug/L	-25	Standard
	Se	82	5455.4	1.2	**53.5737**	0.261	0.5	ug/L	12	Standard
	Se-1	77	3687.1	2.8	**52.4054**	0.959	1.8	ug/L	57	Standard
>	**Ga**	71	291.7	5.5				mg/L	148	Standard
	Rb	85	3975.5	3.5				ug/L	18	Standard
	Y	89	437768.5	1.6				ug/L	401845	Standard
>	**Rh**	103	73.3	21.9				ug/L	10	Standard
	Mo	98	292.6	1.9	**0.1184**	0.004	3.1	ug/L	12	Standard
	Ag	107	6385.3	1.6	**1.0770**	0.028	2.6	ug/L	98	Standard
	Cd	111	98546.6	1.7	**52.8871**	1.151	2.2	mg/L	11	Standard
	Cd	114	241574.4	2.1	**53.2859**	1.073	2.0	ug/L	21	Standard
>	**In**	115	542760.7	1.3				ug/L	547487	Standard
	Sn	118	570.0	9.9	**0.0368**	0.012	33.4	ug/L	450	Standard
	Sb	123	210832.3	1.1	**50.0678**	0.730	1.5	ug/L	105	Standard
	Ba	135	135047.9	1.1	**74.1546**	1.297	1.7	ug/L	111	Standard
	Ce	140	141782.0	0.7				ug/L	107	Standard
>	**Tb**	159	865701.6	1.6				ug/L	890342	Standard
	Ho	165	2566.9	2.9				ug/L	10	Standard
	Tl	203	382403.7	0.7	**52.5418**	1.098	2.1	ug/L	19	Standard
	Tl	205	317463.1	0.8	**53.1627**	1.073	2.0	ug/L	17	Standard
	Pb	206	248494.2	0.2	**53.0491**	0.826	1.6	ug/L	247	Standard
	Pb	207	215899.1	1.2	**50.7054**	1.283	2.5	ug/L	215	Standard
	Pb	208	857334.8	1.1	**53.7766**	0.992	1.8	ug/L	770	Standard
	U	238	302840.8	1.0	**52.4120**	1.195	2.3	ug/L	13	Standard
>	**Bi**	209	484780.2	1.4				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	1276.7	8.6	**1.7042**	0.107	6.3	mg/L	35	Standard
K	39	51.7	49.7	**0.1459**	0.135	92.5	mg/L	25	Standard
Ca	43	55.0	9.1	**5.4513**	0.801	14.7	mg/L	38	Standard
Fe	54	811.1	8.4	**0.6307**	0.085	13.5	mg/L	126	Standard
Fe	57	461.7	3.8	**0.7224**	0.112	15.4	mg/L	245	Standard
> **Sc-1**	45	25197.6	2.6				mg/L	25066	Standard
Cl	35	161517.7	0.6				ug/L	125857	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	2850.3	4.7				ug/L	1350	Standard
P	31	22705.3	1.8				ug/L	18393	Standard
S	34	4462.3	4.8				ug/L	3739	Standard
Sr	88	113.3	17.8				ug/L	78	Standard
C	12	80.0	25.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	3943.7	6.5				mg/L	2	Standard
Ho-1	165	2566.9	2.9				mg/L	10	Standard
Er	166	2160.2	8.1				mg/L	23	Standard
I	127	12827.1	9.5				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.862	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.324	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606054008SD WG573111-10
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.137
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.350
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606062401
Sample Date/Time: Tuesday, June 21, 2016 17:27:58
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58089.5	1.1				ug/L	60176	Standard
	Be	9	30.0	33.3	**0.0342**	0.014	41.0	ug/L	5	Standard
	Al	27	6143141.8	1.0	**48.4472**	0.944	1.9	ug/L	832	Standard
	Sc	45	25180.9	3.0				ug/L	25066	Standard
	Ti	47	164.0	25.9	**0.6648**	0.220	33.1	ug/L	38	Standard
	V	51	185031.3	1.5	**31.8430**	0.072	0.2	ug/L	974	Standard
	Cr	52	18607.9	15.7	**2.0656**	0.441	21.3	ug/L	5792	Standard
	Cr	53	3327.0	10.6	**3.7691**	0.381	10.1	ug/L	347	Standard
	Mn	55	46439.1	0.7	**7.2533**	0.079	1.1	ug/L	1164	Standard
	Co	59	5982.5	1.5	**0.9617**	0.001	0.1	ug/L	303	Standard
	Ni	60	16639.8	1.1	**9.3260**	0.213	2.3	ug/L	291	Standard
	Cu	65	8174.2	0.6	**4.6046**	0.102	2.2	ug/L	173	Standard
	Zn	66	49644.2	2.1	**49.0098**	0.387	0.8	ug/L	130	Standard
>	**Ge**	72	478054.7	1.6				ug/L	491724	Standard
	As	75	1224.7	7.5	**1.2333**	0.072	5.9	ug/L	-25	Standard
	Se	82	472.0	3.9	**4.6028**	0.133	2.9	ug/L	12	Standard
	Se-1	77	207.0	7.7	**2.3618**	0.199	8.4	ug/L	57	Standard
>	**Ga**	71	200.0	23.8				mg/L	148	Standard
	Rb	85	14974.1	2.7				ug/L	18	Standard
	Y	89	411795.2	1.6				ug/L	401845	Standard
>	**Rh**	103	106.7	9.8				ug/L	10	Standard
	Mo	98	231188.7	0.7	**98.5932**	1.267	1.3	ug/L	12	Standard
	Ag	107	131.7	7.2	**0.0075**	0.002	23.5	ug/L	98	Standard
	Cd	111	-78.0	39.1	**-0.0472**	0.016	34.7	mg/L	11	Standard
	Cd	114	617.4	6.3	**0.1339**	0.009	7.0	ug/L	21	Standard
>	**In**	115	534274.2	0.6				ug/L	547487	Standard
	Sn	118	656.7	7.2	**0.0556**	0.010	17.6	ug/L	450	Standard
	Sb	123	2302.2	22.5	**0.5481**	0.126	23.0	ug/L	105	Standard
	Ba	135	32140.4	1.2	**17.8854**	0.296	1.7	ug/L	111	Standard
	Ce	140	261.7	29.6				ug/L	107	Standard
>	**Tb**	159	856456.1	0.5				ug/L	890342	Standard
	Ho	165	20.0	25.0				ug/L	10	Standard
	Tl	203	426.7	20.5	**0.0564**	0.012	21.0	ug/L	19	Standard
	Tl	205	363.3	45.3	**0.0631**	0.028	43.7	ug/L	17	Standard
	Pb	206	788.4	5.3	**0.1175**	0.008	6.8	ug/L	247	Standard
	Pb	207	708.7	4.4	**0.1184**	0.006	5.2	ug/L	215	Standard
	Pb	208	2871.1	13.6	**0.1246**	0.024	18.9	ug/L	770	Standard
	U	238	398.7	34.3	**0.0697**	0.024	33.8	ug/L	13	Standard
>	**Bi**	209	473349.9	0.8				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	16877.7	3.1	**23.0643**	1.225	5.3	mg/L	35	Standard
K	39	280.0	25.0	**1.2812**	0.375	29.2	mg/L	25	Standard
Ca	43	126.7	8.2	**19.5068**	1.380	7.1	mg/L	38	Standard
Fe	54	143.3	6.8	**-0.0010**	0.012	1154.4	mg/L	126	Standard
Fe	57	358.3	9.3	**0.3188**	0.164	51.3	mg/L	245	Standard
> **Sc-1**	45	25180.9	3.0				mg/L	25066	Standard
Cl	35	205780.0	0.7				ug/L	125857	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	97895.4	2.7				ug/L	1350	Standard
P	31	21284.9	2.0				ug/L	18393	Standard
S	34	4504.0	2.9				ug/L	3739	Standard
Sr	88	191.7	4.0				ug/L	78	Standard
C	12	73.3	34.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	88.2				mg/L	0	Standard
Dy	164	29.4	101.4				mg/L	2	Standard
Ho-1	165	20.0	25.0				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	12732.0	2.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		96.533	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.220	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.587
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.079
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606062401PS WG573473-01
Sample Date/Time: Tuesday, June 21, 2016 17:31:09
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59555.2	1.6				ug/L	60176	Standard
	Be	9	38114.6	4.0	**53.6277**	1.538	2.9	ug/L	5	Standard
	Al	27	6236393.4	1.5	**47.9667**	0.190	0.4	ug/L	832	Standard
	Sc	45	25247.7	3.0				ug/L	25066	Standard
	Ti	47	149.7	6.7	**0.5489**	0.064	11.6	ug/L	38	Standard
	V	51	510919.3	1.1	**83.6813**	1.623	1.9	ug/L	974	Standard
	Cr	52	357055.0	1.4	**53.8592**	0.614	1.1	ug/L	5792	Standard
	Cr	53	46658.4	3.1	**55.2620**	1.342	2.4	ug/L	347	Standard
	Mn	55	386237.5	1.3	**58.7100**	1.701	2.9	ug/L	1164	Standard
	Co	59	326523.7	0.8	**52.2967**	1.090	2.1	ug/L	303	Standard
	Ni	60	110932.7	1.4	**59.9730**	0.773	1.3	ug/L	291	Standard
	Cu	65	103725.9	2.2	**56.4780**	0.362	0.6	ug/L	173	Standard
	Zn	66	105350.7	1.8	**98.8815**	0.625	0.6	ug/L	130	Standard
>	**Ge**	72	504099.0	2.3				ug/L	491724	Standard
	As	75	58925.6	0.8	**54.8077**	0.985	1.8	ug/L	-25	Standard
	Se	82	6143.8	2.0	**57.9003**	2.000	3.5	ug/L	12	Standard
	Se-1	77	4049.5	3.3	**55.2355**	0.588	1.1	ug/L	57	Standard
>	**Ga**	71	220.0	17.2				mg/L	148	Standard
	Rb	85	14929.0	0.6				ug/L	18	Standard
	Y	89	406274.5	1.9				ug/L	401845	Standard
>	**Rh**	103	120.0	21.7				ug/L	10	Standard
	Mo	98	233519.6	0.3	**99.7506**	0.946	0.9	ug/L	12	Standard
	Ag	107	294288.6	1.5	**51.2056**	0.387	0.8	ug/L	98	Standard
	Cd	111	97440.1	1.5	**53.2049**	0.652	1.2	mg/L	11	Standard
	Cd	114	237560.5	0.5	**53.3199**	0.438	0.8	ug/L	21	Standard
>	**In**	115	533397.7	0.7				ug/L	547487	Standard
	Sn	118	846.7	2.7	**0.0933**	0.004	4.2	ug/L	450	Standard
	Sb	123	217534.4	0.9	**52.5626**	0.359	0.7	ug/L	105	Standard
	Ba	135	126166.1	0.5	**70.4856**	0.674	1.0	ug/L	111	Standard
	Ce	140	221.7	9.1				ug/L	107	Standard
>	**Tb**	159	863996.7	1.6				ug/L	890342	Standard
	Ho	165	15.0	120.2				ug/L	10	Standard
	Tl	203	388142.4	1.0	**52.8512**	0.991	1.9	ug/L	19	Standard
	Tl	205	322436.9	1.5	**53.5061**	0.715	1.3	ug/L	17	Standard
	Pb	206	253353.0	2.2	**53.5909**	0.163	0.3	ug/L	247	Standard
	Pb	207	220862.2	1.1	**51.4007**	0.713	1.4	ug/L	215	Standard
	Pb	208	859792.8	1.1	**53.4462**	0.779	1.5	ug/L	770	Standard
	U	238	306380.9	1.7	**52.5395**	0.392	0.7	ug/L	13	Standard
>	**Bi**	209	489218.2	2.4				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.9600**	31.099	173.2	mg/L	2	Standard
Mg	24	16909.4	2.0	**23.0293**	0.226	1.0	mg/L	35	Standard
K	39	301.7	1.9	**1.3820**	0.071	5.1	mg/L	25	Standard
Ca	43	131.7	14.4	**20.3888**	3.034	14.9	mg/L	38	Standard
Fe	54	166.4	16.9	**0.0199**	0.023	114.5	mg/L	126	Standard
Fe	57	365.0	8.3	**0.3416**	0.157	46.0	mg/L	245	Standard
> **Sc-1**	45	25247.7	3.0				mg/L	25066	Standard
Cl	35	210532.0	1.1				ug/L	125857	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	100099.7	2.0				ug/L	1350	Standard
P	31	21987.6	1.4				ug/L	18393	Standard
S	34	4502.3	2.4				ug/L	3739	Standard
Sr	88	196.7	8.9				ug/L	78	Standard
C	12	86.7	24.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	70.0	37.8				mg/L	0	Standard
Dy	164	33.0	47.1				mg/L	2	Standard
Ho-1	165	15.0	120.2				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	23	Standard
I	127	13005.6	0.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.968	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.517	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.427
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.232
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606062401SDL WG573473-02
Sample Date/Time: Tuesday, June 21, 2016 17:34:21
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60477.2	2.3				ug/L	60176	Standard
	Be	9	20.0	25.0	**0.0187**	0.007	38.3	ug/L	5	Standard
	Al	27	1346077.1	1.4	**10.1901**	0.104	1.0	ug/L	832	Standard
	Sc	45	26165.9	1.8				ug/L	25066	Standard
	Ti	47	53.3	5.7	**0.0577**	0.020	34.3	ug/L	38	Standard
	V	51	40043.4	1.0	**6.2981**	0.105	1.7	ug/L	974	Standard
	Cr	52	9838.2	1.4	**0.5437**	0.034	6.2	ug/L	5792	Standard
	Cr	53	1326.7	4.2	**1.1460**	0.079	6.9	ug/L	347	Standard
	Mn	55	10769.8	1.7	**1.4023**	0.064	4.6	ug/L	1164	Standard
	Co	59	1559.7	6.1	**0.1970**	0.021	10.5	ug/L	303	Standard
	Ni	60	3793.5	0.5	**1.8350**	0.048	2.6	ug/L	291	Standard
	Cu	65	2218.5	2.2	**1.0935**	0.016	1.5	ug/L	173	Standard
	Zn	66	12058.5	0.3	**10.9344**	0.220	2.0	ug/L	130	Standard
>	**Ge**	72	512114.2	2.3				ug/L	491724	Standard
	As	75	280.0	6.4	**0.2900**	0.014	4.8	ug/L	-25	Standard
	Se	82	125.6	4.8	**1.0748**	0.079	7.4	ug/L	12	Standard
	Se-1	77	81.0	16.3	**0.4492**	0.161	35.8	ug/L	57	Standard
>	**Ga**	71	110.0	9.1				mg/L	148	Standard
	Rb	85	3283.7	4.5				ug/L	18	Standard
	Y	89	414186.7	0.7				ug/L	401845	Standard
>	**Rh**	103	43.3	17.6				ug/L	10	Standard
	Mo	98	48312.3	1.7	**19.6814**	0.770	3.9	ug/L	12	Standard
	Ag	107	449.0	12.1	**0.0592**	0.010	17.0	ug/L	98	Standard
	Cd	111	-5.5	192.0	**-0.0076**	0.005	71.9	mg/L	11	Standard
	Cd	114	194.3	6.1	**0.0372**	0.003	7.7	ug/L	21	Standard
>	**In**	115	559504.5	2.3				ug/L	547487	Standard
	Sn	118	523.3	5.3	**0.0246**	0.006	24.8	ug/L	450	Standard
	Sb	123	2078.0	20.6	**0.4699**	0.089	18.9	ug/L	105	Standard
	Ba	135	6769.2	2.6	**3.5550**	0.174	4.9	ug/L	111	Standard
	Ce	140	83.3	24.2				ug/L	107	Standard
>	**Tb**	159	903655.8	2.0				ug/L	890342	Standard
	Ho	165	10.0	132.3				ug/L	10	Standard
	Tl	203	191.7	11.3	**0.0211**	0.003	12.7	ug/L	19	Standard
	Tl	205	210.0	24.9	**0.0339**	0.008	25.0	ug/L	17	Standard
	Pb	206	458.3	5.1	**0.0367**	0.005	13.4	ug/L	247	Standard
	Pb	207	386.0	11.6	**0.0328**	0.010	31.6	ug/L	215	Standard
	Pb	208	1615.7	13.4	**0.0350**	0.013	38.0	ug/L	770	Standard
	U	238	122.3	50.4	**0.0190**	0.010	52.9	ug/L	13	Standard
>	**Bi**	209	518242.9	1.3				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3608.8	2.9	**4.7118**	0.175	3.7	mg/L	35	Standard
K	39	100.0	50.7	**0.3676**	0.247	67.2	mg/L	25	Standard
Ca	43	65.0	7.7	**6.9544**	1.038	14.9	mg/L	38	Standard
Fe	54	147.5	39.4	**-0.0029**	0.051	1721.0	mg/L	126	Standard
Fe	57	251.7	1.1	**-0.1393**	0.026	18.6	mg/L	245	Standard
> **Sc-1**	45	26165.9	1.8				mg/L	25066	Standard
Cl	35	182370.3	0.5				ug/L	125857	Standard
Kr	83	3.3	17.3				ug/L	1	Standard
Br	81	22266.3	0.9				ug/L	1350	Standard
P	31	21655.5	3.7				ug/L	18393	Standard
S	34	4839.1	3.8				ug/L	3739	Standard
Sr	88	88.3	14.2				ug/L	78	Standard
C	12	70.0	14.3				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.2	45.2				mg/L	2	Standard
Ho-1	165	10.0	132.3				mg/L	10	Standard
Er	166	23.3	49.5				mg/L	23	Standard
I	127	3850.5	6.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.501	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.147	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.195
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.001
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606062401SDL WG573473-02
Sample Date/Time: Tuesday, June 21, 2016 17:37:32
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60611.2	5.2				ug/L	60176	Standard
	Be	9	26.7	78.1	**0.0285**	0.030	104.7	ug/L	5	Standard
	Al	27	272431.0	1.2	**2.0536**	0.080	3.9	ug/L	832	Standard
	Sc	45	26581.7	4.6				ug/L	25066	Standard
	Ti	47	32.3	4.7	**-0.0400**	0.007	18.7	ug/L	38	Standard
	V	51	9199.9	0.5	**1.3799**	0.034	2.5	ug/L	974	Standard
	Cr	52	8009.8	1.0	**0.3197**	0.024	7.6	ug/L	5792	Standard
	Cr	53	745.0	1.3	**0.5003**	0.030	5.9	ug/L	347	Standard
	Mn	55	3074.3	2.9	**0.2662**	0.019	7.0	ug/L	1164	Standard
	Co	59	581.3	20.9	**0.0466**	0.022	46.9	ug/L	303	Standard
	Ni	60	942.0	2.2	**0.3340**	0.011	3.2	ug/L	291	Standard
	Cu	65	557.7	1.9	**0.2148**	0.011	5.0	ug/L	173	Standard
	Zn	66	3925.2	1.4	**3.5576**	0.086	2.4	ug/L	130	Standard
>	**Ge**	72	490874.3	1.9				ug/L	491724	Standard
	As	75	56.2	25.4	**0.0878**	0.015	16.7	ug/L	-25	Standard
	Se	82	43.0	3.7	**0.3232**	0.008	2.4	ug/L	12	Standard
	Se-1	77	62.7	10.3	**0.2398**	0.106	44.2	ug/L	57	Standard
>	**Ga**	71	86.7	3.3				mg/L	148	Standard
	Rb	85	633.3	8.9				ug/L	18	Standard
	Y	89	434053.3	1.1				ug/L	401845	Standard
>	**Rh**	103	58.3	43.1				ug/L	10	Standard
	Mo	98	9730.4	1.6	**3.7980**	0.056	1.5	ug/L	12	Standard
	Ag	107	110.7	14.6	**0.0022**	0.003	122.1	ug/L	98	Standard
	Cd	111	25.2	97.4	**0.0080**	0.012	156.2	mg/L	11	Standard
	Cd	114	100.0	105.0	**0.0162**	0.022	134.8	ug/L	21	Standard
>	**In**	115	583063.2	0.9				ug/L	547487	Standard
	Sn	118	498.3	15.0	**0.0160**	0.013	80.4	ug/L	450	Standard
	Sb	123	635.0	36.6	**0.1330**	0.052	39.5	ug/L	105	Standard
	Ba	135	1538.7	3.8	**0.7317**	0.038	5.1	ug/L	111	Standard
	Ce	140	56.7	43.5				ug/L	107	Standard
>	**Tb**	159	902775.5	1.1				ug/L	890342	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	138.3	68.1	**0.0148**	0.013	86.9	ug/L	19	Standard
	Tl	205	111.7	55.3	**0.0190**	0.010	54.2	ug/L	17	Standard
	Pb	206	376.0	13.9	**0.0221**	0.012	55.2	ug/L	247	Standard
	Pb	207	317.0	22.0	**0.0194**	0.017	88.5	ug/L	215	Standard
	Pb	208	1292.4	11.5	**0.0179**	0.010	58.6	ug/L	770	Standard
	U	238	68.7	96.5	**0.0107**	0.011	105.8	ug/L	13	Standard
>	**Bi**	209	506328.7	1.9				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	790.0	5.2	**0.9874**	0.095	9.7	mg/L	35	Standard
K	39	33.3	48.2	**0.0428**	0.071	166.5	mg/L	25	Standard
Ca	43	25.0	20.0	**-0.6943**	0.773	111.4	mg/L	38	Standard
Fe	54	139.1	10.5	**-0.0116**	0.017	151.0	mg/L	126	Standard
Fe	57	223.3	12.7	**-0.2573**	0.129	50.2	mg/L	245	Standard
> **Sc-1**	45	26581.7	4.6				mg/L	25066	Standard
Cl	35	175991.6	1.1				ug/L	125857	Standard
Kr	83	3.0	0.0				ug/L	1	Standard
Br	81	6047.9	4.6				ug/L	1350	Standard
P	31	21570.4	4.4				ug/L	18393	Standard
S	34	4842.4	5.1				ug/L	3739	Standard
Sr	88	105.0	12.6				ug/L	78	Standard
C	12	50.0	52.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	15.7	36.9				mg/L	2	Standard
Ho-1	165	8.3	91.7				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	23	Standard
I	127	1585.1	7.5				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.723	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.827	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.498
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.633
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 17:40:45
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59081.7	2.6				ug/L	60176	Standard
	Be	9	36702.7	2.3	**52.0769**	1.300	2.5	ug/L	5	Standard
	Al	27	6646200.9	1.1	**51.5434**	0.909	1.8	ug/L	832	Standard
	Sc	45	26020.7	3.8				ug/L	25066	Standard
	Ti	47	21214.8	1.7	**108.7289**	0.181	0.2	ug/L	38	Standard
	V	51	316864.2	1.4	**52.6965**	0.283	0.5	ug/L	974	Standard
	Cr	52	348817.6	0.6	**53.4950**	0.696	1.3	ug/L	5792	Standard
	Cr	53	43763.1	2.6	**52.6787**	0.604	1.1	ug/L	347	Standard
	Mn	55	340527.3	1.8	**52.5942**	0.923	1.8	ug/L	1164	Standard
	Co	59	326617.6	0.4	**53.1853**	0.746	1.4	ug/L	303	Standard
	Ni	60	96463.1	1.0	**53.0038**	0.733	1.4	ug/L	291	Standard
	Cu	65	95600.3	0.8	**52.9319**	0.992	1.9	ug/L	173	Standard
	Zn	66	54738.7	1.8	**52.1262**	0.134	0.3	ug/L	130	Standard
>	Ge	72	495763.5	1.8				ug/L	491724	Standard
	As	75	54512.5	0.4	**51.5524**	0.685	1.3	ug/L	-25	Standard
	Se	82	5543.1	2.2	**53.1106**	2.069	3.9	ug/L	12	Standard
	Se-1	77	3720.1	1.9	**51.5619**	0.639	1.2	ug/L	57	Standard
>	Ga	71	110.0	12.0				mg/L	148	Standard
	Rb	85	793.4	4.1				ug/L	18	Standard
	Y	89	412125.4	1.3				ug/L	401845	Standard
>	Rh	103	66.7	11.5				ug/L	10	Standard
	Mo	98	240736.8	1.1	**97.2447**	1.379	1.4	ug/L	12	Standard
	Ag	107	305628.4	1.4	**50.2975**	1.221	2.4	ug/L	98	Standard
	Cd	111	97888.8	1.5	**50.5420**	0.123	0.2	mg/L	11	Standard
	Cd	114	238935.5	1.4	**50.7107**	0.441	0.9	ug/L	21	Standard
>	In	115	564098.2	1.7				ug/L	547487	Standard
	Sn	118	268378.0	1.5	**50.0920**	0.857	1.7	ug/L	450	Standard
	Sb	123	219285.5	1.2	**50.1127**	1.176	2.3	ug/L	105	Standard
	Ba	135	94955.3	0.6	**50.1501**	0.552	1.1	ug/L	111	Standard
	Ce	140	105.0	45.4				ug/L	107	Standard
>	Tb	159	899441.1	1.5				ug/L	890342	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	387085.4	1.3	**50.9741**	0.552	1.1	ug/L	19	Standard
	Tl	205	323757.8	1.2	**51.9659**	0.790	1.5	ug/L	17	Standard
	Pb	206	244011.4	1.2	**49.9245**	0.191	0.4	ug/L	247	Standard
	Pb	207	221667.8	1.0	**49.8940**	0.499	1.0	ug/L	215	Standard
	Pb	208	859541.6	1.0	**51.6749**	0.448	0.9	ug/L	770	Standard
	U	238	309083.0	1.7	**51.2676**	0.733	1.4	ug/L	13	Standard
>	Bi	209	505715.2	0.9				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.6985**	32.378	173.2	mg/L	2	Standard
Mg	24	3983.9	6.0	**5.2438**	0.478	9.1	mg/L	35	Standard
K	39	1098.4	8.7	**5.1786**	0.659	12.7	mg/L	25	Standard
Ca	43	58.3	24.7	**5.7524**	2.702	47.0	mg/L	38	Standard
Fe	54	5616.8	2.9	**5.0026**	0.232	4.6	mg/L	126	Standard
Fe	57	1575.1	5.8	**4.9072**	0.583	11.9	mg/L	245	Standard
> **Sc-1**	45	26020.7	3.8				mg/L	25066	Standard
Cl	35	161905.2	1.1				ug/L	125857	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	1890.1	7.8				ug/L	1350	Standard
P	31	22423.3	2.7				ug/L	18393	Standard
S	34	5154.2	1.4				ug/L	3739	Standard
Sr	88	80.0	16.5				ug/L	78	Standard
C	12	60.0	28.9				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	15.7	132.5				mg/L	2	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	20.0	0.0				mg/L	23	Standard
I	127	1220.0	4.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	104.154		
Al	27	103.087		
Sc	45			
Ti	47	108.729		
V	51	105.393		
Cr	52	106.990		
Cr	53			
Mn	55	105.188		
Co	59	106.371		
Ni	60	106.008		
Cu	65	105.864		
Zn	66	104.252		
> Ge	72		100.822	
As	75	103.105		
Se	82	106.221		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	97.245		
Ag	107	100.595		
Cd	111	101.084		
Cd	114			
> In	115			103.034
Sn	118	100.184		
Sb	123	100.225		
Ba	135	100.300		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.948		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.350		
U	238	102.535		
> Bi	209			100.511
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 17:43:57
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56721.1	4.5				ug/L	60176	Standard
	Be	9	10.0	86.6	**0.0057**	0.013	221.6	ug/L	5	Standard
	Al	27	1560.1	22.0	**0.0041**	0.002	54.2	ug/L	832	Standard
	Sc	45	25518.2	4.3				ug/L	25066	Standard
	Ti	47	31.0	8.5	**-0.0455**	0.014	30.9	ug/L	38	Standard
	V	51	1025.7	2.6	**0.0036**	0.004	119.2	ug/L	974	Standard
	Cr	52	6145.2	1.0	**0.0342**	0.011	31.8	ug/L	5792	Standard
	Cr	53	456.7	16.4	**0.1515**	0.092	60.5	ug/L	347	Standard
	Mn	55	1042.7	1.9	**-0.0507**	0.003	6.1	ug/L	1164	Standard
	Co	59	294.3	14.4	**-0.0005**	0.007	1510.6	ug/L	303	Standard
	Ni	60	217.3	8.8	**-0.0685**	0.011	15.8	ug/L	291	Standard
	Cu	65	143.7	4.6	**-0.0165**	0.004	23.2	ug/L	173	Standard
	Zn	66	170.7	3.9	**-0.0690**	0.006	9.1	ug/L	130	Standard
>	**Ge**	72	486561.4	0.2				ug/L	491724	Standard
	As	75	-23.1	144.8	**0.0117**	0.032	276.8	ug/L	-25	Standard
	Se	82	19.3	43.3	**0.0963**	0.082	85.2	ug/L	12	Standard
	Se-1	77	61.7	9.5	**0.2322**	0.083	35.8	ug/L	57	Standard
>	**Ga**	71	91.7	11.4				mg/L	148	Standard
	Rb	85	30.0	33.3				ug/L	18	Standard
	Y	89	432565.5	1.6				ug/L	401845	Standard
>	**Rh**	103	56.7	13.5				ug/L	10	Standard
	Mo	98	283.8	18.7	**0.1104**	0.019	17.4	ug/L	12	Standard
	Ag	107	119.7	6.8	**0.0044**	0.001	22.8	ug/L	98	Standard
	Cd	111	7.8	28.1	**-0.0007**	0.001	162.1	mg/L	11	Standard
	Cd	114	30.1	75.3	**0.0019**	0.005	242.3	ug/L	21	Standard
>	**In**	115	561643.0	2.0				ug/L	547487	Standard
	Sn	118	805.0	28.2	**0.0777**	0.045	58.3	ug/L	450	Standard
	Sb	123	547.0	24.1	**0.1184**	0.033	27.7	ug/L	105	Standard
	Ba	135	127.0	2.8	**0.0118**	0.001	5.1	ug/L	111	Standard
	Ce	140	23.3	75.3				ug/L	107	Standard
>	**Tb**	159	876464.1	2.5				ug/L	890342	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	66.0	17.1	**0.0053**	0.001	26.5	ug/L	19	Standard
	Tl	205	63.3	53.7	**0.0113**	0.006	48.9	ug/L	17	Standard
	Pb	206	259.3	8.4	**-0.0008**	0.004	538.8	ug/L	247	Standard
	Pb	207	223.7	7.2	**-0.0007**	0.003	439.4	ug/L	215	Standard
	Pb	208	890.3	1.6	**-0.0052**	0.001	19.5	ug/L	770	Standard
	U	238	44.0	15.7	**0.0066**	0.001	16.4	ug/L	13	Standard
>	**Bi**	209	495284.3	1.2				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	30.0	28.9	**0.0015**	0.011	728.8	mg/L	35	Standard
K	39	26.7	43.3	**0.0178**	0.054	304.4	mg/L	25	Standard
Ca	43	45.0	22.2	**3.3451**	1.602	47.9	mg/L	38	Standard
Fe	54	122.5	43.7	**-0.0227**	0.048	210.0	mg/L	126	Standard
Fe	57	173.3	26.8	**-0.4223**	0.156	36.9	mg/L	245	Standard
Sc-1	45	25518.2	4.3				mg/L	25066	Standard
Cl	35	159927.0	1.4				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	1690.1	11.2				ug/L	1350	Standard
P	31	22770.5	4.5				ug/L	18393	Standard
S	34	5202.6	2.4				ug/L	3739	Standard
Sr	88	78.3	13.3				ug/L	78	Standard
C	12	43.3	35.3				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	-0.3	173.2				mg/L	2	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	6.7	173.2				mg/L	23	Standard
I	127	1065.0	12.4				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.950	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.586	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.438	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606053301
Sample Date/Time: Tuesday, June 21, 2016 17:47:10
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60448.7	2.1				ug/L	60176	Standard
	Be	9	18.3	68.6	**0.0166**	0.018	107.0	ug/L	5	Standard
	Al	27	6338152.4	1.3	**48.0500**	1.591	3.3	ug/L	832	Standard
	Sc	45	26546.6	1.7				ug/L	25066	Standard
	Ti	47	533.3	12.7	**2.5549**	0.399	15.6	ug/L	38	Standard
	V	51	2131.1	5.9	**0.1873**	0.019	10.0	ug/L	974	Standard
	Cr	52	10369.5	2.6	**0.6877**	0.071	10.4	ug/L	5792	Standard
	Cr	53	3198.7	11.9	**3.5005**	0.514	14.7	ug/L	347	Standard
	Mn	55	118129.1	0.7	**18.2372**	0.274	1.5	ug/L	1164	Standard
	Co	59	1318.1	2.7	**0.1671**	0.009	5.6	ug/L	303	Standard
	Ni	60	3116.7	1.4	**1.5404**	0.023	1.5	ug/L	291	Standard
	Cu	65	10605.0	1.7	**5.8283**	0.198	3.4	ug/L	173	Standard
	Zn	66	23001.4	1.8	**21.9280**	0.418	1.9	ug/L	130	Standard
>	Ge	72	492237.0	2.0				ug/L	491724	Standard
	As	75	3704.8	1.1	**3.5603**	0.041	1.1	ug/L	-25	Standard
	Se	82	134.6	8.4	**1.2098**	0.136	11.2	ug/L	12	Standard
	Se-1	77	313.3	8.9	**3.7853**	0.480	12.7	ug/L	57	Standard
>	Ga	71	193.3	12.2				mg/L	148	Standard
	Rb	85	29528.8	1.8				ug/L	18	Standard
	Y	89	410980.2	2.7				ug/L	401845	Standard
>	Rh	103	110.0	23.6				ug/L	10	Standard
	Mo	98	1672.2	1.4	**0.6833**	0.014	2.1	ug/L	12	Standard
	Ag	107	140.0	15.4	**0.0081**	0.004	49.8	ug/L	98	Standard
	Cd	111	117.6	8.0	**0.0571**	0.004	7.3	mg/L	11	Standard
	Cd	114	311.6	20.6	**0.0629**	0.014	22.1	ug/L	21	Standard
>	In	115	554117.5	1.9				ug/L	547487	Standard
	Sn	118	1430.1	5.5	**0.1980**	0.011	5.7	ug/L	450	Standard
	Sb	123	2644.4	2.3	**0.6075**	0.008	1.3	ug/L	105	Standard
	Ba	135	35642.9	0.4	**19.1319**	0.401	2.1	ug/L	111	Standard
	Ce	140	641.7	11.6				ug/L	107	Standard
>	Tb	159	896083.5	0.2				ug/L	890342	Standard
	Ho	165	56.7	18.4				ug/L	10	Standard
	Tl	203	219.3	9.7	**0.0257**	0.003	10.9	ug/L	19	Standard
	Tl	205	195.0	25.3	**0.0326**	0.008	24.4	ug/L	17	Standard
	Pb	206	1749.1	0.8	**0.3074**	0.003	0.8	ug/L	247	Standard
	Pb	207	1455.7	6.4	**0.2796**	0.021	7.4	ug/L	215	Standard
	Pb	208	5822.8	0.8	**0.2946**	0.003	0.9	ug/L	770	Standard
	U	238	208.3	11.2	**0.0341**	0.004	11.4	ug/L	13	Standard
>	Bi	209	499957.7	0.2				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	24221.0	1.0	**31.3840**	0.259	0.8	mg/L	35	Standard
K	39	728.4	13.1	**3.3171**	0.458	13.8	mg/L	25	Standard
Ca	43	125.0	12.0	**17.9391**	2.703	15.1	mg/L	38	Standard
Fe	54	160.7	6.4	**0.0076**	0.011	142.5	mg/L	126	Standard
Fe	57	373.3	9.9	**0.2993**	0.127	42.5	mg/L	245	Standard
> **Sc-1**	45	26546.6	1.7				mg/L	25066	Standard
Cl	35	196436.0	1.5				ug/L	125857	Standard
Kr	83	3.3	45.8				ug/L	1	Standard
Br	81	8072.2	1.9				ug/L	1350	Standard
P	31	22922.3	0.8				ug/L	18393	Standard
S	34	4750.7	1.5				ug/L	3739	Standard
Sr	88	181.7	3.2				ug/L	78	Standard
C	12	106.7	14.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	0	Standard
Dy	164	47.8	39.5				mg/L	2	Standard
Ho-1	165	56.7	18.4				mg/L	10	Standard
Er	166	46.7	68.9				mg/L	23	Standard
I	127	47392.4	2.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.453	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.104	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.211	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.367	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078403
Sample Date/Time: Tuesday, June 21, 2016 17:50:21
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64282.8	1.4				ug/L	60176	Standard
	Be	9	16.7	45.8	**0.0128**	0.010	79.1	ug/L	5	Standard
	Al	27	9496901.0	1.4	**67.6751**	0.189	0.3	ug/L	832	Standard
	Sc	45	26276.1	3.6				ug/L	25066	Standard
	Ti	47	2632.9	0.5	**13.4149**	0.197	1.5	ug/L	38	Standard
	V	51	10654.6	5.7	**1.6202**	0.099	6.1	ug/L	974	Standard
	Cr	52	309449.4	0.1	**47.7126**	0.747	1.6	ug/L	5792	Standard
	Cr	53	43286.8	2.0	**52.4956**	0.461	0.9	ug/L	347	Standard
	Mn	55	415246.8	0.7	**64.6633**	0.642	1.0	ug/L	1164	Standard
	Co	59	14818.2	0.7	**2.3840**	0.050	2.1	ug/L	303	Standard
	Ni	60	13775.3	1.0	**7.4623**	0.106	1.4	ug/L	291	Standard
	Cu	65	2774.3	0.5	**1.4525**	0.017	1.2	ug/L	173	Standard
	Zn	66	6076.9	0.8	**5.6215**	0.043	0.8	ug/L	130	Standard
>	**Ge**	72	492081.5	1.5				ug/L	491724	Standard
	As	75	14825.6	0.7	**14.1492**	0.153	1.1	ug/L	-25	Standard
	Se	82	184.4	7.2	**1.6910**	0.151	8.9	ug/L	12	Standard
	Se-1	77	407.3	7.4	**5.1069**	0.343	6.7	ug/L	57	Standard
>	**Ga**	71	388.3	4.9				mg/L	148	Standard
	Rb	85	247976.3	1.2				ug/L	18	Standard
	Y	89	437835.7	1.8				ug/L	401845	Standard
>	**Rh**	103	111.7	11.3				ug/L	10	Standard
	Mo	98	768.6	2.7	**0.3040**	0.009	3.0	ug/L	12	Standard
	Ag	107	190.7	6.0	**0.0158**	0.002	12.3	ug/L	98	Standard
	Cd	111	45.2	11.2	**0.0185**	0.003	14.3	mg/L	11	Standard
	Cd	114	130.8	33.1	**0.0231**	0.009	39.2	ug/L	21	Standard
>	**In**	115	567817.1	0.2				ug/L	547487	Standard
	Sn	118	10468.6	2.5	**1.8698**	0.053	2.8	ug/L	450	Standard
	Sb	123	902.4	8.0	**0.1972**	0.016	8.2	ug/L	105	Standard
	Ba	135	51153.2	1.3	**26.8107**	0.405	1.5	ug/L	111	Standard
	Ce	140	2558.5	2.2				ug/L	107	Standard
>	**Tb**	159	907507.6	0.1				ug/L	890342	Standard
	Ho	165	388.3	9.3				ug/L	10	Standard
	Tl	203	96.3	26.1	**0.0096**	0.003	35.7	ug/L	19	Standard
	Tl	205	85.0	21.2	**0.0151**	0.003	19.8	ug/L	17	Standard
	Pb	206	1399.4	4.9	**0.2426**	0.015	6.0	ug/L	247	Standard
	Pb	207	1257.4	0.9	**0.2420**	0.003	1.1	ug/L	215	Standard
	Pb	208	4943.7	1.7	**0.2490**	0.006	2.2	ug/L	770	Standard
	U	238	308.0	0.9	**0.0522**	0.000	0.8	ug/L	13	Standard
>	**Bi**	209	487096.1	0.1				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.6640**	30.586	173.2	mg/L	2	Standard
Mg	24	54270.4	1.9	**71.1138**	1.170	1.6	mg/L	35	Standard
K	39	6009.5	3.1	**28.4763**	0.896	3.1	mg/L	25	Standard
Ca	43	55.0	36.4	**4.9932**	3.579	71.7	mg/L	38	Standard
Fe	54	345.1	11.2	**0.1762**	0.038	21.4	mg/L	126	Standard
Fe	57	351.7	7.8	**0.2357**	0.144	61.3	mg/L	245	Standard
> **Sc-1**	45	26276.1	3.6				mg/L	25066	Standard
Cl	35	189873.7	0.5				ug/L	125857	Standard
Kr	83	2.3	99.0				ug/L	1	Standard
Br	81	36477.2	3.1				ug/L	1350	Standard
P	31	23743.6	0.5				ug/L	18393	Standard
S	34	4889.1	0.7				ug/L	3739	Standard
Sr	88	155.0	16.1				ug/L	78	Standard
C	12	456.7	11.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	613.9	9.9				mg/L	2	Standard
Ho-1	165	388.3	9.3				mg/L	10	Standard
Er	166	336.7	6.2				mg/L	23	Standard
I	127	738935.3	7.0				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.825	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.073	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.713
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.811
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078709 WG573111-01
Sample Date/Time: Tuesday, June 21, 2016 17:53:33
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60443.9	5.7				ug/L	60176	Standard
	Be	9	16.7	34.6	**0.0143**	0.009	61.5	ug/L	5	Standard
	Al	27	10305250.8	3.2	**78.3639**	7.053	9.0	ug/L	832	Standard
	Sc	45	26180.9	1.3				ug/L	25066	Standard
	Ti	47	492.3	16.0	**2.2835**	0.397	17.4	ug/L	38	Standard
	V	51	9886.7	1.4	**1.4559**	0.086	5.9	ug/L	974	Standard
	Cr	52	12993.9	3.4	**1.0581**	0.156	14.7	ug/L	5792	Standard
	Cr	53	1368.4	1.8	**1.2241**	0.083	6.8	ug/L	347	Standard
	Mn	55	29966.3	1.1	**4.3673**	0.250	5.7	ug/L	1164	Standard
	Co	59	1096.7	3.0	**0.1268**	0.007	5.7	ug/L	303	Standard
	Ni	60	1721.1	4.7	**0.7463**	0.085	11.4	ug/L	291	Standard
	Cu	65	2142.2	3.0	**1.0742**	0.079	7.3	ug/L	173	Standard
	Zn	66	4731.4	2.1	**4.2285**	0.265	6.3	ug/L	130	Standard
>	**Ge**	72	503481.4	4.3				ug/L	491724	Standard
	As	75	526.8	4.6	**0.5242**	0.012	2.2	ug/L	-25	Standard
	Se	82	62.5	5.9	**0.4971**	0.013	2.6	ug/L	12	Standard
	Se-1	77	73.0	10.9	**0.3585**	0.086	24.0	ug/L	57	Standard
>	**Ga**	71	216.7	13.9				mg/L	148	Standard
	Rb	85	2733.6	1.6				ug/L	18	Standard
	Y	89	422057.6	7.6				ug/L	401845	Standard
>	**Rh**	103	68.3	11.2				ug/L	10	Standard
	Mo	98	279.8	4.4	**0.1129**	0.008	6.7	ug/L	12	Standard
	Ag	107	97.0	11.9	**0.0012**	0.003	216.7	ug/L	98	Standard
	Cd	111	40.5	2.4	**0.0170**	0.000	2.5	mg/L	11	Standard
	Cd	114	71.0	35.0	**0.0113**	0.006	51.4	ug/L	21	Standard
>	**In**	115	544133.8	4.3				ug/L	547487	Standard
	Sn	118	2075.1	3.5	**0.3287**	0.027	8.2	ug/L	450	Standard
	Sb	123	255.1	11.7	**0.0530**	0.009	17.6	ug/L	105	Standard
	Ba	135	71686.9	1.7	**39.2991**	2.336	5.9	ug/L	111	Standard
	Ce	140	6308.0	3.7				ug/L	107	Standard
>	**Tb**	159	874247.6	3.5				ug/L	890342	Standard
	Ho	165	205.0	17.6				ug/L	10	Standard
	Tl	203	72.3	6.8	**0.0062**	0.001	9.3	ug/L	19	Standard
	Tl	205	71.7	24.5	**0.0128**	0.003	22.0	ug/L	17	Standard
	Pb	206	870.4	1.3	**0.1280**	0.008	6.2	ug/L	247	Standard
	Pb	207	718.4	2.5	**0.1139**	0.005	4.4	ug/L	215	Standard
	Pb	208	2829.8	1.2	**0.1148**	0.006	5.6	ug/L	770	Standard
	U	238	125.7	17.0	**0.0206**	0.004	19.0	ug/L	13	Standard
>	**Bi**	209	493218.4	3.0				ug/L	503143	Standard

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Na	23	3.3	173.2	**36.2151**	62.718	173.2	mg/L	2	Standard
Mg	24	1295.1	2.9	**1.6648**	0.058	3.5	mg/L	35	Standard
K	39	110.0	9.1	**0.4127**	0.048	11.7	mg/L	25	Standard
Ca	43	135.0	14.8	**20.1289**	3.508	17.4	mg/L	38	Standard
Fe	54	213.8	22.6	**0.0577**	0.043	74.6	mg/L	126	Standard
Fe	57	361.7	4.2	**0.2754**	0.064	23.3	mg/L	245	Standard
> **Sc-1**	45	26180.9	1.3				mg/L	25066	Standard
Cl	35	162260.9	0.6				ug/L	125857	Standard
Kr	83	2.7	78.1				ug/L	1	Standard
Br	81	10053.3	4.2				ug/L	1350	Standard
P	31	24678.4	1.7				ug/L	18393	Standard
S	34	4714.1	1.8				ug/L	3739	Standard
Sr	88	126.7	12.7				ug/L	78	Standard
C	12	166.7	24.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	368.2	19.7				mg/L	2	Standard
Ho-1	165	205.0	17.6				mg/L	10	Standard
Er	166	176.7	57.8				mg/L	23	Standard
I	127	20693.0	48.0				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.445	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.391	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	99.388
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	98.028
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078710
Sample Date/Time: Tuesday, June 21, 2016 17:56:44
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62773.1	1.4				ug/L	60176	Standard
	Be	9	21.7	35.3	**0.0200**	0.011	52.9	ug/L	5	Standard
	Al	27	10724930.9	3.4	**78.2963**	3.661	4.7	ug/L	832	Standard
	Sc	45	27798.8	3.2				ug/L	25066	Standard
	Ti	47	562.7	17.6	**2.6295**	0.538	20.5	ug/L	38	Standard
	V	51	10217.9	0.6	**1.5004**	0.021	1.4	ug/L	974	Standard
	Cr	52	13153.7	0.9	**1.0695**	0.051	4.8	ug/L	5792	Standard
	Cr	53	1371.7	5.1	**1.2177**	0.058	4.8	ug/L	347	Standard
	Mn	55	29369.4	1.6	**4.2499**	0.136	3.2	ug/L	1164	Standard
	Co	59	1080.7	2.1	**0.1233**	0.002	1.9	ug/L	303	Standard
	Ni	60	1737.1	3.4	**0.7483**	0.031	4.2	ug/L	291	Standard
	Cu	65	1924.5	4.8	**0.9481**	0.033	3.5	ug/L	173	Standard
	Zn	66	4372.0	2.4	**3.8638**	0.075	2.0	ug/L	130	Standard
>	**Ge**	72	505797.3	1.7				ug/L	491724	Standard
	As	75	458.2	3.8	**0.4582**	0.009	2.1	ug/L	-25	Standard
	Se	82	38.6	4.6	**0.2705**	0.020	7.4	ug/L	12	Standard
	Se-1	77	65.3	7.6	**0.2495**	0.074	29.7	ug/L	57	Standard
>	**Ga**	71	210.0	13.3				mg/L	148	Standard
	Rb	85	3273.7	1.4				ug/L	18	Standard
	Y	89	418878.8	2.6				ug/L	401845	Standard
>	**Rh**	103	35.0	37.8				ug/L	10	Standard
	Mo	98	238.7	3.0	**0.0929**	0.004	4.0	ug/L	12	Standard
	Ag	107	109.0	6.6	**0.0027**	0.001	44.0	ug/L	98	Standard
	Cd	111	30.9	30.1	**0.0114**	0.005	43.6	mg/L	11	Standard
	Cd	114	87.2	2.7	**0.0142**	0.001	3.7	ug/L	21	Standard
>	**In**	115	559019.1	0.9				ug/L	547487	Standard
	Sn	118	1906.8	4.3	**0.2855**	0.012	4.3	ug/L	450	Standard
	Sb	123	250.1	13.3	**0.0500**	0.007	14.2	ug/L	105	Standard
	Ba	135	73442.9	1.3	**39.1229**	0.172	0.4	ug/L	111	Standard
	Ce	140	6873.2	4.0				ug/L	107	Standard
>	**Tb**	159	901790.2	0.8				ug/L	890342	Standard
	Ho	165	200.0	9.0				ug/L	10	Standard
	Tl	203	57.3	31.4	**0.0039**	0.002	58.7	ug/L	19	Standard
	Tl	205	43.3	35.3	**0.0078**	0.002	30.1	ug/L	17	Standard
	Pb	206	822.7	3.5	**0.1108**	0.007	6.1	ug/L	247	Standard
	Pb	207	701.0	5.6	**0.1033**	0.010	9.4	ug/L	215	Standard
	Pb	208	2697.1	1.4	**0.0998**	0.003	3.5	ug/L	770	Standard
	U	238	127.0	11.9	**0.0199**	0.002	11.8	ug/L	13	Standard
>	**Bi**	209	514062.2	0.8				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.4295**	30.180	173.2	mg/L	2	Standard
Mg	24	1238.4	1.7	**1.4957**	0.025	1.7	mg/L	35	Standard
K	39	105.0	17.2	**0.3595**	0.078	21.6	mg/L	25	Standard
Ca	43	170.0	10.6	**24.9795**	4.201	16.8	mg/L	38	Standard
Fe	54	232.4	2.4	**0.0625**	0.006	9.3	mg/L	126	Standard
Fe	57	421.7	12.1	**0.4086**	0.168	41.1	mg/L	245	Standard
> **Sc-1**	45	27798.8	3.2				mg/L	25066	Standard
Cl	35	170177.7	0.9				ug/L	125857	Standard
Kr	83	2.3	89.2				ug/L	1	Standard
Br	81	3510.4	1.7				ug/L	1350	Standard
P	31	25923.8	0.8				ug/L	18393	Standard
S	34	5000.8	2.7				ug/L	3739	Standard
Sr	88	136.7	27.0				ug/L	78	Standard
C	12	120.0	16.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	299.1	9.0				mg/L	2	Standard
Ho-1	165	200.0	9.0				mg/L	10	Standard
Er	166	226.7	11.1				mg/L	23	Standard
I	127	8357.3	3.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.316	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.862	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.106
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.170
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606078711S WG573111-06
Sample Date/Time: Tuesday, June 21, 2016 17:59:56
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61600.0	1.8				ug/L	60176	Standard
	Be	9	39351.1	3.1	**53.5432**	1.639	3.1	ug/L	5	Standard
	Al	27	10394779.5	1.5	**77.3073**	1.057	1.4	ug/L	832	Standard
	Sc	45	27065.8	3.5				ug/L	25066	Standard
	Ti	47	963.4	10.6	**4.7337**	0.549	11.6	ug/L	38	Standard
	V	51	322757.3	1.8	**53.6046**	1.325	2.5	ug/L	974	Standard
	Cr	52	347982.3	1.9	**53.2836**	1.385	2.6	ug/L	5792	Standard
	Cr	53	43507.5	4.5	**52.3076**	2.705	5.2	ug/L	347	Standard
	Mn	55	375081.4	0.9	**57.8666**	0.893	1.5	ug/L	1164	Standard
	Co	59	321619.4	0.7	**52.2874**	0.580	1.1	ug/L	303	Standard
	Ni	60	93916.6	2.0	**51.5228**	1.331	2.6	ug/L	291	Standard
	Cu	65	93528.8	1.2	**51.7010**	0.970	1.9	ug/L	173	Standard
	Zn	66	57176.0	0.7	**54.3806**	0.702	1.3	ug/L	130	Standard
>	**Ge**	72	496488.3	0.7				ug/L	491724	Standard
	As	75	55790.3	0.6	**52.6752**	0.114	0.2	ug/L	-25	Standard
	Se	82	5538.3	0.8	**52.9638**	0.537	1.0	ug/L	12	Standard
	Se-1	77	3804.5	1.5	**52.6667**	0.727	1.4	ug/L	57	Standard
>	**Ga**	71	466.7	30.8				mg/L	148	Standard
	Rb	85	5205.9	1.3				ug/L	18	Standard
	Y	89	431108.9	0.1				ug/L	401845	Standard
>	**Rh**	103	70.0	18.9				ug/L	10	Standard
	Mo	98	227.0	2.9	**0.0880**	0.002	2.8	ug/L	12	Standard
	Ag	107	10615.7	2.8	**1.7450**	0.050	2.9	ug/L	98	Standard
	Cd	111	99211.0	0.7	**51.6114**	0.445	0.9	mg/L	11	Standard
	Cd	114	241106.1	2.5	**51.5544**	1.220	2.4	ug/L	21	Standard
>	**In**	115	559879.4	0.9				ug/L	547487	Standard
	Sn	118	2130.1	3.8	**0.3270**	0.012	3.7	ug/L	450	Standard
	Sb	123	217940.1	0.9	**50.1700**	0.382	0.8	ug/L	105	Standard
	Ba	135	167521.4	1.0	**89.1738**	0.251	0.3	ug/L	111	Standard
	Ce	140	9182.8	2.4				ug/L	107	Standard
>	**Tb**	159	892825.7	1.7				ug/L	890342	Standard
	Ho	165	245.0	15.9				ug/L	10	Standard
	Tl	203	382126.3	1.7	**51.0936**	0.456	0.9	ug/L	19	Standard
	Tl	205	328005.7	0.3	**53.4587**	0.419	0.8	ug/L	17	Standard
	Pb	206	247016.4	0.8	**51.3212**	0.143	0.3	ug/L	247	Standard
	Pb	207	215416.9	0.8	**49.2334**	0.302	0.6	ug/L	215	Standard
	Pb	208	864247.6	0.1	**52.7618**	0.483	0.9	ug/L	770	Standard
	U	238	310732.3	0.2	**52.3391**	0.578	1.1	ug/L	13	Standard
>	**Bi**	209	498043.4	1.0				ug/L	503143	Standard

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Na	23	1.7	173.2	**16.7109**	28.936	173.2	mg/L	2	Standard
Mg	24	1233.4	1.0	**1.5318**	0.064	4.2	mg/L	35	Standard
K	39	148.3	7.8	**0.5718**	0.033	5.8	mg/L	25	Standard
Ca	43	170.0	28.4	**25.9171**	9.688	37.4	mg/L	38	Standard
Fe	54	322.0	9.5	**0.1473**	0.036	24.5	mg/L	126	Standard
Fe	57	403.3	22.9	**0.3789**	0.313	82.6	mg/L	245	Standard
> **Sc-1**	45	27065.8	3.5				mg/L	25066	Standard
Cl	35	170176.5	1.7				ug/L	125857	Standard
Kr	83	3.0	57.7				ug/L	1	Standard
Br	81	4414.0	4.5				ug/L	1350	Standard
P	31	26219.3	3.1				ug/L	18393	Standard
S	34	5044.2	5.2				ug/L	3739	Standard
Sr	88	135.0	9.8				ug/L	78	Standard
C	12	86.7	17.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	373.8	5.4				mg/L	2	Standard
Ho-1	165	245.0	15.9				mg/L	10	Standard
Er	166	200.0	13.2				mg/L	23	Standard
I	127	7025.0	4.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.367	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.969	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.264	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.987	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606078712SD WG573111-07
Sample Date/Time: Tuesday, June 21, 2016 18:03:07
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61029.3	0.4				ug/L	60176	Standard
	Be	9	38696.0	1.1	**53.1381**	0.388	0.7	ug/L	5	Standard
	Al	27	10635305.8	0.7	**79.8285**	0.406	0.5	ug/L	832	Standard
	Sc	45	27050.8	1.0				ug/L	25066	Standard
	Ti	47	1614.1	5.0	**7.8928**	0.372	4.7	ug/L	38	Standard
	V	51	334955.3	1.2	**54.4598**	1.088	2.0	ug/L	974	Standard
	Cr	52	351881.2	0.4	**52.7321**	0.628	1.2	ug/L	5792	Standard
	Cr	53	43774.8	1.5	**51.5065**	1.170	2.3	ug/L	347	Standard
	Mn	55	501871.8	1.6	**75.8606**	1.449	1.9	ug/L	1164	Standard
	Co	59	333145.1	1.3	**53.0208**	0.897	1.7	ug/L	303	Standard
	Ni	60	94669.2	0.6	**50.8362**	0.710	1.4	ug/L	291	Standard
	Cu	65	95052.6	1.5	**51.4370**	1.187	2.3	ug/L	173	Standard
	Zn	66	58277.2	0.4	**54.2587**	0.599	1.1	ug/L	130	Standard
>	**Ge**	72	507183.4	0.8				ug/L	491724	Standard
	As	75	57125.5	0.7	**52.8022**	0.788	1.5	ug/L	-25	Standard
	Se	82	5703.6	1.6	**53.3992**	1.190	2.2	ug/L	12	Standard
	Se-1	77	3834.5	0.9	**51.9576**	0.800	1.5	ug/L	57	Standard
>	**Ga**	71	908.4	9.4				mg/L	148	Standard
	Rb	85	10995.7	2.2				ug/L	18	Standard
	Y	89	422851.2	3.7				ug/L	401845	Standard
>	**Rh**	103	70.0	14.3				ug/L	10	Standard
	Mo	98	243.6	1.0	**0.0962**	0.001	1.5	ug/L	12	Standard
	Ag	107	9863.9	1.6	**1.6460**	0.047	2.9	ug/L	98	Standard
	Cd	111	99159.1	2.8	**52.3764**	0.965	1.8	mg/L	11	Standard
	Cd	114	235716.4	1.9	**51.1824**	0.756	1.5	ug/L	21	Standard
>	**In**	115	551348.1	1.3				ug/L	547487	Standard
	Sn	118	2651.9	2.8	**0.4332**	0.019	4.4	ug/L	450	Standard
	Sb	123	193703.2	1.2	**45.2835**	0.741	1.6	ug/L	105	Standard
	Ba	135	168991.9	2.6	**91.3544**	2.313	2.5	ug/L	111	Standard
	Ce	140	32860.6	2.6				ug/L	107	Standard
>	**Tb**	159	880118.4	0.8				ug/L	890342	Standard
	Ho	165	470.0	4.9				ug/L	10	Standard
	Tl	203	380545.4	1.6	**50.5209**	0.728	1.4	ug/L	19	Standard
	Tl	205	329715.6	2.7	**53.3513**	1.427	2.7	ug/L	17	Standard
	Pb	206	252108.4	1.5	**52.0068**	0.872	1.7	ug/L	247	Standard
	Pb	207	219746.2	1.1	**49.8641**	0.528	1.1	ug/L	215	Standard
	Pb	208	883612.2	0.6	**53.5586**	0.555	1.0	ug/L	770	Standard
	U	238	309715.2	1.9	**51.7947**	1.152	2.2	ug/L	13	Standard
>	**Bi**	209	501621.6	0.6				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.3130**	29.978	173.2	mg/L	2	Standard
Mg	24	1170.0	3.4	**1.4509**	0.059	4.0	mg/L	35	Standard
K	39	130.0	27.7	**0.4888**	0.170	34.7	mg/L	25	Standard
Ca	43	153.3	12.3	**22.6892**	3.519	15.5	mg/L	38	Standard
Fe	54	591.5	1.7	**0.3836**	0.008	2.1	mg/L	126	Standard
Fe	57	516.7	13.6	**0.7964**	0.241	30.3	mg/L	245	Standard
> **Sc-1**	45	27050.8	1.0				mg/L	25066	Standard
Cl	35	165809.3	2.3				ug/L	125857	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	2850.3	4.1				ug/L	1350	Standard
P	31	26767.0	3.2				ug/L	18393	Standard
S	34	4750.7	2.1				ug/L	3739	Standard
Sr	88	130.0	7.7				ug/L	78	Standard
C	12	126.7	18.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	835.0	2.5				mg/L	2	Standard
Ho-1	165	470.0	4.9				mg/L	10	Standard
Er	166	453.3	25.8				mg/L	23	Standard
I	127	6214.6	6.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.418	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.144	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.705
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.698
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606078712SD WG573111-07
Report Date/Time: Tuesday, June 21, 2016 18:05:24
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Method 6020 - Summary Report

Sample ID: L1606078718
Sample Date/Time: Tuesday, June 21, 2016 18:06:19
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61345.6	1.0				ug/L	60176	Standard
	Be	9	36.7	28.4	**0.0411**	0.014	34.6	ug/L	5	Standard
	Al	27	13853606.9	0.9	**103.4648**	1.981	1.9	ug/L	832	Standard
	Sc	45	26648.4	1.5				ug/L	25066	Standard
	Ti	47	1471.7	1.8	**7.3873**	0.204	2.8	ug/L	38	Standard
	V	51	15922.0	1.1	**2.4991**	0.067	2.7	ug/L	974	Standard
	Cr	52	13836.7	2.0	**1.2265**	0.015	1.2	ug/L	5792	Standard
	Cr	53	1288.4	6.0	**1.1570**	0.071	6.1	ug/L	347	Standard
	Mn	55	329136.0	2.3	**51.0786**	1.557	3.0	ug/L	1164	Standard
	Co	59	3178.0	2.5	**0.4710**	0.005	1.1	ug/L	303	Standard
	Ni	60	3429.7	2.4	**1.7103**	0.073	4.2	ug/L	291	Standard
	Cu	65	2424.9	0.9	**1.2538**	0.023	1.8	ug/L	173	Standard
	Zn	66	21892.8	1.6	**20.8141**	0.673	3.2	ug/L	130	Standard
>	**Ge**	72	493399.5	1.6				ug/L	491724	Standard
	As	75	662.7	6.1	**0.6629**	0.029	4.3	ug/L	-25	Standard
	Se	82	30.1	21.2	**0.1969**	0.058	29.3	ug/L	12	Standard
	Se-1	77	65.0	20.4	**0.2652**	0.174	65.4	ug/L	57	Standard
>	**Ga**	71	763.4	6.3				mg/L	148	Standard
	Rb	85	11562.7	2.6				ug/L	18	Standard
	Y	89	414722.7	0.7				ug/L	401845	Standard
>	**Rh**	103	61.7	26.1				ug/L	10	Standard
	Mo	98	2202.2	2.7	**0.9051**	0.023	2.6	ug/L	12	Standard
	Ag	107	93.7	9.6	**0.0004**	0.002	405.8	ug/L	98	Standard
	Cd	111	36.0	24.1	**0.0143**	0.005	32.0	mg/L	11	Standard
	Cd	114	82.5	18.5	**0.0135**	0.003	24.8	ug/L	21	Standard
>	**In**	115	551654.9	0.3				ug/L	547487	Standard
	Sn	118	1025.0	2.0	**0.1219**	0.003	2.7	ug/L	450	Standard
	Sb	123	1356.4	22.3	**0.3093**	0.070	22.8	ug/L	105	Standard
	Ba	135	129981.5	0.7	**70.2106**	0.381	0.5	ug/L	111	Standard
	Ce	140	35964.3	1.5				ug/L	107	Standard
>	**Tb**	159	898275.8	1.4				ug/L	890342	Standard
	Ho	165	588.3	7.7				ug/L	10	Standard
	Tl	203	129.0	10.2	**0.0136**	0.002	11.4	ug/L	19	Standard
	Tl	205	128.3	28.2	**0.0218**	0.006	27.3	ug/L	17	Standard
	Pb	206	2292.8	1.9	**0.4195**	0.012	2.9	ug/L	247	Standard
	Pb	207	1882.5	1.6	**0.3763**	0.003	0.8	ug/L	215	Standard
	Pb	208	7667.1	0.4	**0.4062**	0.006	1.5	ug/L	770	Standard
	U	238	370.0	8.6	**0.0612**	0.005	8.6	ug/L	13	Standard
>	**Bi**	209	500668.3	1.1				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.6673**	30.592	173.2	mg/L	2	Standard
Mg	24	3412.1	3.5	**4.3714**	0.183	4.2	mg/L	35	Standard
K	39	153.3	13.2	**0.6068**	0.098	16.1	mg/L	25	Standard
Ca	43	170.0	16.4	**26.2488**	5.560	21.2	mg/L	38	Standard
Fe	54	683.7	6.3	**0.4734**	0.029	6.2	mg/L	126	Standard
Fe	57	593.3	9.3	**1.1125**	0.233	21.0	mg/L	245	Standard
> **Sc-1**	45	26648.4	1.5				mg/L	25066	Standard
Cl	35	162659.9	1.3				ug/L	125857	Standard
Kr	83	4.3	81.0				ug/L	1	Standard
Br	81	1856.8	15.6				ug/L	1350	Standard
P	31	25311.1	1.5				ug/L	18393	Standard
S	34	4550.7	1.1				ug/L	3739	Standard
Sr	88	181.7	9.7				ug/L	78	Standard
C	12	63.3	9.1				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	938.6	15.9				mg/L	2	Standard
Ho-1	165	588.3	7.7				mg/L	10	Standard
Er	166	516.7	15.6				mg/L	23	Standard
I	127	3795.5	3.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.944	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.341	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.761
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.508
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606086201 WG573111-02
Sample Date/Time: Tuesday, June 21, 2016 18:09:30
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70003.4	5.7				ug/L	60176	Standard
	Be	9	36.7	20.8	**0.0348**	0.009	24.5	ug/L	5	Standard
	Al	27	16610862.4	6.4	**108.6830**	1.728	1.6	ug/L	832	Standard
	Sc	45	26531.6	3.2				ug/L	25066	Standard
	Ti	47	79.3	22.9	**0.1919**	0.082	42.6	ug/L	38	Standard
	V	51	2014.4	26.0	**0.1599**	0.083	51.6	ug/L	974	Standard
	Cr	52	10191.1	1.8	**0.6236**	0.029	4.7	ug/L	5792	Standard
	Cr	53	1240.1	4.8	**1.0705**	0.108	10.1	ug/L	347	Standard
	Mn	55	135277.1	2.5	**20.4449**	0.338	1.7	ug/L	1164	Standard
	Co	59	3194.7	8.9	**0.4633**	0.042	9.0	ug/L	303	Standard
	Ni	60	4307.3	3.2	**2.1481**	0.040	1.8	ug/L	291	Standard
	Cu	65	2946.0	3.6	**1.5109**	0.014	0.9	ug/L	173	Standard
	Zn	66	4156.6	3.8	**3.6798**	0.081	2.2	ug/L	130	Standard
>	**Ge**	72	503442.9	2.8				ug/L	491724	Standard
	As	75	284.8	17.5	**0.2994**	0.050	16.6	ug/L	-25	Standard
	Se	82	101.4	8.8	**0.8650**	0.083	9.6	ug/L	12	Standard
	Se-1	77	87.0	7.2	**0.5544**	0.111	20.1	ug/L	57	Standard
>	**Ga**	71	96.7	15.8				mg/L	148	Standard
	Rb	85	10238.5	4.2				ug/L	18	Standard
	Y	89	429610.1	1.8				ug/L	401845	Standard
>	**Rh**	103	65.0	13.3				ug/L	10	Standard
	Mo	98	201.8	61.9	**0.0760**	0.048	63.5	ug/L	12	Standard
	Ag	107	138.7	53.9	**0.0071**	0.012	164.1	ug/L	98	Standard
	Cd	111	55.1	4.5	**0.0236**	0.002	6.5	mg/L	11	Standard
	Cd	114	127.5	35.8	**0.0224**	0.009	41.4	ug/L	21	Standard
>	**In**	115	568273.2	3.6				ug/L	547487	Standard
	Sn	118	590.0	11.4	**0.0352**	0.009	25.4	ug/L	450	Standard
	Sb	123	675.3	25.4	**0.1449**	0.035	24.0	ug/L	105	Standard
	Ba	135	11427.3	2.3	**5.9431**	0.086	1.4	ug/L	111	Standard
	Ce	140	1858.4	6.1				ug/L	107	Standard
>	**Tb**	159	912569.9	2.0				ug/L	890342	Standard
	Ho	165	186.7	6.7				ug/L	10	Standard
	Tl	203	338.7	64.0	**0.0413**	0.028	67.6	ug/L	19	Standard
	Tl	205	318.3	54.7	**0.0526**	0.027	52.2	ug/L	17	Standard
	Pb	206	619.3	45.9	**0.0728**	0.056	77.2	ug/L	247	Standard
	Pb	207	529.7	52.6	**0.0680**	0.061	89.6	ug/L	215	Standard
	Pb	208	1946.1	35.0	**0.0582**	0.039	67.2	ug/L	770	Standard
	U	238	472.3	32.1	**0.0784**	0.024	31.1	ug/L	13	Standard
>	**Bi**	209	499634.8	2.9				ug/L	503143	Standard

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Na	23	3.3	86.6	**35.1997**	30.527	86.7	mg/L	2	Standard
Mg	24	58866.0	4.8	**76.3418**	1.277	1.7	mg/L	35	Standard
K	39	203.3	22.3	**0.8502**	0.245	28.9	mg/L	25	Standard
Ca	43	263.3	12.6	**43.7969**	6.786	15.5	mg/L	38	Standard
Fe	54	172.6	3.6	**0.0183**	0.008	42.0	mg/L	126	Standard
Fe	57	565.0	6.2	**1.0188**	0.198	19.5	mg/L	245	Standard
> **Sc-1**	45	26531.6	3.2				mg/L	25066	Standard
Cl	35	528870.2	4.8				ug/L	125857	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	18100.9	11.2				ug/L	1350	Standard
P	31	22234.7	5.0				ug/L	18393	Standard
S	34	4849.1	0.7				ug/L	3739	Standard
Sr	88	275.0	7.3				ug/L	78	Standard
C	12	93.3	16.4				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	288.4	8.8				mg/L	2	Standard
Ho-1	165	186.7	6.7				mg/L	10	Standard
Er	166	103.3	22.3				mg/L	23	Standard
I	127	6759.8	6.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.331	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.383	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.797
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.303
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606086201 WG573111-02
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Method 6020 - Summary Report

Sample ID: L1606086201DP WG573111-08
Sample Date/Time: Tuesday, June 21, 2016 18:12:42
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77315.1	0.8				ug/L	60176	Standard
	Be	9	36.7	55.1	**0.0306**	0.022	70.8	ug/L	5	Standard
	Al	27	17227028.4	3.4	**102.0589**	2.703	2.6	ug/L	832	Standard
	Sc	45	26312.9	5.4				ug/L	25066	Standard
	Ti	47	92.7	6.6	**0.2625**	0.044	16.8	ug/L	38	Standard
	V	51	1770.2	7.4	**0.1214**	0.033	27.3	ug/L	974	Standard
	Cr	52	10246.5	1.8	**0.6348**	0.045	7.2	ug/L	5792	Standard
	Cr	53	1068.4	4.2	**0.8651**	0.006	0.7	ug/L	347	Standard
	Mn	55	134734.3	3.6	**20.3882**	0.086	0.4	ug/L	1164	Standard
	Co	59	2977.6	2.6	**0.4294**	0.015	3.5	ug/L	303	Standard
	Ni	60	4134.6	6.2	**2.0561**	0.052	2.5	ug/L	291	Standard
	Cu	65	2902.9	3.4	**1.4903**	0.037	2.5	ug/L	173	Standard
	Zn	66	4166.9	2.6	**3.6969**	0.093	2.5	ug/L	130	Standard
>	**Ge**	72	502766.3	3.9				ug/L	491724	Standard
	As	75	231.7	9.5	**0.2502**	0.026	10.3	ug/L	-25	Standard
	Se	82	82.9	12.5	**0.6918**	0.104	15.0	ug/L	12	Standard
	Se-1	77	92.7	5.9	**0.6360**	0.126	19.8	ug/L	57	Standard
>	**Ga**	71	116.7	13.1				mg/L	148	Standard
	Rb	85	10200.1	2.2				ug/L	18	Standard
	Y	89	445666.9	2.4				ug/L	401845	Standard
>	**Rh**	103	83.3	15.1				ug/L	10	Standard
	Mo	98	109.3	3.3	**0.0379**	0.001	2.8	ug/L	12	Standard
	Ag	107	78.3	5.3	**-0.0030**	0.001	22.0	ug/L	98	Standard
	Cd	111	32.1	9.6	**0.0112**	0.002	16.1	mg/L	11	Standard
	Cd	114	61.4	31.5	**0.0081**	0.004	52.2	ug/L	21	Standard
>	**In**	115	588323.0	2.0				ug/L	547487	Standard
	Sn	118	506.7	15.4	**0.0167**	0.013	77.1	ug/L	450	Standard
	Sb	123	391.2	12.5	**0.0783**	0.013	16.1	ug/L	105	Standard
	Ba	135	11417.0	3.2	**5.7308**	0.081	1.4	ug/L	111	Standard
	Ce	140	1880.1	4.4				ug/L	107	Standard
>	**Tb**	159	936011.4	2.7				ug/L	890342	Standard
	Ho	165	181.7	20.8				ug/L	10	Standard
	Tl	203	161.0	14.9	**0.0175**	0.004	20.0	ug/L	19	Standard
	Tl	205	160.0	27.8	**0.0266**	0.008	28.3	ug/L	17	Standard
	Pb	206	452.7	4.8	**0.0372**	0.007	18.1	ug/L	247	Standard
	Pb	207	379.3	5.9	**0.0328**	0.007	22.4	ug/L	215	Standard
	Pb	208	1520.0	3.7	**0.0310**	0.006	19.0	ug/L	770	Standard
	U	238	306.7	5.7	**0.0497**	0.003	6.7	ug/L	13	Standard
>	**Bi**	209	509399.4	2.7				ug/L	503143	Standard

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Na	23	3.3	86.6	**36.1951**	31.438	86.9	mg/L	2	Standard
Mg	24	59695.8	3.9	**78.1443**	2.085	2.7	mg/L	35	Standard
K	39	236.7	11.6	**1.0180**	0.191	18.8	mg/L	25	Standard
Ca	43	230.0	14.3	**37.7841**	4.654	12.3	mg/L	38	Standard
Fe	54	155.5	13.6	**0.0041**	0.017	424.3	mg/L	126	Standard
Fe	57	521.7	15.8	**0.8829**	0.414	46.9	mg/L	245	Standard
> **Sc-1**	45	26312.9	5.4				mg/L	25066	Standard
Cl	35	564291.5	2.7				ug/L	125857	Standard
Kr	83	1.0	0.0				ug/L	1	Standard
Br	81	11614.5	6.5				ug/L	1350	Standard
P	31	22116.2	5.6				ug/L	18393	Standard
S	34	4845.8	1.1				ug/L	3739	Standard
Sr	88	280.0	12.4				ug/L	78	Standard
C	12	113.3	18.4				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	262.8	27.6				mg/L	2	Standard
Ho-1	165	181.7	20.8				mg/L	10	Standard
Er	166	150.0	40.0				mg/L	23	Standard
I	127	6614.8	4.5				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.482	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.246	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.459
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.244
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606086201DP WG573111-08
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Method 6020 - Summary Report

Sample ID: L1606088302
Sample Date/Time: Tuesday, June 21, 2016 18:15:53
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72031.1	4.6				ug/L	60176	Standard
	Be	9	43.3	52.0	**0.0410**	0.025	59.9	ug/L	5	Standard
	Al	27	18877330.6	2.8	**120.1329**	2.878	2.4	ug/L	832	Standard
	Sc	45	26508.2	2.8				ug/L	25066	Standard
	Ti	47	1389.4	3.9	**6.9356**	0.221	3.2	ug/L	38	Standard
	V	51	10133.0	2.4	**1.5222**	0.036	2.4	ug/L	974	Standard
	Cr	52	17075.6	2.7	**1.7253**	0.058	3.4	ug/L	5792	Standard
	Cr	53	2106.8	4.1	**2.1475**	0.127	5.9	ug/L	347	Standard
	Mn	55	8659860.5	3.3	**1344.4292**	36.890	2.7	ug/L	1164	Standard
	Co	59	26955.7	4.2	**4.3488**	0.153	3.5	ug/L	303	Standard
	Ni	60	24380.9	3.0	**13.2700**	0.290	2.2	ug/L	291	Standard
	Cu	65	3102.3	3.6	**1.6250**	0.048	3.0	ug/L	173	Standard
	Zn	66	73890.8	2.7	**70.5385**	1.291	1.8	ug/L	130	Standard
>	**Ge**	72	495064.0	0.9				ug/L	491724	Standard
	As	75	7508.6	3.4	**7.1381**	0.186	2.6	ug/L	-25	Standard
	Se	82	88.8	5.6	**0.7604**	0.041	5.3	ug/L	12	Standard
	Se-1	77	104.3	8.0	**0.8163**	0.107	13.1	ug/L	57	Standard
>	**Ga**	71	1203.4	6.0				mg/L	148	Standard
	Rb	85	18631.5	4.9				ug/L	18	Standard
	Y	89	471499.9	4.5				ug/L	401845	Standard
>	**Rh**	103	68.3	23.5				ug/L	10	Standard
	Mo	98	16975.2	1.8	**6.8750**	0.095	1.4	ug/L	12	Standard
	Ag	107	124.7	8.1	**0.0052**	0.002	43.3	ug/L	98	Standard
	Cd	111	354.4	5.3	**0.1790**	0.013	7.3	mg/L	11	Standard
	Cd	114	927.6	4.1	**0.1930**	0.003	1.7	ug/L	21	Standard
>	**In**	115	562376.6	3.1				ug/L	547487	Standard
	Sn	118	4190.6	1.8	**0.7122**	0.033	4.6	ug/L	450	Standard
	Sb	123	1237.0	1.3	**0.2761**	0.009	3.1	ug/L	105	Standard
	Ba	135	323863.4	1.8	**171.7335**	2.697	1.6	ug/L	111	Standard
	Ce	140	34140.1	1.5				ug/L	107	Standard
>	**Tb**	159	897272.3	2.5				ug/L	890342	Standard
	Ho	165	3113.7	2.4				ug/L	10	Standard
	Tl	203	64.7	19.9	**0.0051**	0.002	33.0	ug/L	19	Standard
	Tl	205	68.3	15.2	**0.0121**	0.002	13.5	ug/L	17	Standard
	Pb	206	38821.3	1.4	**8.0108**	0.071	0.9	ug/L	247	Standard
	Pb	207	32359.9	2.0	**7.3434**	0.107	1.5	ug/L	215	Standard
	Pb	208	128351.5	2.3	**7.7758**	0.128	1.6	ug/L	770	Standard
	U	238	8442.7	2.9	**1.4196**	0.032	2.3	ug/L	13	Standard
>	**Bi**	209	498550.4	0.6				ug/L	503143	Standard

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Na	23	5.0	100.0	**53.3736**	52.932	99.2	mg/L	2	Standard
Mg	24	21398.5	5.6	**27.7596**	1.350	4.9	mg/L	35	Standard
K	39	1008.4	11.1	**4.6456**	0.585	12.6	mg/L	25	Standard
Ca	43	186.7	14.8	**29.4057**	4.377	14.9	mg/L	38	Standard
Fe	54	2908.8	2.8	**2.4754**	0.120	4.8	mg/L	126	Standard
Fe	57	1130.0	7.4	**3.1241**	0.310	9.9	mg/L	245	Standard
> **Sc-1**	45	26508.2	2.8				mg/L	25066	Standard
Cl	35	207996.3	4.3				ug/L	125857	Standard
Kr	83	2.7	78.1				ug/L	1	Standard
Br	81	11254.2	3.5				ug/L	1350	Standard
P	31	26543.2	2.6				ug/L	18393	Standard
S	34	4722.4	7.5				ug/L	3739	Standard
Sr	88	290.0	4.6				ug/L	78	Standard
C	12	550.0	9.1				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	4557.8	5.5				mg/L	2	Standard
Ho-1	165	3113.7	2.4				mg/L	10	Standard
Er	166	2983.6	2.5				mg/L	23	Standard
I	127	203725.5	6.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.701	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.679	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.720	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.087	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 18:19:06
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68241.8	3.0				ug/L	60176	Standard
	Be	9	42051.7	3.8	**51.6361**	0.537	1.0	ug/L	5	Standard
	Al	27	6971995.2	1.7	**46.8104**	0.719	1.5	ug/L	832	Standard
	Sc	45	24852.0	1.3				ug/L	25066	Standard
	Ti	47	20097.0	2.7	**107.8691**	2.722	2.5	ug/L	38	Standard
	V	51	307873.7	1.3	**53.6238**	0.489	0.9	ug/L	974	Standard
	Cr	52	328667.5	1.2	**52.7708**	0.685	1.3	ug/L	5792	Standard
	Cr	53	41331.3	2.5	**52.1074**	1.405	2.7	ug/L	347	Standard
	Mn	55	323878.6	1.2	**52.3860**	0.759	1.4	ug/L	1164	Standard
	Co	59	325002.9	1.5	**55.4186**	0.688	1.2	ug/L	303	Standard
	Ni	60	90037.4	0.9	**51.8053**	0.679	1.3	ug/L	291	Standard
	Cu	65	90581.0	1.5	**52.5134**	0.543	1.0	ug/L	173	Standard
	Zn	66	53001.9	0.8	**52.8632**	0.064	0.1	ug/L	130	Standard
>	Ge	72	473368.8	0.8				ug/L	491724	Standard
	As	75	53534.5	0.7	**53.0137**	0.077	0.1	ug/L	-25	Standard
	Se	82	5487.6	1.0	**55.0445**	0.192	0.3	ug/L	12	Standard
	Se-1	77	3650.1	0.8	**53.0021**	0.366	0.7	ug/L	57	Standard
>	Ga	71	215.0	9.3				mg/L	148	Standard
	Rb	85	910.0	6.2				ug/L	18	Standard
	Y	89	416501.3	1.6				ug/L	401845	Standard
>	Rh	103	51.7	20.1				ug/L	10	Standard
	Mo	98	242295.3	0.6	**98.0576**	1.644	1.7	ug/L	12	Standard
	Ag	107	299878.8	2.2	**49.4337**	1.074	2.2	ug/L	98	Standard
	Cd	111	98207.6	0.4	**50.8054**	0.675	1.3	mg/L	11	Standard
	Cd	114	240827.7	3.2	**51.1947**	0.841	1.6	ug/L	21	Standard
>	In	115	563072.6	1.7				ug/L	547487	Standard
	Sn	118	264056.2	0.9	**49.3801**	1.145	2.3	ug/L	450	Standard
	Sb	123	215333.2	1.5	**49.2924**	0.748	1.5	ug/L	105	Standard
	Ba	135	93099.8	1.2	**49.2664**	1.301	2.6	ug/L	111	Standard
	Ce	140	76.7	30.8				ug/L	107	Standard
>	Tb	159	879908.2	1.7				ug/L	890342	Standard
	Ho	165	3.3	173.2				ug/L	10	Standard
	Tl	203	383264.6	0.5	**51.4037**	0.933	1.8	ug/L	19	Standard
	Tl	205	335822.7	2.8	**54.8792**	0.706	1.3	ug/L	17	Standard
	Pb	206	245508.2	1.1	**51.1598**	0.909	1.8	ug/L	247	Standard
	Pb	207	222387.2	0.6	**50.9816**	0.958	1.9	ug/L	215	Standard
	Pb	208	870389.8	0.4	**53.3024**	1.410	2.6	ug/L	770	Standard
	U	238	316954.9	1.4	**53.5444**	1.099	2.1	ug/L	13	Standard
>	Bi	209	496674.2	2.3				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3777.1	3.0	**5.1944**	0.100	1.9	mg/L	35	Standard
K	39	940.0	7.7	**4.6131**	0.347	7.5	mg/L	25	Standard
Ca	43	46.7	27.0	**3.9480**	2.492	63.1	mg/L	38	Standard
Fe	54	5268.6	7.7	**4.9055**	0.368	7.5	mg/L	126	Standard
Fe	57	1598.4	5.2	**5.2665**	0.320	6.1	mg/L	245	Standard
Sc-1	45	24852.0	1.3				mg/L	25066	Standard
Cl	35	163793.4	1.6				ug/L	125857	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	1850.1	19.4				ug/L	1350	Standard
P	31	22236.3	2.1				ug/L	18393	Standard
S	34	4902.5	1.0				ug/L	3739	Standard
Sr	88	91.7	24.6				ug/L	78	Standard
C	12	70.0	0.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	18.9	49.2				mg/L	2	Standard
Ho-1	165	3.3	173.2				mg/L	10	Standard
Er	166	23.3	65.5				mg/L	23	Standard
I	127	5351.1	56.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	103.272		
Al	27	93.621		
Sc	45			
Ti	47	107.869		
V	51	107.248		
Cr	52	105.542		
Cr	53			
Mn	55	104.772		
Co	59	110.837		
Ni	60	103.611		
Cu	65	105.027		
Zn	66	105.726		
> Ge	72		96.267	
As	75	106.027		
Se	82	110.089		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	98.058		
Ag	107	98.867		
Cd	111	101.611		
Cd	114			
In	115		102.847	
Sn	118	98.760		
Sb	123	98.585		
Ba	135	98.533		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.807		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.605		
U	238	107.089		
Bi	209		98.714	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Co	59	
QC Std 6	Se	82	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 18:22:18
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67175.3	1.0				ug/L	60176	Standard
	Be	9	20.0	25.0	**0.0159**	0.006	38.1	ug/L	5	Standard
	Al	27	2591.9	21.1	**0.0093**	0.004	40.6	ug/L	832	Standard
	Sc	45	25002.3	1.9				ug/L	25066	Standard
	Ti	47	26.3	8.8	**-0.0730**	0.015	21.1	ug/L	38	Standard
	V	51	1024.0	6.3	**-0.0008**	0.011	1434.1	ug/L	974	Standard
	Cr	52	6027.2	0.6	**-0.0071**	0.031	440.7	ug/L	5792	Standard
	Cr	53	448.3	17.4	**0.1301**	0.110	84.6	ug/L	347	Standard
	Mn	55	1540.7	13.4	**0.0229**	0.038	165.9	ug/L	1164	Standard
	Co	59	299.7	11.6	**-0.0007**	0.007	1063.7	ug/L	303	Standard
	Ni	60	216.7	14.8	**-0.0720**	0.016	21.7	ug/L	291	Standard
	Cu	65	161.7	10.9	**-0.0086**	0.009	106.2	ug/L	173	Standard
	Zn	66	175.3	6.1	**-0.0687**	0.005	7.4	ug/L	130	Standard
>	**Ge**	72	498606.4	3.0				ug/L	491724	Standard
	As	75	-26.7	98.4	**0.0088**	0.025	280.9	ug/L	-25	Standard
	Se	82	16.5	23.4	**0.0653**	0.041	63.0	ug/L	12	Standard
	Se-1	77	55.0	16.7	**0.1158**	0.104	89.8	ug/L	57	Standard
>	**Ga**	71	146.7	26.5				mg/L	148	Standard
	Rb	85	28.3	62.0				ug/L	18	Standard
	Y	89	424941.7	0.7				ug/L	401845	Standard
>	**Rh**	103	51.7	27.9				ug/L	10	Standard
	Mo	98	218.0	16.8	**0.0834**	0.015	17.7	ug/L	12	Standard
	Ag	107	103.3	10.3	**0.0016**	0.002	104.0	ug/L	98	Standard
	Cd	111	15.6	39.7	**0.0033**	0.003	97.5	mg/L	11	Standard
	Cd	114	35.3	50.3	**0.0030**	0.004	124.6	ug/L	21	Standard
>	**In**	115	565960.7	1.0				ug/L	547487	Standard
	Sn	118	921.7	38.3	**0.0980**	0.067	68.7	ug/L	450	Standard
	Sb	123	408.0	24.4	**0.0853**	0.023	26.8	ug/L	105	Standard
	Ba	135	123.7	12.1	**0.0096**	0.008	87.6	ug/L	111	Standard
	Ce	140	18.3	63.0				ug/L	107	Standard
>	**Tb**	159	883902.4	1.6				ug/L	890342	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	63.7	25.9	**0.0050**	0.002	46.4	ug/L	19	Standard
	Tl	205	55.0	39.6	**0.0100**	0.004	36.9	ug/L	17	Standard
	Pb	206	285.3	5.4	**0.0043**	0.004	96.3	ug/L	247	Standard
	Pb	207	231.7	13.5	**0.0008**	0.008	949.4	ug/L	215	Standard
	Pb	208	973.0	3.2	**-0.0006**	0.002	406.9	ug/L	770	Standard
	U	238	35.7	23.5	**0.0052**	0.002	29.1	ug/L	13	Standard
>	**Bi**	209	499145.6	2.0				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.6835**	32.352	173.2	mg/L	2	Standard
Mg	24	31.7	50.8	**0.0049**	0.023	465.6	mg/L	35	Standard
K	39	15.0	33.3	**-0.0372**	0.026	69.8	mg/L	25	Standard
Ca	43	28.3	20.4	**0.2868**	1.247	434.6	mg/L	38	Standard
Fe	54	104.1	41.5	**-0.0380**	0.040	104.4	mg/L	126	Standard
Fe	57	216.7	17.3	**-0.2352**	0.133	56.4	mg/L	245	Standard
> **Sc-1**	45	25002.3	1.9				mg/L	25066	Standard
Cl	35	165048.8	0.9				ug/L	125857	Standard
Kr	83	2.7	21.7				ug/L	1	Standard
Br	81	1623.4	12.1				ug/L	1350	Standard
P	31	22124.5	3.3				ug/L	18393	Standard
S	34	4804.1	3.4				ug/L	3739	Standard
Sr	88	68.3	27.7				ug/L	78	Standard
C	12	66.7	31.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.0	193.9				mg/L	2	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	1761.8	7.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.400	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.374
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.206
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606089601
Sample Date/Time: Tuesday, June 21, 2016 18:25:31
Number of Replicates: 3
Autosampler Position: 346
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70103.6	3.0				ug/L	60176	Standard
	Be	9	30.0	16.7	**0.0268**	0.005	18.6	ug/L	5	Standard
	Al	27	3685234.3	1.1	**24.0854**	0.545	2.3	ug/L	832	Standard
	Sc	45	27947.4	2.4				ug/L	25066	Standard
	Ti	47	382.0	70.3	**1.6605**	1.282	77.2	ug/L	38	Standard
	V	51	1685.0	2.5	**0.0990**	0.013	12.7	ug/L	974	Standard
	Cr	52	9250.2	0.4	**0.4417**	0.034	7.7	ug/L	5792	Standard
	Cr	53	1403.4	4.4	**1.2193**	0.042	3.4	ug/L	347	Standard
	Mn	55	19012124.1	0.6	**2827.7756**	74.302	2.6	ug/L	1164	Standard
	Co	59	222392.0	0.8	**34.7165**	1.037	3.0	ug/L	303	Standard
	Ni	60	2226.5	4.2	**0.9867**	0.048	4.9	ug/L	291	Standard
	Cu	65	381.0	0.5	**0.1050**	0.004	3.5	ug/L	173	Standard
	Zn	66	3054.6	2.1	**2.5666**	0.027	1.1	ug/L	130	Standard
>	**Ge**	72	517022.9	2.2				ug/L	491724	Standard
	As	75	3484.3	1.7	**3.1917**	0.073	2.3	ug/L	-25	Standard
	Se	82	132.5	2.0	**1.1265**	0.041	3.6	ug/L	12	Standard
	Se-1	77	106.3	7.5	**0.7815**	0.106	13.5	ug/L	57	Standard
>	**Ga**	71	960.0	20.1				mg/L	148	Standard
	Rb	85	23004.1	0.8				ug/L	18	Standard
	Y	89	437717.7	0.3				ug/L	401845	Standard
>	**Rh**	103	45.0	38.5				ug/L	10	Standard
	Mo	98	134.7	12.0	**0.0478**	0.006	13.5	ug/L	12	Standard
	Ag	107	109.0	10.4	**0.0018**	0.002	91.3	ug/L	98	Standard
	Cd	111	14.4	47.1	**0.0025**	0.003	137.0	mg/L	11	Standard
	Cd	114	41.9	23.5	**0.0041**	0.002	49.9	ug/L	21	Standard
>	**In**	115	587619.1	1.4				ug/L	547487	Standard
	Sn	118	860.0	5.8	**0.0802**	0.008	9.4	ug/L	450	Standard
	Sb	123	233.8	26.5	**0.0436**	0.013	29.9	ug/L	105	Standard
	Ba	135	48272.8	1.0	**24.4439**	0.117	0.5	ug/L	111	Standard
	Ce	140	18765.0	11.4				ug/L	107	Standard
>	**Tb**	159	938001.0	0.8				ug/L	890342	Standard
	Ho	165	298.3	19.3				ug/L	10	Standard
	Tl	203	150.3	4.3	**0.0152**	0.001	6.0	ug/L	19	Standard
	Tl	205	115.0	15.7	**0.0185**	0.003	14.4	ug/L	17	Standard
	Pb	206	534.3	3.6	**0.0487**	0.004	8.5	ug/L	247	Standard
	Pb	207	488.7	1.3	**0.0521**	0.002	4.0	ug/L	215	Standard
	Pb	208	1952.4	0.5	**0.0513**	0.000	0.7	ug/L	770	Standard
	U	238	255.0	5.1	**0.0392**	0.002	5.2	ug/L	13	Standard
>	**Bi**	209	534128.2	0.7				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	7298.4	1.4	**8.9592**	0.320	3.6	mg/L	35	Standard
K	39	96.7	31.6	**0.3179**	0.126	39.6	mg/L	25	Standard
Ca	43	46.7	16.4	**2.9434**	1.521	51.7	mg/L	38	Standard
Fe	54	23061.8	3.5	**19.5103**	1.160	5.9	mg/L	126	Standard
Fe	57	5869.5	4.4	**19.6834**	1.282	6.5	mg/L	245	Standard
> **Sc-1**	45	27947.4	2.4				mg/L	25066	Standard
Cl	35	163080.4	1.3				ug/L	125857	Standard
Kr	83	4.3	48.0				ug/L	1	Standard
Br	81	26733.6	2.6				ug/L	1350	Standard
P	31	26311.2	1.3				ug/L	18393	Standard
S	34	4997.5	0.8				ug/L	3739	Standard
Sr	88	113.3	12.7				ug/L	78	Standard
C	12	230.0	4.3				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	393.7	7.8				mg/L	2	Standard
Ho-1	165	298.3	19.3				mg/L	10	Standard
Er	166	270.0	19.2				mg/L	23	Standard
I	127	1056071.3	10.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.498	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.145	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.330
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.158
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606089602
Sample Date/Time: Tuesday, June 21, 2016 18:28:42
Number of Replicates: 3
Autosampler Position: 347
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66890.7	2.2				ug/L	60176	Standard
	Be	9	23.3	24.7	**0.0201**	0.007	32.5	ug/L	5	Standard
	Al	27	149805.7	3.0	**1.0175**	0.011	1.1	ug/L	832	Standard
	Sc	45	26154.2	3.3				ug/L	25066	Standard
	Ti	47	179.3	10.3	**0.7022**	0.105	15.0	ug/L	38	Standard
	V	51	1401.7	5.1	**0.0601**	0.011	18.8	ug/L	974	Standard
	Cr	52	10512.0	0.7	**0.6764**	0.028	4.1	ug/L	5792	Standard
	Cr	53	1416.7	9.0	**1.2841**	0.157	12.2	ug/L	347	Standard
	Mn	55	10409.3	6.2	**1.3787**	0.114	8.3	ug/L	1164	Standard
	Co	59	540.0	3.3	**0.0375**	0.003	8.6	ug/L	303	Standard
	Ni	60	844.0	0.2	**0.2688**	0.005	1.8	ug/L	291	Standard
	Cu	65	296.7	5.6	**0.0648**	0.011	17.1	ug/L	173	Standard
	Zn	66	1902.8	4.1	**1.5621**	0.096	6.1	ug/L	130	Standard
>	**Ge**	72	502257.1	1.3				ug/L	491724	Standard
	As	75	8.2	485.9	**0.0416**	0.037	88.7	ug/L	-25	Standard
	Se	82	33.9	33.4	**0.2274**	0.104	45.7	ug/L	12	Standard
	Se-1	77	70.7	24.9	**0.3292**	0.242	73.5	ug/L	57	Standard
>	**Ga**	71	326.7	26.3				mg/L	148	Standard
	Rb	85	8215.6	2.7				ug/L	18	Standard
	Y	89	444333.1	2.2				ug/L	401845	Standard
>	**Rh**	103	31.7	48.2				ug/L	10	Standard
	Mo	98	46.8	15.4	**0.0138**	0.002	17.7	ug/L	12	Standard
	Ag	107	73.3	4.4	**-0.0037**	0.000	8.2	ug/L	98	Standard
	Cd	111	8.2	45.8	**-0.0006**	0.002	305.8	mg/L	11	Standard
	Cd	114	19.1	24.5	**-0.0005**	0.001	199.0	ug/L	21	Standard
>	**In**	115	583126.7	2.0				ug/L	547487	Standard
	Sn	118	593.3	2.7	**0.0333**	0.003	10.0	ug/L	450	Standard
	Sb	123	144.2	19.6	**0.0243**	0.007	28.0	ug/L	105	Standard
	Ba	135	7469.5	3.8	**3.7635**	0.074	2.0	ug/L	111	Standard
	Ce	140	1718.4	6.1				ug/L	107	Standard
>	**Tb**	159	899867.4	0.7				ug/L	890342	Standard
	Ho	165	30.0	66.7				ug/L	10	Standard
	Tl	203	67.7	10.9	**0.0053**	0.001	16.4	ug/L	19	Standard
	Tl	205	71.7	22.4	**0.0124**	0.003	20.6	ug/L	17	Standard
	Pb	206	312.7	6.7	**0.0088**	0.004	47.7	ug/L	247	Standard
	Pb	207	252.0	2.7	**0.0044**	0.002	38.0	ug/L	215	Standard
	Pb	208	1132.0	3.9	**0.0079**	0.002	19.1	ug/L	770	Standard
	U	238	82.7	5.0	**0.0128**	0.001	6.4	ug/L	13	Standard
>	**Bi**	209	508030.6	1.7				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.2590**	31.617	173.2	mg/L	2	Standard
Mg	24	2870.3	3.9	**3.7404**	0.081	2.2	mg/L	35	Standard
K	39	155.0	5.6	**0.6292**	0.059	9.4	mg/L	25	Standard
Ca	43	26.7	28.6	**-0.2827**	1.489	526.7	mg/L	38	Standard
Fe	54	167.0	2.0	**0.0156**	0.008	50.9	mg/L	126	Standard
Fe	57	218.3	14.7	**-0.2671**	0.094	35.1	mg/L	245	Standard
> **Sc-1**	45	26154.2	3.3				mg/L	25066	Standard
Cl	35	154406.3	2.1				ug/L	125857	Standard
Kr	83	2.7	21.7				ug/L	1	Standard
Br	81	5824.5	3.9				ug/L	1350	Standard
P	31	26713.5	1.6				ug/L	18393	Standard
S	34	4210.6	7.3				ug/L	3739	Standard
Sr	88	103.3	42.3				ug/L	78	Standard
C	12	70.0	28.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	71.7	36.0				mg/L	2	Standard
Ho-1	165	30.0	66.7				mg/L	10	Standard
Er	166	33.3	75.5				mg/L	23	Standard
I	127	32674.7	51.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.159	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.142	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.510
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.971
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606089603
Sample Date/Time: Tuesday, June 21, 2016 18:31:54
Number of Replicates: 3
Autosampler Position: 348
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70073.3	1.0				ug/L	60176	Standard
	Be	9	81.7	39.4	**0.0886**	0.038	43.1	ug/L	5	Standard
	Al	27	1228150.4	2.6	**8.0209**	0.174	2.2	ug/L	832	Standard
	Sc	45	26367.9	1.0				ug/L	25066	Standard
	Ti	47	312.7	10.6	**1.3625**	0.172	12.6	ug/L	38	Standard
	V	51	2417.3	6.1	**0.2237**	0.026	11.6	ug/L	974	Standard
	Cr	52	10006.0	1.3	**0.5837**	0.012	2.0	ug/L	5792	Standard
	Cr	53	1740.1	6.8	**1.6504**	0.119	7.2	ug/L	347	Standard
	Mn	55	87073.6	2.8	**12.9889**	0.479	3.7	ug/L	1164	Standard
	Co	59	5750.4	2.7	**0.8671**	0.033	3.8	ug/L	303	Standard
	Ni	60	2238.5	3.1	**1.0160**	0.026	2.5	ug/L	291	Standard
	Cu	65	1573.1	4.2	**0.7551**	0.029	3.8	ug/L	173	Standard
	Zn	66	4274.9	3.8	**3.7627**	0.142	3.8	ug/L	130	Standard
>	**Ge**	72	507060.9	1.0				ug/L	491724	Standard
	As	75	114.4	32.4	**0.1397**	0.035	24.9	ug/L	-25	Standard
	Se	82	42.1	12.0	**0.3018**	0.050	16.5	ug/L	12	Standard
	Se-1	77	82.3	10.6	**0.4808**	0.128	26.6	ug/L	57	Standard
>	**Ga**	71	333.3	11.3				mg/L	148	Standard
	Rb	85	29852.7	2.6				ug/L	18	Standard
	Y	89	429423.7	0.4				ug/L	401845	Standard
>	**Rh**	103	41.7	6.9				ug/L	10	Standard
	Mo	98	55.7	3.8	**0.0175**	0.001	6.0	ug/L	12	Standard
	Ag	107	93.7	1.6	**-0.0003**	0.000	76.9	ug/L	98	Standard
	Cd	111	26.6	32.0	**0.0087**	0.004	50.4	mg/L	11	Standard
	Cd	114	73.0	10.0	**0.0107**	0.001	13.2	ug/L	21	Standard
>	**In**	115	577865.9	1.0				ug/L	547487	Standard
	Sn	118	510.0	18.7	**0.0191**	0.018	95.2	ug/L	450	Standard
	Sb	123	155.5	12.6	**0.0270**	0.004	15.1	ug/L	105	Standard
	Ba	135	59410.3	1.7	**30.6085**	0.771	2.5	ug/L	111	Standard
	Ce	140	19626.0	1.7				ug/L	107	Standard
>	**Tb**	159	917847.8	1.6				ug/L	890342	Standard
	Ho	165	385.0	3.4				ug/L	10	Standard
	Tl	203	165.0	14.8	**0.0175**	0.003	17.6	ug/L	19	Standard
	Tl	205	135.0	9.8	**0.0220**	0.002	9.0	ug/L	17	Standard
	Pb	206	734.4	1.2	**0.0910**	0.002	2.3	ug/L	247	Standard
	Pb	207	620.7	4.4	**0.0836**	0.007	8.5	ug/L	215	Standard
	Pb	208	2430.4	2.1	**0.0821**	0.004	5.1	ug/L	770	Standard
	U	238	108.0	7.6	**0.0166**	0.001	8.0	ug/L	13	Standard
>	**Bi**	209	520995.4	0.8				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.6640**	30.586	173.2	mg/L	2	Standard
Mg	24	2681.9	2.8	**3.4633**	0.064	1.8	mg/L	35	Standard
K	39	326.7	9.2	**1.4367**	0.158	11.0	mg/L	25	Standard
Ca	43	23.3	24.7	**-0.9469**	1.132	119.5	mg/L	38	Standard
Fe	54	1418.7	4.6	**1.1433**	0.057	5.0	mg/L	126	Standard
Fe	57	535.0	14.5	**0.9148**	0.284	31.1	mg/L	245	Standard
> **Sc-1**	45	26367.9	1.0				mg/L	25066	Standard
Cl	35	152857.2	1.0				ug/L	125857	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	6364.7	4.2				ug/L	1350	Standard
P	31	24361.2	2.7				ug/L	18393	Standard
S	34	4130.6	1.9				ug/L	3739	Standard
Sr	88	91.7	13.7				ug/L	78	Standard
C	12	86.7	17.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	587.2	3.8				mg/L	2	Standard
Ho-1	165	385.0	3.4				mg/L	10	Standard
Er	166	406.7	11.4				mg/L	23	Standard
I	127	49898.9	6.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.447	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.119	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.549
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.548
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606089604
Sample Date/Time: Tuesday, June 21, 2016 18:35:05
Number of Replicates: 3
Autosampler Position: 349
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68337.1	1.8				ug/L	60176	Standard
	Be	9	20.0	50.0	**0.0155**	0.012	78.6	ug/L	5	Standard
	Al	27	4276567.2	0.3	**28.6693**	0.604	2.1	ug/L	832	Standard
	Sc	45	26610.0	1.8				ug/L	25066	Standard
	Ti	47	192.3	15.6	**0.7599**	0.169	22.2	ug/L	38	Standard
	V	51	1621.9	5.7	**0.0939**	0.019	19.8	ug/L	974	Standard
	Cr	52	9092.7	3.3	**0.4438**	0.038	8.7	ug/L	5792	Standard
	Cr	53	1545.1	7.7	**1.4179**	0.111	7.8	ug/L	347	Standard
	Mn	55	17973806.3	0.6	**2724.7615**	75.997	2.8	ug/L	1164	Standard
	Co	59	227528.7	0.7	**36.1992**	0.876	2.4	ug/L	303	Standard
	Ni	60	2730.6	3.7	**1.2807**	0.043	3.3	ug/L	291	Standard
	Cu	65	354.7	4.1	**0.0946**	0.010	10.1	ug/L	173	Standard
	Zn	66	3333.7	3.1	**2.8812**	0.076	2.6	ug/L	130	Standard
>	**Ge**	72	507285.0	2.2				ug/L	491724	Standard
	As	75	2855.6	3.6	**2.6720**	0.119	4.5	ug/L	-25	Standard
	Se	82	109.9	10.6	**0.9366**	0.098	10.5	ug/L	12	Standard
	Se-1	77	112.3	4.4	**0.8920**	0.086	9.6	ug/L	57	Standard
>	**Ga**	71	996.7	5.1				mg/L	148	Standard
	Rb	85	22107.8	1.5				ug/L	18	Standard
	Y	89	431397.8	1.6				ug/L	401845	Standard
>	**Rh**	103	48.3	74.8				ug/L	10	Standard
	Mo	98	71.9	10.1	**0.0241**	0.003	12.0	ug/L	12	Standard
	Ag	107	78.3	8.7	**-0.0027**	0.001	37.5	ug/L	98	Standard
	Cd	111	9.9	26.7	**0.0003**	0.001	431.1	mg/L	11	Standard
	Cd	114	28.2	29.3	**0.0014**	0.002	118.5	ug/L	21	Standard
>	**In**	115	573974.7	0.6				ug/L	547487	Standard
	Sn	118	751.7	10.6	**0.0641**	0.015	23.9	ug/L	450	Standard
	Sb	123	139.4	12.3	**0.0237**	0.004	16.5	ug/L	105	Standard
	Ba	135	41452.3	0.6	**21.4826**	0.241	1.1	ug/L	111	Standard
	Ce	140	20226.9	8.5				ug/L	107	Standard
>	**Tb**	159	913197.4	0.8				ug/L	890342	Standard
	Ho	165	323.3	19.1				ug/L	10	Standard
	Tl	203	108.7	8.7	**0.0105**	0.001	13.3	ug/L	19	Standard
	Tl	205	98.3	5.9	**0.0165**	0.001	6.6	ug/L	17	Standard
	Pb	206	497.3	2.2	**0.0452**	0.002	5.4	ug/L	247	Standard
	Pb	207	457.7	4.4	**0.0492**	0.003	6.7	ug/L	215	Standard
	Pb	208	1899.7	0.7	**0.0525**	0.001	2.6	ug/L	770	Standard
	U	238	173.0	11.0	**0.0274**	0.003	12.4	ug/L	13	Standard
>	**Bi**	209	514279.4	1.2				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.3614**	30.062	173.2	mg/L	2	Standard
Mg	24	6924.9	3.0	**8.9278**	0.424	4.8	mg/L	35	Standard
K	39	88.3	28.5	**0.3038**	0.126	41.5	mg/L	25	Standard
Ca	43	50.0	26.5	**3.9407**	2.346	59.5	mg/L	38	Standard
Fe	54	22062.2	6.3	**19.5992**	1.505	7.7	mg/L	126	Standard
Fe	57	5569.4	4.3	**19.5983**	0.911	4.6	mg/L	245	Standard
Sc-1	45	26610.0	1.8				mg/L	25066	Standard
Cl	35	158607.9	0.7				ug/L	125857	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	25608.3	1.9				ug/L	1350	Standard
P	31	25134.2	0.8				ug/L	18393	Standard
S	34	4804.1	1.5				ug/L	3739	Standard
Sr	88	91.7	45.7				ug/L	78	Standard
C	12	170.0	11.8				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	416.4	11.7				mg/L	2	Standard
Ho-1	165	323.3	19.1				mg/L	10	Standard
Er	166	283.3	8.9				mg/L	23	Standard
I	127	1043280.7	9.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		113.562	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.165	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.838
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.213
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606089605
Sample Date/Time: Tuesday, June 21, 2016 18:38:17
Number of Replicates: 3
Autosampler Position: 350
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67501.7	0.2				ug/L	60176	Standard
	Be	9	70.0	12.4	**0.0779**	0.011	14.0	ug/L	5	Standard
	Al	27	1172906.0	1.5	**7.9523**	0.131	1.6	ug/L	832	Standard
	Sc	45	26443.1	2.2				ug/L	25066	Standard
	Ti	47	221.7	20.6	**0.9153**	0.226	24.7	ug/L	38	Standard
	V	51	1454.3	19.9	**0.0686**	0.046	67.3	ug/L	974	Standard
	Cr	52	9092.7	2.6	**0.4577**	0.038	8.3	ug/L	5792	Standard
	Cr	53	1685.1	8.0	**1.6053**	0.165	10.3	ug/L	347	Standard
	Mn	55	65030.3	1.6	**9.7392**	0.204	2.1	ug/L	1164	Standard
	Co	59	5197.2	1.5	**0.7866**	0.010	1.3	ug/L	303	Standard
	Ni	60	1995.5	3.6	**0.8953**	0.033	3.7	ug/L	291	Standard
	Cu	65	1224.4	4.2	**0.5725**	0.026	4.5	ug/L	173	Standard
	Zn	66	3995.9	1.1	**3.5378**	0.062	1.7	ug/L	130	Standard
>	**Ge**	72	502248.6	0.7				ug/L	491724	Standard
	As	75	42.4	33.0	**0.0736**	0.013	18.2	ug/L	-25	Standard
	Se	82	42.1	17.3	**0.3052**	0.067	21.9	ug/L	12	Standard
	Se-1	77	99.7	4.9	**0.7312**	0.071	9.7	ug/L	57	Standard
>	**Ga**	71	340.0	25.1				mg/L	148	Standard
	Rb	85	28431.7	1.0				ug/L	18	Standard
	Y	89	432391.4	0.5				ug/L	401845	Standard
>	**Rh**	103	25.0	0.0				ug/L	10	Standard
	Mo	98	25.1	12.7	**0.0054**	0.001	24.9	ug/L	12	Standard
	Ag	107	84.0	10.6	**-0.0020**	0.001	71.0	ug/L	98	Standard
	Cd	111	29.3	29.0	**0.0099**	0.004	41.4	mg/L	11	Standard
	Cd	114	82.1	22.2	**0.0125**	0.004	31.8	ug/L	21	Standard
>	**In**	115	582868.3	1.2				ug/L	547487	Standard
	Sn	118	541.7	7.4	**0.0239**	0.006	27.0	ug/L	450	Standard
	Sb	123	106.5	7.0	**0.0159**	0.002	12.1	ug/L	105	Standard
	Ba	135	57467.5	1.5	**29.3464**	0.109	0.4	ug/L	111	Standard
	Ce	140	10703.9	25.2				ug/L	107	Standard
>	**Tb**	159	910811.6	2.1				ug/L	890342	Standard
	Ho	165	225.0	13.5				ug/L	10	Standard
	Tl	203	137.0	7.6	**0.0141**	0.001	9.3	ug/L	19	Standard
	Tl	205	136.7	14.8	**0.0225**	0.003	13.7	ug/L	17	Standard
	Pb	206	419.0	1.3	**0.0293**	0.002	5.4	ug/L	247	Standard
	Pb	207	358.0	1.7	**0.0271**	0.002	6.9	ug/L	215	Standard
	Pb	208	1368.0	1.1	**0.0209**	0.001	6.4	ug/L	770	Standard
	U	238	55.7	17.4	**0.0082**	0.002	18.6	ug/L	13	Standard
>	**Bi**	209	515104.9	0.7				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	2638.6	3.2	**3.3993**	0.161	4.7	mg/L	35	Standard
K	39	276.7	19.3	**1.1956**	0.256	21.4	mg/L	25	Standard
Ca	43	21.7	48.0	**-1.2810**	1.922	150.1	mg/L	38	Standard
Fe	54	612.6	5.0	**0.4150**	0.036	8.6	mg/L	126	Standard
Fe	57	326.7	24.2	**0.1354**	0.321	237.0	mg/L	245	Standard
> **Sc-1**	45	26443.1	2.2				mg/L	25066	Standard
Cl	35	151770.4	0.9				ug/L	125857	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	6438.0	7.0				ug/L	1350	Standard
P	31	24865.4	2.6				ug/L	18393	Standard
S	34	4355.6	4.7				ug/L	3739	Standard
Sr	88	85.0	10.2				ug/L	78	Standard
C	12	100.0	20.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	393.3	8.6				mg/L	2	Standard
Ho-1	165	225.0	13.5				mg/L	10	Standard
Er	166	210.0	16.5				mg/L	23	Standard
I	127	49125.0	32.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.174	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.140	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.463
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.377
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606089607
Sample Date/Time: Tuesday, June 21, 2016 18:41:28
Number of Replicates: 3
Autosampler Position: 351
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64582.3	0.3				ug/L	60176	Standard
	Be	9	10.0	50.0	**0.0040**	0.007	164.6	ug/L	5	Standard
	Al	27	17276.5	1.9	**0.1142**	0.003	2.4	ug/L	832	Standard
	Sc	45	25347.9	2.5				ug/L	25066	Standard
	Ti	47	28.3	10.8	**-0.0659**	0.014	21.5	ug/L	38	Standard
	V	51	1082.8	8.0	**0.0054**	0.014	253.7	ug/L	974	Standard
	Cr	52	8423.3	1.6	**0.3388**	0.029	8.5	ug/L	5792	Standard
	Cr	53	728.4	2.2	**0.4488**	0.025	5.7	ug/L	347	Standard
	Mn	55	3248.4	11.3	**0.2760**	0.059	21.5	ug/L	1164	Standard
	Co	59	268.3	3.6	**-0.0067**	0.002	28.2	ug/L	303	Standard
	Ni	60	364.0	1.4	**0.0051**	0.004	75.7	ug/L	291	Standard
	Cu	65	796.4	1.2	**0.3329**	0.002	0.5	ug/L	173	Standard
	Zn	66	1386.7	3.7	**1.0581**	0.053	5.0	ug/L	130	Standard
>	**Ge**	72	508475.6	0.8				ug/L	491724	Standard
	As	75	-61.1	19.7	**-0.0224**	0.011	51.1	ug/L	-25	Standard
	Se	82	17.3	24.6	**0.0693**	0.041	59.1	ug/L	12	Standard
	Se-1	77	55.3	1.0	**0.1076**	0.014	12.8	ug/L	57	Standard
>	**Ga**	71	210.0	8.2				mg/L	148	Standard
	Rb	85	103.3	12.2				ug/L	18	Standard
	Y	89	417086.5	1.0				ug/L	401845	Standard
>	**Rh**	103	30.0	16.7				ug/L	10	Standard
	Mo	98	23.7	24.8	**0.0052**	0.002	45.5	ug/L	12	Standard
	Ag	107	74.0	14.1	**-0.0031**	0.002	58.5	ug/L	98	Standard
	Cd	111	3.6	42.1	**-0.0028**	0.001	28.2	mg/L	11	Standard
	Cd	114	4.0	390.1	**-0.0036**	0.003	93.1	ug/L	21	Standard
>	**In**	115	557380.8	0.4				ug/L	547487	Standard
	Sn	118	1653.4	11.4	**0.2386**	0.035	14.5	ug/L	450	Standard
	Sb	123	101.0	13.9	**0.0157**	0.003	21.0	ug/L	105	Standard
	Ba	135	275.0	12.7	**0.0916**	0.019	21.0	ug/L	111	Standard
	Ce	140	46.7	27.0				ug/L	107	Standard
>	**Tb**	159	881433.0	0.7				ug/L	890342	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	15.3	24.7	**-0.0015**	0.001	32.6	ug/L	19	Standard
	Tl	205	18.3	41.7	**0.0039**	0.001	30.9	ug/L	17	Standard
	Pb	206	260.7	4.2	**-0.0017**	0.002	99.9	ug/L	247	Standard
	Pb	207	227.7	1.7	**-0.0009**	0.001	146.9	ug/L	215	Standard
	Pb	208	867.3	2.7	**-0.0078**	0.002	22.4	ug/L	770	Standard
	U	238	4.7	24.7	**-0.0001**	0.000	377.0	ug/L	13	Standard
>	**Bi**	209	506624.8	1.1				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.8980**	30.992	173.2	mg/L	2	Standard
Mg	24	78.3	16.1	**0.0675**	0.017	24.9	mg/L	35	Standard
K	39	31.7	24.1	**0.0432**	0.033	77.4	mg/L	25	Standard
Ca	43	33.3	45.8	**1.2167**	3.121	256.5	mg/L	38	Standard
Fe	54	130.8	25.6	**-0.0136**	0.033	239.4	mg/L	126	Standard
Fe	57	228.3	19.7	**-0.1998**	0.177	88.7	mg/L	245	Standard
> **Sc-1**	45	25347.9	2.5				mg/L	25066	Standard
Cl	35	151435.7	0.5				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	1560.1	4.4				ug/L	1350	Standard
P	31	20533.9	2.0				ug/L	18393	Standard
S	34	4339.0	6.0				ug/L	3739	Standard
Sr	88	95.0	38.0				ug/L	78	Standard
C	12	73.3	34.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.4	106.9				mg/L	2	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	7471.9	14.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.323	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.407	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.807
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.692
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606091601
Sample Date/Time: Tuesday, June 21, 2016 18:44:40
Number of Replicates: 3
Autosampler Position: 352
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67190.3	1.4				ug/L	60176	Standard
	Be	9	13.3	57.3	**0.0077**	0.010	125.6	ug/L	5	Standard
	Al	27	4059977.7	0.1	**27.6783**	0.411	1.5	ug/L	832	Standard
	Sc	45	26110.8	1.4				ug/L	25066	Standard
	Ti	47	49.3	11.2	**0.0353**	0.029	83.4	ug/L	38	Standard
	V	51	1268.5	6.0	**0.0323**	0.015	45.0	ug/L	974	Standard
	Cr	52	9251.5	2.7	**0.4413**	0.053	12.0	ug/L	5792	Standard
	Cr	53	838.4	6.1	**0.5622**	0.063	11.2	ug/L	347	Standard
	Mn	55	71645.4	5.8	**10.4299**	0.498	4.8	ug/L	1164	Standard
	Co	59	506.7	18.5	**0.0297**	0.014	46.5	ug/L	303	Standard
	Ni	60	855.0	1.3	**0.2614**	0.011	4.1	ug/L	291	Standard
	Cu	65	780.7	0.8	**0.3173**	0.002	0.5	ug/L	173	Standard
	Zn	66	4612.7	3.9	**3.9937**	0.147	3.7	ug/L	130	Standard
>	**Ge**	72	517216.1	1.1				ug/L	491724	Standard
	As	75	82.9	23.2	**0.1089**	0.017	15.4	ug/L	-25	Standard
	Se	82	25.8	18.1	**0.1443**	0.045	31.4	ug/L	12	Standard
	Se-1	77	58.3	9.4	**0.1352**	0.074	54.8	ug/L	57	Standard
>	**Ga**	71	198.3	18.6				mg/L	148	Standard
	Rb	85	8013.8	3.9				ug/L	18	Standard
	Y	89	419780.8	0.6				ug/L	401845	Standard
>	**Rh**	103	95.0	13.9				ug/L	10	Standard
	Mo	98	354.8	11.3	**0.1391**	0.018	13.1	ug/L	12	Standard
	Ag	107	124.3	40.3	**0.0052**	0.009	167.0	ug/L	98	Standard
	Cd	111	42.3	55.1	**0.0173**	0.012	72.3	mg/L	11	Standard
	Cd	114	113.9	89.0	**0.0200**	0.022	110.6	ug/L	21	Standard
>	**In**	115	563906.1	1.5				ug/L	547487	Standard
	Sn	118	1531.7	4.6	**0.2123**	0.010	4.8	ug/L	450	Standard
	Sb	123	210.1	8.4	**0.0405**	0.005	11.6	ug/L	105	Standard
	Ba	135	162094.5	0.7	**85.6790**	1.283	1.5	ug/L	111	Standard
	Ce	140	216.7	26.5				ug/L	107	Standard
>	**Tb**	159	900794.6	1.8				ug/L	890342	Standard
	Ho	165	15.0	57.7				ug/L	10	Standard
	Tl	203	104.3	57.0	**0.0100**	0.008	79.7	ug/L	19	Standard
	Tl	205	83.3	27.1	**0.0141**	0.004	26.2	ug/L	17	Standard
	Pb	206	391.3	13.8	**0.0236**	0.012	51.7	ug/L	247	Standard
	Pb	207	338.7	17.1	**0.0227**	0.014	61.6	ug/L	215	Standard
	Pb	208	1279.0	4.7	**0.0155**	0.005	30.6	ug/L	770	Standard
	U	238	198.3	8.7	**0.0314**	0.003	10.7	ug/L	13	Standard
>	**Bi**	209	516668.6	1.7				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.8980**	30.992	173.2	mg/L	2	Standard
Mg	24	4872.5	2.7	**6.3892**	0.242	3.8	mg/L	35	Standard
K	39	126.7	27.7	**0.4955**	0.176	35.6	mg/L	25	Standard
Ca	43	53.3	5.4	**4.7635**	0.439	9.2	mg/L	38	Standard
Fe	54	177.6	14.5	**0.0254**	0.024	95.7	mg/L	126	Standard
Fe	57	276.7	15.4	**-0.0443**	0.146	329.7	mg/L	245	Standard
> **Sc-1**	45	26110.8	1.4				mg/L	25066	Standard
Cl	35	176149.6	1.9				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	3207.0	11.6				ug/L	1350	Standard
P	31	23131.2	13.3				ug/L	18393	Standard
S	34	4474.0	0.8				ug/L	3739	Standard
Sr	88	226.7	10.9				ug/L	78	Standard
C	12	83.3	25.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	16.2	38.3				mg/L	2	Standard
Ho-1	165	15.0	57.7				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	28196.2	4.0				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.657	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.184	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.999
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.688
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606091602
Sample Date/Time: Tuesday, June 21, 2016 18:47:51
Number of Replicates: 3
Autosampler Position: 353
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67906.9	1.3				ug/L	60176	Standard
	Be	9	10.0	50.0	**0.0033**	0.006	187.8	ug/L	5	Standard
	Al	27	2296072.1	1.5	**15.4843**	0.344	2.2	ug/L	832	Standard
	Sc	45	25872.1	5.5				ug/L	25066	Standard
	Ti	47	62.3	24.1	**0.1098**	0.081	73.9	ug/L	38	Standard
	V	51	1552.5	12.5	**0.0855**	0.031	36.6	ug/L	974	Standard
	Cr	52	9142.1	3.0	**0.4684**	0.023	4.9	ug/L	5792	Standard
	Cr	53	858.4	6.3	**0.6172**	0.055	8.8	ug/L	347	Standard
	Mn	55	243622.7	0.7	**37.1709**	0.798	2.1	ug/L	1164	Standard
	Co	59	1785.4	6.9	**0.2386**	0.020	8.4	ug/L	303	Standard
	Ni	60	1792.4	0.5	**0.7874**	0.016	2.0	ug/L	291	Standard
	Cu	65	962.4	1.2	**0.4305**	0.012	2.7	ug/L	173	Standard
	Zn	66	2184.5	1.1	**1.8327**	0.052	2.8	ug/L	130	Standard
>	**Ge**	72	501058.6	1.4				ug/L	491724	Standard
	As	75	100.6	11.3	**0.1281**	0.012	9.4	ug/L	-25	Standard
	Se	82	31.7	15.7	**0.2087**	0.052	24.7	ug/L	12	Standard
	Se-1	77	73.3	7.9	**0.3696**	0.094	25.6	ug/L	57	Standard
>	**Ga**	71	198.3	2.9				mg/L	148	Standard
	Rb	85	8319.0	2.0				ug/L	18	Standard
	Y	89	432620.5	1.7				ug/L	401845	Standard
>	**Rh**	103	35.0	14.3				ug/L	10	Standard
	Mo	98	238.4	19.0	**0.0874**	0.016	18.4	ug/L	12	Standard
	Ag	107	135.0	77.0	**0.0057**	0.016	279.8	ug/L	98	Standard
	Cd	111	47.6	114.6	**0.0185**	0.026	142.4	mg/L	11	Standard
	Cd	114	128.6	115.8	**0.0214**	0.030	138.7	ug/L	21	Standard
>	**In**	115	590384.4	2.1				ug/L	547487	Standard
	Sn	118	671.7	10.1	**0.0460**	0.013	27.4	ug/L	450	Standard
	Sb	123	237.2	55.9	**0.0439**	0.028	63.9	ug/L	105	Standard
	Ba	135	31177.4	0.9	**15.6954**	0.181	1.2	ug/L	111	Standard
	Ce	140	1276.7	10.5				ug/L	107	Standard
>	**Tb**	159	916339.4	2.6				ug/L	890342	Standard
	Ho	165	70.0	7.1				ug/L	10	Standard
	Tl	203	237.7	124.8	**0.0268**	0.038	140.4	ug/L	19	Standard
	Tl	205	80.0	33.1	**0.0135**	0.004	29.6	ug/L	17	Standard
	Pb	206	429.0	29.5	**0.0310**	0.024	78.2	ug/L	247	Standard
	Pb	207	341.7	30.1	**0.0231**	0.022	93.1	ug/L	215	Standard
	Pb	208	1332.4	10.6	**0.0186**	0.008	40.8	ug/L	770	Standard
	U	238	141.3	19.4	**0.0221**	0.004	18.5	ug/L	13	Standard
>	**Bi**	209	515955.1	1.9				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	2985.3	1.9	**3.9427**	0.232	5.9	mg/L	35	Standard
K	39	105.0	19.0	**0.3991**	0.123	30.7	mg/L	25	Standard
Ca	43	45.0	29.4	**3.3646**	2.869	85.3	mg/L	38	Standard
Fe	54	322.3	15.6	**0.1588**	0.032	20.1	mg/L	126	Standard
Fe	57	316.7	8.7	**0.1231**	0.144	117.2	mg/L	245	Standard
> **Sc-1**	45	25872.1	5.5				mg/L	25066	Standard
Cl	35	186002.7	0.3				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	3327.0	4.9				ug/L	1350	Standard
P	31	21338.4	3.1				ug/L	18393	Standard
S	34	4454.0	2.0				ug/L	3739	Standard
Sr	88	85.0	75.1				ug/L	78	Standard
C	12	86.7	40.5				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	102.7	23.6				mg/L	2	Standard
Ho-1	165	70.0	7.1				mg/L	10	Standard
Er	166	83.3	45.4				mg/L	23	Standard
I	127	15337.8	5.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.847	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.898	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.835
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.546
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 18:51:04
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63442.7	3.5				ug/L	60176	Standard
	Be	9	40860.0	2.2	**54.0020**	1.449	2.7	ug/L	5	Standard
	Al	27	6937882.5	1.0	**50.1277**	1.614	3.2	ug/L	832	Standard
	Sc	45	25438.0	2.5				ug/L	25066	Standard
	Ti	47	21024.9	0.5	**106.0299**	0.919	0.9	ug/L	38	Standard
	V	51	323750.5	1.3	**52.9773**	0.236	0.4	ug/L	974	Standard
	Cr	52	348011.5	1.4	**52.4939**	0.728	1.4	ug/L	5792	Standard
	Cr	53	43766.5	1.1	**51.8369**	0.281	0.5	ug/L	347	Standard
	Mn	55	333840.5	2.1	**50.7327**	1.510	3.0	ug/L	1164	Standard
	Co	59	335417.2	1.0	**53.7424**	1.033	1.9	ug/L	303	Standard
	Ni	60	95144.1	1.0	**51.4310**	0.379	0.7	ug/L	291	Standard
	Cu	65	94656.8	0.9	**51.5587**	0.282	0.5	ug/L	173	Standard
	Zn	66	55176.0	1.3	**51.7065**	1.118	2.2	ug/L	130	Standard
>	Ge	72	503835.9	1.3				ug/L	491724	Standard
	As	75	55580.2	0.8	**51.7148**	0.495	1.0	ug/L	-25	Standard
	Se	82	5649.2	1.5	**53.2452**	1.272	2.4	ug/L	12	Standard
	Se-1	77	3911.5	2.0	**53.3712**	1.215	2.3	ug/L	57	Standard
>	Ga	71	175.0	20.6				mg/L	148	Standard
	Rb	85	773.4	10.9				ug/L	18	Standard
	Y	89	413055.9	4.2				ug/L	401845	Standard
>	Rh	103	48.3	15.8				ug/L	10	Standard
	Mo	98	250127.2	1.6	**103.9799**	1.624	1.6	ug/L	12	Standard
	Ag	107	312907.8	0.6	**52.9908**	0.412	0.8	ug/L	98	Standard
	Cd	111	99454.2	0.8	**52.8512**	0.382	0.7	mg/L	11	Standard
	Cd	114	242360.3	0.7	**52.9421**	0.765	1.4	ug/L	21	Standard
>	In	115	548076.9	0.7				ug/L	547487	Standard
	Sn	118	267254.9	1.1	**51.3363**	0.470	0.9	ug/L	450	Standard
	Sb	123	224264.3	0.4	**52.7378**	0.174	0.3	ug/L	105	Standard
	Ba	135	94718.1	0.7	**51.4823**	0.153	0.3	ug/L	111	Standard
	Ce	140	61.7	16.9				ug/L	107	Standard
>	Tb	159	872886.8	0.5				ug/L	890342	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	392549.7	0.9	**52.0956**	0.443	0.9	ug/L	19	Standard
	Tl	205	335218.3	1.5	**54.2215**	0.823	1.5	ug/L	17	Standard
	Pb	206	250297.8	0.3	**51.6123**	0.097	0.2	ug/L	247	Standard
	Pb	207	226489.3	0.6	**51.3765**	0.302	0.6	ug/L	215	Standard
	Pb	208	880738.1	0.5	**53.3625**	0.244	0.5	ug/L	770	Standard
	U	238	319048.1	0.1	**53.3329**	0.065	0.1	ug/L	13	Standard
>	Bi	209	501806.7	0.2				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.2483**	31.598	173.2	mg/L	2	Standard
Mg	24	3748.8	3.4	**5.0383**	0.218	4.3	mg/L	35	Standard
K	39	870.0	3.5	**4.1632**	0.196	4.7	mg/L	25	Standard
Ca	43	66.7	30.3	**7.5630**	3.627	48.0	mg/L	38	Standard
Fe	54	5462.5	1.6	**4.9747**	0.206	4.1	mg/L	126	Standard
Fe	57	1633.4	3.9	**5.2565**	0.210	4.0	mg/L	245	Standard
> **Sc-1**	45	25438.0	2.5				mg/L	25066	Standard
Cl	35	159590.9	1.7				ug/L	125857	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	1526.7	9.8				ug/L	1350	Standard
P	31	21814.0	0.5				ug/L	18393	Standard
S	34	4879.1	3.9				ug/L	3739	Standard
Sr	88	73.3	10.4				ug/L	78	Standard
C	12	60.0	33.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.9	218.3				mg/L	2	Standard
Ho-1	165	8.3	91.7				mg/L	10	Standard
Er	166	10.0	173.2				mg/L	23	Standard
I	127	2962.0	13.4				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	108.004		
Al	27	100.255		
Sc	45			
Ti	47	106.030		
V	51	105.955		
Cr	52	104.988		
Cr	53			
Mn	55	101.465		
Co	59	107.485		
Ni	60	102.862		
Cu	65	103.117		
Zn	66	103.413		
> Ge	72		102.463	
As	75	103.430		
Se	82	106.490		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	103.980		
Ag	107	105.982		
Cd	111	105.702		
Cd	114			
> In	115		100.108	
Sn	118	102.673		
Sb	123	105.476		
Ba	135	102.965		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	104.191		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.725		
U	238	106.666		
> Bi	209		99.734	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 18:54:15
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65759.1	2.1				ug/L	60176	Standard
	Be	9	15.0	66.7	**0.0099**	0.012	124.3	ug/L	5	Standard
	Al	27	1593.4	26.8	**0.0027**	0.003	102.5	ug/L	832	Standard
	Sc	45	26474.8	1.5				ug/L	25066	Standard
	Ti	47	28.3	23.5	**-0.0655**	0.031	47.5	ug/L	38	Standard
	V	51	963.9	7.8	**-0.0130**	0.015	114.8	ug/L	974	Standard
	Cr	52	6015.5	0.7	**-0.0229**	0.022	97.4	ug/L	5792	Standard
	Cr	53	381.7	7.2	**0.0411**	0.039	93.9	ug/L	347	Standard
	Mn	55	1197.4	3.7	**-0.0335**	0.005	13.8	ug/L	1164	Standard
	Co	59	265.0	7.5	**-0.0071**	0.002	35.3	ug/L	303	Standard
	Ni	60	191.7	2.1	**-0.0870**	0.003	3.6	ug/L	291	Standard
	Cu	65	137.7	10.1	**-0.0230**	0.006	27.4	ug/L	173	Standard
	Zn	66	181.3	7.5	**-0.0653**	0.015	22.7	ug/L	130	Standard
>	**Ge**	72	506005.0	1.8				ug/L	491724	Standard
	As	75	-35.7	74.2	**0.0007**	0.025	3529.5	ug/L	-25	Standard
	Se	82	12.6	16.6	**0.0250**	0.018	72.8	ug/L	12	Standard
	Se-1	77	54.3	13.9	**0.0968**	0.095	97.8	ug/L	57	Standard
>	**Ga**	71	158.3	20.3				mg/L	148	Standard
	Rb	85	20.0	86.6				ug/L	18	Standard
	Y	89	416660.0	4.4				ug/L	401845	Standard
>	**Rh**	103	31.7	32.9				ug/L	10	Standard
	Mo	98	234.4	23.9	**0.0897**	0.024	26.8	ug/L	12	Standard
	Ag	107	96.7	10.2	**0.0004**	0.002	455.9	ug/L	98	Standard
	Cd	111	9.2	48.8	**0.0000**	0.002	5096.5	mg/L	11	Standard
	Cd	114	32.6	31.9	**0.0024**	0.002	93.4	ug/L	21	Standard
>	**In**	115	568592.5	1.7				ug/L	547487	Standard
	Sn	118	836.7	13.7	**0.0809**	0.019	23.3	ug/L	450	Standard
	Sb	123	401.8	23.4	**0.0833**	0.020	24.4	ug/L	105	Standard
	Ba	135	112.3	11.3	**0.0034**	0.008	222.2	ug/L	111	Standard
	Ce	140	18.3	63.0				ug/L	107	Standard
>	**Tb**	159	905312.2	2.3				ug/L	890342	Standard
	Ho	165	11.7	89.2				ug/L	10	Standard
	Tl	203	52.3	30.0	**0.0031**	0.002	64.6	ug/L	19	Standard
	Tl	205	41.7	48.5	**0.0075**	0.003	42.3	ug/L	17	Standard
	Pb	206	259.3	16.5	**-0.0033**	0.009	264.4	ug/L	247	Standard
	Pb	207	233.3	11.4	**-0.0010**	0.006	617.4	ug/L	215	Standard
	Pb	208	889.0	1.3	**-0.0079**	0.001	10.4	ug/L	770	Standard
	U	238	29.3	61.9	**0.0039**	0.003	75.3	ug/L	13	Standard
>	**Bi**	209	519697.2	0.3				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	35.0	89.2	**0.0068**	0.041	600.8	mg/L	35	Standard
K	39	33.3	31.2	**0.0452**	0.050	110.3	mg/L	25	Standard
Ca	43	33.3	34.6	**0.8931**	2.150	240.8	mg/L	38	Standard
Fe	54	140.9	5.6	**-0.0098**	0.009	91.5	mg/L	126	Standard
Fe	57	233.3	13.1	**-0.2195**	0.109	49.4	mg/L	245	Standard
Sc-1	45	26474.8	1.5				mg/L	25066	Standard
Cl	35	159066.0	0.9				ug/L	125857	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	1636.8	3.9				ug/L	1350	Standard
P	31	22371.5	1.8				ug/L	18393	Standard
S	34	4974.2	4.8				ug/L	3739	Standard
Sr	88	65.0	23.1				ug/L	78	Standard
C	12	46.7	44.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.8	2.8				mg/L	2	Standard
Ho-1	165	11.7	89.2				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	23	Standard
I	127	2216.8	9.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.904	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.855
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.290
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Tuesday, June 21, 2016 19:12:07
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61166.6	1.6				ug/L	60176	Standard
	Be	9	150.0	15.3	**0.1967**	0.033	16.9	ug/L	5	Standard
	Al	27	1561.8	56.4	**0.0032**	0.006	196.8	ug/L	832	Standard
	Sc	45	24875.4	2.5				ug/L	25066	Standard
	Ti	47	28.0	12.9	**-0.0630**	0.020	31.8	ug/L	38	Standard
	V	51	3300.5	1.2	**0.3830**	0.004	1.1	ug/L	974	Standard
	Cr	52	10916.3	1.5	**0.7699**	0.022	2.9	ug/L	5792	Standard
	Cr	53	1001.7	7.0	**0.8086**	0.075	9.2	ug/L	347	Standard
	Mn	55	4162.9	6.9	**0.4342**	0.055	12.7	ug/L	1164	Standard
	Co	59	2663.9	2.0	**0.3873**	0.016	4.1	ug/L	303	Standard
	Ni	60	2996.6	2.6	**1.4705**	0.019	1.3	ug/L	291	Standard
	Cu	65	1480.7	6.8	**0.7275**	0.043	6.0	ug/L	173	Standard
	Zn	66	7406.5	4.4	**6.8860**	0.205	3.0	ug/L	130	Standard
>	**Ge**	72	493083.1	1.6				ug/L	491724	Standard
	As	75	372.9	12.0	**0.3882**	0.043	11.0	ug/L	-25	Standard
	Se	82	55.9	23.6	**0.4460**	0.125	27.9	ug/L	12	Standard
	Se-1	77	84.3	6.0	**0.5409**	0.079	14.6	ug/L	57	Standard
>	**Ga**	71	103.3	2.8				mg/L	148	Standard
	Rb	85	41.7	13.9				ug/L	18	Standard
	Y	89	400269.9	3.2				ug/L	401845	Standard
>	**Rh**	103	43.3	17.6				ug/L	10	Standard
	Mo	98	42.1	20.5	**0.0135**	0.004	31.1	ug/L	12	Standard
	Ag	107	2361.9	2.4	**0.3942**	0.010	2.6	ug/L	98	Standard
	Cd	111	441.3	5.1	**0.2353**	0.012	5.1	mg/L	11	Standard
	Cd	114	1071.7	9.3	**0.2353**	0.024	10.2	ug/L	21	Standard
>	**In**	115	535559.2	2.7				ug/L	547487	Standard
	Sn	118	436.7	24.1	**0.0116**	0.019	163.3	ug/L	450	Standard
	Sb	123	1772.8	0.2	**0.4193**	0.011	2.7	ug/L	105	Standard
	Ba	135	1338.4	0.9	**0.6899**	0.014	2.0	ug/L	111	Standard
	Ce	140	35.0	28.6				ug/L	107	Standard
>	**Tb**	159	857160.6	2.1				ug/L	890342	Standard
	Ho	165	6.7	86.6				ug/L	10	Standard
	Tl	203	591.3	5.4	**0.0761**	0.006	7.9	ug/L	19	Standard
	Tl	205	471.7	10.6	**0.0783**	0.008	10.5	ug/L	17	Standard
	Pb	206	1188.7	1.6	**0.1938**	0.006	3.2	ug/L	247	Standard
	Pb	207	1022.4	5.0	**0.1831**	0.010	5.7	ug/L	215	Standard
	Pb	208	4003.9	0.8	**0.1862**	0.005	2.6	ug/L	770	Standard
	U	238	2368.9	2.6	**0.4007**	0.018	4.4	ug/L	13	Standard
>	**Bi**	209	495170.9	2.1				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	50.0	10.0	**0.0302**	0.005	18.0	mg/L	35	Standard
K	39	30.0	44.1	**0.0395**	0.069	175.4	mg/L	25	Standard
Ca	43	31.7	65.7	**1.0148**	4.252	419.0	mg/L	38	Standard
Fe	54	92.2	19.0	**-0.0485**	0.015	30.9	mg/L	126	Standard
Fe	57	215.0	14.5	**-0.2376**	0.102	43.0	mg/L	245	Standard
> **Sc-1**	45	24875.4	2.5				mg/L	25066	Standard
Cl	35	148704.8	0.2				ug/L	125857	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	1456.7	4.5				ug/L	1350	Standard
P	31	15039.1	1.7				ug/L	18393	Standard
S	34	4490.7	1.0				ug/L	3739	Standard
Sr	88	73.3	19.7				ug/L	78	Standard
C	12	26.7	21.7				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	2.9	202.3				mg/L	2	Standard
Ho-1	165	6.7	86.6				mg/L	10	Standard
Er	166	10.0					mg/L	23	Standard
I	127	996.7	4.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	98.360		
Al	27			
Sc	45			
Ti	47			
V	51	95.739		
Cr	52	96.237		
Cr	53			
Mn	55	86.841		
Co	59	96.822		
Ni	60	91.905		
Cu	65	90.940		
Zn	66	110.176		
> Ge	72		100.276	
As	75	97.059		
Se	82	111.510		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	98.538		
Cd	111	98.062		
Cd	114			
> In	115			97.821
Sn	118			
Sb	123	104.817		
Ba	135	91.990		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	95.070		
Tl	205			
Pb	206			
Pb	207			
Pb	208	93.123		
U	238	100.174		
> Bi	209			98.416
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606099501
Sample Date/Time: Tuesday, June 21, 2016 19:34:57
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 500
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77633.4	0.8				ug/L	60176	Standard
	Be	9	6.7	43.3	**-0.0018**	0.003	172.4	ug/L	5	Standard
	Al	27	2026217.7	0.7	**11.9496**	0.150	1.3	ug/L	832	Standard
	Sc	45	26748.6	2.3				ug/L	25066	Standard
	Ti	47	31.7	17.4	**-0.0462**	0.030	65.2	ug/L	38	Standard
	V	51	1275.8	6.9	**0.0404**	0.016	40.4	ug/L	974	Standard
	Cr	52	6655.1	6.4	**0.0875**	0.082	93.8	ug/L	5792	Standard
	Cr	53	1963.5	8.8	**1.9476**	0.188	9.6	ug/L	347	Standard
	Mn	55	84988.4	1.3	**12.8494**	0.068	0.5	ug/L	1164	Standard
	Co	59	386.7	8.6	**0.0132**	0.006	45.9	ug/L	303	Standard
	Ni	60	675.3	7.4	**0.1784**	0.024	13.2	ug/L	291	Standard
	Cu	65	195.7	5.7	**0.0100**	0.008	78.4	ug/L	173	Standard
	Zn	66	3591.1	3.1	**3.1695**	0.063	2.0	ug/L	130	Standard
>	**Ge**	72	500114.1	1.6				ug/L	491724	Standard
	As	75	1657.7	10.0	**1.5886**	0.178	11.2	ug/L	-25	Standard
	Se	82	741.5	7.8	**6.9659**	0.657	9.4	ug/L	12	Standard
	Se-1	77	304.7	3.4	**3.5912**	0.205	5.7	ug/L	57	Standard
>	**Ga**	71	115.0	17.4				mg/L	148	Standard
	Rb	85	6904.9	3.3				ug/L	18	Standard
	Y	89	413732.9	0.8				ug/L	401845	Standard
>	**Rh**	103	540.0	15.3				ug/L	10	Standard
	Mo	98	33.8	20.7	**0.0095**	0.003	31.4	ug/L	12	Standard
	Ag	107	87.7	13.3	**-0.0007**	0.002	269.3	ug/L	98	Standard
	Cd	111	5.3	39.3	**-0.0019**	0.001	57.9	mg/L	11	Standard
	Cd	114	4.9	315.7	**-0.0034**	0.003	99.4	ug/L	21	Standard
>	**In**	115	553729.7	2.2				ug/L	547487	Standard
	Sn	118	500.0	18.4	**0.0210**	0.015	73.8	ug/L	450	Standard
	Sb	123	98.6	22.2	**0.0153**	0.005	30.1	ug/L	105	Standard
	Ba	135	188976.6	0.6	**101.7485**	2.043	2.0	ug/L	111	Standard
	Ce	140	20.0	25.0				ug/L	107	Standard
>	**Tb**	159	898084.0	1.2				ug/L	890342	Standard
	Ho	165	3.3	86.6				ug/L	10	Standard
	Tl	203	185.0	4.6	**0.0209**	0.001	6.4	ug/L	19	Standard
	Tl	205	168.3	27.6	**0.0281**	0.008	27.5	ug/L	17	Standard
	Pb	206	327.0	2.4	**0.0122**	0.002	14.3	ug/L	247	Standard
	Pb	207	273.3	4.9	**0.0096**	0.003	26.1	ug/L	215	Standard
	Pb	208	1042.0	2.7	**0.0030**	0.001	37.4	ug/L	770	Standard
	U	238	6.0	16.7	**0.0002**	0.000	92.5	ug/L	13	Standard
>	**Bi**	209	503950.2	0.9				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	24992.3	2.5	**32.1567**	1.409	4.4	mg/L	35	Standard
K	39	90.0	5.6	**0.3081**	0.023	7.4	mg/L	25	Standard
Ca	43	76.7	13.6	**8.8158**	1.657	18.8	mg/L	38	Standard
Fe	54	192.9	22.1	**0.0345**	0.034	98.8	mg/L	126	Standard
Fe	57	315.0	9.9	**0.0759**	0.141	185.8	mg/L	245	Standard
> **Sc-1**	45	26748.6	2.3				mg/L	25066	Standard
Cl	35	159695.2	0.9				ug/L	125857	Standard
Kr	83	2.3	107.9				ug/L	1	Standard
Br	81	185783.8	10.6				ug/L	1350	Standard
P	31	21602.1	2.2				ug/L	18393	Standard
S	34	4462.3	2.7				ug/L	3739	Standard
Sr	88	1885.1	4.1				ug/L	78	Standard
C	12	60.0	16.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	29.2	70.1				mg/L	2	Standard
Ho-1	165	3.3	86.6				mg/L	10	Standard
Er	166	16.7	69.3				mg/L	23	Standard
I	127	135026.1	16.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.011	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.706	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.140
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.160
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606099502
Sample Date/Time: Tuesday, June 21, 2016 19:38:09
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 500
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74226.4	2.4				ug/L	60176	Standard
	Be	9	8.3	34.6	**0.0004**	0.003	782.1	ug/L	5	Standard
	Al	27	1964045.2	2.9	**12.1146**	0.244	2.0	ug/L	832	Standard
	Sc	45	24970.6	3.4				ug/L	25066	Standard
	Ti	47	32.7	9.4	**-0.0368**	0.015	40.8	ug/L	38	Standard
	V	51	1262.9	8.3	**0.0439**	0.016	36.9	ug/L	974	Standard
	Cr	52	7258.4	0.5	**0.2111**	0.007	3.1	ug/L	5792	Standard
	Cr	53	1968.5	11.3	**2.0221**	0.300	14.8	ug/L	347	Standard
	Mn	55	84493.3	0.7	**13.1339**	0.146	1.1	ug/L	1164	Standard
	Co	59	367.0	1.6	**0.0116**	0.000	3.3	ug/L	303	Standard
	Ni	60	734.0	4.8	**0.2217**	0.019	8.5	ug/L	291	Standard
	Cu	65	234.0	5.0	**0.0345**	0.007	20.2	ug/L	173	Standard
	Zn	66	3577.4	1.6	**3.2515**	0.080	2.4	ug/L	130	Standard
>	**Ge**	72	486612.8	1.0				ug/L	491724	Standard
	As	75	1897.2	6.2	**1.8600**	0.104	5.6	ug/L	-25	Standard
	Se	82	847.2	4.6	**8.1876**	0.359	4.4	ug/L	12	Standard
	Se-1	77	299.3	6.6	**3.6325**	0.324	8.9	ug/L	57	Standard
>	**Ga**	71	111.7	23.0				mg/L	148	Standard
	Rb	85	6951.6	2.7				ug/L	18	Standard
	Y	89	428541.2	1.0				ug/L	401845	Standard
>	**Rh**	103	660.0	4.2				ug/L	10	Standard
	Mo	98	28.1	25.8	**0.0071**	0.003	41.3	ug/L	12	Standard
	Ag	107	72.0	3.7	**-0.0033**	0.000	11.5	ug/L	98	Standard
	Cd	111	5.6	20.7	**-0.0018**	0.001	33.9	mg/L	11	Standard
	Cd	114	12.2	78.3	**-0.0018**	0.002	112.9	ug/L	21	Standard
>	**In**	115	554225.0	0.6				ug/L	547487	Standard
	Sn	118	540.0	14.7	**0.0287**	0.015	53.8	ug/L	450	Standard
	Sb	123	76.2	13.8	**0.0101**	0.003	24.8	ug/L	105	Standard
	Ba	135	188355.6	0.6	**101.2959**	0.460	0.5	ug/L	111	Standard
	Ce	140	40.0	33.1				ug/L	107	Standard
>	**Tb**	159	890237.5	1.2				ug/L	890342	Standard
	Ho	165	21.7	35.3				ug/L	10	Standard
	Tl	203	179.7	2.8	**0.0212**	0.001	5.5	ug/L	19	Standard
	Tl	205	150.0	6.7	**0.0261**	0.001	4.6	ug/L	17	Standard
	Pb	206	498.3	4.9	**0.0517**	0.004	7.7	ug/L	247	Standard
	Pb	207	466.3	5.0	**0.0577**	0.006	10.6	ug/L	215	Standard
	Pb	208	1786.7	1.0	**0.0525**	0.002	3.4	ug/L	770	Standard
	U	238	3.0	33.3	**-0.0003**	0.000	60.1	ug/L	13	Standard
>	**Bi**	209	483891.9	2.0				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.7247**	32.424	173.2	mg/L	2	Standard
Mg	24	25317.8	3.2	**34.8845**	0.795	2.3	mg/L	35	Standard
K	39	93.3	22.3	**0.3528**	0.090	25.6	mg/L	25	Standard
Ca	43	91.7	8.3	**12.8496**	1.996	15.5	mg/L	38	Standard
Fe	54	224.3	18.2	**0.0779**	0.045	57.5	mg/L	126	Standard
Fe	57	341.7	9.5	**0.2646**	0.154	58.2	mg/L	245	Standard
> **Sc-1**	45	24970.6	3.4				mg/L	25066	Standard
Cl	35	171948.2	0.2				ug/L	125857	Standard
Kr	83	2.3	49.5				ug/L	1	Standard
Br	81	210718.6	1.3				ug/L	1350	Standard
P	31	22428.3	0.3				ug/L	18393	Standard
S	34	4655.7	1.8				ug/L	3739	Standard
Sr	88	1866.8	5.5				ug/L	78	Standard
C	12	56.7	36.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	45.9	45.5				mg/L	2	Standard
Ho-1	165	21.7	35.3				mg/L	10	Standard
Er	166	16.7	124.9				mg/L	23	Standard
I	127	109731.2	3.5				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.349	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.961	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.231	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.174	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606099502
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 19:41:21
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60753.2	0.7				ug/L	60176	Standard
	Be	9	38719.4	2.5	**53.4127**	1.268	2.4	ug/L	5	Standard
	Al	27	6711778.9	2.1	**50.6033**	0.899	1.8	ug/L	832	Standard
	Sc	45	25728.5	2.1				ug/L	25066	Standard
	Ti	47	20982.5	0.5	**104.3242**	1.357	1.3	ug/L	38	Standard
	V	51	321053.2	1.0	**51.7981**	0.934	1.8	ug/L	974	Standard
	Cr	52	344201.5	0.6	**51.1636**	0.287	0.6	ug/L	5792	Standard
	Cr	53	44291.3	1.7	**51.7172**	0.682	1.3	ug/L	347	Standard
	Mn	55	339218.4	3.0	**50.8246**	1.874	3.7	ug/L	1164	Standard
	Co	59	329430.6	2.2	**52.0390**	1.531	2.9	ug/L	303	Standard
	Ni	60	95047.5	0.5	**50.6545**	0.643	1.3	ug/L	291	Standard
	Cu	65	94430.7	0.6	**50.7104**	0.485	1.0	ug/L	173	Standard
	Zn	66	54795.6	0.3	**50.6166**	0.334	0.7	ug/L	130	Standard
>	**Ge**	72	511027.8	0.9				ug/L	491724	Standard
	As	75	54737.8	0.8	**50.2171**	0.828	1.6	ug/L	-25	Standard
	Se	82	5522.7	2.1	**51.3173**	1.540	3.0	ug/L	12	Standard
	Se-1	77	3859.5	2.0	**51.9063**	1.447	2.8	ug/L	57	Standard
>	**Ga**	71	95.0	18.2				mg/L	148	Standard
	Rb	85	715.0	4.2				ug/L	18	Standard
	Y	89	414601.0	3.0				ug/L	401845	Standard
>	**Rh**	103	75.0	29.1				ug/L	10	Standard
	Mo	98	246703.9	0.8	**102.5745**	0.981	1.0	ug/L	12	Standard
	Ag	107	305467.2	1.3	**51.7401**	0.890	1.7	ug/L	98	Standard
	Cd	111	97736.3	0.7	**51.9469**	0.458	0.9	mg/L	11	Standard
	Cd	114	235851.4	0.5	**51.5266**	0.472	0.9	ug/L	21	Standard
>	**In**	115	547985.7	0.4				ug/L	547487	Standard
	Sn	118	265904.1	2.8	**51.0890**	1.611	3.2	ug/L	450	Standard
	Sb	123	218330.5	1.3	**51.3521**	0.839	1.6	ug/L	105	Standard
	Ba	135	93431.9	0.4	**50.7920**	0.422	0.8	ug/L	111	Standard
	Ce	140	66.7	18.9				ug/L	107	Standard
>	**Tb**	159	878645.9	1.2				ug/L	890342	Standard
	Ho	165	16.7	34.6				ug/L	10	Standard
	Tl	203	382593.3	0.6	**51.2166**	0.851	1.7	ug/L	19	Standard
	Tl	205	319855.9	0.2	**52.1860**	0.686	1.3	ug/L	17	Standard
	Pb	206	245809.9	0.3	**51.1253**	0.527	1.0	ug/L	247	Standard
	Pb	207	223379.0	0.7	**51.1100**	0.660	1.3	ug/L	215	Standard
	Pb	208	860209.0	0.8	**52.5732**	1.026	2.0	ug/L	770	Standard
	U	238	310063.3	0.9	**52.2791**	0.641	1.2	ug/L	13	Standard
>	**Bi**	209	497537.7	1.2				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.4323**	31.917	173.2	mg/L	2	Standard
Mg	24	3723.8	3.0	**4.9453**	0.109	2.2	mg/L	35	Standard
K	39	950.0	8.5	**4.5034**	0.416	9.2	mg/L	25	Standard
Ca	43	46.7	24.7	**3.6078**	2.004	55.6	mg/L	38	Standard
Fe	54	5363.4	1.0	**4.8229**	0.058	1.2	mg/L	126	Standard
Fe	57	1550.1	5.1	**4.8704**	0.425	8.7	mg/L	245	Standard
> **Sc-1**	45	25728.5	2.1				mg/L	25066	Standard
Cl	35	153211.6	2.0				ug/L	125857	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	3267.0	14.6				ug/L	1350	Standard
P	31	22256.3	1.2				ug/L	18393	Standard
S	34	4787.4	1.1				ug/L	3739	Standard
Sr	88	73.3	34.3				ug/L	78	Standard
C	12	40.0	25.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	0.0					mg/L	2	Standard
Ho-1	165	16.7	34.6				mg/L	10	Standard
Er	166	0.0					mg/L	23	Standard
I	127	2020.1	11.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	106.825		
Al	27	101.207		
Sc	45			
Ti	47	104.324		
V	51	103.596		
Cr	52	102.327		
Cr	53			
Mn	55	101.649		
Co	59	104.078		
Ni	60	101.309		
Cu	65	101.421		
Zn	66	101.233		
> Ge	72		103.926	
As	75	100.434		
Se	82	102.635		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	102.575		
Ag	107	103.480		
Cd	111	103.894		
Cd	114			
In	115		100.091	
Sn	118	102.178		
Sb	123	102.704		
Ba	135	101.584		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.433		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.146		
U	238	104.558		
Bi	209		98.886	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 19:44:33
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61186.7	3.6				ug/L	60176	Standard
	Be	9	33.3	121.2	**0.0354**	0.053	148.9	ug/L	5	Standard
	Al	27	5501.8	106.7	**0.0318**	0.042	131.0	ug/L	832	Standard
	Sc	45	26701.8	2.0				ug/L	25066	Standard
	Ti	47	30.3	33.2	**-0.0533**	0.048	90.9	ug/L	38	Standard
	V	51	1141.6	4.7	**0.0186**	0.005	28.0	ug/L	974	Standard
	Cr	52	6134.6	2.3	**0.0092**	0.003	30.8	ug/L	5792	Standard
	Cr	53	388.3	9.1	**0.0563**	0.051	89.9	ug/L	347	Standard
	Mn	55	1080.7	12.0	**-0.0490**	0.017	33.8	ug/L	1164	Standard
	Co	59	305.0	13.6	**0.0000**	0.006	21511.9	ug/L	303	Standard
	Ni	60	217.7	16.0	**-0.0715**	0.017	23.3	ug/L	291	Standard
	Cu	65	178.3	13.0	**0.0005**	0.011	2056.8	ug/L	173	Standard
	Zn	66	169.7	10.0	**-0.0741**	0.013	17.6	ug/L	130	Standard
>	**Ge**	72	498463.8	2.0				ug/L	491724	Standard
	As	75	-12.2	286.7	**0.0221**	0.033	148.3	ug/L	-25	Standard
	Se	82	23.6	25.6	**0.1314**	0.054	41.3	ug/L	12	Standard
	Se-1	77	53.0	11.3	**0.0906**	0.088	97.6	ug/L	57	Standard
>	**Ga**	71	131.7	28.5				mg/L	148	Standard
	Rb	85	18.3	15.7				ug/L	18	Standard
	Y	89	417929.1	0.8				ug/L	401845	Standard
>	**Rh**	103	38.3	41.9				ug/L	10	Standard
	Mo	98	257.5	28.1	**0.0990**	0.027	27.2	ug/L	12	Standard
	Ag	107	163.0	35.8	**0.0113**	0.009	79.0	ug/L	98	Standard
	Cd	111	38.5	98.3	**0.0148**	0.019	127.2	mg/L	11	Standard
	Cd	114	81.0	86.9	**0.0125**	0.014	115.3	ug/L	21	Standard
>	**In**	115	565101.8	2.2				ug/L	547487	Standard
	Sn	118	831.7	11.4	**0.0814**	0.021	25.5	ug/L	450	Standard
	Sb	123	393.5	15.0	**0.0823**	0.015	18.3	ug/L	105	Standard
	Ba	135	200.7	38.6	**0.0498**	0.038	76.8	ug/L	111	Standard
	Ce	140	16.7	45.8				ug/L	107	Standard
>	**Tb**	159	889533.7	0.9				ug/L	890342	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	149.3	78.6	**0.0159**	0.015	94.6	ug/L	19	Standard
	Tl	205	106.7	80.7	**0.0179**	0.013	75.0	ug/L	17	Standard
	Pb	206	292.0	13.2	**0.0046**	0.007	158.0	ug/L	247	Standard
	Pb	207	254.3	15.6	**0.0049**	0.008	166.3	ug/L	215	Standard
	Pb	208	1008.7	14.9	**0.0005**	0.008	1674.4	ug/L	770	Standard
	U	238	103.0	92.1	**0.0161**	0.015	95.6	ug/L	13	Standard
>	**Bi**	209	507542.0	1.3				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.1949**	29.774	173.2	mg/L	2	Standard
Mg	24	48.3	76.3	**0.0231**	0.046	200.6	mg/L	35	Standard
K	39	25.0	20.0	**0.0046**	0.023	492.5	mg/L	25	Standard
Ca	43	23.3	32.7	**-1.0097**	1.396	138.2	mg/L	38	Standard
Fe	54	150.9	27.6	**-0.0016**	0.040	2494.1	mg/L	126	Standard
Fe	57	210.0	10.9	**-0.3128**	0.084	26.9	mg/L	245	Standard
Sc-1	45	26701.8	2.0				mg/L	25066	Standard
Cl	35	151455.2	0.3				ug/L	125857	Standard
Kr	83	2.0	0.0				ug/L	1	Standard
Br	81	2233.5	7.9				ug/L	1350	Standard
P	31	22777.1	4.3				ug/L	18393	Standard
S	34	4777.4	2.0				ug/L	3739	Standard
Sr	88	61.7	4.7				ug/L	78	Standard
C	12	53.3	10.8				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.3	94.7				mg/L	2	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	23	Standard
I	127	1440.1	11.4				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.371	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.217
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.874
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBS M7 WG573333-03
Sample Date/Time: Tuesday, June 21, 2016 19:47:45
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60333.2	0.9				ug/L	60176	Standard
	Be	9	8.3	91.7	**0.0026**	0.011	413.6	ug/L	5	Standard
	Al	27	13747.9	0.9	**0.0960**	0.002	1.6	ug/L	832	Standard
	Sc	45	26165.9	1.6				ug/L	25066	Standard
	Ti	47	33.7	12.0	**-0.0319**	0.021	67.5	ug/L	38	Standard
	V	51	1023.7	5.2	**0.0030**	0.011	364.3	ug/L	974	Standard
	Cr	52	8476.0	2.1	**0.4019**	0.015	3.7	ug/L	5792	Standard
	Cr	53	670.0	10.4	**0.4130**	0.076	18.4	ug/L	347	Standard
	Mn	55	1695.4	1.7	**0.0519**	0.001	2.7	ug/L	1164	Standard
	Co	59	1288.1	1.7	**0.1641**	0.005	3.0	ug/L	303	Standard
	Ni	60	726.0	6.3	**0.2167**	0.030	13.9	ug/L	291	Standard
	Cu	65	492.3	1.6	**0.1799**	0.004	2.2	ug/L	173	Standard
	Zn	66	1621.4	0.7	**1.3419**	0.027	2.0	ug/L	130	Standard
>	**Ge**	72	487560.8	1.2				ug/L	491724	Standard
	As	75	-5.7	503.0	**0.0282**	0.028	98.0	ug/L	-25	Standard
	Se	82	31.9	19.2	**0.2175**	0.056	25.7	ug/L	12	Standard
	Se-1	77	56.0	15.9	**0.1503**	0.133	88.5	ug/L	57	Standard
>	**Ga**	71	95.0	13.9				mg/L	148	Standard
	Rb	85	66.7	31.2				ug/L	18	Standard
	Y	89	416805.6	1.1				ug/L	401845	Standard
>	**Rh**	103	40.0	45.1				ug/L	10	Standard
	Mo	98	145.3	0.5	**0.0548**	0.001	1.4	ug/L	12	Standard
	Ag	107	81.0	9.6	**-0.0019**	0.001	72.0	ug/L	98	Standard
	Cd	111	25.4	13.8	**0.0085**	0.002	23.0	mg/L	11	Standard
	Cd	114	59.1	56.7	**0.0083**	0.007	88.4	ug/L	21	Standard
>	**In**	115	559026.1	1.1				ug/L	547487	Standard
	Sn	118	593.3	6.4	**0.0378**	0.006	15.8	ug/L	450	Standard
	Sb	123	135.0	11.3	**0.0235**	0.003	13.5	ug/L	105	Standard
	Ba	135	280.0	9.7	**0.0939**	0.016	17.3	ug/L	111	Standard
	Ce	140	105.0	29.7				ug/L	107	Standard
>	**Tb**	159	875434.1	1.1				ug/L	890342	Standard
	Ho	165	11.7	49.5				ug/L	10	Standard
	Tl	203	36.0	5.6	**0.0012**	0.000	21.8	ug/L	19	Standard
	Tl	205	30.0	44.1	**0.0059**	0.002	36.7	ug/L	17	Standard
	Pb	206	339.0	5.6	**0.0154**	0.004	24.7	ug/L	247	Standard
	Pb	207	271.0	5.6	**0.0097**	0.003	34.8	ug/L	215	Standard
	Pb	208	1160.0	0.8	**0.0108**	0.001	6.7	ug/L	770	Standard
	U	238	14.3	35.8	**0.0016**	0.001	55.1	ug/L	13	Standard
>	**Bi**	209	499087.6	0.6				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	61.6	**0.0157**	0.033	209.3	mg/L	35	Standard
K	39	23.3	49.5	**-0.0010**	0.055	5424.9	mg/L	25	Standard
Ca	43	25.0	60.0	**-0.6344**	2.755	434.3	mg/L	38	Standard
Fe	54	119.2	14.8	**-0.0282**	0.015	51.5	mg/L	126	Standard
Fe	57	218.3	7.4	**-0.2659**	0.051	19.0	mg/L	245	Standard
Sc-1	45	26165.9	1.6				mg/L	25066	Standard
Cl	35	151596.6	0.8				ug/L	125857	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	4757.4	26.7				ug/L	1350	Standard
P	31	21740.6	1.1				ug/L	18393	Standard
S	34	4795.8	1.6				ug/L	3739	Standard
Sr	88	51.7	5.6				ug/L	78	Standard
C	12	43.3	66.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	22.9	66.8				mg/L	2	Standard
Ho-1	165	11.7	49.5				mg/L	10	Standard
Er	166	10.0					mg/L	23	Standard
I	127	1155.0	7.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.261	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.153	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.108
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.194
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSS M7 WG573333-04
Sample Date/Time: Tuesday, June 21, 2016 19:50:57
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59225.5	1.2				ug/L	60176	Standard
	Be	9	19609.4	3.0	**27.7420**	0.614	2.2	ug/L	5	Standard
	Al	27	12795.4	2.0	**0.0906**	0.002	1.9	ug/L	832	Standard
	Sc	45	25735.2	2.3				ug/L	25066	Standard
	Ti	47	30.7	8.2	**-0.0502**	0.013	25.4	ug/L	38	Standard
	V	51	161756.0	0.9	**26.8215**	0.191	0.7	ug/L	974	Standard
	Cr	52	180807.8	1.0	**27.2779**	0.436	1.6	ug/L	5792	Standard
	Cr	53	22388.2	0.3	**26.7556**	0.203	0.8	ug/L	347	Standard
	Mn	55	175657.5	1.4	**27.0317**	0.594	2.2	ug/L	1164	Standard
	Co	59	169342.1	1.0	**27.5546**	0.491	1.8	ug/L	303	Standard
	Ni	60	48725.6	1.2	**26.6820**	0.407	1.5	ug/L	291	Standard
	Cu	65	49148.3	1.6	**27.1675**	0.617	2.3	ug/L	173	Standard
	Zn	66	29121.0	0.5	**27.6282**	0.375	1.4	ug/L	130	Standard
>	**Ge**	72	495668.9	0.8				ug/L	491724	Standard
	As	75	28447.7	0.7	**26.9212**	0.272	1.0	ug/L	-25	Standard
	Se	82	2857.7	1.2	**27.3299**	0.423	1.5	ug/L	12	Standard
	Se-1	77	1990.5	1.7	**27.2946**	0.705	2.6	ug/L	57	Standard
>	**Ga**	71	91.7	12.6				mg/L	148	Standard
	Rb	85	58.3	27.6				ug/L	18	Standard
	Y	89	417893.5	1.2				ug/L	401845	Standard
>	**Rh**	103	40.0	37.5				ug/L	10	Standard
	Mo	98	60.5	14.8	**0.0204**	0.004	18.1	ug/L	12	Standard
	Ag	107	157370.8	1.5	**26.3596**	0.160	0.6	ug/L	98	Standard
	Cd	111	50266.8	1.9	**26.4266**	0.395	1.5	mg/L	11	Standard
	Cd	114	119121.9	1.8	**25.7414**	0.327	1.3	ug/L	21	Standard
>	**In**	115	553936.9	1.0				ug/L	547487	Standard
	Sn	118	550.0	18.4	**0.0307**	0.020	63.7	ug/L	450	Standard
	Sb	123	113724.8	2.0	**26.4550**	0.324	1.2	ug/L	105	Standard
	Ba	135	48233.0	1.1	**25.9109**	0.064	0.2	ug/L	111	Standard
	Ce	140	93.3	12.4				ug/L	107	Standard
>	**Tb**	159	874780.4	1.3				ug/L	890342	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	196062.2	1.5	**26.2005**	0.206	0.8	ug/L	19	Standard
	Tl	205	168222.2	1.4	**27.4028**	0.377	1.4	ug/L	17	Standard
	Pb	206	128186.0	1.2	**26.5918**	0.160	0.6	ug/L	247	Standard
	Pb	207	111720.4	1.6	**25.4940**	0.201	0.8	ug/L	215	Standard
	Pb	208	451907.4	0.9	**27.5458**	0.346	1.3	ug/L	770	Standard
	U	238	157122.5	0.9	**26.4506**	0.287	1.1	ug/L	13	Standard
>	**Bi**	209	498294.3	0.9				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	30.0	60.1	**0.0016**	0.025	1578.9	mg/L	35	Standard
K	39	23.3	32.7	**0.0007**	0.036	5216.6	mg/L	25	Standard
Ca	43	21.7	48.0	**-1.1391**	2.056	180.5	mg/L	38	Standard
Fe	54	127.8	14.4	**-0.0186**	0.014	76.0	mg/L	126	Standard
Fe	57	258.3	19.9	**-0.0963**	0.212	219.9	mg/L	245	Standard
Sc-1	45	25735.2	2.3				mg/L	25066	Standard
Cl	35	150456.8	1.7				ug/L	125857	Standard
Kr	83	3.0	57.7				ug/L	1	Standard
Br	81	2710.2	6.8				ug/L	1350	Standard
P	31	21206.5	4.7				ug/L	18393	Standard
S	34	4460.7	1.3				ug/L	3739	Standard
Sr	88	63.3	9.1				ug/L	78	Standard
C	12	43.3	13.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.7	118.3				mg/L	2	Standard
Ho-1	165	8.3	91.7				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	998.4	16.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.421	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.802	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.178	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.036	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSS M7 WG573333-04
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Method 6020 - Summary Report

Sample ID: L1606105301 WG573333-02
Sample Date/Time: Tuesday, June 21, 2016 19:54:08
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59553.5	1.0				ug/L	60176	Standard
	Be	9	135.0	13.4	**0.1809**	0.024	13.0	ug/L	5	Standard
	Al	27	390493.3	0.9	**2.9960**	0.057	1.9	ug/L	832	Standard
	Sc	45	27242.8	2.6				ug/L	25066	Standard
	Ti	47	6465.0	1.2	**32.1311**	0.140	0.4	ug/L	38	Standard
	V	51	48073.7	0.3	**7.6430**	0.089	1.2	ug/L	974	Standard
	Cr	52	34364.9	0.8	**4.2815**	0.091	2.1	ug/L	5792	Standard
	Cr	53	4007.2	3.0	**4.3239**	0.170	3.9	ug/L	347	Standard
	Mn	55	232477.7	0.8	**34.9054**	0.509	1.5	ug/L	1164	Standard
	Co	59	7863.0	1.3	**1.1989**	0.016	1.3	ug/L	303	Standard
	Ni	60	6025.5	1.1	**3.0464**	0.076	2.5	ug/L	291	Standard
	Cu	65	4433.0	2.2	**2.2972**	0.044	1.9	ug/L	173	Standard
	Zn	66	19225.9	1.6	**17.6815**	0.348	2.0	ug/L	130	Standard
>	**Ge**	72	508937.9	1.5				ug/L	491724	Standard
	As	75	2936.1	0.9	**2.7370**	0.053	1.9	ug/L	-25	Standard
	Se	82	55.2	23.4	**0.4222**	0.115	27.2	ug/L	12	Standard
	Se-1	77	65.0	8.1	**0.2394**	0.078	32.6	ug/L	57	Standard
>	**Ga**	71	5164.2	2.6				mg/L	148	Standard
	Rb	85	19092.0	2.2				ug/L	18	Standard
	Y	89	428438.9	1.5				ug/L	401845	Standard
>	**Rh**	103	26.7	39.0				ug/L	10	Standard
	Mo	98	5911.8	1.7	**2.4389**	0.038	1.6	ug/L	12	Standard
	Ag	107	147.0	13.6	**0.0094**	0.003	37.1	ug/L	98	Standard
	Cd	111	206.9	4.5	**0.1046**	0.005	4.6	mg/L	11	Standard
	Cd	114	472.4	6.6	**0.0981**	0.006	6.3	ug/L	21	Standard
>	**In**	115	551287.4	0.7				ug/L	547487	Standard
	Sn	118	468.3	5.4	**0.0155**	0.005	29.4	ug/L	450	Standard
	Sb	123	357.0	11.8	**0.0759**	0.010	13.0	ug/L	105	Standard
	Ba	135	38678.0	0.4	**20.8682**	0.219	1.0	ug/L	111	Standard
	Ce	140	306495.9	1.2				ug/L	107	Standard
>	**Tb**	159	890380.5	0.6				ug/L	890342	Standard
	Ho	165	2116.8	9.4				ug/L	10	Standard
	Tl	203	519.3	6.1	**0.0646**	0.004	6.1	ug/L	19	Standard
	Tl	205	458.3	12.0	**0.0743**	0.009	11.8	ug/L	17	Standard
	Pb	206	124187.6	1.0	**25.2798**	0.148	0.6	ug/L	247	Standard
	Pb	207	103763.8	0.7	**23.2336**	0.104	0.4	ug/L	215	Standard
	Pb	208	419261.0	0.7	**25.0733**	0.105	0.4	ug/L	770	Standard
	U	238	1623.1	2.0	**0.2673**	0.004	1.6	ug/L	13	Standard
>	**Bi**	209	507748.9	0.4				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	18.3	**0.0137**	0.009	65.1	mg/L	35	Standard
K	39	28.3	27.0	**0.0171**	0.033	190.3	mg/L	25	Standard
Ca	43	28.3	62.0	**-0.2390**	3.080	1288.3	mg/L	38	Standard
Fe	54	3298.0	4.5	**2.7434**	0.115	4.2	mg/L	126	Standard
Fe	57	1085.0	10.1	**2.8415**	0.310	10.9	mg/L	245	Standard
> **Sc-1**	45	27242.8	2.6				mg/L	25066	Standard
Cl	35	140674.8	1.7				ug/L	125857	Standard
Kr	83	1.7	124.9				ug/L	1	Standard
Br	81	2630.2	14.1				ug/L	1350	Standard
P	31	19367.4	0.5				ug/L	18393	Standard
S	34	4402.3	3.5				ug/L	3739	Standard
Sr	88	81.7	12.7				ug/L	78	Standard
C	12	100.0	40.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	63.3	18.2				mg/L	0	Standard
Dy	164	3670.9	4.8				mg/L	2	Standard
Ho-1	165	2116.8	9.4				mg/L	10	Standard
Er	166	1800.1	7.0				mg/L	23	Standard
I	127	6793.2	6.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.966	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.501	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606105301 WG573333-02
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.694
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.915
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606105302S WG573333-07
Sample Date/Time: Tuesday, June 21, 2016 19:57:20
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60433.6	2.0				ug/L	60176	Standard
	Be	9	19427.5	2.3	**26.9397**	0.549	2.0	ug/L	5	Standard
	Al	27	396251.5	0.8	**2.9962**	0.054	1.8	ug/L	832	Standard
	Sc	45	27251.2	1.0				ug/L	25066	Standard
	Ti	47	7488.9	1.0	**38.3195**	0.066	0.2	ug/L	38	Standard
	V	51	191501.2	1.3	**31.8425**	0.616	1.9	ug/L	974	Standard
	Cr	52	197050.6	1.4	**29.8680**	0.710	2.4	ug/L	5792	Standard
	Cr	53	24456.4	1.3	**29.3202**	0.727	2.5	ug/L	347	Standard
	Mn	55	384294.1	1.4	**59.4969**	1.333	2.2	ug/L	1164	Standard
	Co	59	160969.3	2.7	**26.2367**	0.889	3.4	ug/L	303	Standard
	Ni	60	52090.7	1.5	**28.5899**	0.703	2.5	ug/L	291	Standard
	Cu	65	51279.0	0.4	**28.3978**	0.401	1.4	ug/L	173	Standard
	Zn	66	44812.5	1.1	**42.7178**	0.864	2.0	ug/L	130	Standard
>	**Ge**	72	494830.5	1.2				ug/L	491724	Standard
	As	75	25971.2	2.1	**24.6250**	0.687	2.8	ug/L	-25	Standard
	Se	82	2412.0	4.7	**23.0968**	1.223	5.3	ug/L	12	Standard
	Se-1	77	1649.1	1.6	**22.5387**	0.314	1.4	ug/L	57	Standard
>	**Ga**	71	4899.1	4.8				mg/L	148	Standard
	Rb	85	15933.4	0.2				ug/L	18	Standard
	Y	89	434672.4	2.3				ug/L	401845	Standard
>	**Rh**	103	26.7	57.3				ug/L	10	Standard
	Mo	98	16958.8	1.3	**6.8221**	0.110	1.6	ug/L	12	Standard
	Ag	107	140602.8	1.2	**23.0461**	0.295	1.3	ug/L	98	Standard
	Cd	111	48424.2	1.0	**24.9141**	0.334	1.3	mg/L	11	Standard
	Cd	114	117338.3	1.3	**24.8149**	0.406	1.6	ug/L	21	Standard
>	**In**	115	566048.4	0.4				ug/L	547487	Standard
	Sn	118	788.4	48.0	**0.0729**	0.071	97.4	ug/L	450	Standard
	Sb	123	59314.2	1.3	**13.4999**	0.209	1.5	ug/L	105	Standard
	Ba	135	85875.1	2.0	**45.1887**	1.009	2.2	ug/L	111	Standard
	Ce	140	311360.4	1.3				ug/L	107	Standard
>	**Tb**	159	893299.7	0.4				ug/L	890342	Standard
	Ho	165	1725.1	3.4				ug/L	10	Standard
	Tl	203	188251.6	0.6	**24.7136**	0.342	1.4	ug/L	19	Standard
	Tl	205	158225.3	1.5	**25.3203**	0.563	2.2	ug/L	17	Standard
	Pb	206	385483.0	0.9	**78.6614**	0.775	1.0	ug/L	247	Standard
	Pb	207	325540.1	1.2	**73.0713**	0.789	1.1	ug/L	215	Standard
	Pb	208	1297632.0	1.2	**77.8091**	1.554	2.0	ug/L	770	Standard
	U	238	149860.0	2.2	**24.7839**	0.724	2.9	ug/L	13	Standard
>	**Bi**	209	507277.4	0.8				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	53.3	21.7	**0.0285**	0.014	50.4	mg/L	35	Standard
K	39	40.0	33.1	**0.0713**	0.062	86.8	mg/L	25	Standard
Ca	43	30.0	60.1	**0.1178**	3.297	2798.2	mg/L	38	Standard
Fe	54	2785.6	1.9	**2.2951**	0.053	2.3	mg/L	126	Standard
Fe	57	871.7	5.6	**2.0708**	0.165	8.0	mg/L	245	Standard
> **Sc-1**	45	27251.2	1.0				mg/L	25066	Standard
Cl	35	136548.5	0.2				ug/L	125857	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	2690.2	5.6				ug/L	1350	Standard
P	31	18896.8	0.3				ug/L	18393	Standard
S	34	3938.8	2.0				ug/L	3739	Standard
Sr	88	90.0	36.4				ug/L	78	Standard
C	12	110.0					mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	12.4				mg/L	0	Standard
Dy	164	3247.3	7.3				mg/L	2	Standard
Ho-1	165	1725.1	3.4				mg/L	10	Standard
Er	166	1386.7	5.1				mg/L	23	Standard
I	127	5004.2	4.5				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.428	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.632	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.390
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.822
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606105303SD WG573333-08
Sample Date/Time: Tuesday, June 21, 2016 20:00:31
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60791.8	2.4				ug/L	60176	Standard
	Be	9	19442.5	1.7	**26.8023**	0.232	0.9	ug/L	5	Standard
	Al	27	432728.9	2.0	**3.2535**	0.080	2.4	ug/L	832	Standard
	Sc	45	26972.3	0.6				ug/L	25066	Standard
	Ti	47	8101.2	1.8	**41.8095**	0.489	1.2	ug/L	38	Standard
	V	51	194533.2	1.3	**32.6143**	0.536	1.6	ug/L	974	Standard
	Cr	52	196269.4	0.6	**29.9955**	0.469	1.6	ug/L	5792	Standard
	Cr	53	24483.1	0.2	**29.5930**	0.323	1.1	ug/L	347	Standard
	Mn	55	386351.2	0.3	**60.3048**	0.743	1.2	ug/L	1164	Standard
	Co	59	166196.9	0.5	**27.3090**	0.232	0.8	ug/L	303	Standard
	Ni	60	51605.4	0.6	**28.5533**	0.418	1.5	ug/L	291	Standard
	Cu	65	50075.0	1.9	**27.9529**	0.367	1.3	ug/L	173	Standard
	Zn	66	57353.7	1.8	**55.1795**	0.640	1.2	ug/L	130	Standard
>	**Ge**	72	490809.7	1.0				ug/L	491724	Standard
	As	75	25714.1	1.9	**24.5757**	0.229	0.9	ug/L	-25	Standard
	Se	82	2487.9	0.6	**24.0190**	0.366	1.5	ug/L	12	Standard
	Se-1	77	1747.8	2.5	**24.1314**	0.805	3.3	ug/L	57	Standard
>	**Ga**	71	5157.5	2.7				mg/L	148	Standard
	Rb	85	18523.0	3.1				ug/L	18	Standard
	Y	89	444017.8	1.4				ug/L	401845	Standard
>	**Rh**	103	46.7	16.4				ug/L	10	Standard
	Mo	98	5808.7	0.6	**2.3126**	0.026	1.1	ug/L	12	Standard
	Ag	107	143200.7	1.9	**23.2569**	0.246	1.1	ug/L	98	Standard
	Cd	111	48312.1	2.0	**24.6294**	0.423	1.7	mg/L	11	Standard
	Cd	114	117421.2	1.2	**24.6058**	0.205	0.8	ug/L	21	Standard
>	**In**	115	571242.8	0.9				ug/L	547487	Standard
	Sn	118	516.7	19.9	**0.0212**	0.018	86.9	ug/L	450	Standard
	Sb	123	58163.3	1.0	**13.1170**	0.064	0.5	ug/L	105	Standard
	Ba	135	91445.8	0.5	**47.6850**	0.197	0.4	ug/L	111	Standard
	Ce	140	283441.9	1.3				ug/L	107	Standard
>	**Tb**	159	890644.6	2.9				ug/L	890342	Standard
	Ho	165	1641.8	1.4				ug/L	10	Standard
	Tl	203	186726.4	1.3	**24.8727**	0.635	2.6	ug/L	19	Standard
	Tl	205	159870.8	1.7	**25.9629**	0.965	3.7	ug/L	17	Standard
	Pb	206	345180.0	0.3	**71.4786**	2.166	3.0	ug/L	247	Standard
	Pb	207	289788.0	0.4	**66.0118**	2.154	3.3	ug/L	215	Standard
	Pb	208	1193141.1	0.7	**72.6045**	2.586	3.6	ug/L	770	Standard
	U	238	151251.6	0.9	**25.3870**	0.985	3.9	ug/L	13	Standard
>	**Bi**	209	500148.8	3.1				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	29.0	**0.0164**	0.016	96.8	mg/L	35	Standard
K	39	21.7	35.3	**-0.0118**	0.036	304.9	mg/L	25	Standard
Ca	43	35.0	28.6	**1.0832**	1.815	167.6	mg/L	38	Standard
Fe	54	3124.4	3.6	**2.6191**	0.111	4.2	mg/L	126	Standard
Fe	57	1018.4	7.4	**2.6406**	0.258	9.8	mg/L	245	Standard
> **Sc-1**	45	26972.3	0.6				mg/L	25066	Standard
Cl	35	135993.6	0.3				ug/L	125857	Standard
Kr	83	2.3	49.5				ug/L	1	Standard
Br	81	2136.8	9.1				ug/L	1350	Standard
P	31	18498.0	3.5				ug/L	18393	Standard
S	34	3852.2	5.6				ug/L	3739	Standard
Sr	88	71.7	38.4				ug/L	78	Standard
C	12	123.3	4.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	66.7	52.7				mg/L	0	Standard
Dy	164	3021.0	3.5				mg/L	2	Standard
Ho-1	165	1641.8	1.4				mg/L	10	Standard
Er	166	1586.8	8.2				mg/L	23	Standard
I	127	4954.1	6.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.023	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.814	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.339
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.405
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606105401
Sample Date/Time: Tuesday, June 21, 2016 20:03:43
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61720.5	1.6				ug/L	60176	Standard
	Be	9	93.3	26.4	**0.1174**	0.032	27.0	ug/L	5	Standard
	Al	27	303416.2	0.1	**2.2442**	0.038	1.7	ug/L	832	Standard
	Sc	45	26598.3	1.8				ug/L	25066	Standard
	Ti	47	5974.5	1.1	**29.4612**	0.106	0.4	ug/L	38	Standard
	V	51	29615.8	0.7	**4.6079**	0.038	0.8	ug/L	974	Standard
	Cr	52	34301.5	0.5	**4.2336**	0.017	0.4	ug/L	5792	Standard
	Cr	53	4075.5	5.3	**4.3682**	0.220	5.0	ug/L	347	Standard
	Mn	55	67679.2	0.7	**9.9350**	0.149	1.5	ug/L	1164	Standard
	Co	59	5795.4	0.6	**0.8641**	0.012	1.4	ug/L	303	Standard
	Ni	60	7058.0	2.5	**3.5727**	0.066	1.8	ug/L	291	Standard
	Cu	65	1680.8	0.8	**0.8038**	0.014	1.8	ug/L	173	Standard
	Zn	66	13813.0	1.2	**12.5434**	0.154	1.2	ug/L	130	Standard
>	**Ge**	72	512622.2	0.8				ug/L	491724	Standard
	As	75	1326.1	3.7	**1.2458**	0.045	3.6	ug/L	-25	Standard
	Se	82	58.4	19.9	**0.4492**	0.112	25.0	ug/L	12	Standard
	Se-1	77	88.3	8.0	**0.5495**	0.098	17.9	ug/L	57	Standard
>	**Ga**	71	5431.0	3.2				mg/L	148	Standard
	Rb	85	11375.9	1.4				ug/L	18	Standard
	Y	89	433671.4	3.3				ug/L	401845	Standard
>	**Rh**	103	16.7	62.4				ug/L	10	Standard
	Mo	98	2147.6	0.7	**0.8712**	0.013	1.5	ug/L	12	Standard
	Ag	107	162.0	7.3	**0.0115**	0.002	16.1	ug/L	98	Standard
	Cd	111	42.4	7.2	**0.0174**	0.001	7.5	mg/L	11	Standard
	Cd	114	99.9	11.8	**0.0170**	0.002	13.5	ug/L	21	Standard
>	**In**	115	558893.7	1.3				ug/L	547487	Standard
	Sn	118	561.7	17.7	**0.0319**	0.019	59.1	ug/L	450	Standard
	Sb	123	749.1	15.9	**0.1654**	0.030	17.9	ug/L	105	Standard
	Ba	135	29348.7	0.5	**15.6055**	0.116	0.7	ug/L	111	Standard
	Ce	140	146646.3	1.1				ug/L	107	Standard
>	**Tb**	159	887966.0	1.1				ug/L	890342	Standard
	Ho	165	671.7	6.3				ug/L	10	Standard
	Tl	203	235.7	12.3	**0.0279**	0.004	14.4	ug/L	19	Standard
	Tl	205	173.3	14.5	**0.0291**	0.004	14.7	ug/L	17	Standard
	Pb	206	14922.0	0.9	**3.0381**	0.064	2.1	ug/L	247	Standard
	Pb	207	12398.4	1.3	**2.7752**	0.080	2.9	ug/L	215	Standard
	Pb	208	50203.5	0.7	**2.9980**	0.064	2.1	ug/L	770	Standard
	U	238	2316.2	1.5	**0.3880**	0.011	2.7	ug/L	13	Standard
>	**Bi**	209	499818.9	1.6				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	56.7	18.4	**0.0343**	0.012	35.9	mg/L	35	Standard
K	39	40.0	12.5	**0.0758**	0.026	33.7	mg/L	25	Standard
Ca	43	33.3	31.2	**0.8816**	2.026	229.8	mg/L	38	Standard
Fe	54	1087.4	2.8	**0.8360**	0.027	3.2	mg/L	126	Standard
Fe	57	525.0	12.5	**0.8590**	0.218	25.3	mg/L	245	Standard
> **Sc-1**	45	26598.3	1.8				mg/L	25066	Standard
Cl	35	134133.2	1.4				ug/L	125857	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	2273.5	6.1				ug/L	1350	Standard
P	31	19075.3	1.6				ug/L	18393	Standard
S	34	3665.4	1.3				ug/L	3739	Standard
Sr	88	76.7	10.0				ug/L	78	Standard
C	12	130.0	48.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	63.3	24.1				mg/L	0	Standard
Dy	164	1323.8	7.9				mg/L	2	Standard
Ho-1	165	671.7	6.3				mg/L	10	Standard
Er	166	686.7	8.0				mg/L	23	Standard
I	127	2676.9	2.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.567	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.250	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.084	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.339	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L160105401PS WG573475-01
Sample Date/Time: Tuesday, June 21, 2016 20:06:54
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62794.9	0.3				ug/L	60176	Standard
	Be	9	39553.2	1.1	**52.7892**	0.596	1.1	ug/L	5	Standard
	Al	27	307971.8	0.5	**2.2385**	0.019	0.8	ug/L	832	Standard
	Sc	45	26882.2	1.8				ug/L	25066	Standard
	Ti	47	6129.2	0.9	**30.0854**	0.443	1.5	ug/L	38	Standard
	V	51	350807.1	1.1	**56.1596**	0.484	0.9	ug/L	974	Standard
	Cr	52	380685.2	0.7	**56.2324**	0.702	1.2	ug/L	5792	Standard
	Cr	53	47479.3	2.5	**55.0311**	1.483	2.7	ug/L	347	Standard
	Mn	55	401711.5	2.2	**59.7429**	1.526	2.6	ug/L	1164	Standard
	Co	59	335117.7	1.9	**52.5149**	1.178	2.2	ug/L	303	Standard
	Ni	60	103584.6	0.9	**54.7808**	0.581	1.1	ug/L	291	Standard
	Cu	65	100044.2	0.8	**53.3041**	0.495	0.9	ug/L	173	Standard
	Zn	66	69784.7	1.2	**64.0109**	0.350	0.5	ug/L	130	Standard
>	**Ge**	72	515100.8	0.7				ug/L	491724	Standard
	As	75	57585.9	1.4	**52.4062**	0.728	1.4	ug/L	-25	Standard
	Se	82	5557.0	0.5	**51.2198**	0.370	0.7	ug/L	12	Standard
	Se-1	77	3824.8	2.7	**51.0178**	1.538	3.0	ug/L	57	Standard
>	**Ga**	71	5406.0	3.1				mg/L	148	Standard
	Rb	85	11310.9	0.9				ug/L	18	Standard
	Y	89	430615.8	1.3				ug/L	401845	Standard
>	**Rh**	103	35.0	14.3				ug/L	10	Standard
	Mo	98	2082.6	2.7	**0.8357**	0.016	1.9	ug/L	12	Standard
	Ag	107	313560.0	0.3	**51.5352**	0.570	1.1	ug/L	98	Standard
	Cd	111	99080.1	0.8	**51.0986**	0.459	0.9	mg/L	11	Standard
	Cd	114	240574.4	0.6	**50.9998**	0.581	1.1	ug/L	21	Standard
>	**In**	115	564766.8	1.3				ug/L	547487	Standard
	Sn	118	651.7	3.5	**0.0476**	0.003	5.8	ug/L	450	Standard
	Sb	123	219038.4	0.6	**49.9905**	0.624	1.2	ug/L	105	Standard
	Ba	135	122799.3	0.6	**64.7923**	0.643	1.0	ug/L	111	Standard
	Ce	140	145608.1	1.7				ug/L	107	Standard
>	**Tb**	159	891761.9	1.6				ug/L	890342	Standard
	Ho	165	680.0	5.1				ug/L	10	Standard
	Tl	203	390727.1	0.9	**51.0556**	0.307	0.6	ug/L	19	Standard
	Tl	205	332957.0	0.5	**53.0280**	0.386	0.7	ug/L	17	Standard
	Pb	206	268736.3	0.4	**54.5663**	0.473	0.9	ug/L	247	Standard
	Pb	207	234417.6	1.0	**52.3635**	1.055	2.0	ug/L	215	Standard
	Pb	208	909782.4	1.0	**54.2774**	0.756	1.4	ug/L	770	Standard
	U	238	311618.6	0.6	**51.2899**	0.366	0.7	ug/L	13	Standard
>	**Bi**	209	509666.6	1.1				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	56.7	67.4	**0.0334**	0.048	143.9	mg/L	35	Standard
K	39	28.3	88.8	**0.0206**	0.119	576.6	mg/L	25	Standard
Ca	43	23.3	68.9	**-1.0431**	2.962	283.9	mg/L	38	Standard
Fe	54	984.0	1.5	**0.7343**	0.012	1.7	mg/L	126	Standard
Fe	57	478.3	10.2	**0.6676**	0.161	24.2	mg/L	245	Standard
> **Sc-1**	45	26882.2	1.8				mg/L	25066	Standard
Cl	35	130277.0	0.6				ug/L	125857	Standard
Kr	83	3.3	45.8				ug/L	1	Standard
Br	81	2190.2	10.3				ug/L	1350	Standard
P	31	18941.8	1.3				ug/L	18393	Standard
S	34	3468.7	2.9				ug/L	3739	Standard
Sr	88	81.7	9.4				ug/L	78	Standard
C	12	83.3	6.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	60.0	16.7				mg/L	0	Standard
Dy	164	1430.7	6.9				mg/L	2	Standard
Ho-1	165	680.0	5.1				mg/L	10	Standard
Er	166	613.3	13.6				mg/L	23	Standard
I	127	2793.6	5.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.352	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.754	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L160105401PS WG573475-01
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.156
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.297
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606105401SDL WG573475-02
Sample Date/Time: Tuesday, June 21, 2016 20:10:06
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63462.7	2.8				ug/L	60176	Standard
	Be	9	43.3	6.7	**0.0483**	0.005	10.7	ug/L	5	Standard
	Al	27	62110.4	1.6	**0.4402**	0.014	3.1	ug/L	832	Standard
	Sc	45	27483.2	2.5				ug/L	25066	Standard
	Ti	47	1202.7	6.4	**5.8283**	0.361	6.2	ug/L	38	Standard
	V	51	6687.6	0.7	**0.9204**	0.038	4.1	ug/L	974	Standard
	Cr	52	11970.1	2.2	**0.8833**	0.051	5.8	ug/L	5792	Standard
	Cr	53	1118.4	3.2	**0.9142**	0.068	7.4	ug/L	347	Standard
	Mn	55	14114.2	2.6	**1.9239**	0.035	1.8	ug/L	1164	Standard
	Co	59	1371.4	3.2	**0.1692**	0.010	5.9	ug/L	303	Standard
	Ni	60	1550.7	0.7	**0.6455**	0.028	4.3	ug/L	291	Standard
	Cu	65	526.7	2.9	**0.1880**	0.015	7.9	ug/L	173	Standard
	Zn	66	4240.9	4.2	**3.7282**	0.034	0.9	ug/L	130	Standard
>	**Ge**	72	507330.3	3.4				ug/L	491724	Standard
	As	75	245.5	8.2	**0.2605**	0.014	5.3	ug/L	-25	Standard
	Se	82	25.7	28.8	**0.1499**	0.077	51.5	ug/L	12	Standard
	Se-1	77	61.3	9.3	**0.1936**	0.101	52.0	ug/L	57	Standard
>	**Ga**	71	1146.7	6.4				mg/L	148	Standard
	Rb	85	2321.8	7.4				ug/L	18	Standard
	Y	89	429962.5	1.2				ug/L	401845	Standard
>	**Rh**	103	40.0	66.1				ug/L	10	Standard
	Mo	98	429.5	5.0	**0.1645**	0.007	4.1	ug/L	12	Standard
	Ag	107	155.3	11.0	**0.0095**	0.003	29.8	ug/L	98	Standard
	Cd	111	24.9	56.2	**0.0078**	0.007	90.6	mg/L	11	Standard
	Cd	114	64.8	37.7	**0.0090**	0.005	57.8	ug/L	21	Standard
>	**In**	115	579213.8	1.2				ug/L	547487	Standard
	Sn	118	441.7	2.4	**0.0064**	0.003	44.2	ug/L	450	Standard
	Sb	123	1595.3	21.7	**0.3472**	0.075	21.7	ug/L	105	Standard
	Ba	135	5942.5	1.1	**3.0045**	0.068	2.3	ug/L	111	Standard
	Ce	140	29104.6	2.4				ug/L	107	Standard
>	**Tb**	159	919049.1	0.8				ug/L	890342	Standard
	Ho	165	130.0	6.7				ug/L	10	Standard
	Tl	203	140.3	32.1	**0.0144**	0.006	39.9	ug/L	19	Standard
	Tl	205	131.7	30.7	**0.0215**	0.006	29.1	ug/L	17	Standard
	Pb	206	3187.3	2.3	**0.5784**	0.013	2.3	ug/L	247	Standard
	Pb	207	2652.9	2.4	**0.5278**	0.013	2.5	ug/L	215	Standard
	Pb	208	10854.5	0.5	**0.5739**	0.002	0.3	ug/L	770	Standard
	U	238	529.3	8.9	**0.0844**	0.008	9.0	ug/L	13	Standard
>	**Bi**	209	521218.5	0.3				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	45.0	11.1	**0.0175**	0.006	35.9	mg/L	35	Standard
K	39	30.0	44.1	**0.0243**	0.061	252.8	mg/L	25	Standard
Ca	43	23.3	24.7	**-1.1467**	0.924	80.6	mg/L	38	Standard
Fe	54	317.1	0.9	**0.1380**	0.006	4.5	mg/L	126	Standard
Fe	57	253.3	19.5	**-0.1775**	0.188	106.2	mg/L	245	Standard
> **Sc-1**	45	27483.2	2.5				mg/L	25066	Standard
Cl	35	130060.6	1.2				ug/L	125857	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	1580.1	15.4				ug/L	1350	Standard
P	31	19601.0	6.2				ug/L	18393	Standard
S	34	3312.0	2.4				ug/L	3739	Standard
Sr	88	70.0	14.3				ug/L	78	Standard
C	12	53.3	57.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	173.2				mg/L	0	Standard
Dy	164	306.8	2.4				mg/L	2	Standard
Ho-1	165	130.0	6.7				mg/L	10	Standard
Er	166	136.7	23.5				mg/L	23	Standard
I	127	1430.1	5.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.462	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.174	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.795
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.593
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606105401SDL WG573475-02
Sample Date/Time: Tuesday, June 21, 2016 20:13:17
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62075.3	3.4				ug/L	60176	Standard
	Be	9	16.7	17.3	**0.0135**	0.004	29.0	ug/L	5	Standard
	Al	27	12923.8	2.2	**0.0871**	0.004	4.8	ug/L	832	Standard
	Sc	45	27139.3	3.8				ug/L	25066	Standard
	Ti	47	272.0	8.8	**1.1730**	0.126	10.8	ug/L	38	Standard
	V	51	2230.3	1.0	**0.1971**	0.010	5.1	ug/L	974	Standard
	Cr	52	7378.1	1.3	**0.1951**	0.026	13.6	ug/L	5792	Standard
	Cr	53	530.0	5.7	**0.2224**	0.032	14.3	ug/L	347	Standard
	Mn	55	4071.2	2.2	**0.4086**	0.019	4.6	ug/L	1164	Standard
	Co	59	492.0	9.6	**0.0300**	0.009	29.8	ug/L	303	Standard
	Ni	60	471.3	1.5	**0.0663**	0.008	11.5	ug/L	291	Standard
	Cu	65	217.0	2.6	**0.0213**	0.005	21.6	ug/L	173	Standard
	Zn	66	1805.8	2.4	**1.4723**	0.069	4.7	ug/L	130	Standard
>	**Ge**	72	501702.6	1.7				ug/L	491724	Standard
	As	75	24.3	87.9	**0.0566**	0.020	35.2	ug/L	-25	Standard
	Se	82	18.9	18.3	**0.0867**	0.033	37.9	ug/L	12	Standard
	Se-1	77	53.3	8.5	**0.0899**	0.058	64.7	ug/L	57	Standard
>	**Ga**	71	313.3	3.3				mg/L	148	Standard
	Rb	85	476.7	7.4				ug/L	18	Standard
	Y	89	438752.1	0.6				ug/L	401845	Standard
>	**Rh**	103	30.0	16.7				ug/L	10	Standard
	Mo	98	110.3	7.5	**0.0392**	0.004	9.8	ug/L	12	Standard
	Ag	107	108.0	10.5	**0.0020**	0.002	98.3	ug/L	98	Standard
	Cd	111	10.8	70.1	**0.0008**	0.004	499.4	mg/L	11	Standard
	Cd	114	43.9	46.7	**0.0047**	0.004	91.7	ug/L	21	Standard
>	**In**	115	576504.1	1.5				ug/L	547487	Standard
	Sn	118	475.0	15.9	**0.0128**	0.014	109.1	ug/L	450	Standard
	Sb	123	463.6	29.1	**0.0963**	0.031	32.6	ug/L	105	Standard
	Ba	135	1313.4	3.2	**0.6237**	0.012	1.9	ug/L	111	Standard
	Ce	140	5786.1	4.9				ug/L	107	Standard
>	**Tb**	159	898389.3	2.3				ug/L	890342	Standard
	Ho	165	30.0	16.7				ug/L	10	Standard
	Tl	203	55.0	70.9	**0.0037**	0.005	139.1	ug/L	19	Standard
	Tl	205	41.7	70.3	**0.0077**	0.005	61.7	ug/L	17	Standard
	Pb	206	916.0	4.2	**0.1339**	0.009	6.5	ug/L	247	Standard
	Pb	207	747.7	4.4	**0.1174**	0.008	6.7	ug/L	215	Standard
	Pb	208	3092.8	3.0	**0.1274**	0.006	5.0	ug/L	770	Standard
	U	238	143.3	18.2	**0.0231**	0.004	19.3	ug/L	13	Standard
>	**Bi**	209	502532.6	0.4				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	53.3	47.2	**0.0289**	0.033	114.0	mg/L	35	Standard
K	39	30.0	60.1	**0.0244**	0.079	325.6	mg/L	25	Standard
Ca	43	30.0	33.3	**0.1797**	1.980	1101.9	mg/L	38	Standard
Fe	54	180.9	6.6	**0.0219**	0.004	19.7	mg/L	126	Standard
Fe	57	280.0	8.2	**-0.0692**	0.099	143.2	mg/L	245	Standard
> **Sc-1**	45	27139.3	3.8				mg/L	25066	Standard
Cl	35	132798.2	1.3				ug/L	125857	Standard
Kr	83	2.7	78.1				ug/L	1	Standard
Br	81	1633.4	13.0				ug/L	1350	Standard
P	31	18716.6	3.2				ug/L	18393	Standard
S	34	3410.4	2.5				ug/L	3739	Standard
Sr	88	51.7	22.3				ug/L	78	Standard
C	12	60.0	57.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	91.1	51.3				mg/L	2	Standard
Ho-1	165	30.0	16.7				mg/L	10	Standard
Er	166	46.7	32.7				mg/L	23	Standard
I	127	1188.4	6.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.156	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.029	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.300
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.879
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 20:16:31
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	61809.3	4.5				ug/L	60176	Standard
	Be	9	36245.0	0.8	**49.1988**	1.805	3.7	ug/L	5	Standard
	Al	27	6582318.8	1.8	**48.8210**	1.363	2.8	ug/L	832	Standard
	Sc	45	26551.6	2.9				ug/L	25066	Standard
	Ti	47	20307.3	0.8	**104.7366**	0.864	0.8	ug/L	38	Standard
	V	51	307773.1	2.0	**51.5001**	0.172	0.3	ug/L	974	Standard
	Cr	52	332161.2	0.7	**51.2294**	1.226	2.4	ug/L	5792	Standard
	Cr	53	42405.9	1.2	**51.3640**	0.276	0.5	ug/L	347	Standard
	Mn	55	325172.6	1.2	**50.5298**	0.233	0.5	ug/L	1164	Standard
	Co	59	317920.3	2.4	**52.0831**	0.431	0.8	ug/L	303	Standard
	Ni	60	91403.9	0.5	**50.5335**	0.688	1.4	ug/L	291	Standard
	Cu	65	91169.5	0.8	**50.7905**	0.667	1.3	ug/L	173	Standard
	Zn	66	52960.1	1.1	**50.7498**	0.564	1.1	ug/L	130	Standard
>	Ge	72	492646.8	1.7				ug/L	491724	Standard
	As	75	53122.0	0.6	**50.5540**	0.557	1.1	ug/L	-25	Standard
	Se	82	5355.6	0.4	**51.6204**	0.769	1.5	ug/L	12	Standard
	Se-1	77	3659.1	2.5	**51.0370**	1.490	2.9	ug/L	57	Standard
>	Ga	71	103.3	24.8				mg/L	148	Standard
	Rb	85	821.7	11.1				ug/L	18	Standard
	Y	89	426804.9	1.0				ug/L	401845	Standard
>	Rh	103	46.7	62.8				ug/L	10	Standard
	Mo	98	240578.5	1.9	**95.7566**	1.752	1.8	ug/L	12	Standard
	Ag	107	293672.5	0.8	**47.6191**	0.728	1.5	ug/L	98	Standard
	Cd	111	97148.2	0.4	**49.4310**	0.396	0.8	mg/L	11	Standard
	Cd	114	238273.1	1.3	**49.8334**	0.670	1.3	ug/L	21	Standard
>	In	115	572423.0	0.8				ug/L	547487	Standard
	Sn	118	262319.8	0.9	**48.2447**	0.796	1.6	ug/L	450	Standard
	Sb	123	211959.4	1.1	**47.7258**	0.723	1.5	ug/L	105	Standard
	Ba	135	92131.9	0.5	**47.9464**	0.632	1.3	ug/L	111	Standard
	Ce	140	101.7	44.6				ug/L	107	Standard
>	Tb	159	884901.8	0.8				ug/L	890342	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	370454.0	0.8	**49.8033**	0.613	1.2	ug/L	19	Standard
	Tl	205	319179.0	1.6	**52.3013**	1.096	2.1	ug/L	17	Standard
	Pb	206	236235.7	0.3	**49.3439**	0.398	0.8	ug/L	247	Standard
	Pb	207	215467.7	0.9	**49.5115**	0.712	1.4	ug/L	215	Standard
	Pb	208	846194.0	1.4	**51.9369**	0.988	1.9	ug/L	770	Standard
	U	238	302895.4	0.7	**51.2919**	0.606	1.2	ug/L	13	Standard
>	Bi	209	495377.4	0.6				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3608.8	3.4	**4.6428**	0.152	3.3	mg/L	35	Standard
K	39	930.0	9.8	**4.2620**	0.368	8.6	mg/L	25	Standard
Ca	43	71.7	28.2	**7.9807**	3.539	44.3	mg/L	38	Standard
Fe	54	5416.4	5.0	**4.7205**	0.325	6.9	mg/L	126	Standard
Fe	57	1530.1	9.9	**4.6008**	0.459	10.0	mg/L	245	Standard
> **Sc-1**	45	26551.6	2.9				mg/L	25066	Standard
Cl	35	138136.9	1.0				ug/L	125857	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	1570.1	5.7				ug/L	1350	Standard
P	31	19352.4	2.2				ug/L	18393	Standard
S	34	4222.3	4.4				ug/L	3739	Standard
Sr	88	46.7	16.4				ug/L	78	Standard
C	12	56.7	36.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	2.5	222.5				mg/L	2	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	16.7	34.6				mg/L	23	Standard
I	127	1088.4	5.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	98.398		
Al	27	97.642		
Sc	45			
Ti	47	104.737		
V	51	103.000		
Cr	52	102.459		
Cr	53			
Mn	55	101.060		
Co	59	104.166		
Ni	60	101.067		
Cu	65	101.581		
Zn	66	101.500		
> Ge	72		100.188	
As	75	101.108		
Se	82	103.241		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	95.757		
Ag	107	95.238		
Cd	111	98.862		
Cd	114			
In	115		104.555	
Sn	118	96.489		
Sb	123	95.452		
Ba	135	95.893		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.607		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.874		
U	238	102.584		
Bi	209		98.457	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 20:19:42
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59004.7	2.4				ug/L	60176	Standard
	Be	9	15.0	33.3	**0.0123**	0.007	55.9	ug/L	5	Standard
	Al	27	1221.7	22.8	**0.0011**	0.002	184.4	ug/L	832	Standard
	Sc	45	26162.6	2.8				ug/L	25066	Standard
	Ti	47	22.7	22.2	**-0.0938**	0.025	26.7	ug/L	38	Standard
	V	51	1096.4	3.1	**0.0083**	0.006	72.4	ug/L	974	Standard
	Cr	52	6080.6	0.6	**-0.0141**	0.009	60.7	ug/L	5792	Standard
	Cr	53	428.3	8.2	**0.0958**	0.044	45.6	ug/L	347	Standard
	Mn	55	922.7	7.2	**-0.0753**	0.011	14.0	ug/L	1164	Standard
	Co	59	276.0	8.7	**-0.0053**	0.004	76.6	ug/L	303	Standard
	Ni	60	181.3	7.1	**-0.0927**	0.007	8.0	ug/L	291	Standard
	Cu	65	115.7	15.5	**-0.0349**	0.010	27.6	ug/L	173	Standard
	Zn	66	146.0	12.6	**-0.0986**	0.018	18.2	ug/L	130	Standard
>	Ge	72	506500.5	0.5				ug/L	491724	Standard
	As	75	-18.9	142.2	**0.0164**	0.025	151.4	ug/L	-25	Standard
	Se	82	22.3	20.3	**0.1163**	0.042	36.4	ug/L	12	Standard
	Se-1	77	50.7	8.0	**0.0466**	0.058	125.4	ug/L	57	Standard
>	Ga	71	98.3	22.9				mg/L	148	Standard
	Rb	85	25.0	34.6				ug/L	18	Standard
	Y	89	420472.2	1.7				ug/L	401845	Standard
>	Rh	103	21.7	35.3				ug/L	10	Standard
	Mo	98	215.9	20.5	**0.0836**	0.015	18.1	ug/L	12	Standard
	Ag	107	100.3	2.3	**0.0013**	0.000	16.9	ug/L	98	Standard
	Cd	111	12.6	20.4	**0.0019**	0.001	66.8	mg/L	11	Standard
	Cd	114	36.9	35.9	**0.0034**	0.003	76.6	ug/L	21	Standard
>	In	115	556898.8	3.2				ug/L	547487	Standard
	Sn	118	736.7	14.7	**0.0659**	0.025	37.6	ug/L	450	Standard
	Sb	123	429.7	33.8	**0.0926**	0.037	39.4	ug/L	105	Standard
	Ba	135	112.0	12.9	**0.0043**	0.007	160.0	ug/L	111	Standard
	Ce	140	35.0	14.3				ug/L	107	Standard
>	Tb	159	887182.6	2.1				ug/L	890342	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	50.3	23.7	**0.0032**	0.002	49.1	ug/L	19	Standard
	Tl	205	48.3	29.9	**0.0089**	0.002	26.7	ug/L	17	Standard
	Pb	206	283.7	6.5	**0.0042**	0.003	82.4	ug/L	247	Standard
	Pb	207	216.0	8.2	**-0.0026**	0.004	153.1	ug/L	215	Standard
	Pb	208	914.3	7.2	**-0.0039**	0.004	93.9	ug/L	770	Standard
	U	238	37.3	13.5	**0.0055**	0.001	14.8	ug/L	13	Standard
>	Bi	209	496398.1	0.7				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	48.5	**0.0163**	0.028	170.7	mg/L	35	Standard
K	39	28.3	36.7	**0.0223**	0.046	208.0	mg/L	25	Standard
Ca	43	28.3	36.7	**0.0638**	2.140	3353.3	mg/L	38	Standard
Fe	54	134.3	7.3	**-0.0145**	0.007	47.3	mg/L	126	Standard
Fe	57	193.3	4.0	**-0.3592**	0.042	11.6	mg/L	245	Standard
> **Sc-1**	45	26162.6	2.8				mg/L	25066	Standard
Cl	35	138431.0	1.7				ug/L	125857	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	1586.7	3.9				ug/L	1350	Standard
P	31	19664.4	2.7				ug/L	18393	Standard
S	34	4130.6	2.1				ug/L	3739	Standard
Sr	88	75.0	46.7				ug/L	78	Standard
C	12	43.3	26.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	16.0	75.7				mg/L	2	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	13.3	173.2				mg/L	23	Standard
I	127	915.0	6.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.005	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.719	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.659	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078703 WG573333-01
Sample Date/Time: Tuesday, June 21, 2016 20:22:55
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61250.2	0.8				ug/L	60176	Standard
	Be	9	533.3	8.2	**0.7208**	0.059	8.2	ug/L	5	Standard
	Al	27	4739129.5	0.9	**35.4392**	0.186	0.5	ug/L	832	Standard
	Sc	45	29605.6	2.9				ug/L	25066	Standard
	Ti	47	1339.7	3.2	**6.7020**	0.132	2.0	ug/L	38	Standard
	V	51	71406.4	1.8	**11.7973**	0.190	1.6	ug/L	974	Standard
	Cr	52	50888.7	1.6	**7.0346**	0.128	1.8	ug/L	5792	Standard
	Cr	53	6126.2	1.1	**7.0553**	0.185	2.6	ug/L	347	Standard
	Mn	55	2507110.3	0.7	**390.3777**	5.993	1.5	ug/L	1164	Standard
	Co	59	38304.0	1.2	**6.2221**	0.122	2.0	ug/L	303	Standard
	Ni	60	20980.2	1.2	**11.4317**	0.218	1.9	ug/L	291	Standard
	Cu	65	14716.8	0.9	**8.1026**	0.157	1.9	ug/L	173	Standard
	Zn	66	18330.8	1.8	**17.3802**	0.302	1.7	ug/L	130	Standard
>	**Ge**	72	493512.5	1.4				ug/L	491724	Standard
	As	75	1782.0	5.4	**1.7250**	0.073	4.2	ug/L	-25	Standard
	Se	82	35.6	28.1	**0.2511**	0.099	39.3	ug/L	12	Standard
	Se-1	77	88.0	14.2	**0.5919**	0.186	31.4	ug/L	57	Standard
>	**Ga**	71	8470.7	1.2				mg/L	148	Standard
	Rb	85	77419.0	1.7				ug/L	18	Standard
	Y	89	632239.1	1.1				ug/L	401845	Standard
>	**Rh**	103	36.7	31.5				ug/L	10	Standard
	Mo	98	157.1	8.2	**0.0590**	0.005	8.3	ug/L	12	Standard
	Ag	107	274.7	4.4	**0.0299**	0.003	9.4	ug/L	98	Standard
	Cd	111	187.0	6.5	**0.0920**	0.008	8.8	mg/L	11	Standard
	Cd	114	444.1	15.9	**0.0897**	0.014	15.2	ug/L	21	Standard
>	**In**	115	563958.4	1.8				ug/L	547487	Standard
	Sn	118	591.7	12.1	**0.0367**	0.014	39.0	ug/L	450	Standard
	Sb	123	220.2	26.8	**0.0429**	0.014	33.7	ug/L	105	Standard
	Ba	135	144715.5	0.6	**76.4840**	1.276	1.7	ug/L	111	Standard
	Ce	140	988223.5	0.5				ug/L	107	Standard
>	**Tb**	159	908188.9	1.2				ug/L	890342	Standard
	Ho	165	17219.8	2.5				ug/L	10	Standard
	Tl	203	463.3	4.4	**0.0586**	0.002	4.2	ug/L	19	Standard
	Tl	205	378.3	13.4	**0.0628**	0.008	12.5	ug/L	17	Standard
	Pb	206	45384.9	0.3	**9.4112**	0.053	0.6	ug/L	247	Standard
	Pb	207	36832.4	1.0	**8.3986**	0.095	1.1	ug/L	215	Standard
	Pb	208	155922.4	1.7	**9.4964**	0.166	1.7	ug/L	770	Standard
	U	238	2728.6	1.4	**0.4601**	0.009	2.0	ug/L	13	Standard
>	**Bi**	209	496638.4	0.7				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	93.3	11.2	**0.0696**	0.011	15.8	mg/L	35	Standard
K	39	126.7	21.7	**0.4205**	0.104	24.7	mg/L	25	Standard
Ca	43	46.7	44.6	**2.5335**	3.744	147.8	mg/L	38	Standard
Fe	54	5828.7	1.9	**4.5504**	0.210	4.6	mg/L	126	Standard
Fe	57	1691.8	7.2	**4.5640**	0.493	10.8	mg/L	245	Standard
Sc-1	45	29605.6	2.9				mg/L	25066	Standard
Cl	35	137167.4	0.3				ug/L	125857	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	1823.4	14.0				ug/L	1350	Standard
P	31	18519.7	3.3				ug/L	18393	Standard
S	34	4015.5	1.1				ug/L	3739	Standard
Sr	88	103.3	12.2				ug/L	78	Standard
C	12	66.7	31.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	100.0				mg/L	0	Standard
Dy	164	29188.4	3.4				mg/L	2	Standard
Ho-1	165	17219.8	2.5				mg/L	10	Standard
Er	166	15471.2	3.8				mg/L	23	Standard
I	127	8429.0	7.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.785	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.364	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.009
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.707
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606078703 WG573333-01
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Method 6020 - Summary Report

Sample ID: L1606078704S WG573333-05
Sample Date/Time: Tuesday, June 21, 2016 20:26:07
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60795.1	1.7				ug/L	60176	Standard
	Be	9	19584.3	1.1	**26.9961**	0.342	1.3	ug/L	5	Standard
	Al	27	4567931.7	1.1	**34.4185**	0.489	1.4	ug/L	832	Standard
	Sc	45	29006.1	1.6				ug/L	25066	Standard
	Ti	47	3165.0	3.9	**15.7145**	0.722	4.6	ug/L	38	Standard
	V	51	242137.7	0.6	**39.4045**	0.713	1.8	ug/L	974	Standard
	Cr	52	226731.6	0.9	**33.7129**	0.272	0.8	ug/L	5792	Standard
	Cr	53	28276.4	2.1	**33.1977**	1.054	3.2	ug/L	347	Standard
	Mn	55	2051282.4	3.3	**311.4080**	12.009	3.9	ug/L	1164	Standard
	Co	59	195015.9	1.5	**31.0844**	0.761	2.4	ug/L	303	Standard
	Ni	60	65648.6	0.3	**35.2674**	0.363	1.0	ug/L	291	Standard
	Cu	65	58144.4	1.1	**31.4896**	0.412	1.3	ug/L	173	Standard
	Zn	66	44983.4	1.5	**41.9115**	0.217	0.5	ug/L	130	Standard
>	**Ge**	72	506139.8	1.3				ug/L	491724	Standard
	As	75	25341.1	0.4	**23.4909**	0.303	1.3	ug/L	-25	Standard
	Se	82	2045.3	2.1	**19.1312**	0.577	3.0	ug/L	12	Standard
	Se-1	77	1519.4	1.8	**20.2366**	0.146	0.7	ug/L	57	Standard
>	**Ga**	71	9184.5	4.0				mg/L	148	Standard
	Rb	85	70028.1	1.4				ug/L	18	Standard
	Y	89	627632.4	1.5				ug/L	401845	Standard
>	**Rh**	103	40.0	45.1				ug/L	10	Standard
	Mo	98	594.6	6.7	**0.2447**	0.017	7.1	ug/L	12	Standard
	Ag	107	147727.7	1.0	**25.2040**	0.390	1.5	ug/L	98	Standard
	Cd	111	48105.2	0.3	**25.7603**	0.320	1.2	mg/L	11	Standard
	Cd	114	117496.3	0.5	**25.8635**	0.442	1.7	ug/L	21	Standard
>	**In**	115	543890.8	1.3				ug/L	547487	Standard
	Sn	118	720.0	10.8	**0.0655**	0.015	23.0	ug/L	450	Standard
	Sb	123	21224.1	1.3	**5.0226**	0.049	1.0	ug/L	105	Standard
	Ba	135	168787.7	0.9	**92.5008**	1.371	1.5	ug/L	111	Standard
	Ce	140	900741.5	2.1				ug/L	107	Standard
>	**Tb**	159	881875.5	1.1				ug/L	890342	Standard
	Ho	165	17471.7	0.7				ug/L	10	Standard
	Tl	203	184074.8	0.7	**24.8291**	0.438	1.8	ug/L	19	Standard
	Tl	205	156804.0	1.7	**25.7832**	0.724	2.8	ug/L	17	Standard
	Pb	206	159776.4	0.6	**33.4695**	0.581	1.7	ug/L	247	Standard
	Pb	207	136948.1	0.2	**31.5548**	0.325	1.0	ug/L	215	Standard
	Pb	208	552723.2	0.9	**34.0190**	0.677	2.0	ug/L	770	Standard
	U	238	155414.7	0.8	**26.4072**	0.520	2.0	ug/L	13	Standard
>	**Bi**	209	493745.3	1.2				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	76.7	29.4	**0.0523**	0.028	52.7	mg/L	35	Standard
K	39	121.7	41.6	**0.4123**	0.220	53.4	mg/L	25	Standard
Ca	43	56.7	5.1	**4.3235**	0.342	7.9	mg/L	38	Standard
Fe	54	6910.1	1.7	**5.5303**	0.066	1.2	mg/L	126	Standard
Fe	57	2031.8	2.9	**5.8339**	0.224	3.8	mg/L	245	Standard
> **Sc-1**	45	29006.1	1.6				mg/L	25066	Standard
Cl	35	131188.4	2.4				ug/L	125857	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	1806.8	7.4				ug/L	1350	Standard
P	31	18918.5	1.6				ug/L	18393	Standard
S	34	3765.5	5.6				ug/L	3739	Standard
Sr	88	86.7	23.3				ug/L	78	Standard
C	12	36.7	83.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	28039.5	3.1				mg/L	2	Standard
Ho-1	165	17471.7	0.7				mg/L	10	Standard
Er	166	14914.0	2.5				mg/L	23	Standard
I	127	7893.7	1.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.029	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.932	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.343
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.132
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606078704S WG573333-05
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Method 6020 - Summary Report

Sample ID: L1606078705SD WG573333-06
Sample Date/Time: Tuesday, June 21, 2016 20:29:18
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63216.6	1.8				ug/L	60176	Standard
	Be	9	19696.1	2.2	**26.1120**	0.714	2.7	ug/L	5	Standard
	Al	27	5659138.5	0.3	**41.0133**	0.799	1.9	ug/L	832	Standard
	Sc	45	30033.1	1.0				ug/L	25066	Standard
	Ti	47	2763.3	27.2	**13.8639**	4.139	29.9	ug/L	38	Standard
	V	51	237607.5	1.1	**38.9988**	0.497	1.3	ug/L	974	Standard
	Cr	52	248636.6	1.2	**37.3971**	0.891	2.4	ug/L	5792	Standard
	Cr	53	30921.5	0.6	**36.6639**	1.024	2.8	ug/L	347	Standard
	Mn	55	2410492.6	0.5	**369.1780**	8.479	2.3	ug/L	1164	Standard
	Co	59	185271.5	0.5	**29.7851**	0.497	1.7	ug/L	303	Standard
	Ni	60	67071.8	1.3	**36.3557**	0.915	2.5	ug/L	291	Standard
	Cu	65	60322.2	1.1	**32.9575**	0.383	1.2	ug/L	173	Standard
	Zn	66	45873.7	1.3	**43.1216**	0.385	0.9	ug/L	130	Standard
>	**Ge**	72	501820.8	2.1				ug/L	491724	Standard
	As	75	24039.7	1.9	**22.4789**	0.430	1.9	ug/L	-25	Standard
	Se	82	1972.7	2.1	**18.6056**	0.284	1.5	ug/L	12	Standard
	Se-1	77	1402.7	4.3	**18.8146**	1.203	6.4	ug/L	57	Standard
>	**Ga**	71	9417.9	5.5				mg/L	148	Standard
	Rb	85	66410.2	0.3				ug/L	18	Standard
	Y	89	617512.5	0.5				ug/L	401845	Standard
>	**Rh**	103	50.0	62.5				ug/L	10	Standard
	Mo	98	1524.5	3.3	**0.6151**	0.019	3.1	ug/L	12	Standard
	Ag	107	143879.3	0.9	**23.8137**	0.379	1.6	ug/L	98	Standard
	Cd	111	47710.7	0.7	**24.7847**	0.177	0.7	mg/L	11	Standard
	Cd	114	115961.3	1.6	**24.7605**	0.346	1.4	ug/L	21	Standard
>	**In**	115	560614.7	0.8				ug/L	547487	Standard
	Sn	118	1535.1	5.3	**0.2146**	0.013	6.3	ug/L	450	Standard
	Sb	123	23888.4	1.7	**5.4855**	0.117	2.1	ug/L	105	Standard
	Ba	135	184639.0	1.2	**98.1607**	0.543	0.6	ug/L	111	Standard
	Ce	140	908579.6	1.8				ug/L	107	Standard
>	**Tb**	159	921260.1	0.5				ug/L	890342	Standard
	Ho	165	17002.9	1.2				ug/L	10	Standard
	Tl	203	180601.4	1.1	**23.7143**	0.543	2.3	ug/L	19	Standard
	Tl	205	152330.3	0.3	**24.3789**	0.252	1.0	ug/L	17	Standard
	Pb	206	161923.0	0.9	**33.0139**	0.142	0.4	ug/L	247	Standard
	Pb	207	139326.0	1.1	**31.2477**	0.234	0.7	ug/L	215	Standard
	Pb	208	558215.4	0.7	**33.4396**	0.224	0.7	ug/L	770	Standard
	U	238	149906.9	0.4	**24.7925**	0.215	0.9	ug/L	13	Standard
>	**Bi**	209	507223.5	1.3				ug/L	503143	Standard

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Na	23	1.7	173.2	**15.4815**	26.806	173.1	mg/L	2	Standard
Mg	24	46.7	52.9	**0.0145**	0.028	192.1	mg/L	35	Standard
K	39	158.3	18.5	**0.5456**	0.116	21.3	mg/L	25	Standard
Ca	43	41.7	6.9	**1.5279**	0.454	29.7	mg/L	38	Standard
Fe	54	7213.6	3.5	**5.5758**	0.146	2.6	mg/L	126	Standard
Fe	57	1996.8	3.3	**5.4816**	0.233	4.3	mg/L	245	Standard
> **Sc-1**	45	30033.1	1.0				mg/L	25066	Standard
Cl	35	129762.7	0.8				ug/L	125857	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	1876.8	4.3				ug/L	1350	Standard
P	31	18274.3	0.2				ug/L	18393	Standard
S	34	3732.1	1.2				ug/L	3739	Standard
Sr	88	110.0	27.6				ug/L	78	Standard
C	12	66.7	37.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	29098.6	2.2				mg/L	2	Standard
Ho-1	165	17002.9	1.2				mg/L	10	Standard
Er	166	15394.5	3.5				mg/L	23	Standard
I	127	7451.8	4.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.053	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.053	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.398
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.811
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606078705SD WG573333-06
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Method 6020 - Summary Report

Sample ID: L1606078706
Sample Date/Time: Tuesday, June 21, 2016 20:32:30
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61503.1	4.4				ug/L	60176	Standard
	Be	9	190.0	11.5	**0.2498**	0.027	10.8	ug/L	5	Standard
	Al	27	2161096.6	2.0	**16.1023**	0.467	2.9	ug/L	832	Standard
	Sc	45	27194.4	2.9				ug/L	25066	Standard
	Ti	47	1729.4	29.8	**8.8301**	2.712	30.7	ug/L	38	Standard
	V	51	40719.4	1.5	**6.7406**	0.118	1.7	ug/L	974	Standard
	Cr	52	22743.1	1.4	**2.6675**	0.051	1.9	ug/L	5792	Standard
	Cr	53	2448.5	3.6	**2.6090**	0.103	4.0	ug/L	347	Standard
	Mn	55	1260041.1	0.2	**198.5616**	0.943	0.5	ug/L	1164	Standard
	Co	59	12600.6	0.8	**2.0396**	0.022	1.1	ug/L	303	Standard
	Ni	60	7512.5	0.9	**4.0234**	0.036	0.9	ug/L	291	Standard
	Cu	65	5352.3	2.1	**2.9221**	0.069	2.3	ug/L	173	Standard
	Zn	66	8532.4	1.5	**8.0679**	0.130	1.6	ug/L	130	Standard
>	**Ge**	72	487322.6	0.2				ug/L	491724	Standard
	As	75	1559.9	2.0	**1.5334**	0.026	1.7	ug/L	-25	Standard
	Se	82	35.2	29.3	**0.2510**	0.100	39.8	ug/L	12	Standard
	Se-1	77	72.7	4.2	**0.3880**	0.045	11.7	ug/L	57	Standard
>	**Ga**	71	2870.3	6.0				mg/L	148	Standard
	Rb	85	28276.4	2.7				ug/L	18	Standard
	Y	89	521144.4	0.3				ug/L	401845	Standard
>	**Rh**	103	45.0	19.2				ug/L	10	Standard
	Mo	98	116.0	7.3	**0.0415**	0.003	6.9	ug/L	12	Standard
	Ag	107	230.3	3.7	**0.0218**	0.002	8.7	ug/L	98	Standard
	Cd	111	115.8	1.7	**0.0540**	0.002	4.0	mg/L	11	Standard
	Cd	114	274.3	6.0	**0.0527**	0.005	8.7	ug/L	21	Standard
>	**In**	115	575128.8	2.3				ug/L	547487	Standard
	Sn	118	336.7	3.7	**-0.0123**	0.001	7.1	ug/L	450	Standard
	Sb	123	176.1	18.8	**0.0320**	0.008	25.7	ug/L	105	Standard
	Ba	135	86694.7	1.9	**44.9082**	1.004	2.2	ug/L	111	Standard
	Ce	140	436433.2	2.1				ug/L	107	Standard
>	**Tb**	159	887156.7	2.0				ug/L	890342	Standard
	Ho	165	7937.1	1.0				ug/L	10	Standard
	Tl	203	162.7	11.2	**0.0183**	0.003	15.7	ug/L	19	Standard
	Tl	205	140.0	3.6	**0.0238**	0.000	1.8	ug/L	17	Standard
	Pb	206	19692.8	1.3	**4.0500**	0.140	3.5	ug/L	247	Standard
	Pb	207	16290.1	1.3	**3.6832**	0.128	3.5	ug/L	215	Standard
	Pb	208	67765.1	1.3	**4.0908**	0.139	3.4	ug/L	770	Standard
	U	238	859.4	4.8	**0.1442**	0.009	5.9	ug/L	13	Standard
>	**Bi**	209	497164.1	2.1				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	45.0	19.2	**0.0180**	0.010	57.8	mg/L	35	Standard
K	39	71.7	24.5	**0.2186**	0.091	41.5	mg/L	25	Standard
Ca	43	31.7	65.7	**0.4222**	3.721	881.3	mg/L	38	Standard
Fe	54	2730.0	8.4	**2.2488**	0.134	6.0	mg/L	126	Standard
Fe	57	905.0	11.2	**2.1941**	0.285	13.0	mg/L	245	Standard
> **Sc-1**	45	27194.4	2.9				mg/L	25066	Standard
Cl	35	130552.0	0.6				ug/L	125857	Standard
Kr	83	3.7	83.3				ug/L	1	Standard
Br	81	1476.7	11.6				ug/L	1350	Standard
P	31	18608.1	3.2				ug/L	18393	Standard
S	34	3705.5	6.0				ug/L	3739	Standard
Sr	88	98.3	19.3				ug/L	78	Standard
C	12	70.0	14.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	13334.9	2.3				mg/L	2	Standard
Ho-1	165	7937.1	1.0				mg/L	10	Standard
Er	166	6914.9	5.3				mg/L	23	Standard
I	127	2945.3	1.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.205	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.105	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.049
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.812
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606078707
Sample Date/Time: Tuesday, June 21, 2016 20:35:41
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59709.1	1.3				ug/L	60176	Standard
	Be	9	200.0	10.9	**0.2718**	0.032	11.7	ug/L	5	Standard
	Al	27	1683075.1	1.4	**12.9055**	0.048	0.4	ug/L	832	Standard
	Sc	45	26478.1	4.1				ug/L	25066	Standard
	Ti	47	1140.4	8.0	**5.5902**	0.464	8.3	ug/L	38	Standard
	V	51	39686.8	0.8	**6.3850**	0.023	0.4	ug/L	974	Standard
	Cr	52	23499.9	2.1	**2.6878**	0.064	2.4	ug/L	5792	Standard
	Cr	53	2666.9	3.2	**2.7908**	0.107	3.8	ug/L	347	Standard
	Mn	55	420579.8	1.9	**64.3639**	1.562	2.4	ug/L	1164	Standard
	Co	59	13033.6	2.2	**2.0538**	0.057	2.8	ug/L	303	Standard
	Ni	60	7165.7	0.5	**3.7215**	0.035	0.9	ug/L	291	Standard
	Cu	65	5197.9	1.7	**2.7564**	0.034	1.2	ug/L	173	Standard
	Zn	66	9135.4	1.5	**8.4176**	0.173	2.1	ug/L	130	Standard
>	**Ge**	72	500708.0	0.5				ug/L	491724	Standard
	As	75	1463.5	3.3	**1.4032**	0.042	3.0	ug/L	-25	Standard
	Se	82	24.1	45.1	**0.1358**	0.103	76.2	ug/L	12	Standard
	Se-1	77	77.3	6.1	**0.4249**	0.062	14.6	ug/L	57	Standard
>	**Ga**	71	2593.6	3.7				mg/L	148	Standard
	Rb	85	26549.9	1.6				ug/L	18	Standard
	Y	89	508383.7	2.6				ug/L	401845	Standard
>	**Rh**	103	26.7	47.2				ug/L	10	Standard
	Mo	98	828.3	1.8	**0.3404**	0.004	1.3	ug/L	12	Standard
	Ag	107	171.0	8.6	**0.0136**	0.003	19.8	ug/L	98	Standard
	Cd	111	92.1	6.3	**0.0443**	0.003	7.2	mg/L	11	Standard
	Cd	114	165.6	20.7	**0.0318**	0.007	23.1	ug/L	21	Standard
>	**In**	115	547256.3	0.7				ug/L	547487	Standard
	Sn	118	725.0	5.0	**0.0656**	0.007	10.8	ug/L	450	Standard
	Sb	123	144.6	14.9	**0.0264**	0.005	18.6	ug/L	105	Standard
	Ba	135	55231.2	0.4	**30.0426**	0.229	0.8	ug/L	111	Standard
	Ce	140	414286.0	0.6				ug/L	107	Standard
>	**Tb**	159	881412.3	0.9				ug/L	890342	Standard
	Ho	165	7586.9	2.2				ug/L	10	Standard
	Tl	203	135.7	11.8	**0.0147**	0.002	16.0	ug/L	19	Standard
	Tl	205	110.0	20.8	**0.0190**	0.004	20.0	ug/L	17	Standard
	Pb	206	19007.2	0.5	**3.9191**	0.061	1.6	ug/L	247	Standard
	Pb	207	15601.7	1.7	**3.5366**	0.107	3.0	ug/L	215	Standard
	Pb	208	64611.6	1.1	**3.9100**	0.093	2.4	ug/L	770	Standard
	U	238	755.0	4.6	**0.1270**	0.005	3.6	ug/L	13	Standard
>	**Bi**	209	495487.3	1.3				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	35.0	14.3	**0.0067**	0.007	106.5	mg/L	35	Standard
K	39	83.3	21.1	**0.2797**	0.073	26.3	mg/L	25	Standard
Ca	43	25.0	20.0	**-0.6389**	1.092	170.9	mg/L	38	Standard
Fe	54	2467.8	3.0	**2.0838**	0.134	6.4	mg/L	126	Standard
Fe	57	820.0	4.2	**1.9775**	0.256	13.0	mg/L	245	Standard
> **Sc-1**	45	26478.1	4.1				mg/L	25066	Standard
Cl	35	128995.5	1.3				ug/L	125857	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	1503.4	13.0				ug/L	1350	Standard
P	31	17358.3	0.2				ug/L	18393	Standard
S	34	3645.4	0.9				ug/L	3739	Standard
Sr	88	81.7	14.1				ug/L	78	Standard
C	12	60.0	28.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	12318.4	0.4				mg/L	2	Standard
Ho-1	165	7586.9	2.2				mg/L	10	Standard
Er	166	6754.8	0.3				mg/L	23	Standard
I	127	2638.6	9.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.224	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.827	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.958
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.478
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078708
Sample Date/Time: Tuesday, June 21, 2016 20:38:53
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61146.5	1.9				ug/L	60176	Standard
	Be	9	295.0	11.1	**0.3957**	0.048	12.2	ug/L	5	Standard
	Al	27	10005765.0	2.2	**74.9914**	2.825	3.8	ug/L	832	Standard
	Sc	45	28378.2	1.3				ug/L	25066	Standard
	Ti	47	1581.7	9.8	**7.8186**	0.716	9.2	ug/L	38	Standard
	V	51	56293.6	0.1	**9.1158**	0.120	1.3	ug/L	974	Standard
	Cr	52	35520.9	2.0	**4.5387**	0.182	4.0	ug/L	5792	Standard
	Cr	53	4120.6	4.1	**4.5322**	0.272	6.0	ug/L	347	Standard
	Mn	55	2245242.9	0.6	**344.0555**	5.834	1.7	ug/L	1164	Standard
	Co	59	20048.6	2.0	**3.1815**	0.095	3.0	ug/L	303	Standard
	Ni	60	12750.7	0.7	**6.7615**	0.141	2.1	ug/L	291	Standard
	Cu	65	8350.6	0.8	**4.4816**	0.075	1.7	ug/L	173	Standard
	Zn	66	13186.1	1.0	**12.2373**	0.257	2.1	ug/L	130	Standard
>	**Ge**	72	501445.8	1.4				ug/L	491724	Standard
	As	75	1545.9	0.8	**1.4785**	0.032	2.1	ug/L	-25	Standard
	Se	82	27.4	13.1	**0.1674**	0.035	21.2	ug/L	12	Standard
	Se-1	77	71.0	5.1	**0.3358**	0.056	16.6	ug/L	57	Standard
>	**Ga**	71	4512.3	1.6				mg/L	148	Standard
	Rb	85	37980.9	3.4				ug/L	18	Standard
	Y	89	531850.3	0.5				ug/L	401845	Standard
>	**Rh**	103	33.3	31.2				ug/L	10	Standard
	Mo	98	272.4	0.4	**0.1086**	0.001	1.4	ug/L	12	Standard
	Ag	107	226.3	10.4	**0.0229**	0.005	19.8	ug/L	98	Standard
	Cd	111	165.5	1.0	**0.0831**	0.002	1.9	mg/L	11	Standard
	Cd	114	397.0	5.6	**0.0822**	0.006	7.3	ug/L	21	Standard
>	**In**	115	548993.1	1.6				ug/L	547487	Standard
	Sn	118	608.3	15.7	**0.0426**	0.017	39.0	ug/L	450	Standard
	Sb	123	116.3	12.7	**0.0197**	0.003	15.4	ug/L	105	Standard
	Ba	135	96057.9	1.5	**52.1296**	0.874	1.7	ug/L	111	Standard
	Ce	140	548131.6	1.4				ug/L	107	Standard
>	**Tb**	159	898753.5	0.5				ug/L	890342	Standard
	Ho	165	10386.9	3.9				ug/L	10	Standard
	Tl	203	211.0	1.6	**0.0248**	0.001	2.7	ug/L	19	Standard
	Tl	205	218.3	11.3	**0.0367**	0.005	12.3	ug/L	17	Standard
	Pb	206	25132.8	0.9	**5.1923**	0.133	2.6	ug/L	247	Standard
	Pb	207	20495.2	0.8	**4.6546**	0.102	2.2	ug/L	215	Standard
	Pb	208	84035.9	0.8	**5.0950**	0.088	1.7	ug/L	770	Standard
	U	238	1374.4	2.1	**0.2316**	0.009	3.8	ug/L	13	Standard
>	**Bi**	209	496285.1	1.7				ug/L	503143	Standard

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Na	23	3.3	86.6	**32.9382**	28.528	86.6	mg/L	2	Standard
Mg	24	73.3	41.7	**0.0503**	0.037	74.4	mg/L	35	Standard
K	39	123.3	26.1	**0.4304**	0.140	32.4	mg/L	25	Standard
Ca	43	121.7	6.3	**15.8707**	1.562	9.8	mg/L	38	Standard
Fe	54	4051.3	3.4	**3.2588**	0.079	2.4	mg/L	126	Standard
Fe	57	1385.1	8.4	**3.7369**	0.455	12.2	mg/L	245	Standard
> **Sc-1**	45	28378.2	1.3				mg/L	25066	Standard
Cl	35	136882.9	1.1				ug/L	125857	Standard
Kr	83	3.7	78.7				ug/L	1	Standard
Br	81	1383.4	11.9				ug/L	1350	Standard
P	31	18684.9	2.6				ug/L	18393	Standard
S	34	4252.3	2.8				ug/L	3739	Standard
Sr	88	103.3	17.0				ug/L	78	Standard
C	12	63.3	18.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	17242.5	4.5				mg/L	2	Standard
Ho-1	165	10386.9	3.9				mg/L	10	Standard
Er	166	9069.4	1.8				mg/L	23	Standard
I	127	2725.2	5.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.613	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.977	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.275
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.637
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606078713
Sample Date/Time: Tuesday, June 21, 2016 20:42:04
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60470.5	2.4				ug/L	60176	Standard
	Be	9	438.3	14.7	**0.5976**	0.076	12.8	ug/L	5	Standard
	Al	27	3860251.5	0.5	**29.2500**	0.787	2.7	ug/L	832	Standard
	Sc	45	28167.8	2.6				ug/L	25066	Standard
	Ti	47	839.4	7.8	**4.1705**	0.369	8.8	ug/L	38	Standard
	V	51	70285.4	1.1	**11.7386**	0.317	2.7	ug/L	974	Standard
	Cr	52	48052.7	0.7	**6.6720**	0.165	2.5	ug/L	5792	Standard
	Cr	53	5747.8	3.9	**6.6668**	0.221	3.3	ug/L	347	Standard
	Mn	55	997665.2	0.2	**156.8856**	2.297	1.5	ug/L	1164	Standard
	Co	59	33501.7	1.1	**5.4941**	0.026	0.5	ug/L	303	Standard
	Ni	60	15742.2	0.8	**8.6243**	0.198	2.3	ug/L	291	Standard
	Cu	65	11171.8	1.1	**6.1943**	0.139	2.2	ug/L	173	Standard
	Zn	66	15290.4	1.0	**14.6175**	0.267	1.8	ug/L	130	Standard
>	**Ge**	72	488278.2	1.6				ug/L	491724	Standard
	As	75	2112.2	1.3	**2.0606**	0.030	1.5	ug/L	-25	Standard
	Se	82	33.4	20.1	**0.2323**	0.063	27.1	ug/L	12	Standard
	Se-1	77	80.7	13.6	**0.4996**	0.152	30.5	ug/L	57	Standard
>	**Ga**	71	6092.9	3.0				mg/L	148	Standard
	Rb	85	50096.0	1.4				ug/L	18	Standard
	Y	89	562308.7	3.4				ug/L	401845	Standard
>	**Rh**	103	20.0	25.0				ug/L	10	Standard
	Mo	98	281.8	18.1	**0.1097**	0.019	17.6	ug/L	12	Standard
	Ag	107	279.0	13.7	**0.0307**	0.006	19.7	ug/L	98	Standard
	Cd	111	205.9	9.5	**0.1020**	0.009	9.3	mg/L	11	Standard
	Cd	114	469.4	17.1	**0.0956**	0.016	17.2	ug/L	21	Standard
>	**In**	115	561794.7	1.8				ug/L	547487	Standard
	Sn	118	1265.1	3.6	**0.1635**	0.012	7.3	ug/L	450	Standard
	Sb	123	114.2	20.1	**0.0186**	0.005	27.0	ug/L	105	Standard
	Ba	135	154704.2	1.6	**82.0962**	2.614	3.2	ug/L	111	Standard
	Ce	140	714982.4	2.2				ug/L	107	Standard
>	**Tb**	159	886704.0	1.2				ug/L	890342	Standard
	Ho	165	12760.4	3.9				ug/L	10	Standard
	Tl	203	335.3	19.3	**0.0422**	0.009	20.6	ug/L	19	Standard
	Tl	205	363.3	52.8	**0.0613**	0.032	51.4	ug/L	17	Standard
	Pb	206	36098.0	0.9	**7.6025**	0.113	1.5	ug/L	247	Standard
	Pb	207	29342.1	0.5	**6.7946**	0.072	1.1	ug/L	215	Standard
	Pb	208	123673.5	2.1	**7.6482**	0.125	1.6	ug/L	770	Standard
	U	238	1531.4	12.8	**0.2621**	0.032	12.3	ug/L	13	Standard
>	**Bi**	209	488339.2	0.8				ug/L	503143	Standard

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Na	23	3.3	86.6	**33.1333**	28.719	86.7	mg/L	2	Standard
Mg	24	66.7	18.9	**0.0424**	0.013	31.2	mg/L	35	Standard
K	39	120.0	27.3	**0.4177**	0.133	31.7	mg/L	25	Standard
Ca	43	43.3	24.0	**2.2723**	1.810	79.7	mg/L	38	Standard
Fe	54	5259.3	3.5	**4.3093**	0.268	6.2	mg/L	126	Standard
Fe	57	1548.4	3.1	**4.3481**	0.308	7.1	mg/L	245	Standard
> **Sc-1**	45	28167.8	2.6				mg/L	25066	Standard
Cl	35	136558.6	0.5				ug/L	125857	Standard
Kr	83	1.3	86.6				ug/L	1	Standard
Br	81	1756.8	8.8				ug/L	1350	Standard
P	31	20071.6	3.8				ug/L	18393	Standard
S	34	4248.9	1.9				ug/L	3739	Standard
Sr	88	81.7	3.5				ug/L	78	Standard
C	12	66.7	8.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	0	Standard
Dy	164	21009.1	0.9				mg/L	2	Standard
Ho-1	165	12760.4	3.9				mg/L	10	Standard
Er	166	11264.2	4.0				mg/L	23	Standard
I	127	3685.4	6.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.489	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.299	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.613
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.058
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606078714
Sample Date/Time: Tuesday, June 21, 2016 20:45:16
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59354.4	2.2				ug/L	60176	Standard
	Be	9	183.3	13.7	**0.2501**	0.038	15.2	ug/L	5	Standard
	Al	27	1653362.7	0.4	**12.7568**	0.239	1.9	ug/L	832	Standard
	Sc	45	26840.4	0.7				ug/L	25066	Standard
	Ti	47	1195.7	15.7	**5.8965**	0.875	14.8	ug/L	38	Standard
	V	51	41857.8	0.9	**6.7842**	0.171	2.5	ug/L	974	Standard
	Cr	52	24805.0	0.8	**2.9115**	0.058	2.0	ug/L	5792	Standard
	Cr	53	2718.6	7.9	**2.8685**	0.201	7.0	ug/L	347	Standard
	Mn	55	271171.7	1.9	**41.6625**	1.227	2.9	ug/L	1164	Standard
	Co	59	15078.2	2.2	**2.3974**	0.058	2.4	ug/L	303	Standard
	Ni	60	7281.1	1.4	**3.8071**	0.071	1.9	ug/L	291	Standard
	Cu	65	4899.5	2.2	**2.6079**	0.059	2.3	ug/L	173	Standard
	Zn	66	8848.9	2.1	**8.1949**	0.270	3.3	ug/L	130	Standard
>	**Ge**	72	497940.3	1.9				ug/L	491724	Standard
	As	75	1399.2	6.8	**1.3498**	0.075	5.6	ug/L	-25	Standard
	Se	82	26.2	42.1	**0.1563**	0.101	64.4	ug/L	12	Standard
	Se-1	77	61.7	13.8	**0.2133**	0.129	60.7	ug/L	57	Standard
>	**Ga**	71	2935.3	6.3				mg/L	148	Standard
	Rb	85	27302.9	4.2				ug/L	18	Standard
	Y	89	493083.8	2.1				ug/L	401845	Standard
>	**Rh**	103	30.0	57.7				ug/L	10	Standard
	Mo	98	274.8	4.9	**0.1086**	0.006	5.1	ug/L	12	Standard
	Ag	107	202.7	17.3	**0.0186**	0.006	33.7	ug/L	98	Standard
	Cd	111	68.6	11.9	**0.0313**	0.004	13.1	mg/L	11	Standard
	Cd	114	186.8	21.1	**0.0360**	0.009	24.8	ug/L	21	Standard
>	**In**	115	553874.2	2.5				ug/L	547487	Standard
	Sn	118	1548.4	4.9	**0.2207**	0.012	5.3	ug/L	450	Standard
	Sb	123	134.4	14.6	**0.0237**	0.005	22.2	ug/L	105	Standard
	Ba	135	62896.3	0.8	**33.8185**	0.569	1.7	ug/L	111	Standard
	Ce	140	379145.7	1.3				ug/L	107	Standard
>	**Tb**	159	877738.6	2.8				ug/L	890342	Standard
	Ho	165	6044.5	3.3				ug/L	10	Standard
	Tl	203	194.0	17.9	**0.0229**	0.005	21.1	ug/L	19	Standard
	Tl	205	156.7	23.5	**0.0270**	0.006	23.3	ug/L	17	Standard
	Pb	206	17434.0	1.8	**3.6406**	0.072	2.0	ug/L	247	Standard
	Pb	207	14230.3	0.5	**3.2661**	0.036	1.1	ug/L	215	Standard
	Pb	208	59458.2	1.1	**3.6438**	0.066	1.8	ug/L	770	Standard
	U	238	818.0	4.9	**0.1396**	0.007	5.0	ug/L	13	Standard
>	**Bi**	209	488685.1	0.9				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	78.3	31.5	**0.0617**	0.032	51.7	mg/L	35	Standard
K	39	63.3	44.9	**0.1830**	0.135	73.6	mg/L	25	Standard
Ca	43	26.7	10.8	**-0.4193**	0.505	120.5	mg/L	38	Standard
Fe	54	2855.0	4.8	**2.3943**	0.139	5.8	mg/L	126	Standard
Fe	57	875.0	9.5	**2.1335**	0.331	15.5	mg/L	245	Standard
> **Sc-1**	45	26840.4	0.7				mg/L	25066	Standard
Cl	35	130769.3	1.1				ug/L	125857	Standard
Kr	83	0.3	173.2				ug/L	1	Standard
Br	81	1500.1	12.5				ug/L	1350	Standard
P	31	18306.1	4.6				ug/L	18393	Standard
S	34	3878.8	1.9				ug/L	3739	Standard
Sr	88	100.0	8.7				ug/L	78	Standard
C	12	53.3	43.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	10446.8	2.5				mg/L	2	Standard
Ho-1	165	6044.5	3.3				mg/L	10	Standard
Er	166	5364.3	4.3				mg/L	23	Standard
I	127	2471.9	4.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.635	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.264	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.167
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.127
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078715
Sample Date/Time: Tuesday, June 21, 2016 20:48:27
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64098.6	1.3				ug/L	60176	Standard
	Be	9	823.4	5.6	**1.0673**	0.048	4.5	ug/L	5	Standard
	Al	27	10125297.3	0.4	**72.3681**	0.913	1.3	ug/L	832	Standard
	Sc	45	30844.7	0.4				ug/L	25066	Standard
	Ti	47	1823.8	2.8	**8.7940**	0.274	3.1	ug/L	38	Standard
	V	51	98074.0	0.7	**15.5570**	0.191	1.2	ug/L	974	Standard
	Cr	52	104674.3	0.6	**14.7577**	0.248	1.7	ug/L	5792	Standard
	Cr	53	12927.2	2.0	**14.6613**	0.237	1.6	ug/L	347	Standard
	Mn	55	2973780.0	0.5	**443.0559**	7.216	1.6	ug/L	1164	Standard
	Co	59	58943.8	0.5	**9.1837**	0.119	1.3	ug/L	303	Standard
	Ni	60	38767.5	1.4	**20.3577**	0.493	2.4	ug/L	291	Standard
	Cu	65	24378.9	0.7	**12.8976**	0.065	0.5	ug/L	173	Standard
	Zn	66	41125.4	0.4	**37.5786**	0.477	1.3	ug/L	130	Standard
>	**Ge**	72	515810.5	1.2				ug/L	491724	Standard
	As	75	2841.8	1.6	**2.6150**	0.042	1.6	ug/L	-25	Standard
	Se	82	45.8	14.7	**0.3299**	0.064	19.5	ug/L	12	Standard
	Se-1	77	92.3	7.0	**0.5967**	0.101	16.9	ug/L	57	Standard
>	**Ga**	71	16957.8	0.2				mg/L	148	Standard
	Rb	85	162914.6	1.1				ug/L	18	Standard
	Y	89	615099.4	2.7				ug/L	401845	Standard
>	**Rh**	103	20.0	43.3				ug/L	10	Standard
	Mo	98	203.9	5.6	**0.0800**	0.004	4.8	ug/L	12	Standard
	Ag	107	382.7	10.1	**0.0492**	0.007	13.9	ug/L	98	Standard
	Cd	111	298.0	2.2	**0.1531**	0.002	1.3	mg/L	11	Standard
	Cd	114	666.5	15.5	**0.1406**	0.023	16.0	ug/L	21	Standard
>	**In**	115	550118.7	1.2				ug/L	547487	Standard
	Sn	118	753.4	4.7	**0.0703**	0.007	9.3	ug/L	450	Standard
	Sb	123	98.5	12.2	**0.0154**	0.003	16.9	ug/L	105	Standard
	Ba	135	241514.0	0.7	**130.8807**	1.833	1.4	ug/L	111	Standard
	Ce	140	1155859.2	0.5				ug/L	107	Standard
>	**Tb**	159	899979.5	1.4				ug/L	890342	Standard
	Ho	165	17680.3	2.0				ug/L	10	Standard
	Tl	203	858.7	0.6	**0.1099**	0.001	1.0	ug/L	19	Standard
	Tl	205	755.0	8.0	**0.1226**	0.012	9.4	ug/L	17	Standard
	Pb	206	60941.6	0.3	**12.4665**	0.202	1.6	ug/L	247	Standard
	Pb	207	50135.5	0.2	**11.2791**	0.161	1.4	ug/L	215	Standard
	Pb	208	203300.5	0.7	**12.2136**	0.108	0.9	ug/L	770	Standard
	U	238	2361.2	2.6	**0.3920**	0.006	1.5	ug/L	13	Standard
>	**Bi**	209	504223.9	1.5				ug/L	503143	Standard

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Na	23	3.3	86.6	**30.2029**	26.152	86.6	mg/L	2	Standard
Mg	24	81.7	17.7	**0.0523**	0.016	31.2	mg/L	35	Standard
K	39	335.0	10.4	**1.2451**	0.147	11.8	mg/L	25	Standard
Ca	43	41.7	13.9	**1.3488**	0.931	69.0	mg/L	38	Standard
Fe	54	13937.7	1.7	**10.6123**	0.221	2.1	mg/L	126	Standard
Fe	57	3708.8	2.8	**10.7946**	0.379	3.5	mg/L	245	Standard
> **Sc-1**	45	30844.7	0.4				mg/L	25066	Standard
Cl	35	127408.8	0.7				ug/L	125857	Standard
Kr	83	2.3	49.5				ug/L	1	Standard
Br	81	1913.5	1.6				ug/L	1350	Standard
P	31	18252.7	1.0				ug/L	18393	Standard
S	34	3877.2	0.8				ug/L	3739	Standard
Sr	88	116.7	13.1				ug/L	78	Standard
C	12	63.3	24.1				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	0	Standard
Dy	164	29223.1	3.8				mg/L	2	Standard
Ho-1	165	17680.3	2.0				mg/L	10	Standard
Er	166	15514.6	3.9				mg/L	23	Standard
I	127	5479.3	4.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.519	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.898	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606078715
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.481
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.215
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606078716
Sample Date/Time: Tuesday, June 21, 2016 20:51:39
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63156.4	1.5				ug/L	60176	Standard
	Be	9	671.7	2.1	**0.8826**	0.026	3.0	ug/L	5	Standard
	Al	27	8487404.7	1.9	**61.5729**	1.740	2.8	ug/L	832	Standard
	Sc	45	31963.7	1.0				ug/L	25066	Standard
	Ti	47	787.0	5.2	**3.8622**	0.259	6.7	ug/L	38	Standard
	V	51	41199.8	0.5	**6.7490**	0.110	1.6	ug/L	974	Standard
	Cr	52	73420.2	2.1	**10.5882**	0.090	0.9	ug/L	5792	Standard
	Cr	53	8865.9	1.6	**10.4143**	0.113	1.1	ug/L	347	Standard
	Mn	55	3069080.0	1.7	**478.8131**	2.454	0.5	ug/L	1164	Standard
	Co	59	44326.4	0.3	**7.2228**	0.137	1.9	ug/L	303	Standard
	Ni	60	28414.3	2.4	**15.5776**	0.153	1.0	ug/L	291	Standard
	Cu	65	26490.5	2.7	**14.6878**	0.116	0.8	ug/L	173	Standard
	Zn	66	29868.4	0.5	**28.5277**	0.483	1.7	ug/L	130	Standard
>	**Ge**	72	492563.3	2.0				ug/L	491724	Standard
	As	75	705.4	3.6	**0.7048**	0.021	3.0	ug/L	-25	Standard
	Se	82	43.0	1.8	**0.3227**	0.009	2.7	ug/L	12	Standard
	Se-1	77	107.0	6.1	**0.8613**	0.072	8.3	ug/L	57	Standard
>	**Ga**	71	11926.4	3.1				mg/L	148	Standard
	Rb	85	71819.9	2.8				ug/L	18	Standard
	Y	89	651603.7	2.1				ug/L	401845	Standard
>	**Rh**	103	30.0	0.0				ug/L	10	Standard
	Mo	98	68.5	8.4	**0.0231**	0.003	12.2	ug/L	12	Standard
	Ag	107	420.7	8.6	**0.0536**	0.006	11.6	ug/L	98	Standard
	Cd	111	560.2	2.6	**0.2833**	0.005	1.6	mg/L	11	Standard
	Cd	114	1323.3	4.1	**0.2753**	0.012	4.2	ug/L	21	Standard
>	**In**	115	566534.2	2.2				ug/L	547487	Standard
	Sn	118	563.3	6.8	**0.0309**	0.009	30.5	ug/L	450	Standard
	Sb	123	100.4	11.4	**0.0152**	0.002	14.0	ug/L	105	Standard
	Ba	135	283911.4	0.6	**149.4331**	2.900	1.9	ug/L	111	Standard
	Ce	140	1002744.9	0.8				ug/L	107	Standard
>	**Tb**	159	926505.2	0.9				ug/L	890342	Standard
	Ho	165	19863.0	1.4				ug/L	10	Standard
	Tl	203	430.7	7.9	**0.0532**	0.005	8.6	ug/L	19	Standard
	Tl	205	353.3	5.9	**0.0577**	0.003	4.9	ug/L	17	Standard
	Pb	206	69734.1	0.6	**14.2349**	0.089	0.6	ug/L	247	Standard
	Pb	207	57132.8	0.4	**12.8273**	0.185	1.4	ug/L	215	Standard
	Pb	208	238392.7	1.0	**14.2947**	0.123	0.9	ug/L	770	Standard
	U	238	2332.8	0.7	**0.3863**	0.003	0.7	ug/L	13	Standard
>	**Bi**	209	505510.9	1.2				ug/L	503143	Standard

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Na	23	1.7	173.2	**14.5012**	25.108	173.1	mg/L	2	Standard
Mg	24	86.7	20.3	**0.0546**	0.020	36.4	mg/L	35	Standard
K	39	190.0	17.3	**0.6305**	0.128	20.3	mg/L	25	Standard
Ca	43	63.3	24.1	**4.4800**	2.465	55.0	mg/L	38	Standard
Fe	54	5380.7	2.2	**3.8682**	0.114	2.9	mg/L	126	Standard
Fe	57	1575.1	5.6	**3.7787**	0.227	6.0	mg/L	245	Standard
> **Sc-1**	45	31963.7	1.0				mg/L	25066	Standard
Cl	35	132139.0	0.5				ug/L	125857	Standard
Kr	83	3.3	45.8				ug/L	1	Standard
Br	81	1810.1	9.6				ug/L	1350	Standard
P	31	17954.0	0.5				ug/L	18393	Standard
S	34	3857.2	2.7				ug/L	3739	Standard
Sr	88	100.0	20.0				ug/L	78	Standard
C	12	70.0	14.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	65.5				mg/L	0	Standard
Dy	164	33584.1	0.1				mg/L	2	Standard
Ho-1	165	19863.0	1.4				mg/L	10	Standard
Er	166	16942.8	1.2				mg/L	23	Standard
I	127	7925.4	6.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.953	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.171	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.479
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.471
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 20:54:52
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60883.8	1.2				ug/L	60176	Standard
	Be	9	37452.9	1.8	**51.5526**	0.424	0.8	ug/L	5	Standard
	Al	27	6689358.8	1.2	**50.3342**	1.000	2.0	ug/L	832	Standard
	Sc	45	26605.0	1.1				ug/L	25066	Standard
	Ti	47	21026.9	2.2	**105.9022**	3.978	3.8	ug/L	38	Standard
	V	51	311223.1	1.0	**50.8529**	1.359	2.7	ug/L	974	Standard
	Cr	52	341954.8	0.5	**51.4858**	0.949	1.8	ug/L	5792	Standard
	Cr	53	42792.0	0.9	**50.5973**	0.849	1.7	ug/L	347	Standard
	Mn	55	320340.3	1.3	**48.6001**	1.462	3.0	ug/L	1164	Standard
	Co	59	314843.1	1.0	**50.3634**	1.025	2.0	ug/L	303	Standard
	Ni	60	93552.6	1.1	**50.5030**	1.634	3.2	ug/L	291	Standard
	Cu	65	92967.7	0.8	**50.5704**	1.475	2.9	ug/L	173	Standard
	Zn	66	53414.3	0.4	**49.9687**	0.924	1.8	ug/L	130	Standard
>	Ge	72	504684.6	2.1				ug/L	491724	Standard
	As	75	53717.6	0.4	**49.9128**	1.219	2.4	ug/L	-25	Standard
	Se	82	5331.3	0.9	**50.1675**	1.278	2.5	ug/L	12	Standard
	Se-1	77	3711.8	3.5	**50.5254**	1.616	3.2	ug/L	57	Standard
>	Ga	71	126.7	4.6				mg/L	148	Standard
	Rb	85	895.0	15.1				ug/L	18	Standard
	Y	89	404245.1	2.3				ug/L	401845	Standard
>	Rh	103	30.0	72.6				ug/L	10	Standard
	Mo	98	234676.4	0.3	**98.0864**	1.853	1.9	ug/L	12	Standard
	Ag	107	298634.4	0.6	**50.8442**	0.767	1.5	ug/L	98	Standard
	Cd	111	95655.4	0.7	**51.1097**	1.126	2.2	mg/L	11	Standard
	Cd	114	231347.5	1.0	**50.8153**	1.523	3.0	ug/L	21	Standard
>	In	115	545250.3	2.0				ug/L	547487	Standard
	Sn	118	260351.2	0.6	**50.2848**	1.264	2.5	ug/L	450	Standard
	Sb	123	214346.2	0.6	**50.6758**	0.746	1.5	ug/L	105	Standard
	Ba	135	92176.2	0.3	**50.3714**	0.906	1.8	ug/L	111	Standard
	Ce	140	526.7	81.3				ug/L	107	Standard
>	Tb	159	882908.4	0.6				ug/L	890342	Standard
	Ho	165	28.3	27.0				ug/L	10	Standard
	Tl	203	374935.9	0.9	**50.1205**	0.165	0.3	ug/L	19	Standard
	Tl	205	318674.8	0.7	**51.9217**	0.204	0.4	ug/L	17	Standard
	Pb	206	235754.0	0.4	**48.9660**	0.280	0.6	ug/L	247	Standard
	Pb	207	213881.4	0.3	**48.8706**	0.570	1.2	ug/L	215	Standard
	Pb	208	834513.3	1.3	**50.9306**	0.866	1.7	ug/L	770	Standard
	U	238	300874.8	0.8	**50.6644**	0.698	1.4	ug/L	13	Standard
>	Bi	209	498178.2	0.8				ug/L	503143	Standard

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Na	23	3.3	86.6	**34.8841**	30.207	86.6	mg/L	2	Standard
Mg	24	3477.1	4.4	**4.4607**	0.153	3.4	mg/L	35	Standard
K	39	961.7	14.3	**4.4091**	0.698	15.8	mg/L	25	Standard
Ca	43	43.3	69.6	**2.7007**	5.576	206.5	mg/L	38	Standard
Fe	54	5435.3	1.5	**4.7229**	0.037	0.8	mg/L	126	Standard
Fe	57	1608.4	5.4	**4.8844**	0.305	6.2	mg/L	245	Standard
> **Sc-1**	45	26605.0	1.1				mg/L	25066	Standard
Cl	35	135935.1	1.3				ug/L	125857	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	1366.7	10.0				ug/L	1350	Standard
P	31	19796.3	3.2				ug/L	18393	Standard
S	34	4318.9	4.3				ug/L	3739	Standard
Sr	88	66.7	4.3				ug/L	78	Standard
C	12	60.0	66.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	36.0	84.1				mg/L	2	Standard
Ho-1	165	28.3	27.0				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	1233.4	10.1				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	103.105		
	Al	27	100.668		
	Sc	45			
	Ti	47	105.902		
	V	51	101.706		
	Cr	52	102.972		
	Cr	53			
	Mn	55	97.200		
	Co	59	100.727		
	Ni	60	101.006		
	Cu	65	101.141		
	Zn	66	99.937		
>	Ge	72		102.636	
	As	75	99.826		
	Se	82	100.335		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.086		
Ag	107	101.688		
Cd	111	102.219		
Cd	114			
> In	115			99.592
Sn	118	100.570		
Sb	123	101.352		
Ba	135	100.743		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.241		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.861		
U	238	101.329		
> Bi	209			99.013
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 20:58:03
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60304.9	3.7				ug/L	60176	Standard
	Be	9	20.0	25.0	**0.0187**	0.006	34.5	ug/L	5	Standard
	Al	27	2683.6	13.5	**0.0119**	0.002	17.0	ug/L	832	Standard
	Sc	45	27745.4	2.3				ug/L	25066	Standard
	Ti	47	26.3	7.9	**-0.0698**	0.006	9.1	ug/L	38	Standard
	V	51	1025.5	6.6	**0.0041**	0.015	373.0	ug/L	974	Standard
	Cr	52	5980.2	0.4	**0.0103**	0.035	341.4	ug/L	5792	Standard
	Cr	53	358.3	2.9	**0.0313**	0.025	80.8	ug/L	347	Standard
	Mn	55	1307.7	11.4	**-0.0089**	0.015	168.5	ug/L	1164	Standard
	Co	59	319.0	5.2	**0.0037**	0.001	16.8	ug/L	303	Standard
	Ni	60	213.7	10.1	**-0.0706**	0.007	10.2	ug/L	291	Standard
	Cu	65	176.0	45.3	**0.0009**	0.040	4571.7	ug/L	173	Standard
	Zn	66	197.3	32.7	**-0.0440**	0.055	125.2	ug/L	130	Standard
>	**Ge**	72	485859.0	4.1				ug/L	491724	Standard
	As	75	-7.9	564.3	**0.0257**	0.042	164.8	ug/L	-25	Standard
	Se	82	20.6	52.0	**0.1089**	0.105	96.6	ug/L	12	Standard
	Se-1	77	51.3	4.9	**0.0854**	0.006	7.0	ug/L	57	Standard
>	**Ga**	71	96.7	26.5				mg/L	148	Standard
	Rb	85	53.3	75.8				ug/L	18	Standard
	Y	89	428893.2	2.6				ug/L	401845	Standard
>	**Rh**	103	21.7	35.3				ug/L	10	Standard
	Mo	98	267.7	20.3	**0.1004**	0.022	21.8	ug/L	12	Standard
	Ag	107	154.3	36.0	**0.0093**	0.009	97.1	ug/L	98	Standard
	Cd	111	33.1	68.4	**0.0119**	0.011	96.1	mg/L	11	Standard
	Cd	114	72.5	60.2	**0.0105**	0.009	86.3	ug/L	21	Standard
>	**In**	115	582185.2	0.5				ug/L	547487	Standard
	Sn	118	775.0	15.8	**0.0663**	0.022	32.6	ug/L	450	Standard
	Sb	123	370.4	13.0	**0.0743**	0.010	13.7	ug/L	105	Standard
	Ba	135	185.0	36.1	**0.0393**	0.035	88.5	ug/L	111	Standard
	Ce	140	261.7	98.8				ug/L	107	Standard
>	**Tb**	159	909104.3	2.8				ug/L	890342	Standard
	Ho	165	13.3	21.7				ug/L	10	Standard
	Tl	203	110.3	66.1	**0.0108**	0.009	83.7	ug/L	19	Standard
	Tl	205	71.7	63.3	**0.0123**	0.007	55.7	ug/L	17	Standard
	Pb	206	312.7	18.6	**0.0088**	0.010	110.7	ug/L	247	Standard
	Pb	207	257.0	12.9	**0.0056**	0.006	101.8	ug/L	215	Standard
	Pb	208	984.0	5.5	**-0.0008**	0.002	247.7	ug/L	770	Standard
	U	238	62.3	31.4	**0.0094**	0.003	31.0	ug/L	13	Standard
>	**Bi**	209	506036.5	3.2				ug/L	503143	Standard

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Na	23	1.7	173.2	**16.4456**	28.476	173.2	mg/L	2	Standard
Mg	24	31.7	48.2	**0.0006**	0.019	3169.4	mg/L	35	Standard
K	39	28.3	44.4	**0.0148**	0.056	376.7	mg/L	25	Standard
Ca	43	30.0	16.7	**0.0246**	0.947	3845.4	mg/L	38	Standard
Fe	54	152.6	13.3	**-0.0059**	0.014	243.4	mg/L	126	Standard
Fe	57	205.0	29.6	**-0.3585**	0.221	61.6	mg/L	245	Standard
Sc-1	45	27745.4	2.3				mg/L	25066	Standard
Cl	35	137127.8	1.4				ug/L	125857	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	1390.1	15.1				ug/L	1350	Standard
P	31	20685.8	4.9				ug/L	18393	Standard
S	34	4127.2	9.0				ug/L	3739	Standard
Sr	88	78.3	54.3				ug/L	78	Standard
C	12	46.7	12.4				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	13.0	115.8				mg/L	2	Standard
Ho-1	165	13.3	21.7				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	23	Standard
I	127	885.0	8.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.807	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.338
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.575
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 21, 2016 21:00:20
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Method 6020 - Summary Report

Sample ID: L1606078717
Sample Date/Time: Tuesday, June 21, 2016 21:01:16
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58967.9	1.9				ug/L	60176	Standard
	Be	9	248.3	8.1	**0.3438**	0.024	6.9	ug/L	5	Standard
	Al	27	2227874.3	0.9	**17.3042**	0.322	1.9	ug/L	832	Standard
	Sc	45	26897.2	2.2				ug/L	25066	Standard
	Ti	47	1431.7	18.6	**6.8597**	1.258	18.3	ug/L	38	Standard
	V	51	47458.5	2.5	**7.4476**	0.204	2.7	ug/L	974	Standard
	Cr	52	32459.4	0.3	**3.9305**	0.054	1.4	ug/L	5792	Standard
	Cr	53	3765.5	1.9	**3.9831**	0.119	3.0	ug/L	347	Standard
	Mn	55	1239543.3	1.8	**184.7250**	3.779	2.0	ug/L	1164	Standard
	Co	59	18572.0	2.0	**2.8625**	0.053	1.9	ug/L	303	Standard
	Ni	60	10124.4	1.0	**5.1808**	0.100	1.9	ug/L	291	Standard
	Cu	65	6785.9	0.8	**3.5234**	0.059	1.7	ug/L	173	Standard
	Zn	66	12295.0	0.6	**11.0803**	0.079	0.7	ug/L	130	Standard
>	**Ge**	72	515286.4	0.8				ug/L	491724	Standard
	As	75	1394.4	4.3	**1.3016**	0.051	3.9	ug/L	-25	Standard
	Se	82	20.2	35.8	**0.0940**	0.067	71.3	ug/L	12	Standard
	Se-1	77	68.7	3.7	**0.2777**	0.038	13.8	ug/L	57	Standard
>	**Ga**	71	3877.2	6.5				mg/L	148	Standard
	Rb	85	33081.1	0.9				ug/L	18	Standard
	Y	89	491266.4	1.3				ug/L	401845	Standard
>	**Rh**	103	30.0	50.0				ug/L	10	Standard
	Mo	98	552.0	0.6	**0.2299**	0.004	1.9	ug/L	12	Standard
	Ag	107	180.0	16.1	**0.0157**	0.005	31.4	ug/L	98	Standard
	Cd	111	82.7	5.7	**0.0401**	0.003	6.4	mg/L	11	Standard
	Cd	114	155.0	26.9	**0.0301**	0.009	30.6	ug/L	21	Standard
>	**In**	115	536864.3	1.3				ug/L	547487	Standard
	Sn	118	871.7	22.7	**0.0970**	0.038	39.0	ug/L	450	Standard
	Sb	123	155.5	16.1	**0.0297**	0.006	20.1	ug/L	105	Standard
	Ba	135	92951.9	0.7	**51.5816**	0.551	1.1	ug/L	111	Standard
	Ce	140	470743.1	1.1				ug/L	107	Standard
>	**Tb**	159	879768.9	2.5				ug/L	890342	Standard
	Ho	165	7800.3	2.1				ug/L	10	Standard
	Tl	203	213.0	5.0	**0.0249**	0.002	7.3	ug/L	19	Standard
	Tl	205	180.0	7.3	**0.0302**	0.002	7.1	ug/L	17	Standard
	Pb	206	22080.4	1.2	**4.5264**	0.114	2.5	ug/L	247	Standard
	Pb	207	18228.6	0.8	**4.1081**	0.080	1.9	ug/L	215	Standard
	Pb	208	74972.7	0.7	**4.5107**	0.075	1.7	ug/L	770	Standard
	U	238	864.0	6.8	**0.1443**	0.008	5.6	ug/L	13	Standard
>	**Bi**	209	499355.6	1.6				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.5774**	30.436	173.2	mg/L	2	Standard
Mg	24	61.7	40.0	**0.0403**	0.033	80.9	mg/L	35	Standard
K	39	90.0	19.2	**0.3053**	0.077	25.2	mg/L	25	Standard
Ca	43	26.7	43.3	**-0.4112**	2.189	532.4	mg/L	38	Standard
Fe	54	3684.8	2.8	**3.1243**	0.156	5.0	mg/L	126	Standard
Fe	57	1071.7	3.2	**2.8502**	0.193	6.8	mg/L	245	Standard
> **Sc-1**	45	26897.2	2.2				mg/L	25066	Standard
Cl	35	128581.4	1.9				ug/L	125857	Standard
Kr	83	3.3	69.3				ug/L	1	Standard
Br	81	1366.7	14.0				ug/L	1350	Standard
P	31	18504.6	2.4				ug/L	18393	Standard
S	34	3872.2	3.4				ug/L	3739	Standard
Sr	88	98.3	24.0				ug/L	78	Standard
C	12	83.3	13.9				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	0	Standard
Dy	164	13079.9	4.0				mg/L	2	Standard
Ho-1	165	7800.3	2.1				mg/L	10	Standard
Er	166	6874.9	2.4				mg/L	23	Standard
I	127	43099.7	5.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.992	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.792	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.060
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.247
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606096401
Sample Date/Time: Tuesday, June 21, 2016 21:04:28
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61683.6	0.8				ug/L	60176	Standard
	Be	9	883.4	4.3	**1.1916**	0.058	4.9	ug/L	5	Standard
	Al	27	5178030.7	2.0	**38.4554**	1.068	2.8	ug/L	832	Standard
	Sc	45	30799.6	3.4				ug/L	25066	Standard
	Ti	47	4718.7	1.1	**24.0318**	0.395	1.6	ug/L	38	Standard
	V	51	114345.0	1.6	**18.9116**	0.174	0.9	ug/L	974	Standard
	Cr	52	105274.2	1.9	**15.4891**	0.252	1.6	ug/L	5792	Standard
	Cr	53	13055.6	1.4	**15.4331**	0.322	2.1	ug/L	347	Standard
	Mn	55	7305075.4	0.8	**1132.9355**	7.283	0.6	ug/L	1164	Standard
	Co	59	110053.3	1.1	**17.8911**	0.196	1.1	ug/L	303	Standard
	Ni	60	42512.6	2.1	**23.2560**	0.355	1.5	ug/L	291	Standard
	Cu	65	53072.8	1.3	**29.3454**	0.332	1.1	ug/L	173	Standard
	Zn	66	99122.2	1.6	**94.6103**	1.148	1.2	ug/L	130	Standard
>	**Ge**	72	495611.5	1.0				ug/L	491724	Standard
	As	75	7905.4	0.5	**7.5070**	0.111	1.5	ug/L	-25	Standard
	Se	82	123.9	10.0	**1.0965**	0.127	11.6	ug/L	12	Standard
	Se-1	77	121.7	4.5	**1.0589**	0.089	8.4	ug/L	57	Standard
>	**Ga**	71	15628.1	1.2				mg/L	148	Standard
	Rb	85	148601.9	0.8				ug/L	18	Standard
	Y	89	644139.5	2.1				ug/L	401845	Standard
>	**Rh**	103	43.3	26.6				ug/L	10	Standard
	Mo	98	2523.4	0.5	**1.0118**	0.017	1.7	ug/L	12	Standard
	Ag	107	592.0	2.4	**0.0817**	0.001	1.4	ug/L	98	Standard
	Cd	111	807.3	4.3	**0.4111**	0.024	5.8	mg/L	11	Standard
	Cd	114	1817.8	11.0	**0.3801**	0.041	10.8	ug/L	21	Standard
>	**In**	115	565837.8	1.4				ug/L	547487	Standard
	Sn	118	1080.0	6.1	**0.1273**	0.013	10.3	ug/L	450	Standard
	Sb	123	319.1	4.8	**0.0651**	0.004	6.6	ug/L	105	Standard
	Ba	135	459850.7	0.5	**242.3294**	2.872	1.2	ug/L	111	Standard
	Ce	140	772197.4	0.7				ug/L	107	Standard
>	**Tb**	159	924228.8	0.8				ug/L	890342	Standard
	Ho	165	18805.0	1.1				ug/L	10	Standard
	Tl	203	1334.1	2.6	**0.1715**	0.004	2.4	ug/L	19	Standard
	Tl	205	1121.7	11.7	**0.1804**	0.021	11.8	ug/L	17	Standard
	Pb	206	155702.0	1.1	**31.7305**	0.431	1.4	ug/L	247	Standard
	Pb	207	128499.6	0.8	**28.8036**	0.297	1.0	ug/L	215	Standard
	Pb	208	526834.4	0.3	**31.5436**	0.346	1.1	ug/L	770	Standard
	U	238	6774.5	2.8	**1.1193**	0.041	3.6	ug/L	13	Standard
>	**Bi**	209	507432.9	0.8				ug/L	503143	Standard

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Na	23	1.7	173.2	**14.5920**	25.265	173.1	mg/L	2	Standard
Mg	24	123.3	36.3	**0.0995**	0.052	52.6	mg/L	35	Standard
K	39	286.7	11.6	**1.0529**	0.157	14.9	mg/L	25	Standard
Ca	43	181.7	8.8	**23.8683**	3.171	13.3	mg/L	38	Standard
Fe	54	30681.9	0.6	**23.5794**	0.906	3.8	mg/L	126	Standard
Fe	57	7930.4	3.9	**24.3571**	0.437	1.8	mg/L	245	Standard
Sc-1	45	30799.6	3.4				mg/L	25066	Standard
Cl	35	140264.3	0.6				ug/L	125857	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	4600.7	5.6				ug/L	1350	Standard
P	31	20849.3	1.5				ug/L	18393	Standard
S	34	4297.3	6.2				ug/L	3739	Standard
Sr	88	158.3	6.6				ug/L	78	Standard
C	12	330.0	10.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	140.0	7.1				mg/L	0	Standard
Dy	164	30992.7	0.4				mg/L	2	Standard
Ho-1	165	18805.0	1.1				mg/L	10	Standard
Er	166	16085.2	2.6				mg/L	23	Standard
I	127	12078.2	5.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.506	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.791	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.352
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.853
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606096402
Sample Date/Time: Tuesday, June 21, 2016 21:07:39
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60443.7	2.3				ug/L	60176	Standard
	Be	9	858.4	6.1	**1.1817**	0.077	6.5	ug/L	5	Standard
	Al	27	6826154.4	0.3	**51.7504**	1.316	2.5	ug/L	832	Standard
	Sc	45	29154.7	2.0				ug/L	25066	Standard
	Ti	47	4436.6	0.7	**23.0756**	0.146	0.6	ug/L	38	Standard
	V	51	102185.5	0.5	**17.2535**	0.167	1.0	ug/L	974	Standard
	Cr	52	95353.4	0.7	**14.2638**	0.044	0.3	ug/L	5792	Standard
	Cr	53	11679.5	2.1	**14.0700**	0.355	2.5	ug/L	347	Standard
	Mn	55	7652551.6	0.6	**1212.6036**	11.003	0.9	ug/L	1164	Standard
	Co	59	114240.4	1.3	**18.9785**	0.353	1.9	ug/L	303	Standard
	Ni	60	37577.9	2.9	**20.9856**	0.630	3.0	ug/L	291	Standard
	Cu	65	36514.3	2.8	**20.5993**	0.606	2.9	ug/L	173	Standard
	Zn	66	77328.8	1.2	**75.3661**	1.101	1.5	ug/L	130	Standard
>	**Ge**	72	485083.6	0.6				ug/L	491724	Standard
	As	75	9274.5	0.6	**8.9907**	0.056	0.6	ug/L	-25	Standard
	Se	82	68.6	8.2	**0.5801**	0.058	10.0	ug/L	12	Standard
	Se-1	77	100.0	6.2	**0.7851**	0.097	12.4	ug/L	57	Standard
>	**Ga**	71	13681.2	0.5				mg/L	148	Standard
	Rb	85	107244.9	1.0				ug/L	18	Standard
	Y	89	606939.5	0.4				ug/L	401845	Standard
>	**Rh**	103	73.3	15.7				ug/L	10	Standard
	Mo	98	2763.0	0.4	**1.1251**	0.031	2.8	ug/L	12	Standard
	Ag	107	389.0	4.8	**0.0494**	0.004	8.4	ug/L	98	Standard
	Cd	111	497.8	7.0	**0.2554**	0.018	7.1	mg/L	11	Standard
	Cd	114	1250.0	4.5	**0.2640**	0.013	4.9	ug/L	21	Standard
>	**In**	115	557635.5	2.9				ug/L	547487	Standard
	Sn	118	808.4	8.9	**0.0790**	0.017	21.2	ug/L	450	Standard
	Sb	123	238.7	4.1	**0.0476**	0.003	6.2	ug/L	105	Standard
	Ba	135	379584.7	0.5	**203.0712**	6.745	3.3	ug/L	111	Standard
	Ce	140	697160.9	0.9				ug/L	107	Standard
>	**Tb**	159	886275.1	1.2				ug/L	890342	Standard
	Ho	165	14727.2	5.5				ug/L	10	Standard
	Tl	203	896.7	2.2	**0.1223**	0.004	3.1	ug/L	19	Standard
	Tl	205	745.0	8.4	**0.1283**	0.009	7.2	ug/L	17	Standard
	Pb	206	178412.3	0.6	**38.8786**	0.719	1.8	ug/L	247	Standard
	Pb	207	147399.5	0.7	**35.3313**	0.706	2.0	ug/L	215	Standard
	Pb	208	606573.9	0.8	**38.8359**	0.746	1.9	ug/L	770	Standard
	U	238	7105.3	1.3	**1.2549**	0.033	2.7	ug/L	13	Standard
>	**Bi**	209	474753.1	1.4				ug/L	503143	Standard

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Na	23	8.3	34.6	**79.6978**	26.468	33.2	mg/L	2	Standard
Mg	24	110.0	7.9	**0.0911**	0.012	13.1	mg/L	35	Standard
K	39	256.7	19.5	**0.9885**	0.219	22.1	mg/L	25	Standard
Ca	43	411.7	11.5	**64.4783**	8.203	12.7	mg/L	38	Standard
Fe	54	35968.6	1.2	**29.2125**	0.258	0.9	mg/L	126	Standard
Fe	57	9513.0	2.7	**31.1720**	1.290	4.1	mg/L	245	Standard
> **Sc-1**	45	29154.7	2.0				mg/L	25066	Standard
Cl	35	139874.1	1.4				ug/L	125857	Standard
Kr	83	2.3	107.9				ug/L	1	Standard
Br	81	2370.2	14.6				ug/L	1350	Standard
P	31	20196.8	1.6				ug/L	18393	Standard
S	34	4530.7	2.9				ug/L	3739	Standard
Sr	88	208.3	7.3				ug/L	78	Standard
C	12	226.7	16.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	76.7	52.7				mg/L	0	Standard
Dy	164	23848.2	0.8				mg/L	2	Standard
Ho-1	165	14727.2	5.5				mg/L	10	Standard
Er	166	12765.4	0.8				mg/L	23	Standard
I	127	5762.8	6.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.445	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.650	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.854	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	94.358	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606096402
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Method 6020 - Summary Report

Sample ID: L1606096403
Sample Date/Time: Tuesday, June 21, 2016 21:10:51
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59725.8	1.2				ug/L	60176	Standard
	Be	9	1065.0	7.1	**1.4856**	0.101	6.8	ug/L	5	Standard
	Al	27	6735770.9	2.1	**51.6724**	1.686	3.3	ug/L	832	Standard
	Sc	45	31080.2	2.4				ug/L	25066	Standard
	Ti	47	4731.4	2.9	**23.5917**	1.146	4.9	ug/L	38	Standard
	V	51	159656.7	1.1	**25.9167**	0.803	3.1	ug/L	974	Standard
	Cr	52	150620.2	2.4	**22.0767**	0.911	4.1	ug/L	5792	Standard
	Cr	53	18673.2	1.5	**21.7771**	0.815	3.7	ug/L	347	Standard
	Mn	55	23162167.1	2.5	**3518.0721**	158.797	4.5	ug/L	1164	Standard
	Co	59	153465.2	2.3	**24.4482**	1.075	4.4	ug/L	303	Standard
	Ni	60	66553.2	1.2	**35.7474**	1.066	3.0	ug/L	291	Standard
	Cu	65	62739.7	1.9	**33.9798**	1.174	3.5	ug/L	173	Standard
	Zn	66	111779.9	1.3	**104.4821**	3.185	3.0	ug/L	130	Standard
>	**Ge**	72	506423.5	2.2				ug/L	491724	Standard
	As	75	13400.8	1.3	**12.4352**	0.374	3.0	ug/L	-25	Standard
	Se	82	118.6	7.2	**1.0218**	0.099	9.7	ug/L	12	Standard
	Se-1	77	153.7	9.5	**1.4639**	0.226	15.5	ug/L	57	Standard
>	**Ga**	71	25104.1	4.5				mg/L	148	Standard
	Rb	85	212398.7	1.8				ug/L	18	Standard
	Y	89	707988.0	2.1				ug/L	401845	Standard
>	**Rh**	103	40.0	21.7				ug/L	10	Standard
	Mo	98	3597.9	2.4	**1.5414**	0.022	1.4	ug/L	12	Standard
	Ag	107	833.4	3.0	**0.1305**	0.003	2.1	ug/L	98	Standard
	Cd	111	780.1	2.5	**0.4239**	0.014	3.3	mg/L	11	Standard
	Cd	114	1837.3	7.4	**0.4101**	0.024	5.8	ug/L	21	Standard
>	**In**	115	530289.5	1.6				ug/L	547487	Standard
	Sn	118	726.7	5.9	**0.0704**	0.006	9.1	ug/L	450	Standard
	Sb	123	189.3	5.2	**0.0384**	0.003	7.9	ug/L	105	Standard
	Ba	135	438353.8	1.0	**246.4838**	2.881	1.2	ug/L	111	Standard
	Ce	140	990763.4	1.4				ug/L	107	Standard
>	**Tb**	159	873474.7	0.7				ug/L	890342	Standard
	Ho	165	24511.5	2.8				ug/L	10	Standard
	Tl	203	1762.8	2.6	**0.2422**	0.010	4.3	ug/L	19	Standard
	Tl	205	1573.4	6.4	**0.2681**	0.014	5.1	ug/L	17	Standard
	Pb	206	175441.6	1.0	**37.9831**	0.971	2.6	ug/L	247	Standard
	Pb	207	144605.2	1.4	**34.4368**	0.983	2.9	ug/L	215	Standard
	Pb	208	588641.2	1.8	**37.4440**	1.195	3.2	ug/L	770	Standard
	U	238	9588.7	2.3	**1.6828**	0.058	3.5	ug/L	13	Standard
>	**Bi**	209	477887.7	1.6				ug/L	503143	Standard

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Na	23	3.3	86.6	**29.6244**	25.651	86.6	mg/L	2	Standard
Mg	24	100.0	32.8	**0.0724**	0.039	53.5	mg/L	35	Standard
K	39	251.7	22.0	**0.8997**	0.220	24.5	mg/L	25	Standard
Ca	43	298.3	10.8	**42.0685**	4.357	10.4	mg/L	38	Standard
Fe	54	46609.4	1.9	**35.5544**	1.340	3.8	mg/L	126	Standard
Fe	57	12280.0	1.7	**37.9835**	1.542	4.1	mg/L	245	Standard
> **Sc-1**	45	31080.2	2.4				mg/L	25066	Standard
Cl	35	131632.1	1.5				ug/L	125857	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	2233.5	9.3				ug/L	1350	Standard
P	31	19908.1	1.2				ug/L	18393	Standard
S	34	4282.3	3.5				ug/L	3739	Standard
Sr	88	186.7	10.8				ug/L	78	Standard
C	12	196.7	7.8				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	28.4				mg/L	0	Standard
Dy	164	39222.5	1.3				mg/L	2	Standard
Ho-1	165	24511.5	2.8				mg/L	10	Standard
Er	166	21451.8	2.5				mg/L	23	Standard
I	127	11184.1	5.0				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.252	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.989	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.859
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.981
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606096404
Sample Date/Time: Tuesday, June 21, 2016 21:14:02
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65608.5	2.4				ug/L	60176	Standard
	Be	9	978.4	9.3	**1.2397**	0.091	7.3	ug/L	5	Standard
	Al	27	20276434.3	2.1	**141.6733**	6.192	4.4	ug/L	832	Standard
	Sc	45	32165.8	0.5				ug/L	25066	Standard
	Ti	47	4298.9	2.0	**22.5280**	0.481	2.1	ug/L	38	Standard
	V	51	146058.2	0.9	**24.9272**	0.315	1.3	ug/L	974	Standard
	Cr	52	151598.3	0.6	**23.4255**	0.607	2.6	ug/L	5792	Standard
	Cr	53	18476.3	1.4	**22.6814**	0.785	3.5	ug/L	347	Standard
	Mn	55	9420566.7	0.7	**1504.6626**	40.210	2.7	ug/L	1164	Standard
	Co	59	121066.1	1.2	**20.2709**	0.323	1.6	ug/L	303	Standard
	Ni	60	72261.9	0.3	**40.8509**	0.828	2.0	ug/L	291	Standard
	Cu	65	54807.6	0.9	**31.2098**	0.512	1.6	ug/L	173	Standard
	Zn	66	122838.6	0.9	**120.7890**	1.613	1.3	ug/L	130	Standard
>	**Ge**	72	481416.0	1.9				ug/L	491724	Standard
	As	75	16765.9	1.3	**16.3502**	0.164	1.0	ug/L	-25	Standard
	Se	82	200.1	3.3	**1.8846**	0.080	4.3	ug/L	12	Standard
	Se-1	77	165.3	6.7	**1.7419**	0.196	11.3	ug/L	57	Standard
>	**Ga**	71	21279.9	1.7				mg/L	148	Standard
	Rb	85	212211.0	1.6				ug/L	18	Standard
	Y	89	668598.8	3.4				ug/L	401845	Standard
>	**Rh**	103	146.7	13.8				ug/L	10	Standard
	Mo	98	6675.4	3.0	**2.8530**	0.135	4.7	ug/L	12	Standard
	Ag	107	751.4	7.2	**0.1157**	0.012	10.3	ug/L	98	Standard
	Cd	111	870.3	3.3	**0.4716**	0.024	5.2	mg/L	11	Standard
	Cd	114	2091.4	3.2	**0.4659**	0.020	4.4	ug/L	21	Standard
>	**In**	115	532573.7	1.9				ug/L	547487	Standard
	Sn	118	885.0	9.3	**0.1010**	0.014	13.8	ug/L	450	Standard
	Sb	123	194.5	1.0	**0.0395**	0.001	2.8	ug/L	105	Standard
	Ba	135	1163510.0	0.9	**651.5400**	6.396	1.0	ug/L	111	Standard
	Ce	140	906567.9	0.7				ug/L	107	Standard
>	**Tb**	159	883392.7	1.4				ug/L	890342	Standard
	Ho	165	22286.4	1.5				ug/L	10	Standard
	Tl	203	2482.5	0.8	**0.3521**	0.004	1.0	ug/L	19	Standard
	Tl	205	1881.8	2.0	**0.3296**	0.010	3.2	ug/L	17	Standard
	Pb	206	158091.9	0.8	**35.1738**	0.401	1.1	ug/L	247	Standard
	Pb	207	129834.2	0.5	**31.7739**	0.359	1.1	ug/L	215	Standard
	Pb	208	527254.9	0.3	**34.4662**	0.500	1.5	ug/L	770	Standard
	U	238	16067.5	1.1	**2.8987**	0.040	1.4	ug/L	13	Standard
>	**Bi**	209	464873.7	1.2				ug/L	503143	Standard

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Na	23	13.3	78.1	**115.9288**	90.093	77.7	mg/L	2	Standard
Mg	24	990.0	4.0	**1.0209**	0.038	3.7	mg/L	35	Standard
K	39	433.3	22.9	**1.5710**	0.385	24.5	mg/L	25	Standard
Ca	43	1288.4	2.4	**192.5985**	3.798	2.0	mg/L	38	Standard
Fe	54	42265.6	1.7	**31.1194**	0.570	1.8	mg/L	126	Standard
Fe	57	11794.6	0.9	**35.1500**	0.244	0.7	mg/L	245	Standard
Sc-1	45	32165.8	0.5				mg/L	25066	Standard
Cl	35	147961.0	1.0				ug/L	125857	Standard
Kr	83	2.7	57.3				ug/L	1	Standard
Br	81	8902.6	11.5				ug/L	1350	Standard
P	31	19879.7	1.0				ug/L	18393	Standard
S	34	4369.0	3.9				ug/L	3739	Standard
Sr	88	638.3	9.0				ug/L	78	Standard
C	12	266.7	53.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	80.0	25.0				mg/L	0	Standard
Dy	164	35429.3	3.3				mg/L	2	Standard
Ho-1	165	22286.4	1.5				mg/L	10	Standard
Er	166	19993.2	2.6				mg/L	23	Standard
I	127	41665.6	4.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.028	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.904	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.276
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.394
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606096405
Sample Date/Time: Tuesday, June 21, 2016 21:17:14
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61603.3	1.5				ug/L	60176	Standard
	Be	9	600.0	13.8	**0.8067**	0.103	12.7	ug/L	5	Standard
	Al	27	6725691.5	0.7	**50.0139**	0.453	0.9	ug/L	832	Standard
	Sc	45	29426.9	0.5				ug/L	25066	Standard
	Ti	47	3385.7	1.8	**17.9264**	0.361	2.0	ug/L	38	Standard
	V	51	99171.8	1.0	**17.0872**	0.169	1.0	ug/L	974	Standard
	Cr	52	93106.5	0.5	**14.2111**	0.046	0.3	ug/L	5792	Standard
	Cr	53	11137.4	1.5	**13.6811**	0.187	1.4	ug/L	347	Standard
	Mn	55	4849349.2	0.5	**784.1366**	4.043	0.5	ug/L	1164	Standard
	Co	59	77636.7	0.7	**13.1472**	0.104	0.8	ug/L	303	Standard
	Ni	60	35771.2	0.8	**20.3821**	0.193	0.9	ug/L	291	Standard
	Cu	65	33083.4	0.4	**19.0401**	0.116	0.6	ug/L	173	Standard
	Zn	66	62395.9	0.5	**62.0204**	0.339	0.5	ug/L	130	Standard
>	**Ge**	72	475299.6	0.2				ug/L	491724	Standard
	As	75	7138.4	0.3	**7.0696**	0.031	0.4	ug/L	-25	Standard
	Se	82	72.9	6.9	**0.6363**	0.050	7.8	ug/L	12	Standard
	Se-1	77	94.7	8.2	**0.7362**	0.114	15.4	ug/L	57	Standard
>	**Ga**	71	13139.0	2.4				mg/L	148	Standard
	Rb	85	122434.4	1.4				ug/L	18	Standard
	Y	89	560272.6	0.4				ug/L	401845	Standard
>	**Rh**	103	85.0	10.2				ug/L	10	Standard
	Mo	98	2829.3	0.9	**1.2062**	0.019	1.6	ug/L	12	Standard
	Ag	107	451.3	3.3	**0.0633**	0.003	4.5	ug/L	98	Standard
	Cd	111	585.9	3.4	**0.3157**	0.009	2.8	mg/L	11	Standard
	Cd	114	1338.5	8.1	**0.2966**	0.027	9.2	ug/L	21	Standard
>	**In**	115	532548.5	0.9				ug/L	547487	Standard
	Sn	118	618.3	6.2	**0.0484**	0.008	15.8	ug/L	450	Standard
	Sb	123	149.8	7.0	**0.0287**	0.003	9.9	ug/L	105	Standard
	Ba	135	747435.4	0.3	**418.5133**	3.169	0.8	ug/L	111	Standard
	Ce	140	560557.9	2.3				ug/L	107	Standard
>	**Tb**	159	866879.8	2.2				ug/L	890342	Standard
	Ho	165	12675.3	1.6				ug/L	10	Standard
	Tl	203	1043.0	2.4	**0.1481**	0.005	3.4	ug/L	19	Standard
	Tl	205	948.4	1.9	**0.1690**	0.003	2.0	ug/L	17	Standard
	Pb	206	83575.9	1.0	**18.8379**	0.180	1.0	ug/L	247	Standard
	Pb	207	68735.9	0.3	**17.0411**	0.225	1.3	ug/L	215	Standard
	Pb	208	284935.0	0.5	**18.8685**	0.292	1.5	ug/L	770	Standard
	U	238	6592.4	0.9	**1.2061**	0.023	1.9	ug/L	13	Standard
>	**Bi**	209	458241.8	1.1				ug/L	503143	Standard

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Na	23	16.7	75.5	**158.9499**	120.668	75.9	mg/L	2	Standard
Mg	24	601.7	3.7	**0.6653**	0.030	4.4	mg/L	35	Standard
K	39	206.7	8.5	**0.7650**	0.071	9.3	mg/L	25	Standard
Ca	43	960.0	3.6	**155.9005**	6.175	4.0	mg/L	38	Standard
Fe	54	23834.6	0.7	**19.1304**	0.220	1.1	mg/L	126	Standard
Fe	57	7443.5	4.6	**23.9100**	1.153	4.8	mg/L	245	Standard
> **Sc-1**	45	29426.9	0.5				mg/L	25066	Standard
Cl	35	144441.3	1.4				ug/L	125857	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	2490.2	5.4				ug/L	1350	Standard
P	31	20085.0	2.1				ug/L	18393	Standard
S	34	4562.4	2.9				ug/L	3739	Standard
Sr	88	393.3	4.5				ug/L	78	Standard
C	12	153.3	3.8				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	75.0				mg/L	0	Standard
Dy	164	20473.5	4.3				mg/L	2	Standard
Ho-1	165	12675.3	1.6				mg/L	10	Standard
Er	166	10737.1	4.1				mg/L	23	Standard
I	127	13227.4	3.4				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.372	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.660	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.272
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	91.076
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606096406
Sample Date/Time: Tuesday, June 21, 2016 21:20:25
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60848.7	3.4				ug/L	60176	Standard
	Be	9	848.4	7.1	**1.1616**	0.108	9.3	ug/L	5	Standard
	Al	27	6018452.6	1.5	**45.3266**	0.962	2.1	ug/L	832	Standard
	Sc	45	29640.6	1.5				ug/L	25066	Standard
	Ti	47	4099.9	2.1	**21.1801**	0.616	2.9	ug/L	38	Standard
	V	51	132165.3	0.9	**22.2298**	0.427	1.9	ug/L	974	Standard
	Cr	52	138324.2	0.9	**20.9859**	0.510	2.4	ug/L	5792	Standard
	Cr	53	16679.2	2.2	**20.1440**	0.532	2.6	ug/L	347	Standard
	Mn	55	5769097.8	1.9	**908.7457**	30.297	3.3	ug/L	1164	Standard
	Co	59	130326.2	1.6	**21.5282**	0.614	2.9	ug/L	303	Standard
	Ni	60	50019.1	0.7	**27.8281**	0.578	2.1	ug/L	291	Standard
	Cu	65	47838.4	0.9	**26.8518**	0.165	0.6	ug/L	173	Standard
	Zn	66	97149.5	0.7	**94.1665**	1.182	1.3	ug/L	130	Standard
>	**Ge**	72	488085.6	1.5				ug/L	491724	Standard
	As	75	10945.8	1.2	**10.5404**	0.129	1.2	ug/L	-25	Standard
	Se	82	126.3	7.0	**1.1371**	0.072	6.3	ug/L	12	Standard
	Se-1	77	119.7	5.4	**1.0557**	0.069	6.6	ug/L	57	Standard
>	**Ga**	71	21567.0	2.2				mg/L	148	Standard
	Rb	85	186239.4	1.0				ug/L	18	Standard
	Y	89	601057.7	2.4				ug/L	401845	Standard
>	**Rh**	103	81.7	23.2				ug/L	10	Standard
	Mo	98	3186.2	0.9	**1.3649**	0.035	2.5	ug/L	12	Standard
	Ag	107	455.7	8.5	**0.0644**	0.006	9.6	ug/L	98	Standard
	Cd	111	524.0	6.4	**0.2832**	0.020	7.0	mg/L	11	Standard
	Cd	114	1252.9	3.3	**0.2784**	0.006	2.0	ug/L	21	Standard
>	**In**	115	530301.4	1.7				ug/L	547487	Standard
	Sn	118	516.7	6.3	**0.0287**	0.006	19.5	ug/L	450	Standard
	Sb	123	143.3	12.6	**0.0273**	0.005	17.6	ug/L	105	Standard
	Ba	135	1292682.2	0.4	**727.0559**	14.238	2.0	ug/L	111	Standard
	Ce	140	693916.1	1.8				ug/L	107	Standard
>	**Tb**	159	864495.5	2.4				ug/L	890342	Standard
	Ho	165	16118.6	0.6				ug/L	10	Standard
	Tl	203	1937.1	6.9	**0.2725**	0.018	6.6	ug/L	19	Standard
	Tl	205	1651.8	5.8	**0.2879**	0.017	5.8	ug/L	17	Standard
	Pb	206	129961.3	0.5	**28.7585**	0.109	0.4	ug/L	247	Standard
	Pb	207	107597.0	0.6	**26.1888**	0.063	0.2	ug/L	215	Standard
	Pb	208	436286.5	1.1	**28.3645**	0.441	1.6	ug/L	770	Standard
	U	238	5730.8	1.3	**1.0282**	0.019	1.9	ug/L	13	Standard
>	**Bi**	209	467215.7	0.6				ug/L	503143	Standard

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Na	23	5.0	100.0	**47.5230**	47.311	99.6	mg/L	2	Standard
Mg	24	1591.8	6.0	**1.8117**	0.138	7.6	mg/L	35	Standard
K	39	305.0	4.3	**1.1740**	0.072	6.1	mg/L	25	Standard
Ca	43	253.3	7.5	**36.8883**	2.607	7.1	mg/L	38	Standard
Fe	54	39612.5	0.8	**31.6600**	0.733	2.3	mg/L	126	Standard
Fe	57	9963.3	0.7	**32.1373**	0.629	2.0	mg/L	245	Standard
> **Sc-1**	45	29640.6	1.5				mg/L	25066	Standard
Cl	35	134083.4	1.7				ug/L	125857	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	10510.3	5.8				ug/L	1350	Standard
P	31	21156.4	3.0				ug/L	18393	Standard
S	34	4474.0	1.7				ug/L	3739	Standard
Sr	88	380.0	15.2				ug/L	78	Standard
C	12	116.7	24.7				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	50.0	87.2				mg/L	0	Standard
Dy	164	26535.5	1.2				mg/L	2	Standard
Ho-1	165	16118.6	0.6				mg/L	10	Standard
Er	166	14313.4	2.0				mg/L	23	Standard
I	127	12621.9	3.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.118	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.260	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.861
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.859
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606104801
Sample Date/Time: Tuesday, June 21, 2016 21:23:37
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59245.6	2.3				ug/L	60176	Standard
	Be	9	998.4	8.4	**1.4039**	0.121	8.6	ug/L	5	Standard
	Al	27	6367880.3	0.6	**49.2460**	0.840	1.7	ug/L	832	Standard
	Sc	45	32329.5	1.7				ug/L	25066	Standard
	Ti	47	1382.7	2.8	**6.7449**	0.291	4.3	ug/L	38	Standard
	V	51	119247.6	0.5	**19.3078**	0.442	2.3	ug/L	974	Standard
	Cr	52	109311.3	1.0	**15.7582**	0.462	2.9	ug/L	5792	Standard
	Cr	53	12982.2	1.5	**15.0048**	0.147	1.0	ug/L	347	Standard
	Mn	55	705485.5	0.6	**106.8784**	1.202	1.1	ug/L	1164	Standard
	Co	59	37775.0	1.2	**5.9772**	0.123	2.1	ug/L	303	Standard
	Ni	60	47756.8	1.1	**25.5883**	0.496	1.9	ug/L	291	Standard
	Cu	65	71575.7	0.3	**38.7654**	0.772	2.0	ug/L	173	Standard
	Zn	66	100398.2	0.5	**93.7869**	1.723	1.8	ug/L	130	Standard
>	**Ge**	72	506494.1	1.7				ug/L	491724	Standard
	As	75	1385.3	0.4	**1.3154**	0.019	1.4	ug/L	-25	Standard
	Se	82	173.9	2.4	**1.5403**	0.020	1.3	ug/L	12	Standard
	Se-1	77	199.0	5.6	**2.0859**	0.187	9.0	ug/L	57	Standard
>	**Ga**	71	14914.0	1.3				mg/L	148	Standard
	Rb	85	75430.7	1.8				ug/L	18	Standard
	Y	89	760970.7	1.5				ug/L	401845	Standard
>	**Rh**	103	35.0	42.9				ug/L	10	Standard
	Mo	98	1188.3	0.2	**0.4982**	0.006	1.3	ug/L	12	Standard
	Ag	107	1544.4	4.3	**0.2507**	0.008	3.1	ug/L	98	Standard
	Cd	111	2357.3	1.5	**1.2699**	0.003	0.2	mg/L	11	Standard
	Cd	114	5698.6	3.2	**1.2625**	0.055	4.3	ug/L	21	Standard
>	**In**	115	538711.6	1.4				ug/L	547487	Standard
	Sn	118	1520.1	9.1	**0.2236**	0.029	13.1	ug/L	450	Standard
	Sb	123	745.4	2.0	**0.1708**	0.006	3.3	ug/L	105	Standard
	Ba	135	233929.7	0.2	**129.4576**	1.611	1.2	ug/L	111	Standard
	Ce	140	1443759.2	1.4				ug/L	107	Standard
>	**Tb**	159	888846.2	1.9				ug/L	890342	Standard
	Ho	165	27959.1	1.2				ug/L	10	Standard
	Tl	203	902.7	2.9	**0.1193**	0.002	2.1	ug/L	19	Standard
	Tl	205	766.7	7.0	**0.1281**	0.008	6.1	ug/L	17	Standard
	Pb	206	138959.0	0.2	**29.3640**	0.336	1.1	ug/L	247	Standard
	Pb	207	113827.0	0.5	**26.4558**	0.247	0.9	ug/L	215	Standard
	Pb	208	467592.1	0.8	**29.0276**	0.195	0.7	ug/L	770	Standard
	U	238	27116.9	1.5	**4.6480**	0.064	1.4	ug/L	13	Standard
>	**Bi**	209	489310.6	0.9				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	71.7	14.5	**0.0373**	0.010	27.1	mg/L	35	Standard
K	39	178.3	19.1	**0.5783**	0.141	24.4	mg/L	25	Standard
Ca	43	95.0	10.5	**9.2082**	1.716	18.6	mg/L	38	Standard
Fe	54	10385.0	3.9	**7.5064**	0.345	4.6	mg/L	126	Standard
Fe	57	2965.3	4.1	**7.9807**	0.521	6.5	mg/L	245	Standard
> **Sc-1**	45	32329.5	1.7				mg/L	25066	Standard
Cl	35	130217.9	1.6				ug/L	125857	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	2376.9	10.6				ug/L	1350	Standard
P	31	19497.5	2.1				ug/L	18393	Standard
S	34	4082.2	1.2				ug/L	3739	Standard
Sr	88	118.3	16.0				ug/L	78	Standard
C	12	216.7	11.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	116.7	26.2				mg/L	0	Standard
Dy	164	44057.9	0.3				mg/L	2	Standard
Ho-1	165	27959.1	1.2				mg/L	10	Standard
Er	166	24553.2	1.7				mg/L	23	Standard
I	127	4534.0	1.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.454	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.004	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.397
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.251
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 21:26:49
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	58117.9	1.9				ug/L	60176	Standard
	Be	9	35621.8	0.6	**51.3767**	0.746	1.5	ug/L	5	Standard
	Al	27	6444420.2	2.2	**50.7919**	0.548	1.1	ug/L	832	Standard
	Sc	45	27070.9	3.8				ug/L	25066	Standard
	Ti	47	20949.1	1.3	**109.9419**	1.971	1.8	ug/L	38	Standard
	V	51	311526.8	1.1	**53.0494**	0.891	1.7	ug/L	974	Standard
	Cr	52	336768.4	1.0	**52.8658**	0.756	1.4	ug/L	5792	Standard
	Cr	53	42255.5	1.3	**52.0803**	0.758	1.5	ug/L	347	Standard
	Mn	55	329477.3	1.5	**52.0991**	0.877	1.7	ug/L	1164	Standard
	Co	59	312334.4	0.0	**52.0675**	0.408	0.8	ug/L	303	Standard
	Ni	60	91099.4	0.7	**51.2423**	0.593	1.2	ug/L	291	Standard
	Cu	65	91621.9	0.6	**51.9330**	0.724	1.4	ug/L	173	Standard
	Zn	66	52807.9	0.3	**51.4877**	0.269	0.5	ug/L	130	Standard
>	Ge	72	484191.6	0.8				ug/L	491724	Standard
	As	75	53524.2	1.1	**51.8184**	0.213	0.4	ug/L	-25	Standard
	Se	82	5349.2	1.5	**52.4511**	0.359	0.7	ug/L	12	Standard
	Se-1	77	3620.4	0.5	**51.3775**	0.420	0.8	ug/L	57	Standard
>	Ga	71	158.3	20.1				mg/L	148	Standard
	Rb	85	848.4	15.5				ug/L	18	Standard
	Y	89	427339.9	1.3				ug/L	401845	Standard
>	Rh	103	25.0	52.9				ug/L	10	Standard
	Mo	98	233982.7	0.9	**95.3240**	1.240	1.3	ug/L	12	Standard
	Ag	107	293588.5	0.2	**48.7224**	0.264	0.5	ug/L	98	Standard
	Cd	111	95530.5	0.8	**49.7490**	0.284	0.6	mg/L	11	Standard
	Cd	114	235659.9	1.2	**50.4432**	0.294	0.6	ug/L	21	Standard
>	In	115	559275.1	0.7				ug/L	547487	Standard
	Sn	118	260234.3	0.9	**48.9865**	0.748	1.5	ug/L	450	Standard
	Sb	123	209964.5	0.6	**48.3856**	0.196	0.4	ug/L	105	Standard
	Ba	135	91831.8	1.3	**48.9125**	0.680	1.4	ug/L	111	Standard
	Ce	140	770.0	93.3				ug/L	107	Standard
>	Tb	159	881548.3	1.4				ug/L	890342	Standard
	Ho	165	23.3	101.3				ug/L	10	Standard
	Tl	203	366327.0	0.5	**50.7112**	0.180	0.4	ug/L	19	Standard
	Tl	205	314340.8	1.0	**53.0357**	0.359	0.7	ug/L	17	Standard
	Pb	206	230993.2	0.2	**49.6830**	0.169	0.3	ug/L	247	Standard
	Pb	207	210145.0	1.0	**49.7218**	0.386	0.8	ug/L	215	Standard
	Pb	208	829897.6	0.4	**52.4503**	0.511	1.0	ug/L	770	Standard
	U	238	292600.4	0.9	**51.0190**	0.183	0.4	ug/L	13	Standard
>	Bi	209	481073.7	0.6				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3695.5	9.2	**4.6760**	0.585	12.5	mg/L	35	Standard
K	39	1030.0	1.3	**4.6474**	0.224	4.8	mg/L	25	Standard
Ca	43	45.0	50.9	**2.9507**	4.449	150.8	mg/L	38	Standard
Fe	54	5550.5	2.5	**4.7422**	0.063	1.3	mg/L	126	Standard
Fe	57	1498.4	8.9	**4.3770**	0.384	8.8	mg/L	245	Standard
> **Sc-1**	45	27070.9	3.8				mg/L	25066	Standard
Cl	35	132009.2	0.2				ug/L	125857	Standard
Kr	83	3.0	33.3				ug/L	1	Standard
Br	81	1363.4	15.7				ug/L	1350	Standard
P	31	20323.6	3.2				ug/L	18393	Standard
S	34	4162.2	3.1				ug/L	3739	Standard
Sr	88	85.0	27.0				ug/L	78	Standard
C	12	60.0	33.3				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	58.4	103.7				mg/L	2	Standard
Ho-1	165	23.3	101.3				mg/L	10	Standard
Er	166	33.3	17.3				mg/L	23	Standard
I	127	1211.7	9.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	102.753		
Al	27	101.584		
Sc	45			
Ti	47	109.942		
V	51	106.099		
Cr	52	105.732		
Cr	53			
Mn	55	104.198		
Co	59	104.135		
Ni	60	102.485		
Cu	65	103.866		
Zn	66	102.975		
> Ge	72		98.468	
As	75	103.637		
Se	82	104.902		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	95.324		
Ag	107	97.445		
Cd	111	99.498		
Cd	114			
> In	115		102.153	
Sn	118	97.973		
Sb	123	96.771		
Ba	135	97.825		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.422		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.901		
U	238	102.038		
> Bi	209		95.614	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 21:30:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57000.4	1.8				ug/L	60176	Standard
	Be	9	11.7	89.2	**0.0083**	0.015	186.0	ug/L	5	Standard
	Al	27	2620.3	47.2	**0.0127**	0.010	80.8	ug/L	832	Standard
	Sc	45	26027.3	2.6				ug/L	25066	Standard
	Ti	47	31.7	11.1	**-0.0438**	0.018	40.1	ug/L	38	Standard
	V	51	1068.5	10.9	**0.0089**	0.018	206.9	ug/L	974	Standard
	Cr	52	5732.8	2.3	**-0.0411**	0.022	53.1	ug/L	5792	Standard
	Cr	53	288.3	8.2	**-0.0602**	0.031	51.8	ug/L	347	Standard
	Mn	55	2013.2	47.5	**0.0986**	0.147	148.9	ug/L	1164	Standard
	Co	59	286.0	4.2	**-0.0024**	0.002	79.0	ug/L	303	Standard
	Ni	60	134.0	14.7	**-0.1162**	0.011	9.1	ug/L	291	Standard
	Cu	65	138.7	6.2	**-0.0202**	0.005	23.4	ug/L	173	Standard
	Zn	66	178.0	11.4	**-0.0638**	0.018	28.8	ug/L	130	Standard
>	**Ge**	72	491825.9	0.7				ug/L	491724	Standard
	As	75	-42.4	64.1	**-0.0065**	0.026	398.9	ug/L	-25	Standard
	Se	82	14.2	62.7	**0.0442**	0.085	192.5	ug/L	12	Standard
	Se-1	77	51.7	16.5	**0.0814**	0.121	148.7	ug/L	57	Standard
>	**Ga**	71	160.0	5.4				mg/L	148	Standard
	Rb	85	65.0	55.5				ug/L	18	Standard
	Y	89	420079.4	1.3				ug/L	401845	Standard
>	**Rh**	103	20.0	43.3				ug/L	10	Standard
	Mo	98	229.1	28.0	**0.0908**	0.025	27.9	ug/L	12	Standard
	Ag	107	121.7	14.1	**0.0053**	0.003	59.9	ug/L	98	Standard
	Cd	111	14.3	8.4	**0.0029**	0.001	24.4	mg/L	11	Standard
	Cd	114	32.1	64.9	**0.0026**	0.005	175.9	ug/L	21	Standard
>	**In**	115	546820.4	1.4				ug/L	547487	Standard
	Sn	118	666.7	23.3	**0.0548**	0.031	57.4	ug/L	450	Standard
	Sb	123	349.2	26.6	**0.0749**	0.023	30.5	ug/L	105	Standard
	Ba	135	222.0	49.7	**0.0657**	0.061	93.2	ug/L	111	Standard
	Ce	140	125.0	70.8				ug/L	107	Standard
>	**Tb**	159	852501.8	2.1				ug/L	890342	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	60.0	17.6	**0.0048**	0.001	29.7	ug/L	19	Standard
	Tl	205	38.3	39.8	**0.0075**	0.003	35.3	ug/L	17	Standard
	Pb	206	294.3	6.3	**0.0089**	0.003	35.8	ug/L	247	Standard
	Pb	207	245.7	12.3	**0.0066**	0.007	110.7	ug/L	215	Standard
	Pb	208	963.3	10.3	**0.0016**	0.007	416.4	ug/L	770	Standard
	U	238	48.0	16.7	**0.0076**	0.001	18.1	ug/L	13	Standard
>	**Bi**	209	476870.2	2.1				ug/L	503143	Standard

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 21, 2016 21:32:18
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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	46.6	**0.0185**	0.027	145.6	mg/L	35	Standard
K	39	13.3	108.3	**-0.0485**	0.069	142.0	mg/L	25	Standard
Ca	43	36.7	20.8	**1.6572**	1.618	97.6	mg/L	38	Standard
Fe	54	138.9	10.0	**-0.0095**	0.014	151.2	mg/L	126	Standard
Fe	57	211.7	11.2	**-0.2847**	0.108	38.1	mg/L	245	Standard
> **Sc-1**	45	26027.3	2.6				mg/L	25066	Standard
Cl	35	131985.8	1.3				ug/L	125857	Standard
Kr	83	3.0	33.3				ug/L	1	Standard
Br	81	1333.4	5.0				ug/L	1350	Standard
P	31	20615.7	2.9				ug/L	18393	Standard
S	34	4127.2	2.0				ug/L	3739	Standard
Sr	88	78.3	32.8				ug/L	78	Standard
C	12	23.3	49.5				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.9	86.8				mg/L	2	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	10.0	173.2				mg/L	23	Standard
I	127	953.4	9.0				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.021	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 21, 2016 21:32:18
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Approved: June 22, 2016

Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.878
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.778
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Tuesday, June 21, 2016 21:32:18
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Approved: June 22, 2016

2.3.3 Metals CVAA Data (Mercury)

2.3.3.1 Summary Data

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-01	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW1-061016	**Prep Method:**	7470A	**Prep Date:**	06/14/2016 10:23
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/16/2016 14:15
Workgroup #:	WG573072	**Analyst:**	PDM	**Run Date:**	06/16/2016 15:31
Collect Date:	06/10/2016 07:55	**Dilution:**	1	**File ID:**	M7.061616.153110
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-02	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	MW3-061016	**Prep Method:**	7470A	**Prep Date:**	06/14/2016 10:23
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/16/2016 14:15
Workgroup #:	WG573072	**Analyst:**	PDM	**Run Date:**	06/16/2016 15:33
Collect Date:	06/10/2016 09:05	**Dilution:**	1	**File ID:**	M7.061616.153343
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-03	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	17WW08-061016	**Prep Method:**	7470A	**Prep Date:**	06/14/2016 10:23
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/16/2016 14:15
Workgroup #:	WG573072	**Analyst:**	PDM	**Run Date:**	06/16/2016 15:36
Collect Date:	06/10/2016 10:10	**Dilution:**	1	**File ID:**	M7.061616.153616
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060650-08	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18WW24F-061016	**Prep Method:**	7470A	**Prep Date:**	06/14/2016 10:23
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/16/2016 14:15
Workgroup #:	WG573072	**Analyst:**	PDM	**Run Date:**	06/16/2016 15:38
Collect Date:	06/10/2016 14:40	**Dilution:**	1	**File ID:**	M7.061616.153847
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16060650
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.3.3.2 QC Summary

Example Cold Vapor Mercury Calculations
Hydra AA Mercury Analyzer / CETAC M-7600 Quick Trace Mercury Analyzer

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and five standards.

2.0 Calculating the concentration (C) of an element in water using data from run log and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to Volume (mL)	40
Vi = Aliquot Volume (mL)	40
D = Manual dilution factor, if required (10X = 10)	1
Cx = Concentration of element in ppb (ug/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Ws} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to volume (mL)	40
Ws = Aliquot weight (g)	0.6
D = Manual dilution factor	1
Cx = Concentration of element in ug/kg	6.67

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

1 Cx = Concentration calculated as received (wet basis)	6.67
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	8.33

8.33 ug/kg = 0.00833 mg/kg

TCLP Non-Volatile

Analyst(s): AMA
Date: 06/13/16
Filter Lot #: 9486030
Microbac SOP: TCLP01 Rev #: 12

Analyst / Date		Analyst / Date	
AMA	6/13/16	CPD	6/14/16
Time On	Temp On °C	Time Off	Temp Off °C
1430	23.2	0817	21.9

Agitator Speed 30 ± 2 rpm ☑

Jug #	Sample #	Tests	Method	Fluid #	Matrix *	% Solid	Pretest pH Initial	Pretest pH Final	Int. Wt. (g)	Fluid Vol. (mL)	Final extract pH
14	06-0550-01	ME, SV, Pest, Herb	1311	FI-180	S	100	6.75	3.03	100.79	2016	5.23
D	06-0531-01	300	1312	SPLPFI			NA	NA	100.64	2012	9.60
	06-0532-01	300							50.77	1015	10.00
	-02	300							50.35	1007	9.95
	-03	300							50.70	1014	10.04
	-04	300							50.27	1005	9.95
25	06-0620-01	SV	1311	FI-180			8.84	1.86	100.78	2015	5.35
G-12	-02	SV		FI-180			10.25	1.96	100.48	2009	6.85
D	06-0633-01	ME		F2379			12.44	11.94	25.41	508	11.79
	06-0629-01	ME		FI-180			10.08	1.66	100.60	2012	5.14
NA	06-0537-01	ME, SV	1311	FI	O	<0.5	NA	NA	100	100	6.00
NA	06-0535-01	ME, SV, Pest, Herb	1311	FI	W	<0.5					10.00
NA	FBlk 1	ME, SV, Pest, Herb	1311	FI-180	NA	NA	NA	NA	100	100	4.88
	SPLPBlk 1	300	1312	SFI-62							4.22
	FBlk 2	ME	1311	F2-379							2.90

CPD 6/14/16

*Matrix Code: (S = solid, sand, soil or sludge) (P = paint) (O = organic) (W = water or aqueous waste)
D = Disposable plastic jug
TCLP Pretest weight will be 5.0 g (± 0.1) unless otherwise noted.
Temperature shall be maintained at 23° ± 2 for 18 ± 2 hours unless otherwise noted.

Comments: SX 06-0537-01 strong volatile odor, and 06-0535-01 soap odor.

Peer Review By: [signature]

Microbac Laboratories Inc.
Metals Digest Log

Workgroup: WG572607
Analyst: REK
Spike Analyst: REK
Method: 7470A
Run Date: 06/14/2016 10:23
Hotblock Start Temp: 94.98 @ 10:15
Hotblock End Temp: 94.9 @ 12:15
Instrument: HB2

SOP: ME404 Revison 17
Spike Solution: STD76587
Spike Witness: EMW
H2SO4 Lot #: COA18359
40 & 50 ML. DIGESTION TU COA18772
HNO3 Lot #: COA18905
KMnO4 1:1 Lot #: RGT37006
K2S2O8 1:1 Lot #: RGT37046
Mercury Water ICV Lot #: STD76589
HG H2O STDS 10PPM Lot #: STD76595

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Spike Amount	Due Date
1	WG572607-03	BLANK	1	40 mL	40 mL		
2	WG572434-01	FBLK1	17	4 mL	40 mL		
3	WG572434-02	FBLK2	17	4 mL	40 mL		
4	WG572607-04	LCS	1	40 mL	40 mL	4 mL	
5	L16060535-01	SAMP	17	4 mL	40 mL		06/20/16
6	L16060537-01	SAMP	17	1 mL	40 mL		06/20/16
7	L16060550-01	SAMP	17	4 mL	40 mL		06/16/16
8	WG572607-01	REF	1	40 mL	40 mL		
9	L16060564-01	RS01	1	40 mL	40 mL		06/20/16
10	L16060564-03	SAMP	1	40 mL	40 mL		06/20/16
11	WG572607-05	MS	1	36 mL	40 mL	4 mL	
12	L16060564-05	MS01	1	36 mL	40 mL	4 mL	06/20/16
13	WG572607-06	MSD	1	36 mL	40 mL	4 mL	
14	L16060564-07	SD01	1	36 mL	40 mL	4 mL	06/20/16
15	L16060616-01	SAMP	1	40 mL	40 mL		06/21/16
16	L16060616-02	SAMP	1	40 mL	40 mL		06/21/16
17	L16060616-04	SAMP	1	40 mL	40 mL		06/21/16
18	L16060629-01	SAMP	17	4 mL	40 mL		06/17/16
19	L16060633-01	SAMP	17	4 mL	40 mL		06/17/16
20	WG572607-02	REF	2	40 mL	40 mL		
21	L16060635-01	SAMP	2	40 mL	40 mL		06/21/16
22	L16060635-02	SAMP	2	40 mL	40 mL		06/21/16
23	L16060635-03	SAMP	2	40 mL	40 mL		06/21/16
24	L16060650-01	SAMP	1	40 mL	40 mL		06/24/16
25	L16060650-02	SAMP	1	40 mL	40 mL		06/24/16
26	L16060650-03	SAMP	1	40 mL	40 mL		06/24/16
27	L16060650-08	SAMP	1	40 mL	40 mL		06/24/16
28	WG572607-07	DUP	1	40 mL	40 mL		

L16060537-01	FILT. OIL

Analyst: [signature]

Reviewer: [signature]

HB_DIG - Modified 07/26/2012
PDF ID: 4807349
Report generated: 06/14/2016 14:08

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 061616B.CSV

Analyst1: PDM Analyst2: N/A

Method: 7470A/245.1 SOP: ME404 Rev: 17

Maintenance Log ID:

Calibration Std: STD76595 ICV Std: STD76589 Post Spike: STD76595

ICSA: N/A ICSAB: N/A Int. Std:

CCV: LLCCV: Tuning Sol :

Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 573072

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	M7.061616.140228	WG573073-01	Calibration Point		1		06/16/16 14:02
2	M7.061616.140459	WG573073-02	Calibration Point		1		06/16/16 14:04
3	M7.061616.140731	WG573073-03	Calibration Point		1		06/16/16 14:07
4	M7.061616.141003	WG573073-04	Calibration Point		1		06/16/16 14:10
5	M7.061616.141237	WG573073-05	Calibration Point		1		06/16/16 14:12
6	M7.061616.141510	WG573073-06	Calibration Point		1		06/16/16 14:15
7	M7.061616.141744	WG573073-07	Initial Calibration Verification		1		06/16/16 14:17
8	M7.061616.142015	WG573073-08	Initial Calib Blank		1		06/16/16 14:20
9	M7.061616.142248	WG573073-09	CCV		1		06/16/16 14:22
10	M7.061616.142518	WG573073-10	CCB		1		06/16/16 14:25
11	M7.061616.142749	WG572607-03	Method/Prep Blank	40/40	1		06/16/16 14:27
12	M7.061616.143020	WG572607-04	Laboratory Control S	40/40	1		06/16/16 14:30
13	M7.061616.143252	WG572434-01	Fluid Blank 1		1		06/16/16 14:32
14	M7.061616.143523	WG572434-02	Fluid Blank 2		1		06/16/16 14:35
15	M7.061616.143755	L16060535-01	FPL16027	4/40	1		06/16/16 14:37
16	M7.061616.144028	L16060537-01	FPL16026	1/40	1		06/16/16 14:40
17	M7.061616.144300	L16060550-01	J6F0362-01	4/40	1		06/16/16 14:43
18	M7.061616.144533	WG573072-01	Post Digestion Spike		1	L16060550-01	06/16/16 14:45
19	M7.061616.144806	WG572607-01	Reference Sample	40/40	1	L16060564-01	06/16/16 14:48
20	M7.061616.145040	L16060564-03	WBW-FD-06092016	40/40	1		06/16/16 14:50
21	M7.061616.145312	WG573073-11	CCV		1		06/16/16 14:53
22	M7.061616.145543	WG573073-12	CCB		1		06/16/16 14:55
23	M7.061616.145817	L16060564-05	WBW-MS-06092016	36/40	1	WG572607-05	06/16/16 14:58
24	M7.061616.150051	L16060564-07	WBW-MSD-06092016	36/40	1	WG572607-06	06/16/16 15:00
25	M7.061616.150321	L16060616-01	MW8-060916	40/40	1		06/16/16 15:03
26	M7.061616.150552	L16060616-02	18CPTMW26SW-060916	40/40	1		06/16/16 15:05
27	M7.061616.150822	L16060616-04	MW10F-060916	40/40	1		06/16/16 15:08
28	M7.061616.151053	L16060629-01	S6F0380-01	4/40	1		06/16/16 15:10
29	M7.061616.151325	L16060633-01	ALAN 17 BAGS	4/40	1		06/16/16 15:13
30	M7.061616.151557	WG572607-02	Reference Sample	40/40	1	L16060635-01	06/16/16 15:15
31	M7.061616.151829	WG572607-07	Duplicate	40/40	1	L16060635-01	06/16/16 15:18
32	M7.061616.152101	L16060635-02	OUTFALL 001	40/40	1		06/16/16 15:21
33	M7.061616.152333	WG573073-13	CCV		1		06/16/16 15:23
34	M7.061616.152604	WG573073-14	CCB		1		06/16/16 15:26

Page: 1 Approved: June 17, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 061616B.CSV

Analyst1: PDM Analyst2: N/A

Method: 7470A/245.1 SOP: ME404 Rev: 17

Maintenance Log ID:

Calibration Std: STD76595 ICV Std: STD76589 Post Spike: STD76595

ICSA: N/A ICSAB: N/A Int. Std:

CCV: LLCCV: Tuning Sol :

Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 573072

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	M7.061616.152837	L16060635-03	CATCH BASIN 29	40/40	1		06/16/16 15:28
36	M7.061616.153110	L16060650-01	MW1-061016	40/40	1		06/16/16 15:31
37	M7.061616.153343	L16060650-02	MW3-061016	40/40	1		06/16/16 15:33
38	M7.061616.153616	L16060650-03	17WW08-061016	40/40	1		06/16/16 15:36
39	M7.061616.153847	L16060650-08	18WW24F-061016	40/40	1		06/16/16 15:38
40	M7.061616.154405	WG573072-02	Post Digestion Spike		1	L16060650-08	06/16/16 15:44
41	M7.061616.154636	WG573072-03	Post Digestion Spike		1	L16060564-01	06/16/16 15:46
42	M7.061616.154908	WG573073-15	CCV		1		06/16/16 15:49
43	M7.061616.155139	WG573073-16	CCB		1		06/16/16 15:51

Page: 2 Approved: June 17, 2016

Kim H. Rhoden

Microbac Laboratories Inc.

Data Checklist

Date: 16-JUN-2016
Analyst: AMA
Analyst: NA
Method: 7470A/245.1
Instrument: CVAA1
Curve Workgroup: 573073
Runlog ID: 75732
Analytical Workgroups: 573072

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	0535, 0537, 0616, 0650
Client Forms	X
Level X	
Level 3	0535, 0537
Level 4	0616, 0650
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	AMA
Secondary Reviewer	KHR
Comments	

Primary Reviewer:
17-JUN-2016
Alexandra M. Alfred

Secondary Reviewer:
17-JUN-2016
Kym H. Rhoden

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-17-2016 14:46:02

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 7470A

AAB#: WG573072

Login Number: L16060650

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
MW1-061016	01	06/10/16					06/14/2016	4.1	28		06/16/16	6.3	28	
MW3-061016	02	06/10/16					06/14/2016	4.1	28		06/16/16	6.3	28	
17WW08-061016	03	06/10/16					06/14/2016	4	28		06/16/16	6.2	28	
18WW24F-061016	08	06/10/16					06/14/2016	3.8	28		06/16/16	6	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4812785
Report generated 06/17/2016 13:49

METHOD BLANK SUMMARY

Login Number: L16060650
Blank File ID: M7.061616.142749
Prep Date: 06/14/16 10:23
Analyzed Date: 06/16/16 14:27
Analyst: PDM

Work Group: WG573072
Blank Sample ID: WG572607-03
Instrument ID: CVAA1
Method: 7470A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572607-04	M7.061616.143020	06/16/16 14:30	01
DUP	WG572607-07	M7.061616.151829	06/16/16 15:18	01
MW1-061016	L16060650-01	M7.061616.153110	06/16/16 15:31	01
MW3-061016	L16060650-02	M7.061616.153343	06/16/16 15:33	01
17WW08-061016	L16060650-03	M7.061616.153616	06/16/16 15:36	01
18WW24F-061016	L16060650-08	M7.061616.153847	06/16/16 15:38	01

Report Name: BLANK_SUMMARY
PDF File ID: 4812786
Report generated 06/17/2016 13:49

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060650 Prep Date: 06/14/16 10:23 Sample ID: WG572607-03
Instrument ID: CVAA1 Run Date: 06/16/16 14:27 Prep Method: 7470A
File ID: M7.061616.142749 Analyst: PDM Method: 7470A
Workgroup (AAB#): WG573072 Matrix: Water Units: mg/L
Contract #: Cal ID: CVAA1-16-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Mercury	0.000100	0.000400	0.000100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4812787
17-JUN-2016 13:49

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060650 Run Date: 06/16/2016 Sample ID: WG572607-04
Instrument ID: CVAA1 Run Time: 14:30 Prep Method: 7470A
File ID: M7.061616.143020 Analyst: PDM Method: 7470A
Workgroup (AAB#): WG573072 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76587 Cal ID: CVAA1-16-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Mercury	0.00400	0.00443	111	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4812788
Report generated: 06/17/2016 13:49

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060650 Cal ID: CVAA1 - Worknum: WG573072
Instrument ID: CVAA1 Contract #: Method: 7470A
Parent ID: WG572607-01 File ID: M7.061616.144806 Dil: 1 Matrix: WATER
Sample ID: WG572607-05 MS File ID: M7.061616.145817 Dil: 1 Units: mg/L
Sample ID: WG572607-06 MSD File ID: M7.061616.150051 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Mercury	ND	0.00444	- 0.00000478	-0.108	0.00444	- 0.00000422	-0.0950	-12.3	80 - 120	20	*

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4812789
Report generated 06/17/2016 13:49

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060650 **Worknum:** WG573072
Instrument ID: CVAA1 **Method:** 7470A
Post Spike ID: WG573072-02 **File ID:** M7.061616.154405 **Dil:** 1 **Units:** ug/L
Sample ID: L16060650-08 **File ID:** M7.061616.153847 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MERCURY	1.04		0	U	1	103.9	85 - 115	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4812784
Report generated: 06/17/2016 13:49

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060650
Analytical Method: 7470A
ICAL Worknum: WG573073

Workgroup (AAB#): WG573072
Instrument ID: CVAA1
Initial Calibration Date: 06/16/2016 14:15

Analyte	WG573073-01		WG573073-02		WG573073-03		WG573073-04		WG573073-05		WG573073-06	
	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT
Mercury	0	77.17	0.200	3002	1.00	14230	2.00	28260	5.00	69600	10.0	132600

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4812791
Report generated 06/17/2016 13:49

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060650
Analytical Method: 7470A
ICAL Worknum: WG573073

Workgroup (AAB#): WG573072
Instrument ID: CVAA1
Initial Calibration Date: 06/16/2016 14:15

Analyte	R	Q
Mercury	0.9995	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4812791
Report generated 06/17/2016 13:49

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060650
Instrument ID: CVAA1
File ID: M7.061616.142015
Workgroup (AAB#): WG573072
Matrix: WATER

Run Date: 06/16/2016
Run Time: 14:20
Analyst: PDM
Cal ID: CVAA1 - 16-JUN-16

Sample ID: WG573073-08
Method: 7470A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
MERCURY	.1	.4	.1	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4812793
Report generated 06/17/2016 13:49

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573073-10
Instrument ID: CVAA1
Run Time: 14:25
Method: 7470A
File ID: M7.061616.142518
Analyst: PDM
Units: ug/L
Workgroup (AAB#): WG573072
Cal ID: CVAA1 - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812795
Report generated 06/17/2016 13:49

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573073-12
Instrument ID: CVAA1
Run Time: 14:55
Method: 7470A
File ID: M7.061616.145543
Analyst: PDM
Units: ug/L
Workgroup (AAB#): WG573072
Cal ID: CVAA1 - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812795
Report generated 06/17/2016 13:49

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573073-14
Instrument ID: CVAA1
Run Time: 15:26
Method: 7470A
File ID: M7.061616.152604
Analyst: PDM
Units: ug/L
Workgroup (AAB#): WG573072
Cal ID: CVAA1 - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812795
Report generated 06/17/2016 13:49

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573073-16
Instrument ID: CVAA1
Run Time: 15:51
Method: 7470A
File ID: M7.061616.155139
Analyst: PDM
Units: ug/L
Workgroup (AAB#): WG573072
Cal ID: CVAA1 - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812795
Report generated 06/17/2016 13:49

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573073-07
Instrument ID: CVAA1
Run Time: 14:17
Method: 7470A
File ID: M7.061616.141744
Analyst: PDM
Units: ug/L
Workgroup (AAB#): WG573072
Cal ID: CVAA1 - 16-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Mercury		2	2.07	103	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4812792
Report generated 06/17/2016 13:49

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573073-09
Instrument ID: CVAA1
Run Time: 14:22
Method: 7470A
File ID: M7.061616.142248
Analyst: PDM
QC Key: DOD4
Workgroup (AAB#): WG573072
Cal ID: CVAA1 - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00205	mg/L	103	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812794
Report generated 06/17/2016 13:49

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573073-11
Instrument ID: CVAA1
Run Time: 14:53
Method: 7470A
File ID: M7.061616.145312
Analyst: PDM
QC Key: DOD4
Workgroup (AAB#): WG573072
Cal ID: CVAA1 - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00215	mg/L	107	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812794
Report generated 06/17/2016 13:49

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573073-13
Instrument ID: CVAA1
Run Time: 15:23
Method: 7470A
File ID: M7.061616.152333
Analyst: PDM
QC Key: DOD4
Workgroup (AAB#): WG573072
Cal ID: CVAA1 - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00195	mg/L	97.3	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812794
Report generated 06/17/2016 13:49

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060650
Run Date: 06/16/2016
Sample ID: WG573073-15
Instrument ID: CVAA1
Run Time: 15:49
Method: 7470A
File ID: M7.061616.154908
Analyst: PDM
QC Key: DOD4
Workgroup (AAB#): WG573072
Cal ID: CVAA1 - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00199	mg/L	99.5	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812794
Report generated 06/17/2016 13:49

2.3.3.3 Raw Data

PDM CVAA1 245.1/7470/7471

Report Generated By CETAC QuickTrace
Analyst: VOA
Worksheet file: C:\Program Files (x86)\QuickTrace\Worksheets\061616B.wsz
Date Started: 6/16/2016 1:56:48 PM
Comment:

Results

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
Standard #0					STD	06/16/16 02:02:28 pm	0.0000	77	17.70		1.00
Replicates	68.6	96.4	77.4	66.4							
Standard #1 (0.2 ug/L)					STD	06/16/16 02:04:59 pm	0.2000	3002	1.37		1.00
Replicates	2957.3	2985.0	3013.7	3053.4							
Standard #2 (1.0 ug/L)					STD	06/16/16 02:07:31 pm	1.0000	14233	2.74		1.00
Replicates	13767.0	14078.2	14436.7	14650.8							
Standard #3 (2.0 ug/L)					STD	06/16/16 02:10:03 pm	2.0000	28260	0.21		1.00
Replicates	28177.4	28303.2	28307.2	28254.1							
Standard #4 (5.0 ug/L)					STD	06/16/16 02:12:37 pm	5.0000	69596	0.17		1.00
Replicates	69421.7	69619.7	69676.5	69664.9							
Standard #5 (10.0 ug/L)					STD	06/16/16 02:15:10 pm	10.0000	132584	0.59		1.00
Replicates	131524.8	132472.7	133031.0	133307.0							

Calibration

Equation: A = 1014.787 + 13278.240C
R2: 0.99939
SEE: 1420.4820
Flags:

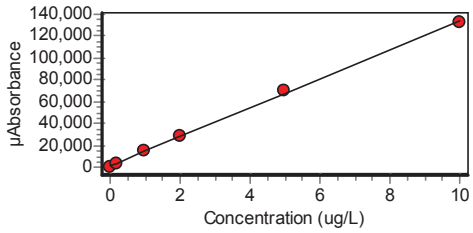

ICV					ICV	06/16/16 02:17:44 pm	2.0690	28486	0.15		1.00
Replicates	28443.8	28541.8	28496.7	28462.5							
% Recovery	103.45										

Approved: June 17, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
ICB					ICB	06/16/16 02:20:15 pm	-0.0754	13	100.37		1.00
Replicates	11.1	5.2	3.7	32.1							
CCV					CCV	06/16/16 02:22:48 pm	2.0500	28237	0.36		1.00
Replicates	28092.3	28241.2	28295.4	28317.5							
% Recovery	102.51										
CCB					CCB	06/16/16 02:25:18 pm	-0.0729	47	22.22		1.00
Replicates	35.9	47.2	61.2	44.7							
WG572607-03					MB	06/16/16 02:27:49 pm	-0.0727	49	17.41		1.00
Replicates	52.1	59.2	47.4	38.7							
WG572607-04					LCS	06/16/16 02:30:20 pm	4.4320	59866	0.24		1.00
Replicates	59655.9	59896.4	59975.4	59936.9							
% Recovery	110.80										
WG572434-01					UNK	06/16/16 02:32:52 pm	-0.0787	-31	48.70		1.00
Replicates	-39.9	-19.2	-46.4	-16.5							
WG572434-02					UNK	06/16/16 02:35:23 pm	-0.0744	27	34.73		1.00
Replicates	40.7	19.6	21.9	26.7							
L1606053501					UNK	06/16/16 02:37:55 pm	-0.0638	168	9.75		1.00
Replicates	151.8	185.4	157.1	179.1							
L1606053701					UNK	06/16/16 02:40:28 pm	0.1418	2897	5.42		1.00
Replicates	2705.0	2847.6	2967.3	3069.4							
L1606055001					UNK	06/16/16 02:43:00 pm	-0.0827	-83	19.72		1.00
Replicates	-81.4	-60.8	-98.4	-91.3							
WG572					SPK	06/16/16 02:45:33 pm	1.0590	15072	0.80		1.00
Replicates	15161.4	15167.3	15052.5	14908.7							
% Recovery	114.14										
L1606056401					UNK	06/16/16 02:48:06 pm	-0.0308	606	3.59		1.00
Replicates	581.4	597.1	612.3	632.5							

Approved: June 17, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1606056403					UNK	06/16/16 02:50:40 pm	-0.0344	558	1.89		1.00
Replicates	573.2	551.1	551.6	554.6							
CCV					CCV	06/16/16 02:53:12 pm	2.1450	29498	0.49		1.00
Replicates	29285.9	29529.8	29606.5	29570.2							
% Recovery	107.26										
CCB					CCB	06/16/16 02:55:43 pm	-0.0721	57	24.06		1.00
Replicates	59.0	41.5	75.0	54.5							
WG572607-05					MSK	06/16/16 02:58:17 pm	-0.0043	958	1.62	N	1.00
Replicates	945.6	946.5	962.0	978.5							
% Recovery	0.75										
WG572607-06					MSDUP	06/16/16 03:00:51 pm	-0.0038	964	1.56	D	1.00
Replicates	946.2	973.6	958.1	979.3							
% Recovery	0.77	RPD -11.47									
L1606061601					UNK	06/16/16 03:03:21 pm	-0.0689	99	17.37		1.00
Replicates	76.3	118.1	101.6	101.5							
L1606061602					UNK	06/16/16 03:05:52 pm	-0.0694	93	4.93		1.00
Replicates	99.1	94.7	91.2	88.4							
L1606061604					UNK	06/16/16 03:08:22 pm	-0.0715	65	21.79		1.00
Replicates	61.5	51.2	85.0	63.4							
L1606062901					UNK	06/16/16 03:10:53 pm	-0.0738	34	37.19		1.00
Replicates	41.7	26.8	47.8	20.4							
L1606063301					UNK	06/16/16 03:13:25 pm	-0.0700	85	13.73		1.00
Replicates	100.7	75.3	77.3	88.1							
L1606063501					UNK	06/16/16 03:15:57 pm	-0.0720	59	32.38		1.00
Replicates	53.2	53.4	85.8	41.8							
WG572607-07					DUP	06/16/16 03:18:29 pm	-0.0725	52	18.54		1.00
Replicates	49.4	44.9	46.9	65.9							
		RPD 0.00									

Approved: June 17, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1606063502					UNK	06/16/16 03:21:01 pm	-0.0713	68	28.27		1.00
Replicates	55.2	78.1	49.8	90.9							
CCV					CCV	06/16/16 03:23:33 pm	1.9450	26837	0.60		1.00
Replicates	26641.3	26776.5	26924.3	27006.6							
% Recovery	97.24										
CCB					CCB	06/16/16 03:26:04 pm	-0.0744	27	70.36		1.00
Replicates	22.1	47.2	3.0	35.4							
L1606063503					UNK	06/16/16 03:28:37 pm	-0.0667	129	5.00		1.00
Replicates	125.1	122.7	137.2	130.5							
L1606065001					UNK	06/16/16 03:31:10 pm	-0.0698	89	6.05		1.00
Replicates	86.0	84.9	96.5	87.0							
L1606065002					UNK	06/16/16 03:33:43 pm	-0.0674	120	12.89		1.00
Replicates	114.1	141.9	118.9	105.7							
L1606065003					UNK	06/16/16 03:36:16 pm	-0.0667	129	3.60		1.00
Replicates	131.1	132.7	122.2	128.3							
L1606065008					UNK	06/16/16 03:38:47 pm	-0.0732	42	37.91		1.00
Replicates	24.8	48.9	34.2	61.2							
WG572-02					SPK	06/16/16 03:44:05 pm	1.0390	14814	0.54		1.00
Replicates	14719.8	14774.9	14876.4	14885.8							
% Recovery	111.25										
WG572-02					SPK	06/16/16 03:46:36 pm	0.5972	8945	1.15	W	1.00
Replicates	8796.5	8955.3	9019.5	9007.8							
% Recovery	67.05										
CCV					CCV	06/16/16 03:49:08 pm	1.9900	27442	0.33		1.00
Replicates	27310.5	27453.2	27488.6	27515.4							
% Recovery	99.51										
CCB					CCB	06/16/16 03:51:39 pm	-0.0754	14	170.01		1.00
Replicates	21.6	41.6	-15.3	8.2							

Approved: June 17, 2016
Alexandra M. Alfred

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
July 1, 2016

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BNB - Brandi N. Bentley
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJQ - Cameron J. Quick
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
CV - Carl Volkman
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
EMW - ERIC M. WILKEN
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LJH - Lacey J. Hendershot
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
NPH - Natalie P. Hart
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
July 01, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
July 01, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Stephanie Mossburg	Project Manager: Debra Richmann	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): Scott Beesinger	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205	pH:	Program:	
Turn Around Time: STANDARD			
Project Name/Location: Longhorn		ERPIMS REQUIRED FIELDS	
Project Number: 60274185.0013BH 1824 MR10			

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Total Metals	1,4 - DIOXANE					SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 18/24	MW1-061016			6/10/16	0755		✓	W	5	✓	✓	✓										
	MW3-061016			6/10/16	0905		✓	W	5	✓	✓	✓										
	17WW08-061016			6/10/16	1010		✓	W	5	✓	✓	✓										
	130-061016			6/10/16	1105		✓	W	4	✓	✓											
	130FD-061016			6/10/16	1105		✓	W	4	✓	✓											
	MW12-061016			6/10/16	1330		✓	W	4	✓	✓											
	18WW24-061016			6/10/16	1440		✓	W	5	✓	✓	✓										
	18WW24F-061016			6/10/16	1440		✓	W	1			✓										
	TRIP BLANK			6/10/16			✓	W	2	✓												

Comments: **STANDARD TAT**

Microbac OVD
Received: 06/11/2016 11:18
By: BRENDA GREENWALT 221000087089
Brenda Greenwalt

	Date	Time		Date	Time	
Relinquished by: (Signature) Scott Beesinger	6/10/16	1545	R			Relinquished by: (Signature)
Relinquished by: (Signature)	Date	Time	R (S		Time	Remarks:

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060650
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 24-JUN-2016

Samplenum	Container ID	Products
L16060650-01	758863	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-JUN-2016 10:38	CLS		
2	ANALYZ	V1	ORG4	14-JUN-2016 07:17	AWE	CLS	
3	STORE	ORG4	A1	27-JUN-2016 16:30	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-JUN-2016 10:38	CLS		
2	ANALYZ	V1	ORG4	14-JUN-2016 07:17	AWE	CLS	
3	STORE	ORG4	A1	27-JUN-2016 16:30	CLS	JST	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-JUN-2016 10:38	CLS		
2	ANALYZ	V1	ORG4	14-JUN-2016 07:17	AWE	CLS	
3	STORE	ORG4	A1	27-JUN-2016 16:30	CLS	JST	

Samplenum	Container ID	Products
L16060650-01	758864	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-JUN-2016 10:38	CLS		
2	ANALYZ	W1	SEM	22-JUN-2016 14:47	JWR	CLS	
3	STORE	SEM	A1	24-JUN-2016 12:04	BRG	JWR	

Samplenum	Container ID	Products
L16060650-01	758865	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-JUN-2016 10:38	CLS		
2	PREP	W1	DIG	13-JUN-2016 13:20	ERP	BRG	
3	STORE	DIG	A1	16-JUN-2016 14:03	BRG	ERP	
4	ANALYZ*	DIG	METALS	16-JUN-2016 16:02	PDM	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060650
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 24-JUN-2016

Samplenum	Container ID	Products
L16060650-02	758866	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-JUN-2016 10:38	CLS		
2	ANALYZ	V1	ORG4	14-JUN-2016 07:17	AWE	CLS	
3	STORE	ORG4	A1	27-JUN-2016 16:30	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-JUN-2016 10:38	CLS		
2	ANALYZ	V1	ORG4	14-JUN-2016 07:17	AWE	CLS	
3	STORE	ORG4	A1	27-JUN-2016 16:31	CLS	JST	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-JUN-2016 10:38	CLS		
2	ANALYZ	V1	ORG4	14-JUN-2016 07:17	AWE	CLS	
3	STORE	ORG4	A1	27-JUN-2016 16:31	CLS	JST	

Samplenum	Container ID	Products
L16060650-02	758867	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-JUN-2016 10:38	CLS		
2	ANALYZ	W1	SEM	22-JUN-2016 14:48	JWR	CLS	
3	STORE	SEM	A1	24-JUN-2016 12:04	BRG	JWR	

Samplenum	Container ID	Products
L16060650-02	758868	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	DIG	13-JUN-2016 10:38	CLS		
2	STORE	DIG	A1	16-JUN-2016 14:03	BRG	ERP	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060650
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 24-JUN-2016

Samplenum	Container ID	Products
L16060650-03	758869	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-JUN-2016 10:38	CLS		
2	ANALYZ	V1	ORG4	14-JUN-2016 07:17	AWE	CLS	
3	STORE	ORG4	A1	27-JUN-2016 16:30	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-JUN-2016 10:38	CLS		
2	ANALYZ	V1	ORG4	14-JUN-2016 07:17	AWE	CLS	
3	STORE	ORG4	A1	27-JUN-2016 16:30	CLS	JST	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	ORG4	13-JUN-2016 10:38	CLS		
2	STORE	ORG4	A1	27-JUN-2016 16:30	CLS	JST	

Samplenum	Container ID	Products
L16060650-03	758870	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-JUN-2016 10:38	CLS		
2	ANALYZ	W1	SEM	22-JUN-2016 14:48	JWR	CLS	
3	STORE	SEM	A1	24-JUN-2016 12:04	BRG	JWR	

Samplenum	Container ID	Products
L16060650-03	758871	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-JUN-2016 10:38	CLS		
2	PREP	W1	DIG	13-JUN-2016 13:20	ERP	BRG	
3	STORE	DIG	A1	16-JUN-2016 14:03	BRG	ERP	
4	ANALYZ*	DIG	METALS	16-JUN-2016 16:02	PDM	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060650
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 24-JUN-2016

Samplenum	Container ID	Products
L16060650-04	758872	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-JUN-2016 10:38	CLS		
2	ANALYZ	V1	ORG4	14-JUN-2016 07:17	AWE	CLS	
3	STORE	ORG4	A1	27-JUN-2016 16:30	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-JUN-2016 10:38	CLS		
2	ANALYZ	V1	ORG4	14-JUN-2016 07:17	AWE	CLS	
3	STORE	ORG4	A1	27-JUN-2016 16:31	CLS	JST	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-JUN-2016 10:38	CLS		
2	ANALYZ	V1	ORG4	14-JUN-2016 07:17	AWE	CLS	
3	STORE	ORG4	A1	27-JUN-2016 16:31	CLS	JST	

Samplenum	Container ID	Products
L16060650-04	758873	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-JUN-2016 10:38	CLS		
2	ANALYZ	W1	SEM	22-JUN-2016 14:48	JWR	CLS	
3	STORE	SEM	A1	24-JUN-2016 12:04	BRG	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060650
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 24-JUN-2016

Samplenum	Container ID	Products
L16060650-05	758874	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-JUN-2016 10:38	CLS		
2	ANALYZ	V1	ORG4	14-JUN-2016 07:17	AWE	CLS	
3	STORE	ORG4	A1	27-JUN-2016 16:30	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-JUN-2016 10:38	CLS		
2	ANALYZ	V1	ORG4	14-JUN-2016 07:17	AWE	CLS	
3	STORE	ORG4	A1	27-JUN-2016 16:30	CLS	JST	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-JUN-2016 10:38	CLS		
2	ANALYZ	V1	ORG4	14-JUN-2016 07:17	AWE	CLS	
3	STORE	ORG4	A1	27-JUN-2016 16:30	CLS	JST	

Samplenum	Container ID	Products
L16060650-05	758875	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-JUN-2016 10:38	CLS		
2	ANALYZ	W1	SEM	22-JUN-2016 14:48	JWR	CLS	
3	STORE	SEM	A1	24-JUN-2016 12:04	BRG	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060650
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 24-JUN-2016

Samplenum	Container ID	Products
L16060650-06	758876	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-JUN-2016 10:38	CLS		
2	ANALYZ	V1	ORG4	14-JUN-2016 07:17	AWE	CLS	
3	STORE	ORG4	A1	27-JUN-2016 16:30	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-JUN-2016 10:38	CLS		
2	ANALYZ	V1	ORG4	14-JUN-2016 07:17	AWE	CLS	
3	STORE	ORG4	A1	27-JUN-2016 16:31	CLS	JST	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-JUN-2016 10:38	CLS		
2	ANALYZ	V1	ORG4	14-JUN-2016 07:17	AWE	CLS	
3	STORE	ORG4	A1	27-JUN-2016 16:31	CLS	JST	

Samplenum	Container ID	Products
L16060650-06	758877	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-JUN-2016 10:38	CLS		
2	ANALYZ	W1	SEM	22-JUN-2016 14:48	JWR	CLS	
3	STORE	SEM	A1	24-JUN-2016 12:04	BRG	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060650
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 24-JUN-2016

Samplenum	Container ID	Products
L16060650-07	758878	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-JUN-2016 10:38	CLS		
2	ANALYZ	V1	ORG4	14-JUN-2016 07:17	AWE	CLS	
3	STORE	ORG4	A1	27-JUN-2016 16:30	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-JUN-2016 10:38	CLS		
2	ANALYZ	V1	ORG4	14-JUN-2016 07:17	AWE	CLS	
3	STORE	ORG4	A1	27-JUN-2016 16:30	CLS	JST	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-JUN-2016 10:38	CLS		
2	ANALYZ	V1	ORG4	14-JUN-2016 07:17	AWE	CLS	
3	STORE	ORG4	A1	27-JUN-2016 16:30	CLS	JST	

Samplenum	Container ID	Products
L16060650-07	758879	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-JUN-2016 10:38	CLS		
2	ANALYZ	W1	SEM	22-JUN-2016 14:48	JWR	CLS	
3	STORE	SEM	A1	24-JUN-2016 12:04	BRG	JWR	

Samplenum	Container ID	Products
L16060650-07	758880	

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-JUN-2016 10:38	CLS		

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060650
Account: 2551
Project: 2551.096
Samples: 9
Due Date: 24-JUN-2016

Samplenum	Container ID	Products
L16060650-08	758881	K MG MN-MS NA NI-MS PB-MS SB-MS SE-AX TL-MS V-

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	13-JUN-2016 10:38	CLS		
2	PREP	W1	DIG	13-JUN-2016 13:20	ERP	BRG	
3	STORE	DIG	A1	16-JUN-2016 14:03	BRG	ERP	
4	ANALYZ*	DIG	METALS	16-JUN-2016 16:02	PDM	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060650-09	758882	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-JUN-2016 10:38	CLS		
2	ANALYZ	V1	ORG4	14-JUN-2016 07:17	AWE	CLS	
3	STORE	ORG4	A1	27-JUN-2016 16:31	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	13-JUN-2016 10:38	CLS		
2	ANALYZ	V1	ORG4	14-JUN-2016 07:17	AWE	CLS	
3	STORE	ORG4	A1	27-JUN-2016 16:31	CLS	JST	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16060730

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Michelle Taylor – Client Services Specialist
(740) 373-4071
Michelle.Taylor@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on July 01 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00113060	I	4.0		J2317165027	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18CPTMW14-061316	L16060730-01	06/13/2016 09:15	06/14/2016 10:15
18CPTMW14FD-061316	L16060730-02	06/13/2016 09:15	06/14/2016 10:15
18CPTMW24-061316	L16060730-03	06/13/2016 10:35	06/14/2016 10:15
TRIP BLANK	L16060730-04	06/13/2016 00:01	06/14/2016 10:15

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16060730
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	8260
Prep Batch Number(s):	573038	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-29 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2016-06-29 19:42:11

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	8260
Prep Batch Number(s):	573038	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-29 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?		X			1
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	8260
Prep Batch Number(s):	573038	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-29 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	8260
Prep Batch Number(s):	573038	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-29 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			2
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	8260
Prep Batch Number(s):	573038	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-29 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	8260
Prep Batch Number(s):	573038	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-29 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1)1,2-Dichloroethane-d4 exceeded the UCL in the analysis of sample 03. Sample matrix interference was confirmed by reanalysis.

2)Bromomethane and 2,2-Dichloropropane exceeded the UCL in the CCV.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572806	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-23 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-06-23 18:19:27

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572806	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-23 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572806	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-23 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572806	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-23 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572806	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-23 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572806	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-23 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG573791	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-24 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Wade DeLong	Wade DeLong	Chemist I	2016-06-24 15:26:38

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG573791	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-24 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG573791	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-24 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG573791	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-24 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG573791	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-24 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG573791	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-24 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572929	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-07-01 00:41:16

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572929	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?		X			ER#3
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572929	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572929	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			ER#1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?		X			ER#2
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572929	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG572929	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - The closing low level calibration check analyzed on 23-Jun-2016 at 15:12 yielded a noncompliant result for selenium. However, all the samples were nondetected for selenium. With permission from project manager, selenium was reported and no further action was taken.

ER#2 - The continuing calibration blank analyzed on 23-JUN-2016 at 15:08 yielded a result for selenium that was above the method detection limit. However, all client samples were below the reporting detection limit for selenium, therefore, no further action was taken.

ER#3 - Client sample 01 required dilution analysis in order to obtain results for calcium and sodium within the calibration range. Client sample 02 required dilution analysis in order to obtain results for calcium and sodium within the calibration range. Client sample 03 required dilution analysis in order to obtain results for calcium, magnesium, and sodium within the calibration range.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG572730, WG573483	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-07-01 00:38:04

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG572730, WG573483	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?		X			ER#3
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?		X			ER#1
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG572730, WG573483	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?		X			ER#2
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG572730, WG573483	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG572730, WG573483	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG572730, WG573483	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - The method blank analyzed on 16-JUN-2016 yielded a result for arsenic which exceeded the reporting detection limit. All QA/QC and client samples were redigested and reanalyzed for arsenic with a compliant method blank. The latter results were reported under WG573483.

ER#2 - The laboratory control sample analysis performed on 16-JUN-2016 yielded a noncompliant result for silver. All QA/QC and client samples were redigested and reanalyzed for silver with a compliant LCS. The latter results were reported under WG573483.

ER#3 - Client samples 01, 02, and 03 required dilution analyses in order to obtain results for barium within the calibration range. Client samples 03 required dilution analysis in order to obtain a result for manganese within the calibration range.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572795	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-07-01 00:37:19

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572795	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572795	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572795	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572795	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060730
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572795	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-01 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW14-061316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573038	**Analyst:**	FJB	**Run Date:**	06/17/2016 00:12
Collect Date:	06/13/2016 09:15	**Dilution:**	1	**File ID:**	8M413052
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.524	J	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	2.20		1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.66		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	25.7		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.422	J	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	212		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	118	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	101	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW14-061316	**Prep Method:**	3520C	**Prep Date:**	06/15/2016 18:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573365	**Analyst:**	MES	**Run Date:**	06/21/2016 15:11
Collect Date:	06/13/2016 09:15	**Dilution:**	1	**File ID:**	15M18471
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	50.2	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW14-061316	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/23/2016 13:42
Collect Date:	06/13/2016 09:15	**Dilution:**	500	**File ID:**	1LM.LM35455
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	505		200	100	50.0

Certificate of Analysis

Sample #:	L16060730-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW14-061316	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 13:57
Collect Date:	06/13/2016 09:15	**Dilution:**	1	**File ID:**	T3.062316.135724
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.400		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	0.0599	J	0.200	0.100	0.0500
Magnesium, Total	7439-95-4	12.5		1.00	0.500	0.250
Potassium, Total	7440-09-7	33.5		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW14-061316	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 14:40
Collect Date:	06/13/2016 09:15	**Dilution:**	100	**File ID:**	T3.062316.144053
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	490		50.0	25.0	12.5
Sodium, Total	7440-23-5	378		100	50.0	25.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW14-061316	**Prep Method:**	3015	**Prep Date:**	06/21/2016 07:48
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/21/2016 12:44
Workgroup #:	WG573557	**Analyst:**	BKT	**Run Date:**	06/21/2016 15:51
Collect Date:	06/13/2016 09:15	**Dilution:**	1	**File ID:**	NI.062116.155109
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Arsenic, Total	7440-38-2	0.00659		0.00200	0.00100	0.000500
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW14-061316	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 20:29
Collect Date:	06/13/2016 09:15	**Dilution:**	1	**File ID:**	NI.061616.202950
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.0803		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00346		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00404		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.00644		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.0116		0.00800	0.00400	0.00200
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00697		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW14-061316	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 21:35
Collect Date:	06/13/2016 09:15	**Dilution:**	50	**File ID:**	NI.061616.213546
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	2.42		0.300	0.150	0.0750

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-01	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18CPTMW14-061316	**Prep Method:**	7470A	**Prep Date:**	06/15/2016 10:55
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/17/2016 09:53
Workgroup #:	WG573131	**Analyst:**	CJQ	**Run Date:**	06/17/2016 11:03
Collect Date:	06/13/2016 09:15	**Dilution:**	1	**File ID:**	M7.061716.110308
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW14FD-061316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573038	**Analyst:**	FJB	**Run Date:**	06/17/2016 00:41
Collect Date:	06/13/2016 09:15	**Dilution:**	1	**File ID:**	8M413053
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.509	J	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	2.13		1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.52		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	25.1		1.00	0.500	0.250

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.464	J	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	208		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	120	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	98.0	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW14FD-061316	**Prep Method:**	3520C	**Prep Date:**	06/15/2016 18:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573365	**Analyst:**	MES	**Run Date:**	06/21/2016 15:34
Collect Date:	06/13/2016 09:15	**Dilution:**	1	**File ID:**	15M18472
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	65.8	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW14FD-061316	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/23/2016 14:01
Collect Date:	06/13/2016 09:15	**Dilution:**	500	**File ID:**	1LM.LM35456
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	520		200	100	50.0

Certificate of Analysis

Sample #:	L16060730-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW14FD-061316	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 14:01
Collect Date:	06/13/2016 09:15	**Dilution:**	1	**File ID:**	T3.062316.140125
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.377		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	0.0756	J	0.200	0.100	0.0500
Magnesium, Total	7439-95-4	13.5		1.00	0.500	0.250
Potassium, Total	7440-09-7	33.6		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW14FD-061316	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 14:44
Collect Date:	06/13/2016 09:15	**Dilution:**	100	**File ID:**	T3.062316.144451
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	477		50.0	25.0	12.5
Sodium, Total	7440-23-5	373		100	50.0	25.0

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW14FD-061316	**Prep Method:**	3015	**Prep Date:**	06/21/2016 07:48
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/21/2016 12:44
Workgroup #:	WG573557	**Analyst:**	BKT	**Run Date:**	06/21/2016 16:00
Collect Date:	06/13/2016 09:15	**Dilution:**	1	**File ID:**	NI.062116.160047
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Arsenic, Total	7440-38-2	0.00731		0.00200	0.00100	0.000500
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW14FD-061316	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 20:40
Collect Date:	06/13/2016 09:15	**Dilution:**	1	**File ID:**	NI.061616.204020
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.0794		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00333		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00420		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.00655		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.0113		0.00800	0.00400	0.00200
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00668		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW14FD-061316	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 21:38
Collect Date:	06/13/2016 09:15	**Dilution:**	50	**File ID:**	NI.061616.213859
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	2.47		0.300	0.150	0.0750

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-02	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18CPTMW14FD-061316	**Prep Method:**	7470A	**Prep Date:**	06/15/2016 10:55
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/17/2016 09:53
Workgroup #:	WG573131	**Analyst:**	CJQ	**Run Date:**	06/17/2016 11:10
Collect Date:	06/13/2016 09:15	**Dilution:**	1	**File ID:**	M7.061716.111043
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW24-061316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573038	**Analyst:**	FJB	**Run Date:**	06/16/2016 22:17
Collect Date:	06/13/2016 10:35	**Dilution:**	1	**File ID:**	8M413048
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	Q	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	Q	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	Q	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	Q	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	Q	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	Q	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	Q	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	Q	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	Q	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	Q	2.00	1.00	0.500
Chloroform	67-66-3	0.250	Q	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	Q	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	Q	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	Q	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	Q	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	Q	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	Q	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	Q	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	Q	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	Q	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	26.0	J	1.00	0.500	0.250

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	Q	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	Q	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	Q	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	Q	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	Q	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	Q	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	Q	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	Q	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	Q	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	Q	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	Q	1.00	0.250	0.125
Styrene	100-42-5	0.250	Q	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	Q	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	Q	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	Q	1.00	0.500	0.250
Toluene	108-88-3	0.500	Q	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	Q	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	Q	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	Q	1.00	0.500	0.250
Trichloroethene	79-01-6	12.7	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	Q	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	Q	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	Q	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	Q	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	Q	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	Q	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	121	70	120	*
Toluene-d8	104	85	120	
4-Bromofluorobenzene	101	75	120	

J	The reported result is an estimated value.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW24-061316	**Prep Method:**	3520C	**Prep Date:**	06/15/2016 18:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573365	**Analyst:**	MES	**Run Date:**	06/21/2016 16:19
Collect Date:	06/13/2016 10:35	**Dilution:**	1	**File ID:**	15M18474
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	45.0	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW24-061316	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/23/2016 00:03
Collect Date:	06/13/2016 10:35	**Dilution:**	50	**File ID:**	1LM.LM35438
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	99.0		20.0	10.0	5.00

Certificate of Analysis

Sample #:	L16060730-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW24-061316	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 14:05
Collect Date:	06/13/2016 10:35	**Dilution:**	1	**File ID:**	T3.062316.140527
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.109	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	9.62		0.200	0.100	0.0500
Potassium, Total	7440-09-7	5.86		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW24-061316	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 14:48
Collect Date:	06/13/2016 10:35	**Dilution:**	100	**File ID:**	T3.062316.144849
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	431		50.0	25.0	12.5
Magnesium, Total	7439-95-4	265		100	50.0	25.0
Sodium, Total	7440-23-5	1090		100	50.0	25.0

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW24-061316	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 20:43
Collect Date:	06/13/2016 10:35	**Dilution:**	1	**File ID:**	NI.061616.204331
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00409		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00662		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00296	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0163		0.00800	0.00400	0.00200
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00192	J	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW24-061316	**Prep Method:**	3015	**Prep Date:**	06/21/2016 07:48
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/21/2016 12:44
Workgroup #:	WG573557	**Analyst:**	BKT	**Run Date:**	06/21/2016 16:03
Collect Date:	06/13/2016 10:35	**Dilution:**	1	**File ID:**	NI.062116.160358
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Arsenic, Total	7440-38-2	0.0161		0.00200	0.00100	0.000500
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW24-061316	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 21:42
Collect Date:	06/13/2016 10:35	**Dilution:**	50	**File ID:**	NI.061616.214210
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	10.3		0.300	0.150	0.0750
Manganese, Total	7439-96-5	0.563		0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-03	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18CPTMW24-061316	**Prep Method:**	7470A	**Prep Date:**	06/15/2016 10:55
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/17/2016 09:53
Workgroup #:	WG573131	**Analyst:**	CJQ	**Run Date:**	06/17/2016 11:13
Collect Date:	06/13/2016 10:35	**Dilution:**	1	**File ID:**	M7.061716.111316
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573038	**Analyst:**	FJB	**Run Date:**	06/16/2016 18:25
Collect Date:	06/13/2016 00:01	**Dilution:**	1	**File ID:**	8M413040
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	114	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	102	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW14-061316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573038	**Analyst:**	FJB	**Run Date:**	06/17/2016 00:12
Collect Date:	06/13/2016 09:15	**Dilution:**	1	**File ID:**	8M413052
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.524	J	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	2.20		1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.66		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	25.7		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.422	J	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	212		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	118	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	101	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW14FD-061316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573038	**Analyst:**	FJB	**Run Date:**	06/17/2016 00:41
Collect Date:	06/13/2016 09:15	**Dilution:**	1	**File ID:**	8M413053
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.509	J	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	2.13		1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.52		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	25.1		1.00	0.500	0.250

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.464	J	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	208		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	120	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	98.0	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW24-061316	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573038	**Analyst:**	FJB	**Run Date:**	06/16/2016 22:17
Collect Date:	06/13/2016 10:35	**Dilution:**	1	**File ID:**	8M413048
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	Q	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	Q	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	Q	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	Q	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	Q	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	Q	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	Q	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	Q	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	Q	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	Q	2.00	1.00	0.500
Chloroform	67-66-3	0.250	Q	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	Q	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	Q	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	Q	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	Q	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	Q	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	Q	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	Q	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	Q	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	Q	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	26.0	J	1.00	0.500	0.250

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	Q	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	Q	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	Q	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	Q	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	Q	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	Q	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	Q	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	Q	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	Q	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	Q	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	Q	1.00	0.250	0.125
Styrene	100-42-5	0.250	Q	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	Q	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	Q	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	Q	1.00	0.500	0.250
Toluene	108-88-3	0.500	Q	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	Q	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	Q	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	Q	1.00	0.500	0.250
Trichloroethene	79-01-6	12.7	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	Q	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	Q	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	Q	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	Q	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	Q	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	Q	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	121	70	120	*
Toluene-d8	104	85	120	
4-Bromofluorobenzene	101	75	120	

J	The reported result is an estimated value.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573038	**Analyst:**	FJB	**Run Date:**	06/16/2016 18:25
Collect Date:	06/13/2016 00:01	**Dilution:**	1	**File ID:**	8M413040
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	114	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	102	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051316
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53752

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG568561

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412209	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 08:38
8M412210	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 08:57
8M412211	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 09:29
8M412212	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 09:56
8M412213	WG568561-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/13/16 10:19
8M412214	WG568561-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/13/16 10:51
8M412215	WG568565-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76072	05/13/16 11:36
8M412216	BFB CHECK	NA	1	1	STD76034	05/13/16 12:04
8M412217	BFB CHECK	NA	1	1	STD76034	05/13/16 12:18
8M412218	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 12:36
8M412219	RINSE	NA	1	1		05/13/16 13:00
8M412220	WG568561-02 0.3ug/L STD 8260	NA	1	1	STD76127	05/13/16 13:29
8M412221	WG568561-03 0.4ug/L STD 8260	NA	1	1	STD76127	05/13/16 13:58
8M412222	WG568561-04 1ug/L STD 8260	NA	1	1	STD76127	05/13/16 14:27
8M412223	WG568561-05 2ug/L STD 8260	NA	1	1	STD76127	05/13/16 14:56
8M412224	WG568561-06 5ug/L STD 8260	NA	1	1	STD76127	05/13/16 15:25
8M412225	WG568561-07 20ug/L STD 8260	NA	1	1	STD76127	05/13/16 15:54
8M412226	WG568561-08 50ug/L STD 8260	NA	1	1	STD76127	05/13/16 16:23
8M412227	WG568561-09 100ug/L STD 8260	NA	1	1	STD76127	05/13/16 16:52
8M412228	WG568561-10 200ug/L STD 8260	NA	1	1	STD76127	05/13/16 17:21
8M412229	WG568561-11 300ug/L STD 8260	NA	1	1	STD76127	05/13/16 17:50
8M412230	RINSE	NA	1	1		05/13/16 18:19
8M412231	RINSE	NA	1	1		05/13/16 18:49
8M412232	WG568561-12 50ug/L ALT SRC STD 8260	NA	1	1	STD76109	05/13/16 19:17
8M412233	RINSE	NA	1	1		05/13/16 19:46

Comments

Seq.	Rerun	Dil.	Reason	Analytes
5	X			
File ID: 8M412213				
	Several compounds were low, DNR.			
6				
File ID: 8M412214				

Approved: May 20, 2016

Page: 1

Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS8	Dataset:	051316		
Analyst1:	TMB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	23
Method:	624	SOP:	MSV10	Rev:	14
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:	53752				

Internal Standard: STD75899 Surrogate Standard: STD75899

CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG568561

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			Two C compounds failed. DNR. Run a curve.	
7 File ID: 8M412215				
			DNR.	

Approved: May 20, 2016

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051716
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76072; STD76127 LCS: STD76109; STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG569079; WG569083

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412319	WG569084-01 50ng BFB STD 8260	NA	1	1	STD76034	05/17/16 08:53
8M412320	WG569084-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/17/16 09:18
8M412321	WG569079-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76072	05/17/16 09:47
8M412322	WG569079-03 50ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 10:16
8M412323	WG569079-04 20ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 10:44
8M412324	WG569079-05 5ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 11:13
8M412325	WG569079-06 200ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 11:42
8M412326	WG569079-07 300ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 12:40
8M412327	WG569079-08 400ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 13:10
8M412328	WG569079-09 500ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 13:39
8M412329	RINSE	NA	1	1		05/17/16 14:08
8M412330	RINSE	NA	1	1		05/17/16 14:37
8M412331	WG569079-10 100ug/L ALT SRC STD 826	NA	1	1	STD75801	05/17/16 15:06
8M412332	WG569259-01 BFB 50ng 8260	NA	1	1	STD76034	05/17/16 18:27
8M412333	WG569259-02 50ug/L CCV 8260	NA	1	1	STD76034	05/17/16 18:53
8M412334	WG569260-01 100ug/L CCV A9	NA	1	1	STD76072	05/17/16 19:22
8M412335	WG569083-01 VBLK0517 BLANK 8260	NA	1	1		05/17/16 19:51
8M412336	WG569083-02 20ug/L LCS 8260	NA	1	1	STD76109	05/17/16 20:20
8M412337	WG569083-03 20ug/L LCS2 8260	NA	1	1	STD76109	05/17/16 20:49
8M412338	WG569083-04 100ug/L LCS A9	NA	1	1	STD75801	05/17/16 21:18
8M412339	WG569083-05 100ug/L LCS2 A9	NA	1	1	STD75801	05/17/16 21:46
8M412340	L16050844-01 TB A 826-A9-SPE	5	1	1		05/17/16 22:16
8M412341	L16050844-07 EB A 826-A9-SPE	5	1	1		05/17/16 22:45
8M412342	L16050844-11 AB A 826-A9-SPE	5	1	1		05/17/16 23:14
8M412343	L16050844-02 A 826-A9-SPE	6	1	1		05/17/16 23:43
8M412344	L16050844-05 A 826-A9-SPE	6	1	1		05/18/16 00:12
8M412345	L16050844-06 A 826-A9-SPE	6	1	1		05/18/16 00:41
8M412346	L16050844-12 A 826-A9-SPE	6	1	1		05/18/16 01:10
8M412347	L16050840-01 A 826-A9-SPE	7	1	1		05/18/16 01:38
8M412348	L16050844-08 A 826-A9-SPE	7	1	1		05/18/16 02:07
8M412349	L16050844-13 A 826-A9-SPE	7	1	1		05/18/16 02:36
8M412350	L16050844-15 A 826-A9-SPE	7	1	1		05/18/16 03:05
8M412351	L16050839-01 A 826-A9-SPE	7	1	1		05/18/16 03:33
8M412352	L16050844-03 2.5X A 826-A9-SPE	7	1	2.5		05/18/16 04:02

Approved: May 20, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051716
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76072; STD76127 LCS: STD76109; STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG569079; WG569083

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412353	L16050844-04 5X A 826-A9-SPE	7	1	5		05/18/16 04:31
8M412354	L16050844-09 5X A 826-A9-SPE	7	1	5		05/18/16 05:01
8M412355	L16050844-10 5X A 826-A9-SPE	7	1	5		05/18/16 05:30
8M412356	L16050844-14 50X A 826-A9-SPE	7	1	50		05/18/16 05:59
8M412357	RINSE	NA	1	1		05/18/16 06:28

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
File ID: 8M412320				
	DNR. Running an a9/foo curve.			
32	X	10	Over Calibration Range	CIS12-DCE
File ID: 8M412350				
40	X	2.5	Analyzed too dilute	
File ID: 8M412353				
	DNR.			
37	X	25	Over Calibration Range	TCE
File ID: 8M412355				
38	X	20	Analyzed too dilute	
File ID: 8M412356				
	DNR.			

Approved: May 20, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 061616
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75370 Surrogate Standard: STD76370
CCV: STD76578 LCS: STD76597 MS/MSD: STD76597

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG573038

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M413031	WG573037-01 BFB 50ng 8260	NA	1	1	STD76496	06/16/16 14:02
8M413032	WG573037-02 50ug/L CCV 8260	NA	1	1	STD76578	06/16/16 14:25
8M413033	WG573XXX-01 100ug/L CCV A9	NA	1	1	STD7XXXX	06/16/16 14:54
8M413034	WG573038-01 BLANK 6/16 8260	NA	1	1		06/16/16 15:23
8M413035	WG573038-02 20ug/L LCS 8260	NA	1	1	STD76597	06/16/16 15:52
8M413036	WG573038-03 20ug/L LCS2 8260	NA	1	1	STD76597	06/16/16 16:21
8M413037	L16060637-04 TB A 826-SPE	<2	1	1		06/16/16 16:58
8M413038	L16060756-05 TB A 826-SPE	<2	1	1		06/16/16 17:27
8M413039	L16060765-01 TB A 826-SPE	<2	1	1		06/16/16 17:56
8M413040	L16060730-04 TB A 826-LOW	<2	1	1		06/16/16 18:25
8M413041	L16060732-03 TB A 826-LOW	<2	1	1		06/16/16 18:54
8M413042	L16060823-05 TB A 826-LOW	<2	1	1		06/16/16 19:23
8M413043	L16060616-01 B 826-LOW	<2	1	1		06/16/16 19:52
8M413044	L16060732-01 A 826-LOW	<2	1	1		06/16/16 20:21
8M413045	L16060823-01 A 826-LOW	<2	1	1		06/16/16 20:50
8M413046	L16060823-03 A 826-LOW	<2	1	1		06/16/16 21:19
8M413047	L16060823-04 A 826-LOW	<2	1	1		06/16/16 21:48
8M413048	L16060730-03 A 826-LOW	<2	1	1		06/16/16 22:17
8M413049	L16060765-02 A 826-SPE	<2	1	1		06/16/16 22:46
8M413050	L16060765-03 A 826-SPE	<2	1	1		06/16/16 23:15
8M413051	L16060765-04 A 826-SPE	<2	1	1		06/16/16 23:43
8M413052	L16060730-01 A 826-SPE	<2	1	1		06/17/16 00:12
8M413053	L16060730-02 A 826-SPE	<2	1	1		06/17/16 00:41
8M413054	L16060637-03 A 826-SPE	<2	1	1		06/17/16 01:10
8M413055	L16060756-04 A 826-SPE	<2	1	1		06/17/16 01:38
8M413056	RINSE	NA	1	1		06/17/16 02:07
8M413057	RINSE	NA	1	1		06/17/16 02:37
8M413058	RINSE	NA	1	1		06/17/16 03:05

Comments

Seq.	Rerun	Dil.	Reason	Analytes
14	X		Carry-over contamination	
File ID: 8M413044				

Approved: June 23, 2016
Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 061616
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75370 Surrogate Standard: STD76370
CCV: STD76578 LCS: STD76597 MS/MSD: STD76597

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG573038

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
	L16060732-01			
15 File ID: 8M413045				
	L16060823-01 high surrogate but sample is ND.			
17 File ID: 8M413047	X		Surrogate standard failure	
	L16060823-04			
18 File ID: 8M413048	X		Surrogate standard failure	
	L16060730-03			
24 File ID: 8M413054	X	20	Over Calibration Range	CFORM, CTET, TCE
	L16060637-03			
25 File ID: 8M413055	X	20	Over Calibration Range	CB
	L16060756-04			

Approved: June 23, 2016

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Microbac Laboratories Inc.

Data Checklist

Date: 13-MAY-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75126
Analytical Workgroups: WG568561

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	TMB
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
17-MAY-2016
Tiffany Bailey

Secondary Reviewer:
20-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2016 11:18:36

Microbac Laboratories Inc.

Data Checklist

Date: 17-MAY-2016
Analyst: TMB
Analyst: FJB
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75174
Analytical Workgroups: WG569079; WG569083

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
19-MAY-2016
Tiffany Bailey

Secondary Reviewer:
20-MAY-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2016 11:05:37

Microbac Laboratories Inc.

Data Checklist

Date: 16-JUN-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75860
Analytical Workgroups: WG573038

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
22-JUN-2016

Secondary Reviewer:
23-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-23-2016 13:34:00

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG573038

Login Number: L16060730

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW14-061316	01	06/13/16					06/17/2016	3.6	14		06/17/16	3.6	14	
18CPTMW14FD-061316	02	06/13/16					06/17/2016	3.6	14		06/17/16	3.6	14	
18CPTMW24-061316	03	06/13/16					06/16/2016	3.5	14		06/16/16	3.5	14	
TRIP BLANK	04	06/13/16					06/16/2016	3.8	14		06/16/16	3.8	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4819633
Report generated 06/29/2016 14:43

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060730
Instrument Id: HPMS8
Workgroup (AAB#): WG573038

Method: 8260
CAL ID: HPMS8-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16060730-01	1.00	01	118	112	101	105
L16060730-02	1.00	01	120	112	98.0	104
L16060730-03	1.00	01	121	112	101	104
L16060730-04	1.00	01	114	110	102	104
WG573038-01	1.00	01	114	109	102	106
WG573038-02	1.00	01	118	110	99.2	104
WG573038-03	1.00	01	114	108	98.9	104

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4819641
Report generated: 06/29/2016 14:43

METHOD BLANK SUMMARY

Login Number: L16060730
Blank File ID: 8M413034
Prep Date: 06/16/16 15:23
Analyzed Date: 06/16/16 15:23
Analyst: FJB

Work Group: WG573038
Blank Sample ID: WG573038-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573038-02	8M413035	06/16/16 15:52	01
LCS2	WG573038-03	8M413036	06/16/16 16:21	01
TRIP BLANK	L16060730-04	8M413040	06/16/16 18:25	01
18CPTMW24-061316	L16060730-03	8M413048	06/16/16 22:17	01
18CPTMW14-061316	L16060730-01	8M413052	06/17/16 00:12	01
18CPTMW14FD-061316	L16060730-02	8M413053	06/17/16 00:41	01

Report Name: BLANK_SUMMARY
PDF File ID: 4819634
Report generated 06/29/2016 14:43

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16060730 Prep Date: 06/16/16 15:23 Sample ID: WG573038-01
Instrument ID: HPMS8 Run Date: 06/16/16 15:23 Prep Method: 5030B/5030C/503
File ID: 8M413034 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573038 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4819635
29-JUN-2016 14:43

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060730 Prep Date: 06/16/16 15:23 Sample ID: WG573038-01
Instrument ID: HPMS8 Run Date: 06/16/16 15:23 Prep Method: 5030B/5030C/503
File ID: 8M413034 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573038 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	109	85 - 115	PASS
1,2-Dichloroethane-d4	114	70 - 120	PASS
Toluene-d8	106	85 - 120	PASS
4-Bromofluorobenzene	102	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4819635
29-JUN-2016 14:43

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060730 | Run Date: 06/16/2016 | Sample ID: WG573038-02
Instrument ID: HPMS8 | Run Time: 15:52 | Prep Method: 5030B/5030C/503
File ID: 8M413035 | Analyst: FJB | Method: 8260B
Workgroup (AAB#): WG573038 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD76597 | Cal ID: HPMS8-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	21.8	109	40 - 140	
Benzene	20.0	20.4	102	80 - 120	
Bromobenzene	20.0	19.2	95.9	75 - 125	
Bromochloromethane	20.0	20.7	103	65 - 130	
Bromodichloromethane	20.0	21.6	108	75 - 120	
Bromoform	20.0	20.0	99.8	70 - 130	
Bromomethane	20.0	14.0	70.2	30 - 145	
2-Butanone	20.0	20.2	101	30 - 150	
n-Butylbenzene	20.0	19.4	97.2	70 - 135	
sec-Butylbenzene	20.0	20.2	101	70 - 125	
tert-Butylbenzene	20.0	19.7	98.5	70 - 130	
Carbon disulfide	20.0	18.1	90.6	35 - 160	
Carbon tetrachloride	20.0	22.5	112	65 - 140	
Chlorobenzene	20.0	20.4	102	80 - 120	
Chlorodibromomethane	20.0	20.5	102	60 - 135	
Chloroethane	20.0	20.4	102	60 - 135	
Chloroform	20.0	21.2	106	65 - 135	
Chloromethane	20.0	18.9	94.7	40 - 125	
2-Chlorotoluene	20.0	20.3	102	75 - 125	
4-Chlorotoluene	20.0	19.7	98.5	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	19.7	98.7	50 - 130	
1,2-Dibromoethane	20.0	20.1	100	80 - 120	
Dibromomethane	20.0	19.9	99.3	75 - 125	
1,2-Dichlorobenzene	20.0	19.7	98.6	70 - 120	
1,3-Dichlorobenzene	20.0	20.0	99.9	75 - 125	
1,4-Dichlorobenzene	20.0	19.7	98.6	75 - 125	
Dichlorodifluoromethane	20.0	20.8	104	30 - 155	
1,1-Dichloroethane	20.0	19.5	97.5	70 - 135	
1,2-Dichloroethane	20.0	23.3	117	70 - 130	
1,1-Dichloroethene	20.0	18.9	94.6	70 - 130	
cis-1,2-Dichloroethene	20.0	20.5	102	70 - 125	
trans-1,2-Dichloroethene	20.0	20.1	100	60 - 140	
1,2-Dichloropropane	20.0	20.4	102	75 - 125	
1,3-Dichloropropane	20.0	20.7	103	75 - 125	
2,2-Dichloropropane	20.0	23.0	115	70 - 135	
cis-1,3-Dichloropropene	20.0	23.1	115	70 - 130	
trans-1,3-Dichloropropene	20.0	20.9	104	55 - 140	
1,1-Dichloropropene	20.0	20.6	103	75 - 130	
Ethylbenzene	20.0	19.9	99.3	75 - 125	
2-Hexanone	20.0	18.6	93.0	55 - 130	
Hexachlorobutadiene	20.0	21.3	106	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4831241
Report generated: 06/29/2016 14:43

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060730 Run Date: 06/16/2016 Sample ID: WG573038-02
Instrument ID: HPMS8 Run Time: 15:52 Prep Method: 5030B/5030C/503
File ID: 8M413035 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573038 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD76597 Cal ID: HPMS8-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	21.6	108	75 - 125	
p-Isopropyltoluene	20.0	20.0	100	75 - 130	
4-Methyl-2-pentanone	20.0	19.8	98.8	60 - 135	
Methylene chloride	20.0	19.3	96.4	55 - 140	
Naphthalene	20.0	17.4	87.0	55 - 140	
n-Propylbenzene	20.0	20.4	102	70 - 130	
Styrene	20.0	20.7	103	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	20.8	104	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	17.7	88.5	65 - 130	
Tetrachloroethene	20.0	20.1	101	45 - 150	
Toluene	20.0	19.7	98.6	75 - 120	
1,2,3-Trichlorobenzene	20.0	19.0	94.8	55 - 140	
1,2,4-Trichlorobenzene	20.0	19.4	96.9	65 - 135	
1,1,1-Trichloroethane	20.0	22.5	112	65 - 130	
1,1,2-Trichloroethane	20.0	19.6	97.9	75 - 125	
Trichloroethene	20.0	21.8	109	70 - 125	
Trichlorofluoromethane	20.0	22.3	111	60 - 145	
1,2,3-Trichloropropane	20.0	19.8	99.1	75 - 125	
1,2,4-Trimethylbenzene	20.0	19.9	99.5	75 - 130	
1,3,5-Trimethylbenzene	20.0	20.3	102	75 - 130	
Vinyl chloride	20.0	23.0	115	50 - 145	
o-Xylene	20.0	21.1	106	80 - 120	
m-,p-Xylene	40.0	40.9	102	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	110	85 - 115	PASS
1,2-Dichloroethane-d4	118	70 - 120	PASS
Toluene-d8	104	85 - 120	PASS
4-Bromofluorobenzene	99.2	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4831241
Report generated: 06/29/2016 14:43

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060730 Analyst: FJB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG573038 Units: ug/L
QC Key: DOD4 Lot #: STD76597

Sample ID: WG573038-02 LCS File ID: 8M413035 Run Date: 06/16/2016 15:52
Sample ID: WG573038-03 LCS2 File ID: 8M413036 Run Date: 06/16/2016 16:21

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	20.8	104	20.0	20.9	105	0.576	80 - 130	30	
1,1,1-Trichloroethane	20.0	22.5	112	20.0	23.2	116	3.45	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	17.7	88.5	20.0	18.1	90.5	2.29	65 - 130	30	
1,1,2-Trichloroethane	20.0	19.6	97.9	20.0	19.6	98.1	0.148	75 - 125	30	
1,1-Dichloroethane	20.0	19.5	97.5	20.0	19.9	99.5	2.06	70 - 135	30	
1,1-Dichloroethene	20.0	18.9	94.6	20.0	19.6	98.2	3.75	70 - 130	30	
1,1-Dichloropropene	20.0	20.6	103	20.0	21.0	105	2.03	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	19.0	94.8	20.0	19.4	96.8	2.05	55 - 140	30	
1,2,3-Trichloropropane	20.0	19.8	99.1	20.0	19.6	97.8	1.36	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	19.4	96.9	20.0	20.1	100	3.60	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	19.9	99.5	20.0	20.3	102	2.19	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	19.7	98.7	20.0	21.4	107	7.93	50 - 130	30	
1,2-Dibromoethane	20.0	20.1	100	20.0	19.9	99.3	1.19	80 - 120	30	
1,2-Dichlorobenzene	20.0	19.7	98.6	20.0	20.3	102	3.14	70 - 120	30	
1,2-Dichloroethane	20.0	23.3	117	20.0	23.5	118	0.816	70 - 130	30	
1,2-Dichloropropane	20.0	20.4	102	20.0	21.0	105	3.16	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	20.3	102	20.0	20.9	105	3.05	75 - 130	30	
1,3-Dichlorobenzene	20.0	20.0	99.9	20.0	20.6	103	3.29	75 - 125	30	
1,3-Dichloropropane	20.0	20.7	103	20.0	21.0	105	1.29	75 - 125	30	
1,4-Dichlorobenzene	20.0	19.7	98.6	20.0	20.4	102	3.14	75 - 125	30	
2,2-Dichloropropane	20.0	23.0	115	20.0	23.5	118	2.50	70 - 135	30	
2-Butanone	20.0	20.2	101	20.0	20.8	104	3.17	30 - 150	30	
2-Chlorotoluene	20.0	20.3	102	20.0	20.6	103	1.51	75 - 125	30	
2-Hexanone	20.0	18.6	93.0	20.0	17.8	89.1	4.24	55 - 130	30	
4-Chlorotoluene	20.0	19.7	98.5	20.0	20.0	100	1.77	75 - 130	30	
4-Methyl-2-pentanone	20.0	19.8	98.8	20.0	20.7	103	4.57	60 - 135	30	
Acetone	20.0	21.8	109	20.0	24.1	121	10.2	40 - 140	30	
Benzene	20.0	20.4	102	20.0	21.1	105	3.43	80 - 120	30	
Bromobenzene	20.0	19.2	95.9	20.0	19.7	98.4	2.64	75 - 125	30	
Bromochloromethane	20.0	20.7	103	20.0	20.6	103	0.508	65 - 130	30	
Bromodichloromethane	20.0	21.6	108	20.0	22.5	112	4.14	75 - 120	30	
Bromoform	20.0	20.0	99.8	20.0	20.0	99.9	0.134	70 - 130	30	
Bromomethane	20.0	14.0	70.2	20.0	15.7	78.3	11.0	30 - 145	30	
Carbon disulfide	20.0	18.1	90.6	20.0	18.6	92.9	2.55	35 - 160	30	
Carbon tetrachloride	20.0	22.5	112	20.0	23.1	115	2.71	65 - 140	30	
Chlorobenzene	20.0	20.4	102	20.0	20.7	104	1.62	80 - 120	30	
Chloroethane	20.0	20.4	102	20.0	21.7	109	6.06	60 - 135	30	
Chloroform	20.0	21.2	106	20.0	21.7	108	2.28	65 - 135	30	
Chloromethane	20.0	18.9	94.7	20.0	20.2	101	6.46	40 - 125	30	
cis-1,2-Dichloroethene	20.0	20.5	102	20.0	21.2	106	3.58	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4819636
Report generated: 06/29/2016 14:43

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060730 Analyst: FJB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG573038 Units: ug/L
QC Key: DOD4 Lot #: STD76597

Sample ID: WG573038-02 LCS File ID: 8M413035 Run Date: 06/16/2016 15:52
Sample ID: WG573038-03 LCS2 File ID: 8M413036 Run Date: 06/16/2016 16:21

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	23.1	115	20.0	23.5	117	1.55	70 - 130	30	
Chlorodibromomethane	20.0	20.5	102	20.0	20.8	104	1.79	60 - 135	30	
Dibromomethane	20.0	19.9	99.3	20.0	19.9	99.6	0.358	75 - 125	30	
Dichlorodifluoromethane	20.0	20.8	104	20.0	21.8	109	4.81	30 - 155	30	
Ethylbenzene	20.0	19.9	99.3	20.0	19.9	99.5	0.215	75 - 125	30	
Hexachlorobutadiene	20.0	21.3	106	20.0	21.7	108	1.84	50 - 140	30	
Isopropylbenzene	20.0	21.6	108	20.0	22.0	110	1.89	75 - 125	30	
m-,p-Xylene	40.0	40.9	102	40.0	41.7	104	2.14	75 - 130	30	
Methylene chloride	20.0	19.3	96.4	20.0	19.9	99.5	3.13	55 - 140	30	
n-Butylbenzene	20.0	19.4	97.2	20.0	19.8	99.2	2.07	70 - 135	30	
n-Propylbenzene	20.0	20.4	102	20.0	21.0	105	2.87	70 - 130	30	
Naphthalene	20.0	17.4	87.0	20.0	18.1	90.5	3.97	55 - 140	30	
o-Xylene	20.0	21.1	106	20.0	21.4	107	1.39	80 - 120	30	
p-Isopropyltoluene	20.0	20.0	100	20.0	20.9	104	4.05	75 - 130	30	
sec-Butylbenzene	20.0	20.2	101	20.0	20.7	104	2.34	70 - 125	30	
Styrene	20.0	20.7	103	20.0	21.1	106	2.22	65 - 135	30	
tert-Butylbenzene	20.0	19.7	98.5	20.0	20.4	102	3.70	70 - 130	30	
Tetrachloroethene	20.0	20.1	101	20.0	20.5	102	1.70	45 - 150	30	
Toluene	20.0	19.7	98.6	20.0	20.1	101	1.94	75 - 120	30	
trans-1,2-Dichloroethene	20.0	20.1	100	20.0	20.4	102	1.57	60 - 140	30	
trans-1,3-Dichloropropene	20.0	20.9	104	20.0	21.1	105	0.925	55 - 140	30	
Trichloroethene	20.0	21.8	109	20.0	22.5	112	3.24	70 - 125	30	
Trichlorofluoromethane	20.0	22.3	111	20.0	22.8	114	2.49	60 - 145	30	
Vinyl chloride	20.0	23.0	115	20.0	24.1	121	4.97	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	118	114	70 - 120	PASS
Dibromofluoromethane	110	108	85 - 115	PASS
4-Bromofluorobenzene	99.2	98.9	75 - 120	PASS
Toluene-d8	104	104	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4819636
Report generated: 06/29/2016 14:43

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060730
Instrument: HPMS8
Analyst: TMB
Workgroup: WG568561

Tune ID: WG568561-01
Run Date: 05/13/2016
Run Time: 12:36
File ID: 8M412218
Cal ID: HPMS8 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	16.7	6575	PASS
75.0	95.0	30.0	60.0	51.3	20171	PASS
95.0	95.0	100	100	100	39312	PASS
96.0	95.0	5.00	9.00	6.74	2649	PASS
173	174	0	2.00	0.363	122	PASS
174	95.0	50.0	100	85.5	33616	PASS
175	174	5.00	9.00	8.17	2746	PASS
176	174	95.0	101	99.2	33360	PASS
177	176	5.00	9.00	6.80	2267	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG568561-02	STD	01	05/13/2016 13:29	
WG568561-03	STD	01	05/13/2016 13:58	
WG568561-04	STD	01	05/13/2016 14:27	
WG568561-05	STD	01	05/13/2016 14:56	
WG568561-06	STD	01	05/13/2016 15:25	
WG568561-07	STD	01	05/13/2016 15:54	
WG568561-08	STD-CCV	01	05/13/2016 16:23	
WG568561-09	STD	01	05/13/2016 16:52	
WG568561-10	STD	01	05/13/2016 17:21	
WG568561-11	STD	01	05/13/2016 17:50	
WG568561-12	SSCV	01	05/13/2016 19:17	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4819638
Report generated 06/29/2016 14:43

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060730
Instrument: HPMS8
Analyst: TMB
Workgroup: WG569084

Tune ID: WG569084-01
Run Date: 05/17/2016
Run Time: 08:53
File ID: 8M412319
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.1	6316	PASS
75.0	95.0	30.0	60.0	54.7	18130	PASS
95.0	95.0	100	100	100	33138	PASS
96.0	95.0	5.00	9.00	6.76	2241	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	72.2	23934	PASS
175	174	5.00	9.00	7.88	1886	PASS
176	174	95.0	101	96.8	23159	PASS
177	176	5.00	9.00	7.15	1655	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG569079-01	STD-CCV	01	05/17/2016 09:47	
WG569079-03	STD	01	05/17/2016 10:16	
WG569079-04	STD	01	05/17/2016 10:44	
WG569079-05	STD	01	05/17/2016 11:13	
WG569079-06	STD	01	05/17/2016 11:42	
WG569079-07	STD	01	05/17/2016 12:40	
WG569079-08	STD	01	05/17/2016 13:10	
WG569079-09	STD	01	05/17/2016 13:39	
WG569079-10	SSCV	01	05/17/2016 15:06	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4819638
Report generated 06/29/2016 14:43

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060730
Instrument: HPMS8
Analyst: FJB
Workgroup: WG573037

Tune ID: WG573037-01
Run Date: 06/16/2016
Run Time: 14:02
File ID: 8M413031
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.9	6352	PASS
75.0	95.0	30.0	60.0	57.2	18249	PASS
95.0	95.0	100	100	100	31890	PASS
96.0	95.0	5.00	9.00	7.42	2366	PASS
173	174	0	2.00	1.50	352	PASS
174	95.0	50.0	100	73.7	23499	PASS
175	174	5.00	9.00	7.96	1870	PASS
176	174	95.0	101	97.3	22869	PASS
177	176	5.00	9.00	6.73	1538	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573037-02	CCV	01	06/16/2016 14:25	
WG573038-01	BLANK	01	06/16/2016 15:23	
WG573038-02	LCS	01	06/16/2016 15:52	
WG573038-03	LCS2	01	06/16/2016 16:21	
L16060730-04	TRIP BLANK	01	06/16/2016 18:25	
L16060730-03	18CPTMW24-061316	01	06/16/2016 22:17	
L16060730-01	18CPTMW14-061316	01	06/17/2016 00:12	
L16060730-02	18CPTMW14FD-061316	01	06/17/2016 00:41	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4819638
Report generated 06/29/2016 14:43

Calibration Table Report
Method: 8260WT.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Calibration: Sat May 14 18:08:06 2016
Curve: WG568561
Calibration Files

	Compound	0.3 8M412220.D	0.4 8M412221.D	1 8M412222.D	2 8M412223.D	5 8M412224.D	20 8M412225.D	50 8M412226.D	100 8M412227.D	200 8M412228.D	300 8M412229.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane		0.427	0.390	0.397	0.364	0.468	0.439	0.452	0.427	0.408	0.419	7.751		
P	Chloromethane			0.264	0.257	0.223	0.253	0.240	0.240	0.239	0.241	0.245	5.336		
C	Vinyl Chloride		0.274	0.296	0.297	0.277	0.299	0.292	0.299	0.292	0.288	0.290	3.191		
T	1,3-Butadiene				0.218	0.208	0.242	0.251	0.277	0.254	0.254	0.243	9.644		
T	Bromomethane			0.129	0.133	0.127	0.162	0.167	0.187	0.205	0.212	0.165	20.449		1.000
T	Chloroethane		0.173	0.157	0.153	0.143	0.164	0.157	0.163	0.164	0.164	0.160	5.354		
T	Trichlorofluoromethane		0.544	0.538	0.559	0.506	0.570	0.538	0.551	0.531	0.525	0.540	3.520		
T	Diethyl ether			0.130	0.138	0.123	0.132	0.125	0.128		0.127	0.129	3.866		
T	Isoprene		0.335	0.351	0.334	0.293	0.334	0.320	0.334	0.322	0.329	0.328	4.867		
T	Acrolein				0.012	0.010	0.010	0.011	0.012		0.014	0.012	12.987		
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.256	0.269	0.240	0.260	0.249	0.257	0.251	0.250	0.254	3.397		
T	Acetone					0.023	0.030	0.029	0.030	0.028	0.028	0.028	9.132		
C	1,1-Dichloroethene		0.424	0.407	0.406	0.387	0.416	0.398	0.409	0.400	0.393	0.404	2.830		
T	Tert-Butyl Alcohol				0.010	0.009	0.009	0.009	0.009		0.009	0.009	2.872		
T	Dimethyl Sulfide		0.133	0.142	0.152	0.137	0.145	0.142	0.151	0.147	0.151	0.145	4.534		
T	Iodomethane				0.019	0.024	0.066	0.101	0.129	0.135	0.131	0.087	58.244		0.998
T	Methyl acetate					0.075	0.076	0.074	0.078	0.076	0.078	0.076	2.221		
T	Methylene Chloride			0.274	0.265	0.244	0.263	0.250	0.255	0.254	0.252	0.257	3.686		
T	Carbon Disulfide			0.888	0.922	0.801	0.873	0.816	0.854	0.813	0.802	0.846	5.346		
T	Acrylonitrile			0.027	0.035	0.033	0.038	0.038	0.039		0.044	0.036	14.671		
T	Methyl Tert Butyl Ether			0.534	0.543	0.521	0.586	0.579	0.585	0.560	0.546	0.557	4.455		
T	trans-1,2-Dichloroethene		0.389	0.395	0.364	0.352	0.381	0.367	0.372	0.364	0.358	0.371	3.858		
T	n-Hexane					0.265	0.280	0.270	0.286	0.275	0.279	0.276	2.732		
T	Diisopropyl ether			0.600	0.607	0.548	0.588	0.572	0.571		0.567	0.579	3.559		
T	Vinyl Acetate				0.256	0.243	0.270	0.275	0.266	0.271	0.275	0.265	4.509		
P	1,1-Dichloroethane		0.441	0.463	0.486	0.434	0.488	0.464	0.470	0.459	0.447	0.461	4.012		
T	Ethyl-Tert-Butyl ether			0.616	0.645	0.590	0.641	0.628	0.619		0.603	0.620	3.188		
T	2-Butanone					0.035	0.042	0.043	0.045	0.041	0.043	0.041	8.268		
T	Propionitrile			0.010	0.012	0.012	0.013	0.012	0.013		0.013	0.012	8.354		
T	2,2-Dichloropropane		0.471	0.462	0.520	0.476	0.503	0.494	0.497	0.483	0.470	0.486	3.839		
T	cis-1,2-Dichloroethene		0.299	0.298	0.291	0.267	0.295	0.282	0.289	0.283	0.277	0.287	3.685		
C	Chloroform	0.563	0.567	0.581	0.536	0.509	0.566	0.543	0.546	0.529	0.506	0.545	4.619		
T	1-Bromopropane			0.034	0.040	0.040	0.043	0.041	0.043	0.043	0.044	0.041	7.649		
T	Bromochloromethane		0.131	0.164	0.147	0.137	0.154	0.148	0.151	0.148	0.145	0.147	6.598		
T	Tetrahydrofuran			0.034	0.028	0.025	0.026	0.026	0.026		0.026	0.027	11.724		
S	Dibromofluoromethane			0.249	0.261	0.257	0.280	0.271	0.284	0.271	0.275	0.269	4.465		
T	1,1,1-Trichloroethane		0.492	0.537	0.515	0.496	0.545	0.525	0.533	0.515	0.499	0.517	3.660		
T	Cyclohexane			0.373	0.369	0.335	0.359	0.344	0.366	0.356	0.364	0.358	3.619		
T	1,1-Dichloropropene			0.414	0.399	0.369	0.403	0.395	0.399	0.392	0.382	0.394	3.488		
T	Tert-Amyl-Methyl ether			0.567	0.587	0.534	0.576	0.568	0.561		0.549	0.563	3.077		
T	Carbon Tetrachloride		0.444	0.456	0.462	0.441	0.481	0.465	0.474	0.462	0.448	0.4594	2.92173		
S	1,2-Dichloroethane-d4			0.241	0.309	0.276	0.312	0.295	0.301	0.284	0.286	0.288	7.93644		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.347	0.335	0.354	0.336	0.371	0.36	0.364	0.349	0.338	0.3505	3.65503		
T	Benzene		1.128	1.084	1.071	0.977	1.085	1.033	1.019	0.963	0.883	1.0269	7.39343		
T	Trichloroethene		0.285	0.275	0.276	0.251	0.283	0.273	0.279	0.273	0.27	0.2739	3.66126		
T	Methylcyclohexane					0.396	0.426	0.408	0.429	0.416	0.422	0.4161	2.94153		
C	1,2-Dichloropropane		0.239	0.222	0.233	0.207	0.238	0.226	0.233	0.231	0.229	0.2286	4.30096		
T	Bromodichloromethane		0.369	0.382	0.412	0.385	0.426	0.421	0.417	0.41	0.395	0.4018	4.93305		
T	1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.0011	14.5817		
T	Dibromomethane		0.141	0.13	0.137	0.128	0.141	0.134	0.137	0.136	0.133	0.1353	3.26799		
T	2-Chloroethyl Vinyl Ether				0.1	0.084	0.103	0.104	0.103	0.095	0.098	0.0983	7.09792		
T	4-Methyl-2-Pentanone					0.033	0.042	0.042	0.043	0.04	0.041	0.0401	8.66859		
T	cis-1,3-Dichloropropene		0.391	0.393	0.386	0.398	0.431	0.428	0.428	0.42	0.405	0.409	4.41527		

T	Dimethyl Disulfide					0.182	0.218	0.221	0.23	0.229	0.23	0.2183	8.49419	
I	Chlorobenzene-d5	ISTD												
S	Toluene-d8			1.282	1.295	1.228	1.385	1.333	1.378	1.289	1.278	1.3084	4.07746	
C	Toluene		1.653	1.696	1.678	1.507	1.647	1.554	1.545	1.418	1.27	1.552	8.98325	
T	Ethyl Methacrylate			0.251	0.293	0.268	0.314	0.314	0.327	0.309	0.31	0.2981	8.76897	
T	Paraldehyde											0	0	
T	trans-1,3-Dichloropropene			0.472	0.51	0.466	0.561	0.552	0.553	0.533	0.515	0.5201	7.01006	
T	1,1,2-Trichloroethane		0.261	0.241	0.242	0.222	0.254	0.249	0.252	0.243	0.241	0.2449	4.54209	
T	2-Hexanone					0.042	0.053	0.053	0.056	0.051	0.053	0.0515	9.50479	
T	1,3-Dichloropropane		0.355	0.442	0.465	0.42	0.468	0.454	0.457	0.437	0.428	0.436	7.93348	
T	Tetrachloroethene		0.355	0.337	0.336	0.306	0.333	0.325	0.337	0.334	0.33	0.3325	3.83886	
T	Dibromochloromethane		0.349	0.336	0.338	0.328	0.373	0.372	0.383	0.373	0.367	0.3576	5.60043	
T	1,2-Dibromoethane		0.233	0.234	0.234	0.227	0.259	0.254	0.258	0.251	0.247	0.2441	5.04151	
T	1-Chlorohexane		0.532	0.584	0.505	0.502	0.54	0.52	0.547	0.521	0.516	0.5298	4.7826	
P	Chlorobenzene		1.029	1.173	1.09	1.007	1.099	1.037	1.043	1.002	0.939	1.0466	6.41465	
T	1,1,1,2-Tetrachloroethane		0.392	0.399	0.403	0.357	0.431	0.414	0.424	0.417	0.413	0.4055	5.39495	
C	Ethylbenzene		0.6	0.594	0.59	0.532	0.586	0.559	0.57	0.564	0.558	0.5726	3.7769	
T	m-,p-Xylene		0.744	0.696	0.691	0.643	0.713	0.67	0.673	0.634	0.581	0.6716	7.12586	
T	o-Xylene			0.691	0.651	0.614	0.692	0.658	0.667	0.65	0.63	0.6567	4.11758	
T	Styrene		1.05	1.06	1.096	1.043	1.159	1.124	1.12	1.061	0.98	1.077	4.96781	
P	Bromoform			0.177	0.21	0.181	0.226	0.221	0.232	0.227	0.223	0.2121	10.0546	
T	Isopropylbenzene		1.853	1.891	1.871	1.708	1.897	1.781	1.75	1.573	1.377	1.7444	9.92447	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.426	0.492	0.503	0.486	0.543	0.51	0.527	0.513	0.514	0.5018	6.60291	
S	p-Bromofluorobenzene				1.054	0.976	1.071	1.016	1.053	1.031	1.046	1.0352	3.05136	
T	1,2,3-Trichloropropane			0.119	0.158	0.161	0.162	0.155	0.162	0.16	0.158	0.1545	9.40789	
T	trans-1,4-Dichloro-2-Butene			0.085	0.118	0.12	0.149	0.151	0.16	0.159	0.161	0.1376	19.9543	1.000
T	n-Propylbenzene		4.139	4.239	4.243	4.051	4.241	3.953	3.882	3.419	2.935	3.9003	11.4439	
T	Bromobenzene	0.796	0.708	0.843	0.837	0.778	0.84	0.798	0.817	0.803	0.803	0.8022	4.93253	
T	1,3,5-Trimethylbenzene		2.941	2.93	2.941	2.839	3.053	2.882	2.871	2.689	2.423	2.8411	6.50391	
T	2-Chlorotoluene		2.917	2.935	2.929	2.712	2.861	2.795	2.682	2.533	2.145	2.7231	9.37022	
T	4-Chlorotoluene		2.681	2.596	2.581	2.474	2.625	2.326	2.447	2.286	2.121	2.4597	7.49558	
T	a-Methylstyrene					1.257	1.406	1.34	1.384	1.35	1.351	1.3479	3.77654	
T	tert-Butylbenzene			0.587	0.555	0.53	0.571	0.533	0.552	0.561	0.558	0.5558	3.34508	
T	1,2,4-Trimethylbenzene		2.955	3.168	3.127	2.936	3.12	2.914	2.937	2.709	2.427	2.9214	7.97314	
T	sec-Butylbenzene			3.701	3.536	3.487	3.607	3.34	3.332	3.045	2.69	3.3424	9.93324	
T	p-Isopropyltoluene			3.112	3.062	2.903	2.988	2.813	2.809	2.634	2.382	2.8379	8.45265	
T	1,3-Dichlorobenzene		1.484	1.617	1.627	1.53	1.605	1.531	1.549	1.51	1.45	1.5448	3.95774	
T	1,4-Dichlorobenzene	1.713	1.524	1.672	1.594	1.503	1.6	1.511	1.535	1.49	1.431	1.5574	5.56562	
T	n-Butylbenzene			3.143	2.96	2.895	3.002	2.791	2.792	2.571	2.292	2.8056	9.55812	
T	1,2-Dichlorobenzene	1.59	1.307	1.415	1.41	1.322	1.404	1.333	1.356	1.315	1.286	1.3739	6.4618	
T	1,2-Dibromo-3-Chloropropane				0.085	0.103	0.102	0.103	0.106	0.104	0.103	0.1007	6.86771	
T	1,2,4-Trichlorobenzene		1.074	1.01	1.028	0.982	1.069	1.013	1.036	1.029	1.002	1.0269	2.90829	
T	Hexachlorobutadiene		0.516	0.476	0.483	0.447	0.487	0.459	0.48	0.485	0.485	0.4798	4.00465	
T	Naphthalene		1.594	1.457	1.574	1.455	1.63	1.552	1.564	1.485	1.422	1.5258	4.75891	
T	1,2,3-Trichlorobenzene	0.913	0.934	0.905	0.862	0.805	0.877	0.824	0.862	0.846	0.835	0.8664	4.7474	

Tue May 17 11:49:41 2016

Calibration Table Report
Method: A9FOOWT.M
Title: A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Calibration: Thu May 19 08:54:31 2016
Curve: WG569079
Calibration Files

	Compound	5 8M412324.D	20 8M412323.D	50 8M412322.D	100 8M412321.D	200 8M412325.D	300 8M412326.D	400 8M412327.D	500 8M412328.D	Avg	%RSD
I	Fluorobenzene	ISTD									
T	Acetonitrile		0.009	0.010	0.010	0.010	0.010	0.010	0.010	0.010	2.076
T	3-Chloro-1-propene	0.306	0.330	0.335	0.331	0.324	0.307	0.304	0.304	0.318	4.307
T	2-Chloro-1,3-butadiene	0.368	0.420	0.420	0.419	0.419	0.392	0.389	0.387	0.402	5.022
T	Ethyl Acetate	0.080	0.096	0.097	0.100	0.099	0.098	0.100	0.095	0.096	6.751
T	Methacrylonitrile	0.041	0.054	0.055	0.055	0.055	0.054	0.055	0.052	0.053	9.227
T	Isobutyl Alcohol			0.003	0.003	0.003	0.003	0.003	0.003	0.003	3.599
T	1-Butanol									0.000	0.000
T	Methyl methacrylate	0.089	0.106	0.106	0.105	0.106	0.105	0.107	0.102	0.103	5.868
T	2-Nitropropane		0.041	0.042	0.043	0.046	0.047	0.048	0.046	0.045	5.992
I	Chlorobenzene-d5	ISTD									
I	1,4-Dichlorobenzene-d4	ISTD									
T	Cyclohexanone		0.011	0.010	0.010	0.009	0.010	0.011	0.010	0.010	4.971

Thu May 19 09:04:52 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060730 Run Date: 05/13/2016 Sample ID: WG568561-12
Instrument ID: HPMS8 Run Time: 19:17 Method: 8260B
File ID: 8M412232 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG568561 Cal ID: HPMS8 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.1	ug/L	0.513	5.70	20	
1,1-Dichloroethene	CCC	50.0	46.0	ug/L	0.372	8.10	20	
1,2-Dichloropropane	CCC	50.0	51.0	ug/L	0.233	1.90	20	
Ethylbenzene	CCC	50.0	48.2	ug/L	0.552	3.60	20	
Toluene	CCC	50.0	49.1	ug/L	1.52	1.80	20	
Vinyl Chloride	CCC	50.0	52.4	ug/L	0.304	4.80	20	
Bromoform	SPCC	50.0	48.2	ug/L	0.205	3.60	20	
Chlorobenzene	SPCC	50.0	50.2	ug/L	1.05	0.400	20	
Chloromethane	SPCC	50.0	50.7	ug/L	0.248	1.40	20	
1,1-Dichloroethane	SPCC	50.0	46.7	ug/L	0.431	6.60	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.6	ug/L	0.498	0.800	20	
Acetone		50.0	57.5	ug/L	0.0324	15.1	20	
Benzene		50.0	48.5	ug/L	0.997	3.00	20	
Bromobenzene		50.0	49.5	ug/L	0.794	1.10	20	
Bromochloromethane		50.0	47.5	ug/L	0.140	4.90	20	
Bromodichloromethane		50.0	48.3	ug/L	0.388	3.40	20	
Bromomethane		50.0	46.4	ug/L	0.162	7.20	20	
2-Butanone		50.0	53.0	ug/L	0.0438	6.00	20	
n-Butylbenzene		50.0	49.7	ug/L	2.79	0.700	20	
sec-Butylbenzene		50.0	51.3	ug/L	3.43	2.70	20	
tert-Butylbenzene		50.0	50.9	ug/L	0.566	1.90	20	
Carbon Disulfide		50.0	42.3	ug/L	0.716	15.4	20	
Carbon Tetrachloride		50.0	46.2	ug/L	0.425	7.50	20	
Dibromochloromethane		50.0	49.7	ug/L	0.355	0.700	20	
Chloroethane		50.0	53.3	ug/L	0.170	6.70	20	
2-Chlorotoluene		50.0	51.6	ug/L	2.81	3.10	20	
4-Chlorotoluene		50.0	48.3	ug/L	2.37	3.50	20	
1,2-Dibromo-3-Chloropropane		50.0	48.5	ug/L	0.0977	3.00	20	
1,2-Dibromoethane		50.0	51.1	ug/L	0.250	2.20	20	
Dibromomethane		50.0	45.8	ug/L	0.124	8.40	20	
1,2-Dichlorobenzene		50.0	50.5	ug/L	1.39	1.00	20	
1,3-Dichlorobenzene		50.0	50.9	ug/L	1.57	1.80	20	
1,4-Dichlorobenzene		50.0	50.5	ug/L	1.57	0.900	20	
Dichlorodifluoromethane		50.0	54.2	ug/L	0.455	8.40	20	
1,2-Dichloroethane		50.0	49.0	ug/L	0.344	2.00	20	
cis-1,2-Dichloroethene		50.0	48.9	ug/L	0.281	2.20	20	
trans-1,2-Dichloroethene		50.0	48.1	ug/L	0.357	3.90	20	
1,3-Dichloropropane		50.0	53.7	ug/L	0.468	7.30	20	
2,2-Dichloropropane		50.0	47.9	ug/L	0.466	4.20	20	
cis-1,3-Dichloropropene		50.0	53.9	ug/L	0.441	7.80	20	
trans-1,3-Dichloropropene		50.0	50.7	ug/L	0.527	1.30	20	
1,1-Dichloropropene		50.0	47.5	ug/L	0.374	5.10	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4819637
Report generated 06/29/2016 14:43

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060730 Run Date: 05/13/2016 Sample ID: WG568561-12
Instrument ID: HPMS8 Run Time: 19:17 Method: 8260B
File ID: 8M412232 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG568561 Cal ID: HPMS8 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	53.6	ug/L	0.0552	7.20	20	
Hexachlorobutadiene		50.0	52.1	ug/L	0.500	4.20	20	
Isopropylbenzene		50.0	51.1	ug/L	1.78	2.20	20	
p-Isopropyltoluene		50.0	50.1	ug/L	2.85	0.300	20	
4-Methyl-2-Pentanone		50.0	51.9	ug/L	0.0416	3.70	20	
Methylene Chloride		50.0	48.4	ug/L	0.249	3.10	20	
Naphthalene		50.0	45.8	ug/L	1.40	8.40	20	
n-Propylbenzene		50.0	51.9	ug/L	4.05	3.80	20	
Styrene		50.0	51.5	ug/L	1.11	3.00	20	
1,1,1,2-Tetrachloroethane		50.0	49.4	ug/L	0.400	1.20	20	
Tetrachloroethene		50.0	47.8	ug/L	0.318	4.40	20	
1,2,3-Trichlorobenzene		50.0	47.7	ug/L	0.827	4.50	20	
1,2,4-Trichlorobenzene		50.0	50.1	ug/L	1.03	0.200	20	
1,1,1-Trichloroethane		50.0	47.6	ug/L	0.492	4.80	20	
1,1,2-Trichloroethane		50.0	49.0	ug/L	0.240	1.90	20	
Trichloroethene		50.0	51.1	ug/L	0.280	2.10	20	
Trichlorofluoromethane		50.0	46.9	ug/L	0.507	6.10	20	
1,2,3-Trichloropropane		50.0	50.1	ug/L	0.155	0.200	20	
1,2,4-Trimethylbenzene		50.0	49.7	ug/L	2.90	0.700	20	
1,3,5-Trimethylbenzene		50.0	51.6	ug/L	2.93	3.30	20	
o-Xylene		50.0	50.6	ug/L	0.664	1.10	20	
m-,p-Xylene		100	101	ug/L	0.679	1.10	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4819637
Report generated 06/29/2016 14:43

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730 Run Date: 06/16/2016 Sample ID: WG573037-02
Instrument ID: HPMS8 Run Time: 14:25 Method: 8260B
File ID: 8M413032 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG573038 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	54.8	ug/L	0.597	9.65	20	
1,1-Dichloroethene	CCC	50.0	54.7	ug/L	0.442	9.30	20	
1,2-Dichloropropane	CCC	50.0	48.6	ug/L	0.222	2.70	20	
Ethylbenzene	CCC	50.0	50.5	ug/L	0.578	0.905	20	
Toluene	CCC	50.0	50.3	ug/L	1.56	0.600	20	
Vinyl Chloride	CCC	50.0	55.1	ug/L	0.320	10.2	20	
Bromoform	SPCC	50.0	50.9	ug/L	0.216	1.72	20	
Chlorobenzene	SPCC	50.0	49.8	ug/L	1.04	0.474	20	
Chloromethane	SPCC	50.0	46.6	ug/L	0.228	6.88	20	
1,1-Dichloroethane	SPCC	50.0	52.3	ug/L	0.483	4.61	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	41.5	ug/L	0.416	17.0	20	
Xylenes		150	154	ug/L	0.683	2.90	20	
Acetone		50.0	52.2	ug/L	0.0293	4.31	20	
Benzene		50.0	52.0	ug/L	1.07	3.99	20	
Bromobenzene		50.0	48.0	ug/L	0.770	4.08	20	
Bromochloromethane		50.0	51.3	ug/L	0.151	2.54	20	
Bromodichloromethane		50.0	55.4	ug/L	0.445	10.8	20	
Bromomethane		50.0	37.0	ug/L	0.128	26.0	20	*
2-Butanone		50.0	45.9	ug/L	0.0380	8.13	20	
n-Butylbenzene		50.0	50.5	ug/L	2.83	1.00	20	
sec-Butylbenzene		50.0	50.3	ug/L	3.37	0.699	20	
tert-Butylbenzene		50.0	48.9	ug/L	0.544	2.12	20	
Carbon Disulfide		50.0	53.0	ug/L	0.897	6.05	20	
Carbon Tetrachloride		50.0	60.0	ug/L	0.551	20.0	20	
Dibromochloromethane		50.0	50.5	ug/L	0.361	0.983	20	
Chloroethane		50.0	48.9	ug/L	0.156	2.14	20	
2-Chlorotoluene		50.0	47.7	ug/L	2.60	4.50	20	
4-Chlorotoluene		50.0	49.7	ug/L	2.44	0.615	20	
1,2-Dibromo-3-Chloropropane		50.0	44.0	ug/L	0.0886	12.0	20	
1,2-Dibromoethane		50.0	47.2	ug/L	0.230	5.67	20	
Dibromomethane		50.0	49.7	ug/L	0.135	0.584	20	
1,2-Dichlorobenzene		50.0	46.6	ug/L	1.28	6.76	20	
1,3-Dichlorobenzene		50.0	49.6	ug/L	1.53	0.820	20	
1,4-Dichlorobenzene		50.0	47.6	ug/L	1.48	4.82	20	
Dichlorodifluoromethane		50.0	57.6	ug/L	0.483	15.3	20	
1,2-Dichloroethane		50.0	56.7	ug/L	0.397	13.3	20	
cis-1,2-Dichloroethene		50.0	50.9	ug/L	0.292	1.90	20	
trans-1,2-Dichloroethene		50.0	52.1	ug/L	0.387	4.10	20	
1,3-Dichloropropane		50.0	47.0	ug/L	0.410	5.96	20	
2,2-Dichloropropane		50.0	61.8	ug/L	0.601	23.6	20	*
cis-1,3-Dichloropropene		50.0	53.3	ug/L	0.436	6.58	20	
trans-1,3-Dichloropropene		50.0	51.1	ug/L	0.532	2.30	20	

CCV - Modified 03/05/2008
PDF File ID: 4819639
Report generated 06/29/2016 14:43

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730 Run Date: 06/16/2016 Sample ID: WG573037-02
Instrument ID: HPMS8 Run Time: 14:25 Method: 8260B
File ID: 8M413032 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG573038 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	54.6	ug/L	0.430	9.13	20	
2-Hexanone		50.0	44.4	ug/L	0.0457	11.3	20	
Hexachlorobutadiene		50.0	54.7	ug/L	0.525	9.43	20	
Isopropylbenzene		50.0	54.0	ug/L	1.88	7.91	20	
p-Isopropyltoluene		50.0	50.6	ug/L	2.87	1.20	20	
4-Methyl-2-Pentanone		50.0	45.5	ug/L	0.0366	8.93	20	
Methylene Chloride		50.0	48.8	ug/L	0.251	2.36	20	
Naphthalene		50.0	43.5	ug/L	1.33	13.0	20	
n-Propylbenzene		50.0	49.8	ug/L	3.88	0.484	20	
Styrene		50.0	52.0	ug/L	1.12	4.02	20	
1,1,1,2-Tetrachloroethane		50.0	52.3	ug/L	0.424	4.56	20	
Tetrachloroethene		50.0	53.6	ug/L	0.356	7.11	20	
1,2,3-Trichlorobenzene		50.0	45.4	ug/L	0.786	9.28	20	
1,2,4-Trichlorobenzene		50.0	48.6	ug/L	0.997	2.89	20	
1,1,1-Trichloroethane		50.0	59.6	ug/L	0.616	19.1	20	
1,1,2-Trichloroethane		50.0	46.3	ug/L	0.227	7.39	20	
Trichloroethene		50.0	54.0	ug/L	0.296	7.92	20	
Trichlorofluoromethane		50.0	59.7	ug/L	0.645	19.5	20	
1,2,3-Trichloropropane		50.0	45.0	ug/L	0.139	10.0	20	
1,2,4-Trimethylbenzene		50.0	50.1	ug/L	2.93	0.254	20	
1,3,5-Trimethylbenzene		50.0	50.2	ug/L	2.85	0.347	20	
o-Xylene		50.0	51.2	ug/L	0.673	2.46	20	
m-,p-Xylene		100	103	ug/L	0.693	3.11	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4819639
Report generated 06/29/2016 14:43

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060730
Instrument ID: HPMS8
Workgroup (AAB#): WG573038

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	288225	539116	778260
Upper Limit	NA	NA	576450	1078232	1556520
Lower Limit	NA	NA	144113	269558	389130
L16060730-01	1.00	01	278960	501855	657827
L16060730-02	1.00	01	286086	506073	673536
L16060730-03	1.00	01	289260	515059	679708
L16060730-04	1.00	01	295335	535923	705973
WG573038-01	1.00	01	292043	533754	717429
WG573038-02	1.00	01	307888	540053	724153
WG573038-03	1.00	01	312159	553122	735322

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4819640
Report generated 06/29/2016 14:43

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060730
Instrument ID: HPMS8
Workgroup (AAB#): WG573038

ICAL CCV Number: WG568561-08
CAL ID: HPMS8-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	17.6	14.58	10.71
Upper Limit	NA	NA	18.1	15.08	11.21
Lower Limit	NA	NA	17.1	14.08	10.21
L16060730-01	1.00	01	17.6	14.57	10.71
L16060730-02	1.00	01	17.6	14.57	10.71
L16060730-03	1.00	01	17.6	14.57	10.71
L16060730-04	1.00	01	17.6	14.57	10.71
WG573038-01	1.00	01	17.6	14.57	10.71
WG573038-02	1.00	01	17.6	14.57	10.71
WG573038-03	1.00	01	17.6	14.57	10.71

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4819642
Report generated: 06/29/2016 14:43

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413052.D Vial: 22
Acq On : 17 Jun 2016 00:12 Operator: FJB
Sample : L16060730-01 A 826-SPE Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:21:24 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	657827	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	501855	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	278960	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	198396	28.0704 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 112.28%		
43) 1,2-Dichloroethane-d4	10.30	65	223502	29.4918 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 117.96%		
58) Toluene-d8	12.68	98	687562	26.1781 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.72%		
80) p-Bromofluorobenzene	16.08	95	291698	25.2532 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.00%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.08	85	1489	0.1350 ug/L #	42
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	489978	73.3423 ug/L	95
13) Acetone	6.25	43	8834	11.9360 ug/L	99
14) 1,1-Dichloroethene	6.47	61	3837	0.3607 ug/L	90
29) 2-Butanone	8.88	43	670	0.6161 ug/L #	47
32) cis-1,2-Dichloroethene	9.17	96	194329	25.7355 ug/L	87
33) Chloroform	9.38	83	31566	2.2028 ug/L	96
45) 1,2-Dichloroethane	10.43	62	15289	1.6577 ug/L	92
46) Benzene	10.46	78	14168	0.5243 ug/L	94
47) Trichloroethene	11.21	130	1528673	212.1091 ug/L	99
48) Methylcyclohexane	11.21	83	21337	1.9488 ug/L #	1
66) Tetrachloroethene	13.60	164	2814	0.4216 ug/L	91

(#) = qualifier out of range (m) = manual integration
8M413052.D 8260WT.M Mon Jun 20 09:20:38 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413052.D Vial: 22
Acq On : 17 Jun 2016 00:12 Operator: FJB
Sample : L16060730-01 A 826-SPE Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 8:21 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

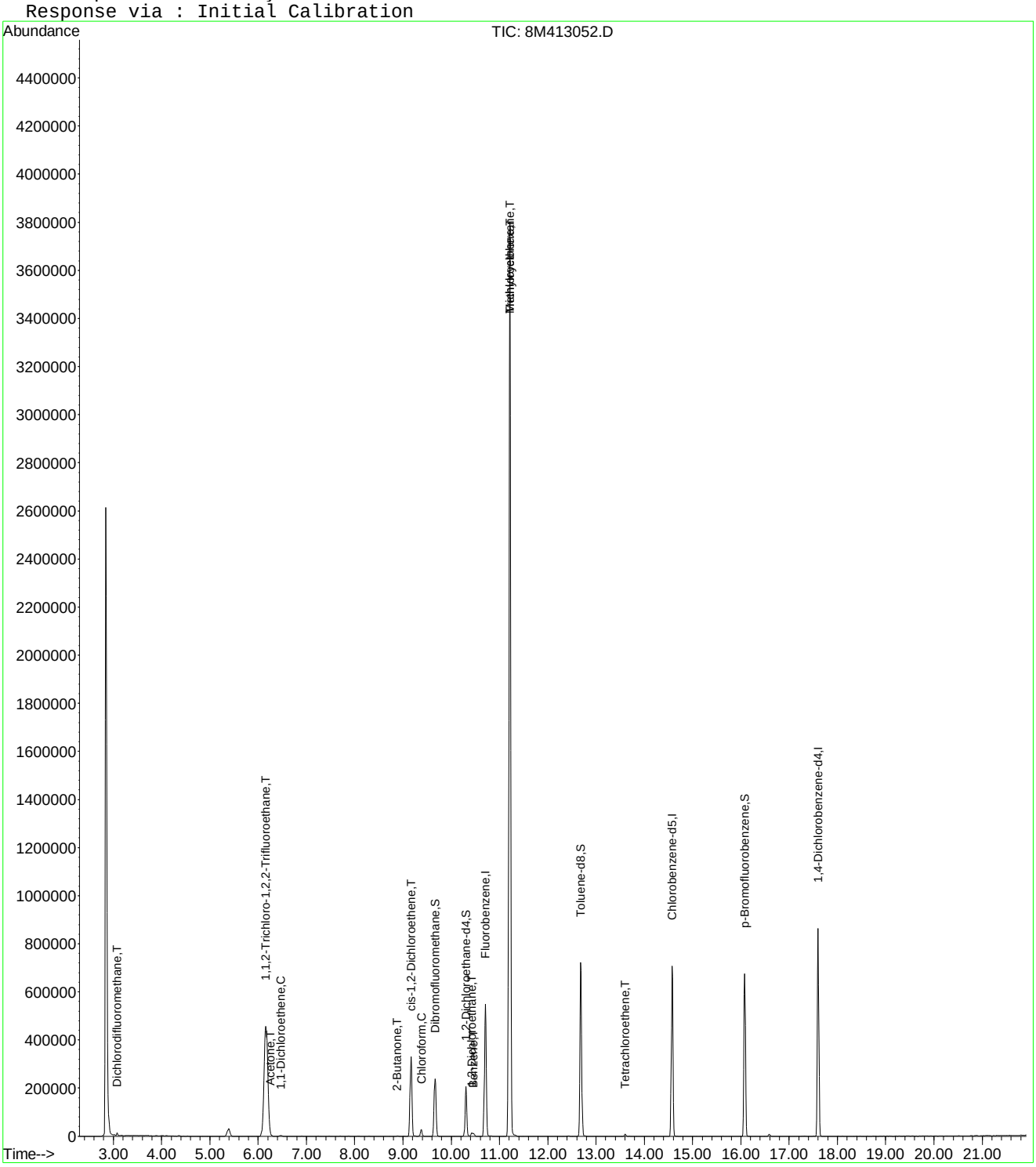

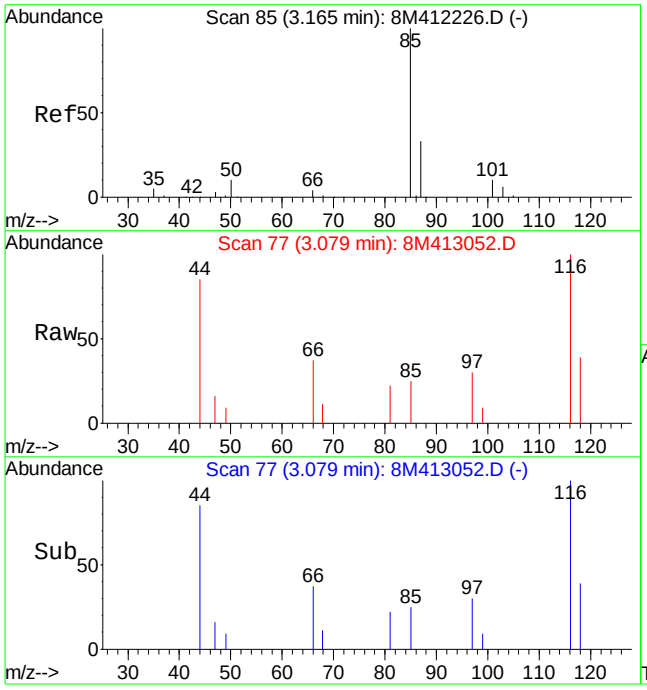

#2
Dichlorodifluoromethane
Concen: 0.14 ug/L
RT: 3.08 min Scan# 77
Delta R.T. -0.09 min
Lab File: 8M413052.D
Acq: 17 Jun 2016 00:12

Tgt Ion: 85 Resp: 1489

Ion	Ratio	Lower	Upper
85	100		
87	0.0	19.6	45.8#

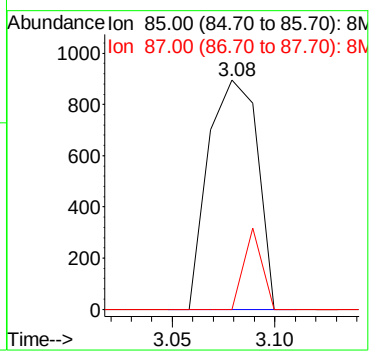

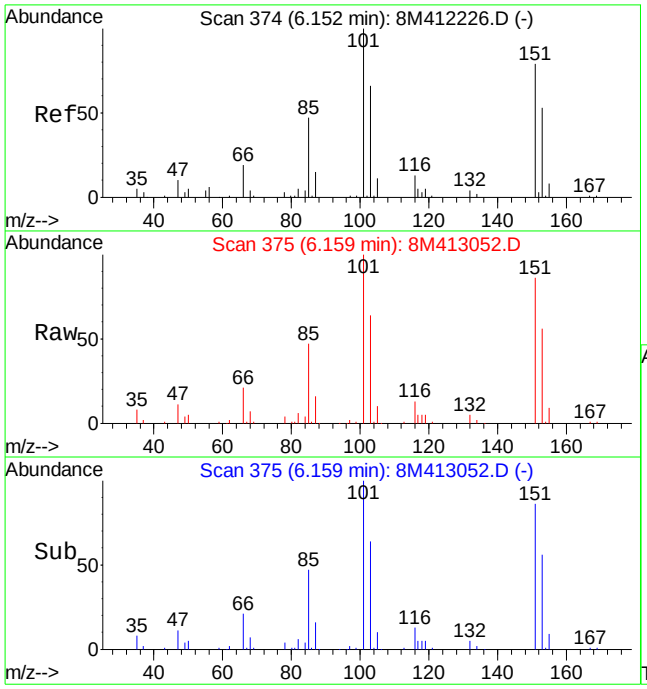

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 73.34 ug/L
RT: 6.16 min Scan# 375
Delta R.T. 0.01 min
Lab File: 8M413052.D
Acq: 17 Jun 2016 00:12

Tgt Ion:101 Resp: 489978

Ion	Ratio	Lower	Upper
101	100		
151	84.8	40.2	120.2

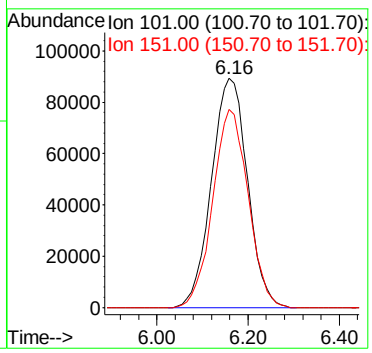

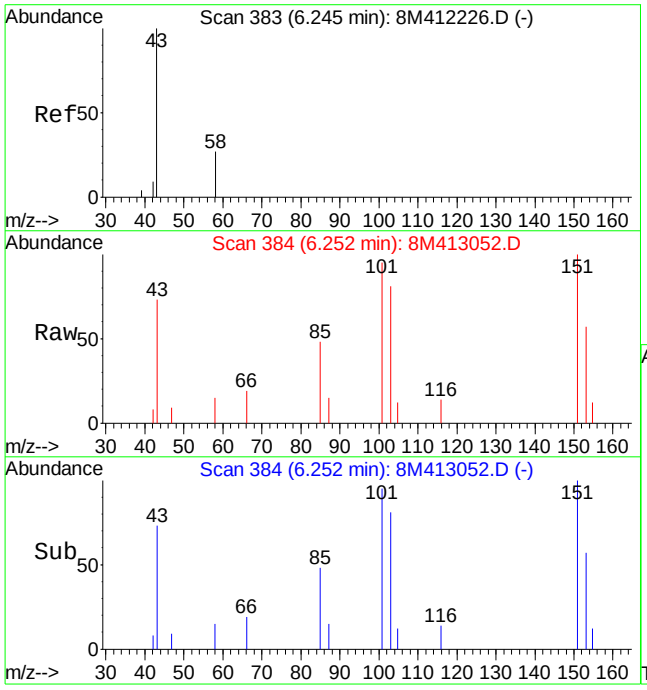

#13
Acetone
Concen: 11.94 ug/L
RT: 6.25 min Scan# 384
Delta R.T. 0.01 min
Lab File: 8M413052.D
Acq: 17 Jun 2016 00:12

Tgt Ion: 43 Resp: 8834

Ion	Ratio	Lower	Upper
43	100		
58	24.6	15.2	35.4

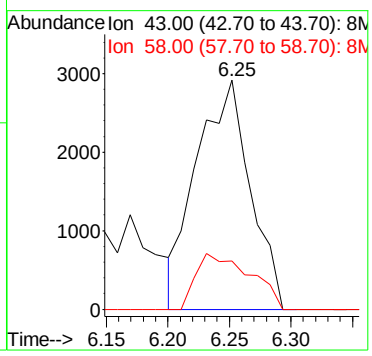

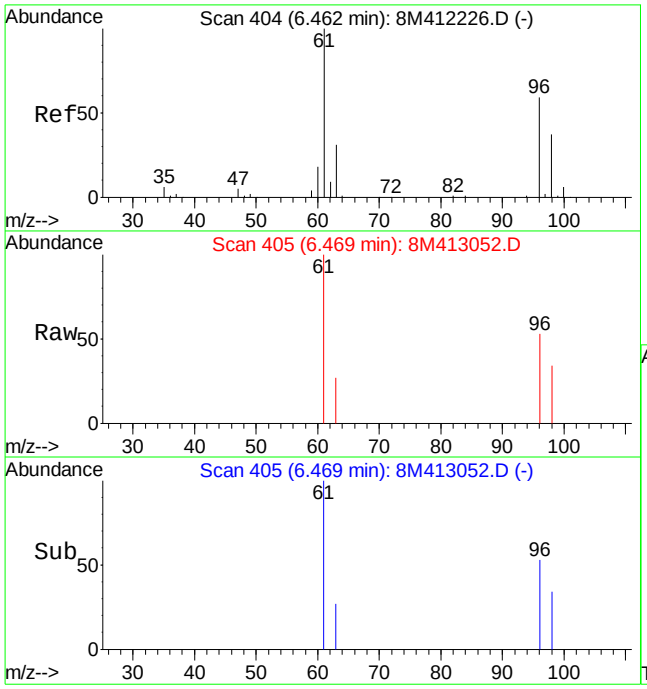

#14
1,1-Dichloroethene
Concen: 0.36 ug/L
RT: 6.47 min Scan# 405
Delta R.T. 0.01 min
Lab File: 8M413052.D
Acq: 17 Jun 2016 00:12

Tgt Ion: 61 Resp: 3837

Ion	Ratio	Lower	Upper
61	100		
96	50.3	34.6	80.8

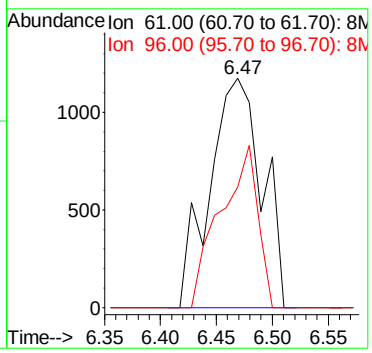

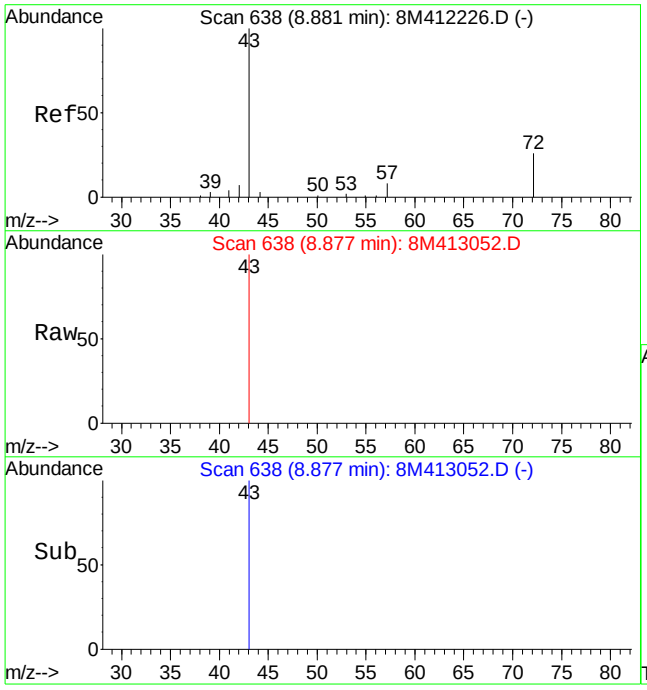

#29
2-Butanone
Concen: 0.62 ug/L
RT: 8.88 min Scan# 638
Delta R.T. -0.00 min
Lab File: 8M413052.D
Acq: 17 Jun 2016 00:12

Tgt Ion: 43 Resp: 670

Ion	Ratio	Lower	Upper
43	100		
72	0.0	16.4	38.4#

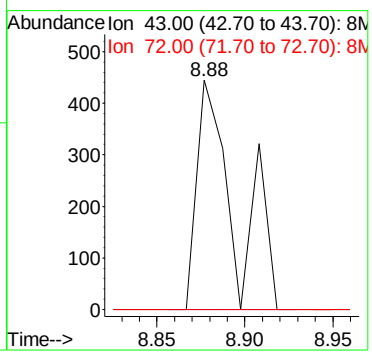

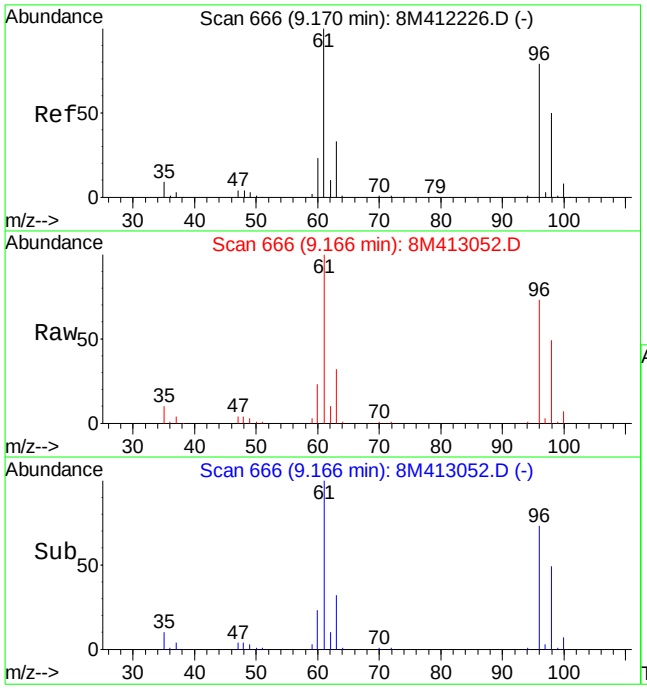

#32
cis-1,2-Dichloroethene
Concen: 25.74 ug/L
RT: 9.17 min Scan# 666
Delta R.T. -0.00 min
Lab File: 8M413052.D
Acq: 17 Jun 2016 00:12

Tgt Ion: 96 Resp: 194329

Ion	Ratio	Lower	Upper
96	100		
61	135.5	91.5	213.5

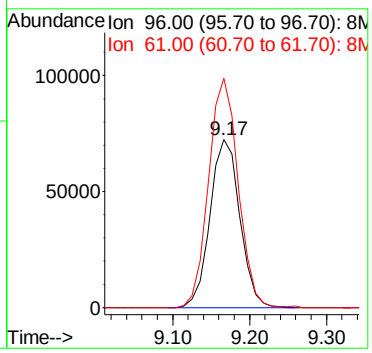

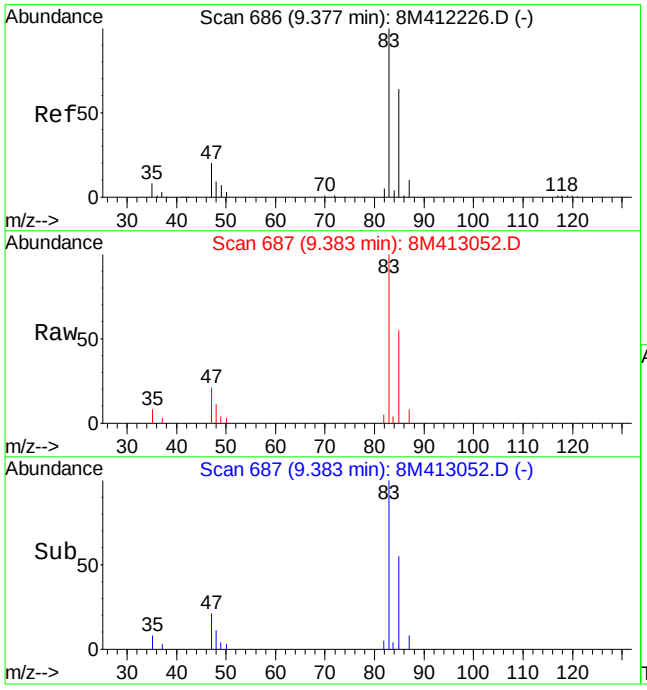

#33
Chloroform
Concen: 2.20 ug/L
RT: 9.38 min Scan# 687
Delta R.T. 0.01 min
Lab File: 8M413052.D
Acq: 17 Jun 2016 00:12

Tgt Ion: 83 Resp: 31566

Ion	Ratio	Lower	Upper
83	100		
85	59.5	37.5	87.5

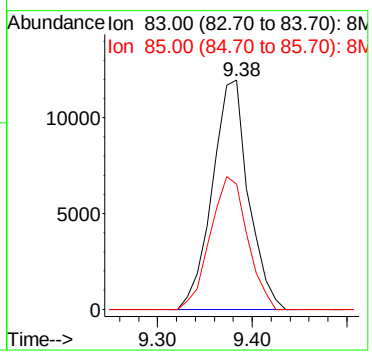

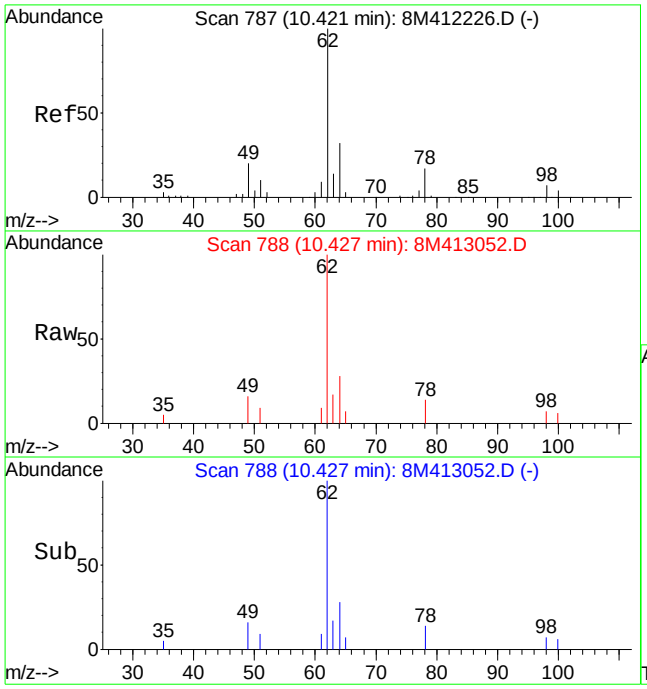

#45
1,2-Dichloroethane
Concen: 1.66 ug/L
RT: 10.43 min Scan# 788
Delta R.T. 0.01 min
Lab File: 8M413052.D
Acq: 17 Jun 2016 00:12

Tgt Ion: 62 Resp: 15289

Ion	Ratio	Lower	Upper
62	100		
64	33.9	19.6	45.6
49	18.2	15.5	36.1

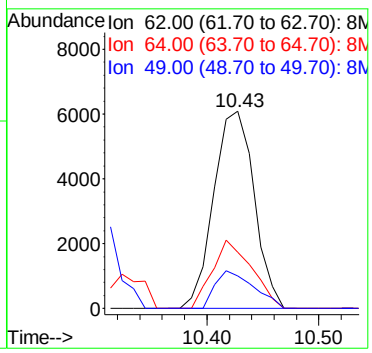

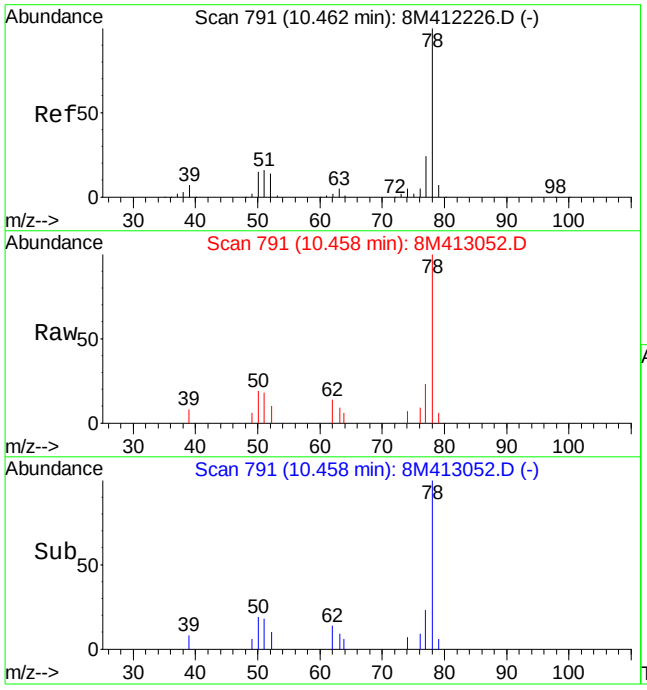

#46
Benzene
Concen: 0.52 ug/L
RT: 10.46 min Scan# 791
Delta R.T. -0.00 min
Lab File: 8M413052.D
Acq: 17 Jun 2016 00:12

Tgt Ion: 78 Resp: 14168

Ion	Ratio	Lower	Upper
78	100		
52	10.2	8.4	19.6
51	20.1	10.9	25.5

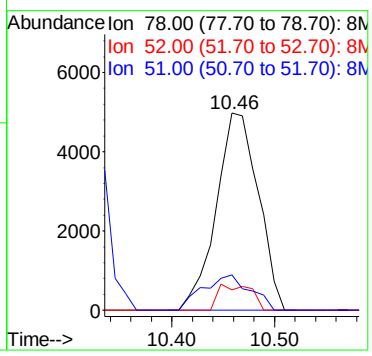

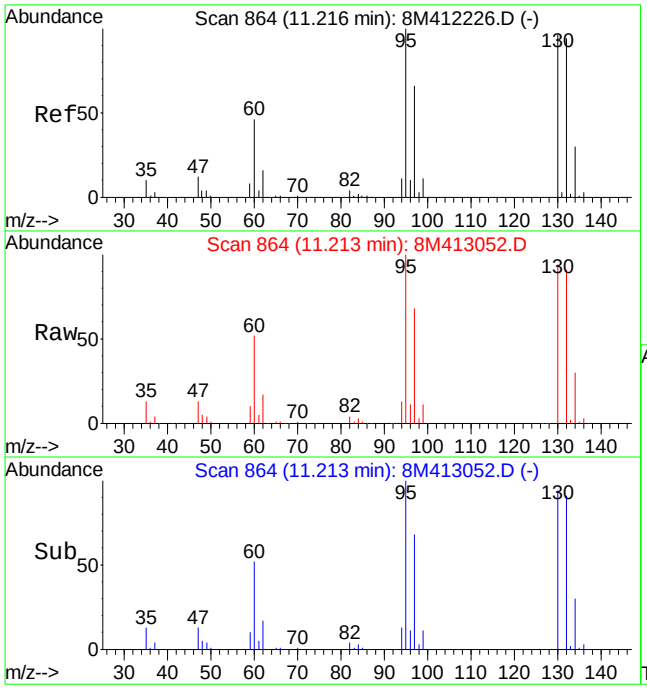

#47
Trichloroethene
Concen: 212.11 ug/L
RT: 11.21 min Scan# 864
Delta R.T. -0.00 min
Lab File: 8M413052.D
Acq: 17 Jun 2016 00:12

Tgt Ion:130 Resp: 1528673

Ion	Ratio	Lower	Upper
130	100		
132	97.2	58.0	135.2
95	106.8	64.9	151.5

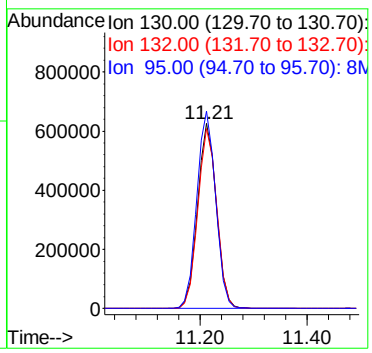

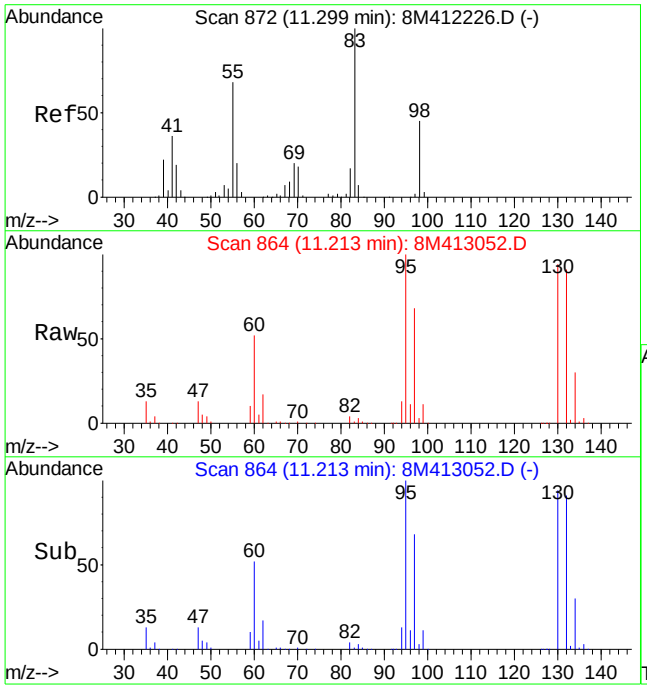

#48
Methylcyclohexane
Concen: 1.95 ug/L
RT: 11.21 min Scan# 864
Delta R.T. -0.09 min
Lab File: 8M413052.D
Acq: 17 Jun 2016 00:12

Tgt Ion: 83 Resp: 21337

Ion	Ratio	Lower	Upper
83	100		
55	0.0	40.9	95.3#
98	212.7	28.1	65.7#

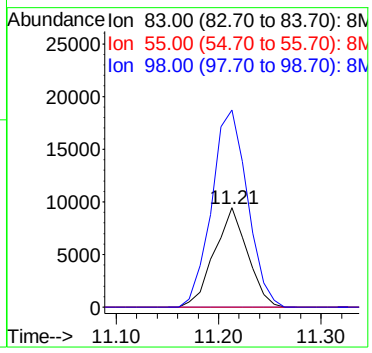

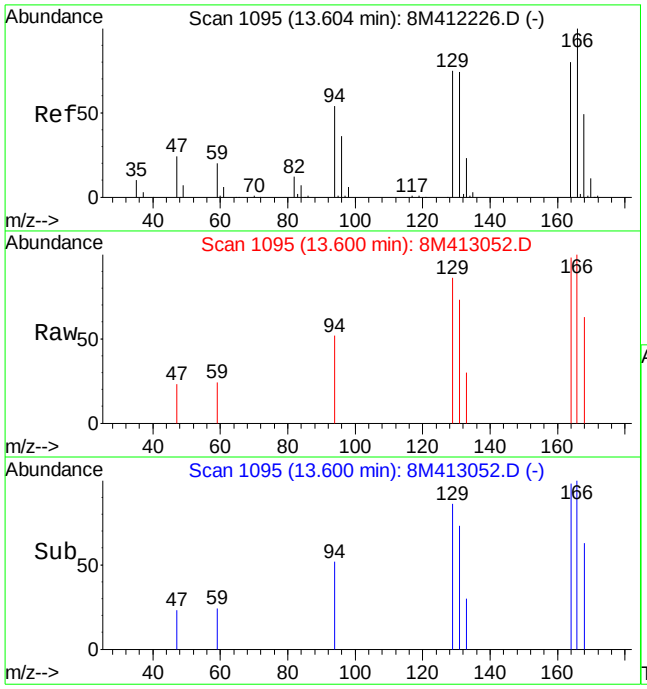

#66
Tetrachloroethene
Concen: 0.42 ug/L
RT: 13.60 min Scan# 1095
Delta R.T. -0.00 min
Lab File: 8M413052.D
Acq: 17 Jun 2016 00:12

Tgt Ion:164 Resp: 2814

Ion	Ratio	Lower	Upper
164	100		
129	87.3	56.6	132.2
94	77.1	40.7	95.1

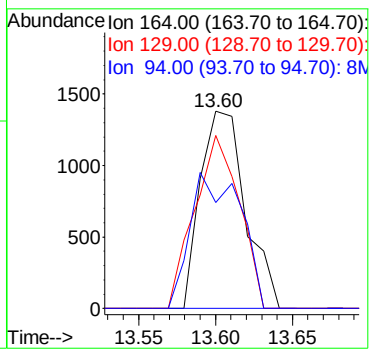

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413053.D Vial: 23
Acq On : 17 Jun 2016 00:41 Operator: FJB
Sample : L16060730-02 A 826-SPE Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:21:53 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	673536	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	506073	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	286086	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	202860	28.0326 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 112.12%		
43) 1,2-Dichloroethane-d4	10.31	65	233224	30.0569 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 120.24%#		
58) Toluene-d8	12.68	98	690474	26.0699 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.28%		
80) p-Bromofluorobenzene	16.08	95	290359	24.5111 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.04%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.08	85	1941	0.1719 ug/L	95
3) Chloromethane	3.62	50	794	0.1205 ug/L #	63
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	480447	70.2383 ug/L	94
13) Acetone	6.23	43	10028	13.2332 ug/L	88
14) 1,1-Dichloroethene	6.45	61	3463	0.3180 ug/L	86
29) 2-Butanone	8.89	43	608	0.5461 ug/L #	47
32) cis-1,2-Dichloroethene	9.17	96	193890	25.0785 ug/L	84
33) Chloroform	9.38	83	31307	2.1338 ug/L	100
45) 1,2-Dichloroethane	10.42	62	14379	1.5226 ug/L #	90
46) Benzene	10.46	78	14074	0.5087 ug/L	95
47) Trichloroethene	11.22	130	1537643	208.3777 ug/L	99
48) Methylcyclohexane	11.22	83	20947	1.8686 ug/L #	1
66) Tetrachloroethene	13.60	164	3124	0.4641 ug/L	84

(#) = qualifier out of range (m) = manual integration
8M413053.D 8260WT.M Mon Jun 20 09:20:44 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413053.D Vial: 23
Acq On : 17 Jun 2016 00:41 Operator: FJB
Sample : L16060730-02 A 826-SPE Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 8:21 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

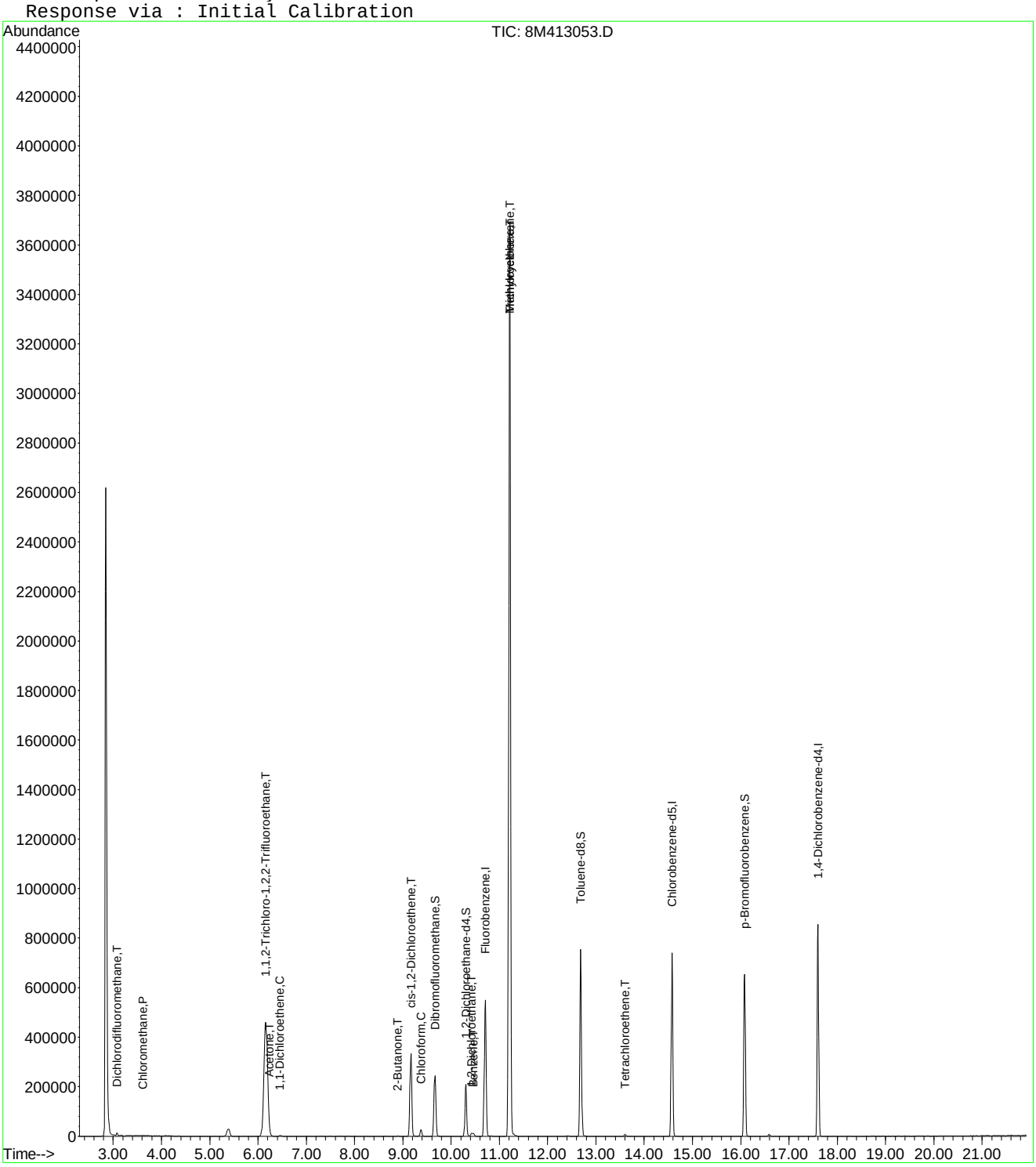

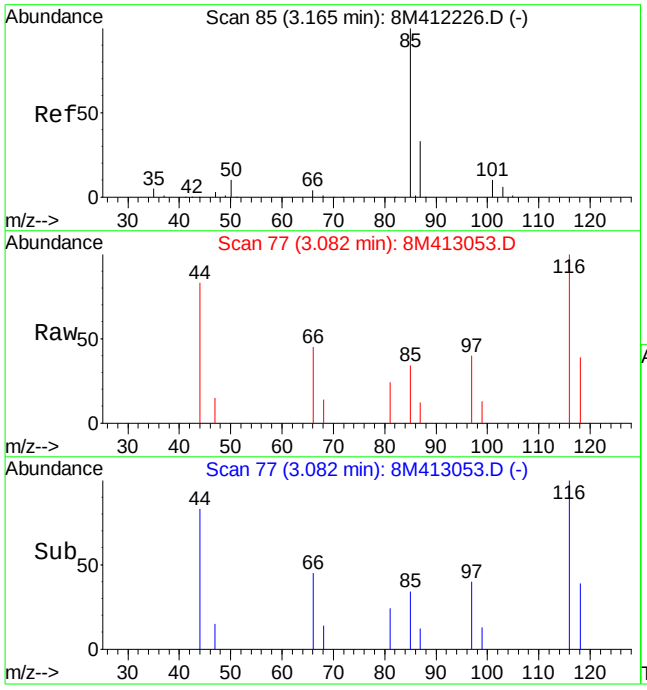

#2
Dichlorodifluoromethane
Concen: 0.17 ug/L
RT: 3.08 min Scan# 77
Delta R.T. -0.08 min
Lab File: 8M413053.D
Acq: 17 Jun 2016 00:41

Tgt Ion: 85 Resp: 1941

Ion	Ratio	Lower	Upper
85	100		
87	35.2	19.6	45.8

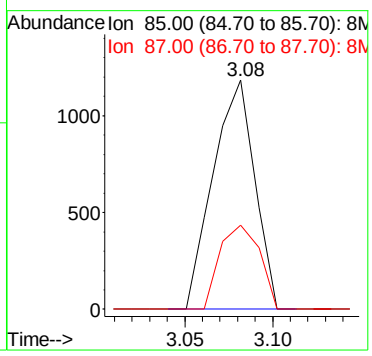

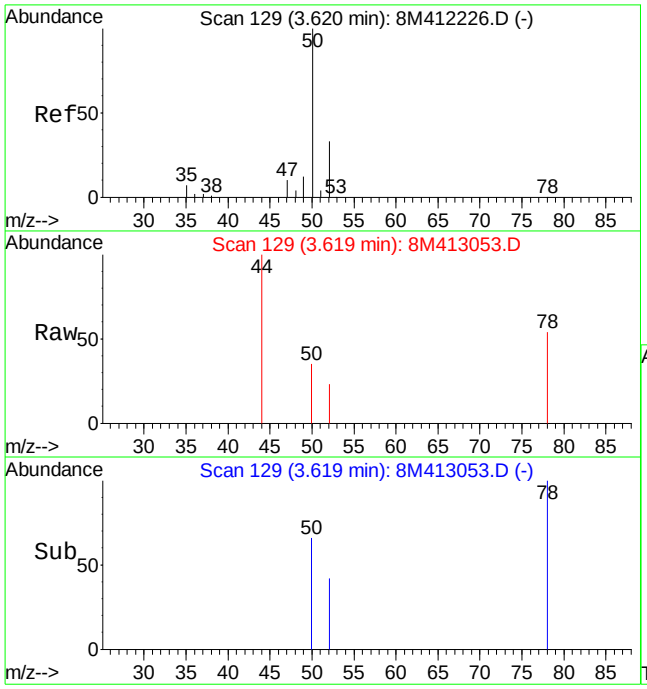

#3
Chloromethane
Concen: 0.12 ug/L
RT: 3.62 min Scan# 129
Delta R.T. -0.00 min
Lab File: 8M413053.D
Acq: 17 Jun 2016 00:41

Tgt Ion: 50 Resp: 794

Ion	Ratio	Lower	Upper
50	100		
52	53.8	19.9	46.3#

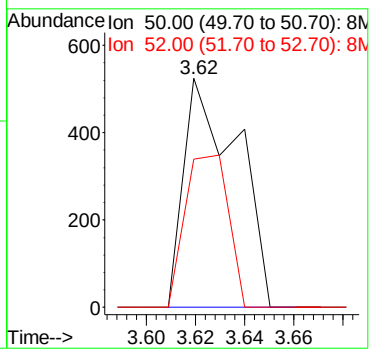

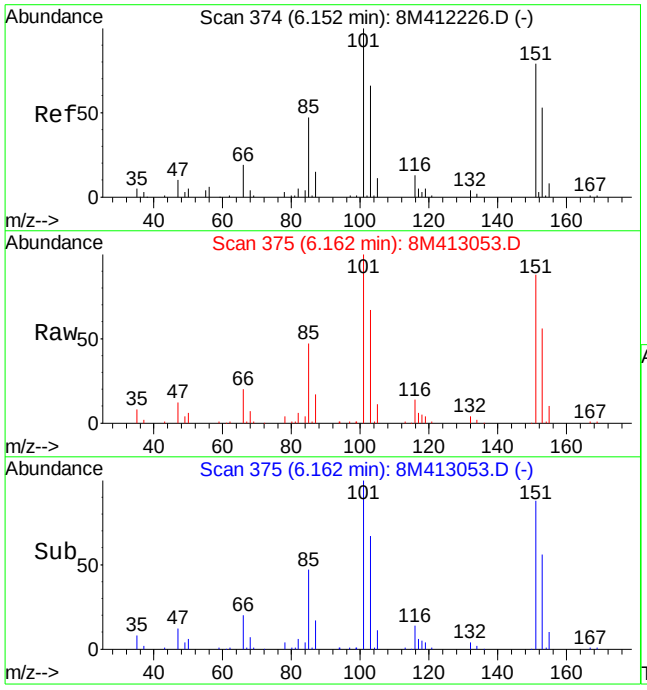

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 70.24 ug/L
RT: 6.16 min Scan# 375
Delta R.T. 0.01 min
Lab File: 8M413053.D
Acq: 17 Jun 2016 00:41

Tgt Ion:101 Resp: 480447

Ion	Ratio	Lower	Upper
101	100		
151	85.9	40.2	120.2

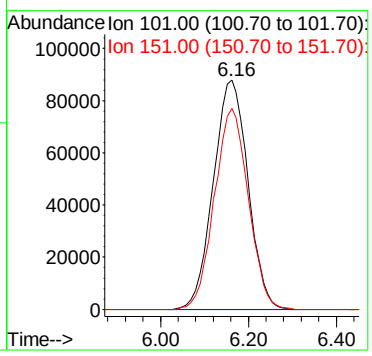

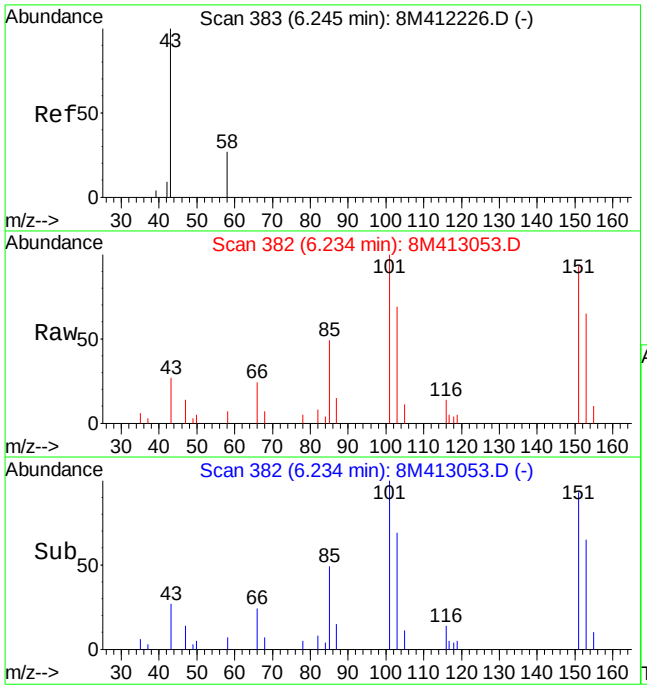

#13
Acetone
Concen: 13.23 ug/L
RT: 6.23 min Scan# 382
Delta R.T. -0.01 min
Lab File: 8M413053.D
Acq: 17 Jun 2016 00:41

Tgt Ion: 43 Resp: 10028

Ion	Ratio	Lower	Upper
43	100		
58	19.1	15.2	35.4

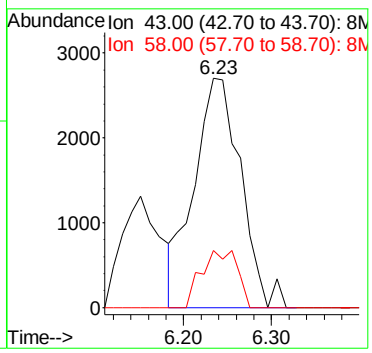

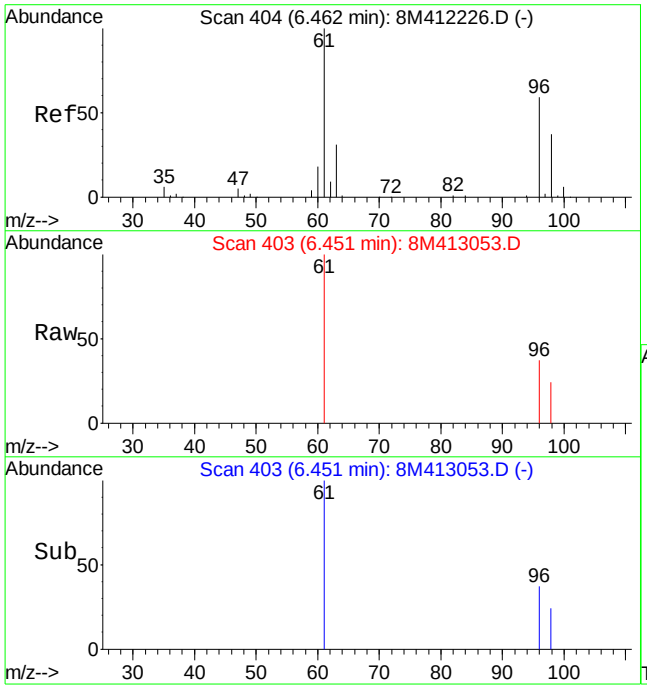

#14
1,1-Dichloroethene
Concen: 0.32 ug/L
RT: 6.45 min Scan# 403
Delta R.T. -0.01 min
Lab File: 8M413053.D
Acq: 17 Jun 2016 00:41

Tgt Ion: 61 Resp: 3463

Ion	Ratio	Lower	Upper
61	100		
96	47.2	34.6	80.8

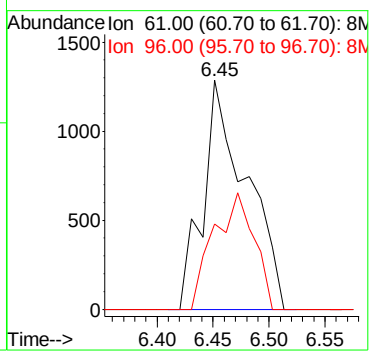

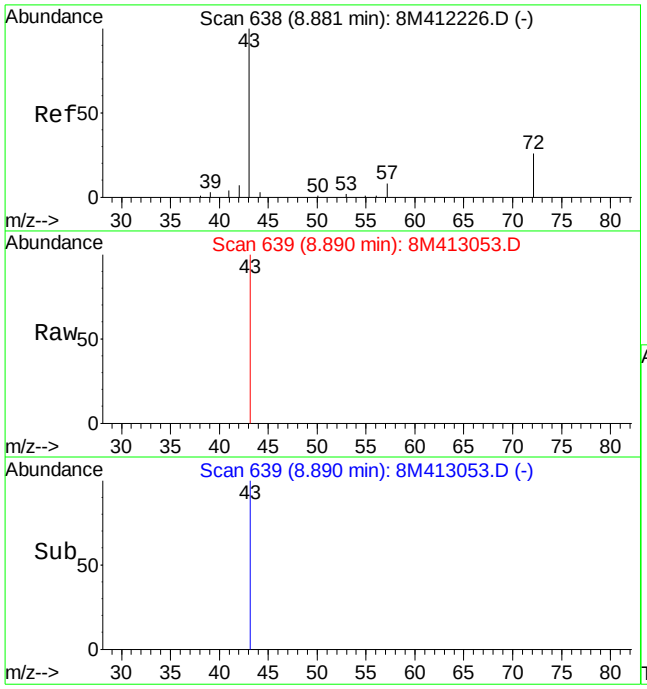

#29
2-Butanone
Concen: 0.55 ug/L
RT: 8.89 min Scan# 639
Delta R.T. 0.01 min
Lab File: 8M413053.D
Acq: 17 Jun 2016 00:41

Tgt Ion: 43 Resp: 608

Ion	Ratio	Lower	Upper
43	100		
72	0.0	16.4	38.4#

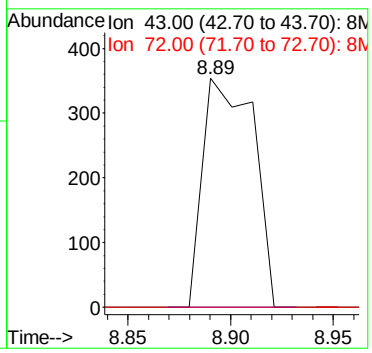

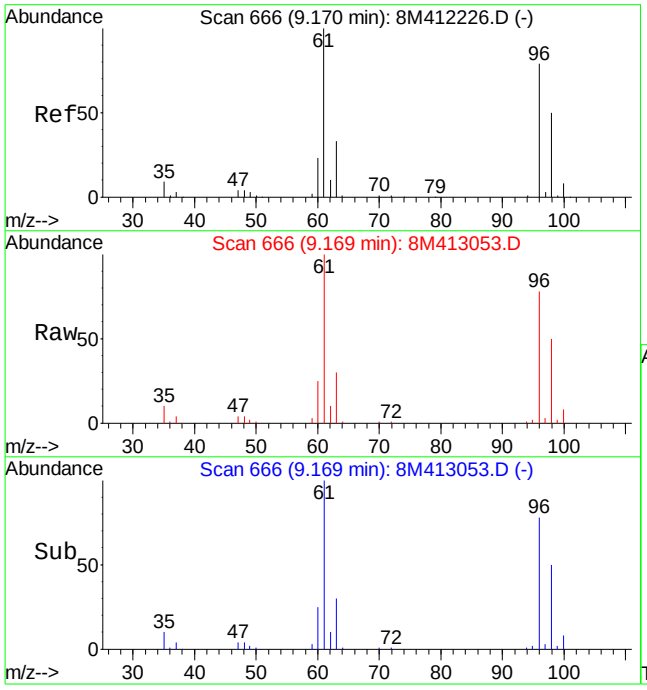

#32
cis-1,2-Dichloroethene
Concen: 25.08 ug/L
RT: 9.17 min Scan# 666
Delta R.T. -0.00 min
Lab File: 8M413053.D
Acq: 17 Jun 2016 00:41

Tgt Ion: 96 Resp: 193890

Ion	Ratio	Lower	Upper
96	100		
61	132.0	91.5	213.5

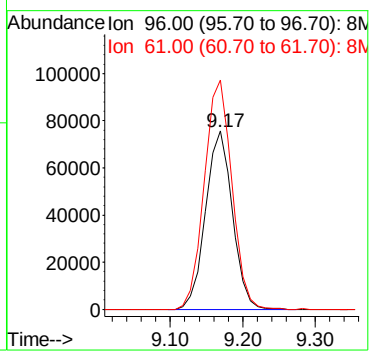

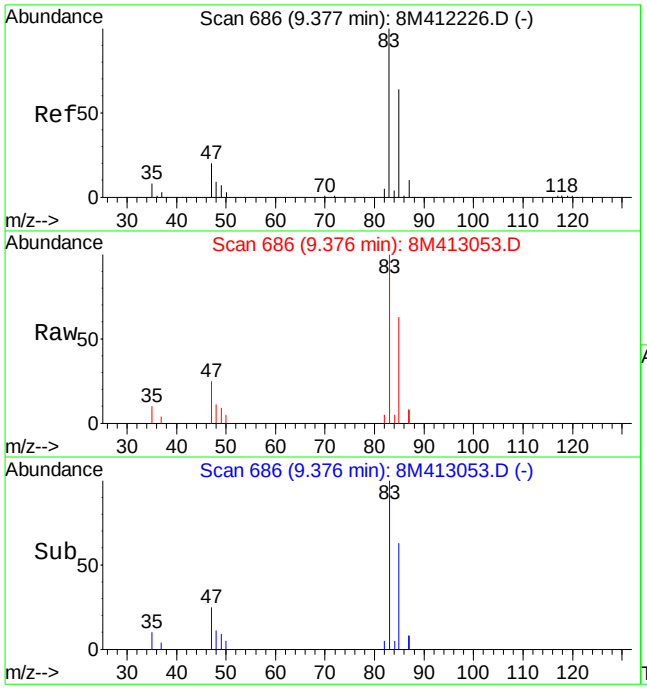

#33
Chloroform
Concen: 2.13 ug/L
RT: 9.38 min Scan# 686
Delta R.T. -0.00 min
Lab File: 8M413053.D
Acq: 17 Jun 2016 00:41

Tgt Ion: 83 Resp: 31307

Ion	Ratio	Lower	Upper
83	100		
85	62.8	37.5	87.5

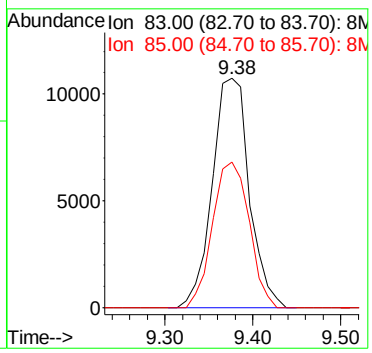

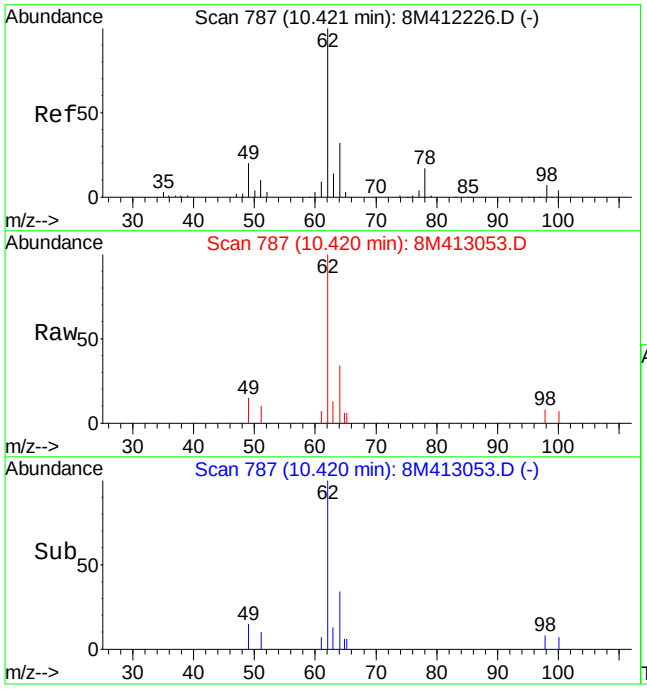

#45
1,2-Dichloroethane
Concen: 1.52 ug/L
RT: 10.42 min Scan# 787
Delta R.T. -0.00 min
Lab File: 8M413053.D
Acq: 17 Jun 2016 00:41

Tgt Ion: 62 Resp: 14379

Ion	Ratio	Lower	Upper
62	100		
64	32.3	19.6	45.6
49	14.7	15.5	36.1#

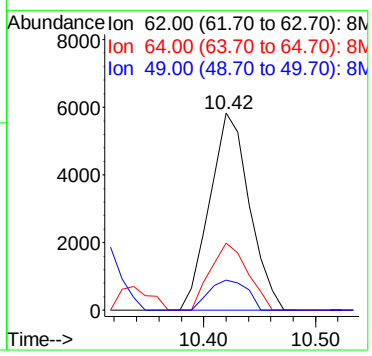

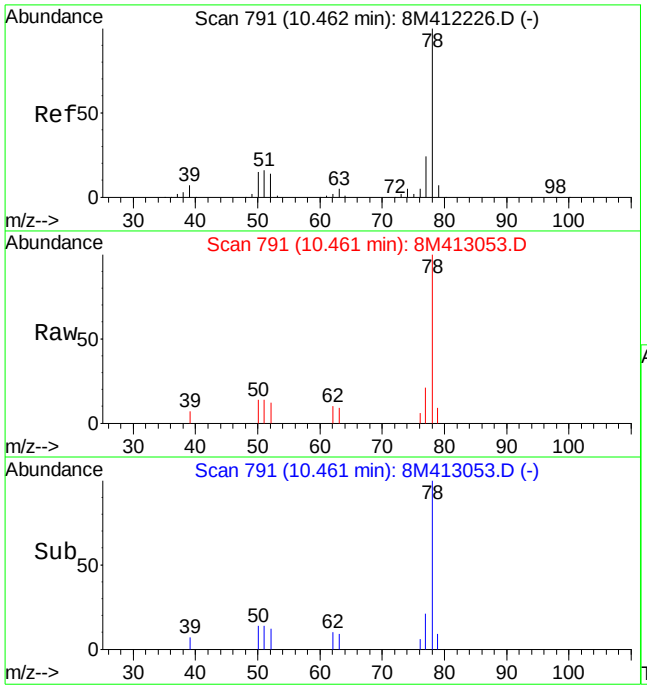

#46
Benzene
Concen: 0.51 ug/L
RT: 10.46 min Scan# 791
Delta R.T. -0.00 min
Lab File: 8M413053.D
Acq: 17 Jun 2016 00:41

Tgt Ion: 78 Resp: 14074

Ion	Ratio	Lower	Upper
78	100		
52	12.9	8.4	19.6
51	21.2	10.9	25.5

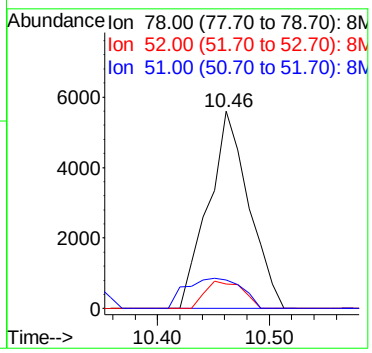

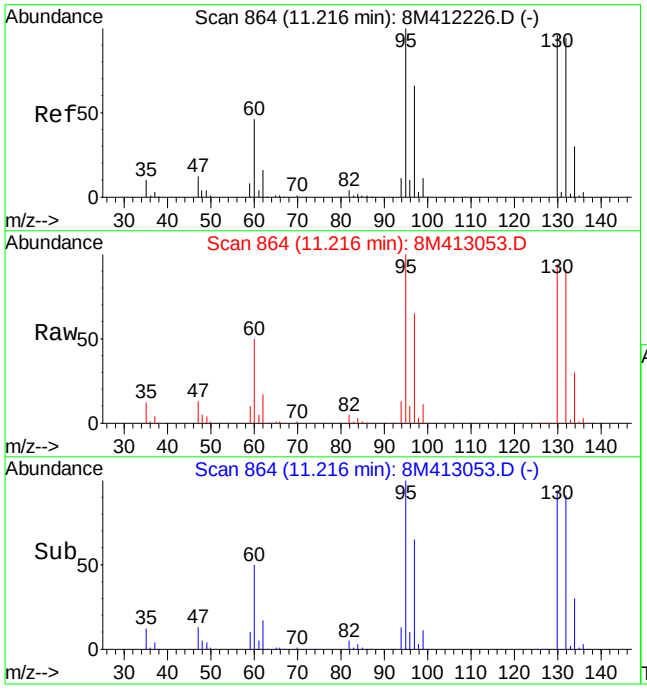

#47
Trichloroethene
Concen: 208.38 ug/L
RT: 11.22 min Scan# 864
Delta R.T. -0.00 min
Lab File: 8M413053.D
Acq: 17 Jun 2016 00:41

Tgt Ion:130 Resp: 1537643

Ion	Ratio	Lower	Upper
130	100		
132	96.4	58.0	135.2
95	107.4	64.9	151.5

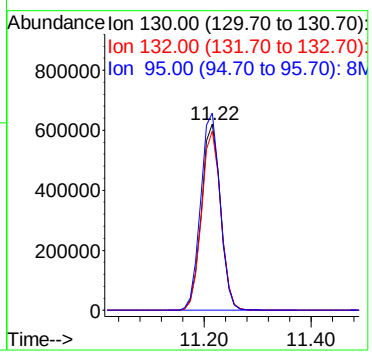

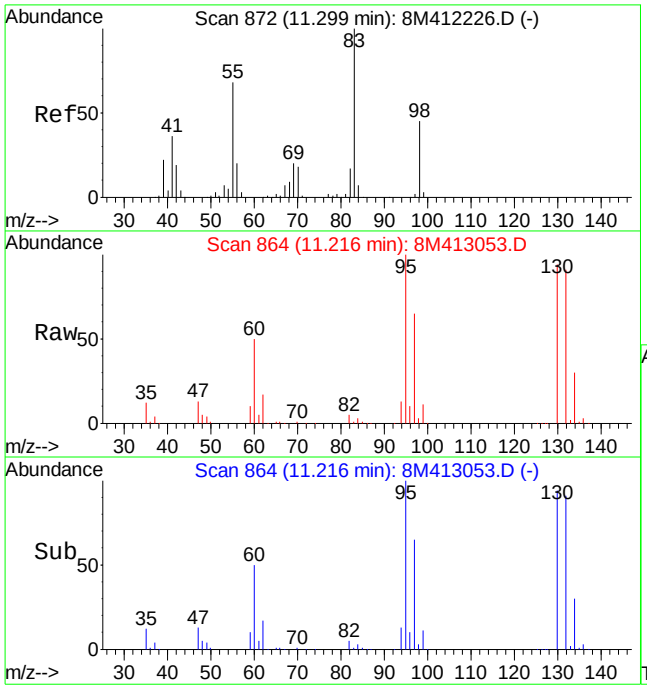

#48
Methylcyclohexane
Concen: 1.87 ug/L
RT: 11.22 min Scan# 864
Delta R.T. -0.08 min
Lab File: 8M413053.D
Acq: 17 Jun 2016 00:41

Tgt Ion: 83 Resp: 20947

Ion	Ratio	Lower	Upper
83	100		
55	0.0	40.9	95.3#
98	224.9	28.1	65.7#

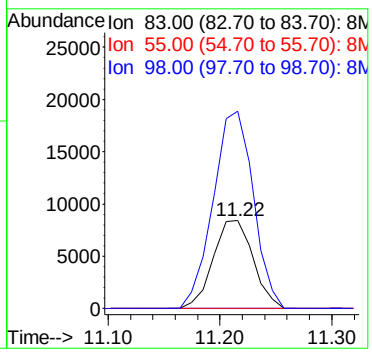

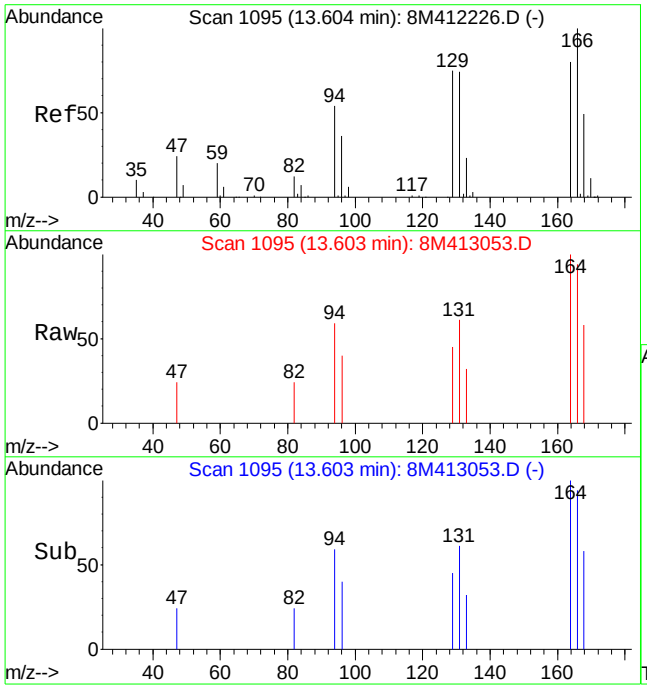

#66
Tetrachloroethene
Concen: 0.46 ug/L
RT: 13.60 min Scan# 1095
Delta R.T. -0.00 min
Lab File: 8M413053.D
Acq: 17 Jun 2016 00:41

Tgt Ion:164 Resp: 3124

Ion	Ratio	Lower	Upper
164	100		
129	79.2	56.6	132.2
94	55.5	40.7	95.1

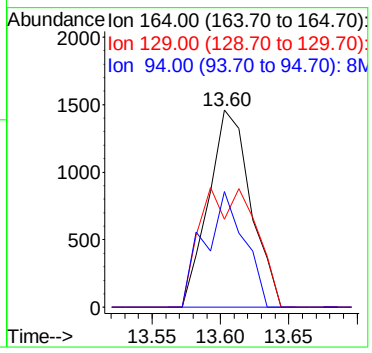

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413048.D Vial: 18
Acq On : 16 Jun 2016 22:17 Operator: FJB
Sample : L16060730-03 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:18:25 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	679708	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	515059	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	289260	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	204245	27.9677 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.88%		
43) 1,2-Dichloroethane-d4	10.30	65	236138	30.1561 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 120.64%#		
58) Toluene-d8	12.68	98	701422	26.0212 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.08%		
80) p-Bromofluorobenzene	16.08	95	301168	25.1446 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.56%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.08	85	6255	0.5489 ug/L	87
8) Trichlorofluoromethane	5.38	101	2573	0.1752 ug/L #	1
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	4361753	631.8706 ug/L	96
13) Acetone	6.17	43	53589	70.0753 ug/L #	77
16) Dimethyl Sulfide	6.73	62	2378	0.6051 ug/L	91
32) cis-1,2-Dichloroethene	9.17	96	202797	25.9924 ug/L	80
47) Trichloroethene	11.21	130	94874	12.7403 ug/L	99
48) Methylcyclohexane	11.21	83	1645	0.1454 ug/L #	1

(#) = qualifier out of range (m) = manual integration
8M413048.D 8260WT.M Mon Jun 20 09:20:18 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413048.D Vial: 18
Acq On : 16 Jun 2016 22:17 Operator: FJB
Sample : L16060730-03 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 8:18 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

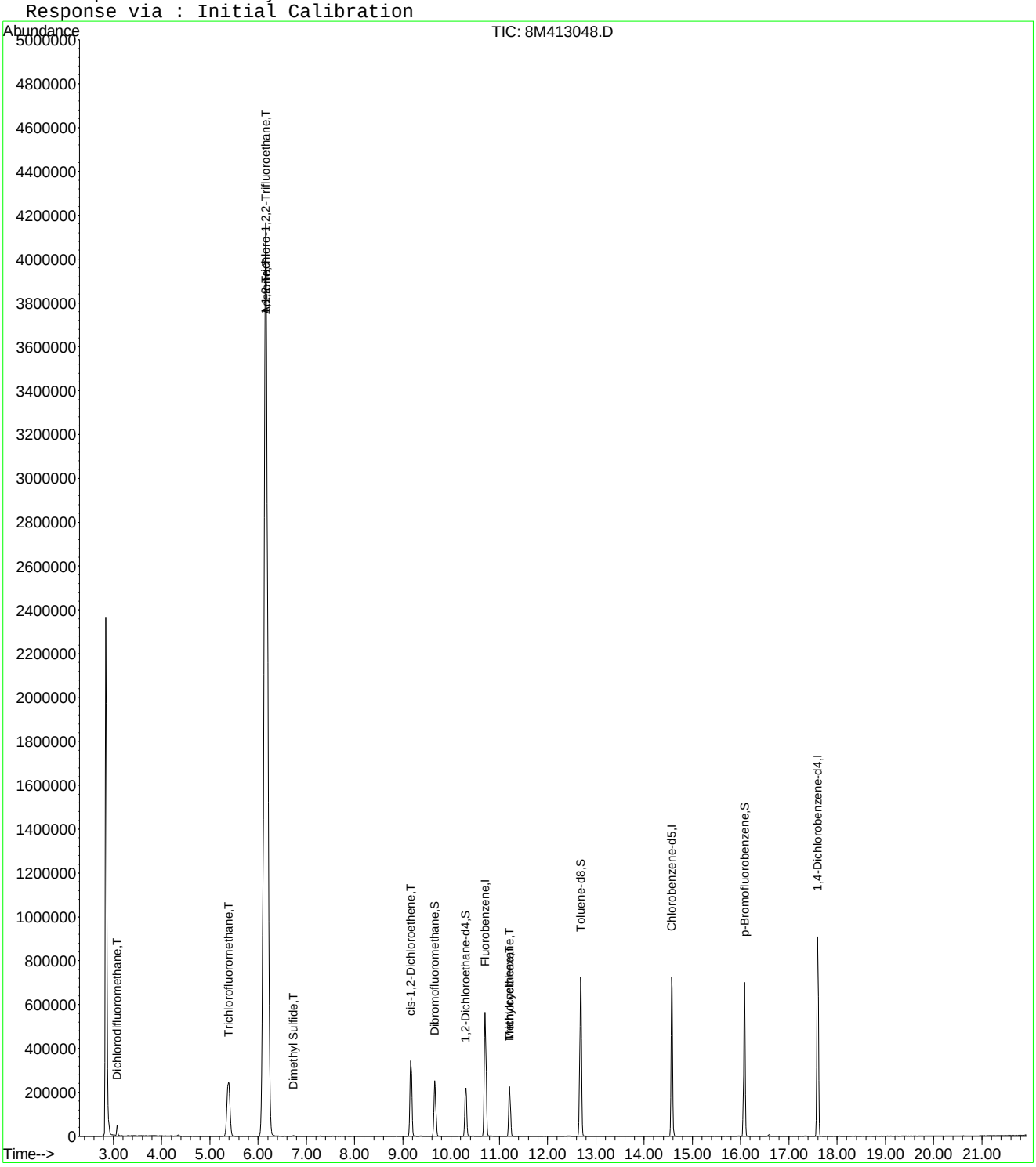

8M413048.D 8260WT.M Mon Jun 20 09:20:18 2016 Page 2

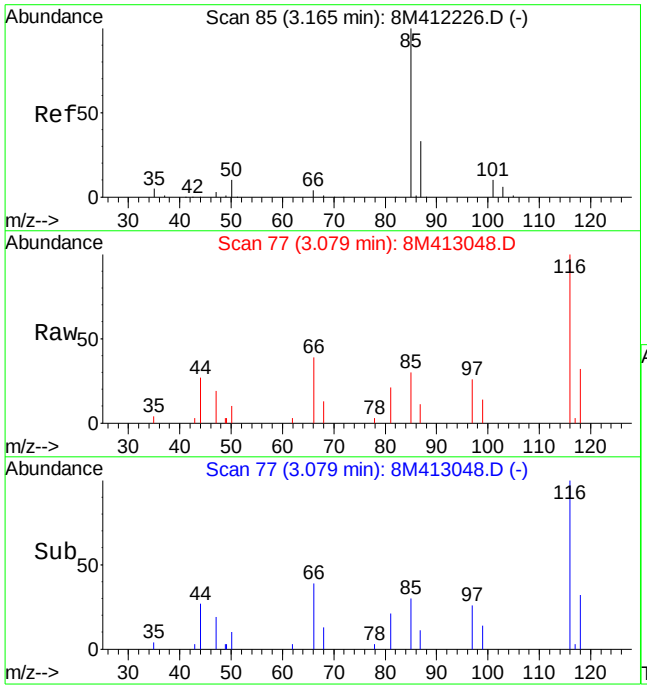

#2
Dichlorodifluoromethane
Concen: 0.55 ug/L
RT: 3.08 min Scan# 77
Delta R.T. -0.09 min
Lab File: 8M413048.D
Acq: 16 Jun 2016 22:17

Tgt Ion: 85 Resp: 6255

Ion	Ratio	Lower	Upper
85	100		
87	40.0	19.6	45.8

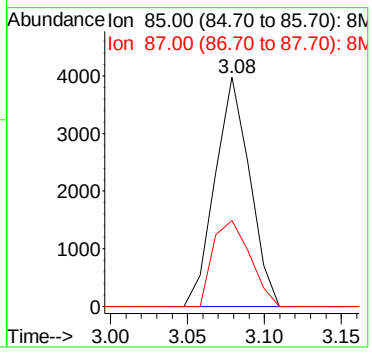

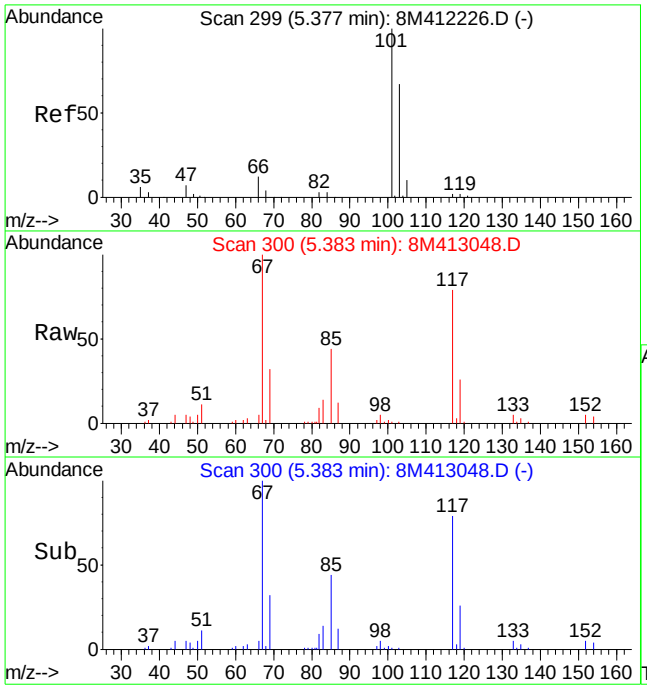

#8
Trichlorofluoromethane
Concen: 0.18 ug/L
RT: 5.38 min Scan# 300
Delta R.T. 0.01 min
Lab File: 8M413048.D
Acq: 16 Jun 2016 22:17

Tgt Ion:101 Resp: 2573

Ion	Ratio	Lower	Upper
101	100		
103	35.6	39.2	91.6#
66	457.2	7.0	16.4#

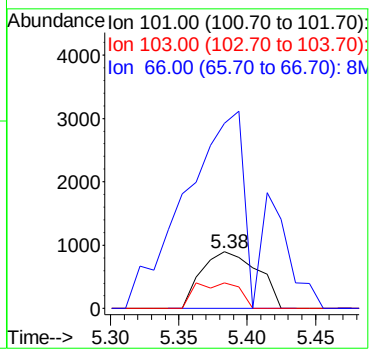

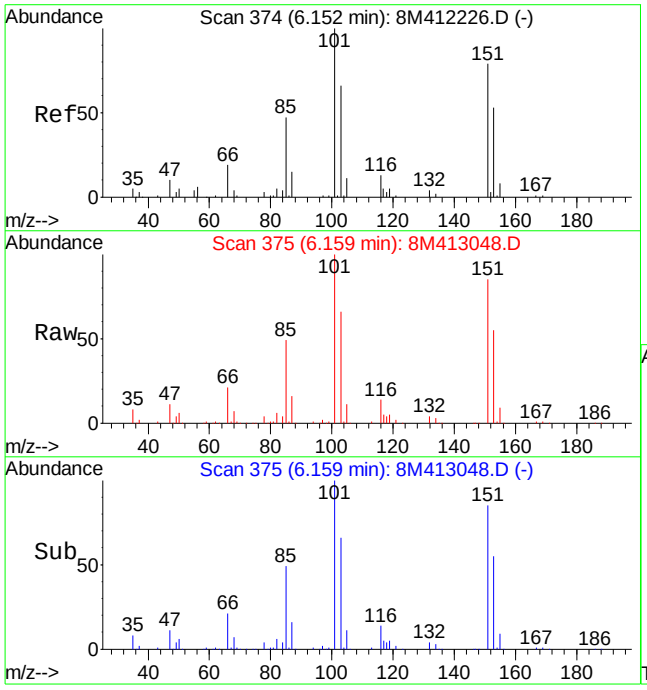

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 631.87 ug/L
RT: 6.16 min Scan# 375
Delta R.T. 0.01 min
Lab File: 8M413048.D
Acq: 16 Jun 2016 22:17

Tgt Ion:101 Resp: 4361753

Ion	Ratio	Lower	Upper
101	100		
151	84.1	40.2	120.2

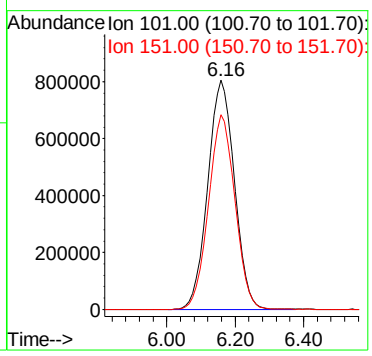

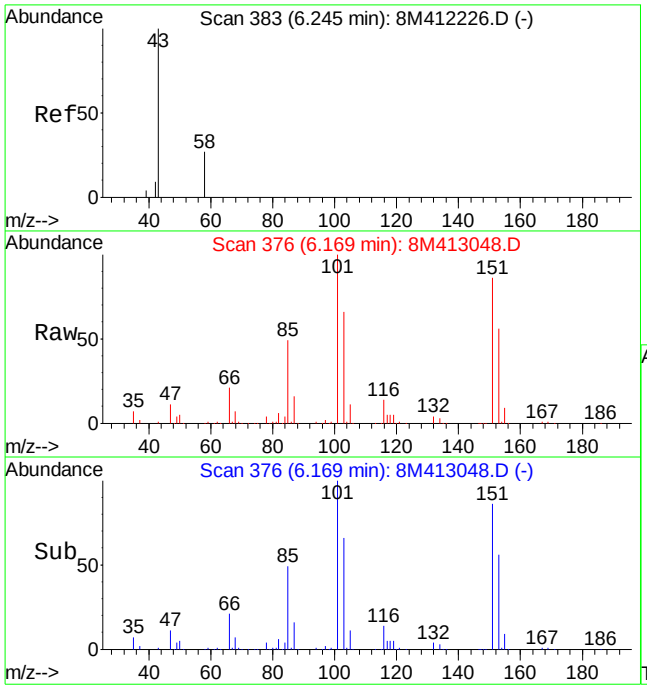

#13
Acetone
Concen: 70.08 ug/L
RT: 6.17 min Scan# 376
Delta R.T. -0.08 min
Lab File: 8M413048.D
Acq: 16 Jun 2016 22:17

Tgt Ion: 43 Resp: 53589

Ion	Ratio	Lower	Upper
43	100		
58	13.9	15.2	35.4#

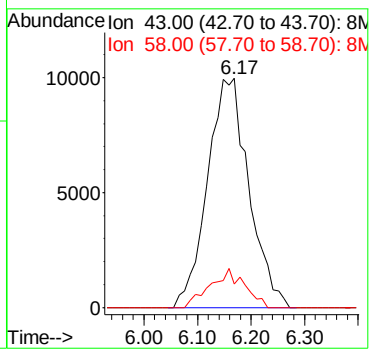

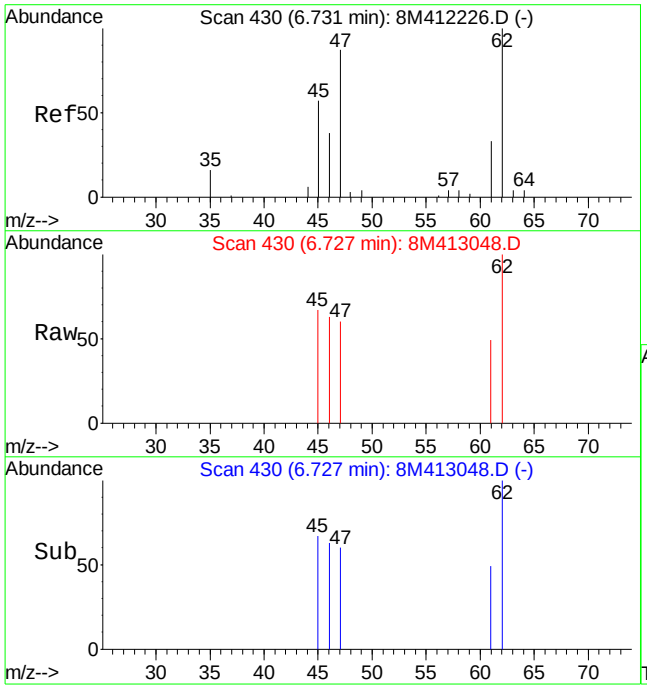

#16
Dimethyl Sulfide
Concen: 0.61 ug/L
RT: 6.73 min Scan# 430
Delta R.T. -0.00 min
Lab File: 8M413048.D
Acq: 16 Jun 2016 22:17

Tgt Ion: 62 Resp: 2378

Ion	Ratio	Lower	Upper
62	100		
47	80.0	53.2	124.0

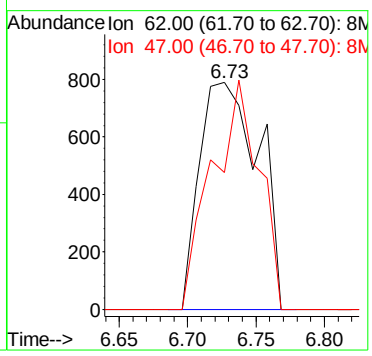

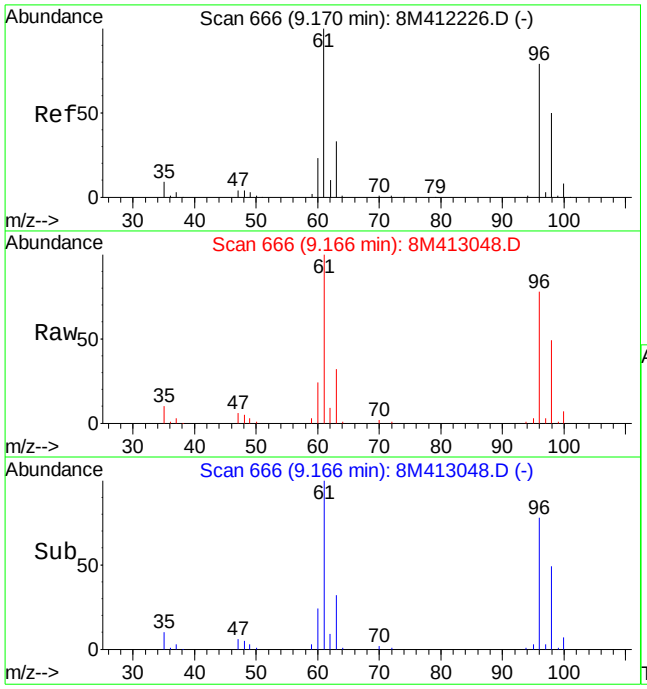

#32
cis-1,2-Dichloroethene
Concen: 25.99 ug/L
RT: 9.17 min Scan# 666
Delta R.T. -0.00 min
Lab File: 8M413048.D
Acq: 16 Jun 2016 22:17

Tgt Ion: 96 Resp: 202797

Ion	Ratio	Lower	Upper
96	100		
61	127.2	91.5	213.5

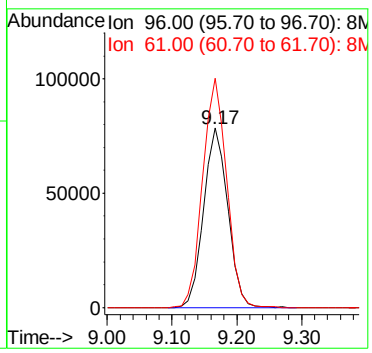

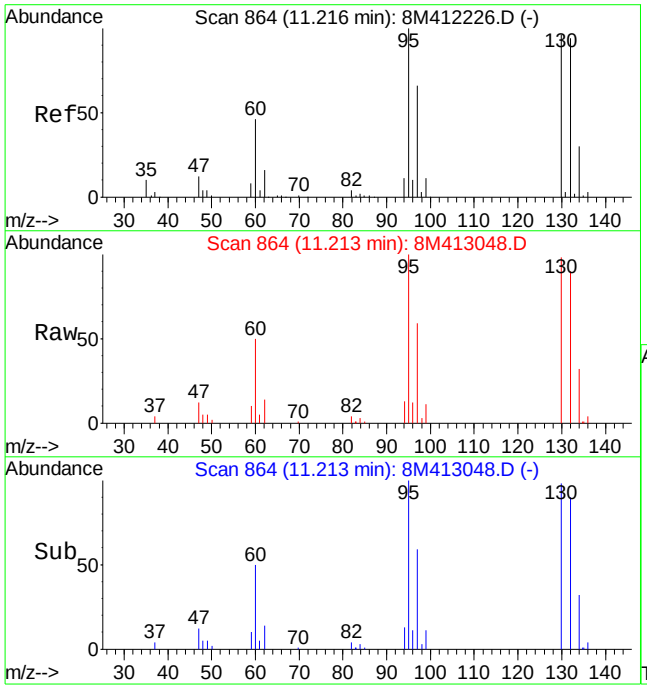

#47
Trichloroethene
Concen: 12.74 ug/L
RT: 11.21 min Scan# 864
Delta R.T. -0.00 min
Lab File: 8M413048.D
Acq: 16 Jun 2016 22:17

Tgt Ion:130 Resp: 94874

Ion	Ratio	Lower	Upper
130	100		
132	95.2	58.0	135.2
95	107.2	64.9	151.5

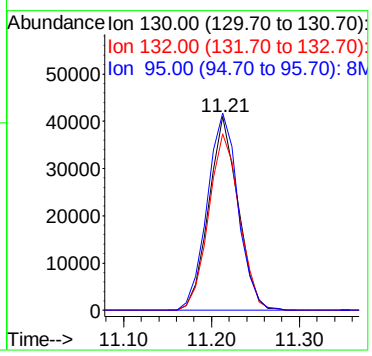

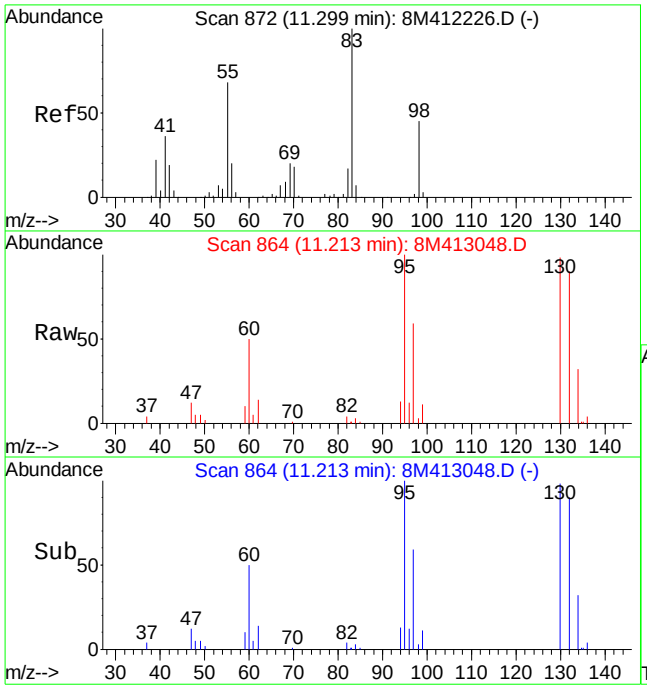

#48
Methylcyclohexane
Concen: 0.15 ug/L
RT: 11.21 min Scan# 864
Delta R.T. -0.09 min
Lab File: 8M413048.D
Acq: 16 Jun 2016 22:17

Tgt Ion: 83 Resp: 1645

Ion	Ratio	Lower	Upper
83	100		
55	0.0	40.9	95.3#
98	162.2	28.1	65.7#

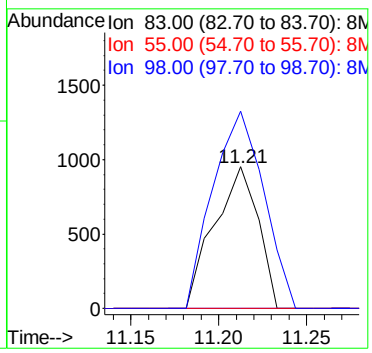

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413040.D Vial: 10
Acq On : 16 Jun 2016 18:25 Operator: FJB
Sample : L16060730-04 TB A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:18:23 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	705973	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	535923	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	295335	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	209210	27.5818 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.32%		
43) 1,2-Dichloroethane-d4	10.31	65	232627	28.6025 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 114.40%		
58) Toluene-d8	12.68	98	727511	25.9383 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.76%		
80) p-Bromofluorobenzene	16.08	95	310344	25.3778 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.52%		

Target Compounds					Qvalue
36) Tetrahydrofuran	9.63	42	871	1.1332 ug/L	92

(#) = qualifier out of range (m) = manual integration
8M413040.D 8260WT.M Mon Jun 20 09:19:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413040.D Vial: 10
Acq On : 16 Jun 2016 18:25 Operator: FJB
Sample : L16060730-04 TB A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 8:18 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

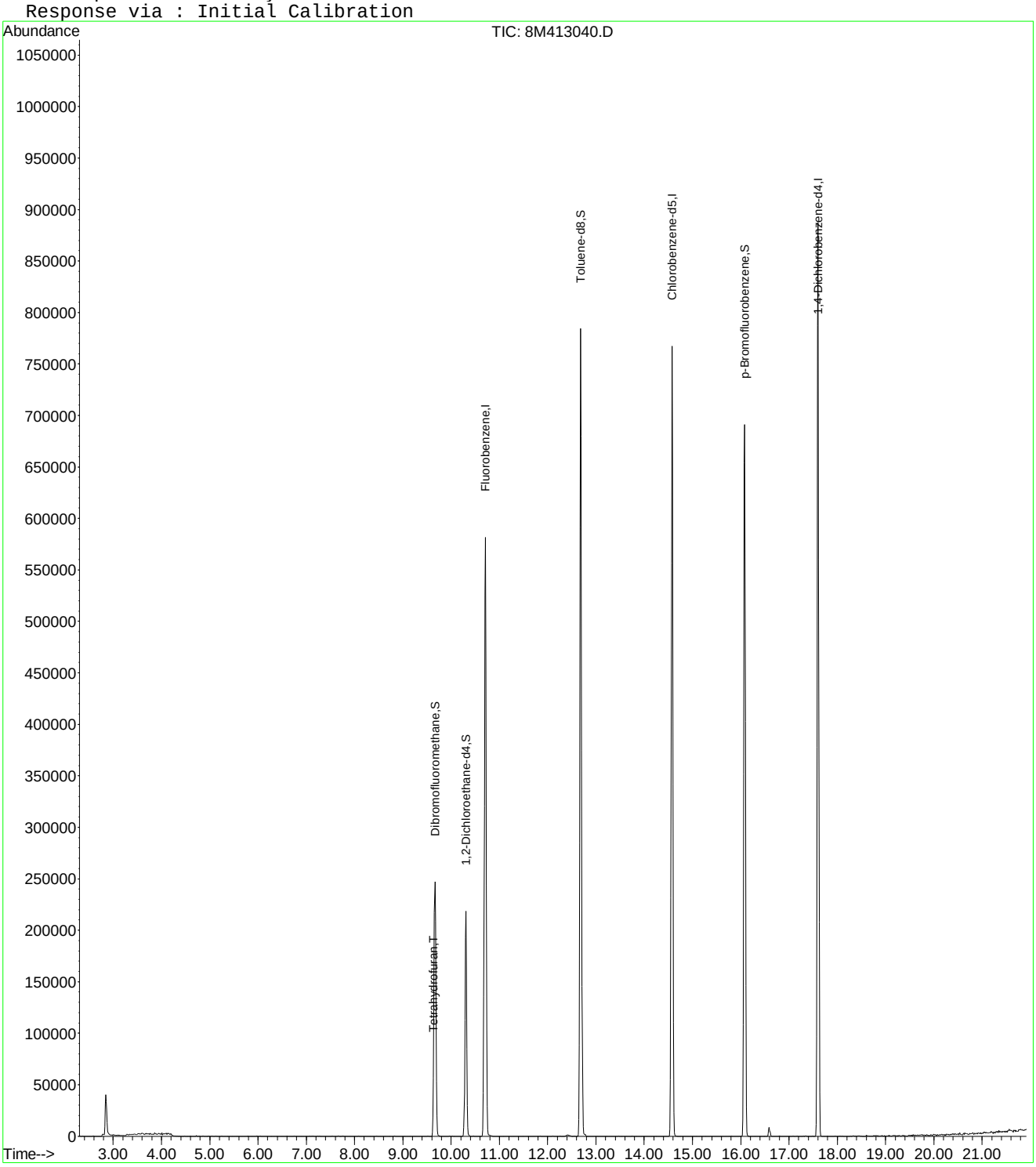

8M413040.D 8260WT.M Mon Jun 20 09:19:44 2016 Page 2

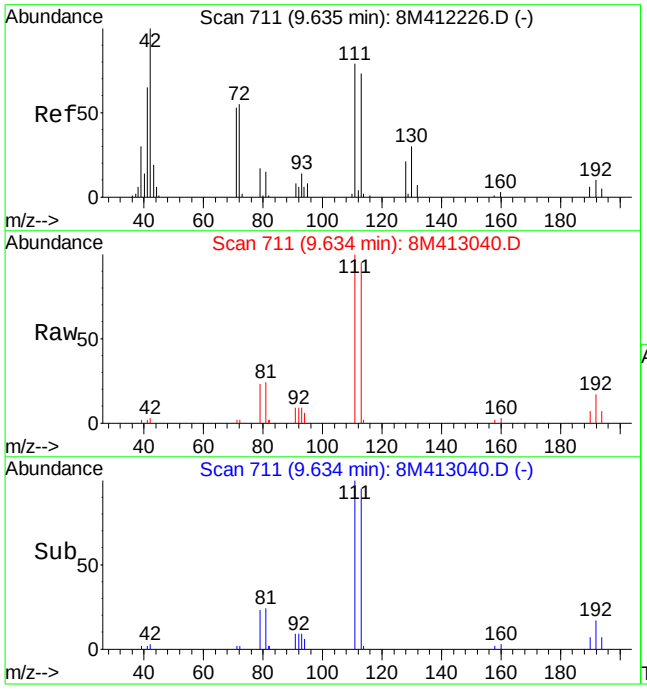

#36
Tetrahydrofuran
Concen: 1.13 ug/L
RT: 9.63 min Scan# 711
Delta R.T. -0.00 min
Lab File: 8M413040.D
Acq: 16 Jun 2016 18:25

Tgt Ion: 42 Resp: 871

Ion	Ratio	Lower	Upper
42	100		
72	52.4	33.8	78.8
71	45.8	32.0	74.8

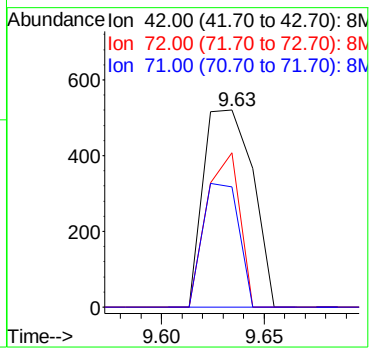

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:40:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	823748	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	571926	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	299321	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	12.68	98	567	0.0189 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.08%#	
80) p-Bromofluorobenzene	16.08	95	313	0.0253 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	3836	0.2778 ug/L	91
3) Chloromethane	3.62	50	3658	0.4537 ug/L	95
4) Vinyl Chloride	3.85	62	2516	0.2630 ug/L #	58
5) 1,3-Butadiene	3.91	54	2079	0.2592 ug/L	71
6) Bromomethane	4.73	94	1152	0.6530 ug/L #	55
7) Chloroethane	4.90	64	1112	0.2113 ug/L #	72
8) Trichlorofluoromethane	5.35	101	2706	0.1520 ug/L #	53
10) Isoprene	5.93	67	2147	0.1987 ug/L	85
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1746	0.2087 ug/L	97
14) 1,1-Dichloroethene	6.48	61	3332	0.2501 ug/L	75
16) Dimethyl Sulfide	6.73	62	1099	0.2308 ug/L	95
19) Methylene Chloride	7.26	84	3414	0.4028 ug/L	88
20) Carbon Disulfide	7.30	76	10739	0.3853 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	4927	0.2686 ug/L #	60
23) trans-1,2-Dichloroethene	7.70	61	3879	0.3170 ug/L	98
24) n-Hexane	7.78	57	2794	0.3075 ug/L	85
26) Vinyl Acetate	8.30	43	1973	0.2259 ug/L #	70
27) 1,1-Dichloroethane	8.33	63	4881	0.3212 ug/L #	88
31) 2,2-Dichloropropane	9.11	77	4966	0.3101 ug/L	89
32) cis-1,2-Dichloroethene	9.17	96	2958	0.3128 ug/L	87
33) Chloroform	9.37	83	5564	0.3101 ug/L	95
34) 1-Bromopropane	9.52	122	210	0.1551 ug/L #	1
35) Bromochloromethane	9.60	130	1386	0.2858 ug/L	76
36) Tetrahydrofuran	9.62	42	1849	2.0617 ug/L #	60
38) 1,1,1-Trichloroethane	9.91	97	4978	0.2921 ug/L	95
39) Cyclohexane	9.93	56	3120	0.2644 ug/L #	85
40) 1,1-Dichloropropene	10.11	75	3779	0.2909 ug/L	97
42) Carbon Tetrachloride	10.24	117	4835	0.3194 ug/L #	74
45) 1,2-Dichloroethane	10.43	62	3295	0.2853 ug/L #	81
46) Benzene	10.46	78	11279	0.3333 ug/L	93
47) Trichloroethene	11.20	130	2410	0.2670 ug/L	97
48) Methylcyclohexane	11.31	83	3936	0.2871 ug/L	84
49) 1,2-Dichloropropane	11.42	63	2136	0.2836 ug/L	88
50) Bromodichloromethane	11.73	83	3767	0.2845 ug/L #	91
52) Dibromomethane	11.82	93	700	0.1570 ug/L #	59
53) 2-Chloroethyl Vinyl Ether	12.02	63	847	0.2616 ug/L #	47
55) cis-1,3-Dichloropropene	12.36	75	4763	0.3535 ug/L	84
56) Dimethyl Disulfide	12.63	79	1647	0.2290 ug/L	82
59) Toluene	12.78	91	11513	0.3243 ug/L	92
60) Ethyl Methacrylate	12.89	69	1631	0.2392 ug/L #	64

(#) = qualifier out of range (m) = manual integration
8M412220.D 8260WT.M Tue May 17 11:40:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:40:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
62)	trans-1,3-Dichloropropene	12.96	75	3626	0.3047 ug/L		82
63)	1,1,2-Trichloroethane	13.18	97	1409	0.2515 ug/L		98
65)	1,3-Dichloropropane	13.49	76	2584	0.2590 ug/L		93
66)	Tetrachloroethene	13.61	164	2678	0.3520 ug/L	#	75
67)	Dibromochloromethane	13.87	129	2126	0.2599 ug/L		79
68)	1,2-Dibromoethane	14.12	107	1895	0.3394 ug/L		91
69)	1-Chlorohexane	14.21	91	3835	0.3164 ug/L		99
70)	Chlorobenzene	14.62	112	7968	0.3328 ug/L		88
71)	1,1,1,2-Tetrachloroethane	14.67	131	2872	0.3096 ug/L		87
72)	Ethylbenzene	14.64	106	3844	0.2934 ug/L		81
73)	m-,p-Xylene	14.75	106	10447	0.6799 ug/L		96
74)	o-Xylene	15.31	106	4577	0.3047 ug/L		97
75)	Styrene	15.35	104	7545	0.3062 ug/L		95
76)	Bromoform	15.84	173	1301	0.2681 ug/L	#	51
77)	Isopropylbenzene	15.74	105	13119	0.3287 ug/L		90
79)	1,1,2,2-Tetrachloroethane	15.96	83	1714	0.2853 ug/L	#	85
83)	n-Propylbenzene	16.24	91	15676	0.3357 ug/L		92
84)	Bromobenzene	16.38	156	2859	0.2977 ug/L		90
85)	1,3,5-Trimethylbenzene	16.43	105	10873	0.3196 ug/L		99
86)	2-Chlorotoluene	16.52	91	11133	0.3415 ug/L		96
87)	4-Chlorotoluene	16.56	91	10305	0.3499 ug/L		97
88)	a-Methylstyrene	16.83	118	4090	0.2534 ug/L		86
89)	tert-Butylbenzene	16.90	134	1734	0.2606 ug/L		72
90)	1,2,4-Trimethylbenzene	16.95	105	10734	0.3069 ug/L		89
91)	sec-Butylbenzene	17.16	105	13749	0.3436 ug/L		97
92)	p-Isopropyltoluene	17.32	119	10847	0.3192 ug/L		95
93)	1,3-Dichlorobenzene	17.52	146	6023	0.3257 ug/L		99
94)	1,4-Dichlorobenzene	17.65	146	6152	0.3299 ug/L	#	60
95)	n-Butylbenzene	17.85	91	11161	0.3323 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	5711	0.3472 ug/L		92
98)	1,2,4-Trichlorobenzene	20.29	180	4203	0.3418 ug/L		91
99)	Hexachlorobutadiene	20.43	225	1894	0.3297 ug/L		84
100)	Naphthalene	20.65	128	6039	0.3306 ug/L		91
101)	1,2,3-Trichlorobenzene	20.96	180	3279	0.3161 ug/L		86

(#) = qualifier out of range (m) = manual integration

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2778	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.4537	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.2630	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	0.2592	0.0	100	0.03
6	T	Bromomethane	-1.0000	0.9911	0.0	100	0.00
7	T	Chloroethane	-1.0000	0.2113	0.0	100	0.00
8	T	Trichlorofluoromethane	-1.0000	0.1520	0.0	100	-0.02
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.90#
10	T	Isoprene	-1.0000	0.1987	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.13#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2087	0.0	100	0.00
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	-1.0000	0.2501	0.0	100	0.02
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.58#
16	T	Dimethyl Sulfide	-1.0000	0.2308	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.0000	0.0	0	-7.00#
19	T	Methylene Chloride	-1.0000	0.4028	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.3853	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.43#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2686	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	-1.0000	0.3170	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.3075	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.2259	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.3212	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.98#
31	T	2,2-Dichloropropane	-1.0000	0.3101	0.0	100	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.3128	0.0	100	0.00
33	C	Chloroform	0.3000	0.3101	-3.4	100	0.00
34		1-Bromopropane	-1.0000	0.1551	0.0	100	0.00
35	T	Bromochloromethane	-1.0000	0.2858	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	2.0617	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	-1.0000	0.2921	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.2644	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.2909	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	-1.0000	0.3194	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	-1.0000	0.2853	0.0	100	0.00
46	T	Benzene	-1.0000	0.3333	0.0	100	0.00
47	T	Trichloroethene	-1.0000	0.2670	0.0	100	-0.01
48	T	Methylcyclohexane	-1.0000	0.2871	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2836	0.0	100	0.00
50	T	Bromodichloromethane	-1.0000	0.2845	0.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	-1.0000	0.1570	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2616	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.05#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.3535	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2290	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0189	0.0	100	0.00
59	C	Toluene	-1.0000	0.3243	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2392	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3047	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.2515	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	-1.0000	0.2590	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.3520	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.2599	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.3394	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.3164	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.3328	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.3096	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.2934	0.0	100	-0.01
73	T	m-,p-Xylene	-1.0000	0.6799	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.3047	0.0	100	0.00
75	T	Styrene	-1.0000	0.3062	0.0	100	0.00
76	P	Bromoform	-1.0000	0.2681	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.3287	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2853	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0253	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.1103	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	-1.0000	0.3357	0.0	100	0.00
84	T	Bromobenzene	0.3000	0.2977	0.8	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.3196	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.3415	0.0	100	0.00
87	T	4-Chlorotoluene	-1.0000	0.3499	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2534	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.2606	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.3069	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3436	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.3192	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.3257	0.0	100	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.3299	-10.0	100	0.00
95	T	n-Butylbenzene	-1.0000	0.3323	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.3472	-15.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.3418	0.0	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.3297	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.3306	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.3161	-5.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412220.D 8260WT.M Sat May 14 18:03:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	801173	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	557498	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	293108	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
80) p-Bromofluorobenzene	16.08	95	343	0.0286 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	5478	0.3262 ug/L	79
3) Chloromethane	3.63	50	3930	0.2484 ug/L	85
4) Vinyl Chloride	3.84	62	3512	0.3288 ug/L	97
5) 1,3-Butadiene	3.90	54	2479	0.2375 ug/L #	75
6) Bromomethane	4.73	94	1343	0.9497 ug/L	85
7) Chloroethane	4.90	64	2219	0.3174 ug/L #	43
8) Trichlorofluoromethane	5.36	101	6974	0.3289 ug/L #	93
10) Isoprene	5.94	67	4288	0.3952 ug/L #	62
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	3168	0.3263 ug/L #	40
14) 1,1-Dichloroethene	6.47	61	5431	0.2882 ug/L	92
16) Dimethyl Sulfide	6.74	62	1708	0.2453 ug/L	64
19) Methylene Chloride	7.24	84	3785	0.4239 ug/L #	43
20) Carbon Disulfide	7.29	76	12437	0.4565 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	6580	0.3336 ug/L #	76
23) trans-1,2-Dichloroethene	7.71	61	4990	0.2928 ug/L	96
24) n-Hexane	7.79	57	3110	0.2011 ug/L	99
26) Vinyl Acetate	8.31	43	2753	0.1566 ug/L	100
27) 1,1-Dichloroethane	8.32	63	5655	0.2774 ug/L #	92
31) 2,2-Dichloropropane	9.10	77	6035	0.3360 ug/L	82
32) cis-1,2-Dichloroethene	9.16	96	3837	0.3762 ug/L	74
33) Chloroform	9.37	83	7267	0.3842 ug/L	100
34) 1-Bromopropane	9.50	122	234	0.1456 ug/L #	1
35) Bromochloromethane	9.60	130	1674	0.3137 ug/L	62
36) Tetrahydrofuran	9.62	42	447	0.2146 ug/L #	41
38) 1,1,1-Trichloroethane	9.91	97	6304	0.3305 ug/L	90
39) Cyclohexane	9.94	56	4658	0.2238 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	5172	0.3768 ug/L	80
42) Carbon Tetrachloride	10.25	117	5692	0.3172 ug/L	95
45) 1,2-Dichloroethane	10.43	62	4443	0.2796 ug/L #	63
46) Benzene	10.46	78	14456	0.4134 ug/L #	77
47) Trichloroethene	11.21	130	3659	0.3626 ug/L	98
48) Methylcyclohexane	11.29	83	5025	0.3562 ug/L	84
49) 1,2-Dichloropropane	11.42	63	3060	0.3007 ug/L	98
50) Bromodichloromethane	11.73	83	4734	0.3343 ug/L #	93
52) Dibromomethane	11.82	93	1805	0.3767 ug/L	84
55) cis-1,3-Dichloropropene	12.36	75	5008	0.3514 ug/L	90
56) Dimethyl Disulfide	12.63	79	1921	0.2573 ug/L	85
59) Toluene	12.78	91	14742	0.4416 ug/L	98
60) Ethyl Methacrylate	12.90	69	2062	0.3292 ug/L	66
62) trans-1,3-Dichloropropene	12.96	75	3693	0.3171 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
63)	1,1,2-Trichloroethane	13.18	97	2326	0.4391 ug/L		70
65)	1,3-Dichloropropane	13.49	76	3163	0.3219 ug/L		88
66)	Tetrachloroethene	13.61	164	3164	0.4185 ug/L		93
67)	Dibromochloromethane	13.87	129	3113	0.3727 ug/L		86
68)	1,2-Dibromoethane	14.12	107	2076	0.3760 ug/L		90
69)	1-Chlorohexane	14.21	91	4746	0.4174 ug/L		80
70)	Chlorobenzene	14.62	112	9180	0.3960 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.66	131	3501	0.3876 ug/L		95
72)	Ethylbenzene	14.65	106	5348	0.4066 ug/L		84
73)	m-,p-Xylene	14.75	106	13269	0.8757 ug/L		89
74)	o-Xylene	15.31	106	6019	0.3943 ug/L		97
75)	Styrene	15.35	104	9370	0.3849 ug/L		95
76)	Bromoform	15.83	173	1198	0.2500 ug/L	#	76
77)	Isopropylbenzene	15.73	105	16528	0.4270 ug/L		92
79)	1,1,2,2-Tetrachloroethane	15.96	83	1999	0.3419 ug/L	#	83
83)	n-Propylbenzene	16.25	91	19410	0.4297 ug/L		95
84)	Bromobenzene	16.37	156	3319	0.3524 ug/L		75
85)	1,3,5-Trimethylbenzene	16.42	105	13794	0.4127 ug/L		95
86)	2-Chlorotoluene	16.51	91	13678	0.4729 ug/L		90
87)	4-Chlorotoluene	16.56	91	12572	0.4219 ug/L		98
88)	a-Methylstyrene	16.84	118	5739	0.3485 ug/L		96
89)	tert-Butylbenzene	16.90	134	2254	0.3403 ug/L		55
90)	1,2,4-Trimethylbenzene	16.95	105	13859	0.4051 ug/L		90
91)	sec-Butylbenzene	17.17	105	17612	0.4382 ug/L		90
92)	p-Isopropyltoluene	17.32	119	13616	0.3968 ug/L		90
93)	1,3-Dichlorobenzene	17.52	146	6961	0.3724 ug/L		86
94)	1,4-Dichlorobenzene	17.64	146	7149	0.3832 ug/L	#	1
95)	n-Butylbenzene	17.85	91	15223	0.4664 ug/L		91
96)	1,2-Dichlorobenzene	18.14	146	6129	0.3742 ug/L		92
98)	1,2,4-Trichlorobenzene	20.28	180	5035	0.3969 ug/L		97
99)	Hexachlorobutadiene	20.44	225	2420	0.4122 ug/L		83
100)	Naphthalene	20.65	128	7474	0.3874 ug/L	#	84
101)	1,2,3-Trichlorobenzene	20.96	180	4378	0.4056 ug/L	#	78

(#) = qualifier out of range (m) = manual integration
8M412221.D 8260WT.M Fri May 13 14:20:39 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

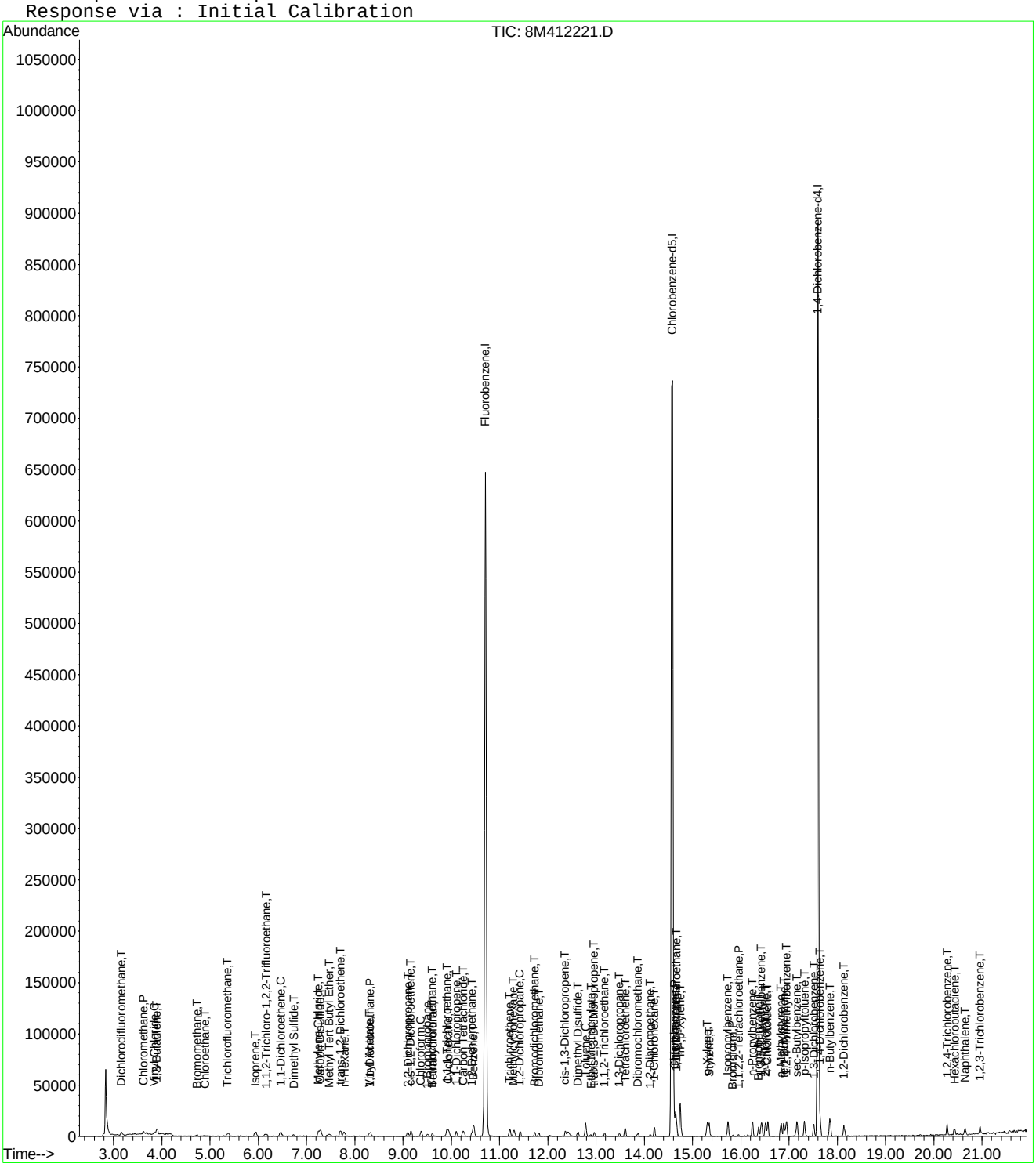

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	0.4000	0.4078	-2.0	100	0.00
3	P	Chloromethane	-1.0000	0.5012	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.3775	5.6	100	0.00
5	T	1,3-Butadiene	-1.0000	0.3178	0.0	100	0.02
6	T	Bromomethane	-1.0000	1.0253	0.0	100	0.00
7	T	Chloroethane	0.4000	0.4335	-8.4	100	0.00
8	T	Trichlorofluoromethane	0.4000	0.4029	-0.7	100	-0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.90#
10	T	Isoprene	0.4000	0.4079	-2.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.13#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3894	0.0	100	0.02
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	0.4000	0.4192	-4.8	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.58#
16	T	Dimethyl Sulfide	0.4000	0.3687	7.8	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.2179	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4591	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4587	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.43#
22	T	Methyl Tert Butyl Ether	-1.0000	0.3688	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.4193	-4.8	100	0.00
24	T	n-Hexane	-1.0000	0.3519	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.3241	0.0	100	0.02
27	P	1,1-Dichloroethane	0.4000	0.3826	4.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.98#
31	T	2,2-Dichloropropane	0.4000	0.3874	3.1	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.4172	-4.3	100	-0.01
33	C	Chloroform	0.4000	0.4164	-4.1	100	0.00
34		1-Bromopropane	-1.0000	0.1776	0.0	100	-0.01
35	T	Bromochloromethane	0.4000	0.3550	11.3	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.5125	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	0.4000	0.3803	4.9	100	0.00
39	T	Cyclohexane	-1.0000	0.4058	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4093	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	0.4000	0.3867	3.3	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	0.4000	0.3955	1.1	100	0.00
46	T	Benzene	0.4000	0.4393	-9.8	100	0.00
47	T	Trichloroethene	0.4000	0.4169	-4.2	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3768	0.0	100	-0.01
49	C	1,2-Dichloropropane	0.4000	0.4177	-4.4	100	0.00
50	T	Bromodichloromethane	0.4000	0.3676	8.1	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	0.4000	0.4162	-4.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1401	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.05#

(#) = Out of Range

8M412221.D 8260WT.M Sat May 14 18:03:54 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3821	4.5	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2746	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0000	0.0	0	-12.68#
59	C	Toluene	0.4000	0.4259	-6.5	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3102	0.0	100	0.02
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3184	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.4259	-6.5	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	0.4000	0.3253	18.7	100	0.00
66	T	Tetrachloroethene	0.4000	0.4267	-6.7	100	0.00
67	T	Dibromochloromethane	0.4000	0.3904	2.4	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.3814	4.6	100	0.00
69	T	1-Chlorohexane	0.4000	0.4017	-0.4	100	0.00
70	P	Chlorobenzene	0.4000	0.3933	1.7	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3872	3.2	100	0.00
72	C	Ethylbenzene	0.4000	0.4188	-4.7	100	0.00
73	T	m-,p-Xylene	0.8000	0.8859	-10.7	100	0.00
74	T	o-Xylene	-1.0000	0.4110	0.0	100	0.00
75	T	Styrene	0.4000	0.3901	2.5	100	0.00
76	P	Bromoform	-1.0000	0.2533	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.4249	-6.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.3398	15.1	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0283	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.14#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	0.4000	0.4245	-6.1	100	0.00
84	T	Bromobenzene	0.4000	0.3529	11.8	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.4141	-3.5	100	0.00
86	T	2-Chlorotoluene	0.4000	0.4284	-7.1	100	0.00
87	T	4-Chlorotoluene	0.4000	0.4359	-9.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.3631	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3459	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	0.4000	0.4046	-1.2	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.4494	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4092	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.3844	3.9	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.3915	2.1	100	0.00
95	T	n-Butylbenzene	-1.0000	0.4628	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.3805	4.9	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	0.4000	0.4182	-4.5	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.4302	-7.5	100	0.00
100	T	Naphthalene	0.4000	0.4178	-4.5	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.4310	-7.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412221.D 8260WT.M Sat May 14 18:03:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	795577	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	547129	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	284579	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.65	111	3962	0.3966 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery	= 1.60%#	
43) 1,2-Dichloroethane-d4	10.31	65	3835	0.3356 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery	= 1.36%#	
58) Toluene-d8	12.68	98	14023	0.4957 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 2.00%#	
80) p-Bromofluorobenzene	16.08	95	6483	0.5565 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery	= 2.24%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	12402	0.7438 ug/L	97
3) Chloromethane	3.62	50	8415	0.5357 ug/L #	75
4) Vinyl Chloride	3.84	62	9412	0.8873 ug/L	89
5) 1,3-Butadiene	3.90	54	6974	0.6729 ug/L	81
6) Bromomethane	4.73	94	4114	1.3123 ug/L	92
7) Chloroethane	4.90	64	4983	0.7178 ug/L #	80
8) Trichlorofluoromethane	5.38	101	17133	0.8136 ug/L #	96
9) Diethyl ether	5.90	59	20707	3.2140 ug/L	84
10) Isoprene	5.94	67	11176	1.0373 ug/L	76
11) Acrolein	6.14	56	246	0.4300 ug/L #	15
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	8135	0.8438 ug/L	96
13) Acetone	6.24	43	413	0.2115 ug/L #	48
14) 1,1-Dichloroethene	6.46	61	12947	0.6919 ug/L	91
15) Tert-Butyl Alcohol	6.59	59	3316	7.3747 ug/L #	55
16) Dimethyl Sulfide	6.72	62	4505	0.6515 ug/L	79
18) Methyl acetate	7.00	43	2119	0.3630 ug/L #	66
19) Methylene Chloride	7.24	84	8723	0.9837 ug/L #	43
20) Carbon Disulfide	7.29	76	28246	1.0441 ug/L	100
21) Acrylonitrile	7.43	53	2164	0.8620 ug/L	76
22) Methyl Tert Butyl Ether	7.47	73	16998	0.8678 ug/L	84
23) trans-1,2-Dichloroethene	7.70	61	12571	0.7427 ug/L	100
24) n-Hexane	7.78	57	9382	0.6109 ug/L	82
25) Diisopropyl ether	8.12	45	95400	2.1939 ug/L #	91
26) Vinyl Acetate	8.30	43	6750	0.3867 ug/L #	89
27) 1,1-Dichloroethane	8.32	63	14721	0.7271 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	97972	3.2102 ug/L	88
29) 2-Butanone	8.88	43	380	0.1215 ug/L #	57
30) Propionitrile	8.99	54	1593	2.0138 ug/L #	56
31) 2,2-Dichloropropane	9.09	77	14691	0.8236 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	9482	0.9362 ug/L	72
33) Chloroform	9.37	83	18494	0.9845 ug/L	94
34) 1-Bromopropane	9.50	122	1092	0.6844 ug/L	80
35) Bromochloromethane	9.61	130	5234	0.9877 ug/L #	55
36) Tetrahydrofuran	9.63	42	5415	2.6185 ug/L #	68
38) 1,1,1-Trichloroethane	9.91	97	17074	0.9016 ug/L	92
39) Cyclohexane	9.94	56	11865	0.5740 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	13172	0.9663 ug/L	87
41) Tert-Amyl-Methyl ether	10.21	73	90255	4.6173 ug/L #	88
42) Carbon Tetrachloride	10.25	117	14515	0.8146 ug/L	95
45) 1,2-Dichloroethane	10.42	62	10675	0.6766 ug/L	85

(#) = qualifier out of range (m) = manual integration
8M412222.D 8260WT.M Fri May 13 14:49:47 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	10.47	78	34504	0.9938 ug/L		84
47)	Trichloroethene	11.21	130	8752	0.8735 ug/L		93
48)	Methylcyclohexane	11.30	83	13513	0.9646 ug/L		79
49)	1,2-Dichloropropane	11.43	63	7057	0.6982 ug/L	#	67
50)	Bromodichloromethane	11.73	83	12147	0.8638 ug/L		96
52)	Dibromomethane	11.81	93	4130	0.8681 ug/L		95
53)	2-Chloroethyl Vinyl Ether	12.03	63	2694	0.6366 ug/L		86
54)	4-Methyl-2-Pentanone	12.06	58	848	0.3671 ug/L	#	41
55)	cis-1,3-Dichloropropene	12.36	75	12521	0.8847 ug/L		97
56)	Dimethyl Disulfide	12.63	79	5799	0.7821 ug/L		96
59)	Toluene	12.79	91	37114	1.1328 ug/L		95
60)	Ethyl Methacrylate	12.88	69	5490	0.8930 ug/L		69
62)	trans-1,3-Dichloropropene	12.96	75	10328	0.9035 ug/L		92
63)	1,1,2-Trichloroethane	13.18	97	5274	1.0144 ug/L		93
64)	2-Hexanone	13.10	58	397	0.2127 ug/L	#	1
65)	1,3-Dichloropropane	13.49	76	9673	1.0032 ug/L		73
66)	Tetrachloroethene	13.61	164	7373	0.9937 ug/L		95
67)	Dibromochloromethane	13.87	129	7358	0.8977 ug/L		95
68)	1,2-Dibromoethane	14.13	107	5123	0.9454 ug/L		95
69)	1-Chlorohexane	14.21	91	12790	1.1461 ug/L		79
70)	Chlorobenzene	14.62	112	25662	1.1281 ug/L		89
71)	1,1,1,2-Tetrachloroethane	14.66	131	8722	0.9838 ug/L		94
72)	Ethylbenzene	14.65	106	13009	1.0078 ug/L		87
73)	m-,p-Xylene	14.75	106	30465	2.0486 ug/L		84
74)	o-Xylene	15.31	106	15133	1.0101 ug/L		84
75)	Styrene	15.35	104	23191	0.9707 ug/L		91
76)	Bromoform	15.84	173	3875	0.8240 ug/L		96
77)	Isopropylbenzene	15.74	105	41382	1.0895 ug/L		95
79)	1,1,2,2-Tetrachloroethane	15.95	83	5604	0.9873 ug/L	#	93
81)	1,2,3-Trichloropropane	16.15	110	1355	0.7428 ug/L	#	1
82)	trans-1,4-Dichloro-2-Buten	16.19	53	962	0.3479 ug/L	#	1
83)	n-Propylbenzene	16.25	91	48249	1.1002 ug/L		99
84)	Bromobenzene	16.37	156	9598	1.0497 ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	33355	1.0278 ug/L		96
86)	2-Chlorotoluene	16.51	91	33408	1.1895 ug/L		94
87)	4-Chlorotoluene	16.56	91	29548	1.0213 ug/L		95
88)	a-Methylstyrene	16.84	118	14414	0.9014 ug/L		91
89)	tert-Butylbenzene	16.89	134	6686	1.0398 ug/L		86
90)	1,2,4-Trimethylbenzene	16.95	105	36066	1.0857 ug/L		96
91)	sec-Butylbenzene	17.16	105	42128	1.0796 ug/L		96
92)	p-Isopropyltoluene	17.32	119	35424	1.0633 ug/L		94
93)	1,3-Dichlorobenzene	17.52	146	18409	1.0144 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	19031	1.0506 ug/L	#	62
95)	n-Butylbenzene	17.85	91	35772	1.1288 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	16104	1.0126 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.14	75	1262	1.0152 ug/L	#	53
98)	1,2,4-Trichlorobenzene	20.28	180	11494	0.9331 ug/L		98
99)	Hexachlorobutadiene	20.43	225	5421	0.9510 ug/L		98
100)	Naphthalene	20.65	128	16581	0.8853 ug/L		100
101)	1,2,3-Trichlorobenzene	20.96	180	10306	0.9835 ug/L		94

(#) = qualifier out of range (m) = manual integration
8M412222.D 8260WT.M Fri May 13 14:49:48 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

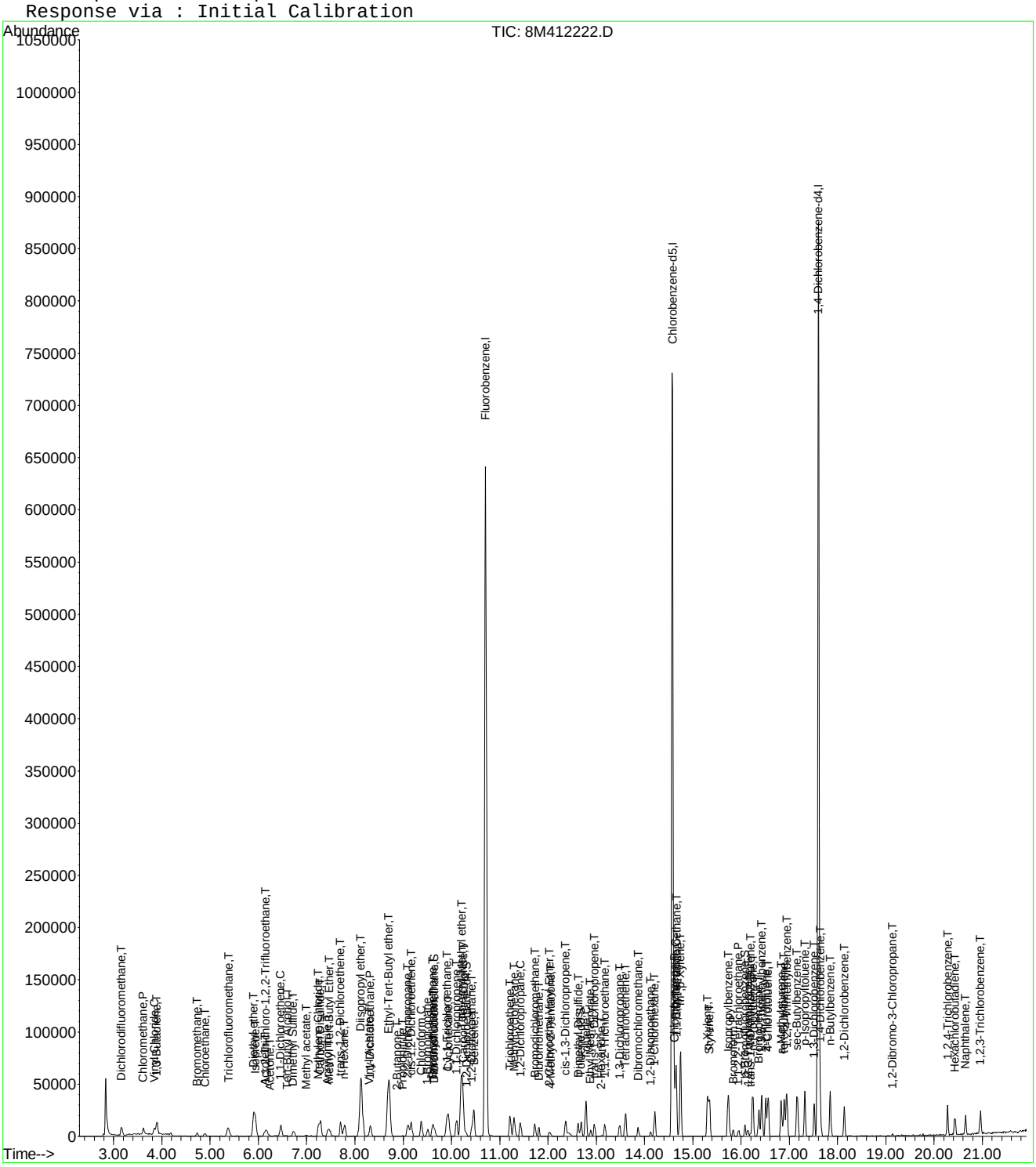

8M412222.D 8260WT.M Fri May 13 14:49:48 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:05:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9298	7.0	100	0.00
3	P	Chloromethane	1.0000	1.0808	-8.1	100	0.00
4	C	Vinyl Chloride	1.0000	1.0189	-1.9	100	0.00
5	T	1,3-Butadiene	-1.0000	0.9002	0.0	100	0.02
6	T	Bromomethane	1.0000	1.2082	-20.8	100	0.00
7	T	Chloroethane	1.0000	0.9803	2.0	100	0.00
8	T	Trichlorofluoromethane	1.0000	0.9968	0.3	100	0.00
9	T	Diethyl ether	5.0000	5.0462	-0.9	100	0.00
10	T	Isoprene	1.0000	1.0707	-7.1	100	0.00
11	T	Acrolein	-1.0000	0.6696	0.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0069	-0.7	100	0.00
13	T	Acetone	-1.0000	0.4614	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	1.0064	-0.6	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	11.5604	0.0	0	0.02
16	T	Dimethyl Sulfide	1.0000	0.9794	2.1	100	-0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.8758	0.0	100	0.00
19	T	Methylene Chloride	1.0000	1.0655	-6.5	100	0.00
20	T	Carbon Disulfide	1.0000	1.0492	-4.9	100	0.00
21	T	Acrylonitrile	2.5000	1.8633	25.5#	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9593	4.1	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	1.0636	-6.4	100	0.00
24	T	n-Hexane	-1.0000	1.0690	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	5.1784	-3.6	100	0.00
26	T	Vinyl Acetate	-1.0000	0.8002	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0029	-0.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.9635	0.7	100	0.00
29	T	2-Butanone	-1.0000	0.2889	0.0	100	0.00
30	T	Propionitrile	5.0000	4.1566	16.9	100	0.00
31	T	2,2-Dichloropropane	1.0000	0.9498	5.0	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	1.0383	-3.8	100	0.00
33	C	Chloroform	1.0000	1.0671	-6.7	100	0.00
34		1-Bromopropane	1.0000	0.8348	16.5	100	-0.01
35	T	Bromochloromethane	1.0000	1.1177	-11.8	100	0.00
36	T	Tetrahydrofuran	5.0000	6.2516	-25.0#	100	0.00
37	S	Dibromofluoromethane	0.5000	0.4635	7.3	100	-0.01
38	T	1,1,1-Trichloroethane	1.0000	1.0372	-3.7	100	0.00
39	T	Cyclohexane	1.0000	1.0411	-4.1	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0498	-5.0	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	5.0344	-0.7	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.9930	0.7	100	0.00
43	S	1,2-Dichloroethane-d4	0.5000	0.4184	16.3	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	1.0000	0.9570	4.3	100	0.00
46	T	Benzene	1.0000	1.0558	-5.6	100	0.00
47	T	Trichloroethene	1.0000	1.0041	-0.4	100	0.00
48	T	Methylcyclohexane	-1.0000	1.0205	0.0	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.9700	3.0	100	0.00
50	T	Bromodichloromethane	1.0000	0.9500	5.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	1.0000	0.9590	4.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.8616	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.6639	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:05:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9621	3.8	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.8348	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	0.5000	0.4897	2.1	100	0.00
59	C	Toluene	1.0000	1.0927	-9.3	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.8416	15.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	1.0000	0.9073	9.3	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.9840	1.6	100	0.00
64	T	2-Hexanone	-1.0000	0.3525	0.0	100	-0.01
65	T	1,3-Dichloropropane	1.0000	1.0137	-1.4	100	0.00
66	T	Tetrachloroethene	1.0000	1.0132	-1.3	100	0.00
67	T	Dibromochloromethane	1.0000	0.9402	6.0	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.9590	4.1	100	0.00
69	T	1-Chlorohexane	1.0000	1.1031	-10.3	100	0.00
70	P	Chlorobenzene	1.0000	1.1204	-12.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.9829	1.7	100	0.00
72	C	Ethylbenzene	1.0000	1.0381	-3.8	100	0.00
73	T	m-,p-Xylene	2.0000	2.0726	-3.6	100	0.00
74	T	o-Xylene	1.0000	1.0530	-5.3	100	0.00
75	T	Styrene	1.0000	0.9839	1.6	100	0.00
76	P	Bromoform	1.0000	0.8348	16.5	100	0.00
77	T	Isopropylbenzene	1.0000	1.0840	-8.4	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	0.9810	1.9	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5502	0.0	100	0.00
81	T	1,2,3-Trichloropropane	1.0000	0.7703	23.0	100	0.02
82	T	trans-1,4-Dichloro-2-Butene	1.0000	1.1443	-14.4	100	0.00
83	T	n-Propylbenzene	1.0000	1.0868	-8.7	100	0.00
84	T	Bromobenzene	1.0000	1.0510	-5.1	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	1.0314	-3.1	100	0.00
86	T	2-Chlorotoluene	1.0000	1.0778	-7.8	100	0.00
87	T	4-Chlorotoluene	1.0000	1.0553	-5.5	100	0.00
88	T	a-Methylstyrene	-1.0000	0.9394	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	1.0567	-5.7	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	1.0845	-8.5	100	0.00
91	T	sec-Butylbenzene	1.0000	1.1073	-10.7	100	0.00
92	T	p-Isopropyltoluene	1.0000	1.0966	-9.7	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0469	-4.7	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	1.0735	-7.3	100	0.00
95	T	n-Butylbenzene	1.0000	1.1201	-12.0	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0297	-3.0	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.1006	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	1.0000	0.9832	1.7	100	0.00
99	T	Hexachlorobutadiene	1.0000	0.9925	0.7	100	0.00
100	T	Naphthalene	1.0000	0.9547	4.5	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	1.0450	-4.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412222.D 8260WT.M Sat May 14 18:05:50 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	782460	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.57	117	543252	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	286450	25.00	ug/L	0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	8161	0.8307	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.32%#		
43) 1,2-Dichloroethane-d4	10.30	65	9681	0.8613	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.44%#		
58) Toluene-d8	12.68	98	28135	1.0016	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.00%#		
80) p-Bromofluorobenzene	16.08	95	12079	1.0302	ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.12%#		

Target Compounds

						Qvalue
2) Dichlorodifluoromethane	3.16	85	24870	1.5166	ug/L	98
3) Chloromethane	3.62	50	16106	1.0425	ug/L	93
4) Vinyl Chloride	3.85	62	18562	1.7792	ug/L	94
5) 1,3-Butadiene	3.90	54	13617	1.3360	ug/L	92
6) Bromomethane	4.73	94	8329	1.8804	ug/L	94
7) Chloroethane	4.90	64	9562	1.4006	ug/L	86
8) Trichlorofluoromethane	5.39	101	34970	1.6885	ug/L	97
9) Diethyl ether	5.90	59	107986	17.0420	ug/L	79
10) Isoprene	5.93	67	20936	1.9757	ug/L	73
11) Acrolein	6.14	56	4864	8.6444	ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	16832	1.7751	ug/L	99
13) Acetone	6.23	43	1519	0.7908	ug/L #	48
14) 1,1-Dichloroethene	6.47	61	25394	1.3798	ug/L	89
15) Tert-Butyl Alcohol	6.58	59	14891	33.6725	ug/L	85
16) Dimethyl Sulfide	6.73	62	9489	1.3953	ug/L	79
17) Iodomethane	6.98	142	1211	1.3472	ug/L #	60
18) Methyl acetate	7.01	43	5064	0.8821	ug/L #	79
19) Methylene Chloride	7.25	84	16579	1.9010	ug/L	52
20) Carbon Disulfide	7.29	76	57693	2.1683	ug/L	98
21) Acrylonitrile	7.43	53	13848	5.6089	ug/L	93
22) Methyl Tert Butyl Ether	7.47	73	33991	1.7644	ug/L	84
23) trans-1,2-Dichloroethene	7.70	61	22786	1.3688	ug/L	88
24) n-Hexane	7.79	57	18282	1.2105	ug/L	84
25) Diisopropyl ether	8.12	45	475271	11.1128	ug/L #	92
26) Vinyl Acetate	8.29	43	15998	0.9318	ug/L	93
27) 1,1-Dichloroethane	8.32	63	30419	1.5277	ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	505010	16.8250	ug/L	89
29) 2-Butanone	8.90	43	2250	0.7313	ug/L #	57
30) Propionitrile	8.99	54	9373	12.0479	ug/L	86
31) 2,2-Dichloropropane	9.10	77	32521	1.8538	ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	18238	1.8309	ug/L	91
33) Chloroform	9.37	83	33543	1.8156	ug/L	99
34) 1-Bromopropane	9.52	122	2513	1.6014	ug/L	88
35) Bromochloromethane	9.60	130	9189	1.7632	ug/L	67
36) Tetrahydrofuran	9.63	42	22074	10.8529	ug/L #	66
38) 1,1,1-Trichloroethane	9.90	97	32268	1.7324	ug/L	96
39) Cyclohexane	9.93	56	23097	1.1362	ug/L #	65
40) 1,1-Dichloropropene	10.10	75	24988	1.8639	ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	459535	23.9029	ug/L	87
42) Carbon Tetrachloride	10.24	117	28935	1.6512	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412223.D 8260WT.M Fri May 13 15:18:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.42	62	22142	1.4270 ug/L #	83
46)	Benzene	10.46	78	67028	1.9629 ug/L	83
47)	Trichloroethene	11.21	130	17287	1.7543 ug/L	96
48)	Methylcyclohexane	11.30	83	26050	1.8907 ug/L	84
49)	1,2-Dichloropropane	11.42	63	14582	1.4670 ug/L	77
50)	Bromodichloromethane	11.73	83	25794	1.8651 ug/L	93
51)	1,4-Dioxane	11.73	88	1282	32.3515 ug/L	74
52)	Dibromomethane	11.81	93	8575	1.8325 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.02	63	6234	1.4979 ug/L	100
54)	4-Methyl-2-Pentanone	12.06	58	2139	0.9416 ug/L	84
55)	cis-1,3-Dichloropropene	12.37	75	24153	1.7353 ug/L	98
56)	Dimethyl Disulfide	12.62	79	12288	1.6851 ug/L	99
59)	Toluene	12.79	91	72944	2.2423 ug/L	95
60)	Ethyl Methacrylate	12.88	69	12716	2.0832 ug/L	71
62)	trans-1,3-Dichloropropene	12.96	75	22163	1.9527 ug/L	100
63)	1,1,2-Trichloroethane	13.18	97	10537	2.0412 ug/L	99
64)	2-Hexanone	13.13	58	2200	1.1873 ug/L #	65
65)	1,3-Dichloropropane	13.49	76	20212	2.1112 ug/L	72
66)	Tetrachloroethene	13.60	164	14595	1.9811 ug/L	90
67)	Dibromochloromethane	13.87	129	14698	1.8061 ug/L	98
68)	1,2-Dibromoethane	14.12	107	10152	1.8869 ug/L	95
69)	1-Chlorohexane	14.21	91	21960	1.9818 ug/L	89
70)	Chlorobenzene	14.62	112	47376	2.0974 ug/L	81
71)	1,1,1,2-Tetrachloroethane	14.66	131	17526	1.9910 ug/L	97
72)	Ethylbenzene	14.66	106	25628	1.9996 ug/L	92
73)	m-,p-Xylene	14.74	106	60087	4.0693 ug/L	84
74)	o-Xylene	15.31	106	28289	1.9017 ug/L	79
75)	Styrene	15.35	104	47644	2.0086 ug/L	92
76)	Bromoform	15.84	173	9145	1.9585 ug/L	95
77)	Isopropylbenzene	15.73	105	81301	2.1557 ug/L	97
79)	1,1,2,2-Tetrachloroethane	15.95	83	11538	2.0194 ug/L	95
81)	1,2,3-Trichloropropane	16.13	110	3630	1.9770 ug/L	94
82)	trans-1,4-Dichloro-2-Buten	16.19	53	2699	0.9698 ug/L #	36
83)	n-Propylbenzene	16.24	91	97233	2.2026 ug/L	96
84)	Bromobenzene	16.37	156	19174	2.0834 ug/L	92
85)	1,3,5-Trimethylbenzene	16.42	105	67395	2.0631 ug/L	97
86)	2-Chlorotoluene	16.51	91	67110	2.3739 ug/L	94
87)	4-Chlorotoluene	16.56	91	59154	2.0313 ug/L	92
88)	a-Methylstyrene	16.84	118	29415	1.8275 ug/L	86
89)	tert-Butylbenzene	16.89	134	12716	1.9647 ug/L	67
90)	1,2,4-Trimethylbenzene	16.95	105	71669	2.1435 ug/L	94
91)	sec-Butylbenzene	17.17	105	81038	2.0632 ug/L	98
92)	p-Isopropyltoluene	17.32	119	70170	2.0924 ug/L	92
93)	1,3-Dichlorobenzene	17.52	146	37289	2.0413 ug/L	93
94)	1,4-Dichlorobenzene	17.64	146	36528	2.0034 ug/L #	73
95)	n-Butylbenzene	17.85	91	67823	2.1262 ug/L	96
96)	1,2-Dichlorobenzene	18.14	146	32322	2.0190 ug/L	92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	1955	1.5624 ug/L	94
98)	1,2,4-Trichlorobenzene	20.28	180	23558	1.9000 ug/L	98
99)	Hexachlorobutadiene	20.43	225	11066	1.9286 ug/L	99
100)	Naphthalene	20.65	128	36066	1.9130 ug/L	99
101)	1,2,3-Trichlorobenzene	20.96	180	19765	1.8738 ug/L	95

(#) = qualifier out of range (m) = manual integration
8M412223.D 8260WT.M Fri May 13 15:18:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

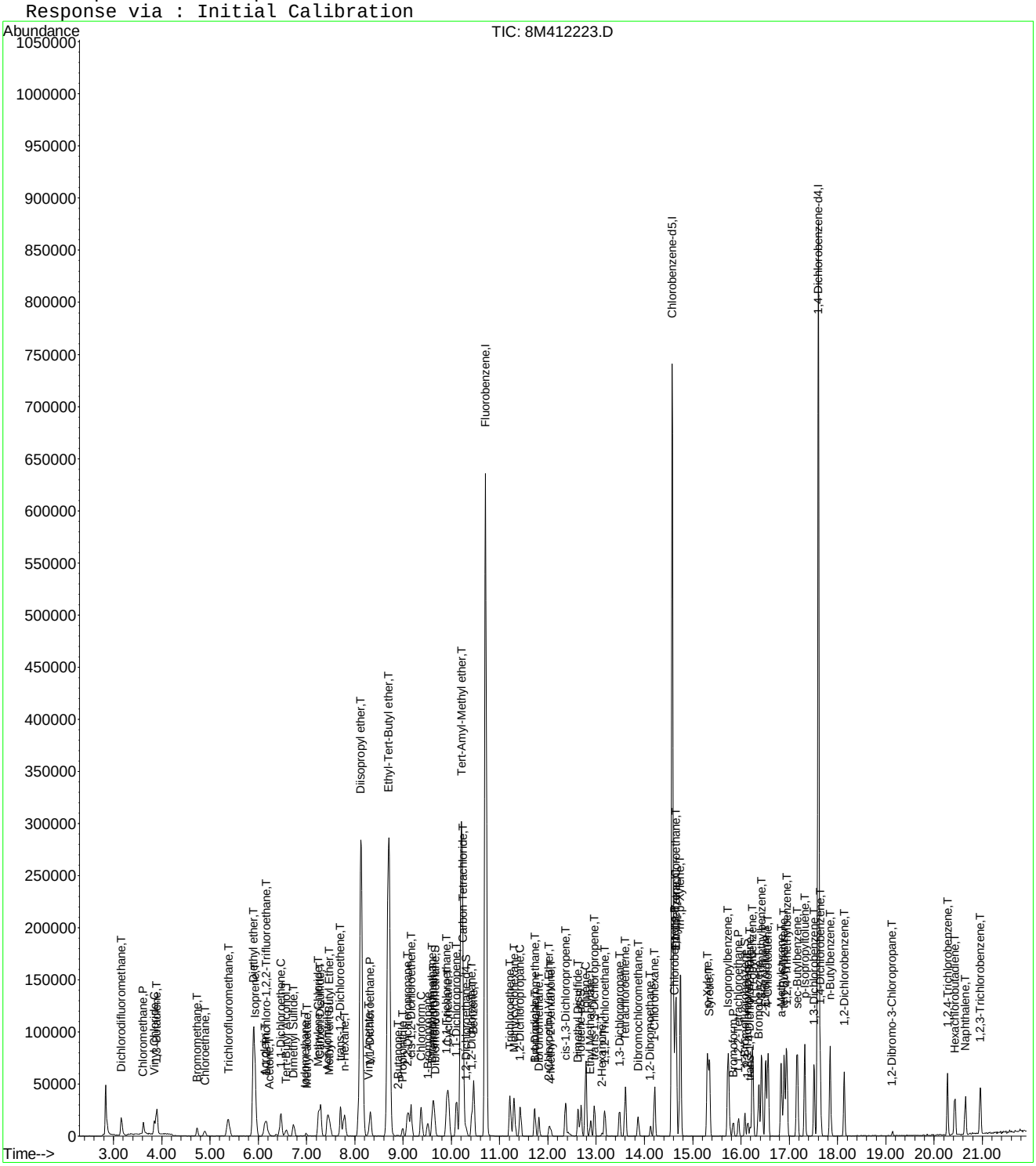

8M412223.D 8260WT.M Fri May 13 15:18:37 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.8958	5.2	100	0.00
3	P	Chloromethane	2.0000	2.1033	-5.2	100	0.00
4	C	Vinyl Chloride	2.0000	2.0431	-2.2	100	0.00
5	T	1,3-Butadiene	2.0000	1.7872	10.6	100	0.02
6	T	Bromomethane	2.0000	2.0126	-0.6	100	0.00
7	T	Chloroethane	2.0000	1.9127	4.4	100	0.00
8	T	Trichlorofluoromethane	2.0000	2.0686	-3.4	100	0.00
9	T	Diethyl ether	25.0000	26.7567	-7.0	100	0.00
10	T	Isoprene	2.0000	2.0394	-2.0	100	0.00
11	T	Acrolein	12.5000	13.4606	-7.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	2.1182	-5.9	100	0.02
13	T	Acetone	-1.0000	1.7255	0.0	100	-0.01
14	C	1,1-Dichloroethene	2.0000	2.0070	-0.4	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	52.7840	-5.6	100	0.00
16	T	Dimethyl Sulfide	2.0000	2.0975	-4.9	100	0.00
17	T	Iodomethane	2.0000	3.0680	-53.4#	100	0.00
18	T	Methyl acetate	-1.0000	2.1281	0.0	100	0.00
19	T	Methylene Chloride	2.0000	2.0590	-3.0	100	0.00
20	T	Carbon Disulfide	2.0000	2.1789	-8.9	100	0.00
21	T	Acrylonitrile	12.5000	12.1237	3.0	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.9505	2.5	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.9603	2.0	100	0.00
24	T	n-Hexane	-1.0000	2.1181	0.0	100	0.00
25	T	Diisopropyl ether	25.0000	26.2305	-4.9	100	0.00
26	T	Vinyl Acetate	2.0000	1.9284	3.6	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.1072	-5.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	26.0139	-4.1	100	0.00
29	T	2-Butanone	-1.0000	1.7396	0.0	100	0.02
30	T	Propionitrile	25.0000	24.8668	0.5	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1378	-6.9	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0306	-1.5	100	0.00
33	C	Chloroform	2.0000	1.9679	1.6	100	0.00
34		1-Bromopropane	2.0000	1.9533	2.3	100	0.00
35	T	Bromochloromethane	2.0000	1.9951	0.2	100	0.00
36	T	Tetrahydrofuran	25.0000	25.9117	-3.6	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9708	2.9	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.9930	0.3	100	0.00
39	T	Cyclohexane	2.0000	2.0605	-3.0	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0248	-1.2	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	26.0627	-4.3	100	0.00
42	T	Carbon Tetrachloride	2.0000	2.0126	-0.6	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0740	-7.4	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	2.0000	2.0183	-0.9	100	0.00
46	T	Benzene	2.0000	2.0854	-4.3	100	0.00
47	T	Trichloroethene	2.0000	2.0166	-0.8	100	0.00
48	T	Methylcyclohexane	-1.0000	2.0003	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0380	-1.9	100	0.00
50	T	Bromodichloromethane	2.0000	2.0511	-2.6	100	0.00
51	T	1,4-Dioxane	-1.0000	35.6688	0.0	100	0.02
52	T	Dibromomethane	2.0000	2.0246	-1.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	2.0271	-1.4	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.7027	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.8869	5.7	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.7986	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	0.9896	1.0	100	0.00
59	C	Toluene	2.0000	2.1628	-8.1	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.9633	1.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	2.0000	1.9609	2.0	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.9800	1.0	100	0.00
64	T	2-Hexanone	-1.0000	1.9672	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.1332	-6.7	100	0.00
66	T	Tetrachloroethene	2.0000	2.0198	-1.0	100	0.00
67	T	Dibromochloromethane	2.0000	1.8915	5.4	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.9141	4.3	100	0.00
69	T	1-Chlorohexane	2.0000	1.9075	4.6	100	0.00
70	P	Chlorobenzene	2.0000	2.0831	-4.2	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.9892	0.5	100	0.00
72	C	Ethylbenzene	2.0000	2.0596	-3.0	100	0.00
73	T	m-,p-Xylene	4.0000	4.1170	-2.9	100	0.00
74	T	o-Xylene	2.0000	1.9825	0.9	100	0.00
75	T	Styrene	2.0000	2.0358	-1.8	100	0.00
76	P	Bromoform	2.0000	1.9841	0.8	100	0.00
77	T	Isopropylbenzene	2.0000	2.1448	-7.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	2.0066	-0.3	100	0.00
80	S	p-Bromofluorobenzene	1.0000	1.0184	-1.8	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	2.0501	-2.5	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	2.0915	-4.6	100	0.00
83	T	n-Propylbenzene	2.0000	2.1757	-8.8	100	0.00
84	T	Bromobenzene	2.0000	2.0859	-4.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.0703	-3.5	100	0.00
86	T	2-Chlorotoluene	2.0000	2.1509	-7.5	100	0.00
87	T	4-Chlorotoluene	2.0000	2.0989	-4.9	100	0.00
88	T	a-Methylstyrene	-1.0000	1.9045	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	1.9967	0.2	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.1411	-7.1	100	0.00
91	T	sec-Butylbenzene	2.0000	2.1161	-5.8	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.1579	-7.9	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.1067	-5.3	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.0470	-2.4	100	0.00
95	T	n-Butylbenzene	2.0000	2.1098	-5.5	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0532	-2.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.6938	15.3	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	2.0021	-0.1	100	0.00
99	T	Hexachlorobutadiene	2.0000	2.0128	-0.6	100	0.00
100	T	Naphthalene	2.0000	2.0630	-3.2	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9910	0.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	768397	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	534372	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	274234	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	19775	2.0496 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	8.20%#	
43) 1,2-Dichloroethane-d4	10.30	65	21200	1.9207 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	7.68%#	
58) Toluene-d8	12.68	98	65647	2.3758 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	9.52%#	
80) p-Bromofluorobenzene	16.08	95	26759	2.3838 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	9.52%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	55961	3.4750 ug/L	99
3) Chloromethane	3.62	50	34194	2.2538 ug/L	100
4) Vinyl Chloride	3.84	62	42506	4.1488 ug/L	99
5) 1,3-Butadiene	3.89	54	32006	3.1976 ug/L	93
6) Bromomethane	4.72	94	19582	3.4204 ug/L	94
7) Chloroethane	4.90	64	22000	3.2814 ug/L	84
8) Trichlorofluoromethane	5.37	101	77715	3.8212 ug/L	96
9) Diethyl ether	5.90	59	188516	30.2955 ug/L	79
10) Isoprene	5.94	67	44975	4.3218 ug/L	78
11) Acrolein	6.15	56	7712	13.9568 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	36867	3.9591 ug/L	99
13) Acetone	6.24	43	3578	1.8967 ug/L	85
14) 1,1-Dichloroethene	6.47	61	59405	3.2870 ug/L	95
15) Tert-Butyl Alcohol	6.58	59	27833	64.0897 ug/L #	82
16) Dimethyl Sulfide	6.73	62	21102	3.1597 ug/L	77
17) Iodomethane	6.99	142	3667	1.8964 ug/L	95
18) Methyl acetate	7.00	43	11500	2.0398 ug/L #	86
19) Methylene Chloride	7.24	84	37533	4.3823 ug/L	52
20) Carbon Disulfide	7.29	76	123060	4.7097 ug/L	100
21) Acrylonitrile	7.43	53	25653	10.5804 ug/L	99
22) Methyl Tert Butyl Ether	7.47	73	80005	4.2289 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	54124	3.3108 ug/L	94
24) n-Hexane	7.78	57	40758	2.7480 ug/L	82
25) Diisopropyl ether	8.12	45	841400	20.0337 ug/L #	91
26) Vinyl Acetate	8.30	43	37284	2.2113 ug/L #	90
27) 1,1-Dichloroethane	8.32	63	66711	3.4116 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	907423	30.7852 ug/L	89
29) 2-Butanone	8.89	43	5359	1.7738 ug/L #	82
30) Propionitrile	8.99	54	17933	23.4726 ug/L	100
31) 2,2-Dichloropropane	9.10	77	73150	4.2462 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	41036	4.1950 ug/L	89
33) Chloroform	9.37	83	78227	4.3116 ug/L	99
34) 1-Bromopropane	9.52	122	6162	3.9986 ug/L	99
35) Bromochloromethane	9.60	130	20988	4.1009 ug/L #	62
36) Tetrahydrofuran	9.62	42	38098	19.0742 ug/L #	62
38) 1,1,1-Trichloroethane	9.91	97	76152	4.1633 ug/L	97
39) Cyclohexane	9.94	56	51439	2.5767 ug/L #	66
40) 1,1-Dichloropropene	10.11	75	56645	4.3027 ug/L	93
41) Tert-Amyl-Methyl ether	10.21	73	821180	43.4958 ug/L	87
42) Carbon Tetrachloride	10.25	117	67831	3.9416 ug/L	96

(#) = qualifier out of range (m) = manual integration
8M412224.D 8260WT.M Fri May 13 15:47:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	51708	3.3934 ug/L		85
46)	Benzene	10.46	78	150204	4.4792 ug/L		86
47)	Trichloroethene	11.21	130	38500	3.9784 ug/L		94
48)	Methylcyclohexane	11.30	83	60897	4.5008 ug/L		81
49)	1,2-Dichloropropane	11.43	63	31773	3.2549 ug/L		77
50)	Bromodichloromethane	11.73	83	59127	4.3535 ug/L		94
51)	1,4-Dioxane	11.71	88	2719	69.8702 ug/L	#	62
52)	Dibromomethane	11.81	93	19711	4.2894 ug/L		96
53)	2-Chloroethyl Vinyl Ether	12.03	63	12946	3.1676 ug/L		98
54)	4-Methyl-2-Pentanone	12.05	58	5129	2.2991 ug/L	#	78
55)	cis-1,3-Dichloropropene	12.36	75	61169	4.4752 ug/L		94
56)	Dimethyl Disulfide	12.62	79	27966	3.9053 ug/L		98
59)	Toluene	12.78	91	161007	5.0316 ug/L		97
60)	Ethyl Methacrylate	12.88	69	28595	4.7624 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	49791	4.4599 ug/L		97
63)	1,1,2-Trichloroethane	13.18	97	23678	4.6631 ug/L		99
64)	2-Hexanone	13.11	58	4499	2.4685 ug/L	#	97
65)	1,3-Dichloropropane	13.49	76	44838	4.7614 ug/L		73
66)	Tetrachloroethene	13.60	164	32715	4.5144 ug/L		97
67)	Dibromochloromethane	13.87	129	35009	4.3734 ug/L		98
68)	1,2-Dibromoethane	14.13	107	24247	4.5815 ug/L		99
69)	1-Chlorohexane	14.21	91	53599	4.9176 ug/L		84
70)	Chlorobenzene	14.62	112	107618	4.8437 ug/L		95
71)	1,1,1,2-Tetrachloroethane	14.65	131	38120	4.4025 ug/L		96
72)	Ethylbenzene	14.65	106	56905	4.5138 ug/L		91
73)	m-,p-Xylene	14.75	106	137390	9.4592 ug/L		86
74)	o-Xylene	15.31	106	65650	4.4866 ug/L		85
75)	Styrene	15.35	104	111433	4.7758 ug/L		91
76)	Bromoform	15.84	173	19346	4.2121 ug/L		97
77)	Isopropylbenzene	15.73	105	182523	4.9200 ug/L		96
79)	1,1,2,2-Tetrachloroethane	15.95	83	26655	4.8730 ug/L		99
81)	1,2,3-Trichloropropane	16.13	110	8840	5.0289 ug/L		81
82)	trans-1,4-Dichloro-2-Buten	16.19	53	6584	2.4712 ug/L	#	51
83)	n-Propylbenzene	16.24	91	222196	5.2576 ug/L		96
84)	Bromobenzene	16.37	156	42665	4.8423 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	155714	4.9790 ug/L		93
86)	2-Chlorotoluene	16.52	91	148764	5.4968 ug/L		94
87)	4-Chlorotoluene	16.56	91	135679	4.8666 ug/L		94
88)	a-Methylstyrene	16.84	118	68945	4.4743 ug/L		91
89)	tert-Butylbenzene	16.89	134	29069	4.6914 ug/L		77
90)	1,2,4-Trimethylbenzene	16.95	105	161016	5.0301 ug/L		94
91)	sec-Butylbenzene	17.17	105	191273	5.0866 ug/L		94
92)	p-Isopropyltoluene	17.32	119	159232	4.9597 ug/L		93
93)	1,3-Dichlorobenzene	17.52	146	83896	4.7972 ug/L		95
94)	1,4-Dichlorobenzene	17.64	146	82462	4.7242 ug/L		86
95)	n-Butylbenzene	17.85	91	158787	5.1996 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	72524	4.7321 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	5629	4.6990 ug/L		76
98)	1,2,4-Trichlorobenzene	20.28	180	53855	4.5369 ug/L		98
99)	Hexachlorobutadiene	20.43	225	24504	4.4608 ug/L		93
100)	Naphthalene	20.65	128	79806	4.4217 ug/L		98
101)	1,2,3-Trichlorobenzene	20.96	180	44150	4.3720 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412224.D 8260WT.M Fri May 13 15:47:44 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

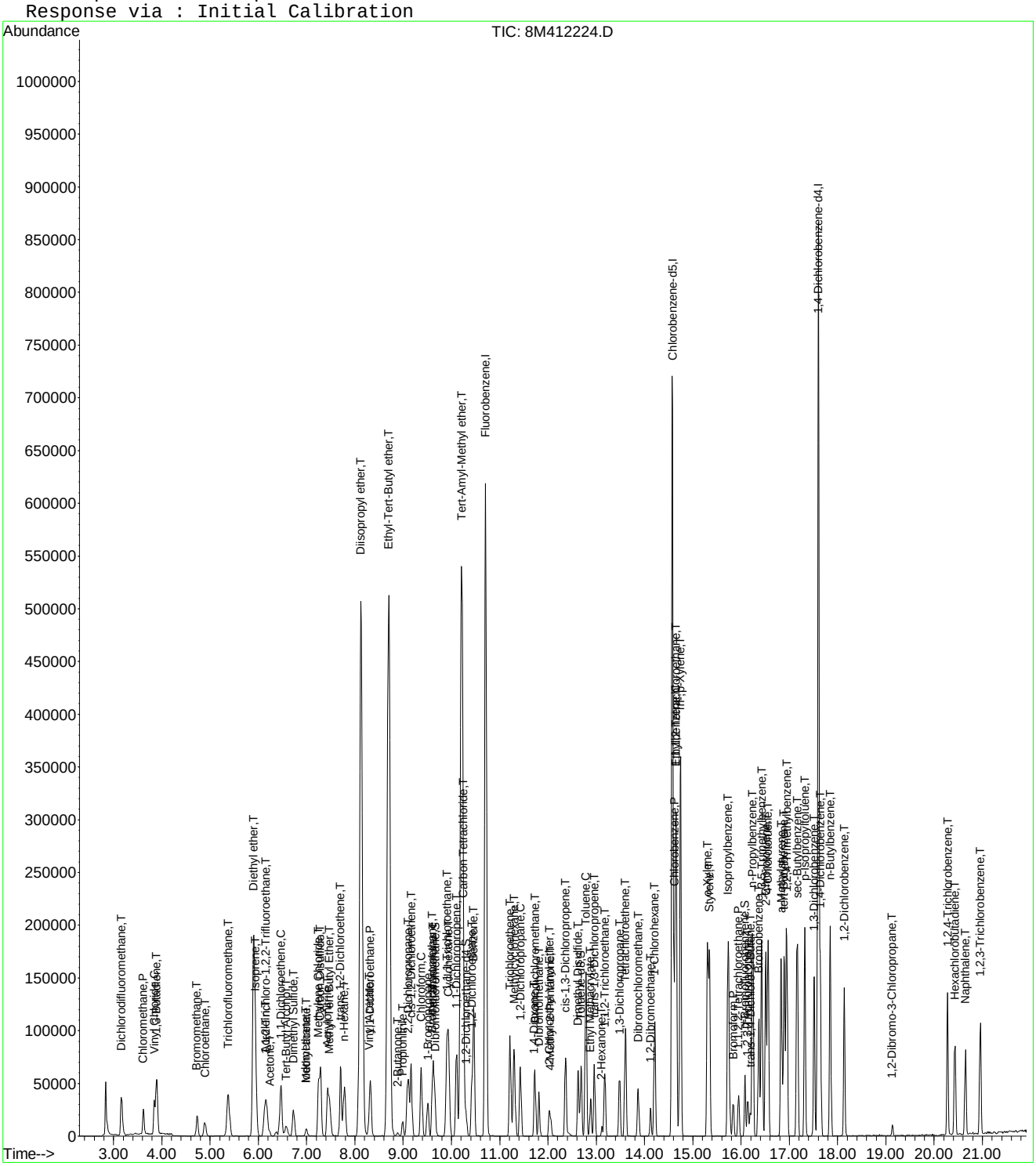

8M412224.D 8260WT.M Fri May 13 15:47:44 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.3438	13.1	100	0.00
3	P	Chloromethane	5.0000	4.5471	9.1	100	0.00
4	C	Vinyl Chloride	5.0000	4.7641	4.7	100	0.00
5	T	1,3-Butadiene	5.0000	4.2777	14.4	100	0.00
6	T	Bromomethane	5.0000	4.1880	16.2	100	-0.01
7	T	Chloroethane	5.0000	4.4813	10.4	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.6812	6.4	100	0.00
9	T	Diethyl ether	50.0000	47.5652	4.9	100	0.00
10	T	Isoprene	5.0000	4.4611	10.8	100	0.00
11	T	Acrolein	25.0000	21.7328	13.1	100	0.02
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.7244	5.5	100	0.00
13	T	Acetone	5.0000	4.1387	17.2	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.7810	4.4	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	100.4650	-0.5	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.7499	5.0	100	0.00
17	T	Iodomethane	5.0000	3.7634	24.7	100	0.00
18	T	Methyl acetate	5.0000	4.9211	1.6	100	0.00
19	T	Methylene Chloride	5.0000	4.7467	5.1	100	0.00
20	T	Carbon Disulfide	5.0000	4.7328	5.3	100	0.00
21	T	Acrylonitrile	25.0000	22.8698	8.5	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.6750	6.5	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.7415	5.2	100	0.00
24	T	n-Hexane	5.0000	4.8084	3.8	100	0.00
25	T	Diisopropyl ether	50.0000	47.2872	5.4	100	0.00
26	T	Vinyl Acetate	5.0000	4.5766	8.5	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.7058	5.9	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	47.5984	4.8	100	0.00
29	T	2-Butanone	5.0000	4.2191	15.6	100	0.00
30	T	Propionitrile	50.0000	48.4475	3.1	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.8965	2.1	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.6525	7.0	100	0.00
33	C	Chloroform	5.0000	4.6735	6.5	100	0.00
34		1-Bromopropane	5.0000	4.8774	2.5	100	0.00
35	T	Bromochloromethane	5.0000	4.6403	7.2	100	0.00
36	T	Tetrahydrofuran	50.0000	45.5400	8.9	100	-0.01
37	S	Dibromofluoromethane	2.5000	2.3953	4.2	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.7896	4.2	100	0.00
39	T	Cyclohexane	5.0000	4.6730	6.5	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.6741	6.5	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	47.6211	4.8	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.8044	3.9	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.3949	4.2	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	5.0000	4.7996	4.0	100	0.00
46	T	Benzene	5.0000	4.7588	4.8	100	0.00
47	T	Trichloroethene	5.0000	4.5733	8.5	100	0.00
48	T	Methylcyclohexane	5.0000	4.7616	4.8	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.5219	9.6	100	0.00
50	T	Bromodichloromethane	5.0000	4.7878	4.2	100	0.00
51	T	1,4-Dioxane	100.0000	77.0346	23.0	100	0.00
52	T	Dibromomethane	5.0000	4.7390	5.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.2867	14.3	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.1576	16.8	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.8662	2.7	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.1683	16.6	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.3473	6.1	100	0.00
59	C	Toluene	5.0000	4.8533	2.9	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.4883	10.2	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	5.0000	4.4786	10.4	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.5231	9.5	100	0.00
64	T	2-Hexanone	5.0000	4.0898	18.2	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.8109	3.8	100	0.00
66	T	Tetrachloroethene	5.0000	4.6028	7.9	100	0.00
67	T	Dibromochloromethane	5.0000	4.5802	8.4	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.6475	7.1	100	0.00
69	T	1-Chlorohexane	5.0000	4.7331	5.3	100	0.00
70	P	Chlorobenzene	5.0000	4.8107	3.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.3984	12.0	100	0.00
72	C	Ethylbenzene	5.0000	4.6492	7.0	100	0.00
73	T	m-,p-Xylene	10.0000	9.5700	4.3	100	0.00
74	T	o-Xylene	5.0000	4.6773	6.5	100	0.00
75	T	Styrene	5.0000	4.8405	3.2	100	0.00
76	P	Bromoform	5.0000	4.2672	14.7	100	0.00
77	T	Isopropylbenzene	5.0000	4.8951	2.1	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	4.8422	3.2	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.3565	5.7	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.2150	-4.3	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.3781	12.4	100	0.00
83	T	n-Propylbenzene	5.0000	5.1935	-3.9	100	0.00
84	T	Bromobenzene	5.0000	4.8483	3.0	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	4.9964	0.1	100	0.00
86	T	2-Chlorotoluene	5.0000	4.9803	0.4	100	0.00
87	T	4-Chlorotoluene	5.0000	5.0286	-0.6	100	0.00
88	T	a-Methylstyrene	5.0000	4.6629	6.7	100	0.00
89	T	tert-Butylbenzene	5.0000	4.7677	4.6	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.0245	-0.5	100	0.00
91	T	sec-Butylbenzene	5.0000	5.2170	-4.3	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.1150	-2.3	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	4.9511	1.0	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	4.8270	3.5	100	0.00
95	T	n-Butylbenzene	5.0000	5.1595	-3.2	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	4.8122	3.8	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	5.0942	-1.9	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.7808	4.4	100	0.00
99	T	Hexachlorobutadiene	5.0000	4.6555	6.9	100	0.00
100	T	Naphthalene	5.0000	4.7684	4.6	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.6455	7.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412224.D 8260WT.M Sat May 14 18:08:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	770027	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	531490	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	283594	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	86295	10.9569 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 43.84%#		
43) 1,2-Dichloroethane-d4	10.30	65	96239	11.3450 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 45.36%#		
58) Toluene-d8	12.68	98	294491	10.9223 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 43.68%#		
80) p-Bromofluorobenzene	16.08	95	121459	10.5490 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 42.20%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	288235	23.7135 ug/L	99
3) Chloromethane	3.62	50	155712	20.3784 ug/L	98
4) Vinyl Chloride	3.84	62	184250	20.9368 ug/L	95
5) 1,3-Butadiene	3.89	54	149348	22.7750 ug/L	96
6) Bromomethane	4.73	94	100098	25.0143 ug/L	99
7) Chloroethane	4.89	64	100876	20.9404 ug/L	91
8) Trichlorofluoromethane	5.37	101	351299	21.2512 ug/L	98
9) Diethyl ether	5.90	59	324317	80.8265 ug/L	78
10) Isoprene	5.94	67	205842	20.3622 ug/L	77
11) Acrolein	6.14	56	12049	34.8201 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	159996	20.3859 ug/L	97
13) Acetone	6.25	43	18459	25.7405 ug/L	98
14) 1,1-Dichloroethene	6.47	61	256241	20.5065 ug/L	92
15) Tert-Butyl Alcohol	6.57	59	43922	153.5712 ug/L	93
16) Dimethyl Sulfide	6.73	62	89456	20.6087 ug/L	83
17) Iodomethane	6.99	142	40622	61.0474 ug/L	93
18) Methyl acetate	7.00	43	46598	20.2171 ug/L #	85
19) Methylene Chloride	7.25	84	161897	20.1338 ug/L	52
20) Carbon Disulfide	7.30	76	538090	20.0802 ug/L	98
21) Acrylonitrile	7.43	53	46305	46.9889 ug/L	100
22) Methyl Tert Butyl Ether	7.47	73	361116	22.0137 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	234754	20.3175 ug/L	90
24) n-Hexane	7.78	57	172498	21.1165 ug/L	84
25) Diisopropyl ether	8.12	45	1447822	80.3755 ug/L #	91
26) Vinyl Acetate	8.30	43	166501	21.7017 ug/L #	88
27) 1,1-Dichloroethane	8.33	63	300321	21.3849 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	1579265	83.0733 ug/L	89
29) 2-Butanone	8.88	43	25681	23.9099 ug/L	87
30) Propionitrile	8.98	54	30953	89.5673 ug/L	94
31) 2,2-Dichloropropane	9.10	77	309575	20.8527 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	181973	20.4488 ug/L	89
33) Chloroform	9.37	83	348925	20.5535 ug/L	96
34) 1-Bromopropane	9.52	122	26723	22.7206 ug/L	96
35) Bromochloromethane	9.61	130	94952	21.3181 ug/L	65
36) Tetrahydrofuran	9.63	42	63066	70.5772 ug/L #	57
38) 1,1,1-Trichloroethane	9.91	97	335486	21.3640 ug/L	99
39) Cyclohexane	9.94	56	221040	19.9984 ug/L #	64
40) 1,1-Dichloropropene	10.11	75	248373	20.4717 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1418183	81.7883 ug/L	88
42) Carbon Tetrachloride	10.25	117	296471	21.3449 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412225.D 8260WT.M Fri May 13 16:16:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	228665	21.6403	ug/L		85
46)	Benzene	10.46	78	668449	20.3769	ug/L		86
47)	Trichloroethene	11.21	130	174107	20.7980	ug/L		96
48)	Methylcyclohexane	11.29	83	262275	21.4887	ug/L		82
49)	1,2-Dichloropropane	11.43	63	146868	21.1883	ug/L	#	72
50)	Bromodichloromethane	11.73	83	262192	21.9986	ug/L		98
51)	1,4-Dioxane	11.71	88	5351	196.3837	ug/L		76
52)	Dibromomethane	11.81	93	86951	21.0734	ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	63586	22.4600	ug/L		91
54)	4-Methyl-2-Pentanone	12.05	58	25754	25.0531	ug/L	#	73
55)	cis-1,3-Dichloropropene	12.36	75	265439	21.9841	ug/L		99
56)	Dimethyl Disulfide	12.63	79	134192	23.9412	ug/L		100
59)	Toluene	12.78	91	700473	20.1722	ug/L		99
60)	Ethyl Methacrylate	12.88	69	133361	23.2046	ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	238585	23.2548	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	107901	21.0216	ug/L		99
64)	2-Hexanone	13.11	58	22561	25.2093	ug/L	#	85
65)	1,3-Dichloropropane	13.49	76	198804	22.2491	ug/L		74
66)	Tetrachloroethene	13.60	164	141791	20.0055	ug/L		94
67)	Dibromochloromethane	13.87	129	158465	22.0695	ug/L		99
68)	1,2-Dibromoethane	14.13	107	110085	22.3366	ug/L		100
69)	1-Chlorohexane	14.21	91	229753	20.3591	ug/L		83
70)	Chlorobenzene	14.62	112	467492	20.4613	ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.65	131	183079	22.2095	ug/L		96
72)	Ethylbenzene	14.65	106	249016	20.2289	ug/L		90
73)	m-,p-Xylene	14.75	106	606381	41.1308	ug/L		88
74)	o-Xylene	15.30	106	294106	21.2106	ug/L		90
75)	Styrene	15.35	104	492781	21.8207	ug/L		89
76)	Bromoform	15.83	173	95911	23.8070	ug/L		99
77)	Isopropylbenzene	15.73	105	806678	20.7280	ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	123253	22.7779	ug/L		95
81)	1,2,3-Trichloropropane	16.14	110	36712	22.1354	ug/L		94
82)	trans-1,4-Dichloro-2-Buten	16.18	53	33702	27.6513	ug/L	#	56
83)	n-Propylbenzene	16.24	91	962196	20.3511	ug/L		97
84)	Bromobenzene	16.37	156	190566	21.2033	ug/L		94
85)	1,3,5-Trimethylbenzene	16.43	105	692633	20.9615	ug/L		94
86)	2-Chlorotoluene	16.51	91	649077	19.9155	ug/L		96
87)	4-Chlorotoluene	16.56	91	595446	20.3225	ug/L		95
88)	a-Methylstyrene	16.83	118	318960	22.3680	ug/L		92
89)	tert-Butylbenzene	16.90	134	129440	20.4705	ug/L		83
90)	1,2,4-Trimethylbenzene	16.95	105	707749	20.4783	ug/L		94
91)	sec-Butylbenzene	17.17	105	818359	20.1802	ug/L		97
92)	p-Isopropyltoluene	17.32	119	677859	19.7492	ug/L		96
93)	1,3-Dichlorobenzene	17.52	146	364065	20.5126	ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	363066	19.9874	ug/L		92
95)	n-Butylbenzene	17.85	91	681055	20.0187	ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	318612	19.9358	ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	23070	21.6419	ug/L		93
98)	1,2,4-Trichlorobenzene	20.28	180	242455	20.8863	ug/L		98
99)	Hexachlorobutadiene	20.43	225	110384	20.2523	ug/L		96
100)	Naphthalene	20.65	128	369849	21.4526	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	198876	19.8356	ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration

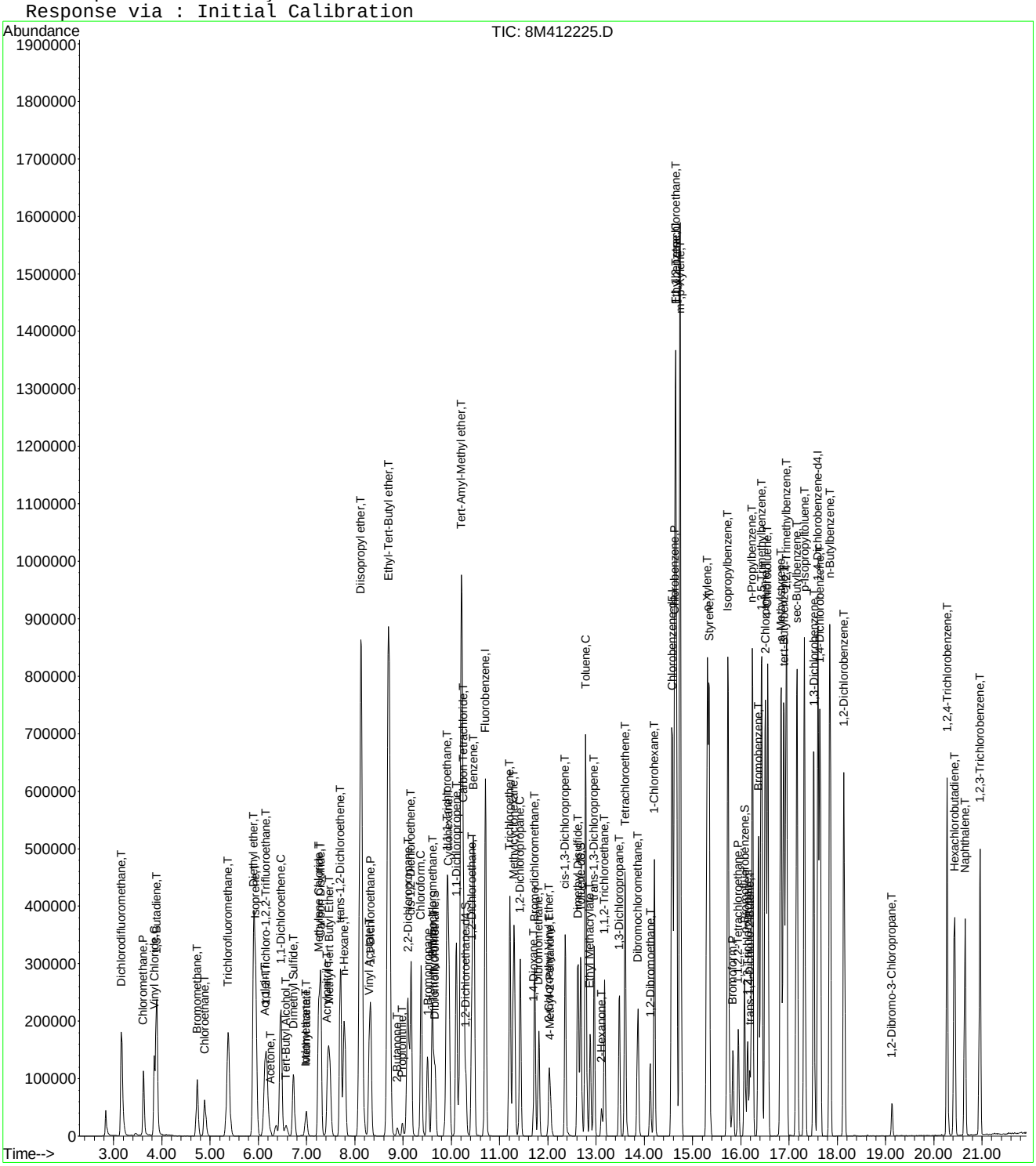

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45:30 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	778260	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	539116	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	288225	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	211053	26.5139 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.04%		
43) 1,2-Dichloroethane-d4	10.31	65	229348	26.7504 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.00%		
58) Toluene-d8	12.68	98	718491	26.2709 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.08%		
80) p-Bromofluorobenzene	16.07	95	292755	25.0180 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.08%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	682745	55.5761 ug/L	100
3) Chloromethane	3.62	50	372858	48.2806 ug/L	98
4) Vinyl Chloride	3.85	62	453905	51.0328 ug/L	96
5) 1,3-Butadiene	3.88	54	390501	58.9199 ug/L	99
6) Bromomethane	4.74	94	260493	64.4080 ug/L	97
7) Chloroethane	4.89	64	244336	50.1840 ug/L	91
8) Trichlorofluoromethane	5.38	101	837676	50.1376 ug/L	99
9) Diethyl ether	5.90	59	389327	96.0019 ug/L	79
10) Isoprene	5.94	67	498060	48.7477 ug/L	76
11) Acrolein	6.13	56	17644	50.4496 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	387643	48.8691 ug/L	97
13) Acetone	6.25	43	45901	63.3305 ug/L	97
14) 1,1-Dichloroethene	6.46	61	619744	49.0724 ug/L	94
15) Tert-Butyl Alcohol	6.58	59	53656	185.6211 ug/L	91
16) Dimethyl Sulfide	6.73	62	221107	50.3993 ug/L	82
17) Iodomethane	6.98	142	157872	234.7428 ug/L	94
18) Methyl acetate	7.00	43	114759	49.2629 ug/L #	81
19) Methylene Chloride	7.25	84	389653	47.9453 ug/L	52
20) Carbon Disulfide	7.29	76	1269941	46.8897 ug/L	99
21) Acrylonitrile	7.43	53	59882	60.1236 ug/L	97
22) Methyl Tert Butyl Ether	7.46	73	901668	54.3843 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	571507	48.9396 ug/L	93
24) n-Hexane	7.79	57	419656	50.8290 ug/L	83
25) Diisopropyl ether	8.13	45	1781012	97.8265 ug/L #	90
26) Vinyl Acetate	8.29	43	428708	55.2866 ug/L #	89
27) 1,1-Dichloroethane	8.32	63	722574	50.9078 ug/L	96
28) Ethyl-Tert-Butyl ether	8.71	59	1955100	101.7552 ug/L	89
29) 2-Butanone	8.88	43	66579	61.3316 ug/L #	82
30) Propionitrile	8.98	54	38235	109.4684 ug/L	95
31) 2,2-Dichloropropane	9.10	77	768496	51.2175 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	439590	48.8754 ug/L	91
33) Chloroform	9.38	83	844564	49.2230 ug/L	97
34) 1-Bromopropane	9.51	122	63442	53.3693 ug/L	99
35) Bromochloromethane	9.60	130	230119	51.1185 ug/L	66
36) Tetrahydrofuran	9.64	42	79437	87.9575 ug/L #	62
38) 1,1,1-Trichloroethane	9.90	97	817606	51.5150 ug/L	99
39) Cyclohexane	9.93	56	535882	47.9707 ug/L #	65
40) 1,1-Dichloropropene	10.10	75	615439	50.1899 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1769381	100.9628 ug/L	88
42) Carbon Tetrachloride	10.24	117	724058	51.5782 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412226.D 8260WT.M Fri May 13 16:45:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45:30 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	561107	52.5401 ug/L		85
46)	Benzene	10.46	78	1607407	48.4816 ug/L		86
47)	Trichloroethene	11.22	130	424998	50.2312 ug/L		96
48)	Methylcyclohexane	11.30	83	635339	51.5040 ug/L		83
49)	1,2-Dichloropropane	11.42	63	351908	50.2320 ug/L	#	71
50)	Bromodichloromethane	11.72	83	654943	54.3701 ug/L		97
51)	1,4-Dioxane	11.71	88	7573	274.9918 ug/L		73
52)	Dibromomethane	11.82	93	209167	50.1574 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	162319	56.7281 ug/L		93
54)	4-Methyl-2-Pentanone	12.05	58	64928	62.4928 ug/L		80
55)	cis-1,3-Dichloropropene	12.36	75	666861	54.6463 ug/L		98
56)	Dimethyl Disulfide	12.62	79	343446	60.6260 ug/L		96
59)	Toluene	12.79	91	1676069	47.5846 ug/L		100
60)	Ethyl Methacrylate	12.88	69	338996	58.1503 ug/L		69
62)	trans-1,3-Dichloropropene	12.96	75	594749	57.1499 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	268432	51.5570 ug/L		98
64)	2-Hexanone	13.12	58	56859	62.6347 ug/L	#	83
65)	1,3-Dichloropropane	13.48	76	489226	53.9770 ug/L		75
66)	Tetrachloroethene	13.60	164	350332	48.7296 ug/L		95
67)	Dibromochloromethane	13.86	129	401149	55.0780 ug/L		100
68)	1,2-Dibromoethane	14.12	107	273580	54.7252 ug/L		99
69)	1-Chlorohexane	14.21	91	560883	48.9984 ug/L		82
70)	Chlorobenzene	14.63	112	1117812	48.2326 ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	446892	53.4462 ug/L		99
72)	Ethylbenzene	14.66	106	603074	48.2980 ug/L		91
73)	m-,p-Xylene	14.74	106	1443780	96.5463 ug/L		90
74)	o-Xylene	15.31	106	709244	50.4265 ug/L		90
75)	Styrene	15.34	104	1212099	52.9133 ug/L		91
76)	Bromoform	15.84	173	238354	58.3272 ug/L		100
77)	Isopropylbenzene	15.73	105	1919993	48.6372 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	294266	53.5083 ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	89279	52.9656 ug/L		93
82)	trans-1,4-Dichloro-2-Buten	16.19	53	86829	70.0956 ug/L	#	53
83)	n-Propylbenzene	16.24	91	2278994	47.4277 ug/L		98
84)	Bromobenzene	16.37	156	459959	50.3549 ug/L		93
85)	1,3,5-Trimethylbenzene	16.43	105	1661486	49.4745 ug/L		95
86)	2-Chlorotoluene	16.51	91	1611031	48.6367 ug/L		97
87)	4-Chlorotoluene	16.56	91	1341051	45.0344 ug/L		95
88)	a-Methylstyrene	16.83	118	772611	53.3111 ug/L		90
89)	tert-Butylbenzene	16.89	134	307503	47.8493 ug/L		81
90)	1,2,4-Trimethylbenzene	16.94	105	1679809	47.8234 ug/L		95
91)	sec-Butylbenzene	17.16	105	1925411	46.7166 ug/L		97
92)	p-Isopropyltoluene	17.32	119	1621383	46.4795 ug/L		95
93)	1,3-Dichlorobenzene	17.51	146	882656	48.9327 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	871210	47.1909 ug/L		92
95)	n-Butylbenzene	17.85	91	1608832	46.5296 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	768548	47.3159 ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	59586	54.9992 ug/L		86
98)	1,2,4-Trichlorobenzene	20.28	180	583880	49.4902 ug/L		100
99)	Hexachlorobutadiene	20.44	225	264699	47.7844 ug/L		98
100)	Naphthalene	20.65	128	894629	51.0579 ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	475246	46.6387 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412226.D 8260WT.M Fri May 13 16:45:33 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration

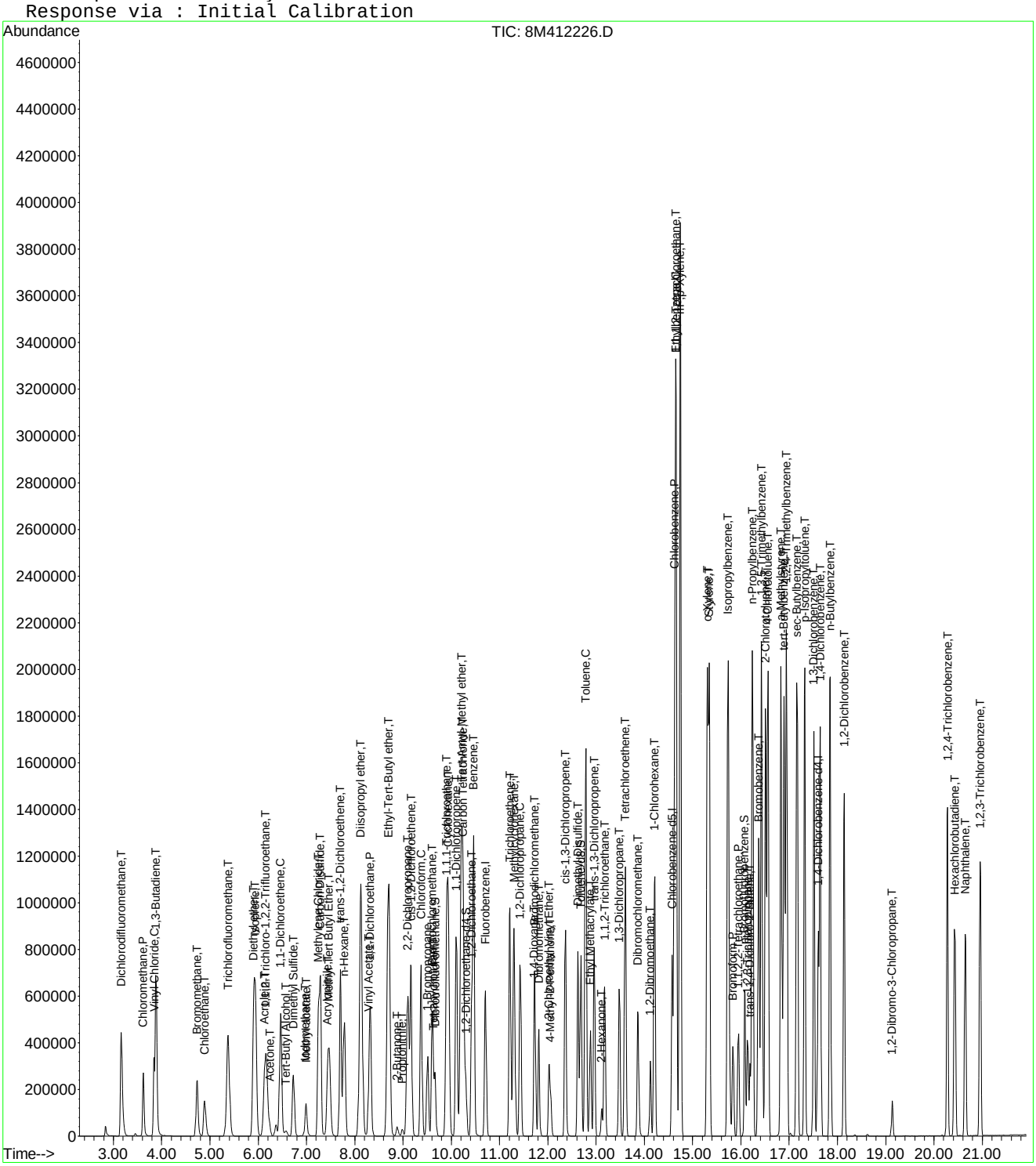

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	809533	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	559075	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	296193	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	460283	53.9056 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 215.64%#		
43) 1,2-Dichloroethane-d4	10.30	65	488116	52.5821 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 210.32%#		
58) Toluene-d8	12.68	98	1540572	52.8075 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 211.24%#		
80) p-Bromofluorobenzene	16.08	95	623735	51.1573 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 204.64%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	1463283	109.1068 ug/L	100
3) Chloromethane	3.62	50	778702	97.2380 ug/L	98
4) Vinyl Chloride	3.84	62	968312	103.4979 ug/L	95
5) 1,3-Butadiene	3.88	54	896569	120.4972 ug/L	95
6) Bromomethane	4.73	94	605228	129.8677 ug/L	99
7) Chloroethane	4.89	64	528153	103.4126 ug/L	90
8) Trichlorofluoromethane	5.37	101	1782726	101.4754 ug/L	99
9) Diethyl ether	5.90	59	828091	197.4770 ug/L	79
10) Isoprene	5.94	67	1080684	101.8037 ug/L	78
11) Acrolein	6.14	56	38655	109.5572 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	833546	101.0906 ug/L	97
13) Acetone	6.24	43	97515	109.1944 ug/L	100
14) 1,1-Dichloroethene	6.46	61	1323999	100.6729 ug/L	93
15) Tert-Butyl Alcohol	6.57	59	114220	387.5328 ug/L	91
16) Dimethyl Sulfide	6.73	62	489571	106.5996 ug/L	82
17) Iodomethane	6.99	142	416890	244.5557 ug/L	97
18) Methyl acetate	7.00	43	252444	104.3161 ug/L #	81
19) Methylene Chloride	7.24	84	827241	98.5346 ug/L	53
20) Carbon Disulfide	7.29	76	2766110	99.3432 ug/L	100
21) Acrylonitrile	7.43	53	126153	113.2272 ug/L	98
22) Methyl Tert Butyl Ether	7.46	73	1894494	105.8643 ug/L	87
23) trans-1,2-Dichloroethene	7.70	61	1203701	99.1822 ug/L	93
24) n-Hexane	7.78	57	926226	105.3097 ug/L	84
25) Diisopropyl ether	8.12	45	3699807	196.0386 ug/L #	90
26) Vinyl Acetate	8.29	43	860820	101.8643 ug/L #	88
27) 1,1-Dichloroethane	8.32	63	1521237	101.5567 ug/L	96
28) Ethyl-Tert-Butyl ether	8.70	59	4005676	198.2271 ug/L	89
29) 2-Butanone	8.88	43	145126	112.6698 ug/L #	81
30) Propionitrile	8.98	54	83038	219.1648 ug/L	97
31) 2,2-Dichloropropane	9.11	77	1610615	102.0557 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	935490	99.9944 ug/L	89
33) Chloroform	9.37	83	1766988	98.8341 ug/L	98
34) 1-Bromopropane	9.51	122	139657	108.5299 ug/L	100
35) Bromochloromethane	9.61	130	488678	102.8480 ug/L	66
36) Tetrahydrofuran	9.63	42	167812	187.5699 ug/L #	61
38) 1,1,1-Trichloroethane	9.91	97	1724504	102.7713 ug/L	100
39) Cyclohexane	9.94	56	1185537	102.8628 ug/L #	66
40) 1,1-Dichloropropene	10.11	75	1293224	100.8377 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	3634806	198.1264 ug/L	88
42) Carbon Tetrachloride	10.25	117	1534696	103.3979 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412227.D 8260WT.M Fri May 13 17:14:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	1177876	103.7352	ug/L		85
46)	Benzene	10.46	78	3298928	95.8405	ug/L		87
47)	Trichloroethene	11.21	130	903490	101.9036	ug/L		97
48)	Methylcyclohexane	11.30	83	1389528	104.6454	ug/L		83
49)	1,2-Dichloropropane	11.43	63	755128	102.5297	ug/L		73
50)	Bromodichloromethane	11.73	83	1351612	104.6036	ug/L		99
51)	1,4-Dioxane	11.72	88	16303	473.9624	ug/L		68
52)	Dibromomethane	11.81	93	445130	101.6543	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.02	63	333977	105.4228	ug/L		92
54)	4-Methyl-2-Pentanone	12.05	58	138980	110.1494	ug/L	#	77
55)	cis-1,3-Dichloropropene	12.36	75	1387475	105.9136	ug/L		100
56)	Dimethyl Disulfide	12.62	79	745504	111.3169	ug/L		97
59)	Toluene	12.78	91	3455614	95.2346	ug/L		99
60)	Ethyl Methacrylate	12.88	69	731009	113.5760	ug/L		70
62)	trans-1,3-Dichloropropene	12.96	75	1236182	107.9445	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	564076	103.0604	ug/L		99
64)	2-Hexanone	13.12	58	126268	114.5366	ug/L	#	79
65)	1,3-Dichloropropane	13.48	76	1021082	105.2672	ug/L		74
66)	Tetrachloroethene	13.60	164	752835	101.4023	ug/L		95
67)	Dibromochloromethane	13.87	129	856499	109.6525	ug/L		100
68)	1,2-Dibromoethane	14.12	107	577701	107.6426	ug/L		98
69)	1-Chlorohexane	14.21	91	1222720	103.0385	ug/L		82
70)	Chlorobenzene	14.62	112	2332247	97.2408	ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	947925	106.1463	ug/L		99
72)	Ethylbenzene	14.66	106	1275519	98.8771	ug/L		97
73)	m-,p-Xylene	14.75	106	3009424	194.2602	ug/L		98
74)	o-Xylene	15.31	106	1490638	100.8068	ug/L		93
75)	Styrene	15.35	104	2503721	102.8373	ug/L		88
76)	Bromoform	15.83	173	517827	114.0520	ug/L		100
77)	Isopropylbenzene	15.73	105	3913141	95.4433	ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	624965	106.8610	ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	192087	107.3268	ug/L		97
82)	trans-1,4-Dichloro-2-Buten	16.18	53	189214	128.4818	ug/L	#	59
83)	n-Propylbenzene	16.24	91	4599057	93.6644	ug/L		100
84)	Bromobenzene	16.37	156	968011	102.1426	ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	3401719	97.9556	ug/L		97
86)	2-Chlorotoluene	16.52	91	3177047	93.8267	ug/L		98
87)	4-Chlorotoluene	16.56	91	2899171	96.0712	ug/L		96
88)	a-Methylstyrene	16.84	118	1639166	103.6811	ug/L		90
89)	tert-Butylbenzene	16.90	134	654025	99.4199	ug/L		85
90)	1,2,4-Trimethylbenzene	16.95	105	3479295	96.7054	ug/L		97
91)	sec-Butylbenzene	17.17	105	3947832	94.2785	ug/L		98
92)	p-Isopropyltoluene	17.32	119	3328450	94.4148	ug/L		97
93)	1,3-Dichlorobenzene	17.52	146	1834740	98.9074	ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	1818309	96.6271	ug/L		92
95)	n-Butylbenzene	17.85	91	3308330	94.4002	ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	1606254	97.0179	ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	125368	107.7020	ug/L		87
98)	1,2,4-Trichlorobenzene	20.28	180	1227926	100.7076	ug/L		99
99)	Hexachlorobutadiene	20.43	225	569213	100.5231	ug/L		97
100)	Naphthalene	20.65	128	1852486	101.2968	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	1021163	98.5794	ug/L		100

(#) = qualifier out of range (m) = manual integration
8M412227.D 8260WT.M Fri May 13 17:14:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration

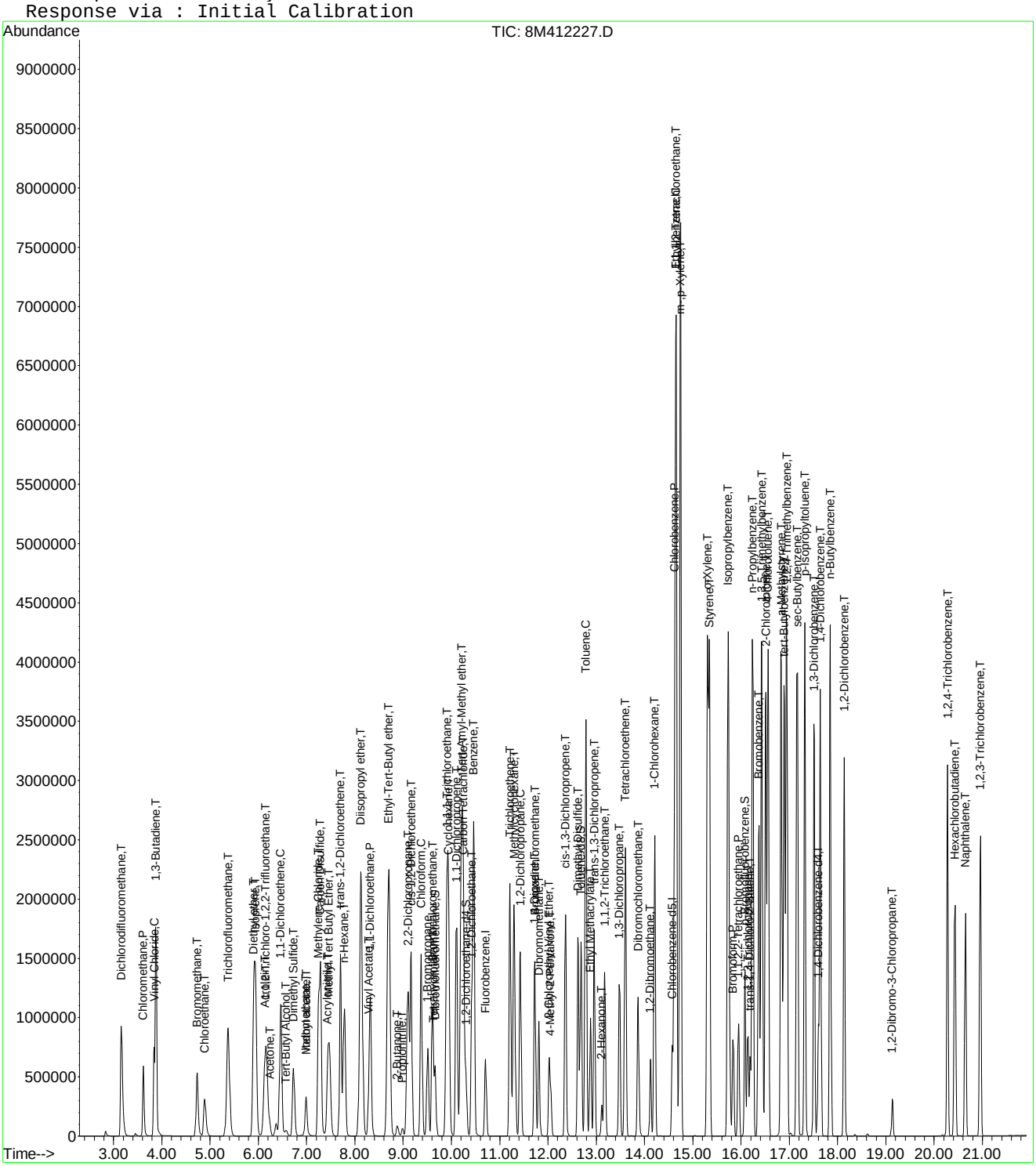

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	828540	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	578848	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	301401	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	898145	101.4517 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 405.80%#		
43) 1,2-Dichloroethane-d4	10.30	65	939848	98.0779 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 392.32%#		
58) Toluene-d8	12.68	98	2984162	97.8805 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 391.52%#		
80) p-Bromofluorobenzene	16.08	95	1242720	99.7023 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 398.80%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	2830517	203.5621 ug/L	98
3) Chloromethane	3.62	50	1586058	194.4056 ug/L	97
4) Vinyl Chloride	3.83	62	1935009	201.0738 ug/L	94
5) 1,3-Butadiene	3.88	54	1684964	212.5477 ug/L	94
6) Bromomethane	4.72	94	1358068	271.2231 ug/L	99
7) Chloroethane	4.89	64	1084803	206.5255 ug/L	90
8) Trichlorofluoromethane	5.37	101	3516760	195.1756 ug/L	99
10) Isoprene	5.94	67	2136665	196.1573 ug/L	78
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1662142	196.5993 ug/L	95
13) Acetone	6.24	43	187748	200.7963 ug/L	97
14) 1,1-Dichloroethene	6.46	61	2649821	196.6732 ug/L	92
15) Tert-Butyl Alcohol	6.58	59	6024	20.0950 ug/L #	87
16) Dimethyl Sulfide	6.73	62	976862	205.8822 ug/L	82
17) Iodomethane	6.99	142	896947	398.7987 ug/L	100
18) Methyl acetate	7.00	43	504293	201.4324 ug/L #	81
19) Methylene Chloride	7.25	84	1684780	196.5546 ug/L	52
20) Carbon Disulfide	7.29	76	5386210	189.2120 ug/L	99
21) Acrylonitrile	7.45	53	30354	26.0447 ug/L #	32
22) Methyl Tert Butyl Ether	7.46	73	3711011	200.6529 ug/L	87
23) trans-1,2-Dichloroethene	7.70	61	2410498	194.2902 ug/L	92
24) n-Hexane	7.78	57	1821777	199.7288 ug/L	84
26) Vinyl Acetate	8.29	43	1796217	206.9060 ug/L #	88
27) 1,1-Dichloroethane	8.32	63	3042055	197.9863 ug/L	95
29) 2-Butanone	8.88	43	271767	199.8193 ug/L #	77
30) Propionitrile	8.90	54	208	0.5280 ug/L #	1
31) 2,2-Dichloropropane	9.11	77	3202633	197.6970 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	1875631	195.8883 ug/L	89
33) Chloroform	9.37	83	3506648	191.9199 ug/L	99
34) 1-Bromopropane	9.51	122	286158	214.2313 ug/L	99
35) Bromochloromethane	9.60	130	980373	200.7807 ug/L	66
36) Tetrahydrofuran	9.62	42	2381	2.6275 ug/L	87
38) 1,1,1-Trichloroethane	9.91	97	3410306	197.7909 ug/L	99
39) Cyclohexane	9.94	56	2357393	198.8974 ug/L #	66
40) 1,1-Dichloropropene	10.10	75	2601175	197.8946 ug/L	96
42) Carbon Tetrachloride	10.25	117	3062767	200.6417 ug/L	99
45) 1,2-Dichloroethane	10.42	62	2313662	198.0324 ug/L	85
46) Benzene	10.46	78	6379817	182.1771 ug/L	89
47) Trichloroethene	11.21	130	1810459	198.9741 ug/L	97
48) Methylcyclohexane	11.30	83	2755373	200.4193 ug/L	83
49) 1,2-Dichloropropane	11.43	63	1528407	202.0331 ug/L	74

(#) = qualifier out of range (m) = manual integration
8M412228.D 8260WT.M Fri May 13 17:43:34 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
50)	Bromodichloromethane	11.73	83	2716764	204.0895 ug/L		99
51)	1,4-Dioxane	11.73	88	3865	104.9352 ug/L	#	18
52)	Dibromomethane	11.81	93	898971	200.1154 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.02	63	631656	192.7236 ug/L		90
54)	4-Methyl-2-Pentanone	12.05	58	262702	198.3957 ug/L	#	75
55)	cis-1,3-Dichloropropene	12.36	75	2784162	205.9153 ug/L		99
56)	Dimethyl Disulfide	12.62	79	1518705	215.4711 ug/L		95
59)	Toluene	12.78	91	6564353	175.9274 ug/L		96
60)	Ethyl Methacrylate	12.88	69	1429837	209.8161 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	2468609	205.4771 ug/L		98
63)	1,1,2-Trichloroethane	13.18	97	1124672	197.6019 ug/L		100
64)	2-Hexanone	13.12	58	237678	200.9290 ug/L	#	81
65)	1,3-Dichloropropane	13.48	76	2023247	199.9545 ug/L		76
66)	Tetrachloroethene	13.60	164	1546618	200.8018 ug/L		97
67)	Dibromochloromethane	13.87	129	1726523	210.5823 ug/L		100
68)	1,2-Dibromoethane	14.12	107	1163160	207.0667 ug/L		99
69)	1-Chlorohexane	14.21	91	2414147	195.6413 ug/L		83
70)	Chlorobenzene	14.62	112	4641169	187.6386 ug/L		94
71)	1,1,1,2-Tetrachloroethane	14.66	131	1929251	206.8372 ug/L		99
72)	Ethylbenzene	14.66	106	2611321	195.8267 ug/L		88
73)	m-,p-Xylene	14.75	106	5876234	367.8657 ug/L		83
74)	o-Xylene	15.31	106	3012318	196.4899 ug/L		98
75)	Styrene	15.35	104	4913204	194.1235 ug/L		86
76)	Bromoform	15.83	173	1052629	218.7989 ug/L		100
77)	Isopropylbenzene	15.73	105	7284624	172.7305 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	1237171	205.8673 ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	386738	209.7906 ug/L	#	54
82)	trans-1,4-Dichloro-2-Buten	16.19	53	382467	243.6526 ug/L		76
83)	n-Propylbenzene	16.24	91	8244387	166.5110 ug/L		93
84)	Bromobenzene	16.37	156	1935166	200.1305 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	6482975	183.9948 ug/L		98
86)	2-Chlorotoluene	16.52	91	6108308	178.8549 ug/L		99
87)	4-Chlorotoluene	16.56	91	5513221	180.5508 ug/L		99
88)	a-Methylstyrene	16.84	118	3255254	200.4995 ug/L		89
89)	tert-Butylbenzene	16.90	134	1351569	202.1005 ug/L		92
90)	1,2,4-Trimethylbenzene	16.95	105	6531416	179.2445 ug/L		97
91)	sec-Butylbenzene	17.17	105	7342730	173.9814 ug/L		97
92)	p-Isopropyltoluene	17.32	119	6352010	178.7315 ug/L		99
93)	1,3-Dichlorobenzene	17.52	146	3640547	193.1654 ug/L		90
94)	1,4-Dichlorobenzene	17.64	146	3593548	188.4603 ug/L		91
95)	n-Butylbenzene	17.85	91	6198060	175.4375 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	3171699	188.9651 ug/L		89
97)	1,2-Dibromo-3-Chloropropan	19.13	75	249646	207.5645 ug/L		88
98)	1,2,4-Trichlorobenzene	20.28	180	2480626	199.7296 ug/L		99
99)	Hexachlorobutadiene	20.43	225	1169411	202.7981 ug/L		98
100)	Naphthalene	20.65	128	3580198	192.0323 ug/L		97
101)	1,2,3-Trichlorobenzene	20.96	180	2040570	193.9298 ug/L		100

(#) = qualifier out of range (m) = manual integration
8M412228.D 8260WT.M Fri May 13 17:43:35 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration

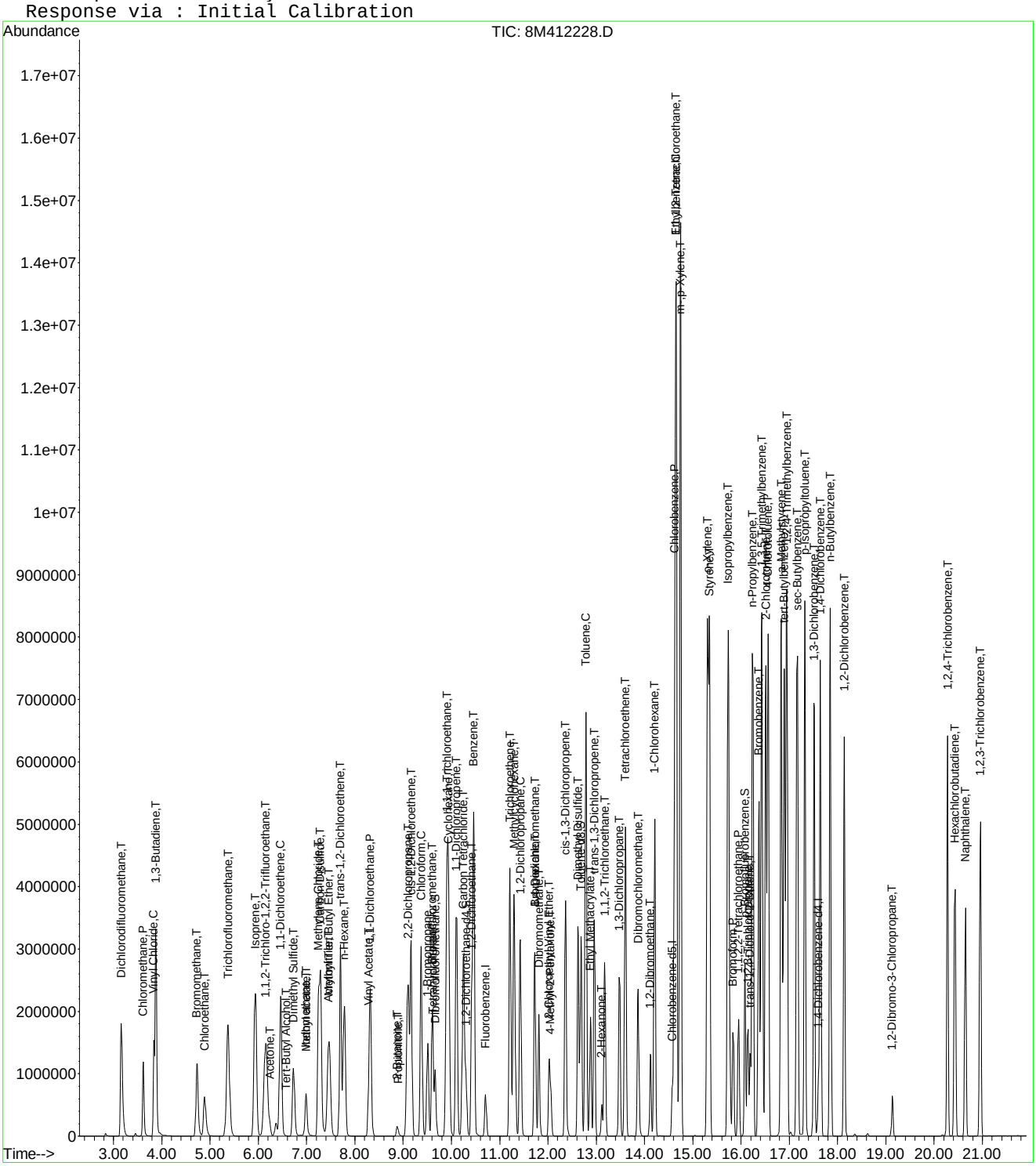

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	855409	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	599314	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	305726	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	1411837	154.4674 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 617.88%#		
43) 1,2-Dichloroethane-d4	10.30	65	1466019	148.1811 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 592.72%#		
58) Toluene-d8	12.69	98	4594713	145.5601 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 582.24%#		
80) p-Bromofluorobenzene	16.08	95	1918996	151.7813 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 607.12%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	4191932	292.0014 ug/L	97
3) Chloromethane	3.62	50	2474035	293.7212 ug/L	97
4) Vinyl Chloride	3.83	62	2956347	297.5552 ug/L	94
5) 1,3-Butadiene	3.87	54	2605506	318.3447 ug/L	94
6) Bromomethane	4.72	94	2177550	421.2239 ug/L	98
7) Chloroethane	4.89	64	1688005	311.2693 ug/L	90
8) Trichlorofluoromethane	5.37	101	5387662	289.6161 ug/L	99
9) Diethyl ether	5.90	59	1306432	295.4610 ug/L	80
10) Isoprene	5.93	67	3377164	300.3032 ug/L	78
11) Acrolein	6.14	56	70572	185.7401 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	2563878	293.7317 ug/L	94
13) Acetone	6.24	43	283185	293.3529 ug/L	90
14) 1,1-Dichloroethene	6.46	61	4031745	289.8421 ug/L	91
15) Tert-Butyl Alcohol	6.58	59	181796	587.3907 ug/L	90
16) Dimethyl Sulfide	6.73	62	1553493	317.1280 ug/L	81
17) Iodomethane	6.99	142	1347307	580.2206 ug/L	98
18) Methyl acetate	7.00	43	800046	309.5287 ug/L #	80
19) Methylene Chloride	7.24	84	2587731	292.4144 ug/L	52
20) Carbon Disulfide	7.29	76	8228181	279.9683 ug/L	98
21) Acrylonitrile	7.43	53	228227	189.6753 ug/L	94
22) Methyl Tert Butyl Ether	7.46	73	5605924	293.5892 ug/L	88
23) trans-1,2-Dichloroethene	7.70	61	3678699	287.1957 ug/L	92
24) n-Hexane	7.78	57	2863434	304.0691 ug/L	86
25) Diisopropyl ether	8.12	45	5819647	292.7898 ug/L #	89
26) Vinyl Acetate	8.30	43	2819503	314.5767 ug/L #	87
27) 1,1-Dichloroethane	8.32	63	4586531	289.1293 ug/L	94
28) Ethyl-Tert-Butyl ether	8.70	59	6190206	290.3321 ug/L	89
29) 2-Butanone	8.88	43	439359	312.8959 ug/L #	76
30) Propionitrile	8.99	54	133197	327.4673 ug/L	95
31) 2,2-Dichloropropane	9.10	77	4821388	288.2735 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	2847005	287.9976 ug/L	89
33) Chloroform	9.37	83	5197860	275.5447 ug/L	100
34) 1-Bromopropane	9.51	122	450012	326.3179 ug/L	100
35) Bromochloromethane	9.61	130	1490221	295.6112 ug/L	66
36) Tetrahydrofuran	9.63	42	271736	290.4491 ug/L #	62
38) 1,1,1-Trichloroethane	9.91	97	5126354	287.9792 ug/L	98
39) Cyclohexane	9.94	56	3733392	305.0987 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	3923871	289.1471 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	5639573	291.3713 ug/L	88
42) Carbon Tetrachloride	10.25	117	4598150	291.7629 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412229.D 8260WT.M Fri May 13 18:12:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.43	62	3468738	287.5726 ug/L	86
46)	Benzene	10.46	78	9065861	250.7462 ug/L	93
47)	Trichloroethene	11.21	130	2772282	295.1106 ug/L	97
48)	Methylcyclohexane	11.30	83	4327357	304.8748 ug/L	84
49)	1,2-Dichloropropane	11.43	63	2350729	300.9718 ug/L	74
50)	Bromodichloromethane	11.73	83	4051493	294.7973 ug/L	99
51)	1,4-Dioxane	11.72	88	26614	699.8767 ug/L	67
52)	Dibromomethane	11.81	93	1369945	295.3776 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.03	63	1006317	297.3917 ug/L	90
54)	4-Methyl-2-Pentanone	12.06	58	424684	310.6522 ug/L #	76
55)	cis-1,3-Dichloropropene	12.36	75	4156310	297.7431 ug/L	97
56)	Dimethyl Disulfide	12.63	79	2359825	324.2911 ug/L	94
59)	Toluene	12.78	91	9135213	236.4669 ug/L	90
60)	Ethyl Methacrylate	12.88	69	2228037	315.7801 ug/L	71
62)	trans-1,3-Dichloropropene	12.96	75	3700845	297.5240 ug/L	96
63)	1,1,2-Trichloroethane	13.18	97	1730199	293.6104 ug/L	100
64)	2-Hexanone	13.11	58	381967	311.8816 ug/L #	78
65)	1,3-Dichloropropane	13.49	76	3080177	294.0141 ug/L	76
66)	Tetrachloroethene	13.60	164	2374435	297.7522 ug/L	96
67)	Dibromochloromethane	13.87	129	2638145	310.7838 ug/L	100
68)	1,2-Dibromoethane	14.13	107	1778561	305.8085 ug/L	99
69)	1-Chlorohexane	14.21	91	3712592	290.5924 ug/L	84
70)	Chlorobenzene	14.63	112	6754240	263.7433 ug/L	90
71)	1,1,1,2-Tetrachloroethane	14.65	131	2967650	307.3001 ug/L	100
72)	Ethylbenzene	14.65	106	4014412	290.7661 ug/L	70
73)	m-,p-Xylene	14.75	106	8357822	505.3514 ug/L	70
74)	o-Xylene	15.31	106	4530840	285.4488 ug/L	88
75)	Styrene	15.35	104	7050702	269.0641 ug/L	82
76)	Bromoform	15.84	173	1602587	321.7373 ug/L	99
77)	Isopropylbenzene	15.73	105	9900817	226.7477 ug/L	90
79)	1,1,2,2-Tetrachloroethane	15.95	83	1885953	309.3861 ug/L	98
81)	1,2,3-Trichloropropane	16.14	110	581198	310.8176 ug/L	61
82)	trans-1,4-Dichloro-2-Buten	16.18	53	589705	370.3601 ug/L	82
83)	n-Propylbenzene	16.25	91	10768378	214.4110 ug/L	86
84)	Bromobenzene	16.37	156	2947671	300.5290 ug/L	99
85)	1,3,5-Trimethylbenzene	16.43	105	8890651	248.7580 ug/L	92
86)	2-Chlorotoluene	16.51	91	7868844	227.1449 ug/L	92
87)	4-Chlorotoluene	16.57	91	7782731	251.2687 ug/L	93
88)	a-Methylstyrene	16.84	118	4955768	300.9205 ug/L	86
89)	tert-Butylbenzene	16.90	134	2046401	301.6701 ug/L	95
90)	1,2,4-Trimethylbenzene	16.95	105	8903769	240.8932 ug/L	89
91)	sec-Butylbenzene	17.17	105	9867862	230.5051 ug/L	91
92)	p-Isopropyltoluene	17.32	119	8738927	242.4155 ug/L	94
93)	1,3-Dichlorobenzene	17.52	146	5319954	278.2806 ug/L	87
94)	1,4-Dichlorobenzene	17.64	146	5248511	271.3593 ug/L	88
95)	n-Butylbenzene	17.85	91	8408157	234.6279 ug/L	92
96)	1,2-Dichlorobenzene	18.14	146	4717385	277.0787 ug/L	87
97)	1,2-Dibromo-3-Chloropropan	19.13	75	377070	309.0741 ug/L	91
98)	1,2,4-Trichlorobenzene	20.28	180	3677657	291.9206 ug/L	98
99)	Hexachlorobutadiene	20.43	225	1780695	304.4378 ug/L	96
100)	Naphthalene	20.65	128	5216751	275.8542 ug/L	95
101)	1,2,3-Trichlorobenzene	20.96	180	3064908	287.1593 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412229.D 8260WT.M Fri May 13 18:12:36 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration

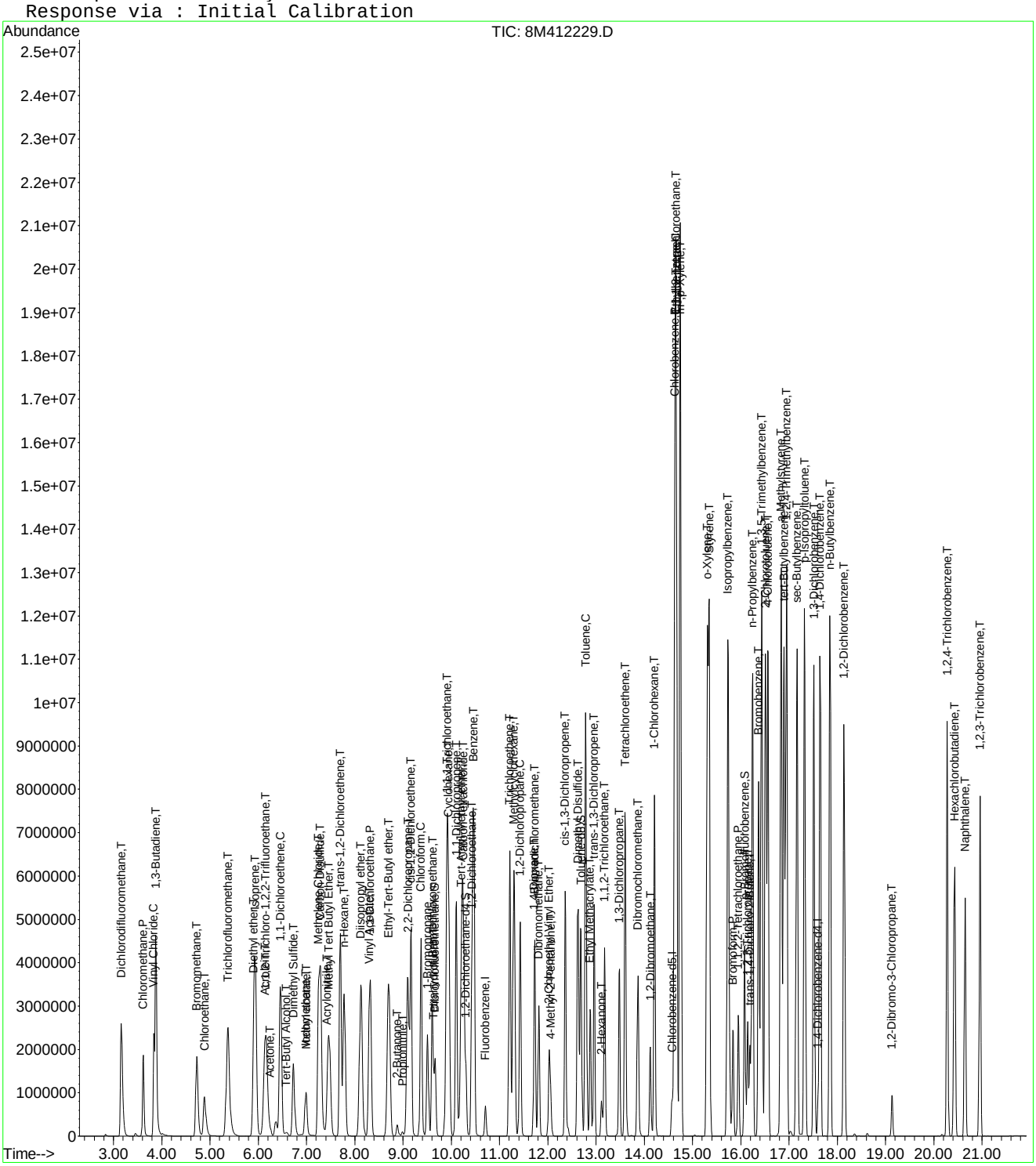

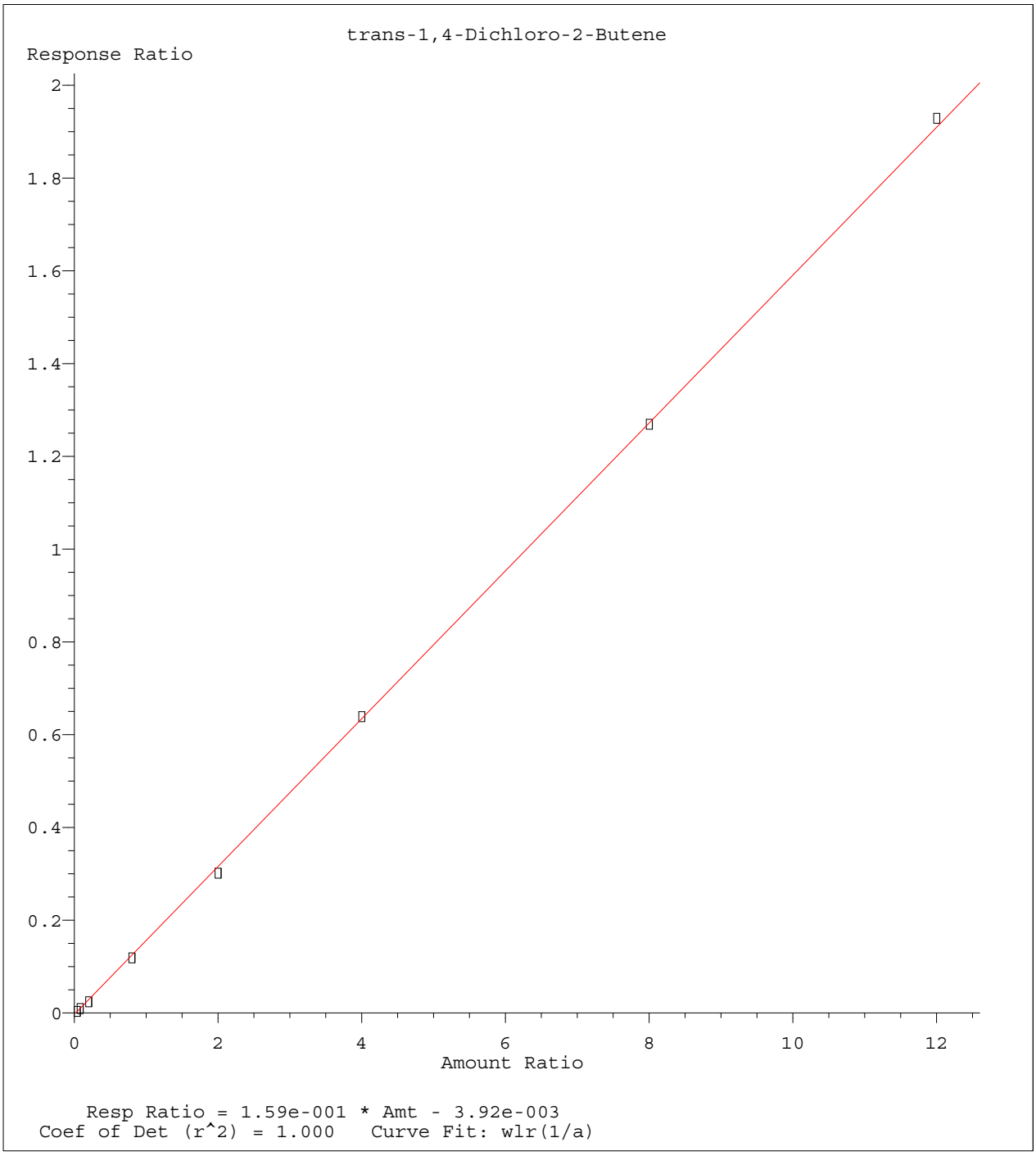

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

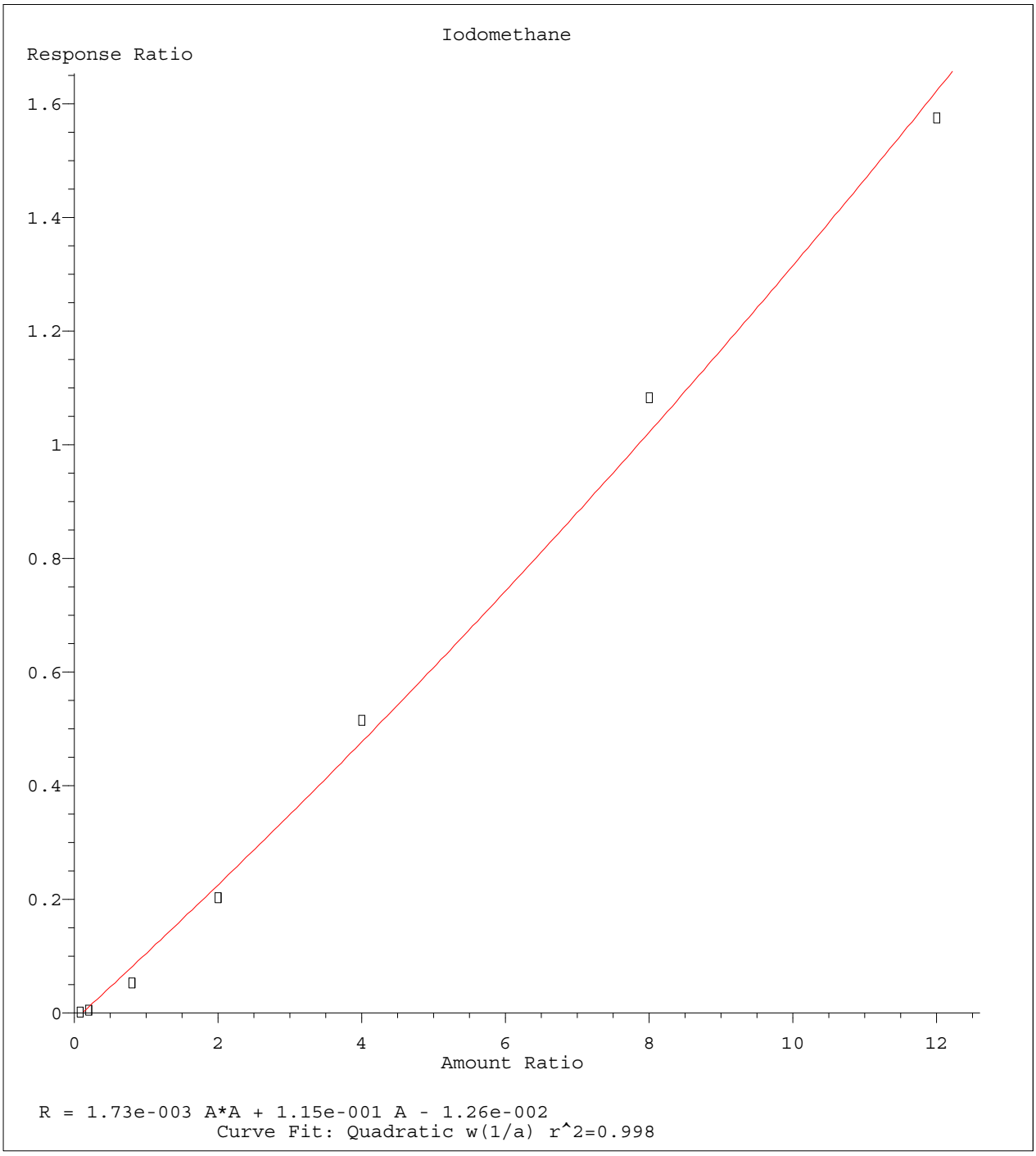

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

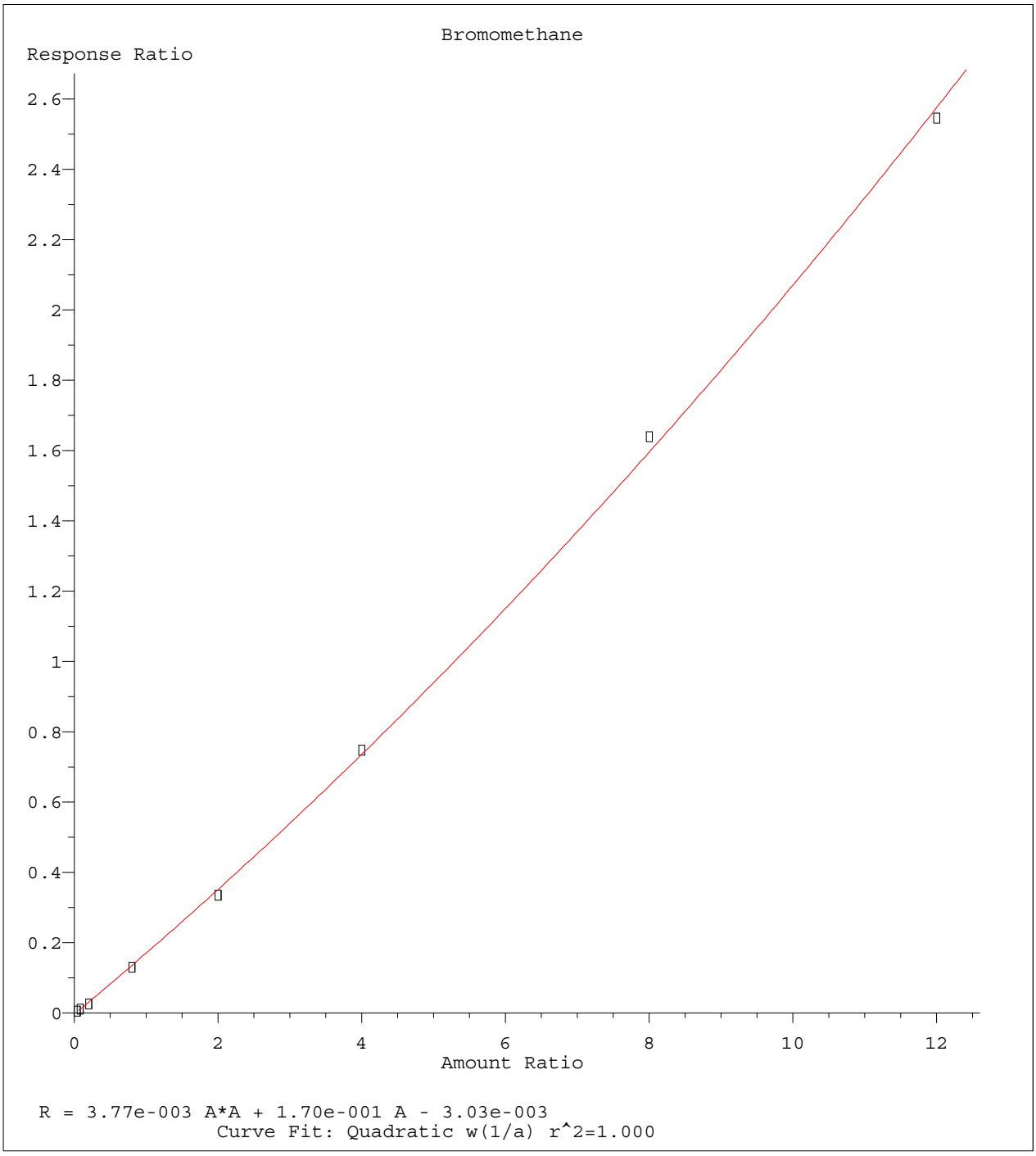

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:44:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Tue May 17 11:43:20 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	837879	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	574720	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	304324	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	229742	25.5204 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.08%		
43) 1,2-Dichloroethane-d4	10.31	65	238672	24.7259 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.92%		
58) Toluene-d8	12.68	98	776362	25.8115 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.24%		
80) p-Bromofluorobenzene	16.07	95	315683	25.0519 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.20%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	761591	54.2141 ug/L	99
3) Chloromethane	3.62	50	415589	50.6814 ug/L	100
4) Vinyl Chloride	3.84	62	509607	52.3810 ug/L	100
5) 1,3-Butadiene	3.88	54	347562	42.6002 ug/L	97
6) Bromomethane	4.73	94	272060	46.3924 ug/L	99
7) Chloroethane	4.88	64	285509	53.3336 ug/L	98
8) Trichlorofluoromethane	5.37	101	849580	46.9313 ug/L	100
9) Diethyl ether	5.90	59	451307	104.4282 ug/L	99
10) Isoprene	5.93	67	582863	53.0208 ug/L	99
11) Acrolein	6.13	56	38877	100.4722 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	419584	49.3091 ug/L	97
13) Acetone	6.23	43	54234	57.5310 ug/L	94
14) 1,1-Dichloroethene	6.46	61	622831	45.9700 ug/L	99
15) Tert-Butyl Alcohol	6.59	59	59797	197.9422 ug/L	97
16) Dimethyl Sulfide	6.73	62	351814	72.6234 ug/L	98
17) Iodomethane	6.99	142	92716	26.2832 ug/L	99
18) Methyl acetate	7.00	43	127540	50.0514 ug/L	98
19) Methylene Chloride	7.25	84	417642	48.4385 ug/L	99
20) Carbon Disulfide	7.29	76	1199899	42.3200 ug/L	100
21) Acrylonitrile	7.43	53	65324	53.4074 ug/L	93
22) Methyl Tert Butyl Ether	7.46	73	949572	50.8859 ug/L	97
23) trans-1,2-Dichloroethene	7.70	61	598296	48.0666 ug/L	99
24) n-Hexane	7.77	57	425106	45.9930 ug/L	99
25) Diisopropyl ether	8.13	45	2040382	105.1615 ug/L	98
26) Vinyl Acetate	8.29	43	415568	46.7802 ug/L	99
27) 1,1-Dichloroethane	8.32	63	721661	46.6846 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	2040020	98.1343 ug/L	99
29) 2-Butanone	8.88	43	73394	52.9905 ug/L	99
30) Propionitrile	8.98	54	42290	104.7756 ug/L	100
31) 2,2-Dichloropropane	9.10	77	780073	47.8861 ug/L	99
32) cis-1,2-Dichloroethene	9.16	96	470465	48.9162 ug/L	98
33) Chloroform	9.38	83	860252	47.1317 ug/L	100
34) 1-Bromopropane	9.51	122	98585	71.5615 ug/L	98
35) Bromochloromethane	9.60	130	234493	47.5456 ug/L	99
36) Tetrahydrofuran	9.62	42	86049	94.3281 ug/L	99
38) 1,1,1-Trichloroethane	9.90	97	825167	47.5949 ug/L	100
39) Cyclohexane	9.93	56	586721	48.8808 ug/L	97
40) 1,1-Dichloropropene	10.10	75	627217	47.4632 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1962875	103.9618 ug/L	99
42) Carbon Tetrachloride	10.24	117	711823	46.2363 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M412232.D 8260WT.M Tue May 17 11:44:38 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	108	0.00
2	T	Dichlorodifluoromethane	50.0000	54.2141	-8.4	112	0.00
3	P	Chloromethane	50.0000	50.6814	-1.4	111	0.00
4	C	Vinyl Chloride	50.0000	52.3811	-4.8	112	-0.01
5	T	1,3-Butadiene	50.0000	42.6002	14.8	89	0.00
6	T	Bromomethane	50.0000	46.3924	7.2	104	-0.01
7	T	Chloroethane	50.0000	53.3336	-6.7	117	-0.01
8	T	Trichlorofluoromethane	50.0000	46.9313	6.1	101	-0.01
9	T	Diethyl ether	100.0000	104.4282	-4.4	116	0.00
10	T	Isoprene	50.0000	53.0208	-6.0	117	0.00
11	T	Acrolein	50.0000	100.4722	-100.9#	220	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	49.3091	1.4	108	0.00
13	T	Acetone	50.0000	57.5310	-15.1	118	-0.01
14	C	1,1-Dichloroethene	50.0000	45.9700	8.1	100	0.00
15	T	Tert-Butyl Alcohol	200.0000	197.9423	1.0	108	0.01
16	T	Dimethyl Sulfide	50.0000	72.6234	-45.2#	159	0.00
17	T	Iodomethane	50.0000	26.2832	47.4#	59	0.01
18	T	Methyl acetate	50.0000	50.0514	-0.1	111	0.00
19	T	Methylene Chloride	50.0000	48.4385	3.1	107	0.00
20	T	Carbon Disulfide	50.0000	42.3200	15.4	94	0.00
21	T	Acrylonitrile	50.0000	53.4074	-6.8	109	0.00
22	T	Methyl Tert Butyl Ether	50.0000	50.8859	-1.8	105	0.00
23	T	trans-1,2-Dichloroethene	50.0000	48.0666	3.9	105	0.00
24	T	n-Hexane	50.0000	45.9930	8.0	101	-0.01
25	T	Diisopropyl ether	100.0000	105.1615	-5.2	115	0.00
26	T	Vinyl Acetate	50.0000	46.7802	6.4	97	0.00
27	P	1,1-Dichloroethane	50.0000	46.6846	6.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.1343	1.9	104	0.00
29	T	2-Butanone	50.0000	52.9905	-6.0	110	0.00
30	T	Propionitrile	100.0000	104.7756	-4.8	111	0.00
31	T	2,2-Dichloropropane	50.0000	47.8861	4.2	102	0.00
32	T	cis-1,2-Dichloroethene	50.0000	48.9162	2.2	107	-0.01
33	C	Chloroform	50.0000	47.1317	5.7	102	0.00
34		1-Bromopropane	50.0000	71.5615	-43.1#	155	0.00
35	T	Bromochloromethane	50.0000	47.5456	4.9	102	0.00
36	T	Tetrahydrofuran	100.0000	94.3281	5.7	108	-0.01
37	S	Dibromofluoromethane	25.0000	25.5204	-2.1	109	0.00
38	T	1,1,1-Trichloroethane	50.0000	47.5949	4.8	101	0.00
39	T	Cyclohexane	50.0000	48.8808	2.2	109	0.00
40	T	1,1-Dichloropropene	50.0000	47.4632	5.1	102	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	103.9618	-4.0	111	0.00
42	T	Carbon Tetrachloride	50.0000	46.2363	7.5	98	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.7259	1.1	104	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	49.0148	2.0	103	0.00
46	T	Benzene	50.0000	48.5232	3.0	104	0.00
47	T	Trichloroethene	50.0000	51.0658	-2.1	110	0.00
48	T	Methylcyclohexane	50.0000	49.8573	0.3	109	0.00
49	C	1,2-Dichloropropane	50.0000	50.9747	-1.9	111	0.00
50	T	Bromodichloromethane	50.0000	48.3053	3.4	99	0.00
51	T	1,4-Dioxane	200.0000	216.9538	-8.5	110	0.01
52	T	Dibromomethane	50.0000	45.8126	8.4	99	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	51.2623	-2.5	104	0.00
54	T	4-Methyl-2-Pentanone	50.0000	51.8715	-3.7	107	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.8979	-7.8	111	0.00
56	T	Dimethyl Disulfide	50.0000	52.2714	-4.5	111	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	107	0.00
58	S	Toluene-d8	25.0000	25.8115	-3.2	108	0.00
59	C	Toluene	50.0000	49.0912	1.8	105	0.00
60	T	Ethyl Methacrylate	50.0000	55.9509	-11.9	113	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	50.6740	-1.3	102	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.0377	1.9	103	0.00
64	T	2-Hexanone	50.0000	53.6057	-7.2	112	0.00
65	T	1,3-Dichloropropane	50.0000	53.6720	-7.3	110	0.00
66	T	Tetrachloroethene	50.0000	47.8053	4.4	104	0.00
67	T	Dibromochloromethane	50.0000	49.6585	0.7	102	0.00
68	T	1,2-Dibromoethane	50.0000	51.1121	-2.2	105	0.00
69	T	1-Chlorohexane	50.0000	51.0611	-2.1	111	0.00
70	P	Chlorobenzene	50.0000	50.1844	-0.4	108	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	49.3793	1.2	103	0.00
72	C	Ethylbenzene	50.0000	48.2013	3.6	105	0.00
73	T	m-,p-Xylene	100.0000	101.1341	-1.1	108	0.00
74	T	o-Xylene	50.0000	50.5675	-1.1	108	0.00
75	T	Styrene	50.0000	51.5086	-3.0	105	0.00
76	P	Bromoform	50.0000	48.2227	3.6	99	0.00
77	T	Isopropylbenzene	50.0000	51.1140	-2.2	107	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	106	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	49.6172	0.8	103	0.00
80	S	p-Bromofluorobenzene	25.0000	25.0519	-0.2	108	0.00
81	T	1,2,3-Trichloropropane	50.0000	50.0849	-0.2	106	0.01
82	T	trans-1,4-Dichloro-2-Butene	50.0000	39.2043	21.6	86	0.00
83	T	n-Propylbenzene	50.0000	51.9237	-3.8	108	0.00
84	T	Bromobenzene	50.0000	49.4648	1.1	105	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	51.6344	-3.3	107	0.00
86	T	2-Chlorotoluene	50.0000	51.5639	-3.1	106	0.00
87	T	4-Chlorotoluene	50.0000	48.2650	3.5	108	0.00
88	T	a-Methylstyrene	50.0000	56.4132	-12.8	120	0.00
89	T	tert-Butylbenzene	50.0000	50.9494	-1.9	112	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	49.6617	0.7	105	0.00
91	T	sec-Butylbenzene	50.0000	51.3386	-2.7	108	0.00
92	T	p-Isopropyltoluene	50.0000	50.1261	-0.3	107	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.8943	-1.8	108	0.00
94	T	1,4-Dichlorobenzene	50.0000	50.4742	-0.9	110	0.00
95	T	n-Butylbenzene	50.0000	49.6520	0.7	105	0.00
96	T	1,2-Dichlorobenzene	50.0000	50.4907	-1.0	110	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	48.4851	3.0	100	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	50.1129	-0.2	107	0.00
99	T	Hexachlorobutadiene	50.0000	52.0919	-4.2	115	0.00
100	T	Naphthalene	50.0000	45.8047	8.4	95	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	47.7353	4.5	106	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412232.D 8260WT.M Sat May 14 18:09:03 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:21 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	709364	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	505399	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	272922	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	27428	100.2132 ug/L	99
3) 3-Chloro-1-propene	7.07	41	940418	104.3259 ug/L	82
4) 2-Chloro-1,3-butadiene	8.45	53	1188994	104.3183 ug/L	86
5) Ethyl Acetate	9.10	43	283167	104.3264 ug/L	95
6) Methacrylonitrile	9.25	67	155775	104.5365 ug/L #	63
7) Isobutyl Alcohol	9.25	43	17893	197.3629 ug/L #	96
9) Methyl methacrylate	11.42	41	298802	102.0346 ug/L	70
10) 2-Nitropropane	11.75	43	121321	95.8263 ug/L	97
13) Cyclohexanone	15.84	55	11401	102.1363 ug/L #	70

(#) = qualifier out of range (m) = manual integration
8M412321.D A9FOOWT.M Thu May 19 09:01:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

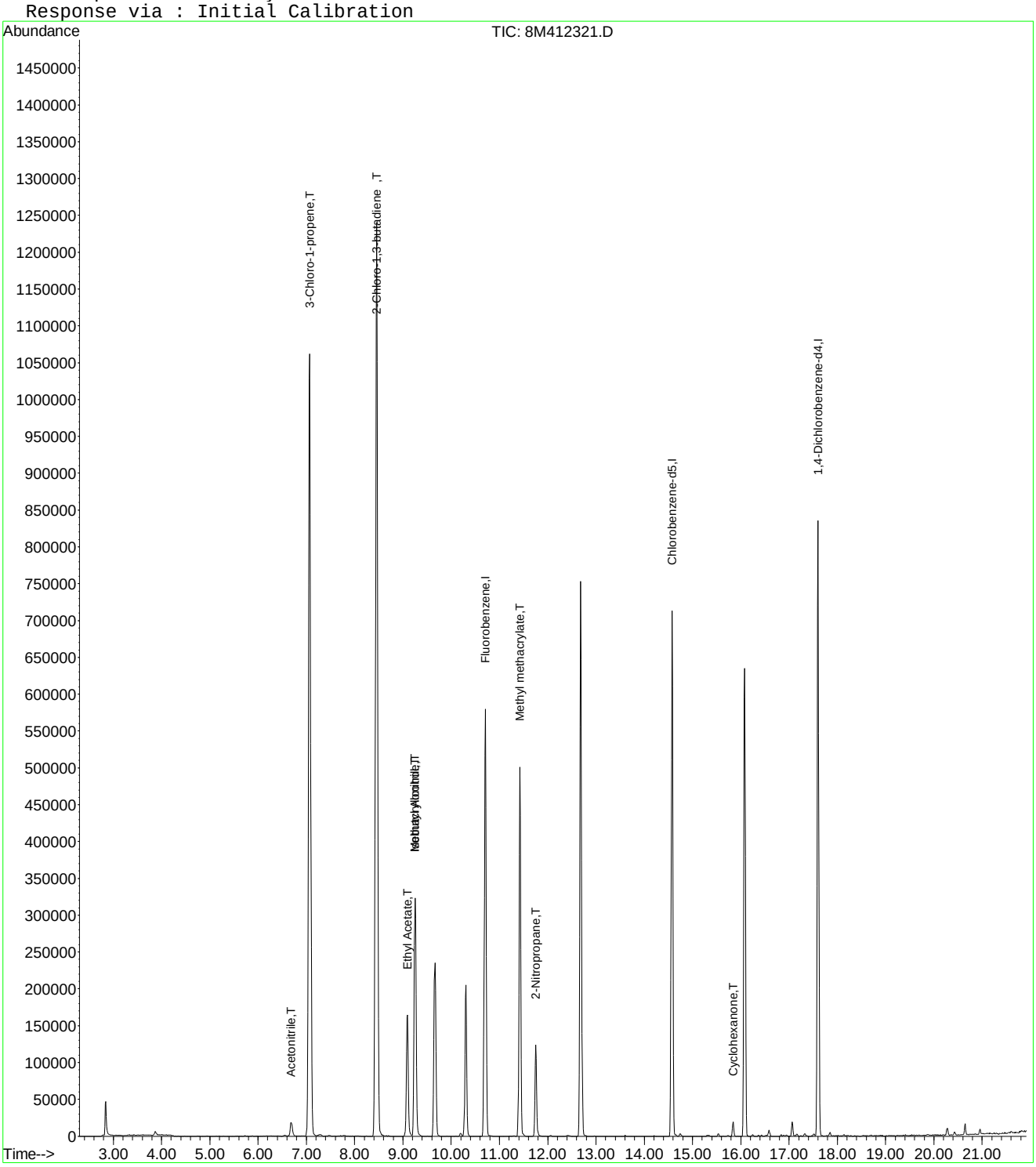

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	100.2132	-0.2	100	0.00
3	T	3-Chloro-1-propene	100.0000	104.3259	-4.3	100	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	104.3183	-4.3	100	0.00
5	T	Ethyl Acetate	100.0000	104.3264	-4.3	100	0.00
6	T	Methacrylonitrile	100.0000	104.5365	-4.5	100	0.00
7	T	Isobutyl Alcohol	200.0000	197.3629	1.3	100	-0.01
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.02
9	T	Methyl methacrylate	100.0000	102.0346	-2.0	100	0.00
10	T	2-Nitropropane	100.0000	95.8263	4.2	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	100.0000	102.1363	-2.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412321.D A9FOOWT.M Thu May 19 09:02:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:20:35 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	677339	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	488377	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	260939	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	13323	50.9795 ug/L	98
3) 3-Chloro-1-propene	7.07	41	453655	52.7060 ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	568765	52.2609 ug/L	87
5) Ethyl Acetate	9.09	43	131636	50.7913 ug/L	97
6) Methacrylonitrile	9.25	67	74064	52.0523 ug/L #	62
7) Isobutyl Alcohol	9.26	43	8483	97.9930 ug/L	95
9) Methyl methacrylate	11.42	41	143892	51.4593 ug/L	70
10) 2-Nitropropane	11.75	43	56559	46.7858 ug/L	95
13) Cyclohexanone	15.84	55	5225	48.9579 ug/L	83

(#) = qualifier out of range (m) = manual integration
8M412322.D A9FOOWT.M Thu May 19 09:20:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:19 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

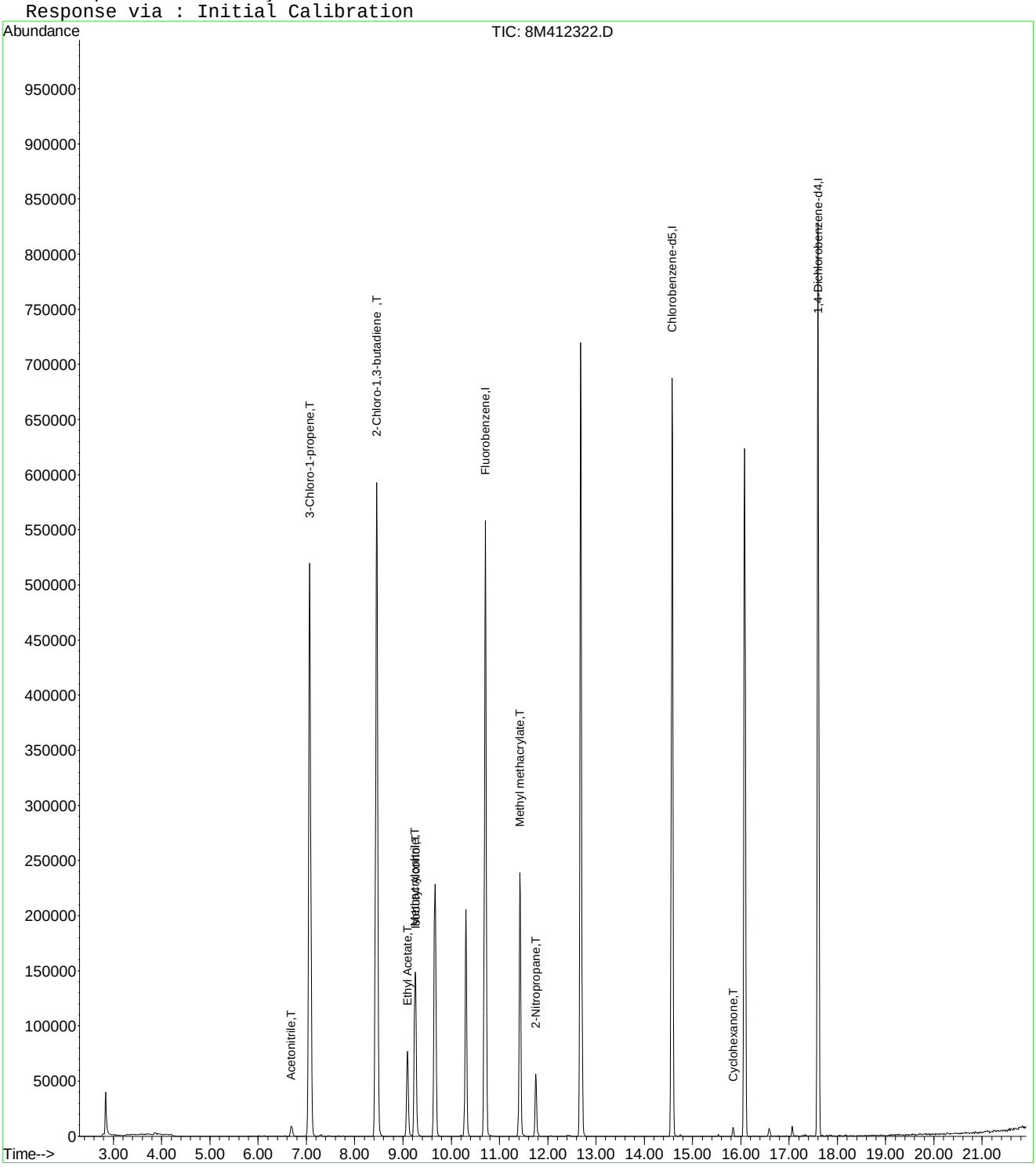

8M412322.D A9FOOWT.M Thu May 19 09:20:36 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	50.9795	-2.0	100	0.00
3	T	3-Chloro-1-propene	50.0000	52.7060	-5.4	100	0.00
4	T	2-Chloro-1,3-butadiene	50.0000	52.2609	-4.5	100	0.00
5	T	Ethyl Acetate	50.0000	50.7913	-1.6	100	0.00
6	T	Methacrylonitrile	50.0000	52.0523	-4.1	100	0.00
7	T	Isobutyl Alcohol	100.0000	97.9929	2.0	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.02
9	T	Methyl methacrylate	50.0000	51.4592	-2.9	100	0.00
10	T	2-Nitropropane	50.0000	46.7858	6.4	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	50.0000	48.9579	2.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412322.D A9FOOWT.M Thu May 19 09:02:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:22:33 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	652985	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	476539	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	256082	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	4873	19.3416 ug/L	80
3) 3-Chloro-1-propene	7.07	41	172467	20.7847 ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	219296	20.9015 ug/L	87
5) Ethyl Acetate	9.09	43	50385	20.1659 ug/L	100
6) Methacrylonitrile	9.26	67	28119	20.4992 ug/L #	63
7) Isobutyl Alcohol	9.27	43	2774	33.2395 ug/L #	8
9) Methyl methacrylate	11.42	41	55309	20.5176 ug/L	73
10) 2-Nitropropane	11.75	43	21584	18.5202 ug/L	99
13) Cyclohexanone	15.84	55	2230	21.2913 ug/L	87

(#) = qualifier out of range (m) = manual integration
8M412323.D A9FOOWT.M Thu May 19 09:22:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:21 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

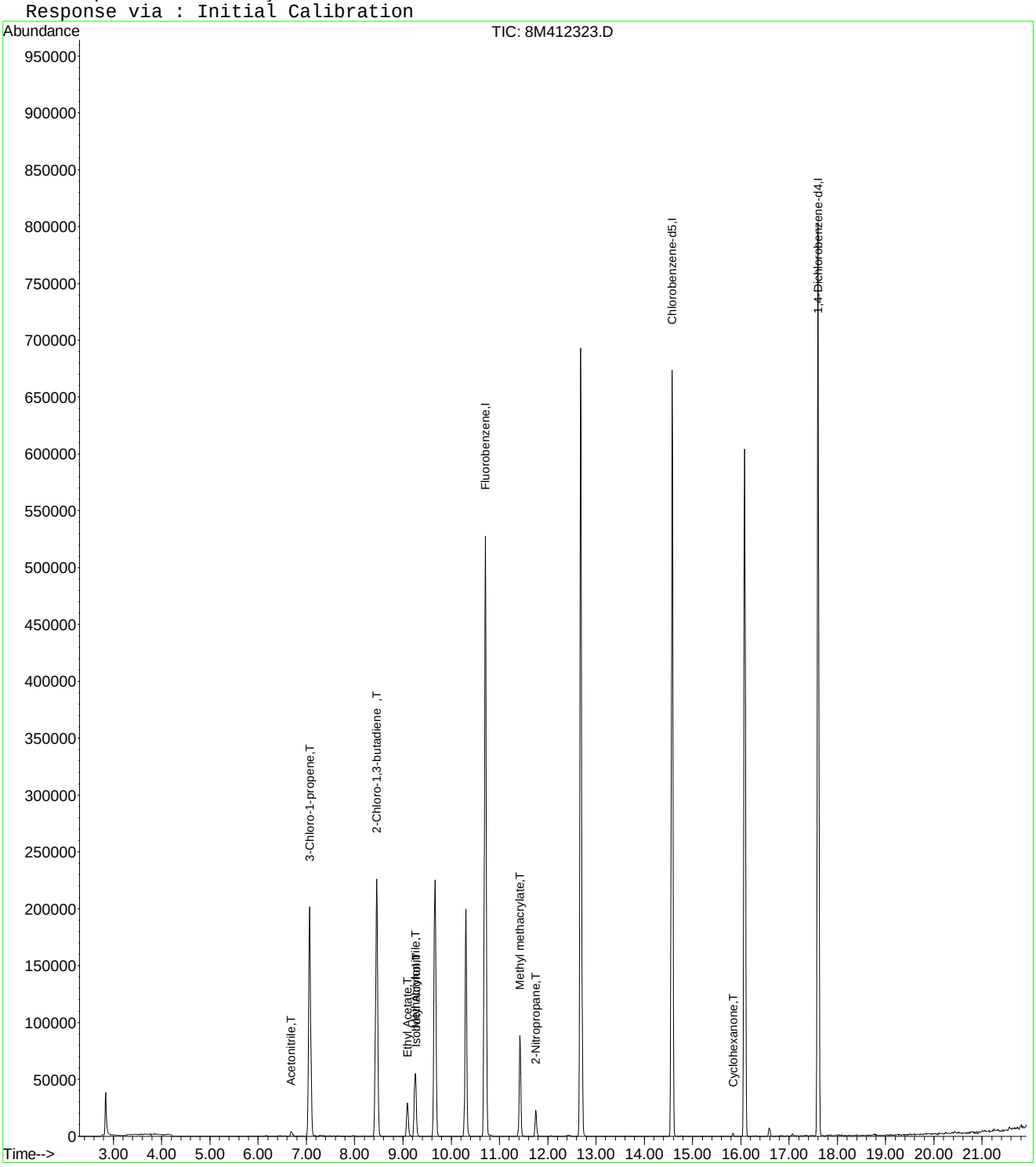

8M412323.D A9FOOWT.M Thu May 19 09:22:34 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	19.3416	3.3	100	0.00
3	T	3-Chloro-1-propene	20.0000	20.7847	-3.9	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	20.9015	-4.5	100	0.00
5	T	Ethyl Acetate	20.0000	20.1659	-0.8	100	0.00
6	T	Methacrylonitrile	20.0000	20.4992	-2.5	100	0.00
7	T	Isobutyl Alcohol	-1.0000	33.2395	0.0	0	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.18#
9	T	Methyl methacrylate	20.0000	20.5176	-2.6	100	0.00
10	T	2-Nitropropane	20.0000	18.5203	7.4	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	20.0000	21.2913	-6.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412323.D A9FOOWT.M Thu May 19 09:02:17 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:22:43 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	665645	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	483812	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	257678	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	405	1.5769 ug/L #	23
3) 3-Chloro-1-propene	7.07	41	40699	4.8115 ug/L	84
4) 2-Chloro-1,3-butadiene	8.45	53	48973	4.5789 ug/L	81
5) Ethyl Acetate	9.09	43	10675	4.1913 ug/L	95
6) Methacrylonitrile	9.26	67	5417	3.8740 ug/L #	72
7) Isobutyl Alcohol	9.27	43	441	5.1838 ug/L #	8
9) Methyl methacrylate	11.43	41	11811	4.2981 ug/L	65
10) 2-Nitropropane	11.76	43	4170	3.5100 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412324.D A9FOOWT.M Thu May 19 09:22:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:21 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

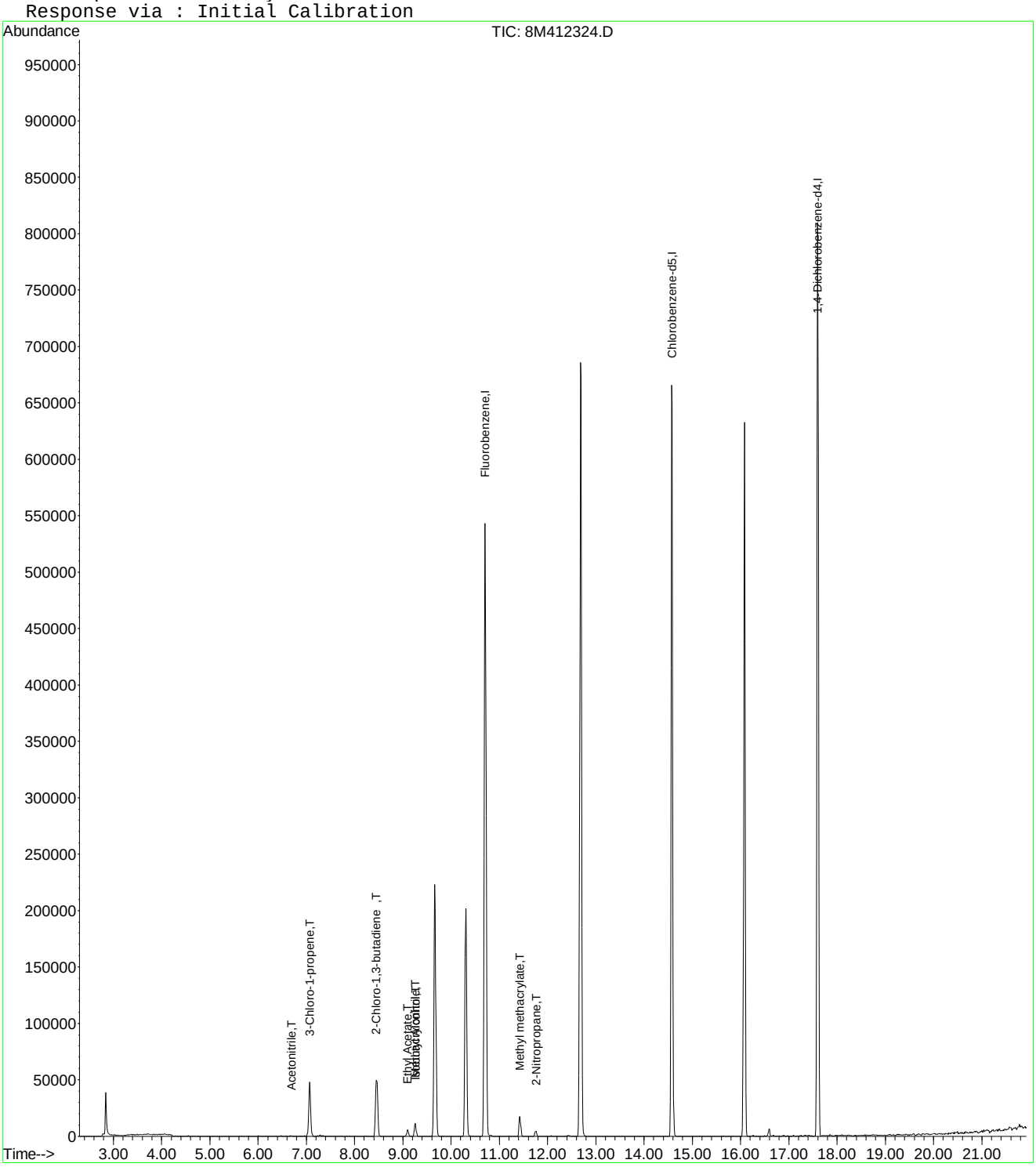

8M412324.D A9FOOWT.M Thu May 19 09:22:43 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	-1.0000	1.5769	0.0	0	0.00
3	T	3-Chloro-1-propene	5.0000	4.8115	3.8	100	0.00
4	T	2-Chloro-1,3-butadiene	5.0000	4.5789	8.4	100	0.00
5	T	Ethyl Acetate	5.0000	4.1913	16.2	100	0.00
6	T	Methacrylonitrile	5.0000	3.8740	22.5	100	0.00
7	T	Isobutyl Alcohol	-1.0000	5.1838	0.0	0	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.18#
9	T	Methyl methacrylate	5.0000	4.2981	14.0	100	0.00
10	T	2-Nitropropane	-1.0000	3.5100	0.0	0	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	0.0000	0.0	0	-15.84#

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412324.D A9FOOWT.M Thu May 19 09:02:03 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412325.D Vial: 7
Acq On : 17 May 2016 11:42 Operator: TMB
Sample : WG569079-06 200ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:27 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	682012	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	491515	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	261877	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.68	41	52022	197.6946 ug/L	97
3) 3-Chloro-1-propene	7.06	41	1768403	204.0468 ug/L	83
4) 2-Chloro-1,3-butadiene	8.46	53	2283706	208.4003 ug/L	87
5) Ethyl Acetate	9.09	43	537585	206.0040 ug/L	94
6) Methacrylonitrile	9.25	67	297408	207.5869 ug/L #	63
7) Isobutyl Alcohol	9.26	43	34441	395.1256 ug/L	95
9) Methyl methacrylate	11.42	41	577612	205.1526 ug/L	72
10) 2-Nitropropane	11.75	43	248395	204.0652 ug/L	95
13) Cyclohexanone	15.85	55	19752	184.4122 ug/L #	59

(#) = qualifier out of range (m) = manual integration
8M412325.D A9FOOWT.M Thu May 19 09:01:28 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412325.D Vial: 7
Acq On : 17 May 2016 11:42 Operator: TMB
Sample : WG569079-06 200ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

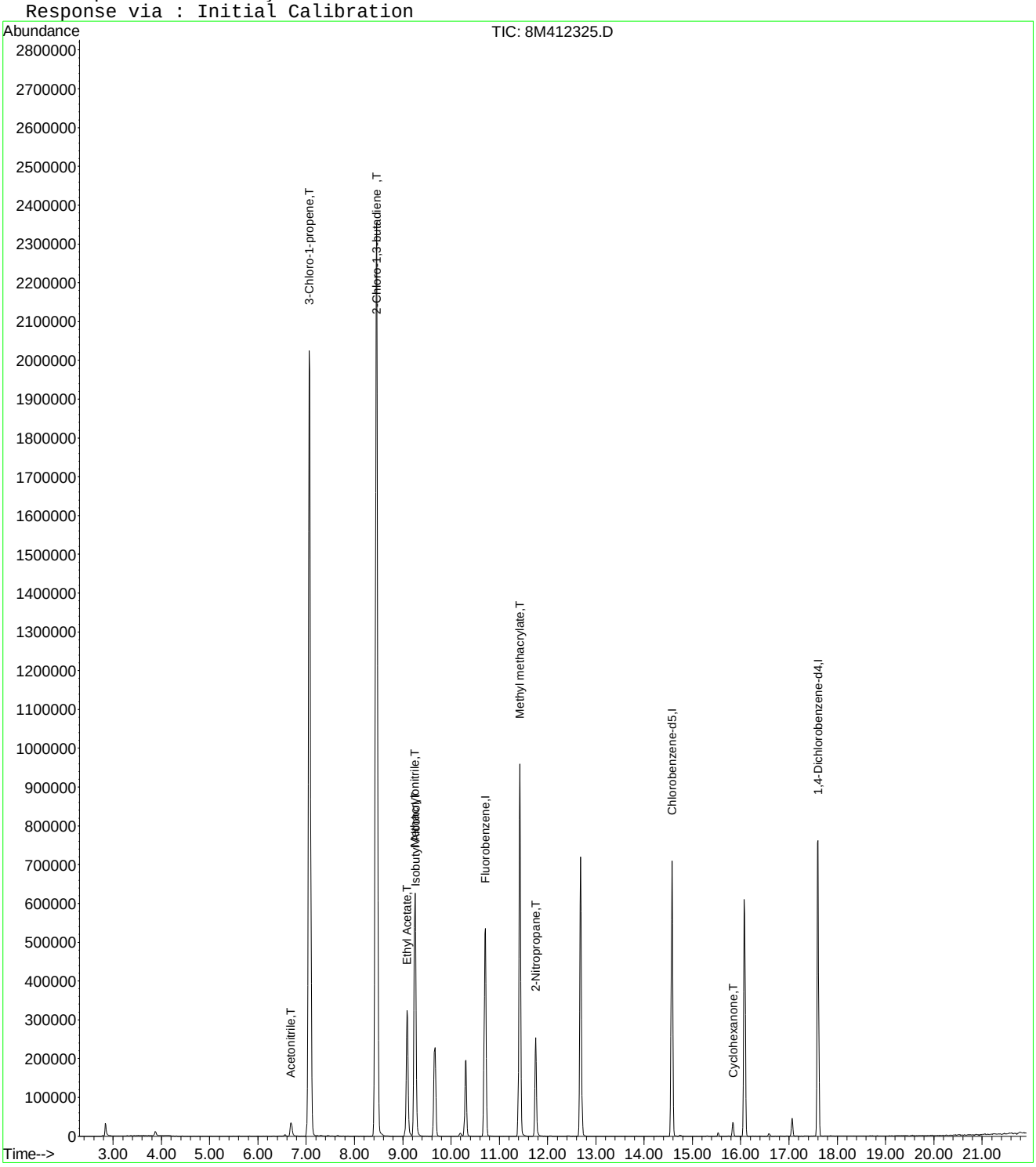

8M412325.D A9FOOWT.M Thu May 19 09:01:28 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412326.D Vial: 8
Acq On : 17 May 2016 12:40 Operator: TMB
Sample : WG569079-07 300ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:29 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	694903	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	496643	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	267309	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.69	41	81471	303.8636	ug/L	98
3) 3-Chloro-1-propene	7.06	41	2563559	290.3084	ug/L	83
4) 2-Chloro-1,3-butadiene	8.46	53	3270971	292.9562	ug/L	86
5) Ethyl Acetate	9.09	43	821184	308.8424	ug/L	95
6) Methacrylonitrile	9.25	67	451708	309.4374	ug/L #	62
7) Isobutyl Alcohol	9.26	43	55071	620.0836	ug/L	94
9) Methyl methacrylate	11.42	41	874430	304.8132	ug/L	70
10) 2-Nitropropane	11.75	43	392965	316.8456	ug/L	94
13) Cyclohexanone	15.84	55	33523	306.6233	ug/L #	61

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412326.D Vial: 8
Acq On : 17 May 2016 12:40 Operator: TMB
Sample : WG569079-07 300ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

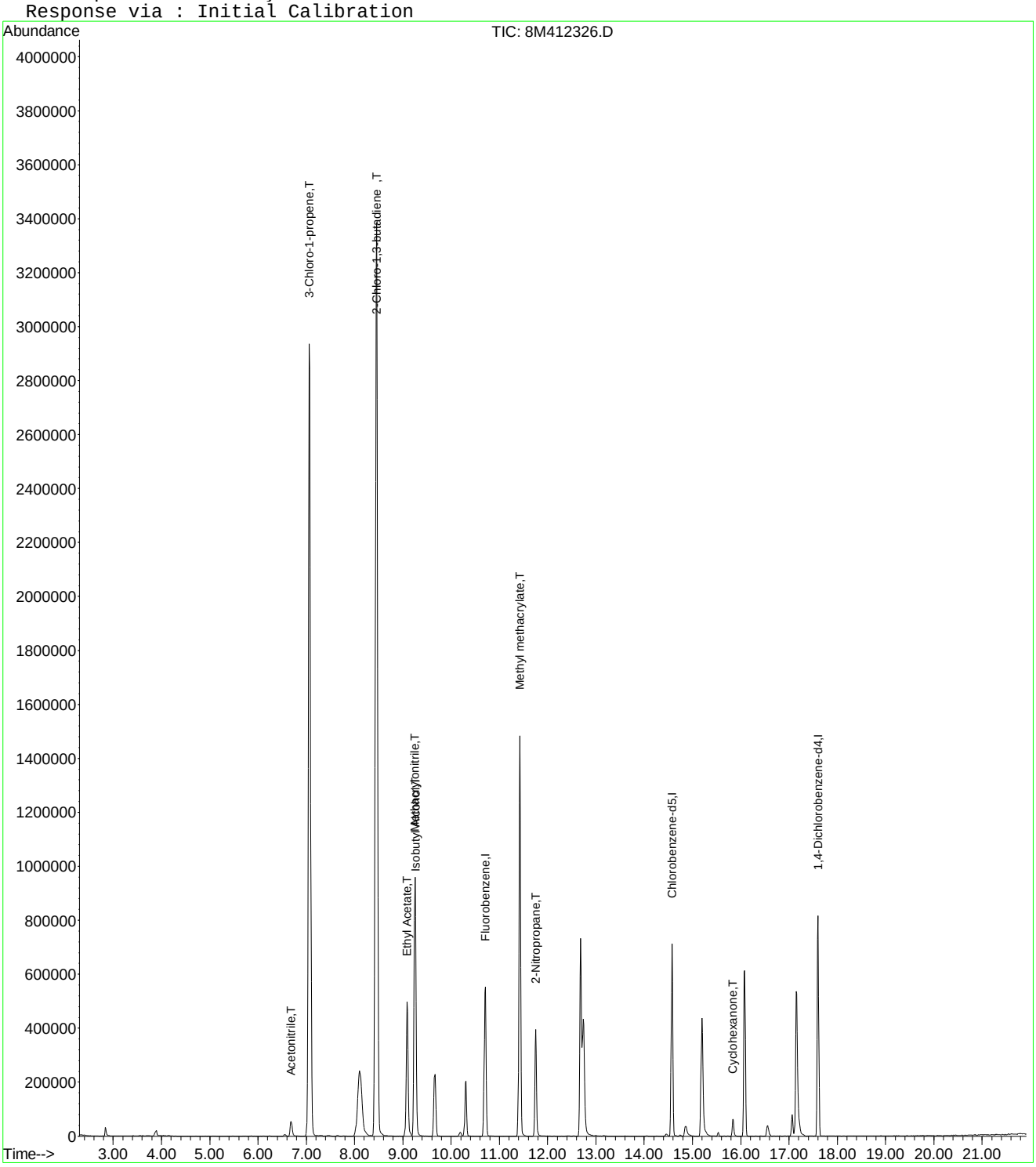

8M412326.D A9FOOWT.M Thu May 19 09:01:29 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412327.D Vial: 9
Acq On : 17 May 2016 13:10 Operator: TMB
Sample : WG569079-08 400ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:30 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	700514	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	502552	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	270883	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	110761	409.7980 ug/L	97
3) 3-Chloro-1-propene	7.07	41	3406131	382.6353 ug/L	82
4) 2-Chloro-1,3-butadiene	8.45	53	4356691	387.0705 ug/L	85
5) Ethyl Acetate	9.09	43	1116818	416.6642 ug/L	94
6) Methacrylonitrile	9.25	67	615482	418.2517 ug/L #	62
7) Isobutyl Alcohol	9.26	43	75472	842.9862 ug/L	97
9) Methyl methacrylate	11.42	41	1199317	414.7153 ug/L	71
10) 2-Nitropropane	11.75	43	538580	430.7760 ug/L	94
13) Cyclohexanone	15.84	55	45874	414.0575 ug/L #	55

(#) = qualifier out of range (m) = manual integration
8M412327.D A9FOOWT.M Thu May 19 09:01:31 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412327.D Vial: 9
Acq On : 17 May 2016 13:10 Operator: TMB
Sample : WG569079-08 400ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

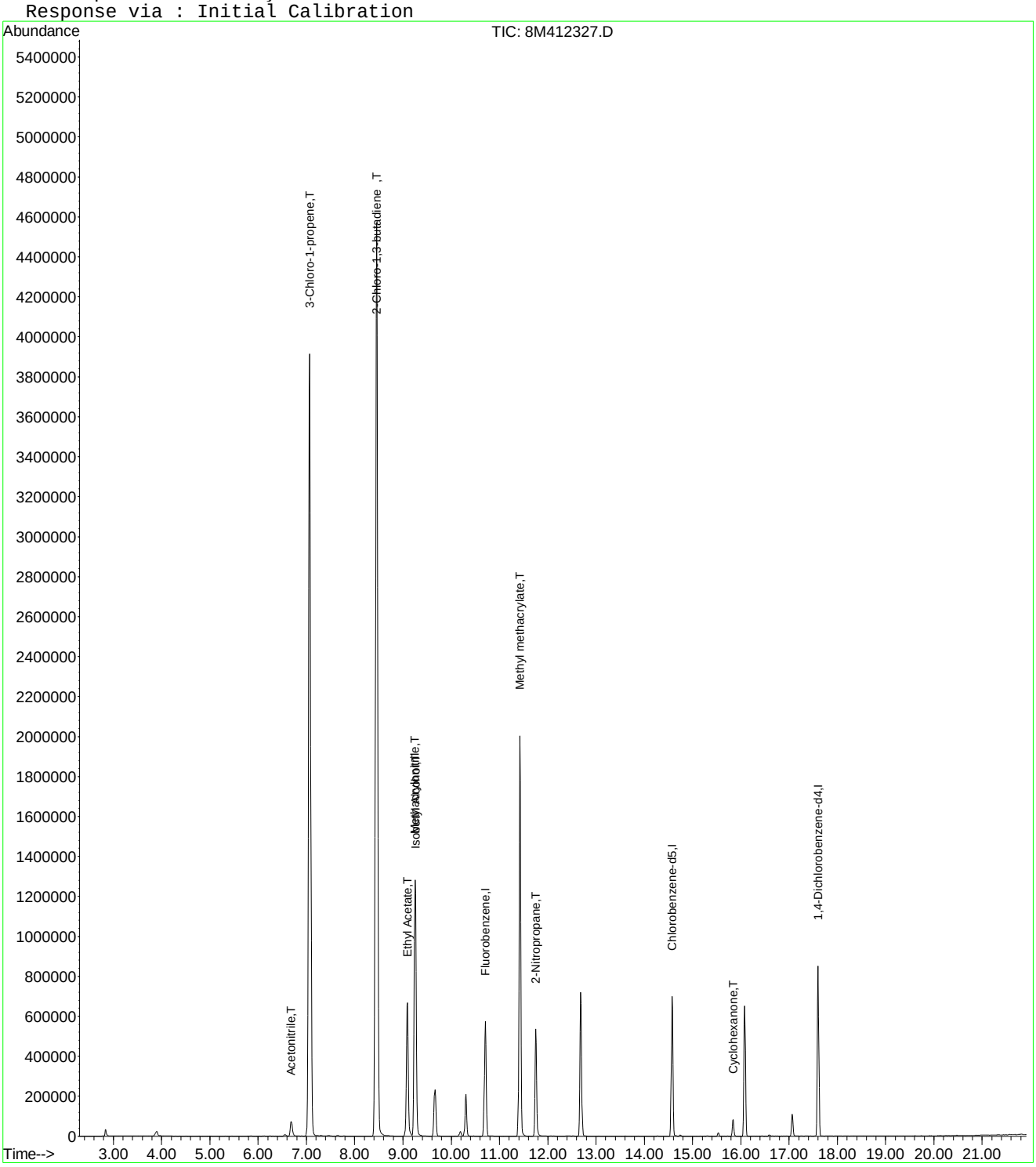

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412328.D Vial: 10
Acq On : 17 May 2016 13:39 Operator: TMB
Sample : WG569079-09 500ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:31 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	695694	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	495257	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	266442	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	132245	492.6753 ug/L	99
3) 3-Chloro-1-propene	7.06	41	4228273	478.2834 ug/L	82
4) 2-Chloro-1,3-butadiene	8.46	53	5390856	482.2693 ug/L	85
5) Ethyl Acetate	9.09	43	1321922	496.6017 ug/L	95
6) Methacrylonitrile	9.25	67	729852	499.4083 ug/L #	61
7) Isobutyl Alcohol	9.26	43	85200	958.2367 ug/L	96
9) Methyl methacrylate	11.42	41	1416438	493.1877 ug/L	72
10) 2-Nitropropane	11.75	43	637335	513.2956 ug/L	93
13) Cyclohexanone	15.84	55	52070	477.8160 ug/L #	61

(#) = qualifier out of range (m) = manual integration
8M412328.D A9FOOWT.M Thu May 19 09:01:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412328.D Vial: 10
Acq On : 17 May 2016 13:39 Operator: TMB
Sample : WG569079-09 500ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

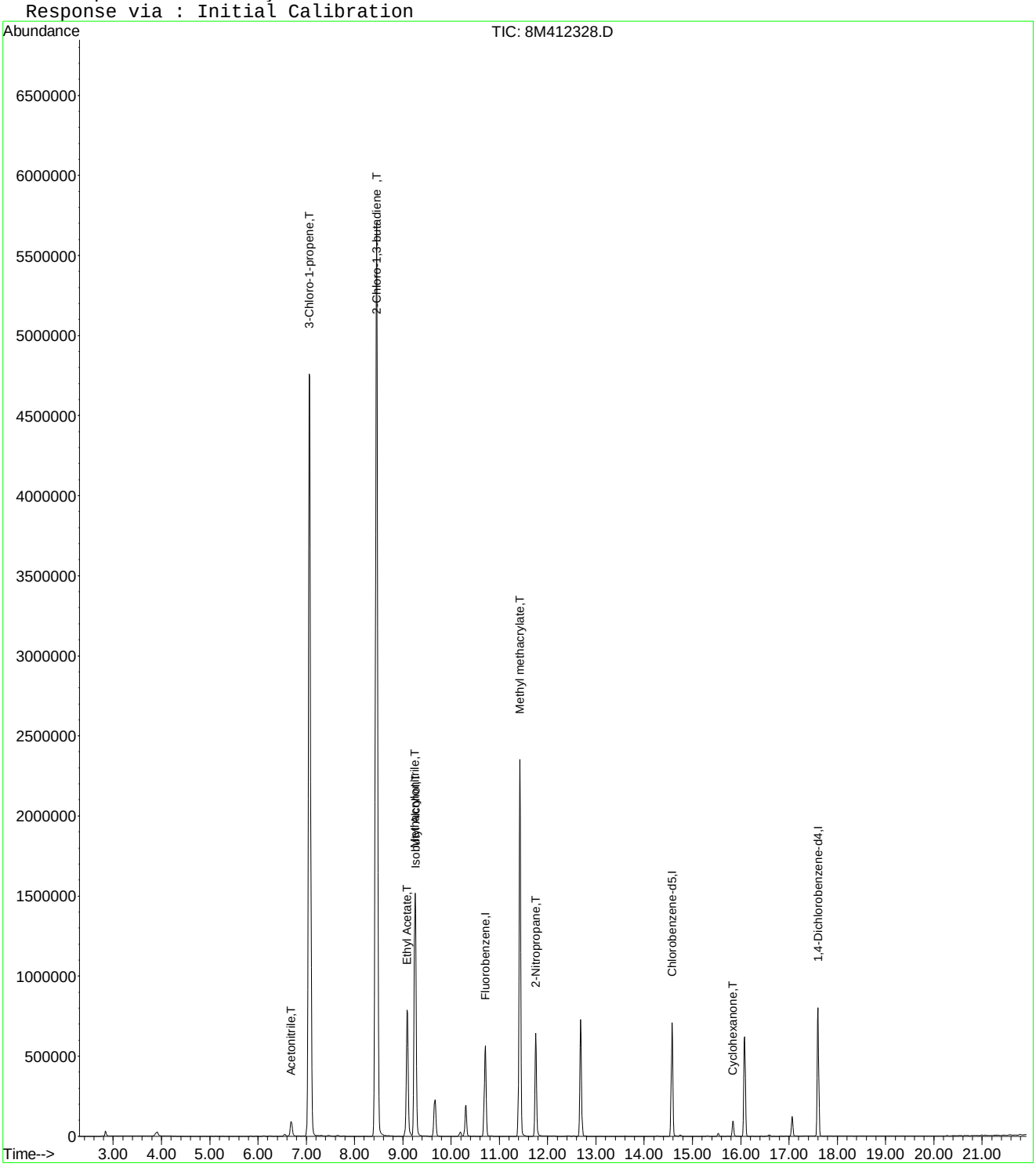

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:32 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	676765	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	486447	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	263036	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.69	41	29876	114.4154	ug/L	97
3) 3-Chloro-1-propene	7.07	41	858035	99.7718	ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	1224194	112.5803	ug/L	87
5) Ethyl Acetate	9.09	43	295545	114.1317	ug/L	96
6) Methacrylonitrile	9.25	67	161574	113.6509	ug/L #	63
7) Isobutyl Alcohol	9.26	43	19948	230.6285	ug/L	94
9) Methyl methacrylate	11.42	41	326465	116.8508	ug/L	72
10) 2-Nitropropane	11.75	43	131261	108.6716	ug/L	94
13) Cyclohexanone	15.83	55	10459	97.2189	ug/L #	74

(#) = qualifier out of range (m) = manual integration
8M412331.D A9FOOWT.M Thu May 19 09:01:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

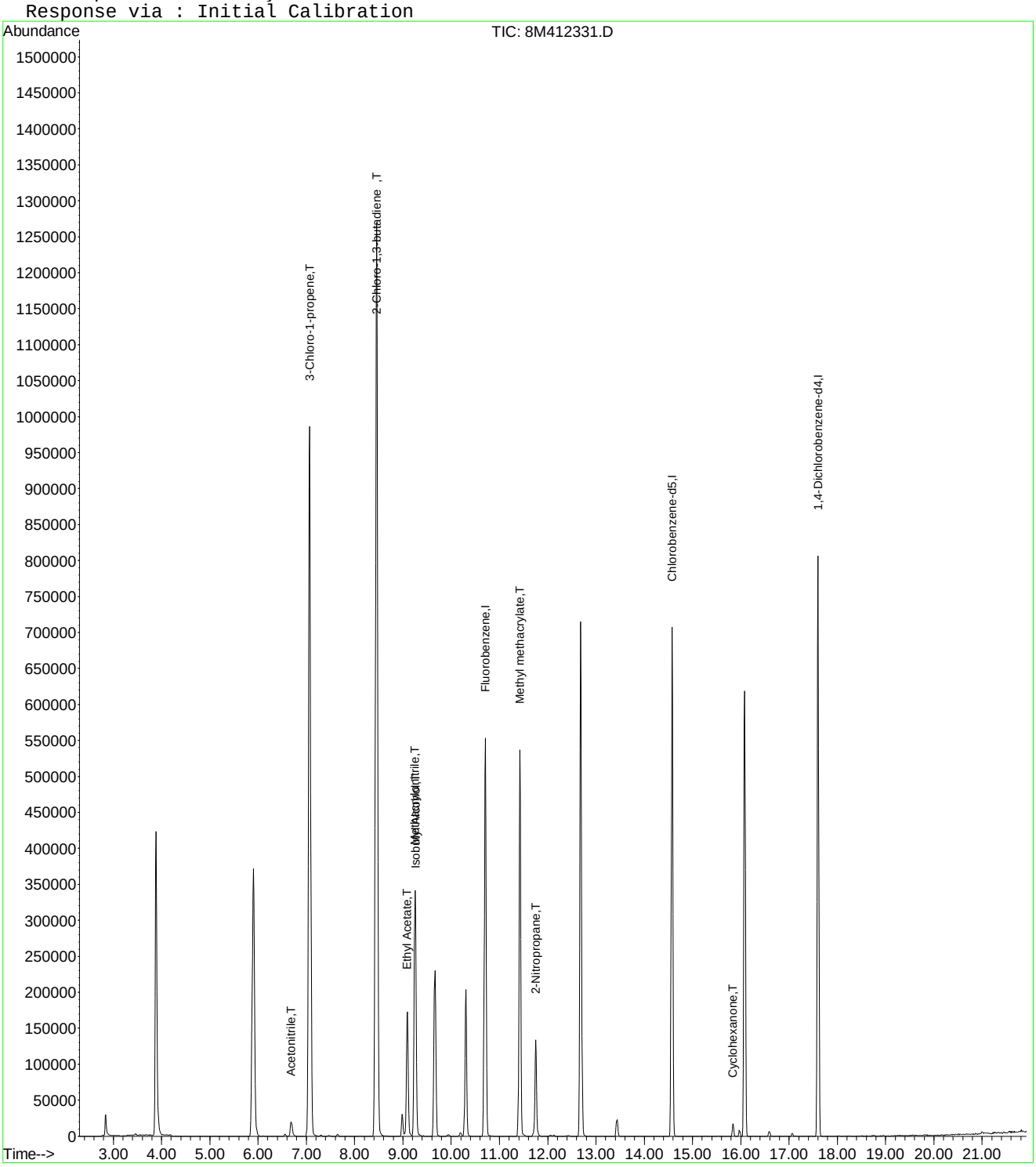

8M412331.D A9FOOWT.M Thu May 19 09:01:33 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	95	0.00
2	T	Acetonitrile	100.0000	114.4154	-14.4	109	0.00
3	T	3-Chloro-1-propene	100.0000	99.7718	0.2	91	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	112.5803	-12.6	103	0.00
5	T	Ethyl Acetate	100.0000	114.1317	-14.1	104	0.00
6	T	Methacrylonitrile	100.0000	113.6509	-13.7	104	0.00
7	T	Isobutyl Alcohol	200.0000	230.6285	-15.3	111	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.01
9	T	Methyl methacrylate	100.0000	116.8508	-16.9	109	0.00
10	T	2-Nitropropane	100.0000	108.6716	-8.7	108	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	96	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	96	0.00
13	T	Cyclohexanone	100.0000	97.2189	2.8	92	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412331.D A9FOOWT.M Thu May 19 09:03:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413032.D Vial: 2
Acq On : 16 Jun 2016 14:25 Operator: FJB
Sample : WG573037-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 20 09:11:28 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	733857	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	538326	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	307491	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	215897	27.3819 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.52%		
43) 1,2-Dichloroethane-d4	10.30	65	234596	27.7486 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.00%		
58) Toluene-d8	12.68	98	742553	26.3564 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.44%		
80) p-Bromofluorobenzene	16.08	95	315298	24.7636 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.04%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	709296	57.6485 ug/L	100
3) Chloromethane	3.62	50	334378	46.5578 ug/L	99
4) Vinyl Chloride	3.84	62	469712	55.1239 ug/L	99
5) 1,3-Butadiene	3.89	54	449731	62.9364 ug/L	97
6) Bromomethane	4.73	94	187928	36.9767 ug/L	99
7) Chloroethane	4.89	64	229428	48.9325 ug/L	97
8) Trichlorofluoromethane	5.37	101	947245	59.7435 ug/L	99
9) Diethyl ether	5.91	59	359174	94.8900 ug/L	97
10) Isoprene	5.94	67	490773	50.9718 ug/L	97
11) Acrolein	6.14	56	15092	44.5317 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	413268	55.4511 ug/L	96
13) Acetone	6.24	43	43062	52.1548 ug/L	100
14) 1,1-Dichloroethene	6.47	61	648526	54.6514 ug/L	98
15) Tert-Butyl Alcohol	6.57	59	62702	236.9793 ug/L	98
16) Dimethyl Sulfide	6.73	62	205530	48.4405 ug/L	98
17) Iodomethane	6.99	142	88941	28.4929 ug/L	92
18) Methyl acetate	7.00	43	95456	42.7704 ug/L	98
19) Methylene Chloride	7.26	84	368680	48.8209 ug/L	100
20) Carbon Disulfide	7.29	76	1316779	53.0253 ug/L	100
21) Acrylonitrile	7.43	53	50980	47.5881 ug/L	94
22) Methyl Tert Butyl Ether	7.46	73	815898	49.9201 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	567448	52.0503 ug/L	100
24) n-Hexane	7.78	57	440578	54.4236 ug/L	99
25) Diisopropyl ether	8.12	45	1629728	95.9026 ug/L	96
26) Vinyl Acetate	8.30	43	383450	49.2832 ug/L	99
27) 1,1-Dichloroethane	8.33	63	708177	52.3061 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1837543	100.9239 ug/L	98
29) 2-Butanone	8.88	43	55723	45.9348 ug/L	98
30) Propionitrile	8.99	54	34053	96.3269 ug/L	98
31) 2,2-Dichloropropane	9.11	77	881786	61.8026 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	429176	50.9485 ug/L	97
33) Chloroform	9.37	83	876461	54.8264 ug/L	100
34) 1-Bromopropane	9.51	122	69827	57.8711 ug/L	99
35) Bromochloromethane	9.61	130	221472	51.2707 ug/L	96
36) Tetrahydrofuran	9.63	42	65588	82.0898 ug/L	92
38) 1,1,1-Trichloroethane	9.91	97	904390	59.5586 ug/L	99
39) Cyclohexane	9.94	56	543065	51.6569 ug/L	96
40) 1,1-Dichloropropene	10.11	75	631550	54.5654 ug/L	100
41) Tert-Amyl-Methyl ether	10.21	73	1667474	100.8347 ug/L	100
42) Carbon Tetrachloride	10.25	117	809209	60.0125 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M413032.D 8260WT.M Mon Jun 20 09:11:29 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413032.D Vial: 2
Acq On : 16 Jun 2016 14:25 Operator: FJB
Sample : WG573037-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 20 09:11:28 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	583022	56.6636	ug/L		98
46)	Benzene	10.46	78	1567451	51.9972	ug/L		99
47)	Trichloroethene	11.21	130	433837	53.9600	ug/L		99
48)	Methylcyclohexane	11.30	83	676953	55.4235	ug/L		100
49)	1,2-Dichloropropane	11.43	63	326457	48.6480	ug/L		86
50)	Bromodichloromethane	11.73	83	653209	55.3826	ug/L		100
51)	1,4-Dioxane	11.72	88	7428	220.3548	ug/L		98
52)	Dibromomethane	11.81	93	197458	49.7082	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.03	63	129844	45.0178	ug/L		95
54)	4-Methyl-2-Pentanone	12.06	58	53646	45.5327	ug/L		94
55)	cis-1,3-Dichloropropene	12.36	75	639780	53.2922	ug/L		100
56)	Dimethyl Disulfide	12.63	79	328801	51.3144	ug/L		99
59)	Toluene	12.78	91	1681041	50.3002	ug/L		100
60)	Ethyl Methacrylate	12.88	69	300733	46.8562	ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	572847	51.1483	ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	244197	46.3057	ug/L		99
64)	2-Hexanone	13.12	58	49168	44.3674	ug/L	#	100
65)	1,3-Dichloropropane	13.48	76	441493	47.0219	ug/L		97
66)	Tetrachloroethene	13.60	164	383463	53.5544	ug/L		98
67)	Dibromochloromethane	13.87	129	388793	50.4917	ug/L		99
68)	1,2-Dibromoethane	14.13	107	247883	47.1634	ug/L		98
69)	1-Chlorohexane	14.21	91	594465	52.1092	ug/L		98
70)	Chlorobenzene	14.62	112	1121470	49.7630	ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.66	131	456454	52.2807	ug/L		100
72)	Ethylbenzene	14.66	106	622088	50.4524	ug/L		99
73)	m-,p-Xylene	14.75	106	1491287	103.1131	ug/L		100
74)	o-Xylene	15.31	106	724388	51.2307	ug/L		99
75)	Styrene	15.35	104	1206191	52.0104	ug/L		96
76)	Bromoform	15.84	173	232298	50.8617	ug/L		99
77)	Isopropylbenzene	15.73	105	2026613	53.9527	ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	256105	41.4928	ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	85494	44.9807	ug/L		72
82)	trans-1,4-Dichloro-2-Buten	16.18	53	84374	43.6303	ug/L	#	51
83)	n-Propylbenzene	16.24	91	2386990	49.7580	ug/L		99
84)	Bromobenzene	16.37	156	473221	47.9586	ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	1753288	50.1733	ug/L		100
86)	2-Chlorotoluene	16.52	91	1599256	47.7491	ug/L		100
87)	4-Chlorotoluene	16.56	91	1503375	49.6923	ug/L		100
88)	a-Methylstyrene	16.84	118	786649	47.4481	ug/L		98
89)	tert-Butylbenzene	16.90	134	334560	48.9377	ug/L		99
90)	1,2,4-Trimethylbenzene	16.95	105	1801178	50.1269	ug/L		100
91)	sec-Butylbenzene	17.17	105	2069862	50.3494	ug/L		99
92)	p-Isopropyltoluene	17.32	119	1766300	50.6022	ug/L		99
93)	1,3-Dichlorobenzene	17.52	146	942205	49.5900	ug/L		98
94)	1,4-Dichlorobenzene	17.64	146	911590	47.5896	ug/L		99
95)	n-Butylbenzene	17.85	91	1742674	50.5007	ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	787813	46.6205	ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	54489	43.9791	ug/L		98
98)	1,2,4-Trichlorobenzene	20.28	180	613274	48.5529	ug/L		100
99)	Hexachlorobutadiene	20.43	225	322898	54.7126	ug/L		99
100)	Naphthalene	20.65	128	816338	43.5006	ug/L		100
101)	1,2,3-Trichlorobenzene	20.96	180	483344	45.3576	ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413032.D Vial: 2
Acq On : 16 Jun 2016 14:25 Operator: FJB
Sample : WG573037-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 20 9:11 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

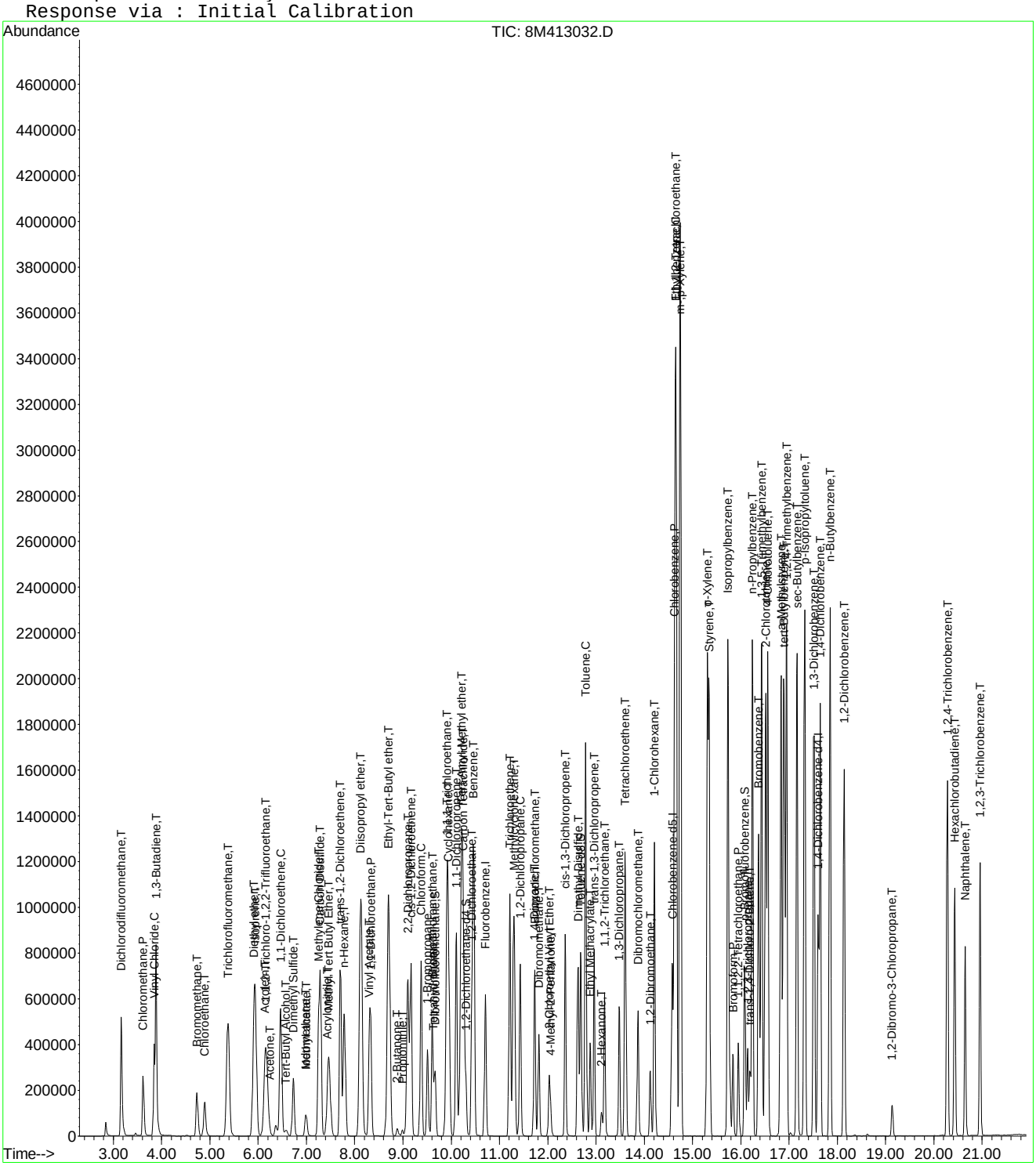

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413032.D Vial: 2
Acq On : 16 Jun 2016 14:25 Operator: FJB
Sample : WG573037-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	94	0.00
2	T	Dichlorodifluoromethane	0.4192	0.4833	-15.3	104	0.00
3	P	Chloromethane	0.2447	0.2278	6.9	90	0.00
4	C	Vinyl Chloride	0.2903	0.3200	-10.2	103	0.00
5	T	1,3-Butadiene	0.2434	0.3064	-25.9#	115	0.00
6	T	Bromomethane	0.1654	0.1280	22.6	72	0.00
7	T	Chloroethane	0.1597	0.1563	2.1	94	0.00
8	T	Trichlorofluoromethane	0.5401	0.6454	-19.5	113	0.00
9	T	Diethyl ether	0.1290	0.1224	5.1	92	0.00
10	T	Isoprene	0.3280	0.3344	-1.9	99	0.00
11	T	Acrolein	0.0116	0.0103	11.0	86	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2539	0.2816	-10.9	107	0.00
13	T	Acetone	0.0281	0.0293	-4.3	94	0.00
14	C	1,1-Dichloroethene	0.4043	0.4419	-9.3	105	0.00
15	T	Tert-Butyl Alcohol	0.0090	0.0107	-18.5	113	0.00
16	T	Dimethyl Sulfide	0.1445	0.1400	3.1	93	0.00
17	T	Iodomethane	0.0866	0.0606	30.0#	56	0.00
18	T	Methyl acetate	0.0760	0.0650	14.5	83	0.00
19	T	Methylene Chloride	0.2573	0.2512	2.4	95	0.00
20	T	Carbon Disulfide	0.8460	0.8972	-6.0	104	0.00
21	T	Acrylonitrile	0.0365	0.0347	4.8	85	0.00
22	T	Methyl Tert Butyl Ether	0.5568	0.5559	0.2	90	0.00
23	T	trans-1,2-Dichloroethene	0.3714	0.3866	-4.1	99	0.00
24	T	n-Hexane	0.2758	0.3002	-8.8	105	0.00
25	T	Diisopropyl ether	0.5789	0.5552	4.1	92	0.00
26	T	Vinyl Acetate	0.2651	0.2613	1.4	89	0.00
27	P	1,1-Dichloroethane	0.4612	0.4825	-4.6	98	0.00
28	T	Ethyl-Tert-Butyl ether	0.6203	0.6260	-0.9	94	0.00
29	T	2-Butanone	0.0413	0.0380	8.1	84	0.00
30	T	Propionitrile	0.0120	0.0116	3.7	89	0.00
31	T	2,2-Dichloropropane	0.4860	0.6008	-23.6	115	0.00
32	T	cis-1,2-Dichloroethene	0.2870	0.2924	-1.9	98	0.00
33	C	Chloroform	0.5446	0.5972	-9.7	104	0.00
34		1-Bromopropane	0.0411	0.0476	-15.8	110	0.00
35	T	Bromochloromethane	0.1472	0.1509	-2.5	96	0.00
36	T	Tetrahydrofuran	0.0272	0.0223	17.9	83	0.00
37	S	Dibromofluoromethane	0.2686	0.2942	-9.5	102	0.00
38	T	1,1,1-Trichloroethane	0.5173	0.6162	-19.1	111	0.00
39	T	Cyclohexane	0.3581	0.3700	-3.3	101	0.00
40	T	1,1-Dichloropropene	0.3943	0.4303	-9.1	103	0.00
41	T	Tert-Amyl-Methyl ether	0.5634	0.5681	-0.8	94	0.00
42	T	Carbon Tetrachloride	0.4593	0.5513	-20.0	112	0.00
43	S	1,2-Dichloroethane-d4	0.2880	0.3197	-11.0	102	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.3505	0.3972	-13.3	104	0.00
46	T	Benzene	1.0269	1.0680	-4.0	98	0.00
47	T	Trichloroethene	0.2739	0.2956	-7.9	102	0.00
48	T	Methylcyclohexane	0.4161	0.4612	-10.8	107	0.00
49	C	1,2-Dichloropropane	0.2286	0.2224	2.7	93	0.00
50	T	Bromodichloromethane	0.4018	0.4451	-10.8	100	0.00
51	T	1,4-Dioxane	0.0012	0.0013	-10.4	98	0.00
52	T	Dibromomethane	0.1353	0.1345	0.6	94	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0983	0.0885	10.0	80	0.00
54	T	4-Methyl-2-Pentanone	0.0401	0.0365	8.9	83	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413032.D Vial: 2
Acq On : 16 Jun 2016 14:25 Operator: FJB
Sample : WG573037-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4090	0.4359	-6.6	96	0.00
56	T	Dimethyl Disulfide	0.2183	0.2240	-2.6	96	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	100	0.00
58	S	Toluene-d8	1.3084	1.3794	-5.4	103	0.00
59	C	Toluene	1.5520	1.5614	-0.6	100	0.00
60	T	Ethyl Methacrylate	0.2981	0.2793	6.3	89	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.5201	0.5321	-2.3	96	0.00
63	T	1,1,2-Trichloroethane	0.2449	0.2268	7.4	91	0.00
64	T	2-Hexanone	0.0515	0.0457	11.3	86	0.00
65	T	1,3-Dichloropropane	0.4360	0.4101	6.0	90	0.00
66	T	Tetrachloroethene	0.3325	0.3562	-7.1	109	0.00
67	T	Dibromochloromethane	0.3576	0.3611	-1.0	97	0.00
68	T	1,2-Dibromoethane	0.2441	0.2302	5.7	91	0.00
69	T	1-Chlorohexane	0.5298	0.5521	-4.2	106	0.00
70	P	Chlorobenzene	1.0466	1.0416	0.5	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4055	0.4240	-4.6	102	0.00
72	C	Ethylbenzene	0.5726	0.5778	-0.9	103	0.00
73	T	m-,p-Xylene	0.6716	0.6926	-3.1	103	0.00
74	T	o-Xylene	0.6566	0.6728	-2.5	102	0.00
75	T	Styrene	1.0770	1.1203	-4.0	100	0.00
76	P	Bromoform	0.2121	0.2158	-1.7	97	0.00
77	T	Isopropylbenzene	1.7444	1.8823	-7.9	106	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	107	0.00
79	P	1,1,2,2-Tetrachloroethane	0.5018	0.4164	17.0	87	0.00
80	S	p-Bromofluorobenzene	1.0352	1.0254	0.9	108	0.00
81	T	1,2,3-Trichloropropane	0.1545	0.1390	10.0	96	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1376	0.1372	0.3	97	0.00
83	T	n-Propylbenzene	3.9003	3.8814	0.5	105	0.00
84	T	Bromobenzene	0.8022	0.7695	4.1	103	0.00
85	T	1,3,5-Trimethylbenzene	2.8411	2.8510	-0.3	106	0.00
86	T	2-Chlorotoluene	2.7231	2.6005	4.5	99	0.00
87	T	4-Chlorotoluene	2.4597	2.4446	0.6	112	0.00
88	T	a-Methylstyrene	1.3479	1.2791	5.1	102	0.00
89	T	tert-Butylbenzene	0.5558	0.5440	2.1	109	0.00
90	T	1,2,4-Trimethylbenzene	2.9214	2.9288	-0.3	107	0.00
91	T	sec-Butylbenzene	3.3424	3.3657	-0.7	108	0.00
92	T	p-Isopropyltoluene	2.8379	2.8721	-1.2	109	0.00
93	T	1,3-Dichlorobenzene	1.5448	1.5321	0.8	107	0.00
94	T	1,4-Dichlorobenzene	1.5574	1.4823	4.8	105	0.00
95	T	n-Butylbenzene	2.8056	2.8337	-1.0	108	0.00
96	T	1,2-Dichlorobenzene	1.3739	1.2810	6.8	103	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1007	0.0886	12.0	91	0.00
98	T	1,2,4-Trichlorobenzene	1.0269	0.9972	2.9	105	0.00
99	T	Hexachlorobutadiene	0.4798	0.5251	-9.4	122	0.00
100	T	Naphthalene	1.5257	1.3274	13.0	91	0.00
101	T	1,2,3-Trichlorobenzene	0.8664	0.7860	9.3	102	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413032.D 8260WT.M Mon Jun 20 09:11:49 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413032.D Vial: 2
Acq On : 16 Jun 2016 14:25 Operator: FJB
Sample : WG573037-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	94	0.00
2	T	Dichlorodifluoromethane	50.0000	57.6485	-15.3	104	0.00
3	P	Chloromethane	50.0000	46.5578	6.9	90	0.00
4	C	Vinyl Chloride	50.0000	55.1240	-10.2	103	0.00
5	T	1,3-Butadiene	50.0000	62.9364	-25.9#	115	0.00
6	T	Bromomethane	50.0000	36.9767	26.0#	72	0.00
7	T	Chloroethane	50.0000	48.9325	2.1	94	0.00
8	T	Trichlorofluoromethane	50.0000	59.7435	-19.5	113	0.00
9	T	Diethyl ether	100.0000	94.8900	5.1	92	0.00
10	T	Isoprene	50.0000	50.9718	-1.9	99	0.00
11	T	Acrolein	50.0000	44.5317	10.9	86	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	55.4511	-10.9	107	0.00
13	T	Acetone	50.0000	52.1548	-4.3	94	0.00
14	C	1,1-Dichloroethene	50.0000	54.6514	-9.3	105	0.00
15	T	Tert-Butyl Alcohol	200.0000	236.9793	-18.5	113	0.00
16	T	Dimethyl Sulfide	50.0000	48.4405	3.1	93	0.00
17	T	Iodomethane	50.0000	28.4930	43.0#	56	0.00
18	T	Methyl acetate	50.0000	42.7704	14.5	83	0.00
19	T	Methylene Chloride	50.0000	48.8209	2.4	95	0.00
20	T	Carbon Disulfide	50.0000	53.0253	-6.1	104	0.00
21	T	Acrylonitrile	50.0000	47.5881	4.8	85	0.00
22	T	Methyl Tert Butyl Ether	50.0000	49.9201	0.2	90	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.0503	-4.1	99	0.00
24	T	n-Hexane	50.0000	54.4236	-8.8	105	0.00
25	T	Diisopropyl ether	100.0000	95.9026	4.1	92	0.00
26	T	Vinyl Acetate	50.0000	49.2832	1.4	89	0.00
27	P	1,1-Dichloroethane	50.0000	52.3061	-4.6	98	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	100.9239	-0.9	94	0.00
29	T	2-Butanone	50.0000	45.9348	8.1	84	0.00
30	T	Propionitrile	100.0000	96.3269	3.7	89	0.00
31	T	2,2-Dichloropropane	50.0000	61.8026	-23.6	115	0.00
32	T	cis-1,2-Dichloroethene	50.0000	50.9485	-1.9	98	0.00
33	C	Chloroform	50.0000	54.8264	-9.7	104	0.00
34		1-Bromopropane	50.0000	57.8711	-15.7	110	0.00
35	T	Bromochloromethane	50.0000	51.2707	-2.5	96	0.00
36	T	Tetrahydrofuran	100.0000	82.0898	17.9	83	0.00
37	S	Dibromofluoromethane	25.0000	27.3819	-9.5	102	0.00
38	T	1,1,1-Trichloroethane	50.0000	59.5586	-19.1	111	0.00
39	T	Cyclohexane	50.0000	51.6569	-3.3	101	0.00
40	T	1,1-Dichloropropene	50.0000	54.5654	-9.1	103	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	100.8347	-0.8	94	0.00
42	T	Carbon Tetrachloride	50.0000	60.0125	-20.0	112	0.00
43	S	1,2-Dichloroethane-d4	25.0000	27.7486	-11.0	102	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	56.6636	-13.3	104	0.00
46	T	Benzene	50.0000	51.9972	-4.0	98	0.00
47	T	Trichloroethene	50.0000	53.9600	-7.9	102	0.00
48	T	Methylcyclohexane	50.0000	55.4235	-10.8	107	0.00
49	C	1,2-Dichloropropane	50.0000	48.6480	2.7	93	0.00
50	T	Bromodichloromethane	50.0000	55.3826	-10.8	100	0.00
51	T	1,4-Dioxane	200.0000	220.3548	-10.2	98	0.00
52	T	Dibromomethane	50.0000	49.7082	0.6	94	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	45.0178	10.0	80	0.00
54	T	4-Methyl-2-Pentanone	50.0000	45.5327	8.9	83	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413032.D Vial: 2
Acq On : 16 Jun 2016 14:25 Operator: FJB
Sample : WG573037-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.2922	-6.6	96	0.00
56	T	Dimethyl Disulfide	50.0000	51.3144	-2.6	96	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	25.0000	26.3564	-5.4	103	0.00
59	C	Toluene	50.0000	50.3002	-0.6	100	0.00
60	T	Ethyl Methacrylate	50.0000	46.8562	6.3	89	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	51.1483	-2.3	96	0.00
63	T	1,1,2-Trichloroethane	50.0000	46.3057	7.4	91	0.00
64	T	2-Hexanone	50.0000	44.3674	11.3	86	0.00
65	T	1,3-Dichloropropane	50.0000	47.0219	6.0	90	0.00
66	T	Tetrachloroethene	50.0000	53.5544	-7.1	109	0.00
67	T	Dibromochloromethane	50.0000	50.4917	-1.0	97	0.00
68	T	1,2-Dibromoethane	50.0000	47.1634	5.7	91	0.00
69	T	1-Chlorohexane	50.0000	52.1093	-4.2	106	0.00
70	P	Chlorobenzene	50.0000	49.7630	0.5	100	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	52.2807	-4.6	102	0.00
72	C	Ethylbenzene	50.0000	50.4524	-0.9	103	0.00
73	T	m-,p-Xylene	100.0000	103.1131	-3.1	103	0.00
74	T	o-Xylene	50.0000	51.2307	-2.5	102	0.00
75	T	Styrene	50.0000	52.0104	-4.0	100	0.00
76	P	Bromoform	50.0000	50.8617	-1.7	97	0.00
77	T	Isopropylbenzene	50.0000	53.9527	-7.9	106	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	107	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	41.4928	17.0	87	0.00
80	S	p-Bromofluorobenzene	25.0000	24.7636	0.9	108	0.00
81	T	1,2,3-Trichloropropane	50.0000	44.9807	10.0	96	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	43.6303	12.7	97	0.00
83	T	n-Propylbenzene	50.0000	49.7580	0.5	105	0.00
84	T	Bromobenzene	50.0000	47.9586	4.1	103	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	50.1733	-0.3	106	0.00
86	T	2-Chlorotoluene	50.0000	47.7491	4.5	99	0.00
87	T	4-Chlorotoluene	50.0000	49.6923	0.6	112	0.00
88	T	a-Methylstyrene	50.0000	47.4481	5.1	102	0.00
89	T	tert-Butylbenzene	50.0000	48.9378	2.1	109	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	50.1269	-0.3	107	0.00
91	T	sec-Butylbenzene	50.0000	50.3494	-0.7	108	0.00
92	T	p-Isopropyltoluene	50.0000	50.6022	-1.2	109	0.00
93	T	1,3-Dichlorobenzene	50.0000	49.5900	0.8	107	0.00
94	T	1,4-Dichlorobenzene	50.0000	47.5896	4.8	105	0.00
95	T	n-Butylbenzene	50.0000	50.5007	-1.0	108	0.00
96	T	1,2-Dichlorobenzene	50.0000	46.6205	6.8	103	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	43.9791	12.0	91	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	48.5529	2.9	105	0.00
99	T	Hexachlorobutadiene	50.0000	54.7126	-9.4	122	0.00
100	T	Naphthalene	50.0000	43.5006	13.0	91	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	45.3576	9.3	102	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413032.D 8260WT.M Mon Jun 20 09:11:52 2016 Page 2

2.1.1.5 Raw QC Data

BFB

Data File : C:\MSDCHEM\2\DATA\051316\8M412218.D Vial: 3
Acq On : 13 May 2016 12:36 Operator: TMB
Sample : WG568561-01 50ng BFB STD 8260 Inst : HPMS8
Misc : 1,1 STD76034 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title : SOP:OVL MSV01

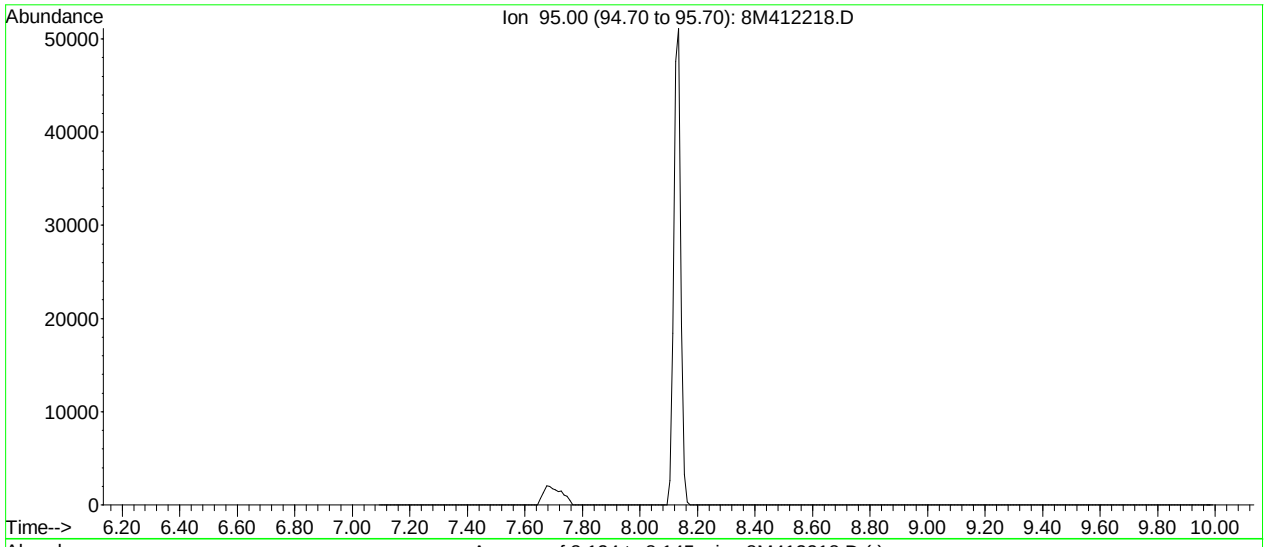

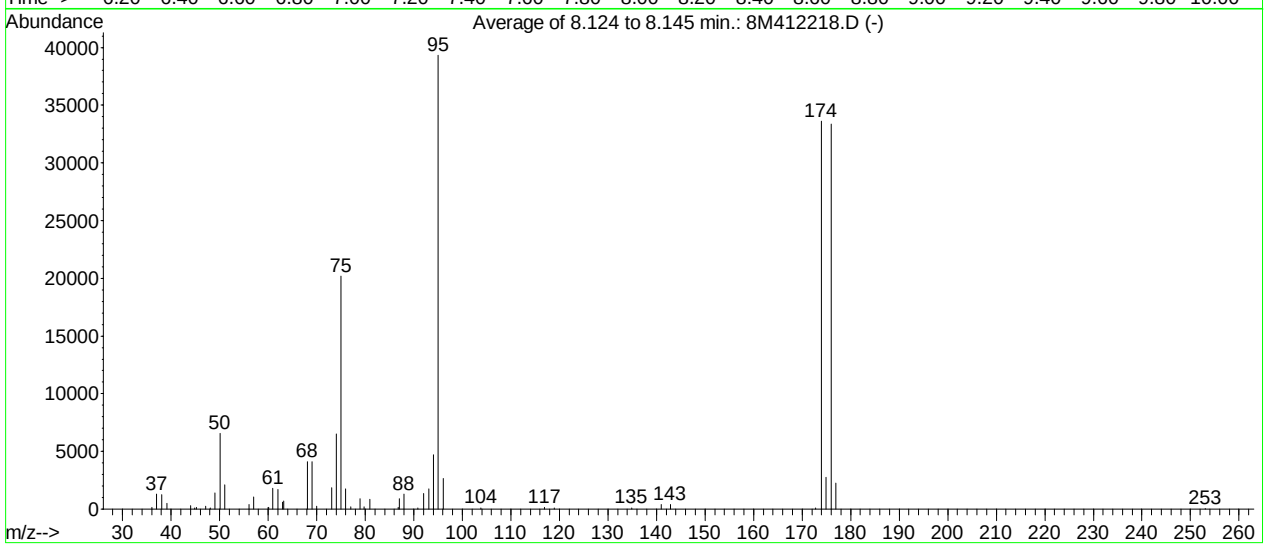

AutoFind: Scans 102, 103, 104; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.7	6575	PASS
75	95	30	60	51.3	20171	PASS
95	95	100	100	100.0	39312	PASS
96	95	5	9	6.7	2649	PASS
173	174	0.00	2	0.4	122	PASS
174	95	50	100	85.5	33616	PASS
175	174	5	9	8.2	2746	PASS
176	174	95	101	99.2	33360	PASS
177	176	5	9	6.8	2267	PASS

8M412218.D BFB.M Fri May 13 12:47:24 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413031.D Vial: 1
Acq On    : 16 Jun 2016  14:02                        Operator: FJB
Sample    : WG573037-01 BFB 50ng 8260                 Inst    : HPMS8
Misc      : 1,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title     : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
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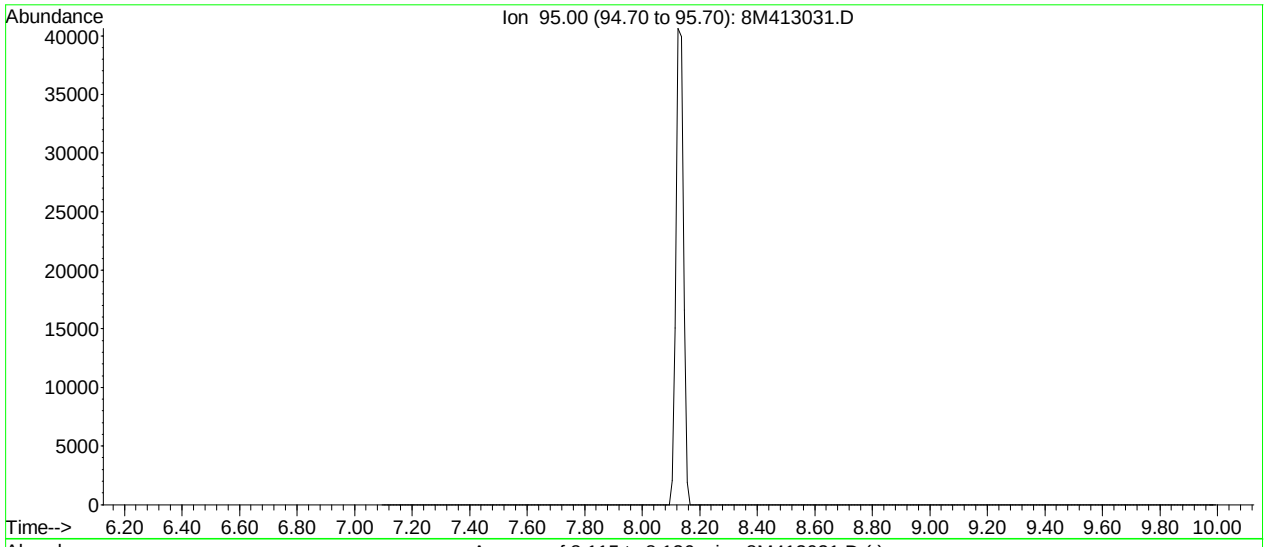

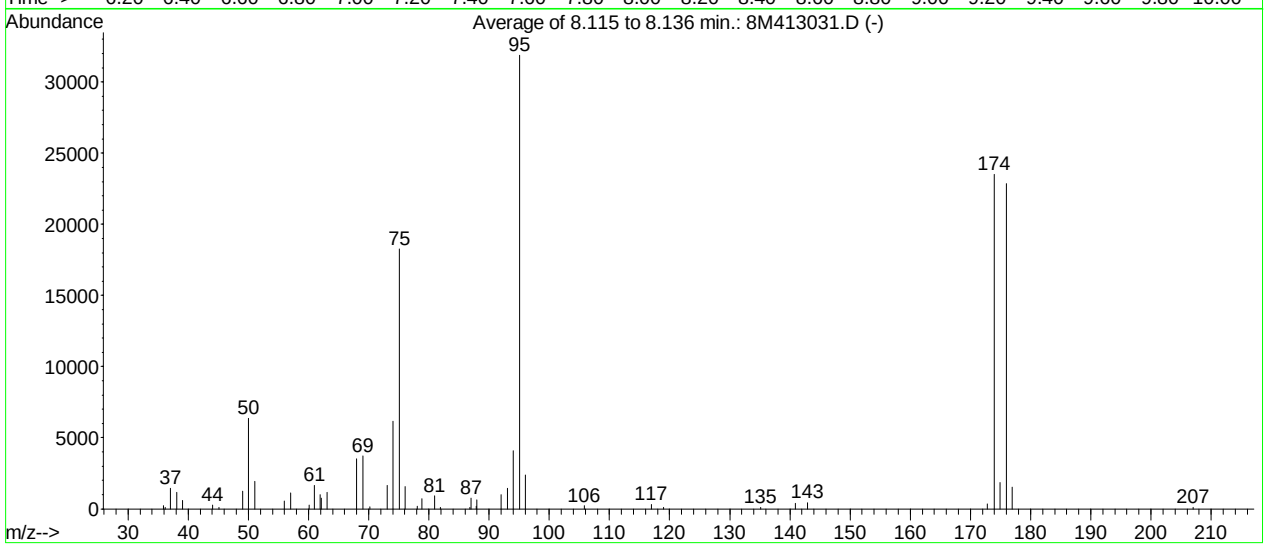

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.9	6352	PASS
75	95	30	60	57.2	18249	PASS
95	95	100	100	100.0	31890	PASS
96	95	5	9	7.4	2366	PASS
173	174	0.00	2	1.5	352	PASS
174	95	50	100	73.7	23499	PASS
175	174	5	9	8.0	1870	PASS
176	174	95	101	97.3	22869	PASS
177	176	5	9	6.7	1538	PASS

8M413031.D 8260WT.M Mon Jun 20 09:08:01 2016

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413034.D Vial: 4
Acq On : 16 Jun 2016 15:23 Operator: FJB
Sample : WG573038-01 BLANK 6/16 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:18:21 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	717429	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	533754	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	292043	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	209977	27.2409 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 108.96%		
43) 1,2-Dichloroethane-d4	10.30	65	235474	28.4902 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 113.96%		
58) Toluene-d8	12.68	98	740524	26.5096 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 106.04%		
80) p-Bromofluorobenzene	16.08	95	307463	25.4256 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.72%		

Target Compounds					Qvalue
36) Tetrahydrofuran	9.64	42	956	1.2239 ug/L	79

(#) = qualifier out of range (m) = manual integration
8M413034.D 8260WT.M Mon Jun 20 09:19:27 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413034.D Vial: 4
Acq On : 16 Jun 2016 15:23 Operator: FJB
Sample : WG573038-01 BLANK 6/16 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 8:18 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

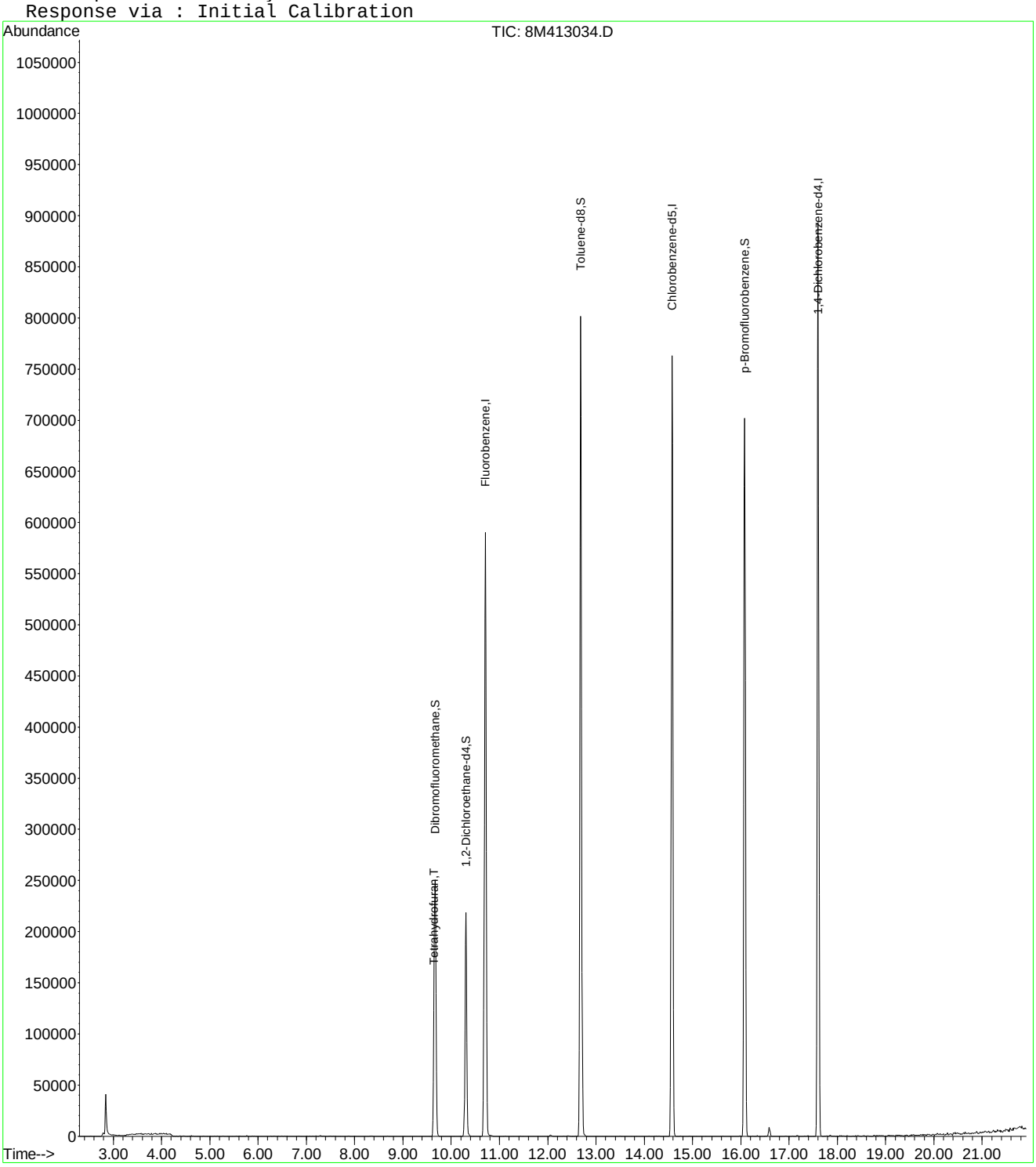

8M413034.D 8260WT.M Mon Jun 20 09:19:28 2016 Page 2

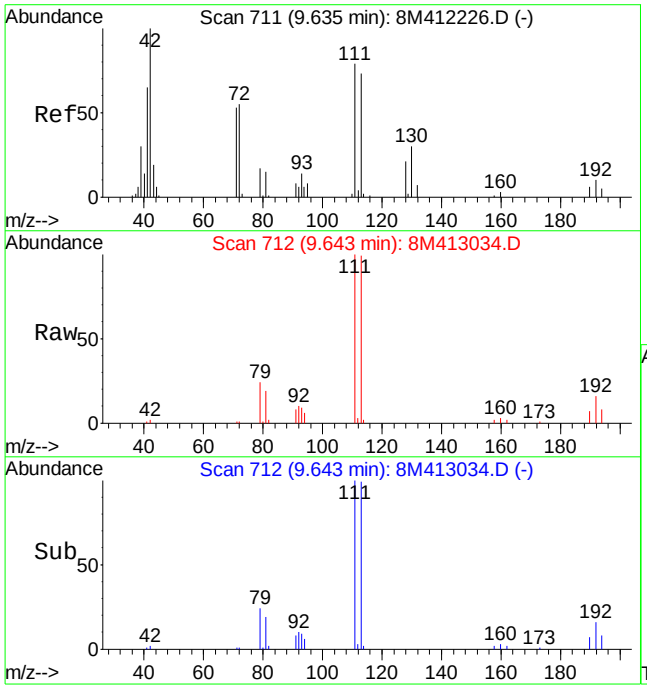

#36
Tetrahydrofuran
Concen: 1.22 ug/L
RT: 9.64 min Scan# 712
Delta R.T. 0.01 min
Lab File: 8M413034.D
Acq: 16 Jun 2016 15:23

Tgt Ion: 42 Resp: 956

Ion	Ratio	Lower	Upper
42	100		
72	74.6	33.8	78.8
71	41.9	32.0	74.8

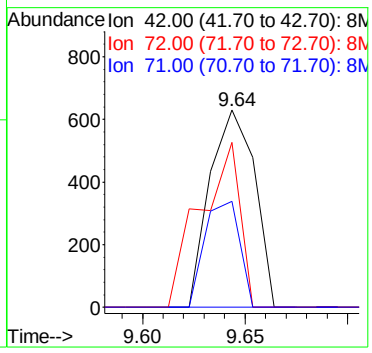

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413035.D Vial: 5
Acq On : 16 Jun 2016 15:52 Operator: FJB
Sample : WG573038-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:18:21 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	724153	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	540053	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	307888	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	213643	27.4591 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.84%		
43) 1,2-Dichloroethane-d4	10.31	65	245621	29.4420 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 117.76%		
58) Toluene-d8	12.68	98	736706	26.0653 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.28%		
80) p-Bromofluorobenzene	16.08	95	316242	24.8057 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.24%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	252315	20.7819 ug/L	99
3) Chloromethane	3.62	50	134208	18.9371 ug/L	99
4) Vinyl Chloride	3.85	62	192999	22.9533 ug/L	100
5) 1,3-Butadiene	3.88	54	21596	3.0627 ug/L	93
6) Bromomethane	4.72	94	67601	14.0319 ug/L	96
7) Chloroethane	4.89	64	94578	20.4419 ug/L	99
8) Trichlorofluoromethane	5.38	101	348634	22.2833 ug/L	99
9) Diethyl ether	5.90	59	376158	100.7087 ug/L	98
10) Isoprene	5.93	67	202345	21.2972 ug/L	96
11) Acrolein	6.13	56	30585	91.4560 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	157632	21.4340 ug/L	96
13) Acetone	6.23	43	17743	21.7775 ug/L	94
14) 1,1-Dichloroethene	6.46	61	221517	18.9174 ug/L	99
15) Tert-Butyl Alcohol	6.58	59	54296	207.9591 ug/L	97
16) Dimethyl Sulfide	6.73	62	149005	35.5890 ug/L	99
17) Iodomethane	6.99	142	33488	12.6554 ug/L	96
18) Methyl acetate	7.00	43	45239	20.5416 ug/L	98
19) Methylene Chloride	7.26	84	143716	19.2860 ug/L	97
20) Carbon Disulfide	7.29	76	443914	18.1155 ug/L	99
21) Acrylonitrile	7.44	53	20303	19.2061 ug/L	97
22) Methyl Tert Butyl Ether	7.46	73	362621	22.4840 ug/L	97
23) trans-1,2-Dichloroethene	7.70	61	216143	20.0918 ug/L	99
24) n-Hexane	7.78	57	148742	18.6200 ug/L	98
25) Diisopropyl ether	8.12	45	1674940	99.8839 ug/L	96
26) Vinyl Acetate	8.30	43	113665	14.8046 ug/L	99
27) 1,1-Dichloroethane	8.32	63	260446	19.4944 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	1819224	101.2567 ug/L	98
29) 2-Butanone	8.88	43	24177	20.1972 ug/L	96
30) Propionitrile	8.99	54	32822	94.0889 ug/L	98
31) 2,2-Dichloropropane	9.11	77	323361	22.9674 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	170309	20.4887 ug/L	97
33) Chloroform	9.37	83	334264	21.1899 ug/L	100
34) 1-Bromopropane	9.51	122	36217	30.4181 ug/L	100
35) Bromochloromethane	9.60	130	88133	20.6762 ug/L	92
36) Tetrahydrofuran	9.62	42	66083	83.8177 ug/L	91
38) 1,1,1-Trichloroethane	9.91	97	336501	22.4572 ug/L	100
39) Cyclohexane	9.94	56	203672	19.6331 ug/L	95
40) 1,1-Dichloropropene	10.10	75	235033	20.5788 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	1758569	107.7684 ug/L	100
42) Carbon Tetrachloride	10.25	117	299046	22.4750 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M413035.D 8260WT.M Mon Jun 20 09:08:47 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413035.D Vial: 5
Acq On : 16 Jun 2016 15:52 Operator: FJB
Sample : WG573038-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:18:21 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	236926	23.3353 ug/L		98
46)	Benzene	10.46	78	605690	20.3618 ug/L		99
47)	Trichloroethene	11.21	130	172682	21.7657 ug/L		99
48)	Methylcyclohexane	11.30	83	251284	20.8488 ug/L		98
49)	1,2-Dichloropropane	11.42	63	134844	20.3635 ug/L		90
50)	Bromodichloromethane	11.73	83	251163	21.5803 ug/L		98
51)	1,4-Dioxane	11.72	88	5908	177.6120 ug/L		98
52)	Dibromomethane	11.81	93	77825	19.8542 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.03	63	55535	19.5124 ug/L		91
54)	4-Methyl-2-Pentanone	12.05	58	22978	19.7642 ug/L		93
55)	cis-1,3-Dichloropropene	12.36	75	273539	23.0905 ug/L		100
56)	Dimethyl Disulfide	12.62	79	137758	21.7873 ug/L		95
59)	Toluene	12.79	91	661287	19.7238 ug/L		99
60)	Ethyl Methacrylate	12.88	69	133238	20.6930 ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	234780	20.8960 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	103597	19.5817 ug/L		97
64)	2-Hexanone	13.12	58	20672	18.5940 ug/L	#	95
65)	1,3-Dichloropropane	13.48	76	194941	20.6961 ug/L		95
66)	Tetrachloroethene	13.60	164	144676	20.1408 ug/L		99
67)	Dibromochloromethane	13.87	129	158132	20.4706 ug/L		100
68)	1,2-Dibromoethane	14.12	107	105951	20.0943 ug/L		99
69)	1-Chlorohexane	14.21	91	223061	19.4904 ug/L		97
70)	Chlorobenzene	14.63	112	460997	20.3904 ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.66	131	182348	20.8187 ug/L		99
72)	Ethylbenzene	14.66	106	245573	19.8527 ug/L		100
73)	m-,p-Xylene	14.75	106	592898	40.8641 ug/L		95
74)	o-Xylene	15.31	106	299422	21.1082 ug/L		99
75)	Styrene	15.35	104	480813	20.6661 ug/L		96
76)	Bromoform	15.83	173	91438	19.9564 ug/L		99
77)	Isopropylbenzene	15.73	105	813144	21.5784 ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	109337	17.6914 ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	37733	19.8268 ug/L		73
82)	trans-1,4-Dichloro-2-Buten	16.19	53	28275	15.0111 ug/L		99
83)	n-Propylbenzene	16.24	91	981466	20.4328 ug/L		100
84)	Bromobenzene	16.37	156	189420	19.1720 ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	710541	20.3071 ug/L		100
86)	2-Chlorotoluene	16.51	91	681730	20.3282 ug/L		98
87)	4-Chlorotoluene	16.56	91	596710	19.6981 ug/L		99
88)	a-Methylstyrene	16.83	118	344648	20.7612 ug/L		100
89)	tert-Butylbenzene	16.90	134	134805	19.6932 ug/L		98
90)	1,2,4-Trimethylbenzene	16.94	105	716254	19.9077 ug/L		99
91)	sec-Butylbenzene	17.16	105	833548	20.2499 ug/L		99
92)	p-Isopropyltoluene	17.32	119	700643	20.0466 ug/L		100
93)	1,3-Dichlorobenzene	17.51	146	379985	19.9735 ug/L		100
94)	1,4-Dichlorobenzene	17.64	146	378307	19.7240 ug/L		99
95)	n-Butylbenzene	17.85	91	671796	19.4428 ug/L		100
96)	1,2-Dichlorobenzene	18.14	146	333637	19.7182 ug/L		97
97)	1,2-Dibromo-3-Chloropropan	19.13	75	24498	19.7473 ug/L		99
98)	1,2,4-Trichlorobenzene	20.28	180	244999	19.3716 ug/L		99
99)	Hexachlorobutadiene	20.43	225	125683	21.2686 ug/L		98
100)	Naphthalene	20.65	128	326897	17.3970 ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	202292	18.9589 ug/L		97

(#) = qualifier out of range (m) = manual integration
8M413035.D 8260WT.M Mon Jun 20 09:08:47 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413035.D Vial: 5
Acq On : 16 Jun 2016 15:52 Operator: FJB
Sample : WG573038-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 8:18 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

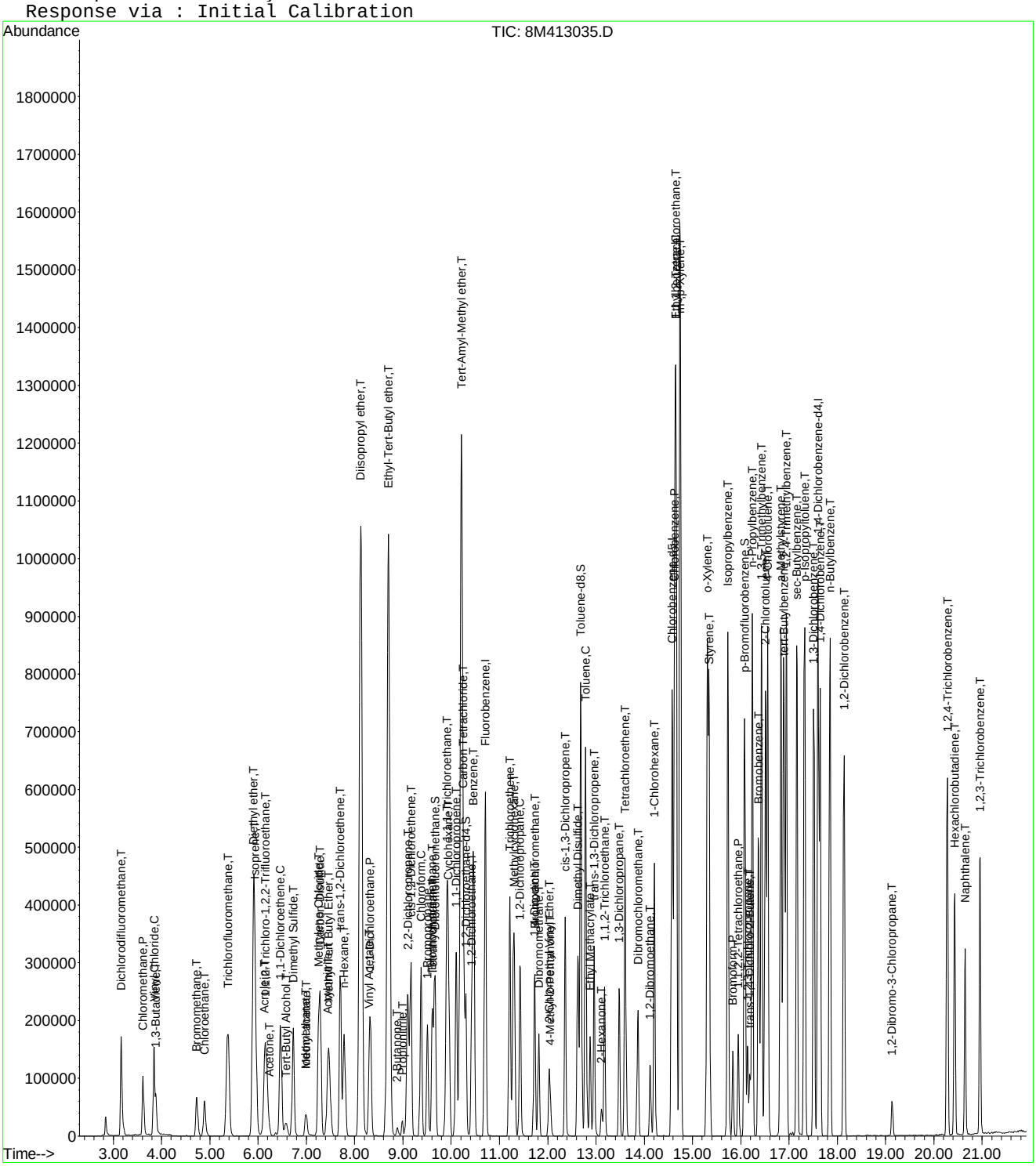

8M413035.D 8260WT.M Mon Jun 20 09:08:48 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413036.D Vial: 6
Acq On : 16 Jun 2016 16:21 Operator: FJB
Sample : WG573038-03 20ug/L LCS2 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:18:22 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	735322	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	553122	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	312159	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	213768	27.0578 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 108.24%		
43) 1,2-Dichloroethane-d4	10.30	65	240558	28.3971 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 113.60%		
58) Toluene-d8	12.68	98	752327	25.9891 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.96%		
80) p-Bromofluorobenzene	16.08	95	319552	24.7224 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.88%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	268839	21.8065 ug/L	99
3) Chloromethane	3.62	50	145372	20.2008 ug/L	99
4) Vinyl Chloride	3.85	62	205956	24.1222 ug/L	100
5) 1,3-Butadiene	3.88	54	22591	3.1551 ug/L	94
6) Bromomethane	4.72	94	76970	15.6580 ug/L	99
7) Chloroethane	4.89	64	102039	21.7196 ug/L	98
8) Trichlorofluoromethane	5.38	101	362939	22.8452 ug/L	98
9) Diethyl ether	5.90	59	397097	104.6998 ug/L	97
10) Isoprene	5.94	67	218692	22.6682 ug/L	99
11) Acrolein	6.14	56	33320	98.1209 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	161414	21.6149 ug/L	94
13) Acetone	6.23	43	19963	24.1301 ug/L	97
14) 1,1-Dichloroethene	6.46	61	233526	19.6401 ug/L	99
15) Tert-Butyl Alcohol	6.57	59	65029	245.2844 ug/L	97
16) Dimethyl Sulfide	6.73	62	155773	36.6403 ug/L	99
17) Iodomethane	6.99	142	48971	16.9853 ug/L	95
18) Methyl acetate	7.00	43	45727	20.4478 ug/L	97
19) Methylene Chloride	7.25	84	150567	19.8985 ug/L	100
20) Carbon Disulfide	7.29	76	462391	18.5829 ug/L	100
21) Acrylonitrile	7.43	53	21986	20.4823 ug/L	92
22) Methyl Tert Butyl Ether	7.47	73	371382	22.6774 ug/L	98
23) trans-1,2-Dichloroethene	7.70	61	222944	20.4092 ug/L	100
24) n-Hexane	7.78	57	159355	19.6456 ug/L	98
25) Diisopropyl ether	8.12	45	1757628	103.2229 ug/L	96
26) Vinyl Acetate	8.30	43	118636	15.2174 ug/L	100
27) 1,1-Dichloroethane	8.32	63	269975	19.9007 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1896750	103.9682 ug/L	98
29) 2-Butanone	8.88	43	25340	20.8472 ug/L	94
30) Propionitrile	8.99	54	36109	101.9393 ug/L	100
31) 2,2-Dichloropropane	9.10	77	336668	23.5494 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	179241	21.2357 ug/L	98
33) Chloroform	9.37	83	347237	21.6779 ug/L	100
34) 1-Bromopropane	9.51	122	37842	31.3001 ug/L	100
35) Bromochloromethane	9.61	130	89039	20.5714 ug/L	96
36) Tetrahydrofuran	9.63	42	72974	91.1522 ug/L	97
38) 1,1,1-Trichloroethane	9.91	97	353698	23.2464 ug/L	100
39) Cyclohexane	9.93	56	214088	20.3237 ug/L	97
40) 1,1-Dichloropropene	10.11	75	243549	21.0005 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1837419	110.8902 ug/L	99
42) Carbon Tetrachloride	10.25	117	311990	23.0917 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413036.D 8260WT.M Mon Jun 20 09:08:50 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413036.D Vial: 6
Acq On : 16 Jun 2016 16:21 Operator: FJB
Sample : WG573038-03 20ug/L LCS2 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:18:22 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	242552	23.5265 ug/L		98
46)	Benzene	10.46	78	636475	21.0718 ug/L		100
47)	Trichloroethene	11.21	130	181127	22.4834 ug/L		99
48)	Methylcyclohexane	11.30	83	268536	21.9418 ug/L		99
49)	1,2-Dichloropropane	11.42	63	141319	21.0171 ug/L		89
50)	Bromodichloromethane	11.73	83	265829	22.4935 ug/L		99
51)	1,4-Dioxane	11.72	88	6780	200.7309 ug/L		99
52)	Dibromomethane	11.81	93	79309	19.9255 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.02	63	56761	19.6402 ug/L		94
54)	4-Methyl-2-Pentanone	12.06	58	24424	20.6889 ug/L		92
55)	cis-1,3-Dichloropropene	12.36	75	282091	23.4507 ug/L		99
56)	Dimethyl Disulfide	12.62	79	140775	21.9263 ug/L		94
59)	Toluene	12.79	91	690537	20.1096 ug/L		99
60)	Ethyl Methacrylate	12.88	69	134927	20.4602 ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	242695	21.0901 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	106261	19.6107 ug/L		98
64)	2-Hexanone	13.12	58	20293	17.8218 ug/L	#	97
65)	1,3-Dichloropropane	13.48	76	202255	20.9653 ug/L		97
66)	Tetrachloroethene	13.60	164	150723	20.4869 ug/L		99
67)	Dibromochloromethane	13.87	129	164885	20.8405 ug/L		100
68)	1,2-Dibromoethane	14.12	107	107229	19.8562 ug/L		100
69)	1-Chlorohexane	14.21	91	238806	20.3731 ug/L		97
70)	Chlorobenzene	14.63	112	479877	20.7240 ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.66	131	187840	20.9390 ug/L		99
72)	Ethylbenzene	14.66	106	252056	19.8954 ug/L		96
73)	m-,p-Xylene	14.75	106	620374	41.7475 ug/L		96
74)	o-Xylene	15.31	106	310957	21.4035 ug/L		98
75)	Styrene	15.35	104	503519	21.1307 ug/L		97
76)	Bromoform	15.83	173	93776	19.9830 ug/L		98
77)	Isopropylbenzene	15.73	105	848704	21.9899 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	113419	18.1008 ug/L		100
81)	1,2,3-Trichloropropane	16.14	110	37740	19.5591 ug/L		73
82)	trans-1,4-Dichloro-2-Buten	16.19	53	34462	17.9212 ug/L		82
83)	n-Propylbenzene	16.24	91	1024017	21.0269 ug/L		99
84)	Bromobenzene	16.37	156	197176	19.6840 ug/L		97
85)	1,3,5-Trimethylbenzene	16.42	105	742680	20.9352 ug/L		99
86)	2-Chlorotoluene	16.51	91	701689	20.6371 ug/L		98
87)	4-Chlorotoluene	16.56	91	615763	20.0490 ug/L		99
88)	a-Methylstyrene	16.83	118	365485	21.7152 ug/L		99
89)	tert-Butylbenzene	16.89	134	141823	20.4349 ug/L		98
90)	1,2,4-Trimethylbenzene	16.94	105	742233	20.3475 ug/L		100
91)	sec-Butylbenzene	17.16	105	865092	20.7287 ug/L		100
92)	p-Isopropyltoluene	17.32	119	739719	20.8751 ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	398135	20.6412 ug/L		100
94)	1,4-Dichlorobenzene	17.64	146	395783	20.3529 ug/L		99
95)	n-Butylbenzene	17.85	91	695375	19.8498 ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	349070	20.3481 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	26890	21.3789 ug/L		96
98)	1,2,4-Trichlorobenzene	20.28	180	257503	20.0816 ug/L		99
99)	Hexachlorobutadiene	20.43	225	129798	21.6644 ug/L		98
100)	Naphthalene	20.65	128	344850	18.1014 ug/L		100
101)	1,2,3-Trichlorobenzene	20.96	180	209338	19.3508 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M413036.D 8260WT.M Mon Jun 20 09:08:51 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413036.D Vial: 6
Acq On : 16 Jun 2016 16:21 Operator: FJB
Sample : WG573038-03 20ug/L LCS2 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 8:18 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

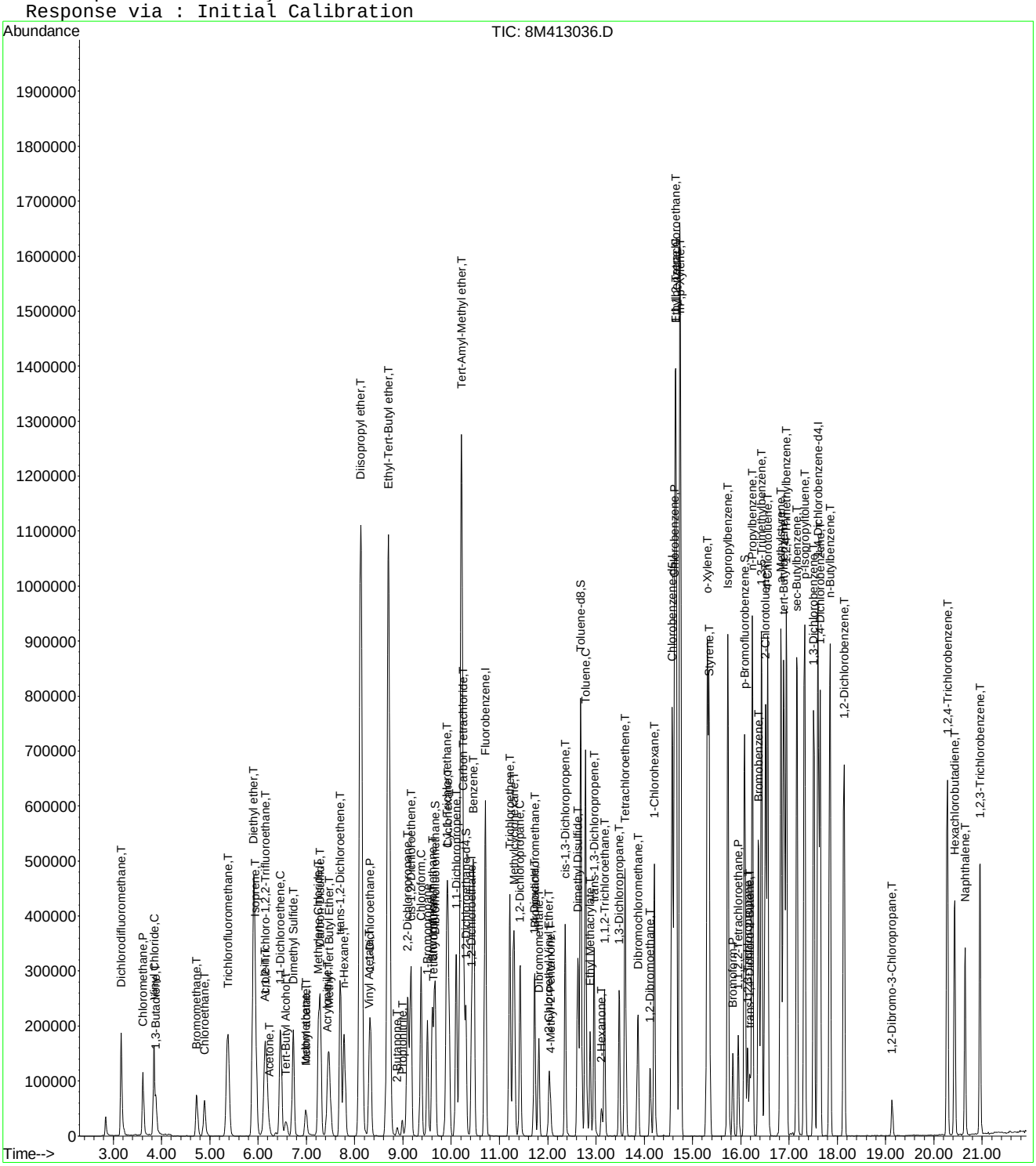

8M413036.D 8260WT.M Mon Jun 20 09:08:52 2016 Page 3

2.2 Semivolatiles Data

2.2.1 Semivolatiles GC/MS Data (Dioxane)

2.2.1.1 Summary Data

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW14-061316	**Prep Method:**	3520C	**Prep Date:**	06/15/2016 18:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573365	**Analyst:**	MES	**Run Date:**	06/21/2016 15:11
Collect Date:	06/13/2016 09:15	**Dilution:**	1	**File ID:**	15M18471
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	50.2	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW14FD-061316	**Prep Method:**	3520C	**Prep Date:**	06/15/2016 18:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573365	**Analyst:**	MES	**Run Date:**	06/21/2016 15:34
Collect Date:	06/13/2016 09:15	**Dilution:**	1	**File ID:**	15M18472
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	65.8	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW24-061316	**Prep Method:**	3520C	**Prep Date:**	06/15/2016 18:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573365	**Analyst:**	MES	**Run Date:**	06/21/2016 16:19
Collect Date:	06/13/2016 10:35	**Dilution:**	1	**File ID:**	15M18474
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	45.0	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.2.1.2 QC Summary Data

Example 8270 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	1261197
Cis = Concentration of the specific internal standard (ug/mL)	40
Ais = Area of the characteristic ion of the specific internal standard	608044
Cx = Concentration of the compound in the standard being measured (ug/mL)	50
RF = Calculated Response Factor	**1.65935**

2.0 Calculating the concentration (C) of a compound in water using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Vi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Vi = Initial volume of sample extracted from prep log (mL)	1021
Cx = Concentration of the compound in the sample being measured (ug/mL)	0.016947
Cx = Concentration of the compound in the sample being measured (ug/L)	**16.947**

3.0 Calculating the concentration (C) of a compound in soil using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Wi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Wi = Initial weight of sample extracted (g) from prep log	30
Cx = Concentration of the compound in the sample being measured (ug/g)	0.576763
Cx = Concentration of the compound in the sample being measured (ug/kg)	**576.7627**

Dry weight correction:

Percent solids (PCT_S)	50
Cd = (Cx) (100)/PCT_S	**1153.525** ug/kg

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve plot

b = intercept from curve plot

Step 2: Calculate y from Quantitation Report

y = 16790/784838 = 0.02139

Step 3: Solve for x

x = (y - b)/m = [(0.02139 -(- 0.0435)]/ 0.0783 = 0.829

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.829) = 20.72 ug/L

Example Spreadsheet Calculation:

Slope from curve, m:	0.0783	
Intercept from curve, b:	-0.0435	
Area of analyte, Ax:	16790	
Area of Internal Standard , Ais:	784484	
Concentration of IS, Cis	25.00	ug/L
Response Ratio (y) :	0.021403	
Amount Ratio:	0.828897	
Concentration (Cx):	20.72241	ug/L

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**0.0259**	
Value of B from plot:	**0.0596**	
Value of C from plot:	**-0.0165**	
Area of analyte from quantitation report:	**203233**	
Area of IS from quantiation report:	**1425653**	
Response ratio, y:	**0.142554**	
C - y:	**-0.15905**	
Root 1 - Computed amount ratio , X1:	**-3.88278**	
Root 2 - Computed amount ratio , X2:	**1.581623**	use this solution
Concentration of IS, Cis:	**40.00**	
Concentration of analyte, Cx:	**63.26**	ug/L

Microbac Laboratories Inc.
Continuous Sample Extract Log

Workgroup: WG572806
Analyst: CPD
Spike Analyst: CPD
Method: 3520C
Run Date: 06/15/2016 18:01
SOP: EXB01 Revison 20
Spike Witness: JDH
Surr Solution: STD74051

TIME ON: 19:15 OFF: 13:30 ON: 17:50 OFF: 12:00

CH2CL2 Lot #: COA18982
sodium sulfate Lot #: COA18814
10N NaOH Lot #: RGT37076
1:1 H2SO4 Lot #: RGT36755

	SAMPLE #	Type	Reference	Prod	pH	Init Amnt	Surr Amnt	Spike Amnt	Spike Sol	Final Vol	Color
1	L16060730-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Colored
2	L16060730-02	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Colored
3	L16060730-03	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
4	L16060756-04	SAMP		827-DIOX	<2>12	1000 mL	.05 mL			1 mL	Colored
5	L16060809-03	SAMP		827-DIOX	<2>12	1000 mL	.05 mL			1 mL	Colored
6	L16060822-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Colored
7	L16060822-03	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
8	L16060822-04	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
9	L16060822-05	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
10	L16060823-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
11	L16060823-03	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Colored
12	L16060823-04	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
13	L16060854-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Colored
14	WG572806-01	BLANK		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
15	WG572806-02	LCS		827-DIOXANE	<2>12	1000 mL	.05 mL	.05 mL	STD75256	1 mL	Transparent
16	WG572806-03	LCS2		827-DIOXANE	<2>12	1000 mL	.05 mL	.05 mL	STD75256	1 mL	Transparent

Due to insufficient sample volume, this preparation batch failed to include the method prescribed MS and MSD.

LCS TV3 Cell 6
LCS DUP TV3 Cell 1

Analyst: Chelsie Davis

Reviewer: Chris Hill

EXTRACT - Modified 01/23/2009
PDF ID: 4813905
Report generated: 06/20/2016 08:50

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062116
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573365

Internal STD: STD76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: STD74214 MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18455	BAKEOUT	1	1		06/21/16 08:46
2	15M18456	WG573501-01 5PPM DFTPP STD	1	1	STD75016	06/21/16 09:05
3	15M18457	WG573501-01 5PPM DFTPP STD	1	1	STD75016	06/21/16 09:34
4	15M18458	WG573501-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 09:52
5	15M18459	WG573501-03 10 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 10:27
6	15M18460	WG573501-04 7.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 10:49
7	15M18461	WG573501-05 2.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:12
8	15M18462	WG573501-06 1 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:34
9	15M18463	WG573501-07 0.4 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:57
10	15M18464	WG573501-08 5PPM 1,4-DIOXANE ALT SRC	1	1	STD74214	06/21/16 12:20
11	15M18465	WG572806-01 BLANK 6/15	1	1		06/21/16 12:54
12	15M18466	WG572806-02 LCS 6/15	1	1		06/21/16 13:17
13	15M18467	WG572806-03 LCSDUP 6/15	1	1		06/21/16 13:40
14	15M18468	WG573008-01 BLANK 6/17	7	1	SOIL	06/21/16 14:03
15	15M18469	WG573008-02 LCS 6/17	7	1	SOIL	06/21/16 14:26
16	15M18470	WG573008-03 LCSDUP 6/17	7	1	SOIL	06/21/16 14:48
17	15M18471	L16060730-01	1	1		06/21/16 15:11
18	15M18472	L16060730-02	1	1		06/21/16 15:34
19	15M18473	L16060854-01	1	1		06/21/16 15:57
20	15M18474	L16060730-03	1	1		06/21/16 16:19
21	15M18475	L16060756-04 827-DIOX	1	1		06/21/16 16:46
22	15M18476	L16060822-01	1	1		06/21/16 17:08
23	15M18477	L16060822-03	1	1		06/21/16 17:31
24	15M18478	L16060822-04	1	1		06/21/16 17:54
25	15M18479	L16060822-05	1	1		06/21/16 18:17
26	15M18480	L16060823-01	1	1		06/21/16 18:40
27	15M18481	L16060823-03	1	1		06/21/16 19:02
28	15M18482	L16060823-04	1	1		06/21/16 19:25
29	15M18483	L16060809-03 827-DIOX	1	1		06/21/16 19:48
30	15M18484	L16060854-01 2X	1	2		06/21/16 20:10
31	15M18485	BAKEOUT	1	1		06/21/16 20:33
32	15M18486	BAKEOUT	1	1		06/21/16 20:55
33	15M18487	BAKEOUT	1	1		06/21/16 21:18

Page: 1 Approved: 22-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062116

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573365

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD: STD74214

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
	WG573501-01 5PPM DFTPP STD rerun DFTPP, pentachlorophenol tailing >2.			
14				
	WG573008-01 BLANK 6/17 DNR-not needed.			
15				
	WG573008-02 LCS DNR-not needed.			
16				
	WG573008-03 LCSDUP DNR-not needed.			
19	X	2	Over Calibration Range	
	L16060854-01			

Page: 2 Approved: 22-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 21-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75850
Analytical Workgroups: L16060730, 060756, 060809, 060822, 060823, 060854

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 22-JUN-2016

Secondary Reviewer: 22-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-22-2016 16:00:51

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8270D

AAB#: WG573365

Login Number: L16060730

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW14-061316	01	06/13/16					06/15/2016	2.4	7		06/21/16	5.9	40	
18CPTMW14FD-061316	02	06/13/16					06/15/2016	2.4	7		06/21/16	5.9	40	
18CPTMW24-061316	03	06/13/16					06/15/2016	2.3	7		06/21/16	5.9	40	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4819032
Report generated 06/23/2016 13:26

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060730
Instrument Id: HPMS15
Workgroup (AAB#): WG573365

Method: 827-DIOXANE
CAL ID: HPMS15-21-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1
L16060730-01	1.00	01	50.2
L16060730-02	1.00	01	65.8
L16060730-03	1.00	01	45.0
WG572806-01	1.00	02	61.7
WG572806-02	1.00	02	62.5
WG572806-03	1.00	02	46.5

Surrogates	Surrogate Limits		
1 - 1,4-Dioxane-d8	20	-	129

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4819048
Report generated: 06/23/2016 13:26

METHOD BLANK SUMMARY

Login Number: L16060730
Blank File ID: 15M18465
Prep Date: 06/15/16 18:01
Analyzed Date: 06/21/16 12:54
Analyst: MES

Work Group: WG573365
Blank Sample ID: WG572806-01
Instrument ID: HPMS15
Method: 8270D

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572806-02	15M18466	06/21/16 13:17	02
LCS2	WG572806-03	15M18467	06/21/16 13:40	02
18CPTMW14-061316	L16060730-01	15M18471	06/21/16 15:11	01
18CPTMW14FD-061316	L16060730-02	15M18472	06/21/16 15:34	01
18CPTMW24-061316	L16060730-03	15M18474	06/21/16 16:19	01

Report Name: BLANK_SUMMARY
PDF File ID: 4821144
Report generated 06/23/2016 13:26

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060730 Prep Date: 06/15/16 18:01 Sample ID: WG572806-01
Instrument ID: HPMS15 Run Date: 06/21/16 12:54 Prep Method: 3520C
File ID: 15M18465 Analyst: MES Method: 8270D
Workgroup (AAB#): WG573365 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS15-21-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
1,4-Dioxane	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	61.7	20 - 129	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4819033
23-JUN-2016 13:26

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060730 Analyst: MES Prep Method: 3520C
Instrument ID: HPMS15 Matrix: Water Method: 8270D
Workgroup (AAB#): WG573365 Units: ug/L
QC Key: DOD4 Lot #: STD75256

Sample ID: WG572806-02 LCS File ID: 15M18466 Run Date: 06/21/2016 13:17
Sample ID: WG572806-03 LCS2 File ID: 15M18467 Run Date: 06/21/2016 13:40

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,4-Dioxane	5.00	3.03	60.6	5.00	2.27	45.5	28.6	30 - 104	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,4-Dioxane-d8	62.5	46.5	20 - 129	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4819034
Report generated: 06/23/2016 13:26

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16060730
Instrument: HPMS15
Analyst: MES
Workgroup: WG573501

Tune ID: WG573501-01
Run Date: 06/21/2016
Run Time: 09:34
File ID: 15M18457
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	38.8	34488	PASS
68.0	69.0	0	2.00	1.36	500	PASS
69.0	198	0	100	41.4	36833	PASS
70.0	69.0	0	2.00	0.467	172	PASS
127	198	40.0	60.0	51.9	46131	PASS
197	198	0	1.00	0	0	PASS
198	198	100	100	100	88880	PASS
199	198	5.00	9.00	6.66	5918	PASS
275	198	10.0	30.0	24.9	22090	PASS
365	198	1.00	100	2.65	2358	PASS
441	443	0.0100	100	75.7	9586	PASS
442	198	40.0	100	73.4	65261	PASS
443	442	17.0	23.0	19.4	12659	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573501-02	STD-CCV	01	06/21/2016 09:52	
WG573501-03	STD	01	06/21/2016 10:27	
WG573501-04	STD	01	06/21/2016 10:49	
WG573501-05	STD	01	06/21/2016 11:12	
WG573501-06	STD	01	06/21/2016 11:34	
WG573501-07	STD	01	06/21/2016 11:57	
WG573501-08	SSCV	01	06/21/2016 12:20	
WG572806-01	BLANK	02	06/21/2016 12:54	
WG572806-02	LCS	02	06/21/2016 13:17	
WG572806-03	LCS2	02	06/21/2016 13:40	
L16060730-01	18CPTMW14-061316	01	06/21/2016 15:11	
L16060730-02	18CPTMW14FD-061316	01	06/21/2016 15:34	
L16060730-03	18CPTMW24-061316	01	06/21/2016 16:19	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4819041
Report generated 06/23/2016 13:26

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060730
Analytical Method: 8270D
ICAL Workgroup: WG573501

Instrument ID: HPMS15
Initial Calibration Date: 21-JUN-16 11:57
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
1,4-Dioxane		0.3060	2.56		

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4819035
Report generated 06/23/2016 13:26

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060730

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 21-JUN-16 11:57

Column ID: F

Analyte	WG573501-02			WG573501-03			WG573501-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	5.00	60883.0000	0.3073	10.0	138820.000	0.3164	7.50	103182.000	0.3106

INT_CAL - Modified 03/06/2008
PDF File ID: 4819035
Report generated 06/23/2016 13:26

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060730

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 21-JUN-16 11:57

Column ID: F

Analyte	WG573501-05			WG573501-06			WG573501-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	2.50	26333.0000	0.2969	1.00	13250.0000	0.2966	0.400	5650.00000	0.3081

INT_CAL - Modified 03/06/2008
PDF File ID: 4819035
Report generated 06/23/2016 13:26

Calibration Table Report
Method: DIOXANE_D8.M
Title: OVD MSS01 SIM 1,4-dioxane ICAL 062116
Last Calibration: Tue Jun 21 12:51:17 2016
Curve:WG573501
Calibration Files

Compound	10 15M18459.D	7.5 15M18460.D	5 15M18458.D	2.5 15M18461.D	1 15M18462.D	0.4 15M18463.D	Avg	%RSD
1,4-Dichlorobenzene-d4	ISTD							
1,4-Dioxane	0.316	0.311	0.307	0.297	0.297	0.308	0.306	2.558
1,4-Dioxane-d8	0.426	0.418	0.417	0.402	0.395		0.411	3.044
Nitrobenzene-d5	1.202	1.173	1.128	1.002	0.927	0.906	1.056	12.163
2-Fluorobiphenyl	2.735	2.736	2.691	2.621	2.563	2.651	2.666	2.548
p-Terphenyl-d14	2.793	2.774	2.622	2.460	2.367	2.405	2.570	7.266

Wed Jun 22 12:17:33 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060730 Run Date: 06/21/2016 Sample ID: WG573501-08
Instrument ID: HPMS15 Run Time: 12:20 Method: 8270D
File ID: 15M18464 Analyst: MES QC Key: DOD4
ICal Workgroup: WG573501 Cal ID: HPMS15 - 21-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
1,4-Dioxane		5000	5050	ug/L	0.309	0.900	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4819040
Report generated 06/23/2016 13:26

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060730
Instrument ID: HPMS15
Workgroup (AAB#): WG573365

ICAL CCV Number: WG573501-02
CAL ID: HPMS15-21-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG573501-02	NA	NA	39637
Upper Limit	NA	NA	79274
Lower Limit	NA	NA	19819
L16060730-01	1.00	01	34018
L16060730-02	1.00	01	34547
L16060730-03	1.00	01	32177
WG572806-01	1.00	02	38899
WG572806-02	1.00	02	27126
WG572806-03	1.00	02	34071

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4819047
Report generated 06/23/2016 13:26

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060730
Instrument ID: HPMS15
Workgroup (AAB#): WG573365

ICAL CCV Number: WG573501-02
CAL ID: HPMS15-21-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG573501-02	NA	NA	6.93
Upper Limit	NA	NA	7.43
Lower Limit	NA	NA	6.43
L16060730-01	1.00	01	6.933
L16060730-02	1.00	01	6.933
L16060730-03	1.00	01	6.936
WG572806-01	1.00	02	6.936
WG572806-02	1.00	02	6.933
WG572806-03	1.00	02	6.933

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4821145
Report generated: 06/23/2016 13:26

2.2.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18471.D
Acq On : 21 Jun 2016 15:11
Operator : MES
Sample : L16060730-01
Misc : 1,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 22 08:03:10 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	34018	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	35119	2.5089	ug/L	0.00
Spiked Amount 5.000			Recovery	=	50.20%	
4) Nitrobenzene-d5	7.436	82	6581	0.1831	ug/L	0.00
Spiked Amount 5.000			Recovery	=	3.60%	
5) 2-Fluorobiphenyl	8.926	172	2335	0.0257	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.60%	
6) p-Terphenyl-d14	12.210	244	1241	0.0142	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.876	58	2865	0.2753	ug/L	71

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18471.D
Acq On : 21 Jun 2016 15:11
Operator : MES
Sample : L16060730-01
Misc : 1,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 22 08:03:10 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

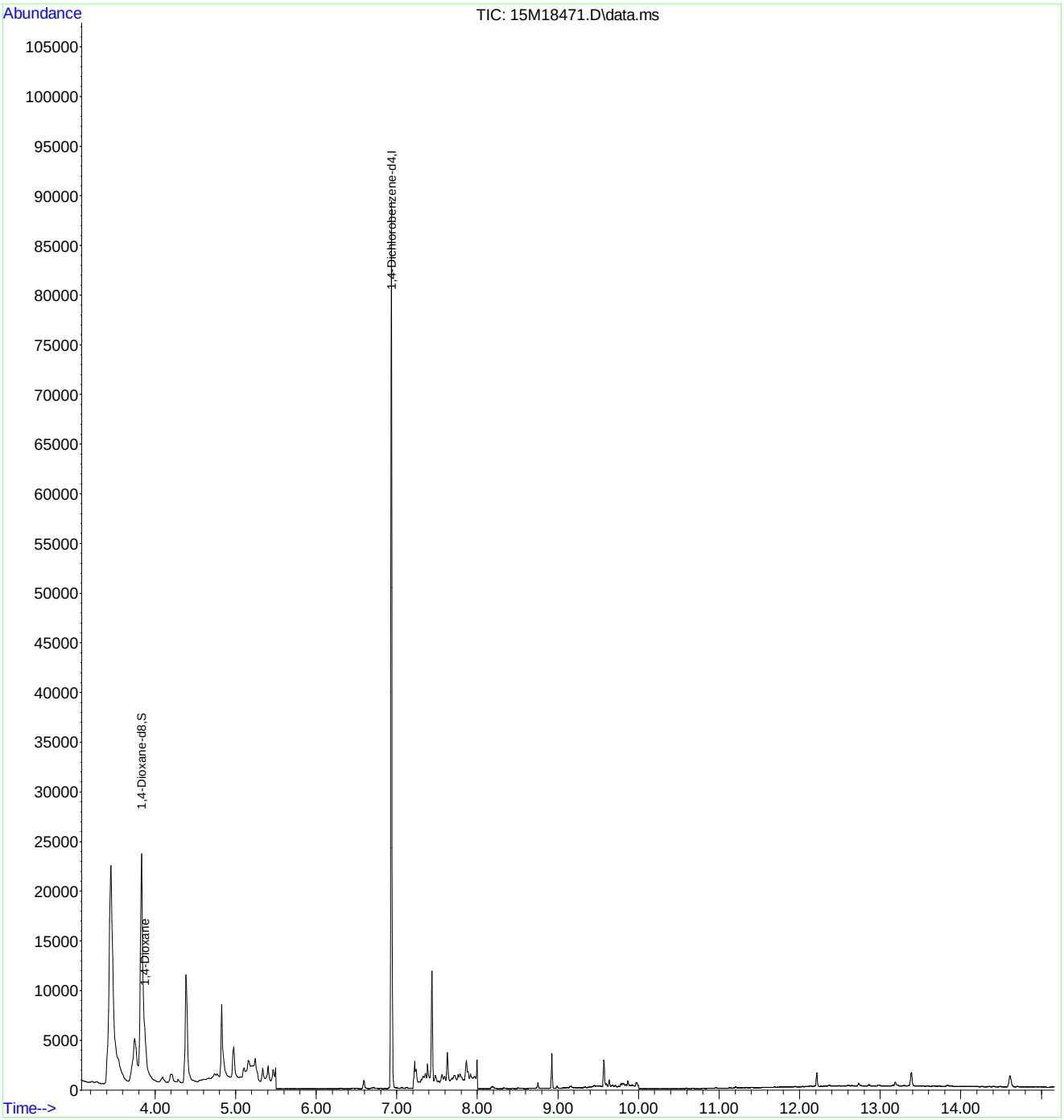

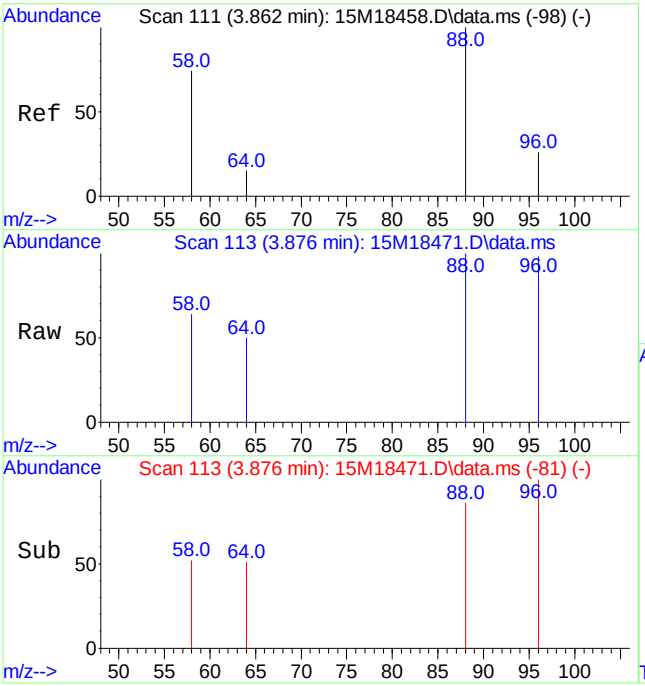

#2
1,4-Dioxane
Concen: 0.28 ug/L
RT: 3.876 min Scan# 113
Delta R.T. 0.014 min
Lab File: 15M18471.D
Acq: 21 Jun 2016 15:11

Tgt Ion: 58 Resp: 2865

Ion	Ratio	Lower	Upper
58	100		
88	132.1	103.1	240.7

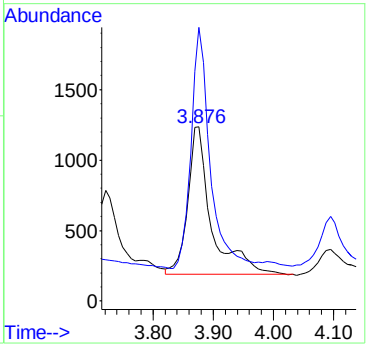

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18472.D
Acq On : 21 Jun 2016 15:34
Operator : MES
Sample : L16060730-02
Misc : 1,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jun 22 08:03:13 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	34547	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	46734	3.2875	ug/L	0.00
Spiked Amount 5.000			Recovery	=	65.80%	
4) Nitrobenzene-d5	7.436	82	7234	0.1982	ug/L	0.00
Spiked Amount 5.000			Recovery	=	4.00%	
5) 2-Fluorobiphenyl	8.926	172	1803	0.0196	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.40%	
6) p-Terphenyl-d14	12.207	244	1115	0.0126	ug/L	0.02
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	3641	0.3445	ug/L	71

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18472.D
Acq On : 21 Jun 2016 15:34
Operator : MES
Sample : L16060730-02
Misc : 1,1
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Jun 22 08:03:13 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

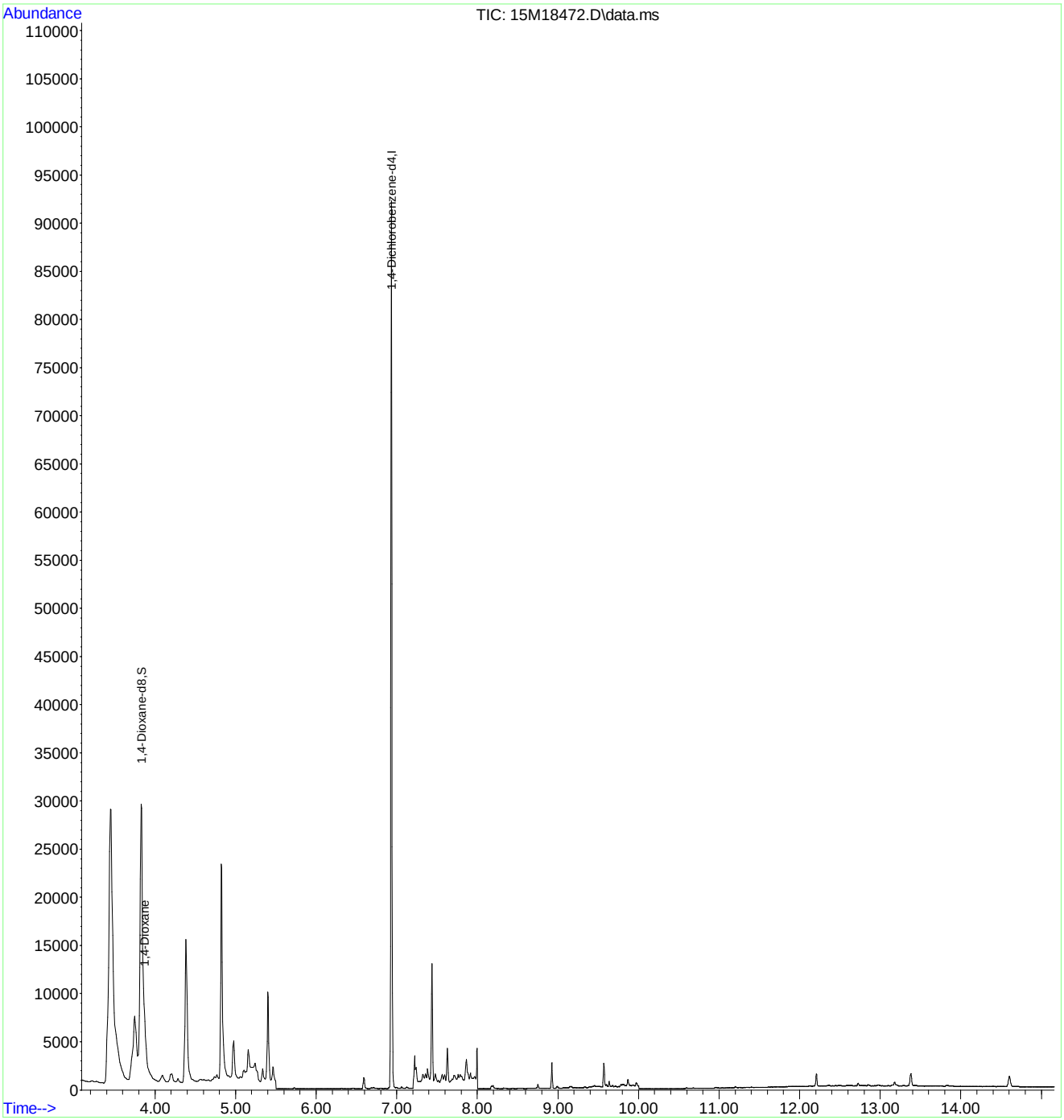

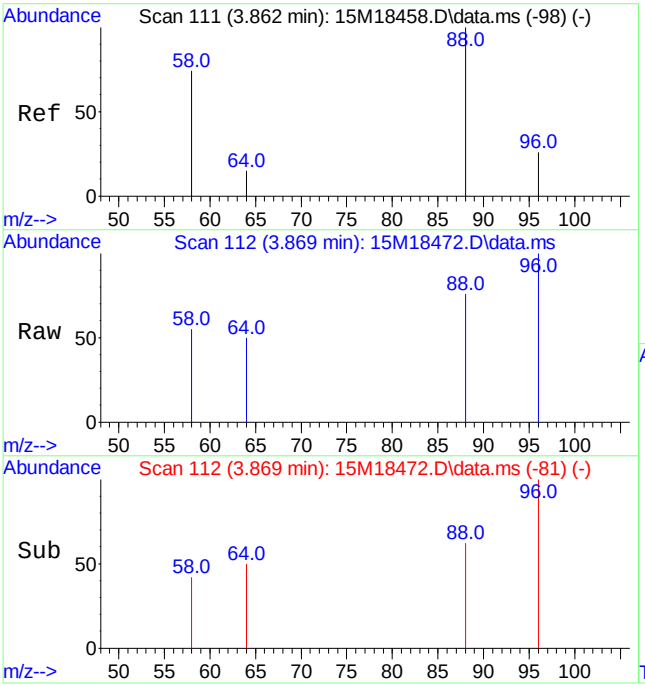

#2
1,4-Dioxane
Concen: 0.34 ug/L
RT: 3.869 min Scan# 112
Delta R.T. 0.007 min
Lab File: 15M18472.D
Acq: 21 Jun 2016 15:34

Tgt Ion: 58 Resp: 3641

Ion	Ratio	Lower	Upper
58	100		
88	131.9	103.1	240.7

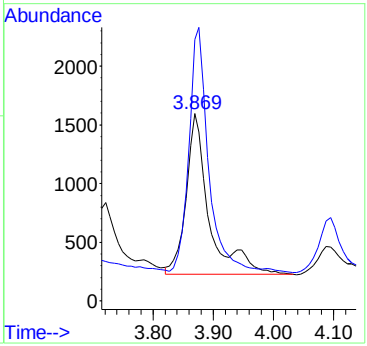

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18474.D
Acq On : 21 Jun 2016 16:19
Operator : MES
Sample : L16060730-03
Misc : 1,1
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Jun 22 08:03:19 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.936	152	32177	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	29820	2.2522	ug/L	0.00
Spiked Amount 5.000			Recovery	=	45.00%	
4) Nitrobenzene-d5	7.436	82	5288	0.1556	ug/L	0.00
Spiked Amount 5.000			Recovery	=	3.20%	
5) 2-Fluorobiphenyl	8.926	172	3787	0.0441	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.80%	
6) p-Terphenyl-d14	12.210	244	1083	0.0131	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.20%	

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18474.D
Acq On : 21 Jun 2016 16:19
Operator : MES
Sample : L16060730-03
Misc : 1,1
ALS Vial : 17 Sample Multiplier: 1

Quant Time: Jun 22 08:03:19 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

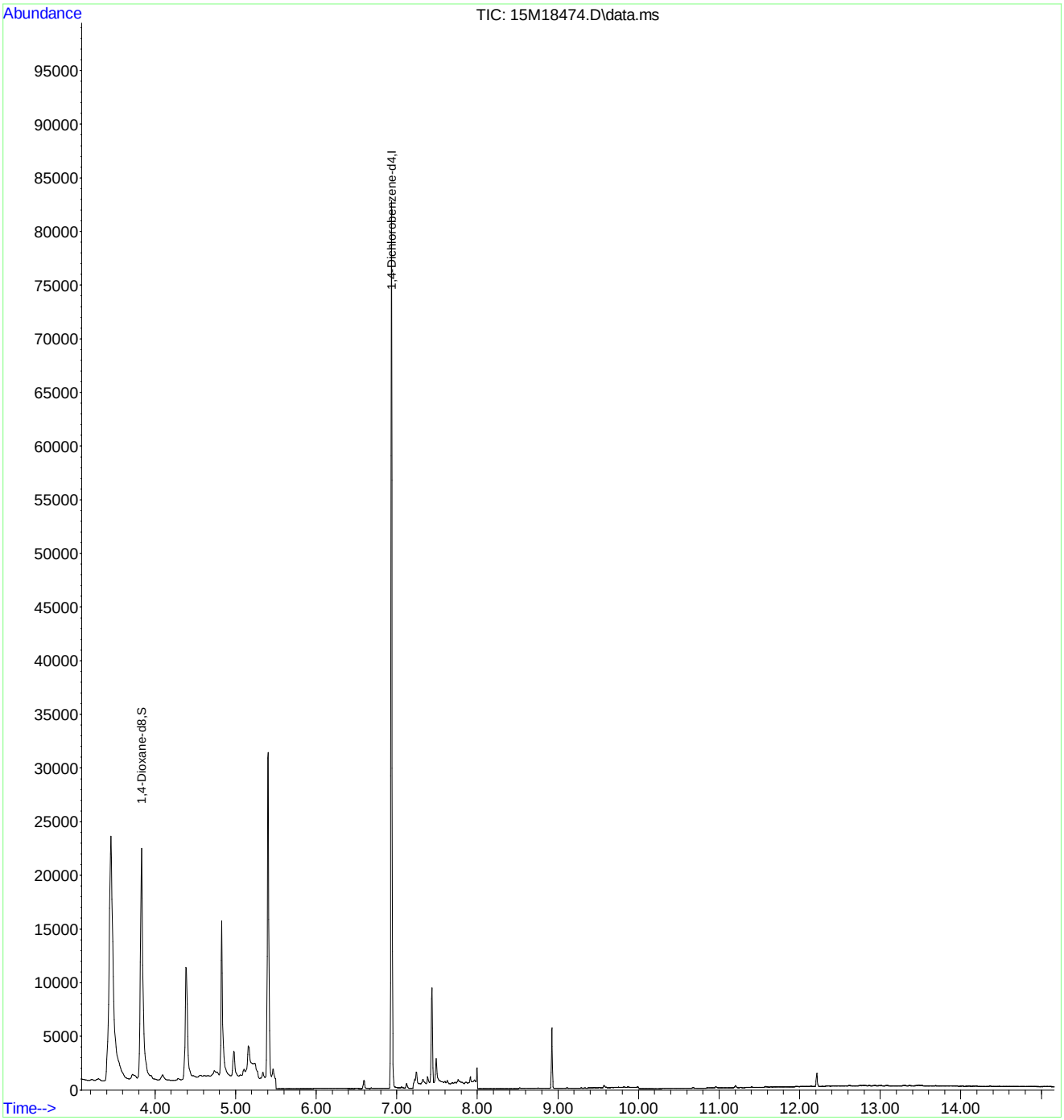

2.2.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 22 08:04:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	39637	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.827	96	82573	5.0627 ug/L	0.00
Spiked Amount 5.000			Recovery	= 101.20%	
4) Nitrobenzene-d5	7.431	82	223381	5.3353 ug/L	0.00
Spiked Amount 5.000			Recovery	= 106.80%	
5) 2-Fluorobiphenyl	8.922	172	533101	5.0444 ug/L	0.00
Spiked Amount 5.000			Recovery	= 100.80%	
6) p-Terphenyl-d14	12.184	244	519544	5.1003 ug/L	0.00
Spiked Amount 5.000			Recovery	= 102.00%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.862	58	60883	5.0202 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 22 08:04:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

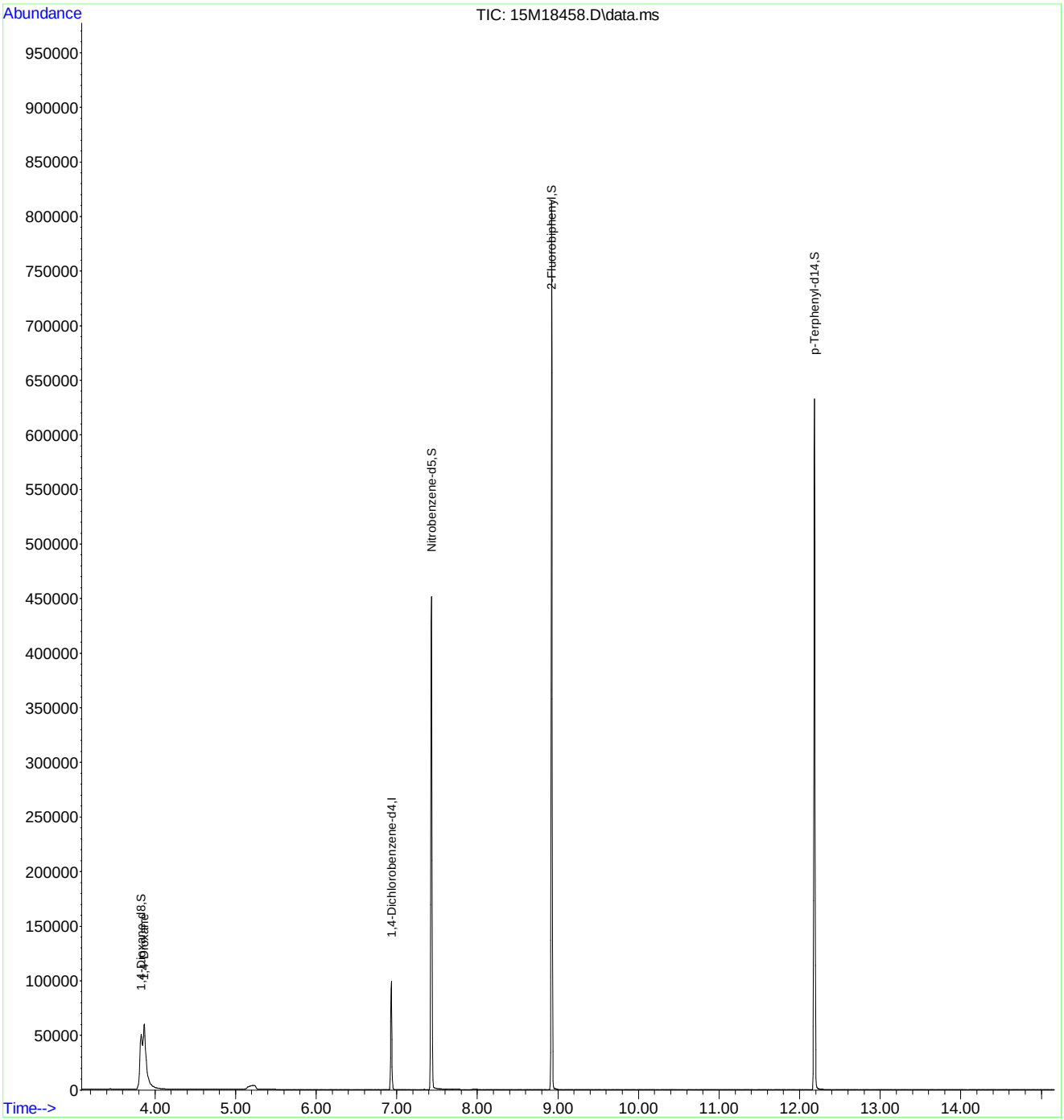

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18459.D
Acq On : 21 Jun 2016 10:27
Operator : MES
Sample : WG573501-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 22 08:04:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	43874	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	186767	10.3452	ug/L	0.00
Spiked Amount 5.000			Recovery = 207.00%			
4) Nitrobenzene-d5	7.431	82	527549	11.3834	ug/L	0.00
Spiked Amount 5.000			Recovery = 227.60%			
5) 2-Fluorobiphenyl	8.926	172	1199799	10.2565	ug/L	0.00
Spiked Amount 5.000			Recovery = 205.20%			
6) p-Terphenyl-d14	12.240	244	1225328	10.8672	ug/L	0.06
Spiked Amount 5.000			Recovery = 217.40%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	138820	10.3412	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18459.D
Acq On : 21 Jun 2016 10:27
Operator : MES
Sample : WG573501-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 22 08:04:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

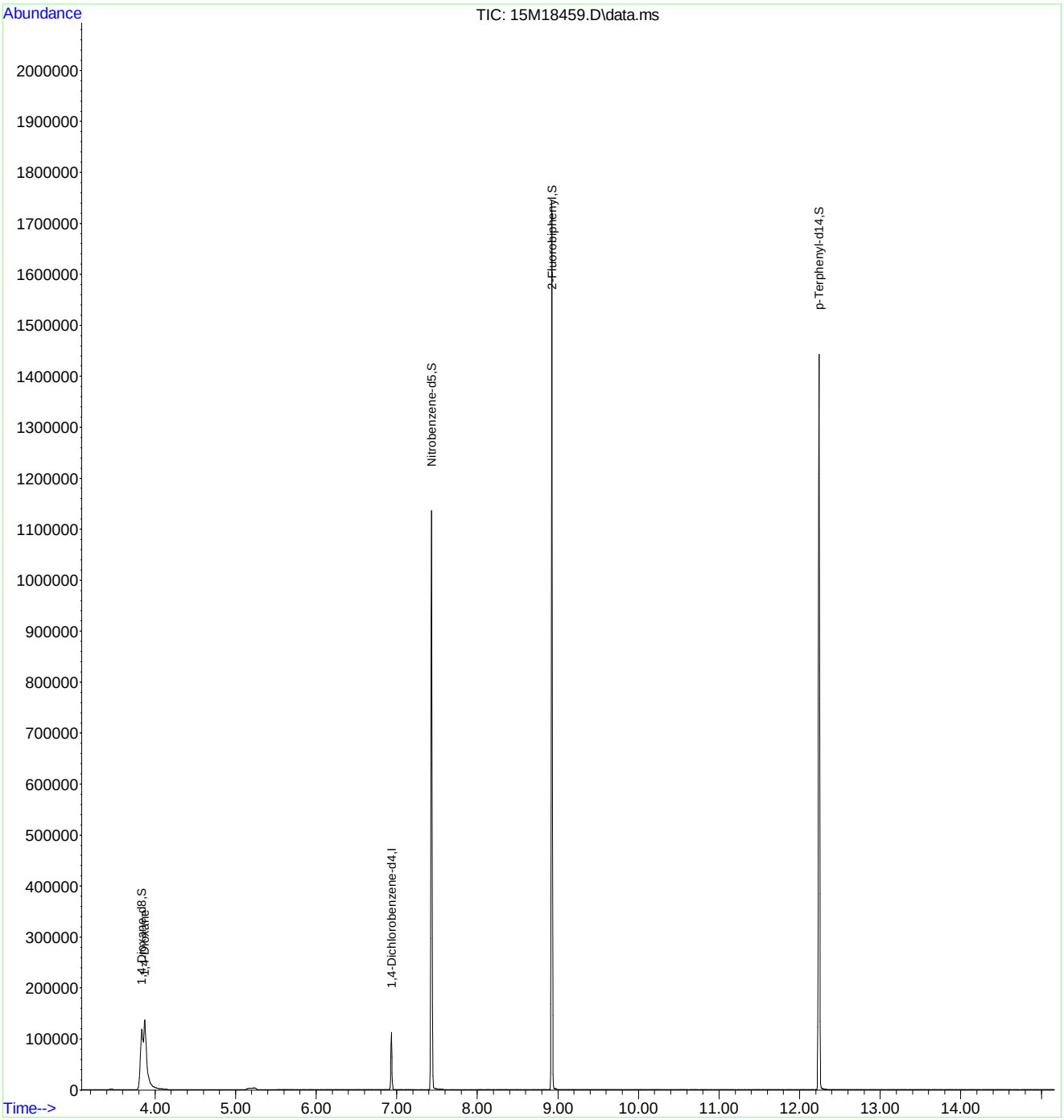

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18460.D
Acq On : 21 Jun 2016 10:49
Operator : MES
Sample : WG573501-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 22 08:04:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	44299	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.834	96	138833	7.6163 ug/L	0.00
Spiked Amount 5.000			Recovery	= 152.40%	
4) Nitrobenzene-d5	7.431	82	389810	8.3306 ug/L	0.00
Spiked Amount 5.000			Recovery	= 166.60%	
5) 2-Fluorobiphenyl	8.923	172	909050	7.6965 ug/L	0.00
Spiked Amount 5.000			Recovery	= 154.00%	
6) p-Terphenyl-d14	12.203	244	921380	8.0931 ug/L	0.02
Spiked Amount 5.000			Recovery	= 161.80%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.876	58	103182	7.6127 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18460.D
Acq On : 21 Jun 2016 10:49
Operator : MES
Sample : WG573501-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 22 08:04:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

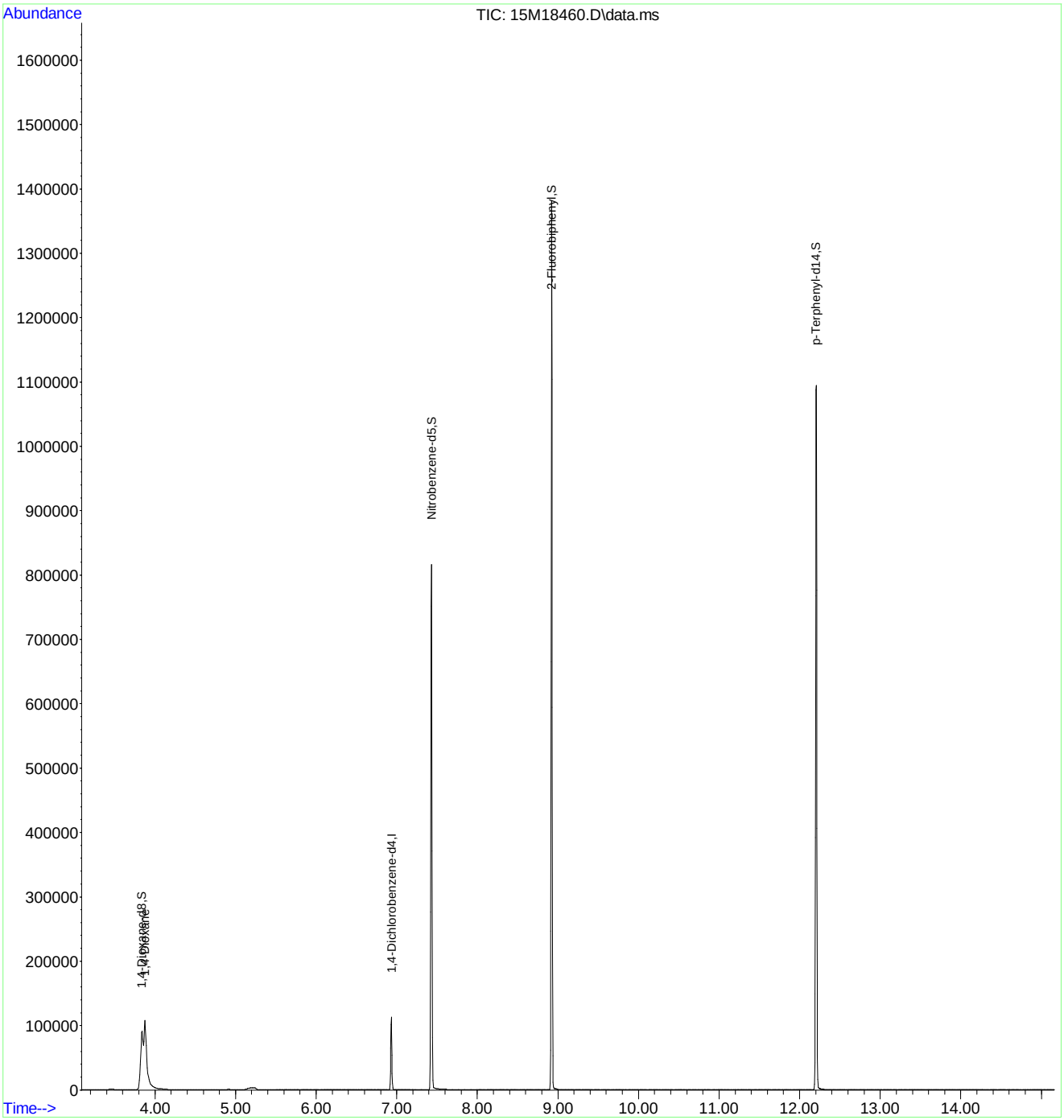

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18461.D
Acq On : 21 Jun 2016 11:12
Operator : MES
Sample : WG573501-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 22 08:04:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	35478	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.827	96	35630	2.4406 ug/L	0.00
Spiked Amount 5.000			Recovery	= 48.80%	
4) Nitrobenzene-d5	7.431	82	88869	2.3714 ug/L	0.00
Spiked Amount 5.000			Recovery	= 47.40%	
5) 2-Fluorobiphenyl	8.923	172	232500	2.4579 ug/L	0.00
Spiked Amount 5.000			Recovery	= 49.20%	
6) p-Terphenyl-d14	12.199	244	218191	2.3930 ug/L	0.02
Spiked Amount 5.000			Recovery	= 47.80%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.862	58	26333	2.4259 ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18461.D
Acq On : 21 Jun 2016 11:12
Operator : MES
Sample : WG573501-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 22 08:04:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

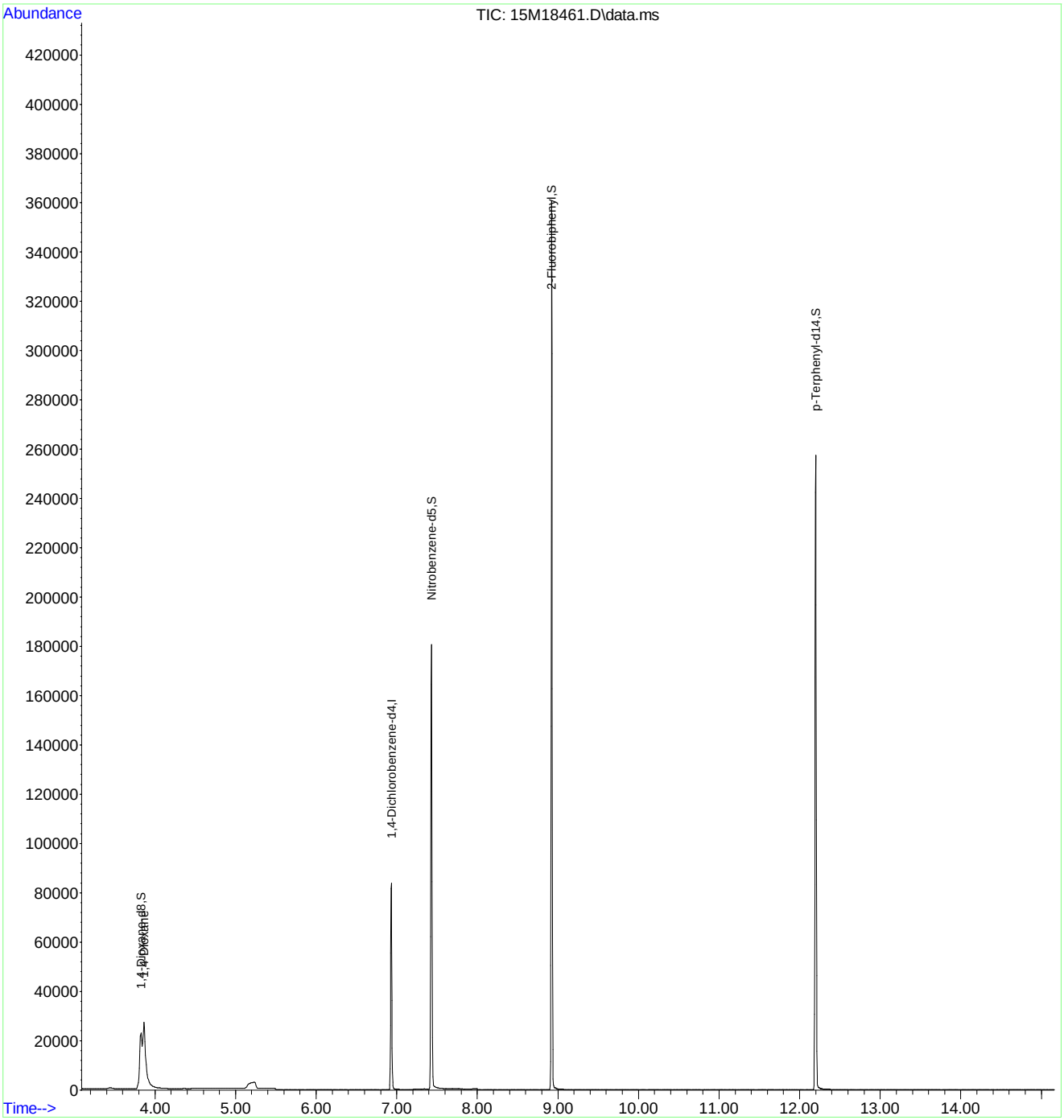

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18462.D
Acq On : 21 Jun 2016 11:34
Operator : MES
Sample : WG573501-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 22 08:04:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	44672	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.841	96	17660	0.9607 ug/L	0.01
Spiked Amount 5.000			Recovery	= 19.20%	
4) Nitrobenzene-d5	7.431	82	41409	0.8776 ug/L	0.00
Spiked Amount 5.000			Recovery	= 17.60%	
5) 2-Fluorobiphenyl	8.922	172	114491	0.9612 ug/L	0.00
Spiked Amount 5.000			Recovery	= 19.20%	
6) p-Terphenyl-d14	12.203	244	105713	0.9208 ug/L	0.02
Spiked Amount 5.000			Recovery	= 18.40%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.876	58	13250	0.9694 ug/L	82

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18462.D
Acq On : 21 Jun 2016 11:34
Operator : MES
Sample : WG573501-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 22 08:04:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

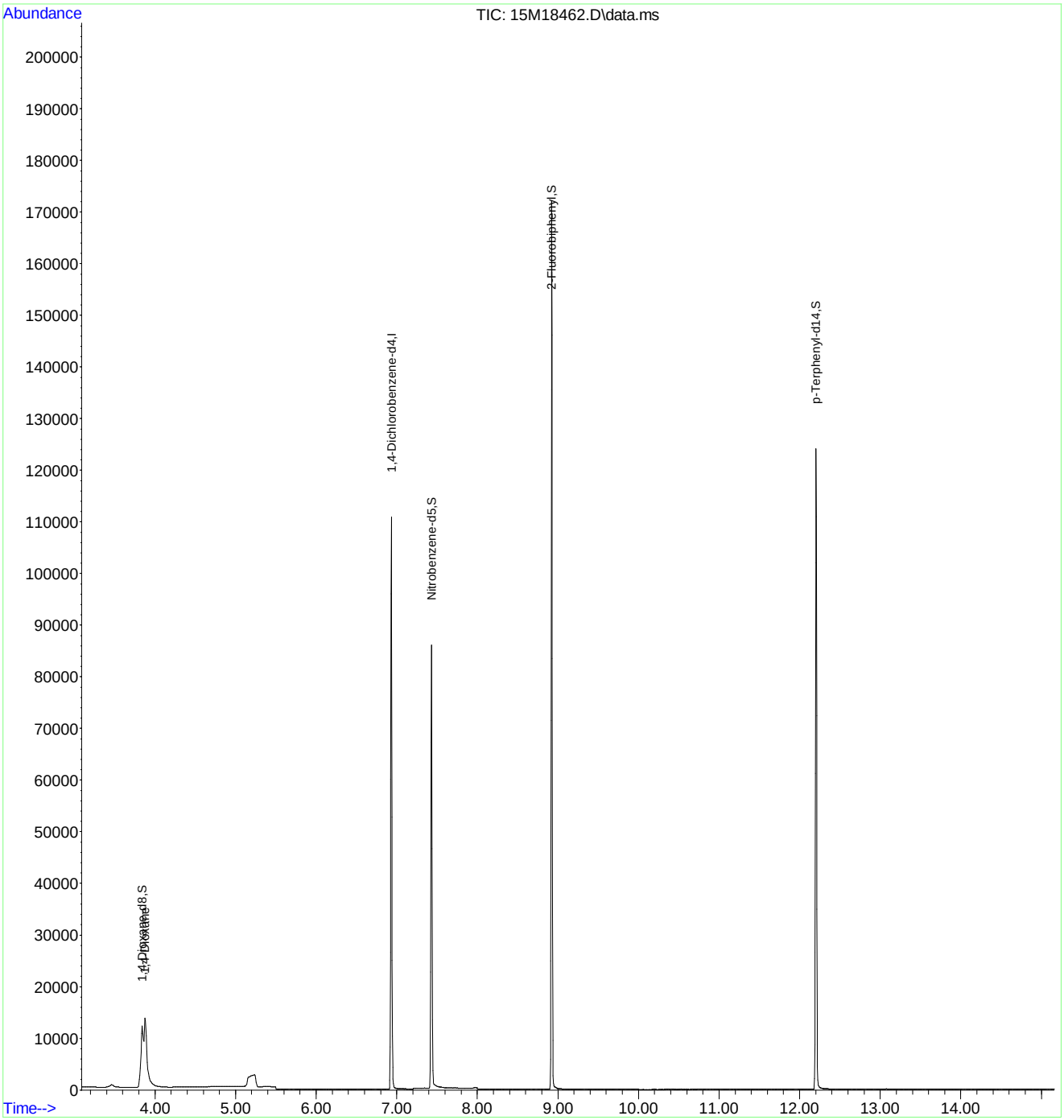

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18463.D
Acq On : 21 Jun 2016 11:57
Operator : MES
Sample : WG573501-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 22 08:04:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	45840	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.841	96	7629	0.4045	ug/L	0.01
Spiked Amount 5.000			Recovery	=	8.00%	
4) Nitrobenzene-d5	7.431	82	16604	0.3429	ug/L	0.00
Spiked Amount 5.000			Recovery	=	6.80%	
5) 2-Fluorobiphenyl	8.923	172	48617	0.3978	ug/L	0.00
Spiked Amount 5.000			Recovery	=	8.00%	
6) p-Terphenyl-d14	12.210	244	44097	0.3743	ug/L	0.03
Spiked Amount 5.000			Recovery	=	7.40%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.876	58	5650	0.4028	ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18463.D
Acq On : 21 Jun 2016 11:57
Operator : MES
Sample : WG573501-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 22 08:04:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

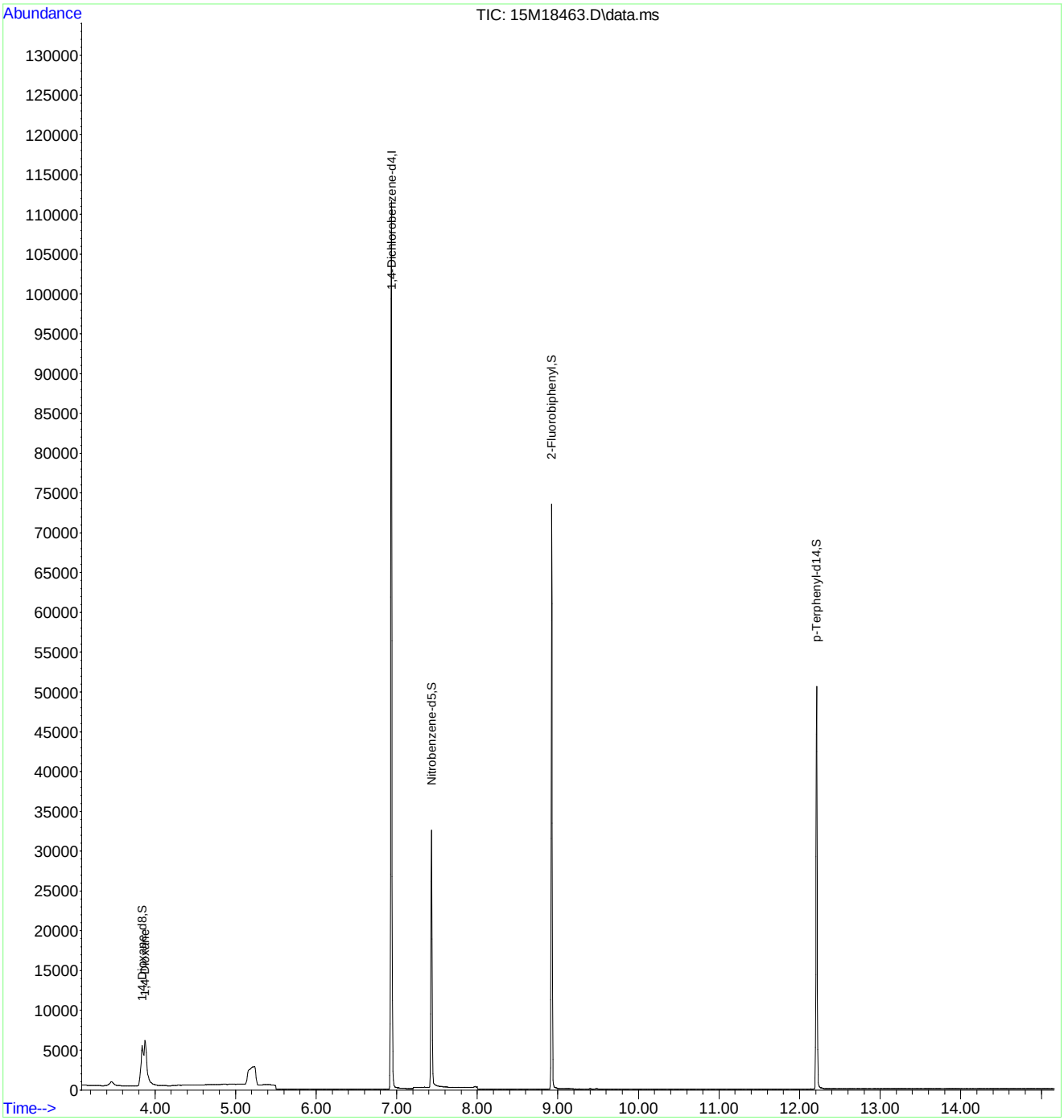

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	41944	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.792	96	22	0.0013	ug/L	-0.04
Spiked Amount 5.000			Recovery	=	0.00%	
4) Nitrobenzene-d5	7.436	82	56	0.0013	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
5) 2-Fluorobiphenyl	8.926	172	23	0.0002	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.214	244	128	0.0012	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	64750	5.0454	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

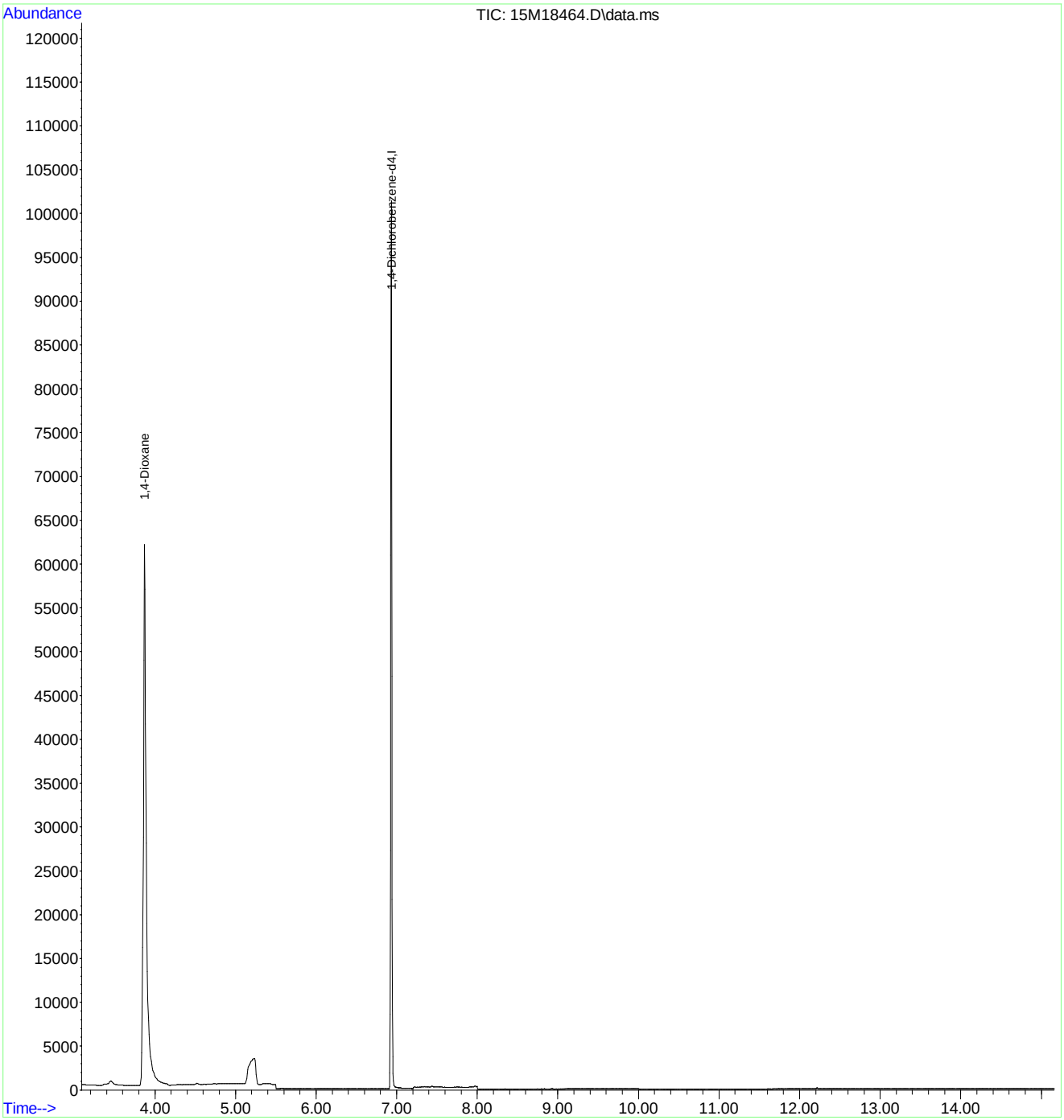

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	106	0.00
2		1,4-Dioxane	5.000	5.045	-0.9	106	0.00
3	S	1,4-Dioxane-d8	5.000	0.001	100.0#	0	-0.04
4	S	Nitrobenzene-d5	5.000	0.001	100.0#	0	0.00
5	S	2-Fluorobiphenyl	5.000	0.000	100.0#	0	0.00
6	S	p-Terphenyl-d14	5.000	0.001	100.0#	0	0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

2.2.1.5 Raw QC Data

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

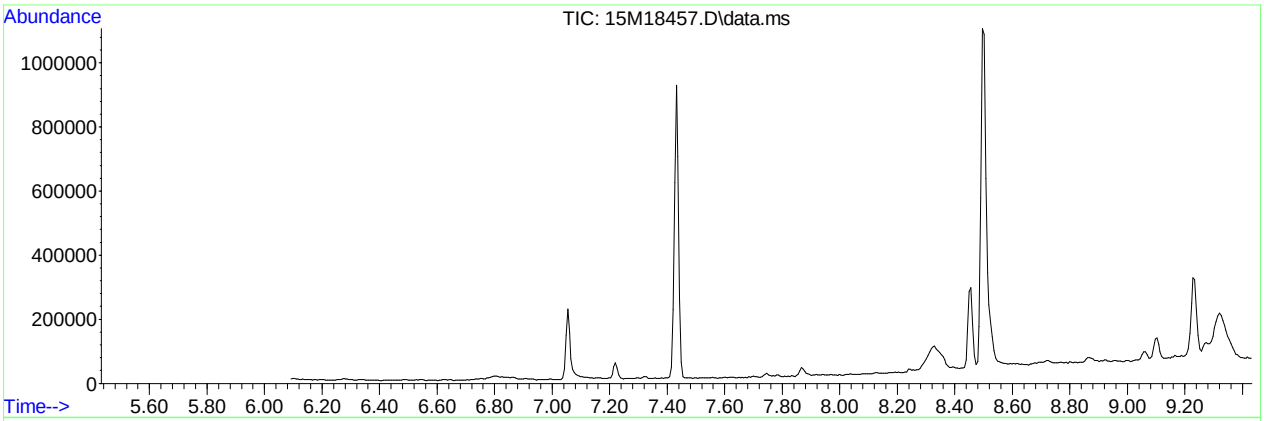

AutoFind: Scans 234, 235, 236; Background Corrected with Scan 228

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	38.8	34488	PASS
68	69	0.00	2	1.4	500	PASS
69	198	0.00	100	41.4	36833	PASS
70	69	0.00	2	0.5	172	PASS
127	198	40	60	51.9	46131	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	88880	PASS
199	198	5	9	6.7	5918	PASS
275	198	10	30	24.9	22090	PASS
365	198	1	100	2.7	2358	PASS
441	443	0.01	100	75.7	9586	PASS
442	198	40	100	73.4	65261	PASS
443	442	17	23	19.4	12659	PASS

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

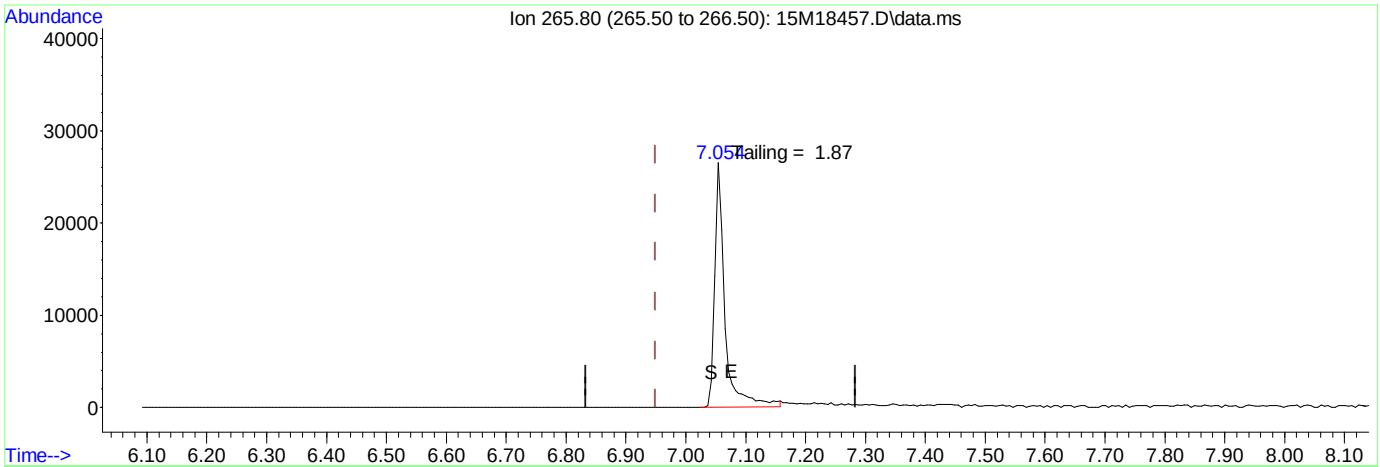

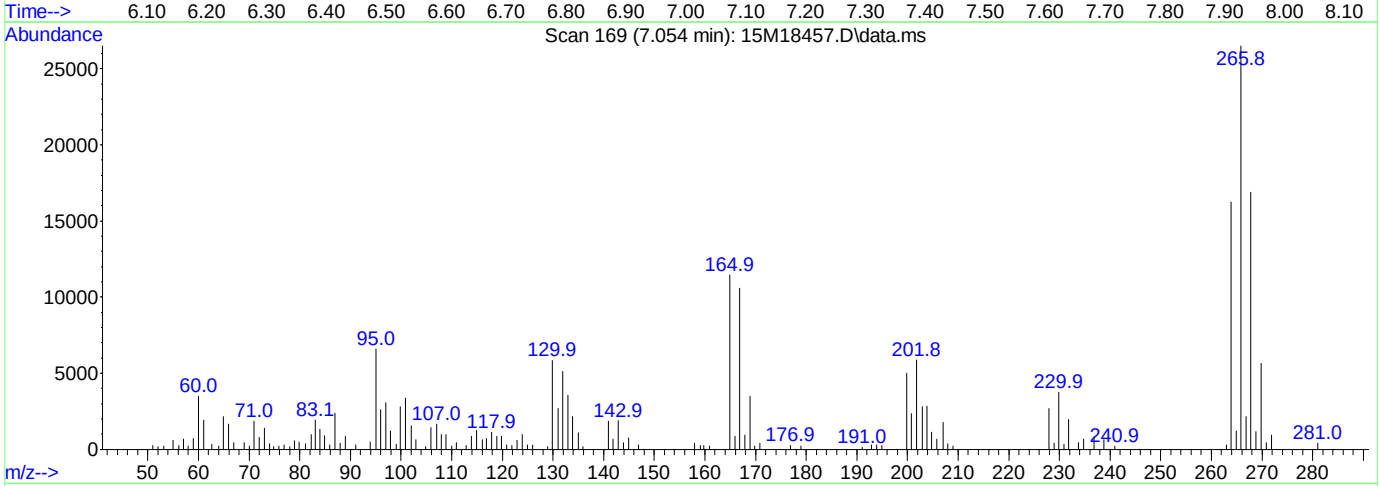

TIC: 15M18457.D\data.ms

(1) Pentachlorophenol

7.054min (+ 0.105) 0.00 ug/ml

response 30738

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

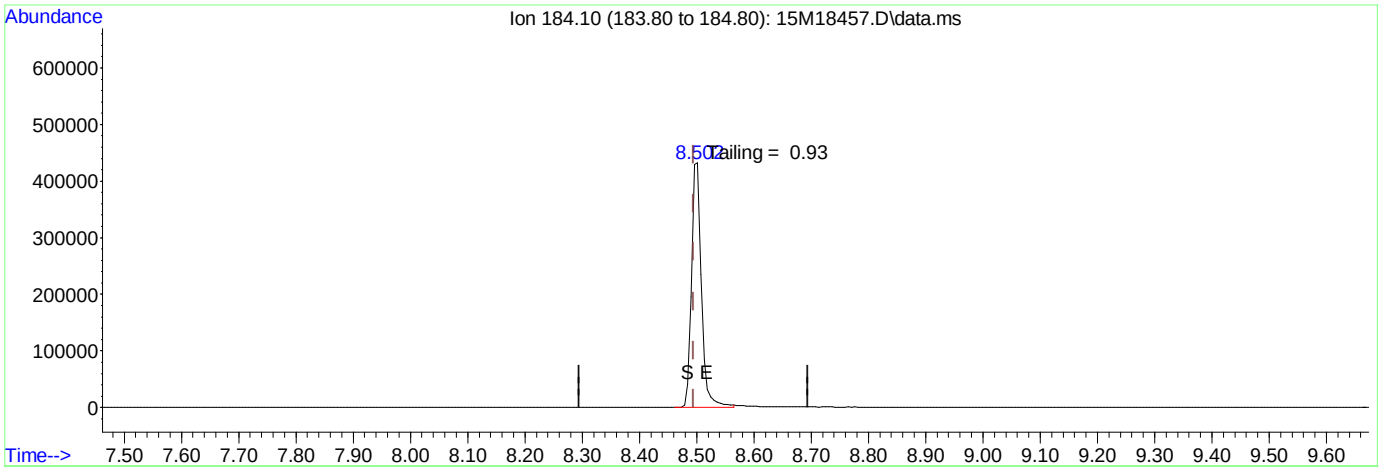

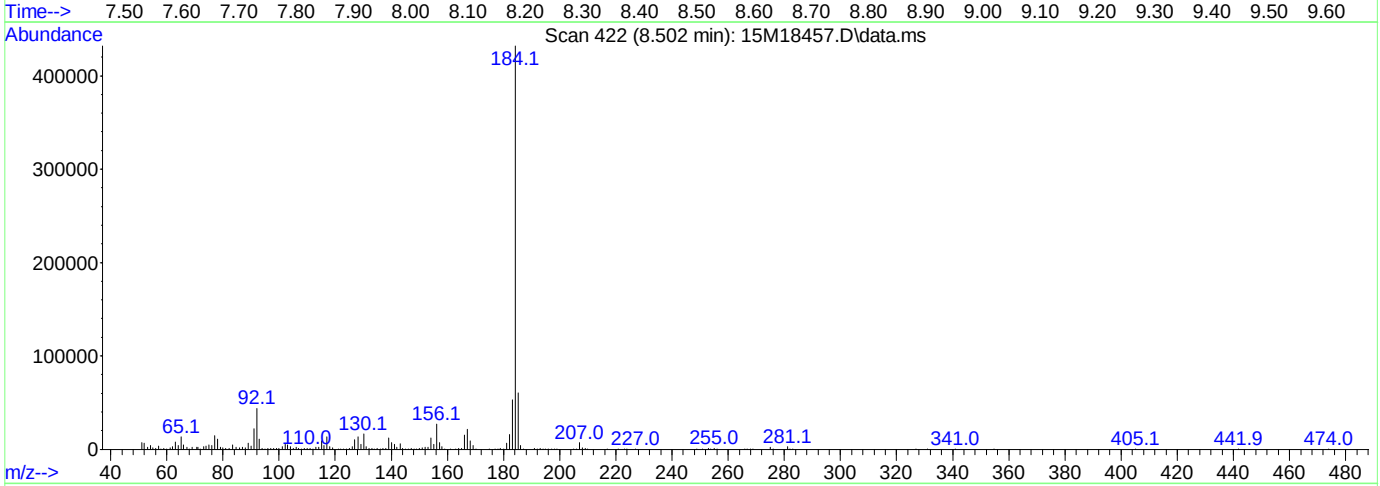

TIC: 15M18457.D\data.ms

(2) Benzidine

8.502min (+ 0.008) 0.00 ug/ml

response 532770

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

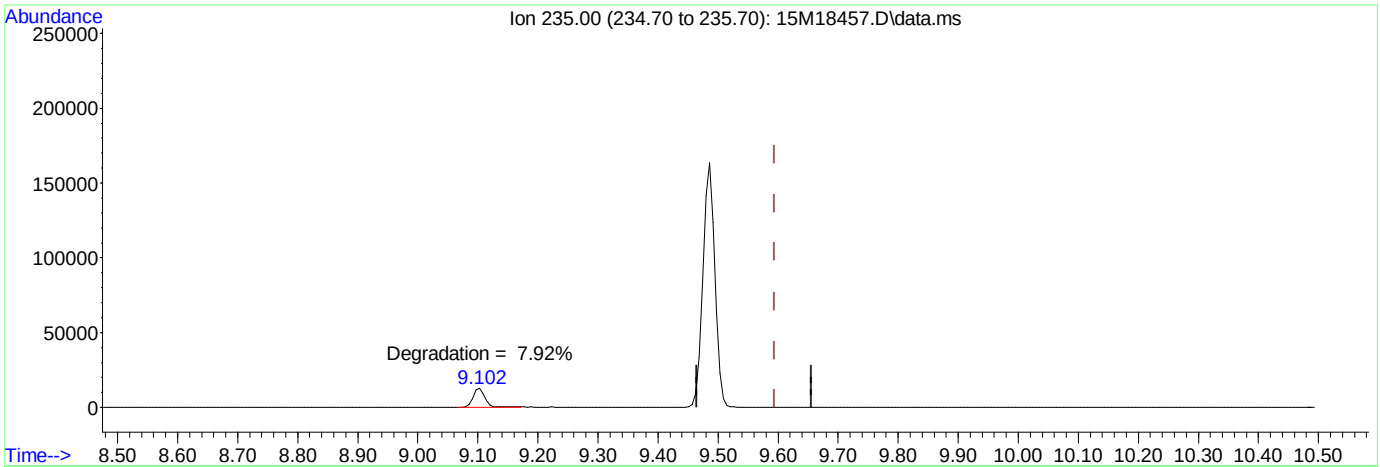

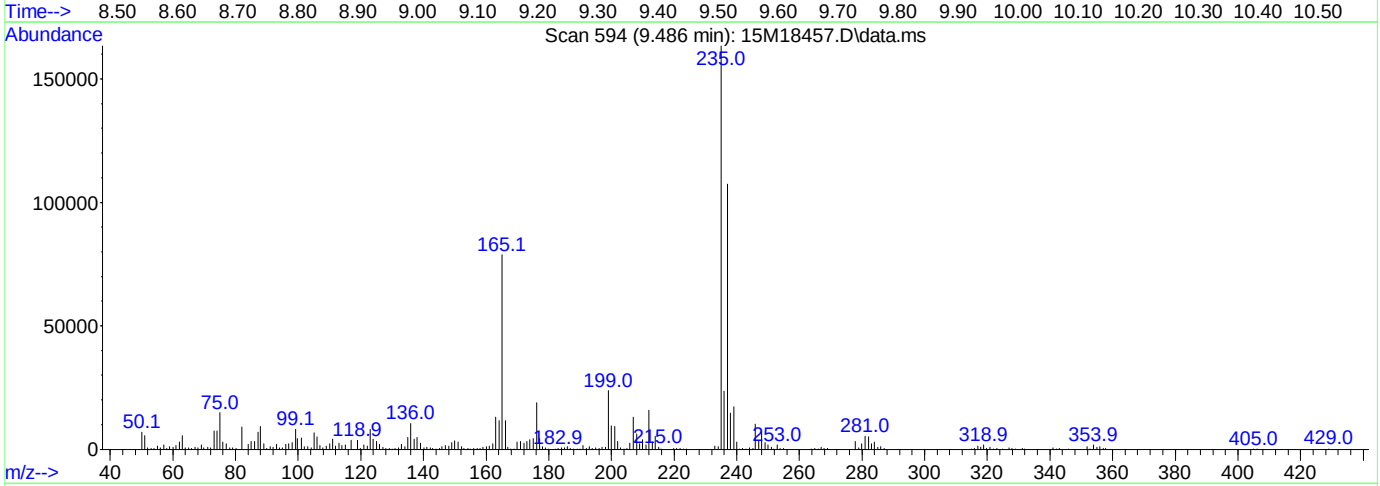

TIC: 15M18457.D\data.ms

(3) DDT

9.486min (-0.108) 0.00 ug/ml

response 180187

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18465.D
Acq On : 21 Jun 2016 12:54
Operator : MES
Sample : WG572806-01 BLANK 6/15
Misc : 1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 21 16:33:15 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.936	152	38899	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	49398	3.0862	ug/L	0.00
Spiked Amount 5.000			Recovery = 61.80%			
4) Nitrobenzene-d5	7.431	82	1663307	40.4808	ug/L	0.00
Spiked Amount 5.000			Recovery = 809.60%			
5) 2-Fluorobiphenyl	8.926	172	3076633	29.6644	ug/L	0.00
Spiked Amount 5.000			Recovery = 593.20%			
6) p-Terphenyl-d14	12.258	244	4064361	40.6562	ug/L	0.07
Spiked Amount 5.000			Recovery = 813.20%			

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18465.D
Acq On : 21 Jun 2016 12:54
Operator : MES
Sample : WG572806-01 BLANK 6/15
Misc : 1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 21 16:33:15 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

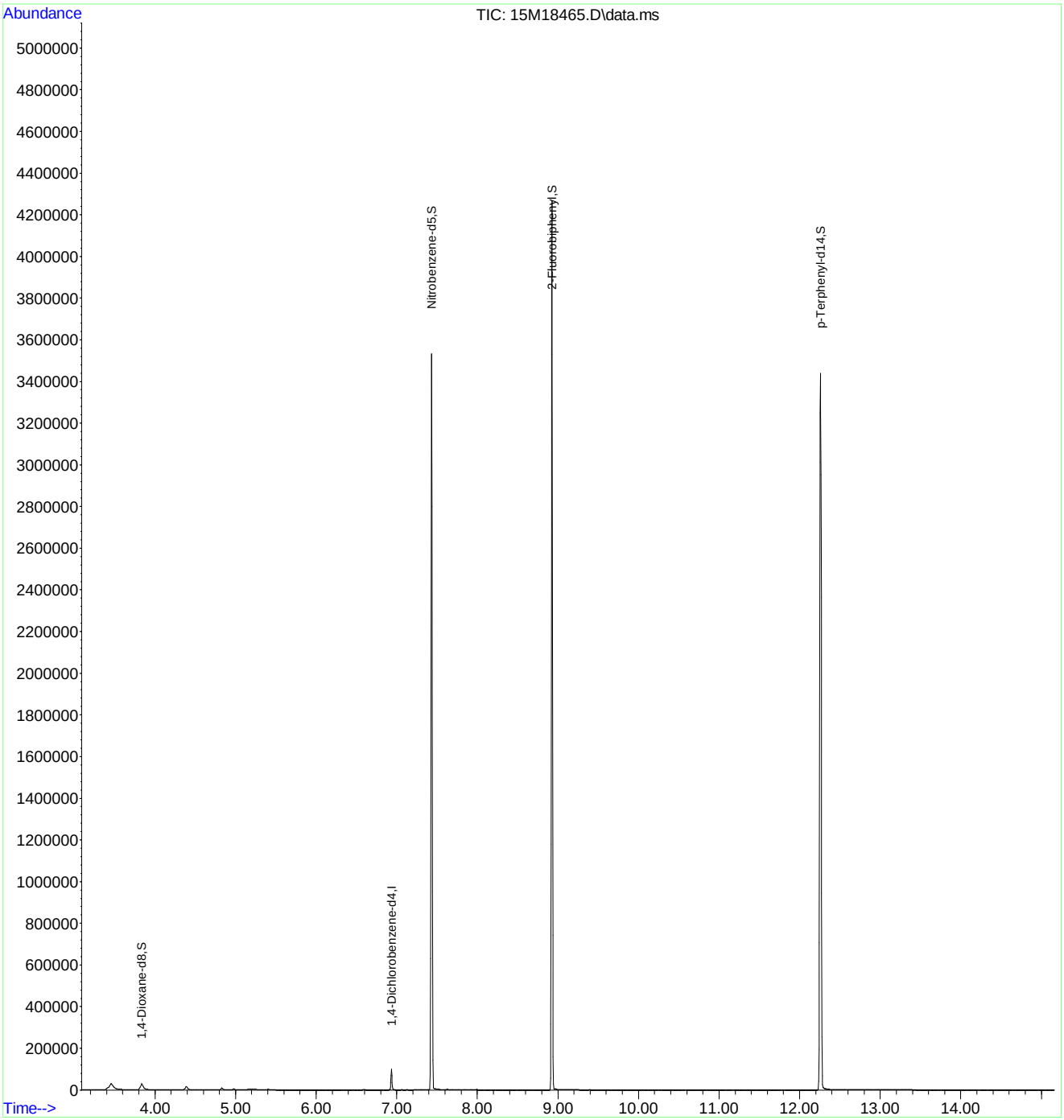

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18466.D
Acq On : 21 Jun 2016 13:17
Operator : MES
Sample : WG572806-02 LCS 6/15
Misc : 1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 22 08:05:00 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	27126	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.820	96	34886	3.1254	ug/L	0.00
Spiked Amount 5.000			Recovery	=	62.60%	
4) Nitrobenzene-d5	7.436	82	2047	0.0714	ug/L	0.00
Spiked Amount 5.000			Recovery	=	1.40%	
5) 2-Fluorobiphenyl	8.923	172	526	0.0073	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.20%	
6) p-Terphenyl-d14	12.229	244	1164	0.0167	ug/L	0.04
Spiked Amount 5.000			Recovery	=	0.40%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.855	58	25161	3.0316	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18466.D
Acq On : 21 Jun 2016 13:17
Operator : MES
Sample : WG572806-02 LCS 6/15
Misc : 1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 22 08:05:00 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

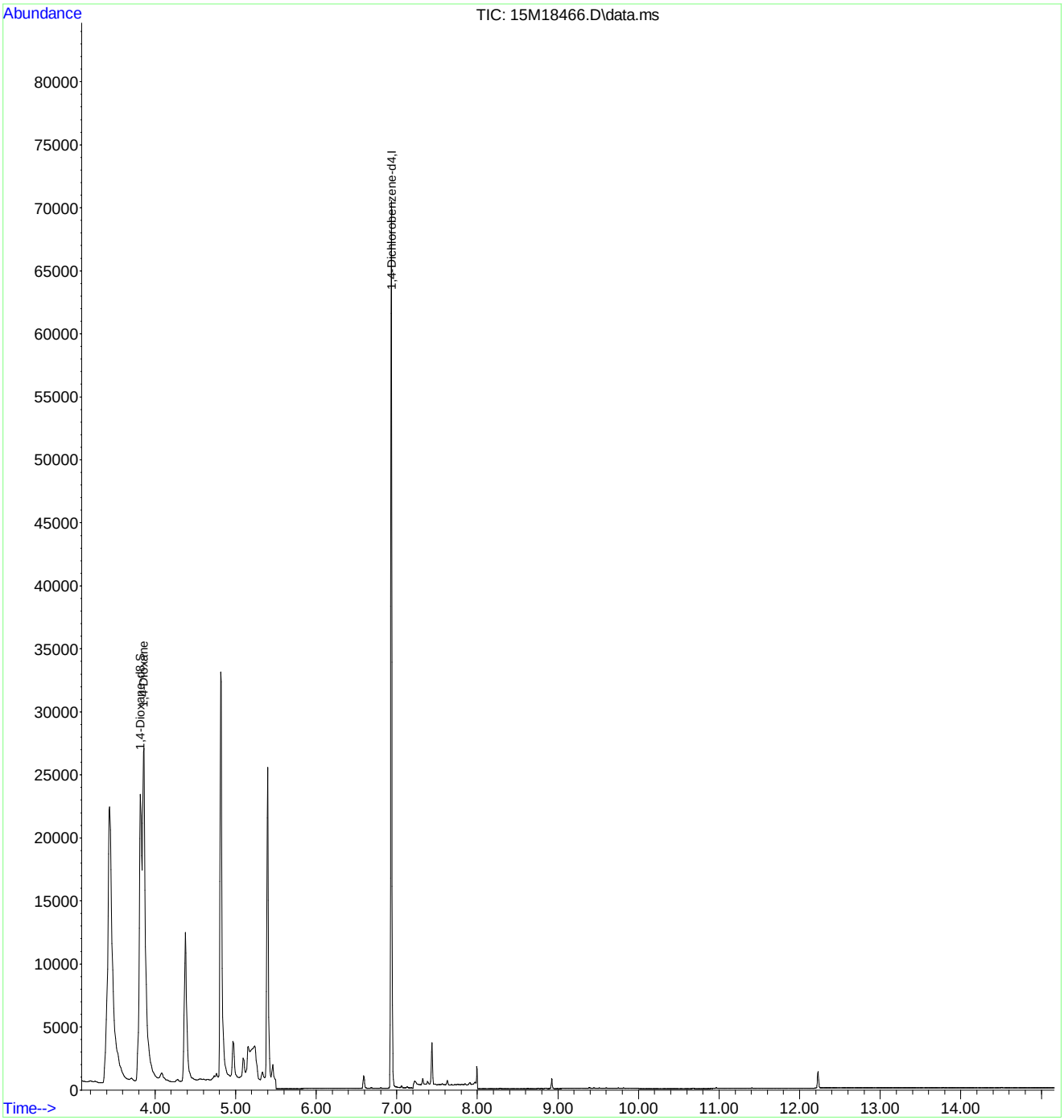

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18467.D
Acq On : 21 Jun 2016 13:40
Operator : MES
Sample : WG572806-03 LCSDUP 6/15
Misc : 1,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jun 22 08:05:03 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	34071	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	32606	2.3257	ug/L	0.00
Spiked Amount 5.000			Recovery	=	46.60%	
4) Nitrobenzene-d5	7.238	82	1167	0.0324	ug/L	-0.19
Spiked Amount 5.000			Recovery	=	0.60%	
5) 2-Fluorobiphenyl	8.923	172	1594	0.0175	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.40%	
6) p-Terphenyl-d14	12.207	244	949	0.0108	ug/L	0.02
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	23691	2.2726	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18467.D
Acq On : 21 Jun 2016 13:40
Operator : MES
Sample : WG572806-03 LCSDUP 6/15
Misc : 1,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jun 22 08:05:03 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

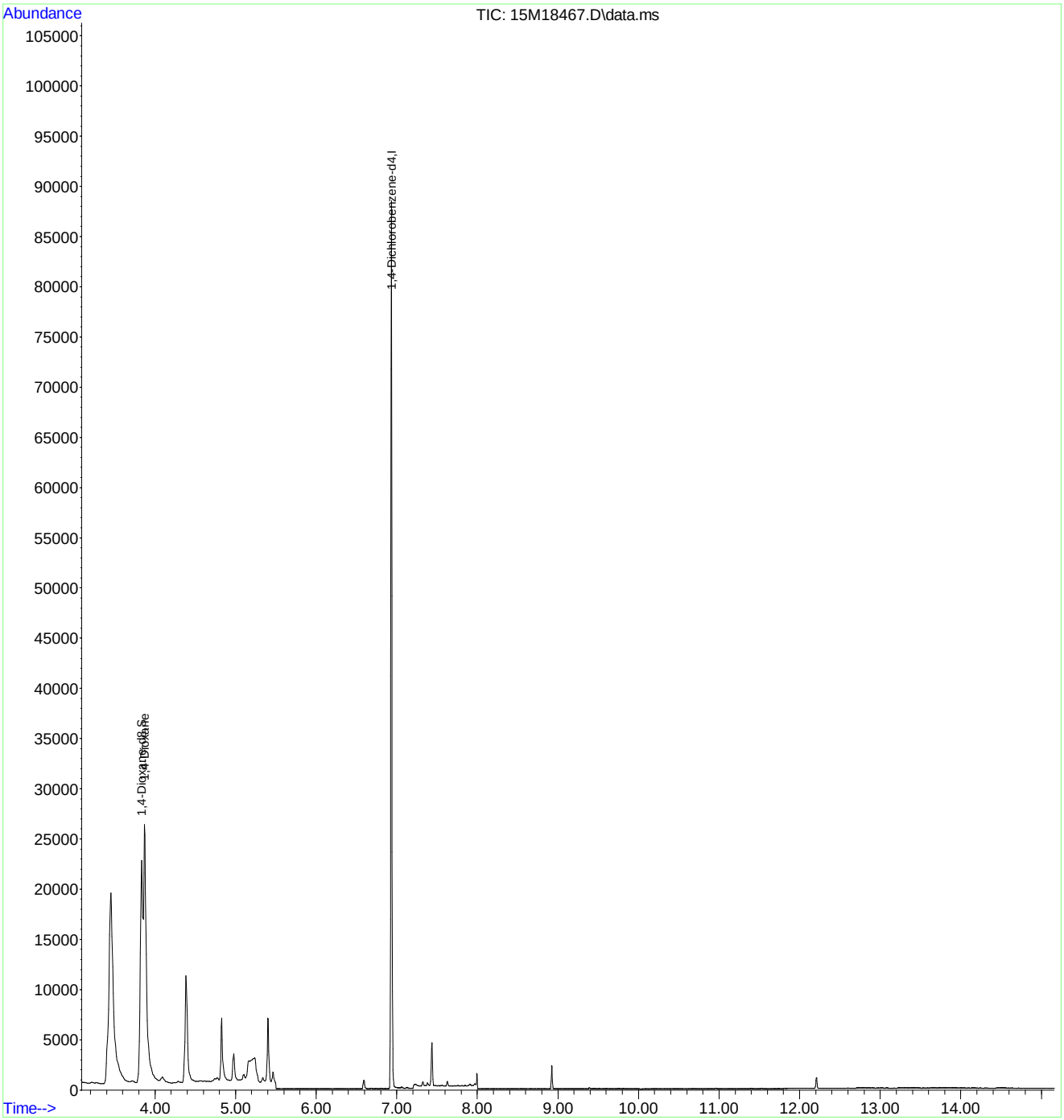

2.2 General Chromatography Data

2.2.2 6850 LC/MS Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW14-061316	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/23/2016 13:42
Collect Date:	06/13/2016 09:15	**Dilution:**	500	**File ID:**	1LM.LM35455
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	505		200	100	50.0

Certificate of Analysis

Sample #:	L16060730-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW14FD-061316	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/23/2016 14:01
Collect Date:	06/13/2016 09:15	**Dilution:**	500	**File ID:**	1LM.LM35456
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	520		200	100	50.0

Certificate of Analysis

Sample #:	L16060730-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW24-061316	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/23/2016 00:03
Collect Date:	06/13/2016 10:35	**Dilution:**	50	**File ID:**	1LM.LM35438
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	99.0		20.0	10.0	5.00

2.2.2.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1401 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG573791-01 MCT	9,940.	
-02 Blank	0.34	
-03 LCS	0.41	
-04 LCS2	0.42	
L16060650-01	2,500.	
-02	1,505.	
-03	839.	
-04	1,830.	
-05	1,832.	
-06	1,104.	
-07	711.	
L16060730-01	4,900.	
-02	4,930.	
-03	10,050.	
L16060732-01	3,060.	
-02	2,940.	
L16060822-01	627.	
-03	1,199.	
-04	901.	
-05	899.	
L16060854-01	3,040.	
L16061180-01	3,020.	

Analyst: John Richards

Date/Time: 06/23/16 13:33

DCN#119262

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

Page: 1 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

Page: 2 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 062216_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG573791 (waters)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments: All samples were initially analyzed neat or at dilutions based on their historical results.
Samples tagged with (NR) did not conform to their historical results. These samples were reanalyzed on the end of the sequence, either neat or at a dilution, based on the results of their initial analysis.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35415	WG573797-01 CCB	1	1		06/22/16 16:48
2	1LM.LM35416	WG573797-02 CCV (1.0ug/L)	1	1	STD75510	06/22/16 17:06
3	1LM.LM35417	WG573791-05 MRL (0.2ug/L)	1	1	STD75510	06/22/16 17:25
4	1LM.LM35418	WG573791-01 MCT (0.2ug/L)	1	1	STD75512	06/22/16 17:44
5	1LM.LM35419	WG573791-02 BLANK	1	1		06/22/16 18:03
6	1LM.LM35420	WG573791-03 LCS (0.2ug/L)	1	1	STD75512	06/22/16 18:22
7	1LM.LM35421	WG573791-04 LCS2 (0.2ug/L)	1	1	STD75512	06/22/16 18:41
8	1LM.LM35422	L16061180-01	1	1		06/22/16 19:00
9	1LM.LM35423	L16060732-01	1	1		06/22/16 19:19
10	1LM.LM35424	L16060732-02	1	1		06/22/16 19:38
11	1LM.LM35425	L16060854-01	1	1		06/22/16 19:57
12	1LM.LM35426	L16060650-01 (10,000x)	1	10000		06/22/16 20:16
13	1LM.LM35427	L16060650-02 (10,000x)	1	10000		06/22/16 20:35
14	1LM.LM35428	WG573797-03 CCV (1.0ug/L)	1	1	STD75510	06/22/16 20:54
15	1LM.LM35429	WG573791-06 MRL (0.2ug/L)	1	1	STD75510	06/22/16 21:13
16	1LM.LM35430	WG573797-04 CCB	1	1		06/22/16 21:31
17	1LM.LM35431	L16060650-03	1	1		06/22/16 21:50
18	1LM.LM35432	L16060650-04 (5,000x) (NR)	1	5000		06/22/16 22:09
19	1LM.LM35433	L16060650-05 (5,000x) (NR)	1	5000		06/22/16 22:28
20	1LM.LM35434	L16060650-06 (100x) (NR)	1	100		06/22/16 22:47
21	1LM.LM35435	L16060650-07	1	1		06/22/16 23:06
22	1LM.LM35436	L16060730-01 (50x) (NR)	1	50		06/22/16 23:25
23	1LM.LM35437	L16060730-02 (50x) (NR)	1	50		06/22/16 23:44
24	1LM.LM35438	L16060730-03 (50x)	1	50		06/23/16 00:03
25	1LM.LM35439	WG573797-05 CCV (1.0ug/L)	1	1	STD75510	06/23/16 00:22
26	1LM.LM35440	WG573791-07 MRL (0.2ug/L)	1	1	STD75510	06/23/16 00:41
27	1LM.LM35441	WG573797-06 CCB	1	1		06/23/16 01:00
28	1LM.LM35442	L16060822-01	1	1		06/23/16 01:19
29	1LM.LM35443	L16060822-03	1	1		06/23/16 01:38
30	1LM.LM35444	L16060822-04 (NR)	1	1		06/23/16 01:57
31	1LM.LM35445	L16060822-05 (NR)	1	1		06/23/16 02:16
32	1LM.LM35446	WG573797-07 CCV (1.0ug/L)	1	1	STD75510	06/23/16 02:34
33	1LM.LM35447	WG573791-08 MRL (0.2ug/L)	1	1	STD75510	06/23/16 02:53

Page: 1 Approved: 24-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 062216_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG573791 (waters)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 NA

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM35448	WG573797-08 CCB	1	1		06/23/16 03:12
35	1LM.LM35449	WG573797-09 CCV (1.0ug/L)	1	1	STD75510	06/23/16 11:49
36	1LM.LM35450	WG573791-09 MRL (0.2ug/L)	1	1	STD75510	06/23/16 12:08
37	1LM.LM35451	WG573797-10 CCB	1	1		06/23/16 12:27
38	1LM.LM35452	L16060650-04 (RR 50x)	1	50		06/23/16 12:46
39	1LM.LM35453	L16060650-05 (RR 50x)	1	50		06/23/16 13:05
40	1LM.LM35454	L16060650-06 (RR Neat)	1	1		06/23/16 13:23
41	1LM.LM35455	L16060730-01 (RR 500x)	1	500		06/23/16 13:42
42	1LM.LM35456	L16060730-02 (RR 500x)	1	500		06/23/16 14:01
43	1LM.LM35457	L16060822-04 (RR 1000x)	1	1000		06/23/16 14:20
44	1LM.LM35458	L16060822-05 (RR 1000x)	1	1000		06/23/16 14:39
45	1LM.LM35459	WG573797-11 CCV (1.0ug/L)	1	1	STD75510	06/23/16 14:58
46	1LM.LM35460	WG573791-10 MRL (0.2ug/L)	1	1	STD75510	06/23/16 15:17
47	1LM.LM35461	WG573797-12 CCB	1	1		06/23/16 15:36

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 2 Approved: 24-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 04-MAY-2016 John Richards

Secondary Reviewer: 05-MAY-2016 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 22-JUN-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 75891
Analytical Workgroups: L16060650, 0730, 0732, 0822, 0854, 1180

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
24-JUN-2016
John Richards

Secondary Reviewer:
24-JUN-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-24-2016 11:54:16

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG573791

Login Number: L16060730

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW14-061316	01	06/13/16					06/22/2016	9.3	28		06/23/16	.9	28	
18CPTMW14FD-061316	02	06/13/16					06/22/2016	9.3	28		06/23/16	.9	28	
18CPTMW24-061316	03	06/13/16					06/22/2016	9.2	28		06/23/16	.3	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4822421
Report generated 06/27/2016 15:53

METHOD BLANK SUMMARY

Login Number: L16060730
Blank File ID: 1LM.LM35419
Prep Date: 06/22/16 16:00
Analyzed Date: 06/22/16 18:03
Analyst: JWR

Work Group: WG573791
Blank Sample ID: WG573791-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG573791-05	1LM.LM35417	06/22/16 17:25	01
MCT	WG573791-01	1LM.LM35418	06/22/16 17:44	01
LCS	WG573791-03	1LM.LM35420	06/22/16 18:22	01
LCS2	WG573791-04	1LM.LM35421	06/22/16 18:41	01
QCMRL	WG573791-06	1LM.LM35429	06/22/16 21:13	01
18CPTMW24-061316	L16060730-03	1LM.LM35438	06/23/16 00:03	DL01
QCMRL	WG573791-07	1LM.LM35440	06/23/16 00:41	01
QCMRL	WG573791-08	1LM.LM35447	06/23/16 02:53	01
QCMRL	WG573791-09	1LM.LM35450	06/23/16 12:08	01
18CPTMW14-061316	L16060730-01	1LM.LM35455	06/23/16 13:42	DL01
18CPTMW14FD-061316	L16060730-02	1LM.LM35456	06/23/16 14:01	DL01
QCMRL	WG573791-10	1LM.LM35460	06/23/16 15:17	01

Report Name: BLANK_SUMMARY
PDF File ID: 4822422
Report generated 06/27/2016 15:53

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060730 Prep Date: 06/22/16 16:00 Sample ID: WG573791-02
Instrument ID: LCMS1 Run Date: 06/22/16 18:03 Prep Method: 6850
File ID: 1LM.LM35419 Analyst: JWR Method: 6850
Workgroup (AAB#): WG573791 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4822423
27-JUN-2016 15:53

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060730 Analyst: JWR Prep Method: 6850
Instrument ID: LCMS1 Matrix: Water Method: 6850
Workgroup (AAB#): WG573791 Units: ug/L
QC Key: DOD4 Lot #: STD75512

Sample ID: WG573791-03 LCS File ID: 1LM.LM35420 Run Date: 06/22/2016 18:22
Sample ID: WG573791-04 LCS2 File ID: 1LM.LM35421 Run Date: 06/22/2016 18:41

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Perchlorate	0.200	0.201	101	0.200	0.215	108	6.73	80 - 120	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4822424
Report generated: 06/27/2016 15:53

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060730
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4822565
Report generated 06/27/2016 15:53

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060730

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4822565
Report generated 06/27/2016 15:53

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060730

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4822565
Report generated 06/27/2016 15:53

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060730

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008

PDF File ID: 4822565

Report generated 06/27/2016 15:53

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060730 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4822566
Report generated 06/27/2016 15:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/22/2016
Sample ID: WG573797-01
Instrument ID: LCMS1
Run Time: 16:48
Method: 6850
File ID: 1LM.LM35415
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822427
Report generated 06/27/2016 15:53

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/22/2016
Sample ID: WG573797-04
Instrument ID: LCMS1
Run Time: 21:31
Method: 6850
File ID: 1LM.LM35430
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822427
Report generated 06/27/2016 15:53

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573797-06
Instrument ID: LCMS1
Run Time: 01:00
Method: 6850
File ID: 1LM.LM35441
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822427
Report generated 06/27/2016 15:53

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573797-08
Instrument ID: LCMS1
Run Time: 03:12
Method: 6850
File ID: 1LM.LM35448
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822427
Report generated 06/27/2016 15:53

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573797-10
Instrument ID: LCMS1
Run Time: 12:27
Method: 6850
File ID: 1LM.LM35451
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822427
Report generated 06/27/2016 15:53

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573797-12
Instrument ID: LCMS1
Run Time: 15:36
Method: 6850
File ID: 1LM.LM35461
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822427
Report generated 06/27/2016 15:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/22/2016
Sample ID: WG573797-02
Instrument ID: LCMS1
Run Time: 17:06
Method: 6850
File ID: 1LM.LM35416
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.997	ug/L	1.68	0.300	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822426
Report generated 06/27/2016 15:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/22/2016
Sample ID: WG573797-03
Instrument ID: LCMS1
Run Time: 20:54
Method: 6850
File ID: 1LM.LM35428
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.75	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822426
Report generated 06/27/2016 15:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573797-05
Instrument ID: LCMS1
Run Time: 00:22
Method: 6850
File ID: 1LM.LM35439
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.74	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822426
Report generated 06/27/2016 15:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573797-07
Instrument ID: LCMS1
Run Time: 02:34
Method: 6850
File ID: 1LM.LM35446
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.75	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822426
Report generated 06/27/2016 15:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573797-09
Instrument ID: LCMS1
Run Time: 11:49
Method: 6850
File ID: 1LM.LM35449
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.71	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822426
Report generated 06/27/2016 15:53

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573797-11
Instrument ID: LCMS1
Run Time: 14:58
Method: 6850
File ID: 1LM.LM35459
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.05	ug/L	1.77	5.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822426
Report generated 06/27/2016 15:53

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060730 Run Date: 06/22/2016 Sample ID: WG573791-05
Instrument ID: LCMS1 Run Time: 17:25 Prep Method: 6850
File ID: 1LM.LM35417 Analyst: JWR Method: 6850
Workgroup (AAB#): WG573791 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4822425
Report generated 06/27/2016 15:53

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060730 Run Date: 06/22/2016 Sample ID: WG573791-06
Instrument ID: LCMS1 Run Time: 21:13 Prep Method: 6850
File ID: 1LM.LM35429 Analyst: JWR Method: 6850
Workgroup (AAB#): WG573791 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.204	102	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4822425
Report generated 06/27/2016 15:53

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060730 Run Date: 06/23/2016 Sample ID: WG573791-07
Instrument ID: LCMS1 Run Time: 00:41 Prep Method: 6850
File ID: 1LM.LM35440 Analyst: JWR Method: 6850
Workgroup (AAB#): WG573791 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.210	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4822425
Report generated 06/27/2016 15:53

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060730 Run Date: 06/23/2016 Sample ID: WG573791-08
Instrument ID: LCMS1 Run Time: 02:53 Prep Method: 6850
File ID: 1LM.LM35447 Analyst: JWR Method: 6850
Workgroup (AAB#): WG573791 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.214	107	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4822425
Report generated 06/27/2016 15:53

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060730 Run Date: 06/23/2016 Sample ID: WG573791-09
Instrument ID: LCMS1 Run Time: 12:08 Prep Method: 6850
File ID: 1LM.LM35450 Analyst: JWR Method: 6850
Workgroup (AAB#): WG573791 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.209	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4822425
Report generated 06/27/2016 15:53

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060730 Run Date: 06/23/2016 Sample ID: WG573791-10
Instrument ID: LCMS1 Run Time: 15:17 Prep Method: 6850
File ID: 1LM.LM35460 Analyst: JWR Method: 6850
Workgroup (AAB#): WG573791 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.201	101	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4822425
Report generated 06/27/2016 15:53

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16060730
Instrument ID: LCMS1
Workgroup (AAB#): WG573791

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16060730-01	500	DL01	439000
L16060730-02	500	DL01	446000
L16060730-03	50.0	DL01	405000
WG573791-02	1.00	01	436000
WG573791-03	1.00	01	440000
WG573791-04	1.00	01	435000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4822428
Report generated 06/27/2016 15:53

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**	6850	**Samplenum:**	L16060730-01
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35455
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 13:42	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	149000	52200	2.85	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**	6850	**Samplenum:**	L16060730-02
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35456
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 14:01	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	157000	54000	2.91	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**	6850	**Samplenum:**	L16060730-03
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35438
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 00:03	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	269000	93600	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**	6850	**Samplenum:**	WG573791-01
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35418
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 17:44	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	28500	10000	2.85	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**	6850	**Samplenum:**	WG573791-02
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35419
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 18:03	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	505	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**	6850	**Samplenum:**	WG573791-03
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35420
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 18:22	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	30300	11500	2.63	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**	6850	**Samplenum:**	WG573791-04
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35421
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 18:41	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32000	11500	2.78	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**	6850	**Samplenum:**	WG573791-05
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35417
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 17:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	31200	11200	2.79	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**	6850	**Samplenum:**	WG573791-06
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35429
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 21:13	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34500	12500	2.76	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**	6850	**Samplenum:**	WG573791-07
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35440
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 00:41	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36700	12900	2.84	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**	6850	**Samplenum:**	WG573791-08
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35447
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 02:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34800	11700	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**	6850	**Samplenum:**	WG573791-09
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35450
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 12:08	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	30500	11000	2.77	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**	6850	**Samplenum:**	WG573791-10
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35460
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 15:17	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32000	12700	2.52	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**		**Samplenum:**	WG573797-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35415
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 16:48	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	583	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**		**Samplenum:**	WG573797-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35416
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 17:06	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	151000	54200	2.79	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**		**Samplenum:**	WG573797-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35428
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 20:54	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	172000	61400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**		**Samplenum:**	WG573797-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35430
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 21:31	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	223	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**		**Samplenum:**	WG573797-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35439
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 00:22	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	176000	61500	2.86	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**		**Samplenum:**	WG573797-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35441
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 01:00	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**		**Samplenum:**	WG573797-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35446
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 02:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	58500	2.89	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**		**Samplenum:**	WG573797-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35448
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 03:12	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**		**Samplenum:**	WG573797-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35449
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 11:49	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	142000	50700	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**		**Samplenum:**	WG573797-10
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35451
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 12:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	560	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**		**Samplenum:**	WG573797-11
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35459
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 14:58	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	167000	56000	2.98	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060730	**Prep Method:**		**Samplenum:**	WG573797-12
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35461
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 15:36	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

2.2.2.3 Sample Data

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Printed: 6/23/2016 5:06 PM

Data File	LM35455.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 1:42:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060730-01 (RR 500x)	**Injection Vial**	29.00
Data File	LM35455.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 1:42:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	L16060730-01	**Dilution Factor**	1.00
Sample Comment	1,500.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.390e+05	9.52	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.490e+05	9.53	N/A	1.01
Perchlorate conf	5.220e+04	9.52	N/A	1.04

O18LP (Internal Standard)

RT (Exp. RT): 9.52(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

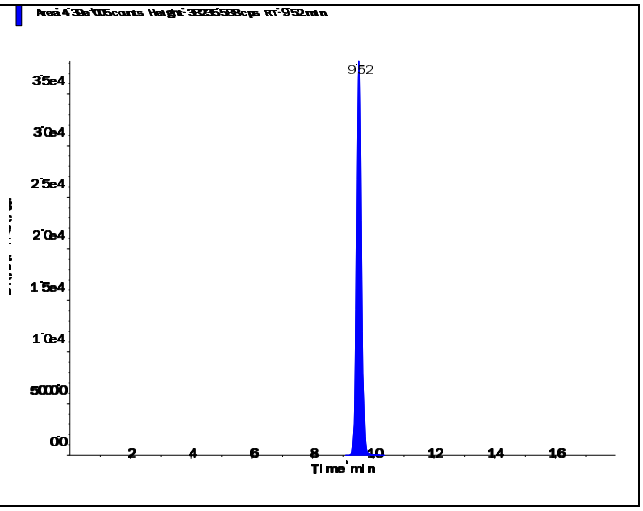

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.53 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.34
Sample Type:	(Unknown)

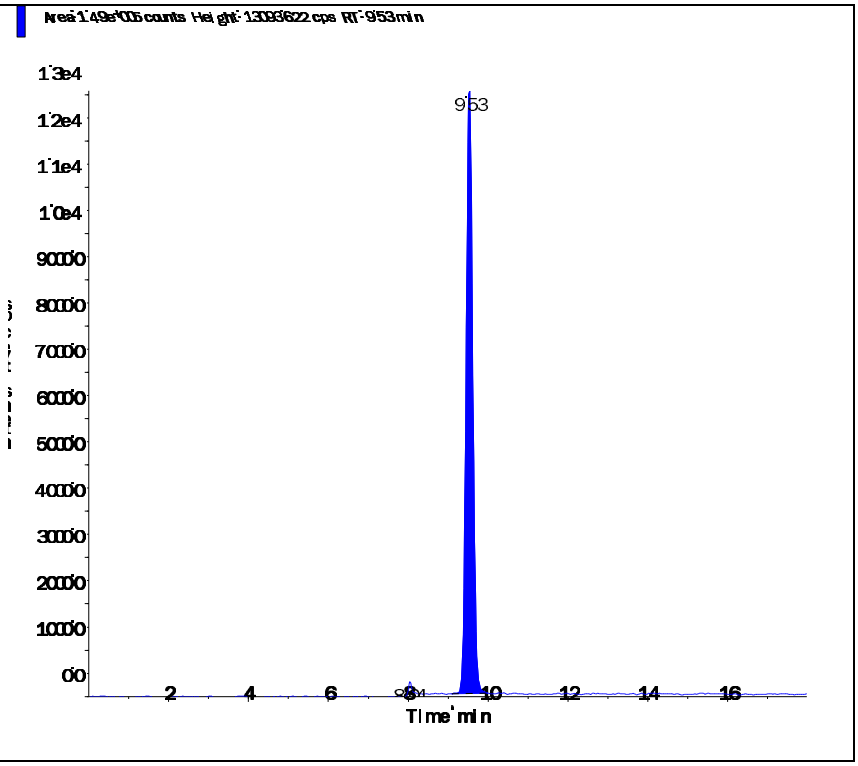

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.52 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.119
Sample Type:	(Unknown)

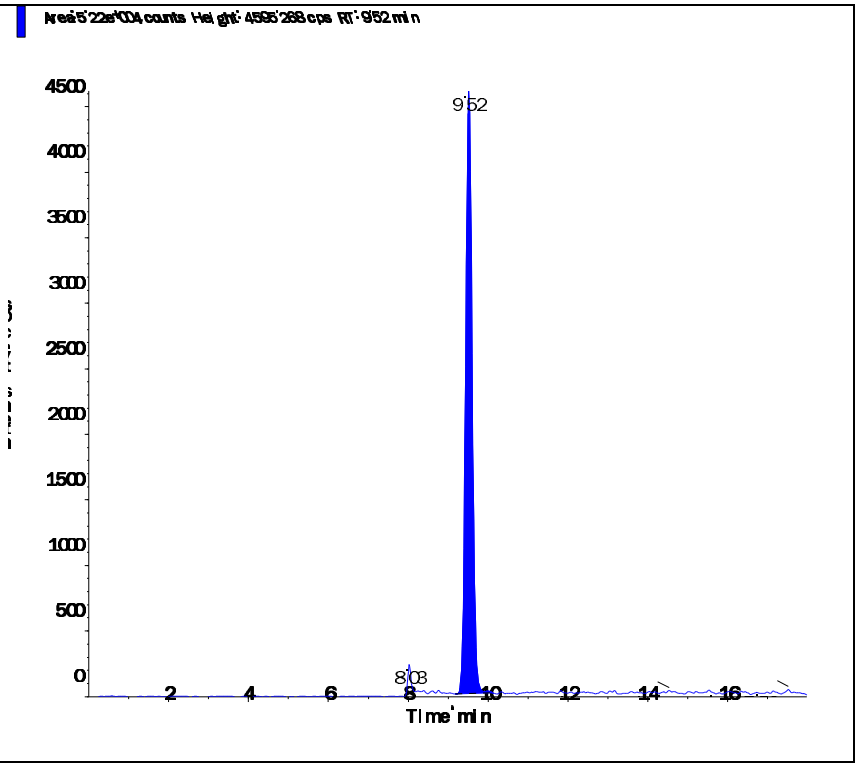

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Printed: 6/23/2016 5:06 PM

Data File	LM35456.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 2:01:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060730-02 (RR 500x)	**Injection Vial**	30.00
Data File	LM35456.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 2:01:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	L16060730-02	**Dilution Factor**	1.00
Sample Comment	1,500.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.460e+05	9.53	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.570e+05	9.55	N/A	1.04
Perchlorate conf	5.400e+04	9.53	N/A	1.06

O18LP (Internal Standard)

RT (Exp. RT): 9.53(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

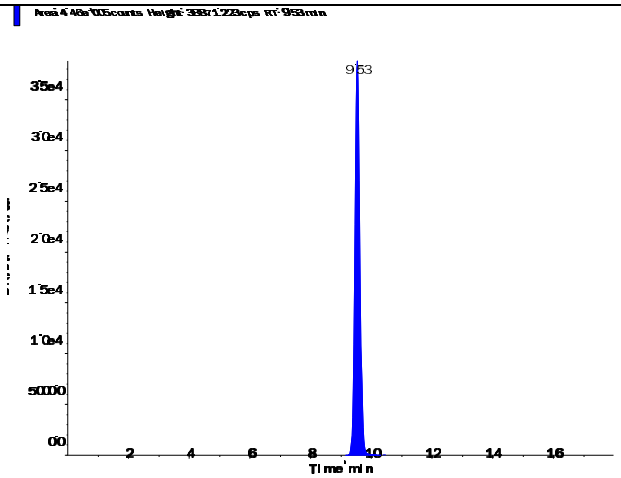

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.55 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.351
Sample Type:	(Unknown)

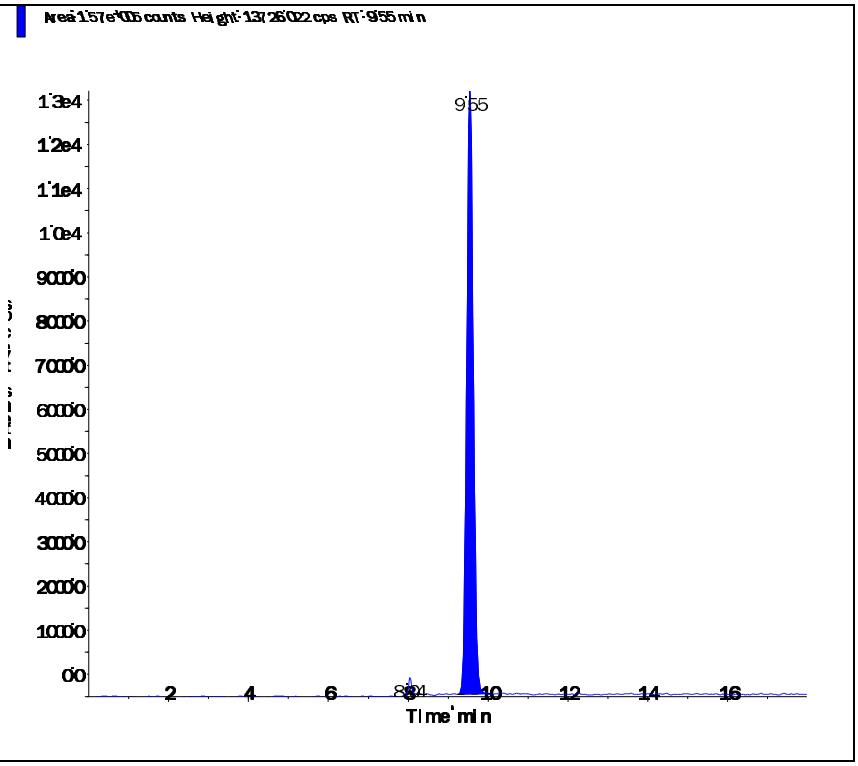

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.53 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.121
Sample Type:	(Unknown)

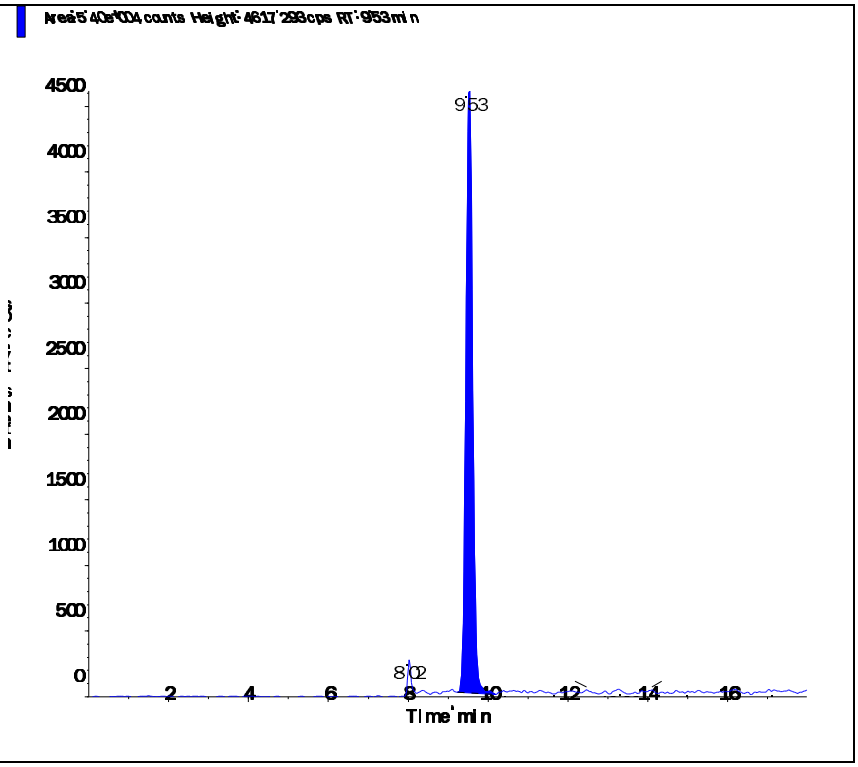

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Printed: 6/23/2016 5:01 PM

Data File	LM35438.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 12:03:29 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060730-03 (50x)	**Injection Vial**	21.00
Data File	LM35438.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 12:03:29 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	L16060730-03	**Dilution Factor**	1.00
Sample Comment	1,50 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.050e+05	9.35	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.690e+05	9.37	N/A	1.98
Perchlorate conf	9.360e+04	9.35	N/A	2.05

O18LP (Internal Standard)

RT (Exp. RT): 9.35(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

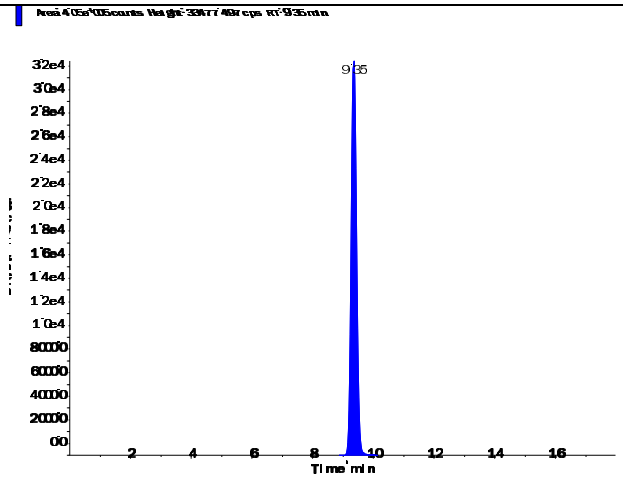

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Printed: 6/23/2016 5:01 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.37 (9.84) min
Calculated conc:	1.98 ng/ml
Area Ratio:	0.666
Sample Type:	(Unknown)

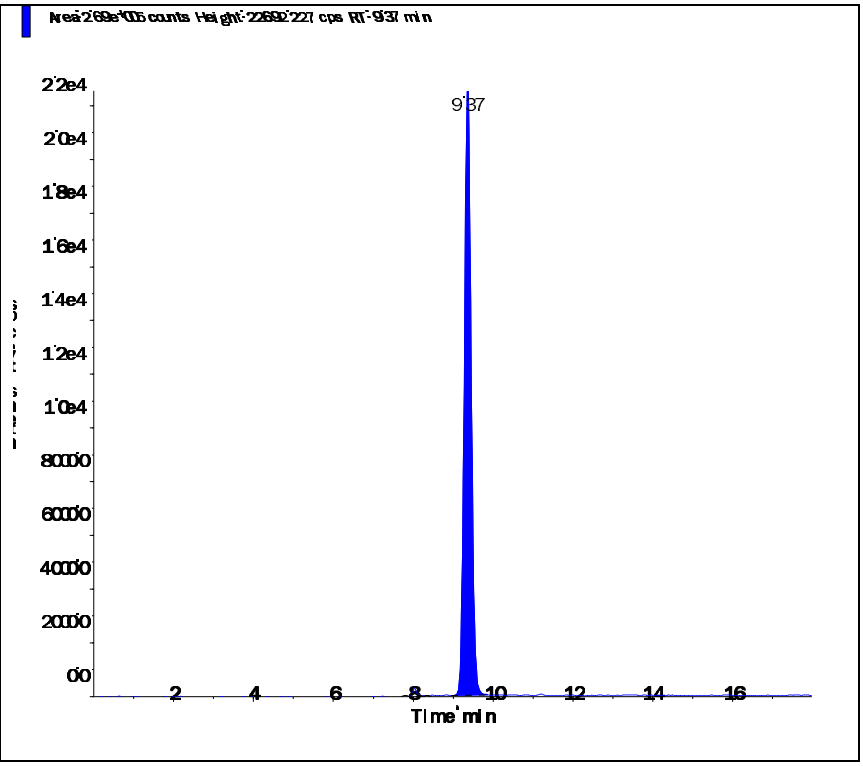

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	2.05 ng/ml
Area Ratio:	0.231
Sample Type:	(Unknown)

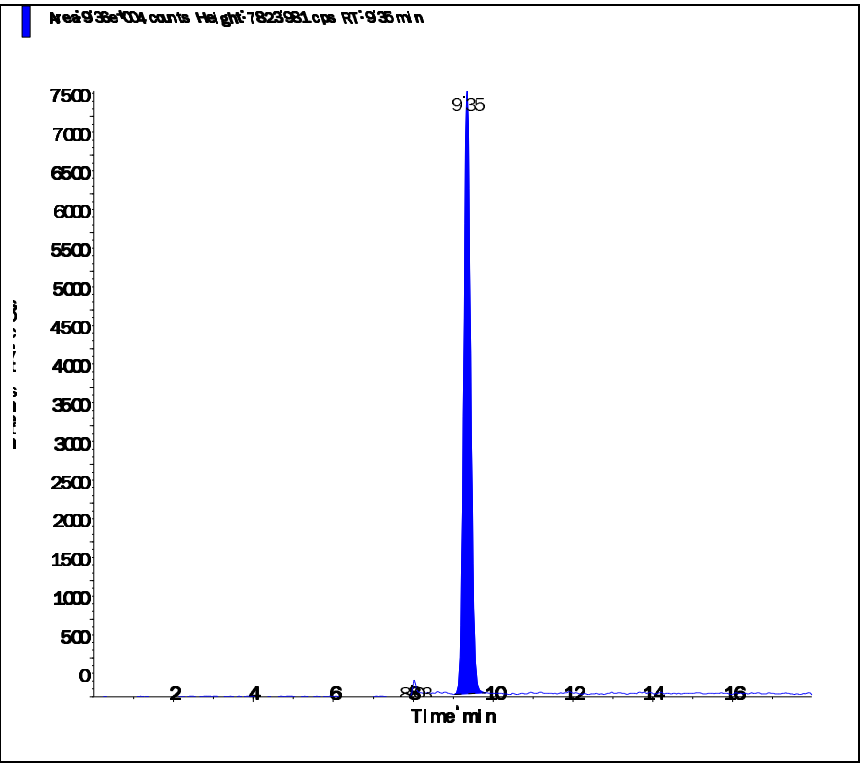

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2.2.2.4 Standards Data

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Created with Analyst Reporter
Printed: 6/23/2016 4:49 PM

Data File	LM34686.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

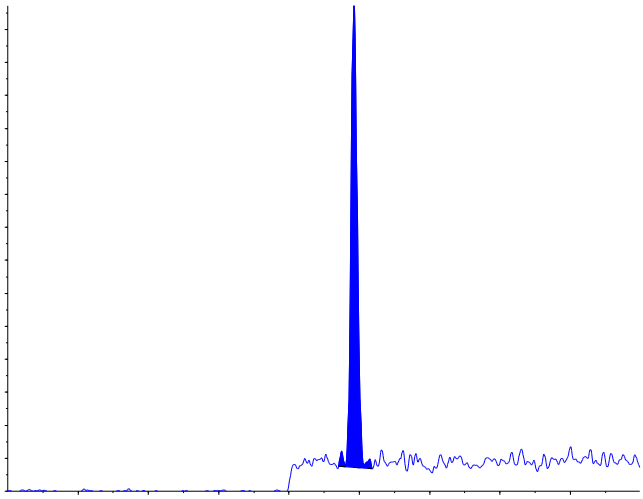

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	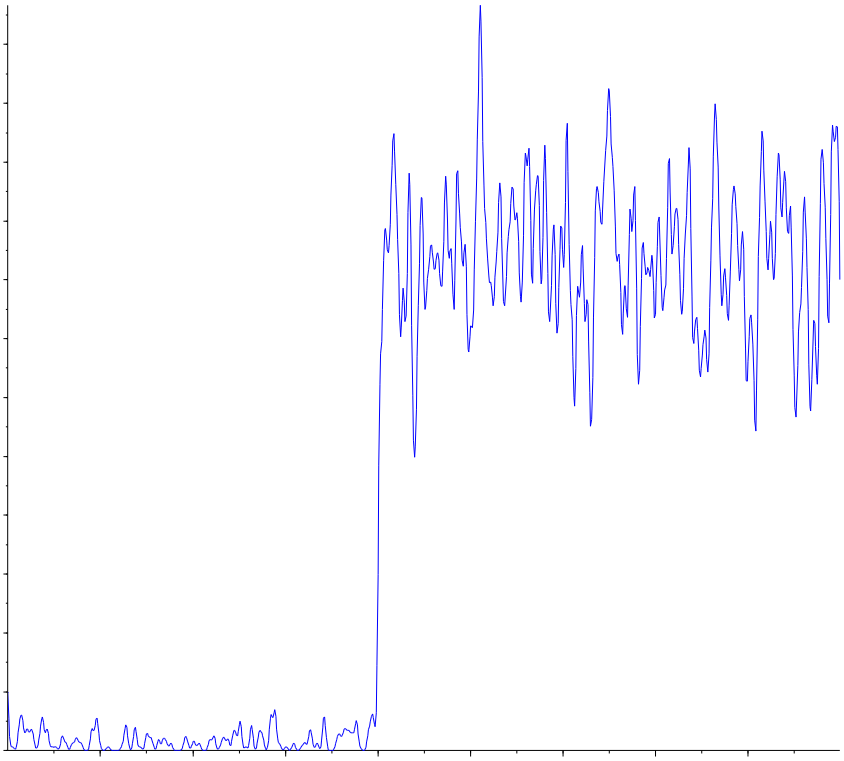
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	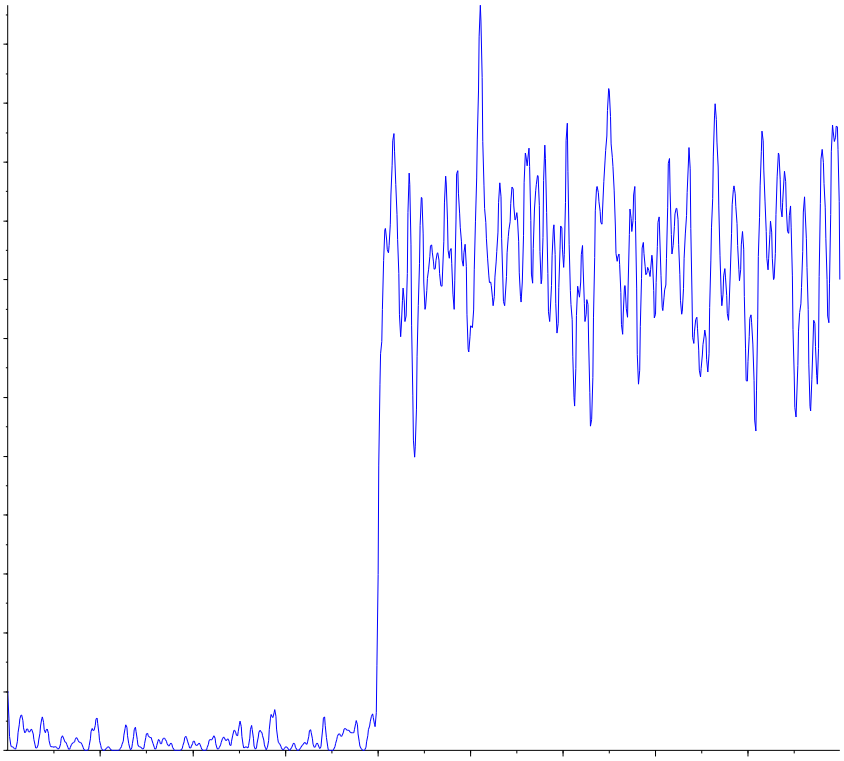

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Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

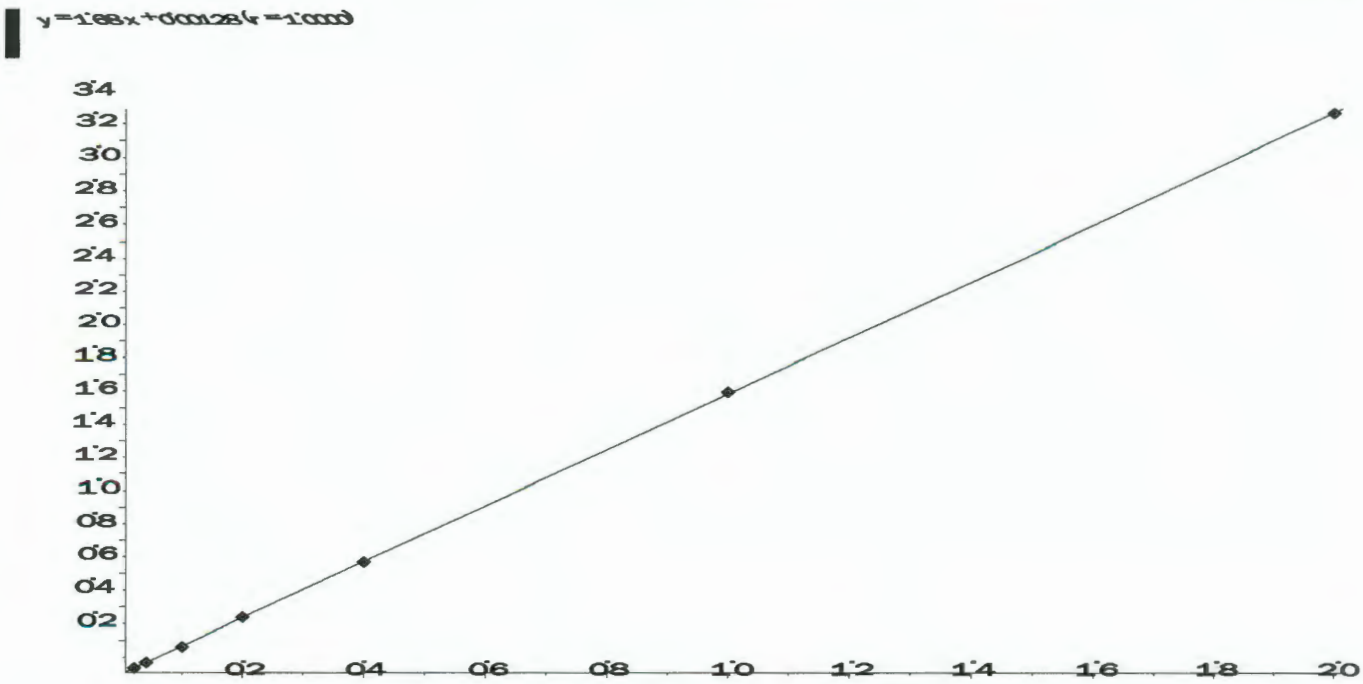

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Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

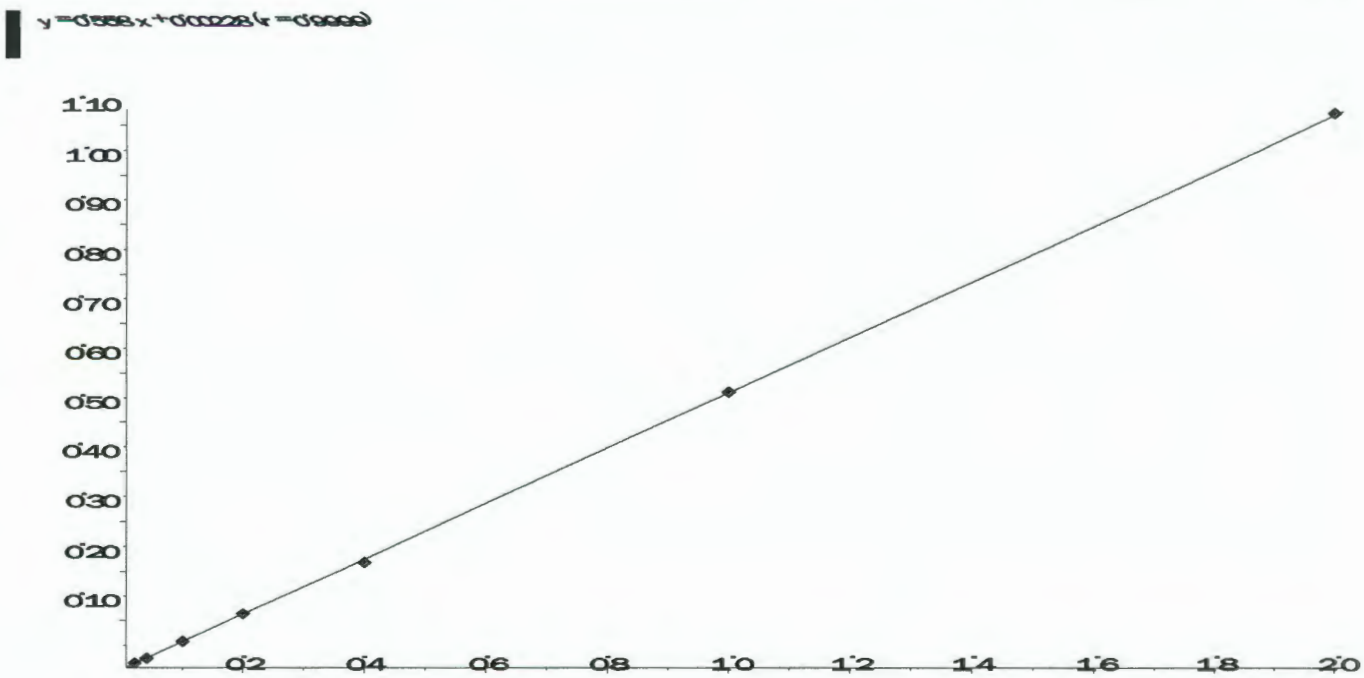

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Printed: 6/23/2016 4:50 PM

Data File	LM34687.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

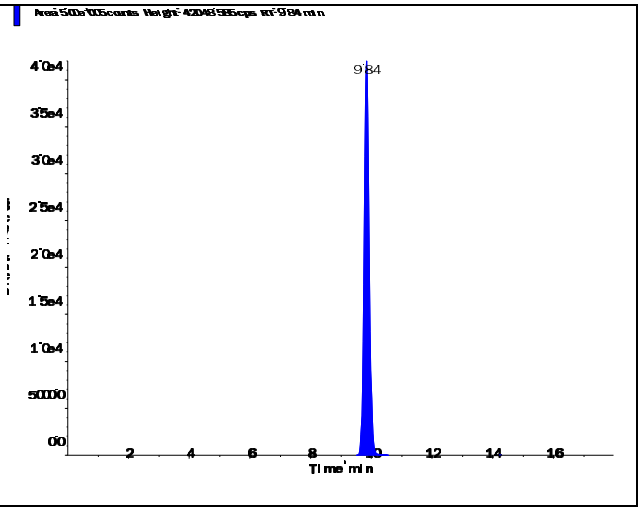

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 0.103 ng/ml Area Ratio: 0.036 Sample Type: (Standard)	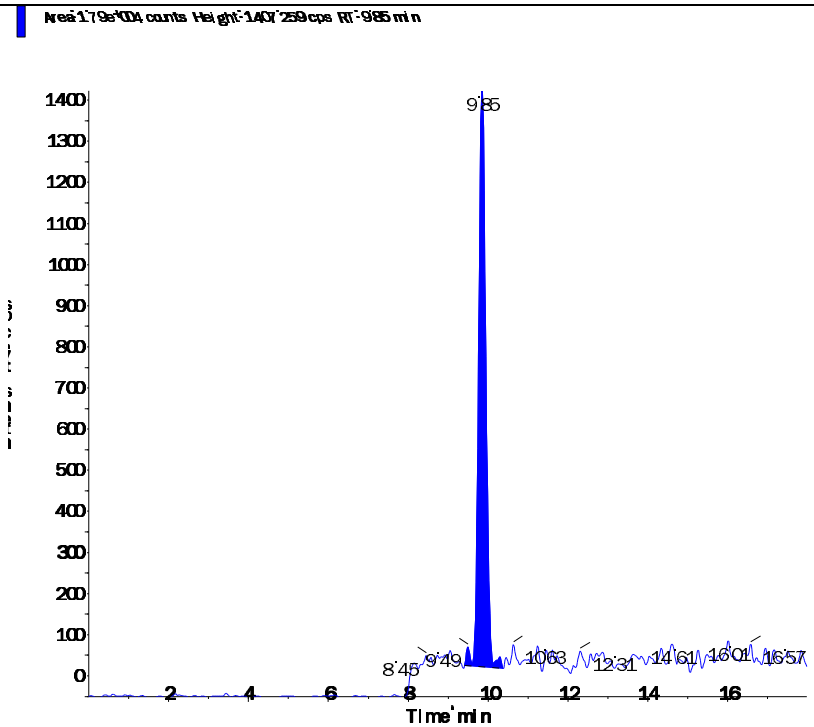
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 0.104 ng/ml Area Ratio: 0.014 Sample Type: (Standard)	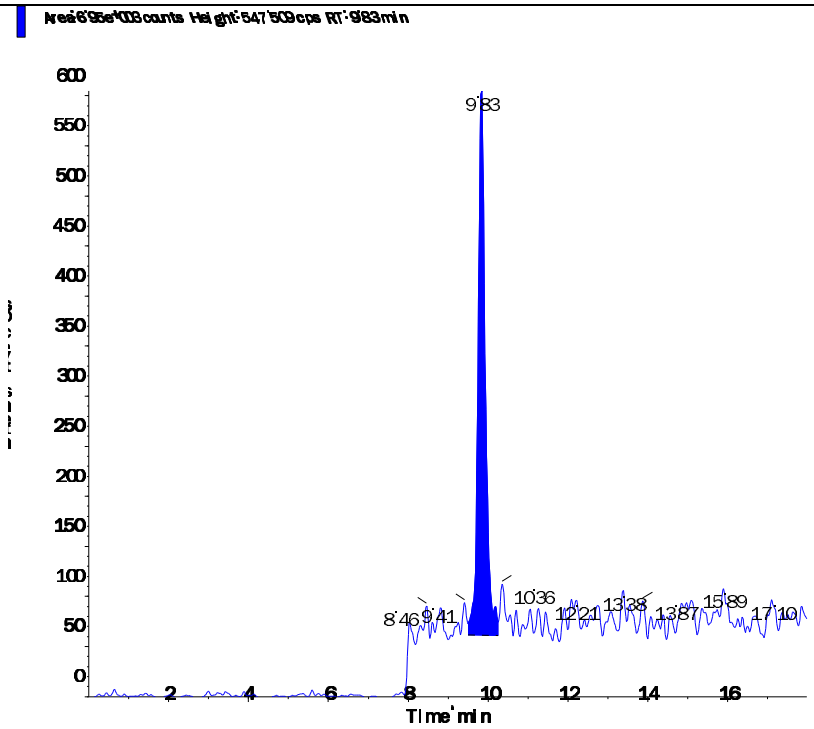

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Data File	LM34688.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

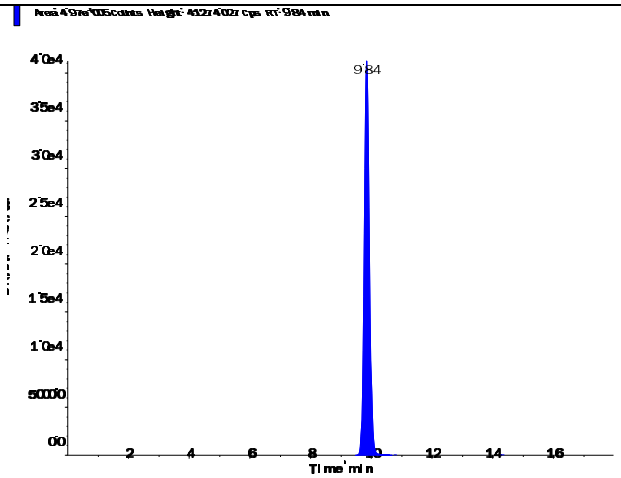

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

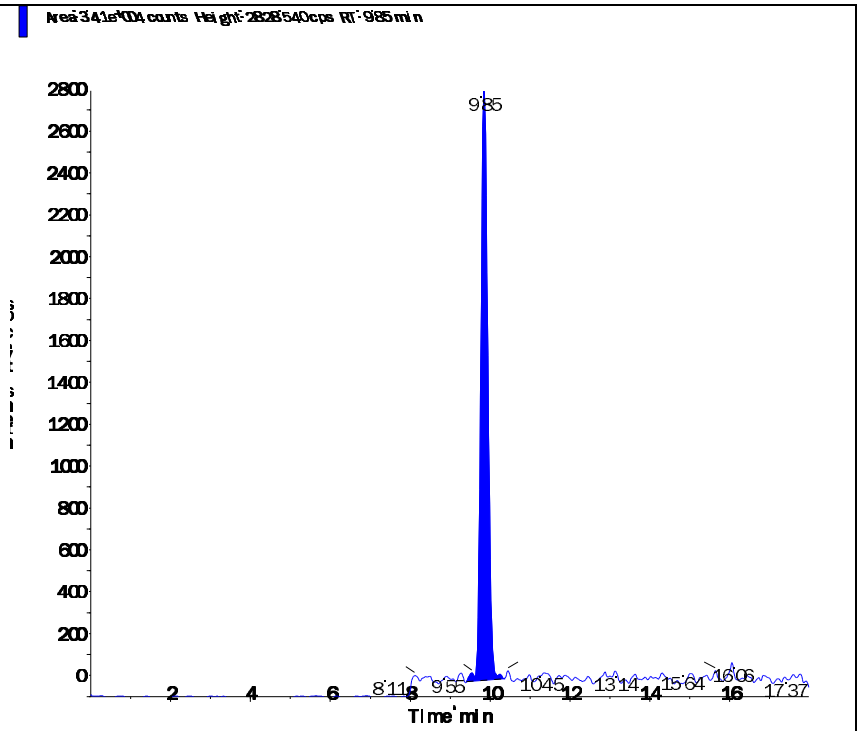

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

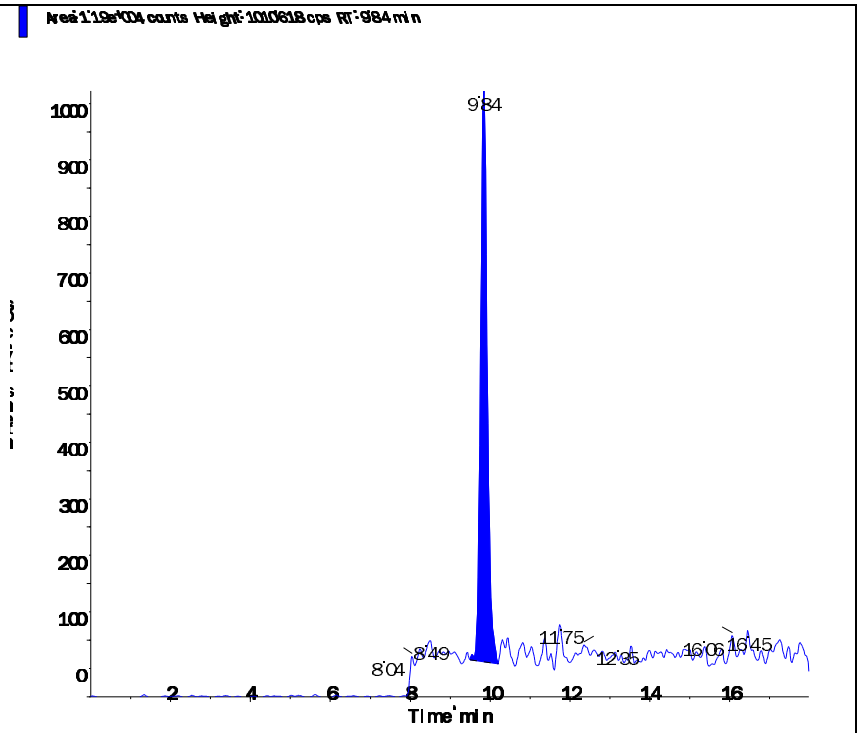

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Data File	LM34689.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

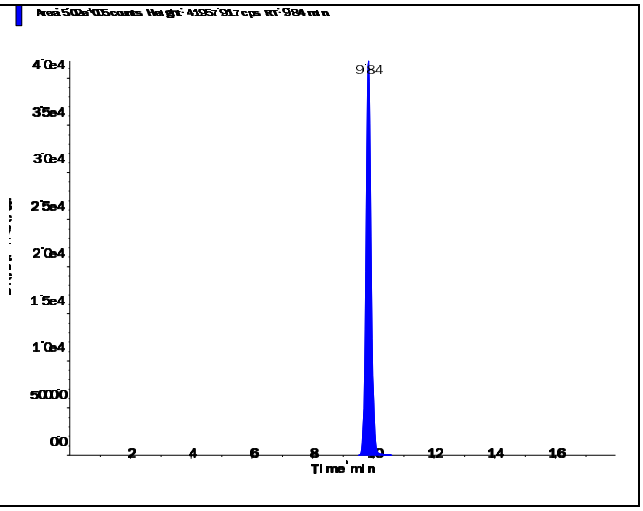

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 0.483 ng/ml Area Ratio: 0.164 Sample Type: (Standard)	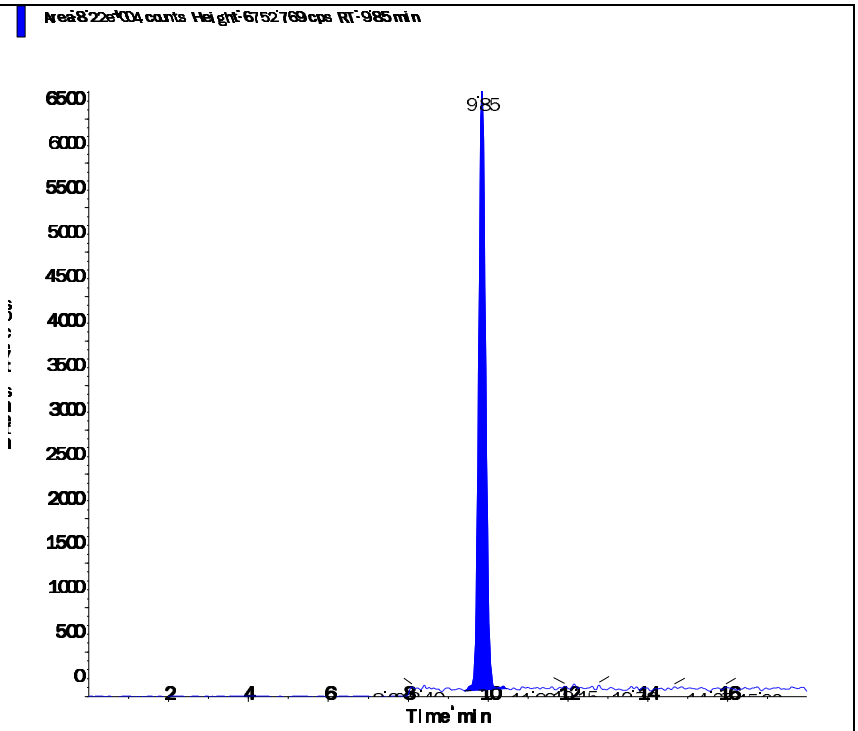
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 0.503 ng/ml Area Ratio: 0.058 Sample Type: (Standard)	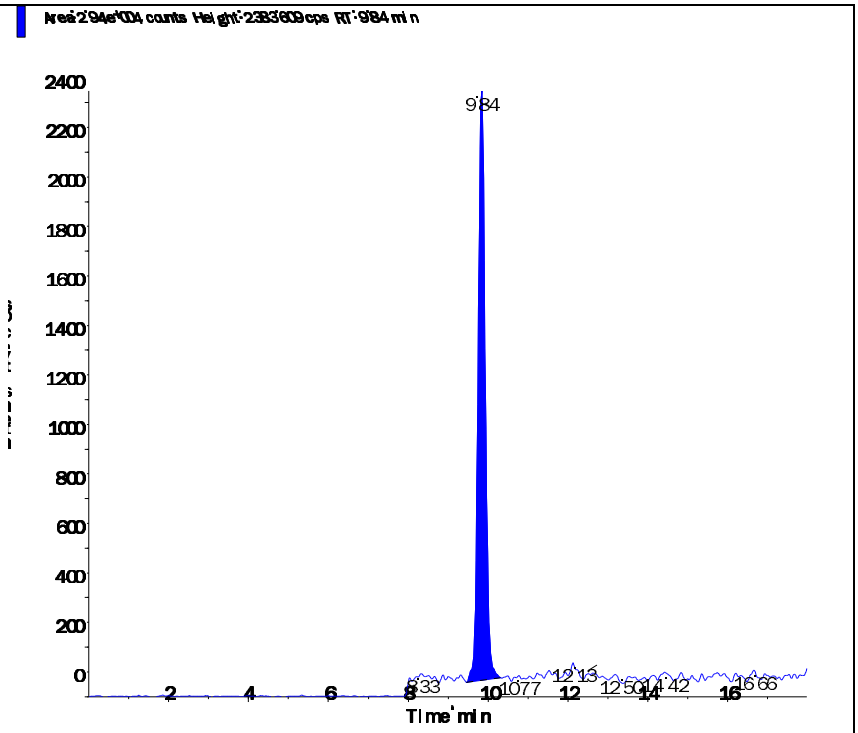

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Data File	LM34690.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

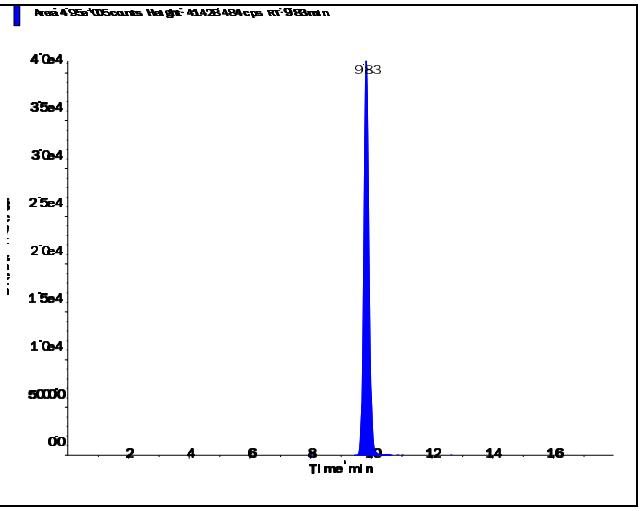

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

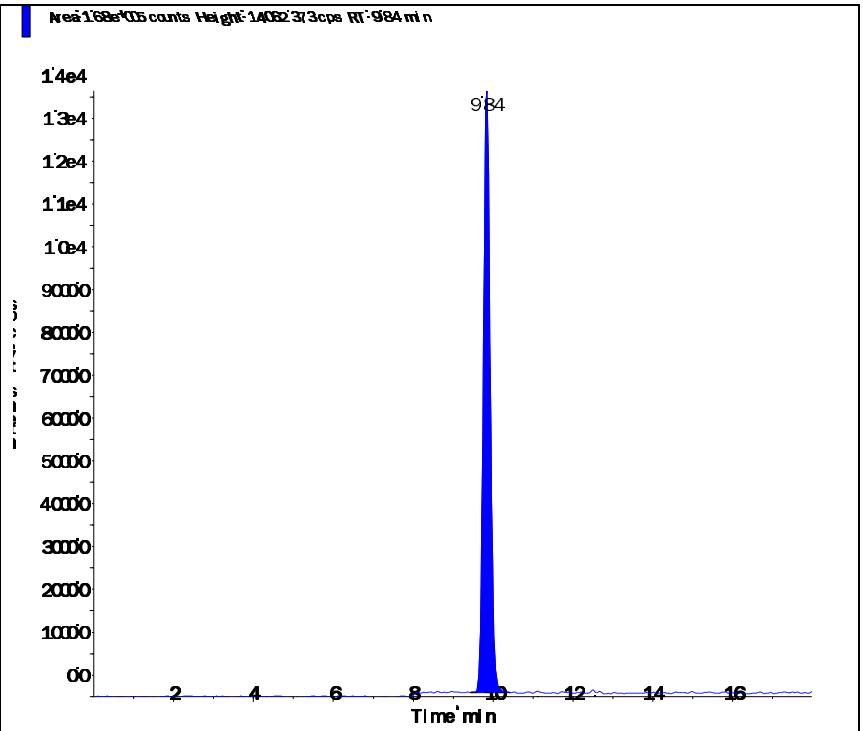

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

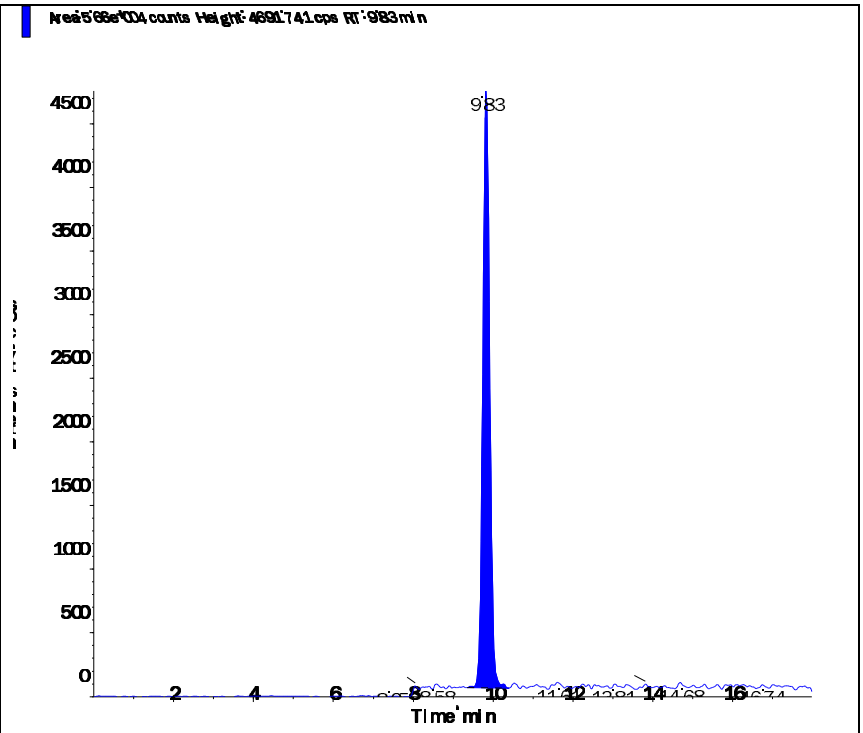

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Data File	LM34691.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

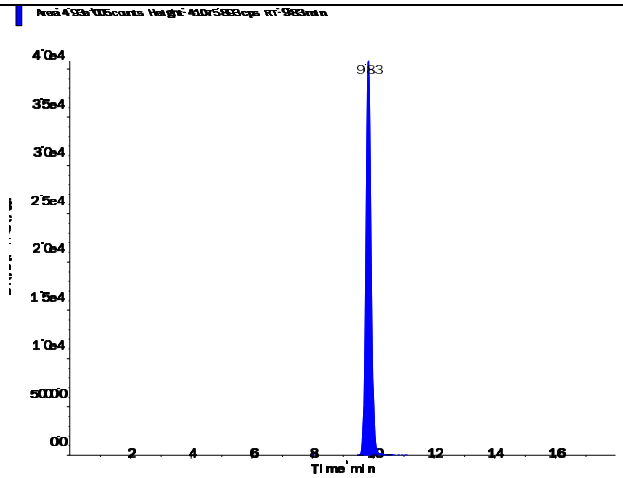

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 1.99 ng/ml Area Ratio: 0.669 Sample Type: (Standard)	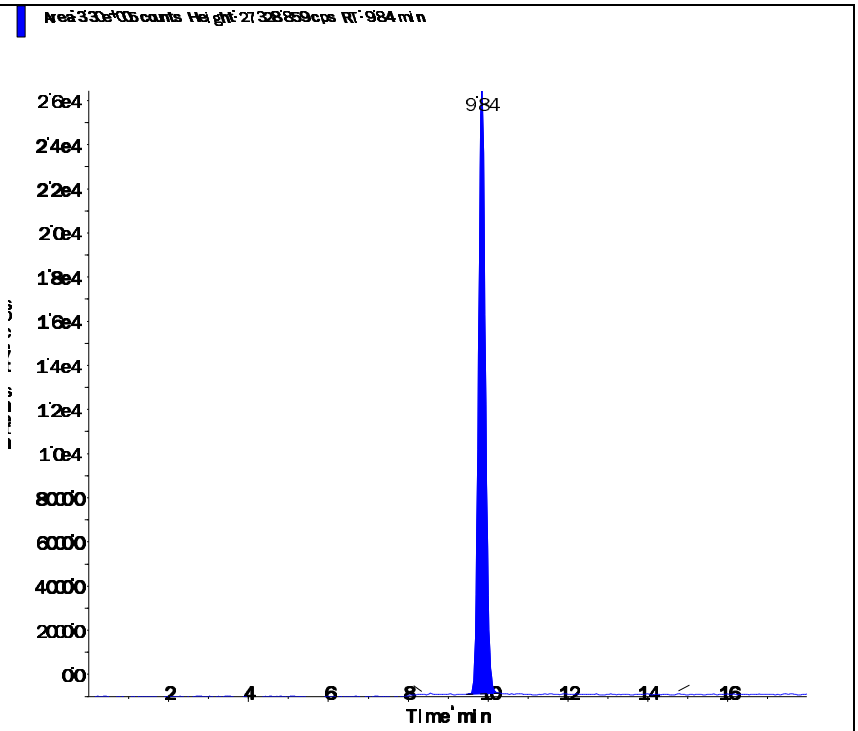
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 1.94 ng/ml Area Ratio: 0.219 Sample Type: (Standard)	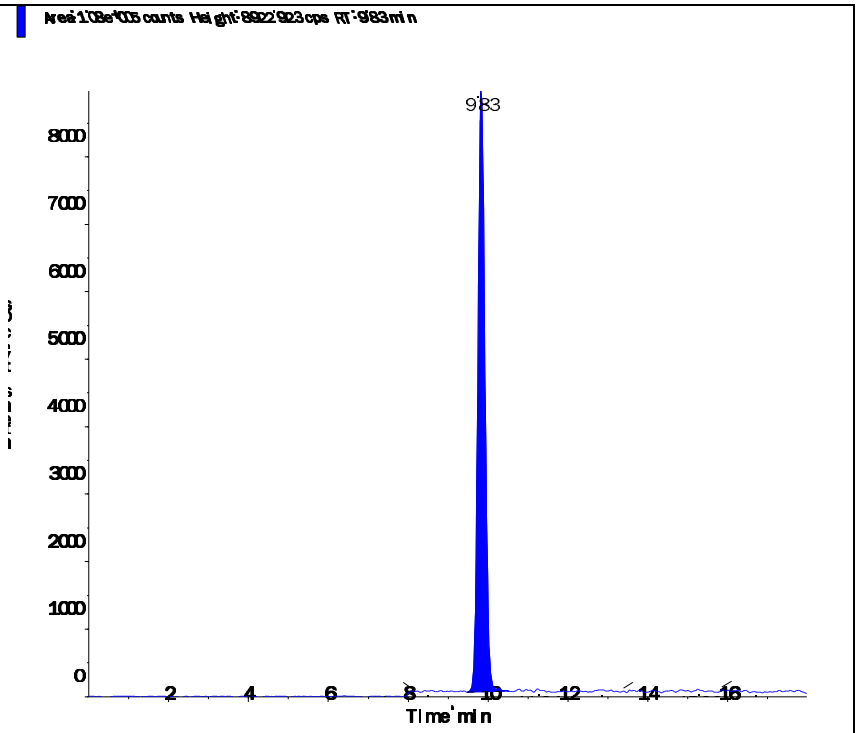

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Data File	LM34692.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

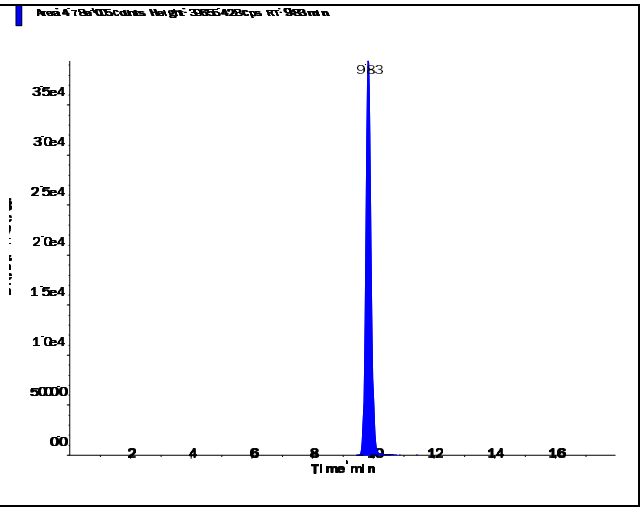

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

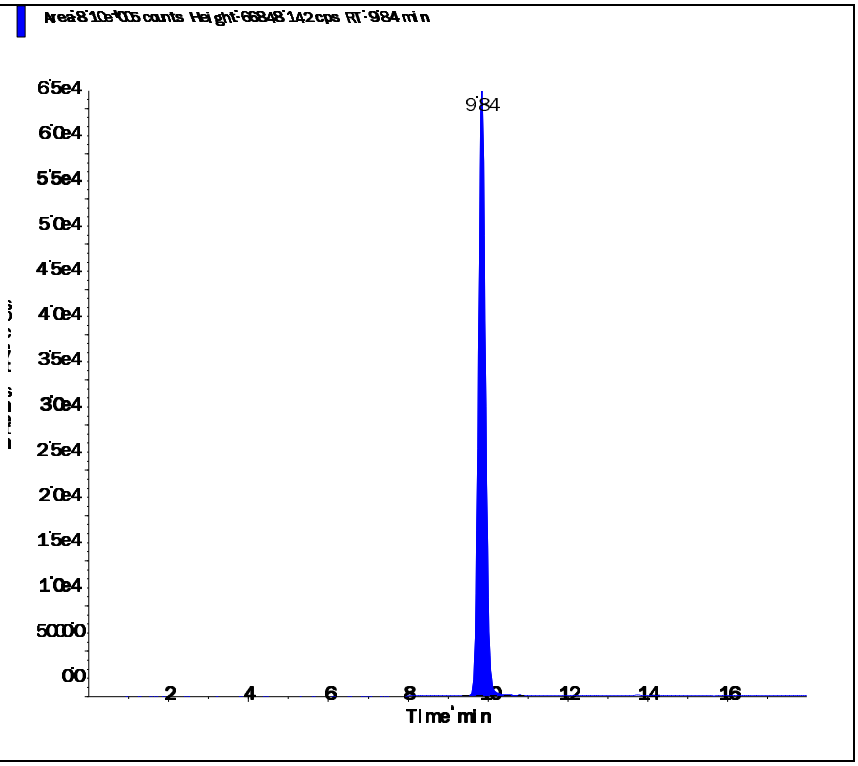

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

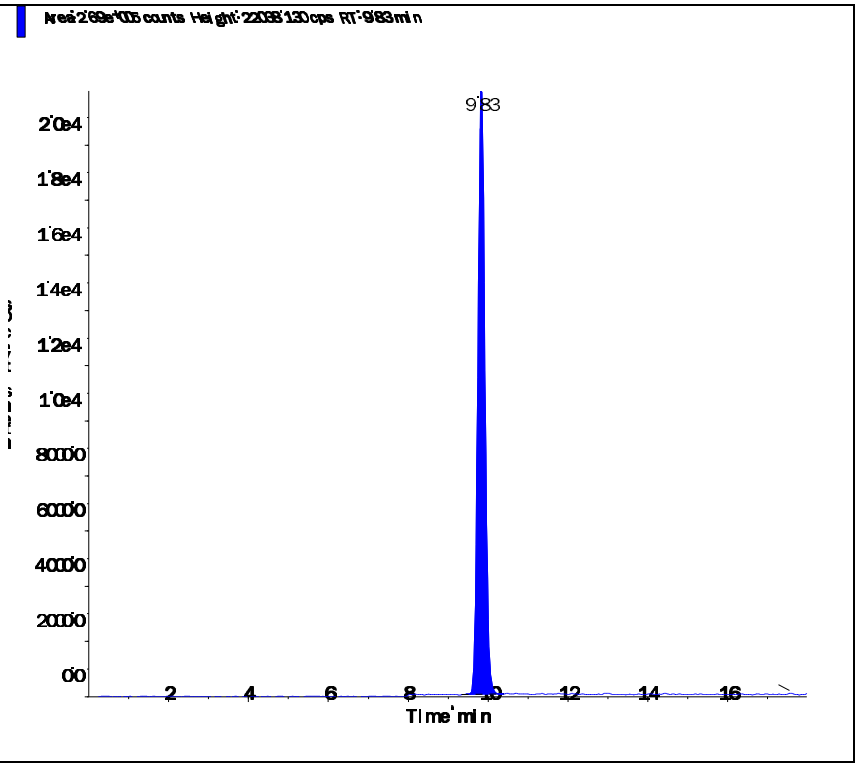

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Printed: 6/23/2016 4:52 PM

Data File	LM34693.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

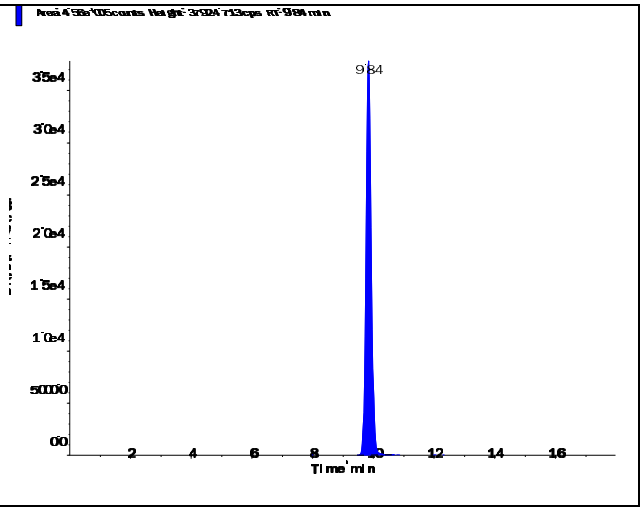

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 9.99 ng/ml Area Ratio: 3.36 Sample Type: (Standard)	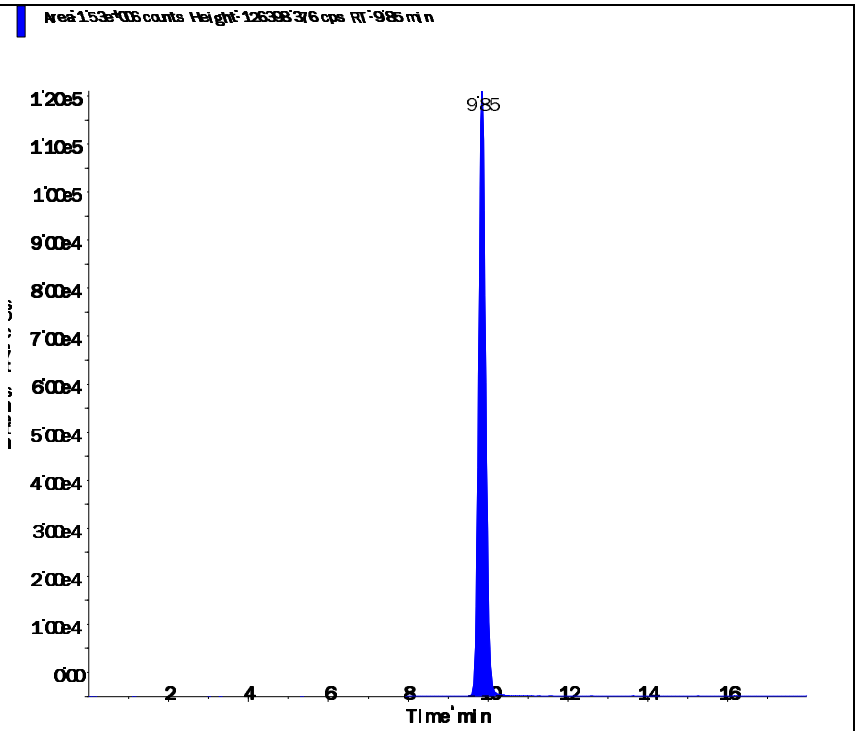
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 10.00 ng/ml Area Ratio: 1.122 Sample Type: (Standard)	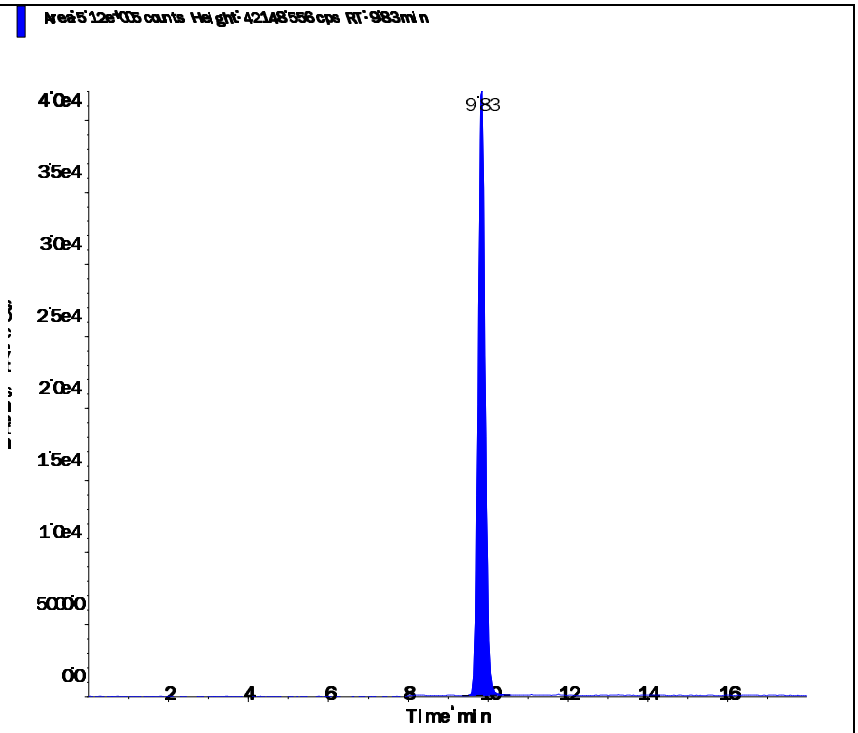

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Printed: 5/4/2016 1:23 PM

Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

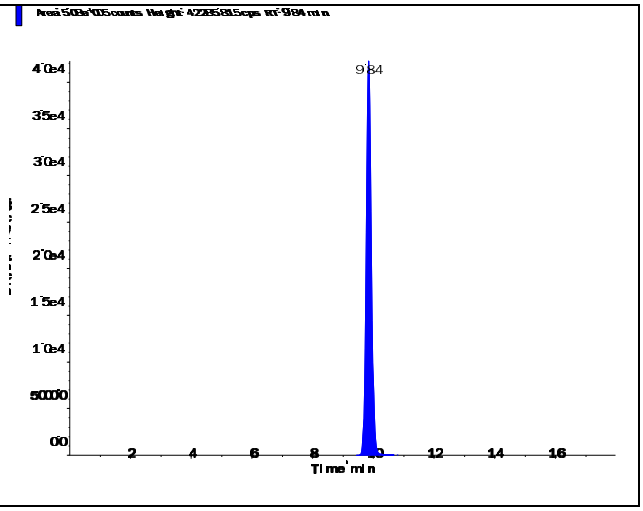

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.332
Sample Type:	(Quality Control)

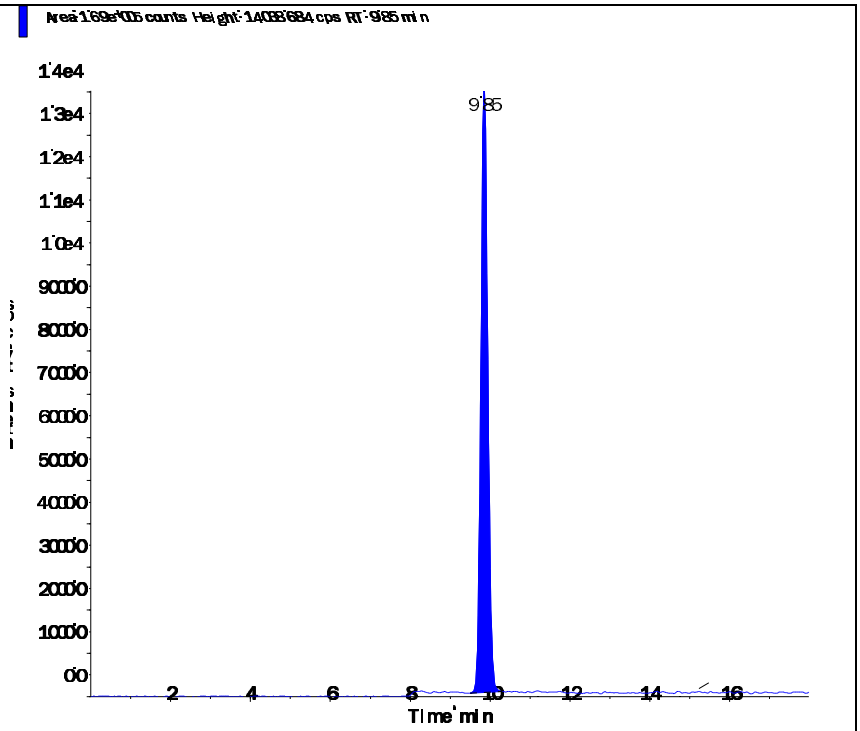

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

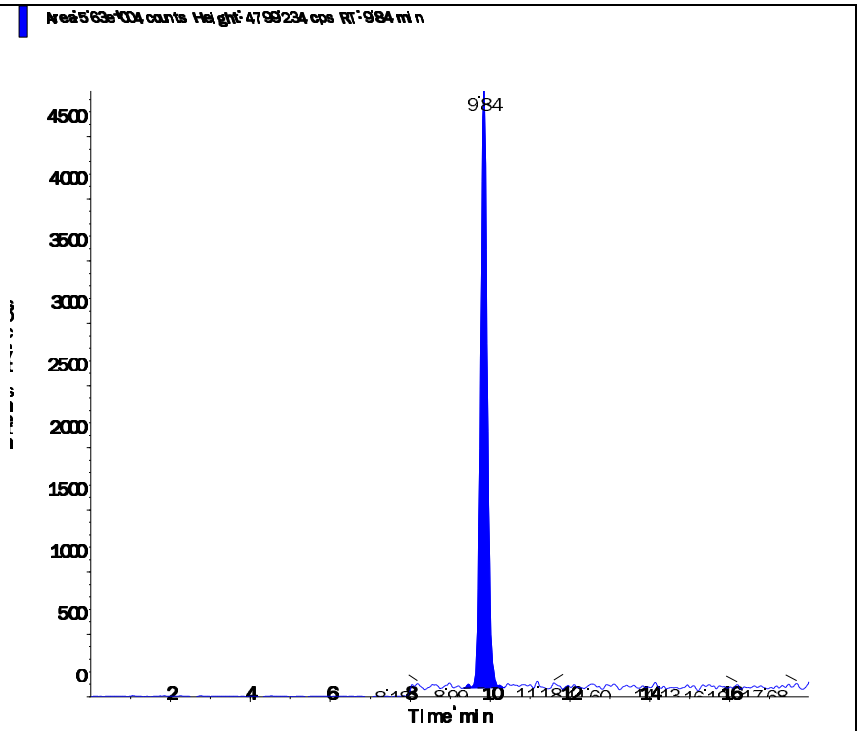

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Data File	LM35416.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 5:06:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35416.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 5:06:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.480e+05	9.13	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.510e+05	9.14	1.00	0.997
Perchlorate conf	5.420e+04	9.13	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 9.13(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

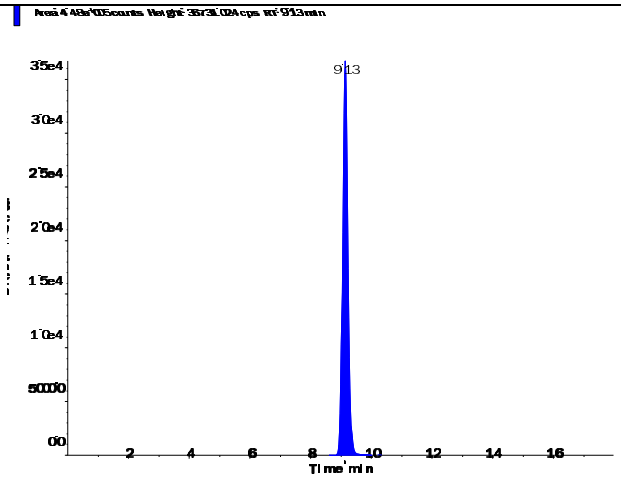

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.14 (9.84) min
Calculated conc:	0.997 ng/ml
Area Ratio:	0.336
Sample Type:	(Quality Control)

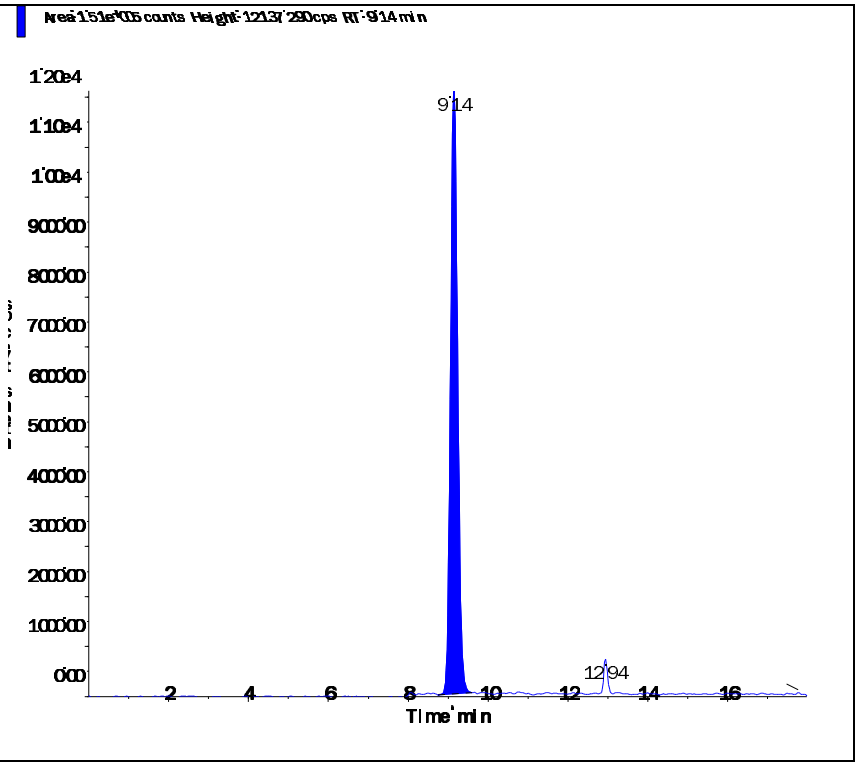

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.13 (9.84) min
Calculated conc:	1.07 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

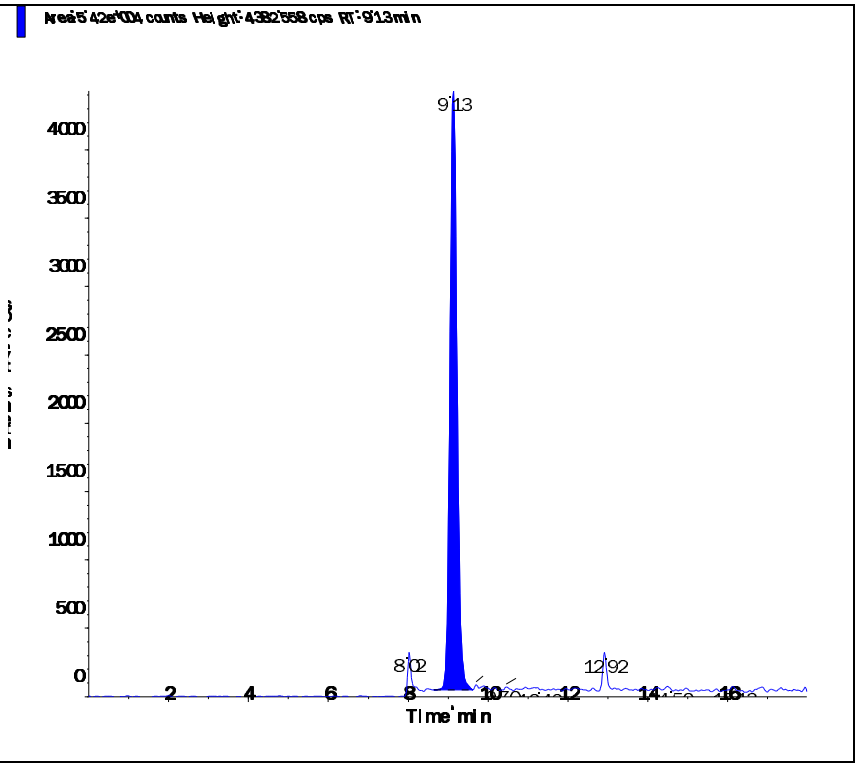

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Data File	LM35428.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 8:54:07 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35428.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 8:54:07 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.900e+05	9.17	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.720e+05	9.18	1.00	1.04
Perchlorate conf	6.140e+04	9.16	1.00	1.10

O18LP (Internal Standard)

RT (Exp. RT): 9.17(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

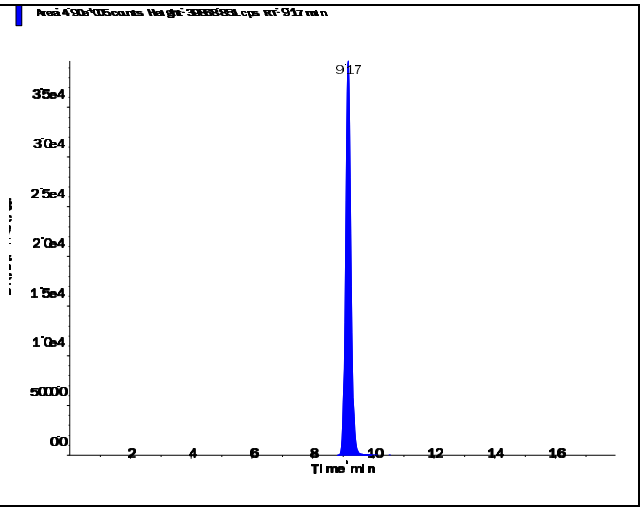

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.18 (9.84) min Calculated conc: 1.04 ng/ml Area Ratio: 0.351 Sample Type: (Quality Control)	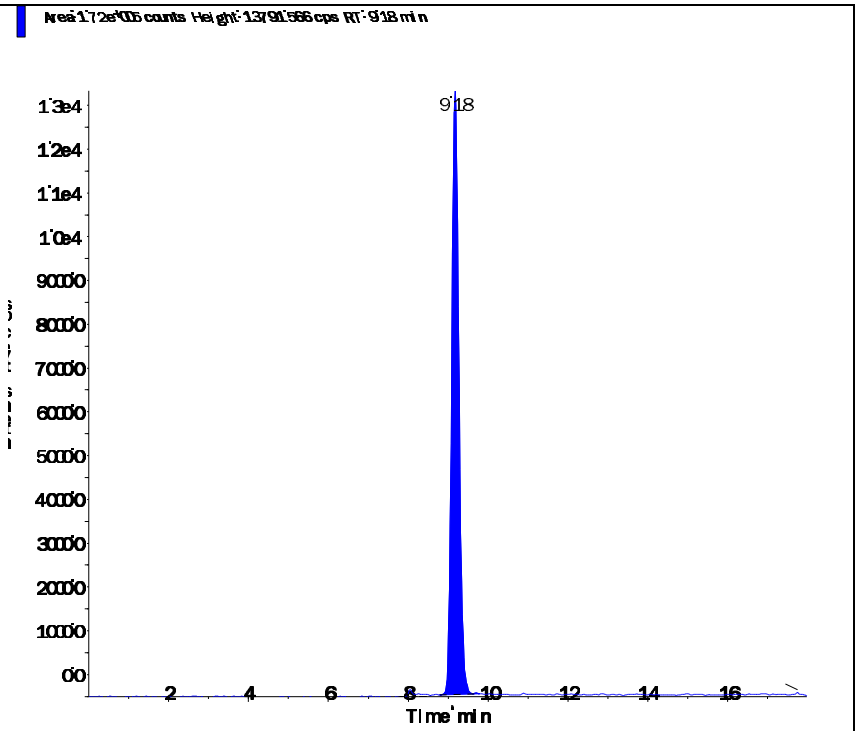
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.16 (9.84) min Calculated conc: 1.10 ng/ml Area Ratio: 0.125 Sample Type: (Quality Control)	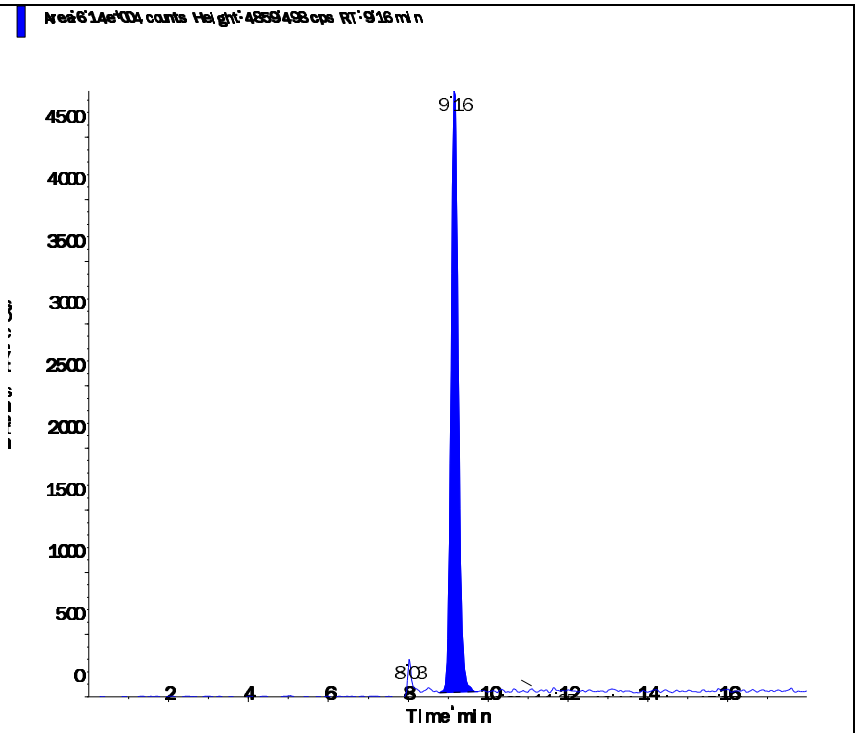

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Printed: 6/23/2016 5:01 PM

Data File	LM35439.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 12:22:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35439.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 12:22:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.20	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.760e+05	9.22	1.00	1.03
Perchlorate conf	6.150e+04	9.20	1.00	1.06

O18LP (Internal Standard)

RT (Exp. RT): 9.20(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

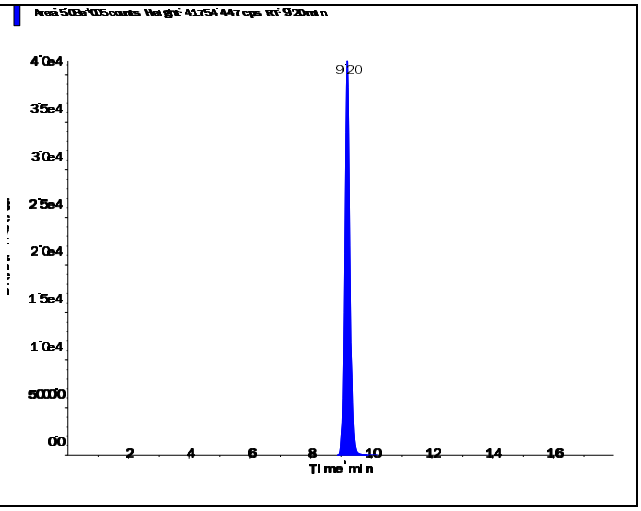

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.22 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.347
Sample Type:	(Quality Control)

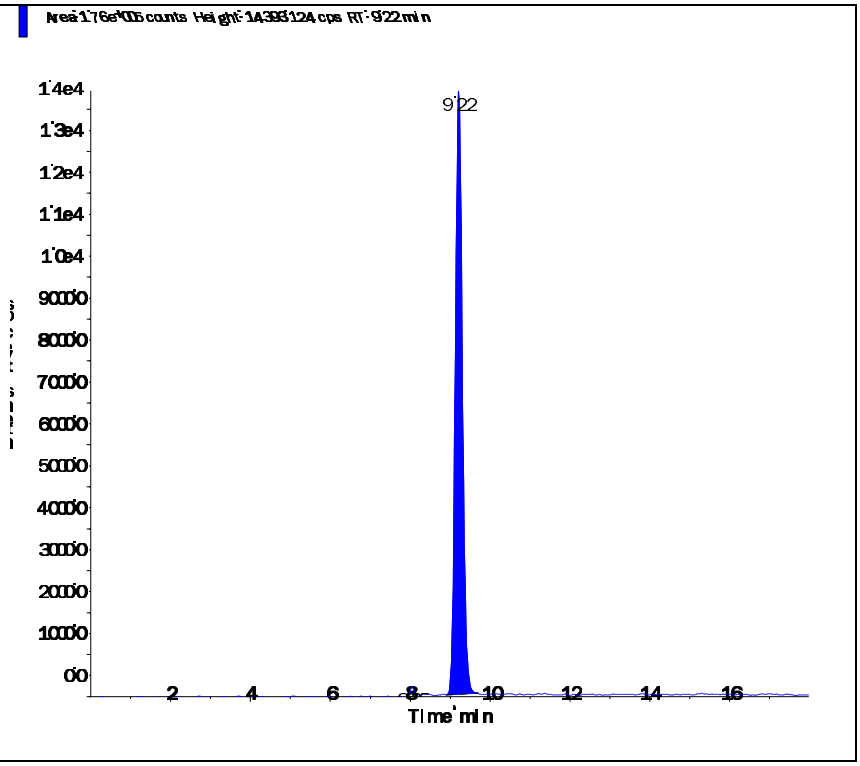

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.20 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

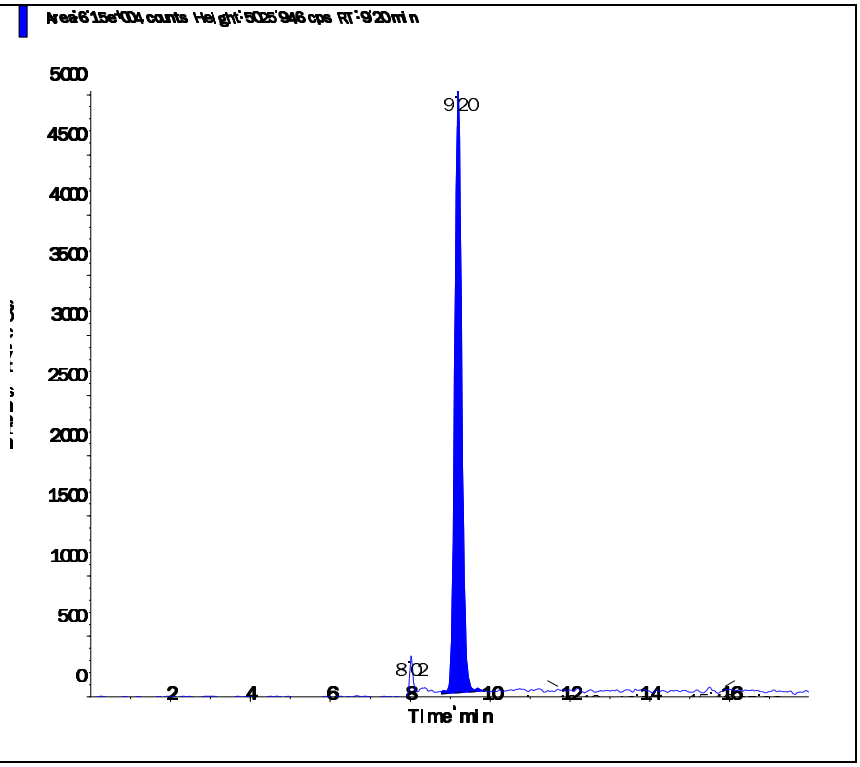

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Printed: 6/23/2016 5:03 PM

Data File	LM35446.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 2:34:57 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35446.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 2:34:57 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.820e+05	9.22	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.23	1.00	1.04
Perchlorate conf	5.850e+04	9.22	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 9.22(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

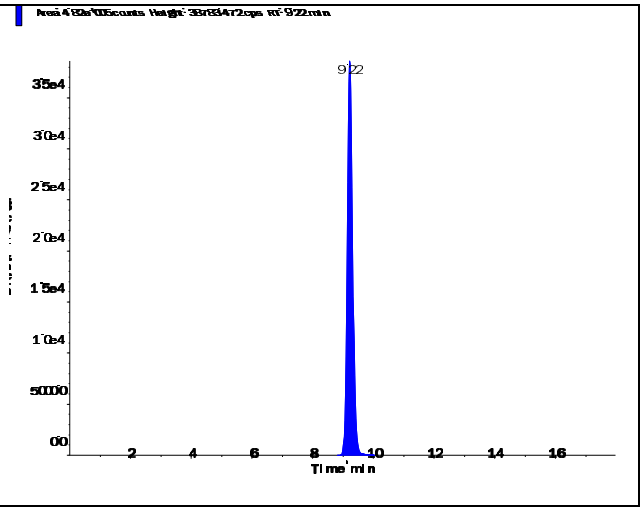

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.23 (9.84) min Calculated conc: 1.04 ng/ml Area Ratio: 0.351 Sample Type: (Quality Control)	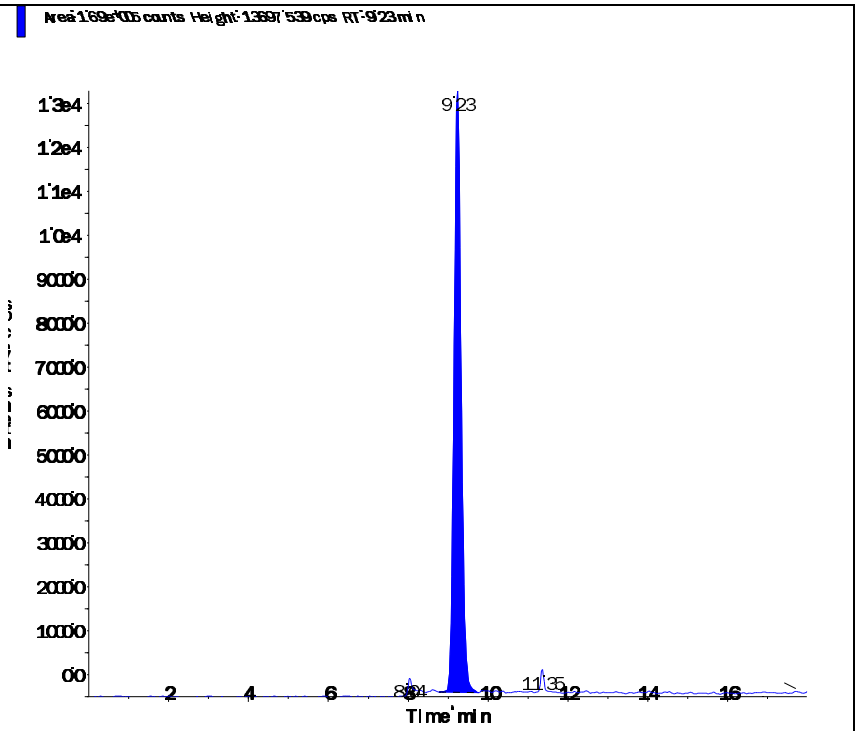
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.22 (9.84) min Calculated conc: 1.07 ng/ml Area Ratio: 0.121 Sample Type: (Quality Control)	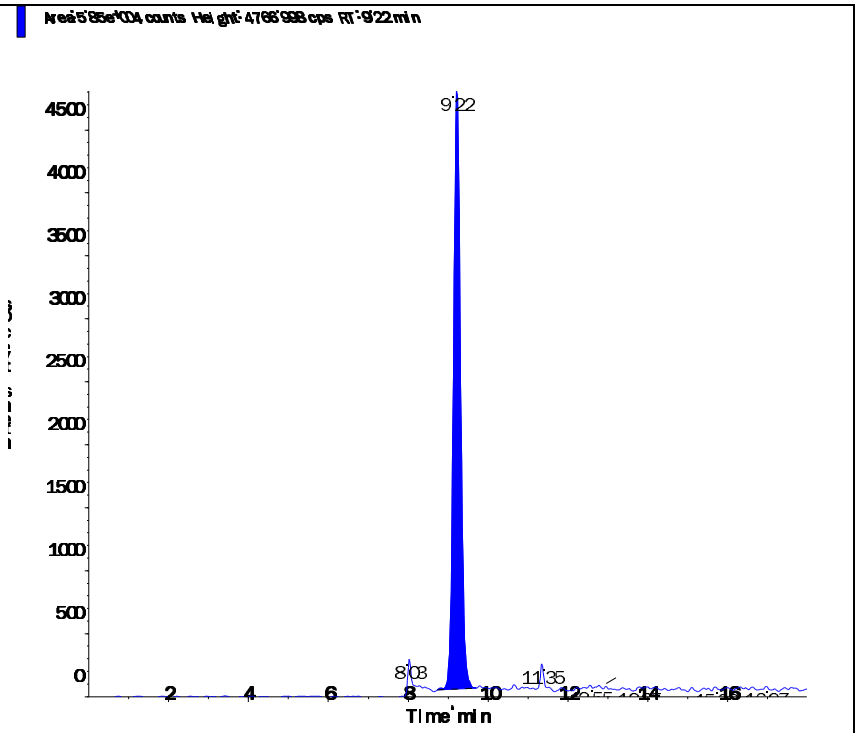

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Printed: 6/23/2016 5:04 PM

Data File	LM35449.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 11:49:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35449.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 11:49:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.170e+05	9.26	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.420e+05	9.27	1.00	1.01
Perchlorate conf	5.070e+04	9.25	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 9.26(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

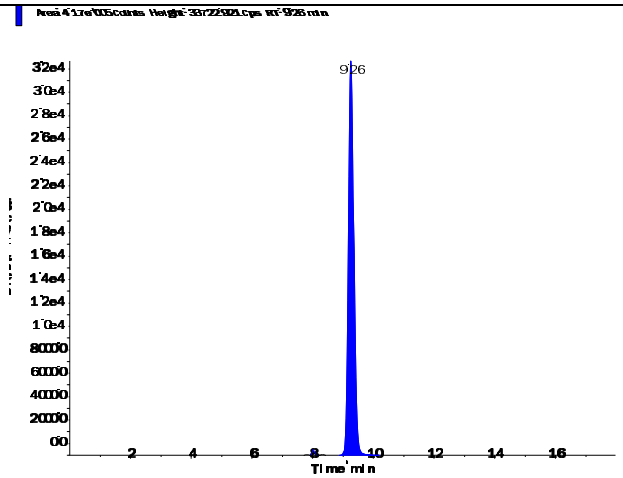

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.27 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.341
Sample Type:	(Quality Control)

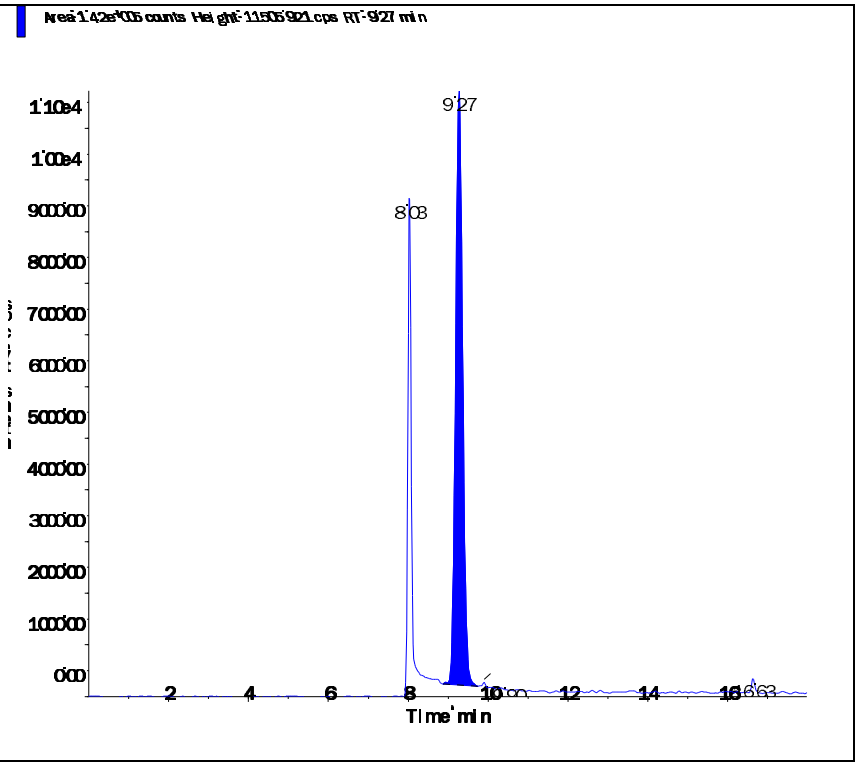

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.25 (9.84) min
Calculated conc:	1.07 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

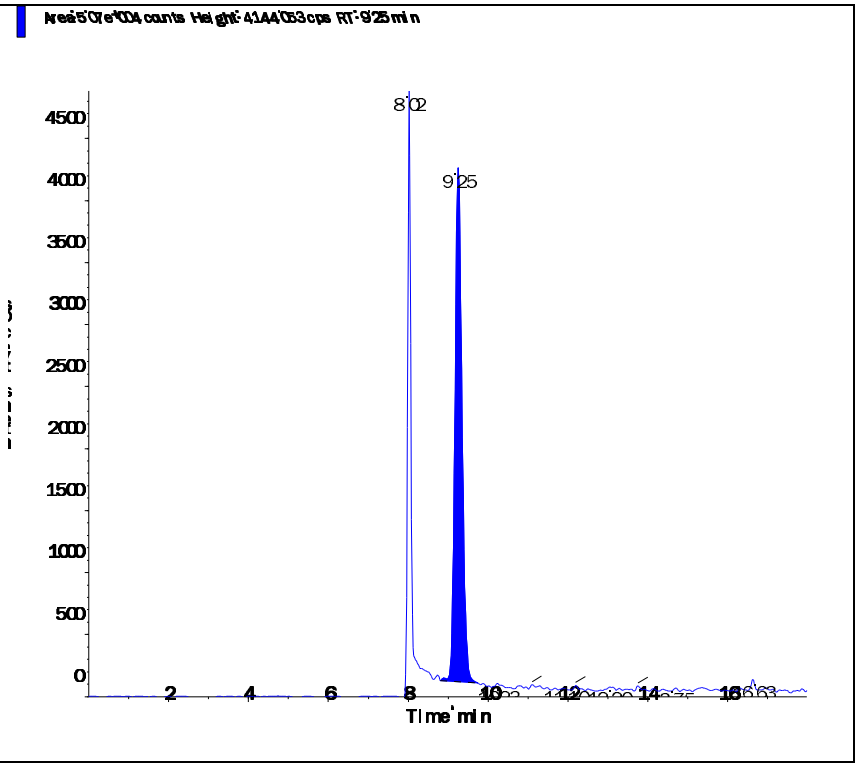

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Data File	LM35459.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 2:58:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-11 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35459.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 2:58:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.720e+05	9.28	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.670e+05	9.29	1.00	1.05
Perchlorate conf	5.600e+04	9.28	1.00	1.04

O18LP (Internal Standard)

RT (Exp. RT): 9.28(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

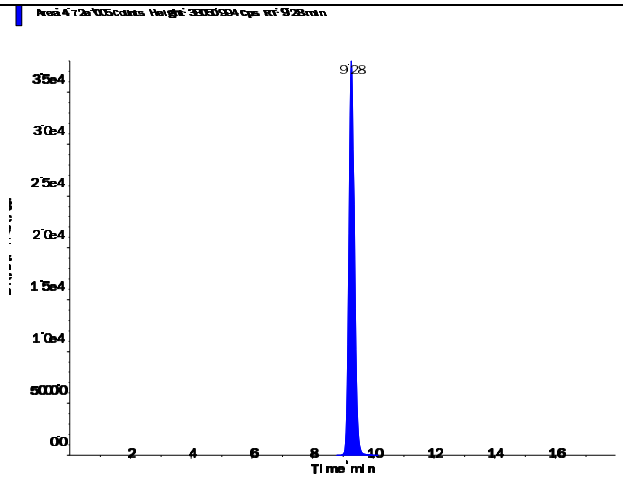

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.29 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.354
Sample Type:	(Quality Control)

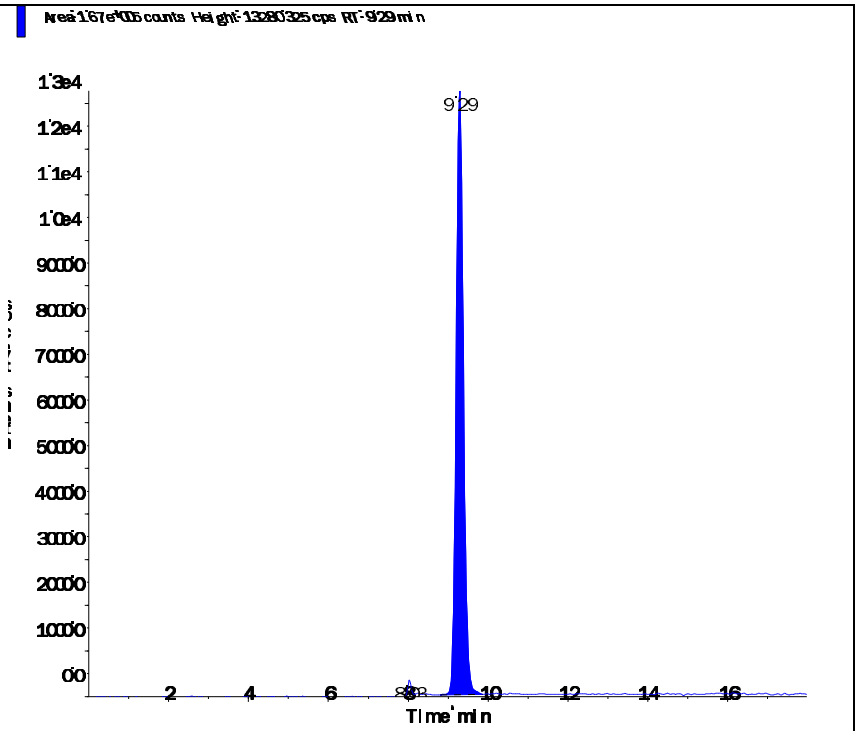

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.28 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

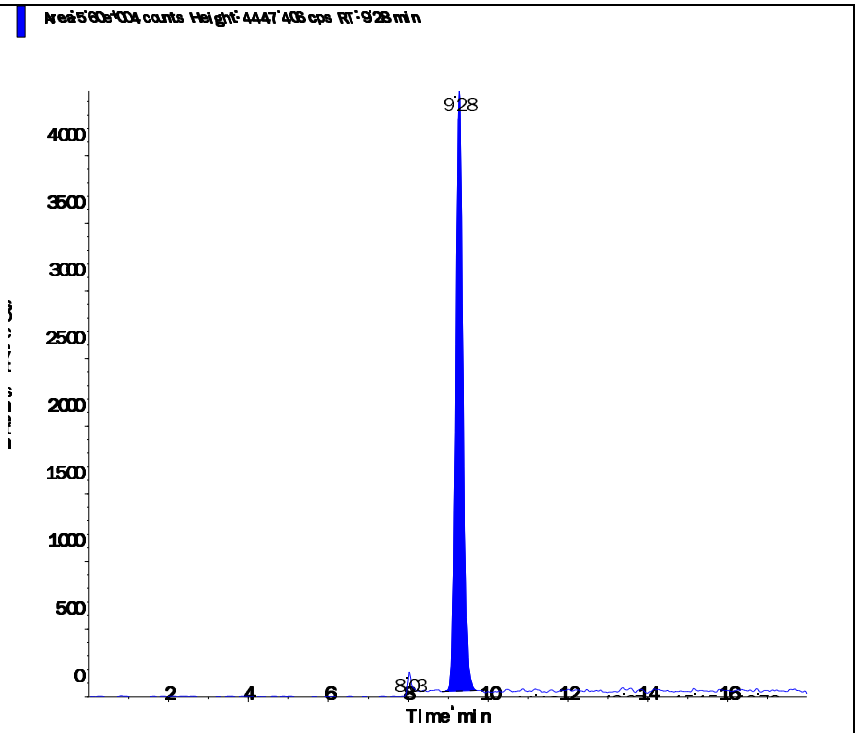

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Data File	LM35417.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 5:25:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-05 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35417.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 5:25:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.430e+05	9.19	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.120e+04	9.20	N/A	0.206
Perchlorate conf	1.120e+04	9.20	N/A	0.206

O18LP (Internal Standard)

RT (Exp. RT): 9.19(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

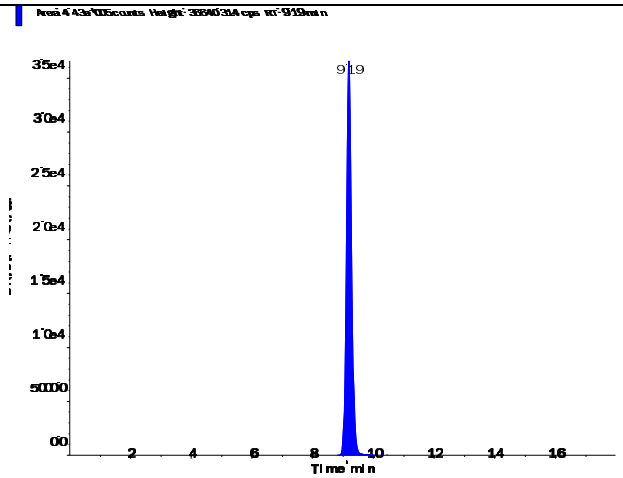

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.20 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

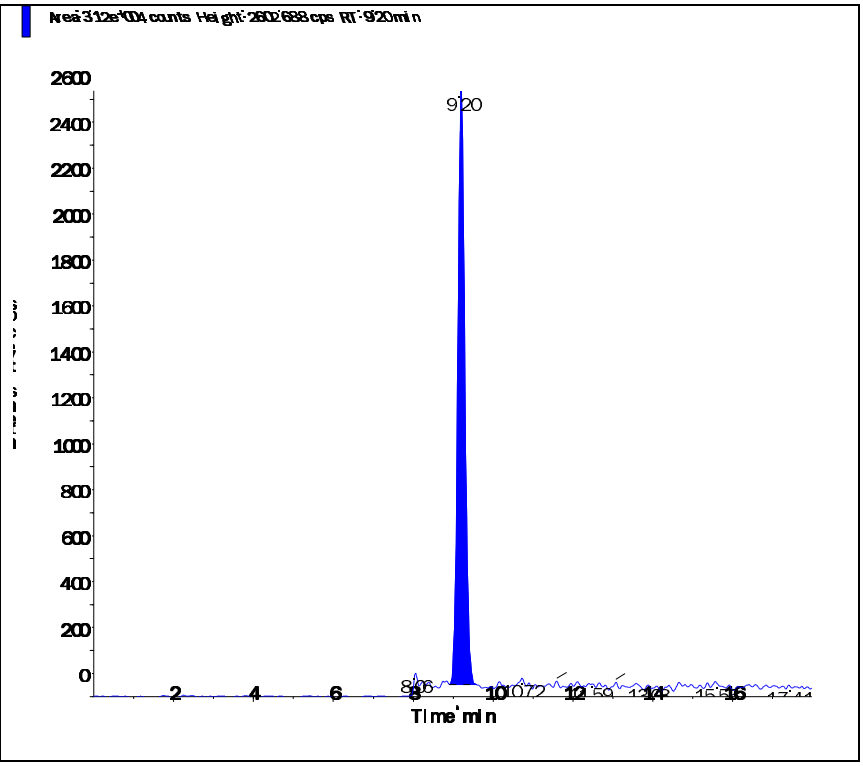

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.20 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

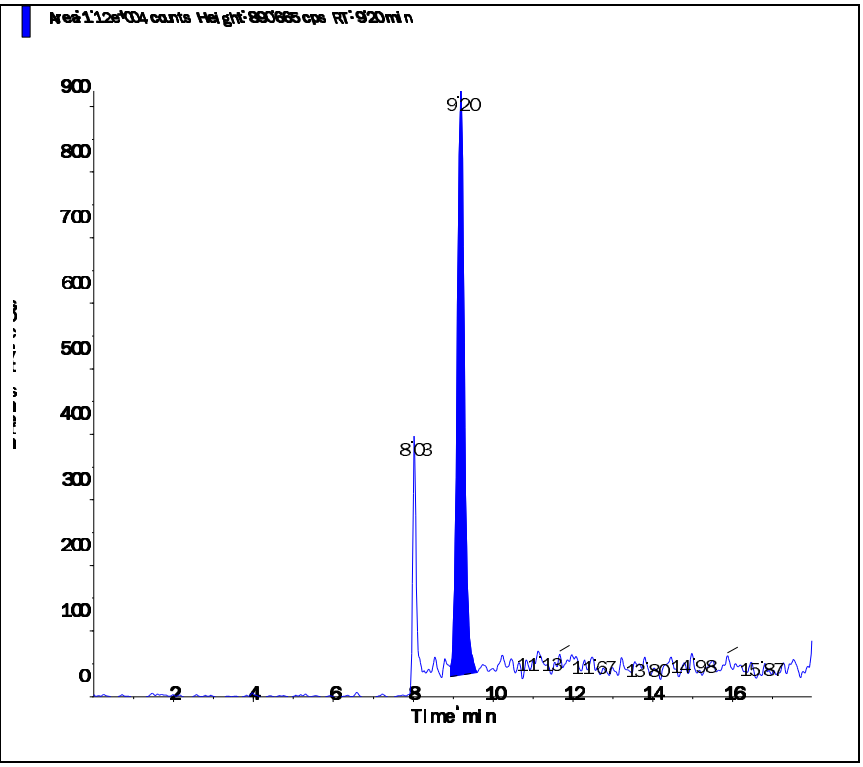

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Data File	LM35429.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 9:13:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-06 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35429.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 9:13:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.940e+05	9.23	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.450e+04	9.24	N/A	0.204
Perchlorate conf	1.250e+04	9.22	N/A	0.206

O18LP (Internal Standard)

RT (Exp. RT): 9.23(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

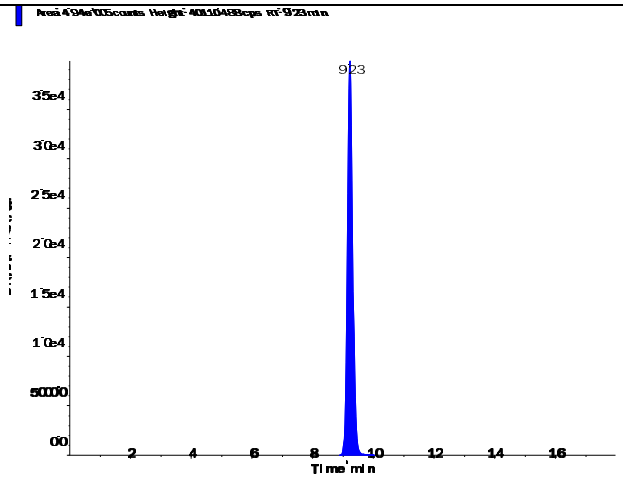

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.24 (9.84) min
Calculated conc:	0.204 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

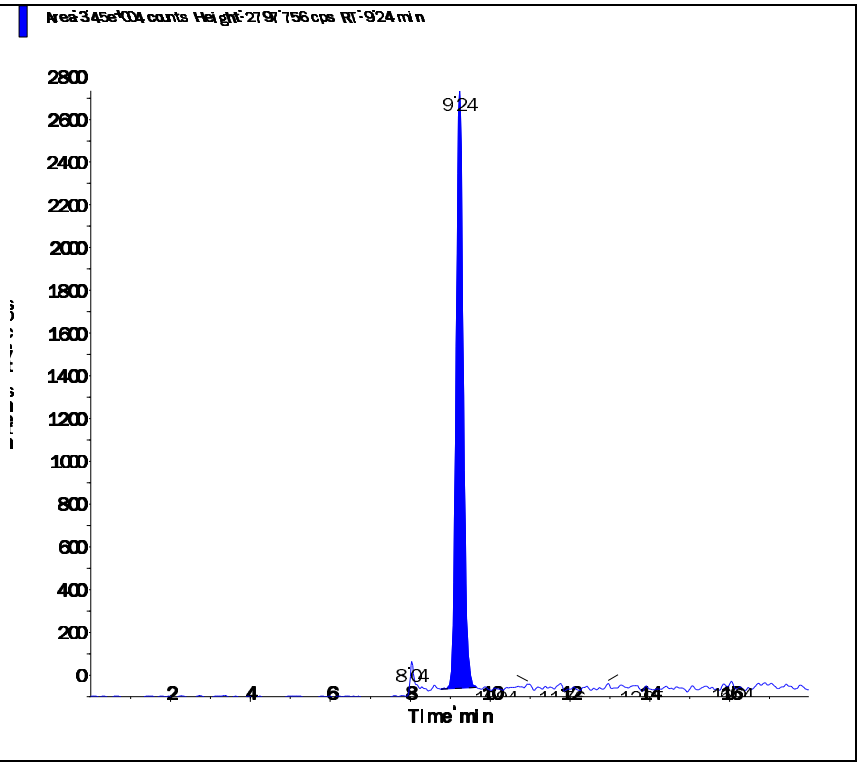

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.22 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

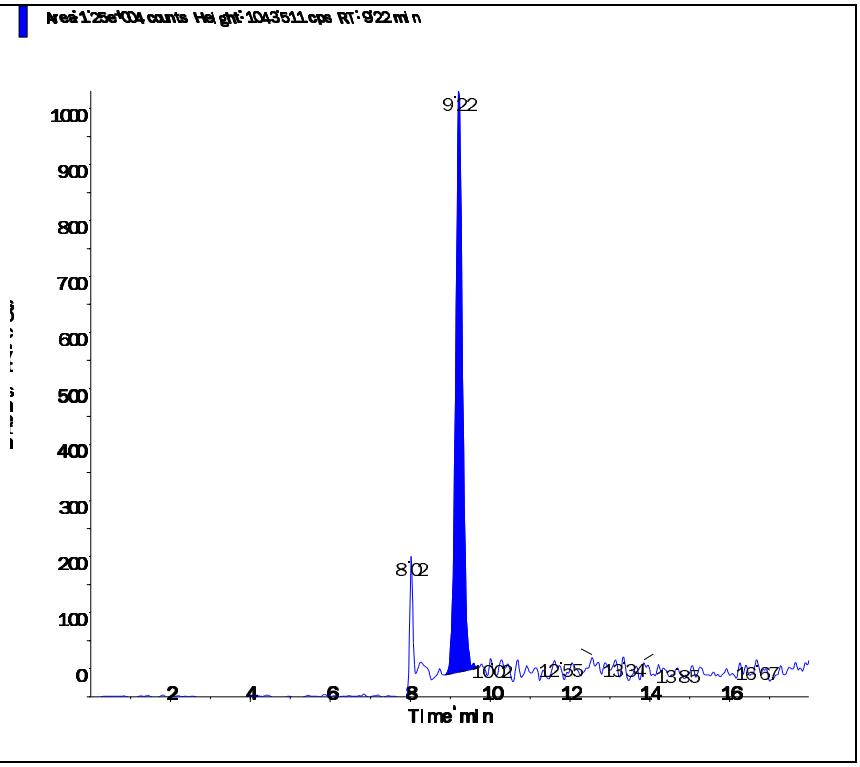

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Data File	LM35440.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 12:41:19 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35440.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 12:41:19 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.090e+05	9.26	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.670e+04	9.27	N/A	0.21
Perchlorate conf	1.290e+04	9.24	N/A	0.207

O18LP (Internal Standard)

RT (Exp. RT): 9.26(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

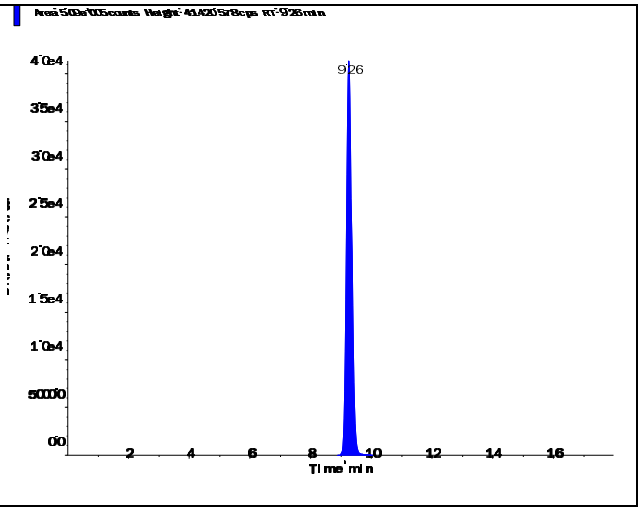

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.27 (9.84) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

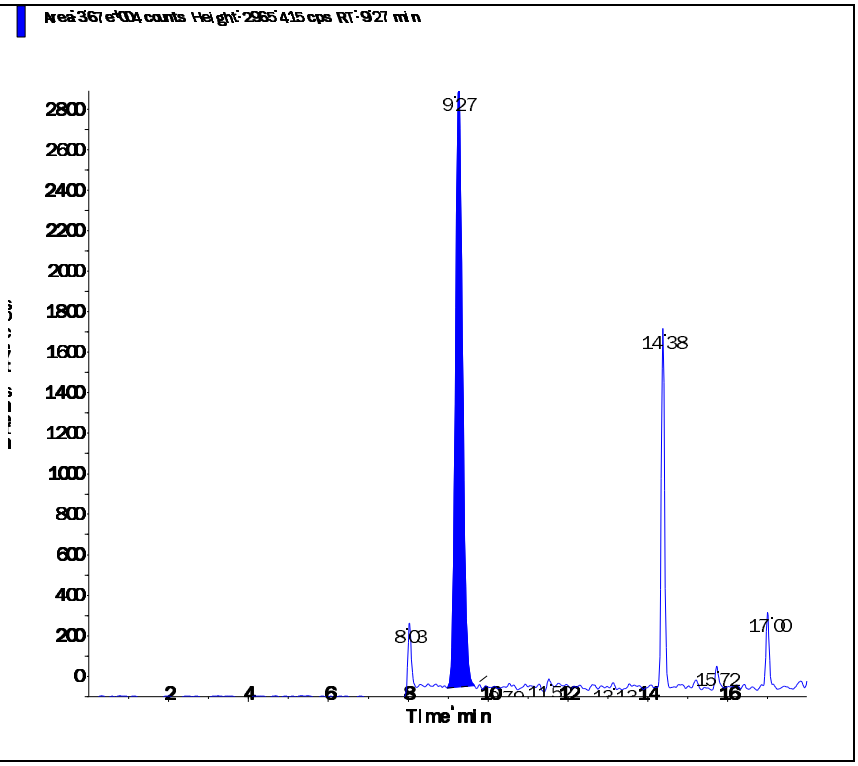

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.24 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

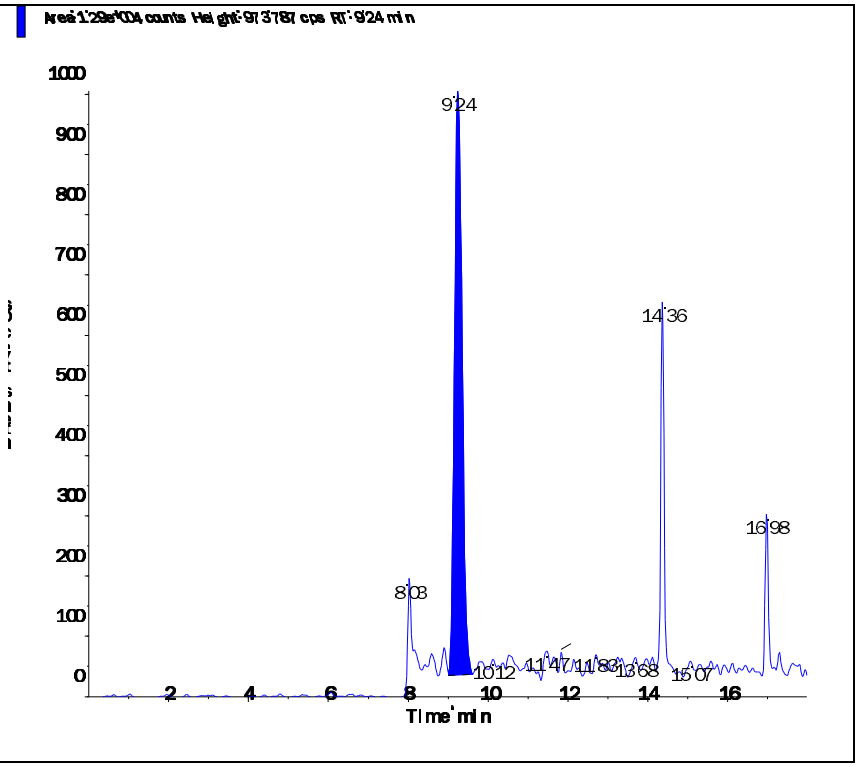

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Data File	LM35447.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 2:53:53 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-08 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35447.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 2:53:53 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.770e+05	9.27	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.480e+04	9.28	N/A	0.214
Perchlorate conf	1.170e+04	9.27	N/A	0.20

O18LP (Internal Standard)

RT (Exp. RT): 9.27(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

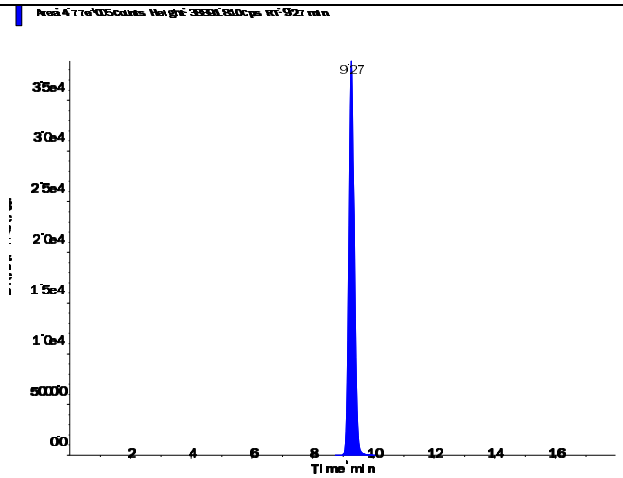

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.28 (9.84) min
Calculated conc:	0.214 ng/ml
Area Ratio:	0.073
Sample Type:	(Unknown)

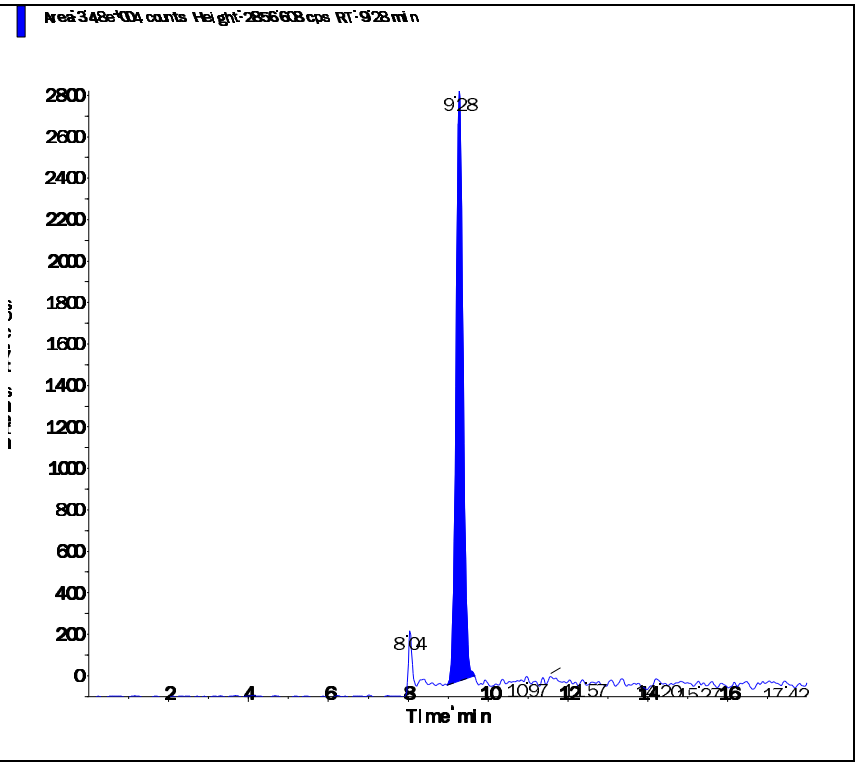

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.27 (9.84) min
Calculated conc:	0.20 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

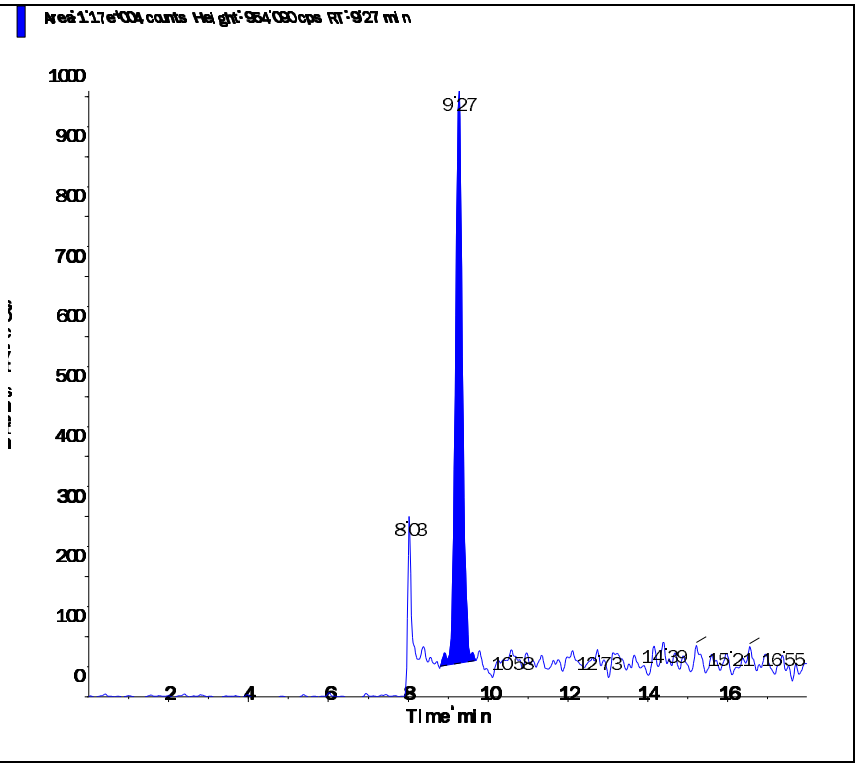

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Data File	LM35450.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 12:08:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-09 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35450.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 12:08:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.250e+05	9.31	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.050e+04	9.32	N/A	0.209
Perchlorate conf	1.100e+04	9.31	N/A	0.211

O18LP (Internal Standard)

RT (Exp. RT): 9.31(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

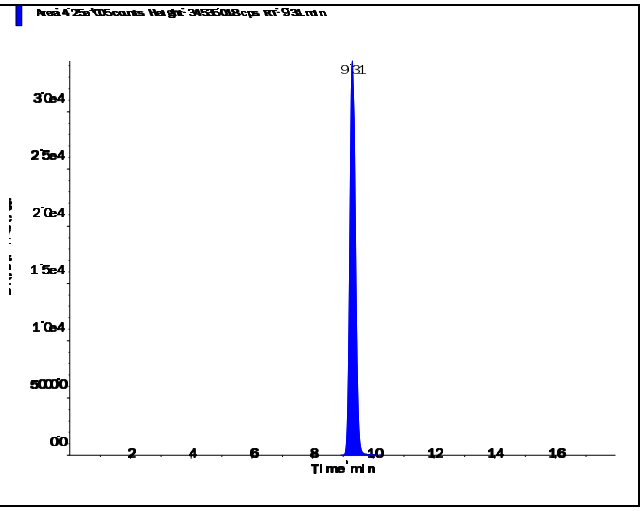

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.32 (9.84) min
Calculated conc:	0.209 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

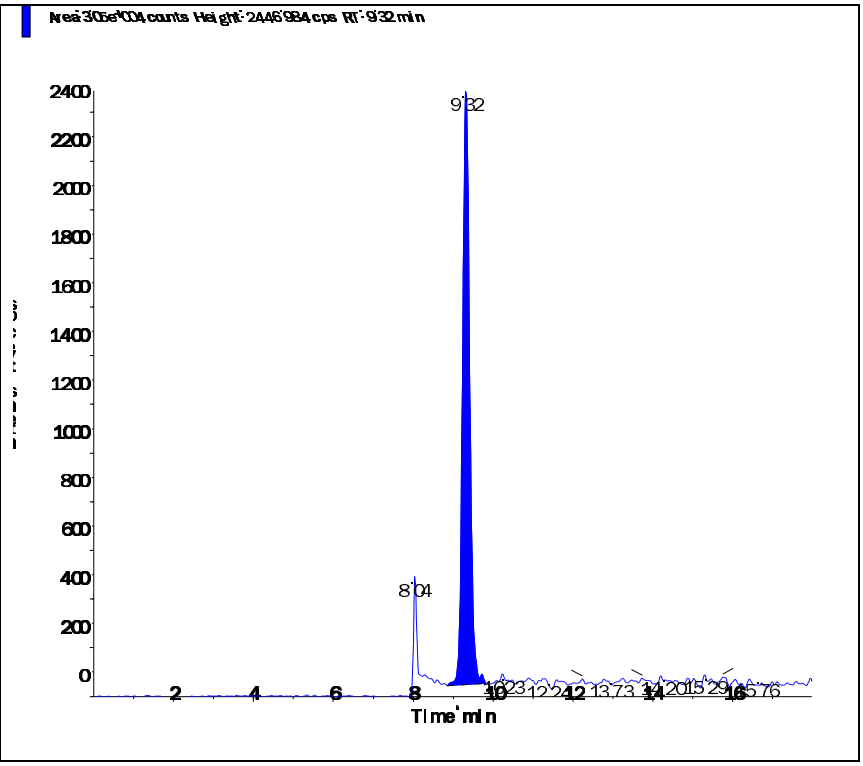

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.31 (9.84) min
Calculated conc:	0.211 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

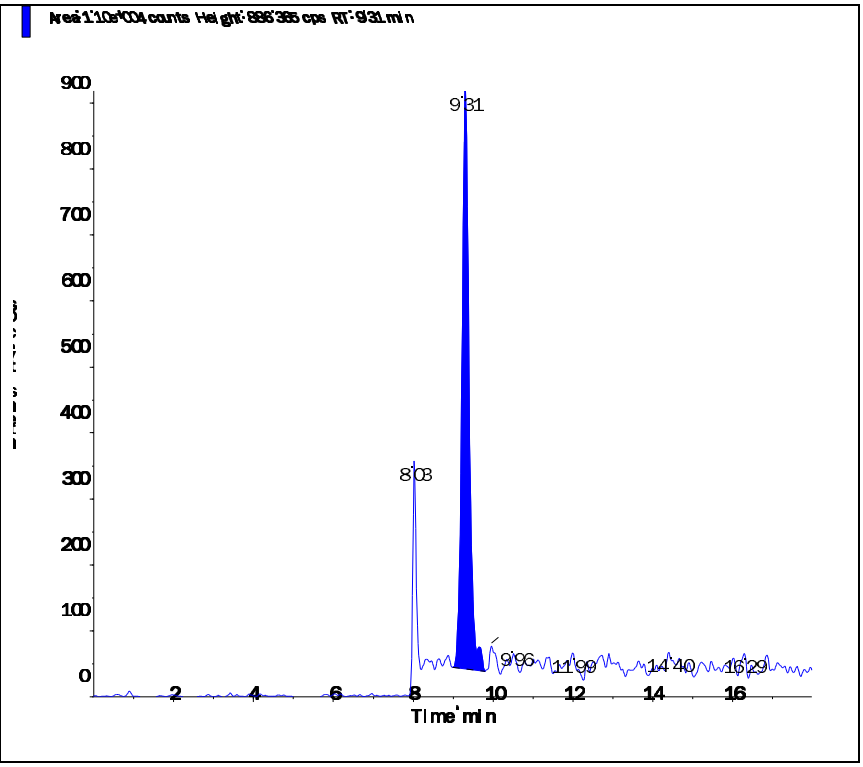

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Data File	LM35460.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 3:17:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-10 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35460.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 3:17:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-10	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.650e+05	9.33	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.200e+04	9.35	N/A	0.201
Perchlorate conf	1.270e+04	9.33	N/A	0.224

O18LP (Internal Standard)

RT (Exp. RT): 9.33(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

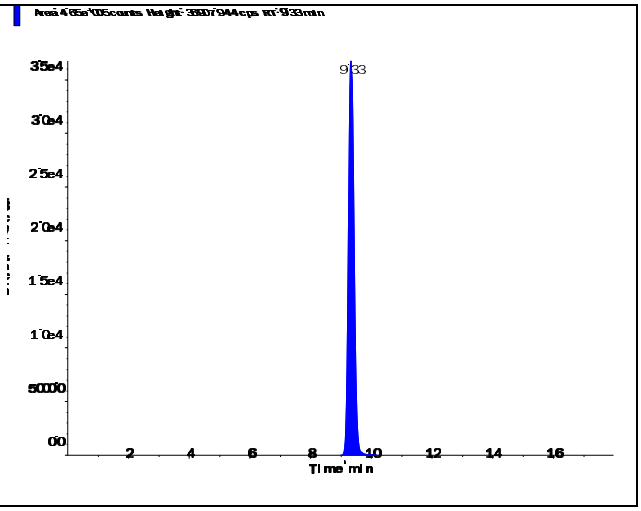

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

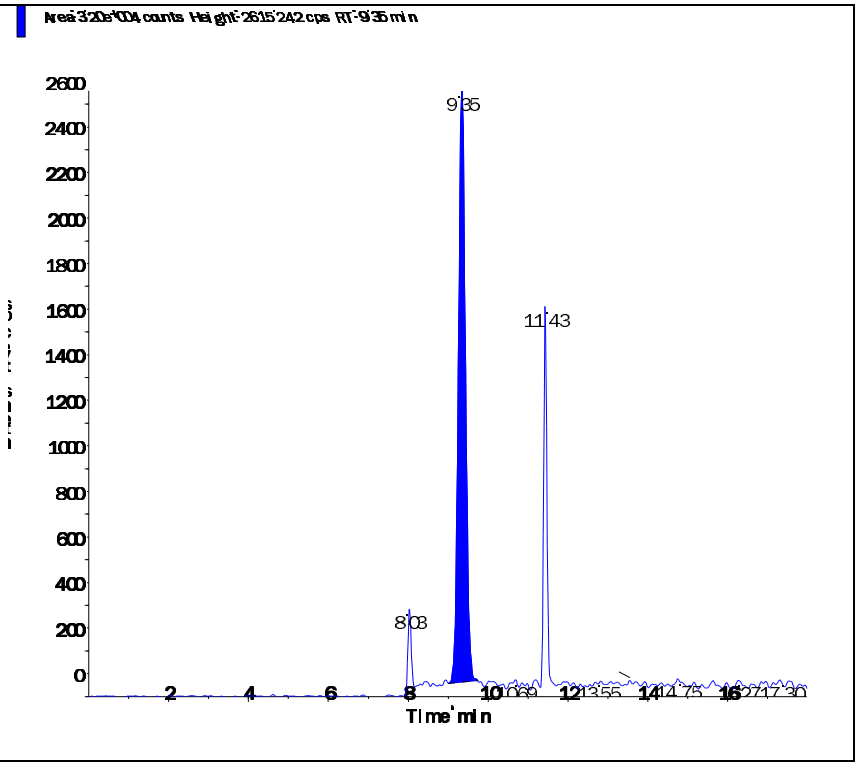

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.33 (9.84) min
Calculated conc:	0.224 ng/ml
Area Ratio:	0.027
Sample Type:	(Unknown)

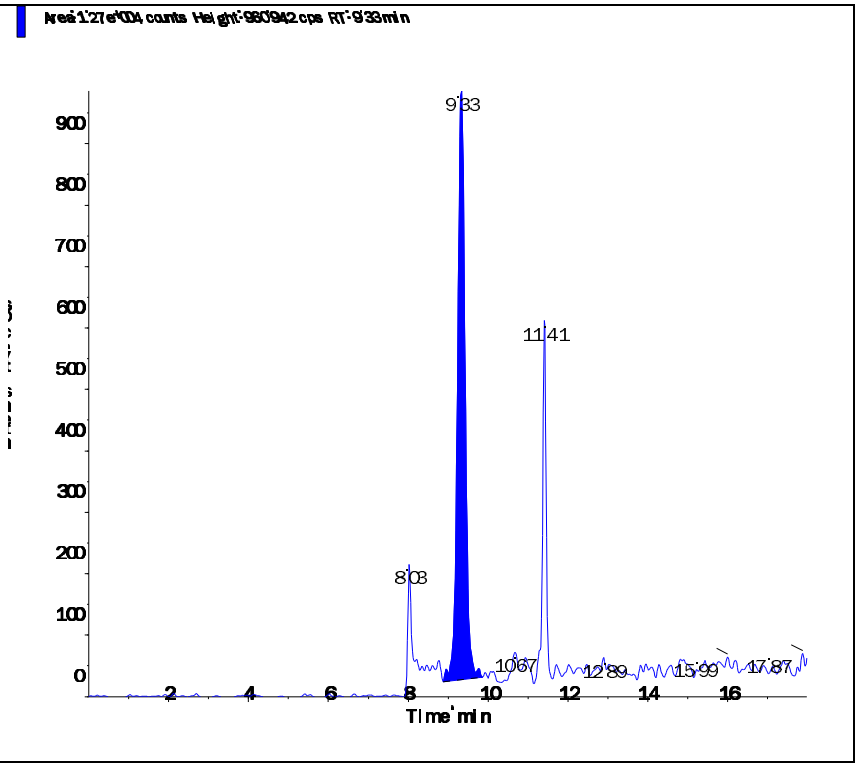

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Data File	LM35415.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 4:48:02 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-01 CCB	**Injection Vial**	1.00
Data File	LM35415.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 4:48:02 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.750e+05	9.37	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	5.830e+02	9.37	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.37(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

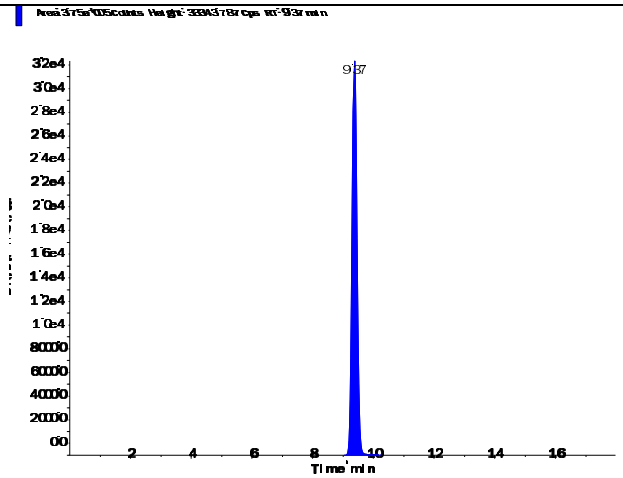

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

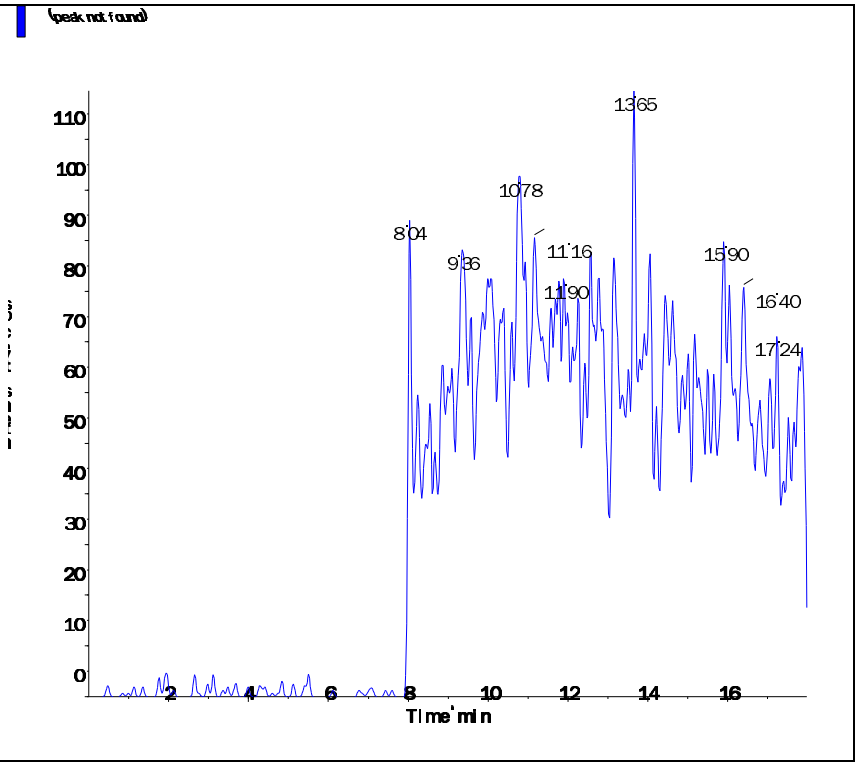

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.37 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

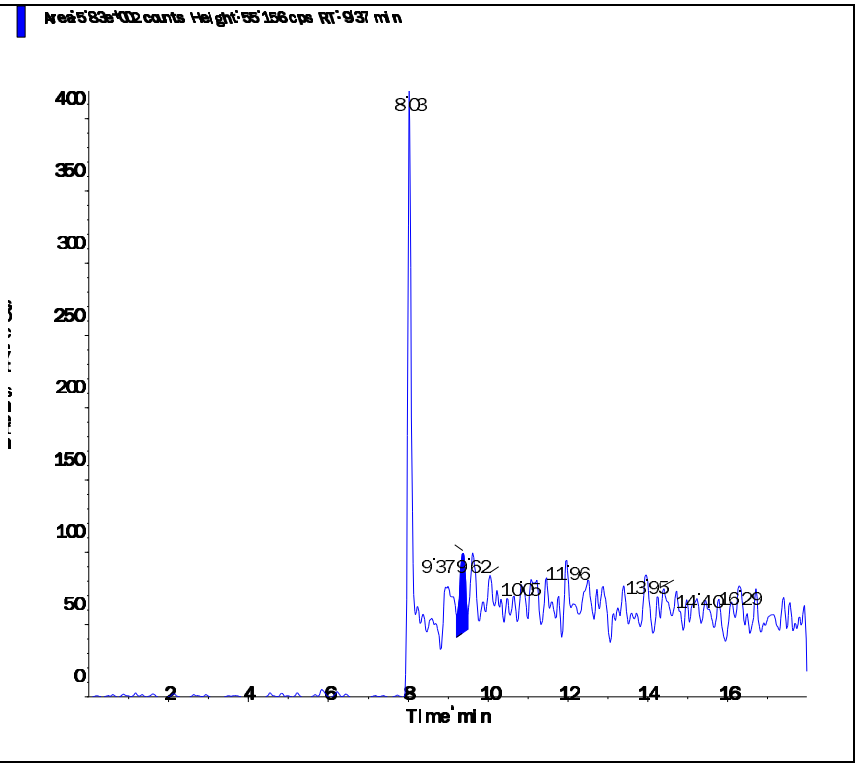

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Data File	LM35430.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 9:31:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-04 CCB	**Injection Vial**	1.00
Data File	LM35430.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 9:31:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.890e+05	9.42	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	2.230e+02	9.45	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.42(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

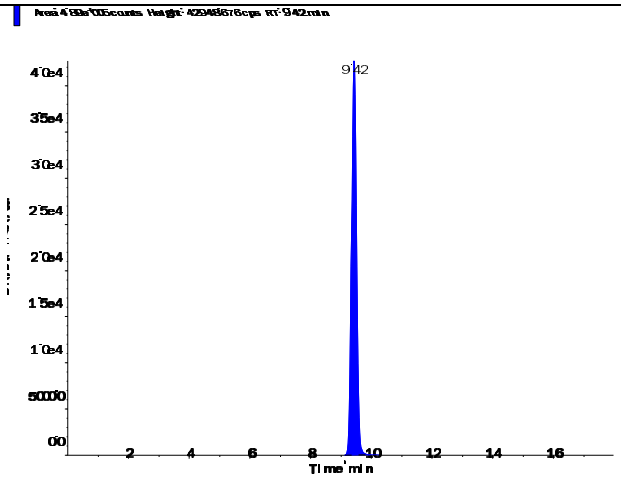

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	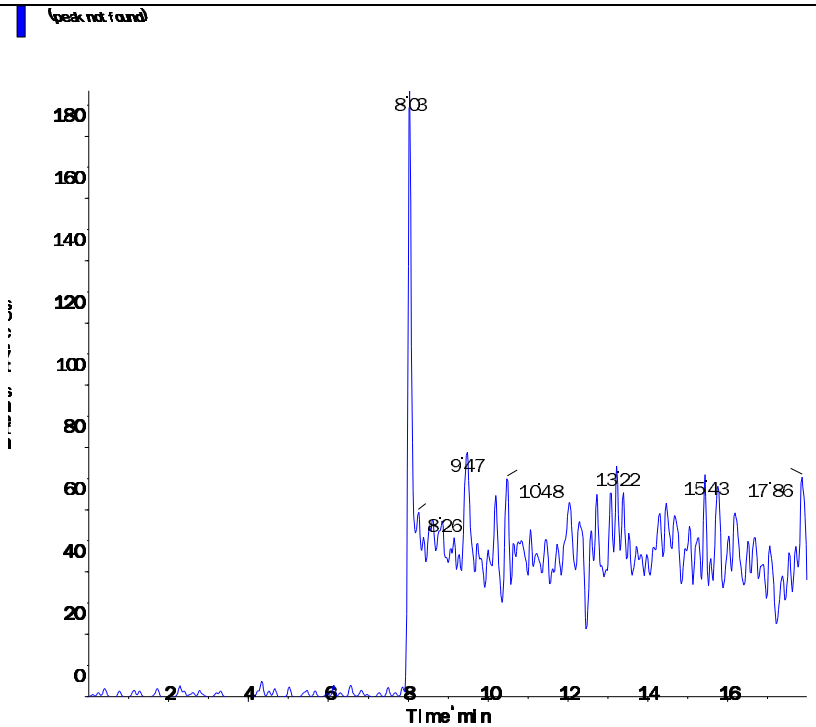
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.45 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	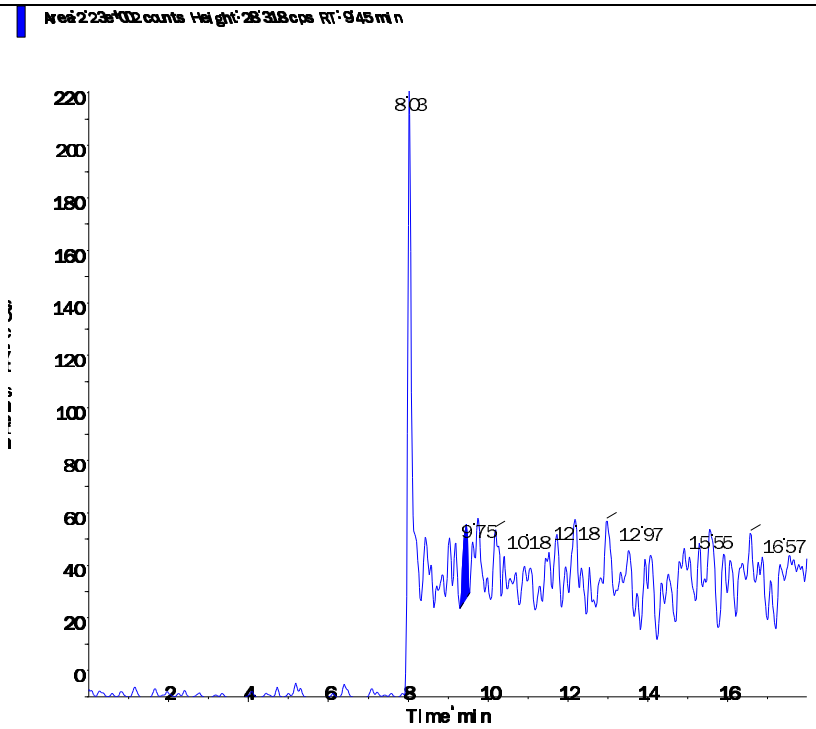

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Created with Analyst Reporter
Printed: 6/23/2016 5:02 PM

Data File	LM35441.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 1:00:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-06 CCB	**Injection Vial**	1.00
Data File	LM35441.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 1:00:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.040e+05	9.46	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.46(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

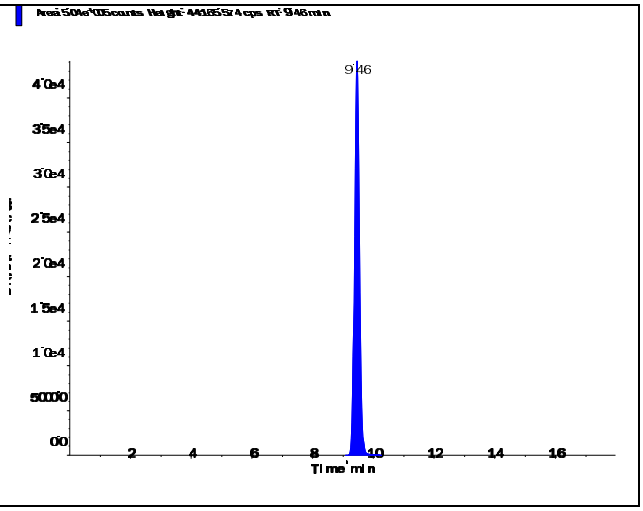

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Created with Analyst Reporter
Printed: 6/23/2016 5:02 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

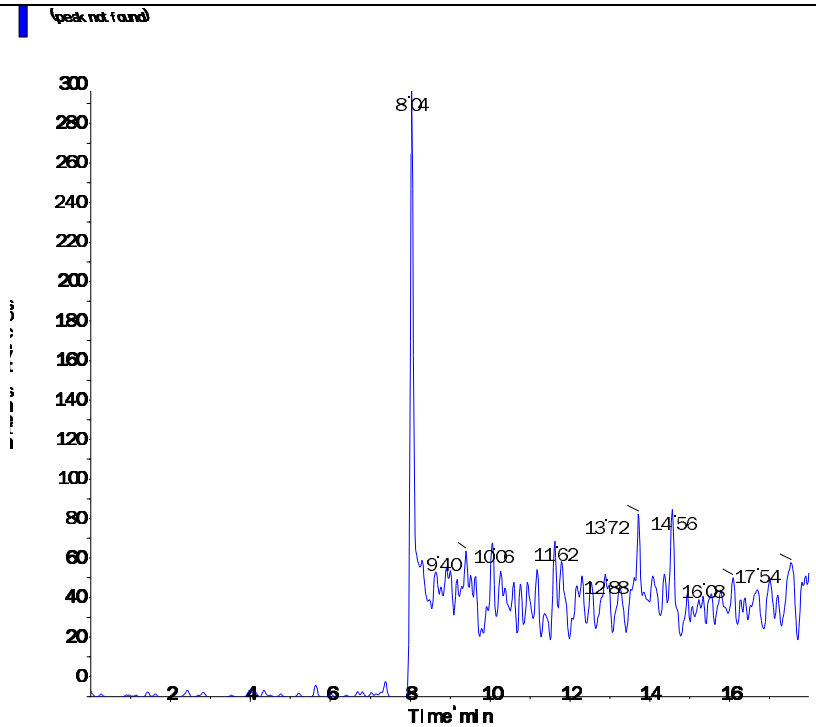

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

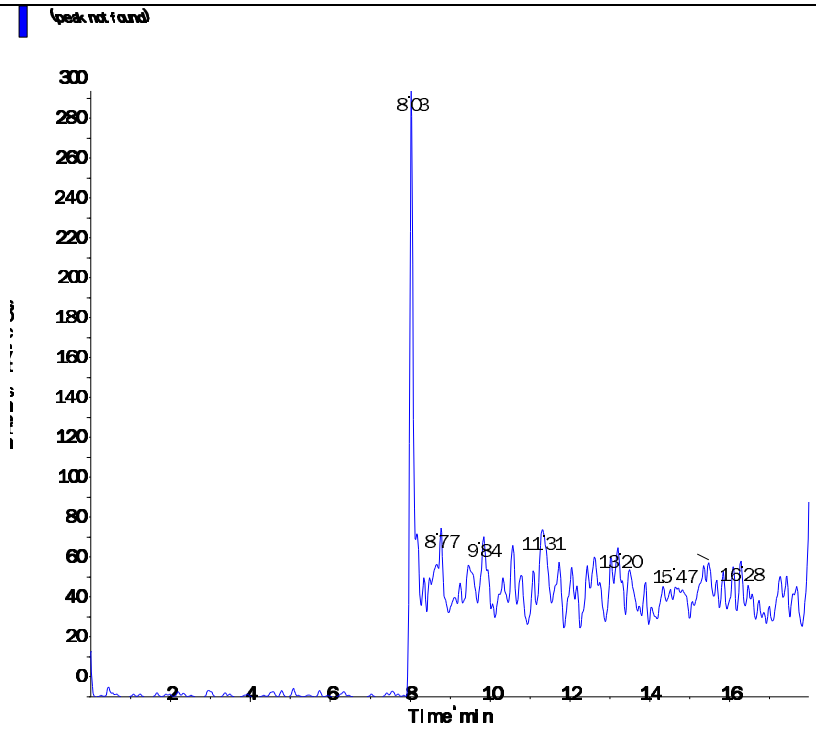

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Created with Analyst Reporter
Printed: 6/23/2016 5:04 PM

Data File	LM35448.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 3:12:48 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-08 CCB	**Injection Vial**	1.00
Data File	LM35448.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 3:12:48 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.850e+05	9.47	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.47(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

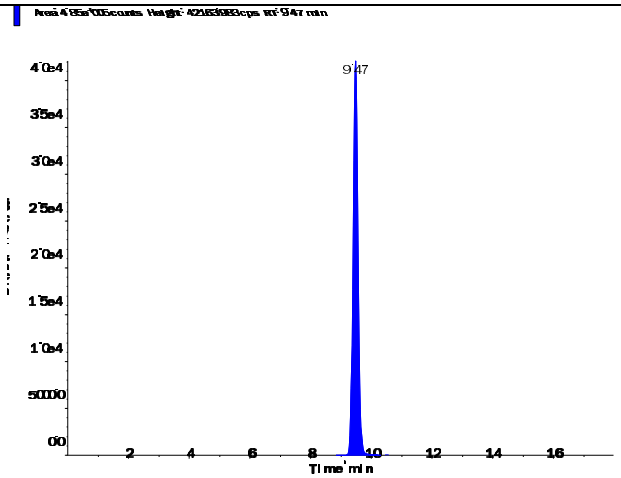

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Created with Analyst Reporter
Printed: 6/23/2016 5:04 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

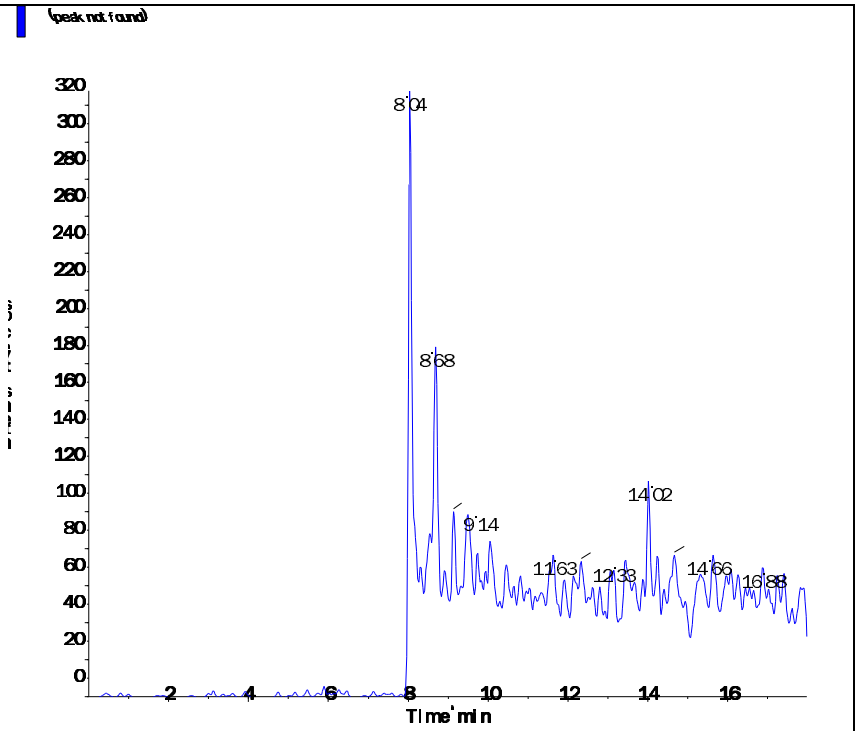

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

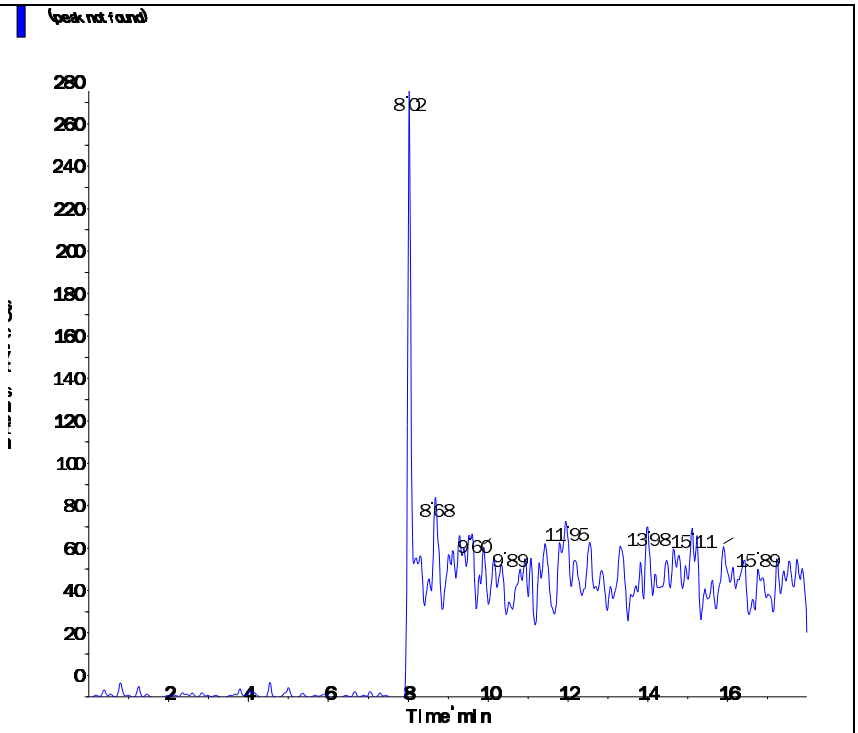

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Created with Analyst Reporter
Printed: 6/23/2016 5:05 PM

Data File	LM35451.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 12:27:11 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-10 CCB	**Injection Vial**	1.00
Data File	LM35451.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 12:27:11 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.370e+05	9.51	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	5.600e+02	9.50	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.51(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

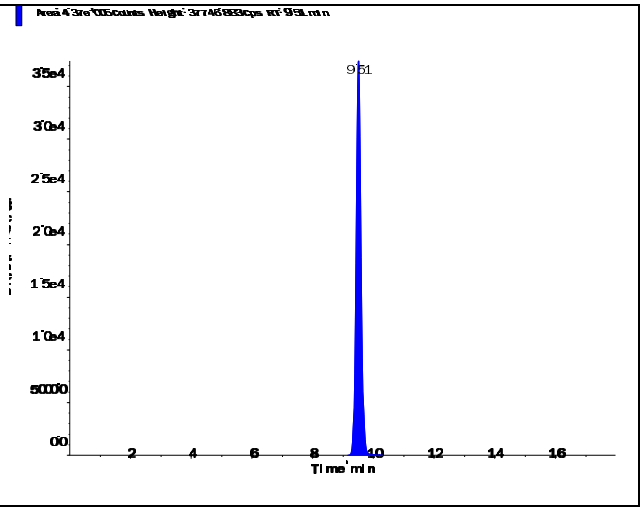

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	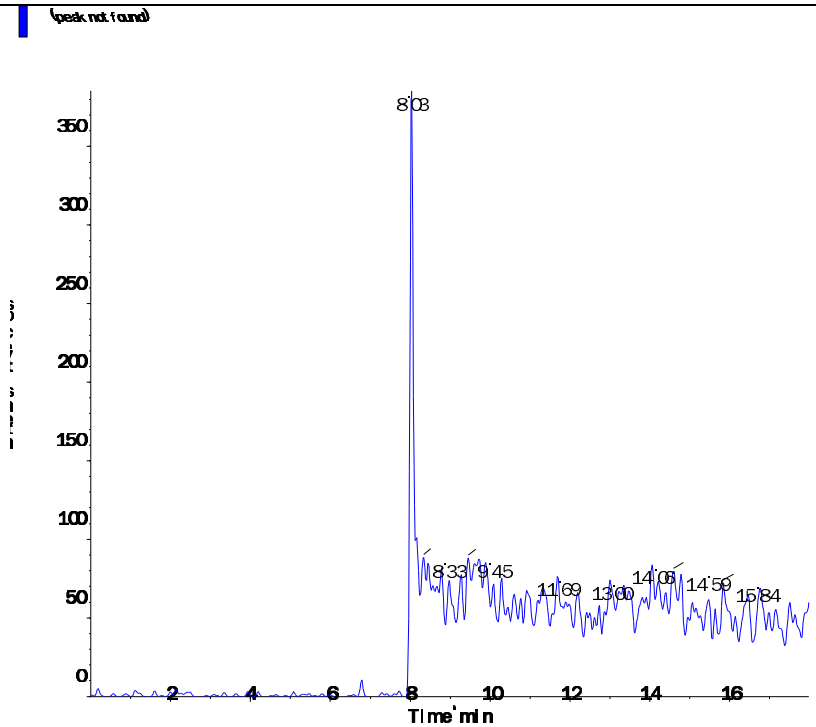
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.50 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	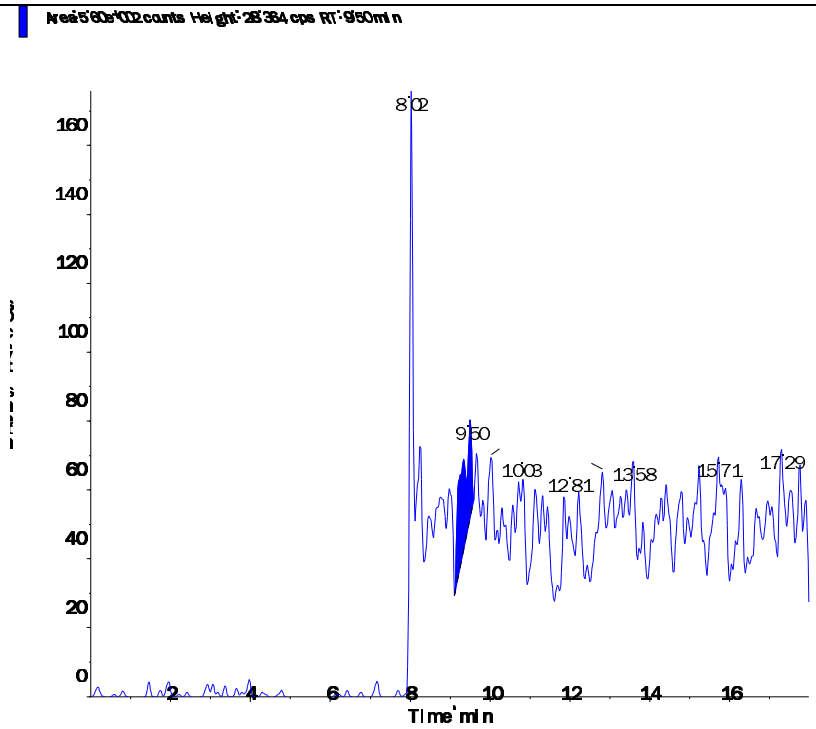

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Printed: 6/23/2016 5:08 PM

Data File	LM35461.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 3:36:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-12 CCB	**Injection Vial**	1.00
Data File	LM35461.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 3:36:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-12	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.660e+05	9.52	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.52(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

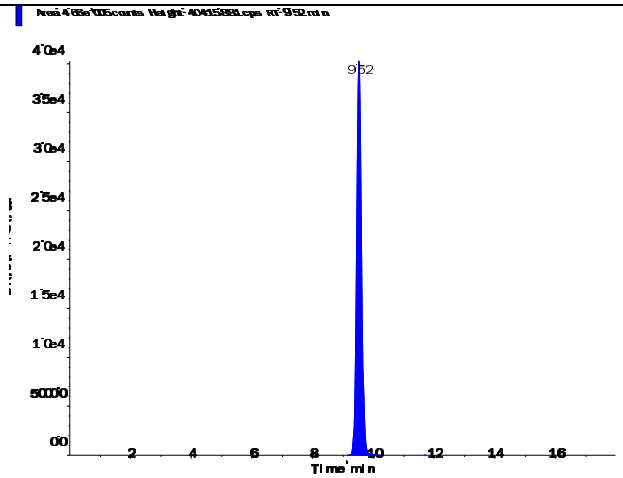

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Printed: 6/23/2016 5:08 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

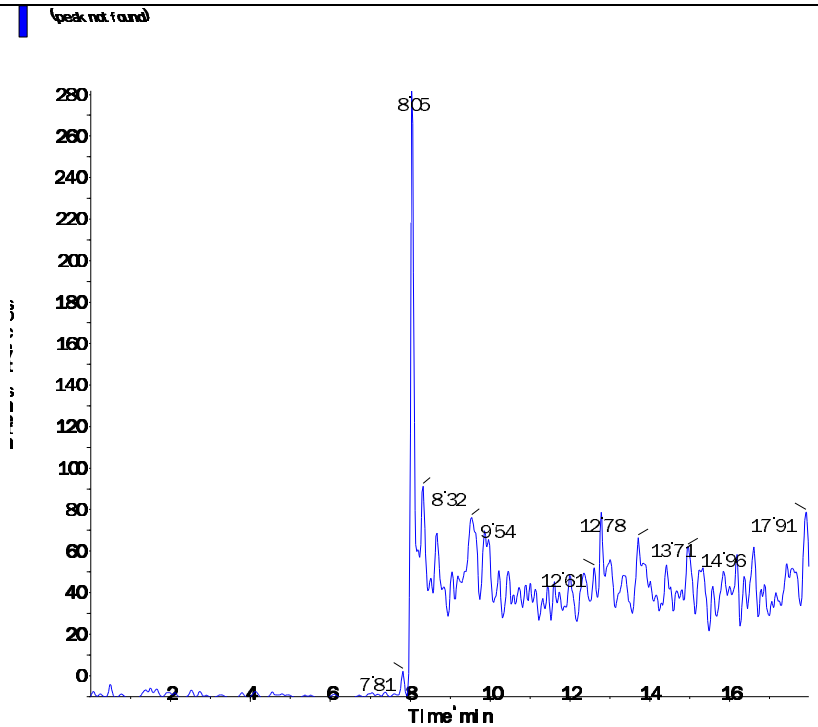

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

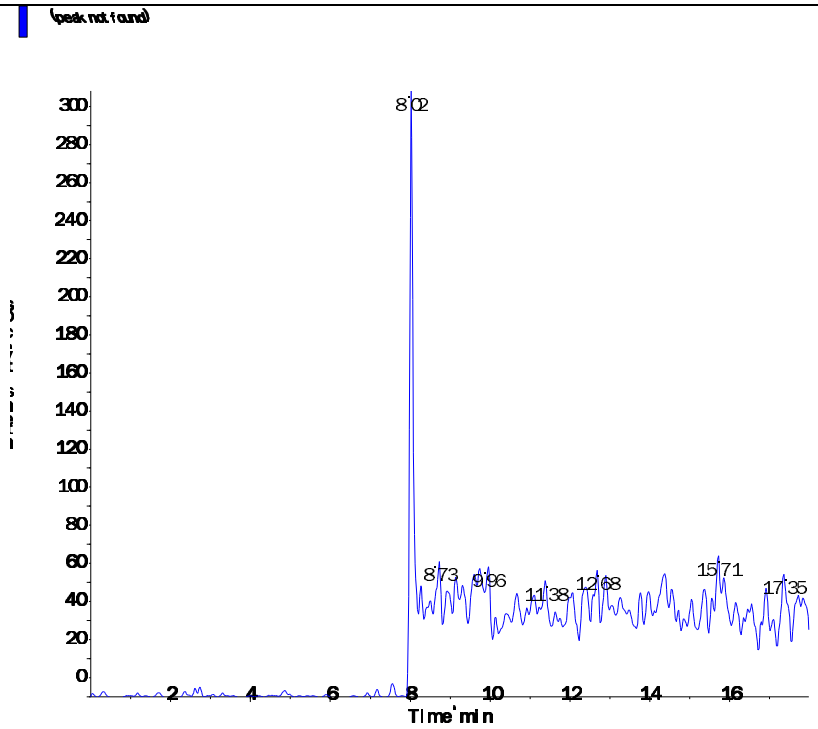

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Created with Analyst Reporter
Printed: 6/23/2016 4:53 PM

Data File	LM35418.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 5:44:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM35418.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 5:44:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.330e+05	8.77	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.850e+04	8.77	N/A	0.192
Perchlorate conf	1.000e+04	8.76	N/A	0.187

O18LP (Internal Standard)

RT (Exp. RT): 8.77(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

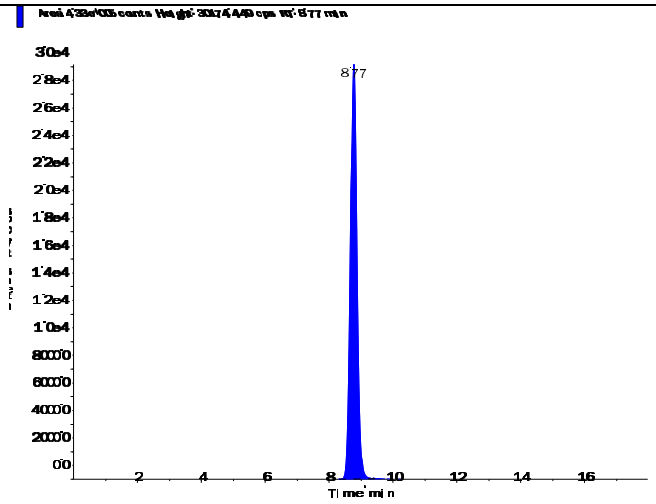

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Printed: 6/23/2016 4:53 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	8.77 (9.84) min
Calculated conc:	0.192 ng/ml
Area Ratio:	0.066
Sample Type:	(Unknown)

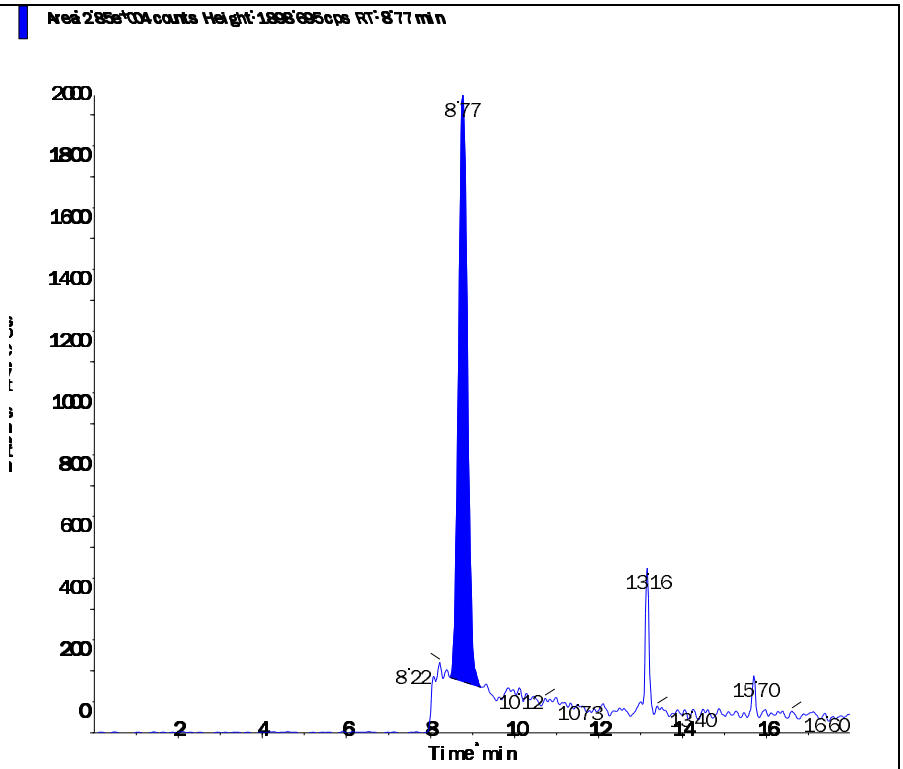

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	8.76 (9.84) min
Calculated conc:	0.187 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

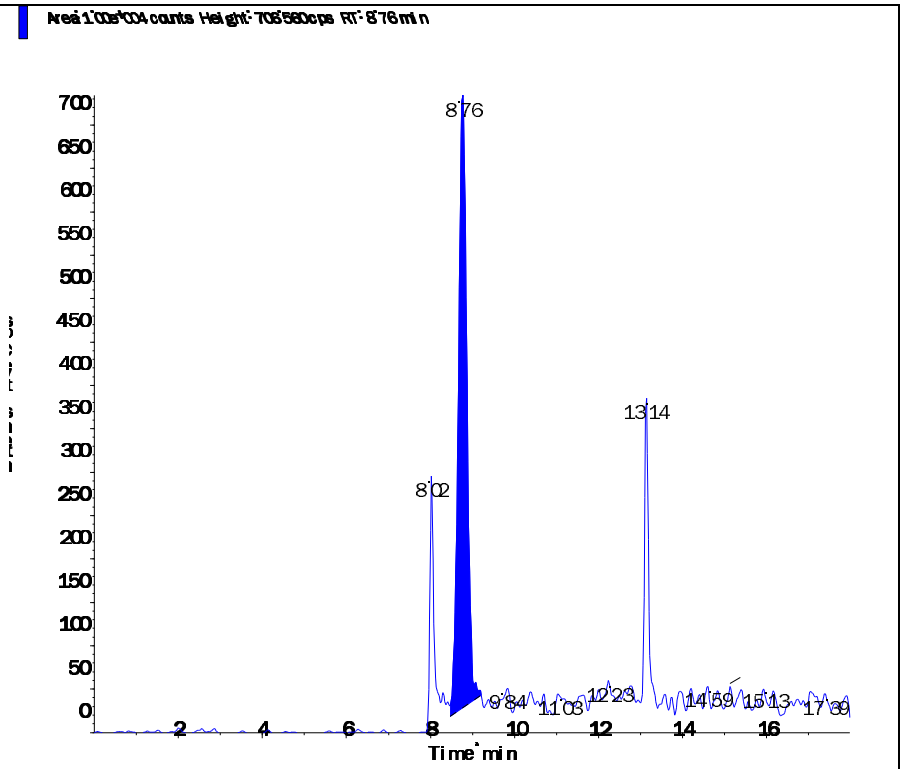

s.dataFile Page 2 of 2

Printing Time: 6:50:16 PM
Printing Date: Wednesday, June 22, 2016

Sample Name: "WG573791-01 MCT (0.2ug/L)" Sample ID: "WG573791-01" File: "LM35418.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index: 1
Sample Type: Unknown
Concentration: N/A
Calculated Conc: 0.230 ug/L
Acq. Date: 6/22/2016
Acq. Time: 5:44:45 PM

Modified: No
Proc. Algorithm: Analyst Classic
Smoothing Factor: 2
Noise Threshold: 18.48 cps
Area Threshold: 92.40 cps
Num. Smooths: 5
Sep. Width: 0.20
Sep. Height: 0.01
Exp. Peak Ratio: 5.00
Exp. Adj. Ratio: 4.00
Exp. Val. Ratio: 3.00
RT Window: 30.000 sec
Expected RT: 9.84 min
Use Relative RT: Yes

Int. Type: Valley
Retention Time: 8.77 min
Area: 3.40e+004 counts
Height: 1990.014 cps
Start Time: 8.303 min
End Time: 9.417 min

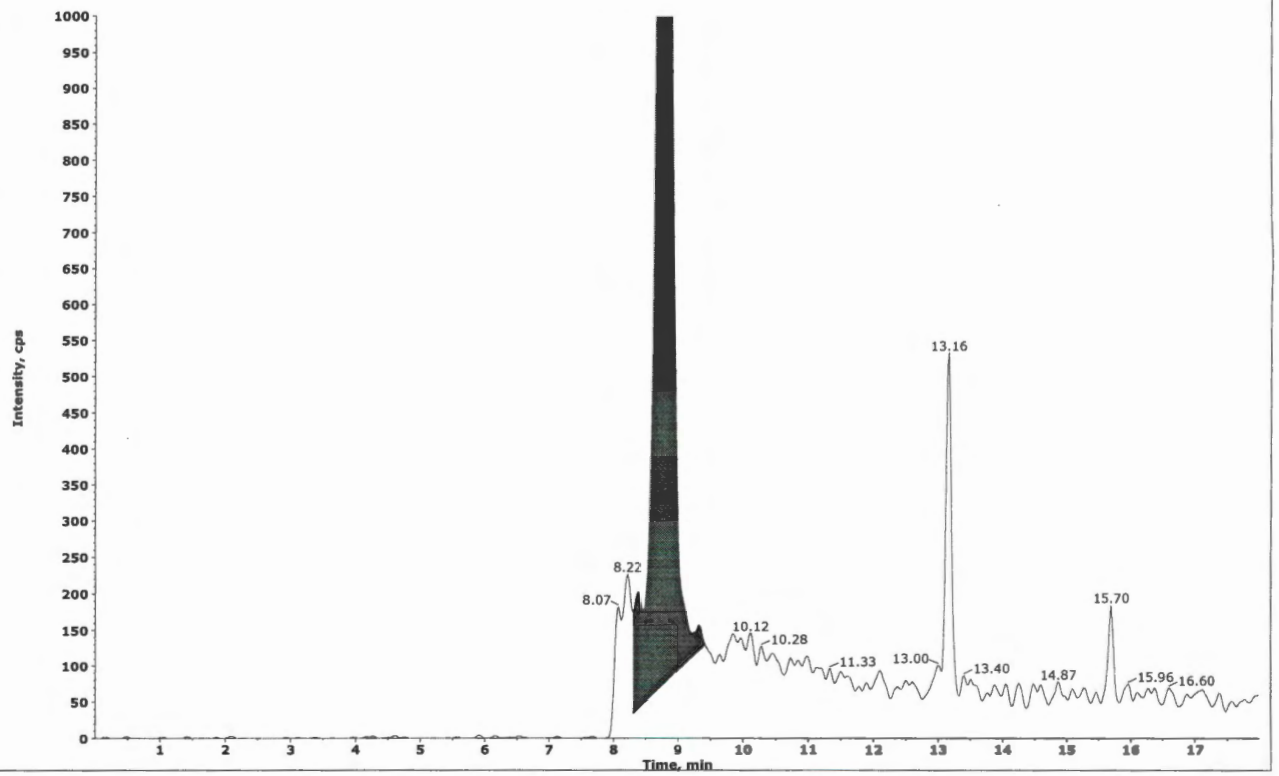

Collected by: N/A
Electronic Signature: no
Operator: lcmsl

Printing Time: 6:52:29 PM
Printing Date: Wednesday, June 22, 2016

Sample Name: "WG573791-01 MCT (0.2ug/L)" Sample ID: "WG573791-01" File: "LM35418.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.192 ug/L
Acq. Date:	6/22/2016
Acq. Time:	5:44:45 PM
Modified:	Yes
Proc. Algorithm:	Analyst Classic
Smoothing Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Sep. Width:	0.20
Sep. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Manual
Retention Time:	8.77 min
Area:	2.85e+004 counts
Height:	1898.695 cps
Start Time:	8.465 min
End Time:	9.194 min

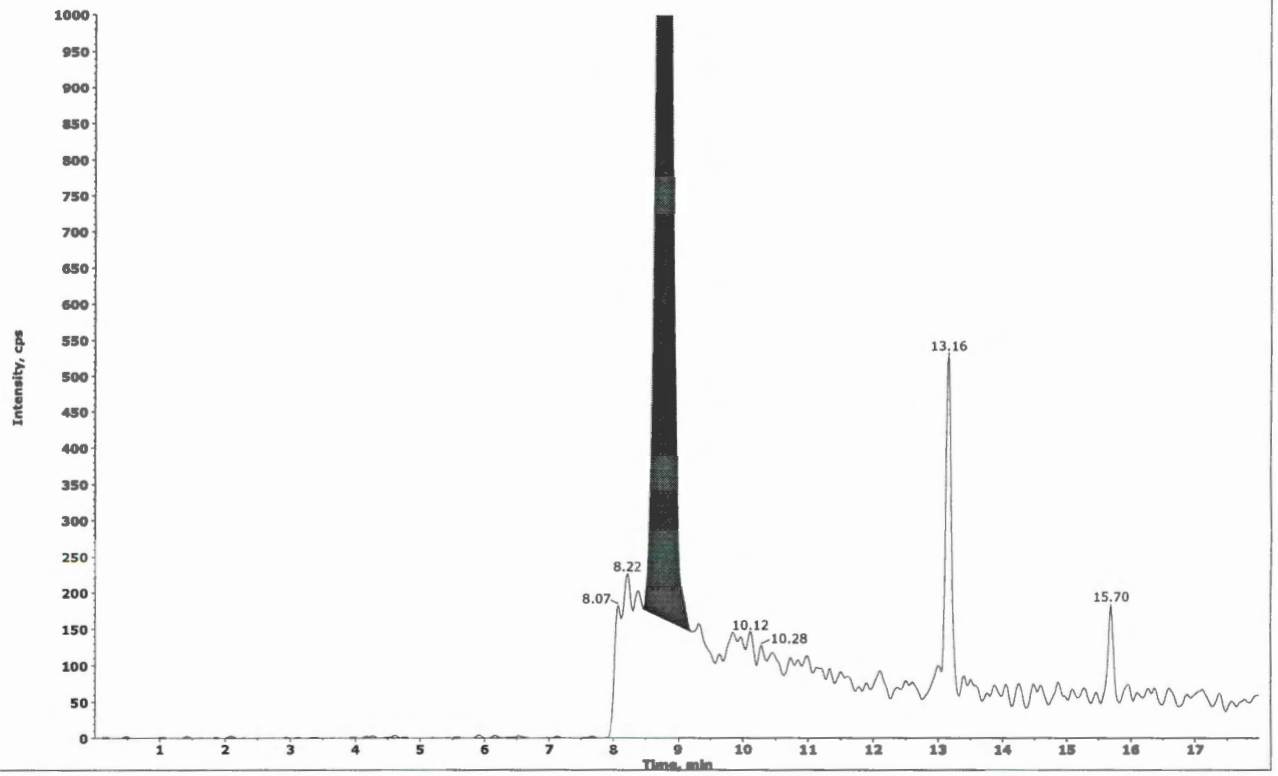

#4
JWR 06/22/16

✓ WD
6-24-16

Collected by: N/A
Electronic Signature: no
Operator: lcms1

2.2.2.5 Raw QC Data

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Printed: 6/23/2016 4:54 PM

Data File	LM35419.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 6:03:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-02 BLANK	**Injection Vial**	5.00
Data File	LM35419.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 6:03:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.360e+05	9.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	5.050e+02	9.25	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.30(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

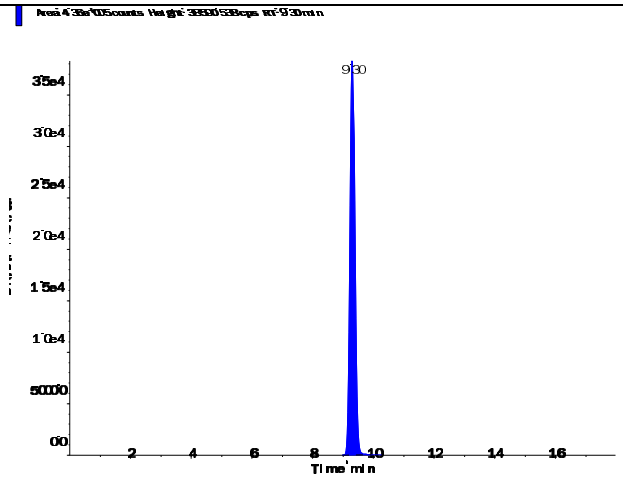

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

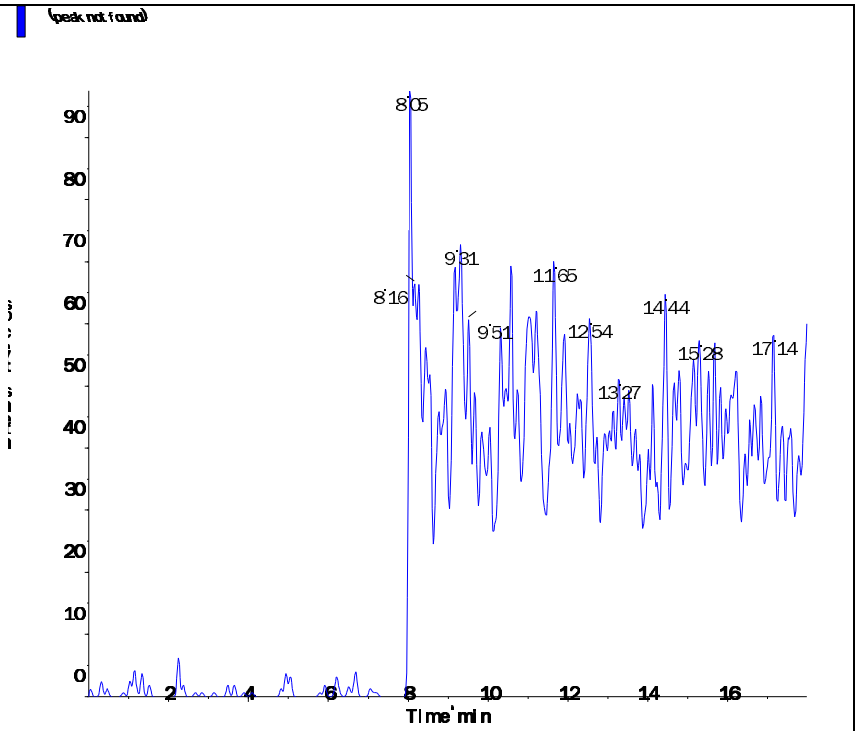

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.25 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

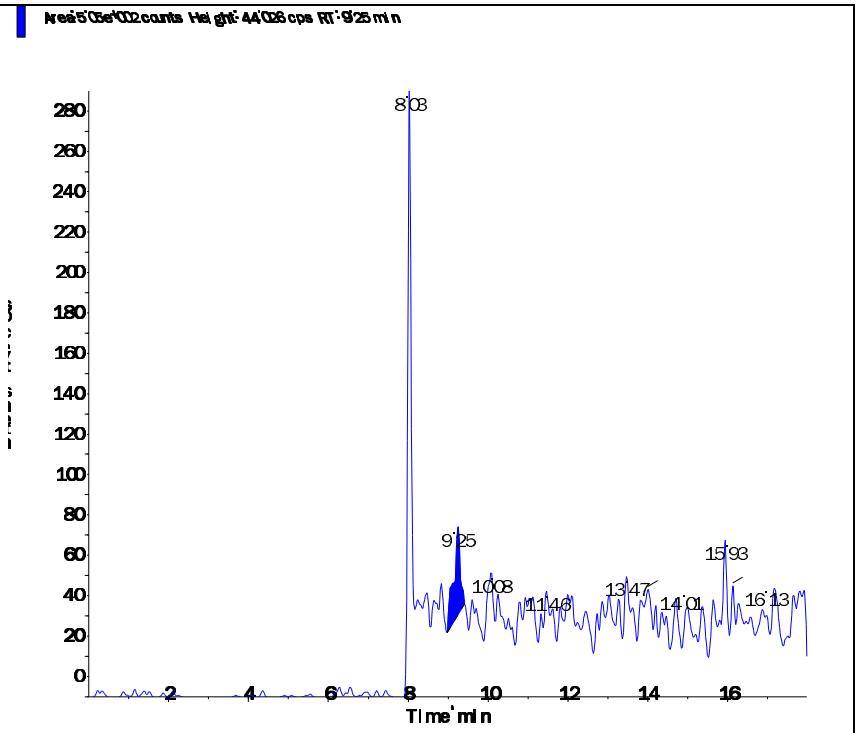

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Created with Analyst Reporter
Printed: 6/23/2016 4:54 PM

Data File	LM35420.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 6:22:36 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM35420.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 6:22:36 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.400e+05	9.33	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.030e+04	9.35	N/A	0.201
Perchlorate conf	1.150e+04	9.33	N/A	0.213

O18LP (Internal Standard)

RT (Exp. RT): 9.33(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

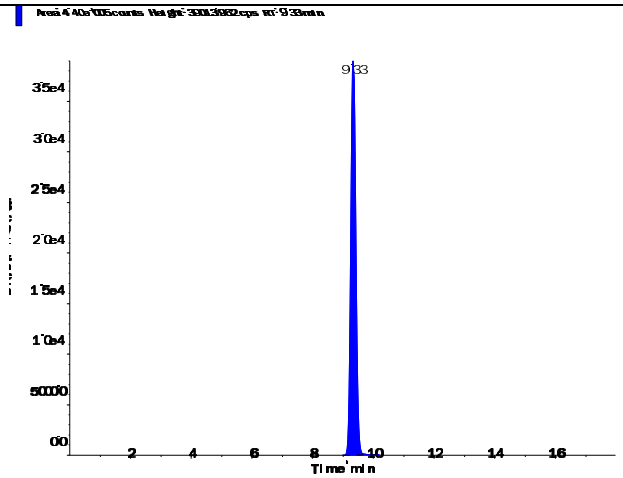

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/23/2016 4:54 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

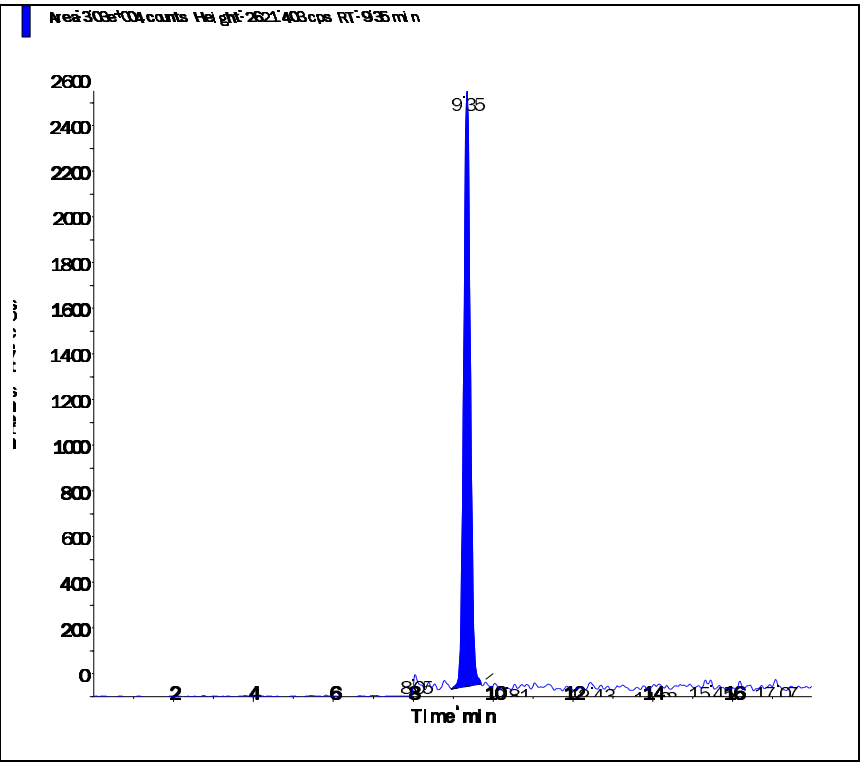

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.33 (9.84) min
Calculated conc:	0.213 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

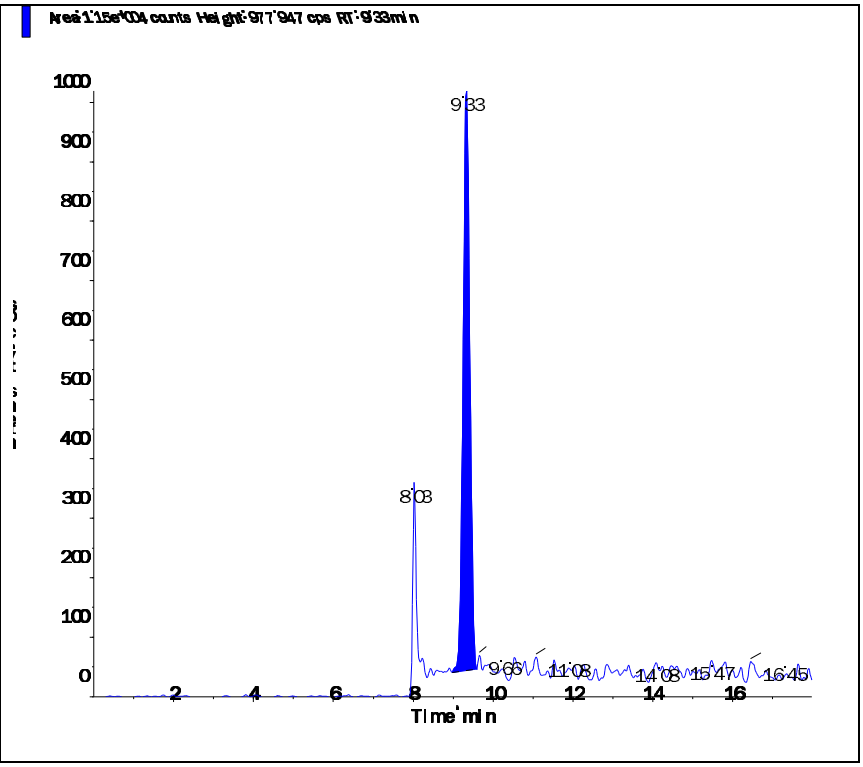

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/23/2016 4:55 PM

Data File	LM35421.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 6:41:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-04 LCS2 (0.2ug/L)	**Injection Vial**	7.00
Data File	LM35421.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 6:41:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.350e+05	9.36	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.200e+04	9.38	N/A	0.215
Perchlorate conf	1.150e+04	9.36	N/A	0.216

O18LP (Internal Standard)

RT (Exp. RT): 9.36(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

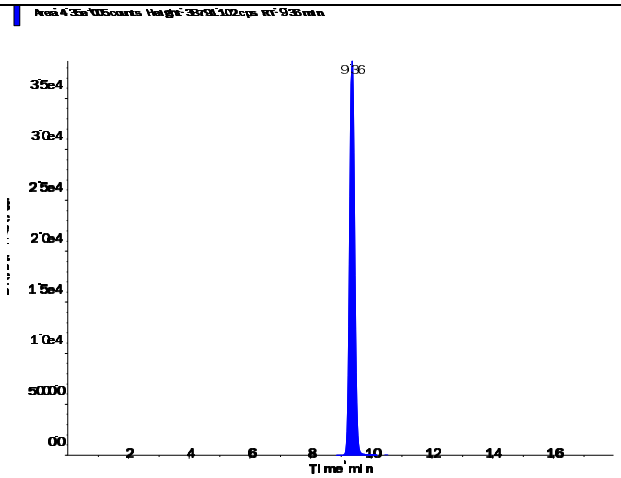

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/23/2016 4:55 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	0.215 ng/ml
Area Ratio:	0.074
Sample Type:	(Unknown)

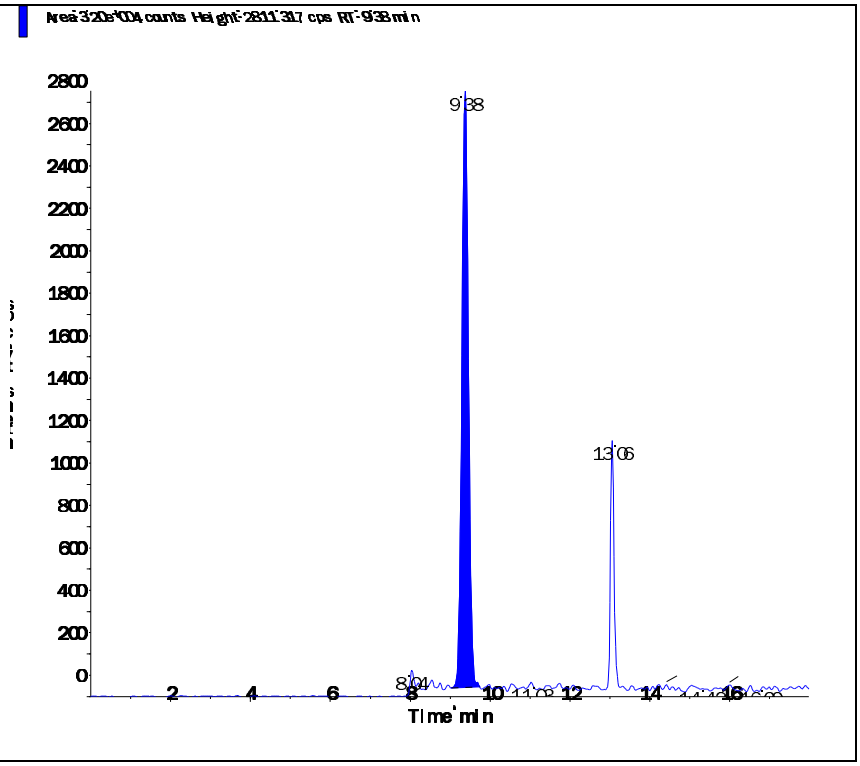

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.36 (9.84) min
Calculated conc:	0.216 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

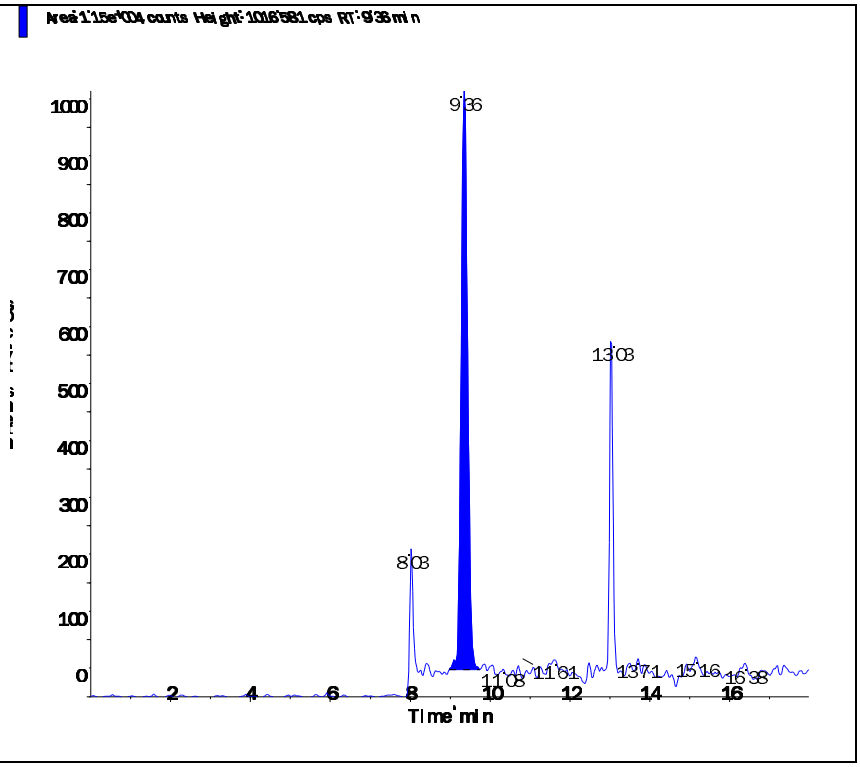

s.dataFile Page 2 of 2

2.3 Metals Data

2.3.1 Metals I C P Data

2.3.1.1 Summary Data

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW14-061316	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 13:57
Collect Date:	06/13/2016 09:15	**Dilution:**	1	**File ID:**	T3.062316.135724
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.400		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	0.0599	J	0.200	0.100	0.0500
Magnesium, Total	7439-95-4	12.5		1.00	0.500	0.250
Potassium, Total	7440-09-7	33.5		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW14-061316	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 14:40
Collect Date:	06/13/2016 09:15	**Dilution:**	100	**File ID:**	T3.062316.144053
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	490		50.0	25.0	12.5
Sodium, Total	7440-23-5	378		100	50.0	25.0

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW14FD-061316	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 14:01
Collect Date:	06/13/2016 09:15	**Dilution:**	1	**File ID:**	T3.062316.140125
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.377		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	0.0756	J	0.200	0.100	0.0500
Magnesium, Total	7439-95-4	13.5		1.00	0.500	0.250
Potassium, Total	7440-09-7	33.6		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW14FD-061316	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 14:44
Collect Date:	06/13/2016 09:15	**Dilution:**	100	**File ID:**	T3.062316.144451
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	477		50.0	25.0	12.5
Sodium, Total	7440-23-5	373		100	50.0	25.0

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW24-061316	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 14:05
Collect Date:	06/13/2016 10:35	**Dilution:**	1	**File ID:**	T3.062316.140527
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.109	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	9.62		0.200	0.100	0.0500
Potassium, Total	7440-09-7	5.86		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW24-061316	**Prep Method:**	3015	**Prep Date:**	06/16/2016 09:15
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 10:03
Workgroup #:	WG573560	**Analyst:**	JYH	**Run Date:**	06/23/2016 14:48
Collect Date:	06/13/2016 10:35	**Dilution:**	100	**File ID:**	T3.062316.144849
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	431		50.0	25.0	12.5
Magnesium, Total	7439-95-4	265		100	50.0	25.0
Sodium, Total	7440-23-5	1090		100	50.0	25.0

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.1.2 QC Summary Data

Example 6010 Calculations
Thermo Scientific iCAP

1.0 Initial Calibration (ICAL) Parameters
For a multi-point calibration, the system performs linear regression from data consisting of a blank and four standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG572929
Analyst: AC
Spike Analyst: AC
Run Date: 06/16/2016 09:15
Method: 3015
Balance: BAL019
Instrument: MW-1
Instrument Start: 06/16/2016 09:15

SOP: ME407 Revison 19
Spike Solution: STD76576
Spike Witness: VC
HNO3 Lot #: COA18905
HCL Lot #: COA18769
ICP Filters- fisher-Lot# RGT35619
40 & 50 ML. DIGESTION TU COA18772

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG572929-02	BLANK	1	40 mL	50 mL	206.938 g	206.935 g		
2	WG572929-03	LCS	1	40 mL	50 mL	210.153 g	210.151 g	5 mL	
3	L16060643-01	SAMP	1	40 mL	50 mL	207.856 g	207.852 g		06/20/16
4	L16060643-02	SAMP	1	40 mL	50 mL	204.497 g	204.494 g		06/20/16
5	L16060643-03	SAMP	1	40 mL	50 mL	207.772 g	207.768 g		06/20/16
6	L16060643-04	SAMP	1	40 mL	50 mL	207.139 g	207.134 g		06/20/16
7	L16060643-05	SAMP	1	40 mL	50 mL	205.74 g	205.731 g		06/20/16
8	L16060643-06	SAMP	1	40 mL	50 mL	208.714 g	208.698 g		06/20/16
9	L16060643-07	SAMP	1	40 mL	50 mL	206.348 g	206.336 g		06/20/16
10	L16060643-08	SAMP	1	40 mL	50 mL	207.957 g	207.944 g		06/20/16
11	L16060643-09	SAMP	1	40 mL	50 mL	206.486 g	206.475 g		06/20/16
12	L16060650-01	SAMP	1	40 mL	50 mL	205.084 g	205.057 g		06/24/16
13	L16060650-02	SAMP	1	40 mL	50 mL	208.779 g	208.757 g		06/24/16
14	L16060650-03	SAMP	1	40 mL	50 mL	209.27 g	209.262 g		06/24/16
15	L16060650-08	SAMP	1	40 mL	50 mL	206.678 g	206.659 g		06/24/16
16	L16060729-01	SAMP	1	40 mL	50 mL	207.286 g	207.265 g		06/24/16
17	L16060729-02	SAMP	1	40 mL	50 mL	207.115 g	207.107 g		06/24/16
18	L16060729-03	SAMP	1	40 mL	50 mL	207.445 g	207.43 g		06/24/16
19	L16060730-01	SAMP	1	40 mL	50 mL	206.076 g	206.069 g		06/24/16
20	L16060730-02	SAMP	1	40 mL	50 mL	209.237 g	209.22 g		06/24/16
21	L16060730-03	SAMP	1	40 mL	50 mL	208.764 g	208.758 g		06/24/16
22	WG572929-01	REF	1	40 mL	50 mL	206.882 g	206.875 g		
23	L16060806-01	RS01	1	40 mL	50 mL	206.882 g	206.875 g		06/24/16
24	WG572929-04	MS	1	40 mL	50 mL	213.169 g	213.153 g	5 mL	
25	L16060806-03	MS01	1	40 mL	50 mL	213.169 g	213.153 g	5 mL	06/24/16
26	WG572929-05	MSD	1	40 mL	50 mL	215.158 g	215.146 g	5 mL	
27	L16060806-04	SD01	1	40 mL	50 mL	215.158 g	215.146 g	5 mL	06/24/16

L16060729-01	filtered digestate

Analyst: Andrew R Cochrane

Reviewer:

MW_DIG - Modified 09/30/2009
PDF ID: 4809573
Report generated: 06/16/2016 10:09

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062316T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573560,573561

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.062316.094745	WG573930-01	Calibration Point		1		06/23/16 09:47
2	T3.062316.095145	WG573930-02	Calibration Point		1		06/23/16 09:51
3	T3.062316.095544	WG573930-03	Calibration Point		1		06/23/16 09:55
4	T3.062316.095942	WG573930-04	Calibration Point		1		06/23/16 09:59
5	T3.062316.100322	WG573930-05	Calibration Point		1		06/23/16 10:03
6	T3.062316.100658	WG573930-06	Initial Calibration Verification		1		06/23/16 10:06
7	T3.062316.101036	WG573930-07	Initial Calib Blank		1		06/23/16 10:10
8	T3.062316.101434	WG573930-08	Low Level Initial Calibration V		1		06/23/16 10:14
9	T3.062316.101833	WG573930-09	Low Level Initial Calibration V		1		06/23/16 10:18
10	T3.062316.102228	WG573930-10	Interference Check		1		06/23/16 10:22
11	T3.062316.102622	WG573930-11	Interference Check		1		06/23/16 10:26
12	T3.062316.103007	WG573930-12	CCV		1		06/23/16 10:30
13	T3.062316.103346	WG573930-13	CCB		1		06/23/16 10:33
14	T3.062316.103746	WG572929-02	Method/Prep Blank	40/50	1		06/23/16 10:37
15	T3.062316.104808	WG572929-03	Laboratory Control S	40/50	1		06/23/16 10:48
16	T3.062316.105149	WG572929-01	Reference Sample		1	L16060806-01	06/23/16 10:51
17	T3.062316.105545	WG572929-04	Matrix Spike	40/50	1	L16060806-01	06/23/16 10:55
18	T3.062316.105925	WG572929-05	Matrix Spike Duplica	40/50	1	L16060806-01	06/23/16 10:59
19	T3.062316.110304	L16060643-01	15-13-8 S1	40/50	1		06/23/16 11:03
20	T3.062316.110701	WG573560-01	Post Digestion Spike		1	L16060643-01	06/23/16 11:07
21	T3.062316.111031	WG573560-02	Serial Dilution		5	L16060643-01	06/23/16 11:10
22	T3.062316.111429	WG573560-02	Serial Dilution		25	L16060643-01	06/23/16 11:14
23	T3.062316.111829	WG573930-14	CCV		1		06/23/16 11:18
24	T3.062316.112207	WG573930-15	CCB		1		06/23/16 11:22
25	T3.062316.112606	L16060643-02	15-13-8 S2	40/50	1		06/23/16 11:26
26	T3.062316.113003	L16060643-03	15-13-8 S3	40/50	1		06/23/16 11:30
27	T3.062316.113358	L16060643-04	15-11-1 S1	40/50	1		06/23/16 11:33
28	T3.062316.113754	L16060643-05	2208-118 W2	40/50	1		06/23/16 11:37
29	T3.062316.114150	L16060643-06	2208-118 W1	40/50	1		06/23/16 11:41
30	T3.062316.114545	L16060643-07	2208-118 S1	40/50	1		06/23/16 11:45
31	T3.062316.114943	L16060643-08	2208-118 S2	40/50	1		06/23/16 11:49
32	T3.062316.115338	L16060643-09	2208-118 S3	40/50	1		06/23/16 11:53
33	T3.062316.115734	L16060650-01	MW1-061016	40/50	1		06/23/16 11:57
34	T3.062316.120126	L16060650-02	MW3-061016	40/50	1		06/23/16 12:01

Page: 1 Approved: June 24, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062316T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573560,573561

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.062316.120521	WG573930-16	CCV		1		06/23/16 12:05
36	T3.062316.120859	WG573930-17	CCB		1		06/23/16 12:08
37	T3.062316.121258	L16060650-03	17WW08-061016	40/50	1		06/23/16 12:12
38	T3.062316.121653	L16060650-08	18WW24F-061016	40/50	1		06/23/16 12:16
39	T3.062316.122048	WG573930-18	CCV		1		06/23/16 12:20
40	T3.062316.122427	WG573930-19	CCB		1		06/23/16 12:24
41	T3.062316.122826	WG573102-02	Method/Prep Blank	40/50	1		06/23/16 12:28
42	T3.062316.123225	WG573102-03	Laboratory Control S	40/50	1		06/23/16 12:32
43	T3.062316.123606	WG573102-04	Filter Blank		1		06/23/16 12:36
44	T3.062316.124005	WG573102-01	Reference Sample		1	L16060787-09	06/23/16 12:40
45	T3.062316.124400	WG573102-05	Matrix Spike	40/50	1	L16060787-09	06/23/16 12:44
46	T3.062316.124740	WG573102-06	Matrix Spike Duplica	40/50	1	L16060787-09	06/23/16 12:47
47	T3.062316.125119	L16060947-02	\#2 (EAST END)	40/50	1		06/23/16 12:51
48	T3.062316.125512	WG573561-01	Post Digestion Spike		1	L16060947-02	06/23/16 12:55
49	T3.062316.125851	WG573561-02	Serial Dilution		5	L16060947-02	06/23/16 12:58
50	T3.062316.130248	WG573561-02	Serial Dilution		25	L16060947-02	06/23/16 13:02
51	T3.062316.130647	WG573930-20	CCV		1		06/23/16 13:06
52	T3.062316.131025	WG573930-21	CCB		1		06/23/16 13:10
53	T3.062316.131425	L16060947-05	\#5 (WEST END)	40/50	1		06/23/16 13:14
54	T3.062316.131818	L16060947-08	\#8 (RAILROAD CULVERT)	40/50	1		06/23/16 13:18
55	T3.062316.132213	L16060763-01	WVOG	40/50	100		06/23/16 13:22
56	T3.062316.132618	L16060837-02	INS-WL01-061316	40/50	1		06/23/16 13:26
57	T3.062316.133005	L16060857-01	2204-129A RW2 (B)	40/50	1		06/23/16 13:30
58	T3.062316.133402	L16060857-02	2204-129A RW2 (U)	40/50	1		06/23/16 13:34
59	T3.062316.133759	WG573930-22	CCV		1		06/23/16 13:37
60	T3.062316.134137	WG573930-23	CCB		1		06/23/16 13:41
61	T3.062316.134536	L16060729-01	A09-MW10-Y1S2	40/50	1		06/23/16 13:45
62	T3.062316.134934	L16060729-02	A09-MW11-Y1S2	40/50	1		06/23/16 13:49
63	T3.062316.135331	L16060729-03	A09-MW12-Y1S2	40/50	1		06/23/16 13:53
64	T3.062316.135724	L16060730-01	18CPTMW14-061316	40/50	1		06/23/16 13:57
65	T3.062316.140125	L16060730-02	18CPTMW14FD-061316	40/50	1		06/23/16 14:01
66	T3.062316.140527	L16060730-03	18CPTMW24-061316	40/50	1		06/23/16 14:05
67	T3.062316.140930	L16060650-01	MW1-061016	40/50	10		06/23/16 14:09
68	T3.062316.141326	L16060650-02	MW3-061016	40/50	10		06/23/16 14:13

Page: 2 Approved: June 24, 2016

Kim H. Rhoden

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062316T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573560,573561

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.062316.141723	L16060650-03	17WW08-061016	40/50	10		06/23/16 14:17
70	T3.062316.142120	L16060650-08	18WW24F-061016	40/50	10		06/23/16 14:21
71	T3.062316.142518	WG573930-24	CCV		1		06/23/16 14:25
72	T3.062316.142857	WG573930-25	CCB		1		06/23/16 14:28
73	T3.062316.143257	L16060729-01	A09-MW10-Y1S2	40/50	10		06/23/16 14:32
74	T3.062316.143655	L16060729-03	A09-MW12-Y1S2	40/50	10		06/23/16 14:36
75	T3.062316.144053	L16060730-01	18CPTMW14-061316	40/50	100		06/23/16 14:40
76	T3.062316.144451	L16060730-02	18CPTMW14FD-061316	40/50	100		06/23/16 14:44
77	T3.062316.144849	L16060730-03	18CPTMW24-061316	40/50	100		06/23/16 14:48
78	T3.062316.145248	L16060798-06	N. DOCK FLUME	1/50	1		06/23/16 14:52
79	T3.062316.145646	L16060837-02	INS-WL01-061316	40/50	1		06/23/16 14:56
80	T3.062316.150032	L16060763-01	WVOG	40/50	2000		06/23/16 15:00
81	T3.062316.150429	WG573930-26	CCV		1		06/23/16 15:04
82	T3.062316.150809	WG573930-27	CCB		1		06/23/16 15:08
83	T3.062316.151209	WG573930-28	Low Level Continuing Calibra		1		06/23/16 15:12
84	T3.062316.151607	L16060724-01	ABW_06142016	40/50	100		06/23/16 15:16
85	T3.062316.152011	L16060762-01	MW-24-001	40/50	1		06/23/16 15:20
86	T3.062316.152407	L16060779-18	477-TS02-W0001	40/50	1		06/23/16 15:24
87	T3.062316.152807	L16060787-01	EB04	40/50	1		06/23/16 15:28
88	T3.062316.153205	L16060787-10	U517TW006C	40/50	1		06/23/16 15:32
89	T3.062316.153601	L16060724-02	ABW_06142016	40/50	100		06/23/16 15:36
90	T3.062316.154005	L16060787-18	U517TW008A	40/50	1		06/23/16 15:40
91	T3.062316.154401	L16060787-19	EB05	40/50	1		06/23/16 15:44
92	T3.062316.154800	L16060798-02	PERMEATE	1/50	1		06/23/16 15:48
93	T3.062316.155157	L16060798-04	BLEED	1/50	2		06/23/16 15:51
94	T3.062316.155553	WG573930-29	CCV		1		06/23/16 15:55
95	T3.062316.155920	WG573930-30	CCB		1		06/23/16 15:59
96	T3.062316.160319	WG573930-31	Interference Check		1		06/23/16 16:03
97	T3.062316.160713	WG573930-32	Interference Check		1		06/23/16 16:07
98	T3.062316.161057	WG573930-33	CCV		1		06/23/16 16:10
99	T3.062316.161435	WG573930-34	CCB		1		06/23/16 16:14
100	T3.062316.162045	WG573930-35	Low Level Continuing Calibra		1		06/23/16 16:20

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Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 23-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 573930
Runlog ID: 75880
Analytical Workgroups: 573560,573561

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	806,762,837
Level 4	650,729,730.779,787
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer:

Secondary Reviewer:
24-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-24-2016 11:23:59

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010C

AAB#: WG573560

Login Number: L16060730

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW14-061316	01	06/13/16					06/16/2016	3	180		06/23/16	10.2	180	
18CPTMW14-061316	01	06/13/16					06/16/2016	3	180		06/23/16	10.2	180	
18CPTMW14FD-061316	02	06/13/16					06/16/2016	3	180		06/23/16	10.2	180	
18CPTMW14FD-061316	02	06/13/16					06/16/2016	3	180		06/23/16	10.2	180	
18CPTMW24-061316	03	06/13/16					06/16/2016	2.9	180		06/23/16	10.2	180	
18CPTMW24-061316	03	06/13/16					06/16/2016	2.9	180		06/23/16	10.1	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4822211
Report generated 06/24/2016 09:04

METHOD BLANK SUMMARY

Login Number: L16060730
Blank File ID: T3.062316.103746
Prep Date: 06/16/16 09:15
Analyzed Date: 06/23/16 10:37
Analyst: JYH

Work Group: WG573560
Blank Sample ID: WG572929-02
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572929-03	T3.062316.104808	06/23/16 10:48	01
18CPTMW14-061316	L16060730-01	T3.062316.135724	06/23/16 13:57	01
18CPTMW14FD-061316	L16060730-02	T3.062316.140125	06/23/16 14:01	01
18CPTMW24-061316	L16060730-03	T3.062316.140527	06/23/16 14:05	01
18CPTMW14-061316	L16060730-01	T3.062316.144053	06/23/16 14:40	DL01
18CPTMW14FD-061316	L16060730-02	T3.062316.144451	06/23/16 14:44	DL01
18CPTMW24-061316	L16060730-03	T3.062316.144849	06/23/16 14:48	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4822212
Report generated 06/24/2016 09:16

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060730 Prep Date: 06/16/16 09:15 Sample ID: WG572929-02
Instrument ID: ICP-THERMO3 Run Date: 06/23/16 10:37 Prep Method: 3015
File ID: T3.062316.103746 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG573560 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-23-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Aluminum, Total	0.0500	0.200	0.0500	1	U
Beryllium, Total	0.00500	0.0200	0.00500	1	U
Calcium, Total	0.125	0.500	0.125	1	U
Iron, Total	0.0500	0.200	0.0500	1	U
Magnesium, Total	0.250	1.00	0.250	1	U
Potassium, Total	0.500	2.00	0.500	1	U
Selenium, Total	0.00500	0.0200	0.00500	1	U
Sodium, Total	0.250	1.00	0.250	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4822213
24-JUN-2016 09:16

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060730 Run Date: 06/23/2016 Sample ID: WG572929-03
Instrument ID: ICP-THERMO3 Run Time: 10:48 Prep Method: 3015
File ID: T3.062316.104808 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG573560 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76576 Cal ID: ICP-TH-23-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Aluminum, Total	6.25	6.69	107	80 - 120	
Beryllium, Total	0.0313	0.0330	106	80 - 120	
Calcium, Total	6.25	6.88	110	80 - 120	
Iron, Total	2.50	2.70	108	80 - 120	
Magnesium, Total	6.25	6.70	107	80 - 120	
Potassium, Total	31.3	33.3	107	80 - 120	
Selenium, Total	0.250	0.256	102	80 - 120	
Sodium, Total	31.3	33.9	108	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4822214
Report generated: 06/24/2016 09:16

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060730 Cal ID: ICP-THERMO3 - Worknum: WG573560
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG572929-01 File ID: T3.062316.105149 Dil: 1 Matrix: WATER
Sample ID: WG572929-04 MS File ID: T3.062316.105545 Dil: 1 Units: mg/L
Sample ID: WG572929-05 MSD File ID: T3.062316.105925 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Aluminum	0.0598	6.25	6.57	104	6.25	6.63	105	0.820	80 - 120	20	
Beryllium	ND	0.0313	0.0323	103	0.0313	0.0327	104	1.04	80 - 120	20	
Calcium	53.8	6.25	58.6	77.4	6.25	59.6	93.0	1.65	80 - 120	20	*
Iron	0.504	2.50	3.14	106	2.50	3.29	112	4.66	80 - 120	20	
Magnesium	9.46	6.25	16.0	105	6.25	15.9	103	0.721	80 - 120	20	
Potassium	3.10	31.3	35.9	105	31.3	36.1	106	0.475	80 - 120	20	
Selenium	ND	0.250	0.254	102	0.250	0.246	98.4	3.13	80 - 120	20	
Sodium	11.0	31.3	44.0	106	31.3	43.1	103	1.97	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4822215
Report generated 06/24/2016 09:16

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16060730 **Worknum:** WG573560
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG573560-02 **File ID:** T3.062316.111031 **Dil:** 5 **Units:** ug/L
Sample: L16060643-01 **File ID:** T3.062316.110304 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	66.2		90.5		36.80	E
Beryllium	ND	U	ND	U		
Calcium	38300		35600		6.95	
Iron	55.1		ND	U		
Magnesium	6970		6480		7.03	
Potassium	822		881		7.15	
Selenium	0.460		33.6		7200.00	E
Sodium	5220		5030		3.52	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4822209
06/24/2016 09:16

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060730 **Worknum:** WG573560
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG573560-01 **File ID:** T3.062316.110701 **Dil:** 1 **Units:** ug/L
Sample ID: L16060643-01 **File ID:** T3.062316.110304 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	5350		66.2	F	5000	105.8	75 - 125	
BERYLLIUM	26.1		0	U	25	104.2	75 - 125	
CALCIUM	39500		38300		5000	100.0	75 - 125	
IRON	2170		55.1	F	2000	106.2	75 - 125	
MAGNESIUM	11700		6970		5000	107.6	75 - 125	
POTASSIUM	27200		822	F	25000	106.0	75 - 125	
SELENIUM	205		0	U	200	102.4	75 - 125	
SODIUM	31300		5220		25000	106.5	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4822210
Report generated: 06/24/2016 09:16

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16060730	Workgroup (AAB#):	WG573560
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG573930	Initial Calibration Date:	23-JUN-2016 10:03

	WG573930-01		WG573930-02		WG573930-03		WG573930-04		WG573930-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.00118	.1	0.00193	.2	0.00268	10	0.0882	20	0.173	.999945	
BERYLLIUM	0	0.000880	.0005	0.00136	.001	0.00170	.05	0.0518	.1	0.101	.999922	
CALCIUM	0	0.00189	.1	0.00547	.2	0.00991	10	0.469	20	0.927	.999971	
IRON	0	-0.0000300	.04	0.000460	.08	0.00112	4	0.0936	8	0.185	.999683	
MAGNESIUM	0	-0.000540	NA	NA	.2	0.000940	10	0.0909	20	0.178	.99993	
POTASSIUM	0	-0.0110	.5	0.0234	1	0.0462	50	3.24	100	6.39	.999797	
SELENIUM	0	-0.000340	NA	NA	.008	-0.000260	.4	0.00638	.8	0.0127	.999812	
SODIUM	0	-0.0674	.5	0.00897	1	0.0787	50	8.98	100	17.7	.999966	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4822218
Report generated: 24-JUN-2016 09:04

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573930-07
Instrument ID: ICP-THERMO3
Run Time: 10:10
Method: 6010C
File ID: T3.062316.101036
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573560
Cal ID: ICP-THERI - 23-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	.004	U
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4822220
Report generated 06/24/2016 09:04

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573930-13
Instrument ID: ICP-THERMO3
Run Time: 10:33
Method: 6010C
File ID: T3.062316.103346
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822223
Report generated 06/24/2016 09:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573930-15
Instrument ID: ICP-THERMO3
Run Time: 11:22
Method: 6010C
File ID: T3.062316.112207
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573930-23
Instrument ID: ICP-THERMO3
Run Time: 13:41
Method: 6010C
File ID: T3.062316.134137
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Report generated 06/24/2016 09:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573930-25
Instrument ID: ICP-THERMO3
Run Time: 14:28
Method: 6010C
File ID: T3.062316.142857
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00482	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573930-27
Instrument ID: ICP-THERMO3
Run Time: 15:08
Method: 6010C
File ID: T3.062316.150809
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00960	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573930-30
Instrument ID: ICP-THERMO3
Run Time: 15:59
Method: 6010C
File ID: T3.062316.155920
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573930-34
Instrument ID: ICP-THERMO3
Run Time: 16:14
Method: 6010C
File ID: T3.062316.161435
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0440	F
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	-0.00590	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822223
Report generated 06/24/2016 09:05

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573930-06
Instrument ID: ICP-THERMO3
Run Time: 10:06
Method: 6010C
File ID: T3.062316.100658
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	10.1	101	90 - 110	
Beryllium		.05	0.0506	101	90 - 110	
Calcium		10	10.1	101	90 - 110	
Iron		4	4.02	100	90 - 110	
Magnesium		10	10.0	100	90 - 110	
Potassium		50	50.3	101	90 - 110	
Selenium		.4	0.401	100	90 - 110	
Sodium		50	50.2	100	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4822219
Report generated 06/24/2016 09:04

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573930-12
Instrument ID: ICP-THERMO3
Run Time: 10:30
Method: 6010C
File ID: T3.062316.103007
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.0	mg/L	100	90 - 110		
Beryllium		0.0500	0.0499	mg/L	99.7	90 - 110		
Calcium		10.0	10.1	mg/L	101	90 - 110		
Iron		4.00	4.06	mg/L	101	90 - 110		
Magnesium		10.0	9.95	mg/L	99.5	90 - 110		
Potassium		50.0	50.4	mg/L	101	90 - 110		
Selenium		0.400	0.406	mg/L	101	90 - 110		
Sodium		50.0	50.4	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822222
Report generated 06/24/2016 09:04

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573930-14
Instrument ID: ICP-THERMO3
Run Time: 11:18
Method: 6010C
File ID: T3.062316.111829
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.0	mg/L	100	90 - 110		
Beryllium		0.0500	0.0501	mg/L	100	90 - 110		
Calcium		10.0	10.0	mg/L	100	90 - 110		
Iron		4.00	4.02	mg/L	100	90 - 110		
Magnesium		10.0	9.96	mg/L	99.6	90 - 110		
Potassium		50.0	50.3	mg/L	101	90 - 110		
Selenium		0.400	0.404	mg/L	101	90 - 110		
Sodium		50.0	50.3	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822222
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573930-22
Instrument ID: ICP-THERMO3
Run Time: 13:37
Method: 6010C
File ID: T3.062316.133759
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.8	mg/L	108	90 - 110		
Beryllium		0.0500	0.0531	mg/L	106	90 - 110		
Calcium		10.0	10.7	mg/L	107	90 - 110		
Iron		4.00	4.33	mg/L	108	90 - 110		
Magnesium		10.0	10.7	mg/L	107	90 - 110		
Potassium		50.0	54.0	mg/L	108	90 - 110		
Selenium		0.400	0.431	mg/L	108	90 - 110		
Sodium		50.0	54.3	mg/L	109	90 - 110		

* Exceeds LIMITS Criteria

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Report generated 06/24/2016 09:04

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573930-24
Instrument ID: ICP-THERMO3
Run Time: 14:25
Method: 6010C
File ID: T3.062316.142518
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.3	mg/L	103	90 - 110		
Beryllium		0.0500	0.0508	mg/L	102	90 - 110		
Calcium		10.0	10.2	mg/L	102	90 - 110		
Iron		4.00	4.15	mg/L	104	90 - 110		
Magnesium		10.0	10.4	mg/L	104	90 - 110		
Potassium		50.0	51.8	mg/L	104	90 - 110		
Selenium		0.400	0.408	mg/L	102	90 - 110		
Sodium		50.0	52.0	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573930-26
Instrument ID: ICP-THERMO3
Run Time: 15:04
Method: 6010C
File ID: T3.062316.150429
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.2	mg/L	102	90 - 110		
Beryllium		0.0500	0.0507	mg/L	101	90 - 110		
Calcium		10.0	10.1	mg/L	101	90 - 110		
Iron		4.00	4.12	mg/L	103	90 - 110		
Magnesium		10.0	10.1	mg/L	101	90 - 110		
Potassium		50.0	51.1	mg/L	102	90 - 110		
Selenium		0.400	0.418	mg/L	104	90 - 110		
Sodium		50.0	51.2	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822222
Report generated 06/24/2016 09:04

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573930-29
Instrument ID: ICP-THERMO3
Run Time: 15:55
Method: 6010C
File ID: T3.062316.155553
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.3	mg/L	103	90 - 110		
Beryllium		0.0500	0.0508	mg/L	102	90 - 110		
Calcium		10.0	10.2	mg/L	102	90 - 110		
Iron		4.00	4.08	mg/L	102	90 - 110		
Magnesium		10.0	10.2	mg/L	102	90 - 110		
Potassium		50.0	51.4	mg/L	103	90 - 110		
Selenium		0.400	0.399	mg/L	99.7	90 - 110		
Sodium		50.0	51.6	mg/L	103	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822222
Report generated 06/24/2016 09:04

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573930-33
Instrument ID: ICP-THERMO3
Run Time: 16:10
Method: 6010C
File ID: T3.062316.161057
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.5	mg/L	105	90 - 110		
Beryllium		0.0500	0.0509	mg/L	102	90 - 110		
Calcium		10.0	10.4	mg/L	104	90 - 110		
Iron		4.00	4.26	mg/L	106	90 - 110		
Magnesium		10.0	10.6	mg/L	106	90 - 110		
Potassium		50.0	51.6	mg/L	103	90 - 110		
Selenium		0.400	0.416	mg/L	104	90 - 110		
Sodium		50.0	52.1	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573930-08
Instrument ID: ICP-THERMO3
Run Time: 10:14
Method: 6010C
File ID: T3.062316.101434
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.167	mg/L	104	70 - 130		
Beryllium		0.00160	0.00152	mg/L	95.0	70 - 130		
Calcium		0.400	0.381	mg/L	95.2	70 - 130		
Iron		0.0800	0.0709	mg/L	88.6	70 - 130		
Magnesium		0.400	0.366	mg/L	91.5	70 - 130		
Selenium		0.0160	0.0185	mg/L	115	70 - 130		
Sodium		0.400	0.457	mg/L	114	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4822224
Report generated 06/24/2016 09:16

Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060730
Run Date: 06/23/2016
Sample ID: WG573930-28
Instrument ID: ICP-THERMO3
Run Time: 15:12
Method: 6010C
File ID: T3.062316.151209
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573560
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.191	mg/L	119	70 - 130		
Beryllium		0.00160	0.00164	mg/L	103	70 - 130		
Calcium		0.400	0.374	mg/L	93.5	70 - 130		
Iron		0.0800	0.0850	mg/L	106	70 - 130		
Magnesium		0.400	0.426	mg/L	106	70 - 130		
Potassium		0.800	0.951	mg/L	119	70 - 130		
Selenium		0.0160	0.0211	mg/L	132	70 - 130		*
Sodium		0.400	0.505	mg/L	126	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4822224
Report generated 06/24/2016 09:16

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060730
Instrument ID: ICP-THERMO3
Sol. A : WG573930-10 **File ID:** T3.062316.102228
Sol. AB : WG573930-11 **File ID:** T3.062316.102622

Workgroup (AAB#): WG573560
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	271	108	250	261	104	
Beryllium	NS	-0.0000600	NS	0.250	0.239	95.6	
Calcium	250	260	104	250	250	100	
Iron	100	102	102	100	97.3	97.3	
Magnesium	250	257	103	250	245	98.0	
Potassium	NS	0.0710	NS	5.00	5.20	104	
Selenium	NS	0.00407	NS	0.250	0.253	101	
Sodium	NS	0.00909	NS	5.00	5.24	105	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4822221
Report generated 06/24/2016 09:04

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060730
Instrument ID: ICP-THERMO3
Sol. A : WG573930-31 **File ID:** T3.062316.160319
Sol. AB : WG573930-32 **File ID:** T3.062316.160713

Workgroup (AAB#): WG573560
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	296	118	250	296	118	
Beryllium	NS	0.000100	NS	0.250	0.272	109	
Calcium	250	274	110	250	276	110	
Iron	100	110	110	100	108	108	
Magnesium	250	276	110	250	272	109	
Potassium	NS	0.0525	NS	5.00	5.80	116	
Selenium	NS	0.00521	NS	0.250	0.281	112	
Sodium	NS	0.128	NS	5.00	5.96	119	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4822221
Report generated 06/24/2016 09:04

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060730 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	AG	AL	AS	B	BA
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000410	0	0	0
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0.0115	0	-0.0000800
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0.000260	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	-0.000289	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	-0.0000490	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.0000120	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0.0000300	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4822217
Report generated: 06/24/2016 09:04

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060730 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	BE	CA	CD	CO	CR
ALUMINUM	308.20	0	0	0	-0.000820	0
ANTIMONY	206.80	0	0	0	0	0.0200
ARSENIC	189.00	0	0	0	0	-0.00190
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0.00343	0
CADMIUM	228.80	0	0	0	-0.00390	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	-0.000200
COPPER	224.70	0	0	0	0.0000770	-0.00100
IRON	261.10	0	0	0	0	-0.00100
LEAD	220.30	0	0	0	-0.0000130	-0.000132
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.0000500
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	-0.000860	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0.00000500	0	0	0
THALLIUM	190.80	0	0	0	0.00240	0.000276
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	-0.00480
ZINC	206.20	0	0	0	0	-0.00180
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4822217
Report generated: 06/24/2016 09:04

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060730 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	CU	FE	K	LI	MG
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000560	0	0	0
ARSENIC	189.00	0	-0.0000500	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0.000300	0	0	0
CADMIUM	228.80	0	-0.0000190	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000500	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0.00160	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0.000609	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.00000300
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0.0000420	0	0	0
PHOSPHORUS	214.90	-0.323	0.000900	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000270	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000400	0	0	0
VANADIUM	292.40	0	0.00000700	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	-0.0000300	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4822217
Report generated: 06/24/2016 09:04

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060730 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	MN	MO	NA	NI	P
ALUMINUM	308.20	0	0.0163	0	0	0
ANTIMONY	206.80	0	-0.00310	0	-0.00350	0
ARSENIC	189.00	0	0.00120	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	-0.00190	0	0	0
CADMIUM	228.80	0	0.0000320	0	-0.000770	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0.000360	0	0	0	0
COBALT	228.60	0	-0.00200	0	0.000100	0
COPPER	224.70	0	0.00160	0	-0.0123	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	-0.00210	0	0.000110	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	-0.00290	-0.0230	0	0	0
MANGANESE	257.60	0	0.0000300	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0.00710	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0.000600	0.000580	0	0	0
SILICON	212.40	0	0.0187	0	0	0
SILVER	328.00	0	-0.0000430	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0.00100	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000153	0	0	0
VANADIUM	292.40	-0.000200	-0.00830	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4822217
Report generated: 06/24/2016 09:04

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060730 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	PB	SB	SE	SI	SN
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0	0	0	-0.0220
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0.00440	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4822217
Report generated: 06/24/2016 09:04

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060730 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	SR	TI	TL	V	ZN
ALUMINUM	308.20	0	0	0	0.0950	0
ANTIMONY	206.80	0	0.00110	0	-0.00360	0
ARSENIC	189.00	0	0	0	0.000107	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	-0.00000700	0	0.000990	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0.000102	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000550	0	0	0
COBALT	228.60	0	0.00210	0	0.0000200	0
COPPER	224.70	0	0.000269	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	-0.000126	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	-0.00290	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	-0.000110	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	-0.00100	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000720	0	-0.000260	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.000800	0	-0.00490	0
TIN	189.90	0	-0.00190	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0.000820	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4822217
Report generated: 06/24/2016 09:04

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060730 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	ZR
ALUMINUM	308.20	0
ANTIMONY	206.80	0
ARSENIC	189.00	0
BARIUM	455.40	0
BERYLLIUM	313.10	0
BORON	249.60	0
CADMIUM	228.80	0
CALCIUM	422.60	0
CHROMIUM	267.70	0
COBALT	228.60	0
COPPER	224.70	0
IRON	261.10	0
LEAD	220.30	0
LITHIUM	670.70	0
MAGNESIUM	279.00	0
MANGANESE	257.60	0
MOLYBDENUM	202.00	0
NICKEL	231.60	0
PHOSPHORUS	214.90	0
POTASSIUM	766.40	0
SELENIUM	196.00	0
SILICON	212.40	0
SILVER	328.00	0
SODIUM	589.50	0
STRONTIUM	407.70	0
THALLIUM	190.80	0
TIN	189.90	0
TITANIUM	337.20	0
VANADIUM	292.40	0
ZINC	206.20	0
ZIRCONIUM	339.10	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4822217
Report generated: 06/24/2016 09:04

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16060730 **Date:** 04/29/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	900.0
Antimony	20.00	45.0
Arsenic	10.00	45.0
Barium	10.00	45.0
Beryllium	10.00	1.8
Boron	20.00	45.0
Cadmium	20.00	4.5
Calcium	5.00	270.0
Chromium	20.00	36.0
Cobalt	20.00	45.0
Copper	20.00	180.0
Iron	5.00	720.0
Lead	20.00	225.0
Lithium	5.00	36.0
Magnesium	5.00	900.0
Manganese	10.00	36.0
Molybdenum	20.00	27.0
Nickel	20.00	90.0
Phosphorus	20.00	180.0
Potassium	5.00	450.0
Selenium	20.00	90.0
Silicon	20.00	36.0
Silver	10.00	9.0
Sodium	5.00	270.0
Strontium	5.00	9.0
Thallium	20.00	18.0
Tin	20.00	45.0
Titanium	5.00	36.0
Vanadium	20.00	27.0
Zinc	20.00	45.0
Zirconium	10.00	45.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4822216
Report generated: 06/24/2016 09:04

2.3.1.3 Raw Data

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000327	0.050519	0.000000	1.000000
Al 308.215 {109}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.001184	0.008547	0.000000	1.000000
As 189.042 {478}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000022	0.024758	0.000000	1.000000
B 249.678 {135}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.000018	0.023238	0.000000	1.000000
Ba 455.403 { 74}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.027822	2.182359	0.000000	1.000000
Be 313.107 {108}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.000884	0.988895	0.000000	1.000000
Ca 422.673 { 80}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.001888	0.046400	0.000000	1.000000
Cd 228.802 {447}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000259	0.601556	0.000000	1.000000
Co 228.616 {447}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000232	0.375758	0.000000	1.000000
Cr 267.716 {126}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.000258	0.061893	0.000000	1.000000
Cu 224.700 {450}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000097	0.130708	0.000000	1.000000
Fe 261.187 {129}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000026	0.023142	0.000000	1.000000
K 766.490 { 44}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.010983	0.064443	0.000000	1.000000
Li 670.784 { 50}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.012386	1.550598	0.000000	1.000000
Mg 279.079 {121}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000540	0.009018	0.000000	1.000000
Mn 257.610 {131}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.000084	0.292837	0.000000	1.000000
Mo 202.030 {467}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000041	0.187450	0.000000	1.000000
Na 589.592 { 57}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.067361	0.179038	0.000000	1.000000
Ni 231.604 {446}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000824	0.142104	0.000000	1.000000
P 214.914 {457}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000276	0.013786	0.000000	1.000000
Pb 220.353 {453}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000879	0.064979	0.000000	1.000000
Sb 206.833 {463}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.000126	0.031435	0.000000	1.000000
Se 196.090 {472}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000341	0.016453	0.000000	1.000000
Si 212.412 {459}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.001289	0.040464	0.000000	1.000000
Sn 189.989 {477}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.000003	0.072384	0.000000	1.000000
Sr 407.771 { 83}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.002752	3.677062	0.000000	1.000000
Ti 337.280 {100}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.004029	0.126515	0.000000	1.000000
Tl 190.856 {477}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.000471	0.029978	0.000000	1.000000
V 292.402 {115}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.000027	0.073239	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	0.000283	0.432003	0.000000	1.000000
Zr 339.198 { 99}	6/23/2016 10:43:23	6/23/2016 10:06:54	Linear	1/Conc	-0.017932	0.006978	0.000000	1.000000

Approved: June 24, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.998445	0.000007	0.003073	0.010242	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999945	0.000006	0.012393	0.041310	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999934	0.000001	0.004231	0.014103	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999002	0.000005	0.003935	0.013116	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999924	0.000171	0.001407	0.004691	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999922	0.000004	0.000127	0.000425	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999971	0.000022	0.054850	0.182833	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.998853	0.000010	0.000352	0.001173	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999920	0.000006	0.000541	0.001803	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999763	0.000004	0.001598	0.005328	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999857	0.000007	0.001832	0.006106	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999683	0.000015	0.029884	0.099612	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999797	0.000412	0.125648	0.418826	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999917	0.000196	0.005174	0.017246	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999930	0.000010	0.103664	0.345547	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999861	0.000015	0.003328	0.011094	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999976	0.000008	0.000575	0.001918	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999966	0.000467	0.041906	0.139686	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999837	0.000008	0.001517	0.005055	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999993	0.000003	0.009729	0.032429	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999313	0.000008	0.004814	0.016047	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999370	0.000008	0.005878	0.019595	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999812	0.000001	0.009227	0.030755	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999941	0.000014	0.003128	0.010426	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999956	0.000004	0.001186	0.003953	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999941	0.000254	0.000576	0.001919	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999409	0.000028	0.009099	0.030331	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999772	0.000003	0.004130	0.013767	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999945	0.000005	0.001306	0.004353	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999933	0.000032	0.000269	0.000895	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.532572	0.000070	0.349536	1.165120	OK.	1.000000	0.000000	1	0

Approved: June 24, 2016

Sample Name: S0 Acquired: 6/23/2016 9:47:45 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00033**	**.00118**	**-.00002**	**.00002**	**.02782**	**.00088**	**.00189**
Stddev	.00010	.00002	.00004	.00004	.00180	.00010	.00037
%RSD	30.084	1.4700	181.28	191.91	6.4574	11.181	19.686
#1	-.00044	.00117	-.00006	.00001	.02575	.00088	.00156
#2	-.00029	.00120	.00002	-.00001	.02884	.00079	.00229
#3	-.00025	.00118	-.00002	.00006	.02887	.00098	.00181

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00026**	**-.00023**	**.00026**	**-.00010**	**-.00003**	**-.01099**	**-.01238**
Stddev	.00008	.00017	.00006	.00021	.00051	.00547	.00240
%RSD	31.523	72.312	22.460	216.26	1964.6	49.768	19.397
#1	-.00035	-.00043	.00026	.00013	-.00053	-.01572	-.00962
#2	-.00018	-.00012	.00032	-.00028	-.00004	-.01227	-.01358
#3	-.00025	-.00015	.00020	-.00014	.00049	-.00500	-.01395

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00054**	**.00008**	**-.00004**	**-.06737**	**-.00082**	**-.00028**	**-.00088**
Stddev	.00016	.00103	.00002	.00237	.00014	.00005	.00011
%RSD	30.180	1239.0	43.179	3.5134	16.845	19.474	12.307
#1	-.00053	.00101	-.00002	-.06969	-.00098	-.00024	-.00080
#2	-.00038	-.00103	-.00005	-.06495	-.00077	-.00034	-.00084
#3	-.00071	.00027	-.00005	-.06746	-.00072	-.00025	-.00100

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00013**	**-.00034**	**.00129**	**.00000**	**.00275**	**-.00403**	**-.00047**
Stddev	.00009	.00012	.00012	.00007	.00094	.00048	.00005
%RSD	74.764	35.234	9.2690	2174.4	34.350	11.992	11.038
#1	.00002	-.00027	.00122	.00008	.00316	-.00353	-.00050
#2	.00021	-.00048	.00143	.00000	.00342	-.00407	-.00050
#3	.00014	-.00027	.00122	-.00007	.00167	-.00449	-.00041

Approved: June 24, 2016

Sample Name: S0 Acquired: 6/23/2016 9:47:45 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00003	.00028	-.01793
Stddev	.00001	.00000	.00048
%RSD	29.396	1.4571	2.6643
#1	.00003	.00028	-.01841
#2	.00002	.00029	-.01792
#3	.00003	.00028	-.01745
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7062.2	43492.	2217.3
Stddev	13.5	299.	17.6
%RSD	.19180	.68708	.79492
#1	7077.5	43152.	2210.9
#2	7057.6	43609.	2203.8
#3	7051.6	43714.	2237.3

Approved: June 24, 2016

Sample Name: S1 Acquired: 6/23/2016 9:51:45 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00007	.00193	.04472	.00136	.00547	.00005	.00043
Stddev	.00004	.00003	.00207	.00006	.00204	.00008	.00007
%RSD	56.524	1.3065	4.6190	4.0730	37.359	159.01	16.558
#1	-.00003	.00191	.04691	.00130	.00781	.00011	.00047
#2	-.00008	.00196	.04281	.00138	.00410	-.00004	.00046
#3	-.00011	.00193	.04443	.00141	.00449	.00009	.00034

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00059	.00032	.00046	.02342	.00155	.00151	.00897
Stddev	.00007	.00009	.00056	.00787	.00023	.00007	.00270
%RSD	11.404	26.424	121.46	33.618	14.624	4.5319	30.104
#1	.00058	.00023	.00096	.02094	.00129	.00152	.00901
#2	.00053	.00038	.00056	.01709	.00170	.00144	.01166
#3	.00066	.00037	-.00014	.03224	.00167	.00158	.00625

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00040	.00082	-.00049	.00022	.00287	.00063	.03432
Stddev	.00009	.00018	.00005	.00001	.00008	.00005	.00075
%RSD	22.758	21.588	10.902	6.3689	2.8319	7.2878	2.1904
#1	-.00029	.00077	-.00049	.00024	.00282	.00066	.03350
#2	-.00044	.00068	-.00043	.00023	.00283	.00065	.03448
#3	-.00046	.00102	-.00054	.00021	.00297	.00058	.03498

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	-.00266	.00054	.00367	-.01945
Stddev	.00038	.00007	.00006	.00123
%RSD	14.429	13.089	1.5774	6.3329
#1	-.00239	.00061	.00371	-.01936
#2	-.00310	.00055	.00360	-.01826
#3	-.00250	.00047	.00369	-.02072

Approved: June 24, 2016

Sample Name: S1 Acquired: 6/23/2016 9:51:45 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7054.0**	**43388.**	**2199.2**
Stddev	62.0	91.	19.7
%RSD	.87863	.20992	.89612
#1	6984.1	43368.	2196.9
#2	7102.3	43308.	2180.7
#3	7075.6	43487.	2219.9

Approved: June 24, 2016

Sample Name: S2 Acquired: 6/23/2016 9:55:44 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00012	.00268	.00011	.00031	.06640	.00170	.00991
Stddev	.00004	.00003	.00010	.00004	.00183	.00007	.00177
%RSD	36.212	1.1391	90.972	12.373	2.7523	3.8893	17.859
#1	.00016	.00268	.00007	.00036	.06434	.00170	.01185
#2	.00007	.00271	.00023	.00029	.06706	.00164	.00838
#3	.00014	.00265	.00004	.00029	.06781	.00177	.00951

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00059	.00085	.00081	.00087	.00112	.04623	.01110
Stddev	.00016	.00020	.00005	.00008	.00089	.00284	.00869
%RSD	27.552	23.577	6.6457	8.7488	79.065	6.1346	78.236
#1	.00064	.00098	.00079	.00091	.00182	.04508	.01496
#2	.00040	.00096	.00078	.00078	.00142	.04946	.00116
#3	.00071	.00062	.00088	.00092	.00012	.04415	.01719

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00094	.00246	.00297	.07870	.00040	.00192	-.00019
Stddev	.00041	.00089	.00002	.00483	.00006	.00008	.00022
%RSD	43.863	36.036	.64370	6.1334	16.212	4.2436	118.69
#1	.00052	.00149	.00298	.07468	.00045	.00184	.00001
#2	.00095	.00264	.00298	.08405	.00032	.00200	-.00014
#3	.00134	.00324	.00295	.07737	.00042	.00192	-.00043

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00066	-.00026	.00459	.00125	.06450	-.00121	-.00029
Stddev	.00013	.00008	.00004	.00004	.00129	.00119	.00010
%RSD	19.457	29.683	.78499	3.1517	1.9941	98.413	34.606
#1	.00051	-.00017	.00462	.00123	.06318	-.00004	-.00021
#2	.00075	-.00030	.00455	.00130	.06457	-.00241	-.00026
#3	.00071	-.00030	.00459	.00123	.06575	-.00117	-.00040

Approved: June 24, 2016

Sample Name: S2 Acquired: 6/23/2016 9:55:44 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00118	.00728	-.01880
Stddev	.00006	.00002	.00401
%RSD	5.2111	.25538	21.324
#1	.00123	.00729	-.01658
#2	.00119	.00729	-.01639
#3	.00111	.00726	-.02343
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7107.4	43682.	2201.4
Stddev	34.8	155.	7.4
%RSD	.49001	.35466	.33601
#1	7078.9	43832.	2207.7
#2	7097.0	43694.	2193.3
#3	7146.2	43522.	2203.3

Approved: June 24, 2016

Sample Name: S3 Acquired: 6/23/2016 9:59:42 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.02081	.08821	.00989	.01171	2.2386	.05183	.46857
Stddev	.00017	.00024	.00010	.00001	.0026	.00010	.00097
%RSD	.83671	.27202	1.0425	.08059	.11782	.19029	.20689
#1	.02061	.08793	.00989	.01171	2.2374	.05180	.46784
#2	.02091	.08835	.00979	.01170	2.2369	.05194	.46820
#3	.02092	.08834	.01000	.01171	2.2417	.05175	.46967

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.03287	.07581	.03164	.06652	.09364	3.2368	1.5657
Stddev	.00024	.00015	.00015	.00023	.00074	.0078	.0054
%RSD	.72813	.20127	.46858	.35008	.78498	.23962	.34576
#1	.03272	.07591	.03147	.06677	.09289	3.2281	1.5662
#2	.03276	.07563	.03172	.06647	.09367	3.2431	1.5600
#3	.03315	.07588	.03173	.06631	.09436	3.2393	1.5708

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.09086	.14859	.18912	8.9754	.07142	.13612	.03223
Stddev	.00042	.00056	.00056	.0162	.00020	.00025	.00019
%RSD	.46733	.37813	.29665	.18036	.28541	.18100	.60348
#1	.09126	.14905	.18974	8.9567	.07119	.13585	.03240
#2	.09042	.14875	.18898	8.9850	.07154	.13616	.03226
#3	.09090	.14797	.18865	8.9845	.07154	.13634	.03202

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.03750	.00638	.20745	.07283	3.7282	.12240	.01360
Stddev	.00016	.00015	.00035	.00003	.0056	.00020	.00017
%RSD	.41622	2.3451	.16934	.03924	.14969	.16109	1.2349
#1	.03757	.00651	.20734	.07280	3.7223	.12235	.01340
#2	.03761	.00641	.20784	.07286	3.7289	.12224	.01369
#3	.03732	.00621	.20717	.07284	3.7334	.12262	.01370

Approved: June 24, 2016

Sample Name: S3 Acquired: 6/23/2016 9:59:42 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.07398	.43911	-.01037
Stddev	.00019	.00017	.00164
%RSD	.25546	.03885	15.815
#1	.07379	.43894	-.01027
#2	.07416	.43911	-.01205
#3	.07399	.43928	-.00878
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7072.0	43259.	2224.1
Stddev	14.8	398.	27.4
%RSD	.20991	.91929	1.2319
#1	7082.8	43351.	2233.7
#2	7055.1	43603.	2193.1
#3	7078.2	42824.	2245.4

Approved: June 24, 2016

Sample Name: S4 Acquired: 6/23/2016 10:03:22 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.03877**	**.17265**	**.01961**	**.02296**	**4.3610**	**.10110**	**.92672**
Stddev	.00008	.00014	.00002	.00010	.0067	.00020	.00216
%RSD	.20818	.08155	.08575	.43952	.15282	.19359	.23349
#1	.03869	.17274	.01961	.02300	4.3606	.10112	.92440
#2	.03885	.17273	.01960	.02304	4.3545	.10128	.92708
#3	.03877	.17249	.01963	.02285	4.3678	.10089	.92868

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.06477**	**.14887**	**.06165**	**.12967**	**.18456**	**6.3934**	**3.0627**
Stddev	.00016	.00033	.00010	.00044	.00066	.0064	.0061
%RSD	.25220	.22294	.15869	.33572	.35572	.09992	.20036
#1	.06467	.14868	.06175	.12936	.18461	6.3967	3.0674
#2	.06468	.14925	.06164	.13017	.18519	6.3860	3.0649
#3	.06496	.14868	.06156	.12949	.18388	6.3974	3.0558

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.17782**	**.29064**	**.37302**	**17.738**	**.14014**	**.27047**	**.06376**
Stddev	.00285	.00058	.00143	.015	.00041	.00041	.00046
%RSD	1.6033	.19826	.38353	.08733	.29065	.15216	.72211
#1	.17453	.29011	.37413	17.754	.14007	.27030	.06405
#2	.17968	.29055	.37352	17.723	.14058	.27094	.06323
#3	.17923	.29126	.37140	17.737	.13978	.27016	.06399

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.07413**	**.01273**	**.40435**	**.14378**	**7.3040**	**.24741**	**.02669**
Stddev	.00038	.00018	.00048	.00027	.0055	.00191	.00012
%RSD	.50593	1.4245	.11988	.19085	.07511	.77196	.46475
#1	.07456	.01277	.40450	.14408	7.2977	.24715	.02667
#2	.07399	.01288	.40474	.14369	7.3077	.24565	.02658
#3	.07385	.01253	.40380	.14356	7.3065	.24944	.02682

Approved: June 24, 2016

Sample Name: S4 Acquired: 6/23/2016 10:03:22 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.14535	.85675	-.00201
Stddev	.00022	.00106	.00208
%RSD	.14897	.12329	103.46
#1	.14559	.85650	-.00367
#2	.14528	.85790	-.00268
#3	.14518	.85583	.00032
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7025.2	42809.	2247.9
Stddev	16.9	188.	24.0
%RSD	.24090	.44025	1.0680
#1	7039.6	42965.	2221.1
#2	7006.5	42863.	2267.3
#3	7029.4	42600.	2255.4

Approved: June 24, 2016

Sample Name: ICV Acquired: 6/23/2016 10:06:58 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .42174	10.074	.40229	.50598	1.0063	.05063	10.063
Stddev	.00302	.012	.00036	.00324	.0012	.00028	.027
%RSD	.71491	.12338	.09016	.63984	.11621	.54378	.26390
#1	.41978	10.077	.40200	.50965	1.0062	.05031	10.058
#2	.42521	10.061	.40269	.50355	1.0074	.05083	10.039
#3	.42022	10.085	.40217	.50473	1.0051	.05074	10.091
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	.40000						
Range	5.0000%						

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05009	.20240	.50800	.50888	4.0175	50.261	1.0143
Stddev	.00040	.00056	.00279	.00221	.0049	.216	.0029
%RSD	.79974	.27632	.54852	.43436	.12247	.43006	.28626
#1	.04978	.20259	.50648	.50656	4.0165	50.225	1.0113
#2	.04996	.20177	.50630	.51096	4.0228	50.065	1.0171
#3	.05054	.20283	.51122	.50911	4.0132	50.492	1.0143
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.029	.50479	1.0180	50.178	.50855	10.012	.50742
Stddev	.068	.00560	.0013	.103	.00125	.021	.00677
%RSD	.67615	1.1094	.12869	.20500	.24556	.20476	1.3336
#1	9.9507	.49880	1.0193	50.067	.50868	10.009	.51030
#2	10.071	.50989	1.0181	50.197	.50972	10.034	.51227
#3	10.065	.50568	1.0167	50.269	.50723	9.9938	.49969
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 24, 2016

Sample Name: ICV Acquired: 6/23/2016 10:06:58 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2144**	**.40080**	**5.0742**	**1.0050**	**1.0071**	**.99391**	**.50847**
Stddev	.0044	.00712	.0014	.0021	.0017	.00711	.00066
%RSD	.36603	1.7766	.02857	.20562	.16965	.71494	.13049
#1	1.2140	.40749	5.0728	1.0062	1.0051	.99195	.50860
#2	1.2101	.40159	5.0757	1.0062	1.0080	1.0018	.50775
#3	1.2190	.39332	5.0743	1.0026	1.0081	.98799	.50906
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0155**	**1.0131**	F **.12125**
Stddev	.0036	.0007	.25829
%RSD	.34912	.07339	213.01
#1	1.0114	1.0137	.27856
#2	1.0171	1.0134	-.17684
#3	1.0179	1.0123	.26204
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-5.0000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7063.9**	**43324.**	**2262.6**
Stddev	26.9	275.	33.0
%RSD	.38052	.63544	1.4576
#1	7089.7	43277.	2289.4
#2	7065.8	43619.	2272.6
#3	7036.1	43074.	2225.7

Approved: June 24, 2016

Sample Name: ICB Acquired: 6/23/2016 10:10:36 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00017**	**.01239**	**.00168**	**.00784**	**.00108**	**-.00005**	**.01547**
Stddev	.00127	.00323	.00365	.00240	.00081	.00013	.03150
%RSD	761.85	26.074	217.60	30.609	74.419	238.60	203.55
#1	-.00111	.01021	-.00250	.00684	.00033	.00009	.00370
#2	.00143	.01085	.00327	.00609	.00194	-.00008	.05117
#3	.00018	.01610	.00427	.01057	.00098	-.00016	-.00844
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00017**	**-.00011**	**.00215**	**-.00040**	**.00514**	**.14107**	**.00031**
Stddev	.00018	.00062	.00088	.00176	.00928	.02657	.00101
%RSD	104.46	548.40	40.681	436.49	180.68	18.833	322.01
#1	-.00003	-.00011	.00293	-.00229	.01533	.11729	-.00065
#2	.00032	.00051	.00233	.00120	-.00283	.16974	.00136
#3	.00022	-.00074	.00120	-.00012	.00291	.13619	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.01369**	**-.00036**	**.00556**	**.06424**	**-.00091**	**.00285**	**-.00073**
Stddev	.01771	.00468	.00084	.01730	.00010	.01137	.00348
%RSD	129.35	1308.3	15.177	26.932	10.872	399.00	478.06
#1	-.03386	-.00180	.00466	.08422	-.00089	.00224	-.00360
#2	-.00656	-.00415	.00566	.05400	-.00102	-.00820	-.00173
#3	-.00066	.00487	.00634	.05451	-.00082	.01452	.00314
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: ICB Acquired: 6/23/2016 10:10:36 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00450**	**.00319**	**.00546**	**.00160**	**.00011**	**.00807**	**-.00078**
Stddev	.00442	.00503	.00259	.00177	.00005	.00279	.00085
%RSD	98.273	157.51	47.403	111.10	47.857	34.558	108.58
#1	.00423	.00106	.00505	.00225	.00017	.01129	-.00165
#2	.00905	-.00042	.00824	.00295	.00010	.00635	-.00076
#3	.00022	.00893	.00311	-.00041	.00007	.00657	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00061**	**.00048**	F **-.08910**
Stddev	.00075	.00021	.06733
%RSD	122.01	43.386	75.566
#1	.00025	.00070	-.02326
#2	-.00099	.00030	-.08622
#3	-.00109	.00043	-.15783
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7168.4**	**44479.**	**2251.6**
Stddev	29.8	69.	20.9
%RSD	.41618	.15552	.92660
#1	7152.0	44539.	2258.2
#2	7150.4	44494.	2268.3
#3	7202.8	44403.	2228.2

Approved: June 24, 2016

Sample Name: LLICV Acquired: 6/23/2016 10:14:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00871	.16697	.00827	.08217	.00866	.00152	.38076	.00112
Stddev	.00156	.00657	.00044	.00102	.00032	.00007	.06191	.00032
%RSD	17.931	3.9351	5.3040	1.2445	3.7469	4.3059	16.258	28.573
#1	.01035	.17443	.00778	.08312	.00851	.00145	.31159	.00084
#2	.00724	.16440	.00839	.08109	.00903	.00156	.39972	.00146
#3	.00855	.16207	.00864	.08229	.00844	.00156	.43097	.00104
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00394	.00592	.00329	.07090	.79173	.08265	.36584	.00927
Stddev	.00047	.00114	.00160	.01384	.02303	.00937	.05302	.00519
%RSD	12.002	19.186	48.539	19.517	2.9090	11.331	14.493	55.960
#1	.00439	.00498	.00379	.07490	.81829	.09313	.30462	.00415
#2	.00345	.00560	.00150	.08230	.77965	.07511	.39718	.00914
#3	.00398	.00718	.00458	.05550	.77726	.07971	.39573	.01453
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00929	.45743	.01489	.78319	.01009	.07954	.01845	.79603
Stddev	.00043	.03314	.00060	.01825	.00222	.00564	.00326	.00509
%RSD	4.6307	7.2446	4.0153	2.3296	21.973	7.0958	17.681	.63940
#1	.00903	.41933	.01553	.77767	.01192	.08338	.01946	.80191
#2	.00906	.47958	.01480	.80356	.01072	.07306	.02110	.79293
#3	.00979	.47338	.01434	.76834	.00762	.08218	.01481	.79326
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: LLICV Acquired: 6/23/2016 10:14:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39699	.04007	.02977	.14695	.00735	.01649	18.209
Stddev	.00063	.00024	.00357	.00246	.00036	.00018	.750
%RSD	.15976	.60040	11.988	1.6760	4.8581	1.0904	4.1175
#1	.39689	.04033	.03374	.14514	.00762	.01640	19.047
#2	.39766	.04002	.02683	.14975	.00695	.01638	17.976
#3	.39640	.03986	.02874	.14596	.00750	.01670	17.602
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7227.1	44664.	2257.6
Stddev	42.6	520.	1.8
%RSD	.58953	1.1634	.08124
#1	7268.9	45241.	2255.5
#2	7228.6	44516.	2258.4
#3	7183.7	44234.	2258.8

Approved: June 24, 2016

Sample Name: LLICV Acquired: 6/23/2016 10:18:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02171	.39362	.01983	.19823	.01984	.00378	.98794
Stddev	.00126	.00193	.00080	.00319	.00015	.00007	.03627
%RSD	5.8133	.49006	4.0133	1.6108	.73269	1.8430	3.6708
#1	.02039	.39161	.01959	.20114	.01975	.00370	1.0191
#2	.02183	.39546	.02072	.19872	.02001	.00380	.99656
#3	.02291	.39380	.01919	.19482	.01977	.00383	.94814
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00252	.01000	.01184	.01043	.17737	1.9880	.19918
Stddev	.00013	.00031	.00088	.00057	.01113	.0700	.00144
%RSD	5.1534	3.0882	7.4088	5.4266	6.2724	3.5205	.72403
#1	.00266	.01021	.01239	.01023	.18480	2.0647	.20052
#2	.00248	.01015	.01231	.01107	.16458	1.9716	.19765
#3	.00241	.00964	.01083	.01000	.18273	1.9276	.19937
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.1505	.02028	.02021	1.0786	.04040	1.9285	.02515
Stddev	.0090	.00213	.00036	.0105	.00040	.0076	.00902
%RSD	.77857	10.486	1.7929	.97378	.98140	.39154	35.846
#1	1.1570	.02252	.01981	1.0904	.04017	1.9199	.01676
#2	1.1403	.01829	.02029	1.0752	.04017	1.9323	.02401
#3	1.1543	.02002	.02052	1.0702	.04085	1.9335	.03469
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: LLICV Acquired: 6/23/2016 10:18:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.21009	.04460	1.9712	.98749	.09965	.06198	.36922
Stddev	.00337	.00699	.0053	.00228	.00021	.00569	.00142
%RSD	1.6035	15.669	.27005	.23094	.20676	9.1750	.38432
#1	.21342	.04410	1.9701	.98953	.09951	.05610	.36818
#2	.21016	.05183	1.9770	.98791	.09956	.06745	.37084
#3	.20668	.03788	1.9665	.98503	.09989	.06237	.36865
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.01894	.04026	F 47.513
Stddev	.00073	.00018	.199
%RSD	3.8495	.44845	.41793
#1	.01826	.04006	47.723
#2	.01884	.04039	47.328
#3	.01971	.04034	47.487
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7163.5	44550.	2290.7
Stddev	23.5	177.	32.2
%RSD	.32766	.39713	1.4074
#1	7153.2	44670.	2264.8
#2	7190.4	44347.	2326.8
#3	7147.1	44633.	2280.6

Approved: June 24, 2016

Sample Name: ICSA Acquired: 6/23/2016 10:22:28 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00351**	**271.49**	**-.00407**	**.01552**	**.00191**	**-.00006**	**259.57**
Stddev	.00173	.32	.00149	.00100	.00131	.00002	.24
%RSD	49.261	.11797	36.681	6.4247	68.399	32.662	.09253
#1	.00498	271.21	-.00491	.01579	.00056	-.00008	259.30
#2	.00393	271.84	-.00495	.01636	.00317	-.00005	259.62
#3	.00161	271.43	-.00235	.01442	.00201	-.00005	259.78
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00073**	**-.00118**	**.00013**	**-.00016**	**102.11**	**.07096**	**.01023**
Stddev	.00043	.00034	.00149	.00197	.27	.10061	.00810
%RSD	59.851	28.800	1110.3	1223.6	.26622	141.78	79.115
#1	.00040	-.00155	.00018	-.00175	102.00	.03056	.01779
#2	.00056	-.00088	.00160	-.00076	101.90	-.00317	.00169
#3	.00122	-.00112	-.00138	.00204	102.42	.18550	.01122
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**257.21**	**-.00249**	**-.00019**	**.00909**	**.00061**	**.04214**	**.00307**
Stddev	.74	.00315	.00022	.02391	.00155	.00873	.00083
%RSD	.28577	126.41	113.88	262.88	255.31	20.716	27.122
#1	256.58	.00103	.00006	.01060	-.00109	.03399	.00215
#2	257.04	-.00505	-.00035	.03221	.00094	.04107	.00329
#3	258.02	-.00345	-.00029	-.01553	.00197	.05136	.00377
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: ICSA Acquired: 6/23/2016 10:22:28 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.01225**	**.00407**	**.01963**	**.00083**	**.00063**	**.00292**	**-.00060**
Stddev	.00264	.01019	.00271	.00011	.00019	.00730	.00391
%RSD	21.585	250.49	13.788	13.141	29.260	250.52	650.88
#1	-.01403	.01308	.02032	.00071	.00052	.00569	.00121
#2	-.00921	-.00698	.01664	.00086	.00053	-.00537	.00208
#3	-.01350	.00610	.02192	.00092	.00085	.00842	-.00509
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00779**	**-.00550**	F **-.47797**
Stddev	.00107	.00025	.21460
%RSD	13.733	4.4540	44.897
#1	-.00663	-.00578	-.66798
#2	-.00800	-.00535	-.52071
#3	-.00874	-.00537	-.24522
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02000
Low Limit			-.02000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6553.6**	**40388.**	**2145.8**
Stddev	12.6	118.	22.2
%RSD	.19296	.29225	1.0362
#1	6564.3	40521.	2171.0
#2	6539.6	40297.	2129.0
#3	6556.7	40345.	2137.4

Approved: June 24, 2016

Sample Name: ICSAB Acquired: 6/23/2016 10:26:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.54642	261.25	.24491	.01461	.25091	.23890	249.80
Stddev	.00252	.21	.00115	.00263	.00040	.00013	.92
%RSD	.46133	.07960	.46840	18.008	.15906	.05602	.36945
#1	.54352	261.03	.24362	.01303	.25053	.23905	249.38
#2	.54809	261.29	.24581	.01315	.25133	.23882	250.86
#3	.54765	261.43	.24530	.01764	.25088	.23882	249.16
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49188	.23744	.24847	.24603	97.291	5.1952	.01399
Stddev	.00064	.00054	.00296	.00107	.562	.0586	.00583
%RSD	.12989	.22676	1.1915	.43492	.57726	1.1288	41.675
#1	.49222	.23763	.24669	.24496	96.756	5.1630	.02072
#2	.49115	.23683	.24683	.24603	97.876	5.1597	.01083
#3	.49229	.23785	.25188	.24710	97.239	5.2629	.01042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	245.45	.24547	-.00016	5.2391	.47688	.02967	.49137
Stddev	.56	.00407	.00020	.0305	.00126	.00679	.00397
%RSD	.22733	1.6582	126.27	.58302	.26435	22.869	.80836
#1	245.09	.24118	.00001	5.2340	.47587	.03596	.48700
#2	246.09	.24596	-.00011	5.2718	.47829	.02248	.49476
#3	245.16	.24927	-.00039	5.2114	.47649	.03058	.49235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: ICSAB Acquired: 6/23/2016 10:26:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49041**	**.25262**	**.01058**	**.00080**	**.00095**	**-.00253**	**.46155**
Stddev	.00461	.00205	.00274	.00118	.00028	.00344	.00419
%RSD	.94074	.81253	25.938	147.62	29.252	135.58	.90806
#1	.49574	.25026	.00741	.00083	.00108	-.00511	.45692
#2	.48787	.25359	.01204	.00197	.00063	.00137	.46508
#3	.48763	.25401	.01228	-.00040	.00114	-.00386	.46266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.24277**	**.47990**	F **-.55726**
Stddev	.00211	.00039	.17760
%RSD	.87023	.08099	31.870
#1	.24037	.47959	-.50386
#2	.24434	.47976	-.75543
#3	.24360	.48033	-.41249
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02500
Low Limit			-.02500

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6867.2**	**42131.**	**2229.4**
Stddev	30.3	59.	27.6
%RSD	.44128	.13923	1.2390
#1	6862.7	42197.	2251.0
#2	6899.5	42109.	2239.0
#3	6839.4	42086.	2198.3

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 10:30:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41972	10.006	.40325	.49964	1.0111	.04985	10.067
Stddev	.00435	.016	.00112	.00580	.0052	.00034	.068
%RSD	1.0364	.16389	.27665	1.1604	.51834	.67480	.67879
#1	.42011	9.9983	.40199	.50246	1.0058	.05014	10.015
#2	.41519	9.9944	.40364	.50348	1.0162	.04993	10.144
#3	.42386	10.025	.40411	.49297	1.0113	.04948	10.041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05024	.20223	.50131	.50749	4.0553	50.377	1.0226
Stddev	.00028	.00067	.00274	.00104	.0420	.183	.0017
%RSD	.56269	.33341	.54611	.20417	1.0345	.36293	.16260
#1	.05043	.20278	.50296	.50646	4.0254	50.317	1.0219
#2	.04992	.20244	.50282	.50853	4.0372	50.582	1.0245
#3	.05037	.20148	.49815	.50748	4.1032	50.231	1.0214
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.9528	.50477	1.0077	50.394	.50575	10.041	.50277
Stddev	.0960	.00398	.0034	.164	.00126	.013	.00300
%RSD	.96419	.78931	.33712	.32583	.24862	.12624	.59574
#1	9.9093	.50065	1.0114	50.208	.50700	10.027	.50104
#2	10.063	.50505	1.0070	50.519	.50448	10.051	.50104
#3	9.8862	.50860	1.0048	50.454	.50576	10.046	.50622
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 10:30:07 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2122**	**.40567**	**5.0769**	**1.0044**	**1.0093**	**.99371**	**.51032**
Stddev	.0058	.00436	.0044	.0017	.0042	.00390	.00026
%RSD	.47789	1.0749	.08648	.16760	.41078	.39271	.05189
#1	1.2179	.40121	5.0794	1.0059	1.0071	.98947	.51004
#2	1.2063	.40587	5.0795	1.0026	1.0141	.99715	.51035
#3	1.2126	.40993	5.0719	1.0046	1.0067	.99452	.51057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0014**	**1.0107**	F **.71299**
Stddev	.0067	.0004	.23489
%RSD	.66944	.04203	32.944
#1	1.0039	1.0108	.53231
#2	1.0066	1.0110	.97851
#3	.99386	1.0102	.62814
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7133.2**	**43787.**	**2246.1**
Stddev	18.4	184.	8.5
%RSD	.25841	.41964	.37924
#1	7124.4	43972.	2255.6
#2	7154.4	43605.	2239.0
#3	7120.8	43783.	2243.7

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 10:33:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00297**	**-.00189**	**.00289**	**.00380**	**.00027**	**-.00003**	**.02225**
Stddev	.00079	.00779	.00159	.00210	.00139	.00004	.03753
%RSD	26.593	413.32	55.111	55.251	514.31	136.58	168.66
#1	.00334	-.00786	.00273	.00334	.00168	-.00001	-.00921
#2	.00350	.00693	.00139	.00609	.00023	-.00000	.06379
#3	.00206	-.00473	.00457	.00197	-.00110	-.00008	.01218
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00012**	**-.00000**	**.00131**	**.00018**	**-.03277**	**.04923**	**-.00040**
Stddev	.00014	.00031	.00102	.00083	.02068	.05258	.00151
%RSD	114.48	23177.	77.426	468.65	63.118	106.80	379.45
#1	.00007	.00021	.00045	-.00049	-.03402	.00596	.00130
#2	.00028	.00015	.00105	-.00008	-.01149	.03398	-.00091
#3	.00002	-.00036	.00243	.00110	-.05280	.10775	-.00158
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00472**	**-.00040**	**.00398**	**.04186**	**.00037**	**.00183**	**.00092**
Stddev	.07151	.00169	.00086	.03433	.00046	.01093	.00506
%RSD	1514.3	422.40	21.740	82.001	123.50	599.09	550.15
#1	.06340	.00145	.00330	.07571	-.00014	-.00531	.00400
#2	.00162	-.00078	.00368	.00708	.00074	.01441	.00368
#3	-.07919	-.00188	.00495	.04280	.00051	-.00362	-.00492
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 10:33:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.00397**	**.00703**	**.00090**	**.00049**	**-.00046**	**-.00277**
Stddev	.00449	.00153	.00249	.00076	.00019	.00531	.00268
%RSD	1177.2	38.496	35.437	84.023	38.599	1160.2	96.770
#1	-.00383	.00290	.00990	.00168	.00070	-.00540	-.00548
#2	.00470	.00572	.00539	.00016	.00039	.00516	-.00013
#3	-.00201	.00329	.00581	.00086	.00037	-.00113	-.00269
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00047**	**.00010**	F **-.23448**
Stddev	.00129	.00031	.19803
%RSD	273.56	297.44	84.455
#1	-.00071	-.00016	-.44342
#2	.00092	.00044	-.21046
#3	-.00163	.00002	-.04956
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7198.5**	**44410.**	**2298.3**
Stddev	13.1	128.	10.8
%RSD	.18130	.28902	.47010
#1	7213.3	44273.	2294.3
#2	7188.5	44528.	2310.6
#3	7193.7	44429.	2290.1

Approved: June 24, 2016

Sample Name: PBW 02 Acquired: 6/23/2016 10:37:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00243	.01289	-.00238	.00215	.00059	.00001	.00064	.00027
Stddev	.00241	.00507	.00138	.00467	.00018	.00007	.03803	.00006
%RSD	99.217	39.320	57.920	217.09	29.967	855.05	5917.2	21.093
#1	-.00031	.01133	-.00397	.00515	.00054	-.00004	-.00920	.00024
#2	.00421	.01856	-.00155	.00453	.00079	-.00003	-.03149	.00033
#3	.00340	.00879	-.00162	-.00323	.00045	.00009	.04262	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00020	.00191	-.00100	.00249	.04815	.00220	-.00515	-.00126
Stddev	.00015	.00073	.00043	.01361	.09597	.00221	.11951	.00238
%RSD	73.207	38.022	42.787	546.34	199.31	100.78	2321.3	189.95
#1	-.00025	.00137	-.00123	.01660	-.05245	.00010	.03750	-.00019
#2	-.00003	.00273	-.00051	-.01057	.13870	.00199	-.14013	.00041
#3	-.00031	.00163	-.00126	.00145	.05820	.00451	.08719	-.00399
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00121	.04263	-.00108	-.00736	.00241	-.00353	.00285	.00836
Stddev	.00026	.02816	.00116	.00127	.00261	.00137	.00741	.00138
%RSD	21.618	66.044	107.01	17.201	108.31	38.784	259.67	16.477
#1	.00092	.01185	.00018	-.00596	.00167	-.00350	-.00460	.00969
#2	.00128	.06707	-.00134	-.00769	.00530	-.00218	.01021	.00694
#3	.00142	.04898	-.00208	-.00843	.00025	-.00492	.00294	.00846
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: PBW 02 Acquired: 6/23/2016 10:37:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v967) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00109**	**-.00009**	**.01096**	**-.00098**	**-.00023**	**.00040**	**.03142**
Stddev	.00065	.00030	.00703	.00449	.00148	.00015	.35769
%RSD	59.540	324.77	64.152	456.40	635.29	36.948	1138.4
#1	.00065	.00022	.01902	.00189	-.00170	.00048	.18768
#2	.00079	-.00037	.00777	-.00616	-.00024	.00050	-.37782
#3	.00184	-.00013	.00609	.00132	.00125	.00023	.28440
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7056.8**	**44113.**	**2291.0**
Stddev	55.6	316.	27.4
%RSD	.78762	.71710	1.1965
#1	7118.4	44456.	2259.3
#2	7041.7	43832.	2306.7
#3	7010.4	44053.	2306.9

Approved: June 24, 2016

Sample Name: LCSW 02 Acquired: 6/23/2016 10:48:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.22850**	**5.3524**	**.21516**	**1.0428**	**.54496**	**.02642**	**5.5039**	**.02684**
Stddev	.00330	.0076	.00251	.0020	.00025	.00010	.0620	.00020
%RSD	1.4451	.14203	1.1655	.19167	.04529	.37359	1.1259	.73257
#1	.22591	5.3512	.21360	1.0405	.54519	.02650	5.4405	.02701
#2	.23222	5.3454	.21805	1.0440	.54499	.02631	5.5067	.02662
#3	.22739	5.3605	.21382	1.0440	.54470	.02644	5.5644	.02689
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10911**	**.27097**	**.27491**	**2.1584**	**26.630**	**.54834**	**5.3637**	**.26968**
Stddev	.00035	.00159	.00152	.0163	.041	.00364	.0151	.00278
%RSD	.31852	.58817	.55193	.75658	.15361	.66310	.28212	1.0312
#1	.10906	.27197	.27357	2.1714	26.592	.55090	5.3742	.27283
#2	.10880	.26913	.27656	2.1401	26.625	.54418	5.3705	.26757
#3	.10949	.27181	.27460	2.1637	26.673	.54993	5.3463	.26864
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.55353**	**27.101**	**.27454**	**5.1950**	**.27137**	**.65400**	**.20493**	**2.7480**
Stddev	.00112	.080	.00191	.0060	.00219	.00254	.00409	.0055
%RSD	.20253	.29526	.69567	.11494	.80702	.38851	1.9961	.20068
#1	.55266	27.180	.27670	5.1938	.27139	.65193	.20099	2.7458
#2	.55314	27.020	.27307	5.1896	.26916	.65683	.20465	2.7440
#3	.55480	27.102	.27383	5.2014	.27354	.65323	.20916	2.7543
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: LCSW 02 Acquired: 6/23/2016 10:48:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.54136**	**.54956**	**.53774**	**.26798**	**.53756**	**.53807**	**.52263**
Stddev	.00124	.00284	.00655	.00160	.00065	.00111	.08625
%RSD	.22963	.51687	1.2184	.59886	.12008	.20681	16.502
#1	.54178	.55283	.53336	.26631	.53698	.53720	.47858
#2	.53996	.54779	.54527	.26810	.53744	.53770	.62201
#3	.54233	.54805	.53459	.26951	.53826	.53933	.46730
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6751.0**	**41595.**	**2147.5**
Stddev	16.5	417.	15.8
%RSD	.24497	1.0037	.73785
#1	6750.9	41122.	2157.2
#2	6734.6	41910.	2156.0
#3	6767.6	41755.	2129.2

Approved: June 24, 2016

Sample Name: L1606080601 Acquired: 6/23/2016 10:51:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00332	.04783	-.00051	.02919	.02316	-.00001	43.010	.00030
Stddev	.00229	.01237	.00173	.00366	.00041	.00006	.052	.00045
%RSD	69.212	25.855	341.87	12.521	1.7488	512.34	.12116	151.99
#1	.00527	.04741	-.00003	.03341	.02305	.00001	43.043	.00037
#2	.00390	.03568	-.00243	.02723	.02361	.00004	42.950	.00071
#3	.00079	.06040	.00094	.02694	.02283	-.00008	43.037	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.00082	.00144	.40311	2.4797	-.00382	7.5681	.03103
Stddev	.00013	.00101	.00278	.00772	.0470	.00214	.0970	.00130
%RSD	74.032	123.26	193.44	1.9146	1.8949	56.013	1.2820	4.2001
#1	-.00014	.00001	.00047	.41089	2.4255	-.00177	7.5891	.03208
#2	-.00031	.00050	-.00073	.39545	2.5043	-.00366	7.6528	.03142
#3	-.00006	.00195	.00457	.40300	2.5092	-.00604	7.4622	.02957
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00181	8.7753	.00096	-.00180	-.00112	-.00294	.00044	2.4583
Stddev	.00051	.0335	.00050	.00217	.00243	.00750	.00595	.0091
%RSD	27.981	.38181	52.318	121.11	217.36	255.25	1360.5	.36984
#1	.00170	8.7390	.00121	-.00156	.00092	-.00259	.00525	2.4480
#2	.00237	8.7818	.00038	.00025	-.00047	.00438	-.00622	2.4617
#3	.00137	8.8051	.00129	-.00408	-.00381	-.01060	.00229	2.4652
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606080601 Acquired: 6/23/2016 10:51:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00095	.15971	.00244	.00018	-.00142	.00421	.06591
Stddev	.00050	.00036	.01050	.00258	.00131	.00020	.08417
%RSD	52.557	.22648	430.07	1452.4	91.782	4.6676	127.70
#1	.00048	.15994	-.00770	-.00278	-.00014	.00424	.10987
#2	.00148	.15929	.00175	.00136	-.00137	.00439	-.03114
#3	.00090	.15990	.01328	.00196	-.00275	.00400	.11899
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6810.6	42146.	2192.1
Stddev	25.2	266.	18.6
%RSD	.36933	.63096	.84850
#1	6802.0	42073.	2178.6
#2	6790.9	41924.	2184.4
#3	6838.9	42440.	2213.3

Approved: June 24, 2016

Sample Name: L1606080603S Acquired: 6/23/2016 10:55:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.22292**	**5.2580**	**.21233**	**1.0506**	**.56122**	**.02585**	**46.880**	**.02653**
Stddev	.00125	.0051	.00435	.0034	.00394	.00006	.174	.00017
%RSD	.56117	.09779	2.0482	.32163	.70242	.22036	.37102	.65401
#1	.22331	5.2556	.21640	1.0468	.56286	.02591	47.040	.02643
#2	.22392	5.2639	.20775	1.0517	.55673	.02583	46.695	.02642
#3	.22152	5.2545	.21283	1.0533	.56408	.02580	46.905	.02673
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10658**	**.26462**	**.26636**	**2.5134**	**28.758**	**.54406**	**12.811**	**.30027**
Stddev	.00029	.00181	.00051	.0405	.213	.00394	.014	.00457
%RSD	.27356	.68391	.18983	1.6130	.74146	.72467	.10931	1.5227
#1	.10631	.26358	.26675	2.5028	28.880	.54429	12.814	.30476
#2	.10654	.26671	.26655	2.4792	28.512	.54000	12.796	.29562
#3	.10689	.26358	.26579	2.5582	28.882	.54788	12.823	.30041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.55170**	**35.165**	**.26531**	**5.2323**	**.26719**	**.65049**	**.20303**	**5.1631**
Stddev	.00113	.187	.00228	.0061	.00196	.00181	.00446	.0029
%RSD	.20429	.53311	.85843	.11604	.73356	.27771	2.1946	.05639
#1	.55286	35.340	.26794	5.2303	.26915	.64881	.20042	5.1665
#2	.55060	34.967	.26407	5.2275	.26523	.65240	.20818	5.1612
#3	.55165	35.189	.26391	5.2391	.26720	.65026	.20050	5.1617
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606080603S Acquired: 6/23/2016 10:55:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53484**	**.70111**	**.52936**	**.26439**	**.52736**	**.52795**	**.54980**
Stddev	.00124	.00139	.00278	.00080	.00211	.00104	.46028
%RSD	.23260	.19809	.52607	.30199	.39931	.19788	83.718
#1	.53546	.70248	.52994	.26380	.52862	.52807	.30765
#2	.53566	.69970	.52632	.26530	.52854	.52685	.26115
#3	.53341	.70117	.53180	.26408	.52493	.52893	1.0806
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6736.2**	**41946.**	**2187.8**
Stddev	5.1	20.	14.7
%RSD	.07591	.04740	.67015
#1	6730.4	41949.	2172.7
#2	6737.9	41964.	2188.8
#3	6740.2	41924.	2201.9

Approved: June 24, 2016

Sample Name: L1606080604SD Acquired: 6/23/2016 10:59:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.22494**	**5.3013**	**.21407**	**1.0628**	**.56365**	**.02612**	**47.662**	**.02643**
Stddev	.00131	.0093	.00129	.0020	.00234	.00011	.148	.00049
%RSD	.58037	.17470	.60415	.18460	.41544	.41243	.31045	1.8605
#1	.22580	5.3020	.21515	1.0606	.56620	.02606	47.808	.02611
#2	.22344	5.3102	.21442	1.0642	.56160	.02624	47.512	.02700
#3	.22559	5.2917	.21263	1.0637	.56315	.02605	47.665	.02619
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10674**	**.26724**	**.26524**	**2.6333**	**28.895**	**.54557**	**12.719**	**.30439**
Stddev	.00058	.00062	.00038	.0330	.106	.00090	.094	.00619
%RSD	.54609	.23196	.14207	1.2527	.36519	.16505	.74234	2.0338
#1	.10638	.26678	.26533	2.6696	28.991	.54627	12.772	.31139
#2	.10741	.26794	.26557	2.6252	28.782	.54456	12.610	.30217
#3	.10642	.26698	.26483	2.6052	28.913	.54588	12.776	.29962
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.55418**	**34.480**	**.26678**	**5.2501**	**.26985**	**.65141**	**.19677**	**5.1827**
Stddev	.00050	.067	.00127	.0075	.00459	.00504	.00312	.0057
%RSD	.08994	.19311	.47791	.14252	1.7002	.77356	1.5871	.10959
#1	.55380	34.540	.26578	5.2415	.27196	.65020	.19384	5.1876
#2	.55474	34.408	.26821	5.2542	.26459	.64709	.19641	5.1765
#3	.55399	34.491	.26635	5.2546	.27301	.65695	.20005	5.1841
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606080604SD Acquired: 6/23/2016 10:59:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG572929-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53983**	**.70207**	**.53595**	**.26631**	**.53443**	**.53118**	**.44263**
Stddev	.00237	.00250	.00231	.00541	.00162	.00068	.38887
%RSD	.43894	.35572	.43187	2.0329	.30357	.12798	87.854
#1	.54163	.70459	.53352	.26243	.53589	.53106	.10258
#2	.54071	.69960	.53620	.27250	.53268	.53191	.86662
#3	.53715	.70202	.53813	.26401	.53473	.53057	.35870
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6749.7**	**41983.**	**2189.9**
Stddev	23.3	132.	6.1
%RSD	.34593	.31400	.28075
#1	6735.6	41949.	2183.1
#2	6776.6	41872.	2195.2
#3	6736.8	42129.	2191.3

Approved: June 24, 2016

Sample Name: L1606064301 Acquired: 6/23/2016 11:03:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00122	.06615	-.00143	.02593	.03006	-.00006	38.280	.00032
Stddev	.00204	.01101	.00114	.00145	.00109	.00010	.072	.00020
%RSD	168.05	16.644	79.877	5.6031	3.6139	160.24	.18846	60.547
#1	-.00114	.06914	-.00036	.02742	.03123	.00004	38.219	.00022
#2	.00222	.05395	-.00264	.02452	.02986	-.00006	38.359	.00055
#3	.00256	.07536	-.00129	.02585	.02908	-.00016	38.261	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.00230	.00108	.05505	.82182	.00036	6.9671	.00298
Stddev	.00067	.00063	.00204	.02247	.04972	.00219	.1563	.00230
%RSD	948.74	27.362	188.95	40.824	6.0505	601.29	2.2439	77.255
#1	-.00016	.00300	-.00033	.07041	.79866	.00194	6.8403	.00562
#2	-.00069	.00179	.00342	.06549	.87890	-.00214	7.1417	.00149
#3	.00064	.00211	.00015	.02926	.78791	.00129	6.9192	.00182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	5.2162	-.00040	.00723	.00244	-.00396	.00046	4.1726
Stddev	.00051	.0203	.00014	.00259	.00459	.00187	.00839	.0123
%RSD	44.166	.38819	33.920	35.779	188.07	47.157	1810.3	.29505
#1	.00058	5.2125	-.00024	.00977	-.00208	-.00520	-.00153	4.1806
#2	.00139	5.2380	-.00049	.00460	.00709	-.00487	-.00675	4.1789
#3	.00153	5.1980	-.00046	.00731	.00230	-.00181	.00967	4.1585
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606064301 Acquired: 6/23/2016 11:03:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00078**	**.20451**	**.00530**	**-.00469**	**-.00006**	**.00110**	**.14863**
Stddev	.00121	.00048	.00792	.00091	.00063	.00030	.13987
%RSD	154.61	.23532	149.42	19.355	996.61	27.576	94.109
#1	.00207	.20397	.00166	-.00442	-.00057	.00145	.23839
#2	.00061	.20490	.01439	-.00395	-.00026	.00092	-.01253
#3	-.00033	.20466	-.00014	-.00571	.00064	.00093	.22003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6830.4**	**42508.**	**2171.6**
Stddev	8.5	112.	27.2
%RSD	.12431	.26329	1.2518
#1	6822.3	42542.	2152.2
#2	6839.3	42598.	2160.0
#3	6829.7	42382.	2202.7

Approved: June 24, 2016

Sample Name: L1606064301PS Acquired: 6/23/2016 11:07:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573560-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.22725**	**5.3504**	**.21699**	**1.0586**	**.56235**	**.02606**	**39.453**	**.02652**
Stddev	.00177	.0067	.00179	.0027	.00155	.00012	.197	.00023
%RSD	.77717	.12503	.82531	.25428	.27486	.46212	.49837	.88589
#1	.22925	5.3465	.21509	1.0575	.56204	.02619	39.648	.02660
#2	.22656	5.3582	.21864	1.0616	.56403	.02598	39.456	.02625
#3	.22593	5.3466	.21724	1.0566	.56099	.02599	39.255	.02669
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10707**	**.26636**	**.26786**	**2.1734**	**27.243**	**.54647**	**11.652**	**.26618**
Stddev	.00054	.00055	.00272	.0119	.213	.00192	.041	.00881
%RSD	.50398	.20739	1.0148	.54748	.78325	.35141	.35108	3.3092
#1	.10730	.26671	.26949	2.1869	27.405	.54632	11.608	.27572
#2	.10746	.26572	.26937	2.1646	27.322	.54463	11.688	.26445
#3	.10645	.26665	.26472	2.1686	27.001	.54846	11.659	.25836
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.54977**	**31.311**	**.26618**	**5.2709**	**.26415**	**.65246**	**.20473**	**6.5222**
Stddev	.00116	.147	.00099	.0077	.00299	.00202	.00237	.0133
%RSD	.21115	.46806	.37140	.14598	1.1311	.30884	1.1586	.20363
#1	.55015	31.346	.26545	5.2795	.26421	.65014	.20272	6.5165
#2	.55069	31.436	.26579	5.2647	.26113	.65378	.20735	6.5374
#3	.54846	31.150	.26730	5.2685	.26710	.65345	.20414	6.5128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606064301PS Acquired: 6/23/2016 11:07:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573560-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53985	.72655	.53558	.26570	.53178	.53125	.33122
Stddev	.00086	.00309	.00331	.00043	.00075	.00054	.05932
%RSD	.15906	.42561	.61803	.16301	.14059	.10232	17.910
#1	.53907	.72896	.53270	.26521	.53252	.53085	.28877
#2	.54077	.72764	.53485	.26582	.53103	.53187	.30588
#3	.53972	.72307	.53920	.26605	.53179	.53103	.39900
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6757.9	41916.	2182.6
Stddev	34.8	107.	23.2
%RSD	.51560	.25636	1.0623
#1	6728.7	41855.	2187.7
#2	6796.5	42040.	2157.3
#3	6748.6	41853.	2202.8

Approved: June 24, 2016

Sample Name: L1606064301SDL Acquired: 6/23/2016 11:10:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573560-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00070**	**.01810**	**-.00492**	**.01185**	**.00631**	**-.00000**	**7.1236**
Stddev	.00274	.00839	.00252	.00391	.00222	.00007	.1325
%RSD	392.94	46.334	51.249	32.975	35.103	3513.5	1.8603
#1	-.00235	.00864	-.00244	.01427	.00517	.00007	6.9946
#2	.00149	.02106	-.00747	.01394	.00887	-.00001	7.2594
#3	.00296	.02462	-.00483	.00734	.00490	-.00006	7.1166
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**.00002**	**.00232**	**-.00095**	**-.00610**	**.17611**	**-.00235**
Stddev	.00025	.00059	.00130	.00129	.02126	.10548	.00501
%RSD	155.98	3337.0	56.059	136.53	348.65	59.896	212.68
#1	.00039	.00038	.00248	-.00038	-.02017	.14177	.00306
#2	-.00011	-.00067	.00095	-.00242	-.01648	.29448	-.00331
#3	.00021	.00034	.00353	-.00003	.01836	.09207	-.00681
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2954**	**.00077**	**.00079**	**1.0065**	**-.00075**	**.00450**	**.00141**
Stddev	.1344	.00192	.00039	.0274	.00071	.00539	.00486
%RSD	10.379	247.98	49.311	2.7240	94.064	119.85	344.90
#1	1.2316	-.00060	.00040	1.0091	-.00103	.00495	-.00378
#2	1.4498	.00297	.00118	1.0325	.00005	.00964	.00586
#3	1.2047	-.00004	.00078	.97783	-.00128	-.00111	.00215
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606064301SDL Acquired: 6/23/2016 11:10:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573560-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00658**	**.00672**	**.79406**	**.00083**	**.03798**	**.01408**	**-.00117**
Stddev	.00316	.00321	.00147	.00103	.00094	.01087	.00246
%RSD	48.021	47.777	.18462	123.89	2.4756	77.174	209.17
#1	-.00294	.00985	.79575	.00155	.03738	.01337	-.00372
#2	-.00825	.00344	.79333	-.00035	.03907	.00359	.00119
#3	-.00856	.00686	.79311	.00130	.03751	.02529	-.00099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00049**	**.00087**	F **-.20818**
Stddev	.00030	.00009	.00447
%RSD	61.635	10.403	2.1493
#1	-.00050	.00094	-.20536
#2	-.00079	.00091	-.21334
#3	-.00019	.00077	-.20585
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7139.5**	**44441.**	**2238.0**
Stddev	50.1	436.	9.4
%RSD	.70115	.98188	.41959
#1	7082.7	44722.	2247.5
#2	7158.3	43938.	2228.7
#3	7177.3	44663.	2237.9

Approved: June 24, 2016

Sample Name: L1606064301SDL Acquired: 6/23/2016 11:14:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573560-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00261	.00791	-.00004	.00376	.00049	.00002	1.3594	.00023
Stddev	.00120	.00238	.00074	.00093	.00141	.00007	.0314	.00034
%RSD	45.945	30.141	1664.4	24.870	290.88	378.58	2.3106	150.85
#1	.00358	.00988	-.00069	.00277	.00038	-.00005	1.3505	.00050
#2	.00297	.00526	.00076	.00387	-.00087	.00008	1.3943	-.00016
#3	.00127	.00858	-.00021	.00463	.00195	.00002	1.3334	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	.00078	-.00032	-.01191	.06875	-.00169	.28703	-.00226
Stddev	.00009	.00052	.00249	.01602	.11639	.00434	.08030	.00304
%RSD	20.872	66.349	784.39	134.58	169.31	257.07	27.975	134.96
#1	.00037	.00028	.00241	-.01207	.19064	.00305	.35886	.00125
#2	.00043	.00131	-.00246	.00420	-.04124	-.00547	.20034	-.00380
#3	.00055	.00075	-.00090	-.02785	.05685	-.00264	.30188	-.00422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	.26228	-.00128	.00562	.00251	-.00194	.00134	.17660
Stddev	.00028	.01679	.00122	.00155	.00558	.00069	.00224	.00148
%RSD	62.629	6.4019	95.033	27.643	222.32	35.685	167.54	.83658
#1	.00015	.27136	-.00120	.00432	.00095	-.00169	.00300	.17609
#2	.00048	.24290	-.00011	.00520	.00870	-.00273	.00222	.17545
#3	.00071	.27258	-.00253	.00734	-.00213	-.00141	-.00121	.17827
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606064301SDL Acquired: 6/23/2016 11:14:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573560-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.00771	.00924	.00187	-.00212	.00023	.10361
Stddev	.00110	.00046	.00454	.00261	.00099	.00022	.04989
%RSD	590.32	5.9848	49.119	139.27	46.532	92.023	48.149
#1	.00142	.00743	.00743	-.00027	-.00305	.00007	.15002
#2	-.00018	.00824	.01440	.00111	-.00224	.00048	.10996
#3	-.00069	.00745	.00588	.00478	-.00108	.00016	.05085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6961.0	42861.	2262.2
Stddev	19.0	128.	28.0
%RSD	.27352	.29900	1.2383
#1	6966.6	42842.	2290.8
#2	6976.7	42744.	2234.8
#3	6939.9	42998.	2261.1

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 11:18:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.42208**	**10.026**	**.40440**	**.50274**	**1.0079**	**.05013**	**10.009**
Stddev	.00403	.034	.00230	.00696	.0010	.00017	.055
%RSD	.95372	.34303	.56808	1.3853	.10403	.33377	.55336
#1	.41788	9.9874	.40287	.49470	1.0087	.04997	10.060
#2	.42245	10.054	.40705	.50702	1.0082	.05030	10.019
#3	.42590	10.037	.40329	.50649	1.0067	.05012	9.9500
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05023**	**.20256**	**.50302**	**.50725**	**4.0199**	**50.275**	**1.0209**
Stddev	.00011	.00027	.00258	.00083	.0198	.052	.0040
%RSD	.22018	.13367	.51361	.16325	.49293	.10377	.39074
#1	.05036	.20253	.50114	.50692	4.0081	50.322	1.0175
#2	.05016	.20231	.50596	.50664	4.0428	50.219	1.0253
#3	.05017	.20285	.50195	.50819	4.0088	50.282	1.0199
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.9566**	**.50840**	**1.0090**	**50.346**	**.50788**	**10.008**	**.50433**
Stddev	.0526	.00612	.0027	.132	.00211	.011	.00390
%RSD	.52863	1.2043	.27275	.26241	.41570	.11030	.77248
#1	9.9739	.51083	1.0117	50.491	.50814	9.9964	.50363
#2	9.9984	.50144	1.0092	50.313	.50565	10.010	.50083
#3	9.8975	.51294	1.0062	50.233	.50985	10.018	.50853
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 11:18:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2091**	**.40397**	**5.0887**	**1.0011**	**1.0108**	**.99757**	**.51228**
Stddev	.0044	.00601	.0108	.0007	.0040	.01110	.00232
%RSD	.36159	1.4875	.21143	.06763	.39423	1.1124	.45377
#1	1.2140	.40998	5.0829	1.0007	1.0113	.98553	.51248
#2	1.2059	.40395	5.0820	1.0019	1.0145	1.0074	.50986
#3	1.2073	.39797	5.1011	1.0007	1.0066	.99981	.51449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0073**	**1.0103**	F **-.07667**
Stddev	.0043	.0010	.16401
%RSD	.42507	.09626	213.92
#1	1.0026	1.0099	.11242
#2	1.0085	1.0096	-.16212
#3	1.0109	1.0114	-.18030
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7112.5**	**44059.**	**2267.2**
Stddev	29.9	13.	7.7
%RSD	.42011	.02930	.33758
#1	7083.9	44050.	2270.1
#2	7143.5	44074.	2273.0
#3	7110.0	44053.	2258.5

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 11:22:07 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00189	.01317	-.00014	.00695	-.00071	.00002	.05005
Stddev	.00207	.00751	.00124	.00172	.00046	.00003	.03317
%RSD	109.38	57.025	881.13	24.753	65.131	192.61	66.278
#1	.00097	.02150	.00128	.00894	-.00027	-.00002	.01183
#2	.00044	.01111	-.00070	.00597	-.00119	.00003	.07135
#3	.00426	.00691	-.00101	.00594	-.00067	.00004	.06697
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.00016	.00124	-.00052	-.01915	.11943	.00219
Stddev	.00022	.00035	.00068	.00139	.00890	.05118	.00124
%RSD	66.393	219.43	54.732	264.88	46.485	42.852	56.612
#1	.00009	-.00001	.00069	-.00028	-.01341	.09118	.00192
#2	.00052	.00056	.00200	-.00202	-.02941	.08860	.00111
#3	.00038	-.00008	.00103	.00073	-.01464	.17850	.00355
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00380	-.00012	.00453	.04304	.00039	.00349	F .00609
Stddev	.12926	.00178	.00020	.00496	.00064	.00646	.00128
%RSD	3404.8	1473.3	4.5001	11.533	165.65	184.97	21.041
#1	-.01541	.00096	.00430	.04248	.00001	.00020	.00607
#2	-.11479	-.00217	.00460	.04826	.00002	.01093	.00482
#3	.14158	.00085	.00469	.03838	.00113	-.00066	.00738
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							.00500
Low Limit							-.00500

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 11:22:07 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00227	.00206	.00558	.00044	.00024	.00228	-.00124
Stddev	.00104	.01111	.00105	.00112	.00019	.00747	.00491
%RSD	45.890	538.56	18.813	256.59	76.427	327.13	397.12
#1	.00114	.01300	.00502	.00065	.00003	.01091	.00178
#2	.00249	-.00921	.00679	.00143	.00031	-.00219	-.00690
#3	.00318	.00239	.00492	-.00077	.00039	-.00187	.00141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00174	.00003	F .09081
Stddev	.00025	.00043	.08933
%RSD	14.138	1286.3	98.377
#1	-.00177	-.00004	.02370
#2	-.00148	-.00035	.05651
#3	-.00197	.00049	.19220
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7200.1	44649.	2270.6
Stddev	37.7	32.	39.2
%RSD	.52300	.07113	1.7243
#1	7240.4	44677.	2277.9
#2	7194.1	44614.	2228.3
#3	7165.8	44655.	2305.6

Approved: June 24, 2016

Sample Name: L1606064302 Acquired: 6/23/2016 11:26:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	.26747	-.00009	.02484	.04254	-.00005	43.396	.00022
Stddev	.00197	.00413	.00272	.00027	.00060	.00012	.324	.00013
%RSD	261.93	1.5424	2949.9	1.0811	1.4178	232.10	.74631	58.986
#1	-.00150	.26752	-.00205	.02509	.04264	-.00019	43.509	.00035
#2	.00218	.26332	.00301	.02456	.04309	.00004	43.649	.00023
#3	.00157	.27158	-.00123	.02486	.04189	-.00000	43.031	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.00266	.00081	.32785	.96194	.00079	5.1860	.01617
Stddev	.00029	.00025	.00240	.01532	.08177	.00339	.1255	.00084
%RSD	88.646	9.5763	296.94	4.6741	8.5002	427.83	2.4202	5.1909
#1	.00048	.00271	-.00046	.32168	1.0234	-.00276	5.2270	.01561
#2	-.00001	.00289	.00357	.31657	.99334	.00400	5.0451	.01713
#3	.00051	.00238	-.00069	.34529	.86913	.00115	5.2859	.01577
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00206	5.2001	.00017	.04611	.00359	-.00067	-.00054	4.1105
Stddev	.00042	.0405	.00053	.00238	.00353	.00387	.00445	.0061
%RSD	20.472	.77885	304.22	5.1573	98.382	575.44	822.83	.14753
#1	.00157	5.1727	-.00037	.04386	.00542	.00182	.00165	4.1139
#2	.00228	5.2466	.00069	.04587	.00581	.00130	-.00566	4.1141
#3	.00232	5.1809	.00021	.04860	-.00048	-.00513	.00239	4.1035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606064302 Acquired: 6/23/2016 11:26:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.15100	-.00290	-.00074	-.00060	.00253	.02492
Stddev	.00012	.00127	.00397	.00016	.00041	.00023	.28447
%RSD	14.883	.83854	137.08	21.805	67.554	9.2827	1141.4
#1	.00091	.14977	-.00056	-.00070	-.00066	.00264	.35267
#2	.00068	.15230	-.00748	-.00091	-.00098	.00269	-.15784
#3	.00086	.15094	-.00065	-.00060	-.00017	.00226	-.12006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6794.5	42752.	2192.4
Stddev	30.7	54.	19.1
%RSD	.45171	.12704	.86965
#1	6781.9	42692.	2170.4
#2	6829.5	42766.	2202.2
#3	6772.1	42798.	2204.6

Approved: June 24, 2016

Sample Name: L1606064303 Acquired: 6/23/2016 11:30:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00032**	**.06602**	**-.00261**	**.01285**	**.08166**	**-.00002**	**70.478**
Stddev	.00222	.00884	.00362	.00367	.00098	.00003	.278
%RSD	699.98	13.390	138.45	28.517	1.2008	166.64	.39496
#1	.00122	.07324	-.00461	.00955	.08278	.00001	70.795
#2	.00069	.05616	.00156	.01680	.08122	-.00005	70.361
#3	-.00286	.06867	-.00478	.01221	.08098	-.00001	70.277
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00043**	**-.00007**	**.00271**	**.00017**	**.04905**	**.61723**	**.00329**
Stddev	.00030	.00015	.00141	.00138	.01853	.06231	.00259
%RSD	71.212	206.71	52.030	794.77	37.781	10.096	78.525
#1	.00025	.00010	.00274	.00099	.03029	.64631	.00522
#2	.00025	-.00017	.00410	-.00142	.06734	.54569	.00035
#3	.00078	-.00014	.00128	.00095	.04951	.65969	.00431
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**6.5197**	**.00210**	**.00114**	**2.3160**	**-.00214**	**.00652**	**.00322**
Stddev	.0292	.00379	.00024	.0359	.00068	.00269	.00233
%RSD	.44719	180.73	20.594	1.5492	31.730	41.293	72.581
#1	6.5530	.00221	.00134	2.3485	-.00249	.00417	.00531
#2	6.5068	.00583	.00121	2.3220	-.00136	.00593	.00363
#3	6.4992	-.00175	.00088	2.2775	-.00258	.00946	.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606064303 Acquired: 6/23/2016 11:30:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00123**	**.00062**	**4.1539**	**.00045**	**.17219**	**-.00442**	**.00006**
Stddev	.00291	.01044	.0062	.00093	.00121	.00598	.00245
%RSD	237.16	1677.3	.14820	204.40	.70469	135.24	4374.1
#1	.00370	.00751	4.1602	.00043	.17312	.00044	-.00181
#2	-.00198	-.01139	4.1479	.00139	.17265	-.01110	.00282
#3	.00197	.00575	4.1535	-.00046	.17082	-.00261	-.00084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00098**	**.00130**	F **-.24913**
Stddev	.00104	.00037	.16574
%RSD	106.16	28.501	66.527
#1	-.00218	.00173	-.34490
#2	-.00050	.00113	-.34473
#3	-.00027	.00105	-.05775
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6742.6**	**42153.**	**2187.5**
Stddev	20.5	148.	11.5
%RSD	.30347	.35129	.52481
#1	6758.7	42081.	2174.4
#2	6749.4	42054.	2192.3
#3	6719.6	42323.	2195.8

Approved: June 24, 2016

Sample Name: L1606064304 Acquired: 6/23/2016 11:33:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00117**	**.04057**	**-.00439**	**.03066**	**.04299**	**.00000**	**34.940**
Stddev	.00339	.00478	.00245	.00191	.00060	.00005	.093
%RSD	290.05	11.772	55.836	6.2346	1.3895	9400.1	.26617
#1	-.00268	.03688	-.00325	.02912	.04367	.00003	34.964
#2	.00250	.03887	-.00272	.03280	.04255	.00003	34.838
#3	.00369	.04596	-.00721	.03006	.04274	-.00006	35.019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**.00024**	**.00105**	**.00014**	**.00854**	**.93624**	**.00350**
Stddev	.00026	.00041	.00147	.00134	.02324	.10226	.00098
%RSD	120.80	169.78	140.19	932.26	272.26	10.922	27.945
#1	-.00008	.00003	-.00057	.00167	.03444	1.0540	.00407
#2	.00043	-.00002	.00230	-.00086	.00162	.87036	.00237
#3	.00030	.00072	.00143	-.00038	-.01046	.88433	.00405
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**7.1691**	**.00284**	**.00082**	**5.3323**	**.00048**	**.04039**	**.00314**
Stddev	.1006	.00320	.00036	.0155	.00048	.00723	.00588
%RSD	1.4038	112.52	43.945	.29013	100.08	17.911	186.90
#1	7.1974	.00652	.00120	5.3463	-.00005	.04875	.00442
#2	7.2526	.00128	.00078	5.3157	.00059	.03626	.00828
#3	7.0574	.00073	.00048	5.3349	.00088	.03617	-.00327
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606064304 Acquired: 6/23/2016 11:33:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00317**	**.00206**	**4.2290**	**.00011**	**.18686**	**.00008**	**-.00047**
Stddev	.00292	.00547	.0074	.00020	.00078	.00312	.00056
%RSD	92.220	265.53	.17548	181.78	.41674	3781.1	120.08
#1	-.00439	.00616	4.2261	-.00003	.18732	.00329	-.00032
#2	-.00528	.00417	4.2374	.00002	.18596	-.00294	-.00108
#3	.00017	-.00415	4.2234	.00034	.18729	-.00010	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00060**	**.00082**	F **-.17008**
Stddev	.00049	.00010	.27354
%RSD	82.787	12.582	160.83
#1	-.00060	.00070	-.07497
#2	-.00109	.00087	.04322
#3	-.00010	.00088	-.47848
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6776.1**	**42494.**	**2204.9**
Stddev	17.1	133.	21.4
%RSD	.25303	.31335	.97208
#1	6795.0	42645.	2183.8
#2	6771.9	42444.	2226.6
#3	6761.5	42394.	2204.4

Approved: June 24, 2016

Sample Name: L1606064305 Acquired: 6/23/2016 11:37:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	.53186	-.00214	.02175	.03601	-.00010	14.722	.00055
Stddev	.00228	.00247	.00445	.00230	.00094	.00005	.126	.00022
%RSD	421.53	.46389	208.04	10.587	2.6199	44.933	.85596	40.022
#1	.00316	.53012	-.00077	.02401	.03640	-.00014	14.685	.00039
#2	-.00105	.53469	-.00712	.01940	.03493	-.00005	14.619	.00081
#3	-.00048	.53078	.00146	.02185	.03669	-.00011	14.863	.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00006	.00230	.00548	.76832	2.3392	.00621	2.5504	.01694
Stddev	.00042	.00048	.00129	.01630	.0828	.00232	.0808	.00496
%RSD	702.55	20.753	23.604	2.1212	3.5411	37.306	3.1691	29.304
#1	-.00052	.00176	.00693	.75108	2.2935	.00388	2.4729	.01653
#2	.00003	.00248	.00444	.78348	2.4348	.00851	2.5441	.01220
#3	.00031	.00267	.00508	.77041	2.2892	.00625	2.6342	.02210
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	2.3848	.00454	.26337	.00504	-.00323	.00041	3.5594
Stddev	.00025	.0113	.00058	.00316	.00307	.00618	.00461	.0030
%RSD	40.210	.47407	12.866	1.1998	60.786	191.51	1127.1	.08456
#1	.00053	2.3726	.00503	.26642	.00155	-.00695	-.00306	3.5582
#2	.00043	2.3950	.00389	.26358	.00631	.00391	-.00135	3.5572
#3	.00091	2.3868	.00469	.26011	.00728	-.00664	.00563	3.5629
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606064305 Acquired: 6/23/2016 11:37:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00103	.06157	.01102	.00080	.00021	.06676	.17696
Stddev	.00038	.00058	.00530	.00336	.00041	.00009	.30311
%RSD	36.515	.93995	48.116	418.46	190.39	.14087	171.29
#1	.00068	.06155	.01291	.00467	.00037	.06668	-.11953
#2	.00098	.06100	.00503	-.00096	.00052	.06675	.48629
#3	.00143	.06216	.01513	-.00131	-.00025	.06686	.16411
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6948.0	43351.	2270.5
Stddev	24.8	156.	17.3
%RSD	.35679	.35939	.76126
#1	6945.4	43469.	2251.5
#2	6924.6	43410.	2274.7
#3	6973.9	43175.	2285.3

Approved: June 24, 2016

Sample Name: L1606064306 Acquired: 6/23/2016 11:41:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00187	.02354	.00138	.02630	.06121	-.00008	71.332	.00064
Stddev	.00122	.00905	.00134	.00013	.00195	.00003	.346	.00019
%RSD	65.350	38.437	97.369	.47954	3.1785	41.406	.48481	30.029
#1	.00046	.01310	.00189	.02632	.06190	-.00011	71.409	.00076
#2	.00257	.02853	.00239	.02617	.05901	-.00005	71.633	.00073
#3	.00258	.02900	-.00014	.02642	.06272	-.00007	70.954	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.00059	.00886	1.1481	2.4731	.02039	10.652	1.0194
Stddev	.00049	.00045	.00003	.0078	.1060	.00516	.108	.0029
%RSD	101.33	75.377	.29783	.68117	4.2846	25.297	1.0171	.28156
#1	.00039	.00035	.00888	1.1433	2.4250	.01560	10.708	1.0222
#2	.00005	.00111	.00886	1.1572	2.3998	.02585	10.527	1.0197
#3	.00102	.00032	.00883	1.1439	2.5946	.01972	10.720	1.0165
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00199	8.2539	.00024	.00303	.00651	-.00357	.00566	6.8739
Stddev	.00062	.0799	.00153	.00444	.00110	.00639	.00190	.0186
%RSD	31.027	.96777	643.77	146.27	16.949	178.95	33.597	.27005
#1	.00160	8.3389	-.00019	.00365	.00621	.00234	.00382	6.8912
#2	.00167	8.2427	.00194	-.00168	.00558	-.00269	.00762	6.8762
#3	.00270	8.1803	-.00103	.00713	.00773	-.01035	.00554	6.8543
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606064306 Acquired: 6/23/2016 11:41:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	.29195	-.00902	-.00150	-.00167	.02587	-.01653
Stddev	.00023	.00130	.00517	.00042	.00082	.00004	.37226
%RSD	81.741	.44447	57.341	28.330	49.121	.15361	2251.5
#1	.00030	.29340	-.00360	-.00101	-.00198	.02590	-.43514
#2	.00051	.29092	-.00957	-.00177	-.00074	.02587	.10816
#3	.00004	.29152	-.01390	-.00172	-.00228	.02582	.27737
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6886.1	42877.	2263.4
Stddev	11.4	248.	22.5
%RSD	.16521	.57737	.99518
#1	6899.1	43012.	2243.8
#2	6878.0	42591.	2258.4
#3	6881.3	43027.	2288.0

Approved: June 24, 2016

Sample Name: L1606064307 Acquired: 6/23/2016 11:45:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00027**	**.46732**	**-.00367**	**.03634**	**.03450**	**-.00001**	**48.188**
Stddev	.00117	.00622	.00300	.00353	.00021	.00003	.411
%RSD	430.98	1.3308	81.768	9.7232	.60957	380.82	.85283
#1	-.00110	.46077	-.00519	.03387	.03473	-.00002	48.611
#2	.00107	.47315	-.00021	.04039	.03431	.00003	48.163
#3	-.00078	.46803	-.00562	.03477	.03447	-.00003	47.791
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00049**	**-.00006**	**.00258**	**.00189**	**.46248**	**1.2468**	**.00637**
Stddev	.00032	.00044	.00041	.00037	.01357	.0192	.00270
%RSD	64.989	744.12	16.031	19.615	2.9342	1.5408	42.427
#1	.00085	-.00054	.00222	.00176	.46783	1.2648	.00616
#2	.00036	.00033	.00303	.00230	.47255	1.2265	.00378
#3	.00025	.00003	.00249	.00159	.44705	1.2490	.00917
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**11.690**	**.00808**	**.00138**	**11.004**	**-.00087**	**.04505**	**.00560**
Stddev	.220	.00278	.00009	.159	.00078	.00925	.00188
%RSD	1.8858	34.421	6.2970	1.4424	90.051	20.521	33.511
#1	11.824	.01029	.00138	11.101	.00003	.03848	.00352
#2	11.435	.00496	.00146	10.820	-.00139	.05563	.00610
#3	11.810	.00900	.00129	11.090	-.00126	.04106	.00718
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606064307 Acquired: 6/23/2016 11:45:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00150	-.00572	4.5875	.00033	.43303	.00532	-.00050
Stddev	.00456	.00884	.0072	.00047	.00154	.00872	.00190
%RSD	304.22	154.57	.15713	143.25	.35558	164.00	377.95
#1	-.00440	.00284	4.5857	.00014	.43366	.01418	-.00160
#2	-.00386	-.00518	4.5813	.00086	.43127	-.00326	.00169
#3	.00376	-.01481	4.5954	-.00002	.43415	.00503	-.00160
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00018	.00281	F -.24796
Stddev	.00061	.00016	.09171
%RSD	331.24	5.7704	36.987
#1	-.00078	.00270	-.33680
#2	-.00022	.00300	-.15362
#3	.00044	.00274	-.25345
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6781.2	42216.	2186.7
Stddev	33.5	59.	32.2
%RSD	.49353	.14055	1.4733
#1	6753.0	42285.	2149.7
#2	6772.5	42188.	2208.2
#3	6818.2	42177.	2202.2

Approved: June 24, 2016

Sample Name: L1606064308 Acquired: 6/23/2016 11:49:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00281	.28274	-.00295	.04314	.05239	-.00005	45.551	.00021
Stddev	.00212	.00598	.00239	.00293	.00113	.00003	.432	.00040
%RSD	75.574	2.1150	81.250	6.7892	2.1640	68.363	.94927	190.87
#1	.00246	.27651	-.00108	.04005	.05186	-.00008	46.037	.00028
#2	.00088	.28328	-.00564	.04350	.05369	-.00006	45.208	.00058
#3	.00508	.28843	-.00211	.04588	.05161	-.00001	45.407	-.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	.00251	-.00039	.27914	1.0523	.00350	9.9548	.00822
Stddev	.00011	.00220	.00108	.00276	.0768	.00421	.0849	.00471
%RSD	51.782	87.665	276.22	.98965	7.2950	120.45	.85241	57.326
#1	.00030	.00492	-.00140	.27833	.96686	.00383	10.029	.00571
#2	.00009	.00201	-.00053	.27688	1.0745	.00754	9.9737	.01366
#3	.00023	.00060	.00075	.28222	1.1155	-.00087	9.8620	.00530
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00143	28.849	.00034	.01859	.00004	-.00158	-.00433	4.2971
Stddev	.00035	.282	.00020	.00238	.00212	.00343	.00783	.0027
%RSD	24.593	.97651	59.389	12.791	4881.5	217.91	180.83	.06385
#1	.00106	29.162	.00024	.02134	-.00032	.00109	.00011	4.2940
#2	.00176	28.616	.00057	.01734	.00232	-.00545	-.01337	4.2982
#3	.00146	28.768	.00020	.01710	-.00187	-.00037	.00027	4.2992
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606064308 Acquired: 6/23/2016 11:49:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00126	.24347	.00339	-.00154	-.00045	.00217	.14987
Stddev	.00049	.00220	.00280	.00105	.00060	.00011	.32468
%RSD	39.037	.90382	82.553	68.121	135.39	4.8880	216.64
#1	.00073	.24601	.00642	-.00066	.00024	.00206	-.08894
#2	.00136	.24221	.00092	-.00270	-.00088	.00228	.51957
#3	.00170	.24219	.00281	-.00126	-.00070	.00217	.01899
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6738.5	42037.	2168.6
Stddev	30.1	232.	22.7
%RSD	.44688	.55143	1.0458
#1	6773.1	41803.	2143.6
#2	6718.5	42041.	2187.9
#3	6723.9	42267.	2174.3

Approved: June 24, 2016

Sample Name: L1606064309 Acquired: 6/23/2016 11:53:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00160	.15661	.00013	.04545	.04682	-.00000	35.419	.00033
Stddev	.00119	.00708	.00146	.00254	.00106	.00005	.240	.00028
%RSD	74.477	4.5233	1123.7	5.5867	2.2675	2104.2	.67865	85.873
#1	.00217	.15152	.00060	.04537	.04715	.00006	35.626	.00060
#2	.00240	.16470	-.00150	.04803	.04768	-.00004	35.476	.00033
#3	.00023	.15362	.00129	.04295	.04564	-.00003	35.155	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	.00123	.00024	.15532	.80097	.00097	6.9091	.00278
Stddev	.00049	.00097	.00034	.01614	.06209	.00454	.1107	.00175
%RSD	317.05	78.958	139.68	10.394	7.7519	469.66	1.6020	63.186
#1	-.00031	.00012	.00055	.17250	.73834	-.00386	6.9993	.00471
#2	.00039	.00163	.00029	.14047	.80205	.00159	6.7856	.00232
#3	-.00055	.00194	-.00012	.15300	.86251	.00516	6.9425	.00129
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00431	36.718	-.00063	.01439	.00498	.00086	.00491	3.5590
Stddev	.00071	.056	.00104	.00557	.00152	.00128	.00282	.0044
%RSD	16.376	.15337	164.46	38.729	30.498	148.41	57.449	.12483
#1	.00432	36.703	-.00058	.02081	.00665	.00233	.00794	3.5641
#2	.00361	36.671	.00038	.01159	.00460	-.00005	.00237	3.5559
#3	.00502	36.780	-.00170	.01077	.00369	.00032	.00441	3.5570
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606064309 Acquired: 6/23/2016 11:53:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00076**	**.21143**	**-.00049**	**-.00473**	**-.00081**	**.00436**	**-.03117**
Stddev	.00101	.00052	.00261	.00291	.00072	.00002	.28307
%RSD	133.37	.24546	537.03	61.538	89.522	.51462	908.26
#1	.00054	.21158	-.00030	-.00579	-.00149	.00436	.28801
#2	.00187	.21086	.00202	-.00697	-.00005	.00433	-.12971
#3	-.00012	.21186	-.00319	-.00144	-.00087	.00437	-.25179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6756.8**	**42049.**	**2196.1**
Stddev	2.9	297.	15.9
%RSD	.04298	.70626	.72401
#1	6759.4	42356.	2177.8
#2	6757.4	41764.	2203.9
#3	6753.6	42028.	2206.5

Approved: June 24, 2016

Sample Name: L1606065001 Acquired: 6/23/2016 11:57:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00189	.06102	.00775	.01249	1.2363	.00005	40.010
Stddev	.00078	.00679	.00307	.00259	.0071	.00016	.172
%RSD	41.259	11.125	39.598	20.763	.57164	292.34	.43096
#1	.00127	.05450	.01048	.01533	1.2439	.00018	40.193
#2	.00276	.06052	.00443	.01188	1.2353	.00011	39.988
#3	.00162	.06805	.00833	.01025	1.2299	-.00012	39.850
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00106	.04734	1.1335	.02781	17.038	2.5926	.01356
Stddev	.00024	.00012	.0049	.00083	.057	.1423	.00643
%RSD	22.902	.25671	.43407	2.9805	.33217	5.4883	47.388
#1	.00108	.04721	1.1300	.02697	17.098	2.7070	.00680
#2	.00081	.04745	1.1391	.02863	17.031	2.4333	.01959
#3	.00129	.04736	1.1313	.02782	16.986	2.6375	.01430
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	34.850	1.3390	.00398	248.16	1.8950	.02385	.00496
Stddev	.281	.0074	.00009	1.41	.0047	.00515	.00238
%RSD	.80752	.55545	2.2572	.56977	.24691	21.589	47.930
#1	35.099	1.3471	.00399	249.72	1.8962	.01848	.00456
#2	34.906	1.3375	.00406	247.80	1.8898	.02433	.00751
#3	34.545	1.3325	.00388	246.96	1.8989	.02874	.00281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606065001 Acquired: 6/23/2016 11:57:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.01117**	**-.00066**	**13.554**	**.00005**	**.88403**	**.00483**	**-.00261**
Stddev	.00331	.00370	.031	.00079	.00508	.00193	.00683
%RSD	29.635	565.13	.22672	1633.3	.57500	39.908	261.28
#1	-.00741	-.00127	13.581	-.00068	.88877	.00490	-.00463
#2	-.01242	.00332	13.521	-.00007	.88464	.00672	.00500
#3	-.01367	-.00401	13.560	.00090	.87866	.00287	-.00820
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00250**	**.00586**	F **-.23790**
Stddev	.00044	.00008	.31093
%RSD	17.584	1.3809	130.70
#1	.00210	.00596	-.30620
#2	.00297	.00581	.10150
#3	.00244	.00582	-.50901
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6603.7**	**40805.**	**2163.3**
Stddev	14.6	102.	41.7
%RSD	.22048	.24875	1.9297
#1	6587.1	40899.	2117.7
#2	6609.4	40818.	2172.3
#3	6614.4	40697.	2199.7

Approved: June 24, 2016

Sample Name: L1606065002 Acquired: 6/23/2016 12:01:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.02489	-.00287	.01411	.43644	.00011	25.711	.00088
Stddev	.00364	.00573	.00631	.00070	.00286	.00008	.186	.00056
%RSD	1038.5	23.031	220.06	4.9786	.65436	74.454	.72154	63.369
#1	-.00031	.03150	.00020	.01409	.43459	.00021	25.499	.00071
#2	-.00291	.02178	-.01012	.01482	.43973	.00004	25.845	.00151
#3	.00428	.02138	.00132	.01341	.43501	.00010	25.789	.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00144	.00464	-.00035	.33432	1.6832	.02333	16.223	.45100
Stddev	.00038	.00058	.00206	.02492	.0621	.00804	.060	.00508
%RSD	26.480	12.537	584.16	7.4533	3.6873	34.445	.36916	1.1259
#1	.00136	.00469	.00094	.34179	1.7336	.01773	16.240	.44555
#2	.00111	.00520	-.00272	.35464	1.7021	.03254	16.273	.45559
#3	.00186	.00404	.00072	.30652	1.6139	.01972	16.157	.45185
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	215.70	.00198	.01638	.00394	-.00086	-.00158	21.449
Stddev	.00010	1.30	.00093	.00175	.00302	.00337	.00400	.049
%RSD	19.360	.60478	47.194	10.688	76.721	393.11	253.30	.22739
#1	.00046	214.20	.00219	.01443	.00078	-.00439	-.00479	21.421
#2	.00062	216.54	.00278	.01781	.00680	.00233	-.00284	21.506
#3	.00045	216.35	.00096	.01689	.00423	-.00052	.00290	21.421
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606065002 Acquired: 6/23/2016 12:01:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00135	.47255	.00420	-.00295	-.00075	.00414	-.00270
Stddev	.00119	.00434	.00287	.00338	.00038	.00035	.37159
%RSD	88.287	.91926	68.478	114.54	51.374	8.5564	13768.
#1	.00241	.46832	.00697	.00051	-.00091	.00441	.12398
#2	.00156	.47234	.00440	-.00312	-.00031	.00428	-.42106
#3	.00006	.47700	.00123	-.00625	-.00102	.00374	.28898
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6563.7	40866.	2174.9
Stddev	21.3	148.	21.1
%RSD	.32412	.36219	.97234
#1	6544.5	40970.	2172.5
#2	6586.6	40931.	2155.1
#3	6560.1	40696.	2197.2

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 12:05:21 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .44831	10.703	.43168	.53573	1.0911	.05263	10.796
Stddev	.00175	.017	.00230	.00775	.0043	.00042	.054
%RSD	.39004	.15465	.53180	1.4463	.39478	.79021	.50197
#1	.44828	10.721	.43341	.54048	1.0870	.05303	10.796
#2	.44658	10.689	.42908	.52679	1.0956	.05220	10.850
#3	.45007	10.698	.43256	.53993	1.0905	.05265	10.741
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	.40000						
Range	10.000%						

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05416	.21667	.53159	.54518	4.3683	54.317	1.0928
Stddev	.00040	.00029	.00253	.00167	.0262	.148	.0073
%RSD	.73561	.13516	.47580	.30570	.59939	.27161	.67268
#1	.05371	.21640	.53279	.54635	4.3590	54.209	1.0857
#2	.05447	.21665	.52868	.54327	4.3978	54.485	1.0922
#3	.05430	.21698	.53329	.54592	4.3480	54.255	1.1004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.810	.54923	1.0837	54.737	.54364	10.749	.54374
Stddev	.058	.00364	.0022	.052	.00153	.032	.00832
%RSD	.53876	.66352	.20765	.09464	.28227	.30158	1.5305
#1	10.744	.54558	1.0861	54.703	.54348	10.742	.55291
#2	10.829	.55287	1.0816	54.797	.54220	10.721	.53666
#3	10.856	.54925	1.0832	54.712	.54525	10.784	.54166
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 12:05:21 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.3058**	**.42212**	**5.4532**	**1.0751**	**1.0918**	**1.0815**	**.54219**
Stddev	.0030	.00832	.0055	.0028	.0024	.0066	.00333
%RSD	.22701	1.9705	.10048	.25831	.21941	.61474	.61478
#1	1.3084	.43050	5.4492	1.0747	1.0913	1.0807	.54087
#2	1.3026	.41386	5.4509	1.0725	1.0944	1.0753	.53971
#3	1.3063	.42201	5.4594	1.0780	1.0897	1.0885	.54598
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0620**	**1.0850**	F **.06906**
Stddev	.0098	.0015	.29136
%RSD	.92653	.13908	421.86
#1	1.0688	1.0865	-.26582
#2	1.0507	1.0835	.20859
#3	1.0665	1.0851	.26442
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6761.2**	**42170.**	**2135.6**
Stddev	30.4	254.	38.5
%RSD	.45025	.60227	1.8034
#1	6745.3	42171.	2097.5
#2	6742.0	41916.	2134.8
#3	6796.3	42424.	2174.6

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 12:08:59 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00138	.00939	.00126	.00156	-.00034	.00001	.02965	-.00007
Stddev	.00293	.00768	.00491	.00136	.00065	.00010	.04568	.00027
%RSD	212.42	81.850	390.17	87.175	192.88	1033.2	154.04	411.15
#1	.00109	.01823	-.00438	.00279	-.00065	-.00008	.02210	-.00003
#2	.00444	.00563	.00455	.00010	.00041	.00011	.07863	.00018
#3	-.00140	.00431	.00361	.00180	-.00077	-.00000	-.01178	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00044	-.00193	-.00150	.04686	-.00321	-.04218	.00070
Stddev	.00023	.00045	.00177	.02531	.06645	.00382	.02089	.00303
%RSD	191.66	103.40	91.906	1685.8	141.79	119.02	49.541	434.91
#1	.00034	.00011	-.00127	.02678	-.00514	-.00396	-.05130	.00224
#2	.00012	.00024	-.00058	-.00927	.02400	-.00661	-.05695	.00264
#3	-.00011	.00095	-.00393	-.02201	.12172	.00093	-.01827	-.00279
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00437	.11699	-.00061	.00269	.00423	.00051	.00440	.00901
Stddev	.00070	.02428	.00128	.00780	.00466	.00512	.00537	.00090
%RSD	15.940	20.756	211.37	290.47	110.16	1005.7	122.02	9.9508
#1	.00357	.11912	.00043	.00283	.00310	-.00541	.01043	.00798
#2	.00471	.09171	-.00204	-.00519	.00936	.00342	.00264	.00957
#3	.00483	.14013	-.00021	.01042	.00024	.00351	.00013	.00949
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 12:08:59 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00104	.00007	.00479	-.00426	-.00086	-.00007	-.03636
Stddev	.00150	.00005	.00475	.00529	.00041	.00006	.17918
%RSD	144.40	81.653	99.036	124.26	48.035	88.430	492.84
#1	.00274	.00004	.00301	.00106	-.00121	-.00001	.10971
#2	.00049	.00013	.01017	-.00952	-.00040	-.00006	.01751
#3	-.00011	.00004	.00120	-.00432	-.00097	-.00013	-.23629
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6787.7	42559.	2189.0
Stddev	42.9	357.	32.2
%RSD	.63217	.83804	1.4713
#1	6836.5	42970.	2162.6
#2	6755.7	42330.	2179.6
#3	6771.0	42377.	2224.9

Approved: June 24, 2016

Sample Name: L1606065003 Acquired: 6/23/2016 12:12:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00370	.80939	.00267	.03223	.15152	.00003	16.410	.00200
Stddev	.00030	.00550	.00231	.00157	.00143	.00010	.167	.00026
%RSD	8.1591	.67996	86.365	4.8792	.94244	399.37	1.0195	13.059
#1	.00343	.80457	.00076	.03228	.15213	-.00008	16.600	.00230
#2	.00403	.81539	.00524	.03063	.14989	.00012	16.345	.00182
#3	.00363	.80821	.00203	.03377	.15254	.00003	16.285	.00188
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00674	.49819	.01602	10.808	1.5538	.01896	9.8126	.38868
Stddev	.00032	.00140	.00090	.095	.1322	.00275	.0110	.00294
%RSD	4.7724	.28078	5.6391	.88079	8.5094	14.512	.11155	.75614
#1	.00646	.49798	.01681	10.917	1.4017	.01883	9.8202	.38995
#2	.00667	.49691	.01621	10.740	1.6187	.01628	9.8000	.38532
#3	.00709	.49968	.01504	10.768	1.6411	.02178	9.8176	.39076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00725	109.71	.11187	.09046	.00426	.00012	-.00167	10.244
Stddev	.00018	.52	.00059	.00282	.00268	.00533	.00876	.010
%RSD	2.4336	.47677	.52734	3.1220	62.780	4272.0	525.12	.09876
#1	.00723	110.29	.11247	.09372	.00362	-.00576	.00638	10.232
#2	.00708	109.28	.11184	.08876	.00720	.00462	-.00039	10.250
#3	.00743	109.56	.11129	.08890	.00196	.00152	-.01099	10.249
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606065003 Acquired: 6/23/2016 12:12:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00113	.28838	.01481	.00147	.00293	.01681	.05048
Stddev	.00051	.00065	.00364	.00241	.00118	.00020	.02831
%RSD	45.019	.22666	24.569	163.44	40.265	1.2003	56.077
#1	.00092	.28836	.01790	.00214	.00241	.01669	.07419
#2	.00172	.28774	.01080	.00348	.00427	.01704	.01914
#3	.00077	.28905	.01573	-.00120	.00209	.01669	.05812
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6730.4	42248.	2219.4
Stddev	36.5	334.	5.6
%RSD	.54199	.79170	.25173
#1	6743.2	42234.	2213.5
#2	6758.8	42590.	2220.1
#3	6689.3	41921.	2224.6

Approved: June 24, 2016

Sample Name: L1606065008 Acquired: 6/23/2016 12:16:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00094**	**.37295**	**-.00050**	**.01100**	**.08991**	**.00014**	**5.5551**
Stddev	.00216	.00586	.00030	.00247	.00137	.00007	.0211
%RSD	231.27	1.5701	60.725	22.464	1.5229	48.760	.37958
#1	-.00155	.37972	-.00076	.00961	.09094	.00017	5.5696
#2	.00239	.36962	-.00058	.00954	.08836	.00019	5.5648
#3	.00197	.36953	-.00016	.01385	.09043	.00006	5.5309
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00045**	**.00183**	**.00276**	**-.00009**	**.22715**	**1.2637**	**.01968**
Stddev	.00019	.00020	.00006	.00175	.01231	.1251	.00398
%RSD	42.655	10.871	2.0726	2042.1	5.4197	9.9030	20.221
#1	.00028	.00168	.00280	.00015	.21454	1.2211	.01991
#2	.00042	.00177	.00269	-.00194	.23914	1.4046	.01559
#3	.00066	.00206	.00277	.00153	.22778	1.1654	.02354
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**3.5219**	**.51901**	**.00085**	**107.29**	**.02015**	**.05313**	**.00169**
Stddev	.1150	.00477	.00050	.21	.00058	.00814	.00069
%RSD	3.2666	.91942	58.338	.19407	2.8910	15.322	41.005
#1	3.3891	.51379	.00032	107.25	.02066	.04374	.00247
#2	3.5920	.52011	.00129	107.52	.02027	.05752	.00113
#3	3.5845	.52314	.00094	107.12	.01952	.05813	.00149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606065008 Acquired: 6/23/2016 12:16:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00073**	**-.00197**	**8.8487**	**.00069**	**.11069**	**.00926**	**-.00445**
Stddev	.00134	.00306	.0099	.00012	.00023	.00236	.00053
%RSD	182.00	155.09	.11148	17.201	.20833	25.534	11.807
#1	-.00192	-.00166	8.8443	.00082	.11048	.00698	-.00505
#2	-.00099	-.00517	8.8600	.00068	.11065	.00910	-.00423
#3	.00071	.00092	8.8417	.00058	.11093	.01170	-.00408
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00059**	**.06839**	F **-.19029**
Stddev	.00037	.00033	.03412
%RSD	61.583	.48036	17.929
#1	-.00097	.06802	-.15444
#2	-.00057	.06860	-.22235
#3	-.00024	.06857	-.19407
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6652.3**	**41744.**	**2157.8**
Stddev	13.8	125.	26.3
%RSD	.20808	.30032	1.2206
#1	6636.5	41605.	2128.7
#2	6661.9	41780.	2164.7
#3	6658.6	41848.	2180.0

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 12:20:48 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.43349**	**10.353**	**.41577**	**.50994**	**1.0482**	**.05096**	**10.384**
Stddev	.00485	.010	.00570	.00299	.0008	.00033	.107
%RSD	1.1187	.09724	1.3717	.58537	.07978	.64838	1.0295
#1	.42886	10.350	.41404	.50989	1.0486	.05109	10.397
#2	.43308	10.345	.41113	.51295	1.0488	.05121	10.483
#3	.43854	10.364	.42213	.50698	1.0473	.05059	10.271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05233**	**.21095**	**.51702**	**.52714**	**4.1456**	**52.157**	**1.0519**
Stddev	.00026	.00011	.00231	.00225	.0219	.071	.0095
%RSD	.49939	.05441	.44715	.42771	.52838	.13576	.90262
#1	.05254	.21106	.51692	.52834	4.1708	52.147	1.0521
#2	.05203	.21083	.51937	.52454	4.1342	52.092	1.0614
#3	.05240	.21096	.51475	.52854	4.1317	52.232	1.0424
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.434**	**.52121**	**1.0492**	**52.414**	**.52654**	**10.396**	**.52092**
Stddev	.126	.00385	.0056	.098	.00103	.025	.00769
%RSD	1.2092	.73822	.53418	.18692	.19506	.24476	1.4771
#1	10.317	.51677	1.0555	52.460	.52766	10.404	.52824
#2	10.568	.52362	1.0474	52.480	.52564	10.368	.51290
#3	10.417	.52323	1.0447	52.301	.52632	10.417	.52161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 12:20:48 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2647**	**.41582**	**5.2897**	**1.0426**	**1.0474**	**1.0316**	**.52421**
Stddev	.0085	.00081	.0192	.0024	.0031	.0076	.00494
%RSD	.67132	.19539	.36255	.23353	.29112	.73907	.94263
#1	1.2718	.41524	5.2962	1.0431	1.0449	1.0253	.52700
#2	1.2553	.41547	5.2682	1.0400	1.0508	1.0294	.52712
#3	1.2670	.41675	5.3049	1.0448	1.0466	1.0400	.51850
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0286**	**1.0463**	F **.06116**
Stddev	.0063	.0019	.57133
%RSD	.60756	.18676	934.11
#1	1.0326	1.0469	-.55556
#2	1.0317	1.0441	.57239
#3	1.0214	1.0478	.16666
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6823.1**	**42205.**	**2180.8**
Stddev	45.2	76.	38.1
%RSD	.66310	.18083	1.7449
#1	6824.7	42291.	2143.4
#2	6867.5	42174.	2219.5
#3	6777.1	42148.	2179.5

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 12:24:27 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00060**	**.01492**	**.00161**	**.00461**	**.00327**	**.00005**	**.00493**
Stddev	.00124	.00546	.00218	.00168	.00084	.00006	.03046
%RSD	205.49	36.566	135.28	36.366	25.661	137.48	617.42
#1	-.00032	.00875	-.00044	.00277	.00418	.00002	-.02974
#2	.00047	.01693	.00390	.00501	.00309	.00000	.01715
#3	-.00195	.01909	.00137	.00605	.00253	.00012	.02738
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00044**	**.00010**	**.00142**	**-.00176**	**-.01069**	**.06773**	**-.00268**
Stddev	.00041	.00031	.00160	.00098	.01615	.07990	.00427
%RSD	92.565	296.93	112.74	55.809	151.09	117.97	159.16
#1	.00010	-.00004	.00076	-.00065	.00519	.15988	.00187
#2	.00090	.00046	.00324	-.00253	-.02710	.02546	-.00659
#3	.00034	-.00011	.00025	-.00210	-.01015	.01784	-.00333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.19200**	**.00252**	**.00474**	**.07698**	**-.00084**	**.00528**	**.00057**
Stddev	.12403	.00084	.00094	.02220	.00131	.00743	.00445
%RSD	64.597	33.209	19.832	28.835	155.82	140.76	776.29
#1	-.15567	.00334	.00378	.08323	-.00038	.01004	-.00293
#2	-.33014	.00167	.00566	.09539	.00018	.00907	-.00094
#3	-.09020	.00254	.00476	.05233	-.00233	-.00328	.00559
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 12:24:27 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00066**	**.00330**	**.01008**	**.00122**	**.00049**	**.00291**	**-.00103**
Stddev	.00887	.00211	.00243	.00082	.00040	.00265	.00189
%RSD	1339.0	63.868	24.056	67.357	81.347	91.128	183.66
#1	-.00210	.00463	.00977	.00028	.00054	-.00004	-.00303
#2	.01058	.00087	.01265	.00182	.00007	.00369	.00073
#3	-.00650	.00440	.00783	.00157	.00085	.00509	-.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00060**	**-.00001**	F **-.22691**
Stddev	.00066	.00012	.26976
%RSD	109.33	1826.7	118.88
#1	-.00062	.00005	-.50673
#2	.00007	-.00014	.03151
#3	-.00125	.00007	-.20552
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6792.2**	**42764.**	**2142.0**
Stddev	4.5	206.	11.5
%RSD	.06579	.48263	.53538
#1	6797.0	42989.	2133.7
#2	6788.2	42584.	2155.1
#3	6791.3	42720.	2137.4

Approved: June 24, 2016

Sample Name: PBW 9A Acquired: 6/23/2016 12:28:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00105**	**.02171**	**.00244**	**.00673**	**.00126**	**-.00003**	**-.05439**
Stddev	.00150	.00352	.00258	.00309	.00128	.00008	.04093
%RSD	143.33	16.201	105.76	45.867	102.12	293.70	75.246
#1	-.00069	.02375	.00128	.00392	.00151	.00000	-.08805
#2	.00189	.01765	.00539	.01003	.00240	.00003	-.06629
#3	.00193	.02373	.00064	.00624	-.00013	-.00012	-.00883
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00035**	**.00023**	**.00158**	**-.00096**	**.00709**	**-.07719**	**.00102**
Stddev	.00000	.00019	.00089	.00068	.03049	.03016	.00222
%RSD	.83206	82.958	56.456	70.362	430.31	39.069	216.53
#1	.00035	.00032	.00226	-.00086	.01702	-.04271	.00135
#2	.00035	.00001	.00190	-.00034	.03137	-.09023	.00306
#3	.00036	.00035	.00057	-.00169	-.02713	-.09865	-.00134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03686**	**.00230**	**.00136**	**.11675**	**-.00185**	**-.00459**	**.00215**
Stddev	.08180	.00124	.00032	.02730	.00032	.00543	.00135
%RSD	221.89	54.095	23.684	23.386	17.191	118.48	62.717
#1	.12721	.00089	.00140	.08528	-.00149	-.00676	.00368
#2	.01555	.00324	.00102	.13093	-.00204	.00160	.00111
#3	-.03217	.00276	.00166	.13405	-.00204	-.00860	.00166
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: PBW 9A Acquired: 6/23/2016 12:28:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00174	-.00430	.00801	.00106	.00047	.01231	-.00171
Stddev	.00278	.00332	.00038	.00032	.00078	.00274	.00288
%RSD	160.19	77.122	4.7825	29.796	167.01	22.301	168.53
#1	.00487	-.00373	.00845	.00141	.00114	.01343	-.00071
#2	-.00042	-.00131	.00773	.00098	-.00038	.00918	.00054
#3	.00076	-.00787	.00785	.00079	.00064	.01432	-.00495
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00020	.00177	F -.42567
Stddev	.00050	.00016	.27822
%RSD	254.67	8.9618	65.360
#1	-.00062	.00175	-.67922
#2	-.00032	.00163	-.12805
#3	.00035	.00194	-.46974
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6735.9	42461.	2142.9
Stddev	23.8	190.	19.6
%RSD	.35284	.44797	.91669
#1	6756.3	42258.	2130.8
#2	6741.6	42489.	2132.3
#3	6709.8	42635.	2165.5

Approved: June 24, 2016

Sample Name: LCSW 9A Acquired: 6/23/2016 12:32:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21862**	**5.1749**	**.20706**	**1.0059**	**.52790**	**.02511**	**5.3259**	**.02625**
Stddev	.00105	.0138	.00142	.0053	.00145	.00005	.0730	.00042
%RSD	.47858	.26622	.68661	.52250	.27422	.20554	1.3710	1.6039
#1	.21748	5.1595	.20682	1.0119	.52887	.02505	5.3723	.02617
#2	.21883	5.1861	.20578	1.0037	.52624	.02514	5.2417	.02587
#3	.21954	5.1791	.20859	1.0021	.52860	.02514	5.3636	.02670
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10579**	**.25981**	**.26650**	**2.1153**	**25.949**	**.52615**	**5.2296**	**.26267**
Stddev	.00017	.00166	.00050	.0412	.208	.00546	.1321	.00383
%RSD	.16358	.63829	.18798	1.9496	.80266	1.0377	2.5264	1.4585
#1	.10598	.26003	.26617	2.0972	25.958	.53066	5.1307	.26398
#2	.10575	.26135	.26625	2.0863	25.736	.52008	5.1784	.26568
#3	.10564	.25806	.26708	2.1626	26.152	.52771	5.3796	.25836
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.53809**	**26.382**	**.26602**	**5.0505**	**.26442**	**.63942**	**.19862**	**2.6942**
Stddev	.00217	.107	.00132	.0129	.00389	.00289	.00602	.0099
%RSD	.40327	.40576	.49728	.25504	1.4726	.45272	3.0327	.36655
#1	.54058	26.505	.26742	5.0651	.26838	.64232	.20378	2.7053
#2	.53711	26.319	.26585	5.0454	.26059	.63653	.19200	2.6864
#3	.53658	26.320	.26479	5.0409	.26429	.63940	.20007	2.6909
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: LCSW 9A Acquired: 6/23/2016 12:32:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52664	.53638	.53249	.26160	.51512	.52639	.07644
Stddev	.00197	.00221	.00973	.00257	.00134	.00186	.23401
%RSD	.37460	.41251	1.8268	.98264	.26011	.35402	306.16
#1	.52890	.53538	.53798	.26390	.51583	.52848	.32243
#2	.52526	.53485	.52126	.26208	.51596	.52489	-.14341
#3	.52576	.53892	.53824	.25882	.51357	.52581	.05029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6718.1	42029.	2146.1
Stddev	16.8	197.	23.7
%RSD	.24960	.46881	1.1059
#1	6729.4	41993.	2126.8
#2	6726.0	41853.	2138.9
#3	6698.8	42242.	2172.6

Approved: June 24, 2016

Sample Name: F BLANK Acquired: 6/23/2016 12:36:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00169**	**.01329**	**.00117**	**.00521**	**.00090**	**.00004**	**.01184**
Stddev	.00118	.01449	.00247	.00116	.00111	.00005	.05441
%RSD	69.720	109.00	211.84	22.232	123.24	115.17	459.72
#1	.00067	.02586	-.00106	.00446	-.00014	.00007	-.05079
#2	.00143	-.00256	.00382	.00464	.00077	-.00001	.04749
#3	.00299	.01658	.00073	.00655	.00207	.00007	.03881
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00030**	**-.00030**	**.00180**	**-.00037**	F **-.03210**	**.02396**	**.00164**
Stddev	.00007	.00028	.00162	.00173	.01094	.07024	.00113
%RSD	22.944	95.859	89.912	468.65	34.099	293.15	68.927
#1	.00032	-.00035	.00011	.00030	-.01979	.07357	.00037
#2	.00023	.00001	.00195	.00093	-.04072	.05472	.00201
#3	.00037	-.00055	.00335	-.00234	-.03578	-.05641	.00253
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.03159**	**-.00119**	**.00127**	**.14348**	**-.00017**	**-.00302**	**.00279**
Stddev	.05268	.00112	.00015	.00668	.00022	.01538	.00239
%RSD	166.73	93.930	12.134	4.6553	124.39	508.76	85.383
#1	-.06723	-.00247	.00111	.15005	-.00016	-.01729	.00135
#2	.02891	-.00065	.00141	.13670	-.00040	.01327	.00555
#3	-.05646	-.00044	.00131	.14370	.00003	-.00504	.00148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: F BLANK Acquired: 6/23/2016 12:36:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-04

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00429**	**.00520**	**.01018**	**.00070**	**.00304**	**.00711**	**-.00371**
Stddev	.00171	.00663	.00080	.00222	.00057	.00751	.00309
%RSD	39.956	127.55	7.8886	317.56	18.898	105.60	83.235
#1	-.00383	.00412	.01000	.00203	.00239	.00988	-.00016
#2	-.00619	-.00083	.00948	.00194	.00326	-.00139	-.00580
#3	-.00286	.01231	.01106	-.00187	.00347	.01285	-.00517
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00052**	**.00247**	**.20188**
Stddev	.00067	.00028	.15109
%RSD	128.14	11.399	74.843
#1	-.00000	.00266	.12763
#2	-.00029	.00260	.10227
#3	-.00128	.00214	.37573
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6848.0**	**43129.**	**2203.6**
Stddev	17.0	116.	40.3
%RSD	.24788	.26822	1.8285
#1	6840.0	43254.	2237.6
#2	6836.5	43026.	2159.1
#3	6867.5	43107.	2214.2

Approved: June 24, 2016

Sample Name: L1606078709 Acquired: 6/23/2016 12:40:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00229	.34423	-.00164	.04501	.09329	-.00010	56.919	.00038
Stddev	.00043	.01247	.00379	.00153	.00209	.00009	.746	.00006
%RSD	18.600	3.6226	230.35	3.4051	2.2355	91.391	1.3098	15.382
#1	.00278	.35810	.00261	.04367	.09569	-.00010	57.776	.00044
#2	.00205	.33394	-.00291	.04468	.09195	-.00001	56.556	.00036
#3	.00205	.34066	-.00463	.04668	.09223	-.00019	56.425	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.00331	.00226	.32551	1.2191	.01307	18.463	.01384
Stddev	.00024	.00045	.00113	.02821	.0343	.00579	.294	.00288
%RSD	163.96	13.717	50.047	8.6673	2.8163	44.290	1.5898	20.829
#1	.00006	.00370	.00148	.35802	1.2200	.00909	18.613	.01575
#2	.00042	.00343	.00356	.31107	1.2530	.01970	18.125	.01052
#3	-.00004	.00281	.00175	.30744	1.1843	.01041	18.651	.01525
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	3.8679	-.00006	.19112	.00273	.00016	.00316	9.5319
Stddev	.00017	.0832	.00169	.00281	.00222	.00426	.01169	.0215
%RSD	33.645	2.1507	2767.7	1.4686	81.412	2635.4	369.49	.22498
#1	.00048	3.9597	.00168	.19419	.00029	-.00139	.00141	9.5100
#2	.00069	3.8464	-.00169	.18868	.00326	-.00310	-.00755	9.5529
#3	.00035	3.7975	-.00017	.19050	.00464	.00498	.01564	9.5328
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606078709 Acquired: 6/23/2016 12:40:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00114**	**.15008**	**.00611**	**.00006**	**.00208**	**.01394**	**.12651**
Stddev	.00029	.00282	.00671	.00130	.00048	.00024	.10058
%RSD	25.142	1.8804	109.74	2091.4	22.807	1.6929	79.498
#1	.00101	.15329	.00841	.00056	.00197	.01393	.23030
#2	.00147	.14797	-.00144	.00104	.00261	.01418	.11976
#3	.00094	.14899	.01136	-.00142	.00168	.01371	.02949
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7008.6**	**44037.**	**2274.6**
Stddev	58.7	90.	58.1
%RSD	.83811	.20335	2.5527
#1	7040.7	44061.	2210.8
#2	6940.8	43938.	2288.9
#3	7044.3	44112.	2324.2

Approved: June 24, 2016

Sample Name: L1606078711S Acquired: 6/23/2016 12:44:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21444**	**5.4597**	**.20422**	**1.0297**	**.60086**	**.02444**	**59.136**	**.02564**
Stddev	.00107	.0321	.00448	.0059	.00240	.00026	.342	.00031
%RSD	.50108	.58738	2.1942	.57168	.39981	1.0599	.57766	1.1894
#1	.21336	5.4646	.19913	1.0298	.60082	.02453	58.978	.02599
#2	.21551	5.4255	.20758	1.0238	.60329	.02415	59.528	.02540
#3	.21444	5.4890	.20595	1.0356	.59848	.02465	58.901	.02554
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10099**	**.25246**	**.25408**	**2.3914**	**26.238**	**.52509**	**22.671**	**.26957**
Stddev	.00096	.00240	.00204	.0378	.190	.00248	.097	.00069
%RSD	.95542	.94955	.80099	1.5812	.72578	.47192	.42611	.25486
#1	.10204	.25175	.25493	2.4019	26.290	.52317	22.742	.26878
#2	.10014	.25050	.25176	2.4230	26.396	.52789	22.561	.27007
#3	.10080	.25513	.25556	2.3495	26.027	.52422	22.709	.26985
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52400**	**29.173**	**.25206**	**5.2009**	**.25684**	**.62111**	**.19336**	**12.135**
Stddev	.00226	.184	.00153	.0264	.00562	.00252	.00475	.045
%RSD	.43200	.63202	.60780	.50841	2.1877	.40638	2.4564	.37093
#1	.52661	29.078	.25383	5.2253	.26309	.62401	.19051	12.187
#2	.52273	29.385	.25133	5.2045	.25220	.61993	.19072	12.105
#3	.52266	29.055	.25104	5.1728	.25523	.61940	.19884	12.114
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606078711S Acquired: 6/23/2016 12:44:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50899**	**.66145**	**.51197**	**.11737**	**.50542**	**.51776**	**.38550**
Stddev	.00093	.00353	.00830	.00250	.00346	.00270	.16244
%RSD	.18257	.53437	1.6211	2.1327	.68550	.52078	42.137
#1	.50929	.65987	.50403	.12026	.50405	.52085	.44171
#2	.50794	.66550	.52059	.11582	.50284	.51657	.20242
#3	.50973	.65898	.51129	.11603	.50936	.51586	.51236
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6896.6**	**43117.**	**2256.9**
Stddev	23.4	149.	25.7
%RSD	.33903	.34585	1.1384
#1	6870.8	43289.	2227.3
#2	6902.4	43043.	2272.5
#3	6916.4	43021.	2271.0

Approved: June 24, 2016

Sample Name: L1606078712SD Acquired: 6/23/2016 12:47:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.22222**	**6.9091**	**.21902**	**1.0835**	**.63705**	**.02557**	**61.949**	**.02711**
Stddev	.00054	.0778	.00270	.0119	.00654	.00033	.627	.00049
%RSD	.24497	1.1267	1.2310	1.0998	1.0260	1.2886	1.0120	1.8122
#1	.22159	6.8203	.22150	1.0711	.64423	.02521	62.665	.02667
#2	.22252	6.9419	.21942	1.0845	.63145	.02585	61.499	.02702
#3	.22255	6.9652	.21615	1.0948	.63547	.02566	61.683	.02764
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10799**	**.26553**	**.27324**	**3.5530**	**27.834**	**.54656**	**24.046**	**.31995**
Stddev	.00068	.00298	.00075	.0652	.258	.00986	.319	.00232
%RSD	.63148	1.1216	.27535	1.8345	.92801	1.8040	1.3284	.72573
#1	.10770	.26210	.27379	3.6282	28.112	.54919	24.403	.32247
#2	.10750	.26697	.27238	3.5140	27.602	.53565	23.948	.31949
#3	.10877	.26750	.27354	3.5167	27.788	.55483	23.787	.31790
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.55768**	**30.666**	**.26947**	**5.5531**	**.27503**	**.65875**	**.20965**	**15.500**
Stddev	.00211	.309	.00314	.0329	.00634	.00222	.00306	.082
%RSD	.37890	1.0085	1.1651	.59314	2.3050	.33734	1.4581	.52959
#1	.55544	31.019	.26645	5.5261	.26776	.65625	.21162	15.429
#2	.55796	30.445	.26924	5.5434	.27796	.66048	.20613	15.482
#3	.55964	30.533	.27272	5.5898	.27938	.65954	.21121	15.590
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606078712SD Acquired: 6/23/2016 12:47:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.54487	.69273	.54313	.20068	.52663	.55357	.81516
Stddev	.00401	.00802	.00413	.00570	.00642	.00315	.20013
%RSD	.73565	1.1579	.75965	2.8389	1.2184	.56876	24.551
#1	.54171	.70191	.54694	.19419	.51929	.55044	.73031
#2	.54352	.68922	.54371	.20484	.52944	.55353	.67143
#3	.54938	.68707	.53875	.20302	.53116	.55674	1.0437
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6712.3	42493.	2227.8
Stddev	15.8	439.	27.4
%RSD	.23544	1.0332	1.2303
#1	6721.1	42996.	2205.4
#2	6721.6	42185.	2219.6
#3	6694.0	42299.	2258.4

Approved: June 24, 2016

Sample Name: L1606094702 Acquired: 6/23/2016 12:51:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00161**	**.72329**	**.00024**	**.04257**	**.02726**	**.00093**	**71.363**
Stddev	.00172	.00564	.00259	.00289	.00077	.00009	.357
%RSD	107.13	.78037	1071.7	6.7912	2.8393	9.5513	.49984
#1	.00263	.72125	.00050	.03924	.02748	.00083	71.550
#2	-.00038	.71895	.00269	.04449	.02790	.00099	71.588
#3	.00257	.72967	-.00247	.04397	.02640	.00097	70.952
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00065**	**.01705**	**.00536**	**.00360**	**.48801**	**4.4714**	**.08505**
Stddev	.00017	.00041	.00004	.00180	.01606	.0806	.00293
%RSD	26.336	2.4191	.69244	50.107	3.2903	1.8030	3.4402
#1	.00062	.01749	.00532	.00198	.49690	4.3787	.08246
#2	.00084	.01697	.00535	.00328	.49765	4.5098	.08447
#3	.00050	.01668	.00540	.00554	.46947	4.5256	.08822
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**49.963**	**2.6850**	**.00051**	**2.6407**	**.10126**	**.02363**	**.00021**
Stddev	.390	.0188	.00060	.0576	.00091	.00614	.00130
%RSD	.78147	.69880	116.71	2.1803	.89694	25.990	626.25
#1	50.021	2.6947	.00017	2.6107	.10203	.01758	.00168
#2	50.320	2.6969	.00120	2.6044	.10149	.02985	-.00027
#3	49.546	2.6634	.00017	2.7071	.10026	.02345	-.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606094702 Acquired: 6/23/2016 12:51:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00117**	**.00780**	**9.0826**	**.00035**	**.15068**	**-.00633**	**-.00126**
Stddev	.00263	.00037	.0069	.00043	.00086	.00191	.00207
%RSD	224.74	4.7068	.07622	124.87	.56783	30.257	164.67
#1	-.00051	.00762	9.0850	-.00014	.15125	-.00686	.00098
#2	.00107	.00823	9.0748	.00049	.15110	-.00792	-.00164
#3	-.00406	.00757	9.0880	.00069	.14970	-.00420	-.00311
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00160**	**.09771**	F **-.16778**
Stddev	.00119	.00040	.51040
%RSD	73.987	.41151	304.20
#1	-.00195	.09817	-.75124
#2	-.00028	.09753	.19603
#3	-.00258	.09742	.05186
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6766.6**	**42365.**	**2163.4**
Stddev	9.2	146.	15.3
%RSD	.13637	.34463	.70577
#1	6775.0	42444.	2166.8
#2	6768.2	42197.	2146.8
#3	6756.7	42455.	2176.8

Approved: June 24, 2016

Sample Name: L1606094702PS Acquired: 6/23/2016 12:55:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573561-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.23131**	**6.0776**	**.22198**	**1.0949**	**.57783**	**.02707**	**68.881**	**.02745**
Stddev	.00261	.0118	.00368	.0042	.00396	.00014	.349	.00034
%RSD	1.1293	.19488	1.6573	.38166	.68564	.52400	.50731	1.2383
#1	.23191	6.0677	.22245	1.0989	.58171	.02694	69.284	.02712
#2	.23358	6.0907	.22540	1.0952	.57379	.02722	68.656	.02780
#3	.22846	6.0743	.21808	1.0905	.57800	.02705	68.704	.02742
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.12357**	**.27001**	**.27410**	**2.6713**	**31.343**	**.63792**	**50.109**	**2.6662**
Stddev	.00057	.00132	.00049	.0829	.141	.00571	.478	.0042
%RSD	.46382	.48739	.18035	3.1046	.45067	.89520	.95447	.15755
#1	.12291	.26993	.27402	2.7447	31.454	.64241	50.655	2.6687
#2	.12395	.26874	.27464	2.5813	31.391	.63149	49.762	2.6614
#3	.12384	.27137	.27366	2.6879	31.184	.63985	49.911	2.6685
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.56440**	**30.139**	**.35952**	**5.4625**	**.27321**	**.67168**	**.20646**	**10.951**
Stddev	.00177	.207	.00084	.0146	.00396	.00325	.00903	.012
%RSD	.31433	.68626	.23364	.26735	1.4480	.48353	4.3731	.11161
#1	.56510	30.360	.35967	5.4483	.26967	.66886	.19608	10.941
#2	.56572	29.950	.36028	5.4775	.27248	.67095	.21077	10.965
#3	.56239	30.107	.35862	5.4616	.27748	.67523	.21252	10.949
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606094702PS Acquired: 6/23/2016 12:55:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573561-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.55207	.69512	.54416	.27151	.53992	.62316	.33455
Stddev	.00111	.00297	.00646	.00259	.00233	.00135	.21435
%RSD	.20021	.42717	1.1871	.95282	.43173	.21709	64.072
#1	.55091	.69855	.54132	.27429	.53723	.62231	.56787
#2	.55311	.69332	.55155	.27110	.54122	.62472	.28942
#3	.55220	.69350	.53960	.26916	.54131	.62246	.14635
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6701.8	41790.	2191.5
Stddev	33.8	212.	30.8
%RSD	.50413	.50847	1.4072
#1	6738.9	41963.	2159.3
#2	6693.9	41855.	2194.4
#3	6672.8	41553.	2220.7

Approved: June 24, 2016

Sample Name: L1606094702SDL Acquired: 6/23/2016 12:58:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573561-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00043**	**.14607**	**-.00240**	**.01522**	**.00533**	**.00018**	**13.829**
Stddev	.00072	.00173	.00155	.00294	.00088	.00007	.014
%RSD	166.60	1.1836	64.638	19.298	16.495	36.775	.10097
#1	.00110	.14802	-.00090	.01555	.00630	.00012	13.821
#2	.00052	.14545	-.00230	.01213	.00459	.00025	13.845
#3	-.00033	.14473	-.00399	.01798	.00509	.00017	13.821
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00040**	**.00301**	**.00202**	**-.00034**	**.09184**	**.97478**	**.01267**
Stddev	.00032	.00048	.00120	.00215	.01151	.12899	.00579
%RSD	79.310	15.784	59.069	637.47	12.537	13.232	45.699
#1	.00047	.00356	.00068	-.00130	.09769	.95678	.00661
#2	.00068	.00280	.00298	.00212	.07858	1.1118	.01326
#3	.00005	.00268	.00241	-.00183	.09927	.85574	.01815
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.9348**	**.52152**	**.00068**	**.59140**	**.01937**	**.00797**	**.00486**
Stddev	.0620	.00623	.00032	.02814	.00066	.00973	.00294
%RSD	.62431	1.1951	47.005	4.7580	3.4076	121.96	60.573
#1	9.8700	.51435	.00105	.60058	.01907	.01776	.00762
#2	9.9936	.52460	.00045	.61381	.01892	-.00169	.00177
#3	9.9409	.52561	.00055	.55982	.02013	.00786	.00517
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606094702SDL Acquired: 6/23/2016 12:58:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573561-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00111**	**.00210**	**1.8002**	**.00040**	**.02959**	**.00055**	**-.00159**
Stddev	.00327	.00710	.0136	.00093	.00013	.00562	.00187
%RSD	293.76	338.69	.75754	236.18	.44358	1015.7	117.61
#1	-.00190	.00513	1.7939	.00073	.02952	.00262	.00008
#2	-.00392	-.00601	1.7909	-.00066	.02974	-.00581	-.00361
#3	.00248	.00718	1.8159	.00112	.02950	.00484	-.00124
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00035**	**.01973**	F **-.13864**
Stddev	.00102	.00027	.24407
%RSD	289.01	1.3729	176.04
#1	.00075	.01955	.08331
#2	-.00055	.02004	-.09920
#3	-.00127	.01961	-.40003
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6855.2**	**43109.**	**2187.1**
Stddev	32.0	303.	16.2
%RSD	.46723	.70314	.73913
#1	6819.8	43433.	2193.1
#2	6882.1	43061.	2199.5
#3	6863.8	42833.	2168.8

Approved: June 24, 2016

Sample Name: L1606094702SDL Acquired: 6/23/2016 13:02:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573561-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00232**	**.02993**	**.00197**	**.00512**	**.00114**	**.00015**	**2.8120**
Stddev	.00313	.00891	.00181	.00244	.00183	.00007	.0500
%RSD	135.12	29.779	91.937	47.607	160.57	48.153	1.7778
#1	-.00063	.02792	.00148	.00724	.00306	.00014	2.7564
#2	.00198	.03967	.00046	.00246	-.00058	.00008	2.8532
#3	.00561	.02219	.00398	.00564	.00094	.00022	2.8264
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**.00072**	**.00245**	**-.00169**	**.00207**	**.15449**	**.00188**
Stddev	.00040	.00049	.00241	.00183	.01789	.14437	.00389
%RSD	284.13	68.360	98.576	108.23	863.70	93.452	207.06
#1	-.00007	.00018	-.00005	-.00315	.01687	.27627	.00638
#2	-.00011	.00115	.00262	-.00229	.00716	-.00499	-.00030
#3	.00060	.00082	.00477	.00036	-.01782	.19218	-.00043
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.8882**	**.10521**	**.00022**	**.13787**	**.00377**	**.01679**	**.00215**
Stddev	.0526	.00189	.00010	.02493	.00067	.01082	.00238
%RSD	2.7846	1.7994	46.937	18.080	17.824	64.431	110.71
#1	1.8378	.10506	.00020	.10917	.00363	.02905	.00396
#2	1.9428	.10340	.00033	.15032	.00318	.01271	-.00055
#3	1.8841	.10717	.00013	.15412	.00450	.00860	.00303
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606094702SDL Acquired: 6/23/2016 13:02:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573561-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00088**	**.00528**	**.39801**	**-.00045**	**.00623**	**.00559**	**-.00232**
Stddev	.00473	.00204	.01013	.00049	.00041	.00837	.00290
%RSD	536.31	38.691	2.5457	109.74	6.5228	149.79	124.78
#1	-.00591	.00761	.38714	-.00061	.00612	.01019	-.00518
#2	-.00021	.00380	.39971	-.00083	.00589	.01064	.00062
#3	.00348	.00443	.40719	.00010	.00668	-.00407	-.00241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00052**	**.00442**	F **-.13647**
Stddev	.00130	.00031	.33809
%RSD	251.32	7.0031	247.74
#1	.00098	.00407	.17426
#2	-.00137	.00451	-.08717
#3	-.00117	.00467	-.49650
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6876.1**	**42408.**	**2136.2**
Stddev	29.1	201.	14.2
%RSD	.42340	.47409	.66281
#1	6864.1	42374.	2128.3
#2	6855.0	42226.	2152.5
#3	6909.3	42624.	2127.7

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 13:06:47 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41931	9.9537	.39878	.50263	1.0085	.04939	10.034
Stddev	.00164	.0353	.00377	.00336	.0014	.00017	.082
%RSD	.39206	.35430	.94451	.66913	.14275	.35114	.81498
#1	.41760	9.9153	.40299	.50583	1.0078	.04928	9.9769
#2	.42087	9.9846	.39571	.50292	1.0075	.04930	10.128
#3	.41947	9.9613	.39765	.49913	1.0101	.04959	9.9974
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05036	.20153	.50072	.50474	4.0678	50.366	1.0214
Stddev	.00065	.00037	.00022	.00087	.0271	.102	.0072
%RSD	1.2912	.18249	.04296	.17151	.66491	.20209	.70465
#1	.04968	.20117	.50070	.50536	4.0371	50.471	1.0215
#2	.05045	.20152	.50094	.50375	4.0880	50.359	1.0141
#3	.05097	.20191	.50052	.50511	4.0784	50.267	1.0285
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.079	.50366	1.0023	50.473	.50280	9.9624	.50077
Stddev	.093	.00324	.0039	.115	.00207	.0072	.00211
%RSD	.92173	.64314	.38539	.22799	.41224	.07221	.42157
#1	10.093	.50472	1.0065	50.555	.50200	9.9547	.50253
#2	9.9799	.50003	1.0015	50.342	.50124	9.9690	.49843
#3	10.164	.50624	.99889	50.523	.50515	9.9635	.50133
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 13:06:47 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2042**	**.41075**	**5.0693**	**.99619**	**1.0092**	**1.0079**	**.50475**
Stddev	.0025	.00642	.0043	.00145	.0003	.0022	.00299
%RSD	.20940	1.5623	.08445	.14552	.02557	.21789	.59179
#1	1.2050	.41242	5.0716	.99657	1.0089	1.0078	.50470
#2	1.2061	.40366	5.0643	.99459	1.0094	1.0101	.50180
#3	1.2013	.41616	5.0719	.99741	1.0093	1.0057	.50777
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.99675**	**1.0031**	F **.29620**
Stddev	.00360	.0019	.08449
%RSD	.36160	.18852	28.526
#1	.99318	1.0044	.28950
#2	.99668	1.0009	.21526
#3	1.0004	1.0040	.38384
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7020.3**	**43456.**	**2261.9**
Stddev	43.3	359.	17.6
%RSD	.61673	.82524	.77983
#1	6973.3	43726.	2266.4
#2	7058.5	43594.	2276.9
#3	7029.1	43049.	2242.5

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 13:10:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00055**	**.00613**	**-.00044**	**.00485**	**.00148**	**-.00004**	**.00904**
Stddev	.00241	.01049	.00350	.00063	.00079	.00007	.03049
%RSD	433.80	171.08	799.41	13.078	53.619	184.29	337.38
#1	-.00199	-.00292	-.00005	.00421	.00232	-.00011	.00926
#2	.00280	.01763	.00285	.00487	.00075	-.00002	.03942
#3	.00085	.00369	-.00411	.00548	.00136	.00002	-.02156
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**.00004**	**.00060**	**.00022**	**-.00957**	**.04485**	**-.00298**
Stddev	.00016	.00039	.00104	.00109	.01163	.02561	.00513
%RSD	223.78	1017.8	171.83	492.97	121.56	57.110	171.96
#1	-.00011	-.00030	-.00058	.00117	.00113	.06139	.00197
#2	.00019	-.00006	.00135	-.00097	-.02194	.01535	-.00827
#3	.00013	.00047	.00104	.00046	-.00789	.05781	-.00265
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.02645**	**-.00131**	**.00436**	**.08359**	**-.00037**	**.00422**	**.00149**
Stddev	.14321	.00098	.00060	.01032	.00168	.00190	.00276
%RSD	541.38	74.508	13.758	12.343	448.02	44.982	185.09
#1	.05023	-.00131	.00393	.08391	-.00111	.00494	.00032
#2	-.19168	-.00033	.00411	.09375	.00154	.00207	-.00049
#3	.06209	-.00229	.00504	.07312	-.00156	.00566	.00464
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 13:10:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00132**	**.00696**	**.00966**	**.00061**	**.00020**	**.00914**	**.00001**
Stddev	.00299	.00629	.00189	.00100	.00058	.00341	.00099
%RSD	227.17	90.310	19.527	162.70	288.56	37.372	8812.9
#1	-.00215	.00080	.01034	.00060	-.00047	.00937	.00002
#2	.00200	.00671	.00753	.00162	.00050	.00561	-.00099
#3	-.00380	.01337	.01111	-.00038	.00057	.01243	.00100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00102**	**-.00026**	F **-.17576**
Stddev	.00081	.00011	.20815
%RSD	79.559	41.267	118.43
#1	-.00149	-.00038	-.14101
#2	-.00149	-.00024	-.39909
#3	-.00008	-.00017	.01284
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7064.6**	**44034.**	**2255.7**
Stddev	48.2	228.	34.9
%RSD	.68253	.51684	1.5489
#1	7013.3	43791.	2215.4
#2	7071.5	44242.	2278.1
#3	7109.0	44070.	2273.5

Approved: June 24, 2016

Sample Name: L1606094705 Acquired: 6/23/2016 13:14:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00161**	**.82187**	**-.00408**	**.03630**	**.02684**	**.00085**	**72.205**
Stddev	.00173	.01481	.00130	.00534	.00064	.00005	.308
%RSD	107.81	1.8022	31.834	14.720	2.3986	5.8394	.42674
#1	-.00022	.80686	-.00282	.03020	.02758	.00091	72.165
#2	.00323	.82228	-.00541	.03856	.02651	.00081	72.531
#3	.00181	.83648	-.00400	.04015	.02642	.00085	71.919
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00064**	**.01817**	**.00093**	**.00185**	**1.6458**	**4.6897**	**.09158**
Stddev	.00025	.00062	.00101	.00048	.0446	.0964	.00336
%RSD	38.480	3.3997	108.34	25.910	2.7105	2.0559	3.6734
#1	.00077	.01886	.00173	.00135	1.5994	4.6337	.09260
#2	.00079	.01766	.00125	.00189	1.6495	4.6344	.09432
#3	.00036	.01800	-.00020	.00230	1.6884	4.8010	.08783
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**50.658**	**2.7986**	**.00127**	**2.6354**	**.09959**	**.02662**	**.00491**
Stddev	.427	.0103	.00085	.0371	.00198	.00455	.00524
%RSD	.84271	.36614	66.753	1.4074	1.9871	17.099	106.80
#1	50.468	2.7956	.00072	2.6766	.09863	.02137	.00295
#2	51.146	2.8100	.00085	2.6046	.10186	.02939	.00092
#3	50.358	2.7901	.00225	2.6249	.09827	.02912	.01085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606094705 Acquired: 6/23/2016 13:14:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.00381	9.4129	.00054	.15051	.00190	-.00354
Stddev	.00250	.00519	.0092	.00074	.00019	.00454	.00281
%RSD	1434.8	136.33	.09823	136.03	.12621	239.54	79.161
#1	-.00288	.00904	9.4198	-.00014	.15064	-.00000	-.00187
#2	.00032	.00371	9.4024	.00044	.15061	.00708	-.00678
#3	.00204	-.00133	9.4164	.00133	.15030	-.00139	-.00198
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00068	.07173	F -.37347
Stddev	.00049	.00031	.18302
%RSD	72.278	.43135	49.004
#1	-.00045	.07207	-.56086
#2	-.00124	.07162	-.19516
#3	-.00034	.07148	-.36439
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6758.8	42075.	2180.1
Stddev	19.3	166.	25.7
%RSD	.28529	.39440	1.1777
#1	6737.6	42257.	2166.1
#2	6763.5	42034.	2164.6
#3	6775.3	41933.	2209.8

Approved: June 24, 2016

Sample Name: L1606094708 Acquired: 6/23/2016 13:18:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00164	.06268	-.00080	.04013	.00822	-.00003	60.992	.00016
Stddev	.00030	.00800	.00219	.00082	.00098	.00002	.228	.00037
%RSD	18.102	12.756	272.89	2.0475	11.889	94.254	.37380	237.07
#1	.00189	.06933	.00137	.04011	.00734	-.00001	61.184	-.00008
#2	.00173	.05381	-.00301	.04096	.00805	-.00005	61.053	.00058
#3	.00131	.06491	-.00077	.03932	.00927	-.00001	60.740	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	.00259	.00012	.09008	2.7645	.02265	30.254	.13310
Stddev	.00013	.00099	.00044	.02365	.0093	.00490	.212	.00117
%RSD	25.250	38.264	366.51	26.251	.33582	21.630	.70194	.87906
#1	.00063	.00359	.00008	.09591	2.7684	.02272	30.452	.13445
#2	.00038	.00161	-.00029	.11026	2.7711	.02751	30.282	.13248
#3	.00059	.00256	.00057	.06406	2.7539	.01771	30.030	.13238
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	4.9855	.00127	.00314	.00298	-.00189	-.00265	2.6611
Stddev	.00045	.0199	.00123	.01354	.00332	.00518	.00200	.0079
%RSD	67.573	.39826	96.334	430.54	111.66	274.01	75.517	.29649
#1	.00015	4.9673	.00107	.01537	-.00028	.00407	-.00034	2.6680
#2	.00085	5.0067	.00016	.00547	.00284	-.00527	-.00378	2.6630
#3	.00098	4.9825	.00259	-.01141	.00636	-.00447	-.00382	2.6525
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606094708 Acquired: 6/23/2016 13:18:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.29525	-.00362	-.00167	-.00101	.00597	.05225
Stddev	.00035	.00175	.00389	.00187	.00032	.00015	.18866
%RSD	198.39	.59327	107.39	112.11	31.885	2.5356	361.09
#1	.00059	.29710	-.00450	-.00362	-.00076	.00607	.26218
#2	-.00000	.29505	-.00700	.00012	-.00138	.00604	-.10311
#3	-.00005	.29362	.00063	-.00151	-.00091	.00580	-.00232
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6816.2	42457.	2186.9
Stddev	19.1	323.	21.6
%RSD	.27982	.76080	.98620
#1	6816.0	42426.	2162.1
#2	6835.4	42150.	2201.0
#3	6797.3	42794.	2197.6

Approved: June 24, 2016

Sample Name: L1606076301 Acquired: 6/23/2016 13:22:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00194	.02208	.02568	.43236	9.4855	-.00003	137.11
Stddev	.00189	.00829	.00398	.00360	.0365	.00003	.72
%RSD	97.559	37.532	15.506	.83185	.38489	98.288	.52423
#1	.00262	.01725	.02946	.42833	9.5136	-.00001	137.41
#2	-.00020	.03164	.02605	.43352	9.4987	-.00002	137.63
#3	.00340	.01734	.02153	.43523	9.4443	-.00007	136.29
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	.00163	.00105	.00139	1.5590	7.9988	.72684
Stddev	.00021	.00016	.00122	.00073	.0278	.0357	.00746
%RSD	39.106	9.9424	116.16	52.795	1.7846	.44566	1.0265
#1	.00076	.00145	.00161	.00122	1.5818	8.0399	.72260
#2	.00035	.00173	-.00035	.00220	1.5671	7.9808	.73546
#3	.00049	.00173	.00189	.00076	1.5280	7.9758	.72247
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	14.574	.07725	.00038	F 366.35	-.00162	.09780	.00176
Stddev	.049	.00319	.00015	1.74	.00116	.00383	.00483
%RSD	.33920	4.1257	40.701	.47471	71.599	3.9136	275.19
#1	14.616	.07580	.00021	367.63	-.00032	.10141	.00318
#2	14.520	.07504	.00050	367.06	-.00199	.09379	.00571
#3	14.587	.08091	.00042	364.37	-.00255	.09822	-.00363
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 24, 2016

Sample Name: L1606076301 Acquired: 6/23/2016 13:22:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00397	-.00149	.10084	.00027	F 24.369	-.01330	.00299
Stddev	.00063	.00465	.00184	.00125	.396	.00152	.00530
%RSD	15.977	312.53	1.8206	463.89	1.6252	11.429	177.27
#1	.00431	-.00566	.10152	.00089	24.651	-.01201	.00898
#2	.00323	-.00233	.09876	.00108	24.539	-.01292	.00105
#3	.00435	.00353	.10223	-.00117	23.916	-.01498	-.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00040	.00607	.08263
Stddev	.00114	.00037	.16823
%RSD	283.06	6.0904	203.59
#1	.00067	.00564	.26003
#2	-.00159	.00627	-.07461
#3	-.00029	.00630	.06248
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6689.4	41180.	2146.8
Stddev	11.2	70.	2.5
%RSD	.16807	.16995	.11474
#1	6693.8	41192.	2144.5
#2	6676.6	41244.	2146.6
#3	6697.7	41105.	2149.4

Approved: June 24, 2016

Sample Name: L1606083702 Acquired: 6/23/2016 13:26:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00431	33.801	.01724	.09854	.41741	.00265	60.826
Stddev	.00281	.289	.00257	.00140	.00133	.00011	.364
%RSD	65.115	.85604	14.900	1.4221	.31977	3.9646	.59912
#1	.00738	33.583	.01584	.09704	.41851	.00273	61.102
#2	.00187	33.691	.02021	.09878	.41592	.00270	60.413
#3	.00369	34.130	.01567	.09981	.41779	.00253	60.962
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00162	.03572	.24908	.16782	92.318	11.517	.04115
Stddev	.00019	.00013	.00143	.00172	.620	.067	.00381
%RSD	11.832	.36436	.57531	1.0249	.67118	.58564	9.2558
#1	.00174	.03587	.24747	.16611	92.764	11.553	.03804
#2	.00172	.03567	.24955	.16781	91.610	11.439	.04540
#3	.00140	.03563	.25022	.16955	92.580	11.558	.04002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	17.028	1.2901	.09338	14.567	.12343	1.5590	.05321
Stddev	.186	.0069	.00072	.078	.00126	.0107	.00374
%RSD	1.0941	.53832	.76698	.53245	1.0197	.68610	7.0268
#1	17.029	1.2886	.09348	14.610	.12229	1.5476	.05746
#2	16.842	1.2841	.09405	14.477	.12322	1.5688	.05046
#3	17.215	1.2977	.09262	14.613	.12478	1.5607	.05169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606083702 Acquired: 6/23/2016 13:26:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00197	.00383	F 49.208	.00874	.24272	.69278	.00268
Stddev	.00187	.00439	.228	.00096	.00102	.00808	.00504
%RSD	94.757	114.53	.46427	10.948	.42123	1.1659	188.15
#1	.00014	.00501	48.946	.00793	.24335	.69156	.00539
#2	-.00342	-.00103	49.367	.00849	.24154	.68538	.00578
#3	-.00263	.00751	49.310	.00980	.24327	.70140	-.00313
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-1.0000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.08021	1.6367	4.1823
Stddev	.00064	.0106	.2507
%RSD	.80102	.64459	5.9933
#1	.07948	1.6246	4.0835
#2	.08071	1.6413	3.9961
#3	.08043	1.6441	4.4673
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6974.3	43179.	2263.8
Stddev	63.4	499.	11.4
%RSD	.90879	1.1550	.50270
#1	7031.6	43179.	2250.8
#2	6985.2	43677.	2268.4
#3	6906.2	42680.	2272.1

Approved: June 24, 2016

Sample Name: L1606085701 Acquired: 6/23/2016 13:30:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00105**	**.01551**	**-.00313**	**.11826**	**.00818**	**-.00000**	**2.0275**
Stddev	.00070	.00234	.00310	.00767	.00196	.00006	.0370
%RSD	66.752	15.097	99.267	6.4869	23.923	1367.3	1.8270
#1	.00059	.01377	-.00395	.11540	.00595	-.00005	1.9946
#2	.00185	.01458	.00031	.11242	.00898	.00006	2.0676
#3	.00071	.01817	-.00574	.12695	.00960	-.00003	2.0203
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00055**	**.00014**	**.00223**	**-.00232**	**-.00256**	**.40790**	**-.00322**
Stddev	.00041	.00028	.00121	.00125	.01666	.12678	.00659
%RSD	74.729	200.06	54.281	54.124	650.75	31.082	205.00
#1	.00103	.00003	.00355	-.00094	.01552	.30288	.00155
#2	.00028	-.00007	.00117	-.00261	-.01729	.37208	-.01074
#3	.00035	.00045	.00197	-.00340	-.00591	.54874	-.00045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.70908**	**.00231**	**.00078**	**28.050**	**.00489**	**.05231**	**.00240**
Stddev	.08177	.00221	.00088	.079	.00053	.00501	.00051
%RSD	11.531	95.612	113.58	.28080	10.812	9.5863	21.339
#1	.78336	.00106	.00002	28.135	.00550	.05582	.00192
#2	.72241	.00485	.00057	28.034	.00462	.05454	.00234
#3	.62147	.00100	.00175	27.980	.00455	.04656	.00294
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606085701 Acquired: 6/23/2016 13:30:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00069	.00604	.93518	.00155	.06238	-.00090	-.00177
Stddev	.00289	.00426	.00365	.00027	.00056	.00405	.00079
%RSD	416.59	70.572	.39073	17.233	.90476	450.45	44.755
#1	.00258	.00177	.93304	.00161	.06186	-.00521	-.00087
#2	-.00174	.00606	.93311	.00179	.06230	-.00032	-.00237
#3	-.00292	.01029	.93940	.00126	.06298	.00283	-.00205
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00004	.03465	F -.25289
Stddev	.00070	.00017	.21558
%RSD	1777.2	.48633	85.245
#1	.00072	.03457	-.04792
#2	.00009	.03454	-.47771
#3	-.00069	.03485	-.23306
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6771.2	42793.	2185.7
Stddev	16.2	557.	12.6
%RSD	.23870	1.3012	.57582
#1	6760.8	42567.	2172.1
#2	6789.8	43427.	2188.0
#3	6762.9	42385.	2197.0

Approved: June 24, 2016

Sample Name: L1606085702 Acquired: 6/23/2016 13:34:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00033**	**.07270**	**-.00203**	**.14026**	**.07278**	**.00001**	**1.8420**
Stddev	.00276	.01164	.00125	.00065	.00057	.00018	.0327
%RSD	841.02	16.017	61.792	.46587	.78910	3297.7	1.7766
#1	-.00316	.07004	-.00091	.14030	.07212	.00019	1.8290
#2	.00236	.06261	-.00179	.13959	.07316	-.00001	1.8178
#3	-.00019	.08544	-.00338	.14090	.07306	-.00016	1.8792
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00058**	**.00049**	**.00229**	**.00175**	**.01354**	**.82547**	**.00707**
Stddev	.00023	.00070	.00094	.00097	.02857	.04036	.00543
%RSD	39.415	144.45	40.924	55.606	211.01	4.8891	76.883
#1	.00077	.00036	.00132	.00068	-.01924	.84400	.01011
#2	.00033	-.00015	.00319	.00257	.02674	.77917	.01030
#3	.00063	.00124	.00236	.00201	.03312	.85323	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51491**	**.00195**	**.00449**	F **275.14**	**-.00069**	**.03509**	**-.00069**
Stddev	.09772	.00296	.00024	.76	.00123	.00164	.00476
%RSD	18.977	151.69	5.4308	.27666	177.16	4.6788	690.35
#1	.41497	.00336	.00448	275.95	.00072	.03463	.00474
#2	.61024	.00394	.00425	274.44	-.00134	.03372	-.00420
#3	.51952	-.00145	.00474	275.04	-.00146	.03691	-.00261
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 24, 2016

Sample Name: L1606085702 Acquired: 6/23/2016 13:34:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00460**	**-.00060**	**3.0002**	**.00006**	**.09445**	**.00506**	**-.00228**
Stddev	.00222	.00516	.0036	.00068	.00055	.00431	.00386
%RSD	48.324	853.07	.11830	1137.5	.58448	85.182	169.08
#1	-.00698	-.00204	3.0021	-.00036	.09414	.00516	-.00490
#2	-.00424	.00512	3.0025	-.00031	.09412	.00070	-.00411
#3	-.00258	-.00489	2.9961	.00085	.09509	.00931	.00215
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00051**	**.00248**	F **-.05261**
Stddev	.00144	.00019	.29783
%RSD	282.24	7.6734	566.10
#1	.00067	.00238	-.32296
#2	-.00211	.00270	-.10151
#3	-.00009	.00236	.26664
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6545.6**	**40539.**	**2141.5**
Stddev	22.7	279.	19.5
%RSD	.34678	.68833	.90844
#1	6540.8	40596.	2119.8
#2	6570.4	40236.	2147.6
#3	6525.8	40786.	2157.3

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 13:37:59 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .45134	10.807	.43069	.53551	1.0873	.05306	10.734
Stddev	.00120	.042	.00127	.00658	.0048	.00054	.109
%RSD	.26661	.38935	.29560	1.2285	.44392	1.0118	1.0192
#1	.45043	10.780	.43162	.52920	1.0877	.05245	10.843
#2	.45270	10.855	.42924	.53499	1.0919	.05345	10.736
#3	.45088	10.785	.43121	.54233	1.0823	.05328	10.624
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value	.40000						
Range	10.000%						

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05377	.21778	.53858	.54577	4.3294	53.973	1.0995
Stddev	.00038	.00023	.00492	.00029	.0324	.101	.0034
%RSD	.70417	.10643	.91354	.05369	.74928	.18648	.31286
#1	.05336	.21804	.53402	.54544	4.2921	53.955	1.0956
#2	.05383	.21761	.54380	.54590	4.3510	54.082	1.1020
#3	.05411	.21768	.53792	.54598	4.3450	53.883	1.1008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.676	.54210	1.0831	54.317	.54570	10.765	.54231
Stddev	.144	.00268	.0045	.237	.00054	.017	.00789
%RSD	1.3465	.49516	.41592	.43723	.09840	.15367	1.4551
#1	10.841	.54173	1.0860	54.234	.54581	10.748	.54167
#2	10.605	.53962	1.0854	54.585	.54511	10.768	.55050
#3	10.581	.54495	1.0779	54.132	.54617	10.781	.53475
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 13:37:59 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.3154**	**.43131**	**5.4716**	**1.0779**	**1.0816**	**1.0682**	**.54041**
Stddev	.0100	.01288	.0063	.0008	.0051	.0038	.00148
%RSD	.76033	2.9867	.11483	.07203	.47288	.35443	.27465
#1	1.3264	.42222	5.4703	1.0779	1.0791	1.0696	.54165
#2	1.3068	.42566	5.4661	1.0786	1.0874	1.0639	.53876
#3	1.3129	.44605	5.4784	1.0771	1.0782	1.0710	.54081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0737**	**1.0856**	F **.15193**
Stddev	.0085	.0016	.28587
%RSD	.79069	.14554	188.16
#1	1.0640	1.0847	.18724
#2	1.0798	1.0846	-.14996
#3	1.0773	1.0874	.41850
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6619.5**	**40889.**	**2120.6**
Stddev	22.8	56.	15.1
%RSD	.34376	.13697	.71393
#1	6636.9	40858.	2120.9
#2	6627.9	40856.	2105.4
#3	6593.8	40954.	2135.6

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 13:41:37 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00158**	**.01770**	**-.00290**	**.00420**	**.00296**	**.00008**	**.00768**
Stddev	.00238	.01297	.00182	.00442	.00097	.00006	.03100
%RSD	150.72	73.266	62.817	105.42	32.973	74.730	403.53
#1	-.00078	.02309	-.00093	.00783	.00184	.00014	-.01510
#2	.00397	.00291	-.00452	.00548	.00340	.00005	-.00484
#3	.00154	.02711	-.00326	-.00073	.00363	.00003	.04298
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00046**	**.00012**	**.00248**	**-.00061**	**-.00542**	**.10552**	**.00074**
Stddev	.00020	.00062	.00070	.00053	.02692	.07766	.00351
%RSD	43.624	499.77	28.448	85.995	496.30	73.597	477.45
#1	.00063	-.00055	.00323	-.00038	-.00888	.03365	.00151
#2	.00024	.00026	.00236	-.00122	-.03045	.09501	.00379
#3	.00052	.00066	.00184	-.00024	.02305	.18790	-.00310
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04199**	**.00149**	**.00473**	**.07384**	**-.00091**	F **.01440**	**.00237**
Stddev	.03372	.00533	.00067	.02566	.00057	.00186	.00194
%RSD	80.305	359.18	14.065	34.748	62.773	12.937	82.124
#1	.06837	.00627	.00403	.06546	-.00149	.01277	.00039
#2	.05361	.00246	.00480	.10263	-.00091	.01643	.00427
#3	.00400	-.00427	.00536	.05341	-.00034	.01399	.00244
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						.01000	
Low Limit						-.01000	

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 13:41:37 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00149**	**.00301**	**.01027**	**.00140**	**.00008**	**.00320**	**.00031**
Stddev	.00130	.00950	.00052	.00086	.00053	.00649	.00310
%RSD	87.162	315.28	5.0885	61.563	705.61	202.89	987.14
#1	.00285	.00014	.00977	.00239	.00066	.00051	.00035
#2	.00026	-.00472	.01081	.00106	-.00039	.01060	-.00281
#3	.00135	.01362	.01022	.00076	-.00004	-.00151	.00340
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00103**	**-.00008**	F **-.23953**
Stddev	.00169	.00028	.04048
%RSD	163.72	371.39	16.899
#1	-.00118	-.00003	-.26217
#2	-.00264	.00018	-.26362
#3	.00073	-.00037	-.19280
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6630.2**	**41602.**	**2070.3**
Stddev	4.8	212.	18.8
%RSD	.07287	.50936	.90799
#1	6631.2	41452.	2049.7
#2	6625.0	41845.	2074.7
#3	6634.5	41510.	2086.6

Approved: June 24, 2016

Sample Name: L1606072901 Acquired: 6/23/2016 13:45:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	1.9022	-.00033	.01275	.10878	.00027	3.3748
Stddev	.00218	.0080	.00247	.00210	.00122	.00005	.0521
%RSD	390.51	.41881	752.84	16.492	1.1199	19.165	1.5437
#1	-.00143	1.9097	.00166	.01339	.10869	.00021	3.3553
#2	.00290	1.9031	-.00310	.01447	.10760	.00029	3.3352
#3	.00021	1.8938	.00045	.01041	.11004	.00031	3.4338
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00070	.00686	.00502	.00274	8.7296	4.0858	.00187
Stddev	.00049	.00031	.00079	.00095	.1044	.1587	.00572
%RSD	70.901	4.5508	15.682	34.818	1.1959	3.8848	306.19
#1	.00013	.00699	.00492	.00271	8.7332	4.1453	-.00456
#2	.00097	.00708	.00585	.00180	8.6235	3.9059	.00638
#3	.00100	.00650	.00428	.00370	8.8322	4.2062	.00378
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	2.5279	.18987	.00146	8.8883	.00643	.07669	.00585
Stddev	.0806	.00418	.00002	.0264	.00132	.00989	.00345
%RSD	3.1886	2.2032	1.4553	.29688	20.582	12.899	59.068
#1	2.6115	.18525	.00145	8.8787	.00728	.08764	.00219
#2	2.4507	.19098	.00145	8.8681	.00491	.06839	.00629
#3	2.5215	.19340	.00149	8.9182	.00711	.07404	.00906
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606072901 Acquired: 6/23/2016 13:45:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00422**	**.00114**	**7.7009**	**.00094**	**.04165**	**.04528**	**-.00124**
Stddev	.00105	.00887	.0106	.00031	.00116	.00750	.00474
%RSD	24.977	779.78	.13780	33.440	2.7765	16.566	383.19
#1	-.00314	.00770	7.7122	.00125	.04034	.05338	-.00668
#2	-.00426	-.00895	7.6912	.00063	.04213	.04390	.00093
#3	-.00525	.00466	7.6993	.00093	.04250	.03857	.00204
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00695**	**.03769**	F **-.07426**
Stddev	.00021	.00010	.25506
%RSD	3.0434	.26201	343.45
#1	.00719	.03759	-.17879
#2	.00685	.03770	.21646
#3	.00679	.03778	-.26046
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6663.7**	**41447.**	**2124.9**
Stddev	31.4	101.	8.5
%RSD	.47053	.24398	.40015
#1	6635.9	41409.	2127.4
#2	6657.5	41369.	2115.5
#3	6697.7	41561.	2131.9

Approved: June 24, 2016

Sample Name: L1606072902 Acquired: 6/23/2016 13:49:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.08436	-.00231	.01162	.09500	.00024	3.2071	.00025
Stddev	.00068	.00795	.00473	.00261	.00117	.00003	.0288	.00030
%RSD	140.03	9.4206	204.37	22.450	1.2279	13.019	.89891	120.44
#1	.00085	.08971	-.00104	.01189	.09406	.00022	3.1880	.00059
#2	-.00030	.08814	-.00754	.01408	.09631	.00022	3.1929	.00004
#3	.00091	.07523	.00164	.00888	.09463	.00027	3.2402	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00258	.00169	.00001	.09122	4.0554	.00554	2.1514	.10164
Stddev	.00036	.00098	.00083	.01409	.0725	.00749	.0915	.00166
%RSD	13.810	58.028	9389.3	15.450	1.7870	135.26	4.2536	1.6371
#1	.00228	.00185	-.00094	.08293	4.0962	-.00132	2.2029	.09978
#2	.00297	.00064	.00036	.10750	3.9717	.01352	2.0457	.10217
#3	.00249	.00258	.00061	.08324	4.0982	.00441	2.2055	.10298
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00107	9.3347	.00534	-.00760	.00262	-.00247	-.00071	5.8284
Stddev	.00067	.0017	.00059	.00657	.00192	.00656	.00734	.0047
%RSD	62.899	.01851	11.082	86.434	73.407	265.29	1036.5	.08050
#1	.00073	9.3339	.00595	-.01085	.00076	.00233	.00419	5.8231
#2	.00063	9.3335	.00477	-.01192	.00459	.00021	.00283	5.8300
#3	.00184	9.3367	.00529	-.00004	.00250	-.00996	-.00914	5.8320
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606072902 Acquired: 6/23/2016 13:49:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	.04455	.00383	-.00158	-.00117	.01067	.01977
Stddev	.00091	.00048	.00462	.00107	.00115	.00017	.19686
%RSD	195.27	1.0877	120.59	67.563	97.637	1.6384	995.89
#1	.00011	.04507	-.00045	-.00119	-.00123	.01066	.06131
#2	.00150	.04411	.00321	-.00077	-.00229	.01086	-.19455
#3	-.00021	.04447	.00873	-.00279	-.00000	.01051	.19254
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6679.4	41883.	2140.8
Stddev	19.5	115.	21.9
%RSD	.29209	.27528	1.0253
#1	6687.8	41773.	2148.4
#2	6693.3	41873.	2116.0
#3	6657.1	42003.	2157.9

Approved: June 24, 2016

Sample Name: L1606072903 Acquired: 6/23/2016 13:53:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00121	3.1940	-.00317	.05585	.05128	.00272	55.198	.00092
Stddev	.00190	.0150	.00311	.00265	.00071	.00005	.533	.00026
%RSD	157.00	.46804	98.051	4.7403	1.3804	2.0101	.96560	28.456
#1	-.00098	3.2101	-.00297	.05354	.05052	.00274	54.599	.00105
#2	.00226	3.1805	-.00017	.05528	.05192	.00276	55.376	.00062
#3	.00234	3.1916	-.00638	.05874	.05142	.00265	55.619	.00109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05365	.00268	.00557	3.4652	2.3690	.00136	16.189	.87450
Stddev	.00041	.00184	.00156	.0341	.0787	.00738	.191	.00113
%RSD	.76801	68.642	27.990	.98414	3.3240	542.12	1.1778	.12910
#1	.05412	.00147	.00733	3.4487	2.4341	-.00716	16.303	.87482
#2	.05346	.00480	.00435	3.5044	2.2815	.00562	15.968	.87543
#3	.05336	.00178	.00504	3.4424	2.3914	.00562	16.295	.87324
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	6.4254	.02173	.00157	.00749	.00178	.00259	5.9642
Stddev	.00053	.0272	.00078	.00506	.00256	.00308	.00359	.0225
%RSD	256.99	.42327	3.5957	323.06	34.182	173.34	138.86	.37668
#1	-.00034	6.4199	.02259	.00740	.00733	.00347	.00639	5.9884
#2	.00025	6.4014	.02152	-.00148	.00502	-.00178	.00211	5.9601
#3	.00072	6.4549	.02107	-.00122	.01014	.00364	-.00075	5.9440
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606072903 Acquired: 6/23/2016 13:53:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.50021	.00294	-.00570	-.00006	.06538	.14572
Stddev	.00142	.00223	.00346	.00366	.00105	.00038	.27662
%RSD	475.50	.44540	117.77	64.085	1811.6	.58637	189.83
#1	.00193	.49771	.00052	-.00185	-.00105	.06577	-.10106
#2	-.00032	.50094	.00139	-.00614	-.00017	.06537	.09350
#3	-.00070	.50198	.00690	-.00913	.00104	.06500	.44473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6815.5	42583.	2186.5
Stddev	19.4	255.	20.2
%RSD	.28450	.59973	.92196
#1	6828.0	42494.	2188.2
#2	6793.2	42385.	2205.8
#3	6825.4	42871.	2165.6

Approved: June 24, 2016

Sample Name: L1606073001 Acquired: 6/23/2016 13:57:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00256	.31997	.00369	.01015	2.4447	-.00002	F 391.57
Stddev	.00124	.00976	.00345	.00235	.0050	.00008	.92
%RSD	48.609	3.0496	93.533	23.200	.20351	460.90	.23566
#1	.00128	.30999	-.00013	.01225	2.4390	-.00011	390.52
#2	.00376	.32043	.00659	.01060	2.4484	.00003	391.93
#3	.00264	.32949	.00461	.00760	2.4465	.00003	392.25
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	.00332	.07503	.00241	.04789	26.816	.16164
Stddev	.00006	.00025	.00123	.00077	.02971	.128	.00555
%RSD	13.649	7.5530	1.6428	31.776	62.037	.47549	3.4306
#1	.00051	.00360	.07369	.00185	.02298	26.708	.16210
#2	.00039	.00313	.07526	.00328	.03991	26.784	.16695
#3	.00050	.00322	.07612	.00210	.08077	26.957	.15589
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.9869	.00807	.00500	F 300.26	-.00001	.00977	.00319
Stddev	.0805	.00347	.00030	.50	.00088	.00901	.00538
%RSD	.80645	42.987	6.0910	.16764	16745.	92.216	168.62
#1	9.9524	.00517	.00524	299.73	.00074	.00083	.00794
#2	9.9294	.00714	.00465	300.32	.00023	.00962	.00428
#3	10.079	.01192	.00510	300.74	-.00098	.01885	-.00265
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 24, 2016

Sample Name: L1606073001 Acquired: 6/23/2016 13:57:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00030**	**-.00121**	**6.9753**	**.00042**	F **24.468**	F **-.04746**	**-.00176**
Stddev	.00142	.00818	.0038	.00053	.196	.01075	.00131
%RSD	471.93	673.71	.05469	126.13	.80146	22.649	74.343
#1	-.00042	.00785	6.9714	.00042	24.521	-.03746	-.00146
#2	.00194	-.00344	6.9790	-.00011	24.631	-.05883	-.00063
#3	-.00061	-.00804	6.9754	.00096	24.250	-.04608	-.00320
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Pass
High Limit					9.0000	36.000	
Low Limit					-.01000	-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00483**	**.00304**	F **-.25994**
Stddev	.00095	.00011	.47028
%RSD	19.772	3.5436	180.92
#1	.00584	.00296	-.78106
#2	.00471	.00316	.13285
#3	.00394	.00300	-.13161
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6405.8**	**39923.**	**2130.5**
Stddev	43.1	179.	24.3
%RSD	.67309	.44763	1.1394
#1	6423.5	39842.	2147.8
#2	6437.2	39799.	2102.8
#3	6356.6	40127.	2140.9

Approved: June 24, 2016

Sample Name: L1606073002 Acquired: 6/23/2016 14:01:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**.30159**	**.00192**	**.00855**	**2.4572**	**-.00005**	F **391.13**
Stddev	.00178	.00597	.00175	.00180	.0121	.00005	1.72
%RSD	1582.0	1.9801	91.272	21.054	.49021	108.20	.43917
#1	-.00072	.30830	.00395	.00732	2.4525	-.00000	390.34
#2	-.00151	.29959	.00093	.00772	2.4483	-.00011	389.95
#3	.00189	.29687	.00089	.01062	2.4709	-.00004	393.10
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00083**	**.00328**	**.07488**	**.00378**	**.06045**	**26.884**	**.15804**
Stddev	.00045	.00088	.00139	.00327	.02010	.168	.00401
%RSD	53.690	26.823	1.8521	86.444	33.259	.62310	2.5398
#1	.00040	.00331	.07575	.00650	.08326	26.768	.16070
#2	.00129	.00414	.07328	.00469	.04533	26.808	.15342
#3	.00080	.00239	.07560	.00015	.05274	27.076	.15999
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.834**	**.00242**	**.00478**	F **302.91**	**-.00114**	**-.00268**	**.00268**
Stddev	.163	.00322	.00063	1.34	.00044	.00170	.00128
%RSD	1.5067	133.12	13.189	.44217	38.961	63.359	47.782
#1	10.905	-.00130	.00456	302.40	-.00129	-.00108	.00361
#2	10.647	.00422	.00549	301.91	-.00064	-.00447	.00321
#3	10.950	.00435	.00429	304.43	-.00149	-.00251	.00122
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 24, 2016

Sample Name: L1606073002 Acquired: 6/23/2016 14:01:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00058**	**-.00081**	**7.0233**	**.00053**	F **24.522**	F **-.05058**	**-.00421**
Stddev	.00221	.00364	.0004	.00034	.334	.00928	.00168
%RSD	381.72	447.00	.00560	64.571	1.3621	18.354	39.774
#1	-.00268	.00184	7.0238	.00033	24.364	-.04360	-.00542
#2	-.00079	.00069	7.0231	.00033	24.905	-.04702	-.00492
#3	.00173	-.00497	7.0231	.00092	24.296	-.06112	-.00230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Pass
High Limit					9.0000	36.000	
Low Limit					-.01000	-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00622**	**.00213**	F **-.10401**
Stddev	.00097	.00020	.39318
%RSD	15.584	9.3584	378.01
#1	.00524	.00203	.33604
#2	.00625	.00236	-.42076
#3	.00718	.00200	-.22731
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6399.2**	**39605.**	**2125.8**
Stddev	37.9	110.	18.5
%RSD	.59190	.27845	.86813
#1	6440.2	39489.	2146.1
#2	6391.9	39620.	2121.4
#3	6365.5	39708.	2110.0

Approved: June 24, 2016

Sample Name: L1606073003 Acquired: 6/23/2016 14:05:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00163	.08741	.00459	.00740	9.5652	.00021	F 359.97
Stddev	.00290	.01125	.00113	.00556	.0602	.00005	2.32
%RSD	177.98	12.875	24.619	75.211	.62908	22.498	.64513
#1	-.00023	.08788	.00519	.01075	9.5821	.00025	360.68
#2	.00496	.09842	.00329	.01047	9.4984	.00023	357.37
#3	.00015	.07593	.00529	.00098	9.6152	.00016	361.85
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	.00733	.00421	.00132	7.6968	4.6889	.05502
Stddev	.00016	.00040	.00043	.00230	.0700	.1346	.00192
%RSD	17.239	5.4950	10.244	173.72	.90938	2.8698	3.4965
#1	.00083	.00700	.00459	-.00074	7.7485	4.5651	.05658
#2	.00080	.00721	.00429	.00091	7.6172	4.6694	.05560
#3	.00109	.00778	.00374	.00380	7.7248	4.8321	.05287
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	222.02	.46392	.00100	F 907.17	.00310	.02957	.00359
Stddev	1.03	.00590	.00045	6.20	.00060	.00708	.00191
%RSD	.46426	1.2720	45.476	.68347	19.251	23.934	53.290
#1	221.59	.46076	.00151	909.32	.00379	.02554	.00305
#2	221.27	.46028	.00064	912.02	.00275	.02542	.00572
#3	223.20	.47073	.00084	900.19	.00276	.03774	.00201
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 24, 2016

Sample Name: L1606073003 Acquired: 6/23/2016 14:05:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00269	-.00290	15.510	.00105	7.7454	F -.03815	-.00190
Stddev	.00374	.00479	.014	.00060	.0520	.00404	.00349
%RSD	138.83	165.18	.09191	57.186	.67173	10.600	183.63
#1	.00695	-.00093	15.517	.00160	7.7532	-.03745	.00130
#2	-.00005	-.00836	15.493	.00114	7.6899	-.04250	-.00563
#3	.00117	.00059	15.519	.00041	7.7931	-.03451	-.00138
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00223	.00565	.20878
Stddev	.00149	.00017	.22493
%RSD	66.807	3.0725	107.73
#1	-.00382	.00583	-.02471
#2	-.00199	.00565	.22702
#3	-.00087	.00548	.42404
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6192.6	37959.	2074.6
Stddev	8.6	172.	6.3
%RSD	.13852	.45191	.30587
#1	6200.5	37983.	2079.7
#2	6183.5	37777.	2076.7
#3	6193.6	38118.	2067.5

Approved: June 24, 2016

Sample Name: L1606065001 Acquired: 6/23/2016 14:09:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00101	.02086	.00078	.00392	.11798	.00010	3.7797
Stddev	.00330	.00981	.00259	.00188	.00093	.00009	.0253
%RSD	325.36	47.024	330.21	48.042	.79125	91.343	.67047
#1	-.00269	.01004	.00280	.00180	.11849	.00006	3.7511
#2	.00211	.02918	.00169	.00456	.11854	.00004	3.7886
#3	.00363	.02335	-.00214	.00540	.11690	.00021	3.7994
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00039	.00473	.11075	.00254	1.6128	.36399	.00052
Stddev	.00015	.00028	.00247	.00153	.0205	.13250	.00682
%RSD	39.437	5.8376	2.2265	59.990	1.2685	36.403	1305.8
#1	.00043	.00442	.10829	.00126	1.6215	.50232	.00839
#2	.00052	.00494	.11323	.00423	1.5894	.35143	-.00365
#3	.00022	.00484	.11072	.00213	1.6275	.23821	-.00317
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	3.3114	.12820	.00059	23.908	.19913	.01143	.00693
Stddev	.0612	.00234	.00031	.193	.00371	.00816	.00284
%RSD	1.8496	1.8238	52.171	.80626	1.8611	71.384	41.001
#1	3.3128	.13027	.00090	23.692	.19516	.00780	.00543
#2	3.2495	.12566	.00028	24.064	.19975	.00572	.00515
#3	3.3720	.12866	.00059	23.967	.20249	.02078	.01021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606065001 Acquired: 6/23/2016 14:09:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00112**	**.00322**	**1.4139**	**.00021**	**.08513**	**.01184**	**-.00134**
Stddev	.00332	.00894	.0290	.00109	.00058	.00972	.00180
%RSD	295.41	277.65	2.0534	506.07	.67723	82.127	134.05
#1	-.00422	.01348	1.3849	.00054	.08447	.00066	-.00038
#2	.00238	-.00289	1.4138	-.00100	.08552	.01829	-.00023
#3	-.00152	-.00093	1.4430	.00110	.08541	.01657	-.00342
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00159**	**.00105**	F **-.37996**
Stddev	.00053	.00021	.11946
%RSD	33.537	19.605	31.441
#1	-.00120	.00087	-.38083
#2	-.00220	.00100	-.26007
#3	-.00137	.00127	-.49899
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6890.2**	**43019.**	**2167.8**
Stddev	63.1	99.	28.1
%RSD	.91638	.23029	1.2947
#1	6934.3	42909.	2177.8
#2	6918.4	43046.	2136.2
#3	6817.9	43101.	2189.6

Approved: June 24, 2016

Sample Name: L1606065002 Acquired: 6/23/2016 14:13:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00119**	**.00619**	**.00053**	**.00242**	**.04050**	**.00005**	**2.4175**
Stddev	.00153	.00568	.00140	.00436	.00121	.00004	.0565
%RSD	128.35	91.662	266.78	179.97	2.9976	95.253	2.3370
#1	.00059	.00843	.00063	.00739	.04165	.00010	2.4475
#2	.00005	.01040	-.00093	.00068	.04062	.00002	2.3523
#3	.00292	-.00026	.00187	-.00080	.03923	.00002	2.4527
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00018**	**.00062**	**.00128**	**-.00132**	**.01627**	**.11917**	**.00122**
Stddev	.00027	.00046	.00064	.00184	.03317	.08838	.00191
%RSD	149.87	75.230	50.288	139.76	203.80	74.161	156.79
#1	-.00011	.00016	.00101	-.00254	.04806	.14500	.00296
#2	.00022	.00109	.00201	.00080	.01888	.02075	.00151
#3	.00042	.00060	.00081	-.00222	-.01812	.19175	-.00082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.5446**	**.04594**	**.00017**	**20.766**	**.00047**	**.00485**	**.00051**
Stddev	.0763	.00146	.00033	.149	.00143	.00885	.00349
%RSD	4.9423	3.1762	199.14	.71702	303.54	182.41	681.91
#1	1.4640	.04664	-.00012	20.654	.00209	.00163	-.00344
#2	1.6158	.04427	.00054	20.710	-.00006	.01486	.00319
#3	1.5540	.04692	.00009	20.935	-.00062	-.00194	.00178
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606065002 Acquired: 6/23/2016 14:13:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00098**	**-.00033**	**2.1606**	**.00059**	**.04583**	**.00531**	**-.00032**
Stddev	.00451	.00336	.0261	.00086	.00032	.01016	.00354
%RSD	460.69	1017.1	1.2061	145.66	.69478	191.19	1094.5
#1	-.00324	.00342	2.1358	.00154	.04555	.00482	-.00398
#2	.00045	-.00306	2.1582	.00037	.04577	.01571	-.00006
#3	.00573	-.00135	2.1877	-.00014	.04618	-.00459	.00307
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00011**	**.00081**	F **-.25970**
Stddev	.00182	.00018	.14592
%RSD	1638.0	22.380	56.190
#1	.00114	.00078	-.23795
#2	-.00221	.00100	-.41527
#3	.00073	.00064	-.12587
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6847.2**	**42507.**	**2206.5**
Stddev	7.7	174.	27.0
%RSD	.11197	.40941	1.2214
#1	6848.1	42368.	2181.6
#2	6839.1	42451.	2203.0
#3	6854.3	42702.	2235.1

Approved: June 24, 2016

Sample Name: L1606065003 Acquired: 6/23/2016 14:17:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00067	.08910	.00038	.00141	.01681	.00007	1.5698	.00071
Stddev	.00142	.00383	.00422	.00345	.00071	.00002	.0515	.00016
%RSD	211.03	4.2965	1109.5	244.57	4.2236	27.061	3.2785	22.773
#1	.00003	.09101	.00022	.00166	.01758	.00009	1.5296	.00090
#2	-.00230	.08469	-.00376	.00473	.01666	.00008	1.5520	.00061
#3	.00026	.09160	.00468	-.00216	.01619	.00005	1.6278	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00113	.05077	.00085	1.0203	.30376	-.00498	.99295	.03616
Stddev	.00058	.00147	.00210	.0205	.07272	.00068	.07738	.00181
%RSD	51.340	2.8981	247.26	2.0115	23.941	13.727	7.7929	5.0090
#1	.00132	.04948	.00273	.99875	.34266	-.00450	1.0062	.03804
#2	.00048	.05047	.00125	1.0396	.21986	-.00467	.90982	.03602
#3	.00159	.05237	-.00142	1.0224	.34877	-.00576	1.0629	.03443
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	10.870	.01041	.02046	.00421	-.00251	-.00096	1.0575
Stddev	.00071	.065	.00096	.00304	.00222	.00307	.00294	.0121
%RSD	118.73	.59889	9.1817	14.859	52.652	122.13	304.81	1.1477
#1	.00120	10.813	.00941	.02356	.00283	-.00575	.00065	1.0435
#2	.00077	10.857	.01132	.02033	.00676	.00035	-.00435	1.0643
#3	-.00018	10.941	.01050	.01748	.00303	-.00214	.00081	1.0648
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606065003 Acquired: 6/23/2016 14:17:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00018**	**.02812**	**.00927**	**-.00234**	**.00055**	**.00136**	**.26713**
Stddev	.00044	.00045	.01111	.00135	.00029	.00018	.11649
%RSD	247.67	1.5998	119.83	57.833	53.067	13.216	43.608
#1	-.00029	.02761	-.00352	-.00390	.00030	.00141	.14323
#2	.00031	.02844	.01649	-.00165	.00048	.00116	.37443
#3	-.00055	.02832	.01484	-.00148	.00086	.00151	.28371
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6858.1**	**42494.**	**2175.3**
Stddev	42.7	209.	26.7
%RSD	.62293	.49294	1.2285
#1	6902.9	42252.	2201.8
#2	6817.9	42604.	2175.9
#3	6853.5	42625.	2148.4

Approved: June 24, 2016

Sample Name: L1606065008 Acquired: 6/23/2016 14:21:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00167	.05295	-.00138	.00258	.01026	.00007	.47962	.00043
Stddev	.00382	.00591	.00487	.00427	.00085	.00006	.02685	.00034
%RSD	228.87	11.159	352.65	165.38	8.2961	86.535	5.5975	78.751
#1	.00493	.04838	-.00184	.00341	.00986	.00008	.50825	.00064
#2	.00262	.05085	.00370	-.00204	.01124	.00013	.47558	.00004
#3	-.00254	.05962	-.00601	.00637	.00969	.00001	.45502	.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	.00105	.00052	.01114	.23594	.00258	.32831	.04867
Stddev	.00048	.00065	.00211	.02304	.15716	.00476	.03457	.00107
%RSD	72.667	62.238	405.10	206.92	66.612	184.28	10.530	2.1978
#1	.00121	.00147	-.00090	.03051	.27011	.00744	.32906	.04762
#2	.00035	.00030	-.00048	-.01435	.37320	.00238	.29337	.04976
#3	.00041	.00139	.00294	.01725	.06450	-.00207	.36250	.04864
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	10.506	.00237	.01642	.00213	-.00348	-.00290	.95589
Stddev	.00033	.102	.00127	.00194	.00052	.00334	.00341	.02057
%RSD	80.143	.97506	53.506	11.825	24.406	96.118	117.83	2.1518
#1	.00038	10.423	.00381	.01546	.00262	-.00214	.00087	.93512
#2	.00074	10.474	.00146	.01866	.00158	-.00728	-.00579	.95628
#3	.00009	10.620	.00183	.01515	.00217	-.00101	-.00377	.97625
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606065008 Acquired: 6/23/2016 14:21:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**.01016**	**.01408**	**-.00180**	**.00034**	**.00780**	**-.02250**
Stddev	.00029	.00090	.00037	.00226	.00082	.00018	.41195
%RSD	114.07	8.8585	2.5924	125.83	238.75	2.2653	1831.1
#1	.00001	.00914	.01377	-.00283	.00079	.00783	.44684
#2	-.00021	.01085	.01448	.00080	.00083	.00796	-.19010
#3	-.00057	.01049	.01399	-.00336	-.00060	.00761	-.32423
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6841.7**	**42195.**	**2159.0**
Stddev	30.1	205.	11.8
%RSD	.44004	.48548	.54660
#1	6815.4	42021.	2145.6
#2	6874.6	42142.	2163.1
#3	6835.2	42421.	2168.1

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 14:25:18 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.42857**	**10.259**	**.41459**	**.51312**	**1.0377**	**.05083**	**10.240**
Stddev	.00145	.042	.00240	.00208	.0005	.00026	.035
%RSD	.33767	.40774	.57876	.40627	.05142	.51677	.34610
#1	.42691	10.262	.41492	.51075	1.0371	.05053	10.280
#2	.42953	10.299	.41680	.51396	1.0378	.05103	10.216
#3	.42927	10.216	.41204	.51467	1.0381	.05092	10.222
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05153**	**.20713**	**.51313**	**.52122**	**4.1496**	**51.824**	**1.0450**
Stddev	.00053	.00038	.00040	.00239	.0217	.086	.0064
%RSD	1.0374	.18497	.07884	.45778	.52422	.16565	.60961
#1	.05201	.20708	.51297	.51947	4.1602	51.775	1.0391
#2	.05164	.20754	.51283	.52394	4.1246	51.773	1.0517
#3	.05096	.20678	.51359	.52026	4.1640	51.923	1.0442
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.365**	**.51748**	**1.0289**	**52.020**	**.52164**	**10.278**	**.51633**
Stddev	.087	.00146	.0058	.056	.00105	.029	.00388
%RSD	.84013	.28224	.56032	.10741	.20123	.27986	.75206
#1	10.444	.51915	1.0335	51.957	.52178	10.279	.51436
#2	10.378	.51684	1.0308	52.062	.52261	10.306	.52080
#3	10.271	.51645	1.0225	52.042	.52052	10.249	.51381
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 14:25:18 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2446**	**.40802**	**5.2183**	**1.0274**	**1.0363**	**1.0285**	**.51759**
Stddev	.0023	.00604	.0089	.0012	.0017	.0067	.00261
%RSD	.18445	1.4800	.17081	.11732	.16361	.65413	.50434
#1	1.2468	.40186	5.2137	1.0272	1.0367	1.0216	.51819
#2	1.2449	.41392	5.2286	1.0286	1.0377	1.0289	.51985
#3	1.2422	.40829	5.2127	1.0262	1.0344	1.0351	.51473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0241**	**1.0338**	F **-.06192**
Stddev	.0027	.0025	.13680
%RSD	.26305	.23934	220.92
#1	1.0256	1.0347	-.12891
#2	1.0256	1.0357	-.15233
#3	1.0210	1.0310	.09546
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6790.5**	**41937.**	**2171.8**
Stddev	14.3	237.	31.3
%RSD	.21009	.56402	1.4431
#1	6793.6	42002.	2142.6
#2	6774.9	41675.	2204.9
#3	6802.9	42135.	2167.9

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 14:28:57 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00068**	**.00684**	**.00039**	**.00405**	**-.00014**	**-.00001**	**.01111**
Stddev	.00139	.00533	.00047	.00294	.00042	.00014	.05193
%RSD	204.27	77.917	119.96	72.476	307.90	1309.0	467.61
#1	.00203	.00321	.00027	.00312	.00020	.00006	.02540
#2	-.00074	.00435	-.00001	.00734	-.00061	-.00017	.05439
#3	.00075	.01296	.00090	.00169	-.00000	.00008	-.04648
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00006**	**.00013**	**.00175**	**-.00169**	**-.03481**	**.03957**	**-.00259**
Stddev	.00015	.00019	.00125	.00122	.01045	.07332	.00926
%RSD	234.29	139.55	71.393	71.935	30.013	185.30	357.55
#1	.00015	.00011	.00272	-.00149	-.03890	.12238	-.01323
#2	-.00011	-.00004	.00034	-.00059	-.02294	-.01707	.00367
#3	.00015	.00033	.00220	-.00299	-.04259	.01338	.00179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00762**	**.00145**	**.00451**	**.09184**	**.00017**	**-.00187**	**.00393**
Stddev	.06220	.00270	.00068	.03009	.00063	.00768	.00289
%RSD	816.14	186.07	15.116	32.766	369.41	409.76	73.613
#1	.05398	.00182	.00387	.11465	-.00014	-.00570	.00494
#2	-.07042	-.00142	.00443	.05773	-.00024	-.00688	.00067
#3	-.00642	.00395	.00522	.10312	.00090	.00697	.00619
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 14:28:57 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00279**	**.00482**	**.00847**	**.00053**	**.00006**	**.00257**	**-.00411**
Stddev	.00278	.00681	.00116	.00085	.00055	.00504	.00289
%RSD	99.442	141.35	13.644	158.61	926.38	195.66	70.433
#1	-.00026	.01020	.00758	.00147	.00031	.00784	-.00566
#2	.00347	-.00284	.00978	.00031	.00045	.00209	-.00589
#3	.00516	.00708	.00806	-.00018	-.00058	-.00220	-.00077
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00079**	**.00006**	F **-.39260**
Stddev	.00035	.00021	.05919
%RSD	44.671	327.48	15.076
#1	-.00108	.00012	-.33568
#2	-.00040	.00024	-.38830
#3	-.00090	-.00017	-.45382
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6873.8**	**43066.**	**2219.3**
Stddev	24.2	262.	10.6
%RSD	.35168	.60922	.47776
#1	6894.9	42910.	2212.4
#2	6847.5	43369.	2213.9
#3	6879.2	42920.	2231.5

Approved: June 24, 2016

Sample Name: L1606072901 Acquired: 6/23/2016 14:32:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00103	.20477	-.00132	.00218	.01021	.00012	.30745	.00047
Stddev	.00053	.01327	.00471	.00232	.00114	.00003	.02774	.00015
%RSD	51.996	6.4798	356.90	106.25	11.138	25.468	9.0221	31.167
#1	.00051	.19008	.00260	-.00050	.01138	.00015	.32209	.00059
#2	.00157	.20831	-.00655	.00356	.00911	.00010	.32479	.00031
#3	.00100	.21590	-.00002	.00349	.01015	.00010	.27546	.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	.00267	-.00085	.77824	.42499	-.00305	.23675	.02029
Stddev	.00027	.00103	.00058	.02700	.08780	.00861	.05586	.00118
%RSD	50.518	38.540	68.845	3.4690	20.660	282.38	23.595	5.8114
#1	.00022	.00290	-.00136	.75084	.33202	.00511	.29331	.01914
#2	.00068	.00356	-.00098	.80482	.50650	-.01205	.18162	.02149
#3	.00070	.00154	-.00021	.77905	.43645	-.00220	.23531	.02024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00083	.86266	.00042	.01404	.00097	-.00077	-.00134	.76395
Stddev	.00051	.02574	.00063	.00375	.00275	.00513	.00230	.00735
%RSD	61.366	2.9839	148.39	26.677	282.93	667.71	172.38	.96211
#1	.00134	.88860	-.00030	.00973	-.00211	.00442	-.00008	.75683
#2	.00082	.86224	.00077	.01648	.00317	-.00089	.00007	.76352
#3	.00032	.83713	.00080	.01592	.00186	-.00583	-.00399	.77151
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606072901 Acquired: 6/23/2016 14:32:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00077**	**.00368**	**.00790**	**.00091**	**.00042**	**.00382**	**.00650**
Stddev	.00078	.00018	.01121	.00106	.00050	.00012	.11639
%RSD	100.57	5.0167	141.79	116.57	120.43	3.0763	1791.7
#1	-.00009	.00388	-.00377	.00178	.00087	.00368	.14066
#2	.00143	.00363	.01857	.00120	-.00012	.00388	-.06741
#3	.00097	.00352	.00891	-.00027	.00049	.00389	-.05376
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6901.1**	**42979.**	**2151.2**
Stddev	19.2	285.	20.3
%RSD	.27820	.66224	.94575
#1	6910.1	42716.	2144.7
#2	6879.1	42940.	2174.0
#3	6914.2	43281.	2134.9

Approved: June 24, 2016

Sample Name: L1606072903 Acquired: 6/23/2016 14:36:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00094	.33608	-.00131	.00564	.00616	.00028	5.3240	.00024
Stddev	.00198	.00768	.00306	.00252	.00005	.00002	.0535	.00020
%RSD	210.97	2.2849	233.73	44.693	.84156	5.9585	1.0055	83.951
#1	-.00250	.34457	-.00041	.00677	.00622	.00030	5.3370	.00012
#2	-.00160	.33405	.00120	.00275	.00614	.00027	5.2651	.00012
#3	.00129	.32962	-.00472	.00739	.00612	.00029	5.3698	.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00548	.00093	.00024	.32576	.22463	-.00164	1.5833	.08416
Stddev	.00028	.00184	.00153	.03169	.09456	.00642	.0663	.00253
%RSD	5.0708	199.26	630.81	9.7265	42.093	390.50	4.1863	3.0039
#1	.00547	.00063	-.00138	.32125	.31484	-.00892	1.6253	.08128
#2	.00576	-.00075	.00164	.29657	.12626	.00078	1.5069	.08600
#3	.00520	.00290	.00047	.35946	.23280	.00321	1.6177	.08520
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.67183	.00202	.00827	.00144	-.00380	-.00466	.60971
Stddev	.00034	.01528	.00167	.00684	.00325	.00501	.00541	.00733
%RSD	171.43	2.2750	82.664	82.772	226.43	132.11	116.12	1.2017
#1	-.00013	.68370	.00049	.01582	-.00007	-.00544	-.01091	.60649
#2	.00017	.65459	.00380	.00649	.00517	-.00778	-.00164	.60453
#3	.00055	.67721	.00176	.00249	-.00079	.00184	-.00144	.61809
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606072903 Acquired: 6/23/2016 14:36:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	.04758	.01193	-.00049	-.00069	.00682	.19864
Stddev	.00020	.00030	.00301	.00156	.00048	.00021	.25703
%RSD	23.011	.62722	25.235	318.54	70.477	3.0551	129.40
#1	.00102	.04760	.01334	-.00168	-.00078	.00688	-.08790
#2	.00096	.04787	.00847	.00128	-.00112	.00658	.27491
#3	.00065	.04727	.01398	-.00107	-.00016	.00698	.40890
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6965.2	43094.	2177.3
Stddev	15.3	76.	32.6
%RSD	.21966	.17684	1.4974
#1	6962.6	43145.	2141.8
#2	6981.7	43006.	2184.2
#3	6951.4	43131.	2205.9

Approved: June 24, 2016

Sample Name: L1606073001 Acquired: 6/23/2016 14:40:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.00616	.00037	.00349	.02625	.00006	3.9162
Stddev	.00335	.00482	.00309	.00065	.00035	.00006	.0556
%RSD	564.87	78.283	834.66	18.491	1.3216	106.85	1.4210
#1	.00444	.01164	-.00103	.00328	.02619	.00005	3.8953
#2	-.00105	.00259	-.00177	.00422	.02663	.00013	3.8741
#3	-.00161	.00425	.00392	.00298	.02594	.00000	3.9793
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	-.00033	.00192	-.00122	-.01907	.37213	-.00062
Stddev	.00029	.00023	.00070	.00142	.03046	.01397	.00645
%RSD	73.054	68.840	36.466	116.28	159.68	3.7528	1041.9
#1	.00063	-.00043	.00172	-.00275	.00425	.36288	.00114
#2	.00007	-.00007	.00269	.00006	-.05353	.36531	-.00777
#3	.00050	-.00048	.00134	-.00098	-.00794	.38819	.00477
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09432	.00289	.00055	3.0211	-.00098	.01000	.00131
Stddev	.14378	.00050	.00029	.0512	.00050	.00813	.00252
%RSD	152.43	17.247	51.863	1.6958	50.999	81.317	192.75
#1	.19256	.00246	.00087	2.9729	-.00134	.01243	.00264
#2	-.07070	.00277	.00046	3.0155	-.00041	.01663	.00288
#3	.16111	.00343	.00032	3.0749	-.00119	.00093	-.00160
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606073001 Acquired: 6/23/2016 14:40:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00098	.00138	.09081	.00094	.24565	.00908	.00018
Stddev	.00150	.01124	.00206	.00054	.00245	.00487	.00266
%RSD	153.60	812.48	2.2711	57.604	.99651	53.609	1475.0
#1	-.00029	-.00680	.09067	.00035	.24300	.00356	-.00259
#2	.00059	.01419	.08882	.00108	.24613	.01277	.00272
#3	.00264	-.00325	.09294	.00141	.24782	.01091	.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00029	.00054	F -.09488
Stddev	.00071	.00025	.31939
%RSD	242.69	45.791	336.63
#1	-.00028	.00030	.08622
#2	-.00102	.00079	-.46366
#3	.00041	.00053	.09280
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6849.4	42570.	2167.2
Stddev	35.5	125.	28.6
%RSD	.51829	.29286	1.3210
#1	6875.7	42440.	2198.6
#2	6863.4	42689.	2160.4
#3	6809.0	42580.	2142.5

Approved: June 24, 2016

Sample Name: L1606073002 Acquired: 6/23/2016 14:44:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00017**	**.01083**	**-.00205**	**.00068**	**.02540**	**.00015**	**3.8128**
Stddev	.00133	.00120	.00144	.00218	.00124	.00005	.0165
%RSD	768.03	11.069	69.997	322.04	4.8845	32.561	.43336
#1	-.00136	.01193	-.00368	.00286	.02637	.00011	3.8166
#2	.00089	.00955	-.00148	-.00151	.02400	.00020	3.7948
#3	.00099	.01100	-.00099	.00068	.02582	.00013	3.8271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00027**	**.00024**	**.00238**	**-.00072**	**-.00102**	**.33240**	**-.00150**
Stddev	.00031	.00067	.00070	.00078	.03059	.08106	.00543
%RSD	116.50	277.35	29.547	107.87	2985.6	24.386	362.53
#1	.00046	.00097	.00198	-.00007	-.03428	.42140	.00454
#2	-.00009	.00009	.00197	-.00158	.00527	.31296	-.00598
#3	.00042	-.00034	.00320	-.00052	.02593	.26282	-.00305
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.08263**	**-.00127**	**.00011**	**2.9817**	**-.00201**	**.00849**	**.00399**
Stddev	.10700	.00354	.00040	.0541	.00161	.01034	.00729
%RSD	129.49	278.60	368.84	1.8148	80.212	121.72	182.85
#1	.12830	-.00124	.00054	3.0211	-.00070	.02020	-.00010
#2	-.03962	-.00483	-.00026	2.9200	-.00381	.00062	.01240
#3	.15921	.00225	.00005	3.0039	-.00151	.00466	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606073002 Acquired: 6/23/2016 14:44:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00184**	**.00620**	**.08953**	**.00070**	**.24109**	**.00037**	**-.00136**
Stddev	.00446	.00364	.00198	.00084	.00389	.00307	.00210
%RSD	242.07	58.803	2.2141	119.60	1.6120	831.83	154.38
#1	-.00677	.00350	.08733	.00005	.24147	.00226	-.00229
#2	.00192	.01034	.09119	.00040	.23703	.00202	-.00284
#3	-.00067	.00474	.09006	.00164	.24478	-.00317	.00105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00051**	**.00070**	F **-.24102**
Stddev	.00283	.00010	.11806
%RSD	551.12	14.785	48.982
#1	.00158	.00072	-.15363
#2	.00061	.00079	-.19411
#3	-.00373	.00059	-.37532
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6840.3**	**42417.**	**2160.9**
Stddev	59.2	242.	14.5
%RSD	.86491	.56950	.67170
#1	6867.8	42609.	2155.8
#2	6772.3	42497.	2177.3
#3	6880.6	42146.	2149.7

Approved: June 24, 2016

Sample Name: L1606073003 Acquired: 6/23/2016 14:48:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00055**	**.01128**	**-.00360**	**.00095**	**.09229**	**.00002**	**3.4454**
Stddev	.00294	.01174	.00423	.00193	.00276	.00001	.0759
%RSD	534.98	104.10	117.37	203.76	2.9914	63.105	2.2014
#1	.00353	.01187	-.00535	.00225	.08912	.00002	3.3587
#2	-.00235	-.00075	.00122	-.00127	.09417	.00004	3.4781
#3	.00047	.02271	-.00667	.00188	.09358	.00001	3.4994
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00047**	**.00032**	**.00060**	**.00028**	**.05676**	**.04348**	**.00010**
Stddev	.00029	.00040	.00086	.00135	.01517	.10320	.00444
%RSD	60.846	126.16	142.92	481.42	26.736	237.38	4312.3
#1	.00069	.00062	-.00010	.00179	.05340	.16110	-.00312
#2	.00015	.00047	.00034	-.00012	.04354	.00124	.00516
#3	.00058	-.00014	.00157	-.00082	.07333	-.03191	-.00174
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**2.1211**	**.00612**	**.00035**	**8.7390**	**-.00056**	**.00954**	**.00317**
Stddev	.0586	.00084	.00008	.1820	.00126	.01316	.00361
%RSD	2.7622	13.667	23.949	2.0828	224.18	138.03	114.02
#1	2.0534	.00679	.00028	8.5296	.00086	-.00088	.00724
#2	2.1559	.00518	.00045	8.8598	-.00102	.02433	.00034
#3	2.1538	.00638	.00034	8.8275	-.00152	.00516	.00193
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606073003 Acquired: 6/23/2016 14:48:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00137**	**.00017**	**.16478**	**-.00039**	**.07546**	**.00790**	**-.00140**
Stddev	.00416	.00381	.00381	.00111	.00268	.00448	.00325
%RSD	303.81	2305.1	2.3143	282.95	3.5523	56.785	231.19
#1	.00324	.00456	.16046	-.00122	.07236	.00467	.00171
#2	-.00483	-.00216	.16767	.00087	.07707	.01302	-.00115
#3	-.00252	-.00190	.16622	-.00083	.07693	.00600	-.00477
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00080**	**.00049**	F **-.49766**
Stddev	.00035	.00012	.27901
%RSD	43.847	24.954	56.065
#1	-.00120	.00048	-.66239
#2	-.00070	.00061	-.65508
#3	-.00052	.00037	-.17551
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6909.4**	**42385.**	**2199.2**
Stddev	85.6	560.	44.7
%RSD	1.2389	1.3218	2.0328
#1	6964.9	42416.	2245.9
#2	6810.8	42929.	2156.9
#3	6952.4	41810.	2194.7

Approved: June 24, 2016

Sample Name: L1606079806 Acquired: 6/23/2016 14:52:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00172	.03292	-.00480	.00673	-.00023	.00008	4.1415
Stddev	.00289	.00555	.00057	.00215	.00045	.00003	.0589
%RSD	167.55	16.855	11.845	31.992	189.92	35.476	1.4213
#1	.00229	.02652	-.00539	.00560	-.00013	.00010	4.1840
#2	-.00141	.03586	-.00476	.00921	-.00072	.00005	4.0743
#3	.00429	.03639	-.00425	.00538	.00015	.00009	4.1662
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.00029	.00067	.00027	.03525	.95621	-.00238
Stddev	.00022	.00037	.00038	.00048	.02860	.05109	.00098
%RSD	68.237	128.88	56.635	179.92	81.137	5.3431	41.163
#1	.00025	.00026	.00057	-.00014	.04638	.89722	-.00177
#2	.00015	-.00007	.00109	.00080	.00276	.98490	-.00351
#3	.00057	.00068	.00035	.00015	.05661	.98650	-.00186
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.22291	.04167	.00051	1.6649	-.00058	.11093	.00427
Stddev	.03032	.00317	.00005	.0494	.00129	.00517	.00167
%RSD	13.600	7.6072	9.5760	2.9645	223.14	4.6572	39.196
#1	.19841	.04523	.00053	1.7187	-.00196	.11261	.00621
#2	.25681	.03916	.00045	1.6218	-.00037	.11505	.00330
#3	.21351	.04061	.00054	1.6542	.00060	.10514	.00331
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606079806 Acquired: 6/23/2016 14:52:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00090	.00853	.10041	.00029	.00840	.00456	-.00331
Stddev	.00606	.00547	.00496	.00066	.00076	.00979	.00385
%RSD	670.85	64.066	4.9419	223.71	9.0388	214.73	116.40
#1	-.00610	.01332	.09874	.00104	.00908	-.00436	-.00335
#2	.00445	.00258	.09649	-.00019	.00758	.01504	-.00714
#3	.00436	.00969	.10599	.00003	.00852	.00300	.00056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00108	.00379	F -.12134
Stddev	.00143	.00002	.45676
%RSD	132.69	.64499	376.42
#1	.00048	.00382	-.46260
#2	-.00232	.00377	.39755
#3	-.00139	.00380	-.29898
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6843.0	42928.	2203.1
Stddev	10.6	399.	20.9
%RSD	.15555	.92941	.94688
#1	6853.1	43236.	2180.6
#2	6844.0	42477.	2221.8
#3	6831.9	43070.	2207.0

Approved: June 24, 2016

Sample Name: L1606083702 Acquired: 6/23/2016 14:56:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00103	33.857	.01885	.09424	.42276	.00271	61.580
Stddev	.00116	.523	.00142	.00266	.00475	.00005	.605
%RSD	112.59	1.5444	7.5406	2.8236	1.1243	1.9678	.98167
#1	.00045	33.254	.02049	.09497	.42332	.00273	62.020
#2	.00028	34.133	.01796	.09647	.42721	.00276	61.828
#3	.00236	34.185	.01811	.09129	.41775	.00266	60.890
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00158	.03539	.25107	.16869	93.694	11.512	.04006
Stddev	.00031	.00035	.00308	.00084	1.110	.087	.00415
%RSD	19.902	1.0004	1.2276	.49779	1.1849	.75934	10.368
#1	.00164	.03511	.24822	.16866	94.581	11.593	.03794
#2	.00124	.03527	.25434	.16955	94.053	11.523	.04485
#3	.00185	.03578	.25064	.16787	92.449	11.420	.03740
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	17.243	1.3068	.09317	14.697	.12633	1.5684	.05340
Stddev	.403	.0150	.00071	.155	.00154	.0065	.00035
%RSD	2.3401	1.1447	.75952	1.0519	1.2191	.41297	.66412
#1	17.343	1.3237	.09309	14.771	.12800	1.5724	.05368
#2	17.586	1.3015	.09391	14.799	.12602	1.5719	.05300
#3	16.798	1.2953	.09251	14.519	.12497	1.5609	.05351
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606083702 Acquired: 6/23/2016 14:56:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00468	.00688	F 49.401	.00852	.24330	.70184	-.00081
Stddev	.00376	.00767	.188	.00007	.00135	.00911	.00079
%RSD	80.452	111.46	.38077	.81926	.55626	1.2982	97.258
#1	-.00342	.00621	49.502	.00844	.24396	.69824	.00000
#2	-.00171	-.00043	49.517	.00857	.24419	.71220	-.00157
#3	-.00891	.01487	49.184	.00853	.24174	.69507	-.00086
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-1.0000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.07972	1.6548	4.0068
Stddev	.00275	.0052	.2116
%RSD	3.4445	.31177	5.2802
#1	.07661	1.6562	4.1269
#2	.08074	1.6591	4.1310
#3	.08181	1.6490	3.7625
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7040.4	43524.	2280.2
Stddev	23.2	392.	46.0
%RSD	.32915	.90067	2.0194
#1	7044.1	43916.	2252.6
#2	7015.6	43132.	2254.7
#3	7061.5	43525.	2333.4

Approved: June 24, 2016

Sample Name: L1606076301 Acquired: 6/23/2016 15:00:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 2000 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00209**	**.00627**	**.00216**	**.02527**	**.48529**	**.00009**	**6.9887**
Stddev	.00272	.01885	.00159	.00167	.00114	.00009	.0306
%RSD	129.86	300.66	73.428	6.6226	.23547	97.727	.43743
#1	-.00051	.00191	.00231	.02362	.48659	.00008	6.9546
#2	.00491	.02692	.00051	.02696	.48443	.00001	7.0136
#3	.00188	-.01002	.00368	.02522	.48485	.00018	6.9981
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00027**	**-.00007**	**.00164**	**-.00209**	**.05206**	**.55309**	**.03828**
Stddev	.00039	.00053	.00064	.00068	.03153	.15560	.00148
%RSD	147.80	766.58	39.062	32.660	60.562	28.132	3.8546
#1	.00002	-.00006	.00153	-.00135	.08578	.50218	.03687
#2	.00072	.00046	.00106	-.00270	.04705	.72777	.03816
#3	.00005	-.00060	.00232	-.00221	.02333	.42933	.03981
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.80937**	**.00615**	**.00011**	**18.432**	**-.00084**	**.01113**	**.00495**
Stddev	.07243	.00368	.00028	.051	.00072	.00634	.00126
%RSD	8.9487	59.847	241.18	.27432	85.170	57.003	25.523
#1	.74808	.00514	.00035	18.483	-.00005	.01420	.00640
#2	.88929	.00308	-.00019	18.382	-.00145	.01535	.00415
#3	.79073	.01023	.00018	18.430	-.00103	.00383	.00429
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606076301 Acquired: 6/23/2016 15:00:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 2000 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00303**	**.00197**	**.01915**	**.00072**	**1.2567**	**.00585**	**-.00090**
Stddev	.00426	.00853	.00295	.00087	.0008	.00852	.00356
%RSD	140.49	432.89	15.427	121.09	.05936	145.65	397.05
#1	.00172	.00221	.01973	.00139	1.2559	-.00393	.00299
#2	-.00650	.01037	.01595	.00103	1.2573	.01163	-.00169
#3	-.00432	-.00668	.02178	-.00026	1.2570	.00985	-.00399
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00051**	**.00049**	F **-.04104**
Stddev	.00064	.00013	.38903
%RSD	125.10	27.351	948.00
#1	-.00100	.00058	-.48337
#2	.00021	.00033	.24794
#3	-.00075	.00055	.11232
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6956.6**	**43183.**	**2199.2**
Stddev	54.4	430.	23.1
%RSD	.78258	.99497	1.0493
#1	6897.1	43389.	2175.5
#2	7003.8	42689.	2221.6
#3	6969.0	43471.	2200.5

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 15:04:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.42738	10.225	.42355	.51012	1.0244	.05065	10.091
Stddev	.00539	.091	.00940	.00307	.0059	.00037	.032
%RSD	1.2616	.89220	2.2182	.60127	.57526	.72572	.31685
#1	.43352	10.304	.41275	.51099	1.0233	.05098	10.124
#2	.42518	10.125	.42814	.51265	1.0307	.05026	10.090
#3	.42343	10.245	.42977	.50671	1.0191	.05072	10.060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05206	.21028	.51417	.52677	4.1200	51.074	1.0411
Stddev	.00053	.00344	.00348	.01016	.0524	.111	.0062
%RSD	1.0133	1.6372	.67695	1.9286	1.2706	.21701	.59918
#1	.05150	.20662	.51607	.51557	4.0788	51.072	1.0407
#2	.05215	.21077	.51015	.52936	4.1789	51.186	1.0475
#3	.05254	.21346	.51628	.53538	4.1023	50.964	1.0351
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.113	.51188	1.0430	51.213	.52516	10.399	.52247
Stddev	.033	.00526	.0152	.231	.01144	.198	.01294
%RSD	.32155	1.0286	1.4605	.45051	2.1789	1.9024	2.4764
#1	10.090	.51095	1.0261	51.190	.51316	10.183	.51032
#2	10.100	.51755	1.0473	51.454	.52639	10.443	.52101
#3	10.151	.50715	1.0556	50.995	.53595	10.572	.53607
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 15:04:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2622**	**.41756**	**5.2863**	**1.0398**	**1.0224**	**1.0081**	**.52620**
Stddev	.0172	.01202	.1013	.0212	.0050	.0168	.01061
%RSD	1.3628	2.8782	1.9163	2.0349	.48725	1.6684	2.0157
#1	1.2445	.40471	5.1785	1.0162	1.0221	.99826	.51546
#2	1.2633	.42852	5.3008	1.0459	1.0276	1.0275	.52647
#3	1.2788	.41945	5.3795	1.0572	1.0176	.99852	.53667
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0245**	**1.0446**	F **.30237**
Stddev	.0058	.0191	.11177
%RSD	.56950	1.8236	36.966
#1	1.0294	1.0239	.21395
#2	1.0181	1.0484	.42800
#3	1.0259	1.0614	.26515
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6742.0**	**42317.**	**2192.6**
Stddev	87.2	372.	30.2
%RSD	1.2933	.87896	1.3758
#1	6830.2	42166.	2173.3
#2	6739.8	42741.	2177.1
#3	6655.9	42044.	2227.3

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 15:08:09 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00165**	**.01698**	**.00203**	**.00543**	**.00119**	**.00012**	**-.02429**
Stddev	.00195	.00654	.00152	.00145	.00127	.00007	.00281
%RSD	118.20	38.505	75.033	26.749	107.33	59.090	11.574
#1	-.00044	.01513	.00183	.00559	.00162	.00008	-.02105
#2	.00342	.01157	.00363	.00390	-.00025	.00009	-.02611
#3	.00196	.02425	.00061	.00679	.00218	.00021	-.02570
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.00021**	**.00208**	**-.00115**	**-.00919**	**.13134**	**-.00257**
Stddev	.00022	.00023	.00133	.00177	.02889	.16842	.00681
%RSD	385.67	112.78	63.704	153.40	314.27	128.23	265.13
#1	-.00015	-.00001	.00141	.00076	.02413	.31843	-.00487
#2	-.00022	.00045	.00361	-.00149	-.02726	-.00819	.00509
#3	.00020	.00018	.00123	-.00273	-.02444	.08379	-.00793
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03703**	**.00048**	**.00464**	**.04952**	**-.00087**	**-.00385**	F **.00550**
Stddev	.05363	.00205	.00051	.02064	.00055	.00333	.00438
%RSD	144.81	427.88	10.944	41.670	63.582	86.433	79.629
#1	-.02401	-.00081	.00408	.07276	-.00099	-.00608	.00137
#2	.05854	-.00060	.00478	.04248	-.00135	-.00546	.00504
#3	.07657	.00284	.00507	.03333	-.00027	-.00002	.01010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							.00500
Low Limit							-.00500

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 15:08:09 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00190	.00960	.00918	.00035	.00048	.00265	-.00074
Stddev	.00634	.00369	.00360	.00070	.00044	.00545	.00148
%RSD	334.41	38.448	39.161	198.03	92.306	205.78	199.13
#1	.00543	.01383	.00505	.00076	.00032	.00705	.00096
#2	-.00566	.00709	.01162	-.00045	.00097	-.00344	-.00148
#3	-.00545	.00786	.01087	.00076	.00014	.00434	-.00171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00082	-.00017	F -.48223
Stddev	.00142	.00006	.08088
%RSD	173.58	35.228	16.772
#1	-.00234	-.00022	-.41477
#2	.00049	-.00010	-.46001
#3	-.00061	-.00017	-.57189
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6825.4	42257.	2184.3
Stddev	15.3	2149.	8.4
%RSD	.22359	5.0854	.38501
#1	6842.1	43585.	2177.3
#2	6821.7	43408.	2193.6
#3	6812.3	39777.	2182.1

Approved: June 24, 2016

Sample Name: LLCCV Acquired: 6/23/2016 15:12:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00900**	**.19078**	**.00767**	**.08599**	**.00976**	**.00164**	**.37400**	**.00143**
Stddev	.00038	.00658	.00428	.00071	.00082	.00004	.02888	.00026
%RSD	4.2583	3.4477	55.791	.82106	8.4373	2.4498	7.7231	18.189
#1	.00920	.19742	.01158	.08642	.00935	.00167	.34688	.00165
#2	.00925	.18427	.00832	.08637	.00922	.00160	.40437	.00149
#3	.00856	.19065	.00310	.08517	.01071	.00167	.37075	.00114
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00437**	**.00454**	**.00423**	**.08499**	**.95099**	**.08309**	**.42598**	**.00933**
Stddev	.00026	.00120	.00118	.02252	.18201	.00250	.04612	.00260
%RSD	5.9228	26.460	27.815	26.494	19.139	3.0129	10.828	27.902
#1	.00437	.00540	.00558	.10931	.94621	.08030	.47657	.00727
#2	.00411	.00505	.00373	.06486	.77142	.08381	.41507	.00846
#3	.00463	.00317	.00339	.08082	1.1353	.08515	.38628	.01225
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00906**	**.50543**	**.01575**	**.83822**	**.01206**	**.08796**	**.02110**	**.86437**
Stddev	.00045	.01423	.00111	.00843	.00061	.00300	.00981	.00437
%RSD	4.9498	2.8156	7.0712	1.0058	5.0700	3.4062	46.487	.50596
#1	.00855	.48956	.01609	.83135	.01163	.08885	.02568	.86154
#2	.00934	.51706	.01664	.84763	.01276	.09042	.00984	.86217
#3	.00930	.50965	.01450	.83568	.01180	.08462	.02778	.86941
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: LLCCV Acquired: 6/23/2016 15:12:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.42833**	**.04265**	**.02782**	**.15622**	**.00760**	**.01768**	**19.398**
Stddev	.00202	.00078	.00320	.00149	.00082	.00018	.364
%RSD	.47120	1.8184	11.486	.95612	10.759	1.0376	1.8748
#1	.43055	.04189	.02625	.15477	.00737	.01787	19.046
#2	.42783	.04344	.03150	.15612	.00850	.01767	19.773
#3	.42661	.04262	.02572	.15776	.00692	.01750	19.376
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6741.4**	**42149.**	**2154.7**
Stddev	40.7	448.	3.9
%RSD	.60444	1.0621	.18286
#1	6739.4	41643.	2153.9
#2	6701.8	42314.	2159.0
#3	6783.2	42491.	2151.2

Approved: June 24, 2016

Sample Name: L1606072401 Acquired: 6/23/2016 15:16:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00277	.01879	.00029	.96014	2.4170	.00001	173.53
Stddev	.00234	.00416	.00093	.00391	.0133	.00011	.98
%RSD	84.467	22.118	321.95	.40684	.55081	1049.3	.56425
#1	.00226	.02192	.00135	.95713	2.4039	.00010	172.57
#2	.00533	.01408	-.00038	.95873	2.4305	.00004	174.53
#3	.00073	.02039	-.00011	.96455	2.4166	-.00011	173.50
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	.00105	.00268	-.00010	.88444	14.199	.57377
Stddev	.00030	.00019	.00115	.00121	.03836	.163	.00568
%RSD	60.201	18.370	42.910	1155.9	4.3367	1.1492	.98942
#1	.00039	.00127	.00146	.00113	.88346	14.011	.56748
#2	.00027	.00096	.00284	-.00016	.92327	14.311	.57853
#3	.00084	.00091	.00374	-.00128	.84658	14.273	.57529
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	16.994	.07845	.00033	F 412.25	-.00165	.00224	.00196
Stddev	.190	.00271	.00048	2.14	.00067	.00447	.00418
%RSD	1.1178	3.4582	144.78	.51818	40.333	199.28	213.26
#1	16.808	.07648	-.00014	409.89	-.00181	.00740	.00030
#2	16.986	.08154	.00032	414.05	-.00223	-.00047	.00672
#3	17.188	.07731	.00081	412.81	-.00092	-.00020	-.00113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 24, 2016

Sample Name: L1606072401 Acquired: 6/23/2016 15:16:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00083	.00344	.10306	.00025	F 33.286	-.01719	.00197
Stddev	.00660	.01147	.00129	.00070	.662	.00384	.00073
%RSD	796.07	333.14	1.2495	284.34	1.9888	22.354	37.258
#1	.00514	-.00975	.10450	-.00055	33.434	-.01505	.00161
#2	-.00677	.01101	.10202	.00075	32.563	-.02162	.00281
#3	.00412	.00907	.10266	.00054	33.862	-.01489	.00148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00083	.00418	F -.23243
Stddev	.00050	.00012	.29004
%RSD	59.630	2.9539	124.79
#1	-.00137	.00405	-.37729
#2	-.00039	.00420	.10151
#3	-.00074	.00429	-.42150
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6723.1	41417.	2153.6
Stddev	21.6	497.	27.2
%RSD	.32089	1.1995	1.2626
#1	6746.3	40877.	2166.1
#2	6703.6	41854.	2172.4
#3	6719.4	41522.	2122.5

Approved: June 24, 2016

Sample Name: L1606076201 Acquired: 6/23/2016 15:20:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.02536	-.00249	.01844	.00535	.00003	13.112	.00023
Stddev	.00127	.01968	.00199	.00200	.00076	.00010	.093	.00036
%RSD	1210.9	77.601	79.841	10.824	14.251	352.87	.70940	158.39
#1	-.00133	.03591	-.00453	.02010	.00610	.00006	13.202	.00020
#2	.00108	.00266	-.00239	.01899	.00537	.00011	13.118	.00059
#3	.00057	.03753	-.00056	.01623	.00458	-.00009	13.016	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.00194	-.00001	.01450	1.0331	.00146	1.8703	.00269
Stddev	.00018	.00175	.00196	.01085	.0976	.00077	.1297	.00116
%RSD	179.15	90.064	25521.	74.817	9.4452	53.000	6.9359	42.985
#1	-.00008	.00349	.00137	.01074	1.1059	.00167	1.9776	.00278
#2	.00007	.00229	-.00225	.00603	.92218	.00060	1.7261	.00380
#3	-.00029	.00005	.00086	.02673	1.0711	.00210	1.9073	.00149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00119	1.9239	-.00066	-.00546	.00006	-.00042	.00466	2.2221
Stddev	.00030	.0280	.00136	.00908	.00267	.00575	.00011	.0019
%RSD	25.010	1.4533	206.81	166.34	4184.1	1357.9	2.3851	.08626
#1	.00148	1.9518	-.00109	.00488	-.00200	-.00344	.00454	2.2236
#2	.00121	1.8959	-.00174	-.01213	.00308	-.00405	.00474	2.2227
#3	.00089	1.9239	.00086	-.00913	-.00089	.00621	.00472	2.2199
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606076201 Acquired: 6/23/2016 15:20:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00040**	**.04721**	**.00638**	**.00000**	**-.00085**	**.00130**	**.50415**
Stddev	.00136	.00033	.00533	.00127	.00101	.00013	.13507
%RSD	341.17	.70394	83.621	32921.	119.58	10.205	26.791
#1	.00187	.04759	.00544	-.00091	.00031	.00144	.65988
#2	.00015	.04708	.00158	-.00053	-.00127	.00129	.41889
#3	-.00082	.04697	.01212	.00145	-.00158	.00117	.43368
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6705.8**	**41937.**	**2141.7**
Stddev	7.3	291.	9.9
%RSD	.10956	.69290	.46000
#1	6707.2	41673.	2137.5
#2	6697.9	41888.	2134.7
#3	6712.4	42248.	2153.0

Approved: June 24, 2016

Sample Name: L1606077918 Acquired: 6/23/2016 15:24:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00167	.01863	-.00253	.02217	.00148	.00003	.01869	.00029
Stddev	.00214	.00655	.00149	.00110	.00241	.00005	.08144	.00024
%RSD	128.32	35.170	59.064	4.9626	162.98	181.98	435.85	82.700
#1	.00243	.01329	-.00293	.02326	-.00126	.00009	.02943	.00045
#2	-.00075	.02594	-.00088	.02220	.00327	-.00002	.09422	.00001
#3	.00332	.01665	-.00378	.02106	.00243	.00002	-.06760	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	.00192	.00078	-.01653	-.02200	-.00394	-.01131	-.00011
Stddev	.00029	.00013	.00054	.01402	.10641	.00102	.07303	.00282
%RSD	164.29	6.8552	69.534	84.801	483.77	25.969	645.89	2502.9
#1	-.00050	.00178	.00029	-.01912	.09171	-.00295	.07302	-.00190
#2	-.00010	.00204	.00136	-.00140	-.03853	-.00500	-.05410	.00314
#3	.00007	.00193	.00070	-.02907	-.11917	-.00387	-.05284	-.00157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	2.0695	-.00008	-.00529	.00154	-.00212	.00188	.14025
Stddev	.00033	.0606	.00084	.00055	.00138	.00317	.00994	.00166
%RSD	44.530	2.9288	1113.0	10.468	89.385	149.30	528.79	1.1848
#1	.00102	2.1357	.00074	-.00465	.00046	-.00572	.00864	.14193
#2	.00079	2.0167	-.00094	-.00563	.00107	.00028	.00653	.14022
#3	.00038	2.0563	-.00003	-.00558	.00309	-.00094	-.00953	.13861
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606077918 Acquired: 6/23/2016 15:24:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.00126	.00815	-.00353	-.00074	.00157	.11270
Stddev	.00035	.00043	.01205	.00082	.00125	.00009	.15849
%RSD	67.954	34.228	147.85	23.195	169.72	6.0212	140.63
#1	.00087	.00176	-.00539	-.00440	.00069	.00167	-.04429
#2	.00053	.00100	.01768	-.00277	-.00127	.00150	.10974
#3	.00016	.00103	.01216	-.00342	-.00163	.00153	.27265
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6730.2	41984.	2122.6
Stddev	9.9	392.	7.1
%RSD	.14640	.93343	.33457
#1	6723.8	41604.	2115.9
#2	6741.6	41961.	2130.1
#3	6725.4	42387.	2121.9

Approved: June 24, 2016

Sample Name: L1606078701 Acquired: 6/23/2016 15:28:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00134**	**.02016**	**-.00184**	**.00404**	**.00137**	**-.00001**	**.12352**
Stddev	.00329	.00145	.00162	.00051	.00066	.00012	.03646
%RSD	244.80	7.1928	87.867	12.618	48.048	1036.7	29.515
#1	-.00242	.01849	-.00198	.00347	.00108	.00002	.12792
#2	.00278	.02084	-.00338	.00444	.00212	.00009	.08506
#3	.00367	.02114	-.00016	.00420	.00091	-.00014	.15758
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00058**	**.00005**	**.00229**	**.00086**	**-.00893**	**.04033**	**.00067**
Stddev	.00021	.00060	.00129	.00091	.05697	.07103	.00112
%RSD	35.316	1231.2	56.527	104.93	637.77	176.11	168.56
#1	.00081	-.00042	.00094	-.00018	-.06783	.07929	-.00038
#2	.00052	.00072	.00242	.00145	-.00485	.08335	.00053
#3	.00042	-.00015	.00351	.00132	.04588	-.04165	.00185
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00079**	**.00355**	**.00016**	**.51805**	**-.00054**	**-.00239**	**-.00291**
Stddev	.04525	.00184	.00024	.02678	.00082	.01066	.00180
%RSD	5714.9	51.848	157.11	5.1696	151.92	446.68	61.810
#1	.02267	.00374	.00029	.54478	.00032	-.00520	-.00089
#2	-.05296	.00529	-.00013	.51816	-.00062	.00940	-.00435
#3	.02792	.00162	.00030	.49122	-.00131	-.01136	-.00349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606078701 Acquired: 6/23/2016 15:28:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00239**	**.00772**	**.13349**	**.00103**	**.00107**	**.00346**	**-.00334**
Stddev	.00234	.00402	.00019	.00058	.00048	.00641	.00040
%RSD	97.989	52.060	.14358	56.048	44.671	185.55	12.008
#1	-.00270	.00313	.13368	.00129	.00156	.00140	-.00288
#2	.00009	.00942	.13350	.00144	.00060	-.00168	-.00355
#3	-.00456	.01060	.13329	.00037	.00105	.01065	-.00360
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00117**	**.00491**	F **-.21371**
Stddev	.00101	.00036	.39855
%RSD	86.018	7.3434	186.50
#1	-.00212	.00530	.20425
#2	-.00129	.00459	-.25586
#3	-.00011	.00483	-.58951
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6740.9**	**42203.**	**2144.6**
Stddev	38.3	203.	23.0
%RSD	.56823	.48091	1.0724
#1	6770.7	42025.	2119.8
#2	6754.4	42161.	2165.3
#3	6697.7	42424.	2148.7

Approved: June 24, 2016

Sample Name: L1606078710 Acquired: 6/23/2016 15:32:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00084**	**.27296**	**-.00343**	**.04542**	**.09618**	**-.00003**	**57.392**
Stddev	.00117	.00475	.00186	.00269	.00132	.00003	.461
%RSD	138.82	1.7388	54.215	5.9151	1.3771	97.809	.80344
#1	-.00034	.27840	-.00365	.04242	.09771	-.00002	57.856
#2	.00087	.26969	-.00518	.04761	.09539	-.00001	57.384
#3	.00200	.27079	-.00147	.04623	.09544	-.00006	56.934
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00064**	**.00033**	**.00402**	**.00290**	**.23383**	**1.0771**	**.00900**
Stddev	.00017	.00013	.00208	.00129	.01456	.0457	.00428
%RSD	26.807	40.705	51.843	44.530	6.2269	4.2470	47.527
#1	.00083	.00031	.00175	.00376	.24955	1.0260	.00837
#2	.00058	.00047	.00585	.00354	.22081	1.1143	.01355
#3	.00051	.00020	.00444	.00142	.23113	1.0909	.00507
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**18.842**	**.01135**	**.00060**	**3.8640**	**-.00095**	**.19470**	**.00196**
Stddev	.177	.00110	.00029	.0359	.00078	.00332	.00221
%RSD	.93834	9.6581	48.710	.92870	82.442	1.7074	113.18
#1	18.724	.01117	.00027	3.8945	-.00012	.19396	.00367
#2	19.045	.01253	.00081	3.8731	-.00105	.19833	.00275
#3	18.757	.01036	.00074	3.8244	-.00167	.19180	-.00054
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606078710 Acquired: 6/23/2016 15:32:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00214**	**.00030**	**9.5395**	**.00090**	**.15048**	**.00322**	**-.00111**
Stddev	.00331	.00448	.0053	.00019	.00007	.00950	.00409
%RSD	154.82	1486.1	.05501	20.991	.04682	294.96	367.19
#1	.00049	-.00485	9.5347	.00098	.15055	-.00075	-.00438
#2	-.00002	.00249	9.5451	.00068	.15047	.01406	-.00244
#3	.00595	.00326	9.5386	.00104	.15041	-.00365	.00348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00310**	**.00611**	F **-.09613**
Stddev	.00083	.00018	.38193
%RSD	26.810	2.9005	397.32
#1	.00381	.00625	.21134
#2	.00329	.00618	-.52366
#3	.00218	.00591	.02394
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6716.0**	**41811.**	**2141.5**
Stddev	20.0	38.	38.3
%RSD	.29820	.09082	1.7907
#1	6697.9	41817.	2120.8
#2	6712.8	41845.	2118.0
#3	6737.5	41770.	2185.8

Approved: June 24, 2016

Sample Name: L1606072402 Acquired: 6/23/2016 15:36:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.02429	.00126	1.0001	2.4553	.00011	175.12
Stddev	.00172	.00751	.00369	.0073	.0182	.00006	1.38
%RSD	1268.7	30.918	292.44	.72550	.74042	57.336	.79024
#1	.00202	.03260	.00295	.99250	2.4346	.00017	173.60
#2	-.00134	.01798	-.00297	1.0008	2.4623	.00013	175.43
#3	-.00027	.02231	.00381	1.0070	2.4689	.00004	176.32
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00053	.00144	.00224	.00109	.88917	14.331	.57927
Stddev	.00026	.00062	.00123	.00028	.02013	.196	.00713
%RSD	50.087	43.164	55.139	26.047	2.2642	1.3673	1.2310
#1	.00027	.00131	.00262	.00136	.90097	14.105	.57116
#2	.00052	.00089	.00323	.00112	.90061	14.456	.58209
#3	.00080	.00212	.00086	.00079	.86592	14.431	.58456
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	17.314	.07801	.00008	F 417.81	-.00090	.00661	.00485
Stddev	.333	.00169	.00032	3.43	.00062	.00486	.00222
%RSD	1.9225	2.1614	387.14	.82124	68.692	73.506	45.764
#1	16.937	.07635	.00046	413.93	-.00126	.00102	.00356
#2	17.437	.07972	-.00012	419.03	-.00019	.00986	.00358
#3	17.567	.07797	-.00009	420.46	-.00127	.00895	.00741
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 24, 2016

Sample Name: L1606072402 Acquired: 6/23/2016 15:36:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 100 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00480**	**-.00067**	**.10759**	**-.00027**	F **33.118**	**-.02215**	**.00020**
Stddev	.00242	.00358	.00424	.00098	.241	.01018	.00271
%RSD	50.361	531.89	3.9427	362.00	.72774	45.960	1351.6
#1	-.00308	.00251	.10307	-.00000	33.152	-.01317	.00188
#2	-.00757	-.00455	.11148	-.00135	33.340	-.02006	-.00293
#3	-.00376	.00003	.10821	.00055	32.862	-.03321	.00165
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					9.0000		
Low Limit					-.01000		

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00126**	**.00524**	F **-.35646**
Stddev	.00018	.00006	.36766
%RSD	13.956	1.1266	103.14
#1	-.00124	.00517	-.66560
#2	-.00110	.00528	.05011
#3	-.00145	.00527	-.45387
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6700.2**	**41500.**	**2177.0**
Stddev	45.1	267.	16.8
%RSD	.67280	.64386	.77022
#1	6649.2	41642.	2175.9
#2	6734.7	41192.	2160.8
#3	6716.7	41667.	2194.2

Approved: June 24, 2016

Sample Name: L1606078718 Acquired: 6/23/2016 15:40:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00182	1.3663	-.00099	.08602	.17005	.00003	59.339	.00041
Stddev	.00205	.0062	.00401	.00049	.00175	.00016	.521	.00016
%RSD	112.70	.45392	402.94	.56785	1.0290	592.47	.87774	39.098
#1	.00101	1.3731	.00134	.08564	.17098	.00020	59.613	.00026
#2	.00030	1.3649	.00129	.08586	.17113	-.00011	59.666	.00039
#3	.00416	1.3610	-.00562	.08657	.16803	-.00000	58.739	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00139	.00460	.00180	1.4597	1.5559	.01180	24.176	.12500
Stddev	.00034	.00106	.00032	.0390	.1298	.00641	.117	.00150
%RSD	24.411	23.098	17.578	2.6741	8.3397	54.300	.48391	1.1984
#1	.00116	.00569	.00160	1.4736	1.5769	.00880	24.113	.12424
#2	.00123	.00452	.00216	1.4899	1.4170	.01916	24.311	.12672
#3	.00178	.00357	.00163	1.4156	1.6739	.00745	24.105	.12403
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00247	10.893	.00215	.17889	.00449	-.00364	.00139	10.448
Stddev	.00018	.216	.00011	.00508	.00265	.00289	.00135	.018
%RSD	7.2484	1.9792	4.9404	2.8394	59.034	79.479	97.200	.17603
#1	.00258	11.133	.00215	.17389	.00534	-.00034	.00294	10.467
#2	.00258	10.830	.00205	.17875	.00152	-.00482	.00047	10.447
#3	.00227	10.716	.00226	.18404	.00661	-.00574	.00076	10.430
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606078718 Acquired: 6/23/2016 15:40:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00169**	**.24340**	**.01315**	**-.00297**	**.00401**	**.00904**	**.48814**
Stddev	.00049	.00237	.01040	.00495	.00132	.00024	.22160
%RSD	29.225	.97535	79.136	166.53	32.895	2.7044	45.397
#1	.00129	.24607	.02200	-.00597	.00252	.00883	.25296
#2	.00154	.24264	.00169	.00274	.00448	.00931	.69305
#3	.00224	.24151	.01575	-.00569	.00503	.00898	.51840
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6702.6**	**41482.**	**2156.8**
Stddev	7.1	311.	17.9
%RSD	.10622	.74978	.83036
#1	6710.2	41132.	2152.2
#2	6701.7	41728.	2141.6
#3	6696.0	41585.	2176.6

Approved: June 24, 2016

Sample Name: L1606078719 Acquired: 6/23/2016 15:44:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00153**	**.01414**	**-.00427**	**.00486**	**.00226**	**.00005**	**.15369**
Stddev	.00114	.00804	.00087	.00166	.00023	.00001	.02440
%RSD	74.831	56.853	20.359	34.032	10.239	25.333	15.878
#1	.00057	.00685	-.00525	.00587	.00249	.00006	.17540
#2	.00122	.02277	-.00358	.00577	.00203	.00004	.12728
#3	.00280	.01281	-.00399	.00295	.00226	.00006	.15840
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00024**	**.00009**	**.00104**	**.00368**	F **-.03550**	**.01454**	**-.00410**
Stddev	.00019	.00020	.00141	.00160	.02523	.01783	.00666
%RSD	79.976	213.68	135.45	43.472	71.078	122.60	162.48
#1	.00014	-.00002	.00040	.00186	-.05512	-.00480	-.00325
#2	.00046	-.00002	.00006	.00430	-.00703	.01812	.00210
#3	.00012	.00033	.00266	.00487	-.04436	.03031	-.01114
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01439**	**.00113**	**.00041**	**.38527**	**-.00105**	**-.00827**	**.00290**
Stddev	.04149	.00426	.00020	.02060	.00044	.00472	.00131
%RSD	288.35	378.69	48.693	5.3456	41.861	57.039	45.127
#1	-.02539	-.00342	.00053	.37602	-.00131	-.00665	.00229
#2	.05740	.00504	.00053	.40887	-.00054	-.01358	.00201
#3	.01115	.00176	.00018	.37092	-.00129	-.00457	.00440
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: L1606078719 Acquired: 6/23/2016 15:44:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00257	.00690	.07841	.00066	.00220	.00871	-.00196
Stddev	.00414	.01188	.00070	.00073	.00015	.00294	.00454
%RSD	161.26	172.25	.88662	111.70	6.9362	33.794	231.14
#1	-.00606	-.00682	.07920	.00142	.00205	.01122	-.00256
#2	.00201	.01408	.07788	-.00004	.00218	.00943	.00284
#3	-.00366	.01344	.07815	.00059	.00235	.00547	-.00617
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00067	.00557	.08340
Stddev	.00077	.00005	.21806
%RSD	115.62	.88962	261.46
#1	.00022	.00562	.20466
#2	-.00113	.00553	-.16833
#3	-.00110	.00554	.21388
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6728.6	42173.	2145.0
Stddev	41.6	57.	33.9
%RSD	.61795	.13424	1.5810
#1	6776.6	42109.	2106.1
#2	6704.9	42215.	2160.0
#3	6704.4	42195.	2168.8

Approved: June 24, 2016

Sample Name: L1606079802 Acquired: 6/23/2016 15:48:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00144	.03243	-.00074	.01231	.00010	.00002	1.1630	.00027
Stddev	.00109	.01416	.00372	.00189	.00037	.00003	.0162	.00019
%RSD	75.901	43.667	501.02	15.351	392.72	145.15	1.3948	69.324
#1	.00136	.04726	-.00472	.01055	-.00032	.00001	1.1621	.00007
#2	.00258	.03100	.00265	.01431	.00021	-.00000	1.1473	.00030
#3	.00039	.01904	-.00016	.01208	.00040	.00005	1.1797	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.00286	.00149	-.00261	17.582	-.00293	.47862	.00440
Stddev	.00027	.00101	.00088	.00368	.094	.00238	.08717	.00440
%RSD	141.67	35.178	58.815	140.96	.53503	81.061	18.212	99.937
#1	.00006	.00398	.00049	.00163	17.679	-.00560	.55068	.00147
#2	.00001	.00203	.00190	-.00493	17.575	-.00104	.50345	.00946
#3	.00050	.00258	.00210	-.00453	17.491	-.00215	.38174	.00227
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00219	36.621	.00066	2.4466	.00301	.00041	.00081	.25089
Stddev	.00044	.385	.00146	.0064	.00179	.00359	.00845	.00206
%RSD	20.233	1.0507	219.59	.26158	59.557	866.11	1046.1	.82160
#1	.00171	37.035	.00190	2.4473	.00481	.00455	.00656	.25256
#2	.00226	36.553	.00104	2.4526	.00123	-.00173	.00477	.25153
#3	.00259	36.275	-.00094	2.4399	.00298	-.00158	-.00890	.24859
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606079802 Acquired: 6/23/2016 15:48:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00167	.00120	.00799	-.00172	-.00016	.01069	.29290
Stddev	.00023	.00009	.00245	.00171	.00081	.00016	.28737
%RSD	13.614	7.7584	30.718	99.218	509.00	1.4511	98.111
#1	.00185	.00111	.00516	-.00311	.00029	.01070	.29578
#2	.00142	.00129	.00922	-.00223	-.00109	.01053	.00410
#3	.00176	.00121	.00958	.00018	.00032	.01084	.57883
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6875.8	42924.	2217.4
Stddev	18.1	343.	31.5
%RSD	.26359	.79954	1.4211
#1	6874.1	42569.	2185.0
#2	6894.7	43254.	2248.0
#3	6858.5	42948.	2219.2

Approved: June 24, 2016

Sample Name: L1606079804 Acquired: 6/23/2016 15:51:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00292	.06016	-.00090	.00843	.00749	-.00019	45.159	.00037
Stddev	.00241	.00107	.00203	.00073	.00119	.00004	.339	.00018
%RSD	82.468	1.7811	226.97	8.6615	15.818	18.253	.75060	47.525
#1	.00166	.06132	-.00161	.00799	.00886	-.00021	44.779	.00055
#2	.00569	.05995	-.00248	.00928	.00687	-.00015	45.430	.00020
#3	.00140	.05921	.00140	.00803	.00675	-.00022	45.268	.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00296	.00937	.17564	8.4244	.00238	2.2221	.09641
Stddev	.00021	.00105	.00039	.02162	.0287	.00549	.0421	.00186
%RSD	241.35	35.503	4.1089	12.307	.34054	230.82	1.8934	1.9315
#1	.00033	.00354	.00975	.19448	8.4123	.00370	2.2235	.09437
#2	-.00005	.00175	.00939	.18040	8.4572	-.00365	2.1794	.09686
#3	-.00002	.00359	.00898	.15204	8.4038	.00709	2.2635	.09802
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00217	17.774	.00302	26.483	.00590	-.00008	.01034	.16124
Stddev	.00050	.097	.00068	.043	.00269	.00227	.00953	.00054
%RSD	22.837	.54315	22.502	.16325	45.484	2730.6	92.186	.33287
#1	.00202	17.666	.00316	26.440	.00849	.00019	.00360	.16097
#2	.00177	17.854	.00228	26.526	.00313	-.00248	.02125	.16186
#3	.00272	17.800	.00361	26.483	.00609	.00204	.00617	.16089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: L1606079804 Acquired: 6/23/2016 15:51:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 2 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	.03109	.00099	.00459	.00006	.08912	.51232
Stddev	.00066	.00080	.00670	.00258	.00048	.00020	.12801
%RSD	85.536	2.5649	674.85	56.182	788.63	.22881	24.986
#1	.00069	.03017	-.00154	.00507	-.00038	.08911	.57216
#2	.00147	.03152	-.00407	.00180	.00057	.08892	.36535
#3	.00016	.03157	.00859	.00690	-.00001	.08933	.59945
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7950.5	48692.	2535.1
Stddev	32.4	365.	7.3
%RSD	.40779	.75001	.28802
#1	7923.5	48270.	2535.8
#2	7986.5	48901.	2542.1
#3	7941.6	48905.	2527.5

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 15:55:53 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.42646	10.279	.41356	.51175	1.0306	.05076	10.205
Stddev	.00204	.051	.00199	.00426	.0086	.00025	.126
%RSD	.47932	.49909	.48079	.83170	.83457	.49984	1.2349
#1	.42434	10.238	.41525	.51584	1.0212	.05048	10.064
#2	.42664	10.336	.41407	.51205	1.0326	.05081	10.244
#3	.42841	10.262	.41137	.50735	1.0380	.05098	10.306
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05186	.20878	.51384	.52434	4.0815	51.382	1.0440
Stddev	.00027	.00087	.00306	.00302	.0649	.432	.0097
%RSD	.52657	.41503	.59534	.57578	1.5889	.84015	.92985
#1	.05202	.20802	.51042	.52115	4.0401	50.884	1.0353
#2	.05201	.20972	.51630	.52716	4.0482	51.628	1.0422
#3	.05154	.20860	.51480	.52470	4.1563	51.635	1.0545
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.201	.51297	1.0355	51.634	.52512	10.356	.52060
Stddev	.133	.00911	.0052	.288	.00329	.031	.00278
%RSD	1.3081	1.7758	.49793	.55755	.62569	.29937	.53373
#1	10.058	.50248	1.0351	51.315	.52328	10.327	.52371
#2	10.223	.51766	1.0408	51.710	.52891	10.389	.51975
#3	10.322	.51879	1.0306	51.876	.52316	10.353	.51835
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 15:55:53 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2590**	**.39898**	**5.2574**	**1.0340**	**1.0272**	**1.0156**	**.52194**
Stddev	.0159	.00202	.0311	.0050	.0078	.0129	.00221
%RSD	1.2636	.50630	.59143	.48329	.76072	1.2706	.42268
#1	1.2594	.39666	5.2283	1.0307	1.0187	1.0008	.51942
#2	1.2746	.40033	5.2902	1.0397	1.0290	1.0249	.52354
#3	1.2428	.39996	5.2537	1.0315	1.0340	1.0209	.52286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0272**	**1.0395**	F **.76977**
Stddev	.0059	.0029	.39400
%RSD	.57455	.27998	51.184
#1	1.0219	1.0379	.54911
#2	1.0336	1.0428	.53555
#3	1.0261	1.0377	1.2247
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6768.6**	**42010.**	**2153.6**
Stddev	37.5	259.	15.3
%RSD	.55402	.61595	.71163
#1	6809.7	41923.	2137.5
#2	6736.2	41806.	2155.3
#3	6760.0	42301.	2168.0

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 15:59:20 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00114**	**.01588**	**.00002**	**.00629**	**.00234**	**.00000**	**.01938**
Stddev	.00137	.00887	.00130	.00592	.00077	.00004	.02910
%RSD	120.04	55.880	5265.1	94.076	32.785	916.73	150.13
#1	-.00044	.02525	-.00001	.00358	.00243	-.00002	-.00373
#2	-.00027	.00761	-.00126	.01308	.00307	.00005	.00982
#3	-.00271	.01478	.00134	.00221	.00154	-.00002	.05206
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00039**	**.00009**	**.00109**	**.00045**	**-.01096**	**.05826**	**-.00107**
Stddev	.00009	.00043	.00020	.00134	.05378	.12671	.00316
%RSD	22.643	485.10	18.341	295.38	490.89	217.49	293.68
#1	.00048	-.00040	.00113	-.00109	-.03258	-.08772	-.00007
#2	.00037	.00043	.00126	.00134	.05027	.12270	.00146
#3	.00031	.00024	.00087	.00110	-.05055	.13981	-.00461
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.01399**	**-.00049**	**.00462**	**.09808**	**.00018**	**.00588**	**.00220**
Stddev	.01908	.00229	.00022	.02974	.00154	.00621	.00597
%RSD	136.32	468.16	4.8140	30.323	833.68	105.64	271.60
#1	.00803	-.00312	.00472	.13145	-.00103	.00102	.00713
#2	-.02479	.00056	.00436	.08842	.00192	.00373	-.00444
#3	-.02522	.00109	.00477	.07438	-.00034	.01288	.00391
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 15:59:20 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00449**	**.00077**	**.01037**	**.00119**	**.00117**	**.00814**	**-.00292**
Stddev	.00414	.00612	.00397	.00019	.00046	.00274	.00050
%RSD	92.254	796.98	38.225	16.402	38.885	33.649	17.217
#1	.00912	.00523	.01435	.00110	.00170	.00638	-.00346
#2	.00112	.00328	.01035	.00105	.00095	.01130	-.00286
#3	.00323	-.00621	.00642	.00141	.00087	.00675	-.00246
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00013**	**.00000**	F **-.15928**
Stddev	.00082	.00025	.25243
%RSD	624.25	8432.5	158.48
#1	-.00065	.00025	-.37693
#2	-.00056	.00001	-.21836
#3	.00082	-.00025	.11745
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6764.3**	**42214.**	**2158.6**
Stddev	9.8	206.	11.6
%RSD	.14426	.48768	.53511
#1	6758.9	42034.	2168.0
#2	6758.3	42168.	2162.1
#3	6775.5	42439.	2145.7

Approved: June 24, 2016

Sample Name: ICSA Acquired: 6/23/2016 16:03:19 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00208**	**295.58**	**-.00325**	**.00908**	**.00322**	**.00010**	**273.70**
Stddev	.00236	.85	.00199	.00346	.00101	.00006	.86
%RSD	113.23	.28674	61.144	38.103	31.523	65.751	.31303
#1	.00087	294.66	-.00312	.00644	.00421	.00014	272.77
#2	.00058	296.32	-.00531	.01300	.00326	.00002	273.88
#3	.00480	295.77	-.00133	.00781	.00219	.00012	274.45
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F **.00108**	**-.00082**	**.00022**	**.00233**	**109.50**	**.05250**	**.01009**
Stddev	.00041	.00021	.00182	.00181	.40	.12252	.00125
%RSD	38.111	25.991	813.25	77.633	.36960	233.38	12.428
#1	.00063	-.00102	.00055	.00411	109.23	.16966	.01044
#2	.00119	-.00085	.00185	.00240	109.30	.06259	.01113
#3	.00143	-.00059	-.00174	.00049	109.96	-.07475	.00869
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.00080						
Low Limit	-.00080						

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**275.93**	**-.00030**	**.00008**	**.12765**	**-.00145**	**.04923**	**-.00110**
Stddev	1.32	.00231	.00021	.02109	.00124	.00453	.00380
%RSD	.47822	758.84	259.08	16.521	85.657	9.2005	344.88
#1	275.22	-.00113	-.00014	.12709	-.00019	.05367	-.00530
#2	275.12	-.00209	.00012	.10685	-.00149	.04941	.00209
#3	277.45	.00230	.00027	.14901	-.00267	.04462	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: ICSA Acquired: 6/23/2016 16:03:19 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00743**	**.00521**	**.02728**	**.00048**	**-.00001**	**-.00737**	**-.00248**
Stddev	.00821	.01356	.00232	.00057	.00068	.00415	.00352
%RSD	110.59	260.10	8.4896	119.75	7500.7	56.273	141.97
#1	-.01603	-.01035	.02586	-.00018	.00063	-.00272	-.00224
#2	-.00656	.01449	.02603	.00085	-.00072	-.01069	-.00611
#3	.00032	.01150	.02995	.00076	.00006	-.00870	.00092
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00690**	**-.00237**	F **-.97047**
Stddev	.00125	.00006	.13443
%RSD	18.064	2.5689	13.852
#1	-.00564	-.00236	-.99205
#2	-.00813	-.00244	-.82655
#3	-.00692	-.00232	-1.0928
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02000
Low Limit			-.02000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6096.7**	**36985.**	**2032.0**
Stddev	12.3	450.	10.8
%RSD	.20106	1.2158	.52965
#1	6103.4	37299.	2022.3
#2	6104.2	36470.	2043.6
#3	6082.6	37186.	2030.0

Approved: June 24, 2016

Sample Name: ICSAB Acquired: 6/23/2016 16:07:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F .61513	295.58	.27616	.01273	.28137	.27182	275.51
Stddev	.00198	.38	.00201	.00218	.00168	.00055	1.53
%RSD	.32189	.12856	.72891	17.114	.59730	.20172	.55467
#1	.61497	295.92	.27748	.01189	.28331	.27245	275.46
#2	.61718	295.65	.27385	.01520	.28043	.27144	277.05
#3	.61323	295.17	.27716	.01109	.28038	.27158	274.00
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.60000						
Low Limit	.40000						

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.55626	.27017	.28219	.28373	108.00	5.8031	.00521
Stddev	.00061	.00065	.00106	.00040	.65	.1899	.00170
%RSD	.11032	.23929	.37563	.14179	.60589	3.2730	32.651
#1	.55696	.26965	.28228	.28330	107.97	6.0146	.00625
#2	.55595	.27089	.28320	.28380	108.66	5.6472	.00613
#3	.55585	.26995	.28108	.28409	107.35	5.7474	.00325
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	271.98	.27321	-.00023	5.9645	.54441	.04388	.55597
Stddev	2.18	.00652	.00054	.0491	.00210	.01228	.00315
%RSD	.80074	2.3850	241.03	.82254	.38502	27.985	.56724
#1	272.14	.26889	-.00078	5.9321	.54658	.05666	.55621
#2	274.08	.28070	-.00020	6.0209	.54240	.04283	.55270
#3	269.73	.27002	.00030	5.9405	.54426	.03216	.55899
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 24, 2016

Sample Name: ICSAB Acquired: 6/23/2016 16:07:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.57108**	**.28123**	**.01867**	**.00174**	**.00066**	**-.00797**	**.51622**
Stddev	.00496	.00708	.00561	.00106	.00040	.00629	.00401
%RSD	.86857	2.5171	30.040	61.006	60.094	78.897	.77665
#1	.57104	.28924	.01660	.00101	.00062	-.00170	.51236
#2	.57607	.27580	.01440	.00296	.00029	-.00794	.51594
#3	.56615	.27865	.02503	.00126	.00108	-.01427	.52036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.27940**	**.53906**	F **-.81686**
Stddev	.00128	.00109	.34524
%RSD	.45637	.20272	42.264
#1	.27986	.54025	-1.1980
#2	.28038	.53883	-.52512
#3	.27796	.53810	-.72746
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02500
Low Limit			-.02500

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6104.6**	**37638.**	**2051.0**
Stddev	15.8	242.	6.9
%RSD	.25938	.64230	.33869
#1	6108.4	37412.	2052.5
#2	6087.2	37610.	2043.5
#3	6118.1	37893.	2057.1

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 16:10:57 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.43129**	**10.465**	**.41985**	**.51183**	**1.0374**	**.05092**	**10.407**
Stddev	.00445	.028	.00287	.00388	.0073	.00042	.026
%RSD	1.0329	.26646	.68377	.75830	.70356	.82022	.24998
#1	.42682	10.482	.41977	.51138	1.0308	.05130	10.385
#2	.43573	10.433	.42276	.50819	1.0362	.05047	10.436
#3	.43133	10.481	.41702	.51591	1.0453	.05100	10.400
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05246**	**.21061**	**.51727**	**.52836**	**4.2555**	**51.648**	**1.0430**
Stddev	.00029	.00045	.00402	.00070	.0398	.269	.0074
%RSD	.55057	.21557	.77762	.13161	.93496	.52018	.70576
#1	.05215	.21014	.51884	.52835	4.2096	51.387	1.0369
#2	.05272	.21105	.51270	.52767	4.2768	51.634	1.0410
#3	.05250	.21063	.52027	.52906	4.2800	51.924	1.0512
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.577**	**.51661**	**1.0426**	**52.094**	**.52783**	**10.433**	**.52665**
Stddev	.150	.00290	.0022	.352	.00290	.019	.00347
%RSD	1.4156	.56079	.21295	.67529	.54945	.18081	.65799
#1	10.619	.51942	1.0445	51.788	.52449	10.416	.52747
#2	10.411	.51363	1.0430	52.016	.52940	10.454	.52285
#3	10.702	.51679	1.0402	52.478	.52961	10.429	.52963
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 24, 2016

Sample Name: CCV Acquired: 6/23/2016 16:10:57 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2640**	**.41613**	**5.2942**	**1.0415**	**1.0304**	**1.0283**	**.52107**
Stddev	.0044	.01334	.0124	.0017	.0086	.0107	.00377
%RSD	.35114	3.2062	.23333	.16484	.83471	1.0423	.72377
#1	1.2686	.40846	5.2802	1.0399	1.0214	1.0160	.51721
#2	1.2597	.43154	5.2989	1.0413	1.0313	1.0359	.52475
#3	1.2639	.40840	5.3034	1.0433	1.0385	1.0329	.52124
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0304**	**1.0488**	F **.29466**
Stddev	.0079	.0015	.06908
%RSD	.76862	.14614	23.443
#1	1.0334	1.0473	.27743
#2	1.0214	1.0504	.37072
#3	1.0364	1.0487	.23582
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6660.8**	**41217.**	**2108.1**
Stddev	24.6	274.	21.9
%RSD	.36920	.66571	1.0385
#1	6682.2	40900.	2084.4
#2	6666.3	41370.	2127.6
#3	6633.9	41380.	2112.3

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 16:14:35 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00225**	**.04402**	**.00120**	**.00288**	**.00212**	**.00005**	**.04105**
Stddev	.00247	.00546	.00401	.00265	.00105	.00005	.01088
%RSD	109.69	12.401	335.85	91.781	49.695	106.37	26.511
#1	.00264	.03779	-.00184	.00082	.00333	.00011	.04148
#2	-.00039	.04798	.00575	.00587	.00163	.00003	.02996
#3	.00452	.04628	-.00032	.00196	.00140	.00001	.05171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00025**	**-.00042**	**.00226**	**-.00066**	**.00784**	**.06373**	**-.00051**
Stddev	.00005	.00021	.00058	.00060	.02162	.10751	.00583
%RSD	20.013	50.707	25.816	91.619	275.57	168.69	1147.8
#1	.00030	-.00043	.00166	-.00039	.01889	.18696	.00620
#2	.00022	-.00062	.00283	-.00023	-.01706	-.01092	-.00339
#3	.00021	-.00020	.00228	-.00134	.02170	.01516	-.00434
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04546**	**.00321**	**.00476**	**.11079**	**-.00088**	F **.01576**	**.00302**
Stddev	.04418	.00204	.00076	.03712	.00083	.00331	.00267
%RSD	97.174	63.563	15.884	33.504	94.324	21.016	88.554
#1	-.00366	.00528	.00394	.15162	-.00140	.01748	.00600
#2	.08192	.00317	.00491	.07909	-.00132	.01194	.00083
#3	.05813	.00119	.00544	.10165	.00008	.01785	.00223
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						.01000	
Low Limit						-.01000	

Approved: June 24, 2016

Sample Name: CCB Acquired: 6/23/2016 16:14:35 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00279	-.00590	.01388	.00065	.00123	.00606	-.00259
Stddev	.00212	.00283	.00309	.00091	.00070	.00181	.00112
%RSD	76.170	48.036	22.277	139.45	57.067	29.854	43.106
#1	.00170	-.00623	.01064	.00170	.00200	.00788	-.00300
#2	.00143	-.00291	.01422	.00003	.00104	.00602	-.00344
#3	.00524	-.00855	.01680	.00024	.00064	.00427	-.00133
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00022	.00017	F .06648
Stddev	.00100	.00012	.34706
%RSD	463.52	73.720	522.02
#1	-.00068	.00013	-.10679
#2	.00003	.00007	-.15982
#3	.00130	.00030	.46606
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6703.4	41700.	2173.4
Stddev	27.2	93.	18.4
%RSD	.40511	.22371	.84726
#1	6715.0	41593.	2190.3
#2	6672.4	41748.	2176.3
#3	6722.9	41760.	2153.8

Approved: June 24, 2016

Sample Name: LLCCV Acquired: 6/23/2016 16:20:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01226**	**.19306**	**.00822**	**.08713**	**.00934**	**.00170**	**.37434**	**.00095**
Stddev	.00226	.00994	.00221	.00050	.00037	.00009	.04623	.00012
%RSD	18.429	5.1483	26.863	.57673	4.0055	5.3752	12.349	12.607
#1	.01082	.20416	.01018	.08727	.00945	.00181	.33947	.00090
#2	.01110	.18498	.00583	.08754	.00964	.00166	.35679	.00108
#3	.01487	.19005	.00866	.08657	.00892	.00164	.42678	.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00443**	**.00621**	**.00343**	**.09684**	**.99841**	**.08574**	**.39422**	**.00845**
Stddev	.00015	.00101	.00090	.02371	.01980	.00431	.04579	.00352
%RSD	3.4357	16.173	26.179	24.486	1.9832	5.0254	11.615	41.733
#1	.00426	.00573	.00262	.11113	1.0142	.08076	.38626	.00758
#2	.00456	.00737	.00329	.06947	.97621	.08821	.44347	.01232
#3	.00447	.00555	.00440	.10992	1.0048	.08824	.35294	.00543
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00955**	**.49049**	**.01642**	**.85294**	**.00895**	**.08691**	**.01959**	**.86370**
Stddev	.00058	.01009	.00122	.01011	.00086	.00285	.00820	.00122
%RSD	6.1041	2.0577	7.4378	1.1851	9.5578	3.2817	41.869	.14090
#1	.01021	.48064	.01558	.85568	.00909	.08424	.02576	.86506
#2	.00910	.50081	.01782	.84175	.00972	.08991	.01028	.86335
#3	.00933	.49002	.01586	.86141	.00803	.08657	.02274	.86270
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 24, 2016

Sample Name: LLCCV Acquired: 6/23/2016 16:20:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v968) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.42813	.04307	.03712	.15993	.00773	.01869	19.866
Stddev	.00098	.00025	.00768	.00135	.00073	.00033	.441
%RSD	.22912	.58060	20.685	.84107	9.4794	1.7749	2.2219
#1	.42871	.04302	.03075	.15935	.00749	.01905	19.528
#2	.42868	.04335	.04565	.16146	.00715	.01864	20.366
#3	.42700	.04285	.03498	.15896	.00855	.01839	19.706
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6737.1	42185.	2135.3
Stddev	26.5	284.	28.1
%RSD	.39354	.67345	1.3174
#1	6718.8	41884.	2154.3
#2	6767.5	42448.	2103.0
#3	6725.1	42222.	2148.5

Approved: June 24, 2016

2.3.2 Metals ICP-MS Data

2.3.2.1 Summary Data

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW14-061316	**Prep Method:**	3015	**Prep Date:**	06/21/2016 07:48
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/21/2016 12:44
Workgroup #:	WG573557	**Analyst:**	BKT	**Run Date:**	06/21/2016 15:51
Collect Date:	06/13/2016 09:15	**Dilution:**	1	**File ID:**	NI.062116.155109
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Arsenic, Total	7440-38-2	0.00659		0.00200	0.00100	0.000500
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW14-061316	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 20:29
Collect Date:	06/13/2016 09:15	**Dilution:**	1	**File ID:**	NI.061616.202950
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.0803		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00346		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00404		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.00644		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.0116		0.00800	0.00400	0.00200
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00697		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-01	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW14-061316	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 21:35
Collect Date:	06/13/2016 09:15	**Dilution:**	50	**File ID:**	NI.061616.213546
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	2.42		0.300	0.150	0.0750

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW14FD-061316	**Prep Method:**	3015	**Prep Date:**	06/21/2016 07:48
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/21/2016 12:44
Workgroup #:	WG573557	**Analyst:**	BKT	**Run Date:**	06/21/2016 16:00
Collect Date:	06/13/2016 09:15	**Dilution:**	1	**File ID:**	NI.062116.160047
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Arsenic, Total	7440-38-2	0.00731		0.00200	0.00100	0.000500
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW14FD-061316	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 20:40
Collect Date:	06/13/2016 09:15	**Dilution:**	1	**File ID:**	NI.061616.204020
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.0794		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00333		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00420		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.00655		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.0113		0.00800	0.00400	0.00200
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00668		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW14FD-061316	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 21:38
Collect Date:	06/13/2016 09:15	**Dilution:**	50	**File ID:**	NI.061616.213859
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	2.47		0.300	0.150	0.0750

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW24-061316	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 20:43
Collect Date:	06/13/2016 10:35	**Dilution:**	1	**File ID:**	NI.061616.204331
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00409		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00662		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00296	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0163		0.00800	0.00400	0.00200
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00192	J	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW24-061316	**Prep Method:**	3015	**Prep Date:**	06/21/2016 07:48
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/21/2016 12:44
Workgroup #:	WG573557	**Analyst:**	BKT	**Run Date:**	06/21/2016 16:03
Collect Date:	06/13/2016 10:35	**Dilution:**	1	**File ID:**	NI.062116.160358
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Arsenic, Total	7440-38-2	0.0161		0.00200	0.00100	0.000500
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW24-061316	**Prep Method:**	3015	**Prep Date:**	06/15/2016 07:54
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/16/2016 15:43
Workgroup #:	WG572869	**Analyst:**	BKT	**Run Date:**	06/16/2016 21:42
Collect Date:	06/13/2016 10:35	**Dilution:**	50	**File ID:**	NI.061616.214210
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	10.3		0.300	0.150	0.0750
Manganese, Total	7439-96-5	0.563		0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer NexION 300X

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	100
Vi = Initial volume	40
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/L)	0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	200
Vi = Initial volume	0.5
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/kg)	40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	40
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	50

50 ug/kg = 0.050 mg/kg

Perkin Elmer NexION ICP/MS

STANDARDS KEY

QC Std 1 - ICV
QC Std 2 - ICB
QC Std 3 - LLICV
QC Std 4 - ICSA
QC Std 5 - ICSAB
QC Std 6 - CCV
QC Std 7 - CCB
QC Std 8 - LLCCV

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.00005	0.05	0.1
Sb	10	0	0.00005	0.05	0.1
As	10	0	0.00005	0.05	0.1
Ba	10	0	0.00005	0.05	0.1
Be	10	0	0.00005	0.05	0.1
Ca	1000	0	0.005	5	10
Cd	10	0	0.0005	0.05	0.1
Cr	10	0	0.0005	0.05	0.1
Co	10	0	0.0005	0.05	0.1
Cu	10	0	0.0005	0.05	0.1
Fe	1000	0	0.005	5	10
Pb	10	0	0.00005	0.05	0.1
Mg	1000	0	0.005	5	10
Mn	10	0	0.00005	0.05	0.1
Ni	10	0	0.00005	0.05	0.1
K	1000	0	0.005	5	10
Se	10	0	0.00005	0.05	0.1
Ag	10	0	0.00005	0.05	0.1
Na	1000	0	0.005	5	10
Tl	10	0	0.00005	0.05	0.1
V	10	0	0.00005	0.05	0.1
U	1000	0	0.00005	0.05	0.1
Zn	10	0	0.00005	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG573483
Analyst: VC
Spike Analyst: VC
Run Date: 06/21/2016 07:48
Method: 3015
Balance: BAL016
Instrument: MW-4
Instrument Start: 06/21/2016 08:19

SOP: ME407 Revison 19
Spike Solution: STD75998
Spike Witness: ERP
40 & 50 ML. DIGESTION TU COA18987
MS Filters- fisher-Lot#R RGT35621
HNO3 Lot #: COA18905

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG573483-02	BLANK	1	20 mL	50 mL	184.315 g	184.299 g		
2	WG572662-01	FBLK2	18	20 mL	50 mL	182.12 g	182.115 g		
3	WG573483-03	LCS	1	20 mL	50 mL	182.488 g	182.467 g	.25 mL	
4	L16060616-01	SAMP	1	20 mL	50 mL	183.726 g	183.7 g		06/21/16
5	L16060616-02	SAMP	1	20 mL	50 mL	182.782 g	182.769 g		06/21/16
6	L16060616-04	SAMP	1	20 mL	50 mL	182.01 g	181.989 g		06/21/16
7	L16060650-01	SAMP	1	20 mL	50 mL	182.593 g	182.584 g		06/24/16
8	L16060650-02	SAMP	1	20 mL	50 mL	182.881 g	182.855 g		06/24/16
9	L16060650-03	SAMP	1	20 mL	50 mL	182.342 g	182.296 g		06/24/16
10	L16060650-08	SAMP	1	20 mL	50 mL	182.009 g	181.997 g		06/24/16
11	L16060729-02	SAMP	1	20 mL	50 mL	183.948 g	183.941 g		06/24/16
12	L16060729-03	SAMP	1	20 mL	50 mL	180.366 g	180.368 g		06/24/16
13	L16060730-01	SAMP	1	20 mL	50 mL	180.5 g	180.493 g		06/24/16
14	L16060730-02	SAMP	1	20 mL	50 mL	182.181 g	182.183 g		06/24/16
15	L16060730-03	SAMP	1	20 mL	50 mL	181.455 g	181.446 g		06/24/16
16	L16060731-02	SAMP	18	20 mL	50 mL	183.631 g	183.62 g		06/17/16
17	L16060961-01	SAMP	1	20 mL	50 mL	184.464 g	184.461 g		06/24/16
18	L16060961-02	SAMP	1	20 mL	50 mL	182.66 g	182.651 g		06/24/16
19	WG573483-01	REF	1	20 mL	50 mL	181.648 g	181.642 g		
20	L16060961-03	SAMP	1	20 mL	50 mL	181.648 g	181.642 g		06/24/16
21	L16060995-01	SAMP	1	20 mL	50 mL	183.365 g	183.359 g		06/24/16
22	L16060995-02	SAMP	1	20 mL	50 mL	185.146 g	185.151 g		06/24/16
23	WG573483-04	MS	1	20 mL	50 mL	181.067 g	181.054 g	.25 mL	
24	WG573483-05	MSD	1	20 mL	50 mL	183.356 g	183.356 g	.25 mL	

L16060995-01	ph adj
L16060995-02	ph adj

Analyst: Vicki Collins

Reviewer: Erin Potter

MW_DIG - Modified 09/30/2009
PDF ID: 4815645
Report generated: 06/21/2016 09:07

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG572730
Analyst: VC
Spike Analyst: VC
Run Date: 06/15/2016 07:54
Method: 3015
Balance: BAL016
Instrument: MW-3
Instrument Start: 06/15/2016 07:59

SOP: ME407 Revison 19
Spike Solution: STD75998
Spike Witness: ERP
40 & 50 ML. DIGESTION TU COA18772
HNO3 Lot #: COA18905
MS Filters- fisher-Lot#R RGT35621

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG572730-03	BLANK	1	20 mL	50 mL	182.294 g	182.284 g		
2	WG572662-01	FBLK2	18	20 mL	50 mL	180.913 g	180.919 g		
3	WG572730-04	LCS	1	20 mL	50 mL	182.621 g	182.604 g	.25 mL	
4	L16060616-01	SAMP	1	20 mL	50 mL	181.592 g	181.591 g		06/21/16
5	L16060616-02	SAMP	1	20 mL	50 mL	183.537 g	183.546 g		06/21/16
6	L16060616-04	SAMP	1	20 mL	50 mL	183.852 g	183.819 g		06/21/16
7	L16060649-01	SAMP	2	20 mL	50 mL	183.221 g	183.203 g		06/20/16
8	L16060650-01	SAMP	1	20 mL	50 mL	182.311 g	182.309 g		06/24/16
9	L16060650-02	SAMP	1	20 mL	50 mL	183.087 g	183.085 g		06/24/16
10	L16060650-03	SAMP	1	20 mL	50 mL	181.652 g	181.65 g		06/24/16
11	L16060650-08	SAMP	1	20 mL	50 mL	184.579 g	184.558 g		06/24/16
12	WG572730-01	REF	2	20 mL	50 mL	182.936 g	182.92 g		
13	L16060664-01	SAMP	2	20 mL	50 mL	182.936 g	182.92 g		06/17/16
14	L16060724-01	SAMP	1	20 mL	50 mL	187.236 g	187.232 g		06/24/16
15	L16060729-01	SAMP	1	20 mL	50 mL	182.146 g	182.149 g		06/24/16
16	L16060729-02	SAMP	1	20 mL	50 mL	181.631 g	181.644 g		06/24/16
17	WG572730-02	REF	1	20 mL	50 mL	183.736 g	183.731 g		
18	L16060729-03	SAMP	1	20 mL	50 mL	183.736 g	183.731 g		06/24/16
19	L16060730-01	SAMP	1	20 mL	50 mL	184.668 g	184.674 g		06/24/16
20	L16060730-02	SAMP	1	20 mL	50 mL	182.686 g	182.675 g		06/24/16
21	L16060730-03	SAMP	1	20 mL	50 mL	181.928 g	181.933 g		06/24/16
22	L16060731-02	SAMP	18	20 mL	50 mL	183.292 g	183.277 g		06/17/16
23	L16060754-01	SAMP	2	20 mL	50 mL	182.824 g	182.823 g		06/21/16
24	WG572730-05	DUP	1	20 mL	50 mL	181.184 g	181.19 g		
25	WG572730-06	MS	1	20 mL	50 mL	183.99 g	183.994 g	.25 mL	
26	WG572730-07	MSD	1	20 mL	50 mL	183.548 g	183.523 g	.25 mL	

L16060650-03	FILTERED DIGESTATE
L16060729-01	FILTERED DIGESTATE
L16060754-01	FILTERED DIGESTATE
L16060731-02	FILTERED DIGESTATE

Analyst: Vicki Collins

Reviewer: Erin Potter

MW_DIG - Modified 09/30/2009
PDF ID: 4807925
Report generated: 06/15/2016 11:11

Microbac

TCLP Non-Volatile

Analyst(s): AMA/CPD
Date: 06/14/2016
Filter Lot #: 94860030
Microbac SOP: TCLP01 Rev #: 12

Analyst / Date		Analyst / Date	
CPD	6/14/16	AMA	6/15/16
Time On	Temp On °C	Time Off	Temp Off °C
1427	23.8	0827	21.9

Agitator Speed 30 ± 2 rpm ☑

Jug #	Sample #	Tests	Method	Fluid #	Matrix *	% Solid	Pretest pH Initial	Pretest pH Final	Int. Wt. (g)	Fluid Vol. (mL)	Final extract pH
D	06-0670-01	ME	1311	F1-181	S	100	8.12	2.08	7.67	153	5.19
↓	-02	↓	↓	↓	↓	↓	8.98	2.06	100.27	2005	5.79
↓	-03	↓	↓	↓	↓	↓	10.07	4.79	100.14	2003	7.34
↓	-04	↓	↓	↓	↓	↓	9.53	1.65	100.72	2014	5.13
↓	-05	↓	↓	↓	↓	↓	8.98	2.69	100.32	2006	6.67
↓	-06	↓	↓	↓	↓	↓	9.43	1.94	40.43	807	6.79
↓	-07	↓	↓	F2-379	↓	↓	8.10	7.75	25.70	514	8.08
D	06-0731-01	ME pH-L	1311	F2-379	S	100	8.47	5.86	50.46	1009	4.32
↓	-02	↓ ↓	1312	SPLP F2-320	↓	↓	NA	NA	100.62	2012	8.44
NA	FBIK1	ME	1311	F1-181	NA	NA	NA	NA	100	100	4.93
↓	FBIK2	↓ COD pH-L ~~ME~~	↓	F2-379	↓	↓	↓	↓	↓	↓	2.88
↓	SPLP F2-	↓ pH-L	1312	SPLP F2-320	↓	↓	↓	↓	↓	↓	5.05

CPD 6/14/16

*Matrix Code: (S = solid, sand, soil or sludge) (P = paint) (O = organic) (W = water or aqueous waste)
D = Disposable plastic jug
TCLP Pretest weight will be 5.0 g (± 0.1) unless otherwise noted.
Temperature shall be maintained at 23° ± 2 for 18 ± 2 hours unless otherwise noted.

Comments: 5x 06-0670-01 recieved with limited volume.

Peer Review By: [signature]

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 061616A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573083,572869,572085,572184

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.061616.153014	Blank	Blank		1		06/16/16 15:30
2	NI.061616.153326	WG573095-01	Calibration Point		1		06/16/16 15:33
3	NI.061616.153637	WG573095-02	Calibration Point		1		06/16/16 15:36
4	NI.061616.153949	WG573095-03	Calibration Point		1		06/16/16 15:39
5	NI.061616.154300	WG573095-04	Calibration Point		1		06/16/16 15:43
6	NI.061616.154613	WG573095-05	ICV		1		06/16/16 15:46
7	NI.061616.154926	WG573095-06	ICB		1		06/16/16 15:49
8	NI.061616.155239	WG573095-07	Low Level Initial Calibration V		1		06/16/16 15:52
9	NI.061616.155746	WG573095-08	Initial Calibration Verification		1		06/16/16 15:57
10	NI.061616.160355	WG573095-09	Initial Calib Blank		1		06/16/16 16:03
11	NI.061616.160740	WG573095-10	Interference Check		1		06/16/16 16:07
12	NI.061616.162201	WG573095-11	Interference Check		1		06/16/16 16:22
13	NI.061616.162516	WG573095-12	CCV		1		06/16/16 16:25
14	NI.061616.163850	WG573095-13	CCB		1		06/16/16 16:38
15	NI.061616.173543	WG572432-04	Method/Prep Blank	20/50	1		06/16/16 17:35
16	NI.061616.173854	WG572432-05	Laboratory Control S	20/50	1		06/16/16 17:38
17	NI.061616.174206	WG572432-01	Reference Sample		1	L16060540-06	06/16/16 17:42
18	NI.061616.174517	WG572432-06	Matrix Spike	20/50	1	L16060540-06	06/16/16 17:45
19	NI.061616.174829	WG572432-07	Matrix Spike Duplica	20/50	1	L16060540-06	06/16/16 17:48
20	NI.061616.175140	L16060533-01	16F0399-01	20/50	1		06/16/16 17:51
21	NI.061616.175452	L16060540-03	AG4573	20/50	1		06/16/16 17:54
22	NI.061616.175803	WG573083-01	Post Digestion Spike		1	L16060540-03	06/16/16 17:58
23	NI.061616.180115	WG573083-02	Serial Dilution		5	L16060540-03	06/16/16 18:01
24	NI.061616.180426	WG573083-02	Serial Dilution		25	L16060540-03	06/16/16 18:04
25	NI.061616.180739	WG573095-14	CCV		1		06/16/16 18:07
26	NI.061616.181051	WG573095-15	CCB		1		06/16/16 18:10
27	NI.061616.181404	L16060540-09	AG4578	20/50	1		06/16/16 18:14
28	NI.061616.181715	L16060540-10	AG4579	20/50	1		06/16/16 18:17
29	NI.061616.182027	L16060540-11	AG4580	20/50	1		06/16/16 18:20
30	NI.061616.182338	L16060540-14	AG4584	20/50	1		06/16/16 18:23
31	NI.061616.182650	L16060540-15	AG4587	20/50	1		06/16/16 18:26
32	NI.061616.183001	L16060540-16	AG4589	20/50	1		06/16/16 18:30
33	NI.061616.183313	L16060549-01	J6F0164-01	20/50	1		06/16/16 18:33
34	NI.061616.183624	L16060614-01	WATER PLANT B/W	20/50	1		06/16/16 18:36

Page: 1 Approved: June 20, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 061616A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573083,572869,572085,572184

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.061616.183936	L16060624-01	16F1312-03	20/50	1		06/16/16 18:39
36	NI.061616.184247	WG572432-03	Reference Sample		1	L16060630-01	06/16/16 18:42
37	NI.061616.184600	WG573095-16	CCV		1		06/16/16 18:46
38	NI.061616.184912	WG573095-17	CCB		1		06/16/16 18:49
39	NI.061616.185225	WG572432-10	Duplicate	20/50	1	L16060630-01	06/16/16 18:52
40	NI.061616.185538	WG573095-18	CCV		1		06/16/16 18:55
41	NI.061616.185850	WG573095-19	CCB		1		06/16/16 18:58
42	NI.061616.190202	WG573095-20	Low Level Continuing Calibra		1		06/16/16 19:02
43	NI.061616.190516	WG572730-03	Method/Prep Blank	20/50	1		06/16/16 19:05
44	NI.061616.190828	WG572730-04	Laboratory Control S	20/50	1		06/16/16 19:08
45	NI.061616.191230	WG572730-01	Reference Sample		1	L16060664-01	06/16/16 19:12
46	NI.061616.191541	WG572730-05	Duplicate	20/50	1	L16060664-01	06/16/16 19:15
47	NI.061616.191852	WG572730-02	Reference Sample		1	L16060729-03	06/16/16 19:18
48	NI.061616.192204	WG572730-06	Matrix Spike	20/50	1	L16060729-03	06/16/16 19:22
49	NI.061616.192515	WG572730-07	Matrix Spike Duplica	20/50	1	L16060729-03	06/16/16 19:25
50	NI.061616.192827	L16060754-01	V6F0103-02	20/50	1		06/16/16 19:28
51	NI.061616.193138	WG572869-01	Post Digestion Spike		1	L16060754-01	06/16/16 19:31
52	NI.061616.193450	L16060754-01	V6F0103-02		5		06/16/16 19:34
53	NI.061616.193803	WG573095-21	CCV		1		06/16/16 19:38
54	NI.061616.194114	WG573095-22	CCB		1		06/16/16 19:41
55	NI.061616.194427	WG572869-02	Serial Dilution		25	L16060754-01	06/16/16 19:44
56	NI.061616.194738	L16060616-01	MW8-060916	20/50	1		06/16/16 19:47
57	NI.061616.195050	L16060616-02	18CPTMW26SW-060916	20/50	1		06/16/16 19:50
58	NI.061616.195401	L16060616-04	MW10F-060916	20/50	1		06/16/16 19:54
59	NI.061616.195713	L16060649-01	V6F0102-02	20/50	1		06/16/16 19:57
60	NI.061616.200024	L16060650-01	MW1-061016	20/50	1		06/16/16 20:00
61	NI.061616.200336	L16060650-02	MW3-061016	20/50	1		06/16/16 20:03
62	NI.061616.200647	L16060650-03	17WW08-061016	20/50	1		06/16/16 20:06
63	NI.061616.201257	L16060650-08	18WW24F-061016	20/50	1		06/16/16 20:12
64	NI.061616.201608	L16060729-01	A09-MW10-Y1S2	20/50	1		06/16/16 20:16
65	NI.061616.201921	WG573095-23	CCV		1		06/16/16 20:19
66	NI.061616.202232	WG573095-24	CCB		1		06/16/16 20:22
67	NI.061616.202638	L16060729-02	A09-MW11-Y1S2	20/50	1		06/16/16 20:26
68	NI.061616.202950	L16060730-01	18CPTMW14-061316	20/50	1		06/16/16 20:29

Page: 2 Approved: June 20, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 061616A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573083,572869,572085,572184

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.061616.204020	L16060730-02	18CPTMW14FD-061316	20/50	1		06/16/16 20:40
70	NI.061616.204331	L16060730-03	18CPTMW24-061316	20/50	1		06/16/16 20:43
71	NI.061616.204643	L16060731-02	60500-SSP0041-SSP0041	20/50	1		06/16/16 20:46
72	NI.061616.204954	L16060731-02	60500-SSP0041-SSP0041	20/50	10		06/16/16 20:49
73	NI.061616.205306	L16060540-09	AG4578	20/50	100		06/16/16 20:53
74	NI.061616.205727	L16060540-10	AG4579	20/50	10		06/16/16 20:57
75	NI.061616.210039	L16060540-11	AG4580	20/50	10		06/16/16 21:00
76	NI.061616.210350	L16060540-14	AG4584	20/50	100		06/16/16 21:03
77	NI.061616.210702	WG573095-25	CCV		1		06/16/16 21:07
78	NI.061616.211014	WG573095-26	CCB		1		06/16/16 21:10
79	NI.061616.211326	L16060616-01	MW8-060916	20/50	10		06/16/16 21:13
80	NI.061616.211638	L16060616-02	18CPTMW26SW-060916	20/50	10		06/16/16 21:16
81	NI.061616.211949	L16060616-04	MW10F-060916	20/50	10		06/16/16 21:19
82	NI.061616.212301	L16060650-01	MW1-061016	20/50	50		06/16/16 21:23
83	NI.061616.212612	L16060650-02	MW3-061016	20/50	10		06/16/16 21:26
84	NI.061616.212923	L16060650-03	17WW08-061016	20/50	10		06/16/16 21:29
85	NI.061616.213235	L16060650-08	18WW24F-061016	20/50	10		06/16/16 21:32
86	NI.061616.213546	L16060730-01	18CPTMW14-061316	20/50	50		06/16/16 21:35
87	NI.061616.213859	L16060730-02	18CPTMW14FD-061316	20/50	50		06/16/16 21:38
88	NI.061616.214210	L16060730-03	18CPTMW24-061316	20/50	50		06/16/16 21:42
89	NI.061616.214523	WG573095-27	CCV		1		06/16/16 21:45
90	NI.061616.214835	WG573095-28	CCB		1		06/16/16 21:48
91	NI.061616.215148	WG573095-29	Low Level Continuing Calibra		1		06/16/16 21:51
92	NI.061616.215500	WG571964-02	Method/Prep Blank	20/50	1		06/16/16 21:55
93	NI.061616.215811	WG571964-03	Laboratory Control S	20/50	1		06/16/16 21:58
94	NI.061616.220123	WG571964-01	Reference Sample		5	L16060428-01	06/16/16 22:01
95	NI.061616.220434	WG571964-05	Matrix Spike	20/50	5	L16060428-01	06/16/16 22:04
96	NI.061616.220746	WG571964-06	Matrix Spike Duplica	20/50	5	L16060428-01	06/16/16 22:07
97	NI.061616.221057	L16060411-03	AWD4T-060716	20/50	1		06/16/16 22:10
98	NI.061616.221409	L16060411-04	AWD4B-060716	20/50	1		06/16/16 22:14
99	NI.061616.221720	WG572085-03	Post Digestion Spike		1	L16060411-04	06/16/16 22:17
100	NI.061616.222032	L16060411-04	AWD4B-060716		5		06/16/16 22:20
101	NI.061616.222343	WG572085-04	Serial Dilution		25	L16060411-04	06/16/16 22:23
102	NI.061616.222656	WG573095-30	CCV		1		06/16/16 22:26

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Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 061616A.REP

Analyst1: BKT Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705

ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607

CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345

Stannous : Hydroxylamine :

Workgroups: 573083,572869,572085,572184

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.061616.223007	WG573095-31	CCB		1		06/16/16 22:30
104	NI.061616.223320	WG571834-02	Method/Prep Blank	20/50	1		06/16/16 22:33
105	NI.061616.223632	WG571834-03	Laboratory Control S	20/50	1		06/16/16 22:36
106	NI.061616.223943	WG571834-01	Reference Sample		1	L16060337-02	06/16/16 22:39
107	NI.061616.224254	WG571834-04	Matrix Spike	20/50	1	L16060337-02	06/16/16 22:42
108	NI.061616.224606	WG571834-05	Matrix Spike Duplica	20/50	1	L16060337-02	06/16/16 22:46
109	NI.061616.224917	L16060303-01	LH18/24-SP650-6368-GRAB	20/50	1		06/16/16 22:49
110	NI.061616.225229	L16060303-02	LH18/24-SP650-6368-COMP	20/50	1		06/16/16 22:52
111	NI.061616.225540	L16060304-02	LH18/24-SP650-6369-GRAB	20/50	1		06/16/16 22:55
112	NI.061616.225852	WG572184-03	Post Digestion Spike		1	L16060304-02	06/16/16 22:58
113	NI.061616.230203	WG572184-04	Serial Dilution		5	L16060304-02	06/16/16 23:02
114	NI.061616.230516	WG573095-32	CCV		1		06/16/16 23:05
115	NI.061616.230827	WG573095-33	CCB		1		06/16/16 23:08
116	NI.061616.231140	WG573095-34	Low Level Continuing Calibra		1		06/16/16 23:11

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Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062116A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573557,573473,573475

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.062116.123136	Blank	Blank		1		06/21/16 12:31
2	NI.062116.123447	WG573631-01	Calibration Point		1		06/21/16 12:34
3	NI.062116.123759	WG573631-02	Calibration Point		1		06/21/16 12:37
4	NI.062116.124110	WG573631-03	Calibration Point		1		06/21/16 12:41
5	NI.062116.124422	WG573631-04	Calibration Point		1		06/21/16 12:44
6	NI.062116.124735	WG573631-05	Initial Calibration Verification		1		06/21/16 12:47
7	NI.062116.125048	WG573631-06	Initial Calib Blank		1		06/21/16 12:50
8	NI.062116.125401	WG573631-07	Low Level Initial Calibration V		1		06/21/16 12:54
9	NI.062116.125712	WG573631-08	Interference Check		1		06/21/16 12:57
10	NI.062116.130024	WG573631-09	Interference Check		1		06/21/16 13:00
11	NI.062116.130337	WG573631-10	CCV		1		06/21/16 13:03
12	NI.062116.130648	WG573631-11	CCB		1		06/21/16 13:06
13	NI.062116.131000	WG573483-02	Method/Prep Blank	20/50	1		06/21/16 13:10
14	NI.062116.131312	WG573483-03	Laboratory Control S		1		06/21/16 13:13
15	NI.062116.131623	WG573483-01	Reference Sample		1	L16060961-03	06/21/16 13:16
16	NI.062116.131935	WG573483-04	Matrix Spike	20/50	1	L16060961-03	06/21/16 13:19
17	NI.062116.132247	WG573483-05	Matrix Spike Duplica	20/50	1	L16060961-03	06/21/16 13:22
18	NI.062116.132558	L16060731-02	60500-SSP0041-SSP0041	20/50	1		06/21/16 13:25
19	NI.062116.132910	WG573557-01	Post Digestion Spike		1	L16060731-02	06/21/16 13:29
20	NI.062116.133221	WG573557-02	Serial Dilution		5	L16060731-02	06/21/16 13:32
21	NI.062116.133650	WG573662-01	Reference Sample	20/50	1	L16060907-14	06/21/16 13:36
22	NI.062116.134003	WG573631-12	CCV		1		06/21/16 13:40
23	NI.062116.134314	WG573631-13	CCB		1		06/21/16 13:43
24	NI.062116.152226	L16060616-01	MW8-060916	20/50	1		06/21/16 15:22
25	NI.062116.152538	L16060616-02	18CPTMW26SW-060916	20/50	1		06/21/16 15:25
26	NI.062116.152849	L16060616-04	MW10F-060916	20/50	1		06/21/16 15:28
27	NI.062116.153201	L16060650-01	MW1-061016	20/50	1		06/21/16 15:32
28	NI.062116.153512	L16060650-02	MW3-061016	20/50	1		06/21/16 15:35
29	NI.062116.153823	L16060650-03	17WW08-061016	20/50	1		06/21/16 15:38
30	NI.062116.154135	L16060650-08	18WW24F-061016	20/50	1		06/21/16 15:41
31	NI.062116.154446	L16060729-02	A09-MW11-Y1S2	20/50	1		06/21/16 15:44
32	NI.062116.154758	L16060729-03	A09-MW12-Y1S2	20/50	1	WG572730-02	06/21/16 15:47
33	NI.062116.155109	L16060730-01	18CPTMW14-061316	20/50	1		06/21/16 15:51
34	NI.062116.155422	WG573631-14	CCV		1		06/21/16 15:54

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Maren Berry

Microbac

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Instrument Run Log

Instrument: ICP-MS2 Dataset: 062116A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573557,573473,573475

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.062116.155734	WG573631-15	CCB		1		06/21/16 15:57
36	NI.062116.160047	L16060730-02	18CPTMW14FD-061316	20/50	1		06/21/16 16:00
37	NI.062116.160358	L16060730-03	18CPTMW24-061316	20/50	1		06/21/16 16:03
38	NI.062116.160710	L16060961-01	GH58HS_MELZER_03-03-0	20/50	1		06/21/16 16:07
39	NI.062116.161021	L16060961-02	GH58HS_MELZER_03-03-0	20/50	1		06/21/16 16:10
40	NI.062116.161333	L16060995-01	UNTREATED	20/50	50		06/21/16 16:13
41	NI.062116.161644	L16060995-02	AFTER	20/50	50		06/21/16 16:16
42	NI.062116.161957	WG573631-16	CCV		1		06/21/16 16:19
43	NI.062116.162309	WG573631-17	CCB		1		06/21/16 16:23
44	NI.062116.171200	WG573111-04	Method/Prep Blank	20/50	1		06/21/16 17:12
45	NI.062116.171512	WG573111-05	Laboratory Control S	20/50	1		06/21/16 17:15
46	NI.062116.171823	WG573111-03	Reference Sample		1	L16060540-06	06/21/16 17:18
47	NI.062116.172135	WG573111-09	Matrix Spike	20/50	1	L16060540-06	06/21/16 17:21
48	NI.062116.172446	WG573111-10	Matrix Spike Duplica	20/50	1	L16060540-06	06/21/16 17:24
49	NI.062116.172758	L16060624-01	16F1312-03	20/50	1		06/21/16 17:27
50	NI.062116.173109	WG573473-01	Post Digestion Spike		1	L16060624-01	06/21/16 17:31
51	NI.062116.173421	WG573473-02	Serial Dilution		5	L16060624-01	06/21/16 17:34
52	NI.062116.173732	WG573473-02	Serial Dilution		25	L16060624-01	06/21/16 17:37
53	NI.062116.174045	WG573631-18	CCV		1		06/21/16 17:40
54	NI.062116.174357	WG573631-19	CCB		1		06/21/16 17:43
55	NI.062116.174710	L16060533-01	16F0399-01	20/50	1		06/21/16 17:47
56	NI.062116.175021	L16060784-03	J6E1050-02	20/50	5		06/21/16 17:50
57	NI.062116.175333	WG573111-01	Reference Sample		1	L16060787-09	06/21/16 17:53
58	NI.062116.175644	L16060787-10	U517TW006C	20/50	1		06/21/16 17:56
59	NI.062116.175956	WG573111-06	Matrix Spike	20/50	1	L16060787-09	06/21/16 17:59
60	NI.062116.180307	WG573111-07	Matrix Spike Duplica	20/50	1	L16060787-09	06/21/16 18:03
61	NI.062116.180619	L16060787-18	U517TW008A	20/50	1		06/21/16 18:06
62	NI.062116.180930	WG573111-02	Reference Sample		1	L16060862-01	06/21/16 18:09
63	NI.062116.181242	WG573111-08	Duplicate	20/50	1	L16060862-01	06/21/16 18:12
64	NI.062116.181553	L16060883-02	WC02	20/50	1		06/21/16 18:15
65	NI.062116.181906	WG573631-20	CCV		1		06/21/16 18:19
66	NI.062116.182218	WG573631-21	CCB		1		06/21/16 18:22
67	NI.062116.182531	L16060896-01	A08-MW02-Y1S2	20/50	1		06/21/16 18:25
68	NI.062116.182842	L16060896-02	A08-MW03-Y1S2	20/50	1		06/21/16 18:28

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Maren Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062116A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573557,573473,573475

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.062116.183154	L16060896-03	A08-MW10-Y1S2	20/50	1		06/21/16 18:31
70	NI.062116.183505	L16060896-04	FD-01	20/50	1		06/21/16 18:35
71	NI.062116.183817	L16060896-05	FD-03	20/50	1		06/21/16 18:38
72	NI.062116.184128	L16060896-07	RB01-06-15-16	20/50	1		06/21/16 18:41
73	NI.062116.184440	L16060916-01	PHL 1 FRESHWATER IMPO	20/50	1		06/21/16 18:44
74	NI.062116.184751	L16060916-02	DS TYGERT RIVER	20/50	1		06/21/16 18:47
75	NI.062116.185104	WG573631-22	CCV		1		06/21/16 18:51
76	NI.062116.185415	WG573631-23	CCB		1		06/21/16 18:54
77	NI.062116.191207	WG573631-24	Low Level Continuing Calibra		1		06/21/16 19:12
78	NI.062116.193457	L16060995-01	UNTREATED	20/50	500		06/21/16 19:34
79	NI.062116.193809	L16060995-02	AFTER	20/50	500		06/21/16 19:38
80	NI.062116.194121	WG573631-25	CCV		1		06/21/16 19:41
81	NI.062116.194433	WG573631-26	CCB		1		06/21/16 19:44
82	NI.062116.194745	WG573333-03	Method/Prep Blank	.25/100	1		06/21/16 19:47
83	NI.062116.195057	WG573333-04	Laboratory Control S	.25/100	1		06/21/16 19:50
84	NI.062116.195408	L16061053-01	GS042QDCF01SB061716S-I		1	WG573333-02	06/21/16 19:54
85	NI.062116.195720	L16061053-02	GS042QDCF01SB061716S-I	.253/100	1	WG573333-07	06/21/16 19:57
86	NI.062116.200031	L16061053-03	GS042QDCF01SB061716S-I	.252/100	1	WG573333-08	06/21/16 20:00
87	NI.062116.200343	L16061054-01	GS037QBCF01XB061616S-E	.254/100	1		06/21/16 20:03
88	NI.062116.200654	WG573475-01	Post Digestion Spike		1	L16061054-01	06/21/16 20:06
89	NI.062116.201006	WG573475-02	Serial Dilution		5	L16061054-01	06/21/16 20:10
90	NI.062116.201317	WG573475-02	Serial Dilution		25	L16061054-01	06/21/16 20:13
91	NI.062116.201631	WG573631-27	CCV		1		06/21/16 20:16
92	NI.062116.201942	WG573631-28	CCB		1		06/21/16 20:19
93	NI.062116.202255	L16060787-03	U517SS00510A		1	WG573333-01	06/21/16 20:22
94	NI.062116.202607	L16060787-04	U517SS00510MS	.256/100	1	WG573333-05	06/21/16 20:26
95	NI.062116.202918	L16060787-05	U517SS00510MSD	.253/100	1	WG573333-06	06/21/16 20:29
96	NI.062116.203230	L16060787-06	U517SS00512A	.256/100	1		06/21/16 20:32
97	NI.062116.203541	L16060787-07	U517SS006010A	.256/100	1		06/21/16 20:35
98	NI.062116.203853	L16060787-08	U517SS00612A	.254/100	1		06/21/16 20:38
99	NI.062116.204204	L16060787-13	U517SS00708A	.252/100	1		06/21/16 20:42
100	NI.062116.204516	L16060787-14	U517SS00710A	.259/100	1		06/21/16 20:45
101	NI.062116.204827	L16060787-15	U517SS00808A	.257/100	1		06/21/16 20:48
102	NI.062116.205139	L16060787-16	U517SS00808C	.255/100	1		06/21/16 20:51

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Maren Berry

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062116A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76433 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573557,573473,573475

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.062116.205452	WG573631-29	CCV		1		06/21/16 20:54
104	NI.062116.205803	WG573631-30	CCB		1		06/21/16 20:58
105	NI.062116.210116	L16060787-17	U517SS00810A	.259/100	1		06/21/16 21:01
106	NI.062116.210428	L16060964-01	GH5-01	.252/100	1		06/21/16 21:04
107	NI.062116.210739	L16060964-02	GH5-02	.259/100	1		06/21/16 21:07
108	NI.062116.211051	L16060964-03	GH5-03	.254/100	1		06/21/16 21:10
109	NI.062116.211402	L16060964-04	GH5-04	.249/100	1		06/21/16 21:14
110	NI.062116.211714	L16060964-05	GH5-05	.252/100	1		06/21/16 21:17
111	NI.062116.212025	L16060964-06	GH5-06	.258/100	1		06/21/16 21:20
112	NI.062116.212337	L16061048-01	TR0062	.252/100	1		06/21/16 21:23
113	NI.062116.212649	WG573631-31	CCV		1		06/21/16 21:26
114	NI.062116.213001	WG573631-32	CCB		1		06/21/16 21:30

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Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 16-JUN-2016
Analyst: BKT
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 573095
Runlog ID: 75740
Analytical Workgroups: 573083,572869,572085,572184

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	
Level 4	303,304,411,540,616,650,729,730,731
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BKT
Secondary Reviewer	KHR
Comments	

Primary Reviewer:
20-JUN-2016

Secondary Reviewer:
20-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-20-2016 14:36:34

Microbac Laboratories Inc.

Data Checklist

Date: 21-JUN-2016
Analyst: BKT
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 573631
Runlog ID: 75827
Analytical Workgroups: 573557,573473,573475

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	
Level 4	540,616,624,650,729,730,731,787
Level 4	883,896,1053,1054
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BKT
Secondary Reviewer	MMB
Comments	

Primary Reviewer:
21-JUN-2016

Secondary Reviewer:
22-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-22-2016 13:22:13

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG572869

Login Number: L16060730

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW14-061316	01	06/13/16					06/15/2016	1.9	180		06/16/16	3.5	180	
18CPTMW14-061316	01	06/13/16					06/15/2016	1.9	180		06/16/16	3.5	180	
18CPTMW14FD-061316	02	06/13/16					06/15/2016	1.9	180		06/16/16	3.5	180	
18CPTMW14FD-061316	02	06/13/16					06/15/2016	1.9	180		06/16/16	3.5	180	
18CPTMW24-061316	03	06/13/16					06/15/2016	1.9	180		06/16/16	3.4	180	
18CPTMW24-061316	03	06/13/16					06/15/2016	1.9	180		06/16/16	3.5	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4812178
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.

00708592

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG573557

Login Number: L16060730

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW14-061316	01	06/13/16					06/21/2016	7.9	180		06/21/16	8.3	180	
18CPTMW14FD-061316	02	06/13/16					06/21/2016	7.9	180		06/21/16	8.3	180	
18CPTMW24-061316	03	06/13/16					06/21/2016	7.9	180		06/21/16	8.2	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4812178
Report generated 06/21/2016 18:22

METHOD BLANK SUMMARY

Login Number: L16060730
Blank File ID: NI.061616.190516
Prep Date: 06/15/16 07:54
Analyzed Date: 06/16/16 19:05
Analyst: BKT

Work Group: WG572869
Blank Sample ID: WG572730-03
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572730-04	NI.061616.190828	06/16/16 19:08	01
DUP	WG572730-05	NI.061616.191541	06/16/16 19:15	01
18CPTMW14-061316	L16060730-01	NI.061616.202950	06/16/16 20:29	01
18CPTMW14FD-061316	L16060730-02	NI.061616.204020	06/16/16 20:40	01
18CPTMW24-061316	L16060730-03	NI.061616.204331	06/16/16 20:43	01
18CPTMW14-061316	L16060730-01	NI.061616.213546	06/16/16 21:35	DL01
18CPTMW14FD-061316	L16060730-02	NI.061616.213859	06/16/16 21:38	DL01
18CPTMW24-061316	L16060730-03	NI.061616.214210	06/16/16 21:42	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4812179
Report generated 06/21/2016 18:22

METHOD BLANK SUMMARY

Login Number: L16060730
Blank File ID: NI.062116.131000
Prep Date: 06/21/16 07:48
Analyzed Date: 06/21/16 13:10
Analyst: BKT

Work Group: WG573557
Blank Sample ID: WG573483-02
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573483-03	NI.062116.133650	06/21/16 13:36	01
18CPTMW14-061316	L16060730-01	NI.062116.155109	06/21/16 15:51	02
18CPTMW14FD-061316	L16060730-02	NI.062116.160047	06/21/16 16:00	02
18CPTMW24-061316	L16060730-03	NI.062116.160358	06/21/16 16:03	02

Report Name: BLANK_SUMMARY
PDF File ID: 4812179
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060730 Prep Date: 06/15/16 07:54 Sample ID: WG572730-03
Instrument ID: ICP-MS2 Run Date: 06/16/16 19:05 Prep Method: 3015
File ID: NI.061616.190516 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG572869 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-16-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Antimony, Total	0.000500	0.00200	0.000500	1	U
Barium, Total	0.00150	0.00600	0.0283	1	*
Cadmium, Total	0.000300	0.00120	0.000300	1	U
Chromium, Total	0.00100	0.00400	0.00100	1	U
Cobalt, Total	0.000500	0.00200	0.000500	1	U
Copper, Total	0.00100	0.00400	0.00100	1	U
Lead, Total	0.000500	0.00200	0.000500	1	U
Manganese, Total	0.00100	0.00400	0.00100	1	U
Nickel, Total	0.00200	0.00800	0.00200	1	U
Thallium, Total	0.000100	0.000400	0.000100	1	U
Vanadium, Total	0.000500	0.00200	0.000500	1	U
Zinc, Total	0.0125	0.0500	0.0125	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4812180
21-JUN-2016 18:22

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060730 Prep Date: 06/21/16 07:48 Sample ID: WG573483-02
Instrument ID: ICP-MS2 Run Date: 06/21/16 13:10 Prep Method: 3015
File ID: NI.062116.131000 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG573557 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-21-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Arsenic, Total	0.000500	0.00200	0.000500	1	U
Silver, Total	0.000500	0.00200	0.000500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4812180
21-JUN-2016 18:22

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060730 Run Date: 06/16/2016 Sample ID: WG572730-04
Instrument ID: ICP-MS2 Run Time: 19:08 Prep Method: 3015
File ID: NI.061616.190828 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG572869 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD75998 Cal ID: ICP-MS-16-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Antimony, Total	0.125	0.118	94.6	80 - 120	
Barium, Total	0.125	0.122	97.3	80 - 120	
Cadmium, Total	0.125	0.122	97.9	80 - 120	
Chromium, Total	0.125	0.126	100	80 - 120	
Cobalt, Total	0.125	0.133	106	80 - 120	
Copper, Total	0.125	0.124	99.5	80 - 120	
Lead, Total	0.125	0.124	99.2	80 - 120	
Manganese, Total	0.125	0.136	109	80 - 120	
Nickel, Total	0.125	0.124	99.1	80 - 120	
Thallium, Total	0.125	0.118	94.7	80 - 120	
Vanadium, Total	0.125	0.127	102	80 - 120	
Zinc, Total	0.125	0.126	101	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4812181
Report generated: 06/21/2016 18:22

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060730 Run Date: 06/21/2016 Sample ID: WG573483-03
Instrument ID: ICP-MS2 Run Time: 13:36 Prep Method: 3015
File ID: NI.062116.133650 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG573557 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD75998 Cal ID: ICP-MS-21-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Arsenic, Total	0.125	0.125	100	80 - 120	
Silver, Total	0.125	0.130	104	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4812181
Report generated: 06/21/2016 18:22

Loginnum: L16060730 Cal ID: ICP-MS2- Worknum: WG572869
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG572730-02 File ID: NI.061616.191852 Dil: 1 Matrix: WATER
Sample ID: WG572730-06 MS File ID: NI.061616.192204 Dil: 1 Units: mg/L
Sample ID: WG572730-07 MSD File ID: NI.061616.192515 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Antimony	0.000748	0.125	0.117	93.0	0.125	0.120	95.4	2.48	80 - 120	20	
Barium	0.0532	0.125	0.163	87.8	0.125	0.360	246	75.4	80 - 120	20	*#
Cadmium	0.000380	0.125	0.118	94.3	0.125	0.118	94.5	0.202	80 - 120	20	
Chromium	0.00126	0.125	0.122	96.2	0.125	0.128	101	5.15	80 - 120	20	
Cobalt	0.0627	0.125	0.194	105	0.125	0.210	118	8.06	80 - 120	20	
Copper	0.00880	0.125	0.129	96.3	0.125	0.134	100	3.48	80 - 120	20	
Lead	0.00276	0.125	0.122	95.5	0.125	0.128	100	4.87	80 - 120	20	
Manganese	0.984	0.125	1.12	108	0.125	1.21	177	7.43	80 - 120	20	*
Nickel	0.0243	0.125	0.144	95.7	0.125	0.150	100	4.07	80 - 120	20	
Thallium	ND	0.125	0.117	93.4	0.125	0.122	97.3	4.07	80 - 120	20	
Vanadium	ND	0.125	0.127	101	0.125	0.135	108	6.40	80 - 120	20	
Zinc	0.0715	0.125	0.193	97.4	0.125	0.203	105	4.74	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4812182
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060730 Cal ID: ICP-MS2- Worknum: WG573557
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG573483-01 File ID: NI.062116.131623 Dil: 1 Matrix: WATER
Sample ID: WG573483-04 MS File ID: NI.062116.131935 Dil: 1 Units: mg/L
Sample ID: WG573483-05 MSD File ID: NI.062116.132247 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Arsenic	ND	0.125	0.128	103	0.125	0.125	100	2.26	80 - 120	20	
Silver	ND	0.125	0.119	95.1	0.125	0.123	98.5	3.53	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4812182
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16060730 **Worknum:** WG573557
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG573557-02 **File ID:** NI.062116.133221 **Dil:** 5 **Units:** ug/L
Sample: L16060731-02 **File ID:** NI.062116.132558 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	1.14		ND			
Arsenic	12.2	X	12.5	X	2.14	
Barium	10.8		ND			
Cadmium	0.267		ND			
Chromium	1.95		ND			
Cobalt	0.370		ND			
Copper	147		ND			
Lead	9.25		ND			
Manganese	21.0		ND			
Nickel	1.17		ND			
Silver	ND	U	ND	U		
Thallium	0.0436		ND			
Vanadium	5.28		ND			
Zinc	18.4		ND			

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4812176
06/21/2016 18:22

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16060730 **Worknum:** WG572869
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG572869-02 **File ID:** NI.061616.194427 **Dil:** 25 **Units:** ug/L
Sample: L16060754-01 **File ID:** NI.061616.193450 **Dil:** 5

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	2.27	F	ND	U		
Arsenic	ND	U	ND	U		
Barium	20.8	X	20.9	F	0.70	
Cadmium	ND	U	ND	U		
Chromium	2.11	F	ND	U		
Cobalt	ND	U	ND	U		
Copper	107	X	110	X	2.54	
Lead	1.85	F	ND	U		
Manganese	17.9	X	18.9	F	5.54	
Nickel	ND	U	ND	U		
Silver	ND	U	ND	U		
Thallium	ND	U	ND	U		
Vanadium	2.04	F	ND	U		
Zinc	100	X	ND	U		

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4812176
06/21/2016 18:22

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16060730 **Worknum:** WG572869
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG572869-02 **File ID:** NI.061616.193450 **Dil:** 5 **Units:** ug/L
Sample: L16060754-01 **File ID:** NI.061616.192827 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	ND	U	2.27	F	1100.00	
Arsenic	0.304	F	ND	U		
Barium	21.4	X	20.8	X	2.86	
Cadmium	ND	U	ND	U		
Chromium	1.95	X	2.11	F	8.12	
Cobalt	0.616	F	ND	U		
Copper	104		107		2.99	
Lead	1.81	X	1.85	F	2.23	
Manganese	18.1	X	17.9	X	0.86	
Nickel	2.91	F	ND	U		
Silver	ND	U	ND	U		
Thallium	ND	U	ND	U		
Vanadium	1.81	X	2.04	F	12.90	
Zinc	97.6	X	100	X	2.53	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4812176
06/21/2016 18:22

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060730 **Worknum:** WG572869
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG572869-01 **File ID:** NI.061616.193138 **Dil:** 1 **Units:** ug/L
Sample ID: L16060754-01 **File ID:** NI.061616.192827 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	51.2		0	U	50	102.4	75 - 125	
ARSENIC	49.9		0.304	F	50	99.2	75 - 125	
BARIUM	70.7		21.4		50	98.7	75 - 125	
CADMIUM	50.8		0	U	50	101.5	75 - 125	
CHROMIUM	49.7		1.95		50	95.5	75 - 125	
COBALT	53.8		0.616	F	50	106.4	75 - 125	
COPPER	146		104		50	84.8	75 - 125	
LEAD	47.6		1.81		50	91.6	75 - 125	
MANGANESE	68.2		18.1		50	100.2	75 - 125	
NICKEL	49.4		2.91	F	50	92.9	75 - 125	
SILVER	50.6		0	U	50	101.2	75 - 125	
THALLIUM	44.4		0	U	50	88.7	75 - 125	
VANADIUM	53.4		1.81		50	103.2	75 - 125	
ZINC	139		97.6		50	83.0	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4812177
Report generated: 06/21/2016 18:22

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060730 **Worknum:** WG573557
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG573557-01 **File ID:** NI.062116.132910 **Dil:** 1 **Units:** ug/L
Sample ID: L16060731-02 **File ID:** NI.062116.132558 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	50.4		1.14		50	98.5	75 - 125	
ARSENIC	64.0		12.2		50	103.6	75 - 125	
BARIUM	60.7		10.8		50	99.9	75 - 125	
CADMIUM	51.9		0.267	F	50	103.2	75 - 125	
CHROMIUM	52.8		1.95		50	101.7	75 - 125	
COBALT	53.2		0.370	F	50	105.7	75 - 125	
COPPER	195		147		50	96.4	75 - 125	
LEAD	60.3		9.25		50	102.0	75 - 125	
MANGANESE	72.2		21.0		50	102.4	75 - 125	
NICKEL	51.1		1.17	F	50	99.8	75 - 125	
SILVER	50.1		0	U	50	100.3	75 - 125	
THALLIUM	49.7		0.0436	F	50	99.4	75 - 125	
VANADIUM	57.1		5.28		50	103.6	75 - 125	
ZINC	70.3		18.4	F	50	103.8	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4812177
Report generated: 06/21/2016 18:22

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16060730	Workgroup (AAB#):	WG572869
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG573095	Initial Calibration Date:	16-JUN-2016 15:43

	WG573095-01		WG573095-02		WG573095-03		WG573095-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	44.3	.4	294	50	219000	100	429000	.999808	
ARSENIC	0	72.1	.4	27.4	50	55400	100	107000	.999975	
BARIUM	0	17.0	.4	202	50	90500	100	179000	.999915	
CADMIUM	0	3.70	.4	107	50	96700	100	192000	.999929	
CHROMIUM	0	2890	.4	7150	50	370000	100	726000	.999966	
COBALT	0	263	.4	583	50	321000	100	621000	.999989	
COPPER	0	79.7	.4	217	50	93700	100	182000	.999999	
LEAD	0	828	.4	1800	50	831000	100	1630000	.999997	
MANGANESE	0	613	.4	1040	50	296000	100	576000	1	
NICKEL	0	108	.4	245	50	96000	100	187000	1	
SILVER	0	82.7	.4	386	50	301000	100	584000	.999738	
THALLIUM	0	10.0	.4	392	50	373000	100	729000	.999991	
VANADIUM	0	581	.4	1540	50	356000	100	688000	.999992	
ZINC	0	145	.4	311	50	55400	100	108000	1	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4812185
Report generated: 21-JUN-2016 18:22

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16060730	Workgroup (AAB#):	WG573557
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG573631	Initial Calibration Date:	21-JUN-2016 12:44

	WG573631-01		WG573631-02		WG573631-03		WG573631-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	43.1	.4	245	50	207000	100	404000	.999913	
ARSENIC	0	-25.5	.4	16.4	50	52300	100	101000	.999973	
BARIUM	0	106	.4	194	50	89200	100	176000	.999962	
CADMIUM	0	9.30	.4	103	50	91400	100	179000	.999944	
CHROMIUM	0	5910	.4	6080	50	320000	100	622000	.999997	
COBALT	0	269	.4	583	50	304000	100	585000	.999971	
COPPER	0	156	.4	255	50	88900	100	173000	.999998	
LEAD	0	792	.4	1730	50	793000	100	1540000	.999869	
MANGANESE	0	1210	.4	1640	50	319000	100	618000	.999993	
NICKEL	0	292	.4	417	50	89800	100	174000	.999991	
SILVER	0	92.7	.4	386	50	288000	100	561000	.999911	
THALLIUM	0	11.0	.4	386	50	361000	100	706000	.999917	
VANADIUM	0	1010	.4	1270	50	298000	100	571000	.999958	
ZINC	0	143	.4	285	50	51700	100	100000	.999996	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4812185
Report generated: 21-JUN-2016 18:22

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060730
Run Date: 06/16/2016
Sample ID: WG573095-09
Instrument ID: ICP-MS2
Run Time: 16:03
Method: 6020A
File ID: NI.061616.160355
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572869
Cal ID: ICP-MS2 - 16-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
COPPER	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.268	F
THALLIUM	.04	.16	.04	U
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4812187
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060730
Instrument ID: ICP-MS2
File ID: NI.062116.125048
Workgroup (AAB#): WG573557
Matrix: WATER

Run Date: 06/21/2016
Run Time: 12:50
Analyst: BKT
Cal ID: ICP-MS2 - 21-JUN-16

Sample ID: WG573631-06
Method: 6020A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U

U = Result is less than 2 x MDL
F = Result is between MDL and 2 x MDL
* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4812187
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/16/2016
Sample ID: WG573095-13
Instrument ID: ICP-MS2
Run Time: 16:38
Method: 6020A
File ID: NI.061616.163850
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812190
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/16/2016
Sample ID: WG573095-19
Instrument ID: ICP-MS2
Run Time: 18:58
Method: 6020A
File ID: NI.061616.185850
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812190
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/16/2016
Sample ID: WG573095-22
Instrument ID: ICP-MS2
Run Time: 19:41
Method: 6020A
File ID: NI.061616.194114
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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PDF File ID: 4812190
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/16/2016
Sample ID: WG573095-24
Instrument ID: ICP-MS2
Run Time: 20:22
Method: 6020A
File ID: NI.061616.202232
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812190
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/16/2016
Sample ID: WG573095-26
Instrument ID: ICP-MS2
Run Time: 21:10
Method: 6020A
File ID: NI.061616.211014
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Report generated 06/21/2016 18:22

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/16/2016
Sample ID: WG573095-28
Instrument ID: ICP-MS2
Run Time: 21:48
Method: 6020A
File ID: NI.061616.214835
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Report generated 06/21/2016 18:22

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/21/2016
Sample ID: WG573631-11
Instrument ID: ICP-MS2
Run Time: 13:06
Method: 6020A
File ID: NI.062116.130648
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Arsenic	0.200	0.800	0.200	U
Silver	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812190
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/21/2016
Sample ID: WG573631-13
Instrument ID: ICP-MS2
Run Time: 13:43
Method: 6020A
File ID: NI.062116.134314
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Arsenic	0.200	0.800	0.200	U
Silver	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812190
Report generated 06/21/2016 18:22

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/21/2016
Sample ID: WG573631-15
Instrument ID: ICP-MS2
Run Time: 15:57
Method: 6020A
File ID: NI.062116.155734
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Arsenic	0.200	0.800	0.200	U
Silver	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
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Report generated 06/21/2016 18:22

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/21/2016
Sample ID: WG573631-17
Instrument ID: ICP-MS2
Run Time: 16:23
Method: 6020A
File ID: NI.062116.162309
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Arsenic	0.200	0.800	0.200	U
Silver	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812190
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060730 Run Date: 06/16/2016 Sample ID: WG573095-08
Instrument ID: ICP-MS2 Run Time: 15:57 Method: 6020A
File ID: NI.061616.155746 Analyst: BKT Units: ug/L
Workgroup (AAB#): WG572869 Cal ID: ICP-MS - 16-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	46.9	93.8	90 - 110	
Barium		50	47.7	95.3	90 - 110	
Cadmium		50	48.1	96.2	90 - 110	
Chromium		50	50.4	101	90 - 110	
Cobalt		50	49.2	98.4	90 - 110	
Copper		50	50.2	100	90 - 110	
Lead		50	48.5	96.9	90 - 110	
Manganese		50	51.6	103	90 - 110	
Nickel		50	50.1	100	90 - 110	
Thallium		50	47.8	95.7	90 - 110	
Vanadium		50	48.7	97.3	90 - 110	
Zinc		50	50.0	100	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4812186
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060730
Run Date: 06/21/2016
Sample ID: WG573631-05
Instrument ID: ICP-MS2
Run Time: 12:47
Method: 6020A
File ID: NI.062116.124735
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Arsenic		50	50.4	101	90 - 110	
Silver		50	49.8	99.6	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4812186
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/16/2016
Sample ID: WG573095-12
Instrument ID: ICP-MS2
Run Time: 16:25
Method: 6020A
File ID: NI.061616.162516
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0492	mg/L	98.4	90 - 110		
Barium		0.0500	0.0480	mg/L	96.0	90 - 110		
Cadmium		0.0500	0.0483	mg/L	96.7	90 - 110		
Chromium		0.0500	0.0497	mg/L	99.4	90 - 110		
Cobalt		0.0500	0.0504	mg/L	101	90 - 110		
Copper		0.0500	0.0502	mg/L	100	90 - 110		
Lead		0.0500	0.0490	mg/L	98.0	90 - 110		
Manganese		0.0500	0.0514	mg/L	103	90 - 110		
Nickel		0.0500	0.0501	mg/L	100	90 - 110		
Thallium		0.0500	0.0491	mg/L	98.2	90 - 110		
Vanadium		0.0500	0.0497	mg/L	99.3	90 - 110		
Zinc		0.0500	0.0499	mg/L	99.7	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812189
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/16/2016
Sample ID: WG573095-18
Instrument ID: ICP-MS2
Run Time: 18:55
Method: 6020A
File ID: NI.061616.185538
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0494	mg/L	98.8	90 - 110		
Barium		0.0500	0.0486	mg/L	97.2	90 - 110		
Cadmium		0.0500	0.0500	mg/L	100	90 - 110		
Chromium		0.0500	0.0500	mg/L	100	90 - 110		
Cobalt		0.0500	0.0532	mg/L	106	90 - 110		
Copper		0.0500	0.0496	mg/L	99.2	90 - 110		
Lead		0.0500	0.0501	mg/L	100	90 - 110		
Manganese		0.0500	0.0540	mg/L	108	90 - 110		
Nickel		0.0500	0.0492	mg/L	98.5	90 - 110		
Thallium		0.0500	0.0493	mg/L	98.6	90 - 110		
Vanadium		0.0500	0.0506	mg/L	101	90 - 110		
Zinc		0.0500	0.0496	mg/L	99.2	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812189
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/16/2016
Sample ID: WG573095-21
Instrument ID: ICP-MS2
Run Time: 19:38
Method: 6020A
File ID: NI.061616.193803
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0512	mg/L	102	90 - 110		
Barium		0.0500	0.0486	mg/L	97.1	90 - 110		
Cadmium		0.0500	0.0503	mg/L	101	90 - 110		
Chromium		0.0500	0.0490	mg/L	98.0	90 - 110		
Cobalt		0.0500	0.0548	mg/L	110	90 - 110		
Copper		0.0500	0.0486	mg/L	97.2	90 - 110		
Lead		0.0500	0.0517	mg/L	103	90 - 110		
Manganese		0.0500	0.0527	mg/L	105	90 - 110		
Nickel		0.0500	0.0487	mg/L	97.4	90 - 110		
Thallium		0.0500	0.0499	mg/L	99.9	90 - 110		
Vanadium		0.0500	0.0515	mg/L	103	90 - 110		
Zinc		0.0500	0.0495	mg/L	98.9	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812189
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/16/2016
Sample ID: WG573095-23
Instrument ID: ICP-MS2
Run Time: 20:19
Method: 6020A
File ID: NI.061616.201921
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0477	mg/L	95.4	90 - 110		
Barium		0.0500	0.0467	mg/L	93.3	90 - 110		
Cadmium		0.0500	0.0485	mg/L	96.9	90 - 110		
Chromium		0.0500	0.0490	mg/L	97.9	90 - 110		
Cobalt		0.0500	0.0524	mg/L	105	90 - 110		
Copper		0.0500	0.0483	mg/L	96.5	90 - 110		
Lead		0.0500	0.0502	mg/L	100	90 - 110		
Manganese		0.0500	0.0530	mg/L	106	90 - 110		
Nickel		0.0500	0.0478	mg/L	95.6	90 - 110		
Thallium		0.0500	0.0479	mg/L	95.7	90 - 110		
Vanadium		0.0500	0.0501	mg/L	100	90 - 110		
Zinc		0.0500	0.0480	mg/L	95.9	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812189
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/16/2016
Sample ID: WG573095-25
Instrument ID: ICP-MS2
Run Time: 21:07
Method: 6020A
File ID: NI.061616.210702
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0484	mg/L	96.9	90 - 110		
Barium		0.0500	0.0477	mg/L	95.4	90 - 110		
Cadmium		0.0500	0.0483	mg/L	96.7	90 - 110		
Chromium		0.0500	0.0499	mg/L	99.8	90 - 110		
Cobalt		0.0500	0.0494	mg/L	98.8	90 - 110		
Copper		0.0500	0.0496	mg/L	99.2	90 - 110		
Lead		0.0500	0.0494	mg/L	98.8	90 - 110		
Manganese		0.0500	0.0534	mg/L	107	90 - 110		
Nickel		0.0500	0.0496	mg/L	99.2	90 - 110		
Thallium		0.0500	0.0475	mg/L	95.0	90 - 110		
Vanadium		0.0500	0.0503	mg/L	101	90 - 110		
Zinc		0.0500	0.0497	mg/L	99.4	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812189
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/16/2016
Sample ID: WG573095-27
Instrument ID: ICP-MS2
Run Time: 21:45
Method: 6020A
File ID: NI.061616.214523
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0479	mg/L	95.7	90 - 110		
Barium		0.0500	0.0478	mg/L	95.6	90 - 110		
Cadmium		0.0500	0.0483	mg/L	96.6	90 - 110		
Chromium		0.0500	0.0507	mg/L	101	90 - 110		
Cobalt		0.0500	0.0512	mg/L	102	90 - 110		
Copper		0.0500	0.0503	mg/L	101	90 - 110		
Lead		0.0500	0.0512	mg/L	102	90 - 110		
Manganese		0.0500	0.0553	mg/L	111	90 - 110		*
Nickel		0.0500	0.0504	mg/L	101	90 - 110		
Thallium		0.0500	0.0492	mg/L	98.4	90 - 110		
Vanadium		0.0500	0.0507	mg/L	101	90 - 110		
Zinc		0.0500	0.0501	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812189
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/21/2016
Sample ID: WG573631-10
Instrument ID: ICP-MS2
Run Time: 13:03
Method: 6020A
File ID: NI.062116.130337
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Arsenic		0.0500	0.0504	mg/L	101	90 - 110		
Silver		0.0500	0.0492	mg/L	98.4	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812189
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/21/2016
Sample ID: WG573631-12
Instrument ID: ICP-MS2
Run Time: 13:40
Method: 6020A
File ID: NI.062116.134003
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Arsenic		0.0500	0.0508	mg/L	102	90 - 110		
Silver		0.0500	0.0497	mg/L	99.3	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812189
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/21/2016
Sample ID: WG573631-14
Instrument ID: ICP-MS2
Run Time: 15:54
Method: 6020A
File ID: NI.062116.155422
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Arsenic		0.0500	0.0505	mg/L	101	90 - 110		
Silver		0.0500	0.0514	mg/L	103	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812189
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/21/2016
Sample ID: WG573631-16
Instrument ID: ICP-MS2
Run Time: 16:19
Method: 6020A
File ID: NI.062116.161957
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Arsenic		0.0500	0.0492	mg/L	98.4	90 - 110		
Silver		0.0500	0.0510	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812189
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060730
Run Date: 06/16/2016
Sample ID: WG573095-07
Instrument ID: ICP-MS2
Run Time: 15:52
Method: 6020A
File ID: NI.061616.155239
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.437	ug/L	109	70 - 130		
Barium		0.750	0.670	ug/L	89.4	70 - 130		
Cadmium		0.240	0.237	ug/L	98.6	70 - 130		
Chromium		0.800	0.723	ug/L	90.4	70 - 130		
Cobalt		0.400	0.380	ug/L	95.0	70 - 130		
Copper		0.800	0.790	ug/L	98.7	70 - 130		
Lead		0.200	0.183	ug/L	91.4	70 - 130		
Manganese		0.500	0.452	ug/L	90.4	70 - 130		
Nickel		1.60	1.54	ug/L	96.1	70 - 130		
Thallium		0.0800	0.0818	ug/L	102	70 - 130		
Vanadium		0.400	0.354	ug/L	88.5	70 - 130		
Zinc		6.25	6.72	ug/L	107	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4812191
Report generated 06/22/2016 13:43

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060730
Run Date: 06/16/2016
Sample ID: WG573095-20
Instrument ID: ICP-MS2
Run Time: 19:02
Method: 6020A
File ID: NI.061616.190202
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.394	ug/L	98.5	70 - 130		
Barium		0.750	0.633	ug/L	84.4	70 - 130		
Cadmium		0.240	0.238	ug/L	99.0	70 - 130		
Chromium		0.800	0.710	ug/L	88.8	70 - 130		
Cobalt		0.400	0.391	ug/L	97.6	70 - 130		
Copper		0.800	0.779	ug/L	97.4	70 - 130		
Lead		0.200	0.185	ug/L	92.4	70 - 130		
Manganese		0.500	0.600	ug/L	120	70 - 130		
Nickel		1.60	1.49	ug/L	93.1	70 - 130		
Thallium		0.0800	0.0829	ug/L	104	70 - 130		
Vanadium		0.400	0.360	ug/L	90.1	70 - 130		
Zinc		6.25	6.68	ug/L	107	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4812191
Report generated 06/22/2016 13:43

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060730
Run Date: 06/16/2016
Sample ID: WG573095-29
Instrument ID: ICP-MS2
Run Time: 21:51
Method: 6020A
File ID: NI.061616.215148
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG572869
Cal ID: ICP-MS - 16-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.379	ug/L	94.7	70 - 130		
Barium		0.750	0.661	ug/L	88.1	70 - 130		
Cadmium		0.240	0.222	ug/L	92.4	70 - 130		
Chromium		0.800	0.719	ug/L	89.8	70 - 130		
Cobalt		0.400	0.364	ug/L	91.0	70 - 130		
Copper		0.800	0.802	ug/L	100	70 - 130		
Lead		0.200	0.176	ug/L	88.2	70 - 130		
Manganese		0.500	0.484	ug/L	96.8	70 - 130		
Nickel		1.60	1.55	ug/L	96.6	70 - 130		
Thallium		0.0800	0.0736	ug/L	92.0	70 - 130		
Vanadium		0.400	0.363	ug/L	90.7	70 - 130		
Zinc		6.25	6.31	ug/L	101	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4812191
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Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060730
Run Date: 06/21/2016
Sample ID: WG573631-07
Instrument ID: ICP-MS2
Run Time: 12:54
Method: 6020A
File ID: NI.062116.125401
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Arsenic		0.400	0.431	ug/L	108	70 - 130		
Silver		0.400	0.401	ug/L	100	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4812191
Report generated 06/22/2016 13:43

Microbac Laboratories Inc.

LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060730
Run Date: 06/21/2016
Sample ID: WG573631-24
Instrument ID: ICP-MS2
Run Time: 19:12
Method: 6020A
File ID: NI.062116.191207
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG573557
Cal ID: ICP-MS - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Arsenic		0.400	0.388	ug/L	97.1	70 - 130		
Silver		0.400	0.394	ug/L	98.6	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4812191
Report generated 06/22/2016 13:43

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060730
Instrument ID: ICP-MS2
Sol. A : WG573095-10 **File ID:** NI.061616.160740
Sol. AB : WG573095-11 **File ID:** NI.061616.162201

Workgroup (AAB#): WG572869
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.0793	NS	100	94.6	94.6	
Barium	NS	0.0676	NS	100	94.7	94.7	
Cadmium	NS	-0.0599	NS	100	96.1	96.1	
Chromium	NS	0.0900	NS	100	99.8	99.8	
Cobalt	NS	0.0224	NS	100	104	104	
Copper	NS	0.277	NS	100	99.9	99.9	
Lead	NS	0.0928	NS	100	98.9	98.9	
Manganese	NS	0.0620	NS	100	106	106	
Nickel	NS	0.326	NS	100	99.4	99.4	
Thallium	NS	0.113	NS	100	98.0	98.0	
Vanadium	NS	0.00810	NS	100	100	100	
Zinc	NS	1.37	NS	100	102	102	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4812188
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Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060730
Instrument ID: ICP-MS2
Sol. A : WG573631-08 **File ID:** NI.062116.125712
Sol. AB : WG573631-09 **File ID:** NI.062116.130024

Workgroup (AAB#): WG573557
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Arsenic	NS	0.00630	NS	100	101	101	
Silver	NS	0.0339	NS	100	95.1	95.1	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4812188
Report generated 06/21/2016 18:22

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060730 **Analytical Method:** 6020
Analytical Workgroup: WG572869 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 16-JUN-2016 15:33

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060730-01	SAMP	16-JUN-2016 20:29	89.796	92.016	94.86
L16060730-01	SAMP	16-JUN-2016 21:35	97.501	95.775	104.832
L16060730-02	SAMP	16-JUN-2016 20:40	87.761	90.678	96.199
L16060730-02	SAMP	16-JUN-2016 21:38	95.058	99.144	101.21
L16060730-03	SAMP	16-JUN-2016 20:43	82.22	89.774	88.488
L16060730-03	SAMP	16-JUN-2016 21:42	95.484	101.752	99.452
WG572730-03	BLANK	16-JUN-2016 19:05	100.216	99.081	102.939
WG572730-04	LCS	16-JUN-2016 19:08	101.421	99.849	103.204
WG572869-01	PSPK	16-JUN-2016 19:31	112.105	100.336	99.705
WG572869-02	SERIAL	16-JUN-2016 19:34	109.035	99.586	107.45
WG572869-02	SERIAL	16-JUN-2016 19:44	102.137	96.905	105.944
WG573095-07	LLICV	16-JUN-2016 15:52	96.13	93.157	96.318
WG573095-08	ICV	16-JUN-2016 15:57	97.13	96.114	99.927
WG573095-09	ICB	16-JUN-2016 16:03	97.661	96.107	100.676
WG573095-10	ICS	16-JUN-2016 16:07	96.606	97.591	98.938
WG573095-11	ICS	16-JUN-2016 16:22	96.039	94.231	101.38
WG573095-12	CCV	16-JUN-2016 16:25	96.818	96.058	101.069
WG573095-13	CCB	16-JUN-2016 16:38	95.395	96.878	98.817
WG573095-18	CCV	16-JUN-2016 18:55	100.879	98.942	103.257
WG573095-19	CCB	16-JUN-2016 18:58	100.363	100.186	103.213
WG573095-20	LLCCV	16-JUN-2016 19:02	98.621	96.559	99.934
WG573095-21	CCV	16-JUN-2016 19:38	99.655	98.678	100.997
WG573095-22	CCB	16-JUN-2016 19:41	103.251	98.035	102.526
WG573095-23	CCV	16-JUN-2016 20:19	102.275	100.766	107.12
WG573095-24	CCB	16-JUN-2016 20:22	101.002	103.79	104.368
WG573095-25	CCV	16-JUN-2016 21:07	98.791	98.968	101.902
WG573095-26	CCB	16-JUN-2016 21:10	98.056	96.18	104.938
WG573095-27	CCV	16-JUN-2016 21:45	94.877	96.278	101.991
WG573095-28	CCB	16-JUN-2016 21:48	95.773	98.51	99.349
WG573095-29	LLCCV	16-JUN-2016 21:51	96.58	95.236	98.152

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4812184
Report generated: 06/21/2016 18:22

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060730 **Analytical Method:** 6020
Analytical Workgroup: WG572869 **Matrix:** 18
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 16-JUN-2016 15:33

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060731-02	SAMP	16-JUN-2016 20:46	98.985	103.449	100.756
L16060731-02	SAMP	16-JUN-2016 20:49	100.189	99.166	103.967

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4812184
Report generated: 06/21/2016 18:22

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060730 **Analytical Method:** 6020
Analytical Workgroup: WG572869 **Matrix:** 2
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 16-JUN-2016 15:33

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060754-01	SAMP	16-JUN-2016 19:28	110.371	97.831	102.475
L16060754-01	SAMP	16-JUN-2016 19:34	109.035	99.586	107.45

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4812184
Report generated: 06/21/2016 18:22

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060730 **Analytical Method:** 6020
Analytical Workgroup: WG573557 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 21-JUN-2016 12:34

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060730-01	SAMP	21-JUN-2016 15:51	87.686	93.118	93.994
L16060730-02	SAMP	21-JUN-2016 16:00	85.838	95.758	88.145
L16060730-03	SAMP	21-JUN-2016 16:03	83.547	88.117	87.886
WG573483-02	BLANK	21-JUN-2016 13:10	95.679	98.524	97.195
WG573483-03	LCS	21-JUN-2016 13:36	94.921	99.695	97.281
WG573557-01	PSPK	21-JUN-2016 13:29	98.084	98.955	98.448
WG573557-02	SERIAL	21-JUN-2016 13:32	97.19	102.137	97.153
WG573631-05	ICV	21-JUN-2016 12:47	96.069	98.452	97.355
WG573631-06	ICB	21-JUN-2016 12:50	96.354	99.72	98.43
WG573631-07	LLICV	21-JUN-2016 12:54	94.241	93.729	96.647
WG573631-08	ICS	21-JUN-2016 12:57	94.267	96.671	98.81
WG573631-09	ICS	21-JUN-2016 13:00	96.004	99.918	95.904
WG573631-10	CCV	21-JUN-2016 13:03	94.215	98.219	98.362
WG573631-11	CCB	21-JUN-2016 13:06	96.643	100.438	97.789
WG573631-12	CCV	21-JUN-2016 13:40	96.239	97.396	98.415
WG573631-13	CCB	21-JUN-2016 13:43	94.78	98.379	99.644
WG573631-14	CCV	21-JUN-2016 15:54	98.094	101.613	99.232
WG573631-15	CCB	21-JUN-2016 15:57	98.876	97.92	103.15
WG573631-16	CCV	21-JUN-2016 16:19	102.709	110.827	104.784
WG573631-17	CCB	21-JUN-2016 16:23	103.832	106.69	110.935

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4812184
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Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060730 **Analytical Method:** 6020
Analytical Workgroup: WG573557 **Matrix:** 18
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 21-JUN-2016 12:34

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060731-02	SAMP	21-JUN-2016 13:25	97.415	97.241	100.268
WG572662-01	FBLK2	21-JUN-2016 13:13	96.669	99.978	97.284

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4812184
Report generated: 06/21/2016 18:22

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16060730 **Date:** 04/19/2016
Insturment ID: ICP-MS2 **Method:** 6020A

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Uranium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4812183
Report generated: 06/21/2016 18:22

2.3.2.3 Raw Data

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Thursday, June 16, 2016 14:07:39

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1326	2024	0.708	
Mg	23.985	23.975	4498	2020	0.704	
Co	58.933	58.975	11692	2022	0.692	
In	114.904	114.875	22859	2028	0.691	
U	238.050	238.075	47457	2043	0.702	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	7.436
5.575	8.287
5.625	3.892
5.675	4.802
5.725	2.185
5.775	3.031
5.825	4.638
5.875	2.806
5.925	2.266
5.975	4.757
6.025	3.190
6.075	3.669
6.125	3.622
6.175	3.148
6.225	8.886
6.275	33.166
6.325	46.481
6.375	46.566
6.425	40.745
6.475	56.845
6.525	15.768
6.575	18.835
6.625	3.774
6.675	4.099
6.725	2.150
6.775	4.632
6.825	1.659

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6.875	4.657
6.925	1.715
6.975	2.467
7.025	2.458
7.075	2.433
7.125	2.586
7.175	4.875
7.225	1.268
7.275	2.064
7.325	10.536
7.375	54.398
7.425	60.990
7.475	63.888
7.525	51.618
7.575	39.529
7.625	69.722
7.675	47.507
7.725	16.110
7.775	58.685
7.825	58.330
7.875	66.667
7.925	61.450
7.975	55.902
8.025	102.740
8.075	55.902
8.125	38.401
8.175	63.949
8.225	43.853
8.275	60.858
8.325	45.079
8.375	40.074
8.425	40.074
8.475	54.149
22.525	
22.575	50.619
22.625	33.641
22.675	51.618
22.725	55.902
22.775	25.951
22.825	27.809
22.875	40.946
22.925	49.701
22.975	18.923
23.025	32.442
23.075	23.055
23.125	25.635
23.175	20.888

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23.225	21.374
23.275	25.000
23.325	45.400
23.375	27.285
23.425	30.987
23.475	25.476
23.525	13.045
23.575	6.296
23.625	2.182
23.675	2.995
23.725	2.713
23.775	2.035
23.825	1.176
23.875	0.613
23.925	0.955
23.975	1.904
24.025	1.612
24.075	1.077
24.125	1.787
24.175	1.904
24.225	1.298
24.275	1.635
24.325	13.413
24.375	39.123
24.425	39.529
24.475	21.077
24.525	2.911
24.575	3.152
24.625	1.254
24.675	1.656
24.725	1.429
24.775	1.818
24.825	1.348
24.875	0.955
24.925	1.650
24.975	0.624
25.025	1.148
25.075	1.394
25.125	0.398
25.175	1.878
25.225	3.006
25.275	5.326
25.325	42.950
25.375	30.619
25.425	70.613
25.475	32.723
57.525	12.330

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57.575	7.587
57.625	2.112
57.675	3.255
57.725	2.490
57.775	2.165
57.825	1.108
57.875	2.141
57.925	2.456
57.975	1.875
58.025	3.007
58.075	2.288
58.125	0.909
58.175	2.980
58.225	2.412
58.275	3.761
58.325	25.824
58.375	36.748
58.425	23.570
58.475	18.248
58.525	7.221
58.575	2.071
58.625	1.712
58.675	1.278
58.725	1.414
58.775	1.870
58.825	1.537
58.875	1.904
58.925	2.989
58.975	2.279
59.025	1.504
59.075	1.307
59.125	2.089
59.175	2.055
59.225	1.826
59.275	4.437
59.325	13.359
59.375	41.110
59.425	58.736
59.475	26.307
59.525	11.352
59.575	4.879
59.625	5.862
59.675	3.367
59.725	2.650
59.775	4.079
59.825	1.668
59.875	2.310

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59.925	1.238
59.975	3.774
60.025	3.677
60.075	1.742
60.125	2.822
60.175	4.864
60.225	4.103
60.275	3.750
60.325	18.054
60.375	31.623
60.425	49.739
60.475	56.723
113.525	6.653
113.575	1.927
113.625	2.838
113.675	2.697
113.725	2.195
113.775	4.236
113.825	2.523
113.875	1.968
113.925	2.426
113.975	2.953
114.025	1.676
114.075	1.976
114.125	1.813
114.175	2.440
114.225	7.942
114.275	11.452
114.325	42.061
114.375	20.163
114.425	13.593
114.475	1.983
114.525	1.683
114.575	2.531
114.625	0.874
114.675	1.279
114.725	0.891
114.775	1.779
114.825	1.186
114.875	1.029
114.925	1.564
114.975	0.950
115.025	1.530
115.075	1.114
115.125	2.208
115.175	3.123
115.225	4.486

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115.275	7.177
115.325	14.172
115.375	54.799
115.425	53.420
115.475	16.011
115.525	12.692
115.575	2.883
115.625	6.251
115.675	4.509
115.725	4.245
115.775	1.283
115.825	4.008
115.875	1.211
115.925	2.114
115.975	7.687
116.025	5.271
116.075	5.578
116.125	4.248
116.175	11.979
116.225	16.277
116.275	30.596
116.325	24.845
116.375	28.284
116.425	54.149
116.475	40.000
236.525	
236.575	23.855
236.625	34.401
236.675	27.422
236.725	35.668
236.775	39.989
236.825	18.757
236.875	23.077
236.925	20.761
236.975	14.650
237.025	36.943
237.075	27.109
237.125	25.586
237.175	42.799
237.225	24.325
237.275	21.429
237.325	30.129
237.375	15.267
237.425	4.597
237.475	48.577
237.525	19.963
237.575	13.238

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237.625	6.730
237.675	7.800
237.725	2.904
237.775	1.428
237.825	2.396
237.875	1.255
237.925	0.555
237.975	1.682
238.025	0.745
238.075	0.906
238.125	0.901
238.175	0.264
238.225	0.953
238.275	0.886
238.325	1.395
238.375	2.556
238.425	2.763
238.475	2.183
238.525	12.890
238.575	14.452
238.625	38.797
238.675	16.933
238.725	6.952
238.775	20.328
238.825	29.472
238.875	37.989
238.925	27.140
238.975	18.731
239.025	17.049
239.075	5.454
239.125	29.410
239.175	29.569
239.225	22.608
239.275	13.847
239.325	15.978
239.375	4.980
239.425	11.111
239.475	34.914

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SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\ReportOutput\a.swz

Start Time: 6/16/2016 3:04:36 PM
End Time: 6/16/2016 3:07:03 PM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 4248.80
        Obtained Intensity (Mg 23.985): 62852.37
        Obtained Intensity (In 114.904): 59263.95
        Obtained Intensity (U 238.05): 123631.92
        Obtained Intensity (Bkgd 220): 0.53
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.020 (=3505.01 / 175287.61)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.005 (=894.29 / 175287.61)
```

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SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\ReportOutput\a.swz

Optimization Status

Start Time: 6/16/2016 3:04:36 PM

Daily Performance Check
        Optimization Settings:
                Method: Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 1
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 4248.80
                Obtained Intensity (Mg 23.985): 62852.37
                Obtained Intensity (In 114.904): 59263.95
                Obtained Intensity (U 238.05): 123631.92
                Obtained Intensity (Bkgd 220): 0.53
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.020 (=3505.01 / 175287.61)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.005 (=894.29 / 175287.61)
[Passed]  Optimum value(s): N/A

End Time: 6/16/2016 3:07:03 PM
```


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Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Thursday, June 16, 2016 15:30:14
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	51024.1	2.3				ug/L		Standard
	Be	9	6.7	43.3				ug/L		Standard
	Al	27	625.0	8.5				ug/L		Standard
	Sc	45	29647.3	3.2				ug/L		Standard
	Ti	47	57.3	8.1				ug/L		Standard
	V	51	1141.9	1.8				ug/L		Standard
	Cr	52	6628.1	1.7				ug/L		Standard
	Cr	53	430.0	9.1				ug/L		Standard
	Mn	55	603.3	5.5				ug/L		Standard
	Co	59	237.3	7.6				ug/L		Standard
	Ni	60	141.0	3.9				ug/L		Standard
	Cu	65	109.0	10.8				ug/L		Standard
	Zn	66	159.0	8.8				ug/L		Standard
>	Ge	72	474053.1	1.2				ug/L		Standard
	As	75	-34.2	89.8				ug/L		Standard
	Se	82	14.4	39.0				ug/L		Standard
	Se-1	77	55.3	3.8				ug/L		Standard
>	Ga	71	50.0	36.1				mg/L		Standard
	Rb	85	20.0	43.3				ug/L		Standard
	Y	89	376601.7	1.2				ug/L		Standard
>	Rh	103	16.7	69.3				ug/L		Standard
	Mo	98	8.0	17.7				ug/L		Standard
	Ag	107	80.7	16.9				ug/L		Standard
	Cd	111	3.0	0.1				mg/L		Standard
	Cd	114	7.5	153.9				ug/L		Standard
>	In	115	524721.8	2.2				ug/L		Standard
	Sn	118	715.0	18.5				ug/L		Standard
	Sb	123	200.9	30.1				ug/L		Standard
	Ba	135	107.7	7.0				ug/L		Standard
	Ce	140	30.0	0.0				ug/L		Standard
>	Tb	159	792236.5	1.3				ug/L		Standard
	Ho	165	6.7	43.3				ug/L		Standard
	Tl	203	9.0	50.9				ug/L		Standard
	Tl	205	0.0					ug/L		Standard
	Pb	206	216.0	6.4				ug/L		Standard
	Pb	207	179.7	5.8				ug/L		Standard
	Pb	208	717.3	4.2				ug/L		Standard
	U	238	3.7	15.7				ug/L		Standard
>	Bi	209	460342.9	1.5				ug/L		Standard

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	Na	23	0.0		mg/L	Standard
	Mg	24	20.0	50.0	mg/L	Standard
	K	39	21.7	26.6	mg/L	Standard
	Ca	43	46.7	27.0	mg/L	Standard
	Fe	54	151.0	18.9	mg/L	Standard
	Fe	57	195.0	11.2	mg/L	Standard
>	**Sc-1**	45	29647.3	3.2	mg/L	Standard
	Cl	35	154151.6	0.9	ug/L	Standard
	Kr	83	3.3	17.3	ug/L	Standard
	Br	81	1606.8	11.7	ug/L	Standard
	P	31	22752.1	1.8	ug/L	Standard
	S	34	5049.2	1.8	ug/L	Standard
	Sr	88	86.7	6.7	ug/L	Standard
	C	12	46.7	24.7	mg/L	Standard
	N	14	0.0		mg/L	Standard
	Hg	202	0.0		mg/L	Standard
	Dy	164	9.8	99.2	mg/L	Standard
	Ho-1	165	6.7	43.3	mg/L	Standard
	Er	166	3.3	173.2	mg/L	Standard
	I	127	841.7	10.5	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Blank
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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Thursday, June 16, 2016 15:33:26
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	61336.5	17.7				ug/L	51024	Standard
	Be	9	5.0	100.0				ug/L	7	Standard
	Al	27	221.7	31.9				ug/L	625	Standard
	Sc	45	28802.5	9.9				ug/L	29647	Standard
	Ti	47	62.3	33.0				ug/L	57	Standard
	V	51	580.8	14.0				ug/L	1142	Standard
	Cr	52	2885.9	3.7				ug/L	6628	Standard
	Cr	53	203.3	7.5				ug/L	430	Standard
	Mn	55	613.3	37.8				ug/L	603	Standard
	Co	59	262.7	10.4				ug/L	237	Standard
	Ni	60	108.3	5.6				ug/L	141	Standard
	Cu	65	79.7	10.1				ug/L	109	Standard
	Zn	66	145.3	10.1				ug/L	159	Standard
>	Ge	72	493610.1	8.2				ug/L	474053	Standard
	As	75	72.1	70.6				ug/L	-34	Standard
	Se	82	46.9	37.4				ug/L	14	Standard
	Se-1	77	47.7	12.6				ug/L	55	Standard
>	Ga	71	35.0	37.8				mg/L	50	Standard
	Rb	85	20.0	0.0				ug/L	20	Standard
	Y	89	401482.6	6.9				ug/L	376602	Standard
>	Rh	103	11.7	107.9				ug/L	17	Standard
	Mo	98	7.8	54.6				ug/L	8	Standard
	Ag	107	82.7	18.8				ug/L	81	Standard
	Cd	111	3.7	15.8				mg/L	3	Standard
	Cd	114	6.4	91.9				ug/L	7	Standard
>	In	115	555148.6	6.0				ug/L	524722	Standard
	Sn	118	256.7	2.2				ug/L	715	Standard
	Sb	123	44.3	25.6				ug/L	201	Standard
	Ba	135	17.0	5.9				ug/L	108	Standard
	Ce	140	18.3	15.7				ug/L	30	Standard
>	Tb	159	901198.6	13.9				ug/L	792236	Standard
	Ho	165	1.7	173.2				ug/L	7	Standard
	Tl	203	10.0	75.5				ug/L	9	Standard
	Tl	205	8.3	124.9				ug/L	0	Standard
	Pb	206	256.7	23.8				ug/L	216	Standard
	Pb	207	208.0	18.4				ug/L	180	Standard
	Pb	208	827.7	17.4				ug/L	717	Standard
	U	238	2.7	21.7				ug/L	4	Standard
>	Bi	209	546132.2	18.5				ug/L	460343	Standard

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	Na	23	0.0		mg/L	0	Standard
	Mg	24	28.3	10.2	mg/L	20	Standard
	K	39	15.0	33.3	mg/L	22	Standard
	Ca	43	50.0	17.3	mg/L	47	Standard
	Fe	54	136.0	58.3	mg/L	151	Standard
	Fe	57	195.0	23.5	mg/L	195	Standard
>	**Sc-1**	45	28802.5	9.9	mg/L	29647	Standard
	Cl	35	67826.3	3.7	ug/L	154152	Standard
	Kr	83	1.7	34.6	ug/L	3	Standard
	Br	81	586.7	16.8	ug/L	1607	Standard
	P	31	15342.0	42.1	ug/L	22752	Standard
	S	34	2116.8	1.5	ug/L	5049	Standard
	Sr	88	106.7	39.0	ug/L	87	Standard
	C	12	23.3	24.7	mg/L	47	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	3.3	173.2	mg/L	0	Standard
	Dy	164	9.5	5.0	mg/L	10	Standard
	Ho-1	165	1.7	173.2	mg/L	7	Standard
	Er	166	10.0	100.0	mg/L	3	Standard
	I	127	316.7	10.7	mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 1
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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Thursday, June 16, 2016 15:36:37
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48482.4	0.7				ug/L	51024	Standard
	Be	9	56.7	51.7				ug/L	7	Standard
	Al	27	8083.8	2.1				ug/L	625	Standard
	Sc	45	30706.1	1.7				ug/L	29647	Standard
	Ti	47	79.3	15.6				ug/L	57	Standard
	V	51	1543.2	4.3				ug/L	1142	Standard
	Cr	52	7153.0	1.0				ug/L	6628	Standard
	Cr	53	445.0	12.2				ug/L	430	Standard
	Mn	55	1041.0	0.8				ug/L	603	Standard
	Co	59	583.0	7.0				ug/L	237	Standard
	Ni	60	245.0	4.3				ug/L	141	Standard
	Cu	65	217.0	8.3				ug/L	109	Standard
	Zn	66	310.7	2.1				ug/L	159	Standard
>	**Ge**	72	471168.8	0.1				ug/L	474053	Standard
	As	75	27.4	88.1				ug/L	-34	Standard
	Se	82	24.1	10.8				ug/L	14	Standard
	Se-1	77	60.7	6.2				ug/L	55	Standard
>	**Ga**	71	60.0	28.9				mg/L	50	Standard
	Rb	85	21.7	26.6				ug/L	20	Standard
	Y	89	408481.5	2.2				ug/L	376602	Standard
>	**Rh**	103	23.3	24.7				ug/L	17	Standard
	Mo	98	258.4	4.9				ug/L	8	Standard
	Ag	107	385.7	3.9				ug/L	81	Standard
	Cd	111	107.2	4.8				mg/L	3	Standard
	Cd	114	267.5	8.7				ug/L	7	Standard
>	**In**	115	544133.0	1.6				ug/L	524722	Standard
	Sn	118	778.4	8.1				ug/L	715	Standard
	Sb	123	293.5	11.5				ug/L	201	Standard
	Ba	135	202.3	5.5				ug/L	108	Standard
	Ce	140	46.7	80.4				ug/L	30	Standard
>	**Tb**	159	788761.6	1.1				ug/L	792236	Standard
	Ho	165	18.3	56.8				ug/L	7	Standard
	Tl	203	392.3	6.9				ug/L	9	Standard
	Tl	205	366.7	20.5				ug/L	0	Standard
	Pb	206	479.7	4.5				ug/L	216	Standard
	Pb	207	426.3	6.0				ug/L	180	Standard
	Pb	208	1798.4	0.2				ug/L	717	Standard
	U	238	349.3	5.8				ug/L	4	Standard
>	**Bi**	209	449760.6	0.7				ug/L	460343	Standard

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Na	23	3.3	86.6	mg/L	0	Standard
Mg	24	38.3	27.2	mg/L	20	Standard
K	39	31.7	24.1	mg/L	22	Standard
Ca	43	58.3	21.6	mg/L	47	Standard
Fe	54	152.6	18.2	mg/L	151	Standard
Fe	57	218.3	10.3	mg/L	195	Standard
> **Sc-1**	45	30706.1	1.7	mg/L	29647	Standard
Cl	35	159978.9	1.3	ug/L	154152	Standard
Kr	83	1.3	43.3	ug/L	3	Standard
Br	81	1600.1	10.1	ug/L	1607	Standard
P	31	22997.4	1.5	ug/L	22752	Standard
S	34	5302.6	1.3	ug/L	5049	Standard
Sr	88	58.3	27.6	ug/L	87	Standard
C	12	23.3	65.5	mg/L	47	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	0.0		mg/L	0	Standard
Dy	164	2.7	234.8	mg/L	10	Standard
Ho-1	165	18.3	56.8	mg/L	7	Standard
Er	166	13.3	86.6	mg/L	3	Standard
I	127	928.4	11.9	mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⎣	Rb	85
⎡	Y	89
⎣>	Rh	103
⎡	Mo	98
⎢	Ag	107
⎢	Cd	111
⎢	Cd	114
⎢>	In	115
⎢	Sn	118
⎢	Sb	123
⎣	Ba	135
⎡	Ce	140
⎣>	Tb	159
⎡	Ho	165
⎢	Tl	203
⎢	Tl	205
⎢	Pb	206
⎢	Pb	207
⎢	Pb	208
⎢	U	238
⎣>	Bi	209
⎡	Na	23
⎢	Mg	24
⎢	K	39
⎢	Ca	43
⎢	Fe	54
⎢	Fe	57
⎣>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Thursday, June 16, 2016 15:39:49
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50565.9	1.8				ug/L	51024	Standard
	Be	9	42044.9	2.0	**50.0000**	1.656	3.3	ug/L	7	Standard
	Al	27	7094492.1	1.7	**50.0000**	0.240	0.5	ug/L	625	Standard
	Sc	45	29363.4	3.4				ug/L	29647	Standard
	Ti	47	29759.2	1.6	**100.0000**	1.722	1.7	ug/L	57	Standard
	V	51	356139.2	0.8	**50.0000**	0.331	0.7	ug/L	1142	Standard
	Cr	52	369550.1	0.3	**50.0000**	0.347	0.7	ug/L	6628	Standard
	Cr	53	46382.6	2.2	**50.0000**	0.884	1.8	ug/L	430	Standard
	Mn	55	295860.1	0.8	**50.0000**	0.768	1.5	ug/L	603	Standard
	Co	59	321303.4	0.4	**50.0000**	0.569	1.1	ug/L	237	Standard
	Ni	60	95975.7	0.7	**50.0000**	0.220	0.4	ug/L	141	Standard
	Cu	65	93739.7	0.2	**50.0000**	0.238	0.5	ug/L	109	Standard
	Zn	66	55396.4	0.5	**50.0000**	0.181	0.4	ug/L	159	Standard
>	**Ge**	72	471316.6	0.7				ug/L	474053	Standard
	As	75	55401.6	1.7	**50.0000**	1.157	2.3	ug/L	-34	Standard
	Se	82	5512.4	2.0	**50.0000**	1.370	2.7	ug/L	14	Standard
	Se-1	77	3915.5	0.9	**50.0000**	0.786	1.6	ug/L	55	Standard
>	**Ga**	71	120.0	8.3				mg/L	50	Standard
	Rb	85	818.4	2.5				ug/L	20	Standard
	Y	89	383423.6	1.9				ug/L	376602	Standard
>	**Rh**	103	26.7	39.0				ug/L	17	Standard
	Mo	98	238525.6	1.7	**100.0000**	2.248	2.2	ug/L	8	Standard
	Ag	107	300586.5	1.0	**50.0000**	0.931	1.9	ug/L	81	Standard
	Cd	111	96734.5	0.7	**50.0000**	0.446	0.9	mg/L	3	Standard
	Cd	114	239222.4	0.8	**50.0000**	0.320	0.6	ug/L	7	Standard
>	**In**	115	516883.8	1.3				ug/L	524722	Standard
	Sn	118	269170.5	1.9	**50.0000**	0.357	0.7	ug/L	715	Standard
	Sb	123	219395.1	0.6	**50.0000**	0.615	1.2	ug/L	201	Standard
	Ba	135	90538.0	0.9	**50.0000**	0.240	0.5	ug/L	108	Standard
	Ce	140	98.3	33.1				ug/L	30	Standard
>	**Tb**	159	780626.5	1.3				ug/L	792236	Standard
	Ho	165	5.0	0.0				ug/L	7	Standard
	Tl	203	372504.5	0.5	**50.0000**	0.339	0.7	ug/L	9	Standard
	Tl	205	316386.0	0.8	**50.0000**	0.414	0.8	ug/L	0	Standard
	Pb	206	225338.3	0.7	**50.0000**	0.467	0.9	ug/L	216	Standard
	Pb	207	205697.6	0.7	**50.0000**	0.491	1.0	ug/L	180	Standard
	Pb	208	831229.4	0.5	**50.0000**	0.375	0.7	ug/L	717	Standard
	U	238	300295.4	0.8	**50.0000**	0.316	0.6	ug/L	4	Standard
>	**Bi**	209	447053.1	1.0				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.0000**	10.302	206.0	mg/L	0	Standard
Mg	24	3705.5	6.1	**5.0000**	0.367	7.3	mg/L	20	Standard
K	39	671.7	7.3	**5.0000**	0.265	5.3	mg/L	22	Standard
Ca	43	63.3	43.5	**5.0000**	18.565	371.3	mg/L	47	Standard
Fe	54	6334.8	3.3	**5.0000**	0.319	6.4	mg/L	151	Standard
Fe	57	1861.8	5.0	**5.0000**	0.466	9.3	mg/L	195	Standard
> **Sc-1**	45	29363.4	3.4				mg/L	29647	Standard
Cl	35	161698.3	1.0				ug/L	154152	Standard
Kr	83	2.7	21.7				ug/L	3	Standard
Br	81	1496.7	10.1				ug/L	1607	Standard
P	31	25361.3	5.9				ug/L	22752	Standard
S	34	5722.8	8.3				ug/L	5049	Standard
Sr	88	76.7	13.6				ug/L	87	Standard
C	12	36.7	41.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.3	126.2				mg/L	10	Standard
Ho-1	165	5.0	0.0				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	6142.9	1.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Thursday, June 16, 2016 15:43:00
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50435.5	1.6				ug/L	51024	Standard
	Be	9	82346.5	1.2	**99.0819**	1.677	1.7	ug/L	7	Standard
	Al	27	13992181.1	1.0	**99.4387**	0.736	0.7	ug/L	625	Standard
	Sc	45	30006.4	2.8				ug/L	29647	Standard
	Ti	47	58505.4	1.0	**200.8925**	5.085	2.5	ug/L	57	Standard
	V	51	687977.3	0.6	**99.6029**	0.871	0.9	ug/L	1142	Standard
	Cr	52	725902.3	0.9	**100.8293**	2.361	2.3	ug/L	6628	Standard
	Cr	53	91049.5	2.4	**100.5343**	1.118	1.1	ug/L	430	Standard
	Mn	55	576461.1	0.2	**100.0121**	1.485	1.5	ug/L	603	Standard
	Co	59	620596.3	0.4	**99.5359**	1.816	1.8	ug/L	237	Standard
	Ni	60	187359.0	1.0	**100.0839**	1.180	1.2	ug/L	141	Standard
	Cu	65	182121.9	1.8	**99.8326**	0.584	0.6	ug/L	109	Standard
	Zn	66	107693.4	1.7	**99.9466**	0.229	0.2	ug/L	159	Standard
>	**Ge**	72	459665.5	1.5				ug/L	474053	Standard
	As	75	106571.4	0.3	**99.2933**	1.200	1.2	ug/L	-34	Standard
	Se	82	10745.6	0.0	**100.0548**	1.484	1.5	ug/L	14	Standard
	Se-1	77	7418.5	2.3	**98.9131**	3.363	3.4	ug/L	55	Standard
>	**Ga**	71	103.3	32.2				mg/L	50	Standard
	Rb	85	1393.4	13.3				ug/L	20	Standard
	Y	89	377187.2	0.3				ug/L	376602	Standard
>	**Rh**	103	38.3	45.8				ug/L	17	Standard
	Mo	98	461069.8	0.9	**194.9574**	1.968	1.0	ug/L	8	Standard
	Ag	107	583703.5	0.6	**97.7109**	0.535	0.5	ug/L	81	Standard
	Cd	111	192033.7	0.5	**98.8117**	0.100	0.1	mg/L	3	Standard
	Cd	114	474593.2	1.8	**98.7794**	1.465	1.5	ug/L	7	Standard
>	**In**	115	525374.3	0.4				ug/L	524722	Standard
	Sn	118	532965.7	1.1	**98.7299**	1.022	1.0	ug/L	715	Standard
	Sb	123	428817.2	1.1	**98.0404**	1.345	1.4	ug/L	201	Standard
	Ba	135	179232.3	1.1	**98.7001**	1.049	1.1	ug/L	108	Standard
	Ce	140	138.3	11.0				ug/L	30	Standard
>	**Tb**	159	777561.5	1.7				ug/L	792236	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	728897.3	1.0	**99.5734**	0.952	1.0	ug/L	9	Standard
	Tl	205	620686.4	2.0	**99.7030**	1.645	1.6	ug/L	0	Standard
	Pb	206	440868.6	1.2	**99.5956**	1.751	1.8	ug/L	216	Standard
	Pb	207	400234.3	1.0	**99.3185**	1.537	1.5	ug/L	180	Standard
	Pb	208	1631531.3	1.4	**99.7532**	0.911	0.9	ug/L	717	Standard
	U	238	597917.2	1.3	**100.4447**	0.594	0.6	ug/L	4	Standard
>	**Bi**	209	441150.8	1.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	7450.2	2.2	**9.9373**	0.220	2.2	mg/L	20	Standard
K	39	1375.1	15.8	**10.1223**	1.524	15.1	mg/L	22	Standard
Ca	43	130.0	15.4	**16.7571**	3.894	23.2	mg/L	47	Standard
Fe	54	12357.9	4.2	**9.8157**	0.430	4.4	mg/L	151	Standard
Fe	57	3355.4	5.1	**9.6321**	0.814	8.4	mg/L	195	Standard
Sc-1	45	30006.4	2.8				mg/L	29647	Standard
Cl	35	163219.8	1.1				ug/L	154152	Standard
Kr	83	2.3	99.0				ug/L	3	Standard
Br	81	1446.7	4.9				ug/L	1607	Standard
P	31	26878.8	3.1				ug/L	22752	Standard
S	34	5969.5	3.7				ug/L	5049	Standard
Sr	88	53.3	21.7				ug/L	87	Standard
C	12	56.7	36.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	16.2	33.1				mg/L	10	Standard
Ho-1	165	8.3	69.3				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	6194.6	1.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998
Corr. Coef.	Ca	43	Correlation coefficient < 0.998

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Thursday, June 16, 2016 15:46:13
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	48900.5	1.4				ug/L	51024	Standard
	Be	9	40029.5	1.7	**49.6695**	1.322	2.7	ug/L	7	Standard
	Al	27	6807595.1	1.1	**49.8931**	0.613	1.2	ug/L	625	Standard
	Sc	45	29859.4	2.2				ug/L	29647	Standard
	Ti	47	30234.8	0.9	**101.5179**	0.557	0.5	ug/L	57	Standard
	V	51	345968.9	0.4	**48.9414**	0.135	0.3	ug/L	1142	Standard
	Cr	52	361268.5	1.4	**48.6339**	0.583	1.2	ug/L	6628	Standard
	Cr	53	44796.1	1.2	**48.2008**	0.799	1.7	ug/L	430	Standard
	Mn	55	290150.7	1.7	**49.2058**	0.854	1.7	ug/L	603	Standard
	Co	59	308353.8	2.9	**48.3820**	1.390	2.9	ug/L	237	Standard
	Ni	60	93264.8	0.6	**48.7266**	0.581	1.2	ug/L	141	Standard
	Cu	65	92121.6	1.1	**49.4021**	0.815	1.6	ug/L	109	Standard
	Zn	66	55388.4	1.1	**50.2077**	0.826	1.6	ug/L	159	Standard
>	Ge	72	469579.4	0.6				ug/L	474053	Standard
	As	75	54025.0	1.0	**49.2819**	0.719	1.5	ug/L	-34	Standard
	Se	82	5305.3	2.4	**48.2613**	1.119	2.3	ug/L	14	Standard
	Se-1	77	3733.1	1.8	**48.3299**	0.600	1.2	ug/L	55	Standard
>	Ga	71	121.7	8.6				mg/L	50	Standard
	Rb	85	516.7	11.5				ug/L	20	Standard
	Y	89	375718.4	2.6				ug/L	376602	Standard
>	Rh	103	33.3	67.6				ug/L	17	Standard
	Mo	98	242646.9	2.2	**104.6905**	2.943	2.8	ug/L	8	Standard
	Ag	107	289971.5	0.6	**49.5201**	0.189	0.4	ug/L	81	Standard
	Cd	111	93046.4	0.5	**48.8483**	0.170	0.3	mg/L	3	Standard
	Cd	114	230715.9	0.2	**48.9961**	0.373	0.8	ug/L	7	Standard
>	In	115	514920.2	0.6				ug/L	524722	Standard
	Sn	118	284710.7	1.9	**53.7768**	1.357	2.5	ug/L	715	Standard
	Sb	123	208688.7	0.3	**48.6728**	0.184	0.4	ug/L	201	Standard
	Ba	135	85799.9	0.5	**48.1785**	0.093	0.2	ug/L	108	Standard
	Ce	140	120.0	21.7				ug/L	30	Standard
>	Tb	159	776088.7	0.5				ug/L	792236	Standard
	Ho	165	16.7	45.8				ug/L	7	Standard
	Tl	203	358537.1	1.1	**48.0462**	0.455	0.9	ug/L	9	Standard
	Tl	205	307552.3	1.7	**48.4612**	0.738	1.5	ug/L	0	Standard
	Pb	206	224129.9	0.7	**49.6400**	0.561	1.1	ug/L	216	Standard
	Pb	207	195303.0	0.4	**47.5147**	0.574	1.2	ug/L	180	Standard
	Pb	208	802915.7	0.1	**48.1309**	0.507	1.1	ug/L	717	Standard
	U	238	288986.2	0.3	**47.6224**	0.342	0.7	ug/L	4	Standard
>	Bi	209	449693.2	1.0				ug/L	460343	Standard

Sample ID: QC Std 1
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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3802.1	3.0	**5.0768**	0.262	5.2	mg/L	20	Standard
K	39	675.0	17.5	**4.8950**	0.999	20.4	mg/L	22	Standard
Ca	43	53.3	10.8	**-0.7985**	1.553	194.4	mg/L	47	Standard
Fe	54	5993.9	4.1	**4.7227**	0.110	2.3	mg/L	151	Standard
Fe	57	1776.8	6.7	**4.8135**	0.313	6.5	mg/L	195	Standard
Sc-1	45	29859.4	2.2				mg/L	29647	Standard
Cl	35	159749.2	1.5				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	1490.1	3.7				ug/L	1607	Standard
P	31	25977.3	1.4				ug/L	22752	Standard
S	34	5996.2	1.4				ug/L	5049	Standard
Sr	88	60.0	22.0				ug/L	87	Standard
C	12	80.0	66.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	13.3	43.3				mg/L	10	Standard
Ho-1	165	16.7	45.8				mg/L	7	Standard
Er	166	0.0					mg/L	3	Standard
I	127	935.0	3.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	99.339		
Al	27	99.786		
Sc	45			
Ti	47	101.518		
V	51	97.883		
Cr	52	97.268		
Cr	53			
Mn	55	98.412		
Co	59	96.764		
Ni	60	97.453		
Cu	65	98.804		
Zn	66	100.415		
Ge	72		99.056	
As	75	98.564		
Se	82	96.523		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	104.691		
Ag	107	99.040		
Cd	111	97.697		
Cd	114			
In	115		98.132	
Sn	118	107.554		
Sb	123	97.346		
Ba	135	96.357		
Ce	140			
Tb	159			
Ho	165			
Tl	203	96.092		
Tl	205			
Pb	206	99.280		
Pb	207	95.029		
Pb	208	96.262		
U	238	95.245		
Bi	209		97.687	
Na	23	209.044		
Mg	24	101.535		
K	39	97.901		
Ca	43	-15.971		
Fe	54	94.453		
Fe	57	96.269		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	K	39	
QC Std 1	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Thursday, June 16, 2016 15:49:26
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48778.4	0.5				ug/L	51024	Standard
	Be	9	35.0	28.6	**0.0225**	0.013	56.3	ug/L	7	Standard
	Al	27	2908.6	43.3	**0.0116**	0.009	80.6	ug/L	625	Standard
	Sc	45	29670.7	2.3				ug/L	29647	Standard
	Ti	47	66.7	16.0	**0.0643**	0.036	55.5	ug/L	57	Standard
	V	51	1072.6	10.6	**-0.0119**	0.017	142.0	ug/L	1142	Standard
	Cr	52	6126.6	0.6	**-0.0646**	0.004	6.2	ug/L	6628	Standard
	Cr	53	356.7	16.1	**-0.0336**	0.065	194.5	ug/L	430	Standard
	Mn	55	698.3	6.8	**-0.0044**	0.009	209.1	ug/L	603	Standard
	Co	59	364.0	15.3	**0.0175**	0.009	54.1	ug/L	237	Standard
	Ni	60	154.7	17.5	**0.0055**	0.015	280.7	ug/L	141	Standard
	Cu	65	145.3	17.7	**0.0141**	0.015	104.9	ug/L	109	Standard
	Zn	66	148.7	11.8	**-0.0929**	0.016	17.2	ug/L	159	Standard
>	**Ge**	72	457105.8	0.9				ug/L	474053	Standard
	As	75	54.4	52.5	**0.0762**	0.027	35.8	ug/L	-34	Standard
	Se	82	25.8	22.3	**0.0738**	0.056	76.3	ug/L	14	Standard
	Se-1	77	51.3	21.0	**-0.0508**	0.151	296.8	ug/L	55	Standard
>	**Ga**	71	53.3	14.3				mg/L	50	Standard
	Rb	85	23.3	65.5				ug/L	20	Standard
	Y	89	386808.9	0.9				ug/L	376602	Standard
>	**Rh**	103	15.0	88.2				ug/L	17	Standard
	Mo	98	421.2	15.5	**0.1736**	0.026	15.2	ug/L	8	Standard
	Ag	107	183.0	26.0	**0.0185**	0.008	41.8	ug/L	81	Standard
	Cd	111	25.9	54.3	**0.0101**	0.007	70.6	mg/L	3	Standard
	Cd	114	76.1	40.9	**0.0121**	0.006	52.7	ug/L	7	Standard
>	**In**	115	521804.6	1.0				ug/L	524722	Standard
	Sn	118	1013.4	16.6	**0.0999**	0.033	32.7	ug/L	715	Standard
	Sb	123	1969.5	19.3	**0.4392**	0.092	20.9	ug/L	201	Standard
	Ba	135	122.3	18.3	**0.0101**	0.012	117.5	ug/L	108	Standard
	Ce	140	26.7	10.8				ug/L	30	Standard
>	**Tb**	159	767907.3	1.3				ug/L	792236	Standard
	Ho	165	6.7	173.2				ug/L	7	Standard
	Tl	203	152.0	42.0	**0.0183**	0.009	47.5	ug/L	9	Standard
	Tl	205	141.7	44.8	**0.0150**	0.010	67.4	ug/L	0	Standard
	Pb	206	285.3	8.6	**0.0085**	0.005	61.9	ug/L	216	Standard
	Pb	207	228.0	15.9	**0.0031**	0.009	284.7	ug/L	180	Standard
	Pb	208	1006.0	13.7	**0.0040**	0.008	208.4	ug/L	717	Standard
	U	238	107.3	30.4	**0.0105**	0.005	51.5	ug/L	4	Standard
>	**Bi**	209	438481.4	0.6				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	33.3	31.2	**-0.0002**	0.013	6870.4	mg/L	20	Standard
K	39	25.0	20.0	**-0.0379**	0.034	91.0	mg/L	22	Standard
Ca	43	46.7	37.6	**-2.2322**	4.367	195.6	mg/L	47	Standard
Fe	54	197.5	14.9	**0.0458**	0.026	57.7	mg/L	151	Standard
Fe	57	191.7	16.8	**-0.0529**	0.109	205.7	mg/L	195	Standard
Sc-1	45	29670.7	2.3				mg/L	29647	Standard
Cl	35	161750.4	2.1				ug/L	154152	Standard
Kr	83	2.7	21.7				ug/L	3	Standard
Br	81	1533.4	11.2				ug/L	1607	Standard
P	31	25499.8	1.3				ug/L	22752	Standard
S	34	5937.8	4.1				ug/L	5049	Standard
Sr	88	66.7	35.4				ug/L	87	Standard
C	12	33.3	75.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.0	187.0				mg/L	10	Standard
Ho-1	165	6.7	173.2				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	1050.0	3.1				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.425	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.444
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.251
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Na	23	
QC Std 2	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Thursday, June 16, 2016 15:52:39
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	47293.7	2.4				ug/L	51024	Standard
	Be	9	145.0	20.7	**0.1655**	0.042	25.4	ug/L	7	Standard
	Al	27	1435.1	31.2	**0.0012**	0.004	314.1	ug/L	625	Standard
	Sc	45	28264.7	3.0				ug/L	29647	Standard
	Ti	47	62.3	15.2	**0.0569**	0.033	58.3	ug/L	57	Standard
	V	51	3460.4	3.6	**0.3540**	0.018	5.2	ug/L	1142	Standard
	Cr	52	11315.9	0.6	**0.7230**	0.033	4.5	ug/L	6628	Standard
	Cr	53	1030.0	4.2	**0.7573**	0.039	5.1	ug/L	430	Standard
	Mn	55	3199.7	2.3	**0.4520**	0.007	1.5	ug/L	603	Standard
	Co	59	2520.2	3.3	**0.3798**	0.019	5.0	ug/L	237	Standard
	Ni	60	2902.6	0.9	**1.5376**	0.034	2.2	ug/L	141	Standard
	Cu	65	1498.7	1.3	**0.7897**	0.019	2.5	ug/L	109	Standard
	Zn	66	7175.7	0.5	**6.7167**	0.069	1.0	ug/L	159	Standard
>	**Ge**	72	441612.7	1.4				ug/L	474053	Standard
	As	75	399.1	9.4	**0.4120**	0.037	8.9	ug/L	-34	Standard
	Se	82	50.3	13.1	**0.3188**	0.059	18.5	ug/L	14	Standard
	Se-1	77	79.7	18.1	**0.3705**	0.214	57.7	ug/L	55	Standard
>	**Ga**	71	46.7	22.3				mg/L	50	Standard
	Rb	85	16.7	96.4				ug/L	20	Standard
	Y	89	357595.4	2.3				ug/L	376602	Standard
>	**Rh**	103	11.7	49.5				ug/L	17	Standard
	Mo	98	140.4	6.4	**0.0562**	0.004	6.6	ug/L	8	Standard
	Ag	107	2290.2	1.1	**0.3863**	0.009	2.4	ug/L	81	Standard
	Cd	111	448.4	2.4	**0.2366**	0.001	0.5	mg/L	3	Standard
	Cd	114	1122.4	5.7	**0.2391**	0.015	6.2	ug/L	7	Standard
>	**In**	115	505402.5	2.0				ug/L	524722	Standard
	Sn	118	471.7	16.6	**0.0014**	0.014	1036.4	ug/L	715	Standard
	Sb	123	1900.7	8.3	**0.4366**	0.030	6.9	ug/L	201	Standard
	Ba	135	1270.4	2.8	**0.6703**	0.033	4.9	ug/L	108	Standard
	Ce	140	16.7	62.4				ug/L	30	Standard
>	**Tb**	159	761635.7	0.6				ug/L	792236	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	619.3	5.8	**0.0818**	0.004	5.4	ug/L	9	Standard
	Tl	205	548.3	4.7	**0.0800**	0.003	4.2	ug/L	0	Standard
	Pb	206	1103.4	2.4	**0.1922**	0.004	2.3	ug/L	216	Standard
	Pb	207	900.7	2.9	**0.1691**	0.006	3.6	ug/L	180	Standard
	Pb	208	3946.5	2.5	**0.1828**	0.006	3.5	ug/L	717	Standard
	U	238	2295.5	1.9	**0.3769**	0.006	1.5	ug/L	4	Standard
>	**Bi**	209	442529.2	1.0				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	23.3	12.4	**-0.0120**	0.004	34.9	mg/L	20	Standard
K	39	20.0	25.0	**-0.0675**	0.043	63.8	mg/L	22	Standard
Ca	43	46.7	52.9	**-1.7510**	6.062	346.2	mg/L	47	Standard
Fe	54	119.0	25.4	**-0.0137**	0.024	175.0	mg/L	151	Standard
Fe	57	175.0	35.1	**-0.0751**	0.210	280.1	mg/L	195	Standard
Sc-1	45	28264.7	3.0				mg/L	29647	Standard
Cl	35	154177.8	0.4				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	1336.7	4.9				ug/L	1607	Standard
P	31	17880.5	2.1				ug/L	22752	Standard
S	34	5776.1	4.1				ug/L	5049	Standard
Sr	88	76.7	43.4				ug/L	87	Standard
C	12	16.7	69.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.4	191.0				mg/L	10	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	3	Standard
I	127	743.4	2.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	82.727		
Al	27	0.117		
Sc	45			
Ti	47			
V	51	88.501		
Cr	52	90.378		
Cr	53			
Mn	55	90.403		
Co	59	94.938		
Ni	60	96.097		
Cu	65	98.718		
Zn	66	107.467		
Ge	72		93.157	
As	75	103.009		
Se	82	79.699		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	96.587		
Cd	111	98.585		
Cd	114			
> In	115			96.318
Sn	118			
Sb	123	109.162		
Ba	135	89.380		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	102.188		
Tl	205			
Pb	206			
Pb	207			
Pb	208	91.390		
U	238	94.214		
> Bi	209			96.130
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

Sample ID: QC Std 3
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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Thursday, June 16, 2016 15:57:46
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	49537.5	0.6				ug/L	51024	Standard
	Be	9	39588.3	1.2	**48.4820**	0.764	1.6	ug/L	7	Standard
	Al	27	6811607.5	1.0	**49.2765**	0.287	0.6	ug/L	625	Standard
	Sc	45	29944.6	0.9				ug/L	29647	Standard
	Ti	47	30600.5	1.8	**105.9033**	0.546	0.5	ug/L	57	Standard
	V	51	333819.4	1.0	**48.6741**	0.557	1.1	ug/L	1142	Standard
	Cr	52	362624.9	0.8	**50.3521**	0.653	1.3	ug/L	6628	Standard
	Cr	53	44669.1	0.6	**49.5578**	1.018	2.1	ug/L	430	Standard
	Mn	55	295010.7	1.9	**51.5679**	0.147	0.3	ug/L	603	Standard
	Co	59	304256.6	2.3	**49.2031**	0.778	1.6	ug/L	237	Standard
	Ni	60	92980.9	2.3	**50.0643**	0.335	0.7	ug/L	141	Standard
	Cu	65	90826.1	1.2	**50.2022**	0.411	0.8	ug/L	109	Standard
	Zn	66	53553.2	3.1	**50.0191**	0.561	1.1	ug/L	159	Standard
>	Ge	72	455630.4	2.0				ug/L	474053	Standard
	As	75	53060.3	1.3	**49.8858**	0.388	0.8	ug/L	-34	Standard
	Se	82	5361.3	1.9	**50.2739**	0.522	1.0	ug/L	14	Standard
	Se-1	77	3719.8	1.8	**49.6698**	1.476	3.0	ug/L	55	Standard
>	Ga	71	106.7	19.5				mg/L	50	Standard
	Rb	85	516.7	9.1				ug/L	20	Standard
	Y	89	378420.4	2.1				ug/L	376602	Standard
>	Rh	103	21.7	74.2				ug/L	17	Standard
	Mo	98	235943.4	1.8	**99.9874**	3.042	3.0	ug/L	8	Standard
	Ag	107	287193.3	1.4	**48.1797**	1.433	3.0	ug/L	81	Standard
	Cd	111	93247.5	0.8	**48.0828**	0.885	1.8	mg/L	3	Standard
	Cd	114	229861.4	1.2	**47.9476**	1.147	2.4	ug/L	7	Standard
>	In	115	524337.5	1.6				ug/L	524722	Standard
	Sn	118	280407.9	1.2	**52.0144**	1.090	2.1	ug/L	715	Standard
	Sb	123	204641.1	2.4	**46.8900**	1.860	4.0	ug/L	201	Standard
	Ba	135	86406.7	0.9	**47.6572**	1.015	2.1	ug/L	108	Standard
	Ce	140	135.0	7.4				ug/L	30	Standard
>	Tb	159	786784.4	0.3				ug/L	792236	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	354843.5	0.6	**47.8254**	0.499	1.0	ug/L	9	Standard
	Tl	205	306407.3	0.5	**48.5592**	0.423	0.9	ug/L	0	Standard
	Pb	206	218264.7	1.4	**48.6127**	0.167	0.3	ug/L	216	Standard
	Pb	207	191093.3	1.2	**46.7522**	0.112	0.2	ug/L	180	Standard
	Pb	208	804010.8	0.5	**48.4716**	0.281	0.6	ug/L	717	Standard
	U	238	288392.8	0.3	**47.7978**	0.457	1.0	ug/L	4	Standard
>	Bi	209	447132.2	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3715.5	2.1	**4.9417**	0.061	1.2	mg/L	20	Standard
K	39	701.7	9.7	**5.0672**	0.500	9.9	mg/L	22	Standard
Ca	43	61.7	24.8	**1.0552**	3.413	323.4	mg/L	47	Standard
Fe	54	6212.5	1.3	**4.8866**	0.105	2.2	mg/L	151	Standard
Fe	57	1778.4	8.4	**4.8076**	0.510	10.6	mg/L	195	Standard
> **Sc-1**	45	29944.6	0.9				mg/L	29647	Standard
Cl	35	161455.3	2.4				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	1416.7	8.8				ug/L	1607	Standard
P	31	25623.3	0.9				ug/L	22752	Standard
S	34	5979.5	3.9				ug/L	5049	Standard
Sr	88	73.3	41.7				ug/L	87	Standard
C	12	33.3	69.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.0	37.7				mg/L	10	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	1055.0	6.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	96.964		
Al	27	98.553		
Sc	45			
Ti	47	105.903		
V	51	97.348		
Cr	52	100.704		
Cr	53			
Mn	55	103.136		
Co	59	98.406		
Ni	60	100.129		
Cu	65	100.404		
Zn	66	100.038		
> Ge	72		96.114	
As	75	99.772		
Se	82	100.548		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	99.987		
Ag	107	96.359		
Cd	111	96.166		
Cd	114			
> In	115		99.927	
Sn	118	104.029		
Sb	123	93.780		
Ba	135	95.314		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	95.651		
Tl	205			
Pb	206	97.225		
Pb	207	93.504		
Pb	208	96.943		
U	238	95.596		
> Bi	209		97.130	
Na	23	209.044		
Mg	24	98.834		
K	39	101.344		
Ca	43	21.103		
Fe	54	97.732		
Fe	57	96.152		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Thursday, June 16, 2016 16:03:55
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	48694.8	0.2				ug/L	51024	Standard
	Be	9	11.7	24.7	**-0.0065**	0.004	55.1	ug/L	7	Standard
	Al	27	941.7	10.9	**-0.0028**	0.001	26.9	ug/L	625	Standard
	Sc	45	29877.8	0.9				ug/L	29647	Standard
	Ti	47	54.3	5.3	**0.0224**	0.010	44.8	ug/L	57	Standard
	V	51	957.2	10.4	**-0.0283**	0.014	48.1	ug/L	1142	Standard
	Cr	52	6138.9	3.0	**-0.0600**	0.025	41.4	ug/L	6628	Standard
	Cr	53	340.0	7.8	**-0.0510**	0.030	59.6	ug/L	430	Standard
	Mn	55	634.3	2.6	**-0.0152**	0.003	19.9	ug/L	603	Standard
	Co	59	238.0	8.6	**-0.0027**	0.004	132.9	ug/L	237	Standard
	Ni	60	130.0	7.3	**-0.0077**	0.005	63.8	ug/L	141	Standard
	Cu	65	103.7	15.4	**-0.0087**	0.009	107.0	ug/L	109	Standard
	Zn	66	127.0	5.2	**-0.1127**	0.007	6.0	ug/L	159	Standard
>	**Ge**	72	455597.3	0.8				ug/L	474053	Standard
	As	75	-43.2	74.2	**-0.0157**	0.030	193.2	ug/L	-34	Standard
	Se	82	18.2	18.4	**0.0019**	0.030	1563.3	ug/L	14	Standard
	Se-1	77	53.3	8.5	**-0.0219**	0.067	305.9	ug/L	55	Standard
>	**Ga**	71	65.0	20.4				mg/L	50	Standard
	Rb	85	26.7	39.0				ug/L	20	Standard
	Y	89	385670.5	2.5				ug/L	376602	Standard
>	**Rh**	103	21.7	48.0				ug/L	17	Standard
	Mo	98	109.5	11.0	**0.0404**	0.004	10.6	ug/L	8	Standard
	Ag	107	89.3	19.3	**0.0026**	0.003	126.0	ug/L	81	Standard
	Cd	111	7.4	34.0	**0.0006**	0.001	222.3	mg/L	3	Standard
	Cd	114	19.0	7.1	**0.0001**	0.000	161.5	ug/L	7	Standard
>	**In**	115	528269.6	2.4				ug/L	524722	Standard
	Sn	118	783.4	18.1	**0.0547**	0.023	42.9	ug/L	715	Standard
	Sb	123	1248.5	31.3	**0.2679**	0.083	31.1	ug/L	201	Standard
	Ba	135	101.3	11.9	**-0.0020**	0.008	395.1	ug/L	108	Standard
	Ce	140	18.3	56.8				ug/L	30	Standard
>	**Tb**	159	789316.7	0.7				ug/L	792236	Standard
	Ho	165	3.3	173.2				ug/L	7	Standard
	Tl	203	34.3	9.4	**0.0020**	0.000	19.3	ug/L	9	Standard
	Tl	205	23.3	61.9	**-0.0042**	0.002	53.7	ug/L	0	Standard
	Pb	206	215.0	9.3	**-0.0087**	0.004	50.2	ug/L	216	Standard
	Pb	207	177.7	3.1	**-0.0106**	0.001	10.4	ug/L	180	Standard
	Pb	208	745.3	3.0	**-0.0132**	0.001	9.1	ug/L	717	Standard
	U	238	19.7	20.5	**-0.0043**	0.001	15.7	ug/L	4	Standard
>	**Bi**	209	449575.7	0.9				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	26.7	60.3	**-0.0094**	0.021	228.0	mg/L	20	Standard
K	39	16.7	45.8	**-0.1015**	0.059	58.3	mg/L	22	Standard
Ca	43	35.0	0.0	**-5.0734**	0.077	1.5	mg/L	47	Standard
Fe	54	139.4	7.2	**-0.0024**	0.009	374.1	mg/L	151	Standard
Fe	57	198.3	8.1	**-0.0375**	0.053	141.8	mg/L	195	Standard
> **Sc-1**	45	29877.8	0.9				mg/L	29647	Standard
Cl	35	160882.5	1.9				ug/L	154152	Standard
Kr	83	1.0	0.0				ug/L	3	Standard
Br	81	1510.1	12.6				ug/L	1607	Standard
P	31	25673.4	1.5				ug/L	22752	Standard
S	34	5894.5	3.2				ug/L	5049	Standard
Sr	88	76.7	32.2				ug/L	87	Standard
C	12	23.3	49.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.4	107.5				mg/L	10	Standard
Ho-1	165	3.3	173.2				mg/L	7	Standard
Er	166	13.3	173.2				mg/L	3	Standard
I	127	965.0	3.2				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.107	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.676	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.661	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Na	23	
QC Std 2	K	39	

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QC Std 2	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Thursday, June 16, 2016 16:07:40
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55474.7	2.1				ug/L	51024	Standard
	Be	9	18.3	15.7	**-0.0010**	0.003	338.2	ug/L	7	Standard
	Al	27	6905396.8	2.8	**44.6071**	0.703	1.6	ug/L	625	Standard
	Sc	45	29577.2	0.8				ug/L	29647	Standard
	Ti	47	31418.2	1.3	**107.0966**	1.877	1.8	ug/L	57	Standard
	V	51	1222.8	22.4	**0.0081**	0.041	507.7	ug/L	1142	Standard
	Cr	52	7310.1	0.7	**0.0900**	0.007	8.1	ug/L	6628	Standard
	Cr	53	3288.7	9.3	**3.1897**	0.292	9.2	ug/L	430	Standard
	Mn	55	1091.7	3.2	**0.0620**	0.006	9.4	ug/L	603	Standard
	Co	59	399.3	5.7	**0.0224**	0.003	12.6	ug/L	237	Standard
	Ni	60	759.0	2.6	**0.3255**	0.016	4.9	ug/L	141	Standard
	Cu	65	628.7	2.7	**0.2766**	0.010	3.8	ug/L	109	Standard
	Zn	66	1729.4	2.6	**1.3663**	0.021	1.6	ug/L	159	Standard
>	**Ge**	72	462633.9	1.3				ug/L	474053	Standard
	As	75	-39.5	207.4	**-0.0113**	0.076	672.8	ug/L	-34	Standard
	Se	82	21.1	40.5	**0.0261**	0.078	299.6	ug/L	14	Standard
	Se-1	77	277.0	14.2	**2.9476**	0.479	16.2	ug/L	55	Standard
>	**Ga**	71	155.0	16.8				mg/L	50	Standard
	Rb	85	810.0	10.2				ug/L	20	Standard
	Y	89	382532.7	1.4				ug/L	376602	Standard
>	**Rh**	103	13.3	57.3				ug/L	17	Standard
	Mo	98	234826.0	1.7	**100.4857**	2.149	2.1	ug/L	8	Standard
	Ag	107	169.0	8.6	**0.0163**	0.002	15.1	ug/L	81	Standard
	Cd	111	-108.8	6.6	**-0.0599**	0.004	5.9	mg/L	3	Standard
	Cd	114	586.7	17.3	**0.1197**	0.021	17.4	ug/L	7	Standard
>	**In**	115	519149.4	0.5				ug/L	524722	Standard
	Sn	118	681.7	7.9	**0.0385**	0.011	27.7	ug/L	715	Standard
	Sb	123	406.1	34.2	**0.0793**	0.032	41.0	ug/L	201	Standard
	Ba	135	224.7	3.6	**0.0676**	0.005	7.3	ug/L	108	Standard
	Ce	140	145.0	18.2				ug/L	30	Standard
>	**Tb**	159	796726.8	0.9				ug/L	792236	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	851.7	23.5	**0.1131**	0.029	25.4	ug/L	9	Standard
	Tl	205	813.4	19.5	**0.1220**	0.027	21.9	ug/L	0	Standard
	Pb	206	671.0	13.8	**0.0943**	0.023	24.1	ug/L	216	Standard
	Pb	207	610.0	7.6	**0.0965**	0.013	13.8	ug/L	180	Standard
	Pb	208	2481.7	5.9	**0.0928**	0.011	11.7	ug/L	717	Standard
	U	238	11.0	24.1	**-0.0057**	0.000	8.1	ug/L	4	Standard
>	**Bi**	209	444717.2	1.3				ug/L	460343	Standard

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Na	23	1.7	173.2	**4.9320**	9.561	193.9	mg/L	0	Standard
Mg	24	9214.5	2.3	**12.4761**	0.188	1.5	mg/L	20	Standard
K	39	665.0	6.6	**4.8546**	0.351	7.2	mg/L	22	Standard
Ca	43	148.3	13.6	**21.5299**	4.516	21.0	mg/L	47	Standard
Fe	54	14427.7	3.0	**11.6428**	0.306	2.6	mg/L	151	Standard
Fe	57	3798.8	1.5	**11.1428**	0.194	1.7	mg/L	195	Standard
> **Sc-1**	45	29577.2	0.8				mg/L	29647	Standard
Cl	35	176475.5	2.2				ug/L	154152	Standard
Kr	83	2.0	86.6				ug/L	3	Standard
Br	81	1553.4	2.3				ug/L	1607	Standard
P	31	23887.2	3.9				ug/L	22752	Standard
S	34	5340.9	1.7				ug/L	5049	Standard
Sr	88	58.3	9.9				ug/L	87	Standard
C	12	96.7	58.8				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	30.0	0.0				mg/L	0	Standard
Dy	164	2.4	262.3				mg/L	10	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	3	Standard
I	127	1410.1	5.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27	0.892		
Sc	45			
Ti	47	107.097		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.591	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	100.486		
Ag	107			
Cd	111			
Cd	114			
> In	115			98.938
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209			96.606
Na	23	39.456		
Mg	24	249.521		
K	39	97.091		
Ca	43	143.533		
Fe	54	93.142		
Fe	57	89.142		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Tl	203	
QC Std 4	Na	23	

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QC Std 4	Mg	24
QC Std 4	Ca	43

Sample ID: QC Std 4
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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Thursday, June 16, 2016 16:22:01
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	58477.6	0.2				ug/L	51024	Standard
	Be	9	88548.0	0.3	**91.8774**	0.469	0.5	ug/L	7	Standard
	Al	27	7648485.8	0.8	**46.8715**	0.352	0.8	ug/L	625	Standard
	Sc	45	29133.0	2.0				ug/L	29647	Standard
	Ti	47	33470.3	2.4	**118.1657**	2.723	2.3	ug/L	57	Standard
	V	51	673843.7	0.9	**100.3884**	1.672	1.7	ug/L	1142	Standard
	Cr	52	698679.1	1.4	**99.8305**	1.037	1.0	ug/L	6628	Standard
	Cr	53	90290.0	2.1	**102.5975**	1.386	1.4	ug/L	430	Standard
	Mn	55	596300.3	1.2	**106.4457**	0.466	0.4	ug/L	603	Standard
	Co	59	629938.1	1.8	**103.9511**	1.908	1.8	ug/L	237	Standard
	Ni	60	180922.1	0.3	**99.4431**	0.584	0.6	ug/L	141	Standard
	Cu	65	177067.3	0.6	**99.8815**	0.324	0.3	ug/L	109	Standard
	Zn	66	106852.8	0.0	**102.0554**	0.902	0.9	ug/L	159	Standard
>	Ge	72	446706.3	0.8				ug/L	474053	Standard
	As	75	106615.2	0.2	**102.2086**	1.049	1.0	ug/L	-34	Standard
	Se	82	10642.5	1.1	**101.9658**	1.771	1.7	ug/L	14	Standard
	Se-1	77	7567.2	2.1	**103.8353**	2.380	2.3	ug/L	55	Standard
>	Ga	71	153.3	10.5				mg/L	50	Standard
	Rb	85	808.4	8.9				ug/L	20	Standard
	Y	89	396492.9	1.1				ug/L	376602	Standard
>	Rh	103	48.3	15.8				ug/L	17	Standard
	Mo	98	245151.1	0.7	**102.3761**	1.234	1.2	ug/L	8	Standard
	Ag	107	517251.9	0.7	**85.5144**	0.680	0.8	ug/L	81	Standard
	Cd	111	189019.4	1.2	**96.0637**	1.742	1.8	mg/L	3	Standard
	Cd	114	457330.5	1.6	**94.0204**	2.156	2.3	ug/L	7	Standard
>	In	115	531964.2	0.7				ug/L	524722	Standard
	Sn	118	896.7	15.7	**0.0749**	0.027	35.8	ug/L	715	Standard
	Sb	123	419181.5	1.0	**94.6488**	1.016	1.1	ug/L	201	Standard
	Ba	135	174129.5	0.2	**94.7022**	0.497	0.5	ug/L	108	Standard
	Ce	140	123.3	45.2				ug/L	30	Standard
>	Tb	159	792285.1	1.1				ug/L	792236	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	718957.1	0.3	**98.0117**	1.579	1.6	ug/L	9	Standard
	Tl	205	627537.4	1.6	**100.6124**	3.065	3.0	ug/L	0	Standard
	Pb	206	453228.9	0.3	**102.1662**	1.141	1.1	ug/L	216	Standard
	Pb	207	393799.0	0.5	**97.5071**	0.924	0.9	ug/L	180	Standard
	Pb	208	1620914.8	1.9	**98.9101**	2.956	3.0	ug/L	717	Standard
	U	238	599569.3	0.5	**100.5173**	1.718	1.7	ug/L	4	Standard
>	Bi	209	442109.9	1.4				ug/L	460343	Standard

Sample ID: QC Std 5
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Na	23	1.7	173.2	**4.7867**	9.813	205.0	mg/L	0	Standard
Mg	24	10183.4	1.3	**14.0071**	0.241	1.7	mg/L	20	Standard
K	39	573.3	13.1	**4.2150**	0.510	12.1	mg/L	22	Standard
Ca	43	138.3	13.7	**19.6561**	3.893	19.8	mg/L	47	Standard
Fe	54	15280.5	1.4	**12.5337**	0.416	3.3	mg/L	151	Standard
Fe	57	4085.6	2.5	**12.2326**	0.552	4.5	mg/L	195	Standard
> **Sc-1**	45	29133.0	2.0				mg/L	29647	Standard
Cl	35	179327.8	1.3				ug/L	154152	Standard
Kr	83	1.3	114.6				ug/L	3	Standard
Br	81	1623.4	4.9				ug/L	1607	Standard
P	31	23591.7	0.4				ug/L	22752	Standard
S	34	5254.2	2.3				ug/L	5049	Standard
Sr	88	70.0	42.9				ug/L	87	Standard
C	12	133.3	4.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	15.9	94.6				mg/L	10	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	3	Standard
I	127	930.0	5.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	91.877		
Al	27	0.937		
Sc	45			
Ti	47	118.166		
V	51	100.388		
Cr	52	99.830		
Cr	53			
Mn	55	106.446		
Co	59	103.951		
Ni	60	99.443		
Cu	65	99.882		
Zn	66	102.055		
> Ge	72		94.231	
As	75	102.209		
Se	82	101.966		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	102.376		
Ag	107	85.514		
Cd	111	96.064		
Cd	114			
> In	115		101.380	
Sn	118			
Sb	123	94.649		
Ba	135	94.702		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.012		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.910		
U	238	100.517		
> Bi	209		96.039	
Na	23	38.294		
Mg	24	280.142		
K	39	84.299		
Ca	43	131.041		
Fe	54	100.269		
Fe	57	97.861		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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QC Std 5	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 16:25:16
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	55603.6	4.4				ug/L	51024	Standard
	Be	9	43453.9	2.4	**47.4947**	3.006	6.3	ug/L	7	Standard
	Al	27	7054078.0	1.0	**45.5100**	1.586	3.5	ug/L	625	Standard
	Sc	45	29373.5	1.7				ug/L	29647	Standard
	Ti	47	28713.9	1.4	**99.4855**	3.895	3.9	ug/L	57	Standard
	V	51	340364.3	1.3	**49.6680**	0.932	1.9	ug/L	1142	Standard
	Cr	52	357828.9	0.7	**49.7225**	1.608	3.2	ug/L	6628	Standard
	Cr	53	43806.6	0.8	**48.6374**	1.665	3.4	ug/L	430	Standard
	Mn	55	293651.9	1.1	**51.3908**	1.852	3.6	ug/L	603	Standard
	Co	59	311248.9	1.6	**50.3908**	1.771	3.5	ug/L	237	Standard
	Ni	60	92893.9	1.1	**50.0647**	1.079	2.2	ug/L	141	Standard
	Cu	65	90724.2	1.5	**50.1802**	0.633	1.3	ug/L	109	Standard
	Zn	66	53344.1	1.6	**49.8682**	0.504	1.0	ug/L	159	Standard
>	Ge	72	455364.8	2.6				ug/L	474053	Standard
	As	75	52938.3	1.1	**49.8092**	0.820	1.6	ug/L	-34	Standard
	Se	82	5329.6	1.7	**50.0105**	0.490	1.0	ug/L	14	Standard
	Se-1	77	3723.8	2.6	**49.7421**	0.784	1.6	ug/L	55	Standard
>	Ga	71	95.0	22.9				mg/L	50	Standard
	Rb	85	726.7	4.9				ug/L	20	Standard
	Y	89	384472.0	0.6				ug/L	376602	Standard
>	Rh	103	16.7	62.4				ug/L	17	Standard
	Mo	98	232118.8	0.3	**97.2358**	1.022	1.1	ug/L	8	Standard
	Ag	107	290638.3	1.3	**48.1940**	0.630	1.3	ug/L	81	Standard
	Cd	111	94793.4	0.9	**48.3272**	1.004	2.1	mg/L	3	Standard
	Cd	114	234828.4	1.3	**48.4291**	1.209	2.5	ug/L	7	Standard
>	In	115	530331.4	1.3				ug/L	524722	Standard
	Sn	118	263139.7	2.6	**48.2596**	1.845	3.8	ug/L	715	Standard
	Sb	123	217327.7	1.3	**49.2164**	0.579	1.2	ug/L	201	Standard
	Ba	135	88067.5	0.7	**48.0226**	0.952	2.0	ug/L	108	Standard
	Ce	140	81.7	18.7				ug/L	30	Standard
>	Tb	159	794129.5	1.0				ug/L	792236	Standard
	Ho	165	6.7	86.6				ug/L	7	Standard
	Tl	203	362843.1	1.0	**49.0795**	1.497	3.1	ug/L	9	Standard
	Tl	205	310212.2	1.3	**49.3427**	1.712	3.5	ug/L	0	Standard
	Pb	206	222989.0	0.9	**49.8435**	1.206	2.4	ug/L	216	Standard
	Pb	207	201083.3	0.8	**49.3722**	1.064	2.2	ug/L	180	Standard
	Pb	208	809454.4	0.8	**48.9759**	1.413	2.9	ug/L	717	Standard
	U	238	299066.7	0.4	**49.7396**	1.132	2.3	ug/L	4	Standard
>	Bi	209	445696.2	2.2				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3647.1	3.0	**4.9460**	0.155	3.1	mg/L	20	Standard
K	39	621.7	4.7	**4.5576**	0.277	6.1	mg/L	22	Standard
Ca	43	53.3	19.5	**-0.5868**	2.635	449.0	mg/L	47	Standard
Fe	54	5858.9	4.9	**4.6943**	0.261	5.6	mg/L	151	Standard
Fe	57	1763.4	1.3	**4.8648**	0.124	2.5	mg/L	195	Standard
> **Sc-1**	45	29373.5	1.7				mg/L	29647	Standard
Cl	35	157950.4	0.4				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	1363.4	1.1				ug/L	1607	Standard
P	31	23531.6	2.3				ug/L	22752	Standard
S	34	5542.7	3.1				ug/L	5049	Standard
Sr	88	65.0	38.5				ug/L	87	Standard
C	12	56.7	71.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.4	50.3				mg/L	10	Standard
Ho-1	165	6.7	86.6				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	3	Standard
I	127	1150.0	8.7				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	94.989		
	Al	27	91.020		
	Sc	45			
	Ti	47	99.485		
	V	51	99.336		
	Cr	52	99.445		
	Cr	53			
	Mn	55	102.782		
	Co	59	100.782		
	Ni	60	100.129		
	Cu	65	100.360		
	Zn	66	99.736		
>	Ge	72		96.058	
	As	75	99.618		
	Se	82	100.021		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	97.236		
Ag	107	96.388		
Cd	111	96.654		
Cd	114			
> In	115			101.069
Sn	118	96.519		
Sb	123	98.433		
Ba	135	96.045		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.159		
Tl	205			
Pb	206			
Pb	207			
Pb	208	97.952		
U	238	99.479		
> Bi	209			96.818
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 16:38:50
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52378.7	2.1				ug/L	51024	Standard
	Be	9	15.0	120.2	**-0.0040**	0.020	512.1	ug/L	7	Standard
	Al	27	540.0	3.7	**-0.0061**	0.000	3.2	ug/L	625	Standard
	Sc	45	28712.2	1.8				ug/L	29647	Standard
	Ti	47	44.7	11.0	**-0.0123**	0.017	140.3	ug/L	57	Standard
	V	51	1065.6	4.8	**-0.0136**	0.008	61.5	ug/L	1142	Standard
	Cr	52	6160.3	1.0	**-0.0638**	0.013	21.0	ug/L	6628	Standard
	Cr	53	386.7	19.4	**-0.0026**	0.081	3156.3	ug/L	430	Standard
	Mn	55	621.0	4.1	**-0.0185**	0.004	21.4	ug/L	603	Standard
	Co	59	231.0	6.0	**-0.0042**	0.002	52.0	ug/L	237	Standard
	Ni	60	109.7	8.8	**-0.0191**	0.005	25.2	ug/L	141	Standard
	Cu	65	97.3	15.8	**-0.0127**	0.008	65.1	ug/L	109	Standard
	Zn	66	133.3	9.4	**-0.1078**	0.012	11.3	ug/L	159	Standard
>	**Ge**	72	459252.1	0.6				ug/L	474053	Standard
	As	75	-47.4	46.6	**-0.0192**	0.021	107.9	ug/L	-34	Standard
	Se	82	15.8	37.3	**-0.0216**	0.055	252.4	ug/L	14	Standard
	Se-1	77	46.7	11.0	**-0.1173**	0.072	61.6	ug/L	55	Standard
>	**Ga**	71	35.0	14.3				mg/L	50	Standard
	Rb	85	20.0	43.3				ug/L	20	Standard
	Y	89	388770.9	2.1				ug/L	376602	Standard
>	**Rh**	103	16.7	62.4				ug/L	17	Standard
	Mo	98	68.1	14.3	**0.0237**	0.004	18.9	ug/L	8	Standard
	Ag	107	85.7	13.7	**0.0022**	0.002	97.9	ug/L	81	Standard
	Cd	111	2.9	60.6	**-0.0017**	0.001	51.5	mg/L	3	Standard
	Cd	114	9.5	115.0	**-0.0018**	0.002	124.6	ug/L	7	Standard
>	**In**	115	518516.6	1.3				ug/L	524722	Standard
	Sn	118	641.7	18.0	**0.0313**	0.023	74.8	ug/L	715	Standard
	Sb	123	920.4	35.2	**0.1991**	0.078	39.0	ug/L	201	Standard
	Ba	135	100.7	10.0	**-0.0014**	0.006	433.1	ug/L	108	Standard
	Ce	140	18.3	78.7				ug/L	30	Standard
>	**Tb**	159	769102.4	0.6				ug/L	792236	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	15.7	25.8	**-0.0004**	0.001	125.3	ug/L	9	Standard
	Tl	205	10.0	50.0	**-0.0062**	0.001	13.5	ug/L	0	Standard
	Pb	206	207.3	13.7	**-0.0092**	0.007	79.6	ug/L	216	Standard
	Pb	207	175.3	4.3	**-0.0101**	0.002	22.2	ug/L	180	Standard
	Pb	208	743.7	4.7	**-0.0122**	0.003	22.5	ug/L	717	Standard
	U	238	8.7	35.3	**-0.0061**	0.000	8.0	ug/L	4	Standard
>	**Bi**	209	439141.9	1.8				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	28.3	66.8	**-0.0053**	0.027	522.2	mg/L	20	Standard
K	39	10.0	86.6	**-0.1489**	0.068	45.9	mg/L	22	Standard
Ca	43	36.7	47.9	**-4.3876**	4.095	93.3	mg/L	47	Standard
Fe	54	152.8	18.0	**0.0136**	0.026	187.8	mg/L	151	Standard
Fe	57	166.7	14.2	**-0.1136**	0.080	70.6	mg/L	195	Standard
> **Sc-1**	45	28712.2	1.8				mg/L	29647	Standard
Cl	35	160111.2	2.5				ug/L	154152	Standard
Kr	83	2.3	89.2				ug/L	3	Standard
Br	81	1460.1	8.4				ug/L	1607	Standard
P	31	22964.1	2.3				ug/L	22752	Standard
S	34	5249.2	1.7				ug/L	5049	Standard
Sr	88	68.3	27.7				ug/L	87	Standard
C	12	40.0	66.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	13.0	113.4				mg/L	10	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	3	Standard
I	127	923.4	1.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.878	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.817
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.395
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW B7 WG572432-04
Sample Date/Time: Thursday, June 16, 2016 17:35:43
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	50888.7	1.4				ug/L	51024	Standard
	Be	9	10.0	50.0	**-0.0092**	0.006	65.8	ug/L	7	Standard
	Al	27	7250.1	1.6	**0.0413**	0.001	3.2	ug/L	625	Standard
	Sc	45	27620.2	1.5				ug/L	29647	Standard
	Ti	47	62.3	15.4	**0.0529**	0.035	66.0	ug/L	57	Standard
	V	51	1096.4	11.0	**-0.0060**	0.018	297.3	ug/L	1142	Standard
	Cr	52	7148.7	0.7	**0.0949**	0.009	9.1	ug/L	6628	Standard
	Cr	53	635.0	13.1	**0.2873**	0.091	31.7	ug/L	430	Standard
	Mn	55	19861.3	0.9	**3.3957**	0.050	1.5	ug/L	603	Standard
	Co	59	181.7	9.8	**-0.0115**	0.003	26.7	ug/L	237	Standard
	Ni	60	180.7	8.3	**0.0208**	0.008	36.7	ug/L	141	Standard
	Cu	65	122.3	7.7	**0.0024**	0.006	234.7	ug/L	109	Standard
	Zn	66	1100.0	2.9	**0.8128**	0.032	3.9	ug/L	159	Standard
>	**Ge**	72	450229.5	0.6				ug/L	474053	Standard
	As	75	-42.0	42.9	**-0.0149**	0.017	113.9	ug/L	-34	Standard
	Se	82	9.3	47.0	**-0.0801**	0.042	52.5	ug/L	14	Standard
	Se-1	77	64.0	16.5	**0.1328**	0.147	110.5	ug/L	55	Standard
>	**Ga**	71	50.0	26.5				mg/L	50	Standard
	Rb	85	73.3	20.8				ug/L	20	Standard
	Y	89	383468.8	0.7				ug/L	376602	Standard
>	**Rh**	103	13.3	21.7				ug/L	17	Standard
	Mo	98	675.4	5.9	**0.2913**	0.019	6.7	ug/L	8	Standard
	Ag	107	79.3	11.9	**0.0015**	0.002	113.9	ug/L	81	Standard
	Cd	111	2.4	24.1	**-0.0019**	0.000	15.9	mg/L	3	Standard
	Cd	114	32.5	70.3	**0.0032**	0.005	153.9	ug/L	7	Standard
>	**In**	115	505606.7	0.8				ug/L	524722	Standard
	Sn	118	778.4	13.1	**0.0606**	0.021	34.0	ug/L	715	Standard
	Sb	123	423.2	31.6	**0.0859**	0.032	37.8	ug/L	201	Standard
	Ba	135	197.0	6.6	**0.0551**	0.008	14.5	ug/L	108	Standard
	Ce	140	71.7	20.1				ug/L	30	Standard
>	**Tb**	159	761176.8	0.6				ug/L	792236	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	45.0	11.1	**0.0037**	0.001	19.6	ug/L	9	Standard
	Tl	205	38.3	27.2	**-0.0016**	0.002	107.0	ug/L	0	Standard
	Pb	206	207.0	9.6	**-0.0086**	0.005	56.9	ug/L	216	Standard
	Pb	207	183.0	3.8	**-0.0075**	0.002	22.0	ug/L	180	Standard
	Pb	208	773.7	0.5	**-0.0097**	0.001	6.3	ug/L	717	Standard
	U	238	7.0	14.3	**-0.0064**	0.000	2.5	ug/L	4	Standard
>	**Bi**	209	432877.1	0.8				ug/L	460343	Standard

Sample ID: PBW B7 WG572432-04
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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	46.7	37.6	**0.0228**	0.026	113.0	mg/L	20	Standard
K	39	25.0	20.0	**-0.0231**	0.042	181.8	mg/L	22	Standard
Ca	43	38.3	19.9	**-3.5551**	2.049	57.6	mg/L	47	Standard
Fe	54	166.0	7.2	**0.0299**	0.009	28.8	mg/L	151	Standard
Fe	57	193.3	5.4	**-0.0042**	0.043	1021.8	mg/L	195	Standard
Sc-1	45	27620.2	1.5				mg/L	29647	Standard
Cl	35	157510.0	2.0				ug/L	154152	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	1796.8	8.2				ug/L	1607	Standard
P	31	21511.9	1.4				ug/L	22752	Standard
S	34	4927.5	1.4				ug/L	5049	Standard
Sr	88	76.7	10.0				ug/L	87	Standard
C	12	53.3	47.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	18.7	50.9				mg/L	10	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	26.7	57.3				mg/L	3	Standard
I	127	1125.0	8.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.734	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.974	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.357
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.034
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: LCSW B7 WG572432-05
Sample Date/Time: Thursday, June 16, 2016 17:38:54
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51783.3	1.2				ug/L	51024	Standard
	Be	9	41423.2	1.3	**48.5300**	0.724	1.5	ug/L	7	Standard
	Al	27	8105.5	5.6	**0.0464**	0.004	7.6	ug/L	625	Standard
	Sc	45	29290.0	1.1				ug/L	29647	Standard
	Ti	47	66.0	28.8	**0.0608**	0.069	114.0	ug/L	57	Standard
	V	51	347988.7	1.1	**50.1052**	0.398	0.8	ug/L	1142	Standard
	Cr	52	363767.8	1.3	**49.8723**	1.265	2.5	ug/L	6628	Standard
	Cr	53	46272.2	1.3	**50.7068**	1.549	3.1	ug/L	430	Standard
	Mn	55	322059.4	1.1	**55.6120**	1.299	2.3	ug/L	603	Standard
	Co	59	318198.3	0.5	**50.8192**	0.688	1.4	ug/L	237	Standard
	Ni	60	95145.8	1.0	**50.6010**	1.153	2.3	ug/L	141	Standard
	Cu	65	93949.4	0.3	**51.2847**	1.031	2.0	ug/L	109	Standard
	Zn	66	55650.7	0.4	**51.3490**	0.838	1.6	ug/L	159	Standard
>	**Ge**	72	461424.2	1.8				ug/L	474053	Standard
	As	75	53752.8	0.6	**49.9059**	0.739	1.5	ug/L	-34	Standard
	Se	82	5332.6	1.0	**49.3792**	0.829	1.7	ug/L	14	Standard
	Se-1	77	3747.5	1.7	**49.4072**	1.506	3.0	ug/L	55	Standard
>	**Ga**	71	81.7	30.2				mg/L	50	Standard
	Rb	85	53.3	23.6				ug/L	20	Standard
	Y	89	377535.8	0.4				ug/L	376602	Standard
>	**Rh**	103	36.7	31.5				ug/L	17	Standard
	Mo	98	750.8	4.4	**0.3174**	0.017	5.4	ug/L	8	Standard
	Ag	107	297266.0	1.0	**50.6052**	0.925	1.8	ug/L	81	Standard
	Cd	111	95234.0	1.1	**49.8345**	0.593	1.2	mg/L	3	Standard
	Cd	114	234836.7	1.4	**49.7088**	0.798	1.6	ug/L	7	Standard
>	**In**	115	516621.5	1.2				ug/L	524722	Standard
	Sn	118	736.7	13.8	**0.0494**	0.018	37.2	ug/L	715	Standard
	Sb	123	208987.1	0.3	**48.5849**	0.463	1.0	ug/L	201	Standard
	Ba	135	88485.0	1.6	**49.5270**	0.847	1.7	ug/L	108	Standard
	Ce	140	93.3	22.3				ug/L	30	Standard
>	**Tb**	159	786575.0	1.5				ug/L	792236	Standard
	Ho	165	15.0	120.2				ug/L	7	Standard
	Tl	203	367143.4	1.3	**48.6717**	0.655	1.3	ug/L	9	Standard
	Tl	205	311332.9	0.6	**48.5309**	0.337	0.7	ug/L	0	Standard
	Pb	206	233648.2	1.0	**51.1920**	0.365	0.7	ug/L	216	Standard
	Pb	207	204781.6	0.5	**49.2852**	0.113	0.2	ug/L	180	Standard
	Pb	208	826562.7	0.6	**49.0156**	0.301	0.6	ug/L	717	Standard
	U	238	299484.9	0.7	**48.8217**	0.244	0.5	ug/L	4	Standard
>	**Bi**	209	454561.3	0.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	50.0	17.3	**0.0233**	0.011	48.4	mg/L	20	Standard
K	39	26.7	28.6	**-0.0218**	0.061	278.8	mg/L	22	Standard
Ca	43	35.0	75.6	**-4.9193**	6.254	127.1	mg/L	47	Standard
Fe	54	111.6	12.4	**-0.0232**	0.011	46.2	mg/L	151	Standard
Fe	57	160.0	10.8	**-0.1456**	0.055	37.5	mg/L	195	Standard
Sc-1	45	29290.0	1.1				mg/L	29647	Standard
Cl	35	154390.7	1.3				ug/L	154152	Standard
Kr	83	3.3	45.8				ug/L	3	Standard
Br	81	1633.4	8.8				ug/L	1607	Standard
P	31	21568.7	2.2				ug/L	22752	Standard
S	34	5032.5	1.0				ug/L	5049	Standard
Sr	88	65.0	15.4				ug/L	87	Standard
C	12	66.7	17.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	23.2	25.5				mg/L	10	Standard
Ho-1	165	15.0	120.2				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	1071.7	9.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		101.488	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.336	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.456
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.744
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW B7 WG572432-05
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Method 6020 - Summary Report

Sample ID: L1606054006 WG572432-01
Sample Date/Time: Thursday, June 16, 2016 17:42:06
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52547.6	1.2				ug/L	51024	Standard
	Be	9	281.7	11.8	**0.3044**	0.040	13.2	ug/L	7	Standard
	Al	27	1816487.4	0.8	**12.3812**	0.043	0.4	ug/L	625	Standard
	Sc	45	29675.7	4.3				ug/L	29647	Standard
	Ti	47	527.0	16.5	**1.6748**	0.301	18.0	ug/L	57	Standard
	V	51	3476.6	2.8	**0.3441**	0.007	2.0	ug/L	1142	Standard
	Cr	52	8938.3	3.6	**0.3455**	0.039	11.3	ug/L	6628	Standard
	Cr	53	901.7	9.0	**0.5864**	0.111	18.9	ug/L	430	Standard
	Mn	55	80134.4	1.0	**14.0253**	0.252	1.8	ug/L	603	Standard
	Co	59	25491.1	1.0	**4.1165**	0.049	1.2	ug/L	237	Standard
	Ni	60	8570.8	3.1	**4.5794**	0.092	2.0	ug/L	141	Standard
	Cu	65	650.0	5.0	**0.2962**	0.012	4.0	ug/L	109	Standard
	Zn	66	3464.7	2.4	**3.0444**	0.035	1.2	ug/L	159	Standard
>	**Ge**	72	452166.6	1.8				ug/L	474053	Standard
	As	75	1182.5	5.5	**1.1442**	0.046	4.0	ug/L	-34	Standard
	Se	82	46.0	21.8	**0.2663**	0.087	32.8	ug/L	14	Standard
	Se-1	77	85.7	5.5	**0.4258**	0.086	20.3	ug/L	55	Standard
>	**Ga**	71	278.3	3.7				mg/L	50	Standard
	Rb	85	4193.9	3.2				ug/L	20	Standard
	Y	89	416460.7	2.0				ug/L	376602	Standard
>	**Rh**	103	23.3	12.4				ug/L	17	Standard
	Mo	98	357.6	5.0	**0.1457**	0.008	5.8	ug/L	8	Standard
	Ag	107	158.3	24.9	**0.0142**	0.007	47.6	ug/L	81	Standard
	Cd	111	270.7	5.4	**0.1360**	0.007	5.2	mg/L	3	Standard
	Cd	114	622.1	11.8	**0.1257**	0.017	13.1	ug/L	7	Standard
>	**In**	115	525525.2	1.0				ug/L	524722	Standard
	Sn	118	728.4	8.0	**0.0455**	0.009	20.8	ug/L	715	Standard
	Sb	123	2010.9	21.8	**0.4446**	0.099	22.2	ug/L	201	Standard
	Ba	135	37719.2	0.5	**20.7210**	0.204	1.0	ug/L	108	Standard
	Ce	140	135002.2	1.6				ug/L	30	Standard
>	**Tb**	159	783120.3	1.3				ug/L	792236	Standard
	Ho	165	2456.9	1.5				ug/L	7	Standard
	Tl	203	253.7	10.2	**0.0320**	0.003	10.8	ug/L	9	Standard
	Tl	205	226.7	16.3	**0.0285**	0.006	20.3	ug/L	0	Standard
	Pb	206	765.0	5.7	**0.1161**	0.008	6.7	ug/L	216	Standard
	Pb	207	652.7	5.5	**0.1078**	0.008	7.7	ug/L	180	Standard
	Pb	208	2766.1	3.6	**0.1109**	0.007	6.4	ug/L	717	Standard
	U	238	1954.1	0.9	**0.3200**	0.006	1.9	ug/L	4	Standard
>	**Bi**	209	442196.1	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1238.4	6.5	**1.6323**	0.087	5.4	mg/L	20	Standard
K	39	41.7	36.7	**0.0889**	0.112	125.7	mg/L	22	Standard
Ca	43	68.3	11.2	**2.8122**	2.229	79.3	mg/L	47	Standard
Fe	54	837.8	5.1	**0.5655**	0.012	2.1	mg/L	151	Standard
Fe	57	411.7	13.3	**0.6277**	0.175	27.9	mg/L	195	Standard
Sc-1	45	29675.7	4.3				mg/L	29647	Standard
Cl	35	169997.1	1.0				ug/L	154152	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	5057.5	1.3				ug/L	1607	Standard
P	31	24386.3	0.9				ug/L	22752	Standard
S	34	5092.5	0.4				ug/L	5049	Standard
Sr	88	103.3	7.4				ug/L	87	Standard
C	12	76.7	60.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	3712.9	1.1				mg/L	10	Standard
Ho-1	165	2456.9	1.5				mg/L	7	Standard
Er	166	2246.8	5.2				mg/L	3	Standard
I	127	9703.1	8.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.986	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.383	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.153
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.058
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606054007S WG572432-06
Sample Date/Time: Thursday, June 16, 2016 17:45:17
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53706.7	0.9				ug/L	51024	Standard
	Be	9	43749.7	1.2	**49.4168**	0.266	0.5	ug/L	7	Standard
	Al	27	1932307.9	0.8	**12.8870**	0.144	1.1	ug/L	625	Standard
	Sc	45	29268.3	2.3				ug/L	29647	Standard
	Ti	47	482.3	20.5	**1.5217**	0.334	21.9	ug/L	57	Standard
	V	51	343151.9	1.8	**50.5559**	1.238	2.4	ug/L	1142	Standard
	Cr	52	356598.9	0.1	**50.0133**	0.323	0.6	ug/L	6628	Standard
	Cr	53	44079.0	0.2	**49.3948**	0.256	0.5	ug/L	430	Standard
	Mn	55	413833.9	0.6	**73.1363**	0.045	0.1	ug/L	603	Standard
	Co	59	348825.8	0.4	**56.9989**	0.424	0.7	ug/L	237	Standard
	Ni	60	100519.4	0.8	**54.6907**	0.393	0.7	ug/L	141	Standard
	Cu	65	91430.0	0.8	**51.0559**	0.663	1.3	ug/L	109	Standard
	Zn	66	56968.2	0.3	**53.7844**	0.273	0.5	ug/L	159	Standard
>	**Ge**	72	450975.6	0.7				ug/L	474053	Standard
	As	75	55730.0	0.9	**52.9297**	0.224	0.4	ug/L	-34	Standard
	Se	82	5454.0	1.2	**51.6747**	0.725	1.4	ug/L	14	Standard
	Se-1	77	3763.1	1.1	**50.7665**	0.264	0.5	ug/L	55	Standard
>	**Ga**	71	263.3	20.3				mg/L	50	Standard
	Rb	85	4255.6	2.8				ug/L	20	Standard
	Y	89	417195.5	2.9				ug/L	376602	Standard
>	**Rh**	103	30.0	16.7				ug/L	17	Standard
	Mo	98	249.7	0.8	**0.1017**	0.004	4.1	ug/L	8	Standard
	Ag	107	291868.5	0.9	**49.6480**	2.126	4.3	ug/L	81	Standard
	Cd	111	96723.0	1.0	**50.5615**	1.461	2.9	mg/L	3	Standard
	Cd	114	235539.9	2.1	**49.7930**	0.984	2.0	ug/L	7	Standard
>	**In**	115	517505.1	3.8				ug/L	524722	Standard
	Sn	118	1476.7	5.3	**0.1884**	0.005	2.4	ug/L	715	Standard
	Sb	123	206896.8	0.8	**48.0521**	1.564	3.3	ug/L	201	Standard
	Ba	135	127540.2	0.0	**71.3559**	2.754	3.9	ug/L	108	Standard
	Ce	140	139925.0	2.0				ug/L	30	Standard
>	**Tb**	159	770775.9	3.8				ug/L	792236	Standard
	Ho	165	2476.9	1.1				ug/L	7	Standard
	Tl	203	360327.5	0.9	**50.2317**	2.202	4.4	ug/L	9	Standard
	Tl	205	316813.0	0.1	**51.9255**	1.944	3.7	ug/L	0	Standard
	Pb	206	230620.2	0.3	**53.1250**	1.777	3.3	ug/L	216	Standard
	Pb	207	202090.2	0.6	**51.1482**	2.204	4.3	ug/L	180	Standard
	Pb	208	841767.9	0.1	**52.4861**	1.864	3.6	ug/L	717	Standard
	U	238	302598.3	0.9	**51.8585**	1.621	3.1	ug/L	4	Standard
>	**Bi**	209	432715.9	3.6				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1251.7	2.3	**1.6745**	0.059	3.5	mg/L	20	Standard
K	39	36.7	20.8	**0.0560**	0.065	115.4	mg/L	22	Standard
Ca	43	53.3	32.9	**-0.5302**	4.352	820.7	mg/L	47	Standard
Fe	54	1026.3	1.7	**0.7308**	0.034	4.6	mg/L	151	Standard
Fe	57	418.3	7.7	**0.6667**	0.128	19.3	mg/L	195	Standard
> **Sc-1**	45	29268.3	2.3				mg/L	29647	Standard
Cl	35	169666.9	1.9				ug/L	154152	Standard
Kr	83	2.0	100.0				ug/L	3	Standard
Br	81	2960.3	5.9				ug/L	1607	Standard
P	31	24135.9	2.5				ug/L	22752	Standard
S	34	4849.1	3.1				ug/L	5049	Standard
Sr	88	106.7	33.9				ug/L	87	Standard
C	12	40.0	50.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	0	Standard
Dy	164	3819.4	7.1				mg/L	10	Standard
Ho-1	165	2476.9	1.1				mg/L	7	Standard
Er	166	2390.2	5.9				mg/L	3	Standard
I	127	12700.3	5.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.257	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.132	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.625
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.999
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606054008SD WG572432-07
Sample Date/Time: Thursday, June 16, 2016 17:48:29
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54998.0	2.9				ug/L	51024	Standard
	Be	9	42282.3	1.6	**46.6702**	1.847	4.0	ug/L	7	Standard
	Al	27	1853346.2	1.8	**12.0720**	0.192	1.6	ug/L	625	Standard
	Sc	45	28618.7	1.6				ug/L	29647	Standard
	Ti	47	438.7	18.4	**1.3101**	0.274	20.9	ug/L	57	Standard
	V	51	339071.1	1.2	**47.9811**	0.898	1.9	ug/L	1142	Standard
	Cr	52	348951.5	0.9	**46.9627**	0.693	1.5	ug/L	6628	Standard
	Cr	53	43296.8	2.2	**46.5875**	1.128	2.4	ug/L	430	Standard
	Mn	55	386934.9	1.9	**65.6847**	1.414	2.2	ug/L	603	Standard
	Co	59	342375.5	0.7	**53.7459**	0.809	1.5	ug/L	237	Standard
	Ni	60	97792.2	0.5	**51.1109**	0.332	0.6	ug/L	141	Standard
	Cu	65	89033.2	0.9	**47.7559**	0.143	0.3	ug/L	109	Standard
	Zn	66	55887.9	0.5	**50.6770**	0.331	0.7	ug/L	159	Standard
>	**Ge**	72	469439.2	1.1				ug/L	474053	Standard
	As	75	54484.6	0.9	**49.7143**	0.277	0.6	ug/L	-34	Standard
	Se	82	5325.5	1.9	**48.4642**	1.024	2.1	ug/L	14	Standard
	Se-1	77	3702.8	2.9	**47.9415**	0.927	1.9	ug/L	55	Standard
>	**Ga**	71	271.7	17.7				mg/L	50	Standard
	Rb	85	4088.9	2.2				ug/L	20	Standard
	Y	89	413416.3	1.0				ug/L	376602	Standard
>	**Rh**	103	41.7	30.2				ug/L	17	Standard
	Mo	98	249.2	1.7	**0.1026**	0.001	1.4	ug/L	8	Standard
	Ag	107	286615.9	0.3	**49.2507**	0.777	1.6	ug/L	81	Standard
	Cd	111	93885.9	0.7	**49.5954**	0.904	1.8	mg/L	3	Standard
	Cd	114	226454.5	0.3	**48.3871**	0.650	1.3	ug/L	7	Standard
>	**In**	115	511810.4	1.2				ug/L	524722	Standard
	Sn	118	701.7	6.8	**0.0441**	0.009	19.5	ug/L	715	Standard
	Sb	123	206600.1	0.8	**48.4856**	0.964	2.0	ug/L	201	Standard
	Ba	135	122408.2	0.7	**69.1850**	1.061	1.5	ug/L	108	Standard
	Ce	140	131819.3	0.1				ug/L	30	Standard
>	**Tb**	159	776885.2	2.2				ug/L	792236	Standard
	Ho	165	2331.8	5.4				ug/L	7	Standard
	Tl	203	352123.1	0.6	**47.6812**	0.707	1.5	ug/L	9	Standard
	Tl	205	309331.5	1.9	**49.2466**	0.608	1.2	ug/L	0	Standard
	Pb	206	228474.4	0.6	**51.1335**	0.852	1.7	ug/L	216	Standard
	Pb	207	200368.2	0.3	**49.2580**	0.755	1.5	ug/L	180	Standard
	Pb	208	813075.7	0.6	**49.2521**	0.923	1.9	ug/L	717	Standard
	U	238	295399.0	1.0	**49.1860**	0.564	1.1	ug/L	4	Standard
>	**Bi**	209	445087.6	1.7				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1281.7	3.9	**1.7556**	0.088	5.0	mg/L	20	Standard
K	39	31.7	63.8	**0.0238**	0.162	681.6	mg/L	22	Standard
Ca	43	90.0	29.4	**8.6263**	6.605	76.6	mg/L	47	Standard
Fe	54	882.7	7.0	**0.6290**	0.061	9.7	mg/L	151	Standard
Fe	57	415.0	3.6	**0.6838**	0.030	4.4	mg/L	195	Standard
Sc-1	45	28618.7	1.6				mg/L	29647	Standard
Cl	35	164516.5	1.8				ug/L	154152	Standard
Kr	83	2.7	78.1				ug/L	3	Standard
Br	81	3177.0	4.4				ug/L	1607	Standard
P	31	23216.1	2.6				ug/L	22752	Standard
S	34	4752.4	2.2				ug/L	5049	Standard
Sr	88	88.3	40.2				ug/L	87	Standard
C	12	76.7	30.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	3671.9	4.0				mg/L	10	Standard
Ho-1	165	2331.8	5.4				mg/L	7	Standard
Er	166	2266.8	11.6				mg/L	3	Standard
I	127	12179.9	5.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		107.788	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.027	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.539
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.686
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606053301
Sample Date/Time: Thursday, June 16, 2016 17:51:40
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60559.2	3.2				ug/L	51024	Standard
	Be	9	28.3	10.2	**0.0074**	0.004	49.8	ug/L	7	Standard
	Al	27	7003612.2	2.3	**41.4514**	0.476	1.1	ug/L	625	Standard
	Sc	45	30053.2	5.5				ug/L	29647	Standard
	Ti	47	795.7	5.5	**2.5457**	0.146	5.8	ug/L	57	Standard
	V	51	2693.3	6.1	**0.2191**	0.025	11.3	ug/L	1142	Standard
	Cr	52	8930.0	3.3	**0.3138**	0.057	18.2	ug/L	6628	Standard
	Cr	53	2155.2	15.7	**1.9427**	0.407	21.0	ug/L	430	Standard
	Mn	55	115337.0	0.2	**19.7464**	0.327	1.7	ug/L	603	Standard
	Co	59	1383.4	9.3	**0.1788**	0.018	10.2	ug/L	237	Standard
	Ni	60	2905.3	1.7	**1.4630**	0.043	2.9	ug/L	141	Standard
	Cu	65	10476.6	1.4	**5.6346**	0.098	1.7	ug/L	109	Standard
	Zn	66	21460.2	1.0	**19.5697**	0.101	0.5	ug/L	159	Standard
>	Ge	72	463434.7	1.4				ug/L	474053	Standard
	As	75	3767.1	1.6	**3.5052**	0.045	1.3	ug/L	-34	Standard
	Se	82	163.8	10.0	**1.3482**	0.174	12.9	ug/L	14	Standard
	Se-1	77	257.3	5.7	**2.6846**	0.227	8.5	ug/L	55	Standard
>	Ga	71	133.3	15.6				mg/L	50	Standard
	Rb	85	28246.3	1.8				ug/L	20	Standard
	Y	89	371509.9	1.1				ug/L	376602	Standard
>	Rh	103	53.3	54.1				ug/L	17	Standard
	Mo	98	1868.0	0.8	**0.7966**	0.012	1.5	ug/L	8	Standard
	Ag	107	323.0	60.8	**0.0424**	0.033	77.8	ug/L	81	Standard
	Cd	111	115.7	21.0	**0.0572**	0.012	21.6	mg/L	3	Standard
	Cd	114	360.8	28.5	**0.0723**	0.021	29.2	ug/L	7	Standard
>	In	115	517402.5	1.9				ug/L	524722	Standard
	Sn	118	1711.8	7.1	**0.2327**	0.020	8.5	ug/L	715	Standard
	Sb	123	4614.0	12.3	**1.0551**	0.113	10.7	ug/L	201	Standard
	Ba	135	35141.4	1.4	**19.6067**	0.326	1.7	ug/L	108	Standard
	Ce	140	703.4	25.4				ug/L	30	Standard
>	Tb	159	794129.4	2.7				ug/L	792236	Standard
	Ho	165	41.7	38.6				ug/L	7	Standard
	Tl	203	449.0	60.2	**0.0569**	0.035	62.3	ug/L	9	Standard
	Tl	205	276.7	17.7	**0.0354**	0.008	22.9	ug/L	0	Standard
	Pb	206	1738.1	4.6	**0.3254**	0.021	6.4	ug/L	216	Standard
	Pb	207	1473.7	6.2	**0.3016**	0.022	7.3	ug/L	180	Standard
	Pb	208	5917.1	2.4	**0.2937**	0.008	2.7	ug/L	717	Standard
	U	238	273.7	21.5	**0.0370**	0.009	24.9	ug/L	4	Standard
>	Bi	209	454186.9	1.7				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.2936**	8.935	168.8	mg/L	0	Standard
Mg	24	24845.4	1.6	**33.2336**	1.348	4.1	mg/L	20	Standard
K	39	435.0	8.7	**3.0600**	0.462	15.1	mg/L	22	Standard
Ca	43	158.3	13.1	**23.4759**	6.234	26.6	mg/L	47	Standard
Fe	54	199.1	33.0	**0.0465**	0.059	127.4	mg/L	151	Standard
Fe	57	291.7	13.3	**0.2501**	0.172	68.9	mg/L	195	Standard
> **Sc-1**	45	30053.2	5.5				mg/L	29647	Standard
Cl	35	199161.9	1.2				ug/L	154152	Standard
Kr	83	2.3	49.5				ug/L	3	Standard
Br	81	12578.6	3.0				ug/L	1607	Standard
P	31	24539.9	2.1				ug/L	22752	Standard
S	34	5079.2	4.0				ug/L	5049	Standard
Sr	88	208.3	14.7				ug/L	87	Standard
C	12	96.7	36.3				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	0	Standard
Dy	164	61.3	25.3				mg/L	10	Standard
Ho-1	165	41.7	38.6				mg/L	7	Standard
Er	166	43.3	13.3				mg/L	3	Standard
I	127	46957.7	3.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.687	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.760	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.605
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.663
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606054003
Sample Date/Time: Thursday, June 16, 2016 17:54:52
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69060.4	2.1				ug/L	51024	Standard
	Be	9	195.0	15.6	**0.1507**	0.030	20.2	ug/L	7	Standard
	Al	27	5538034.2	2.1	**28.7382**	0.596	2.1	ug/L	625	Standard
	Sc	45	34442.5	3.5				ug/L	29647	Standard
	Ti	47	14518.0	3.2	**50.5821**	0.898	1.8	ug/L	57	Standard
	V	51	33577.2	0.6	**4.7869**	0.070	1.5	ug/L	1142	Standard
	Cr	52	33773.6	0.6	**3.8889**	0.037	1.0	ug/L	6628	Standard
	Cr	53	7016.6	2.1	**7.4876**	0.191	2.6	ug/L	430	Standard
	Mn	55	504059.4	0.9	**88.9661**	0.527	0.6	ug/L	603	Standard
	Co	59	17512.8	1.2	**2.8178**	0.022	0.8	ug/L	237	Standard
	Ni	60	10317.5	0.9	**5.5347**	0.034	0.6	ug/L	141	Standard
	Cu	65	2208.5	1.2	**1.1669**	0.032	2.7	ug/L	109	Standard
	Zn	66	8517.7	1.0	**7.8315**	0.096	1.2	ug/L	159	Standard
>	**Ge**	72	451723.4	1.4				ug/L	474053	Standard
	As	75	12920.2	3.5	**12.2750**	0.581	4.7	ug/L	-34	Standard
	Se	82	2961.0	4.8	**27.9437**	1.699	6.1	ug/L	14	Standard
	Se-1	77	326.3	1.4	**3.7149**	0.003	0.1	ug/L	55	Standard
>	**Ga**	71	2480.2	6.2				mg/L	50	Standard
	Rb	85	38117.9	1.8				ug/L	20	Standard
	Y	89	421962.4	2.5				ug/L	376602	Standard
>	**Rh**	103	78.3	24.2				ug/L	17	Standard
	Mo	98	3944.4	0.7	**1.6261**	0.009	0.6	ug/L	8	Standard
	Ag	107	112.0	6.7	**0.0060**	0.001	21.5	ug/L	81	Standard
	Cd	111	53.6	6.7	**0.0237**	0.002	7.8	mg/L	3	Standard
	Cd	114	133.4	41.0	**0.0233**	0.011	47.5	ug/L	7	Standard
>	**In**	115	537036.3	0.3				ug/L	524722	Standard
	Sn	118	2543.5	1.4	**0.3719**	0.007	2.0	ug/L	715	Standard
	Sb	123	798.0	25.2	**0.1636**	0.044	27.1	ug/L	201	Standard
	Ba	135	340692.9	0.8	**183.5929**	1.953	1.1	ug/L	108	Standard
	Ce	140	164779.7	1.7				ug/L	30	Standard
>	**Tb**	159	813065.5	1.9				ug/L	792236	Standard
	Ho	165	2875.3	7.5				ug/L	7	Standard
	Tl	203	422.0	6.7	**0.0538**	0.003	6.1	ug/L	9	Standard
	Tl	205	353.3	13.4	**0.0477**	0.007	15.2	ug/L	0	Standard
	Pb	206	3737.8	1.9	**0.7699**	0.010	1.3	ug/L	216	Standard
	Pb	207	3100.7	1.2	**0.6991**	0.004	0.6	ug/L	180	Standard
	Pb	208	12994.2	0.7	**0.7197**	0.013	1.8	ug/L	717	Standard
	U	238	1498.4	1.2	**0.2387**	0.006	2.5	ug/L	4	Standard
>	**Bi**	209	451028.7	1.3				ug/L	460343	Standard

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Na	23	6.7	114.6	**-8.8575**	22.422	253.1	mg/L	0	Standard
Mg	24	23361.3	1.7	**27.2407**	1.080	4.0	mg/L	20	Standard
K	39	78.3	19.5	**0.2883**	0.117	40.4	mg/L	22	Standard
Ca	43	363.3	8.7	**59.9201**	6.518	10.9	mg/L	47	Standard
Fe	54	6234.3	4.5	**4.2529**	0.273	6.4	mg/L	151	Standard
Fe	57	2021.8	6.4	**4.7439**	0.351	7.4	mg/L	195	Standard
Sc-1	45	34442.5	3.5				mg/L	29647	Standard
Cl	35	236460.3	1.1				ug/L	154152	Standard
Kr	83	2.0	0.0				ug/L	3	Standard
Br	81	708935.6	4.3				ug/L	1607	Standard
P	31	40141.4	0.8				ug/L	22752	Standard
S	34	5004.2	5.7				ug/L	5049	Standard
Sr	88	448.3	5.6				ug/L	87	Standard
C	12	160.0	16.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	4859.0	3.9				mg/L	10	Standard
Ho-1	165	2875.3	7.5				mg/L	7	Standard
Er	166	2543.5	9.9				mg/L	3	Standard
I	127	141220.9	4.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		135.349	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.290	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.347	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.977	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606054003PS WG573083-01
Sample Date/Time: Thursday, June 16, 2016 17:58:03
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70691.2	0.9				ug/L	51024	Standard
	Be	9	50693.0	1.7	**43.5062**	1.094	2.5	ug/L	7	Standard
	Al	27	5657732.1	0.5	**28.6796**	0.340	1.2	ug/L	625	Standard
	Sc	45	32850.6	4.5				ug/L	29647	Standard
	Ti	47	14458.2	2.7	**49.6930**	1.695	3.4	ug/L	57	Standard
	V	51	385117.2	0.8	**55.8774**	0.585	1.0	ug/L	1142	Standard
	Cr	52	382916.9	0.3	**52.9297**	0.331	0.6	ug/L	6628	Standard
	Cr	53	51097.7	0.4	**56.4380**	0.261	0.5	ug/L	430	Standard
	Mn	55	810895.8	0.8	**141.2253**	1.951	1.4	ug/L	603	Standard
	Co	59	346570.3	0.8	**55.7548**	0.081	0.1	ug/L	237	Standard
	Ni	60	100953.5	0.6	**54.0794**	0.195	0.4	ug/L	141	Standard
	Cu	65	91462.3	1.6	**50.2871**	1.080	2.1	ug/L	109	Standard
	Zn	66	61341.3	0.6	**57.0367**	0.769	1.3	ug/L	159	Standard
>	**Ge**	72	458036.5	0.7				ug/L	474053	Standard
	As	75	68674.9	0.5	**64.2143**	0.182	0.3	ug/L	-34	Standard
	Se	82	8569.6	1.8	**80.0280**	0.981	1.2	ug/L	14	Standard
	Se-1	77	4022.5	4.5	**53.4821**	2.795	5.2	ug/L	55	Standard
>	**Ga**	71	2441.9	7.4				mg/L	50	Standard
	Rb	85	38290.0	2.9				ug/L	20	Standard
	Y	89	428743.2	0.3				ug/L	376602	Standard
>	**Rh**	103	91.7	35.1				ug/L	17	Standard
	Mo	98	3923.8	0.2	**1.6525**	0.023	1.4	ug/L	8	Standard
	Ag	107	276547.4	3.6	**46.2633**	2.008	4.3	ug/L	81	Standard
	Cd	111	96223.0	0.5	**49.4786**	0.725	1.5	mg/L	3	Standard
	Cd	114	238042.9	1.3	**49.5078**	0.331	0.7	ug/L	7	Standard
>	**In**	115	525777.0	1.3				ug/L	524722	Standard
	Sn	118	2560.2	3.5	**0.3851**	0.023	6.0	ug/L	715	Standard
	Sb	123	215296.5	0.5	**49.1839**	0.834	1.7	ug/L	201	Standard
	Ba	135	428635.4	1.2	**235.9452**	0.924	0.4	ug/L	108	Standard
	Ce	140	165650.7	1.3				ug/L	30	Standard
>	**Tb**	159	801648.7	1.5				ug/L	792236	Standard
	Ho	165	2957.0	2.0				ug/L	7	Standard
	Tl	203	362265.3	0.3	**49.7124**	0.432	0.9	ug/L	9	Standard
	Tl	205	324753.6	0.8	**52.4032**	0.722	1.4	ug/L	0	Standard
	Pb	206	240535.6	0.4	**54.5563**	0.254	0.5	ug/L	216	Standard
	Pb	207	210550.9	0.8	**52.4580**	0.578	1.1	ug/L	180	Standard
	Pb	208	845714.1	0.6	**51.9167**	0.481	0.9	ug/L	717	Standard
	U	238	316985.2	0.3	**53.4916**	0.510	1.0	ug/L	4	Standard
>	**Bi**	209	439144.9	0.6				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.2953**	8.932	168.7	mg/L	0	Standard
Mg	24	23556.6	1.1	**28.8162**	1.308	4.5	mg/L	20	Standard
K	39	103.3	22.9	**0.4849**	0.170	35.0	mg/L	22	Standard
Ca	43	350.0	13.1	**60.9958**	12.902	21.2	mg/L	47	Standard
Fe	54	6036.8	1.7	**4.3211**	0.223	5.2	mg/L	151	Standard
Fe	57	2113.5	3.5	**5.2621**	0.189	3.6	mg/L	195	Standard
Sc-1	45	32850.6	4.5				mg/L	29647	Standard
Cl	35	237983.9	1.1				ug/L	154152	Standard
Kr	83	0.0					ug/L	3	Standard
Br	81	723069.8	1.3				ug/L	1607	Standard
P	31	40273.5	4.5				ug/L	22752	Standard
S	34	4915.8	1.6				ug/L	5049	Standard
Sr	88	436.7	3.5				ug/L	87	Standard
C	12	133.3	4.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	4443.9	9.4				mg/L	10	Standard
Ho-1	165	2957.0	2.0				mg/L	7	Standard
Er	166	2646.9	6.4				mg/L	3	Standard
I	127	140910.6	0.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		138.545	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.621	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.201
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.395
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606054003SDL WG573083-02
Sample Date/Time: Thursday, June 16, 2016 18:01:15
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67421.4	2.2				ug/L	51024	Standard
	Be	9	65.0	23.1	**0.0373**	0.012	33.1	ug/L	7	Standard
	Al	27	1133068.0	1.4	**6.0172**	0.214	3.6	ug/L	625	Standard
	Sc	45	29907.8	2.2				ug/L	29647	Standard
	Ti	47	2896.9	2.4	**9.4986**	0.237	2.5	ug/L	57	Standard
	V	51	8118.9	1.6	**0.9749**	0.019	2.0	ug/L	1142	Standard
	Cr	52	11547.7	1.7	**0.6435**	0.029	4.5	ug/L	6628	Standard
	Cr	53	2378.5	3.7	**2.1298**	0.095	4.5	ug/L	430	Standard
	Mn	55	103741.0	1.9	**17.3694**	0.315	1.8	ug/L	603	Standard
	Co	59	3838.8	2.5	**0.5567**	0.015	2.6	ug/L	237	Standard
	Ni	60	2235.5	2.6	**1.0826**	0.031	2.9	ug/L	141	Standard
	Cu	65	647.7	4.8	**0.2788**	0.016	5.8	ug/L	109	Standard
	Zn	66	2803.6	0.9	**2.3005**	0.025	1.1	ug/L	159	Standard
>	**Ge**	72	473393.6	0.2				ug/L	474053	Standard
	As	75	2692.6	2.6	**2.4601**	0.062	2.5	ug/L	-34	Standard
	Se	82	639.2	5.1	**5.6193**	0.300	5.3	ug/L	14	Standard
	Se-1	77	131.7	10.1	**0.9721**	0.173	17.8	ug/L	55	Standard
>	**Ga**	71	563.3	2.9				mg/L	50	Standard
	Rb	85	7626.9	1.4				ug/L	20	Standard
	Y	89	387376.2	0.4				ug/L	376602	Standard
>	**Rh**	103	25.0	34.6				ug/L	17	Standard
	Mo	98	784.5	4.4	**0.3255**	0.017	5.2	ug/L	8	Standard
	Ag	107	1243.4	2.6	**0.1954**	0.006	3.2	ug/L	81	Standard
	Cd	111	29.9	54.1	**0.0121**	0.008	67.3	mg/L	3	Standard
	Cd	114	69.0	67.7	**0.0105**	0.010	91.0	ug/L	7	Standard
>	**In**	115	526626.8	0.9				ug/L	524722	Standard
	Sn	118	845.0	11.0	**0.0669**	0.018	26.5	ug/L	715	Standard
	Sb	123	2277.2	24.6	**0.5055**	0.132	26.2	ug/L	201	Standard
	Ba	135	69797.7	0.8	**38.3133**	0.615	1.6	ug/L	108	Standard
	Ce	140	34238.6	1.3				ug/L	30	Standard
>	**Tb**	159	801692.0	0.8				ug/L	792236	Standard
	Ho	165	618.3	9.3				ug/L	7	Standard
	Tl	203	344.7	8.1	**0.0429**	0.004	8.5	ug/L	9	Standard
	Tl	205	311.7	8.8	**0.0405**	0.004	10.8	ug/L	0	Standard
	Pb	206	1064.0	3.5	**0.1759**	0.009	4.9	ug/L	216	Standard
	Pb	207	867.0	6.7	**0.1540**	0.013	8.6	ug/L	180	Standard
	Pb	208	3581.5	3.9	**0.1537**	0.009	6.2	ug/L	717	Standard
	U	238	339.0	2.5	**0.0474**	0.001	2.9	ug/L	4	Standard
>	**Bi**	209	456914.2	0.6				ug/L	460343	Standard

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Na	23	5.0	173.2	**-5.5106**	27.648	501.7	mg/L	0	Standard
Mg	24	4740.7	2.0	**6.3283**	0.198	3.1	mg/L	20	Standard
K	39	31.7	32.9	**0.0103**	0.074	719.1	mg/L	22	Standard
Ca	43	96.7	10.8	**9.2099**	2.490	27.0	mg/L	47	Standard
Fe	54	1310.9	5.1	**0.9427**	0.077	8.2	mg/L	151	Standard
Fe	57	518.3	4.8	**0.9451**	0.104	11.0	mg/L	195	Standard
> **Sc-1**	45	29907.8	2.2				mg/L	29647	Standard
Cl	35	171537.6	0.9				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	154143.7	2.2				ug/L	1607	Standard
P	31	26042.4	2.9				ug/L	22752	Standard
S	34	4889.1	5.0				ug/L	5049	Standard
Sr	88	148.3	17.0				ug/L	87	Standard
C	12	73.3	47.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	929.7	4.3				mg/L	10	Standard
Ho-1	165	618.3	9.3				mg/L	7	Standard
Er	166	563.3	6.2				mg/L	3	Standard
I	127	30853.1	2.8				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.136	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.861	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.363
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.255
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606054003SDL WG573083-02
Sample Date/Time: Thursday, June 16, 2016 18:04:26
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65921.5	1.7				ug/L	51024	Standard
	Be	9	28.3	10.2	**0.0050**	0.002	49.4	ug/L	7	Standard
	Al	27	234588.9	1.0	**1.2659**	0.010	0.8	ug/L	625	Standard
	Sc	45	29675.7	0.4				ug/L	29647	Standard
	Ti	47	693.0	13.8	**2.1806**	0.270	12.4	ug/L	57	Standard
	V	51	2547.4	1.6	**0.1965**	0.004	2.1	ug/L	1142	Standard
	Cr	52	7577.9	0.6	**0.1209**	0.025	20.3	ug/L	6628	Standard
	Cr	53	1020.0	10.6	**0.6861**	0.125	18.2	ug/L	430	Standard
	Mn	55	22549.8	0.3	**3.7420**	0.091	2.4	ug/L	603	Standard
	Co	59	941.7	6.4	**0.1080**	0.010	9.7	ug/L	237	Standard
	Ni	60	563.3	5.9	**0.2199**	0.025	11.2	ug/L	141	Standard
	Cu	65	269.3	8.9	**0.0800**	0.016	20.5	ug/L	109	Standard
	Zn	66	1451.4	2.3	**1.1019**	0.057	5.2	ug/L	159	Standard
>	**Ge**	72	465567.5	2.4				ug/L	474053	Standard
	As	75	572.2	6.7	**0.5515**	0.039	7.1	ug/L	-34	Standard
	Se	82	153.8	5.1	**1.2486**	0.091	7.3	ug/L	14	Standard
	Se-1	77	80.7	9.5	**0.3264**	0.123	37.8	ug/L	55	Standard
>	**Ga**	71	155.0	27.6				mg/L	50	Standard
	Rb	85	1620.1	5.6				ug/L	20	Standard
	Y	89	390804.2	2.3				ug/L	376602	Standard
>	**Rh**	103	10.0	50.0				ug/L	17	Standard
	Mo	98	177.1	5.2	**0.0674**	0.004	5.5	ug/L	8	Standard
	Ag	107	160.0	23.9	**0.0138**	0.006	46.0	ug/L	81	Standard
	Cd	111	25.4	77.5	**0.0095**	0.010	103.8	mg/L	3	Standard
	Cd	114	52.9	101.2	**0.0069**	0.011	156.6	ug/L	7	Standard
>	**In**	115	539456.4	0.6				ug/L	524722	Standard
	Sn	118	513.3	2.8	**0.0033**	0.003	95.9	ug/L	715	Standard
	Sb	123	668.0	33.5	**0.1338**	0.049	36.9	ug/L	201	Standard
	Ba	135	14458.9	2.3	**7.7012**	0.163	2.1	ug/L	108	Standard
	Ce	140	7036.6	6.6				ug/L	30	Standard
>	**Tb**	159	818023.3	1.0				ug/L	792236	Standard
	Ho	165	115.0	27.2				ug/L	7	Standard
	Tl	203	200.0	22.5	**0.0231**	0.006	25.9	ug/L	9	Standard
	Tl	205	161.7	23.6	**0.0166**	0.006	35.1	ug/L	0	Standard
	Pb	206	434.7	9.5	**0.0360**	0.009	24.6	ug/L	216	Standard
	Pb	207	375.3	3.2	**0.0337**	0.004	10.7	ug/L	180	Standard
	Pb	208	1515.7	5.1	**0.0292**	0.005	17.5	ug/L	717	Standard
	U	238	114.7	29.0	**0.0105**	0.005	51.2	ug/L	4	Standard
>	**Bi**	209	469475.2	1.0				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1023.4	7.3	**1.3409**	0.102	7.6	mg/L	20	Standard
K	39	6.7	43.3	**-0.1772**	0.022	12.3	mg/L	22	Standard
Ca	43	43.3	46.6	**-3.0610**	4.758	155.5	mg/L	47	Standard
Fe	54	379.2	10.8	**0.1931**	0.034	17.8	mg/L	151	Standard
Fe	57	256.7	21.5	**0.1469**	0.171	116.2	mg/L	195	Standard
> **Sc-1**	45	29675.7	0.4				mg/L	29647	Standard
Cl	35	160581.2	1.2				ug/L	154152	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	34599.5	0.7				ug/L	1607	Standard
P	31	23708.5	0.9				ug/L	22752	Standard
S	34	4770.8	0.4				ug/L	5049	Standard
Sr	88	63.3	39.7				ug/L	87	Standard
C	12	46.7	44.6				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	195.8	8.2				mg/L	10	Standard
Ho-1	165	115.0	27.2				mg/L	7	Standard
Er	166	156.7	19.5				mg/L	3	Standard
I	127	7458.5	3.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.197	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.210	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	102.808
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.984
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 18:07:39
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	64746.4	0.3				ug/L	51024	Standard
	Be	9	46935.9	0.9	**43.9752**	0.492	1.1	ug/L	7	Standard
	Al	27	7535309.9	1.9	**41.7048**	0.653	1.6	ug/L	625	Standard
	Sc	45	31043.5	4.7				ug/L	29647	Standard
	Ti	47	28772.6	0.9	**96.6294**	1.169	1.2	ug/L	57	Standard
	V	51	348687.3	1.9	**49.3361**	0.535	1.1	ug/L	1142	Standard
	Cr	52	360685.6	0.1	**48.5749**	1.035	2.1	ug/L	6628	Standard
	Cr	53	45317.7	1.7	**48.7728**	0.185	0.4	ug/L	430	Standard
	Mn	55	312229.0	0.7	**52.9756**	0.740	1.4	ug/L	603	Standard
	Co	59	328785.3	1.7	**51.5998**	0.220	0.4	ug/L	237	Standard
	Ni	60	92818.4	0.9	**48.5066**	0.760	1.6	ug/L	141	Standard
	Cu	65	91019.6	1.6	**48.8181**	0.503	1.0	ug/L	109	Standard
	Zn	66	54227.6	1.6	**49.1583**	0.511	1.0	ug/L	159	Standard
>	Ge	72	469521.9	2.1				ug/L	474053	Standard
	As	75	53936.9	1.2	**49.2114**	0.450	0.9	ug/L	-34	Standard
	Se	82	5505.5	2.6	**50.0972**	0.955	1.9	ug/L	14	Standard
	Se-1	77	3726.1	1.9	**48.2480**	0.384	0.8	ug/L	55	Standard
>	Ga	71	78.3	14.7				mg/L	50	Standard
	Rb	85	671.7	4.5				ug/L	20	Standard
	Y	89	383452.4	1.6				ug/L	376602	Standard
>	Rh	103	25.0	0.0				ug/L	17	Standard
	Mo	98	247423.8	2.1	**101.1140**	2.305	2.3	ug/L	8	Standard
	Ag	107	299585.0	1.0	**48.4657**	0.725	1.5	ug/L	81	Standard
	Cd	111	97195.1	1.0	**48.3387**	0.865	1.8	mg/L	3	Standard
	Cd	114	237825.0	2.4	**47.8442**	1.314	2.7	ug/L	7	Standard
>	In	115	543596.8	0.8				ug/L	524722	Standard
	Sn	118	268878.5	1.5	**48.0977**	1.025	2.1	ug/L	715	Standard
	Sb	123	216173.0	0.7	**47.7614**	0.695	1.5	ug/L	201	Standard
	Ba	135	89328.2	0.9	**47.5171**	0.807	1.7	ug/L	108	Standard
	Ce	140	83.3	25.0				ug/L	30	Standard
>	Tb	159	826706.5	0.3				ug/L	792236	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	368647.9	0.4	**47.0636**	0.889	1.9	ug/L	9	Standard
	Tl	205	321431.2	2.0	**48.2447**	0.798	1.7	ug/L	0	Standard
	Pb	206	230222.8	1.5	**48.5740**	1.152	2.4	ug/L	216	Standard
	Pb	207	209229.9	1.3	**48.4917**	1.019	2.1	ug/L	180	Standard
	Pb	208	835767.1	0.5	**47.7236**	0.588	1.2	ug/L	717	Standard
	U	238	311255.6	0.4	**48.8622**	0.739	1.5	ug/L	4	Standard
>	Bi	209	472106.5	1.5				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3973.9	4.2	**5.1144**	0.463	9.1	mg/L	20	Standard
K	39	603.3	5.9	**4.1749**	0.393	9.4	mg/L	22	Standard
Ca	43	58.3	34.6	**-0.2925**	4.036	1380.2	mg/L	47	Standard
Fe	54	5929.6	4.5	**4.5027**	0.427	9.5	mg/L	151	Standard
Fe	57	1646.8	4.1	**4.2259**	0.199	4.7	mg/L	195	Standard
Sc-1	45	31043.5	4.7				mg/L	29647	Standard
Cl	35	162653.1	0.8				ug/L	154152	Standard
Kr	83	1.0	0.0				ug/L	3	Standard
Br	81	4067.2	17.6				ug/L	1607	Standard
P	31	24251.1	1.7				ug/L	22752	Standard
S	34	5482.7	3.7				ug/L	5049	Standard
Sr	88	45.0	33.3				ug/L	87	Standard
C	12	60.0	28.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	22.5	26.8				mg/L	10	Standard
Ho-1	165	8.3	69.3				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	3	Standard
I	127	1428.4	5.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	87.950		
Al	27	83.410		
Sc	45			
Ti	47	96.629		
V	51	98.672		
Cr	52	97.150		
Cr	53			
Mn	55	105.951		
Co	59	103.200		
Ni	60	97.013		
Cu	65	97.636		
Zn	66	98.317		
Ge	72		99.044	
As	75	98.423		
Se	82	100.194		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.114		
Ag	107	96.931		
Cd	111	96.677		
Cd	114			
In	115		103.597	
Sn	118	96.195		
Sb	123	95.523		
Ba	135	95.034		
Ce	140			
Tb	159			
Ho	165			
Tl	203	94.127		
Tl	205			
Pb	206			
Pb	207			
Pb	208	95.447		
U	238	97.724		
Bi	209		102.555	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 18:10:51
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61896.2	1.1				ug/L	51024	Standard
	Be	9	18.3	56.8	**-0.0031**	0.010	331.6	ug/L	7	Standard
	Al	27	1523.4	19.5	**-0.0009**	0.002	172.8	ug/L	625	Standard
	Sc	45	30746.2	4.2				ug/L	29647	Standard
	Ti	47	48.7	24.0	**0.0041**	0.040	983.7	ug/L	57	Standard
	V	51	1096.5	7.2	**-0.0066**	0.011	164.7	ug/L	1142	Standard
	Cr	52	6114.9	1.9	**-0.0559**	0.020	35.8	ug/L	6628	Standard
	Cr	53	420.0	14.4	**0.0427**	0.071	166.6	ug/L	430	Standard
	Mn	55	696.3	8.0	**-0.0034**	0.009	280.9	ug/L	603	Standard
	Co	59	257.0	3.7	**0.0007**	0.001	190.7	ug/L	237	Standard
	Ni	60	98.3	19.1	**-0.0243**	0.010	42.2	ug/L	141	Standard
	Cu	65	138.3	15.9	**0.0111**	0.013	114.3	ug/L	109	Standard
	Zn	66	155.0	9.1	**-0.0853**	0.013	14.8	ug/L	159	Standard
>	**Ge**	72	451752.5	0.6				ug/L	474053	Standard
	As	75	-25.7	89.3	**0.0007**	0.022	2895.4	ug/L	-34	Standard
	Se	82	22.8	34.8	**0.0475**	0.075	158.2	ug/L	14	Standard
	Se-1	77	56.0	11.7	**0.0207**	0.094	453.1	ug/L	55	Standard
>	**Ga**	71	41.7	18.3				mg/L	50	Standard
	Rb	85	23.3	32.7				ug/L	20	Standard
	Y	89	396184.8	0.8				ug/L	376602	Standard
>	**Rh**	103	16.7	45.8				ug/L	17	Standard
	Mo	98	276.1	23.5	**0.1082**	0.027	25.2	ug/L	8	Standard
	Ag	107	114.0	9.8	**0.0063**	0.002	31.9	ug/L	81	Standard
	Cd	111	11.2	11.3	**0.0024**	0.001	28.4	mg/L	3	Standard
	Cd	114	27.7	73.8	**0.0018**	0.004	228.8	ug/L	7	Standard
>	**In**	115	539405.0	1.3				ug/L	524722	Standard
	Sn	118	770.0	23.8	**0.0496**	0.033	67.2	ug/L	715	Standard
	Sb	123	621.2	30.2	**0.1235**	0.042	34.0	ug/L	201	Standard
	Ba	135	117.7	23.5	**0.0055**	0.015	275.0	ug/L	108	Standard
	Ce	140	10.0	50.0				ug/L	30	Standard
>	**Tb**	159	804197.7	0.7				ug/L	792236	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	67.0	31.6	**0.0062**	0.003	43.0	ug/L	9	Standard
	Tl	205	75.0	13.3	**0.0038**	0.001	37.5	ug/L	0	Standard
	Pb	206	240.0	10.9	**-0.0040**	0.005	132.8	ug/L	216	Standard
	Pb	207	198.7	7.7	**-0.0062**	0.004	60.3	ug/L	180	Standard
	Pb	208	866.3	5.4	**-0.0067**	0.003	50.1	ug/L	717	Standard
	U	238	48.0	12.7	**0.0002**	0.001	508.3	ug/L	4	Standard
>	**Bi**	209	456732.7	1.5				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	38.3	82.8	**0.0048**	0.041	858.7	mg/L	20	Standard
K	39	21.7	87.4	**-0.0684**	0.138	202.1	mg/L	22	Standard
Ca	43	51.7	45.7	**-1.4837**	5.565	375.1	mg/L	47	Standard
Fe	54	127.7	12.6	**-0.0146**	0.015	100.1	mg/L	151	Standard
Fe	57	163.3	30.7	**-0.1626**	0.130	79.6	mg/L	195	Standard
Sc-1	45	30746.2	4.2				mg/L	29647	Standard
Cl	35	165606.2	1.3				ug/L	154152	Standard
Kr	83	3.0	57.7				ug/L	3	Standard
Br	81	2933.6	13.2				ug/L	1607	Standard
P	31	25216.0	5.8				ug/L	22752	Standard
S	34	5477.7	2.3				ug/L	5049	Standard
Sr	88	56.7	33.4				ug/L	87	Standard
C	12	36.7	41.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.9	86.8				mg/L	10	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	10.0	173.2				mg/L	3	Standard
I	127	1125.0	7.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.296	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.798	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.216	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606054009
Sample Date/Time: Thursday, June 16, 2016 18:14:04
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62868.5	2.1				ug/L	51024	Standard
	Be	9	25.0	40.0	**0.0030**	0.010	320.4	ug/L	7	Standard
	Al	27	3263361.8	1.6	**18.5978**	0.187	1.0	ug/L	625	Standard
	Sc	45	30816.3	0.3				ug/L	29647	Standard
	Ti	47	176.7	8.1	**0.4336**	0.054	12.4	ug/L	57	Standard
	V	51	2352.6	1.3	**0.1685**	0.004	2.6	ug/L	1142	Standard
	Cr	52	8208.2	0.8	**0.2076**	0.006	3.1	ug/L	6628	Standard
	Cr	53	778.4	12.3	**0.4216**	0.115	27.4	ug/L	430	Standard
	Mn	55	6000883.1	1.3	**1028.9465**	25.297	2.5	ug/L	603	Standard
	Co	59	5272.3	0.9	**0.7938**	0.018	2.3	ug/L	237	Standard
	Ni	60	2681.9	0.9	**1.3375**	0.018	1.4	ug/L	141	Standard
	Cu	65	979.4	2.5	**0.4642**	0.012	2.6	ug/L	109	Standard
	Zn	66	3790.8	1.0	**3.2497**	0.077	2.4	ug/L	159	Standard
>	**Ge**	72	465659.8	1.3				ug/L	474053	Standard
	As	75	5887.6	1.1	**5.4382**	0.057	1.1	ug/L	-34	Standard
	Se	82	141.8	7.0	**1.1369**	0.108	9.5	ug/L	14	Standard
	Se-1	77	74.7	2.0	**0.2451**	0.023	9.4	ug/L	55	Standard
>	**Ga**	71	296.7	5.1				mg/L	50	Standard
	Rb	85	53373.9	1.9				ug/L	20	Standard
	Y	89	385477.9	2.9				ug/L	376602	Standard
>	**Rh**	103	46.7	16.4				ug/L	17	Standard
	Mo	98	1798.6	2.7	**0.7471**	0.020	2.7	ug/L	8	Standard
	Ag	107	110.0	13.7	**0.0059**	0.003	44.0	ug/L	81	Standard
	Cd	111	71.5	14.9	**0.0332**	0.006	17.6	mg/L	3	Standard
	Cd	114	137.0	6.5	**0.0244**	0.002	7.2	ug/L	7	Standard
>	**In**	115	530892.7	1.2				ug/L	524722	Standard
	Sn	118	731.7	10.0	**0.0448**	0.013	28.2	ug/L	715	Standard
	Sb	123	625.1	16.6	**0.1265**	0.022	17.3	ug/L	201	Standard
	Ba	135	131604.4	0.3	**71.7085**	0.676	0.9	ug/L	108	Standard
	Ce	140	6654.8	2.0				ug/L	30	Standard
>	**Tb**	159	816377.9	1.5				ug/L	792236	Standard
	Ho	165	238.3	11.6				ug/L	7	Standard
	Tl	203	76.0	23.3	**0.0075**	0.002	32.6	ug/L	9	Standard
	Tl	205	63.3	64.3	**0.0021**	0.006	310.8	ug/L	0	Standard
	Pb	206	386.0	5.1	**0.0283**	0.005	18.8	ug/L	216	Standard
	Pb	207	347.0	4.2	**0.0297**	0.005	15.2	ug/L	180	Standard
	Pb	208	1437.7	3.0	**0.0274**	0.003	12.5	ug/L	717	Standard
	U	238	4379.0	0.5	**0.7057**	0.012	1.8	ug/L	4	Standard
>	**Bi**	209	455069.1	1.2				ug/L	460343	Standard

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Na	23	5.0	100.0	**-5.2765**	15.737	298.3	mg/L	0	Standard
Mg	24	9816.5	6.9	**12.7603**	0.918	7.2	mg/L	20	Standard
K	39	4015.5	6.3	**29.2188**	1.778	6.1	mg/L	22	Standard
Ca	43	165.0	35.7	**23.9101**	13.280	55.5	mg/L	47	Standard
Fe	54	13256.8	2.9	**10.2548**	0.305	3.0	mg/L	151	Standard
Fe	57	3875.5	1.1	**10.8966**	0.106	1.0	mg/L	195	Standard
> **Sc-1**	45	30816.3	0.3				mg/L	29647	Standard
Cl	35	225833.9	0.4				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	25945.6	7.7				ug/L	1607	Standard
P	31	26763.6	2.0				ug/L	22752	Standard
S	34	5200.9	3.2				ug/L	5049	Standard
Sr	88	240.0	9.1				ug/L	87	Standard
C	12	193.3	18.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	262.1	17.3				mg/L	10	Standard
Ho-1	165	238.3	11.6				mg/L	7	Standard
Er	166	303.3	18.2				mg/L	3	Standard
I	127	75002.8	8.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.213	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.229	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.176	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.854	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606054010
Sample Date/Time: Thursday, June 16, 2016 18:17:15
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65588.3	0.4				ug/L	51024	Standard
	Be	9	30.0	60.1	**0.0066**	0.017	249.6	ug/L	7	Standard
	Al	27	2526422.5	0.3	**13.7972**	0.064	0.5	ug/L	625	Standard
	Sc	45	30417.2	3.2				ug/L	29647	Standard
	Ti	47	2810.3	3.2	**9.9401**	0.380	3.8	ug/L	57	Standard
	V	51	10857.2	0.9	**1.4795**	0.027	1.9	ug/L	1142	Standard
	Cr	52	13448.6	1.8	**1.0447**	0.048	4.6	ug/L	6628	Standard
	Cr	53	1738.4	6.6	**1.5855**	0.118	7.5	ug/L	430	Standard
	Mn	55	662471.2	0.9	**120.2964**	1.474	1.2	ug/L	603	Standard
	Co	59	2699.2	0.2	**0.4120**	0.004	0.9	ug/L	237	Standard
	Ni	60	3377.4	1.2	**1.8118**	0.036	2.0	ug/L	141	Standard
	Cu	65	1366.7	4.1	**0.7187**	0.039	5.4	ug/L	109	Standard
	Zn	66	9779.2	1.9	**9.2895**	0.243	2.6	ug/L	159	Standard
>	**Ge**	72	439226.0	0.9				ug/L	474053	Standard
	As	75	11053.2	2.0	**10.7998**	0.276	2.6	ug/L	-34	Standard
	Se	82	3723.6	2.4	**36.1764**	1.076	3.0	ug/L	14	Standard
	Se-1	77	120.3	17.9	**0.9478**	0.313	33.0	ug/L	55	Standard
>	**Ga**	71	653.3	7.7				mg/L	50	Standard
	Rb	85	17974.0	0.9				ug/L	20	Standard
	Y	89	392749.3	1.5				ug/L	376602	Standard
>	**Rh**	103	83.3	30.2				ug/L	17	Standard
	Mo	98	4323.3	0.4	**1.8596**	0.045	2.4	ug/L	8	Standard
	Ag	107	99.7	3.2	**0.0047**	0.001	17.3	ug/L	81	Standard
	Cd	111	51.2	16.5	**0.0236**	0.004	17.1	mg/L	3	Standard
	Cd	114	147.6	10.0	**0.0276**	0.004	13.0	ug/L	7	Standard
>	**In**	115	515115.8	2.2				ug/L	524722	Standard
	Sn	118	1333.4	7.7	**0.1626**	0.017	10.4	ug/L	715	Standard
	Sb	123	590.9	5.0	**0.1232**	0.010	8.0	ug/L	201	Standard
	Ba	135	57030.1	1.1	**31.9969**	0.347	1.1	ug/L	108	Standard
	Ce	140	21293.3	3.8				ug/L	30	Standard
>	**Tb**	159	786053.3	2.1				ug/L	792236	Standard
	Ho	165	341.7	14.7				ug/L	7	Standard
	Tl	203	337.7	6.2	**0.0450**	0.003	7.2	ug/L	9	Standard
	Tl	205	321.7	3.2	**0.0455**	0.003	5.8	ug/L	0	Standard
	Pb	206	1862.1	0.7	**0.3774**	0.005	1.2	ug/L	216	Standard
	Pb	207	1577.4	0.7	**0.3498**	0.004	1.2	ug/L	180	Standard
	Pb	208	6669.9	1.5	**0.3627**	0.014	3.8	ug/L	717	Standard
	U	238	10873.6	0.3	**1.8752**	0.033	1.8	ug/L	4	Standard
>	**Bi**	209	428106.7	1.8				ug/L	460343	Standard

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Na	23	6.7	114.6	**-10.3208**	23.457	227.3	mg/L	0	Standard
Mg	24	48188.2	2.0	**63.6943**	3.015	4.7	mg/L	20	Standard
K	39	553.3	6.8	**3.8849**	0.281	7.2	mg/L	22	Standard
Ca	43	321.7	16.0	**60.3557**	13.874	23.0	mg/L	47	Standard
Fe	54	1808.8	3.2	**1.3200**	0.080	6.1	mg/L	151	Standard
Fe	57	981.7	5.4	**2.3180**	0.200	8.6	mg/L	195	Standard
> **Sc-1**	45	30417.2	3.2				mg/L	29647	Standard
Cl	35	209372.7	0.6				ug/L	154152	Standard
Kr	83	0.7	173.2				ug/L	3	Standard
Br	81	933072.6	1.4				ug/L	1607	Standard
P	31	28264.7	0.7				ug/L	22752	Standard
S	34	4879.1	1.2				ug/L	5049	Standard
Sr	88	365.0	15.8				ug/L	87	Standard
C	12	160.0	28.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	522.9	18.7				mg/L	10	Standard
Ho-1	165	341.7	14.7				mg/L	7	Standard
Er	166	356.7	9.8				mg/L	3	Standard
I	127	158946.5	8.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.544	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.653	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.169
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	92.997
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606054011
Sample Date/Time: Thursday, June 16, 2016 18:20:27
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66415.2	0.8				ug/L	51024	Standard
	Be	9	31.7	92.5	**0.0080**	0.027	339.9	ug/L	7	Standard
	Al	27	2599405.0	0.8	**14.0190**	0.029	0.2	ug/L	625	Standard
	Sc	45	30612.6	1.1				ug/L	29647	Standard
	Ti	47	3388.4	4.8	**11.4676**	0.712	6.2	ug/L	57	Standard
	V	51	11365.4	1.1	**1.4778**	0.020	1.3	ug/L	1142	Standard
	Cr	52	14126.6	0.8	**1.0496**	0.030	2.9	ug/L	6628	Standard
	Cr	53	1888.5	10.3	**1.6589**	0.194	11.7	ug/L	430	Standard
	Mn	55	683276.7	0.4	**118.4238**	2.389	2.0	ug/L	603	Standard
	Co	59	2752.6	2.0	**0.3999**	0.015	3.8	ug/L	237	Standard
	Ni	60	3356.7	1.2	**1.7147**	0.043	2.5	ug/L	141	Standard
	Cu	65	1350.7	3.3	**0.6741**	0.033	5.0	ug/L	109	Standard
	Zn	66	8668.5	0.7	**7.8234**	0.178	2.3	ug/L	159	Standard
>	**Ge**	72	460253.4	1.6				ug/L	474053	Standard
	As	75	11667.3	1.2	**10.8800**	0.252	2.3	ug/L	-34	Standard
	Se	82	3942.6	1.6	**36.5587**	0.912	2.5	ug/L	14	Standard
	Se-1	77	129.7	8.5	**0.9935**	0.130	13.1	ug/L	55	Standard
>	**Ga**	71	686.7	16.0				mg/L	50	Standard
	Rb	85	19050.3	3.1				ug/L	20	Standard
	Y	89	381859.4	1.4				ug/L	376602	Standard
>	**Rh**	103	103.3	43.9				ug/L	17	Standard
	Mo	98	4373.4	1.2	**1.9146**	0.031	1.6	ug/L	8	Standard
	Ag	107	74.0	18.9	**0.0005**	0.002	456.1	ug/L	81	Standard
	Cd	111	45.0	20.2	**0.0208**	0.005	23.5	mg/L	3	Standard
	Cd	114	116.5	10.2	**0.0214**	0.003	12.0	ug/L	7	Standard
>	**In**	115	506011.1	0.4				ug/L	524722	Standard
	Sn	118	1185.0	3.8	**0.1387**	0.010	6.9	ug/L	715	Standard
	Sb	123	571.9	4.2	**0.1210**	0.005	4.2	ug/L	201	Standard
	Ba	135	57088.3	0.4	**32.6025**	0.223	0.7	ug/L	108	Standard
	Ce	140	20652.4	1.0				ug/L	30	Standard
>	**Tb**	159	785323.2	1.2				ug/L	792236	Standard
	Ho	165	306.7	8.0				ug/L	7	Standard
	Tl	203	332.3	7.5	**0.0441**	0.003	7.8	ug/L	9	Standard
	Tl	205	303.3	2.5	**0.0423**	0.001	2.9	ug/L	0	Standard
	Pb	206	1906.8	2.4	**0.3865**	0.007	1.8	ug/L	216	Standard
	Pb	207	1585.1	0.2	**0.3506**	0.006	1.6	ug/L	180	Standard
	Pb	208	6566.9	1.1	**0.3550**	0.006	1.8	ug/L	717	Standard
	U	238	10922.6	1.0	**1.8784**	0.027	1.4	ug/L	4	Standard
>	**Bi**	209	429255.9	1.2				ug/L	460343	Standard

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Na	23	10.0		**-21.2549**	0.358	1.7	mg/L	0	Standard
Mg	24	49766.6	0.9	**65.3028**	0.773	1.2	mg/L	20	Standard
K	39	513.3	10.0	**3.5605**	0.354	9.9	mg/L	22	Standard
Ca	43	375.0	2.3	**71.6613**	1.832	2.6	mg/L	47	Standard
Fe	54	1685.6	3.3	**1.2127**	0.057	4.7	mg/L	151	Standard
Fe	57	868.4	4.3	**1.9576**	0.137	7.0	mg/L	195	Standard
> **Sc-1**	45	30612.6	1.1				mg/L	29647	Standard
Cl	35	212698.7	1.3				ug/L	154152	Standard
Kr	83	1.3	114.6				ug/L	3	Standard
Br	81	930543.4	1.3				ug/L	1607	Standard
P	31	28647.1	1.3				ug/L	22752	Standard
S	34	4877.5	1.7				ug/L	5049	Standard
Sr	88	360.0	7.7				ug/L	87	Standard
C	12	163.3	18.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	0	Standard
Dy	164	512.3	22.5				mg/L	10	Standard
Ho-1	165	306.7	8.0				mg/L	7	Standard
Er	166	300.0	28.9				mg/L	3	Standard
I	127	165895.7	6.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		130.164	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.089	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.434
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.247
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606054014
Sample Date/Time: Thursday, June 16, 2016 18:23:38
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68457.7	1.1				ug/L	51024	Standard
	Be	9	223.3	18.0	**0.1767**	0.033	18.9	ug/L	7	Standard
	Al	27	3707488.9	1.7	**19.4017**	0.122	0.6	ug/L	625	Standard
	Sc	45	30515.7	3.4				ug/L	29647	Standard
	Ti	47	294.7	2.2	**0.8253**	0.029	3.5	ug/L	57	Standard
	V	51	3410.3	2.9	**0.3157**	0.010	3.3	ug/L	1142	Standard
	Cr	52	8854.9	2.4	**0.2871**	0.040	14.1	ug/L	6628	Standard
	Cr	53	1000.0	7.8	**0.6537**	0.075	11.4	ug/L	430	Standard
	Mn	55	12117646.4	0.4	**2060.2552**	13.775	0.7	ug/L	603	Standard
	Co	59	1473.7	1.2	**0.1902**	0.002	1.2	ug/L	237	Standard
	Ni	60	5603.4	1.0	**2.8548**	0.061	2.1	ug/L	141	Standard
	Cu	65	1122.7	1.8	**0.5367**	0.010	1.8	ug/L	109	Standard
	Zn	66	11386.6	1.1	**10.1370**	0.058	0.6	ug/L	159	Standard
>	**Ge**	72	469570.6	1.1				ug/L	474053	Standard
	As	75	14849.9	0.4	**13.5649**	0.144	1.1	ug/L	-34	Standard
	Se	82	356.9	5.3	**3.0899**	0.192	6.2	ug/L	14	Standard
	Se-1	77	81.7	2.5	**0.3287**	0.021	6.5	ug/L	55	Standard
>	**Ga**	71	528.3	9.7				mg/L	50	Standard
	Rb	85	19908.1	1.7				ug/L	20	Standard
	Y	89	397696.3	3.0				ug/L	376602	Standard
>	**Rh**	103	73.3	28.4				ug/L	17	Standard
	Mo	98	1099.6	1.0	**0.4465**	0.011	2.4	ug/L	8	Standard
	Ag	107	113.3	53.3	**0.0062**	0.010	164.1	ug/L	81	Standard
	Cd	111	46.4	117.1	**0.0203**	0.028	137.1	mg/L	3	Standard
	Cd	114	110.7	115.4	**0.0188**	0.026	140.1	ug/L	7	Standard
>	**In**	115	540492.7	1.5				ug/L	524722	Standard
	Sn	118	843.4	3.6	**0.0625**	0.003	5.4	ug/L	715	Standard
	Sb	123	260.9	5.7	**0.0432**	0.004	9.7	ug/L	201	Standard
	Ba	135	85652.2	2.1	**45.8145**	0.326	0.7	ug/L	108	Standard
	Ce	140	2418.5	4.8				ug/L	30	Standard
>	**Tb**	159	825063.1	0.9				ug/L	792236	Standard
	Ho	165	370.0	15.3				ug/L	7	Standard
	Tl	203	165.0	77.7	**0.0187**	0.017	89.0	ug/L	9	Standard
	Tl	205	83.3	48.9	**0.0048**	0.006	129.6	ug/L	0	Standard
	Pb	206	781.7	2.4	**0.1102**	0.005	4.7	ug/L	216	Standard
	Pb	207	661.7	6.1	**0.1011**	0.010	10.0	ug/L	180	Standard
	Pb	208	2756.1	3.9	**0.1010**	0.006	6.3	ug/L	717	Standard
	U	238	69.7	29.4	**0.0035**	0.003	95.7	ug/L	4	Standard
>	**Bi**	209	467941.3	0.6				ug/L	460343	Standard

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Na	23	1.7	173.2	**4.9367**	9.553	193.5	mg/L	0	Standard
Mg	24	7730.3	2.8	**10.1412**	0.303	3.0	mg/L	20	Standard
K	39	158.3	7.9	**0.9473**	0.128	13.5	mg/L	22	Standard
Ca	43	168.3	19.8	**24.8759**	6.392	25.7	mg/L	47	Standard
Fe	54	6384.0	2.9	**4.9326**	0.253	5.1	mg/L	151	Standard
Fe	57	1760.1	6.1	**4.6585**	0.505	10.8	mg/L	195	Standard
Sc-1	45	30515.7	3.4				mg/L	29647	Standard
Cl	35	207881.0	0.4				ug/L	154152	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	77943.4	2.4				ug/L	1607	Standard
P	31	27538.3	2.1				ug/L	22752	Standard
S	34	5344.3	4.3				ug/L	5049	Standard
Sr	88	228.3	5.5				ug/L	87	Standard
C	12	153.3	22.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	364.7	19.0				mg/L	10	Standard
Ho-1	165	370.0	15.3				mg/L	7	Standard
Er	166	390.0	7.7				mg/L	3	Standard
I	127	96865.7	4.2				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		134.167	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.054	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.006
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.651
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606054015
Sample Date/Time: Thursday, June 16, 2016 18:26:50
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70212.3	1.0				ug/L	51024	Standard
	Be	9	93.3	11.2	**0.0596**	0.009	14.8	ug/L	7	Standard
	Al	27	2156794.6	1.5	**11.0022**	0.244	2.2	ug/L	625	Standard
	Sc	45	32787.1	2.8				ug/L	29647	Standard
	Ti	47	872.7	1.5	**2.8741**	0.038	1.3	ug/L	57	Standard
	V	51	4953.3	2.7	**0.5601**	0.025	4.5	ug/L	1142	Standard
	Cr	52	12535.5	0.5	**0.8533**	0.007	0.8	ug/L	6628	Standard
	Cr	53	3772.1	6.1	**3.8114**	0.290	7.6	ug/L	430	Standard
	Mn	55	223713.2	0.6	**39.2731**	0.557	1.4	ug/L	603	Standard
	Co	59	2453.9	1.1	**0.3579**	0.004	1.1	ug/L	237	Standard
	Ni	60	3886.2	1.3	**2.0286**	0.038	1.9	ug/L	141	Standard
	Cu	65	32893.7	0.8	**18.2296**	0.262	1.4	ug/L	109	Standard
	Zn	66	61284.4	0.6	**57.5727**	0.568	1.0	ug/L	159	Standard
>	**Ge**	72	453357.9	0.8				ug/L	474053	Standard
	As	75	5903.1	1.9	**5.6002**	0.148	2.6	ug/L	-34	Standard
	Se	82	1422.0	3.2	**13.2789**	0.537	4.0	ug/L	14	Standard
	Se-1	77	189.7	16.8	**1.8389**	0.442	24.1	ug/L	55	Standard
>	**Ga**	71	225.0	13.5				mg/L	50	Standard
	Rb	85	13973.1	2.8				ug/L	20	Standard
	Y	89	404441.3	1.8				ug/L	376602	Standard
>	**Rh**	103	65.0	38.5				ug/L	17	Standard
	Mo	98	294.7	2.2	**0.1146**	0.002	2.0	ug/L	8	Standard
	Ag	107	105.0	9.1	**0.0046**	0.002	33.3	ug/L	81	Standard
	Cd	111	122.5	4.2	**0.0575**	0.003	4.7	mg/L	3	Standard
	Cd	114	252.7	21.3	**0.0469**	0.011	22.8	ug/L	7	Standard
>	**In**	115	544955.5	0.5				ug/L	524722	Standard
	Sn	118	895.0	4.4	**0.0706**	0.008	11.3	ug/L	715	Standard
	Sb	123	270.4	10.2	**0.0448**	0.006	14.2	ug/L	201	Standard
	Ba	135	146088.3	0.9	**77.5484**	1.011	1.3	ug/L	108	Standard
	Ce	140	17523.5	3.1				ug/L	30	Standard
>	**Tb**	159	819658.6	1.6				ug/L	792236	Standard
	Ho	165	628.3	0.5				ug/L	7	Standard
	Tl	203	235.3	10.6	**0.0288**	0.003	9.6	ug/L	9	Standard
	Tl	205	200.0	25.0	**0.0236**	0.008	34.4	ug/L	0	Standard
	Pb	206	6489.4	1.2	**1.3771**	0.042	3.0	ug/L	216	Standard
	Pb	207	5497.7	0.5	**1.2800**	0.026	2.0	ug/L	180	Standard
	Pb	208	22985.2	1.3	**1.3164**	0.041	3.1	ug/L	717	Standard
	U	238	227.3	4.1	**0.0298**	0.002	7.0	ug/L	4	Standard
>	**Bi**	209	451512.8	1.8				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.4796**	8.613	157.2	mg/L	0	Standard
Mg	24	16031.8	1.4	**19.6235**	0.803	4.1	mg/L	20	Standard
K	39	240.0	3.6	**1.4284**	0.103	7.2	mg/L	22	Standard
Ca	43	188.3	18.1	**26.5601**	6.775	25.5	mg/L	47	Standard
Fe	54	2702.3	1.1	**1.8725**	0.045	2.4	mg/L	151	Standard
Fe	57	970.0	7.1	**2.0665**	0.116	5.6	mg/L	195	Standard
> **Sc-1**	45	32787.1	2.8				mg/L	29647	Standard
Cl	35	187497.7	0.8				ug/L	154152	Standard
Kr	83	2.3	49.5				ug/L	3	Standard
Br	81	349533.5	4.1				ug/L	1607	Standard
P	31	41573.8	6.0				ug/L	22752	Standard
S	34	4967.5	2.6				ug/L	5049	Standard
Sr	88	208.3	5.5				ug/L	87	Standard
C	12	116.7	26.2				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	870.5	12.8				mg/L	10	Standard
Ho-1	165	628.3	0.5				mg/L	7	Standard
Er	166	616.7	28.8				mg/L	3	Standard
I	127	319694.7	6.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		137.606	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.634	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.856	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.082	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606054016
Sample Date/Time: Thursday, June 16, 2016 18:30:01
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68176.4	1.2				ug/L	51024	Standard
	Be	9	21.7	13.3	**-0.0018**	0.003	143.7	ug/L	7	Standard
	Al	27	2075359.9	0.4	**10.9025**	0.136	1.2	ug/L	625	Standard
	Sc	45	31050.1	1.7				ug/L	29647	Standard
	Ti	47	887.4	5.3	**2.8528**	0.151	5.3	ug/L	57	Standard
	V	51	3806.8	2.6	**0.3783**	0.010	2.7	ug/L	1142	Standard
	Cr	52	10637.4	1.5	**0.5485**	0.036	6.6	ug/L	6628	Standard
	Cr	53	1405.1	2.8	**1.1115**	0.040	3.6	ug/L	430	Standard
	Mn	55	486178.5	1.9	**83.5032**	2.235	2.7	ug/L	603	Standard
	Co	59	1054.7	3.8	**0.1263**	0.008	6.2	ug/L	237	Standard
	Ni	60	11529.4	0.9	**6.0257**	0.114	1.9	ug/L	141	Standard
	Cu	65	2707.2	1.0	**1.4044**	0.012	0.8	ug/L	109	Standard
	Zn	66	9083.1	1.3	**8.1357**	0.169	2.1	ug/L	159	Standard
>	**Ge**	72	464207.3	1.0				ug/L	474053	Standard
	As	75	2758.8	3.0	**2.5691**	0.059	2.3	ug/L	-34	Standard
	Se	82	1024.4	2.4	**9.2906**	0.197	2.1	ug/L	14	Standard
	Se-1	77	98.0	6.2	**0.5580**	0.071	12.7	ug/L	55	Standard
>	**Ga**	71	195.0	23.5				mg/L	50	Standard
	Rb	85	7673.6	3.9				ug/L	20	Standard
	Y	89	397515.6	2.3				ug/L	376602	Standard
>	**Rh**	103	68.3	30.5				ug/L	17	Standard
	Mo	98	786.7	1.9	**0.3292**	0.014	4.4	ug/L	8	Standard
	Ag	107	78.0	2.6	**0.0008**	0.000	5.5	ug/L	81	Standard
	Cd	111	30.9	35.5	**0.0127**	0.005	42.9	mg/L	3	Standard
	Cd	114	65.2	1.1	**0.0098**	0.000	2.0	ug/L	7	Standard
>	**In**	115	522465.9	2.4				ug/L	524722	Standard
	Sn	118	738.4	3.7	**0.0483**	0.008	17.1	ug/L	715	Standard
	Sb	123	275.0	16.0	**0.0486**	0.012	23.8	ug/L	201	Standard
	Ba	135	25240.0	1.7	**13.9295**	0.222	1.6	ug/L	108	Standard
	Ce	140	3872.2	6.3				ug/L	30	Standard
>	**Tb**	159	782878.6	0.7				ug/L	792236	Standard
	Ho	165	290.0	15.0				ug/L	7	Standard
	Tl	203	118.7	19.0	**0.0136**	0.003	22.8	ug/L	9	Standard
	Tl	205	133.3	20.7	**0.0136**	0.004	32.8	ug/L	0	Standard
	Pb	206	2356.5	1.5	**0.4750**	0.007	1.6	ug/L	216	Standard
	Pb	207	2055.5	1.9	**0.4553**	0.008	1.8	ug/L	180	Standard
	Pb	208	8501.6	2.4	**0.4610**	0.013	2.9	ug/L	717	Standard
	U	238	331.0	4.1	**0.0479**	0.002	5.0	ug/L	4	Standard
>	**Bi**	209	442159.2	0.2				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.1730**	9.144	176.8	mg/L	0	Standard
Mg	24	10690.4	1.9	**13.7935**	0.084	0.6	mg/L	20	Standard
K	39	96.7	13.0	**0.4748**	0.079	16.7	mg/L	22	Standard
Ca	43	233.3	8.9	**38.9201**	5.419	13.9	mg/L	47	Standard
Fe	54	3334.2	1.9	**2.4739**	0.064	2.6	mg/L	151	Standard
Fe	57	1251.7	5.3	**3.0560**	0.253	8.3	mg/L	195	Standard
> **Sc-1**	45	31050.1	1.7				mg/L	29647	Standard
Cl	35	170093.6	1.6				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	245182.8	3.5				ug/L	1607	Standard
P	31	32394.6	2.5				ug/L	22752	Standard
S	34	5009.2	1.9				ug/L	5049	Standard
Sr	88	261.7	17.8				ug/L	87	Standard
C	12	140.0	12.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	323.0	18.5				mg/L	10	Standard
Ho-1	165	290.0	15.0				mg/L	7	Standard
Er	166	216.7	25.4				mg/L	3	Standard
I	127	55511.6	2.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		133.616	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.923	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.570
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.050
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606054901
Sample Date/Time: Thursday, June 16, 2016 18:33:13
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72709.1	1.6				ug/L	51024	Standard
	Be	9	15.0	88.2	**-0.0087**	0.011	126.1	ug/L	7	Standard
	Al	27	11667015.3	1.5	**57.5082**	0.540	0.9	ug/L	625	Standard
	Sc	45	28668.8	2.1				ug/L	29647	Standard
	Ti	47	148.7	19.1	**0.3823**	0.104	27.3	ug/L	57	Standard
	V	51	2595.6	16.9	**0.2356**	0.067	28.4	ug/L	1142	Standard
	Cr	52	17123.0	0.8	**1.6486**	0.049	3.0	ug/L	6628	Standard
	Cr	53	9336.3	15.0	**10.6848**	1.682	15.7	ug/L	430	Standard
	Mn	55	18549.3	0.3	**3.3327**	0.052	1.6	ug/L	603	Standard
	Co	59	5007.8	1.9	**0.8213**	0.019	2.4	ug/L	237	Standard
	Ni	60	15512.9	1.9	**8.8253**	0.199	2.3	ug/L	141	Standard
	Cu	65	297329.3	1.3	**175.0473**	3.650	2.1	ug/L	109	Standard
	Zn	66	4856.4	2.5	**4.6181**	0.121	2.6	ug/L	159	Standard
>	**Ge**	72	428183.3	1.3				ug/L	474053	Standard
	As	75	2686.3	8.7	**2.7111**	0.235	8.7	ug/L	-34	Standard
	Se	82	880.4	5.1	**8.6464**	0.479	5.5	ug/L	14	Standard
	Se-1	77	1273.7	6.1	**17.6237**	1.226	7.0	ug/L	55	Standard
>	**Ga**	71	535.0	8.9				mg/L	50	Standard
	Rb	85	254257.5	1.2				ug/L	20	Standard
	Y	89	359721.9	0.6				ug/L	376602	Standard
>	**Rh**	103	140.0	9.4				ug/L	17	Standard
	Mo	98	3488.6	3.7	**1.5905**	0.067	4.2	ug/L	8	Standard
	Ag	107	123.7	2.8	**0.0101**	0.001	6.2	ug/L	81	Standard
	Cd	111	15.6	26.6	**0.0055**	0.002	42.5	mg/L	3	Standard
	Cd	114	44.2	40.8	**0.0061**	0.004	65.8	ug/L	7	Standard
>	**In**	115	485628.6	0.5				ug/L	524722	Standard
	Sn	118	1148.4	1.8	**0.1409**	0.005	3.6	ug/L	715	Standard
	Sb	123	1921.7	1.1	**0.4606**	0.007	1.6	ug/L	201	Standard
	Ba	135	96043.1	1.3	**57.1923**	0.511	0.9	ug/L	108	Standard
	Ce	140	93.3	49.8				ug/L	30	Standard
>	**Tb**	159	766976.5	0.2				ug/L	792236	Standard
	Ho	165	5.0	173.2				ug/L	7	Standard
	Tl	203	328.3	20.2	**0.0463**	0.010	21.2	ug/L	9	Standard
	Tl	205	263.3	14.0	**0.0383**	0.006	16.9	ug/L	0	Standard
	Pb	206	413.7	9.2	**0.0455**	0.009	20.2	ug/L	216	Standard
	Pb	207	380.0	6.3	**0.0489**	0.006	12.7	ug/L	180	Standard
	Pb	208	1519.7	11.6	**0.0434**	0.011	26.5	ug/L	717	Standard
	U	238	31.3	49.5	**-0.0018**	0.003	153.2	ug/L	4	Standard
>	**Bi**	209	404872.2	0.7				ug/L	460343	Standard

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Na	23	10.0	86.6	**-23.4566**	29.384	125.3	mg/L	0	Standard
Mg	24	267948.6	0.7	**375.7604**	9.820	2.6	mg/L	20	Standard
K	39	5807.8	3.4	**45.5805**	2.203	4.8	mg/L	22	Standard
Ca	43	638.3	3.5	**141.1529**	8.616	6.1	mg/L	47	Standard
Fe	54	146.9	19.8	**0.0083**	0.022	270.3	mg/L	151	Standard
Fe	57	816.7	4.9	**1.9694**	0.159	8.1	mg/L	195	Standard
> **Sc-1**	45	28668.8	2.1				mg/L	29647	Standard
Cl	35	417643.9	1.4				ug/L	154152	Standard
Kr	83	3.0	57.7				ug/L	3	Standard
Br	81	229759.6	2.4				ug/L	1607	Standard
P	31	23254.5	2.6				ug/L	22752	Standard
S	34	4967.5	4.2				ug/L	5049	Standard
Sr	88	355.0	7.8				ug/L	87	Standard
C	12	183.3	32.0				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	56.7	27.0				mg/L	0	Standard
Dy	164	9.8	2.8				mg/L	10	Standard
Ho-1	165	5.0	173.2				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	1031517.8	6.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		142.499	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.324	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	92.550
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	87.950
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: L1606061401
Sample Date/Time: Thursday, June 16, 2016 18:36:24
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67849.9	1.1				ug/L	51024	Standard
	Be	9	10.0	100.0	**-0.0122**	0.009	72.4	ug/L	7	Standard
	Al	27	7374370.7	1.4	**38.9545**	0.953	2.4	ug/L	625	Standard
	Sc	45	31795.0	3.3				ug/L	29647	Standard
	Ti	47	313.7	6.8	**0.9174**	0.076	8.3	ug/L	57	Standard
	V	51	2621.7	2.2	**0.2138**	0.007	3.4	ug/L	1142	Standard
	Cr	52	11091.1	1.0	**0.6343**	0.009	1.4	ug/L	6628	Standard
	Cr	53	2283.5	15.4	**2.1128**	0.383	18.1	ug/L	430	Standard
	Mn	55	22885192.4	0.4	**3995.0920**	30.113	0.8	ug/L	603	Standard
	Co	59	1232.4	2.0	**0.1575**	0.003	2.1	ug/L	237	Standard
	Ni	60	2098.5	2.4	**1.0496**	0.022	2.1	ug/L	141	Standard
	Cu	65	1216.4	7.2	**0.6044**	0.045	7.4	ug/L	109	Standard
	Zn	66	2288.2	0.5	**1.9075**	0.018	1.0	ug/L	159	Standard
>	Ge	72	457333.9	0.5				ug/L	474053	Standard
	As	75	909.5	3.9	**0.8764**	0.032	3.6	ug/L	-34	Standard
	Se	82	87.0	7.9	**0.6466**	0.066	10.1	ug/L	14	Standard
	Se-1	77	157.0	28.6	**1.3726**	0.597	43.5	ug/L	55	Standard
>	Ga	71	960.0	12.3				mg/L	50	Standard
	Rb	85	5015.8	1.4				ug/L	20	Standard
	Y	89	394642.7	2.8				ug/L	376602	Standard
>	Rh	103	63.3	16.4				ug/L	17	Standard
	Mo	98	105.8	7.3	**0.0386**	0.003	8.5	ug/L	8	Standard
	Ag	107	76.0	8.0	**0.0002**	0.001	446.5	ug/L	81	Standard
	Cd	111	105.5	11.4	**0.0504**	0.007	13.1	mg/L	3	Standard
	Cd	114	217.3	8.1	**0.0408**	0.003	7.9	ug/L	7	Standard
>	In	115	532134.8	0.9				ug/L	524722	Standard
	Sn	118	536.7	2.8	**0.0088**	0.003	34.6	ug/L	715	Standard
	Sb	123	277.5	10.8	**0.0479**	0.007	15.3	ug/L	201	Standard
	Ba	135	159442.6	1.1	**86.6865**	1.387	1.6	ug/L	108	Standard
	Ce	140	1033.4	5.7				ug/L	30	Standard
>	Tb	159	812600.2	1.7				ug/L	792236	Standard
	Ho	165	136.7	12.8				ug/L	7	Standard
	Tl	203	148.0	12.8	**0.0171**	0.003	14.9	ug/L	9	Standard
	Tl	205	111.7	14.4	**0.0097**	0.003	26.2	ug/L	0	Standard
	Pb	206	315.7	1.6	**0.0132**	0.001	8.8	ug/L	216	Standard
	Pb	207	263.7	2.5	**0.0100**	0.002	15.2	ug/L	180	Standard
	Pb	208	1172.4	3.4	**0.0120**	0.002	19.7	ug/L	717	Standard
	U	238	803.7	2.6	**0.1241**	0.003	2.8	ug/L	4	Standard
>	Bi	209	452405.5	0.1				ug/L	460343	Standard

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Na	23	10.0	50.0	**-19.9609**	15.153	75.9	mg/L	0	Standard
Mg	24	11375.9	2.6	**14.3383**	0.138	1.0	mg/L	20	Standard
K	39	516.7	6.4	**3.4516**	0.346	10.0	mg/L	22	Standard
Ca	43	308.3	25.1	**54.1698**	18.153	33.5	mg/L	47	Standard
Fe	54	4619.7	1.0	**3.3894**	0.094	2.8	mg/L	151	Standard
Fe	57	1538.4	4.2	**3.7997**	0.290	7.6	mg/L	195	Standard
> **Sc-1**	45	31795.0	3.3				mg/L	29647	Standard
Cl	35	183919.6	1.0				ug/L	154152	Standard
Kr	83	2.3	89.2				ug/L	3	Standard
Br	81	17553.5	2.0				ug/L	1607	Standard
P	31	29355.1	2.7				ug/L	22752	Standard
S	34	5200.9	1.9				ug/L	5049	Standard
Sr	88	190.0	11.5				ug/L	87	Standard
C	12	103.3	53.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	152.8	48.1				mg/L	10	Standard
Ho-1	165	136.7	12.8				mg/L	7	Standard
Er	166	150.0	34.6				mg/L	3	Standard
I	127	70208.0	15.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.976	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.473	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.413	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.276	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606061401
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Method 6020 - Summary Report

Sample ID: L1606062401
Sample Date/Time: Thursday, June 16, 2016 18:39:36
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69110.6	0.2				ug/L	51024	Standard
	Be	9	15.0	33.3	**-0.0079**	0.004	55.0	ug/L	7	Standard
	Al	27	7936210.1	0.6	**41.1512**	0.274	0.7	ug/L	625	Standard
	Sc	45	30823.0	3.2				ug/L	29647	Standard
	Ti	47	221.7	9.7	**0.5979**	0.081	13.6	ug/L	57	Standard
	V	51	218784.0	0.6	**31.6314**	0.474	1.5	ug/L	1142	Standard
	Cr	52	16406.2	1.4	**1.3767**	0.046	3.3	ug/L	6628	Standard
	Cr	53	3238.7	7.2	**3.1676**	0.244	7.7	ug/L	430	Standard
	Mn	55	47582.7	4.0	**8.1574**	0.347	4.3	ug/L	603	Standard
	Co	59	6337.0	0.6	**0.9777**	0.004	0.4	ug/L	237	Standard
	Ni	60	16455.3	0.3	**8.7388**	0.105	1.2	ug/L	141	Standard
	Cu	65	7946.8	1.2	**4.3032**	0.079	1.8	ug/L	109	Standard
	Zn	66	49099.1	1.5	**45.5445**	0.480	1.1	ug/L	159	Standard
>	**Ge**	72	458635.0	1.0				ug/L	474053	Standard
	As	75	1613.9	2.7	**1.5315**	0.033	2.1	ug/L	-34	Standard
	Se	82	632.2	1.0	**5.7396**	0.015	0.3	ug/L	14	Standard
	Se-1	77	198.0	8.1	**1.9191**	0.191	10.0	ug/L	55	Standard
>	**Ga**	71	478.3	12.6				mg/L	50	Standard
	Rb	85	15694.8	4.0				ug/L	20	Standard
	Y	89	402857.7	1.3				ug/L	376602	Standard
>	**Rh**	103	55.0	41.7				ug/L	17	Standard
	Mo	98	250973.6	0.6	**101.4589**	1.305	1.3	ug/L	8	Standard
	Ag	107	107.3	16.2	**0.0049**	0.003	57.8	ug/L	81	Standard
	Cd	111	-120.2	20.3	**-0.0625**	0.013	20.5	mg/L	3	Standard
	Cd	114	568.4	5.3	**0.1093**	0.006	5.7	ug/L	7	Standard
>	**In**	115	549544.5	1.2				ug/L	524722	Standard
	Sn	118	805.0	7.3	**0.0532**	0.009	16.5	ug/L	715	Standard
	Sb	123	561.0	5.0	**0.1078**	0.005	5.0	ug/L	201	Standard
	Ba	135	33980.1	2.6	**17.8424**	0.439	2.5	ug/L	108	Standard
	Ce	140	471.7	1.2				ug/L	30	Standard
>	**Tb**	159	820522.7	2.1				ug/L	792236	Standard
	Ho	165	20.0	25.0				ug/L	7	Standard
	Tl	203	251.3	7.2	**0.0306**	0.002	5.8	ug/L	9	Standard
	Tl	205	235.0	7.7	**0.0286**	0.002	7.0	ug/L	0	Standard
	Pb	206	1733.1	4.4	**0.3220**	0.019	5.8	ug/L	216	Standard
	Pb	207	1553.1	3.0	**0.3188**	0.020	6.4	ug/L	180	Standard
	Pb	208	6433.5	1.7	**0.3223**	0.016	4.9	ug/L	717	Standard
	U	238	255.3	11.3	**0.0338**	0.004	11.1	ug/L	4	Standard
>	**Bi**	209	456920.5	2.4				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.0019**	9.440	188.7	mg/L	0	Standard
Mg	24	19250.6	2.3	**25.0636**	0.292	1.2	mg/L	20	Standard
K	39	168.3	17.4	**1.0102**	0.242	24.0	mg/L	22	Standard
Ca	43	145.0	18.2	**19.2916**	5.015	26.0	mg/L	47	Standard
Fe	54	151.8	11.3	**0.0041**	0.017	409.5	mg/L	151	Standard
Fe	57	315.0	7.3	**0.2903**	0.041	14.1	mg/L	195	Standard
Sc-1	45	30823.0	3.2				mg/L	29647	Standard
Cl	35	228215.4	1.2				ug/L	154152	Standard
Kr	83	1.7	124.9				ug/L	3	Standard
Br	81	147558.5	1.4				ug/L	1607	Standard
P	31	26561.6	1.8				ug/L	22752	Standard
S	34	5117.5	2.5				ug/L	5049	Standard
Sr	88	270.0	14.7				ug/L	87	Standard
C	12	100.0	17.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	70.0	24.7				mg/L	0	Standard
Dy	164	58.9	45.9				mg/L	10	Standard
Ho-1	165	20.0	25.0				mg/L	7	Standard
Er	166	23.3	49.5				mg/L	3	Standard
I	127	16912.8	6.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		135.447	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.748	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	104.731	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.257	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	

Sample ID: L1606062401
Report Date/Time: Thursday, June 16, 2016 18:41:53
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Method 6020 - Summary Report

Sample ID: L1606063001 WG572432-03
Sample Date/Time: Thursday, June 16, 2016 18:42:47
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69631.3	1.0				ug/L	51024	Standard
	Be	9	8.3	34.6	**-0.0138**	0.003	18.5	ug/L	7	Standard
	Al	27	1739354.1	0.6	**8.9445**	0.105	1.2	ug/L	625	Standard
	Sc	45	30928.2	2.9				ug/L	29647	Standard
	Ti	47	665.7	3.5	**2.0953**	0.107	5.1	ug/L	57	Standard
	V	51	2109.1	2.9	**0.1339**	0.005	3.7	ug/L	1142	Standard
	Cr	52	7651.6	0.5	**0.1320**	0.020	15.0	ug/L	6628	Standard
	Cr	53	2638.6	11.3	**2.4577**	0.289	11.8	ug/L	430	Standard
	Mn	55	27736.7	1.0	**4.6358**	0.114	2.5	ug/L	603	Standard
	Co	59	815.4	0.8	**0.0880**	0.002	1.9	ug/L	237	Standard
	Ni	60	1350.7	2.9	**0.6359**	0.022	3.4	ug/L	141	Standard
	Cu	65	5230.6	1.3	**2.7695**	0.021	0.8	ug/L	109	Standard
	Zn	66	9220.1	0.6	**8.2452**	0.069	0.8	ug/L	159	Standard
>	**Ge**	72	465111.5	1.4				ug/L	474053	Standard
	As	75	269.2	8.8	**0.2730**	0.025	9.0	ug/L	-34	Standard
	Se	82	49.8	13.6	**0.2903**	0.068	23.4	ug/L	14	Standard
	Se-1	77	173.0	5.2	**1.5506**	0.090	5.8	ug/L	55	Standard
>	**Ga**	71	241.7	10.4				mg/L	50	Standard
	Rb	85	36829.7	1.3				ug/L	20	Standard
	Y	89	384374.8	2.5				ug/L	376602	Standard
>	**Rh**	103	41.7	25.0				ug/L	17	Standard
	Mo	98	728.3	12.5	**0.3031**	0.038	12.6	ug/L	8	Standard
	Ag	107	82.0	10.4	**0.0014**	0.002	110.2	ug/L	81	Standard
	Cd	111	14.7	18.3	**0.0044**	0.001	34.2	mg/L	3	Standard
	Cd	114	39.2	43.5	**0.0044**	0.004	82.7	ug/L	7	Standard
>	**In**	115	524227.9	1.2				ug/L	524722	Standard
	Sn	118	960.0	3.9	**0.0890**	0.009	10.3	ug/L	715	Standard
	Sb	123	670.5	6.9	**0.1389**	0.011	8.0	ug/L	201	Standard
	Ba	135	8761.5	1.0	**4.7811**	0.086	1.8	ug/L	108	Standard
	Ce	140	878.4	8.1				ug/L	30	Standard
>	**Tb**	159	793064.4	3.2				ug/L	792236	Standard
	Ho	165	38.3	19.9				ug/L	7	Standard
	Tl	203	150.0	18.8	**0.0177**	0.004	22.6	ug/L	9	Standard
	Tl	205	133.3	15.6	**0.0133**	0.003	25.5	ug/L	0	Standard
	Pb	206	508.3	5.7	**0.0571**	0.007	12.3	ug/L	216	Standard
	Pb	207	414.7	10.5	**0.0477**	0.010	21.1	ug/L	180	Standard
	Pb	208	1771.7	0.4	**0.0490**	0.001	1.6	ug/L	717	Standard
	U	238	19.0	24.1	**-0.0044**	0.001	16.6	ug/L	4	Standard
>	**Bi**	209	447050.8	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	28164.5	1.9	**36.5804**	1.386	3.8	mg/L	20	Standard
K	39	385.0	0.0	**2.5870**	0.080	3.1	mg/L	22	Standard
Ca	43	85.0	20.4	**5.9218**	4.410	74.5	mg/L	47	Standard
Fe	54	182.6	15.8	**0.0273**	0.022	80.2	mg/L	151	Standard
Fe	57	225.0	0.0	**0.0211**	0.019	90.5	mg/L	195	Standard
> **Sc-1**	45	30928.2	2.9				mg/L	29647	Standard
Cl	35	213453.3	1.7				ug/L	154152	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	8942.7	8.2				ug/L	1607	Standard
P	31	31840.1	1.6				ug/L	22752	Standard
S	34	5007.5	0.9				ug/L	5049	Standard
Sr	88	131.7	11.6				ug/L	87	Standard
C	12	73.3	34.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	40.5	49.2				mg/L	10	Standard
Ho-1	165	38.3	19.9				mg/L	7	Standard
Er	166	60.0	33.3				mg/L	3	Standard
I	127	51039.4	6.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		136.467	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.114	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606063001 WG572432-03
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.906
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.113
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 18:46:00
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68225.0	3.2				ug/L	51024	Standard
	Be	9	50708.1	3.5	**45.0847**	0.435	1.0	ug/L	7	Standard
	Al	27	7858332.7	1.5	**41.2907**	0.687	1.7	ug/L	625	Standard
	Sc	45	30560.8	2.3				ug/L	29647	Standard
	Ti	47	29370.1	1.8	**100.7639**	1.653	1.6	ug/L	57	Standard
	V	51	355260.2	0.6	**51.3611**	0.501	1.0	ug/L	1142	Standard
	Cr	52	364134.0	1.1	**50.1157**	0.189	0.4	ug/L	6628	Standard
	Cr	53	45359.5	2.1	**49.8880**	1.306	2.6	ug/L	430	Standard
	Mn	55	315438.4	1.3	**54.6794**	1.132	2.1	ug/L	603	Standard
	Co	59	335779.3	1.2	**53.8409**	0.832	1.5	ug/L	237	Standard
	Ni	60	93086.4	0.8	**49.6929**	0.140	0.3	ug/L	141	Standard
	Cu	65	91127.3	1.4	**49.9327**	0.679	1.4	ug/L	109	Standard
	Zn	66	54195.8	1.1	**50.1944**	0.353	0.7	ug/L	159	Standard
>	Ge	72	459562.3	0.8				ug/L	474053	Standard
	As	75	53571.2	0.7	**49.9335**	0.666	1.3	ug/L	-34	Standard
	Se	82	5527.7	0.4	**51.3922**	0.186	0.4	ug/L	14	Standard
	Se-1	77	3740.1	0.8	**49.4994**	0.726	1.5	ug/L	55	Standard
>	Ga	71	238.3	8.5				mg/L	50	Standard
	Rb	85	728.4	8.0				ug/L	20	Standard
	Y	89	403863.1	2.0				ug/L	376602	Standard
>	Rh	103	30.0	16.7				ug/L	17	Standard
	Mo	98	249432.2	1.4	**100.2684**	1.541	1.5	ug/L	8	Standard
	Ag	107	296071.6	1.7	**47.1134**	0.851	1.8	ug/L	81	Standard
	Cd	111	98641.2	1.4	**48.2538**	0.726	1.5	mg/L	3	Standard
	Cd	114	241419.7	2.8	**47.7722**	1.408	2.9	ug/L	7	Standard
>	In	115	552610.2	0.1				ug/L	524722	Standard
	Sn	118	274943.9	0.8	**48.3767**	0.444	0.9	ug/L	715	Standard
	Sb	123	217314.9	1.3	**47.2274**	0.669	1.4	ug/L	201	Standard
	Ba	135	89302.7	0.5	**46.7236**	0.287	0.6	ug/L	108	Standard
	Ce	140	61.7	32.8				ug/L	30	Standard
>	Tb	159	816119.0	0.8				ug/L	792236	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	369419.3	1.5	**48.6376**	0.510	1.0	ug/L	9	Standard
	Tl	205	333866.9	0.9	**51.6890**	0.388	0.8	ug/L	0	Standard
	Pb	206	232126.7	1.0	**50.5119**	0.450	0.9	ug/L	216	Standard
	Pb	207	210545.8	0.6	**50.3290**	0.336	0.7	ug/L	180	Standard
	Pb	208	855972.8	0.6	**50.4191**	0.795	1.6	ug/L	717	Standard
	U	238	320948.2	1.1	**51.9636**	0.277	0.5	ug/L	4	Standard
>	Bi	209	457695.0	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	4200.6	2.8	**5.4815**	0.198	3.6	mg/L	20	Standard
K	39	558.3	18.4	**3.8970**	0.711	18.2	mg/L	22	Standard
Ca	43	60.0	25.0	**0.3745**	3.188	851.1	mg/L	47	Standard
Fe	54	6005.7	4.5	**4.6268**	0.322	7.0	mg/L	151	Standard
Fe	57	1721.8	7.2	**4.5229**	0.315	7.0	mg/L	195	Standard
> **Sc-1**	45	30560.8	2.3				mg/L	29647	Standard
Cl	35	169117.3	1.2				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	2713.6	7.9				ug/L	1607	Standard
P	31	25114.1	2.9				ug/L	22752	Standard
S	34	5354.3	6.7				ug/L	5049	Standard
Sr	88	73.3	32.2				ug/L	87	Standard
C	12	66.7	67.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	23.0	67.5				mg/L	10	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	3423.7	23.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	90.169		
Al	27	82.581		
Sc	45			
Ti	47	100.764		
V	51	102.722		
Cr	52	100.231		
Cr	53			
Mn	55	109.359		
Co	59	107.682		
Ni	60	99.386		
Cu	65	99.865		
Zn	66	100.389		
> Ge	72		96.943	
As	75	99.867		
Se	82	102.784		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	100.268		
Ag	107	94.227		
Cd	111	96.508		
Cd	114			
> In	115		105.315	
Sn	118	96.753		
Sb	123	94.455		
Ba	135	93.447		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	97.275		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.838		
U	238	103.927		
> Bi	209		99.425	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 18:49:12
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64312.9	1.7				ug/L	51024	Standard
	Be	9	10.0	100.0	**-0.0116**	0.009	81.0	ug/L	7	Standard
	Al	27	1253.4	11.0	**-0.0028**	0.001	25.9	ug/L	625	Standard
	Sc	45	30213.4	2.2				ug/L	29647	Standard
	Ti	47	46.7	13.1	**-0.0109**	0.022	201.6	ug/L	57	Standard
	V	51	1033.9	3.5	**-0.0234**	0.008	34.0	ug/L	1142	Standard
	Cr	52	6122.9	0.9	**-0.0987**	0.025	25.4	ug/L	6628	Standard
	Cr	53	575.0	8.8	**0.1852**	0.063	34.2	ug/L	430	Standard
	Mn	55	1171.4	5.3	**0.0703**	0.014	19.8	ug/L	603	Standard
	Co	59	202.3	7.7	**-0.0099**	0.003	28.8	ug/L	237	Standard
	Ni	60	113.3	11.9	**-0.0193**	0.006	33.6	ug/L	141	Standard
	Cu	65	139.7	5.5	**0.0080**	0.006	71.9	ug/L	109	Standard
	Zn	66	162.0	9.1	**-0.0865**	0.010	11.9	ug/L	159	Standard
>	**Ge**	72	475844.7	2.3				ug/L	474053	Standard
	As	75	5.3	48.7	**0.0299**	0.002	7.8	ug/L	-34	Standard
	Se	82	21.3	16.5	**0.0231**	0.034	148.8	ug/L	14	Standard
	Se-1	77	70.7	7.0	**0.1723**	0.070	40.6	ug/L	55	Standard
>	**Ga**	71	140.0	34.1				mg/L	50	Standard
	Rb	85	38.3	49.4				ug/L	20	Standard
	Y	89	392359.8	3.0				ug/L	376602	Standard
>	**Rh**	103	15.0	57.7				ug/L	17	Standard
	Mo	98	303.5	29.0	**0.1205**	0.035	28.8	ug/L	8	Standard
	Ag	107	88.3	9.9	**0.0022**	0.001	58.2	ug/L	81	Standard
	Cd	111	9.2	17.1	**0.0014**	0.001	58.9	mg/L	3	Standard
	Cd	114	26.1	34.4	**0.0015**	0.002	118.0	ug/L	7	Standard
>	**In**	115	533517.8	1.4				ug/L	524722	Standard
	Sn	118	766.7	17.2	**0.0508**	0.026	51.1	ug/L	715	Standard
	Sb	123	454.0	26.6	**0.0877**	0.028	32.4	ug/L	201	Standard
	Ba	135	106.0	9.4	**-0.0001**	0.006	3944.8	ug/L	108	Standard
	Ce	140	23.3	44.6				ug/L	30	Standard
>	**Tb**	159	792169.2	1.1				ug/L	792236	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	62.3	2.5	**0.0057**	0.000	2.0	ug/L	9	Standard
	Tl	205	51.7	49.7	**0.0003**	0.004	1341.8	ug/L	0	Standard
	Pb	206	226.7	8.4	**-0.0062**	0.005	76.5	ug/L	216	Standard
	Pb	207	203.3	4.0	**-0.0045**	0.002	40.0	ug/L	180	Standard
	Pb	208	845.7	5.1	**-0.0073**	0.002	33.6	ug/L	717	Standard
	U	238	36.0	10.0	**-0.0017**	0.001	31.3	ug/L	4	Standard
>	**Bi**	209	451238.0	1.2				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	41.7	38.6	**0.0104**	0.022	211.4	mg/L	20	Standard
K	39	10.0	50.0	**-0.1532**	0.037	24.4	mg/L	22	Standard
Ca	43	38.3	32.8	**-4.4370**	2.704	60.9	mg/L	47	Standard
Fe	54	137.9	7.6	**-0.0050**	0.006	124.9	mg/L	151	Standard
Fe	57	133.3	7.8	**-0.2416**	0.038	15.5	mg/L	195	Standard
Sc-1	45	30213.4	2.2				mg/L	29647	Standard
Cl	35	167592.0	1.8				ug/L	154152	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	2426.9	7.0				ug/L	1607	Standard
P	31	25579.9	2.0				ug/L	22752	Standard
S	34	5439.3	0.7				ug/L	5049	Standard
Sr	88	61.7	9.4				ug/L	87	Standard
C	12	56.7	56.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.0	93.6				mg/L	10	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	2145.2	8.8				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.378	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.676	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.022	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606063001DP WG572432-10
Sample Date/Time: Thursday, June 16, 2016 18:52:25
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68712.2	2.1				ug/L	51024	Standard
	Be	9	13.3	57.3	**-0.0092**	0.007	74.2	ug/L	7	Standard
	Al	27	1694606.4	2.1	**8.8301**	0.029	0.3	ug/L	625	Standard
	Sc	45	32870.6	1.4				ug/L	29647	Standard
	Ti	47	632.0	2.3	**1.9902**	0.036	1.8	ug/L	57	Standard
	V	51	2183.1	15.2	**0.1462**	0.049	33.7	ug/L	1142	Standard
	Cr	52	8437.7	0.6	**0.2463**	0.014	5.5	ug/L	6628	Standard
	Cr	53	3582.1	45.8	**3.5137**	1.806	51.4	ug/L	430	Standard
	Mn	55	25959.2	3.5	**4.3517**	0.184	4.2	ug/L	603	Standard
	Co	59	780.0	4.2	**0.0830**	0.005	6.3	ug/L	237	Standard
	Ni	60	1265.7	3.1	**0.5941**	0.019	3.2	ug/L	141	Standard
	Cu	65	4964.1	2.1	**2.6377**	0.034	1.3	ug/L	109	Standard
	Zn	66	7744.6	0.4	**6.9226**	0.090	1.3	ug/L	159	Standard
>	**Ge**	72	462903.9	0.9				ug/L	474053	Standard
	As	75	268.6	20.8	**0.2737**	0.054	19.7	ug/L	-34	Standard
	Se	82	41.2	34.5	**0.2137**	0.136	63.4	ug/L	14	Standard
	Se-1	77	155.7	4.3	**1.3316**	0.104	7.8	ug/L	55	Standard
>	**Ga**	71	160.0	9.4				mg/L	50	Standard
	Rb	85	36001.1	1.5				ug/L	20	Standard
	Y	89	387483.8	2.3				ug/L	376602	Standard
>	**Rh**	103	38.3	41.9				ug/L	17	Standard
	Mo	98	602.0	7.2	**0.2407**	0.015	6.4	ug/L	8	Standard
	Ag	107	97.7	12.0	**0.0035**	0.002	49.5	ug/L	81	Standard
	Cd	111	14.9	82.6	**0.0042**	0.006	147.6	mg/L	3	Standard
	Cd	114	54.8	20.5	**0.0072**	0.002	30.8	ug/L	7	Standard
>	**In**	115	542940.9	1.2				ug/L	524722	Standard
	Sn	118	1003.4	7.5	**0.0905**	0.011	12.7	ug/L	715	Standard
	Sb	123	760.6	4.7	**0.1535**	0.006	4.0	ug/L	201	Standard
	Ba	135	8458.7	1.6	**4.4523**	0.053	1.2	ug/L	108	Standard
	Ce	140	761.7	12.9				ug/L	30	Standard
>	**Tb**	159	813941.2	0.6				ug/L	792236	Standard
	Ho	165	46.7	60.9				ug/L	7	Standard
	Tl	203	213.3	5.0	**0.0252**	0.001	4.7	ug/L	9	Standard
	Tl	205	173.3	1.7	**0.0188**	0.000	1.2	ug/L	0	Standard
	Pb	206	486.7	2.6	**0.0486**	0.003	6.9	ug/L	216	Standard
	Pb	207	410.0	4.9	**0.0433**	0.005	11.5	ug/L	180	Standard
	Pb	208	1804.7	2.7	**0.0475**	0.003	5.4	ug/L	717	Standard
	U	238	45.0	13.3	**-0.0004**	0.001	279.8	ug/L	4	Standard
>	**Bi**	209	462206.0	0.8				ug/L	460343	Standard

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Na	23	5.0	100.0	**-4.2590**	14.576	342.2	mg/L	0	Standard
Mg	24	26429.7	2.8	**32.2858**	1.354	4.2	mg/L	20	Standard
K	39	396.7	3.9	**2.4991**	0.082	3.3	mg/L	22	Standard
Ca	43	96.7	7.9	**7.1952**	1.844	25.6	mg/L	47	Standard
Fe	54	180.8	15.4	**0.0178**	0.022	121.6	mg/L	151	Standard
Fe	57	203.3	16.0	**-0.0787**	0.096	122.2	mg/L	195	Standard
> **Sc-1**	45	32870.6	1.4				mg/L	29647	Standard
Cl	35	203581.4	1.3				ug/L	154152	Standard
Kr	83	2.0	0.0				ug/L	3	Standard
Br	81	6207.9	4.2				ug/L	1607	Standard
P	31	32229.2	1.5				ug/L	22752	Standard
S	34	4830.8	4.5				ug/L	5049	Standard
Sr	88	108.3	30.0				ug/L	87	Standard
C	12	86.7	6.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	47.3	42.6				mg/L	10	Standard
Ho-1	165	46.7	60.9				mg/L	7	Standard
Er	166	56.7	81.5				mg/L	3	Standard
I	127	39314.5	7.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		134.666	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.648	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.472
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.405
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 18:55:38
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67264.1	3.2				ug/L	51024	Standard
	Be	9	51087.7	3.5	**46.0740**	0.786	1.7	ug/L	7	Standard
	Al	27	7974693.7	0.5	**42.5107**	1.182	2.8	ug/L	625	Standard
	Sc	45	31289.0	2.9				ug/L	29647	Standard
	Ti	47	29983.3	1.5	**100.8099**	2.621	2.6	ug/L	57	Standard
	V	51	356976.4	1.6	**50.5633**	0.626	1.2	ug/L	1142	Standard
	Cr	52	371000.0	2.2	**50.0293**	1.004	2.0	ug/L	6628	Standard
	Cr	53	45682.1	3.1	**49.2179**	1.406	2.9	ug/L	430	Standard
	Mn	55	318039.5	1.1	**54.0099**	0.158	0.3	ug/L	603	Standard
	Co	59	338391.0	1.1	**53.1626**	0.493	0.9	ug/L	237	Standard
	Ni	60	94145.4	2.5	**49.2417**	1.028	2.1	ug/L	141	Standard
	Cu	65	92379.1	1.4	**49.5948**	0.289	0.6	ug/L	109	Standard
	Zn	66	54668.5	1.5	**49.6081**	0.589	1.2	ug/L	159	Standard
>	Ge	72	469038.3	1.3				ug/L	474053	Standard
	As	75	54293.6	1.3	**49.5816**	0.207	0.4	ug/L	-34	Standard
	Se	82	5559.0	0.1	**50.6424**	0.722	1.4	ug/L	14	Standard
	Se-1	77	3786.5	1.3	**49.0965**	0.931	1.9	ug/L	55	Standard
>	Ga	71	158.3	25.7				mg/L	50	Standard
	Rb	85	761.7	7.0				ug/L	20	Standard
	Y	89	395591.6	1.3				ug/L	376602	Standard
>	Rh	103	25.0	80.0				ug/L	17	Standard
	Mo	98	251383.1	0.4	**103.0718**	1.215	1.2	ug/L	8	Standard
	Ag	107	306968.8	0.5	**49.8241**	0.634	1.3	ug/L	81	Standard
	Cd	111	100215.1	0.7	**50.0041**	0.742	1.5	mg/L	3	Standard
	Cd	114	243336.5	2.3	**49.1181**	1.543	3.1	ug/L	7	Standard
>	In	115	541813.2	0.8				ug/L	524722	Standard
	Sn	118	281669.0	0.4	**50.5528**	0.296	0.6	ug/L	715	Standard
	Sb	123	222839.5	0.9	**49.3972**	0.805	1.6	ug/L	201	Standard
	Ba	135	91045.1	0.4	**48.5895**	0.562	1.2	ug/L	108	Standard
	Ce	140	61.7	12.4				ug/L	30	Standard
>	Tb	159	817844.5	0.4				ug/L	792236	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	379786.0	0.6	**49.2821**	0.368	0.7	ug/L	9	Standard
	Tl	205	336318.4	0.5	**51.3165**	0.323	0.6	ug/L	0	Standard
	Pb	206	235111.2	1.0	**50.4225**	0.567	1.1	ug/L	216	Standard
	Pb	207	213294.2	0.5	**50.2491**	0.369	0.7	ug/L	180	Standard
	Pb	208	862915.5	0.7	**50.0892**	0.286	0.6	ug/L	717	Standard
	U	238	324915.2	0.1	**51.8469**	0.100	0.2	ug/L	4	Standard
>	Bi	209	464391.0	0.2				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	4073.9	4.4	**5.1949**	0.373	7.2	mg/L	20	Standard
K	39	616.7	11.0	**4.2379**	0.622	14.7	mg/L	22	Standard
Ca	43	71.7	38.4	**2.7208**	6.257	230.0	mg/L	47	Standard
Fe	54	6184.7	3.6	**4.6538**	0.266	5.7	mg/L	151	Standard
Fe	57	1603.4	6.3	**4.0588**	0.310	7.6	mg/L	195	Standard
> **Sc-1**	45	31289.0	2.9				mg/L	29647	Standard
Cl	35	168092.6	0.3				ug/L	154152	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	1803.4	11.3				ug/L	1607	Standard
P	31	25418.0	3.0				ug/L	22752	Standard
S	34	5476.0	0.8				ug/L	5049	Standard
Sr	88	68.3	36.1				ug/L	87	Standard
C	12	76.7	30.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.5	122.8				mg/L	10	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	3	Standard
I	127	2120.2	19.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	92.148		
Al	27	85.021		
Sc	45			
Ti	47	100.810		
V	51	101.127		
Cr	52	100.059		
Cr	53			
Mn	55	108.020		
Co	59	106.325		
Ni	60	98.483		
Cu	65	99.190		
Zn	66	99.216		
> Ge	72		98.942	
As	75	99.163		
Se	82	101.285		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	103.072		
Ag	107	99.648		
Cd	111	100.008		
Cd	114			
> In	115		103.257	
Sn	118	101.106		
Sb	123	98.794		
Ba	135	97.179		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.564		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.178		
U	238	103.694		
> Bi	209		100.879	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 18:58:50
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65086.2	2.0				ug/L	51024	Standard
	Be	9	21.7	58.1	**-0.0010**	0.011	1171.7	ug/L	7	Standard
	Al	27	2008.5	34.3	**0.0013**	0.004	284.1	ug/L	625	Standard
	Sc	45	30751.2	2.4				ug/L	29647	Standard
	Ti	47	41.3	24.7	**-0.0285**	0.034	119.2	ug/L	57	Standard
	V	51	1096.5	3.2	**-0.0144**	0.004	27.7	ug/L	1142	Standard
	Cr	52	6076.9	0.1	**-0.1037**	0.008	7.3	ug/L	6628	Standard
	Cr	53	488.3	13.0	**0.0929**	0.070	75.6	ug/L	430	Standard
	Mn	55	1470.4	24.5	**0.1211**	0.063	51.8	ug/L	603	Standard
	Co	59	206.0	14.6	**-0.0092**	0.005	53.2	ug/L	237	Standard
	Ni	60	120.7	4.2	**-0.0153**	0.002	15.6	ug/L	141	Standard
	Cu	65	142.0	16.7	**0.0093**	0.013	141.3	ug/L	109	Standard
	Zn	66	152.7	7.5	**-0.0944**	0.011	12.1	ug/L	159	Standard
>	**Ge**	72	474934.0	0.8				ug/L	474053	Standard
	As	75	-45.5	82.0	**-0.0158**	0.033	212.2	ug/L	-34	Standard
	Se	82	16.2	50.9	**-0.0227**	0.076	333.7	ug/L	14	Standard
	Se-1	77	66.0	6.9	**0.1132**	0.063	55.7	ug/L	55	Standard
>	**Ga**	71	136.7	9.2				mg/L	50	Standard
	Rb	85	30.0	28.9				ug/L	20	Standard
	Y	89	402114.5	0.5				ug/L	376602	Standard
>	**Rh**	103	21.7	35.3				ug/L	17	Standard
	Mo	98	281.3	33.4	**0.1095**	0.037	34.1	ug/L	8	Standard
	Ag	107	96.3	13.1	**0.0033**	0.002	62.1	ug/L	81	Standard
	Cd	111	10.2	38.2	**0.0019**	0.002	104.1	mg/L	3	Standard
	Cd	114	23.6	19.2	**0.0010**	0.001	99.3	ug/L	7	Standard
>	**In**	115	541583.6	1.8				ug/L	524722	Standard
	Sn	118	860.0	27.1	**0.0652**	0.041	63.3	ug/L	715	Standard
	Sb	123	479.5	22.9	**0.0918**	0.026	27.9	ug/L	201	Standard
	Ba	135	123.3	8.3	**0.0082**	0.005	60.8	ug/L	108	Standard
	Ce	140	23.3	65.5				ug/L	30	Standard
>	**Tb**	159	792193.7	1.1				ug/L	792236	Standard
	Ho	165	13.3	78.1				ug/L	7	Standard
	Tl	203	66.0	21.2	**0.0060**	0.002	29.5	ug/L	9	Standard
	Tl	205	46.7	12.4	**-0.0007**	0.001	132.6	ug/L	0	Standard
	Pb	206	228.3	5.2	**-0.0071**	0.002	32.1	ug/L	216	Standard
	Pb	207	200.3	2.5	**-0.0063**	0.001	19.4	ug/L	180	Standard
	Pb	208	858.7	6.2	**-0.0078**	0.003	36.1	ug/L	717	Standard
	U	238	38.3	37.5	**-0.0014**	0.002	161.1	ug/L	4	Standard
>	**Bi**	209	462016.2	0.6				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	36.7	70.0	**0.0029**	0.034	1195.5	mg/L	20	Standard
K	39	18.3	56.8	**-0.0943**	0.072	76.9	mg/L	22	Standard
Ca	43	45.0	22.2	**-3.0781**	2.040	66.3	mg/L	47	Standard
Fe	54	114.4	7.6	**-0.0252**	0.008	31.9	mg/L	151	Standard
Fe	57	173.3	9.3	**-0.1300**	0.041	31.6	mg/L	195	Standard
Sc-1	45	30751.2	2.4				mg/L	29647	Standard
Cl	35	167486.4	2.8				ug/L	154152	Standard
Kr	83	2.0	86.6				ug/L	3	Standard
Br	81	1856.8	2.2				ug/L	1607	Standard
P	31	26229.4	1.8				ug/L	22752	Standard
S	34	5394.3	3.3				ug/L	5049	Standard
Sr	88	46.7	37.6				ug/L	87	Standard
C	12	50.0	20.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.9	187.9				mg/L	10	Standard
Ho-1	165	13.3	78.1				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	1466.7	5.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.186	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.213
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.363
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, June 16, 2016 19:02:02
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62105.4	2.6				ug/L	51024	Standard
	Be	9	230.0	20.7	**0.2030**	0.041	20.0	ug/L	7	Standard
	Al	27	2411.9	57.3	**0.0040**	0.008	188.2	ug/L	625	Standard
	Sc	45	29320.0	1.0				ug/L	29647	Standard
	Ti	47	44.0	15.9	**-0.0143**	0.023	160.1	ug/L	57	Standard
	V	51	3629.6	1.0	**0.3604**	0.013	3.7	ug/L	1142	Standard
	Cr	52	11639.8	0.7	**0.7104**	0.026	3.6	ug/L	6628	Standard
	Cr	53	1218.4	6.6	**0.9247**	0.069	7.5	ug/L	430	Standard
	Mn	55	4165.6	11.2	**0.6000**	0.079	13.2	ug/L	603	Standard
	Co	59	2679.2	3.3	**0.3905**	0.015	4.0	ug/L	237	Standard
	Ni	60	2918.9	1.9	**1.4896**	0.048	3.2	ug/L	141	Standard
	Cu	65	1533.7	1.1	**0.7788**	0.010	1.3	ug/L	109	Standard
	Zn	66	7393.8	1.4	**6.6758**	0.118	1.8	ug/L	159	Standard
>	**Ge**	72	457738.9	1.6				ug/L	474053	Standard
	As	75	382.8	8.7	**0.3830**	0.030	7.9	ug/L	-34	Standard
	Se	82	57.3	9.5	**0.3683**	0.054	14.6	ug/L	14	Standard
	Se-1	77	79.7	6.9	**0.3297**	0.074	22.6	ug/L	55	Standard
>	**Ga**	71	103.3	23.9				mg/L	50	Standard
	Rb	85	18.3	41.7				ug/L	20	Standard
	Y	89	375631.5	1.4				ug/L	376602	Standard
>	**Rh**	103	10.0	86.6				ug/L	17	Standard
	Mo	98	122.4	54.4	**0.0465**	0.029	61.8	ug/L	8	Standard
	Ag	107	2330.2	1.4	**0.3786**	0.008	2.1	ug/L	81	Standard
	Cd	111	467.2	1.7	**0.2376**	0.006	2.6	mg/L	3	Standard
	Cd	114	1116.8	1.3	**0.2291**	0.004	1.8	ug/L	7	Standard
>	**In**	115	524377.5	1.0				ug/L	524722	Standard
	Sn	118	430.0	17.1	**-0.0096**	0.013	134.4	ug/L	715	Standard
	Sb	123	1783.9	4.5	**0.3940**	0.022	5.6	ug/L	201	Standard
	Ba	135	1250.7	1.9	**0.6328**	0.015	2.4	ug/L	108	Standard
	Ce	140	8.3	91.7				ug/L	30	Standard
>	**Tb**	159	782327.7	0.6				ug/L	792236	Standard
	Ho	165	11.7	107.9				ug/L	7	Standard
	Tl	203	644.0	4.6	**0.0829**	0.005	5.6	ug/L	9	Standard
	Tl	205	603.3	8.3	**0.0864**	0.009	9.9	ug/L	0	Standard
	Pb	206	1176.0	6.8	**0.2020**	0.018	8.8	ug/L	216	Standard
	Pb	207	1021.4	8.8	**0.1927**	0.023	12.1	ug/L	180	Standard
	Pb	208	4081.2	6.5	**0.1848**	0.017	9.4	ug/L	717	Standard
	U	238	2503.2	1.2	**0.4011**	0.007	1.8	ug/L	4	Standard
>	**Bi**	209	453995.6	0.8				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	40.0	25.0	**0.0095**	0.013	138.3	mg/L	20	Standard
K	39	13.3	43.3	**-0.1249**	0.045	36.2	mg/L	22	Standard
Ca	43	35.0	28.6	**-4.9048**	2.432	49.6	mg/L	47	Standard
Fe	54	120.6	31.6	**-0.0158**	0.032	201.6	mg/L	151	Standard
Fe	57	148.3	13.6	**-0.1825**	0.065	35.6	mg/L	195	Standard
Sc-1	45	29320.0	1.0				mg/L	29647	Standard
Cl	35	160593.3	0.6				ug/L	154152	Standard
Kr	83	0.3	173.2				ug/L	3	Standard
Br	81	1753.4	6.3				ug/L	1607	Standard
P	31	18406.2	0.9				ug/L	22752	Standard
S	34	5287.6	2.4				ug/L	5049	Standard
Sr	88	66.7	18.9				ug/L	87	Standard
C	12	56.7	36.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	13.0	46.6				mg/L	10	Standard
Ho-1	165	11.7	107.9				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	3	Standard
I	127	1111.7	9.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	101.480		
Al	27			
Sc	45			
Ti	47			
V	51	90.091		
Cr	52	88.800		
Cr	53			
Mn	55	120.007		
Co	59	97.613		
Ni	60	93.098		
Cu	65	97.350		
Zn	66	106.813		
Ge	72		96.559	
As	75	95.761		
Se	82	92.069		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	94.641		
Cd	111	99.021		
Cd	114			
> In	115			99.934
Sn	118			
Sb	123	98.503		
Ba	135	84.376		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	103.666		
Tl	205			
Pb	206			
Pb	207			
Pb	208	92.383		
U	238	100.273		
> Bi	209			98.621
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
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Method 6020 - Summary Report

Sample ID: PBW 42 WG572730-03
Sample Date/Time: Thursday, June 16, 2016 19:05:16
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62749.7	0.4				ug/L	51024	Standard
	Be	9	18.3	95.8	**-0.0034**	0.017	498.2	ug/L	7	Standard
	Al	27	45563.5	4.1	**0.2505**	0.010	4.1	ug/L	625	Standard
	Sc	45	30499.0	0.2				ug/L	29647	Standard
	Ti	47	51.3	19.1	**0.0066**	0.033	492.2	ug/L	57	Standard
	V	51	1097.4	4.3	**-0.0126**	0.007	55.7	ug/L	1142	Standard
	Cr	52	7963.4	1.0	**0.1642**	0.013	7.9	ug/L	6628	Standard
	Cr	53	896.7	4.5	**0.5418**	0.048	8.8	ug/L	430	Standard
	Mn	55	2548.5	1.6	**0.3068**	0.006	2.0	ug/L	603	Standard
	Co	59	285.7	3.7	**0.0036**	0.002	42.0	ug/L	237	Standard
	Ni	60	410.7	8.1	**0.1371**	0.018	13.2	ug/L	141	Standard
	Cu	65	253.3	2.8	**0.0699**	0.004	5.6	ug/L	109	Standard
	Zn	66	1271.7	3.2	**0.9258**	0.037	4.0	ug/L	159	Standard
>	**Ge**	72	469694.2	0.4				ug/L	474053	Standard
	As	75	1524.9	4.2	**1.4151**	0.063	4.5	ug/L	-34	Standard
	Se	82	670.0	3.5	**5.9461**	0.237	4.0	ug/L	14	Standard
	Se-1	77	66.0	18.4	**0.1230**	0.163	132.4	ug/L	55	Standard
>	**Ga**	71	123.3	16.4				mg/L	50	Standard
	Rb	85	295.0	3.4				ug/L	20	Standard
	Y	89	394476.0	3.2				ug/L	376602	Standard
>	**Rh**	103	20.0	66.1				ug/L	17	Standard
	Mo	98	84.7	10.3	**0.0293**	0.004	12.7	ug/L	8	Standard
	Ag	107	83.0	7.9	**0.0012**	0.001	88.8	ug/L	81	Standard
	Cd	111	13.9	21.7	**0.0037**	0.001	39.9	mg/L	3	Standard
	Cd	114	54.3	34.3	**0.0072**	0.004	52.7	ug/L	7	Standard
>	**In**	115	540141.2	0.4				ug/L	524722	Standard
	Sn	118	648.3	6.2	**0.0275**	0.007	26.0	ug/L	715	Standard
	Sb	123	144.9	16.0	**0.0174**	0.005	30.4	ug/L	201	Standard
	Ba	135	21260.9	1.4	**11.3366**	0.117	1.0	ug/L	108	Standard
	Ce	140	155.0	8.5				ug/L	30	Standard
>	**Tb**	159	801981.8	0.8				ug/L	792236	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	205.7	5.0	**0.0243**	0.001	5.5	ug/L	9	Standard
	Tl	205	185.0	17.7	**0.0206**	0.005	24.4	ug/L	0	Standard
	Pb	206	277.0	10.2	**0.0035**	0.006	164.3	ug/L	216	Standard
	Pb	207	230.3	3.9	**0.0008**	0.002	210.4	ug/L	180	Standard
	Pb	208	975.0	1.4	**-0.0009**	0.000	49.0	ug/L	717	Standard
	U	238	16.3	25.5	**-0.0050**	0.001	13.9	ug/L	4	Standard
>	**Bi**	209	461335.7	0.7				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	403.3	18.0	**0.4864**	0.096	19.7	mg/L	20	Standard
K	39	18.3	56.8	**-0.0922**	0.077	83.3	mg/L	22	Standard
Ca	43	38.3	27.2	**-4.4783**	2.388	53.3	mg/L	47	Standard
Fe	54	151.1	15.7	**0.0044**	0.018	419.9	mg/L	151	Standard
Fe	57	180.0	9.6	**-0.1053**	0.052	49.8	mg/L	195	Standard
> **Sc-1**	45	30499.0	0.2				mg/L	29647	Standard
Cl	35	167221.1	1.1				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	161399.3	3.9				ug/L	1607	Standard
P	31	23832.1	1.6				ug/L	22752	Standard
S	34	5314.3	4.0				ug/L	5049	Standard
Sr	88	105.0	12.6				ug/L	87	Standard
C	12	53.3	43.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.5	177.6				mg/L	10	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	4855.8	5.9				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		122.980	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.081	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.939
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.216
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: LCSW 42 WG572730-04
Sample Date/Time: Thursday, June 16, 2016 19:08:28
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62985.7	0.9				ug/L	51024	Standard
	Be	9	48407.2	1.0	**46.6239**	0.599	1.3	ug/L	7	Standard
	Al	27	15242.7	3.1	**0.0770**	0.003	4.2	ug/L	625	Standard
	Sc	45	31167.0	1.6				ug/L	29647	Standard
	Ti	47	51.0	3.9	**0.0042**	0.006	137.2	ug/L	57	Standard
	V	51	362150.1	1.2	**50.8470**	1.498	2.9	ug/L	1142	Standard
	Cr	52	375631.9	0.2	**50.2056**	0.853	1.7	ug/L	6628	Standard
	Cr	53	46496.2	1.5	**49.6449**	0.253	0.5	ug/L	430	Standard
	Mn	55	324366.5	2.3	**54.5814**	0.385	0.7	ug/L	603	Standard
	Co	59	341108.8	1.8	**53.1006**	0.301	0.6	ug/L	237	Standard
	Ni	60	95614.1	1.0	**49.5608**	0.383	0.8	ug/L	141	Standard
	Cu	65	93513.4	0.6	**49.7560**	0.725	1.5	ug/L	109	Standard
	Zn	66	55921.0	0.3	**50.2961**	0.929	1.8	ug/L	159	Standard
>	**Ge**	72	473336.6	1.7				ug/L	474053	Standard
	As	75	54052.4	0.1	**48.9231**	0.858	1.8	ug/L	-34	Standard
	Se	82	5549.3	0.5	**50.0944**	0.667	1.3	ug/L	14	Standard
	Se-1	77	3851.2	1.4	**49.4942**	1.249	2.5	ug/L	55	Standard
>	**Ga**	71	148.3	5.1				mg/L	50	Standard
	Rb	85	50.0	45.8				ug/L	20	Standard
	Y	89	393664.1	1.4				ug/L	376602	Standard
>	**Rh**	103	30.0	66.7				ug/L	17	Standard
	Mo	98	67.7	16.2	**0.0222**	0.004	19.7	ug/L	8	Standard
	Ag	107	9538.7	1.3	**1.5370**	0.009	0.6	ug/L	81	Standard
	Cd	111	98094.4	0.8	**48.9748**	0.877	1.8	mg/L	3	Standard
	Cd	114	242274.5	1.2	**48.9293**	1.051	2.1	ug/L	7	Standard
>	**In**	115	541531.8	1.4				ug/L	524722	Standard
	Sn	118	718.4	12.9	**0.0399**	0.018	44.4	ug/L	715	Standard
	Sb	123	213208.4	0.4	**47.2901**	0.830	1.8	ug/L	201	Standard
	Ba	135	91061.5	0.2	**48.6273**	0.710	1.5	ug/L	108	Standard
	Ce	140	75.0	30.6				ug/L	30	Standard
>	**Tb**	159	801949.7	1.3				ug/L	792236	Standard
	Ho	165	15.0	66.7				ug/L	7	Standard
	Tl	203	366890.3	0.3	**47.3558**	0.332	0.7	ug/L	9	Standard
	Tl	205	325136.0	2.3	**49.3487**	1.280	2.6	ug/L	0	Standard
	Pb	206	237911.3	0.3	**50.7518**	0.233	0.5	ug/L	216	Standard
	Pb	207	208877.0	1.0	**48.9436**	0.182	0.4	ug/L	180	Standard
	Pb	208	858938.6	1.3	**49.5964**	0.972	2.0	ug/L	717	Standard
	U	238	311185.8	0.3	**49.3920**	0.274	0.6	ug/L	4	Standard
>	**Bi**	209	466882.1	0.8				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	43.3	37.1	**0.0108**	0.021	197.0	mg/L	20	Standard
K	39	21.7	26.6	**-0.0712**	0.040	55.8	mg/L	22	Standard
Ca	43	35.0	37.8	**-5.4027**	2.947	54.5	mg/L	47	Standard
Fe	54	122.0	30.6	**-0.0208**	0.028	132.3	mg/L	151	Standard
Fe	57	123.3	18.3	**-0.2836**	0.067	23.8	mg/L	195	Standard
Sc-1	45	31167.0	1.6				mg/L	29647	Standard
Cl	35	163506.3	1.5				ug/L	154152	Standard
Kr	83	0.3	173.2				ug/L	3	Standard
Br	81	5531.1	27.3				ug/L	1607	Standard
P	31	23947.2	1.0				ug/L	22752	Standard
S	34	5137.5	2.8				ug/L	5049	Standard
Sr	88	76.7	46.3				ug/L	87	Standard
C	12	70.0	14.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	13.2	44.9				mg/L	10	Standard
Ho-1	165	15.0	66.7				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	1283.4	6.1				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.443	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.849	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.204
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.421
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606066401 WG572730-01
Sample Date/Time: Thursday, June 16, 2016 19:12:30
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75454.2	2.8				ug/L	51024	Standard
	Be	9	20.0	90.1	**-0.0048**	0.015	318.2	ug/L	7	Standard
	Al	27	11047678.0	1.9	**52.4883**	1.233	2.3	ug/L	625	Standard
	Sc	45	29264.9	1.3				ug/L	29647	Standard
	Ti	47	190.7	4.0	**0.5084**	0.037	7.3	ug/L	57	Standard
	V	51	1712.7	18.3	**0.0872**	0.046	52.6	ug/L	1142	Standard
	Cr	52	16604.1	1.9	**1.4659**	0.021	1.4	ug/L	6628	Standard
	Cr	53	9623.1	1.9	**10.5512**	0.372	3.5	ug/L	430	Standard
	Mn	55	18349.1	1.7	**3.1531**	0.090	2.8	ug/L	603	Standard
	Co	59	837.4	4.2	**0.0969**	0.005	4.7	ug/L	237	Standard
	Ni	60	47686.6	1.9	**26.1478**	0.400	1.5	ug/L	141	Standard
	Cu	65	35936.9	2.3	**20.2125**	0.174	0.9	ug/L	109	Standard
	Zn	66	7845.4	2.5	**7.2754**	0.080	1.1	ug/L	159	Standard
>	**Ge**	72	446804.8	1.5				ug/L	474053	Standard
	As	75	226.8	62.9	**0.2410**	0.135	55.9	ug/L	-34	Standard
	Se	82	88.3	14.1	**0.6770**	0.108	16.0	ug/L	14	Standard
	Se-1	77	1010.0	4.4	**13.2164**	0.770	5.8	ug/L	55	Standard
>	**Ga**	71	121.7	4.7				mg/L	50	Standard
	Rb	85	9374.6	1.9				ug/L	20	Standard
	Y	89	379651.4	1.2				ug/L	376602	Standard
>	**Rh**	103	176.7	43.0				ug/L	17	Standard
	Mo	98	6942.1	1.1	**3.0258**	0.008	0.3	ug/L	8	Standard
	Ag	107	107.7	10.4	**0.0063**	0.002	31.0	ug/L	81	Standard
	Cd	111	16.0	28.8	**0.0053**	0.002	45.3	mg/L	3	Standard
	Cd	114	155.3	55.3	**0.0296**	0.019	62.9	ug/L	7	Standard
>	**In**	115	508746.6	0.9				ug/L	524722	Standard
	Sn	118	32234.3	2.4	**6.0825**	0.133	2.2	ug/L	715	Standard
	Sb	123	2505.0	15.1	**0.5762**	0.084	14.6	ug/L	201	Standard
	Ba	135	56364.3	0.3	**32.0167**	0.382	1.2	ug/L	108	Standard
	Ce	140	273.3	12.5				ug/L	30	Standard
>	**Tb**	159	786168.7	0.3				ug/L	792236	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	162.7	17.5	**0.0211**	0.005	21.6	ug/L	9	Standard
	Tl	205	136.7	17.3	**0.0156**	0.004	27.5	ug/L	0	Standard
	Pb	206	51660.3	0.9	**12.3691**	0.134	1.1	ug/L	216	Standard
	Pb	207	43372.0	1.0	**11.4048**	0.082	0.7	ug/L	180	Standard
	Pb	208	183979.7	0.6	**11.9203**	0.168	1.4	ug/L	717	Standard
	U	238	40.0	22.9	**-0.0004**	0.002	429.9	ug/L	4	Standard
>	**Bi**	209	414575.6	1.7				ug/L	460343	Standard

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Na	23	3.3	173.2	**-0.6680**	19.261	2883.4	mg/L	0	Standard
Mg	24	393015.0	2.1	**539.7437**	8.154	1.5	mg/L	20	Standard
K	39	755.0	20.2	**5.6021**	1.177	21.0	mg/L	22	Standard
Ca	43	273.3	16.4	**51.4216**	9.712	18.9	mg/L	47	Standard
Fe	54	153.2	8.8	**0.0113**	0.013	111.5	mg/L	151	Standard
Fe	57	410.0	9.5	**0.6384**	0.113	17.7	mg/L	195	Standard
> **Sc-1**	45	29264.9	1.3				mg/L	29647	Standard
Cl	35	947330.3	0.6				ug/L	154152	Standard
Kr	83	2.7	86.6				ug/L	3	Standard
Br	81	16345.5	3.0				ug/L	1607	Standard
P	31	24364.6	0.6				ug/L	22752	Standard
S	34	5329.3	1.4				ug/L	5049	Standard
Sr	88	195.0	4.4				ug/L	87	Standard
C	12	283.3	24.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	0	Standard
Dy	164	16.0	130.4				mg/L	10	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	339108.5	7.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		147.879	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.252	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.955
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.058
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606066401DP WG572730-05
Sample Date/Time: Thursday, June 16, 2016 19:15:41
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82599.5	0.8				ug/L	51024	Standard
	Be	9	18.3	31.5	**-0.0076**	0.004	53.8	ug/L	7	Standard
	Al	27	12101738.6	2.4	**52.5022**	0.943	1.8	ug/L	625	Standard
	Sc	45	29381.8	2.9				ug/L	29647	Standard
	Ti	47	224.3	6.3	**0.6337**	0.051	8.1	ug/L	57	Standard
	V	51	1757.9	10.9	**0.0962**	0.030	31.3	ug/L	1142	Standard
	Cr	52	17254.5	0.4	**1.5806**	0.019	1.2	ug/L	6628	Standard
	Cr	53	9484.6	4.9	**10.4776**	0.447	4.3	ug/L	430	Standard
	Mn	55	18275.7	1.8	**3.1668**	0.077	2.4	ug/L	603	Standard
	Co	59	934.4	2.3	**0.1143**	0.005	4.1	ug/L	237	Standard
	Ni	60	50219.4	0.9	**27.7712**	0.300	1.1	ug/L	141	Standard
	Cu	65	38180.1	1.8	**21.6588**	0.226	1.0	ug/L	109	Standard
	Zn	66	9011.3	2.3	**8.4634**	0.126	1.5	ug/L	159	Standard
>	**Ge**	72	443106.2	0.8				ug/L	474053	Standard
	As	75	276.8	42.6	**0.2919**	0.111	38.1	ug/L	-34	Standard
	Se	82	109.2	13.4	**0.8866**	0.132	14.9	ug/L	14	Standard
	Se-1	77	1030.4	1.0	**13.6099**	0.054	0.4	ug/L	55	Standard
>	**Ga**	71	125.0	10.6				mg/L	50	Standard
	Rb	85	9914.9	0.9				ug/L	20	Standard
	Y	89	378132.1	0.5				ug/L	376602	Standard
>	**Rh**	103	276.7	11.8				ug/L	17	Standard
	Mo	98	7350.8	1.1	**3.1941**	0.056	1.8	ug/L	8	Standard
	Ag	107	113.3	9.2	**0.0072**	0.002	27.2	ug/L	81	Standard
	Cd	111	7.2	44.2	**0.0006**	0.002	301.0	mg/L	3	Standard
	Cd	114	112.0	53.6	**0.0203**	0.013	64.2	ug/L	7	Standard
>	**In**	115	510414.8	1.0				ug/L	524722	Standard
	Sn	118	31860.1	0.6	**5.9914**	0.071	1.2	ug/L	715	Standard
	Sb	123	1301.1	10.9	**0.2913**	0.031	10.6	ug/L	201	Standard
	Ba	135	58474.3	1.0	**33.1066**	0.180	0.5	ug/L	108	Standard
	Ce	140	143.3	4.0				ug/L	30	Standard
>	**Tb**	159	793633.3	0.5				ug/L	792236	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	126.3	11.6	**0.0156**	0.002	13.8	ug/L	9	Standard
	Tl	205	108.3	7.1	**0.0105**	0.001	12.1	ug/L	0	Standard
	Pb	206	55773.5	1.1	**13.2134**	0.113	0.9	ug/L	216	Standard
	Pb	207	47080.7	0.8	**12.2506**	0.066	0.5	ug/L	180	Standard
	Pb	208	190215.8	0.7	**12.1921**	0.079	0.7	ug/L	717	Standard
	U	238	29.3	17.2	**-0.0024**	0.001	37.4	ug/L	4	Standard
>	**Bi**	209	419055.7	0.3				ug/L	460343	Standard

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Na	23	10.0	50.0	**-22.7084**	17.142	75.5	mg/L	0	Standard
Mg	24	418232.9	1.5	**572.3635**	15.570	2.7	mg/L	20	Standard
K	39	648.3	17.8	**4.7577**	0.876	18.4	mg/L	22	Standard
Ca	43	226.7	8.4	**40.2176**	3.679	9.1	mg/L	47	Standard
Fe	54	135.1	14.9	**-0.0042**	0.016	368.6	mg/L	151	Standard
Fe	57	428.3	6.4	**0.6912**	0.080	11.6	mg/L	195	Standard
> **Sc-1**	45	29381.8	2.9				mg/L	29647	Standard
Cl	35	974394.4	0.6				ug/L	154152	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	16325.5	4.8				ug/L	1607	Standard
P	31	25179.2	0.8				ug/L	22752	Standard
S	34	5427.6	0.7				ug/L	5049	Standard
Sr	88	171.7	19.8				ug/L	87	Standard
C	12	336.7	27.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	12.9	93.1				mg/L	10	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	345162.2	8.5				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		161.883	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		93.472	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.273
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.031
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606072903 WG572730-02
Sample Date/Time: Thursday, June 16, 2016 19:18:52
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83167.6	0.4				ug/L	51024	Standard
	Be	9	1595.1	11.9	**1.1433**	0.143	12.5	ug/L	7	Standard
	Al	27	12508760.9	0.4	**53.9014**	0.277	0.5	ug/L	625	Standard
	Sc	45	32636.8	2.2				ug/L	29647	Standard
	Ti	47	734.7	25.1	**2.2005**	0.603	27.4	ug/L	57	Standard
	V	51	2647.4	9.7	**0.1914**	0.035	18.3	ug/L	1142	Standard
	Cr	52	10901.3	2.2	**0.5035**	0.035	7.0	ug/L	6628	Standard
	Cr	53	1756.8	5.0	**1.3940**	0.093	6.7	ug/L	430	Standard
	Mn	55	2418538.1	0.3	**393.4562**	2.564	0.7	ug/L	603	Standard
	Co	59	167227.2	1.2	**25.0953**	0.408	1.6	ug/L	237	Standard
	Ni	60	19549.3	0.9	**9.7135**	0.121	1.2	ug/L	141	Standard
	Cu	65	6980.3	2.4	**3.5215**	0.098	2.8	ug/L	109	Standard
	Zn	66	33084.1	0.4	**28.6038**	0.229	0.8	ug/L	159	Standard
>	**Ge**	72	490606.8	0.4				ug/L	474053	Standard
	As	75	126.0	22.9	**0.1350**	0.026	18.9	ug/L	-34	Standard
	Se	82	91.9	23.2	**0.6344**	0.188	29.7	ug/L	14	Standard
	Se-1	77	154.7	9.2	**1.2017**	0.186	15.5	ug/L	55	Standard
>	**Ga**	71	938.4	4.7				mg/L	50	Standard
	Rb	85	17583.5	1.7				ug/L	20	Standard
	Y	89	717044.0	1.5				ug/L	376602	Standard
>	**Rh**	103	161.7	28.1				ug/L	17	Standard
	Mo	98	55.5	8.7	**0.0173**	0.002	11.5	ug/L	8	Standard
	Ag	107	113.0	9.4	**0.0061**	0.002	26.4	ug/L	81	Standard
	Cd	111	309.2	2.3	**0.1520**	0.004	2.4	mg/L	3	Standard
	Cd	114	755.2	14.7	**0.1496**	0.023	15.3	ug/L	7	Standard
>	**In**	115	538550.6	0.6				ug/L	524722	Standard
	Sn	118	861.7	3.5	**0.0664**	0.005	7.2	ug/L	715	Standard
	Sb	123	1408.2	6.3	**0.2992**	0.018	6.0	ug/L	201	Standard
	Ba	135	39659.2	1.6	**21.2618**	0.456	2.1	ug/L	108	Standard
	Ce	140	1381297.9	0.5				ug/L	30	Standard
>	**Tb**	159	851012.3	2.0				ug/L	792236	Standard
	Ho	165	27889.0	1.7				ug/L	7	Standard
	Tl	203	294.7	3.0	**0.0347**	0.002	6.0	ug/L	9	Standard
	Tl	205	265.0	1.9	**0.0316**	0.001	3.8	ug/L	0	Standard
	Pb	206	5868.1	0.6	**1.1726**	0.027	2.3	ug/L	216	Standard
	Pb	207	4864.8	1.2	**1.0656**	0.042	4.0	ug/L	180	Standard
	Pb	208	20514.5	1.0	**1.1052**	0.038	3.5	ug/L	717	Standard
	U	238	2495.2	0.6	**0.3809**	0.010	2.6	ug/L	4	Standard
>	**Bi**	209	476253.4	2.7				ug/L	460343	Standard

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Na	23	11.7	24.7	**-24.3418**	9.212	37.8	mg/L	0	Standard
Mg	24	2530.2	1.8	**3.0712**	0.030	1.0	mg/L	20	Standard
K	39	120.0	8.3	**0.6043**	0.087	14.3	mg/L	22	Standard
Ca	43	210.0	28.9	**31.2136**	11.780	37.7	mg/L	47	Standard
Fe	54	1764.1	4.7	**1.1881**	0.059	5.0	mg/L	151	Standard
Fe	57	758.4	15.5	**1.4817**	0.281	18.9	mg/L	195	Standard
> **Sc-1**	45	32636.8	2.2				mg/L	29647	Standard
Cl	35	300327.3	0.4				ug/L	154152	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	5971.2	0.5				ug/L	1607	Standard
P	31	27339.7	3.0				ug/L	22752	Standard
S	34	4589.0	1.4				ug/L	5049	Standard
Sr	88	426.7	18.4				ug/L	87	Standard
C	12	223.3	9.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	48154.5	2.6				mg/L	10	Standard
Ho-1	165	27889.0	1.7				mg/L	7	Standard
Er	166	24125.9	1.2				mg/L	3	Standard
I	127	233033.3	7.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		162.997	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.492	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.635
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.456
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606072903S WG572730-06
Sample Date/Time: Thursday, June 16, 2016 19:22:04
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84593.9	1.7				ug/L	51024	Standard
	Be	9	63747.2	1.4	**45.7285**	1.409	3.1	ug/L	7	Standard
	Al	27	12163442.1	0.7	**51.5412**	1.132	2.2	ug/L	625	Standard
	Sc	45	33602.2	1.6				ug/L	29647	Standard
	Ti	47	659.7	12.0	**2.0785**	0.257	12.4	ug/L	57	Standard
	V	51	353641.1	0.6	**50.6609**	2.238	4.4	ug/L	1142	Standard
	Cr	52	356717.6	1.1	**48.6215**	2.101	4.3	ug/L	6628	Standard
	Cr	53	45185.6	0.4	**49.2470**	2.494	5.1	ug/L	430	Standard
	Mn	55	2601278.5	0.7	**447.6689**	18.661	4.2	ug/L	603	Standard
	Co	59	487177.6	1.1	**77.4106**	2.935	3.8	ug/L	237	Standard
	Ni	60	108783.5	0.6	**57.5580**	2.469	4.3	ug/L	141	Standard
	Cu	65	95167.6	1.2	**51.6700**	2.084	4.0	ug/L	109	Standard
	Zn	66	84097.8	1.1	**77.2971**	3.015	3.9	ug/L	159	Standard
>	**Ge**	72	464397.8	4.8				ug/L	474053	Standard
	As	75	53679.2	1.0	**49.5736**	2.027	4.1	ug/L	-34	Standard
	Se	82	5551.8	0.7	**51.1533**	2.421	4.7	ug/L	14	Standard
	Se-1	77	3791.1	3.4	**49.6831**	1.424	2.9	ug/L	55	Standard
>	**Ga**	71	958.4	5.4				mg/L	50	Standard
	Rb	85	16624.1	3.0				ug/L	20	Standard
	Y	89	707625.8	0.5				ug/L	376602	Standard
>	**Rh**	103	125.0	8.0				ug/L	17	Standard
	Mo	98	62.1	4.6	**0.0194**	0.002	8.1	ug/L	8	Standard
	Ag	107	8913.6	1.8	**1.4061**	0.009	0.7	ug/L	81	Standard
	Cd	111	96671.0	1.6	**47.2862**	1.085	2.3	mg/L	3	Standard
	Cd	114	237983.0	1.9	**47.0816**	0.696	1.5	ug/L	7	Standard
>	**In**	115	552753.1	1.8				ug/L	524722	Standard
	Sn	118	638.3	15.9	**0.0231**	0.018	79.7	ug/L	715	Standard
	Sb	123	215408.0	1.4	**46.8023**	0.239	0.5	ug/L	201	Standard
	Ba	135	124502.1	0.5	**65.1569**	0.974	1.5	ug/L	108	Standard
	Ce	140	1314417.9	1.3				ug/L	30	Standard
>	**Tb**	159	881280.8	1.9				ug/L	792236	Standard
	Ho	165	27413.1	3.0				ug/L	7	Standard
	Tl	203	374882.9	0.8	**46.6863**	0.358	0.8	ug/L	9	Standard
	Tl	205	338218.3	0.5	**49.5337**	0.988	2.0	ug/L	0	Standard
	Pb	206	247963.0	0.9	**51.0419**	0.964	1.9	ug/L	216	Standard
	Pb	207	216265.5	0.6	**48.8980**	0.689	1.4	ug/L	180	Standard
	Pb	208	876968.0	0.5	**48.8596**	0.973	2.0	ug/L	717	Standard
	U	238	329321.5	0.3	**50.4388**	0.916	1.8	ug/L	4	Standard
>	**Bi**	209	483914.0	1.5				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.7187**	8.199	143.4	mg/L	0	Standard
Mg	24	2360.2	1.3	**2.7784**	0.056	2.0	mg/L	20	Standard
K	39	110.0	31.5	**0.5143**	0.242	47.0	mg/L	22	Standard
Ca	43	180.0	27.4	**23.8358**	9.598	40.3	mg/L	47	Standard
Fe	54	1737.6	2.8	**1.1314**	0.022	1.9	mg/L	151	Standard
Fe	57	686.7	6.3	**1.2285**	0.107	8.7	mg/L	195	Standard
Sc-1	45	33602.2	1.6				mg/L	29647	Standard
Cl	35	293323.6	1.0				ug/L	154152	Standard
Kr	83	1.7	124.9				ug/L	3	Standard
Br	81	5094.2	9.2				ug/L	1607	Standard
P	31	27336.3	1.5				ug/L	22752	Standard
S	34	4702.4	5.5				ug/L	5049	Standard
Sr	88	400.0	11.5				ug/L	87	Standard
C	12	270.0	13.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	45484.4	2.9				mg/L	10	Standard
Ho-1	165	27413.1	3.0				mg/L	7	Standard
Er	166	23461.5	1.2				mg/L	3	Standard
I	127	221641.3	5.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		165.792	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.963	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.342
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.120
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606072903SD WG572730-07
Sample Date/Time: Thursday, June 16, 2016 19:25:15
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86461.0	1.0				ug/L	51024	Standard
	Be	9	64063.5	1.0	**44.9486**	0.413	0.9	ug/L	7	Standard
	Al	27	12456061.3	1.7	**51.6274**	0.457	0.9	ug/L	625	Standard
	Sc	45	32062.2	2.4				ug/L	29647	Standard
	Ti	47	858.4	8.8	**2.9028**	0.272	9.4	ug/L	57	Standard
	V	51	359033.7	1.5	**54.0078**	1.033	1.9	ug/L	1142	Standard
	Cr	52	357394.7	0.2	**51.1915**	0.354	0.7	ug/L	6628	Standard
	Cr	53	45598.6	3.3	**52.1815**	1.498	2.9	ug/L	430	Standard
	Mn	55	2668759.8	1.0	**482.1929**	4.954	1.0	ug/L	603	Standard
	Co	59	502894.6	1.2	**83.9097**	1.409	1.7	ug/L	237	Standard
	Ni	60	107927.8	1.4	**59.9510**	0.489	0.8	ug/L	141	Standard
	Cu	65	93853.1	1.2	**53.5019**	0.490	0.9	ug/L	109	Standard
	Zn	66	83974.7	0.9	**81.0494**	0.217	0.3	ug/L	159	Standard
>	**Ge**	72	441763.7	0.6				ug/L	474053	Standard
	As	75	55613.6	0.2	**53.9212**	0.243	0.5	ug/L	-34	Standard
	Se	82	6086.3	0.3	**58.8898**	0.200	0.3	ug/L	14	Standard
	Se-1	77	3831.8	0.4	**52.8020**	0.183	0.3	ug/L	55	Standard
>	**Ga**	71	981.7	7.0				mg/L	50	Standard
	Rb	85	19140.4	1.5				ug/L	20	Standard
	Y	89	713271.6	1.4				ug/L	376602	Standard
>	**Rh**	103	201.7	43.7				ug/L	17	Standard
	Mo	98	570.8	5.1	**0.2183**	0.009	3.9	ug/L	8	Standard
	Ag	107	9150.1	1.0	**1.4089**	0.031	2.2	ug/L	81	Standard
	Cd	111	99261.8	1.0	**47.3819**	0.778	1.6	mg/L	3	Standard
	Cd	114	244188.0	1.4	**47.1444**	0.226	0.5	ug/L	7	Standard
>	**In**	115	566399.8	1.8				ug/L	524722	Standard
	Sn	118	1108.4	1.6	**0.1012**	0.003	3.2	ug/L	715	Standard
	Sb	123	226221.3	0.0	**47.9756**	0.857	1.8	ug/L	201	Standard
	Ba	135	281949.2	0.1	**144.0743**	2.519	1.7	ug/L	108	Standard
	Ce	140	1344322.7	0.7				ug/L	30	Standard
>	**Tb**	159	856521.4	0.5				ug/L	792236	Standard
	Ho	165	27917.4	1.4				ug/L	7	Standard
	Tl	203	379214.9	0.1	**48.6259**	0.229	0.5	ug/L	9	Standard
	Tl	205	341701.9	0.7	**51.5229**	0.634	1.2	ug/L	0	Standard
	Pb	206	250400.5	0.4	**53.0698**	0.469	0.9	ug/L	216	Standard
	Pb	207	218768.7	0.4	**50.9304**	0.424	0.8	ug/L	180	Standard
	Pb	208	894325.1	0.6	**51.3006**	0.445	0.9	ug/L	717	Standard
	U	238	333573.8	0.7	**52.6006**	0.628	1.2	ug/L	4	Standard
>	**Bi**	209	469954.5	0.6				ug/L	460343	Standard

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Na	23	3.3	173.2	**0.1020**	17.927	17574.6	mg/L	0	Standard
Mg	24	6119.6	7.0	**7.6313**	0.602	7.9	mg/L	20	Standard
K	39	128.3	31.7	**0.6738**	0.269	39.8	mg/L	22	Standard
Ca	43	203.3	13.5	**30.6746**	5.036	16.4	mg/L	47	Standard
Fe	54	1790.2	1.0	**1.2312**	0.019	1.5	mg/L	151	Standard
Fe	57	780.0	10.9	**1.5831**	0.191	12.1	mg/L	195	Standard
Sc-1	45	32062.2	2.4				mg/L	29647	Standard
Cl	35	296539.1	0.3				ug/L	154152	Standard
Kr	83	1.0	0.0				ug/L	3	Standard
Br	81	116096.7	2.9				ug/L	1607	Standard
P	31	27080.9	1.8				ug/L	22752	Standard
S	34	4614.0	1.1				ug/L	5049	Standard
Sr	88	778.4	3.2				ug/L	87	Standard
C	12	196.7	22.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	46630.2	1.4				mg/L	10	Standard
Ho-1	165	27917.4	1.4				mg/L	7	Standard
Er	166	24322.8	2.2				mg/L	3	Standard
I	127	176317.1	2.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		169.451	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.189	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606072903SD WG572730-07
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.943
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.088
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606075401
Sample Date/Time: Thursday, June 16, 2016 19:28:27
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82366.7	2.1				ug/L	51024	Standard
	Be	9	51.7	14.8	**0.0170**	0.006	32.8	ug/L	7	Standard
	Al	27	17891826.3	2.7	**77.8692**	2.435	3.1	ug/L	625	Standard
	Sc	45	30427.2	1.9				ug/L	29647	Standard
	Ti	47	2820.9	1.0	**9.4421**	0.167	1.8	ug/L	57	Standard
	V	51	13745.3	1.6	**1.8076**	0.041	2.3	ug/L	1142	Standard
	Cr	52	20733.8	0.8	**1.9525**	0.033	1.7	ug/L	6628	Standard
	Cr	53	4984.2	5.0	**5.0448**	0.169	3.3	ug/L	430	Standard
	Mn	55	105692.4	1.8	**18.0774**	0.683	3.8	ug/L	603	Standard
	Co	59	4134.2	4.3	**0.6164**	0.033	5.4	ug/L	237	Standard
	Ni	60	5645.1	0.8	**2.9135**	0.034	1.2	ug/L	141	Standard
	Cu	65	191176.6	0.9	**103.9111**	2.891	2.8	ug/L	109	Standard
	Zn	66	106024.3	0.8	**97.5572**	2.630	2.7	ug/L	159	Standard
>	**Ge**	72	463769.1	2.0				ug/L	474053	Standard
	As	75	301.2	25.5	**0.3039**	0.075	24.6	ug/L	-34	Standard
	Se	82	127.3	9.6	**1.0095**	0.134	13.3	ug/L	14	Standard
	Se-1	77	289.7	4.6	**3.1103**	0.134	4.3	ug/L	55	Standard
>	**Ga**	71	440.0	5.9				mg/L	50	Standard
	Rb	85	66395.2	1.7				ug/L	20	Standard
	Y	89	407745.6	2.4				ug/L	376602	Standard
>	**Rh**	103	96.7	20.9				ug/L	17	Standard
	Mo	98	1561.5	1.4	**0.6398**	0.014	2.1	ug/L	8	Standard
	Ag	107	747.4	3.8	**0.1101**	0.008	7.2	ug/L	81	Standard
	Cd	111	185.0	11.1	**0.0900**	0.013	14.1	mg/L	3	Standard
	Cd	114	453.1	6.4	**0.0885**	0.009	9.7	ug/L	7	Standard
>	**In**	115	537707.7	3.1				ug/L	524722	Standard
	Sn	118	4545.7	5.8	**0.7338**	0.032	4.3	ug/L	715	Standard
	Sb	123	909.7	21.3	**0.1892**	0.048	25.1	ug/L	201	Standard
	Ba	135	39811.9	1.6	**21.3825**	0.338	1.6	ug/L	108	Standard
	Ce	140	8849.3	2.5				ug/L	30	Standard
>	**Tb**	159	810136.1	3.5				ug/L	792236	Standard
	Ho	165	230.0	24.5				ug/L	7	Standard
	Tl	203	286.7	27.5	**0.0315**	0.010	30.7	ug/L	9	Standard
	Tl	205	228.3	32.9	**0.0241**	0.011	44.8	ug/L	0	Standard
	Pb	206	10175.4	0.5	**1.9406**	0.024	1.2	ug/L	216	Standard
	Pb	207	8305.3	0.7	**1.7365**	0.026	1.5	ug/L	180	Standard
	Pb	208	35130.3	0.9	**1.8082**	0.024	1.3	ug/L	717	Standard
	U	238	1915.5	3.0	**0.2719**	0.010	3.6	ug/L	4	Standard
>	**Bi**	209	508087.3	0.9				ug/L	460343	Standard

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Na	23	3.3	86.6	**-0.2885**	9.302	3224.4	mg/L	0	Standard
Mg	24	30961.6	1.7	**40.8617**	0.835	2.0	mg/L	20	Standard
K	39	656.7	18.1	**4.6487**	0.870	18.7	mg/L	22	Standard
Ca	43	158.3	34.8	**22.7292**	12.064	53.1	mg/L	47	Standard
Fe	54	990.1	10.0	**0.6701**	0.088	13.2	mg/L	151	Standard
Fe	57	505.0	3.4	**0.8773**	0.078	8.8	mg/L	195	Standard
> **Sc-1**	45	30427.2	1.9				mg/L	29647	Standard
Cl	35	217230.9	2.7				ug/L	154152	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	12551.9	10.7				ug/L	1607	Standard
P	31	26334.5	1.0				ug/L	22752	Standard
S	34	4555.7	2.6				ug/L	5049	Standard
Sr	88	170.0	8.8				ug/L	87	Standard
C	12	793.4	8.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	96.7	15.8				mg/L	0	Standard
Dy	164	343.6	11.4				mg/L	10	Standard
Ho-1	165	230.0	24.5				mg/L	7	Standard
Er	166	203.3	15.0				mg/L	3	Standard
I	127	19776.3	5.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		161.427	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.831	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	102.475
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	110.371
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: L1606075401PS WG572869-01
Sample Date/Time: Thursday, June 16, 2016 19:31:38
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83402.3	0.7				ug/L	51024	Standard
	Be	9	63124.6	1.4	**45.9169**	0.909	2.0	ug/L	7	Standard
	Al	27	17971744.4	2.8	**77.2382**	2.615	3.4	ug/L	625	Standard
	Sc	45	30682.7	4.2				ug/L	29647	Standard
	Ti	47	2792.9	5.6	**9.1051**	0.451	5.0	ug/L	57	Standard
	V	51	382253.4	0.5	**53.4006**	0.320	0.6	ug/L	1142	Standard
	Cr	52	373919.2	1.3	**49.7147**	0.405	0.8	ug/L	6628	Standard
	Cr	53	49711.5	2.7	**52.8478**	1.467	2.8	ug/L	430	Standard
	Mn	55	406935.5	0.9	**68.1780**	0.090	0.1	ug/L	603	Standard
	Co	59	347435.1	1.8	**53.8207**	0.541	1.0	ug/L	237	Standard
	Ni	60	95683.2	0.8	**49.3519**	0.338	0.7	ug/L	141	Standard
	Cu	65	276145.4	0.3	**146.3258**	0.986	0.7	ug/L	109	Standard
	Zn	66	154951.3	0.2	**139.0713**	0.812	0.6	ug/L	159	Standard
>	**Ge**	72	475646.5	0.8				ug/L	474053	Standard
	As	75	55395.2	0.9	**49.8846**	0.262	0.5	ug/L	-34	Standard
	Se	82	5840.3	1.9	**52.4634**	0.711	1.4	ug/L	14	Standard
	Se-1	77	4138.2	1.9	**52.9629**	0.853	1.6	ug/L	55	Standard
>	**Ga**	71	441.7	10.5				mg/L	50	Standard
	Rb	85	63605.0	2.6				ug/L	20	Standard
	Y	89	384934.5	2.9				ug/L	376602	Standard
>	**Rh**	103	75.0	30.6				ug/L	17	Standard
	Mo	98	1506.0	0.6	**0.6341**	0.012	1.9	ug/L	8	Standard
	Ag	107	301051.6	0.9	**50.6101**	0.914	1.8	ug/L	81	Standard
	Cd	111	98227.5	0.6	**50.7616**	0.701	1.4	mg/L	3	Standard
	Cd	114	243020.5	0.8	**50.8000**	0.654	1.3	ug/L	7	Standard
>	**In**	115	523174.3	1.7				ug/L	524722	Standard
	Sn	118	4532.3	4.2	**0.7549**	0.047	6.3	ug/L	715	Standard
	Sb	123	222938.5	1.8	**51.1866**	1.325	2.6	ug/L	201	Standard
	Ba	135	127885.1	0.6	**70.7164**	1.199	1.7	ug/L	108	Standard
	Ce	140	8752.5	5.4				ug/L	30	Standard
>	**Tb**	159	809108.6	3.0				ug/L	792236	Standard
	Ho	165	236.7	12.0				ug/L	7	Standard
	Tl	203	379894.9	0.9	**44.3716**	1.016	2.3	ug/L	9	Standard
	Tl	205	341979.7	0.7	**46.9709**	1.246	2.7	ug/L	0	Standard
	Pb	206	255943.3	0.4	**49.4070**	1.138	2.3	ug/L	216	Standard
	Pb	207	222866.5	0.7	**47.2585**	1.195	2.5	ug/L	180	Standard
	Pb	208	910678.1	0.7	**47.5815**	1.216	2.6	ug/L	717	Standard
	U	238	341419.2	0.1	**49.0368**	0.922	1.9	ug/L	4	Standard
>	**Bi**	209	516066.4	2.0				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.2328**	9.040	172.8	mg/L	0	Standard
Mg	24	30580.8	0.9	**40.0684**	1.906	4.8	mg/L	20	Standard
K	39	683.3	11.4	**4.8016**	0.478	10.0	mg/L	22	Standard
Ca	43	166.7	18.3	**24.6755**	8.602	34.9	mg/L	47	Standard
Fe	54	991.6	6.4	**0.6639**	0.031	4.7	mg/L	151	Standard
Fe	57	553.3	10.9	**1.0152**	0.249	24.5	mg/L	195	Standard
> **Sc-1**	45	30682.7	4.2				mg/L	29647	Standard
Cl	35	218863.4	0.6				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	11077.4	2.3				ug/L	1607	Standard
P	31	26757.0	3.2				ug/L	22752	Standard
S	34	4704.1	1.5				ug/L	5049	Standard
Sr	88	165.0	10.9				ug/L	87	Standard
C	12	693.3	9.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	90.0	50.9				mg/L	0	Standard
Dy	164	284.7	30.5				mg/L	10	Standard
Ho-1	165	236.7	12.0				mg/L	7	Standard
Er	166	180.0	22.2				mg/L	3	Standard
I	127	17368.3	4.1				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		163.456	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.336	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.705	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	112.105	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1606075401PS WG572869-01
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Method 6020 - Summary Report

Sample ID: L1606075401SDL WG572869-02
Sample Date/Time: Thursday, June 16, 2016 19:34:50
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84174.9	1.5				ug/L	51024	Standard
	Be	9	35.0	14.3	**0.0042**	0.004	88.5	ug/L	7	Standard
	Al	27	3660235.8	1.3	**15.5808**	0.435	2.8	ug/L	625	Standard
	Sc	45	32820.5	2.8				ug/L	29647	Standard
	Ti	47	607.7	5.7	**1.8669**	0.107	5.7	ug/L	57	Standard
	V	51	4082.9	1.0	**0.4082**	0.006	1.6	ug/L	1142	Standard
	Cr	52	9894.2	1.7	**0.4222**	0.007	1.6	ug/L	6628	Standard
	Cr	53	1803.4	1.6	**1.5160**	0.013	0.8	ug/L	430	Standard
	Mn	55	21935.9	0.6	**3.5843**	0.077	2.1	ug/L	603	Standard
	Co	59	994.0	3.5	**0.1140**	0.003	2.9	ug/L	237	Standard
	Ni	60	1361.1	4.8	**0.6305**	0.026	4.2	ug/L	141	Standard
	Cu	65	40184.2	0.6	**21.4035**	0.546	2.6	ug/L	109	Standard
	Zn	66	22341.5	1.6	**20.0059**	0.236	1.2	ug/L	159	Standard
>	**Ge**	72	472090.7	2.0				ug/L	474053	Standard
	As	75	70.8	22.3	**0.0894**	0.015	16.6	ug/L	-34	Standard
	Se	82	38.3	18.3	**0.1793**	0.069	38.5	ug/L	14	Standard
	Se-1	77	126.7	16.1	**0.9154**	0.302	33.0	ug/L	55	Standard
>	**Ga**	71	170.0	15.6				mg/L	50	Standard
	Rb	85	13192.4	0.8				ug/L	20	Standard
	Y	89	392636.4	3.5				ug/L	376602	Standard
>	**Rh**	103	25.0	69.3				ug/L	17	Standard
	Mo	98	328.6	6.7	**0.1240**	0.011	8.7	ug/L	8	Standard
	Ag	107	258.3	8.0	**0.0280**	0.003	12.2	ug/L	81	Standard
	Cd	111	44.1	38.1	**0.0179**	0.008	45.4	mg/L	3	Standard
	Cd	114	91.6	47.0	**0.0140**	0.009	61.0	ug/L	7	Standard
>	**In**	115	563812.4	1.7				ug/L	524722	Standard
	Sn	118	1306.7	7.2	**0.1365**	0.020	14.5	ug/L	715	Standard
	Sb	123	2201.6	19.8	**0.4534**	0.085	18.8	ug/L	201	Standard
	Ba	135	8201.6	0.8	**4.1541**	0.077	1.9	ug/L	108	Standard
	Ce	140	1823.4	12.4				ug/L	30	Standard
>	**Tb**	159	855756.3	0.3				ug/L	792236	Standard
	Ho	165	45.0	11.1				ug/L	7	Standard
	Tl	203	135.3	4.5	**0.0137**	0.001	4.2	ug/L	9	Standard
	Tl	205	115.0	7.5	**0.0084**	0.001	13.4	ug/L	0	Standard
	Pb	206	2315.2	1.8	**0.4035**	0.003	0.8	ug/L	216	Standard
	Pb	207	1893.5	0.7	**0.3593**	0.003	0.7	ug/L	180	Standard
	Pb	208	7952.2	1.5	**0.3697**	0.005	1.4	ug/L	717	Standard
	U	238	417.0	3.9	**0.0540**	0.002	3.2	ug/L	4	Standard
>	**Bi**	209	501935.6	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	6119.6	2.2	**7.4516**	0.184	2.5	mg/L	20	Standard
K	39	163.3	26.0	**0.8923**	0.268	30.1	mg/L	22	Standard
Ca	43	58.3	13.1	**-0.8716**	1.621	186.0	mg/L	47	Standard
Fe	54	338.9	14.2	**0.1347**	0.043	31.9	mg/L	151	Standard
Fe	57	201.7	14.9	**-0.0843**	0.069	82.1	mg/L	195	Standard
> **Sc-1**	45	32820.5	2.8				mg/L	29647	Standard
Cl	35	191817.3	0.7				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	3760.5	5.3				ug/L	1607	Standard
P	31	26361.2	0.5				ug/L	22752	Standard
S	34	5075.9	2.0				ug/L	5049	Standard
Sr	88	91.7	22.0				ug/L	87	Standard
C	12	203.3	19.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	124.9				mg/L	0	Standard
Dy	164	57.6	17.4				mg/L	10	Standard
Ho-1	165	45.0	11.1				mg/L	7	Standard
Er	166	50.0	34.6				mg/L	3	Standard
I	127	5225.9	3.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		164.971	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.586	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.450
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.035
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 19:38:03
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75524.5	1.6				ug/L	51024	Standard
	Be	9	58757.1	2.5	**47.1905**	0.427	0.9	ug/L	7	Standard
	Al	27	8592238.6	0.7	**40.7782**	0.896	2.2	ug/L	625	Standard
	Sc	45	30089.9	1.6				ug/L	29647	Standard
	Ti	47	29681.7	0.7	**100.0625**	1.696	1.7	ug/L	57	Standard
	V	51	362295.0	0.1	**51.4700**	1.097	2.1	ug/L	1142	Standard
	Cr	52	362530.7	0.7	**49.0151**	1.305	2.7	ug/L	6628	Standard
	Cr	53	44988.4	1.6	**48.6083**	1.321	2.7	ug/L	430	Standard
	Mn	55	309292.7	1.9	**52.6874**	2.042	3.9	ug/L	603	Standard
	Co	59	348007.0	1.3	**54.8425**	1.822	3.3	ug/L	237	Standard
	Ni	60	92789.3	1.3	**48.6823**	1.578	3.2	ug/L	141	Standard
	Cu	65	90263.4	0.9	**48.6062**	1.434	3.0	ug/L	109	Standard
	Zn	66	54352.7	0.8	**49.4652**	1.123	2.3	ug/L	159	Standard
>	Ge	72	467786.9	2.0				ug/L	474053	Standard
	As	75	53262.0	0.4	**48.7810**	0.849	1.7	ug/L	-34	Standard
	Se	82	5640.4	1.6	**51.5356**	1.525	3.0	ug/L	14	Standard
	Se-1	77	3823.8	0.2	**49.7310**	1.059	2.1	ug/L	55	Standard
>	Ga	71	100.0	10.0				mg/L	50	Standard
	Rb	85	738.4	4.8				ug/L	20	Standard
	Y	89	389211.3	4.2				ug/L	376602	Standard
>	Rh	103	41.7	45.4				ug/L	17	Standard
	Mo	98	258410.6	0.4	**108.3200**	0.551	0.5	ug/L	8	Standard
	Ag	107	305258.5	0.7	**50.6525**	0.191	0.4	ug/L	81	Standard
	Cd	111	98577.0	0.6	**50.2856**	0.543	1.1	mg/L	3	Standard
	Cd	114	240956.8	0.8	**49.7198**	0.544	1.1	ug/L	7	Standard
>	In	115	529955.9	0.8				ug/L	524722	Standard
	Sn	118	279031.2	1.4	**51.1979**	0.292	0.6	ug/L	715	Standard
	Sb	123	225733.2	0.6	**51.1556**	0.269	0.5	ug/L	201	Standard
	Ba	135	88992.9	0.5	**48.5568**	0.564	1.2	ug/L	108	Standard
	Ce	140	98.3	54.8				ug/L	30	Standard
>	Tb	159	792501.9	1.8				ug/L	792236	Standard
	Ho	165	15.0	57.7				ug/L	7	Standard
	Tl	203	380190.8	0.8	**49.9446**	0.519	1.0	ug/L	9	Standard
	Tl	205	340670.7	0.6	**52.6256**	0.733	1.4	ug/L	0	Standard
	Pb	206	240176.7	0.8	**52.1541**	1.146	2.2	ug/L	216	Standard
	Pb	207	218112.4	0.3	**52.0255**	0.882	1.7	ug/L	180	Standard
	Pb	208	878933.8	0.7	**51.6572**	1.015	2.0	ug/L	717	Standard
	U	238	331188.2	0.5	**53.5069**	0.993	1.9	ug/L	4	Standard
>	Bi	209	458755.1	1.5				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	4233.9	2.0	**5.6123**	0.183	3.3	mg/L	20	Standard
K	39	481.7	4.2	**3.3891**	0.102	3.0	mg/L	22	Standard
Ca	43	51.7	40.3	**-1.3433**	4.578	340.8	mg/L	47	Standard
Fe	54	6013.8	2.7	**4.7022**	0.066	1.4	mg/L	151	Standard
Fe	57	1661.8	4.6	**4.4228**	0.232	5.3	mg/L	195	Standard
> **Sc-1**	45	30089.9	1.6				mg/L	29647	Standard
Cl	35	174583.8	2.5				ug/L	154152	Standard
Kr	83	2.7	108.3				ug/L	3	Standard
Br	81	1656.8	6.5				ug/L	1607	Standard
P	31	26137.5	2.6				ug/L	22752	Standard
S	34	5366.0	2.6				ug/L	5049	Standard
Sr	88	61.7	56.9				ug/L	87	Standard
C	12	73.3	56.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.5	105.0				mg/L	10	Standard
Ho-1	165	15.0	57.7				mg/L	7	Standard
Er	166	10.0					mg/L	3	Standard
I	127	1988.5	11.5				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	94.381		
	Al	27	81.556		
	Sc	45			
	Ti	47	100.063		
	V	51	102.940		
	Cr	52	98.030		
	Cr	53			
	Mn	55	105.375		
	Co	59	109.685		
	Ni	60	97.365		
	Cu	65	97.212		
	Zn	66	98.930		
>	Ge	72		98.678	
	As	75	97.562		
	Se	82	103.071		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	108.320		
Ag	107	101.305		
Cd	111	100.571		
Cd	114			
In	115		100.997	
Sn	118	102.396		
Sb	123	102.311		
Ba	135	97.114		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.889		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.314		
U	238	107.014		
Bi	209		99.655	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 19:41:14
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75737.2	0.8				ug/L	51024	Standard
	Be	9	36.7	64.4	**0.0082**	0.019	228.1	ug/L	7	Standard
	Al	27	2361.9	43.7	**0.0014**	0.005	343.6	ug/L	625	Standard
	Sc	45	30985.0	1.8				ug/L	29647	Standard
	Ti	47	35.3	4.3	**-0.0458**	0.006	13.8	ug/L	57	Standard
	V	51	1037.4	10.2	**-0.0196**	0.013	66.8	ug/L	1142	Standard
	Cr	52	6028.9	1.0	**-0.0922**	0.013	14.2	ug/L	6628	Standard
	Cr	53	500.0	1.7	**0.1170**	0.007	5.6	ug/L	430	Standard
	Mn	55	801.0	1.0	**0.0112**	0.003	28.0	ug/L	603	Standard
	Co	59	242.3	16.2	**-0.0028**	0.006	218.5	ug/L	237	Standard
	Ni	60	194.3	2.8	**0.0250**	0.004	15.2	ug/L	141	Standard
	Cu	65	159.3	5.3	**0.0203**	0.005	24.2	ug/L	109	Standard
	Zn	66	178.7	4.3	**-0.0675**	0.009	14.0	ug/L	159	Standard
>	**Ge**	72	464739.5	1.5				ug/L	474053	Standard
	As	75	7.6	225.8	**0.0322**	0.016	48.9	ug/L	-34	Standard
	Se	82	25.4	8.4	**0.0649**	0.020	31.4	ug/L	14	Standard
	Se-1	77	61.7	15.6	**0.0734**	0.117	159.7	ug/L	55	Standard
>	**Ga**	71	83.3	36.7				mg/L	50	Standard
	Rb	85	23.3	44.6				ug/L	20	Standard
	Y	89	383264.6	3.0				ug/L	376602	Standard
>	**Rh**	103	33.3	8.7				ug/L	17	Standard
	Mo	98	271.3	23.3	**0.1065**	0.026	24.6	ug/L	8	Standard
	Ag	107	117.3	15.5	**0.0068**	0.003	41.5	ug/L	81	Standard
	Cd	111	10.2	68.0	**0.0019**	0.003	183.2	mg/L	3	Standard
	Cd	114	44.5	65.5	**0.0053**	0.006	115.1	ug/L	7	Standard
>	**In**	115	537976.2	1.6				ug/L	524722	Standard
	Sn	118	825.0	17.9	**0.0600**	0.027	44.4	ug/L	715	Standard
	Sb	123	661.4	27.1	**0.1329**	0.040	29.8	ug/L	201	Standard
	Ba	135	101.0	9.8	**-0.0033**	0.006	183.9	ug/L	108	Standard
	Ce	140	31.7	79.5				ug/L	30	Standard
>	**Tb**	159	808787.7	0.7				ug/L	792236	Standard
	Ho	165	10.0					ug/L	7	Standard
	Tl	203	70.0	26.5	**0.0063**	0.002	37.5	ug/L	9	Standard
	Tl	205	83.3	42.1	**0.0046**	0.005	114.0	ug/L	0	Standard
	Pb	206	238.3	5.7	**-0.0064**	0.003	45.5	ug/L	216	Standard
	Pb	207	219.3	6.5	**-0.0033**	0.003	100.2	ug/L	180	Standard
	Pb	208	893.7	3.3	**-0.0072**	0.002	24.1	ug/L	717	Standard
	U	238	52.0	44.7	**0.0005**	0.004	686.7	ug/L	4	Standard
>	**Bi**	209	475308.5	0.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	48.3	26.0	**0.0174**	0.016	91.5	mg/L	20	Standard
K	39	13.3	114.6	**-0.1319**	0.110	83.1	mg/L	22	Standard
Ca	43	30.0	33.3	**-6.4628**	2.334	36.1	mg/L	47	Standard
Fe	54	156.0	6.5	**0.0065**	0.010	153.3	mg/L	151	Standard
Fe	57	171.7	23.4	**-0.1375**	0.125	91.1	mg/L	195	Standard
Sc-1	45	30985.0	1.8				mg/L	29647	Standard
Cl	35	175790.7	1.2				ug/L	154152	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	1680.1	2.7				ug/L	1607	Standard
P	31	26980.7	1.7				ug/L	22752	Standard
S	34	5335.9	0.5				ug/L	5049	Standard
Sr	88	53.3	19.5				ug/L	87	Standard
C	12	106.7	44.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.8	173.2				mg/L	10	Standard
Ho-1	165	10.0					mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	1423.4	7.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.035	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.526
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.251
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606075401SDL WG572869-02
Sample Date/Time: Thursday, June 16, 2016 19:44:27
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75285.0	2.4				ug/L	51024	Standard
	Be	9	28.3	27.0	**0.0018**	0.006	349.7	ug/L	7	Standard
	Al	27	678933.6	1.5	**3.2237**	0.074	2.3	ug/L	625	Standard
	Sc	45	30959.9	1.5				ug/L	29647	Standard
	Ti	47	147.0	11.8	**0.3390**	0.053	15.6	ug/L	57	Standard
	V	51	1608.8	3.2	**0.0651**	0.007	11.5	ug/L	1142	Standard
	Cr	52	6858.9	5.4	**0.0335**	0.040	118.0	ug/L	6628	Standard
	Cr	53	711.7	14.1	**0.3581**	0.110	30.8	ug/L	430	Standard
	Mn	55	5081.9	4.1	**0.7566**	0.025	3.3	ug/L	603	Standard
	Co	59	396.3	6.0	**0.0224**	0.003	13.2	ug/L	237	Standard
	Ni	60	495.3	27.9	**0.1866**	0.070	37.6	ug/L	141	Standard
	Cu	65	8119.8	4.3	**4.3896**	0.136	3.1	ug/L	109	Standard
	Zn	66	5396.3	4.5	**4.7897**	0.160	3.3	ug/L	159	Standard
>	**Ge**	72	459379.8	1.3				ug/L	474053	Standard
	As	75	30.4	143.6	**0.0532**	0.040	75.8	ug/L	-34	Standard
	Se	82	25.8	13.6	**0.0723**	0.035	48.4	ug/L	14	Standard
	Se-1	77	72.3	3.5	**0.2270**	0.021	9.3	ug/L	55	Standard
>	**Ga**	71	85.0	20.4				mg/L	50	Standard
	Rb	85	2591.9	3.3				ug/L	20	Standard
	Y	89	395811.5	2.1				ug/L	376602	Standard
>	**Rh**	103	21.7	48.0				ug/L	17	Standard
	Mo	98	145.0	5.9	**0.0524**	0.004	7.4	ug/L	8	Standard
	Ag	107	135.7	35.4	**0.0092**	0.008	85.2	ug/L	81	Standard
	Cd	111	32.4	102.6	**0.0126**	0.016	129.9	mg/L	3	Standard
	Cd	114	75.7	59.7	**0.0111**	0.009	81.1	ug/L	7	Standard
>	**In**	115	555911.8	0.9				ug/L	524722	Standard
	Sn	118	780.0	12.2	**0.0473**	0.018	37.9	ug/L	715	Standard
	Sb	123	369.0	35.2	**0.0651**	0.029	44.3	ug/L	201	Standard
	Ba	135	1717.1	2.7	**0.8366**	0.031	3.7	ug/L	108	Standard
	Ce	140	485.0	42.7				ug/L	30	Standard
>	**Tb**	159	813354.7	3.1				ug/L	792236	Standard
	Ho	165	18.3	87.7				ug/L	7	Standard
	Tl	203	138.7	62.7	**0.0153**	0.011	74.9	ug/L	9	Standard
	Tl	205	61.7	4.7	**0.0015**	0.001	38.9	ug/L	0	Standard
	Pb	206	674.3	7.5	**0.0868**	0.013	15.5	ug/L	216	Standard
	Pb	207	582.7	6.3	**0.0820**	0.010	12.7	ug/L	180	Standard
	Pb	208	2365.1	0.5	**0.0779**	0.003	3.7	ug/L	717	Standard
	U	238	97.7	25.6	**0.0079**	0.004	53.7	ug/L	4	Standard
>	**Bi**	209	470182.7	2.2				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1275.1	3.2	**1.6099**	0.030	1.9	mg/L	20	Standard
K	39	51.7	39.1	**0.1491**	0.148	99.3	mg/L	22	Standard
Ca	43	31.7	9.1	**-6.0988**	0.709	11.6	mg/L	47	Standard
Fe	54	199.5	21.2	**0.0405**	0.034	83.1	mg/L	151	Standard
Fe	57	250.0	6.0	**0.0939**	0.035	37.2	mg/L	195	Standard
> **Sc-1**	45	30959.9	1.5				mg/L	29647	Standard
Cl	35	180506.2	0.5				ug/L	154152	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	1983.5	10.4				ug/L	1607	Standard
P	31	26828.7	3.3				ug/L	22752	Standard
S	34	5309.3	3.4				ug/L	5049	Standard
Sr	88	65.0	13.3				ug/L	87	Standard
C	12	93.3	12.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	25.5	47.4				mg/L	10	Standard
Ho-1	165	18.3	87.7				mg/L	7	Standard
Er	166	23.3	49.5				mg/L	3	Standard
I	127	1906.8	3.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		147.548	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.905	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	105.944
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.137
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606061601
Sample Date/Time: Thursday, June 16, 2016 19:47:38
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76809.2	0.5				ug/L	51024	Standard
	Be	9	595.0	11.7	**0.4492**	0.056	12.5	ug/L	7	Standard
	Al	27	4369598.1	0.7	**20.3813**	0.060	0.3	ug/L	625	Standard
	Sc	45	31414.2	1.5				ug/L	29647	Standard
	Ti	47	432.0	2.5	**1.3649**	0.030	2.2	ug/L	57	Standard
	V	51	-3320.7	72.4	**-0.6635**	0.356	53.6	ug/L	1142	Standard
	Cr	52	750024.0	0.5	**107.4925**	0.659	0.6	ug/L	6628	Standard
	Cr	53	103144.9	1.1	**117.5491**	0.704	0.6	ug/L	430	Standard
	Mn	55	749735.1	1.9	**134.2073**	3.843	2.9	ug/L	603	Standard
	Co	59	100276.4	1.1	**16.5512**	0.155	0.9	ug/L	237	Standard
	Ni	60	309778.2	0.7	**170.7218**	1.330	0.8	ug/L	141	Standard
	Cu	65	7659.6	1.1	**4.2680**	0.087	2.0	ug/L	109	Standard
	Zn	66	11362.9	1.9	**10.6718**	0.281	2.6	ug/L	159	Standard
>	**Ge**	72	445665.4	0.9				ug/L	474053	Standard
	As	75	686.6	13.7	**0.6845**	0.089	13.0	ug/L	-34	Standard
	Se	82	286.4	5.1	**2.5855**	0.133	5.1	ug/L	14	Standard
	Se-1	77	537.0	3.8	**6.6929**	0.237	3.5	ug/L	55	Standard
>	**Ga**	71	176.7	15.6				mg/L	50	Standard
	Rb	85	2721.9	5.5				ug/L	20	Standard
	Y	89	383236.3	0.5				ug/L	376602	Standard
>	**Rh**	103	50.0	36.1				ug/L	17	Standard
	Mo	98	2500.1	3.0	**1.0779**	0.045	4.2	ug/L	8	Standard
	Ag	107	102.0	12.9	**0.0051**	0.002	37.3	ug/L	81	Standard
	Cd	111	267.3	12.2	**0.1375**	0.014	10.4	mg/L	3	Standard
	Cd	114	603.9	11.8	**0.1249**	0.014	11.6	ug/L	7	Standard
>	**In**	115	512847.6	2.1				ug/L	524722	Standard
	Sn	118	1035.0	6.1	**0.1070**	0.008	7.4	ug/L	715	Standard
	Sb	123	393.5	17.2	**0.0775**	0.017	21.9	ug/L	201	Standard
	Ba	135	97635.9	1.0	**55.0639**	0.765	1.4	ug/L	108	Standard
	Ce	140	12988.9	1.1				ug/L	30	Standard
>	**Tb**	159	771242.3	0.7				ug/L	792236	Standard
	Ho	165	400.0	11.9				ug/L	7	Standard
	Tl	203	321.0	11.6	**0.0421**	0.006	13.3	ug/L	9	Standard
	Tl	205	538.3	98.5	**0.0807**	0.088	108.8	ug/L	0	Standard
	Pb	206	832.7	2.1	**0.1353**	0.003	2.1	ug/L	216	Standard
	Pb	207	700.3	3.6	**0.1232**	0.007	5.6	ug/L	180	Standard
	Pb	208	3407.2	29.9	**0.1547**	0.065	42.3	ug/L	717	Standard
	U	238	614.7	59.9	**0.0979**	0.064	65.5	ug/L	4	Standard
>	**Bi**	209	433217.0	0.9				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.3851**	8.776	163.0	mg/L	0	Standard
Mg	24	53123.0	1.4	**67.9338**	1.263	1.9	mg/L	20	Standard
K	39	26.7	39.0	**-0.0366**	0.073	198.4	mg/L	22	Standard
Ca	43	46.7	27.0	**-2.9236**	2.617	89.5	mg/L	47	Standard
Fe	54	466.9	13.1	**0.2433**	0.047	19.5	mg/L	151	Standard
Fe	57	296.7	18.2	**0.2213**	0.168	75.8	mg/L	195	Standard
Sc-1	45	31414.2	1.5				mg/L	29647	Standard
Cl	35	180426.0	1.3				ug/L	154152	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	63948.0	2.0				ug/L	1607	Standard
P	31	35653.6	1.9				ug/L	22752	Standard
S	34	4944.1	4.8				ug/L	5049	Standard
Sr	88	168.3	28.8				ug/L	87	Standard
C	12	176.7	33.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	644.2	6.3				mg/L	10	Standard
Ho-1	165	400.0	11.9				mg/L	7	Standard
Er	166	330.0	18.9				mg/L	3	Standard
I	127	86114.1	2.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		150.535	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.012	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.737
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.107
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
V 51 Lower	V	51	
Cr 52 Upper, S, EEE	Cr	52	

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Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Ni 60 Upper, S, EEE	Ni	60

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Method 6020 - Summary Report

Sample ID: L1606061602
Sample Date/Time: Thursday, June 16, 2016 19:50:50
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75748.9	1.4				ug/L	51024	Standard
	Be	9	48.3	39.2	**0.0176**	0.015	86.0	ug/L	7	Standard
	Al	27	19995852.4	2.5	**94.6007**	1.188	1.3	ug/L	625	Standard
	Sc	45	30053.1	1.9				ug/L	29647	Standard
	Ti	47	826.4	6.6	**2.7223**	0.220	8.1	ug/L	57	Standard
	V	51	3891.9	11.8	**0.4057**	0.069	17.0	ug/L	1142	Standard
	Cr	52	13157.7	1.1	**0.9469**	0.019	2.0	ug/L	6628	Standard
	Cr	53	8188.9	18.5	**8.8148**	1.816	20.6	ug/L	430	Standard
	Mn	55	3666201.0	1.1	**647.3586**	10.609	1.6	ug/L	603	Standard
	Co	59	2221.5	3.8	**0.3212**	0.018	5.6	ug/L	237	Standard
	Ni	60	1892.5	1.4	**0.9508**	0.014	1.5	ug/L	141	Standard
	Cu	65	951.0	2.0	**0.4643**	0.013	2.7	ug/L	109	Standard
	Zn	66	2843.9	2.3	**2.4576**	0.033	1.3	ug/L	159	Standard
>	**Ge**	72	452100.4	1.1				ug/L	474053	Standard
	As	75	2291.3	4.3	**2.1952**	0.104	4.7	ug/L	-34	Standard
	Se	82	731.9	2.7	**6.7722**	0.229	3.4	ug/L	14	Standard
	Se-1	77	824.7	4.7	**10.5195**	0.619	5.9	ug/L	55	Standard
>	**Ga**	71	260.0	5.8				mg/L	50	Standard
	Rb	85	20994.5	2.7				ug/L	20	Standard
	Y	89	374644.2	1.4				ug/L	376602	Standard
>	**Rh**	103	175.0	2.9				ug/L	17	Standard
	Mo	98	1524.1	2.8	**0.6737**	0.024	3.5	ug/L	8	Standard
	Ag	107	85.0	16.3	**0.0027**	0.002	93.3	ug/L	81	Standard
	Cd	111	31.4	24.1	**0.0138**	0.004	30.8	mg/L	3	Standard
	Cd	114	85.3	56.7	**0.0150**	0.011	72.0	ug/L	7	Standard
>	**In**	115	498521.0	0.9				ug/L	524722	Standard
	Sn	118	2845.3	2.5	**0.4666**	0.019	4.0	ug/L	715	Standard
	Sb	123	273.4	5.3	**0.0511**	0.003	6.4	ug/L	201	Standard
	Ba	135	433999.4	0.6	**251.9694**	2.189	0.9	ug/L	108	Standard
	Ce	140	9039.4	2.4				ug/L	30	Standard
>	**Tb**	159	767594.4	2.3				ug/L	792236	Standard
	Ho	165	158.3	4.8				ug/L	7	Standard
	Tl	203	240.0	18.3	**0.0311**	0.007	21.8	ug/L	9	Standard
	Tl	205	225.0	23.4	**0.0292**	0.009	30.5	ug/L	0	Standard
	Pb	206	742.7	3.3	**0.1155**	0.009	7.8	ug/L	216	Standard
	Pb	207	635.7	4.8	**0.1077**	0.010	9.0	ug/L	180	Standard
	Pb	208	2598.4	5.5	**0.1049**	0.012	11.7	ug/L	717	Standard
	U	238	474.7	5.4	**0.0741**	0.006	7.6	ug/L	4	Standard
>	**Bi**	209	431218.2	2.1				ug/L	460343	Standard

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Na	23	3.3	86.6	**-0.3991**	9.400	2355.4	mg/L	0	Standard
Mg	24	98133.5	1.2	**131.2521**	3.929	3.0	mg/L	20	Standard
K	39	131.7	7.9	**0.7615**	0.060	7.9	mg/L	22	Standard
Ca	43	168.3	4.5	**25.6161**	1.859	7.3	mg/L	47	Standard
Fe	54	29671.0	1.6	**23.6871**	0.442	1.9	mg/L	151	Standard
Fe	57	7898.7	1.9	**23.4845**	0.677	2.9	mg/L	195	Standard
> **Sc-1**	45	30053.1	1.9				mg/L	29647	Standard
Cl	35	175045.0	2.3				ug/L	154152	Standard
Kr	83	2.7	43.3				ug/L	3	Standard
Br	81	182091.9	3.5				ug/L	1607	Standard
P	31	33082.7	1.0				ug/L	22752	Standard
S	34	5377.6	4.5				ug/L	5049	Standard
Sr	88	866.7	3.5				ug/L	87	Standard
C	12	170.0	42.4				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	258.0	17.6				mg/L	10	Standard
Ho-1	165	158.3	4.8				mg/L	7	Standard
Er	166	180.0	25.5				mg/L	3	Standard
I	127	271715.3	7.5				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		148.457	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.369	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.007
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.673
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606061602
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Method 6020 - Summary Report

Sample ID: L1606061604
Sample Date/Time: Thursday, June 16, 2016 19:54:01
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73209.8	0.9				ug/L	51024	Standard
	Be	9	28.3	50.9	**0.0025**	0.012	495.3	ug/L	7	Standard
	Al	27	1228067.5	0.3	**6.0032**	0.043	0.7	ug/L	625	Standard
	Sc	45	32386.3	3.3				ug/L	29647	Standard
	Ti	47	334.0	17.6	**0.9832**	0.212	21.6	ug/L	57	Standard
	V	51	1789.1	4.9	**0.0914**	0.018	19.4	ug/L	1142	Standard
	Cr	52	14674.8	1.1	**1.1301**	0.065	5.7	ug/L	6628	Standard
	Cr	53	2643.6	3.1	**2.5012**	0.083	3.3	ug/L	430	Standard
	Mn	55	705467.3	1.0	**122.4541**	1.381	1.1	ug/L	603	Standard
	Co	59	3430.7	0.7	**0.5095**	0.015	2.8	ug/L	237	Standard
	Ni	60	3839.5	0.3	**1.9758**	0.045	2.3	ug/L	141	Standard
	Cu	65	1168.4	5.1	**0.5751**	0.034	5.9	ug/L	109	Standard
	Zn	66	2259.5	2.7	**1.8718**	0.099	5.3	ug/L	159	Standard
>	**Ge**	72	459550.4	2.1				ug/L	474053	Standard
	As	75	131.8	16.1	**0.1477**	0.018	12.1	ug/L	-34	Standard
	Se	82	59.0	11.8	**0.3811**	0.061	16.1	ug/L	14	Standard
	Se-1	77	99.0	11.6	**0.5837**	0.132	22.6	ug/L	55	Standard
>	**Ga**	71	130.0	11.5				mg/L	50	Standard
	Rb	85	9683.1	3.7				ug/L	20	Standard
	Y	89	395829.7	1.7				ug/L	376602	Standard
>	**Rh**	103	50.0	26.5				ug/L	17	Standard
	Mo	98	129.8	4.6	**0.0461**	0.003	6.2	ug/L	8	Standard
	Ag	107	119.7	9.2	**0.0065**	0.002	28.9	ug/L	81	Standard
	Cd	111	317.1	3.2	**0.1502**	0.006	3.9	mg/L	3	Standard
	Cd	114	681.4	6.2	**0.1296**	0.010	7.4	ug/L	7	Standard
>	**In**	115	558854.3	1.4				ug/L	524722	Standard
	Sn	118	820.0	7.6	**0.0535**	0.012	21.9	ug/L	715	Standard
	Sb	123	282.5	7.4	**0.0459**	0.004	9.0	ug/L	201	Standard
	Ba	135	35268.3	1.2	**18.2144**	0.408	2.2	ug/L	108	Standard
	Ce	140	2163.5	3.8				ug/L	30	Standard
>	**Tb**	159	825700.5	0.4				ug/L	792236	Standard
	Ho	165	51.7	14.8				ug/L	7	Standard
	Tl	203	156.7	22.7	**0.0174**	0.005	26.5	ug/L	9	Standard
	Tl	205	173.3	46.6	**0.0182**	0.012	67.6	ug/L	0	Standard
	Pb	206	424.7	5.7	**0.0331**	0.006	16.7	ug/L	216	Standard
	Pb	207	356.0	3.9	**0.0286**	0.004	13.3	ug/L	180	Standard
	Pb	208	1553.0	4.6	**0.0306**	0.005	14.8	ug/L	717	Standard
	U	238	81.0	68.7	**0.0051**	0.009	171.7	ug/L	4	Standard
>	**Bi**	209	473355.3	0.7				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.6238**	8.363	148.7	mg/L	0	Standard
Mg	24	2843.6	1.0	**3.4857**	0.082	2.3	mg/L	20	Standard
K	39	78.3	14.7	**0.3207**	0.096	29.9	mg/L	22	Standard
Ca	43	50.0	20.0	**-2.4661**	2.354	95.5	mg/L	47	Standard
Fe	54	2460.3	3.7	**1.7187**	0.119	6.9	mg/L	151	Standard
Fe	57	721.7	11.5	**1.4022**	0.269	19.2	mg/L	195	Standard
Sc-1	45	32386.3	3.3				mg/L	29647	Standard
Cl	35	167245.3	0.7				ug/L	154152	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	10406.9	6.9				ug/L	1607	Standard
P	31	27868.9	1.7				ug/L	22752	Standard
S	34	4945.8	3.9				ug/L	5049	Standard
Sr	88	151.7	1.9				ug/L	87	Standard
C	12	130.0	26.6				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	93.0	49.2				mg/L	10	Standard
Ho-1	165	51.7	14.8				mg/L	7	Standard
Er	166	76.7	32.8				mg/L	3	Standard
I	127	108192.1	4.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		143.481	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.941	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.505
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.827
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606064901
Sample Date/Time: Thursday, June 16, 2016 19:57:13
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73899.8	1.9				ug/L	51024	Standard
	Be	9	28.3	20.4	**0.0021**	0.004	205.1	ug/L	7	Standard
	Al	27	17068640.1	0.5	**82.8031**	1.944	2.3	ug/L	625	Standard
	Sc	45	31098.6	0.8				ug/L	29647	Standard
	Ti	47	2220.5	15.6	**7.6952**	1.219	15.8	ug/L	57	Standard
	V	51	3330.6	5.2	**0.3294**	0.025	7.6	ug/L	1142	Standard
	Cr	52	12294.7	1.4	**0.8476**	0.021	2.5	ug/L	6628	Standard
	Cr	53	3545.4	12.3	**3.6195**	0.491	13.6	ug/L	430	Standard
	Mn	55	65149.4	0.9	**11.5346**	0.133	1.2	ug/L	603	Standard
	Co	59	1855.8	3.0	**0.2656**	0.010	3.6	ug/L	237	Standard
	Ni	60	2852.6	1.9	**1.4936**	0.030	2.0	ug/L	141	Standard
	Cu	65	55047.8	0.2	**31.0509**	0.094	0.3	ug/L	109	Standard
	Zn	66	20763.6	1.9	**19.6724**	0.380	1.9	ug/L	159	Standard
>	**Ge**	72	446059.8	0.2				ug/L	474053	Standard
	As	75	230.9	30.1	**0.2467**	0.067	27.2	ug/L	-34	Standard
	Se	82	114.1	10.5	**0.9274**	0.115	12.4	ug/L	14	Standard
	Se-1	77	255.7	12.3	**2.7929**	0.427	15.3	ug/L	55	Standard
>	**Ga**	71	203.3	6.2				mg/L	50	Standard
	Rb	85	64731.4	2.1				ug/L	20	Standard
	Y	89	406326.7	3.3				ug/L	376602	Standard
>	**Rh**	103	48.3	21.5				ug/L	17	Standard
	Mo	98	623.5	1.9	**0.2468**	0.013	5.5	ug/L	8	Standard
	Ag	107	134.0	13.8	**0.0091**	0.002	26.2	ug/L	81	Standard
	Cd	111	49.6	6.5	**0.0211**	0.001	3.6	mg/L	3	Standard
	Cd	114	143.2	27.3	**0.0245**	0.007	27.9	ug/L	7	Standard
>	**In**	115	549535.8	3.5				ug/L	524722	Standard
	Sn	118	1373.4	4.5	**0.1543**	0.017	10.8	ug/L	715	Standard
	Sb	123	311.5	9.8	**0.0535**	0.009	17.0	ug/L	201	Standard
	Ba	135	22377.2	0.2	**11.7401**	0.432	3.7	ug/L	108	Standard
	Ce	140	280.0	11.2				ug/L	30	Standard
>	**Tb**	159	815853.8	2.8				ug/L	792236	Standard
	Ho	165	18.3	95.8				ug/L	7	Standard
	Tl	203	193.0	9.7	**0.0237**	0.002	10.2	ug/L	9	Standard
	Tl	205	165.0	24.1	**0.0186**	0.007	36.0	ug/L	0	Standard
	Pb	206	1296.1	2.0	**0.2354**	0.004	1.8	ug/L	216	Standard
	Pb	207	1110.4	3.4	**0.2207**	0.006	2.5	ug/L	180	Standard
	Pb	208	4630.9	2.3	**0.2243**	0.008	3.6	ug/L	717	Standard
	U	238	1289.4	2.5	**0.2082**	0.002	1.1	ug/L	4	Standard
>	**Bi**	209	442943.4	2.1				ug/L	460343	Standard

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Na	23	6.7	86.6	**-10.3108**	17.983	174.4	mg/L	0	Standard
Mg	24	29769.2	2.1	**38.4319**	0.806	2.1	mg/L	20	Standard
K	39	731.7	8.5	**5.0889**	0.443	8.7	mg/L	22	Standard
Ca	43	196.7	13.0	**30.5875**	5.364	17.5	mg/L	47	Standard
Fe	54	365.7	3.5	**0.1685**	0.008	4.7	mg/L	151	Standard
Fe	57	391.7	14.9	**0.5082**	0.163	32.1	mg/L	195	Standard
> **Sc-1**	45	31098.6	0.8				mg/L	29647	Standard
Cl	35	222953.8	0.9				ug/L	154152	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	17977.3	3.7				ug/L	1607	Standard
P	31	27297.9	1.8				ug/L	22752	Standard
S	34	5117.5	2.7				ug/L	5049	Standard
Sr	88	170.0	7.8				ug/L	87	Standard
C	12	300.0	21.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	86.6				mg/L	0	Standard
Dy	164	34.9	61.4				mg/L	10	Standard
Ho-1	165	18.3	95.8				mg/L	7	Standard
Er	166	36.7	41.7				mg/L	3	Standard
I	127	36641.0	3.4				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		144.833	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		94.095	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	104.729	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.220	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606065001
Sample Date/Time: Thursday, June 16, 2016 20:00:24
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72946.9	1.0				ug/L	51024	Standard
	Be	9	18.3	31.5	**-0.0058**	0.005	85.0	ug/L	7	Standard
	Al	27	25893242.1	1.3	**127.2227**	1.176	0.9	ug/L	625	Standard
	Sc	45	31297.3	0.7				ug/L	29647	Standard
	Ti	47	363.0	6.9	**1.0820**	0.092	8.5	ug/L	57	Standard
	V	51	26598.7	23.4	**3.6881**	0.888	24.1	ug/L	1142	Standard
	Cr	52	3600275.3	0.7	**503.8543**	2.642	0.5	ug/L	6628	Standard
	Cr	53	441968.5	0.3	**489.9131**	0.755	0.2	ug/L	430	Standard
	Mn	55	3750356.5	0.6	**651.5298**	1.262	0.2	ug/L	603	Standard
	Co	59	140636.7	1.1	**22.5301**	0.278	1.2	ug/L	237	Standard
	Ni	60	1491493.6	1.2	**797.5118**	6.177	0.8	ug/L	141	Standard
	Cu	65	3267.0	3.0	**1.7266**	0.047	2.7	ug/L	109	Standard
	Zn	66	3425.7	1.8	**2.9563**	0.067	2.3	ug/L	159	Standard
>	**Ge**	72	459475.2	0.5				ug/L	474053	Standard
	As	75	556.7	15.6	**0.5440**	0.082	15.1	ug/L	-34	Standard
	Se	82	222.9	6.2	**1.9114**	0.137	7.2	ug/L	14	Standard
	Se-1	77	721.0	7.2	**8.9403**	0.656	7.3	ug/L	55	Standard
>	**Ga**	71	291.7	10.5				mg/L	50	Standard
	Rb	85	7967.1	5.2				ug/L	20	Standard
	Y	89	376366.8	3.1				ug/L	376602	Standard
>	**Rh**	103	188.3	17.7				ug/L	17	Standard
	Mo	98	4038.0	0.7	**1.7616**	0.010	0.6	ug/L	8	Standard
	Ag	107	92.0	19.6	**0.0036**	0.003	90.6	ug/L	81	Standard
	Cd	111	324.1	6.9	**0.1694**	0.013	7.5	mg/L	3	Standard
	Cd	114	819.8	8.2	**0.1728**	0.014	8.3	ug/L	7	Standard
>	**In**	115	507645.2	1.3				ug/L	524722	Standard
	Sn	118	691.7	9.8	**0.0432**	0.012	27.3	ug/L	715	Standard
	Sb	123	362.3	12.4	**0.0710**	0.011	16.1	ug/L	201	Standard
	Ba	135	933624.2	0.5	**532.4126**	8.811	1.7	ug/L	108	Standard
	Ce	140	3360.4	5.9				ug/L	30	Standard
>	**Tb**	159	768822.1	0.7				ug/L	792236	Standard
	Ho	165	56.7	48.6				ug/L	7	Standard
	Tl	203	246.7	11.1	**0.0318**	0.003	11.0	ug/L	9	Standard
	Tl	205	253.3	31.2	**0.0337**	0.013	38.1	ug/L	0	Standard
	Pb	206	530.7	3.2	**0.0660**	0.004	5.7	ug/L	216	Standard
	Pb	207	474.0	4.9	**0.0662**	0.005	7.1	ug/L	180	Standard
	Pb	208	1991.7	8.7	**0.0664**	0.011	16.6	ug/L	717	Standard
	U	238	2713.6	2.5	**0.4575**	0.014	3.0	ug/L	4	Standard
>	**Bi**	209	432460.1	1.2				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.2420**	9.024	172.2	mg/L	0	Standard
Mg	24	90814.7	0.4	**116.5891**	0.672	0.6	mg/L	20	Standard
K	39	136.7	18.8	**0.7598**	0.192	25.3	mg/L	22	Standard
Ca	43	113.3	24.3	**11.8769**	5.966	50.2	mg/L	47	Standard
Fe	54	8598.8	2.1	**6.5077**	0.130	2.0	mg/L	151	Standard
Fe	57	2420.2	4.0	**6.4526**	0.333	5.2	mg/L	195	Standard
> **Sc-1**	45	31297.3	0.7				mg/L	29647	Standard
Cl	35	172318.1	2.4				ug/L	154152	Standard
Kr	83	2.7	43.3				ug/L	3	Standard
Br	81	54798.9	1.9				ug/L	1607	Standard
P	31	33010.9	0.2				ug/L	22752	Standard
S	34	5099.2	1.3				ug/L	5049	Standard
Sr	88	600.0	8.0				ug/L	87	Standard
C	12	176.7	34.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	96.6	30.8				mg/L	10	Standard
Ho-1	165	56.7	48.6				mg/L	7	Standard
Er	166	70.0	14.3				mg/L	3	Standard
I	127	400706.8	6.8				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		142.965	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.925	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.746
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.943
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Cr 52 Upper, S, EEE	Cr	52	

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Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Ni 60 Upper, S, EEE	Ni	60
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606065002
Sample Date/Time: Thursday, June 16, 2016 20:03:36
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74923.1	0.9				ug/L	51024	Standard
	Be	9	10.0	86.6	**-0.0129**	0.007	54.5	ug/L	7	Standard
	Al	27	11445723.9	1.0	**54.7538**	1.040	1.9	ug/L	625	Standard
	Sc	45	33881.2	2.3				ug/L	29647	Standard
	Ti	47	432.3	7.3	**1.3384**	0.080	6.0	ug/L	57	Standard
	V	51	2150.8	34.9	**0.1495**	0.116	77.8	ug/L	1142	Standard
	Cr	52	17737.4	0.6	**1.5921**	0.067	4.2	ug/L	6628	Standard
	Cr	53	10231.8	13.3	**11.0925**	1.758	15.8	ug/L	430	Standard
	Mn	55	1115003.1	1.6	**196.2265**	7.080	3.6	ug/L	603	Standard
	Co	59	2902.3	1.7	**0.4307**	0.009	2.2	ug/L	237	Standard
	Ni	60	3566.1	4.1	**1.8534**	0.037	2.0	ug/L	141	Standard
	Cu	65	1206.0	1.3	**0.6044**	0.011	1.8	ug/L	109	Standard
	Zn	66	2690.2	1.2	**2.3054**	0.087	3.8	ug/L	159	Standard
>	**Ge**	72	453598.8	2.2				ug/L	474053	Standard
	As	75	280.7	13.7	**0.2904**	0.040	13.9	ug/L	-34	Standard
	Se	82	128.1	7.4	**1.0434**	0.112	10.7	ug/L	14	Standard
	Se-1	77	619.3	6.2	**7.6936**	0.694	9.0	ug/L	55	Standard
>	**Ga**	71	105.0	17.2				mg/L	50	Standard
	Rb	85	9451.3	1.9				ug/L	20	Standard
	Y	89	391791.6	1.5				ug/L	376602	Standard
>	**Rh**	103	140.0	6.2				ug/L	17	Standard
	Mo	98	235.6	9.4	**0.0929**	0.011	11.9	ug/L	8	Standard
	Ag	107	90.7	15.8	**0.0026**	0.002	86.9	ug/L	81	Standard
	Cd	111	142.6	5.5	**0.0692**	0.005	7.6	mg/L	3	Standard
	Cd	114	324.8	13.1	**0.0629**	0.009	15.1	ug/L	7	Standard
>	**In**	115	532666.5	2.0				ug/L	524722	Standard
	Sn	118	630.0	6.3	**0.0258**	0.009	33.7	ug/L	715	Standard
	Sb	123	425.3	4.8	**0.0811**	0.005	5.7	ug/L	201	Standard
	Ba	135	317814.3	1.2	**172.6789**	1.361	0.8	ug/L	108	Standard
	Ce	140	4260.6	3.9				ug/L	30	Standard
>	**Tb**	159	822106.7	0.8				ug/L	792236	Standard
	Ho	165	98.3	10.6				ug/L	7	Standard
	Tl	203	236.3	5.5	**0.0291**	0.002	5.8	ug/L	9	Standard
	Tl	205	180.0	7.3	**0.0206**	0.002	9.9	ug/L	0	Standard
	Pb	206	404.0	5.2	**0.0334**	0.005	14.3	ug/L	216	Standard
	Pb	207	342.3	3.2	**0.0297**	0.003	8.7	ug/L	180	Standard
	Pb	208	1396.4	3.4	**0.0260**	0.003	10.6	ug/L	717	Standard
	U	238	1612.4	1.0	**0.2586**	0.003	1.2	ug/L	4	Standard
>	**Bi**	209	449004.5	0.2				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	75132.5	1.7	**89.1275**	2.931	3.3	mg/L	20	Standard
K	39	103.3	14.8	**0.4601**	0.085	18.5	mg/L	22	Standard
Ca	43	118.3	6.5	**11.0359**	2.111	19.1	mg/L	47	Standard
Fe	54	299.8	4.4	**0.0986**	0.014	14.4	mg/L	151	Standard
Fe	57	295.0	19.5	**0.1539**	0.166	108.1	mg/L	195	Standard
Sc-1	45	33881.2	2.3				mg/L	29647	Standard
Cl	35	177255.5	0.3				ug/L	154152	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	27852.3	4.5				ug/L	1607	Standard
P	31	36888.2	1.8				ug/L	22752	Standard
S	34	5134.2	5.6				ug/L	5049	Standard
Sr	88	336.7	12.1				ug/L	87	Standard
C	12	236.7	6.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	125.5	16.3				mg/L	10	Standard
Ho-1	165	98.3	10.6				mg/L	7	Standard
Er	166	93.3	16.4				mg/L	3	Standard
I	127	795775.9	5.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		146.839	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.685	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.514	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.537	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606065003
Sample Date/Time: Thursday, June 16, 2016 20:06:47
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73049.1	2.8				ug/L	51024	Standard
	Be	9	56.7	53.2	**0.0258**	0.025	96.4	ug/L	7	Standard
	Al	27	6795723.2	1.7	**33.3429**	0.423	1.3	ug/L	625	Standard
	Sc	45	32349.5	2.7				ug/L	29647	Standard
	Ti	47	1362.4	1.5	**4.5490**	0.135	3.0	ug/L	57	Standard
	V	51	-1621.9	225.1	**-0.4056**	0.530	130.6	ug/L	1142	Standard
	Cr	52	1449129.7	0.3	**203.6270**	3.465	1.7	ug/L	6628	Standard
	Cr	53	186956.4	0.3	**208.3861**	2.811	1.3	ug/L	430	Standard
	Mn	55	969240.4	1.1	**169.4166**	2.152	1.3	ug/L	603	Standard
	Co	59	17799.4	0.3	**2.8346**	0.031	1.1	ug/L	237	Standard
	Ni	60	82918.9	0.7	**44.5655**	0.800	1.8	ug/L	141	Standard
	Cu	65	12426.8	2.2	**6.7981**	0.081	1.2	ug/L	109	Standard
	Zn	66	16815.7	1.7	**15.5225**	0.331	2.1	ug/L	159	Standard
>	**Ge**	72	456450.5	1.3				ug/L	474053	Standard
	As	75	1966.3	2.2	**1.8692**	0.017	0.9	ug/L	-34	Standard
	Se	82	293.5	2.7	**2.5875**	0.085	3.3	ug/L	14	Standard
	Se-1	77	432.0	3.1	**5.0994**	0.235	4.6	ug/L	55	Standard
>	**Ga**	71	736.7	9.9				mg/L	50	Standard
	Rb	85	15683.1	2.3				ug/L	20	Standard
	Y	89	407716.2	0.3				ug/L	376602	Standard
>	**Rh**	103	95.0	13.9				ug/L	17	Standard
	Mo	98	6403.0	2.3	**2.6056**	0.071	2.7	ug/L	8	Standard
	Ag	107	109.7	3.7	**0.0054**	0.001	15.4	ug/L	81	Standard
	Cd	111	1059.3	1.9	**0.5225**	0.015	2.8	mg/L	3	Standard
	Cd	114	2761.6	6.2	**0.5508**	0.040	7.3	ug/L	7	Standard
>	**In**	115	544816.8	1.1				ug/L	524722	Standard
	Sn	118	1191.7	7.7	**0.1237**	0.018	14.6	ug/L	715	Standard
	Sb	123	304.1	8.3	**0.0523**	0.006	10.7	ug/L	201	Standard
	Ba	135	110831.6	1.3	**58.8309**	0.136	0.2	ug/L	108	Standard
	Ce	140	24424.7	1.3				ug/L	30	Standard
>	**Tb**	159	809371.8	1.0				ug/L	792236	Standard
	Ho	165	351.7	3.0				ug/L	7	Standard
	Tl	203	219.0	7.6	**0.0268**	0.002	7.8	ug/L	9	Standard
	Tl	205	185.0	24.8	**0.0214**	0.007	34.0	ug/L	0	Standard
	Pb	206	2753.6	3.0	**0.5549**	0.011	2.0	ug/L	216	Standard
	Pb	207	2285.2	1.4	**0.5035**	0.014	2.7	ug/L	180	Standard
	Pb	208	9786.6	1.2	**0.5303**	0.014	2.6	ug/L	717	Standard
	U	238	353.7	1.7	**0.0508**	0.000	0.5	ug/L	4	Standard
>	**Bi**	209	449128.9	1.4				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	37974.2	2.9	**47.1394**	0.683	1.4	mg/L	20	Standard
K	39	91.7	3.1	**0.4128**	0.025	6.0	mg/L	22	Standard
Ca	43	75.0	26.7	**2.9551**	4.725	159.9	mg/L	47	Standard
Fe	54	5125.4	2.8	**3.7060**	0.149	4.0	mg/L	151	Standard
Fe	57	1555.1	4.8	**3.7648**	0.143	3.8	mg/L	195	Standard
> **Sc-1**	45	32349.5	2.7				mg/L	29647	Standard
Cl	35	176741.0	1.5				ug/L	154152	Standard
Kr	83	1.3	86.6				ug/L	3	Standard
Br	81	69459.0	3.9				ug/L	1607	Standard
P	31	30123.3	2.4				ug/L	22752	Standard
S	34	4967.5	1.4				ug/L	5049	Standard
Sr	88	190.0	9.5				ug/L	87	Standard
C	12	126.7	12.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	637.1	0.5				mg/L	10	Standard
Ho-1	165	351.7	3.0				mg/L	7	Standard
Er	166	340.0	15.3				mg/L	3	Standard
I	127	176369.6	3.2				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		143.166	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.287	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.830	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.564	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
V 51 Lower	V	51	
Cr 52 Upper, S, EEE	Cr	52	

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Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55

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Method 6020 - Summary Report

Sample ID: L1606065008
Sample Date/Time: Thursday, June 16, 2016 20:12:57
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72941.9	1.7				ug/L	51024	Standard
	Be	9	75.0	11.5	**0.0413**	0.007	17.1	ug/L	7	Standard
	Al	27	2553806.5	1.0	**12.5408**	0.102	0.8	ug/L	625	Standard
	Sc	45	32038.9	2.8				ug/L	29647	Standard
	Ti	47	722.7	5.7	**2.2554**	0.110	4.9	ug/L	57	Standard
	V	51	3819.2	3.9	**0.3720**	0.024	6.3	ug/L	1142	Standard
	Cr	52	10926.9	1.1	**0.5663**	0.038	6.8	ug/L	6628	Standard
	Cr	53	5912.8	6.8	**5.9618**	0.341	5.7	ug/L	430	Standard
	Mn	55	1386219.7	0.5	**234.7938**	4.744	2.0	ug/L	603	Standard
	Co	59	5557.7	1.4	**0.8285**	0.006	0.8	ug/L	237	Standard
	Ni	60	17011.5	0.7	**8.7950**	0.195	2.2	ug/L	141	Standard
	Cu	65	1618.4	1.4	**0.8000**	0.013	1.6	ug/L	109	Standard
	Zn	66	33299.6	0.0	**29.9907**	0.453	1.5	ug/L	159	Standard
>	**Ge**	72	471205.0	1.5				ug/L	474053	Standard
	As	75	966.9	5.2	**0.9032**	0.033	3.6	ug/L	-34	Standard
	Se	82	311.0	2.5	**2.6600**	0.029	1.1	ug/L	14	Standard
	Se-1	77	329.3	6.4	**3.5702**	0.277	7.8	ug/L	55	Standard
>	**Ga**	71	258.3	15.5				mg/L	50	Standard
	Rb	85	8330.6	3.2				ug/L	20	Standard
	Y	89	401951.6	2.1				ug/L	376602	Standard
>	**Rh**	103	36.7	43.8				ug/L	17	Standard
	Mo	98	105.4	14.0	**0.0382**	0.006	14.8	ug/L	8	Standard
	Ag	107	90.7	18.0	**0.0026**	0.003	103.7	ug/L	81	Standard
	Cd	111	115.2	13.8	**0.0550**	0.008	14.6	mg/L	3	Standard
	Cd	114	259.1	8.3	**0.0492**	0.005	9.4	ug/L	7	Standard
>	**In**	115	535100.4	1.1				ug/L	524722	Standard
	Sn	118	718.4	7.1	**0.0413**	0.008	20.4	ug/L	715	Standard
	Sb	123	448.1	4.2	**0.0858**	0.005	5.4	ug/L	201	Standard
	Ba	135	68982.0	0.6	**37.2626**	0.244	0.7	ug/L	108	Standard
	Ce	140	25868.7	1.1				ug/L	30	Standard
>	**Tb**	159	806521.0	1.2				ug/L	792236	Standard
	Ho	165	500.0	12.5				ug/L	7	Standard
	Tl	203	215.0	12.2	**0.0260**	0.004	15.1	ug/L	9	Standard
	Tl	205	150.0	6.7	**0.0156**	0.002	10.9	ug/L	0	Standard
	Pb	206	509.0	3.9	**0.0556**	0.003	5.6	ug/L	216	Standard
	Pb	207	432.0	1.7	**0.0505**	0.001	2.1	ug/L	180	Standard
	Pb	208	1819.0	0.9	**0.0504**	0.002	3.5	ug/L	717	Standard
	U	238	230.0	2.3	**0.0300**	0.001	2.2	ug/L	4	Standard
>	**Bi**	209	453449.6	1.5				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	38452.1	0.8	**48.2252**	1.630	3.4	mg/L	20	Standard
K	39	58.3	38.7	**0.1852**	0.162	87.6	mg/L	22	Standard
Ca	43	35.0	51.5	**-5.6048**	3.899	69.6	mg/L	47	Standard
Fe	54	249.0	20.9	**0.0731**	0.044	60.8	mg/L	151	Standard
Fe	57	205.0	6.5	**-0.0599**	0.029	47.9	mg/L	195	Standard
> **Sc-1**	45	32038.9	2.8				mg/L	29647	Standard
Cl	35	205402.9	2.6				ug/L	154152	Standard
Kr	83	2.3	24.7				ug/L	3	Standard
Br	81	66452.1	2.3				ug/L	1607	Standard
P	31	28505.1	1.9				ug/L	22752	Standard
S	34	4827.4	1.0				ug/L	5049	Standard
Sr	88	103.3	7.4				ug/L	87	Standard
C	12	290.0	39.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	843.5	10.6				mg/L	10	Standard
Ho-1	165	500.0	12.5				mg/L	7	Standard
Er	166	483.3	20.9				mg/L	3	Standard
I	127	65771.0	5.3				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		142.956	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.399	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.978	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.503	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606065008
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Method 6020 - Summary Report

Sample ID: L1606072901
Sample Date/Time: Thursday, June 16, 2016 20:16:08
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71451.4	0.2				ug/L	51024	Standard
	Be	9	156.7	13.3	**0.1120**	0.018	15.8	ug/L	7	Standard
	Al	27	1783026.0	1.0	**8.9350**	0.113	1.3	ug/L	625	Standard
	Sc	45	33488.6	0.2				ug/L	29647	Standard
	Ti	47	3847.8	0.7	**12.4804**	0.276	2.2	ug/L	57	Standard
	V	51	20969.4	1.8	**2.7398**	0.019	0.7	ug/L	1142	Standard
	Cr	52	17305.9	0.3	**1.3919**	0.032	2.3	ug/L	6628	Standard
	Cr	53	2988.6	7.9	**2.7405**	0.281	10.3	ug/L	430	Standard
	Mn	55	363989.8	1.4	**60.3519**	1.596	2.6	ug/L	603	Standard
	Co	59	13842.7	0.2	**2.0829**	0.032	1.5	ug/L	237	Standard
	Ni	60	5649.1	2.1	**2.8101**	0.018	0.6	ug/L	141	Standard
	Cu	65	2744.6	2.9	**1.3736**	0.022	1.6	ug/L	109	Standard
	Zn	66	21962.9	1.2	**19.3089**	0.151	0.8	ug/L	159	Standard
>	**Ge**	72	480623.4	1.5				ug/L	474053	Standard
	As	75	604.0	4.6	**0.5630**	0.022	3.9	ug/L	-34	Standard
	Se	82	62.7	5.3	**0.3902**	0.037	9.5	ug/L	14	Standard
	Se-1	77	114.3	16.4	**0.7262**	0.260	35.8	ug/L	55	Standard
>	**Ga**	71	1213.4	6.6				mg/L	50	Standard
	Rb	85	49025.9	0.6				ug/L	20	Standard
	Y	89	427519.3	0.4				ug/L	376602	Standard
>	**Rh**	103	33.3	37.7				ug/L	17	Standard
	Mo	98	183.9	8.3	**0.0677**	0.006	8.8	ug/L	8	Standard
	Ag	107	84.7	15.9	**0.0010**	0.002	216.4	ug/L	81	Standard
	Cd	111	55.6	11.8	**0.0237**	0.003	13.7	mg/L	3	Standard
	Cd	114	123.4	16.9	**0.0204**	0.004	20.0	ug/L	7	Standard
>	**In**	115	557933.4	0.7				ug/L	524722	Standard
	Sn	118	618.3	8.9	**0.0185**	0.009	49.1	ug/L	715	Standard
	Sb	123	180.1	11.3	**0.0240**	0.004	17.3	ug/L	201	Standard
	Ba	135	83499.8	1.0	**43.2656**	0.170	0.4	ug/L	108	Standard
	Ce	140	144607.0	2.1				ug/L	30	Standard
>	**Tb**	159	830815.8	1.2				ug/L	792236	Standard
	Ho	165	2081.8	4.4				ug/L	7	Standard
	Tl	203	322.3	0.4	**0.0385**	0.000	1.0	ug/L	9	Standard
	Tl	205	275.0	3.6	**0.0334**	0.001	4.5	ug/L	0	Standard
	Pb	206	5048.5	0.5	**1.0085**	0.002	0.2	ug/L	216	Standard
	Pb	207	4178.9	1.8	**0.9144**	0.020	2.2	ug/L	180	Standard
	Pb	208	17525.7	1.4	**0.9427**	0.011	1.1	ug/L	717	Standard
	U	238	621.3	3.2	**0.0898**	0.003	3.0	ug/L	4	Standard
>	**Bi**	209	472687.9	0.6				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.6311**	8.350	148.3	mg/L	0	Standard
Mg	24	3158.7	1.3	**3.7460**	0.051	1.3	mg/L	20	Standard
K	39	215.0	8.1	**1.2230**	0.115	9.4	mg/L	22	Standard
Ca	43	38.3	27.2	**-5.2593**	2.154	41.0	mg/L	47	Standard
Fe	54	3415.5	7.7	**2.3435**	0.190	8.1	mg/L	151	Standard
Fe	57	1036.7	4.4	**2.1944**	0.121	5.5	mg/L	195	Standard
> **Sc-1**	45	33488.6	0.2				mg/L	29647	Standard
Cl	35	164707.7	0.4				ug/L	154152	Standard
Kr	83	3.0	33.3				ug/L	3	Standard
Br	81	11457.7	7.7				ug/L	1607	Standard
P	31	28214.6	1.7				ug/L	22752	Standard
S	34	4967.5	1.9				ug/L	5049	Standard
Sr	88	113.3	6.7				ug/L	87	Standard
C	12	80.0	12.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	0	Standard
Dy	164	3722.9	5.4				mg/L	10	Standard
Ho-1	165	2081.8	4.4				mg/L	7	Standard
Er	166	1966.8	4.6				mg/L	3	Standard
I	127	28066.0	3.2				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		140.035	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.386	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.329
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.682
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 20:19:21
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70359.7	1.3				ug/L	51024	Standard
	Be	9	53312.1	5.5	**45.9476**	1.930	4.2	ug/L	7	Standard
	Al	27	8077611.0	1.8	**41.1433**	0.785	1.9	ug/L	625	Standard
	Sc	45	32289.4	1.8				ug/L	29647	Standard
	Ti	47	30321.3	1.6	**100.0769**	1.272	1.3	ug/L	57	Standard
	V	51	360120.0	0.4	**50.0825**	0.106	0.2	ug/L	1142	Standard
	Cr	52	369947.6	1.5	**48.9622**	0.470	1.0	ug/L	6628	Standard
	Cr	53	47002.8	0.4	**49.7282**	0.165	0.3	ug/L	430	Standard
	Mn	55	317711.3	0.7	**52.9755**	0.531	1.0	ug/L	603	Standard
	Co	59	339862.8	0.3	**52.4255**	0.355	0.7	ug/L	237	Standard
	Ni	60	93112.6	1.0	**47.8173**	0.235	0.5	ug/L	141	Standard
	Cu	65	91542.1	0.9	**48.2534**	0.241	0.5	ug/L	109	Standard
	Zn	66	53846.5	0.5	**47.9689**	0.154	0.3	ug/L	159	Standard
>	**Ge**	72	477686.4	0.6				ug/L	474053	Standard
	As	75	53954.1	0.4	**48.3818**	0.469	1.0	ug/L	-34	Standard
	Se	82	5528.9	1.3	**49.4502**	0.921	1.9	ug/L	14	Standard
	Se-1	77	3768.1	3.4	**47.9498**	1.532	3.2	ug/L	55	Standard
>	**Ga**	71	96.7	3.0				mg/L	50	Standard
	Rb	85	860.0	3.6				ug/L	20	Standard
	Y	89	407805.9	2.6				ug/L	376602	Standard
>	**Rh**	103	38.3	19.9				ug/L	17	Standard
	Mo	98	251849.5	0.7	**99.5336**	0.343	0.3	ug/L	8	Standard
	Ag	107	302942.0	0.9	**47.3977**	0.787	1.7	ug/L	81	Standard
	Cd	111	100743.2	0.5	**48.4530**	0.464	1.0	mg/L	3	Standard
	Cd	114	243706.8	2.6	**47.4138**	1.351	2.8	ug/L	7	Standard
>	**In**	115	562084.3	0.9				ug/L	524722	Standard
	Sn	118	283917.6	1.7	**49.1130**	0.500	1.0	ug/L	715	Standard
	Sb	123	223152.0	0.8	**47.6804**	0.566	1.2	ug/L	201	Standard
	Ba	135	90693.3	1.2	**46.6526**	0.606	1.3	ug/L	108	Standard
	Ce	140	95.0	24.1				ug/L	30	Standard
>	**Tb**	159	823567.8	1.3				ug/L	792236	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	373875.5	0.8	**47.8522**	0.141	0.3	ug/L	9	Standard
	Tl	205	338247.8	1.5	**50.9083**	0.885	1.7	ug/L	0	Standard
	Pb	206	233315.4	0.7	**49.3532**	0.331	0.7	ug/L	216	Standard
	Pb	207	211841.0	0.3	**49.2260**	0.469	1.0	ug/L	180	Standard
	Pb	208	876269.3	0.6	**50.1725**	0.549	1.1	ug/L	717	Standard
	U	238	329535.1	0.3	**51.8676**	0.341	0.7	ug/L	4	Standard
>	**Bi**	209	470816.3	0.6				ug/L	460343	Standard

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Na	23	3.3	86.6	**0.5093**	8.613	1691.0	mg/L	0	Standard
Mg	24	4180.6	4.5	**5.1574**	0.149	2.9	mg/L	20	Standard
K	39	543.3	5.4	**3.5784**	0.272	7.6	mg/L	22	Standard
Ca	43	63.3	12.1	**0.3907**	1.523	389.8	mg/L	47	Standard
Fe	54	5922.9	1.4	**4.3077**	0.105	2.4	mg/L	151	Standard
Fe	57	1828.4	2.7	**4.5503**	0.051	1.1	mg/L	195	Standard
Sc-1	45	32289.4	1.8				mg/L	29647	Standard
Cl	35	173385.8	0.9				ug/L	154152	Standard
Kr	83	1.3	114.6				ug/L	3	Standard
Br	81	2136.8	4.6				ug/L	1607	Standard
P	31	26322.9	2.1				ug/L	22752	Standard
S	34	5514.3	2.6				ug/L	5049	Standard
Sr	88	65.0	27.7				ug/L	87	Standard
C	12	70.0	24.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	23.3	89.2				mg/L	10	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	0.0					mg/L	3	Standard
I	127	3703.8	16.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	91.895		
Al	27	82.287		
Sc	45			
Ti	47	100.077		
V	51	100.165		
Cr	52	97.924		
Cr	53			
Mn	55	105.951		
Co	59	104.851		
Ni	60	95.635		
Cu	65	96.507		
Zn	66	95.938		
Ge	72		100.766	
As	75	96.764		
Se	82	98.900		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	99.534		
Ag	107	94.795		
Cd	111	96.906		
Cd	114			
In	115		107.120	
Sn	118	98.226		
Sb	123	95.361		
Ba	135	93.305		
Ce	140			
Tb	159			
Ho	165			
Tl	203	95.704		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.345		
U	238	103.735		
Bi	209		102.275	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 20:22:32
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67637.3	2.1				ug/L	51024	Standard
	Be	9	18.3	83.3	**-0.0045**	0.014	309.1	ug/L	7	Standard
	Al	27	1391.7	16.0	**-0.0024**	0.001	50.0	ug/L	625	Standard
	Sc	45	30764.5	1.2				ug/L	29647	Standard
	Ti	47	37.3	15.2	**-0.0462**	0.017	37.4	ug/L	57	Standard
	V	51	1089.5	9.5	**-0.0208**	0.013	60.2	ug/L	1142	Standard
	Cr	52	6209.3	0.8	**-0.1150**	0.004	3.7	ug/L	6628	Standard
	Cr	53	621.7	6.5	**0.2124**	0.037	17.6	ug/L	430	Standard
	Mn	55	764.0	5.2	**-0.0024**	0.006	259.9	ug/L	603	Standard
	Co	59	234.0	4.1	**-0.0062**	0.002	27.4	ug/L	237	Standard
	Ni	60	152.7	14.0	**-0.0015**	0.011	728.7	ug/L	141	Standard
	Cu	65	133.0	12.1	**0.0021**	0.009	425.3	ug/L	109	Standard
	Zn	66	146.0	6.6	**-0.1051**	0.009	8.1	ug/L	159	Standard
>	**Ge**	72	492018.2	1.0				ug/L	474053	Standard
	As	75	-9.0	401.0	**0.0170**	0.032	186.2	ug/L	-34	Standard
	Se	82	25.4	15.9	**0.0523**	0.034	65.9	ug/L	14	Standard
	Se-1	77	66.3	19.1	**0.0882**	0.166	188.3	ug/L	55	Standard
>	**Ga**	71	71.7	20.1				mg/L	50	Standard
	Rb	85	26.7	43.3				ug/L	20	Standard
	Y	89	407999.6	2.7				ug/L	376602	Standard
>	**Rh**	103	20.0	50.0				ug/L	17	Standard
	Mo	98	257.9	34.0	**0.0988**	0.034	34.5	ug/L	8	Standard
	Ag	107	107.0	12.6	**0.0049**	0.002	46.8	ug/L	81	Standard
	Cd	111	7.2	23.1	**0.0003**	0.001	264.5	mg/L	3	Standard
	Cd	114	32.4	23.6	**0.0026**	0.001	54.7	ug/L	7	Standard
>	**In**	115	547642.1	1.6				ug/L	524722	Standard
	Sn	118	781.7	18.0	**0.0498**	0.026	53.2	ug/L	715	Standard
	Sb	123	445.8	26.8	**0.0832**	0.027	32.7	ug/L	201	Standard
	Ba	135	126.0	4.8	**0.0089**	0.003	29.7	ug/L	108	Standard
	Ce	140	16.7	34.6				ug/L	30	Standard
>	**Tb**	159	805057.6	1.1				ug/L	792236	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	50.7	17.0	**0.0040**	0.001	27.9	ug/L	9	Standard
	Tl	205	33.3	22.9	**-0.0027**	0.001	41.6	ug/L	0	Standard
	Pb	206	245.3	6.9	**-0.0038**	0.003	90.3	ug/L	216	Standard
	Pb	207	206.3	2.8	**-0.0052**	0.002	29.4	ug/L	180	Standard
	Pb	208	876.0	4.6	**-0.0071**	0.002	32.4	ug/L	717	Standard
	U	238	36.7	27.6	**-0.0017**	0.002	94.5	ug/L	4	Standard
>	**Bi**	209	464955.7	0.5				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.1330**	9.213	179.5	mg/L	0	Standard
Mg	24	40.0	21.7	**0.0070**	0.011	155.9	mg/L	20	Standard
K	39	16.7	69.3	**-0.1055**	0.085	80.5	mg/L	22	Standard
Ca	43	30.0	66.7	**-6.3982**	4.581	71.6	mg/L	47	Standard
Fe	54	159.4	19.4	**0.0098**	0.023	233.9	mg/L	151	Standard
Fe	57	178.3	15.9	**-0.1151**	0.084	72.7	mg/L	195	Standard
Sc-1	45	30764.5	1.2				mg/L	29647	Standard
Cl	35	172678.1	2.2				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	1756.8	6.0				ug/L	1607	Standard
P	31	26713.5	1.7				ug/L	22752	Standard
S	34	5486.0	1.1				ug/L	5049	Standard
Sr	88	68.3	25.7				ug/L	87	Standard
C	12	46.7	12.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	13.0	43.3				mg/L	10	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	2433.5	7.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.790	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.368
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.002
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, June 16, 2016 20:24:49
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Method 6020 - Summary Report

Sample ID: L1606072902
Sample Date/Time: Thursday, June 16, 2016 20:26:38
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67597.1	1.4				ug/L	51024	Standard
	Be	9	58.3	13.1	**0.0313**	0.007	23.7	ug/L	7	Standard
	Al	27	1447794.1	2.6	**7.6674**	0.177	2.3	ug/L	625	Standard
	Sc	45	31928.7	4.9				ug/L	29647	Standard
	Ti	47	305.7	12.8	**0.8104**	0.145	17.9	ug/L	57	Standard
	V	51	1674.4	15.6	**0.0568**	0.033	58.1	ug/L	1142	Standard
	Cr	52	9700.4	2.0	**0.3335**	0.001	0.4	ug/L	6628	Standard
	Cr	53	1893.5	6.0	**1.5168**	0.108	7.1	ug/L	430	Standard
	Mn	55	246384.5	0.3	**39.5930**	0.878	2.2	ug/L	603	Standard
	Co	59	7588.2	2.4	**1.0889**	0.047	4.3	ug/L	237	Standard
	Ni	60	3526.1	1.5	**1.6717**	0.049	2.9	ug/L	141	Standard
	Cu	65	954.7	5.5	**0.4196**	0.020	4.8	ug/L	109	Standard
	Zn	66	5586.0	1.4	**4.5915**	0.148	3.2	ug/L	159	Standard
>	**Ge**	72	495383.3	1.9				ug/L	474053	Standard
	As	75	235.4	13.4	**0.2282**	0.025	10.7	ug/L	-34	Standard
	Se	82	130.5	4.3	**0.9599**	0.027	2.8	ug/L	14	Standard
	Se-1	77	93.7	12.4	**0.4210**	0.125	29.6	ug/L	55	Standard
>	**Ga**	71	108.3	13.3				mg/L	50	Standard
	Rb	85	27304.6	1.0				ug/L	20	Standard
	Y	89	392736.9	2.5				ug/L	376602	Standard
>	**Rh**	103	11.7	49.5				ug/L	17	Standard
	Mo	98	87.5	12.2	**0.0306**	0.004	14.1	ug/L	8	Standard
	Ag	107	101.0	6.0	**0.0042**	0.001	22.2	ug/L	81	Standard
	Cd	111	59.5	14.3	**0.0266**	0.004	15.1	mg/L	3	Standard
	Cd	114	114.2	30.2	**0.0194**	0.007	35.4	ug/L	7	Standard
>	**In**	115	538147.1	0.9				ug/L	524722	Standard
	Sn	118	776.7	8.0	**0.0512**	0.012	24.3	ug/L	715	Standard
	Sb	123	200.6	27.1	**0.0300**	0.012	40.3	ug/L	201	Standard
	Ba	135	61289.0	0.7	**32.9142**	0.504	1.5	ug/L	108	Standard
	Ce	140	11052.4	2.4				ug/L	30	Standard
>	**Tb**	159	799876.8	2.9				ug/L	792236	Standard
	Ho	165	190.0	13.9				ug/L	7	Standard
	Tl	203	282.0	7.3	**0.0338**	0.003	8.0	ug/L	9	Standard
	Tl	205	280.0	6.2	**0.0347**	0.004	10.5	ug/L	0	Standard
	Pb	206	401.7	3.5	**0.0294**	0.002	8.2	ug/L	216	Standard
	Pb	207	341.0	0.8	**0.0262**	0.002	6.1	ug/L	180	Standard
	Pb	208	1409.0	1.3	**0.0235**	0.001	4.4	ug/L	717	Standard
	U	238	76.0	25.2	**0.0044**	0.003	61.0	ug/L	4	Standard
>	**Bi**	209	466934.5	2.6				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3003.6	5.4	**3.7365**	0.119	3.2	mg/L	20	Standard
K	39	200.0	11.5	**1.1940**	0.224	18.7	mg/L	22	Standard
Ca	43	26.7	78.1	**-7.2758**	4.881	67.1	mg/L	47	Standard
Fe	54	197.9	11.4	**0.0352**	0.024	69.0	mg/L	151	Standard
Fe	57	201.7	10.0	**-0.0646**	0.087	134.0	mg/L	195	Standard
> **Sc-1**	45	31928.7	4.9				mg/L	29647	Standard
Cl	35	168064.3	0.8				ug/L	154152	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	30467.4	7.1				ug/L	1607	Standard
P	31	27221.1	1.9				ug/L	22752	Standard
S	34	4829.1	7.9				ug/L	5049	Standard
Sr	88	71.7	28.2				ug/L	87	Standard
C	12	70.0	24.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	346.6	23.4				mg/L	10	Standard
Ho-1	165	190.0	13.9				mg/L	7	Standard
Er	166	140.0	21.4				mg/L	3	Standard
I	127	19342.3	3.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.481	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.500	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.559
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.432
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606073001
Sample Date/Time: Thursday, June 16, 2016 20:29:50
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77603.4	4.1				ug/L	51024	Standard
	Be	9	23.3	32.7	**-0.0030**	0.005	179.3	ug/L	7	Standard
	Al	27	6597541.3	1.1	**30.4895**	0.983	3.2	ug/L	625	Standard
	Sc	45	30666.0	3.0				ug/L	29647	Standard
	Ti	47	203.3	18.0	**0.5694**	0.126	22.1	ug/L	57	Standard
	V	51	19344.1	1.4	**2.7880**	0.060	2.2	ug/L	1142	Standard
	Cr	52	223704.1	0.9	**32.1116**	0.253	0.8	ug/L	6628	Standard
	Cr	53	32680.2	2.6	**37.7577**	0.692	1.8	ug/L	430	Standard
	Mn	55	14764.2	0.6	**2.5761**	0.037	1.5	ug/L	603	Standard
	Co	59	8421.3	1.4	**1.3825**	0.016	1.2	ug/L	237	Standard
	Ni	60	8389.0	3.1	**4.6470**	0.087	1.9	ug/L	141	Standard
	Cu	65	2908.6	1.9	**1.6151**	0.017	1.1	ug/L	109	Standard
	Zn	66	3204.0	4.7	**2.9081**	0.114	3.9	ug/L	159	Standard
>	**Ge**	72	436204.2	1.2				ug/L	474053	Standard
	As	75	2688.1	1.6	**2.6639**	0.074	2.8	ug/L	-34	Standard
	Se	82	851.2	1.0	**8.1974**	0.187	2.3	ug/L	14	Standard
	Se-1	77	1137.0	6.7	**15.3552**	1.225	8.0	ug/L	55	Standard
>	**Ga**	71	1600.1	10.1				mg/L	50	Standard
	Rb	85	221561.7	1.4				ug/L	20	Standard
	Y	89	371828.3	2.0				ug/L	376602	Standard
>	**Rh**	103	3242.0	4.8				ug/L	17	Standard
	Mo	98	4562.5	2.6	**2.0314**	0.078	3.9	ug/L	8	Standard
	Ag	107	113.7	11.8	**0.0078**	0.003	32.8	ug/L	81	Standard
	Cd	111	55.8	15.1	**0.0271**	0.005	18.3	mg/L	3	Standard
	Cd	114	143.3	18.4	**0.0277**	0.006	20.9	ug/L	7	Standard
>	**In**	115	497749.4	1.4				ug/L	524722	Standard
	Sn	118	1183.4	2.0	**0.1421**	0.001	1.0	ug/L	715	Standard
	Sb	123	552.4	7.7	**0.1185**	0.008	7.1	ug/L	201	Standard
	Ba	135	1629969.1	1.1	**947.9397**	3.697	0.4	ug/L	108	Standard
	Ce	140	661.7	1.6				ug/L	30	Standard
>	**Tb**	159	768724.3	1.9				ug/L	792236	Standard
	Ho	165	30.0	0.0				ug/L	7	Standard
	Tl	203	273.3	11.0	**0.0373**	0.004	11.6	ug/L	9	Standard
	Tl	205	236.7	11.6	**0.0327**	0.005	13.9	ug/L	0	Standard
	Pb	206	593.0	4.8	**0.0867**	0.006	6.8	ug/L	216	Standard
	Pb	207	503.3	3.4	**0.0795**	0.004	4.6	ug/L	180	Standard
	Pb	208	2099.4	1.6	**0.0791**	0.001	1.5	ug/L	717	Standard
	U	238	272.3	8.1	**0.0412**	0.004	8.8	ug/L	4	Standard
>	**Bi**	209	413369.8	0.7				ug/L	460343	Standard

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Na	23	10.0	86.6	**-20.6958**	26.075	126.0	mg/L	0	Standard
Mg	24	97695.6	0.1	**128.0820**	3.805	3.0	mg/L	20	Standard
K	39	1235.1	6.0	**8.8773**	0.558	6.3	mg/L	22	Standard
Ca	43	1178.4	7.9	**253.1572**	23.304	9.2	mg/L	47	Standard
Fe	54	176.5	19.0	**0.0234**	0.022	95.0	mg/L	151	Standard
Fe	57	1151.7	8.5	**2.8063**	0.366	13.0	mg/L	195	Standard
> **Sc-1**	45	30666.0	3.0				mg/L	29647	Standard
Cl	35	183619.3	0.2				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	216976.2	1.6				ug/L	1607	Standard
P	31	27466.6	2.5				ug/L	22752	Standard
S	34	5401.0	3.5				ug/L	5049	Standard
Sr	88	13359.2	2.8				ug/L	87	Standard
C	12	236.7	14.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	16.2	35.8				mg/L	10	Standard
Ho-1	165	30.0	0.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	172255.5	10.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		152.092	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.016	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.860
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	89.796
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606073002
Sample Date/Time: Thursday, June 16, 2016 20:40:20
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72672.3	2.9				ug/L	51024	Standard
	Be	9	10.0	50.0	**-0.0128**	0.004	30.9	ug/L	7	Standard
	Al	27	6776653.7	2.4	**33.4181**	0.221	0.7	ug/L	625	Standard
	Sc	45	30878.1	3.6				ug/L	29647	Standard
	Ti	47	191.7	10.9	**0.5384**	0.079	14.6	ug/L	57	Standard
	V	51	18320.5	2.2	**2.6731**	0.088	3.3	ug/L	1142	Standard
	Cr	52	218082.0	0.6	**31.7558**	0.128	0.4	ug/L	6628	Standard
	Cr	53	32453.1	2.0	**38.0586**	0.990	2.6	ug/L	430	Standard
	Mn	55	14793.6	1.2	**2.6216**	0.060	2.3	ug/L	603	Standard
	Co	59	8007.4	2.3	**1.3327**	0.045	3.4	ug/L	237	Standard
	Ni	60	8064.8	0.9	**4.5323**	0.032	0.7	ug/L	141	Standard
	Cu	65	2976.0	2.0	**1.6794**	0.017	1.0	ug/L	109	Standard
	Zn	66	2008.5	3.5	**1.7659**	0.064	3.6	ug/L	159	Standard
>	**Ge**	72	429862.6	1.0				ug/L	474053	Standard
	As	75	2572.0	0.4	**2.5869**	0.037	1.4	ug/L	-34	Standard
	Se	82	825.8	3.3	**8.0685**	0.355	4.4	ug/L	14	Standard
	Se-1	77	1141.7	4.7	**15.6522**	0.781	5.0	ug/L	55	Standard
>	**Ga**	71	1611.8	8.9				mg/L	50	Standard
	Rb	85	218102.3	2.0				ug/L	20	Standard
	Y	89	377604.2	0.7				ug/L	376602	Standard
>	**Rh**	103	3075.3	2.3				ug/L	17	Standard
	Mo	98	4376.1	1.3	**1.9206**	0.018	0.9	ug/L	8	Standard
	Ag	107	101.3	11.9	**0.0053**	0.002	42.4	ug/L	81	Standard
	Cd	111	44.3	10.0	**0.0205**	0.002	10.6	mg/L	3	Standard
	Cd	114	101.2	2.7	**0.0181**	0.001	4.2	ug/L	7	Standard
>	**In**	115	504775.6	2.2				ug/L	524722	Standard
	Sn	118	1261.7	9.4	**0.1538**	0.018	12.0	ug/L	715	Standard
	Sb	123	527.5	2.2	**0.1107**	0.000	0.3	ug/L	201	Standard
	Ba	135	1636843.5	1.3	**938.7853**	9.854	1.0	ug/L	108	Standard
	Ce	140	583.3	14.6				ug/L	30	Standard
>	**Tb**	159	772745.6	1.2				ug/L	792236	Standard
	Ho	165	13.3	57.3				ug/L	7	Standard
	Tl	203	237.3	15.4	**0.0328**	0.005	15.8	ug/L	9	Standard
	Tl	205	210.0	10.4	**0.0290**	0.003	11.9	ug/L	0	Standard
	Pb	206	512.7	7.1	**0.0701**	0.008	10.9	ug/L	216	Standard
	Pb	207	440.7	8.2	**0.0656**	0.009	13.2	ug/L	180	Standard
	Pb	208	1827.0	4.1	**0.0642**	0.006	9.9	ug/L	717	Standard
	U	238	243.3	3.8	**0.0371**	0.002	4.2	ug/L	4	Standard
>	**Bi**	209	404002.1	1.1				ug/L	460343	Standard

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Na	23	10.0	86.6	**-20.5285**	26.005	126.7	mg/L	0	Standard
Mg	24	96717.8	1.8	**126.0145**	6.791	5.4	mg/L	20	Standard
K	39	1353.4	2.3	**9.6820**	0.217	2.2	mg/L	22	Standard
Ca	43	1160.0	11.2	**246.7324**	22.672	9.2	mg/L	47	Standard
Fe	54	173.0	8.5	**0.0201**	0.009	45.9	mg/L	151	Standard
Fe	57	1218.4	5.2	**2.9735**	0.072	2.4	mg/L	195	Standard
Sc-1	45	30878.1	3.6				mg/L	29647	Standard
Cl	35	185979.3	1.4				ug/L	154152	Standard
Kr	83	2.7	43.3				ug/L	3	Standard
Br	81	209002.2	2.5				ug/L	1607	Standard
P	31	27092.5	3.1				ug/L	22752	Standard
S	34	5509.3	2.9				ug/L	5049	Standard
Sr	88	11921.4	3.3				ug/L	87	Standard
C	12	216.7	14.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	29.4	59.5				mg/L	10	Standard
Ho-1	165	13.3	57.3				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	173148.1	13.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		142.427	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.678	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.199
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	87.761
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606073003
Sample Date/Time: Thursday, June 16, 2016 20:43:31
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66295.0	5.6				ug/L	51024	Standard
	Be	9	56.7	36.7	**0.0315**	0.022	69.3	ug/L	7	Standard
	Al	27	140324062.6	0.9	**759.9749**	34.895	4.6	ug/L	625	Standard
	Sc	45	30973.3	2.2				ug/L	29647	Standard
	Ti	47	544.3	4.3	**1.8537**	0.066	3.6	ug/L	57	Standard
	V	51	5988.0	12.5	**0.7695**	0.117	15.2	ug/L	1142	Standard
	Cr	52	16952.1	2.7	**1.6378**	0.039	2.4	ug/L	6628	Standard
	Cr	53	39053.8	8.0	**46.3217**	3.179	6.9	ug/L	430	Standard
	Mn	55	1211107.1	0.8	**227.1129**	4.279	1.9	ug/L	603	Standard
	Co	59	15513.3	2.2	**2.6477**	0.097	3.6	ug/L	237	Standard
	Ni	60	11454.7	1.9	**6.5356**	0.059	0.9	ug/L	141	Standard
	Cu	65	2107.5	3.2	**1.1824**	0.030	2.5	ug/L	109	Standard
	Zn	66	3534.1	3.7	**3.3182**	0.082	2.5	ug/L	159	Standard
>	**Ge**	72	425577.5	1.4				ug/L	474053	Standard
	As	75	6875.0	1.9	**6.9431**	0.226	3.3	ug/L	-34	Standard
	Se	82	1838.5	2.4	**18.3557**	0.698	3.8	ug/L	14	Standard
	Se-1	77	5651.1	6.0	**81.1945**	3.892	4.8	ug/L	55	Standard
>	**Ga**	71	298.3	8.3				mg/L	50	Standard
	Rb	85	18603.1	3.0				ug/L	20	Standard
	Y	89	364931.5	1.6				ug/L	376602	Standard
>	**Rh**	103	1093.4	10.5				ug/L	17	Standard
	Mo	98	426.7	6.4	**0.1986**	0.013	6.7	ug/L	8	Standard
	Ag	107	75.7	8.8	**0.0020**	0.001	63.5	ug/L	81	Standard
	Cd	111	101.2	16.3	**0.0557**	0.010	17.5	mg/L	3	Standard
	Cd	114	239.7	20.6	**0.0526**	0.011	21.7	ug/L	7	Standard
>	**In**	115	464316.0	0.4				ug/L	524722	Standard
	Sn	118	820.0	6.0	**0.0826**	0.010	12.0	ug/L	715	Standard
	Sb	123	404.3	9.7	**0.0898**	0.011	11.7	ug/L	201	Standard
	Ba	135	7189623.7	0.9	**4482.5615**	58.524	1.3	ug/L	108	Standard
	Ce	140	11556.1	1.6				ug/L	30	Standard
>	**Tb**	159	738740.3	1.0				ug/L	792236	Standard
	Ho	165	163.3	8.8				ug/L	7	Standard
	Tl	203	154.3	14.2	**0.0220**	0.003	15.0	ug/L	9	Standard
	Tl	205	155.0	9.7	**0.0212**	0.003	13.2	ug/L	0	Standard
	Pb	206	489.3	5.2	**0.0725**	0.006	7.9	ug/L	216	Standard
	Pb	207	420.0	7.6	**0.0677**	0.009	13.2	ug/L	180	Standard
	Pb	208	1652.4	1.4	**0.0599**	0.003	5.3	ug/L	717	Standard
	U	238	9935.9	1.3	**1.9381**	0.028	1.4	ug/L	4	Standard
>	**Bi**	209	378492.4	1.3				ug/L	460343	Standard

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Na	23	20.0	43.3	**-51.8526**	25.479	49.1	mg/L	0	Standard
Mg	24	304205.5	1.3	**394.7766**	3.601	0.9	mg/L	20	Standard
K	39	283.3	22.2	**1.8451**	0.491	26.6	mg/L	22	Standard
Ca	43	1023.4	14.5	**216.1479**	37.325	17.3	mg/L	47	Standard
Fe	54	3507.0	4.8	**2.6133**	0.070	2.7	mg/L	151	Standard
Fe	57	2098.5	3.6	**5.5706**	0.094	1.7	mg/L	195	Standard
> **Sc-1**	45	30973.3	2.2				mg/L	29647	Standard
Cl	35	171200.0	3.8				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	477807.6	1.2				ug/L	1607	Standard
P	31	31030.1	3.4				ug/L	22752	Standard
S	34	5537.7	3.1				ug/L	5049	Standard
Sr	88	3852.2	4.1				ug/L	87	Standard
C	12	250.0	32.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	197.9	47.2				mg/L	10	Standard
Ho-1	165	163.3	8.8				mg/L	7	Standard
Er	166	183.3	6.3				mg/L	3	Standard
I	127	159354.2	8.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.929	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		89.774	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	88.488
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	82.220
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606073102
Sample Date/Time: Thursday, June 16, 2016 20:46:43
Number of Replicates: 3
Autosampler Position: 346
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55473.1	2.7				ug/L	51024	Standard
	Be	9	55.0	36.4	**0.0390**	0.022	55.7	ug/L	7	Standard
	Al	27	942566.4	1.5	**6.0840**	0.204	3.4	ug/L	625	Standard
	Sc	45	34049.9	0.9				ug/L	29647	Standard
	Ti	47	5731.8	2.0	**18.2913**	0.196	1.1	ug/L	57	Standard
	V	51	32065.1	2.5	**4.1901**	0.107	2.6	ug/L	1142	Standard
	Cr	52	17242.5	0.8	**1.3371**	0.009	0.7	ug/L	6628	Standard
	Cr	53	5039.2	15.0	**4.8012**	0.726	15.1	ug/L	430	Standard
	Mn	55	115479.5	1.7	**18.6730**	0.120	0.6	ug/L	603	Standard
	Co	59	2037.1	3.8	**0.2650**	0.009	3.4	ug/L	237	Standard
	Ni	60	2031.8	4.8	**0.9400**	0.039	4.2	ug/L	141	Standard
	Cu	65	266456.7	0.9	**136.9469**	2.046	1.5	ug/L	109	Standard
	Zn	66	37165.9	1.0	**32.1770**	0.480	1.5	ug/L	159	Standard
>	**Ge**	72	490402.9	1.1				ug/L	474053	Standard
	As	75	12459.1	0.9	**10.9020**	0.085	0.8	ug/L	-34	Standard
	Se	82	127.6	3.2	**0.9465**	0.028	3.0	ug/L	14	Standard
	Se-1	77	270.0	15.8	**2.6503**	0.495	18.7	ug/L	55	Standard
>	**Ga**	71	1921.8	2.3				mg/L	50	Standard
	Rb	85	35595.1	1.8				ug/L	20	Standard
	Y	89	404147.8	1.0				ug/L	376602	Standard
>	**Rh**	103	85.0	15.6				ug/L	17	Standard
	Mo	98	4328.7	1.5	**1.8133**	0.020	1.1	ug/L	8	Standard
	Ag	107	869.7	0.1	**0.1324**	0.001	0.5	ug/L	81	Standard
	Cd	111	482.3	7.8	**0.2434**	0.019	8.0	mg/L	3	Standard
	Cd	114	1335.6	3.6	**0.2724**	0.009	3.3	ug/L	7	Standard
>	**In**	115	528691.1	0.6				ug/L	524722	Standard
	Sn	118	4765.7	3.3	**0.7887**	0.031	4.0	ug/L	715	Standard
	Sb	123	3183.9	1.5	**0.7087**	0.011	1.6	ug/L	201	Standard
	Ba	135	17225.1	3.1	**9.3751**	0.336	3.6	ug/L	108	Standard
	Ce	140	48213.3	1.0				ug/L	30	Standard
>	**Tb**	159	793657.4	1.6				ug/L	792236	Standard
	Ho	165	775.0	7.8				ug/L	7	Standard
	Tl	203	260.0	6.4	**0.0318**	0.003	8.6	ug/L	9	Standard
	Tl	205	233.3	20.4	**0.0285**	0.008	27.8	ug/L	0	Standard
	Pb	206	39704.6	1.2	**8.6323**	0.072	0.8	ug/L	216	Standard
	Pb	207	34342.9	1.0	**8.2030**	0.203	2.5	ug/L	180	Standard
	Pb	208	145934.1	1.3	**8.5861**	0.079	0.9	ug/L	717	Standard
	U	238	420.0	4.3	**0.0608**	0.004	7.1	ug/L	4	Standard
>	**Bi**	209	455671.4	2.1				ug/L	460343	Standard

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Na	23	3.3	173.2	**0.8644**	16.607	1921.3	mg/L	0	Standard
Mg	24	12667.0	1.0	**14.9085**	0.215	1.4	mg/L	20	Standard
K	39	335.0	19.1	**1.9967**	0.430	21.5	mg/L	22	Standard
Ca	43	88.3	18.2	**4.8010**	3.416	71.1	mg/L	47	Standard
Fe	54	995.1	5.6	**0.5893**	0.033	5.5	mg/L	151	Standard
Fe	57	445.0	16.6	**0.5516**	0.188	34.0	mg/L	195	Standard
> **Sc-1**	45	34049.9	0.9				mg/L	29647	Standard
Cl	35	173758.3	2.1				ug/L	154152	Standard
Kr	83	3.3	91.7				ug/L	3	Standard
Br	81	6371.4	18.0				ug/L	1607	Standard
P	31	28039.3	2.8				ug/L	22752	Standard
S	34	5270.9	3.8				ug/L	5049	Standard
Sr	88	90.0	5.6				ug/L	87	Standard
C	12	76.7	58.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	56.8				mg/L	0	Standard
Dy	164	1215.7	9.2				mg/L	10	Standard
Ho-1	165	775.0	7.8				mg/L	7	Standard
Er	166	786.7	6.4				mg/L	3	Standard
I	127	21140.1	20.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.719	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.449	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.756	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.985	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: L1606073102
Sample Date/Time: Thursday, June 16, 2016 20:49:54
Number of Replicates: 3
Autosampler Position: 347
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59153.6	1.2				ug/L	51024	Standard
	Be	9	8.3	34.6	**-0.0125**	0.003	23.9	ug/L	7	Standard
	Al	27	100448.6	1.0	**0.5989**	0.007	1.2	ug/L	625	Standard
	Sc	45	33126.2	1.2				ug/L	29647	Standard
	Ti	47	644.7	2.1	**2.0007**	0.071	3.6	ug/L	57	Standard
	V	51	4289.2	6.3	**0.4402**	0.044	10.0	ug/L	1142	Standard
	Cr	52	8064.5	2.5	**0.1771**	0.010	5.7	ug/L	6628	Standard
	Cr	53	1751.8	6.1	**1.4679**	0.099	6.8	ug/L	430	Standard
	Mn	55	12501.5	0.4	**1.9975**	0.048	2.4	ug/L	603	Standard
	Co	59	371.3	7.0	**0.0170**	0.003	18.0	ug/L	237	Standard
	Ni	60	380.0	10.9	**0.1207**	0.019	15.5	ug/L	141	Standard
	Cu	65	26879.2	2.3	**14.3517**	0.162	1.1	ug/L	109	Standard
	Zn	66	5034.5	0.7	**4.3493**	0.122	2.8	ug/L	159	Standard
>	**Ge**	72	470100.0	2.4				ug/L	474053	Standard
	As	75	1188.6	1.5	**1.1081**	0.042	3.8	ug/L	-34	Standard
	Se	82	31.1	20.0	**0.1142**	0.055	48.5	ug/L	14	Standard
	Se-1	77	110.7	11.2	**0.7077**	0.148	20.9	ug/L	55	Standard
>	**Ga**	71	223.3	5.6				mg/L	50	Standard
	Rb	85	3760.5	5.0				ug/L	20	Standard
	Y	89	401153.8	1.8				ug/L	376602	Standard
>	**Rh**	103	35.0	28.6				ug/L	17	Standard
	Mo	98	446.2	5.1	**0.1763**	0.012	6.9	ug/L	8	Standard
	Ag	107	132.3	3.7	**0.0090**	0.001	8.3	ug/L	81	Standard
	Cd	111	53.4	17.3	**0.0233**	0.005	21.5	mg/L	3	Standard
	Cd	114	111.5	28.2	**0.0185**	0.006	33.2	ug/L	7	Standard
>	**In**	115	545539.1	1.6				ug/L	524722	Standard
	Sn	118	1001.7	15.4	**0.0892**	0.025	28.5	ug/L	715	Standard
	Sb	123	390.2	5.8	**0.0711**	0.004	6.2	ug/L	201	Standard
	Ba	135	2004.1	4.2	**1.0056**	0.035	3.5	ug/L	108	Standard
	Ce	140	4912.5	3.1				ug/L	30	Standard
>	**Tb**	159	820295.3	0.5				ug/L	792236	Standard
	Ho	165	85.0	35.8				ug/L	7	Standard
	Tl	203	81.3	9.9	**0.0080**	0.001	12.7	ug/L	9	Standard
	Tl	205	81.7	7.1	**0.0047**	0.001	18.7	ug/L	0	Standard
	Pb	206	4339.0	0.8	**0.8817**	0.013	1.4	ug/L	216	Standard
	Pb	207	3847.8	0.9	**0.8599**	0.011	1.3	ug/L	180	Standard
	Pb	208	15987.3	1.8	**0.8776**	0.022	2.5	ug/L	717	Standard
	U	238	37.0	13.5	**-0.0016**	0.001	51.1	ug/L	4	Standard
>	**Bi**	209	461213.2	0.5				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1265.1	9.3	**1.4911**	0.161	10.8	mg/L	20	Standard
K	39	51.7	11.2	**0.1245**	0.037	30.0	mg/L	22	Standard
Ca	43	36.7	20.8	**-5.5323**	1.502	27.2	mg/L	47	Standard
Fe	54	272.3	11.9	**0.0834**	0.026	30.8	mg/L	151	Standard
Fe	57	213.3	13.3	**-0.0553**	0.084	152.6	mg/L	195	Standard
> **Sc-1**	45	33126.2	1.2				mg/L	29647	Standard
Cl	35	168674.4	1.0				ug/L	154152	Standard
Kr	83	2.7	57.3				ug/L	3	Standard
Br	81	3067.0	8.5				ug/L	1607	Standard
P	31	24656.7	3.1				ug/L	22752	Standard
S	34	5190.9	0.5				ug/L	5049	Standard
Sr	88	70.0	31.1				ug/L	87	Standard
C	12	56.7	40.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	128.2	29.2				mg/L	10	Standard
Ho-1	165	85.0	35.8				mg/L	7	Standard
Er	166	106.7	19.5				mg/L	3	Standard
I	127	4907.5	9.2				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.933	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.166	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.967
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.189
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606054009
Sample Date/Time: Thursday, June 16, 2016 20:53:06
Number of Replicates: 3
Autosampler Position: 348
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57167.7	1.8				ug/L	51024	Standard
	Be	9	16.7	34.6	**-0.0033**	0.006	191.0	ug/L	7	Standard
	Al	27	40703.4	11.7	**0.2452**	0.025	10.3	ug/L	625	Standard
	Sc	45	31935.3	3.8				ug/L	29647	Standard
	Ti	47	33.3	7.5	**-0.0541**	0.007	12.4	ug/L	57	Standard
	V	51	1267.4	7.9	**0.0110**	0.011	98.7	ug/L	1142	Standard
	Cr	52	6813.9	0.7	**0.0049**	0.027	550.7	ug/L	6628	Standard
	Cr	53	1183.4	2.1	**0.8507**	0.047	5.5	ug/L	430	Standard
	Mn	55	63841.2	0.9	**10.7040**	0.156	1.5	ug/L	603	Standard
	Co	59	241.7	8.6	**-0.0034**	0.003	78.7	ug/L	237	Standard
	Ni	60	170.7	5.3	**0.0113**	0.004	35.5	ug/L	141	Standard
	Cu	65	185.7	9.3	**0.0334**	0.011	32.3	ug/L	109	Standard
	Zn	66	1221.7	3.3	**0.8784**	0.051	5.8	ug/L	159	Standard
>	**Ge**	72	470712.9	2.2				ug/L	474053	Standard
	As	75	30.8	16.5	**0.0530**	0.004	7.8	ug/L	-34	Standard
	Se	82	25.1	14.7	**0.0591**	0.030	51.4	ug/L	14	Standard
	Se-1	77	77.3	7.8	**0.2686**	0.059	22.0	ug/L	55	Standard
>	**Ga**	71	51.7	31.1				mg/L	50	Standard
	Rb	85	646.7	20.2				ug/L	20	Standard
	Y	89	396670.0	2.0				ug/L	376602	Standard
>	**Rh**	103	36.7	47.9				ug/L	17	Standard
	Mo	98	41.6	28.6	**0.0117**	0.005	41.7	ug/L	8	Standard
	Ag	107	95.3	39.9	**0.0032**	0.006	177.8	ug/L	81	Standard
	Cd	111	10.6	141.7	**0.0020**	0.007	372.2	mg/L	3	Standard
	Cd	114	31.1	47.0	**0.0025**	0.003	110.7	ug/L	7	Standard
>	**In**	115	535879.5	3.0				ug/L	524722	Standard
	Sn	118	518.3	19.7	**0.0045**	0.016	347.9	ug/L	715	Standard
	Sb	123	86.0	15.9	**0.0044**	0.002	55.3	ug/L	201	Standard
	Ba	135	3179.4	70.5	**1.6371**	1.141	69.7	ug/L	108	Standard
	Ce	140	118.3	56.3				ug/L	30	Standard
>	**Tb**	159	791577.1	1.4				ug/L	792236	Standard
	Ho	165	16.7	62.4				ug/L	7	Standard
	Tl	203	82.0	86.0	**0.0083**	0.009	108.7	ug/L	9	Standard
	Tl	205	38.3	39.8	**-0.0018**	0.002	122.7	ug/L	0	Standard
	Pb	206	276.0	8.2	**0.0051**	0.003	58.8	ug/L	216	Standard
	Pb	207	225.0	9.4	**0.0012**	0.004	310.7	ug/L	180	Standard
	Pb	208	961.3	4.7	**0.0001**	0.001	957.0	ug/L	717	Standard
	U	238	50.7	3.0	**0.0008**	0.000	45.3	ug/L	4	Standard
>	**Bi**	209	447174.4	3.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	178.3	23.3	**0.1782**	0.044	24.8	mg/L	20	Standard
K	39	75.0	0.0	**0.3034**	0.020	6.6	mg/L	22	Standard
Ca	43	26.7	39.0	**-7.4067**	2.216	29.9	mg/L	47	Standard
Fe	54	296.0	2.0	**0.1085**	0.005	4.5	mg/L	151	Standard
Fe	57	203.3	7.1	**-0.0621**	0.045	71.7	mg/L	195	Standard
> **Sc-1**	45	31935.3	3.8				mg/L	29647	Standard
Cl	35	168415.6	1.0				ug/L	154152	Standard
Kr	83	1.0	0.0				ug/L	3	Standard
Br	81	2343.5	14.9				ug/L	1607	Standard
P	31	24079.1	0.8				ug/L	22752	Standard
S	34	5175.9	6.6				ug/L	5049	Standard
Sr	88	91.7	20.7				ug/L	87	Standard
C	12	60.0	28.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	7.9	115.0				mg/L	10	Standard
Ho-1	165	16.7	62.4				mg/L	7	Standard
Er	166	43.3	70.5				mg/L	3	Standard
I	127	3628.8	3.8				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.040	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.295	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.126
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.139
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606054010
Sample Date/Time: Thursday, June 16, 2016 20:57:27
Number of Replicates: 3
Autosampler Position: 349
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56434.9	2.3				ug/L	51024	Standard
	Be	9	8.3	34.6	**-0.0121**	0.003	26.4	ug/L	7	Standard
	Al	27	252906.9	1.5	**1.5971**	0.043	2.7	ug/L	625	Standard
	Sc	45	31920.3	2.1				ug/L	29647	Standard
	Ti	47	312.3	10.2	**0.8821**	0.111	12.6	ug/L	57	Standard
	V	51	2253.7	7.5	**0.1509**	0.028	18.3	ug/L	1142	Standard
	Cr	52	7388.1	1.0	**0.0829**	0.016	19.3	ug/L	6628	Standard
	Cr	53	1196.7	7.3	**0.8649**	0.109	12.6	ug/L	430	Standard
	Mn	55	73740.7	1.7	**12.3802**	0.357	2.9	ug/L	603	Standard
	Co	59	450.0	4.0	**0.0292**	0.003	10.6	ug/L	237	Standard
	Ni	60	555.0	6.8	**0.2120**	0.023	10.8	ug/L	141	Standard
	Cu	65	367.0	6.1	**0.1304**	0.011	8.6	ug/L	109	Standard
	Zn	66	2607.2	1.1	**2.1362**	0.049	2.3	ug/L	159	Standard
>	**Ge**	72	470838.7	1.1				ug/L	474053	Standard
	As	75	1057.7	4.9	**0.9866**	0.037	3.7	ug/L	-34	Standard
	Se	82	371.4	5.2	**3.2111**	0.141	4.4	ug/L	14	Standard
	Se-1	77	82.0	5.3	**0.3308**	0.069	21.0	ug/L	55	Standard
>	**Ga**	71	95.0	21.1				mg/L	50	Standard
	Rb	85	2080.1	6.3				ug/L	20	Standard
	Y	89	394550.0	1.4				ug/L	376602	Standard
>	**Rh**	103	40.0	12.5				ug/L	17	Standard
	Mo	98	432.1	5.5	**0.1778**	0.013	7.4	ug/L	8	Standard
	Ag	107	89.3	6.8	**0.0027**	0.001	34.2	ug/L	81	Standard
	Cd	111	10.8	29.5	**0.0024**	0.002	71.8	mg/L	3	Standard
	Cd	114	7.3	63.1	**-0.0023**	0.001	40.5	ug/L	7	Standard
>	**In**	115	524122.9	2.0				ug/L	524722	Standard
	Sn	118	475.0	16.9	**-0.0012**	0.015	1226.6	ug/L	715	Standard
	Sb	123	126.7	16.7	**0.0143**	0.005	37.6	ug/L	201	Standard
	Ba	135	6164.6	3.3	**3.3481**	0.133	4.0	ug/L	108	Standard
	Ce	140	2293.5	2.9				ug/L	30	Standard
>	**Tb**	159	771498.5	0.9				ug/L	792236	Standard
	Ho	165	40.0	33.1				ug/L	7	Standard
	Tl	203	178.3	6.6	**0.0218**	0.002	7.9	ug/L	9	Standard
	Tl	205	168.3	19.8	**0.0193**	0.006	28.8	ug/L	0	Standard
	Pb	206	424.0	1.9	**0.0396**	0.002	4.6	ug/L	216	Standard
	Pb	207	350.0	3.8	**0.0332**	0.004	10.7	ug/L	180	Standard
	Pb	208	1524.0	3.5	**0.0355**	0.004	11.4	ug/L	717	Standard
	U	238	1126.4	2.3	**0.1820**	0.006	3.2	ug/L	4	Standard
>	**Bi**	209	440459.4	0.9				ug/L	460343	Standard

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Na	23	3.3	86.6	**0.3515**	8.752	2490.2	mg/L	0	Standard
Mg	24	5054.2	1.6	**6.3217**	0.207	3.3	mg/L	20	Standard
K	39	60.0	38.2	**0.1962**	0.161	82.1	mg/L	22	Standard
Ca	43	58.3	27.6	**-0.5341**	3.483	652.1	mg/L	47	Standard
Fe	54	351.0	19.9	**0.1502**	0.054	35.8	mg/L	151	Standard
Fe	57	258.3	13.7	**0.0974**	0.116	119.4	mg/L	195	Standard
> **Sc-1**	45	31920.3	2.1				mg/L	29647	Standard
Cl	35	170598.8	2.4				ug/L	154152	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	89319.4	3.8				ug/L	1607	Standard
P	31	24377.9	0.5				ug/L	22752	Standard
S	34	5239.2	6.6				ug/L	5049	Standard
Sr	88	133.3	15.6				ug/L	87	Standard
C	12	30.0	33.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	52.1	28.7				mg/L	10	Standard
Ho-1	165	40.0	33.1				mg/L	7	Standard
Er	166	26.7	57.3				mg/L	3	Standard
I	127	17059.6	8.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.604	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.322	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.886
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.681
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606054011
Sample Date/Time: Thursday, June 16, 2016 21:00:39
Number of Replicates: 3
Autosampler Position: 350
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58251.8	0.7				ug/L	51024	Standard
	Be	9	10.0	100.0	**-0.0107**	0.010	96.5	ug/L	7	Standard
	Al	27	254779.3	0.3	**1.5580**	0.016	1.0	ug/L	625	Standard
	Sc	45	32790.5	2.0				ug/L	29647	Standard
	Ti	47	354.0	6.1	**1.0202**	0.064	6.3	ug/L	57	Standard
	V	51	2227.5	5.1	**0.1471**	0.023	15.7	ug/L	1142	Standard
	Cr	52	7531.2	1.8	**0.1020**	0.041	40.4	ug/L	6628	Standard
	Cr	53	1105.0	6.8	**0.7629**	0.054	7.1	ug/L	430	Standard
	Mn	55	71367.7	1.1	**11.9661**	0.226	1.9	ug/L	603	Standard
	Co	59	417.3	0.3	**0.0241**	0.001	5.5	ug/L	237	Standard
	Ni	60	538.0	5.0	**0.2029**	0.019	9.2	ug/L	141	Standard
	Cu	65	370.3	6.0	**0.1319**	0.008	6.1	ug/L	109	Standard
	Zn	66	2431.9	0.9	**1.9749**	0.035	1.8	ug/L	159	Standard
>	**Ge**	72	471306.4	2.3				ug/L	474053	Standard
	As	75	1059.1	3.3	**0.9871**	0.024	2.5	ug/L	-34	Standard
	Se	82	374.1	5.5	**3.2332**	0.174	5.4	ug/L	14	Standard
	Se-1	77	74.7	4.7	**0.2331**	0.038	16.2	ug/L	55	Standard
>	**Ga**	71	103.3	15.6				mg/L	50	Standard
	Rb	85	1920.1	7.2				ug/L	20	Standard
	Y	89	383902.2	1.9				ug/L	376602	Standard
>	**Rh**	103	25.0	87.2				ug/L	17	Standard
	Mo	98	436.7	9.1	**0.1748**	0.015	8.7	ug/L	8	Standard
	Ag	107	65.0	9.2	**-0.0017**	0.001	50.8	ug/L	81	Standard
	Cd	111	7.9	14.5	**0.0007**	0.001	83.6	mg/L	3	Standard
	Cd	114	24.6	49.4	**0.0012**	0.002	206.6	ug/L	7	Standard
>	**In**	115	537640.9	1.1				ug/L	524722	Standard
	Sn	118	573.3	39.0	**0.0145**	0.041	281.6	ug/L	715	Standard
	Sb	123	111.2	8.6	**0.0100**	0.002	20.8	ug/L	201	Standard
	Ba	135	6046.2	1.0	**3.1982**	0.060	1.9	ug/L	108	Standard
	Ce	140	2091.8	0.8				ug/L	30	Standard
>	**Tb**	159	809758.8	0.4				ug/L	792236	Standard
	Ho	165	41.7	18.3				ug/L	7	Standard
	Tl	203	180.3	6.1	**0.0211**	0.001	6.1	ug/L	9	Standard
	Tl	205	173.3	24.0	**0.0189**	0.006	33.1	ug/L	0	Standard
	Pb	206	420.3	5.1	**0.0350**	0.005	15.0	ug/L	216	Standard
	Pb	207	374.0	2.6	**0.0354**	0.003	8.0	ug/L	180	Standard
	Pb	208	1541.7	1.3	**0.0327**	0.002	5.1	ug/L	717	Standard
	U	238	1137.0	2.8	**0.1760**	0.006	3.3	ug/L	4	Standard
>	**Bi**	209	459070.7	0.7				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.4041**	8.743	161.8	mg/L	0	Standard
Mg	24	4977.5	2.7	**6.0561**	0.102	1.7	mg/L	20	Standard
K	39	71.7	10.7	**0.2668**	0.063	23.4	mg/L	22	Standard
Ca	43	53.3	10.8	**-1.9274**	1.113	57.7	mg/L	47	Standard
Fe	54	318.9	6.3	**0.1195**	0.015	12.9	mg/L	151	Standard
Fe	57	250.0	29.5	**0.0557**	0.223	399.4	mg/L	195	Standard
> **Sc-1**	45	32790.5	2.0				mg/L	29647	Standard
Cl	35	169793.5	0.8				ug/L	154152	Standard
Kr	83	2.0	0.0				ug/L	3	Standard
Br	81	89396.4	2.9				ug/L	1607	Standard
P	31	24319.5	2.4				ug/L	22752	Standard
S	34	5012.5	5.2				ug/L	5049	Standard
Sr	88	106.7	17.7				ug/L	87	Standard
C	12	46.7	32.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	51.6	38.3				mg/L	10	Standard
Ho-1	165	41.7	18.3				mg/L	7	Standard
Er	166	36.7	63.0				mg/L	3	Standard
I	127	17585.2	6.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.165	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.421	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606054011
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.462	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.724	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606054014
Sample Date/Time: Thursday, June 16, 2016 21:03:50
Number of Replicates: 3
Autosampler Position: 351
Sample Description: 100
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57943.9	0.3				ug/L	51024	Standard
	Be	9	10.0	50.0	**-0.0106**	0.005	49.0	ug/L	7	Standard
	Al	27	40494.2	7.5	**0.2408**	0.019	8.1	ug/L	625	Standard
	Sc	45	33099.4	0.9				ug/L	29647	Standard
	Ti	47	40.0	11.5	**-0.0319**	0.013	41.5	ug/L	57	Standard
	V	51	1267.4	3.9	**0.0110**	0.004	33.2	ug/L	1142	Standard
	Cr	52	6912.6	1.0	**0.0177**	0.023	132.2	ug/L	6628	Standard
	Cr	53	750.0	9.0	**0.3802**	0.071	18.6	ug/L	430	Standard
	Mn	55	124087.1	1.1	**20.9134**	0.521	2.5	ug/L	603	Standard
	Co	59	211.7	10.1	**-0.0081**	0.004	46.5	ug/L	237	Standard
	Ni	60	248.0	1.5	**0.0516**	0.002	4.7	ug/L	141	Standard
	Cu	65	221.0	10.6	**0.0522**	0.012	22.6	ug/L	109	Standard
	Zn	66	3791.1	1.2	**3.2112**	0.103	3.2	ug/L	159	Standard
>	**Ge**	72	470993.8	1.9				ug/L	474053	Standard
	As	75	110.5	40.9	**0.1251**	0.040	31.9	ug/L	-34	Standard
	Se	82	16.7	56.8	**-0.0174**	0.085	487.8	ug/L	14	Standard
	Se-1	77	66.3	16.1	**0.1259**	0.151	119.8	ug/L	55	Standard
>	**Ga**	71	63.3	27.7				mg/L	50	Standard
	Rb	85	276.7	10.3				ug/L	20	Standard
	Y	89	385833.8	2.0				ug/L	376602	Standard
>	**Rh**	103	31.7	50.8				ug/L	17	Standard
	Mo	98	31.0	14.9	**0.0074**	0.002	27.3	ug/L	8	Standard
	Ag	107	68.0	4.4	**-0.0012**	0.000	32.0	ug/L	81	Standard
	Cd	111	10.9	18.2	**0.0023**	0.001	41.2	mg/L	3	Standard
	Cd	114	35.3	7.7	**0.0034**	0.001	15.7	ug/L	7	Standard
>	**In**	115	534994.4	1.2				ug/L	524722	Standard
	Sn	118	486.7	6.0	**-0.0009**	0.004	488.6	ug/L	715	Standard
	Sb	123	88.5	13.6	**0.0050**	0.002	48.6	ug/L	201	Standard
	Ba	135	1149.4	10.0	**0.5638**	0.054	9.6	ug/L	108	Standard
	Ce	140	73.3	33.6				ug/L	30	Standard
>	**Tb**	159	801412.4	0.6				ug/L	792236	Standard
	Ho	165	16.7	17.3				ug/L	7	Standard
	Tl	203	39.7	22.9	**0.0026**	0.001	46.4	ug/L	9	Standard
	Tl	205	23.3	75.3	**-0.0042**	0.003	64.0	ug/L	0	Standard
	Pb	206	288.7	4.7	**0.0060**	0.003	43.9	ug/L	216	Standard
	Pb	207	232.0	1.6	**0.0012**	0.001	74.1	ug/L	180	Standard
	Pb	208	996.7	1.1	**0.0003**	0.001	274.4	ug/L	717	Standard
	U	238	6.3	48.2	**-0.0066**	0.000	7.5	ug/L	4	Standard
>	**Bi**	209	461918.2	0.5				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.5408**	8.507	153.5	mg/L	0	Standard
Mg	24	155.0	19.6	**0.1428**	0.035	24.6	mg/L	20	Standard
K	39	20.0	75.0	**-0.0919**	0.101	110.1	mg/L	22	Standard
Ca	43	28.3	36.7	**-7.2551**	2.201	30.3	mg/L	47	Standard
Fe	54	217.7	12.7	**0.0436**	0.021	47.7	mg/L	151	Standard
Fe	57	210.0	21.4	**-0.0640**	0.129	201.3	mg/L	195	Standard
> **Sc-1**	45	33099.4	0.9				mg/L	29647	Standard
Cl	35	168257.1	0.3				ug/L	154152	Standard
Kr	83	2.0	86.6				ug/L	3	Standard
Br	81	3430.4	12.2				ug/L	1607	Standard
P	31	24144.2	1.0				ug/L	22752	Standard
S	34	5209.2	2.8				ug/L	5049	Standard
Sr	88	75.0	43.7				ug/L	87	Standard
C	12	36.7	63.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.1	43.3				mg/L	10	Standard
Ho-1	165	16.7	17.3				mg/L	7	Standard
Er	166	26.7	43.3				mg/L	3	Standard
I	127	3078.6	10.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.562	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.355	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.958
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.342
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 21:07:02
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	57216.2	1.8				ug/L	51024	Standard
	Be	9	44266.2	0.8	**46.9448**	1.086	2.3	ug/L	7	Standard
	Al	27	7280291.9	1.0	**45.6137**	1.287	2.8	ug/L	625	Standard
	Sc	45	32309.4	1.7				ug/L	29647	Standard
	Ti	47	30197.4	0.3	**101.5240**	2.598	2.6	ug/L	57	Standard
	V	51	355347.4	0.9	**50.3294**	0.808	1.6	ug/L	1142	Standard
	Cr	52	370024.2	0.4	**49.8980**	1.109	2.2	ug/L	6628	Standard
	Cr	53	45872.7	0.6	**49.4285**	1.135	2.3	ug/L	430	Standard
	Mn	55	314239.7	1.6	**53.3617**	1.128	2.1	ug/L	603	Standard
	Co	59	314388.6	0.3	**49.3919**	1.176	2.4	ug/L	237	Standard
	Ni	60	94820.1	0.2	**49.5997**	1.101	2.2	ug/L	141	Standard
	Cu	65	92383.2	1.4	**49.5924**	0.629	1.3	ug/L	109	Standard
	Zn	66	54761.8	0.6	**49.6923**	0.878	1.8	ug/L	159	Standard
>	Ge	72	469160.5	2.3				ug/L	474053	Standard
	As	75	53380.1	0.9	**48.7528**	1.227	2.5	ug/L	-34	Standard
	Se	82	5320.4	1.7	**48.4684**	1.778	3.7	ug/L	14	Standard
	Se-1	77	3692.8	2.0	**47.8512**	0.716	1.5	ug/L	55	Standard
>	Ga	71	61.7	70.8				mg/L	50	Standard
	Rb	85	808.4	9.3				ug/L	20	Standard
	Y	89	383560.2	1.8				ug/L	376602	Standard
>	Rh	103	35.0	42.9				ug/L	17	Standard
	Mo	98	232242.3	1.1	**96.5061**	2.361	2.4	ug/L	8	Standard
	Ag	107	292582.7	0.8	**48.1206**	0.391	0.8	ug/L	81	Standard
	Cd	111	95603.2	0.1	**48.3402**	0.694	1.4	mg/L	3	Standard
	Cd	114	235634.1	0.2	**48.1942**	0.648	1.3	ug/L	7	Standard
>	In	115	534700.6	1.5				ug/L	524722	Standard
	Sn	118	264473.5	1.3	**48.1050**	1.306	2.7	ug/L	715	Standard
	Sb	123	215670.2	0.6	**48.4479**	0.874	1.8	ug/L	201	Standard
	Ba	135	88155.7	0.1	**47.6769**	0.763	1.6	ug/L	108	Standard
	Ce	140	101.7	19.9				ug/L	30	Standard
>	Tb	159	793079.8	1.0				ug/L	792236	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	358440.3	1.1	**47.4951**	0.142	0.3	ug/L	9	Standard
	Tl	205	312266.9	1.0	**48.6540**	0.130	0.3	ug/L	0	Standard
	Pb	206	224283.0	1.3	**49.1202**	0.907	1.8	ug/L	216	Standard
	Pb	207	204302.6	0.7	**49.1523**	0.806	1.6	ug/L	180	Standard
	Pb	208	833504.1	0.4	**49.4087**	0.646	1.3	ug/L	717	Standard
	U	238	304654.1	0.2	**49.6463**	0.682	1.4	ug/L	4	Standard
>	Bi	209	454777.5	1.2				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.3475**	8.842	165.3	mg/L	0	Standard
Mg	24	4015.5	1.7	**4.9520**	0.163	3.3	mg/L	20	Standard
K	39	633.3	0.9	**4.2037**	0.116	2.8	mg/L	22	Standard
Ca	43	71.7	28.2	**2.1962**	4.389	199.9	mg/L	47	Standard
Fe	54	5816.1	3.6	**4.2263**	0.216	5.1	mg/L	151	Standard
Fe	57	1691.8	3.9	**4.1585**	0.125	3.0	mg/L	195	Standard
> **Sc-1**	45	32309.4	1.7				mg/L	29647	Standard
Cl	35	165447.9	1.5				ug/L	154152	Standard
Kr	83	3.0	33.3				ug/L	3	Standard
Br	81	2063.5	3.6				ug/L	1607	Standard
P	31	25169.2	0.8				ug/L	22752	Standard
S	34	5737.8	0.7				ug/L	5049	Standard
Sr	88	55.0	15.7				ug/L	87	Standard
C	12	53.3	47.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.2	93.3				mg/L	10	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	10.0					mg/L	3	Standard
I	127	1655.1	3.8				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	93.890		
	Al	27	91.227		
	Sc	45			
	Ti	47	101.524		
	V	51	100.659		
	Cr	52	99.796		
	Cr	53			
	Mn	55	106.723		
	Co	59	98.784		
	Ni	60	99.199		
	Cu	65	99.185		
	Zn	66	99.385		
>	Ge	72		98.968	
	As	75	97.506		
	Se	82	96.937		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	96.506		
Ag	107	96.241		
Cd	111	96.680		
Cd	114			
In	115			101.902
Sn	118	96.210		
Sb	123	96.896		
Ba	135	95.354		
Ce	140			
Tb	159			
Ho	165			
Tl	203	94.990		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.817		
U	238	99.293		
Bi	209			98.791
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 21:10:14
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55944.8	2.0				ug/L	51024	Standard
	Be	9	16.7	34.6	**-0.0030**	0.006	212.8	ug/L	7	Standard
	Al	27	1526.8	38.2	**-0.0000**	0.004	16917.9	ug/L	625	Standard
	Sc	45	31897.0	7.4				ug/L	29647	Standard
	Ti	47	31.0	8.5	**-0.0586**	0.008	13.1	ug/L	57	Standard
	V	51	1141.1	6.7	**-0.0015**	0.010	648.2	ug/L	1142	Standard
	Cr	52	6326.0	1.2	**-0.0342**	0.003	8.9	ug/L	6628	Standard
	Cr	53	638.3	5.1	**0.2820**	0.027	9.6	ug/L	430	Standard
	Mn	55	672.3	5.7	**-0.0087**	0.006	71.9	ug/L	603	Standard
	Co	59	229.3	15.7	**-0.0042**	0.005	126.3	ug/L	237	Standard
	Ni	60	153.7	14.0	**0.0051**	0.012	235.2	ug/L	141	Standard
	Cu	65	131.3	12.6	**0.0065**	0.009	132.4	ug/L	109	Standard
	Zn	66	145.0	12.1	**-0.0961**	0.015	15.1	ug/L	159	Standard
>	**Ge**	72	455945.8	1.4				ug/L	474053	Standard
	As	75	-22.0	198.7	**0.0041**	0.041	1009.9	ug/L	-34	Standard
	Se	82	27.4	26.2	**0.0880**	0.066	75.2	ug/L	14	Standard
	Se-1	77	76.0	21.7	**0.2852**	0.231	80.9	ug/L	55	Standard
>	**Ga**	71	41.7	42.1				mg/L	50	Standard
	Rb	85	23.3	75.3				ug/L	20	Standard
	Y	89	400519.5	2.1				ug/L	376602	Standard
>	**Rh**	103	30.0	57.7				ug/L	17	Standard
	Mo	98	251.1	32.5	**0.0955**	0.032	33.2	ug/L	8	Standard
	Ag	107	99.3	31.3	**0.0035**	0.005	136.7	ug/L	81	Standard
	Cd	111	14.1	69.7	**0.0037**	0.005	129.5	mg/L	3	Standard
	Cd	114	31.9	76.8	**0.0025**	0.005	193.5	ug/L	7	Standard
>	**In**	115	550633.2	1.2				ug/L	524722	Standard
	Sn	118	735.0	12.4	**0.0407**	0.017	42.7	ug/L	715	Standard
	Sb	123	412.2	18.4	**0.0753**	0.017	23.2	ug/L	201	Standard
	Ba	135	126.7	6.0	**0.0089**	0.003	36.5	ug/L	108	Standard
	Ce	140	13.3	43.3				ug/L	30	Standard
>	**Tb**	159	804256.0	1.8				ug/L	792236	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	62.7	29.5	**0.0058**	0.002	40.2	ug/L	9	Standard
	Tl	205	55.0	15.7	**0.0008**	0.001	147.2	ug/L	0	Standard
	Pb	206	234.3	12.8	**-0.0047**	0.006	120.1	ug/L	216	Standard
	Pb	207	197.7	8.5	**-0.0059**	0.003	52.6	ug/L	180	Standard
	Pb	208	861.7	7.3	**-0.0064**	0.003	48.7	ug/L	717	Standard
	U	238	32.7	49.0	**-0.0022**	0.003	112.0	ug/L	4	Standard
>	**Bi**	209	451393.6	2.0				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.7600**	8.127	141.1	mg/L	0	Standard
Mg	24	66.7	18.9	**0.0383**	0.010	25.0	mg/L	20	Standard
K	39	15.0	66.7	**-0.1191**	0.074	61.9	mg/L	22	Standard
Ca	43	28.3	36.7	**-7.1219**	1.762	24.7	mg/L	47	Standard
Fe	54	147.9	22.4	**-0.0038**	0.019	492.3	mg/L	151	Standard
Fe	57	200.0	17.5	**-0.0677**	0.127	187.5	mg/L	195	Standard
> **Sc-1**	45	31897.0	7.4				mg/L	29647	Standard
Cl	35	166760.1	1.1				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	1793.4	4.2				ug/L	1607	Standard
P	31	26206.0	1.2				ug/L	22752	Standard
S	34	5832.8	0.3				ug/L	5049	Standard
Sr	88	61.7	26.1				ug/L	87	Standard
C	12	43.3	35.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.9	118.8				mg/L	10	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	10.0					mg/L	3	Standard
I	127	1290.1	6.5				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.180	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.938
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.056
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606061601
Sample Date/Time: Thursday, June 16, 2016 21:13:26
Number of Replicates: 3
Autosampler Position: 352
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57249.6	1.2				ug/L	51024	Standard
	Be	9	55.0	9.1	**0.0372**	0.006	15.0	ug/L	7	Standard
	Al	27	393587.4	1.7	**2.4548**	0.057	2.3	ug/L	625	Standard
	Sc	45	32406.3	3.0				ug/L	29647	Standard
	Ti	47	74.0	10.7	**0.0892**	0.028	31.0	ug/L	57	Standard
	V	51	636.6	76.8	**-0.0758**	0.071	93.6	ug/L	1142	Standard
	Cr	52	85601.8	0.6	**11.1086**	0.082	0.7	ug/L	6628	Standard
	Cr	53	11320.9	1.4	**12.1647**	0.172	1.4	ug/L	430	Standard
	Mn	55	80985.9	0.3	**13.9862**	0.035	0.3	ug/L	603	Standard
	Co	59	9834.2	0.6	**1.5416**	0.010	0.6	ug/L	237	Standard
	Ni	60	33446.9	0.3	**17.8603**	0.057	0.3	ug/L	141	Standard
	Cu	65	1052.4	3.7	**0.5130**	0.021	4.2	ug/L	109	Standard
	Zn	66	2617.6	1.1	**2.2110**	0.025	1.1	ug/L	159	Standard
>	**Ge**	72	458154.0	0.1				ug/L	474053	Standard
	As	75	49.8	49.2	**0.0716**	0.023	32.0	ug/L	-34	Standard
	Se	82	42.6	32.1	**0.2293**	0.128	56.0	ug/L	14	Standard
	Se-1	77	102.7	16.6	**0.6383**	0.227	35.6	ug/L	55	Standard
>	**Ga**	71	63.3	35.6				mg/L	50	Standard
	Rb	85	306.7	30.8				ug/L	20	Standard
	Y	89	402460.8	1.4				ug/L	376602	Standard
>	**Rh**	103	15.0	0.0				ug/L	17	Standard
	Mo	98	305.2	3.6	**0.1192**	0.004	3.0	ug/L	8	Standard
	Ag	107	82.0	8.5	**0.0009**	0.001	110.4	ug/L	81	Standard
	Cd	111	31.7	1.8	**0.0126**	0.000	1.7	mg/L	3	Standard
	Cd	114	86.0	11.3	**0.0135**	0.002	15.6	ug/L	7	Standard
>	**In**	115	543559.4	0.9				ug/L	524722	Standard
	Sn	118	521.7	5.3	**0.0040**	0.005	126.9	ug/L	715	Standard
	Sb	123	172.0	20.3	**0.0232**	0.008	34.4	ug/L	201	Standard
	Ba	135	10412.6	2.3	**5.4875**	0.099	1.8	ug/L	108	Standard
	Ce	140	1425.1	2.1				ug/L	30	Standard
>	**Tb**	159	802846.0	2.9				ug/L	792236	Standard
	Ho	165	38.3	49.4				ug/L	7	Standard
	Tl	203	181.0	5.8	**0.0217**	0.002	7.1	ug/L	9	Standard
	Tl	205	158.3	6.6	**0.0171**	0.002	12.3	ug/L	0	Standard
	Pb	206	323.7	3.9	**0.0154**	0.001	9.1	ug/L	216	Standard
	Pb	207	297.3	15.5	**0.0184**	0.010	54.3	ug/L	180	Standard
	Pb	208	1247.7	4.4	**0.0169**	0.002	11.0	ug/L	717	Standard
	U	238	59.7	21.2	**0.0022**	0.002	84.4	ug/L	4	Standard
>	**Bi**	209	449878.2	2.0				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	5219.2	4.5	**6.4369**	0.460	7.1	mg/L	20	Standard
K	39	20.0	25.0	**-0.0887**	0.033	37.4	mg/L	22	Standard
Ca	43	31.7	48.2	**-6.3893**	3.387	53.0	mg/L	47	Standard
Fe	54	173.5	30.0	**0.0146**	0.041	283.6	mg/L	151	Standard
Fe	57	193.3	26.5	**-0.1009**	0.133	132.3	mg/L	195	Standard
> **Sc-1**	45	32406.3	3.0				mg/L	29647	Standard
Cl	35	165598.8	1.0				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	7865.4	1.7				ug/L	1607	Standard
P	31	25877.1	1.5				ug/L	22752	Standard
S	34	5332.6	2.3				ug/L	5049	Standard
Sr	88	75.0	53.3				ug/L	87	Standard
C	12	26.7	86.6				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	38.2	28.0				mg/L	10	Standard
Ho-1	165	38.3	49.4				mg/L	7	Standard
Er	166	36.7	41.7				mg/L	3	Standard
I	127	9661.4	1.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.201	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.646	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	103.590	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.727	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606061602
Sample Date/Time: Thursday, June 16, 2016 21:16:38
Number of Replicates: 3
Autosampler Position: 353
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54740.4	1.6				ug/L	51024	Standard
	Be	9	13.3	78.1	**-0.0064**	0.011	174.7	ug/L	7	Standard
	Al	27	1805152.0	1.4	**11.8114**	0.177	1.5	ug/L	625	Standard
	Sc	45	31105.2	2.7				ug/L	29647	Standard
	Ti	47	145.3	36.9	**0.3297**	0.185	56.3	ug/L	57	Standard
	V	51	1187.4	9.5	**0.0023**	0.015	668.9	ug/L	1142	Standard
	Cr	52	6910.6	1.9	**0.0321**	0.023	70.2	ug/L	6628	Standard
	Cr	53	2121.8	8.3	**1.9016**	0.204	10.7	ug/L	430	Standard
	Mn	55	395363.0	1.6	**67.9452**	1.352	2.0	ug/L	603	Standard
	Co	59	396.7	9.1	**0.0219**	0.006	27.5	ug/L	237	Standard
	Ni	60	325.0	2.7	**0.0944**	0.004	4.0	ug/L	141	Standard
	Cu	65	328.0	3.2	**0.1122**	0.006	5.3	ug/L	109	Standard
	Zn	66	1614.8	2.3	**1.2569**	0.027	2.1	ug/L	159	Standard
>	**Ge**	72	463730.0	0.5				ug/L	474053	Standard
	As	75	191.5	27.2	**0.2018**	0.048	23.7	ug/L	-34	Standard
	Se	82	80.2	8.7	**0.5721**	0.064	11.1	ug/L	14	Standard
	Se-1	77	154.3	3.1	**1.3098**	0.068	5.2	ug/L	55	Standard
>	**Ga**	71	83.3	12.5				mg/L	50	Standard
	Rb	85	2255.2	4.8				ug/L	20	Standard
	Y	89	395085.6	4.8				ug/L	376602	Standard
>	**Rh**	103	30.0	44.1				ug/L	17	Standard
	Mo	98	187.4	6.4	**0.0739**	0.005	6.8	ug/L	8	Standard
	Ag	107	74.0	13.7	**0.0001**	0.002	2155.8	ug/L	81	Standard
	Cd	111	4.7	21.2	**-0.0008**	0.000	58.4	mg/L	3	Standard
	Cd	114	23.6	85.5	**0.0011**	0.004	381.8	ug/L	7	Standard
>	**In**	115	524300.8	1.8				ug/L	524722	Standard
	Sn	118	675.0	7.1	**0.0361**	0.011	30.7	ug/L	715	Standard
	Sb	123	147.3	26.2	**0.0191**	0.009	49.7	ug/L	201	Standard
	Ba	135	46098.7	0.3	**25.3994**	0.381	1.5	ug/L	108	Standard
	Ce	140	986.7	3.2				ug/L	30	Standard
>	**Tb**	159	774505.0	2.0				ug/L	792236	Standard
	Ho	165	13.3	94.4				ug/L	7	Standard
	Tl	203	220.3	5.0	**0.0280**	0.002	6.1	ug/L	9	Standard
	Tl	205	203.3	19.9	**0.0253**	0.006	25.4	ug/L	0	Standard
	Pb	206	323.3	2.8	**0.0179**	0.002	12.9	ug/L	216	Standard
	Pb	207	301.7	4.5	**0.0222**	0.003	14.6	ug/L	180	Standard
	Pb	208	1220.4	3.0	**0.0179**	0.003	14.6	ug/L	717	Standard
	U	238	72.3	70.3	**0.0048**	0.009	183.1	ug/L	4	Standard
>	**Bi**	209	434377.4	0.6				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	9573.0	1.2	**12.3290**	0.229	1.9	mg/L	20	Standard
K	39	33.3	22.9	**0.0143**	0.056	391.5	mg/L	22	Standard
Ca	43	41.7	42.1	**-3.8937**	4.020	103.2	mg/L	47	Standard
Fe	54	3391.5	3.3	**2.5135**	0.063	2.5	mg/L	151	Standard
Fe	57	1036.7	3.7	**2.4151**	0.178	7.4	mg/L	195	Standard
> **Sc-1**	45	31105.2	2.7				mg/L	29647	Standard
Cl	35	163124.3	2.0				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	18861.8	5.5				ug/L	1607	Standard
P	31	25780.2	1.2				ug/L	22752	Standard
S	34	5427.6	1.2				ug/L	5049	Standard
Sr	88	133.3	17.7				ug/L	87	Standard
C	12	63.3	48.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	29.4	2.5				mg/L	10	Standard
Ho-1	165	13.3	94.4				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	3	Standard
I	127	27164.5	9.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.283	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.822	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.920
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.360
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606061604
Sample Date/Time: Thursday, June 16, 2016 21:19:49
Number of Replicates: 3
Autosampler Position: 354
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54814.0	0.5				ug/L	51024	Standard
	Be	9	6.7	86.6	**-0.0137**	0.006	46.5	ug/L	7	Standard
	Al	27	110436.2	2.3	**0.7124**	0.018	2.6	ug/L	625	Standard
	Sc	45	32459.7	0.6				ug/L	29647	Standard
	Ti	47	55.7	9.0	**0.0154**	0.018	115.7	ug/L	57	Standard
	V	51	1190.0	8.3	**-0.0046**	0.017	376.0	ug/L	1142	Standard
	Cr	52	7226.1	2.7	**0.0323**	0.047	144.2	ug/L	6628	Standard
	Cr	53	801.7	5.0	**0.4109**	0.034	8.3	ug/L	430	Standard
	Mn	55	73546.8	1.3	**11.9804**	0.177	1.5	ug/L	603	Standard
	Co	59	487.0	1.6	**0.0328**	0.001	4.1	ug/L	237	Standard
	Ni	60	526.7	1.8	**0.1891**	0.010	5.0	ug/L	141	Standard
	Cu	65	380.0	8.6	**0.1312**	0.013	9.7	ug/L	109	Standard
	Zn	66	2004.8	2.3	**1.5353**	0.023	1.5	ug/L	159	Standard
>	**Ge**	72	485083.0	2.2				ug/L	474053	Standard
	As	75	-27.5	85.1	**0.0005**	0.021	4240.8	ug/L	-34	Standard
	Se	82	14.1	16.8	**-0.0441**	0.023	53.0	ug/L	14	Standard
	Se-1	77	56.3	6.2	**-0.0281**	0.039	138.2	ug/L	55	Standard
>	**Ga**	71	65.0	27.7				mg/L	50	Standard
	Rb	85	975.0	3.7				ug/L	20	Standard
	Y	89	385735.6	1.3				ug/L	376602	Standard
>	**Rh**	103	33.3	48.2				ug/L	17	Standard
	Mo	98	31.0	17.9	**0.0076**	0.002	32.0	ug/L	8	Standard
	Ag	107	69.3	9.6	**-0.0007**	0.001	178.9	ug/L	81	Standard
	Cd	111	35.6	7.1	**0.0152**	0.001	9.3	mg/L	3	Standard
	Cd	114	78.6	33.7	**0.0126**	0.006	43.8	ug/L	7	Standard
>	**In**	115	522479.0	0.6				ug/L	524722	Standard
	Sn	118	488.3	12.5	**0.0016**	0.012	727.2	ug/L	715	Standard
	Sb	123	114.8	19.9	**0.0116**	0.005	46.5	ug/L	201	Standard
	Ba	135	3662.8	1.7	**1.9717**	0.029	1.5	ug/L	108	Standard
	Ce	140	251.7	12.1				ug/L	30	Standard
>	**Tb**	159	792180.5	1.3				ug/L	792236	Standard
	Ho	165	13.3	21.7				ug/L	7	Standard
	Tl	203	47.3	14.4	**0.0036**	0.001	25.0	ug/L	9	Standard
	Tl	205	38.3	27.2	**-0.0019**	0.002	86.2	ug/L	0	Standard
	Pb	206	262.0	5.8	**0.0007**	0.003	518.6	ug/L	216	Standard
	Pb	207	237.7	10.4	**0.0030**	0.006	203.7	ug/L	180	Standard
	Pb	208	979.3	1.2	**-0.0002**	0.001	232.5	ug/L	717	Standard
	U	238	9.3	43.3	**-0.0061**	0.001	10.8	ug/L	4	Standard
>	**Bi**	209	458288.4	0.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	298.3	19.4	**0.3240**	0.070	21.6	mg/L	20	Standard
K	39	26.7	65.8	**-0.0419**	0.123	294.6	mg/L	22	Standard
Ca	43	43.3	52.0	**-3.9540**	4.787	121.1	mg/L	47	Standard
Fe	54	369.3	3.6	**0.1593**	0.010	6.3	mg/L	151	Standard
Fe	57	236.7	13.4	**0.0219**	0.086	394.4	mg/L	195	Standard
Sc-1	45	32459.7	0.6				mg/L	29647	Standard
Cl	35	161744.2	1.3				ug/L	154152	Standard
Kr	83	2.7	78.1				ug/L	3	Standard
Br	81	2450.2	3.6				ug/L	1607	Standard
P	31	25593.3	1.9				ug/L	22752	Standard
S	34	5534.3	4.3				ug/L	5049	Standard
Sr	88	81.7	34.8				ug/L	87	Standard
C	12	56.7	40.8				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.2	113.9				mg/L	10	Standard
Ho-1	165	13.3	21.7				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	3	Standard
I	127	11324.2	2.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.428	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.327	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.573
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.554
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606065001
Sample Date/Time: Thursday, June 16, 2016 21:23:01
Number of Replicates: 3
Autosampler Position: 355
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56128.8	1.5				ug/L	51024	Standard
	Be	9	8.3	34.6	**-0.0121**	0.003	26.6	ug/L	7	Standard
	Al	27	482122.3	0.7	**3.0698**	0.068	2.2	ug/L	625	Standard
	Sc	45	32641.8	1.6				ug/L	29647	Standard
	Ti	47	45.3	15.0	**-0.0118**	0.021	178.3	ug/L	57	Standard
	V	51	499.2	13.7	**-0.0967**	0.009	9.3	ug/L	1142	Standard
	Cr	52	82458.1	0.9	**10.5208**	0.076	0.7	ug/L	6628	Standard
	Cr	53	10431.9	1.2	**11.0318**	0.293	2.7	ug/L	430	Standard
	Mn	55	79305.3	0.7	**13.5203**	0.175	1.3	ug/L	603	Standard
	Co	59	2974.6	1.7	**0.4315**	0.004	1.0	ug/L	237	Standard
	Ni	60	33369.4	1.4	**17.5928**	0.059	0.3	ug/L	141	Standard
	Cu	65	207.3	9.4	**0.0465**	0.009	20.2	ug/L	109	Standard
	Zn	66	1251.4	5.4	**0.9209**	0.049	5.4	ug/L	159	Standard
>	**Ge**	72	464010.1	1.4				ug/L	474053	Standard
	As	75	2.0	650.9	**0.0269**	0.012	45.0	ug/L	-34	Standard
	Se	82	23.1	30.3	**0.0449**	0.067	148.0	ug/L	14	Standard
	Se-1	77	78.7	3.2	**0.3022**	0.048	15.8	ug/L	55	Standard
>	**Ga**	71	63.3	32.9				mg/L	50	Standard
	Rb	85	220.0	4.5				ug/L	20	Standard
	Y	89	399793.1	1.3				ug/L	376602	Standard
>	**Rh**	103	18.3	103.3				ug/L	17	Standard
	Mo	98	108.7	5.3	**0.0384**	0.002	6.3	ug/L	8	Standard
	Ag	107	73.7	11.4	**-0.0005**	0.001	257.8	ug/L	81	Standard
	Cd	111	9.8	27.0	**0.0016**	0.001	82.1	mg/L	3	Standard
	Cd	114	29.3	22.9	**0.0020**	0.001	66.1	ug/L	7	Standard
>	**In**	115	548875.7	0.2				ug/L	524722	Standard
	Sn	118	460.0	8.7	**-0.0078**	0.007	89.3	ug/L	715	Standard
	Sb	123	86.5	15.7	**0.0041**	0.003	71.3	ug/L	201	Standard
	Ba	135	20540.6	0.3	**10.7757**	0.041	0.4	ug/L	108	Standard
	Ce	140	105.0	17.2				ug/L	30	Standard
>	**Tb**	159	820934.6	1.9				ug/L	792236	Standard
	Ho	165	20.0	25.0				ug/L	7	Standard
	Tl	203	96.0	11.0	**0.0101**	0.002	16.2	ug/L	9	Standard
	Tl	205	83.3	24.2	**0.0050**	0.003	58.6	ug/L	0	Standard
	Pb	206	282.0	1.9	**0.0050**	0.002	36.7	ug/L	216	Standard
	Pb	207	225.3	3.3	**-0.0000**	0.001	53500.0	ug/L	180	Standard
	Pb	208	968.3	3.8	**-0.0009**	0.003	322.0	ug/L	717	Standard
	U	238	52.7	14.0	**0.0010**	0.001	142.8	ug/L	4	Standard
>	**Bi**	209	458406.1	1.9				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1866.8	2.0	**2.2543**	0.080	3.6	mg/L	20	Standard
K	39	16.7	96.4	**-0.1137**	0.109	95.5	mg/L	22	Standard
Ca	43	30.0	44.1	**-6.8062**	2.881	42.3	mg/L	47	Standard
Fe	54	329.9	10.2	**0.1288**	0.026	20.3	mg/L	151	Standard
Fe	57	233.3	15.5	**0.0097**	0.106	1102.3	mg/L	195	Standard
> **Sc-1**	45	32641.8	1.6				mg/L	29647	Standard
Cl	35	163083.7	0.8				ug/L	154152	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	2766.9	2.7				ug/L	1607	Standard
P	31	25266.1	2.8				ug/L	22752	Standard
S	34	5369.3	3.4				ug/L	5049	Standard
Sr	88	88.3	8.6				ug/L	87	Standard
C	12	30.0	57.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.9	122.5				mg/L	10	Standard
Ho-1	165	20.0	25.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	9619.7	7.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.004	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.881	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.603
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.579
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606065002
Sample Date/Time: Thursday, June 16, 2016 21:26:12
Number of Replicates: 3
Autosampler Position: 356
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54365.7	1.4				ug/L	51024	Standard
	Be	9	15.0	57.7	**-0.0044**	0.010	217.8	ug/L	7	Standard
	Al	27	1025103.4	0.5	**6.7495**	0.066	1.0	ug/L	625	Standard
	Sc	45	32087.3	3.3				ug/L	29647	Standard
	Ti	47	91.0	58.5	**0.1440**	0.181	125.8	ug/L	57	Standard
	V	51	1237.3	4.1	**0.0097**	0.009	93.5	ug/L	1142	Standard
	Cr	52	7747.0	1.2	**0.1491**	0.005	3.5	ug/L	6628	Standard
	Cr	53	1525.1	10.3	**1.2446**	0.145	11.6	ug/L	430	Standard
	Mn	55	121524.7	0.0	**20.8162**	0.350	1.7	ug/L	603	Standard
	Co	59	489.3	10.2	**0.0367**	0.008	22.6	ug/L	237	Standard
	Ni	60	546.0	2.6	**0.2119**	0.012	5.8	ug/L	141	Standard
	Cu	65	411.0	3.0	**0.1575**	0.006	3.6	ug/L	109	Standard
	Zn	66	2195.8	1.8	**1.7944**	0.008	0.5	ug/L	159	Standard
>	**Ge**	72	463367.3	1.7				ug/L	474053	Standard
	As	75	18.1	195.3	**0.0420**	0.032	77.3	ug/L	-34	Standard
	Se	82	30.0	13.1	**0.1083**	0.035	32.1	ug/L	14	Standard
	Se-1	77	106.3	6.3	**0.6711**	0.066	9.8	ug/L	55	Standard
>	**Ga**	71	40.0	54.5				mg/L	50	Standard
	Rb	85	1018.4	11.8				ug/L	20	Standard
	Y	89	407107.2	1.0				ug/L	376602	Standard
>	**Rh**	103	23.3	12.4				ug/L	17	Standard
	Mo	98	59.9	56.3	**0.0195**	0.014	72.7	ug/L	8	Standard
	Ag	107	115.7	63.4	**0.0068**	0.012	179.6	ug/L	81	Standard
	Cd	111	19.6	16.6	**0.0067**	0.002	24.0	mg/L	3	Standard
	Cd	114	62.3	30.6	**0.0090**	0.004	42.7	ug/L	7	Standard
>	**In**	115	532203.3	2.6				ug/L	524722	Standard
	Sn	118	596.7	23.5	**0.0202**	0.028	136.6	ug/L	715	Standard
	Sb	123	167.7	43.4	**0.0231**	0.017	71.6	ug/L	201	Standard
	Ba	135	32786.1	2.0	**17.7838**	0.579	3.3	ug/L	108	Standard
	Ce	140	491.7	8.2				ug/L	30	Standard
>	**Tb**	159	779044.5	1.2				ug/L	792236	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	239.0	44.6	**0.0304**	0.015	49.0	ug/L	9	Standard
	Tl	205	176.7	20.9	**0.0208**	0.006	27.7	ug/L	0	Standard
	Pb	206	322.7	21.3	**0.0173**	0.016	92.8	ug/L	216	Standard
	Pb	207	291.0	18.0	**0.0192**	0.014	70.8	ug/L	180	Standard
	Pb	208	1188.0	5.2	**0.0154**	0.003	22.6	ug/L	717	Standard
	U	238	183.3	6.3	**0.0235**	0.002	9.7	ug/L	4	Standard
>	**Bi**	209	437003.3	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	7120.0	1.8	**8.8768**	0.151	1.7	mg/L	20	Standard
K	39	41.7	27.7	**0.0654**	0.079	121.4	mg/L	22	Standard
Ca	43	41.7	42.1	**-4.2187**	3.620	85.8	mg/L	47	Standard
Fe	54	137.5	7.6	**-0.0117**	0.005	43.2	mg/L	151	Standard
Fe	57	181.7	19.3	**-0.1275**	0.097	75.8	mg/L	195	Standard
> **Sc-1**	45	32087.3	3.3				mg/L	29647	Standard
Cl	35	166481.1	1.4				ug/L	154152	Standard
Kr	83	1.0	0.0				ug/L	3	Standard
Br	81	4110.6	4.2				ug/L	1607	Standard
P	31	25599.9	1.8				ug/L	22752	Standard
S	34	5374.3	5.2				ug/L	5049	Standard
Sr	88	101.7	24.3				ug/L	87	Standard
C	12	36.7	41.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.4	106.9				mg/L	10	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	76002.0	4.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.549	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.746	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.426
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.930
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606065003
Sample Date/Time: Thursday, June 16, 2016 21:29:23
Number of Replicates: 3
Autosampler Position: 357
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54541.3	1.2				ug/L	51024	Standard
	Be	9	8.3	124.9	**-0.0119**	0.012	97.1	ug/L	7	Standard
	Al	27	606559.5	1.5	**3.9772**	0.101	2.5	ug/L	625	Standard
	Sc	45	31063.5	1.7				ug/L	29647	Standard
	Ti	47	165.3	5.8	**0.3810**	0.031	8.1	ug/L	57	Standard
	V	51	733.0	77.1	**-0.0659**	0.079	120.2	ug/L	1142	Standard
	Cr	52	157074.9	2.2	**20.2677**	0.514	2.5	ug/L	6628	Standard
	Cr	53	20141.7	1.4	**21.0752**	0.347	1.6	ug/L	430	Standard
	Mn	55	101750.2	1.1	**16.8892**	0.212	1.3	ug/L	603	Standard
	Co	59	1910.5	3.6	**0.2538**	0.010	4.1	ug/L	237	Standard
	Ni	60	8863.6	2.0	**4.4841**	0.097	2.2	ug/L	141	Standard
	Cu	65	1674.4	2.3	**0.8182**	0.022	2.7	ug/L	109	Standard
	Zn	66	2740.2	2.8	**2.2224**	0.074	3.3	ug/L	159	Standard
>	**Ge**	72	477422.4	0.2				ug/L	474053	Standard
	As	75	139.6	40.2	**0.1503**	0.051	33.7	ug/L	-34	Standard
	Se	82	42.3	11.2	**0.2113**	0.043	20.3	ug/L	14	Standard
	Se-1	77	93.0	6.5	**0.4578**	0.081	17.7	ug/L	55	Standard
>	**Ga**	71	101.7	37.2				mg/L	50	Standard
	Rb	85	1565.1	2.0				ug/L	20	Standard
	Y	89	382720.6	3.5				ug/L	376602	Standard
>	**Rh**	103	20.0	66.1				ug/L	17	Standard
	Mo	98	639.1	4.3	**0.2676**	0.013	4.7	ug/L	8	Standard
	Ag	107	90.7	24.5	**0.0030**	0.004	127.1	ug/L	81	Standard
	Cd	111	110.9	7.8	**0.0545**	0.005	9.0	mg/L	3	Standard
	Cd	114	275.8	13.3	**0.0542**	0.008	14.0	ug/L	7	Standard
>	**In**	115	519830.3	1.0				ug/L	524722	Standard
	Sn	118	653.3	27.4	**0.0332**	0.035	105.0	ug/L	715	Standard
	Sb	123	127.7	28.4	**0.0147**	0.009	58.6	ug/L	201	Standard
	Ba	135	11175.1	0.7	**6.1659**	0.078	1.3	ug/L	108	Standard
	Ce	140	2495.2	5.2				ug/L	30	Standard
>	**Tb**	159	780545.7	0.5				ug/L	792236	Standard
	Ho	165	53.3	48.1				ug/L	7	Standard
	Tl	203	163.0	29.4	**0.0195**	0.006	33.3	ug/L	9	Standard
	Tl	205	135.0	9.8	**0.0137**	0.002	15.9	ug/L	0	Standard
	Pb	206	547.3	5.3	**0.0663**	0.008	11.4	ug/L	216	Standard
	Pb	207	444.0	2.8	**0.0555**	0.004	6.9	ug/L	180	Standard
	Pb	208	1903.7	3.0	**0.0576**	0.005	8.4	ug/L	717	Standard
	U	238	51.3	38.7	**0.0010**	0.003	341.9	ug/L	4	Standard
>	**Bi**	209	444975.8	1.2				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3707.1	1.1	**4.7531**	0.132	2.8	mg/L	20	Standard
K	39	33.3	17.3	**0.0146**	0.042	286.2	mg/L	22	Standard
Ca	43	30.0	57.7	**-6.5001**	3.854	59.3	mg/L	47	Standard
Fe	54	681.6	4.0	**0.4140**	0.022	5.2	mg/L	151	Standard
Fe	57	318.3	7.1	**0.2945**	0.082	27.9	mg/L	195	Standard
> **Sc-1**	45	31063.5	1.7				mg/L	29647	Standard
Cl	35	164261.1	1.5				ug/L	154152	Standard
Kr	83	2.0	86.6				ug/L	3	Standard
Br	81	7888.7	5.8				ug/L	1607	Standard
P	31	24920.5	3.3				ug/L	22752	Standard
S	34	5307.6	1.0				ug/L	5049	Standard
Sr	88	88.3	8.6				ug/L	87	Standard
C	12	40.0	25.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	74.8	18.4				mg/L	10	Standard
Ho-1	165	53.3	48.1				mg/L	7	Standard
Er	166	40.0	90.1				mg/L	3	Standard
I	127	17526.8	1.7				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		106.893	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.711	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.068
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.662
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606065008
Sample Date/Time: Thursday, June 16, 2016 21:32:35
Number of Replicates: 3
Autosampler Position: 358
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55971.5	1.2				ug/L	51024	Standard
	Be	9	16.7	121.2	**-0.0030**	0.022	732.0	ug/L	7	Standard
	Al	27	227217.9	1.2	**1.4454**	0.014	1.0	ug/L	625	Standard
	Sc	45	33091.1	0.4				ug/L	29647	Standard
	Ti	47	93.0	12.2	**0.1482**	0.035	23.3	ug/L	57	Standard
	V	51	1468.9	10.6	**0.0412**	0.020	48.4	ug/L	1142	Standard
	Cr	52	7242.7	0.8	**0.0709**	0.012	17.1	ug/L	6628	Standard
	Cr	53	1168.4	6.4	**0.8438**	0.086	10.2	ug/L	430	Standard
	Mn	55	143314.1	1.9	**24.3672**	0.286	1.2	ug/L	603	Standard
	Co	59	707.7	4.5	**0.0704**	0.004	5.3	ug/L	237	Standard
	Ni	60	1968.1	3.3	**0.9574**	0.026	2.8	ug/L	141	Standard
	Cu	65	534.7	8.0	**0.2223**	0.018	8.2	ug/L	109	Standard
	Zn	66	4633.0	0.1	**4.0098**	0.079	2.0	ug/L	159	Standard
>	**Ge**	72	467157.4	1.9				ug/L	474053	Standard
	As	75	68.4	19.1	**0.0878**	0.012	13.9	ug/L	-34	Standard
	Se	82	42.7	11.5	**0.2237**	0.049	22.1	ug/L	14	Standard
	Se-1	77	88.3	9.6	**0.4216**	0.095	22.5	ug/L	55	Standard
>	**Ga**	71	53.3	28.6				mg/L	50	Standard
	Rb	85	821.7	8.3				ug/L	20	Standard
	Y	89	390712.9	1.8				ug/L	376602	Standard
>	**Rh**	103	16.7	96.4				ug/L	17	Standard
	Mo	98	26.7	10.2	**0.0055**	0.001	23.5	ug/L	8	Standard
	Ag	107	72.3	16.0	**-0.0005**	0.002	422.0	ug/L	81	Standard
	Cd	111	13.3	4.3	**0.0034**	0.000	6.8	mg/L	3	Standard
	Cd	114	40.2	32.3	**0.0044**	0.003	63.9	ug/L	7	Standard
>	**In**	115	538841.7	2.0				ug/L	524722	Standard
	Sn	118	488.3	14.9	**-0.0013**	0.012	965.6	ug/L	715	Standard
	Sb	123	100.5	11.8	**0.0076**	0.002	30.8	ug/L	201	Standard
	Ba	135	7028.6	0.9	**3.7196**	0.097	2.6	ug/L	108	Standard
	Ce	140	2670.2	3.1				ug/L	30	Standard
>	**Tb**	159	805010.7	0.6				ug/L	792236	Standard
	Ho	165	43.3	40.5				ug/L	7	Standard
	Tl	203	119.0	4.4	**0.0131**	0.001	5.7	ug/L	9	Standard
	Tl	205	95.0	22.9	**0.0069**	0.003	48.8	ug/L	0	Standard
	Pb	206	254.0	2.5	**-0.0008**	0.002	244.2	ug/L	216	Standard
	Pb	207	226.3	9.4	**0.0004**	0.004	982.1	ug/L	180	Standard
	Pb	208	875.0	3.9	**-0.0061**	0.002	39.4	ug/L	717	Standard
	U	238	28.3	19.4	**-0.0030**	0.001	30.6	ug/L	4	Standard
>	**Bi**	209	456325.9	1.4				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	3722.1	3.3	**4.4755**	0.132	3.0	mg/L	20	Standard
K	39	21.7	48.0	**-0.0800**	0.071	88.6	mg/L	22	Standard
Ca	43	38.3	49.4	**-5.1655**	3.960	76.7	mg/L	47	Standard
Fe	54	149.3	20.9	**-0.0062**	0.023	370.8	mg/L	151	Standard
Fe	57	191.7	19.2	**-0.1152**	0.104	90.0	mg/L	195	Standard
> **Sc-1**	45	33091.1	0.4				mg/L	29647	Standard
Cl	35	167461.1	1.4				ug/L	154152	Standard
Kr	83	2.3	49.5				ug/L	3	Standard
Br	81	7938.7	3.1				ug/L	1607	Standard
P	31	24910.5	1.2				ug/L	22752	Standard
S	34	5120.9	0.9				ug/L	5049	Standard
Sr	88	83.3	3.5				ug/L	87	Standard
C	12	63.3	48.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	67.9	15.4				mg/L	10	Standard
Ho-1	165	43.3	40.5				mg/L	7	Standard
Er	166	43.3	26.6				mg/L	3	Standard
I	127	7648.6	2.6				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		109.696	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.545	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.691	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.127	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606073001
Sample Date/Time: Thursday, June 16, 2016 21:35:46
Number of Replicates: 3
Autosampler Position: 359
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55371.0	2.2				ug/L	51024	Standard
	Be	9	11.7	65.5	**-0.0084**	0.008	97.7	ug/L	7	Standard
	Al	27	132096.8	1.8	**0.8455**	0.012	1.5	ug/L	625	Standard
	Sc	45	31868.5	4.0				ug/L	29647	Standard
	Ti	47	30.0	17.3	**-0.0614**	0.019	31.4	ug/L	57	Standard
	V	51	1455.6	7.2	**0.0453**	0.013	29.6	ug/L	1142	Standard
	Cr	52	11040.4	2.7	**0.6383**	0.023	3.6	ug/L	6628	Standard
	Cr	53	1623.4	8.3	**1.3902**	0.129	9.3	ug/L	430	Standard
	Mn	55	1201.0	0.7	**0.0848**	0.004	4.7	ug/L	603	Standard
	Co	59	375.7	2.3	**0.0198**	0.001	6.0	ug/L	237	Standard
	Ni	60	312.3	3.4	**0.0912**	0.004	4.7	ug/L	141	Standard
	Cu	65	236.3	2.7	**0.0651**	0.002	3.6	ug/L	109	Standard
	Zn	66	1941.8	2.7	**1.5970**	0.055	3.5	ug/L	159	Standard
>	**Ge**	72	454022.4	1.2				ug/L	474053	Standard
	As	75	11.9	146.3	**0.0364**	0.016	45.2	ug/L	-34	Standard
	Se	82	31.4	12.8	**0.1281**	0.041	32.3	ug/L	14	Standard
	Se-1	77	87.7	5.7	**0.4469**	0.060	13.4	ug/L	55	Standard
>	**Ga**	71	95.0	18.2				mg/L	50	Standard
	Rb	85	4872.5	2.9				ug/L	20	Standard
	Y	89	404770.5	0.6				ug/L	376602	Standard
>	**Rh**	103	80.0	22.5				ug/L	17	Standard
	Mo	98	116.6	2.8	**0.0416**	0.002	4.6	ug/L	8	Standard
	Ag	107	61.3	24.5	**-0.0025**	0.002	96.4	ug/L	81	Standard
	Cd	111	8.1	43.0	**0.0008**	0.002	229.5	mg/L	3	Standard
	Cd	114	29.0	53.2	**0.0020**	0.003	156.6	ug/L	7	Standard
>	**In**	115	550074.8	1.6				ug/L	524722	Standard
	Sn	118	596.7	39.8	**0.0158**	0.040	254.1	ug/L	715	Standard
	Sb	123	117.4	4.2	**0.0108**	0.001	9.0	ug/L	201	Standard
	Ba	135	36971.7	2.1	**19.3982**	0.128	0.7	ug/L	108	Standard
	Ce	140	30.0	16.7				ug/L	30	Standard
>	**Tb**	159	802021.2	1.6				ug/L	792236	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	154.7	7.4	**0.0182**	0.001	7.8	ug/L	9	Standard
	Tl	205	128.3	9.0	**0.0124**	0.002	14.8	ug/L	0	Standard
	Pb	206	255.7	10.1	**0.0005**	0.007	1256.9	ug/L	216	Standard
	Pb	207	236.0	8.3	**0.0037**	0.003	93.0	ug/L	180	Standard
	Pb	208	980.3	1.1	**0.0011**	0.002	149.5	ug/L	717	Standard
	U	238	28.0	18.9	**-0.0030**	0.001	29.7	ug/L	4	Standard
>	**Bi**	209	448836.9	2.3				ug/L	460343	Standard

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Na	23	5.0	100.0	**-5.1594**	15.986	309.8	mg/L	0	Standard
Mg	24	1993.5	3.8	**2.4733**	0.176	7.1	mg/L	20	Standard
K	39	58.3	21.6	**0.1865**	0.091	48.6	mg/L	22	Standard
Ca	43	45.0	19.2	**-3.3710**	2.098	62.2	mg/L	47	Standard
Fe	54	141.5	17.4	**-0.0075**	0.021	284.9	mg/L	151	Standard
Fe	57	231.7	13.9	**0.0185**	0.068	366.5	mg/L	195	Standard
Sc-1	45	31868.5	4.0				mg/L	29647	Standard
Cl	35	162650.5	1.3				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	5611.0	3.8				ug/L	1607	Standard
P	31	25164.2	0.9				ug/L	22752	Standard
S	34	5320.9	2.9				ug/L	5049	Standard
Sr	88	361.7	6.2				ug/L	87	Standard
C	12	50.0	20.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.0	107.3				mg/L	10	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	13.3	114.6				mg/L	3	Standard
I	127	5254.2	4.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		108.519	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.775	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.832
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.501
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606073002
Sample Date/Time: Thursday, June 16, 2016 21:38:59
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	52860.4	2.3				ug/L	51024	Standard
	Be	9	10.0	50.0	**-0.0095**	0.006	63.2	ug/L	7	Standard
	Al	27	137711.4	1.6	**0.9241**	0.007	0.7	ug/L	625	Standard
	Sc	45	31095.2	1.2				ug/L	29647	Standard
	Ti	47	32.7	23.2	**-0.0560**	0.026	46.7	ug/L	57	Standard
	V	51	1546.7	3.7	**0.0511**	0.010	20.5	ug/L	1142	Standard
	Cr	52	11025.0	1.4	**0.5840**	0.055	9.5	ug/L	6628	Standard
	Cr	53	1463.4	4.0	**1.1555**	0.040	3.5	ug/L	430	Standard
	Mn	55	1410.7	11.5	**0.1137**	0.033	29.0	ug/L	603	Standard
	Co	59	359.7	1.9	**0.0152**	0.002	14.6	ug/L	237	Standard
	Ni	60	319.3	6.2	**0.0894**	0.014	15.7	ug/L	141	Standard
	Cu	65	200.0	1.3	**0.0412**	0.002	3.9	ug/L	109	Standard
	Zn	66	1969.1	2.4	**1.5596**	0.014	0.9	ug/L	159	Standard
>	**Ge**	72	469994.3	2.3				ug/L	474053	Standard
	As	75	0.5	7482.9	**0.0251**	0.035	138.8	ug/L	-34	Standard
	Se	82	28.5	7.3	**0.0908**	0.014	15.4	ug/L	14	Standard
	Se-1	77	88.7	18.3	**0.4207**	0.218	51.8	ug/L	55	Standard
>	**Ga**	71	73.3	28.4				mg/L	50	Standard
	Rb	85	4865.8	1.3				ug/L	20	Standard
	Y	89	399171.5	2.3				ug/L	376602	Standard
>	**Rh**	103	93.3	12.4				ug/L	17	Standard
	Mo	98	101.9	16.6	**0.0370**	0.006	16.6	ug/L	8	Standard
	Ag	107	61.3	18.0	**-0.0021**	0.002	98.0	ug/L	81	Standard
	Cd	111	6.5	18.0	**0.0001**	0.001	960.6	mg/L	3	Standard
	Cd	114	23.1	68.6	**0.0010**	0.003	344.6	ug/L	7	Standard
>	**In**	115	531069.9	2.8				ug/L	524722	Standard
	Sn	118	445.0	10.3	**-0.0078**	0.009	112.2	ug/L	715	Standard
	Sb	123	65.7	14.2	**0.0001**	0.002	2926.8	ug/L	201	Standard
	Ba	135	36371.9	1.1	**19.7762**	0.433	2.2	ug/L	108	Standard
	Ce	140	41.7	50.0				ug/L	30	Standard
>	**Tb**	159	774515.8	2.9				ug/L	792236	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	160.3	8.2	**0.0195**	0.002	8.6	ug/L	9	Standard
	Tl	205	130.0	21.4	**0.0133**	0.005	36.0	ug/L	0	Standard
	Pb	206	254.0	4.2	**0.0016**	0.003	201.3	ug/L	216	Standard
	Pb	207	204.3	4.4	**-0.0027**	0.002	57.9	ug/L	180	Standard
	Pb	208	941.7	3.4	**0.0002**	0.002	1048.9	ug/L	717	Standard
	U	238	8.3	85.1	**-0.0062**	0.001	19.1	ug/L	4	Standard
>	**Bi**	209	437592.9	1.4				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	1953.5	4.1	**2.4795**	0.082	3.3	mg/L	20	Standard
K	39	41.7	13.9	**0.0748**	0.041	54.3	mg/L	22	Standard
Ca	43	46.7	6.2	**-2.7971**	0.513	18.3	mg/L	47	Standard
Fe	54	137.1	22.1	**-0.0088**	0.022	251.4	mg/L	151	Standard
Fe	57	218.3	25.5	**-0.0034**	0.160	4703.1	mg/L	195	Standard
> **Sc-1**	45	31095.2	1.2				mg/L	29647	Standard
Cl	35	164376.3	1.5				ug/L	154152	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	5667.7	1.8				ug/L	1607	Standard
P	31	24892.1	1.3				ug/L	22752	Standard
S	34	5330.9	2.9				ug/L	5049	Standard
Sr	88	315.0	7.3				ug/L	87	Standard
C	12	43.3	26.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.7	100.8				mg/L	10	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	5250.9	7.1				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.599	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.144	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.210
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.058
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606073003
Sample Date/Time: Thursday, June 16, 2016 21:42:10
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53594.6	1.1				ug/L	51024	Standard
	Be	9	3.3	86.6	**-0.0173**	0.003	18.9	ug/L	7	Standard
	Al	27	2979001.9	0.3	**19.9155**	0.253	1.3	ug/L	625	Standard
	Sc	45	31315.7	0.8				ug/L	29647	Standard
	Ti	47	43.0	24.6	**-0.0251**	0.035	139.3	ug/L	57	Standard
	V	51	1280.4	1.3	**0.0086**	0.002	24.3	ug/L	1142	Standard
	Cr	52	6976.3	2.4	**0.0037**	0.022	588.3	ug/L	6628	Standard
	Cr	53	1470.1	6.4	**1.1220**	0.096	8.5	ug/L	430	Standard
	Mn	55	27960.5	2.4	**4.5016**	0.120	2.7	ug/L	603	Standard
	Co	59	554.3	12.3	**0.0435**	0.010	24.1	ug/L	237	Standard
	Ni	60	395.0	5.1	**0.1235**	0.010	8.4	ug/L	141	Standard
	Cu	65	173.0	8.3	**0.0243**	0.008	31.2	ug/L	109	Standard
	Zn	66	1439.4	0.7	**1.0440**	0.007	0.7	ug/L	159	Standard
>	**Ge**	72	482360.2	0.2				ug/L	474053	Standard
	As	75	84.5	59.0	**0.1001**	0.044	44.2	ug/L	-34	Standard
	Se	82	47.5	19.6	**0.2529**	0.082	32.5	ug/L	14	Standard
	Se-1	77	132.0	7.2	**0.9443**	0.119	12.5	ug/L	55	Standard
>	**Ga**	71	60.0	14.4				mg/L	50	Standard
	Rb	85	475.0	12.1				ug/L	20	Standard
	Y	89	391203.2	1.3				ug/L	376602	Standard
>	**Rh**	103	55.0	9.1				ug/L	17	Standard
	Mo	98	37.9	67.6	**0.0106**	0.011	103.7	ug/L	8	Standard
	Ag	107	71.3	16.2	**-0.0003**	0.002	600.9	ug/L	81	Standard
	Cd	111	5.3	57.7	**-0.0005**	0.002	303.0	mg/L	3	Standard
	Cd	114	27.8	51.3	**0.0020**	0.003	149.5	ug/L	7	Standard
>	**In**	115	521847.0	1.7				ug/L	524722	Standard
	Sn	118	455.0	13.4	**-0.0046**	0.010	225.0	ug/L	715	Standard
	Sb	123	77.8	11.7	**0.0031**	0.002	74.2	ug/L	201	Standard
	Ba	135	148771.2	0.6	**82.4802**	0.932	1.1	ug/L	108	Standard
	Ce	140	300.0	8.7				ug/L	30	Standard
>	**Tb**	159	770703.6	1.1				ug/L	792236	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	215.7	6.2	**0.0270**	0.001	5.4	ug/L	9	Standard
	Tl	205	208.3	27.6	**0.0257**	0.009	34.8	ug/L	0	Standard
	Pb	206	272.0	3.0	**0.0054**	0.003	50.7	ug/L	216	Standard
	Pb	207	232.3	12.8	**0.0041**	0.008	195.9	ug/L	180	Standard
	Pb	208	1012.0	13.3	**0.0042**	0.007	176.0	ug/L	717	Standard
	U	238	232.3	16.7	**0.0315**	0.006	19.1	ug/L	4	Standard
>	**Bi**	209	439553.9	1.5				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	6086.2	1.7	**7.7675**	0.192	2.5	mg/L	20	Standard
K	39	18.3	56.8	**-0.0957**	0.075	77.9	mg/L	22	Standard
Ca	43	40.0	37.5	**-4.3545**	3.269	75.1	mg/L	47	Standard
Fe	54	265.9	15.1	**0.0898**	0.032	35.5	mg/L	151	Standard
Fe	57	201.7	20.0	**-0.0564**	0.115	204.5	mg/L	195	Standard
> **Sc-1**	45	31315.7	0.8				mg/L	29647	Standard
Cl	35	164992.2	0.7				ug/L	154152	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	10840.5	3.2				ug/L	1607	Standard
P	31	25164.2	3.4				ug/L	22752	Standard
S	34	5275.9	3.2				ug/L	5049	Standard
Sr	88	133.3	20.7				ug/L	87	Standard
C	12	53.3	57.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.2	49.6				mg/L	10	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	16.7	69.3				mg/L	3	Standard
I	127	4810.8	4.4				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		105.038	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.752	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606073003
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.452
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.484
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 21:45:23
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	52964.1	3.2				ug/L	51024	Standard
	Be	9	42168.6	0.7	**48.3246**	1.216	2.5	ug/L	7	Standard
	Al	27	7159091.1	2.4	**48.4492**	0.473	1.0	ug/L	625	Standard
	Sc	45	31200.4	3.4				ug/L	29647	Standard
	Ti	47	30099.2	0.4	**103.9852**	0.489	0.5	ug/L	57	Standard
	V	51	348173.2	0.9	**50.6797**	0.340	0.7	ug/L	1142	Standard
	Cr	52	366090.7	0.6	**50.7470**	0.566	1.1	ug/L	6628	Standard
	Cr	53	45820.9	1.2	**50.7491**	0.901	1.8	ug/L	430	Standard
	Mn	55	317011.4	2.2	**55.3295**	1.324	2.4	ug/L	603	Standard
	Co	59	316851.8	0.1	**51.1533**	0.313	0.6	ug/L	237	Standard
	Ni	60	93845.8	1.6	**50.4491**	1.080	2.1	ug/L	141	Standard
	Cu	65	91207.1	1.9	**50.3255**	1.210	2.4	ug/L	109	Standard
	Zn	66	53728.8	0.5	**50.1071**	0.516	1.0	ug/L	159	Standard
>	Ge	72	456409.0	0.5				ug/L	474053	Standard
	As	75	53094.6	1.6	**49.8317**	1.034	2.1	ug/L	-34	Standard
	Se	82	5335.2	1.1	**49.9428**	0.782	1.6	ug/L	14	Standard
	Se-1	77	3694.5	1.3	**49.2280**	0.868	1.8	ug/L	55	Standard
>	Ga	71	73.3	28.4				mg/L	50	Standard
	Rb	85	751.7	9.7				ug/L	20	Standard
	Y	89	395355.6	1.3				ug/L	376602	Standard
>	Rh	103	41.7	60.4				ug/L	17	Standard
	Mo	98	229935.7	1.0	**95.4610**	1.901	2.0	ug/L	8	Standard
	Ag	107	284501.2	0.4	**46.7556**	0.793	1.7	ug/L	81	Standard
	Cd	111	95579.3	0.6	**48.2915**	1.096	2.3	mg/L	3	Standard
	Cd	114	235319.3	0.3	**48.0921**	0.943	2.0	ug/L	7	Standard
>	In	115	535171.0	1.8				ug/L	524722	Standard
	Sn	118	268883.3	0.8	**48.8581**	0.478	1.0	ug/L	715	Standard
	Sb	123	213216.9	1.1	**47.8524**	0.650	1.4	ug/L	201	Standard
	Ba	135	88420.6	0.7	**47.7774**	0.620	1.3	ug/L	108	Standard
	Ce	140	60.0	52.0				ug/L	30	Standard
>	Tb	159	778568.6	0.9				ug/L	792236	Standard
	Ho	165	13.3	43.3				ug/L	7	Standard
	Tl	203	356552.0	0.9	**49.1981**	0.525	1.1	ug/L	9	Standard
	Tl	205	312384.5	1.4	**50.6927**	1.380	2.7	ug/L	0	Standard
	Pb	206	221782.7	0.3	**50.5795**	0.697	1.4	ug/L	216	Standard
	Pb	207	201563.9	0.5	**50.4967**	0.774	1.5	ug/L	180	Standard
	Pb	208	829379.7	0.4	**51.1985**	0.900	1.8	ug/L	717	Standard
	U	238	307681.0	0.4	**52.2118**	0.917	1.8	ug/L	4	Standard
>	Bi	209	436760.9	1.5				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.2513**	9.008	171.5	mg/L	0	Standard
Mg	24	3917.2	3.4	**5.0034**	0.184	3.7	mg/L	20	Standard
K	39	655.0	10.8	**4.5166**	0.488	10.8	mg/L	22	Standard
Ca	43	65.0	20.4	**1.3136**	3.422	260.5	mg/L	47	Standard
Fe	54	6192.2	4.0	**4.6769**	0.351	7.5	mg/L	151	Standard
Fe	57	1618.4	6.7	**4.1237**	0.452	11.0	mg/L	195	Standard
Sc-1	45	31200.4	3.4				mg/L	29647	Standard
Cl	35	163997.6	1.9				ug/L	154152	Standard
Kr	83	3.7	15.7				ug/L	3	Standard
Br	81	1766.8	4.0				ug/L	1607	Standard
P	31	25599.9	0.9				ug/L	22752	Standard
S	34	5862.8	2.2				ug/L	5049	Standard
Sr	88	68.3	41.6				ug/L	87	Standard
C	12	33.3	34.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	-1.0	50.0				mg/L	10	Standard
Ho-1	165	13.3	43.3				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	3	Standard
I	127	1488.4	8.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	96.649		
Al	27	96.898		
Sc	45			
Ti	47	103.985		
V	51	101.359		
Cr	52	101.494		
Cr	53			
Mn	55	110.659		
Co	59	102.307		
Ni	60	100.898		
Cu	65	100.651		
Zn	66	100.214		
Ge	72		96.278	
As	75	99.663		
Se	82	99.886		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	95.461		
Ag	107	93.511		
Cd	111	96.583		
Cd	114			
> In	115		101.991	
Sn	118	97.716		
Sb	123	95.705		
Ba	135	95.555		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.396		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.397		
U	238	104.424		
> Bi	209		94.877	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 21:48:35
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51738.2	1.1				ug/L	51024	Standard
	Be	9	8.3	91.7	**-0.0112**	0.009	80.5	ug/L	7	Standard
	Al	27	1365.1	16.8	**-0.0003**	0.002	478.2	ug/L	625	Standard
	Sc	45	32252.6	1.6				ug/L	29647	Standard
	Ti	47	29.0	17.2	**-0.0677**	0.018	26.3	ug/L	57	Standard
	V	51	928.8	10.2	**-0.0358**	0.012	34.3	ug/L	1142	Standard
	Cr	52	6199.9	1.6	**-0.0728**	0.006	8.7	ug/L	6628	Standard
	Cr	53	526.7	17.6	**0.1435**	0.102	70.8	ug/L	430	Standard
	Mn	55	679.7	4.7	**-0.0102**	0.006	62.4	ug/L	603	Standard
	Co	59	222.0	2.4	**-0.0062**	0.001	15.3	ug/L	237	Standard
	Ni	60	127.3	4.5	**-0.0108**	0.003	24.1	ug/L	141	Standard
	Cu	65	129.3	11.3	**0.0037**	0.008	218.4	ug/L	109	Standard
	Zn	66	156.3	8.5	**-0.0888**	0.012	14.0	ug/L	159	Standard
>	**Ge**	72	466990.8	0.9				ug/L	474053	Standard
	As	75	-31.2	100.9	**-0.0035**	0.029	815.0	ug/L	-34	Standard
	Se	82	18.5	27.4	**0.0013**	0.046	3640.7	ug/L	14	Standard
	Se-1	77	60.7	5.3	**0.0572**	0.045	77.9	ug/L	55	Standard
>	**Ga**	71	66.7	41.3				mg/L	50	Standard
	Rb	85	25.0	20.0				ug/L	20	Standard
	Y	89	391075.9	3.9				ug/L	376602	Standard
>	**Rh**	103	35.0	49.5				ug/L	17	Standard
	Mo	98	246.2	31.0	**0.0990**	0.031	31.0	ug/L	8	Standard
	Ag	107	92.0	11.3	**0.0032**	0.002	60.7	ug/L	81	Standard
	Cd	111	9.2	30.0	**0.0015**	0.001	89.3	mg/L	3	Standard
	Cd	114	8.4	58.3	**-0.0021**	0.001	50.3	ug/L	7	Standard
>	**In**	115	521304.7	2.1				ug/L	524722	Standard
	Sn	118	806.7	12.6	**0.0616**	0.022	35.5	ug/L	715	Standard
	Sb	123	413.8	23.7	**0.0808**	0.024	30.2	ug/L	201	Standard
	Ba	135	135.0	17.1	**0.0173**	0.012	72.2	ug/L	108	Standard
	Ce	140	18.3	78.7				ug/L	30	Standard
>	**Tb**	159	770403.7	2.0				ug/L	792236	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	53.3	21.7	**0.0047**	0.002	33.8	ug/L	9	Standard
	Tl	205	41.7	25.0	**-0.0011**	0.002	147.7	ug/L	0	Standard
	Pb	206	231.3	3.6	**-0.0040**	0.002	55.2	ug/L	216	Standard
	Pb	207	191.7	4.4	**-0.0062**	0.002	38.0	ug/L	180	Standard
	Pb	208	830.7	1.5	**-0.0071**	0.001	9.5	ug/L	717	Standard
	U	238	32.3	17.6	**-0.0021**	0.001	45.2	ug/L	4	Standard
>	**Bi**	209	440882.3	0.7				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	40.0	45.1	**0.0046**	0.022	483.5	mg/L	20	Standard
K	39	21.7	13.3	**-0.0762**	0.019	24.7	mg/L	22	Standard
Ca	43	16.7	62.4	**-9.5897**	2.277	23.7	mg/L	47	Standard
Fe	54	154.6	3.2	**0.0006**	0.004	679.4	mg/L	151	Standard
Fe	57	181.7	39.0	**-0.1287**	0.205	159.3	mg/L	195	Standard
> **Sc-1**	45	32252.6	1.6				mg/L	29647	Standard
Cl	35	162535.6	2.7				ug/L	154152	Standard
Kr	83	2.0	100.0				ug/L	3	Standard
Br	81	1583.4	15.5				ug/L	1607	Standard
P	31	25920.5	3.4				ug/L	22752	Standard
S	34	5491.0	2.1				ug/L	5049	Standard
Sr	88	78.3	13.3				ug/L	87	Standard
C	12	43.3	13.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	2.9	173.2				mg/L	10	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	10.0	173.2				mg/L	3	Standard
I	127	951.7	4.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.510	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.349
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.773
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, June 16, 2016 21:51:48
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51025.8	1.8				ug/L	51024	Standard
	Be	9	158.3	20.5	**0.1674**	0.039	23.3	ug/L	7	Standard
	Al	27	703.4	27.7	**-0.0048**	0.001	26.9	ug/L	625	Standard
	Sc	45	32324.5	3.0				ug/L	29647	Standard
	Ti	47	27.3	27.7	**-0.0704**	0.026	37.0	ug/L	57	Standard
	V	51	3596.4	1.1	**0.3627**	0.006	1.6	ug/L	1142	Standard
	Cr	52	11538.7	0.6	**0.7185**	0.004	0.5	ug/L	6628	Standard
	Cr	53	1191.7	2.4	**0.9142**	0.036	4.0	ug/L	430	Standard
	Mn	55	3452.4	2.2	**0.4841**	0.013	2.6	ug/L	603	Standard
	Co	59	2481.5	3.2	**0.3641**	0.012	3.2	ug/L	237	Standard
	Ni	60	2983.6	1.9	**1.5460**	0.025	1.6	ug/L	141	Standard
	Cu	65	1554.1	2.2	**0.8018**	0.018	2.3	ug/L	109	Standard
	Zn	66	6904.6	0.5	**6.3076**	0.040	0.6	ug/L	159	Standard
>	**Ge**	72	451469.6	0.4				ug/L	474053	Standard
	As	75	367.1	3.5	**0.3732**	0.012	3.2	ug/L	-34	Standard
	Se	82	52.6	5.1	**0.3307**	0.024	7.1	ug/L	14	Standard
	Se-1	77	86.0	19.2	**0.4314**	0.229	53.1	ug/L	55	Standard
>	**Ga**	71	36.7	56.8				mg/L	50	Standard
	Rb	85	15.0	145.3				ug/L	20	Standard
	Y	89	372929.0	2.6				ug/L	376602	Standard
>	**Rh**	103	21.7	58.1				ug/L	17	Standard
	Mo	98	53.2	25.4	**0.0175**	0.006	35.6	ug/L	8	Standard
	Ag	107	2191.8	2.9	**0.3621**	0.015	4.2	ug/L	81	Standard
	Cd	111	428.6	3.0	**0.2218**	0.010	4.4	mg/L	3	Standard
	Cd	114	1072.7	8.3	**0.2242**	0.022	10.0	ug/L	7	Standard
>	**In**	115	515022.5	1.7				ug/L	524722	Standard
	Sn	118	460.0	21.8	**-0.0026**	0.018	670.4	ug/L	715	Standard
	Sb	123	1687.6	0.2	**0.3789**	0.008	2.0	ug/L	201	Standard
	Ba	135	1278.4	5.4	**0.6611**	0.044	6.7	ug/L	108	Standard
	Ce	140	11.7	89.2				ug/L	30	Standard
>	**Tb**	159	775692.8	2.1				ug/L	792236	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	561.7	1.8	**0.0736**	0.001	1.5	ug/L	9	Standard
	Tl	205	431.7	7.1	**0.0610**	0.005	8.2	ug/L	0	Standard
	Pb	206	1089.0	2.6	**0.1879**	0.008	4.3	ug/L	216	Standard
	Pb	207	883.7	5.5	**0.1638**	0.011	6.9	ug/L	180	Standard
	Pb	208	3859.2	0.5	**0.1764**	0.003	1.5	ug/L	717	Standard
	U	238	2254.8	1.2	**0.3683**	0.007	1.9	ug/L	4	Standard
>	**Bi**	209	444599.6	0.7				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.3150**	8.898	167.4	mg/L	0	Standard
Mg	24	30.0	16.7	**-0.0079**	0.006	76.0	mg/L	20	Standard
K	39	21.7	66.6	**-0.0767**	0.101	131.3	mg/L	22	Standard
Ca	43	30.0	28.9	**-6.7278**	2.028	30.1	mg/L	47	Standard
Fe	54	87.5	4.0	**-0.0496**	0.004	9.0	mg/L	151	Standard
Fe	57	195.0	9.2	**-0.0929**	0.056	60.4	mg/L	195	Standard
Sc-1	45	32324.5	3.0				mg/L	29647	Standard
Cl	35	156288.7	1.2				ug/L	154152	Standard
Kr	83	3.3	17.3				ug/L	3	Standard
Br	81	1266.7	10.3				ug/L	1607	Standard
P	31	17852.2	2.6				ug/L	22752	Standard
S	34	5659.4	1.8				ug/L	5049	Standard
Sr	88	65.0	40.7				ug/L	87	Standard
C	12	20.0	0.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.2	100.1				mg/L	10	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	985.0	8.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	83.676		
Al	27			
Sc	45			
Ti	47			
V	51	90.668		
Cr	52	89.809		
Cr	53			
Mn	55	96.822		
Co	59	91.014		
Ni	60	96.626		
Cu	65	100.227		
Zn	66	100.922		
Ge	72		95.236	
As	75	93.291		
Se	82	82.669		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	90.533		
Cd	111	92.425		
Cd	114			
> In	115			98.152
Sn	118			
Sb	123	94.728		
Ba	135	88.151		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	91.941		
Tl	205			
Pb	206			
Pb	207			
Pb	208	88.177		
U	238	92.081		
> Bi	209			96.580
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
Report Date/Time: Thursday, June 16, 2016 21:54:04
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Method 6020 - Summary Report

Sample ID: PBW 58 WG571964-02
Sample Date/Time: Thursday, June 16, 2016 21:55:00
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51882.0	0.7				ug/L	51024	Standard
	Be	9	8.3	91.7	**-0.0113**	0.009	79.6	ug/L	7	Standard
	Al	27	7225.1	1.7	**0.0402**	0.001	2.5	ug/L	625	Standard
	Sc	45	32848.9	2.3				ug/L	29647	Standard
	Ti	47	51.0	25.0	**0.0065**	0.044	672.4	ug/L	57	Standard
	V	51	1196.1	1.0	**0.0022**	0.004	185.3	ug/L	1142	Standard
	Cr	52	7726.6	1.1	**0.1365**	0.019	13.7	ug/L	6628	Standard
	Cr	53	648.3	14.3	**0.2747**	0.094	34.1	ug/L	430	Standard
	Mn	55	2688.6	3.0	**0.3326**	0.014	4.1	ug/L	603	Standard
	Co	59	223.3	5.2	**-0.0060**	0.001	19.7	ug/L	237	Standard
	Ni	60	306.7	5.4	**0.0833**	0.005	5.7	ug/L	141	Standard
	Cu	65	369.3	3.4	**0.1332**	0.011	8.3	ug/L	109	Standard
	Zn	66	1524.4	0.8	**1.1625**	0.045	3.9	ug/L	159	Standard
>	**Ge**	72	467701.0	2.5				ug/L	474053	Standard
	As	75	-29.1	18.5	**-0.0015**	0.005	304.8	ug/L	-34	Standard
	Se	82	20.2	33.1	**0.0162**	0.062	379.4	ug/L	14	Standard
	Se-1	77	49.0	28.8	**-0.1009**	0.171	169.5	ug/L	55	Standard
>	**Ga**	71	70.0	25.8				mg/L	50	Standard
	Rb	85	63.3	19.9				ug/L	20	Standard
	Y	89	385228.3	1.7				ug/L	376602	Standard
>	**Rh**	103	13.3	43.3				ug/L	17	Standard
	Mo	98	91.6	20.6	**0.0329**	0.008	25.1	ug/L	8	Standard
	Ag	107	70.0	10.3	**-0.0007**	0.001	169.4	ug/L	81	Standard
	Cd	111	7.2	21.3	**0.0004**	0.001	191.2	mg/L	3	Standard
	Cd	114	8.6	219.6	**-0.0020**	0.004	198.4	ug/L	7	Standard
>	**In**	115	529391.3	2.2				ug/L	524722	Standard
	Sn	118	1728.4	4.6	**0.2287**	0.017	7.5	ug/L	715	Standard
	Sb	123	139.5	23.6	**0.0168**	0.007	40.4	ug/L	201	Standard
	Ba	135	108.3	10.8	**0.0016**	0.007	433.3	ug/L	108	Standard
	Ce	140	70.0	18.9				ug/L	30	Standard
>	**Tb**	159	807450.9	1.8				ug/L	792236	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	22.0	12.0	**0.0003**	0.000	106.9	ug/L	9	Standard
	Tl	205	30.0	28.9	**-0.0032**	0.001	42.5	ug/L	0	Standard
	Pb	206	253.7	10.4	**-0.0009**	0.006	689.0	ug/L	216	Standard
	Pb	207	220.0	2.1	**-0.0010**	0.001	126.8	ug/L	180	Standard
	Pb	208	877.3	3.6	**-0.0060**	0.002	33.1	ug/L	717	Standard
	U	238	8.7	63.5	**-0.0062**	0.001	14.5	ug/L	4	Standard
>	**Bi**	209	455782.1	0.2				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.5393**	8.509	153.6	mg/L	0	Standard
Mg	24	36.7	7.9	**-0.0004**	0.003	710.4	mg/L	20	Standard
K	39	8.3	34.6	**-0.1703**	0.021	12.2	mg/L	22	Standard
Ca	43	33.3	8.7	**-6.1652**	0.476	7.7	mg/L	47	Standard
Fe	54	150.7	24.4	**-0.0047**	0.025	526.5	mg/L	151	Standard
Fe	57	176.7	14.2	**-0.1527**	0.076	49.6	mg/L	195	Standard
> **Sc-1**	45	32848.9	2.3				mg/L	29647	Standard
Cl	35	161385.0	1.1				ug/L	154152	Standard
Kr	83	3.3	34.6				ug/L	3	Standard
Br	81	1680.1	1.8				ug/L	1607	Standard
P	31	24029.0	2.1				ug/L	22752	Standard
S	34	5571.0	3.7				ug/L	5049	Standard
Sr	88	66.7	56.3				ug/L	87	Standard
C	12	53.3	94.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.2	100.1				mg/L	10	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	1201.7	0.5				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		101.681	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.660	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.890	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.009	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 58 WG571964-03
Sample Date/Time: Thursday, June 16, 2016 21:58:11
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	53618.1	1.9				ug/L	51024	Standard
	Be	9	43223.2	1.9	**48.9062**	0.701	1.4	ug/L	7	Standard
	Al	27	16045.2	3.1	**0.0975**	0.001	1.5	ug/L	625	Standard
	Sc	45	33034.3	2.7				ug/L	29647	Standard
	Ti	47	54.7	14.9	**0.0208**	0.027	130.9	ug/L	57	Standard
	V	51	357626.2	0.2	**51.4076**	0.356	0.7	ug/L	1142	Standard
	Cr	52	377061.2	0.6	**51.6273**	0.257	0.5	ug/L	6628	Standard
	Cr	53	46803.9	1.6	**51.1933**	1.124	2.2	ug/L	430	Standard
	Mn	55	326931.8	1.1	**56.3462**	0.565	1.0	ug/L	603	Standard
	Co	59	321699.5	0.9	**51.2838**	0.209	0.4	ug/L	237	Standard
	Ni	60	96180.4	1.7	**51.0507**	0.482	0.9	ug/L	141	Standard
	Cu	65	95306.5	1.4	**51.9244**	0.344	0.7	ug/L	109	Standard
	Zn	66	56208.1	0.9	**51.7682**	0.278	0.5	ug/L	159	Standard
>	Ge	72	462203.6	0.8				ug/L	474053	Standard
	As	75	54677.4	1.3	**50.6686**	0.319	0.6	ug/L	-34	Standard
	Se	82	5471.8	2.6	**50.5742**	0.951	1.9	ug/L	14	Standard
	Se-1	77	3817.1	0.9	**50.2380**	0.317	0.6	ug/L	55	Standard
>	Ga	71	60.0	22.0				mg/L	50	Standard
	Rb	85	115.0	15.7				ug/L	20	Standard
	Y	89	401062.4	1.0				ug/L	376602	Standard
>	Rh	103	33.3	37.7				ug/L	17	Standard
	Mo	98	55.7	12.6	**0.0170**	0.003	16.7	ug/L	8	Standard
	Ag	107	298947.0	1.2	**47.9637**	0.316	0.7	ug/L	81	Standard
	Cd	111	99244.6	1.4	**48.9502**	0.549	1.1	mg/L	3	Standard
	Cd	114	239743.2	0.7	**47.8326**	0.248	0.5	ug/L	7	Standard
>	In	115	548071.7	0.8				ug/L	524722	Standard
	Sn	118	1466.7	2.8	**0.1712**	0.008	4.6	ug/L	715	Standard
	Sb	123	213065.5	1.1	**46.6859**	0.143	0.3	ug/L	201	Standard
	Ba	135	90504.9	1.1	**47.7484**	0.750	1.6	ug/L	108	Standard
	Ce	140	71.7	4.0				ug/L	30	Standard
>	Tb	159	809470.0	2.7				ug/L	792236	Standard
	Ho	165	10.0	100.0				ug/L	7	Standard
	Tl	203	363003.7	1.1	**48.3987**	0.635	1.3	ug/L	9	Standard
	Tl	205	319279.0	0.6	**50.0661**	1.366	2.7	ug/L	0	Standard
	Pb	206	230746.8	0.4	**50.8528**	1.062	2.1	ug/L	216	Standard
	Pb	207	202045.2	0.4	**48.9160**	1.313	2.7	ug/L	180	Standard
	Pb	208	862693.1	0.1	**51.4643**	1.296	2.5	ug/L	717	Standard
	U	238	307882.3	0.1	**50.4881**	1.234	2.4	ug/L	4	Standard
>	Bi	209	452058.0	2.3				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.4002**	8.750	162.0	mg/L	0	Standard
Mg	24	33.3	8.7	**-0.0046**	0.004	92.7	mg/L	20	Standard
K	39	38.3	32.8	**0.0349**	0.087	249.1	mg/L	22	Standard
Ca	43	31.7	48.2	**-6.5426**	3.175	48.5	mg/L	47	Standard
Fe	54	129.8	11.6	**-0.0203**	0.010	51.0	mg/L	151	Standard
Fe	57	178.3	5.8	**-0.1508**	0.042	28.0	mg/L	195	Standard
> **Sc-1**	45	33034.3	2.7				mg/L	29647	Standard
Cl	35	160489.1	2.1				ug/L	154152	Standard
Kr	83	1.7	69.3				ug/L	3	Standard
Br	81	1963.5	7.4				ug/L	1607	Standard
P	31	24446.4	2.0				ug/L	22752	Standard
S	34	5609.4	5.5				ug/L	5049	Standard
Sr	88	61.7	16.9				ug/L	87	Standard
C	12	83.3	59.2				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	16.2	127.9				mg/L	10	Standard
Ho-1	165	10.0	100.0				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	1580.1	4.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.084	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.500	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	104.450	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.200	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 58 WG571964-03
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Method 6020 - Summary Report

Sample ID: L1606042801 WG571964-01
Sample Date/Time: Thursday, June 16, 2016 22:01:23
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53056.1	0.8				ug/L	51024	Standard
	Be	9	15.0	120.2	**-0.0038**	0.021	544.4	ug/L	7	Standard
	Al	27	757403.8	1.6	**5.1075**	0.106	2.1	ug/L	625	Standard
	Sc	45	31754.9	2.5				ug/L	29647	Standard
	Ti	47	165.7	8.9	**0.3896**	0.046	11.7	ug/L	57	Standard
	V	51	1511.6	6.0	**0.0457**	0.014	31.1	ug/L	1142	Standard
	Cr	52	8164.9	0.8	**0.1892**	0.010	5.5	ug/L	6628	Standard
	Cr	53	1656.8	10.3	**1.3626**	0.187	13.8	ug/L	430	Standard
	Mn	55	17190.1	1.5	**2.7889**	0.065	2.3	ug/L	603	Standard
	Co	59	391.7	5.3	**0.0201**	0.004	18.4	ug/L	237	Standard
	Ni	60	11431.6	1.7	**5.8888**	0.134	2.3	ug/L	141	Standard
	Cu	65	74287.3	0.4	**39.7191**	0.286	0.7	ug/L	109	Standard
	Zn	66	6798.2	0.6	**5.9426**	0.080	1.3	ug/L	159	Standard
>	**Ge**	72	470820.2	0.8				ug/L	474053	Standard
	As	75	23.4	122.6	**0.0464**	0.026	56.6	ug/L	-34	Standard
	Se	82	24.3	11.2	**0.0524**	0.025	47.2	ug/L	14	Standard
	Se-1	77	121.0	4.3	**0.8414**	0.059	7.0	ug/L	55	Standard
>	**Ga**	71	111.7	6.8				mg/L	50	Standard
	Rb	85	8439.0	5.7				ug/L	20	Standard
	Y	89	394979.4	1.5				ug/L	376602	Standard
>	**Rh**	103	30.0	0.0				ug/L	17	Standard
	Mo	98	18900.0	0.6	**7.8902**	0.142	1.8	ug/L	8	Standard
	Ag	107	1050.7	1.6	**0.1614**	0.000	0.2	ug/L	81	Standard
	Cd	111	8.7	19.0	**0.0012**	0.001	76.4	mg/L	3	Standard
	Cd	114	173.0	66.1	**0.0315**	0.023	73.0	ug/L	7	Standard
>	**In**	115	531861.1	1.7				ug/L	524722	Standard
	Sn	118	33005.9	1.3	**5.9570**	0.142	2.4	ug/L	715	Standard
	Sb	123	2285.8	18.9	**0.5027**	0.106	21.1	ug/L	201	Standard
	Ba	135	21266.9	0.9	**11.5188**	0.132	1.1	ug/L	108	Standard
	Ce	140	228.3	16.1				ug/L	30	Standard
>	**Tb**	159	787998.7	1.7				ug/L	792236	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	150.7	22.9	**0.0182**	0.005	26.8	ug/L	9	Standard
	Tl	205	115.0	41.5	**0.0108**	0.008	72.2	ug/L	0	Standard
	Pb	206	32589.3	0.1	**7.3677**	0.062	0.8	ug/L	216	Standard
	Pb	207	27351.7	1.3	**6.7905**	0.113	1.7	ug/L	180	Standard
	Pb	208	116700.7	0.9	**7.1377**	0.028	0.4	ug/L	717	Standard
	U	238	60.7	30.6	**0.0027**	0.003	116.1	ug/L	4	Standard
>	**Bi**	209	437691.5	0.7				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.5017**	8.575	155.9	mg/L	0	Standard
Mg	24	12460.1	1.8	**15.7356**	0.595	3.8	mg/L	20	Standard
K	39	611.7	9.8	**4.1225**	0.361	8.8	mg/L	22	Standard
Ca	43	61.7	24.8	**0.2569**	3.325	1294.5	mg/L	47	Standard
Fe	54	123.9	25.0	**-0.0210**	0.023	110.5	mg/L	151	Standard
Fe	57	213.3	11.8	**-0.0300**	0.077	258.2	mg/L	195	Standard
Sc-1	45	31754.9	2.5				mg/L	29647	Standard
Cl	35	194533.7	1.6				ug/L	154152	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	3240.3	4.0				ug/L	1607	Standard
P	31	24090.8	3.3				ug/L	22752	Standard
S	34	5104.2	4.8				ug/L	5049	Standard
Sr	88	81.7	19.7				ug/L	87	Standard
C	12	96.7	6.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.5	179.6				mg/L	10	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	13282.5	4.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		103.982	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.318	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.361
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.079
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606042801S WG571964-05
Sample Date/Time: Thursday, June 16, 2016 22:04:34
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55394.4	1.8				ug/L	51024	Standard
	Be	9	8934.3	3.4	**9.7660**	0.194	2.0	ug/L	7	Standard
	Al	27	748355.5	1.6	**4.8346**	0.168	3.5	ug/L	625	Standard
	Sc	45	32691.9	1.0				ug/L	29647	Standard
	Ti	47	168.3	4.0	**0.3836**	0.024	6.2	ug/L	57	Standard
	V	51	72192.1	1.7	**9.7775**	0.188	1.9	ug/L	1142	Standard
	Cr	52	79707.4	0.5	**9.6848**	0.014	0.1	ug/L	6628	Standard
	Cr	53	10453.6	1.1	**10.5826**	0.158	1.5	ug/L	430	Standard
	Mn	55	79152.9	1.5	**12.9343**	0.146	1.1	ug/L	603	Standard
	Co	59	63320.4	0.7	**9.6094**	0.039	0.4	ug/L	237	Standard
	Ni	60	29840.4	0.9	**15.0769**	0.185	1.2	ug/L	141	Standard
	Cu	65	88796.8	0.4	**46.2088**	0.054	0.1	ug/L	109	Standard
	Zn	66	17201.8	0.7	**14.9707**	0.150	1.0	ug/L	159	Standard
>	**Ge**	72	483837.9	0.4				ug/L	474053	Standard
	As	75	10943.5	1.9	**9.7081**	0.171	1.8	ug/L	-34	Standard
	Se	82	1071.8	4.1	**9.3269**	0.380	4.1	ug/L	14	Standard
	Se-1	77	883.4	1.7	**10.5260**	0.205	1.9	ug/L	55	Standard
>	**Ga**	71	61.7	18.7				mg/L	50	Standard
	Rb	85	8238.9	4.0				ug/L	20	Standard
	Y	89	381877.6	0.5				ug/L	376602	Standard
>	**Rh**	103	51.7	55.9				ug/L	17	Standard
	Mo	98	18040.5	0.2	**7.6113**	0.126	1.7	ug/L	8	Standard
	Ag	107	57677.6	1.0	**9.6285**	0.084	0.9	ug/L	81	Standard
	Cd	111	18876.2	0.3	**9.6948**	0.114	1.2	mg/L	3	Standard
	Cd	114	46340.2	1.4	**9.6280**	0.249	2.6	ug/L	7	Standard
>	**In**	115	526253.2	1.5				ug/L	524722	Standard
	Sn	118	29871.1	0.9	**5.4406**	0.094	1.7	ug/L	715	Standard
	Sb	123	44200.6	1.7	**10.0749**	0.023	0.2	ug/L	201	Standard
	Ba	135	37005.8	1.2	**20.2992**	0.061	0.3	ug/L	108	Standard
	Ce	140	223.3	9.3				ug/L	30	Standard
>	**Tb**	159	800388.6	1.7				ug/L	792236	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	71293.7	0.6	**9.5115**	0.043	0.5	ug/L	9	Standard
	Tl	205	61241.9	1.8	**9.6035**	0.196	2.0	ug/L	0	Standard
	Pb	206	76986.8	0.6	**16.9419**	0.160	0.9	ug/L	216	Standard
	Pb	207	66311.8	0.8	**16.0284**	0.098	0.6	ug/L	180	Standard
	Pb	208	275320.9	0.6	**16.3962**	0.155	0.9	ug/L	717	Standard
	U	238	60579.2	0.6	**9.9347**	0.056	0.6	ug/L	4	Standard
>	**Bi**	209	451597.7	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	12333.4	0.5	**15.1192**	0.089	0.6	mg/L	20	Standard
K	39	615.0	5.3	**4.0231**	0.203	5.0	mg/L	22	Standard
Ca	43	28.3	10.2	**-7.1884**	0.556	7.7	mg/L	47	Standard
Fe	54	187.4	26.5	**0.0230**	0.035	154.6	mg/L	151	Standard
Fe	57	198.3	19.1	**-0.0900**	0.107	118.9	mg/L	195	Standard
> **Sc-1**	45	32691.9	1.0				mg/L	29647	Standard
Cl	35	191462.1	0.2				ug/L	154152	Standard
Kr	83	1.7	124.9				ug/L	3	Standard
Br	81	2590.2	10.5				ug/L	1607	Standard
P	31	24189.3	1.6				ug/L	22752	Standard
S	34	5244.2	0.9				ug/L	5049	Standard
Sr	88	83.3	24.2				ug/L	87	Standard
C	12	146.7	23.9				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	13.3	114.6				mg/L	10	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	0.0					mg/L	3	Standard
I	127	11335.9	2.7				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		108.565	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		102.064	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.292	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.100	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606042801SD WG571964-06
Sample Date/Time: Thursday, June 16, 2016 22:07:46
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56861.5	1.0				ug/L	51024	Standard
	Be	9	9379.6	0.6	**9.9907**	0.123	1.2	ug/L	7	Standard
	Al	27	791197.5	0.6	**4.9782**	0.076	1.5	ug/L	625	Standard
	Sc	45	33405.1	3.0				ug/L	29647	Standard
	Ti	47	189.0	15.7	**0.4621**	0.100	21.6	ug/L	57	Standard
	V	51	73275.8	0.5	**10.1068**	0.150	1.5	ug/L	1142	Standard
	Cr	52	82693.4	0.6	**10.2789**	0.155	1.5	ug/L	6628	Standard
	Cr	53	11009.0	1.3	**11.3764**	0.331	2.9	ug/L	430	Standard
	Mn	55	80077.1	1.3	**13.3217**	0.087	0.6	ug/L	603	Standard
	Co	59	64342.3	1.0	**9.9396**	0.081	0.8	ug/L	237	Standard
	Ni	60	30668.0	0.6	**15.7751**	0.244	1.5	ug/L	141	Standard
	Cu	65	102903.3	0.9	**54.5140**	0.360	0.7	ug/L	109	Standard
	Zn	66	17903.6	1.4	**15.8728**	0.283	1.8	ug/L	159	Standard
>	**Ge**	72	475415.3	1.6				ug/L	474053	Standard
	As	75	11042.5	1.9	**9.9692**	0.144	1.4	ug/L	-34	Standard
	Se	82	1111.2	2.5	**9.8543**	0.398	4.0	ug/L	14	Standard
	Se-1	77	817.4	1.4	**9.8699**	0.196	2.0	ug/L	55	Standard
>	**Ga**	71	86.7	39.3				mg/L	50	Standard
	Rb	85	8222.2	4.2				ug/L	20	Standard
	Y	89	394850.6	0.8				ug/L	376602	Standard
>	**Rh**	103	35.0	28.6				ug/L	17	Standard
	Mo	98	19398.6	1.2	**8.0048**	0.167	2.1	ug/L	8	Standard
	Ag	107	59697.4	0.4	**9.7470**	0.052	0.5	ug/L	81	Standard
	Cd	111	19317.1	0.2	**9.7032**	0.092	0.9	mg/L	3	Standard
	Cd	114	47826.5	0.6	**9.7171**	0.080	0.8	ug/L	7	Standard
>	**In**	115	538049.7	0.9				ug/L	524722	Standard
	Sn	118	39536.5	1.2	**7.0684**	0.038	0.5	ug/L	715	Standard
	Sb	123	45183.1	0.7	**10.0737**	0.100	1.0	ug/L	201	Standard
	Ba	135	43743.7	0.4	**23.4783**	0.172	0.7	ug/L	108	Standard
	Ce	140	316.7	16.7				ug/L	30	Standard
>	**Tb**	159	823661.0	0.7				ug/L	792236	Standard
	Ho	165	16.7	69.3				ug/L	7	Standard
	Tl	203	73870.7	1.0	**9.7275**	0.120	1.2	ug/L	9	Standard
	Tl	205	62943.8	1.2	**9.7425**	0.171	1.8	ug/L	0	Standard
	Pb	206	79783.5	0.3	**17.3303**	0.067	0.4	ug/L	216	Standard
	Pb	207	68152.3	0.6	**16.2608**	0.196	1.2	ug/L	180	Standard
	Pb	208	286237.0	1.1	**16.8270**	0.286	1.7	ug/L	717	Standard
	U	238	62126.1	0.8	**10.0567**	0.149	1.5	ug/L	4	Standard
>	**Bi**	209	457529.8	0.7				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	13005.6	1.2	**15.6137**	0.541	3.5	mg/L	20	Standard
K	39	631.7	11.7	**4.0527**	0.574	14.2	mg/L	22	Standard
Ca	43	45.0	29.4	**-3.9018**	2.447	62.7	mg/L	47	Standard
Fe	54	151.2	21.8	**-0.0055**	0.026	477.7	mg/L	151	Standard
Fe	57	191.7	21.7	**-0.1180**	0.127	107.5	mg/L	195	Standard
Sc-1	45	33405.1	3.0				mg/L	29647	Standard
Cl	35	198754.5	0.5				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	2900.3	3.8				ug/L	1607	Standard
P	31	24661.7	2.9				ug/L	22752	Standard
S	34	5152.5	2.9				ug/L	5049	Standard
Sr	88	78.3	9.8				ug/L	87	Standard
C	12	96.7	43.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.9	187.9				mg/L	10	Standard
Ho-1	165	16.7	69.3				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	3	Standard
I	127	11145.8	3.0				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		111.440	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.287	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.540	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.389	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606041103
Sample Date/Time: Thursday, June 16, 2016 22:10:57
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62574.0	2.3				ug/L	51024	Standard
	Be	9	160.0	11.3	**0.1339**	0.015	11.0	ug/L	7	Standard
	Al	27	3612417.3	0.5	**20.6888**	0.380	1.8	ug/L	625	Standard
	Sc	45	41445.0	4.1				ug/L	29647	Standard
	Ti	47	11430.0	1.2	**38.8931**	0.503	1.3	ug/L	57	Standard
	V	51	49465.6	5.9	**6.9654**	0.407	5.8	ug/L	1142	Standard
	Cr	52	278119.6	1.2	**37.8421**	0.634	1.7	ug/L	6628	Standard
	Cr	53	35835.7	1.3	**39.0973**	0.639	1.6	ug/L	430	Standard
	Mn	55	108739.8	1.1	**18.6585**	0.168	0.9	ug/L	603	Standard
	Co	59	16555.0	2.3	**2.6001**	0.043	1.6	ug/L	237	Standard
	Ni	60	172929.3	0.8	**91.8635**	0.500	0.5	ug/L	141	Standard
	Cu	65	6358.3	3.5	**3.4028**	0.118	3.5	ug/L	109	Standard
	Zn	66	15282.7	1.5	**13.9075**	0.137	1.0	ug/L	159	Standard
>	**Ge**	72	462157.8	0.7				ug/L	474053	Standard
	As	75	708.4	1.9	**0.6813**	0.015	2.2	ug/L	-34	Standard
	Se	82	305.6	0.9	**2.6661**	0.043	1.6	ug/L	14	Standard
	Se-1	77	262.0	4.6	**2.7550**	0.165	6.0	ug/L	55	Standard
>	**Ga**	71	6034.5	4.8				mg/L	50	Standard
	Rb	85	47790.3	0.2				ug/L	20	Standard
	Y	89	408920.9	2.9				ug/L	376602	Standard
>	**Rh**	103	41.7	34.6				ug/L	17	Standard
	Mo	98	2172.6	4.5	**0.8781**	0.030	3.5	ug/L	8	Standard
	Ag	107	219.7	70.0	**0.0229**	0.024	105.6	ug/L	81	Standard
	Cd	111	75.9	34.7	**0.0343**	0.013	36.7	mg/L	3	Standard
	Cd	114	241.8	20.0	**0.0446**	0.009	20.8	ug/L	7	Standard
>	**In**	115	546080.6	1.7				ug/L	524722	Standard
	Sn	118	1300.1	5.7	**0.1424**	0.011	7.6	ug/L	715	Standard
	Sb	123	571.3	25.0	**0.1106**	0.030	26.8	ug/L	201	Standard
	Ba	135	154749.6	0.9	**81.9842**	0.666	0.8	ug/L	108	Standard
	Ce	140	87014.2	1.0				ug/L	30	Standard
>	**Tb**	159	814427.9	0.6				ug/L	792236	Standard
	Ho	165	750.0	9.7				ug/L	7	Standard
	Tl	203	378.3	10.9	**0.0480**	0.006	11.9	ug/L	9	Standard
	Tl	205	368.3	33.6	**0.0501**	0.020	39.4	ug/L	0	Standard
	Pb	206	5985.2	3.5	**1.2661**	0.051	4.1	ug/L	216	Standard
	Pb	207	4992.8	4.4	**1.1580**	0.058	5.0	ug/L	180	Standard
	Pb	208	21391.6	3.3	**1.2214**	0.047	3.9	ug/L	717	Standard
	U	238	1095.4	14.1	**0.1724**	0.026	15.1	ug/L	4	Standard
>	**Bi**	209	451292.0	0.4				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	20841.0	1.9	**20.1926**	1.006	5.0	mg/L	20	Standard
K	39	73.3	37.6	**0.1715**	0.145	84.8	mg/L	22	Standard
Ca	43	58.3	64.9	**-3.6032**	6.066	168.3	mg/L	47	Standard
Fe	54	4110.0	2.2	**2.2769**	0.060	2.6	mg/L	151	Standard
Fe	57	1281.7	3.9	**2.1921**	0.046	2.1	mg/L	195	Standard
> **Sc-1**	45	41445.0	4.1				mg/L	29647	Standard
Cl	35	174319.7	0.6				ug/L	154152	Standard
Kr	83	1.7	34.6				ug/L	3	Standard
Br	81	22139.5	6.4				ug/L	1607	Standard
P	31	56868.2	1.9				ug/L	22752	Standard
S	34	4735.7	5.8				ug/L	5049	Standard
Sr	88	138.3	8.3				ug/L	87	Standard
C	12	140.0	24.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	71.3				mg/L	0	Standard
Dy	164	1332.7	14.4				mg/L	10	Standard
Ho-1	165	750.0	9.7				mg/L	7	Standard
Er	166	710.0	11.5				mg/L	3	Standard
I	127	202127.9	4.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		122.636	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.491	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.070
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.034
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: June 20, 2016

Method 6020 - Summary Report

Sample ID: L1606041104
Sample Date/Time: Thursday, June 16, 2016 22:14:09
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64240.9	1.6				ug/L	51024	Standard
	Be	9	136.7	22.1	**0.1078**	0.027	24.9	ug/L	7	Standard
	Al	27	3763925.2	1.3	**20.9934**	0.276	1.3	ug/L	625	Standard
	Sc	45	40464.0	1.9				ug/L	29647	Standard
	Ti	47	8699.5	0.7	**27.3016**	0.630	2.3	ug/L	57	Standard
	V	51	38467.6	1.3	**4.9573**	0.087	1.7	ug/L	1142	Standard
	Cr	52	284248.5	0.2	**35.6883**	1.177	3.3	ug/L	6628	Standard
	Cr	53	35927.6	2.1	**36.1893**	1.342	3.7	ug/L	430	Standard
	Mn	55	133272.7	1.8	**21.1444**	0.498	2.4	ug/L	603	Standard
	Co	59	18921.1	3.5	**2.7470**	0.050	1.8	ug/L	237	Standard
	Ni	60	221247.9	1.4	**108.5931**	1.677	1.5	ug/L	141	Standard
	Cu	65	5825.8	2.3	**2.8698**	0.029	1.0	ug/L	109	Standard
	Zn	66	12440.8	1.3	**10.4031**	0.253	2.4	ug/L	159	Standard
>	**Ge**	72	500409.8	2.9				ug/L	474053	Standard
	As	75	551.3	12.2	**0.4975**	0.064	12.9	ug/L	-34	Standard
	Se	82	300.3	5.4	**2.4053**	0.175	7.3	ug/L	14	Standard
	Se-1	77	256.7	3.5	**2.4250**	0.195	8.0	ug/L	55	Standard
>	**Ga**	71	4735.7	2.7				mg/L	50	Standard
	Rb	85	38717.8	2.3				ug/L	20	Standard
	Y	89	413643.0	2.8				ug/L	376602	Standard
>	**Rh**	103	26.7	28.6				ug/L	17	Standard
	Mo	98	7867.7	1.9	**3.2136**	0.028	0.9	ug/L	8	Standard
	Ag	107	99.3	12.1	**0.0038**	0.002	50.7	ug/L	81	Standard
	Cd	111	46.8	16.9	**0.0200**	0.004	18.8	mg/L	3	Standard
	Cd	114	206.0	6.6	**0.0377**	0.003	7.1	ug/L	7	Standard
>	**In**	115	542917.1	1.0				ug/L	524722	Standard
	Sn	118	1081.7	2.4	**0.1046**	0.003	3.0	ug/L	715	Standard
	Sb	123	436.3	12.1	**0.0817**	0.011	13.3	ug/L	201	Standard
	Ba	135	146593.2	1.4	**78.1037**	0.328	0.4	ug/L	108	Standard
	Ce	140	75445.7	1.8				ug/L	30	Standard
>	**Tb**	159	801118.6	3.0				ug/L	792236	Standard
	Ho	165	633.3	15.1				ug/L	7	Standard
	Tl	203	300.0	6.5	**0.0378**	0.003	8.4	ug/L	9	Standard
	Tl	205	321.7	21.6	**0.0433**	0.012	28.2	ug/L	0	Standard
	Pb	206	5087.9	2.5	**1.0767**	0.011	1.0	ug/L	216	Standard
	Pb	207	4144.6	1.8	**0.9603**	0.027	2.8	ug/L	180	Standard
	Pb	208	18065.6	1.4	**1.0314**	0.029	2.8	ug/L	717	Standard
	U	238	874.7	4.0	**0.1374**	0.011	7.8	ug/L	4	Standard
>	**Bi**	209	447824.2	3.4				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	22872.3	0.6	**22.6806**	0.473	2.1	mg/L	20	Standard
K	39	35.0	51.5	**-0.0329**	0.100	305.7	mg/L	22	Standard
Ca	43	48.3	31.6	**-4.9013**	2.699	55.1	mg/L	47	Standard
Fe	54	3361.7	4.8	**1.8885**	0.113	6.0	mg/L	151	Standard
Fe	57	1078.4	5.6	**1.8011**	0.173	9.6	mg/L	195	Standard
Sc-1	45	40464.0	1.9				mg/L	29647	Standard
Cl	35	177669.3	2.1				ug/L	154152	Standard
Kr	83	2.3	24.7				ug/L	3	Standard
Br	81	20991.2	6.6				ug/L	1607	Standard
P	31	55948.1	2.2				ug/L	22752	Standard
S	34	4435.6	2.7				ug/L	5049	Standard
Sr	88	156.7	18.7				ug/L	87	Standard
C	12	160.0	47.2				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	26.7	21.7				mg/L	0	Standard
Dy	164	1259.3	5.9				mg/L	10	Standard
Ho-1	165	633.3	15.1				mg/L	7	Standard
Er	166	573.3	7.3				mg/L	3	Standard
I	127	221985.7	5.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		125.903	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.560	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.468
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.281
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ni 60 Upper, S, EEE	Ni	60	

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Method 6020 - Summary Report

Sample ID: L1606041104PS WG572085-03
Sample Date/Time: Thursday, June 16, 2016 22:17:20
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68479.5	2.8				ug/L	51024	Standard
	Be	9	53798.7	2.5	**47.6621**	0.433	0.9	ug/L	7	Standard
	Al	27	3774638.8	2.0	**19.7508**	0.180	0.9	ug/L	625	Standard
	Sc	45	41744.1	0.5				ug/L	29647	Standard
	Ti	47	8543.7	1.2	**27.1926**	0.351	1.3	ug/L	57	Standard
	V	51	416323.5	0.8	**56.1020**	0.898	1.6	ug/L	1142	Standard
	Cr	52	661415.5	1.7	**85.4827**	2.467	2.9	ug/L	6628	Standard
	Cr	53	82886.1	1.6	**85.2548**	2.351	2.8	ug/L	430	Standard
	Mn	55	455226.4	0.8	**73.5653**	0.461	0.6	ug/L	603	Standard
	Co	59	356626.6	0.3	**53.2845**	0.717	1.3	ug/L	237	Standard
	Ni	60	319608.9	1.5	**159.1819**	4.226	2.7	ug/L	141	Standard
	Cu	65	101931.1	1.4	**52.0544**	1.323	2.5	ug/L	109	Standard
	Zn	66	69708.7	0.9	**60.2129**	1.260	2.1	ug/L	159	Standard
>	Ge	72	493214.1	1.2				ug/L	474053	Standard
	As	75	57487.0	0.2	**49.9285**	0.540	1.1	ug/L	-34	Standard
	Se	82	5945.0	0.7	**51.5039**	0.559	1.1	ug/L	14	Standard
	Se-1	77	4052.2	2.0	**49.9708**	0.414	0.8	ug/L	55	Standard
>	Ga	71	4670.7	3.3				mg/L	50	Standard
	Rb	85	37354.3	0.9				ug/L	20	Standard
	Y	89	401490.0	0.7				ug/L	376602	Standard
>	Rh	103	51.7	24.4				ug/L	17	Standard
	Mo	98	7837.2	0.6	**3.1623**	0.111	3.5	ug/L	8	Standard
	Ag	107	304891.6	0.9	**48.7677**	0.989	2.0	ug/L	81	Standard
	Cd	111	99959.3	1.1	**49.1537**	1.231	2.5	mg/L	3	Standard
	Cd	114	244744.0	1.6	**48.6729**	0.677	1.4	ug/L	7	Standard
>	In	115	549981.7	2.9				ug/L	524722	Standard
	Sn	118	1156.7	4.0	**0.1154**	0.002	1.9	ug/L	715	Standard
	Sb	123	225529.7	0.1	**49.2752**	1.450	2.9	ug/L	201	Standard
	Ba	135	235280.0	1.6	**123.8168**	1.916	1.5	ug/L	108	Standard
	Ce	140	72287.1	1.8				ug/L	30	Standard
>	Tb	159	836927.2	1.6				ug/L	792236	Standard
	Ho	165	618.3	2.8				ug/L	7	Standard
	Tl	203	374508.5	1.3	**47.9478**	0.598	1.2	ug/L	9	Standard
	Tl	205	331693.7	1.7	**49.9323**	0.614	1.2	ug/L	0	Standard
	Pb	206	246855.7	0.5	**52.2356**	0.118	0.2	ug/L	216	Standard
	Pb	207	213815.1	0.2	**49.6985**	0.193	0.4	ug/L	180	Standard
	Pb	208	877795.6	1.2	**50.2714**	0.366	0.7	ug/L	717	Standard
	U	238	322334.9	1.2	**50.7465**	0.349	0.7	ug/L	4	Standard
>	Bi	209	470679.1	0.5				ug/L	460343	Standard

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Na	23	3.3	173.2	**2.6916**	13.442	499.4	mg/L	0	Standard
Mg	24	22820.5	2.3	**21.9277**	0.463	2.1	mg/L	20	Standard
K	39	55.0	32.8	**0.0700**	0.098	140.3	mg/L	22	Standard
Ca	43	53.3	28.6	**-4.3313**	2.572	59.4	mg/L	47	Standard
Fe	54	3487.5	4.4	**1.8989**	0.090	4.7	mg/L	151	Standard
Fe	57	1048.4	8.2	**1.6588**	0.199	12.0	mg/L	195	Standard
> **Sc-1**	45	41744.1	0.5				mg/L	29647	Standard
Cl	35	171137.1	0.1				ug/L	154152	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	19926.4	2.2				ug/L	1607	Standard
P	31	55093.4	2.6				ug/L	22752	Standard
S	34	4375.6	3.4				ug/L	5049	Standard
Sr	88	146.7	22.7				ug/L	87	Standard
C	12	130.0	35.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	69.3				mg/L	0	Standard
Dy	164	1135.3	6.0				mg/L	10	Standard
Ho-1	165	618.3	2.8				mg/L	7	Standard
Er	166	516.7	11.3				mg/L	3	Standard
I	127	228888.4	2.7				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		134.210	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.042	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.814
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.245
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ni 60 Upper, S, EEE	Ni	60	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606041104SDL WG572085-04
Sample Date/Time: Thursday, June 16, 2016 22:20:32
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64080.3	2.7				ug/L	51024	Standard
	Be	9	40.0	12.5	**0.0168**	0.005	27.3	ug/L	7	Standard
	Al	27	710132.3	2.2	**3.9635**	0.097	2.4	ug/L	625	Standard
	Sc	45	34213.6	1.2				ug/L	29647	Standard
	Ti	47	1665.1	3.3	**5.5149**	0.188	3.4	ug/L	57	Standard
	V	51	8406.9	2.7	**1.0425**	0.044	4.3	ug/L	1142	Standard
	Cr	52	60396.1	0.7	**7.4773**	0.032	0.4	ug/L	6628	Standard
	Cr	53	7433.5	0.9	**7.7546**	0.056	0.7	ug/L	430	Standard
	Mn	55	26233.4	1.3	**4.3983**	0.064	1.4	ug/L	603	Standard
	Co	59	3790.1	2.7	**0.5627**	0.022	4.0	ug/L	237	Standard
	Ni	60	42759.9	1.8	**22.6189**	0.287	1.3	ug/L	141	Standard
	Cu	65	1312.1	2.0	**0.6485**	0.012	1.8	ug/L	109	Standard
	Zn	66	4020.5	0.7	**3.4822**	0.054	1.5	ug/L	159	Standard
>	**Ge**	72	462909.1	1.0				ug/L	474053	Standard
	As	75	127.1	1.3	**0.1426**	0.002	1.2	ug/L	-34	Standard
	Se	82	76.1	4.5	**0.5359**	0.031	5.8	ug/L	14	Standard
	Se-1	77	88.7	7.5	**0.4371**	0.078	17.8	ug/L	55	Standard
>	**Ga**	71	933.4	4.3				mg/L	50	Standard
	Rb	85	7380.1	1.8				ug/L	20	Standard
	Y	89	399286.8	1.5				ug/L	376602	Standard
>	**Rh**	103	10.0	50.0				ug/L	17	Standard
	Mo	98	1500.2	2.7	**0.5970**	0.016	2.6	ug/L	8	Standard
	Ag	107	118.7	15.0	**0.0065**	0.003	41.2	ug/L	81	Standard
	Cd	111	28.9	34.9	**0.0109**	0.005	45.1	mg/L	3	Standard
	Cd	114	79.5	41.7	**0.0119**	0.007	55.5	ug/L	7	Standard
>	**In**	115	553072.6	0.8				ug/L	524722	Standard
	Sn	118	576.7	14.8	**0.0122**	0.016	129.0	ug/L	715	Standard
	Sb	123	2178.3	21.1	**0.4589**	0.103	22.5	ug/L	201	Standard
	Ba	135	28213.6	0.4	**14.7104**	0.164	1.1	ug/L	108	Standard
	Ce	140	14325.1	2.6				ug/L	30	Standard
>	**Tb**	159	808125.3	1.3				ug/L	792236	Standard
	Ho	165	128.3	18.0				ug/L	7	Standard
	Tl	203	157.0	14.8	**0.0183**	0.003	16.5	ug/L	9	Standard
	Tl	205	128.3	27.4	**0.0122**	0.005	43.6	ug/L	0	Standard
	Pb	206	1207.7	4.1	**0.2094**	0.008	3.9	ug/L	216	Standard
	Pb	207	969.0	2.2	**0.1805**	0.006	3.4	ug/L	180	Standard
	Pb	208	4243.2	2.0	**0.1949**	0.007	3.7	ug/L	717	Standard
	U	238	239.0	4.0	**0.0315**	0.002	6.6	ug/L	4	Standard
>	**Bi**	209	453005.7	1.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	4389.0	3.6	**5.1101**	0.132	2.6	mg/L	20	Standard
K	39	13.3	78.1	**-0.1402**	0.068	48.2	mg/L	22	Standard
Ca	43	36.7	43.8	**-5.7822**	3.171	54.8	mg/L	47	Standard
Fe	54	812.9	7.6	**0.4581**	0.050	11.0	mg/L	151	Standard
Fe	57	373.3	8.7	**0.3544**	0.083	23.5	mg/L	195	Standard
> **Sc-1**	45	34213.6	1.2				mg/L	29647	Standard
Cl	35	155114.0	1.0				ug/L	154152	Standard
Kr	83	1.3	114.6				ug/L	3	Standard
Br	81	5447.6	5.1				ug/L	1607	Standard
P	31	29535.4	3.0				ug/L	22752	Standard
S	34	4345.6	4.1				ug/L	5049	Standard
Sr	88	98.3	16.3				ug/L	87	Standard
C	12	66.7	69.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	223.5	3.8				mg/L	10	Standard
Ho-1	165	128.3	18.0				mg/L	7	Standard
Er	166	136.7	22.4				mg/L	3	Standard
I	127	47285.3	1.6				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		125.588	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.649	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.403
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.406
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606041104SDL WG572085-04
Sample Date/Time: Thursday, June 16, 2016 22:23:43
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60699.7	1.4				ug/L	51024	Standard
	Be	9	26.7	65.8	**0.0056**	0.018	312.0	ug/L	7	Standard
	Al	27	141309.4	1.9	**0.8247**	0.016	2.0	ug/L	625	Standard
	Sc	45	31491.0	2.2				ug/L	29647	Standard
	Ti	47	381.3	5.6	**1.1251**	0.055	4.9	ug/L	57	Standard
	V	51	2585.2	5.7	**0.2016**	0.028	14.1	ug/L	1142	Standard
	Cr	52	17170.4	0.5	**1.4445**	0.049	3.4	ug/L	6628	Standard
	Cr	53	1966.8	5.0	**1.7199**	0.140	8.1	ug/L	430	Standard
	Mn	55	5874.1	1.6	**0.8794**	0.018	2.1	ug/L	603	Standard
	Co	59	918.7	1.3	**0.1040**	0.001	1.4	ug/L	237	Standard
	Ni	60	8671.8	1.0	**4.4921**	0.067	1.5	ug/L	141	Standard
	Cu	65	375.3	1.5	**0.1368**	0.002	1.4	ug/L	109	Standard
	Zn	66	1553.7	2.6	**1.1927**	0.020	1.7	ug/L	159	Standard
>	**Ge**	72	466371.9	2.3				ug/L	474053	Standard
	As	75	-6.1	252.7	**0.0197**	0.014	72.2	ug/L	-34	Standard
	Se	82	31.9	14.9	**0.1250**	0.051	40.6	ug/L	14	Standard
	Se-1	77	67.3	8.6	**0.1479**	0.098	66.2	ug/L	55	Standard
>	**Ga**	71	236.7	12.4				mg/L	50	Standard
	Rb	85	1530.1	6.8				ug/L	20	Standard
	Y	89	398351.9	2.2				ug/L	376602	Standard
>	**Rh**	103	20.0	90.1				ug/L	17	Standard
	Mo	98	309.3	4.7	**0.1235**	0.007	5.8	ug/L	8	Standard
	Ag	107	82.7	3.5	**0.0013**	0.000	30.9	ug/L	81	Standard
	Cd	111	8.8	17.3	**0.0012**	0.001	68.5	mg/L	3	Standard
	Cd	114	33.8	15.5	**0.0031**	0.001	31.5	ug/L	7	Standard
>	**In**	115	532767.1	1.5				ug/L	524722	Standard
	Sn	118	478.3	5.3	**-0.0020**	0.004	179.1	ug/L	715	Standard
	Sb	123	535.3	25.6	**0.1062**	0.033	30.9	ug/L	201	Standard
	Ba	135	5770.1	0.9	**3.0781**	0.059	1.9	ug/L	108	Standard
	Ce	140	2811.9	5.2				ug/L	30	Standard
>	**Tb**	159	784308.2	0.8				ug/L	792236	Standard
	Ho	165	41.7	18.3				ug/L	7	Standard
	Tl	203	52.7	23.4	**0.0046**	0.002	36.5	ug/L	9	Standard
	Tl	205	35.0	14.3	**-0.0022**	0.001	34.5	ug/L	0	Standard
	Pb	206	411.7	5.6	**0.0360**	0.005	12.9	ug/L	216	Standard
	Pb	207	350.0	3.5	**0.0324**	0.003	8.3	ug/L	180	Standard
	Pb	208	1486.7	0.5	**0.0323**	0.001	2.8	ug/L	717	Standard
	U	238	58.7	16.8	**0.0022**	0.002	75.4	ug/L	4	Standard
>	**Bi**	209	444600.9	0.5				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.3313**	8.870	166.4	mg/L	0	Standard
Mg	24	840.0	10.8	**1.0281**	0.127	12.3	mg/L	20	Standard
K	39	15.0	88.2	**-0.1198**	0.096	80.2	mg/L	22	Standard
Ca	43	18.3	83.3	**-9.1765**	3.343	36.4	mg/L	47	Standard
Fe	54	272.4	14.1	**0.0939**	0.032	34.1	mg/L	151	Standard
Fe	57	256.7	4.9	**0.1011**	0.032	31.4	mg/L	195	Standard
> **Sc-1**	45	31491.0	2.2				mg/L	29647	Standard
Cl	35	151247.9	1.3				ug/L	154152	Standard
Kr	83	3.3	69.3				ug/L	3	Standard
Br	81	2453.5	11.0				ug/L	1607	Standard
P	31	23077.6	3.5				ug/L	22752	Standard
S	34	4429.0	4.8				ug/L	5049	Standard
Sr	88	73.3	21.9				ug/L	87	Standard
C	12	63.3	24.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	47.6	24.3				mg/L	10	Standard
Ho-1	165	41.7	18.3				mg/L	7	Standard
Er	166	50.0	91.7				mg/L	3	Standard
I	127	10970.6	2.1				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		118.963	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.380	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.533	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.580	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 22:26:56
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59001.4	3.1				ug/L	51024	Standard
	Be	9	47251.9	1.9	**48.5958**	0.632	1.3	ug/L	7	Standard
	Al	27	7707900.4	0.6	**46.8442**	1.367	2.9	ug/L	625	Standard
	Sc	45	32042.2	2.5				ug/L	29647	Standard
	Ti	47	31108.6	0.8	**106.3533**	1.301	1.2	ug/L	57	Standard
	V	51	354930.5	0.4	**51.1260**	0.515	1.0	ug/L	1142	Standard
	Cr	52	373996.6	0.2	**51.3100**	0.429	0.8	ug/L	6628	Standard
	Cr	53	46528.0	1.9	**50.9890**	0.660	1.3	ug/L	430	Standard
	Mn	55	313560.0	0.4	**54.1496**	0.181	0.3	ug/L	603	Standard
	Co	59	324218.3	1.5	**51.7917**	0.391	0.8	ug/L	237	Standard
	Ni	60	95070.0	1.4	**50.5665**	0.352	0.7	ug/L	141	Standard
	Cu	65	93181.7	1.5	**50.8709**	0.430	0.8	ug/L	109	Standard
	Zn	66	54868.9	1.6	**50.6327**	0.507	1.0	ug/L	159	Standard
>	Ge	72	461242.2	0.7				ug/L	474053	Standard
	As	75	53786.6	0.6	**49.9506**	0.524	1.0	ug/L	-34	Standard
	Se	82	5398.5	1.3	**50.0080**	1.035	2.1	ug/L	14	Standard
	Se-1	77	3763.8	1.7	**49.6296**	0.770	1.6	ug/L	55	Standard
>	Ga	71	83.3	29.6				mg/L	50	Standard
	Rb	85	758.4	8.6				ug/L	20	Standard
	Y	89	392635.2	3.0				ug/L	376602	Standard
>	Rh	103	40.0	45.1				ug/L	17	Standard
	Mo	98	239363.5	0.3	**97.9544**	0.320	0.3	ug/L	8	Standard
	Ag	107	297613.5	1.2	**48.2150**	0.880	1.8	ug/L	81	Standard
	Cd	111	96257.9	0.7	**47.9363**	0.352	0.7	mg/L	3	Standard
	Cd	114	237569.3	0.8	**47.8568**	0.430	0.9	ug/L	7	Standard
>	In	115	542829.4	0.6				ug/L	524722	Standard
	Sn	118	271504.8	1.8	**48.6303**	0.573	1.2	ug/L	715	Standard
	Sb	123	221602.7	1.2	**49.0302**	0.874	1.8	ug/L	201	Standard
	Ba	135	89759.4	0.9	**47.8096**	0.296	0.6	ug/L	108	Standard
	Ce	140	83.3	15.1				ug/L	30	Standard
>	Tb	159	805068.8	1.3				ug/L	792236	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	366179.1	0.5	**49.0753**	0.770	1.6	ug/L	9	Standard
	Tl	205	320780.3	0.9	**50.5527**	0.981	1.9	ug/L	0	Standard
	Pb	206	226792.4	0.6	**50.2313**	0.545	1.1	ug/L	216	Standard
	Pb	207	206205.4	0.5	**50.1728**	0.804	1.6	ug/L	180	Standard
	Pb	208	828355.0	0.6	**49.6609**	0.844	1.7	ug/L	717	Standard
	U	238	311232.5	0.6	**51.2945**	0.952	1.9	ug/L	4	Standard
>	Bi	209	449694.2	1.3				ug/L	460343	Standard

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Na	23	3.3	173.2	**0.2298**	17.706	7704.3	mg/L	0	Standard
Mg	24	4013.9	1.6	**4.9932**	0.201	4.0	mg/L	20	Standard
K	39	691.7	2.2	**4.6523**	0.139	3.0	mg/L	22	Standard
Ca	43	66.7	18.9	**1.1897**	2.387	200.6	mg/L	47	Standard
Fe	54	5963.7	3.1	**4.3749**	0.232	5.3	mg/L	151	Standard
Fe	57	1775.1	6.5	**4.4411**	0.377	8.5	mg/L	195	Standard
Sc-1	45	32042.2	2.5				mg/L	29647	Standard
Cl	35	154194.0	0.8				ug/L	154152	Standard
Kr	83	1.7	91.7				ug/L	3	Standard
Br	81	1553.4	2.0				ug/L	1607	Standard
P	31	22800.5	1.3				ug/L	22752	Standard
S	34	4925.8	3.9				ug/L	5049	Standard
Sr	88	71.7	8.1				ug/L	87	Standard
C	12	50.0	40.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.7	108.3				mg/L	10	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	3	Standard
I	127	1866.8	9.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	97.192		
Al	27	93.688		
Sc	45			
Ti	47	106.353		
V	51	102.252		
Cr	52	102.620		
Cr	53			
Mn	55	108.299		
Co	59	103.583		
Ni	60	101.133		
Cu	65	101.742		
Zn	66	101.265		
Ge	72		97.298	
As	75	99.901		
Se	82	100.016		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	97.954		
Ag	107	96.430		
Cd	111	95.873		
Cd	114			
> In	115		103.451	
Sn	118	97.261		
Sb	123	98.060		
Ba	135	95.619		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.151		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.322		
U	238	102.589		
> Bi	209		97.687	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 22:30:07
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57406.9	2.2				ug/L	51024	Standard
	Be	9	13.3	86.6	**-0.0071**	0.012	172.1	ug/L	7	Standard
	Al	27	1425.1	26.0	**-0.0009**	0.002	242.5	ug/L	625	Standard
	Sc	45	31355.8	2.5				ug/L	29647	Standard
	Ti	47	24.7	20.0	**-0.0813**	0.017	20.7	ug/L	57	Standard
	V	51	1120.2	2.3	**-0.0061**	0.006	100.1	ug/L	1142	Standard
	Cr	52	6392.0	0.4	**-0.0333**	0.015	44.8	ug/L	6628	Standard
	Cr	53	548.3	18.8	**0.1770**	0.124	70.1	ug/L	430	Standard
	Mn	55	724.0	4.6	**-0.0007**	0.008	1032.9	ug/L	603	Standard
	Co	59	242.7	2.3	**-0.0024**	0.000	19.9	ug/L	237	Standard
	Ni	60	130.3	12.7	**-0.0081**	0.010	124.4	ug/L	141	Standard
	Cu	65	128.7	7.9	**0.0044**	0.007	154.7	ug/L	109	Standard
	Zn	66	153.3	8.3	**-0.0894**	0.013	14.8	ug/L	159	Standard
>	**Ge**	72	460344.2	1.9				ug/L	474053	Standard
	As	75	-26.8	68.7	**0.0000**	0.017	51664.1	ug/L	-34	Standard
	Se	82	13.1	41.0	**-0.0473**	0.049	102.7	ug/L	14	Standard
	Se-1	77	56.7	10.8	**0.0148**	0.078	525.1	ug/L	55	Standard
>	**Ga**	71	50.0	36.1				mg/L	50	Standard
	Rb	85	33.3	8.7				ug/L	20	Standard
	Y	89	391660.9	0.1				ug/L	376602	Standard
>	**Rh**	103	21.7	58.1				ug/L	17	Standard
	Mo	98	296.5	33.7	**0.1177**	0.040	33.6	ug/L	8	Standard
	Ag	107	114.3	9.9	**0.0065**	0.002	24.1	ug/L	81	Standard
	Cd	111	13.8	22.3	**0.0038**	0.001	39.2	mg/L	3	Standard
	Cd	114	58.6	51.2	**0.0082**	0.006	72.9	ug/L	7	Standard
>	**In**	115	532413.4	1.7				ug/L	524722	Standard
	Sn	118	798.4	13.3	**0.0568**	0.021	36.2	ug/L	715	Standard
	Sb	123	522.7	25.9	**0.1035**	0.032	31.2	ug/L	201	Standard
	Ba	135	112.0	12.3	**0.0031**	0.006	206.8	ug/L	108	Standard
	Ce	140	18.3	63.0				ug/L	30	Standard
>	**Tb**	159	782152.3	0.6				ug/L	792236	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	55.3	28.1	**0.0050**	0.002	40.9	ug/L	9	Standard
	Tl	205	48.3	6.0	**-0.0000**	0.000	944.3	ug/L	0	Standard
	Pb	206	239.7	3.4	**-0.0020**	0.002	107.0	ug/L	216	Standard
	Pb	207	204.0	6.9	**-0.0031**	0.003	92.9	ug/L	180	Standard
	Pb	208	866.0	6.6	**-0.0048**	0.003	59.0	ug/L	717	Standard
	U	238	38.3	34.4	**-0.0011**	0.002	189.9	ug/L	4	Standard
>	**Bi**	209	440050.2	1.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	41.7	6.9	**0.0082**	0.003	39.8	mg/L	20	Standard
K	39	13.3	21.7	**-0.1321**	0.019	14.2	mg/L	22	Standard
Ca	43	21.7	53.3	**-8.4223**	2.469	29.3	mg/L	47	Standard
Fe	54	134.4	12.8	**-0.0117**	0.012	103.5	mg/L	151	Standard
Fe	57	178.3	16.9	**-0.1234**	0.101	82.1	mg/L	195	Standard
Sc-1	45	31355.8	2.5				mg/L	29647	Standard
Cl	35	154796.2	1.9				ug/L	154152	Standard
Kr	83	1.3	86.6				ug/L	3	Standard
Br	81	1420.1	12.0				ug/L	1607	Standard
P	31	23807.0	1.6				ug/L	22752	Standard
S	34	4767.4	2.9				ug/L	5049	Standard
Sr	88	76.7	22.9				ug/L	87	Standard
C	12	50.0	60.0				mg/L	47	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	6.5	179.6				mg/L	10	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	1236.7	11.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.108	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.466	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	95.592	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Thursday, June 16, 2016 22:32:24
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Method 6020 - Summary Report

Sample ID: PBW 41 WG571834-02
Sample Date/Time: Thursday, June 16, 2016 22:33:20
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57729.8	2.4				ug/L	51024	Standard
	Be	9	15.0	66.7	**-0.0052**	0.011	207.3	ug/L	7	Standard
	Al	27	10453.6	1.9	**0.0552**	0.003	5.0	ug/L	625	Standard
	Sc	45	33299.9	2.5				ug/L	29647	Standard
	Ti	47	35.7	25.1	**-0.0492**	0.028	57.5	ug/L	57	Standard
	V	51	1262.4	5.5	**0.0063**	0.008	133.6	ug/L	1142	Standard
	Cr	52	7466.2	1.6	**0.0706**	0.026	36.2	ug/L	6628	Standard
	Cr	53	643.3	12.9	**0.2497**	0.092	36.8	ug/L	430	Standard
	Mn	55	1616.1	2.8	**0.1414**	0.004	2.6	ug/L	603	Standard
	Co	59	253.0	6.6	**-0.0025**	0.002	79.5	ug/L	237	Standard
	Ni	60	378.3	5.2	**0.1151**	0.008	6.8	ug/L	141	Standard
	Cu	65	209.0	6.0	**0.0433**	0.007	15.3	ug/L	109	Standard
	Zn	66	1638.4	1.5	**1.2227**	0.044	3.6	ug/L	159	Standard
>	**Ge**	72	481770.3	1.5				ug/L	474053	Standard
	As	75	-7.3	61.8	**0.0186**	0.004	21.3	ug/L	-34	Standard
	Se	82	21.7	38.5	**0.0252**	0.078	309.4	ug/L	14	Standard
	Se-1	77	49.7	10.3	**-0.1081**	0.069	63.9	ug/L	55	Standard
>	**Ga**	71	81.7	19.7				mg/L	50	Standard
	Rb	85	50.0	17.3				ug/L	20	Standard
	Y	89	391456.0	1.0				ug/L	376602	Standard
>	**Rh**	103	15.0	33.3				ug/L	17	Standard
	Mo	98	98.4	20.8	**0.0355**	0.009	26.7	ug/L	8	Standard
	Ag	107	94.7	3.7	**0.0032**	0.001	16.1	ug/L	81	Standard
	Cd	111	15.5	31.8	**0.0046**	0.003	57.0	mg/L	3	Standard
	Cd	114	31.0	41.6	**0.0025**	0.003	104.4	ug/L	7	Standard
>	**In**	115	534892.9	2.4				ug/L	524722	Standard
	Sn	118	895.0	10.2	**0.0734**	0.014	18.9	ug/L	715	Standard
	Sb	123	243.3	24.4	**0.0397**	0.012	30.7	ug/L	201	Standard
	Ba	135	132.3	7.6	**0.0140**	0.006	42.8	ug/L	108	Standard
	Ce	140	126.7	2.3				ug/L	30	Standard
>	**Tb**	159	808648.5	2.5				ug/L	792236	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	39.3	24.7	**0.0026**	0.001	49.6	ug/L	9	Standard
	Tl	205	40.0	50.0	**-0.0017**	0.003	183.3	ug/L	0	Standard
	Pb	206	250.7	8.4	**-0.0022**	0.005	210.3	ug/L	216	Standard
	Pb	207	220.7	4.6	**-0.0015**	0.003	191.8	ug/L	180	Standard
	Pb	208	931.3	4.0	**-0.0035**	0.003	80.4	ug/L	717	Standard
	U	238	32.0	46.7	**-0.0024**	0.002	99.2	ug/L	4	Standard
>	**Bi**	209	461825.2	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	43.3	46.6	**0.0073**	0.026	347.9	mg/L	20	Standard
K	39	21.7	35.3	**-0.0805**	0.053	65.7	mg/L	22	Standard
Ca	43	33.3	31.2	**-6.2262**	2.322	37.3	mg/L	47	Standard
Fe	54	132.8	30.7	**-0.0183**	0.032	174.0	mg/L	151	Standard
Fe	57	186.7	24.3	**-0.1330**	0.122	92.1	mg/L	195	Standard
Sc-1	45	33299.9	2.5				mg/L	29647	Standard
Cl	35	150658.7	1.1				ug/L	154152	Standard
Kr	83	2.3	24.7				ug/L	3	Standard
Br	81	2026.8	3.8				ug/L	1607	Standard
P	31	21810.7	2.4				ug/L	22752	Standard
S	34	4620.7	1.9				ug/L	5049	Standard
Sr	88	70.0	14.3				ug/L	87	Standard
C	12	86.7	40.5				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.2	111.3				mg/L	10	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	16.7	34.6				mg/L	3	Standard
I	127	2880.3	5.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.142	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.628	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.938
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.322
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 41 WG571834-03
Sample Date/Time: Thursday, June 16, 2016 22:36:32
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58134.7	1.4				ug/L	51024	Standard
	Be	9	47481.0	1.2	**49.5549**	1.040	2.1	ug/L	7	Standard
	Al	27	11848.2	29.8	**0.0633**	0.022	34.2	ug/L	625	Standard
	Sc	45	33760.9	2.8				ug/L	29647	Standard
	Ti	47	60.7	19.3	**0.0386**	0.038	99.0	ug/L	57	Standard
	V	51	364743.8	0.9	**51.7833**	1.598	3.1	ug/L	1142	Standard
	Cr	52	384565.8	0.9	**52.0063**	1.376	2.6	ug/L	6628	Standard
	Cr	53	46865.7	2.2	**50.6129**	1.593	3.1	ug/L	430	Standard
	Mn	55	323505.6	0.5	**55.0551**	1.092	2.0	ug/L	603	Standard
	Co	59	330925.6	0.6	**52.1042**	1.547	3.0	ug/L	237	Standard
	Ni	60	98420.3	0.4	**51.5920**	1.168	2.3	ug/L	141	Standard
	Cu	65	96735.2	0.8	**52.0474**	1.195	2.3	ug/L	109	Standard
	Zn	66	60428.3	1.1	**54.9708**	1.052	1.9	ug/L	159	Standard
>	**Ge**	72	468206.5	2.5				ug/L	474053	Standard
	As	75	53251.7	1.1	**48.7274**	0.650	1.3	ug/L	-34	Standard
	Se	82	5558.2	1.1	**50.7386**	1.287	2.5	ug/L	14	Standard
	Se-1	77	3779.1	1.8	**49.0879**	0.350	0.7	ug/L	55	Standard
>	**Ga**	71	95.0	5.3				mg/L	50	Standard
	Rb	85	148.3	20.6				ug/L	20	Standard
	Y	89	410210.7	3.1				ug/L	376602	Standard
>	**Rh**	103	26.7	28.6				ug/L	17	Standard
	Mo	98	76.7	14.4	**0.0250**	0.004	16.4	ug/L	8	Standard
	Ag	107	306600.5	0.9	**48.2949**	0.124	0.3	ug/L	81	Standard
	Cd	111	98706.0	0.5	**47.7973**	0.198	0.4	mg/L	3	Standard
	Cd	114	240379.3	1.1	**47.0837**	0.284	0.6	ug/L	7	Standard
>	**In**	115	558260.1	0.9				ug/L	524722	Standard
	Sn	118	793.4	5.7	**0.0490**	0.008	17.0	ug/L	715	Standard
	Sb	123	217861.1	1.5	**46.8696**	0.887	1.9	ug/L	201	Standard
	Ba	135	91054.1	0.9	**47.1604**	0.551	1.2	ug/L	108	Standard
	Ce	140	330.0	6.6				ug/L	30	Standard
>	**Tb**	159	829912.3	0.8				ug/L	792236	Standard
	Ho	165	8.3	91.7				ug/L	7	Standard
	Tl	203	372803.8	0.5	**48.2082**	0.596	1.2	ug/L	9	Standard
	Tl	205	323995.9	0.8	**49.2672**	0.912	1.9	ug/L	0	Standard
	Pb	206	236745.0	0.6	**50.5944**	0.255	0.5	ug/L	216	Standard
	Pb	207	206177.7	0.9	**48.4046**	0.929	1.9	ug/L	180	Standard
	Pb	208	859668.8	0.2	**49.7270**	0.479	1.0	ug/L	717	Standard
	U	238	310255.0	0.3	**49.3362**	0.627	1.3	ug/L	4	Standard
>	**Bi**	209	466041.0	1.1				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	161.7	12.9	**0.1477**	0.029	19.8	mg/L	20	Standard
K	39	16.7	17.3	**-0.1160**	0.022	19.3	mg/L	22	Standard
Ca	43	33.3	31.2	**-6.3847**	1.928	30.2	mg/L	47	Standard
Fe	54	164.9	14.3	**0.0027**	0.015	570.4	mg/L	151	Standard
Fe	57	196.7	21.3	**-0.1103**	0.128	116.3	mg/L	195	Standard
Sc-1	45	33760.9	2.8				mg/L	29647	Standard
Cl	35	149762.7	1.8				ug/L	154152	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	1560.1	10.1				ug/L	1607	Standard
P	31	22984.1	3.6				ug/L	22752	Standard
S	34	4315.6	2.6				ug/L	5049	Standard
Sr	88	53.3	28.6				ug/L	87	Standard
C	12	83.3	18.3				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	5.9	86.7				mg/L	10	Standard
Ho-1	165	8.3	91.7				mg/L	7	Standard
Er	166	16.7	91.7				mg/L	3	Standard
I	127	1323.4	9.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.936	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.767	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.392
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.238
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606033702 WG571834-01
Sample Date/Time: Thursday, June 16, 2016 22:39:43
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64441.8	2.3				ug/L	51024	Standard
	Be	9	20.0	25.0	**-0.0022**	0.005	232.0	ug/L	7	Standard
	Al	27	60114.2	4.5	**0.3246**	0.014	4.3	ug/L	625	Standard
	Sc	45	31512.8	4.2				ug/L	29647	Standard
	Ti	47	128.0	6.2	**0.2921**	0.031	10.5	ug/L	57	Standard
	V	51	53503.8	0.8	**7.9103**	0.048	0.6	ug/L	1142	Standard
	Cr	52	15505.3	1.8	**1.3346**	0.030	2.3	ug/L	6628	Standard
	Cr	53	2881.9	1.2	**2.8964**	0.027	0.9	ug/L	430	Standard
	Mn	55	1707.4	4.0	**0.1824**	0.014	7.5	ug/L	603	Standard
	Co	59	1839.8	1.0	**0.2661**	0.003	1.0	ug/L	237	Standard
	Ni	60	5162.5	5.3	**2.7953**	0.140	5.0	ug/L	141	Standard
	Cu	65	169344.1	2.3	**96.6524**	1.757	1.8	ug/L	109	Standard
	Zn	66	2344.5	2.7	**2.0388**	0.050	2.4	ug/L	159	Standard
>	**Ge**	72	441453.2	0.5				ug/L	474053	Standard
	As	75	1218.2	9.1	**1.2061**	0.101	8.4	ug/L	-34	Standard
	Se	82	116.0	12.5	**0.9573**	0.138	14.4	ug/L	14	Standard
	Se-1	77	201.7	7.0	**2.0760**	0.211	10.2	ug/L	55	Standard
>	**Ga**	71	926.7	11.5				mg/L	50	Standard
	Rb	85	12571.9	3.7				ug/L	20	Standard
	Y	89	399117.1	1.0				ug/L	376602	Standard
>	**Rh**	103	173.3	1.7				ug/L	17	Standard
	Mo	98	29352.9	0.6	**12.3636**	0.369	3.0	ug/L	8	Standard
	Ag	107	149.7	54.9	**0.0129**	0.015	112.8	ug/L	81	Standard
	Cd	111	24.8	238.3	**0.0100**	0.031	310.7	mg/L	3	Standard
	Cd	114	161.6	48.9	**0.0300**	0.017	58.2	ug/L	7	Standard
>	**In**	115	527437.4	2.5				ug/L	524722	Standard
	Sn	118	1430.1	3.9	**0.1747**	0.010	5.4	ug/L	715	Standard
	Sb	123	2404.5	19.4	**0.5345**	0.118	22.0	ug/L	201	Standard
	Ba	135	29634.3	0.9	**16.2125**	0.353	2.2	ug/L	108	Standard
	Ce	140	185.0	4.7				ug/L	30	Standard
>	**Tb**	159	786743.9	2.6				ug/L	792236	Standard
	Ho	165	16.7	105.4				ug/L	7	Standard
	Tl	203	226.3	39.8	**0.0295**	0.013	45.5	ug/L	9	Standard
	Tl	205	155.0	25.2	**0.0180**	0.007	37.6	ug/L	0	Standard
	Pb	206	685.3	11.7	**0.1039**	0.021	20.6	ug/L	216	Standard
	Pb	207	574.0	3.7	**0.0935**	0.008	8.7	ug/L	180	Standard
	Pb	208	2394.4	2.6	**0.0935**	0.004	4.7	ug/L	717	Standard
	U	238	81.3	17.9	**0.0066**	0.003	42.7	ug/L	4	Standard
>	**Bi**	209	426956.6	1.8				ug/L	460343	Standard

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Na	23	5.0	100.0	**-4.6650**	15.246	326.8	mg/L	0	Standard
Mg	24	23326.3	4.3	**29.7226**	1.184	4.0	mg/L	20	Standard
K	39	571.7	12.7	**3.8838**	0.629	16.2	mg/L	22	Standard
Ca	43	926.7	6.8	**191.1093**	22.294	11.7	mg/L	47	Standard
Fe	54	142.0	8.4	**-0.0064**	0.005	79.6	mg/L	151	Standard
Fe	57	988.4	6.7	**2.2303**	0.090	4.0	mg/L	195	Standard
> **Sc-1**	45	31512.8	4.2				mg/L	29647	Standard
Cl	35	486390.1	1.5				ug/L	154152	Standard
Kr	83	3.0	33.3				ug/L	3	Standard
Br	81	9422.9	2.9				ug/L	1607	Standard
P	31	23089.2	1.2				ug/L	22752	Standard
S	34	5072.5	3.6				ug/L	5049	Standard
Sr	88	663.3	3.8				ug/L	87	Standard
C	12	73.3	41.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	0	Standard
Dy	164	22.4	24.2				mg/L	10	Standard
Ho-1	165	16.7	105.4				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	3	Standard
I	127	47469.3	4.2				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		126.297	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		93.123	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.518	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	92.748	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606033702S WG571834-04
Sample Date/Time: Thursday, June 16, 2016 22:42:54
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68019.0	1.4				ug/L	51024	Standard
	Be	9	52452.3	2.6	**46.7932**	1.722	3.7	ug/L	7	Standard
	Al	27	59786.1	1.3	**0.3053**	0.006	2.1	ug/L	625	Standard
	Sc	45	30205.1	3.4				ug/L	29647	Standard
	Ti	47	100.0	14.5	**0.1859**	0.054	29.0	ug/L	57	Standard
	V	51	400824.3	1.2	**59.3044**	1.295	2.2	ug/L	1142	Standard
	Cr	52	361100.0	0.4	**50.8503**	0.412	0.8	ug/L	6628	Standard
	Cr	53	45675.4	2.3	**51.3868**	0.642	1.2	ug/L	430	Standard
	Mn	55	307080.3	1.9	**54.4520**	1.620	3.0	ug/L	603	Standard
	Co	59	323604.2	1.1	**53.0793**	1.177	2.2	ug/L	237	Standard
	Ni	60	93445.6	0.1	**51.0299**	0.526	1.0	ug/L	141	Standard
	Cu	65	247263.6	0.1	**138.7095**	1.722	1.2	ug/L	109	Standard
	Zn	66	54519.2	0.7	**51.6612**	0.952	1.8	ug/L	159	Standard
>	**Ge**	72	449299.9	1.1				ug/L	474053	Standard
	As	75	56719.6	0.9	**54.0778**	1.049	1.9	ug/L	-34	Standard
	Se	82	5785.5	2.0	**55.0413**	1.675	3.0	ug/L	14	Standard
	Se-1	77	3927.8	1.2	**53.2304**	1.135	2.1	ug/L	55	Standard
>	**Ga**	71	895.0	4.4				mg/L	50	Standard
	Rb	85	12290.0	5.9				ug/L	20	Standard
	Y	89	386361.5	1.5				ug/L	376602	Standard
>	**Rh**	103	176.7	6.5				ug/L	17	Standard
	Mo	98	28613.4	1.5	**12.4123**	0.434	3.5	ug/L	8	Standard
	Ag	107	279613.9	0.6	**48.0280**	1.230	2.6	ug/L	81	Standard
	Cd	111	93716.1	1.7	**49.4705**	0.238	0.5	mg/L	3	Standard
	Cd	114	229714.0	2.7	**49.0468**	0.741	1.5	ug/L	7	Standard
>	**In**	115	512129.2	2.1				ug/L	524722	Standard
	Sn	118	1266.7	5.0	**0.1514**	0.007	4.6	ug/L	715	Standard
	Sb	123	219270.1	0.1	**51.4357**	1.142	2.2	ug/L	201	Standard
	Ba	135	113634.2	0.4	**64.1909**	1.164	1.8	ug/L	108	Standard
	Ce	140	183.3	35.2				ug/L	30	Standard
>	**Tb**	159	767306.4	2.1				ug/L	792236	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	352266.3	0.4	**50.2886**	0.147	0.3	ug/L	9	Standard
	Tl	205	319230.0	1.5	**53.5879**	0.832	1.6	ug/L	0	Standard
	Pb	206	230082.1	0.2	**54.2895**	0.055	0.1	ug/L	216	Standard
	Pb	207	199935.5	0.5	**51.8202**	0.151	0.3	ug/L	180	Standard
	Pb	208	828887.7	1.4	**52.9349**	0.572	1.1	ug/L	717	Standard
	U	238	314710.8	1.3	**55.2472**	0.560	1.0	ug/L	4	Standard
>	**Bi**	209	422116.6	0.3				ug/L	460343	Standard

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Na	23	8.3	34.6	**-16.4613**	9.729	59.1	mg/L	0	Standard
Mg	24	22338.1	2.7	**29.6923**	0.787	2.7	mg/L	20	Standard
K	39	545.0	6.6	**3.8545**	0.326	8.5	mg/L	22	Standard
Ca	43	843.4	10.1	**180.3649**	20.489	11.4	mg/L	47	Standard
Fe	54	148.7	22.1	**0.0032**	0.023	711.1	mg/L	151	Standard
Fe	57	781.7	6.7	**1.7339**	0.242	13.9	mg/L	195	Standard
> **Sc-1**	45	30205.1	3.4				mg/L	29647	Standard
Cl	35	476373.7	2.1				ug/L	154152	Standard
Kr	83	2.3	89.2				ug/L	3	Standard
Br	81	9679.8	3.3				ug/L	1607	Standard
P	31	23531.6	1.5				ug/L	22752	Standard
S	34	4985.8	2.7				ug/L	5049	Standard
Sr	88	643.3	5.9				ug/L	87	Standard
C	12	83.3	54.1				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	100.0				mg/L	0	Standard
Dy	164	9.7	103.3				mg/L	10	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	3	Standard
I	127	46467.9	3.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		133.308	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.778	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.600
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	91.696
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: L1606033702SD WG571834-05
Sample Date/Time: Thursday, June 16, 2016 22:46:06
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69477.3	1.8				ug/L	51024	Standard
	Be	9	51502.4	2.4	**44.9684**	0.786	1.7	ug/L	7	Standard
	Al	27	70351.3	0.6	**0.3532**	0.005	1.3	ug/L	625	Standard
	Sc	45	29879.4	2.7				ug/L	29647	Standard
	Ti	47	116.3	8.0	**0.2444**	0.037	15.0	ug/L	57	Standard
	V	51	388223.7	1.2	**57.5908**	0.764	1.3	ug/L	1142	Standard
	Cr	52	347952.9	2.2	**49.1031**	1.033	2.1	ug/L	6628	Standard
	Cr	53	43768.2	2.9	**49.3632**	1.152	2.3	ug/L	430	Standard
	Mn	55	286009.9	1.4	**50.8380**	0.394	0.8	ug/L	603	Standard
	Co	59	307889.4	1.2	**50.6347**	0.555	1.1	ug/L	237	Standard
	Ni	60	89481.8	1.5	**48.9952**	0.439	0.9	ug/L	141	Standard
	Cu	65	241814.9	1.2	**136.0209**	1.038	0.8	ug/L	109	Standard
	Zn	66	51913.8	0.8	**49.3151**	0.405	0.8	ug/L	159	Standard
>	**Ge**	72	448036.8	0.9				ug/L	474053	Standard
	As	75	54590.9	0.7	**52.1892**	0.176	0.3	ug/L	-34	Standard
	Se	82	5464.5	2.1	**52.1104**	0.678	1.3	ug/L	14	Standard
	Se-1	77	3736.5	2.4	**50.7332**	0.775	1.5	ug/L	55	Standard
>	**Ga**	71	880.0	7.8				mg/L	50	Standard
	Rb	85	11956.4	0.5				ug/L	20	Standard
	Y	89	354548.8	0.8				ug/L	376602	Standard
>	**Rh**	103	176.7	9.9				ug/L	17	Standard
	Mo	98	28019.9	1.2	**12.5852**	0.199	1.6	ug/L	8	Standard
	Ag	107	268450.3	0.3	**47.7483**	0.458	1.0	ug/L	81	Standard
	Cd	111	88694.5	1.0	**48.4950**	0.379	0.8	mg/L	3	Standard
	Cd	114	219923.4	1.6	**48.6380**	0.413	0.8	ug/L	7	Standard
>	**In**	115	494421.9	1.1				ug/L	524722	Standard
	Sn	118	1316.7	9.7	**0.1699**	0.024	14.2	ug/L	715	Standard
	Sb	123	211754.6	0.6	**51.4377**	0.300	0.6	ug/L	201	Standard
	Ba	135	110652.9	0.5	**64.7326**	0.425	0.7	ug/L	108	Standard
	Ce	140	260.0	20.0				ug/L	30	Standard
>	**Tb**	159	762292.0	2.0				ug/L	792236	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	342694.3	1.4	**48.0097**	0.052	0.1	ug/L	9	Standard
	Tl	205	304091.9	1.8	**50.0920**	0.270	0.5	ug/L	0	Standard
	Pb	206	222070.0	1.1	**51.4209**	0.338	0.7	ug/L	216	Standard
	Pb	207	193776.6	0.8	**49.2893**	0.546	1.1	ug/L	180	Standard
	Pb	208	789689.1	0.4	**49.4955**	0.776	1.6	ug/L	717	Standard
	U	238	302421.4	0.6	**52.1051**	0.540	1.0	ug/L	4	Standard
>	**Bi**	209	430141.1	1.5				ug/L	460343	Standard

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Na	23	11.7	24.7	**-27.5524**	10.035	36.4	mg/L	0	Standard
Mg	24	22465.0	1.9	**30.1800**	0.330	1.1	mg/L	20	Standard
K	39	500.0	5.0	**3.5529**	0.109	3.1	mg/L	22	Standard
Ca	43	825.0	4.8	**178.0126**	5.766	3.2	mg/L	47	Standard
Fe	54	141.0	25.7	**-0.0008**	0.031	4097.7	mg/L	151	Standard
Fe	57	861.7	4.4	**2.0033**	0.182	9.1	mg/L	195	Standard
> **Sc-1**	45	29879.4	2.7				mg/L	29647	Standard
Cl	35	471095.3	0.9				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	9509.7	3.3				ug/L	1607	Standard
P	31	23573.3	1.7				ug/L	22752	Standard
S	34	4992.5	2.6				ug/L	5049	Standard
Sr	88	646.7	10.1				ug/L	87	Standard
C	12	96.7	31.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	41.7				mg/L	0	Standard
Dy	164	15.7	76.3				mg/L	10	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	3	Standard
I	127	49629.6	4.5				mg/L	842	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		136.166	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		94.512	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.226
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.439
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: L1606030301
Sample Date/Time: Thursday, June 16, 2016 22:49:17
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75542.9	1.1				ug/L	51024	Standard
	Be	9	35.0	14.3	**0.0070**	0.004	53.8	ug/L	7	Standard
	Al	27	29747316.4	1.2	**141.1560**	2.929	2.1	ug/L	625	Standard
	Sc	45	33087.8	1.2				ug/L	29647	Standard
	Ti	47	864.4	0.5	**2.9151**	0.077	2.6	ug/L	57	Standard
	V	51	2646.8	15.2	**0.2300**	0.062	27.0	ug/L	1142	Standard
	Cr	52	10730.1	1.6	**0.6326**	0.065	10.2	ug/L	6628	Standard
	Cr	53	13055.7	9.8	**14.6159**	1.842	12.6	ug/L	430	Standard
	Mn	55	149866.6	1.0	**26.8754**	0.469	1.7	ug/L	603	Standard
	Co	59	3157.0	1.2	**0.4841**	0.012	2.4	ug/L	237	Standard
	Ni	60	2562.6	1.9	**1.3439**	0.063	4.7	ug/L	141	Standard
	Cu	65	1783.1	4.8	**0.9478**	0.026	2.7	ug/L	109	Standard
	Zn	66	4720.1	0.9	**4.3229**	0.088	2.0	ug/L	159	Standard
>	**Ge**	72	443259.0	2.7				ug/L	474053	Standard
	As	75	1196.5	7.5	**1.1797**	0.057	4.8	ug/L	-34	Standard
	Se	82	433.0	3.3	**4.0226**	0.239	5.9	ug/L	14	Standard
	Se-1	77	945.4	12.5	**12.4569**	1.980	15.9	ug/L	55	Standard
>	**Ga**	71	90.0	14.7				mg/L	50	Standard
	Rb	85	8912.6	1.9				ug/L	20	Standard
	Y	89	372910.9	1.8				ug/L	376602	Standard
>	**Rh**	103	138.3	9.1				ug/L	17	Standard
	Mo	98	418.3	6.0	**0.1743**	0.012	6.8	ug/L	8	Standard
	Ag	107	142.7	27.1	**0.0119**	0.006	53.9	ug/L	81	Standard
	Cd	111	58.8	59.4	**0.0275**	0.018	65.5	mg/L	3	Standard
	Cd	114	163.0	53.7	**0.0306**	0.018	59.7	ug/L	7	Standard
>	**In**	115	516818.9	0.6				ug/L	524722	Standard
	Sn	118	633.3	5.7	**0.0299**	0.006	20.2	ug/L	715	Standard
	Sb	123	884.4	13.0	**0.1907**	0.026	13.4	ug/L	201	Standard
	Ba	135	210091.9	0.7	**117.6212**	0.688	0.6	ug/L	108	Standard
	Ce	140	548.3	4.6				ug/L	30	Standard
>	**Tb**	159	797833.7	0.3				ug/L	792236	Standard
	Ho	165	23.3	68.9				ug/L	7	Standard
	Tl	203	225.3	33.3	**0.0286**	0.011	36.9	ug/L	9	Standard
	Tl	205	156.7	26.6	**0.0177**	0.007	39.2	ug/L	0	Standard
	Pb	206	343.3	6.6	**0.0221**	0.005	23.5	ug/L	216	Standard
	Pb	207	295.0	6.1	**0.0203**	0.005	24.8	ug/L	180	Standard
	Pb	208	1172.7	3.5	**0.0147**	0.003	21.3	ug/L	717	Standard
	U	238	2550.2	1.4	**0.4258**	0.006	1.3	ug/L	4	Standard
>	**Bi**	209	436094.8	0.8				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.5341**	8.518	153.9	mg/L	0	Standard
Mg	24	135567.2	1.0	**164.6662**	3.386	2.1	mg/L	20	Standard
K	39	101.7	25.2	**0.4668**	0.178	38.1	mg/L	22	Standard
Ca	43	143.3	8.8	**16.8014**	2.330	13.9	mg/L	47	Standard
Fe	54	210.5	7.2	**0.0385**	0.013	33.1	mg/L	151	Standard
Fe	57	346.7	4.4	**0.3147**	0.041	13.0	mg/L	195	Standard
> **Sc-1**	45	33087.8	1.2				mg/L	29647	Standard
Cl	35	252380.3	1.6				ug/L	154152	Standard
Kr	83	1.3	43.3				ug/L	3	Standard
Br	81	100794.6	4.5				ug/L	1607	Standard
P	31	32519.9	1.3				ug/L	22752	Standard
S	34	4837.4	4.7				ug/L	5049	Standard
Sr	88	436.7	6.9				ug/L	87	Standard
C	12	223.3	5.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	28.7	92.1				mg/L	10	Standard
Ho-1	165	23.3	68.9				mg/L	7	Standard
Er	166	26.7	57.3				mg/L	3	Standard
I	127	617066.8	8.9				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		148.053	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.504	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.494
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.733
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606030302
Sample Date/Time: Thursday, June 16, 2016 22:52:29
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73040.7	1.9				ug/L	51024	Standard
	Be	9	40.0	45.1	**0.0120**	0.014	119.9	ug/L	7	Standard
	Al	27	29071018.9	1.5	**142.6695**	1.976	1.4	ug/L	625	Standard
	Sc	45	31137.0	3.2				ug/L	29647	Standard
	Ti	47	896.0	0.6	**3.1347**	0.013	0.4	ug/L	57	Standard
	V	51	2628.5	16.8	**0.2400**	0.066	27.6	ug/L	1142	Standard
	Cr	52	11569.4	2.8	**0.8104**	0.048	5.9	ug/L	6628	Standard
	Cr	53	14446.9	3.6	**16.7439**	0.524	3.1	ug/L	430	Standard
	Mn	55	152328.9	0.4	**28.2404**	0.204	0.7	ug/L	603	Standard
	Co	59	3172.7	3.4	**0.5045**	0.021	4.1	ug/L	237	Standard
	Ni	60	2824.9	2.2	**1.5411**	0.022	1.4	ug/L	141	Standard
	Cu	65	1634.1	4.2	**0.8948**	0.038	4.3	ug/L	109	Standard
	Zn	66	5209.6	4.4	**4.9636**	0.220	4.4	ug/L	159	Standard
>	**Ge**	72	428745.2	1.0				ug/L	474053	Standard
	As	75	1258.8	1.9	**1.2822**	0.036	2.8	ug/L	-34	Standard
	Se	82	439.1	3.6	**4.2227**	0.199	4.7	ug/L	14	Standard
	Se-1	77	1078.4	5.9	**14.7842**	0.963	6.5	ug/L	55	Standard
>	**Ga**	71	70.0	25.8				mg/L	50	Standard
	Rb	85	9496.3	1.9				ug/L	20	Standard
	Y	89	380626.7	0.4				ug/L	376602	Standard
>	**Rh**	103	98.3	11.7				ug/L	17	Standard
	Mo	98	479.8	3.7	**0.2023**	0.007	3.6	ug/L	8	Standard
	Ag	107	174.0	68.0	**0.0174**	0.020	114.9	ug/L	81	Standard
	Cd	111	83.1	60.8	**0.0404**	0.026	64.8	mg/L	3	Standard
	Cd	114	224.6	76.7	**0.0439**	0.036	82.5	ug/L	7	Standard
>	**In**	115	512708.3	1.5				ug/L	524722	Standard
	Sn	118	761.7	9.5	**0.0552**	0.012	21.8	ug/L	715	Standard
	Sb	123	807.2	10.7	**0.1743**	0.019	11.1	ug/L	201	Standard
	Ba	135	209488.0	1.0	**118.2448**	2.471	2.1	ug/L	108	Standard
	Ce	140	541.7	9.3				ug/L	30	Standard
>	**Tb**	159	775209.0	3.4				ug/L	792236	Standard
	Ho	165	25.0	20.0				ug/L	7	Standard
	Tl	203	254.0	67.1	**0.0340**	0.024	70.2	ug/L	9	Standard
	Tl	205	180.0	38.9	**0.0228**	0.011	49.8	ug/L	0	Standard
	Pb	206	477.0	17.2	**0.0581**	0.017	29.8	ug/L	216	Standard
	Pb	207	417.0	19.6	**0.0560**	0.019	34.6	ug/L	180	Standard
	Pb	208	1674.7	14.6	**0.0509**	0.014	27.2	ug/L	717	Standard
	U	238	2253.2	2.5	**0.3950**	0.010	2.6	ug/L	4	Standard
>	**Bi**	209	414870.7	2.1				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.0844**	9.297	182.9	mg/L	0	Standard
Mg	24	134474.1	0.2	**173.6638**	5.440	3.1	mg/L	20	Standard
K	39	88.3	19.9	**0.4121**	0.119	28.8	mg/L	22	Standard
Ca	43	171.7	13.8	**24.9409**	4.511	18.1	mg/L	47	Standard
Fe	54	188.7	7.0	**0.0310**	0.006	19.6	mg/L	151	Standard
Fe	57	286.7	15.2	**0.1978**	0.124	62.9	mg/L	195	Standard
Sc-1	45	31137.0	3.2				mg/L	29647	Standard
Cl	35	236218.5	0.5				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	103082.9	2.1				ug/L	1607	Standard
P	31	32710.3	0.4				ug/L	22752	Standard
S	34	4897.5	3.2				ug/L	5049	Standard
Sr	88	453.3	14.0				ug/L	87	Standard
C	12	190.0	18.2				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	21.9	52.8				mg/L	10	Standard
Ho-1	165	25.0	20.0				mg/L	7	Standard
Er	166	30.0	33.3				mg/L	3	Standard
I	127	617957.6	6.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		143.149	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		90.442	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.710
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.122
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606030402
Sample Date/Time: Thursday, June 16, 2016 22:55:40
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71156.7	0.3				ug/L	51024	Standard
	Be	9	20.0	50.0	**-0.0040**	0.009	211.0	ug/L	7	Standard
	Al	27	27285286.1	1.5	**137.4375**	2.316	1.7	ug/L	625	Standard
	Sc	45	31798.3	2.5				ug/L	29647	Standard
	Ti	47	833.7	1.4	**2.8012**	0.055	2.0	ug/L	57	Standard
	V	51	2537.6	8.1	**0.2132**	0.036	16.9	ug/L	1142	Standard
	Cr	52	12018.1	1.3	**0.8169**	0.043	5.3	ug/L	6628	Standard
	Cr	53	14870.6	5.1	**16.6424**	0.566	3.4	ug/L	430	Standard
	Mn	55	153406.0	0.3	**27.4780**	0.629	2.3	ug/L	603	Standard
	Co	59	3042.6	1.6	**0.4644**	0.013	2.9	ug/L	237	Standard
	Ni	60	2834.9	0.9	**1.4924**	0.050	3.3	ug/L	141	Standard
	Cu	65	1512.4	1.9	**0.7934**	0.029	3.7	ug/L	109	Standard
	Zn	66	12243.6	1.2	**11.5661**	0.178	1.5	ug/L	159	Standard
>	**Ge**	72	443839.5	2.3				ug/L	474053	Standard
	As	75	1046.3	4.7	**1.0354**	0.070	6.7	ug/L	-34	Standard
	Se	82	370.0	2.6	**3.4056**	0.089	2.6	ug/L	14	Standard
	Se-1	77	1056.7	5.5	**13.9459**	0.499	3.6	ug/L	55	Standard
>	**Ga**	71	63.3	29.9				mg/L	50	Standard
	Rb	85	8789.2	0.9				ug/L	20	Standard
	Y	89	374101.9	2.2				ug/L	376602	Standard
>	**Rh**	103	100.0	39.7				ug/L	17	Standard
	Mo	98	414.8	3.1	**0.1799**	0.005	3.0	ug/L	8	Standard
	Ag	107	91.0	19.0	**0.0038**	0.003	80.6	ug/L	81	Standard
	Cd	111	38.9	24.2	**0.0179**	0.005	27.8	mg/L	3	Standard
	Cd	114	124.8	37.3	**0.0236**	0.010	41.9	ug/L	7	Standard
>	**In**	115	496787.9	1.5				ug/L	524722	Standard
	Sn	118	751.7	3.4	**0.0580**	0.007	12.3	ug/L	715	Standard
	Sb	123	699.9	9.2	**0.1546**	0.018	11.7	ug/L	201	Standard
	Ba	135	200966.0	0.6	**117.0693**	2.247	1.9	ug/L	108	Standard
	Ce	140	703.3	2.3				ug/L	30	Standard
>	**Tb**	159	757626.8	0.4				ug/L	792236	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	132.7	7.8	**0.0167**	0.001	8.9	ug/L	9	Standard
	Tl	205	95.0	31.6	**0.0084**	0.005	62.5	ug/L	0	Standard
	Pb	206	531.7	2.2	**0.0713**	0.003	3.6	ug/L	216	Standard
	Pb	207	455.3	6.2	**0.0663**	0.009	13.1	ug/L	180	Standard
	Pb	208	1923.0	1.8	**0.0670**	0.003	4.3	ug/L	717	Standard
	U	238	1986.8	1.8	**0.3469**	0.010	2.8	ug/L	4	Standard
>	**Bi**	209	415441.7	1.2				ug/L	460343	Standard

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Na	23	5.0	0.0	**-4.8155**	0.394	8.2	mg/L	0	Standard
Mg	24	122585.6	0.8	**154.9558**	2.818	1.8	mg/L	20	Standard
K	39	68.3	27.7	**0.2568**	0.128	49.9	mg/L	22	Standard
Ca	43	118.3	20.0	**12.5323**	4.646	37.1	mg/L	47	Standard
Fe	54	188.9	8.2	**0.0283**	0.012	41.6	mg/L	151	Standard
Fe	57	303.3	9.9	**0.2303**	0.108	46.9	mg/L	195	Standard
> **Sc-1**	45	31798.3	2.5				mg/L	29647	Standard
Cl	35	229346.8	0.7				ug/L	154152	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	83539.7	2.1				ug/L	1607	Standard
P	31	32606.7	1.9				ug/L	22752	Standard
S	34	4827.4	4.1				ug/L	5049	Standard
Sr	88	453.3	10.5				ug/L	87	Standard
C	12	170.0	0.0				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	51.9	21.5				mg/L	10	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	30.0	33.3				mg/L	3	Standard
I	127	562279.3	5.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		139.457	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.627	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.676
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	90.246
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606030402PS WG572184-03
Sample Date/Time: Thursday, June 16, 2016 22:58:52
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73075.8	1.3				ug/L	51024	Standard
	Be	9	53890.7	1.6	**44.7456**	1.235	2.8	ug/L	7	Standard
	Al	27	27168938.9	0.8	**133.2737**	2.450	1.8	ug/L	625	Standard
	Sc	45	32783.8	3.0				ug/L	29647	Standard
	Ti	47	859.4	2.1	**2.8540**	0.076	2.7	ug/L	57	Standard
	V	51	356764.3	1.1	**52.7436**	0.694	1.3	ug/L	1142	Standard
	Cr	52	356493.8	0.1	**50.1744**	0.746	1.5	ug/L	6628	Standard
	Cr	53	58201.6	1.0	**65.5911**	1.486	2.3	ug/L	430	Standard
	Mn	55	450920.3	1.1	**79.9871**	1.948	2.4	ug/L	603	Standard
	Co	59	316431.5	0.7	**51.8775**	0.422	0.8	ug/L	237	Standard
	Ni	60	89734.3	1.3	**48.9891**	1.257	2.6	ug/L	141	Standard
	Cu	65	87088.6	0.9	**48.7984**	1.056	2.2	ug/L	109	Standard
	Zn	66	59430.7	0.2	**56.3137**	0.736	1.3	ug/L	159	Standard
>	**Ge**	72	449467.4	1.3				ug/L	474053	Standard
	As	75	54174.2	0.7	**51.6333**	0.928	1.8	ug/L	-34	Standard
	Se	82	5615.8	0.7	**53.3981**	0.963	1.8	ug/L	14	Standard
	Se-1	77	4643.7	1.4	**63.0355**	0.461	0.7	ug/L	55	Standard
>	**Ga**	71	86.7	6.7				mg/L	50	Standard
	Rb	85	8584.1	2.2				ug/L	20	Standard
	Y	89	362129.9	0.6				ug/L	376602	Standard
>	**Rh**	103	126.7	12.1				ug/L	17	Standard
	Mo	98	423.7	5.1	**0.1836**	0.012	6.4	ug/L	8	Standard
	Ag	107	266853.3	1.0	**47.1390**	0.674	1.4	ug/L	81	Standard
	Cd	111	91252.6	1.2	**49.5561**	0.951	1.9	mg/L	3	Standard
	Cd	114	222037.4	0.3	**48.7752**	0.696	1.4	ug/L	7	Standard
>	**In**	115	497860.4	1.7				ug/L	524722	Standard
	Sn	118	795.0	4.5	**0.0661**	0.005	7.0	ug/L	715	Standard
	Sb	123	212175.4	1.5	**51.1854**	0.593	1.2	ug/L	201	Standard
	Ba	135	282462.3	0.7	**164.2013**	1.778	1.1	ug/L	108	Standard
	Ce	140	631.7	10.3				ug/L	30	Standard
>	**Tb**	159	772720.2	0.9				ug/L	792236	Standard
	Ho	165	25.0	72.1				ug/L	7	Standard
	Tl	203	348021.0	0.8	**48.9171**	0.207	0.4	ug/L	9	Standard
	Tl	205	307292.3	1.9	**50.7847**	0.486	1.0	ug/L	0	Standard
	Pb	206	227366.6	0.7	**52.8212**	0.283	0.5	ug/L	216	Standard
	Pb	207	198570.4	0.5	**50.6733**	0.216	0.4	ug/L	180	Standard
	Pb	208	808970.2	1.0	**50.8658**	0.381	0.7	ug/L	717	Standard
	U	238	316899.9	0.9	**54.7755**	0.248	0.5	ug/L	4	Standard
>	**Bi**	209	428726.0	0.9				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.3595**	8.821	164.6	mg/L	0	Standard
Mg	24	124008.8	1.6	**152.0535**	3.346	2.2	mg/L	20	Standard
K	39	85.0	11.8	**0.3592**	0.081	22.7	mg/L	22	Standard
Ca	43	100.0	5.0	**7.9645**	1.532	19.2	mg/L	47	Standard
Fe	54	177.2	11.1	**0.0154**	0.015	95.9	mg/L	151	Standard
Fe	57	351.7	12.7	**0.3402**	0.148	43.6	mg/L	195	Standard
> **Sc-1**	45	32783.8	3.0				mg/L	29647	Standard
Cl	35	226771.8	0.7				ug/L	154152	Standard
Kr	83	1.0	100.0				ug/L	3	Standard
Br	81	82051.8	3.7				ug/L	1607	Standard
P	31	32553.3	0.7				ug/L	22752	Standard
S	34	4877.5	2.7				ug/L	5049	Standard
Sr	88	468.3	17.3				ug/L	87	Standard
C	12	143.3	17.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	28.9	106.4				mg/L	10	Standard
Ho-1	165	25.0	72.1				mg/L	7	Standard
Er	166	23.3	65.5				mg/L	3	Standard
I	127	560436.2	7.8				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		143.218	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.814	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.881
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.132
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606030402SDL WG572184-04
Sample Date/Time: Thursday, June 16, 2016 23:02:03
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70743.1	1.8				ug/L	51024	Standard
	Be	9	28.3	50.9	**0.0034**	0.013	384.2	ug/L	7	Standard
	Al	27	5919809.8	1.5	**29.9860**	0.193	0.6	ug/L	625	Standard
	Sc	45	33931.3	4.9				ug/L	29647	Standard
	Ti	47	210.3	4.5	**0.5323**	0.026	4.9	ug/L	57	Standard
	V	51	1736.1	7.7	**0.0751**	0.020	26.8	ug/L	1142	Standard
	Cr	52	8517.7	1.3	**0.2257**	0.018	7.8	ug/L	6628	Standard
	Cr	53	4512.3	4.3	**4.4067**	0.273	6.2	ug/L	430	Standard
	Mn	55	34493.9	0.5	**5.6636**	0.053	0.9	ug/L	603	Standard
	Co	59	857.0	3.0	**0.0916**	0.004	4.4	ug/L	237	Standard
	Ni	60	815.4	3.7	**0.3434**	0.013	3.8	ug/L	141	Standard
	Cu	65	609.0	2.8	**0.2567**	0.008	3.3	ug/L	109	Standard
	Zn	66	2631.2	2.5	**2.1339**	0.077	3.6	ug/L	159	Standard
>	**Ge**	72	475670.8	1.3				ug/L	474053	Standard
	As	75	259.9	19.5	**0.2591**	0.046	17.8	ug/L	-34	Standard
	Se	82	96.9	9.6	**0.7044**	0.090	12.8	ug/L	14	Standard
	Se-1	77	278.3	6.3	**2.8660**	0.190	6.6	ug/L	55	Standard
>	**Ga**	71	100.0	13.2				mg/L	50	Standard
	Rb	85	1971.8	2.2				ug/L	20	Standard
	Y	89	399368.2	0.1				ug/L	376602	Standard
>	**Rh**	103	31.7	55.5				ug/L	17	Standard
	Mo	98	97.2	8.5	**0.0330**	0.003	8.8	ug/L	8	Standard
	Ag	107	194.3	8.7	**0.0182**	0.002	12.0	ug/L	81	Standard
	Cd	111	22.8	26.6	**0.0078**	0.003	35.8	mg/L	3	Standard
	Cd	114	48.7	59.7	**0.0057**	0.006	99.0	ug/L	7	Standard
>	**In**	115	559725.5	1.9				ug/L	524722	Standard
	Sn	118	606.7	7.7	**0.0162**	0.009	56.8	ug/L	715	Standard
	Sb	123	2363.7	19.9	**0.4914**	0.092	18.7	ug/L	201	Standard
	Ba	135	43798.6	2.4	**22.5929**	0.145	0.6	ug/L	108	Standard
	Ce	140	198.3	9.5				ug/L	30	Standard
>	**Tb**	159	842868.7	1.3				ug/L	792236	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	155.3	20.7	**0.0174**	0.004	24.2	ug/L	9	Standard
	Tl	205	138.3	25.4	**0.0131**	0.005	41.5	ug/L	0	Standard
	Pb	206	331.7	5.4	**0.0143**	0.004	25.7	ug/L	216	Standard
	Pb	207	291.7	3.0	**0.0144**	0.002	12.4	ug/L	180	Standard
	Pb	208	1219.7	5.8	**0.0124**	0.004	35.2	ug/L	717	Standard
	U	238	456.0	5.1	**0.0646**	0.005	7.0	ug/L	4	Standard
>	**Bi**	209	468142.9	1.3				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	26463.1	2.5	**31.3785**	2.343	7.5	mg/L	20	Standard
K	39	26.7	78.1	**-0.0526**	0.134	255.5	mg/L	22	Standard
Ca	43	43.3	17.6	**-4.3735**	1.225	28.0	mg/L	47	Standard
Fe	54	169.2	3.0	**0.0053**	0.003	52.6	mg/L	151	Standard
Fe	57	196.7	11.5	**-0.1160**	0.038	32.8	mg/L	195	Standard
> **Sc-1**	45	33931.3	4.9				mg/L	29647	Standard
Cl	35	196142.1	0.3				ug/L	154152	Standard
Kr	83	2.0	50.0				ug/L	3	Standard
Br	81	19616.0	5.5				ug/L	1607	Standard
P	31	27376.4	1.1				ug/L	22752	Standard
S	34	5225.9	4.8				ug/L	5049	Standard
Sr	88	161.7	12.5				ug/L	87	Standard
C	12	53.3	21.7				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	18.9	105.9				mg/L	10	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	23.3	24.7				mg/L	3	Standard
I	127	136986.5	1.1				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		138.646	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.341	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.671
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.694
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Thursday, June 16, 2016 23:05:16
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65141.5	3.2				ug/L	51024	Standard
	Be	9	52703.2	1.3	**49.1153**	1.764	3.6	ug/L	7	Standard
	Al	27	8228815.5	2.2	**45.2824**	0.920	2.0	ug/L	625	Standard
	Sc	45	32498.2	4.1				ug/L	29647	Standard
	Ti	47	31345.1	0.7	**103.5318**	1.343	1.3	ug/L	57	Standard
	V	51	367453.1	0.4	**51.1407**	0.777	1.5	ug/L	1142	Standard
	Cr	52	375913.5	0.3	**49.8070**	1.076	2.2	ug/L	6628	Standard
	Cr	53	47646.5	1.3	**50.4578**	1.488	2.9	ug/L	430	Standard
	Mn	55	329100.4	0.4	**54.9171**	0.971	1.8	ug/L	603	Standard
	Co	59	349269.0	1.0	**53.9203**	1.421	2.6	ug/L	237	Standard
	Ni	60	96531.2	0.8	**49.6170**	1.272	2.6	ug/L	141	Standard
	Cu	65	93924.6	0.9	**49.5504**	1.188	2.4	ug/L	109	Standard
	Zn	66	55518.9	0.1	**49.5011**	0.851	1.7	ug/L	159	Standard
>	Ge	72	477444.4	1.8				ug/L	474053	Standard
	As	75	55141.7	0.8	**49.4767**	0.656	1.3	ug/L	-34	Standard
	Se	82	5701.1	0.6	**51.0288**	1.000	2.0	ug/L	14	Standard
	Se-1	77	3881.8	1.1	**49.4608**	1.267	2.6	ug/L	55	Standard
>	Ga	71	65.0	13.3				mg/L	50	Standard
	Rb	85	788.4	3.5				ug/L	20	Standard
	Y	89	405958.4	2.3				ug/L	376602	Standard
>	Rh	103	46.7	6.2				ug/L	17	Standard
	Mo	98	255980.2	1.6	**104.9334**	3.174	3.0	ug/L	8	Standard
	Ag	107	304085.1	0.1	**49.3379**	0.777	1.6	ug/L	81	Standard
	Cd	111	100650.6	0.4	**50.2032**	0.894	1.8	mg/L	3	Standard
	Cd	114	247889.3	0.9	**50.0095**	0.397	0.8	ug/L	7	Standard
>	In	115	542056.8	1.5				ug/L	524722	Standard
	Sn	118	285272.3	0.9	**51.1841**	0.960	1.9	ug/L	715	Standard
	Sb	123	227314.1	0.8	**50.3702**	0.881	1.7	ug/L	201	Standard
	Ba	135	91208.0	0.4	**48.6598**	0.850	1.7	ug/L	108	Standard
	Ce	140	63.3	32.9				ug/L	30	Standard
>	Tb	159	789070.3	2.3				ug/L	792236	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	377602.8	0.5	**50.2279**	0.920	1.8	ug/L	9	Standard
	Tl	205	337371.9	1.4	**52.7729**	1.437	2.7	ug/L	0	Standard
	Pb	206	238042.0	0.2	**52.3320**	0.779	1.5	ug/L	216	Standard
	Pb	207	215459.6	1.1	**52.0360**	1.192	2.3	ug/L	180	Standard
	Pb	208	891326.9	0.5	**53.0399**	0.951	1.8	ug/L	717	Standard
	U	238	333407.3	1.0	**54.5375**	1.116	2.0	ug/L	4	Standard
>	Bi	209	453096.7	1.3				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.3907**	8.767	162.6	mg/L	0	Standard
Mg	24	4200.6	2.3	**5.1529**	0.111	2.2	mg/L	20	Standard
K	39	616.7	6.8	**4.0727**	0.447	11.0	mg/L	22	Standard
Ca	43	71.7	17.6	**2.1532**	3.105	144.2	mg/L	47	Standard
Fe	54	6037.6	3.3	**4.3664**	0.172	3.9	mg/L	151	Standard
Fe	57	1763.4	0.4	**4.3392**	0.195	4.5	mg/L	195	Standard
Sc-1	45	32498.2	4.1				mg/L	29647	Standard
Cl	35	179833.9	2.1				ug/L	154152	Standard
Kr	83	0.7	86.6				ug/L	3	Standard
Br	81	2146.8	4.2				ug/L	1607	Standard
P	31	26813.7	2.2				ug/L	22752	Standard
S	34	5724.4	0.6				ug/L	5049	Standard
Sr	88	70.0	14.3				ug/L	87	Standard
C	12	63.3	50.8				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.0	50.0				mg/L	10	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	3	Standard
I	127	9479.8	26.5				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	98.231		
Al	27	90.565		
Sc	45			
Ti	47	103.532		
V	51	102.281		
Cr	52	99.614		
Cr	53			
Mn	55	109.834		
Co	59	107.841		
Ni	60	99.234		
Cu	65	99.101		
Zn	66	99.002		
Ge	72		100.715	
As	75	98.953		
Se	82	102.058		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	104.933		
Ag	107	98.676		
Cd	111	100.406		
Cd	114			
> In	115		103.304	
Sn	118	102.368		
Sb	123	100.740		
Ba	135	97.320		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.456		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.080		
U	238	109.075		
> Bi	209		98.426	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Thursday, June 16, 2016 23:08:27
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65521.4	0.4				ug/L	51024	Standard
	Be	9	23.3	99.0	**0.0005**	0.021	4564.3	ug/L	7	Standard
	Al	27	5681.9	111.4	**0.0212**	0.034	162.2	ug/L	625	Standard
	Sc	45	34061.6	0.4				ug/L	29647	Standard
	Ti	47	31.0	31.1	**-0.0658**	0.030	46.1	ug/L	57	Standard
	V	51	1137.0	4.8	**-0.0132**	0.008	58.0	ug/L	1142	Standard
	Cr	52	6409.0	1.1	**-0.0829**	0.007	8.9	ug/L	6628	Standard
	Cr	53	666.7	9.6	**0.2639**	0.061	23.2	ug/L	430	Standard
	Mn	55	712.4	6.8	**-0.0100**	0.007	70.1	ug/L	603	Standard
	Co	59	233.0	15.5	**-0.0061**	0.005	85.2	ug/L	237	Standard
	Ni	60	159.3	10.8	**0.0024**	0.008	354.6	ug/L	141	Standard
	Cu	65	160.3	16.8	**0.0166**	0.013	81.1	ug/L	109	Standard
	Zn	66	162.7	11.7	**-0.0896**	0.016	17.5	ug/L	159	Standard
>	**Ge**	72	488521.2	0.7				ug/L	474053	Standard
	As	75	-18.2	245.0	**0.0090**	0.039	433.3	ug/L	-34	Standard
	Se	82	22.9	33.5	**0.0317**	0.066	209.0	ug/L	14	Standard
	Se-1	77	61.7	10.8	**0.0347**	0.088	253.1	ug/L	55	Standard
>	**Ga**	71	43.3	6.7				mg/L	50	Standard
	Rb	85	21.7	26.6				ug/L	20	Standard
	Y	89	392497.9	1.5				ug/L	376602	Standard
>	**Rh**	103	15.0	66.7				ug/L	17	Standard
	Mo	98	290.0	34.9	**0.1112**	0.040	35.6	ug/L	8	Standard
	Ag	107	124.3	21.0	**0.0075**	0.004	51.6	ug/L	81	Standard
	Cd	111	11.5	16.4	**0.0024**	0.001	34.9	mg/L	3	Standard
	Cd	114	37.6	64.7	**0.0036**	0.005	130.1	ug/L	7	Standard
>	**In**	115	550836.3	1.7				ug/L	524722	Standard
	Sn	118	835.0	15.5	**0.0583**	0.023	39.6	ug/L	715	Standard
	Sb	123	699.1	30.0	**0.1378**	0.046	33.4	ug/L	201	Standard
	Ba	135	132.0	3.9	**0.0117**	0.003	27.6	ug/L	108	Standard
	Ce	140	11.7	24.7				ug/L	30	Standard
>	**Tb**	159	819426.3	1.1				ug/L	792236	Standard
	Ho	165	6.7	86.6				ug/L	7	Standard
	Tl	203	74.7	34.7	**0.0068**	0.003	47.8	ug/L	9	Standard
	Tl	205	90.0	77.2	**0.0055**	0.010	186.7	ug/L	0	Standard
	Pb	206	270.7	9.3	**0.0000**	0.005	33114.8	ug/L	216	Standard
	Pb	207	219.0	11.0	**-0.0037**	0.006	150.6	ug/L	180	Standard
	Pb	208	961.7	14.2	**-0.0037**	0.008	206.3	ug/L	717	Standard
	U	238	71.3	83.4	**0.0035**	0.009	266.3	ug/L	4	Standard
>	**Bi**	209	478835.9	0.7				ug/L	460343	Standard

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Na	23	1.7	173.2	**5.7236**	8.190	143.1	mg/L	0	Standard
Mg	24	78.3	36.3	**0.0471**	0.033	70.4	mg/L	20	Standard
K	39	20.0	50.0	**-0.0950**	0.067	70.5	mg/L	22	Standard
Ca	43	16.7	62.4	**-9.7998**	2.111	21.5	mg/L	47	Standard
Fe	54	162.8	19.9	**0.0003**	0.023	7301.8	mg/L	151	Standard
Fe	57	211.7	11.2	**-0.0764**	0.066	86.3	mg/L	195	Standard
Sc-1	45	34061.6	0.4				mg/L	29647	Standard
Cl	35	176482.8	2.0				ug/L	154152	Standard
Kr	83	2.3	65.5				ug/L	3	Standard
Br	81	1700.1	5.3				ug/L	1607	Standard
P	31	27343.0	0.9				ug/L	22752	Standard
S	34	5614.4	3.8				ug/L	5049	Standard
Sr	88	68.3	27.7				ug/L	87	Standard
C	12	56.7	44.4				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	16.0	95.0				mg/L	10	Standard
Ho-1	165	6.7	86.6				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	3	Standard
I	127	4402.3	12.3				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.052	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.977
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.017
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Thursday, June 16, 2016 23:11:40
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62197.5	2.7				ug/L	51024	Standard
	Be	9	238.3	13.6	**0.2121**	0.037	17.6	ug/L	7	Standard
	Al	27	1466.7	24.6	**-0.0013**	0.002	173.1	ug/L	625	Standard
	Sc	45	31464.3	3.4				ug/L	29647	Standard
	Ti	47	25.0	41.8	**-0.0793**	0.036	45.5	ug/L	57	Standard
	V	51	3787.9	2.1	**0.3855**	0.011	2.8	ug/L	1142	Standard
	Cr	52	11607.4	0.4	**0.7122**	0.016	2.2	ug/L	6628	Standard
	Cr	53	1381.7	1.4	**1.1136**	0.035	3.1	ug/L	430	Standard
	Mn	55	3485.4	2.1	**0.4840**	0.015	3.1	ug/L	603	Standard
	Co	59	2688.9	0.3	**0.3937**	0.004	0.9	ug/L	237	Standard
	Ni	60	3045.6	2.3	**1.5635**	0.022	1.4	ug/L	141	Standard
	Cu	65	1580.4	3.3	**0.8079**	0.030	3.7	ug/L	109	Standard
	Zn	66	7167.0	0.7	**6.4903**	0.095	1.5	ug/L	159	Standard
>	**Ge**	72	455928.4	0.9				ug/L	474053	Standard
	As	75	370.6	7.7	**0.3732**	0.030	8.0	ug/L	-34	Standard
	Se	82	61.3	17.8	**0.4078**	0.107	26.4	ug/L	14	Standard
	Se-1	77	90.3	17.8	**0.4781**	0.216	45.1	ug/L	55	Standard
>	**Ga**	71	55.0	24.1				mg/L	50	Standard
	Rb	85	15.0	57.7				ug/L	20	Standard
	Y	89	401919.6	0.8				ug/L	376602	Standard
>	**Rh**	103	13.3	43.3				ug/L	17	Standard
	Mo	98	54.9	10.1	**0.0169**	0.002	11.0	ug/L	8	Standard
	Ag	107	2304.2	2.4	**0.3610**	0.011	3.1	ug/L	81	Standard
	Cd	111	463.2	4.6	**0.2274**	0.011	4.7	mg/L	3	Standard
	Cd	114	1100.0	5.3	**0.2180**	0.017	7.9	ug/L	7	Standard
>	**In**	115	543008.1	2.6				ug/L	524722	Standard
	Sn	118	436.7	6.3	**-0.0111**	0.004	33.6	ug/L	715	Standard
	Sb	123	1825.0	3.3	**0.3894**	0.024	6.1	ug/L	201	Standard
	Ba	135	1282.7	6.8	**0.6257**	0.032	5.1	ug/L	108	Standard
	Ce	140	18.3	41.7				ug/L	30	Standard
>	**Tb**	159	786449.8	2.4				ug/L	792236	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	625.7	5.7	**0.0805**	0.004	5.1	ug/L	9	Standard
	Tl	205	541.7	4.7	**0.0768**	0.002	3.0	ug/L	0	Standard
	Pb	206	1119.4	3.0	**0.1897**	0.004	2.2	ug/L	216	Standard
	Pb	207	980.4	3.9	**0.1828**	0.004	2.1	ug/L	180	Standard
	Pb	208	4169.9	1.1	**0.1903**	0.004	2.3	ug/L	717	Standard
	U	238	2499.2	1.6	**0.4009**	0.009	2.3	ug/L	4	Standard
>	**Bi**	209	453610.3	2.8				ug/L	460343	Standard

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Na	23	0.0		**10.4522**	0.000	0.0	mg/L	0	Standard
Mg	24	55.0	15.7	**0.0251**	0.011	43.4	mg/L	20	Standard
K	39	8.3	91.7	**-0.1668**	0.057	33.9	mg/L	22	Standard
Ca	43	21.7	66.6	**-8.4026**	3.204	38.1	mg/L	47	Standard
Fe	54	104.1	4.5	**-0.0352**	0.004	10.9	mg/L	151	Standard
Fe	57	183.3	11.0	**-0.1131**	0.042	36.8	mg/L	195	Standard
Sc-1	45	31464.3	3.4				mg/L	29647	Standard
Cl	35	173373.0	1.2				ug/L	154152	Standard
Kr	83	0.7	173.2				ug/L	3	Standard
Br	81	1516.7	7.1				ug/L	1607	Standard
P	31	19057.0	2.5				ug/L	22752	Standard
S	34	5394.3	1.5				ug/L	5049	Standard
Sr	88	70.0	24.7				ug/L	87	Standard
C	12	66.7	82.6				mg/L	47	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	3.2	173.2				mg/L	10	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	3	Standard
I	127	3055.3	5.4				mg/L	842	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	106.050		
Al	27			
Sc	45			
Ti	47			
V	51	96.369		
Cr	52	89.022		
Cr	53			
Mn	55	96.796		
Co	59	98.420		
Ni	60	97.718		
Cu	65	100.991		
Zn	66	103.844		
Ge	72		96.177	
As	75	93.302		
Se	82	101.945		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	90.256		
Cd	111	94.767		
Cd	114			
> In	115			103.485
Sn	118			
Sb	123	97.340		
Ba	135	83.430		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.678		
Tl	205			
Pb	206			
Pb	207			
Pb	208	95.126		
U	238	100.222		
> Bi	209			98.537
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Tuesday, June 21, 2016 12:07:41

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1329	2024	0.712	
Mg	23.985	23.975	4501	2020	0.694	
Co	58.933	58.925	11686	2022	0.702	
In	114.904	114.925	22861	2028	0.687	
U	238.050	238.075	47460	2043	0.684	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	6.556
5.575	2.909
5.625	3.124
5.675	4.542
5.725	2.516
5.775	3.133
5.825	3.034
5.875	2.659
5.925	3.116
5.975	0.663
6.025	3.021
6.075	4.431
6.125	3.101
6.175	3.302
6.225	9.989
6.275	25.913
6.325	61.237
6.375	37.268
6.425	95.831
6.475	39.218
6.525	13.045
6.575	6.056
6.625	3.694
6.675	1.639
6.725	2.760
6.775	1.475
6.825	2.174

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6.875	1.150
6.925	1.430
6.975	2.330
7.025	1.255
7.075	0.705
7.125	2.295
7.175	1.271
7.225	3.628
7.275	4.494
7.325	27.694
7.375	63.888
7.425	39.123
7.475	88.928
7.525	69.869
7.575	37.268
7.625	63.191
7.675	69.869
7.725	86.603
7.775	99.381
7.825	121.967
7.875	83.853
7.925	72.436
7.975	99.381
8.025	50.000
8.075	34.233
8.125	100.000
8.175	38.030
8.225	40.825
8.275	22.822
8.325	138.332
8.375	39.123
8.425	79.057
8.475	43.853
22.525	223.607
22.575	38.030
22.625	43.853
22.675	32.401
22.725	43.376
22.775	49.793
22.825	52.408
22.875	27.407
22.925	16.563
22.975	20.412
23.025	28.315
23.075	34.881
23.125	25.951
23.175	32.541

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23.225	14.650
23.275	27.809
23.325	19.174
23.375	43.122
23.425	29.487
23.475	18.506
23.525	5.966
23.575	3.055
23.625	1.534
23.675	1.817
23.725	1.183
23.775	0.960
23.825	1.298
23.875	1.103
23.925	0.675
23.975	1.038
24.025	1.417
24.075	0.260
24.125	0.656
24.175	1.631
24.225	1.863
24.275	3.146
24.325	28.710
24.375	26.307
24.425	30.292
24.475	13.327
24.525	4.037
24.575	1.007
24.625	3.057
24.675	2.129
24.725	1.137
24.775	1.370
24.825	1.603
24.875	1.801
24.925	0.625
24.975	1.310
25.025	1.635
25.075	1.412
25.125	1.115
25.175	1.388
25.225	1.212
25.275	14.200
25.325	57.334
25.375	84.265
25.425	42.127
25.475	10.037
57.525	5.453

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57.575	2.202
57.625	3.035
57.675	1.654
57.725	3.803
57.775	1.264
57.825	1.936
57.875	2.815
57.925	1.641
57.975	2.107
58.025	2.389
58.075	2.038
58.125	0.977
58.175	4.405
58.225	4.049
58.275	3.597
58.325	15.526
58.375	17.815
58.425	26.131
58.475	8.281
58.525	1.499
58.575	1.606
58.625	2.262
58.675	1.232
58.725	2.036
58.775	0.724
58.825	1.502
58.875	1.471
58.925	1.251
58.975	1.106
59.025	1.762
59.075	1.429
59.125	1.832
59.175	2.462
59.225	2.138
59.275	14.258
59.325	45.166
59.375	47.140
59.425	44.721
59.475	23.904
59.525	10.883
59.575	9.409
59.625	4.974
59.675	2.777
59.725	1.421
59.775	3.138
59.825	1.163
59.875	1.334

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59.925	3.822
59.975	1.863
60.025	1.945
60.075	2.122
60.125	3.418
60.175	2.126
60.225	8.067
60.275	17.408
60.325	50.619
60.375	35.355
60.425	52.705
60.475	30.842
113.525	13.070
113.575	7.506
113.625	5.331
113.675	1.010
113.725	3.027
113.775	2.098
113.825	2.123
113.875	2.206
113.925	2.127
113.975	2.183
114.025	0.695
114.075	2.493
114.125	1.430
114.175	1.596
114.225	3.899
114.275	3.770
114.325	17.743
114.375	38.065
114.425	24.241
114.475	10.721
114.525	4.779
114.575	3.301
114.625	1.042
114.675	2.599
114.725	2.253
114.775	2.049
114.825	0.960
114.875	1.817
114.925	1.355
114.975	1.378
115.025	1.472
115.075	1.260
115.125	2.051
115.175	2.855
115.225	2.482

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115.275	6.639
115.325	11.285
115.375	27.524
115.425	38.030
115.475	48.445
115.525	22.628
115.575	8.442
115.625	5.335
115.675	3.400
115.725	5.123
115.775	2.482
115.825	4.190
115.875	5.728
115.925	4.930
115.975	5.489
116.025	3.368
116.075	2.667
116.125	3.465
116.175	4.332
116.225	4.691
116.275	14.225
116.325	24.781
116.375	59.266
116.425	74.689
116.475	76.697
236.525	
236.575	42.229
236.625	43.069
236.675	30.822
236.725	19.846
236.775	17.801
236.825	35.067
236.875	14.286
236.925	33.026
236.975	31.044
237.025	23.207
237.075	28.152
237.125	38.870
237.175	48.879
237.225	33.159
237.275	29.116
237.325	14.542
237.375	23.458
237.425	19.563
237.475	25.573
237.525	41.592
237.575	22.988

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237.625	9.655
237.675	3.555
237.725	2.204
237.775	2.335
237.825	2.878
237.875	1.983
237.925	0.860
237.975	1.594
238.025	1.305
238.075	0.963
238.125	1.566
238.175	1.319
238.225	0.999
238.275	0.949
238.325	1.610
238.375	2.604
238.425	0.685
238.475	5.782
238.525	6.276
238.575	21.121
238.625	40.982
238.675	25.226
238.725	31.270
238.775	24.717
238.825	36.014
238.875	26.854
238.925	18.372
238.975	35.067
239.025	35.209
239.075	29.613
239.125	29.155
239.175	13.847
239.225	32.341
239.275	28.917
239.325	41.445
239.375	36.361
239.425	32.530
239.475	31.439

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SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\ReportOutput\a.swz

Start Time: 6/21/2016 12:13:16 PM
End Time: 6/21/2016 12:15:43 PM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 4257.87
        Obtained Intensity (Mg 23.985): 91046.81
        Obtained Intensity (In 114.904): 67007.59
        Obtained Intensity (U 238.05): 138801.86
        Obtained Intensity (Bkgd 220): 0.27
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.018 (=3833.82 / 209522.60)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.006 (=1202.25 / 209522.60)
```


Approved: June 22, 2016

SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\ReportOutput\a.swz

Optimization Status

Start Time: 6/21/2016 12:13:16 PM

Daily Performance Check
        Optimization Settings:
                Method: Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 1
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 4257.87
                Obtained Intensity (Mg 23.985): 91046.81
                Obtained Intensity (In 114.904): 67007.59
                Obtained Intensity (U 238.05): 138801.86
                Obtained Intensity (Bkgd 220): 0.27
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.018 (=3833.82 / 209522.60)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.006 (=1202.25 / 209522.60)
[Passed]  Optimum value(s): N/A

End Time: 6/21/2016 12:15:43 PM
```


Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Tuesday, June 21, 2016 12:31:36
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60175.9	0.2				ug/L		Standard
	Be	9	5.0	0.0				ug/L		Standard
	Al	27	831.7	9.4				ug/L		Standard
	Sc	45	25065.7	2.2				ug/L		Standard
	Ti	47	37.7	15.6				ug/L		Standard
	V	51	974.0	7.7				ug/L		Standard
	Cr	52	5792.4	1.5				ug/L		Standard
	Cr	53	346.7	9.8				ug/L		Standard
	Mn	55	1164.0	4.2				ug/L		Standard
	Co	59	303.3	8.1				ug/L		Standard
	Ni	60	290.7	6.8				ug/L		Standard
	Cu	65	172.7	6.7				ug/L		Standard
	Zn	66	130.3	5.4				ug/L		Standard
>	Ge	72	491723.5	1.3				ug/L		Standard
	As	75	-24.7	79.1				ug/L		Standard
	Se	82	11.5	37.2				ug/L		Standard
	Se-1	77	57.0	6.3				ug/L		Standard
>	Ga	71	148.3	7.8				mg/L		Standard
	Rb	85	18.3	41.7				ug/L		Standard
	Y	89	401844.8	1.4				ug/L		Standard
>	Rh	103	10.0	50.0				ug/L		Standard
	Mo	98	11.9	33.1				ug/L		Standard
	Ag	107	97.7	16.8				ug/L		Standard
	Cd	111	10.7	42.3				mg/L		Standard
	Cd	114	21.3	80.2				ug/L		Standard
>	In	115	547486.6	2.6				ug/L		Standard
	Sn	118	450.0	16.8				ug/L		Standard
	Sb	123	105.2	26.0				ug/L		Standard
	Ba	135	111.3	14.6				ug/L		Standard
	Ce	140	106.7	44.3				ug/L		Standard
>	Tb	159	890342.4	1.4				ug/L		Standard
	Ho	165	10.0	50.0				ug/L		Standard
	Tl	203	19.3	72.5				ug/L		Standard
	Tl	205	16.7	62.4				ug/L		Standard
	Pb	206	247.0	5.1				ug/L		Standard
	Pb	207	215.0	4.1				ug/L		Standard
	Pb	208	770.0	5.2				ug/L		Standard
	U	238	13.3	42.6				ug/L		Standard
>	Bi	209	503142.7	1.4				ug/L		Standard

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Na	23	1.7	173.2	mg/L	Standard
Mg	24	35.0	14.3	mg/L	Standard
K	39	25.0	52.9	mg/L	Standard
Ca	43	38.3	19.9	mg/L	Standard
Fe	54	126.1	27.3	mg/L	Standard
Fe	57	245.0	30.1	mg/L	Standard
> **Sc-1**	45	25065.7	2.2	mg/L	Standard
Cl	35	125857.3	1.3	ug/L	Standard
Kr	83	1.0	100.0	ug/L	Standard
Br	81	1350.1	4.5	ug/L	Standard
P	31	18392.8	1.6	ug/L	Standard
S	34	3738.8	6.0	ug/L	Standard
Sr	88	78.3	24.2	ug/L	Standard
C	12	53.3	60.3	mg/L	Standard
N	14	0.0		mg/L	Standard
Hg	202	0.0		mg/L	Standard
Dy	164	2.2	286.4	mg/L	Standard
Ho-1	165	10.0	50.0	mg/L	Standard
Er	166	23.3	65.5	mg/L	Standard
I	127	1145.0	4.2	mg/L	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: Blank
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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Blank
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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Tuesday, June 21, 2016 12:34:47
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60488.9	1.3				ug/L	60176	Standard
	Be	9	11.7	65.5				ug/L	5	Standard
	Al	27	836.7	4.8				ug/L	832	Standard
	Sc	45	24878.7	2.2				ug/L	25066	Standard
	Ti	47	35.3	20.5				ug/L	38	Standard
	V	51	1014.5	7.5				ug/L	974	Standard
	Cr	52	5913.2	2.9				ug/L	5792	Standard
	Cr	53	315.0	19.3				ug/L	347	Standard
	Mn	55	1207.0	3.4				ug/L	1164	Standard
	Co	59	269.3	1.8				ug/L	303	Standard
	Ni	60	292.0	1.9				ug/L	291	Standard
	Cu	65	155.7	6.3				ug/L	173	Standard
	Zn	66	143.3	11.1				ug/L	130	Standard
>	**Ge**	72	484278.1	1.8				ug/L	491724	Standard
	As	75	-25.5	164.8				ug/L	-25	Standard
	Se	82	11.6	54.6				ug/L	12	Standard
	Se-1	77	49.7	15.1				ug/L	57	Standard
>	**Ga**	71	168.3	18.1				mg/L	148	Standard
	Rb	85	21.7	48.0				ug/L	18	Standard
	Y	89	409346.3	1.0				ug/L	401845	Standard
>	**Rh**	103	26.7	10.8				ug/L	10	Standard
	Mo	98	8.3	17.9				ug/L	12	Standard
	Ag	107	92.7	12.5				ug/L	98	Standard
	Cd	111	9.3	34.5				mg/L	11	Standard
	Cd	114	15.1	46.6				ug/L	21	Standard
>	**In**	115	551450.0	0.7				ug/L	547487	Standard
	Sn	118	430.0	8.1				ug/L	450	Standard
	Sb	123	43.1	45.3				ug/L	105	Standard
	Ba	135	105.7	9.3				ug/L	111	Standard
	Ce	140	71.7	83.2				ug/L	107	Standard
>	**Tb**	159	897003.4	2.0				ug/L	890342	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	11.0	72.2				ug/L	19	Standard
	Tl	205	10.0	132.3				ug/L	17	Standard
	Pb	206	238.0	4.2				ug/L	247	Standard
	Pb	207	219.3	4.9				ug/L	215	Standard
	Pb	208	792.0	5.9				ug/L	770	Standard
	U	238	10.0	75.5				ug/L	13	Standard
>	**Bi**	209	496302.2	1.2				ug/L	503143	Standard

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	Na	23	0.0		mg/L	2	Standard
	Mg	24	31.7	24.1	mg/L	35	Standard
	K	39	33.3	43.3	mg/L	25	Standard
	Ca	43	26.7	10.8	mg/L	38	Standard
	Fe	54	132.9	5.9	mg/L	126	Standard
	Fe	57	250.0	24.0	mg/L	245	Standard
>	**Sc-1**	45	24878.7	2.2	mg/L	25066	Standard
	Cl	35	129128.6	0.4	ug/L	125857	Standard
	Kr	83	1.7	124.9	ug/L	1	Standard
	Br	81	1190.0	4.4	ug/L	1350	Standard
	P	31	18840.0	2.5	ug/L	18393	Standard
	S	34	3955.5	5.6	ug/L	3739	Standard
	Sr	88	98.3	22.9	ug/L	78	Standard
	C	12	73.3	28.4	mg/L	53	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	3.3	173.2	mg/L	0	Standard
	Dy	164	6.2	93.6	mg/L	2	Standard
	Ho-1	165	8.3	69.3	mg/L	10	Standard
	Er	166	10.0	100.0	mg/L	23	Standard
	I	127	1046.7	2.3	mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Tuesday, June 21, 2016 12:37:59
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58902.6	2.2				ug/L	60176	Standard
	Be	9	41.7	36.7				ug/L	5	Standard
	Al	27	7506.9	2.0				ug/L	832	Standard
	Sc	45	24807.0	1.7				ug/L	25066	Standard
	Ti	47	57.3	17.5				ug/L	38	Standard
	V	51	1265.4	5.8				ug/L	974	Standard
	Cr	52	6084.9	2.1				ug/L	5792	Standard
	Cr	53	365.0	11.9				ug/L	347	Standard
	Mn	55	1636.8	0.3				ug/L	1164	Standard
	Co	59	583.0	6.7				ug/L	303	Standard
	Ni	60	417.3	3.9				ug/L	291	Standard
	Cu	65	254.7	1.5				ug/L	173	Standard
	Zn	66	285.3	6.4				ug/L	130	Standard
>	**Ge**	72	474091.1	0.6				ug/L	491724	Standard
	As	75	16.4	175.0				ug/L	-25	Standard
	Se	82	14.3	35.4				ug/L	12	Standard
	Se-1	77	47.7	3.2				ug/L	57	Standard
>	**Ga**	71	163.3	20.8				mg/L	148	Standard
	Rb	85	21.7	35.3				ug/L	18	Standard
	Y	89	421814.2	2.0				ug/L	401845	Standard
>	**Rh**	103	33.3	45.8				ug/L	10	Standard
	Mo	98	251.2	2.5				ug/L	12	Standard
	Ag	107	386.0	1.2				ug/L	98	Standard
	Cd	111	102.9	11.3				mg/L	11	Standard
	Cd	114	249.4	9.6				ug/L	21	Standard
>	**In**	115	548120.3	1.1				ug/L	547487	Standard
	Sn	118	645.0	5.6				ug/L	450	Standard
	Sb	123	245.0	3.3				ug/L	105	Standard
	Ba	135	194.0	3.9				ug/L	111	Standard
	Ce	140	15.0	57.7				ug/L	107	Standard
>	**Tb**	159	869696.1	0.6				ug/L	890342	Standard
	Ho	165	1.7	173.2				ug/L	10	Standard
	Tl	203	386.3	6.2				ug/L	19	Standard
	Tl	205	290.0	6.0				ug/L	17	Standard
	Pb	206	486.7	5.5				ug/L	247	Standard
	Pb	207	430.7	8.6				ug/L	215	Standard
	Pb	208	1734.7	2.5				ug/L	770	Standard
	U	238	291.0	3.0				ug/L	13	Standard
>	**Bi**	209	480303.9	0.6				ug/L	503143	Standard

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	Na	23	0.0		mg/L	2	Standard
	Mg	24	31.7	32.9	mg/L	35	Standard
	K	39	23.3	32.7	mg/L	25	Standard
	Ca	43	26.7	43.3	mg/L	38	Standard
	Fe	54	147.5	2.0	mg/L	126	Standard
	Fe	57	275.0	5.5	mg/L	245	Standard
>	**Sc-1**	45	24807.0	1.7	mg/L	25066	Standard
	Cl	35	127847.2	1.5	ug/L	125857	Standard
	Kr	83	2.0	0.0	ug/L	1	Standard
	Br	81	1250.1	12.9	ug/L	1350	Standard
	P	31	18074.1	2.7	ug/L	18393	Standard
	S	34	3720.5	1.6	ug/L	3739	Standard
	Sr	88	101.7	31.6	ug/L	78	Standard
	C	12	43.3	48.0	mg/L	53	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	0.0		mg/L	0	Standard
	Dy	164	22.2	64.8	mg/L	2	Standard
	Ho-1	165	1.7	173.2	mg/L	10	Standard
	Er	166	23.3	89.2	mg/L	23	Standard
	I	127	1036.7	8.6	mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Tuesday, June 21, 2016 12:41:10
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56823.0	1.6				ug/L	60176	Standard
	Be	9	34135.1	0.9	**50.0000**	0.642	1.3	ug/L	5	Standard
	Al	27	6273208.6	1.1	**50.0000**	0.818	1.6	ug/L	832	Standard
	Sc	45	23723.6	2.6				ug/L	25066	Standard
	Ti	47	19074.3	0.3	**100.0000**	1.640	1.6	ug/L	38	Standard
	V	51	298222.0	1.3	**50.0000**	0.132	0.3	ug/L	974	Standard
	Cr	52	320017.6	0.3	**50.0000**	0.524	1.0	ug/L	5792	Standard
	Cr	53	40928.5	1.7	**50.0000**	0.225	0.4	ug/L	347	Standard
	Mn	55	319441.0	1.9	**50.0000**	0.827	1.7	ug/L	1164	Standard
	Co	59	304089.0	1.5	**50.0000**	1.058	2.1	ug/L	303	Standard
	Ni	60	89819.8	1.0	**50.0000**	0.212	0.4	ug/L	291	Standard
	Cu	65	88932.2	0.8	**50.0000**	0.449	0.9	ug/L	173	Standard
	Zn	66	51748.9	0.1	**50.0000**	0.578	1.2	ug/L	130	Standard
>	**Ge**	72	487193.0	1.3				ug/L	491724	Standard
	As	75	52343.3	1.1	**50.0000**	0.143	0.3	ug/L	-25	Standard
	Se	82	5108.3	0.1	**50.0000**	0.635	1.3	ug/L	12	Standard
	Se-1	77	3568.4	3.1	**50.0000**	1.152	2.3	ug/L	57	Standard
>	**Ga**	71	203.3	5.1				mg/L	148	Standard
	Rb	85	696.7	7.2				ug/L	18	Standard
	Y	89	396857.0	0.8				ug/L	401845	Standard
>	**Rh**	103	46.7	30.9				ug/L	10	Standard
	Mo	98	234863.2	0.4	**100.0000**	1.015	1.0	ug/L	12	Standard
	Ag	107	287635.1	1.1	**50.0000**	0.173	0.3	ug/L	98	Standard
	Cd	111	91412.4	1.2	**50.0000**	0.269	0.5	mg/L	11	Standard
	Cd	114	221759.1	0.4	**50.0000**	0.185	0.4	ug/L	21	Standard
>	**In**	115	526904.6	0.8				ug/L	547487	Standard
	Sn	118	252169.7	1.4	**50.0000**	0.512	1.0	ug/L	450	Standard
	Sb	123	207104.5	0.9	**50.0000**	0.294	0.6	ug/L	105	Standard
	Ba	135	89208.5	1.1	**50.0000**	0.205	0.4	ug/L	111	Standard
	Ce	140	53.3	43.3				ug/L	107	Standard
>	**Tb**	159	848207.6	0.5				ug/L	890342	Standard
	Ho	165	15.0	33.3				ug/L	10	Standard
	Tl	203	360672.2	1.4	**50.0000**	0.148	0.3	ug/L	19	Standard
	Tl	205	296087.7	2.3	**50.0000**	0.563	1.1	ug/L	17	Standard
	Pb	206	233966.3	0.1	**50.0000**	0.511	1.0	ug/L	247	Standard
	Pb	207	213337.5	0.5	**50.0000**	0.319	0.6	ug/L	215	Standard
	Pb	208	792528.2	1.3	**50.0000**	0.762	1.5	ug/L	770	Standard
	U	238	284703.0	1.6	**50.0000**	0.560	1.1	ug/L	13	Standard
>	**Bi**	209	474262.1	1.1				ug/L	503143	Standard

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Na	23	0.0					mg/L	2	Standard
Mg	24	3497.1	1.9	**5.0000**	0.218	4.4	mg/L	35	Standard
K	39	948.4	2.7	**5.0000**	0.233	4.7	mg/L	25	Standard
Ca	43	43.3	43.7	**5.0000**	5.602	112.0	mg/L	38	Standard
Fe	54	5101.0	4.4	**5.0000**	0.298	6.0	mg/L	126	Standard
Fe	57	1468.4	4.8	**5.0000**	0.320	6.4	mg/L	245	Standard
> **Sc-1**	45	23723.6	2.6				mg/L	25066	Standard
Cl	35	130578.9	0.5				ug/L	125857	Standard
Kr	83	3.3	45.8				ug/L	1	Standard
Br	81	1203.4	13.8				ug/L	1350	Standard
P	31	19414.1	1.7				ug/L	18393	Standard
S	34	4177.2	1.3				ug/L	3739	Standard
Sr	88	70.0	21.4				ug/L	78	Standard
C	12	46.7	53.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	15.9	37.5				mg/L	2	Standard
Ho-1	165	15.0	33.3				mg/L	10	Standard
Er	166	16.7	91.7				mg/L	23	Standard
I	127	1070.0	6.4				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Tuesday, June 21, 2016 12:44:22
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57683.0	3.4				ug/L	60176	Standard
	Be	9	68243.4	3.2	**99.2986**	6.394	6.4	ug/L	5	Standard
	Al	27	12435861.2	1.2	**98.8482**	4.005	4.1	ug/L	832	Standard
	Sc	45	23635.1	1.4				ug/L	25066	Standard
	Ti	47	37614.3	1.3	**201.0526**	7.758	3.9	ug/L	38	Standard
	V	51	571041.3	1.0	**99.0826**	2.797	2.8	ug/L	974	Standard
	Cr	52	622374.2	0.8	**100.2480**	3.517	3.5	ug/L	5792	Standard
	Cr	53	79243.4	1.4	**99.7703**	3.986	4.0	ug/L	347	Standard
	Mn	55	617908.9	0.6	**99.6157**	3.115	3.1	ug/L	1164	Standard
	Co	59	584748.3	1.1	**99.2336**	3.268	3.3	ug/L	303	Standard
	Ni	60	173682.2	0.7	**99.5871**	3.225	3.2	ug/L	291	Standard
	Cu	65	172904.7	0.9	**99.8122**	3.300	3.3	ug/L	173	Standard
	Zn	66	100294.9	0.4	**99.7166**	2.796	2.8	ug/L	130	Standard
>	**Ge**	72	476090.8	2.6				ug/L	491724	Standard
	As	75	100801.1	0.2	**99.2690**	2.816	2.8	ug/L	-25	Standard
	Se	82	10056.7	0.8	**100.4354**	3.397	3.4	ug/L	12	Standard
	Se-1	77	6841.5	0.8	**99.3844**	2.883	2.9	ug/L	57	Standard
>	**Ga**	71	273.3	16.9				mg/L	148	Standard
	Rb	85	1416.7	3.8				ug/L	18	Standard
	Y	89	395351.6	0.3				ug/L	401845	Standard
>	**Rh**	103	41.7	25.0				ug/L	10	Standard
	Mo	98	456031.3	1.3	**196.8782**	2.248	1.1	ug/L	12	Standard
	Ag	107	560896.5	1.5	**98.6698**	2.452	2.5	ug/L	98	Standard
	Cd	111	179284.5	0.8	**98.9447**	0.201	0.2	mg/L	11	Standard
	Cd	114	437441.6	1.4	**99.2289**	0.388	0.4	ug/L	21	Standard
>	**In**	115	527764.9	1.0				ug/L	547487	Standard
	Sn	118	497084.9	1.2	**99.2341**	1.596	1.6	ug/L	450	Standard
	Sb	123	404041.2	0.9	**98.6832**	1.399	1.4	ug/L	105	Standard
	Ba	135	175539.8	1.5	**99.1323**	0.709	0.7	ug/L	111	Standard
	Ce	140	116.7	19.8				ug/L	107	Standard
>	**Tb**	159	866248.1	0.4				ug/L	890342	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	705654.1	0.9	**98.7126**	1.568	1.6	ug/L	19	Standard
	Tl	205	578679.2	0.9	**98.6617**	1.804	1.8	ug/L	17	Standard
	Pb	206	450208.6	0.6	**97.9011**	1.428	1.5	ug/L	247	Standard
	Pb	207	407952.9	0.7	**97.5890**	1.592	1.6	ug/L	215	Standard
	Pb	208	1539751.2	0.8	**98.3858**	1.719	1.7	ug/L	770	Standard
	U	238	563509.1	0.5	**99.2888**	1.369	1.4	ug/L	13	Standard
>	**Bi**	209	476118.1	0.9				ug/L	503143	Standard

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Na	23	1.7	173.2	**19.9850**	34.606	173.2	mg/L	2	Standard
Mg	24	6833.2	0.7	**9.9179**	0.081	0.8	mg/L	35	Standard
K	39	1956.8	10.6	**10.2282**	1.035	10.1	mg/L	25	Standard
Ca	43	85.0	45.9	**12.4591**	8.230	66.1	mg/L	38	Standard
Fe	54	10109.9	3.0	**10.0367**	0.163	1.6	mg/L	126	Standard
Fe	57	2636.9	7.0	**9.9408**	0.844	8.5	mg/L	245	Standard
Sc-1	45	23635.1	1.4				mg/L	25066	Standard
Cl	35	128334.7	1.7				ug/L	125857	Standard
Kr	83	2.0	132.3				ug/L	1	Standard
Br	81	1193.4	13.5				ug/L	1350	Standard
P	31	19429.1	2.9				ug/L	18393	Standard
S	34	4115.6	1.9				ug/L	3739	Standard
Sr	88	65.0	15.4				ug/L	78	Standard
C	12	73.3	67.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	18.7	93.3				mg/L	2	Standard
Ho-1	165	8.3	91.7				mg/L	10	Standard
Er	166	26.7	57.3				mg/L	23	Standard
I	127	1098.4	3.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998
Corr. Coef.	Ca	43	Correlation coefficient < 0.998

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Tuesday, June 21, 2016 12:47:35
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56476.7	1.6				ug/L	60176	Standard
	Be	9	33926.3	3.5	**50.3337**	0.983	2.0	ug/L	5	Standard
	Al	27	6239013.2	0.4	**50.6129**	1.022	2.0	ug/L	832	Standard
	Sc	45	23940.6	0.8				ug/L	25066	Standard
	Ti	47	19415.4	2.2	**101.8802**	1.438	1.4	ug/L	38	Standard
	V	51	297179.3	0.9	**50.6032**	0.136	0.3	ug/L	974	Standard
	Cr	52	318615.5	0.4	**49.9739**	0.554	1.1	ug/L	5792	Standard
	Cr	53	40926.9	0.9	**50.4413**	0.865	1.7	ug/L	347	Standard
	Mn	55	316181.4	1.9	**50.0005**	1.281	2.6	ug/L	1164	Standard
	Co	59	298771.6	1.9	**49.8177**	1.314	2.6	ug/L	303	Standard
	Ni	60	88672.0	0.3	**49.8796**	0.328	0.7	ug/L	291	Standard
	Cu	65	89405.3	0.8	**50.6805**	0.441	0.9	ug/L	173	Standard
	Zn	66	52396.1	1.0	**51.0914**	0.187	0.4	ug/L	130	Standard
>	**Ge**	72	484110.7	0.9				ug/L	491724	Standard
	As	75	52053.9	0.4	**50.4073**	0.437	0.9	ug/L	-25	Standard
	Se	82	5137.2	2.1	**50.3854**	1.416	2.8	ug/L	12	Standard
	Se-1	77	3484.7	1.5	**49.4329**	0.431	0.9	ug/L	57	Standard
>	**Ga**	71	218.3	24.7				mg/L	148	Standard
	Rb	85	558.3	1.9				ug/L	18	Standard
	Y	89	399672.1	1.8				ug/L	401845	Standard
>	**Rh**	103	33.3	45.8				ug/L	10	Standard
	Mo	98	243135.2	2.2	**103.9589**	3.579	3.4	ug/L	12	Standard
	Ag	107	285914.9	0.7	**49.7940**	0.941	1.9	ug/L	98	Standard
	Cd	111	90046.3	0.9	**49.2056**	0.320	0.7	mg/L	11	Standard
	Cd	114	222130.6	2.1	**49.8897**	0.705	1.4	ug/L	21	Standard
>	**In**	115	533007.6	1.2				ug/L	547487	Standard
	Sn	118	273659.7	1.6	**54.0588**	0.839	1.6	ug/L	450	Standard
	Sb	123	202430.4	0.7	**48.9552**	0.900	1.8	ug/L	105	Standard
	Ba	135	87724.9	0.8	**49.0309**	0.637	1.3	ug/L	111	Standard
	Ce	140	115.0	26.4				ug/L	107	Standard
>	**Tb**	159	857166.0	1.1				ug/L	890342	Standard
	Ho	165	13.3	43.3				ug/L	10	Standard
	Tl	203	356396.7	0.7	**49.1066**	0.742	1.5	ug/L	19	Standard
	Tl	205	297731.8	0.4	**49.9971**	0.245	0.5	ug/L	17	Standard
	Pb	206	236852.3	0.9	**50.7035**	0.443	0.9	ug/L	247	Standard
	Pb	207	206236.5	0.5	**48.5659**	0.259	0.5	ug/L	215	Standard
	Pb	208	787029.8	0.1	**49.5023**	0.368	0.7	ug/L	770	Standard
	U	238	277599.7	0.5	**48.1782**	0.616	1.3	ug/L	13	Standard
>	**Bi**	209	483361.7	0.8				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3418.7	4.6	**4.8797**	0.255	5.2	mg/L	35	Standard
K	39	995.0	4.8	**5.0805**	0.235	4.6	mg/L	25	Standard
Ca	43	51.7	43.6	**5.3124**	4.563	85.9	mg/L	38	Standard
Fe	54	5233.0	6.0	**5.0647**	0.353	7.0	mg/L	126	Standard
Fe	57	1536.7	1.5	**5.2538**	0.069	1.3	mg/L	245	Standard
> **Sc-1**	45	23940.6	0.8				mg/L	25066	Standard
Cl	35	125636.8	0.9				ug/L	125857	Standard
Kr	83	2.0	0.0				ug/L	1	Standard
Br	81	1126.7	10.0				ug/L	1350	Standard
P	31	18713.2	1.4				ug/L	18393	Standard
S	34	3855.5	6.1				ug/L	3739	Standard
Sr	88	63.3	32.9				ug/L	78	Standard
C	12	76.7	19.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	5.5	203.3				mg/L	2	Standard
Ho-1	165	13.3	43.3				mg/L	10	Standard
Er	166	23.3	49.5				mg/L	23	Standard
I	127	955.0	1.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	100.667		
Al	27	101.226		
Sc	45			
Ti	47	101.880		
V	51	101.206		
Cr	52	99.948		
Cr	53			
Mn	55	100.001		
Co	59	99.635		
Ni	60	99.759		
Cu	65	101.361		
Zn	66	102.183		
> Ge	72		98.452	
As	75	100.815		
Se	82	100.771		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	103.959		
Ag	107	99.588		
Cd	111	98.411		
Cd	114			
In	115		97.355	
Sn	118	108.118		
Sb	123	97.910		
Ba	135	98.062		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.213		
Tl	205			
Pb	206	101.407		
Pb	207	97.132		
Pb	208	99.005		
U	238	96.356		
Bi	209		96.069	
Na	23	0.100		
Mg	24	97.595		
K	39	101.610		
Ca	43	106.247		
Fe	54	101.294		
Fe	57	105.077		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Tuesday, June 21, 2016 12:50:48
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57199.5	1.7				ug/L	60176	Standard
	Be	9	16.7	75.5	**0.0155**	0.019	119.7	ug/L	5	Standard
	Al	27	2038.5	13.7	**0.0079**	0.002	25.0	ug/L	832	Standard
	Sc	45	24297.8	0.5				ug/L	25066	Standard
	Ti	47	32.3	12.5	**-0.0396**	0.023	58.6	ug/L	38	Standard
	V	51	922.0	9.4	**-0.0151**	0.016	107.2	ug/L	974	Standard
	Cr	52	5344.9	2.1	**-0.0994**	0.028	28.6	ug/L	5792	Standard
	Cr	53	318.3	8.7	**-0.0227**	0.028	125.4	ug/L	347	Standard
	Mn	55	1227.7	2.1	**-0.0229**	0.006	27.8	ug/L	1164	Standard
	Co	59	382.3	8.7	**0.0137**	0.006	44.1	ug/L	303	Standard
	Ni	60	312.0	6.8	**-0.0166**	0.014	83.6	ug/L	291	Standard
	Cu	65	170.3	13.8	**-0.0020**	0.015	715.5	ug/L	173	Standard
	Zn	66	185.7	7.5	**-0.0559**	0.012	21.0	ug/L	130	Standard
>	**Ge**	72	490344.5	1.5				ug/L	491724	Standard
	As	75	12.4	235.8	**0.0460**	0.028	60.7	ug/L	-25	Standard
	Se	82	19.0	38.1	**0.0914**	0.071	78.1	ug/L	12	Standard
	Se-1	77	55.0	15.5	**0.1320**	0.132	99.9	ug/L	57	Standard
>	**Ga**	71	143.3	7.3				mg/L	148	Standard
	Rb	85	13.3	43.3				ug/L	18	Standard
	Y	89	406629.8	1.3				ug/L	401845	Standard
>	**Rh**	103	30.0	33.3				ug/L	10	Standard
	Mo	98	318.1	10.6	**0.1300**	0.014	10.8	ug/L	12	Standard
	Ag	107	139.3	8.5	**0.0086**	0.002	23.1	ug/L	98	Standard
	Cd	111	28.1	12.1	**0.0105**	0.002	17.2	mg/L	11	Standard
	Cd	114	75.1	5.3	**0.0122**	0.001	6.8	ug/L	21	Standard
>	**In**	115	538890.5	0.3				ug/L	547487	Standard
	Sn	118	866.7	26.5	**0.0956**	0.046	47.6	ug/L	450	Standard
	Sb	123	1357.6	21.6	**0.3172**	0.071	22.4	ug/L	105	Standard
	Ba	135	122.7	6.5	**0.0123**	0.005	37.7	ug/L	111	Standard
	Ce	140	16.7	124.9				ug/L	107	Standard
>	**Tb**	159	856476.7	1.5				ug/L	890342	Standard
	Ho	165	11.7	107.9				ug/L	10	Standard
	Tl	203	98.3	24.6	**0.0099**	0.003	33.6	ug/L	19	Standard
	Tl	205	75.0	34.6	**0.0135**	0.004	31.4	ug/L	17	Standard
	Pb	206	275.0	3.1	**0.0038**	0.002	58.9	ug/L	247	Standard
	Pb	207	245.0	14.3	**0.0055**	0.009	157.6	ug/L	215	Standard
	Pb	208	917.0	5.8	**-0.0023**	0.004	151.0	ug/L	770	Standard
	U	238	60.7	16.0	**0.0097**	0.002	16.7	ug/L	13	Standard
>	**Bi**	209	484798.8	0.7				ug/L	503143	Standard

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Na	23	1.7	173.2	**19.2545**	33.341	173.2	mg/L	2	Standard
Mg	24	31.7	9.1	**0.0060**	0.004	64.4	mg/L	35	Standard
K	39	31.7	39.7	**0.0506**	0.065	128.8	mg/L	25	Standard
Ca	43	26.7	60.3	**0.0987**	3.281	3325.6	mg/L	38	Standard
Fe	54	137.7	14.6	**-0.0017**	0.019	1127.9	mg/L	126	Standard
Fe	57	235.0	2.1	**-0.1342**	0.025	18.7	mg/L	245	Standard
> **Sc-1**	45	24297.8	0.5				mg/L	25066	Standard
Cl	35	123923.5	2.0				ug/L	125857	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	1190.0	11.8				ug/L	1350	Standard
P	31	19601.0	4.8				ug/L	18393	Standard
S	34	3848.8	8.3				ug/L	3739	Standard
Sr	88	63.3	32.9				ug/L	78	Standard
C	12	46.7	32.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	19.4	53.0				mg/L	2	Standard
Ho-1	165	11.7	107.9				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	1073.4	5.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.720	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.430
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.354
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Na	23	
QC Std 2	Fe	57	

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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Tuesday, June 21, 2016 12:54:01
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54655.2	5.0				ug/L	60176	Standard
	Be	9	166.7	9.2	**0.2464**	0.016	6.5	ug/L	5	Standard
	Al	27	3600.6	78.3	**0.0211**	0.022	102.5	ug/L	832	Standard
	Sc	45	22989.1	1.7				ug/L	25066	Standard
	Ti	47	44.3	25.7	**0.0370**	0.061	164.4	ug/L	38	Standard
	V	51	3236.7	8.3	**0.4098**	0.039	9.6	ug/L	974	Standard
	Cr	52	10252.8	1.1	**0.7782**	0.013	1.7	ug/L	5792	Standard
	Cr	53	963.4	10.4	**0.8456**	0.146	17.3	ug/L	347	Standard
	Mn	55	4198.9	8.1	**0.4847**	0.049	10.1	ug/L	1164	Standard
	Co	59	2734.9	12.7	**0.4297**	0.055	12.9	ug/L	303	Standard
	Ni	60	3023.6	2.6	**1.6026**	0.022	1.4	ug/L	291	Standard
	Cu	65	1528.7	5.1	**0.8141**	0.035	4.3	ug/L	173	Standard
	Zn	66	6997.6	1.0	**6.9667**	0.165	2.4	ug/L	130	Standard
>	**Ge**	72	460888.7	1.9				ug/L	491724	Standard
	As	75	390.1	8.4	**0.4307**	0.036	8.3	ug/L	-25	Standard
	Se	82	49.3	11.7	**0.4157**	0.051	12.3	ug/L	12	Standard
	Se-1	77	73.3	5.5	**0.4585**	0.082	18.0	ug/L	57	Standard
>	**Ga**	71	193.3	33.8				mg/L	148	Standard
	Rb	85	25.0	72.1				ug/L	18	Standard
	Y	89	391940.6	1.7				ug/L	401845	Standard
>	**Rh**	103	18.3	31.5				ug/L	10	Standard
	Mo	98	268.6	80.2	**0.1109**	0.092	82.8	ug/L	12	Standard
	Ag	107	2373.9	3.4	**0.4011**	0.013	3.1	ug/L	98	Standard
	Cd	111	418.7	2.5	**0.2258**	0.005	2.2	mg/L	11	Standard
	Cd	114	1058.7	2.4	**0.2351**	0.005	2.1	ug/L	21	Standard
>	**In**	115	529129.7	0.8				ug/L	547487	Standard
	Sn	118	546.7	13.3	**0.0350**	0.015	44.2	ug/L	450	Standard
	Sb	123	1860.1	4.7	**0.4457**	0.025	5.6	ug/L	105	Standard
	Ba	135	1306.7	5.0	**0.6811**	0.043	6.3	ug/L	111	Standard
	Ce	140	71.7	45.4				ug/L	107	Standard
>	**Tb**	159	840369.4	1.8				ug/L	890342	Standard
	Ho	165	3.3	86.6				ug/L	10	Standard
	Tl	203	677.3	13.0	**0.0915**	0.012	13.1	ug/L	19	Standard
	Tl	205	673.3	28.8	**0.1162**	0.033	28.2	ug/L	17	Standard
	Pb	206	1332.4	14.3	**0.2361**	0.041	17.4	ug/L	247	Standard
	Pb	207	1139.0	15.8	**0.2215**	0.042	19.1	ug/L	215	Standard
	Pb	208	4327.3	17.0	**0.2178**	0.046	21.3	ug/L	770	Standard
	U	238	2258.5	8.8	**0.3988**	0.036	8.9	ug/L	13	Standard
>	**Bi**	209	474166.4	1.0				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	13.3	**0.0260**	0.009	33.4	mg/L	35	Standard
K	39	35.0	14.3	**0.0782**	0.031	39.0	mg/L	25	Standard
Ca	43	33.3	45.8	**1.8021**	3.150	174.8	mg/L	38	Standard
Fe	54	89.0	20.5	**-0.0447**	0.017	38.6	mg/L	126	Standard
Fe	57	240.0	23.5	**-0.0557**	0.261	468.1	mg/L	245	Standard
> **Sc-1**	45	22989.1	1.7				mg/L	25066	Standard
Cl	35	119419.5	1.1				ug/L	125857	Standard
Kr	83	3.3	75.5				ug/L	1	Standard
Br	81	1160.0	4.6				ug/L	1350	Standard
P	31	12982.2	1.5				ug/L	18393	Standard
S	34	3700.5	6.7				ug/L	3739	Standard
Sr	88	70.0	7.1				ug/L	78	Standard
C	12	50.0	60.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.2	86.7				mg/L	2	Standard
Ho-1	165	3.3	86.6				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	760.0	5.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	123.200		
Al	27	2.108		
Sc	45			
Ti	47			
V	51	102.440		
Cr	52	97.277		
Cr	53			
Mn	55	96.934		
Co	59	107.430		
Ni	60	100.161		
Cu	65	101.757		
Zn	66	111.467		
> Ge	72		93.729	
As	75	107.669		
Se	82	103.926		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	100.275		
Cd	111	94.072		
Cd	114			
> In	115			96.647
Sn	118			
Sb	123	111.413		
Ba	135	90.816		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	114.430		
Tl	205			
Pb	206			
Pb	207			
Pb	208	108.881		
U	238	99.694		
> Bi	209			94.241
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Tuesday, June 21, 2016 12:57:12
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59928.3	1.0				ug/L	60176	Standard
	Be	9	13.3	78.1	**0.0097**	0.015	152.2	ug/L	5	Standard
	Al	27	6442669.1	1.9	**49.2453**	0.871	1.8	ug/L	832	Standard
	Sc	45	24813.6	2.8				ug/L	25066	Standard
	Ti	47	19998.2	2.1	**106.8973**	2.582	2.4	ug/L	38	Standard
	V	51	1246.2	25.8	**0.0465**	0.058	124.9	ug/L	974	Standard
	Cr	52	6657.1	2.4	**0.1405**	0.025	17.7	ug/L	5792	Standard
	Cr	53	1993.5	6.1	**2.1090**	0.143	6.8	ug/L	347	Standard
	Mn	55	1883.1	3.1	**0.0891**	0.008	8.9	ug/L	1164	Standard
	Co	59	559.7	6.4	**0.0458**	0.006	12.2	ug/L	303	Standard
	Ni	60	864.0	5.1	**0.3063**	0.026	8.5	ug/L	291	Standard
	Cu	65	667.0	6.9	**0.2880**	0.024	8.5	ug/L	173	Standard
	Zn	66	2146.2	5.5	**1.9055**	0.111	5.8	ug/L	130	Standard
>	Ge	72	475353.7	1.0				ug/L	491724	Standard
	As	75	-27.8	154.3	**0.0063**	0.042	673.6	ug/L	-25	Standard
	Se	82	18.3	27.0	**0.0905**	0.048	53.4	ug/L	12	Standard
	Se-1	77	292.0	12.5	**3.6225**	0.508	14.0	ug/L	57	Standard
>	Ga	71	251.7	1.1				mg/L	148	Standard
	Rb	85	916.7	3.2				ug/L	18	Standard
	Y	89	407553.9	0.9				ug/L	401845	Standard
>	Rh	103	21.7	13.3				ug/L	10	Standard
	Mo	98	227701.2	0.8	**95.9028**	0.590	0.6	ug/L	12	Standard
	Ag	107	287.3	17.5	**0.0339**	0.008	24.1	ug/L	98	Standard
	Cd	111	-145.8	9.1	**-0.0833**	0.008	9.6	mg/L	11	Standard
	Cd	114	464.9	14.1	**0.0986**	0.016	15.9	ug/L	21	Standard
>	In	115	540970.5	1.1				ug/L	547487	Standard
	Sn	118	813.4	12.5	**0.0844**	0.019	22.3	ug/L	450	Standard
	Sb	123	429.7	19.0	**0.0947**	0.019	20.0	ug/L	105	Standard
	Ba	135	438.7	7.4	**0.1861**	0.015	8.2	ug/L	111	Standard
	Ce	140	421.7	17.3				ug/L	107	Standard
>	Tb	159	869535.9	1.7				ug/L	890342	Standard
	Ho	165	25.0	72.1				ug/L	10	Standard
	Tl	203	354.0	26.0	**0.0461**	0.013	27.8	ug/L	19	Standard
	Tl	205	328.3	30.2	**0.0571**	0.017	29.2	ug/L	17	Standard
	Pb	206	641.0	8.2	**0.0850**	0.011	12.9	ug/L	247	Standard
	Pb	207	546.0	4.3	**0.0790**	0.005	6.1	ug/L	215	Standard
	Pb	208	2135.1	6.6	**0.0771**	0.009	11.7	ug/L	770	Standard
	U	238	92.3	51.3	**0.0155**	0.008	54.0	ug/L	13	Standard
>	Bi	209	474298.1	0.6				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.5792**	32.172	173.2	mg/L	2	Standard
Mg	24	8645.8	1.7	**11.9633**	0.233	1.9	mg/L	35	Standard
K	39	950.0	10.3	**4.6748**	0.512	11.0	mg/L	25	Standard
Ca	43	120.0	27.3	**18.4950**	6.097	33.0	mg/L	38	Standard
Fe	54	12543.1	1.5	**11.8952**	0.445	3.7	mg/L	126	Standard
Fe	57	3418.7	4.3	**12.5234**	0.241	1.9	mg/L	245	Standard
> **Sc-1**	45	24813.6	2.8				mg/L	25066	Standard
Cl	35	133729.6	1.1				ug/L	125857	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	1173.4	5.8				ug/L	1350	Standard
P	31	17748.7	0.7				ug/L	18393	Standard
S	34	3328.7	3.9				ug/L	3739	Standard
Sr	88	88.3	27.9				ug/L	78	Standard
C	12	106.7	14.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	33.3				mg/L	0	Standard
Dy	164	29.4	56.6				mg/L	2	Standard
Ho-1	165	25.0	72.1				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	1626.8	8.4				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27	0.985		
	Sc	45			
	Ti	47	106.897		
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.671	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	95.903		
Ag	107			
Cd	111			
Cd	114			
> In	115			98.810
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209			94.267
Na	23	148.634		
Mg	24	239.267		
K	39	93.495		
Ca	43	123.300		
Fe	54	95.162		
Fe	57	100.187		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Tl	203	
QC Std 4	Na	23	

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QC Std 4	Mg	24
QC Std 4	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Tuesday, June 21, 2016 13:00:24
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	61313.8	1.9				ug/L	60176	Standard
	Be	9	72875.0	3.4	**99.6031**	1.781	1.8	ug/L	5	Standard
	Al	27	6936241.6	2.7	**51.8339**	1.804	3.5	ug/L	832	Standard
	Sc	45	23489.9	0.9				ug/L	25066	Standard
	Ti	47	21276.6	0.7	**110.0520**	2.192	2.0	ug/L	38	Standard
	V	51	582101.9	0.7	**97.8399**	1.870	1.9	ug/L	974	Standard
	Cr	52	624654.9	1.1	**97.4149**	0.832	0.9	ug/L	5792	Standard
	Cr	53	80558.6	0.3	**98.2182**	1.167	1.2	ug/L	347	Standard
	Mn	55	645844.3	0.9	**100.8477**	1.253	1.2	ug/L	1164	Standard
	Co	59	617389.8	0.7	**101.4766**	0.663	0.7	ug/L	303	Standard
	Ni	60	173011.2	0.8	**96.0705**	0.455	0.5	ug/L	291	Standard
	Cu	65	173942.1	0.9	**97.2491**	1.211	1.2	ug/L	173	Standard
	Zn	66	103580.5	0.6	**99.7581**	1.812	1.8	ug/L	130	Standard
>	Ge	72	491319.1	1.3				ug/L	491724	Standard
	As	75	106169.7	0.7	**101.2696**	0.638	0.6	ug/L	-25	Standard
	Se	82	10505.5	0.8	**101.6127**	0.832	0.8	ug/L	12	Standard
	Se-1	77	7353.1	1.7	**103.4898**	1.990	1.9	ug/L	57	Standard
>	Ga	71	335.0	6.5				mg/L	148	Standard
	Rb	85	808.4	4.6				ug/L	18	Standard
	Y	89	401288.7	1.4				ug/L	401845	Standard
>	Rh	103	43.3	24.0				ug/L	10	Standard
	Mo	98	244397.7	1.3	**106.0540**	1.465	1.4	ug/L	12	Standard
	Ag	107	538144.7	0.3	**95.1434**	0.773	0.8	ug/L	98	Standard
	Cd	111	185622.1	1.2	**102.9756**	1.700	1.7	mg/L	11	Standard
	Cd	114	445028.4	2.2	**101.4874**	3.011	3.0	ug/L	21	Standard
>	In	115	525063.0	0.9				ug/L	547487	Standard
	Sn	118	885.0	4.3	**0.1037**	0.009	8.6	ug/L	450	Standard
	Sb	123	410344.2	0.6	**100.7382**	1.315	1.3	ug/L	105	Standard
	Ba	135	176777.0	0.5	**100.3551**	1.267	1.3	ug/L	111	Standard
	Ce	140	53.3	5.4				ug/L	107	Standard
>	Tb	159	870528.1	1.1				ug/L	890342	Standard
	Ho	165	10.0	86.6				ug/L	10	Standard
	Tl	203	717855.7	0.6	**98.9861**	1.545	1.6	ug/L	19	Standard
	Tl	205	613661.1	1.7	**103.1465**	3.224	3.1	ug/L	17	Standard
	Pb	206	474569.5	1.2	**101.7199**	1.074	1.1	ug/L	247	Standard
	Pb	207	412085.1	0.4	**97.1656**	1.063	1.1	ug/L	215	Standard
	Pb	208	1621535.0	0.8	**102.1386**	2.136	2.1	ug/L	770	Standard
	U	238	576318.6	1.3	**100.1091**	2.735	2.7	ug/L	13	Standard
>	Bi	209	483038.3	1.5				ug/L	503143	Standard

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Na	23	1.7	173.2	**19.9124**	34.481	173.2	mg/L	2	Standard
Mg	24	9276.2	1.0	**13.5616**	0.245	1.8	mg/L	35	Standard
K	39	1035.0	5.9	**5.3939**	0.335	6.2	mg/L	25	Standard
Ca	43	95.0	18.2	**14.6391**	3.459	23.6	mg/L	38	Standard
Fe	54	13234.0	0.1	**13.2653**	0.121	0.9	mg/L	126	Standard
Fe	57	3633.8	1.9	**14.1986**	0.233	1.6	mg/L	245	Standard
> **Sc-1**	45	23489.9	0.9				mg/L	25066	Standard
Cl	35	135528.8	0.9				ug/L	125857	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	1296.7	11.2				ug/L	1350	Standard
P	31	17078.0	3.3				ug/L	18393	Standard
S	34	3508.7	2.5				ug/L	3739	Standard
Sr	88	66.7	8.7				ug/L	78	Standard
C	12	133.3	22.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.2	93.3				mg/L	2	Standard
Ho-1	165	10.0	86.6				mg/L	10	Standard
Er	166	10.0					mg/L	23	Standard
I	127	985.0	5.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	99.603		
Al	27	1.037		
Sc	45			
Ti	47	110.052		
V	51	97.840		
Cr	52	97.415		
Cr	53			
Mn	55	100.848		
Co	59	101.477		
Ni	60	96.070		
Cu	65	97.249		
Zn	66	99.758		
> Ge	72		99.918	
As	75	101.270		
Se	82	101.613		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	106.054		
Ag	107	95.143		
Cd	111	102.976		
Cd	114			
> In	115		95.904	
Sn	118			
Sb	123	100.738		
Ba	135	100.355		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.986		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.139		
U	238	100.109		
> Bi	209		96.004	
Na	23	159.300		
Mg	24	271.232		
K	39	107.878		
Ca	43	97.594		
Fe	54	106.123		
Fe	57	113.589		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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QC Std 5	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 13:03:37
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60077.3	2.7				ug/L	60176	Standard
	Be	9	36198.2	1.7	**50.5140**	1.282	2.5	ug/L	5	Standard
	Al	27	6376898.0	1.9	**48.6310**	0.871	1.8	ug/L	832	Standard
	Sc	45	23925.5	1.1				ug/L	25066	Standard
	Ti	47	18736.6	0.9	**98.5507**	0.836	0.8	ug/L	38	Standard
	V	51	296150.3	0.5	**50.5471**	0.213	0.4	ug/L	974	Standard
	Cr	52	313728.4	0.3	**49.3090**	0.221	0.4	ug/L	5792	Standard
	Cr	53	39496.4	3.0	**48.7745**	1.414	2.9	ug/L	347	Standard
	Mn	55	317457.2	0.2	**50.3163**	0.163	0.3	ug/L	1164	Standard
	Co	59	310517.1	1.0	**51.8939**	0.567	1.1	ug/L	303	Standard
	Ni	60	88251.3	0.9	**49.7584**	0.471	0.9	ug/L	291	Standard
	Cu	65	88383.0	0.6	**50.2173**	0.264	0.5	ug/L	173	Standard
	Zn	66	51386.7	1.3	**50.2219**	0.654	1.3	ug/L	130	Standard
>	**Ge**	72	482967.1	0.2				ug/L	491724	Standard
	As	75	51917.7	0.5	**50.3921**	0.181	0.4	ug/L	-25	Standard
	Se	82	5239.5	1.1	**51.5049**	0.485	0.9	ug/L	12	Standard
	Se-1	77	3545.7	2.3	**50.4312**	1.129	2.2	ug/L	57	Standard
>	**Ga**	71	213.3	29.9				mg/L	148	Standard
	Rb	85	683.3	10.3				ug/L	18	Standard
	Y	89	409717.0	1.9				ug/L	401845	Standard
>	**Rh**	103	31.7	50.8				ug/L	10	Standard
	Mo	98	232285.6	0.4	**98.2916**	1.691	1.7	ug/L	12	Standard
	Ag	107	285420.0	0.6	**49.1961**	0.526	1.1	ug/L	98	Standard
	Cd	111	92777.6	1.2	**50.1831**	0.862	1.7	mg/L	11	Standard
	Cd	114	226030.0	0.7	**50.2543**	0.780	1.6	ug/L	21	Standard
>	**In**	115	538520.1	1.5				ug/L	547487	Standard
	Sn	118	254569.4	1.6	**49.7699**	0.919	1.8	ug/L	450	Standard
	Sb	123	208380.8	0.8	**49.8815**	1.089	2.2	ug/L	105	Standard
	Ba	135	89491.5	0.9	**49.5071**	0.604	1.2	ug/L	111	Standard
	Ce	140	65.0	33.5				ug/L	107	Standard
>	**Tb**	159	844342.7	0.8				ug/L	890342	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	362962.1	0.5	**50.9927**	0.530	1.0	ug/L	19	Standard
	Tl	205	304433.0	0.1	**52.1279**	0.337	0.6	ug/L	17	Standard
	Pb	206	233807.2	0.0	**51.0365**	0.279	0.5	ug/L	247	Standard
	Pb	207	211565.2	0.5	**50.8037**	0.504	1.0	ug/L	215	Standard
	Pb	208	809571.0	0.8	**51.9240**	0.557	1.1	ug/L	770	Standard
	U	238	290163.7	1.3	**51.3453**	0.563	1.1	ug/L	13	Standard
>	**Bi**	209	474036.7	0.5				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3508.7	4.9	**5.0100**	0.196	3.9	mg/L	35	Standard
K	39	841.7	3.8	**4.2829**	0.143	3.3	mg/L	25	Standard
Ca	43	70.0	25.8	**9.1073**	3.560	39.1	mg/L	38	Standard
Fe	54	5170.4	1.1	**5.0040**	0.054	1.1	mg/L	126	Standard
Fe	57	1545.1	3.9	**5.2918**	0.217	4.1	mg/L	245	Standard
> **Sc-1**	45	23925.5	1.1				mg/L	25066	Standard
Cl	35	126968.4	0.5				ug/L	125857	Standard
Kr	83	2.7	21.7				ug/L	1	Standard
Br	81	1253.4	5.1				ug/L	1350	Standard
P	31	17353.3	2.1				ug/L	18393	Standard
S	34	3680.4	9.2				ug/L	3739	Standard
Sr	88	66.7	11.5				ug/L	78	Standard
C	12	53.3	10.8				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.5	86.7				mg/L	2	Standard
Ho-1	165	8.3	69.3				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	23	Standard
I	127	1191.7	5.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	101.028		
Al	27	97.262		
Sc	45			
Ti	47	98.551		
V	51	101.094		
Cr	52	98.618		
Cr	53			
Mn	55	100.633		
Co	59	103.788		
Ni	60	99.517		
Cu	65	100.435		
Zn	66	100.444		
> Ge	72		98.219	
As	75	100.784		
Se	82	103.010		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.292		
Ag	107	98.392		
Cd	111	100.366		
Cd	114			
> In	115			98.362
Sn	118	99.540		
Sb	123	99.763		
Ba	135	99.014		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.985		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.848		
U	238	102.691		
> Bi	209			94.215
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 13:06:48
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59220.5	2.2				ug/L	60176	Standard
	Be	9	21.7	113.8	**0.0219**	0.035	161.5	ug/L	5	Standard
	Al	27	2657.0	57.6	**0.0122**	0.012	99.2	ug/L	832	Standard
	Sc	45	23930.6	3.3				ug/L	25066	Standard
	Ti	47	35.7	25.9	**-0.0239**	0.047	197.1	ug/L	38	Standard
	V	51	1146.6	35.4	**0.0212**	0.067	317.9	ug/L	974	Standard
	Cr	52	5554.4	3.9	**-0.0728**	0.035	47.8	ug/L	5792	Standard
	Cr	53	378.3	10.0	**0.0477**	0.045	93.6	ug/L	347	Standard
	Mn	55	1370.7	12.3	**-0.0021**	0.026	1218.8	ug/L	1164	Standard
	Co	59	513.7	41.1	**0.0346**	0.034	98.9	ug/L	303	Standard
	Ni	60	343.7	8.0	**-0.0004**	0.015	3446.4	ug/L	291	Standard
	Cu	65	177.3	6.6	**0.0010**	0.006	620.6	ug/L	173	Standard
	Zn	66	178.7	18.3	**-0.0639**	0.031	48.4	ug/L	130	Standard
>	**Ge**	72	493877.2	0.3				ug/L	491724	Standard
	As	75	17.2	53.9	**0.0502**	0.009	17.4	ug/L	-25	Standard
	Se	82	20.0	19.9	**0.1000**	0.038	37.8	ug/L	12	Standard
	Se-1	77	45.3	7.1	**-0.0109**	0.047	434.0	ug/L	57	Standard
>	**Ga**	71	238.3	11.9				mg/L	148	Standard
	Rb	85	26.7	10.8				ug/L	18	Standard
	Y	89	397655.2	1.8				ug/L	401845	Standard
>	**Rh**	103	25.0	20.0				ug/L	10	Standard
	Mo	98	421.6	47.5	**0.1748**	0.084	48.3	ug/L	12	Standard
	Ag	107	433.3	112.5	**0.0596**	0.084	141.2	ug/L	98	Standard
	Cd	111	31.1	76.1	**0.0122**	0.013	105.0	mg/L	11	Standard
	Cd	114	71.1	92.6	**0.0114**	0.015	128.1	ug/L	21	Standard
>	**In**	115	535380.0	0.4				ug/L	547487	Standard
	Sn	118	765.0	11.6	**0.0766**	0.017	22.1	ug/L	450	Standard
	Sb	123	1104.8	53.2	**0.2581**	0.140	54.4	ug/L	105	Standard
	Ba	135	133.3	33.1	**0.0186**	0.024	130.4	ug/L	111	Standard
	Ce	140	16.7	17.3				ug/L	107	Standard
>	**Tb**	159	863928.7	0.9				ug/L	890342	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	400.0	138.2	**0.0504**	0.074	147.0	ug/L	19	Standard
	Tl	205	160.0	86.7	**0.0274**	0.022	81.9	ug/L	17	Standard
	Pb	206	498.3	73.3	**0.0503**	0.075	149.6	ug/L	247	Standard
	Pb	207	424.0	75.0	**0.0464**	0.072	155.4	ug/L	215	Standard
	Pb	208	1164.7	36.5	**0.0127**	0.025	198.3	ug/L	770	Standard
	U	238	130.0	106.6	**0.0213**	0.023	109.2	ug/L	13	Standard
>	**Bi**	209	486251.4	1.7				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	33.3	8.7	**0.0092**	0.006	61.0	mg/L	35	Standard
K	39	15.0	33.3	**-0.0334**	0.028	84.6	mg/L	25	Standard
Ca	43	26.7	39.0	**0.2255**	2.276	1009.5	mg/L	38	Standard
Fe	54	141.1	12.6	**0.0041**	0.021	506.6	mg/L	126	Standard
Fe	57	250.0	10.4	**-0.0592**	0.073	123.1	mg/L	245	Standard
> **Sc-1**	45	23930.6	3.3				mg/L	25066	Standard
Cl	35	125381.4	1.2				ug/L	125857	Standard
Kr	83	2.7	43.3				ug/L	1	Standard
Br	81	1060.0	3.8				ug/L	1350	Standard
P	31	17481.7	2.2				ug/L	18393	Standard
S	34	3750.5	3.0				ug/L	3739	Standard
Sr	88	66.7	8.7				ug/L	78	Standard
C	12	66.7	48.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	6.2	186.8				mg/L	2	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	1055.0	11.6				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.438	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	97.789	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.643	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	
QC Std 7	Tl	203	

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Method 6020 - Summary Report

Sample ID: PBW 7Q WG573483-02
Sample Date/Time: Tuesday, June 21, 2016 13:10:00
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58444.2	0.7				ug/L	60176	Standard
	Be	9	26.7	47.2	**0.0292**	0.018	60.9	ug/L	5	Standard
	Al	27	23049.2	3.8	**0.1723**	0.008	4.5	ug/L	832	Standard
	Sc	45	24202.7	2.5				ug/L	25066	Standard
	Ti	47	43.7	14.7	**0.0218**	0.034	156.7	ug/L	38	Standard
	V	51	1023.3	8.4	**0.0039**	0.014	347.8	ug/L	974	Standard
	Cr	52	7324.1	2.0	**0.2266**	0.020	8.6	ug/L	5792	Standard
	Cr	53	578.3	3.5	**0.3051**	0.025	8.2	ug/L	347	Standard
	Mn	55	2461.2	1.9	**0.1751**	0.005	2.7	ug/L	1164	Standard
	Co	59	428.7	8.1	**0.0221**	0.005	24.1	ug/L	303	Standard
	Ni	60	482.7	6.5	**0.0817**	0.017	21.3	ug/L	291	Standard
	Cu	65	326.0	2.1	**0.0873**	0.005	5.3	ug/L	173	Standard
	Zn	66	1189.0	5.1	**0.9283**	0.052	5.6	ug/L	130	Standard
>	**Ge**	72	484464.0	0.7				ug/L	491724	Standard
	As	75	-14.6	23.2	**0.0198**	0.003	16.3	ug/L	-25	Standard
	Se	82	17.0	20.8	**0.0742**	0.035	47.7	ug/L	12	Standard
	Se-1	77	51.3	11.4	**0.0873**	0.080	91.1	ug/L	57	Standard
>	**Ga**	71	196.7	5.9				mg/L	148	Standard
	Rb	85	100.0	27.8				ug/L	18	Standard
	Y	89	408879.8	3.6				ug/L	401845	Standard
>	**Rh**	103	25.0	52.9				ug/L	10	Standard
	Mo	98	122.8	14.6	**0.0481**	0.008	16.4	ug/L	12	Standard
	Ag	107	156.0	19.3	**0.0119**	0.005	46.1	ug/L	98	Standard
	Cd	111	26.1	40.8	**0.0096**	0.006	61.9	mg/L	11	Standard
	Cd	114	50.9	19.0	**0.0070**	0.002	32.2	ug/L	21	Standard
>	**In**	115	532128.9	0.9				ug/L	547487	Standard
	Sn	118	586.7	9.1	**0.0422**	0.011	26.5	ug/L	450	Standard
	Sb	123	401.0	34.8	**0.0897**	0.034	38.3	ug/L	105	Standard
	Ba	135	228.3	6.6	**0.0724**	0.009	12.2	ug/L	111	Standard
	Ce	140	110.0	22.7				ug/L	107	Standard
>	**Tb**	159	840904.1	1.3				ug/L	890342	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	87.0	51.2	**0.0084**	0.006	71.8	ug/L	19	Standard
	Tl	205	86.7	76.8	**0.0155**	0.011	71.5	ug/L	17	Standard
	Pb	206	333.0	6.3	**0.0167**	0.004	25.8	ug/L	247	Standard
	Pb	207	290.7	9.1	**0.0166**	0.006	33.9	ug/L	215	Standard
	Pb	208	1101.3	4.9	**0.0097**	0.003	31.1	ug/L	770	Standard
	U	238	73.3	48.0	**0.0119**	0.006	50.6	ug/L	13	Standard
>	**Bi**	209	481400.6	1.0				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	38.3	41.9	**0.0153**	0.022	142.7	mg/L	35	Standard
K	39	23.3	53.9	**0.0092**	0.068	740.5	mg/L	25	Standard
Ca	43	21.7	58.1	**-0.8598**	2.697	313.7	mg/L	38	Standard
Fe	54	130.8	28.3	**-0.0077**	0.038	495.4	mg/L	126	Standard
Fe	57	285.0	4.6	**0.0748**	0.079	105.8	mg/L	245	Standard
> **Sc-1**	45	24202.7	2.5				mg/L	25066	Standard
Cl	35	126348.0	1.3				ug/L	125857	Standard
Kr	83	1.0	173.2				ug/L	1	Standard
Br	81	1470.1	6.5				ug/L	1350	Standard
P	31	16710.9	1.6				ug/L	18393	Standard
S	34	3748.8	2.6				ug/L	3739	Standard
Sr	88	75.0	11.5				ug/L	78	Standard
C	12	26.7	57.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.0	94.2				mg/L	2	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	656.7	5.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.122	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.524	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.195
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.679
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 7Q WG573483-02
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Method 6020 - Summary Report

Sample ID: LCSW 7Q WG573483-03
Sample Date/Time: Tuesday, June 21, 2016 13:13:12
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59597.0	1.4				ug/L	60176	Standard
	Be	9	26.7	28.6	**0.0284**	0.010	36.7	ug/L	5	Standard
	Al	27	123378.7	0.8	**0.9401**	0.007	0.7	ug/L	832	Standard
	Sc	45	24184.3	4.6				ug/L	25066	Standard
	Ti	47	45.0	25.6	**0.0250**	0.057	229.9	ug/L	38	Standard
	V	51	1068.6	8.7	**0.0091**	0.015	170.4	ug/L	974	Standard
	Cr	52	7727.3	2.4	**0.2731**	0.024	8.9	ug/L	5792	Standard
	Cr	53	576.7	16.1	**0.2921**	0.109	37.2	ug/L	347	Standard
	Mn	55	3288.0	1.8	**0.2988**	0.009	3.0	ug/L	1164	Standard
	Co	59	442.3	9.5	**0.0233**	0.007	28.1	ug/L	303	Standard
	Ni	60	549.7	6.7	**0.1150**	0.019	16.8	ug/L	291	Standard
	Cu	65	1533.7	1.8	**0.7602**	0.018	2.4	ug/L	173	Standard
	Zn	66	3561.1	0.5	**3.2002**	0.053	1.7	ug/L	130	Standard
>	**Ge**	72	491613.1	1.0				ug/L	491724	Standard
	As	75	67.8	11.4	**0.0986**	0.008	8.2	ug/L	-25	Standard
	Se	82	49.8	19.1	**0.3887**	0.090	23.1	ug/L	12	Standard
	Se-1	77	49.0	15.9	**0.0445**	0.115	258.9	ug/L	57	Standard
>	**Ga**	71	185.0	23.4				mg/L	148	Standard
	Rb	85	243.3	21.6				ug/L	18	Standard
	Y	89	394619.8	1.0				ug/L	401845	Standard
>	**Rh**	103	30.0	44.1				ug/L	10	Standard
	Mo	98	108.2	38.9	**0.0419**	0.018	43.1	ug/L	12	Standard
	Ag	107	146.7	33.6	**0.0102**	0.009	84.7	ug/L	98	Standard
	Cd	111	29.5	45.9	**0.0114**	0.007	64.9	mg/L	11	Standard
	Cd	114	80.9	41.5	**0.0138**	0.008	55.0	ug/L	21	Standard
>	**In**	115	532617.2	0.2				ug/L	547487	Standard
	Sn	118	588.3	10.2	**0.0424**	0.012	28.7	ug/L	450	Standard
	Sb	123	334.8	20.5	**0.0734**	0.016	22.4	ug/L	105	Standard
	Ba	135	9299.9	0.5	**5.1515**	0.018	0.3	ug/L	111	Standard
	Ce	140	778.4	11.1				ug/L	107	Standard
>	**Tb**	159	856842.4	1.3				ug/L	890342	Standard
	Ho	165	25.0	20.0				ug/L	10	Standard
	Tl	203	92.3	45.4	**0.0091**	0.006	63.1	ug/L	19	Standard
	Tl	205	91.7	74.5	**0.0163**	0.011	69.8	ug/L	17	Standard
	Pb	206	607.0	7.8	**0.0743**	0.010	14.0	ug/L	247	Standard
	Pb	207	493.7	5.6	**0.0635**	0.006	9.8	ug/L	215	Standard
	Pb	208	1980.7	5.5	**0.0640**	0.007	10.5	ug/L	770	Standard
	U	238	71.0	67.4	**0.0114**	0.008	72.1	ug/L	13	Standard
>	**Bi**	209	486381.9	0.6				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.3778**	31.823	173.2	mg/L	2	Standard
Mg	24	1595.1	7.2	**2.2306**	0.060	2.7	mg/L	35	Standard
K	39	30.0	44.1	**0.0441**	0.075	168.9	mg/L	25	Standard
Ca	43	33.3	45.8	**1.5391**	3.367	218.8	mg/L	38	Standard
Fe	54	139.5	48.2	**-0.0011**	0.059	5464.9	mg/L	126	Standard
Fe	57	250.0	17.8	**-0.0719**	0.146	202.6	mg/L	245	Standard
Sc-1	45	24184.3	4.6				mg/L	25066	Standard
Cl	35	130065.3	1.4				ug/L	125857	Standard
Kr	83	1.0	0.0				ug/L	1	Standard
Br	81	9623.1	5.0				ug/L	1350	Standard
P	31	16951.1	1.1				ug/L	18393	Standard
S	34	3743.8	4.5				ug/L	3739	Standard
Sr	88	116.7	20.3				ug/L	78	Standard
C	12	46.7	96.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.2	94.4				mg/L	2	Standard
Ho-1	165	25.0	20.0				mg/L	10	Standard
Er	166	10.0					mg/L	23	Standard
I	127	1343.4	6.5				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.038	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.978	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.284
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.669
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 7Q WG573483-03
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Method 6020 - Summary Report

Sample ID: L1606096103 WG573483-01
Sample Date/Time: Tuesday, June 21, 2016 13:16:23
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61047.7	0.6				ug/L	60176	Standard
	Be	9	15.0	33.3	**0.0116**	0.007	59.6	ug/L	5	Standard
	Al	27	9341973.6	1.7	**70.1047**	1.594	2.3	ug/L	832	Standard
	Sc	45	24823.7	1.2				ug/L	25066	Standard
	Ti	47	196.3	14.4	**0.8437**	0.163	19.3	ug/L	38	Standard
	V	51	1520.3	9.2	**0.0937**	0.027	28.5	ug/L	974	Standard
	Cr	52	9129.1	2.7	**0.5414**	0.059	10.9	ug/L	5792	Standard
	Cr	53	738.4	5.5	**0.5207**	0.064	12.4	ug/L	347	Standard
	Mn	55	11081.1	1.1	**1.5747**	0.043	2.7	ug/L	1164	Standard
	Co	59	619.0	4.0	**0.0557**	0.005	8.5	ug/L	303	Standard
	Ni	60	1274.1	1.2	**0.5411**	0.006	1.2	ug/L	291	Standard
	Cu	65	459.3	3.5	**0.1677**	0.009	5.7	ug/L	173	Standard
	Zn	66	1745.8	2.8	**1.5038**	0.023	1.6	ug/L	130	Standard
>	**Ge**	72	475973.6	1.5				ug/L	491724	Standard
	As	75	98.0	38.5	**0.1307**	0.038	29.4	ug/L	-25	Standard
	Se	82	59.0	18.3	**0.4974**	0.116	23.2	ug/L	12	Standard
	Se-1	77	72.0	13.9	**0.4016**	0.131	32.6	ug/L	57	Standard
>	**Ga**	71	200.0	13.9				mg/L	148	Standard
	Rb	85	3465.4	3.7				ug/L	18	Standard
	Y	89	402121.2	2.1				ug/L	401845	Standard
>	**Rh**	103	56.7	44.4				ug/L	10	Standard
	Mo	98	1248.8	2.4	**0.5212**	0.009	1.6	ug/L	12	Standard
	Ag	107	87.0	10.2	**-0.0005**	0.001	301.6	ug/L	98	Standard
	Cd	111	21.3	35.2	**0.0068**	0.004	60.3	mg/L	11	Standard
	Cd	114	36.7	39.5	**0.0037**	0.003	87.9	ug/L	21	Standard
>	**In**	115	541289.4	0.8				ug/L	547487	Standard
	Sn	118	620.0	15.4	**0.0468**	0.019	41.6	ug/L	450	Standard
	Sb	123	250.2	30.2	**0.0519**	0.018	34.1	ug/L	105	Standard
	Ba	135	26997.7	0.3	**14.8192**	0.144	1.0	ug/L	111	Standard
	Ce	140	1078.4	4.8				ug/L	107	Standard
>	**Tb**	159	866683.9	0.6				ug/L	890342	Standard
	Ho	165	30.0	33.3				ug/L	10	Standard
	Tl	203	79.7	2.6	**0.0074**	0.000	3.9	ug/L	19	Standard
	Tl	205	76.7	3.8	**0.0139**	0.000	3.0	ug/L	17	Standard
	Pb	206	354.3	0.4	**0.0212**	0.001	5.4	ug/L	247	Standard
	Pb	207	308.0	4.4	**0.0207**	0.003	15.8	ug/L	215	Standard
	Pb	208	1235.0	2.9	**0.0181**	0.002	9.8	ug/L	770	Standard
	U	238	2800.3	1.8	**0.4867**	0.012	2.5	ug/L	13	Standard
>	**Bi**	209	481870.9	1.1				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3122.0	2.6	**4.2928**	0.138	3.2	mg/L	35	Standard
K	39	116.7	8.9	**0.4746**	0.046	9.7	mg/L	25	Standard
Ca	43	158.3	7.9	**26.2024**	2.672	10.2	mg/L	38	Standard
Fe	54	139.3	11.0	**-0.0029**	0.016	532.1	mg/L	126	Standard
Fe	57	351.7	4.3	**0.3106**	0.078	25.0	mg/L	245	Standard
> **Sc-1**	45	24823.7	1.2				mg/L	25066	Standard
Cl	35	140998.6	2.1				ug/L	125857	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	3500.4	2.8				ug/L	1350	Standard
P	31	19117.1	2.2				ug/L	18393	Standard
S	34	3825.5	3.2				ug/L	3739	Standard
Sr	88	203.3	12.4				ug/L	78	Standard
C	12	103.3	45.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	55.1	19.0				mg/L	2	Standard
Ho-1	165	30.0	33.3				mg/L	10	Standard
Er	166	33.3	75.5				mg/L	23	Standard
I	127	4417.3	4.0				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.449	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.797	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	98.868
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	95.772
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606096103S WG573483-04
Sample Date/Time: Tuesday, June 21, 2016 13:19:35
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60085.6	1.7				ug/L	60176	Standard
	Be	9	35418.0	1.7	**49.4123**	1.273	2.6	ug/L	5	Standard
	Al	27	9553806.1	0.1	**72.8510**	1.232	1.7	ug/L	832	Standard
	Sc	45	24382.9	1.2				ug/L	25066	Standard
	Ti	47	190.0	4.7	**0.8162**	0.021	2.5	ug/L	38	Standard
	V	51	287859.7	1.7	**50.2556**	0.599	1.2	ug/L	974	Standard
	Cr	52	311117.1	1.3	**50.0342**	0.746	1.5	ug/L	5792	Standard
	Cr	53	39177.3	2.9	**49.4856**	0.624	1.3	ug/L	347	Standard
	Mn	55	324372.6	0.9	**52.6072**	1.077	2.0	ug/L	1164	Standard
	Co	59	291577.0	1.6	**49.8422**	0.595	1.2	ug/L	303	Standard
	Ni	60	85207.9	1.0	**49.1473**	1.009	2.1	ug/L	291	Standard
	Cu	65	84645.8	0.5	**49.2054**	1.253	2.5	ug/L	173	Standard
	Zn	66	51645.2	1.3	**51.6401**	0.793	1.5	ug/L	130	Standard
>	**Ge**	72	472256.1	2.8				ug/L	491724	Standard
	As	75	51695.2	1.6	**51.3245**	0.593	1.2	ug/L	-25	Standard
	Se	82	5173.1	1.2	**52.0219**	0.822	1.6	ug/L	12	Standard
	Se-1	77	3476.7	1.4	**50.5984**	1.532	3.0	ug/L	57	Standard
>	**Ga**	71	260.0	28.7				mg/L	148	Standard
	Rb	85	3562.1	2.1				ug/L	18	Standard
	Y	89	407263.7	1.8				ug/L	401845	Standard
>	**Rh**	103	68.3	30.5				ug/L	10	Standard
	Mo	98	1317.0	3.1	**0.5537**	0.021	3.9	ug/L	12	Standard
	Ag	107	275415.2	1.3	**47.5488**	1.124	2.4	ug/L	98	Standard
	Cd	111	88696.0	0.6	**48.0474**	0.431	0.9	mg/L	11	Standard
	Cd	114	213461.1	1.2	**47.5387**	1.278	2.7	ug/L	21	Standard
>	**In**	115	537694.2	1.5				ug/L	547487	Standard
	Sn	118	585.0	5.9	**0.0407**	0.007	17.4	ug/L	450	Standard
	Sb	123	193980.1	0.3	**46.5021**	0.680	1.5	ug/L	105	Standard
	Ba	135	112772.5	1.0	**62.4946**	0.514	0.8	ug/L	111	Standard
	Ce	140	1368.4	17.9				ug/L	107	Standard
>	**Tb**	159	852959.3	0.9				ug/L	890342	Standard
	Ho	165	35.0	37.8				ug/L	10	Standard
	Tl	203	345111.3	0.9	**48.9395**	0.677	1.4	ug/L	19	Standard
	Tl	205	293390.1	0.8	**50.7100**	0.765	1.5	ug/L	17	Standard
	Pb	206	227814.4	1.2	**50.1915**	0.357	0.7	ug/L	247	Standard
	Pb	207	198202.5	1.7	**48.0341**	0.475	1.0	ug/L	215	Standard
	Pb	208	774653.3	0.9	**50.1464**	0.296	0.6	ug/L	770	Standard
	U	238	276162.4	0.2	**49.3292**	0.615	1.2	ug/L	13	Standard
>	**Bi**	209	469650.7	1.1				ug/L	503143	Standard

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Na	23	3.3	86.6	**38.0335**	32.935	86.6	mg/L	2	Standard
Mg	24	3283.7	5.8	**4.5981**	0.247	5.4	mg/L	35	Standard
K	39	128.3	19.2	**0.5454**	0.127	23.3	mg/L	25	Standard
Ca	43	110.0	16.4	**16.9725**	3.680	21.7	mg/L	38	Standard
Fe	54	154.7	12.2	**0.0146**	0.020	138.4	mg/L	126	Standard
Fe	57	370.0	1.4	**0.4097**	0.022	5.4	mg/L	245	Standard
> **Sc-1**	45	24382.9	1.2				mg/L	25066	Standard
Cl	35	147069.0	0.9				ug/L	125857	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	2353.5	2.8				ug/L	1350	Standard
P	31	18783.3	1.7				ug/L	18393	Standard
S	34	3680.4	2.3				ug/L	3739	Standard
Sr	88	195.0	15.4				ug/L	78	Standard
C	12	110.0	36.4				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	61.9	82.6				mg/L	2	Standard
Ho-1	165	35.0	37.8				mg/L	10	Standard
Er	166	30.0	57.7				mg/L	23	Standard
I	127	4779.1	3.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.850	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.041	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.211
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.343
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606096103S WG573483-04
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Method 6020 - Summary Report

Sample ID: L1606096103SD WG573483-05
Sample Date/Time: Tuesday, June 21, 2016 13:22:47
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61462.8	1.9				ug/L	60176	Standard
	Be	9	36453.8	2.4	**49.7327**	2.122	4.3	ug/L	5	Standard
	Al	27	9453301.8	0.8	**70.4658**	0.824	1.2	ug/L	832	Standard
	Sc	45	24409.6	0.4				ug/L	25066	Standard
	Ti	47	344.0	66.5	**1.5970**	1.182	74.0	ug/L	38	Standard
	V	51	289238.2	2.5	**49.3099**	0.828	1.7	ug/L	974	Standard
	Cr	52	318109.2	0.9	**49.9609**	0.437	0.9	ug/L	5792	Standard
	Cr	53	40479.0	3.1	**49.9452**	1.314	2.6	ug/L	347	Standard
	Mn	55	314057.7	2.4	**49.7210**	0.754	1.5	ug/L	1164	Standard
	Co	59	290318.9	2.9	**48.4610**	0.991	2.0	ug/L	303	Standard
	Ni	60	87273.0	1.1	**49.1559**	0.393	0.8	ug/L	291	Standard
	Cu	65	85527.1	2.3	**48.5400**	0.760	1.6	ug/L	173	Standard
	Zn	66	51755.6	2.3	**50.5302**	0.778	1.5	ug/L	130	Standard
>	**Ge**	72	483447.8	0.9				ug/L	491724	Standard
	As	75	51749.9	1.4	**50.1783**	0.327	0.7	ug/L	-25	Standard
	Se	82	5053.4	1.0	**49.6285**	0.930	1.9	ug/L	12	Standard
	Se-1	77	3472.4	4.6	**49.3184**	2.029	4.1	ug/L	57	Standard
>	**Ga**	71	256.7	20.0				mg/L	148	Standard
	Rb	85	3362.0	2.8				ug/L	18	Standard
	Y	89	401293.0	3.1				ug/L	401845	Standard
>	**Rh**	103	56.7	10.2				ug/L	10	Standard
	Mo	98	1289.5	8.7	**0.5470**	0.043	7.9	ug/L	12	Standard
	Ag	107	282626.7	0.7	**49.2593**	0.185	0.4	ug/L	98	Standard
	Cd	111	89595.6	1.1	**49.0014**	0.114	0.2	mg/L	11	Standard
	Cd	114	217595.8	1.3	**48.9159**	0.226	0.5	ug/L	21	Standard
>	**In**	115	532522.5	0.9				ug/L	547487	Standard
	Sn	118	533.3	7.5	**0.0316**	0.009	27.6	ug/L	450	Standard
	Sb	123	199986.0	1.4	**48.4014**	0.599	1.2	ug/L	105	Standard
	Ba	135	113635.9	0.8	**63.5855**	0.778	1.2	ug/L	111	Standard
	Ce	140	1038.4	8.3				ug/L	107	Standard
>	**Tb**	159	861213.7	0.8				ug/L	890342	Standard
	Ho	165	33.3	45.8				ug/L	10	Standard
	Tl	203	354994.0	0.6	**48.9345**	0.505	1.0	ug/L	19	Standard
	Tl	205	289401.6	1.8	**48.6253**	1.171	2.4	ug/L	17	Standard
	Pb	206	230028.8	1.2	**49.2668**	0.831	1.7	ug/L	247	Standard
	Pb	207	199754.3	1.2	**47.0633**	0.908	1.9	ug/L	215	Standard
	Pb	208	767538.1	0.5	**48.2969**	0.306	0.6	ug/L	770	Standard
	U	238	277842.3	0.1	**48.2419**	0.411	0.9	ug/L	13	Standard
>	**Bi**	209	483136.4	0.9				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3075.3	4.3	**4.3000**	0.197	4.6	mg/L	35	Standard
K	39	133.3	11.5	**0.5703**	0.080	14.0	mg/L	25	Standard
Ca	43	143.3	12.3	**23.6865**	3.499	14.8	mg/L	38	Standard
Fe	54	131.9	32.2	**-0.0079**	0.042	522.5	mg/L	126	Standard
Fe	57	375.0	17.0	**0.4278**	0.255	59.7	mg/L	245	Standard
> **Sc-1**	45	24409.6	0.4				mg/L	25066	Standard
Cl	35	148355.5	1.1				ug/L	125857	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	1950.1	13.4				ug/L	1350	Standard
P	31	18893.5	3.9				ug/L	18393	Standard
S	34	3878.8	5.1				ug/L	3739	Standard
Sr	88	180.0	4.8				ug/L	78	Standard
C	12	116.7	49.5				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	94.6	15.9				mg/L	2	Standard
Ho-1	165	33.3	45.8				mg/L	10	Standard
Er	166	43.3	13.3				mg/L	23	Standard
I	127	4419.0	9.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.138	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.317	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.267
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.024
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606073102
Sample Date/Time: Tuesday, June 21, 2016 13:25:58
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62050.2	2.7				ug/L	60176	Standard
	Be	9	105.0	8.2	**0.1327**	0.009	6.8	ug/L	5	Standard
	Al	27	1013016.4	2.3	**7.4716**	0.030	0.4	ug/L	832	Standard
	Sc	45	25413.0	0.7				ug/L	25066	Standard
	Ti	47	11689.2	3.8	**62.0270**	2.447	3.9	ug/L	38	Standard
	V	51	31514.4	0.8	**5.2807**	0.054	1.0	ug/L	974	Standard
	Cr	52	17882.9	0.9	**1.9504**	0.032	1.6	ug/L	5792	Standard
	Cr	53	2040.1	2.3	**2.1533**	0.055	2.6	ug/L	347	Standard
	Mn	55	131913.8	0.6	**20.9934**	0.153	0.7	ug/L	1164	Standard
	Co	59	2483.5	3.2	**0.3703**	0.015	3.9	ug/L	303	Standard
	Ni	60	2377.5	1.9	**1.1685**	0.022	1.9	ug/L	291	Standard
	Cu	65	255994.2	0.7	**147.1034**	1.372	0.9	ug/L	173	Standard
	Zn	66	18744.6	0.9	**18.3555**	0.182	1.0	ug/L	130	Standard
>	**Ge**	72	478159.2	0.3				ug/L	491724	Standard
	As	75	12450.5	0.9	**12.2318**	0.086	0.7	ug/L	-25	Standard
	Se	82	110.0	5.3	**1.0009**	0.058	5.8	ug/L	12	Standard
	Se-1	77	115.3	7.0	**1.0288**	0.120	11.7	ug/L	57	Standard
>	**Ga**	71	2798.6	0.4				mg/L	148	Standard
	Rb	85	49900.4	1.1				ug/L	18	Standard
	Y	89	416526.1	0.5				ug/L	401845	Standard
>	**Rh**	103	41.7	13.9				ug/L	10	Standard
	Mo	98	4437.9	0.6	**1.8377**	0.013	0.7	ug/L	12	Standard
	Ag	107	916.0	2.3	**0.1396**	0.005	3.7	ug/L	98	Standard
	Cd	111	512.1	2.9	**0.2671**	0.011	4.2	mg/L	11	Standard
	Cd	114	1211.6	3.0	**0.2598**	0.006	2.2	ug/L	21	Standard
>	**In**	115	548951.9	1.2				ug/L	547487	Standard
	Sn	118	5657.7	4.2	**1.0127**	0.047	4.7	ug/L	450	Standard
	Sb	123	4885.2	8.8	**1.1392**	0.095	8.3	ug/L	105	Standard
	Ba	135	19928.1	1.6	**10.7709**	0.169	1.6	ug/L	111	Standard
	Ce	140	57480.5	1.9				ug/L	107	Standard
>	**Tb**	159	878774.2	1.0				ug/L	890342	Standard
	Ho	165	1093.4	18.2				ug/L	10	Standard
	Tl	203	347.3	5.3	**0.0436**	0.002	4.8	ug/L	19	Standard
	Tl	205	276.7	3.8	**0.0468**	0.002	4.8	ug/L	17	Standard
	Pb	206	43154.7	0.9	**9.0669**	0.187	2.1	ug/L	247	Standard
	Pb	207	37803.4	1.8	**8.7363**	0.108	1.2	ug/L	215	Standard
	Pb	208	149908.5	0.2	**9.2509**	0.144	1.6	ug/L	770	Standard
	U	238	690.7	5.1	**0.1174**	0.005	4.3	ug/L	13	Standard
>	**Bi**	209	490138.0	1.5				ug/L	503143	Standard

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Na	23	3.3	86.6	**36.6395**	31.728	86.6	mg/L	2	Standard
Mg	24	11255.8	2.0	**15.2140**	0.309	2.0	mg/L	35	Standard
K	39	513.3	5.7	**2.4114**	0.137	5.7	mg/L	25	Standard
Ca	43	73.3	31.5	**8.9140**	4.383	49.2	mg/L	38	Standard
Fe	54	1193.7	6.4	**0.9809**	0.074	7.6	mg/L	126	Standard
Fe	57	501.7	10.9	**0.8612**	0.218	25.3	mg/L	245	Standard
> **Sc-1**	45	25413.0	0.7				mg/L	25066	Standard
Cl	35	147490.5	1.3				ug/L	125857	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	2373.5	6.5				ug/L	1350	Standard
P	31	25653.5	10.8				ug/L	18393	Standard
S	34	3847.2	1.9				ug/L	3739	Standard
Sr	88	95.0	22.9				ug/L	78	Standard
C	12	80.0	43.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	100.0				mg/L	0	Standard
Dy	164	1461.7	2.4				mg/L	2	Standard
Ho-1	165	1093.4	18.2				mg/L	10	Standard
Er	166	1010.0	4.3				mg/L	23	Standard
I	127	10345.2	3.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.115	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.241	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.268	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.415	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: L1606073102PS WG573557-01
Sample Date/Time: Tuesday, June 21, 2016 13:29:10
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	62836.7	1.0				ug/L	60176	Standard
	Be	9	38405.3	1.0	**51.2242**	0.495	1.0	ug/L	5	Standard
	Al	27	986754.3	0.7	**7.1861**	0.032	0.4	ug/L	832	Standard
	Sc	45	25206.0	4.0				ug/L	25066	Standard
	Ti	47	12380.1	4.7	**64.5662**	3.180	4.9	ug/L	38	Standard
	V	51	336761.7	1.5	**57.0716**	0.650	1.1	ug/L	974	Standard
	Cr	52	338031.4	0.9	**52.7987**	0.435	0.8	ug/L	5792	Standard
	Cr	53	42471.1	2.2	**52.0846**	0.966	1.9	ug/L	347	Standard
	Mn	55	458391.3	1.7	**72.2107**	1.483	2.1	ug/L	1164	Standard
	Co	59	320824.6	0.9	**53.2201**	0.682	1.3	ug/L	303	Standard
	Ni	60	91216.4	1.1	**51.0539**	0.706	1.4	ug/L	291	Standard
	Cu	65	345800.3	0.7	**195.2967**	1.049	0.5	ug/L	173	Standard
	Zn	66	72342.6	1.4	**70.2705**	0.971	1.4	ug/L	130	Standard
>	Ge	72	486585.9	0.4				ug/L	491724	Standard
	As	75	66468.7	1.6	**64.0258**	0.932	1.5	ug/L	-25	Standard
	Se	82	5473.3	1.5	**53.4097**	0.960	1.8	ug/L	12	Standard
	Se-1	77	3758.5	2.1	**53.0932**	1.114	2.1	ug/L	57	Standard
>	Ga	71	2930.3	6.6				mg/L	148	Standard
	Rb	85	50851.9	2.6				ug/L	18	Standard
	Y	89	422665.5	2.8				ug/L	401845	Standard
>	Rh	103	43.3	13.3				ug/L	10	Standard
	Mo	98	4548.7	3.3	**1.9199**	0.104	5.4	ug/L	12	Standard
	Ag	107	291098.5	1.4	**50.1491**	1.656	3.3	ug/L	98	Standard
	Cd	111	96011.5	1.2	**51.8878**	0.482	0.9	mg/L	11	Standard
	Cd	114	228852.1	1.3	**50.8404**	0.872	1.7	ug/L	21	Standard
>	In	115	538990.3	2.1				ug/L	547487	Standard
	Sn	118	6059.6	11.2	**1.1120**	0.140	12.6	ug/L	450	Standard
	Sb	123	210648.2	0.5	**50.3883**	1.297	2.6	ug/L	105	Standard
	Ba	135	109800.4	0.6	**60.7142**	1.334	2.2	ug/L	111	Standard
	Ce	140	59162.4	7.7				ug/L	107	Standard
>	Tb	159	872877.7	0.3				ug/L	890342	Standard
	Ho	165	1188.4	22.2				ug/L	10	Standard
	Tl	203	368407.8	0.3	**49.7173**	0.416	0.8	ug/L	19	Standard
	Tl	205	314960.3	1.3	**51.8065**	0.923	1.8	ug/L	17	Standard
	Pb	206	286269.8	0.5	**60.0352**	0.497	0.8	ug/L	247	Standard
	Pb	207	250420.9	0.8	**57.7692**	0.376	0.7	ug/L	215	Standard
	Pb	208	977924.5	0.9	**60.2632**	1.112	1.8	ug/L	770	Standard
	U	238	292324.4	0.4	**49.6915**	0.547	1.1	ug/L	13	Standard
>	Bi	209	493501.4	1.0				ug/L	503143	Standard

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Na	23	3.3	86.6	**37.0547**	32.164	86.8	mg/L	2	Standard
Mg	24	11367.6	3.6	**15.5226**	1.170	7.5	mg/L	35	Standard
K	39	491.7	4.1	**2.3285**	0.165	7.1	mg/L	25	Standard
Ca	43	61.7	32.8	**6.7120**	3.782	56.4	mg/L	38	Standard
Fe	54	1050.3	3.7	**0.8567**	0.077	8.9	mg/L	126	Standard
Fe	57	553.3	6.8	**1.0850**	0.222	20.5	mg/L	245	Standard
> **Sc-1**	45	25206.0	4.0				mg/L	25066	Standard
Cl	35	141394.7	1.2				ug/L	125857	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	2206.8	11.9				ug/L	1350	Standard
P	31	23750.3	1.6				ug/L	18393	Standard
S	34	3492.1	3.7				ug/L	3739	Standard
Sr	88	91.7	19.2				ug/L	78	Standard
C	12	96.7	39.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	65.5				mg/L	0	Standard
Dy	164	1514.9	12.9				mg/L	2	Standard
Ho-1	165	1188.4	22.2				mg/L	10	Standard
Er	166	1083.4	11.0				mg/L	23	Standard
I	127	10306.8	3.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.422	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.955	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.448
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.084
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: L1606073102SDL WG573557-02
Sample Date/Time: Tuesday, June 21, 2016 13:32:21
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62607.4	1.3				ug/L	60176	Standard
	Be	9	25.0	34.6	**0.0244**	0.011	45.5	ug/L	5	Standard
	Al	27	212439.0	0.9	**1.5464**	0.033	2.1	ug/L	832	Standard
	Sc	45	24628.3	0.4				ug/L	25066	Standard
	Ti	47	2784.9	3.0	**13.9086**	0.389	2.8	ug/L	38	Standard
	V	51	7566.4	0.8	**1.0756**	0.023	2.2	ug/L	974	Standard
	Cr	52	8980.0	0.9	**0.4405**	0.021	4.7	ug/L	5792	Standard
	Cr	53	745.0	5.8	**0.4791**	0.044	9.2	ug/L	347	Standard
	Mn	55	27746.4	1.2	**4.0322**	0.081	2.0	ug/L	1164	Standard
	Co	59	770.7	3.6	**0.0747**	0.006	7.8	ug/L	303	Standard
	Ni	60	728.0	3.3	**0.2056**	0.009	4.5	ug/L	291	Standard
	Cu	65	55112.7	1.2	**30.0755**	0.388	1.3	ug/L	173	Standard
	Zn	66	4901.5	0.7	**4.3932**	0.053	1.2	ug/L	130	Standard
>	**Ge**	72	502229.8	1.2				ug/L	491724	Standard
	As	75	2641.7	1.6	**2.4986**	0.070	2.8	ug/L	-25	Standard
	Se	82	37.4	7.9	**0.2610**	0.029	11.1	ug/L	12	Standard
	Se-1	77	65.3	16.9	**0.2568**	0.164	63.9	ug/L	57	Standard
>	**Ga**	71	860.0	7.0				mg/L	148	Standard
	Rb	85	10418.6	2.0				ug/L	18	Standard
	Y	89	399994.5	0.5				ug/L	401845	Standard
>	**Rh**	103	30.0	33.3				ug/L	10	Standard
	Mo	98	925.4	2.8	**0.3921**	0.014	3.7	ug/L	12	Standard
	Ag	107	297.0	13.1	**0.0365**	0.007	19.3	ug/L	98	Standard
	Cd	111	115.6	4.7	**0.0586**	0.003	5.9	mg/L	11	Standard
	Cd	114	279.1	9.6	**0.0584**	0.006	10.2	ug/L	21	Standard
>	**In**	115	531899.2	0.8				ug/L	547487	Standard
	Sn	118	1896.8	36.6	**0.3027**	0.141	46.7	ug/L	450	Standard
	Sb	123	2351.8	13.2	**0.5620**	0.071	12.7	ug/L	105	Standard
	Ba	135	4320.6	0.3	**2.3669**	0.016	0.7	ug/L	111	Standard
	Ce	140	11052.4	4.5				ug/L	107	Standard
>	**Tb**	159	858576.5	0.7				ug/L	890342	Standard
	Ho	165	216.7	10.7				ug/L	10	Standard
	Tl	203	116.0	17.5	**0.0123**	0.003	24.6	ug/L	19	Standard
	Tl	205	98.3	11.7	**0.0173**	0.002	12.0	ug/L	17	Standard
	Pb	206	9169.1	1.7	**1.8876**	0.041	2.2	ug/L	247	Standard
	Pb	207	7982.8	0.7	**1.8083**	0.035	1.9	ug/L	215	Standard
	Pb	208	31008.6	0.6	**1.8704**	0.021	1.1	ug/L	770	Standard
	U	238	168.3	3.3	**0.0281**	0.001	3.9	ug/L	13	Standard
>	**Bi**	209	489002.3	1.5				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	2341.8	1.1	**3.2356**	0.024	0.7	mg/L	35	Standard
K	39	118.3	20.0	**0.4878**	0.118	24.2	mg/L	25	Standard
Ca	43	43.3	17.6	**3.3707**	1.559	46.2	mg/L	38	Standard
Fe	54	377.4	16.5	**0.2279**	0.059	26.1	mg/L	126	Standard
Fe	57	345.0	9.5	**0.2940**	0.127	43.1	mg/L	245	Standard
> **Sc-1**	45	24628.3	0.4				mg/L	25066	Standard
Cl	35	138476.6	0.9				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	1490.1	4.7				ug/L	1350	Standard
P	31	19304.0	1.2				ug/L	18393	Standard
S	34	3498.7	5.5				ug/L	3739	Standard
Sr	88	68.3	18.4				ug/L	78	Standard
C	12	46.7	44.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	337.2	15.6				mg/L	2	Standard
Ho-1	165	216.7	10.7				mg/L	10	Standard
Er	166	196.7	28.9				mg/L	23	Standard
I	127	3045.3	3.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.041	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.137	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.153
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.190
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: FBLANK 7Q WG573662-01
Sample Date/Time: Tuesday, June 21, 2016 13:36:50
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60862.0	1.5				ug/L	60176	Standard
	Be	9	37583.2	1.6	**51.7542**	0.552	1.1	ug/L	5	Standard
	Al	27	21697.9	26.0	**0.1552**	0.044	28.5	ug/L	832	Standard
	Sc	45	23591.7	4.2				ug/L	25066	Standard
	Ti	47	83.7	108.0	**0.2200**	0.454	206.3	ug/L	38	Standard
	V	51	305889.4	1.3	**51.4535**	1.008	2.0	ug/L	974	Standard
	Cr	52	330929.6	0.4	**51.2983**	1.178	2.3	ug/L	5792	Standard
	Cr	53	41528.5	0.6	**50.5645**	1.478	2.9	ug/L	347	Standard
	Mn	55	328303.3	1.1	**51.2988**	1.820	3.5	ug/L	1164	Standard
	Co	59	315656.4	1.0	**52.0010**	1.804	3.5	ug/L	303	Standard
	Ni	60	91664.8	1.0	**50.9431**	1.373	2.7	ug/L	291	Standard
	Cu	65	92045.1	0.9	**51.5472**	1.356	2.6	ug/L	173	Standard
	Zn	66	54111.8	0.2	**52.1307**	1.195	2.3	ug/L	130	Standard
>	**Ge**	72	490225.8	2.5				ug/L	491724	Standard
	As	75	52438.9	0.3	**50.1639**	1.182	2.4	ug/L	-25	Standard
	Se	82	5295.6	0.8	**51.3116**	1.607	3.1	ug/L	12	Standard
	Se-1	77	3616.8	1.2	**50.6984**	1.048	2.1	ug/L	57	Standard
>	**Ga**	71	186.7	10.8				mg/L	148	Standard
	Rb	85	61.7	12.4				ug/L	18	Standard
	Y	89	408507.2	0.7				ug/L	401845	Standard
>	**Rh**	103	48.3	15.8				ug/L	10	Standard
	Mo	98	52.1	23.1	**0.0179**	0.005	29.8	ug/L	12	Standard
	Ag	107	297940.9	0.5	**51.9244**	0.468	0.9	ug/L	98	Standard
	Cd	111	93406.3	0.2	**51.0848**	0.731	1.4	mg/L	11	Standard
	Cd	114	226390.7	0.3	**50.8926**	0.677	1.3	ug/L	21	Standard
>	**In**	115	532598.8	1.2				ug/L	547487	Standard
	Sn	118	560.0	13.9	**0.0370**	0.017	45.0	ug/L	450	Standard
	Sb	123	206757.3	1.1	**50.0344**	0.431	0.9	ug/L	105	Standard
	Ba	135	90690.6	0.8	**50.7329**	0.993	2.0	ug/L	111	Standard
	Ce	140	146.7	19.4				ug/L	107	Standard
>	**Tb**	159	846206.7	1.1				ug/L	890342	Standard
	Ho	165	13.3	86.6				ug/L	10	Standard
	Tl	203	364672.7	1.1	**50.8514**	0.648	1.3	ug/L	19	Standard
	Tl	205	306373.3	0.5	**52.0688**	0.058	0.1	ug/L	17	Standard
	Pb	206	242442.7	0.5	**52.5299**	0.446	0.8	ug/L	247	Standard
	Pb	207	211276.6	0.7	**50.3548**	0.226	0.4	ug/L	215	Standard
	Pb	208	820675.9	0.4	**52.2445**	0.286	0.5	ug/L	770	Standard
	U	238	287466.1	0.1	**50.4910**	0.234	0.5	ug/L	13	Standard
>	**Bi**	209	477588.3	0.5				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	65.0	26.6	**0.0558**	0.025	43.9	mg/L	35	Standard
K	39	33.3	31.2	**0.0629**	0.047	74.5	mg/L	25	Standard
Ca	43	28.3	50.9	**0.5321**	2.713	509.8	mg/L	38	Standard
Fe	54	102.3	13.6	**-0.0329**	0.018	54.0	mg/L	126	Standard
Fe	57	231.7	21.8	**-0.1150**	0.242	210.0	mg/L	245	Standard
> **Sc-1**	45	23591.7	4.2				mg/L	25066	Standard
Cl	35	136517.0	1.3				ug/L	125857	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	1383.4	10.5				ug/L	1350	Standard
P	31	16972.8	0.8				ug/L	18393	Standard
S	34	3713.8	2.7				ug/L	3739	Standard
Sr	88	61.7	9.4				ug/L	78	Standard
C	12	53.3	47.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	19.8	49.2				mg/L	2	Standard
Ho-1	165	13.3	86.6				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	23	Standard
I	127	1001.7	6.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.140	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.695	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.281
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.921
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 13:40:03
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61031.0	0.7				ug/L	60176	Standard
	Be	9	36594.2	3.2	**50.2545**	1.736	3.5	ug/L	5	Standard
	Al	27	6613287.8	2.3	**49.6387**	1.327	2.7	ug/L	832	Standard
	Sc	45	24596.6	1.9				ug/L	25066	Standard
	Ti	47	19478.9	2.3	**103.3937**	4.517	4.4	ug/L	38	Standard
	V	51	296612.7	2.3	**51.0859**	2.216	4.3	ug/L	974	Standard
	Cr	52	329696.2	2.1	**52.3442**	2.253	4.3	ug/L	5792	Standard
	Cr	53	41729.1	0.9	**52.0173**	1.592	3.1	ug/L	347	Standard
	Mn	55	310317.0	2.6	**49.6295**	2.343	4.7	ug/L	1164	Standard
	Co	59	303689.4	2.7	**51.2154**	2.491	4.9	ug/L	303	Standard
	Ni	60	90715.2	2.4	**51.6193**	2.335	4.5	ug/L	291	Standard
	Cu	65	89623.1	3.1	**51.3920**	2.693	5.2	ug/L	173	Standard
	Zn	66	52311.5	3.1	**51.6008**	2.673	5.2	ug/L	130	Standard
>	**Ge**	72	478918.3	2.1				ug/L	491724	Standard
	As	75	51909.7	2.4	**50.8415**	2.263	4.5	ug/L	-25	Standard
	Se	82	5184.4	2.6	**51.4278**	2.428	4.7	ug/L	12	Standard
	Se-1	77	3510.4	2.6	**50.3835**	2.410	4.8	ug/L	57	Standard
>	**Ga**	71	205.0	20.8				mg/L	148	Standard
	Rb	85	766.7	4.6				ug/L	18	Standard
	Y	89	405836.1	1.8				ug/L	401845	Standard
>	**Rh**	103	35.0	42.9				ug/L	10	Standard
	Mo	98	227649.5	2.0	**96.2656**	2.103	2.2	ug/L	12	Standard
	Ag	107	288372.2	1.1	**49.6724**	0.252	0.5	ug/L	98	Standard
	Cd	111	92130.2	0.9	**49.8016**	0.575	1.2	mg/L	11	Standard
	Cd	114	225554.0	0.3	**50.1162**	0.425	0.8	ug/L	21	Standard
>	**In**	115	538810.9	0.6				ug/L	547487	Standard
	Sn	118	247773.3	1.9	**48.4123**	1.160	2.4	ug/L	450	Standard
	Sb	123	211050.2	2.3	**50.4816**	1.038	2.1	ug/L	105	Standard
	Ba	135	89213.6	0.7	**49.3244**	0.656	1.3	ug/L	111	Standard
	Ce	140	93.3	16.4				ug/L	107	Standard
>	**Tb**	159	860595.9	0.4				ug/L	890342	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	362174.3	0.8	**49.8195**	1.053	2.1	ug/L	19	Standard
	Tl	205	305739.0	0.6	**51.2583**	0.985	1.9	ug/L	17	Standard
	Pb	206	230874.7	1.7	**49.3431**	1.266	2.6	ug/L	247	Standard
	Pb	207	208855.0	2.0	**49.1070**	1.530	3.1	ug/L	215	Standard
	Pb	208	795788.6	1.4	**49.9753**	1.375	2.8	ug/L	770	Standard
	U	238	286489.2	0.6	**49.6372**	0.898	1.8	ug/L	13	Standard
>	**Bi**	209	484221.4	1.4				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3497.1	3.8	**4.8581**	0.197	4.1	mg/L	35	Standard
K	39	931.7	4.0	**4.6234**	0.265	5.7	mg/L	25	Standard
Ca	43	35.0	62.3	**1.6854**	4.328	256.8	mg/L	38	Standard
Fe	54	5344.8	3.0	**5.0352**	0.242	4.8	mg/L	126	Standard
Fe	57	1481.7	2.1	**4.8642**	0.109	2.2	mg/L	245	Standard
Sc-1	45	24596.6	1.9				mg/L	25066	Standard
Cl	35	138959.7	0.4				ug/L	125857	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	1233.4	20.2				ug/L	1350	Standard
P	31	18719.9	0.8				ug/L	18393	Standard
S	34	4417.3	5.9				ug/L	3739	Standard
Sr	88	70.0	32.7				ug/L	78	Standard
C	12	46.7	53.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	-0.6	114.6				mg/L	2	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	23	Standard
I	127	1176.7	6.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	100.509		
Al	27	99.277		
Sc	45			
Ti	47	103.394		
V	51	102.172		
Cr	52	104.688		
Cr	53			
Mn	55	99.259		
Co	59	102.431		
Ni	60	103.239		
Cu	65	102.784		
Zn	66	103.202		
> Ge	72		97.396	
As	75	101.683		
Se	82	102.856		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	96.266		
Ag	107	99.345		
Cd	111	99.603		
Cd	114			
> In	115			98.415
Sn	118	96.825		
Sb	123	100.963		
Ba	135	98.649		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.639		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.951		
U	238	99.274		
> Bi	209			96.239
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 13:43:14
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59649.0	4.4				ug/L	60176	Standard
	Be	9	41.7	69.3	**0.0484**	0.037	76.6	ug/L	5	Standard
	Al	27	4266.0	98.6	**0.0235**	0.030	128.4	ug/L	832	Standard
	Sc	45	24342.9	3.0				ug/L	25066	Standard
	Ti	47	33.3	27.1	**-0.0321**	0.048	148.9	ug/L	38	Standard
	V	51	1086.3	15.0	**0.0151**	0.028	186.7	ug/L	974	Standard
	Cr	52	6084.9	2.7	**0.0304**	0.025	82.0	ug/L	5792	Standard
	Cr	53	316.7	20.3	**-0.0194**	0.077	400.2	ug/L	347	Standard
	Mn	55	1292.4	23.2	**-0.0102**	0.046	450.7	ug/L	1164	Standard
	Co	59	507.7	41.8	**0.0353**	0.035	98.0	ug/L	303	Standard
	Ni	60	317.3	24.7	**-0.0115**	0.043	371.7	ug/L	291	Standard
	Cu	65	214.0	56.1	**0.0236**	0.067	282.9	ug/L	173	Standard
	Zn	66	173.7	20.6	**-0.0653**	0.034	51.4	ug/L	130	Standard
>	**Ge**	72	483753.8	2.3				ug/L	491724	Standard
	As	75	6.9	624.5	**0.0407**	0.041	101.6	ug/L	-25	Standard
	Se	82	18.5	29.1	**0.0893**	0.056	62.8	ug/L	12	Standard
	Se-1	77	55.0	3.6	**0.1421**	0.045	31.6	ug/L	57	Standard
>	**Ga**	71	175.0	10.3				mg/L	148	Standard
	Rb	85	30.0	44.1				ug/L	18	Standard
	Y	89	416072.0	2.1				ug/L	401845	Standard
>	**Rh**	103	28.3	27.0				ug/L	10	Standard
	Mo	98	258.2	21.7	**0.1033**	0.023	21.8	ug/L	12	Standard
	Ag	107	212.0	65.6	**0.0205**	0.023	112.4	ug/L	98	Standard
	Cd	111	49.9	119.2	**0.0217**	0.031	143.8	mg/L	11	Standard
	Cd	114	138.9	94.3	**0.0258**	0.028	109.1	ug/L	21	Standard
>	**In**	115	545536.5	1.5				ug/L	547487	Standard
	Sn	118	786.7	5.1	**0.0781**	0.009	11.7	ug/L	450	Standard
	Sb	123	893.7	15.1	**0.2036**	0.032	15.8	ug/L	105	Standard
	Ba	135	155.0	26.2	**0.0290**	0.021	73.2	ug/L	111	Standard
	Ce	140	46.7	89.9				ug/L	107	Standard
>	**Tb**	159	851423.1	1.4				ug/L	890342	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	204.7	101.3	**0.0248**	0.028	114.4	ug/L	19	Standard
	Tl	205	236.7	112.3	**0.0410**	0.044	108.4	ug/L	17	Standard
	Pb	206	322.0	34.4	**0.0148**	0.023	155.8	ug/L	247	Standard
	Pb	207	278.7	40.6	**0.0143**	0.026	182.5	ug/L	215	Standard
	Pb	208	1396.0	53.4	**0.0288**	0.046	160.2	ug/L	770	Standard
	U	238	214.3	118.3	**0.0365**	0.044	119.9	ug/L	13	Standard
>	**Bi**	209	476880.3	2.0				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	25.0	52.9	**-0.0037**	0.018	500.1	mg/L	35	Standard
K	39	18.3	56.8	**-0.0172**	0.057	329.7	mg/L	25	Standard
Ca	43	26.7	47.2	**0.1406**	2.740	1948.1	mg/L	38	Standard
Fe	54	132.6	9.5	**-0.0068**	0.014	206.9	mg/L	126	Standard
Fe	57	211.7	5.5	**-0.2294**	0.073	31.8	mg/L	245	Standard
Sc-1	45	24342.9	3.0				mg/L	25066	Standard
Cl	35	143897.4	0.2				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	1373.4	16.1				ug/L	1350	Standard
P	31	19679.4	1.3				ug/L	18393	Standard
S	34	4449.0	1.1				ug/L	3739	Standard
Sr	88	78.3	19.5				ug/L	78	Standard
C	12	66.7	22.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.3	179.8				mg/L	2	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	23	Standard
I	127	996.7	2.4				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.379	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.644
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.780
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606061601
Sample Date/Time: Tuesday, June 21, 2016 15:22:26
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61906.2	1.7				ug/L	60176	Standard
	Be	9	353.3	21.2	**0.4684**	0.095	20.2	ug/L	5	Standard
	Al	27	3358447.2	1.6	**24.8506**	0.581	2.3	ug/L	832	Standard
	Sc	45	24973.9	2.3				ug/L	25066	Standard
	Ti	47	298.0	14.4	**1.3564**	0.221	16.3	ug/L	38	Standard
	V	51	-5189.4	20.1	**-1.0574**	0.187	17.7	ug/L	974	Standard
	Cr	52	703390.4	0.3	**111.3019**	1.587	1.4	ug/L	5792	Standard
	Cr	53	93571.6	3.2	**115.6494**	2.048	1.8	ug/L	347	Standard
	Mn	55	821479.7	1.9	**130.0789**	4.283	3.3	ug/L	1164	Standard
	Co	59	94839.6	1.2	**15.7576**	0.403	2.6	ug/L	303	Standard
	Ni	60	304442.7	1.6	**171.4532**	1.376	0.8	ug/L	291	Standard
	Cu	65	7661.9	1.9	**4.2471**	0.033	0.8	ug/L	173	Standard
	Zn	66	10599.0	2.6	**10.1313**	0.186	1.8	ug/L	130	Standard
>	**Ge**	72	484843.6	1.4				ug/L	491724	Standard
	As	75	570.7	9.1	**0.5858**	0.057	9.7	ug/L	-25	Standard
	Se	82	251.1	0.8	**2.3709**	0.055	2.3	ug/L	12	Standard
	Se-1	77	415.7	8.5	**5.3115**	0.417	7.8	ug/L	57	Standard
>	**Ga**	71	288.3	8.9				mg/L	148	Standard
	Rb	85	2623.6	2.0				ug/L	18	Standard
	Y	89	398713.2	0.8				ug/L	401845	Standard
>	**Rh**	103	56.7	27.0				ug/L	10	Standard
	Mo	98	2419.6	2.5	**1.0703**	0.029	2.7	ug/L	12	Standard
	Ag	107	130.0	2.3	**0.0081**	0.001	10.1	ug/L	98	Standard
	Cd	111	262.1	7.2	**0.1442**	0.012	8.3	mg/L	11	Standard
	Cd	114	609.6	2.6	**0.1378**	0.003	2.4	ug/L	21	Standard
>	**In**	115	513017.2	1.6				ug/L	547487	Standard
	Sn	118	821.7	9.2	**0.0947**	0.014	14.3	ug/L	450	Standard
	Sb	123	733.0	25.0	**0.1761**	0.043	24.6	ug/L	105	Standard
	Ba	135	99016.2	1.6	**57.5032**	0.291	0.5	ug/L	111	Standard
	Ce	140	12887.1	3.7				ug/L	107	Standard
>	**Tb**	159	848478.4	1.1				ug/L	890342	Standard
	Ho	165	410.0	18.2				ug/L	10	Standard
	Tl	203	359.3	6.1	**0.0475**	0.004	8.4	ug/L	19	Standard
	Tl	205	305.0	1.6	**0.0538**	0.002	3.7	ug/L	17	Standard
	Pb	206	880.4	2.3	**0.1394**	0.005	3.8	ug/L	247	Standard
	Pb	207	741.7	1.8	**0.1280**	0.007	5.6	ug/L	215	Standard
	Pb	208	2788.1	1.1	**0.1210**	0.006	4.6	ug/L	770	Standard
	U	238	430.0	8.6	**0.0762**	0.008	10.9	ug/L	13	Standard
>	**Bi**	209	469289.0	2.2				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	44893.1	1.4	**61.8782**	1.088	1.8	mg/L	35	Standard
K	39	80.0	10.8	**0.2875**	0.036	12.5	mg/L	25	Standard
Ca	43	58.3	34.6	**6.1586**	3.723	60.4	mg/L	38	Standard
Fe	54	459.2	2.0	**0.3009**	0.006	1.9	mg/L	126	Standard
Fe	57	306.7	6.6	**0.1228**	0.057	46.4	mg/L	245	Standard
> **Sc-1**	45	24973.9	2.3				mg/L	25066	Standard
Cl	35	156643.7	1.7				ug/L	125857	Standard
Kr	83	2.7	43.3				ug/L	1	Standard
Br	81	58328.8	2.2				ug/L	1350	Standard
P	31	28678.8	2.1				ug/L	18393	Standard
S	34	4364.0	4.4				ug/L	3739	Standard
Sr	88	118.3	19.1				ug/L	78	Standard
C	12	100.0	72.1				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	613.2	2.5				mg/L	2	Standard
Ho-1	165	410.0	18.2				mg/L	10	Standard
Er	166	350.0	12.5				mg/L	23	Standard
I	127	70092.1	5.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.875	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.601	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	93.704
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.272
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Lower	V	51	
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	

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Mn 55 Upper, S, EEE	Mn	55
Ni 60 Upper, S, EEE	Ni	60

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Method 6020 - Summary Report

Sample ID: L1606061602
Sample Date/Time: Tuesday, June 21, 2016 15:25:38
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62282.9	3.9				ug/L	60176	Standard
	Be	9	13.3	78.1	**0.0089**	0.014	158.6	ug/L	5	Standard
	Al	27	17049432.7	0.9	**125.5063**	3.981	3.2	ug/L	832	Standard
	Sc	45	25169.2	3.4				ug/L	25066	Standard
	Ti	47	807.7	16.8	**4.0608**	0.742	18.3	ug/L	38	Standard
	V	51	2867.2	4.6	**0.3212**	0.020	6.3	ug/L	974	Standard
	Cr	52	13094.0	1.7	**1.1584**	0.021	1.8	ug/L	5792	Standard
	Cr	53	5707.8	16.6	**6.7038**	1.131	16.9	ug/L	347	Standard
	Mn	55	4214750.0	1.0	**671.9640**	7.527	1.1	ug/L	1164	Standard
	Co	59	2363.5	2.5	**0.3468**	0.009	2.6	ug/L	303	Standard
	Ni	60	2095.5	4.7	**0.9976**	0.054	5.4	ug/L	291	Standard
	Cu	65	827.0	5.3	**0.3740**	0.026	7.0	ug/L	173	Standard
	Zn	66	2898.6	2.7	**2.6166**	0.093	3.5	ug/L	130	Standard
>	**Ge**	72	482049.8	0.7				ug/L	491724	Standard
	As	75	2600.5	3.1	**2.5615**	0.093	3.7	ug/L	-25	Standard
	Se	82	880.4	1.9	**8.5951**	0.224	2.6	ug/L	12	Standard
	Se-1	77	853.7	1.5	**11.6729**	0.213	1.8	ug/L	57	Standard
>	**Ga**	71	506.7	6.6				mg/L	148	Standard
	Rb	85	23870.5	3.1				ug/L	18	Standard
	Y	89	394978.3	1.9				ug/L	401845	Standard
>	**Rh**	103	256.7	27.0				ug/L	10	Standard
	Mo	98	1604.0	4.5	**0.7016**	0.035	5.0	ug/L	12	Standard
	Ag	107	79.0	13.3	**-0.0012**	0.002	164.6	ug/L	98	Standard
	Cd	111	16.1	12.6	**0.0044**	0.001	27.5	mg/L	11	Standard
	Cd	114	59.0	10.1	**0.0092**	0.001	13.1	ug/L	21	Standard
>	**In**	115	517707.0	1.4				ug/L	547487	Standard
	Sn	118	2710.2	6.3	**0.4777**	0.029	6.0	ug/L	450	Standard
	Sb	123	297.7	21.5	**0.0665**	0.016	23.7	ug/L	105	Standard
	Ba	135	499345.8	0.5	**287.6104**	2.831	1.0	ug/L	111	Standard
	Ce	140	10685.4	3.5				ug/L	107	Standard
>	**Tb**	159	859857.7	0.6				ug/L	890342	Standard
	Ho	165	171.7	6.7				ug/L	10	Standard
	Tl	203	147.0	7.7	**0.0176**	0.002	10.6	ug/L	19	Standard
	Tl	205	131.7	9.6	**0.0241**	0.002	10.1	ug/L	17	Standard
	Pb	206	806.4	2.2	**0.1255**	0.005	3.9	ug/L	247	Standard
	Pb	207	665.0	1.0	**0.1116**	0.004	3.1	ug/L	215	Standard
	Pb	208	2632.8	1.6	**0.1132**	0.001	0.6	ug/L	770	Standard
	U	238	475.7	3.2	**0.0854**	0.003	3.7	ug/L	13	Standard
>	**Bi**	209	462865.3	1.2				ug/L	503143	Standard

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Na	23	5.0	100.0	**54.7235**	55.001	100.5	mg/L	2	Standard
Mg	24	92887.3	2.9	**127.2146**	7.642	6.0	mg/L	35	Standard
K	39	313.3	13.8	**1.4400**	0.167	11.6	mg/L	25	Standard
Ca	43	165.0	21.9	**27.2389**	8.231	30.2	mg/L	38	Standard
Fe	54	29519.0	1.0	**27.7809**	0.908	3.3	mg/L	126	Standard
Fe	57	8005.4	3.0	**30.3493**	0.303	1.0	mg/L	245	Standard
> **Sc-1**	45	25169.2	3.4				mg/L	25066	Standard
Cl	35	152557.1	2.2				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	221629.9	2.5				ug/L	1350	Standard
P	31	26778.6	1.5				ug/L	18393	Standard
S	34	4655.7	4.3				ug/L	3739	Standard
Sr	88	723.4	3.8				ug/L	78	Standard
C	12	93.3	22.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	0	Standard
Dy	164	336.0	12.3				mg/L	2	Standard
Ho-1	165	171.7	6.7				mg/L	10	Standard
Er	166	153.3	19.9				mg/L	23	Standard
I	127	284517.0	8.4				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.501	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.033	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.561
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.995
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606061604
Sample Date/Time: Tuesday, June 21, 2016 15:28:49
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57020.4	1.0				ug/L	60176	Standard
	Be	9	11.7	24.7	**0.0081**	0.004	51.2	ug/L	5	Standard
	Al	27	1079402.9	2.6	**8.6639**	0.184	2.1	ug/L	832	Standard
	Sc	45	25052.4	2.1				ug/L	25066	Standard
	Ti	47	402.3	58.5	**1.8535**	1.201	64.8	ug/L	38	Standard
	V	51	1463.1	9.7	**0.0731**	0.024	32.4	ug/L	974	Standard
	Cr	52	14139.6	1.7	**1.2608**	0.045	3.6	ug/L	5792	Standard
	Cr	53	2088.5	7.6	**2.1170**	0.178	8.4	ug/L	347	Standard
	Mn	55	835676.7	0.8	**129.2089**	1.084	0.8	ug/L	1164	Standard
	Co	59	3523.1	1.4	**0.5240**	0.006	1.1	ug/L	303	Standard
	Ni	60	4025.9	3.0	**2.0265**	0.074	3.6	ug/L	291	Standard
	Cu	65	706.3	1.2	**0.2935**	0.005	1.8	ug/L	173	Standard
	Zn	66	9224.1	1.2	**8.5777**	0.163	1.9	ug/L	130	Standard
>	**Ge**	72	496394.0	0.7				ug/L	491724	Standard
	As	75	111.7	16.0	**0.1393**	0.017	12.0	ug/L	-25	Standard
	Se	82	53.9	8.6	**0.4236**	0.046	10.9	ug/L	12	Standard
	Se-1	77	90.3	6.8	**0.6163**	0.078	12.7	ug/L	57	Standard
>	**Ga**	71	265.0	3.8				mg/L	148	Standard
	Rb	85	10645.4	6.1				ug/L	18	Standard
	Y	89	419565.3	1.2				ug/L	401845	Standard
>	**Rh**	103	76.7	21.0				ug/L	10	Standard
	Mo	98	94.8	4.8	**0.0348**	0.002	5.0	ug/L	12	Standard
	Ag	107	92.7	8.0	**0.0002**	0.001	504.2	ug/L	98	Standard
	Cd	111	330.1	5.6	**0.1699**	0.010	5.6	mg/L	11	Standard
	Cd	114	763.9	13.9	**0.1615**	0.022	13.6	ug/L	21	Standard
>	**In**	115	550787.3	1.4				ug/L	547487	Standard
	Sn	118	540.0	13.8	**0.0292**	0.013	44.4	ug/L	450	Standard
	Sb	123	257.9	10.5	**0.0527**	0.006	12.1	ug/L	105	Standard
	Ba	135	38973.7	1.1	**21.0479**	0.260	1.2	ug/L	111	Standard
	Ce	140	2586.9	4.8				ug/L	107	Standard
>	**Tb**	159	856869.1	0.8				ug/L	890342	Standard
	Ho	165	58.3	54.4				ug/L	10	Standard
	Tl	203	144.7	17.5	**0.0161**	0.003	20.9	ug/L	19	Standard
	Tl	205	115.0	28.5	**0.0201**	0.005	26.9	ug/L	17	Standard
	Pb	206	457.0	4.6	**0.0419**	0.005	10.8	ug/L	247	Standard
	Pb	207	362.3	5.9	**0.0324**	0.005	16.3	ug/L	215	Standard
	Pb	208	1499.7	3.6	**0.0335**	0.003	9.2	ug/L	770	Standard
	U	238	42.7	10.6	**0.0065**	0.001	11.8	ug/L	13	Standard
>	**Bi**	209	488736.5	0.4				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.7135**	32.404	173.2	mg/L	2	Standard
Mg	24	2508.5	0.8	**3.4105**	0.088	2.6	mg/L	35	Standard
K	39	146.7	2.0	**0.6192**	0.005	0.8	mg/L	25	Standard
Ca	43	36.7	47.9	**1.9276**	3.571	185.3	mg/L	38	Standard
Fe	54	2278.8	4.5	**2.0291**	0.142	7.0	mg/L	126	Standard
Fe	57	766.7	5.8	**1.9335**	0.140	7.2	mg/L	245	Standard
> **Sc-1**	45	25052.4	2.1				mg/L	25066	Standard
Cl	35	147914.5	0.4				ug/L	125857	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	9583.1	14.5				ug/L	1350	Standard
P	31	24017.4	7.0				ug/L	18393	Standard
S	34	4402.3	1.3				ug/L	3739	Standard
Sr	88	115.0	24.2				ug/L	78	Standard
C	12	110.0	15.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	111.3	9.5				mg/L	2	Standard
Ho-1	165	58.3	54.4				mg/L	10	Standard
Er	166	43.3	48.0				mg/L	23	Standard
I	127	122962.9	5.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.756	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.950	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.603
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.137
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606065001
Sample Date/Time: Tuesday, June 21, 2016 15:32:01
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58737.0	2.5				ug/L	60176	Standard
	Be	9	13.3	78.1	**0.0099**	0.015	148.6	ug/L	5	Standard
	Al	27	20311195.1	0.7	**158.4647**	3.057	1.9	ug/L	832	Standard
	Sc	45	24576.6	0.4				ug/L	25066	Standard
	Ti	47	298.3	18.8	**1.3401**	0.257	19.2	ug/L	38	Standard
	V	51	-26804.6	32.1	**-4.7157**	1.536	32.6	ug/L	974	Standard
	Cr	52	3156638.5	1.5	**497.8823**	3.945	0.8	ug/L	5792	Standard
	Cr	53	406838.5	1.2	**499.5299**	10.508	2.1	ug/L	347	Standard
	Mn	55	3878787.1	0.6	**609.0624**	15.870	2.6	ug/L	1164	Standard
	Co	59	134308.5	1.9	**22.1248**	0.836	3.8	ug/L	303	Standard
	Ni	60	1500074.7	0.8	**837.5062**	11.813	1.4	ug/L	291	Standard
	Cu	65	3294.7	4.2	**1.7525**	0.064	3.7	ug/L	173	Standard
	Zn	66	3534.1	0.8	**3.1886**	0.054	1.7	ug/L	130	Standard
>	**Ge**	72	489585.9	2.0				ug/L	491724	Standard
	As	75	619.2	16.7	**0.6262**	0.096	15.3	ug/L	-25	Standard
	Se	82	219.8	7.3	**2.0451**	0.198	9.7	ug/L	12	Standard
	Se-1	77	661.7	6.7	**8.7481**	0.445	5.1	ug/L	57	Standard
>	**Ga**	71	480.0	18.8				mg/L	148	Standard
	Rb	85	7842.0	1.6				ug/L	18	Standard
	Y	89	401986.8	1.4				ug/L	401845	Standard
>	**Rh**	103	255.0	17.1				ug/L	10	Standard
	Mo	98	3790.0	2.1	**1.6493**	0.037	2.3	ug/L	12	Standard
	Ag	107	91.7	12.6	**0.0009**	0.002	229.9	ug/L	98	Standard
	Cd	111	318.1	9.7	**0.1728**	0.018	10.6	mg/L	11	Standard
	Cd	114	767.4	4.0	**0.1715**	0.006	3.7	ug/L	21	Standard
>	**In**	115	522178.8	0.8				ug/L	547487	Standard
	Sn	118	655.0	6.0	**0.0582**	0.008	14.0	ug/L	450	Standard
	Sb	123	316.3	5.2	**0.0705**	0.004	6.2	ug/L	105	Standard
	Ba	135	988361.5	1.0	**564.4491**	9.763	1.7	ug/L	111	Standard
	Ce	140	3193.7	1.3				ug/L	107	Standard
>	**Tb**	159	848147.8	2.2				ug/L	890342	Standard
	Ho	165	61.7	20.4				ug/L	10	Standard
	Tl	203	205.3	8.6	**0.0262**	0.002	9.4	ug/L	19	Standard
	Tl	205	211.7	4.9	**0.0383**	0.002	4.4	ug/L	17	Standard
	Pb	206	552.0	3.0	**0.0694**	0.003	3.8	ug/L	247	Standard
	Pb	207	484.3	2.7	**0.0679**	0.004	6.5	ug/L	215	Standard
	Pb	208	1839.4	3.4	**0.0618**	0.005	8.1	ug/L	770	Standard
	U	238	2510.9	1.9	**0.4572**	0.010	2.2	ug/L	13	Standard
>	**Bi**	209	459869.7	1.0				ug/L	503143	Standard

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Na	23	5.0	0.0	**56.9736**	0.236	0.4	mg/L	2	Standard
Mg	24	79633.7	1.2	**111.5486**	1.739	1.6	mg/L	35	Standard
K	39	216.7	13.5	**0.9891**	0.148	14.9	mg/L	25	Standard
Ca	43	143.3	11.2	**23.4985**	3.298	14.0	mg/L	38	Standard
Fe	54	8009.6	2.0	**7.6156**	0.141	1.9	mg/L	126	Standard
Fe	57	2330.2	7.0	**8.2796**	0.633	7.6	mg/L	245	Standard
> **Sc-1**	45	24576.6	0.4				mg/L	25066	Standard
Cl	35	147026.1	2.2				ug/L	125857	Standard
Kr	83	3.0	33.3				ug/L	1	Standard
Br	81	52694.8	2.4				ug/L	1350	Standard
P	31	26670.1	1.1				ug/L	18393	Standard
S	34	4514.0	2.6				ug/L	3739	Standard
Sr	88	530.0	12.0				ug/L	78	Standard
C	12	150.0	17.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	69.8	80.1				mg/L	2	Standard
Ho-1	165	61.7	20.4				mg/L	10	Standard
Er	166	73.3	47.9				mg/L	23	Standard
I	127	406278.2	6.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.609	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.565	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.377
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	91.399
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
V 51 Lower	V	51	
Cr 52 Upper, S, EEE	Cr	52	

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Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Ni 60 Upper, S, EEE	Ni	60
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606065002
Sample Date/Time: Tuesday, June 21, 2016 15:35:12
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60596.0	1.9				ug/L	60176	Standard
	Be	9	13.3	21.7	**0.0094**	0.004	40.0	ug/L	5	Standard
	Al	27	8739182.4	2.0	**66.0672**	0.799	1.2	ug/L	832	Standard
	Sc	45	26192.6	2.2				ug/L	25066	Standard
	Ti	47	278.7	7.4	**1.2062**	0.081	6.7	ug/L	38	Standard
	V	51	739.9	19.6	**-0.0487**	0.023	48.1	ug/L	974	Standard
	Cr	52	22061.4	0.9	**2.4614**	0.056	2.3	ug/L	5792	Standard
	Cr	53	7727.0	4.4	**8.8615**	0.540	6.1	ug/L	347	Standard
	Mn	55	1194045.7	2.0	**182.8701**	3.213	1.8	ug/L	1164	Standard
	Co	59	2942.3	2.7	**0.4247**	0.011	2.5	ug/L	303	Standard
	Ni	60	3788.5	1.5	**1.8749**	0.030	1.6	ug/L	291	Standard
	Cu	65	823.4	3.2	**0.3537**	0.007	2.1	ug/L	173	Standard
	Zn	66	2433.2	2.0	**2.0660**	0.023	1.1	ug/L	130	Standard
>	**Ge**	72	501409.8	1.7				ug/L	491724	Standard
	As	75	283.2	37.7	**0.2992**	0.102	34.0	ug/L	-25	Standard
	Se	82	131.4	7.4	**1.1550**	0.115	9.9	ug/L	12	Standard
	Se-1	77	578.0	3.8	**7.3693**	0.169	2.3	ug/L	57	Standard
>	**Ga**	71	285.0	6.3				mg/L	148	Standard
	Rb	85	8877.6	3.1				ug/L	18	Standard
	Y	89	394026.5	1.2				ug/L	401845	Standard
>	**Rh**	103	161.7	9.4				ug/L	10	Standard
	Mo	98	195.9	2.8	**0.0813**	0.003	4.3	ug/L	12	Standard
	Ag	107	96.7	5.1	**0.0018**	0.001	33.2	ug/L	98	Standard
	Cd	111	123.0	9.0	**0.0640**	0.005	8.5	mg/L	11	Standard
	Cd	114	254.1	11.5	**0.0540**	0.007	13.5	ug/L	21	Standard
>	**In**	115	520782.3	1.6				ug/L	547487	Standard
	Sn	118	470.0	9.1	**0.0211**	0.009	42.4	ug/L	450	Standard
	Sb	123	310.6	7.2	**0.0693**	0.007	9.8	ug/L	105	Standard
	Ba	135	314668.7	2.2	**180.1229**	1.150	0.6	ug/L	111	Standard
	Ce	140	4312.3	4.3				ug/L	107	Standard
>	**Tb**	159	863525.5	2.8				ug/L	890342	Standard
	Ho	165	90.0	9.6				ug/L	10	Standard
	Tl	203	216.7	3.1	**0.0269**	0.001	4.8	ug/L	19	Standard
	Tl	205	188.3	12.5	**0.0332**	0.005	14.2	ug/L	17	Standard
	Pb	206	400.0	2.1	**0.0323**	0.001	2.6	ug/L	247	Standard
	Pb	207	353.7	7.0	**0.0327**	0.004	13.3	ug/L	215	Standard
	Pb	208	1312.0	2.8	**0.0243**	0.004	16.7	ug/L	770	Standard
	U	238	1391.1	5.3	**0.2449**	0.008	3.4	ug/L	13	Standard
>	**Bi**	209	474675.7	2.0				ug/L	503143	Standard

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Na	23	5.0	100.0	**54.0687**	53.938	99.8	mg/L	2	Standard
Mg	24	62982.4	3.0	**82.7804**	2.551	3.1	mg/L	35	Standard
K	39	133.3	17.7	**0.5224**	0.099	18.9	mg/L	25	Standard
Ca	43	83.3	24.2	**10.4165**	3.976	38.2	mg/L	38	Standard
Fe	54	266.1	10.7	**0.1052**	0.027	25.7	mg/L	126	Standard
Fe	57	355.0	11.2	**0.2514**	0.173	69.0	mg/L	245	Standard
Sc-1	45	26192.6	2.2				mg/L	25066	Standard
Cl	35	150054.1	0.8				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	29669.0	1.2				ug/L	1350	Standard
P	31	28545.2	2.4				ug/L	18393	Standard
S	34	4138.9	4.6				ug/L	3739	Standard
Sr	88	250.0	10.6				ug/L	78	Standard
C	12	156.7	19.5				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	133.3	30.3				mg/L	2	Standard
Ho-1	165	90.0	9.6				mg/L	10	Standard
Er	166	70.0	0.0				mg/L	23	Standard
I	127	661507.8	3.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		100.698	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.970	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.122
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.342
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606065003
Sample Date/Time: Tuesday, June 21, 2016 15:38:23
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63387.4	2.8				ug/L	60176	Standard
	Be	9	70.0	18.9	**0.0835**	0.017	20.0	ug/L	5	Standard
	Al	27	5157375.6	0.9	**37.2814**	0.808	2.2	ug/L	832	Standard
	Sc	45	26581.6	2.7				ug/L	25066	Standard
	Ti	47	1387.7	9.4	**6.8983**	0.595	8.6	ug/L	38	Standard
	V	51	-9213.7	17.6	**-1.7068**	0.290	17.0	ug/L	974	Standard
	Cr	52	1335310.3	0.9	**206.9695**	2.043	1.0	ug/L	5792	Standard
	Cr	53	177419.5	1.4	**214.3688**	2.599	1.2	ug/L	347	Standard
	Mn	55	997073.2	0.3	**154.0720**	2.167	1.4	ug/L	1164	Standard
	Co	59	16548.7	1.0	**2.6420**	0.067	2.5	ug/L	303	Standard
	Ni	60	80673.3	2.0	**44.1887**	0.256	0.6	ug/L	291	Standard
	Cu	65	12419.1	2.2	**6.7740**	0.077	1.1	ug/L	173	Standard
	Zn	66	5844.5	1.7	**5.3426**	0.029	0.5	ug/L	130	Standard
>	**Ge**	72	496879.0	1.5				ug/L	491724	Standard
	As	75	1809.6	8.9	**1.7401**	0.151	8.7	ug/L	-25	Standard
	Se	82	252.2	9.4	**2.3215**	0.229	9.8	ug/L	12	Standard
	Se-1	77	378.7	3.2	**4.6535**	0.175	3.8	ug/L	57	Standard
>	**Ga**	71	746.7	6.2				mg/L	148	Standard
	Rb	85	13919.7	1.1				ug/L	18	Standard
	Y	89	410755.2	2.3				ug/L	401845	Standard
>	**Rh**	103	111.7	5.2				ug/L	10	Standard
	Mo	98	5865.4	1.5	**2.4053**	0.027	1.1	ug/L	12	Standard
	Ag	107	135.7	10.3	**0.0074**	0.003	38.1	ug/L	98	Standard
	Cd	111	1056.6	4.0	**0.5506**	0.033	6.0	mg/L	11	Standard
	Cd	114	2556.7	1.3	**0.5477**	0.019	3.4	ug/L	21	Standard
>	**In**	115	554660.2	2.1				ug/L	547487	Standard
	Sn	118	1000.0	6.5	**0.1161**	0.012	10.2	ug/L	450	Standard
	Sb	123	402.1	12.9	**0.0857**	0.010	11.9	ug/L	105	Standard
	Ba	135	110239.6	0.8	**59.2270**	0.804	1.4	ug/L	111	Standard
	Ce	140	24279.4	2.4				ug/L	107	Standard
>	**Tb**	159	911640.4	0.6				ug/L	890342	Standard
	Ho	165	350.0	16.5				ug/L	10	Standard
	Tl	203	434.7	1.5	**0.0538**	0.001	1.7	ug/L	19	Standard
	Tl	205	305.0	7.5	**0.0500**	0.004	7.0	ug/L	17	Standard
	Pb	206	4440.3	0.9	**0.8568**	0.008	1.0	ug/L	247	Standard
	Pb	207	3810.8	1.1	**0.8086**	0.012	1.4	ug/L	215	Standard
	Pb	208	15060.6	1.4	**0.8488**	0.012	1.4	ug/L	770	Standard
	U	238	450.7	0.8	**0.0741**	0.001	0.7	ug/L	13	Standard
>	**Bi**	209	504464.9	0.3				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	31947.0	1.0	**41.3748**	1.485	3.6	mg/L	35	Standard
K	39	130.0	21.4	**0.4999**	0.137	27.3	mg/L	25	Standard
Ca	43	60.0		**5.8324**	0.297	5.1	mg/L	38	Standard
Fe	54	4403.4	0.3	**3.8059**	0.116	3.0	mg/L	126	Standard
Fe	57	1286.7	20.4	**3.6876**	0.933	25.3	mg/L	245	Standard
> **Sc-1**	45	26581.6	2.7				mg/L	25066	Standard
Cl	35	147975.1	1.2				ug/L	125857	Standard
Kr	83	2.7	43.3				ug/L	1	Standard
Br	81	55598.5	2.9				ug/L	1350	Standard
P	31	23972.3	2.6				ug/L	18393	Standard
S	34	4225.6	2.4				ug/L	3739	Standard
Sr	88	170.0	19.3				ug/L	78	Standard
C	12	100.0	10.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	656.9	13.7				mg/L	2	Standard
Ho-1	165	350.0	16.5				mg/L	10	Standard
Er	166	343.3	11.0				mg/L	23	Standard
I	127	145460.0	1.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.337	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.048	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.310
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.263
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Lower	V	51	
Cr 52 Upper, S, EEE	Cr	52	
Cr 53 Upper, S, EEE	Cr	53	

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Mn 55 Upper, S, EEE	Mn	55

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Method 6020 - Summary Report

Sample ID: L1606065008
Sample Date/Time: Tuesday, June 21, 2016 15:41:35
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63802.5	2.9				ug/L	60176	Standard
	Be	9	36.7	28.4	**0.0391**	0.013	34.5	ug/L	5	Standard
	Al	27	2078545.0	1.4	**14.9291**	0.633	4.2	ug/L	832	Standard
	Sc	45	25579.9	3.4				ug/L	25066	Standard
	Ti	47	845.0	4.5	**4.1986**	0.233	5.6	ug/L	38	Standard
	V	51	3095.5	13.9	**0.3533**	0.071	20.0	ug/L	974	Standard
	Cr	52	11042.0	0.8	**0.8065**	0.028	3.5	ug/L	5792	Standard
	Cr	53	4624.0	3.3	**5.2817**	0.152	2.9	ug/L	347	Standard
	Mn	55	1458217.0	0.5	**229.3462**	1.807	0.8	ug/L	1164	Standard
	Co	59	5268.2	0.6	**0.8223**	0.014	1.7	ug/L	303	Standard
	Ni	60	16880.1	0.7	**9.2581**	0.054	0.6	ug/L	291	Standard
	Cu	65	1985.8	3.0	**1.0205**	0.041	4.0	ug/L	173	Standard
	Zn	66	32937.1	1.1	**31.7490**	0.128	0.4	ug/L	130	Standard
>	**Ge**	72	488364.0	1.2				ug/L	491724	Standard
	As	75	999.3	3.7	**0.9925**	0.031	3.1	ug/L	-25	Standard
	Se	82	345.9	2.6	**3.2758**	0.047	1.4	ug/L	12	Standard
	Se-1	77	334.7	3.8	**4.1184**	0.171	4.1	ug/L	57	Standard
>	**Ga**	71	493.3	14.2				mg/L	148	Standard
	Rb	85	9207.8	3.6				ug/L	18	Standard
	Y	89	437252.9	0.3				ug/L	401845	Standard
>	**Rh**	103	80.0	18.8				ug/L	10	Standard
	Mo	98	268.9	2.1	**0.1055**	0.004	3.8	ug/L	12	Standard
	Ag	107	76.3	10.0	**-0.0027**	0.001	41.6	ug/L	98	Standard
	Cd	111	118.8	3.8	**0.0574**	0.003	4.7	mg/L	11	Standard
	Cd	114	286.1	7.3	**0.0571**	0.005	9.4	ug/L	21	Standard
>	**In**	115	557575.9	1.6				ug/L	547487	Standard
	Sn	118	580.0	4.0	**0.0356**	0.003	9.3	ug/L	450	Standard
	Sb	123	413.5	12.2	**0.0880**	0.012	14.2	ug/L	105	Standard
	Ba	135	72473.6	0.8	**38.7111**	0.451	1.2	ug/L	111	Standard
	Ce	140	27496.6	2.4				ug/L	107	Standard
>	**Tb**	159	890154.3	0.6				ug/L	890342	Standard
	Ho	165	563.3	4.6				ug/L	10	Standard
	Tl	203	194.0	10.1	**0.0231**	0.003	13.1	ug/L	19	Standard
	Tl	205	155.0	11.6	**0.0269**	0.003	10.3	ug/L	17	Standard
	Pb	206	503.3	4.6	**0.0525**	0.006	12.2	ug/L	247	Standard
	Pb	207	451.7	4.0	**0.0538**	0.003	6.1	ug/L	215	Standard
	Pb	208	1721.0	1.3	**0.0480**	0.002	3.9	ug/L	770	Standard
	U	238	216.3	8.8	**0.0365**	0.003	7.7	ug/L	13	Standard
>	**Bi**	209	485551.6	1.6				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.8740**	30.950	173.2	mg/L	2	Standard
Mg	24	34632.9	0.6	**46.6189**	1.523	3.3	mg/L	35	Standard
K	39	138.3	25.6	**0.5602**	0.155	27.6	mg/L	25	Standard
Ca	43	65.0	13.3	**7.2572**	1.904	26.2	mg/L	38	Standard
Fe	54	279.3	17.0	**0.1243**	0.053	42.6	mg/L	126	Standard
Fe	57	271.7	11.8	**-0.0378**	0.151	397.7	mg/L	245	Standard
> **Sc-1**	45	25579.9	3.4				mg/L	25066	Standard
Cl	35	178666.6	0.8				ug/L	125857	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	80231.9	1.9				ug/L	1350	Standard
P	31	24055.7	0.9				ug/L	18393	Standard
S	34	3798.8	4.0				ug/L	3739	Standard
Sr	88	145.0	11.9				ug/L	78	Standard
C	12	176.7	22.9				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	130.0	23.1				mg/L	0	Standard
Dy	164	829.7	17.8				mg/L	2	Standard
Ho-1	165	563.3	4.6				mg/L	10	Standard
Er	166	563.3	12.6				mg/L	23	Standard
I	127	75514.5	3.5				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.027	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.317	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.843	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.504	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606072902
Sample Date/Time: Tuesday, June 21, 2016 15:44:46
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61000.9	2.3				ug/L	60176	Standard
	Be	9	48.3	31.6	**0.0571**	0.019	34.0	ug/L	5	Standard
	Al	27	1265197.3	0.4	**9.4968**	0.215	2.3	ug/L	832	Standard
	Sc	45	24843.7	5.1				ug/L	25066	Standard
	Ti	47	295.0	39.1	**1.2721**	0.610	48.0	ug/L	38	Standard
	V	51	1662.0	6.7	**0.0984**	0.013	12.9	ug/L	974	Standard
	Cr	52	9640.7	1.5	**0.5183**	0.014	2.7	ug/L	5792	Standard
	Cr	53	1788.4	7.9	**1.6929**	0.129	7.6	ug/L	347	Standard
	Mn	55	269286.4	1.8	**40.3553**	1.271	3.2	ug/L	1164	Standard
	Co	59	7695.6	2.0	**1.1688**	0.020	1.7	ug/L	303	Standard
	Ni	60	3736.8	1.2	**1.8110**	0.042	2.3	ug/L	291	Standard
	Cu	65	1102.4	3.8	**0.4960**	0.012	2.4	ug/L	173	Standard
	Zn	66	5766.8	0.8	**5.1234**	0.095	1.8	ug/L	130	Standard
>	**Ge**	72	510457.8	2.2				ug/L	491724	Standard
	As	75	81.7	14.6	**0.1091**	0.013	11.6	ug/L	-25	Standard
	Se	82	51.2	4.3	**0.3844**	0.013	3.3	ug/L	12	Standard
	Se-1	77	109.3	5.0	**0.8419**	0.100	11.9	ug/L	57	Standard
>	**Ga**	71	216.7	17.3				mg/L	148	Standard
	Rb	85	27894.0	1.5				ug/L	18	Standard
	Y	89	417086.1	2.1				ug/L	401845	Standard
>	**Rh**	103	31.7	24.1				ug/L	10	Standard
	Mo	98	60.3	14.2	**0.0209**	0.003	16.1	ug/L	12	Standard
	Ag	107	152.7	9.2	**0.0108**	0.003	25.1	ug/L	98	Standard
	Cd	111	73.5	21.7	**0.0349**	0.009	26.3	mg/L	11	Standard
	Cd	114	176.5	11.5	**0.0346**	0.004	11.6	ug/L	21	Standard
>	**In**	115	541515.1	1.4				ug/L	547487	Standard
	Sn	118	1061.7	1.2	**0.1327**	0.005	4.0	ug/L	450	Standard
	Sb	123	145.5	4.3	**0.0270**	0.002	7.3	ug/L	105	Standard
	Ba	135	64548.3	2.6	**35.5016**	1.269	3.6	ug/L	111	Standard
	Ce	140	11564.4	2.1				ug/L	107	Standard
>	**Tb**	159	870646.6	1.9				ug/L	890342	Standard
	Ho	165	225.0	10.2				ug/L	10	Standard
	Tl	203	276.7	4.4	**0.0339**	0.001	3.4	ug/L	19	Standard
	Tl	205	246.7	10.4	**0.0416**	0.004	8.7	ug/L	17	Standard
	Pb	206	518.0	0.8	**0.0540**	0.002	3.0	ug/L	247	Standard
	Pb	207	451.0	6.3	**0.0522**	0.006	10.7	ug/L	215	Standard
	Pb	208	1790.0	3.5	**0.0508**	0.006	11.7	ug/L	770	Standard
	U	238	117.7	5.0	**0.0192**	0.001	3.2	ug/L	13	Standard
>	**Bi**	209	492368.0	1.9				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	2613.6	7.0	**3.5946**	0.386	10.7	mg/L	35	Standard
K	39	313.3	2.4	**1.4668**	0.102	6.9	mg/L	25	Standard
Ca	43	40.0	12.5	**2.6700**	1.367	51.2	mg/L	38	Standard
Fe	54	172.6	19.4	**0.0297**	0.037	125.0	mg/L	126	Standard
Fe	57	250.0	16.4	**-0.0882**	0.218	247.4	mg/L	245	Standard
> **Sc-1**	45	24843.7	5.1				mg/L	25066	Standard
Cl	35	141007.2	1.2				ug/L	125857	Standard
Kr	83	3.7	68.6				ug/L	1	Standard
Br	81	8976.0	3.5				ug/L	1350	Standard
P	31	21415.1	1.0				ug/L	18393	Standard
S	34	3635.4	3.8				ug/L	3739	Standard
Sr	88	86.7	23.3				ug/L	78	Standard
C	12	93.3	55.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	321.7	9.0				mg/L	2	Standard
Ho-1	165	225.0	10.2				mg/L	10	Standard
Er	166	173.3	13.3				mg/L	23	Standard
I	127	27626.9	6.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.371	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.810	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.909
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.859
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606072903
Sample Date/Time: Tuesday, June 21, 2016 15:47:58
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65829.4	1.7				ug/L	60176	Standard
	Be	9	1091.7	7.9	**1.3819**	0.122	8.9	ug/L	5	Standard
	Al	27	9658460.6	2.5	**67.2033**	0.573	0.9	ug/L	832	Standard
	Sc	45	26962.3	1.0				ug/L	25066	Standard
	Ti	47	1161.4	44.0	**5.6242**	2.574	45.8	ug/L	38	Standard
	V	51	2955.0	3.3	**0.3108**	0.013	4.1	ug/L	974	Standard
	Cr	52	10847.2	2.6	**0.7108**	0.049	6.9	ug/L	5792	Standard
	Cr	53	1273.4	6.0	**1.0957**	0.073	6.6	ug/L	347	Standard
	Mn	55	2432059.6	0.8	**368.2427**	6.764	1.8	ug/L	1164	Standard
	Co	59	153183.5	0.7	**24.3375**	0.235	1.0	ug/L	303	Standard
	Ni	60	19503.2	0.5	**10.3155**	0.174	1.7	ug/L	291	Standard
	Cu	65	6676.5	1.4	**3.5201**	0.098	2.8	ug/L	173	Standard
	Zn	66	32319.1	1.0	**29.9680**	0.510	1.7	ug/L	130	Standard
>	**Ge**	72	507509.6	1.3				ug/L	491724	Standard
	As	75	65.2	90.0	**0.0946**	0.055	58.4	ug/L	-25	Standard
	Se	82	67.0	5.6	**0.5352**	0.041	7.6	ug/L	12	Standard
	Se-1	77	128.3	9.7	**1.1086**	0.151	13.6	ug/L	57	Standard
>	**Ga**	71	1310.1	5.3				mg/L	148	Standard
	Rb	85	17616.9	2.0				ug/L	18	Standard
	Y	89	727532.8	1.3				ug/L	401845	Standard
>	**Rh**	103	103.3	14.8				ug/L	10	Standard
	Mo	98	67.1	4.9	**0.0233**	0.001	5.8	ug/L	12	Standard
	Ag	107	109.7	4.3	**0.0031**	0.001	41.1	ug/L	98	Standard
	Cd	111	313.2	8.9	**0.1612**	0.018	11.3	mg/L	11	Standard
	Cd	114	738.1	10.6	**0.1561**	0.018	11.8	ug/L	21	Standard
>	**In**	115	550912.0	2.6				ug/L	547487	Standard
	Sn	118	630.0	11.0	**0.0468**	0.016	34.7	ug/L	450	Standard
	Sb	123	137.7	12.6	**0.0246**	0.003	13.1	ug/L	105	Standard
	Ba	135	39985.4	1.7	**21.5966**	0.536	2.5	ug/L	111	Standard
	Ce	140	1423873.1	0.8				ug/L	107	Standard
>	**Tb**	159	928141.2	1.7				ug/L	890342	Standard
	Ho	165	28324.8	1.1				ug/L	10	Standard
	Tl	203	290.7	5.4	**0.0344**	0.003	9.6	ug/L	19	Standard
	Tl	205	235.0	16.9	**0.0383**	0.006	14.9	ug/L	17	Standard
	Pb	206	5921.8	0.5	**1.1479**	0.039	3.4	ug/L	247	Standard
	Pb	207	4990.2	2.0	**1.0630**	0.048	4.5	ug/L	215	Standard
	Pb	208	19749.1	0.7	**1.1186**	0.030	2.7	ug/L	770	Standard
	U	238	2317.5	1.8	**0.3802**	0.005	1.4	ug/L	13	Standard
>	**Bi**	209	510317.8	3.2				ug/L	503143	Standard

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Na	23	5.0	100.0	**52.2757**	52.372	100.2	mg/L	2	Standard
Mg	24	2030.1	7.1	**2.5548**	0.200	7.8	mg/L	35	Standard
K	39	193.3	15.2	**0.7833**	0.132	16.9	mg/L	25	Standard
Ca	43	171.7	8.9	**26.1296**	2.684	10.3	mg/L	38	Standard
Fe	54	1645.5	6.5	**1.3153**	0.096	7.3	mg/L	126	Standard
Fe	57	753.4	12.5	**1.6728**	0.365	21.8	mg/L	245	Standard
Sc-1	45	26962.3	1.0				mg/L	25066	Standard
Cl	35	255018.3	0.9				ug/L	125857	Standard
Kr	83	1.0	0.0				ug/L	1	Standard
Br	81	5220.9	5.0				ug/L	1350	Standard
P	31	21920.9	3.7				ug/L	18393	Standard
S	34	3950.5	6.9				ug/L	3739	Standard
Sr	88	301.7	3.8				ug/L	78	Standard
C	12	83.3	38.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	47352.9	1.1				mg/L	2	Standard
Ho-1	165	28324.8	1.1				mg/L	10	Standard
Er	166	25150.9	2.3				mg/L	23	Standard
I	127	224463.3	10.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		109.395	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.210	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.626
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.426
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606073001
Sample Date/Time: Tuesday, June 21, 2016 15:51:09
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73917.0	6.1				ug/L	60176	Standard
	Be	9	16.7	45.8	**0.0097**	0.008	79.3	ug/L	5	Standard
	Al	27	5652423.5	6.3	**35.0242**	0.471	1.3	ug/L	832	Standard
	Sc	45	24773.6	1.2				ug/L	25066	Standard
	Ti	47	116.3	10.9	**0.4405**	0.086	19.6	ug/L	38	Standard
	V	51	15193.9	3.1	**2.5748**	0.099	3.8	ug/L	974	Standard
	Cr	52	199468.5	0.9	**32.7681**	0.651	2.0	ug/L	5792	Standard
	Cr	53	29413.5	3.2	**38.2606**	2.147	5.6	ug/L	347	Standard
	Mn	55	16906.8	3.1	**2.6231**	0.046	1.8	ug/L	1164	Standard
	Co	59	8261.3	2.1	**1.4084**	0.013	0.9	ug/L	303	Standard
	Ni	60	7629.3	4.1	**4.3628**	0.068	1.6	ug/L	291	Standard
	Cu	65	2854.9	2.0	**1.6169**	0.031	1.9	ug/L	173	Standard
	Zn	66	2209.5	2.4	**2.0537**	0.064	3.1	ug/L	130	Standard
>	**Ge**	72	457885.1	2.6				ug/L	491724	Standard
	As	75	2538.0	5.5	**2.6341**	0.209	8.0	ug/L	-25	Standard
	Se	82	858.9	4.6	**8.8399**	0.642	7.3	ug/L	12	Standard
	Se-1	77	1191.0	2.5	**17.4647**	0.920	5.3	ug/L	57	Standard
>	**Ga**	71	1676.8	5.5				mg/L	148	Standard
	Rb	85	226016.7	0.7				ug/L	18	Standard
	Y	89	390113.6	0.9				ug/L	401845	Standard
>	**Rh**	103	3238.7	1.2				ug/L	10	Standard
	Mo	98	4439.9	1.2	**1.9618**	0.048	2.5	ug/L	12	Standard
	Ag	107	114.0	9.8	**0.0052**	0.002	36.0	ug/L	98	Standard
	Cd	111	49.0	20.1	**0.0230**	0.005	23.8	mg/L	11	Standard
	Cd	114	113.7	9.0	**0.0220**	0.002	11.3	ug/L	21	Standard
>	**In**	115	514604.2	1.3				ug/L	547487	Standard
	Sn	118	1230.1	8.0	**0.1780**	0.020	11.1	ug/L	450	Standard
	Sb	123	498.9	3.3	**0.1174**	0.004	3.7	ug/L	105	Standard
	Ba	135	1735936.7	1.5	**1005.9141**	2.820	0.3	ug/L	111	Standard
	Ce	140	845.0	14.5				ug/L	107	Standard
>	**Tb**	159	860331.0	2.6				ug/L	890342	Standard
	Ho	165	16.7	17.3				ug/L	10	Standard
	Tl	203	237.3	4.9	**0.0323**	0.002	6.7	ug/L	19	Standard
	Tl	205	226.7	26.3	**0.0425**	0.010	22.8	ug/L	17	Standard
	Pb	206	559.7	1.7	**0.0765**	0.002	3.2	ug/L	247	Standard
	Pb	207	477.3	6.9	**0.0710**	0.005	6.3	ug/L	215	Standard
	Pb	208	1797.7	2.6	**0.0642**	0.006	8.9	ug/L	770	Standard
	U	238	256.3	4.6	**0.0480**	0.003	7.3	ug/L	13	Standard
>	**Bi**	209	441187.4	3.3				ug/L	503143	Standard

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Na	23	6.7	114.6	**75.7212**	86.562	114.3	mg/L	2	Standard
Mg	24	90539.7	1.2	**125.8278**	2.144	1.7	mg/L	35	Standard
K	39	2236.8	7.2	**11.1766**	0.942	8.4	mg/L	25	Standard
Ca	43	748.4	12.6	**144.1070**	20.471	14.2	mg/L	38	Standard
Fe	54	142.0	15.6	**-0.0001**	0.022	16866.3	mg/L	126	Standard
Fe	57	1348.4	5.7	**4.2895**	0.312	7.3	mg/L	245	Standard
> **Sc-1**	45	24773.6	1.2				mg/L	25066	Standard
Cl	35	159146.8	0.8				ug/L	125857	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	209975.2	1.8				ug/L	1350	Standard
P	31	20949.5	2.8				ug/L	18393	Standard
S	34	4584.0	1.1				ug/L	3739	Standard
Sr	88	10782.2	5.2				ug/L	78	Standard
C	12	116.7	32.5				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	5.4	219.6				mg/L	2	Standard
Ho-1	165	16.7	17.3				mg/L	10	Standard
Er	166	26.7	43.3				mg/L	23	Standard
I	127	166779.4	5.0				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		122.835	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.118	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.994
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		87.686
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 15:54:22
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59968.5	1.3				ug/L	60176	Standard
	Be	9	36398.7	0.5	**50.8713**	0.403	0.8	ug/L	5	Standard
	Al	27	6548192.3	1.8	**50.0297**	1.523	3.0	ug/L	832	Standard
	Sc	45	25387.9	1.8				ug/L	25066	Standard
	Ti	47	20514.5	1.9	**104.3164**	2.213	2.1	ug/L	38	Standard
	V	51	309165.3	1.8	**51.0062**	0.680	1.3	ug/L	974	Standard
	Cr	52	340251.9	0.9	**51.7368**	0.210	0.4	ug/L	5792	Standard
	Cr	53	43082.8	0.7	**51.4506**	0.301	0.6	ug/L	347	Standard
	Mn	55	327886.5	1.7	**50.2320**	0.671	1.3	ug/L	1164	Standard
	Co	59	311341.2	1.1	**50.2912**	0.234	0.5	ug/L	303	Standard
	Ni	60	95005.0	1.3	**51.7832**	0.285	0.6	ug/L	291	Standard
	Cu	65	94085.6	1.9	**51.6732**	0.769	1.5	ug/L	173	Standard
	Zn	66	54162.3	1.8	**51.1699**	0.730	1.4	ug/L	130	Standard
>	Ge	72	499656.0	0.8				ug/L	491724	Standard
	As	75	53793.1	1.5	**50.4679**	0.579	1.1	ug/L	-25	Standard
	Se	82	5297.2	1.4	**50.3360**	1.022	2.0	ug/L	12	Standard
	Se-1	77	3753.1	2.9	**51.6078**	1.108	2.1	ug/L	57	Standard
>	Ga	71	116.7	31.0				mg/L	148	Standard
	Rb	85	846.7	4.4				ug/L	18	Standard
	Y	89	409237.0	1.3				ug/L	401845	Standard
>	Rh	103	43.3	24.0				ug/L	10	Standard
	Mo	98	236019.2	1.3	**98.9883**	1.916	1.9	ug/L	12	Standard
	Ag	107	301027.0	0.2	**51.4292**	0.425	0.8	ug/L	98	Standard
	Cd	111	95327.7	1.4	**51.1098**	1.090	2.1	mg/L	11	Standard
	Cd	114	232932.5	0.7	**51.3315**	0.699	1.4	ug/L	21	Standard
>	In	115	543279.3	0.7				ug/L	547487	Standard
	Sn	118	259515.7	1.7	**50.2935**	1.187	2.4	ug/L	450	Standard
	Sb	123	214686.9	1.2	**50.9350**	0.980	1.9	ug/L	105	Standard
	Ba	135	92608.2	0.1	**50.7811**	0.422	0.8	ug/L	111	Standard
	Ce	140	138.3	43.1				ug/L	107	Standard
>	Tb	159	879645.1	1.9				ug/L	890342	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	374242.2	0.3	**50.5043**	0.815	1.6	ug/L	19	Standard
	Tl	205	312151.2	0.8	**51.3434**	0.975	1.9	ug/L	17	Standard
	Pb	206	237883.3	0.7	**49.8803**	1.009	2.0	ug/L	247	Standard
	Pb	207	215064.7	1.2	**49.6101**	1.233	2.5	ug/L	215	Standard
	Pb	208	825294.1	0.6	**50.8408**	0.434	0.9	ug/L	770	Standard
	U	238	298401.1	0.3	**50.7212**	0.598	1.2	ug/L	13	Standard
>	Bi	209	493553.5	1.4				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3700.5	3.6	**4.9819**	0.214	4.3	mg/L	35	Standard
K	39	1016.7	7.6	**4.8957**	0.446	9.1	mg/L	25	Standard
Ca	43	56.7	13.5	**5.6936**	1.352	23.7	mg/L	38	Standard
Fe	54	5409.1	1.3	**4.9332**	0.148	3.0	mg/L	126	Standard
Fe	57	1620.1	7.8	**5.2229**	0.583	11.2	mg/L	245	Standard
> **Sc-1**	45	25387.9	1.8				mg/L	25066	Standard
Cl	35	151052.7	1.4				ug/L	125857	Standard
Kr	83	2.3	137.8				ug/L	1	Standard
Br	81	3390.4	24.1				ug/L	1350	Standard
P	31	21366.7	3.1				ug/L	18393	Standard
S	34	5074.2	4.4				ug/L	3739	Standard
Sr	88	91.7	22.0				ug/L	78	Standard
C	12	80.0	33.1				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.2	96.3				mg/L	2	Standard
Ho-1	165	8.3	34.6				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	8529.2	32.6				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	101.743		
	Al	27	100.059		
	Sc	45			
	Ti	47	104.316		
	V	51	102.012		
	Cr	52	103.474		
	Cr	53			
	Mn	55	100.464		
	Co	59	100.582		
	Ni	60	103.566		
	Cu	65	103.346		
	Zn	66	102.340		
>	Ge	72		101.613	
	As	75	100.936		
	Se	82	100.672		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.988		
Ag	107	102.858		
Cd	111	102.220		
Cd	114			
> In	115		99.232	
Sn	118	100.587		
Sb	123	101.870		
Ba	135	101.562		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.009		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.682		
U	238	101.442		
> Bi	209		98.094	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 15:57:34
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59362.8	1.8				ug/L	60176	Standard
	Be	9	21.7	93.3	**0.0213**	0.028	130.6	ug/L	5	Standard
	Al	27	10005.1	126.3	**0.0677**	0.095	140.7	ug/L	832	Standard
	Sc	45	25473.1	2.6				ug/L	25066	Standard
	Ti	47	37.3	36.4	**-0.0109**	0.069	630.7	ug/L	38	Standard
	V	51	1039.9	1.7	**0.0080**	0.005	68.5	ug/L	974	Standard
	Cr	52	6459.7	10.1	**0.0942**	0.091	96.2	ug/L	5792	Standard
	Cr	53	603.3	18.3	**0.3396**	0.127	37.3	ug/L	347	Standard
	Mn	55	2162.5	62.6	**0.1280**	0.210	164.2	ug/L	1164	Standard
	Co	59	333.7	16.0	**0.0066**	0.008	124.3	ug/L	303	Standard
	Ni	60	322.7	48.2	**-0.0082**	0.085	1042.9	ug/L	291	Standard
	Cu	65	161.7	29.8	**-0.0056**	0.026	466.7	ug/L	173	Standard
	Zn	66	184.7	16.2	**-0.0537**	0.027	49.9	ug/L	130	Standard
>	**Ge**	72	481495.2	1.4				ug/L	491724	Standard
	As	75	-13.3	88.6	**0.0210**	0.012	54.8	ug/L	-25	Standard
	Se	82	22.2	8.5	**0.1261**	0.021	16.7	ug/L	12	Standard
	Se-1	77	62.0	2.8	**0.2463**	0.018	7.5	ug/L	57	Standard
>	**Ga**	71	106.7	9.8				mg/L	148	Standard
	Rb	85	63.3	43.5				ug/L	18	Standard
	Y	89	417621.1	1.2				ug/L	401845	Standard
>	**Rh**	103	40.0	45.1				ug/L	10	Standard
	Mo	98	240.6	46.2	**0.0925**	0.045	48.3	ug/L	12	Standard
	Ag	107	129.0	44.6	**0.0058**	0.009	162.4	ug/L	98	Standard
	Cd	111	26.5	116.9	**0.0090**	0.016	178.2	mg/L	11	Standard
	Cd	114	62.7	80.7	**0.0088**	0.011	121.2	ug/L	21	Standard
>	**In**	115	564731.0	1.2				ug/L	547487	Standard
	Sn	118	768.4	3.1	**0.0694**	0.006	8.4	ug/L	450	Standard
	Sb	123	399.1	17.4	**0.0835**	0.016	19.6	ug/L	105	Standard
	Ba	135	378.0	72.8	**0.1438**	0.145	100.9	ug/L	111	Standard
	Ce	140	128.3	104.6				ug/L	107	Standard
>	**Tb**	159	890002.5	2.1				ug/L	890342	Standard
	Ho	165	5.0	100.0				ug/L	10	Standard
	Tl	203	105.7	64.2	**0.0104**	0.008	81.6	ug/L	19	Standard
	Tl	205	133.3	103.5	**0.0222**	0.021	96.6	ug/L	17	Standard
	Pb	206	266.0	23.7	**0.0002**	0.011	6809.3	ug/L	247	Standard
	Pb	207	260.7	18.8	**0.0074**	0.009	126.1	ug/L	215	Standard
	Pb	208	1119.4	33.0	**0.0081**	0.020	245.9	ug/L	770	Standard
	U	238	112.3	126.2	**0.0176**	0.023	129.9	ug/L	13	Standard
>	**Bi**	209	497488.5	3.7				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	95.0	109.9	**0.0875**	0.137	156.5	mg/L	35	Standard
K	39	31.7	18.2	**0.0434**	0.031	72.1	mg/L	25	Standard
Ca	43	43.3	26.6	**3.1138**	2.393	76.8	mg/L	38	Standard
Fe	54	134.3	11.0	**-0.0112**	0.012	107.9	mg/L	126	Standard
Fe	57	253.3	12.5	**-0.1072**	0.121	112.7	mg/L	245	Standard
> **Sc-1**	45	25473.1	2.6				mg/L	25066	Standard
Cl	35	154720.7	1.0				ug/L	125857	Standard
Kr	83	2.7	78.1				ug/L	1	Standard
Br	81	2063.5	2.4				ug/L	1350	Standard
P	31	22254.7	2.6				ug/L	18393	Standard
S	34	4942.5	2.2				ug/L	3739	Standard
Sr	88	83.3	19.3				ug/L	78	Standard
C	12	40.0	25.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.5	88.7				mg/L	2	Standard
Ho-1	165	5.0	100.0				mg/L	10	Standard
Er	166	10.0					mg/L	23	Standard
I	127	3717.1	8.4				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.920	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.150
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.876
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606073002
Sample Date/Time: Tuesday, June 21, 2016 16:00:47
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	69308.3	3.7				ug/L	60176	Standard
	Be	9	20.0	50.0	**0.0149**	0.011	75.7	ug/L	5	Standard
	Al	27	6126361.3	1.2	**40.5279**	1.700	4.2	ug/L	832	Standard
	Sc	45	24543.2	3.9				ug/L	25066	Standard
	Ti	47	125.3	13.2	**0.4695**	0.084	17.8	ug/L	38	Standard
	V	51	16629.0	4.3	**2.7512**	0.149	5.4	ug/L	974	Standard
	Cr	52	210588.5	2.1	**33.6543**	0.594	1.8	ug/L	5792	Standard
	Cr	53	31539.5	3.2	**39.8713**	0.997	2.5	ug/L	347	Standard
	Mn	55	23748.6	0.8	**3.6623**	0.062	1.7	ug/L	1164	Standard
	Co	59	8388.0	2.5	**1.3899**	0.039	2.8	ug/L	303	Standard
	Ni	60	8179.5	3.3	**4.5574**	0.124	2.7	ug/L	291	Standard
	Cu	65	2815.6	0.9	**1.5465**	0.029	1.9	ug/L	173	Standard
	Zn	66	2262.5	3.2	**2.0433**	0.069	3.4	ug/L	130	Standard
>	**Ge**	72	470862.5	0.8				ug/L	491724	Standard
	As	75	2905.3	0.7	**2.9245**	0.023	0.8	ug/L	-25	Standard
	Se	82	925.8	0.9	**9.2587**	0.060	0.6	ug/L	12	Standard
	Se-1	77	1310.7	2.5	**18.7167**	0.330	1.8	ug/L	57	Standard
>	**Ga**	71	1603.4	3.2				mg/L	148	Standard
	Rb	85	230305.6	1.1				ug/L	18	Standard
	Y	89	379545.1	0.6				ug/L	401845	Standard
>	**Rh**	103	3307.0	4.1				ug/L	10	Standard
	Mo	98	4638.8	1.0	**2.1857**	0.018	0.8	ug/L	12	Standard
	Ag	107	129.7	17.9	**0.0096**	0.005	47.2	ug/L	98	Standard
	Cd	111	47.1	19.5	**0.0237**	0.006	23.4	mg/L	11	Standard
	Cd	114	88.1	29.6	**0.0174**	0.007	37.3	ug/L	21	Standard
>	**In**	115	482582.3	0.3				ug/L	547487	Standard
	Sn	118	1188.4	1.3	**0.1856**	0.004	2.1	ug/L	450	Standard
	Sb	123	594.7	6.6	**0.1512**	0.010	6.6	ug/L	105	Standard
	Ba	135	1814565.7	1.4	**1121.2802**	14.912	1.3	ug/L	111	Standard
	Ce	140	778.4	4.7				ug/L	107	Standard
>	**Tb**	159	825227.5	1.6				ug/L	890342	Standard
	Ho	165	23.3	101.3				ug/L	10	Standard
	Tl	203	227.3	5.1	**0.0315**	0.002	7.2	ug/L	19	Standard
	Tl	205	193.3	12.2	**0.0374**	0.005	13.4	ug/L	17	Standard
	Pb	206	563.7	9.9	**0.0803**	0.015	18.7	ug/L	247	Standard
	Pb	207	484.3	4.2	**0.0757**	0.007	9.4	ug/L	215	Standard
	Pb	208	1753.4	1.0	**0.0637**	0.003	4.2	ug/L	770	Standard
	U	238	254.3	2.6	**0.0486**	0.002	4.1	ug/L	13	Standard
>	**Bi**	209	431889.8	1.5				ug/L	503143	Standard

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Na	23	15.0	66.7	**174.2413**	120.728	69.3	mg/L	2	Standard
Mg	24	93727.4	0.9	**131.5829**	4.471	3.4	mg/L	35	Standard
K	39	2483.5	4.9	**12.5508**	0.926	7.4	mg/L	25	Standard
Ca	43	885.0	14.1	**173.5278**	30.084	17.3	mg/L	38	Standard
Fe	54	139.9	31.8	**0.0000**	0.04(183799.3		mg/L	126	Standard
Fe	57	1356.7	6.6	**4.3695**	0.153	3.5	mg/L	245	Standard
> **Sc-1**	45	24543.2	3.9				mg/L	25066	Standard
Cl	35	157218.9	1.1				ug/L	125857	Standard
Kr	83	3.7	41.7				ug/L	1	Standard
Br	81	220692.4	1.0				ug/L	1350	Standard
P	31	22506.7	0.5				ug/L	18393	Standard
S	34	4602.4	5.2				ug/L	3739	Standard
Sr	88	10935.6	1.0				ug/L	78	Standard
C	12	216.7	20.8				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	12.9	48.5				mg/L	2	Standard
Ho-1	165	23.3	101.3				mg/L	10	Standard
Er	166	10.0	173.2				mg/L	23	Standard
I	127	172463.4	8.0				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.176	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.758	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		88.145
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		85.838
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606073003
Sample Date/Time: Tuesday, June 21, 2016 16:03:58
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64465.7	7.2				ug/L	60176	Standard
	Be	9	48.3	48.9	**0.0549**	0.035	63.6	ug/L	5	Standard
	Al	27	114115919.1	1.6	**813.1976**	46.881	5.8	ug/L	832	Standard
	Sc	45	25436.3	2.0				ug/L	25066	Standard
	Ti	47	345.7	4.6	**1.8234**	0.101	5.6	ug/L	38	Standard
	V	51	1068.5	35.2	**0.0334**	0.072	216.4	ug/L	974	Standard
	Cr	52	14799.2	0.9	**1.6994**	0.023	1.4	ug/L	5792	Standard
	Cr	53	29695.8	4.6	**40.8112**	1.956	4.8	ug/L	347	Standard
	Mn	55	1183452.9	1.0	**209.7588**	2.233	1.1	ug/L	1164	Standard
	Co	59	14597.4	0.2	**2.6724**	0.007	0.3	ug/L	303	Standard
	Ni	60	10363.9	2.1	**6.3478**	0.146	2.3	ug/L	291	Standard
	Cu	65	1987.5	3.5	**1.1635**	0.045	3.9	ug/L	173	Standard
	Zn	66	3577.8	1.3	**3.6805**	0.061	1.7	ug/L	130	Standard
>	**Ge**	72	433293.9	0.3				ug/L	491724	Standard
	As	75	5927.9	2.2	**6.4431**	0.152	2.4	ug/L	-25	Standard
	Se	82	1611.7	1.7	**17.5991**	0.335	1.9	ug/L	12	Standard
	Se-1	77	5107.5	5.2	**81.3703**	4.339	5.3	ug/L	57	Standard
>	**Ga**	71	338.3	13.7				mg/L	148	Standard
	Rb	85	17830.5	1.3				ug/L	18	Standard
	Y	89	379868.8	3.7				ug/L	401845	Standard
>	**Rh**	103	1205.0	3.7				ug/L	10	Standard
	Mo	98	436.0	6.7	**0.2020**	0.013	6.6	ug/L	12	Standard
	Ag	107	96.0	2.8	**0.0031**	0.001	17.0	ug/L	98	Standard
	Cd	111	101.5	4.0	**0.0568**	0.002	3.9	mg/L	11	Standard
	Cd	114	243.8	21.8	**0.0563**	0.013	23.9	ug/L	21	Standard
>	**In**	115	481162.5	1.1				ug/L	547487	Standard
	Sn	118	790.0	15.5	**0.0989**	0.025	25.1	ug/L	450	Standard
	Sb	123	455.4	4.8	**0.1144**	0.005	4.7	ug/L	105	Standard
	Ba	135	6828454.6	0.9	**4232.2396**	20.556	0.5	ug/L	111	Standard
	Ce	140	12164.9	2.3				ug/L	107	Standard
>	**Tb**	159	829521.0	0.4				ug/L	890342	Standard
	Ho	165	176.7	18.8				ug/L	10	Standard
	Tl	203	129.7	8.2	**0.0170**	0.002	9.5	ug/L	19	Standard
	Tl	205	95.0	19.0	**0.0193**	0.003	17.6	ug/L	17	Standard
	Pb	206	521.0	9.8	**0.0734**	0.012	16.5	ug/L	247	Standard
	Pb	207	417.0	5.1	**0.0609**	0.006	10.2	ug/L	215	Standard
	Pb	208	1676.4	1.8	**0.0615**	0.002	3.3	ug/L	770	Standard
	U	238	9099.4	1.6	**1.8151**	0.034	1.9	ug/L	13	Standard
>	**Bi**	209	420359.8	0.4				ug/L	503143	Standard

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Na	23	15.0	33.3	**164.4381**	51.833	31.5	mg/L	2	Standard
Mg	24	263283.1	1.4	**356.5075**	9.102	2.6	mg/L	35	Standard
K	39	456.7	16.0	**2.1312**	0.355	16.7	mg/L	25	Standard
Ca	43	700.0	3.7	**130.7182**	6.161	4.7	mg/L	38	Standard
Fe	54	3184.3	4.9	**2.8411**	0.129	4.5	mg/L	126	Standard
Fe	57	2041.8	5.4	**6.8401**	0.287	4.2	mg/L	245	Standard
> **Sc-1**	45	25436.3	2.0				mg/L	25066	Standard
Cl	35	151004.1	1.2				ug/L	125857	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	445209.8	0.6				ug/L	1350	Standard
P	31	26399.6	1.7				ug/L	18393	Standard
S	34	4885.8	2.7				ug/L	3739	Standard
Sr	88	3080.3	7.6				ug/L	78	Standard
C	12	203.3	19.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	194.4	40.3				mg/L	2	Standard
Ho-1	165	176.7	18.8				mg/L	10	Standard
Er	166	186.7	8.2				mg/L	23	Standard
I	127	130585.3	6.7				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		107.129	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		88.117	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	87.886	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	83.547	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606096101
Sample Date/Time: Tuesday, June 21, 2016 16:07:10
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	51179.6	1.3				ug/L	60176	Standard
	Be	9	6.7	43.3	**0.0019**	0.005	248.3	ug/L	5	Standard
	Al	27	50980.9	25.3	**0.4489**	0.121	26.9	ug/L	832	Standard
	Sc	45	25962.2	3.5				ug/L	25066	Standard
	Ti	47	119.0	4.2	**0.4268**	0.032	7.4	ug/L	38	Standard
	V	51	1327.1	7.8	**0.0590**	0.015	25.5	ug/L	974	Standard
	Cr	52	10085.4	1.2	**0.6910**	0.038	5.5	ug/L	5792	Standard
	Cr	53	2786.9	12.0	**3.1009**	0.469	15.1	ug/L	347	Standard
	Mn	55	4068.2	4.6	**0.4397**	0.037	8.5	ug/L	1164	Standard
	Co	59	403.7	6.2	**0.0189**	0.004	21.3	ug/L	303	Standard
	Ni	60	539.0	3.3	**0.1179**	0.012	10.2	ug/L	291	Standard
	Cu	65	14898.0	0.8	**8.4790**	0.067	0.8	ug/L	173	Standard
	Zn	66	3517.4	1.5	**3.2574**	0.058	1.8	ug/L	130	Standard
>	**Ge**	72	477620.4	1.4				ug/L	491724	Standard
	As	75	1519.4	3.8	**1.5239**	0.036	2.3	ug/L	-25	Standard
	Se	82	49.8	7.3	**0.4026**	0.036	8.9	ug/L	12	Standard
	Se-1	77	174.7	19.2	**1.8996**	0.522	27.5	ug/L	57	Standard
>	**Ga**	71	81.7	12.7				mg/L	148	Standard
	Rb	85	1321.7	1.4				ug/L	18	Standard
	Y	89	409645.6	0.4				ug/L	401845	Standard
>	**Rh**	103	80.0	6.3				ug/L	10	Standard
	Mo	98	714.4	3.4	**0.3043**	0.009	3.0	ug/L	12	Standard
	Ag	107	102.7	8.3	**0.0027**	0.002	56.4	ug/L	98	Standard
	Cd	111	14.0	51.5	**0.0031**	0.004	131.5	mg/L	11	Standard
	Cd	114	24.8	60.7	**0.0012**	0.003	284.8	ug/L	21	Standard
>	**In**	115	527134.4	0.6				ug/L	547487	Standard
	Sn	118	2366.9	4.7	**0.3994**	0.023	5.8	ug/L	450	Standard
	Sb	123	152.2	11.5	**0.0296**	0.004	14.7	ug/L	105	Standard
	Ba	135	3191.0	19.6	**1.7498**	0.356	20.3	ug/L	111	Standard
	Ce	140	173.3	23.1				ug/L	107	Standard
>	**Tb**	159	840402.3	0.7				ug/L	890342	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	123.0	17.0	**0.0144**	0.003	21.3	ug/L	19	Standard
	Tl	205	116.7	31.0	**0.0217**	0.006	29.6	ug/L	17	Standard
	Pb	206	3120.0	3.9	**0.6516**	0.026	4.0	ug/L	247	Standard
	Pb	207	2680.2	1.7	**0.6156**	0.006	0.9	ug/L	215	Standard
	Pb	208	10994.6	2.0	**0.6718**	0.014	2.1	ug/L	770	Standard
	U	238	72.3	2.9	**0.0124**	0.000	2.0	ug/L	13	Standard
>	**Bi**	209	457373.4	1.0				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	35125.7	1.1	**46.5846**	1.473	3.2	mg/L	35	Standard
K	39	51.7	5.6	**0.1362**	0.007	5.1	mg/L	25	Standard
Ca	43	31.7	39.7	**0.6865**	2.370	345.2	mg/L	38	Standard
Fe	54	162.3	12.6	**0.0125**	0.021	169.6	mg/L	126	Standard
Fe	57	268.3	4.3	**-0.0679**	0.055	81.1	mg/L	245	Standard
> **Sc-1**	45	25962.2	3.5				mg/L	25066	Standard
Cl	35	155782.8	0.6				ug/L	125857	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	7928.7	7.4				ug/L	1350	Standard
P	31	21842.4	3.3				ug/L	18393	Standard
S	34	4624.0	1.7				ug/L	3739	Standard
Sr	88	61.7	4.7				ug/L	78	Standard
C	12	123.3	54.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	22.5	69.8				mg/L	2	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	16.7	124.9				mg/L	23	Standard
I	127	273253.9	9.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		85.050	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.132	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.283
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.903
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606096102
Sample Date/Time: Tuesday, June 21, 2016 16:10:21
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55466.4	1.7				ug/L	60176	Standard
	Be	9	10.0	50.0	**0.0061**	0.008	123.3	ug/L	5	Standard
	Al	27	3404100.9	2.1	**28.1074**	0.199	0.7	ug/L	832	Standard
	Sc	45	25237.7	1.7				ug/L	25066	Standard
	Ti	47	137.7	20.3	**0.5030**	0.133	26.4	ug/L	38	Standard
	V	51	1824.3	3.0	**0.1361**	0.015	10.9	ug/L	974	Standard
	Cr	52	9639.7	1.2	**0.5728**	0.021	3.6	ug/L	5792	Standard
	Cr	53	2536.9	7.6	**2.6926**	0.311	11.6	ug/L	347	Standard
	Mn	55	410336.5	3.0	**63.9418**	3.504	5.5	ug/L	1164	Standard
	Co	59	771.7	2.6	**0.0774**	0.003	4.5	ug/L	303	Standard
	Ni	60	1278.1	2.9	**0.5199**	0.037	7.2	ug/L	291	Standard
	Cu	65	956.4	1.4	**0.4368**	0.016	3.7	ug/L	173	Standard
	Zn	66	2255.5	3.4	**1.9395**	0.107	5.5	ug/L	130	Standard
>	**Ge**	72	492109.1	2.4				ug/L	491724	Standard
	As	75	628.2	9.2	**0.6327**	0.065	10.2	ug/L	-25	Standard
	Se	82	84.5	5.3	**0.7234**	0.031	4.3	ug/L	12	Standard
	Se-1	77	165.7	4.1	**1.6947**	0.142	8.4	ug/L	57	Standard
>	**Ga**	71	128.3	21.5				mg/L	148	Standard
	Rb	85	1845.1	8.3				ug/L	18	Standard
	Y	89	407649.4	2.2				ug/L	401845	Standard
>	**Rh**	103	66.7	17.3				ug/L	10	Standard
	Mo	98	795.9	1.4	**0.3389**	0.011	3.3	ug/L	12	Standard
	Ag	107	240.3	3.9	**0.0269**	0.002	9.1	ug/L	98	Standard
	Cd	111	25.8	4.4	**0.0095**	0.000	3.6	mg/L	11	Standard
	Cd	114	76.3	38.0	**0.0129**	0.007	53.5	ug/L	21	Standard
>	**In**	115	528415.2	2.1				ug/L	547487	Standard
	Sn	118	820.0	7.2	**0.0898**	0.015	17.0	ug/L	450	Standard
	Sb	123	374.4	4.7	**0.0837**	0.002	2.9	ug/L	105	Standard
	Ba	135	25131.8	1.1	**14.1323**	0.352	2.5	ug/L	111	Standard
	Ce	140	776.7	26.8				ug/L	107	Standard
>	**Tb**	159	852950.8	1.0				ug/L	890342	Standard
	Ho	165	40.0	12.5				ug/L	10	Standard
	Tl	203	322.3	8.3	**0.0415**	0.004	9.0	ug/L	19	Standard
	Tl	205	273.3	11.9	**0.0475**	0.005	11.3	ug/L	17	Standard
	Pb	206	550.0	3.4	**0.0646**	0.004	5.5	ug/L	247	Standard
	Pb	207	494.7	5.4	**0.0662**	0.007	10.5	ug/L	215	Standard
	Pb	208	1825.0	0.9	**0.0567**	0.001	1.9	ug/L	770	Standard
	U	238	550.3	3.0	**0.0961**	0.003	3.3	ug/L	13	Standard
>	**Bi**	209	476377.1	0.5				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	5382.6	8.6	**7.3029**	0.563	7.7	mg/L	35	Standard
K	39	113.3	10.2	**0.4482**	0.048	10.8	mg/L	25	Standard
Ca	43	105.0	23.8	**15.1842**	4.585	30.2	mg/L	38	Standard
Fe	54	182.7	18.3	**0.0355**	0.030	84.2	mg/L	126	Standard
Fe	57	376.7	12.3	**0.3841**	0.168	43.8	mg/L	245	Standard
> **Sc-1**	45	25237.7	1.7				mg/L	25066	Standard
Cl	35	165485.5	0.6				ug/L	125857	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	15875.0	3.1				ug/L	1350	Standard
P	31	18915.1	1.7				ug/L	18393	Standard
S	34	4484.0	2.4				ug/L	3739	Standard
Sr	88	145.0	6.0				ug/L	78	Standard
C	12	53.3	39.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	18.4	111.4				mg/L	2	Standard
Ho-1	165	40.0	12.5				mg/L	10	Standard
Er	166	33.3	75.5				mg/L	23	Standard
I	127	33351.8	7.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.174	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.078	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.517
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.680
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606099501
Sample Date/Time: Tuesday, June 21, 2016 16:13:33
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	168635.9	4.1				ug/L	60176	Standard
	Be	9	6.7	114.6	**-0.0058**	0.004	64.0	ug/L	5	Standard
	Al	27	18474058.8	4.7	**50.2007**	2.075	4.1	ug/L	832	Standard
	Sc	45	25611.7	6.8				ug/L	25066	Standard
	Ti	47	96.0	15.3	**0.3247**	0.061	18.9	ug/L	38	Standard
	V	51	329.6	160.1	**-0.1086**	0.096	88.6	ug/L	974	Standard
	Cr	52	8533.4	2.1	**0.5000**	0.036	7.3	ug/L	5792	Standard
	Cr	53	18279.4	4.6	**23.6005**	0.090	0.4	ug/L	347	Standard
	Mn	55	795230.1	6.4	**133.2539**	3.844	2.9	ug/L	1164	Standard
	Co	59	1757.4	10.4	**0.2603**	0.020	7.8	ug/L	303	Standard
	Ni	60	5918.8	6.2	**3.3415**	0.070	2.1	ug/L	291	Standard
	Cu	65	974.0	13.3	**0.4862**	0.060	12.3	ug/L	173	Standard
	Zn	66	25732.5	3.6	**26.4255**	0.290	1.1	ug/L	130	Standard
>	**Ge**	72	457809.6	4.2				ug/L	491724	Standard
	As	75	24304.8	12.7	**24.8619**	2.381	9.6	ug/L	-25	Standard
	Se	82	10353.3	13.1	**107.2820**	10.769	10.0	ug/L	12	Standard
	Se-1	77	3338.4	7.4	**50.0689**	2.631	5.3	ug/L	57	Standard
>	**Ga**	71	190.0	18.2				mg/L	148	Standard
	Rb	85	67272.7	5.9				ug/L	18	Standard
	Y	89	392267.7	7.8				ug/L	401845	Standard
>	**Rh**	103	6212.9	7.3				ug/L	10	Standard
	Mo	98	66.8	16.5	**0.0261**	0.003	10.8	ug/L	12	Standard
	Ag	107	141.7	8.0	**0.0112**	0.002	19.1	ug/L	98	Standard
	Cd	111	25.2	33.7	**0.0099**	0.004	38.5	mg/L	11	Standard
	Cd	114	42.8	22.6	**0.0058**	0.002	26.8	ug/L	21	Standard
>	**In**	115	495596.9	7.2				ug/L	547487	Standard
	Sn	118	453.3	8.9	**0.0231**	0.015	65.7	ug/L	450	Standard
	Sb	123	307.9	14.7	**0.0722**	0.006	8.8	ug/L	105	Standard
	Ba	135	1737649.7	4.8	**1046.7670**	27.756	2.7	ug/L	111	Standard
	Ce	140	60.0	22.0				ug/L	107	Standard
>	**Tb**	159	833968.6	4.3				ug/L	890342	Standard
	Ho	165	16.7	34.6				ug/L	10	Standard
	Tl	203	93.0	16.9	**0.0113**	0.003	22.9	ug/L	19	Standard
	Tl	205	90.0	16.7	**0.0185**	0.003	15.2	ug/L	17	Standard
	Pb	206	345.7	4.5	**0.0311**	0.007	21.6	ug/L	247	Standard
	Pb	207	301.0	3.7	**0.0302**	0.000	0.9	ug/L	215	Standard
	Pb	208	1072.7	2.8	**0.0184**	0.001	6.1	ug/L	770	Standard
	U	238	4.3	35.3	**0.0001**	0.000	664.3	ug/L	13	Standard
>	**Bi**	209	416771.5	4.0				ug/L	503143	Standard

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Na	23	8.3	91.7	**92.7162**	88.289	95.2	mg/L	2	Standard
Mg	24	248689.5	5.2	**334.6353**	8.738	2.6	mg/L	35	Standard
K	39	770.0	3.9	**3.6624**	0.402	11.0	mg/L	25	Standard
Ca	43	676.7	8.2	**125.1812**	3.636	2.9	mg/L	38	Standard
Fe	54	913.9	19.2	**0.7080**	0.107	15.2	mg/L	126	Standard
Fe	57	1341.7	7.5	**4.0874**	0.184	4.5	mg/L	245	Standard
> **Sc-1**	45	25611.7	6.8				mg/L	25066	Standard
Cl	35	163994.5	4.3				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	2535152.6	9.1				ug/L	1350	Standard
P	31	21693.9	7.1				ug/L	18393	Standard
S	34	5349.3	7.3				ug/L	3739	Standard
Sr	88	17340.0	7.2				ug/L	78	Standard
C	12	46.7	24.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.7	100.4				mg/L	2	Standard
Ho-1	165	16.7	34.6				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	23	Standard
I	127	915873.2	10.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		280.238	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.103	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.522
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		82.834
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Se 82 Upper, S, EEE	Se	82	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606099502
Sample Date/Time: Tuesday, June 21, 2016 16:16:44
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	161934.6	2.9				ug/L	60176	Standard
	Be	9	5.0	0.0	**-0.0064**	0.000	1.1	ug/L	5	Standard
	Al	27	18034095.9	1.2	**51.0410**	1.601	3.1	ug/L	832	Standard
	Sc	45	25640.0	0.6				ug/L	25066	Standard
	Ti	47	101.0	11.2	**0.3353**	0.057	17.0	ug/L	38	Standard
	V	51	557.0	72.8	**-0.0732**	0.071	97.4	ug/L	974	Standard
	Cr	52	8384.0	1.2	**0.4274**	0.017	4.0	ug/L	5792	Standard
	Cr	53	17313.2	4.7	**21.5821**	0.836	3.9	ug/L	347	Standard
	Mn	55	803112.8	0.5	**130.2269**	0.853	0.7	ug/L	1164	Standard
	Co	59	1799.1	3.0	**0.2578**	0.012	4.7	ug/L	303	Standard
	Ni	60	5982.8	1.8	**3.2648**	0.077	2.3	ug/L	291	Standard
	Cu	65	1150.7	3.3	**0.5706**	0.016	2.9	ug/L	173	Standard
	Zn	66	24866.4	0.7	**24.6790**	0.202	0.8	ug/L	130	Standard
>	**Ge**	72	473336.7	1.0				ug/L	491724	Standard
	As	75	25587.3	1.8	**25.3566**	0.273	1.1	ug/L	-25	Standard
	Se	82	10890.0	1.7	**109.3307**	1.159	1.1	ug/L	12	Standard
	Se-1	77	3343.0	3.9	**48.4872**	1.708	3.5	ug/L	57	Standard
>	**Ga**	71	181.7	12.7				mg/L	148	Standard
	Rb	85	66679.8	2.2				ug/L	18	Standard
	Y	89	414678.4	1.0				ug/L	401845	Standard
>	**Rh**	103	6289.6	5.0				ug/L	10	Standard
	Mo	98	37.1	14.9	**0.0122**	0.003	21.4	ug/L	12	Standard
	Ag	107	130.3	5.8	**0.0083**	0.002	18.8	ug/L	98	Standard
	Cd	111	31.2	14.4	**0.0131**	0.003	20.3	mg/L	11	Standard
	Cd	114	39.9	47.6	**0.0049**	0.004	88.5	ug/L	21	Standard
>	**In**	115	510227.1	2.2				ug/L	547487	Standard
	Sn	118	625.0	2.9	**0.0551**	0.005	8.2	ug/L	450	Standard
	Sb	123	301.2	2.3	**0.0685**	0.003	3.9	ug/L	105	Standard
	Ba	135	1706474.6	1.4	**997.5420**	18.016	1.8	ug/L	111	Standard
	Ce	140	70.0	39.8				ug/L	107	Standard
>	**Tb**	159	847245.8	1.6				ug/L	890342	Standard
	Ho	165	16.7	34.6				ug/L	10	Standard
	Tl	203	82.0	5.6	**0.0095**	0.001	7.4	ug/L	19	Standard
	Tl	205	63.3	19.9	**0.0132**	0.002	18.3	ug/L	17	Standard
	Pb	206	2104.8	3.5	**0.4651**	0.017	3.6	ug/L	247	Standard
	Pb	207	1755.4	1.6	**0.4250**	0.008	1.8	ug/L	215	Standard
	Pb	208	6586.6	2.3	**0.4183**	0.011	2.6	ug/L	770	Standard
	U	238	3.3	75.5	**-0.0002**	0.001	311.3	ug/L	13	Standard
>	**Bi**	209	419186.3	0.3				ug/L	503143	Standard

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Na	23	11.7	49.5	**127.1945**	62.567	49.2	mg/L	2	Standard
Mg	24	247534.5	2.1	**332.4511**	8.574	2.6	mg/L	35	Standard
K	39	821.7	11.6	**3.8912**	0.453	11.6	mg/L	25	Standard
Ca	43	693.3	9.8	**128.3410**	13.655	10.6	mg/L	38	Standard
Fe	54	995.6	6.1	**0.7869**	0.051	6.4	mg/L	126	Standard
Fe	57	1348.4	5.9	**4.1068**	0.292	7.1	mg/L	245	Standard
> **Sc-1**	45	25640.0	0.6				mg/L	25066	Standard
Cl	35	170844.7	1.8				ug/L	125857	Standard
Kr	83	3.0	66.7				ug/L	1	Standard
Br	81	2578824.0	0.0				ug/L	1350	Standard
P	31	21972.6	2.3				ug/L	18393	Standard
S	34	5225.9	2.7				ug/L	3739	Standard
Sr	88	16430.6	4.1				ug/L	78	Standard
C	12	46.7	32.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.0	111.0				mg/L	2	Standard
Ho-1	165	16.7	34.6				mg/L	10	Standard
Er	166	20.0	86.6				mg/L	23	Standard
I	127	815214.3	2.9				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		269.102	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.261	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.194
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		83.314
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Se 82 Upper, S, EEE	Se	82	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 16:19:57
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	53255.1	2.6				ug/L	60176	Standard
	Be	9	34201.9	0.2	**53.8492**	1.444	2.7	ug/L	5	Standard
	Al	27	6443317.1	1.2	**55.4427**	1.386	2.5	ug/L	832	Standard
	Sc	45	29281.6	1.0				ug/L	25066	Standard
	Ti	47	22756.4	2.7	**106.0921**	2.711	2.6	ug/L	38	Standard
	V	51	330023.3	1.9	**49.9178**	0.818	1.6	ug/L	974	Standard
	Cr	52	374935.6	2.1	**52.2804**	1.022	2.0	ug/L	5792	Standard
	Cr	53	48235.0	2.8	**52.8231**	1.387	2.6	ug/L	347	Standard
	Mn	55	352441.5	1.8	**49.5016**	0.742	1.5	ug/L	1164	Standard
	Co	59	322946.3	1.0	**47.8265**	0.311	0.7	ug/L	303	Standard
	Ni	60	103457.1	1.6	**51.7034**	0.790	1.5	ug/L	291	Standard
	Cu	65	102599.3	1.6	**51.6656**	0.731	1.4	ug/L	173	Standard
	Zn	66	58130.6	0.7	**50.3515**	0.428	0.9	ug/L	130	Standard
>	Ge	72	544960.4	0.5				ug/L	491724	Standard
	As	75	57215.3	2.2	**49.2169**	0.986	2.0	ug/L	-25	Standard
	Se	82	5680.0	0.8	**49.4814**	0.520	1.1	ug/L	12	Standard
	Se-1	77	4029.9	3.0	**50.7996**	1.419	2.8	ug/L	57	Standard
>	Ga	71	136.7	2.1				mg/L	148	Standard
	Rb	85	848.4	0.7				ug/L	18	Standard
	Y	89	441171.0	0.9				ug/L	401845	Standard
>	Rh	103	98.3	34.6				ug/L	10	Standard
	Mo	98	240530.6	0.1	**95.5654**	2.386	2.5	ug/L	12	Standard
	Ag	107	314903.2	0.7	**50.9642**	1.103	2.2	ug/L	98	Standard
	Cd	111	99040.2	2.0	**50.2851**	0.336	0.7	mg/L	11	Standard
	Cd	114	242003.9	1.6	**50.5109**	0.771	1.5	ug/L	21	Standard
>	In	115	573676.8	2.4				ug/L	547487	Standard
	Sn	118	268045.3	0.6	**49.2020**	0.945	1.9	ug/L	450	Standard
	Sb	123	224141.2	0.6	**50.3723**	1.071	2.1	ug/L	105	Standard
	Ba	135	96926.4	0.9	**50.3436**	0.859	1.7	ug/L	111	Standard
	Ce	140	86.7	38.4				ug/L	107	Standard
>	Tb	159	919162.1	0.7				ug/L	890342	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	383744.4	1.7	**49.4533**	0.202	0.4	ug/L	19	Standard
	Tl	205	316340.9	2.1	**49.6852**	0.346	0.7	ug/L	17	Standard
	Pb	206	242321.1	0.6	**48.5289**	1.001	2.1	ug/L	247	Standard
	Pb	207	218155.0	0.4	**48.0608**	0.946	2.0	ug/L	215	Standard
	Pb	208	851760.1	1.1	**50.1133**	0.387	0.8	ug/L	770	Standard
	U	238	300943.2	1.1	**48.8537**	0.383	0.8	ug/L	13	Standard
>	Bi	209	516771.8	1.8				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3847.2	2.3	**4.4854**	0.083	1.8	mg/L	35	Standard
K	39	1120.0	5.4	**4.6686**	0.296	6.3	mg/L	25	Standard
Ca	43	61.7	49.5	**5.0777**	5.123	100.9	mg/L	38	Standard
Fe	54	5797.8	2.5	**4.5733**	0.113	2.5	mg/L	126	Standard
Fe	57	1638.4	11.3	**4.4400**	0.621	14.0	mg/L	245	Standard
> **Sc-1**	45	29281.6	1.0				mg/L	25066	Standard
Cl	35	158279.8	0.9				ug/L	125857	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	7785.3	7.0				ug/L	1350	Standard
P	31	24633.3	2.3				ug/L	18393	Standard
S	34	5546.0	5.0				ug/L	3739	Standard
Sr	88	78.3	26.6				ug/L	78	Standard
C	12	36.7	83.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.9	217.0				mg/L	2	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	7436.9	29.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	107.698		
Al	27	110.885		
Sc	45			
Ti	47	106.092		
V	51	99.836		
Cr	52	104.561		
Cr	53			
Mn	55	99.003		
Co	59	95.653		
Ni	60	103.407		
Cu	65	103.331		
Zn	66	100.703		
> Ge	72		110.827	
As	75	98.434		
Se	82	98.963		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	95.565		
Ag	107	101.928		
Cd	111	100.570		
Cd	114			
> In	115		104.784	
Sn	118	98.404		
Sb	123	100.745		
Ba	135	100.687		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.907		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.227		
U	238	97.707		
> Bi	209		102.709	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 16:23:09
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56266.0	2.0				ug/L	60176	Standard
	Be	9	25.0	80.0	**0.0280**	0.030	105.7	ug/L	5	Standard
	Al	27	7918.3	94.7	**0.0560**	0.061	108.1	ug/L	832	Standard
	Sc	45	29356.8	5.8				ug/L	25066	Standard
	Ti	47	35.0	18.7	**-0.0382**	0.028	74.5	ug/L	38	Standard
	V	51	1134.6	16.5	**0.0083**	0.030	365.3	ug/L	974	Standard
	Cr	52	6818.2	1.1	**0.0629**	0.027	42.6	ug/L	5792	Standard
	Cr	53	1238.4	11.1	**1.0052**	0.129	12.8	ug/L	347	Standard
	Mn	55	1320.1	12.1	**-0.0219**	0.024	109.1	ug/L	1164	Standard
	Co	59	310.0	11.8	**-0.0016**	0.006	351.9	ug/L	303	Standard
	Ni	60	235.3	8.6	**-0.0679**	0.011	16.8	ug/L	291	Standard
	Cu	65	177.0	8.0	**-0.0049**	0.008	164.6	ug/L	173	Standard
	Zn	66	177.0	5.2	**-0.0754**	0.007	9.0	ug/L	130	Standard
>	**Ge**	72	524620.7	2.1				ug/L	491724	Standard
	As	75	-13.2	80.2	**0.0220**	0.010	43.5	ug/L	-25	Standard
	Se	82	28.7	3.3	**0.1675**	0.014	8.3	ug/L	12	Standard
	Se-1	77	113.7	8.9	**0.8568**	0.111	13.0	ug/L	57	Standard
>	**Ga**	71	91.7	13.7				mg/L	148	Standard
	Rb	85	53.3	84.0				ug/L	18	Standard
	Y	89	460825.3	1.3				ug/L	401845	Standard
>	**Rh**	103	101.7	25.2				ug/L	10	Standard
	Mo	98	249.0	15.8	**0.0890**	0.015	16.5	ug/L	12	Standard
	Ag	107	151.0	31.3	**0.0077**	0.007	94.9	ug/L	98	Standard
	Cd	111	24.8	83.9	**0.0072**	0.010	139.1	mg/L	11	Standard
	Cd	114	38.5	121.3	**0.0032**	0.009	291.6	ug/L	21	Standard
>	**In**	115	607357.0	0.3				ug/L	547487	Standard
	Sn	118	863.4	16.0	**0.0759**	0.024	32.0	ug/L	450	Standard
	Sb	123	252.1	31.9	**0.0459**	0.017	37.5	ug/L	105	Standard
	Ba	135	755.7	103.5	**0.3163**	0.386	122.0	ug/L	111	Standard
	Ce	140	33.3	70.9				ug/L	107	Standard
>	**Tb**	159	941140.6	1.6				ug/L	890342	Standard
	Ho	165	6.7	114.6				ug/L	10	Standard
	Tl	203	152.0	39.9	**0.0158**	0.008	49.6	ug/L	19	Standard
	Tl	205	98.3	43.8	**0.0163**	0.007	41.4	ug/L	17	Standard
	Pb	206	282.7	4.4	**0.0011**	0.002	198.8	ug/L	247	Standard
	Pb	207	255.7	7.2	**0.0036**	0.003	80.4	ug/L	215	Standard
	Pb	208	1014.3	8.8	**-0.0008**	0.006	712.2	ug/L	770	Standard
	U	238	74.0	54.7	**0.0111**	0.007	59.3	ug/L	13	Standard
>	**Bi**	209	522423.3	2.2				ug/L	503143	Standard

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Na	23	1.7	173.2	**15.5124**	26.860	173.1	mg/L	2	Standard
Mg	24	78.3	48.8	**0.0520**	0.042	80.2	mg/L	35	Standard
K	39	28.3	53.9	**0.0109**	0.074	678.3	mg/L	25	Standard
Ca	43	20.0	25.0	**-1.9217**	1.047	54.5	mg/L	38	Standard
Fe	54	152.7	6.9	**-0.0127**	0.009	69.1	mg/L	126	Standard
Fe	57	248.3	9.9	**-0.2512**	0.109	43.3	mg/L	245	Standard
> **Sc-1**	45	29356.8	5.8				mg/L	25066	Standard
Cl	35	163319.6	1.6				ug/L	125857	Standard
Kr	83	3.3	17.3				ug/L	1	Standard
Br	81	4450.7	3.2				ug/L	1350	Standard
P	31	25079.1	2.0				ug/L	18393	Standard
S	34	5581.0	3.4				ug/L	3739	Standard
Sr	88	80.0	25.0				ug/L	78	Standard
C	12	76.7	7.5				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.2	186.8				mg/L	2	Standard
Ho-1	165	6.7	114.6				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	3778.8	9.6				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		106.690	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.935
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.832
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW 17 WG573111-04
Sample Date/Time: Tuesday, June 21, 2016 17:12:00
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54402.5	1.6				ug/L	60176	Standard
	Be	9	5.0	100.0	**-0.0013**	0.008	610.8	ug/L	5	Standard
	Al	27	10618.7	0.6	**0.0810**	0.001	1.1	ug/L	832	Standard
	Sc	45	24893.8	1.7				ug/L	25066	Standard
	Ti	47	40.7	25.8	**0.0061**	0.051	846.2	ug/L	38	Standard
	V	51	1126.6	6.2	**0.0221**	0.007	33.6	ug/L	974	Standard
	Cr	52	8748.9	1.0	**0.4586**	0.027	6.0	ug/L	5792	Standard
	Cr	53	838.4	4.0	**0.6314**	0.050	8.0	ug/L	347	Standard
	Mn	55	1743.4	2.0	**0.0621**	0.003	4.4	ug/L	1164	Standard
	Co	59	260.3	10.0	**-0.0058**	0.005	78.5	ug/L	303	Standard
	Ni	60	358.3	2.1	**0.0122**	0.003	26.6	ug/L	291	Standard
	Cu	65	173.7	5.2	**0.0013**	0.007	572.1	ug/L	173	Standard
	Zn	66	1250.4	1.5	**0.9925**	0.026	2.6	ug/L	130	Standard
>	**Ge**	72	483042.7	2.3				ug/L	491724	Standard
	As	75	-21.6	45.1	**0.0130**	0.009	71.6	ug/L	-25	Standard
	Se	82	20.3	42.3	**0.1056**	0.079	74.7	ug/L	12	Standard
	Se-1	77	60.7	14.0	**0.2232**	0.110	49.2	ug/L	57	Standard
>	**Ga**	71	95.0	27.3				mg/L	148	Standard
	Rb	85	53.3	28.6				ug/L	18	Standard
	Y	89	406515.1	1.2				ug/L	401845	Standard
>	**Rh**	103	40.0	33.1				ug/L	10	Standard
	Mo	98	66.3	12.4	**0.0239**	0.004	16.1	ug/L	12	Standard
	Ag	107	76.0	9.9	**-0.0021**	0.001	70.0	ug/L	98	Standard
	Cd	111	4.2	59.6	**-0.0024**	0.001	56.9	mg/L	11	Standard
	Cd	114	16.2	34.0	**-0.0008**	0.001	148.3	ug/L	21	Standard
>	**In**	115	532744.5	1.4				ug/L	547487	Standard
	Sn	118	578.3	18.2	**0.0405**	0.021	51.9	ug/L	450	Standard
	Sb	123	112.7	14.7	**0.0197**	0.004	21.1	ug/L	105	Standard
	Ba	135	77.3	10.0	**-0.0123**	0.004	33.0	ug/L	111	Standard
	Ce	140	56.7	20.4				ug/L	107	Standard
>	**Tb**	159	863639.0	0.6				ug/L	890342	Standard
	Ho	165	10.0	86.6				ug/L	10	Standard
	Tl	203	20.7	12.2	**-0.0007**	0.000	46.3	ug/L	19	Standard
	Tl	205	13.3	57.3	**0.0032**	0.001	39.6	ug/L	17	Standard
	Pb	206	252.0	6.0	**-0.0014**	0.003	236.2	ug/L	247	Standard
	Pb	207	197.0	9.6	**-0.0061**	0.004	71.2	ug/L	215	Standard
	Pb	208	811.7	2.3	**-0.0092**	0.001	11.3	ug/L	770	Standard
	U	238	4.3	13.3	**-0.0001**	0.000	120.6	ug/L	13	Standard
>	**Bi**	209	487095.8	0.3				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	46.7	22.3	**0.0258**	0.015	59.6	mg/L	35	Standard
K	39	21.7	26.6	**-0.0039**	0.028	718.4	mg/L	25	Standard
Ca	43	25.0	0.0	**-0.3636**	0.085	23.3	mg/L	38	Standard
Fe	54	131.2	2.2	**-0.0111**	0.005	43.5	mg/L	126	Standard
Fe	57	268.3	15.6	**-0.0229**	0.182	793.2	mg/L	245	Standard
Sc-1	45	24893.8	1.7				mg/L	25066	Standard
Cl	35	153737.5	1.5				ug/L	125857	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	1480.1	4.7				ug/L	1350	Standard
P	31	20108.3	1.0				ug/L	18393	Standard
S	34	5007.5	3.6				ug/L	3739	Standard
Sr	88	75.0	24.0				ug/L	78	Standard
C	12	86.7	56.9				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.7	86.6				mg/L	2	Standard
Ho-1	165	10.0	86.6				mg/L	10	Standard
Er	166	0.0					mg/L	23	Standard
I	127	1100.0	6.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.406	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.235	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.307
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.811
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 17 WG573111-04
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Method 6020 - Summary Report

Sample ID: LCSW 17 WG573111-05
Sample Date/Time: Tuesday, June 21, 2016 17:15:12
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53402.3	2.8				ug/L	60176	Standard
	Be	9	32992.6	3.7	**51.7865**	1.692	3.3	ug/L	5	Standard
	Al	27	12198.2	3.5	**0.0963**	0.003	3.3	ug/L	832	Standard
	Sc	45	25010.7	4.4				ug/L	25066	Standard
	Ti	47	36.7	19.3	**-0.0127**	0.038	300.5	ug/L	38	Standard
	V	51	309717.1	0.7	**53.3313**	0.527	1.0	ug/L	974	Standard
	Cr	52	342937.1	0.8	**54.4644**	0.576	1.1	ug/L	5792	Standard
	Cr	53	43542.5	1.3	**54.2826**	0.411	0.8	ug/L	347	Standard
	Mn	55	351550.5	1.0	**56.2349**	1.195	2.1	ug/L	1164	Standard
	Co	59	316884.2	0.8	**53.4233**	1.002	1.9	ug/L	303	Standard
	Ni	60	94717.8	1.1	**53.8819**	0.368	0.7	ug/L	291	Standard
	Cu	65	94262.3	0.8	**54.0303**	0.520	1.0	ug/L	173	Standard
	Zn	66	54370.7	1.4	**53.6116**	0.241	0.4	ug/L	130	Standard
>	**Ge**	72	478860.5	1.7				ug/L	491724	Standard
	As	75	54535.7	0.7	**53.3915**	0.571	1.1	ug/L	-25	Standard
	Se	82	5489.3	0.8	**54.4366**	0.730	1.3	ug/L	12	Standard
	Se-1	77	3768.1	1.6	**54.1018**	0.084	0.2	ug/L	57	Standard
>	**Ga**	71	106.7	23.6				mg/L	148	Standard
	Rb	85	70.0	25.8				ug/L	18	Standard
	Y	89	420312.3	1.2				ug/L	401845	Standard
>	**Rh**	103	70.0	14.3				ug/L	10	Standard
	Mo	98	30.2	2.9	**0.0083**	0.001	6.6	ug/L	12	Standard
	Ag	107	9909.6	0.5	**1.6841**	0.042	2.5	ug/L	98	Standard
	Cd	111	95930.4	1.1	**51.6011**	0.537	1.0	mg/L	11	Standard
	Cd	114	231350.0	0.5	**51.1556**	0.846	1.7	ug/L	21	Standard
>	**In**	115	541530.1	2.0				ug/L	547487	Standard
	Sn	118	488.3	3.9	**0.0210**	0.003	13.6	ug/L	450	Standard
	Sb	123	205763.6	0.9	**48.9816**	0.890	1.8	ug/L	105	Standard
	Ba	135	93604.3	1.7	**51.4945**	0.191	0.4	ug/L	111	Standard
	Ce	140	73.3	20.8				ug/L	107	Standard
>	**Tb**	159	860719.0	2.3				ug/L	890342	Standard
	Ho	165	16.7	96.4				ug/L	10	Standard
	Tl	203	369565.4	1.5	**51.2366**	0.305	0.6	ug/L	19	Standard
	Tl	205	309835.9	0.4	**52.3608**	0.657	1.3	ug/L	17	Standard
	Pb	206	243588.1	0.4	**52.4792**	0.634	1.2	ug/L	247	Standard
	Pb	207	213081.9	0.8	**50.5043**	1.123	2.2	ug/L	215	Standard
	Pb	208	848492.0	0.7	**53.7161**	1.109	2.1	ug/L	770	Standard
	U	238	292643.2	0.8	**51.1091**	0.641	1.3	ug/L	13	Standard
>	**Bi**	209	480350.2	1.5				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	53.3	23.6	**0.0350**	0.020	55.8	mg/L	35	Standard
K	39	43.3	24.0	**0.1052**	0.059	55.9	mg/L	25	Standard
Ca	43	38.3	41.9	**2.3482**	3.443	146.6	mg/L	38	Standard
Fe	54	126.6	30.3	**-0.0161**	0.037	230.4	mg/L	126	Standard
Fe	57	250.0	12.5	**-0.1010**	0.134	132.3	mg/L	245	Standard
> **Sc-1**	45	25010.7	4.4				mg/L	25066	Standard
Cl	35	154303.8	1.1				ug/L	125857	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	1753.4	3.7				ug/L	1350	Standard
P	31	20824.3	0.3				ug/L	18393	Standard
S	34	4885.8	3.3				ug/L	3739	Standard
Sr	88	56.7	28.4				ug/L	78	Standard
C	12	36.7	15.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	8.9	8.2				mg/L	2	Standard
Ho-1	165	16.7	96.4				mg/L	10	Standard
Er	166	23.3	65.5				mg/L	23	Standard
I	127	1055.0	7.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.744	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.384	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.912
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.470
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606054006 WG573111-03
Sample Date/Time: Tuesday, June 21, 2016 17:18:23
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	53768.6	1.8				ug/L	60176	Standard
	Be	9	223.3	5.2	**0.3390**	0.013	4.0	ug/L	5	Standard
	Al	27	1723479.9	1.0	**14.6779**	0.117	0.8	ug/L	832	Standard
	Sc	45	25968.9	1.0				ug/L	25066	Standard
	Ti	47	174.3	23.9	**0.6975**	0.209	30.0	ug/L	38	Standard
	V	51	3187.1	1.0	**0.3676**	0.007	1.8	ug/L	974	Standard
	Cr	52	9962.3	2.2	**0.6307**	0.032	5.0	ug/L	5792	Standard
	Cr	53	1050.0	15.7	**0.8771**	0.206	23.5	ug/L	347	Standard
	Mn	55	96644.7	2.5	**14.9562**	0.439	2.9	ug/L	1164	Standard
	Co	59	26099.5	1.4	**4.2561**	0.058	1.4	ug/L	303	Standard
	Ni	60	9094.4	0.4	**4.8855**	0.040	0.8	ug/L	291	Standard
	Cu	65	962.0	3.3	**0.4423**	0.013	3.0	ug/L	173	Standard
	Zn	66	4916.8	1.4	**4.5256**	0.053	1.2	ug/L	130	Standard
>	**Ge**	72	489760.3	0.8				ug/L	491724	Standard
	As	75	1211.7	3.7	**1.1931**	0.045	3.8	ug/L	-25	Standard
	Se	82	46.7	17.2	**0.3607**	0.079	21.9	ug/L	12	Standard
	Se-1	77	79.0	14.9	**0.4737**	0.176	37.2	ug/L	57	Standard
>	**Ga**	71	271.7	15.3				mg/L	148	Standard
	Rb	85	4263.9	3.2				ug/L	18	Standard
	Y	89	440770.7	2.7				ug/L	401845	Standard
>	**Rh**	103	63.3	12.1				ug/L	10	Standard
	Mo	98	195.2	3.2	**0.0786**	0.003	4.2	ug/L	12	Standard
	Ag	107	113.0	15.1	**0.0042**	0.003	72.0	ug/L	98	Standard
	Cd	111	262.6	11.3	**0.1381**	0.015	10.9	mg/L	11	Standard
	Cd	114	702.5	10.7	**0.1526**	0.016	10.3	ug/L	21	Standard
>	**In**	115	535297.3	0.8				ug/L	547487	Standard
	Sn	118	651.7	5.8	**0.0543**	0.006	11.8	ug/L	450	Standard
	Sb	123	1542.7	18.6	**0.3642**	0.071	19.6	ug/L	105	Standard
	Ba	135	39728.0	0.6	**22.0778**	0.170	0.8	ug/L	111	Standard
	Ce	140	141161.2	0.1				ug/L	107	Standard
>	**Tb**	159	862084.5	1.3				ug/L	890342	Standard
	Ho	165	2525.2	0.9				ug/L	10	Standard
	Tl	203	237.3	1.4	**0.0286**	0.000	1.4	ug/L	19	Standard
	Tl	205	215.0	12.9	**0.0365**	0.005	13.1	ug/L	17	Standard
	Pb	206	988.7	2.5	**0.1535**	0.005	2.9	ug/L	247	Standard
	Pb	207	865.0	0.8	**0.1485**	0.002	1.1	ug/L	215	Standard
	Pb	208	3337.8	2.7	**0.1469**	0.006	4.0	ug/L	770	Standard
	U	238	1870.8	2.8	**0.3187**	0.008	2.5	ug/L	13	Standard
>	**Bi**	209	491187.2	0.5				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.7819**	30.791	173.2	mg/L	2	Standard
Mg	24	1156.7	3.8	**1.4947**	0.043	2.9	mg/L	35	Standard
K	39	66.7	22.9	**0.2083**	0.073	35.0	mg/L	25	Standard
Ca	43	60.0	28.9	**6.0703**	3.171	52.2	mg/L	38	Standard
Fe	54	927.1	5.1	**0.7125**	0.036	5.1	mg/L	126	Standard
Fe	57	453.3	12.5	**0.6351**	0.217	34.1	mg/L	245	Standard
> **Sc-1**	45	25968.9	1.0				mg/L	25066	Standard
Cl	35	162179.5	1.3				ug/L	125857	Standard
Kr	83	1.7	124.9				ug/L	1	Standard
Br	81	3033.6	2.3				ug/L	1350	Standard
P	31	21506.9	0.4				ug/L	18393	Standard
S	34	4834.1	0.8				ug/L	3739	Standard
Sr	88	95.0	26.3				ug/L	78	Standard
C	12	80.0	25.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	3728.6	6.7				mg/L	2	Standard
Ho-1	165	2525.2	0.9				mg/L	10	Standard
Er	166	2266.8	4.7				mg/L	23	Standard
I	127	11339.3	11.3				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		89.352	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.601	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.774
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.624
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606054007S WG573111-09
Sample Date/Time: Tuesday, June 21, 2016 17:21:35
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55648.7	1.0				ug/L	60176	Standard
	Be	9	35439.7	1.0	**53.3747**	0.542	1.0	ug/L	5	Standard
	Al	27	1734040.1	1.3	**14.2679**	0.205	1.4	ug/L	832	Standard
	Sc	45	25546.5	2.5				ug/L	25066	Standard
	Ti	47	195.0	1.4	**0.7899**	0.031	3.9	ug/L	38	Standard
	V	51	309925.0	0.5	**51.3311**	0.675	1.3	ug/L	974	Standard
	Cr	52	343998.6	1.2	**52.5323**	1.556	3.0	ug/L	5792	Standard
	Cr	53	43246.7	4.8	**51.8802**	3.426	6.6	ug/L	347	Standard
	Mn	55	421085.3	0.6	**64.8270**	1.302	2.0	ug/L	1164	Standard
	Co	59	336029.8	0.8	**54.5018**	1.427	2.6	ug/L	303	Standard
	Ni	60	104045.4	1.6	**56.9634**	1.904	3.3	ug/L	291	Standard
	Cu	65	95190.8	1.4	**52.4843**	0.914	1.7	ug/L	173	Standard
	Zn	66	58975.9	0.8	**55.9583**	1.065	1.9	ug/L	130	Standard
>	**Ge**	72	497816.0	1.8				ug/L	491724	Standard
	As	75	56479.5	0.3	**53.1942**	0.942	1.8	ug/L	-25	Standard
	Se	82	5338.4	1.1	**50.9267**	1.343	2.6	ug/L	12	Standard
	Se-1	77	3721.8	0.2	**51.3788**	0.854	1.7	ug/L	57	Standard
>	**Ga**	71	246.7	20.3				mg/L	148	Standard
	Rb	85	4018.9	6.2				ug/L	18	Standard
	Y	89	438370.4	1.5				ug/L	401845	Standard
>	**Rh**	103	75.0	20.0				ug/L	10	Standard
	Mo	98	177.1	10.3	**0.0704**	0.007	9.6	ug/L	12	Standard
	Ag	107	25202.6	1.7	**4.3298**	0.014	0.3	ug/L	98	Standard
	Cd	111	95691.9	1.4	**51.7579**	0.175	0.3	mg/L	11	Standard
	Cd	114	231930.1	2.9	**51.5555**	0.701	1.4	ug/L	21	Standard
>	**In**	115	538493.9	1.7				ug/L	547487	Standard
	Sn	118	535.0	0.9	**0.0307**	0.002	8.0	ug/L	450	Standard
	Sb	123	208964.7	1.0	**50.0186**	0.580	1.2	ug/L	105	Standard
	Ba	135	133008.3	1.3	**73.6104**	0.853	1.2	ug/L	111	Standard
	Ce	140	144677.5	1.4				ug/L	107	Standard
>	**Tb**	159	870588.4	1.2				ug/L	890342	Standard
	Ho	165	2515.2	1.4				ug/L	10	Standard
	Tl	203	376132.5	1.2	**50.4480**	0.208	0.4	ug/L	19	Standard
	Tl	205	310457.8	2.2	**50.7488**	0.818	1.6	ug/L	17	Standard
	Pb	206	249489.7	0.6	**51.9992**	0.813	1.6	ug/L	247	Standard
	Pb	207	216108.6	0.2	**49.5458**	0.596	1.2	ug/L	215	Standard
	Pb	208	835970.7	1.9	**51.1849**	0.557	1.1	ug/L	770	Standard
	U	238	296500.2	1.1	**50.0915**	0.324	0.6	ug/L	13	Standard
>	**Bi**	209	496523.1	1.1				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	1253.4	1.0	**1.6514**	0.045	2.7	mg/L	35	Standard
K	39	90.0	24.2	**0.3274**	0.105	31.9	mg/L	25	Standard
Ca	43	50.0	0.0	**4.3487**	0.242	5.6	mg/L	38	Standard
Fe	54	828.2	6.8	**0.6342**	0.039	6.2	mg/L	126	Standard
Fe	57	453.3	3.4	**0.6651**	0.095	14.3	mg/L	245	Standard
> **Sc-1**	45	25546.5	2.5				mg/L	25066	Standard
Cl	35	160715.9	0.9				ug/L	125857	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	6278.0	7.6				ug/L	1350	Standard
P	31	21558.7	3.0				ug/L	18393	Standard
S	34	4647.4	1.5				ug/L	3739	Standard
Sr	88	96.7	16.6				ug/L	78	Standard
C	12	80.0	33.1				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	3942.4	3.7				mg/L	2	Standard
Ho-1	165	2515.2	1.4				mg/L	10	Standard
Er	166	2396.9	12.6				mg/L	23	Standard
I	127	13020.6	8.0				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.477	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.239	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.357
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.684
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606054008SD WG573111-10
Sample Date/Time: Tuesday, June 21, 2016 17:24:46
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	55279.0	1.9				ug/L	60176	Standard
	Be	9	36627.6	1.2	**55.5439**	1.219	2.2	ug/L	5	Standard
	Al	27	1713238.5	1.0	**14.1936**	0.289	2.0	ug/L	832	Standard
	Sc	45	25197.6	2.6				ug/L	25066	Standard
	Ti	47	199.3	7.4	**0.8424**	0.087	10.4	ug/L	38	Standard
	V	51	309494.1	1.0	**52.7786**	0.658	1.2	ug/L	974	Standard
	Cr	52	347378.1	1.2	**54.6471**	1.197	2.2	ug/L	5792	Standard
	Cr	53	43514.1	2.2	**53.7328**	1.741	3.2	ug/L	347	Standard
	Mn	55	424846.4	0.6	**67.3400**	0.361	0.5	ug/L	1164	Standard
	Co	59	340025.8	0.7	**56.7736**	0.789	1.4	ug/L	303	Standard
	Ni	60	103607.1	1.5	**58.3956**	1.391	2.4	ug/L	291	Standard
	Cu	65	94948.3	1.4	**53.9039**	1.162	2.2	ug/L	173	Standard
	Zn	66	59000.7	0.9	**57.6432**	1.050	1.8	ug/L	130	Standard
>	**Ge**	72	483481.9	1.0				ug/L	491724	Standard
	As	75	55725.2	0.4	**54.0300**	0.345	0.6	ug/L	-25	Standard
	Se	82	5455.4	1.2	**53.5737**	0.261	0.5	ug/L	12	Standard
	Se-1	77	3687.1	2.8	**52.4054**	0.959	1.8	ug/L	57	Standard
>	**Ga**	71	291.7	5.5				mg/L	148	Standard
	Rb	85	3975.5	3.5				ug/L	18	Standard
	Y	89	437768.5	1.6				ug/L	401845	Standard
>	**Rh**	103	73.3	21.9				ug/L	10	Standard
	Mo	98	292.6	1.9	**0.1184**	0.004	3.1	ug/L	12	Standard
	Ag	107	6385.3	1.6	**1.0770**	0.028	2.6	ug/L	98	Standard
	Cd	111	98546.6	1.7	**52.8871**	1.151	2.2	mg/L	11	Standard
	Cd	114	241574.4	2.1	**53.2859**	1.073	2.0	ug/L	21	Standard
>	**In**	115	542760.7	1.3				ug/L	547487	Standard
	Sn	118	570.0	9.9	**0.0368**	0.012	33.4	ug/L	450	Standard
	Sb	123	210832.3	1.1	**50.0678**	0.730	1.5	ug/L	105	Standard
	Ba	135	135047.9	1.1	**74.1546**	1.297	1.7	ug/L	111	Standard
	Ce	140	141782.0	0.7				ug/L	107	Standard
>	**Tb**	159	865701.6	1.6				ug/L	890342	Standard
	Ho	165	2566.9	2.9				ug/L	10	Standard
	Tl	203	382403.7	0.7	**52.5418**	1.098	2.1	ug/L	19	Standard
	Tl	205	317463.1	0.8	**53.1627**	1.073	2.0	ug/L	17	Standard
	Pb	206	248494.2	0.2	**53.0491**	0.826	1.6	ug/L	247	Standard
	Pb	207	215899.1	1.2	**50.7054**	1.283	2.5	ug/L	215	Standard
	Pb	208	857334.8	1.1	**53.7766**	0.992	1.8	ug/L	770	Standard
	U	238	302840.8	1.0	**52.4120**	1.195	2.3	ug/L	13	Standard
>	**Bi**	209	484780.2	1.4				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	1276.7	8.6	**1.7042**	0.107	6.3	mg/L	35	Standard
K	39	51.7	49.7	**0.1459**	0.135	92.5	mg/L	25	Standard
Ca	43	55.0	9.1	**5.4513**	0.801	14.7	mg/L	38	Standard
Fe	54	811.1	8.4	**0.6307**	0.085	13.5	mg/L	126	Standard
Fe	57	461.7	3.8	**0.7224**	0.112	15.4	mg/L	245	Standard
> **Sc-1**	45	25197.6	2.6				mg/L	25066	Standard
Cl	35	161517.7	0.6				ug/L	125857	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	2850.3	4.7				ug/L	1350	Standard
P	31	22705.3	1.8				ug/L	18393	Standard
S	34	4462.3	4.8				ug/L	3739	Standard
Sr	88	113.3	17.8				ug/L	78	Standard
C	12	80.0	25.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	3943.7	6.5				mg/L	2	Standard
Ho-1	165	2566.9	2.9				mg/L	10	Standard
Er	166	2160.2	8.1				mg/L	23	Standard
I	127	12827.1	9.5				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.862	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.324	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.137
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.350
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606062401
Sample Date/Time: Tuesday, June 21, 2016 17:27:58
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58089.5	1.1				ug/L	60176	Standard
	Be	9	30.0	33.3	**0.0342**	0.014	41.0	ug/L	5	Standard
	Al	27	6143141.8	1.0	**48.4472**	0.944	1.9	ug/L	832	Standard
	Sc	45	25180.9	3.0				ug/L	25066	Standard
	Ti	47	164.0	25.9	**0.6648**	0.220	33.1	ug/L	38	Standard
	V	51	185031.3	1.5	**31.8430**	0.072	0.2	ug/L	974	Standard
	Cr	52	18607.9	15.7	**2.0656**	0.441	21.3	ug/L	5792	Standard
	Cr	53	3327.0	10.6	**3.7691**	0.381	10.1	ug/L	347	Standard
	Mn	55	46439.1	0.7	**7.2533**	0.079	1.1	ug/L	1164	Standard
	Co	59	5982.5	1.5	**0.9617**	0.001	0.1	ug/L	303	Standard
	Ni	60	16639.8	1.1	**9.3260**	0.213	2.3	ug/L	291	Standard
	Cu	65	8174.2	0.6	**4.6046**	0.102	2.2	ug/L	173	Standard
	Zn	66	49644.2	2.1	**49.0098**	0.387	0.8	ug/L	130	Standard
>	**Ge**	72	478054.7	1.6				ug/L	491724	Standard
	As	75	1224.7	7.5	**1.2333**	0.072	5.9	ug/L	-25	Standard
	Se	82	472.0	3.9	**4.6028**	0.133	2.9	ug/L	12	Standard
	Se-1	77	207.0	7.7	**2.3618**	0.199	8.4	ug/L	57	Standard
>	**Ga**	71	200.0	23.8				mg/L	148	Standard
	Rb	85	14974.1	2.7				ug/L	18	Standard
	Y	89	411795.2	1.6				ug/L	401845	Standard
>	**Rh**	103	106.7	9.8				ug/L	10	Standard
	Mo	98	231188.7	0.7	**98.5932**	1.267	1.3	ug/L	12	Standard
	Ag	107	131.7	7.2	**0.0075**	0.002	23.5	ug/L	98	Standard
	Cd	111	-78.0	39.1	**-0.0472**	0.016	34.7	mg/L	11	Standard
	Cd	114	617.4	6.3	**0.1339**	0.009	7.0	ug/L	21	Standard
>	**In**	115	534274.2	0.6				ug/L	547487	Standard
	Sn	118	656.7	7.2	**0.0556**	0.010	17.6	ug/L	450	Standard
	Sb	123	2302.2	22.5	**0.5481**	0.126	23.0	ug/L	105	Standard
	Ba	135	32140.4	1.2	**17.8854**	0.296	1.7	ug/L	111	Standard
	Ce	140	261.7	29.6				ug/L	107	Standard
>	**Tb**	159	856456.1	0.5				ug/L	890342	Standard
	Ho	165	20.0	25.0				ug/L	10	Standard
	Tl	203	426.7	20.5	**0.0564**	0.012	21.0	ug/L	19	Standard
	Tl	205	363.3	45.3	**0.0631**	0.028	43.7	ug/L	17	Standard
	Pb	206	788.4	5.3	**0.1175**	0.008	6.8	ug/L	247	Standard
	Pb	207	708.7	4.4	**0.1184**	0.006	5.2	ug/L	215	Standard
	Pb	208	2871.1	13.6	**0.1246**	0.024	18.9	ug/L	770	Standard
	U	238	398.7	34.3	**0.0697**	0.024	33.8	ug/L	13	Standard
>	**Bi**	209	473349.9	0.8				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	16877.7	3.1	**23.0643**	1.225	5.3	mg/L	35	Standard
K	39	280.0	25.0	**1.2812**	0.375	29.2	mg/L	25	Standard
Ca	43	126.7	8.2	**19.5068**	1.380	7.1	mg/L	38	Standard
Fe	54	143.3	6.8	**-0.0010**	0.012	1154.4	mg/L	126	Standard
Fe	57	358.3	9.3	**0.3188**	0.164	51.3	mg/L	245	Standard
> **Sc-1**	45	25180.9	3.0				mg/L	25066	Standard
Cl	35	205780.0	0.7				ug/L	125857	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	97895.4	2.7				ug/L	1350	Standard
P	31	21284.9	2.0				ug/L	18393	Standard
S	34	4504.0	2.9				ug/L	3739	Standard
Sr	88	191.7	4.0				ug/L	78	Standard
C	12	73.3	34.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	88.2				mg/L	0	Standard
Dy	164	29.4	101.4				mg/L	2	Standard
Ho-1	165	20.0	25.0				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	12732.0	2.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		96.533	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.220	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.587
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.079
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606062401PS WG573473-01
Sample Date/Time: Tuesday, June 21, 2016 17:31:09
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59555.2	1.6				ug/L	60176	Standard
	Be	9	38114.6	4.0	**53.6277**	1.538	2.9	ug/L	5	Standard
	Al	27	6236393.4	1.5	**47.9667**	0.190	0.4	ug/L	832	Standard
	Sc	45	25247.7	3.0				ug/L	25066	Standard
	Ti	47	149.7	6.7	**0.5489**	0.064	11.6	ug/L	38	Standard
	V	51	510919.3	1.1	**83.6813**	1.623	1.9	ug/L	974	Standard
	Cr	52	357055.0	1.4	**53.8592**	0.614	1.1	ug/L	5792	Standard
	Cr	53	46658.4	3.1	**55.2620**	1.342	2.4	ug/L	347	Standard
	Mn	55	386237.5	1.3	**58.7100**	1.701	2.9	ug/L	1164	Standard
	Co	59	326523.7	0.8	**52.2967**	1.090	2.1	ug/L	303	Standard
	Ni	60	110932.7	1.4	**59.9730**	0.773	1.3	ug/L	291	Standard
	Cu	65	103725.9	2.2	**56.4780**	0.362	0.6	ug/L	173	Standard
	Zn	66	105350.7	1.8	**98.8815**	0.625	0.6	ug/L	130	Standard
>	**Ge**	72	504099.0	2.3				ug/L	491724	Standard
	As	75	58925.6	0.8	**54.8077**	0.985	1.8	ug/L	-25	Standard
	Se	82	6143.8	2.0	**57.9003**	2.000	3.5	ug/L	12	Standard
	Se-1	77	4049.5	3.3	**55.2355**	0.588	1.1	ug/L	57	Standard
>	**Ga**	71	220.0	17.2				mg/L	148	Standard
	Rb	85	14929.0	0.6				ug/L	18	Standard
	Y	89	406274.5	1.9				ug/L	401845	Standard
>	**Rh**	103	120.0	21.7				ug/L	10	Standard
	Mo	98	233519.6	0.3	**99.7506**	0.946	0.9	ug/L	12	Standard
	Ag	107	294288.6	1.5	**51.2056**	0.387	0.8	ug/L	98	Standard
	Cd	111	97440.1	1.5	**53.2049**	0.652	1.2	mg/L	11	Standard
	Cd	114	237560.5	0.5	**53.3199**	0.438	0.8	ug/L	21	Standard
>	**In**	115	533397.7	0.7				ug/L	547487	Standard
	Sn	118	846.7	2.7	**0.0933**	0.004	4.2	ug/L	450	Standard
	Sb	123	217534.4	0.9	**52.5626**	0.359	0.7	ug/L	105	Standard
	Ba	135	126166.1	0.5	**70.4856**	0.674	1.0	ug/L	111	Standard
	Ce	140	221.7	9.1				ug/L	107	Standard
>	**Tb**	159	863996.7	1.6				ug/L	890342	Standard
	Ho	165	15.0	120.2				ug/L	10	Standard
	Tl	203	388142.4	1.0	**52.8512**	0.991	1.9	ug/L	19	Standard
	Tl	205	322436.9	1.5	**53.5061**	0.715	1.3	ug/L	17	Standard
	Pb	206	253353.0	2.2	**53.5909**	0.163	0.3	ug/L	247	Standard
	Pb	207	220862.2	1.1	**51.4007**	0.713	1.4	ug/L	215	Standard
	Pb	208	859792.8	1.1	**53.4462**	0.779	1.5	ug/L	770	Standard
	U	238	306380.9	1.7	**52.5395**	0.392	0.7	ug/L	13	Standard
>	**Bi**	209	489218.2	2.4				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.9600**	31.099	173.2	mg/L	2	Standard
Mg	24	16909.4	2.0	**23.0293**	0.226	1.0	mg/L	35	Standard
K	39	301.7	1.9	**1.3820**	0.071	5.1	mg/L	25	Standard
Ca	43	131.7	14.4	**20.3888**	3.034	14.9	mg/L	38	Standard
Fe	54	166.4	16.9	**0.0199**	0.023	114.5	mg/L	126	Standard
Fe	57	365.0	8.3	**0.3416**	0.157	46.0	mg/L	245	Standard
> **Sc-1**	45	25247.7	3.0				mg/L	25066	Standard
Cl	35	210532.0	1.1				ug/L	125857	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	100099.7	2.0				ug/L	1350	Standard
P	31	21987.6	1.4				ug/L	18393	Standard
S	34	4502.3	2.4				ug/L	3739	Standard
Sr	88	196.7	8.9				ug/L	78	Standard
C	12	86.7	24.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	70.0	37.8				mg/L	0	Standard
Dy	164	33.0	47.1				mg/L	2	Standard
Ho-1	165	15.0	120.2				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	23	Standard
I	127	13005.6	0.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.968	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.517	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606062401PS WG573473-01
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.427
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.232
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606062401SDL WG573473-02
Sample Date/Time: Tuesday, June 21, 2016 17:34:21
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60477.2	2.3				ug/L	60176	Standard
	Be	9	20.0	25.0	**0.0187**	0.007	38.3	ug/L	5	Standard
	Al	27	1346077.1	1.4	**10.1901**	0.104	1.0	ug/L	832	Standard
	Sc	45	26165.9	1.8				ug/L	25066	Standard
	Ti	47	53.3	5.7	**0.0577**	0.020	34.3	ug/L	38	Standard
	V	51	40043.4	1.0	**6.2981**	0.105	1.7	ug/L	974	Standard
	Cr	52	9838.2	1.4	**0.5437**	0.034	6.2	ug/L	5792	Standard
	Cr	53	1326.7	4.2	**1.1460**	0.079	6.9	ug/L	347	Standard
	Mn	55	10769.8	1.7	**1.4023**	0.064	4.6	ug/L	1164	Standard
	Co	59	1559.7	6.1	**0.1970**	0.021	10.5	ug/L	303	Standard
	Ni	60	3793.5	0.5	**1.8350**	0.048	2.6	ug/L	291	Standard
	Cu	65	2218.5	2.2	**1.0935**	0.016	1.5	ug/L	173	Standard
	Zn	66	12058.5	0.3	**10.9344**	0.220	2.0	ug/L	130	Standard
>	**Ge**	72	512114.2	2.3				ug/L	491724	Standard
	As	75	280.0	6.4	**0.2900**	0.014	4.8	ug/L	-25	Standard
	Se	82	125.6	4.8	**1.0748**	0.079	7.4	ug/L	12	Standard
	Se-1	77	81.0	16.3	**0.4492**	0.161	35.8	ug/L	57	Standard
>	**Ga**	71	110.0	9.1				mg/L	148	Standard
	Rb	85	3283.7	4.5				ug/L	18	Standard
	Y	89	414186.7	0.7				ug/L	401845	Standard
>	**Rh**	103	43.3	17.6				ug/L	10	Standard
	Mo	98	48312.3	1.7	**19.6814**	0.770	3.9	ug/L	12	Standard
	Ag	107	449.0	12.1	**0.0592**	0.010	17.0	ug/L	98	Standard
	Cd	111	-5.5	192.0	**-0.0076**	0.005	71.9	mg/L	11	Standard
	Cd	114	194.3	6.1	**0.0372**	0.003	7.7	ug/L	21	Standard
>	**In**	115	559504.5	2.3				ug/L	547487	Standard
	Sn	118	523.3	5.3	**0.0246**	0.006	24.8	ug/L	450	Standard
	Sb	123	2078.0	20.6	**0.4699**	0.089	18.9	ug/L	105	Standard
	Ba	135	6769.2	2.6	**3.5550**	0.174	4.9	ug/L	111	Standard
	Ce	140	83.3	24.2				ug/L	107	Standard
>	**Tb**	159	903655.8	2.0				ug/L	890342	Standard
	Ho	165	10.0	132.3				ug/L	10	Standard
	Tl	203	191.7	11.3	**0.0211**	0.003	12.7	ug/L	19	Standard
	Tl	205	210.0	24.9	**0.0339**	0.008	25.0	ug/L	17	Standard
	Pb	206	458.3	5.1	**0.0367**	0.005	13.4	ug/L	247	Standard
	Pb	207	386.0	11.6	**0.0328**	0.010	31.6	ug/L	215	Standard
	Pb	208	1615.7	13.4	**0.0350**	0.013	38.0	ug/L	770	Standard
	U	238	122.3	50.4	**0.0190**	0.010	52.9	ug/L	13	Standard
>	**Bi**	209	518242.9	1.3				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3608.8	2.9	**4.7118**	0.175	3.7	mg/L	35	Standard
K	39	100.0	50.7	**0.3676**	0.247	67.2	mg/L	25	Standard
Ca	43	65.0	7.7	**6.9544**	1.038	14.9	mg/L	38	Standard
Fe	54	147.5	39.4	**-0.0029**	0.051	1721.0	mg/L	126	Standard
Fe	57	251.7	1.1	**-0.1393**	0.026	18.6	mg/L	245	Standard
> **Sc-1**	45	26165.9	1.8				mg/L	25066	Standard
Cl	35	182370.3	0.5				ug/L	125857	Standard
Kr	83	3.3	17.3				ug/L	1	Standard
Br	81	22266.3	0.9				ug/L	1350	Standard
P	31	21655.5	3.7				ug/L	18393	Standard
S	34	4839.1	3.8				ug/L	3739	Standard
Sr	88	88.3	14.2				ug/L	78	Standard
C	12	70.0	14.3				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.2	45.2				mg/L	2	Standard
Ho-1	165	10.0	132.3				mg/L	10	Standard
Er	166	23.3	49.5				mg/L	23	Standard
I	127	3850.5	6.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.501	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.147	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.195
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.001
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606062401SDL WG573473-02
Sample Date/Time: Tuesday, June 21, 2016 17:37:32
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60611.2	5.2				ug/L	60176	Standard
	Be	9	26.7	78.1	**0.0285**	0.030	104.7	ug/L	5	Standard
	Al	27	272431.0	1.2	**2.0536**	0.080	3.9	ug/L	832	Standard
	Sc	45	26581.7	4.6				ug/L	25066	Standard
	Ti	47	32.3	4.7	**-0.0400**	0.007	18.7	ug/L	38	Standard
	V	51	9199.9	0.5	**1.3799**	0.034	2.5	ug/L	974	Standard
	Cr	52	8009.8	1.0	**0.3197**	0.024	7.6	ug/L	5792	Standard
	Cr	53	745.0	1.3	**0.5003**	0.030	5.9	ug/L	347	Standard
	Mn	55	3074.3	2.9	**0.2662**	0.019	7.0	ug/L	1164	Standard
	Co	59	581.3	20.9	**0.0466**	0.022	46.9	ug/L	303	Standard
	Ni	60	942.0	2.2	**0.3340**	0.011	3.2	ug/L	291	Standard
	Cu	65	557.7	1.9	**0.2148**	0.011	5.0	ug/L	173	Standard
	Zn	66	3925.2	1.4	**3.5576**	0.086	2.4	ug/L	130	Standard
>	**Ge**	72	490874.3	1.9				ug/L	491724	Standard
	As	75	56.2	25.4	**0.0878**	0.015	16.7	ug/L	-25	Standard
	Se	82	43.0	3.7	**0.3232**	0.008	2.4	ug/L	12	Standard
	Se-1	77	62.7	10.3	**0.2398**	0.106	44.2	ug/L	57	Standard
>	**Ga**	71	86.7	3.3				mg/L	148	Standard
	Rb	85	633.3	8.9				ug/L	18	Standard
	Y	89	434053.3	1.1				ug/L	401845	Standard
>	**Rh**	103	58.3	43.1				ug/L	10	Standard
	Mo	98	9730.4	1.6	**3.7980**	0.056	1.5	ug/L	12	Standard
	Ag	107	110.7	14.6	**0.0022**	0.003	122.1	ug/L	98	Standard
	Cd	111	25.2	97.4	**0.0080**	0.012	156.2	mg/L	11	Standard
	Cd	114	100.0	105.0	**0.0162**	0.022	134.8	ug/L	21	Standard
>	**In**	115	583063.2	0.9				ug/L	547487	Standard
	Sn	118	498.3	15.0	**0.0160**	0.013	80.4	ug/L	450	Standard
	Sb	123	635.0	36.6	**0.1330**	0.052	39.5	ug/L	105	Standard
	Ba	135	1538.7	3.8	**0.7317**	0.038	5.1	ug/L	111	Standard
	Ce	140	56.7	43.5				ug/L	107	Standard
>	**Tb**	159	902775.5	1.1				ug/L	890342	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	138.3	68.1	**0.0148**	0.013	86.9	ug/L	19	Standard
	Tl	205	111.7	55.3	**0.0190**	0.010	54.2	ug/L	17	Standard
	Pb	206	376.0	13.9	**0.0221**	0.012	55.2	ug/L	247	Standard
	Pb	207	317.0	22.0	**0.0194**	0.017	88.5	ug/L	215	Standard
	Pb	208	1292.4	11.5	**0.0179**	0.010	58.6	ug/L	770	Standard
	U	238	68.7	96.5	**0.0107**	0.011	105.8	ug/L	13	Standard
>	**Bi**	209	506328.7	1.9				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	790.0	5.2	**0.9874**	0.095	9.7	mg/L	35	Standard
K	39	33.3	48.2	**0.0428**	0.071	166.5	mg/L	25	Standard
Ca	43	25.0	20.0	**-0.6943**	0.773	111.4	mg/L	38	Standard
Fe	54	139.1	10.5	**-0.0116**	0.017	151.0	mg/L	126	Standard
Fe	57	223.3	12.7	**-0.2573**	0.129	50.2	mg/L	245	Standard
> **Sc-1**	45	26581.7	4.6				mg/L	25066	Standard
Cl	35	175991.6	1.1				ug/L	125857	Standard
Kr	83	3.0	0.0				ug/L	1	Standard
Br	81	6047.9	4.6				ug/L	1350	Standard
P	31	21570.4	4.4				ug/L	18393	Standard
S	34	4842.4	5.1				ug/L	3739	Standard
Sr	88	105.0	12.6				ug/L	78	Standard
C	12	50.0	52.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	15.7	36.9				mg/L	2	Standard
Ho-1	165	8.3	91.7				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	23	Standard
I	127	1585.1	7.5				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.723	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.827	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.498
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.633
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 17:40:45
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59081.7	2.6				ug/L	60176	Standard
	Be	9	36702.7	2.3	**52.0769**	1.300	2.5	ug/L	5	Standard
	Al	27	6646200.9	1.1	**51.5434**	0.909	1.8	ug/L	832	Standard
	Sc	45	26020.7	3.8				ug/L	25066	Standard
	Ti	47	21214.8	1.7	**108.7289**	0.181	0.2	ug/L	38	Standard
	V	51	316864.2	1.4	**52.6965**	0.283	0.5	ug/L	974	Standard
	Cr	52	348817.6	0.6	**53.4950**	0.696	1.3	ug/L	5792	Standard
	Cr	53	43763.1	2.6	**52.6787**	0.604	1.1	ug/L	347	Standard
	Mn	55	340527.3	1.8	**52.5942**	0.923	1.8	ug/L	1164	Standard
	Co	59	326617.6	0.4	**53.1853**	0.746	1.4	ug/L	303	Standard
	Ni	60	96463.1	1.0	**53.0038**	0.733	1.4	ug/L	291	Standard
	Cu	65	95600.3	0.8	**52.9319**	0.992	1.9	ug/L	173	Standard
	Zn	66	54738.7	1.8	**52.1262**	0.134	0.3	ug/L	130	Standard
>	Ge	72	495763.5	1.8				ug/L	491724	Standard
	As	75	54512.5	0.4	**51.5524**	0.685	1.3	ug/L	-25	Standard
	Se	82	5543.1	2.2	**53.1106**	2.069	3.9	ug/L	12	Standard
	Se-1	77	3720.1	1.9	**51.5619**	0.639	1.2	ug/L	57	Standard
>	Ga	71	110.0	12.0				mg/L	148	Standard
	Rb	85	793.4	4.1				ug/L	18	Standard
	Y	89	412125.4	1.3				ug/L	401845	Standard
>	Rh	103	66.7	11.5				ug/L	10	Standard
	Mo	98	240736.8	1.1	**97.2447**	1.379	1.4	ug/L	12	Standard
	Ag	107	305628.4	1.4	**50.2975**	1.221	2.4	ug/L	98	Standard
	Cd	111	97888.8	1.5	**50.5420**	0.123	0.2	mg/L	11	Standard
	Cd	114	238935.5	1.4	**50.7107**	0.441	0.9	ug/L	21	Standard
>	In	115	564098.2	1.7				ug/L	547487	Standard
	Sn	118	268378.0	1.5	**50.0920**	0.857	1.7	ug/L	450	Standard
	Sb	123	219285.5	1.2	**50.1127**	1.176	2.3	ug/L	105	Standard
	Ba	135	94955.3	0.6	**50.1501**	0.552	1.1	ug/L	111	Standard
	Ce	140	105.0	45.4				ug/L	107	Standard
>	Tb	159	899441.1	1.5				ug/L	890342	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	387085.4	1.3	**50.9741**	0.552	1.1	ug/L	19	Standard
	Tl	205	323757.8	1.2	**51.9659**	0.790	1.5	ug/L	17	Standard
	Pb	206	244011.4	1.2	**49.9245**	0.191	0.4	ug/L	247	Standard
	Pb	207	221667.8	1.0	**49.8940**	0.499	1.0	ug/L	215	Standard
	Pb	208	859541.6	1.0	**51.6749**	0.448	0.9	ug/L	770	Standard
	U	238	309083.0	1.7	**51.2676**	0.733	1.4	ug/L	13	Standard
>	Bi	209	505715.2	0.9				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.6985**	32.378	173.2	mg/L	2	Standard
Mg	24	3983.9	6.0	**5.2438**	0.478	9.1	mg/L	35	Standard
K	39	1098.4	8.7	**5.1786**	0.659	12.7	mg/L	25	Standard
Ca	43	58.3	24.7	**5.7524**	2.702	47.0	mg/L	38	Standard
Fe	54	5616.8	2.9	**5.0026**	0.232	4.6	mg/L	126	Standard
Fe	57	1575.1	5.8	**4.9072**	0.583	11.9	mg/L	245	Standard
> **Sc-1**	45	26020.7	3.8				mg/L	25066	Standard
Cl	35	161905.2	1.1				ug/L	125857	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	1890.1	7.8				ug/L	1350	Standard
P	31	22423.3	2.7				ug/L	18393	Standard
S	34	5154.2	1.4				ug/L	3739	Standard
Sr	88	80.0	16.5				ug/L	78	Standard
C	12	60.0	28.9				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	15.7	132.5				mg/L	2	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	20.0	0.0				mg/L	23	Standard
I	127	1220.0	4.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	104.154		
Al	27	103.087		
Sc	45			
Ti	47	108.729		
V	51	105.393		
Cr	52	106.990		
Cr	53			
Mn	55	105.188		
Co	59	106.371		
Ni	60	106.008		
Cu	65	105.864		
Zn	66	104.252		
> Ge	72		100.822	
As	75	103.105		
Se	82	106.221		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	97.245		
Ag	107	100.595		
Cd	111	101.084		
Cd	114			
> In	115			103.034
Sn	118	100.184		
Sb	123	100.225		
Ba	135	100.300		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.948		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.350		
U	238	102.535		
> Bi	209			100.511
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 17:43:57
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56721.1	4.5				ug/L	60176	Standard
	Be	9	10.0	86.6	**0.0057**	0.013	221.6	ug/L	5	Standard
	Al	27	1560.1	22.0	**0.0041**	0.002	54.2	ug/L	832	Standard
	Sc	45	25518.2	4.3				ug/L	25066	Standard
	Ti	47	31.0	8.5	**-0.0455**	0.014	30.9	ug/L	38	Standard
	V	51	1025.7	2.6	**0.0036**	0.004	119.2	ug/L	974	Standard
	Cr	52	6145.2	1.0	**0.0342**	0.011	31.8	ug/L	5792	Standard
	Cr	53	456.7	16.4	**0.1515**	0.092	60.5	ug/L	347	Standard
	Mn	55	1042.7	1.9	**-0.0507**	0.003	6.1	ug/L	1164	Standard
	Co	59	294.3	14.4	**-0.0005**	0.007	1510.6	ug/L	303	Standard
	Ni	60	217.3	8.8	**-0.0685**	0.011	15.8	ug/L	291	Standard
	Cu	65	143.7	4.6	**-0.0165**	0.004	23.2	ug/L	173	Standard
	Zn	66	170.7	3.9	**-0.0690**	0.006	9.1	ug/L	130	Standard
>	**Ge**	72	486561.4	0.2				ug/L	491724	Standard
	As	75	-23.1	144.8	**0.0117**	0.032	276.8	ug/L	-25	Standard
	Se	82	19.3	43.3	**0.0963**	0.082	85.2	ug/L	12	Standard
	Se-1	77	61.7	9.5	**0.2322**	0.083	35.8	ug/L	57	Standard
>	**Ga**	71	91.7	11.4				mg/L	148	Standard
	Rb	85	30.0	33.3				ug/L	18	Standard
	Y	89	432565.5	1.6				ug/L	401845	Standard
>	**Rh**	103	56.7	13.5				ug/L	10	Standard
	Mo	98	283.8	18.7	**0.1104**	0.019	17.4	ug/L	12	Standard
	Ag	107	119.7	6.8	**0.0044**	0.001	22.8	ug/L	98	Standard
	Cd	111	7.8	28.1	**-0.0007**	0.001	162.1	mg/L	11	Standard
	Cd	114	30.1	75.3	**0.0019**	0.005	242.3	ug/L	21	Standard
>	**In**	115	561643.0	2.0				ug/L	547487	Standard
	Sn	118	805.0	28.2	**0.0777**	0.045	58.3	ug/L	450	Standard
	Sb	123	547.0	24.1	**0.1184**	0.033	27.7	ug/L	105	Standard
	Ba	135	127.0	2.8	**0.0118**	0.001	5.1	ug/L	111	Standard
	Ce	140	23.3	75.3				ug/L	107	Standard
>	**Tb**	159	876464.1	2.5				ug/L	890342	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	66.0	17.1	**0.0053**	0.001	26.5	ug/L	19	Standard
	Tl	205	63.3	53.7	**0.0113**	0.006	48.9	ug/L	17	Standard
	Pb	206	259.3	8.4	**-0.0008**	0.004	538.8	ug/L	247	Standard
	Pb	207	223.7	7.2	**-0.0007**	0.003	439.4	ug/L	215	Standard
	Pb	208	890.3	1.6	**-0.0052**	0.001	19.5	ug/L	770	Standard
	U	238	44.0	15.7	**0.0066**	0.001	16.4	ug/L	13	Standard
>	**Bi**	209	495284.3	1.2				ug/L	503143	Standard

Sample ID: QC Std 7
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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	30.0	28.9	**0.0015**	0.011	728.8	mg/L	35	Standard
K	39	26.7	43.3	**0.0178**	0.054	304.4	mg/L	25	Standard
Ca	43	45.0	22.2	**3.3451**	1.602	47.9	mg/L	38	Standard
Fe	54	122.5	43.7	**-0.0227**	0.048	210.0	mg/L	126	Standard
Fe	57	173.3	26.8	**-0.4223**	0.156	36.9	mg/L	245	Standard
> **Sc-1**	45	25518.2	4.3				mg/L	25066	Standard
Cl	35	159927.0	1.4				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	1690.1	11.2				ug/L	1350	Standard
P	31	22770.5	4.5				ug/L	18393	Standard
S	34	5202.6	2.4				ug/L	3739	Standard
Sr	88	78.3	13.3				ug/L	78	Standard
C	12	43.3	35.3				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	-0.3	173.2				mg/L	2	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	6.7	173.2				mg/L	23	Standard
I	127	1065.0	12.4				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.950	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.586	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.438	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606053301
Sample Date/Time: Tuesday, June 21, 2016 17:47:10
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60448.7	2.1				ug/L	60176	Standard
	Be	9	18.3	68.6	**0.0166**	0.018	107.0	ug/L	5	Standard
	Al	27	6338152.4	1.3	**48.0500**	1.591	3.3	ug/L	832	Standard
	Sc	45	26546.6	1.7				ug/L	25066	Standard
	Ti	47	533.3	12.7	**2.5549**	0.399	15.6	ug/L	38	Standard
	V	51	2131.1	5.9	**0.1873**	0.019	10.0	ug/L	974	Standard
	Cr	52	10369.5	2.6	**0.6877**	0.071	10.4	ug/L	5792	Standard
	Cr	53	3198.7	11.9	**3.5005**	0.514	14.7	ug/L	347	Standard
	Mn	55	118129.1	0.7	**18.2372**	0.274	1.5	ug/L	1164	Standard
	Co	59	1318.1	2.7	**0.1671**	0.009	5.6	ug/L	303	Standard
	Ni	60	3116.7	1.4	**1.5404**	0.023	1.5	ug/L	291	Standard
	Cu	65	10605.0	1.7	**5.8283**	0.198	3.4	ug/L	173	Standard
	Zn	66	23001.4	1.8	**21.9280**	0.418	1.9	ug/L	130	Standard
>	**Ge**	72	492237.0	2.0				ug/L	491724	Standard
	As	75	3704.8	1.1	**3.5603**	0.041	1.1	ug/L	-25	Standard
	Se	82	134.6	8.4	**1.2098**	0.136	11.2	ug/L	12	Standard
	Se-1	77	313.3	8.9	**3.7853**	0.480	12.7	ug/L	57	Standard
>	**Ga**	71	193.3	12.2				mg/L	148	Standard
	Rb	85	29528.8	1.8				ug/L	18	Standard
	Y	89	410980.2	2.7				ug/L	401845	Standard
>	**Rh**	103	110.0	23.6				ug/L	10	Standard
	Mo	98	1672.2	1.4	**0.6833**	0.014	2.1	ug/L	12	Standard
	Ag	107	140.0	15.4	**0.0081**	0.004	49.8	ug/L	98	Standard
	Cd	111	117.6	8.0	**0.0571**	0.004	7.3	mg/L	11	Standard
	Cd	114	311.6	20.6	**0.0629**	0.014	22.1	ug/L	21	Standard
>	**In**	115	554117.5	1.9				ug/L	547487	Standard
	Sn	118	1430.1	5.5	**0.1980**	0.011	5.7	ug/L	450	Standard
	Sb	123	2644.4	2.3	**0.6075**	0.008	1.3	ug/L	105	Standard
	Ba	135	35642.9	0.4	**19.1319**	0.401	2.1	ug/L	111	Standard
	Ce	140	641.7	11.6				ug/L	107	Standard
>	**Tb**	159	896083.5	0.2				ug/L	890342	Standard
	Ho	165	56.7	18.4				ug/L	10	Standard
	Tl	203	219.3	9.7	**0.0257**	0.003	10.9	ug/L	19	Standard
	Tl	205	195.0	25.3	**0.0326**	0.008	24.4	ug/L	17	Standard
	Pb	206	1749.1	0.8	**0.3074**	0.003	0.8	ug/L	247	Standard
	Pb	207	1455.7	6.4	**0.2796**	0.021	7.4	ug/L	215	Standard
	Pb	208	5822.8	0.8	**0.2946**	0.003	0.9	ug/L	770	Standard
	U	238	208.3	11.2	**0.0341**	0.004	11.4	ug/L	13	Standard
>	**Bi**	209	499957.7	0.2				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	24221.0	1.0	**31.3840**	0.259	0.8	mg/L	35	Standard
K	39	728.4	13.1	**3.3171**	0.458	13.8	mg/L	25	Standard
Ca	43	125.0	12.0	**17.9391**	2.703	15.1	mg/L	38	Standard
Fe	54	160.7	6.4	**0.0076**	0.011	142.5	mg/L	126	Standard
Fe	57	373.3	9.9	**0.2993**	0.127	42.5	mg/L	245	Standard
> **Sc-1**	45	26546.6	1.7				mg/L	25066	Standard
Cl	35	196436.0	1.5				ug/L	125857	Standard
Kr	83	3.3	45.8				ug/L	1	Standard
Br	81	8072.2	1.9				ug/L	1350	Standard
P	31	22922.3	0.8				ug/L	18393	Standard
S	34	4750.7	1.5				ug/L	3739	Standard
Sr	88	181.7	3.2				ug/L	78	Standard
C	12	106.7	14.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	0	Standard
Dy	164	47.8	39.5				mg/L	2	Standard
Ho-1	165	56.7	18.4				mg/L	10	Standard
Er	166	46.7	68.9				mg/L	23	Standard
I	127	47392.4	2.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.453	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.104	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.211	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.367	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078403
Sample Date/Time: Tuesday, June 21, 2016 17:50:21
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64282.8	1.4				ug/L	60176	Standard
	Be	9	16.7	45.8	**0.0128**	0.010	79.1	ug/L	5	Standard
	Al	27	9496901.0	1.4	**67.6751**	0.189	0.3	ug/L	832	Standard
	Sc	45	26276.1	3.6				ug/L	25066	Standard
	Ti	47	2632.9	0.5	**13.4149**	0.197	1.5	ug/L	38	Standard
	V	51	10654.6	5.7	**1.6202**	0.099	6.1	ug/L	974	Standard
	Cr	52	309449.4	0.1	**47.7126**	0.747	1.6	ug/L	5792	Standard
	Cr	53	43286.8	2.0	**52.4956**	0.461	0.9	ug/L	347	Standard
	Mn	55	415246.8	0.7	**64.6633**	0.642	1.0	ug/L	1164	Standard
	Co	59	14818.2	0.7	**2.3840**	0.050	2.1	ug/L	303	Standard
	Ni	60	13775.3	1.0	**7.4623**	0.106	1.4	ug/L	291	Standard
	Cu	65	2774.3	0.5	**1.4525**	0.017	1.2	ug/L	173	Standard
	Zn	66	6076.9	0.8	**5.6215**	0.043	0.8	ug/L	130	Standard
>	**Ge**	72	492081.5	1.5				ug/L	491724	Standard
	As	75	14825.6	0.7	**14.1492**	0.153	1.1	ug/L	-25	Standard
	Se	82	184.4	7.2	**1.6910**	0.151	8.9	ug/L	12	Standard
	Se-1	77	407.3	7.4	**5.1069**	0.343	6.7	ug/L	57	Standard
>	**Ga**	71	388.3	4.9				mg/L	148	Standard
	Rb	85	247976.3	1.2				ug/L	18	Standard
	Y	89	437835.7	1.8				ug/L	401845	Standard
>	**Rh**	103	111.7	11.3				ug/L	10	Standard
	Mo	98	768.6	2.7	**0.3040**	0.009	3.0	ug/L	12	Standard
	Ag	107	190.7	6.0	**0.0158**	0.002	12.3	ug/L	98	Standard
	Cd	111	45.2	11.2	**0.0185**	0.003	14.3	mg/L	11	Standard
	Cd	114	130.8	33.1	**0.0231**	0.009	39.2	ug/L	21	Standard
>	**In**	115	567817.1	0.2				ug/L	547487	Standard
	Sn	118	10468.6	2.5	**1.8698**	0.053	2.8	ug/L	450	Standard
	Sb	123	902.4	8.0	**0.1972**	0.016	8.2	ug/L	105	Standard
	Ba	135	51153.2	1.3	**26.8107**	0.405	1.5	ug/L	111	Standard
	Ce	140	2558.5	2.2				ug/L	107	Standard
>	**Tb**	159	907507.6	0.1				ug/L	890342	Standard
	Ho	165	388.3	9.3				ug/L	10	Standard
	Tl	203	96.3	26.1	**0.0096**	0.003	35.7	ug/L	19	Standard
	Tl	205	85.0	21.2	**0.0151**	0.003	19.8	ug/L	17	Standard
	Pb	206	1399.4	4.9	**0.2426**	0.015	6.0	ug/L	247	Standard
	Pb	207	1257.4	0.9	**0.2420**	0.003	1.1	ug/L	215	Standard
	Pb	208	4943.7	1.7	**0.2490**	0.006	2.2	ug/L	770	Standard
	U	238	308.0	0.9	**0.0522**	0.000	0.8	ug/L	13	Standard
>	**Bi**	209	487096.1	0.1				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.6640**	30.586	173.2	mg/L	2	Standard
Mg	24	54270.4	1.9	**71.1138**	1.170	1.6	mg/L	35	Standard
K	39	6009.5	3.1	**28.4763**	0.896	3.1	mg/L	25	Standard
Ca	43	55.0	36.4	**4.9932**	3.579	71.7	mg/L	38	Standard
Fe	54	345.1	11.2	**0.1762**	0.038	21.4	mg/L	126	Standard
Fe	57	351.7	7.8	**0.2357**	0.144	61.3	mg/L	245	Standard
> **Sc-1**	45	26276.1	3.6				mg/L	25066	Standard
Cl	35	189873.7	0.5				ug/L	125857	Standard
Kr	83	2.3	99.0				ug/L	1	Standard
Br	81	36477.2	3.1				ug/L	1350	Standard
P	31	23743.6	0.5				ug/L	18393	Standard
S	34	4889.1	0.7				ug/L	3739	Standard
Sr	88	155.0	16.1				ug/L	78	Standard
C	12	456.7	11.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	613.9	9.9				mg/L	2	Standard
Ho-1	165	388.3	9.3				mg/L	10	Standard
Er	166	336.7	6.2				mg/L	23	Standard
I	127	738935.3	7.0				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.825	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.073	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.713
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.811
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606078709 WG573111-01
Sample Date/Time: Tuesday, June 21, 2016 17:53:33
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60443.9	5.7				ug/L	60176	Standard
	Be	9	16.7	34.6	**0.0143**	0.009	61.5	ug/L	5	Standard
	Al	27	10305250.8	3.2	**78.3639**	7.053	9.0	ug/L	832	Standard
	Sc	45	26180.9	1.3				ug/L	25066	Standard
	Ti	47	492.3	16.0	**2.2835**	0.397	17.4	ug/L	38	Standard
	V	51	9886.7	1.4	**1.4559**	0.086	5.9	ug/L	974	Standard
	Cr	52	12993.9	3.4	**1.0581**	0.156	14.7	ug/L	5792	Standard
	Cr	53	1368.4	1.8	**1.2241**	0.083	6.8	ug/L	347	Standard
	Mn	55	29966.3	1.1	**4.3673**	0.250	5.7	ug/L	1164	Standard
	Co	59	1096.7	3.0	**0.1268**	0.007	5.7	ug/L	303	Standard
	Ni	60	1721.1	4.7	**0.7463**	0.085	11.4	ug/L	291	Standard
	Cu	65	2142.2	3.0	**1.0742**	0.079	7.3	ug/L	173	Standard
	Zn	66	4731.4	2.1	**4.2285**	0.265	6.3	ug/L	130	Standard
>	**Ge**	72	503481.4	4.3				ug/L	491724	Standard
	As	75	526.8	4.6	**0.5242**	0.012	2.2	ug/L	-25	Standard
	Se	82	62.5	5.9	**0.4971**	0.013	2.6	ug/L	12	Standard
	Se-1	77	73.0	10.9	**0.3585**	0.086	24.0	ug/L	57	Standard
>	**Ga**	71	216.7	13.9				mg/L	148	Standard
	Rb	85	2733.6	1.6				ug/L	18	Standard
	Y	89	422057.6	7.6				ug/L	401845	Standard
>	**Rh**	103	68.3	11.2				ug/L	10	Standard
	Mo	98	279.8	4.4	**0.1129**	0.008	6.7	ug/L	12	Standard
	Ag	107	97.0	11.9	**0.0012**	0.003	216.7	ug/L	98	Standard
	Cd	111	40.5	2.4	**0.0170**	0.000	2.5	mg/L	11	Standard
	Cd	114	71.0	35.0	**0.0113**	0.006	51.4	ug/L	21	Standard
>	**In**	115	544133.8	4.3				ug/L	547487	Standard
	Sn	118	2075.1	3.5	**0.3287**	0.027	8.2	ug/L	450	Standard
	Sb	123	255.1	11.7	**0.0530**	0.009	17.6	ug/L	105	Standard
	Ba	135	71686.9	1.7	**39.2991**	2.336	5.9	ug/L	111	Standard
	Ce	140	6308.0	3.7				ug/L	107	Standard
>	**Tb**	159	874247.6	3.5				ug/L	890342	Standard
	Ho	165	205.0	17.6				ug/L	10	Standard
	Tl	203	72.3	6.8	**0.0062**	0.001	9.3	ug/L	19	Standard
	Tl	205	71.7	24.5	**0.0128**	0.003	22.0	ug/L	17	Standard
	Pb	206	870.4	1.3	**0.1280**	0.008	6.2	ug/L	247	Standard
	Pb	207	718.4	2.5	**0.1139**	0.005	4.4	ug/L	215	Standard
	Pb	208	2829.8	1.2	**0.1148**	0.006	5.6	ug/L	770	Standard
	U	238	125.7	17.0	**0.0206**	0.004	19.0	ug/L	13	Standard
>	**Bi**	209	493218.4	3.0				ug/L	503143	Standard

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Na	23	3.3	173.2	**36.2151**	62.718	173.2	mg/L	2	Standard
Mg	24	1295.1	2.9	**1.6648**	0.058	3.5	mg/L	35	Standard
K	39	110.0	9.1	**0.4127**	0.048	11.7	mg/L	25	Standard
Ca	43	135.0	14.8	**20.1289**	3.508	17.4	mg/L	38	Standard
Fe	54	213.8	22.6	**0.0577**	0.043	74.6	mg/L	126	Standard
Fe	57	361.7	4.2	**0.2754**	0.064	23.3	mg/L	245	Standard
> **Sc-1**	45	26180.9	1.3				mg/L	25066	Standard
Cl	35	162260.9	0.6				ug/L	125857	Standard
Kr	83	2.7	78.1				ug/L	1	Standard
Br	81	10053.3	4.2				ug/L	1350	Standard
P	31	24678.4	1.7				ug/L	18393	Standard
S	34	4714.1	1.8				ug/L	3739	Standard
Sr	88	126.7	12.7				ug/L	78	Standard
C	12	166.7	24.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	368.2	19.7				mg/L	2	Standard
Ho-1	165	205.0	17.6				mg/L	10	Standard
Er	166	176.7	57.8				mg/L	23	Standard
I	127	20693.0	48.0				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.445	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.391	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.388
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.028
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606078710
Sample Date/Time: Tuesday, June 21, 2016 17:56:44
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62773.1	1.4				ug/L	60176	Standard
	Be	9	21.7	35.3	**0.0200**	0.011	52.9	ug/L	5	Standard
	Al	27	10724930.9	3.4	**78.2963**	3.661	4.7	ug/L	832	Standard
	Sc	45	27798.8	3.2				ug/L	25066	Standard
	Ti	47	562.7	17.6	**2.6295**	0.538	20.5	ug/L	38	Standard
	V	51	10217.9	0.6	**1.5004**	0.021	1.4	ug/L	974	Standard
	Cr	52	13153.7	0.9	**1.0695**	0.051	4.8	ug/L	5792	Standard
	Cr	53	1371.7	5.1	**1.2177**	0.058	4.8	ug/L	347	Standard
	Mn	55	29369.4	1.6	**4.2499**	0.136	3.2	ug/L	1164	Standard
	Co	59	1080.7	2.1	**0.1233**	0.002	1.9	ug/L	303	Standard
	Ni	60	1737.1	3.4	**0.7483**	0.031	4.2	ug/L	291	Standard
	Cu	65	1924.5	4.8	**0.9481**	0.033	3.5	ug/L	173	Standard
	Zn	66	4372.0	2.4	**3.8638**	0.075	2.0	ug/L	130	Standard
>	**Ge**	72	505797.3	1.7				ug/L	491724	Standard
	As	75	458.2	3.8	**0.4582**	0.009	2.1	ug/L	-25	Standard
	Se	82	38.6	4.6	**0.2705**	0.020	7.4	ug/L	12	Standard
	Se-1	77	65.3	7.6	**0.2495**	0.074	29.7	ug/L	57	Standard
>	**Ga**	71	210.0	13.3				mg/L	148	Standard
	Rb	85	3273.7	1.4				ug/L	18	Standard
	Y	89	418878.8	2.6				ug/L	401845	Standard
>	**Rh**	103	35.0	37.8				ug/L	10	Standard
	Mo	98	238.7	3.0	**0.0929**	0.004	4.0	ug/L	12	Standard
	Ag	107	109.0	6.6	**0.0027**	0.001	44.0	ug/L	98	Standard
	Cd	111	30.9	30.1	**0.0114**	0.005	43.6	mg/L	11	Standard
	Cd	114	87.2	2.7	**0.0142**	0.001	3.7	ug/L	21	Standard
>	**In**	115	559019.1	0.9				ug/L	547487	Standard
	Sn	118	1906.8	4.3	**0.2855**	0.012	4.3	ug/L	450	Standard
	Sb	123	250.1	13.3	**0.0500**	0.007	14.2	ug/L	105	Standard
	Ba	135	73442.9	1.3	**39.1229**	0.172	0.4	ug/L	111	Standard
	Ce	140	6873.2	4.0				ug/L	107	Standard
>	**Tb**	159	901790.2	0.8				ug/L	890342	Standard
	Ho	165	200.0	9.0				ug/L	10	Standard
	Tl	203	57.3	31.4	**0.0039**	0.002	58.7	ug/L	19	Standard
	Tl	205	43.3	35.3	**0.0078**	0.002	30.1	ug/L	17	Standard
	Pb	206	822.7	3.5	**0.1108**	0.007	6.1	ug/L	247	Standard
	Pb	207	701.0	5.6	**0.1033**	0.010	9.4	ug/L	215	Standard
	Pb	208	2697.1	1.4	**0.0998**	0.003	3.5	ug/L	770	Standard
	U	238	127.0	11.9	**0.0199**	0.002	11.8	ug/L	13	Standard
>	**Bi**	209	514062.2	0.8				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.4295**	30.180	173.2	mg/L	2	Standard
Mg	24	1238.4	1.7	**1.4957**	0.025	1.7	mg/L	35	Standard
K	39	105.0	17.2	**0.3595**	0.078	21.6	mg/L	25	Standard
Ca	43	170.0	10.6	**24.9795**	4.201	16.8	mg/L	38	Standard
Fe	54	232.4	2.4	**0.0625**	0.006	9.3	mg/L	126	Standard
Fe	57	421.7	12.1	**0.4086**	0.168	41.1	mg/L	245	Standard
Sc-1	45	27798.8	3.2				mg/L	25066	Standard
Cl	35	170177.7	0.9				ug/L	125857	Standard
Kr	83	2.3	89.2				ug/L	1	Standard
Br	81	3510.4	1.7				ug/L	1350	Standard
P	31	25923.8	0.8				ug/L	18393	Standard
S	34	5000.8	2.7				ug/L	3739	Standard
Sr	88	136.7	27.0				ug/L	78	Standard
C	12	120.0	16.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	299.1	9.0				mg/L	2	Standard
Ho-1	165	200.0	9.0				mg/L	10	Standard
Er	166	226.7	11.1				mg/L	23	Standard
I	127	8357.3	3.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.316	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.862	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.106
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.170
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606078711S WG573111-06
Sample Date/Time: Tuesday, June 21, 2016 17:59:56
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	61600.0	1.8				ug/L	60176	Standard
	Be	9	39351.1	3.1	53.5432	1.639	3.1	ug/L	5	Standard
	Al	27	10394779.5	1.5	77.3073	1.057	1.4	ug/L	832	Standard
	Sc	45	27065.8	3.5				ug/L	25066	Standard
	Ti	47	963.4	10.6	4.7337	0.549	11.6	ug/L	38	Standard
	V	51	322757.3	1.8	53.6046	1.325	2.5	ug/L	974	Standard
	Cr	52	347982.3	1.9	53.2836	1.385	2.6	ug/L	5792	Standard
	Cr	53	43507.5	4.5	52.3076	2.705	5.2	ug/L	347	Standard
	Mn	55	375081.4	0.9	57.8666	0.893	1.5	ug/L	1164	Standard
	Co	59	321619.4	0.7	52.2874	0.580	1.1	ug/L	303	Standard
	Ni	60	93916.6	2.0	51.5228	1.331	2.6	ug/L	291	Standard
	Cu	65	93528.8	1.2	51.7010	0.970	1.9	ug/L	173	Standard
	Zn	66	57176.0	0.7	54.3806	0.702	1.3	ug/L	130	Standard
>	Ge	72	496488.3	0.7				ug/L	491724	Standard
	As	75	55790.3	0.6	52.6752	0.114	0.2	ug/L	-25	Standard
	Se	82	5538.3	0.8	52.9638	0.537	1.0	ug/L	12	Standard
	Se-1	77	3804.5	1.5	52.6667	0.727	1.4	ug/L	57	Standard
>	Ga	71	466.7	30.8				mg/L	148	Standard
	Rb	85	5205.9	1.3				ug/L	18	Standard
	Y	89	431108.9	0.1				ug/L	401845	Standard
>	Rh	103	70.0	18.9				ug/L	10	Standard
	Mo	98	227.0	2.9	0.0880	0.002	2.8	ug/L	12	Standard
	Ag	107	10615.7	2.8	1.7450	0.050	2.9	ug/L	98	Standard
	Cd	111	99211.0	0.7	51.6114	0.445	0.9	mg/L	11	Standard
	Cd	114	241106.1	2.5	51.5544	1.220	2.4	ug/L	21	Standard
>	In	115	559879.4	0.9				ug/L	547487	Standard
	Sn	118	2130.1	3.8	0.3270	0.012	3.7	ug/L	450	Standard
	Sb	123	217940.1	0.9	50.1700	0.382	0.8	ug/L	105	Standard
	Ba	135	167521.4	1.0	89.1738	0.251	0.3	ug/L	111	Standard
	Ce	140	9182.8	2.4				ug/L	107	Standard
>	Tb	159	892825.7	1.7				ug/L	890342	Standard
	Ho	165	245.0	15.9				ug/L	10	Standard
	Tl	203	382126.3	1.7	51.0936	0.456	0.9	ug/L	19	Standard
	Tl	205	328005.7	0.3	53.4587	0.419	0.8	ug/L	17	Standard
	Pb	206	247016.4	0.8	51.3212	0.143	0.3	ug/L	247	Standard
	Pb	207	215416.9	0.8	49.2334	0.302	0.6	ug/L	215	Standard
	Pb	208	864247.6	0.1	52.7618	0.483	0.9	ug/L	770	Standard
	U	238	310732.3	0.2	52.3391	0.578	1.1	ug/L	13	Standard
>	Bi	209	498043.4	1.0				ug/L	503143	Standard

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Na	23	1.7	173.2	**16.7109**	28.936	173.2	mg/L	2	Standard
Mg	24	1233.4	1.0	**1.5318**	0.064	4.2	mg/L	35	Standard
K	39	148.3	7.8	**0.5718**	0.033	5.8	mg/L	25	Standard
Ca	43	170.0	28.4	**25.9171**	9.688	37.4	mg/L	38	Standard
Fe	54	322.0	9.5	**0.1473**	0.036	24.5	mg/L	126	Standard
Fe	57	403.3	22.9	**0.3789**	0.313	82.6	mg/L	245	Standard
> **Sc-1**	45	27065.8	3.5				mg/L	25066	Standard
Cl	35	170176.5	1.7				ug/L	125857	Standard
Kr	83	3.0	57.7				ug/L	1	Standard
Br	81	4414.0	4.5				ug/L	1350	Standard
P	31	26219.3	3.1				ug/L	18393	Standard
S	34	5044.2	5.2				ug/L	3739	Standard
Sr	88	135.0	9.8				ug/L	78	Standard
C	12	86.7	17.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	373.8	5.4				mg/L	2	Standard
Ho-1	165	245.0	15.9				mg/L	10	Standard
Er	166	200.0	13.2				mg/L	23	Standard
I	127	7025.0	4.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.367	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.969	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.264	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.987	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606078712SD WG573111-07
Sample Date/Time: Tuesday, June 21, 2016 18:03:07
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61029.3	0.4				ug/L	60176	Standard
	Be	9	38696.0	1.1	**53.1381**	0.388	0.7	ug/L	5	Standard
	Al	27	10635305.8	0.7	**79.8285**	0.406	0.5	ug/L	832	Standard
	Sc	45	27050.8	1.0				ug/L	25066	Standard
	Ti	47	1614.1	5.0	**7.8928**	0.372	4.7	ug/L	38	Standard
	V	51	334955.3	1.2	**54.4598**	1.088	2.0	ug/L	974	Standard
	Cr	52	351881.2	0.4	**52.7321**	0.628	1.2	ug/L	5792	Standard
	Cr	53	43774.8	1.5	**51.5065**	1.170	2.3	ug/L	347	Standard
	Mn	55	501871.8	1.6	**75.8606**	1.449	1.9	ug/L	1164	Standard
	Co	59	333145.1	1.3	**53.0208**	0.897	1.7	ug/L	303	Standard
	Ni	60	94669.2	0.6	**50.8362**	0.710	1.4	ug/L	291	Standard
	Cu	65	95052.6	1.5	**51.4370**	1.187	2.3	ug/L	173	Standard
	Zn	66	58277.2	0.4	**54.2587**	0.599	1.1	ug/L	130	Standard
>	**Ge**	72	507183.4	0.8				ug/L	491724	Standard
	As	75	57125.5	0.7	**52.8022**	0.788	1.5	ug/L	-25	Standard
	Se	82	5703.6	1.6	**53.3992**	1.190	2.2	ug/L	12	Standard
	Se-1	77	3834.5	0.9	**51.9576**	0.800	1.5	ug/L	57	Standard
>	**Ga**	71	908.4	9.4				mg/L	148	Standard
	Rb	85	10995.7	2.2				ug/L	18	Standard
	Y	89	422851.2	3.7				ug/L	401845	Standard
>	**Rh**	103	70.0	14.3				ug/L	10	Standard
	Mo	98	243.6	1.0	**0.0962**	0.001	1.5	ug/L	12	Standard
	Ag	107	9863.9	1.6	**1.6460**	0.047	2.9	ug/L	98	Standard
	Cd	111	99159.1	2.8	**52.3764**	0.965	1.8	mg/L	11	Standard
	Cd	114	235716.4	1.9	**51.1824**	0.756	1.5	ug/L	21	Standard
>	**In**	115	551348.1	1.3				ug/L	547487	Standard
	Sn	118	2651.9	2.8	**0.4332**	0.019	4.4	ug/L	450	Standard
	Sb	123	193703.2	1.2	**45.2835**	0.741	1.6	ug/L	105	Standard
	Ba	135	168991.9	2.6	**91.3544**	2.313	2.5	ug/L	111	Standard
	Ce	140	32860.6	2.6				ug/L	107	Standard
>	**Tb**	159	880118.4	0.8				ug/L	890342	Standard
	Ho	165	470.0	4.9				ug/L	10	Standard
	Tl	203	380545.4	1.6	**50.5209**	0.728	1.4	ug/L	19	Standard
	Tl	205	329715.6	2.7	**53.3513**	1.427	2.7	ug/L	17	Standard
	Pb	206	252108.4	1.5	**52.0068**	0.872	1.7	ug/L	247	Standard
	Pb	207	219746.2	1.1	**49.8641**	0.528	1.1	ug/L	215	Standard
	Pb	208	883612.2	0.6	**53.5586**	0.555	1.0	ug/L	770	Standard
	U	238	309715.2	1.9	**51.7947**	1.152	2.2	ug/L	13	Standard
>	**Bi**	209	501621.6	0.6				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.3130**	29.978	173.2	mg/L	2	Standard
Mg	24	1170.0	3.4	**1.4509**	0.059	4.0	mg/L	35	Standard
K	39	130.0	27.7	**0.4888**	0.170	34.7	mg/L	25	Standard
Ca	43	153.3	12.3	**22.6892**	3.519	15.5	mg/L	38	Standard
Fe	54	591.5	1.7	**0.3836**	0.008	2.1	mg/L	126	Standard
Fe	57	516.7	13.6	**0.7964**	0.241	30.3	mg/L	245	Standard
> **Sc-1**	45	27050.8	1.0				mg/L	25066	Standard
Cl	35	165809.3	2.3				ug/L	125857	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	2850.3	4.1				ug/L	1350	Standard
P	31	26767.0	3.2				ug/L	18393	Standard
S	34	4750.7	2.1				ug/L	3739	Standard
Sr	88	130.0	7.7				ug/L	78	Standard
C	12	126.7	18.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	835.0	2.5				mg/L	2	Standard
Ho-1	165	470.0	4.9				mg/L	10	Standard
Er	166	453.3	25.8				mg/L	23	Standard
I	127	6214.6	6.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.418	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.144	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.705
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.698
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078718
Sample Date/Time: Tuesday, June 21, 2016 18:06:19
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61345.6	1.0				ug/L	60176	Standard
	Be	9	36.7	28.4	**0.0411**	0.014	34.6	ug/L	5	Standard
	Al	27	13853606.9	0.9	**103.4648**	1.981	1.9	ug/L	832	Standard
	Sc	45	26648.4	1.5				ug/L	25066	Standard
	Ti	47	1471.7	1.8	**7.3873**	0.204	2.8	ug/L	38	Standard
	V	51	15922.0	1.1	**2.4991**	0.067	2.7	ug/L	974	Standard
	Cr	52	13836.7	2.0	**1.2265**	0.015	1.2	ug/L	5792	Standard
	Cr	53	1288.4	6.0	**1.1570**	0.071	6.1	ug/L	347	Standard
	Mn	55	329136.0	2.3	**51.0786**	1.557	3.0	ug/L	1164	Standard
	Co	59	3178.0	2.5	**0.4710**	0.005	1.1	ug/L	303	Standard
	Ni	60	3429.7	2.4	**1.7103**	0.073	4.2	ug/L	291	Standard
	Cu	65	2424.9	0.9	**1.2538**	0.023	1.8	ug/L	173	Standard
	Zn	66	21892.8	1.6	**20.8141**	0.673	3.2	ug/L	130	Standard
>	**Ge**	72	493399.5	1.6				ug/L	491724	Standard
	As	75	662.7	6.1	**0.6629**	0.029	4.3	ug/L	-25	Standard
	Se	82	30.1	21.2	**0.1969**	0.058	29.3	ug/L	12	Standard
	Se-1	77	65.0	20.4	**0.2652**	0.174	65.4	ug/L	57	Standard
>	**Ga**	71	763.4	6.3				mg/L	148	Standard
	Rb	85	11562.7	2.6				ug/L	18	Standard
	Y	89	414722.7	0.7				ug/L	401845	Standard
>	**Rh**	103	61.7	26.1				ug/L	10	Standard
	Mo	98	2202.2	2.7	**0.9051**	0.023	2.6	ug/L	12	Standard
	Ag	107	93.7	9.6	**0.0004**	0.002	405.8	ug/L	98	Standard
	Cd	111	36.0	24.1	**0.0143**	0.005	32.0	mg/L	11	Standard
	Cd	114	82.5	18.5	**0.0135**	0.003	24.8	ug/L	21	Standard
>	**In**	115	551654.9	0.3				ug/L	547487	Standard
	Sn	118	1025.0	2.0	**0.1219**	0.003	2.7	ug/L	450	Standard
	Sb	123	1356.4	22.3	**0.3093**	0.070	22.8	ug/L	105	Standard
	Ba	135	129981.5	0.7	**70.2106**	0.381	0.5	ug/L	111	Standard
	Ce	140	35964.3	1.5				ug/L	107	Standard
>	**Tb**	159	898275.8	1.4				ug/L	890342	Standard
	Ho	165	588.3	7.7				ug/L	10	Standard
	Tl	203	129.0	10.2	**0.0136**	0.002	11.4	ug/L	19	Standard
	Tl	205	128.3	28.2	**0.0218**	0.006	27.3	ug/L	17	Standard
	Pb	206	2292.8	1.9	**0.4195**	0.012	2.9	ug/L	247	Standard
	Pb	207	1882.5	1.6	**0.3763**	0.003	0.8	ug/L	215	Standard
	Pb	208	7667.1	0.4	**0.4062**	0.006	1.5	ug/L	770	Standard
	U	238	370.0	8.6	**0.0612**	0.005	8.6	ug/L	13	Standard
>	**Bi**	209	500668.3	1.1				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.6673**	30.592	173.2	mg/L	2	Standard
Mg	24	3412.1	3.5	**4.3714**	0.183	4.2	mg/L	35	Standard
K	39	153.3	13.2	**0.6068**	0.098	16.1	mg/L	25	Standard
Ca	43	170.0	16.4	**26.2488**	5.560	21.2	mg/L	38	Standard
Fe	54	683.7	6.3	**0.4734**	0.029	6.2	mg/L	126	Standard
Fe	57	593.3	9.3	**1.1125**	0.233	21.0	mg/L	245	Standard
> **Sc-1**	45	26648.4	1.5				mg/L	25066	Standard
Cl	35	162659.9	1.3				ug/L	125857	Standard
Kr	83	4.3	81.0				ug/L	1	Standard
Br	81	1856.8	15.6				ug/L	1350	Standard
P	31	25311.1	1.5				ug/L	18393	Standard
S	34	4550.7	1.1				ug/L	3739	Standard
Sr	88	181.7	9.7				ug/L	78	Standard
C	12	63.3	9.1				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	938.6	15.9				mg/L	2	Standard
Ho-1	165	588.3	7.7				mg/L	10	Standard
Er	166	516.7	15.6				mg/L	23	Standard
I	127	3795.5	3.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.944	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.341	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.761
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.508
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606086201 WG573111-02
Sample Date/Time: Tuesday, June 21, 2016 18:09:30
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70003.4	5.7				ug/L	60176	Standard
	Be	9	36.7	20.8	**0.0348**	0.009	24.5	ug/L	5	Standard
	Al	27	16610862.4	6.4	**108.6830**	1.728	1.6	ug/L	832	Standard
	Sc	45	26531.6	3.2				ug/L	25066	Standard
	Ti	47	79.3	22.9	**0.1919**	0.082	42.6	ug/L	38	Standard
	V	51	2014.4	26.0	**0.1599**	0.083	51.6	ug/L	974	Standard
	Cr	52	10191.1	1.8	**0.6236**	0.029	4.7	ug/L	5792	Standard
	Cr	53	1240.1	4.8	**1.0705**	0.108	10.1	ug/L	347	Standard
	Mn	55	135277.1	2.5	**20.4449**	0.338	1.7	ug/L	1164	Standard
	Co	59	3194.7	8.9	**0.4633**	0.042	9.0	ug/L	303	Standard
	Ni	60	4307.3	3.2	**2.1481**	0.040	1.8	ug/L	291	Standard
	Cu	65	2946.0	3.6	**1.5109**	0.014	0.9	ug/L	173	Standard
	Zn	66	4156.6	3.8	**3.6798**	0.081	2.2	ug/L	130	Standard
>	**Ge**	72	503442.9	2.8				ug/L	491724	Standard
	As	75	284.8	17.5	**0.2994**	0.050	16.6	ug/L	-25	Standard
	Se	82	101.4	8.8	**0.8650**	0.083	9.6	ug/L	12	Standard
	Se-1	77	87.0	7.2	**0.5544**	0.111	20.1	ug/L	57	Standard
>	**Ga**	71	96.7	15.8				mg/L	148	Standard
	Rb	85	10238.5	4.2				ug/L	18	Standard
	Y	89	429610.1	1.8				ug/L	401845	Standard
>	**Rh**	103	65.0	13.3				ug/L	10	Standard
	Mo	98	201.8	61.9	**0.0760**	0.048	63.5	ug/L	12	Standard
	Ag	107	138.7	53.9	**0.0071**	0.012	164.1	ug/L	98	Standard
	Cd	111	55.1	4.5	**0.0236**	0.002	6.5	mg/L	11	Standard
	Cd	114	127.5	35.8	**0.0224**	0.009	41.4	ug/L	21	Standard
>	**In**	115	568273.2	3.6				ug/L	547487	Standard
	Sn	118	590.0	11.4	**0.0352**	0.009	25.4	ug/L	450	Standard
	Sb	123	675.3	25.4	**0.1449**	0.035	24.0	ug/L	105	Standard
	Ba	135	11427.3	2.3	**5.9431**	0.086	1.4	ug/L	111	Standard
	Ce	140	1858.4	6.1				ug/L	107	Standard
>	**Tb**	159	912569.9	2.0				ug/L	890342	Standard
	Ho	165	186.7	6.7				ug/L	10	Standard
	Tl	203	338.7	64.0	**0.0413**	0.028	67.6	ug/L	19	Standard
	Tl	205	318.3	54.7	**0.0526**	0.027	52.2	ug/L	17	Standard
	Pb	206	619.3	45.9	**0.0728**	0.056	77.2	ug/L	247	Standard
	Pb	207	529.7	52.6	**0.0680**	0.061	89.6	ug/L	215	Standard
	Pb	208	1946.1	35.0	**0.0582**	0.039	67.2	ug/L	770	Standard
	U	238	472.3	32.1	**0.0784**	0.024	31.1	ug/L	13	Standard
>	**Bi**	209	499634.8	2.9				ug/L	503143	Standard

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Na	23	3.3	86.6	**35.1997**	30.527	86.7	mg/L	2	Standard
Mg	24	58866.0	4.8	**76.3418**	1.277	1.7	mg/L	35	Standard
K	39	203.3	22.3	**0.8502**	0.245	28.9	mg/L	25	Standard
Ca	43	263.3	12.6	**43.7969**	6.786	15.5	mg/L	38	Standard
Fe	54	172.6	3.6	**0.0183**	0.008	42.0	mg/L	126	Standard
Fe	57	565.0	6.2	**1.0188**	0.198	19.5	mg/L	245	Standard
> **Sc-1**	45	26531.6	3.2				mg/L	25066	Standard
Cl	35	528870.2	4.8				ug/L	125857	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	18100.9	11.2				ug/L	1350	Standard
P	31	22234.7	5.0				ug/L	18393	Standard
S	34	4849.1	0.7				ug/L	3739	Standard
Sr	88	275.0	7.3				ug/L	78	Standard
C	12	93.3	16.4				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	288.4	8.8				mg/L	2	Standard
Ho-1	165	186.7	6.7				mg/L	10	Standard
Er	166	103.3	22.3				mg/L	23	Standard
I	127	6759.8	6.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.331	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.383	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.797
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.303
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606086201 WG573111-02
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Method 6020 - Summary Report

Sample ID: L1606086201DP WG573111-08
Sample Date/Time: Tuesday, June 21, 2016 18:12:42
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77315.1	0.8				ug/L	60176	Standard
	Be	9	36.7	55.1	**0.0306**	0.022	70.8	ug/L	5	Standard
	Al	27	17227028.4	3.4	**102.0589**	2.703	2.6	ug/L	832	Standard
	Sc	45	26312.9	5.4				ug/L	25066	Standard
	Ti	47	92.7	6.6	**0.2625**	0.044	16.8	ug/L	38	Standard
	V	51	1770.2	7.4	**0.1214**	0.033	27.3	ug/L	974	Standard
	Cr	52	10246.5	1.8	**0.6348**	0.045	7.2	ug/L	5792	Standard
	Cr	53	1068.4	4.2	**0.8651**	0.006	0.7	ug/L	347	Standard
	Mn	55	134734.3	3.6	**20.3882**	0.086	0.4	ug/L	1164	Standard
	Co	59	2977.6	2.6	**0.4294**	0.015	3.5	ug/L	303	Standard
	Ni	60	4134.6	6.2	**2.0561**	0.052	2.5	ug/L	291	Standard
	Cu	65	2902.9	3.4	**1.4903**	0.037	2.5	ug/L	173	Standard
	Zn	66	4166.9	2.6	**3.6969**	0.093	2.5	ug/L	130	Standard
>	**Ge**	72	502766.3	3.9				ug/L	491724	Standard
	As	75	231.7	9.5	**0.2502**	0.026	10.3	ug/L	-25	Standard
	Se	82	82.9	12.5	**0.6918**	0.104	15.0	ug/L	12	Standard
	Se-1	77	92.7	5.9	**0.6360**	0.126	19.8	ug/L	57	Standard
>	**Ga**	71	116.7	13.1				mg/L	148	Standard
	Rb	85	10200.1	2.2				ug/L	18	Standard
	Y	89	445666.9	2.4				ug/L	401845	Standard
>	**Rh**	103	83.3	15.1				ug/L	10	Standard
	Mo	98	109.3	3.3	**0.0379**	0.001	2.8	ug/L	12	Standard
	Ag	107	78.3	5.3	**-0.0030**	0.001	22.0	ug/L	98	Standard
	Cd	111	32.1	9.6	**0.0112**	0.002	16.1	mg/L	11	Standard
	Cd	114	61.4	31.5	**0.0081**	0.004	52.2	ug/L	21	Standard
>	**In**	115	588323.0	2.0				ug/L	547487	Standard
	Sn	118	506.7	15.4	**0.0167**	0.013	77.1	ug/L	450	Standard
	Sb	123	391.2	12.5	**0.0783**	0.013	16.1	ug/L	105	Standard
	Ba	135	11417.0	3.2	**5.7308**	0.081	1.4	ug/L	111	Standard
	Ce	140	1880.1	4.4				ug/L	107	Standard
>	**Tb**	159	936011.4	2.7				ug/L	890342	Standard
	Ho	165	181.7	20.8				ug/L	10	Standard
	Tl	203	161.0	14.9	**0.0175**	0.004	20.0	ug/L	19	Standard
	Tl	205	160.0	27.8	**0.0266**	0.008	28.3	ug/L	17	Standard
	Pb	206	452.7	4.8	**0.0372**	0.007	18.1	ug/L	247	Standard
	Pb	207	379.3	5.9	**0.0328**	0.007	22.4	ug/L	215	Standard
	Pb	208	1520.0	3.7	**0.0310**	0.006	19.0	ug/L	770	Standard
	U	238	306.7	5.7	**0.0497**	0.003	6.7	ug/L	13	Standard
>	**Bi**	209	509399.4	2.7				ug/L	503143	Standard

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Na	23	3.3	86.6	**36.1951**	31.438	86.9	mg/L	2	Standard
Mg	24	59695.8	3.9	**78.1443**	2.085	2.7	mg/L	35	Standard
K	39	236.7	11.6	**1.0180**	0.191	18.8	mg/L	25	Standard
Ca	43	230.0	14.3	**37.7841**	4.654	12.3	mg/L	38	Standard
Fe	54	155.5	13.6	**0.0041**	0.017	424.3	mg/L	126	Standard
Fe	57	521.7	15.8	**0.8829**	0.414	46.9	mg/L	245	Standard
> **Sc-1**	45	26312.9	5.4				mg/L	25066	Standard
Cl	35	564291.5	2.7				ug/L	125857	Standard
Kr	83	1.0	0.0				ug/L	1	Standard
Br	81	11614.5	6.5				ug/L	1350	Standard
P	31	22116.2	5.6				ug/L	18393	Standard
S	34	4845.8	1.1				ug/L	3739	Standard
Sr	88	280.0	12.4				ug/L	78	Standard
C	12	113.3	18.4				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	262.8	27.6				mg/L	2	Standard
Ho-1	165	181.7	20.8				mg/L	10	Standard
Er	166	150.0	40.0				mg/L	23	Standard
I	127	6614.8	4.5				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.482	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.246	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.459
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.244
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606088302
Sample Date/Time: Tuesday, June 21, 2016 18:15:53
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72031.1	4.6				ug/L	60176	Standard
	Be	9	43.3	52.0	**0.0410**	0.025	59.9	ug/L	5	Standard
	Al	27	18877330.6	2.8	**120.1329**	2.878	2.4	ug/L	832	Standard
	Sc	45	26508.2	2.8				ug/L	25066	Standard
	Ti	47	1389.4	3.9	**6.9356**	0.221	3.2	ug/L	38	Standard
	V	51	10133.0	2.4	**1.5222**	0.036	2.4	ug/L	974	Standard
	Cr	52	17075.6	2.7	**1.7253**	0.058	3.4	ug/L	5792	Standard
	Cr	53	2106.8	4.1	**2.1475**	0.127	5.9	ug/L	347	Standard
	Mn	55	8659860.5	3.3	**1344.4292**	36.890	2.7	ug/L	1164	Standard
	Co	59	26955.7	4.2	**4.3488**	0.153	3.5	ug/L	303	Standard
	Ni	60	24380.9	3.0	**13.2700**	0.290	2.2	ug/L	291	Standard
	Cu	65	3102.3	3.6	**1.6250**	0.048	3.0	ug/L	173	Standard
	Zn	66	73890.8	2.7	**70.5385**	1.291	1.8	ug/L	130	Standard
>	**Ge**	72	495064.0	0.9				ug/L	491724	Standard
	As	75	7508.6	3.4	**7.1381**	0.186	2.6	ug/L	-25	Standard
	Se	82	88.8	5.6	**0.7604**	0.041	5.3	ug/L	12	Standard
	Se-1	77	104.3	8.0	**0.8163**	0.107	13.1	ug/L	57	Standard
>	**Ga**	71	1203.4	6.0				mg/L	148	Standard
	Rb	85	18631.5	4.9				ug/L	18	Standard
	Y	89	471499.9	4.5				ug/L	401845	Standard
>	**Rh**	103	68.3	23.5				ug/L	10	Standard
	Mo	98	16975.2	1.8	**6.8750**	0.095	1.4	ug/L	12	Standard
	Ag	107	124.7	8.1	**0.0052**	0.002	43.3	ug/L	98	Standard
	Cd	111	354.4	5.3	**0.1790**	0.013	7.3	mg/L	11	Standard
	Cd	114	927.6	4.1	**0.1930**	0.003	1.7	ug/L	21	Standard
>	**In**	115	562376.6	3.1				ug/L	547487	Standard
	Sn	118	4190.6	1.8	**0.7122**	0.033	4.6	ug/L	450	Standard
	Sb	123	1237.0	1.3	**0.2761**	0.009	3.1	ug/L	105	Standard
	Ba	135	323863.4	1.8	**171.7335**	2.697	1.6	ug/L	111	Standard
	Ce	140	34140.1	1.5				ug/L	107	Standard
>	**Tb**	159	897272.3	2.5				ug/L	890342	Standard
	Ho	165	3113.7	2.4				ug/L	10	Standard
	Tl	203	64.7	19.9	**0.0051**	0.002	33.0	ug/L	19	Standard
	Tl	205	68.3	15.2	**0.0121**	0.002	13.5	ug/L	17	Standard
	Pb	206	38821.3	1.4	**8.0108**	0.071	0.9	ug/L	247	Standard
	Pb	207	32359.9	2.0	**7.3434**	0.107	1.5	ug/L	215	Standard
	Pb	208	128351.5	2.3	**7.7758**	0.128	1.6	ug/L	770	Standard
	U	238	8442.7	2.9	**1.4196**	0.032	2.3	ug/L	13	Standard
>	**Bi**	209	498550.4	0.6				ug/L	503143	Standard

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Na	23	5.0	100.0	**53.3736**	52.932	99.2	mg/L	2	Standard
Mg	24	21398.5	5.6	**27.7596**	1.350	4.9	mg/L	35	Standard
K	39	1008.4	11.1	**4.6456**	0.585	12.6	mg/L	25	Standard
Ca	43	186.7	14.8	**29.4057**	4.377	14.9	mg/L	38	Standard
Fe	54	2908.8	2.8	**2.4754**	0.120	4.8	mg/L	126	Standard
Fe	57	1130.0	7.4	**3.1241**	0.310	9.9	mg/L	245	Standard
> **Sc-1**	45	26508.2	2.8				mg/L	25066	Standard
Cl	35	207996.3	4.3				ug/L	125857	Standard
Kr	83	2.7	78.1				ug/L	1	Standard
Br	81	11254.2	3.5				ug/L	1350	Standard
P	31	26543.2	2.6				ug/L	18393	Standard
S	34	4722.4	7.5				ug/L	3739	Standard
Sr	88	290.0	4.6				ug/L	78	Standard
C	12	550.0	9.1				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	4557.8	5.5				mg/L	2	Standard
Ho-1	165	3113.7	2.4				mg/L	10	Standard
Er	166	2983.6	2.5				mg/L	23	Standard
I	127	203725.5	6.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.701	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.679	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.720	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.087	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 18:19:06
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	68241.8	3.0				ug/L	60176	Standard
	Be	9	42051.7	3.8	**51.6361**	0.537	1.0	ug/L	5	Standard
	Al	27	6971995.2	1.7	**46.8104**	0.719	1.5	ug/L	832	Standard
	Sc	45	24852.0	1.3				ug/L	25066	Standard
	Ti	47	20097.0	2.7	**107.8691**	2.722	2.5	ug/L	38	Standard
	V	51	307873.7	1.3	**53.6238**	0.489	0.9	ug/L	974	Standard
	Cr	52	328667.5	1.2	**52.7708**	0.685	1.3	ug/L	5792	Standard
	Cr	53	41331.3	2.5	**52.1074**	1.405	2.7	ug/L	347	Standard
	Mn	55	323878.6	1.2	**52.3860**	0.759	1.4	ug/L	1164	Standard
	Co	59	325002.9	1.5	**55.4186**	0.688	1.2	ug/L	303	Standard
	Ni	60	90037.4	0.9	**51.8053**	0.679	1.3	ug/L	291	Standard
	Cu	65	90581.0	1.5	**52.5134**	0.543	1.0	ug/L	173	Standard
	Zn	66	53001.9	0.8	**52.8632**	0.064	0.1	ug/L	130	Standard
>	Ge	72	473368.8	0.8				ug/L	491724	Standard
	As	75	53534.5	0.7	**53.0137**	0.077	0.1	ug/L	-25	Standard
	Se	82	5487.6	1.0	**55.0445**	0.192	0.3	ug/L	12	Standard
	Se-1	77	3650.1	0.8	**53.0021**	0.366	0.7	ug/L	57	Standard
>	Ga	71	215.0	9.3				mg/L	148	Standard
	Rb	85	910.0	6.2				ug/L	18	Standard
	Y	89	416501.3	1.6				ug/L	401845	Standard
>	Rh	103	51.7	20.1				ug/L	10	Standard
	Mo	98	242295.3	0.6	**98.0576**	1.644	1.7	ug/L	12	Standard
	Ag	107	299878.8	2.2	**49.4337**	1.074	2.2	ug/L	98	Standard
	Cd	111	98207.6	0.4	**50.8054**	0.675	1.3	mg/L	11	Standard
	Cd	114	240827.7	3.2	**51.1947**	0.841	1.6	ug/L	21	Standard
>	In	115	563072.6	1.7				ug/L	547487	Standard
	Sn	118	264056.2	0.9	**49.3801**	1.145	2.3	ug/L	450	Standard
	Sb	123	215333.2	1.5	**49.2924**	0.748	1.5	ug/L	105	Standard
	Ba	135	93099.8	1.2	**49.2664**	1.301	2.6	ug/L	111	Standard
	Ce	140	76.7	30.8				ug/L	107	Standard
>	Tb	159	879908.2	1.7				ug/L	890342	Standard
	Ho	165	3.3	173.2				ug/L	10	Standard
	Tl	203	383264.6	0.5	**51.4037**	0.933	1.8	ug/L	19	Standard
	Tl	205	335822.7	2.8	**54.8792**	0.706	1.3	ug/L	17	Standard
	Pb	206	245508.2	1.1	**51.1598**	0.909	1.8	ug/L	247	Standard
	Pb	207	222387.2	0.6	**50.9816**	0.958	1.9	ug/L	215	Standard
	Pb	208	870389.8	0.4	**53.3024**	1.410	2.6	ug/L	770	Standard
	U	238	316954.9	1.4	**53.5444**	1.099	2.1	ug/L	13	Standard
>	Bi	209	496674.2	2.3				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3777.1	3.0	**5.1944**	0.100	1.9	mg/L	35	Standard
K	39	940.0	7.7	**4.6131**	0.347	7.5	mg/L	25	Standard
Ca	43	46.7	27.0	**3.9480**	2.492	63.1	mg/L	38	Standard
Fe	54	5268.6	7.7	**4.9055**	0.368	7.5	mg/L	126	Standard
Fe	57	1598.4	5.2	**5.2665**	0.320	6.1	mg/L	245	Standard
> **Sc-1**	45	24852.0	1.3				mg/L	25066	Standard
Cl	35	163793.4	1.6				ug/L	125857	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	1850.1	19.4				ug/L	1350	Standard
P	31	22236.3	2.1				ug/L	18393	Standard
S	34	4902.5	1.0				ug/L	3739	Standard
Sr	88	91.7	24.6				ug/L	78	Standard
C	12	70.0	0.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	18.9	49.2				mg/L	2	Standard
Ho-1	165	3.3	173.2				mg/L	10	Standard
Er	166	23.3	65.5				mg/L	23	Standard
I	127	5351.1	56.9				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	103.272		
	Al	27	93.621		
	Sc	45			
	Ti	47	107.869		
	V	51	107.248		
	Cr	52	105.542		
	Cr	53			
	Mn	55	104.772		
	Co	59	110.837		
	Ni	60	103.611		
	Cu	65	105.027		
	Zn	66	105.726		
>	Ge	72		96.267	
	As	75	106.027		
	Se	82	110.089		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	98.058		
Ag	107	98.867		
Cd	111	101.611		
Cd	114			
In	115		102.847	
Sn	118	98.760		
Sb	123	98.585		
Ba	135	98.533		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.807		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.605		
U	238	107.089		
Bi	209		98.714	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Co	59	
QC Std 6	Se	82	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 18:22:18
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67175.3	1.0				ug/L	60176	Standard
	Be	9	20.0	25.0	**0.0159**	0.006	38.1	ug/L	5	Standard
	Al	27	2591.9	21.1	**0.0093**	0.004	40.6	ug/L	832	Standard
	Sc	45	25002.3	1.9				ug/L	25066	Standard
	Ti	47	26.3	8.8	**-0.0730**	0.015	21.1	ug/L	38	Standard
	V	51	1024.0	6.3	**-0.0008**	0.011	1434.1	ug/L	974	Standard
	Cr	52	6027.2	0.6	**-0.0071**	0.031	440.7	ug/L	5792	Standard
	Cr	53	448.3	17.4	**0.1301**	0.110	84.6	ug/L	347	Standard
	Mn	55	1540.7	13.4	**0.0229**	0.038	165.9	ug/L	1164	Standard
	Co	59	299.7	11.6	**-0.0007**	0.007	1063.7	ug/L	303	Standard
	Ni	60	216.7	14.8	**-0.0720**	0.016	21.7	ug/L	291	Standard
	Cu	65	161.7	10.9	**-0.0086**	0.009	106.2	ug/L	173	Standard
	Zn	66	175.3	6.1	**-0.0687**	0.005	7.4	ug/L	130	Standard
>	**Ge**	72	498606.4	3.0				ug/L	491724	Standard
	As	75	-26.7	98.4	**0.0088**	0.025	280.9	ug/L	-25	Standard
	Se	82	16.5	23.4	**0.0653**	0.041	63.0	ug/L	12	Standard
	Se-1	77	55.0	16.7	**0.1158**	0.104	89.8	ug/L	57	Standard
>	**Ga**	71	146.7	26.5				mg/L	148	Standard
	Rb	85	28.3	62.0				ug/L	18	Standard
	Y	89	424941.7	0.7				ug/L	401845	Standard
>	**Rh**	103	51.7	27.9				ug/L	10	Standard
	Mo	98	218.0	16.8	**0.0834**	0.015	17.7	ug/L	12	Standard
	Ag	107	103.3	10.3	**0.0016**	0.002	104.0	ug/L	98	Standard
	Cd	111	15.6	39.7	**0.0033**	0.003	97.5	mg/L	11	Standard
	Cd	114	35.3	50.3	**0.0030**	0.004	124.6	ug/L	21	Standard
>	**In**	115	565960.7	1.0				ug/L	547487	Standard
	Sn	118	921.7	38.3	**0.0980**	0.067	68.7	ug/L	450	Standard
	Sb	123	408.0	24.4	**0.0853**	0.023	26.8	ug/L	105	Standard
	Ba	135	123.7	12.1	**0.0096**	0.008	87.6	ug/L	111	Standard
	Ce	140	18.3	63.0				ug/L	107	Standard
>	**Tb**	159	883902.4	1.6				ug/L	890342	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	63.7	25.9	**0.0050**	0.002	46.4	ug/L	19	Standard
	Tl	205	55.0	39.6	**0.0100**	0.004	36.9	ug/L	17	Standard
	Pb	206	285.3	5.4	**0.0043**	0.004	96.3	ug/L	247	Standard
	Pb	207	231.7	13.5	**0.0008**	0.008	949.4	ug/L	215	Standard
	Pb	208	973.0	3.2	**-0.0006**	0.002	406.9	ug/L	770	Standard
	U	238	35.7	23.5	**0.0052**	0.002	29.1	ug/L	13	Standard
>	**Bi**	209	499145.6	2.0				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.6835**	32.352	173.2	mg/L	2	Standard
Mg	24	31.7	50.8	**0.0049**	0.023	465.6	mg/L	35	Standard
K	39	15.0	33.3	**-0.0372**	0.026	69.8	mg/L	25	Standard
Ca	43	28.3	20.4	**0.2868**	1.247	434.6	mg/L	38	Standard
Fe	54	104.1	41.5	**-0.0380**	0.040	104.4	mg/L	126	Standard
Fe	57	216.7	17.3	**-0.2352**	0.133	56.4	mg/L	245	Standard
> **Sc-1**	45	25002.3	1.9				mg/L	25066	Standard
Cl	35	165048.8	0.9				ug/L	125857	Standard
Kr	83	2.7	21.7				ug/L	1	Standard
Br	81	1623.4	12.1				ug/L	1350	Standard
P	31	22124.5	3.3				ug/L	18393	Standard
S	34	4804.1	3.4				ug/L	3739	Standard
Sr	88	68.3	27.7				ug/L	78	Standard
C	12	66.7	31.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	6.0	193.9				mg/L	2	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	1761.8	7.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.400	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.374
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.206
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606089601
Sample Date/Time: Tuesday, June 21, 2016 18:25:31
Number of Replicates: 3
Autosampler Position: 346
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70103.6	3.0				ug/L	60176	Standard
	Be	9	30.0	16.7	**0.0268**	0.005	18.6	ug/L	5	Standard
	Al	27	3685234.3	1.1	**24.0854**	0.545	2.3	ug/L	832	Standard
	Sc	45	27947.4	2.4				ug/L	25066	Standard
	Ti	47	382.0	70.3	**1.6605**	1.282	77.2	ug/L	38	Standard
	V	51	1685.0	2.5	**0.0990**	0.013	12.7	ug/L	974	Standard
	Cr	52	9250.2	0.4	**0.4417**	0.034	7.7	ug/L	5792	Standard
	Cr	53	1403.4	4.4	**1.2193**	0.042	3.4	ug/L	347	Standard
	Mn	55	19012124.1	0.6	**2827.7756**	74.302	2.6	ug/L	1164	Standard
	Co	59	222392.0	0.8	**34.7165**	1.037	3.0	ug/L	303	Standard
	Ni	60	2226.5	4.2	**0.9867**	0.048	4.9	ug/L	291	Standard
	Cu	65	381.0	0.5	**0.1050**	0.004	3.5	ug/L	173	Standard
	Zn	66	3054.6	2.1	**2.5666**	0.027	1.1	ug/L	130	Standard
>	**Ge**	72	517022.9	2.2				ug/L	491724	Standard
	As	75	3484.3	1.7	**3.1917**	0.073	2.3	ug/L	-25	Standard
	Se	82	132.5	2.0	**1.1265**	0.041	3.6	ug/L	12	Standard
	Se-1	77	106.3	7.5	**0.7815**	0.106	13.5	ug/L	57	Standard
>	**Ga**	71	960.0	20.1				mg/L	148	Standard
	Rb	85	23004.1	0.8				ug/L	18	Standard
	Y	89	437717.7	0.3				ug/L	401845	Standard
>	**Rh**	103	45.0	38.5				ug/L	10	Standard
	Mo	98	134.7	12.0	**0.0478**	0.006	13.5	ug/L	12	Standard
	Ag	107	109.0	10.4	**0.0018**	0.002	91.3	ug/L	98	Standard
	Cd	111	14.4	47.1	**0.0025**	0.003	137.0	mg/L	11	Standard
	Cd	114	41.9	23.5	**0.0041**	0.002	49.9	ug/L	21	Standard
>	**In**	115	587619.1	1.4				ug/L	547487	Standard
	Sn	118	860.0	5.8	**0.0802**	0.008	9.4	ug/L	450	Standard
	Sb	123	233.8	26.5	**0.0436**	0.013	29.9	ug/L	105	Standard
	Ba	135	48272.8	1.0	**24.4439**	0.117	0.5	ug/L	111	Standard
	Ce	140	18765.0	11.4				ug/L	107	Standard
>	**Tb**	159	938001.0	0.8				ug/L	890342	Standard
	Ho	165	298.3	19.3				ug/L	10	Standard
	Tl	203	150.3	4.3	**0.0152**	0.001	6.0	ug/L	19	Standard
	Tl	205	115.0	15.7	**0.0185**	0.003	14.4	ug/L	17	Standard
	Pb	206	534.3	3.6	**0.0487**	0.004	8.5	ug/L	247	Standard
	Pb	207	488.7	1.3	**0.0521**	0.002	4.0	ug/L	215	Standard
	Pb	208	1952.4	0.5	**0.0513**	0.000	0.7	ug/L	770	Standard
	U	238	255.0	5.1	**0.0392**	0.002	5.2	ug/L	13	Standard
>	**Bi**	209	534128.2	0.7				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	7298.4	1.4	**8.9592**	0.320	3.6	mg/L	35	Standard
K	39	96.7	31.6	**0.3179**	0.126	39.6	mg/L	25	Standard
Ca	43	46.7	16.4	**2.9434**	1.521	51.7	mg/L	38	Standard
Fe	54	23061.8	3.5	**19.5103**	1.160	5.9	mg/L	126	Standard
Fe	57	5869.5	4.4	**19.6834**	1.282	6.5	mg/L	245	Standard
> **Sc-1**	45	27947.4	2.4				mg/L	25066	Standard
Cl	35	163080.4	1.3				ug/L	125857	Standard
Kr	83	4.3	48.0				ug/L	1	Standard
Br	81	26733.6	2.6				ug/L	1350	Standard
P	31	26311.2	1.3				ug/L	18393	Standard
S	34	4997.5	0.8				ug/L	3739	Standard
Sr	88	113.3	12.7				ug/L	78	Standard
C	12	230.0	4.3				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	393.7	7.8				mg/L	2	Standard
Ho-1	165	298.3	19.3				mg/L	10	Standard
Er	166	270.0	19.2				mg/L	23	Standard
I	127	1056071.3	10.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.498	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.145	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.330
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.158
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606089602
Sample Date/Time: Tuesday, June 21, 2016 18:28:42
Number of Replicates: 3
Autosampler Position: 347
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66890.7	2.2				ug/L	60176	Standard
	Be	9	23.3	24.7	**0.0201**	0.007	32.5	ug/L	5	Standard
	Al	27	149805.7	3.0	**1.0175**	0.011	1.1	ug/L	832	Standard
	Sc	45	26154.2	3.3				ug/L	25066	Standard
	Ti	47	179.3	10.3	**0.7022**	0.105	15.0	ug/L	38	Standard
	V	51	1401.7	5.1	**0.0601**	0.011	18.8	ug/L	974	Standard
	Cr	52	10512.0	0.7	**0.6764**	0.028	4.1	ug/L	5792	Standard
	Cr	53	1416.7	9.0	**1.2841**	0.157	12.2	ug/L	347	Standard
	Mn	55	10409.3	6.2	**1.3787**	0.114	8.3	ug/L	1164	Standard
	Co	59	540.0	3.3	**0.0375**	0.003	8.6	ug/L	303	Standard
	Ni	60	844.0	0.2	**0.2688**	0.005	1.8	ug/L	291	Standard
	Cu	65	296.7	5.6	**0.0648**	0.011	17.1	ug/L	173	Standard
	Zn	66	1902.8	4.1	**1.5621**	0.096	6.1	ug/L	130	Standard
>	**Ge**	72	502257.1	1.3				ug/L	491724	Standard
	As	75	8.2	485.9	**0.0416**	0.037	88.7	ug/L	-25	Standard
	Se	82	33.9	33.4	**0.2274**	0.104	45.7	ug/L	12	Standard
	Se-1	77	70.7	24.9	**0.3292**	0.242	73.5	ug/L	57	Standard
>	**Ga**	71	326.7	26.3				mg/L	148	Standard
	Rb	85	8215.6	2.7				ug/L	18	Standard
	Y	89	444333.1	2.2				ug/L	401845	Standard
>	**Rh**	103	31.7	48.2				ug/L	10	Standard
	Mo	98	46.8	15.4	**0.0138**	0.002	17.7	ug/L	12	Standard
	Ag	107	73.3	4.4	**-0.0037**	0.000	8.2	ug/L	98	Standard
	Cd	111	8.2	45.8	**-0.0006**	0.002	305.8	mg/L	11	Standard
	Cd	114	19.1	24.5	**-0.0005**	0.001	199.0	ug/L	21	Standard
>	**In**	115	583126.7	2.0				ug/L	547487	Standard
	Sn	118	593.3	2.7	**0.0333**	0.003	10.0	ug/L	450	Standard
	Sb	123	144.2	19.6	**0.0243**	0.007	28.0	ug/L	105	Standard
	Ba	135	7469.5	3.8	**3.7635**	0.074	2.0	ug/L	111	Standard
	Ce	140	1718.4	6.1				ug/L	107	Standard
>	**Tb**	159	899867.4	0.7				ug/L	890342	Standard
	Ho	165	30.0	66.7				ug/L	10	Standard
	Tl	203	67.7	10.9	**0.0053**	0.001	16.4	ug/L	19	Standard
	Tl	205	71.7	22.4	**0.0124**	0.003	20.6	ug/L	17	Standard
	Pb	206	312.7	6.7	**0.0088**	0.004	47.7	ug/L	247	Standard
	Pb	207	252.0	2.7	**0.0044**	0.002	38.0	ug/L	215	Standard
	Pb	208	1132.0	3.9	**0.0079**	0.002	19.1	ug/L	770	Standard
	U	238	82.7	5.0	**0.0128**	0.001	6.4	ug/L	13	Standard
>	**Bi**	209	508030.6	1.7				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.2590**	31.617	173.2	mg/L	2	Standard
Mg	24	2870.3	3.9	**3.7404**	0.081	2.2	mg/L	35	Standard
K	39	155.0	5.6	**0.6292**	0.059	9.4	mg/L	25	Standard
Ca	43	26.7	28.6	**-0.2827**	1.489	526.7	mg/L	38	Standard
Fe	54	167.0	2.0	**0.0156**	0.008	50.9	mg/L	126	Standard
Fe	57	218.3	14.7	**-0.2671**	0.094	35.1	mg/L	245	Standard
> **Sc-1**	45	26154.2	3.3				mg/L	25066	Standard
Cl	35	154406.3	2.1				ug/L	125857	Standard
Kr	83	2.7	21.7				ug/L	1	Standard
Br	81	5824.5	3.9				ug/L	1350	Standard
P	31	26713.5	1.6				ug/L	18393	Standard
S	34	4210.6	7.3				ug/L	3739	Standard
Sr	88	103.3	42.3				ug/L	78	Standard
C	12	70.0	28.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	71.7	36.0				mg/L	2	Standard
Ho-1	165	30.0	66.7				mg/L	10	Standard
Er	166	33.3	75.5				mg/L	23	Standard
I	127	32674.7	51.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.159	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.142	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.510
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.971
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606089603
Sample Date/Time: Tuesday, June 21, 2016 18:31:54
Number of Replicates: 3
Autosampler Position: 348
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70073.3	1.0				ug/L	60176	Standard
	Be	9	81.7	39.4	**0.0886**	0.038	43.1	ug/L	5	Standard
	Al	27	1228150.4	2.6	**8.0209**	0.174	2.2	ug/L	832	Standard
	Sc	45	26367.9	1.0				ug/L	25066	Standard
	Ti	47	312.7	10.6	**1.3625**	0.172	12.6	ug/L	38	Standard
	V	51	2417.3	6.1	**0.2237**	0.026	11.6	ug/L	974	Standard
	Cr	52	10006.0	1.3	**0.5837**	0.012	2.0	ug/L	5792	Standard
	Cr	53	1740.1	6.8	**1.6504**	0.119	7.2	ug/L	347	Standard
	Mn	55	87073.6	2.8	**12.9889**	0.479	3.7	ug/L	1164	Standard
	Co	59	5750.4	2.7	**0.8671**	0.033	3.8	ug/L	303	Standard
	Ni	60	2238.5	3.1	**1.0160**	0.026	2.5	ug/L	291	Standard
	Cu	65	1573.1	4.2	**0.7551**	0.029	3.8	ug/L	173	Standard
	Zn	66	4274.9	3.8	**3.7627**	0.142	3.8	ug/L	130	Standard
>	**Ge**	72	507060.9	1.0				ug/L	491724	Standard
	As	75	114.4	32.4	**0.1397**	0.035	24.9	ug/L	-25	Standard
	Se	82	42.1	12.0	**0.3018**	0.050	16.5	ug/L	12	Standard
	Se-1	77	82.3	10.6	**0.4808**	0.128	26.6	ug/L	57	Standard
>	**Ga**	71	333.3	11.3				mg/L	148	Standard
	Rb	85	29852.7	2.6				ug/L	18	Standard
	Y	89	429423.7	0.4				ug/L	401845	Standard
>	**Rh**	103	41.7	6.9				ug/L	10	Standard
	Mo	98	55.7	3.8	**0.0175**	0.001	6.0	ug/L	12	Standard
	Ag	107	93.7	1.6	**-0.0003**	0.000	76.9	ug/L	98	Standard
	Cd	111	26.6	32.0	**0.0087**	0.004	50.4	mg/L	11	Standard
	Cd	114	73.0	10.0	**0.0107**	0.001	13.2	ug/L	21	Standard
>	**In**	115	577865.9	1.0				ug/L	547487	Standard
	Sn	118	510.0	18.7	**0.0191**	0.018	95.2	ug/L	450	Standard
	Sb	123	155.5	12.6	**0.0270**	0.004	15.1	ug/L	105	Standard
	Ba	135	59410.3	1.7	**30.6085**	0.771	2.5	ug/L	111	Standard
	Ce	140	19626.0	1.7				ug/L	107	Standard
>	**Tb**	159	917847.8	1.6				ug/L	890342	Standard
	Ho	165	385.0	3.4				ug/L	10	Standard
	Tl	203	165.0	14.8	**0.0175**	0.003	17.6	ug/L	19	Standard
	Tl	205	135.0	9.8	**0.0220**	0.002	9.0	ug/L	17	Standard
	Pb	206	734.4	1.2	**0.0910**	0.002	2.3	ug/L	247	Standard
	Pb	207	620.7	4.4	**0.0836**	0.007	8.5	ug/L	215	Standard
	Pb	208	2430.4	2.1	**0.0821**	0.004	5.1	ug/L	770	Standard
	U	238	108.0	7.6	**0.0166**	0.001	8.0	ug/L	13	Standard
>	**Bi**	209	520995.4	0.8				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.6640**	30.586	173.2	mg/L	2	Standard
Mg	24	2681.9	2.8	**3.4633**	0.064	1.8	mg/L	35	Standard
K	39	326.7	9.2	**1.4367**	0.158	11.0	mg/L	25	Standard
Ca	43	23.3	24.7	**-0.9469**	1.132	119.5	mg/L	38	Standard
Fe	54	1418.7	4.6	**1.1433**	0.057	5.0	mg/L	126	Standard
Fe	57	535.0	14.5	**0.9148**	0.284	31.1	mg/L	245	Standard
Sc-1	45	26367.9	1.0				mg/L	25066	Standard
Cl	35	152857.2	1.0				ug/L	125857	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	6364.7	4.2				ug/L	1350	Standard
P	31	24361.2	2.7				ug/L	18393	Standard
S	34	4130.6	1.9				ug/L	3739	Standard
Sr	88	91.7	13.7				ug/L	78	Standard
C	12	86.7	17.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	587.2	3.8				mg/L	2	Standard
Ho-1	165	385.0	3.4				mg/L	10	Standard
Er	166	406.7	11.4				mg/L	23	Standard
I	127	49898.9	6.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		116.447	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.119	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.549
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.548
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606089604
Sample Date/Time: Tuesday, June 21, 2016 18:35:05
Number of Replicates: 3
Autosampler Position: 349
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	68337.1	1.8				ug/L	60176	Standard
	Be	9	20.0	50.0	**0.0155**	0.012	78.6	ug/L	5	Standard
	Al	27	4276567.2	0.3	**28.6693**	0.604	2.1	ug/L	832	Standard
	Sc	45	26610.0	1.8				ug/L	25066	Standard
	Ti	47	192.3	15.6	**0.7599**	0.169	22.2	ug/L	38	Standard
	V	51	1621.9	5.7	**0.0939**	0.019	19.8	ug/L	974	Standard
	Cr	52	9092.7	3.3	**0.4438**	0.038	8.7	ug/L	5792	Standard
	Cr	53	1545.1	7.7	**1.4179**	0.111	7.8	ug/L	347	Standard
	Mn	55	17973806.3	0.6	**2724.7615**	75.997	2.8	ug/L	1164	Standard
	Co	59	227528.7	0.7	**36.1992**	0.876	2.4	ug/L	303	Standard
	Ni	60	2730.6	3.7	**1.2807**	0.043	3.3	ug/L	291	Standard
	Cu	65	354.7	4.1	**0.0946**	0.010	10.1	ug/L	173	Standard
	Zn	66	3333.7	3.1	**2.8812**	0.076	2.6	ug/L	130	Standard
>	**Ge**	72	507285.0	2.2				ug/L	491724	Standard
	As	75	2855.6	3.6	**2.6720**	0.119	4.5	ug/L	-25	Standard
	Se	82	109.9	10.6	**0.9366**	0.098	10.5	ug/L	12	Standard
	Se-1	77	112.3	4.4	**0.8920**	0.086	9.6	ug/L	57	Standard
>	**Ga**	71	996.7	5.1				mg/L	148	Standard
	Rb	85	22107.8	1.5				ug/L	18	Standard
	Y	89	431397.8	1.6				ug/L	401845	Standard
>	**Rh**	103	48.3	74.8				ug/L	10	Standard
	Mo	98	71.9	10.1	**0.0241**	0.003	12.0	ug/L	12	Standard
	Ag	107	78.3	8.7	**-0.0027**	0.001	37.5	ug/L	98	Standard
	Cd	111	9.9	26.7	**0.0003**	0.001	431.1	mg/L	11	Standard
	Cd	114	28.2	29.3	**0.0014**	0.002	118.5	ug/L	21	Standard
>	**In**	115	573974.7	0.6				ug/L	547487	Standard
	Sn	118	751.7	10.6	**0.0641**	0.015	23.9	ug/L	450	Standard
	Sb	123	139.4	12.3	**0.0237**	0.004	16.5	ug/L	105	Standard
	Ba	135	41452.3	0.6	**21.4826**	0.241	1.1	ug/L	111	Standard
	Ce	140	20226.9	8.5				ug/L	107	Standard
>	**Tb**	159	913197.4	0.8				ug/L	890342	Standard
	Ho	165	323.3	19.1				ug/L	10	Standard
	Tl	203	108.7	8.7	**0.0105**	0.001	13.3	ug/L	19	Standard
	Tl	205	98.3	5.9	**0.0165**	0.001	6.6	ug/L	17	Standard
	Pb	206	497.3	2.2	**0.0452**	0.002	5.4	ug/L	247	Standard
	Pb	207	457.7	4.4	**0.0492**	0.003	6.7	ug/L	215	Standard
	Pb	208	1899.7	0.7	**0.0525**	0.001	2.6	ug/L	770	Standard
	U	238	173.0	11.0	**0.0274**	0.003	12.4	ug/L	13	Standard
>	**Bi**	209	514279.4	1.2				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.3614**	30.062	173.2	mg/L	2	Standard
Mg	24	6924.9	3.0	**8.9278**	0.424	4.8	mg/L	35	Standard
K	39	88.3	28.5	**0.3038**	0.126	41.5	mg/L	25	Standard
Ca	43	50.0	26.5	**3.9407**	2.346	59.5	mg/L	38	Standard
Fe	54	22062.2	6.3	**19.5992**	1.505	7.7	mg/L	126	Standard
Fe	57	5569.4	4.3	**19.5983**	0.911	4.6	mg/L	245	Standard
> **Sc-1**	45	26610.0	1.8				mg/L	25066	Standard
Cl	35	158607.9	0.7				ug/L	125857	Standard
Kr	83	1.0	100.0				ug/L	1	Standard
Br	81	25608.3	1.9				ug/L	1350	Standard
P	31	25134.2	0.8				ug/L	18393	Standard
S	34	4804.1	1.5				ug/L	3739	Standard
Sr	88	91.7	45.7				ug/L	78	Standard
C	12	170.0	11.8				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	416.4	11.7				mg/L	2	Standard
Ho-1	165	323.3	19.1				mg/L	10	Standard
Er	166	283.3	8.9				mg/L	23	Standard
I	127	1043280.7	9.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.562	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.165	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.838
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.213
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606089605
Sample Date/Time: Tuesday, June 21, 2016 18:38:17
Number of Replicates: 3
Autosampler Position: 350
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67501.7	0.2				ug/L	60176	Standard
	Be	9	70.0	12.4	**0.0779**	0.011	14.0	ug/L	5	Standard
	Al	27	1172906.0	1.5	**7.9523**	0.131	1.6	ug/L	832	Standard
	Sc	45	26443.1	2.2				ug/L	25066	Standard
	Ti	47	221.7	20.6	**0.9153**	0.226	24.7	ug/L	38	Standard
	V	51	1454.3	19.9	**0.0686**	0.046	67.3	ug/L	974	Standard
	Cr	52	9092.7	2.6	**0.4577**	0.038	8.3	ug/L	5792	Standard
	Cr	53	1685.1	8.0	**1.6053**	0.165	10.3	ug/L	347	Standard
	Mn	55	65030.3	1.6	**9.7392**	0.204	2.1	ug/L	1164	Standard
	Co	59	5197.2	1.5	**0.7866**	0.010	1.3	ug/L	303	Standard
	Ni	60	1995.5	3.6	**0.8953**	0.033	3.7	ug/L	291	Standard
	Cu	65	1224.4	4.2	**0.5725**	0.026	4.5	ug/L	173	Standard
	Zn	66	3995.9	1.1	**3.5378**	0.062	1.7	ug/L	130	Standard
>	**Ge**	72	502248.6	0.7				ug/L	491724	Standard
	As	75	42.4	33.0	**0.0736**	0.013	18.2	ug/L	-25	Standard
	Se	82	42.1	17.3	**0.3052**	0.067	21.9	ug/L	12	Standard
	Se-1	77	99.7	4.9	**0.7312**	0.071	9.7	ug/L	57	Standard
>	**Ga**	71	340.0	25.1				mg/L	148	Standard
	Rb	85	28431.7	1.0				ug/L	18	Standard
	Y	89	432391.4	0.5				ug/L	401845	Standard
>	**Rh**	103	25.0	0.0				ug/L	10	Standard
	Mo	98	25.1	12.7	**0.0054**	0.001	24.9	ug/L	12	Standard
	Ag	107	84.0	10.6	**-0.0020**	0.001	71.0	ug/L	98	Standard
	Cd	111	29.3	29.0	**0.0099**	0.004	41.4	mg/L	11	Standard
	Cd	114	82.1	22.2	**0.0125**	0.004	31.8	ug/L	21	Standard
>	**In**	115	582868.3	1.2				ug/L	547487	Standard
	Sn	118	541.7	7.4	**0.0239**	0.006	27.0	ug/L	450	Standard
	Sb	123	106.5	7.0	**0.0159**	0.002	12.1	ug/L	105	Standard
	Ba	135	57467.5	1.5	**29.3464**	0.109	0.4	ug/L	111	Standard
	Ce	140	10703.9	25.2				ug/L	107	Standard
>	**Tb**	159	910811.6	2.1				ug/L	890342	Standard
	Ho	165	225.0	13.5				ug/L	10	Standard
	Tl	203	137.0	7.6	**0.0141**	0.001	9.3	ug/L	19	Standard
	Tl	205	136.7	14.8	**0.0225**	0.003	13.7	ug/L	17	Standard
	Pb	206	419.0	1.3	**0.0293**	0.002	5.4	ug/L	247	Standard
	Pb	207	358.0	1.7	**0.0271**	0.002	6.9	ug/L	215	Standard
	Pb	208	1368.0	1.1	**0.0209**	0.001	6.4	ug/L	770	Standard
	U	238	55.7	17.4	**0.0082**	0.002	18.6	ug/L	13	Standard
>	**Bi**	209	515104.9	0.7				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	2638.6	3.2	**3.3993**	0.161	4.7	mg/L	35	Standard
K	39	276.7	19.3	**1.1956**	0.256	21.4	mg/L	25	Standard
Ca	43	21.7	48.0	**-1.2810**	1.922	150.1	mg/L	38	Standard
Fe	54	612.6	5.0	**0.4150**	0.036	8.6	mg/L	126	Standard
Fe	57	326.7	24.2	**0.1354**	0.321	237.0	mg/L	245	Standard
> **Sc-1**	45	26443.1	2.2				mg/L	25066	Standard
Cl	35	151770.4	0.9				ug/L	125857	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	6438.0	7.0				ug/L	1350	Standard
P	31	24865.4	2.6				ug/L	18393	Standard
S	34	4355.6	4.7				ug/L	3739	Standard
Sr	88	85.0	10.2				ug/L	78	Standard
C	12	100.0	20.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	393.3	8.6				mg/L	2	Standard
Ho-1	165	225.0	13.5				mg/L	10	Standard
Er	166	210.0	16.5				mg/L	23	Standard
I	127	49125.0	32.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.174	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.140	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.463
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.377
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606089607
Sample Date/Time: Tuesday, June 21, 2016 18:41:28
Number of Replicates: 3
Autosampler Position: 351
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64582.3	0.3				ug/L	60176	Standard
	Be	9	10.0	50.0	**0.0040**	0.007	164.6	ug/L	5	Standard
	Al	27	17276.5	1.9	**0.1142**	0.003	2.4	ug/L	832	Standard
	Sc	45	25347.9	2.5				ug/L	25066	Standard
	Ti	47	28.3	10.8	**-0.0659**	0.014	21.5	ug/L	38	Standard
	V	51	1082.8	8.0	**0.0054**	0.014	253.7	ug/L	974	Standard
	Cr	52	8423.3	1.6	**0.3388**	0.029	8.5	ug/L	5792	Standard
	Cr	53	728.4	2.2	**0.4488**	0.025	5.7	ug/L	347	Standard
	Mn	55	3248.4	11.3	**0.2760**	0.059	21.5	ug/L	1164	Standard
	Co	59	268.3	3.6	**-0.0067**	0.002	28.2	ug/L	303	Standard
	Ni	60	364.0	1.4	**0.0051**	0.004	75.7	ug/L	291	Standard
	Cu	65	796.4	1.2	**0.3329**	0.002	0.5	ug/L	173	Standard
	Zn	66	1386.7	3.7	**1.0581**	0.053	5.0	ug/L	130	Standard
>	**Ge**	72	508475.6	0.8				ug/L	491724	Standard
	As	75	-61.1	19.7	**-0.0224**	0.011	51.1	ug/L	-25	Standard
	Se	82	17.3	24.6	**0.0693**	0.041	59.1	ug/L	12	Standard
	Se-1	77	55.3	1.0	**0.1076**	0.014	12.8	ug/L	57	Standard
>	**Ga**	71	210.0	8.2				mg/L	148	Standard
	Rb	85	103.3	12.2				ug/L	18	Standard
	Y	89	417086.5	1.0				ug/L	401845	Standard
>	**Rh**	103	30.0	16.7				ug/L	10	Standard
	Mo	98	23.7	24.8	**0.0052**	0.002	45.5	ug/L	12	Standard
	Ag	107	74.0	14.1	**-0.0031**	0.002	58.5	ug/L	98	Standard
	Cd	111	3.6	42.1	**-0.0028**	0.001	28.2	mg/L	11	Standard
	Cd	114	4.0	390.1	**-0.0036**	0.003	93.1	ug/L	21	Standard
>	**In**	115	557380.8	0.4				ug/L	547487	Standard
	Sn	118	1653.4	11.4	**0.2386**	0.035	14.5	ug/L	450	Standard
	Sb	123	101.0	13.9	**0.0157**	0.003	21.0	ug/L	105	Standard
	Ba	135	275.0	12.7	**0.0916**	0.019	21.0	ug/L	111	Standard
	Ce	140	46.7	27.0				ug/L	107	Standard
>	**Tb**	159	881433.0	0.7				ug/L	890342	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	15.3	24.7	**-0.0015**	0.001	32.6	ug/L	19	Standard
	Tl	205	18.3	41.7	**0.0039**	0.001	30.9	ug/L	17	Standard
	Pb	206	260.7	4.2	**-0.0017**	0.002	99.9	ug/L	247	Standard
	Pb	207	227.7	1.7	**-0.0009**	0.001	146.9	ug/L	215	Standard
	Pb	208	867.3	2.7	**-0.0078**	0.002	22.4	ug/L	770	Standard
	U	238	4.7	24.7	**-0.0001**	0.000	377.0	ug/L	13	Standard
>	**Bi**	209	506624.8	1.1				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.8980**	30.992	173.2	mg/L	2	Standard
Mg	24	78.3	16.1	**0.0675**	0.017	24.9	mg/L	35	Standard
K	39	31.7	24.1	**0.0432**	0.033	77.4	mg/L	25	Standard
Ca	43	33.3	45.8	**1.2167**	3.121	256.5	mg/L	38	Standard
Fe	54	130.8	25.6	**-0.0136**	0.033	239.4	mg/L	126	Standard
Fe	57	228.3	19.7	**-0.1998**	0.177	88.7	mg/L	245	Standard
> **Sc-1**	45	25347.9	2.5				mg/L	25066	Standard
Cl	35	151435.7	0.5				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	1560.1	4.4				ug/L	1350	Standard
P	31	20533.9	2.0				ug/L	18393	Standard
S	34	4339.0	6.0				ug/L	3739	Standard
Sr	88	95.0	38.0				ug/L	78	Standard
C	12	73.3	34.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.4	106.9				mg/L	2	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	7471.9	14.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.323	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.407	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.807
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.692
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606091601
Sample Date/Time: Tuesday, June 21, 2016 18:44:40
Number of Replicates: 3
Autosampler Position: 352
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67190.3	1.4				ug/L	60176	Standard
	Be	9	13.3	57.3	**0.0077**	0.010	125.6	ug/L	5	Standard
	Al	27	4059977.7	0.1	**27.6783**	0.411	1.5	ug/L	832	Standard
	Sc	45	26110.8	1.4				ug/L	25066	Standard
	Ti	47	49.3	11.2	**0.0353**	0.029	83.4	ug/L	38	Standard
	V	51	1268.5	6.0	**0.0323**	0.015	45.0	ug/L	974	Standard
	Cr	52	9251.5	2.7	**0.4413**	0.053	12.0	ug/L	5792	Standard
	Cr	53	838.4	6.1	**0.5622**	0.063	11.2	ug/L	347	Standard
	Mn	55	71645.4	5.8	**10.4299**	0.498	4.8	ug/L	1164	Standard
	Co	59	506.7	18.5	**0.0297**	0.014	46.5	ug/L	303	Standard
	Ni	60	855.0	1.3	**0.2614**	0.011	4.1	ug/L	291	Standard
	Cu	65	780.7	0.8	**0.3173**	0.002	0.5	ug/L	173	Standard
	Zn	66	4612.7	3.9	**3.9937**	0.147	3.7	ug/L	130	Standard
>	**Ge**	72	517216.1	1.1				ug/L	491724	Standard
	As	75	82.9	23.2	**0.1089**	0.017	15.4	ug/L	-25	Standard
	Se	82	25.8	18.1	**0.1443**	0.045	31.4	ug/L	12	Standard
	Se-1	77	58.3	9.4	**0.1352**	0.074	54.8	ug/L	57	Standard
>	**Ga**	71	198.3	18.6				mg/L	148	Standard
	Rb	85	8013.8	3.9				ug/L	18	Standard
	Y	89	419780.8	0.6				ug/L	401845	Standard
>	**Rh**	103	95.0	13.9				ug/L	10	Standard
	Mo	98	354.8	11.3	**0.1391**	0.018	13.1	ug/L	12	Standard
	Ag	107	124.3	40.3	**0.0052**	0.009	167.0	ug/L	98	Standard
	Cd	111	42.3	55.1	**0.0173**	0.012	72.3	mg/L	11	Standard
	Cd	114	113.9	89.0	**0.0200**	0.022	110.6	ug/L	21	Standard
>	**In**	115	563906.1	1.5				ug/L	547487	Standard
	Sn	118	1531.7	4.6	**0.2123**	0.010	4.8	ug/L	450	Standard
	Sb	123	210.1	8.4	**0.0405**	0.005	11.6	ug/L	105	Standard
	Ba	135	162094.5	0.7	**85.6790**	1.283	1.5	ug/L	111	Standard
	Ce	140	216.7	26.5				ug/L	107	Standard
>	**Tb**	159	900794.6	1.8				ug/L	890342	Standard
	Ho	165	15.0	57.7				ug/L	10	Standard
	Tl	203	104.3	57.0	**0.0100**	0.008	79.7	ug/L	19	Standard
	Tl	205	83.3	27.1	**0.0141**	0.004	26.2	ug/L	17	Standard
	Pb	206	391.3	13.8	**0.0236**	0.012	51.7	ug/L	247	Standard
	Pb	207	338.7	17.1	**0.0227**	0.014	61.6	ug/L	215	Standard
	Pb	208	1279.0	4.7	**0.0155**	0.005	30.6	ug/L	770	Standard
	U	238	198.3	8.7	**0.0314**	0.003	10.7	ug/L	13	Standard
>	**Bi**	209	516668.6	1.7				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.8980**	30.992	173.2	mg/L	2	Standard
Mg	24	4872.5	2.7	**6.3892**	0.242	3.8	mg/L	35	Standard
K	39	126.7	27.7	**0.4955**	0.176	35.6	mg/L	25	Standard
Ca	43	53.3	5.4	**4.7635**	0.439	9.2	mg/L	38	Standard
Fe	54	177.6	14.5	**0.0254**	0.024	95.7	mg/L	126	Standard
Fe	57	276.7	15.4	**-0.0443**	0.146	329.7	mg/L	245	Standard
> **Sc-1**	45	26110.8	1.4				mg/L	25066	Standard
Cl	35	176149.6	1.9				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	3207.0	11.6				ug/L	1350	Standard
P	31	23131.2	13.3				ug/L	18393	Standard
S	34	4474.0	0.8				ug/L	3739	Standard
Sr	88	226.7	10.9				ug/L	78	Standard
C	12	83.3	25.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	16.2	38.3				mg/L	2	Standard
Ho-1	165	15.0	57.7				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	23	Standard
I	127	28196.2	4.0				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.657	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.184	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.999
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.688
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606091602
Sample Date/Time: Tuesday, June 21, 2016 18:47:51
Number of Replicates: 3
Autosampler Position: 353
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	67906.9	1.3				ug/L	60176	Standard
	Be	9	10.0	50.0	**0.0033**	0.006	187.8	ug/L	5	Standard
	Al	27	2296072.1	1.5	**15.4843**	0.344	2.2	ug/L	832	Standard
	Sc	45	25872.1	5.5				ug/L	25066	Standard
	Ti	47	62.3	24.1	**0.1098**	0.081	73.9	ug/L	38	Standard
	V	51	1552.5	12.5	**0.0855**	0.031	36.6	ug/L	974	Standard
	Cr	52	9142.1	3.0	**0.4684**	0.023	4.9	ug/L	5792	Standard
	Cr	53	858.4	6.3	**0.6172**	0.055	8.8	ug/L	347	Standard
	Mn	55	243622.7	0.7	**37.1709**	0.798	2.1	ug/L	1164	Standard
	Co	59	1785.4	6.9	**0.2386**	0.020	8.4	ug/L	303	Standard
	Ni	60	1792.4	0.5	**0.7874**	0.016	2.0	ug/L	291	Standard
	Cu	65	962.4	1.2	**0.4305**	0.012	2.7	ug/L	173	Standard
	Zn	66	2184.5	1.1	**1.8327**	0.052	2.8	ug/L	130	Standard
>	**Ge**	72	501058.6	1.4				ug/L	491724	Standard
	As	75	100.6	11.3	**0.1281**	0.012	9.4	ug/L	-25	Standard
	Se	82	31.7	15.7	**0.2087**	0.052	24.7	ug/L	12	Standard
	Se-1	77	73.3	7.9	**0.3696**	0.094	25.6	ug/L	57	Standard
>	**Ga**	71	198.3	2.9				mg/L	148	Standard
	Rb	85	8319.0	2.0				ug/L	18	Standard
	Y	89	432620.5	1.7				ug/L	401845	Standard
>	**Rh**	103	35.0	14.3				ug/L	10	Standard
	Mo	98	238.4	19.0	**0.0874**	0.016	18.4	ug/L	12	Standard
	Ag	107	135.0	77.0	**0.0057**	0.016	279.8	ug/L	98	Standard
	Cd	111	47.6	114.6	**0.0185**	0.026	142.4	mg/L	11	Standard
	Cd	114	128.6	115.8	**0.0214**	0.030	138.7	ug/L	21	Standard
>	**In**	115	590384.4	2.1				ug/L	547487	Standard
	Sn	118	671.7	10.1	**0.0460**	0.013	27.4	ug/L	450	Standard
	Sb	123	237.2	55.9	**0.0439**	0.028	63.9	ug/L	105	Standard
	Ba	135	31177.4	0.9	**15.6954**	0.181	1.2	ug/L	111	Standard
	Ce	140	1276.7	10.5				ug/L	107	Standard
>	**Tb**	159	916339.4	2.6				ug/L	890342	Standard
	Ho	165	70.0	7.1				ug/L	10	Standard
	Tl	203	237.7	124.8	**0.0268**	0.038	140.4	ug/L	19	Standard
	Tl	205	80.0	33.1	**0.0135**	0.004	29.6	ug/L	17	Standard
	Pb	206	429.0	29.5	**0.0310**	0.024	78.2	ug/L	247	Standard
	Pb	207	341.7	30.1	**0.0231**	0.022	93.1	ug/L	215	Standard
	Pb	208	1332.4	10.6	**0.0186**	0.008	40.8	ug/L	770	Standard
	U	238	141.3	19.4	**0.0221**	0.004	18.5	ug/L	13	Standard
>	**Bi**	209	515955.1	1.9				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	2985.3	1.9	**3.9427**	0.232	5.9	mg/L	35	Standard
K	39	105.0	19.0	**0.3991**	0.123	30.7	mg/L	25	Standard
Ca	43	45.0	29.4	**3.3646**	2.869	85.3	mg/L	38	Standard
Fe	54	322.3	15.6	**0.1588**	0.032	20.1	mg/L	126	Standard
Fe	57	316.7	8.7	**0.1231**	0.144	117.2	mg/L	245	Standard
Sc-1	45	25872.1	5.5				mg/L	25066	Standard
Cl	35	186002.7	0.3				ug/L	125857	Standard
Kr	83	2.3	65.5				ug/L	1	Standard
Br	81	3327.0	4.9				ug/L	1350	Standard
P	31	21338.4	3.1				ug/L	18393	Standard
S	34	4454.0	2.0				ug/L	3739	Standard
Sr	88	85.0	75.1				ug/L	78	Standard
C	12	86.7	40.5				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	102.7	23.6				mg/L	2	Standard
Ho-1	165	70.0	7.1				mg/L	10	Standard
Er	166	83.3	45.4				mg/L	23	Standard
I	127	15337.8	5.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		112.847	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.898	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.835
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.546
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 18:51:04
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63442.7	3.5				ug/L	60176	Standard
	Be	9	40860.0	2.2	**54.0020**	1.449	2.7	ug/L	5	Standard
	Al	27	6937882.5	1.0	**50.1277**	1.614	3.2	ug/L	832	Standard
	Sc	45	25438.0	2.5				ug/L	25066	Standard
	Ti	47	21024.9	0.5	**106.0299**	0.919	0.9	ug/L	38	Standard
	V	51	323750.5	1.3	**52.9773**	0.236	0.4	ug/L	974	Standard
	Cr	52	348011.5	1.4	**52.4939**	0.728	1.4	ug/L	5792	Standard
	Cr	53	43766.5	1.1	**51.8369**	0.281	0.5	ug/L	347	Standard
	Mn	55	333840.5	2.1	**50.7327**	1.510	3.0	ug/L	1164	Standard
	Co	59	335417.2	1.0	**53.7424**	1.033	1.9	ug/L	303	Standard
	Ni	60	95144.1	1.0	**51.4310**	0.379	0.7	ug/L	291	Standard
	Cu	65	94656.8	0.9	**51.5587**	0.282	0.5	ug/L	173	Standard
	Zn	66	55176.0	1.3	**51.7065**	1.118	2.2	ug/L	130	Standard
>	Ge	72	503835.9	1.3				ug/L	491724	Standard
	As	75	55580.2	0.8	**51.7148**	0.495	1.0	ug/L	-25	Standard
	Se	82	5649.2	1.5	**53.2452**	1.272	2.4	ug/L	12	Standard
	Se-1	77	3911.5	2.0	**53.3712**	1.215	2.3	ug/L	57	Standard
>	Ga	71	175.0	20.6				mg/L	148	Standard
	Rb	85	773.4	10.9				ug/L	18	Standard
	Y	89	413055.9	4.2				ug/L	401845	Standard
>	Rh	103	48.3	15.8				ug/L	10	Standard
	Mo	98	250127.2	1.6	**103.9799**	1.624	1.6	ug/L	12	Standard
	Ag	107	312907.8	0.6	**52.9908**	0.412	0.8	ug/L	98	Standard
	Cd	111	99454.2	0.8	**52.8512**	0.382	0.7	mg/L	11	Standard
	Cd	114	242360.3	0.7	**52.9421**	0.765	1.4	ug/L	21	Standard
>	In	115	548076.9	0.7				ug/L	547487	Standard
	Sn	118	267254.9	1.1	**51.3363**	0.470	0.9	ug/L	450	Standard
	Sb	123	224264.3	0.4	**52.7378**	0.174	0.3	ug/L	105	Standard
	Ba	135	94718.1	0.7	**51.4823**	0.153	0.3	ug/L	111	Standard
	Ce	140	61.7	16.9				ug/L	107	Standard
>	Tb	159	872886.8	0.5				ug/L	890342	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	392549.7	0.9	**52.0956**	0.443	0.9	ug/L	19	Standard
	Tl	205	335218.3	1.5	**54.2215**	0.823	1.5	ug/L	17	Standard
	Pb	206	250297.8	0.3	**51.6123**	0.097	0.2	ug/L	247	Standard
	Pb	207	226489.3	0.6	**51.3765**	0.302	0.6	ug/L	215	Standard
	Pb	208	880738.1	0.5	**53.3625**	0.244	0.5	ug/L	770	Standard
	U	238	319048.1	0.1	**53.3329**	0.065	0.1	ug/L	13	Standard
>	Bi	209	501806.7	0.2				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.2483**	31.598	173.2	mg/L	2	Standard
Mg	24	3748.8	3.4	**5.0383**	0.218	4.3	mg/L	35	Standard
K	39	870.0	3.5	**4.1632**	0.196	4.7	mg/L	25	Standard
Ca	43	66.7	30.3	**7.5630**	3.627	48.0	mg/L	38	Standard
Fe	54	5462.5	1.6	**4.9747**	0.206	4.1	mg/L	126	Standard
Fe	57	1633.4	3.9	**5.2565**	0.210	4.0	mg/L	245	Standard
> **Sc-1**	45	25438.0	2.5				mg/L	25066	Standard
Cl	35	159590.9	1.7				ug/L	125857	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	1526.7	9.8				ug/L	1350	Standard
P	31	21814.0	0.5				ug/L	18393	Standard
S	34	4879.1	3.9				ug/L	3739	Standard
Sr	88	73.3	10.4				ug/L	78	Standard
C	12	60.0	33.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.9	218.3				mg/L	2	Standard
Ho-1	165	8.3	91.7				mg/L	10	Standard
Er	166	10.0	173.2				mg/L	23	Standard
I	127	2962.0	13.4				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	108.004		
Al	27	100.255		
Sc	45			
Ti	47	106.030		
V	51	105.955		
Cr	52	104.988		
Cr	53			
Mn	55	101.465		
Co	59	107.485		
Ni	60	102.862		
Cu	65	103.117		
Zn	66	103.413		
> Ge	72		102.463	
As	75	103.430		
Se	82	106.490		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	103.980		
Ag	107	105.982		
Cd	111	105.702		
Cd	114			
> In	115		100.108	
Sn	118	102.673		
Sb	123	105.476		
Ba	135	102.965		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	104.191		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.725		
U	238	106.666		
> Bi	209		99.734	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 18:54:15
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65759.1	2.1				ug/L	60176	Standard
	Be	9	15.0	66.7	**0.0099**	0.012	124.3	ug/L	5	Standard
	Al	27	1593.4	26.8	**0.0027**	0.003	102.5	ug/L	832	Standard
	Sc	45	26474.8	1.5				ug/L	25066	Standard
	Ti	47	28.3	23.5	**-0.0655**	0.031	47.5	ug/L	38	Standard
	V	51	963.9	7.8	**-0.0130**	0.015	114.8	ug/L	974	Standard
	Cr	52	6015.5	0.7	**-0.0229**	0.022	97.4	ug/L	5792	Standard
	Cr	53	381.7	7.2	**0.0411**	0.039	93.9	ug/L	347	Standard
	Mn	55	1197.4	3.7	**-0.0335**	0.005	13.8	ug/L	1164	Standard
	Co	59	265.0	7.5	**-0.0071**	0.002	35.3	ug/L	303	Standard
	Ni	60	191.7	2.1	**-0.0870**	0.003	3.6	ug/L	291	Standard
	Cu	65	137.7	10.1	**-0.0230**	0.006	27.4	ug/L	173	Standard
	Zn	66	181.3	7.5	**-0.0653**	0.015	22.7	ug/L	130	Standard
>	**Ge**	72	506005.0	1.8				ug/L	491724	Standard
	As	75	-35.7	74.2	**0.0007**	0.025	3529.5	ug/L	-25	Standard
	Se	82	12.6	16.6	**0.0250**	0.018	72.8	ug/L	12	Standard
	Se-1	77	54.3	13.9	**0.0968**	0.095	97.8	ug/L	57	Standard
>	**Ga**	71	158.3	20.3				mg/L	148	Standard
	Rb	85	20.0	86.6				ug/L	18	Standard
	Y	89	416660.0	4.4				ug/L	401845	Standard
>	**Rh**	103	31.7	32.9				ug/L	10	Standard
	Mo	98	234.4	23.9	**0.0897**	0.024	26.8	ug/L	12	Standard
	Ag	107	96.7	10.2	**0.0004**	0.002	455.9	ug/L	98	Standard
	Cd	111	9.2	48.8	**0.0000**	0.002	5096.5	mg/L	11	Standard
	Cd	114	32.6	31.9	**0.0024**	0.002	93.4	ug/L	21	Standard
>	**In**	115	568592.5	1.7				ug/L	547487	Standard
	Sn	118	836.7	13.7	**0.0809**	0.019	23.3	ug/L	450	Standard
	Sb	123	401.8	23.4	**0.0833**	0.020	24.4	ug/L	105	Standard
	Ba	135	112.3	11.3	**0.0034**	0.008	222.2	ug/L	111	Standard
	Ce	140	18.3	63.0				ug/L	107	Standard
>	**Tb**	159	905312.2	2.3				ug/L	890342	Standard
	Ho	165	11.7	89.2				ug/L	10	Standard
	Tl	203	52.3	30.0	**0.0031**	0.002	64.6	ug/L	19	Standard
	Tl	205	41.7	48.5	**0.0075**	0.003	42.3	ug/L	17	Standard
	Pb	206	259.3	16.5	**-0.0033**	0.009	264.4	ug/L	247	Standard
	Pb	207	233.3	11.4	**-0.0010**	0.006	617.4	ug/L	215	Standard
	Pb	208	889.0	1.3	**-0.0079**	0.001	10.4	ug/L	770	Standard
	U	238	29.3	61.9	**0.0039**	0.003	75.3	ug/L	13	Standard
>	**Bi**	209	519697.2	0.3				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	35.0	89.2	**0.0068**	0.041	600.8	mg/L	35	Standard
K	39	33.3	31.2	**0.0452**	0.050	110.3	mg/L	25	Standard
Ca	43	33.3	34.6	**0.8931**	2.150	240.8	mg/L	38	Standard
Fe	54	140.9	5.6	**-0.0098**	0.009	91.5	mg/L	126	Standard
Fe	57	233.3	13.1	**-0.2195**	0.109	49.4	mg/L	245	Standard
Sc-1	45	26474.8	1.5				mg/L	25066	Standard
Cl	35	159066.0	0.9				ug/L	125857	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	1636.8	3.9				ug/L	1350	Standard
P	31	22371.5	1.8				ug/L	18393	Standard
S	34	4974.2	4.8				ug/L	3739	Standard
Sr	88	65.0	23.1				ug/L	78	Standard
C	12	46.7	44.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.8	2.8				mg/L	2	Standard
Ho-1	165	11.7	89.2				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	23	Standard
I	127	2216.8	9.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.904	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.855
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.290
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Tuesday, June 21, 2016 19:12:07
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61166.6	1.6				ug/L	60176	Standard
	Be	9	150.0	15.3	**0.1967**	0.033	16.9	ug/L	5	Standard
	Al	27	1561.8	56.4	**0.0032**	0.006	196.8	ug/L	832	Standard
	Sc	45	24875.4	2.5				ug/L	25066	Standard
	Ti	47	28.0	12.9	**-0.0630**	0.020	31.8	ug/L	38	Standard
	V	51	3300.5	1.2	**0.3830**	0.004	1.1	ug/L	974	Standard
	Cr	52	10916.3	1.5	**0.7699**	0.022	2.9	ug/L	5792	Standard
	Cr	53	1001.7	7.0	**0.8086**	0.075	9.2	ug/L	347	Standard
	Mn	55	4162.9	6.9	**0.4342**	0.055	12.7	ug/L	1164	Standard
	Co	59	2663.9	2.0	**0.3873**	0.016	4.1	ug/L	303	Standard
	Ni	60	2996.6	2.6	**1.4705**	0.019	1.3	ug/L	291	Standard
	Cu	65	1480.7	6.8	**0.7275**	0.043	6.0	ug/L	173	Standard
	Zn	66	7406.5	4.4	**6.8860**	0.205	3.0	ug/L	130	Standard
>	**Ge**	72	493083.1	1.6				ug/L	491724	Standard
	As	75	372.9	12.0	**0.3882**	0.043	11.0	ug/L	-25	Standard
	Se	82	55.9	23.6	**0.4460**	0.125	27.9	ug/L	12	Standard
	Se-1	77	84.3	6.0	**0.5409**	0.079	14.6	ug/L	57	Standard
>	**Ga**	71	103.3	2.8				mg/L	148	Standard
	Rb	85	41.7	13.9				ug/L	18	Standard
	Y	89	400269.9	3.2				ug/L	401845	Standard
>	**Rh**	103	43.3	17.6				ug/L	10	Standard
	Mo	98	42.1	20.5	**0.0135**	0.004	31.1	ug/L	12	Standard
	Ag	107	2361.9	2.4	**0.3942**	0.010	2.6	ug/L	98	Standard
	Cd	111	441.3	5.1	**0.2353**	0.012	5.1	mg/L	11	Standard
	Cd	114	1071.7	9.3	**0.2353**	0.024	10.2	ug/L	21	Standard
>	**In**	115	535559.2	2.7				ug/L	547487	Standard
	Sn	118	436.7	24.1	**0.0116**	0.019	163.3	ug/L	450	Standard
	Sb	123	1772.8	0.2	**0.4193**	0.011	2.7	ug/L	105	Standard
	Ba	135	1338.4	0.9	**0.6899**	0.014	2.0	ug/L	111	Standard
	Ce	140	35.0	28.6				ug/L	107	Standard
>	**Tb**	159	857160.6	2.1				ug/L	890342	Standard
	Ho	165	6.7	86.6				ug/L	10	Standard
	Tl	203	591.3	5.4	**0.0761**	0.006	7.9	ug/L	19	Standard
	Tl	205	471.7	10.6	**0.0783**	0.008	10.5	ug/L	17	Standard
	Pb	206	1188.7	1.6	**0.1938**	0.006	3.2	ug/L	247	Standard
	Pb	207	1022.4	5.0	**0.1831**	0.010	5.7	ug/L	215	Standard
	Pb	208	4003.9	0.8	**0.1862**	0.005	2.6	ug/L	770	Standard
	U	238	2368.9	2.6	**0.4007**	0.018	4.4	ug/L	13	Standard
>	**Bi**	209	495170.9	2.1				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	50.0	10.0	**0.0302**	0.005	18.0	mg/L	35	Standard
K	39	30.0	44.1	**0.0395**	0.069	175.4	mg/L	25	Standard
Ca	43	31.7	65.7	**1.0148**	4.252	419.0	mg/L	38	Standard
Fe	54	92.2	19.0	**-0.0485**	0.015	30.9	mg/L	126	Standard
Fe	57	215.0	14.5	**-0.2376**	0.102	43.0	mg/L	245	Standard
> **Sc-1**	45	24875.4	2.5				mg/L	25066	Standard
Cl	35	148704.8	0.2				ug/L	125857	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	1456.7	4.5				ug/L	1350	Standard
P	31	15039.1	1.7				ug/L	18393	Standard
S	34	4490.7	1.0				ug/L	3739	Standard
Sr	88	73.3	19.7				ug/L	78	Standard
C	12	26.7	21.7				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	2.9	202.3				mg/L	2	Standard
Ho-1	165	6.7	86.6				mg/L	10	Standard
Er	166	10.0					mg/L	23	Standard
I	127	996.7	4.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	98.360		
Al	27			
Sc	45			
Ti	47			
V	51	95.739		
Cr	52	96.237		
Cr	53			
Mn	55	86.841		
Co	59	96.822		
Ni	60	91.905		
Cu	65	90.940		
Zn	66	110.176		
> Ge	72		100.276	
As	75	97.059		
Se	82	111.510		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	98.538		
Cd	111	98.062		
Cd	114			
> In	115			97.821
Sn	118			
Sb	123	104.817		
Ba	135	91.990		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	95.070		
Tl	205			
Pb	206			
Pb	207			
Pb	208	93.123		
U	238	100.174		
> Bi	209			98.416
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606099501
Sample Date/Time: Tuesday, June 21, 2016 19:34:57
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 500
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77633.4	0.8				ug/L	60176	Standard
	Be	9	6.7	43.3	**-0.0018**	0.003	172.4	ug/L	5	Standard
	Al	27	2026217.7	0.7	**11.9496**	0.150	1.3	ug/L	832	Standard
	Sc	45	26748.6	2.3				ug/L	25066	Standard
	Ti	47	31.7	17.4	**-0.0462**	0.030	65.2	ug/L	38	Standard
	V	51	1275.8	6.9	**0.0404**	0.016	40.4	ug/L	974	Standard
	Cr	52	6655.1	6.4	**0.0875**	0.082	93.8	ug/L	5792	Standard
	Cr	53	1963.5	8.8	**1.9476**	0.188	9.6	ug/L	347	Standard
	Mn	55	84988.4	1.3	**12.8494**	0.068	0.5	ug/L	1164	Standard
	Co	59	386.7	8.6	**0.0132**	0.006	45.9	ug/L	303	Standard
	Ni	60	675.3	7.4	**0.1784**	0.024	13.2	ug/L	291	Standard
	Cu	65	195.7	5.7	**0.0100**	0.008	78.4	ug/L	173	Standard
	Zn	66	3591.1	3.1	**3.1695**	0.063	2.0	ug/L	130	Standard
>	**Ge**	72	500114.1	1.6				ug/L	491724	Standard
	As	75	1657.7	10.0	**1.5886**	0.178	11.2	ug/L	-25	Standard
	Se	82	741.5	7.8	**6.9659**	0.657	9.4	ug/L	12	Standard
	Se-1	77	304.7	3.4	**3.5912**	0.205	5.7	ug/L	57	Standard
>	**Ga**	71	115.0	17.4				mg/L	148	Standard
	Rb	85	6904.9	3.3				ug/L	18	Standard
	Y	89	413732.9	0.8				ug/L	401845	Standard
>	**Rh**	103	540.0	15.3				ug/L	10	Standard
	Mo	98	33.8	20.7	**0.0095**	0.003	31.4	ug/L	12	Standard
	Ag	107	87.7	13.3	**-0.0007**	0.002	269.3	ug/L	98	Standard
	Cd	111	5.3	39.3	**-0.0019**	0.001	57.9	mg/L	11	Standard
	Cd	114	4.9	315.7	**-0.0034**	0.003	99.4	ug/L	21	Standard
>	**In**	115	553729.7	2.2				ug/L	547487	Standard
	Sn	118	500.0	18.4	**0.0210**	0.015	73.8	ug/L	450	Standard
	Sb	123	98.6	22.2	**0.0153**	0.005	30.1	ug/L	105	Standard
	Ba	135	188976.6	0.6	**101.7485**	2.043	2.0	ug/L	111	Standard
	Ce	140	20.0	25.0				ug/L	107	Standard
>	**Tb**	159	898084.0	1.2				ug/L	890342	Standard
	Ho	165	3.3	86.6				ug/L	10	Standard
	Tl	203	185.0	4.6	**0.0209**	0.001	6.4	ug/L	19	Standard
	Tl	205	168.3	27.6	**0.0281**	0.008	27.5	ug/L	17	Standard
	Pb	206	327.0	2.4	**0.0122**	0.002	14.3	ug/L	247	Standard
	Pb	207	273.3	4.9	**0.0096**	0.003	26.1	ug/L	215	Standard
	Pb	208	1042.0	2.7	**0.0030**	0.001	37.4	ug/L	770	Standard
	U	238	6.0	16.7	**0.0002**	0.000	92.5	ug/L	13	Standard
>	**Bi**	209	503950.2	0.9				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	24992.3	2.5	**32.1567**	1.409	4.4	mg/L	35	Standard
K	39	90.0	5.6	**0.3081**	0.023	7.4	mg/L	25	Standard
Ca	43	76.7	13.6	**8.8158**	1.657	18.8	mg/L	38	Standard
Fe	54	192.9	22.1	**0.0345**	0.034	98.8	mg/L	126	Standard
Fe	57	315.0	9.9	**0.0759**	0.141	185.8	mg/L	245	Standard
> **Sc-1**	45	26748.6	2.3				mg/L	25066	Standard
Cl	35	159695.2	0.9				ug/L	125857	Standard
Kr	83	2.3	107.9				ug/L	1	Standard
Br	81	185783.8	10.6				ug/L	1350	Standard
P	31	21602.1	2.2				ug/L	18393	Standard
S	34	4462.3	2.7				ug/L	3739	Standard
Sr	88	1885.1	4.1				ug/L	78	Standard
C	12	60.0	16.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	29.2	70.1				mg/L	2	Standard
Ho-1	165	3.3	86.6				mg/L	10	Standard
Er	166	16.7	69.3				mg/L	23	Standard
I	127	135026.1	16.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.011	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.706	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.140
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.160
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606099502
Sample Date/Time: Tuesday, June 21, 2016 19:38:09
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 500
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74226.4	2.4				ug/L	60176	Standard
	Be	9	8.3	34.6	**0.0004**	0.003	782.1	ug/L	5	Standard
	Al	27	1964045.2	2.9	**12.1146**	0.244	2.0	ug/L	832	Standard
	Sc	45	24970.6	3.4				ug/L	25066	Standard
	Ti	47	32.7	9.4	**-0.0368**	0.015	40.8	ug/L	38	Standard
	V	51	1262.9	8.3	**0.0439**	0.016	36.9	ug/L	974	Standard
	Cr	52	7258.4	0.5	**0.2111**	0.007	3.1	ug/L	5792	Standard
	Cr	53	1968.5	11.3	**2.0221**	0.300	14.8	ug/L	347	Standard
	Mn	55	84493.3	0.7	**13.1339**	0.146	1.1	ug/L	1164	Standard
	Co	59	367.0	1.6	**0.0116**	0.000	3.3	ug/L	303	Standard
	Ni	60	734.0	4.8	**0.2217**	0.019	8.5	ug/L	291	Standard
	Cu	65	234.0	5.0	**0.0345**	0.007	20.2	ug/L	173	Standard
	Zn	66	3577.4	1.6	**3.2515**	0.080	2.4	ug/L	130	Standard
>	**Ge**	72	486612.8	1.0				ug/L	491724	Standard
	As	75	1897.2	6.2	**1.8600**	0.104	5.6	ug/L	-25	Standard
	Se	82	847.2	4.6	**8.1876**	0.359	4.4	ug/L	12	Standard
	Se-1	77	299.3	6.6	**3.6325**	0.324	8.9	ug/L	57	Standard
>	**Ga**	71	111.7	23.0				mg/L	148	Standard
	Rb	85	6951.6	2.7				ug/L	18	Standard
	Y	89	428541.2	1.0				ug/L	401845	Standard
>	**Rh**	103	660.0	4.2				ug/L	10	Standard
	Mo	98	28.1	25.8	**0.0071**	0.003	41.3	ug/L	12	Standard
	Ag	107	72.0	3.7	**-0.0033**	0.000	11.5	ug/L	98	Standard
	Cd	111	5.6	20.7	**-0.0018**	0.001	33.9	mg/L	11	Standard
	Cd	114	12.2	78.3	**-0.0018**	0.002	112.9	ug/L	21	Standard
>	**In**	115	554225.0	0.6				ug/L	547487	Standard
	Sn	118	540.0	14.7	**0.0287**	0.015	53.8	ug/L	450	Standard
	Sb	123	76.2	13.8	**0.0101**	0.003	24.8	ug/L	105	Standard
	Ba	135	188355.6	0.6	**101.2959**	0.460	0.5	ug/L	111	Standard
	Ce	140	40.0	33.1				ug/L	107	Standard
>	**Tb**	159	890237.5	1.2				ug/L	890342	Standard
	Ho	165	21.7	35.3				ug/L	10	Standard
	Tl	203	179.7	2.8	**0.0212**	0.001	5.5	ug/L	19	Standard
	Tl	205	150.0	6.7	**0.0261**	0.001	4.6	ug/L	17	Standard
	Pb	206	498.3	4.9	**0.0517**	0.004	7.7	ug/L	247	Standard
	Pb	207	466.3	5.0	**0.0577**	0.006	10.6	ug/L	215	Standard
	Pb	208	1786.7	1.0	**0.0525**	0.002	3.4	ug/L	770	Standard
	U	238	3.0	33.3	**-0.0003**	0.000	60.1	ug/L	13	Standard
>	**Bi**	209	483891.9	2.0				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.7247**	32.424	173.2	mg/L	2	Standard
Mg	24	25317.8	3.2	**34.8845**	0.795	2.3	mg/L	35	Standard
K	39	93.3	22.3	**0.3528**	0.090	25.6	mg/L	25	Standard
Ca	43	91.7	8.3	**12.8496**	1.996	15.5	mg/L	38	Standard
Fe	54	224.3	18.2	**0.0779**	0.045	57.5	mg/L	126	Standard
Fe	57	341.7	9.5	**0.2646**	0.154	58.2	mg/L	245	Standard
> **Sc-1**	45	24970.6	3.4				mg/L	25066	Standard
Cl	35	171948.2	0.2				ug/L	125857	Standard
Kr	83	2.3	49.5				ug/L	1	Standard
Br	81	210718.6	1.3				ug/L	1350	Standard
P	31	22428.3	0.3				ug/L	18393	Standard
S	34	4655.7	1.8				ug/L	3739	Standard
Sr	88	1866.8	5.5				ug/L	78	Standard
C	12	56.7	36.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	45.9	45.5				mg/L	2	Standard
Ho-1	165	21.7	35.3				mg/L	10	Standard
Er	166	16.7	124.9				mg/L	23	Standard
I	127	109731.2	3.5				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.349	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.961	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.231	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.174	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 19:41:21
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60753.2	0.7				ug/L	60176	Standard
	Be	9	38719.4	2.5	**53.4127**	1.268	2.4	ug/L	5	Standard
	Al	27	6711778.9	2.1	**50.6033**	0.899	1.8	ug/L	832	Standard
	Sc	45	25728.5	2.1				ug/L	25066	Standard
	Ti	47	20982.5	0.5	**104.3242**	1.357	1.3	ug/L	38	Standard
	V	51	321053.2	1.0	**51.7981**	0.934	1.8	ug/L	974	Standard
	Cr	52	344201.5	0.6	**51.1636**	0.287	0.6	ug/L	5792	Standard
	Cr	53	44291.3	1.7	**51.7172**	0.682	1.3	ug/L	347	Standard
	Mn	55	339218.4	3.0	**50.8246**	1.874	3.7	ug/L	1164	Standard
	Co	59	329430.6	2.2	**52.0390**	1.531	2.9	ug/L	303	Standard
	Ni	60	95047.5	0.5	**50.6545**	0.643	1.3	ug/L	291	Standard
	Cu	65	94430.7	0.6	**50.7104**	0.485	1.0	ug/L	173	Standard
	Zn	66	54795.6	0.3	**50.6166**	0.334	0.7	ug/L	130	Standard
>	**Ge**	72	511027.8	0.9				ug/L	491724	Standard
	As	75	54737.8	0.8	**50.2171**	0.828	1.6	ug/L	-25	Standard
	Se	82	5522.7	2.1	**51.3173**	1.540	3.0	ug/L	12	Standard
	Se-1	77	3859.5	2.0	**51.9063**	1.447	2.8	ug/L	57	Standard
>	**Ga**	71	95.0	18.2				mg/L	148	Standard
	Rb	85	715.0	4.2				ug/L	18	Standard
	Y	89	414601.0	3.0				ug/L	401845	Standard
>	**Rh**	103	75.0	29.1				ug/L	10	Standard
	Mo	98	246703.9	0.8	**102.5745**	0.981	1.0	ug/L	12	Standard
	Ag	107	305467.2	1.3	**51.7401**	0.890	1.7	ug/L	98	Standard
	Cd	111	97736.3	0.7	**51.9469**	0.458	0.9	mg/L	11	Standard
	Cd	114	235851.4	0.5	**51.5266**	0.472	0.9	ug/L	21	Standard
>	**In**	115	547985.7	0.4				ug/L	547487	Standard
	Sn	118	265904.1	2.8	**51.0890**	1.611	3.2	ug/L	450	Standard
	Sb	123	218330.5	1.3	**51.3521**	0.839	1.6	ug/L	105	Standard
	Ba	135	93431.9	0.4	**50.7920**	0.422	0.8	ug/L	111	Standard
	Ce	140	66.7	18.9				ug/L	107	Standard
>	**Tb**	159	878645.9	1.2				ug/L	890342	Standard
	Ho	165	16.7	34.6				ug/L	10	Standard
	Tl	203	382593.3	0.6	**51.2166**	0.851	1.7	ug/L	19	Standard
	Tl	205	319855.9	0.2	**52.1860**	0.686	1.3	ug/L	17	Standard
	Pb	206	245809.9	0.3	**51.1253**	0.527	1.0	ug/L	247	Standard
	Pb	207	223379.0	0.7	**51.1100**	0.660	1.3	ug/L	215	Standard
	Pb	208	860209.0	0.8	**52.5732**	1.026	2.0	ug/L	770	Standard
	U	238	310063.3	0.9	**52.2791**	0.641	1.2	ug/L	13	Standard
>	**Bi**	209	497537.7	1.2				ug/L	503143	Standard

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Na	23	1.7	173.2	**18.4323**	31.917	173.2	mg/L	2	Standard
Mg	24	3723.8	3.0	**4.9453**	0.109	2.2	mg/L	35	Standard
K	39	950.0	8.5	**4.5034**	0.416	9.2	mg/L	25	Standard
Ca	43	46.7	24.7	**3.6078**	2.004	55.6	mg/L	38	Standard
Fe	54	5363.4	1.0	**4.8229**	0.058	1.2	mg/L	126	Standard
Fe	57	1550.1	5.1	**4.8704**	0.425	8.7	mg/L	245	Standard
> **Sc-1**	45	25728.5	2.1				mg/L	25066	Standard
Cl	35	153211.6	2.0				ug/L	125857	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	3267.0	14.6				ug/L	1350	Standard
P	31	22256.3	1.2				ug/L	18393	Standard
S	34	4787.4	1.1				ug/L	3739	Standard
Sr	88	73.3	34.3				ug/L	78	Standard
C	12	40.0	25.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	0.0					mg/L	2	Standard
Ho-1	165	16.7	34.6				mg/L	10	Standard
Er	166	0.0					mg/L	23	Standard
I	127	2020.1	11.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	106.825		
Al	27	101.207		
Sc	45			
Ti	47	104.324		
V	51	103.596		
Cr	52	102.327		
Cr	53			
Mn	55	101.649		
Co	59	104.078		
Ni	60	101.309		
Cu	65	101.421		
Zn	66	101.233		
> Ge	72		103.926	
As	75	100.434		
Se	82	102.635		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	102.575		
Ag	107	103.480		
Cd	111	103.894		
Cd	114			
> In	115		100.091	
Sn	118	102.178		
Sb	123	102.704		
Ba	135	101.584		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	102.433		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.146		
U	238	104.558		
> Bi	209		98.886	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 19:44:33
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61186.7	3.6				ug/L	60176	Standard
	Be	9	33.3	121.2	**0.0354**	0.053	148.9	ug/L	5	Standard
	Al	27	5501.8	106.7	**0.0318**	0.042	131.0	ug/L	832	Standard
	Sc	45	26701.8	2.0				ug/L	25066	Standard
	Ti	47	30.3	33.2	**-0.0533**	0.048	90.9	ug/L	38	Standard
	V	51	1141.6	4.7	**0.0186**	0.005	28.0	ug/L	974	Standard
	Cr	52	6134.6	2.3	**0.0092**	0.003	30.8	ug/L	5792	Standard
	Cr	53	388.3	9.1	**0.0563**	0.051	89.9	ug/L	347	Standard
	Mn	55	1080.7	12.0	**-0.0490**	0.017	33.8	ug/L	1164	Standard
	Co	59	305.0	13.6	**0.0000**	0.006	21511.9	ug/L	303	Standard
	Ni	60	217.7	16.0	**-0.0715**	0.017	23.3	ug/L	291	Standard
	Cu	65	178.3	13.0	**0.0005**	0.011	2056.8	ug/L	173	Standard
	Zn	66	169.7	10.0	**-0.0741**	0.013	17.6	ug/L	130	Standard
>	**Ge**	72	498463.8	2.0				ug/L	491724	Standard
	As	75	-12.2	286.7	**0.0221**	0.033	148.3	ug/L	-25	Standard
	Se	82	23.6	25.6	**0.1314**	0.054	41.3	ug/L	12	Standard
	Se-1	77	53.0	11.3	**0.0906**	0.088	97.6	ug/L	57	Standard
>	**Ga**	71	131.7	28.5				mg/L	148	Standard
	Rb	85	18.3	15.7				ug/L	18	Standard
	Y	89	417929.1	0.8				ug/L	401845	Standard
>	**Rh**	103	38.3	41.9				ug/L	10	Standard
	Mo	98	257.5	28.1	**0.0990**	0.027	27.2	ug/L	12	Standard
	Ag	107	163.0	35.8	**0.0113**	0.009	79.0	ug/L	98	Standard
	Cd	111	38.5	98.3	**0.0148**	0.019	127.2	mg/L	11	Standard
	Cd	114	81.0	86.9	**0.0125**	0.014	115.3	ug/L	21	Standard
>	**In**	115	565101.8	2.2				ug/L	547487	Standard
	Sn	118	831.7	11.4	**0.0814**	0.021	25.5	ug/L	450	Standard
	Sb	123	393.5	15.0	**0.0823**	0.015	18.3	ug/L	105	Standard
	Ba	135	200.7	38.6	**0.0498**	0.038	76.8	ug/L	111	Standard
	Ce	140	16.7	45.8				ug/L	107	Standard
>	**Tb**	159	889533.7	0.9				ug/L	890342	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	149.3	78.6	**0.0159**	0.015	94.6	ug/L	19	Standard
	Tl	205	106.7	80.7	**0.0179**	0.013	75.0	ug/L	17	Standard
	Pb	206	292.0	13.2	**0.0046**	0.007	158.0	ug/L	247	Standard
	Pb	207	254.3	15.6	**0.0049**	0.008	166.3	ug/L	215	Standard
	Pb	208	1008.7	14.9	**0.0005**	0.008	1674.4	ug/L	770	Standard
	U	238	103.0	92.1	**0.0161**	0.015	95.6	ug/L	13	Standard
>	**Bi**	209	507542.0	1.3				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.1949**	29.774	173.2	mg/L	2	Standard
Mg	24	48.3	76.3	**0.0231**	0.046	200.6	mg/L	35	Standard
K	39	25.0	20.0	**0.0046**	0.023	492.5	mg/L	25	Standard
Ca	43	23.3	32.7	**-1.0097**	1.396	138.2	mg/L	38	Standard
Fe	54	150.9	27.6	**-0.0016**	0.040	2494.1	mg/L	126	Standard
Fe	57	210.0	10.9	**-0.3128**	0.084	26.9	mg/L	245	Standard
Sc-1	45	26701.8	2.0				mg/L	25066	Standard
Cl	35	151455.2	0.3				ug/L	125857	Standard
Kr	83	2.0	0.0				ug/L	1	Standard
Br	81	2233.5	7.9				ug/L	1350	Standard
P	31	22777.1	4.3				ug/L	18393	Standard
S	34	4777.4	2.0				ug/L	3739	Standard
Sr	88	61.7	4.7				ug/L	78	Standard
C	12	53.3	10.8				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	16.3	94.7				mg/L	2	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	23	Standard
I	127	1440.1	11.4				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.371	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.217
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.874
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBS M7 WG573333-03
Sample Date/Time: Tuesday, June 21, 2016 19:47:45
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60333.2	0.9				ug/L	60176	Standard
	Be	9	8.3	91.7	**0.0026**	0.011	413.6	ug/L	5	Standard
	Al	27	13747.9	0.9	**0.0960**	0.002	1.6	ug/L	832	Standard
	Sc	45	26165.9	1.6				ug/L	25066	Standard
	Ti	47	33.7	12.0	**-0.0319**	0.021	67.5	ug/L	38	Standard
	V	51	1023.7	5.2	**0.0030**	0.011	364.3	ug/L	974	Standard
	Cr	52	8476.0	2.1	**0.4019**	0.015	3.7	ug/L	5792	Standard
	Cr	53	670.0	10.4	**0.4130**	0.076	18.4	ug/L	347	Standard
	Mn	55	1695.4	1.7	**0.0519**	0.001	2.7	ug/L	1164	Standard
	Co	59	1288.1	1.7	**0.1641**	0.005	3.0	ug/L	303	Standard
	Ni	60	726.0	6.3	**0.2167**	0.030	13.9	ug/L	291	Standard
	Cu	65	492.3	1.6	**0.1799**	0.004	2.2	ug/L	173	Standard
	Zn	66	1621.4	0.7	**1.3419**	0.027	2.0	ug/L	130	Standard
>	**Ge**	72	487560.8	1.2				ug/L	491724	Standard
	As	75	-5.7	503.0	**0.0282**	0.028	98.0	ug/L	-25	Standard
	Se	82	31.9	19.2	**0.2175**	0.056	25.7	ug/L	12	Standard
	Se-1	77	56.0	15.9	**0.1503**	0.133	88.5	ug/L	57	Standard
>	**Ga**	71	95.0	13.9				mg/L	148	Standard
	Rb	85	66.7	31.2				ug/L	18	Standard
	Y	89	416805.6	1.1				ug/L	401845	Standard
>	**Rh**	103	40.0	45.1				ug/L	10	Standard
	Mo	98	145.3	0.5	**0.0548**	0.001	1.4	ug/L	12	Standard
	Ag	107	81.0	9.6	**-0.0019**	0.001	72.0	ug/L	98	Standard
	Cd	111	25.4	13.8	**0.0085**	0.002	23.0	mg/L	11	Standard
	Cd	114	59.1	56.7	**0.0083**	0.007	88.4	ug/L	21	Standard
>	**In**	115	559026.1	1.1				ug/L	547487	Standard
	Sn	118	593.3	6.4	**0.0378**	0.006	15.8	ug/L	450	Standard
	Sb	123	135.0	11.3	**0.0235**	0.003	13.5	ug/L	105	Standard
	Ba	135	280.0	9.7	**0.0939**	0.016	17.3	ug/L	111	Standard
	Ce	140	105.0	29.7				ug/L	107	Standard
>	**Tb**	159	875434.1	1.1				ug/L	890342	Standard
	Ho	165	11.7	49.5				ug/L	10	Standard
	Tl	203	36.0	5.6	**0.0012**	0.000	21.8	ug/L	19	Standard
	Tl	205	30.0	44.1	**0.0059**	0.002	36.7	ug/L	17	Standard
	Pb	206	339.0	5.6	**0.0154**	0.004	24.7	ug/L	247	Standard
	Pb	207	271.0	5.6	**0.0097**	0.003	34.8	ug/L	215	Standard
	Pb	208	1160.0	0.8	**0.0108**	0.001	6.7	ug/L	770	Standard
	U	238	14.3	35.8	**0.0016**	0.001	55.1	ug/L	13	Standard
>	**Bi**	209	499087.6	0.6				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	61.6	**0.0157**	0.033	209.3	mg/L	35	Standard
K	39	23.3	49.5	**-0.0010**	0.055	5424.9	mg/L	25	Standard
Ca	43	25.0	60.0	**-0.6344**	2.755	434.3	mg/L	38	Standard
Fe	54	119.2	14.8	**-0.0282**	0.015	51.5	mg/L	126	Standard
Fe	57	218.3	7.4	**-0.2659**	0.051	19.0	mg/L	245	Standard
> **Sc-1**	45	26165.9	1.6				mg/L	25066	Standard
Cl	35	151596.6	0.8				ug/L	125857	Standard
Kr	83	0.7	86.6				ug/L	1	Standard
Br	81	4757.4	26.7				ug/L	1350	Standard
P	31	21740.6	1.1				ug/L	18393	Standard
S	34	4795.8	1.6				ug/L	3739	Standard
Sr	88	51.7	5.6				ug/L	78	Standard
C	12	43.3	66.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	22.9	66.8				mg/L	2	Standard
Ho-1	165	11.7	49.5				mg/L	10	Standard
Er	166	10.0					mg/L	23	Standard
I	127	1155.0	7.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.261	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.153	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.108	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.194	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSS M7 WG573333-04
Sample Date/Time: Tuesday, June 21, 2016 19:50:57
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59225.5	1.2				ug/L	60176	Standard
	Be	9	19609.4	3.0	**27.7420**	0.614	2.2	ug/L	5	Standard
	Al	27	12795.4	2.0	**0.0906**	0.002	1.9	ug/L	832	Standard
	Sc	45	25735.2	2.3				ug/L	25066	Standard
	Ti	47	30.7	8.2	**-0.0502**	0.013	25.4	ug/L	38	Standard
	V	51	161756.0	0.9	**26.8215**	0.191	0.7	ug/L	974	Standard
	Cr	52	180807.8	1.0	**27.2779**	0.436	1.6	ug/L	5792	Standard
	Cr	53	22388.2	0.3	**26.7556**	0.203	0.8	ug/L	347	Standard
	Mn	55	175657.5	1.4	**27.0317**	0.594	2.2	ug/L	1164	Standard
	Co	59	169342.1	1.0	**27.5546**	0.491	1.8	ug/L	303	Standard
	Ni	60	48725.6	1.2	**26.6820**	0.407	1.5	ug/L	291	Standard
	Cu	65	49148.3	1.6	**27.1675**	0.617	2.3	ug/L	173	Standard
	Zn	66	29121.0	0.5	**27.6282**	0.375	1.4	ug/L	130	Standard
>	**Ge**	72	495668.9	0.8				ug/L	491724	Standard
	As	75	28447.7	0.7	**26.9212**	0.272	1.0	ug/L	-25	Standard
	Se	82	2857.7	1.2	**27.3299**	0.423	1.5	ug/L	12	Standard
	Se-1	77	1990.5	1.7	**27.2946**	0.705	2.6	ug/L	57	Standard
>	**Ga**	71	91.7	12.6				mg/L	148	Standard
	Rb	85	58.3	27.6				ug/L	18	Standard
	Y	89	417893.5	1.2				ug/L	401845	Standard
>	**Rh**	103	40.0	37.5				ug/L	10	Standard
	Mo	98	60.5	14.8	**0.0204**	0.004	18.1	ug/L	12	Standard
	Ag	107	157370.8	1.5	**26.3596**	0.160	0.6	ug/L	98	Standard
	Cd	111	50266.8	1.9	**26.4266**	0.395	1.5	mg/L	11	Standard
	Cd	114	119121.9	1.8	**25.7414**	0.327	1.3	ug/L	21	Standard
>	**In**	115	553936.9	1.0				ug/L	547487	Standard
	Sn	118	550.0	18.4	**0.0307**	0.020	63.7	ug/L	450	Standard
	Sb	123	113724.8	2.0	**26.4550**	0.324	1.2	ug/L	105	Standard
	Ba	135	48233.0	1.1	**25.9109**	0.064	0.2	ug/L	111	Standard
	Ce	140	93.3	12.4				ug/L	107	Standard
>	**Tb**	159	874780.4	1.3				ug/L	890342	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	196062.2	1.5	**26.2005**	0.206	0.8	ug/L	19	Standard
	Tl	205	168222.2	1.4	**27.4028**	0.377	1.4	ug/L	17	Standard
	Pb	206	128186.0	1.2	**26.5918**	0.160	0.6	ug/L	247	Standard
	Pb	207	111720.4	1.6	**25.4940**	0.201	0.8	ug/L	215	Standard
	Pb	208	451907.4	0.9	**27.5458**	0.346	1.3	ug/L	770	Standard
	U	238	157122.5	0.9	**26.4506**	0.287	1.1	ug/L	13	Standard
>	**Bi**	209	498294.3	0.9				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	30.0	60.1	**0.0016**	0.025	1578.9	mg/L	35	Standard
K	39	23.3	32.7	**0.0007**	0.036	5216.6	mg/L	25	Standard
Ca	43	21.7	48.0	**-1.1391**	2.056	180.5	mg/L	38	Standard
Fe	54	127.8	14.4	**-0.0186**	0.014	76.0	mg/L	126	Standard
Fe	57	258.3	19.9	**-0.0963**	0.212	219.9	mg/L	245	Standard
> **Sc-1**	45	25735.2	2.3				mg/L	25066	Standard
Cl	35	150456.8	1.7				ug/L	125857	Standard
Kr	83	3.0	57.7				ug/L	1	Standard
Br	81	2710.2	6.8				ug/L	1350	Standard
P	31	21206.5	4.7				ug/L	18393	Standard
S	34	4460.7	1.3				ug/L	3739	Standard
Sr	88	63.3	9.1				ug/L	78	Standard
C	12	43.3	13.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.7	118.3				mg/L	2	Standard
Ho-1	165	8.3	91.7				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	998.4	16.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.421	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.802	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.178	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.036	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606105301 WG573333-02
Sample Date/Time: Tuesday, June 21, 2016 19:54:08
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59553.5	1.0				ug/L	60176	Standard
	Be	9	135.0	13.4	**0.1809**	0.024	13.0	ug/L	5	Standard
	Al	27	390493.3	0.9	**2.9960**	0.057	1.9	ug/L	832	Standard
	Sc	45	27242.8	2.6				ug/L	25066	Standard
	Ti	47	6465.0	1.2	**32.1311**	0.140	0.4	ug/L	38	Standard
	V	51	48073.7	0.3	**7.6430**	0.089	1.2	ug/L	974	Standard
	Cr	52	34364.9	0.8	**4.2815**	0.091	2.1	ug/L	5792	Standard
	Cr	53	4007.2	3.0	**4.3239**	0.170	3.9	ug/L	347	Standard
	Mn	55	232477.7	0.8	**34.9054**	0.509	1.5	ug/L	1164	Standard
	Co	59	7863.0	1.3	**1.1989**	0.016	1.3	ug/L	303	Standard
	Ni	60	6025.5	1.1	**3.0464**	0.076	2.5	ug/L	291	Standard
	Cu	65	4433.0	2.2	**2.2972**	0.044	1.9	ug/L	173	Standard
	Zn	66	19225.9	1.6	**17.6815**	0.348	2.0	ug/L	130	Standard
>	**Ge**	72	508937.9	1.5				ug/L	491724	Standard
	As	75	2936.1	0.9	**2.7370**	0.053	1.9	ug/L	-25	Standard
	Se	82	55.2	23.4	**0.4222**	0.115	27.2	ug/L	12	Standard
	Se-1	77	65.0	8.1	**0.2394**	0.078	32.6	ug/L	57	Standard
>	**Ga**	71	5164.2	2.6				mg/L	148	Standard
	Rb	85	19092.0	2.2				ug/L	18	Standard
	Y	89	428438.9	1.5				ug/L	401845	Standard
>	**Rh**	103	26.7	39.0				ug/L	10	Standard
	Mo	98	5911.8	1.7	**2.4389**	0.038	1.6	ug/L	12	Standard
	Ag	107	147.0	13.6	**0.0094**	0.003	37.1	ug/L	98	Standard
	Cd	111	206.9	4.5	**0.1046**	0.005	4.6	mg/L	11	Standard
	Cd	114	472.4	6.6	**0.0981**	0.006	6.3	ug/L	21	Standard
>	**In**	115	551287.4	0.7				ug/L	547487	Standard
	Sn	118	468.3	5.4	**0.0155**	0.005	29.4	ug/L	450	Standard
	Sb	123	357.0	11.8	**0.0759**	0.010	13.0	ug/L	105	Standard
	Ba	135	38678.0	0.4	**20.8682**	0.219	1.0	ug/L	111	Standard
	Ce	140	306495.9	1.2				ug/L	107	Standard
>	**Tb**	159	890380.5	0.6				ug/L	890342	Standard
	Ho	165	2116.8	9.4				ug/L	10	Standard
	Tl	203	519.3	6.1	**0.0646**	0.004	6.1	ug/L	19	Standard
	Tl	205	458.3	12.0	**0.0743**	0.009	11.8	ug/L	17	Standard
	Pb	206	124187.6	1.0	**25.2798**	0.148	0.6	ug/L	247	Standard
	Pb	207	103763.8	0.7	**23.2336**	0.104	0.4	ug/L	215	Standard
	Pb	208	419261.0	0.7	**25.0733**	0.105	0.4	ug/L	770	Standard
	U	238	1623.1	2.0	**0.2673**	0.004	1.6	ug/L	13	Standard
>	**Bi**	209	507748.9	0.4				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	18.3	**0.0137**	0.009	65.1	mg/L	35	Standard
K	39	28.3	27.0	**0.0171**	0.033	190.3	mg/L	25	Standard
Ca	43	28.3	62.0	**-0.2390**	3.080	1288.3	mg/L	38	Standard
Fe	54	3298.0	4.5	**2.7434**	0.115	4.2	mg/L	126	Standard
Fe	57	1085.0	10.1	**2.8415**	0.310	10.9	mg/L	245	Standard
> **Sc-1**	45	27242.8	2.6				mg/L	25066	Standard
Cl	35	140674.8	1.7				ug/L	125857	Standard
Kr	83	1.7	124.9				ug/L	1	Standard
Br	81	2630.2	14.1				ug/L	1350	Standard
P	31	19367.4	0.5				ug/L	18393	Standard
S	34	4402.3	3.5				ug/L	3739	Standard
Sr	88	81.7	12.7				ug/L	78	Standard
C	12	100.0	40.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	63.3	18.2				mg/L	0	Standard
Dy	164	3670.9	4.8				mg/L	2	Standard
Ho-1	165	2116.8	9.4				mg/L	10	Standard
Er	166	1800.1	7.0				mg/L	23	Standard
I	127	6793.2	6.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.966	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.501	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.694
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.915
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606105302S WG573333-07
Sample Date/Time: Tuesday, June 21, 2016 19:57:20
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60433.6	2.0				ug/L	60176	Standard
	Be	9	19427.5	2.3	**26.9397**	0.549	2.0	ug/L	5	Standard
	Al	27	396251.5	0.8	**2.9962**	0.054	1.8	ug/L	832	Standard
	Sc	45	27251.2	1.0				ug/L	25066	Standard
	Ti	47	7488.9	1.0	**38.3195**	0.066	0.2	ug/L	38	Standard
	V	51	191501.2	1.3	**31.8425**	0.616	1.9	ug/L	974	Standard
	Cr	52	197050.6	1.4	**29.8680**	0.710	2.4	ug/L	5792	Standard
	Cr	53	24456.4	1.3	**29.3202**	0.727	2.5	ug/L	347	Standard
	Mn	55	384294.1	1.4	**59.4969**	1.333	2.2	ug/L	1164	Standard
	Co	59	160969.3	2.7	**26.2367**	0.889	3.4	ug/L	303	Standard
	Ni	60	52090.7	1.5	**28.5899**	0.703	2.5	ug/L	291	Standard
	Cu	65	51279.0	0.4	**28.3978**	0.401	1.4	ug/L	173	Standard
	Zn	66	44812.5	1.1	**42.7178**	0.864	2.0	ug/L	130	Standard
>	**Ge**	72	494830.5	1.2				ug/L	491724	Standard
	As	75	25971.2	2.1	**24.6250**	0.687	2.8	ug/L	-25	Standard
	Se	82	2412.0	4.7	**23.0968**	1.223	5.3	ug/L	12	Standard
	Se-1	77	1649.1	1.6	**22.5387**	0.314	1.4	ug/L	57	Standard
>	**Ga**	71	4899.1	4.8				mg/L	148	Standard
	Rb	85	15933.4	0.2				ug/L	18	Standard
	Y	89	434672.4	2.3				ug/L	401845	Standard
>	**Rh**	103	26.7	57.3				ug/L	10	Standard
	Mo	98	16958.8	1.3	**6.8221**	0.110	1.6	ug/L	12	Standard
	Ag	107	140602.8	1.2	**23.0461**	0.295	1.3	ug/L	98	Standard
	Cd	111	48424.2	1.0	**24.9141**	0.334	1.3	mg/L	11	Standard
	Cd	114	117338.3	1.3	**24.8149**	0.406	1.6	ug/L	21	Standard
>	**In**	115	566048.4	0.4				ug/L	547487	Standard
	Sn	118	788.4	48.0	**0.0729**	0.071	97.4	ug/L	450	Standard
	Sb	123	59314.2	1.3	**13.4999**	0.209	1.5	ug/L	105	Standard
	Ba	135	85875.1	2.0	**45.1887**	1.009	2.2	ug/L	111	Standard
	Ce	140	311360.4	1.3				ug/L	107	Standard
>	**Tb**	159	893299.7	0.4				ug/L	890342	Standard
	Ho	165	1725.1	3.4				ug/L	10	Standard
	Tl	203	188251.6	0.6	**24.7136**	0.342	1.4	ug/L	19	Standard
	Tl	205	158225.3	1.5	**25.3203**	0.563	2.2	ug/L	17	Standard
	Pb	206	385483.0	0.9	**78.6614**	0.775	1.0	ug/L	247	Standard
	Pb	207	325540.1	1.2	**73.0713**	0.789	1.1	ug/L	215	Standard
	Pb	208	1297632.0	1.2	**77.8091**	1.554	2.0	ug/L	770	Standard
	U	238	149860.0	2.2	**24.7839**	0.724	2.9	ug/L	13	Standard
>	**Bi**	209	507277.4	0.8				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	53.3	21.7	**0.0285**	0.014	50.4	mg/L	35	Standard
K	39	40.0	33.1	**0.0713**	0.062	86.8	mg/L	25	Standard
Ca	43	30.0	60.1	**0.1178**	3.297	2798.2	mg/L	38	Standard
Fe	54	2785.6	1.9	**2.2951**	0.053	2.3	mg/L	126	Standard
Fe	57	871.7	5.6	**2.0708**	0.165	8.0	mg/L	245	Standard
> **Sc-1**	45	27251.2	1.0				mg/L	25066	Standard
Cl	35	136548.5	0.2				ug/L	125857	Standard
Kr	83	1.7	69.3				ug/L	1	Standard
Br	81	2690.2	5.6				ug/L	1350	Standard
P	31	18896.8	0.3				ug/L	18393	Standard
S	34	3938.8	2.0				ug/L	3739	Standard
Sr	88	90.0	36.4				ug/L	78	Standard
C	12	110.0					mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	12.4				mg/L	0	Standard
Dy	164	3247.3	7.3				mg/L	2	Standard
Ho-1	165	1725.1	3.4				mg/L	10	Standard
Er	166	1386.7	5.1				mg/L	23	Standard
I	127	5004.2	4.5				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.428	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.632	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.390
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.822
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606105303SD WG573333-08
Sample Date/Time: Tuesday, June 21, 2016 20:00:31
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60791.8	2.4				ug/L	60176	Standard
	Be	9	19442.5	1.7	**26.8023**	0.232	0.9	ug/L	5	Standard
	Al	27	432728.9	2.0	**3.2535**	0.080	2.4	ug/L	832	Standard
	Sc	45	26972.3	0.6				ug/L	25066	Standard
	Ti	47	8101.2	1.8	**41.8095**	0.489	1.2	ug/L	38	Standard
	V	51	194533.2	1.3	**32.6143**	0.536	1.6	ug/L	974	Standard
	Cr	52	196269.4	0.6	**29.9955**	0.469	1.6	ug/L	5792	Standard
	Cr	53	24483.1	0.2	**29.5930**	0.323	1.1	ug/L	347	Standard
	Mn	55	386351.2	0.3	**60.3048**	0.743	1.2	ug/L	1164	Standard
	Co	59	166196.9	0.5	**27.3090**	0.232	0.8	ug/L	303	Standard
	Ni	60	51605.4	0.6	**28.5533**	0.418	1.5	ug/L	291	Standard
	Cu	65	50075.0	1.9	**27.9529**	0.367	1.3	ug/L	173	Standard
	Zn	66	57353.7	1.8	**55.1795**	0.640	1.2	ug/L	130	Standard
>	**Ge**	72	490809.7	1.0				ug/L	491724	Standard
	As	75	25714.1	1.9	**24.5757**	0.229	0.9	ug/L	-25	Standard
	Se	82	2487.9	0.6	**24.0190**	0.366	1.5	ug/L	12	Standard
	Se-1	77	1747.8	2.5	**24.1314**	0.805	3.3	ug/L	57	Standard
>	**Ga**	71	5157.5	2.7				mg/L	148	Standard
	Rb	85	18523.0	3.1				ug/L	18	Standard
	Y	89	444017.8	1.4				ug/L	401845	Standard
>	**Rh**	103	46.7	16.4				ug/L	10	Standard
	Mo	98	5808.7	0.6	**2.3126**	0.026	1.1	ug/L	12	Standard
	Ag	107	143200.7	1.9	**23.2569**	0.246	1.1	ug/L	98	Standard
	Cd	111	48312.1	2.0	**24.6294**	0.423	1.7	mg/L	11	Standard
	Cd	114	117421.2	1.2	**24.6058**	0.205	0.8	ug/L	21	Standard
>	**In**	115	571242.8	0.9				ug/L	547487	Standard
	Sn	118	516.7	19.9	**0.0212**	0.018	86.9	ug/L	450	Standard
	Sb	123	58163.3	1.0	**13.1170**	0.064	0.5	ug/L	105	Standard
	Ba	135	91445.8	0.5	**47.6850**	0.197	0.4	ug/L	111	Standard
	Ce	140	283441.9	1.3				ug/L	107	Standard
>	**Tb**	159	890644.6	2.9				ug/L	890342	Standard
	Ho	165	1641.8	1.4				ug/L	10	Standard
	Tl	203	186726.4	1.3	**24.8727**	0.635	2.6	ug/L	19	Standard
	Tl	205	159870.8	1.7	**25.9629**	0.965	3.7	ug/L	17	Standard
	Pb	206	345180.0	0.3	**71.4786**	2.166	3.0	ug/L	247	Standard
	Pb	207	289788.0	0.4	**66.0118**	2.154	3.3	ug/L	215	Standard
	Pb	208	1193141.1	0.7	**72.6045**	2.586	3.6	ug/L	770	Standard
	U	238	151251.6	0.9	**25.3870**	0.985	3.9	ug/L	13	Standard
>	**Bi**	209	500148.8	3.1				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	29.0	**0.0164**	0.016	96.8	mg/L	35	Standard
K	39	21.7	35.3	**-0.0118**	0.036	304.9	mg/L	25	Standard
Ca	43	35.0	28.6	**1.0832**	1.815	167.6	mg/L	38	Standard
Fe	54	3124.4	3.6	**2.6191**	0.111	4.2	mg/L	126	Standard
Fe	57	1018.4	7.4	**2.6406**	0.258	9.8	mg/L	245	Standard
> **Sc-1**	45	26972.3	0.6				mg/L	25066	Standard
Cl	35	135993.6	0.3				ug/L	125857	Standard
Kr	83	2.3	49.5				ug/L	1	Standard
Br	81	2136.8	9.1				ug/L	1350	Standard
P	31	18498.0	3.5				ug/L	18393	Standard
S	34	3852.2	5.6				ug/L	3739	Standard
Sr	88	71.7	38.4				ug/L	78	Standard
C	12	123.3	4.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	66.7	52.7				mg/L	0	Standard
Dy	164	3021.0	3.5				mg/L	2	Standard
Ho-1	165	1641.8	1.4				mg/L	10	Standard
Er	166	1586.8	8.2				mg/L	23	Standard
I	127	4954.1	6.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.023	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.814	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.339
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.405
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606105401
Sample Date/Time: Tuesday, June 21, 2016 20:03:43
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61720.5	1.6				ug/L	60176	Standard
	Be	9	93.3	26.4	**0.1174**	0.032	27.0	ug/L	5	Standard
	Al	27	303416.2	0.1	**2.2442**	0.038	1.7	ug/L	832	Standard
	Sc	45	26598.3	1.8				ug/L	25066	Standard
	Ti	47	5974.5	1.1	**29.4612**	0.106	0.4	ug/L	38	Standard
	V	51	29615.8	0.7	**4.6079**	0.038	0.8	ug/L	974	Standard
	Cr	52	34301.5	0.5	**4.2336**	0.017	0.4	ug/L	5792	Standard
	Cr	53	4075.5	5.3	**4.3682**	0.220	5.0	ug/L	347	Standard
	Mn	55	67679.2	0.7	**9.9350**	0.149	1.5	ug/L	1164	Standard
	Co	59	5795.4	0.6	**0.8641**	0.012	1.4	ug/L	303	Standard
	Ni	60	7058.0	2.5	**3.5727**	0.066	1.8	ug/L	291	Standard
	Cu	65	1680.8	0.8	**0.8038**	0.014	1.8	ug/L	173	Standard
	Zn	66	13813.0	1.2	**12.5434**	0.154	1.2	ug/L	130	Standard
>	**Ge**	72	512622.2	0.8				ug/L	491724	Standard
	As	75	1326.1	3.7	**1.2458**	0.045	3.6	ug/L	-25	Standard
	Se	82	58.4	19.9	**0.4492**	0.112	25.0	ug/L	12	Standard
	Se-1	77	88.3	8.0	**0.5495**	0.098	17.9	ug/L	57	Standard
>	**Ga**	71	5431.0	3.2				mg/L	148	Standard
	Rb	85	11375.9	1.4				ug/L	18	Standard
	Y	89	433671.4	3.3				ug/L	401845	Standard
>	**Rh**	103	16.7	62.4				ug/L	10	Standard
	Mo	98	2147.6	0.7	**0.8712**	0.013	1.5	ug/L	12	Standard
	Ag	107	162.0	7.3	**0.0115**	0.002	16.1	ug/L	98	Standard
	Cd	111	42.4	7.2	**0.0174**	0.001	7.5	mg/L	11	Standard
	Cd	114	99.9	11.8	**0.0170**	0.002	13.5	ug/L	21	Standard
>	**In**	115	558893.7	1.3				ug/L	547487	Standard
	Sn	118	561.7	17.7	**0.0319**	0.019	59.1	ug/L	450	Standard
	Sb	123	749.1	15.9	**0.1654**	0.030	17.9	ug/L	105	Standard
	Ba	135	29348.7	0.5	**15.6055**	0.116	0.7	ug/L	111	Standard
	Ce	140	146646.3	1.1				ug/L	107	Standard
>	**Tb**	159	887966.0	1.1				ug/L	890342	Standard
	Ho	165	671.7	6.3				ug/L	10	Standard
	Tl	203	235.7	12.3	**0.0279**	0.004	14.4	ug/L	19	Standard
	Tl	205	173.3	14.5	**0.0291**	0.004	14.7	ug/L	17	Standard
	Pb	206	14922.0	0.9	**3.0381**	0.064	2.1	ug/L	247	Standard
	Pb	207	12398.4	1.3	**2.7752**	0.080	2.9	ug/L	215	Standard
	Pb	208	50203.5	0.7	**2.9980**	0.064	2.1	ug/L	770	Standard
	U	238	2316.2	1.5	**0.3880**	0.011	2.7	ug/L	13	Standard
>	**Bi**	209	499818.9	1.6				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	56.7	18.4	**0.0343**	0.012	35.9	mg/L	35	Standard
K	39	40.0	12.5	**0.0758**	0.026	33.7	mg/L	25	Standard
Ca	43	33.3	31.2	**0.8816**	2.026	229.8	mg/L	38	Standard
Fe	54	1087.4	2.8	**0.8360**	0.027	3.2	mg/L	126	Standard
Fe	57	525.0	12.5	**0.8590**	0.218	25.3	mg/L	245	Standard
> **Sc-1**	45	26598.3	1.8				mg/L	25066	Standard
Cl	35	134133.2	1.4				ug/L	125857	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	2273.5	6.1				ug/L	1350	Standard
P	31	19075.3	1.6				ug/L	18393	Standard
S	34	3665.4	1.3				ug/L	3739	Standard
Sr	88	76.7	10.0				ug/L	78	Standard
C	12	130.0	48.0				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	63.3	24.1				mg/L	0	Standard
Dy	164	1323.8	7.9				mg/L	2	Standard
Ho-1	165	671.7	6.3				mg/L	10	Standard
Er	166	686.7	8.0				mg/L	23	Standard
I	127	2676.9	2.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.567	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.250	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606105401
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.084	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.339	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L160105401PS WG573475-01
Sample Date/Time: Tuesday, June 21, 2016 20:06:54
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62794.9	0.3				ug/L	60176	Standard
	Be	9	39553.2	1.1	**52.7892**	0.596	1.1	ug/L	5	Standard
	Al	27	307971.8	0.5	**2.2385**	0.019	0.8	ug/L	832	Standard
	Sc	45	26882.2	1.8				ug/L	25066	Standard
	Ti	47	6129.2	0.9	**30.0854**	0.443	1.5	ug/L	38	Standard
	V	51	350807.1	1.1	**56.1596**	0.484	0.9	ug/L	974	Standard
	Cr	52	380685.2	0.7	**56.2324**	0.702	1.2	ug/L	5792	Standard
	Cr	53	47479.3	2.5	**55.0311**	1.483	2.7	ug/L	347	Standard
	Mn	55	401711.5	2.2	**59.7429**	1.526	2.6	ug/L	1164	Standard
	Co	59	335117.7	1.9	**52.5149**	1.178	2.2	ug/L	303	Standard
	Ni	60	103584.6	0.9	**54.7808**	0.581	1.1	ug/L	291	Standard
	Cu	65	100044.2	0.8	**53.3041**	0.495	0.9	ug/L	173	Standard
	Zn	66	69784.7	1.2	**64.0109**	0.350	0.5	ug/L	130	Standard
>	**Ge**	72	515100.8	0.7				ug/L	491724	Standard
	As	75	57585.9	1.4	**52.4062**	0.728	1.4	ug/L	-25	Standard
	Se	82	5557.0	0.5	**51.2198**	0.370	0.7	ug/L	12	Standard
	Se-1	77	3824.8	2.7	**51.0178**	1.538	3.0	ug/L	57	Standard
>	**Ga**	71	5406.0	3.1				mg/L	148	Standard
	Rb	85	11310.9	0.9				ug/L	18	Standard
	Y	89	430615.8	1.3				ug/L	401845	Standard
>	**Rh**	103	35.0	14.3				ug/L	10	Standard
	Mo	98	2082.6	2.7	**0.8357**	0.016	1.9	ug/L	12	Standard
	Ag	107	313560.0	0.3	**51.5352**	0.570	1.1	ug/L	98	Standard
	Cd	111	99080.1	0.8	**51.0986**	0.459	0.9	mg/L	11	Standard
	Cd	114	240574.4	0.6	**50.9998**	0.581	1.1	ug/L	21	Standard
>	**In**	115	564766.8	1.3				ug/L	547487	Standard
	Sn	118	651.7	3.5	**0.0476**	0.003	5.8	ug/L	450	Standard
	Sb	123	219038.4	0.6	**49.9905**	0.624	1.2	ug/L	105	Standard
	Ba	135	122799.3	0.6	**64.7923**	0.643	1.0	ug/L	111	Standard
	Ce	140	145608.1	1.7				ug/L	107	Standard
>	**Tb**	159	891761.9	1.6				ug/L	890342	Standard
	Ho	165	680.0	5.1				ug/L	10	Standard
	Tl	203	390727.1	0.9	**51.0556**	0.307	0.6	ug/L	19	Standard
	Tl	205	332957.0	0.5	**53.0280**	0.386	0.7	ug/L	17	Standard
	Pb	206	268736.3	0.4	**54.5663**	0.473	0.9	ug/L	247	Standard
	Pb	207	234417.6	1.0	**52.3635**	1.055	2.0	ug/L	215	Standard
	Pb	208	909782.4	1.0	**54.2774**	0.756	1.4	ug/L	770	Standard
	U	238	311618.6	0.6	**51.2899**	0.366	0.7	ug/L	13	Standard
>	**Bi**	209	509666.6	1.1				ug/L	503143	Standard

Sample ID: L160105401PS WG573475-01
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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	56.7	67.4	**0.0334**	0.048	143.9	mg/L	35	Standard
K	39	28.3	88.8	**0.0206**	0.119	576.6	mg/L	25	Standard
Ca	43	23.3	68.9	**-1.0431**	2.962	283.9	mg/L	38	Standard
Fe	54	984.0	1.5	**0.7343**	0.012	1.7	mg/L	126	Standard
Fe	57	478.3	10.2	**0.6676**	0.161	24.2	mg/L	245	Standard
Sc-1	45	26882.2	1.8				mg/L	25066	Standard
Cl	35	130277.0	0.6				ug/L	125857	Standard
Kr	83	3.3	45.8				ug/L	1	Standard
Br	81	2190.2	10.3				ug/L	1350	Standard
P	31	18941.8	1.3				ug/L	18393	Standard
S	34	3468.7	2.9				ug/L	3739	Standard
Sr	88	81.7	9.4				ug/L	78	Standard
C	12	83.3	6.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	60.0	16.7				mg/L	0	Standard
Dy	164	1430.7	6.9				mg/L	2	Standard
Ho-1	165	680.0	5.1				mg/L	10	Standard
Er	166	613.3	13.6				mg/L	23	Standard
I	127	2793.6	5.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		104.352	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		104.754	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.156
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.297
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606105401SDL WG573475-02
Sample Date/Time: Tuesday, June 21, 2016 20:10:06
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63462.7	2.8				ug/L	60176	Standard
	Be	9	43.3	6.7	**0.0483**	0.005	10.7	ug/L	5	Standard
	Al	27	62110.4	1.6	**0.4402**	0.014	3.1	ug/L	832	Standard
	Sc	45	27483.2	2.5				ug/L	25066	Standard
	Ti	47	1202.7	6.4	**5.8283**	0.361	6.2	ug/L	38	Standard
	V	51	6687.6	0.7	**0.9204**	0.038	4.1	ug/L	974	Standard
	Cr	52	11970.1	2.2	**0.8833**	0.051	5.8	ug/L	5792	Standard
	Cr	53	1118.4	3.2	**0.9142**	0.068	7.4	ug/L	347	Standard
	Mn	55	14114.2	2.6	**1.9239**	0.035	1.8	ug/L	1164	Standard
	Co	59	1371.4	3.2	**0.1692**	0.010	5.9	ug/L	303	Standard
	Ni	60	1550.7	0.7	**0.6455**	0.028	4.3	ug/L	291	Standard
	Cu	65	526.7	2.9	**0.1880**	0.015	7.9	ug/L	173	Standard
	Zn	66	4240.9	4.2	**3.7282**	0.034	0.9	ug/L	130	Standard
>	**Ge**	72	507330.3	3.4				ug/L	491724	Standard
	As	75	245.5	8.2	**0.2605**	0.014	5.3	ug/L	-25	Standard
	Se	82	25.7	28.8	**0.1499**	0.077	51.5	ug/L	12	Standard
	Se-1	77	61.3	9.3	**0.1936**	0.101	52.0	ug/L	57	Standard
>	**Ga**	71	1146.7	6.4				mg/L	148	Standard
	Rb	85	2321.8	7.4				ug/L	18	Standard
	Y	89	429962.5	1.2				ug/L	401845	Standard
>	**Rh**	103	40.0	66.1				ug/L	10	Standard
	Mo	98	429.5	5.0	**0.1645**	0.007	4.1	ug/L	12	Standard
	Ag	107	155.3	11.0	**0.0095**	0.003	29.8	ug/L	98	Standard
	Cd	111	24.9	56.2	**0.0078**	0.007	90.6	mg/L	11	Standard
	Cd	114	64.8	37.7	**0.0090**	0.005	57.8	ug/L	21	Standard
>	**In**	115	579213.8	1.2				ug/L	547487	Standard
	Sn	118	441.7	2.4	**0.0064**	0.003	44.2	ug/L	450	Standard
	Sb	123	1595.3	21.7	**0.3472**	0.075	21.7	ug/L	105	Standard
	Ba	135	5942.5	1.1	**3.0045**	0.068	2.3	ug/L	111	Standard
	Ce	140	29104.6	2.4				ug/L	107	Standard
>	**Tb**	159	919049.1	0.8				ug/L	890342	Standard
	Ho	165	130.0	6.7				ug/L	10	Standard
	Tl	203	140.3	32.1	**0.0144**	0.006	39.9	ug/L	19	Standard
	Tl	205	131.7	30.7	**0.0215**	0.006	29.1	ug/L	17	Standard
	Pb	206	3187.3	2.3	**0.5784**	0.013	2.3	ug/L	247	Standard
	Pb	207	2652.9	2.4	**0.5278**	0.013	2.5	ug/L	215	Standard
	Pb	208	10854.5	0.5	**0.5739**	0.002	0.3	ug/L	770	Standard
	U	238	529.3	8.9	**0.0844**	0.008	9.0	ug/L	13	Standard
>	**Bi**	209	521218.5	0.3				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	45.0	11.1	**0.0175**	0.006	35.9	mg/L	35	Standard
K	39	30.0	44.1	**0.0243**	0.061	252.8	mg/L	25	Standard
Ca	43	23.3	24.7	**-1.1467**	0.924	80.6	mg/L	38	Standard
Fe	54	317.1	0.9	**0.1380**	0.006	4.5	mg/L	126	Standard
Fe	57	253.3	19.5	**-0.1775**	0.188	106.2	mg/L	245	Standard
> **Sc-1**	45	27483.2	2.5				mg/L	25066	Standard
Cl	35	130060.6	1.2				ug/L	125857	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	1580.1	15.4				ug/L	1350	Standard
P	31	19601.0	6.2				ug/L	18393	Standard
S	34	3312.0	2.4				ug/L	3739	Standard
Sr	88	70.0	14.3				ug/L	78	Standard
C	12	53.3	57.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	173.2				mg/L	0	Standard
Dy	164	306.8	2.4				mg/L	2	Standard
Ho-1	165	130.0	6.7				mg/L	10	Standard
Er	166	136.7	23.5				mg/L	23	Standard
I	127	1430.1	5.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.462	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.174	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.795
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.593
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606105401SDL WG573475-02
Sample Date/Time: Tuesday, June 21, 2016 20:13:17
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	62075.3	3.4				ug/L	60176	Standard
	Be	9	16.7	17.3	**0.0135**	0.004	29.0	ug/L	5	Standard
	Al	27	12923.8	2.2	**0.0871**	0.004	4.8	ug/L	832	Standard
	Sc	45	27139.3	3.8				ug/L	25066	Standard
	Ti	47	272.0	8.8	**1.1730**	0.126	10.8	ug/L	38	Standard
	V	51	2230.3	1.0	**0.1971**	0.010	5.1	ug/L	974	Standard
	Cr	52	7378.1	1.3	**0.1951**	0.026	13.6	ug/L	5792	Standard
	Cr	53	530.0	5.7	**0.2224**	0.032	14.3	ug/L	347	Standard
	Mn	55	4071.2	2.2	**0.4086**	0.019	4.6	ug/L	1164	Standard
	Co	59	492.0	9.6	**0.0300**	0.009	29.8	ug/L	303	Standard
	Ni	60	471.3	1.5	**0.0663**	0.008	11.5	ug/L	291	Standard
	Cu	65	217.0	2.6	**0.0213**	0.005	21.6	ug/L	173	Standard
	Zn	66	1805.8	2.4	**1.4723**	0.069	4.7	ug/L	130	Standard
>	**Ge**	72	501702.6	1.7				ug/L	491724	Standard
	As	75	24.3	87.9	**0.0566**	0.020	35.2	ug/L	-25	Standard
	Se	82	18.9	18.3	**0.0867**	0.033	37.9	ug/L	12	Standard
	Se-1	77	53.3	8.5	**0.0899**	0.058	64.7	ug/L	57	Standard
>	**Ga**	71	313.3	3.3				mg/L	148	Standard
	Rb	85	476.7	7.4				ug/L	18	Standard
	Y	89	438752.1	0.6				ug/L	401845	Standard
>	**Rh**	103	30.0	16.7				ug/L	10	Standard
	Mo	98	110.3	7.5	**0.0392**	0.004	9.8	ug/L	12	Standard
	Ag	107	108.0	10.5	**0.0020**	0.002	98.3	ug/L	98	Standard
	Cd	111	10.8	70.1	**0.0008**	0.004	499.4	mg/L	11	Standard
	Cd	114	43.9	46.7	**0.0047**	0.004	91.7	ug/L	21	Standard
>	**In**	115	576504.1	1.5				ug/L	547487	Standard
	Sn	118	475.0	15.9	**0.0128**	0.014	109.1	ug/L	450	Standard
	Sb	123	463.6	29.1	**0.0963**	0.031	32.6	ug/L	105	Standard
	Ba	135	1313.4	3.2	**0.6237**	0.012	1.9	ug/L	111	Standard
	Ce	140	5786.1	4.9				ug/L	107	Standard
>	**Tb**	159	898389.3	2.3				ug/L	890342	Standard
	Ho	165	30.0	16.7				ug/L	10	Standard
	Tl	203	55.0	70.9	**0.0037**	0.005	139.1	ug/L	19	Standard
	Tl	205	41.7	70.3	**0.0077**	0.005	61.7	ug/L	17	Standard
	Pb	206	916.0	4.2	**0.1339**	0.009	6.5	ug/L	247	Standard
	Pb	207	747.7	4.4	**0.1174**	0.008	6.7	ug/L	215	Standard
	Pb	208	3092.8	3.0	**0.1274**	0.006	5.0	ug/L	770	Standard
	U	238	143.3	18.2	**0.0231**	0.004	19.3	ug/L	13	Standard
>	**Bi**	209	502532.6	0.4				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	53.3	47.2	**0.0289**	0.033	114.0	mg/L	35	Standard
K	39	30.0	60.1	**0.0244**	0.079	325.6	mg/L	25	Standard
Ca	43	30.0	33.3	**0.1797**	1.980	1101.9	mg/L	38	Standard
Fe	54	180.9	6.6	**0.0219**	0.004	19.7	mg/L	126	Standard
Fe	57	280.0	8.2	**-0.0692**	0.099	143.2	mg/L	245	Standard
> **Sc-1**	45	27139.3	3.8				mg/L	25066	Standard
Cl	35	132798.2	1.3				ug/L	125857	Standard
Kr	83	2.7	78.1				ug/L	1	Standard
Br	81	1633.4	13.0				ug/L	1350	Standard
P	31	18716.6	3.2				ug/L	18393	Standard
S	34	3410.4	2.5				ug/L	3739	Standard
Sr	88	51.7	22.3				ug/L	78	Standard
C	12	60.0	57.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	91.1	51.3				mg/L	2	Standard
Ho-1	165	30.0	16.7				mg/L	10	Standard
Er	166	46.7	32.7				mg/L	23	Standard
I	127	1188.4	6.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.156	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.029	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606105401SDL WG573475-02
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.300
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.879
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 20:16:31
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	61809.3	4.5				ug/L	60176	Standard
	Be	9	36245.0	0.8	**49.1988**	1.805	3.7	ug/L	5	Standard
	Al	27	6582318.8	1.8	**48.8210**	1.363	2.8	ug/L	832	Standard
	Sc	45	26551.6	2.9				ug/L	25066	Standard
	Ti	47	20307.3	0.8	**104.7366**	0.864	0.8	ug/L	38	Standard
	V	51	307773.1	2.0	**51.5001**	0.172	0.3	ug/L	974	Standard
	Cr	52	332161.2	0.7	**51.2294**	1.226	2.4	ug/L	5792	Standard
	Cr	53	42405.9	1.2	**51.3640**	0.276	0.5	ug/L	347	Standard
	Mn	55	325172.6	1.2	**50.5298**	0.233	0.5	ug/L	1164	Standard
	Co	59	317920.3	2.4	**52.0831**	0.431	0.8	ug/L	303	Standard
	Ni	60	91403.9	0.5	**50.5335**	0.688	1.4	ug/L	291	Standard
	Cu	65	91169.5	0.8	**50.7905**	0.667	1.3	ug/L	173	Standard
	Zn	66	52960.1	1.1	**50.7498**	0.564	1.1	ug/L	130	Standard
>	Ge	72	492646.8	1.7				ug/L	491724	Standard
	As	75	53122.0	0.6	**50.5540**	0.557	1.1	ug/L	-25	Standard
	Se	82	5355.6	0.4	**51.6204**	0.769	1.5	ug/L	12	Standard
	Se-1	77	3659.1	2.5	**51.0370**	1.490	2.9	ug/L	57	Standard
>	Ga	71	103.3	24.8				mg/L	148	Standard
	Rb	85	821.7	11.1				ug/L	18	Standard
	Y	89	426804.9	1.0				ug/L	401845	Standard
>	Rh	103	46.7	62.8				ug/L	10	Standard
	Mo	98	240578.5	1.9	**95.7566**	1.752	1.8	ug/L	12	Standard
	Ag	107	293672.5	0.8	**47.6191**	0.728	1.5	ug/L	98	Standard
	Cd	111	97148.2	0.4	**49.4310**	0.396	0.8	mg/L	11	Standard
	Cd	114	238273.1	1.3	**49.8334**	0.670	1.3	ug/L	21	Standard
>	In	115	572423.0	0.8				ug/L	547487	Standard
	Sn	118	262319.8	0.9	**48.2447**	0.796	1.6	ug/L	450	Standard
	Sb	123	211959.4	1.1	**47.7258**	0.723	1.5	ug/L	105	Standard
	Ba	135	92131.9	0.5	**47.9464**	0.632	1.3	ug/L	111	Standard
	Ce	140	101.7	44.6				ug/L	107	Standard
>	Tb	159	884901.8	0.8				ug/L	890342	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	370454.0	0.8	**49.8033**	0.613	1.2	ug/L	19	Standard
	Tl	205	319179.0	1.6	**52.3013**	1.096	2.1	ug/L	17	Standard
	Pb	206	236235.7	0.3	**49.3439**	0.398	0.8	ug/L	247	Standard
	Pb	207	215467.7	0.9	**49.5115**	0.712	1.4	ug/L	215	Standard
	Pb	208	846194.0	1.4	**51.9369**	0.988	1.9	ug/L	770	Standard
	U	238	302895.4	0.7	**51.2919**	0.606	1.2	ug/L	13	Standard
>	Bi	209	495377.4	0.6				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3608.8	3.4	**4.6428**	0.152	3.3	mg/L	35	Standard
K	39	930.0	9.8	**4.2620**	0.368	8.6	mg/L	25	Standard
Ca	43	71.7	28.2	**7.9807**	3.539	44.3	mg/L	38	Standard
Fe	54	5416.4	5.0	**4.7205**	0.325	6.9	mg/L	126	Standard
Fe	57	1530.1	9.9	**4.6008**	0.459	10.0	mg/L	245	Standard
> **Sc-1**	45	26551.6	2.9				mg/L	25066	Standard
Cl	35	138136.9	1.0				ug/L	125857	Standard
Kr	83	1.7	34.6				ug/L	1	Standard
Br	81	1570.1	5.7				ug/L	1350	Standard
P	31	19352.4	2.2				ug/L	18393	Standard
S	34	4222.3	4.4				ug/L	3739	Standard
Sr	88	46.7	16.4				ug/L	78	Standard
C	12	56.7	36.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	2.5	222.5				mg/L	2	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	16.7	34.6				mg/L	23	Standard
I	127	1088.4	5.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	98.398		
Al	27	97.642		
Sc	45			
Ti	47	104.737		
V	51	103.000		
Cr	52	102.459		
Cr	53			
Mn	55	101.060		
Co	59	104.166		
Ni	60	101.067		
Cu	65	101.581		
Zn	66	101.500		
> Ge	72		100.188	
As	75	101.108		
Se	82	103.241		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	95.757		
Ag	107	95.238		
Cd	111	98.862		
Cd	114			
> In	115		104.555	
Sn	118	96.489		
Sb	123	95.452		
Ba	135	95.893		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.607		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.874		
U	238	102.584		
> Bi	209		98.457	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 20:19:42
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59004.7	2.4				ug/L	60176	Standard
	Be	9	15.0	33.3	**0.0123**	0.007	55.9	ug/L	5	Standard
	Al	27	1221.7	22.8	**0.0011**	0.002	184.4	ug/L	832	Standard
	Sc	45	26162.6	2.8				ug/L	25066	Standard
	Ti	47	22.7	22.2	**-0.0938**	0.025	26.7	ug/L	38	Standard
	V	51	1096.4	3.1	**0.0083**	0.006	72.4	ug/L	974	Standard
	Cr	52	6080.6	0.6	**-0.0141**	0.009	60.7	ug/L	5792	Standard
	Cr	53	428.3	8.2	**0.0958**	0.044	45.6	ug/L	347	Standard
	Mn	55	922.7	7.2	**-0.0753**	0.011	14.0	ug/L	1164	Standard
	Co	59	276.0	8.7	**-0.0053**	0.004	76.6	ug/L	303	Standard
	Ni	60	181.3	7.1	**-0.0927**	0.007	8.0	ug/L	291	Standard
	Cu	65	115.7	15.5	**-0.0349**	0.010	27.6	ug/L	173	Standard
	Zn	66	146.0	12.6	**-0.0986**	0.018	18.2	ug/L	130	Standard
>	**Ge**	72	506500.5	0.5				ug/L	491724	Standard
	As	75	-18.9	142.2	**0.0164**	0.025	151.4	ug/L	-25	Standard
	Se	82	22.3	20.3	**0.1163**	0.042	36.4	ug/L	12	Standard
	Se-1	77	50.7	8.0	**0.0466**	0.058	125.4	ug/L	57	Standard
>	**Ga**	71	98.3	22.9				mg/L	148	Standard
	Rb	85	25.0	34.6				ug/L	18	Standard
	Y	89	420472.2	1.7				ug/L	401845	Standard
>	**Rh**	103	21.7	35.3				ug/L	10	Standard
	Mo	98	215.9	20.5	**0.0836**	0.015	18.1	ug/L	12	Standard
	Ag	107	100.3	2.3	**0.0013**	0.000	16.9	ug/L	98	Standard
	Cd	111	12.6	20.4	**0.0019**	0.001	66.8	mg/L	11	Standard
	Cd	114	36.9	35.9	**0.0034**	0.003	76.6	ug/L	21	Standard
>	**In**	115	556898.8	3.2				ug/L	547487	Standard
	Sn	118	736.7	14.7	**0.0659**	0.025	37.6	ug/L	450	Standard
	Sb	123	429.7	33.8	**0.0926**	0.037	39.4	ug/L	105	Standard
	Ba	135	112.0	12.9	**0.0043**	0.007	160.0	ug/L	111	Standard
	Ce	140	35.0	14.3				ug/L	107	Standard
>	**Tb**	159	887182.6	2.1				ug/L	890342	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	50.3	23.7	**0.0032**	0.002	49.1	ug/L	19	Standard
	Tl	205	48.3	29.9	**0.0089**	0.002	26.7	ug/L	17	Standard
	Pb	206	283.7	6.5	**0.0042**	0.003	82.4	ug/L	247	Standard
	Pb	207	216.0	8.2	**-0.0026**	0.004	153.1	ug/L	215	Standard
	Pb	208	914.3	7.2	**-0.0039**	0.004	93.9	ug/L	770	Standard
	U	238	37.3	13.5	**0.0055**	0.001	14.8	ug/L	13	Standard
>	**Bi**	209	496398.1	0.7				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	41.7	48.5	**0.0163**	0.028	170.7	mg/L	35	Standard
K	39	28.3	36.7	**0.0223**	0.046	208.0	mg/L	25	Standard
Ca	43	28.3	36.7	**0.0638**	2.140	3353.3	mg/L	38	Standard
Fe	54	134.3	7.3	**-0.0145**	0.007	47.3	mg/L	126	Standard
Fe	57	193.3	4.0	**-0.3592**	0.042	11.6	mg/L	245	Standard
> **Sc-1**	45	26162.6	2.8				mg/L	25066	Standard
Cl	35	138431.0	1.7				ug/L	125857	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	1586.7	3.9				ug/L	1350	Standard
P	31	19664.4	2.7				ug/L	18393	Standard
S	34	4130.6	2.1				ug/L	3739	Standard
Sr	88	75.0	46.7				ug/L	78	Standard
C	12	43.3	26.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	16.0	75.7				mg/L	2	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	13.3	173.2				mg/L	23	Standard
I	127	915.0	6.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.005	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.719
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.659
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078703 WG573333-01
Sample Date/Time: Tuesday, June 21, 2016 20:22:55
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61250.2	0.8				ug/L	60176	Standard
	Be	9	533.3	8.2	**0.7208**	0.059	8.2	ug/L	5	Standard
	Al	27	4739129.5	0.9	**35.4392**	0.186	0.5	ug/L	832	Standard
	Sc	45	29605.6	2.9				ug/L	25066	Standard
	Ti	47	1339.7	3.2	**6.7020**	0.132	2.0	ug/L	38	Standard
	V	51	71406.4	1.8	**11.7973**	0.190	1.6	ug/L	974	Standard
	Cr	52	50888.7	1.6	**7.0346**	0.128	1.8	ug/L	5792	Standard
	Cr	53	6126.2	1.1	**7.0553**	0.185	2.6	ug/L	347	Standard
	Mn	55	2507110.3	0.7	**390.3777**	5.993	1.5	ug/L	1164	Standard
	Co	59	38304.0	1.2	**6.2221**	0.122	2.0	ug/L	303	Standard
	Ni	60	20980.2	1.2	**11.4317**	0.218	1.9	ug/L	291	Standard
	Cu	65	14716.8	0.9	**8.1026**	0.157	1.9	ug/L	173	Standard
	Zn	66	18330.8	1.8	**17.3802**	0.302	1.7	ug/L	130	Standard
>	**Ge**	72	493512.5	1.4				ug/L	491724	Standard
	As	75	1782.0	5.4	**1.7250**	0.073	4.2	ug/L	-25	Standard
	Se	82	35.6	28.1	**0.2511**	0.099	39.3	ug/L	12	Standard
	Se-1	77	88.0	14.2	**0.5919**	0.186	31.4	ug/L	57	Standard
>	**Ga**	71	8470.7	1.2				mg/L	148	Standard
	Rb	85	77419.0	1.7				ug/L	18	Standard
	Y	89	632239.1	1.1				ug/L	401845	Standard
>	**Rh**	103	36.7	31.5				ug/L	10	Standard
	Mo	98	157.1	8.2	**0.0590**	0.005	8.3	ug/L	12	Standard
	Ag	107	274.7	4.4	**0.0299**	0.003	9.4	ug/L	98	Standard
	Cd	111	187.0	6.5	**0.0920**	0.008	8.8	mg/L	11	Standard
	Cd	114	444.1	15.9	**0.0897**	0.014	15.2	ug/L	21	Standard
>	**In**	115	563958.4	1.8				ug/L	547487	Standard
	Sn	118	591.7	12.1	**0.0367**	0.014	39.0	ug/L	450	Standard
	Sb	123	220.2	26.8	**0.0429**	0.014	33.7	ug/L	105	Standard
	Ba	135	144715.5	0.6	**76.4840**	1.276	1.7	ug/L	111	Standard
	Ce	140	988223.5	0.5				ug/L	107	Standard
>	**Tb**	159	908188.9	1.2				ug/L	890342	Standard
	Ho	165	17219.8	2.5				ug/L	10	Standard
	Tl	203	463.3	4.4	**0.0586**	0.002	4.2	ug/L	19	Standard
	Tl	205	378.3	13.4	**0.0628**	0.008	12.5	ug/L	17	Standard
	Pb	206	45384.9	0.3	**9.4112**	0.053	0.6	ug/L	247	Standard
	Pb	207	36832.4	1.0	**8.3986**	0.095	1.1	ug/L	215	Standard
	Pb	208	155922.4	1.7	**9.4964**	0.166	1.7	ug/L	770	Standard
	U	238	2728.6	1.4	**0.4601**	0.009	2.0	ug/L	13	Standard
>	**Bi**	209	496638.4	0.7				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	93.3	11.2	**0.0696**	0.011	15.8	mg/L	35	Standard
K	39	126.7	21.7	**0.4205**	0.104	24.7	mg/L	25	Standard
Ca	43	46.7	44.6	**2.5335**	3.744	147.8	mg/L	38	Standard
Fe	54	5828.7	1.9	**4.5504**	0.210	4.6	mg/L	126	Standard
Fe	57	1691.8	7.2	**4.5640**	0.493	10.8	mg/L	245	Standard
> **Sc-1**	45	29605.6	2.9				mg/L	25066	Standard
Cl	35	137167.4	0.3				ug/L	125857	Standard
Kr	83	0.7	173.2				ug/L	1	Standard
Br	81	1823.4	14.0				ug/L	1350	Standard
P	31	18519.7	3.3				ug/L	18393	Standard
S	34	4015.5	1.1				ug/L	3739	Standard
Sr	88	103.3	12.2				ug/L	78	Standard
C	12	66.7	31.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	100.0				mg/L	0	Standard
Dy	164	29188.4	3.4				mg/L	2	Standard
Ho-1	165	17219.8	2.5				mg/L	10	Standard
Er	166	15471.2	3.8				mg/L	23	Standard
I	127	8429.0	7.7				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.785	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.364	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.009
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.707
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606078704S WG573333-05
Sample Date/Time: Tuesday, June 21, 2016 20:26:07
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60795.1	1.7				ug/L	60176	Standard
	Be	9	19584.3	1.1	**26.9961**	0.342	1.3	ug/L	5	Standard
	Al	27	4567931.7	1.1	**34.4185**	0.489	1.4	ug/L	832	Standard
	Sc	45	29006.1	1.6				ug/L	25066	Standard
	Ti	47	3165.0	3.9	**15.7145**	0.722	4.6	ug/L	38	Standard
	V	51	242137.7	0.6	**39.4045**	0.713	1.8	ug/L	974	Standard
	Cr	52	226731.6	0.9	**33.7129**	0.272	0.8	ug/L	5792	Standard
	Cr	53	28276.4	2.1	**33.1977**	1.054	3.2	ug/L	347	Standard
	Mn	55	2051282.4	3.3	**311.4080**	12.009	3.9	ug/L	1164	Standard
	Co	59	195015.9	1.5	**31.0844**	0.761	2.4	ug/L	303	Standard
	Ni	60	65648.6	0.3	**35.2674**	0.363	1.0	ug/L	291	Standard
	Cu	65	58144.4	1.1	**31.4896**	0.412	1.3	ug/L	173	Standard
	Zn	66	44983.4	1.5	**41.9115**	0.217	0.5	ug/L	130	Standard
>	**Ge**	72	506139.8	1.3				ug/L	491724	Standard
	As	75	25341.1	0.4	**23.4909**	0.303	1.3	ug/L	-25	Standard
	Se	82	2045.3	2.1	**19.1312**	0.577	3.0	ug/L	12	Standard
	Se-1	77	1519.4	1.8	**20.2366**	0.146	0.7	ug/L	57	Standard
>	**Ga**	71	9184.5	4.0				mg/L	148	Standard
	Rb	85	70028.1	1.4				ug/L	18	Standard
	Y	89	627632.4	1.5				ug/L	401845	Standard
>	**Rh**	103	40.0	45.1				ug/L	10	Standard
	Mo	98	594.6	6.7	**0.2447**	0.017	7.1	ug/L	12	Standard
	Ag	107	147727.7	1.0	**25.2040**	0.390	1.5	ug/L	98	Standard
	Cd	111	48105.2	0.3	**25.7603**	0.320	1.2	mg/L	11	Standard
	Cd	114	117496.3	0.5	**25.8635**	0.442	1.7	ug/L	21	Standard
>	**In**	115	543890.8	1.3				ug/L	547487	Standard
	Sn	118	720.0	10.8	**0.0655**	0.015	23.0	ug/L	450	Standard
	Sb	123	21224.1	1.3	**5.0226**	0.049	1.0	ug/L	105	Standard
	Ba	135	168787.7	0.9	**92.5008**	1.371	1.5	ug/L	111	Standard
	Ce	140	900741.5	2.1				ug/L	107	Standard
>	**Tb**	159	881875.5	1.1				ug/L	890342	Standard
	Ho	165	17471.7	0.7				ug/L	10	Standard
	Tl	203	184074.8	0.7	**24.8291**	0.438	1.8	ug/L	19	Standard
	Tl	205	156804.0	1.7	**25.7832**	0.724	2.8	ug/L	17	Standard
	Pb	206	159776.4	0.6	**33.4695**	0.581	1.7	ug/L	247	Standard
	Pb	207	136948.1	0.2	**31.5548**	0.325	1.0	ug/L	215	Standard
	Pb	208	552723.2	0.9	**34.0190**	0.677	2.0	ug/L	770	Standard
	U	238	155414.7	0.8	**26.4072**	0.520	2.0	ug/L	13	Standard
>	**Bi**	209	493745.3	1.2				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	76.7	29.4	**0.0523**	0.028	52.7	mg/L	35	Standard
K	39	121.7	41.6	**0.4123**	0.220	53.4	mg/L	25	Standard
Ca	43	56.7	5.1	**4.3235**	0.342	7.9	mg/L	38	Standard
Fe	54	6910.1	1.7	**5.5303**	0.066	1.2	mg/L	126	Standard
Fe	57	2031.8	2.9	**5.8339**	0.224	3.8	mg/L	245	Standard
> **Sc-1**	45	29006.1	1.6				mg/L	25066	Standard
Cl	35	131188.4	2.4				ug/L	125857	Standard
Kr	83	2.0	50.0				ug/L	1	Standard
Br	81	1806.8	7.4				ug/L	1350	Standard
P	31	18918.5	1.6				ug/L	18393	Standard
S	34	3765.5	5.6				ug/L	3739	Standard
Sr	88	86.7	23.3				ug/L	78	Standard
C	12	36.7	83.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	28039.5	3.1				mg/L	2	Standard
Ho-1	165	17471.7	0.7				mg/L	10	Standard
Er	166	14914.0	2.5				mg/L	23	Standard
I	127	7893.7	1.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.029	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.932	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.343
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.132
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606078705SD WG573333-06
Sample Date/Time: Tuesday, June 21, 2016 20:29:18
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63216.6	1.8				ug/L	60176	Standard
	Be	9	19696.1	2.2	**26.1120**	0.714	2.7	ug/L	5	Standard
	Al	27	5659138.5	0.3	**41.0133**	0.799	1.9	ug/L	832	Standard
	Sc	45	30033.1	1.0				ug/L	25066	Standard
	Ti	47	2763.3	27.2	**13.8639**	4.139	29.9	ug/L	38	Standard
	V	51	237607.5	1.1	**38.9988**	0.497	1.3	ug/L	974	Standard
	Cr	52	248636.6	1.2	**37.3971**	0.891	2.4	ug/L	5792	Standard
	Cr	53	30921.5	0.6	**36.6639**	1.024	2.8	ug/L	347	Standard
	Mn	55	2410492.6	0.5	**369.1780**	8.479	2.3	ug/L	1164	Standard
	Co	59	185271.5	0.5	**29.7851**	0.497	1.7	ug/L	303	Standard
	Ni	60	67071.8	1.3	**36.3557**	0.915	2.5	ug/L	291	Standard
	Cu	65	60322.2	1.1	**32.9575**	0.383	1.2	ug/L	173	Standard
	Zn	66	45873.7	1.3	**43.1216**	0.385	0.9	ug/L	130	Standard
>	**Ge**	72	501820.8	2.1				ug/L	491724	Standard
	As	75	24039.7	1.9	**22.4789**	0.430	1.9	ug/L	-25	Standard
	Se	82	1972.7	2.1	**18.6056**	0.284	1.5	ug/L	12	Standard
	Se-1	77	1402.7	4.3	**18.8146**	1.203	6.4	ug/L	57	Standard
>	**Ga**	71	9417.9	5.5				mg/L	148	Standard
	Rb	85	66410.2	0.3				ug/L	18	Standard
	Y	89	617512.5	0.5				ug/L	401845	Standard
>	**Rh**	103	50.0	62.5				ug/L	10	Standard
	Mo	98	1524.5	3.3	**0.6151**	0.019	3.1	ug/L	12	Standard
	Ag	107	143879.3	0.9	**23.8137**	0.379	1.6	ug/L	98	Standard
	Cd	111	47710.7	0.7	**24.7847**	0.177	0.7	mg/L	11	Standard
	Cd	114	115961.3	1.6	**24.7605**	0.346	1.4	ug/L	21	Standard
>	**In**	115	560614.7	0.8				ug/L	547487	Standard
	Sn	118	1535.1	5.3	**0.2146**	0.013	6.3	ug/L	450	Standard
	Sb	123	23888.4	1.7	**5.4855**	0.117	2.1	ug/L	105	Standard
	Ba	135	184639.0	1.2	**98.1607**	0.543	0.6	ug/L	111	Standard
	Ce	140	908579.6	1.8				ug/L	107	Standard
>	**Tb**	159	921260.1	0.5				ug/L	890342	Standard
	Ho	165	17002.9	1.2				ug/L	10	Standard
	Tl	203	180601.4	1.1	**23.7143**	0.543	2.3	ug/L	19	Standard
	Tl	205	152330.3	0.3	**24.3789**	0.252	1.0	ug/L	17	Standard
	Pb	206	161923.0	0.9	**33.0139**	0.142	0.4	ug/L	247	Standard
	Pb	207	139326.0	1.1	**31.2477**	0.234	0.7	ug/L	215	Standard
	Pb	208	558215.4	0.7	**33.4396**	0.224	0.7	ug/L	770	Standard
	U	238	149906.9	0.4	**24.7925**	0.215	0.9	ug/L	13	Standard
>	**Bi**	209	507223.5	1.3				ug/L	503143	Standard

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Na	23	1.7	173.2	**15.4815**	26.806	173.1	mg/L	2	Standard
Mg	24	46.7	52.9	**0.0145**	0.028	192.1	mg/L	35	Standard
K	39	158.3	18.5	**0.5456**	0.116	21.3	mg/L	25	Standard
Ca	43	41.7	6.9	**1.5279**	0.454	29.7	mg/L	38	Standard
Fe	54	7213.6	3.5	**5.5758**	0.146	2.6	mg/L	126	Standard
Fe	57	1996.8	3.3	**5.4816**	0.233	4.3	mg/L	245	Standard
> **Sc-1**	45	30033.1	1.0				mg/L	25066	Standard
Cl	35	129762.7	0.8				ug/L	125857	Standard
Kr	83	1.7	91.7				ug/L	1	Standard
Br	81	1876.8	4.3				ug/L	1350	Standard
P	31	18274.3	0.2				ug/L	18393	Standard
S	34	3732.1	1.2				ug/L	3739	Standard
Sr	88	110.0	27.6				ug/L	78	Standard
C	12	66.7	37.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	29098.6	2.2				mg/L	2	Standard
Ho-1	165	17002.9	1.2				mg/L	10	Standard
Er	166	15394.5	3.5				mg/L	23	Standard
I	127	7451.8	4.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.053	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.053	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.398
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.811
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606078706
Sample Date/Time: Tuesday, June 21, 2016 20:32:30
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61503.1	4.4				ug/L	60176	Standard
	Be	9	190.0	11.5	**0.2498**	0.027	10.8	ug/L	5	Standard
	Al	27	2161096.6	2.0	**16.1023**	0.467	2.9	ug/L	832	Standard
	Sc	45	27194.4	2.9				ug/L	25066	Standard
	Ti	47	1729.4	29.8	**8.8301**	2.712	30.7	ug/L	38	Standard
	V	51	40719.4	1.5	**6.7406**	0.118	1.7	ug/L	974	Standard
	Cr	52	22743.1	1.4	**2.6675**	0.051	1.9	ug/L	5792	Standard
	Cr	53	2448.5	3.6	**2.6090**	0.103	4.0	ug/L	347	Standard
	Mn	55	1260041.1	0.2	**198.5616**	0.943	0.5	ug/L	1164	Standard
	Co	59	12600.6	0.8	**2.0396**	0.022	1.1	ug/L	303	Standard
	Ni	60	7512.5	0.9	**4.0234**	0.036	0.9	ug/L	291	Standard
	Cu	65	5352.3	2.1	**2.9221**	0.069	2.3	ug/L	173	Standard
	Zn	66	8532.4	1.5	**8.0679**	0.130	1.6	ug/L	130	Standard
>	**Ge**	72	487322.6	0.2				ug/L	491724	Standard
	As	75	1559.9	2.0	**1.5334**	0.026	1.7	ug/L	-25	Standard
	Se	82	35.2	29.3	**0.2510**	0.100	39.8	ug/L	12	Standard
	Se-1	77	72.7	4.2	**0.3880**	0.045	11.7	ug/L	57	Standard
>	**Ga**	71	2870.3	6.0				mg/L	148	Standard
	Rb	85	28276.4	2.7				ug/L	18	Standard
	Y	89	521144.4	0.3				ug/L	401845	Standard
>	**Rh**	103	45.0	19.2				ug/L	10	Standard
	Mo	98	116.0	7.3	**0.0415**	0.003	6.9	ug/L	12	Standard
	Ag	107	230.3	3.7	**0.0218**	0.002	8.7	ug/L	98	Standard
	Cd	111	115.8	1.7	**0.0540**	0.002	4.0	mg/L	11	Standard
	Cd	114	274.3	6.0	**0.0527**	0.005	8.7	ug/L	21	Standard
>	**In**	115	575128.8	2.3				ug/L	547487	Standard
	Sn	118	336.7	3.7	**-0.0123**	0.001	7.1	ug/L	450	Standard
	Sb	123	176.1	18.8	**0.0320**	0.008	25.7	ug/L	105	Standard
	Ba	135	86694.7	1.9	**44.9082**	1.004	2.2	ug/L	111	Standard
	Ce	140	436433.2	2.1				ug/L	107	Standard
>	**Tb**	159	887156.7	2.0				ug/L	890342	Standard
	Ho	165	7937.1	1.0				ug/L	10	Standard
	Tl	203	162.7	11.2	**0.0183**	0.003	15.7	ug/L	19	Standard
	Tl	205	140.0	3.6	**0.0238**	0.000	1.8	ug/L	17	Standard
	Pb	206	19692.8	1.3	**4.0500**	0.140	3.5	ug/L	247	Standard
	Pb	207	16290.1	1.3	**3.6832**	0.128	3.5	ug/L	215	Standard
	Pb	208	67765.1	1.3	**4.0908**	0.139	3.4	ug/L	770	Standard
	U	238	859.4	4.8	**0.1442**	0.009	5.9	ug/L	13	Standard
>	**Bi**	209	497164.1	2.1				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	45.0	19.2	**0.0180**	0.010	57.8	mg/L	35	Standard
K	39	71.7	24.5	**0.2186**	0.091	41.5	mg/L	25	Standard
Ca	43	31.7	65.7	**0.4222**	3.721	881.3	mg/L	38	Standard
Fe	54	2730.0	8.4	**2.2488**	0.134	6.0	mg/L	126	Standard
Fe	57	905.0	11.2	**2.1941**	0.285	13.0	mg/L	245	Standard
> **Sc-1**	45	27194.4	2.9				mg/L	25066	Standard
Cl	35	130552.0	0.6				ug/L	125857	Standard
Kr	83	3.7	83.3				ug/L	1	Standard
Br	81	1476.7	11.6				ug/L	1350	Standard
P	31	18608.1	3.2				ug/L	18393	Standard
S	34	3705.5	6.0				ug/L	3739	Standard
Sr	88	98.3	19.3				ug/L	78	Standard
C	12	70.0	14.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	13334.9	2.3				mg/L	2	Standard
Ho-1	165	7937.1	1.0				mg/L	10	Standard
Er	166	6914.9	5.3				mg/L	23	Standard
I	127	2945.3	1.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.205	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.105	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	105.049	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.812	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606078707
Sample Date/Time: Tuesday, June 21, 2016 20:35:41
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59709.1	1.3				ug/L	60176	Standard
	Be	9	200.0	10.9	**0.2718**	0.032	11.7	ug/L	5	Standard
	Al	27	1683075.1	1.4	**12.9055**	0.048	0.4	ug/L	832	Standard
	Sc	45	26478.1	4.1				ug/L	25066	Standard
	Ti	47	1140.4	8.0	**5.5902**	0.464	8.3	ug/L	38	Standard
	V	51	39686.8	0.8	**6.3850**	0.023	0.4	ug/L	974	Standard
	Cr	52	23499.9	2.1	**2.6878**	0.064	2.4	ug/L	5792	Standard
	Cr	53	2666.9	3.2	**2.7908**	0.107	3.8	ug/L	347	Standard
	Mn	55	420579.8	1.9	**64.3639**	1.562	2.4	ug/L	1164	Standard
	Co	59	13033.6	2.2	**2.0538**	0.057	2.8	ug/L	303	Standard
	Ni	60	7165.7	0.5	**3.7215**	0.035	0.9	ug/L	291	Standard
	Cu	65	5197.9	1.7	**2.7564**	0.034	1.2	ug/L	173	Standard
	Zn	66	9135.4	1.5	**8.4176**	0.173	2.1	ug/L	130	Standard
>	**Ge**	72	500708.0	0.5				ug/L	491724	Standard
	As	75	1463.5	3.3	**1.4032**	0.042	3.0	ug/L	-25	Standard
	Se	82	24.1	45.1	**0.1358**	0.103	76.2	ug/L	12	Standard
	Se-1	77	77.3	6.1	**0.4249**	0.062	14.6	ug/L	57	Standard
>	**Ga**	71	2593.6	3.7				mg/L	148	Standard
	Rb	85	26549.9	1.6				ug/L	18	Standard
	Y	89	508383.7	2.6				ug/L	401845	Standard
>	**Rh**	103	26.7	47.2				ug/L	10	Standard
	Mo	98	828.3	1.8	**0.3404**	0.004	1.3	ug/L	12	Standard
	Ag	107	171.0	8.6	**0.0136**	0.003	19.8	ug/L	98	Standard
	Cd	111	92.1	6.3	**0.0443**	0.003	7.2	mg/L	11	Standard
	Cd	114	165.6	20.7	**0.0318**	0.007	23.1	ug/L	21	Standard
>	**In**	115	547256.3	0.7				ug/L	547487	Standard
	Sn	118	725.0	5.0	**0.0656**	0.007	10.8	ug/L	450	Standard
	Sb	123	144.6	14.9	**0.0264**	0.005	18.6	ug/L	105	Standard
	Ba	135	55231.2	0.4	**30.0426**	0.229	0.8	ug/L	111	Standard
	Ce	140	414286.0	0.6				ug/L	107	Standard
>	**Tb**	159	881412.3	0.9				ug/L	890342	Standard
	Ho	165	7586.9	2.2				ug/L	10	Standard
	Tl	203	135.7	11.8	**0.0147**	0.002	16.0	ug/L	19	Standard
	Tl	205	110.0	20.8	**0.0190**	0.004	20.0	ug/L	17	Standard
	Pb	206	19007.2	0.5	**3.9191**	0.061	1.6	ug/L	247	Standard
	Pb	207	15601.7	1.7	**3.5366**	0.107	3.0	ug/L	215	Standard
	Pb	208	64611.6	1.1	**3.9100**	0.093	2.4	ug/L	770	Standard
	U	238	755.0	4.6	**0.1270**	0.005	3.6	ug/L	13	Standard
>	**Bi**	209	495487.3	1.3				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	35.0	14.3	**0.0067**	0.007	106.5	mg/L	35	Standard
K	39	83.3	21.1	**0.2797**	0.073	26.3	mg/L	25	Standard
Ca	43	25.0	20.0	**-0.6389**	1.092	170.9	mg/L	38	Standard
Fe	54	2467.8	3.0	**2.0838**	0.134	6.4	mg/L	126	Standard
Fe	57	820.0	4.2	**1.9775**	0.256	13.0	mg/L	245	Standard
> **Sc-1**	45	26478.1	4.1				mg/L	25066	Standard
Cl	35	128995.5	1.3				ug/L	125857	Standard
Kr	83	2.3	24.7				ug/L	1	Standard
Br	81	1503.4	13.0				ug/L	1350	Standard
P	31	17358.3	0.2				ug/L	18393	Standard
S	34	3645.4	0.9				ug/L	3739	Standard
Sr	88	81.7	14.1				ug/L	78	Standard
C	12	60.0	28.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	12318.4	0.4				mg/L	2	Standard
Ho-1	165	7586.9	2.2				mg/L	10	Standard
Er	166	6754.8	0.3				mg/L	23	Standard
I	127	2638.6	9.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.224	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.827	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.958
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.478
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078708
Sample Date/Time: Tuesday, June 21, 2016 20:38:53
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61146.5	1.9				ug/L	60176	Standard
	Be	9	295.0	11.1	**0.3957**	0.048	12.2	ug/L	5	Standard
	Al	27	10005765.0	2.2	**74.9914**	2.825	3.8	ug/L	832	Standard
	Sc	45	28378.2	1.3				ug/L	25066	Standard
	Ti	47	1581.7	9.8	**7.8186**	0.716	9.2	ug/L	38	Standard
	V	51	56293.6	0.1	**9.1158**	0.120	1.3	ug/L	974	Standard
	Cr	52	35520.9	2.0	**4.5387**	0.182	4.0	ug/L	5792	Standard
	Cr	53	4120.6	4.1	**4.5322**	0.272	6.0	ug/L	347	Standard
	Mn	55	2245242.9	0.6	**344.0555**	5.834	1.7	ug/L	1164	Standard
	Co	59	20048.6	2.0	**3.1815**	0.095	3.0	ug/L	303	Standard
	Ni	60	12750.7	0.7	**6.7615**	0.141	2.1	ug/L	291	Standard
	Cu	65	8350.6	0.8	**4.4816**	0.075	1.7	ug/L	173	Standard
	Zn	66	13186.1	1.0	**12.2373**	0.257	2.1	ug/L	130	Standard
>	**Ge**	72	501445.8	1.4				ug/L	491724	Standard
	As	75	1545.9	0.8	**1.4785**	0.032	2.1	ug/L	-25	Standard
	Se	82	27.4	13.1	**0.1674**	0.035	21.2	ug/L	12	Standard
	Se-1	77	71.0	5.1	**0.3358**	0.056	16.6	ug/L	57	Standard
>	**Ga**	71	4512.3	1.6				mg/L	148	Standard
	Rb	85	37980.9	3.4				ug/L	18	Standard
	Y	89	531850.3	0.5				ug/L	401845	Standard
>	**Rh**	103	33.3	31.2				ug/L	10	Standard
	Mo	98	272.4	0.4	**0.1086**	0.001	1.4	ug/L	12	Standard
	Ag	107	226.3	10.4	**0.0229**	0.005	19.8	ug/L	98	Standard
	Cd	111	165.5	1.0	**0.0831**	0.002	1.9	mg/L	11	Standard
	Cd	114	397.0	5.6	**0.0822**	0.006	7.3	ug/L	21	Standard
>	**In**	115	548993.1	1.6				ug/L	547487	Standard
	Sn	118	608.3	15.7	**0.0426**	0.017	39.0	ug/L	450	Standard
	Sb	123	116.3	12.7	**0.0197**	0.003	15.4	ug/L	105	Standard
	Ba	135	96057.9	1.5	**52.1296**	0.874	1.7	ug/L	111	Standard
	Ce	140	548131.6	1.4				ug/L	107	Standard
>	**Tb**	159	898753.5	0.5				ug/L	890342	Standard
	Ho	165	10386.9	3.9				ug/L	10	Standard
	Tl	203	211.0	1.6	**0.0248**	0.001	2.7	ug/L	19	Standard
	Tl	205	218.3	11.3	**0.0367**	0.005	12.3	ug/L	17	Standard
	Pb	206	25132.8	0.9	**5.1923**	0.133	2.6	ug/L	247	Standard
	Pb	207	20495.2	0.8	**4.6546**	0.102	2.2	ug/L	215	Standard
	Pb	208	84035.9	0.8	**5.0950**	0.088	1.7	ug/L	770	Standard
	U	238	1374.4	2.1	**0.2316**	0.009	3.8	ug/L	13	Standard
>	**Bi**	209	496285.1	1.7				ug/L	503143	Standard

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Na	23	3.3	86.6	**32.9382**	28.528	86.6	mg/L	2	Standard
Mg	24	73.3	41.7	**0.0503**	0.037	74.4	mg/L	35	Standard
K	39	123.3	26.1	**0.4304**	0.140	32.4	mg/L	25	Standard
Ca	43	121.7	6.3	**15.8707**	1.562	9.8	mg/L	38	Standard
Fe	54	4051.3	3.4	**3.2588**	0.079	2.4	mg/L	126	Standard
Fe	57	1385.1	8.4	**3.7369**	0.455	12.2	mg/L	245	Standard
> **Sc-1**	45	28378.2	1.3				mg/L	25066	Standard
Cl	35	136882.9	1.1				ug/L	125857	Standard
Kr	83	3.7	78.7				ug/L	1	Standard
Br	81	1383.4	11.9				ug/L	1350	Standard
P	31	18684.9	2.6				ug/L	18393	Standard
S	34	4252.3	2.8				ug/L	3739	Standard
Sr	88	103.3	17.0				ug/L	78	Standard
C	12	63.3	18.2				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	17242.5	4.5				mg/L	2	Standard
Ho-1	165	10386.9	3.9				mg/L	10	Standard
Er	166	9069.4	1.8				mg/L	23	Standard
I	127	2725.2	5.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.613	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.977	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.275
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.637
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606078713
Sample Date/Time: Tuesday, June 21, 2016 20:42:04
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60470.5	2.4				ug/L	60176	Standard
	Be	9	438.3	14.7	**0.5976**	0.076	12.8	ug/L	5	Standard
	Al	27	3860251.5	0.5	**29.2500**	0.787	2.7	ug/L	832	Standard
	Sc	45	28167.8	2.6				ug/L	25066	Standard
	Ti	47	839.4	7.8	**4.1705**	0.369	8.8	ug/L	38	Standard
	V	51	70285.4	1.1	**11.7386**	0.317	2.7	ug/L	974	Standard
	Cr	52	48052.7	0.7	**6.6720**	0.165	2.5	ug/L	5792	Standard
	Cr	53	5747.8	3.9	**6.6668**	0.221	3.3	ug/L	347	Standard
	Mn	55	997665.2	0.2	**156.8856**	2.297	1.5	ug/L	1164	Standard
	Co	59	33501.7	1.1	**5.4941**	0.026	0.5	ug/L	303	Standard
	Ni	60	15742.2	0.8	**8.6243**	0.198	2.3	ug/L	291	Standard
	Cu	65	11171.8	1.1	**6.1943**	0.139	2.2	ug/L	173	Standard
	Zn	66	15290.4	1.0	**14.6175**	0.267	1.8	ug/L	130	Standard
>	**Ge**	72	488278.2	1.6				ug/L	491724	Standard
	As	75	2112.2	1.3	**2.0606**	0.030	1.5	ug/L	-25	Standard
	Se	82	33.4	20.1	**0.2323**	0.063	27.1	ug/L	12	Standard
	Se-1	77	80.7	13.6	**0.4996**	0.152	30.5	ug/L	57	Standard
>	**Ga**	71	6092.9	3.0				mg/L	148	Standard
	Rb	85	50096.0	1.4				ug/L	18	Standard
	Y	89	562308.7	3.4				ug/L	401845	Standard
>	**Rh**	103	20.0	25.0				ug/L	10	Standard
	Mo	98	281.8	18.1	**0.1097**	0.019	17.6	ug/L	12	Standard
	Ag	107	279.0	13.7	**0.0307**	0.006	19.7	ug/L	98	Standard
	Cd	111	205.9	9.5	**0.1020**	0.009	9.3	mg/L	11	Standard
	Cd	114	469.4	17.1	**0.0956**	0.016	17.2	ug/L	21	Standard
>	**In**	115	561794.7	1.8				ug/L	547487	Standard
	Sn	118	1265.1	3.6	**0.1635**	0.012	7.3	ug/L	450	Standard
	Sb	123	114.2	20.1	**0.0186**	0.005	27.0	ug/L	105	Standard
	Ba	135	154704.2	1.6	**82.0962**	2.614	3.2	ug/L	111	Standard
	Ce	140	714982.4	2.2				ug/L	107	Standard
>	**Tb**	159	886704.0	1.2				ug/L	890342	Standard
	Ho	165	12760.4	3.9				ug/L	10	Standard
	Tl	203	335.3	19.3	**0.0422**	0.009	20.6	ug/L	19	Standard
	Tl	205	363.3	52.8	**0.0613**	0.032	51.4	ug/L	17	Standard
	Pb	206	36098.0	0.9	**7.6025**	0.113	1.5	ug/L	247	Standard
	Pb	207	29342.1	0.5	**6.7946**	0.072	1.1	ug/L	215	Standard
	Pb	208	123673.5	2.1	**7.6482**	0.125	1.6	ug/L	770	Standard
	U	238	1531.4	12.8	**0.2621**	0.032	12.3	ug/L	13	Standard
>	**Bi**	209	488339.2	0.8				ug/L	503143	Standard

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Na	23	3.3	86.6	**33.1333**	28.719	86.7	mg/L	2	Standard
Mg	24	66.7	18.9	**0.0424**	0.013	31.2	mg/L	35	Standard
K	39	120.0	27.3	**0.4177**	0.133	31.7	mg/L	25	Standard
Ca	43	43.3	24.0	**2.2723**	1.810	79.7	mg/L	38	Standard
Fe	54	5259.3	3.5	**4.3093**	0.268	6.2	mg/L	126	Standard
Fe	57	1548.4	3.1	**4.3481**	0.308	7.1	mg/L	245	Standard
> **Sc-1**	45	28167.8	2.6				mg/L	25066	Standard
Cl	35	136558.6	0.5				ug/L	125857	Standard
Kr	83	1.3	86.6				ug/L	1	Standard
Br	81	1756.8	8.8				ug/L	1350	Standard
P	31	20071.6	3.8				ug/L	18393	Standard
S	34	4248.9	1.9				ug/L	3739	Standard
Sr	88	81.7	3.5				ug/L	78	Standard
C	12	66.7	8.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	0	Standard
Dy	164	21009.1	0.9				mg/L	2	Standard
Ho-1	165	12760.4	3.9				mg/L	10	Standard
Er	166	11264.2	4.0				mg/L	23	Standard
I	127	3685.4	6.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.489	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.299	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.613	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.058	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606078714
Sample Date/Time: Tuesday, June 21, 2016 20:45:16
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59354.4	2.2				ug/L	60176	Standard
	Be	9	183.3	13.7	**0.2501**	0.038	15.2	ug/L	5	Standard
	Al	27	1653362.7	0.4	**12.7568**	0.239	1.9	ug/L	832	Standard
	Sc	45	26840.4	0.7				ug/L	25066	Standard
	Ti	47	1195.7	15.7	**5.8965**	0.875	14.8	ug/L	38	Standard
	V	51	41857.8	0.9	**6.7842**	0.171	2.5	ug/L	974	Standard
	Cr	52	24805.0	0.8	**2.9115**	0.058	2.0	ug/L	5792	Standard
	Cr	53	2718.6	7.9	**2.8685**	0.201	7.0	ug/L	347	Standard
	Mn	55	271171.7	1.9	**41.6625**	1.227	2.9	ug/L	1164	Standard
	Co	59	15078.2	2.2	**2.3974**	0.058	2.4	ug/L	303	Standard
	Ni	60	7281.1	1.4	**3.8071**	0.071	1.9	ug/L	291	Standard
	Cu	65	4899.5	2.2	**2.6079**	0.059	2.3	ug/L	173	Standard
	Zn	66	8848.9	2.1	**8.1949**	0.270	3.3	ug/L	130	Standard
>	**Ge**	72	497940.3	1.9				ug/L	491724	Standard
	As	75	1399.2	6.8	**1.3498**	0.075	5.6	ug/L	-25	Standard
	Se	82	26.2	42.1	**0.1563**	0.101	64.4	ug/L	12	Standard
	Se-1	77	61.7	13.8	**0.2133**	0.129	60.7	ug/L	57	Standard
>	**Ga**	71	2935.3	6.3				mg/L	148	Standard
	Rb	85	27302.9	4.2				ug/L	18	Standard
	Y	89	493083.8	2.1				ug/L	401845	Standard
>	**Rh**	103	30.0	57.7				ug/L	10	Standard
	Mo	98	274.8	4.9	**0.1086**	0.006	5.1	ug/L	12	Standard
	Ag	107	202.7	17.3	**0.0186**	0.006	33.7	ug/L	98	Standard
	Cd	111	68.6	11.9	**0.0313**	0.004	13.1	mg/L	11	Standard
	Cd	114	186.8	21.1	**0.0360**	0.009	24.8	ug/L	21	Standard
>	**In**	115	553874.2	2.5				ug/L	547487	Standard
	Sn	118	1548.4	4.9	**0.2207**	0.012	5.3	ug/L	450	Standard
	Sb	123	134.4	14.6	**0.0237**	0.005	22.2	ug/L	105	Standard
	Ba	135	62896.3	0.8	**33.8185**	0.569	1.7	ug/L	111	Standard
	Ce	140	379145.7	1.3				ug/L	107	Standard
>	**Tb**	159	877738.6	2.8				ug/L	890342	Standard
	Ho	165	6044.5	3.3				ug/L	10	Standard
	Tl	203	194.0	17.9	**0.0229**	0.005	21.1	ug/L	19	Standard
	Tl	205	156.7	23.5	**0.0270**	0.006	23.3	ug/L	17	Standard
	Pb	206	17434.0	1.8	**3.6406**	0.072	2.0	ug/L	247	Standard
	Pb	207	14230.3	0.5	**3.2661**	0.036	1.1	ug/L	215	Standard
	Pb	208	59458.2	1.1	**3.6438**	0.066	1.8	ug/L	770	Standard
	U	238	818.0	4.9	**0.1396**	0.007	5.0	ug/L	13	Standard
>	**Bi**	209	488685.1	0.9				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	78.3	31.5	**0.0617**	0.032	51.7	mg/L	35	Standard
K	39	63.3	44.9	**0.1830**	0.135	73.6	mg/L	25	Standard
Ca	43	26.7	10.8	**-0.4193**	0.505	120.5	mg/L	38	Standard
Fe	54	2855.0	4.8	**2.3943**	0.139	5.8	mg/L	126	Standard
Fe	57	875.0	9.5	**2.1335**	0.331	15.5	mg/L	245	Standard
> **Sc-1**	45	26840.4	0.7				mg/L	25066	Standard
Cl	35	130769.3	1.1				ug/L	125857	Standard
Kr	83	0.3	173.2				ug/L	1	Standard
Br	81	1500.1	12.5				ug/L	1350	Standard
P	31	18306.1	4.6				ug/L	18393	Standard
S	34	3878.8	1.9				ug/L	3739	Standard
Sr	88	100.0	8.7				ug/L	78	Standard
C	12	53.3	43.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	10446.8	2.5				mg/L	2	Standard
Ho-1	165	6044.5	3.3				mg/L	10	Standard
Er	166	5364.3	4.3				mg/L	23	Standard
I	127	2471.9	4.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.635	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.264	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.167
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.127
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078715
Sample Date/Time: Tuesday, June 21, 2016 20:48:27
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64098.6	1.3				ug/L	60176	Standard
	Be	9	823.4	5.6	**1.0673**	0.048	4.5	ug/L	5	Standard
	Al	27	10125297.3	0.4	**72.3681**	0.913	1.3	ug/L	832	Standard
	Sc	45	30844.7	0.4				ug/L	25066	Standard
	Ti	47	1823.8	2.8	**8.7940**	0.274	3.1	ug/L	38	Standard
	V	51	98074.0	0.7	**15.5570**	0.191	1.2	ug/L	974	Standard
	Cr	52	104674.3	0.6	**14.7577**	0.248	1.7	ug/L	5792	Standard
	Cr	53	12927.2	2.0	**14.6613**	0.237	1.6	ug/L	347	Standard
	Mn	55	2973780.0	0.5	**443.0559**	7.216	1.6	ug/L	1164	Standard
	Co	59	58943.8	0.5	**9.1837**	0.119	1.3	ug/L	303	Standard
	Ni	60	38767.5	1.4	**20.3577**	0.493	2.4	ug/L	291	Standard
	Cu	65	24378.9	0.7	**12.8976**	0.065	0.5	ug/L	173	Standard
	Zn	66	41125.4	0.4	**37.5786**	0.477	1.3	ug/L	130	Standard
>	**Ge**	72	515810.5	1.2				ug/L	491724	Standard
	As	75	2841.8	1.6	**2.6150**	0.042	1.6	ug/L	-25	Standard
	Se	82	45.8	14.7	**0.3299**	0.064	19.5	ug/L	12	Standard
	Se-1	77	92.3	7.0	**0.5967**	0.101	16.9	ug/L	57	Standard
>	**Ga**	71	16957.8	0.2				mg/L	148	Standard
	Rb	85	162914.6	1.1				ug/L	18	Standard
	Y	89	615099.4	2.7				ug/L	401845	Standard
>	**Rh**	103	20.0	43.3				ug/L	10	Standard
	Mo	98	203.9	5.6	**0.0800**	0.004	4.8	ug/L	12	Standard
	Ag	107	382.7	10.1	**0.0492**	0.007	13.9	ug/L	98	Standard
	Cd	111	298.0	2.2	**0.1531**	0.002	1.3	mg/L	11	Standard
	Cd	114	666.5	15.5	**0.1406**	0.023	16.0	ug/L	21	Standard
>	**In**	115	550118.7	1.2				ug/L	547487	Standard
	Sn	118	753.4	4.7	**0.0703**	0.007	9.3	ug/L	450	Standard
	Sb	123	98.5	12.2	**0.0154**	0.003	16.9	ug/L	105	Standard
	Ba	135	241514.0	0.7	**130.8807**	1.833	1.4	ug/L	111	Standard
	Ce	140	1155859.2	0.5				ug/L	107	Standard
>	**Tb**	159	899979.5	1.4				ug/L	890342	Standard
	Ho	165	17680.3	2.0				ug/L	10	Standard
	Tl	203	858.7	0.6	**0.1099**	0.001	1.0	ug/L	19	Standard
	Tl	205	755.0	8.0	**0.1226**	0.012	9.4	ug/L	17	Standard
	Pb	206	60941.6	0.3	**12.4665**	0.202	1.6	ug/L	247	Standard
	Pb	207	50135.5	0.2	**11.2791**	0.161	1.4	ug/L	215	Standard
	Pb	208	203300.5	0.7	**12.2136**	0.108	0.9	ug/L	770	Standard
	U	238	2361.2	2.6	**0.3920**	0.006	1.5	ug/L	13	Standard
>	**Bi**	209	504223.9	1.5				ug/L	503143	Standard

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Na	23	3.3	86.6	**30.2029**	26.152	86.6	mg/L	2	Standard
Mg	24	81.7	17.7	**0.0523**	0.016	31.2	mg/L	35	Standard
K	39	335.0	10.4	**1.2451**	0.147	11.8	mg/L	25	Standard
Ca	43	41.7	13.9	**1.3488**	0.931	69.0	mg/L	38	Standard
Fe	54	13937.7	1.7	**10.6123**	0.221	2.1	mg/L	126	Standard
Fe	57	3708.8	2.8	**10.7946**	0.379	3.5	mg/L	245	Standard
> **Sc-1**	45	30844.7	0.4				mg/L	25066	Standard
Cl	35	127408.8	0.7				ug/L	125857	Standard
Kr	83	2.3	49.5				ug/L	1	Standard
Br	81	1913.5	1.6				ug/L	1350	Standard
P	31	18252.7	1.0				ug/L	18393	Standard
S	34	3877.2	0.8				ug/L	3739	Standard
Sr	88	116.7	13.1				ug/L	78	Standard
C	12	63.3	24.1				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	0	Standard
Dy	164	29223.1	3.8				mg/L	2	Standard
Ho-1	165	17680.3	2.0				mg/L	10	Standard
Er	166	15514.6	3.9				mg/L	23	Standard
I	127	5479.3	4.3				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.519	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.898	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.481
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.215
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606078716
Sample Date/Time: Tuesday, June 21, 2016 20:51:39
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63156.4	1.5				ug/L	60176	Standard
	Be	9	671.7	2.1	**0.8826**	0.026	3.0	ug/L	5	Standard
	Al	27	8487404.7	1.9	**61.5729**	1.740	2.8	ug/L	832	Standard
	Sc	45	31963.7	1.0				ug/L	25066	Standard
	Ti	47	787.0	5.2	**3.8622**	0.259	6.7	ug/L	38	Standard
	V	51	41199.8	0.5	**6.7490**	0.110	1.6	ug/L	974	Standard
	Cr	52	73420.2	2.1	**10.5882**	0.090	0.9	ug/L	5792	Standard
	Cr	53	8865.9	1.6	**10.4143**	0.113	1.1	ug/L	347	Standard
	Mn	55	3069080.0	1.7	**478.8131**	2.454	0.5	ug/L	1164	Standard
	Co	59	44326.4	0.3	**7.2228**	0.137	1.9	ug/L	303	Standard
	Ni	60	28414.3	2.4	**15.5776**	0.153	1.0	ug/L	291	Standard
	Cu	65	26490.5	2.7	**14.6878**	0.116	0.8	ug/L	173	Standard
	Zn	66	29868.4	0.5	**28.5277**	0.483	1.7	ug/L	130	Standard
>	**Ge**	72	492563.3	2.0				ug/L	491724	Standard
	As	75	705.4	3.6	**0.7048**	0.021	3.0	ug/L	-25	Standard
	Se	82	43.0	1.8	**0.3227**	0.009	2.7	ug/L	12	Standard
	Se-1	77	107.0	6.1	**0.8613**	0.072	8.3	ug/L	57	Standard
>	**Ga**	71	11926.4	3.1				mg/L	148	Standard
	Rb	85	71819.9	2.8				ug/L	18	Standard
	Y	89	651603.7	2.1				ug/L	401845	Standard
>	**Rh**	103	30.0	0.0				ug/L	10	Standard
	Mo	98	68.5	8.4	**0.0231**	0.003	12.2	ug/L	12	Standard
	Ag	107	420.7	8.6	**0.0536**	0.006	11.6	ug/L	98	Standard
	Cd	111	560.2	2.6	**0.2833**	0.005	1.6	mg/L	11	Standard
	Cd	114	1323.3	4.1	**0.2753**	0.012	4.2	ug/L	21	Standard
>	**In**	115	566534.2	2.2				ug/L	547487	Standard
	Sn	118	563.3	6.8	**0.0309**	0.009	30.5	ug/L	450	Standard
	Sb	123	100.4	11.4	**0.0152**	0.002	14.0	ug/L	105	Standard
	Ba	135	283911.4	0.6	**149.4331**	2.900	1.9	ug/L	111	Standard
	Ce	140	1002744.9	0.8				ug/L	107	Standard
>	**Tb**	159	926505.2	0.9				ug/L	890342	Standard
	Ho	165	19863.0	1.4				ug/L	10	Standard
	Tl	203	430.7	7.9	**0.0532**	0.005	8.6	ug/L	19	Standard
	Tl	205	353.3	5.9	**0.0577**	0.003	4.9	ug/L	17	Standard
	Pb	206	69734.1	0.6	**14.2349**	0.089	0.6	ug/L	247	Standard
	Pb	207	57132.8	0.4	**12.8273**	0.185	1.4	ug/L	215	Standard
	Pb	208	238392.7	1.0	**14.2947**	0.123	0.9	ug/L	770	Standard
	U	238	2332.8	0.7	**0.3863**	0.003	0.7	ug/L	13	Standard
>	**Bi**	209	505510.9	1.2				ug/L	503143	Standard

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Na	23	1.7	173.2	**14.5012**	25.108	173.1	mg/L	2	Standard
Mg	24	86.7	20.3	**0.0546**	0.020	36.4	mg/L	35	Standard
K	39	190.0	17.3	**0.6305**	0.128	20.3	mg/L	25	Standard
Ca	43	63.3	24.1	**4.4800**	2.465	55.0	mg/L	38	Standard
Fe	54	5380.7	2.2	**3.8682**	0.114	2.9	mg/L	126	Standard
Fe	57	1575.1	5.6	**3.7787**	0.227	6.0	mg/L	245	Standard
> **Sc-1**	45	31963.7	1.0				mg/L	25066	Standard
Cl	35	132139.0	0.5				ug/L	125857	Standard
Kr	83	3.3	45.8				ug/L	1	Standard
Br	81	1810.1	9.6				ug/L	1350	Standard
P	31	17954.0	0.5				ug/L	18393	Standard
S	34	3857.2	2.7				ug/L	3739	Standard
Sr	88	100.0	20.0				ug/L	78	Standard
C	12	70.0	14.3				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	65.5				mg/L	0	Standard
Dy	164	33584.1	0.1				mg/L	2	Standard
Ho-1	165	19863.0	1.4				mg/L	10	Standard
Er	166	16942.8	1.2				mg/L	23	Standard
I	127	7925.4	6.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.953	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.171	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.479
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.471
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 20:54:52
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60883.8	1.2				ug/L	60176	Standard
	Be	9	37452.9	1.8	**51.5526**	0.424	0.8	ug/L	5	Standard
	Al	27	6689358.8	1.2	**50.3342**	1.000	2.0	ug/L	832	Standard
	Sc	45	26605.0	1.1				ug/L	25066	Standard
	Ti	47	21026.9	2.2	**105.9022**	3.978	3.8	ug/L	38	Standard
	V	51	311223.1	1.0	**50.8529**	1.359	2.7	ug/L	974	Standard
	Cr	52	341954.8	0.5	**51.4858**	0.949	1.8	ug/L	5792	Standard
	Cr	53	42792.0	0.9	**50.5973**	0.849	1.7	ug/L	347	Standard
	Mn	55	320340.3	1.3	**48.6001**	1.462	3.0	ug/L	1164	Standard
	Co	59	314843.1	1.0	**50.3634**	1.025	2.0	ug/L	303	Standard
	Ni	60	93552.6	1.1	**50.5030**	1.634	3.2	ug/L	291	Standard
	Cu	65	92967.7	0.8	**50.5704**	1.475	2.9	ug/L	173	Standard
	Zn	66	53414.3	0.4	**49.9687**	0.924	1.8	ug/L	130	Standard
>	**Ge**	72	504684.6	2.1				ug/L	491724	Standard
	As	75	53717.6	0.4	**49.9128**	1.219	2.4	ug/L	-25	Standard
	Se	82	5331.3	0.9	**50.1675**	1.278	2.5	ug/L	12	Standard
	Se-1	77	3711.8	3.5	**50.5254**	1.616	3.2	ug/L	57	Standard
>	**Ga**	71	126.7	4.6				mg/L	148	Standard
	Rb	85	895.0	15.1				ug/L	18	Standard
	Y	89	404245.1	2.3				ug/L	401845	Standard
>	**Rh**	103	30.0	72.6				ug/L	10	Standard
	Mo	98	234676.4	0.3	**98.0864**	1.853	1.9	ug/L	12	Standard
	Ag	107	298634.4	0.6	**50.8442**	0.767	1.5	ug/L	98	Standard
	Cd	111	95655.4	0.7	**51.1097**	1.126	2.2	mg/L	11	Standard
	Cd	114	231347.5	1.0	**50.8153**	1.523	3.0	ug/L	21	Standard
>	**In**	115	545250.3	2.0				ug/L	547487	Standard
	Sn	118	260351.2	0.6	**50.2848**	1.264	2.5	ug/L	450	Standard
	Sb	123	214346.2	0.6	**50.6758**	0.746	1.5	ug/L	105	Standard
	Ba	135	92176.2	0.3	**50.3714**	0.906	1.8	ug/L	111	Standard
	Ce	140	526.7	81.3				ug/L	107	Standard
>	**Tb**	159	882908.4	0.6				ug/L	890342	Standard
	Ho	165	28.3	27.0				ug/L	10	Standard
	Tl	203	374935.9	0.9	**50.1205**	0.165	0.3	ug/L	19	Standard
	Tl	205	318674.8	0.7	**51.9217**	0.204	0.4	ug/L	17	Standard
	Pb	206	235754.0	0.4	**48.9660**	0.280	0.6	ug/L	247	Standard
	Pb	207	213881.4	0.3	**48.8706**	0.570	1.2	ug/L	215	Standard
	Pb	208	834513.3	1.3	**50.9306**	0.866	1.7	ug/L	770	Standard
	U	238	300874.8	0.8	**50.6644**	0.698	1.4	ug/L	13	Standard
>	**Bi**	209	498178.2	0.8				ug/L	503143	Standard

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Na	23	3.3	86.6	**34.8841**	30.207	86.6	mg/L	2	Standard
Mg	24	3477.1	4.4	**4.4607**	0.153	3.4	mg/L	35	Standard
K	39	961.7	14.3	**4.4091**	0.698	15.8	mg/L	25	Standard
Ca	43	43.3	69.6	**2.7007**	5.576	206.5	mg/L	38	Standard
Fe	54	5435.3	1.5	**4.7229**	0.037	0.8	mg/L	126	Standard
Fe	57	1608.4	5.4	**4.8844**	0.305	6.2	mg/L	245	Standard
> **Sc-1**	45	26605.0	1.1				mg/L	25066	Standard
Cl	35	135935.1	1.3				ug/L	125857	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	1366.7	10.0				ug/L	1350	Standard
P	31	19796.3	3.2				ug/L	18393	Standard
S	34	4318.9	4.3				ug/L	3739	Standard
Sr	88	66.7	4.3				ug/L	78	Standard
C	12	60.0	66.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	36.0	84.1				mg/L	2	Standard
Ho-1	165	28.3	27.0				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	23	Standard
I	127	1233.4	10.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	103.105		
Al	27	100.668		
Sc	45			
Ti	47	105.902		
V	51	101.706		
Cr	52	102.972		
Cr	53			
Mn	55	97.200		
Co	59	100.727		
Ni	60	101.006		
Cu	65	101.141		
Zn	66	99.937		
> Ge	72		102.636	
As	75	99.826		
Se	82	100.335		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.086		
Ag	107	101.688		
Cd	111	102.219		
Cd	114			
> In	115			99.592
Sn	118	100.570		
Sb	123	101.352		
Ba	135	100.743		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.241		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.861		
U	238	101.329		
> Bi	209			99.013
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 20:58:03
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60304.9	3.7				ug/L	60176	Standard
	Be	9	20.0	25.0	**0.0187**	0.006	34.5	ug/L	5	Standard
	Al	27	2683.6	13.5	**0.0119**	0.002	17.0	ug/L	832	Standard
	Sc	45	27745.4	2.3				ug/L	25066	Standard
	Ti	47	26.3	7.9	**-0.0698**	0.006	9.1	ug/L	38	Standard
	V	51	1025.5	6.6	**0.0041**	0.015	373.0	ug/L	974	Standard
	Cr	52	5980.2	0.4	**0.0103**	0.035	341.4	ug/L	5792	Standard
	Cr	53	358.3	2.9	**0.0313**	0.025	80.8	ug/L	347	Standard
	Mn	55	1307.7	11.4	**-0.0089**	0.015	168.5	ug/L	1164	Standard
	Co	59	319.0	5.2	**0.0037**	0.001	16.8	ug/L	303	Standard
	Ni	60	213.7	10.1	**-0.0706**	0.007	10.2	ug/L	291	Standard
	Cu	65	176.0	45.3	**0.0009**	0.040	4571.7	ug/L	173	Standard
	Zn	66	197.3	32.7	**-0.0440**	0.055	125.2	ug/L	130	Standard
>	**Ge**	72	485859.0	4.1				ug/L	491724	Standard
	As	75	-7.9	564.3	**0.0257**	0.042	164.8	ug/L	-25	Standard
	Se	82	20.6	52.0	**0.1089**	0.105	96.6	ug/L	12	Standard
	Se-1	77	51.3	4.9	**0.0854**	0.006	7.0	ug/L	57	Standard
>	**Ga**	71	96.7	26.5				mg/L	148	Standard
	Rb	85	53.3	75.8				ug/L	18	Standard
	Y	89	428893.2	2.6				ug/L	401845	Standard
>	**Rh**	103	21.7	35.3				ug/L	10	Standard
	Mo	98	267.7	20.3	**0.1004**	0.022	21.8	ug/L	12	Standard
	Ag	107	154.3	36.0	**0.0093**	0.009	97.1	ug/L	98	Standard
	Cd	111	33.1	68.4	**0.0119**	0.011	96.1	mg/L	11	Standard
	Cd	114	72.5	60.2	**0.0105**	0.009	86.3	ug/L	21	Standard
>	**In**	115	582185.2	0.5				ug/L	547487	Standard
	Sn	118	775.0	15.8	**0.0663**	0.022	32.6	ug/L	450	Standard
	Sb	123	370.4	13.0	**0.0743**	0.010	13.7	ug/L	105	Standard
	Ba	135	185.0	36.1	**0.0393**	0.035	88.5	ug/L	111	Standard
	Ce	140	261.7	98.8				ug/L	107	Standard
>	**Tb**	159	909104.3	2.8				ug/L	890342	Standard
	Ho	165	13.3	21.7				ug/L	10	Standard
	Tl	203	110.3	66.1	**0.0108**	0.009	83.7	ug/L	19	Standard
	Tl	205	71.7	63.3	**0.0123**	0.007	55.7	ug/L	17	Standard
	Pb	206	312.7	18.6	**0.0088**	0.010	110.7	ug/L	247	Standard
	Pb	207	257.0	12.9	**0.0056**	0.006	101.8	ug/L	215	Standard
	Pb	208	984.0	5.5	**-0.0008**	0.002	247.7	ug/L	770	Standard
	U	238	62.3	31.4	**0.0094**	0.003	31.0	ug/L	13	Standard
>	**Bi**	209	506036.5	3.2				ug/L	503143	Standard

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Na	23	1.7	173.2	**16.4456**	28.476	173.2	mg/L	2	Standard
Mg	24	31.7	48.2	**0.0006**	0.019	3169.4	mg/L	35	Standard
K	39	28.3	44.4	**0.0148**	0.056	376.7	mg/L	25	Standard
Ca	43	30.0	16.7	**0.0246**	0.947	3845.4	mg/L	38	Standard
Fe	54	152.6	13.3	**-0.0059**	0.014	243.4	mg/L	126	Standard
Fe	57	205.0	29.6	**-0.3585**	0.221	61.6	mg/L	245	Standard
> **Sc-1**	45	27745.4	2.3				mg/L	25066	Standard
Cl	35	137127.8	1.4				ug/L	125857	Standard
Kr	83	1.3	43.3				ug/L	1	Standard
Br	81	1390.1	15.1				ug/L	1350	Standard
P	31	20685.8	4.9				ug/L	18393	Standard
S	34	4127.2	9.0				ug/L	3739	Standard
Sr	88	78.3	54.3				ug/L	78	Standard
C	12	46.7	12.4				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	13.0	115.8				mg/L	2	Standard
Ho-1	165	13.3	21.7				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	23	Standard
I	127	885.0	8.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.807	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.338
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.575
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606078717
Sample Date/Time: Tuesday, June 21, 2016 21:01:16
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58967.9	1.9				ug/L	60176	Standard
	Be	9	248.3	8.1	**0.3438**	0.024	6.9	ug/L	5	Standard
	Al	27	2227874.3	0.9	**17.3042**	0.322	1.9	ug/L	832	Standard
	Sc	45	26897.2	2.2				ug/L	25066	Standard
	Ti	47	1431.7	18.6	**6.8597**	1.258	18.3	ug/L	38	Standard
	V	51	47458.5	2.5	**7.4476**	0.204	2.7	ug/L	974	Standard
	Cr	52	32459.4	0.3	**3.9305**	0.054	1.4	ug/L	5792	Standard
	Cr	53	3765.5	1.9	**3.9831**	0.119	3.0	ug/L	347	Standard
	Mn	55	1239543.3	1.8	**184.7250**	3.779	2.0	ug/L	1164	Standard
	Co	59	18572.0	2.0	**2.8625**	0.053	1.9	ug/L	303	Standard
	Ni	60	10124.4	1.0	**5.1808**	0.100	1.9	ug/L	291	Standard
	Cu	65	6785.9	0.8	**3.5234**	0.059	1.7	ug/L	173	Standard
	Zn	66	12295.0	0.6	**11.0803**	0.079	0.7	ug/L	130	Standard
>	**Ge**	72	515286.4	0.8				ug/L	491724	Standard
	As	75	1394.4	4.3	**1.3016**	0.051	3.9	ug/L	-25	Standard
	Se	82	20.2	35.8	**0.0940**	0.067	71.3	ug/L	12	Standard
	Se-1	77	68.7	3.7	**0.2777**	0.038	13.8	ug/L	57	Standard
>	**Ga**	71	3877.2	6.5				mg/L	148	Standard
	Rb	85	33081.1	0.9				ug/L	18	Standard
	Y	89	491266.4	1.3				ug/L	401845	Standard
>	**Rh**	103	30.0	50.0				ug/L	10	Standard
	Mo	98	552.0	0.6	**0.2299**	0.004	1.9	ug/L	12	Standard
	Ag	107	180.0	16.1	**0.0157**	0.005	31.4	ug/L	98	Standard
	Cd	111	82.7	5.7	**0.0401**	0.003	6.4	mg/L	11	Standard
	Cd	114	155.0	26.9	**0.0301**	0.009	30.6	ug/L	21	Standard
>	**In**	115	536864.3	1.3				ug/L	547487	Standard
	Sn	118	871.7	22.7	**0.0970**	0.038	39.0	ug/L	450	Standard
	Sb	123	155.5	16.1	**0.0297**	0.006	20.1	ug/L	105	Standard
	Ba	135	92951.9	0.7	**51.5816**	0.551	1.1	ug/L	111	Standard
	Ce	140	470743.1	1.1				ug/L	107	Standard
>	**Tb**	159	879768.9	2.5				ug/L	890342	Standard
	Ho	165	7800.3	2.1				ug/L	10	Standard
	Tl	203	213.0	5.0	**0.0249**	0.002	7.3	ug/L	19	Standard
	Tl	205	180.0	7.3	**0.0302**	0.002	7.1	ug/L	17	Standard
	Pb	206	22080.4	1.2	**4.5264**	0.114	2.5	ug/L	247	Standard
	Pb	207	18228.6	0.8	**4.1081**	0.080	1.9	ug/L	215	Standard
	Pb	208	74972.7	0.7	**4.5107**	0.075	1.7	ug/L	770	Standard
	U	238	864.0	6.8	**0.1443**	0.008	5.6	ug/L	13	Standard
>	**Bi**	209	499355.6	1.6				ug/L	503143	Standard

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Na	23	1.7	173.2	**17.5774**	30.436	173.2	mg/L	2	Standard
Mg	24	61.7	40.0	**0.0403**	0.033	80.9	mg/L	35	Standard
K	39	90.0	19.2	**0.3053**	0.077	25.2	mg/L	25	Standard
Ca	43	26.7	43.3	**-0.4112**	2.189	532.4	mg/L	38	Standard
Fe	54	3684.8	2.8	**3.1243**	0.156	5.0	mg/L	126	Standard
Fe	57	1071.7	3.2	**2.8502**	0.193	6.8	mg/L	245	Standard
> **Sc-1**	45	26897.2	2.2				mg/L	25066	Standard
Cl	35	128581.4	1.9				ug/L	125857	Standard
Kr	83	3.3	69.3				ug/L	1	Standard
Br	81	1366.7	14.0				ug/L	1350	Standard
P	31	18504.6	2.4				ug/L	18393	Standard
S	34	3872.2	3.4				ug/L	3739	Standard
Sr	88	98.3	24.0				ug/L	78	Standard
C	12	83.3	13.9				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	0	Standard
Dy	164	13079.9	4.0				mg/L	2	Standard
Ho-1	165	7800.3	2.1				mg/L	10	Standard
Er	166	6874.9	2.4				mg/L	23	Standard
I	127	43099.7	5.9				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.992	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.792	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.060
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.247
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: June 22, 2016

Method 6020 - Summary Report

Sample ID: L1606096401
Sample Date/Time: Tuesday, June 21, 2016 21:04:28
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61683.6	0.8				ug/L	60176	Standard
	Be	9	883.4	4.3	**1.1916**	0.058	4.9	ug/L	5	Standard
	Al	27	5178030.7	2.0	**38.4554**	1.068	2.8	ug/L	832	Standard
	Sc	45	30799.6	3.4				ug/L	25066	Standard
	Ti	47	4718.7	1.1	**24.0318**	0.395	1.6	ug/L	38	Standard
	V	51	114345.0	1.6	**18.9116**	0.174	0.9	ug/L	974	Standard
	Cr	52	105274.2	1.9	**15.4891**	0.252	1.6	ug/L	5792	Standard
	Cr	53	13055.6	1.4	**15.4331**	0.322	2.1	ug/L	347	Standard
	Mn	55	7305075.4	0.8	**1132.9355**	7.283	0.6	ug/L	1164	Standard
	Co	59	110053.3	1.1	**17.8911**	0.196	1.1	ug/L	303	Standard
	Ni	60	42512.6	2.1	**23.2560**	0.355	1.5	ug/L	291	Standard
	Cu	65	53072.8	1.3	**29.3454**	0.332	1.1	ug/L	173	Standard
	Zn	66	99122.2	1.6	**94.6103**	1.148	1.2	ug/L	130	Standard
>	**Ge**	72	495611.5	1.0				ug/L	491724	Standard
	As	75	7905.4	0.5	**7.5070**	0.111	1.5	ug/L	-25	Standard
	Se	82	123.9	10.0	**1.0965**	0.127	11.6	ug/L	12	Standard
	Se-1	77	121.7	4.5	**1.0589**	0.089	8.4	ug/L	57	Standard
>	**Ga**	71	15628.1	1.2				mg/L	148	Standard
	Rb	85	148601.9	0.8				ug/L	18	Standard
	Y	89	644139.5	2.1				ug/L	401845	Standard
>	**Rh**	103	43.3	26.6				ug/L	10	Standard
	Mo	98	2523.4	0.5	**1.0118**	0.017	1.7	ug/L	12	Standard
	Ag	107	592.0	2.4	**0.0817**	0.001	1.4	ug/L	98	Standard
	Cd	111	807.3	4.3	**0.4111**	0.024	5.8	mg/L	11	Standard
	Cd	114	1817.8	11.0	**0.3801**	0.041	10.8	ug/L	21	Standard
>	**In**	115	565837.8	1.4				ug/L	547487	Standard
	Sn	118	1080.0	6.1	**0.1273**	0.013	10.3	ug/L	450	Standard
	Sb	123	319.1	4.8	**0.0651**	0.004	6.6	ug/L	105	Standard
	Ba	135	459850.7	0.5	**242.3294**	2.872	1.2	ug/L	111	Standard
	Ce	140	772197.4	0.7				ug/L	107	Standard
>	**Tb**	159	924228.8	0.8				ug/L	890342	Standard
	Ho	165	18805.0	1.1				ug/L	10	Standard
	Tl	203	1334.1	2.6	**0.1715**	0.004	2.4	ug/L	19	Standard
	Tl	205	1121.7	11.7	**0.1804**	0.021	11.8	ug/L	17	Standard
	Pb	206	155702.0	1.1	**31.7305**	0.431	1.4	ug/L	247	Standard
	Pb	207	128499.6	0.8	**28.8036**	0.297	1.0	ug/L	215	Standard
	Pb	208	526834.4	0.3	**31.5436**	0.346	1.1	ug/L	770	Standard
	U	238	6774.5	2.8	**1.1193**	0.041	3.6	ug/L	13	Standard
>	**Bi**	209	507432.9	0.8				ug/L	503143	Standard

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Na	23	1.7	173.2	**14.5920**	25.265	173.1	mg/L	2	Standard
Mg	24	123.3	36.3	**0.0995**	0.052	52.6	mg/L	35	Standard
K	39	286.7	11.6	**1.0529**	0.157	14.9	mg/L	25	Standard
Ca	43	181.7	8.8	**23.8683**	3.171	13.3	mg/L	38	Standard
Fe	54	30681.9	0.6	**23.5794**	0.906	3.8	mg/L	126	Standard
Fe	57	7930.4	3.9	**24.3571**	0.437	1.8	mg/L	245	Standard
Sc-1	45	30799.6	3.4				mg/L	25066	Standard
Cl	35	140264.3	0.6				ug/L	125857	Standard
Kr	83	1.3	114.6				ug/L	1	Standard
Br	81	4600.7	5.6				ug/L	1350	Standard
P	31	20849.3	1.5				ug/L	18393	Standard
S	34	4297.3	6.2				ug/L	3739	Standard
Sr	88	158.3	6.6				ug/L	78	Standard
C	12	330.0	10.9				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	140.0	7.1				mg/L	0	Standard
Dy	164	30992.7	0.4				mg/L	2	Standard
Ho-1	165	18805.0	1.1				mg/L	10	Standard
Er	166	16085.2	2.6				mg/L	23	Standard
I	127	12078.2	5.8				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.506	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.791	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606096401
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.352
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.853
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606096401
Report Date/Time: Tuesday, June 21, 2016 21:06:45
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Method 6020 - Summary Report

Sample ID: L1606096402
Sample Date/Time: Tuesday, June 21, 2016 21:07:39
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60443.7	2.3				ug/L	60176	Standard
	Be	9	858.4	6.1	**1.1817**	0.077	6.5	ug/L	5	Standard
	Al	27	6826154.4	0.3	**51.7504**	1.316	2.5	ug/L	832	Standard
	Sc	45	29154.7	2.0				ug/L	25066	Standard
	Ti	47	4436.6	0.7	**23.0756**	0.146	0.6	ug/L	38	Standard
	V	51	102185.5	0.5	**17.2535**	0.167	1.0	ug/L	974	Standard
	Cr	52	95353.4	0.7	**14.2638**	0.044	0.3	ug/L	5792	Standard
	Cr	53	11679.5	2.1	**14.0700**	0.355	2.5	ug/L	347	Standard
	Mn	55	7652551.6	0.6	**1212.6036**	11.003	0.9	ug/L	1164	Standard
	Co	59	114240.4	1.3	**18.9785**	0.353	1.9	ug/L	303	Standard
	Ni	60	37577.9	2.9	**20.9856**	0.630	3.0	ug/L	291	Standard
	Cu	65	36514.3	2.8	**20.5993**	0.606	2.9	ug/L	173	Standard
	Zn	66	77328.8	1.2	**75.3661**	1.101	1.5	ug/L	130	Standard
>	**Ge**	72	485083.6	0.6				ug/L	491724	Standard
	As	75	9274.5	0.6	**8.9907**	0.056	0.6	ug/L	-25	Standard
	Se	82	68.6	8.2	**0.5801**	0.058	10.0	ug/L	12	Standard
	Se-1	77	100.0	6.2	**0.7851**	0.097	12.4	ug/L	57	Standard
>	**Ga**	71	13681.2	0.5				mg/L	148	Standard
	Rb	85	107244.9	1.0				ug/L	18	Standard
	Y	89	606939.5	0.4				ug/L	401845	Standard
>	**Rh**	103	73.3	15.7				ug/L	10	Standard
	Mo	98	2763.0	0.4	**1.1251**	0.031	2.8	ug/L	12	Standard
	Ag	107	389.0	4.8	**0.0494**	0.004	8.4	ug/L	98	Standard
	Cd	111	497.8	7.0	**0.2554**	0.018	7.1	mg/L	11	Standard
	Cd	114	1250.0	4.5	**0.2640**	0.013	4.9	ug/L	21	Standard
>	**In**	115	557635.5	2.9				ug/L	547487	Standard
	Sn	118	808.4	8.9	**0.0790**	0.017	21.2	ug/L	450	Standard
	Sb	123	238.7	4.1	**0.0476**	0.003	6.2	ug/L	105	Standard
	Ba	135	379584.7	0.5	**203.0712**	6.745	3.3	ug/L	111	Standard
	Ce	140	697160.9	0.9				ug/L	107	Standard
>	**Tb**	159	886275.1	1.2				ug/L	890342	Standard
	Ho	165	14727.2	5.5				ug/L	10	Standard
	Tl	203	896.7	2.2	**0.1223**	0.004	3.1	ug/L	19	Standard
	Tl	205	745.0	8.4	**0.1283**	0.009	7.2	ug/L	17	Standard
	Pb	206	178412.3	0.6	**38.8786**	0.719	1.8	ug/L	247	Standard
	Pb	207	147399.5	0.7	**35.3313**	0.706	2.0	ug/L	215	Standard
	Pb	208	606573.9	0.8	**38.8359**	0.746	1.9	ug/L	770	Standard
	U	238	7105.3	1.3	**1.2549**	0.033	2.7	ug/L	13	Standard
>	**Bi**	209	474753.1	1.4				ug/L	503143	Standard

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Na	23	8.3	34.6	**79.6978**	26.468	33.2	mg/L	2	Standard
Mg	24	110.0	7.9	**0.0911**	0.012	13.1	mg/L	35	Standard
K	39	256.7	19.5	**0.9885**	0.219	22.1	mg/L	25	Standard
Ca	43	411.7	11.5	**64.4783**	8.203	12.7	mg/L	38	Standard
Fe	54	35968.6	1.2	**29.2125**	0.258	0.9	mg/L	126	Standard
Fe	57	9513.0	2.7	**31.1720**	1.290	4.1	mg/L	245	Standard
> **Sc-1**	45	29154.7	2.0				mg/L	25066	Standard
Cl	35	139874.1	1.4				ug/L	125857	Standard
Kr	83	2.3	107.9				ug/L	1	Standard
Br	81	2370.2	14.6				ug/L	1350	Standard
P	31	20196.8	1.6				ug/L	18393	Standard
S	34	4530.7	2.9				ug/L	3739	Standard
Sr	88	208.3	7.3				ug/L	78	Standard
C	12	226.7	16.7				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	76.7	52.7				mg/L	0	Standard
Dy	164	23848.2	0.8				mg/L	2	Standard
Ho-1	165	14727.2	5.5				mg/L	10	Standard
Er	166	12765.4	0.8				mg/L	23	Standard
I	127	5762.8	6.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.445	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.650	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.854	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	94.358	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606096403
Sample Date/Time: Tuesday, June 21, 2016 21:10:51
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59725.8	1.2				ug/L	60176	Standard
	Be	9	1065.0	7.1	**1.4856**	0.101	6.8	ug/L	5	Standard
	Al	27	6735770.9	2.1	**51.6724**	1.686	3.3	ug/L	832	Standard
	Sc	45	31080.2	2.4				ug/L	25066	Standard
	Ti	47	4731.4	2.9	**23.5917**	1.146	4.9	ug/L	38	Standard
	V	51	159656.7	1.1	**25.9167**	0.803	3.1	ug/L	974	Standard
	Cr	52	150620.2	2.4	**22.0767**	0.911	4.1	ug/L	5792	Standard
	Cr	53	18673.2	1.5	**21.7771**	0.815	3.7	ug/L	347	Standard
	Mn	55	23162167.1	2.5	**3518.0721**	158.797	4.5	ug/L	1164	Standard
	Co	59	153465.2	2.3	**24.4482**	1.075	4.4	ug/L	303	Standard
	Ni	60	66553.2	1.2	**35.7474**	1.066	3.0	ug/L	291	Standard
	Cu	65	62739.7	1.9	**33.9798**	1.174	3.5	ug/L	173	Standard
	Zn	66	111779.9	1.3	**104.4821**	3.185	3.0	ug/L	130	Standard
>	**Ge**	72	506423.5	2.2				ug/L	491724	Standard
	As	75	13400.8	1.3	**12.4352**	0.374	3.0	ug/L	-25	Standard
	Se	82	118.6	7.2	**1.0218**	0.099	9.7	ug/L	12	Standard
	Se-1	77	153.7	9.5	**1.4639**	0.226	15.5	ug/L	57	Standard
>	**Ga**	71	25104.1	4.5				mg/L	148	Standard
	Rb	85	212398.7	1.8				ug/L	18	Standard
	Y	89	707988.0	2.1				ug/L	401845	Standard
>	**Rh**	103	40.0	21.7				ug/L	10	Standard
	Mo	98	3597.9	2.4	**1.5414**	0.022	1.4	ug/L	12	Standard
	Ag	107	833.4	3.0	**0.1305**	0.003	2.1	ug/L	98	Standard
	Cd	111	780.1	2.5	**0.4239**	0.014	3.3	mg/L	11	Standard
	Cd	114	1837.3	7.4	**0.4101**	0.024	5.8	ug/L	21	Standard
>	**In**	115	530289.5	1.6				ug/L	547487	Standard
	Sn	118	726.7	5.9	**0.0704**	0.006	9.1	ug/L	450	Standard
	Sb	123	189.3	5.2	**0.0384**	0.003	7.9	ug/L	105	Standard
	Ba	135	438353.8	1.0	**246.4838**	2.881	1.2	ug/L	111	Standard
	Ce	140	990763.4	1.4				ug/L	107	Standard
>	**Tb**	159	873474.7	0.7				ug/L	890342	Standard
	Ho	165	24511.5	2.8				ug/L	10	Standard
	Tl	203	1762.8	2.6	**0.2422**	0.010	4.3	ug/L	19	Standard
	Tl	205	1573.4	6.4	**0.2681**	0.014	5.1	ug/L	17	Standard
	Pb	206	175441.6	1.0	**37.9831**	0.971	2.6	ug/L	247	Standard
	Pb	207	144605.2	1.4	**34.4368**	0.983	2.9	ug/L	215	Standard
	Pb	208	588641.2	1.8	**37.4440**	1.195	3.2	ug/L	770	Standard
	U	238	9588.7	2.3	**1.6828**	0.058	3.5	ug/L	13	Standard
>	**Bi**	209	477887.7	1.6				ug/L	503143	Standard

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Na	23	3.3	86.6	**29.6244**	25.651	86.6	mg/L	2	Standard
Mg	24	100.0	32.8	**0.0724**	0.039	53.5	mg/L	35	Standard
K	39	251.7	22.0	**0.8997**	0.220	24.5	mg/L	25	Standard
Ca	43	298.3	10.8	**42.0685**	4.357	10.4	mg/L	38	Standard
Fe	54	46609.4	1.9	**35.5544**	1.340	3.8	mg/L	126	Standard
Fe	57	12280.0	1.7	**37.9835**	1.542	4.1	mg/L	245	Standard
> **Sc-1**	45	31080.2	2.4				mg/L	25066	Standard
Cl	35	131632.1	1.5				ug/L	125857	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	2233.5	9.3				ug/L	1350	Standard
P	31	19908.1	1.2				ug/L	18393	Standard
S	34	4282.3	3.5				ug/L	3739	Standard
Sr	88	186.7	10.8				ug/L	78	Standard
C	12	196.7	7.8				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	28.4				mg/L	0	Standard
Dy	164	39222.5	1.3				mg/L	2	Standard
Ho-1	165	24511.5	2.8				mg/L	10	Standard
Er	166	21451.8	2.5				mg/L	23	Standard
I	127	11184.1	5.0				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.252	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.989	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.859
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.981
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606096404
Sample Date/Time: Tuesday, June 21, 2016 21:14:02
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65608.5	2.4				ug/L	60176	Standard
	Be	9	978.4	9.3	**1.2397**	0.091	7.3	ug/L	5	Standard
	Al	27	20276434.3	2.1	**141.6733**	6.192	4.4	ug/L	832	Standard
	Sc	45	32165.8	0.5				ug/L	25066	Standard
	Ti	47	4298.9	2.0	**22.5280**	0.481	2.1	ug/L	38	Standard
	V	51	146058.2	0.9	**24.9272**	0.315	1.3	ug/L	974	Standard
	Cr	52	151598.3	0.6	**23.4255**	0.607	2.6	ug/L	5792	Standard
	Cr	53	18476.3	1.4	**22.6814**	0.785	3.5	ug/L	347	Standard
	Mn	55	9420566.7	0.7	**1504.6626**	40.210	2.7	ug/L	1164	Standard
	Co	59	121066.1	1.2	**20.2709**	0.323	1.6	ug/L	303	Standard
	Ni	60	72261.9	0.3	**40.8509**	0.828	2.0	ug/L	291	Standard
	Cu	65	54807.6	0.9	**31.2098**	0.512	1.6	ug/L	173	Standard
	Zn	66	122838.6	0.9	**120.7890**	1.613	1.3	ug/L	130	Standard
>	**Ge**	72	481416.0	1.9				ug/L	491724	Standard
	As	75	16765.9	1.3	**16.3502**	0.164	1.0	ug/L	-25	Standard
	Se	82	200.1	3.3	**1.8846**	0.080	4.3	ug/L	12	Standard
	Se-1	77	165.3	6.7	**1.7419**	0.196	11.3	ug/L	57	Standard
>	**Ga**	71	21279.9	1.7				mg/L	148	Standard
	Rb	85	212211.0	1.6				ug/L	18	Standard
	Y	89	668598.8	3.4				ug/L	401845	Standard
>	**Rh**	103	146.7	13.8				ug/L	10	Standard
	Mo	98	6675.4	3.0	**2.8530**	0.135	4.7	ug/L	12	Standard
	Ag	107	751.4	7.2	**0.1157**	0.012	10.3	ug/L	98	Standard
	Cd	111	870.3	3.3	**0.4716**	0.024	5.2	mg/L	11	Standard
	Cd	114	2091.4	3.2	**0.4659**	0.020	4.4	ug/L	21	Standard
>	**In**	115	532573.7	1.9				ug/L	547487	Standard
	Sn	118	885.0	9.3	**0.1010**	0.014	13.8	ug/L	450	Standard
	Sb	123	194.5	1.0	**0.0395**	0.001	2.8	ug/L	105	Standard
	Ba	135	1163510.0	0.9	**651.5400**	6.396	1.0	ug/L	111	Standard
	Ce	140	906567.9	0.7				ug/L	107	Standard
>	**Tb**	159	883392.7	1.4				ug/L	890342	Standard
	Ho	165	22286.4	1.5				ug/L	10	Standard
	Tl	203	2482.5	0.8	**0.3521**	0.004	1.0	ug/L	19	Standard
	Tl	205	1881.8	2.0	**0.3296**	0.010	3.2	ug/L	17	Standard
	Pb	206	158091.9	0.8	**35.1738**	0.401	1.1	ug/L	247	Standard
	Pb	207	129834.2	0.5	**31.7739**	0.359	1.1	ug/L	215	Standard
	Pb	208	527254.9	0.3	**34.4662**	0.500	1.5	ug/L	770	Standard
	U	238	16067.5	1.1	**2.8987**	0.040	1.4	ug/L	13	Standard
>	**Bi**	209	464873.7	1.2				ug/L	503143	Standard

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Na	23	13.3	78.1	**115.9288**	90.093	77.7	mg/L	2	Standard
Mg	24	990.0	4.0	**1.0209**	0.038	3.7	mg/L	35	Standard
K	39	433.3	22.9	**1.5710**	0.385	24.5	mg/L	25	Standard
Ca	43	1288.4	2.4	**192.5985**	3.798	2.0	mg/L	38	Standard
Fe	54	42265.6	1.7	**31.1194**	0.570	1.8	mg/L	126	Standard
Fe	57	11794.6	0.9	**35.1500**	0.244	0.7	mg/L	245	Standard
Sc-1	45	32165.8	0.5				mg/L	25066	Standard
Cl	35	147961.0	1.0				ug/L	125857	Standard
Kr	83	2.7	57.3				ug/L	1	Standard
Br	81	8902.6	11.5				ug/L	1350	Standard
P	31	19879.7	1.0				ug/L	18393	Standard
S	34	4369.0	3.9				ug/L	3739	Standard
Sr	88	638.3	9.0				ug/L	78	Standard
C	12	266.7	53.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	80.0	25.0				mg/L	0	Standard
Dy	164	35429.3	3.3				mg/L	2	Standard
Ho-1	165	22286.4	1.5				mg/L	10	Standard
Er	166	19993.2	2.6				mg/L	23	Standard
I	127	41665.6	4.2				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		109.028	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.904	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.276
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	92.394
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606096405
Sample Date/Time: Tuesday, June 21, 2016 21:17:14
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	61603.3	1.5				ug/L	60176	Standard
	Be	9	600.0	13.8	**0.8067**	0.103	12.7	ug/L	5	Standard
	Al	27	6725691.5	0.7	**50.0139**	0.453	0.9	ug/L	832	Standard
	Sc	45	29426.9	0.5				ug/L	25066	Standard
	Ti	47	3385.7	1.8	**17.9264**	0.361	2.0	ug/L	38	Standard
	V	51	99171.8	1.0	**17.0872**	0.169	1.0	ug/L	974	Standard
	Cr	52	93106.5	0.5	**14.2111**	0.046	0.3	ug/L	5792	Standard
	Cr	53	11137.4	1.5	**13.6811**	0.187	1.4	ug/L	347	Standard
	Mn	55	4849349.2	0.5	**784.1366**	4.043	0.5	ug/L	1164	Standard
	Co	59	77636.7	0.7	**13.1472**	0.104	0.8	ug/L	303	Standard
	Ni	60	35771.2	0.8	**20.3821**	0.193	0.9	ug/L	291	Standard
	Cu	65	33083.4	0.4	**19.0401**	0.116	0.6	ug/L	173	Standard
	Zn	66	62395.9	0.5	**62.0204**	0.339	0.5	ug/L	130	Standard
>	Ge	72	475299.6	0.2				ug/L	491724	Standard
	As	75	7138.4	0.3	**7.0696**	0.031	0.4	ug/L	-25	Standard
	Se	82	72.9	6.9	**0.6363**	0.050	7.8	ug/L	12	Standard
	Se-1	77	94.7	8.2	**0.7362**	0.114	15.4	ug/L	57	Standard
>	Ga	71	13139.0	2.4				mg/L	148	Standard
	Rb	85	122434.4	1.4				ug/L	18	Standard
	Y	89	560272.6	0.4				ug/L	401845	Standard
>	Rh	103	85.0	10.2				ug/L	10	Standard
	Mo	98	2829.3	0.9	**1.2062**	0.019	1.6	ug/L	12	Standard
	Ag	107	451.3	3.3	**0.0633**	0.003	4.5	ug/L	98	Standard
	Cd	111	585.9	3.4	**0.3157**	0.009	2.8	mg/L	11	Standard
	Cd	114	1338.5	8.1	**0.2966**	0.027	9.2	ug/L	21	Standard
>	In	115	532548.5	0.9				ug/L	547487	Standard
	Sn	118	618.3	6.2	**0.0484**	0.008	15.8	ug/L	450	Standard
	Sb	123	149.8	7.0	**0.0287**	0.003	9.9	ug/L	105	Standard
	Ba	135	747435.4	0.3	**418.5133**	3.169	0.8	ug/L	111	Standard
	Ce	140	560557.9	2.3				ug/L	107	Standard
>	Tb	159	866879.8	2.2				ug/L	890342	Standard
	Ho	165	12675.3	1.6				ug/L	10	Standard
	Tl	203	1043.0	2.4	**0.1481**	0.005	3.4	ug/L	19	Standard
	Tl	205	948.4	1.9	**0.1690**	0.003	2.0	ug/L	17	Standard
	Pb	206	83575.9	1.0	**18.8379**	0.180	1.0	ug/L	247	Standard
	Pb	207	68735.9	0.3	**17.0411**	0.225	1.3	ug/L	215	Standard
	Pb	208	284935.0	0.5	**18.8685**	0.292	1.5	ug/L	770	Standard
	U	238	6592.4	0.9	**1.2061**	0.023	1.9	ug/L	13	Standard
>	Bi	209	458241.8	1.1				ug/L	503143	Standard

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Na	23	16.7	75.5	**158.9499**	120.668	75.9	mg/L	2	Standard
Mg	24	601.7	3.7	**0.6653**	0.030	4.4	mg/L	35	Standard
K	39	206.7	8.5	**0.7650**	0.071	9.3	mg/L	25	Standard
Ca	43	960.0	3.6	**155.9005**	6.175	4.0	mg/L	38	Standard
Fe	54	23834.6	0.7	**19.1304**	0.220	1.1	mg/L	126	Standard
Fe	57	7443.5	4.6	**23.9100**	1.153	4.8	mg/L	245	Standard
> **Sc-1**	45	29426.9	0.5				mg/L	25066	Standard
Cl	35	144441.3	1.4				ug/L	125857	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	2490.2	5.4				ug/L	1350	Standard
P	31	20085.0	2.1				ug/L	18393	Standard
S	34	4562.4	2.9				ug/L	3739	Standard
Sr	88	393.3	4.5				ug/L	78	Standard
C	12	153.3	3.8				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	75.0				mg/L	0	Standard
Dy	164	20473.5	4.3				mg/L	2	Standard
Ho-1	165	12675.3	1.6				mg/L	10	Standard
Er	166	10737.1	4.1				mg/L	23	Standard
I	127	13227.4	3.4				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.372	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.660	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	97.272	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	91.076	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606096406
Sample Date/Time: Tuesday, June 21, 2016 21:20:25
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	60848.7	3.4				ug/L	60176	Standard
	Be	9	848.4	7.1	**1.1616**	0.108	9.3	ug/L	5	Standard
	Al	27	6018452.6	1.5	**45.3266**	0.962	2.1	ug/L	832	Standard
	Sc	45	29640.6	1.5				ug/L	25066	Standard
	Ti	47	4099.9	2.1	**21.1801**	0.616	2.9	ug/L	38	Standard
	V	51	132165.3	0.9	**22.2298**	0.427	1.9	ug/L	974	Standard
	Cr	52	138324.2	0.9	**20.9859**	0.510	2.4	ug/L	5792	Standard
	Cr	53	16679.2	2.2	**20.1440**	0.532	2.6	ug/L	347	Standard
	Mn	55	5769097.8	1.9	**908.7457**	30.297	3.3	ug/L	1164	Standard
	Co	59	130326.2	1.6	**21.5282**	0.614	2.9	ug/L	303	Standard
	Ni	60	50019.1	0.7	**27.8281**	0.578	2.1	ug/L	291	Standard
	Cu	65	47838.4	0.9	**26.8518**	0.165	0.6	ug/L	173	Standard
	Zn	66	97149.5	0.7	**94.1665**	1.182	1.3	ug/L	130	Standard
>	**Ge**	72	488085.6	1.5				ug/L	491724	Standard
	As	75	10945.8	1.2	**10.5404**	0.129	1.2	ug/L	-25	Standard
	Se	82	126.3	7.0	**1.1371**	0.072	6.3	ug/L	12	Standard
	Se-1	77	119.7	5.4	**1.0557**	0.069	6.6	ug/L	57	Standard
>	**Ga**	71	21567.0	2.2				mg/L	148	Standard
	Rb	85	186239.4	1.0				ug/L	18	Standard
	Y	89	601057.7	2.4				ug/L	401845	Standard
>	**Rh**	103	81.7	23.2				ug/L	10	Standard
	Mo	98	3186.2	0.9	**1.3649**	0.035	2.5	ug/L	12	Standard
	Ag	107	455.7	8.5	**0.0644**	0.006	9.6	ug/L	98	Standard
	Cd	111	524.0	6.4	**0.2832**	0.020	7.0	mg/L	11	Standard
	Cd	114	1252.9	3.3	**0.2784**	0.006	2.0	ug/L	21	Standard
>	**In**	115	530301.4	1.7				ug/L	547487	Standard
	Sn	118	516.7	6.3	**0.0287**	0.006	19.5	ug/L	450	Standard
	Sb	123	143.3	12.6	**0.0273**	0.005	17.6	ug/L	105	Standard
	Ba	135	1292682.2	0.4	**727.0559**	14.238	2.0	ug/L	111	Standard
	Ce	140	693916.1	1.8				ug/L	107	Standard
>	**Tb**	159	864495.5	2.4				ug/L	890342	Standard
	Ho	165	16118.6	0.6				ug/L	10	Standard
	Tl	203	1937.1	6.9	**0.2725**	0.018	6.6	ug/L	19	Standard
	Tl	205	1651.8	5.8	**0.2879**	0.017	5.8	ug/L	17	Standard
	Pb	206	129961.3	0.5	**28.7585**	0.109	0.4	ug/L	247	Standard
	Pb	207	107597.0	0.6	**26.1888**	0.063	0.2	ug/L	215	Standard
	Pb	208	436286.5	1.1	**28.3645**	0.441	1.6	ug/L	770	Standard
	U	238	5730.8	1.3	**1.0282**	0.019	1.9	ug/L	13	Standard
>	**Bi**	209	467215.7	0.6				ug/L	503143	Standard

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Na	23	5.0	100.0	**47.5230**	47.311	99.6	mg/L	2	Standard
Mg	24	1591.8	6.0	**1.8117**	0.138	7.6	mg/L	35	Standard
K	39	305.0	4.3	**1.1740**	0.072	6.1	mg/L	25	Standard
Ca	43	253.3	7.5	**36.8883**	2.607	7.1	mg/L	38	Standard
Fe	54	39612.5	0.8	**31.6600**	0.733	2.3	mg/L	126	Standard
Fe	57	9963.3	0.7	**32.1373**	0.629	2.0	mg/L	245	Standard
> **Sc-1**	45	29640.6	1.5				mg/L	25066	Standard
Cl	35	134083.4	1.7				ug/L	125857	Standard
Kr	83	2.0	100.0				ug/L	1	Standard
Br	81	10510.3	5.8				ug/L	1350	Standard
P	31	21156.4	3.0				ug/L	18393	Standard
S	34	4474.0	1.7				ug/L	3739	Standard
Sr	88	380.0	15.2				ug/L	78	Standard
C	12	116.7	24.7				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	50.0	87.2				mg/L	0	Standard
Dy	164	26535.5	1.2				mg/L	2	Standard
Ho-1	165	16118.6	0.6				mg/L	10	Standard
Er	166	14313.4	2.0				mg/L	23	Standard
I	127	12621.9	3.6				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.118	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.260	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.861
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.859
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606104801
Sample Date/Time: Tuesday, June 21, 2016 21:23:37
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59245.6	2.3				ug/L	60176	Standard
	Be	9	998.4	8.4	**1.4039**	0.121	8.6	ug/L	5	Standard
	Al	27	6367880.3	0.6	**49.2460**	0.840	1.7	ug/L	832	Standard
	Sc	45	32329.5	1.7				ug/L	25066	Standard
	Ti	47	1382.7	2.8	**6.7449**	0.291	4.3	ug/L	38	Standard
	V	51	119247.6	0.5	**19.3078**	0.442	2.3	ug/L	974	Standard
	Cr	52	109311.3	1.0	**15.7582**	0.462	2.9	ug/L	5792	Standard
	Cr	53	12982.2	1.5	**15.0048**	0.147	1.0	ug/L	347	Standard
	Mn	55	705485.5	0.6	**106.8784**	1.202	1.1	ug/L	1164	Standard
	Co	59	37775.0	1.2	**5.9772**	0.123	2.1	ug/L	303	Standard
	Ni	60	47756.8	1.1	**25.5883**	0.496	1.9	ug/L	291	Standard
	Cu	65	71575.7	0.3	**38.7654**	0.772	2.0	ug/L	173	Standard
	Zn	66	100398.2	0.5	**93.7869**	1.723	1.8	ug/L	130	Standard
>	**Ge**	72	506494.1	1.7				ug/L	491724	Standard
	As	75	1385.3	0.4	**1.3154**	0.019	1.4	ug/L	-25	Standard
	Se	82	173.9	2.4	**1.5403**	0.020	1.3	ug/L	12	Standard
	Se-1	77	199.0	5.6	**2.0859**	0.187	9.0	ug/L	57	Standard
>	**Ga**	71	14914.0	1.3				mg/L	148	Standard
	Rb	85	75430.7	1.8				ug/L	18	Standard
	Y	89	760970.7	1.5				ug/L	401845	Standard
>	**Rh**	103	35.0	42.9				ug/L	10	Standard
	Mo	98	1188.3	0.2	**0.4982**	0.006	1.3	ug/L	12	Standard
	Ag	107	1544.4	4.3	**0.2507**	0.008	3.1	ug/L	98	Standard
	Cd	111	2357.3	1.5	**1.2699**	0.003	0.2	mg/L	11	Standard
	Cd	114	5698.6	3.2	**1.2625**	0.055	4.3	ug/L	21	Standard
>	**In**	115	538711.6	1.4				ug/L	547487	Standard
	Sn	118	1520.1	9.1	**0.2236**	0.029	13.1	ug/L	450	Standard
	Sb	123	745.4	2.0	**0.1708**	0.006	3.3	ug/L	105	Standard
	Ba	135	233929.7	0.2	**129.4576**	1.611	1.2	ug/L	111	Standard
	Ce	140	1443759.2	1.4				ug/L	107	Standard
>	**Tb**	159	888846.2	1.9				ug/L	890342	Standard
	Ho	165	27959.1	1.2				ug/L	10	Standard
	Tl	203	902.7	2.9	**0.1193**	0.002	2.1	ug/L	19	Standard
	Tl	205	766.7	7.0	**0.1281**	0.008	6.1	ug/L	17	Standard
	Pb	206	138959.0	0.2	**29.3640**	0.336	1.1	ug/L	247	Standard
	Pb	207	113827.0	0.5	**26.4558**	0.247	0.9	ug/L	215	Standard
	Pb	208	467592.1	0.8	**29.0276**	0.195	0.7	ug/L	770	Standard
	U	238	27116.9	1.5	**4.6480**	0.064	1.4	ug/L	13	Standard
>	**Bi**	209	489310.6	0.9				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	71.7	14.5	**0.0373**	0.010	27.1	mg/L	35	Standard
K	39	178.3	19.1	**0.5783**	0.141	24.4	mg/L	25	Standard
Ca	43	95.0	10.5	**9.2082**	1.716	18.6	mg/L	38	Standard
Fe	54	10385.0	3.9	**7.5064**	0.345	4.6	mg/L	126	Standard
Fe	57	2965.3	4.1	**7.9807**	0.521	6.5	mg/L	245	Standard
> **Sc-1**	45	32329.5	1.7				mg/L	25066	Standard
Cl	35	130217.9	1.6				ug/L	125857	Standard
Kr	83	2.0	86.6				ug/L	1	Standard
Br	81	2376.9	10.6				ug/L	1350	Standard
P	31	19497.5	2.1				ug/L	18393	Standard
S	34	4082.2	1.2				ug/L	3739	Standard
Sr	88	118.3	16.0				ug/L	78	Standard
C	12	216.7	11.6				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	116.7	26.2				mg/L	0	Standard
Dy	164	44057.9	0.3				mg/L	2	Standard
Ho-1	165	27959.1	1.2				mg/L	10	Standard
Er	166	24553.2	1.7				mg/L	23	Standard
I	127	4534.0	1.1				mg/L	1145	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.454	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.004	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.397
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.251
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606104801
Report Date/Time: Tuesday, June 21, 2016 21:25:54
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 21, 2016 21:26:49
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	58117.9	1.9				ug/L	60176	Standard
	Be	9	35621.8	0.6	**51.3767**	0.746	1.5	ug/L	5	Standard
	Al	27	6444420.2	2.2	**50.7919**	0.548	1.1	ug/L	832	Standard
	Sc	45	27070.9	3.8				ug/L	25066	Standard
	Ti	47	20949.1	1.3	**109.9419**	1.971	1.8	ug/L	38	Standard
	V	51	311526.8	1.1	**53.0494**	0.891	1.7	ug/L	974	Standard
	Cr	52	336768.4	1.0	**52.8658**	0.756	1.4	ug/L	5792	Standard
	Cr	53	42255.5	1.3	**52.0803**	0.758	1.5	ug/L	347	Standard
	Mn	55	329477.3	1.5	**52.0991**	0.877	1.7	ug/L	1164	Standard
	Co	59	312334.4	0.0	**52.0675**	0.408	0.8	ug/L	303	Standard
	Ni	60	91099.4	0.7	**51.2423**	0.593	1.2	ug/L	291	Standard
	Cu	65	91621.9	0.6	**51.9330**	0.724	1.4	ug/L	173	Standard
	Zn	66	52807.9	0.3	**51.4877**	0.269	0.5	ug/L	130	Standard
>	Ge	72	484191.6	0.8				ug/L	491724	Standard
	As	75	53524.2	1.1	**51.8184**	0.213	0.4	ug/L	-25	Standard
	Se	82	5349.2	1.5	**52.4511**	0.359	0.7	ug/L	12	Standard
	Se-1	77	3620.4	0.5	**51.3775**	0.420	0.8	ug/L	57	Standard
>	Ga	71	158.3	20.1				mg/L	148	Standard
	Rb	85	848.4	15.5				ug/L	18	Standard
	Y	89	427339.9	1.3				ug/L	401845	Standard
>	Rh	103	25.0	52.9				ug/L	10	Standard
	Mo	98	233982.7	0.9	**95.3240**	1.240	1.3	ug/L	12	Standard
	Ag	107	293588.5	0.2	**48.7224**	0.264	0.5	ug/L	98	Standard
	Cd	111	95530.5	0.8	**49.7490**	0.284	0.6	mg/L	11	Standard
	Cd	114	235659.9	1.2	**50.4432**	0.294	0.6	ug/L	21	Standard
>	In	115	559275.1	0.7				ug/L	547487	Standard
	Sn	118	260234.3	0.9	**48.9865**	0.748	1.5	ug/L	450	Standard
	Sb	123	209964.5	0.6	**48.3856**	0.196	0.4	ug/L	105	Standard
	Ba	135	91831.8	1.3	**48.9125**	0.680	1.4	ug/L	111	Standard
	Ce	140	770.0	93.3				ug/L	107	Standard
>	Tb	159	881548.3	1.4				ug/L	890342	Standard
	Ho	165	23.3	101.3				ug/L	10	Standard
	Tl	203	366327.0	0.5	**50.7112**	0.180	0.4	ug/L	19	Standard
	Tl	205	314340.8	1.0	**53.0357**	0.359	0.7	ug/L	17	Standard
	Pb	206	230993.2	0.2	**49.6830**	0.169	0.3	ug/L	247	Standard
	Pb	207	210145.0	1.0	**49.7218**	0.386	0.8	ug/L	215	Standard
	Pb	208	829897.6	0.4	**52.4503**	0.511	1.0	ug/L	770	Standard
	U	238	292600.4	0.9	**51.0190**	0.183	0.4	ug/L	13	Standard
>	Bi	209	481073.7	0.6				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	3695.5	9.2	**4.6760**	0.585	12.5	mg/L	35	Standard
K	39	1030.0	1.3	**4.6474**	0.224	4.8	mg/L	25	Standard
Ca	43	45.0	50.9	**2.9507**	4.449	150.8	mg/L	38	Standard
Fe	54	5550.5	2.5	**4.7422**	0.063	1.3	mg/L	126	Standard
Fe	57	1498.4	8.9	**4.3770**	0.384	8.8	mg/L	245	Standard
> **Sc-1**	45	27070.9	3.8				mg/L	25066	Standard
Cl	35	132009.2	0.2				ug/L	125857	Standard
Kr	83	3.0	33.3				ug/L	1	Standard
Br	81	1363.4	15.7				ug/L	1350	Standard
P	31	20323.6	3.2				ug/L	18393	Standard
S	34	4162.2	3.1				ug/L	3739	Standard
Sr	88	85.0	27.0				ug/L	78	Standard
C	12	60.0	33.3				mg/L	53	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	58.4	103.7				mg/L	2	Standard
Ho-1	165	23.3	101.3				mg/L	10	Standard
Er	166	33.3	17.3				mg/L	23	Standard
I	127	1211.7	9.1				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	102.753		
	Al	27	101.584		
	Sc	45			
	Ti	47	109.942		
	V	51	106.099		
	Cr	52	105.732		
	Cr	53			
	Mn	55	104.198		
	Co	59	104.135		
	Ni	60	102.485		
	Cu	65	103.866		
	Zn	66	102.975		
>	Ge	72		98.468	
	As	75	103.637		
	Se	82	104.902		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	95.324		
Ag	107	97.445		
Cd	111	99.498		
Cd	114			
> In	115		102.153	
Sn	118	97.973		
Sb	123	96.771		
Ba	135	97.825		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.422		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.901		
U	238	102.038		
> Bi	209		95.614	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 21, 2016 21:30:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57000.4	1.8				ug/L	60176	Standard
	Be	9	11.7	89.2	**0.0083**	0.015	186.0	ug/L	5	Standard
	Al	27	2620.3	47.2	**0.0127**	0.010	80.8	ug/L	832	Standard
	Sc	45	26027.3	2.6				ug/L	25066	Standard
	Ti	47	31.7	11.1	**-0.0438**	0.018	40.1	ug/L	38	Standard
	V	51	1068.5	10.9	**0.0089**	0.018	206.9	ug/L	974	Standard
	Cr	52	5732.8	2.3	**-0.0411**	0.022	53.1	ug/L	5792	Standard
	Cr	53	288.3	8.2	**-0.0602**	0.031	51.8	ug/L	347	Standard
	Mn	55	2013.2	47.5	**0.0986**	0.147	148.9	ug/L	1164	Standard
	Co	59	286.0	4.2	**-0.0024**	0.002	79.0	ug/L	303	Standard
	Ni	60	134.0	14.7	**-0.1162**	0.011	9.1	ug/L	291	Standard
	Cu	65	138.7	6.2	**-0.0202**	0.005	23.4	ug/L	173	Standard
	Zn	66	178.0	11.4	**-0.0638**	0.018	28.8	ug/L	130	Standard
>	**Ge**	72	491825.9	0.7				ug/L	491724	Standard
	As	75	-42.4	64.1	**-0.0065**	0.026	398.9	ug/L	-25	Standard
	Se	82	14.2	62.7	**0.0442**	0.085	192.5	ug/L	12	Standard
	Se-1	77	51.7	16.5	**0.0814**	0.121	148.7	ug/L	57	Standard
>	**Ga**	71	160.0	5.4				mg/L	148	Standard
	Rb	85	65.0	55.5				ug/L	18	Standard
	Y	89	420079.4	1.3				ug/L	401845	Standard
>	**Rh**	103	20.0	43.3				ug/L	10	Standard
	Mo	98	229.1	28.0	**0.0908**	0.025	27.9	ug/L	12	Standard
	Ag	107	121.7	14.1	**0.0053**	0.003	59.9	ug/L	98	Standard
	Cd	111	14.3	8.4	**0.0029**	0.001	24.4	mg/L	11	Standard
	Cd	114	32.1	64.9	**0.0026**	0.005	175.9	ug/L	21	Standard
>	**In**	115	546820.4	1.4				ug/L	547487	Standard
	Sn	118	666.7	23.3	**0.0548**	0.031	57.4	ug/L	450	Standard
	Sb	123	349.2	26.6	**0.0749**	0.023	30.5	ug/L	105	Standard
	Ba	135	222.0	49.7	**0.0657**	0.061	93.2	ug/L	111	Standard
	Ce	140	125.0	70.8				ug/L	107	Standard
>	**Tb**	159	852501.8	2.1				ug/L	890342	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	60.0	17.6	**0.0048**	0.001	29.7	ug/L	19	Standard
	Tl	205	38.3	39.8	**0.0075**	0.003	35.3	ug/L	17	Standard
	Pb	206	294.3	6.3	**0.0089**	0.003	35.8	ug/L	247	Standard
	Pb	207	245.7	12.3	**0.0066**	0.007	110.7	ug/L	215	Standard
	Pb	208	963.3	10.3	**0.0016**	0.007	416.4	ug/L	770	Standard
	U	238	48.0	16.7	**0.0076**	0.001	18.1	ug/L	13	Standard
>	**Bi**	209	476870.2	2.1				ug/L	503143	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	2	Standard
Mg	24	43.3	46.6	**0.0185**	0.027	145.6	mg/L	35	Standard
K	39	13.3	108.3	**-0.0485**	0.069	142.0	mg/L	25	Standard
Ca	43	36.7	20.8	**1.6572**	1.618	97.6	mg/L	38	Standard
Fe	54	138.9	10.0	**-0.0095**	0.014	151.2	mg/L	126	Standard
Fe	57	211.7	11.2	**-0.2847**	0.108	38.1	mg/L	245	Standard
> **Sc-1**	45	26027.3	2.6				mg/L	25066	Standard
Cl	35	131985.8	1.3				ug/L	125857	Standard
Kr	83	3.0	33.3				ug/L	1	Standard
Br	81	1333.4	5.0				ug/L	1350	Standard
P	31	20615.7	2.9				ug/L	18393	Standard
S	34	4127.2	2.0				ug/L	3739	Standard
Sr	88	78.3	32.8				ug/L	78	Standard
C	12	23.3	49.5				mg/L	53	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.9	86.8				mg/L	2	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	10.0	173.2				mg/L	23	Standard
I	127	953.4	9.0				mg/L	1145	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.021	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.878
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.778
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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2.3.3 Metals CVAA Data (Mercury)

2.3.3.1 Summary Data

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-01	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18CPTMW14-061316	**Prep Method:**	7470A	**Prep Date:**	06/15/2016 10:55
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/17/2016 09:53
Workgroup #:	WG573131	**Analyst:**	CJQ	**Run Date:**	06/17/2016 11:03
Collect Date:	06/13/2016 09:15	**Dilution:**	1	**File ID:**	M7.061716.110308
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-02	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18CPTMW14FD-061316	**Prep Method:**	7470A	**Prep Date:**	06/15/2016 10:55
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/17/2016 09:53
Workgroup #:	WG573131	**Analyst:**	CJQ	**Run Date:**	06/17/2016 11:10
Collect Date:	06/13/2016 09:15	**Dilution:**	1	**File ID:**	M7.061716.111043
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060730-03	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18CPTMW24-061316	**Prep Method:**	7470A	**Prep Date:**	06/15/2016 10:55
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/17/2016 09:53
Workgroup #:	WG573131	**Analyst:**	CJQ	**Run Date:**	06/17/2016 11:13
Collect Date:	06/13/2016 10:35	**Dilution:**	1	**File ID:**	M7.061716.111316
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16060730
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.3.3.2 QC Summary

Example Cold Vapor Mercury Calculations
Hydra AA Mercury Analyzer / CETAC M-7600 Quick Trace Mercury Analyzer

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and five standards.

2.0 Calculating the concentration (C) of an element in water using data from run log and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to Volume (mL)	40
Vi = Aliquot Volume (mL)	40
D = Manual dilution factor, if required (10X = 10)	1
Cx = Concentration of element in ppb (ug/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Ws} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to volume (mL)	40
Ws = Aliquot weight (g)	0.6
D = Manual dilution factor	1
Cx = Concentration of element in ug/kg	6.67

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

1 Cx = Concentration calculated as received (wet basis)	6.67
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	8.33

8.33 ug/kg = 0.00833 mg/kg

Microbac Laboratories Inc.
Metals Digest Log

Workgroup: WG572795
Analyst: REK
Spike Analyst: REK
Method: 7470A
Run Date: 06/15/2016 10:55
Hotblock Start Temp: 95 @ 10:50
Hotblock End Temp: 95 @ 12:50
Instrument: HB2

SOP: ME404 Revison 17
Spike Solution: STD76612
Spike Witness: EMW
H2SO4 Lot #: COA18359
40 & 50 ML. DIGESTION TU COA18772
HNO3 Lot #: COA18905
K2S2O8 1:1 Lot #: RGT37046
KMnO4 1:1 Lot #: RGT37006
Mercury Water ICV Lot #: STD76614
HG H2O STDS 10PPM Lot #: STD76620

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Spike Amount	Due Date
1	WG572795-03	BLANK	1	40 mL	40 mL		
2	WG572612-01	FBLK1	17	4 mL	40 mL		
3	WG572612-02	FBLK2	17	4 mL	40 mL		
4	WG572795-04	LCS	1	40 mL	40 mL	4 mL	
5	L16060670-01	SAMP	17	4 mL	40 mL		06/17/16
6	L16060670-02	SAMP	17	4 mL	40 mL		06/17/16
7	L16060670-03	SAMP	17	4 mL	40 mL		06/17/16
8	WG572795-01	REF	17	4 mL	40 mL		
9	L16060670-04	SAMP	17	4 mL	40 mL		06/17/16
10	L16060670-05	SAMP	17	4 mL	40 mL		06/17/16
11	L16060670-06	SAMP	17	4 mL	40 mL		06/17/16
12	L16060670-07	SAMP	17	4 mL	40 mL		06/17/16
13	L16060724-01	SAMP	1	40 mL	40 mL		06/24/16
14	L16060729-01	SAMP	1	40 mL	40 mL		06/24/16
15	L16060729-02	SAMP	1	40 mL	40 mL		06/24/16
16	L16060729-03	SAMP	1	40 mL	40 mL		06/24/16
17	L16060730-01	SAMP	1	40 mL	40 mL		06/24/16
18	L16060730-02	SAMP	1	40 mL	40 mL		06/24/16
19	L16060730-03	SAMP	1	40 mL	40 mL		06/24/16
20	WG572795-02	REF	2	40 mL	40 mL		
21	L16060759-02	SAMP	2	40 mL	40 mL		06/24/16
22	L16060762-01	SAMP	1	40 mL	40 mL		06/28/16
23	WG572795-05	MS	1	4 mL	40 mL	4 mL	
24	WG572795-06	MSD	1	4 mL	40 mL	4 mL	
25	WG572795-07	DUP	1	40 mL	40 mL		

Analyst: [signature]

Reviewer: [signature]

* All calibration and check standards are prepared and digested with sample batch following the procedures in section 7.0 of SOP ME404/ME405.

HB_DIG - Modified 07/26/2012
PDF ID: 4808745
Report generated: 06/15/2016 13:37

TCLP Non-Volatile

Analyst(s): AMA/CPD
Date: 06/14/2016
Filter Lot #: 94860030
Microbac SOP: TCLP01 Rev #: 12

Analyst / Date		Analyst / Date	
CPD	6/14/16	AMA	6/15/16
Time On	Temp On °C	Time Off	Temp Off °C
1427	23.8	0827	21.9

Agitator Speed 30 ± 2 rpm ☑

Jug #	Sample #	Tests	Method	Fluid #	Matrix *	% Solid	Pretest pH Initial	Pretest pH Final	Int. Wt. (g)	Fluid Vol. (mL)	Final extract pH
D	06-0670-01	ME	1311	F1-181	S	100	8.12	2.08	7.67	153	5.19
	-02						8.98	2.06	100.27	2005	5.79
	-03						10.07	4.79	100.14	2003	7.34
	-04						9.53	1.65	100.72	2014	5.13
	-05						8.98	2.69	100.32	2006	6.67
	-06						9.43	1.94	40.43	807	6.79
	-07			F2-379			8.10	7.75	25.70	514	8.08
D	06-0731-01	ME pH-2	1311	F2-379	S	100	8.47	5.86	50.46	1009	4.32
	-02		1312	SPLP F2-326			NA	NA	100.62	2012	8.44
NA	FBIK1	ME	1311	F1-181	NA	NA	NA	NA	100	100	4.93
	FBIK2	COD pH-2 ~~ME~~		F2-379							2.88
	SPLP F2-	pH-2	1312	SPLP F2-326							5.05

CPD 6/14/16

*Matrix Code: (S = solid, sand, soil or sludge) (P = paint) (O = organic) (W = water or aqueous waste)
D = Disposable plastic jug
TCLP Pretest weight will be 5.0 g (± 0.1) unless otherwise noted.
Temperature shall be maintained at 23° ± 2 for 18 ± 2 hours unless otherwise noted.

Comments: 5x 06-0670-01 recieved with limited volume.

Peer Review By: [signature]

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 061716A.CSV

Analyst1: AMA Analyst2: N/A

Method: 7470A/245.1 SOP: ME404 Rev: 17

Maintenance Log ID:

Calibration Std: STD76620 ICV Std: STD76614 Post Spike: STD76620

ICSA: N/A ICSAB: N/A Int. Std:

CCV: LLCCV: Tuning Sol :

Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 573131

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	M7.061716.094017	WG573198-01	Calibration Point		1		06/17/16 09:40
2	M7.061716.094249	WG573198-02	Calibration Point		1		06/17/16 09:42
3	M7.061716.094521	WG573198-03	Calibration Point		1		06/17/16 09:45
4	M7.061716.094753	WG573198-04	Calibration Point		1		06/17/16 09:47
5	M7.061716.095026	WG573198-05	Calibration Point		1		06/17/16 09:50
6	M7.061716.095300	WG573198-06	Calibration Point		1		06/17/16 09:53
7	M7.061716.095534	WG573198-07	Initial Calibration Verification		1		06/17/16 09:55
8	M7.061716.095951	WG573198-08	Initial Calibration Verification		1		06/17/16 09:59
9	M7.061716.100222	WG573198-09	Initial Calib Blank		1		06/17/16 10:02
10	M7.061716.100454	WG573198-10	CCV		1		06/17/16 10:04
11	M7.061716.100725	WG573198-11	CCB		1		06/17/16 10:07
12	M7.061716.100956	WG572795-03	Method/Prep Blank	40/40	1		06/17/16 10:09
13	M7.061716.101227	WG572795-04	Laboratory Control S	40/40	1		06/17/16 10:12
14	M7.061716.101458	WG572612-01	Fluid Blank 1		1		06/17/16 10:14
15	M7.061716.101730	WG572612-02	Fluid Blank 2		1		06/17/16 10:17
16	M7.061716.102002	L16060670-01	J6F0497-01	4/40	1		06/17/16 10:20
17	M7.061716.102234	WG573131-01	Post Digestion Spike		1	L16060670-01	06/17/16 10:22
18	M7.061716.102507	L16060670-02	J6F0497-02	4/40	1		06/17/16 10:25
19	M7.061716.102740	L16060670-03	J6F0497-03	4/40	1		06/17/16 10:27
20	M7.061716.103013	L16060670-04	J6F0497-04	4/40	1	WG572795-01	06/17/16 10:30
21	M7.061716.103246	WG572795-05	Matrix Spike	4/40	1	L16060670-04	06/17/16 10:32
22	M7.061716.103519	WG573198-12	CCV		1		06/17/16 10:35
23	M7.061716.103750	WG573198-13	CCB		1		06/17/16 10:37
24	M7.061716.104023	WG572795-06	Matrix Spike Duplica	4/40	1	L16060670-04	06/17/16 10:40
25	M7.061716.104257	L16060670-05	J6F0497-05	4/40	1		06/17/16 10:42
26	M7.061716.104528	L16060670-06	J6F0497-06	4/40	1		06/17/16 10:45
27	M7.061716.104758	L16060670-07	J6F0497-07	4/40	1		06/17/16 10:47
28	M7.061716.105029	L16060724-01	ABW_06142016	40/40	1		06/17/16 10:50
29	M7.061716.105300	L16060729-01	A09-MW10-Y1S2	40/40	1		06/17/16 10:53
30	M7.061716.105532	L16060729-02	A09-MW11-Y1S2	40/40	1		06/17/16 10:55
31	M7.061716.105803	WG573131-02	Post Digestion Spike		1	L16060729-01	06/17/16 10:58
32	M7.061716.110035	L16060729-03	A09-MW12-Y1S2	40/40	1		06/17/16 11:00
33	M7.061716.110308	L16060730-01	18CPTMW14-061316	40/40	1		06/17/16 11:03
34	M7.061716.110540	WG573198-14	CCV		1		06/17/16 11:05

Page: 1 Approved: June 17, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 061716A.CSV

Analyst1: AMA Analyst2: N/A

Method: 7470A/245.1 SOP: ME404 Rev: 17

Maintenance Log ID:

Calibration Std: STD76620 ICV Std: STD76614 Post Spike: STD76620

ICSA: N/A ICSAB: N/A Int. Std:

CCV: LLCCV: Tuning Sol :

Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 573131

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	M7.061716.110811	WG573198-15	CCB		1		06/17/16 11:08
36	M7.061716.111043	L16060730-02	18CPTMW14FD-061316	40/40	1		06/17/16 11:10
37	M7.061716.111316	L16060730-03	18CPTMW24-061316	40/40	1		06/17/16 11:13
38	M7.061716.111549	L16060759-02	LOCAL/COMP	40/40	1	WG572795-02	06/17/16 11:15
39	M7.061716.111823	WG572795-07	Duplicate	40/40	1	L16060759-02	06/17/16 11:18
40	M7.061716.112053	L16060762-01	MW-24-001	40/40	1		06/17/16 11:20
41	M7.061716.112325	WG573198-16	CCV		1		06/17/16 11:23
42	M7.061716.112556	WG573198-17	CCB		1		06/17/16 11:25

Page: 2 Approved: June 17, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 17-JUN-2016
Analyst: AMA
Analyst: NA
Method: 7470A/245.1
Instrument: CVAA1
Curve Workgroup: 573198
Runlog ID: 75763
Analytical Workgroups: 573131

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	0729, 0730, 0762
Client Forms	X
Level X	
Level 3	0762
Level 4	0729, 0730
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	AMA
Secondary Reviewer	KHR
Comments	

Primary Reviewer:
17-JUN-2016
Alexandra M. Alfred

Secondary Reviewer:
17-JUN-2016
Kym H. Rhoden

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-17-2016 14:02:31

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 7470A

AAB#: WG573131

Login Number: L16060730

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW14-061316	01	06/13/16					06/15/2016	2.1	28		06/17/16	4.1	28	
18CPTMW14FD-061316	02	06/13/16					06/15/2016	2.1	28		06/17/16	4.1	28	
18CPTMW24-061316	03	06/13/16					06/15/2016	2	28		06/17/16	4	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4812598
Report generated 06/17/2016 13:03

METHOD BLANK SUMMARY

Login Number: L16060730
Blank File ID: M7.061716.100956
Prep Date: 06/15/16 10:55
Analyzed Date: 06/17/16 10:09
Analyst: CJQ

Work Group: WG573131
Blank Sample ID: WG572795-03
Instrument ID: CVAA1
Method: 7470A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572795-04	M7.061716.101227	06/17/16 10:12	01
18CPTMW14-061316	L16060730-01	M7.061716.110308	06/17/16 11:03	01
18CPTMW14FD-061316	L16060730-02	M7.061716.111043	06/17/16 11:10	01
18CPTMW24-061316	L16060730-03	M7.061716.111316	06/17/16 11:13	01
DUP	WG572795-07	M7.061716.111823	06/17/16 11:18	01

Report Name: BLANK_SUMMARY
PDF File ID: 4812599
Report generated 06/17/2016 13:03

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060730 Prep Date: 06/15/16 10:55 Sample ID: WG572795-03
Instrument ID: CVAA1 Run Date: 06/17/16 10:09 Prep Method: 7470A
File ID: M7.061716.100956 Analyst: CJQ Method: 7470A
Workgroup (AAB#): WG573131 Matrix: Water Units: mg/L
Contract #: Cal ID: CVAA1-17-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Mercury	0.000100	0.000400	0.000100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4812600
17-JUN-2016 13:03

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060730 Run Date: 06/17/2016 Sample ID: WG572795-04
Instrument ID: CVAA1 Run Time: 10:12 Prep Method: 7470A
File ID: M7.061716.101227 Analyst: CJQ Method: 7470A
Workgroup (AAB#): WG573131 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76612 Cal ID: CVAA1-17-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Mercury	0.00400	0.00441	110	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4812602
Report generated: 06/17/2016 13:03

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060730 Cal ID: CVAA1 - Worknum: WG573131
Instrument ID: CVAA1 Contract #: Method: 7470A
Parent ID: WG572795-01 File ID: M7.061716.103013 Dil: 1 Matrix: WATER
Sample ID: WG572795-05 MS File ID: M7.061716.103246 Dil: 1 Units: mg/L
Sample ID: WG572795-06 MSD File ID: M7.061716.104023 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Mercury	ND	0.0400	0.0449	112	0.0400	0.0458	114	1.85	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4812603
Report generated 06/17/2016 13:03

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060730 **Worknum:** WG573131
Instrument ID: CVAA1 **Method:** 7470A
Post Spike ID: WG573131-02 **File ID:** M7.061716.105803 **Dil:** 1 **Units:** ug/L
Sample ID: L16060729-01 **File ID:** M7.061716.105300 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MERCURY	1.11		0	U	1	111.3	85 - 115	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4812597
Report generated: 06/17/2016 13:03

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060730
Analytical Method: 7470A
ICAL Worknum: WG573198

Workgroup (AAB#): WG573131
Instrument ID: CVAA1
Initial Calibration Date: 06/17/2016 09:53

Analyte	WG573198-01		WG573198-02		WG573198-03		WG573198-04		WG573198-05		WG573198-06	
	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT
Mercury	0	12.47	0.200	2342	1.00	12030	2.00	23820	5.00	58000	10.0	117600

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4812604
Report generated 06/17/2016 13:03

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060730
Analytical Method: 7470A
ICAL Worknum: WG573198

Workgroup (AAB#): WG573131
Instrument ID: CVAA1
Initial Calibration Date: 06/17/2016 09:53

Analyte	R	Q
Mercury	1.000	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4812604
Report generated 06/17/2016 13:03

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060730
Run Date: 06/17/2016
Sample ID: WG573198-09
Instrument ID: CVAA1
Run Time: 10:02
Method: 7470A
File ID: M7.061716.100222
Analyst: CJQ
Units: ug/L
Workgroup (AAB#): WG573131
Cal ID: CVAA1 - 17-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
MERCURY	.1	.4	.1	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4812606
Report generated 06/17/2016 13:03

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/17/2016
Sample ID: WG573198-11
Instrument ID: CVAA1
Run Time: 10:07
Method: 7470A
File ID: M7.061716.100725
Analyst: CJQ
Units: ug/L
Workgroup (AAB#): WG573131
Cal ID: CVAA1 - 17-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812608
Report generated 06/17/2016 13:03

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/17/2016
Sample ID: WG573198-13
Instrument ID: CVAA1
Run Time: 10:37
Method: 7470A
File ID: M7.061716.103750
Analyst: CJQ
Units: ug/L
Workgroup (AAB#): WG573131
Cal ID: CVAA1 - 17-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812608
Report generated 06/17/2016 13:03

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/17/2016
Sample ID: WG573198-15
Instrument ID: CVAA1
Run Time: 11:08
Method: 7470A
File ID: M7.061716.110811
Analyst: CJQ
Units: ug/L
Workgroup (AAB#): WG573131
Cal ID: CVAA1 - 17-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812608
Report generated 06/17/2016 13:03

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060730
Run Date: 06/17/2016
Sample ID: WG573198-17
Instrument ID: CVAA1
Run Time: 11:25
Method: 7470A
File ID: M7.061716.112556
Analyst: CJQ
Units: ug/L
Workgroup (AAB#): WG573131
Cal ID: CVAA1 - 17-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4812608
Report generated 06/17/2016 13:03

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060730 Run Date: 06/17/2016 Sample ID: WG573198-08
Instrument ID: CVAA1 Run Time: 09:59 Method: 7470A
File ID: M7.061716.095951 Analyst: CJQ Units: ug/L
Workgroup (AAB#): WG573131 Cal ID: CVAA1 - 17-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Mercury		2	1.97	98.3	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4812605
Report generated 06/17/2016 13:11

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/17/2016
Sample ID: WG573198-10
Instrument ID: CVAA1
Run Time: 10:04
Method: 7470A
File ID: M7.061716.100454
Analyst: CJQ
QC Key: DOD4
Workgroup (AAB#): WG573131
Cal ID: CVAA1 - 17-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00214	mg/L	107	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812607
Report generated 06/17/2016 13:03

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/17/2016
Sample ID: WG573198-12
Instrument ID: CVAA1
Run Time: 10:35
Method: 7470A
File ID: M7.061716.103519
Analyst: CJQ
QC Key: DOD4
Workgroup (AAB#): WG573131
Cal ID: CVAA1 - 17-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00222	mg/L	111	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812607
Report generated 06/17/2016 13:03

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/17/2016
Sample ID: WG573198-14
Instrument ID: CVAA1
Run Time: 11:05
Method: 7470A
File ID: M7.061716.110540
Analyst: CJQ
QC Key: DOD4
Workgroup (AAB#): WG573131
Cal ID: CVAA1 - 17-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00220	mg/L	110	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812607
Report generated 06/17/2016 13:03

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060730
Run Date: 06/17/2016
Sample ID: WG573198-16
Instrument ID: CVAA1
Run Time: 11:23
Method: 7470A
File ID: M7.061716.112325
Analyst: CJQ
QC Key: DOD4
Workgroup (AAB#): WG573131
Cal ID: CVAA1 - 17-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00219	mg/L	110	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4812607
Report generated 06/17/2016 13:03

2.3.3.3 Raw Data

PDM CVAA1 245.1/7470/7471

Report Generated By CETAC QuickTrace
Analyst: VOA
Worksheet file: C:\Program Files (x86)\QuickTrace\Worksheets\061716A.wsz
Date Started: 6/17/2016 9:17:30 AM
Comment:

Results

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
Standard #0					STD	06/17/16 09:40:17 am	0.0000	12	84.65		1.00
Replicates	-1.5	15.5	23.9	12.0							
Standard #1 (0.2 ug/L)					STD	06/17/16 09:42:49 am	0.2000	2342	1.13		1.00
Replicates	2379.1	2336.7	2336.5	2316.2							
Standard #2 (1.0 ug/L)					STD	06/17/16 09:45:21 am	1.0000	12034	0.35		1.00
Replicates	12092.3	12036.0	11999.2	12009.5							
Standard #3 (2.0 ug/L)					STD	06/17/16 09:47:53 am	2.0000	23817	0.38		1.00
Replicates	23923.7	23858.2	23733.3	23753.0							
Standard #4 (5.0 ug/L)					STD	06/17/16 09:50:26 am	5.0000	57996	0.43		1.00
Replicates	58322.6	58052.6	57854.1	57756.4							
Standard #5 (10.0 ug/L)					STD	06/17/16 09:53:00 am	10.0000	117620	0.17		1.00
Replicates	117900.5	117628.3	117431.1	117522.1							

Calibration

Equation: A = 58.859 + 11729.100C
R2: 0.99993
SEE: 427.5421
Flags:

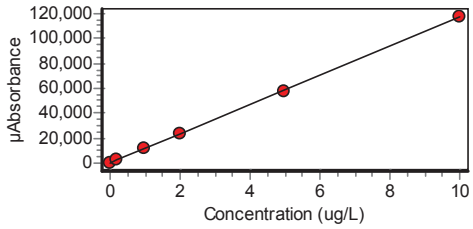

ICV					ICV	06/17/16 09:55:34 am	2.1630	25433	0.49	Q	1.00
Replicates	25590.4	25463.2	25380.4	25299.4							
% Recovery	108.17										

Approved: June 17, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
ICV					ICV	06/17/16 09:59:51 am	1.9650	23109	0.17		1.00
Replicates	23118.5	23066.3	23094.8	23158.3							
% Recovery	98.26										
ICB					ICB	06/17/16 10:02:22 am	-0.0055	-6	397.68		1.00
Replicates	-37.5	1.0	17.2	-3.8							
CCV					CCV	06/17/16 10:04:54 am	2.1440	25201	0.25		1.00
Replicates	25273.8	25234.2	25157.7	25138.2							
% Recovery	107.18										
CCB					CCB	06/17/16 10:07:25 am	-0.0041	11	63.50		1.00
Replicates	3.7	6.8	18.1	16.8							
WG572795-03					UNK	06/17/16 10:09:56 am	-0.0041	11	56.12		1.00
Replicates	3.1	11.2	12.2	18.4							
WG572795-04					UNK	06/17/16 10:12:27 am	4.4120	51808	0.19		1.00
Replicates	51929.8	51843.7	51760.5	51698.9							
WG572612-01					UNK	06/17/16 10:14:58 am	-0.0053	-3	347.17		1.00
Replicates	-13.4	-7.4	8.8	0.8							
WG572612-02					UNK	06/17/16 10:17:30 am	-0.0017	39	16.11		1.00
Replicates	38.6	41.5	45.8	30.8							
L1606067001					UNK	06/17/16 10:20:02 am	-0.0029	25	56.38		1.00
Replicates	43.7	26.0	13.6	15.1							
WG573131-01					UNK	06/17/16 10:22:34 am	1.1420	13452	0.42		1.00
Replicates	13496.3	13492.6	13446.2	13374.6							
L1606067002					UNK	06/17/16 10:25:07 am	-0.0037	16	160.72		1.00
Replicates	8.3	-2.2	52.5	3.6							
L1606067003					UNK	06/17/16 10:27:40 am	-0.0009	48	11.03		1.00
Replicates	46.6	55.6	44.0	45.3							

Approved: June 17, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1606067004					UNK	06/17/16 10:30:13 am	-0.0011	46	19.50		1.00
Replicates	34.8	46.9	45.4	56.7							
WG572795-05					UNK	06/17/16 10:32:46 am	4.4930	52753	0.24		1.00
Replicates	52893.8	52816.9	52702.2	52601.1							
CCV					CCV	06/17/16 10:35:19 am	2.2240	26144	0.51	Q	1.00
Replicates	26268.9	26229.3	26102.5	25976.6							
% Recovery	111.20										
CCB					CCB	06/17/16 10:37:50 am	-0.0102	-61	15.22		1.00
Replicates	-71.4	-48.9	-61.2	-60.9							
WG572795-06					UNK	06/17/16 10:40:23 am	4.5770	53742	0.75		1.00
Replicates	54139.9	53960.9	53644.7	53223.1							
L1606067005					UNK	06/17/16 10:42:57 am	-0.0078	-33	49.67		1.00
Replicates	-33.6	-21.2	-55.2	-20.5							
L1606067006					UNK	06/17/16 10:45:28 am	-0.0183	-155	11.82		1.00
Replicates	-135.5	-146.7	-161.5	-177.9							
L1606067007					UNK	06/17/16 10:47:58 am	-0.0140	-106	15.58		1.00
Replicates	-104.2	-89.3	-128.4	-100.8							
L1606072401					UNK	06/17/16 10:50:29 am	0.0332	448	3.74		1.00
Replicates	429.8	451.3	441.1	469.3							
L1606072901					UNK	06/17/16 10:53:00 am	-0.0095	-53	30.15		1.00
Replicates	-42.6	-60.7	-37.2	-71.7							
WG573131-02					SPK	06/17/16 10:55:32 am	-0.0105	-64	16.08	W	1.00
Replicates	-49.3	-73.4	-66.8	-66.4							
% Recovery	-0.09										
L1606072902					UNK	06/17/16 10:58:03 am	1.1130	13116	0.58		1.00
Replicates	13202.7	13145.9	13088.8	13025.6							

Approved: June 17, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1606072903					UNK	06/17/16 11:00:35 am	-0.0126	-89	21.89		1.00
Replicates	-81.9	-69.4	-89.2	-115.6							
L1606073001					UNK	06/17/16 11:03:08 am	-0.0096	-53	28.92		1.00
Replicates	-51.6	-38.4	-75.1	-48.9							
CCV					CCV	06/17/16 11:05:40 am	2.2030	25903	0.37	Q	1.00
Replicates	25978.7	25979.2	25873.5	25781.7							
% Recovery	110.17										
CCB					CCB	06/17/16 11:08:11 am	-0.0078	-33	67.29		1.00
Replicates	-1.3	-53.2	-38.0	-39.7							
L1606073002					UNK	06/17/16 11:10:43 am	-0.0108	-67	31.91		1.00
Replicates	-74.4	-84.8	-36.0	-74.3							
L1606073003					UNK	06/17/16 11:13:16 am	-0.0071	-24	92.16		1.00
Replicates	-52.1	2.1	-28.4	-19.1							
L1606075902					UNK	06/17/16 11:15:49 am	0.0081	154	14.15		1.00
Replicates	152.9	134.2	184.4	143.7							
WG572795-07					DUP	06/17/16 11:18:23 am	0.0050	118	14.76		1.00
Replicates	123.6	138.2	96.7	113.7							
		RPD 0.00									
L1606076201					UNK	06/17/16 11:20:53 am	-0.0139	-105	10.68		1.00
Replicates	-88.4	-109.9	-113.5	-106.5							
CCV					CCV	06/17/16 11:23:25 am	2.1910	25762	0.35		1.00
Replicates	25813.9	25832.0	25768.7	25633.7							
% Recovery	109.57										
CCB					CCB	06/17/16 11:25:56 am	-0.0273	-261	8.28		1.00
Replicates	-231.7	-258.0	-273.9	-280.2							

Approved: June 17, 2016
Alexandra M. Alfred

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
July 1, 2016

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BNB - Brandi N. Bentley
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJQ - Cameron J. Quick
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
CV - Carl Volkman
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
EMW - ERIC M. WILKEN
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LJH - Lacey J. Hendershot
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
NPH - Natalie P. Hart
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
July 01, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
July 01, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Debra Richmann
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD	pH:	
Project Name/Location:	Longhorn		
Project Number:	60274185.0013BH 1824 MR10		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Total Metals	1, 4 - DIOXANE	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 18/24	18CPT mw14-061316			6/13/16	0915		✓	W	7	✓	✓	✓	✓					
	18CPT mw14 FD-061316			6/13/16	0915		✓	W	7	✓	✓	✓	✓					
	18CPT mw24-061316			6/13/16	1035		✓	W	7	✓	✓	✓	✓					
	TRIP BLANK			6/13/16			✓	W	2	✓								

Comments: **STANDARD TAT**

Relinquished by: (Signature) Scott Beesinger	Date 6/13/16	Time 1500	Received
Relinquished by: (Signature)	Date	Time	Received (Signature)

Microbac OVD
Received: 06/14/2016 10:15
By: CARA STRICKLER 221000087134
Cara Strickler

Time	Relinquished by: (Signature)
Time	Remarks:

*Homogenize all composite samples prior to analysis

Distribution: White to Laboratory, Canary to Project Manager, Pink QA/QC Manager

00709411

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060730
Account: 2551
Project: 2551.096
Samples: 4
Due Date: 24-JUN-2016

Samplenum	Container ID	Products
L16060730-01	759930	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	ORG4	14-JUN-2016 12:53	CLS		
2	STORE	ORG4	A1	29-JUN-2016 12:16	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-JUN-2016 12:53	CLS		
2	ANALYZ	V1	ORG4	15-JUN-2016 07:36	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:16	CLS	JST	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-JUN-2016 12:53	CLS		
2	ANALYZ	V1	ORG4	15-JUN-2016 07:36	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:16	CLS	JST	

Samplenum	Container ID	Products
L16060730-01	759931	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	14-JUN-2016 12:53	CLS		
2	PREP	W1	EXT	15-JUN-2016 17:32	CPD	AZH	
3	DISP	EXT	DISP	16-JUN-2016 15:23	BJO	BJO	
4	ANALYZ*	EXT	SEMI	20-JUN-2016 09:18	NPH	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	14-JUN-2016 12:53	CLS		
2	STORE	W1	A1	24-JUN-2016 08:23	BRG	BRG	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060730-01	759932	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	14-JUN-2016 12:53	CLS		
2	ANALYZ	W1	SEM	22-JUN-2016 14:48	JWR	CLS	
3	STORE	SEM	A1	24-JUN-2016 12:04	BRG	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060730
Account: 2551
Project: 2551.096
Samples: 4
Due Date: 24-JUN-2016

Samplenum	Container ID	Products
L16060730-01	759933	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	14-JUN-2016 12:53	CLS		
2	PREP	W1	DIG	14-JUN-2016 13:35	ERP	CLS	
3	STORE	DIG	A1	16-JUN-2016 14:03	BRG	ERP	
4	ANALYZ*	DIG	METALS	17-JUN-2016 09:10	CJQ	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060730-02	759934	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER		14-JUN-2016 12:53	CLS		

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-JUN-2016 12:53	CLS		
2	ANALYZ	V1	ORG4	15-JUN-2016 07:36	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:16	CLS	JST	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-JUN-2016 12:53	CLS		
2	ANALYZ	V1	ORG4	15-JUN-2016 07:36	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:16	CLS	JST	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060730
Account: 2551
Project: 2551.096
Samples: 4
Due Date: 24-JUN-2016

Samplenum	Container ID	Products
L16060730-02	759935	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	14-JUN-2016 12:53	CLS		
2	PREP	W1	EXT	15-JUN-2016 17:32	CPD	AZH	
3	DISP	EXT	DISP	16-JUN-2016 15:23	BJO	BJO	
4	ANALYZ*	EXT	SEMI	20-JUN-2016 09:18	NPH	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	14-JUN-2016 12:53	CLS		
2	STORE	W1	A1	24-JUN-2016 08:23	BRG	BRG	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060730-02	759936	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	14-JUN-2016 12:53	CLS		
2	ANALYZ	W1	SEM	22-JUN-2016 14:48	JWR	CLS	
3	STORE	SEM	A1	24-JUN-2016 12:04	BRG	JWR	

Samplenum	Container ID	Products
L16060730-02	759937	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	14-JUN-2016 12:53	CLS		
2	PREP	W1	DIG	14-JUN-2016 13:35	ERP	CLS	
3	STORE	DIG	A1	16-JUN-2016 14:03	BRG	ERP	
4	ANALYZ*	DIG	METALS	17-JUN-2016 09:10	CJQ	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060730
Account: 2551
Project: 2551.096
Samples: 4
Due Date: 24-JUN-2016

Samplenum	Container ID	Products
L16060730-03	759938	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-JUN-2016 12:53	CLS		
2	ANALYZ	V1	ORG4	15-JUN-2016 07:36	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:16	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-JUN-2016 12:53	CLS		
2	ANALYZ	V1	ORG4	15-JUN-2016 07:36	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:16	CLS	JST	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-JUN-2016 12:53	CLS		
2	ANALYZ	V1	ORG4	15-JUN-2016 07:36	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:16	CLS	JST	

Samplenum	Container ID	Products
L16060730-03	759939	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	14-JUN-2016 12:53	CLS		
2	PREP	W1	EXT	15-JUN-2016 17:32	CPD	AZH	
3	DISP	EXT	DISP	16-JUN-2016 15:22	BJO	BJO	
4	ANALYZ*	EXT	SEMI	20-JUN-2016 09:18	NPH	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	14-JUN-2016 12:53	CLS		
2	STORE	W1	A1	24-JUN-2016 08:23	BRG	BRG	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060730
Account: 2551
Project: 2551.096
Samples: 4
Due Date: 24-JUN-2016

Samplenum	Container ID	Products
L16060730-03	759940	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	14-JUN-2016 12:53	CLS		
2	ANALYZ	W1	SEM	22-JUN-2016 14:48	JWR	CLS	
3	STORE	SEM	A1	24-JUN-2016 12:04	BRG	JWR	

Samplenum	Container ID	Products
L16060730-03	759941	K MG MN-MS NA NI-MS PB-MS SB-MS SE-AX TL-MS V-

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	14-JUN-2016 12:53	CLS		
2	PREP	W1	DIG	14-JUN-2016 13:35	ERP	CLS	
3	STORE	DIG	A1	16-JUN-2016 14:03	BRG	ERP	
4	ANALYZ*	DIG	METALS	17-JUN-2016 09:10	CJQ	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060730-04	759942	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-JUN-2016 12:53	CLS		
2	ANALYZ	V1	ORG4	15-JUN-2016 07:36	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:16	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	14-JUN-2016 12:53	CLS		
2	ANALYZ	V1	ORG4	15-JUN-2016 07:36	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:16	CLS	JST	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16060822

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Michelle Taylor – Client Services Specialist
(740) 373-4071
Michelle.Taylor@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on July 07 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
00110834	H	3.0		J2317165018	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18WW03-061416	L16060822-01	06/14/2016 07:40	06/15/2016 09:54
18WW03F-061416	L16060822-02	06/14/2016 07:40	06/15/2016 09:54
18CPTMW04SW-061416	L16060822-03	06/14/2016 09:00	06/15/2016 09:54
18CPTMW04-061416	L16060822-04	06/14/2016 10:00	06/15/2016 09:54
18CPTMW04FD-061416	L16060822-05	06/14/2016 10:00	06/15/2016 09:54
TRIP BLANK	L16060822-06	06/14/2016 00:01	06/15/2016 09:54

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac REPORT L16060822
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	8260
Prep Batch Number(s):	573036,573253	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-24 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2016-06-24 20:33:54

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	8260
Prep Batch Number(s):	573036,573253	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-24 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	8260
Prep Batch Number(s):	573036,573253	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-24 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	8260
Prep Batch Number(s):	573036,573253	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-24 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	8260
Prep Batch Number(s):	573036,573253	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-24 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	8260
Prep Batch Number(s):	573036,573253	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-24 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572806	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-23 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-06-23 18:21:41

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572806	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-23 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572806	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-23 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572806	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-23 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572806	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-23 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572806	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-23 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG573791	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-24 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Wade DeLong	Wade DeLong	Chemist I	2016-06-24 15:34:16

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG573791	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-24 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG573791	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-24 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG573791	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-24 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG573791	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-24 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG573791	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-24 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573190	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-07-07 19:01:34

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573190	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?		X			ER#3
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?		X			ER#2
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573190	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573190	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			ER#1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573190	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573190	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - The low level continuing calibration verification analyzed on 23-JUN-2016 at 22:27 yielded a noncompliant recovery for selenium. All batch QA/QC and client samples were reanalyzed on a later calibration for selenium. The low level continuing calibration verification analyzed on 25-JUN-2016 at 17:25 yielded a recovery for selenium that was above the acceptance limit. Generally this elevated recovery could indicate a high bias on the sample results, however, since the samples yielded results less than the reporting detection limit, no further action was taken.

ER#2 - The continuing calibration blank analyzed on 23-JUN-2016 at 19:20 yielded a result for sodium that was above the method detection limit. However, the reported sample results exceeded that of the CCB by greater than a factor of ten, therefore, no further action was taken. The initial calibration blank analyzed on 25-JUN-2016 at 12:43 yielded a result for selenium that was above the method detection limit. However, all client samples were below the reporting detection limit for selenium, therefore, no further action was taken.

ER#3 - Client sample 03 required dilution analysis in order to obtain a result for calcium within the calibration range.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG574242	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-07-07 18:53:54

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG574242	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?		X			ER#2
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?		X			ER#1
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG574242	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG574242	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG574242	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG574242	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - The initial calibration blank analyzed on 28-JUN-2016 at 13:22 yielded a result for antimony greater than the LOD and less than the LOQ. All client samples were nondetect for antimony. With permission from the project manager, antimony was reported and no further action was taken.

ER#2 - Client sample 02 required dilution analysis in order to obtain a result for barium within the calibration range.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572915	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Brendan Torrence	Brendan Torrence	Analyst	2016-07-07 17:28:06

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572915	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572915	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572915	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572915	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060822
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG572915	**Reviewer Name:**	Brendan Torrence
LRC Date:	2016-07-07 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18WW03-061416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/01/2016 17:19
Workgroup #:	WG573036	**Analyst:**	FJB	**Run Date:**	06/17/2016 01:10
Collect Date:	06/14/2016 07:40	**Dilution:**	1	**File ID:**	6M140129
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	105	70	120	
Toluene-d8	98.5	85	120	
4-Bromofluorobenzene	104	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18WW03-061416	**Prep Method:**	3520C	**Prep Date:**	06/15/2016 18:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573365	**Analyst:**	MES	**Run Date:**	06/21/2016 17:08
Collect Date:	06/14/2016 07:40	**Dilution:**	1	**File ID:**	15M18476
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	43.7	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW03-061416	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/23/2016 01:19
Collect Date:	06/14/2016 07:40	**Dilution:**	1	**File ID:**	1LM.LM35442
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW03F-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 16:45
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/23/2016 20:25
Collect Date:	06/14/2016 07:40	**Dilution:**	1	**File ID:**	T3.062316.202527
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.100	U	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	8.25		0.500	0.250	0.125
Iron, Total	7439-89-6	2.77		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	5.84		1.00	0.500	0.250
Potassium, Total	7440-09-7	2.16		2.00	1.00	0.500
Sodium, Total	7440-23-5	109		1.00	0.500	0.250

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW03F-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/25/2016 12:36
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/25/2016 13:40
Collect Date:	06/14/2016 07:40	**Dilution:**	1	**File ID:**	T3.062516.134058
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Selenium, Total	7782-49-2	0.00565	J	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW03F-061416	**Prep Method:**	3015	**Prep Date:**	06/27/2016 08:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/28/2016 13:15
Workgroup #:	WG574570	**Analyst:**	BKT	**Run Date:**	06/28/2016 20:42
Collect Date:	06/14/2016 07:40	**Dilution:**	1	**File ID:**	NI.062816.204236
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.000919	J	0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.173		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00200	U	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00100	U	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00200	U	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.0960		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00400	U	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-02	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18WW03F-061416	**Prep Method:**	7470A	**Prep Date:**	06/16/2016 07:27
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/26/2016 12:23
Workgroup #:	WG573236	**Analyst:**	AMA	**Run Date:**	06/26/2016 13:14
Collect Date:	06/14/2016 07:40	**Dilution:**	1	**File ID:**	M7.062616.131428
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW04SW-061416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/01/2016 17:19
Workgroup #:	WG573036	**Analyst:**	FJB	**Run Date:**	06/17/2016 01:42
Collect Date:	06/14/2016 09:00	**Dilution:**	1	**File ID:**	6M140130
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	106	70	120	
Toluene-d8	99.1	85	120	
4-Bromofluorobenzene	104	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW04SW-061416	**Prep Method:**	3520C	**Prep Date:**	06/15/2016 18:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573365	**Analyst:**	MES	**Run Date:**	06/21/2016 17:31
Collect Date:	06/14/2016 09:00	**Dilution:**	1	**File ID:**	15M18477
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	48.5	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW04SW-061416	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/23/2016 01:38
Collect Date:	06/14/2016 09:00	**Dilution:**	1	**File ID:**	1LM.LM35443
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.186	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW04SW-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 16:45
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/23/2016 20:29
Collect Date:	06/14/2016 09:00	**Dilution:**	1	**File ID:**	T3.062316.202923
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.0639	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	6.72		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	19.1		1.00	0.500	0.250
Potassium, Total	7440-09-7	64.8		2.00	1.00	0.500
Sodium, Total	7440-23-5	117		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW04SW-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/25/2016 12:36
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/25/2016 13:37
Collect Date:	06/14/2016 09:00	**Dilution:**	1	**File ID:**	T3.062516.133704
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW04SW-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 16:45
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/23/2016 21:28
Collect Date:	06/14/2016 09:00	**Dilution:**	20	**File ID:**	T3.062316.212816
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	38.2		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW04SW-061416	**Prep Method:**	3015	**Prep Date:**	06/27/2016 08:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/28/2016 13:15
Workgroup #:	WG574570	**Analyst:**	BKT	**Run Date:**	06/28/2016 20:45
Collect Date:	06/14/2016 09:00	**Dilution:**	1	**File ID:**	NI.062816.204547
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00407		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00950		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00368		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00200	U	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.213		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00574	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW04SW-061416	**Prep Method:**	3015	**Prep Date:**	06/27/2016 08:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/29/2016 11:35
Workgroup #:	WG574570	**Analyst:**	BKT	**Run Date:**	06/29/2016 12:25
Collect Date:	06/14/2016 09:00	**Dilution:**	10	**File ID:**	NI.062916.122501
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.936		0.0600	0.0300	0.0150

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-03	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18CPTMW04SW-061416	**Prep Method:**	7470A	**Prep Date:**	06/16/2016 07:27
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/26/2016 12:23
Workgroup #:	WG573236	**Analyst:**	AMA	**Run Date:**	06/26/2016 13:16
Collect Date:	06/14/2016 09:00	**Dilution:**	1	**File ID:**	M7.062616.131659
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW04-061416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/01/2016 17:19
Workgroup #:	WG573036	**Analyst:**	FJB	**Run Date:**	06/17/2016 02:15
Collect Date:	06/14/2016 10:00	**Dilution:**	1	**File ID:**	6M140131
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.618	J	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	3.39		1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.314	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	4.87		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	5.87		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	76.9		1.00	0.500	0.250

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.593	J	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.494	J	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	1.09		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.617	J	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	105	70	120	
Toluene-d8	99.4	85	120	
4-Bromofluorobenzene	104	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW04-061416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573253	**Analyst:**	FJB	**Run Date:**	06/17/2016 21:42
Collect Date:	06/14/2016 10:00	**Dilution:**	50	**File ID:**	8M413071
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Trichloroethene	79-01-6	2030		50.0	25.0	12.5

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	113	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	99.5	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW04-061416	**Prep Method:**	3520C	**Prep Date:**	06/15/2016 18:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573365	**Analyst:**	MES	**Run Date:**	06/21/2016 17:54
Collect Date:	06/14/2016 10:00	**Dilution:**	1	**File ID:**	15M18478
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.67	J	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	72.9	20	129	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW04-061416	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/23/2016 14:20
Collect Date:	06/14/2016 10:00	**Dilution:**	1000	**File ID:**	1LM.LM35457
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1360		400	200	100

Certificate of Analysis

Sample #:	L16060822-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW04FD-061416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/01/2016 17:19
Workgroup #:	WG573036	**Analyst:**	FJB	**Run Date:**	06/17/2016 02:47
Collect Date:	06/14/2016 10:00	**Dilution:**	1	**File ID:**	6M140132
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.612	J	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	3.33		1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.311	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	4.84		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	5.76		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	76.2		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.671	J	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.528	J	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	1.10		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.631	J	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	106	70	120	
Toluene-d8	99.2	85	120	
4-Bromofluorobenzene	104	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW04FD-061416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573253	**Analyst:**	FJB	**Run Date:**	06/17/2016 22:12
Collect Date:	06/14/2016 10:00	**Dilution:**	50	**File ID:**	8M413072
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Trichloroethene	79-01-6	1960		50.0	25.0	12.5

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	109	85	115	
1,2-Dichloroethane-d4	109	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	100	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW04FD-061416	**Prep Method:**	3520C	**Prep Date:**	06/15/2016 18:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573365	**Analyst:**	MES	**Run Date:**	06/21/2016 18:17
Collect Date:	06/14/2016 10:00	**Dilution:**	1	**File ID:**	15M18479
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	2.01		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	103	20	129	

Certificate of Analysis

Sample #:	L16060822-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW04FD-061416	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/23/2016 14:39
Collect Date:	06/14/2016 10:00	**Dilution:**	1000	**File ID:**	1LM.LM35458
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1380		400	200	100

Certificate of Analysis

Sample #:	L16060822-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/01/2016 17:19
Workgroup #:	WG573036	**Analyst:**	FJB	**Run Date:**	06/16/2016 23:34
Collect Date:	06/14/2016 00:01	**Dilution:**	1	**File ID:**	6M140126
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200

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Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	105	70	120	
Toluene-d8	99.0	85	120	
4-Bromofluorobenzene	103	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18WW03-061416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/01/2016 17:19
Workgroup #:	WG573036	**Analyst:**	FJB	**Run Date:**	06/17/2016 01:10
Collect Date:	06/14/2016 07:40	**Dilution:**	1	**File ID:**	6M140129
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

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Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	105	70	120	
Toluene-d8	98.5	85	120	
4-Bromofluorobenzene	104	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

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Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW04SW-061416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/01/2016 17:19
Workgroup #:	WG573036	**Analyst:**	FJB	**Run Date:**	06/17/2016 01:42
Collect Date:	06/14/2016 09:00	**Dilution:**	1	**File ID:**	6M140130
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	106	70	120	
Toluene-d8	99.1	85	120	
4-Bromofluorobenzene	104	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW04-061416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/01/2016 17:19
Workgroup #:	WG573036	**Analyst:**	FJB	**Run Date:**	06/17/2016 02:15
Collect Date:	06/14/2016 10:00	**Dilution:**	1	**File ID:**	6M140131
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.618	J	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	3.39		1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.314	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	4.87		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	5.87		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	76.9		1.00	0.500	0.250

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.593	J	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.494	J	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	1.09		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.617	J	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	105	70	120	
Toluene-d8	99.4	85	120	
4-Bromofluorobenzene	104	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW04-061416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573253	**Analyst:**	FJB	**Run Date:**	06/17/2016 21:42
Collect Date:	06/14/2016 10:00	**Dilution:**	50	**File ID:**	8M413071
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Trichloroethene	79-01-6	2030		50.0	25.0	12.5

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	113	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	99.5	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	18CPTMW04FD-061416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/01/2016 17:19
Workgroup #:	WG573036	**Analyst:**	FJB	**Run Date:**	06/17/2016 02:47
Collect Date:	06/14/2016 10:00	**Dilution:**	1	**File ID:**	6M140132
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.612	J	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	3.33		1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.311	J	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	4.84		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	5.76		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	76.2		1.00	0.500	0.250

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.671	J	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.528	J	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	1.10		1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.631	J	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	104	85	115	
1,2-Dichloroethane-d4	106	70	120	
Toluene-d8	99.2	85	120	
4-Bromofluorobenzene	104	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW04FD-061416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573253	**Analyst:**	FJB	**Run Date:**	06/17/2016 22:12
Collect Date:	06/14/2016 10:00	**Dilution:**	50	**File ID:**	8M413072
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Trichloroethene	79-01-6	1960		50.0	25.0	12.5

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	109	85	115	
1,2-Dichloroethane-d4	109	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	100	75	120	

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-06	**PrePrep Method:**	N/A	**Instrument:**	HPMS6
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	06/01/2016 17:19
Workgroup #:	WG573036	**Analyst:**	FJB	**Run Date:**	06/16/2016 23:34
Collect Date:	06/14/2016 00:01	**Dilution:**	1	**File ID:**	6M140126
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	102	85	115	
1,2-Dichloroethane-d4	105	70	120	
Toluene-d8	99.0	85	120	
4-Bromofluorobenzene	103	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 042416
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75498 Surrogate Standard: STD75498
CCV: STD75791 LCS: STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG566155

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M138749	RINSE	NA	1	1		04/24/16 16:05
6M138750	WG566155-01 50ng BFB 826-A9	NA	1	1	STD75485	04/24/16 16:33
6M138751	WG566155-02 5ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 16:59
6M138752	WG566155-03 20ug/L STD 826-A	NA	1	1	STD75791	04/24/16 17:31
6M138753	WG566155-04 50ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 18:03
6M138754	WG566155-05 100ug/L STD 826-A	NA	1	1	STD75791	04/24/16 18:36
6M138755	WG566155-06 200ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 19:08
6M138756	WG566155-07 300ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 19:40
6M138757	WG566155-08 400ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 20:12
6M138758	WG566155-09 500ug/L STD 826-A9	NA	1	1	STD75791	04/24/16 20:44
6M138759	RINSE	NA	1	1		04/24/16 21:16
6M138760	RINSE	NA	1	1		04/24/16 21:49
6M138761	WG566155-10 100ug/L ALT SRC	NA	1	1	STD75801	04/24/16 22:21
6M138762	RINSE	NA	1	1		04/24/16 22:53
6M138763	RINSE	NA	1	1		04/24/16 23:25

Approved: April 29, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051316
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53752

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG568561

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412209	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 08:38
8M412210	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 08:57
8M412211	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 09:29
8M412212	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 09:56
8M412213	WG568561-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/13/16 10:19
8M412214	WG568561-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/13/16 10:51
8M412215	WG568565-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76072	05/13/16 11:36
8M412216	BFB CHECK	NA	1	1	STD76034	05/13/16 12:04
8M412217	BFB CHECK	NA	1	1	STD76034	05/13/16 12:18
8M412218	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 12:36
8M412219	RINSE	NA	1	1		05/13/16 13:00
8M412220	WG568561-02 0.3ug/L STD 8260	NA	1	1	STD76127	05/13/16 13:29
8M412221	WG568561-03 0.4ug/L STD 8260	NA	1	1	STD76127	05/13/16 13:58
8M412222	WG568561-04 1ug/L STD 8260	NA	1	1	STD76127	05/13/16 14:27
8M412223	WG568561-05 2ug/L STD 8260	NA	1	1	STD76127	05/13/16 14:56
8M412224	WG568561-06 5ug/L STD 8260	NA	1	1	STD76127	05/13/16 15:25
8M412225	WG568561-07 20ug/L STD 8260	NA	1	1	STD76127	05/13/16 15:54
8M412226	WG568561-08 50ug/L STD 8260	NA	1	1	STD76127	05/13/16 16:23
8M412227	WG568561-09 100ug/L STD 8260	NA	1	1	STD76127	05/13/16 16:52
8M412228	WG568561-10 200ug/L STD 8260	NA	1	1	STD76127	05/13/16 17:21
8M412229	WG568561-11 300ug/L STD 8260	NA	1	1	STD76127	05/13/16 17:50
8M412230	RINSE	NA	1	1		05/13/16 18:19
8M412231	RINSE	NA	1	1		05/13/16 18:49
8M412232	WG568561-12 50ug/L ALT SRC STD 8260	NA	1	1	STD76109	05/13/16 19:17
8M412233	RINSE	NA	1	1		05/13/16 19:46

Comments

Seq.	Rerun	Dil.	Reason	Analytes
5	X			
File ID: 8M412213				
	Several compounds were low, DNR.			
6				
File ID: 8M412214				

Approved: May 20, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS8	Dataset:	051316		
Analyst1:	TMB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	23
Method:	624	SOP:	MSV10	Rev:	14
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:	53752				

Internal Standard: STD75899 Surrogate Standard: STD75899

CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG568561

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			Two C compounds failed. DNR. Run a curve.	
7 File ID: 8M412215				
			DNR.	

Approved: May 20, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051716
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76072; STD76127 LCS: STD76109; STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG569079; WG569083

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412319	WG569084-01 50ng BFB STD 8260	NA	1	1	STD76034	05/17/16 08:53
8M412320	WG569084-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/17/16 09:18
8M412321	WG569079-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76072	05/17/16 09:47
8M412322	WG569079-03 50ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 10:16
8M412323	WG569079-04 20ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 10:44
8M412324	WG569079-05 5ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 11:13
8M412325	WG569079-06 200ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 11:42
8M412326	WG569079-07 300ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 12:40
8M412327	WG569079-08 400ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 13:10
8M412328	WG569079-09 500ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 13:39
8M412329	RINSE	NA	1	1		05/17/16 14:08
8M412330	RINSE	NA	1	1		05/17/16 14:37
8M412331	WG569079-10 100ug/L ALT SRC STD 826	NA	1	1	STD75801	05/17/16 15:06
8M412332	WG569259-01 BFB 50ng 8260	NA	1	1	STD76034	05/17/16 18:27
8M412333	WG569259-02 50ug/L CCV 8260	NA	1	1	STD76034	05/17/16 18:53
8M412334	WG569260-01 100ug/L CCV A9	NA	1	1	STD76072	05/17/16 19:22
8M412335	WG569083-01 VBLK0517 BLANK 8260	NA	1	1		05/17/16 19:51
8M412336	WG569083-02 20ug/L LCS 8260	NA	1	1	STD76109	05/17/16 20:20
8M412337	WG569083-03 20ug/L LCS2 8260	NA	1	1	STD76109	05/17/16 20:49
8M412338	WG569083-04 100ug/L LCS A9	NA	1	1	STD75801	05/17/16 21:18
8M412339	WG569083-05 100ug/L LCS2 A9	NA	1	1	STD75801	05/17/16 21:46
8M412340	L16050844-01 TB A 826-A9-SPE	5	1	1		05/17/16 22:16
8M412341	L16050844-07 EB A 826-A9-SPE	5	1	1		05/17/16 22:45
8M412342	L16050844-11 AB A 826-A9-SPE	5	1	1		05/17/16 23:14
8M412343	L16050844-02 A 826-A9-SPE	6	1	1		05/17/16 23:43
8M412344	L16050844-05 A 826-A9-SPE	6	1	1		05/18/16 00:12
8M412345	L16050844-06 A 826-A9-SPE	6	1	1		05/18/16 00:41
8M412346	L16050844-12 A 826-A9-SPE	6	1	1		05/18/16 01:10
8M412347	L16050840-01 A 826-A9-SPE	7	1	1		05/18/16 01:38
8M412348	L16050844-08 A 826-A9-SPE	7	1	1		05/18/16 02:07
8M412349	L16050844-13 A 826-A9-SPE	7	1	1		05/18/16 02:36
8M412350	L16050844-15 A 826-A9-SPE	7	1	1		05/18/16 03:05
8M412351	L16050839-01 A 826-A9-SPE	7	1	1		05/18/16 03:33
8M412352	L16050844-03 2.5X A 826-A9-SPE	7	1	2.5		05/18/16 04:02

Approved: May 20, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051716
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76072; STD76127 LCS: STD76109; STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG569079; WG569083

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412353	L16050844-04 5X A 826-A9-SPE	7	1	5		05/18/16 04:31
8M412354	L16050844-09 5X A 826-A9-SPE	7	1	5		05/18/16 05:01
8M412355	L16050844-10 5X A 826-A9-SPE	7	1	5		05/18/16 05:30
8M412356	L16050844-14 50X A 826-A9-SPE	7	1	50		05/18/16 05:59
8M412357	RINSE	NA	1	1		05/18/16 06:28

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
File ID: 8M412320				
	DNR. Running an a9/foo curve.			
32	X	10	Over Calibration Range	CIS12-DCE
File ID: 8M412350				
40	X	2.5	Analyzed too dilute	
File ID: 8M412353				
	DNR.			
37	X	25	Over Calibration Range	TCE
File ID: 8M412355				
38	X	20	Analyzed too dilute	
File ID: 8M412356				
	DNR.			

Approved: May 20, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 060116
Analyst1: TMB Analyst2: NA
Method: 8260B/OVAP SOP: MSV01 Rev: 23/0
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A/OVAP SOP: PAT01 Rev: 18/0
Maintenance Log ID: 53768

Internal Standard: STD76146 Surrogate Standard: STD76146
CCV: STD76405 LCS: STD76401 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG570915; WG570966

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M139735	WG570915-01 50ng BFB STD 8260	NA	1	1	STD76034	06/01/16 12:04
6M139736	WG570915-02 0.3ug/L STD 8260	NA	1	1	STD76405	06/01/16 12:30
6M139737	WG570915-03 0.4ug/L STD 8260	NA	1	1	STD76405	06/01/16 13:01
6M139738	WG570915-04 1ug/L STD 8260	NA	1	1	STD76405	06/01/16 13:33
6M139739	WG570915-05 2ug/L STD 8260	NA	1	1	STD76405	06/01/16 14:06
6M139740	WG570915-06 5ug/L STD 8260	NA	1	1	STD76405	06/01/16 14:38
6M139741	WG570915-07 20ug/L STD 8260	NA	1	1	STD76405	06/01/16 15:10
6M139742	WG570915-08 50ug/L STD 8260	NA	1	1	STD76405	06/01/16 15:43
6M139743	WG570915-09 100ug/L STD 8260	NA	1	1	STD76405	06/01/16 16:15
6M139744	WG570915-10 200ug/L STD 8260	NA	1	1	STD76405	06/01/16 16:47
6M139745	WG570915-11 300ug/L STD 8260	NA	1	1	STD76405	06/01/16 17:19
6M139746	RINSE	NA	1	1		06/01/16 17:52
6M139747	RINSE	NA	1	1		06/01/16 18:24
6M139748	WG570915-12 50ug/L ALT SRC STD 8260	NA	1	1	STD76401	06/01/16 18:56
6M139749	WG570966-01 VBLK0601 BLANK STD 826	NA	1	1		06/01/16 19:28
6M139750	L16010006-01 MDL-A 826-SPE	NA	1	1	STD76411	06/01/16 20:00
6M139751	L16010006-02 MDL-A 826-SPE	NA	1	1	STD76411	06/01/16 20:33
6M139752	L16010006-03 MDL-A 826-SPE	NA	1	1	STD76411	06/01/16 21:05
6M139753	L16010006-04 MDL-A 826-SPE	NA	1	1	STD76411	06/01/16 21:37
6M139754	L16010006-05 MDL-A 826-SPE	NA	1	1	STD76411	06/01/16 22:09
6M139755	L16010006-06 MDL-A 826-SPE	NA	1	1	STD76411	06/01/16 22:41
6M139756	L16010006-07 MDL-A 826-SPE	NA	1	1	STD76411	06/01/16 23:13

Approved: June 02, 2016

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Instrument Run Log

Instrument: HPMS6 Dataset: 061616
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 16
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD76454 Surrogate Standard: STD76454
CCV: STD76405 LCS: STD76597 MS/MSD: STD76597

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG573036

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
6M140110	WG573035-01 BFB 50ng 8260	NA	1	1	STD76496	06/16/16 14:03
6M140111	WG573035-02 50ug/L CCV 8260	NA	1	1	STD76496	06/16/16 14:28
6M140112	WG573035-02 50ug/L CCV 8260	NA	1	1	STD76496	06/16/16 15:01
6M140113	WG573035-01 BFB 50ng 8260	NA	1	1	STD76496	06/16/16 16:21
6M140114	WG573035-02 50ug/L CCV 8260	NA	1	1	STD76496	06/16/16 16:59
6M140115	WG573XXX-01 100ug/L CCV A9	NA	1	1	STDXXXXX	06/16/16 17:41
6M140116	WG573036-01 BLANK 6/16 8260	NA	1	1		06/16/16 18:13
6M140117	WG573036-02 20ug/L LCS 8260	NA	1	1	STD76597	06/16/16 18:45
6M140118	L16060806-03 MS A 826-SPE	7	1	1	STD76597	06/16/16 19:17
6M140119	L16060806-04 MSD A 826-SPE	7	1	1	STD76597	06/16/16 19:49
6M140120	L16060808-03 MS A 826-SPE	7	1	1	STD76597	06/16/16 20:22
6M140121	L16060808-04 MSD A 826-SPE	7	1	1	STD76597	06/16/16 20:54
6M140122	L16060590-05 5X 826-SPE D1	<2	1	5		06/16/16 21:26
6M140123	L16060790-01 10X 826-SPE	<2	1	10		06/16/16 21:58
6M140124	L16060808-02 TB A 826-SPE	6	1	1		06/16/16 22:30
6M140125	L16060806-02 TB A 826-SPE	5	1	1		06/16/16 23:02
6M140126	L16060822-06 TB A 826-LOW	<2	1	1		06/16/16 23:34
6M140127	L16060806-01 REF A 826-SPE	7	1	1		06/17/16 00:06
6M140128	L16060808-01 REF A 826-SPE	7	1	1		06/17/16 00:38
6M140129	L16060822-01 A 826-LOW	<2	1	1		06/17/16 01:10
6M140130	L16060822-03 A 826-LOW	<2	1	1		06/17/16 01:42
6M140131	L16060822-04 A 826-LOW	<2	1	1		06/17/16 02:15
6M140132	L16060822-05 A 826-LOW	<2	1	1		06/17/16 02:47
6M140133	L16060794-01 A 826-SPE	<2	1	1		06/17/16 03:19
6M140134	L16060794-02 A 826-SPE	<2	1	1		06/17/16 03:51
6M140135	L16060837-02 10X A 826-SPE	<2	1	10		06/17/16 04:23
6M140136	CCV	NA	1	1		06/17/16 04:55
6M140137	RINSE	NA	1	1		06/17/16 05:27
6M140138	RINSE	NA	1	1		06/17/16 05:59

Comments

Seq.	Rerun	Dil.	Reason	Analytes
22	X	50	Over Calibration Range	TCE

Approved: June 24, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS6 Dataset: 061616
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 16
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD76454 Surrogate Standard: STD76454
CCV: STD76405 LCS: STD76597 MS/MSD: STD76597

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG573036

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
File ID: 6M140131				
	L16060822-04			
23	X	50	Over Calibration Range	TCE
File ID: 6M140132				
	L16060822-05			
24	X	1	Carry-over contamination	
File ID: 6M140133				
	L16060794-01			
25	X	1	Carry-over contamination	
File ID: 6M140134				
	L16060794-02			
26	X	1	Analyzed too dilute	
File ID: 6M140135				
	L16060837-02			

Approved: June 24, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 061716
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75370 Surrogate Standard: STD76370
CCV: STD76578 LCS: STD76597 MS/MSD: STD76597

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG573253

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M413059	WG573252-01 BFB 50ng 8260	NA	1	1	STD76496	06/17/16 15:56
8M413060	WG573252-02 50ug/L CCV 8260	NA	1	1	STD76578	06/17/16 16:23
8M413061	WG573XXX-01 100ug/L CCV A9	NA	1	1	STDXXXXX	06/17/16 16:52
8M413062	WG573253-01 BLANK 6/17 8260	NA	1	1		06/17/16 17:21
8M413063	L16060134-01 A 826-REF-BLK	NA	1	1		06/17/16 17:50
8M413064	L16060134-02 A 826-REF-BLK	NA	1	1		06/17/16 18:19
8M413065	L16060134-03 A 826-REF-BLK	NA	1	1		06/17/16 18:48
8M413066	L16060134-04 A 826-REF-BLK	NA	1	1		06/17/16 19:17
8M413067	L16060134-05 A 826-REF-BLK	NA	1	1		06/17/16 19:46
8M413068	WG573253-02 20ug/L LCS 8260	NA	1	1	STD76597	06/17/16 20:15
8M413069	L16060564-05 MS 10X A 8260	NA	1	10	STD76597	06/17/16 20:44
8M413070	L16060564-07 MSD 10X A 8260	NA	1	10	STD76597	06/17/16 21:13
8M413071	L16060822-04 50X B 826-LOW D1	NA	1	50		06/17/16 21:42
8M413072	L16060822-05 50X B 826-LOW D1	NA	1	50		06/17/16 22:12
8M413073	L16060637-03 20X B 826-LOW D1	NA	1	20		06/17/16 22:41
8M413074	L16060756-04 20X B 826-LOW D1	NA	1	20		06/17/16 23:10
8M413075	L16060779-19 TB A 826-LOW	NA	1	1		06/17/16 23:38
8M413076	L16060904-04 TB A 826-SPE	NA	1	1		06/18/16 00:07
8M413077	L16060900-19 EB A 826-SPE	NA	1	1		06/18/16 00:36
8M413078	L16060729-04 TB B 826-SPE	NA	1	1		06/18/16 01:05
8M413079	L16060729-03 B 826-SPE	NA	1	1		06/18/16 01:33
8M413080	L16060837-02 B 826-SPE	NA	1	1		06/18/16 02:02
8M413081	L16060564-01 REF 10X A 8260	NA	1	10		06/18/16 02:32
8M413082	L16060564-03 10X A 8260	NA	1	10		06/18/16 03:01
8M413083	L16060779-18 A 826-LOW	NA	1	1		06/18/16 03:29
8M413084	RINSE	NA	1	1		06/18/16 03:58
8M413085	WG573253-06 BLANK 624	NA	2	1		06/18/16 04:27
8M413086	L16061006-01 A 624-SPE	7	2	1		06/18/16 04:56
8M413087	L16061035-02 A 624-SPE	7	2	1		06/18/16 05:25
8M413088	L16061031-02 A 624-SPE	NA	2	1		06/18/16 05:53
8M413089	L16061047-01 A 624-SPE	NA	2	1		06/18/16 06:22
8M413090	L16060989-01 A 624	NA	2	1		06/18/16 06:50
8M413091	CCV	NA	1	1		06/18/16 07:19
8M413092	RINSE	NA	1	1		06/18/16 07:48

Approved: June 24, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 061716
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75370 Surrogate Standard: STD76370
CCV: STD76578 LCS: STD76597 MS/MSD: STD76597

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG573253

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M413093	RINSE	NA	1	1		06/18/16 08:17

Approved: June 24, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Data Checklist

Date: 24-APR-2016
Analyst: JDS
Analyst: NA
Method: 8260B/624
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 74754
Analytical Workgroups: WG566155

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
27-APR-2016
Tiffany Bailey

Secondary Reviewer:
29-APR-2016

CHECKLIST1 - Modified 03/05/2008
Generated: APR-29-2016 12:29:57

Microbac Laboratories Inc.

Data Checklist

Date: 13-MAY-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75126
Analytical Workgroups: WG568561

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	TMB
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
17-MAY-2016
Tiffany Bailey

Secondary Reviewer:
20-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2016 11:18:36

Microbac Laboratories Inc.

Data Checklist

Date: 17-MAY-2016
Analyst: TMB
Analyst: FJB
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75174
Analytical Workgroups: WG569079; WG569083

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
19-MAY-2016
Tiffany Bailey

Secondary Reviewer:
20-MAY-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2016 11:05:37

Microbac Laboratories Inc.

Data Checklist

Date: 01-JUN-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624/OVAP
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 75441
Analytical Workgroups: WG570915; WG570966

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
02-JUN-2016
Tiffany Bailey

Secondary Reviewer:
02-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-02-2016 17:16:55

Microbac Laboratories Inc.

Data Checklist

Date: 16-JUN-2016
Analyst: FJB
Analyst: NA
Method: 8260B
Instrument: HPMS6
Curve Workgroup: NA
Runlog ID: 75903
Analytical Workgroups: WG573036

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	WTD
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	FJB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
24-JUN-2016

Secondary Reviewer:
24-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-24-2016 12:44:28

Microbac Laboratories Inc.

Data Checklist

Date: 17-JUN-2016
Analyst: FJB
Analyst: NA
Method: 8260B
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75908
Analytical Workgroups: WG573253

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	WTD
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	FJB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
24-JUN-2016

Secondary Reviewer:
24-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-24-2016 16:22:07

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG573036

Login Number: L16060822

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW03-061416	01	06/14/16					06/17/2016	2.7	14		06/17/16	2.7	14	
18CPTMW04SW-061416	03	06/14/16					06/17/2016	2.7	14		06/17/16	2.7	14	
18CPTMW04-061416	04	06/14/16					06/17/2016	2.7	14		06/17/16	2.7	14	
18CPTMW04FD-061416	05	06/14/16					06/17/2016	2.7	14		06/17/16	2.7	14	
TRIP BLANK	06	06/14/16					06/16/2016	3	14		06/16/16	3	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4822658
Report generated 06/24/2016 16:18

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG573253

Login Number: L16060822

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW04-061416	04	06/14/16					06/17/2016	3.5	14		06/17/16	3.5	14	
18CPTMW04FD-061416	05	06/14/16					06/17/2016	3.5	14		06/17/16	3.5	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4822658
Report generated 06/24/2016 16:18

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060822
Instrument Id: HPMS6
Workgroup (AAB#): WG573036

Method: 8260
CAL ID: HPMS6-01-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16060822-01	1.00	01	105	103	104	98.5
L16060822-03	1.00	01	106	103	104	99.1
L16060822-04	1.00	01	105	104	104	99.4
L16060822-05	1.00	01	106	104	104	99.2
L16060822-06	1.00	01	105	102	103	99.0
WG573036-01	1.00	01	104	102	107	99.6
WG573036-02	1.00	01	103	101	101	99.7

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4822666
Report generated: 06/24/2016 16:18

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060822
Instrument Id: HPMS8
Workgroup (AAB#): WG573253

Method: 8260
CAL ID: HPMS8 - 13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16060822-04	50.0	DL01	113	110	99.5	105
L16060822-05	50.0	DL01	109	109	100	105
WG573253-01	1.00	01	118	112	101	104
WG573253-02	1.00	01	119	111	101	103
WG573253-06	1.00	01	118	113	101	105

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4822666
Report generated: 06/24/2016 16:18

METHOD BLANK SUMMARY

Login Number: L16060822
Blank File ID: 6M140116
Prep Date: 06/16/16 18:13
Analyzed Date: 06/16/16 18:13
Analyst: FJB

Work Group: WG573036
Blank Sample ID: WG573036-01
Instrument ID: HPMS6
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573036-02	6M140117	06/16/16 18:45	01
TRIP BLANK	L16060822-06	6M140126	06/16/16 23:34	01
18WW03-061416	L16060822-01	6M140129	06/17/16 01:10	01
18CPTMW04SW-061416	L16060822-03	6M140130	06/17/16 01:42	01
18CPTMW04-061416	L16060822-04	6M140131	06/17/16 02:15	01
18CPTMW04FD-061416	L16060822-05	6M140132	06/17/16 02:47	01

Report Name: BLANK_SUMMARY
PDF File ID: 4822659
Report generated 06/24/2016 16:18

METHOD BLANK SUMMARY

Login Number: L16060822
Blank File ID: 8M413062
Prep Date: 06/17/16 17:21
Analyzed Date: 06/17/16 17:21
Analyst: FJB

Work Group: WG573253
Blank Sample ID: WG573253-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573253-02	8M413068	06/17/16 20:15	01
18CPTMW04-061416	L16060822-04	8M413071	06/17/16 21:42	DL01
18CPTMW04FD-061416	L16060822-05	8M413072	06/17/16 22:12	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4822659
Report generated 06/24/2016 16:18

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16060822 Prep Date: 06/16/16 18:13 Sample ID: WG573036-01
Instrument ID: HPMS6 Run Date: 06/16/16 18:13 Prep Method: 5030B/5030C/503
File ID: 6M140116 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573036 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS6-01-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4822660
24-JUN-2016 16:18

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060822 Prep Date: 06/16/16 18:13 Sample ID: WG573036-01
Instrument ID: HPMS6 Run Date: 06/16/16 18:13 Prep Method: 5030B/5030C/503
File ID: 6M140116 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573036 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS6-01-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	102	85 - 115	PASS
1,2-Dichloroethane-d4	104	70 - 120	PASS
Toluene-d8	99.6	85 - 120	PASS
4-Bromofluorobenzene	107	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4822660
24-JUN-2016 16:18

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060822 Prep Date: 06/17/16 17:21 Sample ID: WG573253-01
Instrument ID: HPMS8 Run Date: 06/17/16 17:21 Prep Method: 5030B/5030C/503
File ID: 8M413062 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573253 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Trichloroethene	0.250	1.00	0.250	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	112	85 - 115	PASS
1,2-Dichloroethane-d4	118	70 - 120	PASS
Toluene-d8	104	85 - 120	PASS
4-Bromofluorobenzene	101	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4822660
24-JUN-2016 16:18

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060822 Run Date: 06/16/2016 Sample ID: WG573036-02
Instrument ID: HPMS6 Run Time: 18:45 Prep Method: 5030B/5030C/503
File ID: 6M140117 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573036 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD76597 Cal ID: HPMS6-01-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	20.2	101	40 - 140	
Benzene	20.0	20.6	103	80 - 120	
Bromobenzene	20.0	20.5	102	75 - 125	
Bromochloromethane	20.0	20.6	103	65 - 130	
Bromodichloromethane	20.0	21.8	109	75 - 120	
Bromoform	20.0	20.7	103	70 - 130	
Bromomethane	20.0	17.9	89.3	30 - 145	
2-Butanone	20.0	21.6	108	30 - 150	
n-Butylbenzene	20.0	22.0	110	70 - 135	
sec-Butylbenzene	20.0	22.2	111	70 - 125	
tert-Butylbenzene	20.0	22.0	110	70 - 130	
Carbon disulfide	20.0	19.2	96.2	35 - 160	
Carbon tetrachloride	20.0	21.6	108	65 - 140	
Chlorobenzene	20.0	21.4	107	80 - 120	
Chlorodibromomethane	20.0	21.7	108	60 - 135	
Chloroethane	20.0	18.6	93.1	60 - 135	
Chloroform	20.0	21.1	106	65 - 135	
Chloromethane	20.0	17.1	85.3	40 - 125	
2-Chlorotoluene	20.0	21.3	107	75 - 125	
4-Chlorotoluene	20.0	22.1	110	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	23.0	115	50 - 130	
1,2-Dibromoethane	20.0	21.4	107	80 - 120	
Dibromomethane	20.0	20.7	103	75 - 125	
1,2-Dichlorobenzene	20.0	21.6	108	70 - 120	
1,3-Dichlorobenzene	20.0	21.1	105	75 - 125	
1,4-Dichlorobenzene	20.0	22.6	113	75 - 125	
Dichlorodifluoromethane	20.0	19.4	97.1	30 - 155	
1,1-Dichloroethane	20.0	19.9	99.5	70 - 135	
1,2-Dichloroethane	20.0	22.3	112	70 - 130	
1,1-Dichloroethene	20.0	19.6	97.8	70 - 130	
cis-1,2-Dichloroethene	20.0	21.0	105	70 - 125	
trans-1,2-Dichloroethene	20.0	20.4	102	60 - 140	
1,2-Dichloropropane	20.0	21.9	110	75 - 125	
1,3-Dichloropropane	20.0	22.5	113	75 - 125	
2,2-Dichloropropane	20.0	22.4	112	70 - 135	
cis-1,3-Dichloropropene	20.0	23.9	120	70 - 130	
trans-1,3-Dichloropropene	20.0	22.2	111	55 - 140	
1,1-Dichloropropene	20.0	20.5	103	75 - 130	
Ethylbenzene	20.0	20.8	104	75 - 125	
2-Hexanone	20.0	20.7	104	55 - 130	
Hexachlorobutadiene	20.0	22.9	114	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4822661
Report generated: 06/24/2016 16:18

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060822 Run Date: 06/16/2016 Sample ID: WG573036-02
Instrument ID: HPMS6 Run Time: 18:45 Prep Method: 5030B/5030C/503
File ID: 6M140117 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573036 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD76597 Cal ID: HPMS6-01-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	22.6	113	75 - 125	
p-Isopropyltoluene	20.0	22.0	110	75 - 130	
4-Methyl-2-pentanone	20.0	21.5	108	60 - 135	
Methylene chloride	20.0	19.8	99.2	55 - 140	
Naphthalene	20.0	21.0	105	55 - 140	
n-Propylbenzene	20.0	22.7	113	70 - 130	
Styrene	20.0	22.2	111	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	21.6	108	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	21.4	107	65 - 130	
Tetrachloroethene	20.0	19.9	99.7	45 - 150	
Toluene	20.0	20.9	105	75 - 120	
1,2,3-Trichlorobenzene	20.0	21.5	107	55 - 140	
1,2,4-Trichlorobenzene	20.0	22.1	110	65 - 135	
1,1,1-Trichloroethane	20.0	21.4	107	65 - 130	
1,1,2-Trichloroethane	20.0	21.5	107	75 - 125	
Trichloroethene	20.0	21.1	106	70 - 125	
Trichlorofluoromethane	20.0	22.0	110	60 - 145	
1,2,3-Trichloropropane	20.0	21.4	107	75 - 125	
1,2,4-Trimethylbenzene	20.0	21.4	107	75 - 130	
1,3,5-Trimethylbenzene	20.0	22.2	111	75 - 130	
Vinyl chloride	20.0	19.9	99.4	50 - 145	
o-Xylene	20.0	22.1	111	80 - 120	
m-,p-Xylene	40.0	43.2	108	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	101	85 - 115	PASS
1,2-Dichloroethane-d4	103	70 - 120	PASS
Toluene-d8	99.7	85 - 120	PASS
4-Bromofluorobenzene	101	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4822661
Report generated: 06/24/2016 16:18

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060822 Run Date: 06/17/2016 Sample ID: WG573253-02
Instrument ID: HPMS8 Run Time: 20:15 Prep Method: 5030B/5030C/503
File ID: 8M413068 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573253 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD76597 Cal ID: HPMS8-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Trichloroethene	20.0	23.2	116	70 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	111	85 - 115	PASS
1,2-Dichloroethane-d4	119	70 - 120	PASS
Toluene-d8	103	85 - 120	PASS
4-Bromofluorobenzene	101	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4822661
Report generated: 06/24/2016 16:18

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060822
Instrument: HPMS6
Analyst: JDS
Workgroup: WG566155

Tune ID: WG566155-01
Run Date: 04/24/2016
Run Time: 16:33
File ID: 6M138750
Cal ID: HPMS6 - 24-APR-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.5	10010	PASS
75.0	95.0	30.0	60.0	52.0	23152	PASS
95.0	95.0	100	100	100	44552	PASS
96.0	95.0	5.00	9.00	6.92	3085	PASS
173	174	0	2.00	0.346	113	PASS
174	95.0	50.0	100	73.2	32632	PASS
175	174	5.00	9.00	7.16	2336	PASS
176	174	95.0	101	99.2	32384	PASS
177	176	5.00	9.00	6.95	2251	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG566155-02	STD	01	04/24/2016 16:59	
WG566155-03	STD	01	04/24/2016 17:31	
WG566155-04	STD	01	04/24/2016 18:03	
WG566155-05	STD-CCV	01	04/24/2016 18:36	
WG566155-06	STD	01	04/24/2016 19:08	
WG566155-07	STD	01	04/24/2016 19:40	
WG566155-08	STD	01	04/24/2016 20:12	
WG566155-09	STD	01	04/24/2016 20:44	
WG566155-10	SSCV	01	04/24/2016 22:21	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4822663
Report generated 06/24/2016 16:18

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060822
Instrument: HPMS6
Analyst: TMB
Workgroup: WG570915

Tune ID: WG570915-01
Run Date: 06/01/2016
Run Time: 12:04
File ID: 6M139735
Cal ID: HPMS6 - 01-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	22.0	10283	PASS
75.0	95.0	30.0	60.0	48.7	22744	PASS
95.0	95.0	100	100	100	46704	PASS
96.0	95.0	5.00	9.00	7.26	3392	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	79.6	37192	PASS
175	174	5.00	9.00	7.41	2756	PASS
176	174	95.0	101	97.2	36149	PASS
177	176	5.00	9.00	6.58	2378	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG570915-02	STD	01	06/01/2016 12:30	
WG570915-03	STD	01	06/01/2016 13:01	
WG570915-04	STD	01	06/01/2016 13:33	
WG570915-05	STD	01	06/01/2016 14:06	
WG570915-06	STD	01	06/01/2016 14:38	
WG570915-07	STD	01	06/01/2016 15:10	
WG570915-08	STD-CCV	01	06/01/2016 15:43	
WG570915-09	STD	01	06/01/2016 16:15	
WG570915-10	STD	01	06/01/2016 16:47	
WG570915-11	STD	01	06/01/2016 17:19	
WG570915-12	SSCV	01	06/01/2016 18:56	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4822663
Report generated 06/24/2016 16:18

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060822
Instrument: HPMS6
Analyst: FJB
Workgroup: WG573035

Tune ID: WG573035-01
Run Date: 06/16/2016
Run Time: 16:21
File ID: 6M140113
Cal ID: HPMS6 - 01-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.9	7403	PASS
75.0	95.0	30.0	60.0	50.2	16974	PASS
95.0	95.0	100	100	100	33797	PASS
96.0	95.0	5.00	9.00	6.81	2302	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	80.0	27042	PASS
175	174	5.00	9.00	7.46	2016	PASS
176	174	95.0	101	96.3	26048	PASS
177	176	5.00	9.00	7.16	1864	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573035-02	CCV	01	06/16/2016 16:59	
WG573036-01	BLANK	01	06/16/2016 18:13	
WG573036-02	LCS	01	06/16/2016 18:45	
L16060822-06	TRIP BLANK	01	06/16/2016 23:34	
L16060822-01	18WW03-061416	01	06/17/2016 01:10	
L16060822-03	18CPTMW04SW-061416	01	06/17/2016 01:42	
L16060822-04	18CPTMW04-061416	01	06/17/2016 02:15	
L16060822-05	18CPTMW04FD-061416	01	06/17/2016 02:47	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4822663
Report generated 06/24/2016 16:18

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060822
Instrument: HPMS8
Analyst: TMB
Workgroup: WG568561

Tune ID: WG568561-01
Run Date: 05/13/2016
Run Time: 12:36
File ID: 8M412218
Cal ID: HPMS8 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	16.7	6575	PASS
75.0	95.0	30.0	60.0	51.3	20171	PASS
95.0	95.0	100	100	100	39312	PASS
96.0	95.0	5.00	9.00	6.74	2649	PASS
173	174	0	2.00	0.363	122	PASS
174	95.0	50.0	100	85.5	33616	PASS
175	174	5.00	9.00	8.17	2746	PASS
176	174	95.0	101	99.2	33360	PASS
177	176	5.00	9.00	6.80	2267	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG568561-02	STD	01	05/13/2016 13:29	
WG568561-03	STD	01	05/13/2016 13:58	
WG568561-04	STD	01	05/13/2016 14:27	
WG568561-05	STD	01	05/13/2016 14:56	
WG568561-06	STD	01	05/13/2016 15:25	
WG568561-07	STD	01	05/13/2016 15:54	
WG568561-08	STD-CCV	01	05/13/2016 16:23	
WG568561-09	STD	01	05/13/2016 16:52	
WG568561-10	STD	01	05/13/2016 17:21	
WG568561-11	STD	01	05/13/2016 17:50	
WG568561-12	SSCV	01	05/13/2016 19:17	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4822663
Report generated 06/24/2016 16:18

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060822
Instrument: HPMS8
Analyst: TMB
Workgroup: WG569084

Tune ID: WG569084-01
Run Date: 05/17/2016
Run Time: 08:53
File ID: 8M412319
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.1	6316	PASS
75.0	95.0	30.0	60.0	54.7	18130	PASS
95.0	95.0	100	100	100	33138	PASS
96.0	95.0	5.00	9.00	6.76	2241	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	72.2	23934	PASS
175	174	5.00	9.00	7.88	1886	PASS
176	174	95.0	101	96.8	23159	PASS
177	176	5.00	9.00	7.15	1655	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG569079-01	STD-CCV	01	05/17/2016 09:47	
WG569079-03	STD	01	05/17/2016 10:16	
WG569079-04	STD	01	05/17/2016 10:44	
WG569079-05	STD	01	05/17/2016 11:13	
WG569079-06	STD	01	05/17/2016 11:42	
WG569079-07	STD	01	05/17/2016 12:40	
WG569079-08	STD	01	05/17/2016 13:10	
WG569079-09	STD	01	05/17/2016 13:39	
WG569079-10	SSCV	01	05/17/2016 15:06	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4822663
Report generated 06/24/2016 16:18

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060822
Instrument: HPMS8
Analyst: FJB
Workgroup: WG573252

Tune ID: WG573252-01
Run Date: 06/17/2016
Run Time: 15:56
File ID: 8M413059
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	17.7	6432	PASS
75.0	95.0	30.0	60.0	57.5	20879	PASS
95.0	95.0	100	100	100	36330	PASS
96.0	95.0	5.00	9.00	6.14	2230	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	76.8	27909	PASS
175	174	5.00	9.00	6.98	1948	PASS
176	174	95.0	101	96.5	26925	PASS
177	176	5.00	9.00	6.58	1773	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573252-02	CCV	01	06/17/2016 16:23	
WG573253-01	BLANK	01	06/17/2016 17:21	
WG573253-02	LCS	01	06/17/2016 20:15	
L16060822-04	18CPTMW04-061416	DL01	06/17/2016 21:42	
L16060822-05	18CPTMW04FD-061416	DL01	06/17/2016 22:12	
WG573253-06	BLANK2	01	06/18/2016 04:27	*

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4822663
Report generated 06/24/2016 16:18

Calibration Table Report
Method: A9FOOWT.M
Title: A9-FOO Water - IC: 042416 - HPMS6
Last Calibration: Wed Apr 27 16:03:33 2016
Curve: WG566155
Calibration Files

	Compound	5 6M138751.D	20 6M138752.D	50 6M138753.D	100 6M138754.D	200 6M138755.D	300 6M138756.D	400 6M138757.D	500 6M138758.D	Avg	%RSD
I	Fluorobenzene	ISTD									
T	Acetonitrile	0.036	0.037	0.039	0.038	0.038	0.038	0.038	0.036	0.037	2.606
T	3-Chloro-1-propene	0.567	0.621	0.656	0.672	0.635	0.622	0.617	0.603	0.624	5.157
T	2-Chloro-1,3-butadiene	0.415	0.507	0.558	0.590	0.558	0.553	0.556	0.548	0.535	10.001
T	Ethyl Acetate	0.229	0.259	0.279	0.281	0.277	0.272	0.279	0.268	0.268	6.419
T	Methacrylonitrile	0.071	0.089	0.099	0.099	0.097	0.095	0.096	0.093	0.092	9.852
T	Isobutyl Alcohol		0.008	0.008	0.007	0.007	0.008	0.010	0.010	0.009	13.654
T	1-Butanol									0.000	0.000
T	Methyl methacrylate	0.159	0.200	0.231	0.244	0.244	0.241	0.246	0.236	0.225	13.591
T	2-Nitropropane			0.079	0.082	0.085	0.085	0.088	0.084	0.084	3.643
I	Chlorobenzene-d5	ISTD									
I	1,4-Dichlorobenzene-d4	ISTD									
T	Cyclohexanone			0.026	0.027	0.032	0.034	0.035	0.033	0.031	12.127

Wed Apr 27 16:05:59 2016

Calibration Table Report
Method: 8260WT.M
Title: 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Calibration: Thu Jun 02 12:19:33 2016
Curve: WG570915
Calibration Files

	Compound	0.3 6M139736.D	0.4 6M139737.D	1 6M139738.D	2 6M139739.D	5 6M139740.D	20 6M139741.D	50 6M139742.D	100 6M139743.D	200 6M139744.D	300 6M139745.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.368	0.389	0.360	0.417	0.428	0.427	0.416	0.361	0.396	7.472		
P	Chloromethane			0.508	0.532	0.486	0.500	0.497	0.488	0.465	0.385	0.482	9.076		
C	Vinyl Chloride		0.401	0.350	0.343	0.312	0.323	0.317	0.315	0.304	0.262	0.325	11.731		
T	1,3-Butadiene					0.284	0.265	0.185	0.182	0.173	0.159	0.208	25.270	0.993	
T	Bromomethane			0.159	0.168	0.144	0.137	0.153	0.170	0.184	0.167	0.160	9.429		
T	Chloroethane			0.212	0.219	0.210	0.206	0.204	0.204	0.204	0.186	0.206	4.708		
T	Trichlorofluoromethane		0.437	0.445	0.470	0.433	0.436	0.435	0.434	0.431	0.399	0.436	4.163		
T	Diethyl ether			0.220	0.247	0.237	0.230	0.236	0.237		0.232	0.234	3.554		
T	Isoprene					0.355	0.373	0.369	0.380	0.375	0.368	0.370	2.297		
T	Acrolein				0.038	0.040	0.038	0.039	0.041		0.040	0.040	2.934		
T	1,1,2-Trichloro-1,2,2-Trifluoroet			0.237	0.269	0.247	0.245	0.249	0.250	0.252	0.241	0.249	3.880		
T	Acetone					0.103	0.074	0.075	0.074	0.072	0.067	0.078	16.625	0.999	
C	1,1-Dichloroethene		0.464	0.431	0.455	0.435	0.429	0.438	0.440	0.447	0.425	0.441	2.860		
T	Tert-Butyl Alcohol			0.019	0.021	0.022	0.022	0.023	0.024		0.021	0.022	7.217		
T	Dimethyl Sulfide					0.191	0.206	0.203	0.205	0.206	0.203	0.202	2.776		
T	Iodomethane				0.048	0.105	0.188	0.192	0.194	0.191	0.176	0.156	36.677	0.997	
T	Methyl acetate					0.225	0.218	0.215	0.216	0.212	0.208	0.216	2.557		
T	Methylene Chloride			0.290	0.301	0.275	0.263	0.262	0.260	0.267	0.256	0.272	5.900		
T	Carbon Disulfide			0.869	0.917	0.858	0.877	0.860	0.869	0.852	0.792	0.862	3.999		
T	Acrylonitrile			0.088	0.092	0.090	0.093	0.101	0.100		0.102	0.095	5.996		
T	Methyl Tert Butyl Ether			0.638	0.686	0.655	0.655	0.669	0.668	0.678	0.655	0.663	2.281		
T	trans-1,2-Dichloroethene		0.254	0.252	0.269	0.253	0.255	0.257	0.257	0.262	0.253	0.257	2.039		
T	n-Hexane					0.407	0.403	0.398	0.405	0.399	0.387	0.400	1.831		
T	Diisopropyl ether			1.043	1.114	1.089	1.056	1.078	1.065		1.007	1.064	3.213		
T	Vinyl Acetate					0.421	0.424	0.454	0.438	0.497	0.478	0.452	6.758		
P	1,1-Dichloroethane		0.527	0.521	0.544	0.508	0.506	0.505	0.507	0.516	0.499	0.515	2.718		
T	Ethyl-Tert-Butyl ether			0.841	0.896	0.884	0.864	0.890	0.881		0.843	0.871	2.557		
T	2-Butanone					0.121	0.109	0.114	0.115	0.113	0.104	0.113	5.044		
T	Propionitrile			0.028	0.032	0.031	0.032	0.033	0.033		0.029	0.031	6.795		
T	2,2-Dichloropropane		0.374	0.389	0.411	0.378	0.356	0.362	0.369	0.376	0.361	0.375	4.479		
T	cis-1,2-Dichloroethene		0.263	0.280	0.292	0.281	0.276	0.282	0.280	0.288	0.277	0.280	2.886		
C	Chloroform	0.482	0.449	0.447	0.491	0.459	0.450	0.452	0.451	0.460	0.442	0.458	3.416		
T	1-Bromopropane			0.026	0.043	0.048	0.046	0.046	0.047	0.047	0.046	0.044	16.515	1.000	
T	Bromochloromethane		0.151	0.151	0.167	0.159	0.160	0.161	0.161	0.164	0.157	0.159	3.527		
T	Tetrahydrofuran			0.095	0.078	0.075	0.074	0.077	0.076		0.070	0.078	10.111		
S	Dibromofluoromethane				0.257	0.255	0.269	0.262	0.256	0.260	0.253	0.259	2.029		
T	1,1,1-Trichloroethane		0.436	0.383	0.433	0.400	0.393	0.404	0.408	0.419	0.403	0.409	4.334		
T	Cyclohexane			0.487	0.535	0.494	0.516	0.511	0.523	0.524	0.509	0.512	3.081		
T	1,1-Dichloropropene			0.340	0.358	0.349	0.344	0.350	0.355	0.361	0.346	0.350	2.036		
T	Tert-Amyl-Methyl ether			0.641	0.688	0.677	0.666	0.686	0.691		0.671	0.674	2.592		
T	Carbon Tetrachloride		0.358	0.347	0.378	0.35	0.356	0.37	0.377	0.379	0.367	0.36473	3.3573		
S	1,2-Dichloroethane-d4				0.29	0.283	0.299	0.288	0.282	0.282	0.272	0.28519	2.87577		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.365	0.344	0.373	0.347	0.343	0.35	0.349	0.356	0.342	0.35222	3.02016		
T	Benzene		1.124	1.064	1.107	1.037	1.005	1.01	1.002	0.995	0.9	1.02701	6.51675		
T	Trichloroethene		0.258	0.271	0.275	0.256	0.259	0.262	0.264	0.265	0.251	0.2623	2.78541		
T	Methylcyclohexane					0.394	0.401	0.396	0.405	0.402	0.388	0.39768	1.59426		
C	1,2-Dichloropropane		0.277	0.281	0.294	0.283	0.278	0.284	0.285	0.292	0.28	0.28367	2.04718		
T	1,4-Dioxane					0.002	0.002	0.002	0.002		0.002	0.00202	8.64372		
T	Bromodichloromethane		0.332	0.346	0.359	0.34	0.343	0.355	0.355	0.363	0.346	0.34886	2.85717		
T	Dibromomethane		0.14	0.142	0.148	0.145	0.146	0.15	0.149	0.153	0.145	0.14638	2.73027		
T	2-Chloroethyl Vinyl Ether				0.12	0.118	0.133	0.141	0.138	0.134	0.122	0.12947	7.05634		
T	4-Methyl-2-Pentanone					0.077	0.085	0.091	0.091	0.091	0.083	0.08617	6.68181		
T	cis-1,3-Dichloropropene		0.354	0.356	0.398	0.395	0.399	0.413	0.415	0.425	0.4	0.39484	6.23009		
T	Dimethyl Disulfide					0.183	0.218	0.231	0.241	0.249	0.243	0.22747	10.8008		
I	Chlorobenzene-d5	ISTD													
S	Toluene-d8				1.251	1.228	1.225	1.176	1.161	1.169	1.189	1.19981	2.90775		
C	Toluene		1.473	1.426	1.524	1.458	1.418	1.408	1.402	1.382	1.285	1.41964	4.6754		
T	Ethyl Methacrylate			0.306	0.362	0.365	0.398	0.411	0.421	0.426	0.424	0.38902	10.8195		
T	Paraldehyde											0	0		
T	trans-1,3-Dichloropropene			0.421	0.476	0.468	0.478	0.498	0.501	0.517	0.51	0.4835	6.35458		
T	1,1,2-Trichloroethane		0.272	0.252	0.282	0.268	0.269	0.273	0.271	0.276	0.269	0.27029	3.02397		
T	2-Hexanone					0.221	0.217	0.233	0.237	0.24	0.227	0.22936	3.87639		
T	1,3-Dichloropropane		0.467	0.467	0.498	0.469	0.473	0.479	0.475	0.481	0.466	0.47522	2.15067		
T	Tetrachloroethene		0.377	0.386	0.393	0.377	0.362	0.364	0.362	0.366	0.364	0.37239	3.0474		
T	Dibromochloromethane		0.334	0.328	0.341	0.335	0.34	0.354	0.356	0.362	0.349	0.3444	3.3424		
T	1,2-Dibromoethane		0.256	0.24	0.267	0.254	0.263	0.268	0.269	0.271	0.262	0.26125	3.70682		
T	1-Chlorohexane		0.42	0.416	0.457	0.451	0.472	0.482	0.487	0.486	0.478	0.46097	5.97256		
P	Chlorobenzene		0.984	0.972	1.04	0.972	0.93	0.933	0.926	0.927	0.865	0.9499	5.17962		
T	1,1,1,2-Tetrachloroethane		0.333	0.322	0.341	0.342	0.344	0.353	0.356	0.365	0.346	0.34453	3.65039		
C	Ethylbenzene		0.485	0.495	0.519	0.505	0.492	0.508	0.508	0.524	0.498	0.50384	2.47296		
T	m-,p-Xylene		0.627	0.587	0.625	0.612	0.603	0.606	0.606	0.592	0.53	0.59856	4.81039		
T	o-Xylene			0.554	0.6	0.592	0.595	0.603	0.604	0.613	0.571	0.59151	3.29999		
T	Styrene		0.817	0.867	0.983	0.988	1.024	1.054	1.069	1.071	0.967	0.98236	9.03093		
P	Bromoform			0.191	0.199	0.198	0.213	0.228	0.239	0.248	0.233	0.21851	9.8506		
T	Isopropylbenzene		1.479	1.461	1.525	1.509	1.513	1.549	1.55	1.495	1.282	1.48477	5.4827		
I	1,4-Dichlorobenzene-d4	ISTD													
P	1,1,2,2-Tetrachloroethane		0.587	0.595	0.639	0.592	0.581	0.6	0.6	0.623	0.608	0.60275	3.02728		
S	p-Bromofluorobenzene				0.883	0.881	0.916	0.873	0.863	0.883	0.881	0.88281	1.83022		

T	1,2,3-Trichloropropane			0.168	0.192	0.163	0.17	0.176	0.176	0.178	0.175	0.17451	4.94444	
T	trans-1,4-Dichloro-2-Butene			0.107	0.15	0.163	0.191	0.205	0.217	0.219	0.221	0.18403	22.2298	0.999
T	n-Propylbenzene		3.439	3.272	3.551	3.406	3.322	3.313	3.215	3.027	2.616	3.2401	8.53408	
T	Bromobenzene	0.84	0.754	0.764	0.805	0.762	0.737	0.736	0.727	0.748	0.73	0.76031	4.726	
T	1,3,5-Trimethylbenzene		2.174	2.282	2.426	2.351	2.342	2.342	2.317	2.311	2.086	2.29253	4.46771	
T	2-Chlorotoluene		2.453	2.255	2.502	2.26	2.177	2.144	2.165	2.112	1.907	2.21937	8.06439	
T	4-Chlorotoluene		1.999	2.118	2.186	2.154	2.046	2.063	1.99	2.054	1.936	2.06065	3.92778	
T	a-Methylstyrene					1.193	1.289	1.293	1.32	1.315	1.279	1.28165	3.60789	
T	tert-Butylbenzene			0.467	0.527	0.516	0.503	0.508	0.509	0.518	0.496	0.50542	3.60353	
T	1,2,4-Trimethylbenzene			2.289	2.555	2.468	2.45	2.451	2.435	2.403	2.149	2.39988	5.22721	
T	sec-Butylbenzene			2.845	3.007	2.916	2.875	2.877	2.866	2.757	2.424	2.82101	6.19277	
T	p-Isopropyltoluene			2.3	2.503	2.467	2.445	2.488	2.483	2.404	2.142	2.404	5.1767	
T	1,3-Dichlorobenzene		1.665	1.484	1.562	1.493	1.45	1.441	1.447	1.439	1.363	1.48259	5.84022	
T	1,4-Dichlorobenzene	2.703	1.755	1.595	1.633	1.463	1.435	1.445	1.445	1.434	1.353	1.62614	24.4079	0.999
T	n-Butylbenzene			2.15	2.352	2.307	2.306	2.359	2.37	2.304	2.055	2.27543	4.95243	
T	1,2-Dichlorobenzene	1.542	1.39	1.334	1.501	1.383	1.346	1.359	1.355	1.342	1.264	1.3816	5.91958	
T	1,2-Dibromo-3-Chloropropane				0.09	0.105	0.102	0.115	0.116	0.117	0.112	0.10824	9.10771	
T	1,2,4-Trichlorobenzene		0.991	0.897	0.97	0.944	0.955	0.967	0.967	0.977	0.928	0.95524	2.96669	
T	Hexachlorobutadiene		0.41	0.42	0.407	0.413	0.385	0.389	0.387	0.384	0.372	0.39643	4.16165	
T	Naphthalene		1.837	1.729	1.844	1.857	1.956	2.027	2.008	1.956	1.781	1.88827	5.46689	
T	1,2,3-Trichlorobenzene	0.981	0.939	0.873	0.921	0.896	0.892	0.903	0.895	0.893	0.847	0.90398	4.0381	

Thu Jun 02 14:04:26 2016

Calibration Table Report
Method: 8260WT.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Calibration: Sat May 14 18:08:06 2016
Curve: WG568561
Calibration Files

	Compound	0.3 8M412220.D	0.4 8M412221.D	1 8M412222.D	2 8M412223.D	5 8M412224.D	20 8M412225.D	50 8M412226.D	100 8M412227.D	200 8M412228.D	300 8M412229.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane		0.427	0.390	0.397	0.364	0.468	0.439	0.452	0.427	0.408	0.419	7.751		
P	Chloromethane			0.264	0.257	0.223	0.253	0.240	0.240	0.239	0.241	0.245	5.336		
C	Vinyl Chloride		0.274	0.296	0.297	0.277	0.299	0.292	0.299	0.292	0.288	0.290	3.191		
T	1,3-Butadiene				0.218	0.208	0.242	0.251	0.277	0.254	0.254	0.243	9.644		
T	Bromomethane			0.129	0.133	0.127	0.162	0.167	0.187	0.205	0.212	0.165	20.449		1.000
T	Chloroethane		0.173	0.157	0.153	0.143	0.164	0.157	0.163	0.164	0.164	0.160	5.354		
T	Trichlorofluoromethane		0.544	0.538	0.559	0.506	0.570	0.538	0.551	0.531	0.525	0.540	3.520		
T	Diethyl ether			0.130	0.138	0.123	0.132	0.125	0.128		0.127	0.129	3.866		
T	Isoprene		0.335	0.351	0.334	0.293	0.334	0.320	0.334	0.322	0.329	0.328	4.867		
T	Acrolein				0.012	0.010	0.010	0.011	0.012		0.014	0.012	12.987		
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.256	0.269	0.240	0.260	0.249	0.257	0.251	0.250	0.254	3.397		
T	Acetone					0.023	0.030	0.029	0.030	0.028	0.028	0.028	9.132		
C	1,1-Dichloroethene		0.424	0.407	0.406	0.387	0.416	0.398	0.409	0.400	0.393	0.404	2.830		
T	Tert-Butyl Alcohol				0.010	0.009	0.009	0.009	0.009		0.009	0.009	2.872		
T	Dimethyl Sulfide		0.133	0.142	0.152	0.137	0.145	0.142	0.151	0.147	0.151	0.145	4.534		
T	Iodomethane				0.019	0.024	0.066	0.101	0.129	0.135	0.131	0.087	58.244		0.998
T	Methyl acetate					0.075	0.076	0.074	0.078	0.076	0.078	0.076	2.221		
T	Methylene Chloride			0.274	0.265	0.244	0.263	0.250	0.255	0.254	0.252	0.257	3.686		
T	Carbon Disulfide			0.888	0.922	0.801	0.873	0.816	0.854	0.813	0.802	0.846	5.346		
T	Acrylonitrile			0.027	0.035	0.033	0.038	0.038	0.039		0.044	0.036	14.671		
T	Methyl Tert Butyl Ether			0.534	0.543	0.521	0.586	0.579	0.585	0.560	0.546	0.557	4.455		
T	trans-1,2-Dichloroethene		0.389	0.395	0.364	0.352	0.381	0.367	0.372	0.364	0.358	0.371	3.858		
T	n-Hexane					0.265	0.280	0.270	0.286	0.275	0.279	0.276	2.732		
T	Diisopropyl ether			0.600	0.607	0.548	0.588	0.572	0.571		0.567	0.579	3.559		
T	Vinyl Acetate				0.256	0.243	0.270	0.275	0.266	0.271	0.275	0.265	4.509		
P	1,1-Dichloroethane		0.441	0.463	0.486	0.434	0.488	0.464	0.470	0.459	0.447	0.461	4.012		
T	Ethyl-Tert-Butyl ether			0.616	0.645	0.590	0.641	0.628	0.619		0.603	0.620	3.188		
T	2-Butanone					0.035	0.042	0.043	0.045	0.041	0.043	0.041	8.268		
T	Propionitrile			0.010	0.012	0.012	0.013	0.012	0.013		0.013	0.012	8.354		
T	2,2-Dichloropropane		0.471	0.462	0.520	0.476	0.503	0.494	0.497	0.483	0.470	0.486	3.839		
T	cis-1,2-Dichloroethene		0.299	0.298	0.291	0.267	0.295	0.282	0.289	0.283	0.277	0.287	3.685		
C	Chloroform	0.563	0.567	0.581	0.536	0.509	0.566	0.543	0.546	0.529	0.506	0.545	4.619		
T	1-Bromopropane			0.034	0.040	0.040	0.043	0.041	0.043	0.043	0.044	0.041	7.649		
T	Bromochloromethane		0.131	0.164	0.147	0.137	0.154	0.148	0.151	0.148	0.145	0.147	6.598		
T	Tetrahydrofuran			0.034	0.028	0.025	0.026	0.026	0.026		0.026	0.027	11.724		
S	Dibromofluoromethane			0.249	0.261	0.257	0.280	0.271	0.284	0.271	0.275	0.269	4.465		
T	1,1,1-Trichloroethane		0.492	0.537	0.515	0.496	0.545	0.525	0.533	0.515	0.499	0.517	3.660		
T	Cyclohexane			0.373	0.369	0.335	0.359	0.344	0.366	0.356	0.364	0.358	3.619		
T	1,1-Dichloropropene			0.414	0.399	0.369	0.403	0.395	0.399	0.392	0.382	0.394	3.488		
T	Tert-Amyl-Methyl ether			0.567	0.587	0.534	0.576	0.568	0.561		0.549	0.563	3.077		
T	Carbon Tetrachloride		0.444	0.456	0.462	0.441	0.481	0.465	0.474	0.462	0.448	0.4594	2.92173		
S	1,2-Dichloroethane-d4			0.241	0.309	0.276	0.312	0.295	0.301	0.284	0.286	0.288	7.93644		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.347	0.335	0.354	0.336	0.371	0.36	0.364	0.349	0.338	0.3505	3.65503		
T	Benzene		1.128	1.084	1.071	0.977	1.085	1.033	1.019	0.963	0.883	1.0269	7.39343		
T	Trichloroethene		0.285	0.275	0.276	0.251	0.283	0.273	0.279	0.273	0.27	0.2739	3.66126		
T	Methylcyclohexane					0.396	0.426	0.408	0.429	0.416	0.422	0.4161	2.94153		
C	1,2-Dichloropropane		0.239	0.222	0.233	0.207	0.238	0.226	0.233	0.231	0.229	0.2286	4.30096		
T	Bromodichloromethane		0.369	0.382	0.412	0.385	0.426	0.421	0.417	0.41	0.395	0.4018	4.93305		
T	1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.0011	14.5817		
T	Dibromomethane		0.141	0.13	0.137	0.128	0.141	0.134	0.137	0.136	0.133	0.1353	3.26799		
T	2-Chloroethyl Vinyl Ether				0.1	0.084	0.103	0.104	0.103	0.095	0.098	0.0983	7.09792		
T	4-Methyl-2-Pentanone					0.033	0.042	0.042	0.043	0.04	0.041	0.0401	8.66859		
T	cis-1,3-Dichloropropene		0.391	0.393	0.386	0.398	0.431	0.428	0.428	0.42	0.405	0.409	4.41527		

T	Dimethyl Disulfide					0.182	0.218	0.221	0.23	0.229	0.23	0.2183	8.49419	
I	Chlorobenzene-d5	ISTD												
S	Toluene-d8			1.282	1.295	1.228	1.385	1.333	1.378	1.289	1.278	1.3084	4.07746	
C	Toluene		1.653	1.696	1.678	1.507	1.647	1.554	1.545	1.418	1.27	1.552	8.98325	
T	Ethyl Methacrylate			0.251	0.293	0.268	0.314	0.314	0.327	0.309	0.31	0.2981	8.76897	
T	Paraldehyde											0	0	
T	trans-1,3-Dichloropropene			0.472	0.51	0.466	0.561	0.552	0.553	0.533	0.515	0.5201	7.01006	
T	1,1,2-Trichloroethane		0.261	0.241	0.242	0.222	0.254	0.249	0.252	0.243	0.241	0.2449	4.54209	
T	2-Hexanone					0.042	0.053	0.053	0.056	0.051	0.053	0.0515	9.50479	
T	1,3-Dichloropropane		0.355	0.442	0.465	0.42	0.468	0.454	0.457	0.437	0.428	0.436	7.93348	
T	Tetrachloroethene		0.355	0.337	0.336	0.306	0.333	0.325	0.337	0.334	0.33	0.3325	3.83886	
T	Dibromochloromethane		0.349	0.336	0.338	0.328	0.373	0.372	0.383	0.373	0.367	0.3576	5.60043	
T	1,2-Dibromoethane		0.233	0.234	0.234	0.227	0.259	0.254	0.258	0.251	0.247	0.2441	5.04151	
T	1-Chlorohexane		0.532	0.584	0.505	0.502	0.54	0.52	0.547	0.521	0.516	0.5298	4.7826	
P	Chlorobenzene		1.029	1.173	1.09	1.007	1.099	1.037	1.043	1.002	0.939	1.0466	6.41465	
T	1,1,1,2-Tetrachloroethane		0.392	0.399	0.403	0.357	0.431	0.414	0.424	0.417	0.413	0.4055	5.39495	
C	Ethylbenzene		0.6	0.594	0.59	0.532	0.586	0.559	0.57	0.564	0.558	0.5726	3.7769	
T	m-,p-Xylene		0.744	0.696	0.691	0.643	0.713	0.67	0.673	0.634	0.581	0.6716	7.12586	
T	o-Xylene			0.691	0.651	0.614	0.692	0.658	0.667	0.65	0.63	0.6567	4.11758	
T	Styrene		1.05	1.06	1.096	1.043	1.159	1.124	1.12	1.061	0.98	1.077	4.96781	
P	Bromoform			0.177	0.21	0.181	0.226	0.221	0.232	0.227	0.223	0.2121	10.0546	
T	Isopropylbenzene		1.853	1.891	1.871	1.708	1.897	1.781	1.75	1.573	1.377	1.7444	9.92447	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.426	0.492	0.503	0.486	0.543	0.51	0.527	0.513	0.514	0.5018	6.60291	
S	p-Bromofluorobenzene				1.054	0.976	1.071	1.016	1.053	1.031	1.046	1.0352	3.05136	
T	1,2,3-Trichloropropane			0.119	0.158	0.161	0.162	0.155	0.162	0.16	0.158	0.1545	9.40789	
T	trans-1,4-Dichloro-2-Butene			0.085	0.118	0.12	0.149	0.151	0.16	0.159	0.161	0.1376	19.9543	1.000
T	n-Propylbenzene		4.139	4.239	4.243	4.051	4.241	3.953	3.882	3.419	2.935	3.9003	11.4439	
T	Bromobenzene	0.796	0.708	0.843	0.837	0.778	0.84	0.798	0.817	0.803	0.803	0.8022	4.93253	
T	1,3,5-Trimethylbenzene		2.941	2.93	2.941	2.839	3.053	2.882	2.871	2.689	2.423	2.8411	6.50391	
T	2-Chlorotoluene		2.917	2.935	2.929	2.712	2.861	2.795	2.682	2.533	2.145	2.7231	9.37022	
T	4-Chlorotoluene		2.681	2.596	2.581	2.474	2.625	2.326	2.447	2.286	2.121	2.4597	7.49558	
T	a-Methylstyrene					1.257	1.406	1.34	1.384	1.35	1.351	1.3479	3.77654	
T	tert-Butylbenzene			0.587	0.555	0.53	0.571	0.533	0.552	0.561	0.558	0.5558	3.34508	
T	1,2,4-Trimethylbenzene		2.955	3.168	3.127	2.936	3.12	2.914	2.937	2.709	2.427	2.9214	7.97314	
T	sec-Butylbenzene			3.701	3.536	3.487	3.607	3.34	3.332	3.045	2.69	3.3424	9.93324	
T	p-Isopropyltoluene			3.112	3.062	2.903	2.988	2.813	2.809	2.634	2.382	2.8379	8.45265	
T	1,3-Dichlorobenzene		1.484	1.617	1.627	1.53	1.605	1.531	1.549	1.51	1.45	1.5448	3.95774	
T	1,4-Dichlorobenzene	1.713	1.524	1.672	1.594	1.503	1.6	1.511	1.535	1.49	1.431	1.5574	5.56562	
T	n-Butylbenzene			3.143	2.96	2.895	3.002	2.791	2.792	2.571	2.292	2.8056	9.55812	
T	1,2-Dichlorobenzene	1.59	1.307	1.415	1.41	1.322	1.404	1.333	1.356	1.315	1.286	1.3739	6.4618	
T	1,2-Dibromo-3-Chloropropane				0.085	0.103	0.102	0.103	0.106	0.104	0.103	0.1007	6.86771	
T	1,2,4-Trichlorobenzene		1.074	1.01	1.028	0.982	1.069	1.013	1.036	1.029	1.002	1.0269	2.90829	
T	Hexachlorobutadiene		0.516	0.476	0.483	0.447	0.487	0.459	0.48	0.485	0.485	0.4798	4.00465	
T	Naphthalene		1.594	1.457	1.574	1.455	1.63	1.552	1.564	1.485	1.422	1.5258	4.75891	
T	1,2,3-Trichlorobenzene	0.913	0.934	0.905	0.862	0.805	0.877	0.824	0.862	0.846	0.835	0.8664	4.7474	

Tue May 17 11:49:41 2016

Calibration Table Report
Method: A9FOOWT.M
Title: A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Calibration: Thu May 19 08:54:31 2016
Curve: WG569079
Calibration Files

	Compound	5 8M412324.D	20 8M412323.D	50 8M412322.D	100 8M412321.D	200 8M412325.D	300 8M412326.D	400 8M412327.D	500 8M412328.D	Avg	%RSD
I	Fluorobenzene	ISTD									
T	Acetonitrile		0.009	0.010	0.010	0.010	0.010	0.010	0.010	0.010	2.076
T	3-Chloro-1-propene	0.306	0.330	0.335	0.331	0.324	0.307	0.304	0.304	0.318	4.307
T	2-Chloro-1,3-butadiene	0.368	0.420	0.420	0.419	0.419	0.392	0.389	0.387	0.402	5.022
T	Ethyl Acetate	0.080	0.096	0.097	0.100	0.099	0.098	0.100	0.095	0.096	6.751
T	Methacrylonitrile	0.041	0.054	0.055	0.055	0.055	0.054	0.055	0.052	0.053	9.227
T	Isobutyl Alcohol			0.003	0.003	0.003	0.003	0.003	0.003	0.003	3.599
T	1-Butanol									0.000	0.000
T	Methyl methacrylate	0.089	0.106	0.106	0.105	0.106	0.105	0.107	0.102	0.103	5.868
T	2-Nitropropane		0.041	0.042	0.043	0.046	0.047	0.048	0.046	0.045	5.992
I	Chlorobenzene-d5	ISTD									
I	1,4-Dichlorobenzene-d4	ISTD									
T	Cyclohexanone		0.011	0.010	0.010	0.009	0.010	0.011	0.010	0.010	4.971

Thu May 19 09:04:52 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060822 Run Date: 06/01/2016 Sample ID: WG570915-12
Instrument ID: HPMS6 Run Time: 18:56 Method: 8260B
File ID: 6M139748 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG570915 Cal ID: HPMS6 - 01-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	49.5	ug/L	0.453	1.10	20	
1,1-Dichloroethene	CCC	50.0	48.1	ug/L	0.424	3.80	20	
1,2-Dichloropropane	CCC	50.0	52.4	ug/L	0.297	4.80	20	
Ethylbenzene	CCC	50.0	51.3	ug/L	0.517	2.60	20	
Toluene	CCC	50.0	51.7	ug/L	1.47	3.40	20	
Vinyl Chloride	CCC	50.0	48.8	ug/L	0.317	2.50	20	
Bromoform	SPCC	50.0	48.3	ug/L	0.211	3.50	20	
Chlorobenzene	SPCC	50.0	51.3	ug/L	0.974	2.50	20	
Chloromethane	SPCC	50.0	47.6	ug/L	0.460	4.70	20	
1,1-Dichloroethane	SPCC	50.0	48.0	ug/L	0.494	3.90	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	51.7	ug/L	0.623	3.40	20	
Acetone		50.0	50.0	ug/L	0.0727	0.100	20	
Benzene		50.0	50.0	ug/L	1.03	0	20	
Bromobenzene		50.0	50.0	ug/L	0.760	0	20	
Bromochloromethane		50.0	50.2	ug/L	0.160	0.400	20	
Bromodichloromethane		50.0	51.1	ug/L	0.356	2.10	20	
Bromomethane		50.0	45.5	ug/L	0.146	9.00	20	
2-Butanone		50.0	48.8	ug/L	0.110	2.40	20	
n-Butylbenzene		50.0	52.4	ug/L	2.39	4.80	20	
sec-Butylbenzene		50.0	53.8	ug/L	3.03	7.60	20	
tert-Butylbenzene		50.0	53.4	ug/L	0.540	6.80	20	
Carbon Disulfide		50.0	48.3	ug/L	0.833	3.40	20	
Carbon Tetrachloride		50.0	50.4	ug/L	0.367	0.700	20	
Dibromochloromethane		50.0	51.4	ug/L	0.354	2.80	20	
Chloroethane		50.0	51.4	ug/L	0.211	2.70	20	
2-Chlorotoluene		50.0	52.0	ug/L	2.31	4.00	20	
4-Chlorotoluene		50.0	53.6	ug/L	2.21	7.30	20	
1,2-Dibromo-3-Chloropropane		50.0	53.9	ug/L	0.117	7.80	20	
1,2-Dibromoethane		50.0	52.4	ug/L	0.274	4.80	20	
Dibromomethane		50.0	49.4	ug/L	0.145	1.20	20	
1,2-Dichlorobenzene		50.0	51.9	ug/L	1.43	3.80	20	
1,3-Dichlorobenzene		50.0	50.4	ug/L	1.49	0.800	20	
1,4-Dichlorobenzene		50.0	54.3	ug/L	1.52	8.50	20	
Dichlorodifluoromethane		50.0	54.6	ug/L	0.432	9.20	20	
1,2-Dichloroethane		50.0	50.5	ug/L	0.356	1.00	20	
cis-1,2-Dichloroethene		50.0	51.7	ug/L	0.289	3.50	20	
trans-1,2-Dichloroethene		50.0	50.9	ug/L	0.262	1.90	20	
1,3-Dichloropropane		50.0	54.6	ug/L	0.519	9.30	20	
2,2-Dichloropropane		50.0	48.0	ug/L	0.360	4.00	20	
cis-1,3-Dichloropropene		50.0	57.2	ug/L	0.452	14.4	20	
trans-1,3-Dichloropropene		50.0	52.9	ug/L	0.511	5.70	20	
1,1-Dichloropropene		50.0	49.7	ug/L	0.348	0.600	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4822662
Report generated 06/24/2016 16:18

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060822 Run Date: 06/01/2016 Sample ID: WG570915-12
Instrument ID: HPMS6 Run Time: 18:56 Method: 8260B
File ID: 6M139748 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG570915 Cal ID: HPMS6 - 01-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	48.5	ug/L	0.223	3.00	20	
Hexachlorobutadiene		50.0	53.5	ug/L	0.424	6.90	20	
Isopropylbenzene		50.0	53.4	ug/L	1.58	6.70	20	
p-Isopropyltoluene		50.0	53.2	ug/L	2.56	6.30	20	
4-Methyl-2-Pentanone		50.0	50.1	ug/L	0.0863	0.200	20	
Methylene Chloride		50.0	49.1	ug/L	0.267	1.90	20	
Naphthalene		50.0	48.9	ug/L	1.85	2.20	20	
n-Propylbenzene		50.0	55.1	ug/L	3.57	10.2	20	
Styrene		50.0	54.2	ug/L	1.07	8.40	20	
1,1,1,2-Tetrachloroethane		50.0	52.5	ug/L	0.362	5.10	20	
Tetrachloroethene		50.0	49.1	ug/L	0.365	1.90	20	
1,2,3-Trichlorobenzene		50.0	50.0	ug/L	0.905	0.100	20	
1,2,4-Trichlorobenzene		50.0	52.1	ug/L	0.996	4.30	20	
1,1,1-Trichloroethane		50.0	49.8	ug/L	0.407	0.400	20	
1,1,2-Trichloroethane		50.0	51.8	ug/L	0.280	3.50	20	
Trichloroethene		50.0	51.8	ug/L	0.272	3.60	20	
Trichlorofluoromethane		50.0	47.5	ug/L	0.414	5.00	20	
1,2,3-Trichloropropane		50.0	52.7	ug/L	0.184	5.50	20	
1,2,4-Trimethylbenzene		50.0	52.0	ug/L	2.50	4.10	20	
1,3,5-Trimethylbenzene		50.0	54.2	ug/L	2.48	8.40	20	
o-Xylene		50.0	53.6	ug/L	0.634	7.20	20	
m-,p-Xylene		100	106	ug/L	0.632	5.60	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4822662
Report generated 06/24/2016 16:18

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060822 Run Date: 05/13/2016 Sample ID: WG568561-12
Instrument ID: HPMS8 Run Time: 19:17 Method: 8260B
File ID: 8M412232 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG568561 Cal ID: HPMS8 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.1	ug/L	0.513	5.70	20	
1,1-Dichloroethene	CCC	50.0	46.0	ug/L	0.372	8.10	20	
1,2-Dichloropropane	CCC	50.0	51.0	ug/L	0.233	1.90	20	
Ethylbenzene	CCC	50.0	48.2	ug/L	0.552	3.60	20	
Toluene	CCC	50.0	49.1	ug/L	1.52	1.80	20	
Vinyl Chloride	CCC	50.0	52.4	ug/L	0.304	4.80	20	
Bromoform	SPCC	50.0	48.2	ug/L	0.205	3.60	20	
Chlorobenzene	SPCC	50.0	50.2	ug/L	1.05	0.400	20	
Chloromethane	SPCC	50.0	50.7	ug/L	0.248	1.40	20	
1,1-Dichloroethane	SPCC	50.0	46.7	ug/L	0.431	6.60	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.6	ug/L	0.498	0.800	20	
Acetone		50.0	57.5	ug/L	0.0324	15.1	20	
Benzene		50.0	48.5	ug/L	0.997	3.00	20	
Bromobenzene		50.0	49.5	ug/L	0.794	1.10	20	
Bromochloromethane		50.0	47.5	ug/L	0.140	4.90	20	
Bromodichloromethane		50.0	48.3	ug/L	0.388	3.40	20	
Bromomethane		50.0	46.4	ug/L	0.162	7.20	20	
2-Butanone		50.0	53.0	ug/L	0.0438	6.00	20	
n-Butylbenzene		50.0	49.7	ug/L	2.79	0.700	20	
sec-Butylbenzene		50.0	51.3	ug/L	3.43	2.70	20	
tert-Butylbenzene		50.0	50.9	ug/L	0.566	1.90	20	
Carbon Disulfide		50.0	42.3	ug/L	0.716	15.4	20	
Carbon Tetrachloride		50.0	46.2	ug/L	0.425	7.50	20	
Dibromochloromethane		50.0	49.7	ug/L	0.355	0.700	20	
Chloroethane		50.0	53.3	ug/L	0.170	6.70	20	
2-Chlorotoluene		50.0	51.6	ug/L	2.81	3.10	20	
4-Chlorotoluene		50.0	48.3	ug/L	2.37	3.50	20	
1,2-Dibromo-3-Chloropropane		50.0	48.5	ug/L	0.0977	3.00	20	
1,2-Dibromoethane		50.0	51.1	ug/L	0.250	2.20	20	
Dibromomethane		50.0	45.8	ug/L	0.124	8.40	20	
1,2-Dichlorobenzene		50.0	50.5	ug/L	1.39	1.00	20	
1,3-Dichlorobenzene		50.0	50.9	ug/L	1.57	1.80	20	
1,4-Dichlorobenzene		50.0	50.5	ug/L	1.57	0.900	20	
Dichlorodifluoromethane		50.0	54.2	ug/L	0.455	8.40	20	
1,2-Dichloroethane		50.0	49.0	ug/L	0.344	2.00	20	
cis-1,2-Dichloroethene		50.0	48.9	ug/L	0.281	2.20	20	
trans-1,2-Dichloroethene		50.0	48.1	ug/L	0.357	3.90	20	
1,3-Dichloropropane		50.0	53.7	ug/L	0.468	7.30	20	
2,2-Dichloropropane		50.0	47.9	ug/L	0.466	4.20	20	
cis-1,3-Dichloropropene		50.0	53.9	ug/L	0.441	7.80	20	
trans-1,3-Dichloropropene		50.0	50.7	ug/L	0.527	1.30	20	
1,1-Dichloropropene		50.0	47.5	ug/L	0.374	5.10	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4822662
Report generated 06/24/2016 16:18

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060822 Run Date: 05/13/2016 Sample ID: WG568561-12
Instrument ID: HPMS8 Run Time: 19:17 Method: 8260B
File ID: 8M412232 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG568561 Cal ID: HPMS8 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	53.6	ug/L	0.0552	7.20	20	
Hexachlorobutadiene		50.0	52.1	ug/L	0.500	4.20	20	
Isopropylbenzene		50.0	51.1	ug/L	1.78	2.20	20	
p-Isopropyltoluene		50.0	50.1	ug/L	2.85	0.300	20	
4-Methyl-2-Pentanone		50.0	51.9	ug/L	0.0416	3.70	20	
Methylene Chloride		50.0	48.4	ug/L	0.249	3.10	20	
Naphthalene		50.0	45.8	ug/L	1.40	8.40	20	
n-Propylbenzene		50.0	51.9	ug/L	4.05	3.80	20	
Styrene		50.0	51.5	ug/L	1.11	3.00	20	
1,1,1,2-Tetrachloroethane		50.0	49.4	ug/L	0.400	1.20	20	
Tetrachloroethene		50.0	47.8	ug/L	0.318	4.40	20	
1,2,3-Trichlorobenzene		50.0	47.7	ug/L	0.827	4.50	20	
1,2,4-Trichlorobenzene		50.0	50.1	ug/L	1.03	0.200	20	
1,1,1-Trichloroethane		50.0	47.6	ug/L	0.492	4.80	20	
1,1,2-Trichloroethane		50.0	49.0	ug/L	0.240	1.90	20	
Trichloroethene		50.0	51.1	ug/L	0.280	2.10	20	
Trichlorofluoromethane		50.0	46.9	ug/L	0.507	6.10	20	
1,2,3-Trichloropropane		50.0	50.1	ug/L	0.155	0.200	20	
1,2,4-Trimethylbenzene		50.0	49.7	ug/L	2.90	0.700	20	
1,3,5-Trimethylbenzene		50.0	51.6	ug/L	2.93	3.30	20	
o-Xylene		50.0	50.6	ug/L	0.664	1.10	20	
m-,p-Xylene		100	101	ug/L	0.679	1.10	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4822662
Report generated 06/24/2016 16:18

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822 Run Date: 06/16/2016 Sample ID: WG573035-02
Instrument ID: HPMS6 Run Time: 16:59 Method: 8260B
File ID: 6M140114 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG573036 Cal ID: HPMS6 - 01-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	49.8	ug/L	0.457	0.339	20	
1,1-Dichloroethene	CCC	50.0	50.5	ug/L	0.445	1.06	20	
1,2-Dichloropropane	CCC	50.0	49.2	ug/L	0.279	1.57	20	
Ethylbenzene	CCC	50.0	48.3	ug/L	0.487	3.44	20	
Toluene	CCC	50.0	48.6	ug/L	1.38	2.75	20	
Vinyl Chloride	CCC	50.0	43.5	ug/L	0.283	13.0	20	
Bromoform	SPCC	50.0	47.7	ug/L	0.209	4.58	20	
Chlorobenzene	SPCC	50.0	47.6	ug/L	0.905	4.70	20	
Chloromethane	SPCC	50.0	41.1	ug/L	0.396	17.9	20	
1,1-Dichloroethane	SPCC	50.0	49.2	ug/L	0.506	1.64	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	45.5	ug/L	0.549	8.94	20	
Xylenes		150	147	ug/L	0.583	2.10	20	
Acetone		50.0	43.9	ug/L	0.0642	12.2	20	
Benzene		50.0	48.3	ug/L	0.993	3.30	20	
Bromobenzene		50.0	47.2	ug/L	0.718	5.59	20	
Bromochloromethane		50.0	49.6	ug/L	0.158	0.857	20	
Bromodichloromethane		50.0	50.9	ug/L	0.355	1.77	20	
Bromomethane		50.0	43.3	ug/L	0.139	13.5	20	
2-Butanone		50.0	44.9	ug/L	0.101	10.3	20	
n-Butylbenzene		50.0	51.7	ug/L	2.35	3.48	20	
sec-Butylbenzene		50.0	50.2	ug/L	2.83	0.369	20	
tert-Butylbenzene		50.0	48.6	ug/L	0.492	2.73	20	
Carbon Disulfide		50.0	53.3	ug/L	0.918	6.50	20	
Carbon Tetrachloride		50.0	52.7	ug/L	0.385	5.49	20	
Dibromochloromethane		50.0	49.6	ug/L	0.342	0.821	20	
Chloroethane		50.0	40.6	ug/L	0.167	18.7	20	
2-Chlorotoluene		50.0	48.0	ug/L	2.13	3.94	20	
4-Chlorotoluene		50.0	49.5	ug/L	2.04	1.07	20	
1,2-Dibromo-3-Chloropropane		50.0	47.8	ug/L	0.103	4.49	20	
1,2-Dibromoethane		50.0	47.4	ug/L	0.248	5.20	20	
Dibromomethane		50.0	48.8	ug/L	0.143	2.44	20	
1,2-Dichlorobenzene		50.0	47.2	ug/L	1.30	5.69	20	
1,3-Dichlorobenzene		50.0	47.7	ug/L	1.41	4.61	20	
1,4-Dichlorobenzene		50.0	50.2	ug/L	1.41	0.427	20	
Dichlorodifluoromethane		50.0	47.8	ug/L	0.378	4.42	20	
1,2-Dichloroethane		50.0	49.6	ug/L	0.350	0.722	20	
cis-1,2-Dichloroethene		50.0	49.7	ug/L	0.278	0.632	20	
trans-1,2-Dichloroethene		50.0	49.2	ug/L	0.253	1.59	20	
1,3-Dichloropropane		50.0	47.4	ug/L	0.451	5.10	20	
2,2-Dichloropropane		50.0	54.3	ug/L	0.407	8.51	20	
cis-1,3-Dichloropropene		50.0	52.1	ug/L	0.411	4.10	20	
trans-1,3-Dichloropropene		50.0	50.3	ug/L	0.487	0.699	20	

CCV - Modified 03/05/2008
PDF File ID: 4822664
Report generated 06/24/2016 16:18

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822 Run Date: 06/16/2016 Sample ID: WG573035-02
Instrument ID: HPMS6 Run Time: 16:59 Method: 8260B
File ID: 6M140114 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG573036 Cal ID: HPMS6 - 01-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	50.8	ug/L	0.356	1.57	20	
2-Hexanone		50.0	43.7	ug/L	0.200	12.6	20	
Hexachlorobutadiene		50.0	49.9	ug/L	0.396	0.164	20	
Isopropylbenzene		50.0	50.8	ug/L	1.51	1.54	20	
p-Isopropyltoluene		50.0	51.1	ug/L	2.46	2.16	20	
4-Methyl-2-Pentanone		50.0	45.3	ug/L	0.0781	9.34	20	
Methylene Chloride		50.0	47.3	ug/L	0.257	5.36	20	
Naphthalene		50.0	49.4	ug/L	1.87	1.21	20	
n-Propylbenzene		50.0	51.1	ug/L	3.31	2.22	20	
Styrene		50.0	50.8	ug/L	0.998	1.57	20	
1,1,1,2-Tetrachloroethane		50.0	49.7	ug/L	0.343	0.549	20	
Tetrachloroethene		50.0	48.2	ug/L	0.359	3.62	20	
1,2,3-Trichlorobenzene		50.0	47.5	ug/L	0.858	5.05	20	
1,2,4-Trichlorobenzene		50.0	49.9	ug/L	0.954	0.110	20	
1,1,1-Trichloroethane		50.0	50.8	ug/L	0.416	1.65	20	
1,1,2-Trichloroethane		50.0	47.3	ug/L	0.256	5.36	20	
Trichloroethene		50.0	48.5	ug/L	0.255	2.92	20	
Trichlorofluoromethane		50.0	53.2	ug/L	0.463	6.34	20	
1,2,3-Trichloropropane		50.0	45.0	ug/L	0.157	10.0	20	
1,2,4-Trimethylbenzene		50.0	49.9	ug/L	2.40	0.118	20	
1,3,5-Trimethylbenzene		50.0	50.4	ug/L	2.31	0.824	20	
o-Xylene		50.0	49.2	ug/L	0.583	1.52	20	
m-,p-Xylene		100	97.6	ug/L	0.584	2.39	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4822664
Report generated 06/24/2016 16:18

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822 Run Date: 06/17/2016 Sample ID: WG573252-02
Instrument ID: HPMS8 Run Time: 16:23 Method: 8260B
File ID: 8M413060 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG573253 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	52.9	ug/L	0.576	5.83	20	
1,1-Dichloroethene	CCC	50.0	51.5	ug/L	0.416	2.94	20	
1,2-Dichloropropane	CCC	50.0	46.7	ug/L	0.214	6.55	20	
Ethylbenzene	CCC	50.0	47.9	ug/L	0.549	4.17	20	
Toluene	CCC	50.0	47.6	ug/L	1.48	4.84	20	
Vinyl Chloride	CCC	50.0	52.1	ug/L	0.302	4.14	20	
Bromoform	SPCC	50.0	51.5	ug/L	0.219	3.03	20	
Chlorobenzene	SPCC	50.0	47.5	ug/L	0.994	5.04	20	
Chloromethane	SPCC	50.0	43.9	ug/L	0.215	12.2	20	
1,1-Dichloroethane	SPCC	50.0	50.2	ug/L	0.463	0.426	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	41.4	ug/L	0.415	17.2	20	
Trichloroethene		50.0	51.5	ug/L	0.282	3.07	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4822664
Report generated 06/24/2016 16:18

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060822
Instrument ID: HPMS6
Workgroup (AAB#): WG573036

ICAL CCV Number: WG570915-08
CAL ID: HPMS6 - 01-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG570915-08	NA	NA	314779	551471	743292
Upper Limit	NA	NA	629558	1102942	1486584
Lower Limit	NA	NA	157390	275736	371646
L16060822-01	1.00	01	210501	396217	530050
L16060822-03	1.00	01	214202	398813	530311
L16060822-04	1.00	01	214898	396686	531330
L16060822-05	1.00	01	210980	392746	526269
L16060822-06	1.00	01	216671	402451	537933
WG573036-01	1.00	01	223731	423614	572141
WG573036-02	1.00	01	240638	426092	567923

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4822665
Report generated 06/24/2016 16:18

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060822
Instrument ID: HPMS8
Workgroup (AAB#): WG573253

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	288225	539116	778260
Upper Limit	NA	NA	576450	1078232	1556520
Lower Limit	NA	NA	144113	269558	389130
L16060822-04	50.0	DL01	315183	559419	742726
L16060822-05	50.0	DL01	307393	559288	741577
WG573253-01	1.00	01	282360	509490	668097
WG573253-02	1.00	01	286337	510872	672761

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4822665
Report generated 06/24/2016 16:18

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060822
Instrument ID: HPMS8
Workgroup (AAB#): WG573253

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	17.6	14.58	10.71
Upper Limit	NA	NA	18.1	15.08	11.21
Lower Limit	NA	NA	17.1	14.08	10.21
L16060822-04	50.0	DL01	17.6	14.57	10.71
L16060822-05	50.0	DL01	17.6	14.57	10.71
WG573253-01	1.00	01	17.6	14.57	10.71
WG573253-02	1.00	01	17.6	14.57	10.71

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4822667
Report generated: 06/24/2016 16:18

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060822
Instrument ID: HPMS6
Workgroup (AAB#): WG573036

ICAL CCV Number: WG570915-08
CAL ID: HPMS6 - 01-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG570915-08	NA	NA	19.65	16.06	11.57
Upper Limit	NA	NA	20.15	16.56	12.07
Lower Limit	NA	NA	19.15	15.56	11.07
L16060822-01	1.00	01	19.65	16.06	11.57
L16060822-03	1.00	01	19.65	16.07	11.57
L16060822-04	1.00	01	19.64	16.07	11.57
L16060822-05	1.00	01	19.64	16.07	11.56
L16060822-06	1.00	01	19.64	16.07	11.57
WG573036-01	1.00	01	19.64	16.07	11.57
WG573036-02	1.00	01	19.65	16.06	11.57

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4822667
Report generated: 06/24/2016 16:18

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061616\6M140129.D Vial: 17
Acq On : 17 Jun 2016 1:10 Operator: FJB
Sample : L16060822-01 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:37:19 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	530050	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.06	117	396217	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	210501	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	141922	25.8711 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.48%		
43) 1,2-Dichloroethane-d4	11.11	65	158438	26.2033 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 104.80%		
58) Toluene-d8	13.85	98	468316	24.6283 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.52%		
80) p-Bromofluorobenzene	17.84	95	194014	26.1005 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.40%		

Target Compounds					Qvalue
13) Acetone	6.66	43	205	Below Cal	# 48
26) Vinyl Acetate	9.04	43	2439	0.2545 ug/L	# 78
60) Ethyl Methacrylate	13.86	69	795	0.1289 ug/L	# 11

(#) = qualifier out of range (m) = manual integration
6M140129.D 8260WT.M Fri Jun 17 08:37:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061616\6M140129.D Vial: 17
Acq On : 17 Jun 2016 1:10 Operator: FJB
Sample : L16060822-01 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 8:37 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration

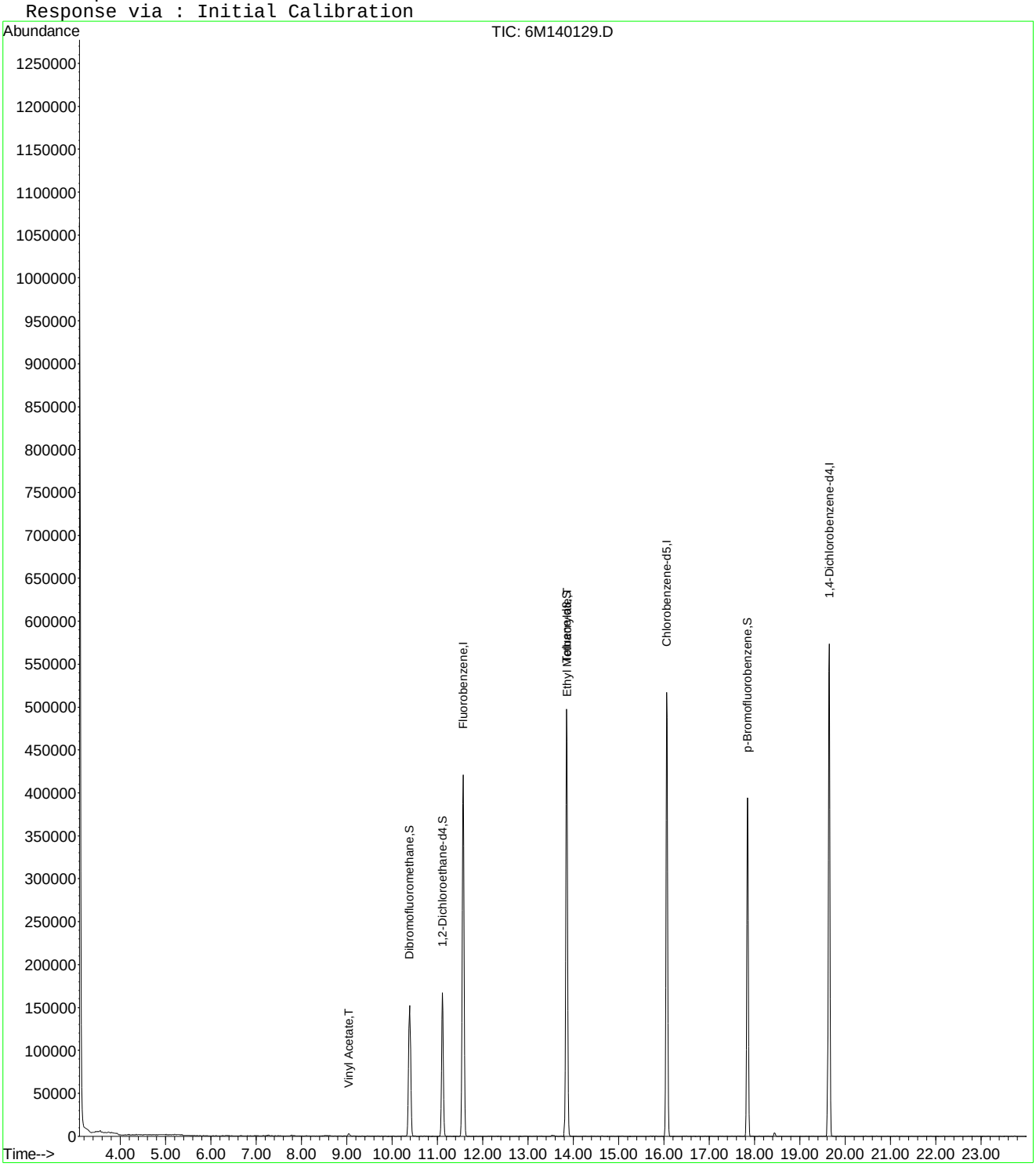

6M140129.D 8260WT.M Fri Jun 17 08:37:23 2016 Page 2

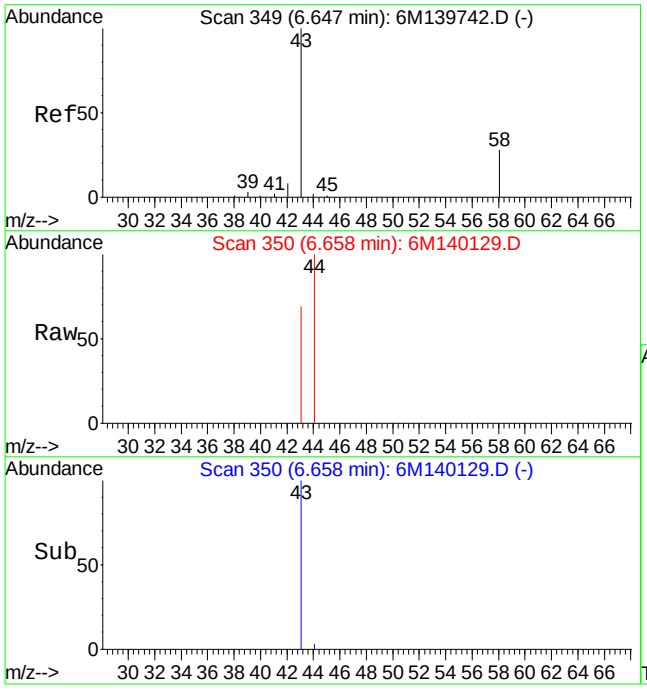

#13
Acetone
Concen: Below Cal
RT: 6.66 min Scan# 350
Delta R.T. 0.00 min
Lab File: 6M140129.D
Acq: 17 Jun 2016 1:10

Tgt Ion: 43 Resp: 205

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

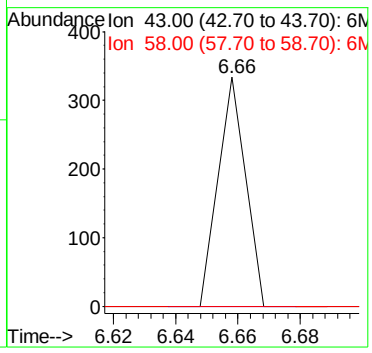

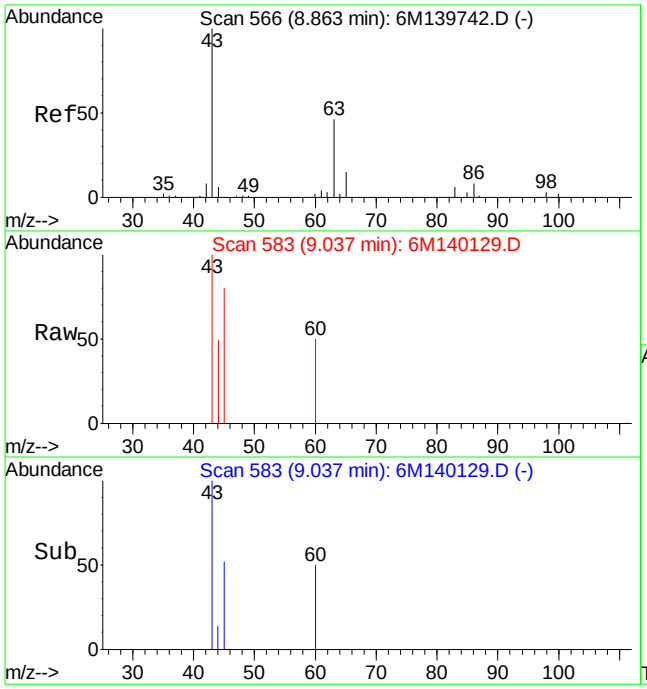

#26
Vinyl Acetate
Concen: 0.25 ug/L
RT: 9.04 min Scan# 583
Delta R.T. 0.17 min
Lab File: 6M140129.D
Acq: 17 Jun 2016 1:10

Tgt Ion: 43 Resp: 2439

Ion	Ratio	Lower	Upper
43	100		
86	0.0	4.5	10.5#

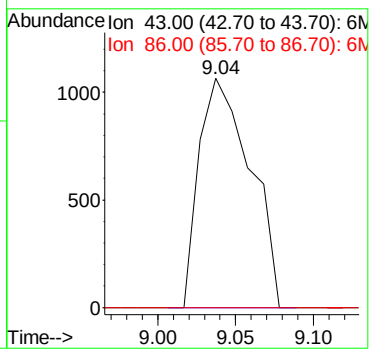

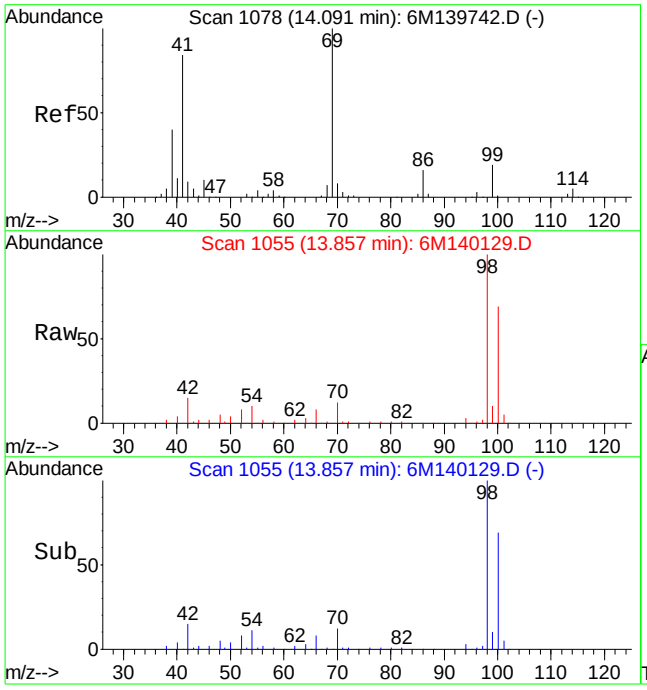

#60
Ethyl Methacrylate
Concen: 0.13 ug/L
RT: 13.86 min Scan# 1055
Delta R.T. -0.23 min
Lab File: 6M140129.D
Acq: 17 Jun 2016 1:10

Tgt Ion: 69 Resp: 795

Ion	Ratio	Lower	Upper
69	100		
41	167.0	51.4	120.0#

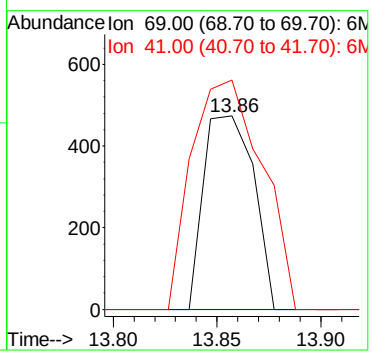

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061616\6M140130.D Vial: 18
Acq On : 17 Jun 2016 1:42 Operator: FJB
Sample : L16060822-03 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:37:25 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	530311	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	398813	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	214202	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.38	111	141981	25.8691 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.48%		
43) 1,2-Dichloroethane-d4	11.11	65	160253	26.4904 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 105.96%		
58) Toluene-d8	13.85	98	474258	24.7784 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.12%		
80) p-Bromofluorobenzene	17.85	95	196865	26.0265 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.12%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.36	85	13226	1.5756 ug/L #	56
12) 1,1,2-Trichloro-1,2,2-Trif	6.55	101	5557	1.0530 ug/L	98
13) Acetone	6.67	43	193	Below Cal #	48
26) Vinyl Acetate	9.04	43	4659	0.4859 ug/L #	78
55) cis-1,3-Dichloropropene	13.55	75	1196	0.1428 ug/L #	46
60) Ethyl Methacrylate	13.86	69	845	0.1362 ug/L #	59

(#) = qualifier out of range (m) = manual integration
6M140130.D 8260WT.M Fri Jun 17 08:37:27 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061616\6M140130.D Vial: 18
Acq On : 17 Jun 2016 1:42 Operator: FJB
Sample : L16060822-03 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 8:37 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration

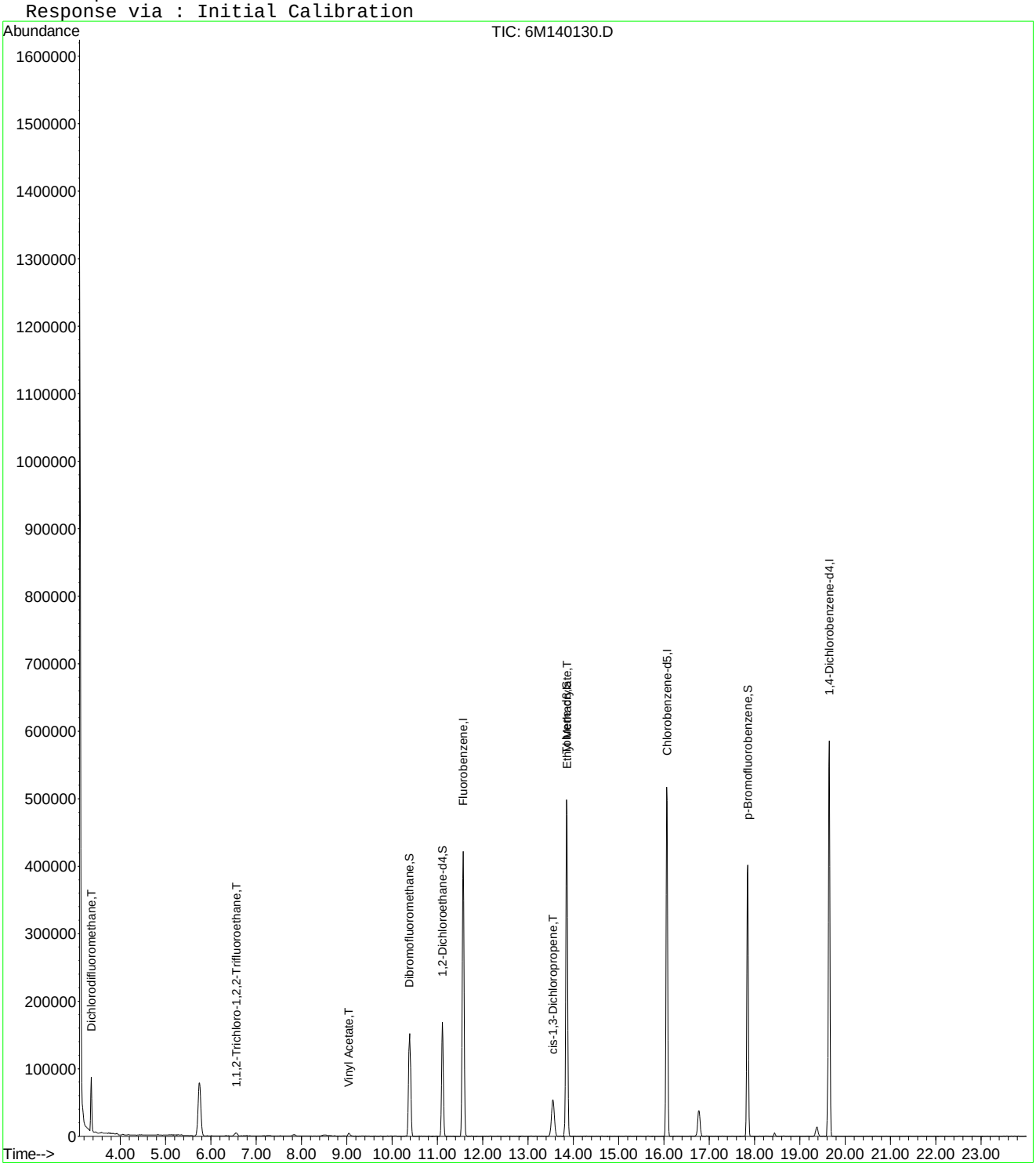

6M140130.D 8260WT.M Fri Jun 17 08:37:28 2016 Page 2

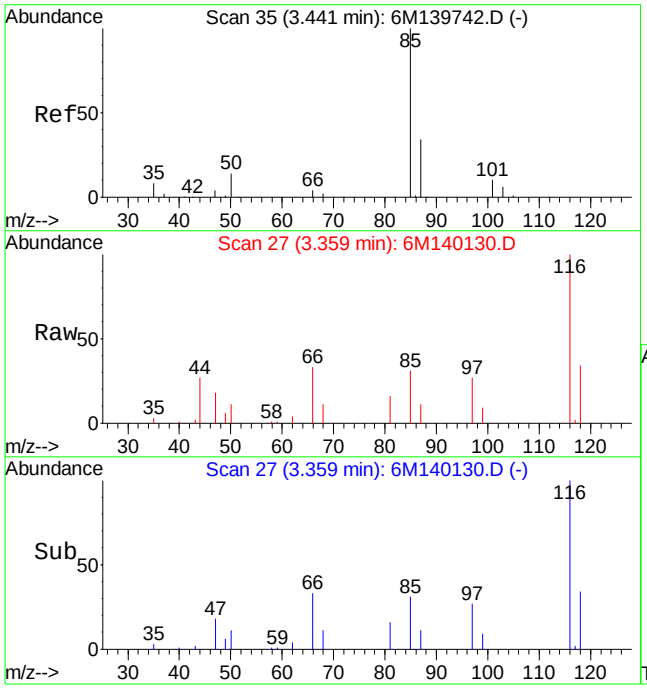

#2
Dichlorodifluoromethane
Concen: 1.58 ug/L
RT: 3.36 min Scan# 27
Delta R.T. -0.08 min
Lab File: 6M140130.D
Acq: 17 Jun 2016 1:42

Tgt Ion: 85 Resp: 13226

Ion	Ratio	Lower	Upper
85	100		
50	33.5	9.1	21.1#

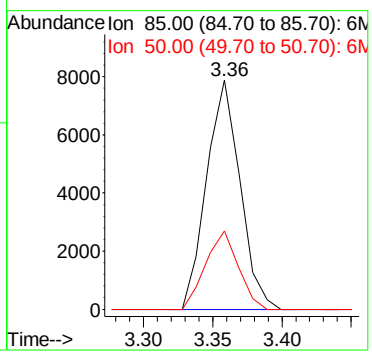

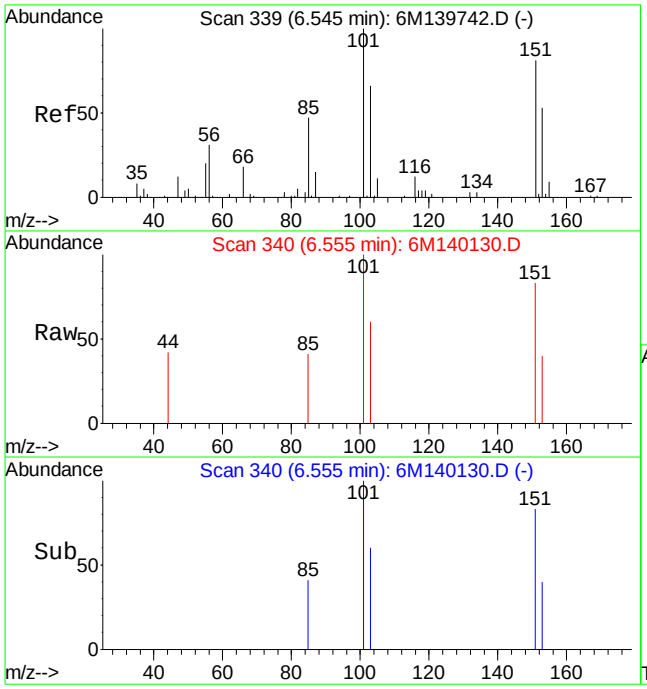

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 1.05 ug/L
RT: 6.55 min Scan# 340
Delta R.T. 0.01 min
Lab File: 6M140130.D
Acq: 17 Jun 2016 1:42

Tgt Ion:101 Resp: 5557

Ion	Ratio	Lower	Upper
101	100		
151	83.1	49.4	115.2
103	67.1	38.8	90.4

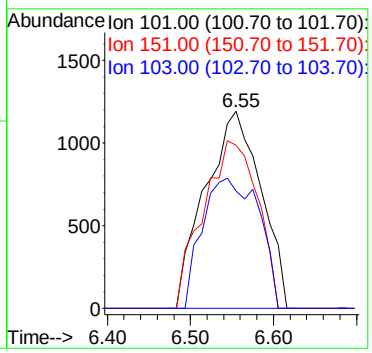

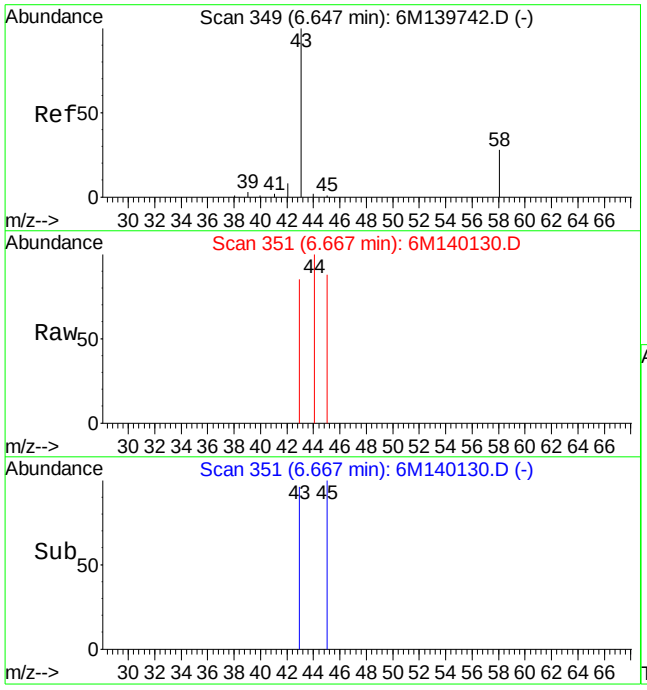

#13
Acetone
Concen: Below Cal
RT: 6.67 min Scan# 351
Delta R.T. 0.01 min
Lab File: 6M140130.D
Acq: 17 Jun 2016 1:42

Tgt Ion: 43 Resp: 193

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

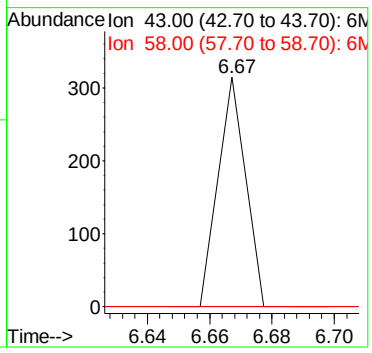

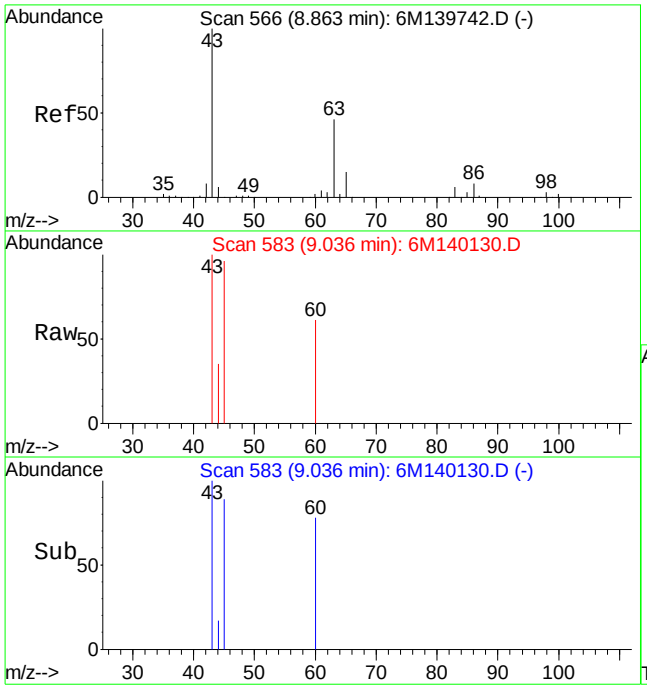

#26
Vinyl Acetate
Concen: 0.49 ug/L
RT: 9.04 min Scan# 583
Delta R.T. 0.17 min
Lab File: 6M140130.D
Acq: 17 Jun 2016 1:42

Tgt Ion: 43 Resp: 4659

Ion	Ratio	Lower	Upper
43	100		
86	0.0	4.5	10.5#

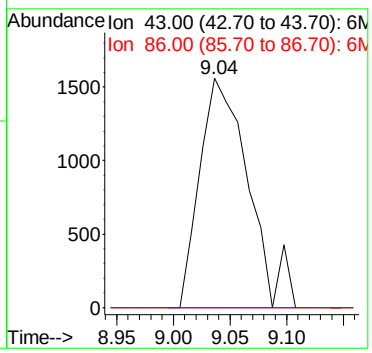

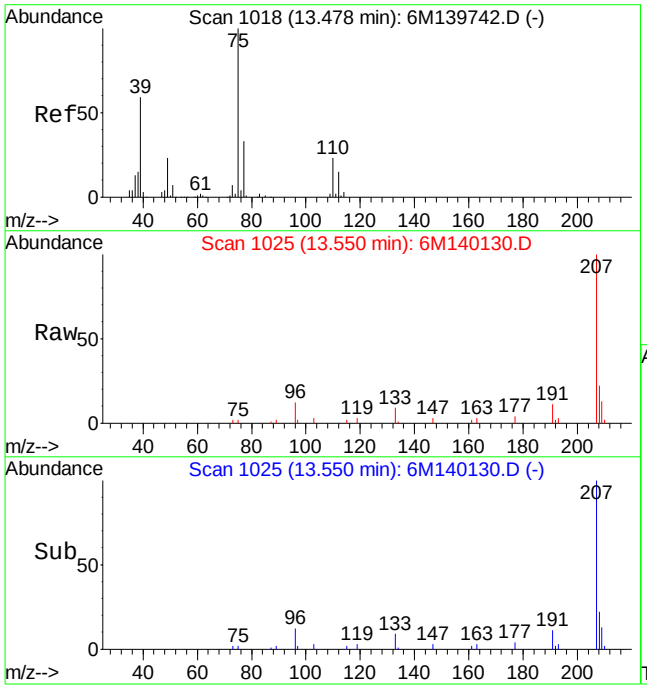

#55
cis-1,3-Dichloropropene
Concen: 0.14 ug/L
RT: 13.55 min Scan# 1025
Delta R.T. 0.07 min
Lab File: 6M140130.D
Acq: 17 Jun 2016 1:42

Tgt Ion: 75 Resp: 1196

Ion	Ratio	Lower	Upper
75	100		
77	0.0	19.5	45.5#
49	0.0	14.1	32.9#

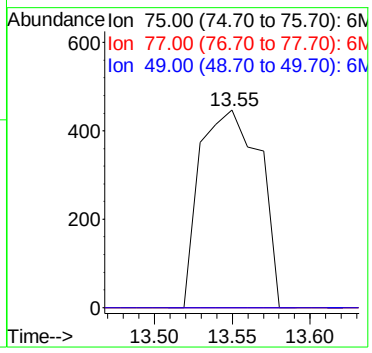

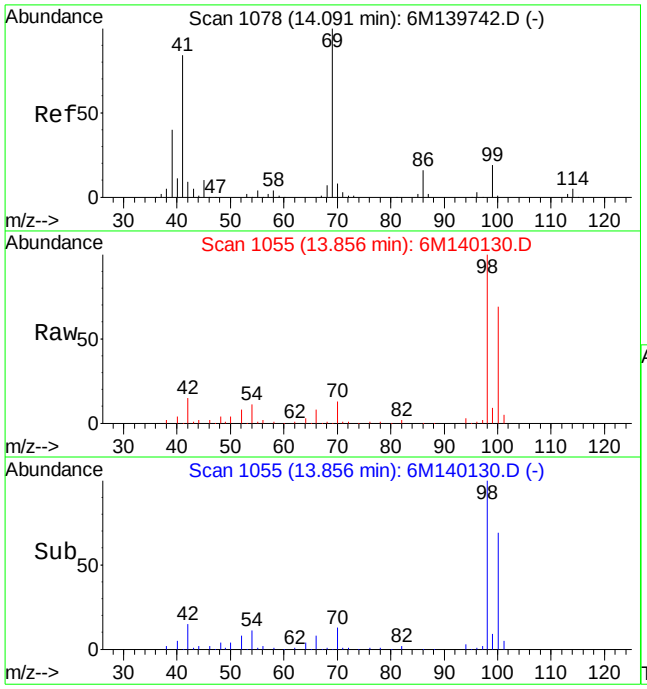

#60
Ethyl Methacrylate
Concen: 0.14 ug/L
RT: 13.86 min Scan# 1055
Delta R.T. -0.24 min
Lab File: 6M140130.D
Acq: 17 Jun 2016 1:42

Tgt Ion: 69 Resp: 845

Ion	Ratio	Lower	Upper
69	100		
41	123.7	51.4	120.0#

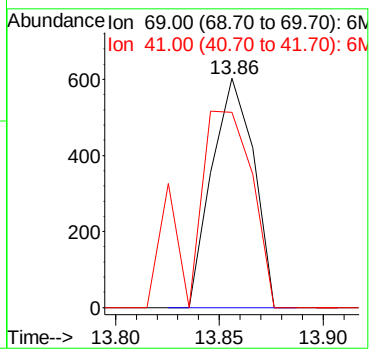

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061616\6M140131.D Vial: 19
Acq On : 17 Jun 2016 2:15 Operator: FJB
Sample : L16060822-04 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:37:31 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	531330	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	396686	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.64	152	214898	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	143187	26.0388 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.16%		
43) 1,2-Dichloroethane-d4	11.11	65	159249	26.2740 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 105.08%		
58) Toluene-d8	13.85	98	473136	24.8523 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.40%		
80) p-Bromofluorobenzene	17.84	95	196852	25.9405 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.76%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.36	85	31540	3.7501 ug/L #	59
4) Vinyl Chloride	4.17	62	4264	0.6169 ug/L	96
8) Trichlorofluoromethane	5.74	101	10087	1.0898 ug/L #	64
9) Diethyl ether	6.54	59	74323	14.9320 ug/L #	16
10) Isoprene	6.54	67	44272	5.6259 ug/L #	10
12) 1,1,2-Trichloro-1,2,2-Trif	6.55	101	6920824	1308.8607 ug/L	97
13) Acetone	6.55	43	97571	63.9050 ug/L	91
14) 1,1-Dichloroethene	6.89	61	54963	5.8695 ug/L	98
15) Tert-Butyl Alcohol	6.89	59	1406	3.0593 ug/L #	57
19) Methylene Chloride	7.73	84	755	0.1307 ug/L	71
23) trans-1,2-Dichloroethene	8.21	96	3235	0.5927 ug/L	90
26) Vinyl Acetate	9.03	43	4012	0.4177 ug/L #	78
27) 1,1-Dichloroethane	8.90	63	3432	0.3138 ug/L #	75
32) cis-1,2-Dichloroethene	9.83	96	457504	76.9369 ug/L	99
33) Chloroform	10.06	83	32986	3.3865 ug/L	99
45) 1,2-Dichloroethane	11.25	62	36468	4.8716 ug/L	91
46) Benzene	11.29	78	13498	0.6184 ug/L	95
47) Trichloroethene	12.14	130	8574613	1538.1169 ug/L	76
48) Methylcyclohexane	12.14	83	152225	18.0107 ug/L #	1
49) 1,2-Dichloropropane	12.14	63	45415	7.5328 ug/L #	35
60) Ethyl Methacrylate	13.84	69	783	0.1268 ug/L	80
66) Tetrachloroethene	14.92	166	2916	0.4935 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140131.D 8260WT.M Fri Jun 17 08:37:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061616\6M140131.D Vial: 19
Acq On : 17 Jun 2016 2:15 Operator: FJB
Sample : L16060822-04 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 8:37 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration

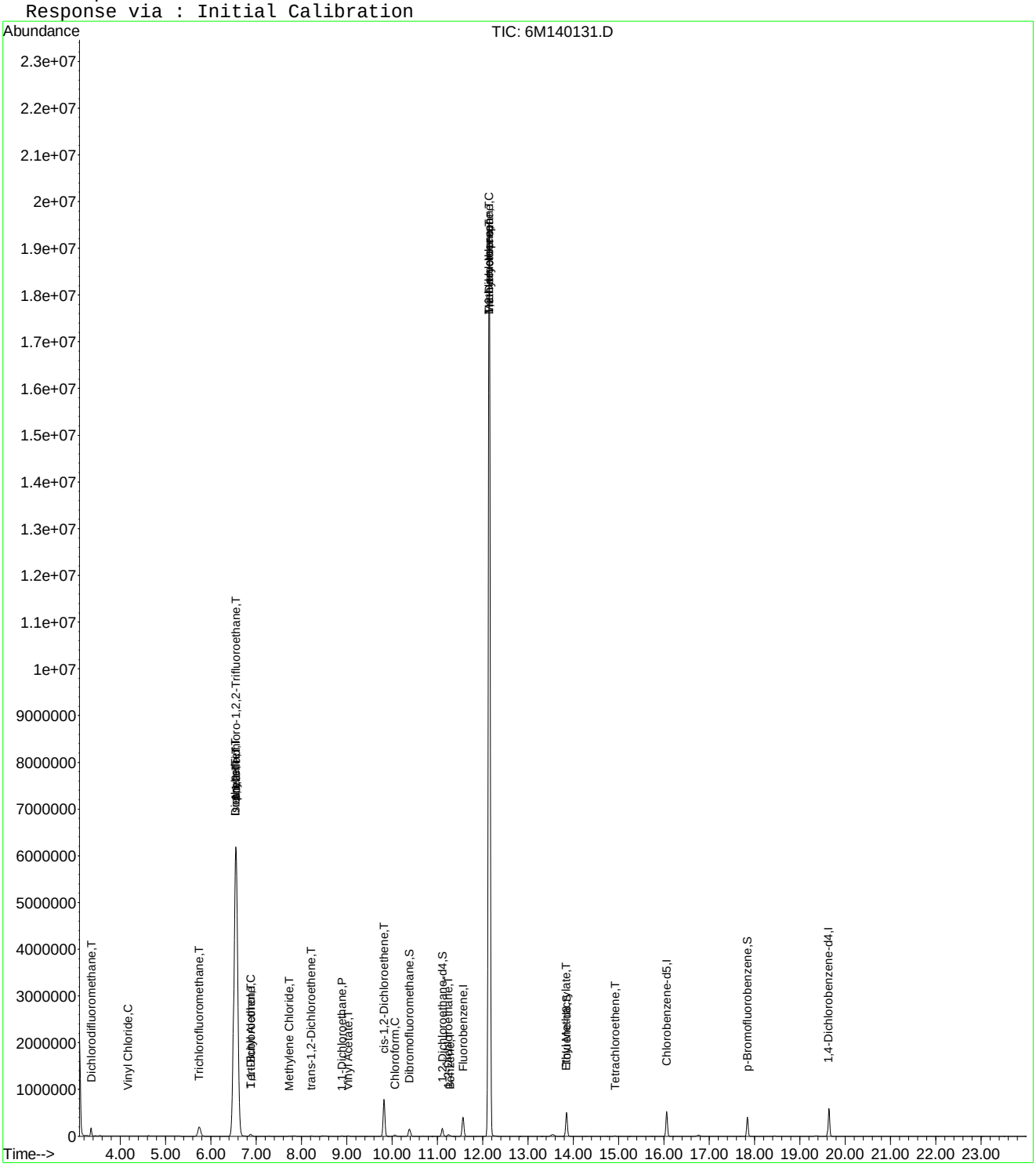

6M140131.D 8260WT.M Fri Jun 17 08:37:34 2016 Page 2

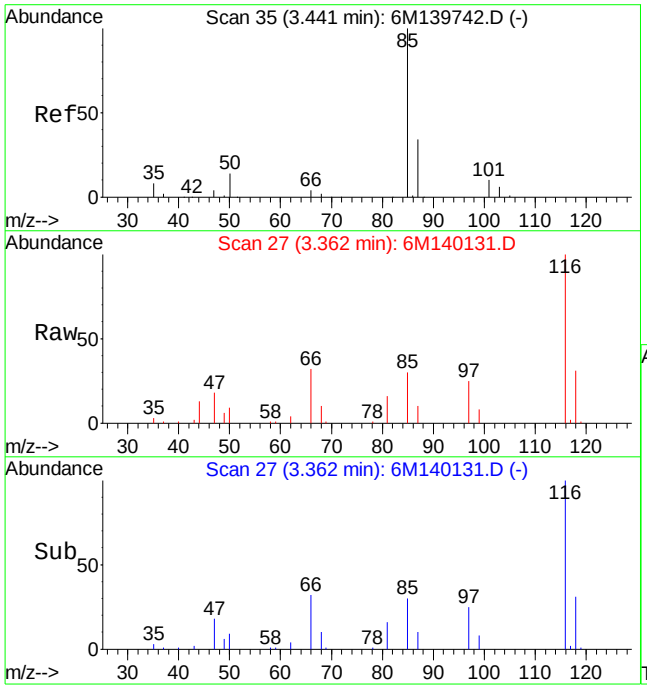

#2
Dichlorodifluoromethane
Concen: 3.75 ug/L
RT: 3.36 min Scan# 27
Delta R.T. -0.08 min
Lab File: 6M140131.D
Acq: 17 Jun 2016 2:15

Tgt Ion: 85 Resp: 31540

Ion	Ratio	Lower	Upper
85	100		
50	32.2	9.1	21.1#

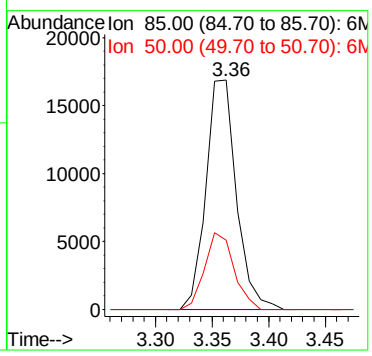

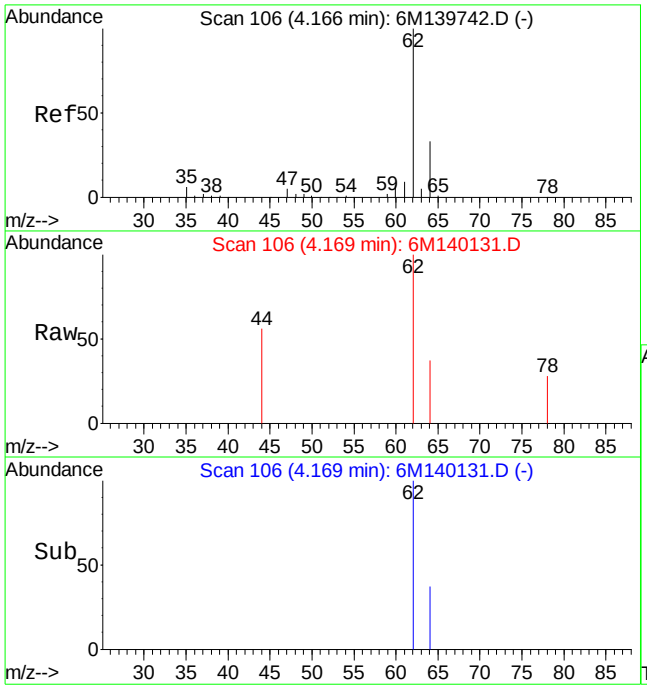

#4
Vinyl Chloride
Concen: 0.62 ug/L
RT: 4.17 min Scan# 106
Delta R.T. 0.01 min
Lab File: 6M140131.D
Acq: 17 Jun 2016 2:15

Tgt Ion: 62 Resp: 4264

Ion	Ratio	Lower	Upper
62	100		
64	30.1	19.3	45.1

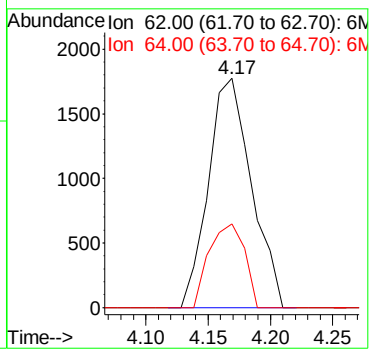

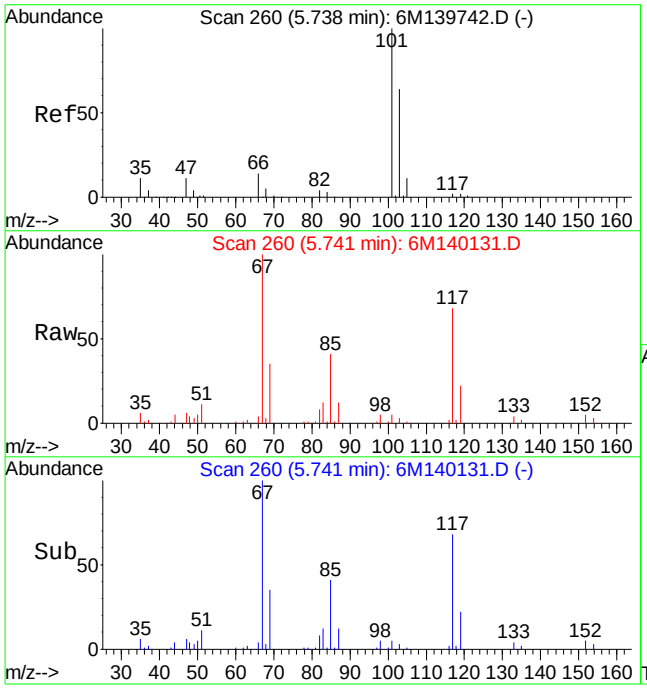

#8
Trichlorofluoromethane
Concen: 1.09 ug/L
RT: 5.74 min Scan# 260
Delta R.T. 0.02 min
Lab File: 6M140131.D
Acq: 17 Jun 2016 2:15

Tgt Ion:101 Resp: 10087

Ion	Ratio	Lower	Upper
101	100		
103	65.6	39.1	91.1
66	94.7	8.3	19.5#

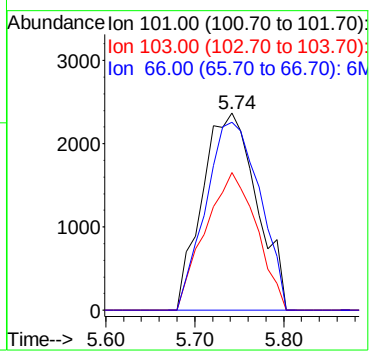

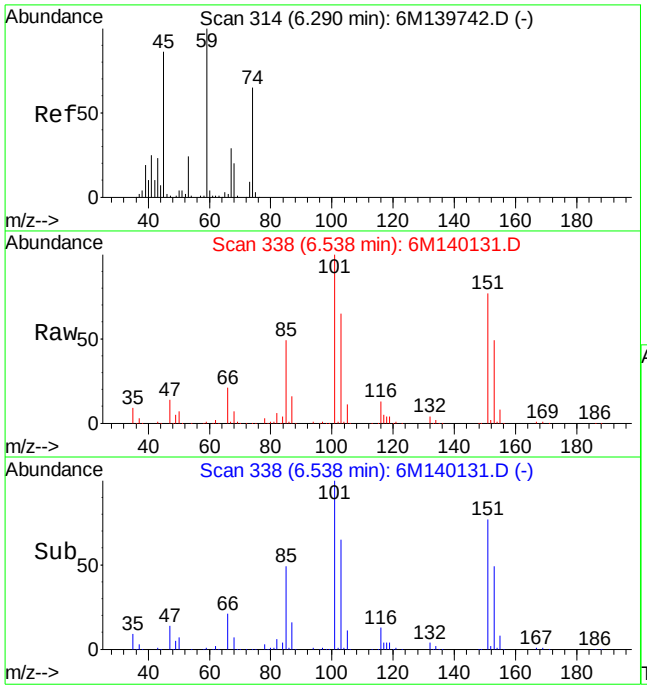

#9
Diethyl ether
Concen: 14.93 ug/L
RT: 6.54 min Scan# 338
Delta R.T. 0.25 min
Lab File: 6M140131.D
Acq: 17 Jun 2016 2:15

Tgt Ion: 59 Resp: 74323

Ion	Ratio	Lower	Upper
59	100		
45	0.3	51.5	120.3#
74	7.4	38.5	89.7#

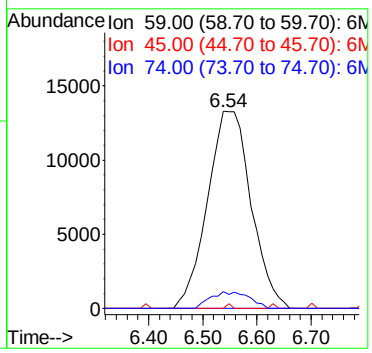

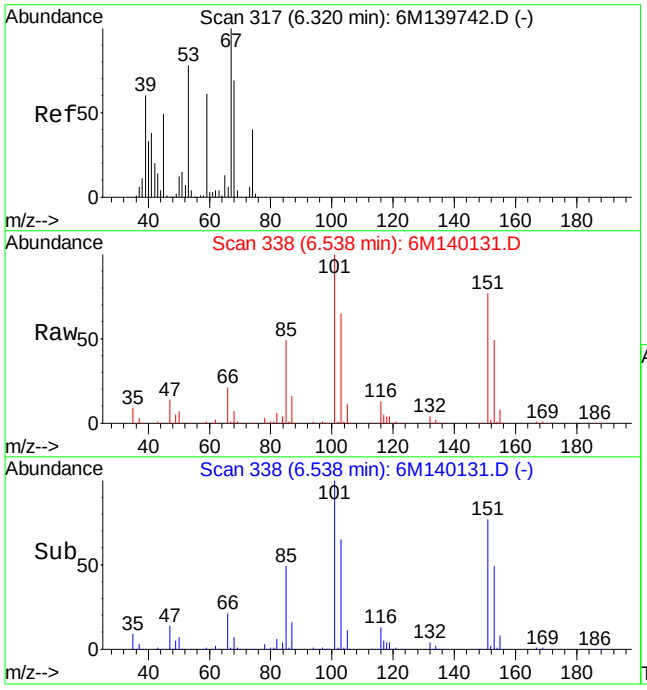

#10
Isoprene
Concen: 5.63 ug/L
RT: 6.54 min Scan# 338
Delta R.T. 0.22 min
Lab File: 6M140131.D
Acq: 17 Jun 2016 2:15

Tgt Ion: 67 Resp: 44272

Ion	Ratio	Lower	Upper
67	100		
53	0.0	47.4	110.6#

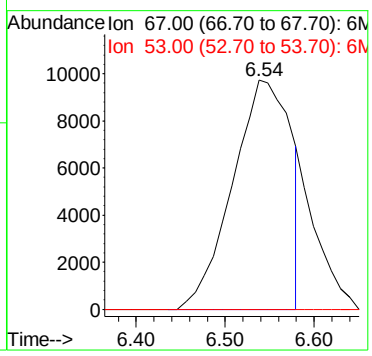

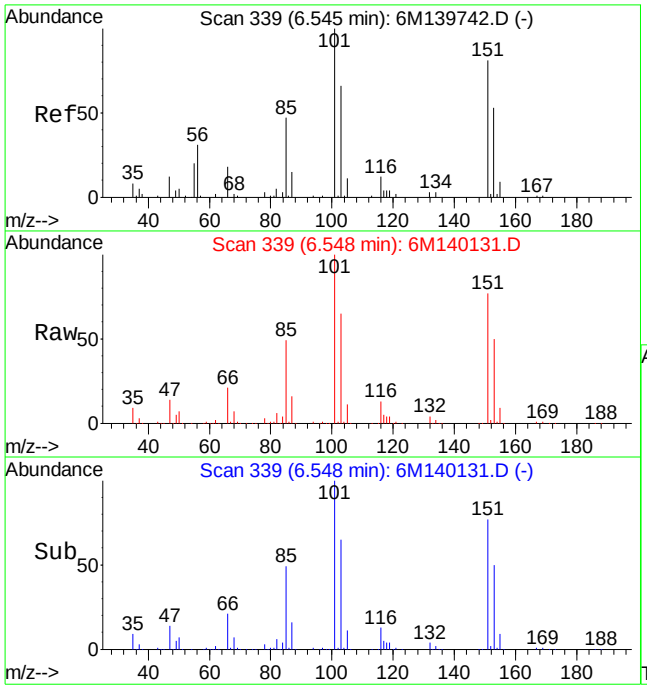

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 1308.86 ug/L
RT: 6.55 min Scan# 339
Delta R.T. 0.00 min
Lab File: 6M140131.D
Acq: 17 Jun 2016 2:15

Tgt Ion:101 Resp: 6920824

Ion	Ratio	Lower	Upper
101	100		
151	78.5	49.4	115.2
103	65.2	38.8	90.4

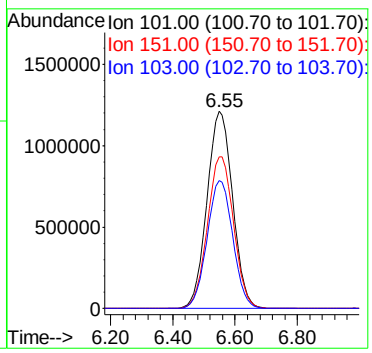

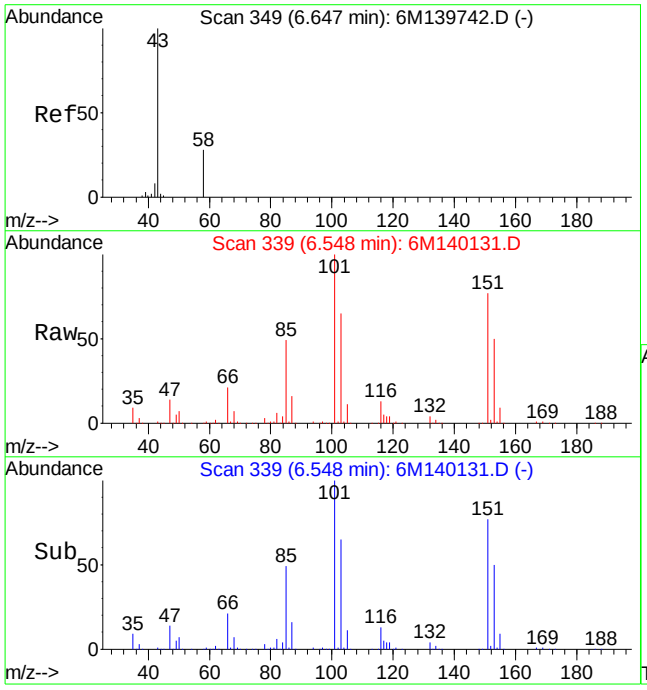

#13
Acetone
Concen: 63.90 ug/L
RT: 6.55 min Scan# 339
Delta R.T. -0.11 min
Lab File: 6M140131.D
Acq: 17 Jun 2016 2:15

Tgt Ion: 43 Resp: 97571

Ion	Ratio	Lower	Upper
43	100		
58	22.6	16.4	38.2

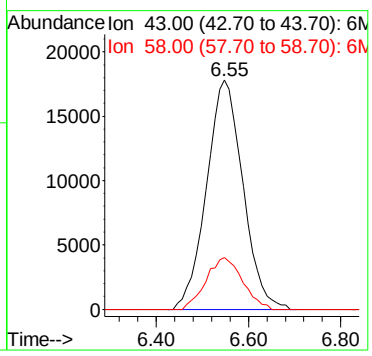

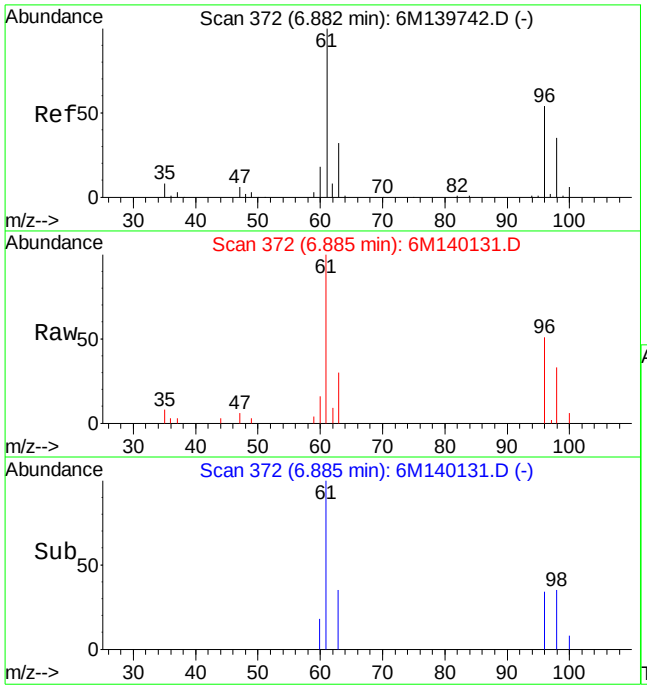

#14
1,1-Dichloroethene
Concen: 5.87 ug/L
RT: 6.89 min Scan# 372
Delta R.T. 0.01 min
Lab File: 6M140131.D
Acq: 17 Jun 2016 2:15

Tgt Ion: 61 Resp: 54963

Ion	Ratio	Lower	Upper
61	100		
96	51.7	32.0	74.6

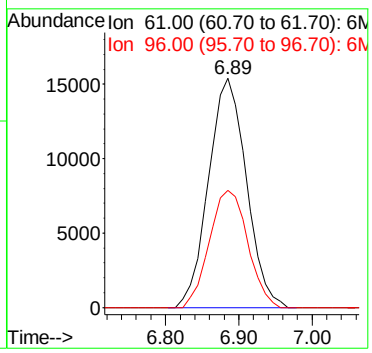

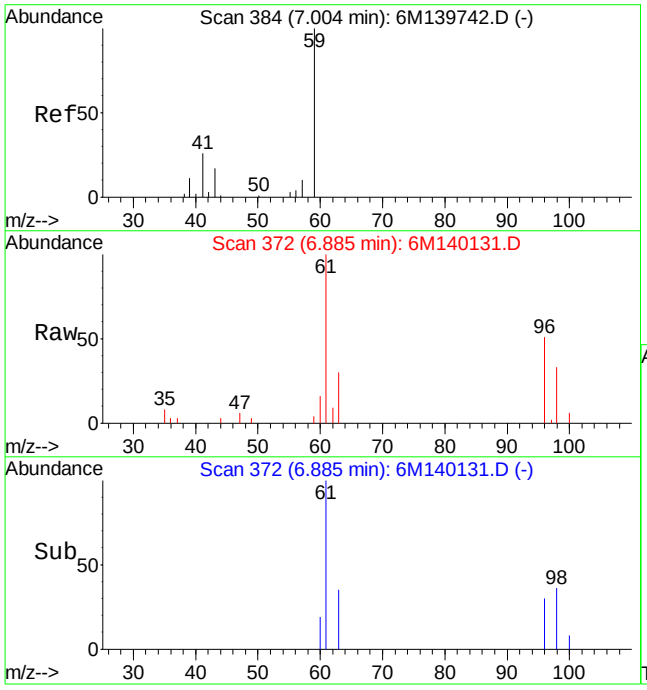

#15
Tert-Butyl Alcohol
Concen: 3.06 ug/L
RT: 6.89 min Scan# 372
Delta R.T. -0.16 min
Lab File: 6M140131.D
Acq: 17 Jun 2016 2:15

Tgt Ion: 59 Resp: 1406

Ion	Ratio	Lower	Upper
59	100		
41	0.0	14.6	34.0#
57	0.0	6.4	14.8#

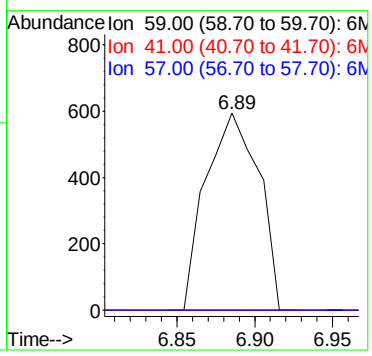

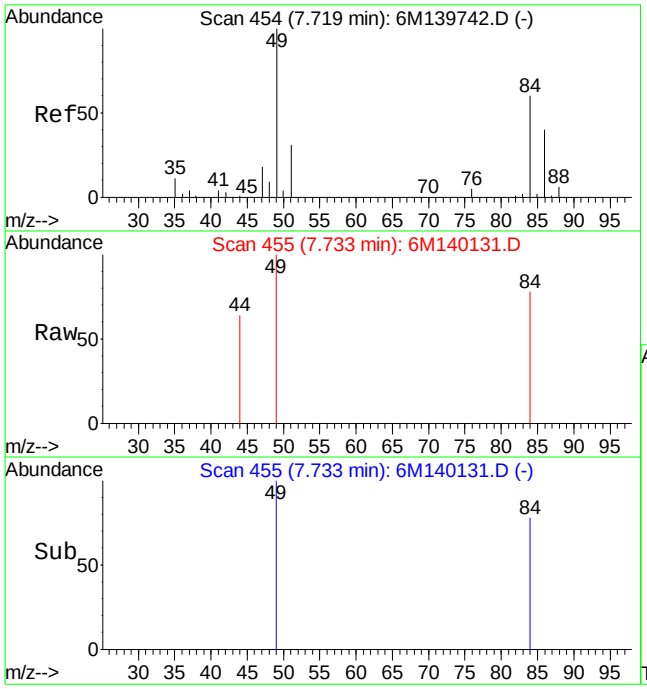

#19
Methylene Chloride
Concen: 0.13 ug/L
RT: 7.73 min Scan# 455
Delta R.T. 0.01 min
Lab File: 6M140131.D
Acq: 17 Jun 2016 2:15

Tgt Ion: 84 Resp: 755

Ion	Ratio	Lower	Upper
84	100		
49	205.2	99.3	231.7

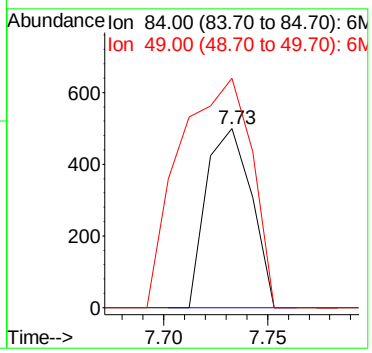

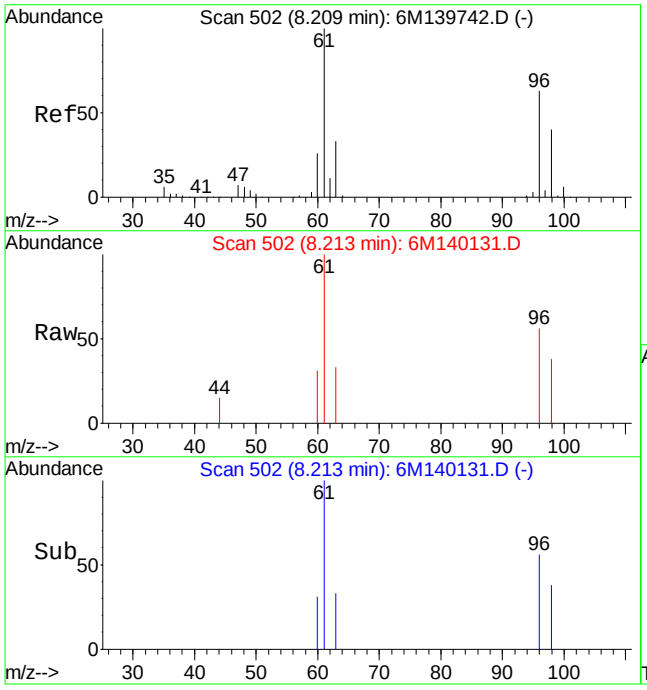

#23
trans-1,2-Dichloroethene
Concen: 0.59 ug/L
RT: 8.21 min Scan# 502
Delta R.T. 0.00 min
Lab File: 6M140131.D
Acq: 17 Jun 2016 2:15

Tgt Ion: 96 Resp: 3235

Ion	Ratio	Lower	Upper
96	100		
61	174.3	96.3	224.7

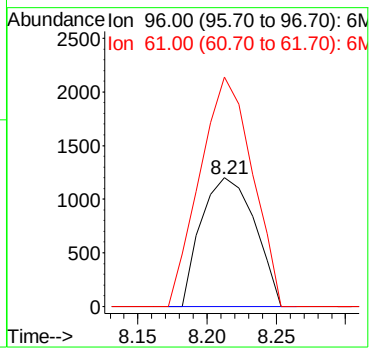

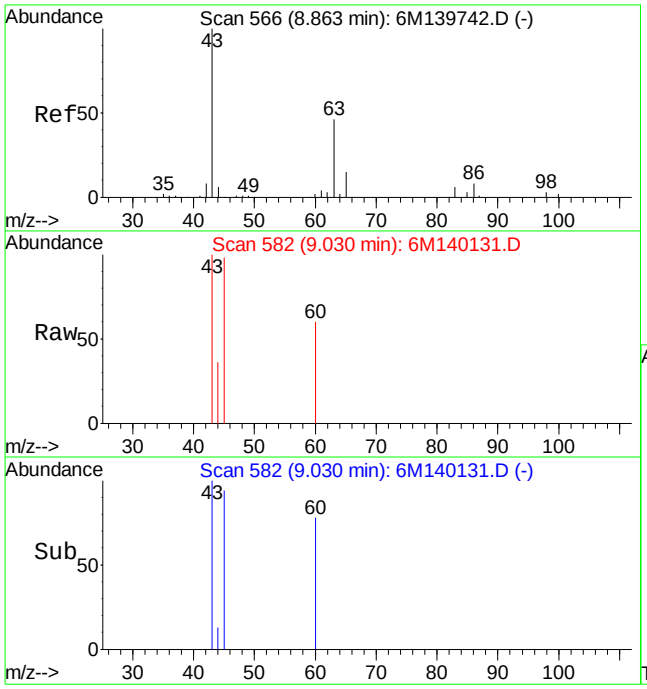

#26
Vinyl Acetate
Concen: 0.42 ug/L
RT: 9.03 min Scan# 582
Delta R.T. 0.17 min
Lab File: 6M140131.D
Acq: 17 Jun 2016 2:15

Tgt Ion: 43 Resp: 4012

Ion	Ratio	Lower	Upper
43	100		
86	0.0	4.5	10.5#

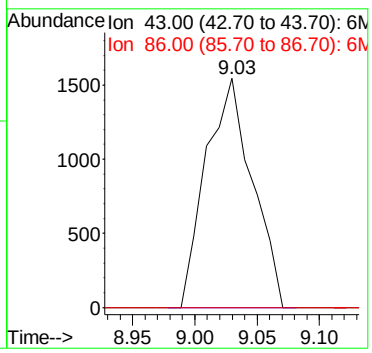

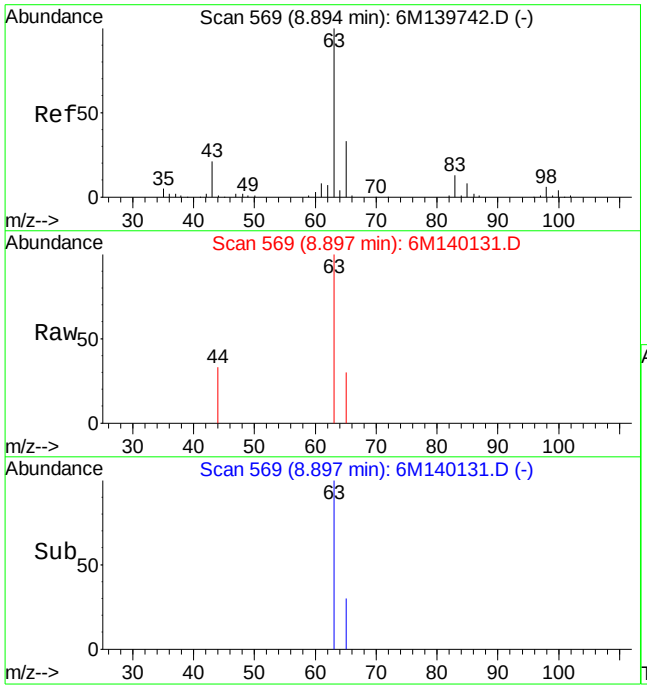

#27
1,1-Dichloroethane
Concen: 0.31 ug/L
RT: 8.90 min Scan# 569
Delta R.T. 0.00 min
Lab File: 6M140131.D
Acq: 17 Jun 2016 2:15

Tgt Ion: 63 Resp: 3432

Ion	Ratio	Lower	Upper
63	100		
65	18.4	19.3	44.9#

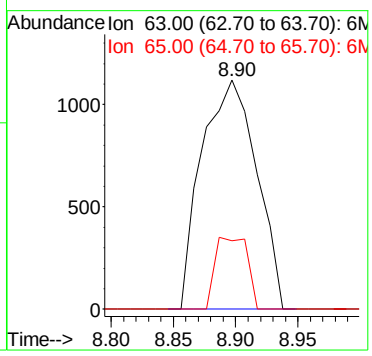

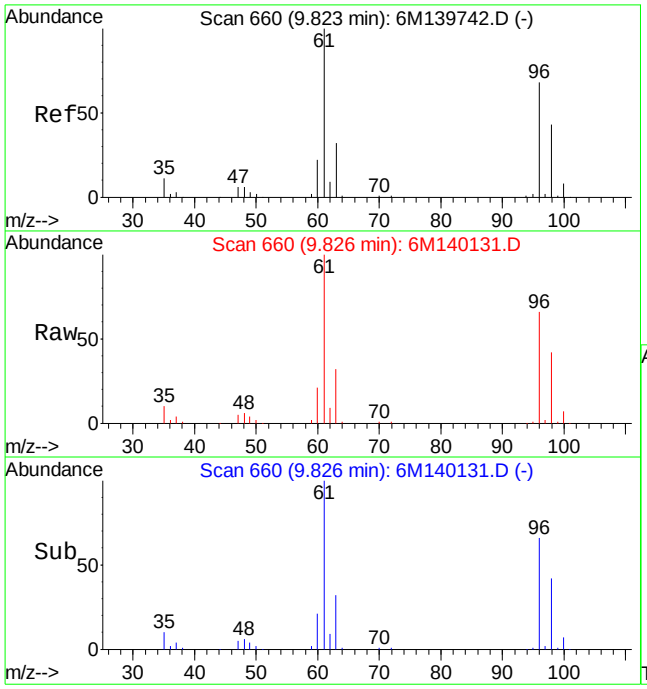

#32
cis-1,2-Dichloroethene
Concen: 76.94 ug/L
RT: 9.83 min Scan# 660
Delta R.T. 0.00 min
Lab File: 6M140131.D
Acq: 17 Jun 2016 2:15

Tgt Ion: 96 Resp: 457504

Ion	Ratio	Lower	Upper
96	100		
61	150.5	89.2	208.2

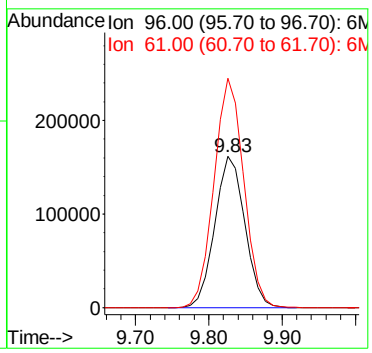

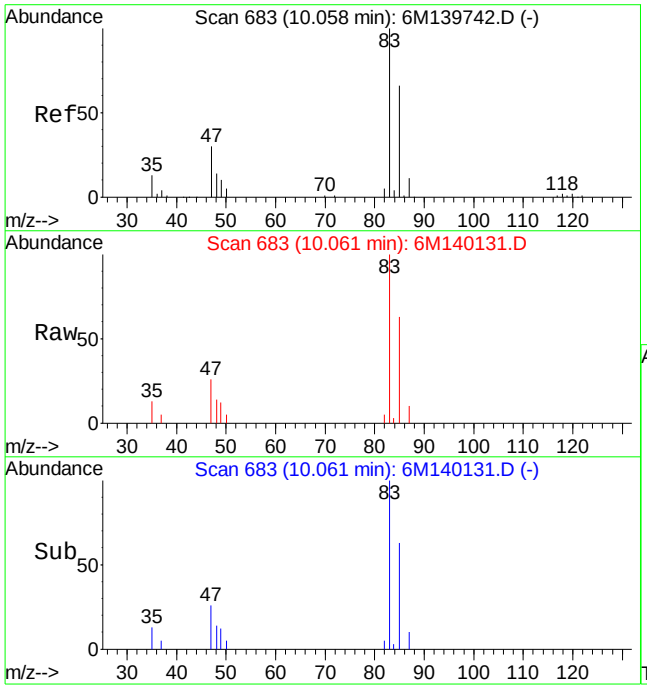

#33
Chloroform
Concen: 3.39 ug/L
RT: 10.06 min Scan# 683
Delta R.T. 0.00 min
Lab File: 6M140131.D
Acq: 17 Jun 2016 2:15

Tgt Ion: 83 Resp: 32986

Ion	Ratio	Lower	Upper
83	100		
85	65.2	39.0	91.0
47	29.4	18.5	43.1

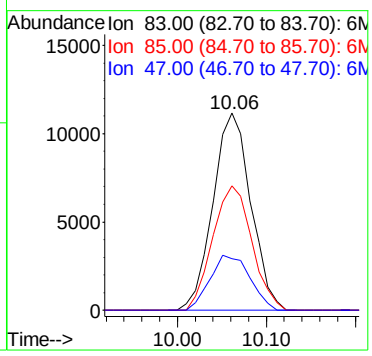

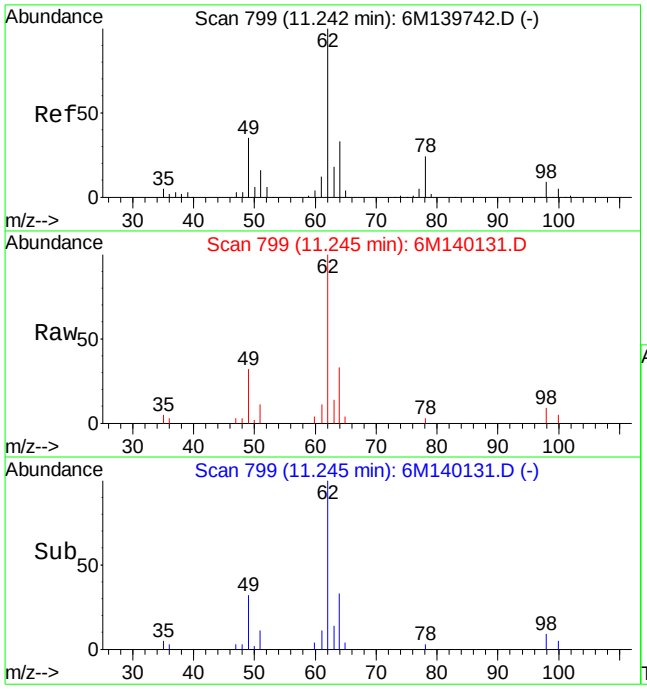

#45
1,2-Dichloroethane
Concen: 4.87 ug/L
RT: 11.25 min Scan# 799
Delta R.T. 0.00 min
Lab File: 6M140131.D
Acq: 17 Jun 2016 2:15

Tgt Ion: 62 Resp: 36468

Ion	Ratio	Lower	Upper
62	100		
49	35.3	25.1	58.5
98	7.3	5.2	12.0

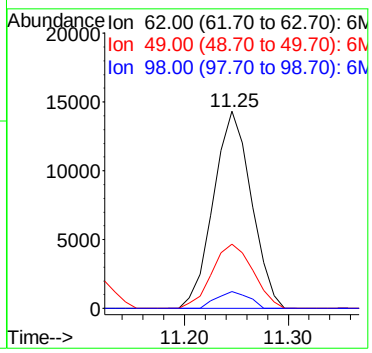

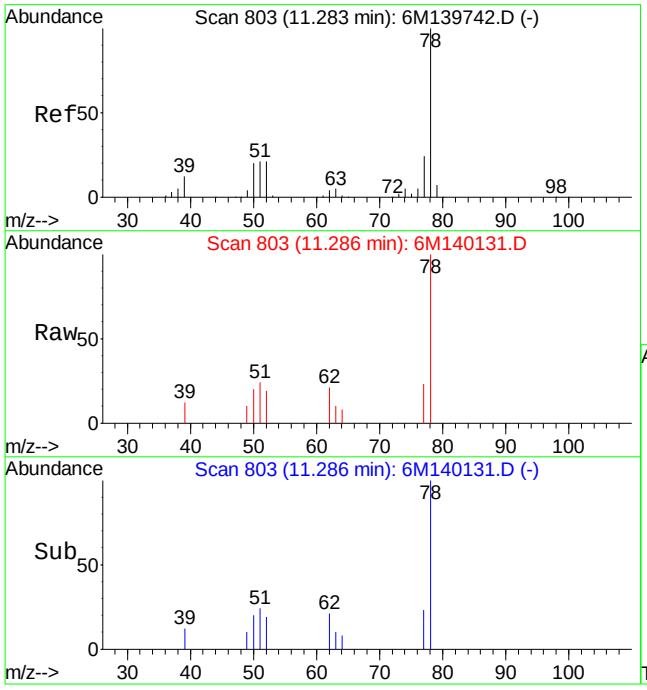

#46
Benzene
Concen: 0.62 ug/L
RT: 11.29 min Scan# 803
Delta R.T. 0.00 min
Lab File: 6M140131.D
Acq: 17 Jun 2016 2:15

Tgt Ion: 78 Resp: 13498

Ion	Ratio	Lower	Upper
78	100		
52	18.6	12.4	29.0

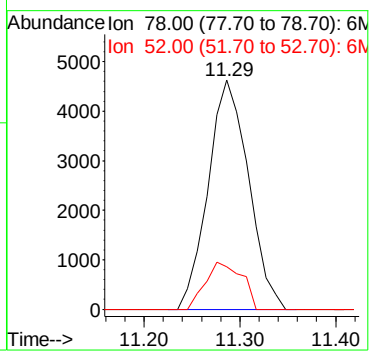

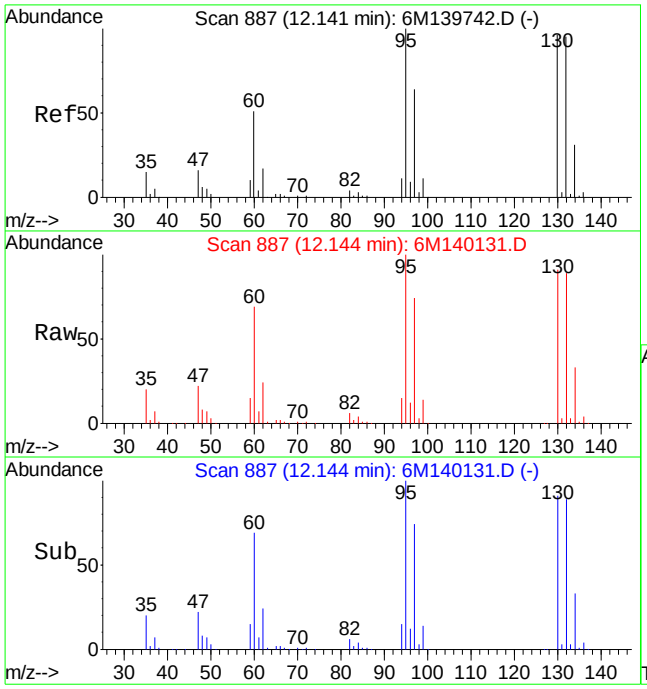

#47
Trichloroethene
Concen: 1538.12 ug/L
RT: 12.14 min Scan# 887
Delta R.T. -0.01 min
Lab File: 6M140131.D
Acq: 17 Jun 2016 2:15

Tgt Ion:130 Resp: 8574613

Ion	Ratio	Lower	Upper
130	100		
60	70.6	32.0	74.6

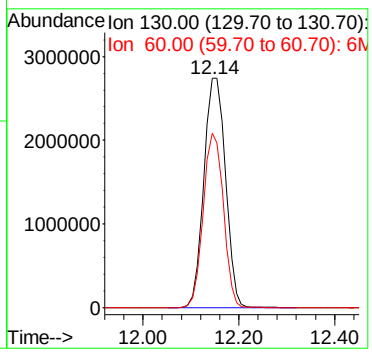

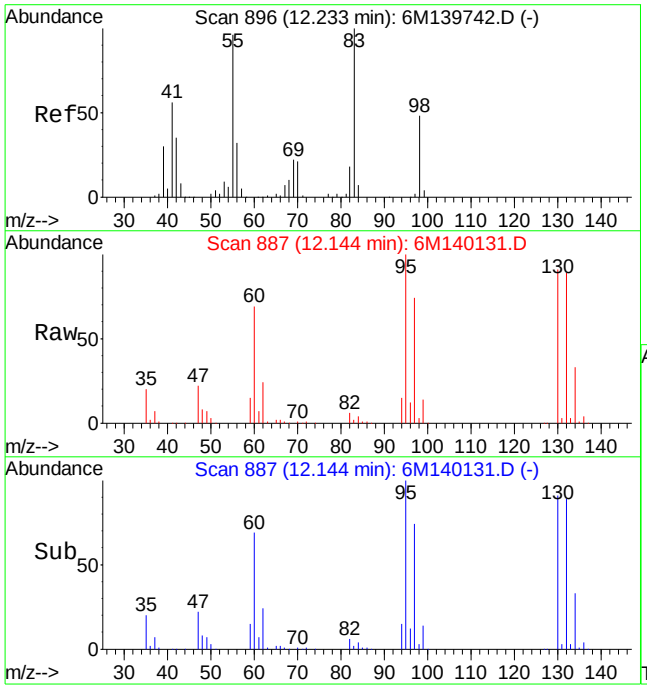

#48
Methylcyclohexane
Concen: 18.01 ug/L
RT: 12.14 min Scan# 887
Delta R.T. -0.09 min
Lab File: 6M140131.D
Acq: 17 Jun 2016 2:15

Tgt Ion: 83 Resp: 152225

Ion	Ratio	Lower	Upper
83	100		
55	0.0	56.3	131.3#
98	196.5	28.4	66.4#

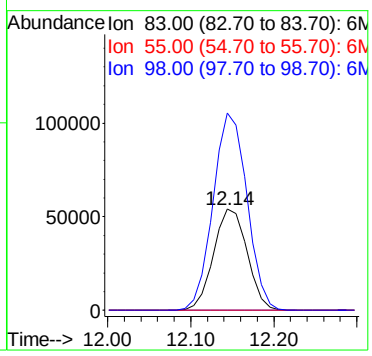

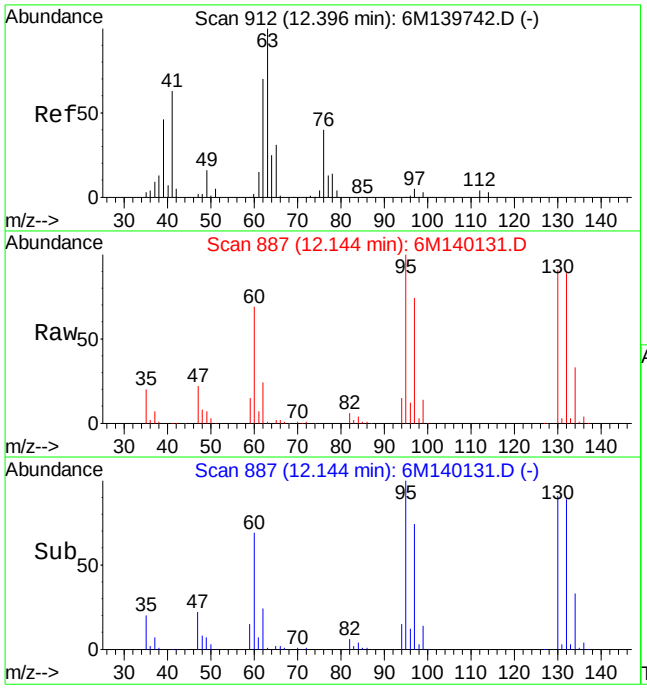

#49
1,2-Dichloropropane
Concen: 7.53 ug/L
RT: 12.14 min Scan# 887
Delta R.T. -0.25 min
Lab File: 6M140131.D
Acq: 17 Jun 2016 2:15

Tgt Ion: 63 Resp: 45415

Ion	Ratio	Lower	Upper
63	100		
76	0.0	24.2	56.4#

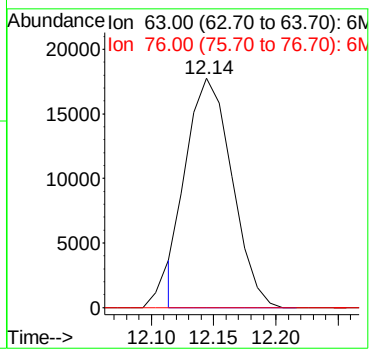

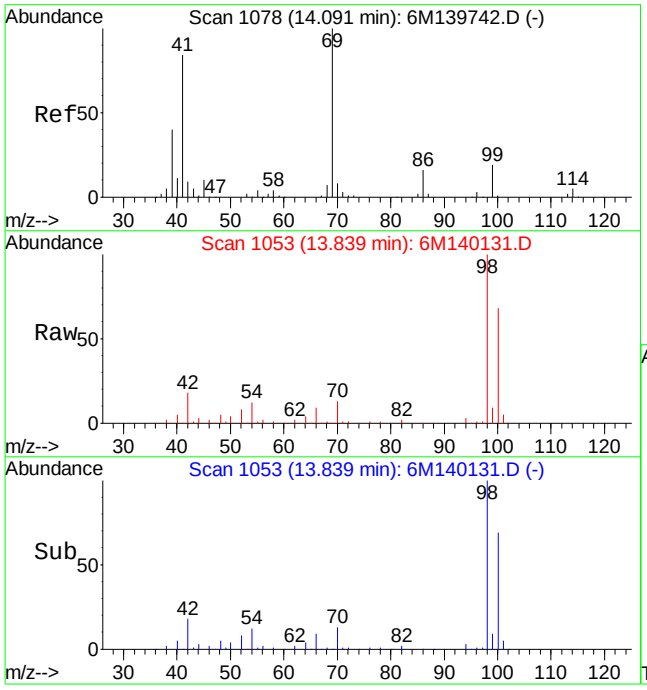

#60
Ethyl Methacrylate
Concen: 0.13 ug/L
RT: 13.84 min Scan# 1053
Delta R.T. -0.25 min
Lab File: 6M140131.D
Acq: 17 Jun 2016 2:15

Tgt Ion: 69 Resp: 783

Ion	Ratio	Lower	Upper
69	100		
41	104.3	51.4	120.0

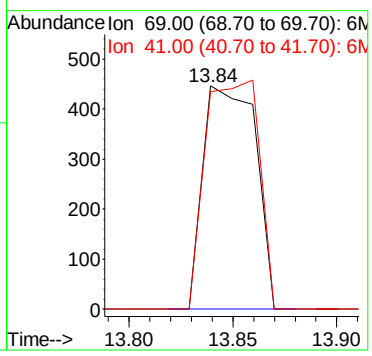

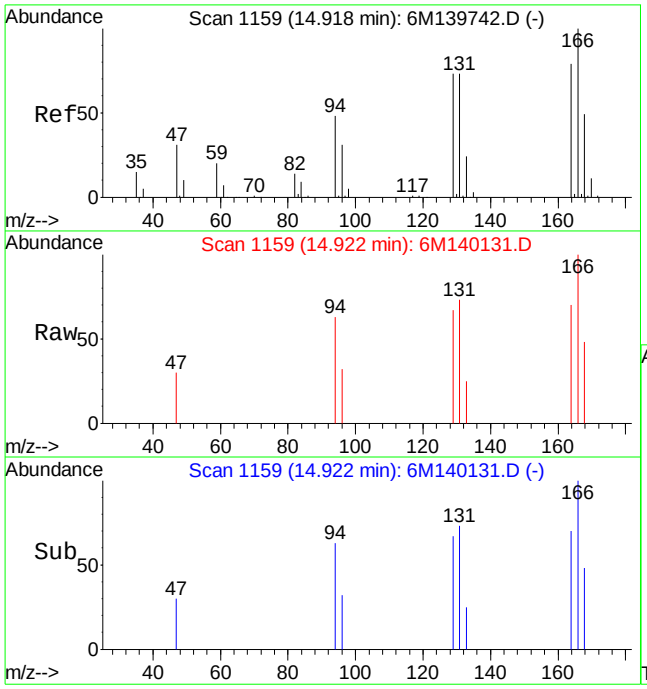

#66
Tetrachloroethene
Concen: 0.49 ug/L
RT: 14.92 min Scan# 1159
Delta R.T. -0.01 min
Lab File: 6M140131.D
Acq: 17 Jun 2016 2:15

Tgt Ion:166 Resp: 2916

Ion	Ratio	Lower	Upper
166	100		
129	72.7	43.5	101.5
94	47.8	27.8	64.8

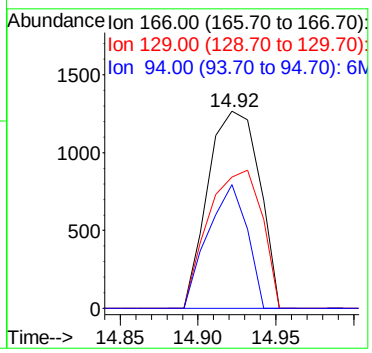

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061716\8M413071.D Vial: 13
Acq On : 17 Jun 2016 21:42 Operator: FJB
Sample : L16060822-04 50X B 826-LOW D1 Inst : HPMS8
Misc : 1,50 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 22:04:25 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	742726	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	559419	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	315183	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	219783	27.5419 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.16%		
43) 1,2-Dichloroethane-d4	10.30	65	242309	28.3187 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 113.28%		
58) Toluene-d8	12.68	98	770828	26.3284 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.32%		
80) p-Bromofluorobenzene	16.08	95	324607	24.8725 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.48%		

Target Compounds					Qvalue
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	196606	26.0650 ug/L	95
13) Acetone	6.20	43	419	0.5014 ug/L #	50
20) Carbon Disulfide	7.30	76	4106	0.1634 ug/L #	74
32) cis-1,2-Dichloroethene	9.16	96	12370	1.4509 ug/L	82
47) Trichloroethene	11.21	130	329608	40.5066 ug/L	98
98) 1,2,4-Trichlorobenzene	20.28	180	1748	0.1350 ug/L #	64
99) Hexachlorobutadiene	20.42	225	1166	0.1927 ug/L #	54
100) Naphthalene	20.65	128	8277	0.4303 ug/L #	73
101) 1,2,3-Trichlorobenzene	20.96	180	1622	0.1485 ug/L #	49

(#) = qualifier out of range (m) = manual integration
8M413071.D 8260WT.M Mon Jun 20 09:21:27 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061716\8M413071.D Vial: 13
Acq On : 17 Jun 2016 21:42 Operator: FJB
Sample : L16060822-04 50X B 826-LOW D1 Inst : HPMS8
Misc : 1,50 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 22:04 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

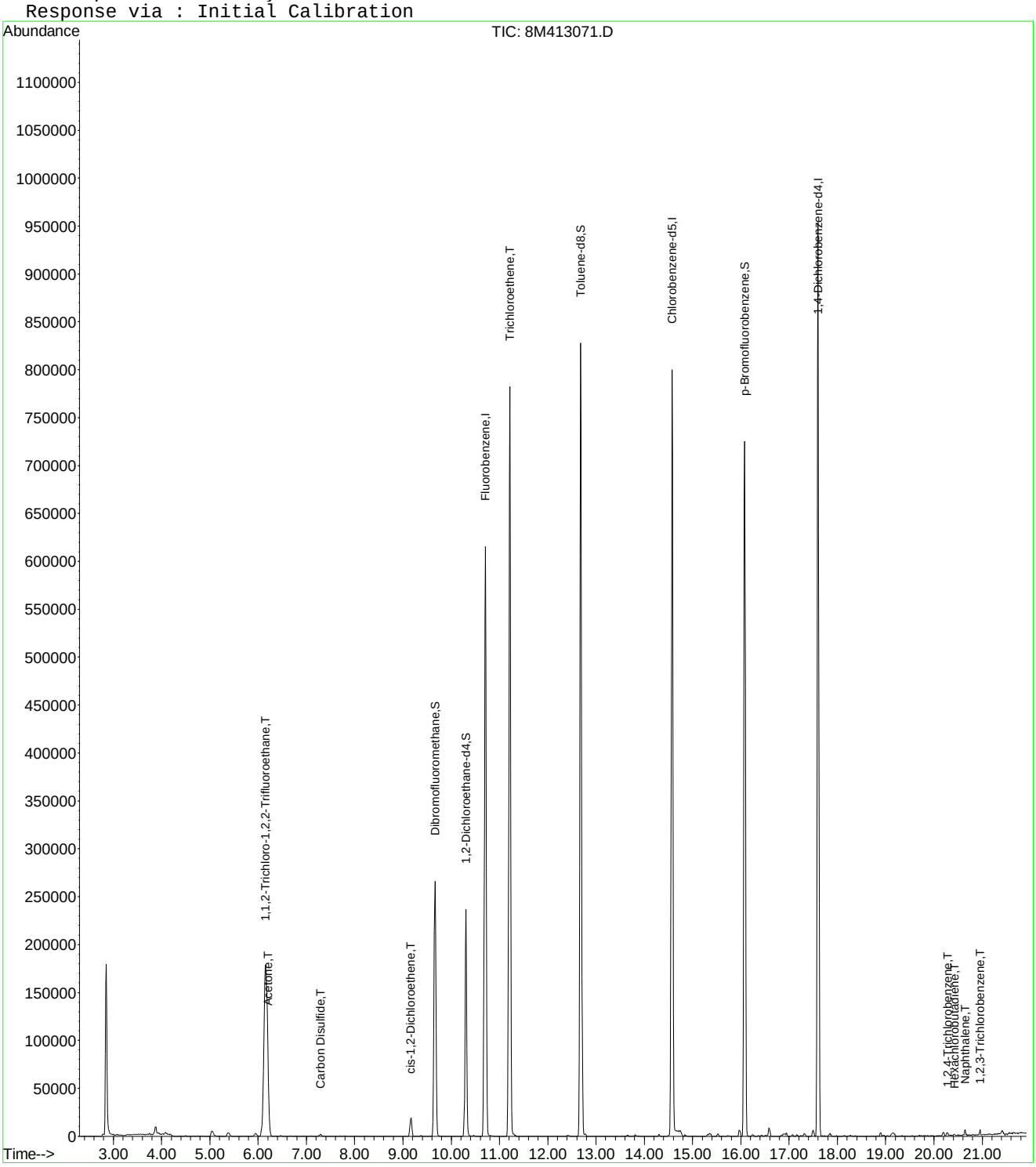

8M413071.D 8260WT.M Mon Jun 20 09:21:28 2016 Page 2

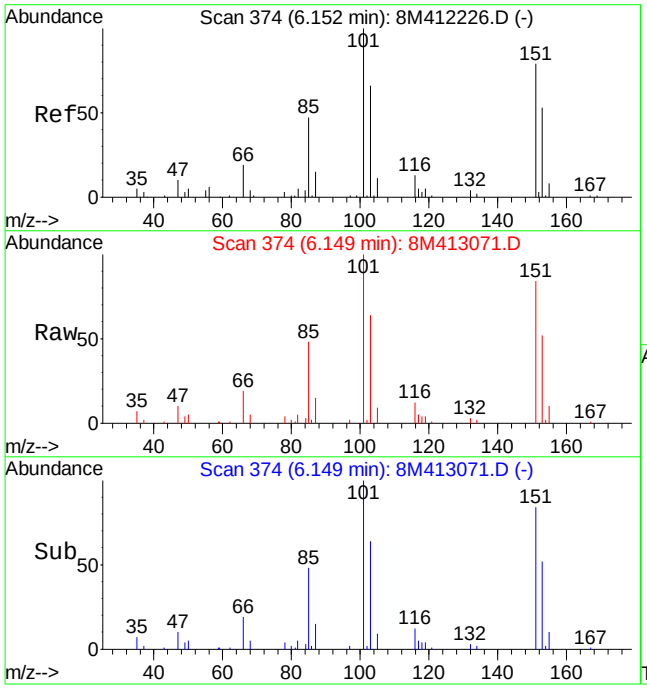

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 26.06 ug/L
RT: 6.15 min Scan# 374
Delta R.T. -0.00 min
Lab File: 8M413071.D
Acq: 17 Jun 2016 21:42

Tgt Ion:101 Resp: 196606

Ion	Ratio	Lower	Upper
101	100		
151	84.8	40.2	120.2

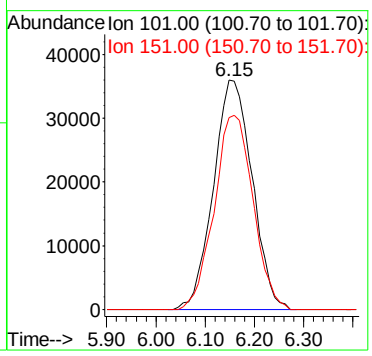

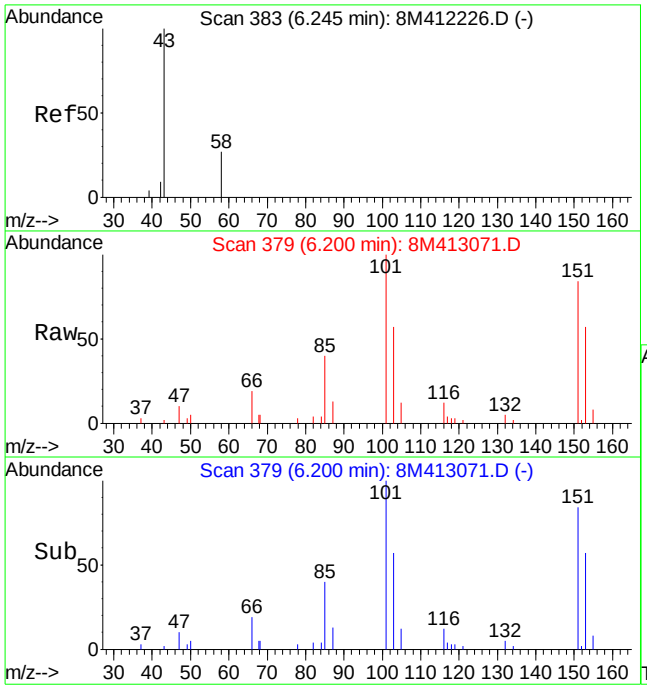

#13
Acetone
Concen: 0.50 ug/L
RT: 6.20 min Scan# 379
Delta R.T. -0.04 min
Lab File: 8M413071.D
Acq: 17 Jun 2016 21:42

Tgt Ion: 43 Resp: 419

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.2	35.4#

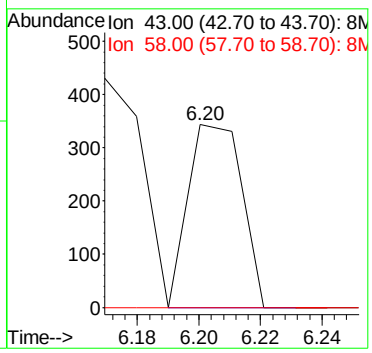

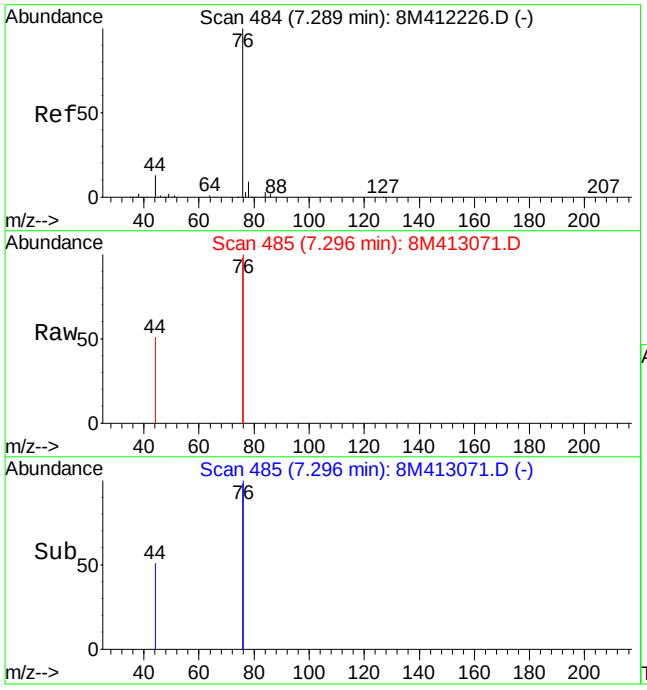

#20
Carbon Disulfide
Concen: 0.16 ug/L
RT: 7.30 min Scan# 485
Delta R.T. 0.01 min
Lab File: 8M413071.D
Acq: 17 Jun 2016 21:42

Tgt Ion: 76 Resp: 4106

Ion	Ratio	Lower	Upper
76	100		
78	0.0	5.6	13.0#

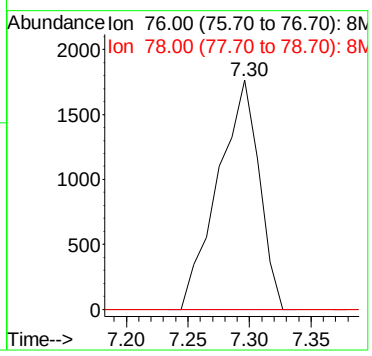

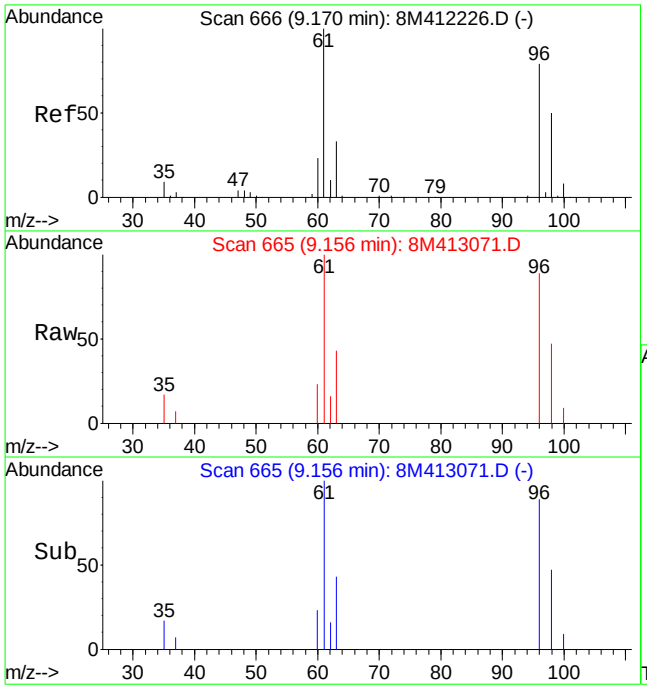

#32
cis-1,2-Dichloroethene
Concen: 1.45 ug/L
RT: 9.16 min Scan# 665
Delta R.T. -0.01 min
Lab File: 8M413071.D
Acq: 17 Jun 2016 21:42

Tgt Ion: 96 Resp: 12370

Ion	Ratio	Lower	Upper
96	100		
61	129.4	91.5	213.5

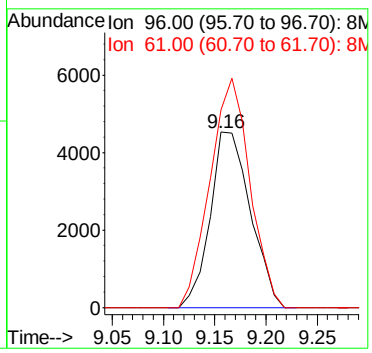

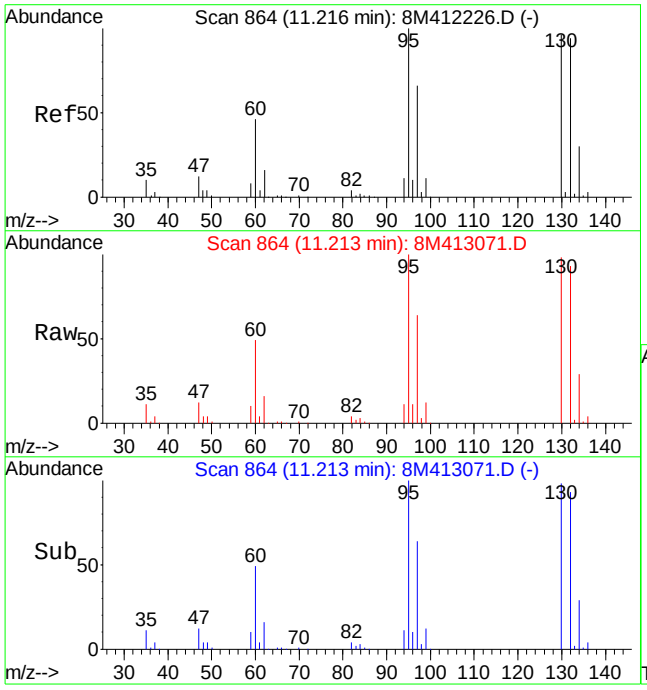

#47
Trichloroethene
Concen: 40.51 ug/L
RT: 11.21 min Scan# 864
Delta R.T. -0.00 min
Lab File: 8M413071.D
Acq: 17 Jun 2016 21:42

Tgt Ion:130 Resp: 329608

Ion	Ratio	Lower	Upper
130	100		
132	94.8	58.0	135.2
95	106.5	64.9	151.5

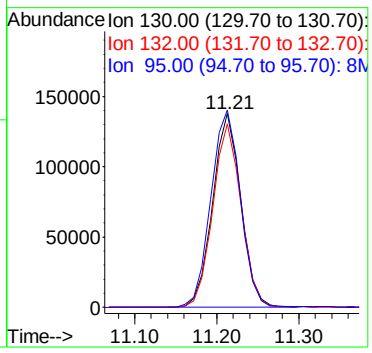

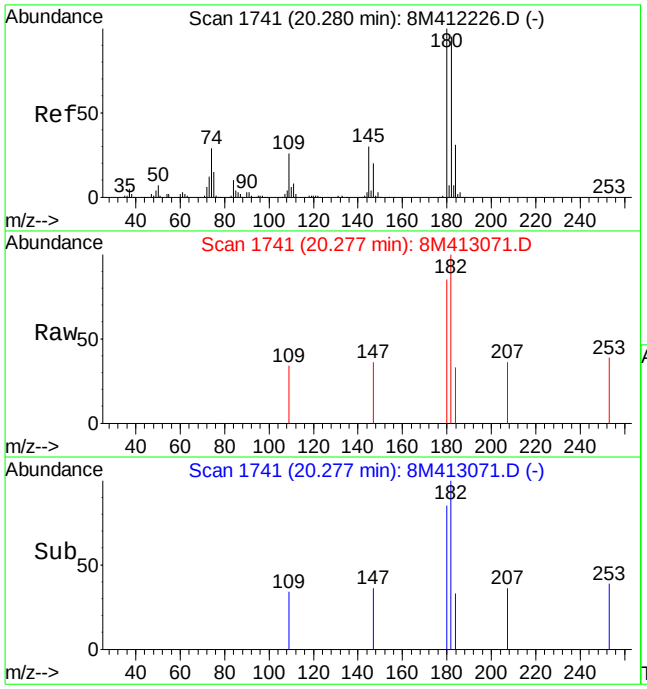

#98
1,2,4-Trichlorobenzene
Concen: 0.14 ug/L
RT: 20.28 min Scan# 1741
Delta R.T. -0.00 min
Lab File: 8M413071.D
Acq: 17 Jun 2016 21:42

Tgt Ion:180 Resp: 1748

Ion	Ratio	Lower	Upper
180	100		
182	122.7	56.8	132.4
145	0.0	18.4	42.8#

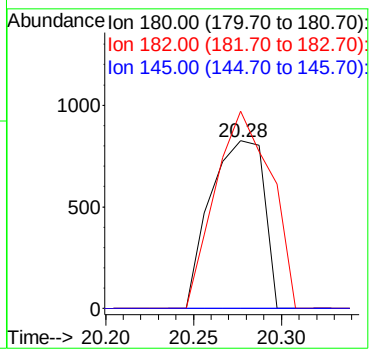

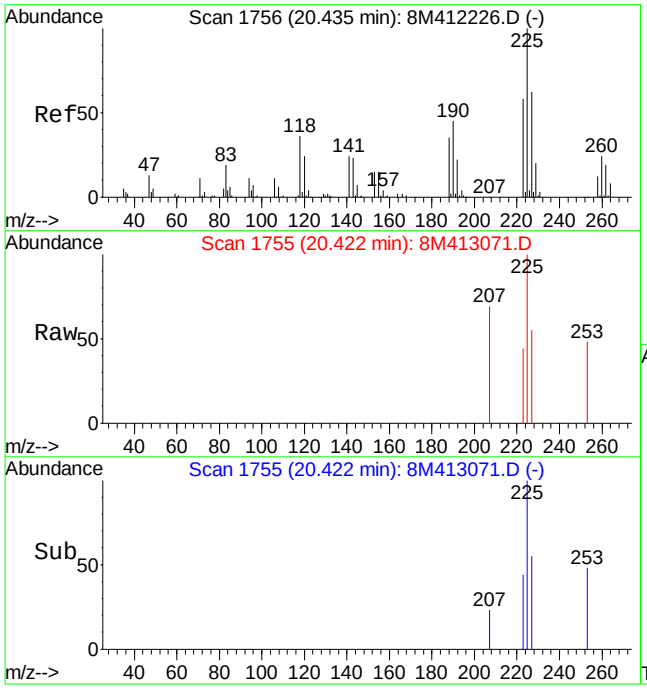

#99
Hexachlorobutadiene
Concen: 0.19 ug/L
RT: 20.42 min Scan# 1755
Delta R.T. -0.01 min
Lab File: 8M413071.D
Acq: 17 Jun 2016 21:42

Tgt Ion:225 Resp: 1166

Ion	Ratio	Lower	Upper
225	100		
223	40.9	36.8	85.8
190	0.0	28.3	66.1#

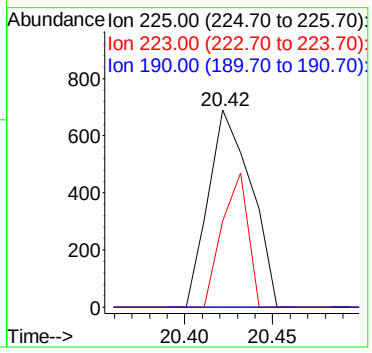

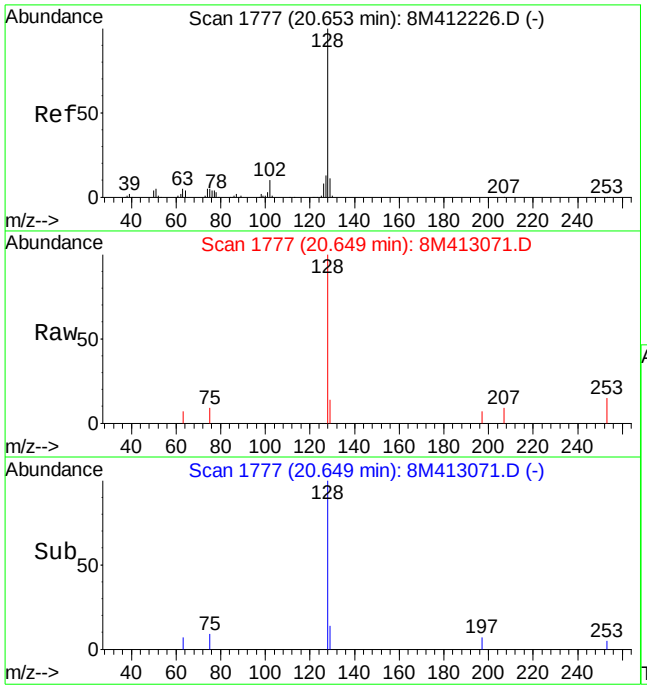

#100
Naphthalene
Concen: 0.43 ug/L
RT: 20.65 min Scan# 1777
Delta R.T. -0.00 min
Lab File: 8M413071.D
Acq: 17 Jun 2016 21:42

Tgt Ion:128 Resp: 8277

Ion	Ratio	Lower	Upper
128	100		
127	2.5	7.8	18.2#

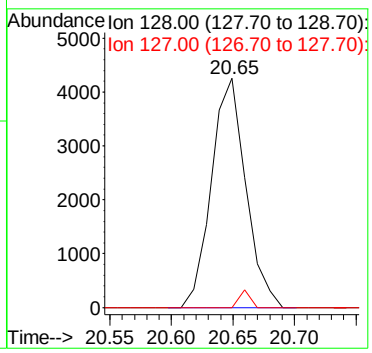

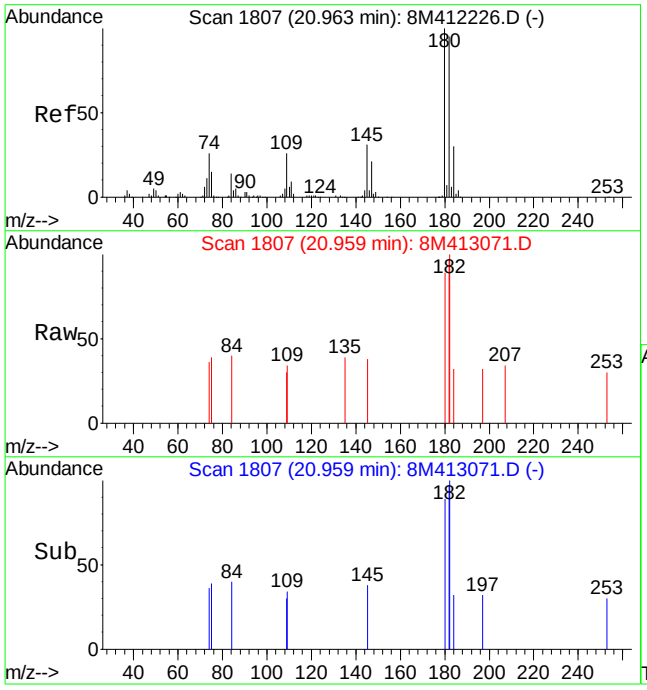

#101
1,2,3-Trichlorobenzene
Concen: 0.15 ug/L
RT: 20.96 min Scan# 1807
Delta R.T. -0.00 min
Lab File: 8M413071.D
Acq: 17 Jun 2016 21:42

Tgt Ion:180 Resp: 1622

Ion	Ratio	Lower	Upper
180	100		
182	152.2	57.8	135.0#
145	14.9	20.1	46.9#

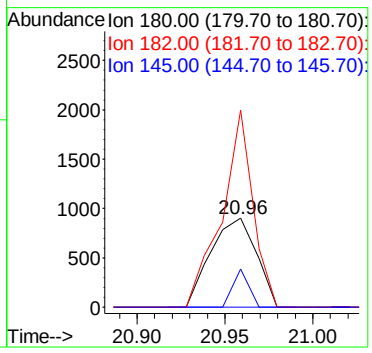

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061616\6M140132.D Vial: 20
Acq On : 17 Jun 2016 2:47 Operator: FJB
Sample : L16060822-05 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:37:39 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.56	96	526269	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	392746	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.64	152	210980	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	141505	25.9804 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 103.92%		
43) 1,2-Dichloroethane-d4	11.11	65	158635	26.4244 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 105.68%		
58) Toluene-d8	13.85	98	467571	24.8064 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.24%		
80) p-Bromofluorobenzene	17.84	95	194391	26.0919 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 104.36%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.36	85	30837	3.7018 ug/L #	59
3) Chloromethane	3.92	50	1273	0.1253 ug/L #	69
4) Vinyl Chloride	4.17	62	4320	0.6310 ug/L	84
8) Trichlorofluoromethane	5.73	101	10127	1.1046 ug/L #	65
9) Diethyl ether	6.55	59	72150	14.6349 ug/L #	15
10) Isoprene	6.55	67	43482	5.5786 ug/L #	10
12) 1,1,2-Trichloro-1,2,2-Trif	6.55	101	6672021	1273.9417 ug/L	97
13) Acetone	6.55	43	93081	61.4555 ug/L	90
14) 1,1-Dichloroethene	6.89	61	53464	5.7643 ug/L	98
15) Tert-Butyl Alcohol	6.90	59	1164	2.5571 ug/L #	57
19) Methylene Chloride	7.71	84	688	0.1203 ug/L	61
23) trans-1,2-Dichloroethene	8.21	96	3627	0.6709 ug/L	95
26) Vinyl Acetate	9.03	43	1434	0.1507 ug/L #	78
27) 1,1-Dichloroethane	8.90	63	3365	0.3106 ug/L #	74
32) cis-1,2-Dichloroethene	9.83	96	448993	76.2318 ug/L	98
33) Chloroform	10.06	83	32171	3.3346 ug/L	99
45) 1,2-Dichloroethane	11.25	62	35893	4.8409 ug/L	91
46) Benzene	11.29	78	13235	0.6122 ug/L	97
47) Trichloroethene	12.14	130	8423630	1525.5648 ug/L	75
48) Methylcyclohexane	12.14	83	152172	18.1776 ug/L #	1
49) 1,2-Dichloropropane	12.14	63	43881	7.3483 ug/L #	35
60) Ethyl Methacrylate	13.85	69	772	0.1263 ug/L #	51
66) Tetrachloroethene	14.92	166	3090	0.5282 ug/L	95

(#) = qualifier out of range (m) = manual integration
6M140132.D 8260WT.M Fri Jun 17 08:37:42 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061616\6M140132.D Vial: 20
Acq On : 17 Jun 2016 2:47 Operator: FJB
Sample : L16060822-05 A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 8:37 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration

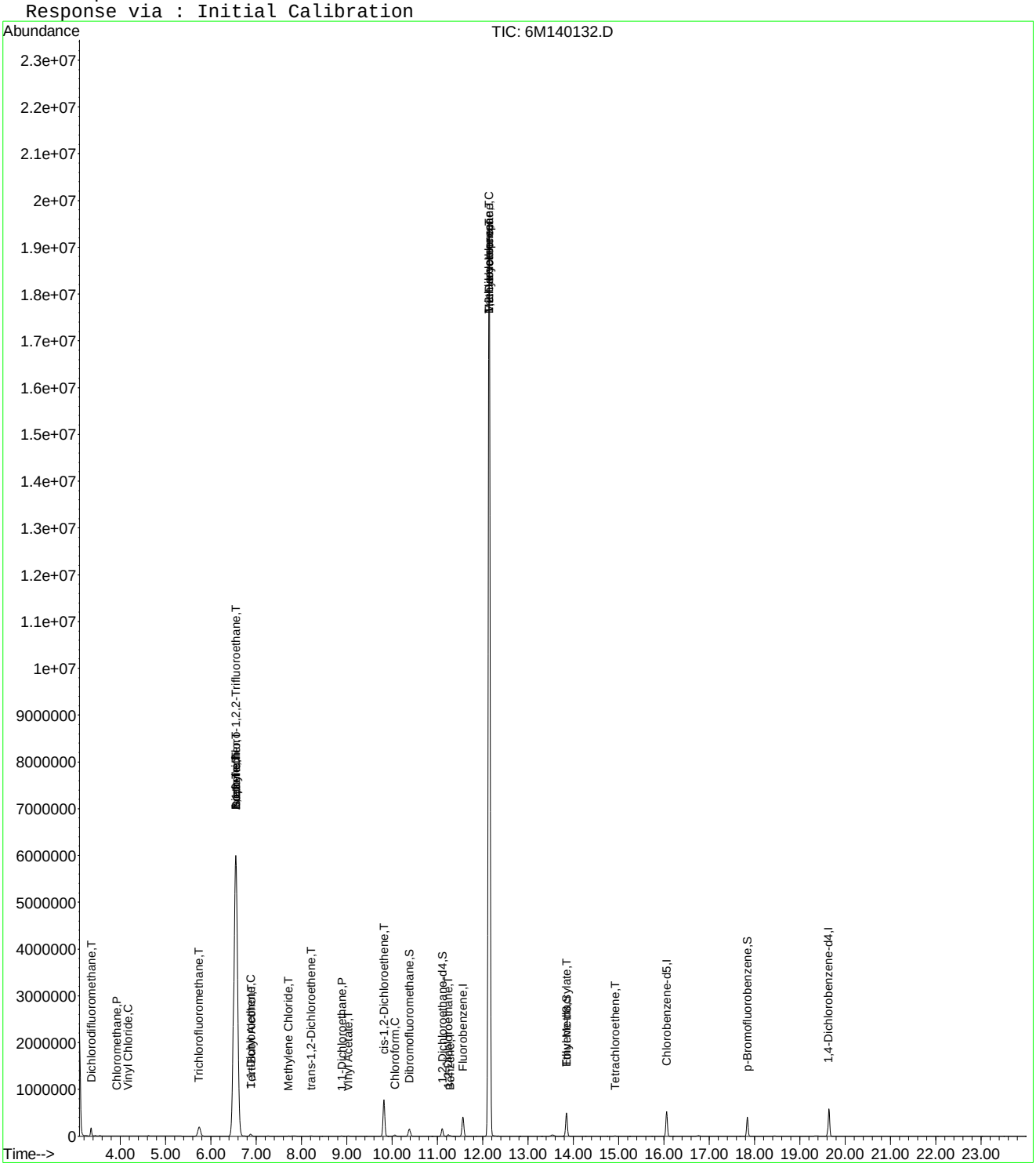

6M140132.D 8260WT.M Fri Jun 17 08:37:43 2016 Page 2

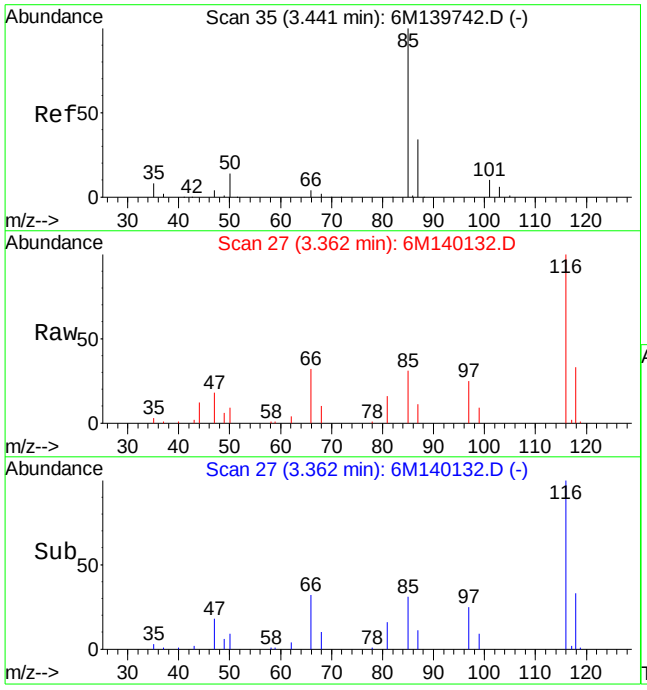

#2
Dichlorodifluoromethane
Concen: 3.70 ug/L
RT: 3.36 min Scan# 27
Delta R.T. -0.08 min
Lab File: 6M140132.D
Acq: 17 Jun 2016 2:47

Tgt Ion: 85 Resp: 30837

Ion	Ratio	Lower	Upper
85	100		
50	32.2	9.1	21.1#

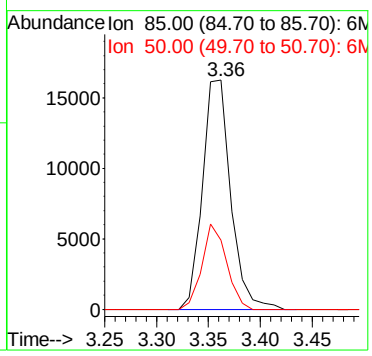

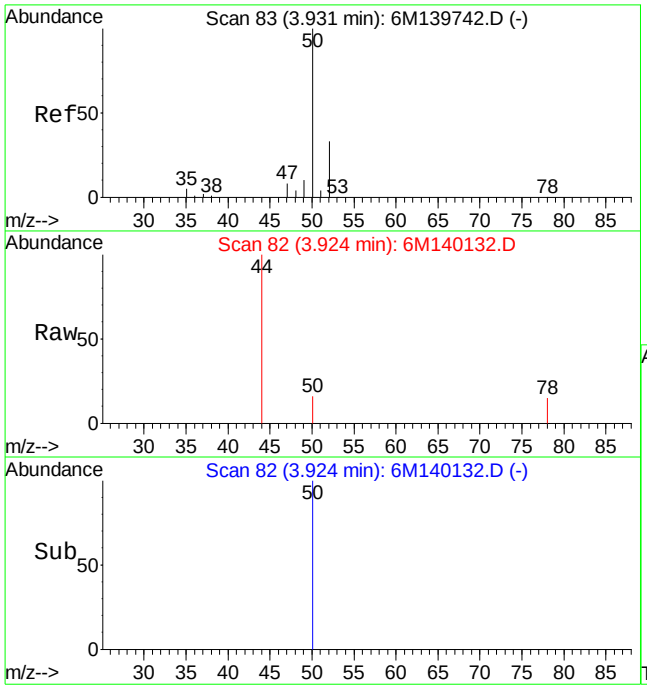

#3
Chloromethane
Concen: 0.13 ug/L
RT: 3.92 min Scan# 82
Delta R.T. -0.01 min
Lab File: 6M140132.D
Acq: 17 Jun 2016 2:47

Tgt Ion: 50 Resp: 1273

Ion	Ratio	Lower	Upper
50	100		
52	15.4	19.8	46.2#

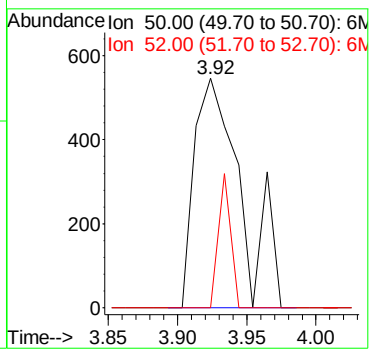

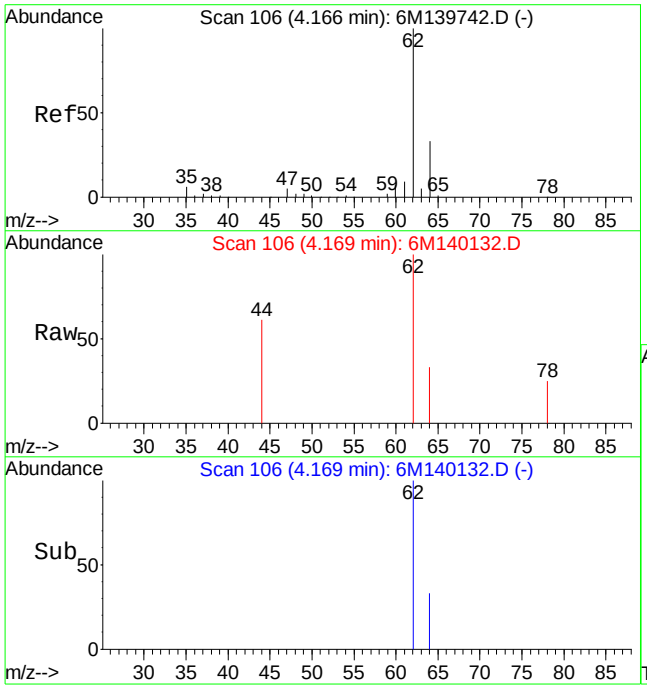

#4
Vinyl Chloride
Concen: 0.63 ug/L
RT: 4.17 min Scan# 106
Delta R.T. 0.01 min
Lab File: 6M140132.D
Acq: 17 Jun 2016 2:47

Tgt Ion: 62 Resp: 4320

Ion	Ratio	Lower	Upper
62	100		
64	23.3	19.3	45.1

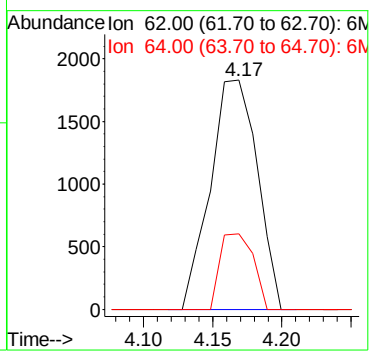

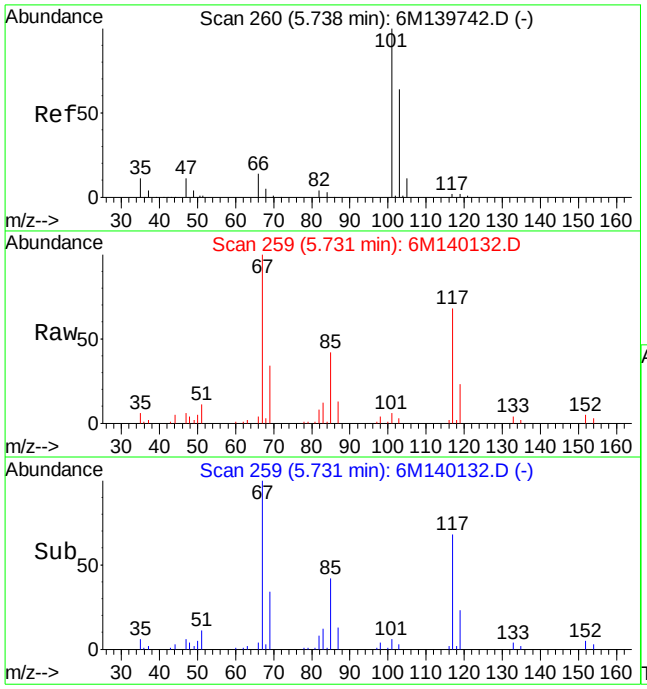

#8
Trichlorofluoromethane
Concen: 1.10 ug/L
RT: 5.73 min Scan# 259
Delta R.T. 0.01 min
Lab File: 6M140132.D
Acq: 17 Jun 2016 2:47

Tgt Ion:101 Resp: 10127

Ion	Ratio	Lower	Upper
101	100		
103	64.0	39.1	91.1
66	91.1	8.3	19.5#

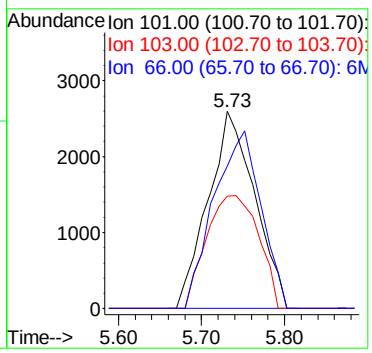

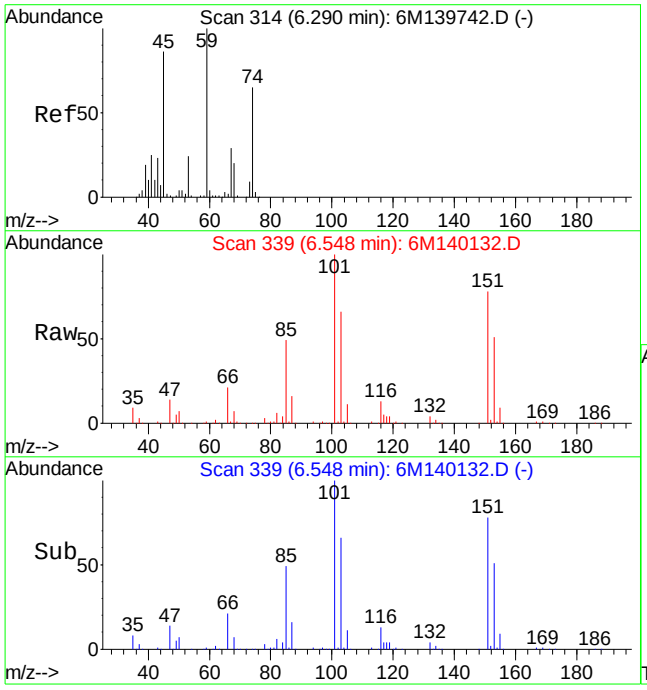

#9
Diethyl ether
Concen: 14.63 ug/L
RT: 6.55 min Scan# 339
Delta R.T. 0.26 min
Lab File: 6M140132.D
Acq: 17 Jun 2016 2:47

Tgt Ion: 59 Resp: 72150

Ion	Ratio	Lower	Upper
59	100		
45	0.3	51.5	120.3#
74	7.0	38.5	89.7#

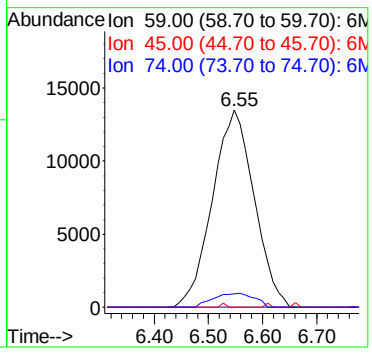

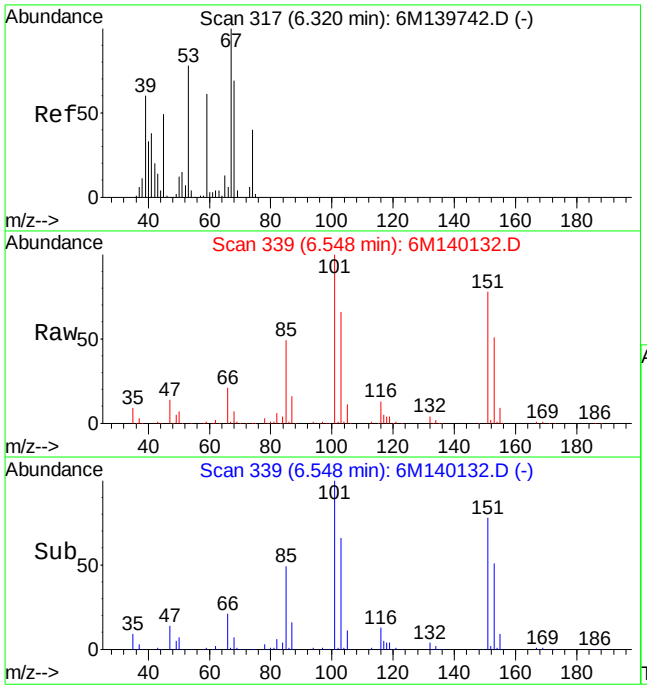

#10
Isoprene
Concen: 5.58 ug/L
RT: 6.55 min Scan# 339
Delta R.T. 0.23 min
Lab File: 6M140132.D
Acq: 17 Jun 2016 2:47

Tgt Ion: 67 Resp: 43482

Ion	Ratio	Lower	Upper
67	100		
53	0.0	47.4	110.6#

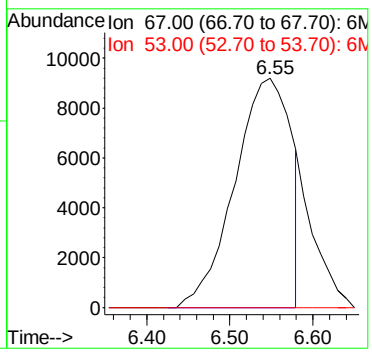

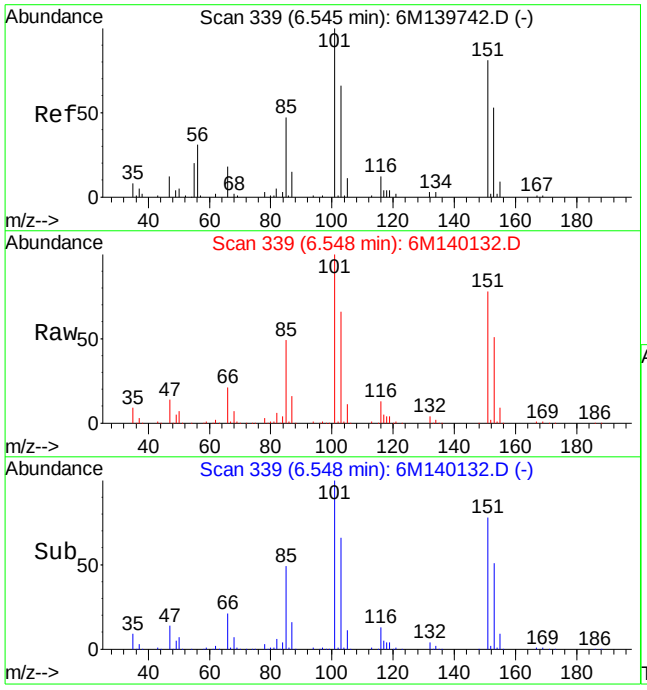

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 1273.94 ug/L
RT: 6.55 min Scan# 339
Delta R.T. 0.00 min
Lab File: 6M140132.D
Acq: 17 Jun 2016 2:47

Tgt Ion:101 Resp: 6672021

Ion	Ratio	Lower	Upper
101	100		
151	78.5	49.4	115.2
103	65.2	38.8	90.4

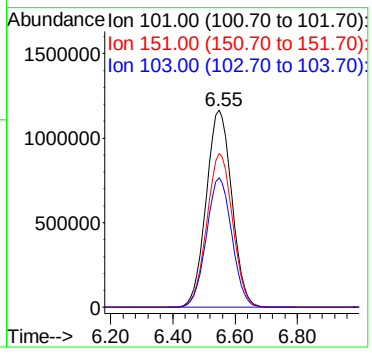

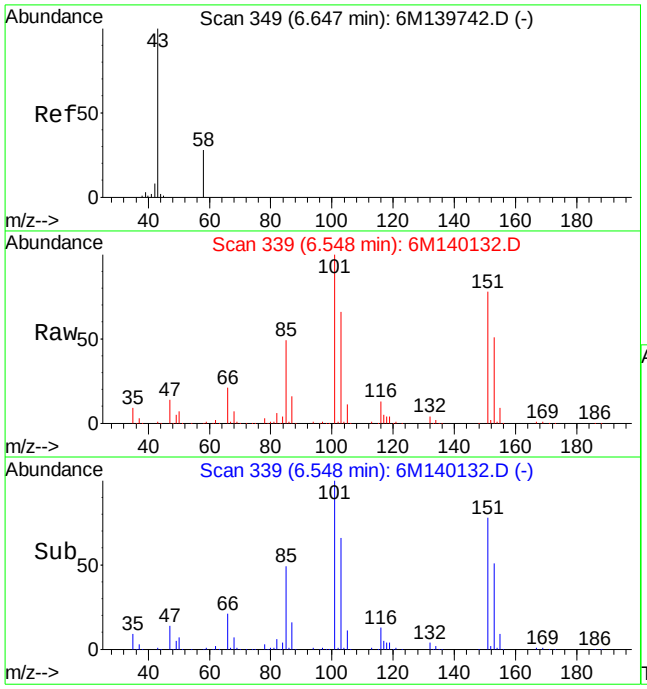

#13
Acetone
Concen: 61.46 ug/L
RT: 6.55 min Scan# 339
Delta R.T. -0.11 min
Lab File: 6M140132.D
Acq: 17 Jun 2016 2:47

Tgt Ion: 43 Resp: 93081

Ion	Ratio	Lower	Upper
43	100		
58	22.1	16.4	38.2

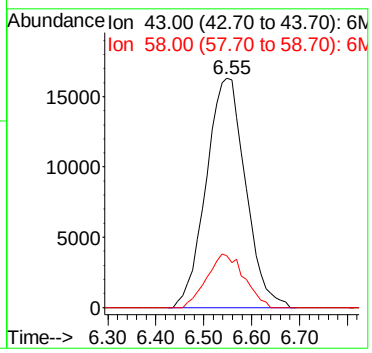

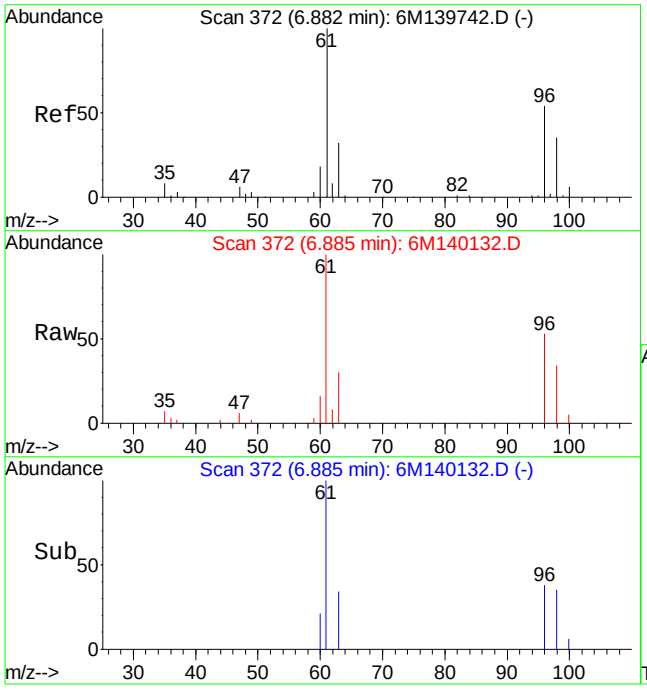

#14
1,1-Dichloroethene
Concen: 5.76 ug/L
RT: 6.89 min Scan# 372
Delta R.T. 0.01 min
Lab File: 6M140132.D
Acq: 17 Jun 2016 2:47

Tgt Ion: 61 Resp: 53464

Ion	Ratio	Lower	Upper
61	100		
96	51.9	32.0	74.6

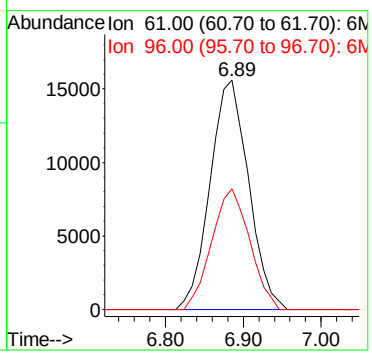

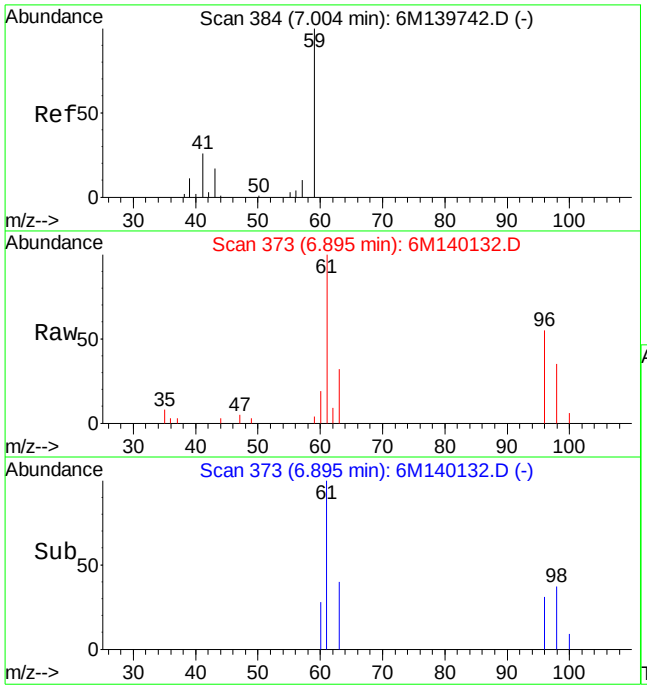

#15
Tert-Butyl Alcohol
Concen: 2.56 ug/L
RT: 6.90 min Scan# 373
Delta R.T. -0.15 min
Lab File: 6M140132.D
Acq: 17 Jun 2016 2:47

Tgt Ion: 59 Resp: 1164

Ion	Ratio	Lower	Upper
59	100		
41	0.0	14.6	34.0#
57	0.0	6.4	14.8#

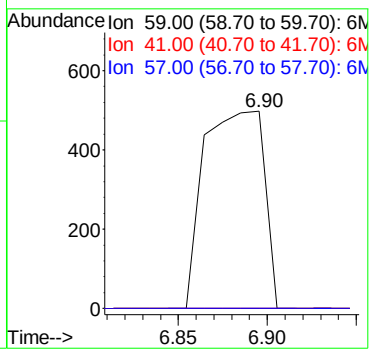

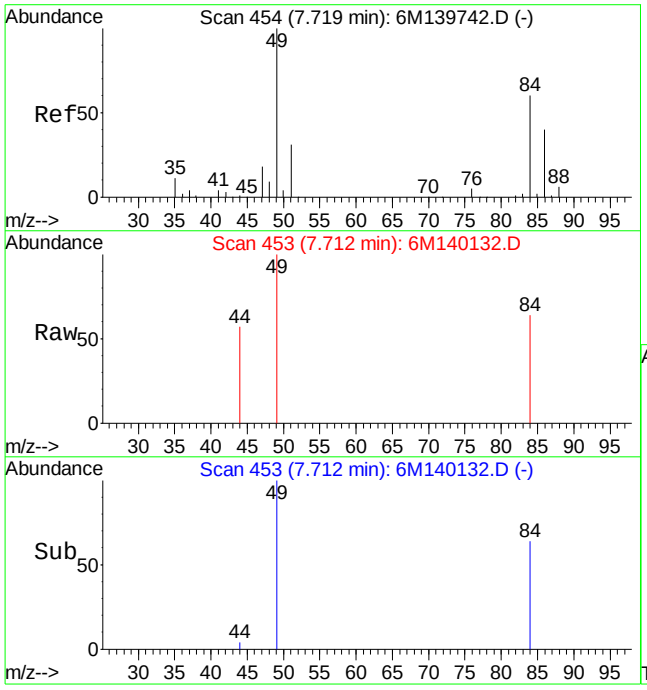

#19
Methylene Chloride
Concen: 0.12 ug/L
RT: 7.71 min Scan# 453
Delta R.T. -0.01 min
Lab File: 6M140132.D
Acq: 17 Jun 2016 2:47

Tgt Ion: 84 Resp: 688

Ion	Ratio	Lower	Upper
84	100		
49	217.6	99.3	231.7

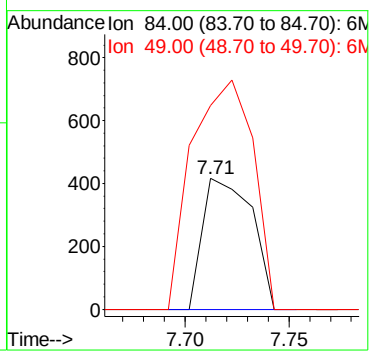

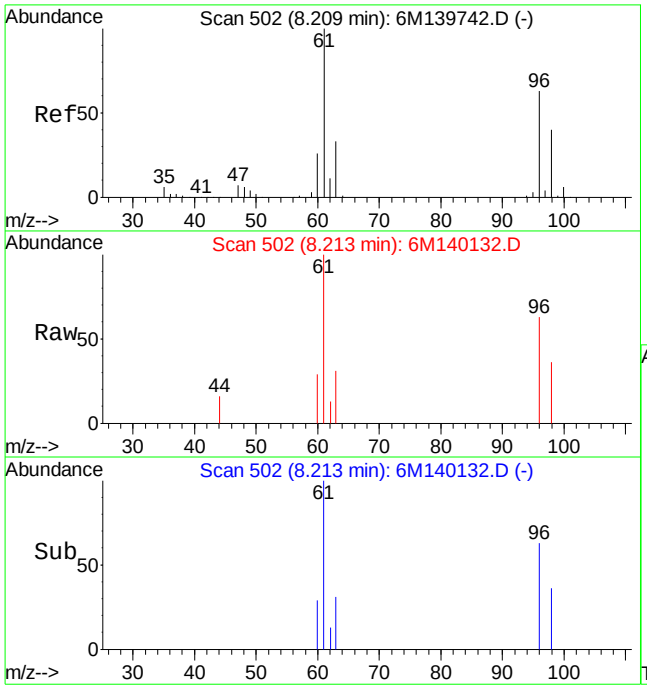

#23
trans-1,2-Dichloroethene
Concen: 0.67 ug/L
RT: 8.21 min Scan# 502
Delta R.T. 0.00 min
Lab File: 6M140132.D
Acq: 17 Jun 2016 2:47

Tgt Ion: 96 Resp: 3627

Ion	Ratio	Lower	Upper
96	100		
61	166.6	96.3	224.7

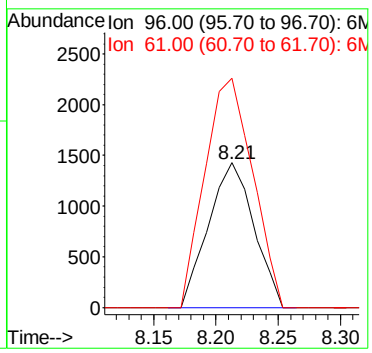

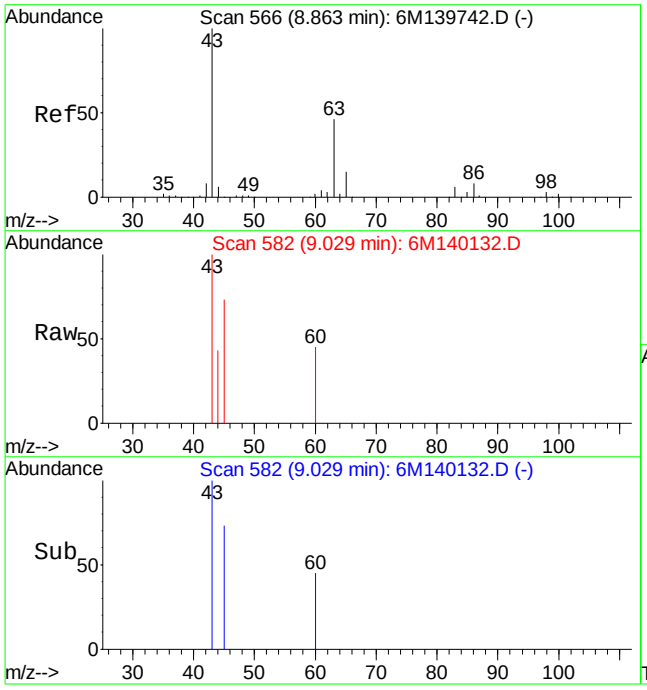

#26
Vinyl Acetate
Concen: 0.15 ug/L
RT: 9.03 min Scan# 582
Delta R.T. 0.17 min
Lab File: 6M140132.D
Acq: 17 Jun 2016 2:47

Tgt Ion: 43 Resp: 1434

Ion	Ratio	Lower	Upper
43	100		
86	0.0	4.5	10.5#

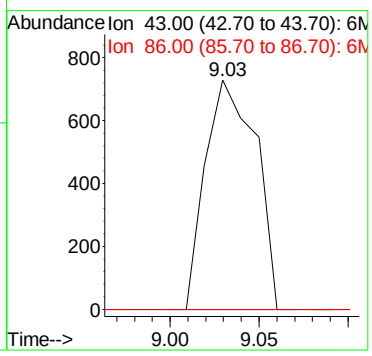

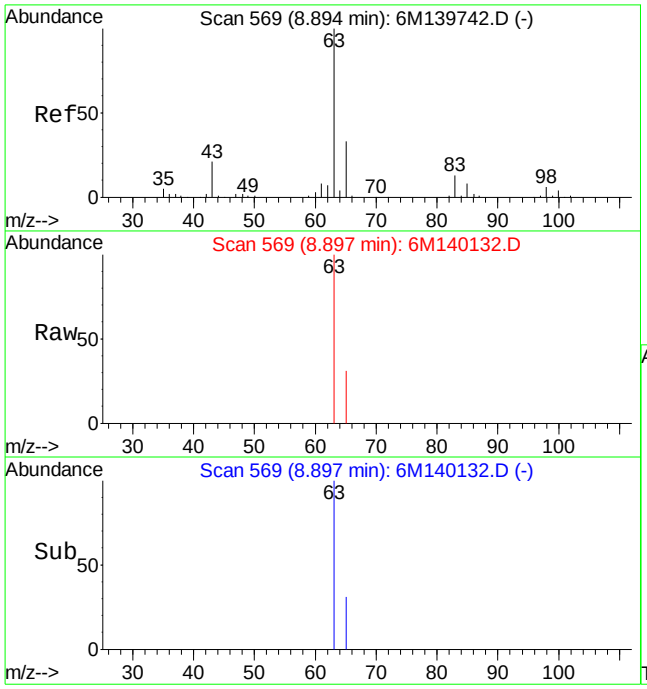

#27
1,1-Dichloroethane
Concen: 0.31 ug/L
RT: 8.90 min Scan# 569
Delta R.T. 0.00 min
Lab File: 6M140132.D
Acq: 17 Jun 2016 2:47

Tgt Ion: 63 Resp: 3365

Ion	Ratio	Lower	Upper
63	100		
65	17.8	19.3	44.9#

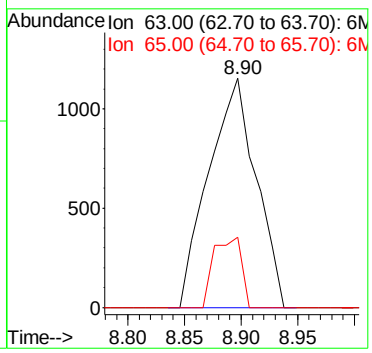

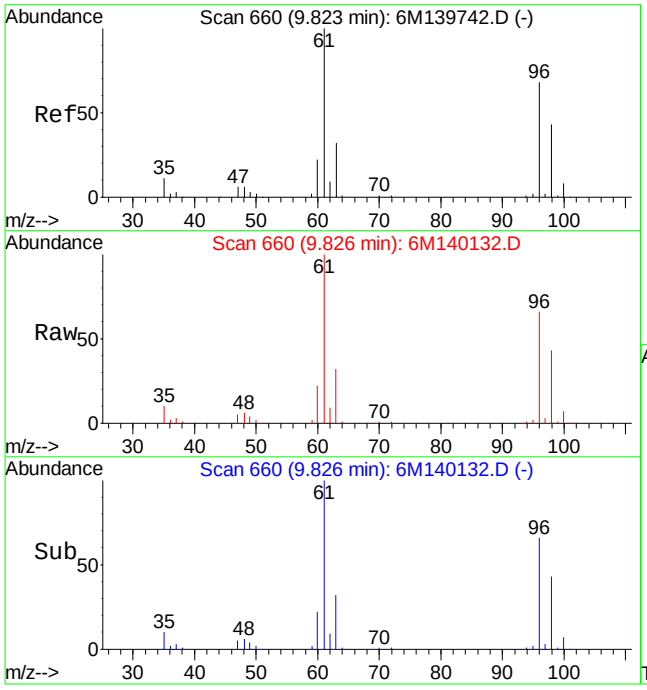

#32
cis-1,2-Dichloroethene
Concen: 76.23 ug/L
RT: 9.83 min Scan# 660
Delta R.T. 0.00 min
Lab File: 6M140132.D
Acq: 17 Jun 2016 2:47

Tgt Ion: 96 Resp: 448993

Ion	Ratio	Lower	Upper
96	100		
61	150.9	89.2	208.2

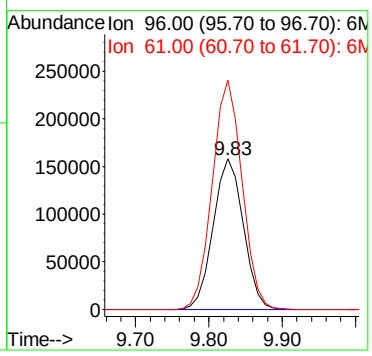

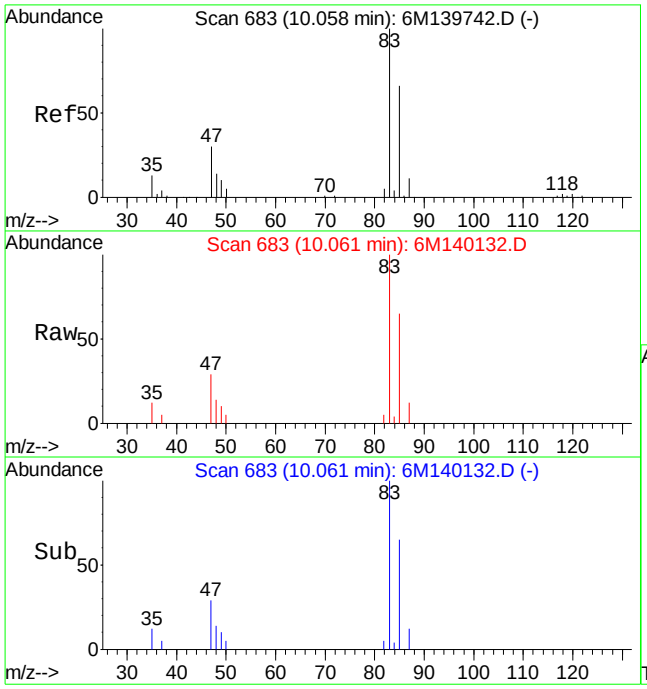

#33
Chloroform
Concen: 3.33 ug/L
RT: 10.06 min Scan# 683
Delta R.T. 0.00 min
Lab File: 6M140132.D
Acq: 17 Jun 2016 2:47

Tgt Ion: 83 Resp: 32171

Ion	Ratio	Lower	Upper
83	100		
85	65.8	39.0	91.0
47	30.5	18.5	43.1

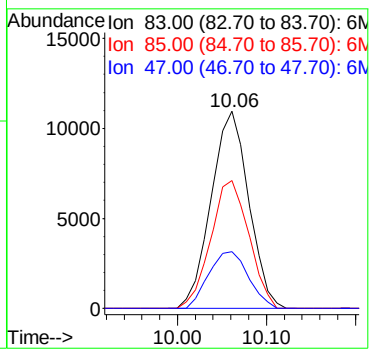

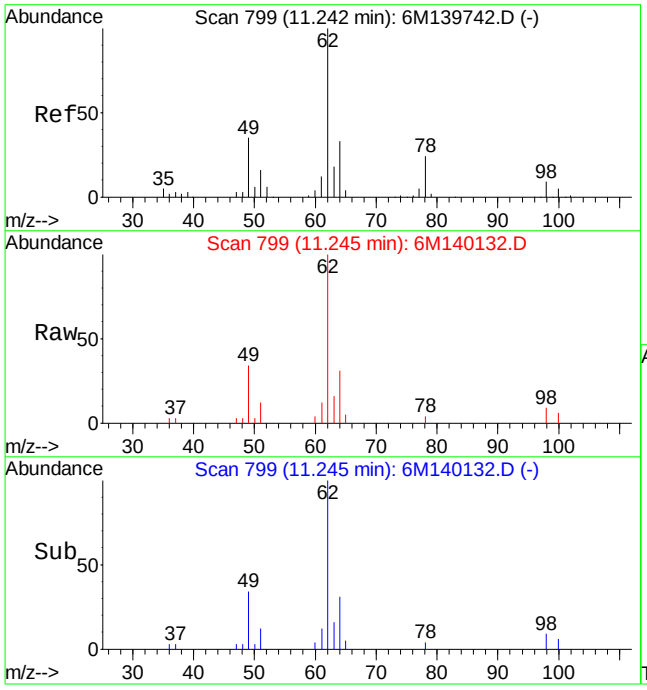

#45
1,2-Dichloroethane
Concen: 4.84 ug/L
RT: 11.25 min Scan# 799
Delta R.T. 0.00 min
Lab File: 6M140132.D
Acq: 17 Jun 2016 2:47

Tgt Ion: 62 Resp: 35893

Ion	Ratio	Lower	Upper
62	100		
49	35.5	25.1	58.5
98	7.8	5.2	12.0

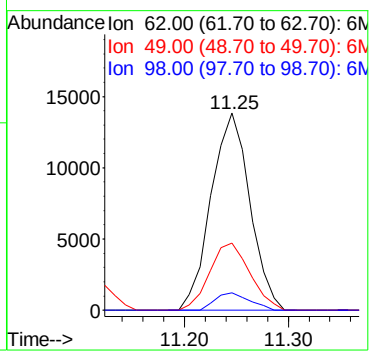

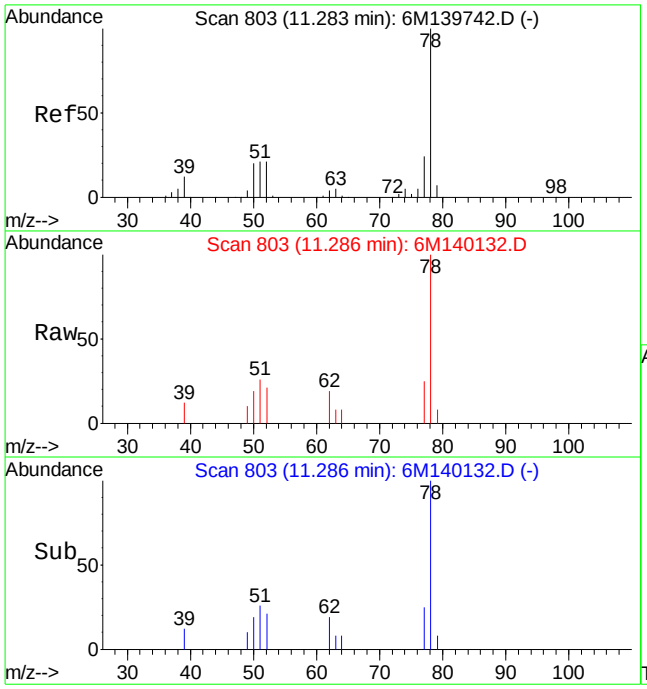

#46
Benzene
Concen: 0.61 ug/L
RT: 11.29 min Scan# 803
Delta R.T. 0.00 min
Lab File: 6M140132.D
Acq: 17 Jun 2016 2:47

Tgt Ion: 78 Resp: 13235

Ion	Ratio	Lower	Upper
78	100		
52	19.5	12.4	29.0

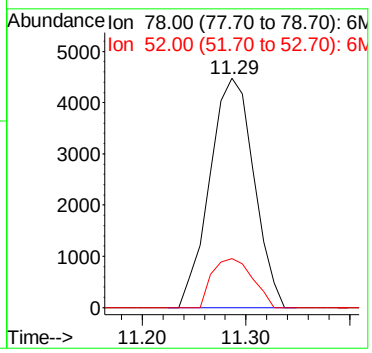

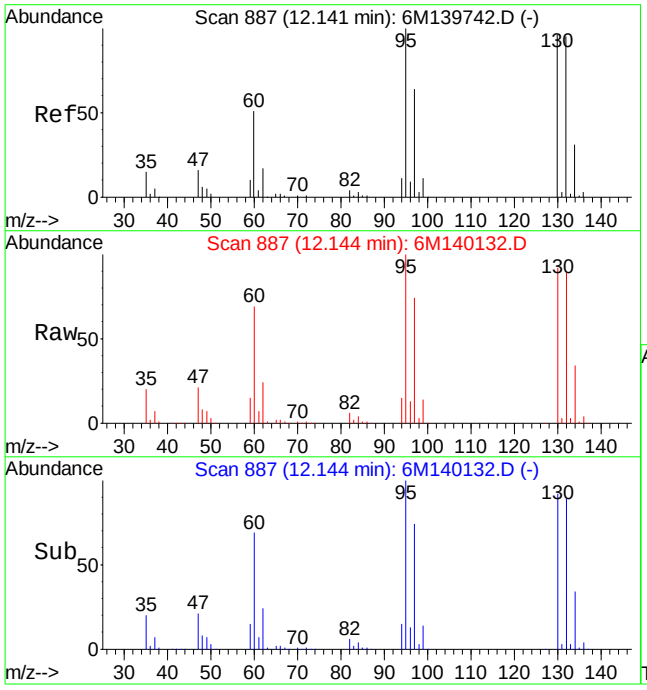

#47
Trichloroethene
Concen: 1525.56 ug/L
RT: 12.14 min Scan# 887
Delta R.T. -0.01 min
Lab File: 6M140132.D
Acq: 17 Jun 2016 2:47

Tgt Ion:130 Resp: 8423630

Ion	Ratio	Lower	Upper
130	100		
60	70.8	32.0	74.6

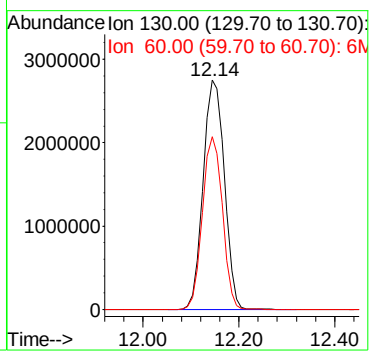

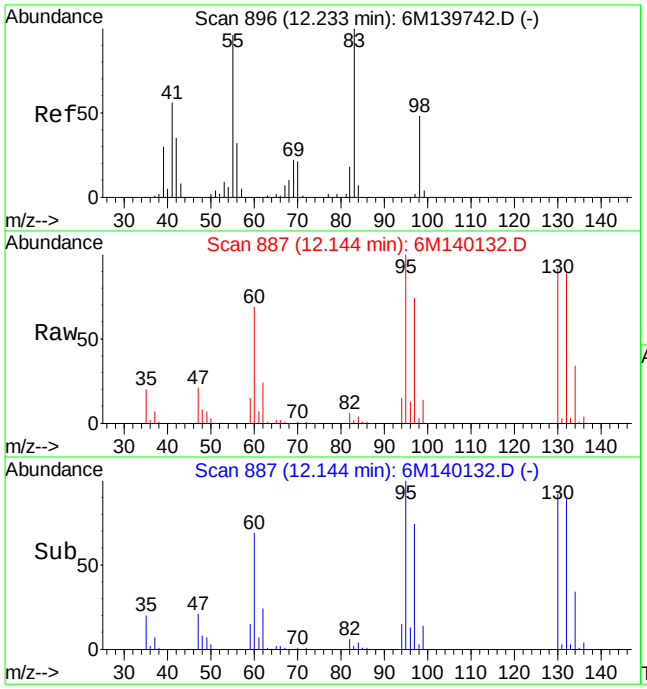

#48
Methylcyclohexane
Concen: 18.18 ug/L
RT: 12.14 min Scan# 887
Delta R.T. -0.09 min
Lab File: 6M140132.D
Acq: 17 Jun 2016 2:47

Tgt Ion: 83 Resp: 152172

Ion	Ratio	Lower	Upper
83	100		
55	0.0	56.3	131.3#
98	191.6	28.4	66.4#

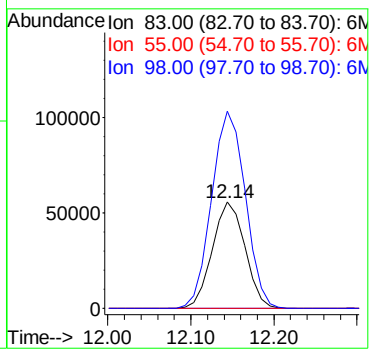

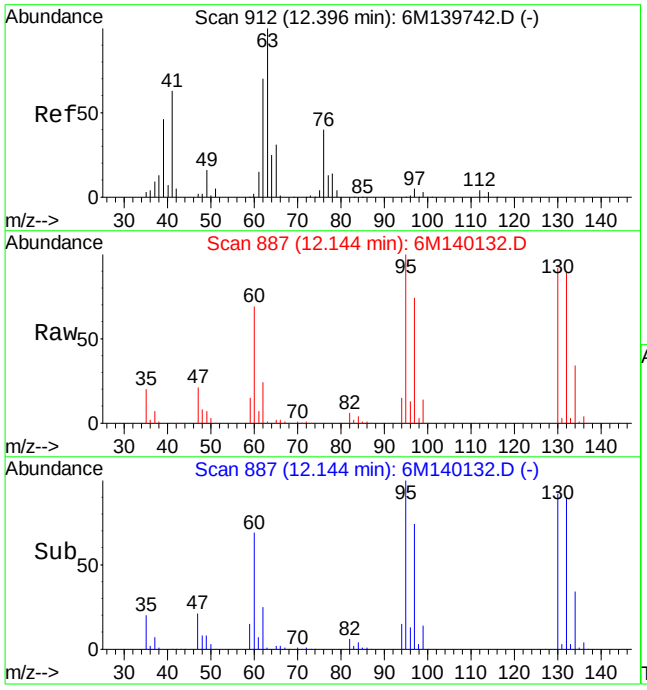

#49
1,2-Dichloropropane
Concen: 7.35 ug/L
RT: 12.14 min Scan# 887
Delta R.T. -0.25 min
Lab File: 6M140132.D
Acq: 17 Jun 2016 2:47

Tgt Ion: 63 Resp: 43881

Ion	Ratio	Lower	Upper
63	100		
76	0.0	24.2	56.4#

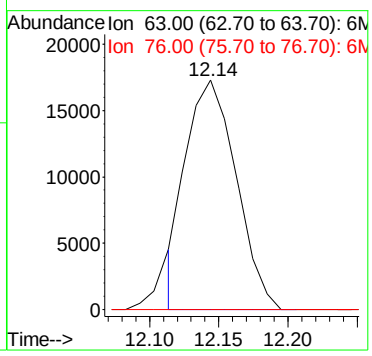

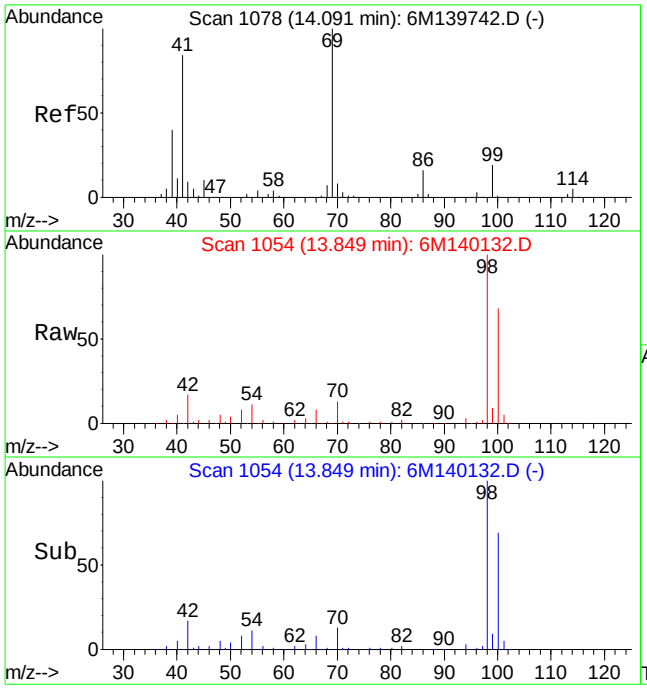

#60
Ethyl Methacrylate
Concen: 0.13 ug/L
RT: 13.85 min Scan# 1054
Delta R.T. -0.24 min
Lab File: 6M140132.D
Acq: 17 Jun 2016 2:47

Tgt Ion: 69 Resp: 772

Ion	Ratio	Lower	Upper
69	100		
41	130.4	51.4	120.0#

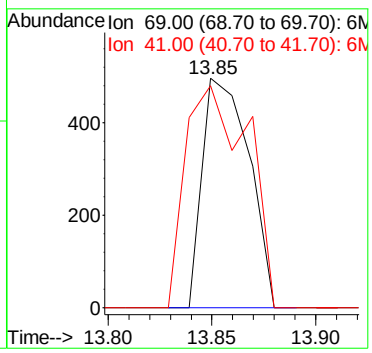

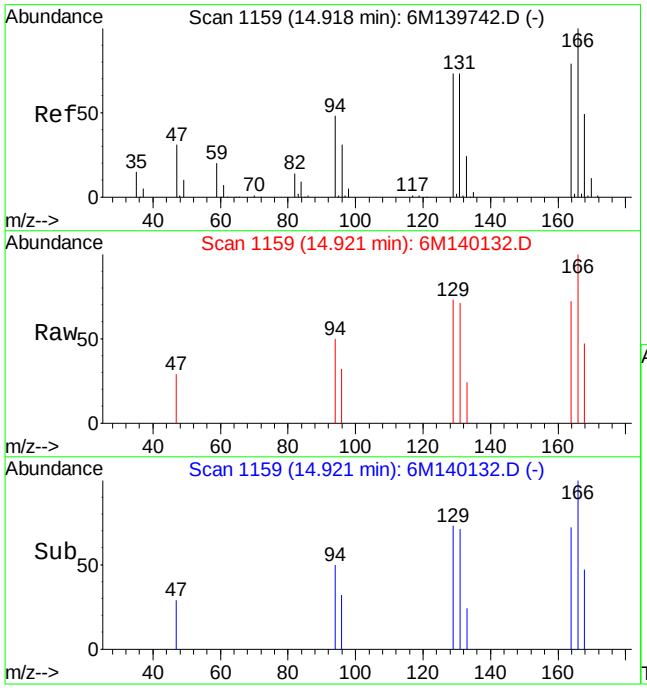

#66
Tetrachloroethene
Concen: 0.53 ug/L
RT: 14.92 min Scan# 1159
Delta R.T. -0.01 min
Lab File: 6M140132.D
Acq: 17 Jun 2016 2:47

Tgt Ion:166 Resp: 3090

Ion	Ratio	Lower	Upper
166	100		
129	73.1	43.5	101.5
94	38.6	27.8	64.8

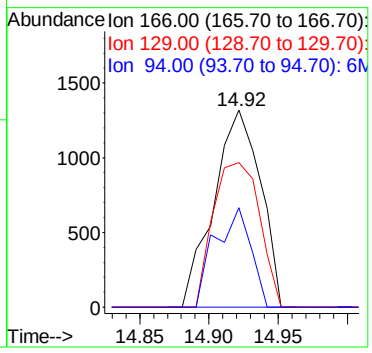

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061716\8M413072.D Vial: 14
Acq On : 17 Jun 2016 22:12 Operator: FJB
Sample : L16060822-05 50X B 826-LOW D1 Inst : HPMS8
Misc : 1,50 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 22:34:04 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	741577	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	559288	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	307393	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	216952	27.2292 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 108.92%		
43) 1,2-Dichloroethane-d4	10.30	65	233563	27.3388 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 109.36%		
58) Toluene-d8	12.68	98	766165	26.1753 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.72%		
80) p-Bromofluorobenzene	16.08	95	318429	25.0175 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.08%		
Target Compounds					Qvalue
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	187182	24.8541 ug/L	92
32) cis-1,2-Dichloroethene	9.18	96	11329	1.3309 ug/L	89
47) Trichloroethene	11.21	130	319033	39.2677 ug/L	98
48) Methylcyclohexane	11.21	83	3909	0.3167 ug/L #	1

(#) = qualifier out of range (m) = manual integration
8M413072.D 8260WT.M Mon Jun 20 09:21:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061716\8M413072.D Vial: 14
Acq On : 17 Jun 2016 22:12 Operator: FJB
Sample : L16060822-05 50X B 826-LOW D1 Inst : HPMS8
Misc : 1,50 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 22:34 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

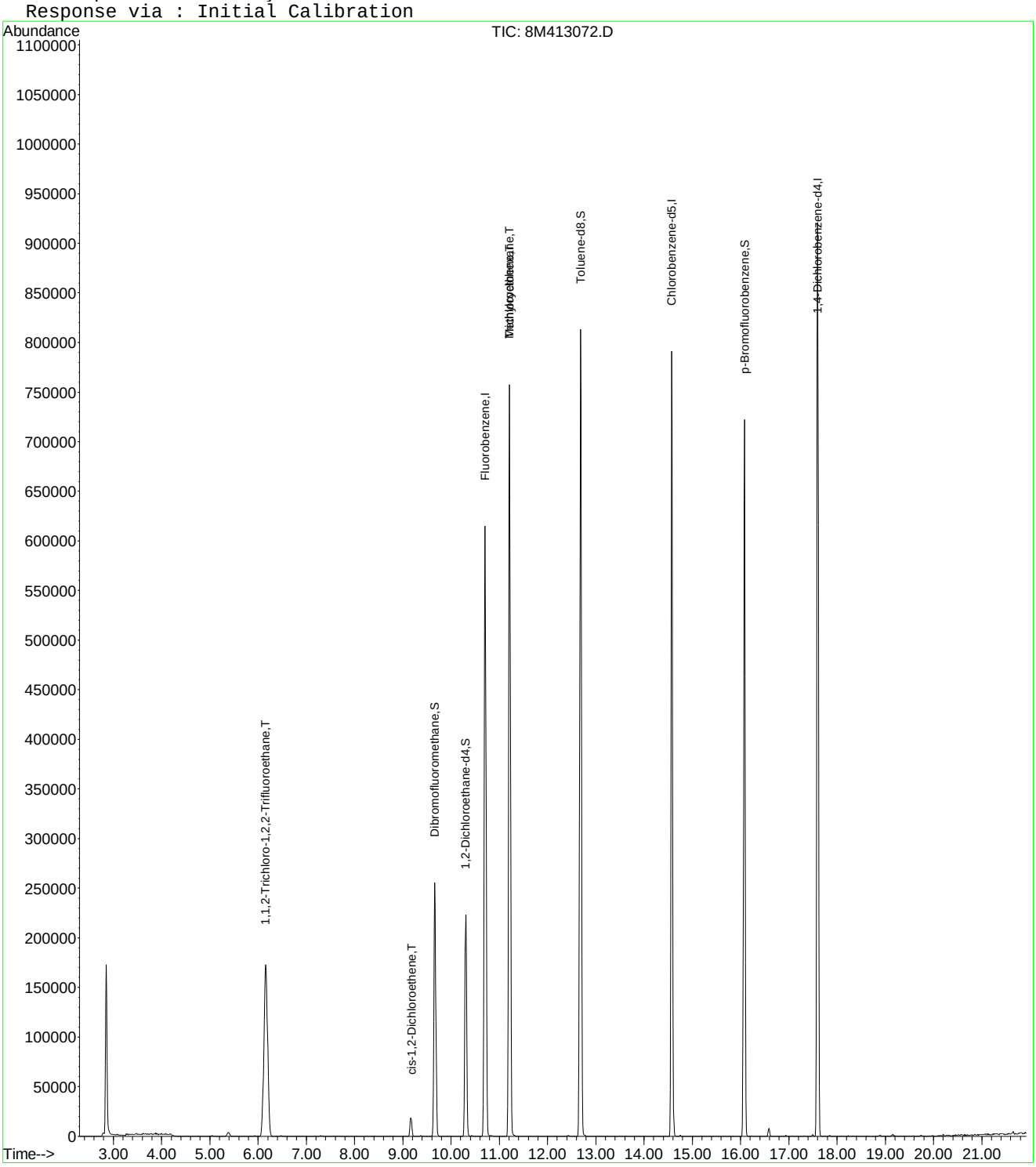

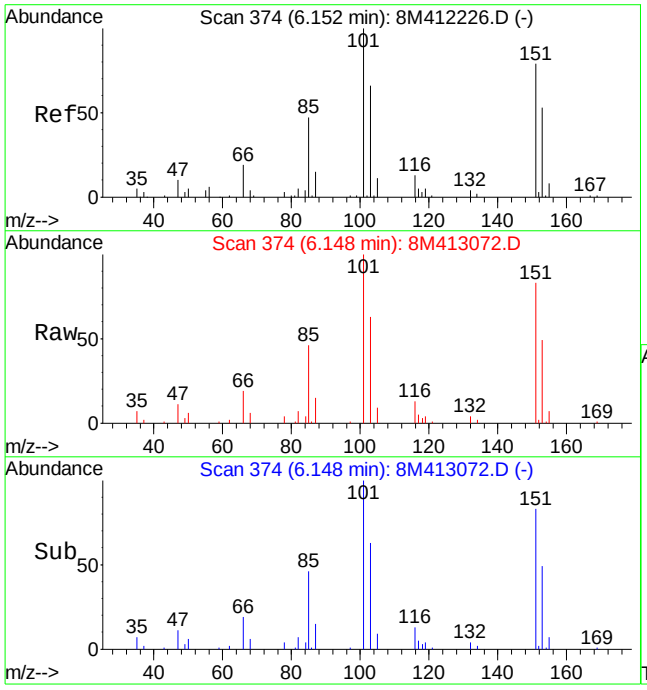

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 24.85 ug/L
RT: 6.15 min Scan# 374
Delta R.T. -0.00 min
Lab File: 8M413072.D
Acq: 17 Jun 2016 22:12

Tgt Ion:101 Resp: 187182

Ion	Ratio	Lower	Upper
101	100		
151	87.0	40.2	120.2

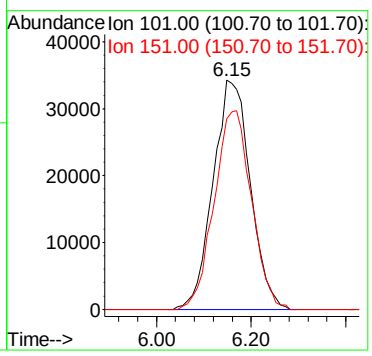

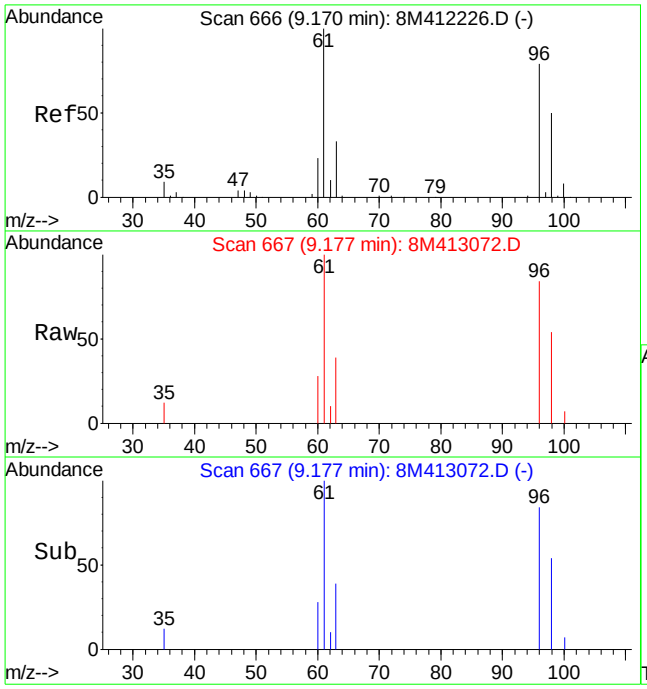

#32
cis-1,2-Dichloroethene
Concen: 1.33 ug/L
RT: 9.18 min Scan# 667
Delta R.T. 0.01 min
Lab File: 8M413072.D
Acq: 17 Jun 2016 22:12

Tgt Ion: 96 Resp: 11329

Ion	Ratio	Lower	Upper
96	100		
61	138.9	91.5	213.5

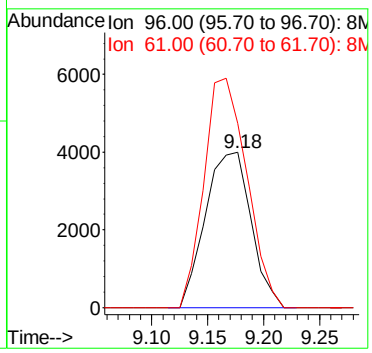

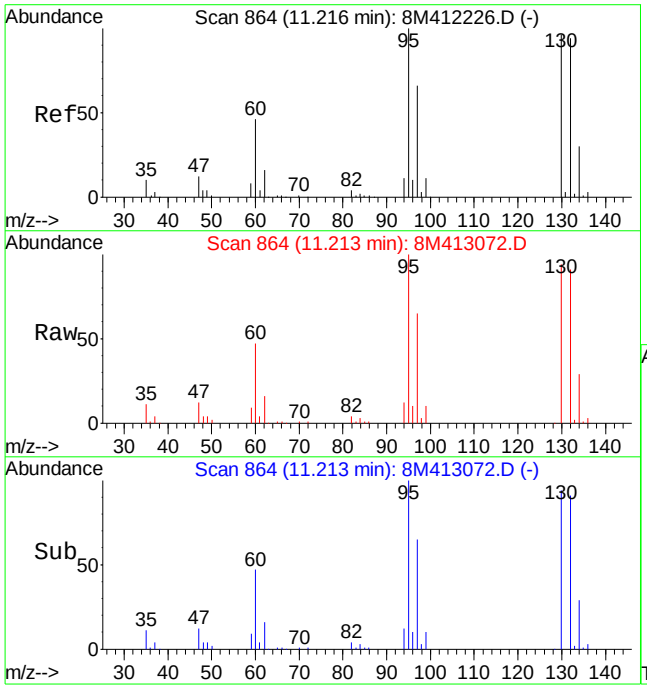

#47
Trichloroethene
Concen: 39.27 ug/L
RT: 11.21 min Scan# 864
Delta R.T. -0.00 min
Lab File: 8M413072.D
Acq: 17 Jun 2016 22:12

Tgt Ion:130 Resp: 319033

Ion	Ratio	Lower	Upper
130	100		
132	95.4	58.0	135.2
95	105.5	64.9	151.5

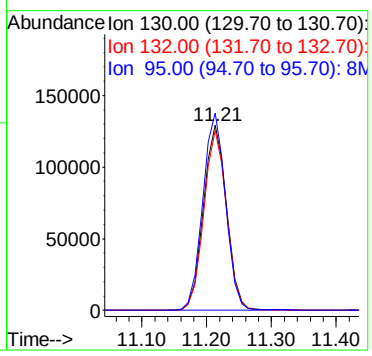

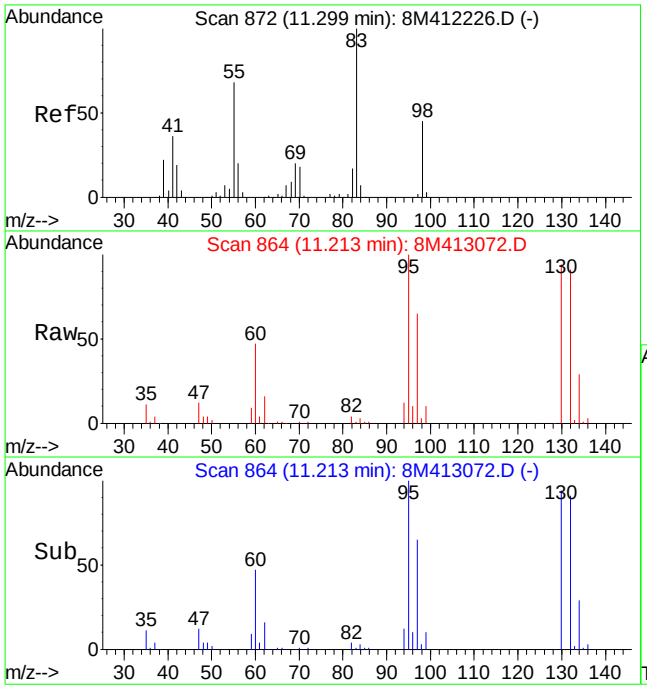

#48
Methylcyclohexane
Concen: 0.32 ug/L
RT: 11.21 min Scan# 864
Delta R.T. -0.09 min
Lab File: 8M413072.D
Acq: 17 Jun 2016 22:12

Tgt Ion: 83 Resp: 3909

Ion	Ratio	Lower	Upper
83	100		
55	0.0	40.9	95.3#
98	246.0	28.1	65.7#

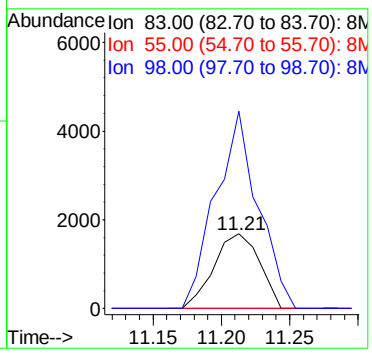

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061616\6M140126.D Vial: 14
Acq On : 16 Jun 2016 23:34 Operator: FJB
Sample : L16060822-06 TB A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:37:02 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	537933	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	402451	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.64	152	216671	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	141907	25.4893 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.96%		
43) 1,2-Dichloroethane-d4	11.11	65	161153	26.2618 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 105.04%		
58) Toluene-d8	13.85	98	477816	24.7386 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.96%		
80) p-Bromofluorobenzene	17.84	95	197235	25.7783 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.12%		

Target Compounds					Qvalue
13) Acetone	6.65	43	869	Below Cal #	48
26) Vinyl Acetate	9.04	43	1831	0.1883 ug/L #	78
36) Tetrahydrofuran	10.37	42	3351	2.0038 ug/L #	68
60) Ethyl Methacrylate	13.85	69	991	0.1582 ug/L	71

(#) = qualifier out of range (m) = manual integration
6M140126.D 8260WT.M Fri Jun 17 08:37:05 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061616\6M140126.D Vial: 14
Acq On : 16 Jun 2016 23:34 Operator: FJB
Sample : L16060822-06 TB A 826-LOW Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 8:37 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration

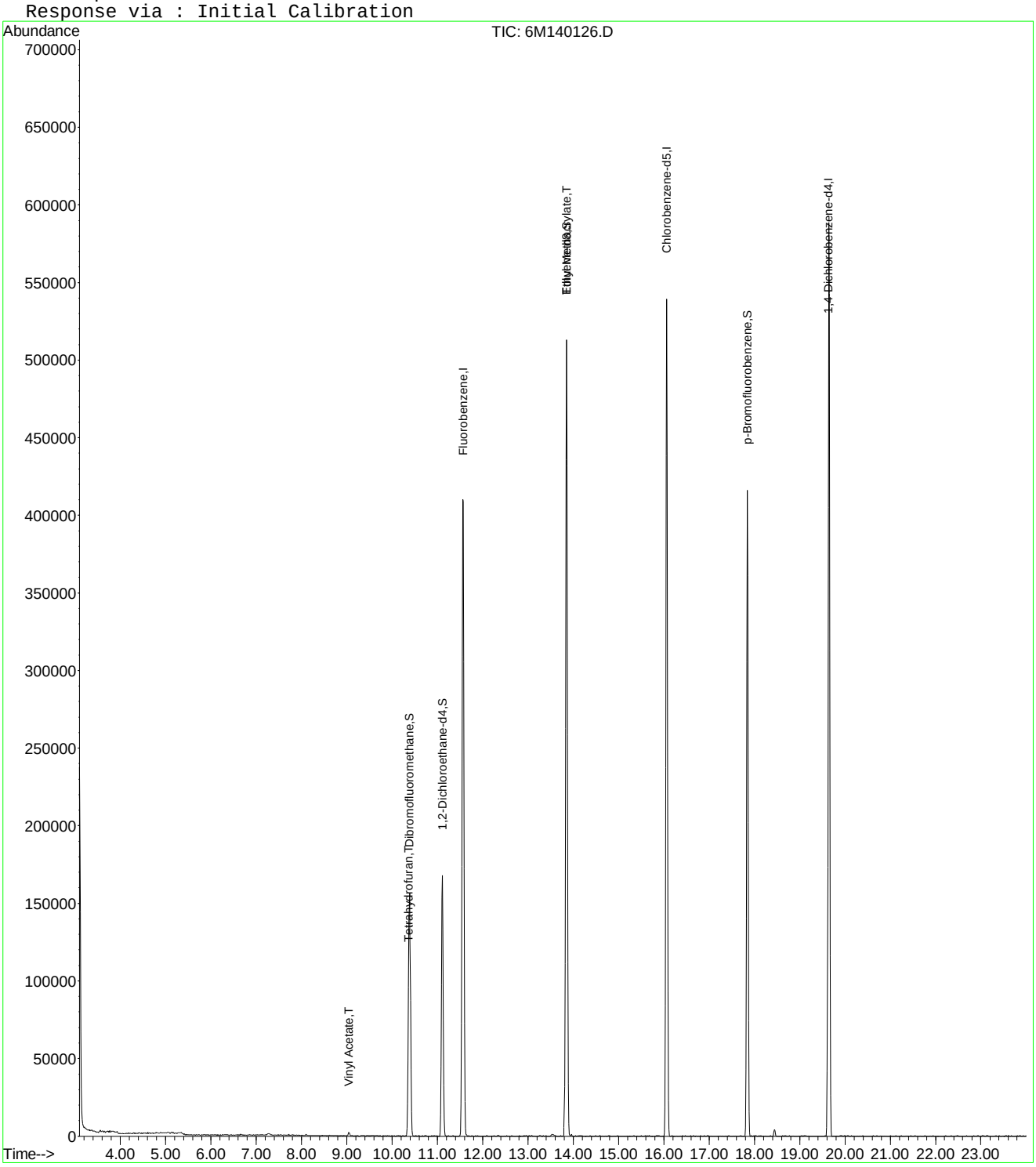

6M140126.D 8260WT.M Fri Jun 17 08:37:06 2016 Page 2

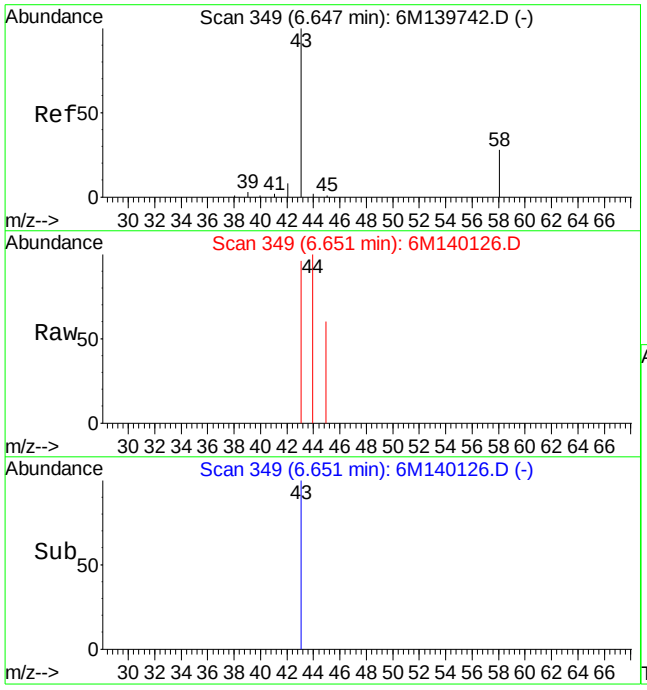

#13
Acetone
Concen: Below Cal
RT: 6.65 min Scan# 349
Delta R.T. -0.01 min
Lab File: 6M140126.D
Acq: 16 Jun 2016 23:34

Tgt Ion: 43 Resp: 869

Ion	Ratio	Lower	Upper
43	100		
58	0.0	16.4	38.2#

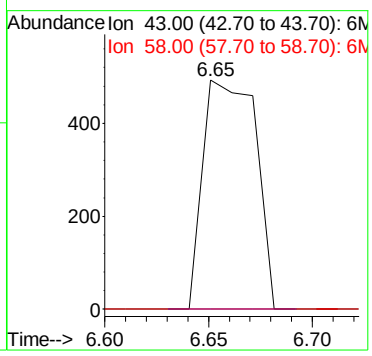

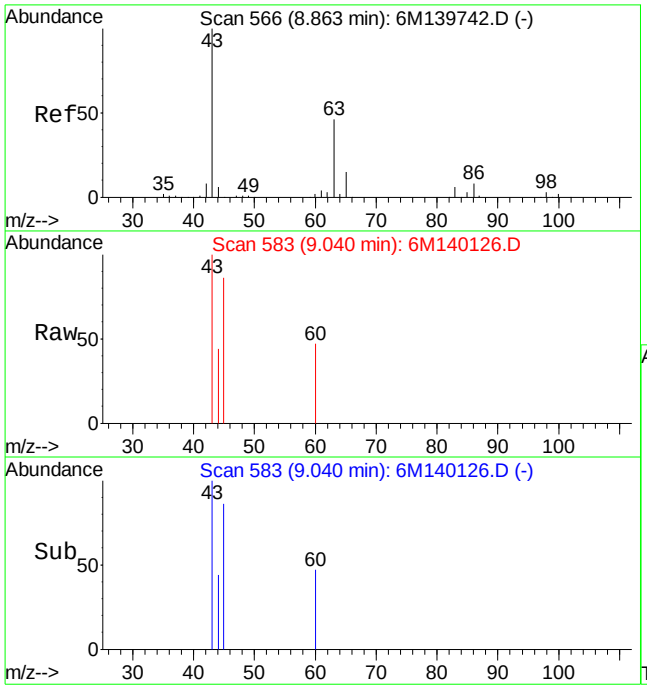

#26
Vinyl Acetate
Concen: 0.19 ug/L
RT: 9.04 min Scan# 583
Delta R.T. 0.18 min
Lab File: 6M140126.D
Acq: 16 Jun 2016 23:34

Tgt Ion: 43 Resp: 1831

Ion	Ratio	Lower	Upper
43	100		
86	0.0	4.5	10.5#

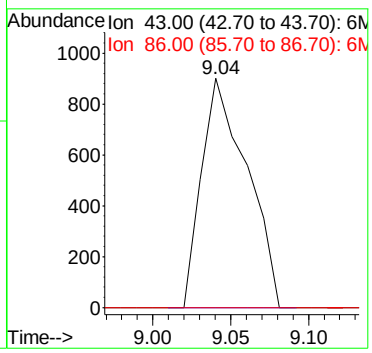

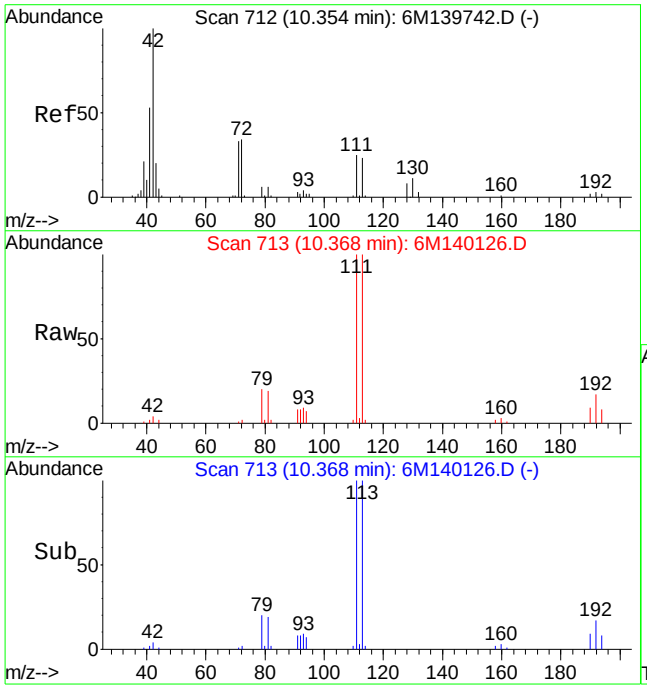

#36
Tetrahydrofuran
Concen: 2.00 ug/L
RT: 10.37 min Scan# 713
Delta R.T. 0.01 min
Lab File: 6M140126.D
Acq: 16 Jun 2016 23:34

Tgt Ion: 42 Resp: 3351

Ion	Ratio	Lower	Upper
42	100		
72	20.3	20.8	48.4#
71	11.3	19.9	46.5#

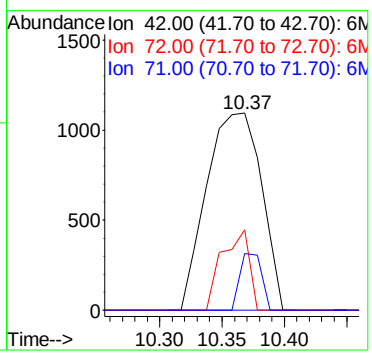

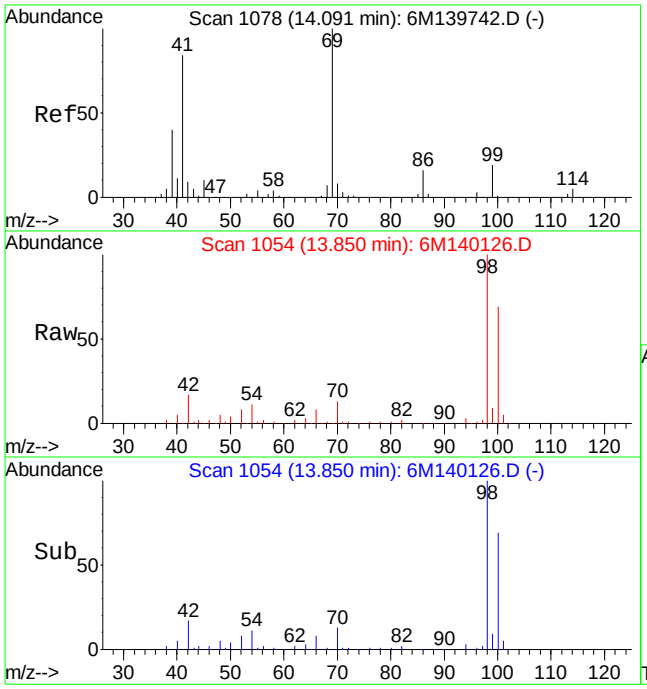

#60
Ethyl Methacrylate
Concen: 0.16 ug/L
RT: 13.85 min Scan# 1054
Delta R.T. -0.24 min
Lab File: 6M140126.D
Acq: 16 Jun 2016 23:34

Tgt Ion: 69 Resp: 991

Ion	Ratio	Lower	Upper
69	100		
41	112.3	51.4	120.0

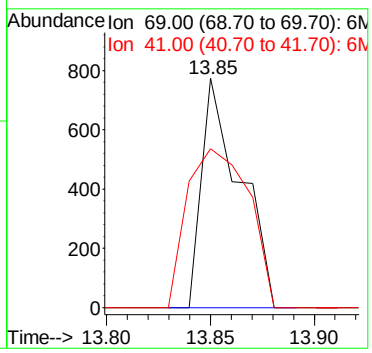

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:46 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	611118	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	473080	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	253718	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.40	111	173671	27.7488 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.00%		
43) 1,2-Dichloroethane-d4	11.12	65	203570	26.8000 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.20%		
58) Toluene-d8	13.86	98	554047	26.0139 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.04%		
80) p-Bromofluorobenzene	17.85	95	229998	27.1525 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 108.60%		

Target Compounds					Qvalue
13) Acetone	6.67	43	1325	0.6992 ug/L #	46
20) Carbon Disulfide	7.54	76	18747	0.9622 ug/L #	39
29) 2-Butanone	9.31	43	1188	0.4247 ug/L #	1
36) Tetrahydrofuran	10.36	42	2769	1.5196 ug/L #	58
60) Ethyl Methacrylate	13.87	69	899	0.1270 ug/L #	1

(#) = qualifier out of range (m) = manual integration
6M138751.D 8260WTR.M Mon Apr 25 09:22:46 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

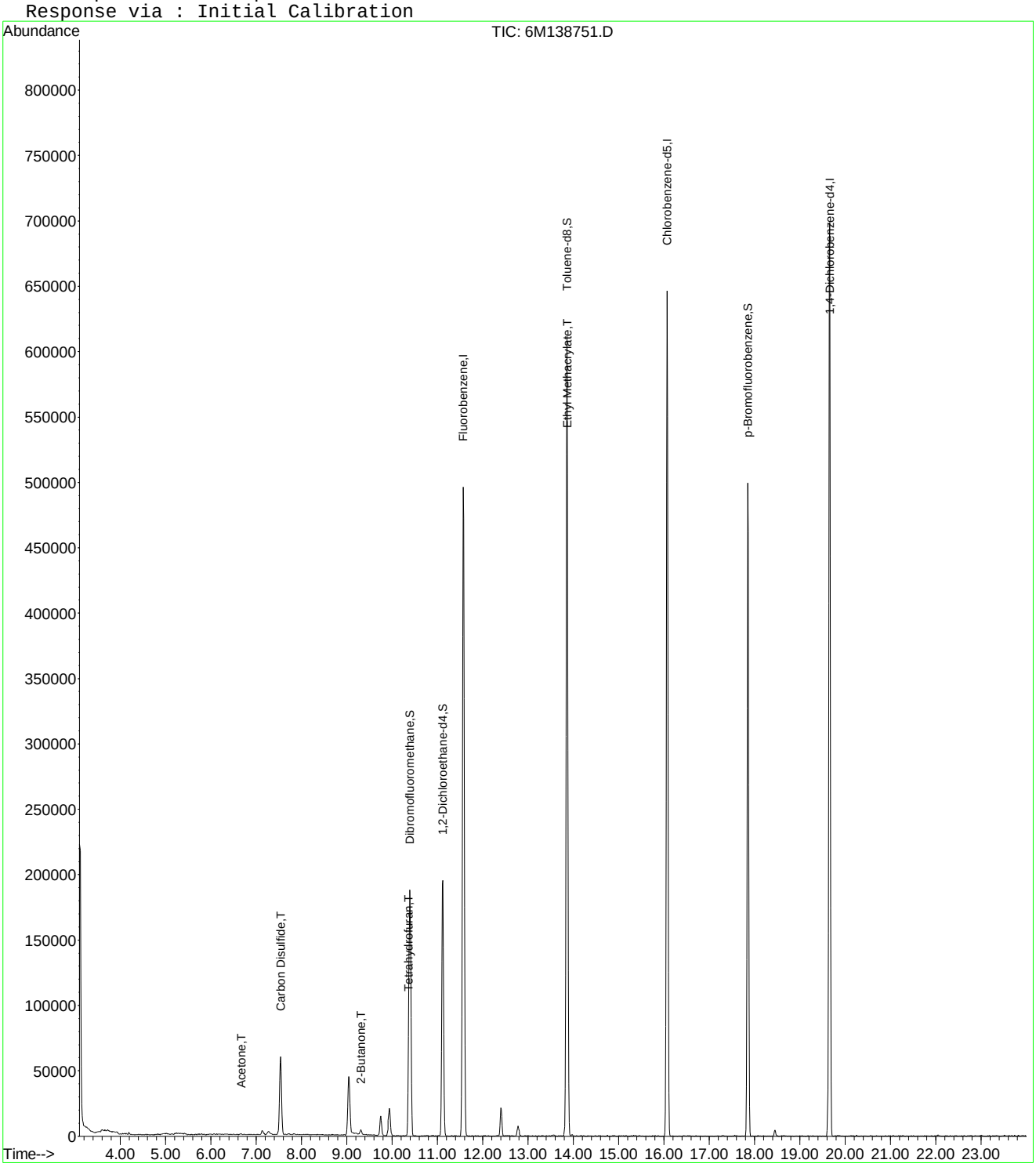

6M138751.D 8260WTR.M Mon Apr 25 09:22:46 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:52 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	611118	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	473080	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	253718	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.13	41	4366	3.7209 ug/L	76
3) 3-Chloro-1-propene	7.54	41	69268	4.2301 ug/L	92
4) 2-Chloro-1,3-butadiene	9.04	53	50753	3.6002 ug/L	85
5) Ethyl Acetate	9.75	43	28042	4.3499 ug/L #	90
6) Methacrylonitrile	9.94	67	8721	3.5173 ug/L #	55
7) Isobutyl Alcohol	9.94	43	1233	3.4767 ug/L #	85
9) Methyl methacrylate	12.40	41	19474	3.0338 ug/L	79
10) 2-Nitropropane	12.78	43	7076	3.7392 ug/L	93
13) Cyclohexanone	17.57	55	447	0.5159 ug/L #	25

(#) = qualifier out of range (m) = manual integration
6M138751.D A9FOOWT.M Mon Apr 25 15:45:52 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

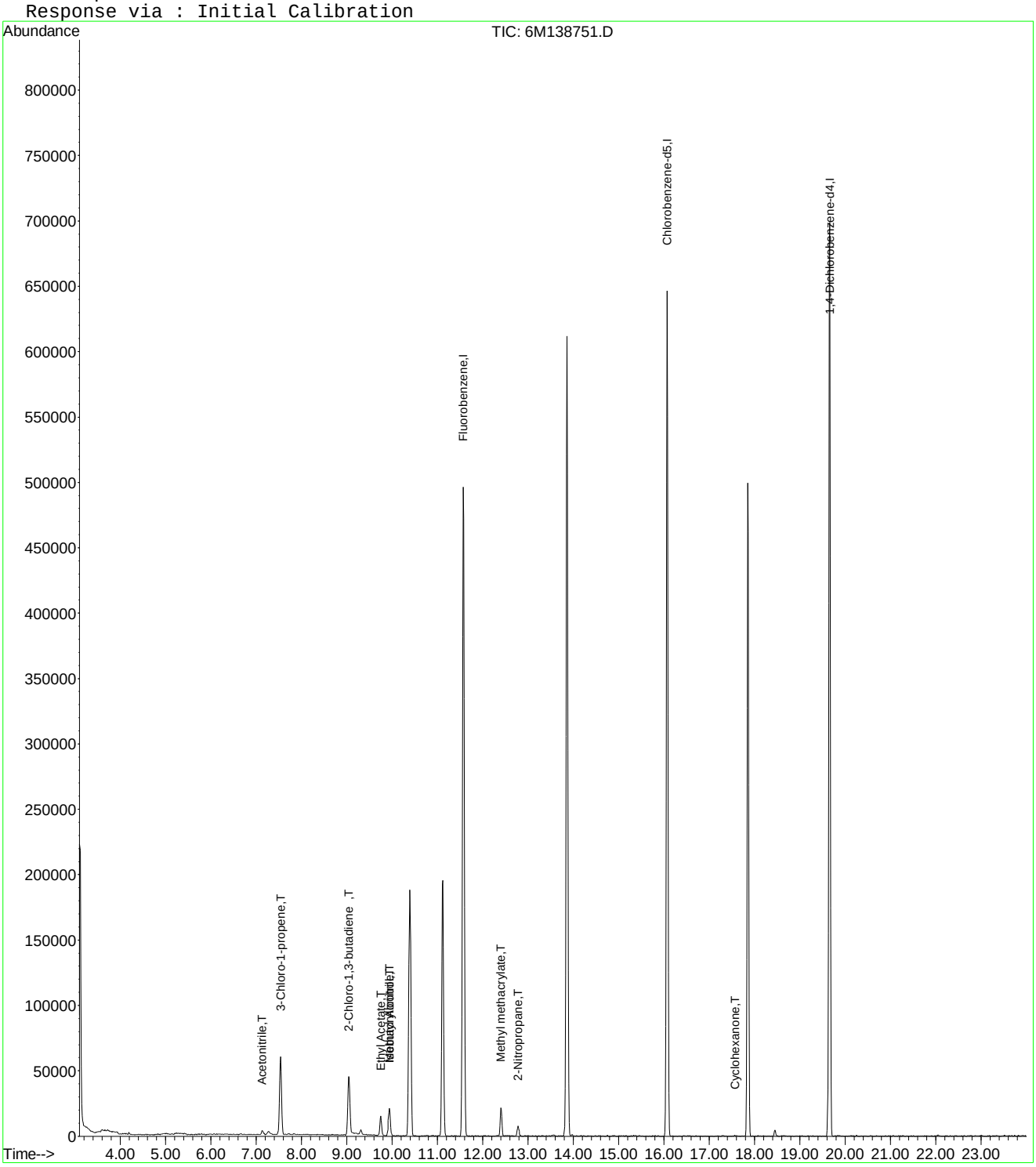

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:56 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	611118	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	473080	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	253718	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.13	41	4366	4.7698 ug/L	76
3) 3-Chloro-1-propene	7.54	41	69268	4.5408 ug/L	92
4) 2-Chloro-1,3-butadiene	9.04	53	50753	3.8775 ug/L	85
5) Ethyl Acetate	9.75	43	28042	4.2792 ug/L #	90
6) Methacrylonitrile	9.94	67	8721	3.8601 ug/L #	55
7) Isobutyl Alcohol	9.94	43	1233	5.9076 ug/L #	85
9) Methyl methacrylate	12.40	41	19474	3.5356 ug/L	79
10) 2-Nitropropane	12.78	43	7076	3.4543 ug/L	93
13) Cyclohexanone	17.57	55	447	1.4133 ug/L #	25

(#) = qualifier out of range (m) = manual integration
6M138751.D A9FOOWT.M Wed Apr 27 16:04:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

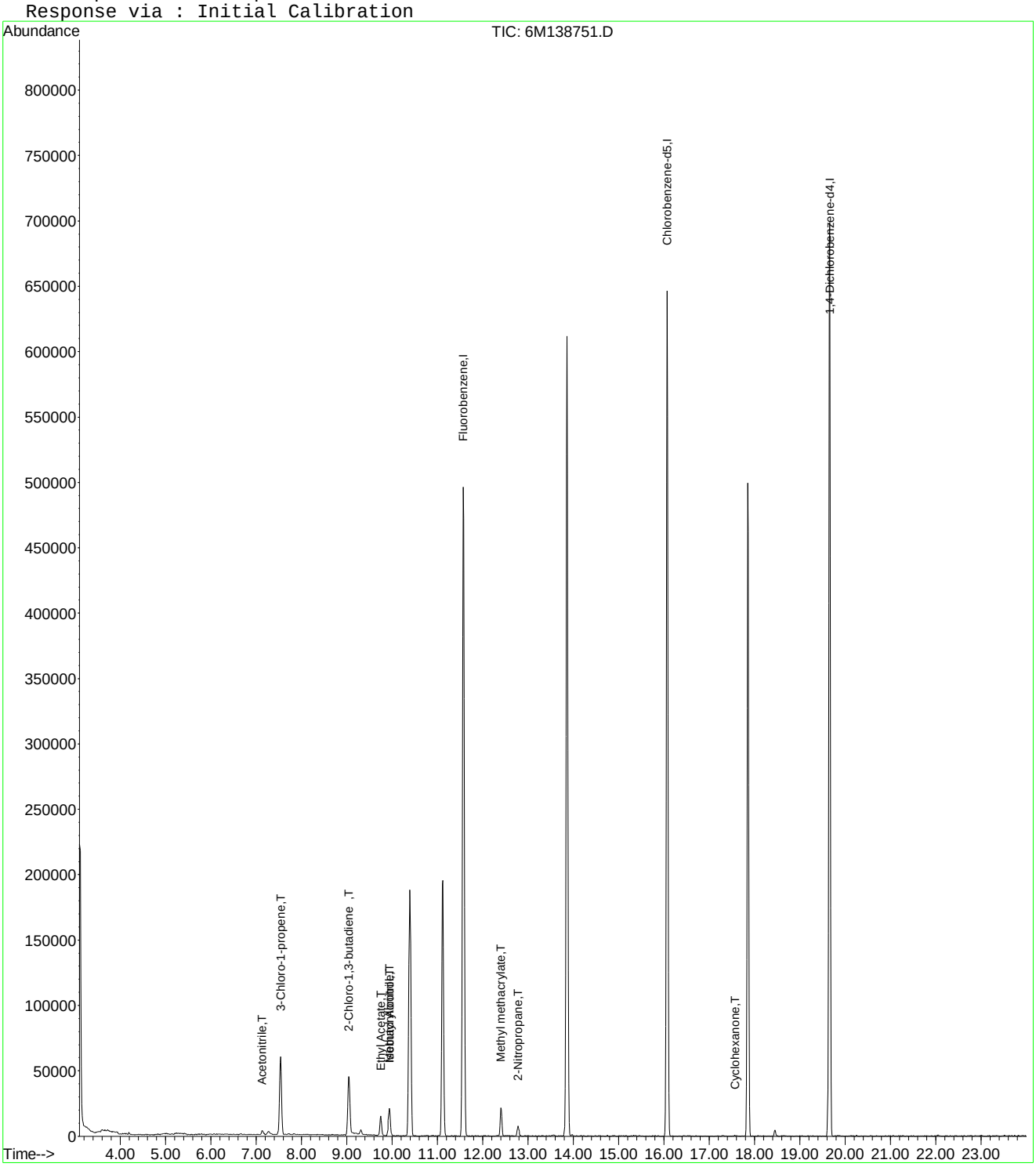

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138751.D Vial: 2
Acq On : 24 Apr 2016 16:59 Operator: JDS
Sample : WG566155-02 5ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	5.0000	4.7698	4.6	100	0.00
3	T	3-Chloro-1-propene	5.0000	4.5408	9.2	100	0.00
4	T	2-Chloro-1,3-butadiene	5.0000	3.8775	22.5	100	0.00
5	T	Ethyl Acetate	5.0000	4.2792	14.4	100	0.00
6	T	Methacrylonitrile	5.0000	3.8601	22.8	100	0.00
7	T	Isobutyl Alcohol	-1.0000	5.9076	0.0	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.99#
9	T	Methyl methacrylate	5.0000	3.5356	29.3	100	0.00
10	T	2-Nitropropane	-1.0000	3.4543	0.0	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	1.4133	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138751.D A9FOOWT.M Wed Apr 27 16:04:12 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:48 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	599043	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	463005	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	248475	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	171577	27.9669 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.88%		
43) 1,2-Dichloroethane-d4	11.12	65	207390	27.8532 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.40%		
58) Toluene-d8	13.86	98	547786	26.2796 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.12%		
80) p-Bromofluorobenzene	17.85	95	228171	27.5052 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 110.04%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	2739	1.4745 ug/L #	59
20) Carbon Disulfide	7.54	76	81493	4.2668 ug/L #	36
27) 1,1-Dichloroethane	9.05	63	3411	0.2688 ug/L #	42
29) 2-Butanone	9.31	43	3879	1.4148 ug/L #	1
36) Tetrahydrofuran	10.37	42	3350	1.8754 ug/L #	62
60) Ethyl Methacrylate	13.86	69	1183	0.1708 ug/L #	27

(#) = qualifier out of range (m) = manual integration
6M138752.D 8260WTR.M Mon Apr 25 09:22:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

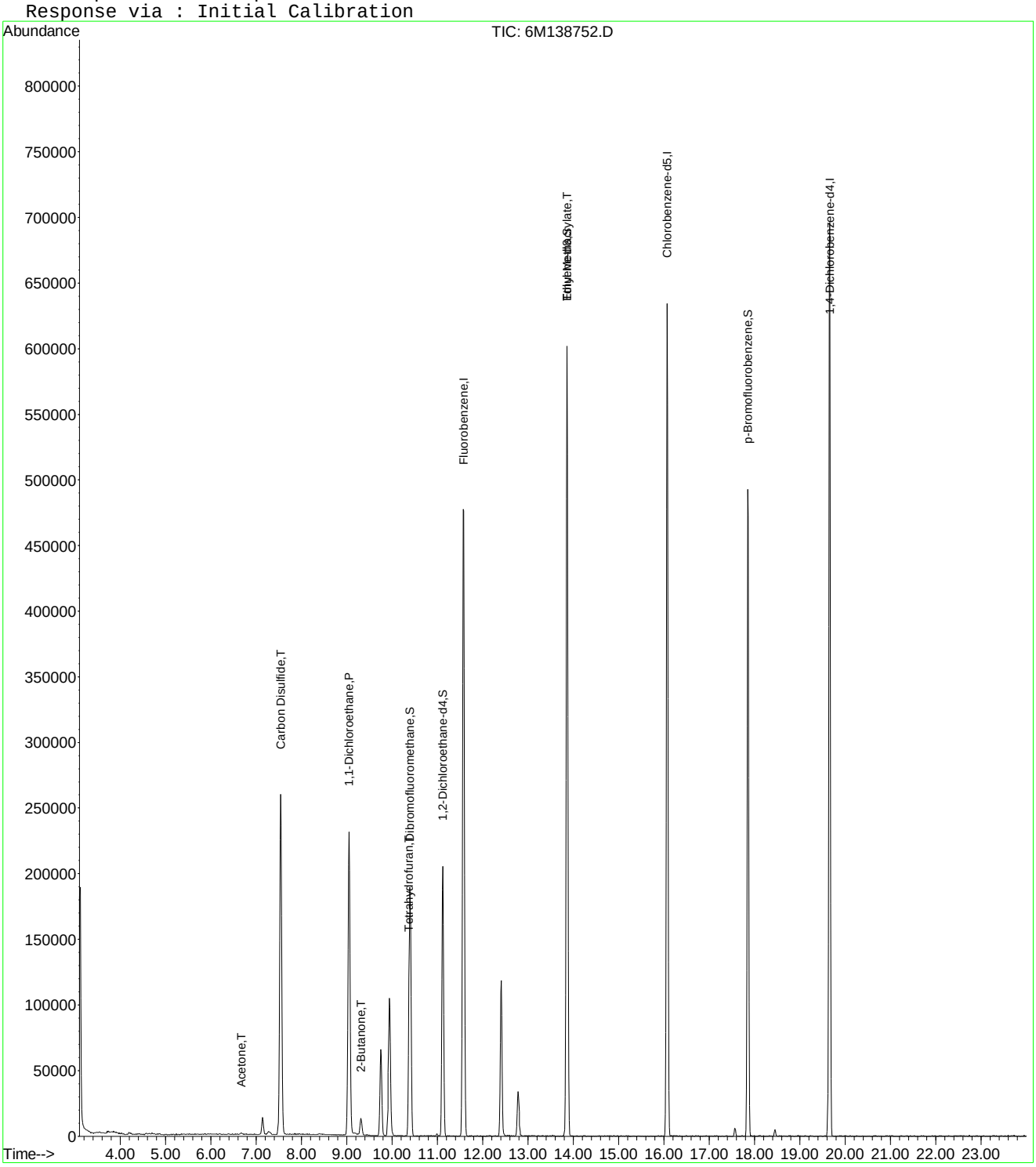

6M138752.D 8260WTR.M Mon Apr 25 09:22:48 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:54 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	599043	25.00 ug/L	-0.02
11) Chlorobenzene-d5	16.07	117	463005	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	248475	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	17741	15.4242 ug/L	95
3) 3-Chloro-1-propene	7.54	41	297686	18.5457 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	242962	17.5823 ug/L	84
5) Ethyl Acetate	9.75	43	124111	19.6403 ug/L	93
6) Methacrylonitrile	9.93	67	42708	17.5719 ug/L #	59
7) Isobutyl Alcohol	9.95	43	7968	22.9203 ug/L #	85
8) 1-Butanol	10.98	41	982	6.5662 ug/L #	52
9) Methyl methacrylate	12.41	41	95824	15.2291 ug/L	81
10) 2-Nitropropane	12.78	43	34207	18.4403 ug/L	92
13) Cyclohexanone	17.57	55	4053	4.7763 ug/L	81

(#) = qualifier out of range (m) = manual integration
6M138752.D A9FOOWT.M Mon Apr 25 15:45:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

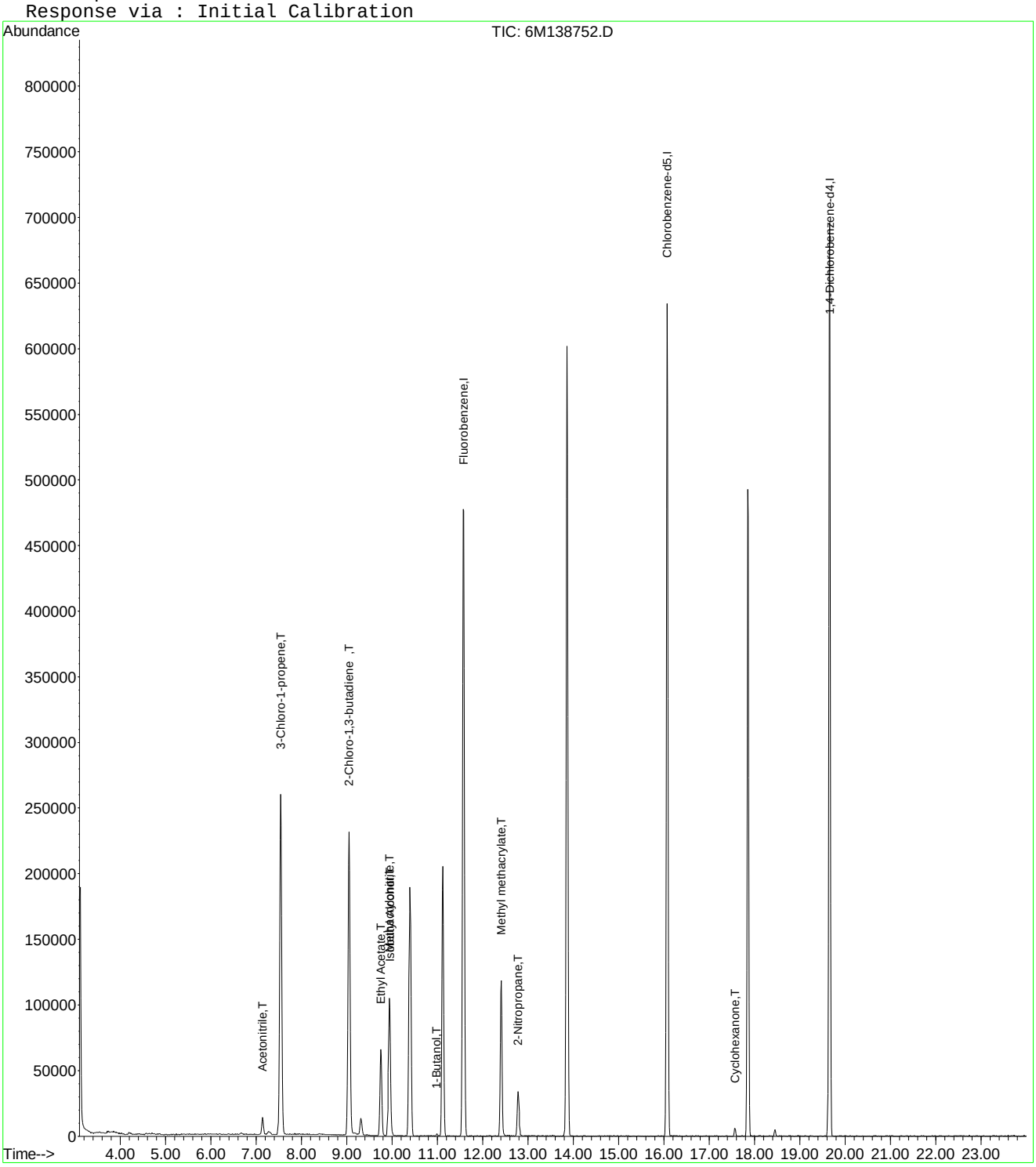

6M138752.D A9FOOWT.M Mon Apr 25 15:45:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:58 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	599043	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	463005	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	248475	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	17741	19.7725 ug/L	95
3) 3-Chloro-1-propene	7.54	41	297686	19.9080 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	242962	18.9362 ug/L	84
5) Ethyl Acetate	9.75	43	124111	19.3209 ug/L	93
6) Methacrylonitrile	9.93	67	42708	19.2846 ug/L #	59
7) Isobutyl Alcohol	9.95	43	7968	38.9462 ug/L #	85
9) Methyl methacrylate	12.41	41	95824	17.7480 ug/L	81
10) 2-Nitropropane	12.78	43	34207	17.0355 ug/L	92
13) Cyclohexanone	17.57	55	4053	13.0852 ug/L	81

(#) = qualifier out of range (m) = manual integration
6M138752.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

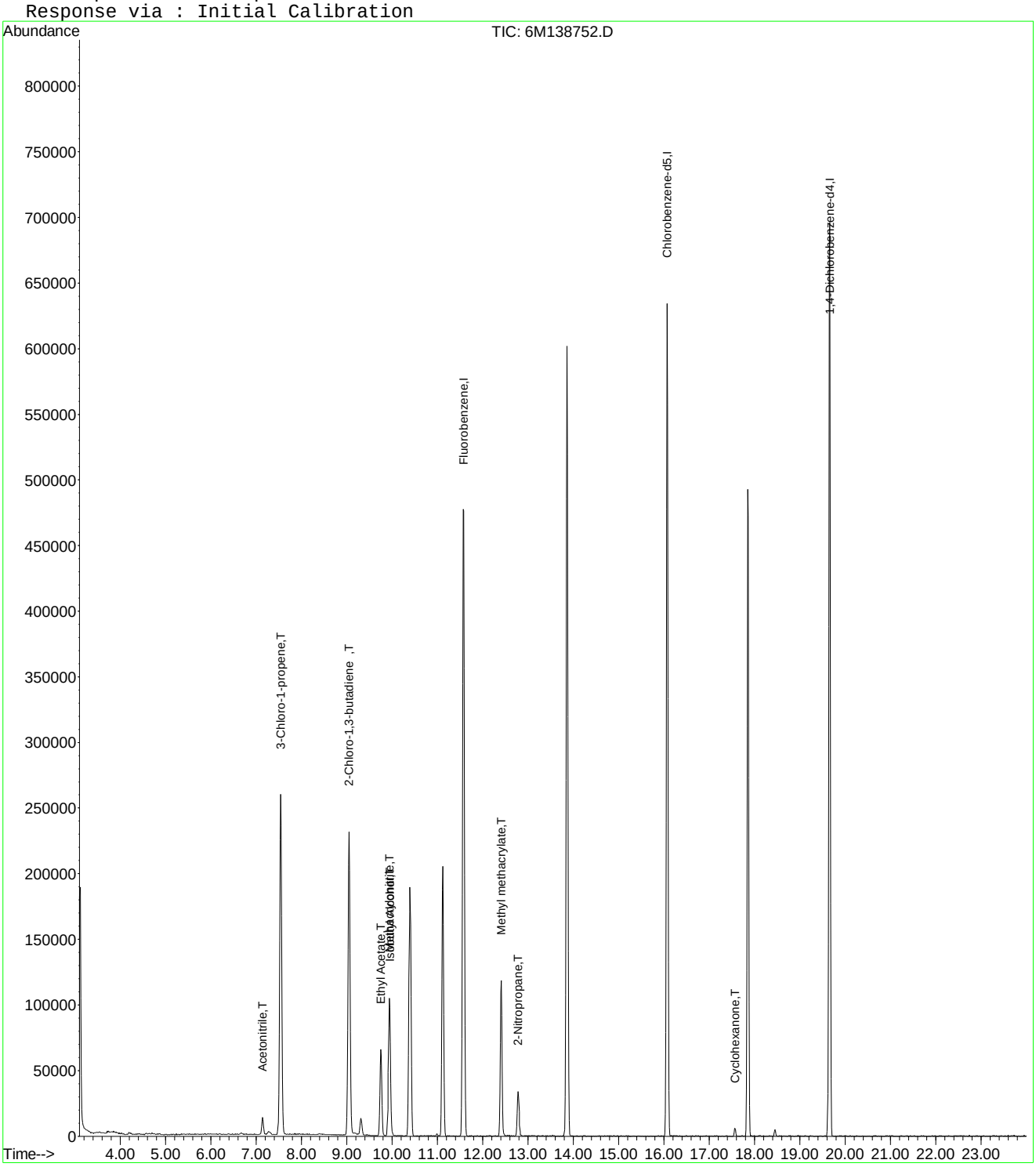

6M138752.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138752.D Vial: 3
Acq On : 24 Apr 2016 17:31 Operator: JDS
Sample : WG566155-03 20ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	19.7724	1.1	100	0.00
3	T	3-Chloro-1-propene	20.0000	19.9080	0.5	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	18.9362	5.3	100	0.00
5	T	Ethyl Acetate	20.0000	19.3209	3.4	100	0.00
6	T	Methacrylonitrile	20.0000	19.2846	3.6	100	0.00
7	T	Isobutyl Alcohol	40.0000	38.9462	2.6	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	20.0000	17.7480	11.3	100	0.00
10	T	2-Nitropropane	-1.0000	17.0355	0.0	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	13.0852	0.0	0	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138752.D A9FOOWT.M Wed Apr 27 16:04:26 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:48 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	604736	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	468574	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	254472	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.40	111	172256	27.8132 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.24%		
43) 1,2-Dichloroethane-d4	11.12	65	208744	27.7711 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.08%		
58) Toluene-d8	13.86	98	553191	26.2235 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.88%		
80) p-Bromofluorobenzene	17.85	95	239542	28.1954 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 112.80%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	3732	1.9901 ug/L #	57
20) Carbon Disulfide	7.54	76	220780	11.4508 ug/L #	36
26) Vinyl Acetate	9.04	43	2704	0.2791 ug/L #	8
27) 1,1-Dichloroethane	9.05	63	9803	0.7652 ug/L #	42
28) Ethyl-Tert-Butyl ether	9.31	59	152978	7.3579 ug/L #	39
29) 2-Butanone	9.53	43	660	0.2385 ug/L #	52
36) Tetrahydrofuran	10.37	42	3746	2.0774 ug/L #	62
60) Ethyl Methacrylate	13.86	69	1423	0.2030 ug/L #	9

(#) = qualifier out of range (m) = manual integration
6M138753.D 8260WTR.M Mon Apr 25 09:22:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

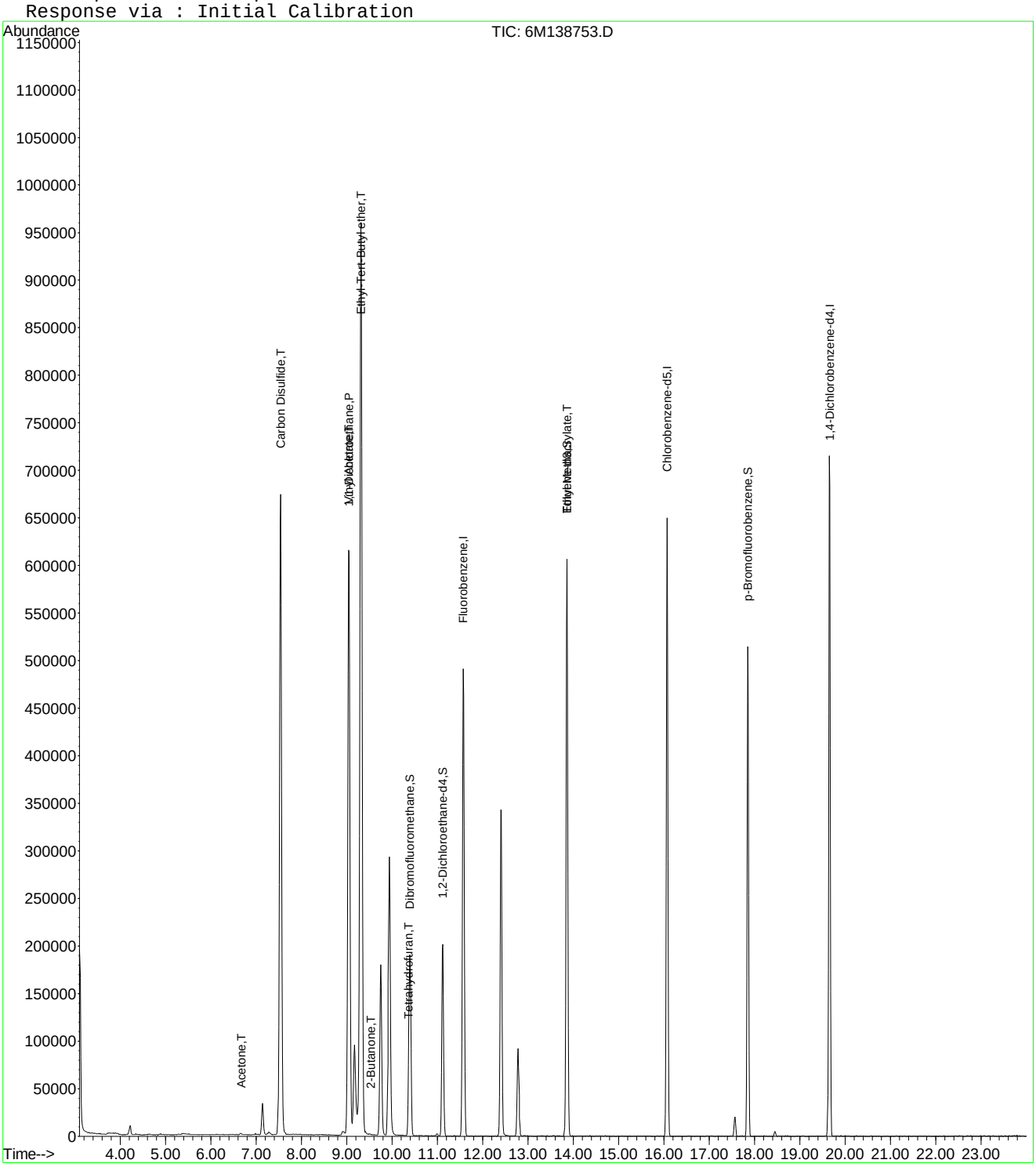

6M138753.D 8260WTR.M Mon Apr 25 09:22:49 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:55 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	604736	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	468574	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	254472	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	46802	40.3072 ug/L	94
3) 3-Chloro-1-propene	7.54	41	793114	48.9454 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	674471	48.3496 ug/L	83
5) Ethyl Acetate	9.75	43	336975	52.8234 ug/L	93
6) Methacrylonitrile	9.94	67	119267	48.6097 ug/L #	62
7) Isobutyl Alcohol	9.95	43	20135	57.3741 ug/L #	99
8) 1-Butanol	10.98	41	1474	9.7632 ug/L	77
9) Methyl methacrylate	12.40	41	279157	43.9482 ug/L	81
10) 2-Nitropropane	12.79	43	95327	50.9052 ug/L	94
13) Cyclohexanone	17.56	55	13241	15.2363 ug/L	91

(#) = qualifier out of range (m) = manual integration
6M138753.D A9FOOWT.M Mon Apr 25 15:45:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

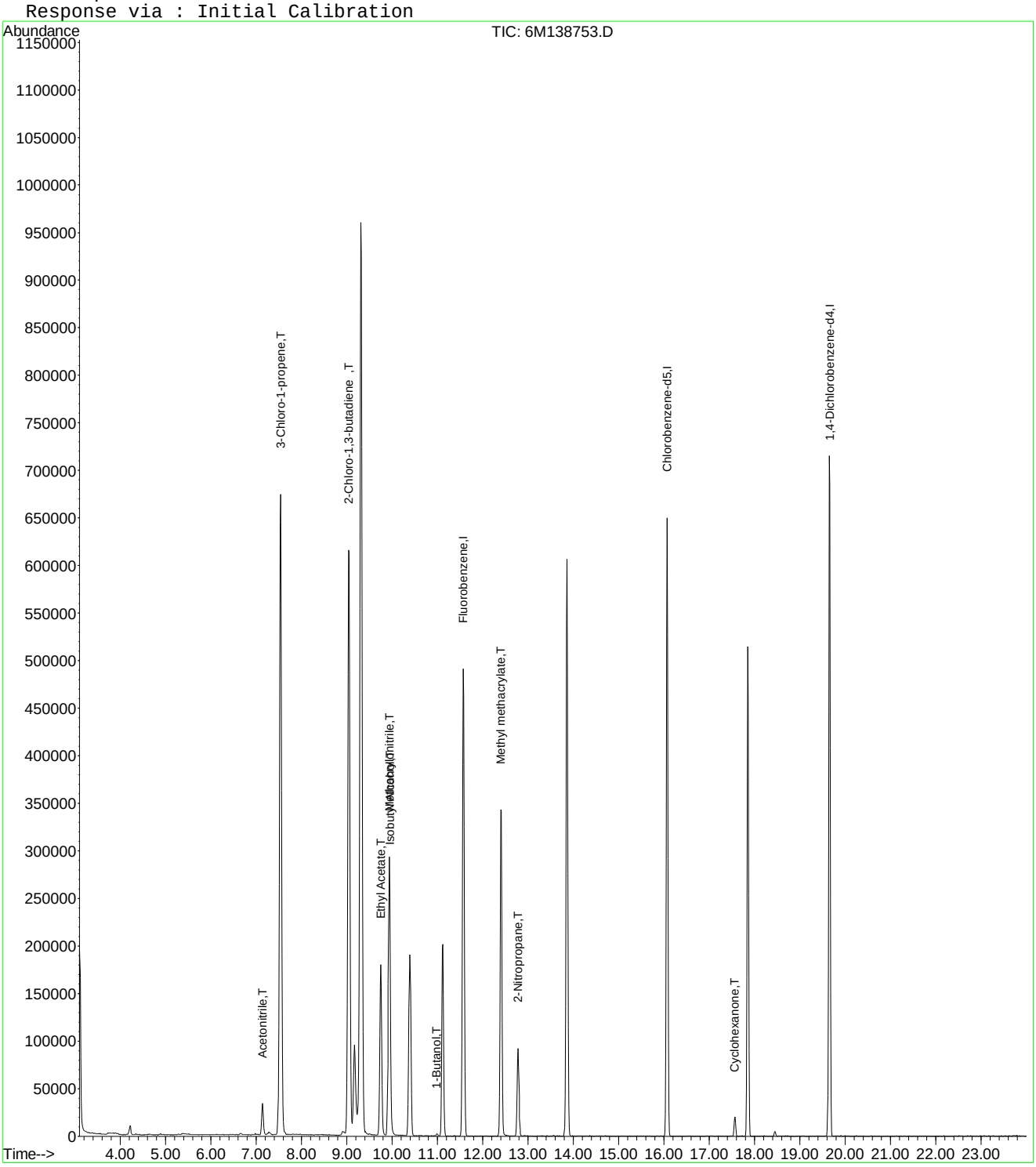

6M138753.D A9FOOWT.M Mon Apr 25 15:45:57 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:59 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	604736	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	468574	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	254472	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	46802	51.6701 ug/L	94
3) 3-Chloro-1-propene	7.54	41	793114	52.5409 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	674471	52.0726 ug/L	83
5) Ethyl Acetate	9.75	43	336975	51.9646 ug/L	93
6) Methacrylonitrile	9.94	67	119267	53.3476 ug/L #	62
7) Isobutyl Alcohol	9.95	43	20135	97.4900 ug/L #	99
9) Methyl methacrylate	12.40	41	279157	51.2171 ug/L	81
10) 2-Nitropropane	12.79	43	95327	47.0270 ug/L	94
13) Cyclohexanone	17.56	55	13241	41.7415 ug/L	91

(#) = qualifier out of range (m) = manual integration
6M138753.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

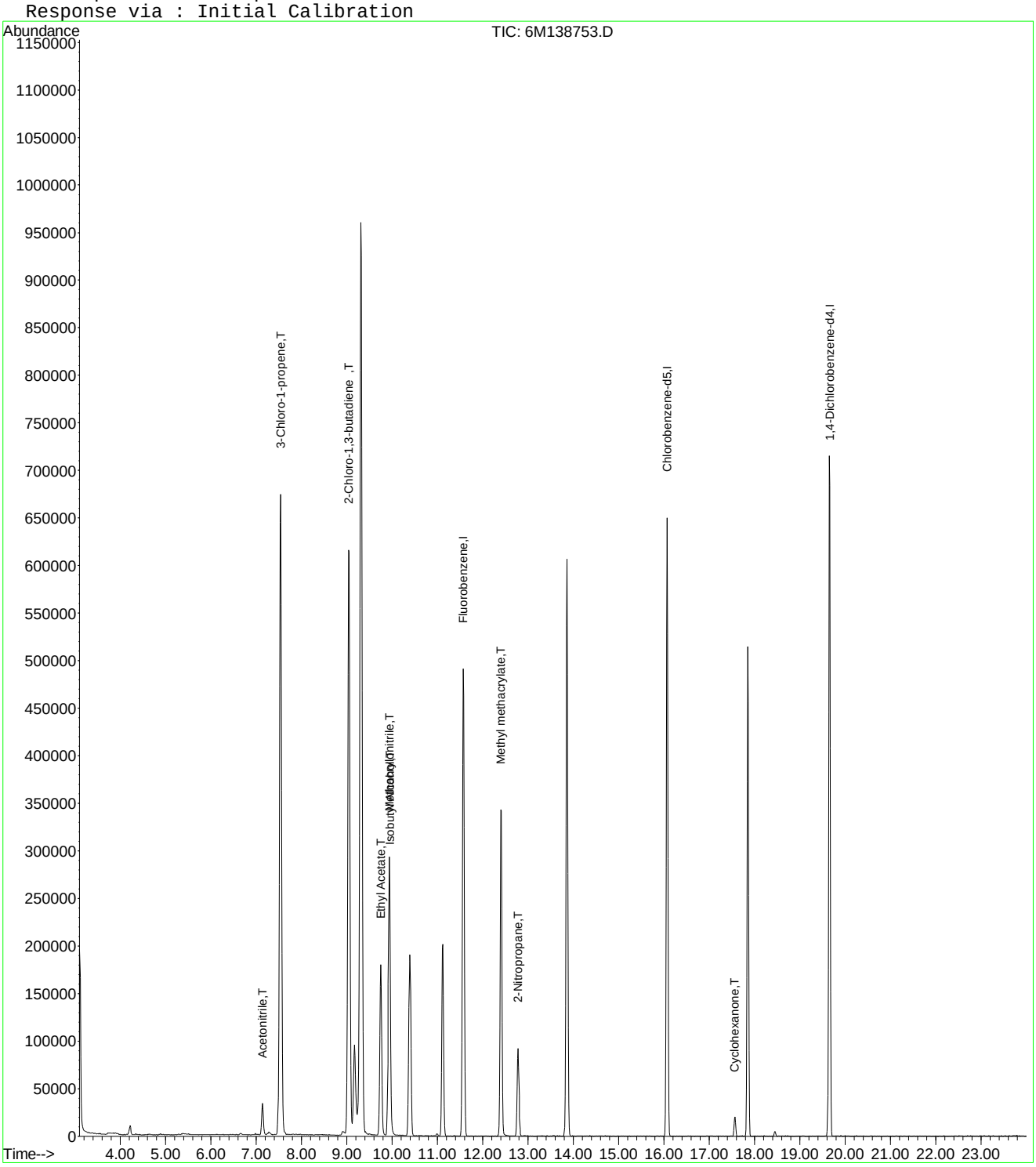

6M138753.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138753.D Vial: 4
Acq On : 24 Apr 2016 18:03 Operator: JDS
Sample : WG566155-04 50ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	51.6701	-3.3	100	0.00
3	T	3-Chloro-1-propene	50.0000	52.5409	-5.1	100	0.00
4	T	2-Chloro-1,3-butadiene	50.0000	52.0726	-4.1	100	0.00
5	T	Ethyl Acetate	50.0000	51.9646	-3.9	100	0.00
6	T	Methacrylonitrile	50.0000	53.3476	-6.7	100	0.00
7	T	Isobutyl Alcohol	100.0000	97.4900	2.5	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	50.0000	51.2171	-2.4	100	0.00
10	T	2-Nitropropane	50.0000	47.0270	5.9	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	50.0000	41.7415	16.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138753.D A9FOOWT.M Wed Apr 27 16:04:38 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:49 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	599121	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	467316	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	255798	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	169577	27.6373 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.56%		
43) 1,2-Dichloroethane-d4	11.12	65	210119	28.2161 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.88%		
58) Toluene-d8	13.86	98	550953	26.1877 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.76%		
80) p-Bromofluorobenzene	17.85	95	239480	28.0420 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 112.16%		

Target Compounds					Qvalue
13) Acetone	6.66	43	6960	3.7463 ug/L	82
16) Dimethyl Sulfide	7.15	62	732	0.1448 ug/L #	1
18) Methyl acetate	7.53	43	1419	0.2750 ug/L #	1
22) Methyl Tert Butyl Ether	7.96	73	2141	0.1320 ug/L #	72
27) 1,1-Dichloroethane	9.05	63	20725	1.6328 ug/L #	42
28) Ethyl-Tert-Butyl ether	9.31	59	76666	3.7220 ug/L #	39
29) 2-Butanone	9.53	43	1176	0.4289 ug/L #	52
34) 1-Bromopropane	10.00	122	702	0.6817 ug/L #	1
36) Tetrahydrofuran	10.35	42	4425	2.4769 ug/L #	60
48) Methylcyclohexane	12.41	83	1461	0.1681 ug/L #	1
60) Ethyl Methacrylate	13.87	69	1083	0.1549 ug/L #	1
79) 1,1,2,2-Tetrachloroethane	17.57	83	1910	0.3066 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138754.D 8260WTR.M Mon Apr 25 09:22:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

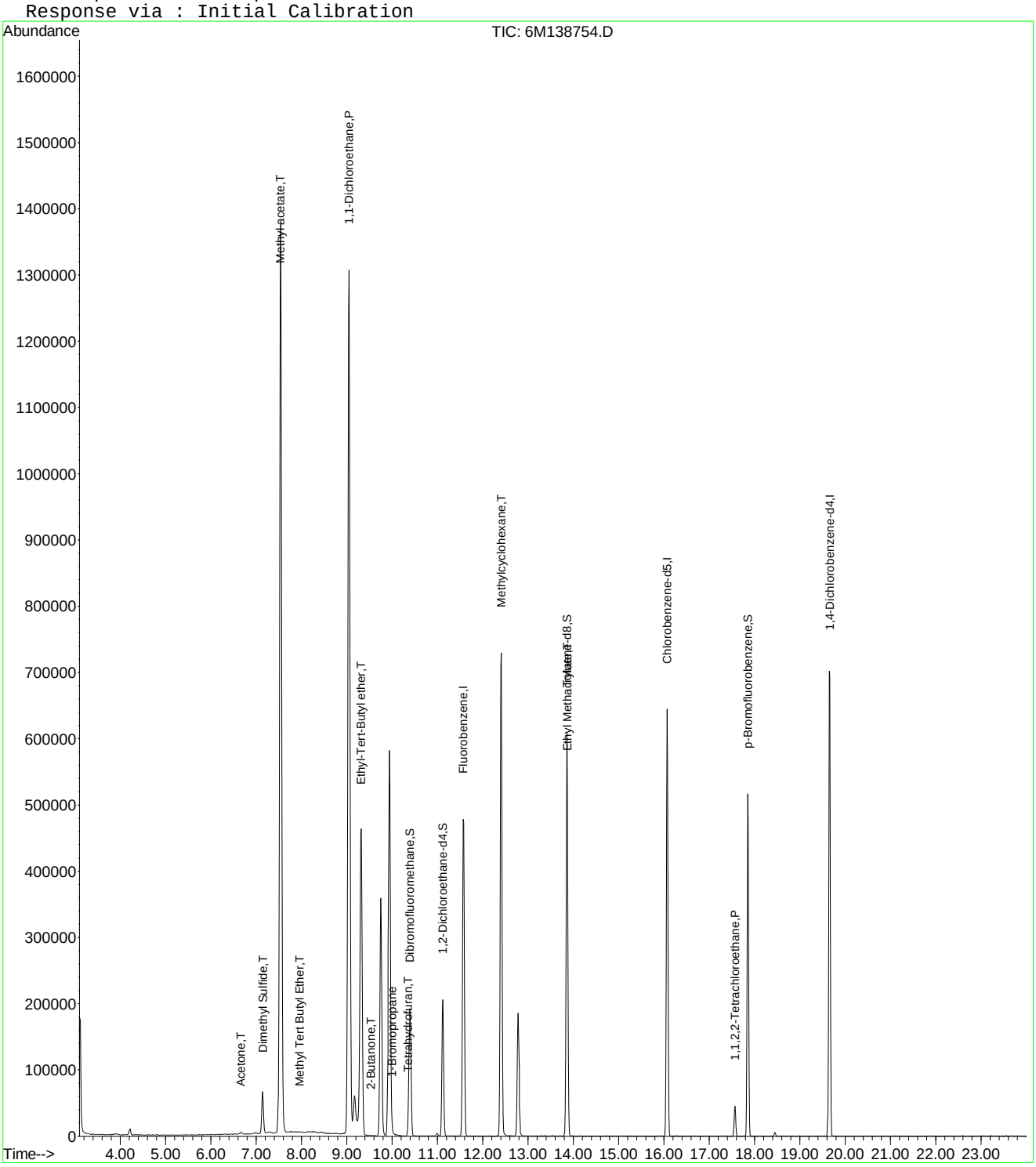

6M138754.D 8260WTR.M Mon Apr 25 09:22:50 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:57 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	599121	25.00	ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	467316	25.00	ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	255798	25.00	ug/L	-0.02

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	90880	79.0019	ug/L	95
3) 3-Chloro-1-propene	7.54	41	1610716	100.3335	ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	1413663	102.2884	ug/L	83
5) Ethyl Acetate	9.75	43	673221	106.5217	ug/L	93
6) Methacrylonitrile	9.94	67	237219	97.5895	ug/L #	62
7) Isobutyl Alcohol	9.95	43	33897	97.4937	ug/L #	85
8) 1-Butanol	11.00	41	2978	19.9099	ug/L #	64
9) Methyl methacrylate	12.41	41	585839	93.0942	ug/L	80
10) 2-Nitropropane	12.78	43	197598	106.5074	ug/L	97
13) Cyclohexanone	17.57	55	27547	31.5338	ug/L	88

(#) = qualifier out of range (m) = manual integration
6M138754.D A9FOOWT.M Mon Apr 25 15:45:57 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

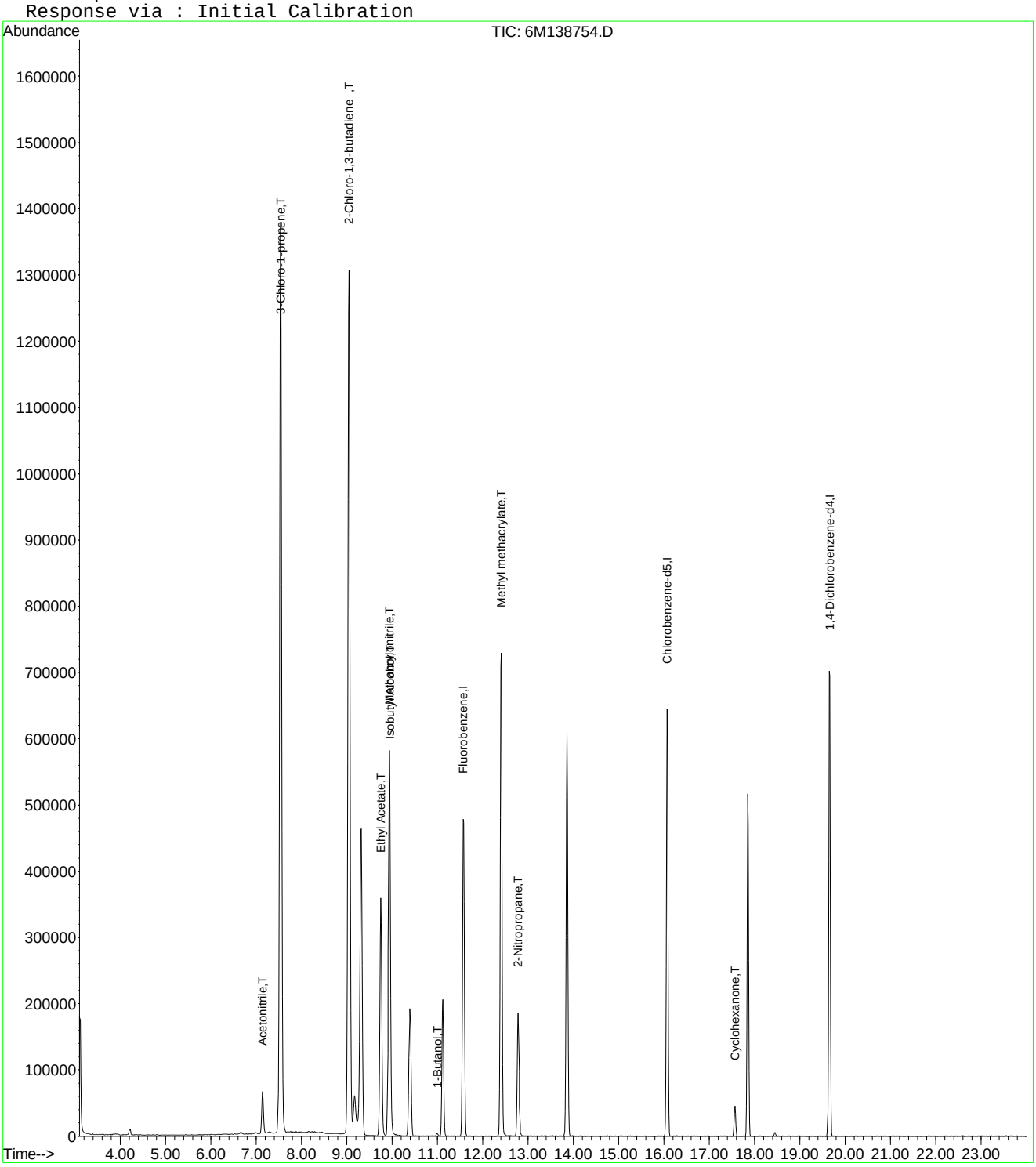

6M138754.D A9FOOWT.M Mon Apr 25 15:45:58 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04:59 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	599121	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.07	117	467316	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	255798	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	90880	101.2731 ug/L	95
3) 3-Chloro-1-propene	7.54	41	1610716	107.7041 ug/L	93
4) 2-Chloro-1,3-butadiene	9.05	53	1413663	110.1648 ug/L	83
5) Ethyl Acetate	9.75	43	673221	104.7898 ug/L	93
6) Methacrylonitrile	9.94	67	237219	107.1014 ug/L #	62
7) Isobutyl Alcohol	9.95	43	33897	165.6613 ug/L #	85
9) Methyl methacrylate	12.41	41	585839	108.4917 ug/L	80
10) 2-Nitropropane	12.78	43	197598	98.3932 ug/L	97
13) Cyclohexanone	17.57	55	27547	86.3902 ug/L	88

(#) = qualifier out of range (m) = manual integration
6M138754.D A9FOOWT.M Wed Apr 27 16:04:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138754.D Vial: 5
Acq On : 24 Apr 2016 18:36 Operator: JDS
Sample : WG566155-05 100ug/L STD 826-A Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:04 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

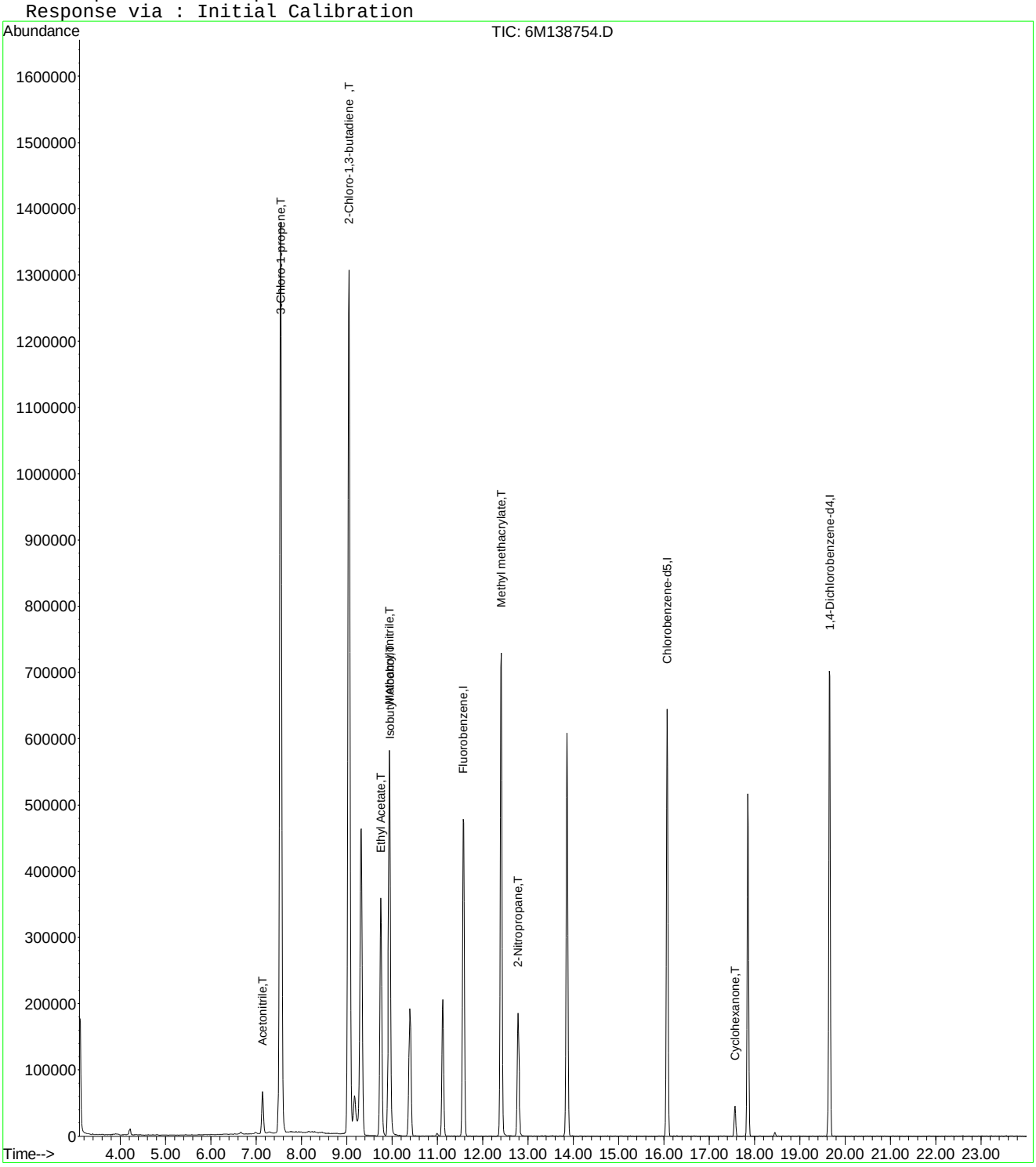

6M138754.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:50 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	607157	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	473187	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	259046	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.40	111	172341	27.7160 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.88%		
43) 1,2-Dichloroethane-d4	11.12	65	211249	27.9923 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.96%		
58) Toluene-d8	13.86	98	552831	25.9510 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.80%		
80) p-Bromofluorobenzene	17.85	95	247709	28.6419 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 114.56%		

Target Compounds

					Qvalue
9) Diethyl ether	6.31	59	653	0.1225 ug/L #	12
13) Acetone	6.66	43	9406	4.9959 ug/L #	64
15) Tert-Butyl Alcohol	6.98	59	449	0.8301 ug/L #	1
16) Dimethyl Sulfide	7.16	62	680	0.1328 ug/L #	1
22) Methyl Tert Butyl Ether	7.96	73	3926	0.2388 ug/L	83
24) n-Hexane	8.30	57	1777	0.2040 ug/L	87
27) 1,1-Dichloroethane	9.05	63	41640	3.2372 ug/L #	47
28) Ethyl-Tert-Butyl ether	9.31	59	272648	13.0615 ug/L #	38
29) 2-Butanone	9.51	43	2992	1.0767 ug/L #	67
30) Propionitrile	9.93	54	258	0.3232 ug/L #	57
34) 1-Bromopropane	9.99	122	1417	1.3579 ug/L #	1
36) Tetrahydrofuran	10.37	42	4839	2.6728 ug/L #	62
48) Methylcyclohexane	12.40	83	2976	0.3378 ug/L #	1
60) Ethyl Methacrylate	13.87	69	1202	0.1698 ug/L #	1
79) 1,1,2,2-Tetrachloroethane	17.57	83	5192	0.8231 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138755.D 8260WTR.M Mon Apr 25 09:22:50 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

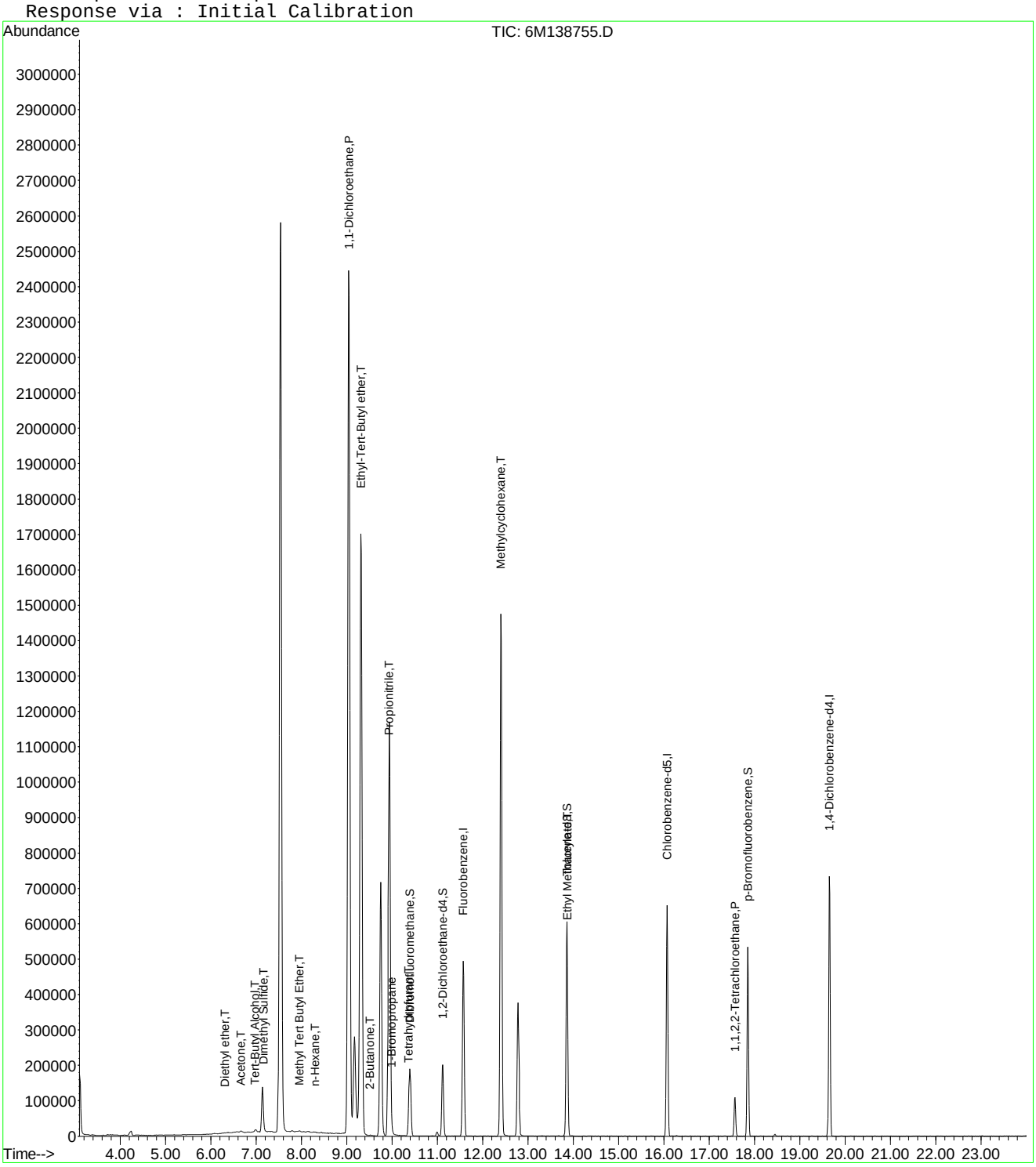

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:58 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	607157	25.00	ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	473187	25.00	ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.65	152	259046	25.00	ug/L	-0.03

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	183628	157.5150	ug/L	93
3) 3-Chloro-1-propene	7.54	41	3085939	189.6828	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	2709180	193.4336	ug/L	83
5) Ethyl Acetate	9.75	43	1346541	210.2391	ug/L	94
6) Methacrylonitrile	9.94	67	471538	191.4186	ug/L #	64
7) Isobutyl Alcohol	9.95	43	72755	206.4864	ug/L #	92
8) 1-Butanol	10.99	41	8815	58.1542	ug/L #	64
9) Methyl methacrylate	12.40	41	1186381	186.0295	ug/L	80
10) 2-Nitropropane	12.79	43	410702	218.4428	ug/L	99
13) Cyclohexanone	17.57	55	67080	75.8254	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138755.D A9FOOWT.M Mon Apr 25 15:45:58 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

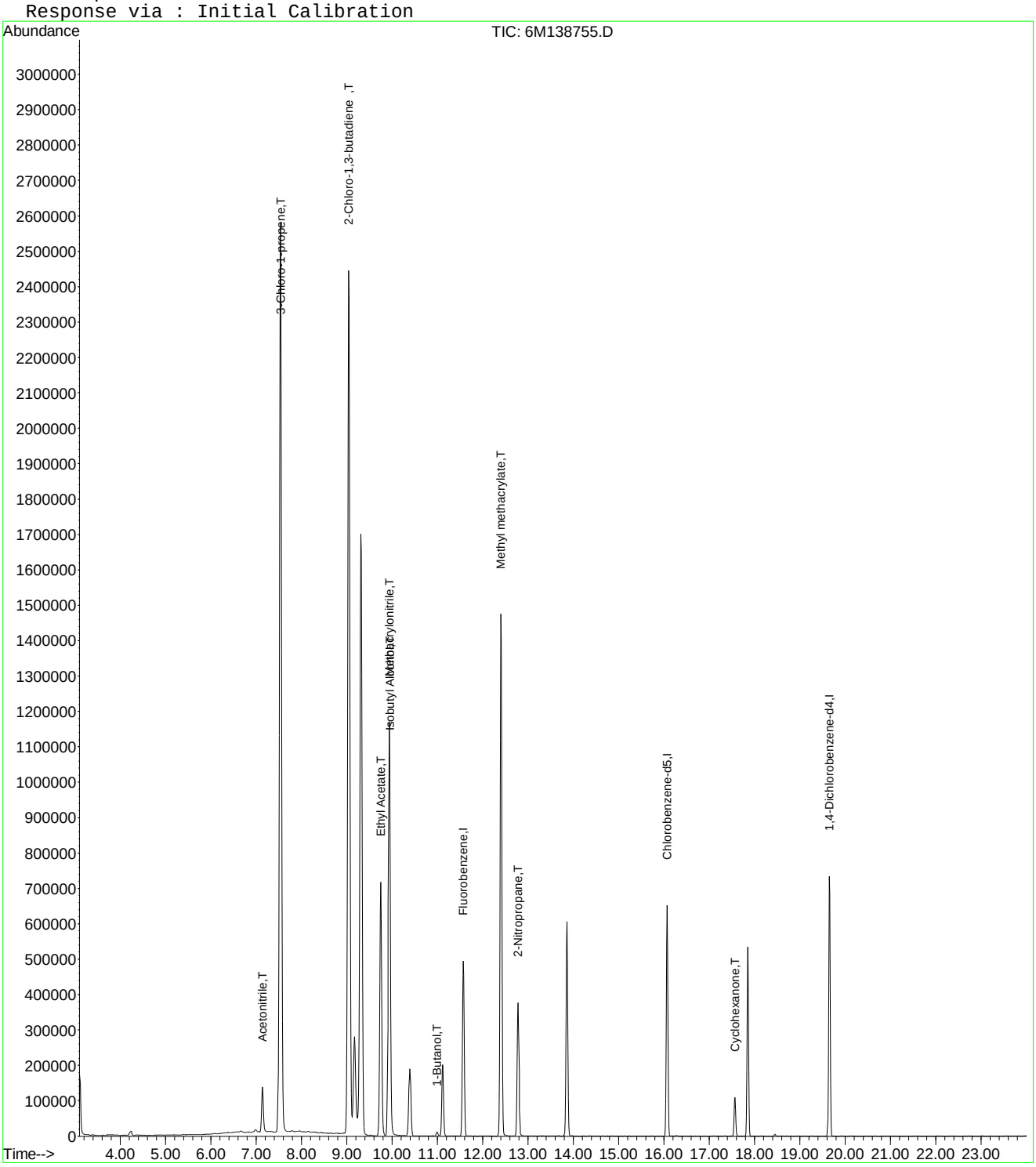

6M138755.D A9FOOWT.M Mon Apr 25 15:45:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	607157	25.00	ug/L	0.00
11) Chlorobenzene-d5	16.07	117	473187	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.65	152	259046	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	183628	201.9195	ug/L	93
3) 3-Chloro-1-propene	7.54	41	3085939	203.6170	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	2709180	208.3284	ug/L	83
5) Ethyl Acetate	9.75	43	1346541	206.8209	ug/L	94
6) Methacrylonitrile	9.94	67	471538	210.0757	ug/L #	64
7) Isobutyl Alcohol	9.95	43	72755	350.8618	ug/L #	92
9) Methyl methacrylate	12.40	41	1186381	216.7982	ug/L	80
10) 2-Nitropropane	12.79	43	410702	201.8008	ug/L	99
13) Cyclohexanone	17.57	55	67080	207.7320	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138755.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138755.D Vial: 6
Acq On : 24 Apr 2016 19:08 Operator: JDS
Sample : WG566155-06 200ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

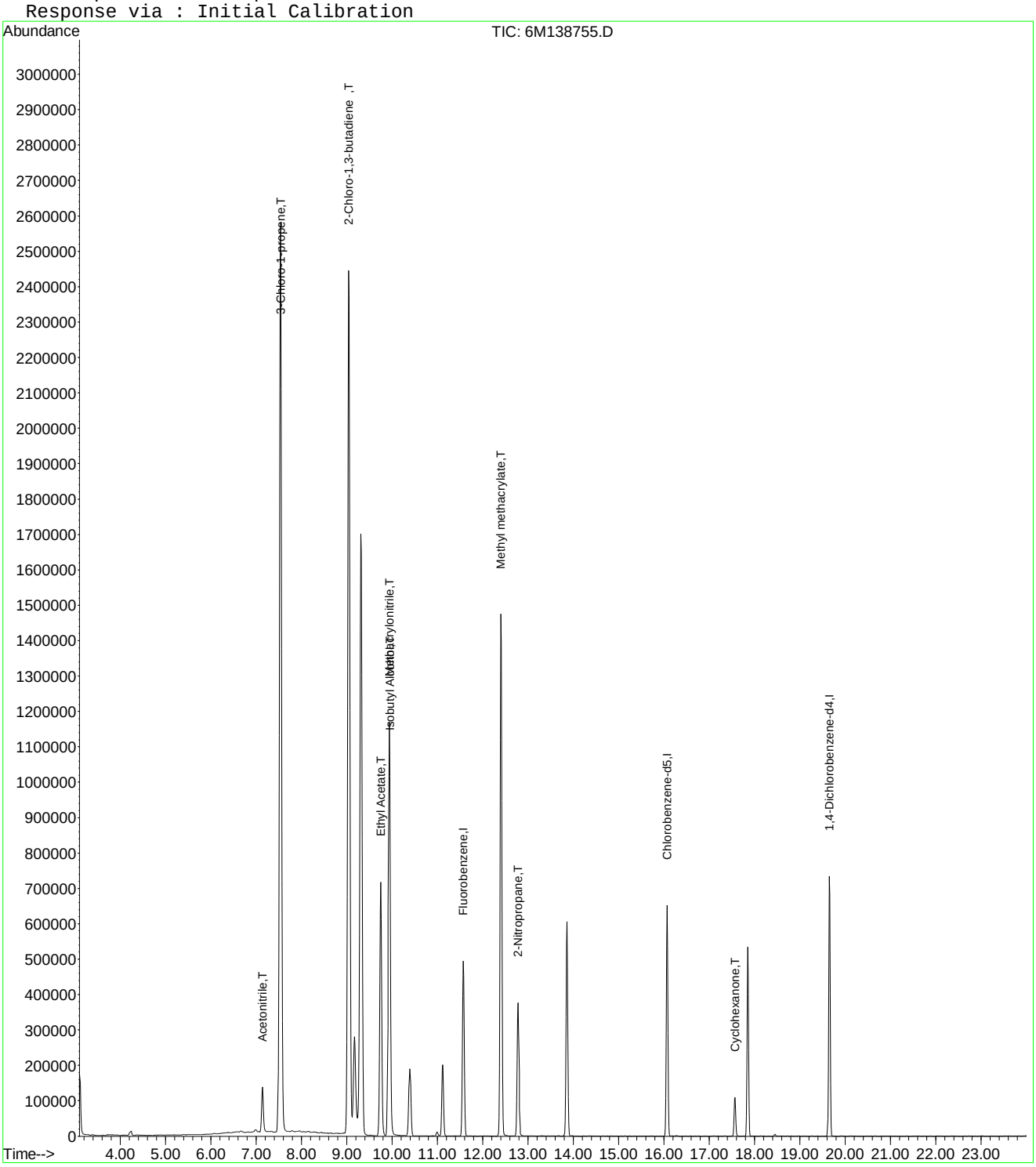

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:50 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	602356	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	472685	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	264650	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	169983	27.5546 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.20%		
43) 1,2-Dichloroethane-d4	11.12	65	207199	27.6745 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 110.68%		
58) Toluene-d8	13.86	98	553023	25.9875 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.96%		
80) p-Bromofluorobenzene	17.85	95	247939	28.0615 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 112.24%		

Target Compounds

					Qvalue
13) Acetone	6.67	43	13666	7.3164 ug/L #	77
15) Tert-Butyl Alcohol	7.06	59	467	0.8703 ug/L #	59
16) Dimethyl Sulfide	7.14	62	668	0.1315 ug/L #	1
18) Methyl acetate	7.54	43	3262	0.6289 ug/L #	1
22) Methyl Tert Butyl Ether	7.97	73	10591	0.6492 ug/L #	53
24) n-Hexane	8.28	57	3576	0.4138 ug/L #	56
27) 1,1-Dichloroethane	9.04	63	60743	4.7600 ug/L #	48
28) Ethyl-Tert-Butyl ether	9.31	59	155796	7.5231 ug/L #	39
29) 2-Butanone	9.52	43	4002	1.4516 ug/L	97
30) Propionitrile	9.95	54	1113	1.4052 ug/L #	1
34) 1-Bromopropane	9.99	122	1450	1.4006 ug/L #	1
36) Tetrahydrofuran	10.36	42	4902	2.7292 ug/L #	61
48) Methylcyclohexane	12.41	83	4626	0.5293 ug/L #	1
60) Ethyl Methacrylate	13.88	69	1599	0.2261 ug/L #	1
72) Ethylbenzene	16.28	106	1349	0.1427 ug/L	56
73) m-,p-Xylene	16.28	106	1349	0.1203 ug/L	81
79) 1,1,2,2-Tetrachloroethane	17.57	83	8744	1.3569 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138756.D 8260WTR.M Mon Apr 25 09:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

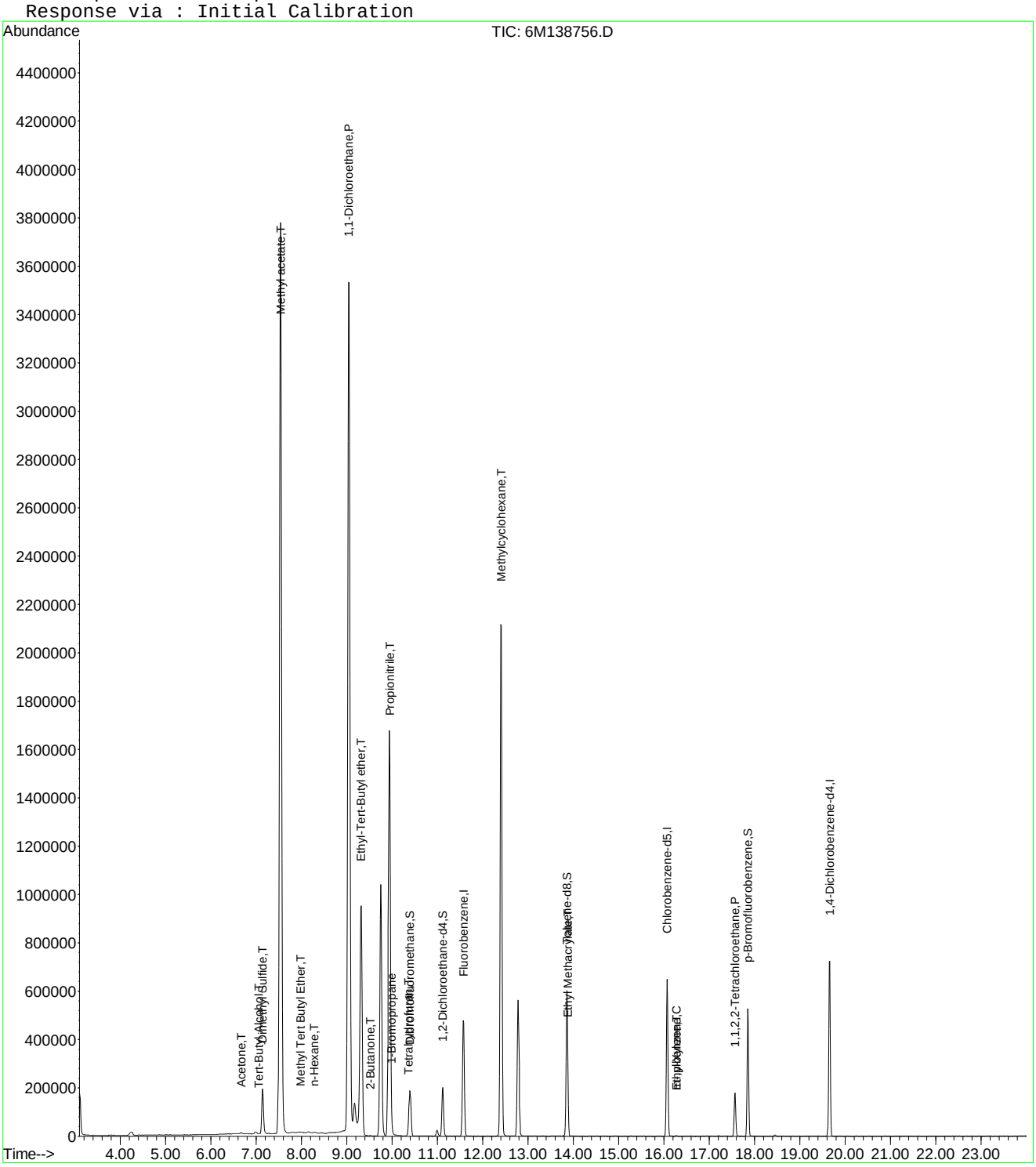

6M138756.D 8260WTR.M Mon Apr 25 09:22:51 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45:59 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.58	96	602356	25.00 ug/L	-0.02
11) Chlorobenzene-d5	16.07	117	472685	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	264650	25.00 ug/L	-0.02

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	273003	236.0468 ug/L	93
3) 3-Chloro-1-propene	7.54	41	4493022	278.3729 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	3994938	287.5093 ug/L	83
5) Ethyl Acetate	9.75	43	1967613	309.6573 ug/L	94
6) Methacrylonitrile	9.94	67	686612	280.9484 ug/L #	63
7) Isobutyl Alcohol	9.95	43	121480	347.5212 ug/L #	90
8) 1-Butanol	10.99	41	18116	120.4672 ug/L	69
9) Methyl methacrylate	12.40	41	1742413	275.3954 ug/L	81
10) 2-Nitropropane	12.78	43	613081	328.6824 ug/L	99
13) Cyclohexanone	17.57	55	106618	117.9661 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138756.D A9FOOWT.M Mon Apr 25 15:45:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:45 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

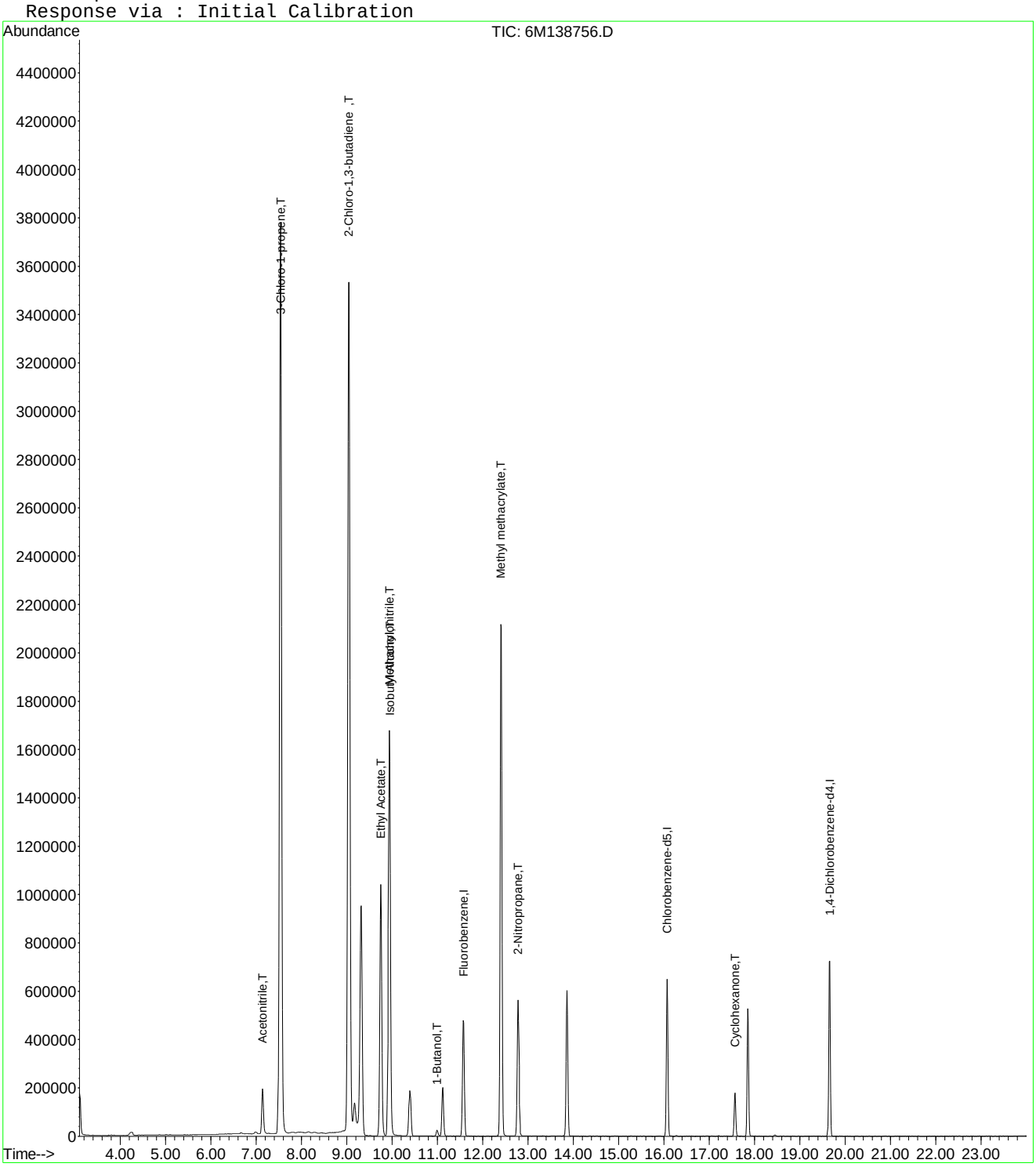

6M138756.D A9FOOWT.M Mon Apr 25 15:45:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.58	96	602356	25.00	ug/L	0.01
11) Chlorobenzene-d5	16.07	117	472685	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	264650	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	273003	302.5900	ug/L	93
3) 3-Chloro-1-propene	7.54	41	4493022	298.8224	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	3994938	309.6481	ug/L	83
5) Ethyl Acetate	9.75	43	1967613	304.6228	ug/L	94
6) Methacrylonitrile	9.94	67	686612	308.3318	ug/L #	63
7) Isobutyl Alcohol	9.95	43	121480	590.5081	ug/L #	90
9) Methyl methacrylate	12.40	41	1742413	320.9449	ug/L	81
10) 2-Nitropropane	12.78	43	613081	303.6419	ug/L	99
13) Cyclohexanone	17.57	55	106618	323.1811	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138756.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138756.D Vial: 7
Acq On : 24 Apr 2016 19:40 Operator: JDS
Sample : WG566155-07 300ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

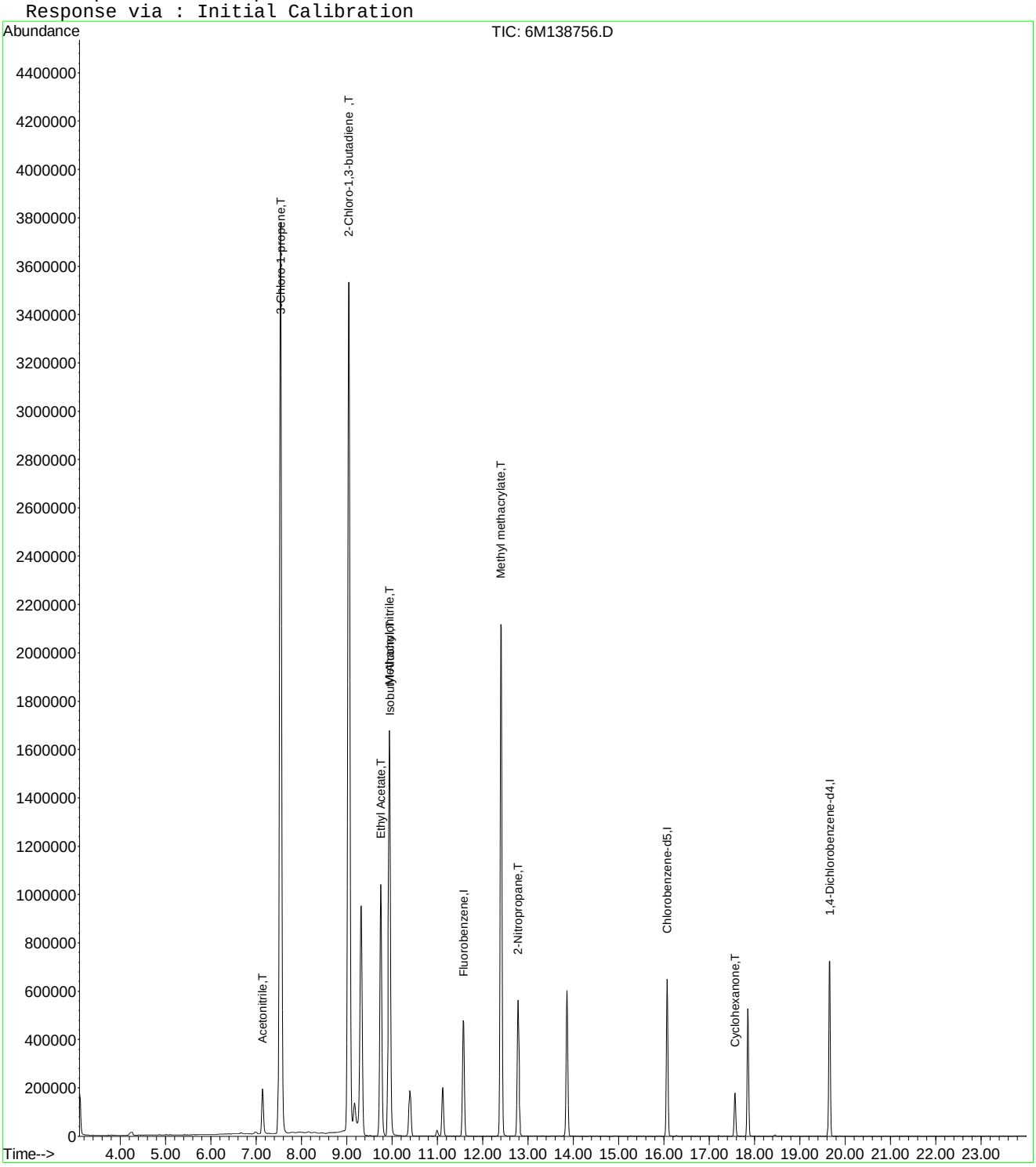

6M138756.D A9FOOWT.M Wed Apr 27 16:05:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:51 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602625	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.08	117	475117	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	264739	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	170708	27.6598 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.64%		
43) 1,2-Dichloroethane-d4	11.11	65	208757	27.8702 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.48%		
58) Toluene-d8	13.86	98	554316	25.9150 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.64%		
80) p-Bromofluorobenzene	17.85	95	246698	27.9116 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 111.64%		

Target Compounds

					Qvalue
13) Acetone	6.66	43	14063	7.5256 ug/L	99
15) Tert-Butyl Alcohol	7.05	59	807	1.5033 ug/L #	59
16) Dimethyl Sulfide	7.16	62	1034	0.2034 ug/L #	1
18) Methyl acetate	7.48	43	1103	0.2125 ug/L #	60
19) Methylene Chloride	7.73	84	1123	0.1699 ug/L #	40
22) Methyl Tert Butyl Ether	7.97	73	18318	1.1224 ug/L #	53
24) n-Hexane	8.28	57	5609	0.6488 ug/L	75
27) 1,1-Dichloroethane	9.04	63	82912	6.4943 ug/L #	48
28) Ethyl-Tert-Butyl ether	9.32	59	139043	6.7111 ug/L #	38
29) 2-Butanone	9.53	43	4129	1.4970 ug/L	86
30) Propionitrile	9.72	54	202	0.2549 ug/L #	1
34) 1-Bromopropane	9.99	122	1978	1.9098 ug/L #	1
36) Tetrahydrofuran	10.37	42	5444	3.0296 ug/L #	63
48) Methylcyclohexane	12.40	83	6593	0.7540 ug/L #	1
60) Ethyl Methacrylate	13.85	69	1165	0.1639 ug/L #	1
73) m-,p-Xylene	16.28	106	1795	0.1593 ug/L	72
79) 1,1,2,2-Tetrachloroethane	17.57	83	12875	1.9973 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138757.D 8260WTR.M Mon Apr 25 09:22:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

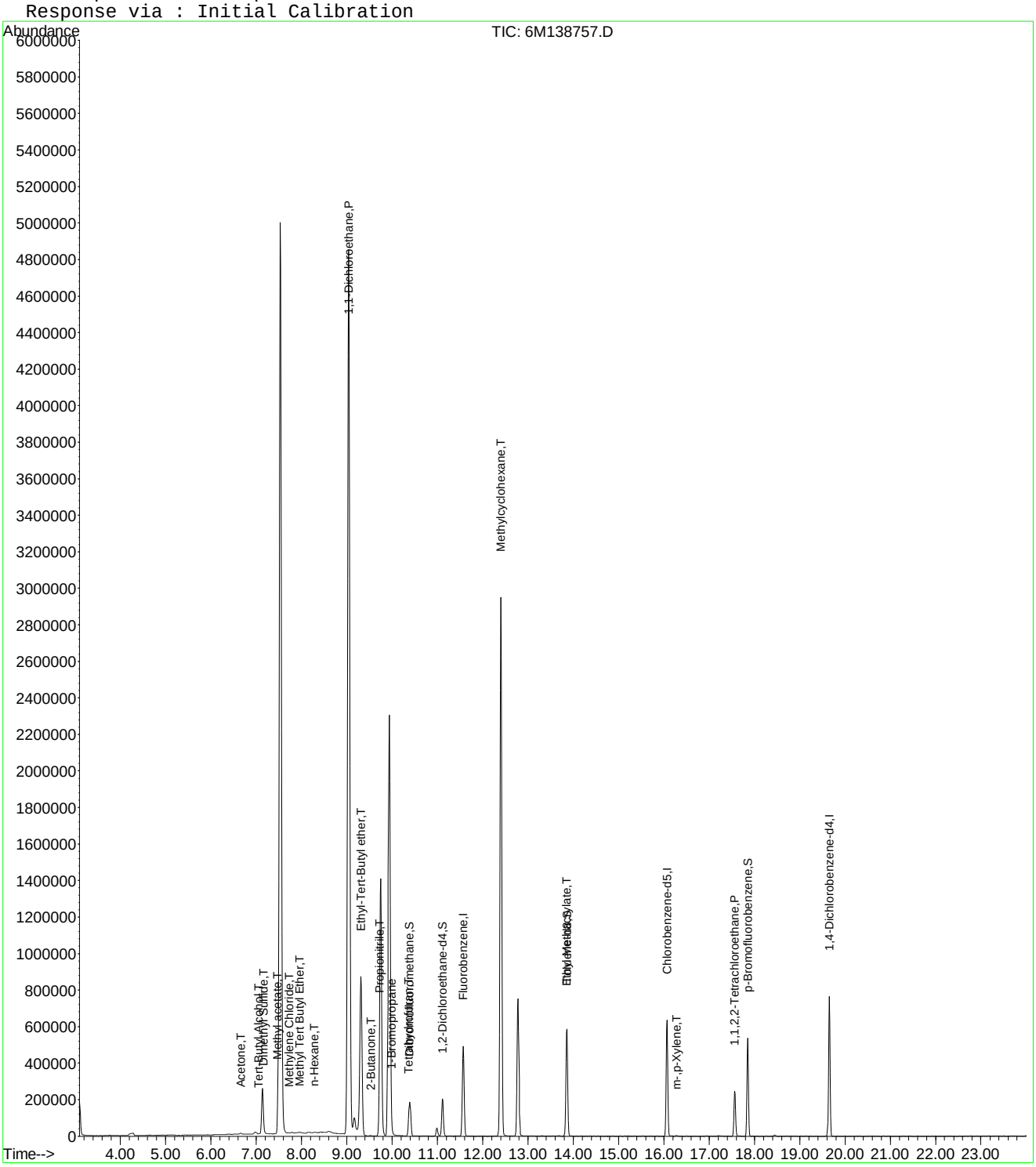

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602625	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.08	117	475117	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.65	152	264739	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	368012	318.0524 ug/L	93
3) 3-Chloro-1-propene	7.53	41	5948883	368.4088 ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	5359203	385.5211 ug/L	83
5) Ethyl Acetate	9.76	43	2690267	423.1975 ug/L	94
6) Methacrylonitrile	9.94	67	929265	380.0675 ug/L #	62
7) Isobutyl Alcohol	9.95	43	192560	550.6158 ug/L #	89
8) 1-Butanol	10.99	41	29815	198.1744 ug/L	75
9) Methyl methacrylate	12.40	41	2375132	375.2316 ug/L	81
10) 2-Nitropropane	12.79	43	849210	455.0717 ug/L	98
13) Cyclohexanone	17.57	55	149420	165.2683 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138757.D A9FOOWT.M Mon Apr 25 15:46:00 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

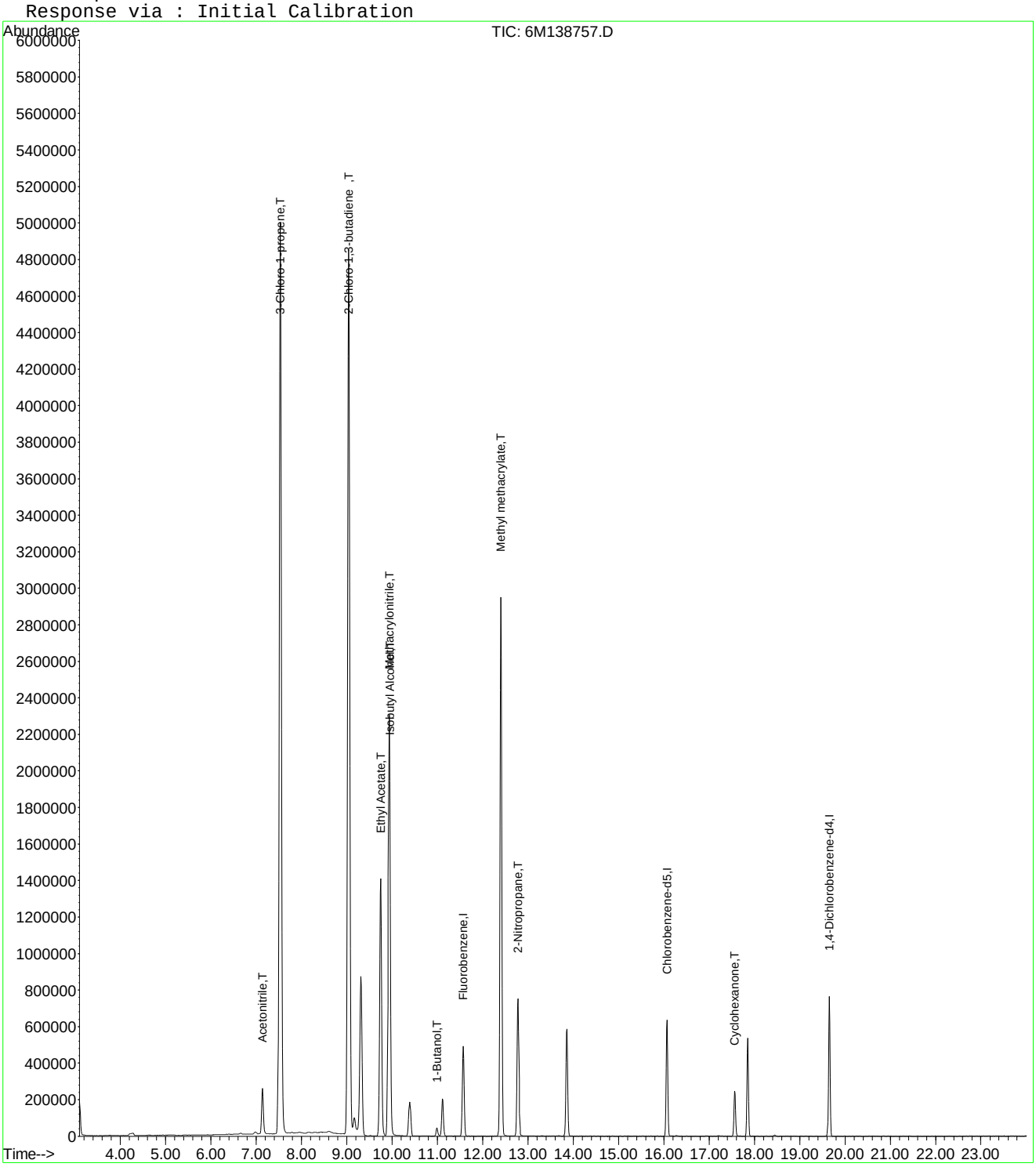

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:01 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602625	25.00 ug/L	0.00
11) Chlorobenzene-d5	16.08	117	475117	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.65	152	264739	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	368012	407.7137 ug/L	93
3) 3-Chloro-1-propene	7.53	41	5948883	395.4723 ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	5359203	415.2070 ug/L	83
5) Ethyl Acetate	9.76	43	2690267	416.3170 ug/L	94
6) Methacrylonitrile	9.94	67	929265	417.1119 ug/L #	62
7) Isobutyl Alcohol	9.95	43	192560	935.6065 ug/L #	89
9) Methyl methacrylate	12.40	41	2375132	437.2937 ug/L	81
10) 2-Nitropropane	12.79	43	849210	420.4022 ug/L	98
13) Cyclohexanone	17.57	55	149420	452.7705 ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138757.D A9FOOWT.M Wed Apr 27 16:05:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138757.D Vial: 8
Acq On : 24 Apr 2016 20:12 Operator: JDS
Sample : WG566155-08 400ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

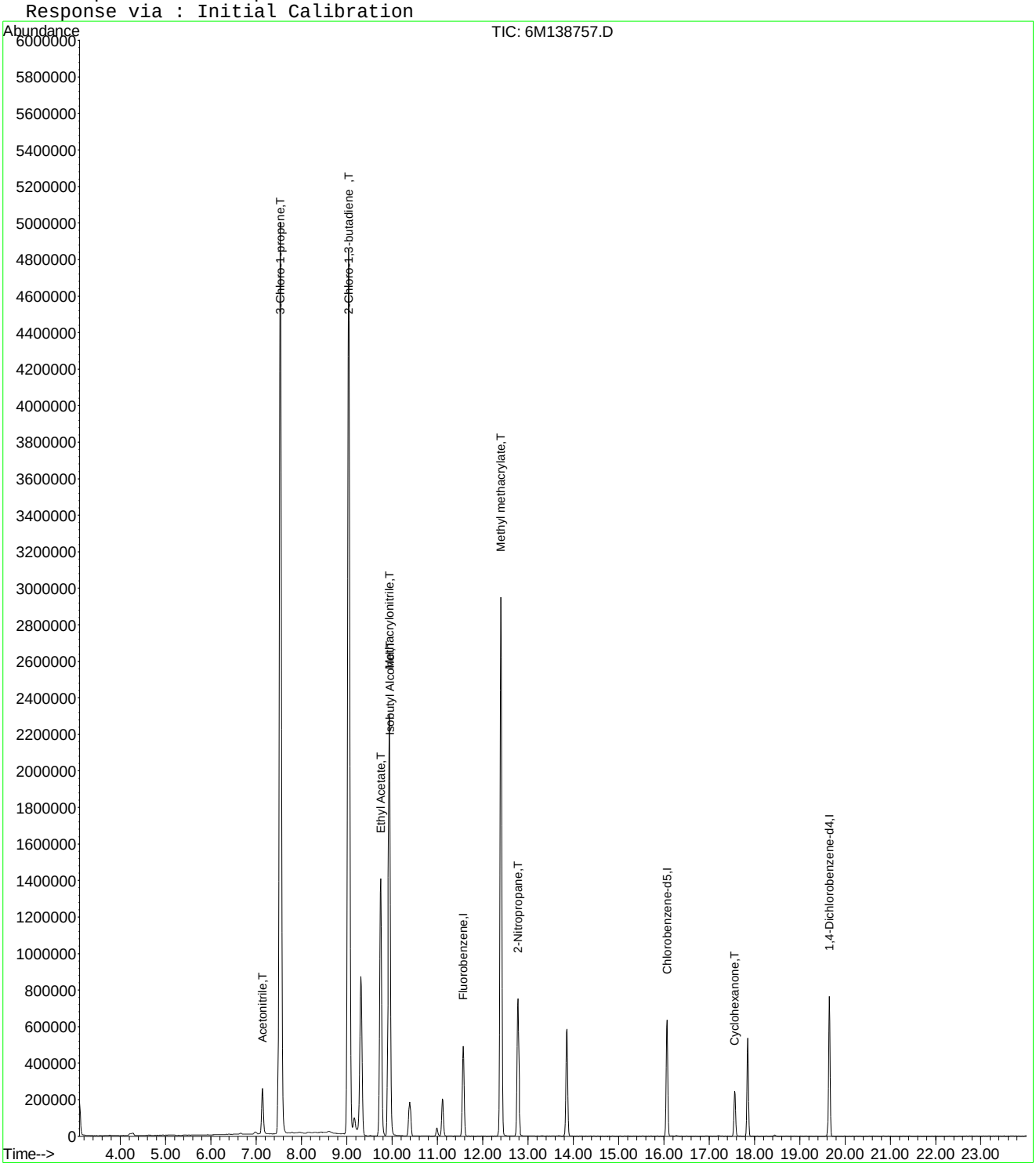

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:52 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	616486	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	485048	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.66	152	268890	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	175239	27.7556 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.04%		
43) 1,2-Dichloroethane-d4	11.12	65	210644	27.4898 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 109.96%		
58) Toluene-d8	13.86	98	563297	25.7957 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.20%		
80) p-Bromofluorobenzene	17.85	95	249406	27.7824 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 111.12%		

Target Compounds					Qvalue
13) Acetone	6.67	43	15233	7.9684 ug/L	89
15) Tert-Butyl Alcohol	7.06	59	370	0.6737 ug/L #	59
18) Methyl acetate	7.46	43	1079	0.2032 ug/L #	34
19) Methylene Chloride	7.73	84	1471	0.2176 ug/L	66
20) Carbon Disulfide	7.78	76	2765	0.1407 ug/L #	74
22) Methyl Tert Butyl Ether	7.96	73	25284	1.5144 ug/L #	53
24) n-Hexane	8.28	57	5266	0.5954 ug/L	97
27) 1,1-Dichloroethane	9.05	63	105121	8.0488 ug/L #	48
28) Ethyl-Tert-Butyl ether	9.31	59	124099	5.8551 ug/L #	39
29) 2-Butanone	9.52	43	4475	1.5860 ug/L #	72
30) Propionitrile	9.71	54	473	0.5835 ug/L #	1
34) 1-Bromopropane	10.00	122	2117	1.9980 ug/L #	1
36) Tetrahydrofuran	10.36	42	5652	3.0747 ug/L #	54
48) Methylcyclohexane	12.40	83	8011	0.8956 ug/L #	1
59) Toluene	13.98	91	3373	0.1249 ug/L	84
60) Ethyl Methacrylate	13.87	69	1585	0.2184 ug/L #	1
73) m-,p-Xylene	16.28	106	2521	0.2191 ug/L	79
79) 1,1,2,2-Tetrachloroethane	17.57	83	14350	2.1917 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138758.D 8260WTR.M Mon Apr 25 09:22:52 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

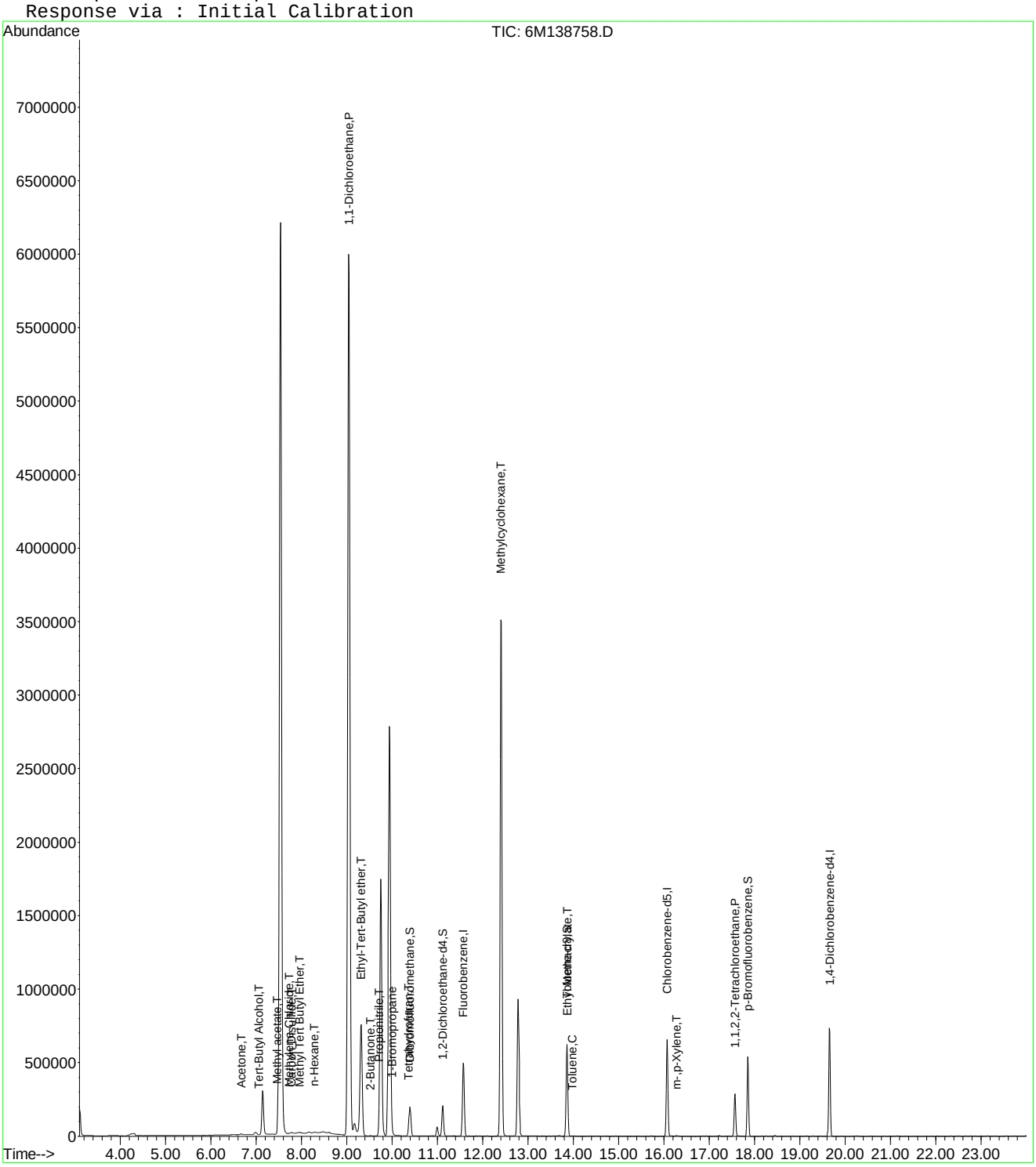

6M138758.D 8260WTR.M Mon Apr 25 09:22:52 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46:00 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	616486	25.00	ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	485048	25.00	ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.66	152	268890	25.00	ug/L	-0.02

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	449583	379.8136	ug/L	92
3) 3-Chloro-1-propene	7.54	41	7430577	449.8223	ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	6752476	474.8265	ug/L	84
5) Ethyl Acetate	9.75	43	3307403	508.5794	ug/L	94
6) Methacrylonitrile	9.94	67	1145073	457.8027	ug/L #	63
7) Isobutyl Alcohol	9.95	43	251034	701.6799	ug/L #	90
8) 1-Butanol	10.99	41	42236	274.4224	ug/L	75
9) Methyl methacrylate	12.40	41	2914815	450.1389	ug/L	81
10) 2-Nitropropane	12.78	43	1036720	543.0629	ug/L	99
13) Cyclohexanone	17.57	55	176545	192.2558	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138758.D A9FOOWT.M Mon Apr 25 15:46:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

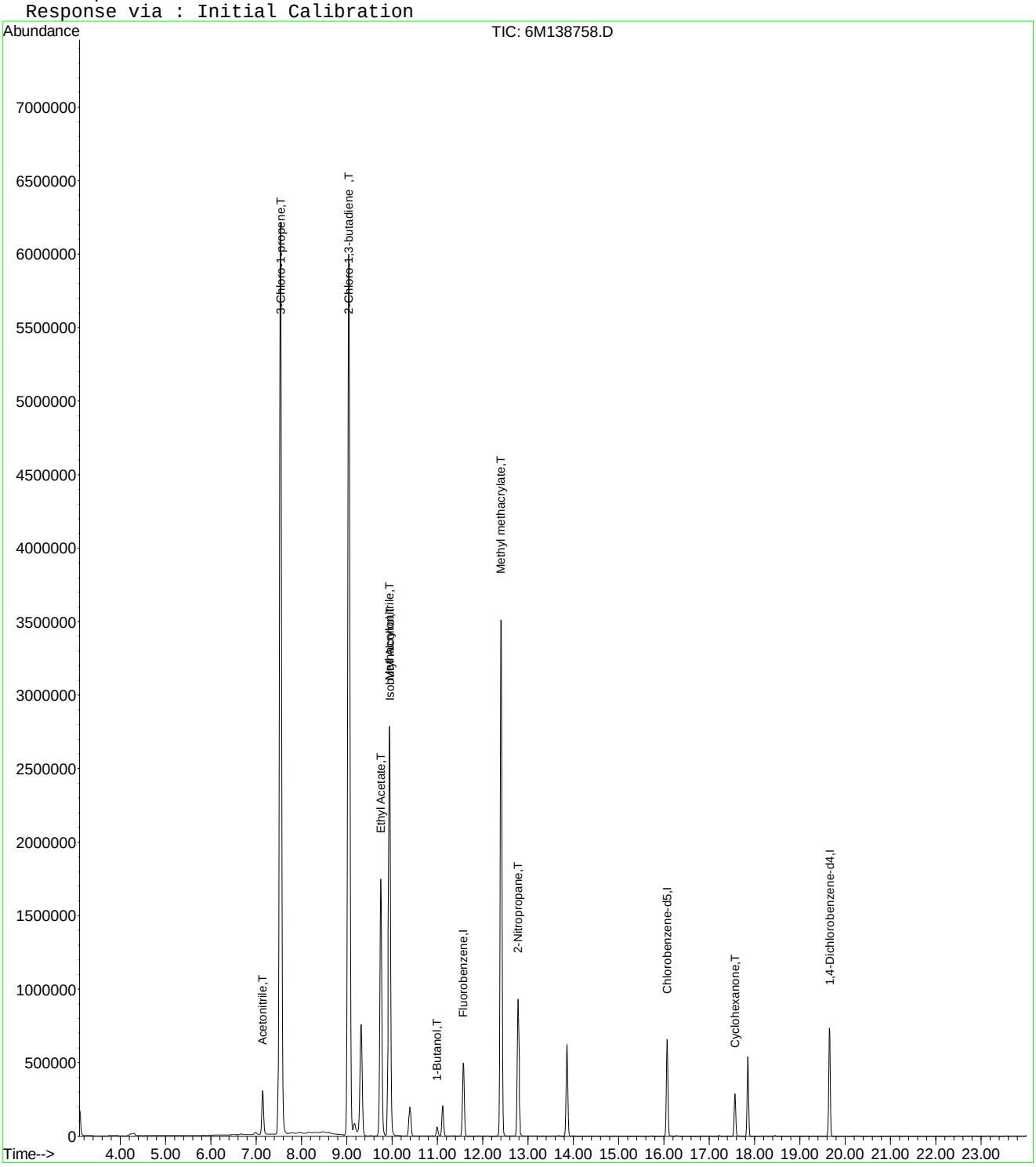

6M138758.D A9FOOWT.M Mon Apr 25 15:46:01 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:01 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	616486	25.00	ug/L	0.00
11) Chlorobenzene-d5	16.07	117	485048	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.66	152	268890	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	449583	486.8858	ug/L	92
3) 3-Chloro-1-propene	7.54	41	7430577	482.8665	ug/L	94
4) 2-Chloro-1,3-butadiene	9.04	53	6752476	511.3891	ug/L	84
5) Ethyl Acetate	9.75	43	3307403	500.3107	ug/L	94
6) Methacrylonitrile	9.94	67	1145073	502.4237	ug/L #	63
7) Isobutyl Alcohol	9.95	43	251034	1192.2947	ug/L #	90
9) Methyl methacrylate	12.40	41	2914815	524.5904	ug/L	81
10) 2-Nitropropane	12.78	43	1036720	501.6898	ug/L	99
13) Cyclohexanone	17.57	55	176545	526.7057	ug/L	87

(#) = qualifier out of range (m) = manual integration
6M138758.D A9FOOWT.M Wed Apr 27 16:05:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138758.D Vial: 9
Acq On : 24 Apr 2016 20:44 Operator: JDS
Sample : WG566155-09 500ug/L STD 826-A9 Inst : HPMS6
Misc : 1,1 STD75791 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

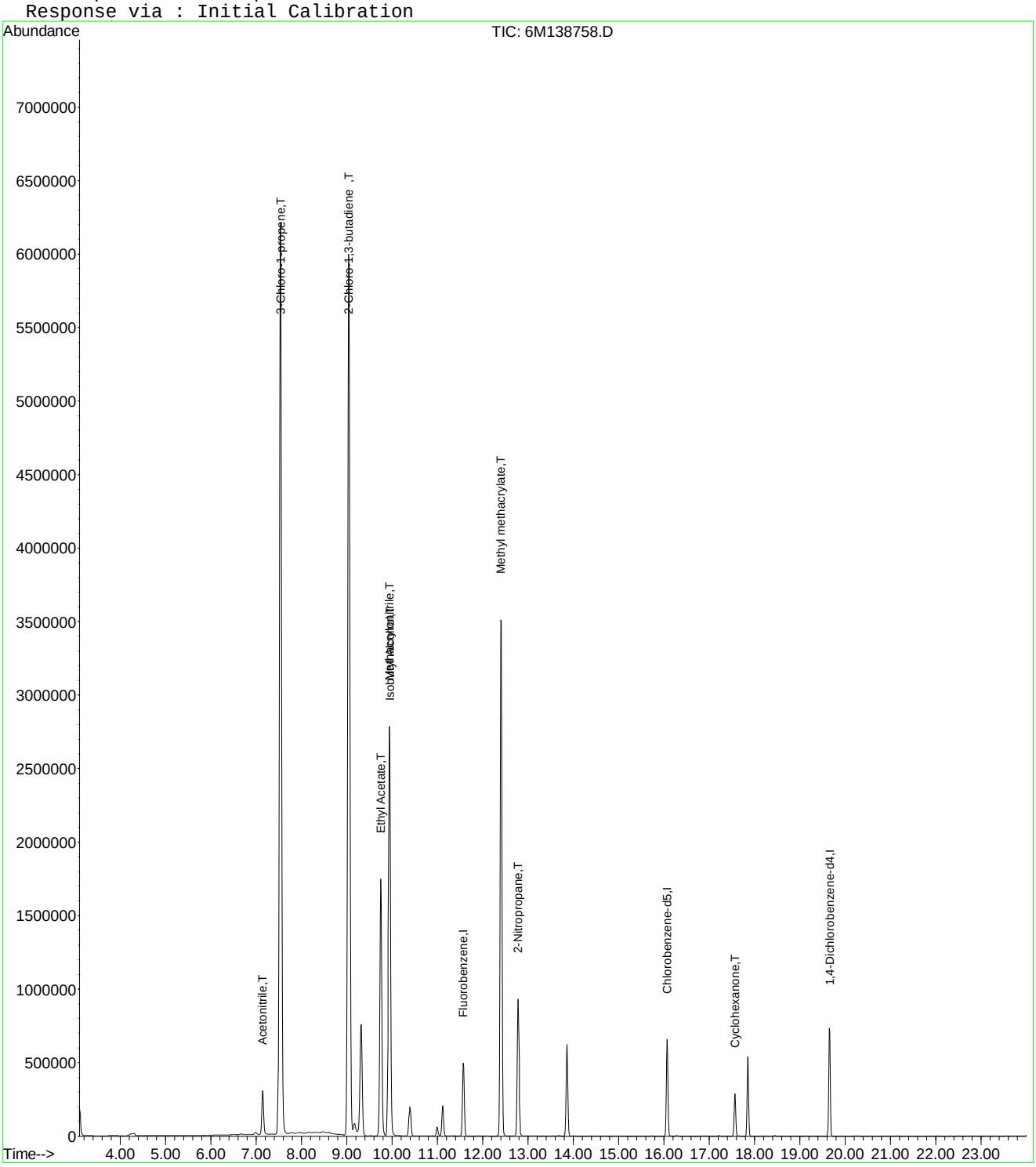

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 09:22:54 2016 Quant Results File: 8260WTR.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602884	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	471639	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	256885	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.40	111	171708	27.8099 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.24%		
43) 1,2-Dichloroethane-d4	11.12	65	210067	28.0330 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.12%		
58) Toluene-d8	13.86	98	553825	26.0829 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.32%		
80) p-Bromofluorobenzene	17.85	95	243088	28.3441 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 113.36%		

Target Compounds					Qvalue
5) 1,3-Butadiene	4.21	54	367749	92.2302 ug/L	88
9) Diethyl ether	6.30	59	700386	132.3612 ug/L	92
13) Acetone	6.67	43	6570	3.5143 ug/L	81
16) Dimethyl Sulfide	7.14	62	2726	0.5361 ug/L #	1
20) Carbon Disulfide	7.54	76	432674	22.5096 ug/L #	36
22) Methyl Tert Butyl Ether	7.97	73	2916	0.1786 ug/L #	53
26) Vinyl Acetate	9.05	43	5230	0.5414 ug/L #	1
27) 1,1-Dichloroethane	9.04	63	22472	1.7594 ug/L #	42
28) Ethyl-Tert-Butyl ether	9.32	59	4063	0.1960 ug/L #	35
29) 2-Butanone	9.52	43	6076	2.2019 ug/L #	66
30) Propionitrile	9.64	54	91341	115.2239 ug/L	96
36) Tetrahydrofuran	10.36	42	4030	2.2418 ug/L #	52
39) Cyclohexane	10.69	56	2387	0.2138 ug/L	79
48) Methylcyclohexane	12.40	83	1353	0.1547 ug/L #	1
50) 1,4-Dioxane	12.73	88	9231	177.0935 ug/L	71
60) Ethyl Methacrylate	13.86	69	1222	0.1732 ug/L #	1
79) 1,1,2,2-Tetrachloroethane	17.57	83	1146	0.1832 ug/L #	18

(#) = qualifier out of range (m) = manual integration
6M138761.D 8260WTR.M Mon Apr 25 09:22:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Apr 25 9:22 2016 Quant Results File: 8260WTR.RES

Method : C:\MSDCHEM\1\METHODS\8260WTR.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 04-11-16 - HPMS6
Last Update : Tue Apr 12 15:28:54 2016
Response via : Initial Calibration

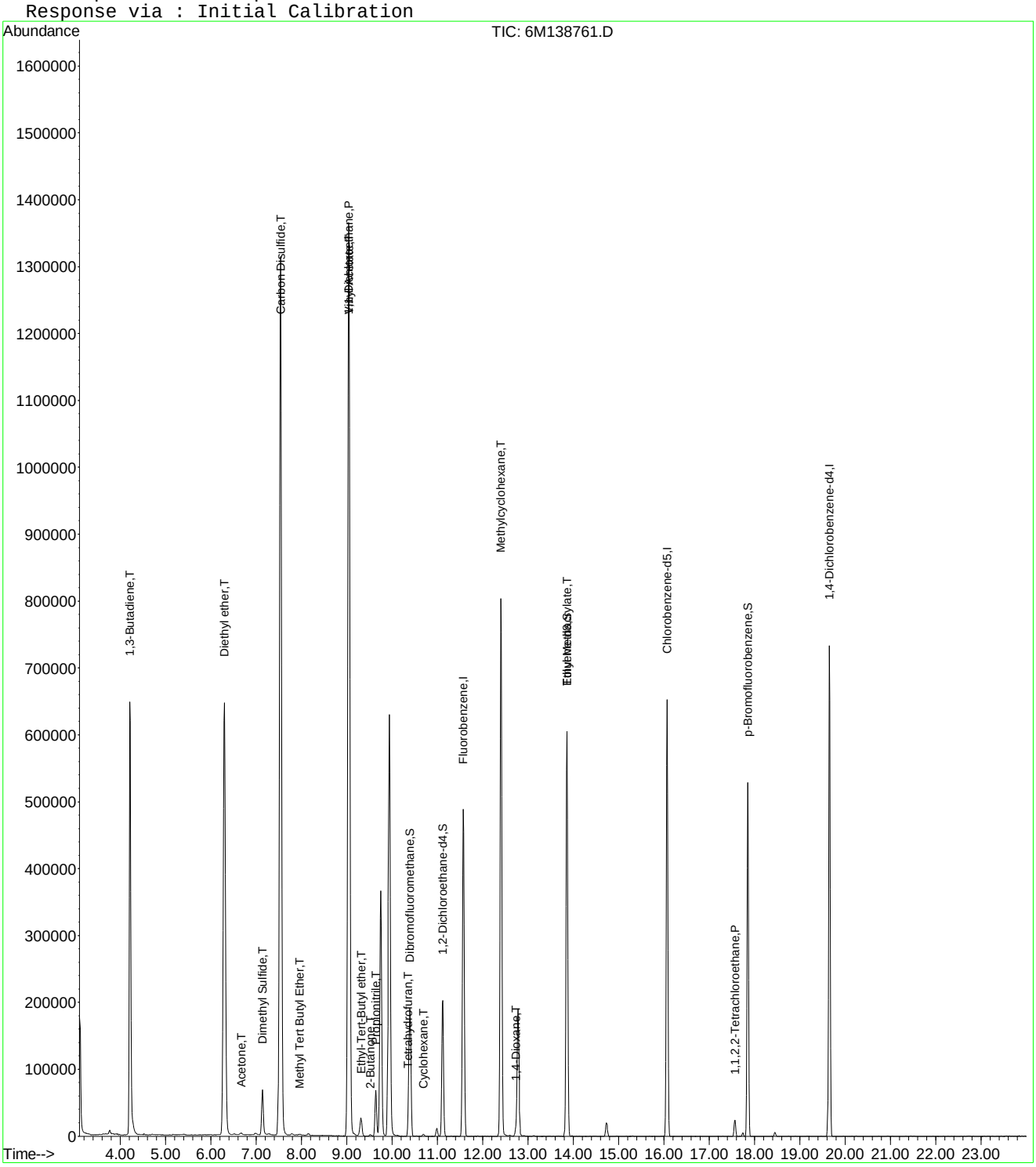

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46:01 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	602884	25.00 ug/L	-0.03
11) Chlorobenzene-d5	16.07	117	471639	25.00 ug/L	-0.03
12) 1,4-Dichlorobenzene-d4	19.65	152	256885	25.00 ug/L	-0.03

Target Compounds					Qvalue
2) Acetonitrile	7.14	41	96564	83.4191 ug/L	96
3) 3-Chloro-1-propene	7.54	41	1552115	96.0797 ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	1512761	108.7756 ug/L	83
5) Ethyl Acetate	9.75	43	691566	108.7414 ug/L	93
6) Methacrylonitrile	9.94	67	252030	103.0355 ug/L #	63
7) Isobutyl Alcohol	9.95	43	51165	146.2409 ug/L #	93
8) 1-Butanol	10.99	41	7584	50.3877 ug/L	72
9) Methyl methacrylate	12.40	41	635574	100.3670 ug/L	81
10) 2-Nitropropane	12.79	43	211020	113.0321 ug/L	98
13) Cyclohexanone	17.57	55	15491	17.6579 ug/L	85

(#) = qualifier out of range (m) = manual integration
6M138761.D A9FOOWT.M Mon Apr 25 15:46:02 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 25 15:46 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042216 - HPMS6
Last Update : Wed Oct 07 14:05:31 2015
Response via : Initial Calibration

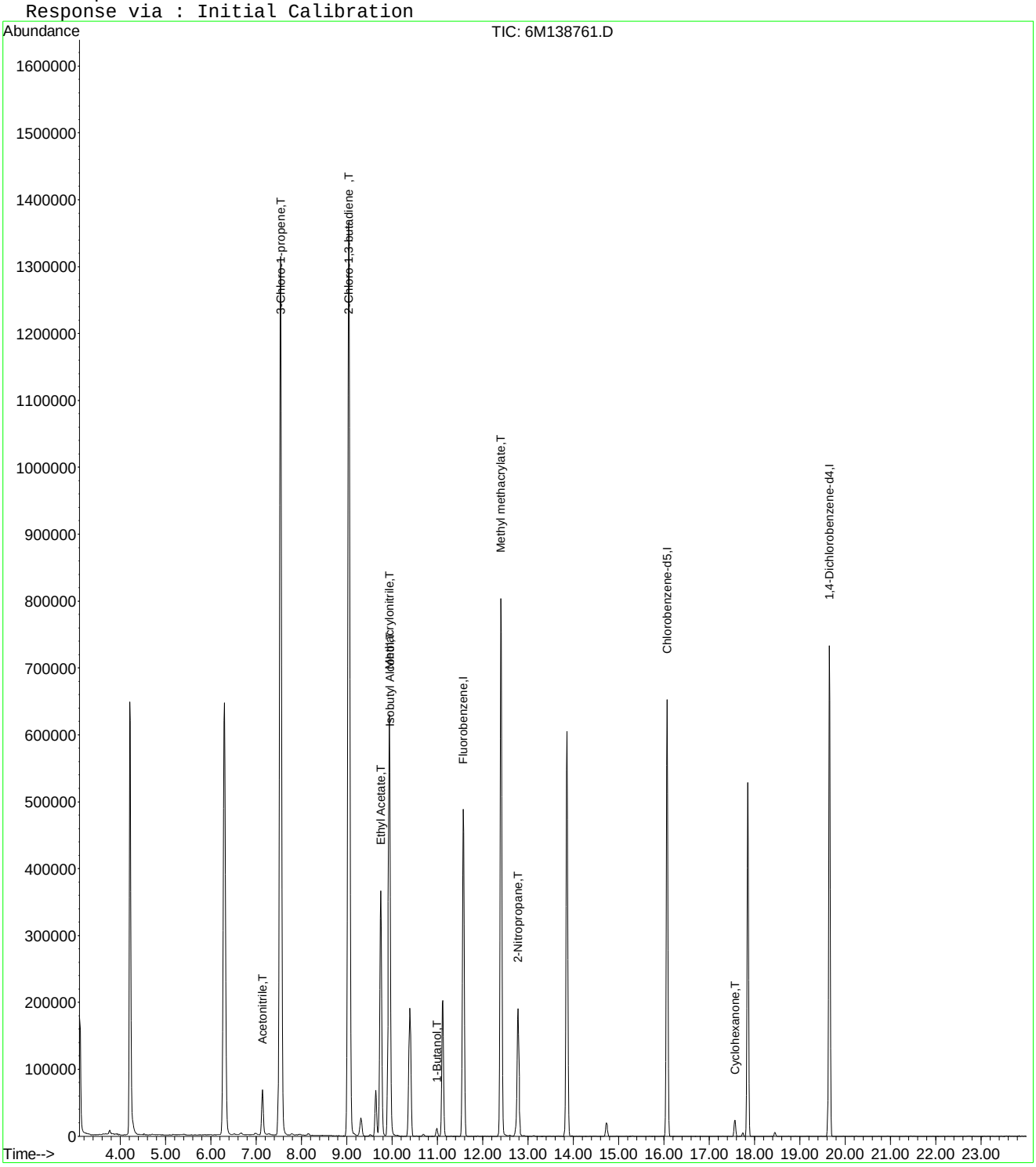

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05:02 2016 Quant Results File: A9FOOWT.RES

Quant Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WTR

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	11.57	96	602884	25.00	ug/L	0.00
11) Chlorobenzene-d5	16.07	117	471639	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	19.65	152	256885	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	7.14	41	96564	106.9355	ug/L	96
3) 3-Chloro-1-propene	7.54	41	1552115	103.1378	ug/L	93
4) 2-Chloro-1,3-butadiene	9.04	53	1512761	117.1516	ug/L	83
5) Ethyl Acetate	9.75	43	691566	106.9734	ug/L	93
6) Methacrylonitrile	9.94	67	252030	113.0781	ug/L #	63
7) Isobutyl Alcohol	9.95	43	51165	248.4926	ug/L #	93
9) Methyl methacrylate	12.40	41	635574	116.9674	ug/L	81
10) 2-Nitropropane	12.79	43	211020	104.4208	ug/L	98
13) Cyclohexanone	17.57	55	15491	48.3758	ug/L	85

(#) = qualifier out of range (m) = manual integration
6M138761.D A9FOOWT.M Wed Apr 27 16:05:02 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Apr 27 16:05 2016 Quant Results File: A9FOOWT.RES

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Initial Calibration

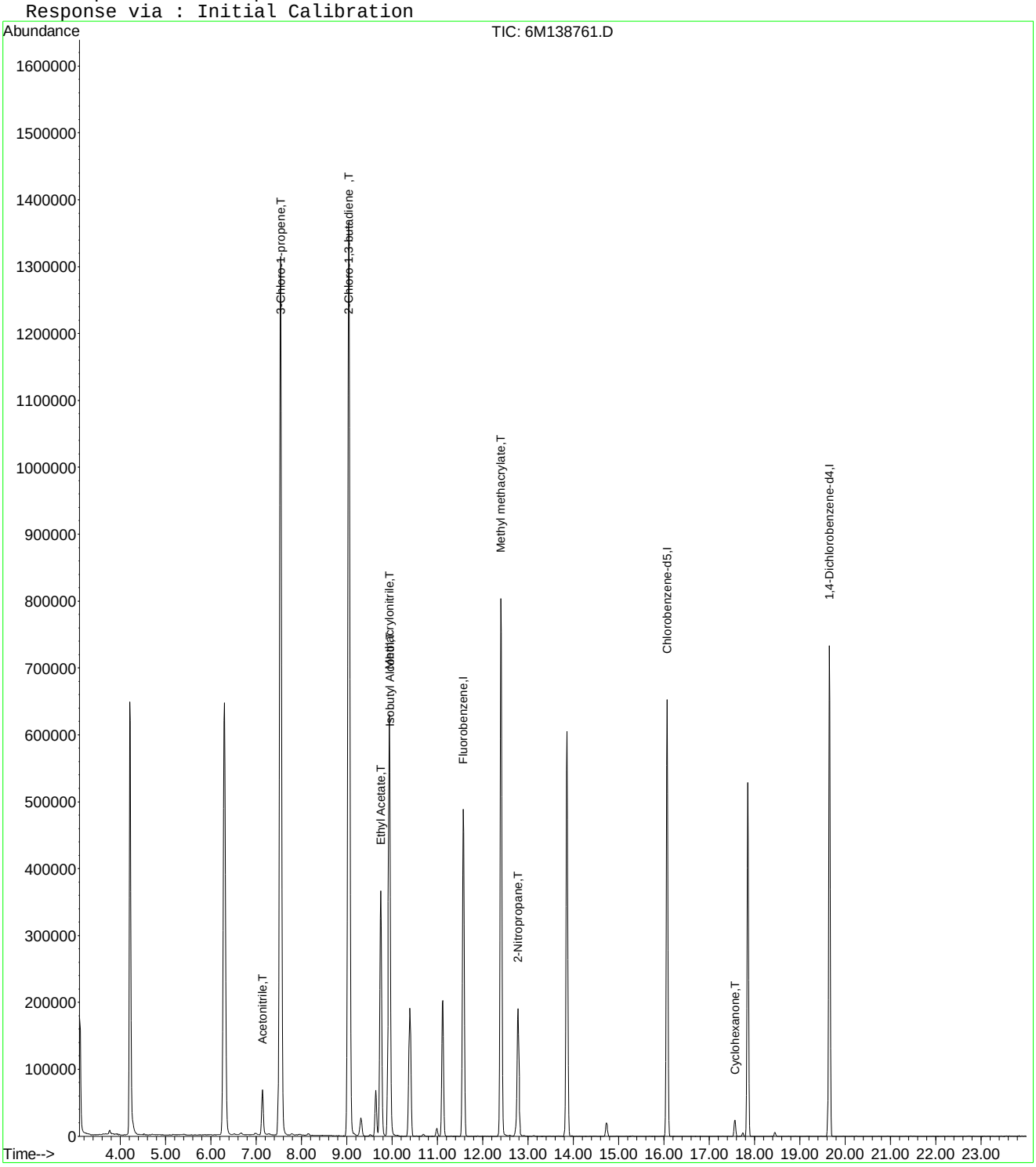

6M138761.D A9FOOWT.M Wed Apr 27 16:05:02 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\042416\6M138761.D Vial: 12
Acq On : 24 Apr 2016 22:21 Operator: JDS
Sample : WG566 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water - IC: 042416 - HPMS6
Last Update : Wed Apr 27 16:03:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	101	0.00
2	T	Acetonitrile	100.0000	106.9355	-6.9	106	0.00
3	T	3-Chloro-1-propene	100.0000	103.1378	-3.1	96	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	117.1516	-17.2	107	0.00
5	T	Ethyl Acetate	100.0000	106.9734	-7.0	103	0.00
6	T	Methacrylonitrile	100.0000	113.0781	-13.1	106	0.00
7	T	Isobutyl Alcohol	200.0000	248.4926	-24.2	151	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.00
9	T	Methyl methacrylate	100.0000	116.9674	-17.0	108	0.00
10	T	2-Nitropropane	100.0000	104.4208	-4.4	107	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	101	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	100.0000	48.3758	51.6	56	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M138761.D A9FOOWT.M Wed Apr 27 16:05:40 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139736.D Vial: 2
Acq On : 1 Jun 2016 12:30 Operator: TMB
Sample : WG570915-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:16 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.56	96	813215	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.06	117	577965	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.64	152	301716	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.38	111	4283	0.5089 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	2.04%#	
43) 1,2-Dichloroethane-d4	11.10	65	4854	0.5232 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	2.08%#	
58) Toluene-d8	13.85	98	12480	0.4499 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	1.80%#	
80) p-Bromofluorobenzene	17.84	95	4709	0.4420 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	1.76%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	4144	0.3219 ug/L #	64
3) Chloromethane	3.94	50	8154	0.5196 ug/L	89
4) Vinyl Chloride	4.17	62	4049	0.3828 ug/L	83
5) 1,3-Butadiene	4.23	54	3789	Below Cal	82
6) Bromomethane	5.09	94	2017	0.3871 ug/L	67
7) Chloroethane	5.24	64	1907	0.2852 ug/L	78
8) Trichlorofluoromethane	5.74	101	5609	0.3959 ug/L #	90
10) Isoprene	6.32	67	4333	0.3598 ug/L	85
12) 1,1,2-Trichloro-1,2,2-Trif	6.53	101	2492	0.3079 ug/L #	51
13) Acetone	6.65	43	8781	1.3297 ug/L	95
14) 1,1-Dichloroethene	6.88	61	5302	0.3699 ug/L	94
16) Dimethyl Sulfide	7.16	62	1556	0.2366 ug/L	90
18) Methyl acetate	7.45	43	2371	0.3380 ug/L #	66
19) Methylene Chloride	7.72	84	3850	0.4356 ug/L	96
20) Carbon Disulfide	7.76	76	13710	0.4889 ug/L	97
22) Methyl Tert Butyl Ether	7.96	73	5876	0.2725 ug/L #	57
23) trans-1,2-Dichloroethene	8.21	96	2912	0.3486 ug/L	79
24) n-Hexane	8.27	57	6111	0.4698 ug/L	95
26) Vinyl Acetate	8.85	43	3338	0.2270 ug/L #	78
27) 1,1-Dichloroethane	8.90	63	5337	0.3188 ug/L	90
29) 2-Butanone	9.52	43	1477	0.4022 ug/L #	57
31) 2,2-Dichloropropane	9.75	77	3421	0.2803 ug/L	93
32) cis-1,2-Dichloroethene	9.82	96	3404	0.3740 ug/L	96
33) Chloroform	10.06	83	4699	0.3152 ug/L	89
35) Bromochloromethane	10.33	130	1415	0.2738 ug/L	97
36) Tetrahydrofuran	10.35	42	3272	1.2942 ug/L #	65
38) 1,1,1-Trichloroethane	10.65	97	3984	0.2996 ug/L	88
39) Cyclohexane	10.69	56	5836	0.3501 ug/L	89
40) 1,1-Dichloropropene	10.89	75	3675	0.3224 ug/L	88
42) Carbon Tetrachloride	11.04	117	3635	0.3064 ug/L #	88
45) 1,2-Dichloroethane	11.24	62	3851	0.3361 ug/L #	84
46) Benzene	11.29	78	13082	0.3916 ug/L	94
47) Trichloroethene	12.15	130	3379	0.3960 ug/L	90
48) Methylcyclohexane	12.23	83	4088	0.3160 ug/L	89
49) 1,2-Dichloropropane	12.39	63	2852	0.3091 ug/L	92
51) Bromodichloromethane	12.74	83	3241	0.2856 ug/L	93
52) Dibromomethane	12.84	93	1404	0.2949 ug/L	85
53) 2-Chloroethyl Vinyl Ether	13.09	63	565	0.1342 ug/L #	41
54) 4-Methyl-2-Pentanone	13.13	58	397	0.1416 ug/L #	38
55) cis-1,3-Dichloropropene	13.48	75	4146	0.3228 ug/L #	86

(#) = qualifier out of range (m) = manual integration
6M139736.D 8260WT.M Thu Jun 02 12:18:18 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139736.D Vial: 2
Acq On : 1 Jun 2016 12:30 Operator: TMB
Sample : WG570915-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:16 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
56)	Dimethyl Disulfide	13.79	79	1395	0.1885 ug/L #	47
59)	Toluene	13.96	91	12731	0.3879 ug/L	97
60)	Ethyl Methacrylate	14.08	69	2174	0.2417 ug/L	85
62)	trans-1,3-Dichloropropene	14.17	75	3169	0.2835 ug/L #	66
63)	1,1,2-Trichloroethane	14.43	97	1621	0.2594 ug/L	96
64)	2-Hexanone	14.36	43	1082	0.2041 ug/L #	28
65)	1,3-Dichloropropane	14.79	76	3110	0.2831 ug/L	83
66)	Tetrachloroethene	14.92	166	3177	0.3690 ug/L	86
67)	Dibromochloromethane	15.23	129	2098	0.2635 ug/L	96
68)	1,2-Dibromoethane	15.53	107	1937	0.3207 ug/L	77
69)	1-Chlorohexane	15.65	91	3354	0.3147 ug/L	92
70)	Chlorobenzene	16.13	112	8026	0.3655 ug/L	95
71)	1,1,1,2-Tetrachloroethane	16.17	131	2302	0.2890 ug/L	94
72)	Ethylbenzene	16.16	106	3722	0.3195 ug/L	74
73)	m-,p-Xylene	16.27	106	10149	0.7334 ug/L	99
74)	o-Xylene	16.92	106	4124	0.3016 ug/L	92
75)	Styrene	16.97	104	6703	0.2951 ug/L	96
76)	Bromoform	17.55	173	1095	0.2168 ug/L #	52
77)	Isopropylbenzene	17.43	105	10818	0.3152 ug/L	99
79)	1,1,2,2-Tetrachloroethane	17.70	83	1648	0.2266 ug/L	89
83)	n-Propylbenzene	18.03	91	15389	0.3935 ug/L #	95
84)	Bromobenzene	18.18	156	3040	0.3313 ug/L	88
85)	1,3,5-Trimethylbenzene	18.26	105	8430	0.3047 ug/L	95
86)	2-Chlorotoluene	18.35	91	9550	0.3565 ug/L	89
87)	4-Chlorotoluene	18.41	91	8247	0.3316 ug/L	98
88)	a-Methylstyrene	18.74	118	3516	0.2273 ug/L	85
89)	tert-Butylbenzene	18.80	134	1775	0.2910 ug/L	94
90)	1,2,4-Trimethylbenzene	18.86	105	8937	0.3086 ug/L	99
91)	sec-Butylbenzene	19.12	105	10994	0.3229 ug/L	94
92)	p-Isopropyltoluene	19.32	119	9119	0.3143 ug/L	92
93)	1,3-Dichlorobenzene	19.54	146	7014	0.3920 ug/L	92
94)	1,4-Dichlorobenzene	19.69	146	9787	0.3660 ug/L	92
95)	n-Butylbenzene	19.94	91	9532	0.3471 ug/L	97
96)	1,2-Dichlorobenzene	20.27	146	5584	0.3349 ug/L	92
98)	1,2,4-Trichlorobenzene	22.82	180	4377	0.3797 ug/L	96
99)	Hexachlorobutadiene	23.01	225	1664	0.3478 ug/L #	77
100)	Naphthalene	23.27	128	8470	0.3717 ug/L #	86
101)	1,2,3-Trichlorobenzene	23.69	180	3552	0.3256 ug/L	89

(#) = qualifier out of range (m) = manual integration
6M139736.D 8260WT.M Thu Jun 02 12:18:18 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139736.D Vial: 2
Acq On : 1 Jun 2016 12:30 Operator: TMB
Sample : WG570915-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 2 12:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration

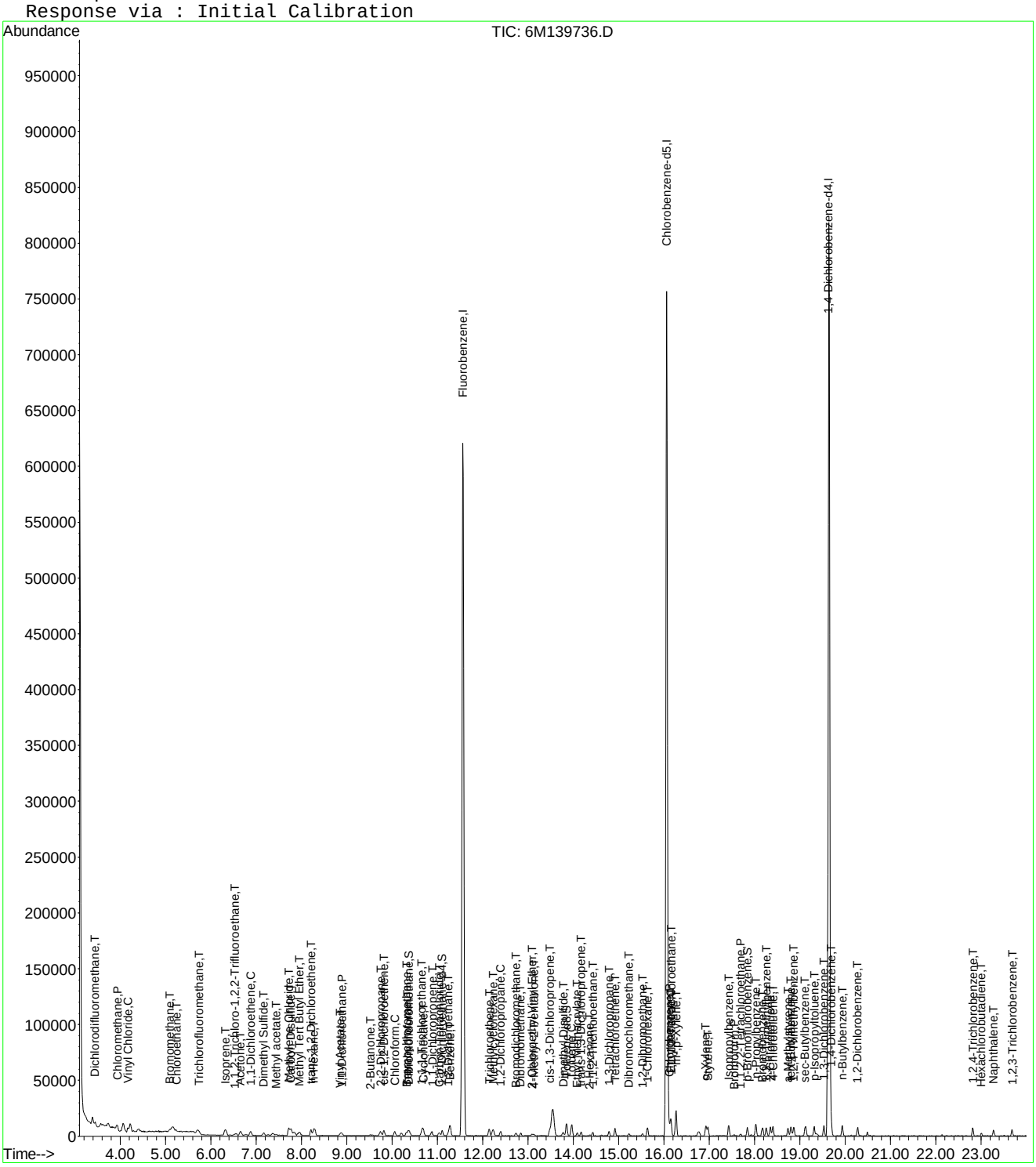

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\060116\6M139736.D Vial: 2
Acq On : 1 Jun 2016 12:30 Operator: TMB
Sample : WG570915-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.3219	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.5196	0.0	100	0.01
4	C	Vinyl Chloride	-1.0000	0.3828	0.0	100	0.01
5	T	1,3-Butadiene	-1.0000	-4.7832	0.0	0	0.03
6	T	Bromomethane	-1.0000	0.3871	0.0	100	0.02
7	T	Chloroethane	-1.0000	0.2852	0.0	100	0.01
8	T	Trichlorofluoromethane	-1.0000	0.3959	0.0	100	0.02
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.29#
10	T	Isoprene	-1.0000	0.3598	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.54#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3079	0.0	100	-0.02
13	T	Acetone	-1.0000	1.3297	0.0	0	0.00
14	C	1,1-Dichloroethene	-1.0000	0.3699	0.0	100	0.01
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-7.05#
16	T	Dimethyl Sulfide	-1.0000	0.2366	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.43#
18	T	Methyl acetate	-1.0000	0.3380	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4356	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4889	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.92#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2725	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	-1.0000	0.3486	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.4698	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.67#
26	T	Vinyl Acetate	-1.0000	0.2270	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.3188	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-9.30#
29	T	2-Butanone	-1.0000	0.4022	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.64#
31	T	2,2-Dichloropropane	-1.0000	0.2803	0.0	100	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.3740	0.0	100	0.00
33	C	Chloroform	0.3000	0.3152	-5.1	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-10.21#
35	T	Bromochloromethane	-1.0000	0.2738	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	1.2942	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.5089	0.0	100	0.00
38	T	1,1,1-Trichloroethane	-1.0000	0.2996	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.3501	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.3224	0.0	100	0.01
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-11.01#
42	T	Carbon Tetrachloride	-1.0000	0.3064	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.5232	0.0	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-11.01#
45	T	1,2-Dichloroethane	-1.0000	0.3361	0.0	100	0.00
46	T	Benzene	-1.0000	0.3916	0.0	100	0.00
47	T	Trichloroethene	-1.0000	0.3960	0.0	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3160	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.3091	0.0	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-12.74#
51	T	Bromodichloromethane	-1.0000	0.2856	0.0	100	0.00
52	T	Dibromomethane	-1.0000	0.2949	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1342	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.1416	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\060116\6M139736.D Vial: 2
Acq On : 1 Jun 2016 12:30 Operator: TMB
Sample : WG570915-02 0.3ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.3228	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.1885	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.4499	0.0	100	0.00
59	C	Toluene	-1.0000	0.3879	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2417	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.97#
62	T	trans-1,3-Dichloropropene	-1.0000	0.2835	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.2594	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.2041	0.0	100	0.00
65	T	1,3-Dichloropropane	-1.0000	0.2831	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.3690	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.2635	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.3207	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.3147	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.3655	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.2890	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.3195	0.0	100	0.00
73	T	m-,p-Xylene	-1.0000	0.7334	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.3016	0.0	100	0.00
75	T	Styrene	-1.0000	0.2951	0.0	100	0.00
76	P	Bromoform	-1.0000	0.2168	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.3152	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2266	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.4420	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-17.92#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-17.98#
83	T	n-Propylbenzene	-1.0000	0.3935	0.0	100	0.00
84	T	Bromobenzene	0.3000	0.3313	-10.4	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.3047	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.3565	0.0	100	0.00
87	T	4-Chlorotoluene	-1.0000	0.3316	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2273	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.2910	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.3086	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3229	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.3143	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.3920	0.0	100	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.3660	-22.0#	100	0.00
95	T	n-Butylbenzene	-1.0000	0.3471	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.3349	-11.6	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-21.46#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.3797	0.0	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.3478	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.3717	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.3256	-8.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M139736.D 8260WT.M Thu Jun 02 12:18:44 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139737.D Vial: 3
Acq On : 1 Jun 2016 13:01 Operator: TMB
Sample : WG570915-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:19 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.56	96	762881	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	549597	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.64	152	286787	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	13.85	98	1770	0.0671 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.28%#	
80) p-Bromofluorobenzene	17.83	95	697	0.0688 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	4460	0.3693 ug/L #	75
3) Chloromethane	3.93	50	7549	0.5128 ug/L	89
4) Vinyl Chloride	4.17	62	4900	0.4938 ug/L	79
5) 1,3-Butadiene	4.23	54	5430	Below Cal #	74
6) Bromomethane	5.08	94	1638	0.3351 ug/L	89
7) Chloroethane	5.24	64	2312	0.3686 ug/L #	72
8) Trichlorofluoromethane	5.73	101	5332	0.4012 ug/L #	89
10) Isoprene	6.33	67	4504	0.3986 ug/L	91
12) 1,1,2-Trichloro-1,2,2-Trif	6.55	101	2583	0.3402 ug/L	86
13) Acetone	6.66	43	2630	Below Cal #	48
14) 1,1-Dichloroethene	6.89	61	5658	0.4208 ug/L	91
16) Dimethyl Sulfide	7.17	62	2447	0.3966 ug/L	84
18) Methyl acetate	7.46	43	2637	0.4008 ug/L #	66
19) Methylene Chloride	7.72	84	3896	0.4699 ug/L	95
20) Carbon Disulfide	7.77	76	11879	0.4516 ug/L	90
22) Methyl Tert Butyl Ether	7.96	73	7778	0.3845 ug/L	88
23) trans-1,2-Dichloroethene	8.21	96	3104	0.3961 ug/L	95
24) n-Hexane	8.29	57	5504	0.4510 ug/L	100
26) Vinyl Acetate	8.86	43	4070	0.2951 ug/L #	78
27) 1,1-Dichloroethane	8.90	63	6427	0.4093 ug/L	93
29) 2-Butanone	9.51	43	1191	0.3457 ug/L #	57
31) 2,2-Dichloropropane	9.76	77	4571	0.3993 ug/L	92
32) cis-1,2-Dichloroethene	9.83	96	3207	0.3756 ug/L	85
33) Chloroform	10.06	83	5486	0.3923 ug/L	94
35) Bromochloromethane	10.33	130	1840	0.3795 ug/L	81
36) Tetrahydrofuran	10.36	42	3761	1.5858 ug/L	79
38) 1,1,1-Trichloroethane	10.65	97	5324	0.4267 ug/L	82
39) Cyclohexane	10.68	56	6403	0.4095 ug/L	90
40) 1,1-Dichloropropene	10.88	75	4176	0.3906 ug/L	95
42) Carbon Tetrachloride	11.04	117	4371	0.3927 ug/L #	92
45) 1,2-Dichloroethane	11.25	62	4453	0.4143 ug/L #	79
46) Benzene	11.29	78	13721	0.4378 ug/L	96
47) Trichloroethene	12.14	130	3152	0.3938 ug/L	99
48) Methylcyclohexane	12.23	83	4741	0.3907 ug/L	91
49) 1,2-Dichloropropane	12.39	63	3378	0.3902 ug/L	91
51) Bromodichloromethane	12.74	83	4050	0.3804 ug/L	98
52) Dibromomethane	12.84	93	1706	0.3819 ug/L	85
53) 2-Chloroethyl Vinyl Ether	13.08	63	1091	0.2761 ug/L #	41
55) cis-1,3-Dichloropropene	13.48	75	4324	0.3589 ug/L	91
56) Dimethyl Disulfide	13.78	79	1868	0.2691 ug/L #	47

(#) = qualifier out of range (m) = manual integration
6M139737.D 8260WT.M Thu Jun 02 12:18:19 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139737.D Vial: 3
Acq On : 1 Jun 2016 13:01 Operator: TMB
Sample : WG570915-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:19 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
59)	Toluene	13.96	91	12953	0.4150 ug/L		98
60)	Ethyl Methacrylate	14.10	69	2921	0.3415 ug/L		94
62)	trans-1,3-Dichloropropene	14.18	75	3597	0.3384 ug/L		88
63)	1,1,2-Trichloroethane	14.43	97	2395	0.4031 ug/L		98
64)	2-Hexanone	14.36	43	1748	0.3467 ug/L	#	68
65)	1,3-Dichloropropane	14.79	76	4110	0.3934 ug/L		93
66)	Tetrachloroethene	14.92	166	3316	0.4051 ug/L		95
67)	Dibromochloromethane	15.23	129	2940	0.3883 ug/L		88
68)	1,2-Dibromoethane	15.53	107	2255	0.3926 ug/L		97
69)	1-Chlorohexane	15.64	91	3691	0.3642 ug/L		89
70)	Chlorobenzene	16.13	112	8656	0.4145 ug/L		90
71)	1,1,1,2-Tetrachloroethane	16.16	131	2926	0.3863 ug/L		91
72)	Ethylbenzene	16.16	106	4269	0.3854 ug/L		86
73)	m-,p-Xylene	16.26	106	11025	0.8378 ug/L		99
74)	o-Xylene	16.93	106	4600	0.3537 ug/L		86
75)	Styrene	16.97	104	7188	0.3328 ug/L		90
76)	Bromoform	17.55	173	1259	0.2621 ug/L	#	68
77)	Isopropylbenzene	17.43	105	13008	0.3985 ug/L		93
79)	1,1,2,2-Tetrachloroethane	17.70	83	2694	0.3896 ug/L		90
81)	1,2,3-Trichloropropane	17.91	110	393	0.1963 ug/L	#	1
83)	n-Propylbenzene	18.04	91	15780	0.4246 ug/L	#	92
84)	Bromobenzene	18.18	156	3461	0.3968 ug/L		93
85)	1,3,5-Trimethylbenzene	18.26	105	9975	0.3793 ug/L		99
86)	2-Chlorotoluene	18.35	91	11254	0.4420 ug/L		95
87)	4-Chlorotoluene	18.41	91	9173	0.3881 ug/L		93
88)	a-Methylstyrene	18.74	118	4377	0.2977 ug/L		97
89)	tert-Butylbenzene	18.80	134	2203	0.3800 ug/L		87
90)	1,2,4-Trimethylbenzene	18.86	105	10590	0.3847 ug/L		99
91)	sec-Butylbenzene	19.13	105	12756	0.3942 ug/L		90
92)	p-Isopropyltoluene	19.32	119	10579	0.3836 ug/L		93
93)	1,3-Dichlorobenzene	19.54	146	7639	0.4492 ug/L		93
94)	1,4-Dichlorobenzene	19.69	146	8053	0.2880 ug/L		91
95)	n-Butylbenzene	19.94	91	10201	0.3908 ug/L		97
96)	1,2-Dichlorobenzene	20.28	146	6377	0.4024 ug/L		98
98)	1,2,4-Trichlorobenzene	22.83	180	4547	0.4149 ug/L		97
99)	Hexachlorobutadiene	23.01	225	1883	0.4141 ug/L		86
100)	Naphthalene	23.28	128	8429	0.3891 ug/L	#	82
101)	1,2,3-Trichlorobenzene	23.67	180	4307	0.4153 ug/L		94

(#) = qualifier out of range (m) = manual integration
6M139737.D 8260WT.M Thu Jun 02 12:18:19 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139737.D Vial: 3
Acq On : 1 Jun 2016 13:01 Operator: TMB
Sample : WG570915-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 2 12:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration

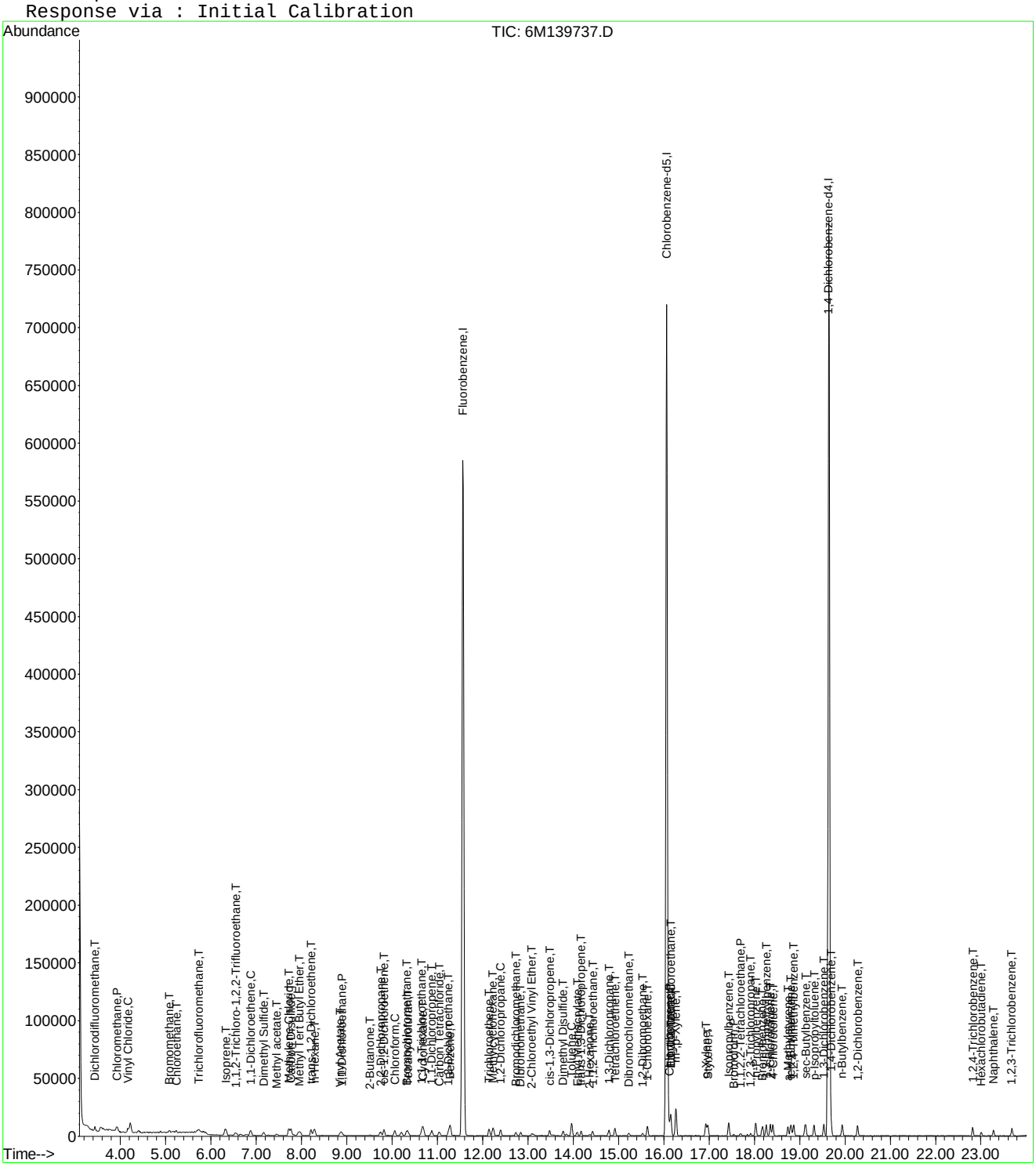

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\060116\6M139737.D Vial: 3
Acq On : 1 Jun 2016 13:01 Operator: TMB
Sample : WG570915-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.3693	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.5128	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.4938	-23.4#	100	0.01
5	T	1,3-Butadiene	-1.0000	-4.4099	0.0	0	0.03
6	T	Bromomethane	-1.0000	0.3351	0.0	100	0.01
7	T	Chloroethane	-1.0000	0.3686	0.0	100	0.01
8	T	Trichlorofluoromethane	0.4000	0.4012	-0.3	100	0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.29#
10	T	Isoprene	-1.0000	0.3986	0.0	100	0.01
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.54#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3402	0.0	100	0.00
13	T	Acetone	-1.0000	-1.3315	0.0	0	0.00
14	C	1,1-Dichloroethene	0.4000	0.4208	-5.2	100	0.01
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-7.05#
16	T	Dimethyl Sulfide	-1.0000	0.3966	0.0	100	0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.43#
18	T	Methyl acetate	-1.0000	0.4008	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4699	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4516	0.0	100	0.01
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.92#
22	T	Methyl Tert Butyl Ether	-1.0000	0.3845	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.3961	1.0	100	0.00
24	T	n-Hexane	-1.0000	0.4510	0.0	100	0.01
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.67#
26	T	Vinyl Acetate	-1.0000	0.2951	0.0	100	0.00
27	P	1,1-Dichloroethane	0.4000	0.4093	-2.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-9.30#
29	T	2-Butanone	-1.0000	0.3457	0.0	100	0.00
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-9.64#
31	T	2,2-Dichloropropane	0.4000	0.3993	0.2	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.3756	6.1	100	0.00
33	C	Chloroform	0.4000	0.3923	1.9	100	0.00
34		1-Bromopropane	-1.0000	0.0000	0.0	0	-10.21#
35	T	Bromochloromethane	0.4000	0.3795	5.1	100	0.00
36	T	Tetrahydrofuran	-1.0000	1.5858	0.0	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-10.38#
38	T	1,1,1-Trichloroethane	0.4000	0.4268	-6.7	100	0.00
39	T	Cyclohexane	-1.0000	0.4095	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.3906	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-11.01#
42	T	Carbon Tetrachloride	0.4000	0.3927	1.8	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-11.11#
44		Heptane	-1.0000	0.0000	0.0	0	-11.01#
45	T	1,2-Dichloroethane	0.4000	0.4143	-3.6	100	0.00
46	T	Benzene	0.4000	0.4378	-9.5	100	0.00
47	T	Trichloroethene	0.4000	0.3938	1.6	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3907	0.0	100	0.00
49	C	1,2-Dichloropropane	0.4000	0.3902	2.4	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-12.74#
51	T	Bromodichloromethane	0.4000	0.3804	4.9	100	0.00
52	T	Dibromomethane	0.4000	0.3819	4.5	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2761	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0913	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\060116\6M139737.D Vial: 3
Acq On : 1 Jun 2016 13:01 Operator: TMB
Sample : WG570915-03 0.4ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3589	10.3	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2691	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0671	0.0	100	0.00
59	C	Toluene	0.4000	0.4150	-3.8	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3415	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.97#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3384	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.4031	-0.8	100	0.00
64	T	2-Hexanone	-1.0000	0.3467	0.0	100	0.00
65	T	1,3-Dichloropropane	0.4000	0.3934	1.6	100	0.00
66	T	Tetrachloroethene	0.4000	0.4051	-1.3	100	0.00
67	T	Dibromochloromethane	0.4000	0.3883	2.9	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.3926	1.8	100	0.00
69	T	1-Chlorohexane	0.4000	0.3642	8.9	100	0.00
70	P	Chlorobenzene	0.4000	0.4145	-3.6	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3863	3.4	100	0.00
72	C	Ethylbenzene	0.4000	0.3854	3.6	100	0.00
73	T	m-,p-Xylene	0.8000	0.8378	-4.7	100	0.00
74	T	o-Xylene	-1.0000	0.3537	0.0	100	0.00
75	T	Styrene	0.4000	0.3328	16.8	100	0.00
76	P	Bromoform	-1.0000	0.2621	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.3985	0.4	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.3896	2.6	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0688	0.0	100	-0.02
81	T	1,2,3-Trichloropropane	-1.0000	0.1963	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-17.98#
83	T	n-Propylbenzene	0.4000	0.4245	-6.1	100	0.00
84	T	Bromobenzene	0.4000	0.3968	0.8	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.3793	5.2	100	0.00
86	T	2-Chlorotoluene	0.4000	0.4420	-10.5	100	0.00
87	T	4-Chlorotoluene	0.4000	0.3881	3.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2977	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3800	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.3847	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3942	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.3836	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.4491	-12.3	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.2880	28.0#	100	0.00
95	T	n-Butylbenzene	-1.0000	0.3908	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.4024	-0.6	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-21.46#
98	T	1,2,4-Trichlorobenzene	0.4000	0.4149	-3.7	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.4141	-3.5	100	0.00
100	T	Naphthalene	0.4000	0.3891	2.7	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.4153	-3.8	100	-0.02

(#) = Out of Range SPCC's out = 0 CCC's out = 1
6M139737.D 8260WT.M Thu Jun 02 12:18:53 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139738.D Vial: 4
Acq On : 1 Jun 2016 13:33 Operator: TMB
Sample : WG570915-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:19 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	735945	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.06	117	535564	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	279249	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.38	111	4107	0.5392 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	2.16%#	
43) 1,2-Dichloroethane-d4	11.11	65	4822	0.5744 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	2.28%#	
58) Toluene-d8	13.85	98	13936	0.5422 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.16%#	
80) p-Bromofluorobenzene	17.84	95	5325	0.5400 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.16%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	10837	0.9303 ug/L	94
3) Chloromethane	3.93	50	14951	1.0527 ug/L	95
4) Vinyl Chloride	4.17	62	10315	1.0775 ug/L	98
5) 1,3-Butadiene	4.23	54	11501	Below Cal #	71
6) Bromomethane	5.09	94	4678	0.9920 ug/L	91
7) Chloroethane	5.24	64	6242	1.0315 ug/L	93
8) Trichlorofluoromethane	5.74	101	13112	1.0227 ug/L	98
9) Diethyl ether	6.29	59	32367	4.6948 ug/L	95
10) Isoprene	6.32	67	10603	0.9728 ug/L	96
11) Acrolein	6.55	56	2886	2.4811 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.55	101	6983	0.9534 ug/L	99
13) Acetone	6.65	43	4248	Below Cal	88
14) 1,1-Dichloroethene	6.88	61	12693	0.9786 ug/L	95
15) Tert-Butyl Alcohol	7.01	59	5638	8.8569 ug/L #	91
16) Dimethyl Sulfide	7.16	62	5494	0.9230 ug/L	95
17) Iodomethane	7.44	142	206	1.4776 ug/L #	32
18) Methyl acetate	7.45	43	6108	0.9622 ug/L #	84
19) Methylene Chloride	7.72	84	8543	1.0681 ug/L	99
20) Carbon Disulfide	7.77	76	25589	1.0084 ug/L	97
21) Acrylonitrile	7.92	53	6481	2.3166 ug/L	99
22) Methyl Tert Butyl Ether	7.96	73	18778	0.9622 ug/L	98
23) trans-1,2-Dichloroethene	8.21	96	7417	0.9810 ug/L	94
24) n-Hexane	8.29	57	11426	0.9706 ug/L	99
25) Diisopropyl ether	8.67	45	153480	4.8980 ug/L	98
26) Vinyl Acetate	8.85	43	9400	0.7065 ug/L #	84
27) 1,1-Dichloroethane	8.89	63	15342	1.0128 ug/L	97
28) Ethyl-Tert-Butyl ether	9.30	59	123806	4.8277 ug/L	99
29) 2-Butanone	9.52	43	3323	0.9999 ug/L #	57
30) Propionitrile	9.63	54	4078	4.4461 ug/L #	67
31) 2,2-Dichloropropane	9.75	77	11462	1.0379 ug/L	97
32) cis-1,2-Dichloroethene	9.82	96	8252	1.0019 ug/L	100
33) Chloroform	10.06	83	13163	0.9757 ug/L	96
34) 1-Bromopropane	10.22	122	767	0.8504 ug/L	95
35) Bromochloromethane	10.32	130	4431	0.9473 ug/L	98
36) Tetrahydrofuran	10.35	42	13920	6.0841 ug/L	96
38) 1,1,1-Trichloroethane	10.66	97	11268	0.9363 ug/L	97
39) Cyclohexane	10.68	56	14333	0.9501 ug/L	97
40) 1,1-Dichloropropene	10.87	75	10019	0.9713 ug/L	98
41) Tert-Amyl-Methyl ether	11.00	73	94333	4.7510 ug/L	95
42) Carbon Tetrachloride	11.05	117	10227	0.9525 ug/L	96

(#) = qualifier out of range (m) = manual integration
6M139738.D 8260WT.M Thu Jun 02 12:18:20 2016 Page 1

Data File : C:\MSDCHEM\1\DATA\060116\6M139738.D Vial: 4
Acq On : 1 Jun 2016 13:33 Operator: TMB
Sample : WG570915-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:19 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	11.24	62	10141	0.9780 ug/L		97
46)	Benzene	11.28	78	31309	1.0356 ug/L		97
47)	Trichloroethene	12.14	130	7967	1.0318 ug/L		92
48)	Methylcyclohexane	12.24	83	11289	0.9643 ug/L		96
49)	1,2-Dichloropropane	12.40	63	8268	0.9901 ug/L		94
51)	Bromodichloromethane	12.73	83	10186	0.9919 ug/L		93
52)	Dibromomethane	12.84	93	4177	0.9693 ug/L		96
53)	2-Chloroethyl Vinyl Ether	13.09	63	3010	0.7897 ug/L		83
54)	4-Methyl-2-Pentanone	13.12	58	1877	0.7400 ug/L	#	55
55)	cis-1,3-Dichloropropene	13.48	75	10469	0.9007 ug/L		96
56)	Dimethyl Disulfide	13.79	79	4425	0.6608 ug/L		95
59)	Toluene	13.97	91	30558	1.0048 ug/L		98
60)	Ethyl Methacrylate	14.09	69	6558	0.7869 ug/L		93
62)	trans-1,3-Dichloropropene	14.18	75	9010	0.8699 ug/L		96
63)	1,1,2-Trichloroethane	14.43	97	5393	0.9314 ug/L		94
64)	2-Hexanone	14.36	43	4275	0.8701 ug/L		96
65)	1,3-Dichloropropane	14.79	76	10006	0.9829 ug/L		98
66)	Tetrachloroethene	14.92	166	8268	1.0364 ug/L		93
67)	Dibromochloromethane	15.24	129	7033	0.9532 ug/L		94
68)	1,2-Dibromoethane	15.53	107	5148	0.9198 ug/L		98
69)	1-Chlorohexane	15.64	91	8904	0.9017 ug/L		90
70)	Chlorobenzene	16.12	112	20831	1.0237 ug/L		95
71)	1,1,1,2-Tetrachloroethane	16.16	131	6905	0.9355 ug/L		97
72)	Ethylbenzene	16.15	106	10603	0.9824 ug/L		97
73)	m-,p-Xylene	16.27	106	25147	1.9611 ug/L		97
74)	o-Xylene	16.93	106	11865	0.9363 ug/L		96
75)	Styrene	16.97	104	18579	0.8828 ug/L		99
76)	Bromoform	17.55	173	4082	0.8720 ug/L		84
77)	Isopropylbenzene	17.43	105	31300	0.9840 ug/L		98
79)	1,1,2,2-Tetrachloroethane	17.70	83	6643	0.9867 ug/L		93
81)	1,2,3-Trichloropropane	17.92	110	1876	0.9624 ug/L		74
82)	trans-1,4-Dichloro-2-Buten	17.99	53	1194	1.2005 ug/L		94
83)	n-Propylbenzene	18.03	91	36550	1.0099 ug/L		97
84)	Bromobenzene	18.18	156	8529	1.0043 ug/L		98
85)	1,3,5-Trimethylbenzene	18.26	105	25491	0.9955 ug/L		96
86)	2-Chlorotoluene	18.35	91	25187	1.0160 ug/L		97
87)	4-Chlorotoluene	18.41	91	23659	1.0279 ug/L		98
88)	a-Methylstyrene	18.74	118	11586	0.8093 ug/L		95
89)	tert-Butylbenzene	18.81	134	5217	0.9241 ug/L		78
90)	1,2,4-Trimethylbenzene	18.87	105	25567	0.9538 ug/L		98
91)	sec-Butylbenzene	19.13	105	31783	1.0086 ug/L		97
92)	p-Isopropyltoluene	19.32	119	25687	0.9566 ug/L		98
93)	1,3-Dichlorobenzene	19.53	146	16574	1.0008 ug/L		100
94)	1,4-Dichlorobenzene	19.69	146	17812	0.9265 ug/L		92
95)	n-Butylbenzene	19.94	91	24011	0.9447 ug/L		95
96)	1,2-Dichlorobenzene	20.28	146	14898	0.9654 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	21.46	75	675	0.5583 ug/L		92
98)	1,2,4-Trichlorobenzene	22.82	180	10025	0.9396 ug/L		98
99)	Hexachlorobutadiene	23.01	225	4690	1.0591 ug/L		94
100)	Naphthalene	23.28	128	19311	0.9156 ug/L		98
101)	1,2,3-Trichlorobenzene	23.68	180	9754	0.9660 ug/L		98

(#) = qualifier out of range (m) = manual integration
6M139738.D 8260WT.M Thu Jun 02 12:18:20 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139738.D Vial: 4
Acq On : 1 Jun 2016 13:33 Operator: TMB
Sample : WG570915-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 2 12:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration

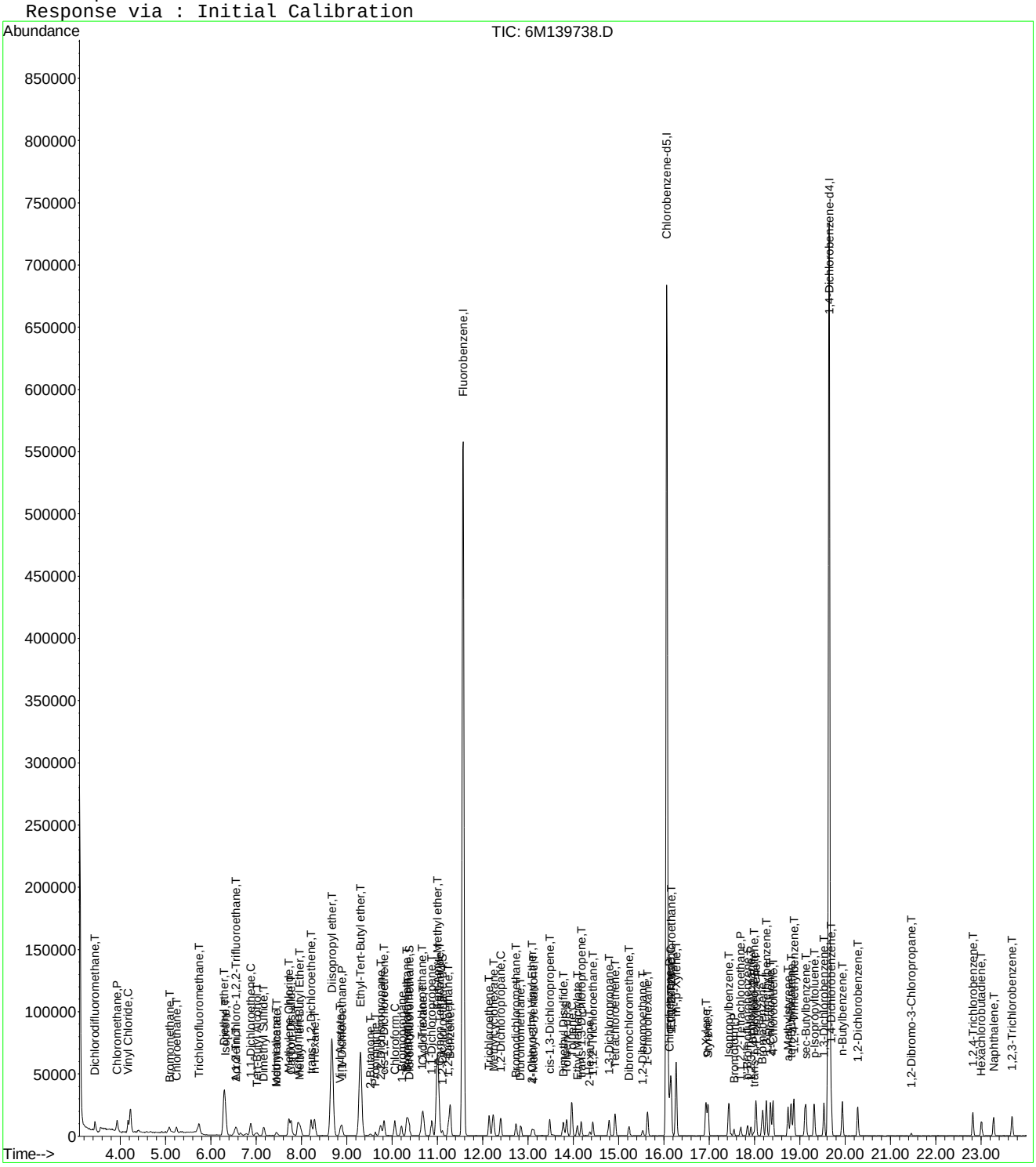

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\060116\6M139738.D Vial: 4
Acq On : 1 Jun 2016 13:33 Operator: TMB
Sample : WG570915-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9303	7.0	100	0.00
3	P	Chloromethane	1.0000	1.0527	-5.3	100	0.00
4	C	Vinyl Chloride	1.0000	1.0775	-7.7	100	0.01
5	T	1,3-Butadiene	-1.0000	-3.1177	0.0	0	0.03
6	T	Bromomethane	1.0000	0.9920	0.8	100	0.02
7	T	Chloroethane	1.0000	1.0315	-3.2	100	0.01
8	T	Trichlorofluoromethane	1.0000	1.0227	-2.3	100	0.02
9	T	Diethyl ether	5.0000	4.6948	6.1	100	0.00
10	T	Isoprene	-1.0000	0.9728	0.0	100	0.00
11	T	Acrolein	-1.0000	2.4811	0.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	0.9535	4.7	100	0.00
13	T	Acetone	-1.0000	-0.4899	0.0	0	0.00
14	C	1,1-Dichloroethene	1.0000	0.9786	2.1	100	0.01
15	T	Tert-Butyl Alcohol	10.0000	8.8569	11.4	100	-0.03
16	T	Dimethyl Sulfide	-1.0000	0.9230	0.0	100	0.00
17	T	Iodomethane	-1.0000	1.4776	0.0	0	0.01
18	T	Methyl acetate	-1.0000	0.9622	0.0	100	0.00
19	T	Methylene Chloride	1.0000	1.0681	-6.8	100	0.00
20	T	Carbon Disulfide	1.0000	1.0084	-0.8	100	0.01
21	T	Acrylonitrile	2.5000	2.3166	7.3	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9622	3.8	100	0.01
23	T	trans-1,2-Dichloroethene	1.0000	0.9810	1.9	100	0.00
24	T	n-Hexane	-1.0000	0.9706	0.0	100	0.01
25	T	Diisopropyl ether	5.0000	4.8979	2.0	100	0.00
26	T	Vinyl Acetate	-1.0000	0.7065	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0128	-1.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.8277	3.4	100	0.00
29	T	2-Butanone	-1.0000	0.9999	0.0	100	0.00
30	T	Propionitrile	5.0000	4.4461	11.1	100	0.00
31	T	2,2-Dichloropropane	1.0000	1.0379	-3.8	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	1.0019	-0.2	100	0.00
33	C	Chloroform	1.0000	0.9757	2.4	100	0.00
34		1-Bromopropane	1.0000	0.8504	15.0	100	0.01
35	T	Bromochloromethane	1.0000	0.9474	5.3	100	0.00
36	T	Tetrahydrofuran	5.0000	6.0841	-21.7#	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.5392	0.0	100	0.00
38	T	1,1,1-Trichloroethane	1.0000	0.9363	6.4	100	0.00
39	T	Cyclohexane	1.0000	0.9501	5.0	100	0.00
40	T	1,1-Dichloropropene	1.0000	0.9713	2.9	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	4.7510	5.0	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.9525	4.7	100	0.01
43	S	1,2-Dichloroethane-d4	-1.0000	0.5744	0.0	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	T	1,2-Dichloroethane	1.0000	0.9780	2.2	100	0.00
46	T	Benzene	1.0000	1.0356	-3.6	100	0.00
47	T	Trichloroethene	1.0000	1.0318	-3.2	100	0.00
48	T	Methylcyclohexane	-1.0000	0.9643	0.0	100	0.01
49	C	1,2-Dichloropropane	1.0000	0.9901	1.0	100	0.00
50	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-12.74#
51	T	Bromodichloromethane	1.0000	0.9919	0.8	100	0.00
52	T	Dibromomethane	1.0000	0.9693	3.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.7897	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.7400	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\060116\6M139738.D Vial: 4
Acq On : 1 Jun 2016 13:33 Operator: TMB
Sample : WG570915-04 1ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9007	9.9	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.6608	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.5422	0.0	100	0.00
59	C	Toluene	1.0000	1.0048	-0.5	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.7869	21.3#	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	1.0000	0.8699	13.0	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.9314	6.9	100	0.00
64	T	2-Hexanone	-1.0000	0.8701	0.0	100	0.00
65	T	1,3-Dichloropropane	1.0000	0.9829	1.7	100	0.00
66	T	Tetrachloroethene	1.0000	1.0364	-3.6	100	0.00
67	T	Dibromochloromethane	1.0000	0.9532	4.7	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.9198	8.0	100	0.00
69	T	1-Chlorohexane	1.0000	0.9017	9.8	100	0.00
70	P	Chlorobenzene	1.0000	1.0237	-2.4	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.9355	6.4	100	0.00
72	C	Ethylbenzene	1.0000	0.9823	1.8	100	0.00
73	T	m-,p-Xylene	2.0000	1.9611	1.9	100	0.00
74	T	o-Xylene	1.0000	0.9363	6.4	100	0.00
75	T	Styrene	1.0000	0.8828	11.7	100	0.00
76	P	Bromoform	1.0000	0.8720	12.8	100	0.00
77	T	Isopropylbenzene	1.0000	0.9840	1.6	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	0.9867	1.3	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5400	0.0	100	0.00
81	T	1,2,3-Trichloropropane	1.0000	0.9624	3.8	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	1.0000	1.2005	-20.1#	100	0.01
83	T	n-Propylbenzene	1.0000	1.0099	-1.0	100	0.00
84	T	Bromobenzene	1.0000	1.0043	-0.4	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	0.9954	0.5	100	0.00
86	T	2-Chlorotoluene	1.0000	1.0160	-1.6	100	0.00
87	T	4-Chlorotoluene	1.0000	1.0279	-2.8	100	0.00
88	T	a-Methylstyrene	-1.0000	0.8093	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	0.9241	7.6	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	0.9538	4.6	100	0.00
91	T	sec-Butylbenzene	1.0000	1.0086	-0.9	100	0.00
92	T	p-Isopropyltoluene	1.0000	0.9566	4.3	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0008	-0.1	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	0.9265	7.3	100	0.00
95	T	n-Butylbenzene	1.0000	0.9447	5.5	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	0.9654	3.5	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.5583	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	1.0000	0.9396	6.0	100	0.00
99	T	Hexachlorobutadiene	1.0000	1.0591	-5.9	100	0.00
100	T	Naphthalene	1.0000	0.9156	8.4	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	0.9660	3.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M139738.D 8260WT.M Thu Jun 02 12:19:02 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139739.D Vial: 5
Acq On : 1 Jun 2016 14:06 Operator: TMB
Sample : WG570915-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:20 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.56	96	742943	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	538524	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.64	152	285481	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.39	111	7626	0.9918 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.96%#	
43) 1,2-Dichloroethane-d4	11.11	65	8619	1.0170 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	4.08%#	
58) Toluene-d8	13.85	98	26951	1.0428 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.16%#	
80) p-Bromofluorobenzene	17.84	95	10079	0.9998 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	23119	1.9659 ug/L	97
3) Chloromethane	3.93	50	31601	2.2041 ug/L	99
4) Vinyl Chloride	4.17	62	20397	2.1105 ug/L	99
5) 1,3-Butadiene	4.22	54	23740	Below Cal	95
6) Bromomethane	5.09	94	9969	2.0940 ug/L	95
7) Chloroethane	5.24	64	13031	2.1332 ug/L	97
8) Trichlorofluoromethane	5.74	101	27906	2.1561 ug/L	100
9) Diethyl ether	6.29	59	183827	26.4128 ug/L	99
10) Isoprene	6.32	67	22261	2.0231 ug/L	100
11) Acrolein	6.55	56	14289	12.1687 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.54	101	16014	2.1659 ug/L	99
13) Acetone	6.65	43	7448	1.0499 ug/L	98
14) 1,1-Dichloroethene	6.88	61	27057	2.0664 ug/L	98
15) Tert-Butyl Alcohol	7.01	59	31691	49.3156 ug/L	95
16) Dimethyl Sulfide	7.16	62	11867	1.9748 ug/L	97
17) Iodomethane	7.43	142	2857	1.9552 ug/L	84
18) Methyl acetate	7.45	43	14589	2.2767 ug/L #	88
19) Methylene Chloride	7.72	84	17881	2.2145 ug/L	97
20) Carbon Disulfide	7.77	76	54515	2.1280 ug/L	99
21) Acrylonitrile	7.93	53	34183	12.1037 ug/L	95
22) Methyl Tert Butyl Ether	7.96	73	40745	2.0681 ug/L	98
23) trans-1,2-Dichloroethene	8.21	96	15961	2.0912 ug/L	98
24) n-Hexane	8.28	57	25065	2.1090 ug/L	97
25) Diisopropyl ether	8.67	45	827327	26.1535 ug/L	99
26) Vinyl Acetate	8.86	43	23762	1.7691 ug/L	96
27) 1,1-Dichloroethane	8.89	63	32311	2.1129 ug/L	99
28) Ethyl-Tert-Butyl ether	9.31	59	665309	25.6988 ug/L	100
29) 2-Butanone	9.51	43	7490	2.2325 ug/L	86
30) Propionitrile	9.63	54	24032	25.9544 ug/L	98
31) 2,2-Dichloropropane	9.75	77	24405	2.1890 ug/L	98
32) cis-1,2-Dichloroethene	9.83	96	17351	2.0868 ug/L	95
33) Chloroform	10.06	83	29158	2.1409 ug/L	99
34) 1-Bromopropane	10.21	122	2575	2.1509 ug/L	86
35) Bromochloromethane	10.32	130	9943	2.1058 ug/L	98
36) Tetrahydrofuran	10.36	42	57713	24.9874 ug/L	97
38) 1,1,1-Trichloroethane	10.65	97	25747	2.1191 ug/L	96
39) Cyclohexane	10.68	56	31781	2.0869 ug/L	97
40) 1,1-Dichloropropene	10.88	75	21286	2.0442 ug/L	99
41) Tert-Amyl-Methyl ether	11.00	73	511503	25.5189 ug/L	97
42) Carbon Tetrachloride	11.03	117	22465	2.0726 ug/L	98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139739.D Vial: 5
Acq On : 1 Jun 2016 14:06 Operator: TMB
Sample : WG570915-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:20 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.25	62	22181	2.1191 ug/L	95
46)	Benzene	11.29	78	65773	2.1550 ug/L	99
47)	Trichloroethene	12.14	130	16332	2.0952 ug/L	97
48)	Methylcyclohexane	12.24	83	23681	2.0038 ug/L	98
49)	1,2-Dichloropropane	12.40	63	17445	2.0694 ug/L	98
50)	1,4-Dioxane	12.74	88	2396	39.8941 ug/L	93
51)	Bromodichloromethane	12.74	83	21332	2.0576 ug/L	100
52)	Dibromomethane	12.84	93	8776	2.0174 ug/L	97
53)	2-Chloroethyl Vinyl Ether	13.08	63	7129	1.8528 ug/L	92
54)	4-Methyl-2-Pentanone	13.12	58	4367	1.7054 ug/L	90
55)	cis-1,3-Dichloropropene	13.48	75	23627	2.0136 ug/L	97
56)	Dimethyl Disulfide	13.78	79	10612	1.5698 ug/L	92
59)	Toluene	13.96	91	65655	2.1470 ug/L	100
60)	Ethyl Methacrylate	14.08	69	15579	1.8591 ug/L	100
62)	trans-1,3-Dichloropropene	14.18	75	20491	1.9674 ug/L	100
63)	1,1,2-Trichloroethane	14.43	97	12151	2.0870 ug/L	98
64)	2-Hexanone	14.36	43	9676	1.9585 ug/L	91
65)	1,3-Dichloropropane	14.79	76	21467	2.0971 ug/L	97
66)	Tetrachloroethene	14.92	166	16914	2.1086 ug/L	97
67)	Dibromochloromethane	15.23	129	14673	1.9778 ug/L	97
68)	1,2-Dibromoethane	15.53	107	11510	2.0453 ug/L	97
69)	1-Chlorohexane	15.65	91	19668	1.9807 ug/L	95
70)	Chlorobenzene	16.13	112	44821	2.1905 ug/L	99
71)	1,1,1,2-Tetrachloroethane	16.16	131	14676	1.9775 ug/L	98
72)	Ethylbenzene	16.16	106	22360	2.0602 ug/L	99
73)	m-,p-Xylene	16.27	106	53821	4.1742 ug/L	96
74)	o-Xylene	16.93	106	25852	2.0289 ug/L	99
75)	Styrene	16.97	104	42355	2.0016 ug/L	99
76)	Bromoform	17.55	173	8554	1.8173 ug/L	98
77)	Isopropylbenzene	17.43	105	65691	2.0539 ug/L	99
79)	1,1,2,2-Tetrachloroethane	17.69	83	14598	2.1209 ug/L	98
81)	1,2,3-Trichloropropane	17.92	110	4381	2.1985 ug/L	91
82)	trans-1,4-Dichloro-2-Buten	17.98	53	3430	2.0845 ug/L	81
83)	n-Propylbenzene	18.04	91	81094	2.1918 ug/L	98
84)	Bromobenzene	18.18	156	18389	2.1180 ug/L	97
85)	1,3,5-Trimethylbenzene	18.26	105	55405	2.1164 ug/L	97
86)	2-Chlorotoluene	18.35	91	57133	2.2543 ug/L	98
87)	4-Chlorotoluene	18.40	91	49926	2.1217 ug/L	99
88)	a-Methylstyrene	18.74	118	25561	1.7465 ug/L	95
89)	tert-Butylbenzene	18.80	134	12038	2.0858 ug/L	71
90)	1,2,4-Trimethylbenzene	18.87	105	58343	2.1289 ug/L	100
91)	sec-Butylbenzene	19.13	105	68680	2.1320 ug/L	99
92)	p-Isopropyltoluene	19.31	119	57167	2.0824 ug/L	98
93)	1,3-Dichlorobenzene	19.54	146	35679	2.1074 ug/L	99
94)	1,4-Dichlorobenzene	19.69	146	37305	2.1227 ug/L	89
95)	n-Butylbenzene	19.94	91	53712	2.0671 ug/L	99
96)	1,2-Dichlorobenzene	20.27	146	34278	2.1727 ug/L	98
97)	1,2-Dibromo-3-Chloropropan	21.46	75	2052	1.6602 ug/L	93
98)	1,2,4-Trichlorobenzene	22.82	180	22161	2.0316 ug/L	100
99)	Hexachlorobutadiene	23.02	225	9292	2.0526 ug/L	97
100)	Naphthalene	23.27	128	42114	1.9531 ug/L	97
101)	1,2,3-Trichlorobenzene	23.68	180	21030	2.0373 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M139739.D 8260WT.M Thu Jun 02 12:18:20 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139739.D Vial: 5
Acq On : 1 Jun 2016 14:06 Operator: TMB
Sample : WG570915-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 2 12:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration

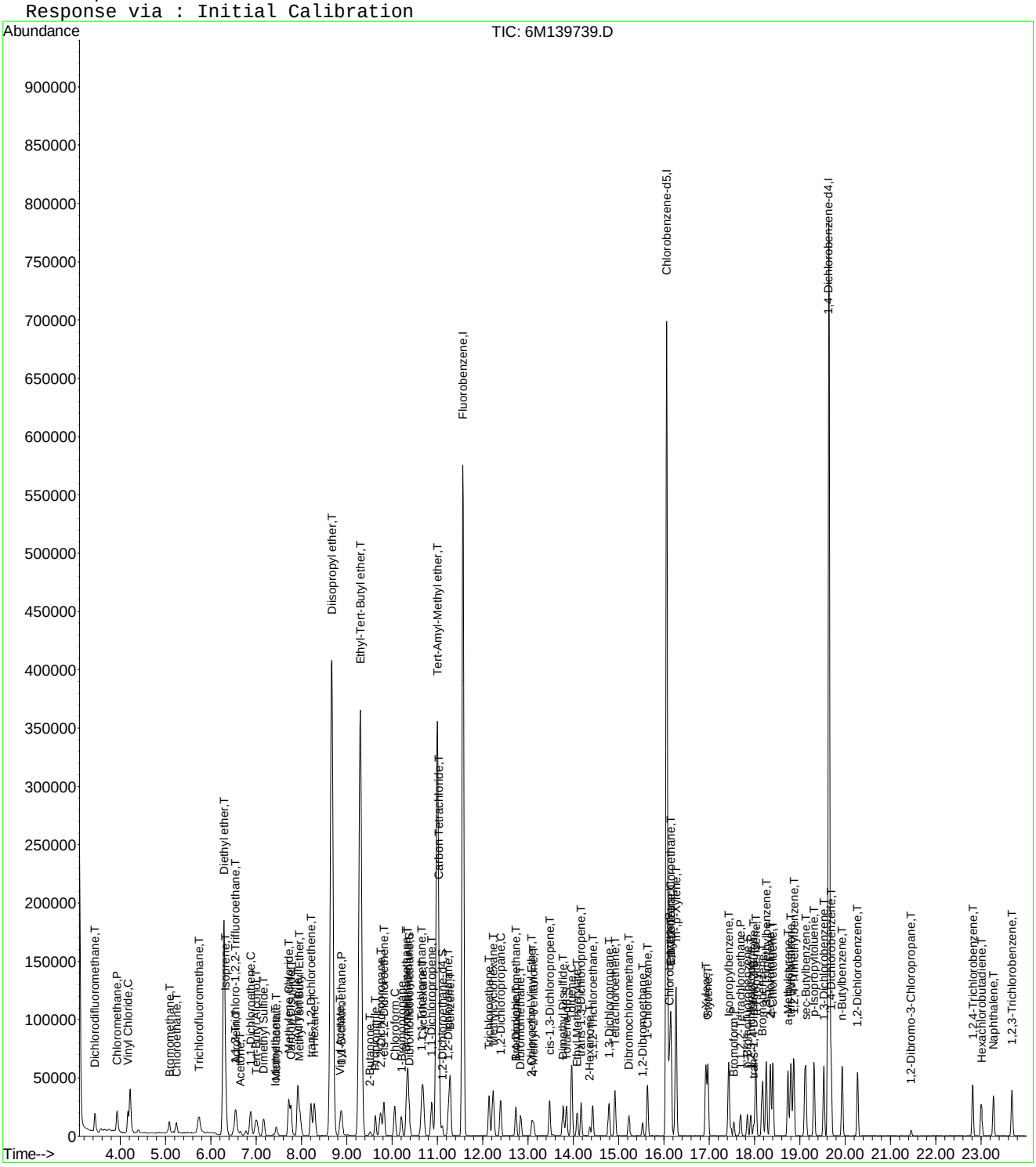

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\060116\6M139739.D Vial: 5
Acq On : 1 Jun 2016 14:06 Operator: TMB
Sample : WG570915-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.9659	1.7	100	0.00
3	P	Chloromethane	2.0000	2.2041	-10.2	100	0.00
4	C	Vinyl Chloride	2.0000	2.1105	-5.5	100	0.01
5	T	1,3-Butadiene	-1.0000	-0.6386	0.0	0	0.02
6	T	Bromomethane	2.0000	2.0940	-4.7	100	0.02
7	T	Chloroethane	2.0000	2.1332	-6.7	100	0.01
8	T	Trichlorofluoromethane	2.0000	2.1561	-7.8	100	0.02
9	T	Diethyl ether	25.0000	26.4128	-5.7	100	0.00
10	T	Isoprene	-1.0000	2.0231	0.0	100	0.00
11	T	Acrolein	12.5000	12.1687	2.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	2.1659	-8.3	100	0.00
13	T	Acetone	-1.0000	1.0499	0.0	0	0.00
14	C	1,1-Dichloroethene	2.0000	2.0664	-3.3	100	0.01
15	T	Tert-Butyl Alcohol	50.0000	49.3156	1.4	100	-0.04
16	T	Dimethyl Sulfide	-1.0000	1.9748	0.0	100	0.00
17	T	Iodomethane	2.0000	1.9552	2.2	100	0.00
18	T	Methyl acetate	-1.0000	2.2767	0.0	100	0.00
19	T	Methylene Chloride	2.0000	2.2145	-10.7	100	0.00
20	T	Carbon Disulfide	2.0000	2.1280	-6.4	100	0.01
21	T	Acrylonitrile	12.5000	12.1037	3.2	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	2.0681	-3.4	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	2.0913	-4.6	100	0.00
24	T	n-Hexane	-1.0000	2.1090	0.0	100	0.00
25	T	Diisopropyl ether	25.0000	26.1535	-4.6	100	0.00
26	T	Vinyl Acetate	-1.0000	1.7691	0.0	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.1129	-5.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	25.6988	-2.8	100	0.00
29	T	2-Butanone	-1.0000	2.2325	0.0	100	0.00
30	T	Propionitrile	25.0000	25.9544	-3.8	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1890	-9.5	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0868	-4.3	100	0.00
33	C	Chloroform	2.0000	2.1408	-7.0	100	0.00
34		1-Bromopropane	2.0000	2.1509	-7.5	100	0.00
35	T	Bromochloromethane	2.0000	2.1058	-5.3	100	0.00
36	T	Tetrahydrofuran	25.0000	24.9874	0.1	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9918	0.8	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	2.1191	-6.0	100	0.00
39	T	Cyclohexane	2.0000	2.0869	-4.3	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0442	-2.2	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	25.5189	-2.1	100	0.00
42	T	Carbon Tetrachloride	2.0000	2.0726	-3.6	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0170	-1.7	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	0.00
45	T	1,2-Dichloroethane	2.0000	2.1191	-6.0	100	0.00
46	T	Benzene	2.0000	2.1551	-7.8	100	0.00
47	T	Trichloroethene	2.0000	2.0952	-4.8	100	0.00
48	T	Methylcyclohexane	-1.0000	2.0038	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0694	-3.5	100	0.00
50	T	1,4-Dioxane	-1.0000	39.8941	0.0	100	0.00
51	T	Bromodichloromethane	2.0000	2.0576	-2.9	100	0.00
52	T	Dibromomethane	2.0000	2.0174	-0.9	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	1.8528	7.4	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.7054	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\060116\6M139739.D Vial: 5
Acq On : 1 Jun 2016 14:06 Operator: TMB
Sample : WG570915-05 2ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	2.0136	-0.7	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.5698	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	1.0428	-4.3	100	0.00
59	C	Toluene	2.0000	2.1470	-7.3	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.8591	7.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	2.0000	1.9674	1.6	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	2.0870	-4.3	100	0.00
64	T	2-Hexanone	-1.0000	1.9585	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.0970	-4.9	100	0.00
66	T	Tetrachloroethene	2.0000	2.1086	-5.4	100	0.00
67	T	Dibromochloromethane	2.0000	1.9778	1.1	100	0.00
68	T	1,2-Dibromoethane	2.0000	2.0453	-2.3	100	0.00
69	T	1-Chlorohexane	2.0000	1.9807	1.0	100	0.00
70	P	Chlorobenzene	2.0000	2.1905	-9.5	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.9775	1.1	100	0.00
72	C	Ethylbenzene	2.0000	2.0602	-3.0	100	0.00
73	T	m-,p-Xylene	4.0000	4.1742	-4.4	100	0.00
74	T	o-Xylene	2.0000	2.0289	-1.4	100	0.00
75	T	Styrene	2.0000	2.0016	-0.1	100	0.00
76	P	Bromoform	2.0000	1.8173	9.1	100	0.00
77	T	Isopropylbenzene	2.0000	2.0539	-2.7	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	2.1209	-6.0	100	0.00
80	S	p-Bromofluorobenzene	1.0000	0.9998	0.0	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	2.1985	-9.9	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	2.0845	-4.2	100	0.00
83	T	n-Propylbenzene	2.0000	2.1918	-9.6	100	0.00
84	T	Bromobenzene	2.0000	2.1180	-5.9	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.1164	-5.8	100	0.00
86	T	2-Chlorotoluene	2.0000	2.2543	-12.7	100	0.00
87	T	4-Chlorotoluene	2.0000	2.1217	-6.1	100	0.00
88	T	a-Methylstyrene	-1.0000	1.7465	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	2.0858	-4.3	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.1289	-6.4	100	0.00
91	T	sec-Butylbenzene	2.0000	2.1320	-6.6	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.0825	-4.1	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.1074	-5.4	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.1227	-6.1	100	0.00
95	T	n-Butylbenzene	2.0000	2.0671	-3.4	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.1727	-8.6	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.6602	17.0	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	2.0316	-1.6	100	0.00
99	T	Hexachlorobutadiene	2.0000	2.0526	-2.6	100	0.00
100	T	Naphthalene	2.0000	1.9531	2.3	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	2.0372	-1.9	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M139739.D 8260WT.M Thu Jun 02 12:19:13 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139740.D Vial: 6
Acq On : 1 Jun 2016 14:38 Operator: TMB
Sample : WG570915-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:21 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	739555	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.06	117	536758	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	19.65	152	288515	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	10.38	111	18845	2.4621 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	9.84%#	
43) 1,2-Dichloroethane-d4	11.11	65	20951	2.4834 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	9.92%#	
58) Toluene-d8	13.85	98	65932	2.5594 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	10.24%#	
80) p-Bromofluorobenzene	17.84	95	25405	2.4936 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	9.96%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	53233	4.5473 ug/L	97
3) Chloromethane	3.93	50	71846	5.0340 ug/L	100
4) Vinyl Chloride	4.17	62	46089	4.7908 ug/L	99
5) 1,3-Butadiene	4.21	54	42049	3.1429 ug/L	91
6) Bromomethane	5.08	94	21334	4.5018 ug/L	98
7) Chloroethane	5.24	64	31006	5.0990 ug/L	98
8) Trichlorofluoromethane	5.74	101	64044	4.9710 ug/L	100
9) Diethyl ether	6.29	59	349877	50.5016 ug/L	100
10) Isoprene	6.32	67	52571	4.7995 ug/L	99
11) Acrolein	6.54	56	29717	25.4233 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.55	101	36494	4.9585 ug/L	98
13) Acetone	6.65	43	15281	4.9011 ug/L	98
14) 1,1-Dichloroethene	6.88	61	64405	4.9413 ug/L	100
15) Tert-Butyl Alcohol	7.00	59	63946	99.9648 ug/L	98
16) Dimethyl Sulfide	7.17	62	28254	4.7234 ug/L	98
17) Iodomethane	7.43	142	15471	4.2422 ug/L	97
18) Methyl acetate	7.45	43	33236	5.2104 ug/L	95
19) Methylene Chloride	7.72	84	40736	5.0682 ug/L	99
20) Carbon Disulfide	7.77	76	126979	4.9794 ug/L	100
21) Acrylonitrile	7.92	53	66289	23.5794 ug/L	94
22) Methyl Tert Butyl Ether	7.95	73	96916	4.9418 ug/L	99
23) trans-1,2-Dichloroethene	8.21	96	37460	4.9306 ug/L	97
24) n-Hexane	8.29	57	60246	5.0925 ug/L	99
25) Diisopropyl ether	8.67	45	1610342	51.1394 ug/L	100
26) Vinyl Acetate	8.85	43	62309	4.6602 ug/L	97
27) 1,1-Dichloroethane	8.89	63	75144	4.9363 ug/L	99
28) Ethyl-Tert-Butyl ether	9.30	59	1306947	50.7146 ug/L	99
29) 2-Butanone	9.52	43	17941	5.3720 ug/L	96
30) Propionitrile	9.63	54	46508	50.4584 ug/L	100
31) 2,2-Dichloropropane	9.75	77	55908	5.0377 ug/L	98
32) cis-1,2-Dichloroethene	9.83	96	41514	5.0157 ug/L	100
33) Chloroform	10.06	83	67873	5.0062 ug/L	98
34) 1-Bromopropane	10.20	122	7077	5.4256 ug/L	95
35) Bromochloromethane	10.32	130	23487	4.9970 ug/L	97
36) Tetrahydrofuran	10.35	42	111625	48.5506 ug/L	97
38) 1,1,1-Trichloroethane	10.66	97	59147	4.8905 ug/L	100
39) Cyclohexane	10.69	56	73130	4.8241 ug/L	99
40) 1,1-Dichloropropene	10.87	75	51586	4.9768 ug/L	98
41) Tert-Amyl-Methyl ether	11.00	73	1001616	50.1996 ug/L	98
42) Carbon Tetrachloride	11.04	117	51776	4.7988 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M139740.D 8260WT.M Thu Jun 02 12:18:21 2016 Page 1

Data File : C:\MSDCHEM\1\DATA\060116\6M139740.D Vial: 6
Acq On : 1 Jun 2016 14:38 Operator: TMB
Sample : WG570915-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:21 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	11.24	62	51329	4.9263	ug/L	99
46)	Benzene	11.28	78	153403	5.0493	ug/L	99
47)	Trichloroethene	12.14	130	37892	4.8833	ug/L	100
48)	Methylcyclohexane	12.23	83	58249	4.9514	ug/L	99
49)	1,2-Dichloropropane	12.40	63	41911	4.9943	ug/L	99
50)	1,4-Dioxane	12.73	88	5253	87.8647	ug/L	94
51)	Bromodichloromethane	12.74	83	50357	4.8796	ug/L	100
52)	Dibromomethane	12.83	93	21481	4.9606	ug/L	99
53)	2-Chloroethyl Vinyl Ether	13.09	63	17503	4.5699	ug/L	99
54)	4-Methyl-2-Pentanone	13.13	58	11365	4.4586	ug/L	94
55)	cis-1,3-Dichloropropene	13.48	75	58485	5.0071	ug/L	97
56)	Dimethyl Disulfide	13.78	79	27006	4.0133	ug/L	98
59)	Toluene	13.97	91	156506	5.1347	ug/L	100
60)	Ethyl Methacrylate	14.09	69	39144	4.6865	ug/L	98
62)	trans-1,3-Dichloropropene	14.17	75	50230	4.8387	ug/L	98
63)	1,1,2-Trichloroethane	14.43	97	28765	4.9567	ug/L	99
64)	2-Hexanone	14.36	43	23751	4.8232	ug/L	98
65)	1,3-Dichloropropane	14.79	76	50356	4.9353	ug/L	97
66)	Tetrachloroethene	14.92	166	40511	5.0669	ug/L	99
67)	Dibromochloromethane	15.23	129	35926	4.8585	ug/L	97
68)	1,2-Dibromoethane	15.53	107	27314	4.8696	ug/L	98
69)	1-Chlorohexane	15.64	91	48413	4.8916	ug/L	97
70)	Chlorobenzene	16.12	112	104312	5.1147	ug/L	97
71)	1,1,1,2-Tetrachloroethane	16.16	131	36730	4.9654	ug/L	99
72)	Ethylbenzene	16.16	106	54248	5.0148	ug/L	98
73)	m-,p-Xylene	16.27	106	131323	10.2186	ug/L	100
74)	o-Xylene	16.93	106	63554	5.0043	ug/L	100
75)	Styrene	16.97	104	106058	5.0285	ug/L	100
76)	Bromoform	17.55	173	21214	4.5219	ug/L	98
77)	Isopropylbenzene	17.43	105	162047	5.0833	ug/L	99
79)	1,1,2,2-Tetrachloroethane	17.70	83	34171	4.9124	ug/L	99
81)	1,2,3-Trichloropropane	17.92	110	9377	4.6562	ug/L	72
82)	trans-1,4-Dichloro-2-Buten	17.98	53	9378	4.4249	ug/L	93
83)	n-Propylbenzene	18.03	91	196536	5.2560	ug/L	98
84)	Bromobenzene	18.18	156	43947	5.0085	ug/L	98
85)	1,3,5-Trimethylbenzene	18.26	105	135685	5.1285	ug/L	99
86)	2-Chlorotoluene	18.35	91	130402	5.0913	ug/L	99
87)	4-Chlorotoluene	18.41	91	124301	5.2269	ug/L	98
88)	a-Methylstyrene	18.74	118	68837	4.6540	ug/L	97
89)	tert-Butylbenzene	18.81	134	29765	5.1030	ug/L	98
90)	1,2,4-Trimethylbenzene	18.87	105	142438	5.1429	ug/L	100
91)	sec-Butylbenzene	19.13	105	168272	5.1687	ug/L	100
92)	p-Isopropyltoluene	19.32	119	142353	5.1310	ug/L	98
93)	1,3-Dichlorobenzene	19.53	146	86160	5.0357	ug/L	99
94)	1,4-Dichlorobenzene	19.70	146	84427	5.0188	ug/L	93
95)	n-Butylbenzene	19.94	91	133112	5.0690	ug/L	98
96)	1,2-Dichlorobenzene	20.28	146	79776	5.0034	ug/L	99
97)	1,2-Dibromo-3-Chloropropan	21.46	75	6079	4.8666	ug/L	92
98)	1,2,4-Trichlorobenzene	22.82	180	54492	4.9430	ug/L	100
99)	Hexachlorobutadiene	23.01	225	23856	5.2144	ug/L	97
100)	Naphthalene	23.28	128	107168	4.9178	ug/L	98
101)	1,2,3-Trichlorobenzene	23.69	180	51676	4.9534	ug/L	99

(#) = qualifier out of range (m) = manual integration
6M139740.D 8260WT.M Thu Jun 02 12:18:21 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139740.D Vial: 6
Acq On : 1 Jun 2016 14:38 Operator: TMB
Sample : WG570915-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 2 12:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration

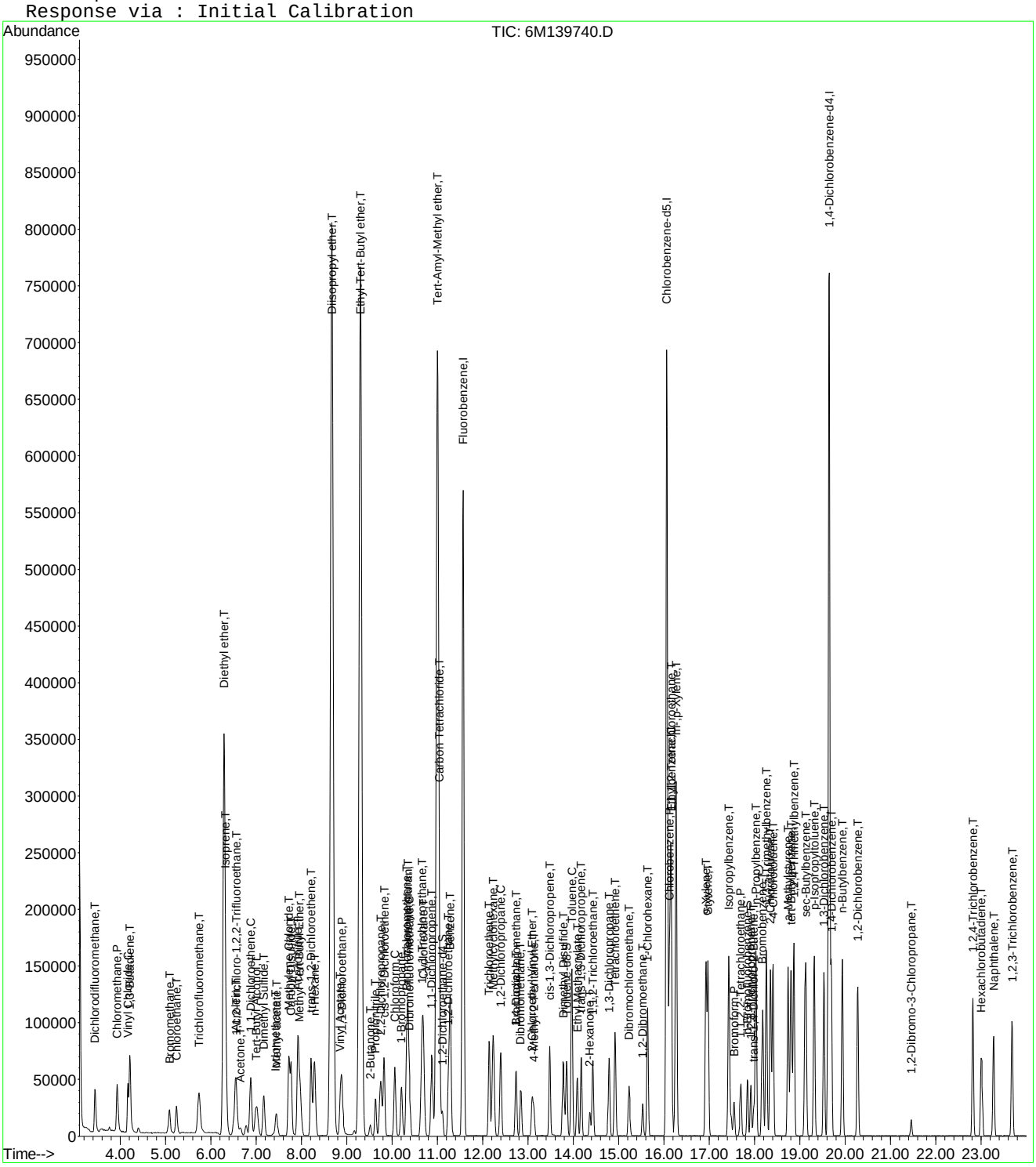

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\060116\6M139740.D Vial: 6
Acq On : 1 Jun 2016 14:38 Operator: TMB
Sample : WG570915-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.5473	9.1	100	0.00
3	P	Chloromethane	5.0000	5.0340	-0.7	100	0.00
4	C	Vinyl Chloride	5.0000	4.7908	4.2	100	0.00
5	T	1,3-Butadiene	5.0000	3.1429	37.1#	100	0.01
6	T	Bromomethane	5.0000	4.5018	10.0	100	0.02
7	T	Chloroethane	5.0000	5.0990	-2.0	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.9710	0.6	100	0.02
9	T	Diethyl ether	50.0000	50.5016	-1.0	100	0.00
10	T	Isoprene	5.0000	4.7995	4.0	100	0.00
11	T	Acrolein	25.0000	25.4233	-1.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.9585	0.8	100	0.00
13	T	Acetone	5.0000	4.9011	2.0	100	-0.01
14	C	1,1-Dichloroethene	5.0000	4.9413	1.2	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	99.9648	0.0	100	-0.04
16	T	Dimethyl Sulfide	5.0000	4.7234	5.5	100	0.00
17	T	Iodomethane	5.0000	4.2422	15.2	100	0.00
18	T	Methyl acetate	5.0000	5.2104	-4.2	100	0.00
19	T	Methylene Chloride	5.0000	5.0682	-1.4	100	0.00
20	T	Carbon Disulfide	5.0000	4.9794	0.4	100	0.00
21	T	Acrylonitrile	25.0000	23.5794	5.7	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.9418	1.2	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.9306	1.4	100	0.00
24	T	n-Hexane	5.0000	5.0925	-1.9	100	0.00
25	T	Diisopropyl ether	50.0000	51.1394	-2.3	100	0.00
26	T	Vinyl Acetate	5.0000	4.6602	6.8	100	-0.01
27	P	1,1-Dichloroethane	5.0000	4.9363	1.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	50.7146	-1.4	100	0.00
29	T	2-Butanone	5.0000	5.3720	-7.4	100	0.00
30	T	Propionitrile	50.0000	50.4584	-0.9	100	-0.01
31	T	2,2-Dichloropropane	5.0000	5.0377	-0.8	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	5.0157	-0.3	100	0.00
33	C	Chloroform	5.0000	5.0062	-0.1	100	0.00
34		1-Bromopropane	5.0000	5.4256	-8.5	100	0.00
35	T	Bromochloromethane	5.0000	4.9970	0.1	100	0.00
36	T	Tetrahydrofuran	50.0000	48.5506	2.9	100	0.00
37	S	Dibromofluoromethane	2.5000	2.4621	1.5	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.8905	2.2	100	0.00
39	T	Cyclohexane	5.0000	4.8242	3.5	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.9768	0.5	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	50.1996	-0.4	100	-0.01
42	T	Carbon Tetrachloride	5.0000	4.7988	4.0	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.4834	0.7	100	0.00
44		Heptane	-1.0000	0.0000	0.0	100	-0.01
45	T	1,2-Dichloroethane	5.0000	4.9262	1.5	100	0.00
46	T	Benzene	5.0000	5.0493	-1.0	100	0.00
47	T	Trichloroethene	5.0000	4.8833	2.3	100	-0.01
48	T	Methylcyclohexane	5.0000	4.9514	1.0	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.9943	0.1	100	0.00
50	T	1,4-Dioxane	100.0000	87.8647	12.1	100	-0.01
51	T	Bromodichloromethane	5.0000	4.8796	2.4	100	0.00
52	T	Dibromomethane	5.0000	4.9606	0.8	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.5699	8.6	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.4586	10.8	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\060116\6M139740.D Vial: 6
Acq On : 1 Jun 2016 14:38 Operator: TMB
Sample : WG570915-06 5ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	5.0071	-0.1	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.0133	19.7	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	-0.01
58	S	Toluene-d8	2.5000	2.5594	-2.4	100	0.00
59	C	Toluene	5.0000	5.1347	-2.7	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.6865	6.3	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	100	0.00
62	T	trans-1,3-Dichloropropene	5.0000	4.8387	3.2	100	-0.01
63	T	1,1,2-Trichloroethane	5.0000	4.9567	0.9	100	0.00
64	T	2-Hexanone	5.0000	4.8232	3.5	100	-0.01
65	T	1,3-Dichloropropane	5.0000	4.9353	1.3	100	0.00
66	T	Tetrachloroethene	5.0000	5.0669	-1.3	100	-0.01
67	T	Dibromochloromethane	5.0000	4.8585	2.8	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.8696	2.6	100	0.00
69	T	1-Chlorohexane	5.0000	4.8916	2.2	100	0.00
70	P	Chlorobenzene	5.0000	5.1147	-2.3	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.9654	0.7	100	0.00
72	C	Ethylbenzene	5.0000	5.0148	-0.3	100	0.00
73	T	m-,p-Xylene	10.0000	10.2186	-2.2	100	0.00
74	T	o-Xylene	5.0000	5.0043	-0.1	100	0.00
75	T	Styrene	5.0000	5.0285	-0.6	100	-0.01
76	P	Bromoform	5.0000	4.5218	9.6	100	0.00
77	T	Isopropylbenzene	5.0000	5.0833	-1.7	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	4.9124	1.8	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.4936	0.3	100	-0.01
81	T	1,2,3-Trichloropropane	5.0000	4.6562	6.9	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.4249	11.5	100	0.00
83	T	n-Propylbenzene	5.0000	5.2560	-5.1	100	0.00
84	T	Bromobenzene	5.0000	5.0085	-0.2	100	-0.01
85	T	1,3,5-Trimethylbenzene	5.0000	5.1285	-2.6	100	-0.01
86	T	2-Chlorotoluene	5.0000	5.0913	-1.8	100	0.00
87	T	4-Chlorotoluene	5.0000	5.2269	-4.5	100	0.00
88	T	a-Methylstyrene	5.0000	4.6540	6.9	100	0.00
89	T	tert-Butylbenzene	5.0000	5.1030	-2.1	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.1429	-2.9	100	0.00
91	T	sec-Butylbenzene	5.0000	5.1687	-3.4	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.1310	-2.6	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	5.0357	-0.7	100	-0.01
94	T	1,4-Dichlorobenzene	5.0000	5.0188	-0.4	100	0.00
95	T	n-Butylbenzene	5.0000	5.0690	-1.4	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	5.0034	-0.1	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	4.8666	2.7	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.9430	1.1	100	0.00
99	T	Hexachlorobutadiene	5.0000	5.2143	-4.3	100	-0.01
100	T	Naphthalene	5.0000	4.9178	1.6	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.9534	0.9	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M139740.D 8260WT.M Thu Jun 02 12:19:24 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139741.D Vial: 7
Acq On : 1 Jun 2016 15:10 Operator: TMB
Sample : WG570915-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:22 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	741749	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.06	117	542308	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	300008	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.38	111	79708	10.3831 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 41.52%#		
43) 1,2-Dichloroethane-d4	11.11	65	88573	10.4679 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 41.88%#		
58) Toluene-d8	13.85	98	265815	10.2132 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 40.84%#		
80) p-Bromofluorobenzene	17.84	95	109890	10.3728 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 41.48%#		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	247381	21.0696 ug/L	98
3) Chloromethane	3.93	50	296797	20.7339 ug/L	99
4) Vinyl Chloride	4.17	62	191392	19.8356 ug/L	99
5) 1,3-Butadiene	4.21	54	157053	26.6603 ug/L	98
6) Bromomethane	5.09	94	81508	17.1486 ug/L	97
7) Chloroethane	5.24	64	122316	20.0554 ug/L	99
8) Trichlorofluoromethane	5.74	101	258878	20.0342 ug/L	99
9) Diethyl ether	6.29	59	547075	78.7318 ug/L	99
10) Isoprene	6.32	67	221464	20.1591 ug/L	99
11) Acrolein	6.55	56	44949	38.3408 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.55	101	145375	19.6939 ug/L	99
13) Acetone	6.65	43	44156	18.9729 ug/L	99
14) 1,1-Dichloroethene	6.88	61	254854	19.4952 ug/L	99
15) Tert-Butyl Alcohol	7.00	59	102719	160.1025 ug/L	98
16) Dimethyl Sulfide	7.17	62	122102	20.3521 ug/L	99
17) Iodomethane	7.43	142	111720	21.6149 ug/L	99
18) Methyl acetate	7.45	43	129311	20.2119 ug/L	99
19) Methylene Chloride	7.72	84	155771	19.3229 ug/L	100
20) Carbon Disulfide	7.77	76	520481	20.3498 ug/L	100
21) Acrylonitrile	7.92	53	110335	39.1307 ug/L	96
22) Methyl Tert Butyl Ether	7.95	73	388723	19.7626 ug/L	100
23) trans-1,2-Dichloroethene	8.21	96	151236	19.8472 ug/L	99
24) n-Hexane	8.29	57	239236	20.1625 ug/L	100
25) Diisopropyl ether	8.67	45	2507424	79.3924 ug/L	100
26) Vinyl Acetate	8.85	43	251396	18.7467 ug/L	99
27) 1,1-Dichloroethane	8.89	63	300042	19.6518 ug/L	100
28) Ethyl-Tert-Butyl ether	9.30	59	2050757	79.3419 ug/L	99
29) 2-Butanone	9.51	43	64868	19.3656 ug/L	99
30) Propionitrile	9.63	54	74857	80.9752 ug/L	100
31) 2,2-Dichloropropane	9.75	77	211176	18.9721 ug/L	99
32) cis-1,2-Dichloroethene	9.82	96	163903	19.7440 ug/L	100
33) Chloroform	10.06	83	267226	19.6520 ug/L	99
34) 1-Bromopropane	10.21	122	27047	19.8559 ug/L	99
35) Bromochloromethane	10.32	130	94683	20.0848 ug/L	99
36) Tetrahydrofuran	10.35	42	174854	75.8267 ug/L	98
38) 1,1,1-Trichloroethane	10.65	97	233161	19.2216 ug/L	100
39) Cyclohexane	10.69	56	306471	20.1571 ug/L	99
40) 1,1-Dichloropropene	10.88	75	204304	19.6521 ug/L	98
41) Tert-Amyl-Methyl ether	11.00	73	1581113	79.0088 ug/L	98
42) Carbon Tetrachloride	11.04	117	211271	19.5234 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M139741.D 8260WT.M Thu Jun 02 12:18:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139741.D Vial: 7
Acq On : 1 Jun 2016 15:10 Operator: TMB
Sample : WG570915-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:22 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.24	62	203687	19.4909 ug/L	99
46)	Benzene	11.28	78	596288	19.5688 ug/L	100
47)	Trichloroethene	12.14	130	153787	19.7607 ug/L	99
48)	Methylcyclohexane	12.23	83	238202	20.1882 ug/L	99
49)	1,2-Dichloropropane	12.40	63	164832	19.5842 ug/L	99
50)	1,4-Dioxane	12.73	88	9239	154.0797 ug/L	96
51)	Bromodichloromethane	12.74	83	203755	19.6854 ug/L	99
52)	Dibromomethane	12.84	93	86662	19.9537 ug/L	100
53)	2-Chloroethyl Vinyl Ether	13.09	63	78877	20.5333 ug/L	98
54)	4-Methyl-2-Pentanone	13.12	58	50584	19.7859 ug/L	99
55)	cis-1,3-Dichloropropene	13.48	75	236552	20.1922 ug/L	100
56)	Dimethyl Disulfide	13.78	79	129245	19.1502 ug/L	99
59)	Toluene	13.97	91	615093	19.9736 ug/L	99
60)	Ethyl Methacrylate	14.09	69	172598	20.4528 ug/L	100
62)	trans-1,3-Dichloropropene	14.17	75	207562	19.7898 ug/L	100
63)	1,1,2-Trichloroethane	14.43	97	116786	19.9183 ug/L	99
64)	2-Hexanone	14.36	43	94360	18.9657 ug/L	98
65)	1,3-Dichloropropane	14.79	76	205188	19.9044 ug/L	98
66)	Tetrachloroethene	14.92	166	156971	19.4321 ug/L	100
67)	Dibromochloromethane	15.24	129	147629	19.7605 ug/L	100
68)	1,2-Dibromoethane	15.53	107	114125	20.1383 ug/L	99
69)	1-Chlorohexane	15.64	91	204931	20.4942 ug/L	98
70)	Chlorobenzene	16.12	112	403304	19.5727 ug/L	98
71)	1,1,1,2-Tetrachloroethane	16.16	131	149046	19.9427 ug/L	99
72)	Ethylbenzene	16.16	106	213615	19.5450 ug/L	97
73)	m-,p-Xylene	16.27	106	522902	40.2721 ug/L	99
74)	o-Xylene	16.93	106	258312	20.1315 ug/L	99
75)	Styrene	16.97	104	444118	20.8412 ug/L	100
76)	Bromoform	17.55	173	92368	19.4871 ug/L	99
77)	Isopropylbenzene	17.43	105	656228	20.3746 ug/L	100
79)	1,1,2,2-Tetrachloroethane	17.70	83	139457	19.2803 ug/L	99
81)	1,2,3-Trichloropropane	17.92	110	40786	19.4765 ug/L	80
82)	trans-1,4-Dichloro-2-Buten	17.98	53	45829	18.1607 ug/L	96
83)	n-Propylbenzene	18.03	91	797340	20.5066 ug/L	100
84)	Bromobenzene	18.18	156	176971	19.3962 ug/L	98
85)	1,3,5-Trimethylbenzene	18.26	105	562167	20.4342 ug/L	100
86)	2-Chlorotoluene	18.35	91	522498	19.6183 ug/L	99
87)	4-Chlorotoluene	18.41	91	491019	19.8565 ug/L	99
88)	a-Methylstyrene	18.74	118	309473	20.1216 ug/L	99
89)	tert-Butylbenzene	18.81	134	120609	19.8853 ug/L	97
90)	1,2,4-Trimethylbenzene	18.87	105	587977	20.4163 ug/L	100
91)	sec-Butylbenzene	19.13	105	690021	20.3828 ug/L	99
92)	p-Isopropyltoluene	19.32	119	586819	20.3412 ug/L	100
93)	1,3-Dichlorobenzene	19.53	146	347927	19.5557 ug/L	100
94)	1,4-Dichlorobenzene	19.69	146	344416	20.3156 ug/L	98
95)	n-Butylbenzene	19.94	91	553574	20.2731 ug/L	99
96)	1,2-Dichlorobenzene	20.28	146	323149	19.4907 ug/L	99
97)	1,2-Dibromo-3-Chloropropan	21.46	75	24521	18.8784 ug/L	100
98)	1,2,4-Trichlorobenzene	22.82	180	229322	20.0052 ug/L	99
99)	Hexachlorobutadiene	23.02	225	92359	19.4141 ug/L	99
100)	Naphthalene	23.28	128	469355	20.7131 ug/L	99
101)	1,2,3-Trichlorobenzene	23.68	180	214161	19.7420 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139741.D Vial: 7
Acq On : 1 Jun 2016 15:10 Operator: TMB
Sample : WG570915-07 20ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 2 12:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration

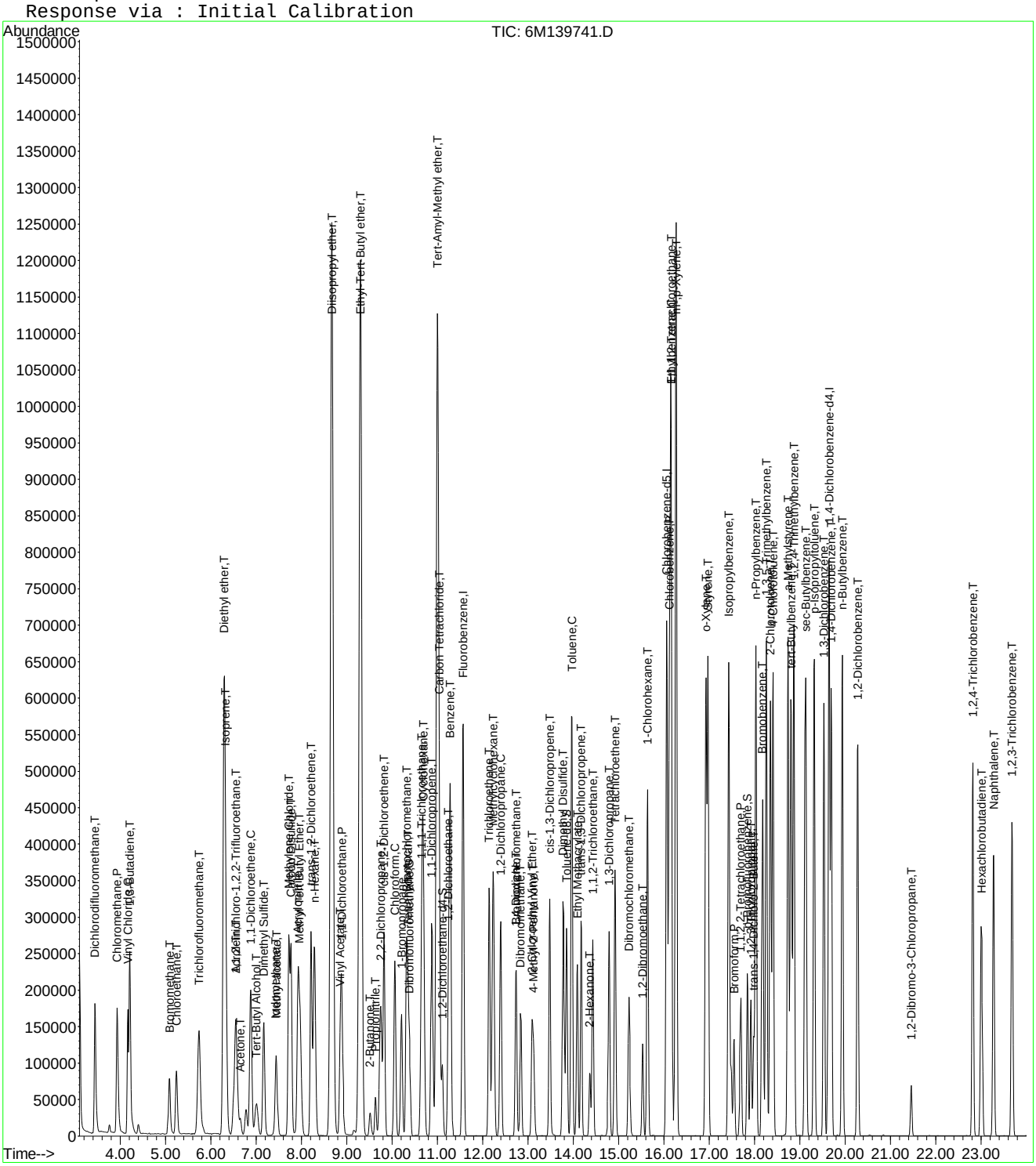

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139742.D Vial: 8
Acq On : 1 Jun 2016 15:43 Operator: TMB
Sample : WG570915-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:22 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	743292	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.06	117	551471	25.00 ug/L	-0.01
78) 1,4-Dichlorobenzene-d4	19.65	152	314779	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.38	111	194703	25.3102 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.24%		
43) 1,2-Dichloroethane-d4	11.11	65	214016	25.2407 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.96%		
58) Toluene-d8	13.85	98	648440	24.5005 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 98.00%		
80) p-Bromofluorobenzene	17.84	95	274770	24.7192 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.88%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	636760	54.1207 ug/L	98
3) Chloromethane	3.93	50	738547	51.4870 ug/L	100
4) Vinyl Chloride	4.17	62	471300	48.7435 ug/L	100
5) 1,3-Butadiene	4.21	54	275105	50.7103 ug/L	99
6) Bromomethane	5.07	94	226755	47.6082 ug/L	100
7) Chloroethane	5.24	64	303648	49.6840 ug/L	99
8) Trichlorofluoromethane	5.74	101	645944	49.8850 ug/L	100
9) Diethyl ether	6.29	59	702021	100.8209 ug/L	99
10) Isoprene	6.32	67	548707	49.8431 ug/L	100
11) Acrolein	6.54	56	58598	49.8794 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.54	101	369548	49.9587 ug/L	99
13) Acetone	6.65	43	111738	51.8463 ug/L	99
14) 1,1-Dichloroethene	6.88	61	651451	49.7296 ug/L	99
15) Tert-Butyl Alcohol	7.00	59	138578	215.5456 ug/L	99
16) Dimethyl Sulfide	7.17	62	302459	50.3095 ug/L	99
17) Iodomethane	7.43	142	285920	52.9654 ug/L	98
18) Methyl acetate	7.45	43	319270	49.7999 ug/L	100
19) Methylene Chloride	7.72	84	389825	48.2562 ug/L	100
20) Carbon Disulfide	7.77	76	1278901	49.8987 ug/L	100
21) Acrylonitrile	7.92	53	149508	52.9135 ug/L	99
22) Methyl Tert Butyl Ether	7.95	73	994073	50.4335 ug/L	100
23) trans-1,2-Dichloroethene	8.21	96	381485	49.9596 ug/L	99
24) n-Hexane	8.29	57	591079	49.7119 ug/L	99
25) Diisopropyl ether	8.67	45	3204444	101.2514 ug/L	99
26) Vinyl Acetate	8.86	43	674502	50.1936 ug/L	100
27) 1,1-Dichloroethane	8.89	63	750842	49.0756 ug/L	100
28) Ethyl-Tert-Butyl ether	9.30	59	2645854	102.1531 ug/L	99
29) 2-Butanone	9.51	43	169396	50.4663 ug/L	100
30) Propionitrile	9.63	54	99277	107.1681 ug/L	99
31) 2,2-Dichloropropane	9.75	77	537506	48.1895 ug/L	98
32) cis-1,2-Dichloroethene	9.82	96	418745	50.3378 ug/L	98
33) Chloroform	10.06	83	671266	49.2629 ug/L	99
34) 1-Bromopropane	10.21	122	68097	49.4474 ug/L	100
35) Bromochloromethane	10.32	130	239411	50.6801 ug/L	100
36) Tetrahydrofuran	10.35	42	229400	99.2745 ug/L	98
38) 1,1,1-Trichloroethane	10.65	97	600672	49.4161 ug/L	99
39) Cyclohexane	10.69	56	759332	49.8388 ug/L	98
40) 1,1-Dichloropropene	10.87	75	519993	49.9147 ug/L	98
41) Tert-Amyl-Methyl ether	11.00	73	2040976	101.7767 ug/L	99
42) Carbon Tetrachloride	11.04	117	549979	50.7176 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M139742.D 8260WT.M Thu Jun 02 12:18:23 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139742.D Vial: 8
Acq On : 1 Jun 2016 15:43 Operator: TMB
Sample : WG570915-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:22 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.24	62	520403	49.6941 ug/L	100
46)	Benzene	11.28	78	1501660	49.1787 ug/L	100
47)	Trichloroethene	12.14	130	389158	49.9006 ug/L	100
48)	Methylcyclohexane	12.23	83	588750	49.7945 ug/L	100
49)	1,2-Dichloropropane	12.40	63	421731	50.0030 ug/L	99
50)	1,4-Dioxane	12.73	88	13033	216.9015 ug/L	96
51)	Bromodichloromethane	12.74	83	527662	50.8733 ug/L	100
52)	Dibromomethane	12.84	93	222406	51.1020 ug/L	100
53)	2-Chloroethyl Vinyl Ether	13.09	63	209173	54.3390 ug/L	100
54)	4-Methyl-2-Pentanone	13.12	58	135553	52.9115 ug/L	100
55)	cis-1,3-Dichloropropene	13.48	75	613925	52.2962 ug/L	100
56)	Dimethyl Disulfide	13.77	79	343367	50.7709 ug/L	99
59)	Toluene	13.97	91	1553020	49.5926 ug/L	99
60)	Ethyl Methacrylate	14.09	69	453009	52.7895 ug/L	99
62)	trans-1,3-Dichloropropene	14.18	75	548907	51.4655 ug/L	100
63)	1,1,2-Trichloroethane	14.43	97	301382	50.5477 ug/L	100
64)	2-Hexanone	14.36	43	257451	50.8862 ug/L	100
65)	1,3-Dichloropropane	14.79	76	528668	50.4317 ug/L	98
66)	Tetrachloroethene	14.92	166	401722	48.9046 ug/L	99
67)	Dibromochloromethane	15.23	129	390196	51.3609 ug/L	100
68)	1,2-Dibromoethane	15.53	107	295388	51.2575 ug/L	99
69)	1-Chlorohexane	15.64	91	531557	52.2752 ug/L	100
70)	Chlorobenzene	16.12	112	1028906	49.1040 ug/L	99
71)	1,1,1,2-Tetrachloroethane	16.16	131	389576	51.2600 ug/L	99
72)	Ethylbenzene	16.16	106	560484	50.4301 ug/L	100
73)	m-,p-Xylene	16.27	106	1337468	101.2957 ug/L	100
74)	o-Xylene	16.93	106	664993	50.9649 ug/L	100
75)	Styrene	16.97	104	1162477	53.6454 ug/L	99
76)	Bromoform	17.55	173	251758	52.2316 ug/L	99
77)	Isopropylbenzene	17.43	105	1708173	52.1543 ug/L	100
79)	1,1,2,2-Tetrachloroethane	17.70	83	377511	49.7428 ug/L	100
81)	1,2,3-Trichloropropane	17.92	110	110787	50.4216 ug/L	85
82)	trans-1,4-Dichloro-2-Buten	17.98	53	128776	47.4405 ug/L	99
83)	n-Propylbenzene	18.03	91	2085439	51.1180 ug/L	99
84)	Bromobenzene	18.18	156	463664	48.4335 ug/L	99
85)	1,3,5-Trimethylbenzene	18.26	105	1474739	51.0898 ug/L	100
86)	2-Chlorotoluene	18.35	91	1349618	48.2965 ug/L	99
87)	4-Chlorotoluene	18.41	91	1298591	50.0499 ug/L	100
88)	a-Methylstyrene	18.74	118	813708	50.4237 ug/L	100
89)	tert-Butylbenzene	18.81	134	320084	50.2972 ug/L	81
90)	1,2,4-Trimethylbenzene	18.87	105	1542733	51.0547 ug/L	100
91)	sec-Butylbenzene	19.13	105	1811256	50.9928 ug/L	100
92)	p-Isopropyltoluene	19.32	119	1566478	51.7517 ug/L	100
93)	1,3-Dichlorobenzene	19.53	146	907226	48.5991 ug/L	98
94)	1,4-Dichlorobenzene	19.70	146	909939	51.4796 ug/L	99
95)	n-Butylbenzene	19.94	91	1484817	51.8256 ug/L	99
96)	1,2-Dichlorobenzene	20.28	146	855774	49.1938 ug/L	99
97)	1,2-Dibromo-3-Chloropropan	21.46	75	72400	53.1242 ug/L	97
98)	1,2,4-Trichlorobenzene	22.82	180	608734	50.6118 ug/L	99
99)	Hexachlorobutadiene	23.02	225	245206	49.1243 ug/L	100
100)	Naphthalene	23.28	128	1276187	53.6766 ug/L	100
101)	1,2,3-Trichlorobenzene	23.69	180	568536	49.9499 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139742.D Vial: 8
Acq On : 1 Jun 2016 15:43 Operator: TMB
Sample : WG570915-08 50ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 2 12:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration

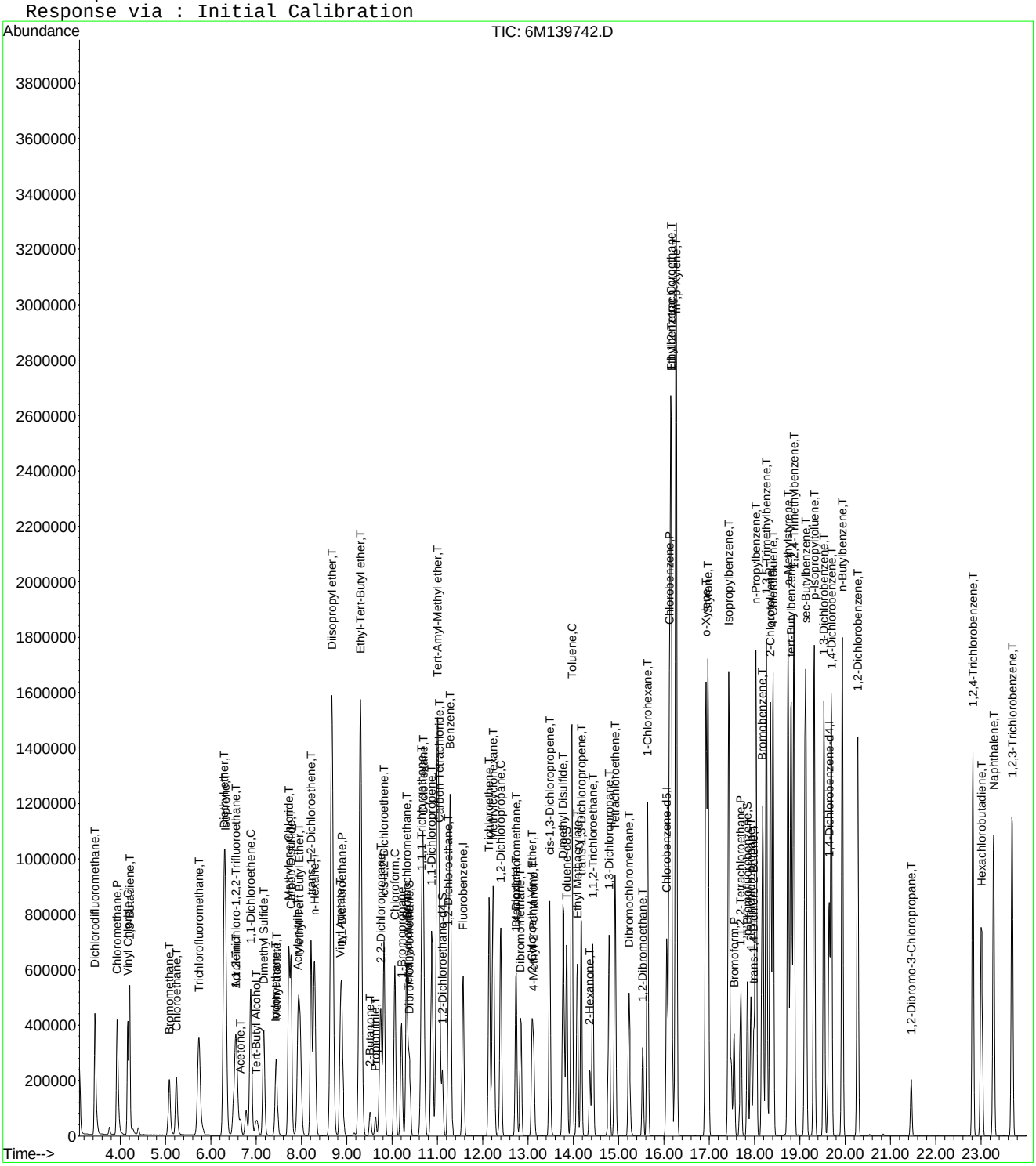

6M139742.D 8260WT.M Thu Jun 02 12:18:23 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139743.D Vial: 9
Acq On : 1 Jun 2016 16:15 Operator: TMB
Sample : WG570915-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:23 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.56	96	745219	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	553231	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.64	152	324979	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	381593	49.4765 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 197.92%#		
43) 1,2-Dichloroethane-d4	11.11	65	420324	49.4441 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 197.76%#		
58) Toluene-d8	13.85	98	1284388	48.3746 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 193.48%#		
80) p-Bromofluorobenzene	17.84	95	561184	48.9013 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 195.60%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	1271545	107.7942 ug/L	99
3) Chloromethane	3.93	50	1453604	101.0744 ug/L	99
4) Vinyl Chloride	4.16	62	940309	96.9986 ug/L	100
5) 1,3-Butadiene	4.20	54	543605	105.2748 ug/L	98
6) Bromomethane	5.08	94	507202	106.2139 ug/L	100
7) Chloroethane	5.23	64	607096	99.0784 ug/L	98
8) Trichlorofluoromethane	5.73	101	1293807	99.6599 ug/L	100
9) Diethyl ether	6.29	59	1412947	202.3960 ug/L	100
10) Isoprene	6.32	67	1134177	102.7593 ug/L	100
11) Acrolein	6.54	56	121987	103.5684 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.54	101	746025	100.5934 ug/L	99
13) Acetone	6.65	43	219673	104.1433 ug/L	97
14) 1,1-Dichloroethene	6.88	61	1312919	99.9646 ug/L	99
15) Tert-Butyl Alcohol	7.02	59	283142	439.2630 ug/L	100
16) Dimethyl Sulfide	7.16	62	610247	101.2429 ug/L	99
17) Iodomethane	7.44	142	578425	105.4079 ug/L	99
18) Methyl acetate	7.45	43	643020	100.0391 ug/L	99
19) Methylene Chloride	7.72	84	774654	95.6460 ug/L	100
20) Carbon Disulfide	7.76	76	2590427	100.8089 ug/L	100
21) Acrylonitrile	7.93	53	297985	105.1894 ug/L	99
22) Methyl Tert Butyl Ether	7.95	73	1991839	100.7930 ug/L	99
23) trans-1,2-Dichloroethene	8.21	96	766532	100.1262 ug/L	99
24) n-Hexane	8.28	57	1207948	101.3301 ug/L	99
25) Diisopropyl ether	8.67	45	6349652	200.1124 ug/L	100
26) Vinyl Acetate	8.86	43	1305411	96.8920 ug/L	100
27) 1,1-Dichloroethane	8.89	63	1510299	98.4590 ug/L	99
28) Ethyl-Tert-Butyl ether	9.31	59	5254811	202.3571 ug/L	99
29) 2-Butanone	9.51	43	343748	102.1442 ug/L	99
30) Propionitrile	9.63	54	195891	210.9148 ug/L	99
31) 2,2-Dichloropropane	9.74	77	1100861	98.4413 ug/L	97
32) cis-1,2-Dichloroethene	9.83	96	833939	99.9895 ug/L	98
33) Chloroform	10.06	83	1345458	98.4852 ug/L	99
34) 1-Bromopropane	10.20	122	139415	100.6685 ug/L	99
35) Bromochloromethane	10.32	130	481146	101.5887 ug/L	100
36) Tetrahydrofuran	10.35	42	450185	194.3170 ug/L	99
38) 1,1,1-Trichloroethane	10.65	97	1216226	99.7977 ug/L	99
39) Cyclohexane	10.68	56	1560090	102.1318 ug/L	98
40) 1,1-Dichloropropene	10.88	75	1059287	101.4191 ug/L	97
41) Tert-Amyl-Methyl ether	11.00	73	4120411	204.9398 ug/L	99
42) Carbon Tetrachloride	11.04	117	1123233	103.3138 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M139743.D 8260WT.M Thu Jun 02 12:18:24 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139743.D Vial: 9
Acq On : 1 Jun 2016 16:15 Operator: TMB
Sample : WG570915-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:23 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	11.25	62	1041653	99.2119	ug/L	99
46)	Benzene	11.29	78	2987728	97.5938	ug/L	100
47)	Trichloroethene	12.14	130	787643	100.7360	ug/L	100
48)	Methylcyclohexane	12.24	83	1207654	101.8752	ug/L	100
49)	1,2-Dichloropropane	12.39	63	848936	100.3948	ug/L	99
50)	1,4-Dioxane	12.73	88	26054	432.4820	ug/L	91
51)	Bromodichloromethane	12.74	83	1058042	101.7449	ug/L	99
52)	Dibromomethane	12.84	93	445604	102.1212	ug/L	100
53)	2-Chloroethyl Vinyl Ether	13.08	63	410765	106.4326	ug/L	100
54)	4-Methyl-2-Pentanone	13.12	58	270288	105.2308	ug/L	99
55)	cis-1,3-Dichloropropene	13.48	75	1235593	104.9798	ug/L	100
56)	Dimethyl Disulfide	13.78	79	719355	106.0902	ug/L	100
59)	Toluene	13.96	91	3103522	98.7895	ug/L	99
60)	Ethyl Methacrylate	14.08	69	931022	108.1477	ug/L	99
62)	trans-1,3-Dichloropropene	14.18	75	1108920	103.6415	ug/L	100
63)	1,1,2-Trichloroethane	14.43	97	600453	100.3874	ug/L	100
64)	2-Hexanone	14.36	43	525162	103.4700	ug/L	100
65)	1,3-Dichloropropane	14.79	76	1051661	100.0029	ug/L	98
66)	Tetrachloroethene	14.92	166	801128	97.2171	ug/L	99
67)	Dibromochloromethane	15.23	129	788751	103.4917	ug/L	100
68)	1,2-Dibromoethane	15.53	107	594770	102.8797	ug/L	100
69)	1-Chlorohexane	15.65	91	1078462	105.7225	ug/L	100
70)	Chlorobenzene	16.13	112	2048564	97.4556	ug/L	98
71)	1,1,1,2-Tetrachloroethane	16.17	131	787668	103.3109	ug/L	99
72)	Ethylbenzene	16.16	106	1123449	100.7619	ug/L	100
73)	m-,p-Xylene	16.27	106	2682669	202.5308	ug/L	98
74)	o-Xylene	16.93	106	1337407	102.1724	ug/L	100
75)	Styrene	16.97	104	2366159	108.8450	ug/L	98
76)	Bromoform	17.55	173	529470	109.4983	ug/L	99
77)	Isopropylbenzene	17.43	105	3429724	104.3838	ug/L	100
79)	1,1,2,2-Tetrachloroethane	17.70	83	780189	99.5752	ug/L	100
81)	1,2,3-Trichloropropane	17.92	110	228360	100.6695	ug/L	89
82)	trans-1,4-Dichloro-2-Buten	17.99	53	281575	99.6791	ug/L	90
83)	n-Propylbenzene	18.04	91	4178754	99.2142	ug/L	100
84)	Bromobenzene	18.18	156	945550	95.6704	ug/L	98
85)	1,3,5-Trimethylbenzene	18.26	105	3012486	101.0869	ug/L	100
86)	2-Chlorotoluene	18.35	91	2814456	97.5550	ug/L	100
87)	4-Chlorotoluene	18.41	91	2586619	96.5636	ug/L	100
88)	a-Methylstyrene	18.74	118	1716308	103.0177	ug/L	100
89)	tert-Butylbenzene	18.81	134	661932	100.7497	ug/L	99
90)	1,2,4-Trimethylbenzene	18.87	105	3165014	101.4544	ug/L	100
91)	sec-Butylbenzene	19.13	105	3724940	101.5778	ug/L	100
92)	p-Isopropyltoluene	19.31	119	3227971	103.2952	ug/L	100
93)	1,3-Dichlorobenzene	19.54	146	1880510	97.5751	ug/L	98
94)	1,4-Dichlorobenzene	19.69	146	1878131	103.1339	ug/L	98
95)	n-Butylbenzene	19.95	91	3081384	104.1760	ug/L	100
96)	1,2-Dichlorobenzene	20.27	146	1761523	98.0823	ug/L	98
97)	1,2-Dibromo-3-Chloropropan	21.46	75	150529	106.9853	ug/L	99
98)	1,2,4-Trichlorobenzene	22.83	180	1257020	101.2317	ug/L	99
99)	Hexachlorobutadiene	23.01	225	503637	97.7313	ug/L	100
100)	Naphthalene	23.27	128	2610257	106.3420	ug/L	100
101)	1,2,3-Trichlorobenzene	23.68	180	1163258	98.9927	ug/L	99

(#) = qualifier out of range (m) = manual integration
6M139743.D 8260WT.M Thu Jun 02 12:18:24 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139743.D Vial: 9
Acq On : 1 Jun 2016 16:15 Operator: TMB
Sample : WG570915-09 100ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 2 12:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration

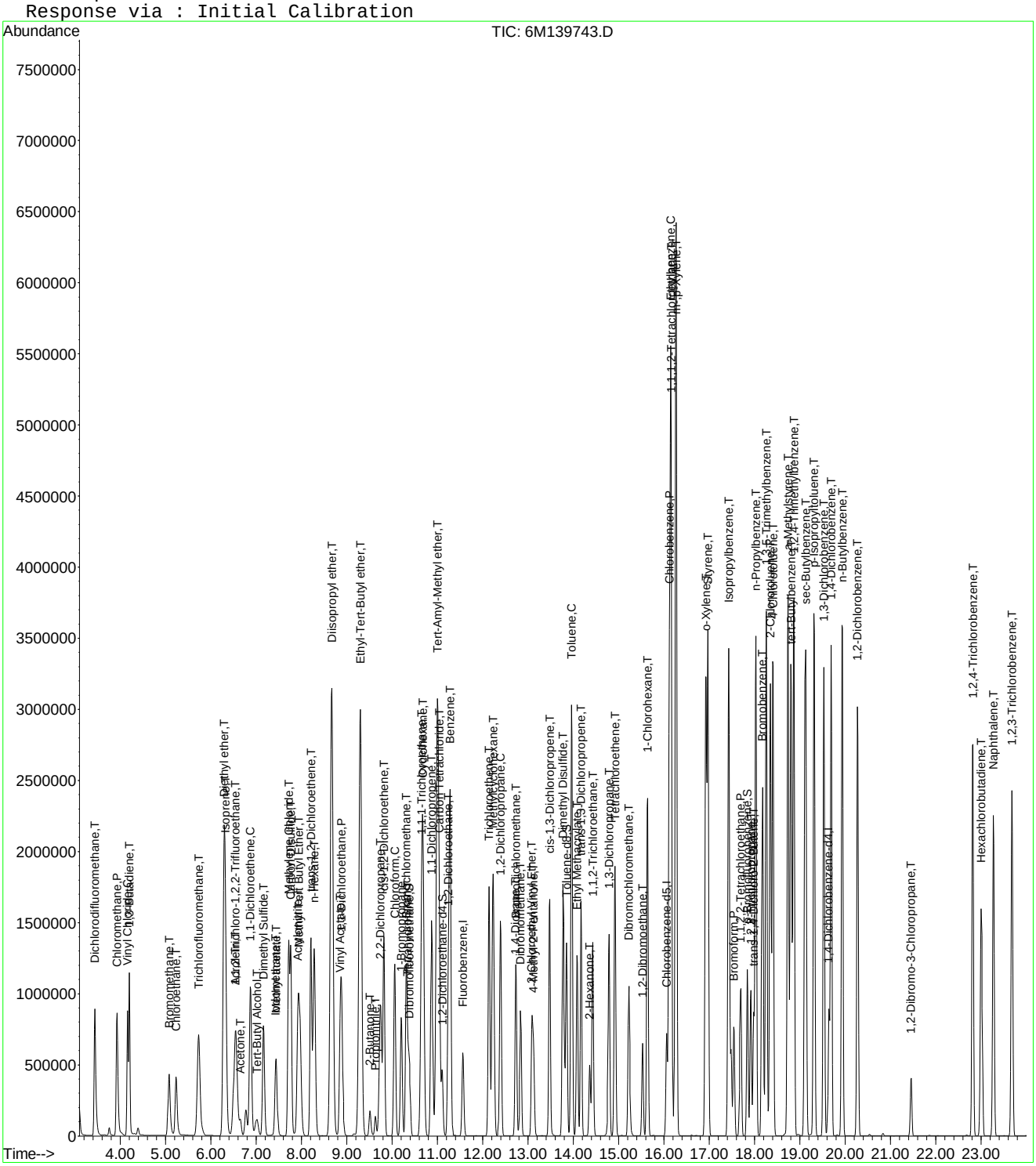

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139744.D Vial: 10
Acq On : 1 Jun 2016 16:47 Operator: TMB
Sample : WG570915-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:24 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	776064	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.06	117	573619	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	333724	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	806214	100.3772 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 401.52%#		
43) 1,2-Dichloroethane-d4	11.11	65	876933	99.0564 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 396.24%#		
58) Toluene-d8	13.85	98	2681218	97.3950 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 389.56%#		
80) p-Bromofluorobenzene	17.84	95	1179267	100.0680 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 400.28%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	2579822	210.0099 ug/L	99
3) Chloromethane	3.93	50	2884749	192.6148 ug/L	100
4) Vinyl Chloride	4.16	62	1885735	186.7936 ug/L	99
5) 1,3-Butadiene	4.20	54	1072988	204.4528 ug/L	98
6) Bromomethane	5.08	94	1138500	228.9390 ug/L	100
7) Chloroethane	5.23	64	1266416	198.4652 ug/L	99
8) Trichlorofluoromethane	5.73	101	2677396	198.0386 ug/L	100
9) Diethyl ether	6.30	59	2847	0.3916 ug/L #	47
10) Isoprene	6.32	67	2328586	202.5904 ug/L	100
11) Acrolein	6.55	56	4274	3.4845 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.55	101	1565121	202.6517 ug/L	99
13) Acetone	6.66	43	445796	205.3917 ug/L	97
14) 1,1-Dichloroethene	6.87	61	2774888	202.8805 ug/L	99
15) Tert-Butyl Alcohol	7.04	59	15311	22.8092 ug/L #	58
16) Dimethyl Sulfide	7.16	62	1276573	203.3718 ug/L	100
17) Iodomethane	7.43	142	1184276	205.8450 ug/L	97
18) Methyl acetate	7.46	43	1318166	196.9255 ug/L	98
19) Methylene Chloride	7.72	84	1656713	196.4233 ug/L	98
20) Carbon Disulfide	7.77	76	5292625	197.7812 ug/L	99
21) Acrylonitrile	7.95	53	52128	17.6699 ug/L #	39
22) Methyl Tert Butyl Ether	7.96	73	4208038	204.4759 ug/L	99
23) trans-1,2-Dichloroethene	8.21	96	1623775	203.6712 ug/L	100
24) n-Hexane	8.28	57	2478699	199.6643 ug/L	100
25) Diisopropyl ether	8.66	45	5024	0.1520 ug/L #	53
26) Vinyl Acetate	8.85	43	3085472	219.9118 ug/L	99
27) 1,1-Dichloroethane	8.88	63	3203758	200.5574 ug/L	99
28) Ethyl-Tert-Butyl ether	9.31	59	31362	1.1597 ug/L #	45
29) 2-Butanone	9.51	43	702047	200.3209 ug/L	100
30) Propionitrile	9.64	54	5995	6.1982 ug/L	92
31) 2,2-Dichloropropane	9.75	77	2335468	200.5419 ug/L	96
32) cis-1,2-Dichloroethene	9.82	96	1785062	205.5228 ug/L	99
33) Chloroform	10.06	83	2856444	200.7766 ug/L	99
34) 1-Bromopropane	10.21	122	290511	201.1427 ug/L	100
35) Bromochloromethane	10.32	130	1018815	206.5620 ug/L	100
36) Tetrahydrofuran	10.36	42	13533	5.6092 ug/L	97
38) 1,1,1-Trichloroethane	10.65	97	2601990	205.0210 ug/L	99
39) Cyclohexane	10.68	56	3250515	204.3384 ug/L	98
40) 1,1-Dichloropropene	10.88	75	2239923	205.9328 ug/L	97
41) Tert-Amyl-Methyl ether	11.01	73	4521	0.2159 ug/L	95
42) Carbon Tetrachloride	11.04	117	2354561	207.9624 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139744.D Vial: 10
Acq On : 1 Jun 2016 16:47 Operator: TMB
Sample : WG570915-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:24 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.24	62	2210694	202.1881 ug/L	99
46)	Benzene	11.28	78	6174905	193.6858 ug/L	98
47)	Trichloroethene	12.14	130	1643481	201.8396 ug/L	99
48)	Methylcyclohexane	12.23	83	2494638	202.0783 ug/L	100
49)	1,2-Dichloropropane	12.40	63	1813017	205.8849 ug/L	99
50)	1,4-Dioxane	12.73	88	4051	64.5717 ug/L #	42
51)	Bromodichloromethane	12.73	83	2256070	208.3284 ug/L	99
52)	Dibromomethane	12.84	93	947659	208.5476 ug/L	100
53)	2-Chloroethyl Vinyl Ether	13.09	63	834725	207.6879 ug/L	100
54)	4-Methyl-2-Pentanone	13.12	58	562095	210.1417 ug/L	99
55)	cis-1,3-Dichloropropene	13.48	75	2636809	215.1272 ug/L	100
56)	Dimethyl Disulfide	13.78	79	1544098	218.6720 ug/L	100
59)	Toluene	13.97	91	6343599	194.7487 ug/L	97
60)	Ethyl Methacrylate	14.09	69	1956368	219.1749 ug/L	99
62)	trans-1,3-Dichloropropene	14.17	75	2372003	213.8118 ug/L	100
63)	1,1,2-Trichloroethane	14.43	97	1265411	204.0398 ug/L	99
64)	2-Hexanone	14.36	43	1099274	208.8865 ug/L	99
65)	1,3-Dichloropropane	14.79	76	2208806	202.5711 ug/L	98
66)	Tetrachloroethene	14.92	166	1679955	196.6171 ug/L	97
67)	Dibromochloromethane	15.24	129	1662430	210.3740 ug/L	99
68)	1,2-Dibromoethane	15.53	107	1245613	207.8007 ug/L	100
69)	1-Chlorohexane	15.64	91	2230493	210.8853 ug/L	99
70)	Chlorobenzene	16.12	112	4254241	195.1921 ug/L	94
71)	1,1,1,2-Tetrachloroethane	16.17	131	1673381	211.6804 ug/L	98
72)	Ethylbenzene	16.17	106	2403044	207.8680 ug/L	91
73)	m-,p-Xylene	16.27	106	5429587	395.3427 ug/L	84
74)	o-Xylene	16.93	106	2810875	207.1070 ug/L	97
75)	Styrene	16.97	104	4915148	218.0641 ug/L	95
76)	Bromoform	17.55	173	1136738	226.7302 ug/L	99
77)	Isopropylbenzene	17.43	105	6859790	201.3575 ug/L	97
79)	1,1,2,2-Tetrachloroethane	17.70	83	1662819	206.6637 ug/L	99
81)	1,2,3-Trichloropropane	17.92	110	474236	203.5824 ug/L	82
82)	trans-1,4-Dichloro-2-Buten	17.98	53	585581	201.1368 ug/L	96
83)	n-Propylbenzene	18.03	91	8082495	186.8702 ug/L	96
84)	Bromobenzene	18.18	156	1996554	196.7170 ug/L	97
85)	1,3,5-Trimethylbenzene	18.26	105	6169530	201.5996 ug/L	98
86)	2-Chlorotoluene	18.35	91	5638837	190.3323 ug/L	99
87)	4-Chlorotoluene	18.41	91	5484270	199.3736 ug/L	98
88)	a-Methylstyrene	18.74	118	3512028	205.2781 ug/L	100
89)	tert-Butylbenzene	18.81	134	1381654	204.7847 ug/L	83
90)	1,2,4-Trimethylbenzene	18.87	105	6415254	200.2520 ug/L	97
91)	sec-Butylbenzene	19.13	105	7361358	195.4813 ug/L	97
92)	p-Isopropyltoluene	19.32	119	6417848	199.9897 ug/L	97
93)	1,3-Dichlorobenzene	19.54	146	3842248	194.1406 ug/L	96
94)	1,4-Dichlorobenzene	19.70	146	3828208	204.9208 ug/L	96
95)	n-Butylbenzene	19.94	91	6152441	202.5523 ug/L	98
96)	1,2-Dichlorobenzene	20.28	146	3581931	194.2170 ug/L	96
97)	1,2-Dibromo-3-Chloropropan	21.47	75	312895	216.5561 ug/L	99
98)	1,2,4-Trichlorobenzene	22.82	180	2607210	204.4647 ug/L	98
99)	Hexachlorobutadiene	23.02	225	1025399	193.7656 ug/L	99
100)	Naphthalene	23.28	128	5221771	207.1606 ug/L	98
101)	1,2,3-Trichlorobenzene	23.69	180	2383834	197.5473 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M139744.D 8260WT.M Thu Jun 02 12:18:24 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139744.D Vial: 10
Acq On : 1 Jun 2016 16:47 Operator: TMB
Sample : WG570915-10 200ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 2 12:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration

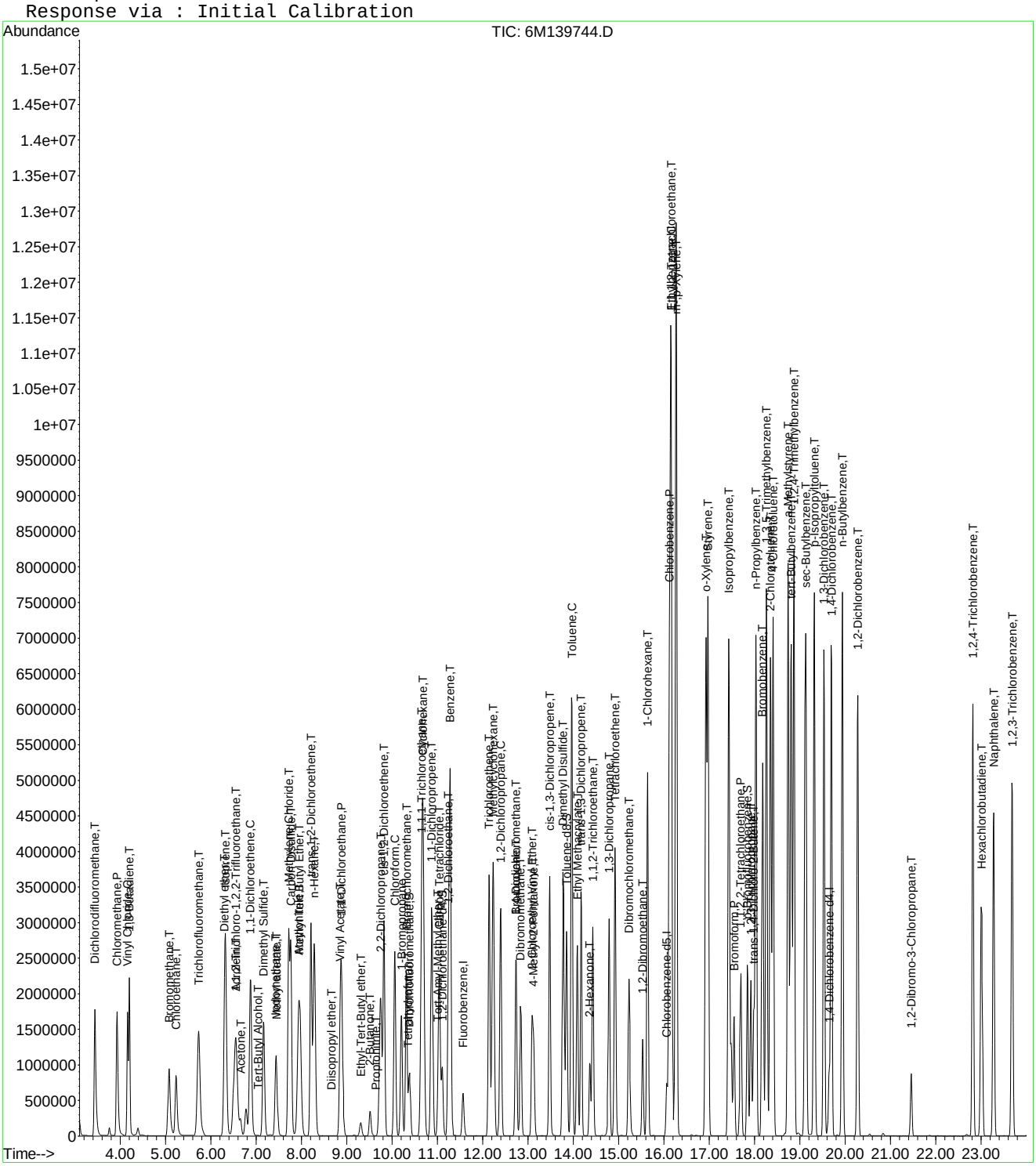

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139745.D Vial: 11
Acq On : 1 Jun 2016 17:19 Operator: TMB
Sample : WG570915-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:25 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	874785	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	603118	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	334735	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.38	111	1329975	146.9008 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 587.60%#		
43) 1,2-Dichloroethane-d4	11.11	65	1427686	143.0689 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 572.28%#		
58) Toluene-d8	13.85	98	4301159	148.5974 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 594.40%#		
80) p-Bromofluorobenzene	17.85	95	1769546	149.7033 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 598.80%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	3794421	274.0259 ug/L	99
3) Chloromethane	3.93	50	4042633	239.4651 ug/L	100
4) Vinyl Chloride	4.16	62	2745108	241.2331 ug/L	98
5) 1,3-Butadiene	4.20	54	1672121	284.7589 ug/L	99
6) Bromomethane	5.06	94	1745686	311.4219 ug/L	100
7) Chloroethane	5.23	64	1947490	270.7569 ug/L	99
8) Trichlorofluoromethane	5.72	101	4186804	274.7363 ug/L	100
9) Diethyl ether	6.29	59	2434269	297.0484 ug/L	99
10) Isoprene	6.32	67	3866380	298.4196 ug/L	100
11) Acrolein	6.54	56	211081	152.6671 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.54	101	2530270	290.6468 ug/L	99
13) Acetone	6.66	43	706320	289.7447 ug/L	95
14) 1,1-Dichloroethene	6.87	61	4460855	289.3404 ug/L	98
15) Tert-Butyl Alcohol	7.05	59	432972	572.2196 ug/L	99
16) Dimethyl Sulfide	7.16	62	2127423	300.6735 ug/L	99
17) Iodomethane	7.43	142	1850962	284.8611 ug/L	98
18) Methyl acetate	7.45	43	2187319	289.8946 ug/L	98
19) Methylene Chloride	7.72	84	2684397	282.3505 ug/L	98
20) Carbon Disulfide	7.76	76	8318935	275.7895 ug/L	97
21) Acrylonitrile	7.92	53	535439	161.0165 ug/L	97
22) Methyl Tert Butyl Ether	7.95	73	6877613	296.4807 ug/L	99
23) trans-1,2-Dichloroethene	8.21	96	2657970	295.7672 ug/L	100
24) n-Hexane	8.28	57	4061677	290.2540 ug/L	100
25) Diisopropyl ether	8.67	45	10570767	283.8005 ug/L	98
26) Vinyl Acetate	8.86	43	5021055	317.4813 ug/L	99
27) 1,1-Dichloroethane	8.89	63	5233579	290.6524 ug/L	98
28) Ethyl-Tert-Butyl ether	9.30	59	8844197	290.1365 ug/L	98
29) 2-Butanone	9.52	43	1096187	277.4859 ug/L	99
30) Propionitrile	9.64	54	302541	277.4977 ug/L	99
31) 2,2-Dichloropropane	9.75	77	3789844	288.7014 ug/L	96
32) cis-1,2-Dichloroethene	9.82	96	2910936	297.3278 ug/L	99
33) Chloroform	10.06	83	4641408	289.4232 ug/L	99
34) 1-Bromopropane	10.21	122	486129	298.4586 ug/L	99
35) Bromochloromethane	10.32	130	1642991	295.5197 ug/L	99
36) Tetrahydrofuran	10.35	42	734691	270.1512 ug/L	100
38) 1,1,1-Trichloroethane	10.66	97	4234747	296.0169 ug/L	100
39) Cyclohexane	10.69	56	5346656	298.1784 ug/L	98
40) 1,1-Dichloropropene	10.87	75	3628282	295.9305 ug/L	96
41) Tert-Amyl-Methyl ether	11.01	73	7044691	298.4904 ug/L	99
42) Carbon Tetrachloride	11.04	117	3852044	301.8300 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M139745.D 8260WT.M Thu Jun 02 12:18:25 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139745.D Vial: 11
Acq On : 1 Jun 2016 17:19 Operator: TMB
Sample : WG570915-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:25 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.24	62	3586153	290.9725 ug/L	98
46)	Benzene	11.28	78	9445205	262.8302 ug/L	94
47)	Trichloroethene	12.15	130	2634728	287.0606 ug/L	98
48)	Methylcyclohexane	12.23	83	4071369	292.5829 ug/L	99
49)	1,2-Dichloropropane	12.40	63	2942534	296.4424 ug/L	100
50)	1,4-Dioxane	12.74	88	42118	595.5853 ug/L	96
51)	Bromodichloromethane	12.74	83	3630814	297.4378 ug/L	99
52)	Dibromomethane	12.84	93	1523394	297.4141 ug/L	99
53)	2-Chloroethyl Vinyl Ether	13.09	63	1282176	283.0164 ug/L	100
54)	4-Methyl-2-Pentanone	13.13	58	866300	287.3208 ug/L	99
55)	cis-1,3-Dichloropropene	13.48	75	4198516	303.8845 ug/L	99
56)	Dimethyl Disulfide	13.78	79	2555342	321.0433 ug/L	99
59)	Toluene	13.97	91	9298621	271.5055 ug/L	92
60)	Ethyl Methacrylate	14.09	69	3070235	327.1395 ug/L	98
62)	trans-1,3-Dichloropropene	14.18	75	3689732	316.3243 ug/L	100
63)	1,1,2-Trichloroethane	14.43	97	1946854	298.5644 ug/L	99
64)	2-Hexanone	14.37	43	1643728	297.0678 ug/L	98
65)	1,3-Dichloropropane	14.79	76	3375035	294.3875 ug/L	98
66)	Tetrachloroethene	14.93	166	2636661	293.4940 ug/L	96
67)	Dibromochloromethane	15.23	129	2525879	304.0063 ug/L	98
68)	1,2-Dibromoethane	15.53	107	1894786	300.6389 ug/L	100
69)	1-Chlorohexane	15.64	91	3460425	311.1688 ug/L	98
70)	Chlorobenzene	16.12	112	6260439	273.1908 ug/L	89
71)	1,1,1,2-Tetrachloroethane	16.16	131	2501054	300.9055 ug/L	97
72)	Ethylbenzene	16.16	106	3603522	296.4656 ug/L	77
73)	m-,p-Xylene	16.27	106	7675830	531.5614 ug/L	72
74)	o-Xylene	16.93	106	4132097	289.5642 ug/L	91
75)	Styrene	16.98	104	7001942	295.4523 ug/L	90
76)	Bromoform	17.55	173	1687864	320.1900 ug/L	98
77)	Isopropylbenzene	17.43	105	9280334	259.0848 ug/L	93
79)	1,1,2,2-Tetrachloroethane	17.70	83	2441380	302.5109 ug/L	100
81)	1,2,3-Trichloropropane	17.92	110	701095	300.0606 ug/L	84
82)	trans-1,4-Dichloro-2-Buten	17.98	53	888429	303.8730 ug/L	92
83)	n-Propylbenzene	18.03	91	10509002	242.2381 ug/L	91
84)	Bromobenzene	18.19	156	2931431	287.9565 ug/L	97
85)	1,3,5-Trimethylbenzene	18.27	105	8380264	273.0120 ug/L	94
86)	2-Chlorotoluene	18.35	91	7661586	257.8267 ug/L	96
87)	4-Chlorotoluene	18.41	91	7776019	281.8333 ug/L	94
88)	a-Methylstyrene	18.74	118	5138258	299.4242 ug/L	98
89)	tert-Butylbenzene	18.81	134	1991224	294.2420 ug/L	95
90)	1,2,4-Trimethylbenzene	18.87	105	8632335	268.6443 ug/L	93
91)	sec-Butylbenzene	19.13	105	9738776	257.8326 ug/L	93
92)	p-Isopropyltoluene	19.32	119	8603731	267.2953 ug/L	93
93)	1,3-Dichlorobenzene	19.54	146	5474292	275.7689 ug/L	93
94)	1,4-Dichlorobenzene	19.70	146	5434751	290.1280 ug/L	93
95)	n-Butylbenzene	19.94	91	8255399	270.9656 ug/L	95
96)	1,2-Dichlorobenzene	20.28	146	5078448	274.5284 ug/L	93
97)	1,2-Dibromo-3-Chloropropan	21.46	75	451100	311.2655 ug/L	99
98)	1,2,4-Trichlorobenzene	22.82	180	3727725	291.4556 ug/L	97
99)	Hexachlorobutadiene	23.02	225	1492415	281.1640 ug/L	99
100)	Naphthalene	23.28	128	7153107	282.9244 ug/L	96
101)	1,2,3-Trichlorobenzene	23.69	180	3403591	281.2023 ug/L	98

(#) = qualifier out of range (m) = manual integration
6M139745.D 8260WT.M Thu Jun 02 12:18:25 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139745.D Vial: 11
Acq On : 1 Jun 2016 17:19 Operator: TMB
Sample : WG570915-11 300ug/L STD 8260 Inst : HPMS6
Misc : 1,1 STD76405 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 2 12:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration

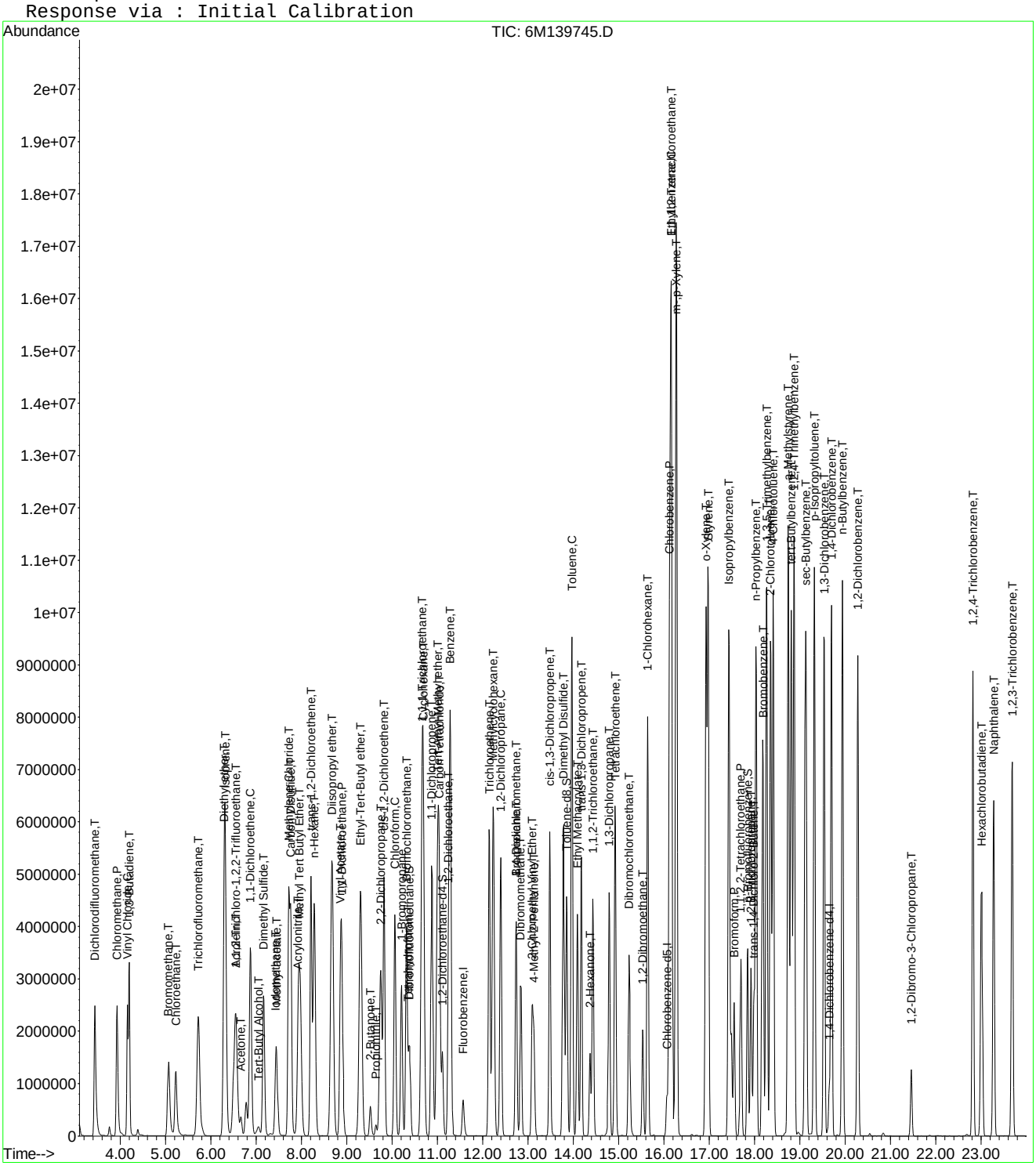

6M139745.D 8260WT.M Thu Jun 02 12:18:25 2016 Page 3

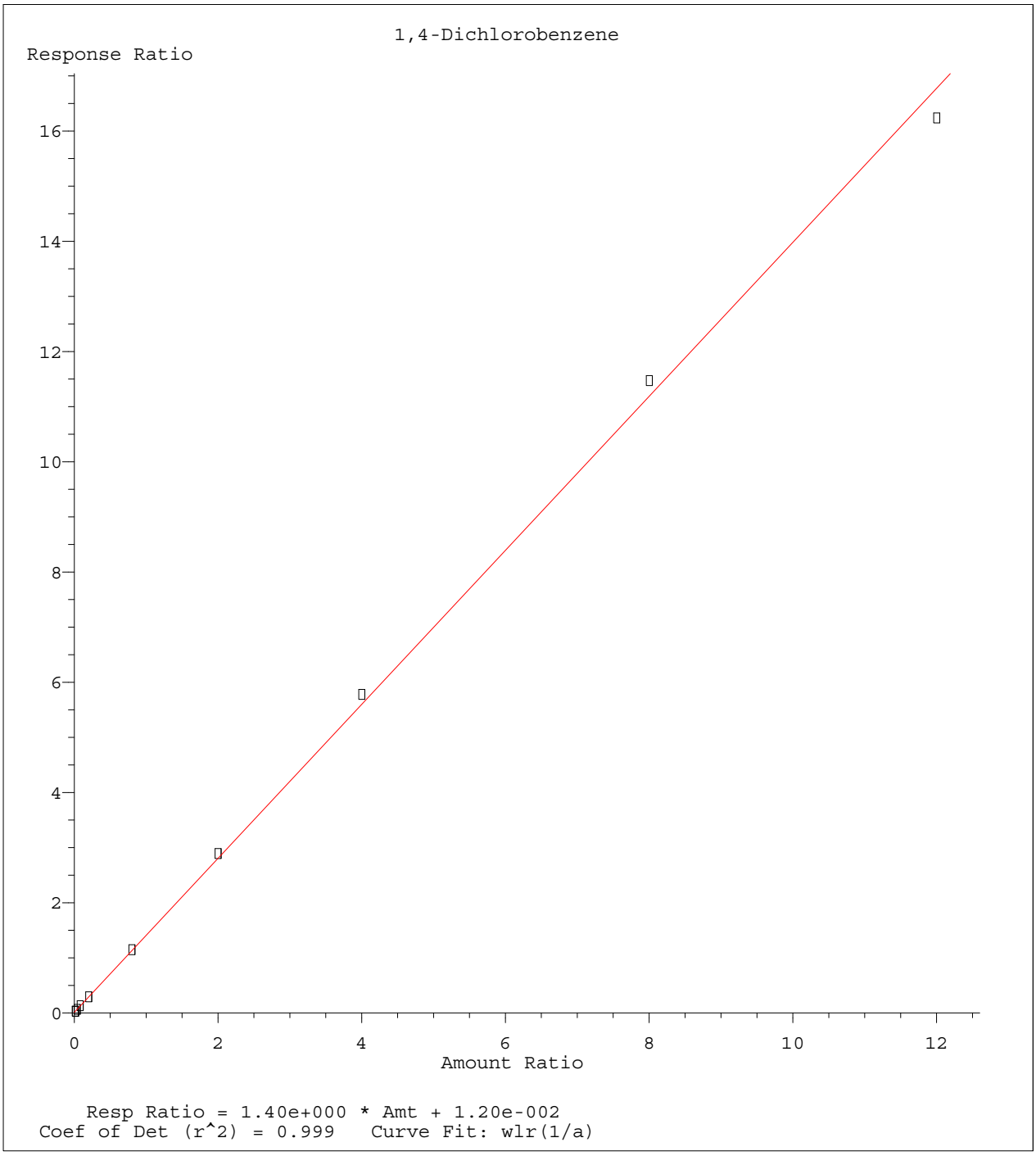

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Thu Jun 02 12:19:33 2016

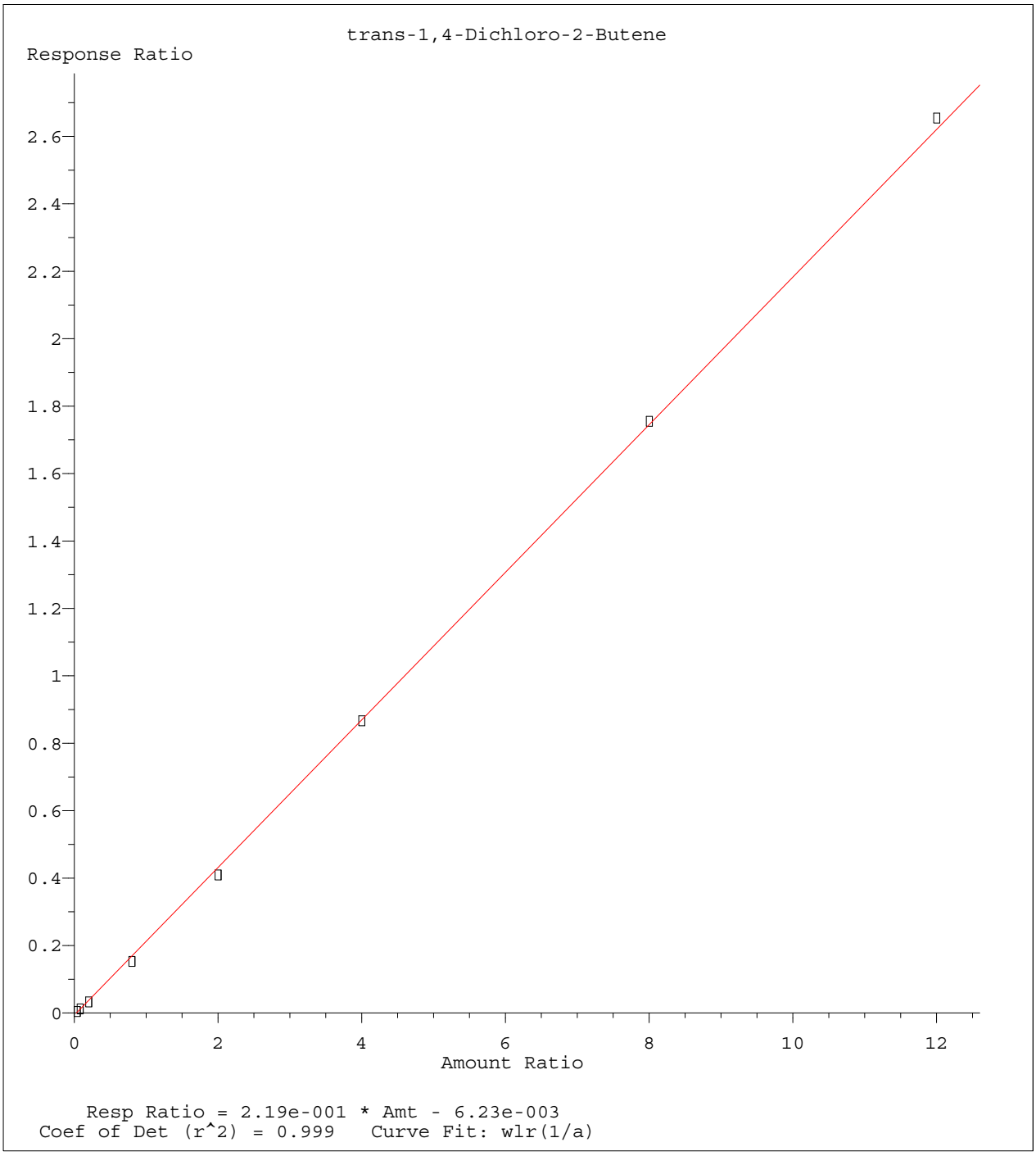

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Thu Jun 02 12:19:33 2016

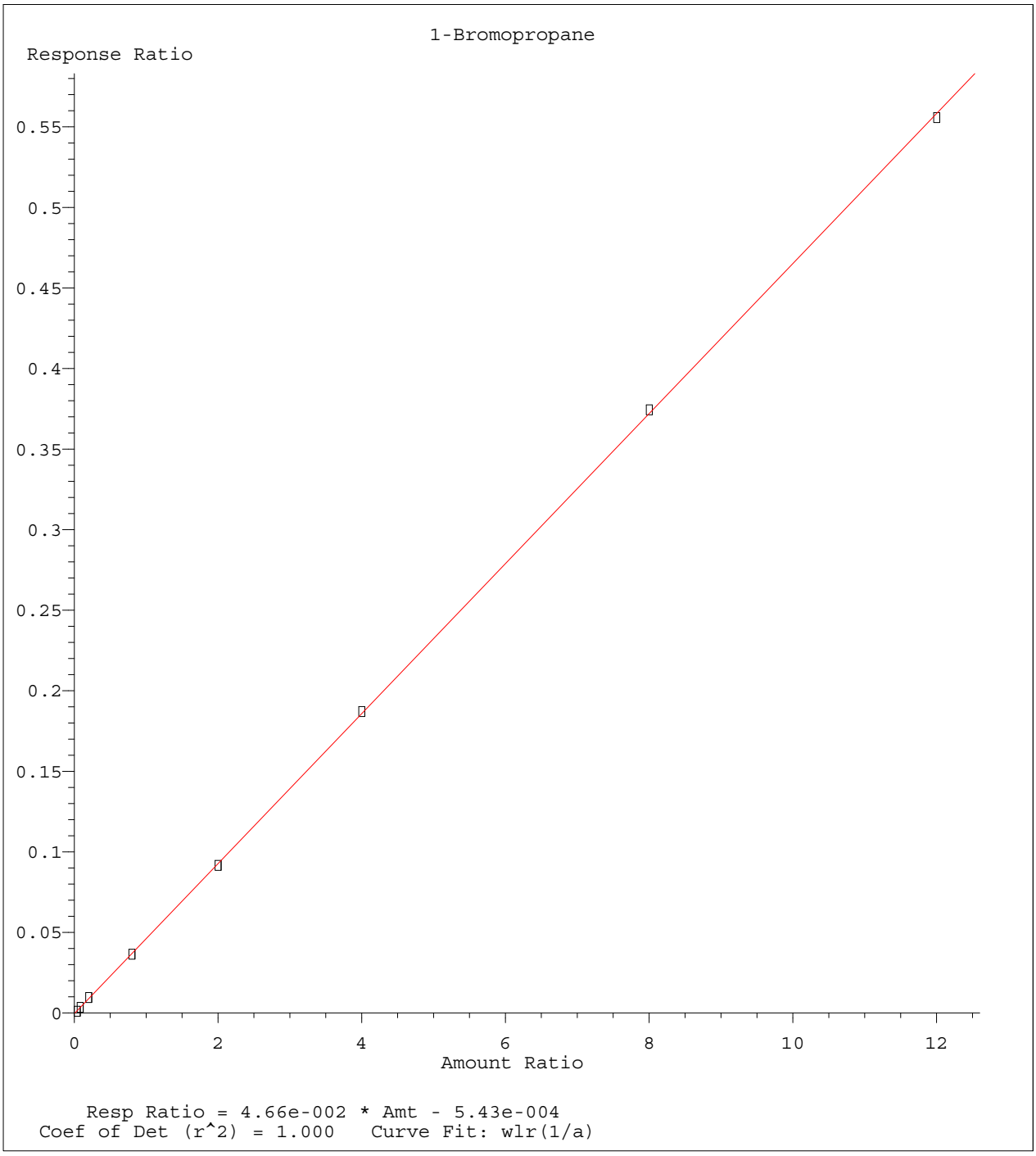

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Thu Jun 02 12:19:33 2016

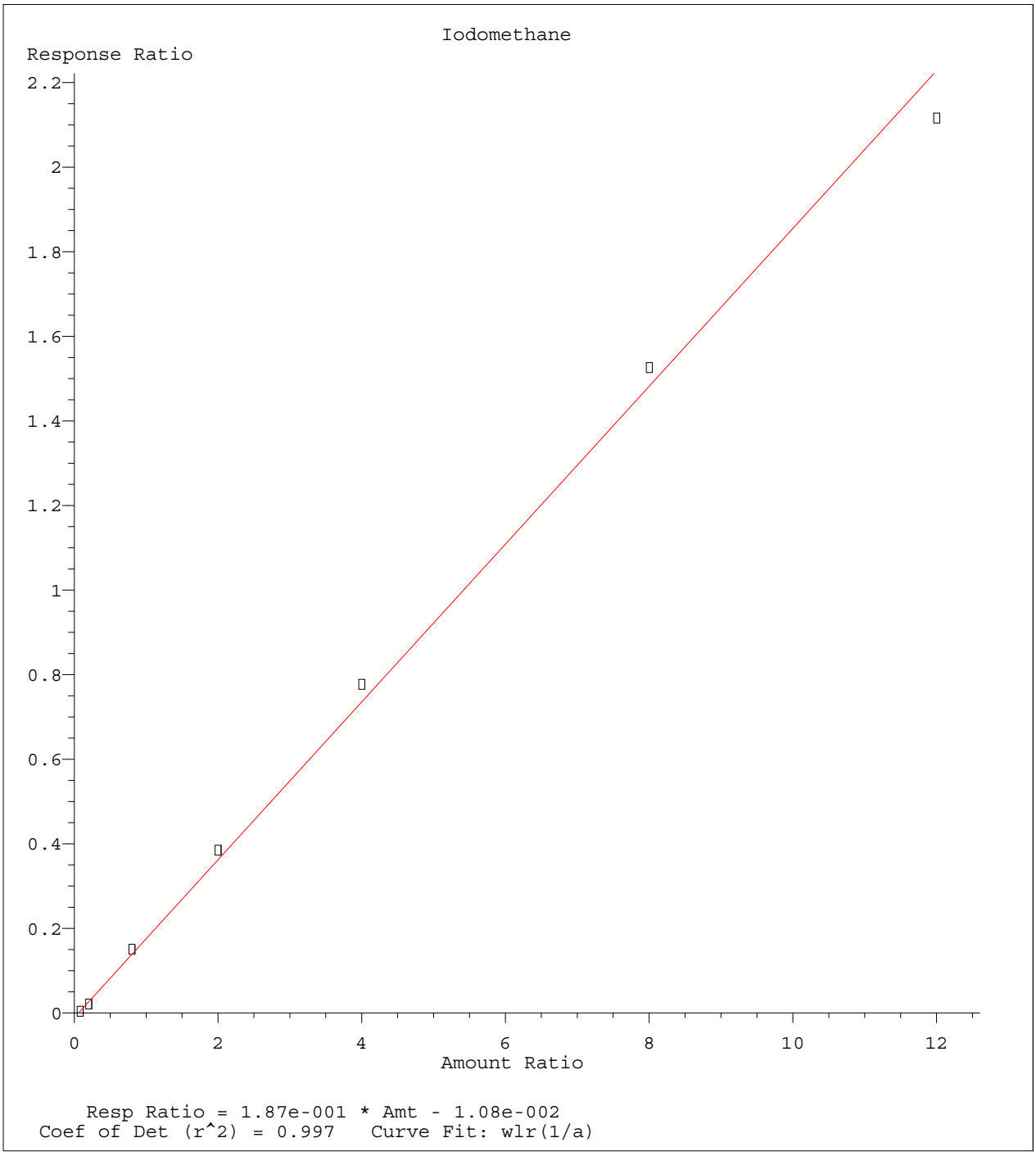

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Thu Jun 02 12:19:33 2016

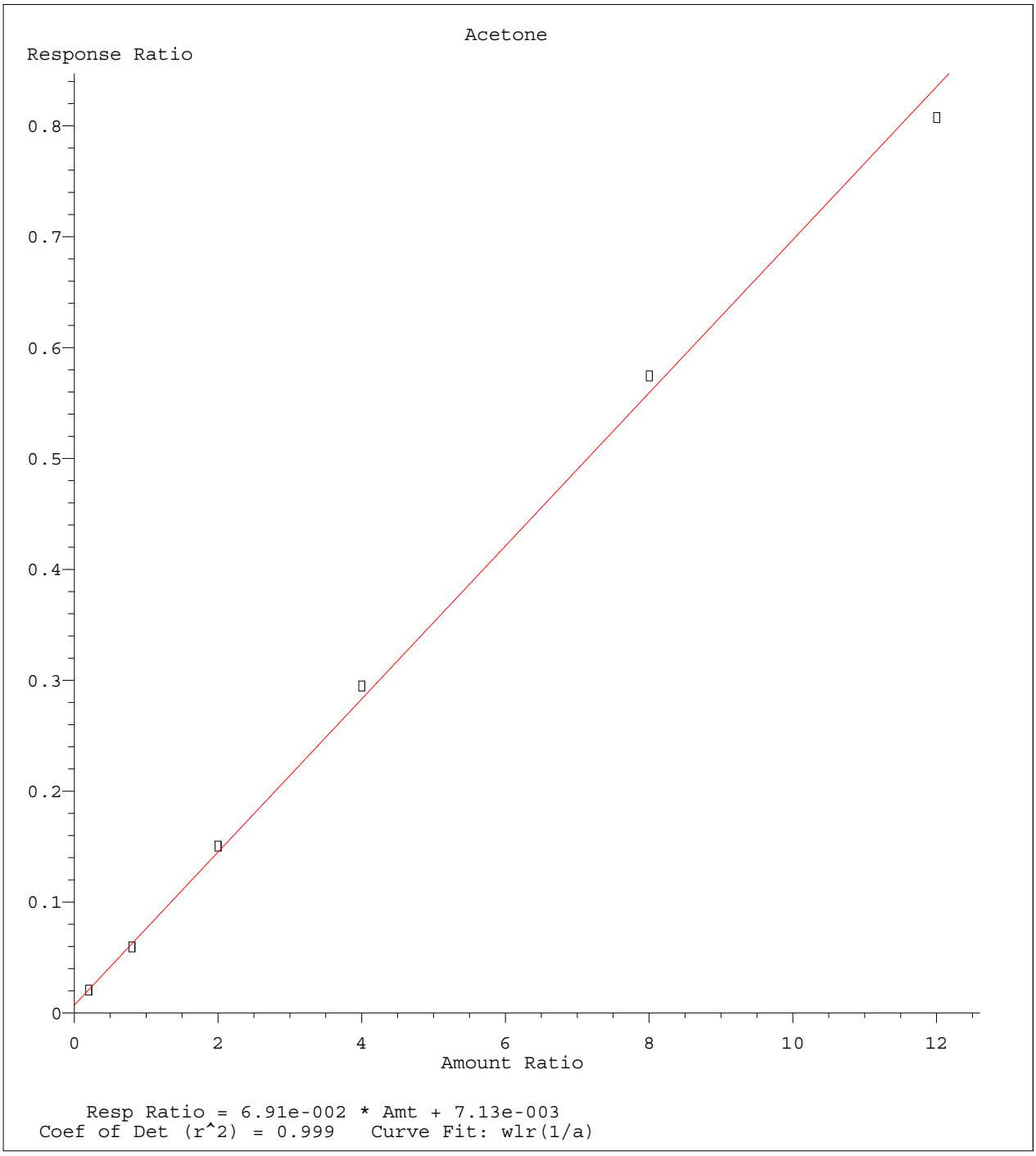

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Thu Jun 02 12:19:33 2016

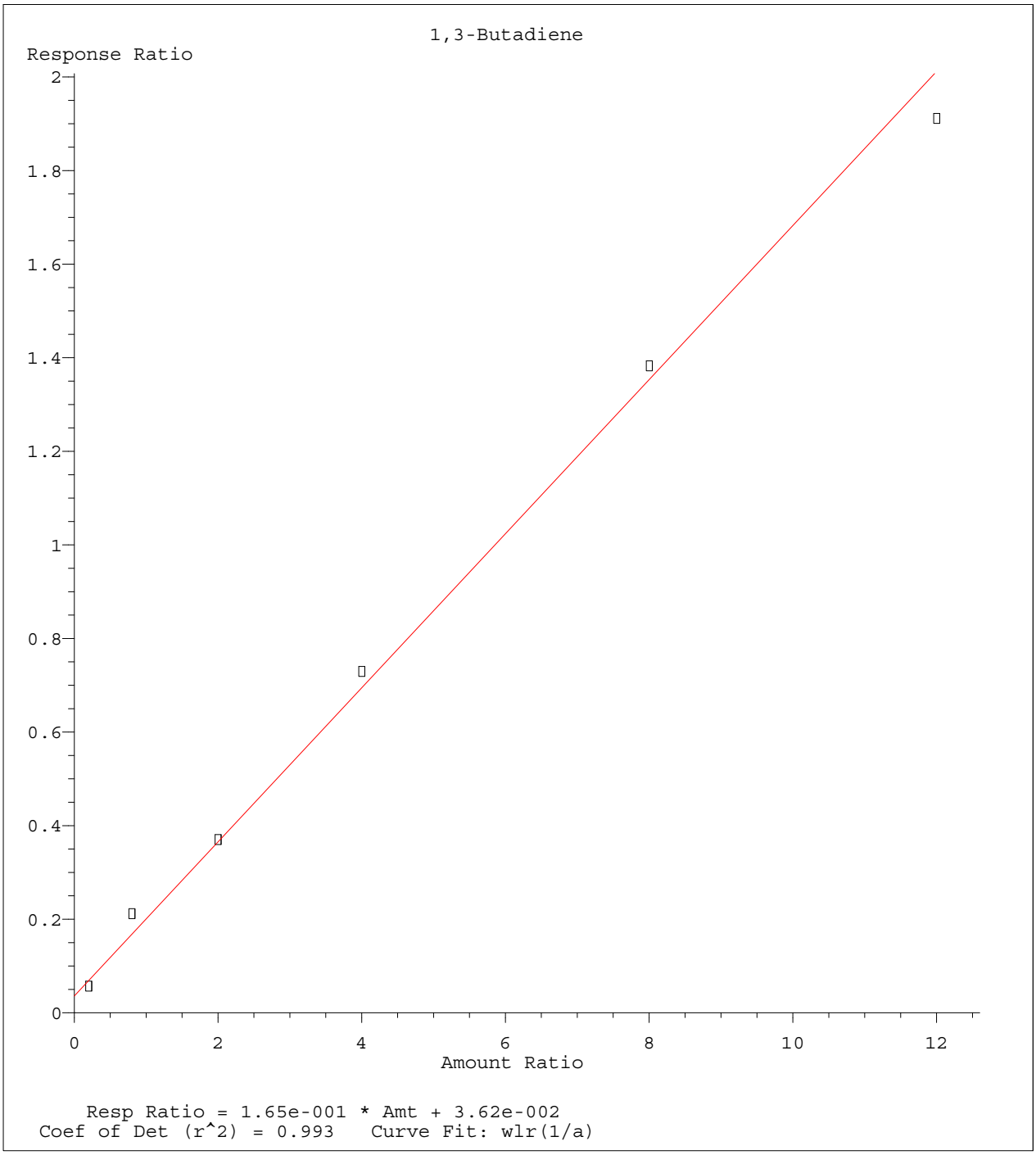

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Thu Jun 02 12:19:33 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139748.D Vial: 14
Acq On : 1 Jun 2016 18:56 Operator: TMB
Sample : WG570915-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76401 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:26 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	813057	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.06	117	589773	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	316393	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.39	111	199426	23.6997 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 94.80%		
43) 1,2-Dichloroethane-d4	11.11	65	218159	23.5215 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 94.08%		
58) Toluene-d8	13.85	98	670292	23.6814 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 94.72%		
80) p-Bromofluorobenzene	17.84	95	273340	24.4651 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 97.88%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	702608	54.5933 ug/L	98
3) Chloromethane	3.93	50	747480	47.6385 ug/L	99
4) Vinyl Chloride	4.16	62	515858	48.7740 ug/L	100
5) 1,3-Butadiene	4.20	54	214643	34.5960 ug/L	98
6) Bromomethane	5.07	94	237144	45.5172 ug/L	98
7) Chloroethane	5.23	64	343302	51.3524 ug/L	100
8) Trichlorofluoromethane	5.72	101	672942	47.5107 ug/L	100
9) Diethyl ether	6.29	59	786242	103.2275 ug/L	99
10) Isoprene	6.31	67	678234	56.3226 ug/L	100
11) Acrolein	6.55	56	140853	109.6081 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.54	101	414439	51.2200 ug/L	100
13) Acetone	6.66	43	118151	50.0319 ug/L	97
14) 1,1-Dichloroethene	6.87	61	689534	48.1202 ug/L	99
15) Tert-Butyl Alcohol	7.03	59	143024	203.3725 ug/L	99
16) Dimethyl Sulfide	7.16	62	615770	93.6354 ug/L	99
17) Iodomethane	7.43	142	452025	75.9094 ug/L	98
18) Methyl acetate	7.45	43	332389	47.3975 ug/L	98
19) Methylene Chloride	7.72	84	433555	49.0644 ug/L	99
20) Carbon Disulfide	7.76	76	1354672	48.3197 ug/L	100
21) Acrylonitrile	7.92	53	153905	49.7959 ug/L	99
22) Methyl Tert Butyl Ether	7.95	73	1128767	52.3532 ug/L	100
23) trans-1,2-Dichloroethene	8.21	96	425561	50.9498 ug/L	100
24) n-Hexane	8.28	57	642177	49.3751 ug/L	99
25) Diisopropyl ether	8.67	45	3642506	105.2173 ug/L	99
26) Vinyl Acetate	8.85	43	788393	53.6348 ug/L	99
27) 1,1-Dichloroethane	8.88	63	804025	48.0424 ug/L	100
28) Ethyl-Tert-Butyl ether	9.30	59	2815001	99.3580 ug/L	100
29) 2-Butanone	9.52	43	179165	48.7966 ug/L	100
30) Propionitrile	9.64	54	100730	99.4064 ug/L	99
31) 2,2-Dichloropropane	9.75	77	585369	47.9775 ug/L	97
32) cis-1,2-Dichloroethene	9.82	96	470672	51.7251 ug/L	99
33) Chloroform	10.06	83	737298	49.4660 ug/L	99
34) 1-Bromopropane	10.21	122	102822	68.1452 ug/L	100
35) Bromochloromethane	10.32	130	259428	50.2052 ug/L	100
36) Tetrahydrofuran	10.35	42	229614	90.8408 ug/L	99
38) 1,1,1-Trichloroethane	10.65	97	662124	49.7976 ug/L	99
39) Cyclohexane	10.68	56	844891	50.6962 ug/L	98
40) 1,1-Dichloropropene	10.88	75	566607	49.7223 ug/L	97
41) Tert-Amyl-Methyl ether	11.00	73	2310471	105.3293 ug/L	99
42) Carbon Tetrachloride	11.04	117	597488	50.3710 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M139748.D 8260WT.M Thu Jun 02 12:18:26 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139748.D Vial: 14
Acq On : 1 Jun 2016 18:56 Operator: TMB
Sample : WG570915-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76401 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 02 12:18:26 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	11.24	62	578724	50.5214	ug/L	100
46)	Benzene	11.28	78	1669568	49.9860	ug/L	100
47)	Trichloroethene	12.14	130	441901	51.8016	ug/L	100
48)	Methylcyclohexane	12.23	83	663944	51.3358	ug/L	99
49)	1,2-Dichloropropane	12.39	63	483336	52.3900	ug/L	100
50)	1,4-Dioxane	12.73	88	13070	198.8530	ug/L	92
51)	Bromodichloromethane	12.73	83	579293	51.0588	ug/L	99
52)	Dibromomethane	12.84	93	235154	49.3949	ug/L	100
53)	2-Chloroethyl Vinyl Ether	13.09	63	227071	53.9270	ug/L	99
54)	4-Methyl-2-Pentanone	13.12	58	140404	50.1024	ug/L	99
55)	cis-1,3-Dichloropropene	13.48	75	734218	57.1766	ug/L	100
56)	Dimethyl Disulfide	13.78	79	393408	53.1787	ug/L	99
59)	Toluene	13.96	91	1732060	51.7178	ug/L	100
60)	Ethyl Methacrylate	14.09	69	507926	55.3451	ug/L	96
62)	trans-1,3-Dichloropropene	14.17	75	602953	52.8614	ug/L	99
63)	1,1,2-Trichloroethane	14.43	97	330025	51.7570	ug/L	99
64)	2-Hexanone	14.36	43	262407	48.4974	ug/L	100
65)	1,3-Dichloropropane	14.79	76	612537	54.6375	ug/L	98
66)	Tetrachloroethene	14.92	166	430915	49.0517	ug/L	99
67)	Dibromochloromethane	15.24	129	417665	51.4062	ug/L	100
68)	1,2-Dibromoethane	15.53	107	322862	52.3865	ug/L	100
69)	1-Chlorohexane	15.64	91	575164	52.8903	ug/L	100
70)	Chlorobenzene	16.12	112	1148834	51.2668	ug/L	99
71)	1,1,1,2-Tetrachloroethane	16.16	131	427082	52.5455	ug/L	100
72)	Ethylbenzene	16.15	106	609992	51.3202	ug/L	99
73)	m-,p-Xylene	16.27	106	1491756	105.6436	ug/L	100
74)	o-Xylene	16.93	106	747716	53.5832	ug/L	100
75)	Styrene	16.97	104	1256580	54.2221	ug/L	99
76)	Bromoform	17.55	173	248794	48.2645	ug/L	99
77)	Isopropylbenzene	17.43	105	1869415	53.3705	ug/L	100
79)	1,1,2,2-Tetrachloroethane	17.70	83	394192	51.6759	ug/L	99
81)	1,2,3-Trichloropropane	17.92	110	116497	52.7498	ug/L	82
82)	trans-1,4-Dichloro-2-Buten	17.98	53	119870	43.9870	ug/L	99
83)	n-Propylbenzene	18.03	91	2259617	55.1049	ug/L	100
84)	Bromobenzene	18.18	156	480958	49.9837	ug/L	97
85)	1,3,5-Trimethylbenzene	18.26	105	1571815	54.1751	ug/L	100
86)	2-Chlorotoluene	18.35	91	1460482	51.9972	ug/L	99
87)	4-Chlorotoluene	18.41	91	1398653	53.6314	ug/L	100
88)	a-Methylstyrene	18.74	118	896576	55.2755	ug/L	100
89)	tert-Butylbenzene	18.81	134	341672	53.4156	ug/L	80
90)	1,2,4-Trimethylbenzene	18.87	105	1580583	52.0404	ug/L	100
91)	sec-Butylbenzene	19.13	105	1920297	53.7869	ug/L	99
92)	p-Isopropyltoluene	19.32	119	1617808	53.1748	ug/L	100
93)	1,3-Dichlorobenzene	19.53	146	945910	50.4129	ug/L	99
94)	1,4-Dichlorobenzene	19.70	146	963948	54.2685	ug/L	99
95)	n-Butylbenzene	19.94	91	1509669	52.4242	ug/L	99
96)	1,2-Dichlorobenzene	20.28	146	907052	51.8756	ug/L	98
97)	1,2-Dibromo-3-Chloropropan	21.46	75	73844	53.9073	ug/L	98
98)	1,2,4-Trichlorobenzene	22.82	180	630356	52.1421	ug/L	99
99)	Hexachlorobutadiene	23.02	225	268285	53.4738	ug/L	100
100)	Naphthalene	23.28	128	1168133	48.8812	ug/L	100
101)	1,2,3-Trichlorobenzene	23.69	180	572367	50.0300	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\060116\6M139748.D Vial: 14
Acq On : 1 Jun 2016 18:56 Operator: TMB
Sample : WG570915-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76401 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 2 12:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Initial Calibration

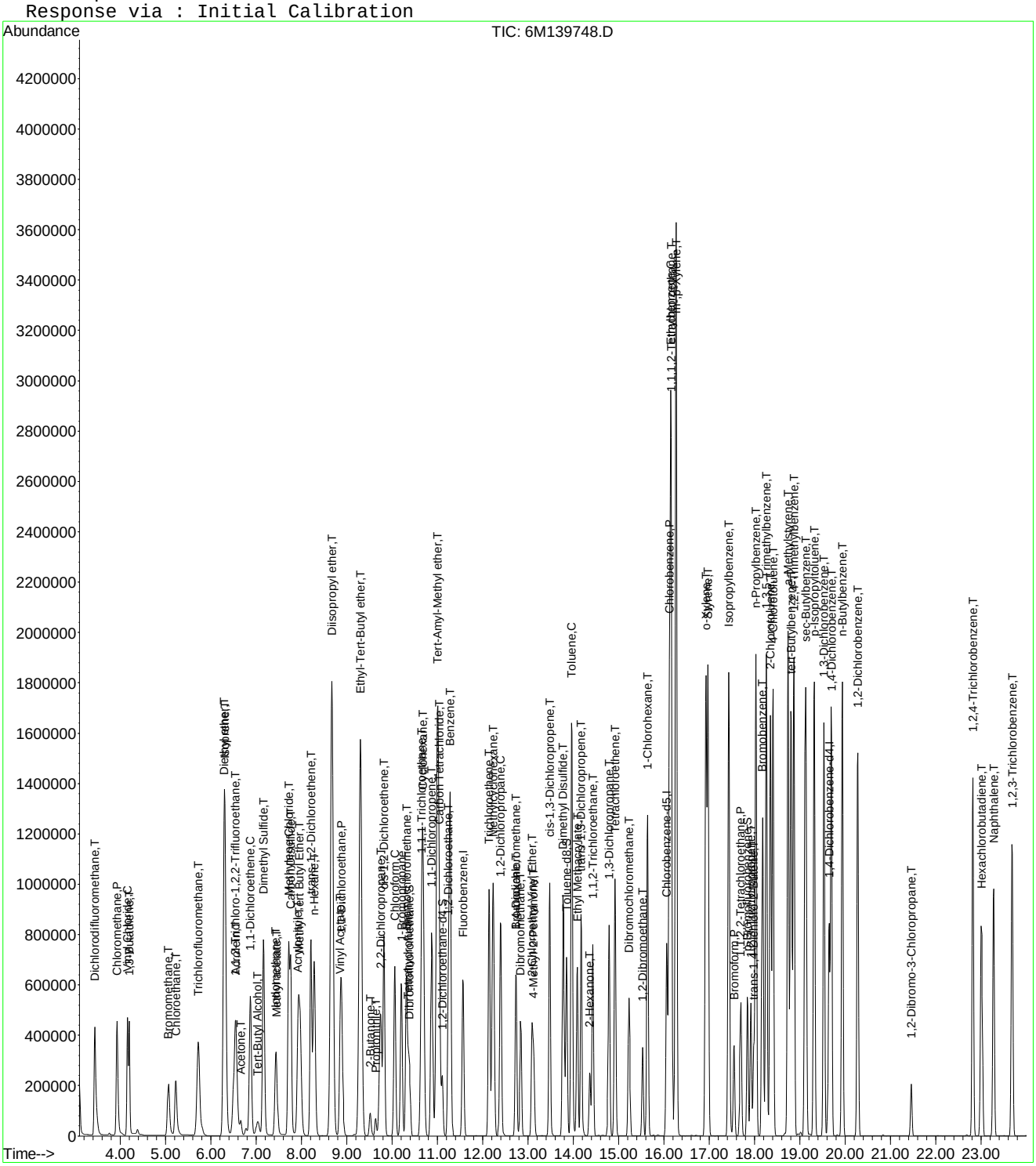

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\060116\6M139748.D Vial: 14
Acq On : 1 Jun 2016 18:56 Operator: TMB
Sample : WG570915-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76401 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	109	0.00
2	T	Dichlorodifluoromethane	50.0000	54.5933	-9.2	110	0.00
3	P	Chloromethane	50.0000	47.6385	4.7	101	0.00
4	C	Vinyl Chloride	50.0000	48.7740	2.5	109	0.00
5	T	1,3-Butadiene	50.0000	34.5960	30.8#	78	0.00
6	T	Bromomethane	50.0000	45.5172	9.0	105	0.00
7	T	Chloroethane	50.0000	51.3524	-2.7	113	0.00
8	T	Trichlorofluoromethane	50.0000	47.5107	5.0	104	0.00
9	T	Diethyl ether	100.0000	103.2275	-3.2	112	0.00
10	T	Isoprene	50.0000	56.3226	-12.6	124	0.00
11	T	Acrolein	50.0000	109.6081	-119.2#	240	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	51.2200	-2.4	112	0.00
13	T	Acetone	50.0000	50.0319	-0.1	106	0.00
14	C	1,1-Dichloroethene	50.0000	48.1202	3.8	106	0.00
15	T	Tert-Butyl Alcohol	200.0000	203.3725	-1.7	103	-0.02
16	T	Dimethyl Sulfide	50.0000	93.6354	-87.3#	204	0.00
17	T	Iodomethane	50.0000	75.9094	-51.8#	158	0.00
18	T	Methyl acetate	50.0000	47.3975	5.2	104	0.00
19	T	Methylene Chloride	50.0000	49.0644	1.9	111	0.00
20	T	Carbon Disulfide	50.0000	48.3197	3.4	106	0.00
21	T	Acrylonitrile	50.0000	49.7959	0.4	103	0.00
22	T	Methyl Tert Butyl Ether	50.0000	52.3532	-4.7	114	0.00
23	T	trans-1,2-Dichloroethene	50.0000	50.9498	-1.9	112	0.00
24	T	n-Hexane	50.0000	49.3751	1.2	109	0.00
25	T	Diisopropyl ether	100.0000	105.2173	-5.2	114	0.00
26	T	Vinyl Acetate	50.0000	53.6347	-7.3	117	0.00
27	P	1,1-Dichloroethane	50.0000	48.0424	3.9	107	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	99.3580	0.6	106	0.00
29	T	2-Butanone	50.0000	48.7966	2.4	106	0.00
30	T	Propionitrile	100.0000	99.4064	0.6	101	0.00
31	T	2,2-Dichloropropane	50.0000	47.9775	4.0	109	0.00
32	T	cis-1,2-Dichloroethene	50.0000	51.7251	-3.5	112	0.00
33	C	Chloroform	50.0000	49.4660	1.1	110	0.00
34		1-Bromopropane	50.0000	68.1452	-36.3#	151	0.00
35	T	Bromochloromethane	50.0000	50.2052	-0.4	108	0.00
36	T	Tetrahydrofuran	100.0000	90.8408	9.2	100	0.00
37	S	Dibromofluoromethane	25.0000	23.6997	5.2	102	0.00
38	T	1,1,1-Trichloroethane	50.0000	49.7976	0.4	110	0.00
39	T	Cyclohexane	50.0000	50.6962	-1.4	111	0.00
40	T	1,1-Dichloropropene	50.0000	49.7223	0.6	109	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	105.3293	-5.3	113	0.00
42	T	Carbon Tetrachloride	50.0000	50.3710	-0.7	109	0.00
43	S	1,2-Dichloroethane-d4	25.0000	23.5216	5.9	102	0.00
44		Heptane	-1.0000	0.0000	0.0	115	0.00
45	T	1,2-Dichloroethane	50.0000	50.5213	-1.0	111	0.00
46	T	Benzene	50.0000	49.9860	0.0	111	0.00
47	T	Trichloroethene	50.0000	51.8016	-3.6	114	0.00
48	T	Methylcyclohexane	50.0000	51.3358	-2.7	113	0.00
49	C	1,2-Dichloropropane	50.0000	52.3900	-4.8	115	0.00
50	T	1,4-Dioxane	200.0000	198.8530	0.6	100	0.00
51	T	Bromodichloromethane	50.0000	51.0588	-2.1	110	0.00
52	T	Dibromomethane	50.0000	49.3949	1.2	106	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	53.9270	-7.9	109	0.00
54	T	4-Methyl-2-Pentanone	50.0000	50.1024	-0.2	104	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\060116\6M139748.D Vial: 14
Acq On : 1 Jun 2016 18:56 Operator: TMB
Sample : WG570915-12 50ug/L ALT SRC STD 8260 Inst : HPMS6
Misc : 1,1 STD76401 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:17:14 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	57.1766	-14.4	120	0.00
56	T	Dimethyl Disulfide	50.0000	53.1787	-6.4	115	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	107	0.00
58	S	Toluene-d8	25.0000	23.6814	5.3	103	0.00
59	C	Toluene	50.0000	51.7178	-3.4	112	0.00
60	T	Ethyl Methacrylate	50.0000	55.3451	-10.7	112	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	112	0.00
62	T	trans-1,3-Dichloropropene	50.0000	52.8614	-5.7	110	0.00
63	T	1,1,2-Trichloroethane	50.0000	51.7570	-3.5	110	0.00
64	T	2-Hexanone	50.0000	48.4974	3.0	102	0.00
65	T	1,3-Dichloropropane	50.0000	54.6375	-9.3	116	0.00
66	T	Tetrachloroethene	50.0000	49.0517	1.9	107	0.00
67	T	Dibromochloromethane	50.0000	51.4062	-2.8	107	0.00
68	T	1,2-Dibromoethane	50.0000	52.3865	-4.8	109	0.00
69	T	1-Chlorohexane	50.0000	52.8903	-5.8	108	0.00
70	P	Chlorobenzene	50.0000	51.2668	-2.5	112	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	52.5455	-5.1	110	0.00
72	C	Ethylbenzene	50.0000	51.3202	-2.6	109	0.00
73	T	m-,p-Xylene	100.0000	105.6436	-5.6	112	0.00
74	T	o-Xylene	50.0000	53.5832	-7.2	112	0.00
75	T	Styrene	50.0000	54.2221	-8.4	108	0.00
76	P	Bromoform	50.0000	48.2645	3.5	99	0.00
77	T	Isopropylbenzene	50.0000	53.3705	-6.7	109	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	101	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	51.6759	-3.4	104	0.00
80	S	p-Bromofluorobenzene	25.0000	24.4651	2.1	99	0.00
81	T	1,2,3-Trichloropropane	50.0000	52.7498	-5.5	105	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	43.9870	12.0	93	0.00
83	T	n-Propylbenzene	50.0000	55.1049	-10.2	108	0.00
84	T	Bromobenzene	50.0000	49.9837	0.0	104	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	54.1751	-8.4	107	0.00
86	T	2-Chlorotoluene	50.0000	51.9972	-4.0	108	0.00
87	T	4-Chlorotoluene	50.0000	53.6314	-7.3	108	0.00
88	T	a-Methylstyrene	50.0000	55.2754	-10.6	110	0.00
89	T	tert-Butylbenzene	50.0000	53.4156	-6.8	107	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	52.0404	-4.1	102	0.00
91	T	sec-Butylbenzene	50.0000	53.7869	-7.6	106	0.00
92	T	p-Isopropyltoluene	50.0000	53.1748	-6.3	103	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.4129	-0.8	104	0.00
94	T	1,4-Dichlorobenzene	50.0000	54.2685	-8.5	106	0.00
95	T	n-Butylbenzene	50.0000	52.4242	-4.8	102	0.00
96	T	1,2-Dichlorobenzene	50.0000	51.8756	-3.8	106	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	53.9073	-7.8	102	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	52.1421	-4.3	104	0.00
99	T	Hexachlorobutadiene	50.0000	53.4738	-6.9	109	0.00
100	T	Naphthalene	50.0000	48.8812	2.2	92	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	50.0300	-0.1	101	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M139748.D 8260WT.M Thu Jun 02 12:20:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:40:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	823748	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	571926	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	299321	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	12.68	98	567	0.0189 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.08%#	
80) p-Bromofluorobenzene	16.08	95	313	0.0253 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	3836	0.2778 ug/L	91
3) Chloromethane	3.62	50	3658	0.4537 ug/L	95
4) Vinyl Chloride	3.85	62	2516	0.2630 ug/L #	58
5) 1,3-Butadiene	3.91	54	2079	0.2592 ug/L	71
6) Bromomethane	4.73	94	1152	0.6530 ug/L #	55
7) Chloroethane	4.90	64	1112	0.2113 ug/L #	72
8) Trichlorofluoromethane	5.35	101	2706	0.1520 ug/L #	53
10) Isoprene	5.93	67	2147	0.1987 ug/L	85
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1746	0.2087 ug/L	97
14) 1,1-Dichloroethene	6.48	61	3332	0.2501 ug/L	75
16) Dimethyl Sulfide	6.73	62	1099	0.2308 ug/L	95
19) Methylene Chloride	7.26	84	3414	0.4028 ug/L	88
20) Carbon Disulfide	7.30	76	10739	0.3853 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	4927	0.2686 ug/L #	60
23) trans-1,2-Dichloroethene	7.70	61	3879	0.3170 ug/L	98
24) n-Hexane	7.78	57	2794	0.3075 ug/L	85
26) Vinyl Acetate	8.30	43	1973	0.2259 ug/L #	70
27) 1,1-Dichloroethane	8.33	63	4881	0.3212 ug/L #	88
31) 2,2-Dichloropropane	9.11	77	4966	0.3101 ug/L	89
32) cis-1,2-Dichloroethene	9.17	96	2958	0.3128 ug/L	87
33) Chloroform	9.37	83	5564	0.3101 ug/L	95
34) 1-Bromopropane	9.52	122	210	0.1551 ug/L #	1
35) Bromochloromethane	9.60	130	1386	0.2858 ug/L	76
36) Tetrahydrofuran	9.62	42	1849	2.0617 ug/L #	60
38) 1,1,1-Trichloroethane	9.91	97	4978	0.2921 ug/L	95
39) Cyclohexane	9.93	56	3120	0.2644 ug/L #	85
40) 1,1-Dichloropropene	10.11	75	3779	0.2909 ug/L	97
42) Carbon Tetrachloride	10.24	117	4835	0.3194 ug/L #	74
45) 1,2-Dichloroethane	10.43	62	3295	0.2853 ug/L #	81
46) Benzene	10.46	78	11279	0.3333 ug/L	93
47) Trichloroethene	11.20	130	2410	0.2670 ug/L	97
48) Methylcyclohexane	11.31	83	3936	0.2871 ug/L	84
49) 1,2-Dichloropropane	11.42	63	2136	0.2836 ug/L	88
50) Bromodichloromethane	11.73	83	3767	0.2845 ug/L #	91
52) Dibromomethane	11.82	93	700	0.1570 ug/L #	59
53) 2-Chloroethyl Vinyl Ether	12.02	63	847	0.2616 ug/L #	47
55) cis-1,3-Dichloropropene	12.36	75	4763	0.3535 ug/L	84
56) Dimethyl Disulfide	12.63	79	1647	0.2290 ug/L	82
59) Toluene	12.78	91	11513	0.3243 ug/L	92
60) Ethyl Methacrylate	12.89	69	1631	0.2392 ug/L #	64

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:40:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
62)	trans-1,3-Dichloropropene	12.96	75	3626	0.3047 ug/L		82
63)	1,1,2-Trichloroethane	13.18	97	1409	0.2515 ug/L		98
65)	1,3-Dichloropropane	13.49	76	2584	0.2590 ug/L		93
66)	Tetrachloroethene	13.61	164	2678	0.3520 ug/L	#	75
67)	Dibromochloromethane	13.87	129	2126	0.2599 ug/L		79
68)	1,2-Dibromoethane	14.12	107	1895	0.3394 ug/L		91
69)	1-Chlorohexane	14.21	91	3835	0.3164 ug/L		99
70)	Chlorobenzene	14.62	112	7968	0.3328 ug/L		88
71)	1,1,1,2-Tetrachloroethane	14.67	131	2872	0.3096 ug/L		87
72)	Ethylbenzene	14.64	106	3844	0.2934 ug/L		81
73)	m-,p-Xylene	14.75	106	10447	0.6799 ug/L		96
74)	o-Xylene	15.31	106	4577	0.3047 ug/L		97
75)	Styrene	15.35	104	7545	0.3062 ug/L		95
76)	Bromoform	15.84	173	1301	0.2681 ug/L	#	51
77)	Isopropylbenzene	15.74	105	13119	0.3287 ug/L		90
79)	1,1,2,2-Tetrachloroethane	15.96	83	1714	0.2853 ug/L	#	85
83)	n-Propylbenzene	16.24	91	15676	0.3357 ug/L		92
84)	Bromobenzene	16.38	156	2859	0.2977 ug/L		90
85)	1,3,5-Trimethylbenzene	16.43	105	10873	0.3196 ug/L		99
86)	2-Chlorotoluene	16.52	91	11133	0.3415 ug/L		96
87)	4-Chlorotoluene	16.56	91	10305	0.3499 ug/L		97
88)	a-Methylstyrene	16.83	118	4090	0.2534 ug/L		86
89)	tert-Butylbenzene	16.90	134	1734	0.2606 ug/L		72
90)	1,2,4-Trimethylbenzene	16.95	105	10734	0.3069 ug/L		89
91)	sec-Butylbenzene	17.16	105	13749	0.3436 ug/L		97
92)	p-Isopropyltoluene	17.32	119	10847	0.3192 ug/L		95
93)	1,3-Dichlorobenzene	17.52	146	6023	0.3257 ug/L		99
94)	1,4-Dichlorobenzene	17.65	146	6152	0.3299 ug/L	#	60
95)	n-Butylbenzene	17.85	91	11161	0.3323 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	5711	0.3472 ug/L		92
98)	1,2,4-Trichlorobenzene	20.29	180	4203	0.3418 ug/L		91
99)	Hexachlorobutadiene	20.43	225	1894	0.3297 ug/L		84
100)	Naphthalene	20.65	128	6039	0.3306 ug/L		91
101)	1,2,3-Trichlorobenzene	20.96	180	3279	0.3161 ug/L		86

(#) = qualifier out of range (m) = manual integration

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2778	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.4537	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.2630	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	0.2592	0.0	100	0.03
6	T	Bromomethane	-1.0000	0.9911	0.0	100	0.00
7	T	Chloroethane	-1.0000	0.2113	0.0	100	0.00
8	T	Trichlorofluoromethane	-1.0000	0.1520	0.0	100	-0.02
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.90#
10	T	Isoprene	-1.0000	0.1987	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.13#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2087	0.0	100	0.00
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	-1.0000	0.2501	0.0	100	0.02
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.58#
16	T	Dimethyl Sulfide	-1.0000	0.2308	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.0000	0.0	0	-7.00#
19	T	Methylene Chloride	-1.0000	0.4028	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.3853	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.43#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2686	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	-1.0000	0.3170	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.3075	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.2259	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.3212	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.98#
31	T	2,2-Dichloropropane	-1.0000	0.3101	0.0	100	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.3128	0.0	100	0.00
33	C	Chloroform	0.3000	0.3101	-3.4	100	0.00
34		1-Bromopropane	-1.0000	0.1551	0.0	100	0.00
35	T	Bromochloromethane	-1.0000	0.2858	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	2.0617	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	-1.0000	0.2921	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.2644	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.2909	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	-1.0000	0.3194	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	-1.0000	0.2853	0.0	100	0.00
46	T	Benzene	-1.0000	0.3333	0.0	100	0.00
47	T	Trichloroethene	-1.0000	0.2670	0.0	100	-0.01
48	T	Methylcyclohexane	-1.0000	0.2871	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2836	0.0	100	0.00
50	T	Bromodichloromethane	-1.0000	0.2845	0.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	-1.0000	0.1570	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2616	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.05#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.3535	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2290	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0189	0.0	100	0.00
59	C	Toluene	-1.0000	0.3243	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2392	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3047	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.2515	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	-1.0000	0.2590	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.3520	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.2599	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.3394	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.3164	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.3328	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.3096	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.2934	0.0	100	-0.01
73	T	m-,p-Xylene	-1.0000	0.6799	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.3047	0.0	100	0.00
75	T	Styrene	-1.0000	0.3062	0.0	100	0.00
76	P	Bromoform	-1.0000	0.2681	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.3287	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2853	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0253	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.1103	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	-1.0000	0.3357	0.0	100	0.00
84	T	Bromobenzene	0.3000	0.2977	0.8	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.3196	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.3415	0.0	100	0.00
87	T	4-Chlorotoluene	-1.0000	0.3499	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2534	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.2606	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.3069	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3436	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.3192	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.3257	0.0	100	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.3299	-10.0	100	0.00
95	T	n-Butylbenzene	-1.0000	0.3323	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.3472	-15.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.3418	0.0	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.3297	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.3306	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.3161	-5.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412220.D 8260WT.M Sat May 14 18:03:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	801173	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	557498	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	293108	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
80) p-Bromofluorobenzene	16.08	95	343	0.0286 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	5478	0.3262 ug/L	79
3) Chloromethane	3.63	50	3930	0.2484 ug/L	85
4) Vinyl Chloride	3.84	62	3512	0.3288 ug/L	97
5) 1,3-Butadiene	3.90	54	2479	0.2375 ug/L #	75
6) Bromomethane	4.73	94	1343	0.9497 ug/L	85
7) Chloroethane	4.90	64	2219	0.3174 ug/L #	43
8) Trichlorofluoromethane	5.36	101	6974	0.3289 ug/L #	93
10) Isoprene	5.94	67	4288	0.3952 ug/L #	62
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	3168	0.3263 ug/L #	40
14) 1,1-Dichloroethene	6.47	61	5431	0.2882 ug/L	92
16) Dimethyl Sulfide	6.74	62	1708	0.2453 ug/L	64
19) Methylene Chloride	7.24	84	3785	0.4239 ug/L #	43
20) Carbon Disulfide	7.29	76	12437	0.4565 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	6580	0.3336 ug/L #	76
23) trans-1,2-Dichloroethene	7.71	61	4990	0.2928 ug/L	96
24) n-Hexane	7.79	57	3110	0.2011 ug/L	99
26) Vinyl Acetate	8.31	43	2753	0.1566 ug/L	100
27) 1,1-Dichloroethane	8.32	63	5655	0.2774 ug/L #	92
31) 2,2-Dichloropropane	9.10	77	6035	0.3360 ug/L	82
32) cis-1,2-Dichloroethene	9.16	96	3837	0.3762 ug/L	74
33) Chloroform	9.37	83	7267	0.3842 ug/L	100
34) 1-Bromopropane	9.50	122	234	0.1456 ug/L #	1
35) Bromochloromethane	9.60	130	1674	0.3137 ug/L	62
36) Tetrahydrofuran	9.62	42	447	0.2146 ug/L #	41
38) 1,1,1-Trichloroethane	9.91	97	6304	0.3305 ug/L	90
39) Cyclohexane	9.94	56	4658	0.2238 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	5172	0.3768 ug/L	80
42) Carbon Tetrachloride	10.25	117	5692	0.3172 ug/L	95
45) 1,2-Dichloroethane	10.43	62	4443	0.2796 ug/L #	63
46) Benzene	10.46	78	14456	0.4134 ug/L #	77
47) Trichloroethene	11.21	130	3659	0.3626 ug/L	98
48) Methylcyclohexane	11.29	83	5025	0.3562 ug/L	84
49) 1,2-Dichloropropane	11.42	63	3060	0.3007 ug/L	98
50) Bromodichloromethane	11.73	83	4734	0.3343 ug/L #	93
52) Dibromomethane	11.82	93	1805	0.3767 ug/L	84
55) cis-1,3-Dichloropropene	12.36	75	5008	0.3514 ug/L	90
56) Dimethyl Disulfide	12.63	79	1921	0.2573 ug/L	85
59) Toluene	12.78	91	14742	0.4416 ug/L	98
60) Ethyl Methacrylate	12.90	69	2062	0.3292 ug/L	66
62) trans-1,3-Dichloropropene	12.96	75	3693	0.3171 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M412221.D 8260WT.M Fri May 13 14:20:38 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
63)	1,1,2-Trichloroethane	13.18	97	2326	0.4391 ug/L		70
65)	1,3-Dichloropropane	13.49	76	3163	0.3219 ug/L		88
66)	Tetrachloroethene	13.61	164	3164	0.4185 ug/L		93
67)	Dibromochloromethane	13.87	129	3113	0.3727 ug/L		86
68)	1,2-Dibromoethane	14.12	107	2076	0.3760 ug/L		90
69)	1-Chlorohexane	14.21	91	4746	0.4174 ug/L		80
70)	Chlorobenzene	14.62	112	9180	0.3960 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.66	131	3501	0.3876 ug/L		95
72)	Ethylbenzene	14.65	106	5348	0.4066 ug/L		84
73)	m-,p-Xylene	14.75	106	13269	0.8757 ug/L		89
74)	o-Xylene	15.31	106	6019	0.3943 ug/L		97
75)	Styrene	15.35	104	9370	0.3849 ug/L		95
76)	Bromoform	15.83	173	1198	0.2500 ug/L	#	76
77)	Isopropylbenzene	15.73	105	16528	0.4270 ug/L		92
79)	1,1,2,2-Tetrachloroethane	15.96	83	1999	0.3419 ug/L	#	83
83)	n-Propylbenzene	16.25	91	19410	0.4297 ug/L		95
84)	Bromobenzene	16.37	156	3319	0.3524 ug/L		75
85)	1,3,5-Trimethylbenzene	16.42	105	13794	0.4127 ug/L		95
86)	2-Chlorotoluene	16.51	91	13678	0.4729 ug/L		90
87)	4-Chlorotoluene	16.56	91	12572	0.4219 ug/L		98
88)	a-Methylstyrene	16.84	118	5739	0.3485 ug/L		96
89)	tert-Butylbenzene	16.90	134	2254	0.3403 ug/L		55
90)	1,2,4-Trimethylbenzene	16.95	105	13859	0.4051 ug/L		90
91)	sec-Butylbenzene	17.17	105	17612	0.4382 ug/L		90
92)	p-Isopropyltoluene	17.32	119	13616	0.3968 ug/L		90
93)	1,3-Dichlorobenzene	17.52	146	6961	0.3724 ug/L		86
94)	1,4-Dichlorobenzene	17.64	146	7149	0.3832 ug/L	#	1
95)	n-Butylbenzene	17.85	91	15223	0.4664 ug/L		91
96)	1,2-Dichlorobenzene	18.14	146	6129	0.3742 ug/L		92
98)	1,2,4-Trichlorobenzene	20.28	180	5035	0.3969 ug/L		97
99)	Hexachlorobutadiene	20.44	225	2420	0.4122 ug/L		83
100)	Naphthalene	20.65	128	7474	0.3874 ug/L	#	84
101)	1,2,3-Trichlorobenzene	20.96	180	4378	0.4056 ug/L	#	78

(#) = qualifier out of range (m) = manual integration
8M412221.D 8260WT.M Fri May 13 14:20:39 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

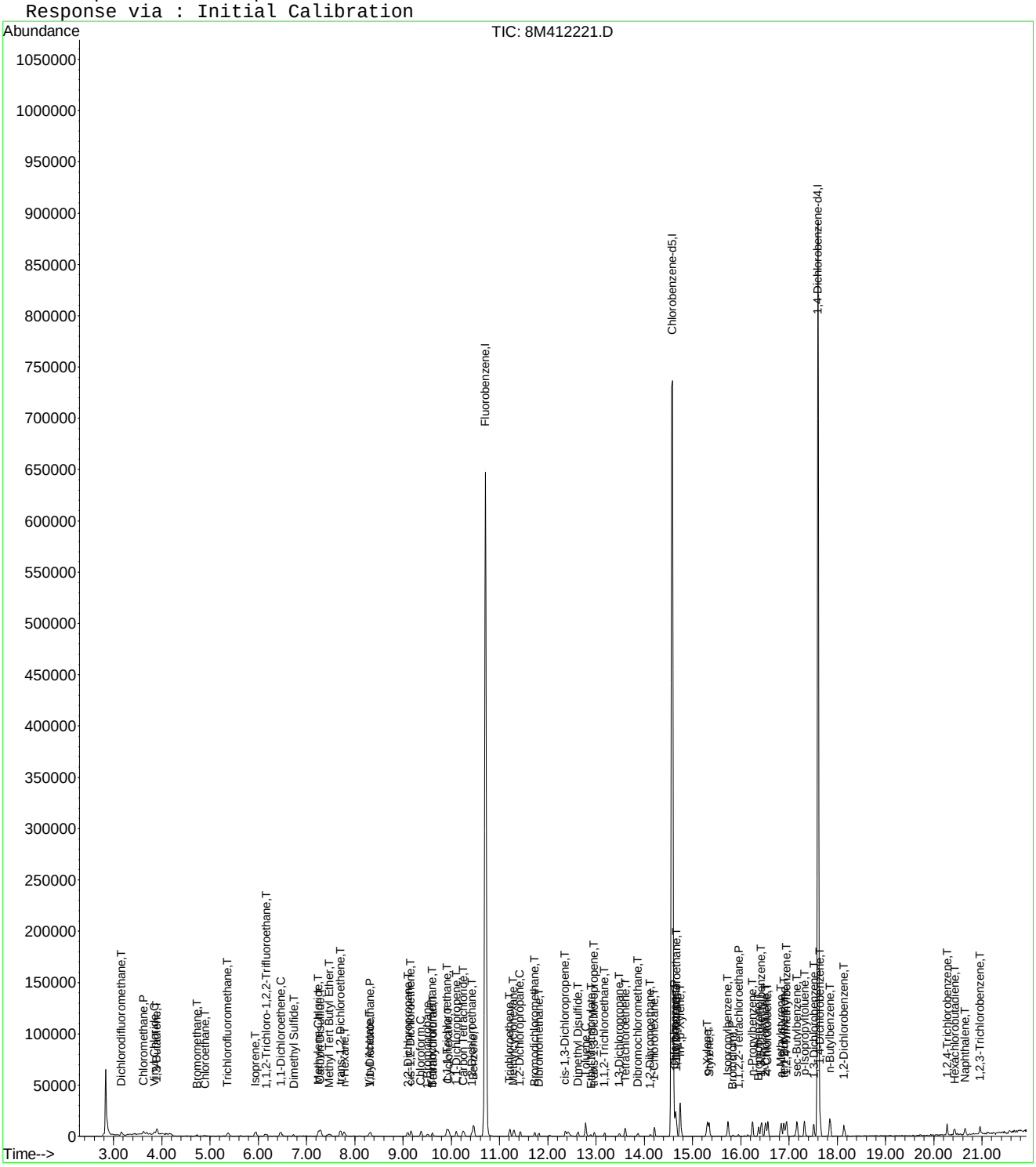

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	0.4000	0.4078	-2.0	100	0.00
3	P	Chloromethane	-1.0000	0.5012	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.3775	5.6	100	0.00
5	T	1,3-Butadiene	-1.0000	0.3178	0.0	100	0.02
6	T	Bromomethane	-1.0000	1.0253	0.0	100	0.00
7	T	Chloroethane	0.4000	0.4335	-8.4	100	0.00
8	T	Trichlorofluoromethane	0.4000	0.4029	-0.7	100	-0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.90#
10	T	Isoprene	0.4000	0.4079	-2.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.13#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3894	0.0	100	0.02
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	0.4000	0.4192	-4.8	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.58#
16	T	Dimethyl Sulfide	0.4000	0.3687	7.8	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.2179	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4591	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4587	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.43#
22	T	Methyl Tert Butyl Ether	-1.0000	0.3688	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.4193	-4.8	100	0.00
24	T	n-Hexane	-1.0000	0.3519	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.3241	0.0	100	0.02
27	P	1,1-Dichloroethane	0.4000	0.3826	4.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.98#
31	T	2,2-Dichloropropane	0.4000	0.3874	3.1	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.4172	-4.3	100	-0.01
33	C	Chloroform	0.4000	0.4164	-4.1	100	0.00
34		1-Bromopropane	-1.0000	0.1776	0.0	100	-0.01
35	T	Bromochloromethane	0.4000	0.3550	11.3	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.5125	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	0.4000	0.3803	4.9	100	0.00
39	T	Cyclohexane	-1.0000	0.4058	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4093	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	0.4000	0.3867	3.3	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	0.4000	0.3955	1.1	100	0.00
46	T	Benzene	0.4000	0.4393	-9.8	100	0.00
47	T	Trichloroethene	0.4000	0.4169	-4.2	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3768	0.0	100	-0.01
49	C	1,2-Dichloropropane	0.4000	0.4177	-4.4	100	0.00
50	T	Bromodichloromethane	0.4000	0.3676	8.1	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	0.4000	0.4162	-4.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1401	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.05#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3821	4.5	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2746	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0000	0.0	0	-12.68#
59	C	Toluene	0.4000	0.4259	-6.5	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3102	0.0	100	0.02
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3184	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.4259	-6.5	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	0.4000	0.3253	18.7	100	0.00
66	T	Tetrachloroethene	0.4000	0.4267	-6.7	100	0.00
67	T	Dibromochloromethane	0.4000	0.3904	2.4	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.3814	4.6	100	0.00
69	T	1-Chlorohexane	0.4000	0.4017	-0.4	100	0.00
70	P	Chlorobenzene	0.4000	0.3933	1.7	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3872	3.2	100	0.00
72	C	Ethylbenzene	0.4000	0.4188	-4.7	100	0.00
73	T	m-,p-Xylene	0.8000	0.8859	-10.7	100	0.00
74	T	o-Xylene	-1.0000	0.4110	0.0	100	0.00
75	T	Styrene	0.4000	0.3901	2.5	100	0.00
76	P	Bromoform	-1.0000	0.2533	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.4249	-6.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.3398	15.1	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0283	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.14#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	0.4000	0.4245	-6.1	100	0.00
84	T	Bromobenzene	0.4000	0.3529	11.8	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.4141	-3.5	100	0.00
86	T	2-Chlorotoluene	0.4000	0.4284	-7.1	100	0.00
87	T	4-Chlorotoluene	0.4000	0.4359	-9.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.3631	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3459	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	0.4000	0.4046	-1.2	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.4494	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4092	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.3844	3.9	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.3915	2.1	100	0.00
95	T	n-Butylbenzene	-1.0000	0.4628	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.3805	4.9	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	0.4000	0.4182	-4.5	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.4302	-7.5	100	0.00
100	T	Naphthalene	0.4000	0.4178	-4.5	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.4310	-7.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412221.D 8260WT.M Sat May 14 18:03:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	795577	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	547129	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	284579	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.65	111	3962	0.3966 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.60%#	
43) 1,2-Dichloroethane-d4	10.31	65	3835	0.3356 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	1.36%#	
58) Toluene-d8	12.68	98	14023	0.4957 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	2.00%#	
80) p-Bromofluorobenzene	16.08	95	6483	0.5565 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.24%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	12402	0.7438 ug/L	97
3) Chloromethane	3.62	50	8415	0.5357 ug/L #	75
4) Vinyl Chloride	3.84	62	9412	0.8873 ug/L	89
5) 1,3-Butadiene	3.90	54	6974	0.6729 ug/L	81
6) Bromomethane	4.73	94	4114	1.3123 ug/L	92
7) Chloroethane	4.90	64	4983	0.7178 ug/L #	80
8) Trichlorofluoromethane	5.38	101	17133	0.8136 ug/L #	96
9) Diethyl ether	5.90	59	20707	3.2140 ug/L	84
10) Isoprene	5.94	67	11176	1.0373 ug/L	76
11) Acrolein	6.14	56	246	0.4300 ug/L #	15
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	8135	0.8438 ug/L	96
13) Acetone	6.24	43	413	0.2115 ug/L #	48
14) 1,1-Dichloroethene	6.46	61	12947	0.6919 ug/L	91
15) Tert-Butyl Alcohol	6.59	59	3316	7.3747 ug/L #	55
16) Dimethyl Sulfide	6.72	62	4505	0.6515 ug/L	79
18) Methyl acetate	7.00	43	2119	0.3630 ug/L #	66
19) Methylene Chloride	7.24	84	8723	0.9837 ug/L #	43
20) Carbon Disulfide	7.29	76	28246	1.0441 ug/L	100
21) Acrylonitrile	7.43	53	2164	0.8620 ug/L	76
22) Methyl Tert Butyl Ether	7.47	73	16998	0.8678 ug/L	84
23) trans-1,2-Dichloroethene	7.70	61	12571	0.7427 ug/L	100
24) n-Hexane	7.78	57	9382	0.6109 ug/L	82
25) Diisopropyl ether	8.12	45	95400	2.1939 ug/L #	91
26) Vinyl Acetate	8.30	43	6750	0.3867 ug/L #	89
27) 1,1-Dichloroethane	8.32	63	14721	0.7271 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	97972	3.2102 ug/L	88
29) 2-Butanone	8.88	43	380	0.1215 ug/L #	57
30) Propionitrile	8.99	54	1593	2.0138 ug/L #	56
31) 2,2-Dichloropropane	9.09	77	14691	0.8236 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	9482	0.9362 ug/L	72
33) Chloroform	9.37	83	18494	0.9845 ug/L	94
34) 1-Bromopropane	9.50	122	1092	0.6844 ug/L	80
35) Bromochloromethane	9.61	130	5234	0.9877 ug/L #	55
36) Tetrahydrofuran	9.63	42	5415	2.6185 ug/L #	68
38) 1,1,1-Trichloroethane	9.91	97	17074	0.9016 ug/L	92
39) Cyclohexane	9.94	56	11865	0.5740 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	13172	0.9663 ug/L	87
41) Tert-Amyl-Methyl ether	10.21	73	90255	4.6173 ug/L #	88
42) Carbon Tetrachloride	10.25	117	14515	0.8146 ug/L	95
45) 1,2-Dichloroethane	10.42	62	10675	0.6766 ug/L	85

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	10.47	78	34504	0.9938 ug/L		84
47)	Trichloroethene	11.21	130	8752	0.8735 ug/L		93
48)	Methylcyclohexane	11.30	83	13513	0.9646 ug/L		79
49)	1,2-Dichloropropane	11.43	63	7057	0.6982 ug/L	#	67
50)	Bromodichloromethane	11.73	83	12147	0.8638 ug/L		96
52)	Dibromomethane	11.81	93	4130	0.8681 ug/L		95
53)	2-Chloroethyl Vinyl Ether	12.03	63	2694	0.6366 ug/L		86
54)	4-Methyl-2-Pentanone	12.06	58	848	0.3671 ug/L	#	41
55)	cis-1,3-Dichloropropene	12.36	75	12521	0.8847 ug/L		97
56)	Dimethyl Disulfide	12.63	79	5799	0.7821 ug/L		96
59)	Toluene	12.79	91	37114	1.1328 ug/L		95
60)	Ethyl Methacrylate	12.88	69	5490	0.8930 ug/L		69
62)	trans-1,3-Dichloropropene	12.96	75	10328	0.9035 ug/L		92
63)	1,1,2-Trichloroethane	13.18	97	5274	1.0144 ug/L		93
64)	2-Hexanone	13.10	58	397	0.2127 ug/L	#	1
65)	1,3-Dichloropropane	13.49	76	9673	1.0032 ug/L		73
66)	Tetrachloroethene	13.61	164	7373	0.9937 ug/L		95
67)	Dibromochloromethane	13.87	129	7358	0.8977 ug/L		95
68)	1,2-Dibromoethane	14.13	107	5123	0.9454 ug/L		95
69)	1-Chlorohexane	14.21	91	12790	1.1461 ug/L		79
70)	Chlorobenzene	14.62	112	25662	1.1281 ug/L		89
71)	1,1,1,2-Tetrachloroethane	14.66	131	8722	0.9838 ug/L		94
72)	Ethylbenzene	14.65	106	13009	1.0078 ug/L		87
73)	m-,p-Xylene	14.75	106	30465	2.0486 ug/L		84
74)	o-Xylene	15.31	106	15133	1.0101 ug/L		84
75)	Styrene	15.35	104	23191	0.9707 ug/L		91
76)	Bromoform	15.84	173	3875	0.8240 ug/L		96
77)	Isopropylbenzene	15.74	105	41382	1.0895 ug/L		95
79)	1,1,2,2-Tetrachloroethane	15.95	83	5604	0.9873 ug/L	#	93
81)	1,2,3-Trichloropropane	16.15	110	1355	0.7428 ug/L	#	1
82)	trans-1,4-Dichloro-2-Buten	16.19	53	962	0.3479 ug/L	#	1
83)	n-Propylbenzene	16.25	91	48249	1.1002 ug/L		99
84)	Bromobenzene	16.37	156	9598	1.0497 ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	33355	1.0278 ug/L		96
86)	2-Chlorotoluene	16.51	91	33408	1.1895 ug/L		94
87)	4-Chlorotoluene	16.56	91	29548	1.0213 ug/L		95
88)	a-Methylstyrene	16.84	118	14414	0.9014 ug/L		91
89)	tert-Butylbenzene	16.89	134	6686	1.0398 ug/L		86
90)	1,2,4-Trimethylbenzene	16.95	105	36066	1.0857 ug/L		96
91)	sec-Butylbenzene	17.16	105	42128	1.0796 ug/L		96
92)	p-Isopropyltoluene	17.32	119	35424	1.0633 ug/L		94
93)	1,3-Dichlorobenzene	17.52	146	18409	1.0144 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	19031	1.0506 ug/L	#	62
95)	n-Butylbenzene	17.85	91	35772	1.1288 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	16104	1.0126 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.14	75	1262	1.0152 ug/L	#	53
98)	1,2,4-Trichlorobenzene	20.28	180	11494	0.9331 ug/L		98
99)	Hexachlorobutadiene	20.43	225	5421	0.9510 ug/L		98
100)	Naphthalene	20.65	128	16581	0.8853 ug/L		100
101)	1,2,3-Trichlorobenzene	20.96	180	10306	0.9835 ug/L		94

(#) = qualifier out of range (m) = manual integration
8M412222.D 8260WT.M Fri May 13 14:49:48 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

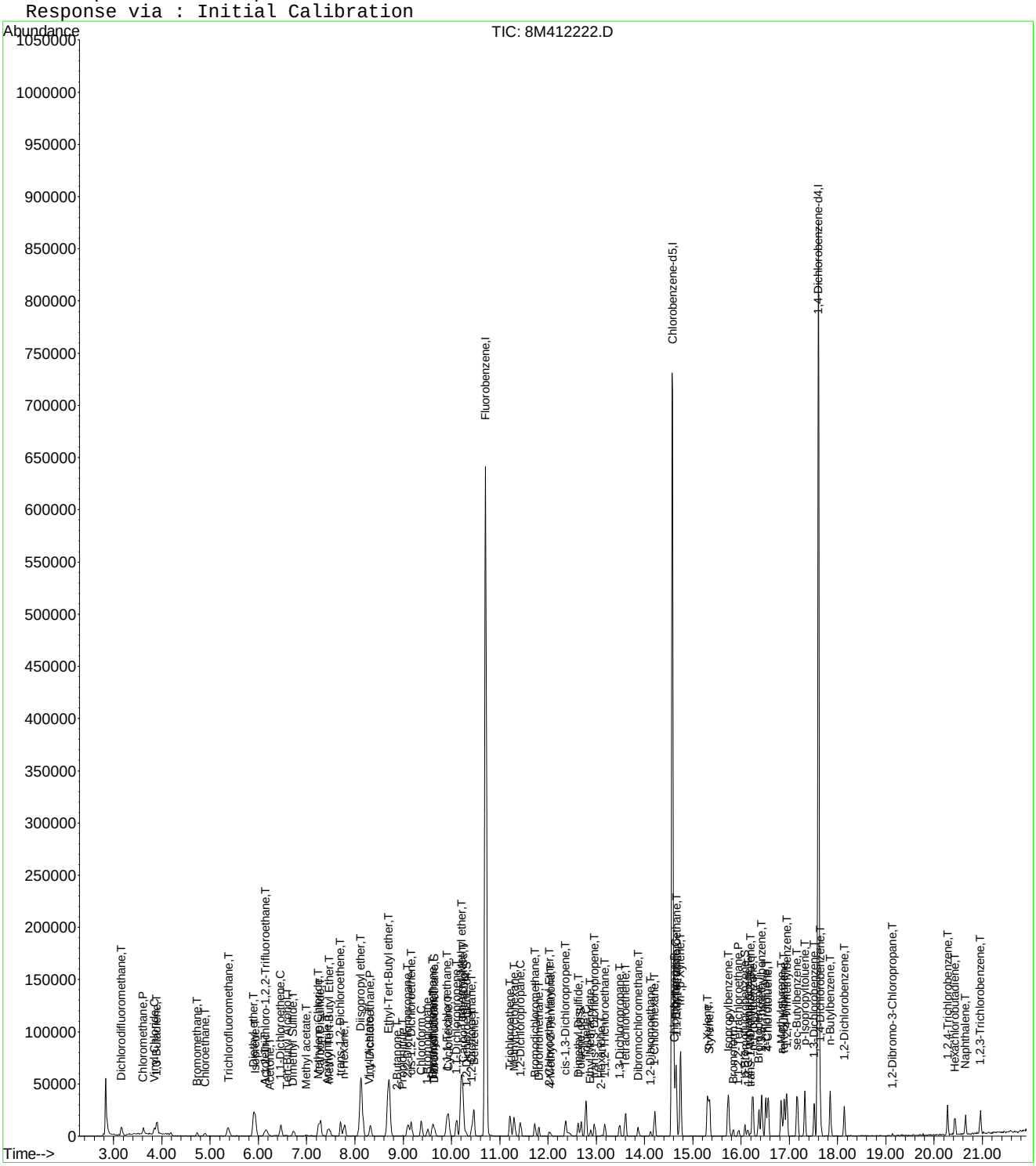

8M412222.D 8260WT.M Fri May 13 14:49:48 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:05:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9298	7.0	100	0.00
3	P	Chloromethane	1.0000	1.0808	-8.1	100	0.00
4	C	Vinyl Chloride	1.0000	1.0189	-1.9	100	0.00
5	T	1,3-Butadiene	-1.0000	0.9002	0.0	100	0.02
6	T	Bromomethane	1.0000	1.2082	-20.8	100	0.00
7	T	Chloroethane	1.0000	0.9803	2.0	100	0.00
8	T	Trichlorofluoromethane	1.0000	0.9968	0.3	100	0.00
9	T	Diethyl ether	5.0000	5.0462	-0.9	100	0.00
10	T	Isoprene	1.0000	1.0707	-7.1	100	0.00
11	T	Acrolein	-1.0000	0.6696	0.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0069	-0.7	100	0.00
13	T	Acetone	-1.0000	0.4614	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	1.0064	-0.6	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	11.5604	0.0	0	0.02
16	T	Dimethyl Sulfide	1.0000	0.9794	2.1	100	-0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.8758	0.0	100	0.00
19	T	Methylene Chloride	1.0000	1.0655	-6.5	100	0.00
20	T	Carbon Disulfide	1.0000	1.0492	-4.9	100	0.00
21	T	Acrylonitrile	2.5000	1.8633	25.5#	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9593	4.1	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	1.0636	-6.4	100	0.00
24	T	n-Hexane	-1.0000	1.0690	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	5.1784	-3.6	100	0.00
26	T	Vinyl Acetate	-1.0000	0.8002	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0029	-0.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.9635	0.7	100	0.00
29	T	2-Butanone	-1.0000	0.2889	0.0	100	0.00
30	T	Propionitrile	5.0000	4.1566	16.9	100	0.00
31	T	2,2-Dichloropropane	1.0000	0.9498	5.0	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	1.0383	-3.8	100	0.00
33	C	Chloroform	1.0000	1.0671	-6.7	100	0.00
34		1-Bromopropane	1.0000	0.8348	16.5	100	-0.01
35	T	Bromochloromethane	1.0000	1.1177	-11.8	100	0.00
36	T	Tetrahydrofuran	5.0000	6.2516	-25.0#	100	0.00
37	S	Dibromofluoromethane	0.5000	0.4635	7.3	100	-0.01
38	T	1,1,1-Trichloroethane	1.0000	1.0372	-3.7	100	0.00
39	T	Cyclohexane	1.0000	1.0411	-4.1	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0498	-5.0	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	5.0344	-0.7	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.9930	0.7	100	0.00
43	S	1,2-Dichloroethane-d4	0.5000	0.4184	16.3	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	1.0000	0.9570	4.3	100	0.00
46	T	Benzene	1.0000	1.0558	-5.6	100	0.00
47	T	Trichloroethene	1.0000	1.0041	-0.4	100	0.00
48	T	Methylcyclohexane	-1.0000	1.0205	0.0	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.9700	3.0	100	0.00
50	T	Bromodichloromethane	1.0000	0.9500	5.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	1.0000	0.9590	4.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.8616	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.6639	0.0	100	0.00

(#) = Out of Range
8M412222.D 8260WT.M Sat May 14 18:05:49 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:05:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9621	3.8	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.8348	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	0.5000	0.4897	2.1	100	0.00
59	C	Toluene	1.0000	1.0927	-9.3	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.8416	15.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	1.0000	0.9073	9.3	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.9840	1.6	100	0.00
64	T	2-Hexanone	-1.0000	0.3525	0.0	100	-0.01
65	T	1,3-Dichloropropane	1.0000	1.0137	-1.4	100	0.00
66	T	Tetrachloroethene	1.0000	1.0132	-1.3	100	0.00
67	T	Dibromochloromethane	1.0000	0.9402	6.0	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.9590	4.1	100	0.00
69	T	1-Chlorohexane	1.0000	1.1031	-10.3	100	0.00
70	P	Chlorobenzene	1.0000	1.1204	-12.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.9829	1.7	100	0.00
72	C	Ethylbenzene	1.0000	1.0381	-3.8	100	0.00
73	T	m-,p-Xylene	2.0000	2.0726	-3.6	100	0.00
74	T	o-Xylene	1.0000	1.0530	-5.3	100	0.00
75	T	Styrene	1.0000	0.9839	1.6	100	0.00
76	P	Bromoform	1.0000	0.8348	16.5	100	0.00
77	T	Isopropylbenzene	1.0000	1.0840	-8.4	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	0.9810	1.9	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5502	0.0	100	0.00
81	T	1,2,3-Trichloropropane	1.0000	0.7703	23.0	100	0.02
82	T	trans-1,4-Dichloro-2-Butene	1.0000	1.1443	-14.4	100	0.00
83	T	n-Propylbenzene	1.0000	1.0868	-8.7	100	0.00
84	T	Bromobenzene	1.0000	1.0510	-5.1	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	1.0314	-3.1	100	0.00
86	T	2-Chlorotoluene	1.0000	1.0778	-7.8	100	0.00
87	T	4-Chlorotoluene	1.0000	1.0553	-5.5	100	0.00
88	T	a-Methylstyrene	-1.0000	0.9394	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	1.0567	-5.7	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	1.0845	-8.5	100	0.00
91	T	sec-Butylbenzene	1.0000	1.1073	-10.7	100	0.00
92	T	p-Isopropyltoluene	1.0000	1.0966	-9.7	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0469	-4.7	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	1.0735	-7.3	100	0.00
95	T	n-Butylbenzene	1.0000	1.1201	-12.0	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0297	-3.0	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.1006	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	1.0000	0.9832	1.7	100	0.00
99	T	Hexachlorobutadiene	1.0000	0.9925	0.7	100	0.00
100	T	Naphthalene	1.0000	0.9547	4.5	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	1.0450	-4.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	782460	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.57	117	543252	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	286450	25.00	ug/L	0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	8161	0.8307	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.32%#		
43) 1,2-Dichloroethane-d4	10.30	65	9681	0.8613	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.44%#		
58) Toluene-d8	12.68	98	28135	1.0016	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.00%#		
80) p-Bromofluorobenzene	16.08	95	12079	1.0302	ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.12%#		

Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.16	85	24870	1.5166	ug/L	98
3) Chloromethane	3.62	50	16106	1.0425	ug/L	93
4) Vinyl Chloride	3.85	62	18562	1.7792	ug/L	94
5) 1,3-Butadiene	3.90	54	13617	1.3360	ug/L	92
6) Bromomethane	4.73	94	8329	1.8804	ug/L	94
7) Chloroethane	4.90	64	9562	1.4006	ug/L	86
8) Trichlorofluoromethane	5.39	101	34970	1.6885	ug/L	97
9) Diethyl ether	5.90	59	107986	17.0420	ug/L	79
10) Isoprene	5.93	67	20936	1.9757	ug/L	73
11) Acrolein	6.14	56	4864	8.6444	ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	16832	1.7751	ug/L	99
13) Acetone	6.23	43	1519	0.7908	ug/L #	48
14) 1,1-Dichloroethene	6.47	61	25394	1.3798	ug/L	89
15) Tert-Butyl Alcohol	6.58	59	14891	33.6725	ug/L	85
16) Dimethyl Sulfide	6.73	62	9489	1.3953	ug/L	79
17) Iodomethane	6.98	142	1211	1.3472	ug/L #	60
18) Methyl acetate	7.01	43	5064	0.8821	ug/L #	79
19) Methylene Chloride	7.25	84	16579	1.9010	ug/L	52
20) Carbon Disulfide	7.29	76	57693	2.1683	ug/L	98
21) Acrylonitrile	7.43	53	13848	5.6089	ug/L	93
22) Methyl Tert Butyl Ether	7.47	73	33991	1.7644	ug/L	84
23) trans-1,2-Dichloroethene	7.70	61	22786	1.3688	ug/L	88
24) n-Hexane	7.79	57	18282	1.2105	ug/L	84
25) Diisopropyl ether	8.12	45	475271	11.1128	ug/L #	92
26) Vinyl Acetate	8.29	43	15998	0.9318	ug/L	93
27) 1,1-Dichloroethane	8.32	63	30419	1.5277	ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	505010	16.8250	ug/L	89
29) 2-Butanone	8.90	43	2250	0.7313	ug/L #	57
30) Propionitrile	8.99	54	9373	12.0479	ug/L	86
31) 2,2-Dichloropropane	9.10	77	32521	1.8538	ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	18238	1.8309	ug/L	91
33) Chloroform	9.37	83	33543	1.8156	ug/L	99
34) 1-Bromopropane	9.52	122	2513	1.6014	ug/L	88
35) Bromochloromethane	9.60	130	9189	1.7632	ug/L	67
36) Tetrahydrofuran	9.63	42	22074	10.8529	ug/L #	66
38) 1,1,1-Trichloroethane	9.90	97	32268	1.7324	ug/L	96
39) Cyclohexane	9.93	56	23097	1.1362	ug/L #	65
40) 1,1-Dichloropropene	10.10	75	24988	1.8639	ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	459535	23.9029	ug/L	87
42) Carbon Tetrachloride	10.24	117	28935	1.6512	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412223.D 8260WT.M Fri May 13 15:18:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.42	62	22142	1.4270 ug/L #	83
46)	Benzene	10.46	78	67028	1.9629 ug/L	83
47)	Trichloroethene	11.21	130	17287	1.7543 ug/L	96
48)	Methylcyclohexane	11.30	83	26050	1.8907 ug/L	84
49)	1,2-Dichloropropane	11.42	63	14582	1.4670 ug/L	77
50)	Bromodichloromethane	11.73	83	25794	1.8651 ug/L	93
51)	1,4-Dioxane	11.73	88	1282	32.3515 ug/L	74
52)	Dibromomethane	11.81	93	8575	1.8325 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.02	63	6234	1.4979 ug/L	100
54)	4-Methyl-2-Pentanone	12.06	58	2139	0.9416 ug/L	84
55)	cis-1,3-Dichloropropene	12.37	75	24153	1.7353 ug/L	98
56)	Dimethyl Disulfide	12.62	79	12288	1.6851 ug/L	99
59)	Toluene	12.79	91	72944	2.2423 ug/L	95
60)	Ethyl Methacrylate	12.88	69	12716	2.0832 ug/L	71
62)	trans-1,3-Dichloropropene	12.96	75	22163	1.9527 ug/L	100
63)	1,1,2-Trichloroethane	13.18	97	10537	2.0412 ug/L	99
64)	2-Hexanone	13.13	58	2200	1.1873 ug/L #	65
65)	1,3-Dichloropropane	13.49	76	20212	2.1112 ug/L	72
66)	Tetrachloroethene	13.60	164	14595	1.9811 ug/L	90
67)	Dibromochloromethane	13.87	129	14698	1.8061 ug/L	98
68)	1,2-Dibromoethane	14.12	107	10152	1.8869 ug/L	95
69)	1-Chlorohexane	14.21	91	21960	1.9818 ug/L	89
70)	Chlorobenzene	14.62	112	47376	2.0974 ug/L	81
71)	1,1,1,2-Tetrachloroethane	14.66	131	17526	1.9910 ug/L	97
72)	Ethylbenzene	14.66	106	25628	1.9996 ug/L	92
73)	m-,p-Xylene	14.74	106	60087	4.0693 ug/L	84
74)	o-Xylene	15.31	106	28289	1.9017 ug/L	79
75)	Styrene	15.35	104	47644	2.0086 ug/L	92
76)	Bromoform	15.84	173	9145	1.9585 ug/L	95
77)	Isopropylbenzene	15.73	105	81301	2.1557 ug/L	97
79)	1,1,2,2-Tetrachloroethane	15.95	83	11538	2.0194 ug/L	95
81)	1,2,3-Trichloropropane	16.13	110	3630	1.9770 ug/L	94
82)	trans-1,4-Dichloro-2-Buten	16.19	53	2699	0.9698 ug/L #	36
83)	n-Propylbenzene	16.24	91	97233	2.2026 ug/L	96
84)	Bromobenzene	16.37	156	19174	2.0834 ug/L	92
85)	1,3,5-Trimethylbenzene	16.42	105	67395	2.0631 ug/L	97
86)	2-Chlorotoluene	16.51	91	67110	2.3739 ug/L	94
87)	4-Chlorotoluene	16.56	91	59154	2.0313 ug/L	92
88)	a-Methylstyrene	16.84	118	29415	1.8275 ug/L	86
89)	tert-Butylbenzene	16.89	134	12716	1.9647 ug/L	67
90)	1,2,4-Trimethylbenzene	16.95	105	71669	2.1435 ug/L	94
91)	sec-Butylbenzene	17.17	105	81038	2.0632 ug/L	98
92)	p-Isopropyltoluene	17.32	119	70170	2.0924 ug/L	92
93)	1,3-Dichlorobenzene	17.52	146	37289	2.0413 ug/L	93
94)	1,4-Dichlorobenzene	17.64	146	36528	2.0034 ug/L #	73
95)	n-Butylbenzene	17.85	91	67823	2.1262 ug/L	96
96)	1,2-Dichlorobenzene	18.14	146	32322	2.0190 ug/L	92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	1955	1.5624 ug/L	94
98)	1,2,4-Trichlorobenzene	20.28	180	23558	1.9000 ug/L	98
99)	Hexachlorobutadiene	20.43	225	11066	1.9286 ug/L	99
100)	Naphthalene	20.65	128	36066	1.9130 ug/L	99
101)	1,2,3-Trichlorobenzene	20.96	180	19765	1.8738 ug/L	95

(#) = qualifier out of range (m) = manual integration
8M412223.D 8260WT.M Fri May 13 15:18:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

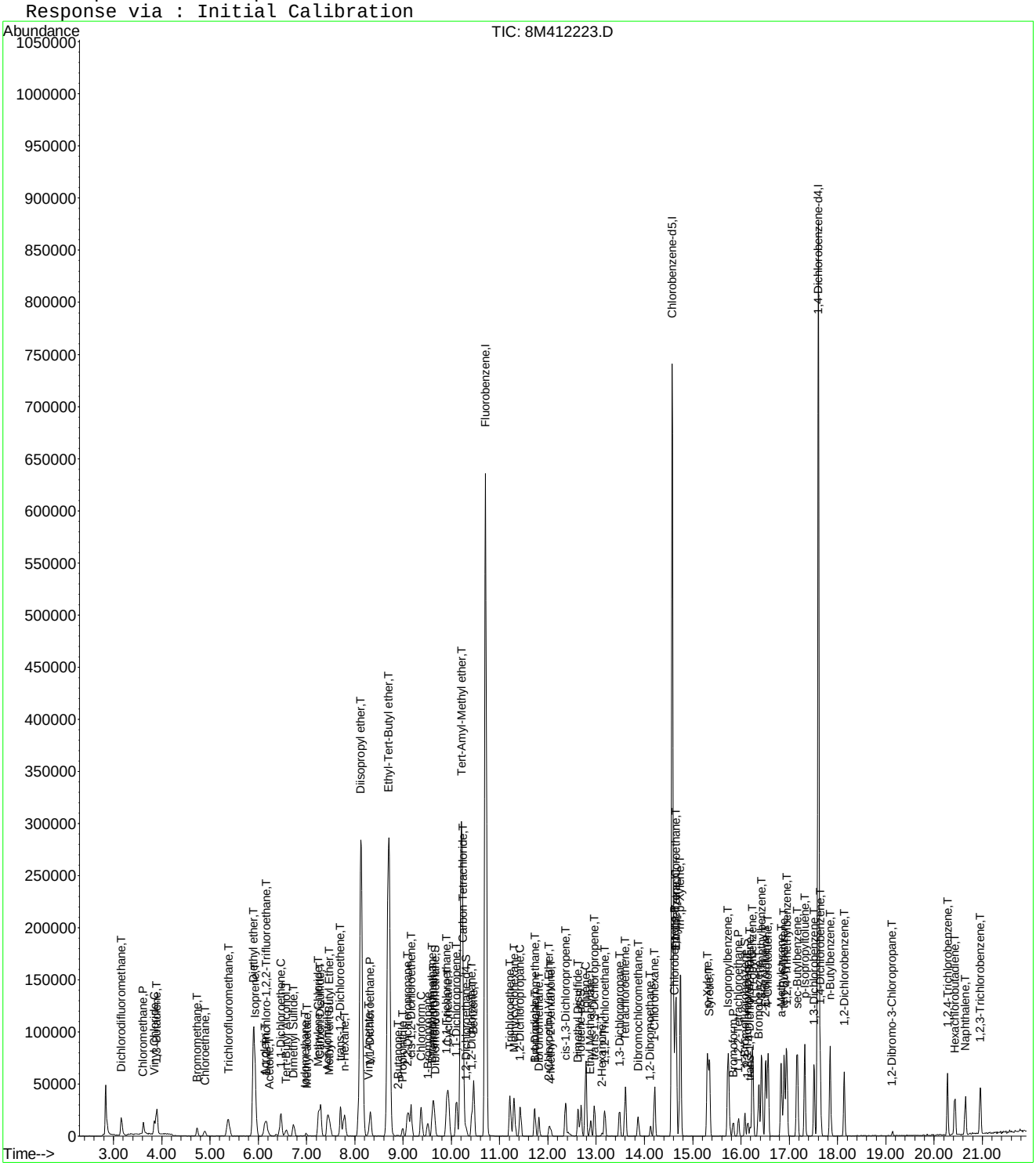

8M412223.D 8260WT.M Fri May 13 15:18:37 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.8958	5.2	100	0.00
3	P	Chloromethane	2.0000	2.1033	-5.2	100	0.00
4	C	Vinyl Chloride	2.0000	2.0431	-2.2	100	0.00
5	T	1,3-Butadiene	2.0000	1.7872	10.6	100	0.02
6	T	Bromomethane	2.0000	2.0126	-0.6	100	0.00
7	T	Chloroethane	2.0000	1.9127	4.4	100	0.00
8	T	Trichlorofluoromethane	2.0000	2.0686	-3.4	100	0.00
9	T	Diethyl ether	25.0000	26.7567	-7.0	100	0.00
10	T	Isoprene	2.0000	2.0394	-2.0	100	0.00
11	T	Acrolein	12.5000	13.4606	-7.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	2.1182	-5.9	100	0.02
13	T	Acetone	-1.0000	1.7255	0.0	100	-0.01
14	C	1,1-Dichloroethene	2.0000	2.0070	-0.4	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	52.7840	-5.6	100	0.00
16	T	Dimethyl Sulfide	2.0000	2.0975	-4.9	100	0.00
17	T	Iodomethane	2.0000	3.0680	-53.4#	100	0.00
18	T	Methyl acetate	-1.0000	2.1281	0.0	100	0.00
19	T	Methylene Chloride	2.0000	2.0590	-3.0	100	0.00
20	T	Carbon Disulfide	2.0000	2.1789	-8.9	100	0.00
21	T	Acrylonitrile	12.5000	12.1237	3.0	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.9505	2.5	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.9603	2.0	100	0.00
24	T	n-Hexane	-1.0000	2.1181	0.0	100	0.00
25	T	Diisopropyl ether	25.0000	26.2305	-4.9	100	0.00
26	T	Vinyl Acetate	2.0000	1.9284	3.6	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.1072	-5.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	26.0139	-4.1	100	0.00
29	T	2-Butanone	-1.0000	1.7396	0.0	100	0.02
30	T	Propionitrile	25.0000	24.8668	0.5	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1378	-6.9	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0306	-1.5	100	0.00
33	C	Chloroform	2.0000	1.9679	1.6	100	0.00
34		1-Bromopropane	2.0000	1.9533	2.3	100	0.00
35	T	Bromochloromethane	2.0000	1.9951	0.2	100	0.00
36	T	Tetrahydrofuran	25.0000	25.9117	-3.6	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9708	2.9	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.9930	0.3	100	0.00
39	T	Cyclohexane	2.0000	2.0605	-3.0	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0248	-1.2	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	26.0627	-4.3	100	0.00
42	T	Carbon Tetrachloride	2.0000	2.0126	-0.6	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0740	-7.4	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	2.0000	2.0183	-0.9	100	0.00
46	T	Benzene	2.0000	2.0854	-4.3	100	0.00
47	T	Trichloroethene	2.0000	2.0166	-0.8	100	0.00
48	T	Methylcyclohexane	-1.0000	2.0003	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0380	-1.9	100	0.00
50	T	Bromodichloromethane	2.0000	2.0511	-2.6	100	0.00
51	T	1,4-Dioxane	-1.0000	35.6688	0.0	100	0.02
52	T	Dibromomethane	2.0000	2.0246	-1.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	2.0271	-1.4	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.7027	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.8869	5.7	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.7986	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	0.9896	1.0	100	0.00
59	C	Toluene	2.0000	2.1628	-8.1	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.9633	1.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	2.0000	1.9609	2.0	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.9800	1.0	100	0.00
64	T	2-Hexanone	-1.0000	1.9672	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.1332	-6.7	100	0.00
66	T	Tetrachloroethene	2.0000	2.0198	-1.0	100	0.00
67	T	Dibromochloromethane	2.0000	1.8915	5.4	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.9141	4.3	100	0.00
69	T	1-Chlorohexane	2.0000	1.9075	4.6	100	0.00
70	P	Chlorobenzene	2.0000	2.0831	-4.2	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.9892	0.5	100	0.00
72	C	Ethylbenzene	2.0000	2.0596	-3.0	100	0.00
73	T	m-,p-Xylene	4.0000	4.1170	-2.9	100	0.00
74	T	o-Xylene	2.0000	1.9825	0.9	100	0.00
75	T	Styrene	2.0000	2.0358	-1.8	100	0.00
76	P	Bromoform	2.0000	1.9841	0.8	100	0.00
77	T	Isopropylbenzene	2.0000	2.1448	-7.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	2.0066	-0.3	100	0.00
80	S	p-Bromofluorobenzene	1.0000	1.0184	-1.8	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	2.0501	-2.5	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	2.0915	-4.6	100	0.00
83	T	n-Propylbenzene	2.0000	2.1757	-8.8	100	0.00
84	T	Bromobenzene	2.0000	2.0859	-4.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.0703	-3.5	100	0.00
86	T	2-Chlorotoluene	2.0000	2.1509	-7.5	100	0.00
87	T	4-Chlorotoluene	2.0000	2.0989	-4.9	100	0.00
88	T	a-Methylstyrene	-1.0000	1.9045	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	1.9967	0.2	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.1411	-7.1	100	0.00
91	T	sec-Butylbenzene	2.0000	2.1161	-5.8	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.1579	-7.9	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.1067	-5.3	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.0470	-2.4	100	0.00
95	T	n-Butylbenzene	2.0000	2.1098	-5.5	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0532	-2.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.6938	15.3	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	2.0021	-0.1	100	0.00
99	T	Hexachlorobutadiene	2.0000	2.0128	-0.6	100	0.00
100	T	Naphthalene	2.0000	2.0630	-3.2	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9910	0.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	768397	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.58	117	534372	25.00	ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	274234	25.00	ug/L	0.01

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	19775	2.0496	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	8.20%#		
43) 1,2-Dichloroethane-d4	10.30	65	21200	1.9207	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	7.68%#		
58) Toluene-d8	12.68	98	65647	2.3758	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	9.52%#		
80) p-Bromofluorobenzene	16.08	95	26759	2.3838	ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	9.52%#		

Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.16	85	55961	3.4750	ug/L	99
3) Chloromethane	3.62	50	34194	2.2538	ug/L	100
4) Vinyl Chloride	3.84	62	42506	4.1488	ug/L	99
5) 1,3-Butadiene	3.89	54	32006	3.1976	ug/L	93
6) Bromomethane	4.72	94	19582	3.4204	ug/L	94
7) Chloroethane	4.90	64	22000	3.2814	ug/L	84
8) Trichlorofluoromethane	5.37	101	77715	3.8212	ug/L	96
9) Diethyl ether	5.90	59	188516	30.2955	ug/L	79
10) Isoprene	5.94	67	44975	4.3218	ug/L	78
11) Acrolein	6.15	56	7712	13.9568	ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	36867	3.9591	ug/L	99
13) Acetone	6.24	43	3578	1.8967	ug/L	85
14) 1,1-Dichloroethene	6.47	61	59405	3.2870	ug/L	95
15) Tert-Butyl Alcohol	6.58	59	27833	64.0897	ug/L #	82
16) Dimethyl Sulfide	6.73	62	21102	3.1597	ug/L	77
17) Iodomethane	6.99	142	3667	1.8964	ug/L	95
18) Methyl acetate	7.00	43	11500	2.0398	ug/L #	86
19) Methylene Chloride	7.24	84	37533	4.3823	ug/L	52
20) Carbon Disulfide	7.29	76	123060	4.7097	ug/L	100
21) Acrylonitrile	7.43	53	25653	10.5804	ug/L	99
22) Methyl Tert Butyl Ether	7.47	73	80005	4.2289	ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	54124	3.3108	ug/L	94
24) n-Hexane	7.78	57	40758	2.7480	ug/L	82
25) Diisopropyl ether	8.12	45	841400	20.0337	ug/L #	91
26) Vinyl Acetate	8.30	43	37284	2.2113	ug/L #	90
27) 1,1-Dichloroethane	8.32	63	66711	3.4116	ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	907423	30.7852	ug/L	89
29) 2-Butanone	8.89	43	5359	1.7738	ug/L #	82
30) Propionitrile	8.99	54	17933	23.4726	ug/L	100
31) 2,2-Dichloropropane	9.10	77	73150	4.2462	ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	41036	4.1950	ug/L	89
33) Chloroform	9.37	83	78227	4.3116	ug/L	99
34) 1-Bromopropane	9.52	122	6162	3.9986	ug/L	99
35) Bromochloromethane	9.60	130	20988	4.1009	ug/L #	62
36) Tetrahydrofuran	9.62	42	38098	19.0742	ug/L #	62
38) 1,1,1-Trichloroethane	9.91	97	76152	4.1633	ug/L	97
39) Cyclohexane	9.94	56	51439	2.5767	ug/L #	66
40) 1,1-Dichloropropene	10.11	75	56645	4.3027	ug/L	93
41) Tert-Amyl-Methyl ether	10.21	73	821180	43.4958	ug/L	87
42) Carbon Tetrachloride	10.25	117	67831	3.9416	ug/L	96

(#) = qualifier out of range (m) = manual integration
8M412224.D 8260WT.M Fri May 13 15:47:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	51708	3.3934 ug/L		85
46)	Benzene	10.46	78	150204	4.4792 ug/L		86
47)	Trichloroethene	11.21	130	38500	3.9784 ug/L		94
48)	Methylcyclohexane	11.30	83	60897	4.5008 ug/L		81
49)	1,2-Dichloropropane	11.43	63	31773	3.2549 ug/L		77
50)	Bromodichloromethane	11.73	83	59127	4.3535 ug/L		94
51)	1,4-Dioxane	11.71	88	2719	69.8702 ug/L	#	62
52)	Dibromomethane	11.81	93	19711	4.2894 ug/L		96
53)	2-Chloroethyl Vinyl Ether	12.03	63	12946	3.1676 ug/L		98
54)	4-Methyl-2-Pentanone	12.05	58	5129	2.2991 ug/L	#	78
55)	cis-1,3-Dichloropropene	12.36	75	61169	4.4752 ug/L		94
56)	Dimethyl Disulfide	12.62	79	27966	3.9053 ug/L		98
59)	Toluene	12.78	91	161007	5.0316 ug/L		97
60)	Ethyl Methacrylate	12.88	69	28595	4.7624 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	49791	4.4599 ug/L		97
63)	1,1,2-Trichloroethane	13.18	97	23678	4.6631 ug/L		99
64)	2-Hexanone	13.11	58	4499	2.4685 ug/L	#	97
65)	1,3-Dichloropropane	13.49	76	44838	4.7614 ug/L		73
66)	Tetrachloroethene	13.60	164	32715	4.5144 ug/L		97
67)	Dibromochloromethane	13.87	129	35009	4.3734 ug/L		98
68)	1,2-Dibromoethane	14.13	107	24247	4.5815 ug/L		99
69)	1-Chlorohexane	14.21	91	53599	4.9176 ug/L		84
70)	Chlorobenzene	14.62	112	107618	4.8437 ug/L		95
71)	1,1,1,2-Tetrachloroethane	14.65	131	38120	4.4025 ug/L		96
72)	Ethylbenzene	14.65	106	56905	4.5138 ug/L		91
73)	m-,p-Xylene	14.75	106	137390	9.4592 ug/L		86
74)	o-Xylene	15.31	106	65650	4.4866 ug/L		85
75)	Styrene	15.35	104	111433	4.7758 ug/L		91
76)	Bromoform	15.84	173	19346	4.2121 ug/L		97
77)	Isopropylbenzene	15.73	105	182523	4.9200 ug/L		96
79)	1,1,2,2-Tetrachloroethane	15.95	83	26655	4.8730 ug/L		99
81)	1,2,3-Trichloropropane	16.13	110	8840	5.0289 ug/L		81
82)	trans-1,4-Dichloro-2-Buten	16.19	53	6584	2.4712 ug/L	#	51
83)	n-Propylbenzene	16.24	91	222196	5.2576 ug/L		96
84)	Bromobenzene	16.37	156	42665	4.8423 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	155714	4.9790 ug/L		93
86)	2-Chlorotoluene	16.52	91	148764	5.4968 ug/L		94
87)	4-Chlorotoluene	16.56	91	135679	4.8666 ug/L		94
88)	a-Methylstyrene	16.84	118	68945	4.4743 ug/L		91
89)	tert-Butylbenzene	16.89	134	29069	4.6914 ug/L		77
90)	1,2,4-Trimethylbenzene	16.95	105	161016	5.0301 ug/L		94
91)	sec-Butylbenzene	17.17	105	191273	5.0866 ug/L		94
92)	p-Isopropyltoluene	17.32	119	159232	4.9597 ug/L		93
93)	1,3-Dichlorobenzene	17.52	146	83896	4.7972 ug/L		95
94)	1,4-Dichlorobenzene	17.64	146	82462	4.7242 ug/L		86
95)	n-Butylbenzene	17.85	91	158787	5.1996 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	72524	4.7321 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	5629	4.6990 ug/L		76
98)	1,2,4-Trichlorobenzene	20.28	180	53855	4.5369 ug/L		98
99)	Hexachlorobutadiene	20.43	225	24504	4.4608 ug/L		93
100)	Naphthalene	20.65	128	79806	4.4217 ug/L		98
101)	1,2,3-Trichlorobenzene	20.96	180	44150	4.3720 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412224.D 8260WT.M Fri May 13 15:47:44 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

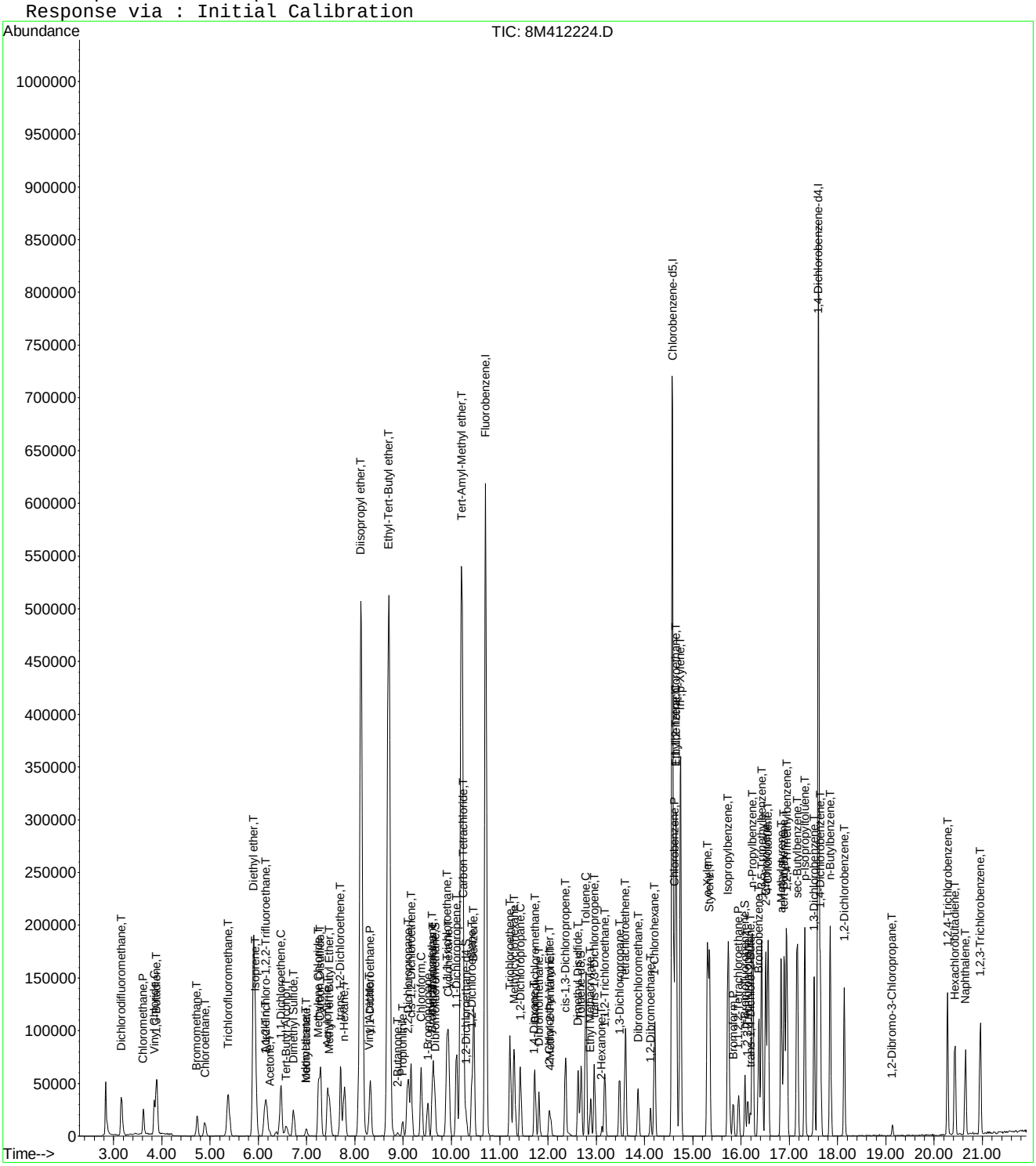

8M412224.D 8260WT.M Fri May 13 15:47:44 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.3438	13.1	100	0.00
3	P	Chloromethane	5.0000	4.5471	9.1	100	0.00
4	C	Vinyl Chloride	5.0000	4.7641	4.7	100	0.00
5	T	1,3-Butadiene	5.0000	4.2777	14.4	100	0.00
6	T	Bromomethane	5.0000	4.1880	16.2	100	-0.01
7	T	Chloroethane	5.0000	4.4813	10.4	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.6812	6.4	100	0.00
9	T	Diethyl ether	50.0000	47.5652	4.9	100	0.00
10	T	Isoprene	5.0000	4.4611	10.8	100	0.00
11	T	Acrolein	25.0000	21.7328	13.1	100	0.02
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.7244	5.5	100	0.00
13	T	Acetone	5.0000	4.1387	17.2	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.7810	4.4	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	100.4650	-0.5	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.7499	5.0	100	0.00
17	T	Iodomethane	5.0000	3.7634	24.7	100	0.00
18	T	Methyl acetate	5.0000	4.9211	1.6	100	0.00
19	T	Methylene Chloride	5.0000	4.7467	5.1	100	0.00
20	T	Carbon Disulfide	5.0000	4.7328	5.3	100	0.00
21	T	Acrylonitrile	25.0000	22.8698	8.5	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.6750	6.5	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.7415	5.2	100	0.00
24	T	n-Hexane	5.0000	4.8084	3.8	100	0.00
25	T	Diisopropyl ether	50.0000	47.2872	5.4	100	0.00
26	T	Vinyl Acetate	5.0000	4.5766	8.5	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.7058	5.9	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	47.5984	4.8	100	0.00
29	T	2-Butanone	5.0000	4.2191	15.6	100	0.00
30	T	Propionitrile	50.0000	48.4475	3.1	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.8965	2.1	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.6525	7.0	100	0.00
33	C	Chloroform	5.0000	4.6735	6.5	100	0.00
34		1-Bromopropane	5.0000	4.8774	2.5	100	0.00
35	T	Bromochloromethane	5.0000	4.6403	7.2	100	0.00
36	T	Tetrahydrofuran	50.0000	45.5400	8.9	100	-0.01
37	S	Dibromofluoromethane	2.5000	2.3953	4.2	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.7896	4.2	100	0.00
39	T	Cyclohexane	5.0000	4.6730	6.5	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.6741	6.5	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	47.6211	4.8	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.8044	3.9	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.3949	4.2	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	5.0000	4.7996	4.0	100	0.00
46	T	Benzene	5.0000	4.7588	4.8	100	0.00
47	T	Trichloroethene	5.0000	4.5733	8.5	100	0.00
48	T	Methylcyclohexane	5.0000	4.7616	4.8	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.5219	9.6	100	0.00
50	T	Bromodichloromethane	5.0000	4.7878	4.2	100	0.00
51	T	1,4-Dioxane	100.0000	77.0346	23.0	100	0.00
52	T	Dibromomethane	5.0000	4.7390	5.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.2867	14.3	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.1576	16.8	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.8662	2.7	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.1683	16.6	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.3473	6.1	100	0.00
59	C	Toluene	5.0000	4.8533	2.9	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.4883	10.2	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	5.0000	4.4786	10.4	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.5231	9.5	100	0.00
64	T	2-Hexanone	5.0000	4.0898	18.2	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.8109	3.8	100	0.00
66	T	Tetrachloroethene	5.0000	4.6028	7.9	100	0.00
67	T	Dibromochloromethane	5.0000	4.5802	8.4	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.6475	7.1	100	0.00
69	T	1-Chlorohexane	5.0000	4.7331	5.3	100	0.00
70	P	Chlorobenzene	5.0000	4.8107	3.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.3984	12.0	100	0.00
72	C	Ethylbenzene	5.0000	4.6492	7.0	100	0.00
73	T	m-,p-Xylene	10.0000	9.5700	4.3	100	0.00
74	T	o-Xylene	5.0000	4.6773	6.5	100	0.00
75	T	Styrene	5.0000	4.8405	3.2	100	0.00
76	P	Bromoform	5.0000	4.2672	14.7	100	0.00
77	T	Isopropylbenzene	5.0000	4.8951	2.1	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	4.8422	3.2	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.3565	5.7	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.2150	-4.3	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.3781	12.4	100	0.00
83	T	n-Propylbenzene	5.0000	5.1935	-3.9	100	0.00
84	T	Bromobenzene	5.0000	4.8483	3.0	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	4.9964	0.1	100	0.00
86	T	2-Chlorotoluene	5.0000	4.9803	0.4	100	0.00
87	T	4-Chlorotoluene	5.0000	5.0286	-0.6	100	0.00
88	T	a-Methylstyrene	5.0000	4.6629	6.7	100	0.00
89	T	tert-Butylbenzene	5.0000	4.7677	4.6	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.0245	-0.5	100	0.00
91	T	sec-Butylbenzene	5.0000	5.2170	-4.3	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.1150	-2.3	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	4.9511	1.0	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	4.8270	3.5	100	0.00
95	T	n-Butylbenzene	5.0000	5.1595	-3.2	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	4.8122	3.8	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	5.0942	-1.9	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.7808	4.4	100	0.00
99	T	Hexachlorobutadiene	5.0000	4.6555	6.9	100	0.00
100	T	Naphthalene	5.0000	4.7684	4.6	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.6455	7.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412224.D 8260WT.M Sat May 14 18:08:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	770027	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	531490	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	283594	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	86295	10.9569 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 43.84%#		
43) 1,2-Dichloroethane-d4	10.30	65	96239	11.3450 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 45.36%#		
58) Toluene-d8	12.68	98	294491	10.9223 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 43.68%#		
80) p-Bromofluorobenzene	16.08	95	121459	10.5490 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 42.20%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	288235	23.7135 ug/L	99
3) Chloromethane	3.62	50	155712	20.3784 ug/L	98
4) Vinyl Chloride	3.84	62	184250	20.9368 ug/L	95
5) 1,3-Butadiene	3.89	54	149348	22.7750 ug/L	96
6) Bromomethane	4.73	94	100098	25.0143 ug/L	99
7) Chloroethane	4.89	64	100876	20.9404 ug/L	91
8) Trichlorofluoromethane	5.37	101	351299	21.2512 ug/L	98
9) Diethyl ether	5.90	59	324317	80.8265 ug/L	78
10) Isoprene	5.94	67	205842	20.3622 ug/L	77
11) Acrolein	6.14	56	12049	34.8201 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	159996	20.3859 ug/L	97
13) Acetone	6.25	43	18459	25.7405 ug/L	98
14) 1,1-Dichloroethene	6.47	61	256241	20.5065 ug/L	92
15) Tert-Butyl Alcohol	6.57	59	43922	153.5712 ug/L	93
16) Dimethyl Sulfide	6.73	62	89456	20.6087 ug/L	83
17) Iodomethane	6.99	142	40622	61.0474 ug/L	93
18) Methyl acetate	7.00	43	46598	20.2171 ug/L #	85
19) Methylene Chloride	7.25	84	161897	20.1338 ug/L	52
20) Carbon Disulfide	7.30	76	538090	20.0802 ug/L	98
21) Acrylonitrile	7.43	53	46305	46.9889 ug/L	100
22) Methyl Tert Butyl Ether	7.47	73	361116	22.0137 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	234754	20.3175 ug/L	90
24) n-Hexane	7.78	57	172498	21.1165 ug/L	84
25) Diisopropyl ether	8.12	45	1447822	80.3755 ug/L #	91
26) Vinyl Acetate	8.30	43	166501	21.7017 ug/L #	88
27) 1,1-Dichloroethane	8.33	63	300321	21.3849 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	1579265	83.0733 ug/L	89
29) 2-Butanone	8.88	43	25681	23.9099 ug/L	87
30) Propionitrile	8.98	54	30953	89.5673 ug/L	94
31) 2,2-Dichloropropane	9.10	77	309575	20.8527 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	181973	20.4488 ug/L	89
33) Chloroform	9.37	83	348925	20.5535 ug/L	96
34) 1-Bromopropane	9.52	122	26723	22.7206 ug/L	96
35) Bromochloromethane	9.61	130	94952	21.3181 ug/L	65
36) Tetrahydrofuran	9.63	42	63066	70.5772 ug/L #	57
38) 1,1,1-Trichloroethane	9.91	97	335486	21.3640 ug/L	99
39) Cyclohexane	9.94	56	221040	19.9984 ug/L #	64
40) 1,1-Dichloropropene	10.11	75	248373	20.4717 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1418183	81.7883 ug/L	88
42) Carbon Tetrachloride	10.25	117	296471	21.3449 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412225.D 8260WT.M Fri May 13 16:16:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	228665	21.6403	ug/L		85
46)	Benzene	10.46	78	668449	20.3769	ug/L		86
47)	Trichloroethene	11.21	130	174107	20.7980	ug/L		96
48)	Methylcyclohexane	11.29	83	262275	21.4887	ug/L		82
49)	1,2-Dichloropropane	11.43	63	146868	21.1883	ug/L	#	72
50)	Bromodichloromethane	11.73	83	262192	21.9986	ug/L		98
51)	1,4-Dioxane	11.71	88	5351	196.3837	ug/L		76
52)	Dibromomethane	11.81	93	86951	21.0734	ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	63586	22.4600	ug/L		91
54)	4-Methyl-2-Pentanone	12.05	58	25754	25.0531	ug/L	#	73
55)	cis-1,3-Dichloropropene	12.36	75	265439	21.9841	ug/L		99
56)	Dimethyl Disulfide	12.63	79	134192	23.9412	ug/L		100
59)	Toluene	12.78	91	700473	20.1722	ug/L		99
60)	Ethyl Methacrylate	12.88	69	133361	23.2046	ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	238585	23.2548	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	107901	21.0216	ug/L		99
64)	2-Hexanone	13.11	58	22561	25.2093	ug/L	#	85
65)	1,3-Dichloropropane	13.49	76	198804	22.2491	ug/L		74
66)	Tetrachloroethene	13.60	164	141791	20.0055	ug/L		94
67)	Dibromochloromethane	13.87	129	158465	22.0695	ug/L		99
68)	1,2-Dibromoethane	14.13	107	110085	22.3366	ug/L		100
69)	1-Chlorohexane	14.21	91	229753	20.3591	ug/L		83
70)	Chlorobenzene	14.62	112	467492	20.4613	ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.65	131	183079	22.2095	ug/L		96
72)	Ethylbenzene	14.65	106	249016	20.2289	ug/L		90
73)	m-,p-Xylene	14.75	106	606381	41.1308	ug/L		88
74)	o-Xylene	15.30	106	294106	21.2106	ug/L		90
75)	Styrene	15.35	104	492781	21.8207	ug/L		89
76)	Bromoform	15.83	173	95911	23.8070	ug/L		99
77)	Isopropylbenzene	15.73	105	806678	20.7280	ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	123253	22.7779	ug/L		95
81)	1,2,3-Trichloropropane	16.14	110	36712	22.1354	ug/L		94
82)	trans-1,4-Dichloro-2-Buten	16.18	53	33702	27.6513	ug/L	#	56
83)	n-Propylbenzene	16.24	91	962196	20.3511	ug/L		97
84)	Bromobenzene	16.37	156	190566	21.2033	ug/L		94
85)	1,3,5-Trimethylbenzene	16.43	105	692633	20.9615	ug/L		94
86)	2-Chlorotoluene	16.51	91	649077	19.9155	ug/L		96
87)	4-Chlorotoluene	16.56	91	595446	20.3225	ug/L		95
88)	a-Methylstyrene	16.83	118	318960	22.3680	ug/L		92
89)	tert-Butylbenzene	16.90	134	129440	20.4705	ug/L		83
90)	1,2,4-Trimethylbenzene	16.95	105	707749	20.4783	ug/L		94
91)	sec-Butylbenzene	17.17	105	818359	20.1802	ug/L		97
92)	p-Isopropyltoluene	17.32	119	677859	19.7492	ug/L		96
93)	1,3-Dichlorobenzene	17.52	146	364065	20.5126	ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	363066	19.9874	ug/L		92
95)	n-Butylbenzene	17.85	91	681055	20.0187	ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	318612	19.9358	ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	23070	21.6419	ug/L		93
98)	1,2,4-Trichlorobenzene	20.28	180	242455	20.8863	ug/L		98
99)	Hexachlorobutadiene	20.43	225	110384	20.2523	ug/L		96
100)	Naphthalene	20.65	128	369849	21.4526	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	198876	19.8356	ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration

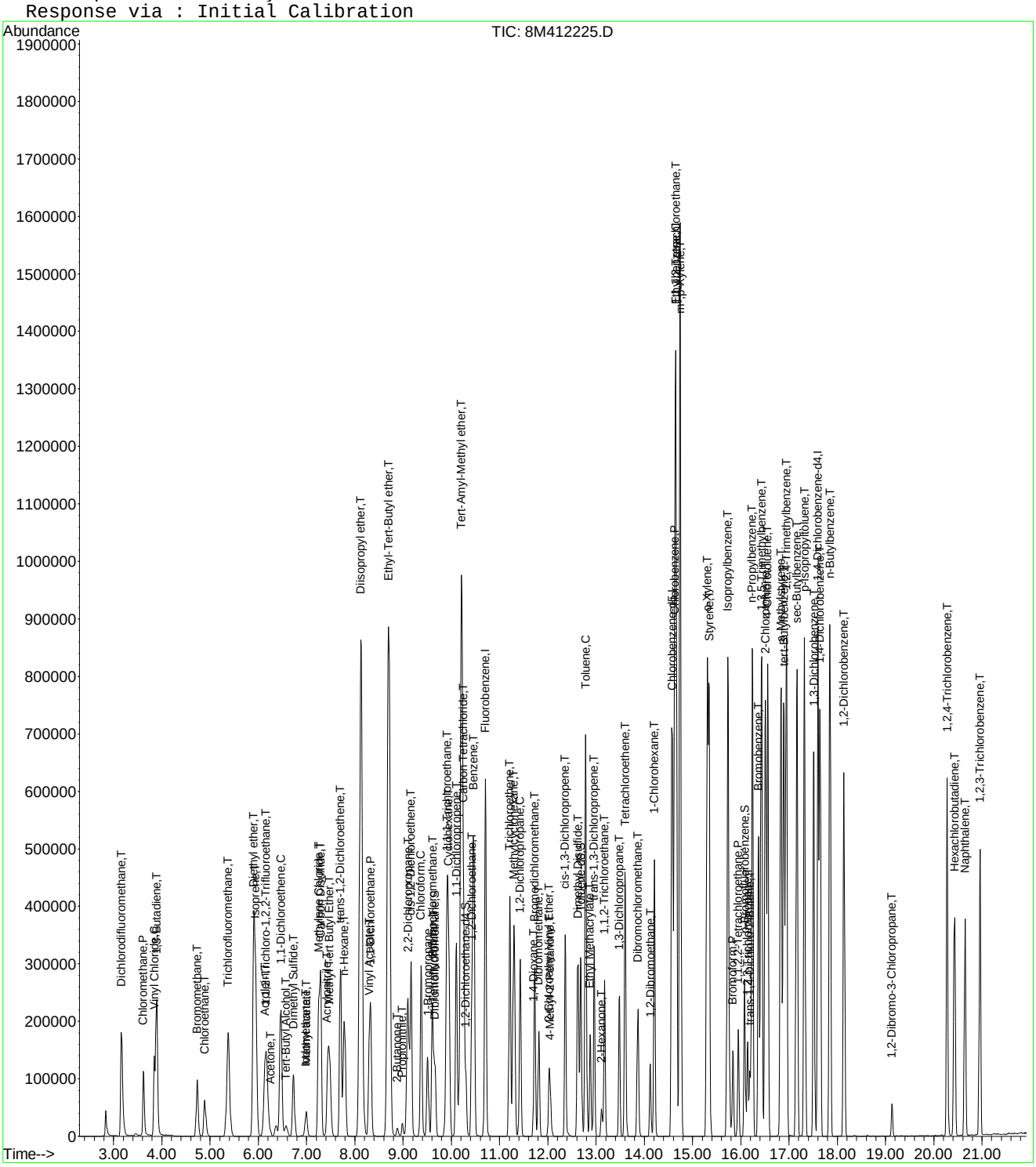

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45:30 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	778260	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	539116	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	288225	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	211053	26.5139 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.04%		
43) 1,2-Dichloroethane-d4	10.31	65	229348	26.7504 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.00%		
58) Toluene-d8	12.68	98	718491	26.2709 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.08%		
80) p-Bromofluorobenzene	16.07	95	292755	25.0180 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.08%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	682745	55.5761 ug/L	100
3) Chloromethane	3.62	50	372858	48.2806 ug/L	98
4) Vinyl Chloride	3.85	62	453905	51.0328 ug/L	96
5) 1,3-Butadiene	3.88	54	390501	58.9199 ug/L	99
6) Bromomethane	4.74	94	260493	64.4080 ug/L	97
7) Chloroethane	4.89	64	244336	50.1840 ug/L	91
8) Trichlorofluoromethane	5.38	101	837676	50.1376 ug/L	99
9) Diethyl ether	5.90	59	389327	96.0019 ug/L	79
10) Isoprene	5.94	67	498060	48.7477 ug/L	76
11) Acrolein	6.13	56	17644	50.4496 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	387643	48.8691 ug/L	97
13) Acetone	6.25	43	45901	63.3305 ug/L	97
14) 1,1-Dichloroethene	6.46	61	619744	49.0724 ug/L	94
15) Tert-Butyl Alcohol	6.58	59	53656	185.6211 ug/L	91
16) Dimethyl Sulfide	6.73	62	221107	50.3993 ug/L	82
17) Iodomethane	6.98	142	157872	234.7428 ug/L	94
18) Methyl acetate	7.00	43	114759	49.2629 ug/L #	81
19) Methylene Chloride	7.25	84	389653	47.9453 ug/L	52
20) Carbon Disulfide	7.29	76	1269941	46.8897 ug/L	99
21) Acrylonitrile	7.43	53	59882	60.1236 ug/L	97
22) Methyl Tert Butyl Ether	7.46	73	901668	54.3843 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	571507	48.9396 ug/L	93
24) n-Hexane	7.79	57	419656	50.8290 ug/L	83
25) Diisopropyl ether	8.13	45	1781012	97.8265 ug/L #	90
26) Vinyl Acetate	8.29	43	428708	55.2866 ug/L #	89
27) 1,1-Dichloroethane	8.32	63	722574	50.9078 ug/L	96
28) Ethyl-Tert-Butyl ether	8.71	59	1955100	101.7552 ug/L	89
29) 2-Butanone	8.88	43	66579	61.3316 ug/L #	82
30) Propionitrile	8.98	54	38235	109.4684 ug/L	95
31) 2,2-Dichloropropane	9.10	77	768496	51.2175 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	439590	48.8754 ug/L	91
33) Chloroform	9.38	83	844564	49.2230 ug/L	97
34) 1-Bromopropane	9.51	122	63442	53.3693 ug/L	99
35) Bromochloromethane	9.60	130	230119	51.1185 ug/L	66
36) Tetrahydrofuran	9.64	42	79437	87.9575 ug/L #	62
38) 1,1,1-Trichloroethane	9.90	97	817606	51.5150 ug/L	99
39) Cyclohexane	9.93	56	535882	47.9707 ug/L #	65
40) 1,1-Dichloropropene	10.10	75	615439	50.1899 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1769381	100.9628 ug/L	88
42) Carbon Tetrachloride	10.24	117	724058	51.5782 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412226.D 8260WT.M Fri May 13 16:45:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45:30 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	561107	52.5401 ug/L		85
46)	Benzene	10.46	78	1607407	48.4816 ug/L		86
47)	Trichloroethene	11.22	130	424998	50.2312 ug/L		96
48)	Methylcyclohexane	11.30	83	635339	51.5040 ug/L		83
49)	1,2-Dichloropropane	11.42	63	351908	50.2320 ug/L	#	71
50)	Bromodichloromethane	11.72	83	654943	54.3701 ug/L		97
51)	1,4-Dioxane	11.71	88	7573	274.9918 ug/L		73
52)	Dibromomethane	11.82	93	209167	50.1574 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	162319	56.7281 ug/L		93
54)	4-Methyl-2-Pentanone	12.05	58	64928	62.4928 ug/L		80
55)	cis-1,3-Dichloropropene	12.36	75	666861	54.6463 ug/L		98
56)	Dimethyl Disulfide	12.62	79	343446	60.6260 ug/L		96
59)	Toluene	12.79	91	1676069	47.5846 ug/L		100
60)	Ethyl Methacrylate	12.88	69	338996	58.1503 ug/L		69
62)	trans-1,3-Dichloropropene	12.96	75	594749	57.1499 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	268432	51.5570 ug/L		98
64)	2-Hexanone	13.12	58	56859	62.6347 ug/L	#	83
65)	1,3-Dichloropropane	13.48	76	489226	53.9770 ug/L		75
66)	Tetrachloroethene	13.60	164	350332	48.7296 ug/L		95
67)	Dibromochloromethane	13.86	129	401149	55.0780 ug/L		100
68)	1,2-Dibromoethane	14.12	107	273580	54.7252 ug/L		99
69)	1-Chlorohexane	14.21	91	560883	48.9984 ug/L		82
70)	Chlorobenzene	14.63	112	1117812	48.2326 ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	446892	53.4462 ug/L		99
72)	Ethylbenzene	14.66	106	603074	48.2980 ug/L		91
73)	m-,p-Xylene	14.74	106	1443780	96.5463 ug/L		90
74)	o-Xylene	15.31	106	709244	50.4265 ug/L		90
75)	Styrene	15.34	104	1212099	52.9133 ug/L		91
76)	Bromoform	15.84	173	238354	58.3272 ug/L		100
77)	Isopropylbenzene	15.73	105	1919993	48.6372 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	294266	53.5083 ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	89279	52.9656 ug/L		93
82)	trans-1,4-Dichloro-2-Buten	16.19	53	86829	70.0956 ug/L	#	53
83)	n-Propylbenzene	16.24	91	2278994	47.4277 ug/L		98
84)	Bromobenzene	16.37	156	459959	50.3549 ug/L		93
85)	1,3,5-Trimethylbenzene	16.43	105	1661486	49.4745 ug/L		95
86)	2-Chlorotoluene	16.51	91	1611031	48.6367 ug/L		97
87)	4-Chlorotoluene	16.56	91	1341051	45.0344 ug/L		95
88)	a-Methylstyrene	16.83	118	772611	53.3111 ug/L		90
89)	tert-Butylbenzene	16.89	134	307503	47.8493 ug/L		81
90)	1,2,4-Trimethylbenzene	16.94	105	1679809	47.8234 ug/L		95
91)	sec-Butylbenzene	17.16	105	1925411	46.7166 ug/L		97
92)	p-Isopropyltoluene	17.32	119	1621383	46.4795 ug/L		95
93)	1,3-Dichlorobenzene	17.51	146	882656	48.9327 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	871210	47.1909 ug/L		92
95)	n-Butylbenzene	17.85	91	1608832	46.5296 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	768548	47.3159 ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	59586	54.9992 ug/L		86
98)	1,2,4-Trichlorobenzene	20.28	180	583880	49.4902 ug/L		100
99)	Hexachlorobutadiene	20.44	225	264699	47.7844 ug/L		98
100)	Naphthalene	20.65	128	894629	51.0579 ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	475246	46.6387 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412226.D 8260WT.M Fri May 13 16:45:33 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration

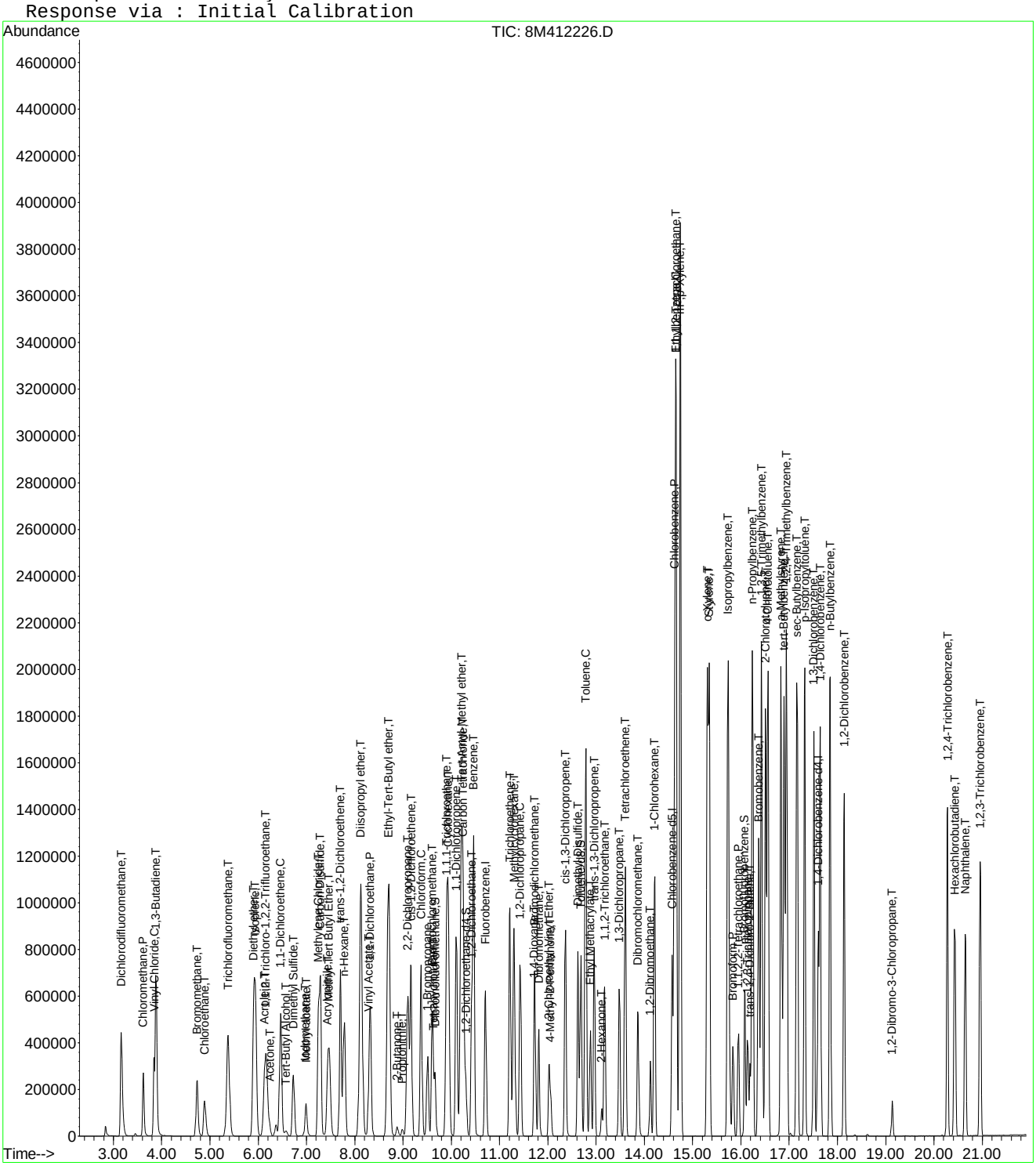

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	809533	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	559075	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	296193	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	460283	53.9056 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 215.64%#		
43) 1,2-Dichloroethane-d4	10.30	65	488116	52.5821 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 210.32%#		
58) Toluene-d8	12.68	98	1540572	52.8075 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 211.24%#		
80) p-Bromofluorobenzene	16.08	95	623735	51.1573 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 204.64%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	1463283	109.1068 ug/L	100
3) Chloromethane	3.62	50	778702	97.2380 ug/L	98
4) Vinyl Chloride	3.84	62	968312	103.4979 ug/L	95
5) 1,3-Butadiene	3.88	54	896569	120.4972 ug/L	95
6) Bromomethane	4.73	94	605228	129.8677 ug/L	99
7) Chloroethane	4.89	64	528153	103.4126 ug/L	90
8) Trichlorofluoromethane	5.37	101	1782726	101.4754 ug/L	99
9) Diethyl ether	5.90	59	828091	197.4770 ug/L	79
10) Isoprene	5.94	67	1080684	101.8037 ug/L	78
11) Acrolein	6.14	56	38655	109.5572 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	833546	101.0906 ug/L	97
13) Acetone	6.24	43	97515	109.1944 ug/L	100
14) 1,1-Dichloroethene	6.46	61	1323999	100.6729 ug/L	93
15) Tert-Butyl Alcohol	6.57	59	114220	387.5328 ug/L	91
16) Dimethyl Sulfide	6.73	62	489571	106.5996 ug/L	82
17) Iodomethane	6.99	142	416890	244.5557 ug/L	97
18) Methyl acetate	7.00	43	252444	104.3161 ug/L #	81
19) Methylene Chloride	7.24	84	827241	98.5346 ug/L	53
20) Carbon Disulfide	7.29	76	2766110	99.3432 ug/L	100
21) Acrylonitrile	7.43	53	126153	113.2272 ug/L	98
22) Methyl Tert Butyl Ether	7.46	73	1894494	105.8643 ug/L	87
23) trans-1,2-Dichloroethene	7.70	61	1203701	99.1822 ug/L	93
24) n-Hexane	7.78	57	926226	105.3097 ug/L	84
25) Diisopropyl ether	8.12	45	3699807	196.0386 ug/L #	90
26) Vinyl Acetate	8.29	43	860820	101.8643 ug/L #	88
27) 1,1-Dichloroethane	8.32	63	1521237	101.5567 ug/L	96
28) Ethyl-Tert-Butyl ether	8.70	59	4005676	198.2271 ug/L	89
29) 2-Butanone	8.88	43	145126	112.6698 ug/L #	81
30) Propionitrile	8.98	54	83038	219.1648 ug/L	97
31) 2,2-Dichloropropane	9.11	77	1610615	102.0557 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	935490	99.9944 ug/L	89
33) Chloroform	9.37	83	1766988	98.8341 ug/L	98
34) 1-Bromopropane	9.51	122	139657	108.5299 ug/L	100
35) Bromochloromethane	9.61	130	488678	102.8480 ug/L	66
36) Tetrahydrofuran	9.63	42	167812	187.5699 ug/L #	61
38) 1,1,1-Trichloroethane	9.91	97	1724504	102.7713 ug/L	100
39) Cyclohexane	9.94	56	1185537	102.8628 ug/L #	66
40) 1,1-Dichloropropene	10.11	75	1293224	100.8377 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	3634806	198.1264 ug/L	88
42) Carbon Tetrachloride	10.25	117	1534696	103.3979 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412227.D 8260WT.M Fri May 13 17:14:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	1177876	103.7352	ug/L		85
46)	Benzene	10.46	78	3298928	95.8405	ug/L		87
47)	Trichloroethene	11.21	130	903490	101.9036	ug/L		97
48)	Methylcyclohexane	11.30	83	1389528	104.6454	ug/L		83
49)	1,2-Dichloropropane	11.43	63	755128	102.5297	ug/L		73
50)	Bromodichloromethane	11.73	83	1351612	104.6036	ug/L		99
51)	1,4-Dioxane	11.72	88	16303	473.9624	ug/L		68
52)	Dibromomethane	11.81	93	445130	101.6543	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.02	63	333977	105.4228	ug/L		92
54)	4-Methyl-2-Pentanone	12.05	58	138980	110.1494	ug/L	#	77
55)	cis-1,3-Dichloropropene	12.36	75	1387475	105.9136	ug/L		100
56)	Dimethyl Disulfide	12.62	79	745504	111.3169	ug/L		97
59)	Toluene	12.78	91	3455614	95.2346	ug/L		99
60)	Ethyl Methacrylate	12.88	69	731009	113.5760	ug/L		70
62)	trans-1,3-Dichloropropene	12.96	75	1236182	107.9445	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	564076	103.0604	ug/L		99
64)	2-Hexanone	13.12	58	126268	114.5366	ug/L	#	79
65)	1,3-Dichloropropane	13.48	76	1021082	105.2672	ug/L		74
66)	Tetrachloroethene	13.60	164	752835	101.4023	ug/L		95
67)	Dibromochloromethane	13.87	129	856499	109.6525	ug/L		100
68)	1,2-Dibromoethane	14.12	107	577701	107.6426	ug/L		98
69)	1-Chlorohexane	14.21	91	1222720	103.0385	ug/L		82
70)	Chlorobenzene	14.62	112	2332247	97.2408	ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	947925	106.1463	ug/L		99
72)	Ethylbenzene	14.66	106	1275519	98.8771	ug/L		97
73)	m-,p-Xylene	14.75	106	3009424	194.2602	ug/L		98
74)	o-Xylene	15.31	106	1490638	100.8068	ug/L		93
75)	Styrene	15.35	104	2503721	102.8373	ug/L		88
76)	Bromoform	15.83	173	517827	114.0520	ug/L		100
77)	Isopropylbenzene	15.73	105	3913141	95.4433	ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	624965	106.8610	ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	192087	107.3268	ug/L		97
82)	trans-1,4-Dichloro-2-Buten	16.18	53	189214	128.4818	ug/L	#	59
83)	n-Propylbenzene	16.24	91	4599057	93.6644	ug/L		100
84)	Bromobenzene	16.37	156	968011	102.1426	ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	3401719	97.9556	ug/L		97
86)	2-Chlorotoluene	16.52	91	3177047	93.8267	ug/L		98
87)	4-Chlorotoluene	16.56	91	2899171	96.0712	ug/L		96
88)	a-Methylstyrene	16.84	118	1639166	103.6811	ug/L		90
89)	tert-Butylbenzene	16.90	134	654025	99.4199	ug/L		85
90)	1,2,4-Trimethylbenzene	16.95	105	3479295	96.7054	ug/L		97
91)	sec-Butylbenzene	17.17	105	3947832	94.2785	ug/L		98
92)	p-Isopropyltoluene	17.32	119	3328450	94.4148	ug/L		97
93)	1,3-Dichlorobenzene	17.52	146	1834740	98.9074	ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	1818309	96.6271	ug/L		92
95)	n-Butylbenzene	17.85	91	3308330	94.4002	ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	1606254	97.0179	ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	125368	107.7020	ug/L		87
98)	1,2,4-Trichlorobenzene	20.28	180	1227926	100.7076	ug/L		99
99)	Hexachlorobutadiene	20.43	225	569213	100.5231	ug/L		97
100)	Naphthalene	20.65	128	1852486	101.2968	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	1021163	98.5794	ug/L		100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration

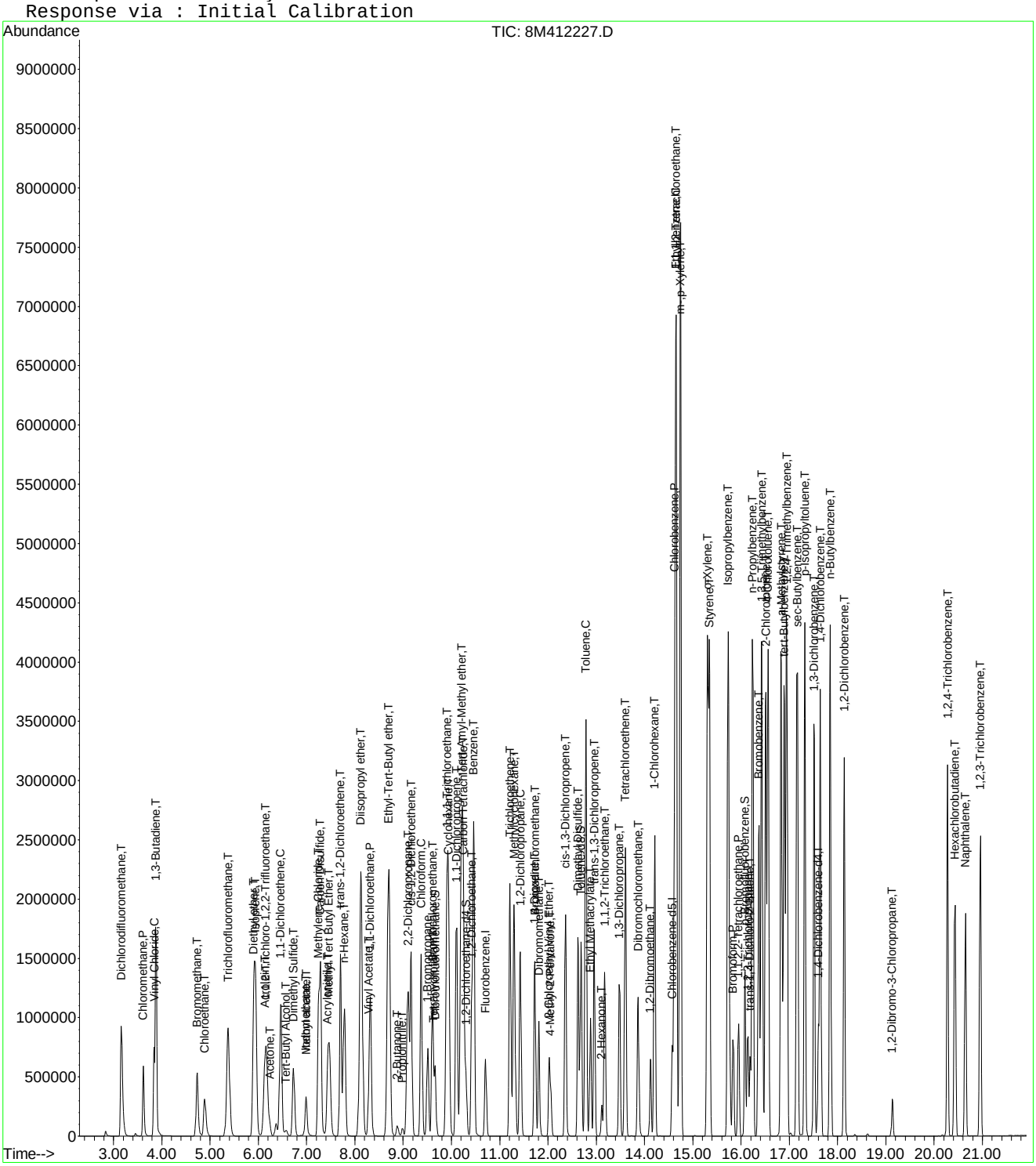

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	828540	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	578848	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	301401	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	898145	101.4517 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 405.80%#		
43) 1,2-Dichloroethane-d4	10.30	65	939848	98.0779 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 392.32%#		
58) Toluene-d8	12.68	98	2984162	97.8805 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 391.52%#		
80) p-Bromofluorobenzene	16.08	95	1242720	99.7023 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 398.80%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	2830517	203.5621 ug/L	98
3) Chloromethane	3.62	50	1586058	194.4056 ug/L	97
4) Vinyl Chloride	3.83	62	1935009	201.0738 ug/L	94
5) 1,3-Butadiene	3.88	54	1684964	212.5477 ug/L	94
6) Bromomethane	4.72	94	1358068	271.2231 ug/L	99
7) Chloroethane	4.89	64	1084803	206.5255 ug/L	90
8) Trichlorofluoromethane	5.37	101	3516760	195.1756 ug/L	99
10) Isoprene	5.94	67	2136665	196.1573 ug/L	78
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1662142	196.5993 ug/L	95
13) Acetone	6.24	43	187748	200.7963 ug/L	97
14) 1,1-Dichloroethene	6.46	61	2649821	196.6732 ug/L	92
15) Tert-Butyl Alcohol	6.58	59	6024	20.0950 ug/L #	87
16) Dimethyl Sulfide	6.73	62	976862	205.8822 ug/L	82
17) Iodomethane	6.99	142	896947	398.7987 ug/L	100
18) Methyl acetate	7.00	43	504293	201.4324 ug/L #	81
19) Methylene Chloride	7.25	84	1684780	196.5546 ug/L	52
20) Carbon Disulfide	7.29	76	5386210	189.2120 ug/L	99
21) Acrylonitrile	7.45	53	30354	26.0447 ug/L #	32
22) Methyl Tert Butyl Ether	7.46	73	3711011	200.6529 ug/L	87
23) trans-1,2-Dichloroethene	7.70	61	2410498	194.2902 ug/L	92
24) n-Hexane	7.78	57	1821777	199.7288 ug/L	84
26) Vinyl Acetate	8.29	43	1796217	206.9060 ug/L #	88
27) 1,1-Dichloroethane	8.32	63	3042055	197.9863 ug/L	95
29) 2-Butanone	8.88	43	271767	199.8193 ug/L #	77
30) Propionitrile	8.90	54	208	0.5280 ug/L #	1
31) 2,2-Dichloropropane	9.11	77	3202633	197.6970 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	1875631	195.8883 ug/L	89
33) Chloroform	9.37	83	3506648	191.9199 ug/L	99
34) 1-Bromopropane	9.51	122	286158	214.2313 ug/L	99
35) Bromochloromethane	9.60	130	980373	200.7807 ug/L	66
36) Tetrahydrofuran	9.62	42	2381	2.6275 ug/L	87
38) 1,1,1-Trichloroethane	9.91	97	3410306	197.7909 ug/L	99
39) Cyclohexane	9.94	56	2357393	198.8974 ug/L #	66
40) 1,1-Dichloropropene	10.10	75	2601175	197.8946 ug/L	96
42) Carbon Tetrachloride	10.25	117	3062767	200.6417 ug/L	99
45) 1,2-Dichloroethane	10.42	62	2313662	198.0324 ug/L	85
46) Benzene	10.46	78	6379817	182.1771 ug/L	89
47) Trichloroethene	11.21	130	1810459	198.9741 ug/L	97
48) Methylcyclohexane	11.30	83	2755373	200.4193 ug/L	83
49) 1,2-Dichloropropane	11.43	63	1528407	202.0331 ug/L	74

(#) = qualifier out of range (m) = manual integration
8M412228.D 8260WT.M Fri May 13 17:43:34 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
50)	Bromodichloromethane	11.73	83	2716764	204.0895 ug/L		99
51)	1,4-Dioxane	11.73	88	3865	104.9352 ug/L	#	18
52)	Dibromomethane	11.81	93	898971	200.1154 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.02	63	631656	192.7236 ug/L		90
54)	4-Methyl-2-Pentanone	12.05	58	262702	198.3957 ug/L	#	75
55)	cis-1,3-Dichloropropene	12.36	75	2784162	205.9153 ug/L		99
56)	Dimethyl Disulfide	12.62	79	1518705	215.4711 ug/L		95
59)	Toluene	12.78	91	6564353	175.9274 ug/L		96
60)	Ethyl Methacrylate	12.88	69	1429837	209.8161 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	2468609	205.4771 ug/L		98
63)	1,1,2-Trichloroethane	13.18	97	1124672	197.6019 ug/L		100
64)	2-Hexanone	13.12	58	237678	200.9290 ug/L	#	81
65)	1,3-Dichloropropane	13.48	76	2023247	199.9545 ug/L		76
66)	Tetrachloroethene	13.60	164	1546618	200.8018 ug/L		97
67)	Dibromochloromethane	13.87	129	1726523	210.5823 ug/L		100
68)	1,2-Dibromoethane	14.12	107	1163160	207.0667 ug/L		99
69)	1-Chlorohexane	14.21	91	2414147	195.6413 ug/L		83
70)	Chlorobenzene	14.62	112	4641169	187.6386 ug/L		94
71)	1,1,1,2-Tetrachloroethane	14.66	131	1929251	206.8372 ug/L		99
72)	Ethylbenzene	14.66	106	2611321	195.8267 ug/L		88
73)	m-,p-Xylene	14.75	106	5876234	367.8657 ug/L		83
74)	o-Xylene	15.31	106	3012318	196.4899 ug/L		98
75)	Styrene	15.35	104	4913204	194.1235 ug/L		86
76)	Bromoform	15.83	173	1052629	218.7989 ug/L		100
77)	Isopropylbenzene	15.73	105	7284624	172.7305 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	1237171	205.8673 ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	386738	209.7906 ug/L	#	54
82)	trans-1,4-Dichloro-2-Buten	16.19	53	382467	243.6526 ug/L		76
83)	n-Propylbenzene	16.24	91	8244387	166.5110 ug/L		93
84)	Bromobenzene	16.37	156	1935166	200.1305 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	6482975	183.9948 ug/L		98
86)	2-Chlorotoluene	16.52	91	6108308	178.8549 ug/L		99
87)	4-Chlorotoluene	16.56	91	5513221	180.5508 ug/L		99
88)	a-Methylstyrene	16.84	118	3255254	200.4995 ug/L		89
89)	tert-Butylbenzene	16.90	134	1351569	202.1005 ug/L		92
90)	1,2,4-Trimethylbenzene	16.95	105	6531416	179.2445 ug/L		97
91)	sec-Butylbenzene	17.17	105	7342730	173.9814 ug/L		97
92)	p-Isopropyltoluene	17.32	119	6352010	178.7315 ug/L		99
93)	1,3-Dichlorobenzene	17.52	146	3640547	193.1654 ug/L		90
94)	1,4-Dichlorobenzene	17.64	146	3593548	188.4603 ug/L		91
95)	n-Butylbenzene	17.85	91	6198060	175.4375 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	3171699	188.9651 ug/L		89
97)	1,2-Dibromo-3-Chloropropan	19.13	75	249646	207.5645 ug/L		88
98)	1,2,4-Trichlorobenzene	20.28	180	2480626	199.7296 ug/L		99
99)	Hexachlorobutadiene	20.43	225	1169411	202.7981 ug/L		98
100)	Naphthalene	20.65	128	3580198	192.0323 ug/L		97
101)	1,2,3-Trichlorobenzene	20.96	180	2040570	193.9298 ug/L		100

(#) = qualifier out of range (m) = manual integration
8M412228.D 8260WT.M Fri May 13 17:43:35 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration

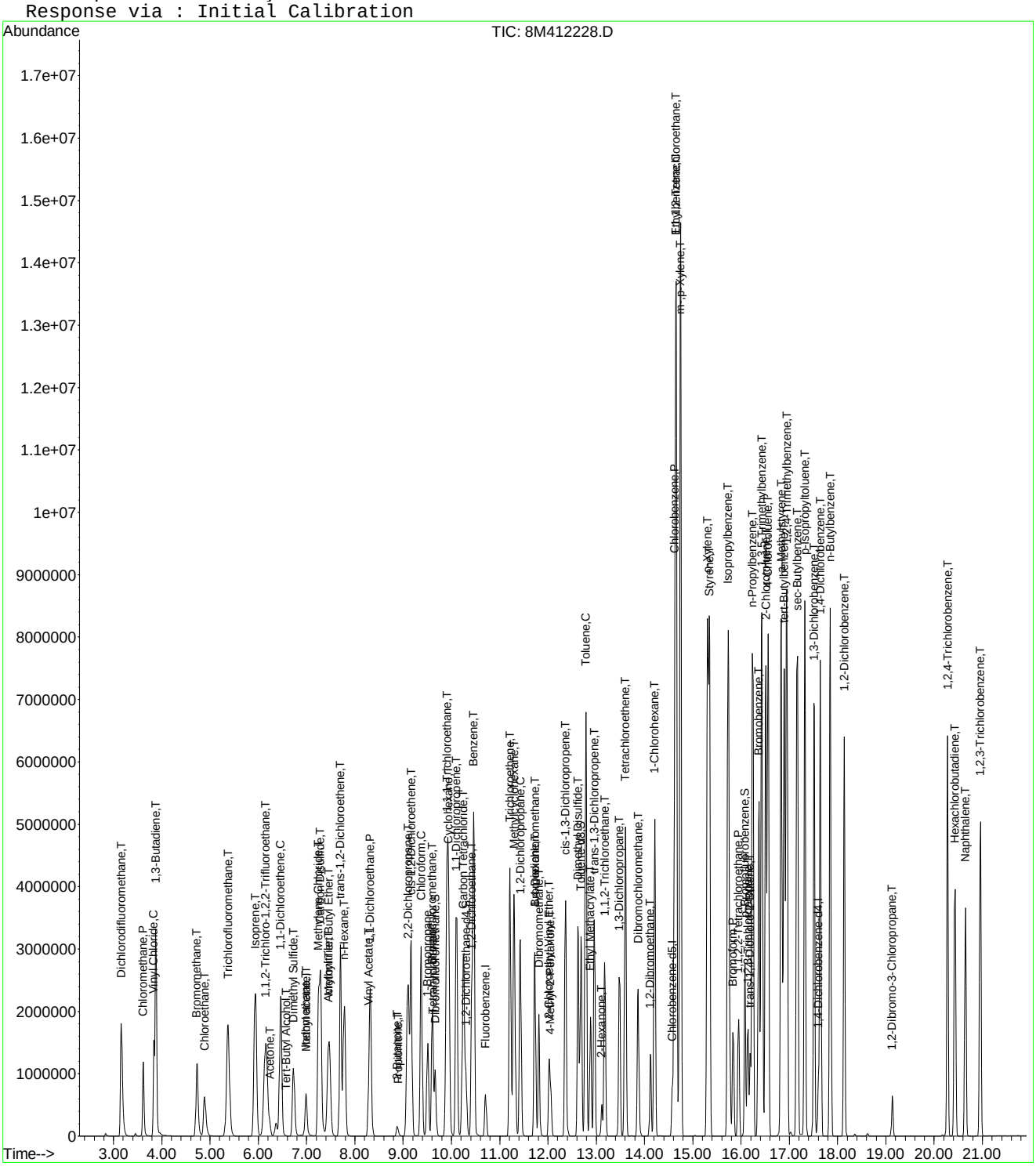

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	855409	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	599314	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	305726	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	1411837	154.4674 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 617.88%#		
43) 1,2-Dichloroethane-d4	10.30	65	1466019	148.1811 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 592.72%#		
58) Toluene-d8	12.69	98	4594713	145.5601 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 582.24%#		
80) p-Bromofluorobenzene	16.08	95	1918996	151.7813 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 607.12%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	4191932	292.0014 ug/L	97
3) Chloromethane	3.62	50	2474035	293.7212 ug/L	97
4) Vinyl Chloride	3.83	62	2956347	297.5552 ug/L	94
5) 1,3-Butadiene	3.87	54	2605506	318.3447 ug/L	94
6) Bromomethane	4.72	94	2177550	421.2239 ug/L	98
7) Chloroethane	4.89	64	1688005	311.2693 ug/L	90
8) Trichlorofluoromethane	5.37	101	5387662	289.6161 ug/L	99
9) Diethyl ether	5.90	59	1306432	295.4610 ug/L	80
10) Isoprene	5.93	67	3377164	300.3032 ug/L	78
11) Acrolein	6.14	56	70572	185.7401 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	2563878	293.7317 ug/L	94
13) Acetone	6.24	43	283185	293.3529 ug/L	90
14) 1,1-Dichloroethene	6.46	61	4031745	289.8421 ug/L	91
15) Tert-Butyl Alcohol	6.58	59	181796	587.3907 ug/L	90
16) Dimethyl Sulfide	6.73	62	1553493	317.1280 ug/L	81
17) Iodomethane	6.99	142	1347307	580.2206 ug/L	98
18) Methyl acetate	7.00	43	800046	309.5287 ug/L #	80
19) Methylene Chloride	7.24	84	2587731	292.4144 ug/L	52
20) Carbon Disulfide	7.29	76	8228181	279.9683 ug/L	98
21) Acrylonitrile	7.43	53	228227	189.6753 ug/L	94
22) Methyl Tert Butyl Ether	7.46	73	5605924	293.5892 ug/L	88
23) trans-1,2-Dichloroethene	7.70	61	3678699	287.1957 ug/L	92
24) n-Hexane	7.78	57	2863434	304.0691 ug/L	86
25) Diisopropyl ether	8.12	45	5819647	292.7898 ug/L #	89
26) Vinyl Acetate	8.30	43	2819503	314.5767 ug/L #	87
27) 1,1-Dichloroethane	8.32	63	4586531	289.1293 ug/L	94
28) Ethyl-Tert-Butyl ether	8.70	59	6190206	290.3321 ug/L	89
29) 2-Butanone	8.88	43	439359	312.8959 ug/L #	76
30) Propionitrile	8.99	54	133197	327.4673 ug/L	95
31) 2,2-Dichloropropane	9.10	77	4821388	288.2735 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	2847005	287.9976 ug/L	89
33) Chloroform	9.37	83	5197860	275.5447 ug/L	100
34) 1-Bromopropane	9.51	122	450012	326.3179 ug/L	100
35) Bromochloromethane	9.61	130	1490221	295.6112 ug/L	66
36) Tetrahydrofuran	9.63	42	271736	290.4491 ug/L #	62
38) 1,1,1-Trichloroethane	9.91	97	5126354	287.9792 ug/L	98
39) Cyclohexane	9.94	56	3733392	305.0987 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	3923871	289.1471 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	5639573	291.3713 ug/L	88
42) Carbon Tetrachloride	10.25	117	4598150	291.7629 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412229.D 8260WT.M Fri May 13 18:12:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	3468738	287.5726	ug/L		86
46)	Benzene	10.46	78	9065861	250.7462	ug/L		93
47)	Trichloroethene	11.21	130	2772282	295.1106	ug/L		97
48)	Methylcyclohexane	11.30	83	4327357	304.8748	ug/L		84
49)	1,2-Dichloropropane	11.43	63	2350729	300.9718	ug/L		74
50)	Bromodichloromethane	11.73	83	4051493	294.7973	ug/L		99
51)	1,4-Dioxane	11.72	88	26614	699.8767	ug/L		67
52)	Dibromomethane	11.81	93	1369945	295.3776	ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.03	63	1006317	297.3917	ug/L		90
54)	4-Methyl-2-Pentanone	12.06	58	424684	310.6522	ug/L	#	76
55)	cis-1,3-Dichloropropene	12.36	75	4156310	297.7431	ug/L		97
56)	Dimethyl Disulfide	12.63	79	2359825	324.2911	ug/L		94
59)	Toluene	12.78	91	9135213	236.4669	ug/L		90
60)	Ethyl Methacrylate	12.88	69	2228037	315.7801	ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	3700845	297.5240	ug/L		96
63)	1,1,2-Trichloroethane	13.18	97	1730199	293.6104	ug/L		100
64)	2-Hexanone	13.11	58	381967	311.8816	ug/L	#	78
65)	1,3-Dichloropropane	13.49	76	3080177	294.0141	ug/L		76
66)	Tetrachloroethene	13.60	164	2374435	297.7522	ug/L		96
67)	Dibromochloromethane	13.87	129	2638145	310.7838	ug/L		100
68)	1,2-Dibromoethane	14.13	107	1778561	305.8085	ug/L		99
69)	1-Chlorohexane	14.21	91	3712592	290.5924	ug/L		84
70)	Chlorobenzene	14.63	112	6754240	263.7433	ug/L		90
71)	1,1,1,2-Tetrachloroethane	14.65	131	2967650	307.3001	ug/L		100
72)	Ethylbenzene	14.65	106	4014412	290.7661	ug/L		70
73)	m-,p-Xylene	14.75	106	8357822	505.3514	ug/L		70
74)	o-Xylene	15.31	106	4530840	285.4488	ug/L		88
75)	Styrene	15.35	104	7050702	269.0641	ug/L		82
76)	Bromoform	15.84	173	1602587	321.7373	ug/L		99
77)	Isopropylbenzene	15.73	105	9900817	226.7477	ug/L		90
79)	1,1,2,2-Tetrachloroethane	15.95	83	1885953	309.3861	ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	581198	310.8176	ug/L		61
82)	trans-1,4-Dichloro-2-Buten	16.18	53	589705	370.3601	ug/L		82
83)	n-Propylbenzene	16.25	91	10768378	214.4110	ug/L		86
84)	Bromobenzene	16.37	156	2947671	300.5290	ug/L		99
85)	1,3,5-Trimethylbenzene	16.43	105	8890651	248.7580	ug/L		92
86)	2-Chlorotoluene	16.51	91	7868844	227.1449	ug/L		92
87)	4-Chlorotoluene	16.57	91	7782731	251.2687	ug/L		93
88)	a-Methylstyrene	16.84	118	4955768	300.9205	ug/L		86
89)	tert-Butylbenzene	16.90	134	2046401	301.6701	ug/L		95
90)	1,2,4-Trimethylbenzene	16.95	105	8903769	240.8932	ug/L		89
91)	sec-Butylbenzene	17.17	105	9867862	230.5051	ug/L		91
92)	p-Isopropyltoluene	17.32	119	8738927	242.4155	ug/L		94
93)	1,3-Dichlorobenzene	17.52	146	5319954	278.2806	ug/L		87
94)	1,4-Dichlorobenzene	17.64	146	5248511	271.3593	ug/L		88
95)	n-Butylbenzene	17.85	91	8408157	234.6279	ug/L		92
96)	1,2-Dichlorobenzene	18.14	146	4717385	277.0787	ug/L		87
97)	1,2-Dibromo-3-Chloropropan	19.13	75	377070	309.0741	ug/L		91
98)	1,2,4-Trichlorobenzene	20.28	180	3677657	291.9206	ug/L		98
99)	Hexachlorobutadiene	20.43	225	1780695	304.4378	ug/L		96
100)	Naphthalene	20.65	128	5216751	275.8542	ug/L		95
101)	1,2,3-Trichlorobenzene	20.96	180	3064908	287.1593	ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration

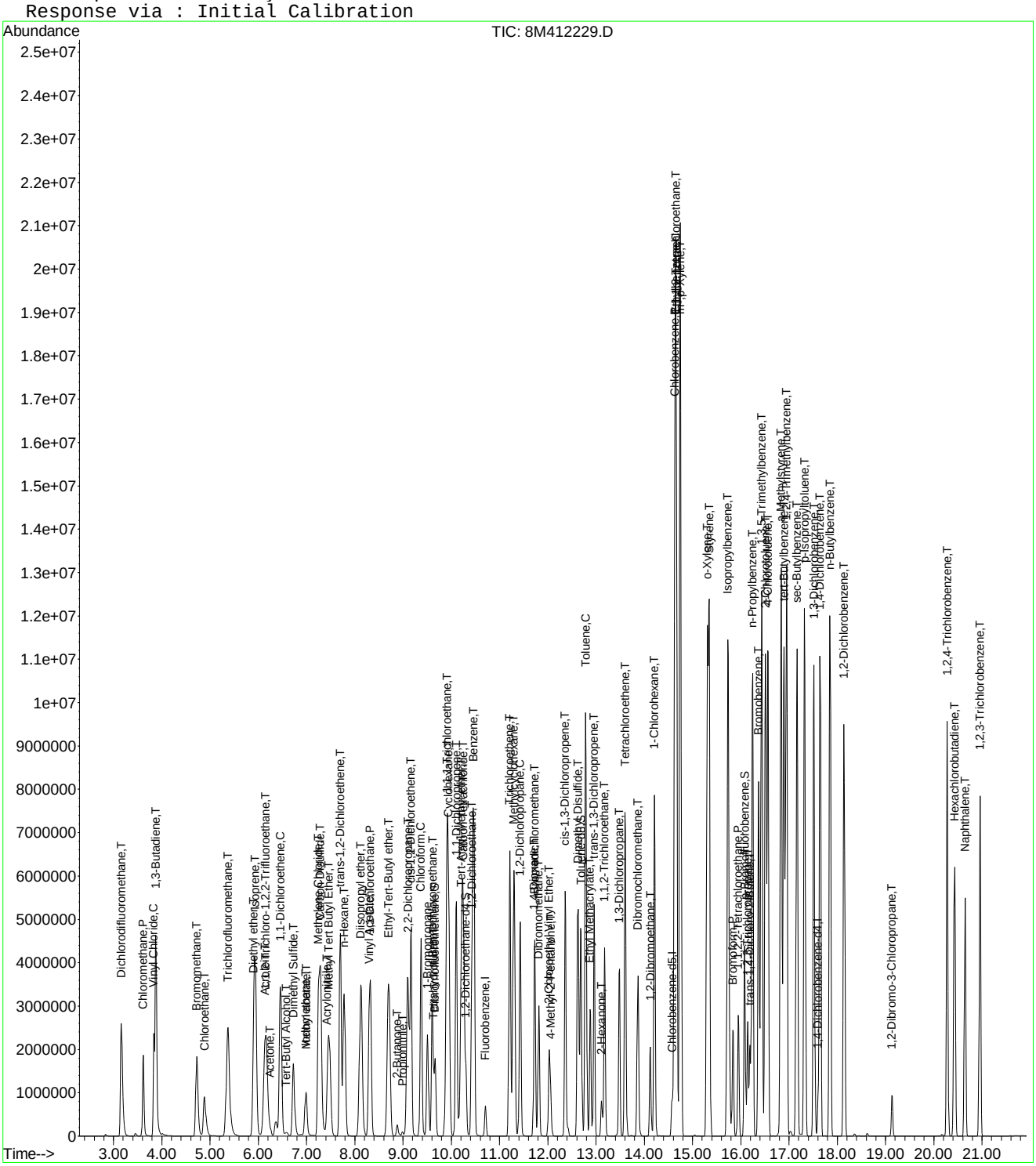

8M412229.D 8260WT.M Fri May 13 18:12:36 2016 Page 3

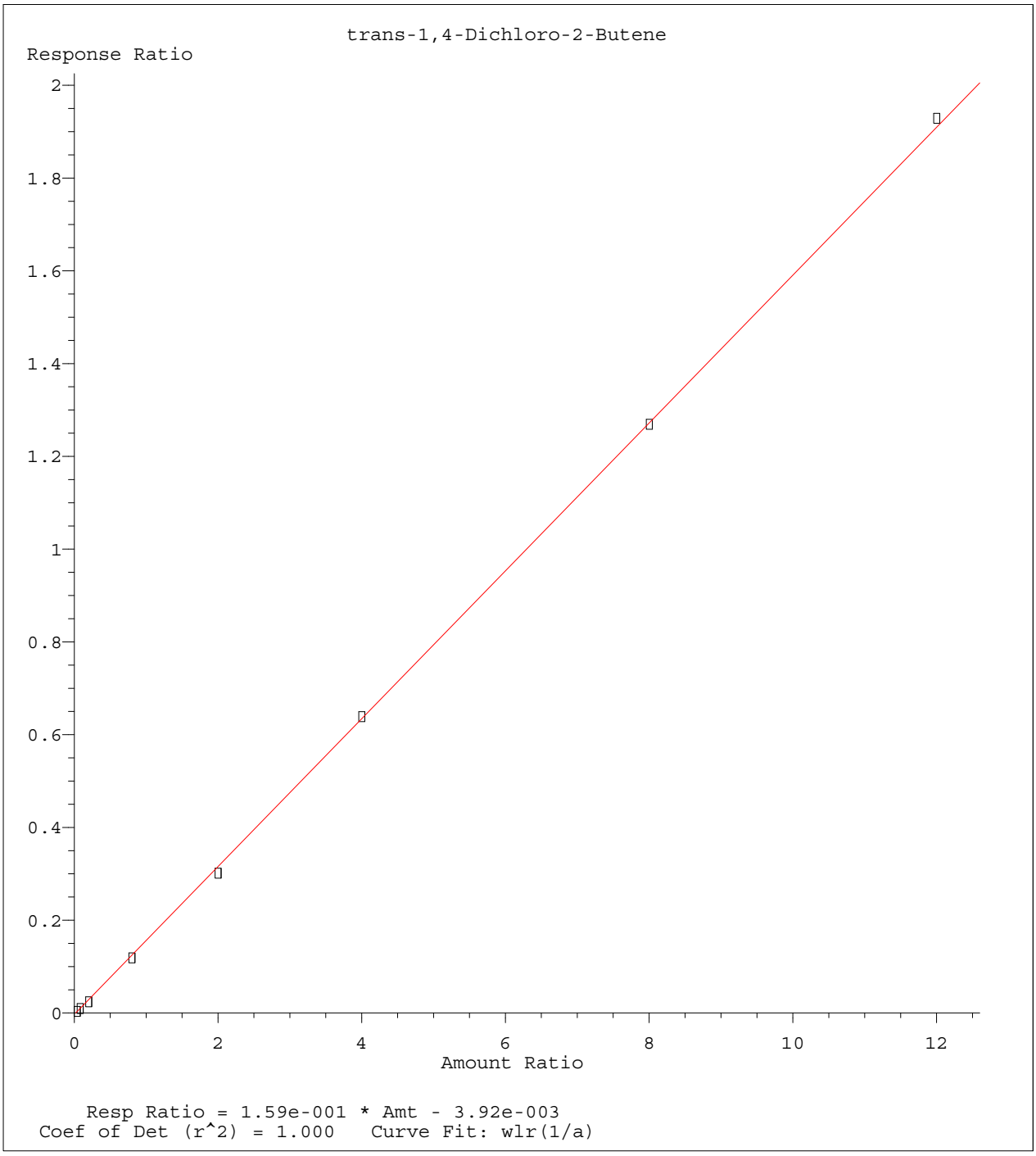

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

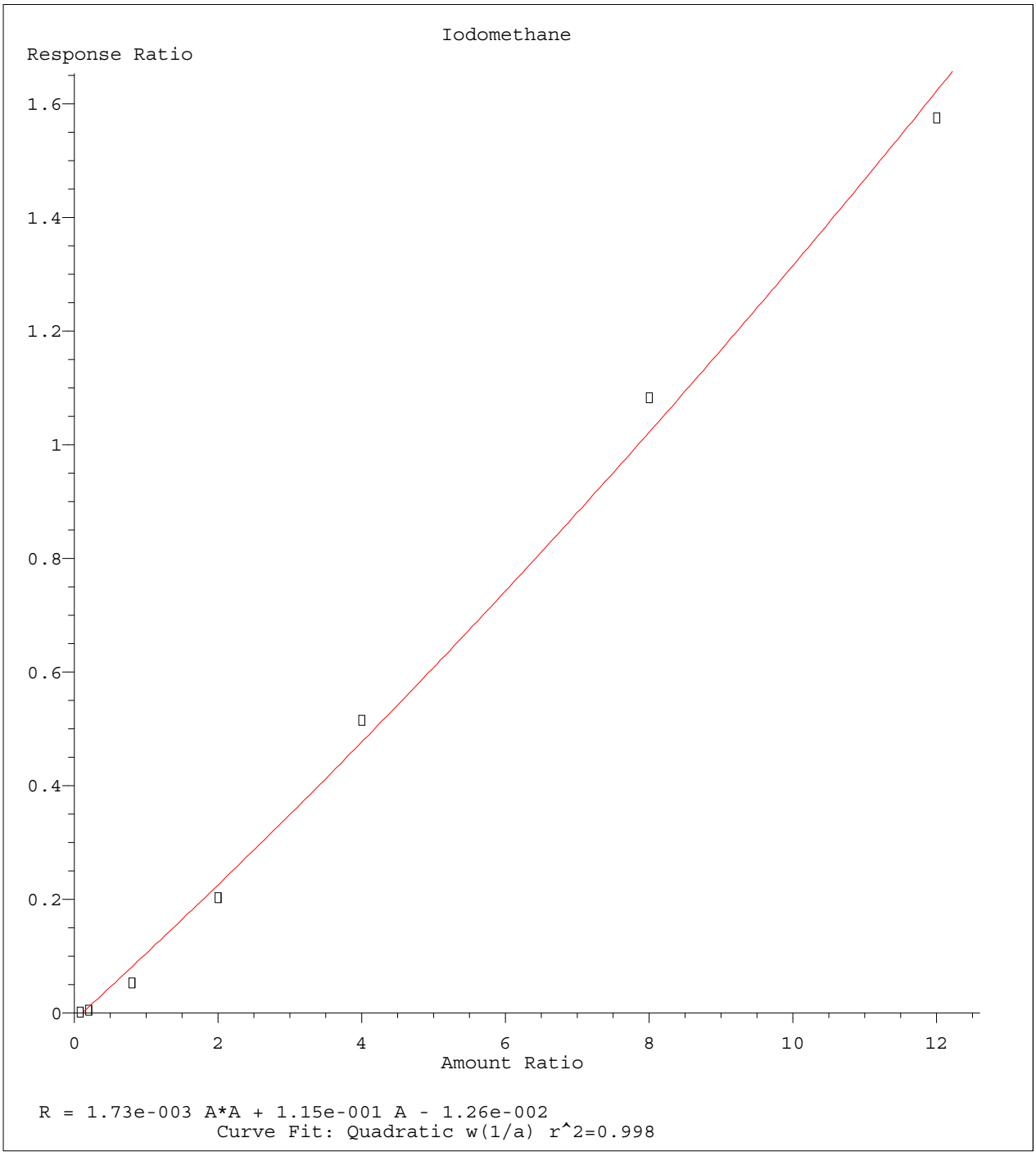

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

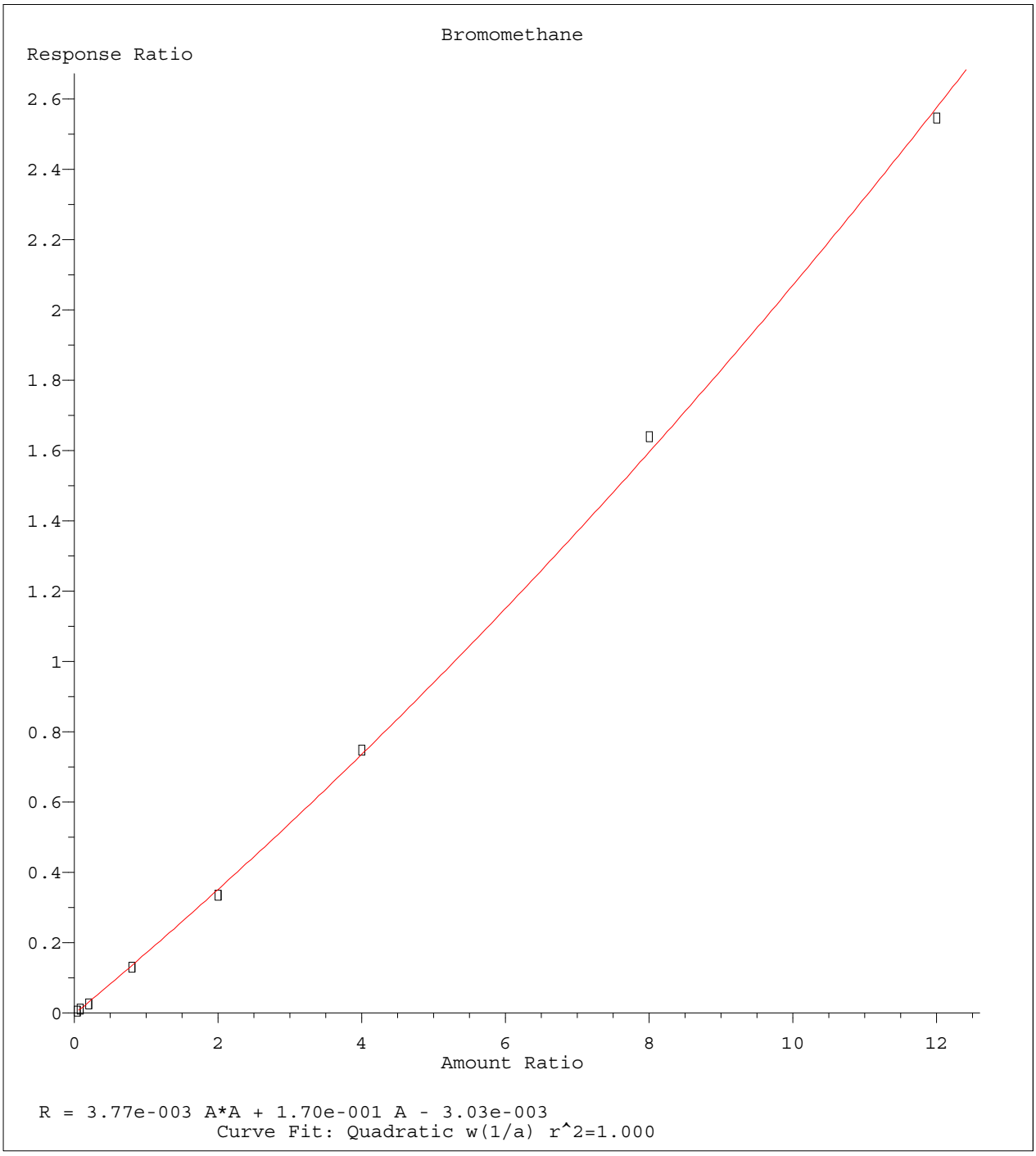

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:44:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Tue May 17 11:43:20 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	837879	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	574720	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	304324	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	229742	25.5204 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.08%		
43) 1,2-Dichloroethane-d4	10.31	65	238672	24.7259 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.92%		
58) Toluene-d8	12.68	98	776362	25.8115 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.24%		
80) p-Bromofluorobenzene	16.07	95	315683	25.0519 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.20%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	761591	54.2141 ug/L	99
3) Chloromethane	3.62	50	415589	50.6814 ug/L	100
4) Vinyl Chloride	3.84	62	509607	52.3810 ug/L	100
5) 1,3-Butadiene	3.88	54	347562	42.6002 ug/L	97
6) Bromomethane	4.73	94	272060	46.3924 ug/L	99
7) Chloroethane	4.88	64	285509	53.3336 ug/L	98
8) Trichlorofluoromethane	5.37	101	849580	46.9313 ug/L	100
9) Diethyl ether	5.90	59	451307	104.4282 ug/L	99
10) Isoprene	5.93	67	582863	53.0208 ug/L	99
11) Acrolein	6.13	56	38877	100.4722 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	419584	49.3091 ug/L	97
13) Acetone	6.23	43	54234	57.5310 ug/L	94
14) 1,1-Dichloroethene	6.46	61	622831	45.9700 ug/L	99
15) Tert-Butyl Alcohol	6.59	59	59797	197.9422 ug/L	97
16) Dimethyl Sulfide	6.73	62	351814	72.6234 ug/L	98
17) Iodomethane	6.99	142	92716	26.2832 ug/L	99
18) Methyl acetate	7.00	43	127540	50.0514 ug/L	98
19) Methylene Chloride	7.25	84	417642	48.4385 ug/L	99
20) Carbon Disulfide	7.29	76	1199899	42.3200 ug/L	100
21) Acrylonitrile	7.43	53	65324	53.4074 ug/L	93
22) Methyl Tert Butyl Ether	7.46	73	949572	50.8859 ug/L	97
23) trans-1,2-Dichloroethene	7.70	61	598296	48.0666 ug/L	99
24) n-Hexane	7.77	57	425106	45.9930 ug/L	99
25) Diisopropyl ether	8.13	45	2040382	105.1615 ug/L	98
26) Vinyl Acetate	8.29	43	415568	46.7802 ug/L	99
27) 1,1-Dichloroethane	8.32	63	721661	46.6846 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	2040020	98.1343 ug/L	99
29) 2-Butanone	8.88	43	73394	52.9905 ug/L	99
30) Propionitrile	8.98	54	42290	104.7756 ug/L	100
31) 2,2-Dichloropropane	9.10	77	780073	47.8861 ug/L	99
32) cis-1,2-Dichloroethene	9.16	96	470465	48.9162 ug/L	98
33) Chloroform	9.38	83	860252	47.1317 ug/L	100
34) 1-Bromopropane	9.51	122	98585	71.5615 ug/L	98
35) Bromochloromethane	9.60	130	234493	47.5456 ug/L	99
36) Tetrahydrofuran	9.62	42	86049	94.3281 ug/L	99
38) 1,1,1-Trichloroethane	9.90	97	825167	47.5949 ug/L	100
39) Cyclohexane	9.93	56	586721	48.8808 ug/L	97
40) 1,1-Dichloropropene	10.10	75	627217	47.4632 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1962875	103.9618 ug/L	99
42) Carbon Tetrachloride	10.24	117	711823	46.2363 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M412232.D 8260WT.M Tue May 17 11:44:38 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	108	0.00
2	T	Dichlorodifluoromethane	50.0000	54.2141	-8.4	112	0.00
3	P	Chloromethane	50.0000	50.6814	-1.4	111	0.00
4	C	Vinyl Chloride	50.0000	52.3811	-4.8	112	-0.01
5	T	1,3-Butadiene	50.0000	42.6002	14.8	89	0.00
6	T	Bromomethane	50.0000	46.3924	7.2	104	-0.01
7	T	Chloroethane	50.0000	53.3336	-6.7	117	-0.01
8	T	Trichlorofluoromethane	50.0000	46.9313	6.1	101	-0.01
9	T	Diethyl ether	100.0000	104.4282	-4.4	116	0.00
10	T	Isoprene	50.0000	53.0208	-6.0	117	0.00
11	T	Acrolein	50.0000	100.4722	-100.9#	220	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	49.3091	1.4	108	0.00
13	T	Acetone	50.0000	57.5310	-15.1	118	-0.01
14	C	1,1-Dichloroethene	50.0000	45.9700	8.1	100	0.00
15	T	Tert-Butyl Alcohol	200.0000	197.9423	1.0	108	0.01
16	T	Dimethyl Sulfide	50.0000	72.6234	-45.2#	159	0.00
17	T	Iodomethane	50.0000	26.2832	47.4#	59	0.01
18	T	Methyl acetate	50.0000	50.0514	-0.1	111	0.00
19	T	Methylene Chloride	50.0000	48.4385	3.1	107	0.00
20	T	Carbon Disulfide	50.0000	42.3200	15.4	94	0.00
21	T	Acrylonitrile	50.0000	53.4074	-6.8	109	0.00
22	T	Methyl Tert Butyl Ether	50.0000	50.8859	-1.8	105	0.00
23	T	trans-1,2-Dichloroethene	50.0000	48.0666	3.9	105	0.00
24	T	n-Hexane	50.0000	45.9930	8.0	101	-0.01
25	T	Diisopropyl ether	100.0000	105.1615	-5.2	115	0.00
26	T	Vinyl Acetate	50.0000	46.7802	6.4	97	0.00
27	P	1,1-Dichloroethane	50.0000	46.6846	6.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.1343	1.9	104	0.00
29	T	2-Butanone	50.0000	52.9905	-6.0	110	0.00
30	T	Propionitrile	100.0000	104.7756	-4.8	111	0.00
31	T	2,2-Dichloropropane	50.0000	47.8861	4.2	102	0.00
32	T	cis-1,2-Dichloroethene	50.0000	48.9162	2.2	107	-0.01
33	C	Chloroform	50.0000	47.1317	5.7	102	0.00
34		1-Bromopropane	50.0000	71.5615	-43.1#	155	0.00
35	T	Bromochloromethane	50.0000	47.5456	4.9	102	0.00
36	T	Tetrahydrofuran	100.0000	94.3281	5.7	108	-0.01
37	S	Dibromofluoromethane	25.0000	25.5204	-2.1	109	0.00
38	T	1,1,1-Trichloroethane	50.0000	47.5949	4.8	101	0.00
39	T	Cyclohexane	50.0000	48.8808	2.2	109	0.00
40	T	1,1-Dichloropropene	50.0000	47.4632	5.1	102	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	103.9618	-4.0	111	0.00
42	T	Carbon Tetrachloride	50.0000	46.2363	7.5	98	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.7259	1.1	104	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	49.0148	2.0	103	0.00
46	T	Benzene	50.0000	48.5232	3.0	104	0.00
47	T	Trichloroethene	50.0000	51.0658	-2.1	110	0.00
48	T	Methylcyclohexane	50.0000	49.8573	0.3	109	0.00
49	C	1,2-Dichloropropane	50.0000	50.9747	-1.9	111	0.00
50	T	Bromodichloromethane	50.0000	48.3053	3.4	99	0.00
51	T	1,4-Dioxane	200.0000	216.9538	-8.5	110	0.01
52	T	Dibromomethane	50.0000	45.8126	8.4	99	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	51.2623	-2.5	104	0.00
54	T	4-Methyl-2-Pentanone	50.0000	51.8715	-3.7	107	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.8979	-7.8	111	0.00
56	T	Dimethyl Disulfide	50.0000	52.2714	-4.5	111	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	107	0.00
58	S	Toluene-d8	25.0000	25.8115	-3.2	108	0.00
59	C	Toluene	50.0000	49.0912	1.8	105	0.00
60	T	Ethyl Methacrylate	50.0000	55.9509	-11.9	113	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	50.6740	-1.3	102	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.0377	1.9	103	0.00
64	T	2-Hexanone	50.0000	53.6057	-7.2	112	0.00
65	T	1,3-Dichloropropane	50.0000	53.6720	-7.3	110	0.00
66	T	Tetrachloroethene	50.0000	47.8053	4.4	104	0.00
67	T	Dibromochloromethane	50.0000	49.6585	0.7	102	0.00
68	T	1,2-Dibromoethane	50.0000	51.1121	-2.2	105	0.00
69	T	1-Chlorohexane	50.0000	51.0611	-2.1	111	0.00
70	P	Chlorobenzene	50.0000	50.1844	-0.4	108	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	49.3793	1.2	103	0.00
72	C	Ethylbenzene	50.0000	48.2013	3.6	105	0.00
73	T	m-,p-Xylene	100.0000	101.1341	-1.1	108	0.00
74	T	o-Xylene	50.0000	50.5675	-1.1	108	0.00
75	T	Styrene	50.0000	51.5086	-3.0	105	0.00
76	P	Bromoform	50.0000	48.2227	3.6	99	0.00
77	T	Isopropylbenzene	50.0000	51.1140	-2.2	107	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	106	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	49.6172	0.8	103	0.00
80	S	p-Bromofluorobenzene	25.0000	25.0519	-0.2	108	0.00
81	T	1,2,3-Trichloropropane	50.0000	50.0849	-0.2	106	0.01
82	T	trans-1,4-Dichloro-2-Butene	50.0000	39.2043	21.6	86	0.00
83	T	n-Propylbenzene	50.0000	51.9237	-3.8	108	0.00
84	T	Bromobenzene	50.0000	49.4648	1.1	105	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	51.6344	-3.3	107	0.00
86	T	2-Chlorotoluene	50.0000	51.5639	-3.1	106	0.00
87	T	4-Chlorotoluene	50.0000	48.2650	3.5	108	0.00
88	T	a-Methylstyrene	50.0000	56.4132	-12.8	120	0.00
89	T	tert-Butylbenzene	50.0000	50.9494	-1.9	112	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	49.6617	0.7	105	0.00
91	T	sec-Butylbenzene	50.0000	51.3386	-2.7	108	0.00
92	T	p-Isopropyltoluene	50.0000	50.1261	-0.3	107	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.8943	-1.8	108	0.00
94	T	1,4-Dichlorobenzene	50.0000	50.4742	-0.9	110	0.00
95	T	n-Butylbenzene	50.0000	49.6520	0.7	105	0.00
96	T	1,2-Dichlorobenzene	50.0000	50.4907	-1.0	110	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	48.4851	3.0	100	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	50.1129	-0.2	107	0.00
99	T	Hexachlorobutadiene	50.0000	52.0919	-4.2	115	0.00
100	T	Naphthalene	50.0000	45.8047	8.4	95	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	47.7353	4.5	106	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412232.D 8260WT.M Sat May 14 18:09:03 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:21 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	709364	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	505399	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	272922	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	27428	100.2132 ug/L	99
3) 3-Chloro-1-propene	7.07	41	940418	104.3259 ug/L	82
4) 2-Chloro-1,3-butadiene	8.45	53	1188994	104.3183 ug/L	86
5) Ethyl Acetate	9.10	43	283167	104.3264 ug/L	95
6) Methacrylonitrile	9.25	67	155775	104.5365 ug/L #	63
7) Isobutyl Alcohol	9.25	43	17893	197.3629 ug/L #	96
9) Methyl methacrylate	11.42	41	298802	102.0346 ug/L	70
10) 2-Nitropropane	11.75	43	121321	95.8263 ug/L	97
13) Cyclohexanone	15.84	55	11401	102.1363 ug/L #	70

(#) = qualifier out of range (m) = manual integration
8M412321.D A9FOOWT.M Thu May 19 09:01:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

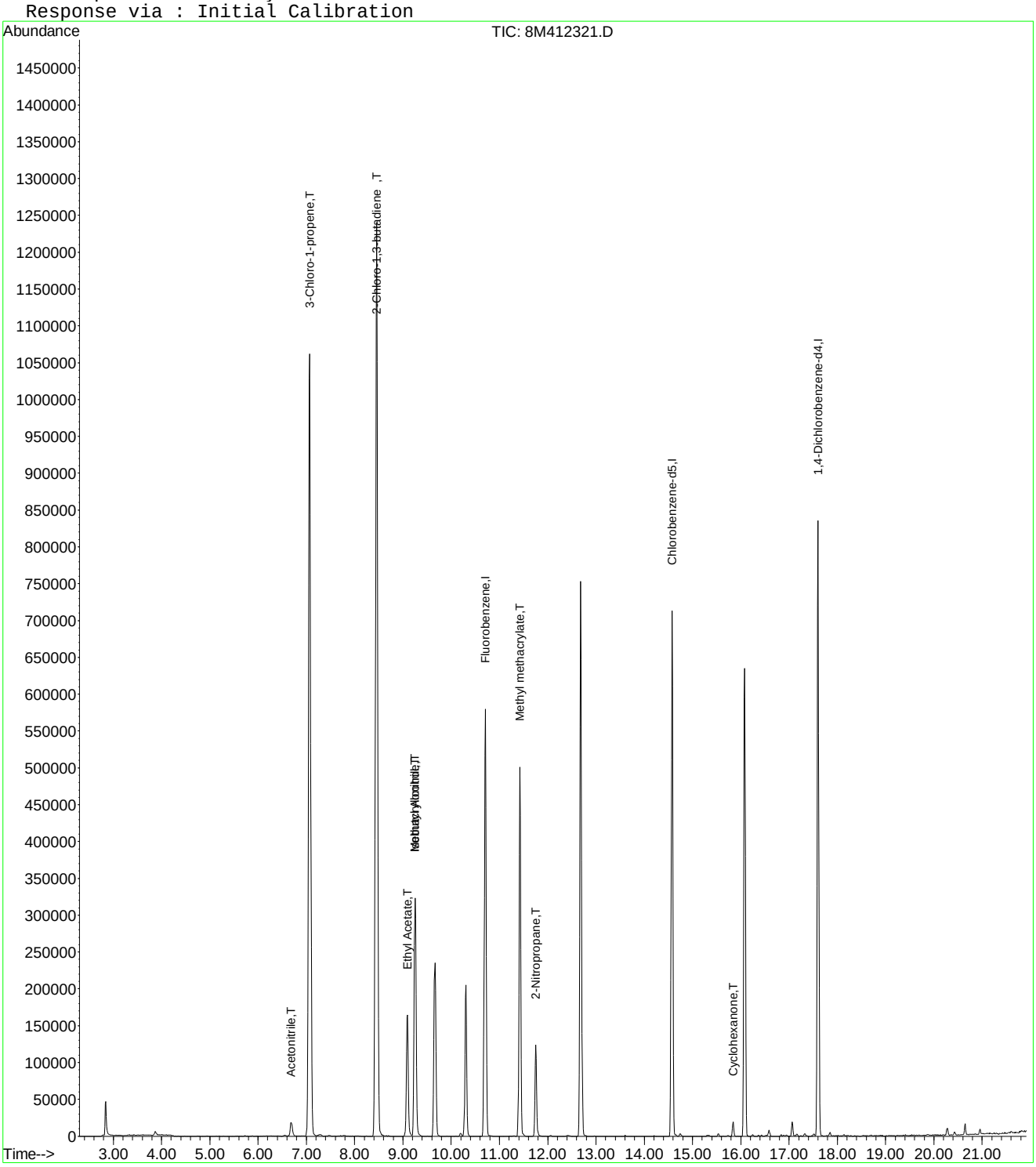

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	100.2132	-0.2	100	0.00
3	T	3-Chloro-1-propene	100.0000	104.3259	-4.3	100	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	104.3183	-4.3	100	0.00
5	T	Ethyl Acetate	100.0000	104.3264	-4.3	100	0.00
6	T	Methacrylonitrile	100.0000	104.5365	-4.5	100	0.00
7	T	Isobutyl Alcohol	200.0000	197.3629	1.3	100	-0.01
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.02
9	T	Methyl methacrylate	100.0000	102.0346	-2.0	100	0.00
10	T	2-Nitropropane	100.0000	95.8263	4.2	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	100.0000	102.1363	-2.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412321.D A9FOOWT.M Thu May 19 09:02:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:20:35 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	677339	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	488377	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	260939	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	13323	50.9795 ug/L	98
3) 3-Chloro-1-propene	7.07	41	453655	52.7060 ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	568765	52.2609 ug/L	87
5) Ethyl Acetate	9.09	43	131636	50.7913 ug/L	97
6) Methacrylonitrile	9.25	67	74064	52.0523 ug/L #	62
7) Isobutyl Alcohol	9.26	43	8483	97.9930 ug/L	95
9) Methyl methacrylate	11.42	41	143892	51.4593 ug/L	70
10) 2-Nitropropane	11.75	43	56559	46.7858 ug/L	95
13) Cyclohexanone	15.84	55	5225	48.9579 ug/L	83

(#) = qualifier out of range (m) = manual integration
8M412322.D A9FOOWT.M Thu May 19 09:20:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:19 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

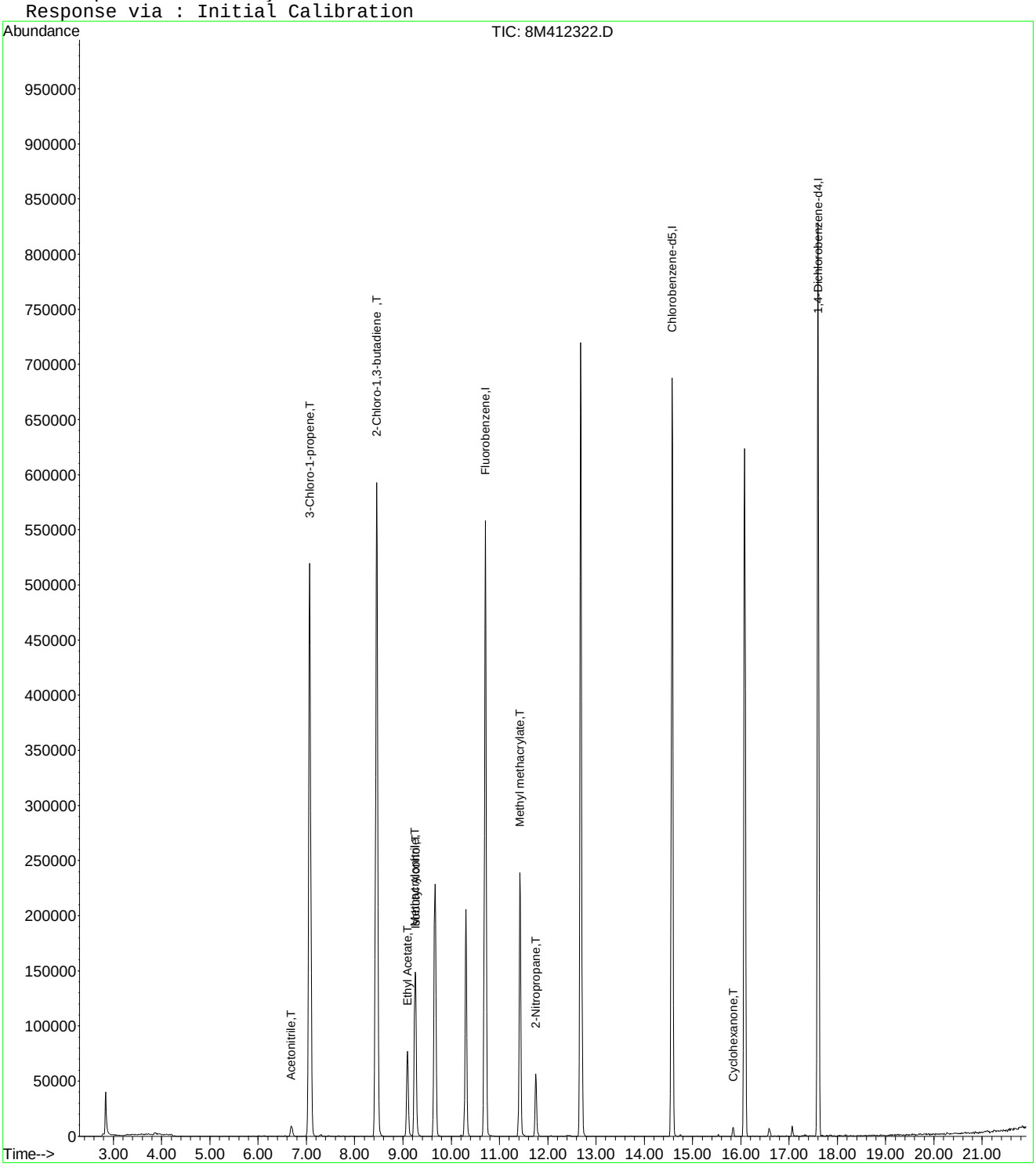

8M412322.D A9FOOWT.M Thu May 19 09:20:36 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	50.9795	-2.0	100	0.00
3	T	3-Chloro-1-propene	50.0000	52.7060	-5.4	100	0.00
4	T	2-Chloro-1,3-butadiene	50.0000	52.2609	-4.5	100	0.00
5	T	Ethyl Acetate	50.0000	50.7913	-1.6	100	0.00
6	T	Methacrylonitrile	50.0000	52.0523	-4.1	100	0.00
7	T	Isobutyl Alcohol	100.0000	97.9929	2.0	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.02
9	T	Methyl methacrylate	50.0000	51.4592	-2.9	100	0.00
10	T	2-Nitropropane	50.0000	46.7858	6.4	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	50.0000	48.9579	2.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412322.D A9FOOWT.M Thu May 19 09:02:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:22:33 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	652985	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	476539	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	256082	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	4873	19.3416 ug/L	80
3) 3-Chloro-1-propene	7.07	41	172467	20.7847 ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	219296	20.9015 ug/L	87
5) Ethyl Acetate	9.09	43	50385	20.1659 ug/L	100
6) Methacrylonitrile	9.26	67	28119	20.4992 ug/L #	63
7) Isobutyl Alcohol	9.27	43	2774	33.2395 ug/L #	8
9) Methyl methacrylate	11.42	41	55309	20.5176 ug/L	73
10) 2-Nitropropane	11.75	43	21584	18.5202 ug/L	99
13) Cyclohexanone	15.84	55	2230	21.2913 ug/L	87

(#) = qualifier out of range (m) = manual integration
8M412323.D A9FOOWT.M Thu May 19 09:22:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:21 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

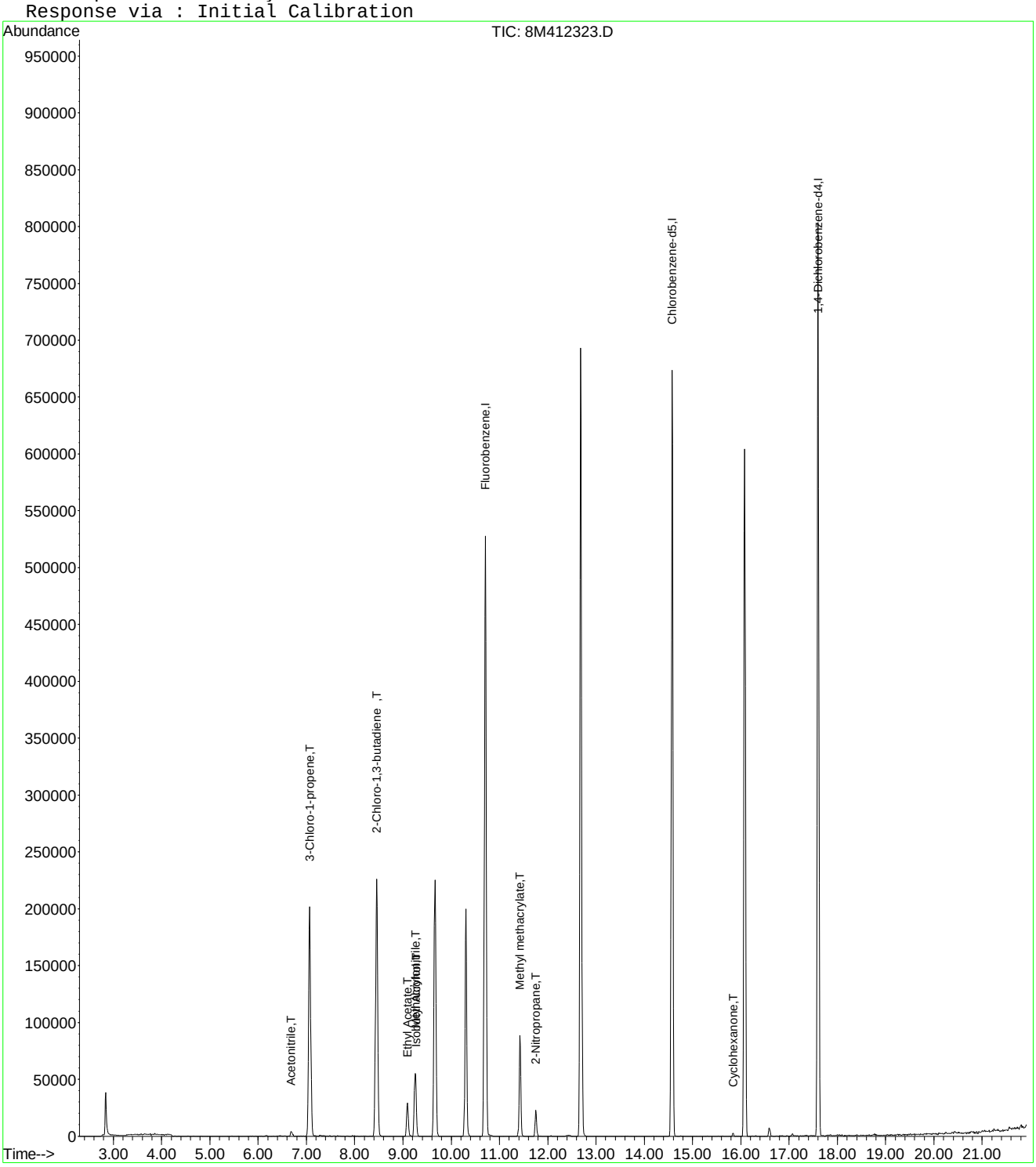

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	19.3416	3.3	100	0.00
3	T	3-Chloro-1-propene	20.0000	20.7847	-3.9	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	20.9015	-4.5	100	0.00
5	T	Ethyl Acetate	20.0000	20.1659	-0.8	100	0.00
6	T	Methacrylonitrile	20.0000	20.4992	-2.5	100	0.00
7	T	Isobutyl Alcohol	-1.0000	33.2395	0.0	0	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.18#
9	T	Methyl methacrylate	20.0000	20.5176	-2.6	100	0.00
10	T	2-Nitropropane	20.0000	18.5203	7.4	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	20.0000	21.2913	-6.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412323.D A9FOOWT.M Thu May 19 09:02:17 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:22:43 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	665645	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	483812	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	257678	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	405	1.5769 ug/L #	23
3) 3-Chloro-1-propene	7.07	41	40699	4.8115 ug/L	84
4) 2-Chloro-1,3-butadiene	8.45	53	48973	4.5789 ug/L	81
5) Ethyl Acetate	9.09	43	10675	4.1913 ug/L	95
6) Methacrylonitrile	9.26	67	5417	3.8740 ug/L #	72
7) Isobutyl Alcohol	9.27	43	441	5.1838 ug/L #	8
9) Methyl methacrylate	11.43	41	11811	4.2981 ug/L	65
10) 2-Nitropropane	11.76	43	4170	3.5100 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412324.D A9FOOWT.M Thu May 19 09:22:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:21 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

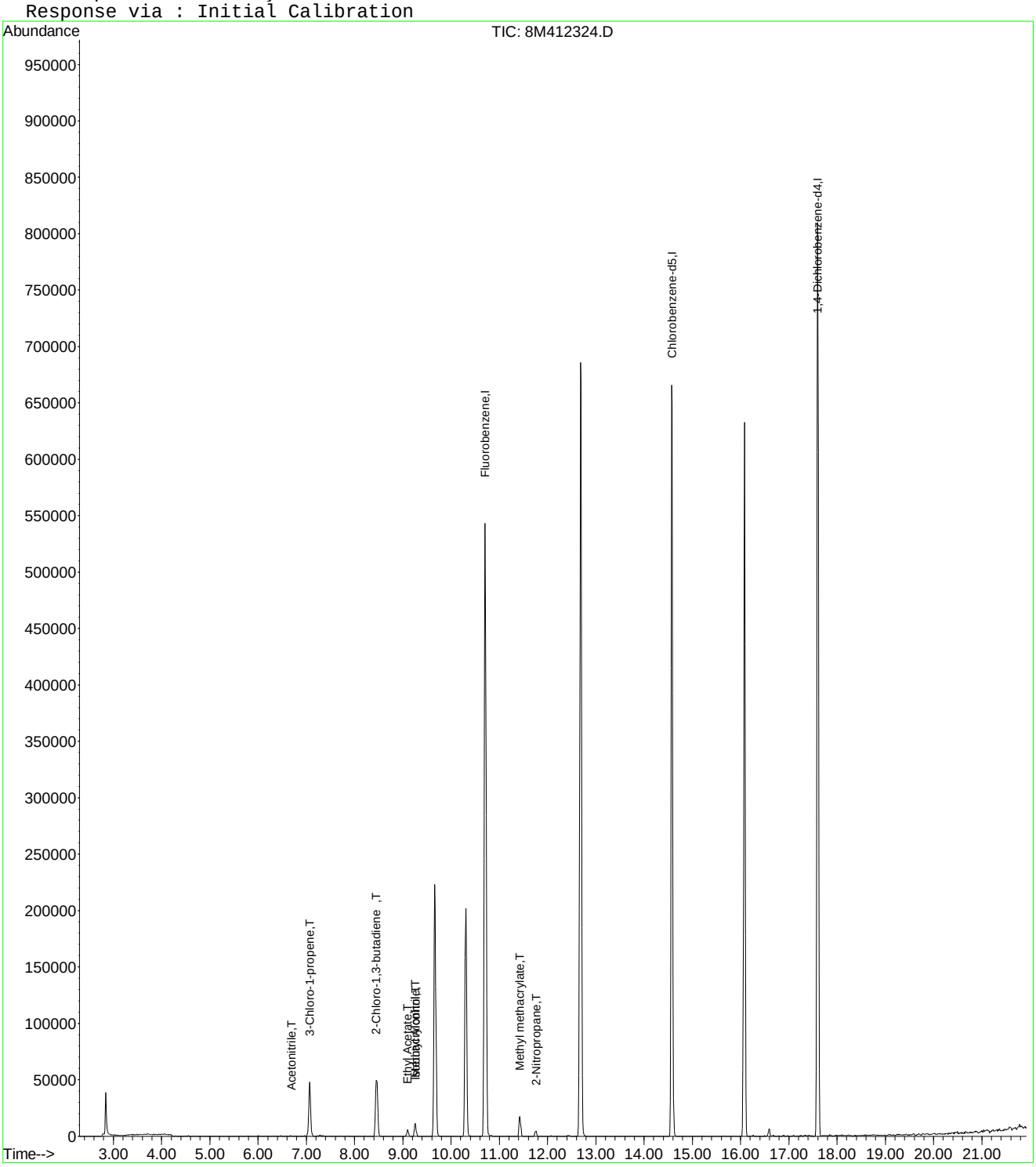

8M412324.D A9FOOWT.M Thu May 19 09:22:43 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	-1.0000	1.5769	0.0	0	0.00
3	T	3-Chloro-1-propene	5.0000	4.8115	3.8	100	0.00
4	T	2-Chloro-1,3-butadiene	5.0000	4.5789	8.4	100	0.00
5	T	Ethyl Acetate	5.0000	4.1913	16.2	100	0.00
6	T	Methacrylonitrile	5.0000	3.8740	22.5	100	0.00
7	T	Isobutyl Alcohol	-1.0000	5.1838	0.0	0	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.18#
9	T	Methyl methacrylate	5.0000	4.2981	14.0	100	0.00
10	T	2-Nitropropane	-1.0000	3.5100	0.0	0	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	0.0000	0.0	0	-15.84#

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412324.D A9FOOWT.M Thu May 19 09:02:03 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412325.D Vial: 7
Acq On : 17 May 2016 11:42 Operator: TMB
Sample : WG569079-06 200ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:27 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	682012	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	491515	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	261877	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.68	41	52022	197.6946 ug/L	97
3) 3-Chloro-1-propene	7.06	41	1768403	204.0468 ug/L	83
4) 2-Chloro-1,3-butadiene	8.46	53	2283706	208.4003 ug/L	87
5) Ethyl Acetate	9.09	43	537585	206.0040 ug/L	94
6) Methacrylonitrile	9.25	67	297408	207.5869 ug/L #	63
7) Isobutyl Alcohol	9.26	43	34441	395.1256 ug/L	95
9) Methyl methacrylate	11.42	41	577612	205.1526 ug/L	72
10) 2-Nitropropane	11.75	43	248395	204.0652 ug/L	95
13) Cyclohexanone	15.85	55	19752	184.4122 ug/L #	59

(#) = qualifier out of range (m) = manual integration
8M412325.D A9FOOWT.M Thu May 19 09:01:28 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412325.D Vial: 7
Acq On : 17 May 2016 11:42 Operator: TMB
Sample : WG569079-06 200ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

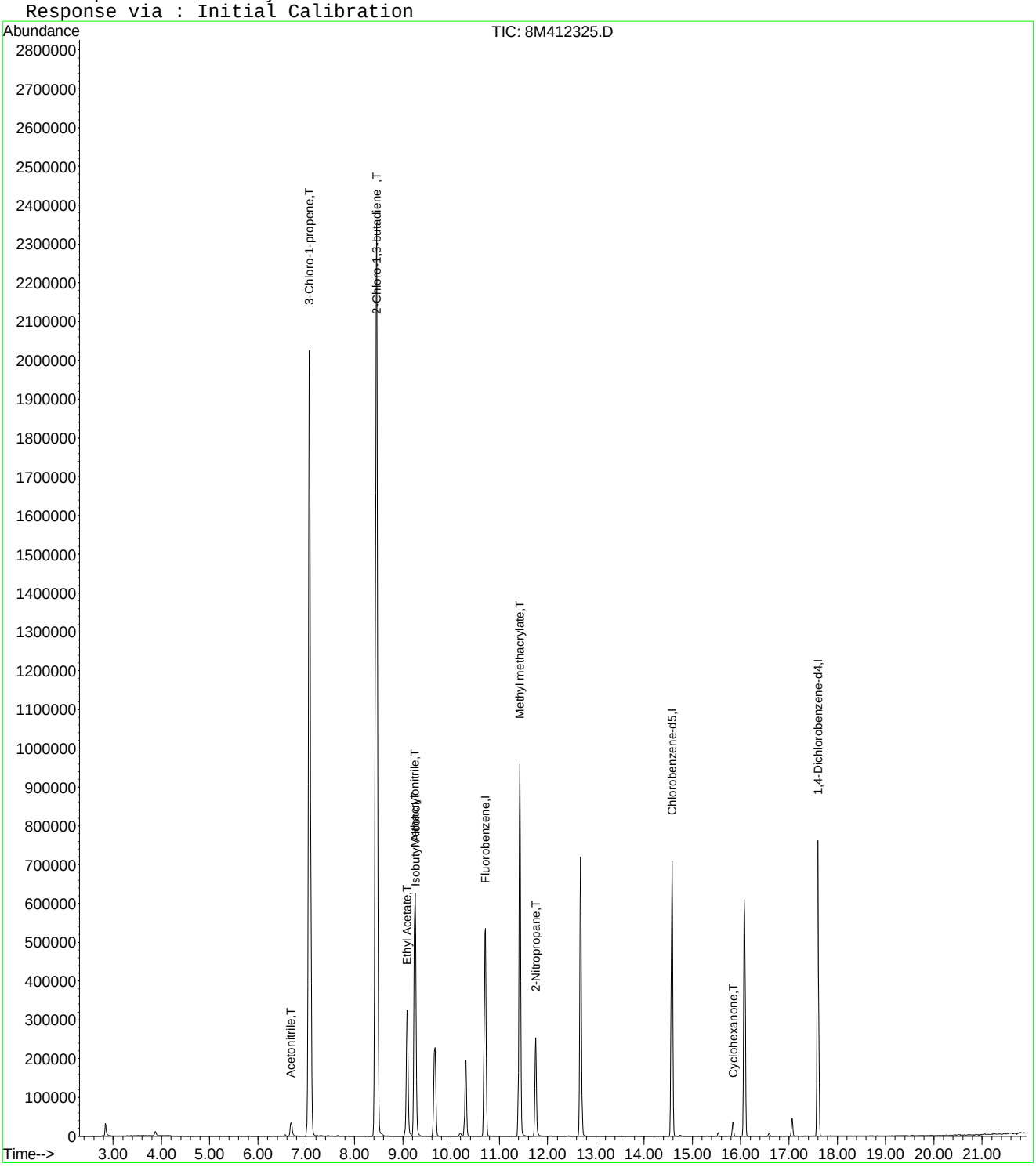

8M412325.D A9FOOWT.M Thu May 19 09:01:28 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412326.D Vial: 8
Acq On : 17 May 2016 12:40 Operator: TMB
Sample : WG569079-07 300ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:29 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	694903	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	496643	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	267309	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.69	41	81471	303.8636	ug/L	98
3) 3-Chloro-1-propene	7.06	41	2563559	290.3084	ug/L	83
4) 2-Chloro-1,3-butadiene	8.46	53	3270971	292.9562	ug/L	86
5) Ethyl Acetate	9.09	43	821184	308.8424	ug/L	95
6) Methacrylonitrile	9.25	67	451708	309.4374	ug/L #	62
7) Isobutyl Alcohol	9.26	43	55071	620.0836	ug/L	94
9) Methyl methacrylate	11.42	41	874430	304.8132	ug/L	70
10) 2-Nitropropane	11.75	43	392965	316.8456	ug/L	94
13) Cyclohexanone	15.84	55	33523	306.6233	ug/L #	61

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412326.D Vial: 8
Acq On : 17 May 2016 12:40 Operator: TMB
Sample : WG569079-07 300ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

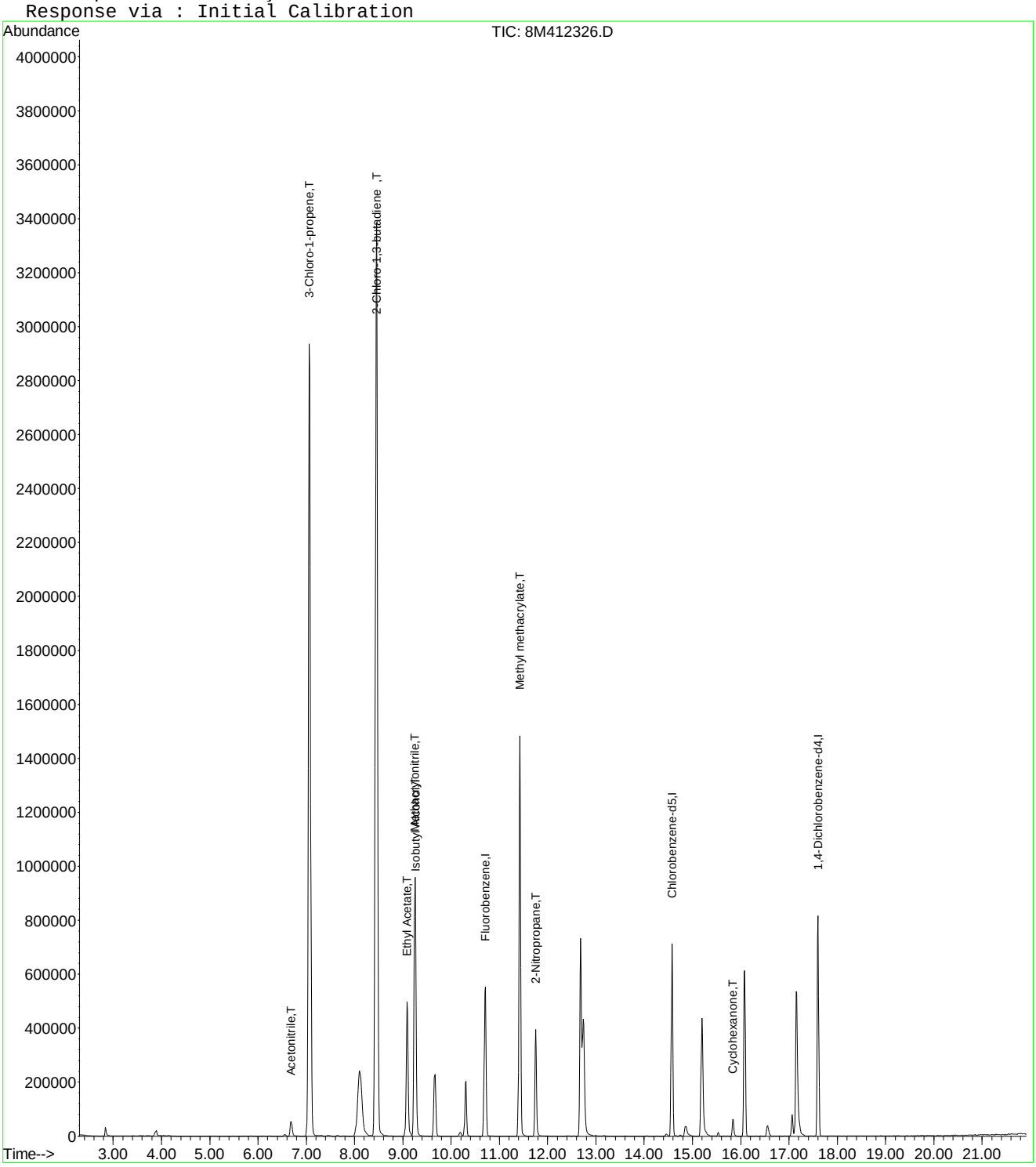

8M412326.D A9FOOWT.M Thu May 19 09:01:29 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412327.D Vial: 9
Acq On : 17 May 2016 13:10 Operator: TMB
Sample : WG569079-08 400ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:30 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	700514	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	502552	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	270883	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	110761	409.7980 ug/L	97
3) 3-Chloro-1-propene	7.07	41	3406131	382.6353 ug/L	82
4) 2-Chloro-1,3-butadiene	8.45	53	4356691	387.0705 ug/L	85
5) Ethyl Acetate	9.09	43	1116818	416.6642 ug/L	94
6) Methacrylonitrile	9.25	67	615482	418.2517 ug/L #	62
7) Isobutyl Alcohol	9.26	43	75472	842.9862 ug/L	97
9) Methyl methacrylate	11.42	41	1199317	414.7153 ug/L	71
10) 2-Nitropropane	11.75	43	538580	430.7760 ug/L	94
13) Cyclohexanone	15.84	55	45874	414.0575 ug/L #	55

(#) = qualifier out of range (m) = manual integration
8M412327.D A9FOOWT.M Thu May 19 09:01:31 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412327.D Vial: 9
Acq On : 17 May 2016 13:10 Operator: TMB
Sample : WG569079-08 400ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

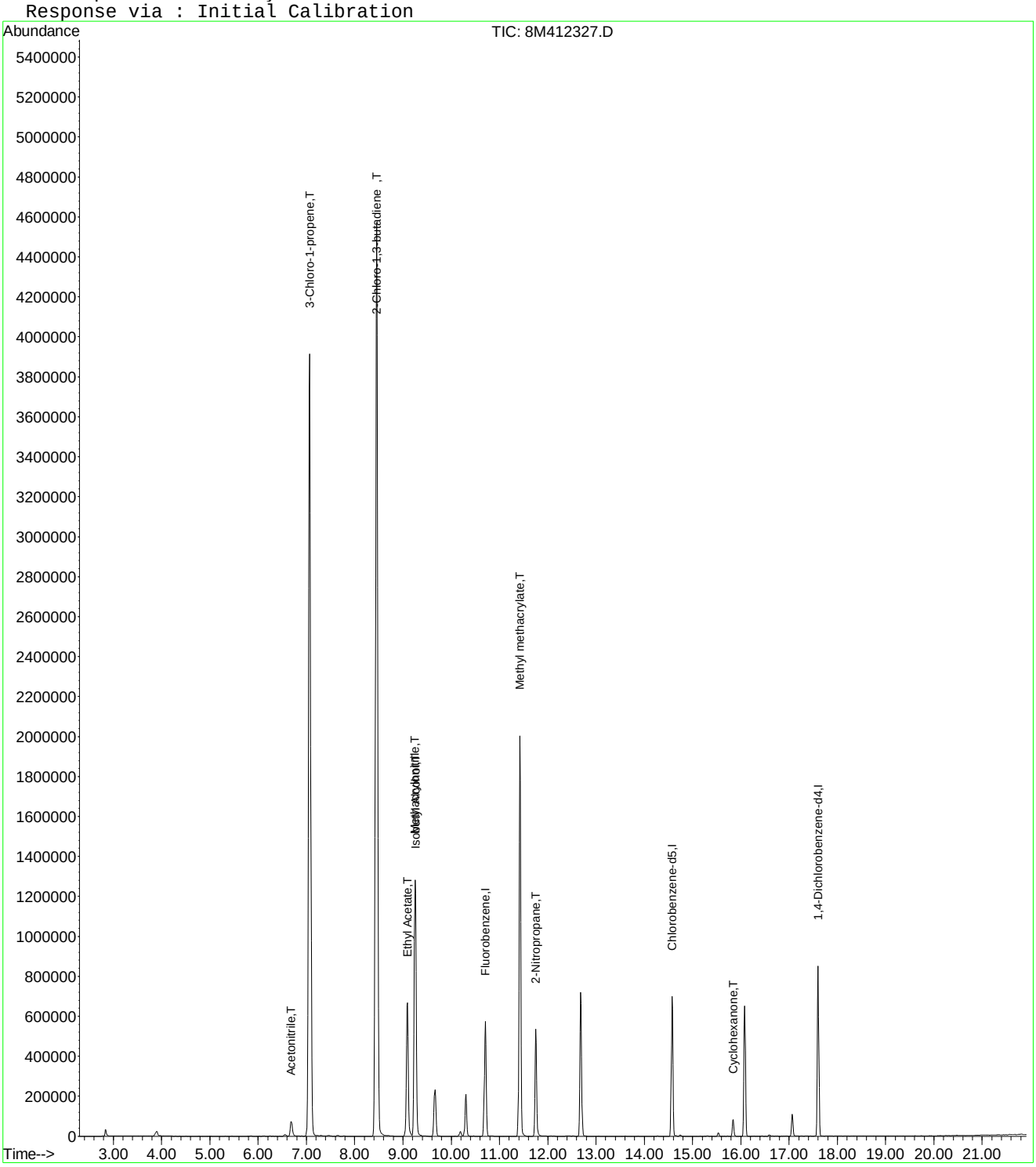

8M412327.D A9FOOWT.M Thu May 19 09:01:31 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412328.D Vial: 10
Acq On : 17 May 2016 13:39 Operator: TMB
Sample : WG569079-09 500ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:31 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	695694	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	495257	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	266442	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	132245	492.6753 ug/L	99
3) 3-Chloro-1-propene	7.06	41	4228273	478.2834 ug/L	82
4) 2-Chloro-1,3-butadiene	8.46	53	5390856	482.2693 ug/L	85
5) Ethyl Acetate	9.09	43	1321922	496.6017 ug/L	95
6) Methacrylonitrile	9.25	67	729852	499.4083 ug/L #	61
7) Isobutyl Alcohol	9.26	43	85200	958.2367 ug/L	96
9) Methyl methacrylate	11.42	41	1416438	493.1877 ug/L	72
10) 2-Nitropropane	11.75	43	637335	513.2956 ug/L	93
13) Cyclohexanone	15.84	55	52070	477.8160 ug/L #	61

(#) = qualifier out of range (m) = manual integration
8M412328.D A9FOOWT.M Thu May 19 09:01:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412328.D Vial: 10
Acq On : 17 May 2016 13:39 Operator: TMB
Sample : WG569079-09 500ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

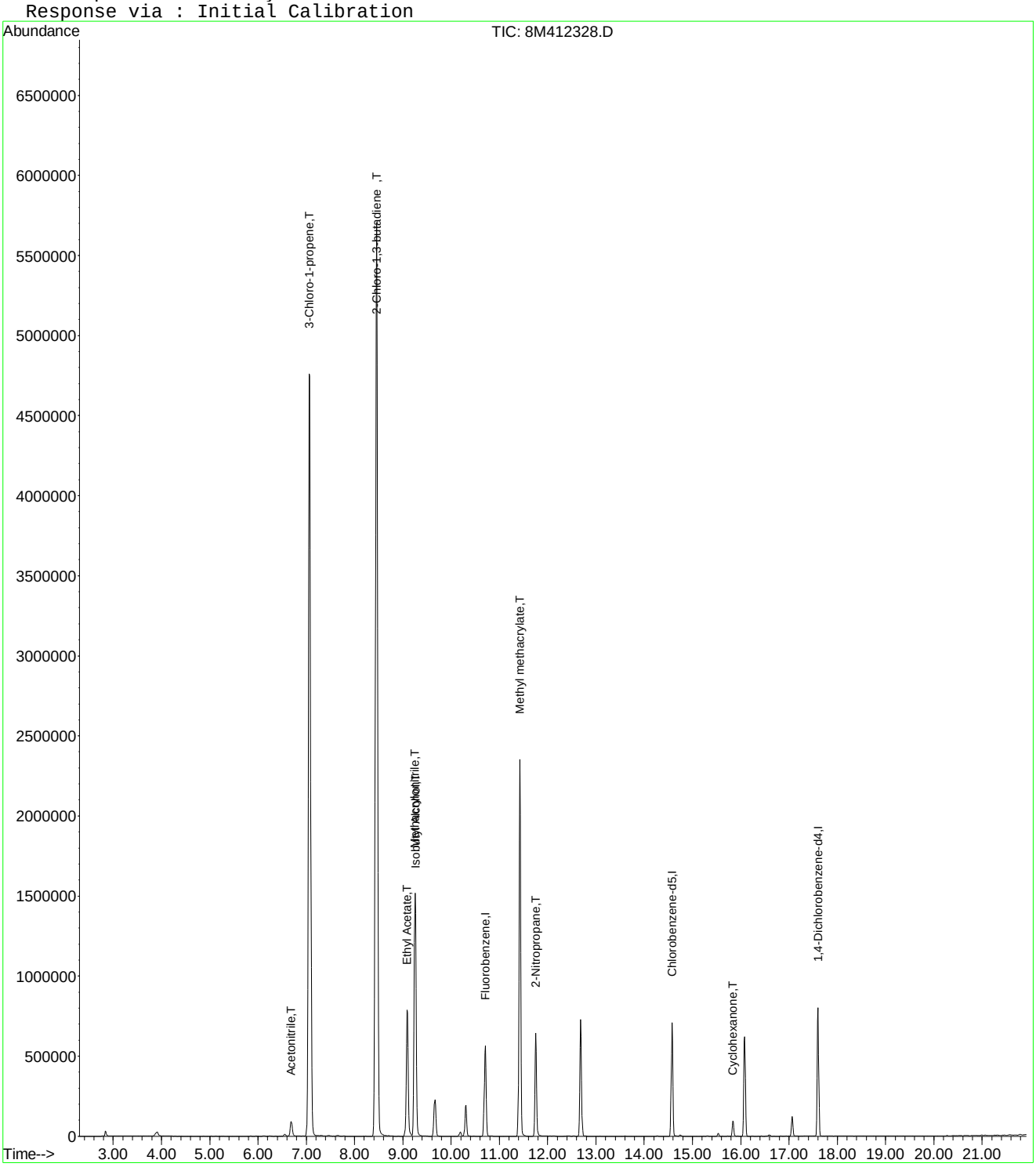

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:32 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	676765	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	486447	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	263036	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.69	41	29876	114.4154	ug/L	97
3) 3-Chloro-1-propene	7.07	41	858035	99.7718	ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	1224194	112.5803	ug/L	87
5) Ethyl Acetate	9.09	43	295545	114.1317	ug/L	96
6) Methacrylonitrile	9.25	67	161574	113.6509	ug/L #	63
7) Isobutyl Alcohol	9.26	43	19948	230.6285	ug/L	94
9) Methyl methacrylate	11.42	41	326465	116.8508	ug/L	72
10) 2-Nitropropane	11.75	43	131261	108.6716	ug/L	94
13) Cyclohexanone	15.83	55	10459	97.2189	ug/L #	74

(#) = qualifier out of range (m) = manual integration
8M412331.D A9FOOWT.M Thu May 19 09:01:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

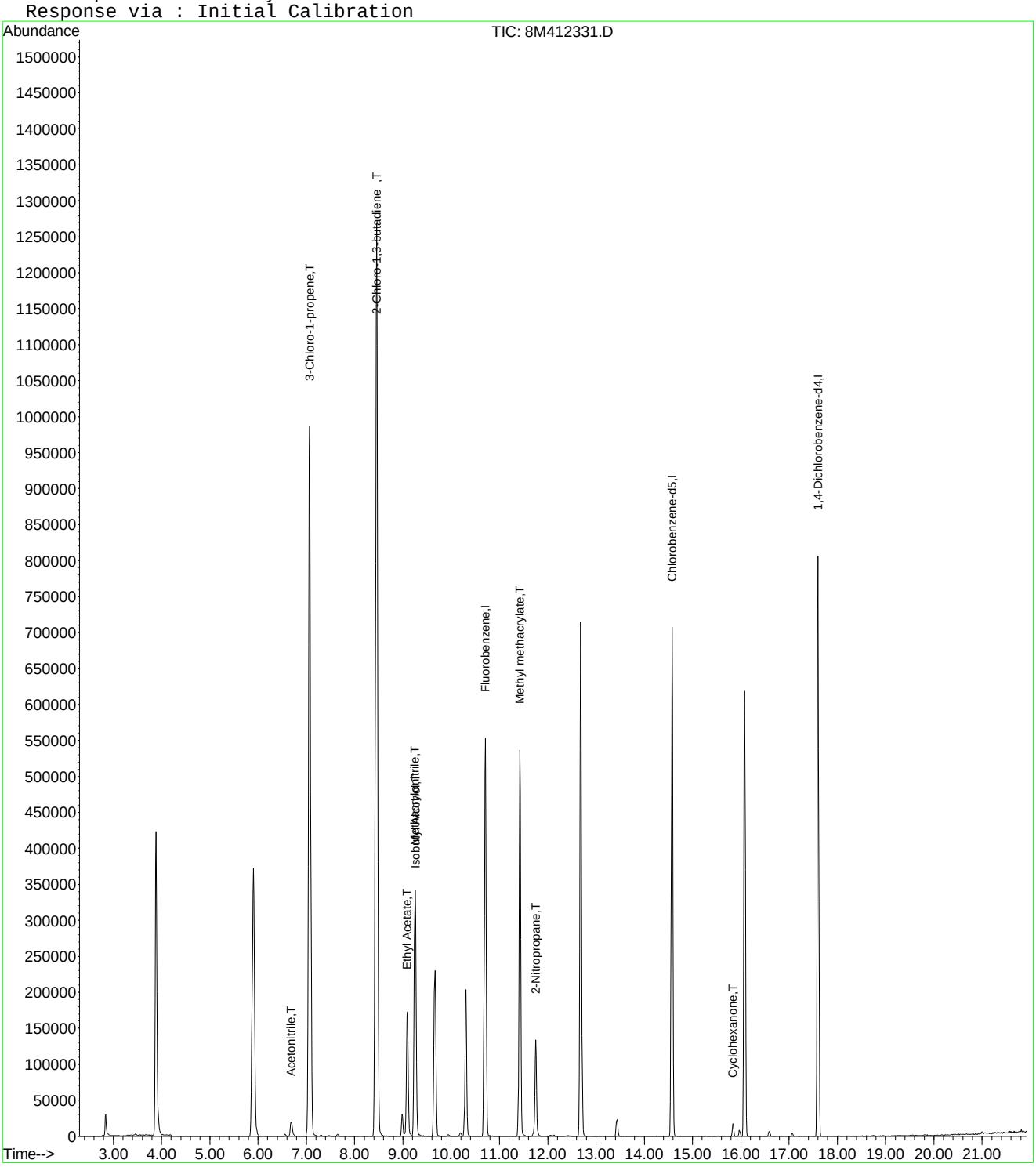

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	95	0.00
2	T	Acetonitrile	100.0000	114.4154	-14.4	109	0.00
3	T	3-Chloro-1-propene	100.0000	99.7718	0.2	91	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	112.5803	-12.6	103	0.00
5	T	Ethyl Acetate	100.0000	114.1317	-14.1	104	0.00
6	T	Methacrylonitrile	100.0000	113.6509	-13.7	104	0.00
7	T	Isobutyl Alcohol	200.0000	230.6285	-15.3	111	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.01
9	T	Methyl methacrylate	100.0000	116.8508	-16.9	109	0.00
10	T	2-Nitropropane	100.0000	108.6716	-8.7	108	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	96	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	96	0.00
13	T	Cyclohexanone	100.0000	97.2189	2.8	92	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412331.D A9FOOWT.M Thu May 19 09:03:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061616\6M140114.D Vial: 2
Acq On : 16 Jun 2016 16:59 Operator: FJB
Sample : WG573035-02 50ug/L CCV 8260 Inst : HPMS6
Misc : 1,1 STD76496 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 17:23:17 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	609223	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.06	117	455972	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	256090	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	10.39	111	160546	25.4627 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.84%		
43) 1,2-Dichloroethane-d4	11.11	65	172497	24.8210 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.28%		
58) Toluene-d8	13.85	98	549527	25.1119 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.44%		
80) p-Bromofluorobenzene	17.84	95	231854	25.6385 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.56%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	460860	47.7903 ug/L	98
3) Chloromethane	3.92	50	482787	41.0637 ug/L	99
4) Vinyl Chloride	4.16	62	344786	43.5063 ug/L	100
5) 1,3-Butadiene	4.20	54	277523	63.6809 ug/L	97
6) Bromomethane	5.08	94	168905	43.2664 ug/L	100
7) Chloroethane	5.23	64	203507	40.6264 ug/L	96
8) Trichlorofluoromethane	5.73	101	564318	53.1719 ug/L	100
9) Diethyl ether	6.29	59	551496	96.6331 ug/L	98
10) Isoprene	6.32	67	455539	50.4863 ug/L	98
11) Acrolein	6.55	56	38041	39.5069 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.55	101	301393	49.7115 ug/L	99
13) Acetone	6.66	43	78195	43.8898 ug/L	99
14) 1,1-Dichloroethene	6.88	61	542554	50.5311 ug/L	99
15) Tert-Butyl Alcohol	7.01	59	83032	157.5700 ug/L	98
16) Dimethyl Sulfide	7.17	62	250745	50.8860 ug/L	98
17) Iodomethane	7.43	142	229989	52.0070 ug/L	97
18) Methyl acetate	7.45	43	233383	44.4142 ug/L	99
19) Methylene Chloride	7.72	84	313309	47.3195 ug/L	98
20) Carbon Disulfide	7.77	76	1118644	53.2509 ug/L	100
21) Acrylonitrile	7.92	53	110810	47.8481 ug/L	98
22) Methyl Tert Butyl Ether	7.96	73	773194	47.8599 ug/L	99
23) trans-1,2-Dichloroethene	8.21	96	307942	49.2033 ug/L	97
24) n-Hexane	8.28	57	553326	56.7779 ug/L	99
25) Diisopropyl ether	8.67	45	2704807	104.2721 ug/L	99
26) Vinyl Acetate	8.85	43	685636	62.2504 ug/L	100
27) 1,1-Dichloroethane	8.88	63	616712	49.1793 ug/L	100
28) Ethyl-Tert-Butyl ether	9.30	59	2120034	99.8647 ug/L	100
29) 2-Butanone	9.51	43	123439	44.8677 ug/L	98
30) Propionitrile	9.63	54	68918	90.7680 ug/L	99
31) 2,2-Dichloropropane	9.75	77	496009	54.2553 ug/L	97
32) cis-1,2-Dichloroethene	9.82	96	338756	49.6838 ug/L	99
33) Chloroform	10.06	83	556525	49.8303 ug/L	99
34) 1-Bromopropane	10.21	122	57939	51.3188 ug/L	99
35) Bromochloromethane	10.32	130	191936	49.5716 ug/L	100
36) Tetrahydrofuran	10.35	42	163777	86.4729 ug/L	97
38) 1,1,1-Trichloroethane	10.65	97	506361	50.8246 ug/L	100
39) Cyclohexane	10.68	56	682303	54.6382 ug/L	98
40) 1,1-Dichloropropene	10.88	75	433618	50.7833 ug/L	99
41) Tert-Amyl-Methyl ether	11.00	73	1595961	97.0992 ug/L	98
42) Carbon Tetrachloride	11.04	117	468789	52.7441 ug/L	99

(#) = qualifier out of range (m) = manual integration

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061616\6M140114.D Vial: 2
Acq On : 16 Jun 2016 16:59 Operator: FJB
Sample : WG573035-02 50ug/L CCV 8260 Inst : HPMS6
Misc : 1,1 STD76496 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 17:23:17 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
45)	1,2-Dichloroethane	11.24	62	426062	49.6388	ug/L	99
46)	Benzene	11.28	78	1210046	48.3494	ug/L	98
47)	Trichloroethene	12.14	130	310264	48.5394	ug/L	98
48)	Methylcyclohexane	12.23	83	519836	53.6414	ug/L	98
49)	1,2-Dichloropropane	12.39	63	340219	49.2156	ug/L	99
50)	1,4-Dioxane	12.72	88	7528	152.8554	ug/L	91
51)	Bromodichloromethane	12.73	83	432606	50.8873	ug/L	99
52)	Dibromomethane	12.84	93	174011	48.7810	ug/L	100
53)	2-Chloroethyl Vinyl Ether	13.09	63	162700	51.5676	ug/L	99
54)	4-Methyl-2-Pentanone	13.12	58	95185	45.3307	ug/L	99
55)	cis-1,3-Dichloropropene	13.48	75	500827	52.0506	ug/L	100
56)	Dimethyl Disulfide	13.78	79	281352	50.7563	ug/L	99
59)	Toluene	13.97	91	1259026	48.6249	ug/L	100
60)	Ethyl Methacrylate	14.09	69	345573	48.7041	ug/L	98
62)	trans-1,3-Dichloropropene	14.17	75	444011	50.3495	ug/L	99
63)	1,1,2-Trichloroethane	14.43	97	233277	47.3196	ug/L	100
64)	2-Hexanone	14.36	43	182758	43.6884	ug/L	97
65)	1,3-Dichloropropane	14.79	76	411273	47.4499	ug/L	99
66)	Tetrachloroethene	14.92	166	327291	48.1885	ug/L	99
67)	Dibromochloromethane	15.24	129	311499	49.5896	ug/L	100
68)	1,2-Dibromoethane	15.53	107	225854	47.3998	ug/L	99
69)	1-Chlorohexane	15.64	91	460160	54.7318	ug/L	97
70)	Chlorobenzene	16.12	112	825529	47.6494	ug/L	98
71)	1,1,1,2-Tetrachloroethane	16.17	131	312470	49.7255	ug/L	98
72)	Ethylbenzene	16.15	106	443669	48.2803	ug/L	97
73)	m-,p-Xylene	16.27	106	1065591	97.6074	ug/L	98
74)	o-Xylene	16.93	106	531222	49.2396	ug/L	98
75)	Styrene	16.97	104	909933	50.7858	ug/L	97
76)	Bromoform	17.55	173	190145	47.7111	ug/L	99
77)	Isopropylbenzene	17.43	105	1374906	50.7710	ug/L	100
79)	1,1,2,2-Tetrachloroethane	17.70	83	281111	45.5294	ug/L	100
81)	1,2,3-Trichloropropane	17.92	110	80403	44.9793	ug/L	87
82)	trans-1,4-Dichloro-2-Buten	17.98	53	100122	45.3690	ug/L	92
83)	n-Propylbenzene	18.03	91	1696402	51.1115	ug/L	100
84)	Bromobenzene	18.18	156	367667	47.2074	ug/L	98
85)	1,3,5-Trimethylbenzene	18.26	105	1183868	50.4122	ug/L	99
86)	2-Chlorotoluene	18.35	91	1091886	48.0281	ug/L	99
87)	4-Chlorotoluene	18.41	91	1044130	49.4650	ug/L	99
88)	a-Methylstyrene	18.74	118	652158	49.6744	ug/L	100
89)	tert-Butylbenzene	18.81	134	251802	48.6354	ug/L	78
90)	1,2,4-Trimethylbenzene	18.87	105	1227716	49.9408	ug/L	99
91)	sec-Butylbenzene	19.13	105	1450199	50.1845	ug/L	99
92)	p-Isopropyltoluene	19.32	119	1257909	51.0813	ug/L	100
93)	1,3-Dichlorobenzene	19.53	146	724338	47.6944	ug/L	98
94)	1,4-Dichlorobenzene	19.70	146	722152	50.2134	ug/L	98
95)	n-Butylbenzene	19.94	91	1205970	51.7394	ug/L	99
96)	1,2-Dichlorobenzene	20.28	146	667354	47.1543	ug/L	97
97)	1,2-Dibromo-3-Chloropropan	21.46	75	52951	47.7574	ug/L	96
98)	1,2,4-Trichlorobenzene	22.82	180	488714	49.9450	ug/L	98
99)	Hexachlorobutadiene	23.02	225	202711	49.9179	ug/L	100
100)	Naphthalene	23.28	128	955454	49.3962	ug/L	100
101)	1,2,3-Trichlorobenzene	23.69	180	439641	47.4775	ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061616\6M140114.D Vial: 2
Acq On : 16 Jun 2016 16:59 Operator: FJB
Sample : WG573035-02 50ug/L CCV 8260 Inst : HPMS6
Misc : 1,1 STD76496 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 17:23 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration

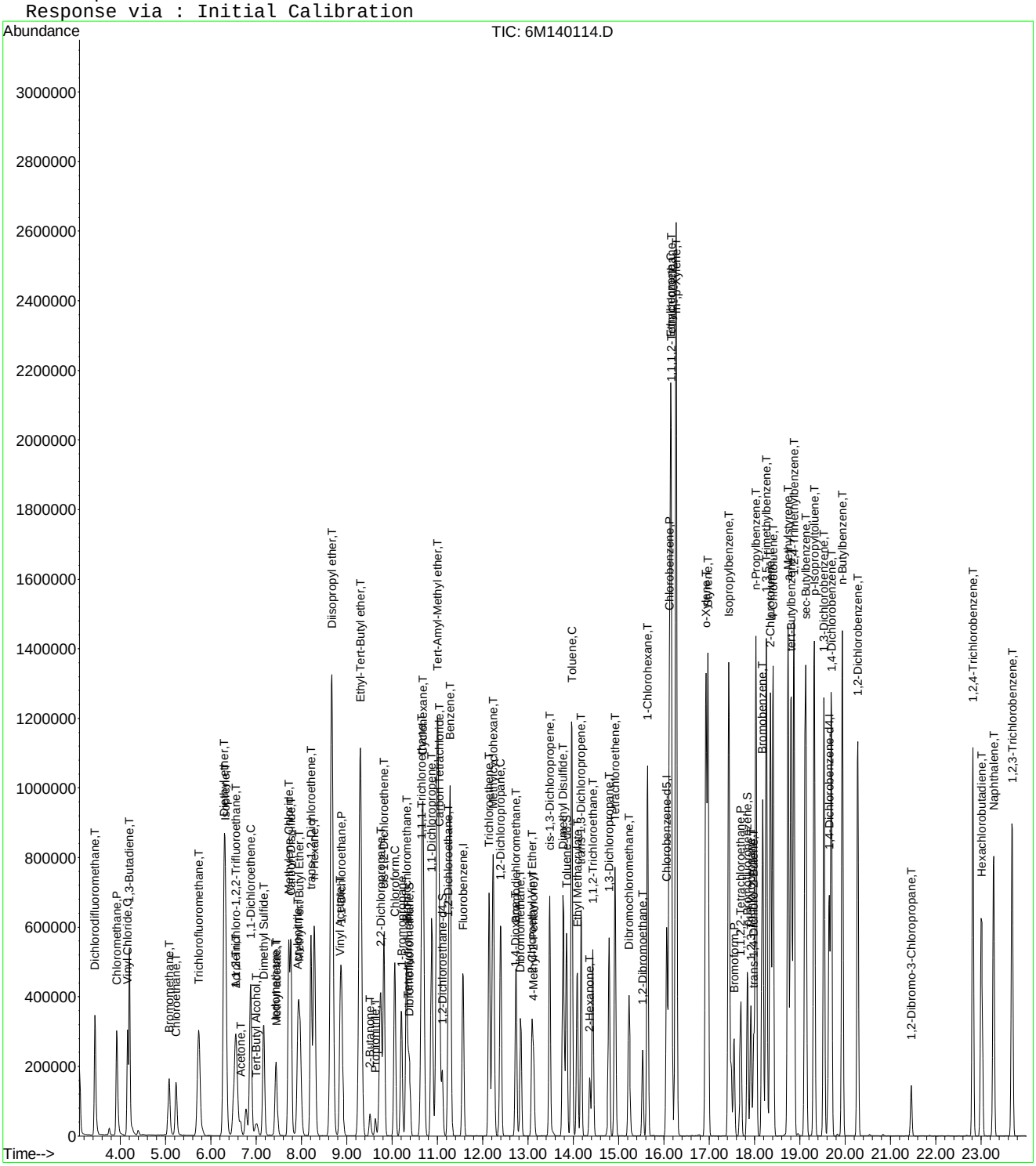

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061616\6M140114.D Vial: 2
Acq On : 16 Jun 2016 16:59 Operator: FJB
Sample : WG573035-02 50ug/L CCV 8260 Inst : HPMS6
Misc : 1,1 STD76496 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	82	0.00
2	T	Dichlorodifluoromethane	0.3957	0.3782	4.4	72	0.00
3	P	Chloromethane	0.4825	0.3962	17.9	65	0.00
4	C	Vinyl Chloride	0.3252	0.2830	13.0	73	0.00
5	T	1,3-Butadiene	0.2081	0.2278	-9.5	101	0.00
6	T	Bromomethane	0.1602	0.1386	13.5	74	0.01
7	T	Chloroethane	0.2056	0.1670	18.7	67	0.00
8	T	Trichlorofluoromethane	0.4355	0.4632	-6.3	87	0.01
9	T	Diethyl ether	0.2342	0.2263	3.4	79	0.00
10	T	Isoprene	0.3703	0.3739	-1.0	83	0.00
11	T	Acrolein	0.0395	0.0312	21.0#	65	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2488	0.2474	0.6	82	0.00
13	T	Acetone	0.0776	0.0642	17.3	70	0.00
14	C	1,1-Dichloroethene	0.4406	0.4453	-1.1	83	0.01
15	T	Tert-Butyl Alcohol	0.0216	0.0170	21.2#	60	-0.04
16	T	Dimethyl Sulfide	0.2022	0.2058	-1.8	83	0.01
17	T	Iodomethane	0.1564	0.1888	-20.7#	80	0.00
18	T	Methyl acetate	0.2156	0.1915	11.2	73	0.00
19	T	Methylene Chloride	0.2717	0.2571	5.4	80	0.00
20	T	Carbon Disulfide	0.8620	0.9181	-6.5	87	0.01
21	T	Acrylonitrile	0.0950	0.0909	4.3	74	0.00
22	T	Methyl Tert Butyl Ether	0.6630	0.6346	4.3	78	0.00
23	T	trans-1,2-Dichloroethene	0.2568	0.2527	1.6	81	0.00
24	T	n-Hexane	0.3999	0.4541	-13.6	94	0.00
25	T	Diisopropyl ether	1.0645	1.1099	-4.3	84	0.00
26	T	Vinyl Acetate	0.4520	0.5627	-24.5#	102	0.00
27	P	1,1-Dichloroethane	0.5146	0.5061	1.6	82	0.00
28	T	Ethyl-Tert-Butyl ether	0.8711	0.8700	0.1	80	0.00
29	T	2-Butanone	0.1129	0.1013	10.3	73	0.00
30	T	Propionitrile	0.0312	0.0283	9.2	69	0.00
31	T	2,2-Dichloropropane	0.3752	0.4071	-8.5	92	0.00
32	T	cis-1,2-Dichloroethene	0.2798	0.2780	0.6	81	0.00
33	C	Chloroform	0.4583	0.4567	0.3	83	0.00
34		1-Bromopropane	0.0436	0.0476	-9.2	85	0.00
35	T	Bromochloromethane	0.1589	0.1575	0.9	80	0.00
36	T	Tetrahydrofuran	0.0777	0.0672	13.5	71	0.00
37	S	Dibromofluoromethane	0.2587	0.2635	-1.9	82	0.00
38	T	1,1,1-Trichloroethane	0.4088	0.4156	-1.6	84	0.00
39	T	Cyclohexane	0.5124	0.5600	-9.3	90	0.00
40	T	1,1-Dichloropropene	0.3504	0.3559	-1.6	83	0.00
41	T	Tert-Amyl-Methyl ether	0.6745	0.6549	2.9	78	0.00
42	T	Carbon Tetrachloride	0.3647	0.3847	-5.5	85	0.00
43	S	1,2-Dichloroethane-d4	0.2852	0.2831	0.7	81	0.00
44		Heptane	0.0000	0.0000	0.0	81	0.00
45	T	1,2-Dichloroethane	0.3522	0.3497	0.7	82	0.00
46	T	Benzene	1.0270	0.9931	3.3	81	0.00
47	T	Trichloroethene	0.2623	0.2546	2.9	80	0.00
48	T	Methylcyclohexane	0.3977	0.4266	-7.3	88	0.00
49	C	1,2-Dichloropropane	0.2837	0.2792	1.6	81	0.00
50	T	1,4-Dioxane	0.0020	0.0015	23.8#	58	-0.02
51	T	Bromodichloromethane	0.3489	0.3550	-1.8	82	0.00
52	T	Dibromomethane	0.1464	0.1428	2.4	78	0.00
53	T	2-Chloroethyl Vinyl Ether	0.1295	0.1335	-3.1	78	0.00
54	T	4-Methyl-2-Pentanone	0.0862	0.0781	9.3	70	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061616\6M140114.D Vial: 2
Acq On : 16 Jun 2016 16:59 Operator: FJB
Sample : WG573035-02 50ug/L CCV 8260 Inst : HPMS6
Misc : 1,1 STD76496 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.3948	0.4110	-4.1	82	0.00
56	T	Dimethyl Disulfide	0.2275	0.2309	-1.5	82	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	83	0.00
58	S	Toluene-d8	1.1998	1.2052	-0.4	85	0.00
59	C	Toluene	1.4196	1.3806	2.7	81	0.00
60	T	Ethyl Methacrylate	0.3890	0.3789	2.6	76	0.00
61		Paraldehyde	0.0000	0.0000	0.0	80	0.00
62	T	trans-1,3-Dichloropropene	0.4835	0.4869	-0.7	81	0.00
63	T	1,1,2-Trichloroethane	0.2703	0.2558	5.4	77	0.00
64	T	2-Hexanone	0.2294	0.2004	12.6	71	0.00
65	T	1,3-Dichloropropane	0.4752	0.4510	5.1	78	0.00
66	T	Tetrachloroethene	0.3724	0.3589	3.6	81	0.00
67	T	Dibromochloromethane	0.3444	0.3416	0.8	80	0.00
68	T	1,2-Dibromoethane	0.2612	0.2477	5.2	76	0.00
69	T	1-Chlorohexane	0.4610	0.5046	-9.5	87	0.00
70	P	Chlorobenzene	0.9499	0.9052	4.7	80	0.00
71	T	1,1,1,2-Tetrachloroethane	0.3445	0.3426	0.5	80	0.00
72	C	Ethylbenzene	0.5038	0.4865	3.4	79	0.00
73	T	m-,p-Xylene	0.5986	0.5842	2.4	80	0.00
74	T	o-Xylene	0.5915	0.5825	1.5	80	0.00
75	T	Styrene	0.9824	0.9978	-1.6	78	0.00
76	P	Bromoform	0.2185	0.2085	4.6	76	0.00
77	T	Isopropylbenzene	1.4848	1.5077	-1.5	80	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	81	0.00
79	P	1,1,2,2-Tetrachloroethane	0.6027	0.5488	8.9	74	0.00
80	S	p-Bromofluorobenzene	0.8828	0.9054	-2.6	84	0.00
81	T	1,2,3-Trichloropropane	0.1745	0.1570	10.0	73	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1840	0.1955	-6.2	78	0.00
83	T	n-Propylbenzene	3.2401	3.3121	-2.2	81	0.00
84	T	Bromobenzene	0.7603	0.7178	5.6	79	0.00
85	T	1,3,5-Trimethylbenzene	2.2925	2.3114	-0.8	80	0.00
86	T	2-Chlorotoluene	2.2194	2.1318	3.9	81	0.00
87	T	4-Chlorotoluene	2.0606	2.0386	1.1	80	0.00
88	T	a-Methylstyrene	1.2817	1.2733	0.7	80	0.00
89	T	tert-Butylbenzene	0.5054	0.4916	2.7	79	0.00
90	T	1,2,4-Trimethylbenzene	2.3999	2.3970	0.1	80	0.00
91	T	sec-Butylbenzene	2.8210	2.8314	-0.4	80	0.00
92	T	p-Isopropyltoluene	2.4040	2.4560	-2.2	80	0.00
93	T	1,3-Dichlorobenzene	1.4826	1.4142	4.6	80	0.00
94	T	1,4-Dichlorobenzene	1.6261	1.4100	13.3	79	0.00
95	T	n-Butylbenzene	2.2754	2.3546	-3.5	81	0.00
96	T	1,2-Dichlorobenzene	1.3816	1.3030	5.7	78	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1082	0.1034	4.5	73	0.00
98	T	1,2,4-Trichlorobenzene	0.9552	0.9542	0.1	80	0.00
99	T	Hexachlorobutadiene	0.3964	0.3958	0.2	83	0.00
100	T	Naphthalene	1.8883	1.8655	1.2	75	0.00
101	T	1,2,3-Trichlorobenzene	0.9040	0.8584	5.0	77	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140114.D 8260WT.M Fri Jun 17 08:33:34 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061616\6M140114.D Vial: 2
Acq On : 16 Jun 2016 16:59 Operator: FJB
Sample : WG573035-02 50ug/L CCV 8260 Inst : HPMS6
Misc : 1,1 STD76496 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	82	0.00
2	T	Dichlorodifluoromethane	50.0000	47.7903	4.4	72	0.00
3	P	Chloromethane	50.0000	41.0637	17.9	65	0.00
4	C	Vinyl Chloride	50.0000	43.5063	13.0	73	0.00
5	T	1,3-Butadiene	50.0000	63.6809	-27.4#	101	0.00
6	T	Bromomethane	50.0000	43.2664	13.5	74	0.01
7	T	Chloroethane	50.0000	40.6264	18.7	67	0.00
8	T	Trichlorofluoromethane	50.0000	53.1719	-6.3	87	0.01
9	T	Diethyl ether	100.0000	96.6331	3.4	79	0.00
10	T	Isoprene	50.0000	50.4863	-1.0	83	0.00
11	T	Acrolein	50.0000	39.5069	21.0#	65	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	49.7115	0.6	82	0.00
13	T	Acetone	50.0000	43.8898	12.2	70	0.00
14	C	1,1-Dichloroethene	50.0000	50.5311	-1.1	83	0.01
15	T	Tert-Butyl Alcohol	200.0000	157.5700	21.2#	60	-0.04
16	T	Dimethyl Sulfide	50.0000	50.8860	-1.8	83	0.01
17	T	Iodomethane	50.0000	52.0070	-4.0	80	0.00
18	T	Methyl acetate	50.0000	44.4143	11.2	73	0.00
19	T	Methylene Chloride	50.0000	47.3195	5.4	80	0.00
20	T	Carbon Disulfide	50.0000	53.2509	-6.5	87	0.01
21	T	Acrylonitrile	50.0000	47.8481	4.3	74	0.00
22	T	Methyl Tert Butyl Ether	50.0000	47.8599	4.3	78	0.00
23	T	trans-1,2-Dichloroethene	50.0000	49.2033	1.6	81	0.00
24	T	n-Hexane	50.0000	56.7779	-13.6	94	0.00
25	T	Diisopropyl ether	100.0000	104.2721	-4.3	84	0.00
26	T	Vinyl Acetate	50.0000	62.2504	-24.5#	102	0.00
27	P	1,1-Dichloroethane	50.0000	49.1793	1.6	82	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	99.8647	0.1	80	0.00
29	T	2-Butanone	50.0000	44.8677	10.3	73	0.00
30	T	Propionitrile	100.0000	90.7680	9.2	69	0.00
31	T	2,2-Dichloropropane	50.0000	54.2553	-8.5	92	0.00
32	T	cis-1,2-Dichloroethene	50.0000	49.6838	0.6	81	0.00
33	C	Chloroform	50.0000	49.8303	0.3	83	0.00
34		1-Bromopropane	50.0000	51.3188	-2.6	85	0.00
35	T	Bromochloromethane	50.0000	49.5716	0.9	80	0.00
36	T	Tetrahydrofuran	100.0000	86.4729	13.5	71	0.00
37	S	Dibromofluoromethane	25.0000	25.4628	-1.9	82	0.00
38	T	1,1,1-Trichloroethane	50.0000	50.8246	-1.6	84	0.00
39	T	Cyclohexane	50.0000	54.6382	-9.3	90	0.00
40	T	1,1-Dichloropropene	50.0000	50.7833	-1.6	83	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	97.0992	2.9	78	0.00
42	T	Carbon Tetrachloride	50.0000	52.7441	-5.5	85	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.8210	0.7	81	0.00
44		Heptane	-1.0000	0.0000	0.0	81	0.00
45	T	1,2-Dichloroethane	50.0000	49.6388	0.7	82	0.00
46	T	Benzene	50.0000	48.3494	3.3	81	0.00
47	T	Trichloroethene	50.0000	48.5394	2.9	80	0.00
48	T	Methylcyclohexane	50.0000	53.6414	-7.3	88	0.00
49	C	1,2-Dichloropropane	50.0000	49.2156	1.6	81	0.00
50	T	1,4-Dioxane	200.0000	152.8554	23.6#	58	-0.02
51	T	Bromodichloromethane	50.0000	50.8873	-1.8	82	0.00
52	T	Dibromomethane	50.0000	48.7810	2.4	78	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	51.5675	-3.1	78	0.00
54	T	4-Methyl-2-Pentanone	50.0000	45.3307	9.3	70	0.00

(#) = Out of Range

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061616\6M140114.D Vial: 2
Acq On : 16 Jun 2016 16:59 Operator: FJB
Sample : WG573035-02 50ug/L CCV 8260 Inst : HPMS6
Misc : 1,1 STD76496 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 20% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	52.0506	-4.1	82	0.00
56	T	Dimethyl Disulfide	50.0000	50.7563	-1.5	82	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	83	0.00
58	S	Toluene-d8	25.0000	25.1119	-0.4	85	0.00
59	C	Toluene	50.0000	48.6249	2.8	81	0.00
60	T	Ethyl Methacrylate	50.0000	48.7041	2.6	76	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	80	0.00
62	T	trans-1,3-Dichloropropene	50.0000	50.3495	-0.7	81	0.00
63	T	1,1,2-Trichloroethane	50.0000	47.3196	5.4	77	0.00
64	T	2-Hexanone	50.0000	43.6884	12.6	71	0.00
65	T	1,3-Dichloropropane	50.0000	47.4499	5.1	78	0.00
66	T	Tetrachloroethene	50.0000	48.1885	3.6	81	0.00
67	T	Dibromochloromethane	50.0000	49.5896	0.8	80	0.00
68	T	1,2-Dibromoethane	50.0000	47.3998	5.2	76	0.00
69	T	1-Chlorohexane	50.0000	54.7318	-9.5	87	0.00
70	P	Chlorobenzene	50.0000	47.6494	4.7	80	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	49.7255	0.5	80	0.00
72	C	Ethylbenzene	50.0000	48.2803	3.4	79	0.00
73	T	m-,p-Xylene	100.0000	97.6074	2.4	80	0.00
74	T	o-Xylene	50.0000	49.2396	1.5	80	0.00
75	T	Styrene	50.0000	50.7858	-1.6	78	0.00
76	P	Bromoform	50.0000	47.7111	4.6	76	0.00
77	T	Isopropylbenzene	50.0000	50.7710	-1.5	80	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	81	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	45.5294	8.9	74	0.00
80	S	p-Bromofluorobenzene	25.0000	25.6385	-2.6	84	0.00
81	T	1,2,3-Trichloropropane	50.0000	44.9793	10.0	73	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	45.3690	9.3	78	0.00
83	T	n-Propylbenzene	50.0000	51.1115	-2.2	81	0.00
84	T	Bromobenzene	50.0000	47.2074	5.6	79	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	50.4122	-0.8	80	0.00
86	T	2-Chlorotoluene	50.0000	48.0281	3.9	81	0.00
87	T	4-Chlorotoluene	50.0000	49.4650	1.1	80	0.00
88	T	a-Methylstyrene	50.0000	49.6744	0.7	80	0.00
89	T	tert-Butylbenzene	50.0000	48.6354	2.7	79	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	49.9408	0.1	80	0.00
91	T	sec-Butylbenzene	50.0000	50.1845	-0.4	80	0.00
92	T	p-Isopropyltoluene	50.0000	51.0813	-2.2	80	0.00
93	T	1,3-Dichlorobenzene	50.0000	47.6944	4.6	80	0.00
94	T	1,4-Dichlorobenzene	50.0000	50.2134	-0.4	79	0.00
95	T	n-Butylbenzene	50.0000	51.7394	-3.5	81	0.00
96	T	1,2-Dichlorobenzene	50.0000	47.1543	5.7	78	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	47.7574	4.5	73	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	49.9450	0.1	80	0.00
99	T	Hexachlorobutadiene	50.0000	49.9179	0.2	83	0.00
100	T	Naphthalene	50.0000	49.3962	1.2	75	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	47.4775	5.0	77	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
6M140114.D 8260WT.M Fri Jun 17 08:33:36 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061716\8M413060.D Vial: 2
Acq On : 17 Jun 2016 16:23 Operator: FJB
Sample : WG573252-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 16:45:53 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	699122	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	518270	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	296683	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	205056	27.2990 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.20%		
43) 1,2-Dichloroethane-d4	10.30	65	228273	28.3422 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 113.36%		
58) Toluene-d8	12.68	98	710755	26.2041 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.80%		
80) p-Bromofluorobenzene	16.08	95	308175	25.0859 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.36%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	623426	53.1868 ug/L	100
3) Chloromethane	3.62	50	300377	43.9015 ug/L	100
4) Vinyl Chloride	3.84	62	422699	52.0713 ug/L	100
5) 1,3-Butadiene	3.89	54	415461	61.0292 ug/L	96
6) Bromomethane	4.73	94	137868	28.7775 ug/L	99
7) Chloroethane	4.89	64	206931	46.3271 ug/L	95
8) Trichlorofluoromethane	5.37	101	851971	56.4042 ug/L	99
9) Diethyl ether	5.90	59	342623	95.0146 ug/L	97
10) Isoprene	5.94	67	423769	46.1995 ug/L	98
11) Acrolein	6.14	56	14627	45.3040 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	356208	50.1695 ug/L	95
13) Acetone	6.24	43	44365	56.4026 ug/L	96
14) 1,1-Dichloroethene	6.46	61	581851	51.4688 ug/L	98
15) Tert-Butyl Alcohol	6.58	59	54523	216.3053 ug/L #	87
16) Dimethyl Sulfide	6.73	62	187403	46.3627 ug/L	100
17) Iodomethane	6.99	142	42196	15.6597 ug/L	93
18) Methyl acetate	7.00	43	91653	43.1067 ug/L	98
19) Methylene Chloride	7.25	84	343322	47.7217 ug/L	98
20) Carbon Disulfide	7.29	76	1159644	49.0178 ug/L	100
21) Acrylonitrile	7.43	53	48738	47.7556 ug/L	95
22) Methyl Tert Butyl Ether	7.46	73	799007	51.3155 ug/L	98
23) trans-1,2-Dichloroethene	7.70	61	510226	49.1267 ug/L	99
24) n-Hexane	7.78	57	353499	45.8365 ug/L	100
25) Diisopropyl ether	8.12	45	1540853	95.1777 ug/L	95
26) Vinyl Acetate	8.30	43	345358	46.5927 ug/L	99
27) 1,1-Dichloroethane	8.32	63	647658	50.2128 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1784670	102.8899 ug/L	98
29) 2-Butanone	8.88	43	53558	46.3436 ug/L	96
30) Propionitrile	8.98	54	31315	92.9829 ug/L	93
31) 2,2-Dichloropropane	9.09	77	778632	57.2841 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	397374	49.5169 ug/L	98
33) Chloroform	9.37	83	805895	52.9169 ug/L	99
34) 1-Bromopropane	9.51	122	60651	52.7637 ug/L	99
35) Bromochloromethane	9.61	130	205405	49.9137 ug/L	95
36) Tetrahydrofuran	9.63	42	63981	84.0571 ug/L	94
38) 1,1,1-Trichloroethane	9.91	97	826193	57.1121 ug/L	99
39) Cyclohexane	9.94	56	464869	46.4157 ug/L	96
40) 1,1-Dichloropropene	10.11	75	567873	51.5014 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1609648	102.1740 ug/L	100
42) Carbon Tetrachloride	10.25	117	749994	58.3845 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413060.D 8260WT.M Mon Jun 20 09:14:31 2016 Page 1

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061716\8M413060.D Vial: 2
Acq On : 17 Jun 2016 16:23 Operator: FJB
Sample : WG573252-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 16:45:53 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	564259	57.5647 ug/L		97
46)	Benzene	10.46	78	1427454	49.7057 ug/L		99
47)	Trichloroethene	11.21	130	394718	51.5336 ug/L		99
48)	Methylcyclohexane	11.30	83	573986	49.3282 ug/L		98
49)	1,2-Dichloropropane	11.43	63	298715	46.7256 ug/L		86
50)	Bromodichloromethane	11.73	83	614292	54.6707 ug/L		99
51)	1,4-Dioxane	11.72	88	7460	232.2993 ug/L		99
52)	Dibromomethane	11.81	93	185790	49.0946 ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.02	63	118919	43.2785 ug/L		96
54)	4-Methyl-2-Pentanone	12.06	58	49282	43.9069 ug/L		95
55)	cis-1,3-Dichloropropene	12.36	75	601654	52.6064 ug/L		99
56)	Dimethyl Disulfide	12.62	79	282584	46.2927 ug/L		100
59)	Toluene	12.78	91	1530940	47.5816 ug/L		100
60)	Ethyl Methacrylate	12.88	69	281218	45.5112 ug/L		96
62)	trans-1,3-Dichloropropene	12.96	75	537596	49.8584 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	229945	45.2905 ug/L		99
64)	2-Hexanone	13.11	58	44443	41.6557 ug/L	#	92
65)	1,3-Dichloropropane	13.48	76	423955	46.9014 ug/L		98
66)	Tetrachloroethene	13.60	164	344557	49.9830 ug/L		98
67)	Dibromochloromethane	13.87	129	369738	49.8753 ug/L		100
68)	1,2-Dibromoethane	14.12	107	234650	46.3733 ug/L		99
69)	1-Chlorohexane	14.21	91	517166	47.0877 ug/L		98
70)	Chlorobenzene	14.62	112	1030148	47.4797 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.65	131	429122	51.0522 ug/L		99
72)	Ethylbenzene	14.65	106	568765	47.9129 ug/L		100
73)	m-,p-Xylene	14.75	106	1358926	97.5973 ug/L		97
74)	o-Xylene	15.31	106	662717	48.6829 ug/L		98
75)	Styrene	15.35	104	1120192	50.1713 ug/L		95
76)	Bromoform	15.83	173	226525	51.5170 ug/L		99
77)	Isopropylbenzene	15.73	105	1851778	51.2060 ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	246486	41.3891 ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	81116	44.2321 ug/L		90
82)	trans-1,4-Dichloro-2-Buten	16.18	53	68708	36.9195 ug/L		95
83)	n-Propylbenzene	16.24	91	2187115	47.2524 ug/L		100
84)	Bromobenzene	16.37	156	434101	45.5967 ug/L		97
85)	1,3,5-Trimethylbenzene	16.43	105	1628830	48.3097 ug/L		100
86)	2-Chlorotoluene	16.52	91	1523671	47.1496 ug/L		99
87)	4-Chlorotoluene	16.56	91	1355367	46.4321 ug/L		100
88)	a-Methylstyrene	16.83	118	717962	44.8827 ug/L		99
89)	tert-Butylbenzene	16.89	134	304275	46.1292 ug/L		97
90)	1,2,4-Trimethylbenzene	16.94	105	1670172	48.1742 ug/L		100
91)	sec-Butylbenzene	17.16	105	1890564	47.6633 ug/L		99
92)	p-Isopropyltoluene	17.32	119	1616479	47.9971 ug/L		98
93)	1,3-Dichlorobenzene	17.51	146	869537	47.4325 ug/L		99
94)	1,4-Dichlorobenzene	17.64	146	851972	46.0975 ug/L		100
95)	n-Butylbenzene	17.85	91	1573125	47.2480 ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	743931	45.6275 ug/L		100
97)	1,2-Dibromo-3-Chloropropan	19.13	75	53495	44.7498 ug/L		99
98)	1,2,4-Trichlorobenzene	20.28	180	570171	46.7849 ug/L		99
99)	Hexachlorobutadiene	20.43	225	284554	49.9720 ug/L		97
100)	Naphthalene	20.65	128	780692	43.1166 ug/L		100
101)	1,2,3-Trichlorobenzene	20.96	180	454242	44.1795 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M413060.D 8260WT.M Mon Jun 20 09:14:32 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061716\8M413060.D Vial: 2
Acq On : 17 Jun 2016 16:23 Operator: FJB
Sample : WG573252-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 16:45 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

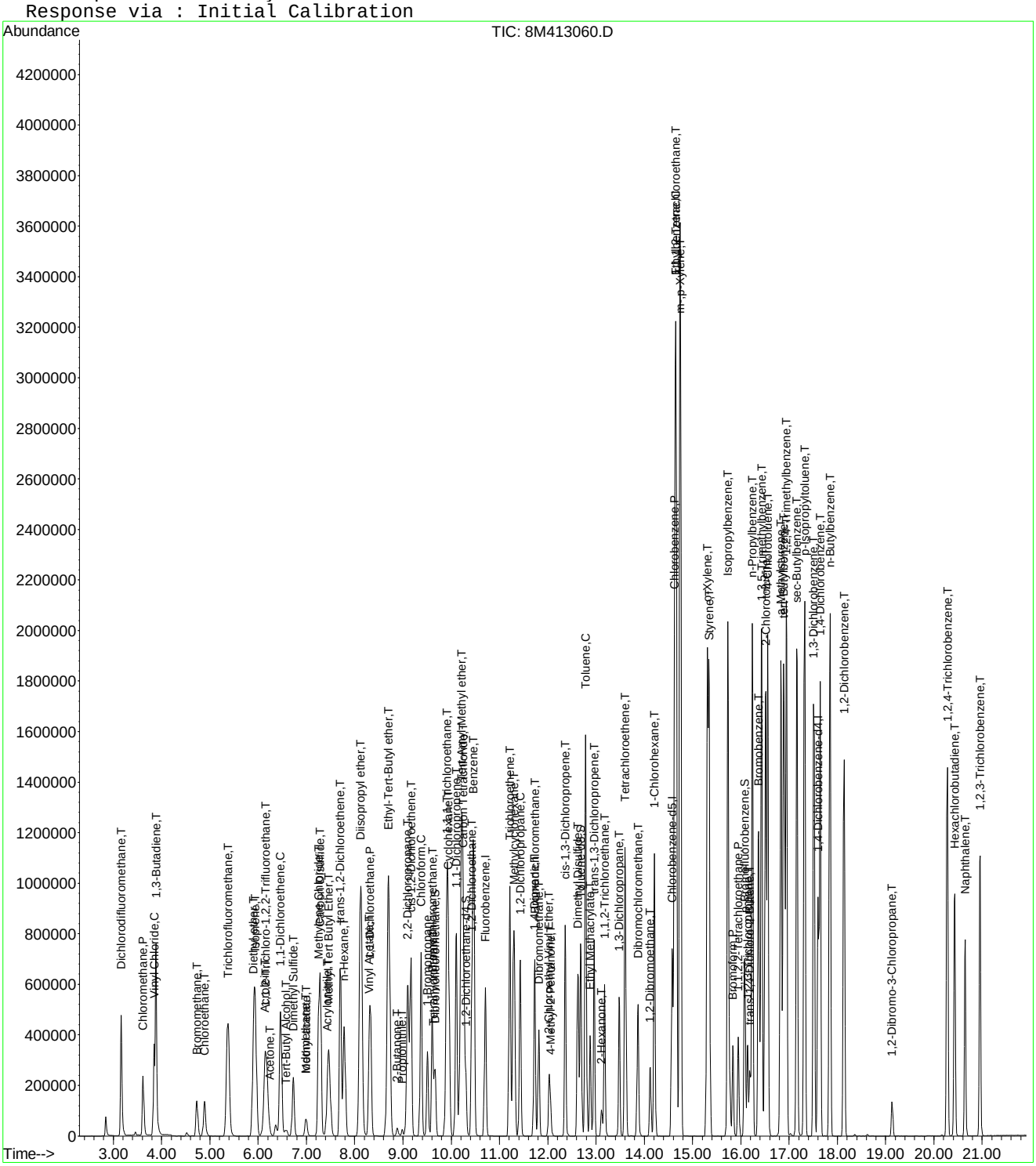

8M413060.D 8260WT.M Mon Jun 20 09:14:33 2016 Page 3

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061716\8M413060.D Vial: 2
Acq On : 17 Jun 2016 16:23 Operator: FJB
Sample : WG573252-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	90	0.00
2	T	Dichlorodifluoromethane	0.4192	0.4459	-6.4	91	0.00
3	P	Chloromethane	0.2447	0.2148	12.2	81	0.00
4	C	Vinyl Chloride	0.2903	0.3023	-4.1	93	0.00
5	T	1,3-Butadiene	0.2434	0.2971	-22.1	106	0.00
6	T	Bromomethane	0.1654	0.0986	40.4#	53	0.00
7	T	Chloroethane	0.1597	0.1480	7.3	85	0.00
8	T	Trichlorofluoromethane	0.5401	0.6093	-12.8	102	0.00
9	T	Diethyl ether	0.1290	0.1225	5.0	88	0.00
10	T	Isoprene	0.3280	0.3031	7.6	85	0.00
11	T	Acrolein	0.0116	0.0105	9.4	83	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2539	0.2547	-0.3	92	0.00
13	T	Acetone	0.0281	0.0317	-12.8	97	0.00
14	C	1,1-Dichloroethene	0.4043	0.4161	-2.9	94	0.00
15	T	Tert-Butyl Alcohol	0.0090	0.0098	-8.2	98	0.00
16	T	Dimethyl Sulfide	0.1445	0.1340	7.3	85	0.00
17	T	Iodomethane	0.0866	0.0302	65.1#	27#	0.00
18	T	Methyl acetate	0.0760	0.0655	13.8	80	0.00
19	T	Methylene Chloride	0.2573	0.2455	4.6	88	0.00
20	T	Carbon Disulfide	0.8460	0.8294	2.0	91	0.00
21	T	Acrylonitrile	0.0365	0.0349	4.5	81	0.00
22	T	Methyl Tert Butyl Ether	0.5568	0.5714	-2.6	89	0.00
23	T	trans-1,2-Dichloroethene	0.3714	0.3649	1.7	89	0.00
24	T	n-Hexane	0.2758	0.2528	8.3	84	0.00
25	T	Diisopropyl ether	0.5789	0.5510	4.8	87	0.00
26	T	Vinyl Acetate	0.2651	0.2470	6.8	81	0.00
27	P	1,1-Dichloroethane	0.4612	0.4632	-0.4	90	0.00
28	T	Ethyl-Tert-Butyl ether	0.6203	0.6382	-2.9	91	0.00
29	T	2-Butanone	0.0413	0.0383	7.3	80	0.00
30	T	Propionitrile	0.0120	0.0112	7.0	82	0.00
31	T	2,2-Dichloropropane	0.4860	0.5569	-14.6	101	0.00
32	T	cis-1,2-Dichloroethene	0.2870	0.2842	1.0	90	0.00
33	C	Chloroform	0.5446	0.5764	-5.8	95	0.00
34		1-Bromopropane	0.0411	0.0434	-5.5	96	0.00
35	T	Bromochloromethane	0.1472	0.1469	0.2	89	0.00
36	T	Tetrahydrofuran	0.0272	0.0229	15.9	81	0.00
37	S	Dibromofluoromethane	0.2686	0.2933	-9.2	97	0.00
38	T	1,1,1-Trichloroethane	0.5173	0.5909	-14.2	101	0.00
39	T	Cyclohexane	0.3581	0.3325	7.2	87	0.00
40	T	1,1-Dichloropropene	0.3943	0.4061	-3.0	92	0.00
41	T	Tert-Amyl-Methyl ether	0.5634	0.5756	-2.2	91	0.00
42	T	Carbon Tetrachloride	0.4593	0.5364	-16.8	104	0.00
43	S	1,2-Dichloroethane-d4	0.2880	0.3265	-13.4	100	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.3505	0.4036	-15.1	101	0.00
46	T	Benzene	1.0269	1.0209	0.6	89	0.00
47	T	Trichloroethene	0.2739	0.2823	-3.1	93	0.00
48	T	Methylcyclohexane	0.4161	0.4105	1.3	90	0.00
49	C	1,2-Dichloropropane	0.2286	0.2136	6.5	85	0.00
50	T	Bromodichloromethane	0.4018	0.4393	-9.3	94	0.00
51	T	1,4-Dioxane	0.0012	0.0013	-15.7	99	0.00
52	T	Dibromomethane	0.1353	0.1329	1.8	89	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0983	0.0851	13.4	73	0.00
54	T	4-Methyl-2-Pentanone	0.0401	0.0352	12.2	76	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061716\8M413060.D Vial: 2
Acq On : 17 Jun 2016 16:23 Operator: FJB
Sample : WG573252-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4090	0.4303	-5.2	90	0.00
56	T	Dimethyl Disulfide	0.2183	0.2021	7.4	82	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	96	0.00
58	S	Toluene-d8	1.3084	1.3714	-4.8	99	0.00
59	C	Toluene	1.5520	1.4770	4.8	91	0.00
60	T	Ethyl Methacrylate	0.2981	0.2713	9.0	83	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.5201	0.5186	0.3	90	0.00
63	T	1,1,2-Trichloroethane	0.2449	0.2218	9.4	86	0.00
64	T	2-Hexanone	0.0515	0.0429	16.7	78	0.00
65	T	1,3-Dichloropropane	0.4360	0.4090	6.2	87	0.00
66	T	Tetrachloroethene	0.3325	0.3324	0.0	98	0.00
67	T	Dibromochloromethane	0.3576	0.3567	0.3	92	0.00
68	T	1,2-Dibromoethane	0.2441	0.2264	7.3	86	0.00
69	T	1-Chlorohexane	0.5298	0.4989	5.8	92	0.00
70	P	Chlorobenzene	1.0466	0.9938	5.0	92	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4055	0.4140	-2.1	96	0.00
72	C	Ethylbenzene	0.5726	0.5487	4.2	94	0.00
73	T	m-,p-Xylene	0.6716	0.6555	2.4	94	0.00
74	T	o-Xylene	0.6566	0.6393	2.6	93	0.00
75	T	Styrene	1.0770	1.0807	-0.3	92	0.00
76	P	Bromoform	0.2121	0.2185	-3.0	95	0.00
77	T	Isopropylbenzene	1.7444	1.7865	-2.4	96	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	103	0.00
79	P	1,1,2,2-Tetrachloroethane	0.5018	0.4154	17.2	84	0.00
80	S	p-Bromofluorobenzene	1.0352	1.0387	-0.3	105	0.00
81	T	1,2,3-Trichloropropane	0.1545	0.1367	11.5	91	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1376	0.1158	15.8	79	0.00
83	T	n-Propylbenzene	3.9003	3.6860	5.5	96	0.00
84	T	Bromobenzene	0.8022	0.7316	8.8	94	0.00
85	T	1,3,5-Trimethylbenzene	2.8411	2.7451	3.4	98	0.00
86	T	2-Chlorotoluene	2.7231	2.5678	5.7	95	0.00
87	T	4-Chlorotoluene	2.4597	2.2842	7.1	101	0.00
88	T	a-Methylstyrene	1.3479	1.2100	10.2	93	0.00
89	T	tert-Butylbenzene	0.5558	0.5128	7.7	99	0.00
90	T	1,2,4-Trimethylbenzene	2.9214	2.8147	3.7	99	0.00
91	T	sec-Butylbenzene	3.3424	3.1862	4.7	98	0.00
92	T	p-Isopropyltoluene	2.8379	2.7243	4.0	100	0.00
93	T	1,3-Dichlorobenzene	1.5448	1.4654	5.1	99	0.00
94	T	1,4-Dichlorobenzene	1.5574	1.4358	7.8	98	0.00
95	T	n-Butylbenzene	2.8056	2.6512	5.5	98	0.00
96	T	1,2-Dichlorobenzene	1.3739	1.2537	8.7	97	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1007	0.0902	10.5	90	0.00
98	T	1,2,4-Trichlorobenzene	1.0269	0.9609	6.4	98	0.00
99	T	Hexachlorobutadiene	0.4798	0.4796	0.1	108	0.00
100	T	Naphthalene	1.5257	1.3157	13.8	87	0.00
101	T	1,2,3-Trichlorobenzene	0.8664	0.7655	11.6	96	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413060.D 8260WT.M Mon Jun 20 09:18:06 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061716\8M413060.D Vial: 2
Acq On : 17 Jun 2016 16:23 Operator: FJB
Sample : WG573252-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	90	0.00
2	T	Dichlorodifluoromethane	50.0000	53.1868	-6.4	91	0.00
3	P	Chloromethane	50.0000	43.9016	12.2	81	0.00
4	C	Vinyl Chloride	50.0000	52.0713	-4.1	93	0.00
5	T	1,3-Butadiene	50.0000	61.0292	-22.1	106	0.00
6	T	Bromomethane	50.0000	28.7775	42.4#	53	0.00
7	T	Chloroethane	50.0000	46.3271	7.3	85	0.00
8	T	Trichlorofluoromethane	50.0000	56.4042	-12.8	102	0.00
9	T	Diethyl ether	100.0000	95.0146	5.0	88	0.00
10	T	Isoprene	50.0000	46.1995	7.6	85	0.00
11	T	Acrolein	50.0000	45.3040	9.4	83	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	50.1696	-0.3	92	0.00
13	T	Acetone	50.0000	56.4026	-12.8	97	0.00
14	C	1,1-Dichloroethene	50.0000	51.4688	-2.9	94	0.00
15	T	Tert-Butyl Alcohol	200.0000	216.3053	-8.2	98	0.00
16	T	Dimethyl Sulfide	50.0000	46.3627	7.3	85	0.00
17	T	Iodomethane	50.0000	15.6597	68.7#	27	0.00
18	T	Methyl acetate	50.0000	43.1067	13.8	80	0.00
19	T	Methylene Chloride	50.0000	47.7217	4.6	88	0.00
20	T	Carbon Disulfide	50.0000	49.0178	2.0	91	0.00
21	T	Acrylonitrile	50.0000	47.7556	4.5	81	0.00
22	T	Methyl Tert Butyl Ether	50.0000	51.3155	-2.6	89	0.00
23	T	trans-1,2-Dichloroethene	50.0000	49.1268	1.7	89	0.00
24	T	n-Hexane	50.0000	45.8365	8.3	84	0.00
25	T	Diisopropyl ether	100.0000	95.1777	4.8	87	0.00
26	T	Vinyl Acetate	50.0000	46.5927	6.8	81	0.00
27	P	1,1-Dichloroethane	50.0000	50.2128	-0.4	90	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	102.8899	-2.9	91	0.00
29	T	2-Butanone	50.0000	46.3436	7.3	80	0.00
30	T	Propionitrile	100.0000	92.9829	7.0	82	0.00
31	T	2,2-Dichloropropane	50.0000	57.2841	-14.6	101	0.00
32	T	cis-1,2-Dichloroethene	50.0000	49.5169	1.0	90	0.00
33	C	Chloroform	50.0000	52.9169	-5.8	95	0.00
34		1-Bromopropane	50.0000	52.7636	-5.5	96	0.00
35	T	Bromochloromethane	50.0000	49.9137	0.2	89	0.00
36	T	Tetrahydrofuran	100.0000	84.0571	15.9	81	0.00
37	S	Dibromofluoromethane	25.0000	27.2990	-9.2	97	0.00
38	T	1,1,1-Trichloroethane	50.0000	57.1122	-14.2	101	0.00
39	T	Cyclohexane	50.0000	46.4157	7.2	87	0.00
40	T	1,1-Dichloropropene	50.0000	51.5014	-3.0	92	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	102.1740	-2.2	91	0.00
42	T	Carbon Tetrachloride	50.0000	58.3845	-16.8	104	0.00
43	S	1,2-Dichloroethane-d4	25.0000	28.3422	-13.4	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	57.5647	-15.1	101	0.00
46	T	Benzene	50.0000	49.7057	0.6	89	0.00
47	T	Trichloroethene	50.0000	51.5336	-3.1	93	0.00
48	T	Methylcyclohexane	50.0000	49.3282	1.3	90	0.00
49	C	1,2-Dichloropropane	50.0000	46.7256	6.5	85	0.00
50	T	Bromodichloromethane	50.0000	54.6707	-9.3	94	0.00
51	T	1,4-Dioxane	200.0000	232.2993	-16.1	99	0.00
52	T	Dibromomethane	50.0000	49.0946	1.8	89	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	43.2785	13.4	73	0.00
54	T	4-Methyl-2-Pentanone	50.0000	43.9069	12.2	76	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061716\8M413060.D Vial: 2
Acq On : 17 Jun 2016 16:23 Operator: FJB
Sample : WG573252-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	52.6064	-5.2	90	0.00
56	T	Dimethyl Disulfide	50.0000	46.2927	7.4	82	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	96	0.00
58	S	Toluene-d8	25.0000	26.2041	-4.8	99	0.00
59	C	Toluene	50.0000	47.5816	4.8	91	0.00
60	T	Ethyl Methacrylate	50.0000	45.5112	9.0	83	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	49.8584	0.3	90	0.00
63	T	1,1,2-Trichloroethane	50.0000	45.2905	9.4	86	0.00
64	T	2-Hexanone	50.0000	41.6557	16.7	78	0.00
65	T	1,3-Dichloropropane	50.0000	46.9014	6.2	87	0.00
66	T	Tetrachloroethene	50.0000	49.9830	0.0	98	0.00
67	T	Dibromochloromethane	50.0000	49.8753	0.2	92	0.00
68	T	1,2-Dibromoethane	50.0000	46.3734	7.3	86	0.00
69	T	1-Chlorohexane	50.0000	47.0877	5.8	92	0.00
70	P	Chlorobenzene	50.0000	47.4797	5.0	92	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	51.0522	-2.1	96	0.00
72	C	Ethylbenzene	50.0000	47.9129	4.2	94	0.00
73	T	m-,p-Xylene	100.0000	97.5973	2.4	94	0.00
74	T	o-Xylene	50.0000	48.6829	2.6	93	0.00
75	T	Styrene	50.0000	50.1713	-0.3	92	0.00
76	P	Bromoform	50.0000	51.5170	-3.0	95	0.00
77	T	Isopropylbenzene	50.0000	51.2060	-2.4	96	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	103	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	41.3891	17.2	84	0.00
80	S	p-Bromofluorobenzene	25.0000	25.0859	-0.3	105	0.00
81	T	1,2,3-Trichloropropane	50.0000	44.2321	11.5	91	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	36.9194	26.2#	79	0.00
83	T	n-Propylbenzene	50.0000	47.2524	5.5	96	0.00
84	T	Bromobenzene	50.0000	45.5966	8.8	94	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	48.3097	3.4	98	0.00
86	T	2-Chlorotoluene	50.0000	47.1496	5.7	95	0.00
87	T	4-Chlorotoluene	50.0000	46.4321	7.1	101	0.00
88	T	a-Methylstyrene	50.0000	44.8827	10.2	93	0.00
89	T	tert-Butylbenzene	50.0000	46.1292	7.7	99	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	48.1742	3.7	99	0.00
91	T	sec-Butylbenzene	50.0000	47.6633	4.7	98	0.00
92	T	p-Isopropyltoluene	50.0000	47.9971	4.0	100	0.00
93	T	1,3-Dichlorobenzene	50.0000	47.4325	5.1	99	0.00
94	T	1,4-Dichlorobenzene	50.0000	46.0975	7.8	98	0.00
95	T	n-Butylbenzene	50.0000	47.2480	5.5	98	0.00
96	T	1,2-Dichlorobenzene	50.0000	45.6275	8.7	97	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	44.7498	10.5	90	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	46.7849	6.4	98	0.00
99	T	Hexachlorobutadiene	50.0000	49.9720	0.1	108	0.00
100	T	Naphthalene	50.0000	43.1166	13.8	87	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	44.1795	11.6	96	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413060.D 8260WT.M Mon Jun 20 09:18:09 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\1\DATA\042416\6M138750.D          Vial: 1
Acq On    : 24 Apr 2016  16:33                       Operator: JDS
Sample    : WG566155-01 50ng BFB 826-A9              Inst    : HPMS6
Misc      : 1,1 STD75485                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP: OVL MSV01
```

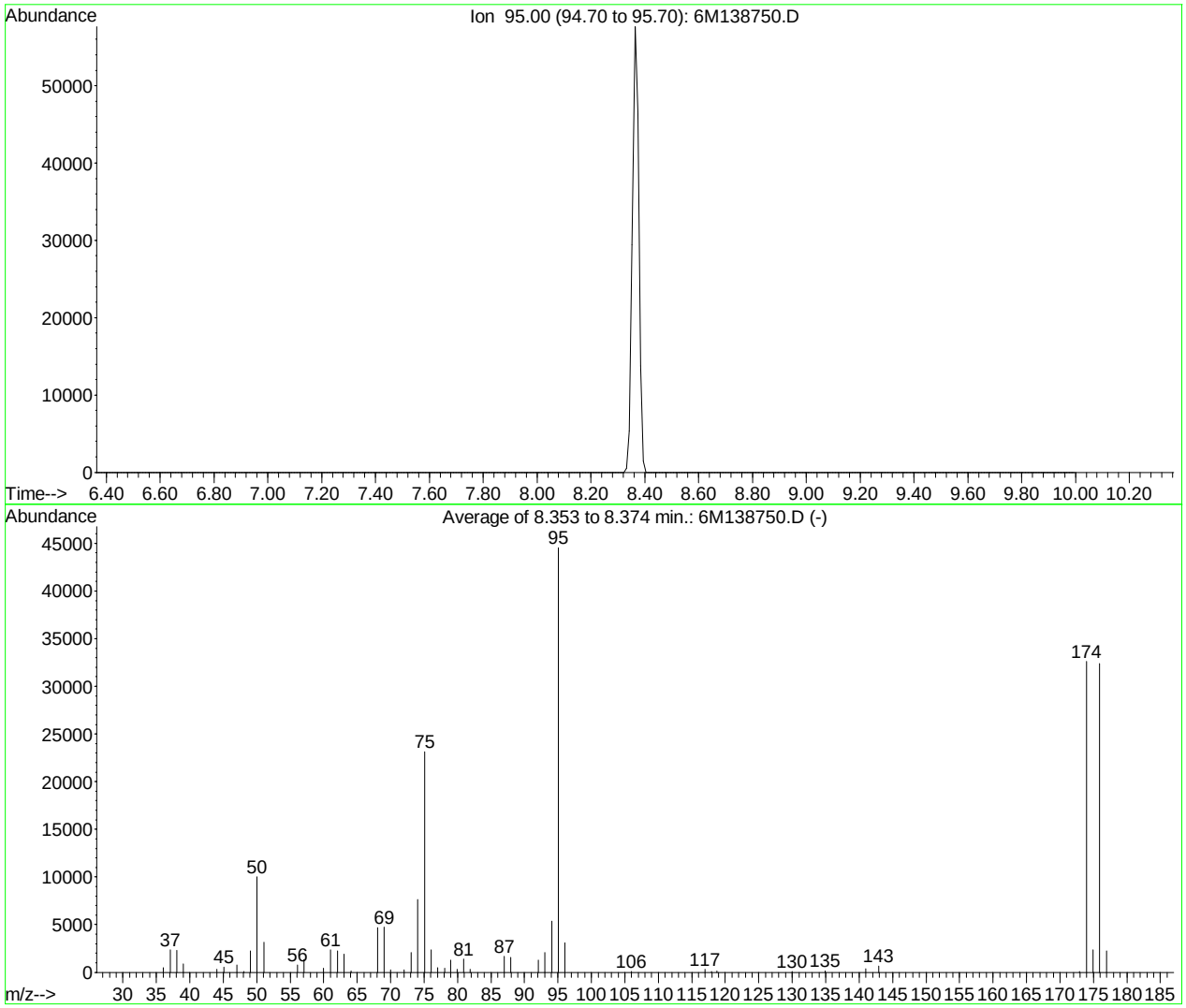

AutoFind: Scans 320, 321, 322; Background Corrected with Scan 315

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.5	10010	PASS
75	95	30	60	52.0	23152	PASS
95	95	100	100	100.0	44552	PASS
96	95	5	9	6.9	3085	PASS
173	174	0.00	2	0.3	113	PASS
174	95	50	100	73.2	32632	PASS
175	174	5	9	7.2	2336	PASS
176	174	95	101	99.2	32384	PASS
177	176	5	9	7.0	2251	PASS

6M138750.D BFB.M Mon Apr 25 09:21:54 2016

BFB

```
Data File : C:\MSDCHEM\2\DATA\051316\8M412218.D          Vial: 3
Acq On    : 13 May 2016  12:36                       Operator: TMB
Sample    : WG568561-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD76034                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
```

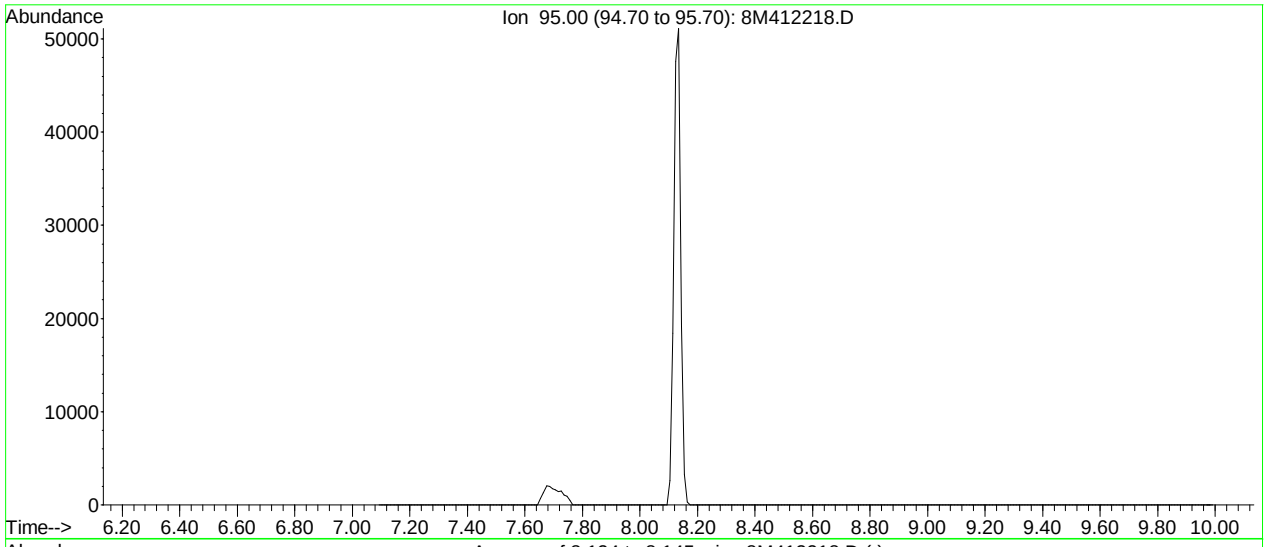

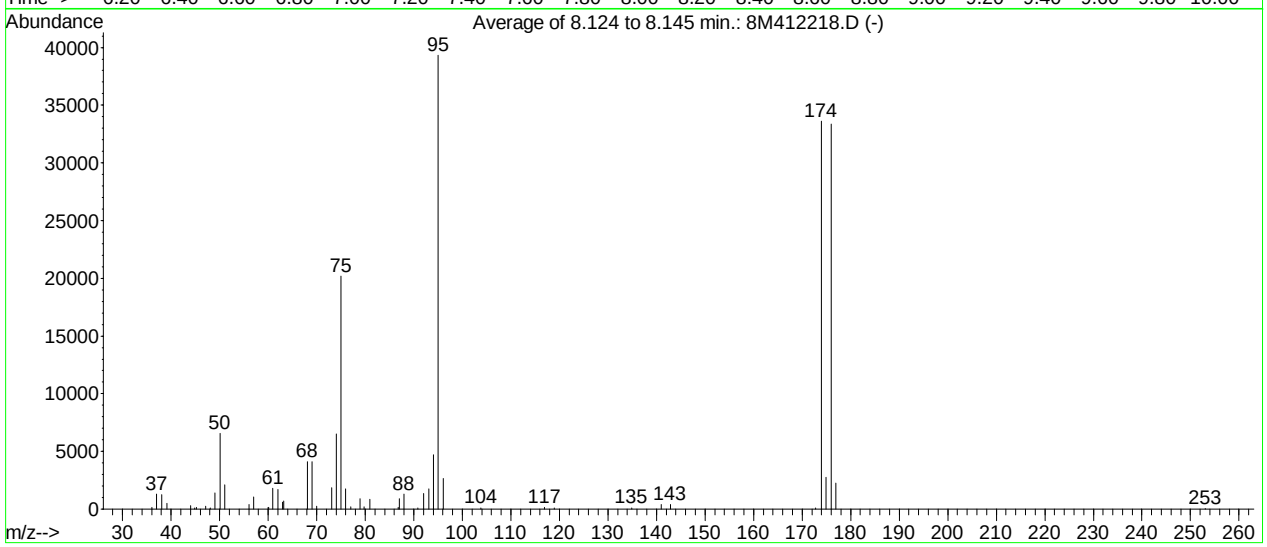

AutoFind: Scans 102, 103, 104; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.7	6575	PASS
75	95	30	60	51.3	20171	PASS
95	95	100	100	100.0	39312	PASS
96	95	5	9	6.7	2649	PASS
173	174	0.00	2	0.4	122	PASS
174	95	50	100	85.5	33616	PASS
175	174	5	9	8.2	2746	PASS
176	174	95	101	99.2	33360	PASS
177	176	5	9	6.8	2267	PASS

8M412218.D BFB.M Fri May 13 12:47:24 2016

BFB

```
Data File : C:\MSDCHEM\1\DATA\060116\6M139735.D          Vial: 1
Acq On    :  1 Jun 2016  12:04                       Operator: TMB
Sample    : WG570915-01 50ng BFB STD 8260            Inst    : HPMS6
Misc      : 1,1 STD76034                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\BFB.M (RTE Integrator)
Title     : SOP: OVL MSV01
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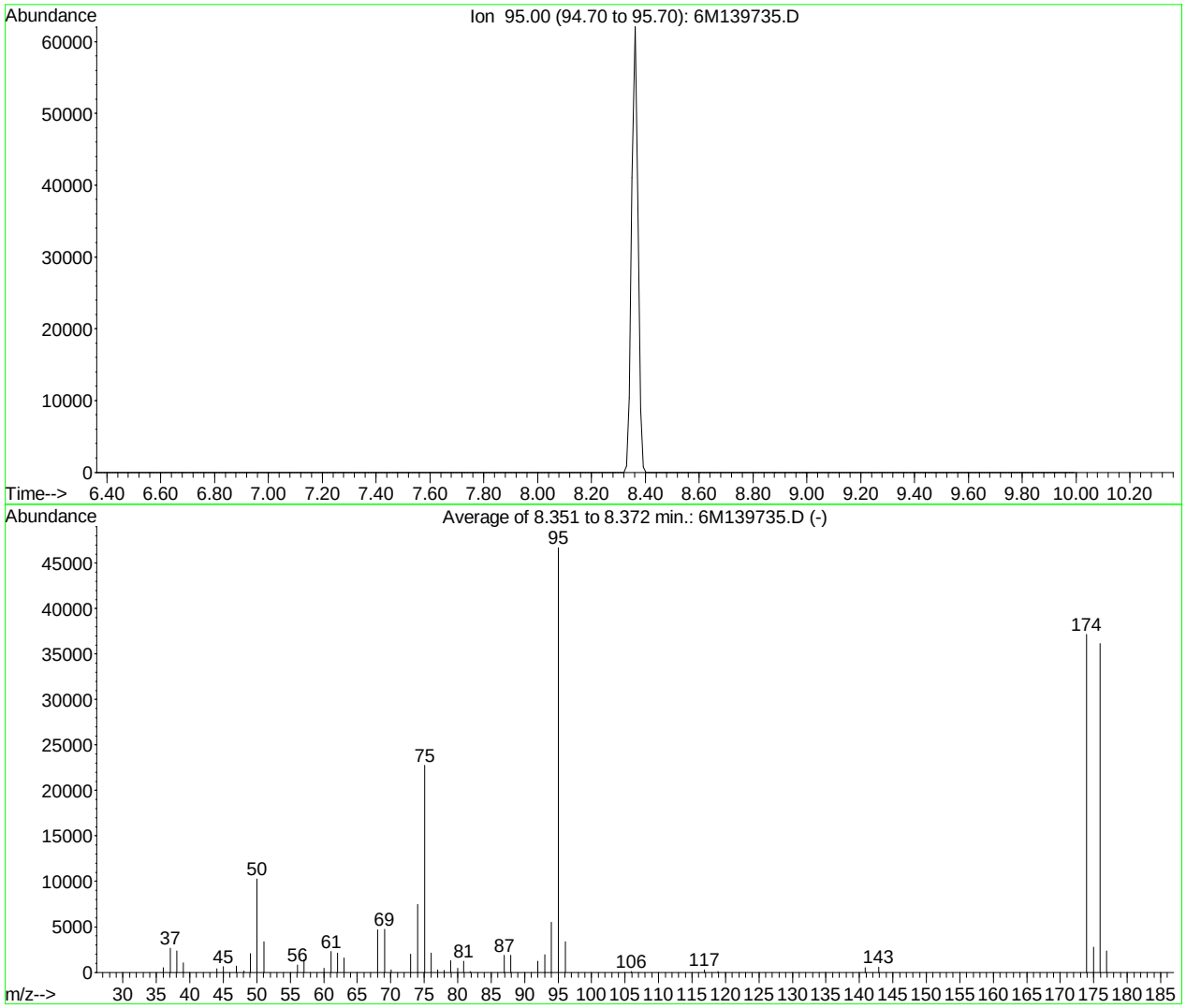

AutoFind: Scans 320, 321, 322; Background Corrected with Scan 315

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	22.0	10283	PASS
75	95	30	60	48.7	22744	PASS
95	95	100	100	100.0	46704	PASS
96	95	5	9	7.3	3392	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	79.6	37192	PASS
175	174	5	9	7.4	2756	PASS
176	174	95	101	97.2	36149	PASS
177	176	5	9	6.6	2378	PASS

6M139735.D BFB.M Wed Jun 01 12:15:03 2016

BFB

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061616\6M140113.D Vial: 1
Acq On : 16 Jun 2016 16:21 Operator: FJB
Sample : WG573035-01 BFB 50ng 8260 Inst : HPMS6
Misc : 1,1 STD76496 Multiplr: 1.00
MS Integration Params: RTEINT.P
Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6

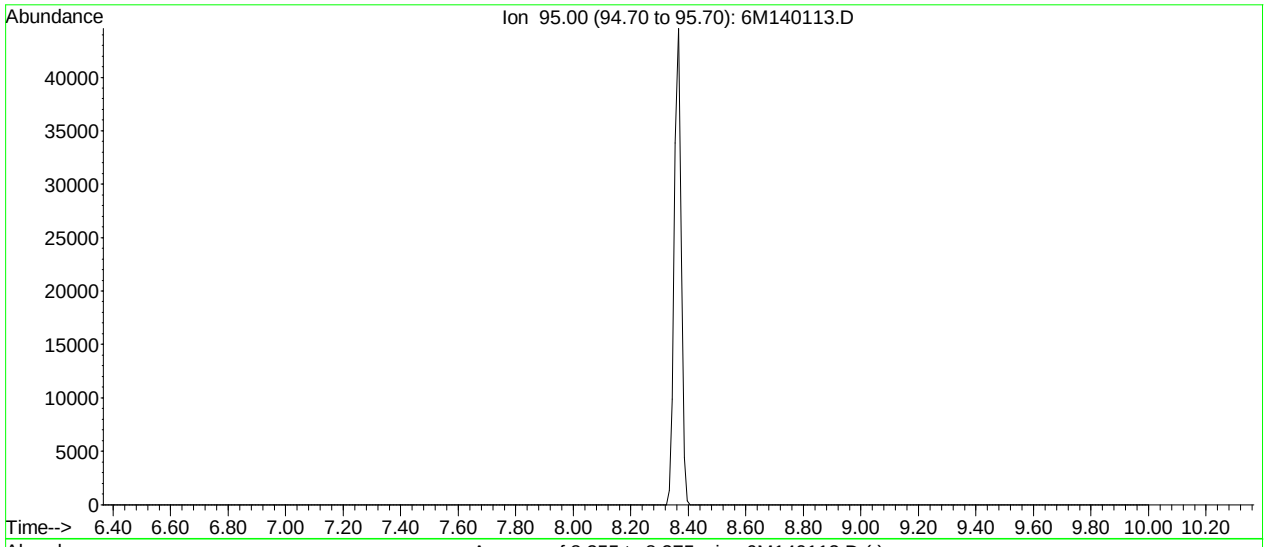

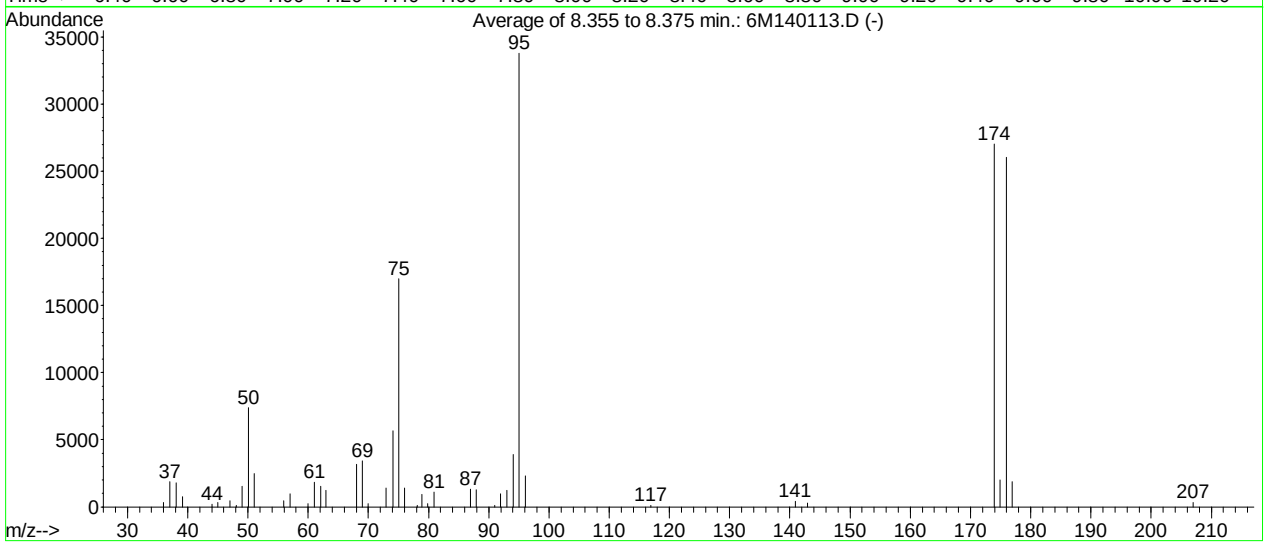

AutoFind: Scans 320, 321, 322; Background Corrected with Scan 315

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	21.9	7403	PASS
75	95	30	60	50.2	16974	PASS
95	95	100	100	100.0	33797	PASS
96	95	5	9	6.8	2302	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	80.0	27042	PASS
175	174	5	9	7.5	2016	PASS
176	174	95	101	96.3	26048	PASS
177	176	5	9	7.2	1864	PASS

6M140113.D 8260WT.M Fri Jun 17 08:33:10 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061716\8M413059.D Vial: 1
Acq On    : 17 Jun 2016  15:56                        Operator: FJB
Sample    : WG573252-01 BFB 50ng 8260                 Inst    : HPMS8
Misc      : 1,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title     : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
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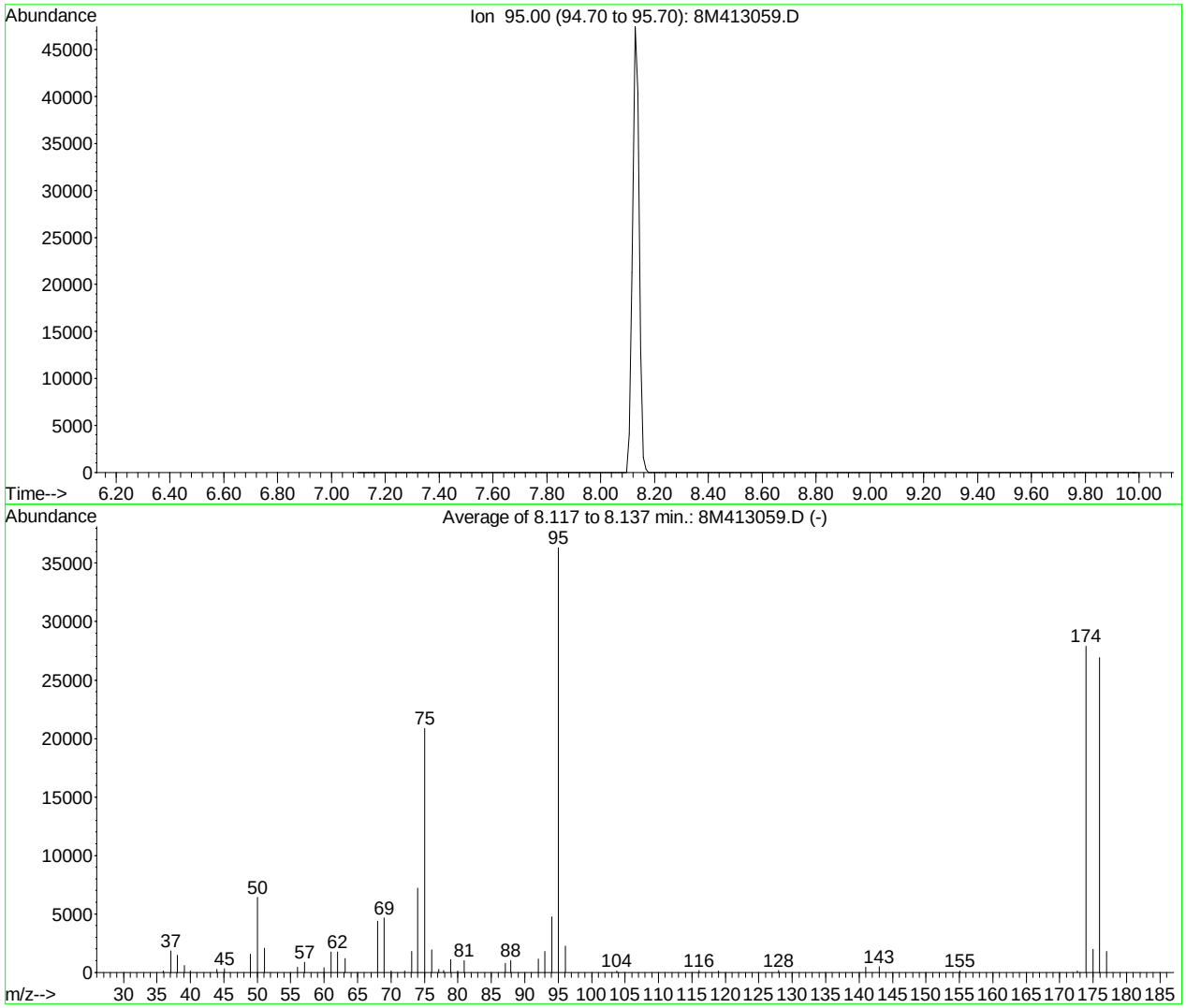

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.7	6432	PASS
75	95	30	60	57.5	20879	PASS
95	95	100	100	100.0	36330	PASS
96	95	5	9	6.1	2230	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	76.8	27909	PASS
175	174	5	9	7.0	1948	PASS
176	174	95	101	96.5	26925	PASS
177	176	5	9	6.6	1773	PASS

8M413059.D 8260WT.M Mon Jun 20 09:13:50 2016

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061616\6M140116.D Vial: 4
Acq On : 16 Jun 2016 18:13 Operator: FJB
Sample : WG573036-01 BLANK 6/16 8260 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:36:33 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	572141	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.07	117	423614	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.64	152	223731	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	150625	25.4376 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.76%		
43) 1,2-Dichloroethane-d4	11.11	65	169653	25.9939 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.96%		
58) Toluene-d8	13.85	98	506201	24.8989 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.60%		
80) p-Bromofluorobenzene	17.84	95	210801	26.6819 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 106.72%		

Target Compounds

					Qvalue
29) 2-Butanone	9.75	43	1026	0.3971 ug/L #	57
36) Tetrahydrofuran	10.36	42	3069	1.7254 ug/L #	74
94) 1,4-Dichlorobenzene	19.70	146	421	Below Cal #	36

(#) = qualifier out of range (m) = manual integration
6M140116.D 8260WT.M Fri Jun 17 08:36:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061616\6M140116.D Vial: 4
Acq On : 16 Jun 2016 18:13 Operator: FJB
Sample : WG573036-01 BLANK 6/16 8260 Inst : HPMS6
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 8:36 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration

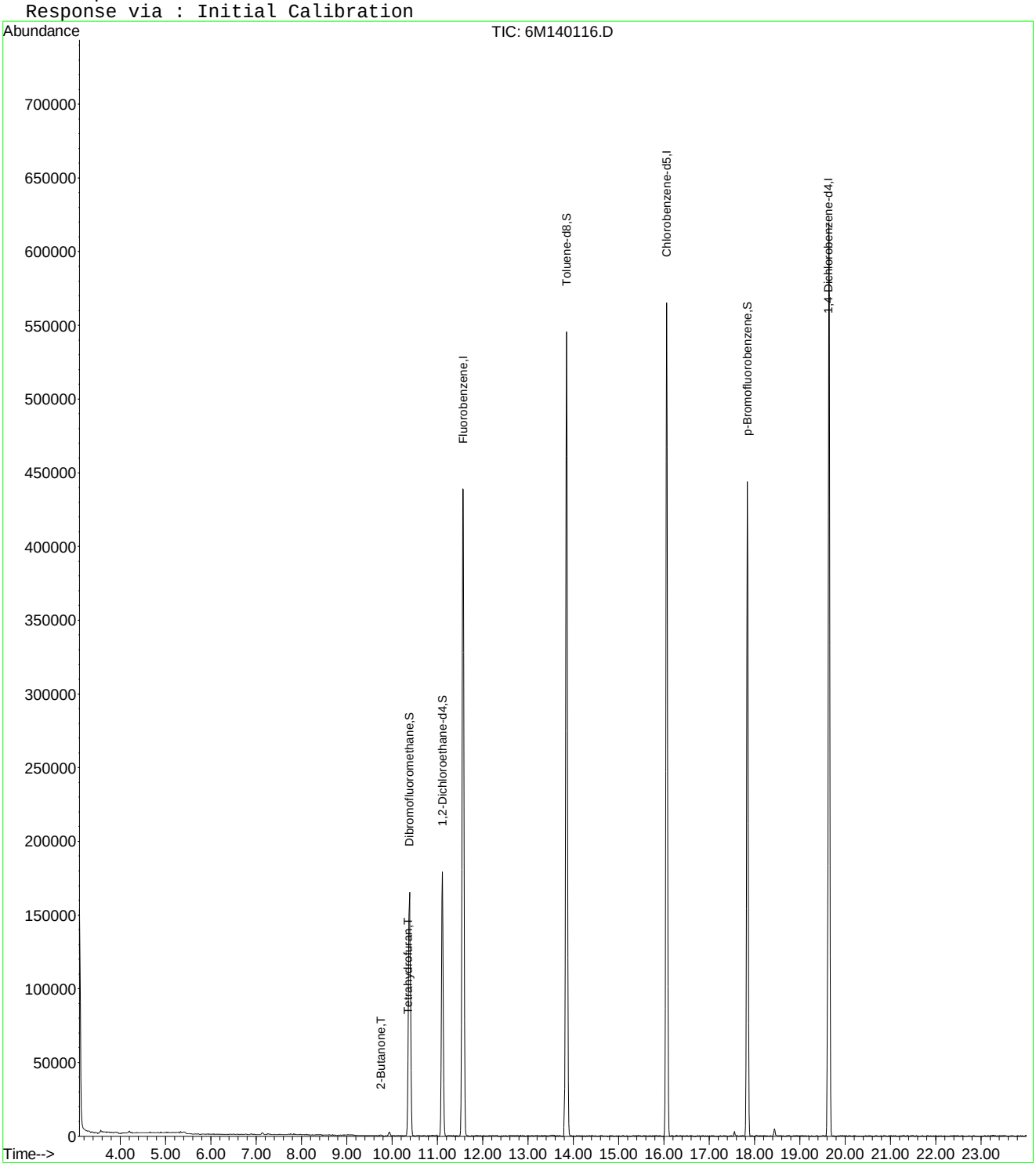

6M140116.D 8260WT.M Fri Jun 17 08:36:36 2016 Page 2

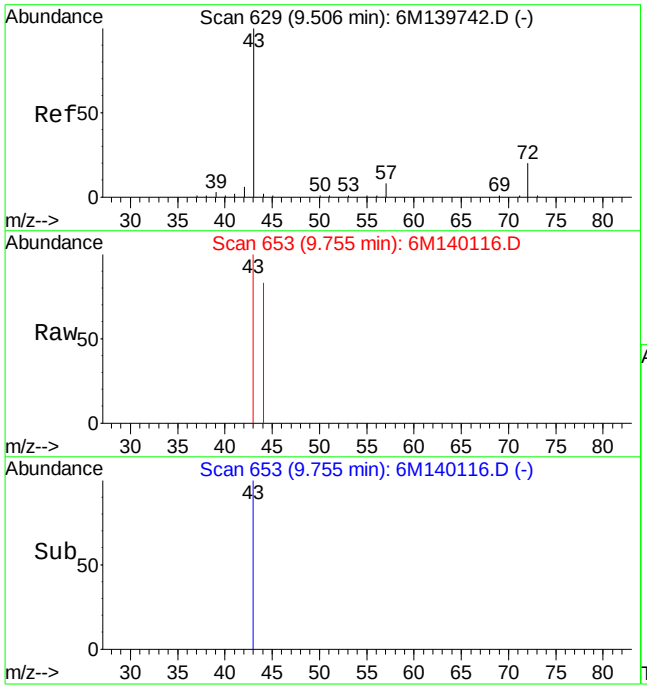

#29
2-Butanone
Concen: 0.40 ug/L
RT: 9.75 min Scan# 653
Delta R.T. 0.24 min
Lab File: 6M140116.D
Acq: 16 Jun 2016 18:13

Tgt Ion: 43 Resp: 1026

Ion	Ratio	Lower	Upper
43	100		
72	0.0	11.9	27.9#

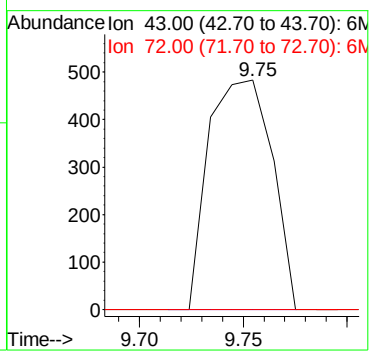

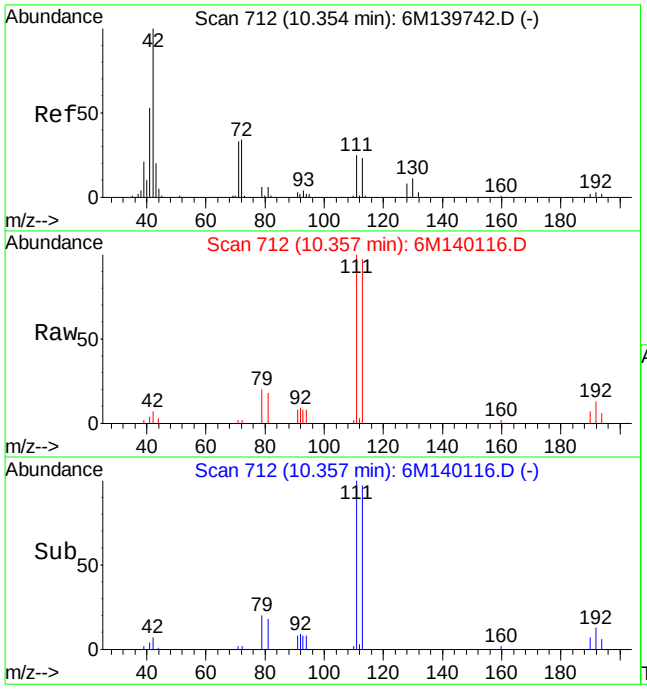

#36
Tetrahydrofuran
Concen: 1.73 ug/L
RT: 10.36 min Scan# 712
Delta R.T. 0.00 min
Lab File: 6M140116.D
Acq: 16 Jun 2016 18:13

Tgt Ion: 42 Resp: 3069

Ion	Ratio	Lower	Upper
42	100		
72	15.2	20.8	48.4#
71	22.5	19.9	46.5

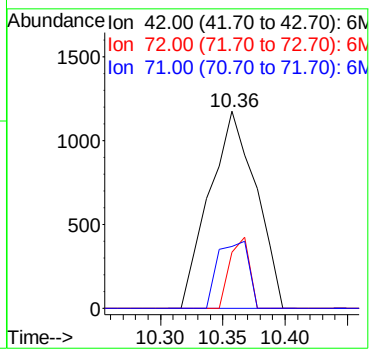

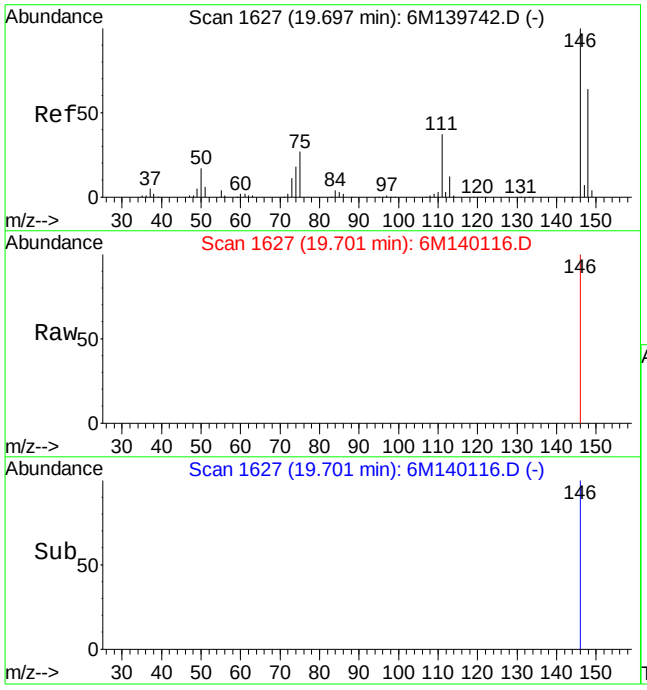

#94
1,4-Dichlorobenzene
Concen: Below Cal
RT: 19.70 min Scan# 1627
Delta R.T. 0.00 min
Lab File: 6M140116.D
Acq: 16 Jun 2016 18:13

Tgt Ion:146 Resp: 421

Ion	Ratio	Lower	Upper
146	100		
111	0.0	23.5	54.9#

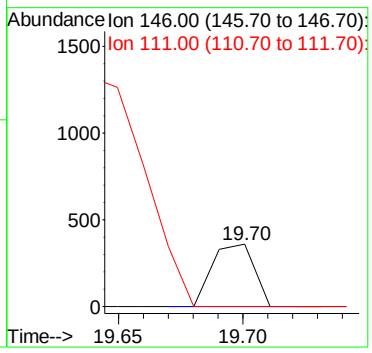

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061716\8M413062.D Vial: 4
Acq On : 17 Jun 2016 17:21 Operator: FJB
Sample : WG573253-01 BLANK 6/17 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 17:43:46 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	668097	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	509490	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	282360	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	200318	27.9067 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.64%		
43) 1,2-Dichloroethane-d4	10.30	65	227532	29.5621 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 118.24%		
58) Toluene-d8	12.68	98	695855	26.0968 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.40%		
80) p-Bromofluorobenzene	16.08	95	294047	25.1500 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.60%		
Target Compounds					Qvalue
36) Tetrahydrofuran	9.63	42	740	1.0173 ug/L #	59

(#) = qualifier out of range (m) = manual integration
8M413062.D 8260WT.M Mon Jun 20 09:21:04 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061716\8M413062.D Vial: 4
Acq On : 17 Jun 2016 17:21 Operator: FJB
Sample : WG573253-01 BLANK 6/17 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 17:43 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

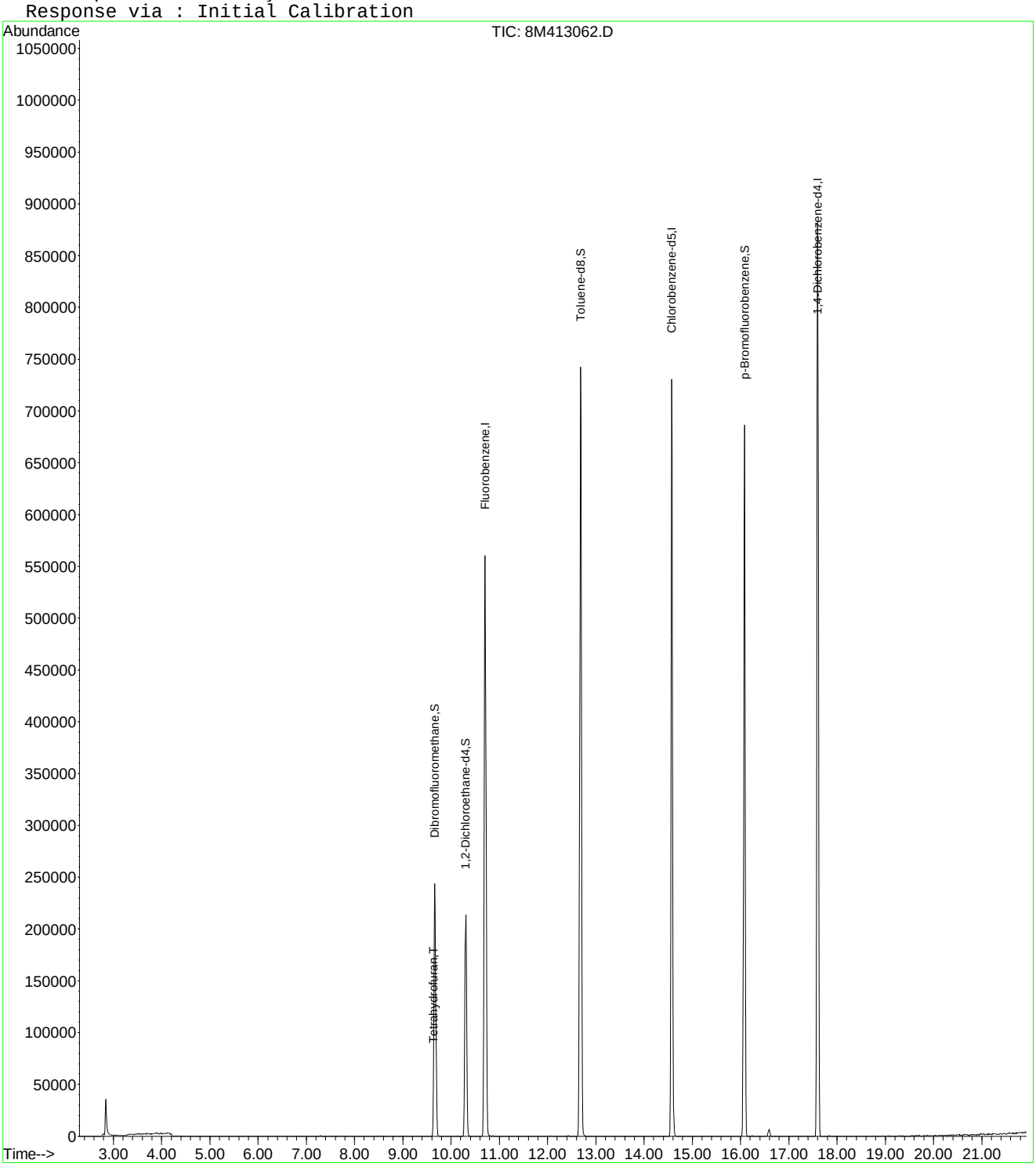

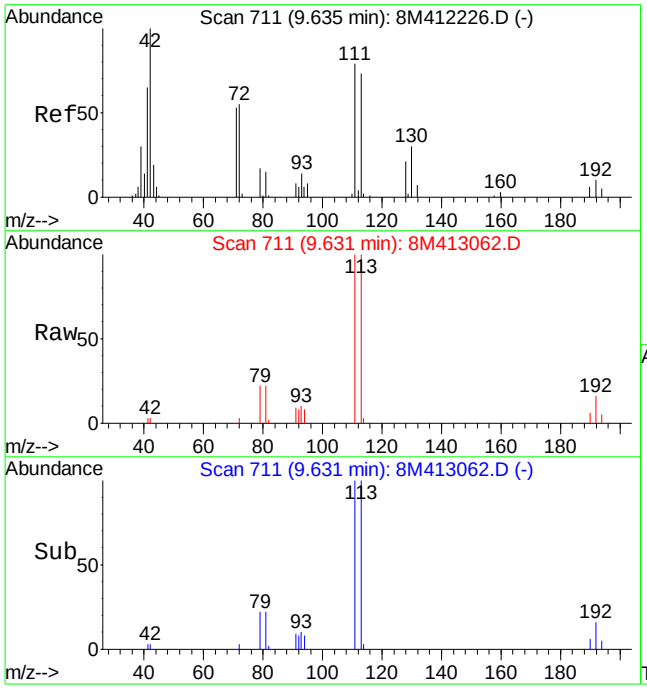

#36
Tetrahydrofuran
Concen: 1.02 ug/L
RT: 9.63 min Scan# 711
Delta R.T. -0.00 min
Lab File: 8M413062.D
Acq: 17 Jun 2016 17:21

Tgt Ion: 42 Resp: 740

Ion	Ratio	Lower	Upper
42	100		
72	62.4	33.8	78.8
71	0.0	32.0	74.8#

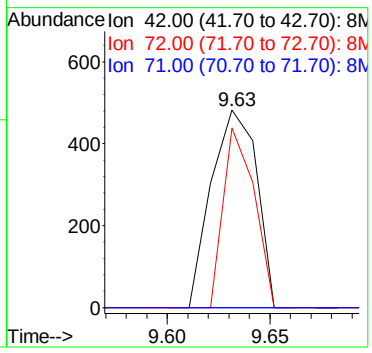

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061716\8M413062.D Vial: 4
Acq On : 17 Jun 2016 17:21 Operator: FJB
Sample : WG573253-01 BLANK 6/17 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Smoothing : ON Filtering: 5
Sampling : 1 Min Area: 200 Area counts
Start Thrs: 0.2 Max Peaks: 100
Stop Thrs : 0 Peak Location: TOP

If leading or trailing edge < 100 prefer < Baseline drop else tangent >
Peak separation: 5

Signal : TIC

peak #	R.T. min	first scan	max scan	last scan	PK TY	peak height	corr. area	corr. % max.	% of total
1	3.492	111	117	118	rBV2	1301	3327	0.18%	0.035%
2	3.523	118	120	123	rBV2	1283	2197	0.12%	0.023%
3	3.565	123	124	127	rVB3	892	1442	0.08%	0.015%
4	3.637	127	131	132	rBV2	1134	2411	0.13%	0.026%
5	3.720	138	139	143	rVB	1552	2432	0.13%	0.026%
6	3.771	143	144	146	rBV	1321	1590	0.09%	0.017%
7	3.895	153	156	162	rVB3	1787	4543	0.25%	0.048%
8	3.988	162	165	168	rBV	1438	2794	0.15%	0.030%
9	4.050	168	171	172	rVV2	1069	2023	0.11%	0.021%
10	4.123	176	178	184	rVB2	1366	3973	0.22%	0.042%
11	4.278	191	193	195	rBB2	338	417	0.02%	0.004%
12	4.340	196	199	200	rBB2	360	434	0.02%	0.005%
13	4.360	200	201	203	rBB2	369	430	0.02%	0.005%
14	4.464	209	211	213	rBB2	326	202	0.01%	0.002%
15	4.981	259	261	263	rBB2	327	203	0.01%	0.002%
16	5.663	325	327	329	rBB2	355	220	0.01%	0.002%
17	6.458	402	404	406	rBB2	334	207	0.01%	0.002%
18	6.810	436	438	440	rBB2	326	202	0.01%	0.002%
19	7.296	481	485	488	rBB2	574	1062	0.06%	0.011%
20	7.461	499	501	503	rBB2	344	213	0.01%	0.002%
21	7.730	523	527	529	rBB2	345	417	0.02%	0.004%
22	7.792	531	533	535	rBB2	359	223	0.01%	0.002%
23	8.536	603	605	607	rBB2	354	219	0.01%	0.002%
24	8.980	646	648	650	rBB2	401	249	0.01%	0.003%
25	9.063	654	656	658	rBB2	398	247	0.01%	0.003%
26	9.290	676	678	680	rBB2	334	207	0.01%	0.002%
27	9.662	707	714	724	rBB	243669	656228	36.24%	6.941%
28	10.138	758	760	762	rBB	323	200	0.01%	0.002%
29	10.303	769	776	785	rBB	213717	523861	28.93%	5.541%
30	10.706	807	815	828	rBB	560614	1461797	80.72%	15.462%
31	10.861	829	830	833	rBB	682	659	0.04%	0.007%
32	11.688	908	910	912	rBB	373	231	0.01%	0.002%
33	12.070	944	947	949	rBB	358	411	0.02%	0.004%
34	12.432	978	982	985	rBB	535	1035	0.06%	0.011%
35	12.680	999	1006	1019	rBB	742469	1811025	100.00%	19.156%
36	13.021	1037	1039	1041	rBB	401	249	0.01%	0.003%
37	14.572	1183	1189	1199	rBB	730511	1643159	90.73%	17.380%
38	14.747	1204	1206	1208	rBB	413	256	0.01%	0.003%
39	16.081	1328	1335	1342	rBB	686594	1438972	79.46%	15.221%
40	16.246	1349	1351	1353	rBB	600	372	0.02%	0.004%
41	16.587	1379	1384	1389	rBB3	6856	16228	0.90%	0.172%
42	16.732	1396	1398	1400	rBB3	354	220	0.01%	0.002%

43	17.166	1437	1440	1442	rBB3	397	442	0.02%	0.005%
44	17.321	1453	1455	1458	rBB3	380	438	0.02%	0.005%
45	17.600	1476	1482	1489	rBB	882028	1792043	98.95%	18.955%
46	17.807	1500	1502	1503	rBB	333	206	0.01%	0.002%
47	17.838	1504	1505	1510	rBB	690	988	0.05%	0.010%
48	18.034	1522	1524	1526	rBB	333	206	0.01%	0.002%
49	18.437	1561	1563	1567	rBB	412	445	0.02%	0.005%
50	18.571	1574	1576	1580	rBB	383	445	0.02%	0.005%
51	18.778	1592	1596	1598	rBB	344	620	0.03%	0.007%
52	18.954	1611	1613	1616	rBB	334	598	0.03%	0.006%
53	19.036	1619	1621	1623	rBB	325	398	0.02%	0.004%
54	19.078	1624	1625	1627	rBB	700	434	0.02%	0.005%
55	19.140	1629	1631	1635	rBB	316	386	0.02%	0.004%
56	19.274	1640	1644	1645	rBB	403	650	0.04%	0.007%
57	19.305	1645	1647	1650	rBB	515	766	0.04%	0.008%
58	19.357	1651	1652	1655	rBB	693	618	0.03%	0.007%
59	19.408	1656	1657	1658	rBB	332	206	0.01%	0.002%
60	19.501	1664	1666	1668	rBB	316	383	0.02%	0.004%
61	19.543	1669	1670	1672	rBV	791	911	0.05%	0.010%
62	19.646	1678	1680	1682	rBV	1058	1334	0.07%	0.014%
63	19.698	1682	1685	1688	rVB	1098	1952	0.11%	0.021%
64	19.739	1688	1689	1691	rBB	485	574	0.03%	0.006%
65	19.791	1691	1694	1696	rBV	720	1517	0.08%	0.016%
66	19.832	1696	1698	1701	rVV	634	1068	0.06%	0.011%
67	19.874	1701	1702	1705	rVB	962	1453	0.08%	0.015%
68	19.946	1705	1709	1713	rBB	614	1900	0.10%	0.020%
69	20.039	1713	1718	1722	rBB	1108	3070	0.17%	0.032%
70	20.122	1722	1726	1729	rBV	998	3185	0.18%	0.034%
71	20.184	1729	1732	1734	rVB	835	1158	0.06%	0.012%
72	20.235	1734	1737	1739	rBV	715	1278	0.07%	0.014%
73	20.277	1740	1741	1742	rVB	1113	690	0.04%	0.007%
74	20.308	1742	1744	1747	rBV2	1222	2990	0.17%	0.032%
75	20.359	1747	1749	1752	rVV	944	1004	0.06%	0.011%
76	20.401	1752	1753	1758	rVB	876	1581	0.09%	0.017%
77	20.483	1758	1761	1766	rBV	1073	2963	0.16%	0.031%
78	20.607	1771	1773	1774	rBV	982	1154	0.06%	0.012%
79	20.638	1774	1776	1782	rBV	1475	4495	0.25%	0.048%
80	20.804	1786	1792	1795	rBV3	1993	7525	0.42%	0.080%
81	20.907	1800	1802	1806	rBV2	1841	3970	0.22%	0.042%
82	20.969	1806	1808	1809	rBV	1453	1761	0.10%	0.019%
83	21.031	1813	1814	1817	rVB3	1243	2105	0.12%	0.022%
84	21.093	1819	1820	1821	rBV	480	312	0.02%	0.003%
85	21.217	1831	1832	1835	rBV2	1685	2917	0.16%	0.031%
86	21.382	1846	1848	1852	rBV3	1059	2656	0.15%	0.028%
87	21.465	1854	1856	1860	rVB	1499	3151	0.17%	0.033%
88	21.527	1860	1862	1864	rBV	1465	2550	0.14%	0.027%
89	21.569	1864	1866	1869	rVV2	1519	2321	0.13%	0.025%
90	21.724	1880	1881	1884	rBV2	1867	3539	0.20%	0.037%

Sum of corrected areas: 9454143

LSC Report - Integrated Chromatogram

File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061716\8M413062.D
Operator : FJB
Acquired : 17 Jun 2016 17:21 using AcqMethod 8260WT
Instrument : HPMS8
Sample Name: WG573253-01 BLANK 6/17 8260
Misc Info : 1,1
Vial Number: 4
Quant File :8260WT.RES (RTE Integrator)

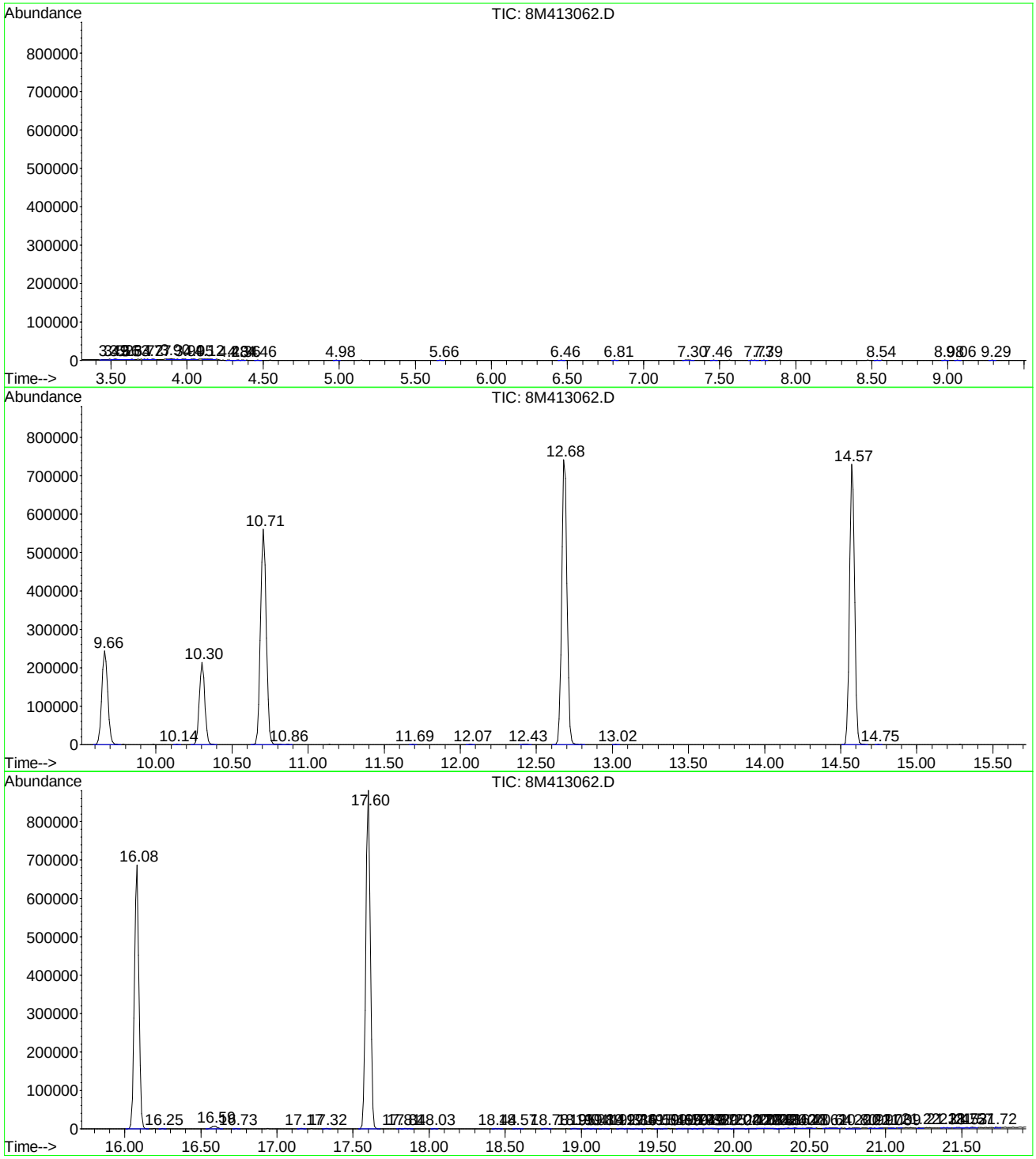

8M413062.D 8260WT.M Fri Jun 24 14:43:43 2016 Page 3

Tentatively Identified Compound (LSC) summary

Operator ID: FJB Date Acquired: 17 Jun 2016 17:21
Data File: K:\ORGANICS\VOLATILE\HPMS8\DATA\061716\8M413062.D
Name: WG573253-01 BLANK 6/17 8260
Misc: 1,1
Method: C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title: Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Library Searched: C:\DATABASE\NIST02.L

						Internal Standard		
TIC	Top Hit name	RT	EstConc	Units	Response	#	RT	Resp	Conc

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061716\8M413085.D Vial: 27
Acq On : 18 Jun 2016 4:27 Operator: FJB
Sample : WG573253-06 BLANK 624 Inst : HPMS8
Misc : 2,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 18 04:49:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	672158	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	508672	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	283566	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	203438	28.1701 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 112.68%		
43) 1,2-Dichloroethane-d4	10.30	65	227709	29.4063 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 117.64%		
58) Toluene-d8	12.68	98	699890	26.2904 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.16%		
80) p-Bromofluorobenzene	16.07	95	296342	25.2385 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.96%		
Target Compounds					Qvalue
36) Tetrahydrofuran	9.63	42	980	1.3392 ug/L #	55

(#) = qualifier out of range (m) = manual integration
8M413085.D 8260WT.M Mon Jun 20 09:22:34 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061716\8M413085.D Vial: 27
Acq On : 18 Jun 2016 4:27 Operator: FJB
Sample : WG573253-06 BLANK 624 Inst : HPMS8
Misc : 2,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 18 4:49 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

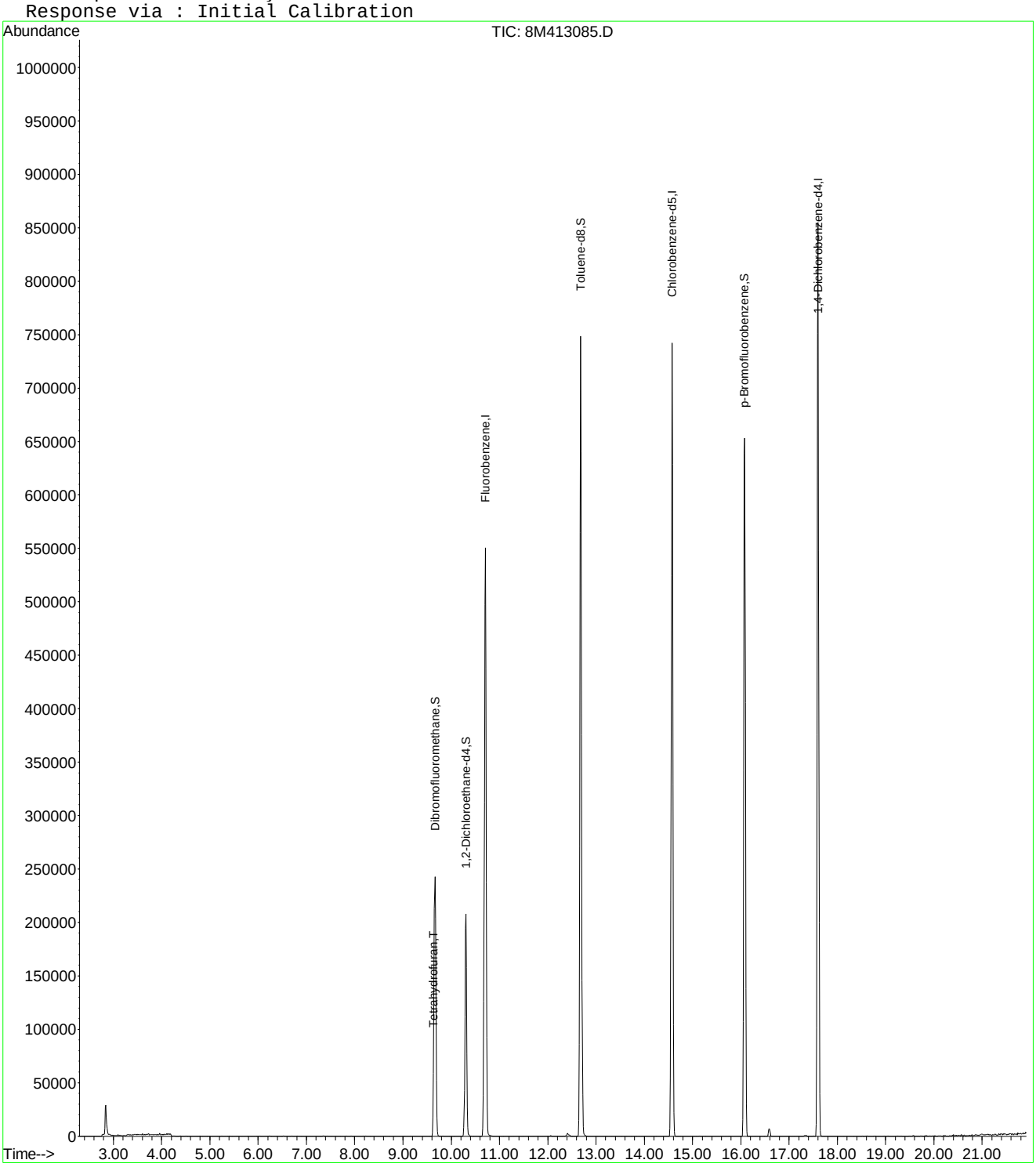

8M413085.D 8260WT.M Mon Jun 20 09:22:35 2016 Page 2

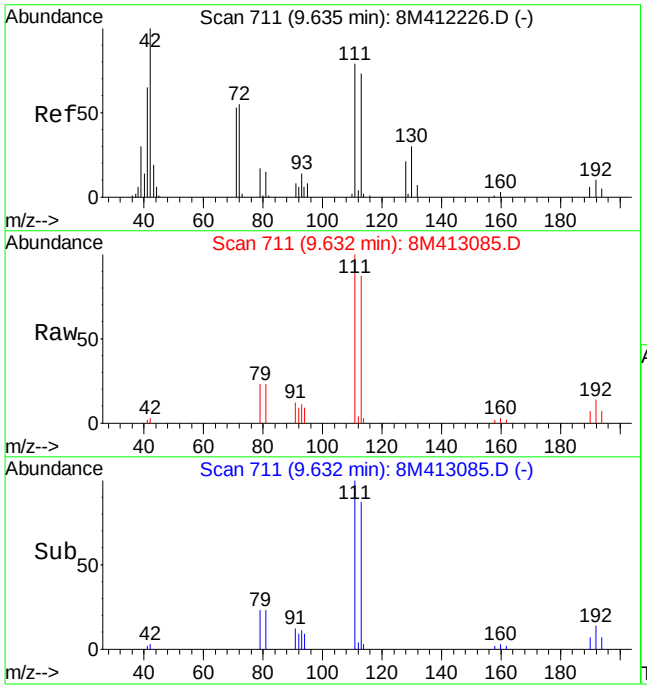

#36
Tetrahydrofuran
Concen: 1.34 ug/L
RT: 9.63 min Scan# 711
Delta R.T. -0.00 min
Lab File: 8M413085.D
Acq: 18 Jun 2016 4:27

Tgt Ion: 42 Resp: 980

Ion	Ratio	Lower	Upper
42	100		
72	44.1	33.8	78.8
71	0.0	32.0	74.8#

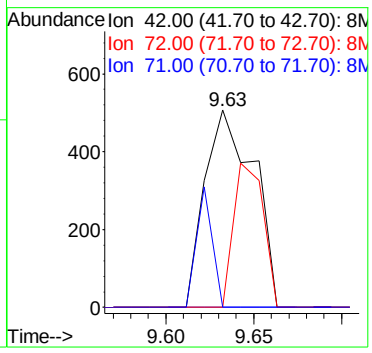

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061616\6M140117.D Vial: 5
Acq On : 16 Jun 2016 18:45 Operator: FJB
Sample : WG573036-02 20ug/L LCS 8260 Inst : HPMS6
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 19:09:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	11.57	96	567923	25.00 ug/L	0.00
57) Chlorobenzene-d5	16.06	117	426092	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	19.65	152	240638	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	10.39	111	148775	25.3118 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.24%		
43) 1,2-Dichloroethane-d4	11.11	65	167488	25.8528 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.40%		
58) Toluene-d8	13.85	98	509739	24.9271 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.72%		
80) p-Bromofluorobenzene	17.84	95	215497	25.3599 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.44%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.44	85	174627	19.4254 ug/L	97
3) Chloromethane	3.93	50	186918	17.0546 ug/L	99
4) Vinyl Chloride	4.16	62	146908	19.8854 ug/L	99
5) 1,3-Butadiene	4.20	54	1052	Below Cal #	22
6) Bromomethane	5.08	94	65024	17.8677 ug/L	100
7) Chloroethane	5.23	64	86994	18.6297 ug/L	96
8) Trichlorofluoromethane	5.73	101	217851	22.0194 ug/L	99
9) Diethyl ether	6.30	59	97552	18.3361 ug/L	97
10) Isoprene	6.32	67	187689	22.3138 ug/L	97
11) Acrolein	6.55	56	32190	35.8616 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.55	101	122746	21.7179 ug/L	99
13) Acetone	6.66	43	35711	20.1859 ug/L	99
14) 1,1-Dichloroethene	6.88	61	195810	19.5631 ug/L	98
15) Tert-Butyl Alcohol	7.02	59	113345	230.7370 ug/L	98
16) Dimethyl Sulfide	7.17	62	177302	38.5982 ug/L	98
17) Iodomethane	7.43	142	121181	30.0213 ug/L	96
18) Methyl acetate	7.45	43	116341	23.7505 ug/L	98
19) Methylene Chloride	7.72	84	122409	19.8320 ug/L	93
20) Carbon Disulfide	7.77	76	376592	19.2306 ug/L	99
21) Acrylonitrile	7.92	53	47432	21.9707 ug/L	100
22) Methyl Tert Butyl Ether	7.96	73	340186	22.5885 ug/L	99
23) trans-1,2-Dichloroethene	8.21	96	119228	20.4357 ug/L	96
24) n-Hexane	8.29	57	190341	20.9516 ug/L	100
25) Diisopropyl ether	8.67	45	1717268	71.0161 ug/L	99
26) Vinyl Acetate	8.86	43	139038	13.5416 ug/L	100
27) 1,1-Dichloroethane	8.89	63	232683	19.9045 ug/L	100
28) Ethyl-Tert-Butyl ether	9.30	59	1363294	68.8883 ug/L	100
29) 2-Butanone	9.52	43	55327	21.5727 ug/L	96
30) Propionitrile	9.64	54	70332	99.3665 ug/L	99
31) 2,2-Dichloropropane	9.75	77	191057	22.4183 ug/L	97
32) cis-1,2-Dichloroethene	9.82	96	133514	21.0059 ug/L	96
33) Chloroform	10.06	83	220131	21.1435 ug/L	99
34) 1-Bromopropane	10.21	122	29701	28.3515 ug/L	100
35) Bromochloromethane	10.32	130	74506	20.6421 ug/L	100
36) Tetrahydrofuran	10.35	42	132960	75.3070 ug/L	96
38) 1,1,1-Trichloroethane	10.66	97	198903	21.4162 ug/L	99
39) Cyclohexane	10.69	56	248073	21.3101 ug/L	98
40) 1,1-Dichloropropene	10.88	75	163295	20.5151 ug/L	97
41) Tert-Amyl-Methyl ether	11.00	73	1375241	89.7551 ug/L	97
42) Carbon Tetrachloride	11.04	117	179128	21.6195 ug/L	99

(#) = qualifier out of range (m) = manual integration
6M140117.D 8260WT.M Fri Jun 17 08:34:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061616\6M140117.D Vial: 5
Acq On : 16 Jun 2016 18:45 Operator: FJB
Sample : WG573036-02 20ug/L LCS 8260 Inst : HPMS6
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 19:09:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	11.24	62	178443	22.3015 ug/L	99
46)	Benzene	11.28	78	481259	20.6279 ug/L	99
47)	Trichloroethene	12.14	130	125992	21.1443 ug/L	99
48)	Methylcyclohexane	12.23	83	193414	21.4096 ug/L	98
49)	1,2-Dichloropropane	12.40	63	141149	21.9032 ug/L	100
50)	1,4-Dioxane	12.73	88	6301	137.2453 ug/L	94
51)	Bromodichloromethane	12.74	83	172681	21.7896 ug/L	100
52)	Dibromomethane	12.84	93	68677	20.6525 ug/L	99
53)	2-Chloroethyl Vinyl Ether	13.09	63	68149	23.1705 ug/L	98
54)	4-Methyl-2-Pentanone	13.12	58	42182	21.5495 ug/L	97
55)	cis-1,3-Dichloropropene	13.48	75	214674	23.9334 ug/L	100
56)	Dimethyl Disulfide	13.78	79	111558	21.5887 ug/L	99
59)	Toluene	13.97	91	506642	20.9392 ug/L	100
60)	Ethyl Methacrylate	14.09	69	148602	22.4122 ug/L	99
62)	trans-1,3-Dichloropropene	14.17	75	183051	22.2131 ug/L	98
63)	1,1,2-Trichloroethane	14.43	97	98953	21.4799 ug/L	99
64)	2-Hexanone	14.36	43	81007	20.7227 ug/L	97
65)	1,3-Dichloropropane	14.79	76	182591	22.5434 ug/L	97
66)	Tetrachloroethene	14.92	166	126581	19.9440 ug/L	98
67)	Dibromochloromethane	15.24	129	127192	21.6685 ug/L	100
68)	1,2-Dibromoethane	15.53	107	95149	21.3692 ug/L	99
69)	1-Chlorohexane	15.64	91	172300	21.9306 ug/L	96
70)	Chlorobenzene	16.12	112	346298	21.3900 ug/L	99
71)	1,1,1,2-Tetrachloroethane	16.17	131	126851	21.6023 ug/L	99
72)	Ethylbenzene	16.17	106	178444	20.7801 ug/L	96
73)	m-,p-Xylene	16.27	106	440626	43.1914 ug/L	98
74)	o-Xylene	16.93	106	223061	22.1257 ug/L	99
75)	Styrene	16.97	104	371774	22.2048 ug/L	98
76)	Bromoform	17.55	173	76969	20.6674 ug/L	99
77)	Isopropylbenzene	17.43	105	570695	22.5518 ug/L	99
79)	1,1,2,2-Tetrachloroethane	17.70	83	124304	21.4253 ug/L	99
81)	1,2,3-Trichloropropane	17.92	110	35958	21.4074 ug/L	80
82)	trans-1,4-Dichloro-2-Buten	17.98	53	35920	17.7621 ug/L	98
83)	n-Propylbenzene	18.03	91	707707	22.6919 ug/L	99
84)	Bromobenzene	18.18	156	149794	20.4681 ug/L	98
85)	1,3,5-Trimethylbenzene	18.26	105	488906	22.1557 ug/L	99
86)	2-Chlorotoluene	18.35	91	455199	21.3082 ug/L	99
87)	4-Chlorotoluene	18.41	91	437429	22.0536 ug/L	99
88)	a-Methylstyrene	18.74	118	278088	22.5419 ug/L	99
89)	tert-Butylbenzene	18.81	134	106985	21.9910 ug/L	78
90)	1,2,4-Trimethylbenzene	18.87	105	495493	21.4498 ug/L	99
91)	sec-Butylbenzene	19.13	105	601994	22.1698 ug/L	99
92)	p-Isopropyltoluene	19.32	119	509727	22.0282 ug/L	99
93)	1,3-Dichlorobenzene	19.53	146	300436	21.0526 ug/L	99
94)	1,4-Dichlorobenzene	19.70	146	306654	22.5744 ug/L	98
95)	n-Butylbenzene	19.94	91	482716	22.0397 ug/L	98
96)	1,2-Dichlorobenzene	20.28	146	287812	21.6422 ug/L	98
97)	1,2-Dibromo-3-Chloropropan	21.46	75	23958	22.9956 ug/L	95
98)	1,2,4-Trichlorobenzene	22.82	180	203138	22.0931 ug/L	100
99)	Hexachlorobutadiene	23.02	225	87348	22.8907 ug/L	100
100)	Naphthalene	23.28	128	381523	20.9910 ug/L	100
101)	1,2,3-Trichlorobenzene	23.69	180	186949	21.4853 ug/L	100

(#) = qualifier out of range (m) = manual integration
6M140117.D 8260WT.M Fri Jun 17 08:34:36 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS6\DATA\061616\6M140117.D Vial: 5
Acq On : 16 Jun 2016 18:45 Operator: FJB
Sample : WG573036-02 20ug/L LCS 8260 Inst : HPMS6
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 16 19:09 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS6\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624_WATER SOP:MSV01 06-01-16 - HPMS6
Last Update : Thu Jun 02 12:19:33 2016
Response via : Initial Calibration

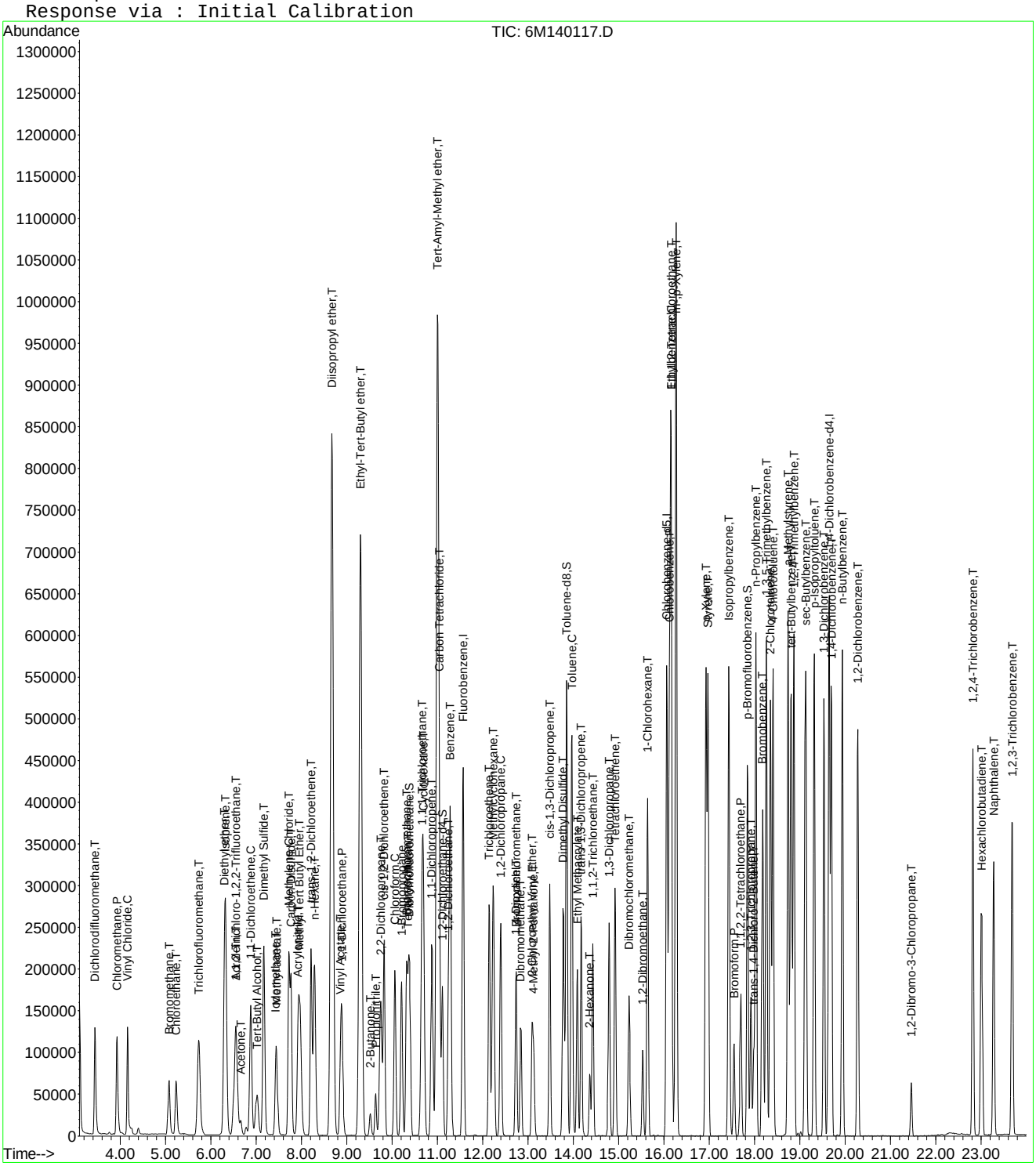

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061716\8M413068.D Vial: 10
Acq On : 17 Jun 2016 20:15 Operator: FJB
Sample : WG573253-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 20:37:16 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	672761	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	510872	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	286337	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	200776	27.7766 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.12%		
43) 1,2-Dichloroethane-d4	10.30	65	231241	29.8357 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 119.36%		
58) Toluene-d8	12.68	98	685607	25.6429 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.56%		
80) p-Bromofluorobenzene	16.08	95	299333	25.2466 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.00%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	230983	20.4782 ug/L	99
3) Chloromethane	3.62	50	119346	18.1265 ug/L	100
4) Vinyl Chloride	3.84	62	181672	23.2567 ug/L	98
5) 1,3-Butadiene	3.87	54	1065	0.1626 ug/L #	2
6) Bromomethane	4.73	94	55383	12.4436 ug/L	97
7) Chloroethane	4.89	64	88293	20.5413 ug/L	98
8) Trichlorofluoromethane	5.37	101	336040	23.1190 ug/L	99
9) Diethyl ether	5.90	59	352808	101.6727 ug/L	97
10) Isoprene	5.93	67	191638	21.7111 ug/L	97
11) Acrolein	6.14	56	27966	90.0127 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	147073	21.5259 ug/L	93
13) Acetone	6.24	43	16296	21.5294 ug/L	94
14) 1,1-Dichloroethene	6.46	61	209483	19.2563 ug/L	97
15) Tert-Butyl Alcohol	6.58	59	39289	161.9760 ug/L	96
16) Dimethyl Sulfide	6.73	62	134929	34.6888 ug/L	98
17) Iodomethane	6.97	142	23883	10.3607 ug/L	96
18) Methyl acetate	7.00	43	42602	20.8219 ug/L	99
19) Methylene Chloride	7.24	84	135443	19.5643 ug/L	96
20) Carbon Disulfide	7.29	76	408927	17.9625 ug/L	99
21) Acrylonitrile	7.43	53	18120	18.4505 ug/L	88
22) Methyl Tert Butyl Ether	7.46	73	338006	22.5587 ug/L	97
23) trans-1,2-Dichloroethene	7.70	61	204315	20.4432 ug/L	96
24) n-Hexane	7.78	57	134334	18.1009 ug/L	100
25) Diisopropyl ether	8.12	45	1564082	100.3981 ug/L	94
26) Vinyl Acetate	8.30	43	55968	7.8466 ug/L	99
27) 1,1-Dichloroethane	8.32	63	249079	20.0677 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1730260	103.6617 ug/L	98
29) 2-Butanone	8.88	43	21068	18.9444 ug/L	94
30) Propionitrile	8.98	54	30781	94.9786 ug/L	100
31) 2,2-Dichloropropane	9.10	77	288627	22.0664 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	161062	20.8564 ug/L	99
33) Chloroform	9.37	83	323891	22.1007 ug/L	99
34) 1-Bromopropane	9.51	122	33899	30.6462 ug/L	99
35) Bromochloromethane	9.60	130	81074	20.4731 ug/L	94
36) Tetrahydrofuran	9.63	42	61380	83.7997 ug/L	94
38) 1,1,1-Trichloroethane	9.91	97	336929	24.2035 ug/L	99
39) Cyclohexane	9.94	56	189222	19.6335 ug/L	95
40) 1,1-Dichloropropene	10.11	75	222250	20.9460 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1679966	110.8159 ug/L	100
42) Carbon Tetrachloride	10.24	117	293780	23.7659 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413068.D 8260WT.M Mon Jun 20 09:14:58 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061716\8M413068.D Vial: 10
Acq On : 17 Jun 2016 20:15 Operator: FJB
Sample : WG573253-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 20:37:16 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.42	62	232179	24.6146 ug/L	98
46)	Benzene	10.46	78	575599	20.8284 ug/L	99
47)	Trichloroethene	11.21	130	171340	23.2463 ug/L	99
48)	Methylcyclohexane	11.30	83	241063	21.5286 ug/L	98
49)	1,2-Dichloropropane	11.43	63	123803	20.1243 ug/L	85
50)	Bromodichloromethane	11.73	83	252342	23.3379 ug/L	99
51)	1,4-Dioxane	11.73	88	3314	107.2392 ug/L	82
52)	Dibromomethane	11.81	93	74973	20.5877 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.02	63	49491	18.7171 ug/L	96
54)	4-Methyl-2-Pentanone	12.05	58	21317	19.7362 ug/L	96
55)	cis-1,3-Dichloropropene	12.36	75	258247	23.4649 ug/L	100
56)	Dimethyl Disulfide	12.62	79	126839	21.5928 ug/L	95
59)	Toluene	12.78	91	627677	19.7907 ug/L	100
60)	Ethyl Methacrylate	12.88	69	122121	20.0498 ug/L	98
62)	trans-1,3-Dichloropropene	12.96	75	222968	20.9782 ug/L	99
63)	1,1,2-Trichloroethane	13.18	97	98079	19.5976 ug/L	99
64)	2-Hexanone	13.11	58	19093	18.1547 ug/L #	96
65)	1,3-Dichloropropane	13.49	76	185982	20.8728 ug/L	95
66)	Tetrachloroethene	13.60	164	136600	20.1028 ug/L	97
67)	Dibromochloromethane	13.87	129	152731	20.9008 ug/L	97
68)	1,2-Dibromoethane	14.12	107	100331	20.1153 ug/L	97
69)	1-Chlorohexane	14.21	91	210003	19.3976 ug/L	97
70)	Chlorobenzene	14.62	112	435153	20.3467 ug/L	99
71)	1,1,1,2-Tetrachloroethane	14.65	131	178573	21.5523 ug/L	100
72)	Ethylbenzene	14.65	106	232759	19.8916 ug/L	98
73)	m-,p-Xylene	14.75	106	576257	41.9858 ug/L	97
74)	o-Xylene	15.31	106	282651	21.0641 ug/L	96
75)	Styrene	15.35	104	461371	20.9632 ug/L	95
76)	Bromoform	15.83	173	90269	20.8266 ug/L	98
77)	Isopropylbenzene	15.73	105	781406	21.9206 ug/L	98
79)	1,1,2,2-Tetrachloroethane	15.95	83	99467	17.3057 ug/L	99
81)	1,2,3-Trichloropropane	16.14	110	35171	19.8715 ug/L	76
82)	trans-1,4-Dichloro-2-Buten	16.18	53	25737	14.7051 ug/L	93
83)	n-Propylbenzene	16.24	91	941501	21.0760 ug/L	99
84)	Bromobenzene	16.37	156	179809	19.5690 ug/L	96
85)	1,3,5-Trimethylbenzene	16.42	105	688403	21.1552 ug/L	99
86)	2-Chlorotoluene	16.51	91	641535	20.5694 ug/L	98
87)	4-Chlorotoluene	16.56	91	576181	20.4520 ug/L	100
88)	a-Methylstyrene	16.82	118	323057	20.9253 ug/L	100
89)	tert-Butylbenzene	16.89	134	128492	20.1837 ug/L	94
90)	1,2,4-Trimethylbenzene	16.94	105	682103	20.3854 ug/L	100
91)	sec-Butylbenzene	17.17	105	801469	20.9361 ug/L	100
92)	p-Isopropyltoluene	17.32	119	672642	20.6940 ug/L	99
93)	1,3-Dichlorobenzene	17.51	146	365545	20.6607 ug/L	99
94)	1,4-Dichlorobenzene	17.64	146	358989	20.1256 ug/L	100
95)	n-Butylbenzene	17.85	91	631846	19.6629 ug/L	100
96)	1,2-Dichlorobenzene	18.14	146	317300	20.1641 ug/L	99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	24478	21.2163 ug/L	91
98)	1,2,4-Trichlorobenzene	20.28	180	232717	19.7853 ug/L	100
99)	Hexachlorobutadiene	20.43	225	117790	21.4331 ug/L	97
100)	Naphthalene	20.65	128	303086	17.3439 ug/L	100
101)	1,2,3-Trichlorobenzene	20.96	180	190773	19.2250 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M413068.D 8260WT.M Mon Jun 20 09:14:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061716\8M413068.D Vial: 10
Acq On : 17 Jun 2016 20:15 Operator: FJB
Sample : WG573253-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 20:37 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

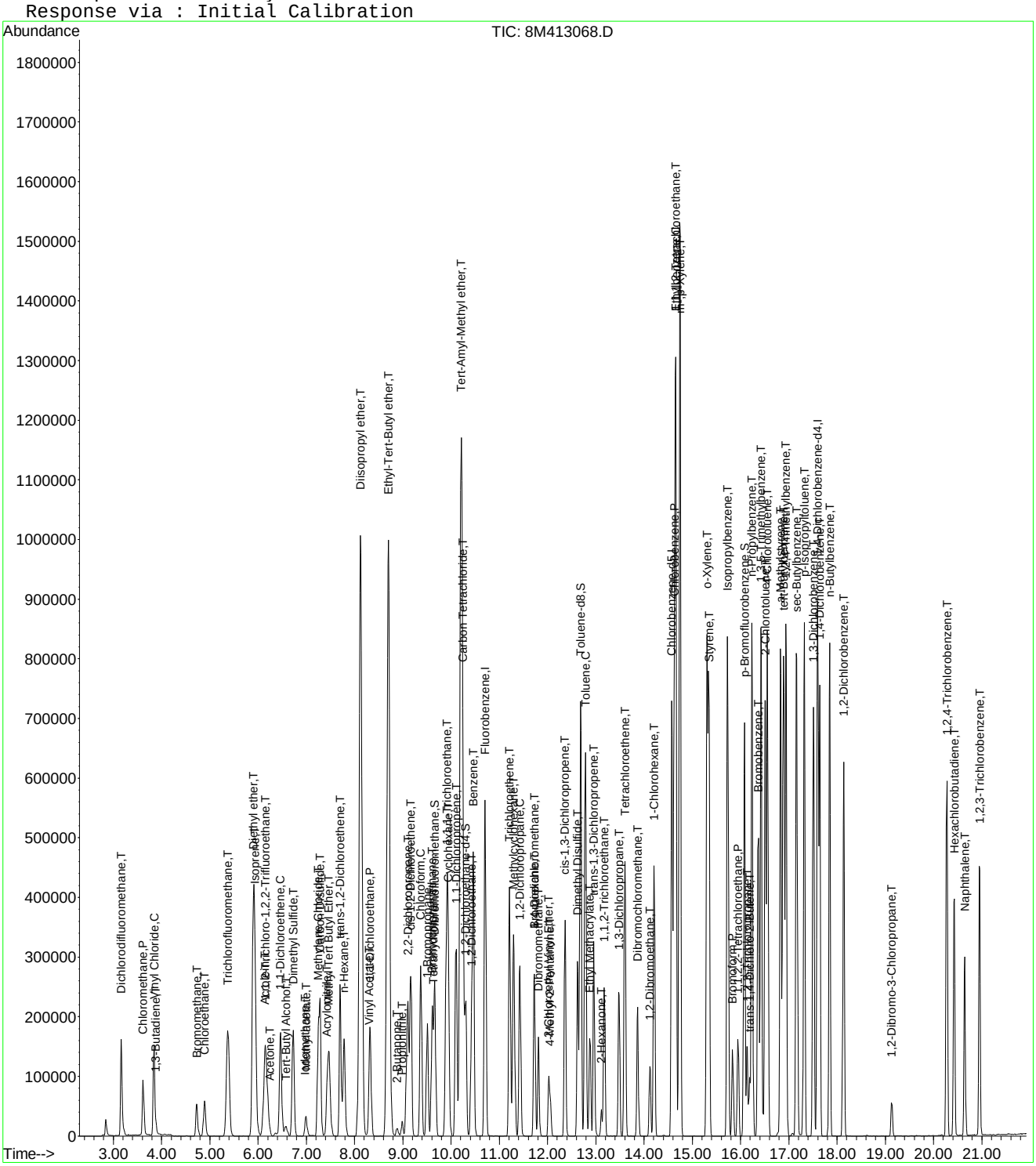

8M413068.D 8260WT.M Mon Jun 20 09:15:00 2016 Page 3

2.2 Semivolatiles Data

2.2.1 Semivolatiles GC/MS Data (Dioxane)

2.2.1.1 Summary Data

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18WW03-061416	**Prep Method:**	3520C	**Prep Date:**	06/15/2016 18:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573365	**Analyst:**	MES	**Run Date:**	06/21/2016 17:08
Collect Date:	06/14/2016 07:40	**Dilution:**	1	**File ID:**	15M18476
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	43.7	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW04SW-061416	**Prep Method:**	3520C	**Prep Date:**	06/15/2016 18:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573365	**Analyst:**	MES	**Run Date:**	06/21/2016 17:31
Collect Date:	06/14/2016 09:00	**Dilution:**	1	**File ID:**	15M18477
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	48.5	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW04-061416	**Prep Method:**	3520C	**Prep Date:**	06/15/2016 18:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573365	**Analyst:**	MES	**Run Date:**	06/21/2016 17:54
Collect Date:	06/14/2016 10:00	**Dilution:**	1	**File ID:**	15M18478
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.67	J	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	72.9	20	129	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW04FD-061416	**Prep Method:**	3520C	**Prep Date:**	06/15/2016 18:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573365	**Analyst:**	MES	**Run Date:**	06/21/2016 18:17
Collect Date:	06/14/2016 10:00	**Dilution:**	1	**File ID:**	15M18479
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	2.01		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	103	20	129	

2.2.1.2 QC Summary Data

Example 8270 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	1261197
Cis = Concentration of the specific internal standard (ug/mL)	40
Ais = Area of the characteristic ion of the specific internal standard	608044
Cx = Concentration of the compound in the standard being measured (ug/mL)	50
RF = Calculated Response Factor	**1.65935**

2.0 Calculating the concentration (C) of a compound in water using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Vi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Vi = Initial volume of sample extracted from prep log (mL)	1021
Cx = Concentration of the compound in the sample being measured (ug/mL)	0.016947
Cx = Concentration of the compound in the sample being measured (ug/L)	**16.947**

3.0 Calculating the concentration (C) of a compound in soil using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Wi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Wi = Initial weight of sample extracted (g) from prep log	30
Cx = Concentration of the compound in the sample being measured (ug/g)	0.576763
Cx = Concentration of the compound in the sample being measured (ug/kg)	**576.7627**

Dry weight correction:

Percent solids (PCT_S)	50
Cd = (Cx) (100)/PCT_S	**1153.525** ug/kg

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve plot

b = intercept from curve plot

Step 2: Calculate y from Quantitation Report

y = 16790/784838 = 0.02139

Step 3: Solve for x

x = (y - b)/m = [(0.02139 -(- 0.0435)]/ 0.0783 = 0.829

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.829) = 20.72 ug/L

Example Spreadsheet Calculation:

Slope from curve, m:	0.0783	
Intercept from curve, b:	-0.0435	
Area of analyte, Ax:	16790	
Area of Internal Standard , Ais:	784484	
Concentration of IS, Cis	25.00	ug/L
Response Ratio (y) :	0.021403	
Amount Ratio:	0.828897	
Concentration (Cx):	20.72241	ug/L

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**0.0259**	
Value of B from plot:	**0.0596**	
Value of C from plot:	**-0.0165**	
Area of analyte from quantitation report:	**203233**	
Area of IS from quantiation report:	**1425653**	
Response ratio, y:	**0.142554**	
C - y:	**-0.15905**	
Root 1 - Computed amount ratio , X1:	**-3.88278**	
Root 2 - Computed amount ratio , X2:	**1.581623**	use this solution
Concentration of IS, Cis:	**40.00**	
Concentration of analyte, Cx:	**63.26**	ug/L

Microbac Laboratories Inc.
Continuous Sample Extract Log

Workgroup: WG572806
Analyst: CPD
Spike Analyst: CPD
Method: 3520C
Run Date: 06/15/2016 18:01
SOP: EXB01 Revison 20
Spike Witness: JDH
Surr Solution: STD74051

TIME ON: 19:15 OFF: 13:30 ON: 17:50 OFF: 12:00

CH2CL2 Lot #: COA18982
sodium sulfate Lot #: COA18814
10N NaOH Lot #: RGT37076
1:1 H2SO4 Lot #: RGT36755

	SAMPLE #	Type	Reference	Prod	pH	Init Amnt	Surr Amnt	Spike Amnt	Spike Sol	Final Vol	Color
1	L16060730-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Colored
2	L16060730-02	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Colored
3	L16060730-03	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
4	L16060756-04	SAMP		827-DIOX	<2>12	1000 mL	.05 mL			1 mL	Colored
5	L16060809-03	SAMP		827-DIOX	<2>12	1000 mL	.05 mL			1 mL	Colored
6	L16060822-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Colored
7	L16060822-03	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
8	L16060822-04	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
9	L16060822-05	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
10	L16060823-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
11	L16060823-03	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Colored
12	L16060823-04	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
13	L16060854-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Colored
14	WG572806-01	BLANK		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
15	WG572806-02	LCS		827-DIOXANE	<2>12	1000 mL	.05 mL	.05 mL	STD75256	1 mL	Transparent
16	WG572806-03	LCS2		827-DIOXANE	<2>12	1000 mL	.05 mL	.05 mL	STD75256	1 mL	Transparent

Due to insufficient sample volume, this preparation batch failed to include the method prescribed MS and MSD.

LCS TV3 Cell 6
LCS DUP TV3 Cell 1

Analyst: Chelsie Davis

Reviewer: Chris Hill

EXTRACT - Modified 01/23/2009
PDF ID: 4813903
Report generated: 06/20/2016 08:50

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062116
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573365

Internal STD: STD76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: STD74214 MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18455	BAKEOUT	1	1		06/21/16 08:46
2	15M18456	WG573501-01 5PPM DFTPP STD	1	1	STD75016	06/21/16 09:05
3	15M18457	WG573501-01 5PPM DFTPP STD	1	1	STD75016	06/21/16 09:34
4	15M18458	WG573501-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 09:52
5	15M18459	WG573501-03 10 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 10:27
6	15M18460	WG573501-04 7.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 10:49
7	15M18461	WG573501-05 2.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:12
8	15M18462	WG573501-06 1 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:34
9	15M18463	WG573501-07 0.4 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:57
10	15M18464	WG573501-08 5PPM 1,4-DIOXANE ALT SRC	1	1	STD74214	06/21/16 12:20
11	15M18465	WG572806-01 BLANK 6/15	1	1		06/21/16 12:54
12	15M18466	WG572806-02 LCS 6/15	1	1		06/21/16 13:17
13	15M18467	WG572806-03 LCSDUP 6/15	1	1		06/21/16 13:40
14	15M18468	WG573008-01 BLANK 6/17	7	1	SOIL	06/21/16 14:03
15	15M18469	WG573008-02 LCS 6/17	7	1	SOIL	06/21/16 14:26
16	15M18470	WG573008-03 LCSDUP 6/17	7	1	SOIL	06/21/16 14:48
17	15M18471	L16060730-01	1	1		06/21/16 15:11
18	15M18472	L16060730-02	1	1		06/21/16 15:34
19	15M18473	L16060854-01	1	1		06/21/16 15:57
20	15M18474	L16060730-03	1	1		06/21/16 16:19
21	15M18475	L16060756-04 827-DIOX	1	1		06/21/16 16:46
22	15M18476	L16060822-01	1	1		06/21/16 17:08
23	15M18477	L16060822-03	1	1		06/21/16 17:31
24	15M18478	L16060822-04	1	1		06/21/16 17:54
25	15M18479	L16060822-05	1	1		06/21/16 18:17
26	15M18480	L16060823-01	1	1		06/21/16 18:40
27	15M18481	L16060823-03	1	1		06/21/16 19:02
28	15M18482	L16060823-04	1	1		06/21/16 19:25
29	15M18483	L16060809-03 827-DIOX	1	1		06/21/16 19:48
30	15M18484	L16060854-01 2X	1	2		06/21/16 20:10
31	15M18485	BAKEOUT	1	1		06/21/16 20:33
32	15M18486	BAKEOUT	1	1		06/21/16 20:55
33	15M18487	BAKEOUT	1	1		06/21/16 21:18

Page: 1 Approved: 22-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062116

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573365

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD: STD74214

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
	WG573501-01 5PPM DFTPP STD rerun DFTPP, pentachlorophenol tailing >2.			
14				
	WG573008-01 BLANK 6/17 DNR-not needed.			
15				
	WG573008-02 LCS DNR-not needed.			
16				
	WG573008-03 LCSDUP DNR-not needed.			
19	X	2	Over Calibration Range	
	L16060854-01			

Page: 2 Approved: 22-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 21-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75850
Analytical Workgroups: L16060730, 060756, 060809, 060822, 060823, 060854

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 22-JUN-2016

Secondary Reviewer: 22-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-22-2016 16:00:51

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8270D

AAB#: WG573365

Login Number: L16060822

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW03-061416	01	06/14/16					06/15/2016	1.4	7		06/21/16	6	40	
18CPTMW04SW-061416	03	06/14/16					06/15/2016	1.4	7		06/21/16	6	40	
18CPTMW04-061416	04	06/14/16					06/15/2016	1.3	7		06/21/16	6	40	
18CPTMW04FD-061416	05	06/14/16					06/15/2016	1.3	7		06/21/16	6	40	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4819071
Report generated 06/23/2016 13:27

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060822
Instrument Id: HPMS15
Workgroup (AAB#): WG573365

Method: 827-DIOXANE
CAL ID: HPMS15-21-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1
L16060822-01	1.00	01	43.7
L16060822-03	1.00	01	48.5
L16060822-04	1.00	01	72.9
L16060822-05	1.00	01	103
WG572806-01	1.00	02	61.7
WG572806-02	1.00	02	62.5
WG572806-03	1.00	02	46.5

Surrogates	Surrogate Limits
1 - 1,4-Dioxane-d8	20 - 129

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4819078
Report generated: 06/23/2016 13:27

METHOD BLANK SUMMARY

Login Number: L16060822
Blank File ID: 15M18465
Prep Date: 06/15/16 18:01
Analyzed Date: 06/21/16 12:54
Analyst: MES

Work Group: WG573365
Blank Sample ID: WG572806-01
Instrument ID: HPMS15
Method: 8270D

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572806-02	15M18466	06/21/16 13:17	02
LCS2	WG572806-03	15M18467	06/21/16 13:40	02
18WW03-061416	L16060822-01	15M18476	06/21/16 17:08	01
18CPTMW04SW-061416	L16060822-03	15M18477	06/21/16 17:31	01
18CPTMW04-061416	L16060822-04	15M18478	06/21/16 17:54	01
18CPTMW04FD-061416	L16060822-05	15M18479	06/21/16 18:17	01

Report Name: BLANK_SUMMARY
PDF File ID: 4821146
Report generated 06/23/2016 13:27

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060822 Prep Date: 06/15/16 18:01 Sample ID: WG572806-01
Instrument ID: HPMS15 Run Date: 06/21/16 12:54 Prep Method: 3520C
File ID: 15M18465 Analyst: MES Method: 8270D
Workgroup (AAB#): WG573365 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS15-21-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
1,4-Dioxane	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	61.7	20 - 129	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4819072
23-JUN-2016 13:27

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060822 Analyst: MES Prep Method: 3520C
Instrument ID: HPMS15 Matrix: Water Method: 8270D
Workgroup (AAB#): WG573365 Units: ug/L
QC Key: DOD4 Lot #: STD75256

Sample ID: WG572806-02 LCS File ID: 15M18466 Run Date: 06/21/2016 13:17
Sample ID: WG572806-03 LCS2 File ID: 15M18467 Run Date: 06/21/2016 13:40

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,4-Dioxane	5.00	3.03	60.6	5.00	2.27	45.5	28.6	30 - 104	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,4-Dioxane-d8	62.5	46.5	20 - 129	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4819073
Report generated: 06/23/2016 13:27

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16060822
Instrument: HPMS15
Analyst: MES
Workgroup: WG573501

Tune ID: WG573501-01
Run Date: 06/21/2016
Run Time: 09:34
File ID: 15M18457
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	38.8	34488	PASS
68.0	69.0	0	2.00	1.36	500	PASS
69.0	198	0	100	41.4	36833	PASS
70.0	69.0	0	2.00	0.467	172	PASS
127	198	40.0	60.0	51.9	46131	PASS
197	198	0	1.00	0	0	PASS
198	198	100	100	100	88880	PASS
199	198	5.00	9.00	6.66	5918	PASS
275	198	10.0	30.0	24.9	22090	PASS
365	198	1.00	100	2.65	2358	PASS
441	443	0.0100	100	75.7	9586	PASS
442	198	40.0	100	73.4	65261	PASS
443	442	17.0	23.0	19.4	12659	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573501-02	STD-CCV	01	06/21/2016 09:52	
WG573501-03	STD	01	06/21/2016 10:27	
WG573501-04	STD	01	06/21/2016 10:49	
WG573501-05	STD	01	06/21/2016 11:12	
WG573501-06	STD	01	06/21/2016 11:34	
WG573501-07	STD	01	06/21/2016 11:57	
WG573501-08	SSCV	01	06/21/2016 12:20	
WG572806-01	BLANK	02	06/21/2016 12:54	
WG572806-02	LCS	02	06/21/2016 13:17	
WG572806-03	LCS2	02	06/21/2016 13:40	
L16060822-01	18WW03-061416	01	06/21/2016 17:08	
L16060822-03	18CPTMW04SW-061416	01	06/21/2016 17:31	
L16060822-04	18CPTMW04-061416	01	06/21/2016 17:54	
L16060822-05	18CPTMW04FD-061416	01	06/21/2016 18:17	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4819076
Report generated 06/23/2016 13:27

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060822
Analytical Method: 8270D
ICAL Workgroup: WG573501

Instrument ID: HPMS15
Initial Calibration Date: 21-JUN-16 11:57
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
1,4-Dioxane		0.3060	2.56		

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4819074
Report generated 06/23/2016 13:27

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060822

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 21-JUN-16 11:57

Column ID: F

Analyte	WG573501-02			WG573501-03			WG573501-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	5.00	60883.0000	0.3073	10.0	138820.000	0.3164	7.50	103182.000	0.3106

INT_CAL - Modified 03/06/2008
PDF File ID: 4819074
Report generated 06/23/2016 13:27

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060822

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 21-JUN-16 11:57

Column ID: F

Analyte	WG573501-05			WG573501-06			WG573501-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	2.50	26333.0000	0.2969	1.00	13250.0000	0.2966	0.400	5650.00000	0.3081

INT_CAL - Modified 03/06/2008
PDF File ID: 4819074
Report generated 06/23/2016 13:27

Calibration Table Report
Method: DIOXANE_D8.M
Title: OVD MSS01 SIM 1,4-dioxane ICAL 062116
Last Calibration: Tue Jun 21 12:51:17 2016
Curve:WG573501
Calibration Files

Compound	10 15M18459.D	7.5 15M18460.D	5 15M18458.D	2.5 15M18461.D	1 15M18462.D	0.4 15M18463.D	Avg	%RSD
1,4-Dichlorobenzene-d4	ISTD							
1,4-Dioxane	0.316	0.311	0.307	0.297	0.297	0.308	0.306	2.558
1,4-Dioxane-d8	0.426	0.418	0.417	0.402	0.395		0.411	3.044
Nitrobenzene-d5	1.202	1.173	1.128	1.002	0.927	0.906	1.056	12.163
2-Fluorobiphenyl	2.735	2.736	2.691	2.621	2.563	2.651	2.666	2.548
p-Terphenyl-d14	2.793	2.774	2.622	2.460	2.367	2.405	2.570	7.266

Wed Jun 22 12:17:33 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060822 Run Date: 06/21/2016 Sample ID: WG573501-08
Instrument ID: HPMS15 Run Time: 12:20 Method: 8270D
File ID: 15M18464 Analyst: MES QC Key: DOD4
ICal Workgroup: WG573501 Cal ID: HPMS15 - 21-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
1,4-Dioxane		5000	5050	ug/L	0.309	0.900	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4819075
Report generated 06/23/2016 13:27

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060822
Instrument ID: HPMS15
Workgroup (AAB#): WG573365

ICAL CCV Number: WG573501-02
CAL ID: HPMS15-21-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG573501-02	NA	NA	39637
Upper Limit	NA	NA	79274
Lower Limit	NA	NA	19819
L16060822-01	1.00	01	33038
L16060822-03	1.00	01	24778
L16060822-04	1.00	01	29740
L16060822-05	1.00	01	24302
WG572806-01	1.00	02	38899
WG572806-02	1.00	02	27126
WG572806-03	1.00	02	34071

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4819077
Report generated 06/23/2016 13:27

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060822
Instrument ID: HPMS15
Workgroup (AAB#): WG573365

ICAL CCV Number: WG573501-02
CAL ID: HPMS15 - 21-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG573501-02	NA	NA	6.93
Upper Limit	NA	NA	7.43
Lower Limit	NA	NA	6.43
L16060822-01	1.00	01	6.936
L16060822-03	1.00	01	6.936
L16060822-04	1.00	01	6.936
L16060822-05	1.00	01	6.937
WG572806-01	1.00	02	6.936
WG572806-02	1.00	02	6.933
WG572806-03	1.00	02	6.933

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4821147
Report generated: 06/23/2016 13:27

2.2.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18476.D
Acq On : 21 Jun 2016 17:08
Operator : MES
Sample : L16060822-01
Misc : 1,1
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Jun 22 08:03:25 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.936	152	33038	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	29689	2.1839	ug/L	0.00
Spiked Amount 5.000			Recovery	=	43.60%	
4) Nitrobenzene-d5	7.436	82	5041	0.1445	ug/L	0.00
Spiked Amount 5.000			Recovery	=	2.80%	
5) 2-Fluorobiphenyl	8.926	172	5502	0.0625	ug/L	0.00
Spiked Amount 5.000			Recovery	=	1.20%	
6) p-Terphenyl-d14	12.210	244	2382	0.0281	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.60%	

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18476.D
Acq On : 21 Jun 2016 17:08
Operator : MES
Sample : L16060822-01
Misc : 1,1
ALS Vial : 19 Sample Multiplier: 1

Quant Time: Jun 22 08:03:25 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

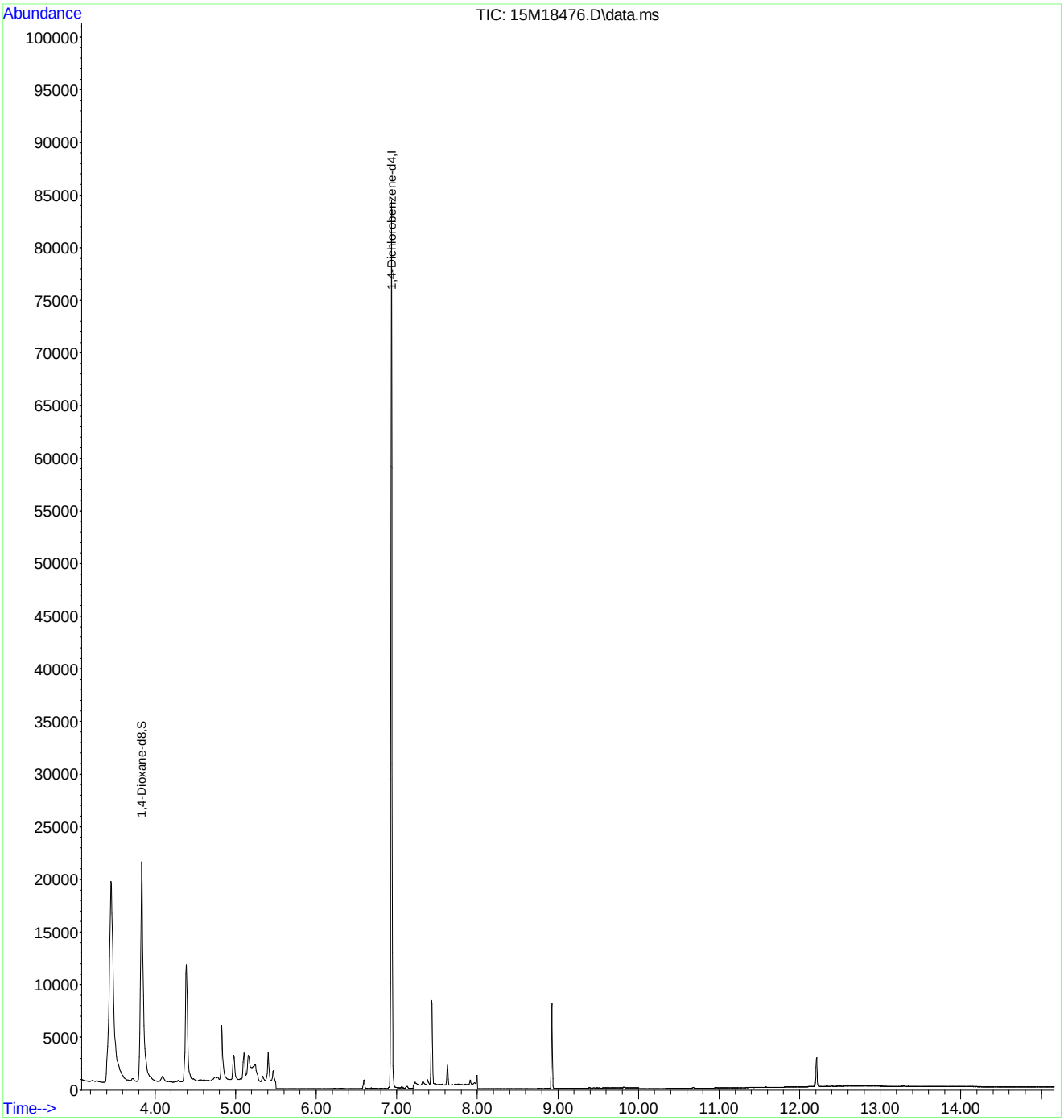

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18477.D
Acq On : 21 Jun 2016 17:31
Operator : MES
Sample : L16060822-03
Misc : 1,1
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Jun 22 08:03:28 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.936	152	24778	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.827	96	24726	2.4251	ug/L	0.00
Spiked Amount 5.000			Recovery	=	48.60%	
4) Nitrobenzene-d5	7.436	82	2358	0.0901	ug/L	0.00
Spiked Amount 5.000			Recovery	=	1.80%	
5) 2-Fluorobiphenyl	8.926	172	2168	0.0328	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.60%	
6) p-Terphenyl-d14	12.203	244	543	0.0085	ug/L	0.02
Spiked Amount 5.000			Recovery	=	0.20%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18477.D
Acq On : 21 Jun 2016 17:31
Operator : MES
Sample : L16060822-03
Misc : 1,1
ALS Vial : 20 Sample Multiplier: 1

Quant Time: Jun 22 08:03:28 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

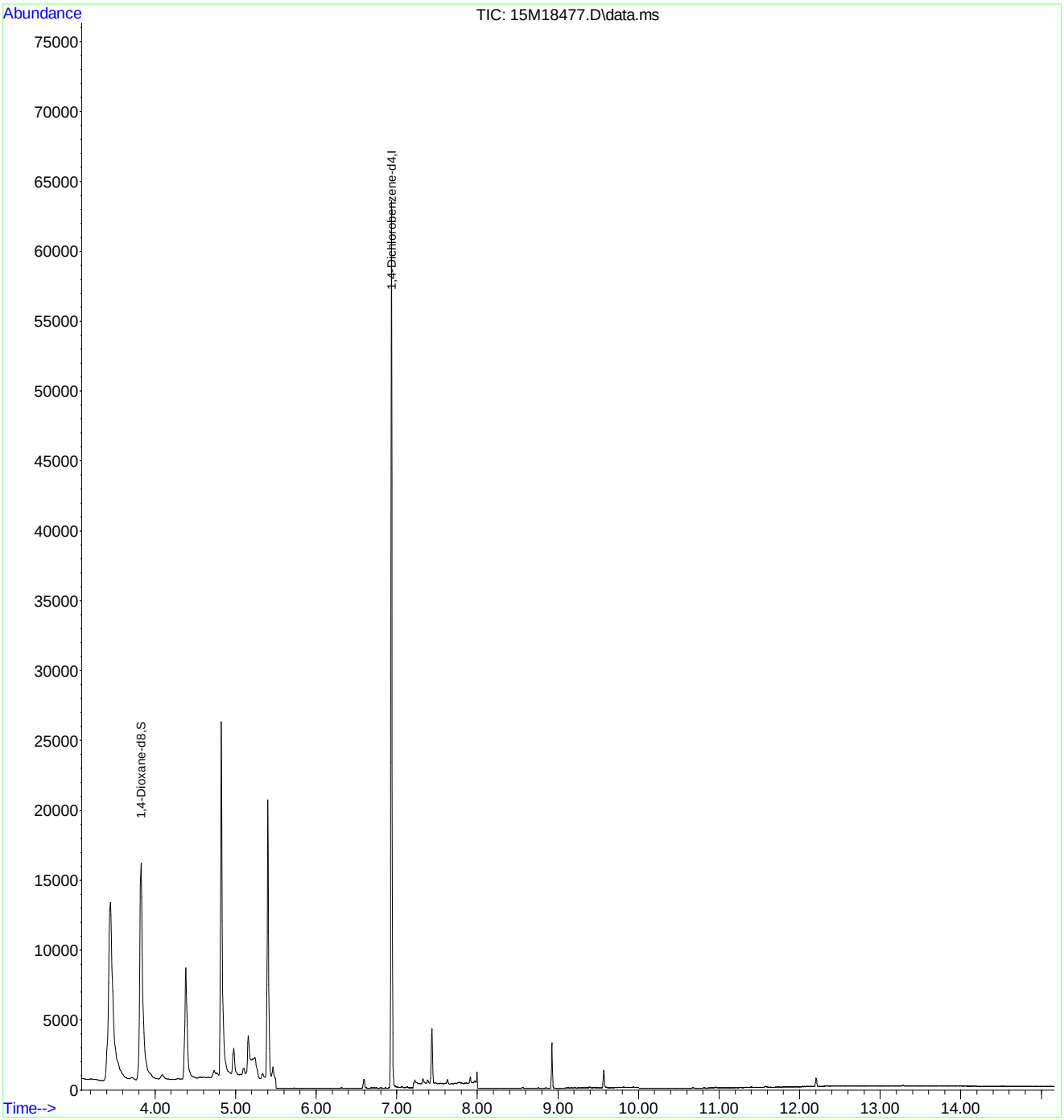

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18478.D
Acq On : 21 Jun 2016 17:54
Operator : MES
Sample : L16060822-04
Misc : 1,1
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Jun 22 08:03:31 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.936	152	29740	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	44621	3.6462	ug/L	0.00
Spiked Amount 5.000			Recovery	=	73.00%	
4) Nitrobenzene-d5	7.227	82	1407	0.0448	ug/L	-0.20
Spiked Amount 5.000			Recovery	=	0.80%	
5) 2-Fluorobiphenyl	8.926	172	136	0.0017	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.188	244	532	0.0070	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	15235	1.6743	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18478.D
Acq On : 21 Jun 2016 17:54
Operator : MES
Sample : L16060822-04
Misc : 1,1
ALS Vial : 21 Sample Multiplier: 1

Quant Time: Jun 22 08:03:31 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

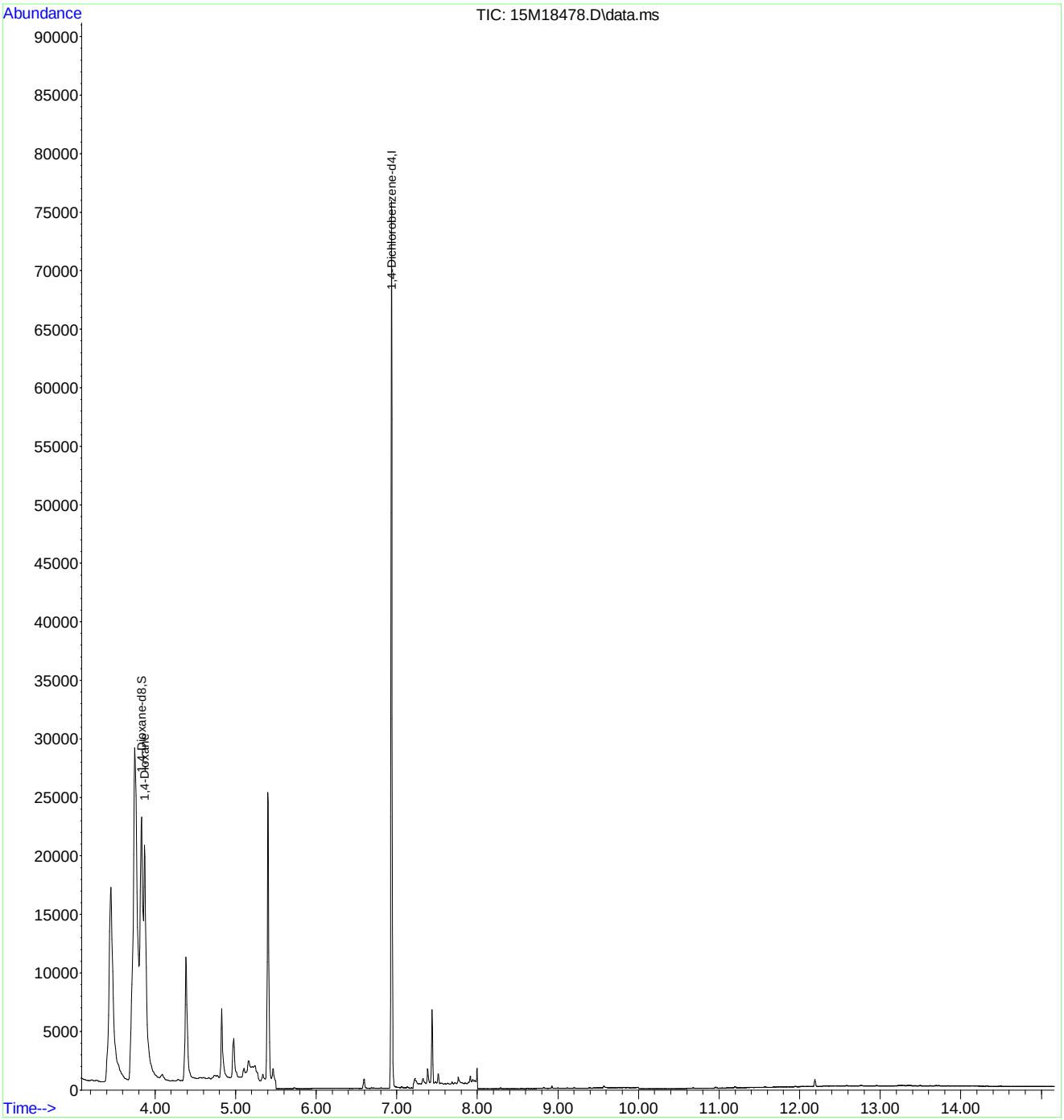

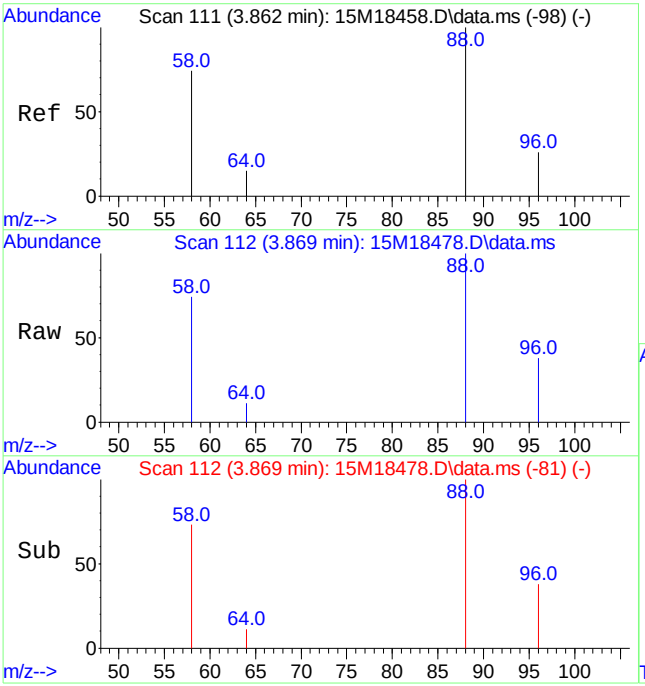

#2
1,4-Dioxane
Concen: 1.67 ug/L
RT: 3.869 min Scan# 112
Delta R.T. 0.007 min
Lab File: 15M18478.D
Acq: 21 Jun 2016 17:54

Tgt Ion: 58 Resp: 15235

Ion	Ratio	Lower	Upper
58	100		
88	150.5	103.1	240.7

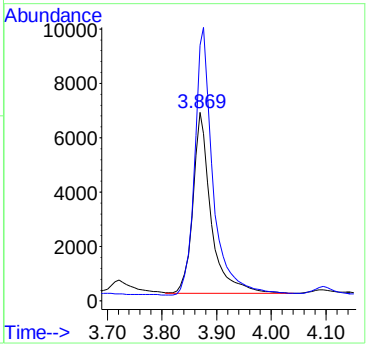

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18479.D
Acq On : 21 Jun 2016 18:17
Operator : MES
Sample : L16060822-05
Misc : 1,1
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Jun 22 08:03:34 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.937	152	24302	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.820	96	51485	5.1486	ug/L	0.00
Spiked Amount 5.000			Recovery	=	103.00%	
4) Nitrobenzene-d5	7.436	82	3648	0.1421	ug/L	0.00
Spiked Amount 5.000			Recovery	=	2.80%	
5) 2-Fluorobiphenyl	8.926	172	547	0.0084	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.20%	
6) p-Terphenyl-d14	12.188	244	582	0.0093	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.862	58	14926	2.0074	ug/L	82

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18479.D
Acq On : 21 Jun 2016 18:17
Operator : MES
Sample : L16060822-05
Misc : 1,1
ALS Vial : 22 Sample Multiplier: 1

Quant Time: Jun 22 08:03:34 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

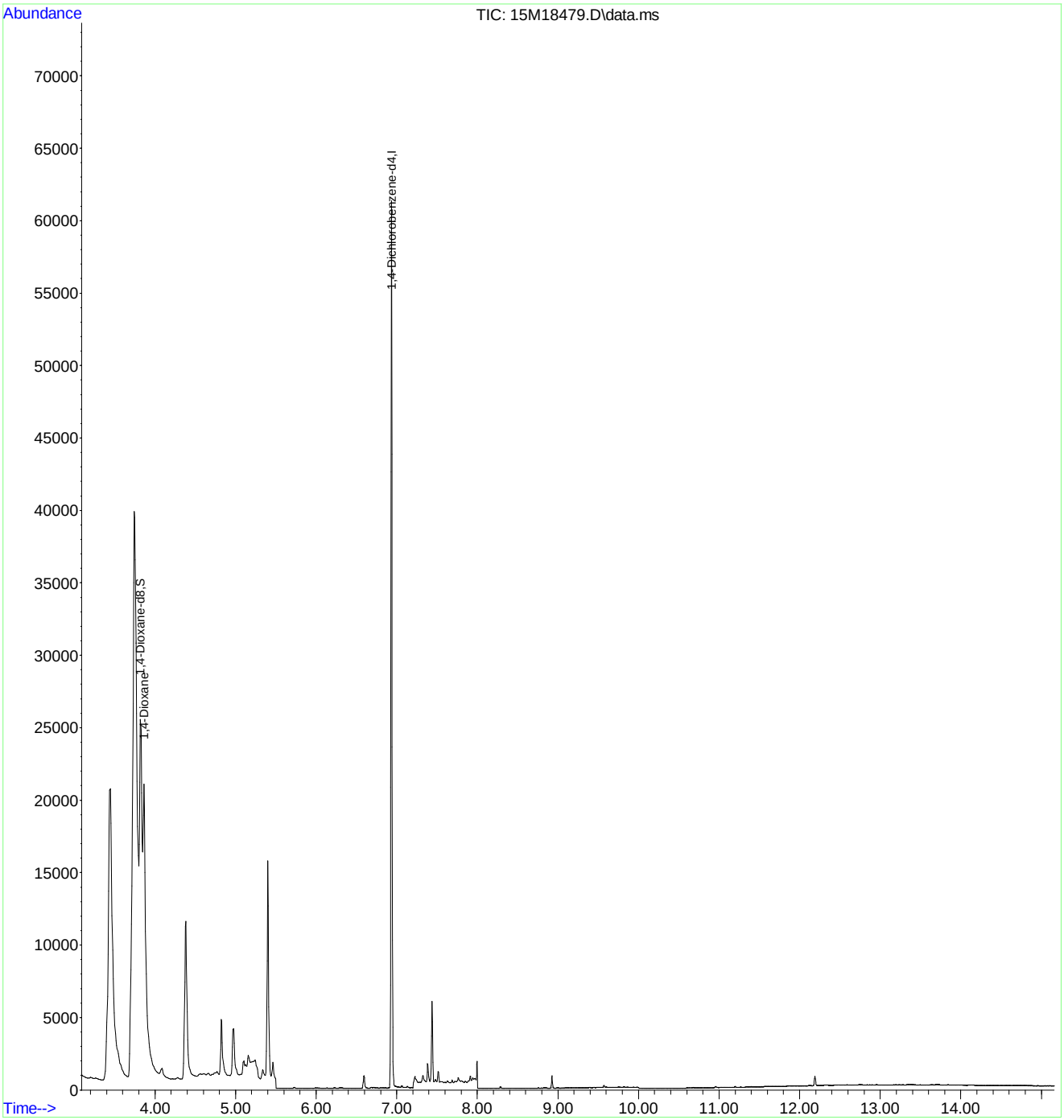

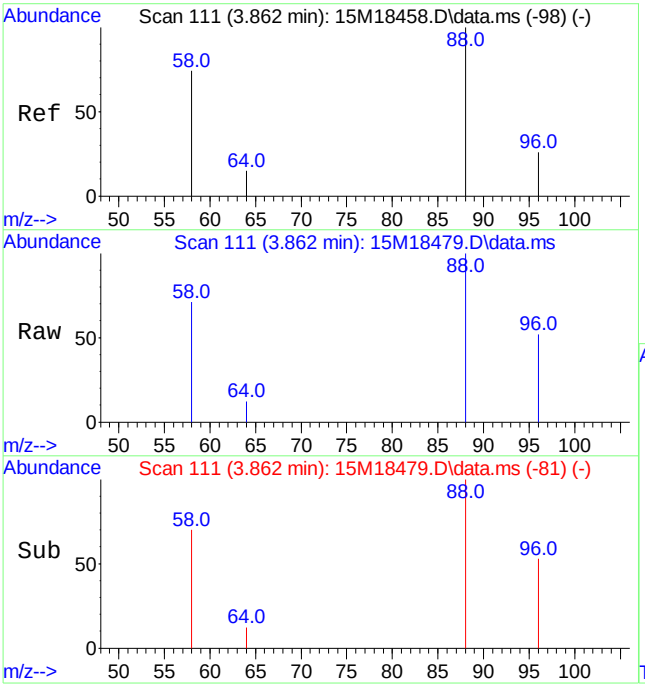

#2
1,4-Dioxane
Concen: 2.01 ug/L
RT: 3.862 min Scan# 111
Delta R.T. 0.000 min
Lab File: 15M18479.D
Acq: 21 Jun 2016 18:17

Tgt Ion: 58 Resp: 14926

Ion	Ratio	Lower	Upper
58	100		
88	147.6	103.1	240.7

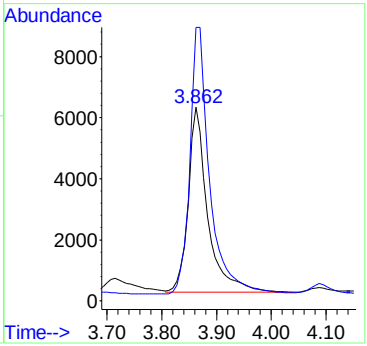

2.2.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 22 08:04:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	39637	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.827	96	82573	5.0627 ug/L	0.00
Spiked Amount 5.000			Recovery	= 101.20%	
4) Nitrobenzene-d5	7.431	82	223381	5.3353 ug/L	0.00
Spiked Amount 5.000			Recovery	= 106.80%	
5) 2-Fluorobiphenyl	8.922	172	533101	5.0444 ug/L	0.00
Spiked Amount 5.000			Recovery	= 100.80%	
6) p-Terphenyl-d14	12.184	244	519544	5.1003 ug/L	0.00
Spiked Amount 5.000			Recovery	= 102.00%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.862	58	60883	5.0202 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 22 08:04:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

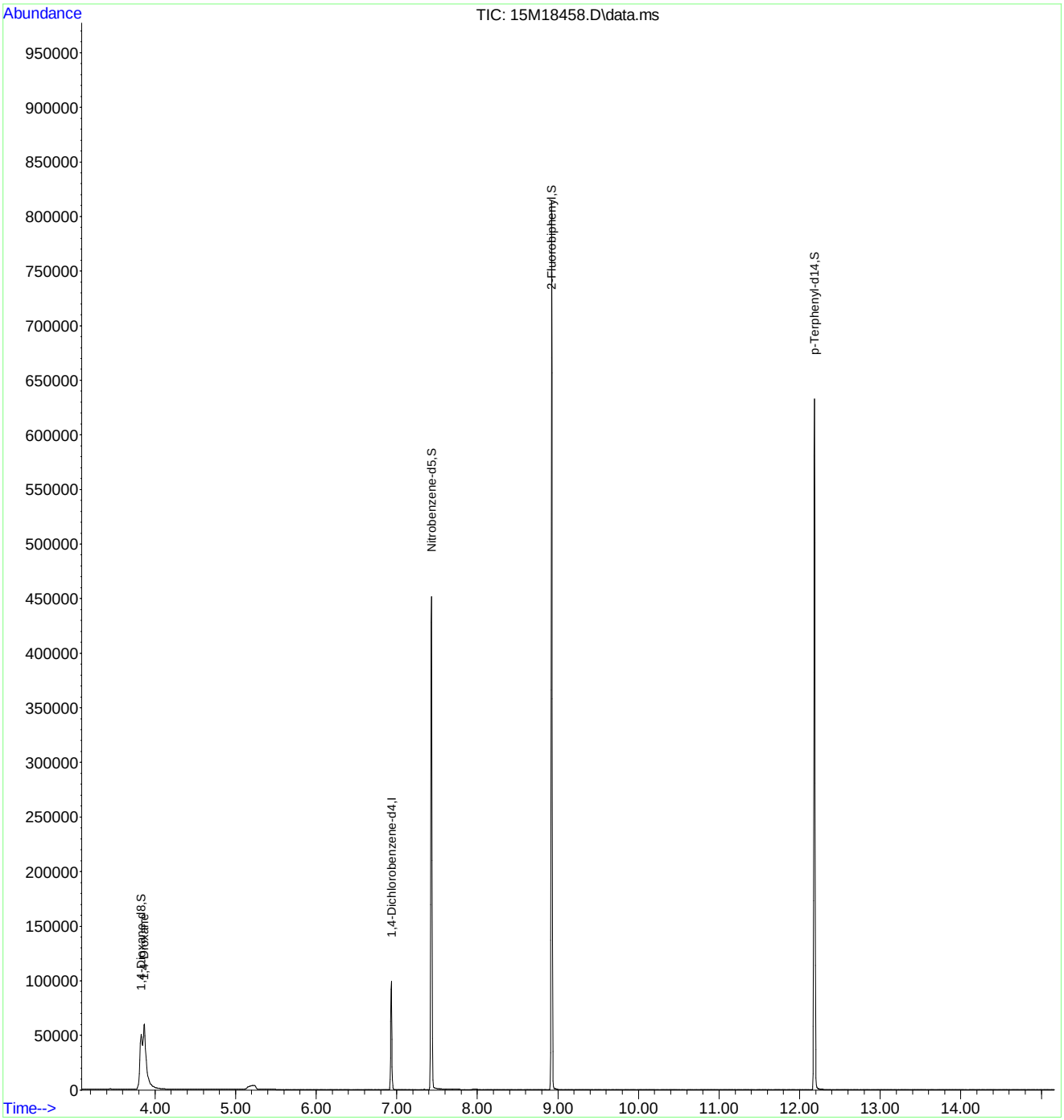

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18459.D
Acq On : 21 Jun 2016 10:27
Operator : MES
Sample : WG573501-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 22 08:04:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	43874	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	186767	10.3452	ug/L	0.00
Spiked Amount 5.000			Recovery = 207.00%			
4) Nitrobenzene-d5	7.431	82	527549	11.3834	ug/L	0.00
Spiked Amount 5.000			Recovery = 227.60%			
5) 2-Fluorobiphenyl	8.926	172	1199799	10.2565	ug/L	0.00
Spiked Amount 5.000			Recovery = 205.20%			
6) p-Terphenyl-d14	12.240	244	1225328	10.8672	ug/L	0.06
Spiked Amount 5.000			Recovery = 217.40%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	138820	10.3412	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18459.D
Acq On : 21 Jun 2016 10:27
Operator : MES
Sample : WG573501-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 22 08:04:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

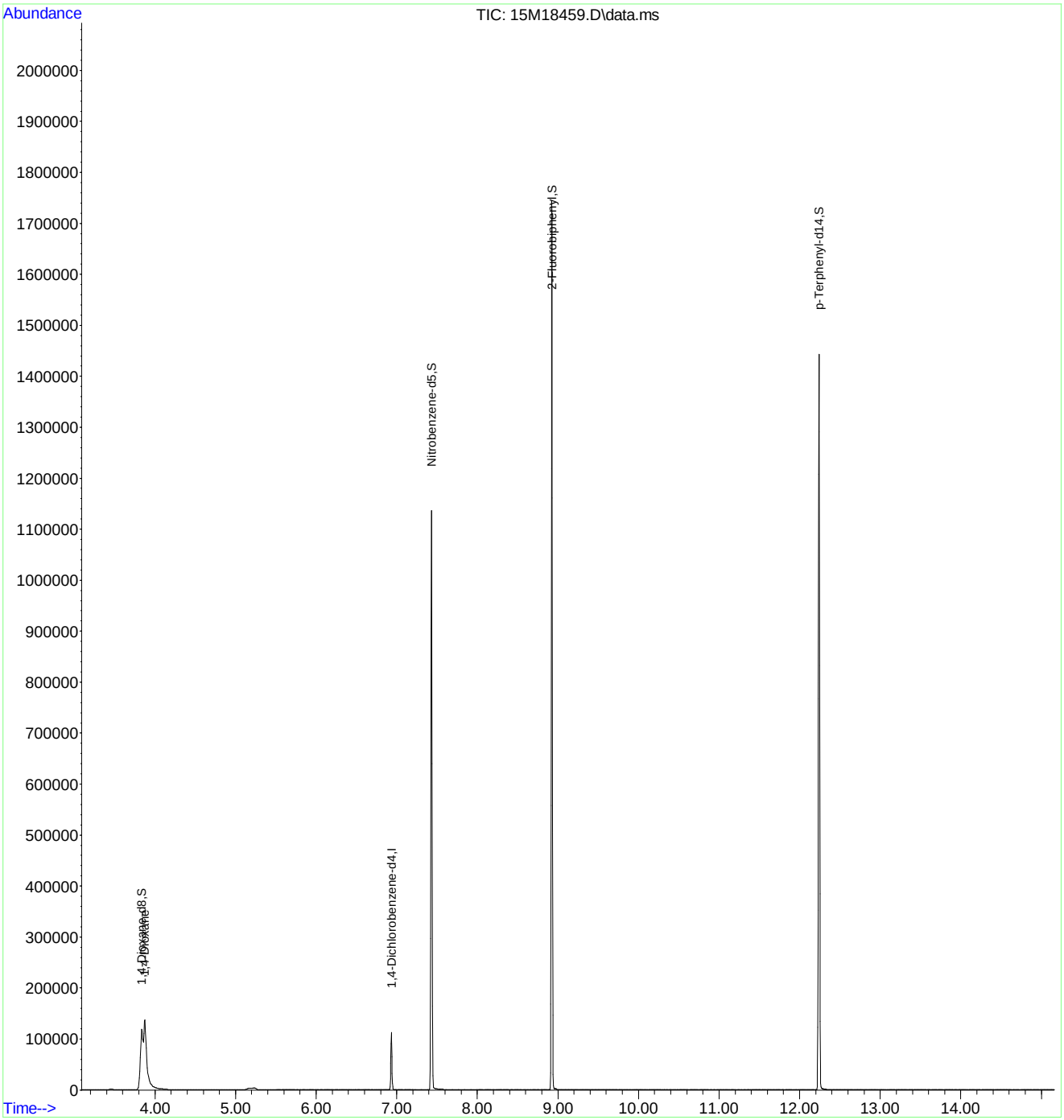

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18460.D
Acq On : 21 Jun 2016 10:49
Operator : MES
Sample : WG573501-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 22 08:04:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	44299	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.834	96	138833	7.6163 ug/L	0.00
Spiked Amount 5.000			Recovery	= 152.40%	
4) Nitrobenzene-d5	7.431	82	389810	8.3306 ug/L	0.00
Spiked Amount 5.000			Recovery	= 166.60%	
5) 2-Fluorobiphenyl	8.923	172	909050	7.6965 ug/L	0.00
Spiked Amount 5.000			Recovery	= 154.00%	
6) p-Terphenyl-d14	12.203	244	921380	8.0931 ug/L	0.02
Spiked Amount 5.000			Recovery	= 161.80%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.876	58	103182	7.6127 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18460.D
Acq On : 21 Jun 2016 10:49
Operator : MES
Sample : WG573501-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 22 08:04:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

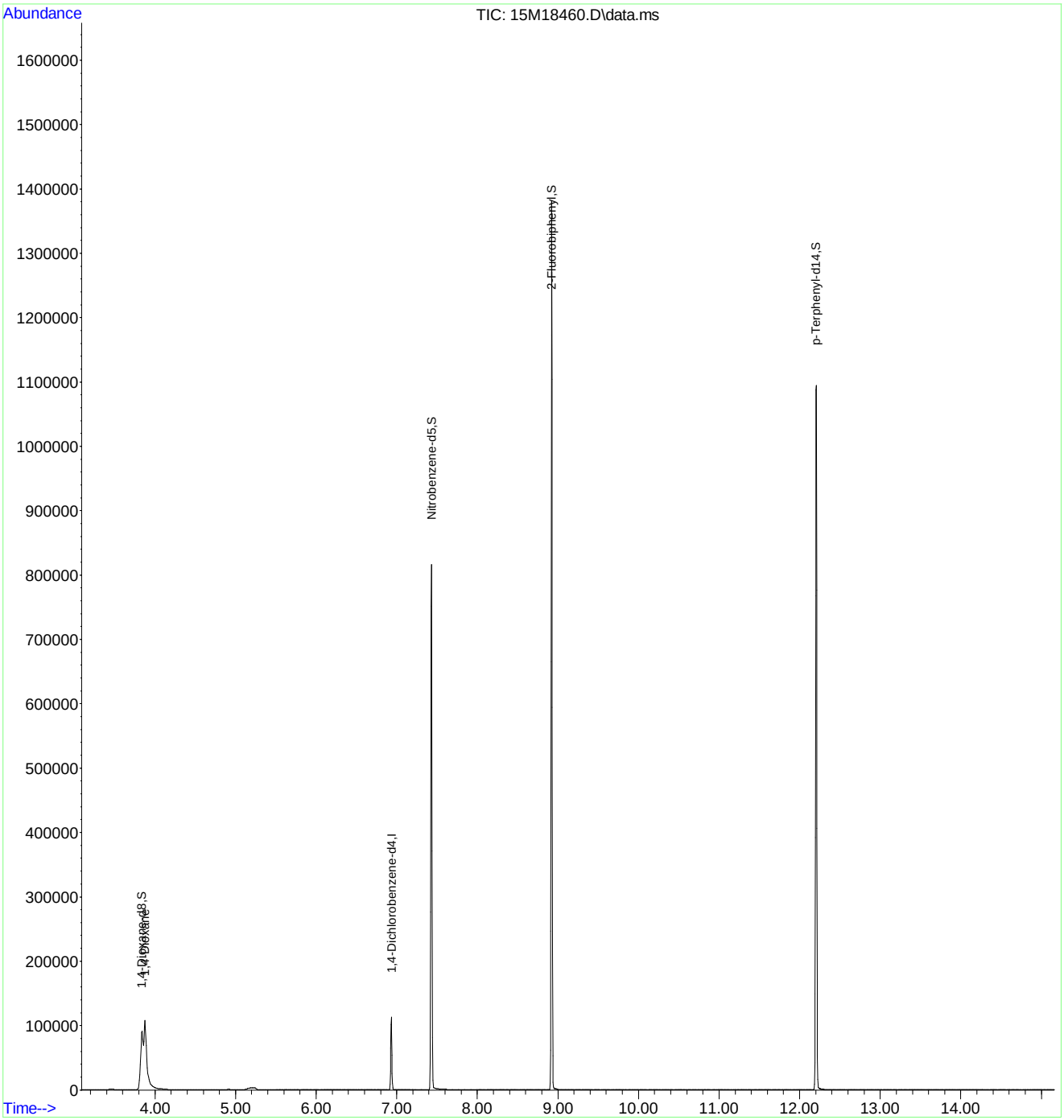

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18461.D
Acq On : 21 Jun 2016 11:12
Operator : MES
Sample : WG573501-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 22 08:04:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	35478	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.827	96	35630	2.4406	ug/L	0.00
Spiked Amount 5.000			Recovery = 48.80%			
4) Nitrobenzene-d5	7.431	82	88869	2.3714	ug/L	0.00
Spiked Amount 5.000			Recovery = 47.40%			
5) 2-Fluorobiphenyl	8.923	172	232500	2.4579	ug/L	0.00
Spiked Amount 5.000			Recovery = 49.20%			
6) p-Terphenyl-d14	12.199	244	218191	2.3930	ug/L	0.02
Spiked Amount 5.000			Recovery = 47.80%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.862	58	26333	2.4259	ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18461.D
Acq On : 21 Jun 2016 11:12
Operator : MES
Sample : WG573501-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 22 08:04:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

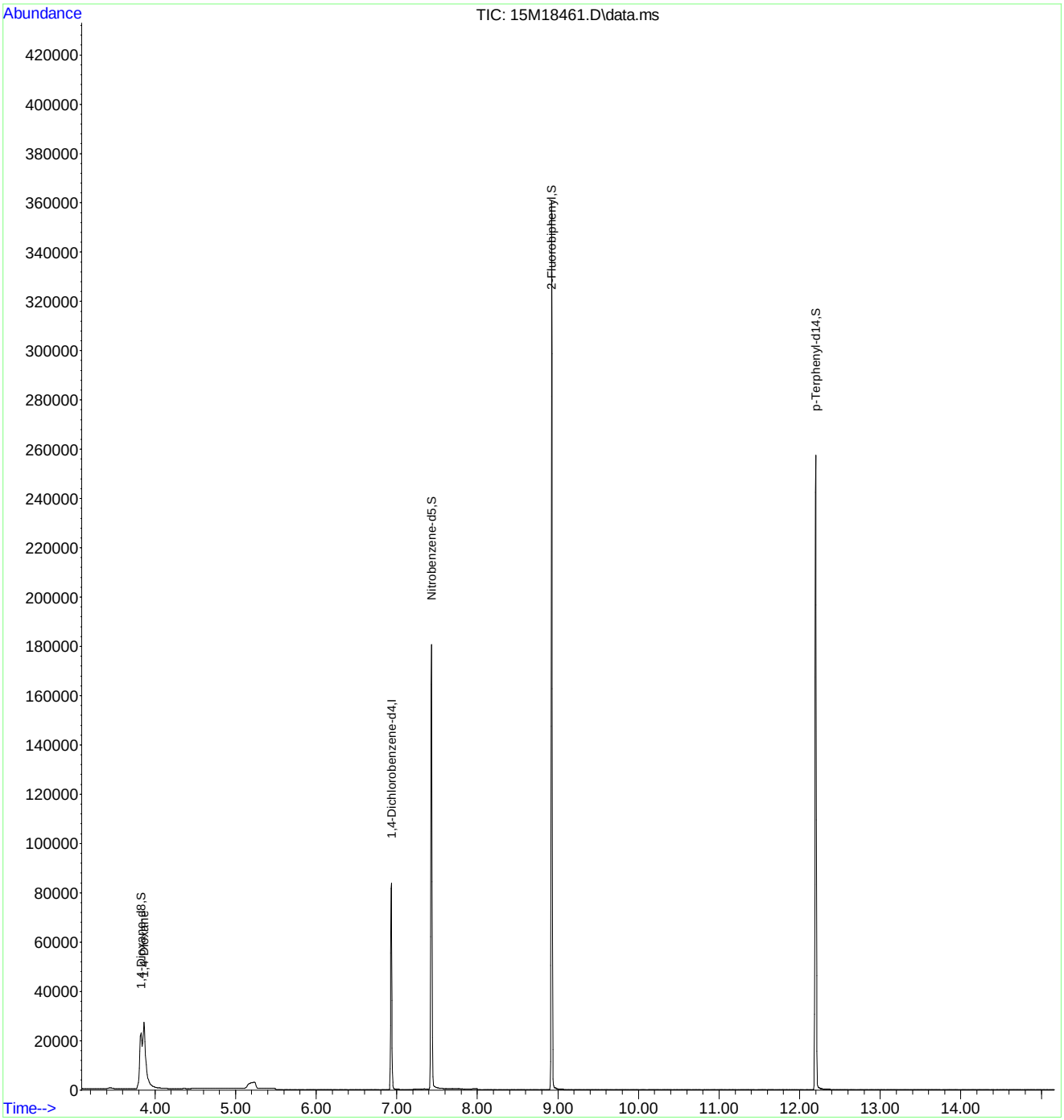

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18462.D
Acq On : 21 Jun 2016 11:34
Operator : MES
Sample : WG573501-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 22 08:04:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	44672	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.841	96	17660	0.9607 ug/L	0.01
Spiked Amount 5.000			Recovery	= 19.20%	
4) Nitrobenzene-d5	7.431	82	41409	0.8776 ug/L	0.00
Spiked Amount 5.000			Recovery	= 17.60%	
5) 2-Fluorobiphenyl	8.922	172	114491	0.9612 ug/L	0.00
Spiked Amount 5.000			Recovery	= 19.20%	
6) p-Terphenyl-d14	12.203	244	105713	0.9208 ug/L	0.02
Spiked Amount 5.000			Recovery	= 18.40%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.876	58	13250	0.9694 ug/L	82

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18462.D
Acq On : 21 Jun 2016 11:34
Operator : MES
Sample : WG573501-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 22 08:04:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

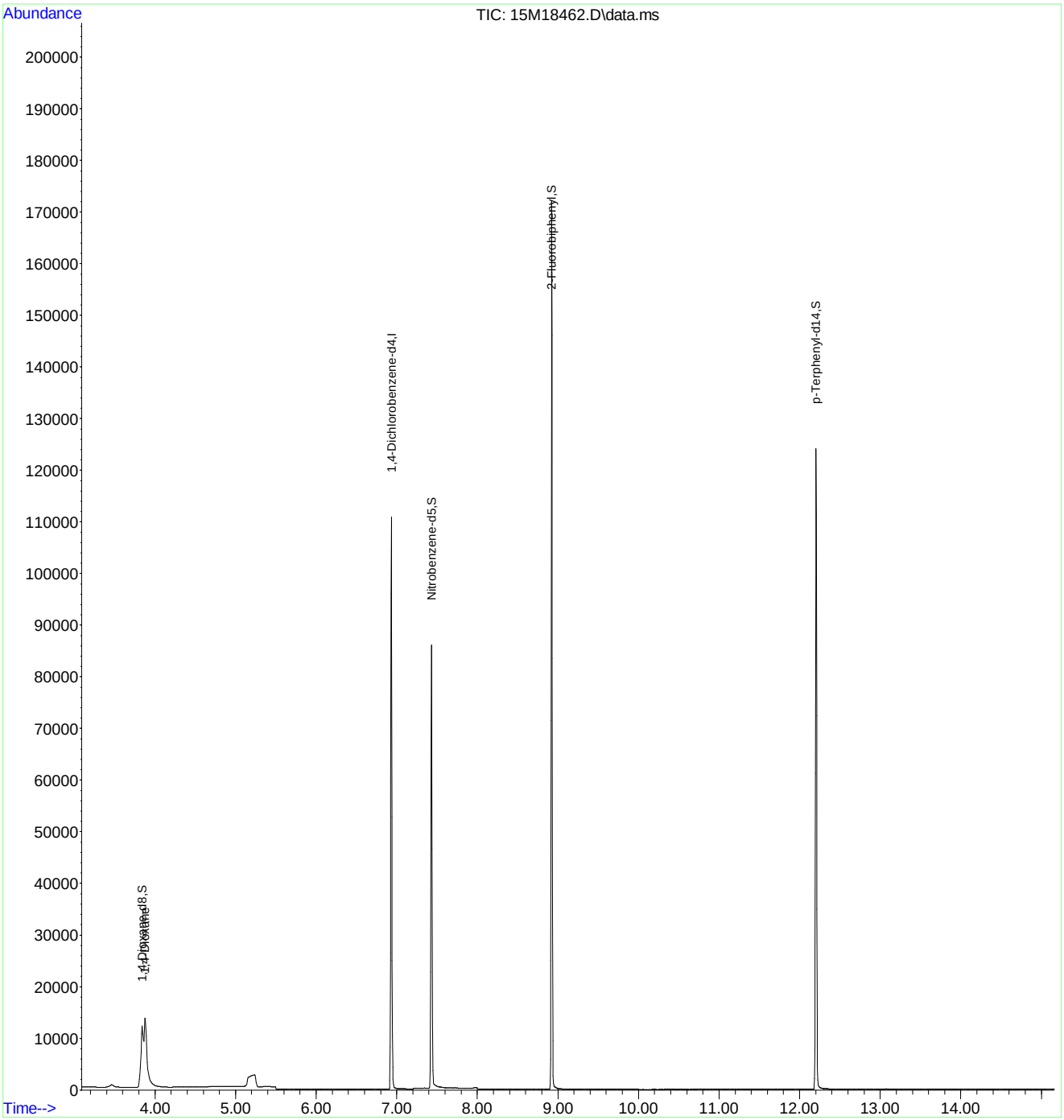

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18463.D
Acq On : 21 Jun 2016 11:57
Operator : MES
Sample : WG573501-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 22 08:04:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	45840	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.841	96	7629	0.4045	ug/L	0.01
Spiked Amount 5.000			Recovery	=	8.00%	
4) Nitrobenzene-d5	7.431	82	16604	0.3429	ug/L	0.00
Spiked Amount 5.000			Recovery	=	6.80%	
5) 2-Fluorobiphenyl	8.923	172	48617	0.3978	ug/L	0.00
Spiked Amount 5.000			Recovery	=	8.00%	
6) p-Terphenyl-d14	12.210	244	44097	0.3743	ug/L	0.03
Spiked Amount 5.000			Recovery	=	7.40%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.876	58	5650	0.4028	ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18463.D
Acq On : 21 Jun 2016 11:57
Operator : MES
Sample : WG573501-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 22 08:04:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

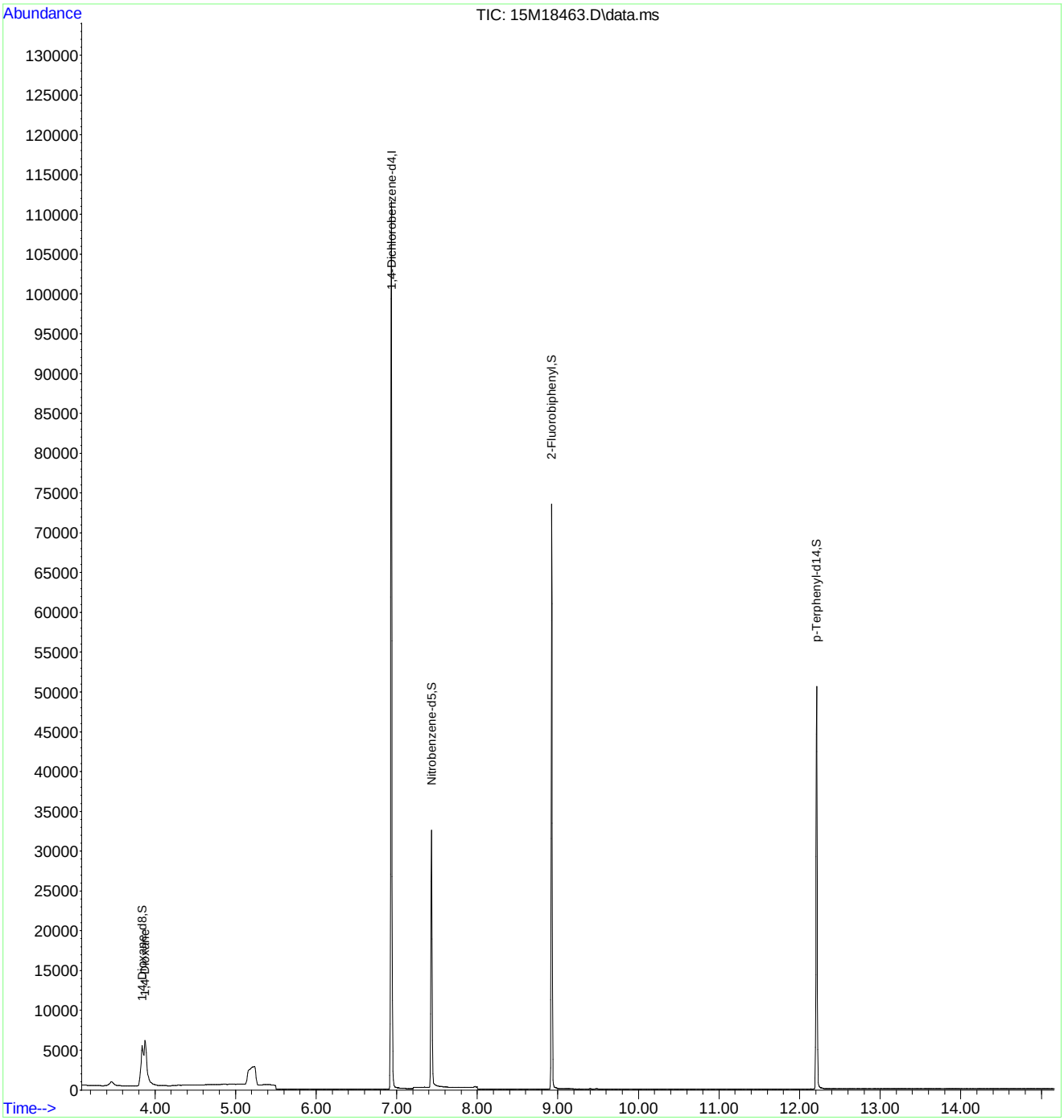

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	41944	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.792	96	22	0.0013	ug/L	-0.04
Spiked Amount 5.000			Recovery	=	0.00%	
4) Nitrobenzene-d5	7.436	82	56	0.0013	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
5) 2-Fluorobiphenyl	8.926	172	23	0.0002	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.214	244	128	0.0012	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	64750	5.0454	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

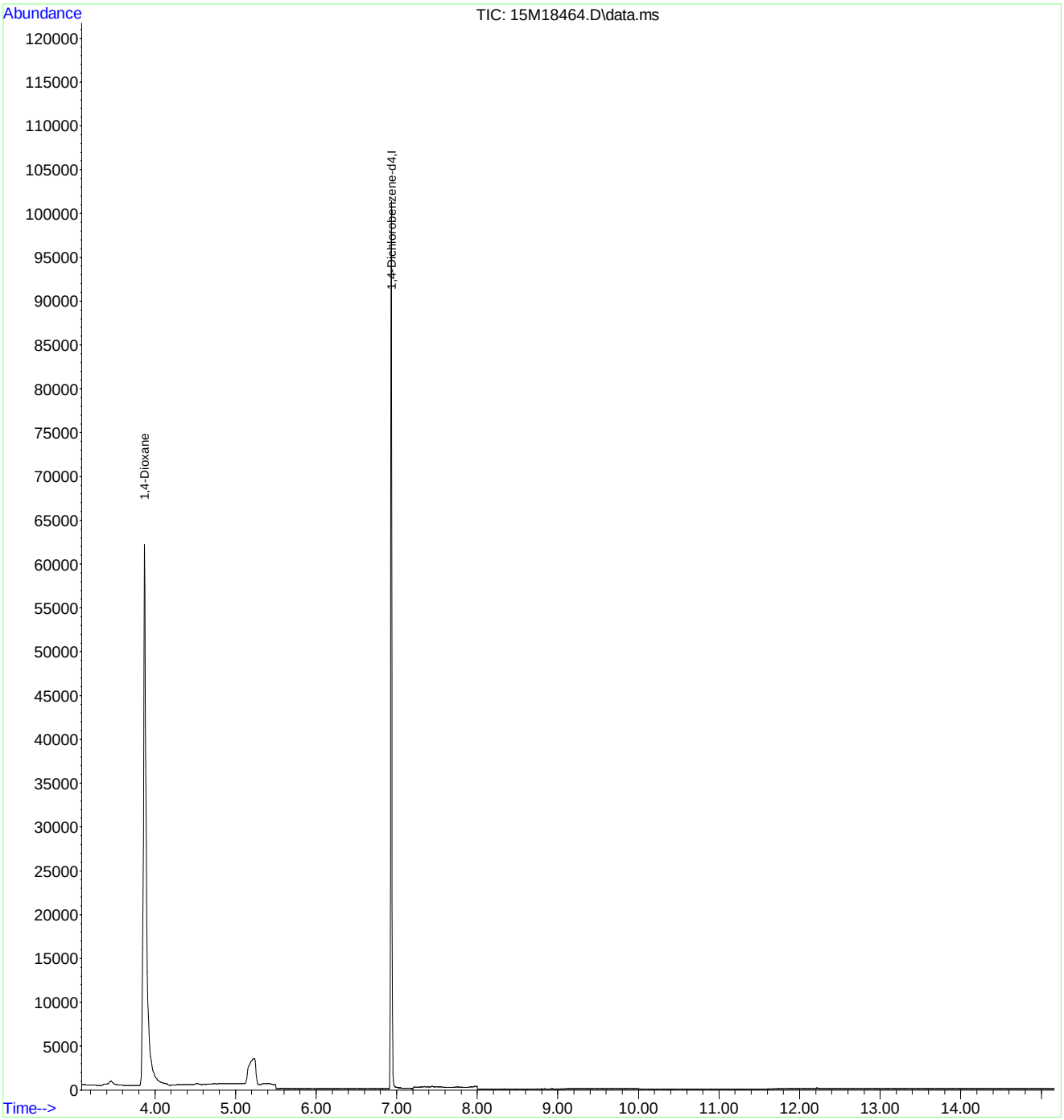

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	106	0.00
2		1,4-Dioxane	5.000	5.045	-0.9	106	0.00
3	S	1,4-Dioxane-d8	5.000	0.001	100.0#	0	-0.04
4	S	Nitrobenzene-d5	5.000	0.001	100.0#	0	0.00
5	S	2-Fluorobiphenyl	5.000	0.000	100.0#	0	0.00
6	S	p-Terphenyl-d14	5.000	0.001	100.0#	0	0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

2.2.1.5 Raw QC Data

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

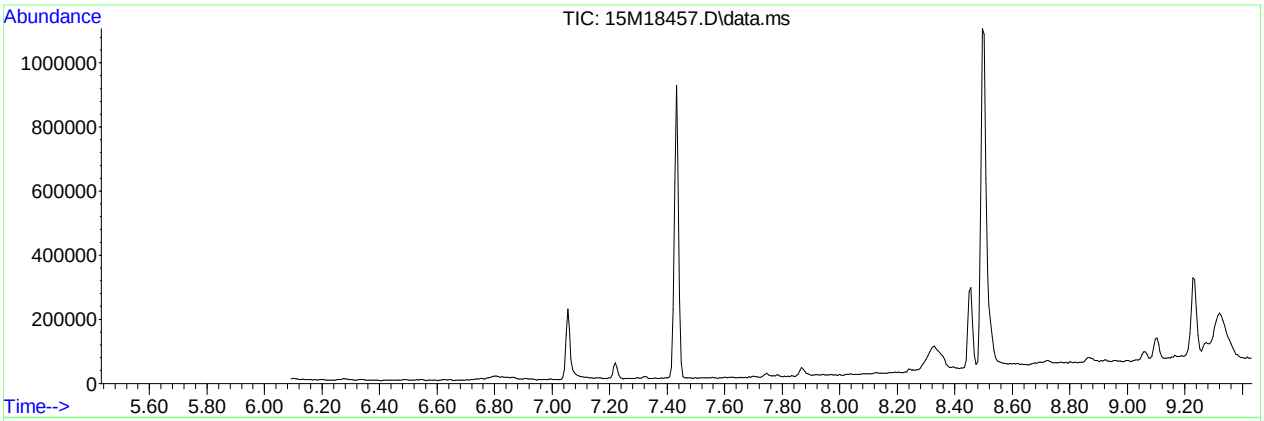

AutoFind: Scans 234, 235, 236; Background Corrected with Scan 228

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	38.8	34488	PASS
68	69	0.00	2	1.4	500	PASS
69	198	0.00	100	41.4	36833	PASS
70	69	0.00	2	0.5	172	PASS
127	198	40	60	51.9	46131	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	88880	PASS
199	198	5	9	6.7	5918	PASS
275	198	10	30	24.9	22090	PASS
365	198	1	100	2.7	2358	PASS
441	443	0.01	100	75.7	9586	PASS
442	198	40	100	73.4	65261	PASS
443	442	17	23	19.4	12659	PASS

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

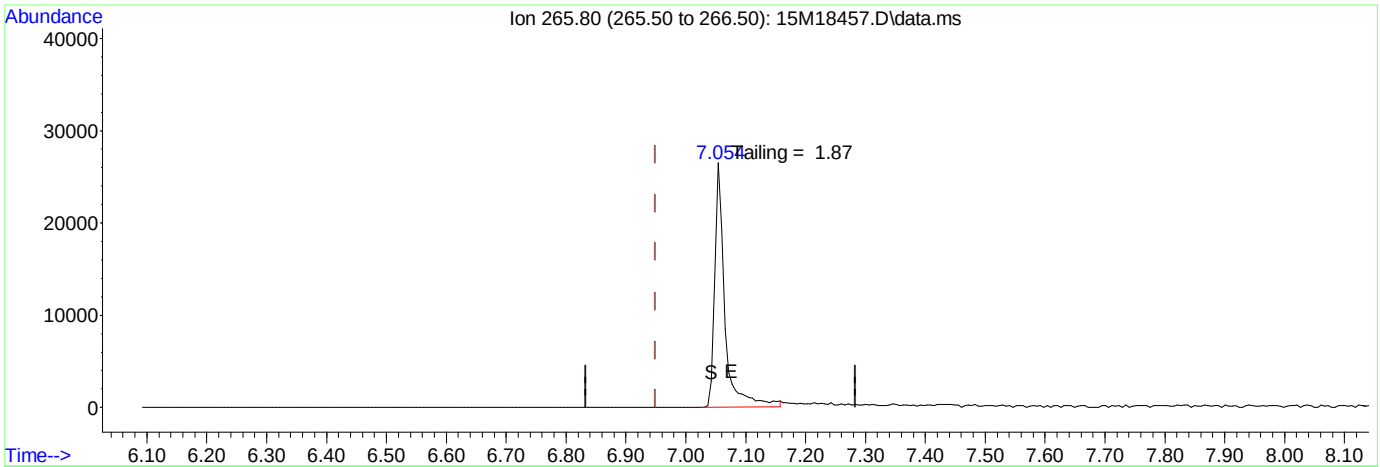

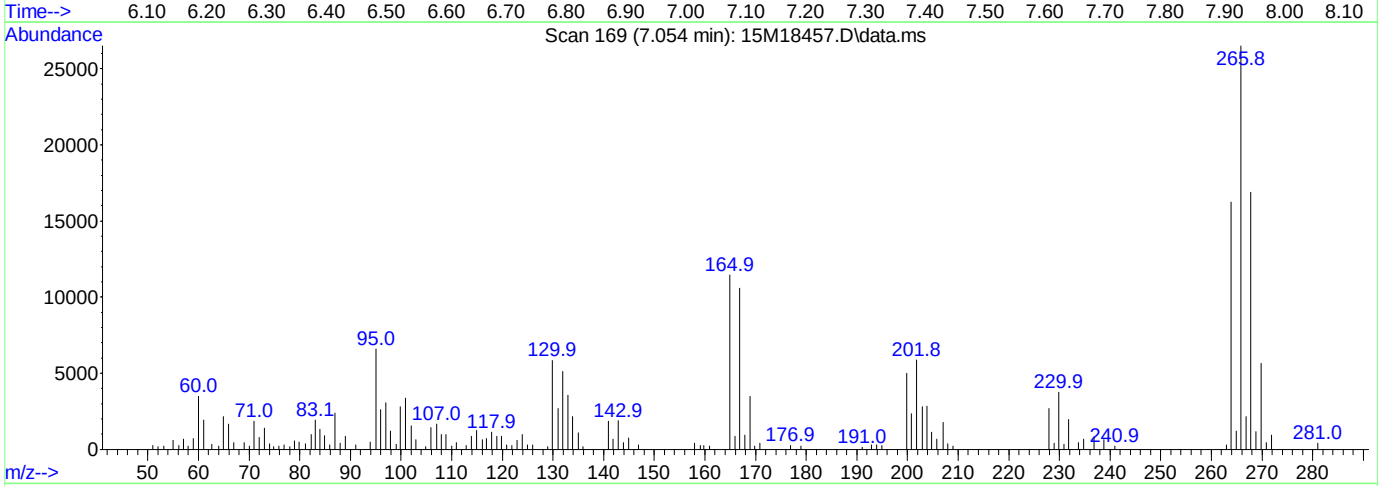

TIC: 15M18457.D\data.ms

(1) Pentachlorophenol

7.054min (+ 0.105) 0.00 ug/ml

response 30738

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

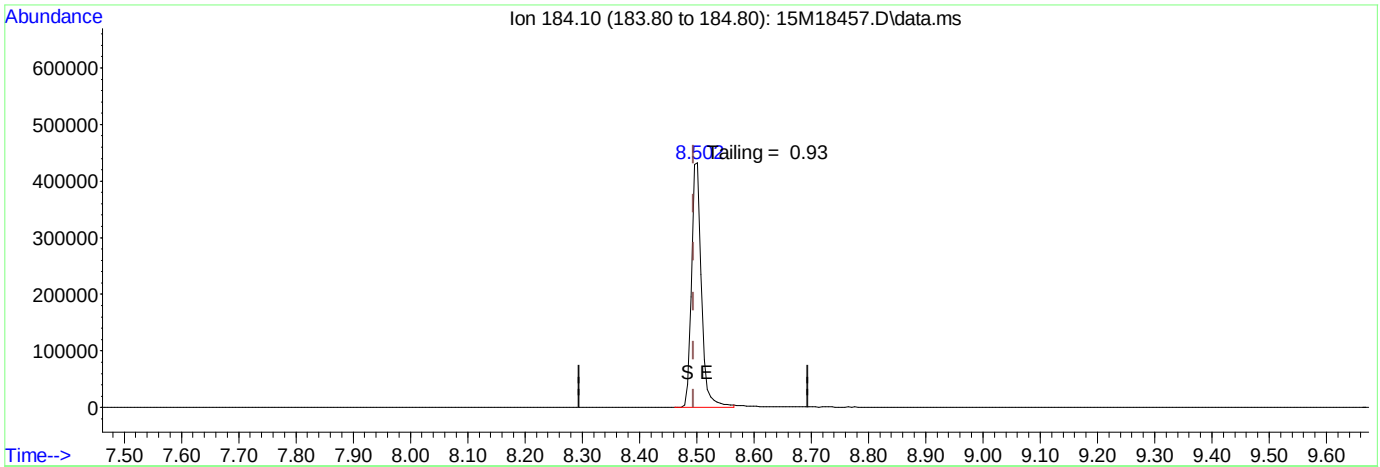

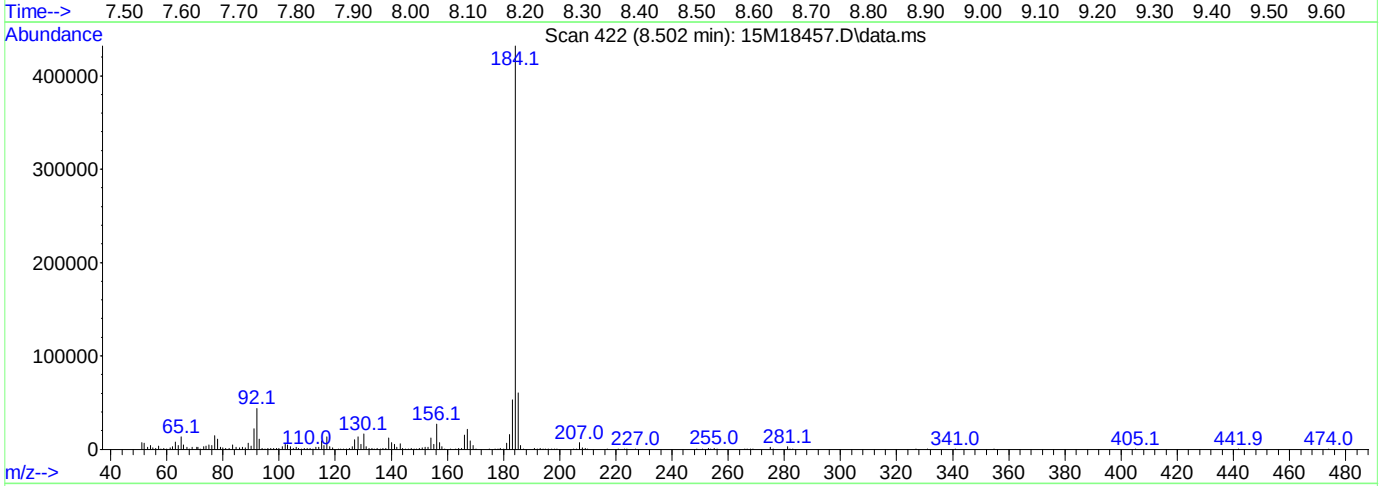

(2) Benzidine

8.502min (+ 0.008) 0.00 ug/ml

response 532770

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

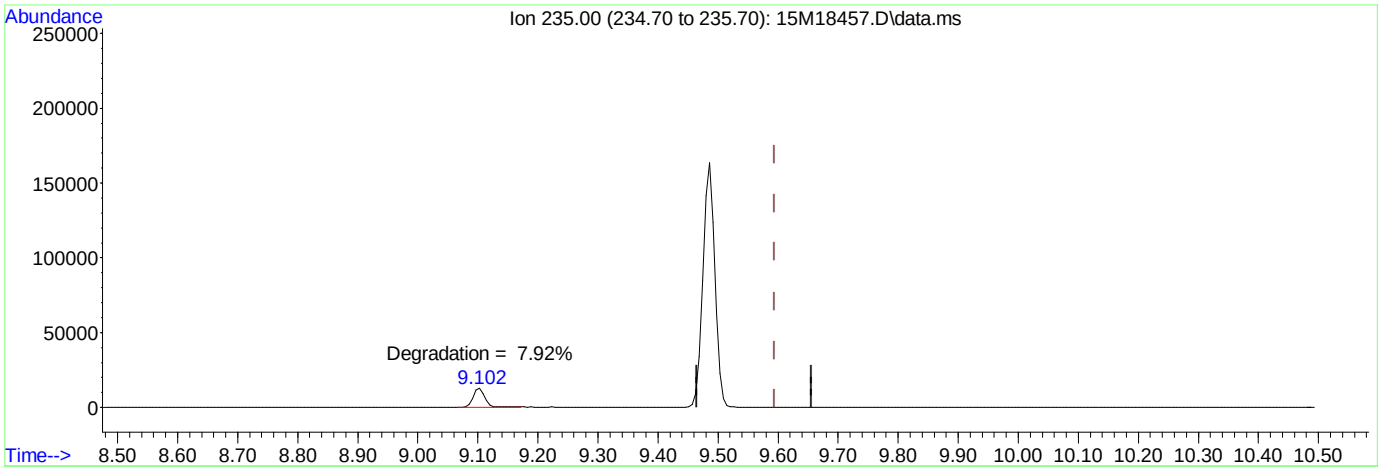

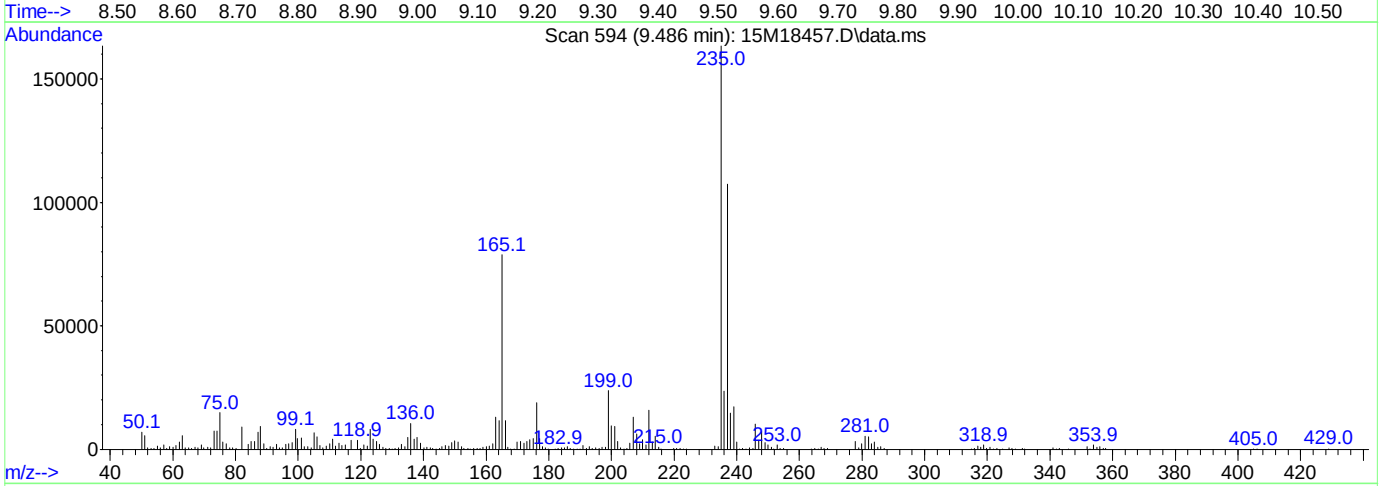

TIC: 15M18457.D\data.ms

(3) DDT

9.486min (-0.108) 0.00 ug/ml

response 180187

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18465.D
Acq On : 21 Jun 2016 12:54
Operator : MES
Sample : WG572806-01 BLANK 6/15
Misc : 1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 21 16:33:15 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.936	152	38899	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	49398	3.0862	ug/L	0.00
Spiked Amount 5.000			Recovery = 61.80%			
4) Nitrobenzene-d5	7.431	82	1663307	40.4808	ug/L	0.00
Spiked Amount 5.000			Recovery = 809.60%			
5) 2-Fluorobiphenyl	8.926	172	3076633	29.6644	ug/L	0.00
Spiked Amount 5.000			Recovery = 593.20%			
6) p-Terphenyl-d14	12.258	244	4064361	40.6562	ug/L	0.07
Spiked Amount 5.000			Recovery = 813.20%			

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18465.D
Acq On : 21 Jun 2016 12:54
Operator : MES
Sample : WG572806-01 BLANK 6/15
Misc : 1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 21 16:33:15 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

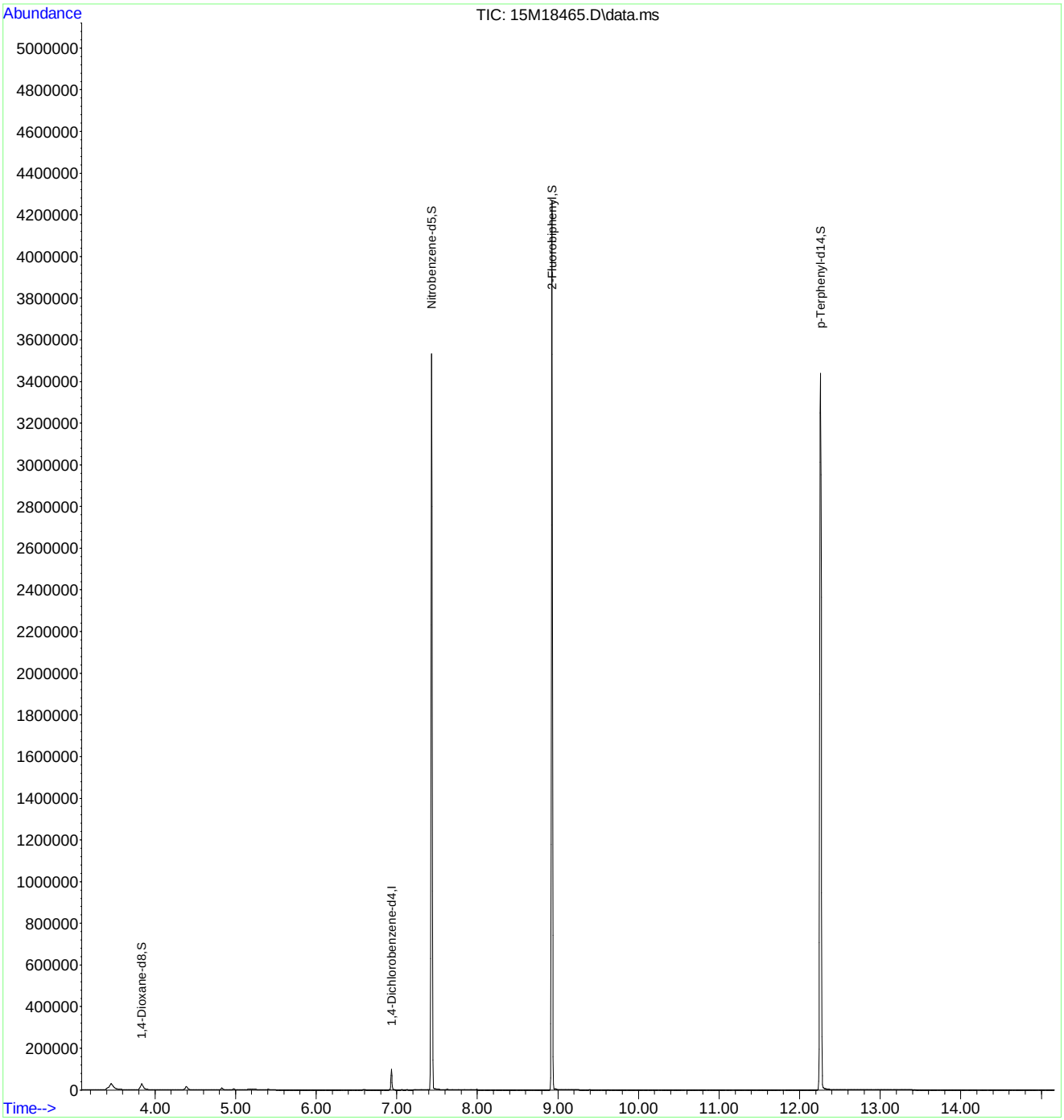

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18466.D
Acq On : 21 Jun 2016 13:17
Operator : MES
Sample : WG572806-02 LCS 6/15
Misc : 1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 22 08:05:00 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	27126	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.820	96	34886	3.1254	ug/L	0.00
Spiked Amount 5.000			Recovery	=	62.60%	
4) Nitrobenzene-d5	7.436	82	2047	0.0714	ug/L	0.00
Spiked Amount 5.000			Recovery	=	1.40%	
5) 2-Fluorobiphenyl	8.923	172	526	0.0073	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.20%	
6) p-Terphenyl-d14	12.229	244	1164	0.0167	ug/L	0.04
Spiked Amount 5.000			Recovery	=	0.40%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.855	58	25161	3.0316	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18466.D
Acq On : 21 Jun 2016 13:17
Operator : MES
Sample : WG572806-02 LCS 6/15
Misc : 1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 22 08:05:00 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

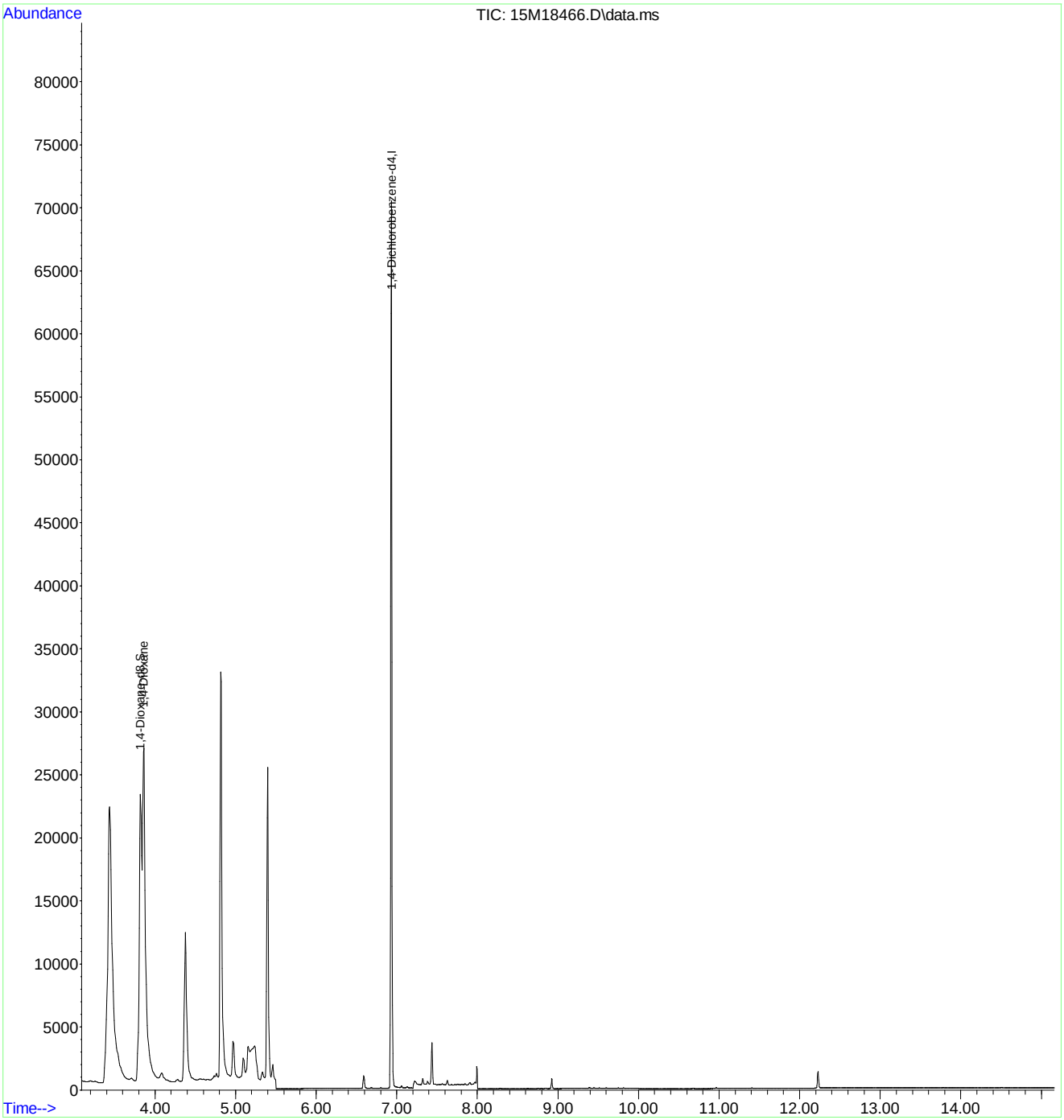

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18467.D
Acq On : 21 Jun 2016 13:40
Operator : MES
Sample : WG572806-03 LCSDUP 6/15
Misc : 1,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jun 22 08:05:03 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	34071	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	32606	2.3257	ug/L	0.00
Spiked Amount 5.000			Recovery	=	46.60%	
4) Nitrobenzene-d5	7.238	82	1167	0.0324	ug/L	-0.19
Spiked Amount 5.000			Recovery	=	0.60%	
5) 2-Fluorobiphenyl	8.923	172	1594	0.0175	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.40%	
6) p-Terphenyl-d14	12.207	244	949	0.0108	ug/L	0.02
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	23691	2.2726	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18467.D
Acq On : 21 Jun 2016 13:40
Operator : MES
Sample : WG572806-03 LCSDUP 6/15
Misc : 1,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jun 22 08:05:03 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

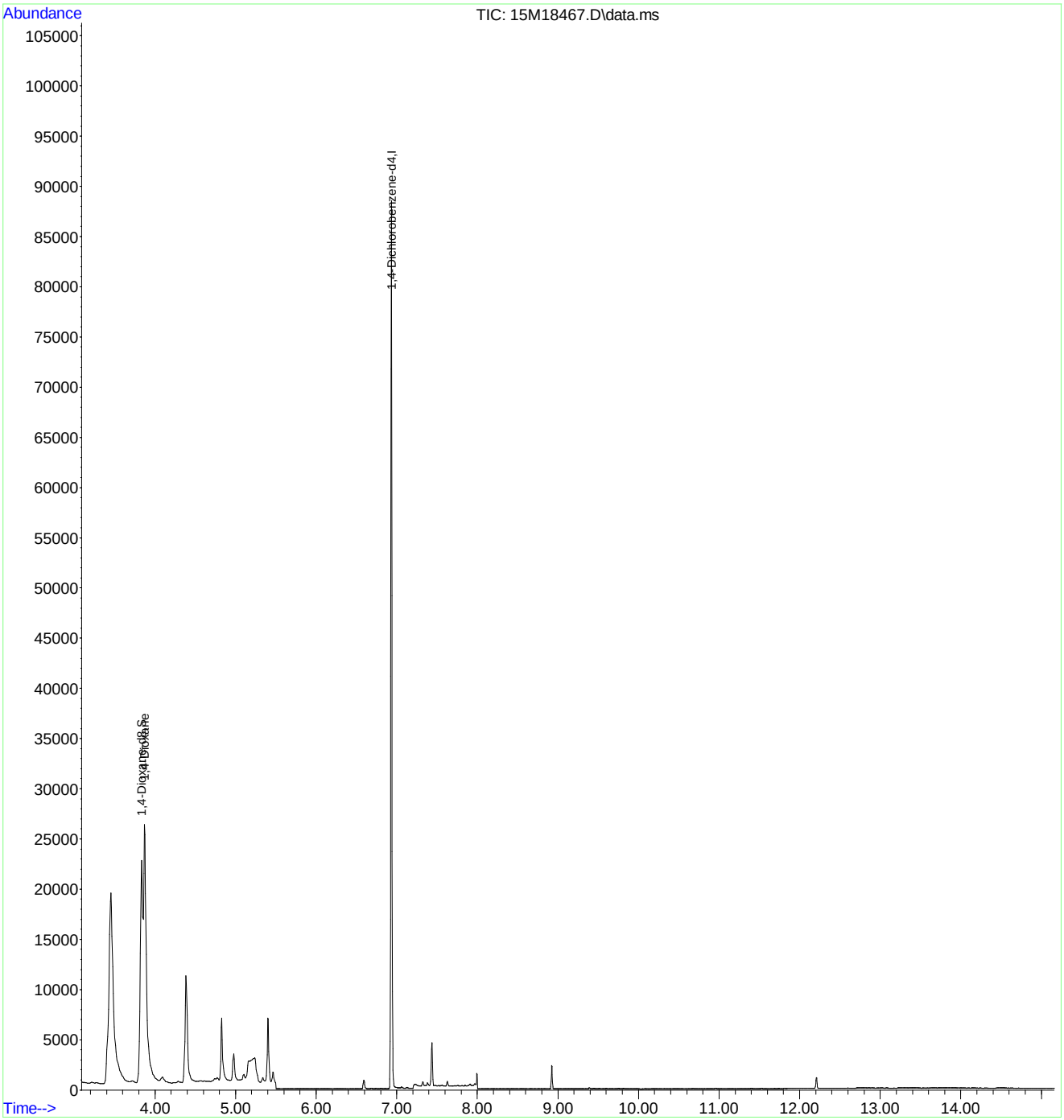

2.2 General Chromatography Data

2.2.2 6850 LC/MS Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW03-061416	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/23/2016 01:19
Collect Date:	06/14/2016 07:40	**Dilution:**	1	**File ID:**	1LM.LM35442
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW04SW-061416	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/23/2016 01:38
Collect Date:	06/14/2016 09:00	**Dilution:**	1	**File ID:**	1LM.LM35443
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.186	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW04-061416	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/23/2016 14:20
Collect Date:	06/14/2016 10:00	**Dilution:**	1000	**File ID:**	1LM.LM35457
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1360		400	200	100

Certificate of Analysis

Sample #:	L16060822-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW04FD-061416	**Prep Method:**	6850	**Prep Date:**	06/22/2016 16:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG573791	**Analyst:**	JWR	**Run Date:**	06/23/2016 14:39
Collect Date:	06/14/2016 10:00	**Dilution:**	1000	**File ID:**	1LM.LM35458
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1380		400	200	100

2.2.2.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1401 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG573791-01 MCT	9,940.	
-02 Blank	0.34	
-03 LCS	0.41	
-04 LCS2	0.42	
L16060650-01	2,500.	
-02	1,505.	
-03	839.	
-04	1,830.	
-05	1,832.	
-06	1,104.	
-07	711.	
L16060730-01	4,900.	
-02	4,930.	
-03	10,050.	
L16060732-01	3,060.	
-02	2,940.	
L16060822-01	627.	
-03	1,199.	
-04	901.	
-05	899.	
L16060854-01	3,040.	
L16061180-01	3,020.	

Analyst: John Richards

Date/Time: 06/23/16 13:33

DCN#119262

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

Page: 1 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

Page: 2 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 062216_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG573791 (waters)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments: All samples were initially analyzed neat or at dilutions based on their historical results.
Samples tagged with (NR) did not conform to their historical results. These samples were reanalyzed on the end of the sequence, either neat or at a dilution, based on the results of their initial analysis.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35415	WG573797-01 CCB	1	1		06/22/16 16:48
2	1LM.LM35416	WG573797-02 CCV (1.0ug/L)	1	1	STD75510	06/22/16 17:06
3	1LM.LM35417	WG573791-05 MRL (0.2ug/L)	1	1	STD75510	06/22/16 17:25
4	1LM.LM35418	WG573791-01 MCT (0.2ug/L)	1	1	STD75512	06/22/16 17:44
5	1LM.LM35419	WG573791-02 BLANK	1	1		06/22/16 18:03
6	1LM.LM35420	WG573791-03 LCS (0.2ug/L)	1	1	STD75512	06/22/16 18:22
7	1LM.LM35421	WG573791-04 LCS2 (0.2ug/L)	1	1	STD75512	06/22/16 18:41
8	1LM.LM35422	L16061180-01	1	1		06/22/16 19:00
9	1LM.LM35423	L16060732-01	1	1		06/22/16 19:19
10	1LM.LM35424	L16060732-02	1	1		06/22/16 19:38
11	1LM.LM35425	L16060854-01	1	1		06/22/16 19:57
12	1LM.LM35426	L16060650-01 (10,000x)	1	10000		06/22/16 20:16
13	1LM.LM35427	L16060650-02 (10,000x)	1	10000		06/22/16 20:35
14	1LM.LM35428	WG573797-03 CCV (1.0ug/L)	1	1	STD75510	06/22/16 20:54
15	1LM.LM35429	WG573791-06 MRL (0.2ug/L)	1	1	STD75510	06/22/16 21:13
16	1LM.LM35430	WG573797-04 CCB	1	1		06/22/16 21:31
17	1LM.LM35431	L16060650-03	1	1		06/22/16 21:50
18	1LM.LM35432	L16060650-04 (5,000x) (NR)	1	5000		06/22/16 22:09
19	1LM.LM35433	L16060650-05 (5,000x) (NR)	1	5000		06/22/16 22:28
20	1LM.LM35434	L16060650-06 (100x) (NR)	1	100		06/22/16 22:47
21	1LM.LM35435	L16060650-07	1	1		06/22/16 23:06
22	1LM.LM35436	L16060730-01 (50x) (NR)	1	50		06/22/16 23:25
23	1LM.LM35437	L16060730-02 (50x) (NR)	1	50		06/22/16 23:44
24	1LM.LM35438	L16060730-03 (50x)	1	50		06/23/16 00:03
25	1LM.LM35439	WG573797-05 CCV (1.0ug/L)	1	1	STD75510	06/23/16 00:22
26	1LM.LM35440	WG573791-07 MRL (0.2ug/L)	1	1	STD75510	06/23/16 00:41
27	1LM.LM35441	WG573797-06 CCB	1	1		06/23/16 01:00
28	1LM.LM35442	L16060822-01	1	1		06/23/16 01:19
29	1LM.LM35443	L16060822-03	1	1		06/23/16 01:38
30	1LM.LM35444	L16060822-04 (NR)	1	1		06/23/16 01:57
31	1LM.LM35445	L16060822-05 (NR)	1	1		06/23/16 02:16
32	1LM.LM35446	WG573797-07 CCV (1.0ug/L)	1	1	STD75510	06/23/16 02:34
33	1LM.LM35447	WG573791-08 MRL (0.2ug/L)	1	1	STD75510	06/23/16 02:53

Page: 1 Approved: 24-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 062216_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG573791 (waters)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 NA

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM35448	WG573797-08 CCB	1	1		06/23/16 03:12
35	1LM.LM35449	WG573797-09 CCV (1.0ug/L)	1	1	STD75510	06/23/16 11:49
36	1LM.LM35450	WG573791-09 MRL (0.2ug/L)	1	1	STD75510	06/23/16 12:08
37	1LM.LM35451	WG573797-10 CCB	1	1		06/23/16 12:27
38	1LM.LM35452	L16060650-04 (RR 50x)	1	50		06/23/16 12:46
39	1LM.LM35453	L16060650-05 (RR 50x)	1	50		06/23/16 13:05
40	1LM.LM35454	L16060650-06 (RR Neat)	1	1		06/23/16 13:23
41	1LM.LM35455	L16060730-01 (RR 500x)	1	500		06/23/16 13:42
42	1LM.LM35456	L16060730-02 (RR 500x)	1	500		06/23/16 14:01
43	1LM.LM35457	L16060822-04 (RR 1000x)	1	1000		06/23/16 14:20
44	1LM.LM35458	L16060822-05 (RR 1000x)	1	1000		06/23/16 14:39
45	1LM.LM35459	WG573797-11 CCV (1.0ug/L)	1	1	STD75510	06/23/16 14:58
46	1LM.LM35460	WG573791-10 MRL (0.2ug/L)	1	1	STD75510	06/23/16 15:17
47	1LM.LM35461	WG573797-12 CCB	1	1		06/23/16 15:36

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 2 Approved: 24-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 04-MAY-2016 John Richards

Secondary Reviewer: 05-MAY-2016 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 22-JUN-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 75891
Analytical Workgroups: L16060650, 0730, 0732, 0822, 0854, 1180

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
24-JUN-2016
John Richards

Secondary Reviewer:
24-JUN-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-24-2016 11:54:16

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG573791

Login Number: L16060822

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW03-061416	01	06/14/16					06/22/2016	8.3	28		06/23/16	.4	28	
18CPTMW04SW-061416	03	06/14/16					06/22/2016	8.3	28		06/23/16	.4	28	
18CPTMW04-061416	04	06/14/16					06/22/2016	8.3	28		06/23/16	.9	28	
18CPTMW04FD-061416	05	06/14/16					06/22/2016	8.3	28		06/23/16	.9	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4822443
Report generated 06/27/2016 15:54

METHOD BLANK SUMMARY

Login Number: L16060822
Blank File ID: 1LM.LM35419
Prep Date: 06/22/16 16:00
Analyzed Date: 06/22/16 18:03
Analyst: JWR

Work Group: WG573791
Blank Sample ID: WG573791-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG573791-05	1LM.LM35417	06/22/16 17:25	01
MCT	WG573791-01	1LM.LM35418	06/22/16 17:44	01
LCS	WG573791-03	1LM.LM35420	06/22/16 18:22	01
LCS2	WG573791-04	1LM.LM35421	06/22/16 18:41	01
QCMRL	WG573791-06	1LM.LM35429	06/22/16 21:13	01
QCMRL	WG573791-07	1LM.LM35440	06/23/16 00:41	01
18WW03-061416	L16060822-01	1LM.LM35442	06/23/16 01:19	01
18CPTMW04SW-061416	L16060822-03	1LM.LM35443	06/23/16 01:38	01
QCMRL	WG573791-08	1LM.LM35447	06/23/16 02:53	01
QCMRL	WG573791-09	1LM.LM35450	06/23/16 12:08	01
18CPTMW04-061416	L16060822-04	1LM.LM35457	06/23/16 14:20	DL01
18CPTMW04FD-061416	L16060822-05	1LM.LM35458	06/23/16 14:39	DL01
QCMRL	WG573791-10	1LM.LM35460	06/23/16 15:17	01

Report Name: BLANK_SUMMARY
PDF File ID: 4822444
Report generated 06/27/2016 15:54

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060822 Prep Date: 06/22/16 16:00 Sample ID: WG573791-02
Instrument ID: LCMS1 Run Date: 06/22/16 18:03 Prep Method: 6850
File ID: 1LM.LM35419 Analyst: JWR Method: 6850
Workgroup (AAB#): WG573791 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4822445
27-JUN-2016 15:54

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060822 Analyst: JWR Prep Method: 6850
Instrument ID: LCMS1 Matrix: Water Method: 6850
Workgroup (AAB#): WG573791 Units: ug/L
QC Key: DOD4 Lot #: STD75512

Sample ID: WG573791-03 LCS File ID: 1LM.LM35420 Run Date: 06/22/2016 18:22
Sample ID: WG573791-04 LCS2 File ID: 1LM.LM35421 Run Date: 06/22/2016 18:41

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Perchlorate	0.200	0.201	101	0.200	0.215	108	6.73	80 - 120	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4822446
Report generated: 06/27/2016 15:54

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060822
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4822603
Report generated 06/27/2016 15:54

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060822

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4822603
Report generated 06/27/2016 15:54

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060822

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4822603
Report generated 06/27/2016 15:54

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060822

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008

PDF File ID: 4822603

Report generated 06/27/2016 15:54

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060822 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4822604
Report generated 06/27/2016 15:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/22/2016
Sample ID: WG573797-01
Instrument ID: LCMS1
Run Time: 16:48
Method: 6850
File ID: 1LM.LM35415
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822449
Report generated 06/27/2016 15:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/22/2016
Sample ID: WG573797-04
Instrument ID: LCMS1
Run Time: 21:31
Method: 6850
File ID: 1LM.LM35430
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822449
Report generated 06/27/2016 15:54

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/23/2016
Sample ID: WG573797-06
Instrument ID: LCMS1
Run Time: 01:00
Method: 6850
File ID: 1LM.LM35441
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822449
Report generated 06/27/2016 15:54

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/23/2016
Sample ID: WG573797-08
Instrument ID: LCMS1
Run Time: 03:12
Method: 6850
File ID: 1LM.LM35448
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822449
Report generated 06/27/2016 15:54

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/23/2016
Sample ID: WG573797-10
Instrument ID: LCMS1
Run Time: 12:27
Method: 6850
File ID: 1LM.LM35451
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822449
Report generated 06/27/2016 15:54

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/23/2016
Sample ID: WG573797-12
Instrument ID: LCMS1
Run Time: 15:36
Method: 6850
File ID: 1LM.LM35461
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4822449
Report generated 06/27/2016 15:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822
Run Date: 06/22/2016
Sample ID: WG573797-02
Instrument ID: LCMS1
Run Time: 17:06
Method: 6850
File ID: 1LM.LM35416
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	0.997	ug/L	1.68	0.300	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822448
Report generated 06/27/2016 15:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822
Run Date: 06/22/2016
Sample ID: WG573797-03
Instrument ID: LCMS1
Run Time: 20:54
Method: 6850
File ID: 1LM.LM35428
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.75	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822448
Report generated 06/27/2016 15:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822
Run Date: 06/23/2016
Sample ID: WG573797-05
Instrument ID: LCMS1
Run Time: 00:22
Method: 6850
File ID: 1LM.LM35439
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.03	ug/L	1.74	3.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822448
Report generated 06/27/2016 15:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822
Run Date: 06/23/2016
Sample ID: WG573797-07
Instrument ID: LCMS1
Run Time: 02:34
Method: 6850
File ID: 1LM.LM35446
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.75	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822448
Report generated 06/27/2016 15:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822
Run Date: 06/23/2016
Sample ID: WG573797-09
Instrument ID: LCMS1
Run Time: 11:49
Method: 6850
File ID: 1LM.LM35449
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.71	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822448
Report generated 06/27/2016 15:54

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822
Run Date: 06/23/2016
Sample ID: WG573797-11
Instrument ID: LCMS1
Run Time: 14:58
Method: 6850
File ID: 1LM.LM35459
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG573791
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.05	ug/L	1.77	5.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4822448
Report generated 06/27/2016 15:54

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060822 Run Date: 06/22/2016 Sample ID: WG573791-05
Instrument ID: LCMS1 Run Time: 17:25 Prep Method: 6850
File ID: 1LM.LM35417 Analyst: JWR Method: 6850
Workgroup (AAB#): WG573791 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4822447
Report generated 06/27/2016 15:54

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060822 Run Date: 06/22/2016 Sample ID: WG573791-06
Instrument ID: LCMS1 Run Time: 21:13 Prep Method: 6850
File ID: 1LM.LM35429 Analyst: JWR Method: 6850
Workgroup (AAB#): WG573791 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.204	102	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4822447
Report generated 06/27/2016 15:54

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060822 Run Date: 06/23/2016 Sample ID: WG573791-07
Instrument ID: LCMS1 Run Time: 00:41 Prep Method: 6850
File ID: 1LM.LM35440 Analyst: JWR Method: 6850
Workgroup (AAB#): WG573791 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.210	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4822447
Report generated 06/27/2016 15:54

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060822 Run Date: 06/23/2016 Sample ID: WG573791-08
Instrument ID: LCMS1 Run Time: 02:53 Prep Method: 6850
File ID: 1LM.LM35447 Analyst: JWR Method: 6850
Workgroup (AAB#): WG573791 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.214	107	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4822447
Report generated 06/27/2016 15:54

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060822 Run Date: 06/23/2016 Sample ID: WG573791-09
Instrument ID: LCMS1 Run Time: 12:08 Prep Method: 6850
File ID: 1LM.LM35450 Analyst: JWR Method: 6850
Workgroup (AAB#): WG573791 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.209	105	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4822447
Report generated 06/27/2016 15:54

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060822 Run Date: 06/23/2016 Sample ID: WG573791-10
Instrument ID: LCMS1 Run Time: 15:17 Prep Method: 6850
File ID: 1LM.LM35460 Analyst: JWR Method: 6850
Workgroup (AAB#): WG573791 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.201	101	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4822447
Report generated 06/27/2016 15:54

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16060822
Instrument ID: LCMS1
Workgroup (AAB#): WG573791

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16060822-01	1.00	01	477000
L16060822-03	1.00	01	356000
L16060822-04	1000	DL01	445000
L16060822-05	1000	DL01	447000
WG573791-02	1.00	01	436000
WG573791-03	1.00	01	440000
WG573791-04	1.00	01	435000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4822450
Report generated 06/27/2016 15:54

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**	6850	**Samplenum:**	L16060822-01
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35442
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 01:19	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	2850	1730	1.65	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**	6850	**Samplenum:**	L16060822-03
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35443
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 01:38	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	22800	8190	2.78	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**	6850	**Samplenum:**	L16060822-04
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35457
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 14:20	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	204000	69400	2.94	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**	6850	**Samplenum:**	L16060822-05
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35458
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 14:39	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	208000	71500	2.91	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**	6850	**Samplenum:**	WG573791-01
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35418
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 17:44	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	28500	10000	2.85	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**	6850	**Samplenum:**	WG573791-02
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35419
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 18:03	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	505	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**	6850	**Samplenum:**	WG573791-03
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35420
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 18:22	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	30300	11500	2.63	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**	6850	**Samplenum:**	WG573791-04
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35421
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 18:41	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32000	11500	2.78	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**	6850	**Samplenum:**	WG573791-05
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35417
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 17:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	31200	11200	2.79	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**	6850	**Samplenum:**	WG573791-06
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35429
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 21:13	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34500	12500	2.76	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**	6850	**Samplenum:**	WG573791-07
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35440
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 00:41	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	36700	12900	2.84	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**	6850	**Samplenum:**	WG573791-08
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35447
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 02:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34800	11700	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**	6850	**Samplenum:**	WG573791-09
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35450
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 12:08	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	30500	11000	2.77	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**	6850	**Samplenum:**	WG573791-10
Instrument:	LCMS1	**Prep Date:**	06/22/2016 16:00	**File ID:**	1LM.LM35460
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 15:17	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32000	12700	2.52	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**		**Samplenum:**	WG573797-01
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35415
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 16:48	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	583	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**		**Samplenum:**	WG573797-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35416
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 17:06	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	151000	54200	2.79	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**		**Samplenum:**	WG573797-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35428
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 20:54	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	172000	61400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**		**Samplenum:**	WG573797-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35430
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/22/2016 21:31	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	223	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**		**Samplenum:**	WG573797-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35439
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 00:22	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	176000	61500	2.86	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**		**Samplenum:**	WG573797-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35441
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 01:00	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**		**Samplenum:**	WG573797-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35446
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 02:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	58500	2.89	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**		**Samplenum:**	WG573797-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35448
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 03:12	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**		**Samplenum:**	WG573797-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35449
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 11:49	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	142000	50700	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**		**Samplenum:**	WG573797-10
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35451
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 12:27	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	560	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**		**Samplenum:**	WG573797-11
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35459
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 14:58	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	167000	56000	2.98	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060822	**Prep Method:**		**Samplenum:**	WG573797-12
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM35461
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG573791	**Analysis Date:**	06/23/2016 15:36	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

2.2.2.3 Sample Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/23/2016 5:02 PM

Data File	LM35442.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 1:19:12 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060822-01	**Injection Vial**	22.00
Data File	LM35442.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 1:19:12 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	L16060822-01	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.770e+05	9.34	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.850e+03	9.36	N/A	0.0139
Perchlorate conf	1.730e+03	9.35	N/A	0.012

O18LP (Internal Standard)

RT (Exp. RT): 9.34(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

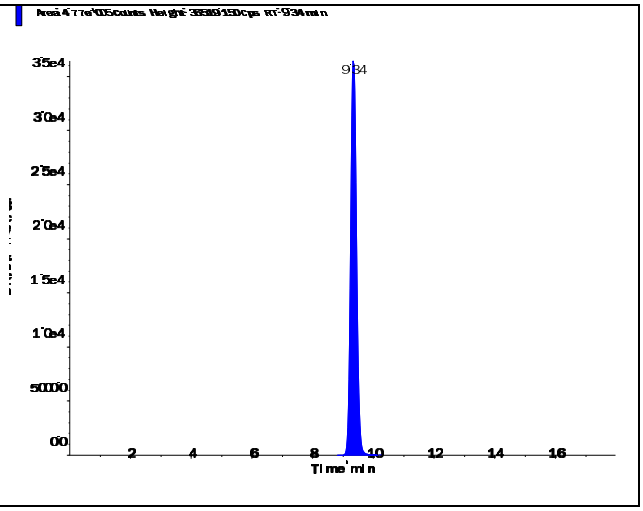

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.36 (9.84) min
Calculated conc:	0.0139 ng/ml
Area Ratio:	0.006
Sample Type:	(Unknown)

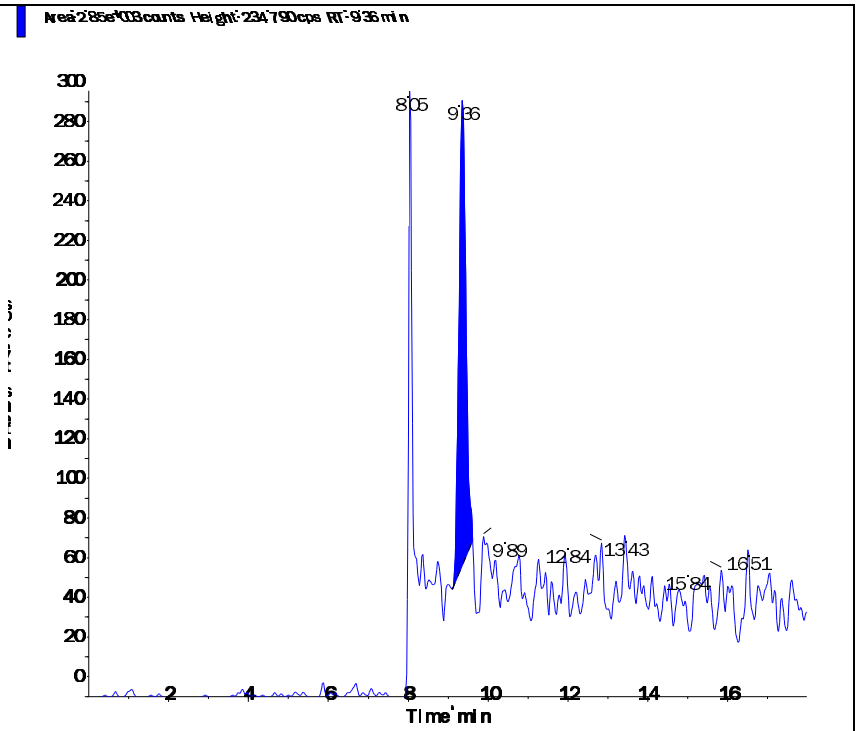

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	0.012 ng/ml
Area Ratio:	0.004
Sample Type:	(Unknown)

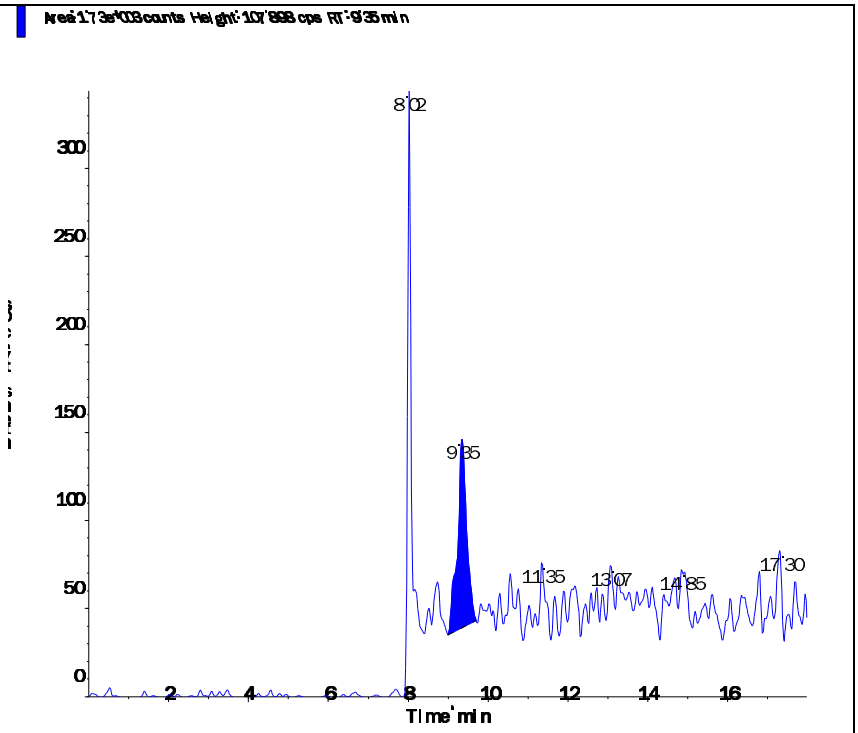

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Created with Analyst Reporter
Printed: 6/23/2016 5:02 PM

Data File	LM35443.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 1:38:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060822-03	**Injection Vial**	23.00
Data File	LM35443.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 1:38:09 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	L16060822-03	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.560e+05	9.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.280e+04	9.11	N/A	0.186
Perchlorate conf	8.190e+03	9.09	N/A	0.186

O18LP (Internal Standard)

RT (Exp. RT): 9.10(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

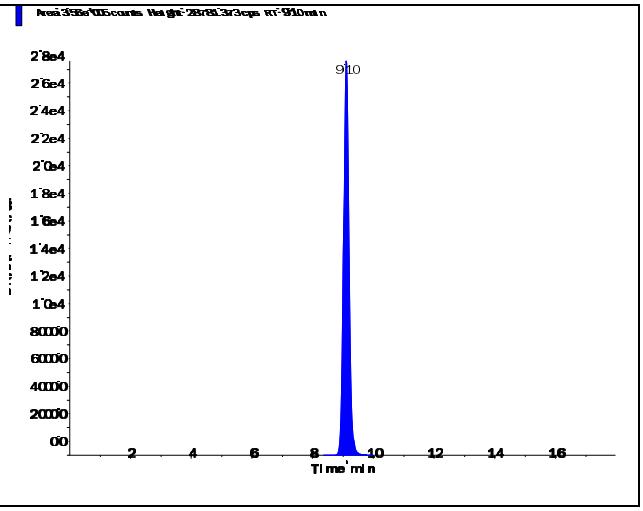

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.11 (9.84) min
Calculated conc:	0.186 ng/ml
Area Ratio:	0.064
Sample Type:	(Unknown)

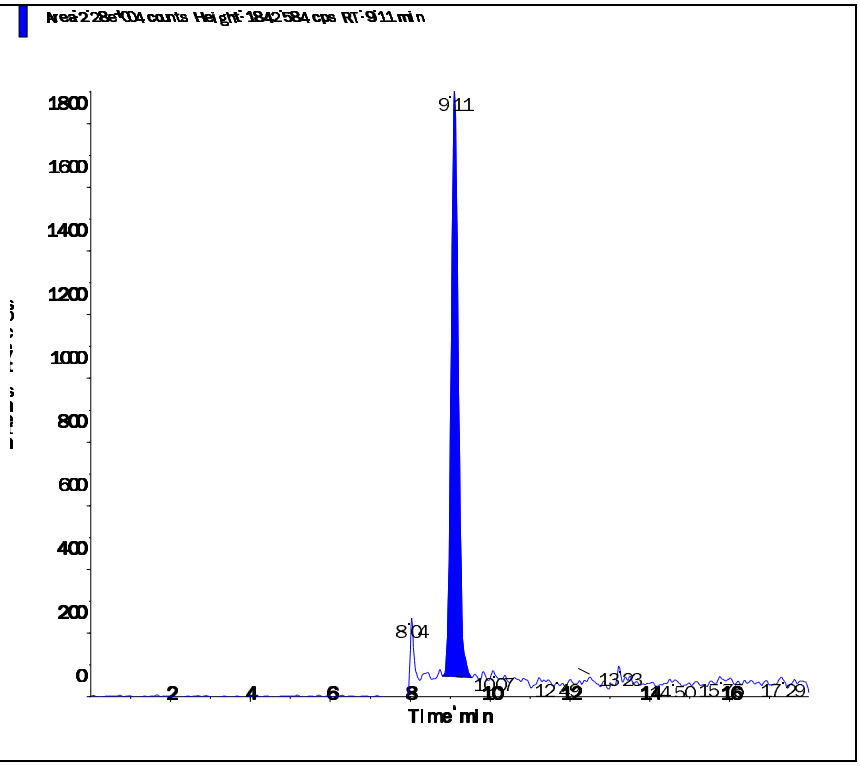

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.09 (9.84) min
Calculated conc:	0.186 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

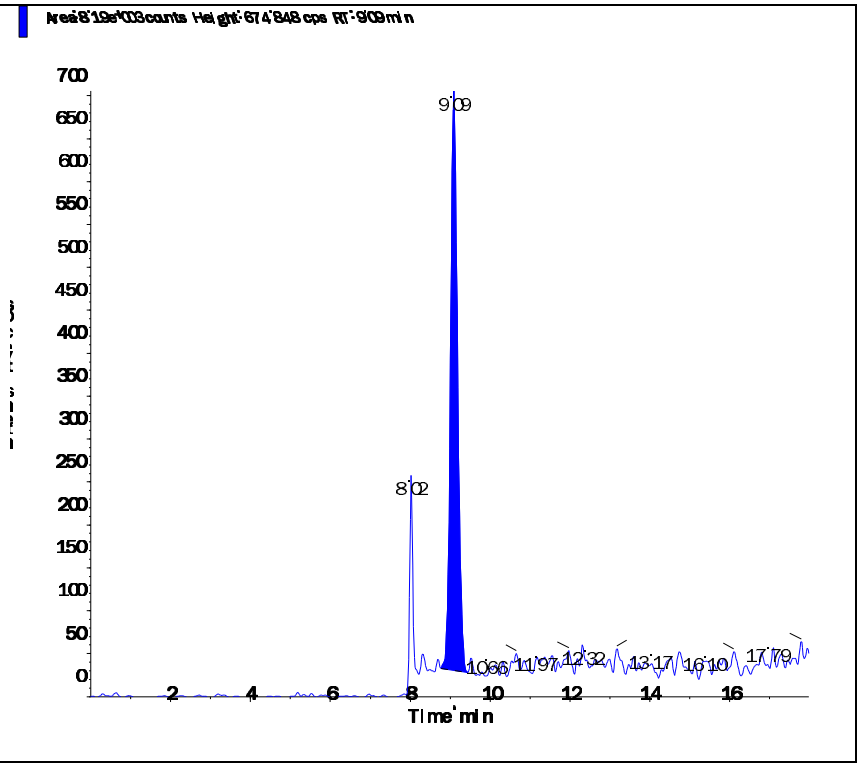

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/23/2016 5:07 PM

Data File	LM35457.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 2:20:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060822-04 (RR 1000x)	**Injection Vial**	31.00
Data File	LM35457.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 2:20:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	L16060822-04	**Dilution Factor**	1.00
Sample Comment	11,000.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.450e+05	9.53	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.040e+05	9.54	N/A	1.36
Perchlorate conf	6.940e+04	9.53	N/A	1.38

O18LP (Internal Standard)

RT (Exp. RT): 9.53(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

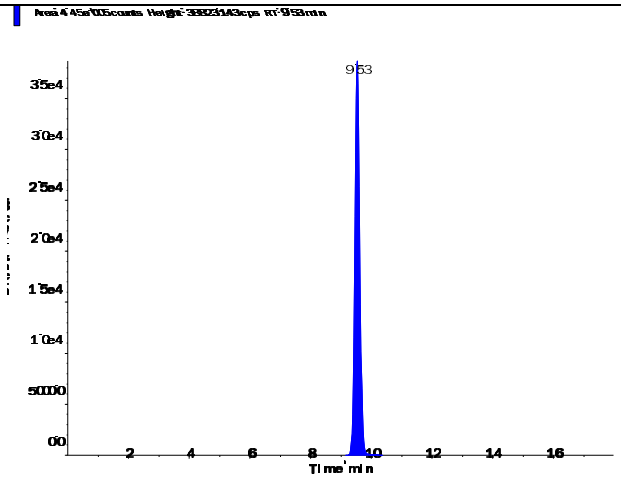

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.54 (9.84) min
Calculated conc:	1.36 ng/ml
Area Ratio:	0.459
Sample Type:	(Unknown)

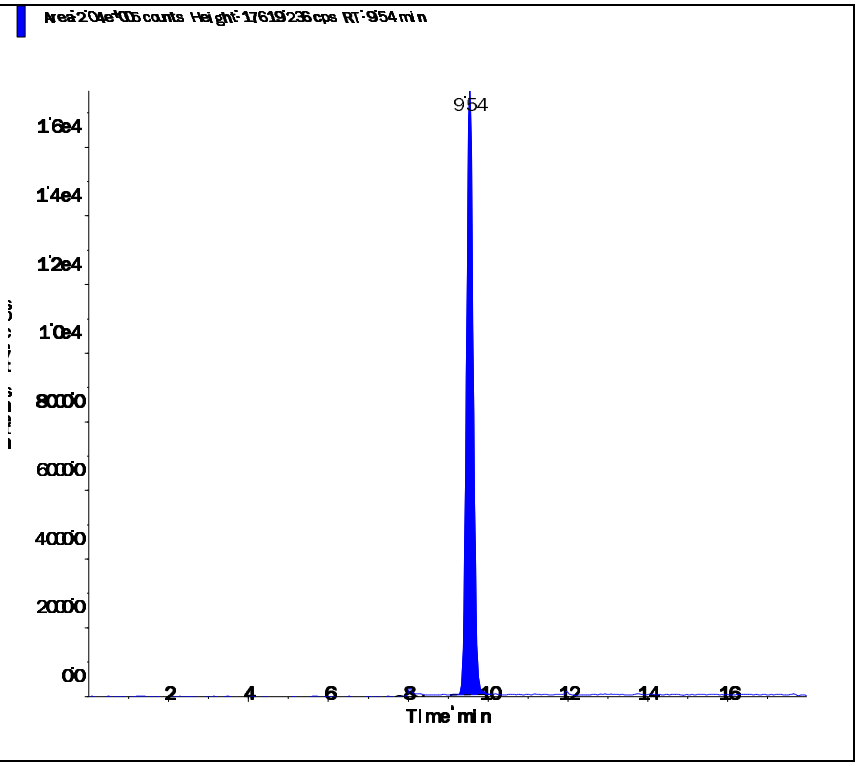

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.53 (9.84) min
Calculated conc:	1.38 ng/ml
Area Ratio:	0.156
Sample Type:	(Unknown)

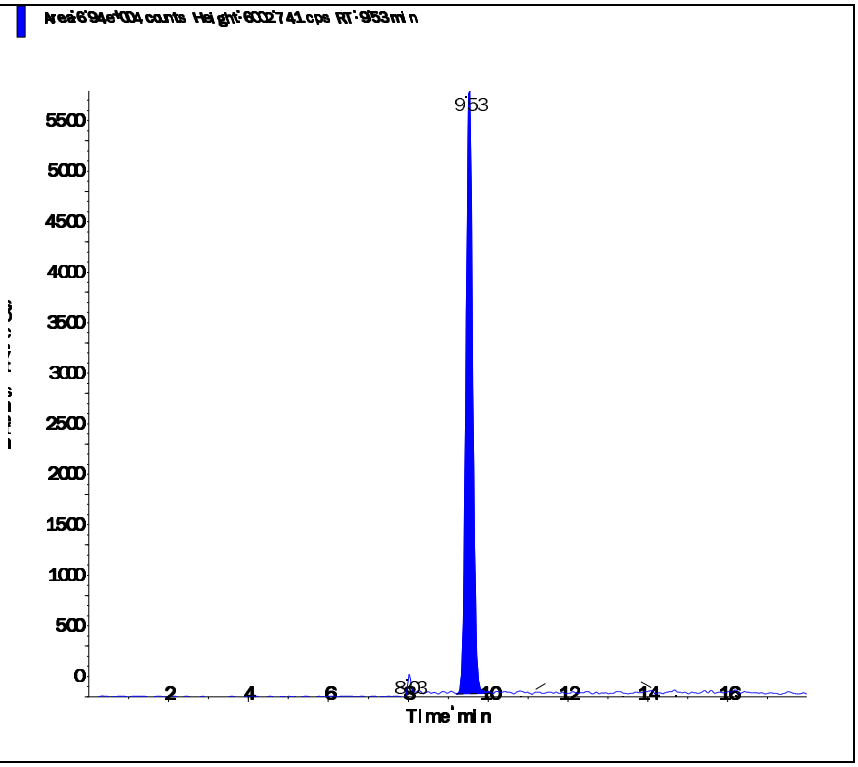

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Printed: 6/23/2016 5:07 PM

Data File	LM35458.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 2:39:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060822-05 (RR 1000x)	**Injection Vial**	32.00
Data File	LM35458.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 2:39:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	L16060822-05	**Dilution Factor**	1.00
Sample Comment	11,000.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.470e+05	9.54	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.080e+05	9.54	N/A	1.38
Perchlorate conf	7.150e+04	9.53	N/A	1.41

O18LP (Internal Standard)

RT (Exp. RT): 9.54(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

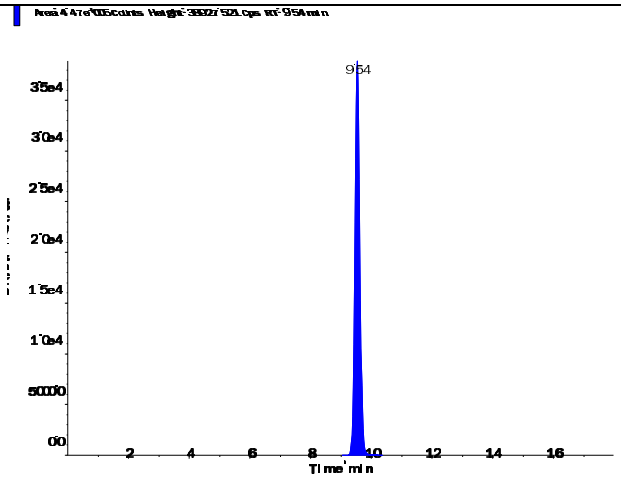

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.54 (9.84) min
Calculated conc:	1.38 ng/ml
Area Ratio:	0.467
Sample Type:	(Unknown)

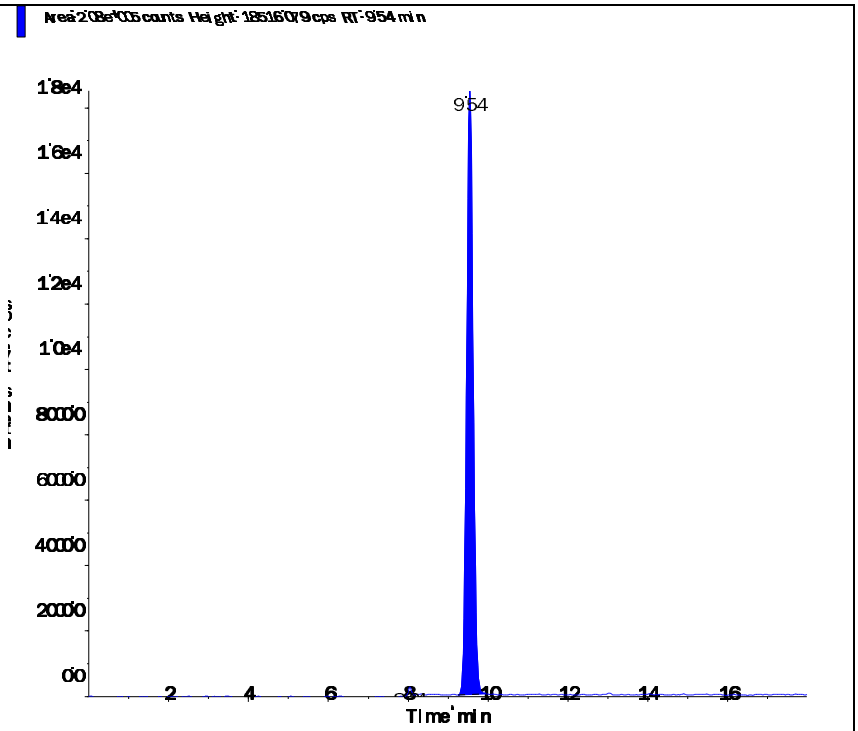

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.53 (9.84) min
Calculated conc:	1.41 ng/ml
Area Ratio:	0.16
Sample Type:	(Unknown)

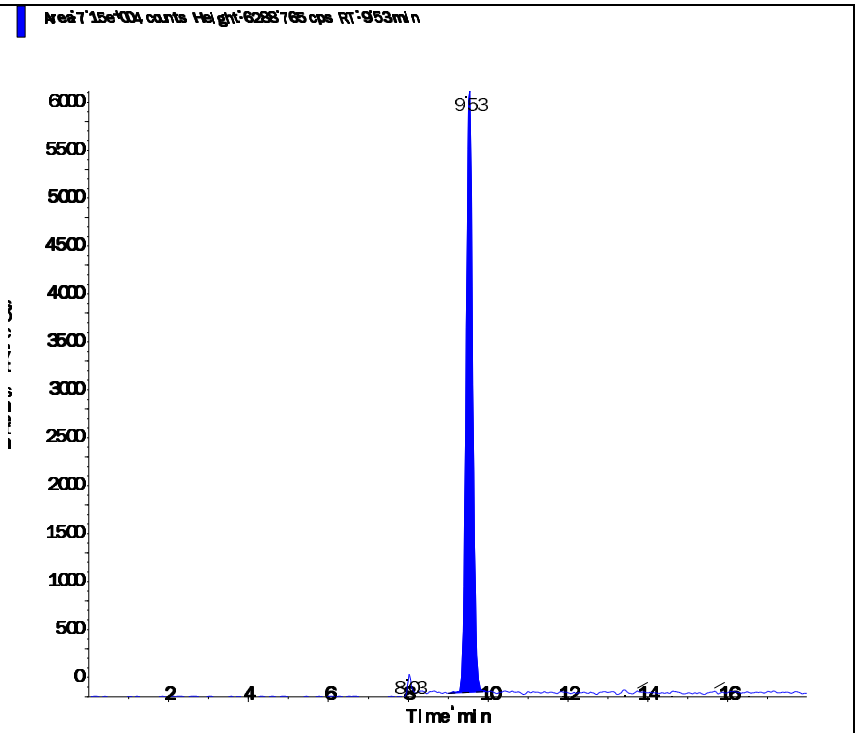

2.2.2.4 Standards Data

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Printed: 6/23/2016 4:49 PM

Data File	LM34686.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

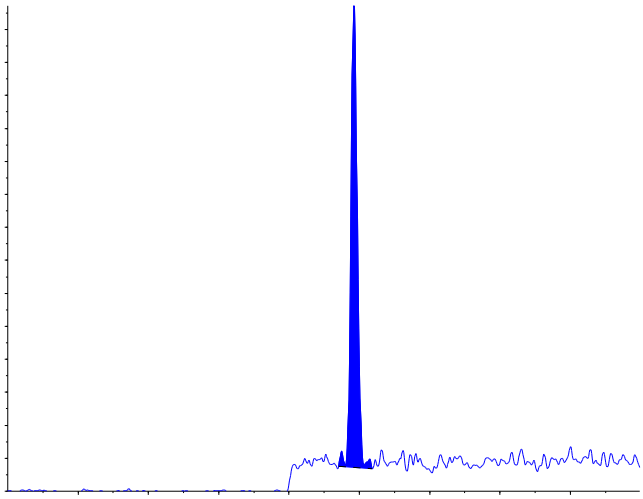

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

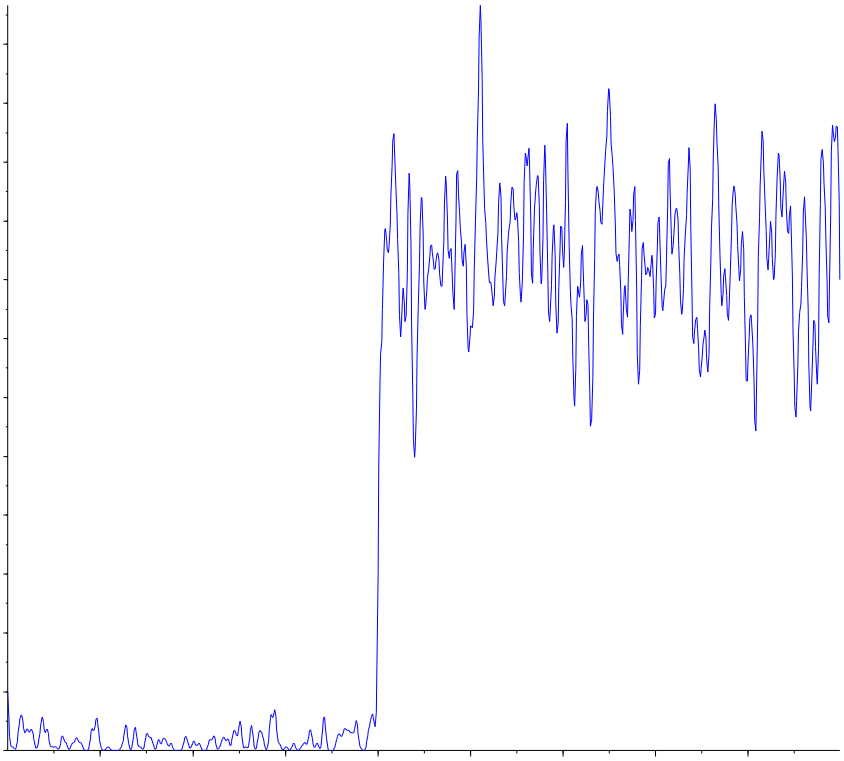

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

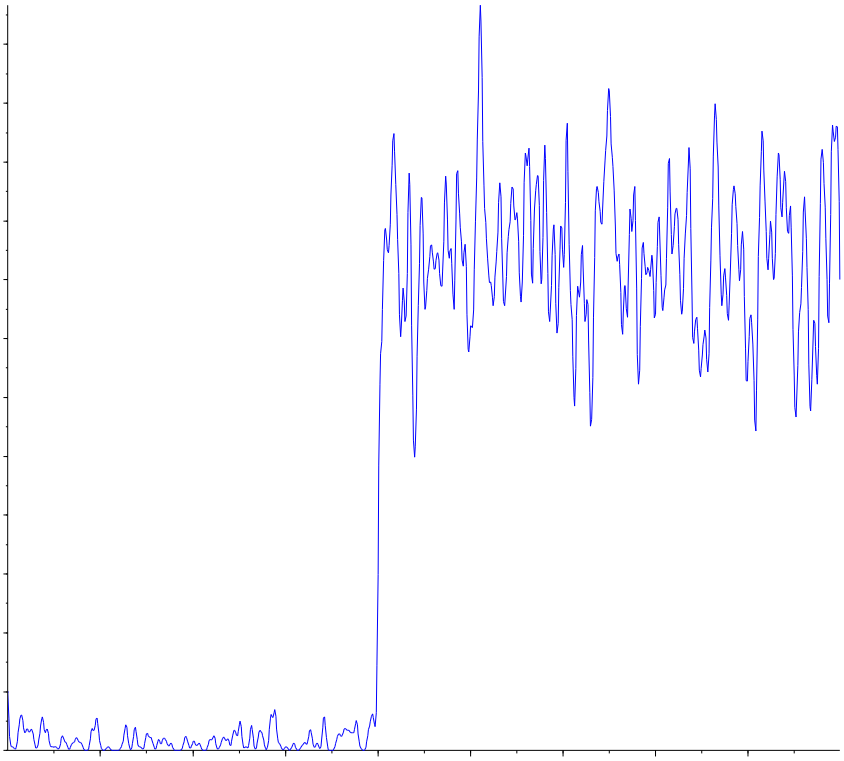

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Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

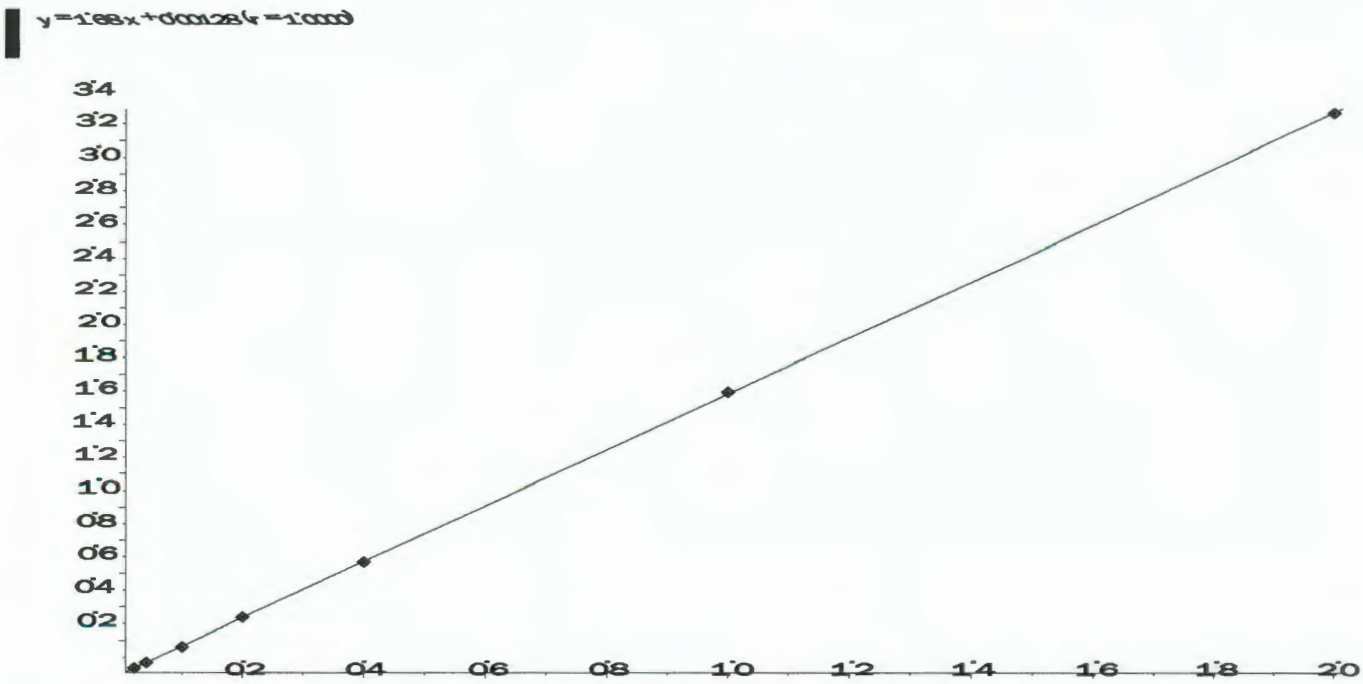

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Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

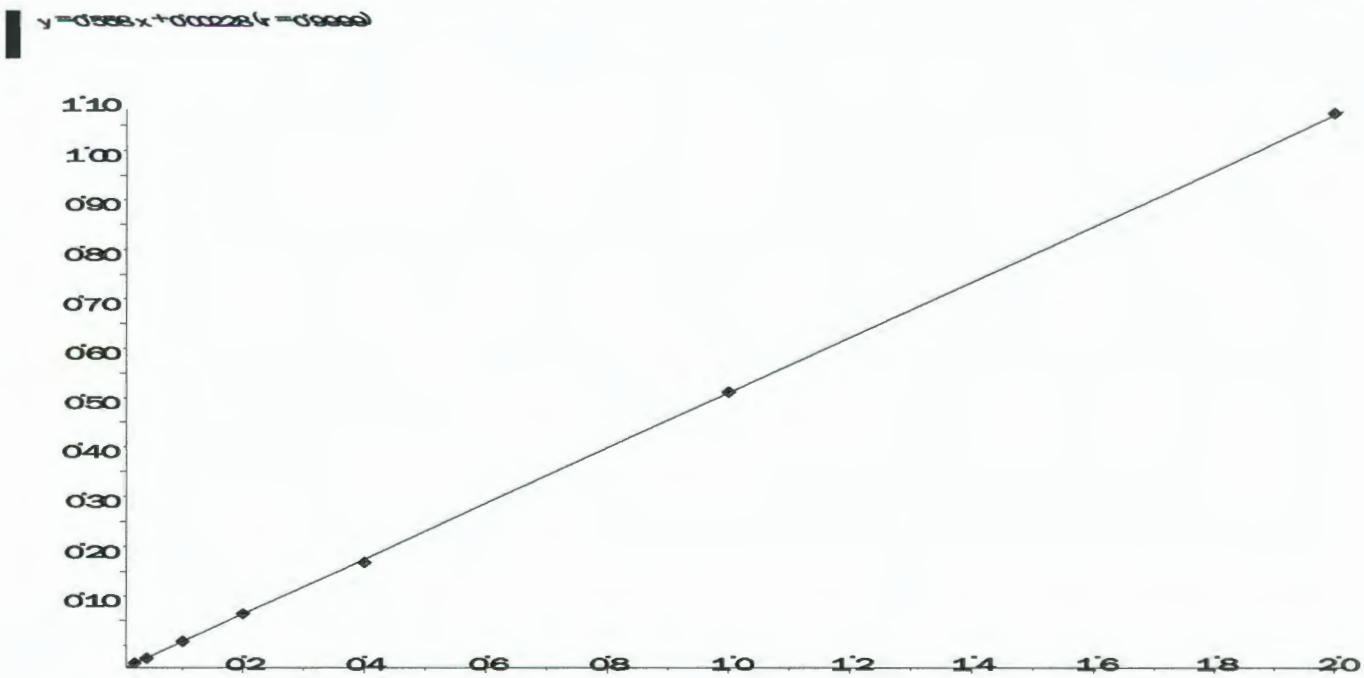

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Data File	LM34687.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

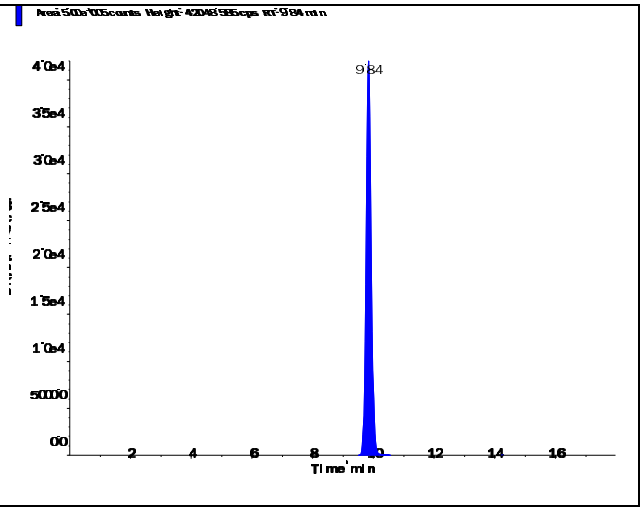

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.103 ng/ml
Area Ratio:	0.036
Sample Type:	(Standard)

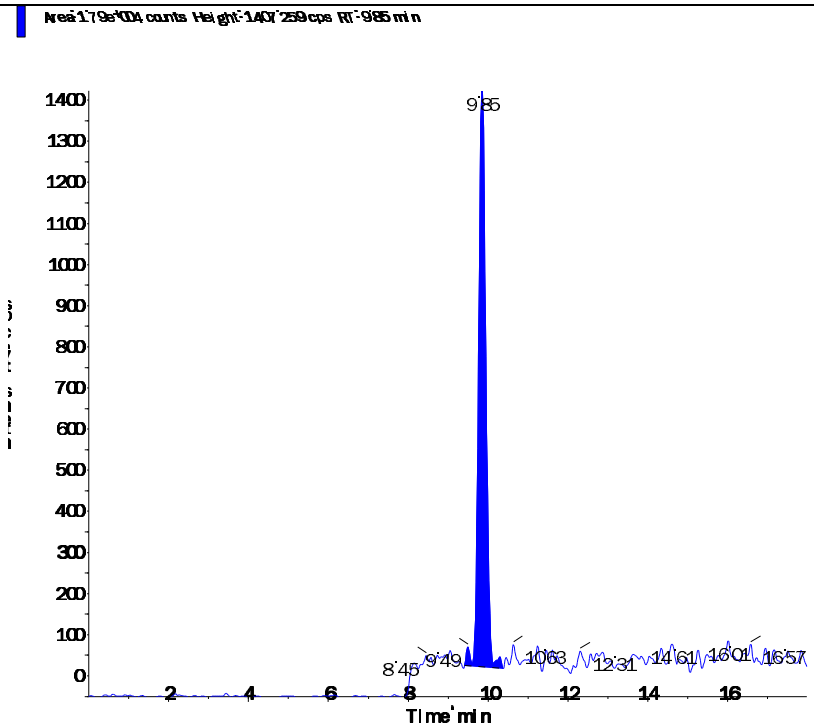

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.104 ng/ml
Area Ratio:	0.014
Sample Type:	(Standard)

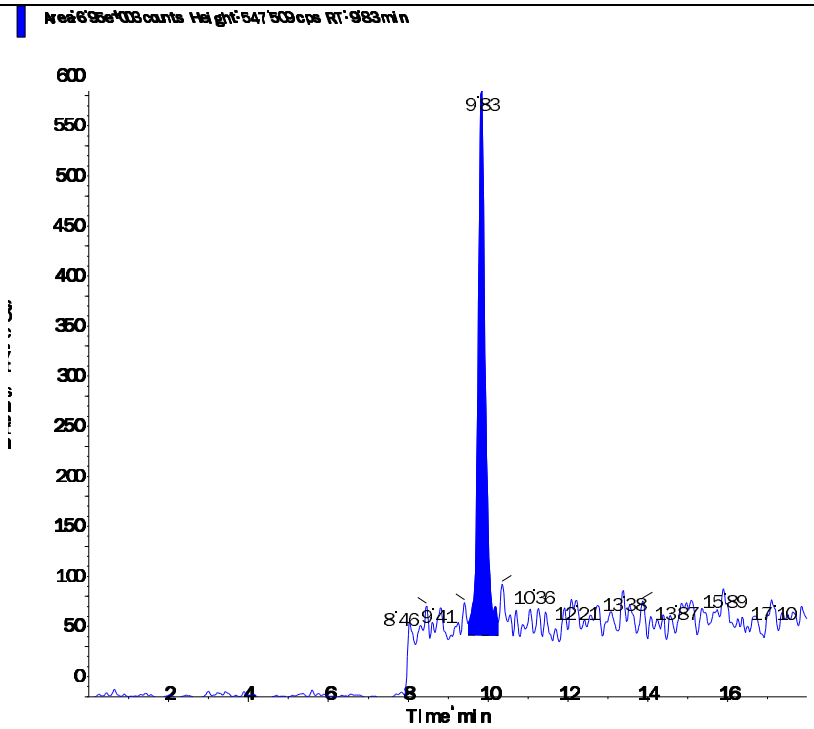

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Data File	LM34688.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

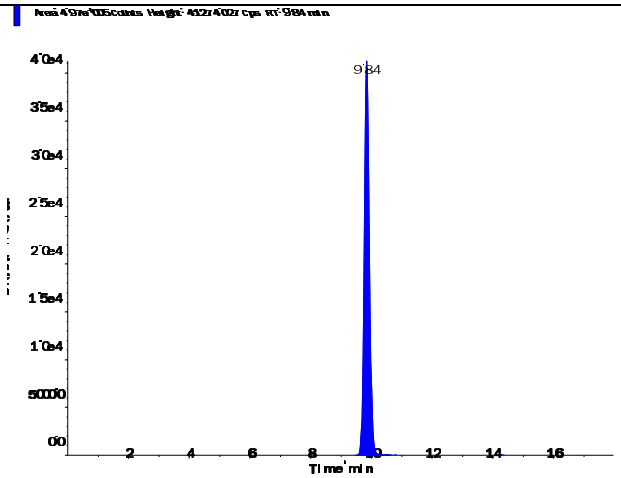

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

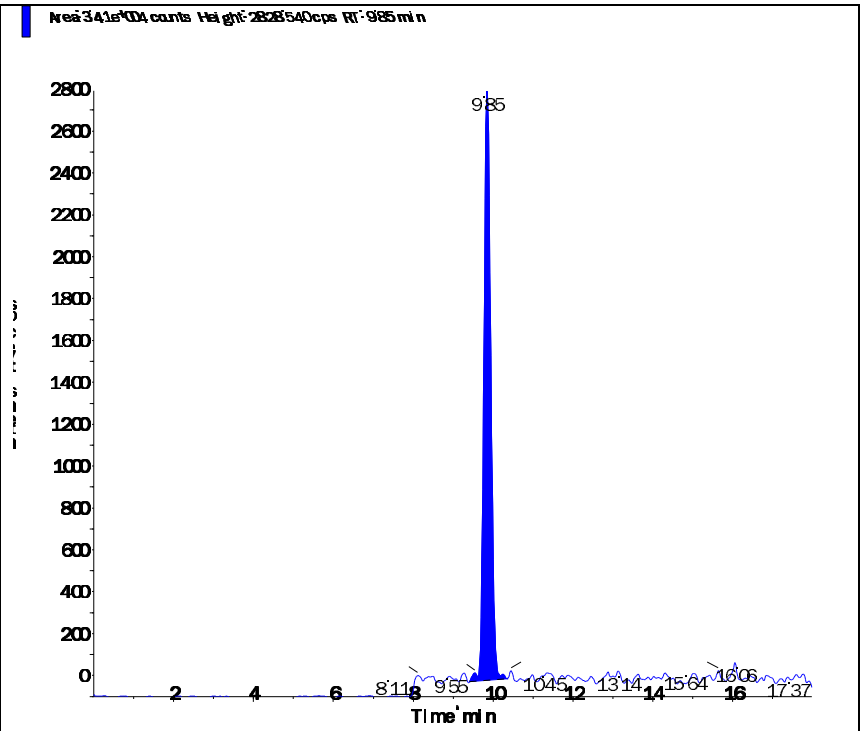

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

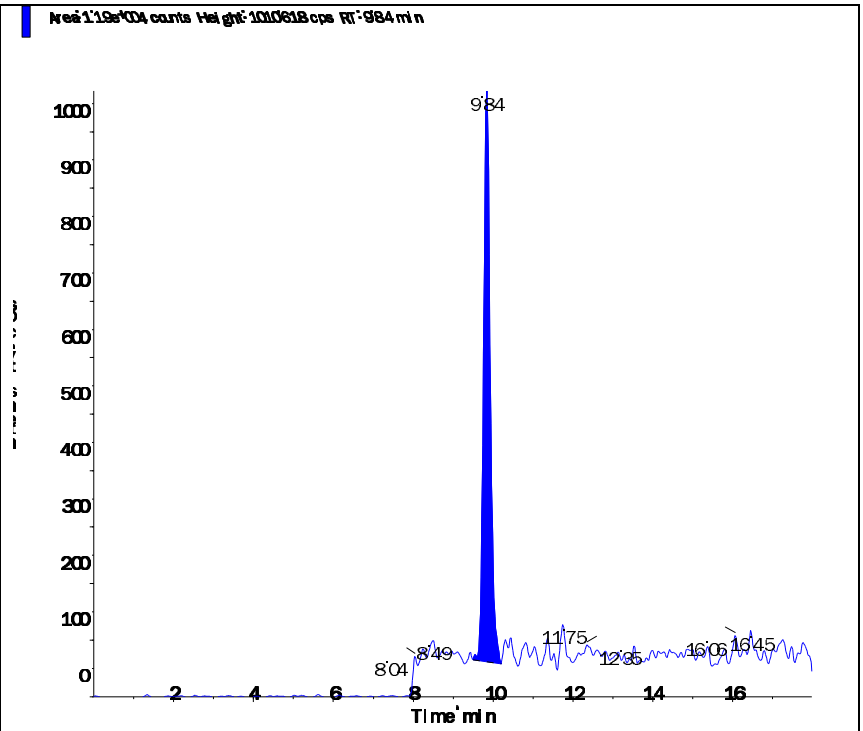

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Data File	LM34689.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

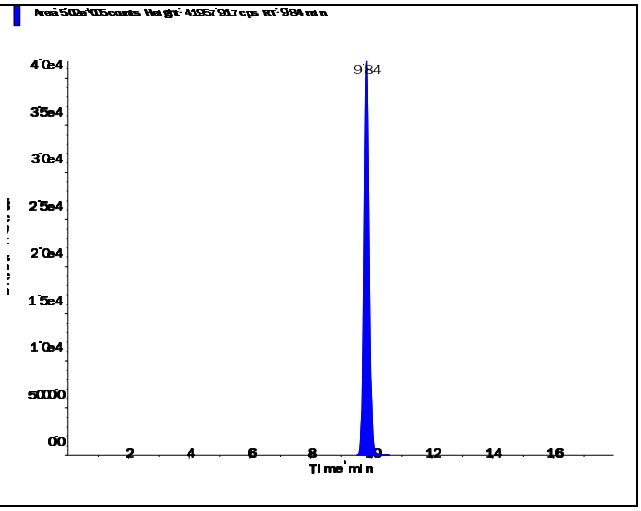

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.483 ng/ml
Area Ratio:	0.164
Sample Type:	(Standard)

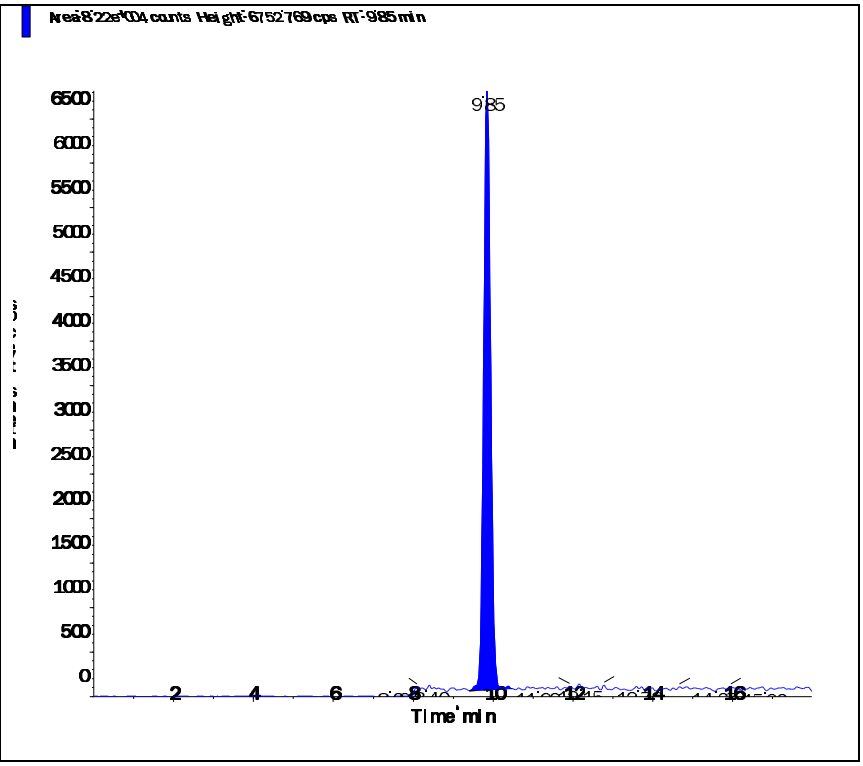

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.503 ng/ml
Area Ratio:	0.058
Sample Type:	(Standard)

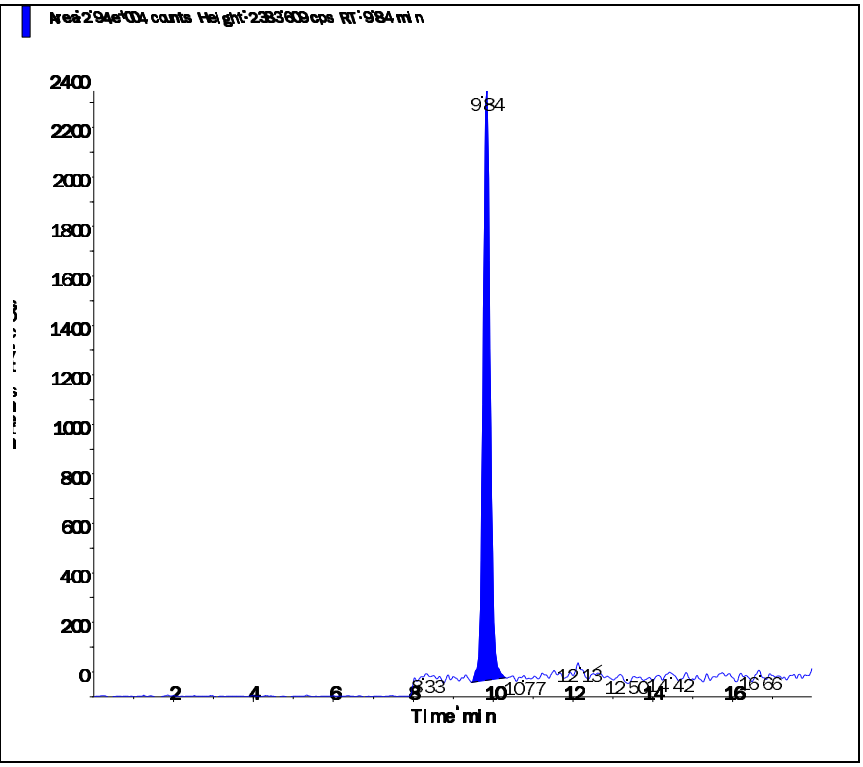

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Data File	LM34690.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

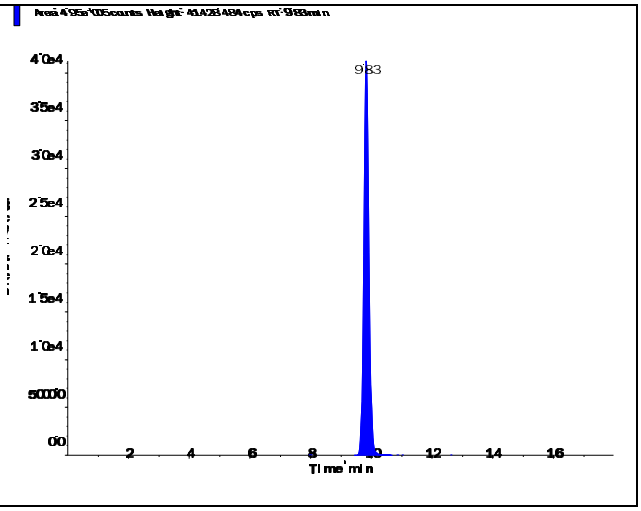

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

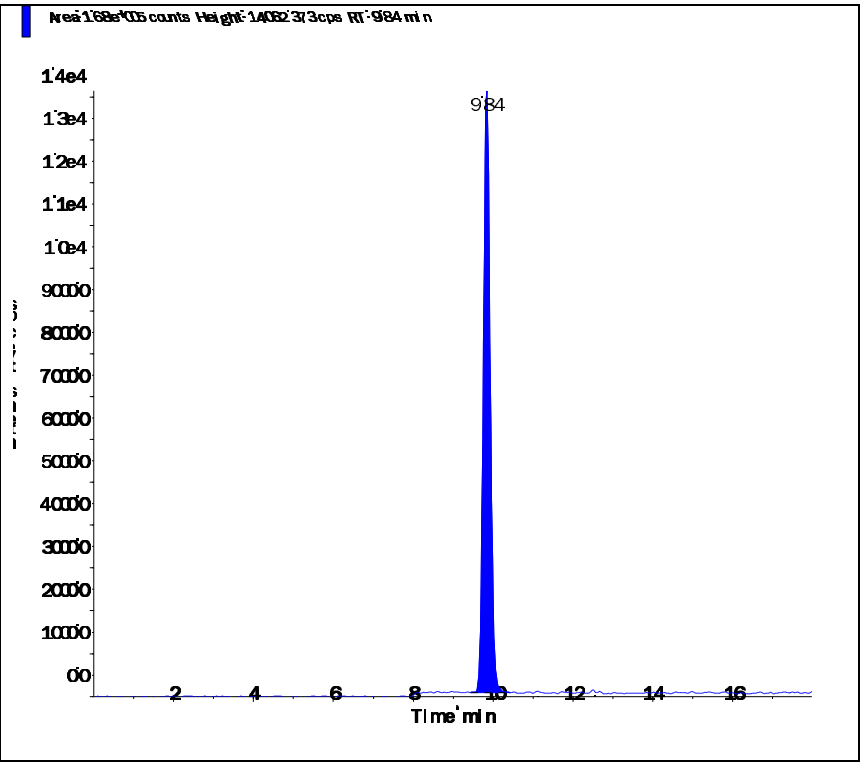

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

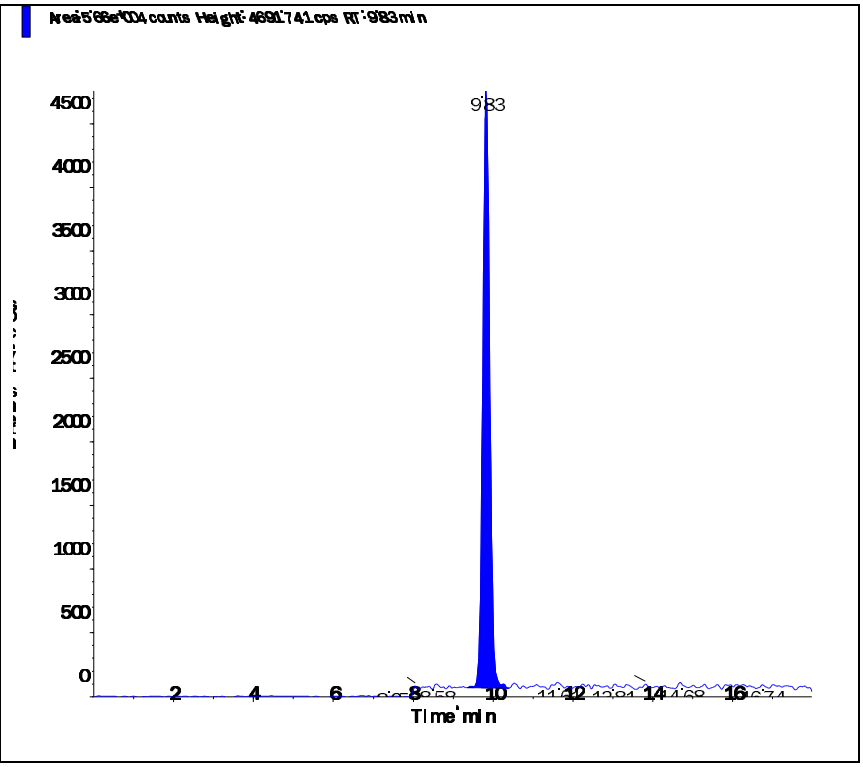

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Data File	LM34691.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

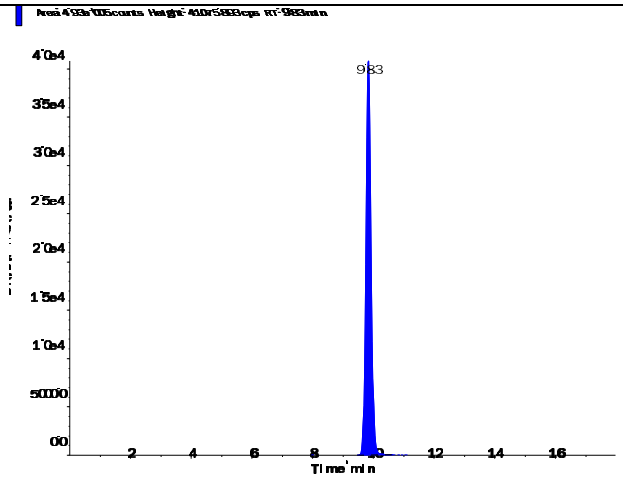

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.84 (9.84) min Calculated conc: 1.99 ng/ml Area Ratio: 0.669 Sample Type: (Standard)	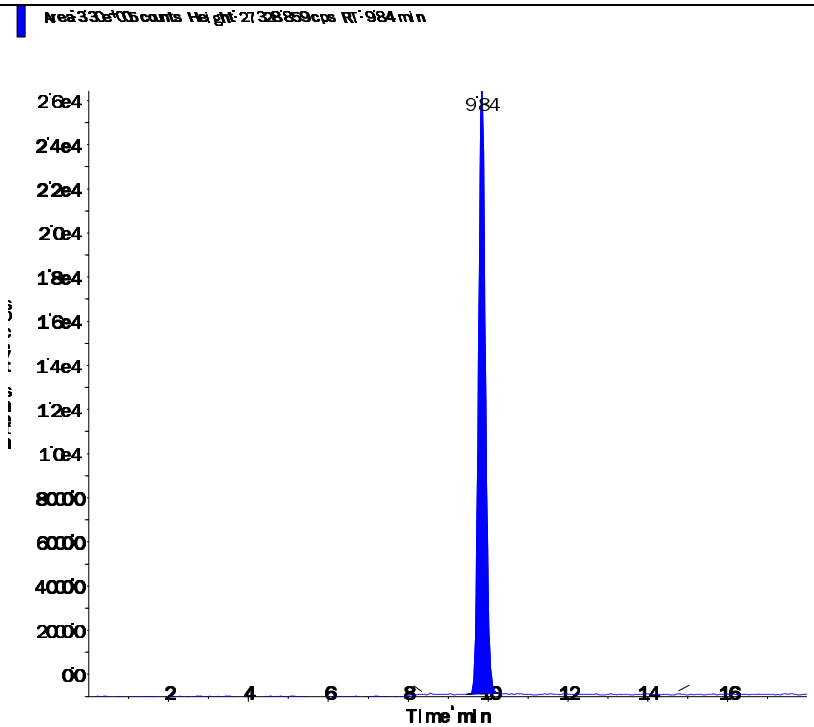
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 1.94 ng/ml Area Ratio: 0.219 Sample Type: (Standard)	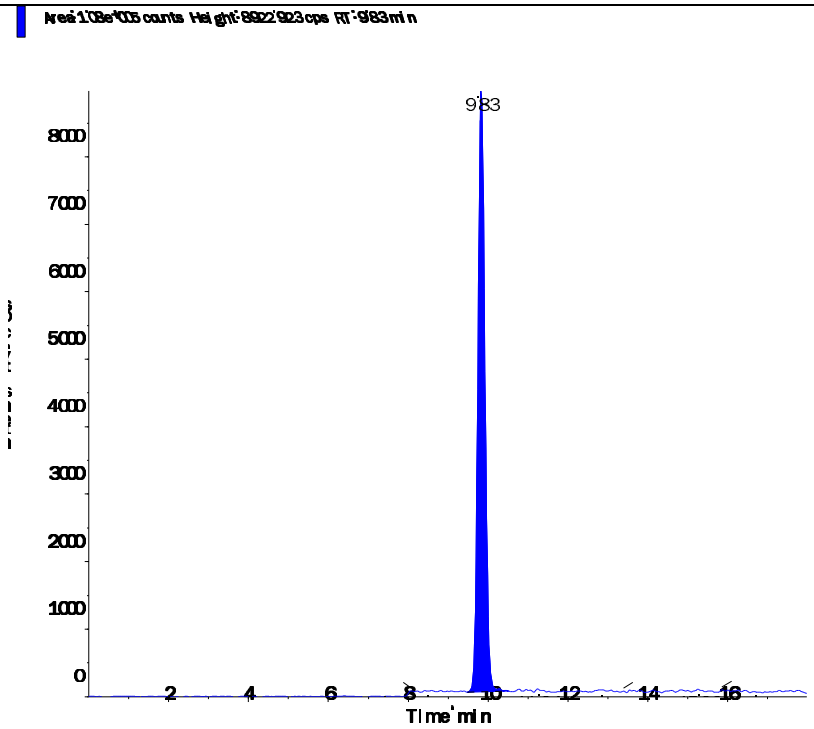

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Data File	LM34692.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

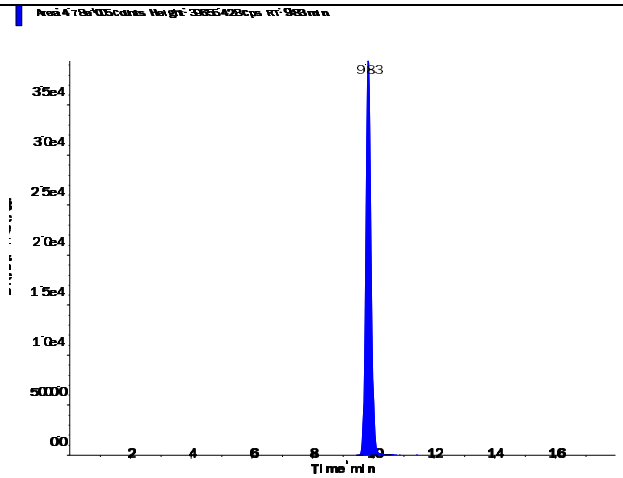

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

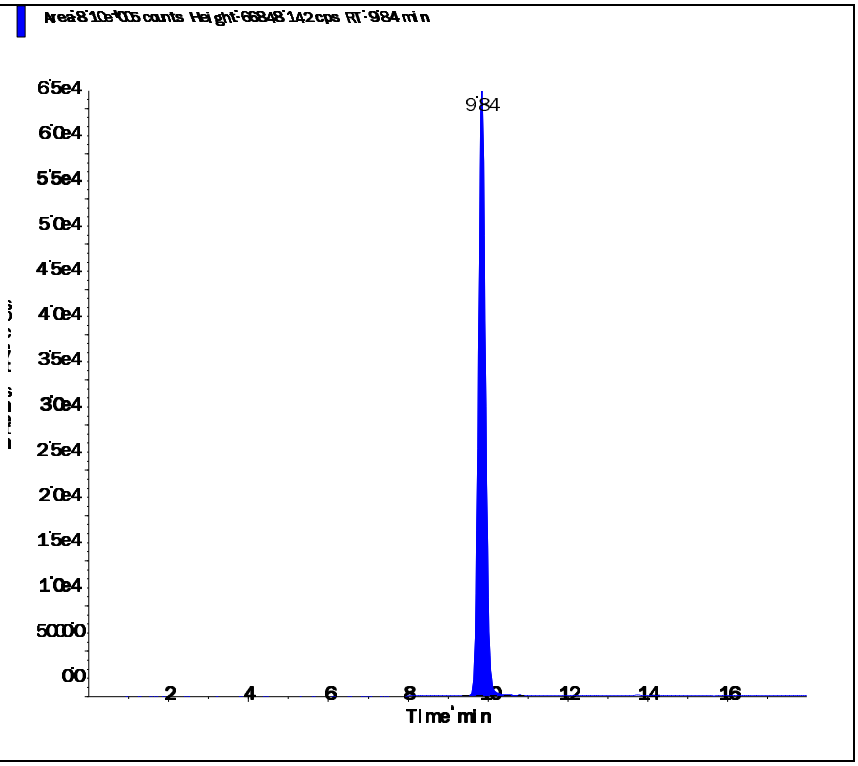

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

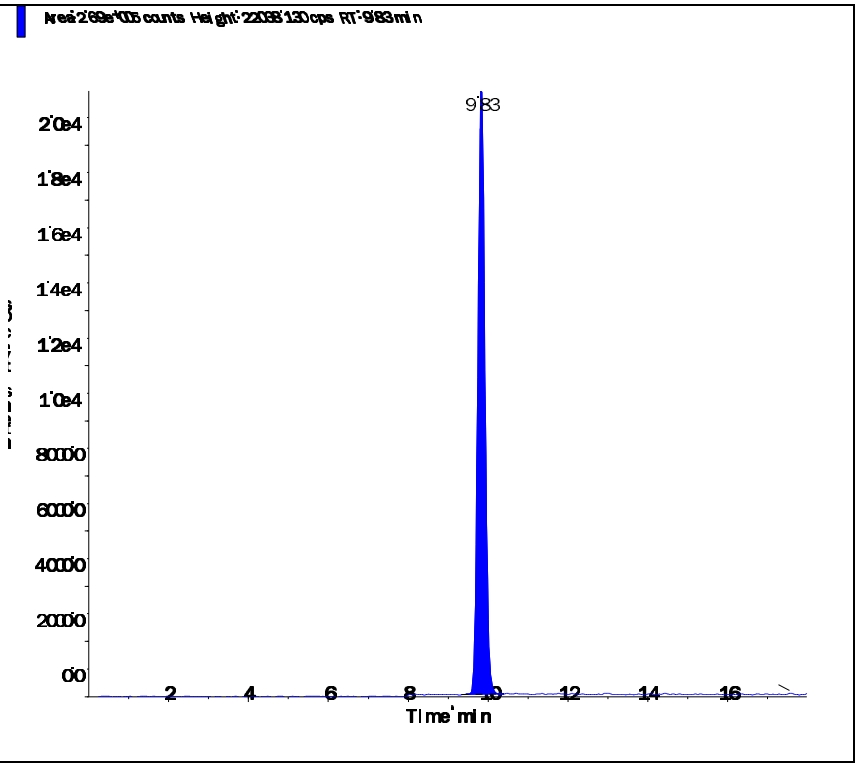

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Data File	LM34693.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

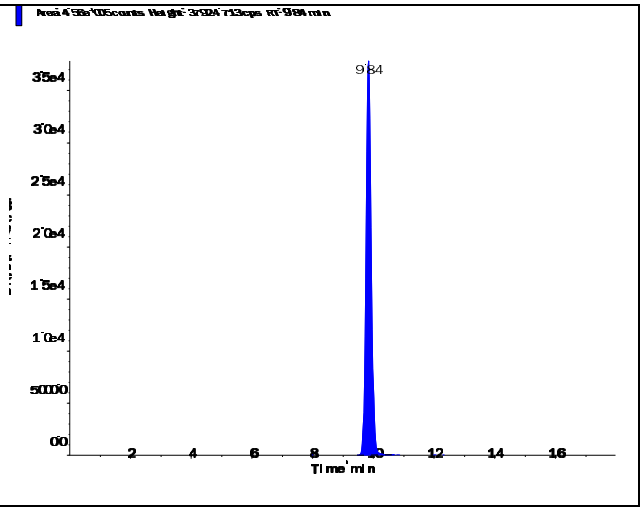

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 9.99 ng/ml Area Ratio: 3.36 Sample Type: (Standard)	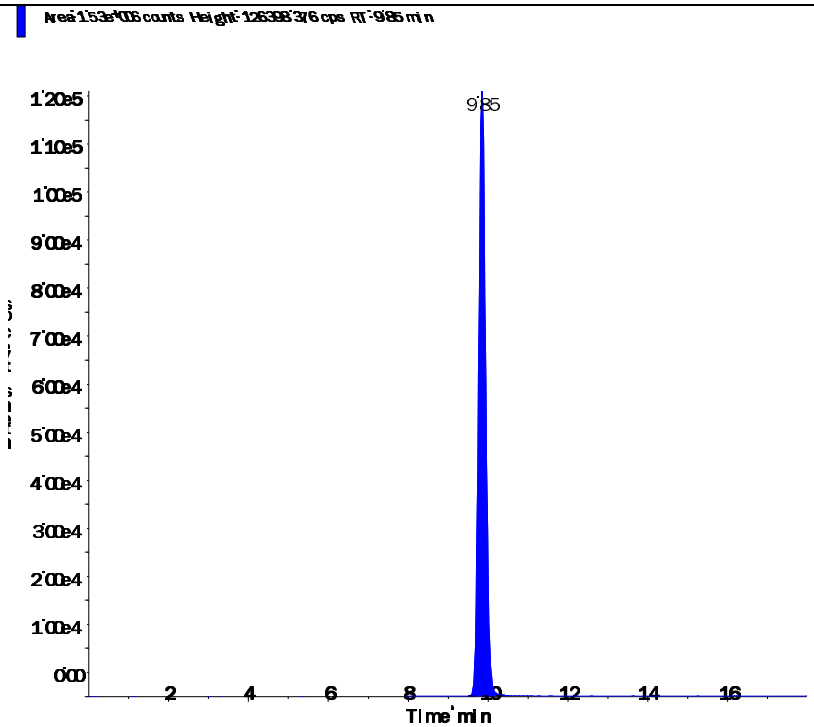
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 10.00 ng/ml Area Ratio: 1.122 Sample Type: (Standard)	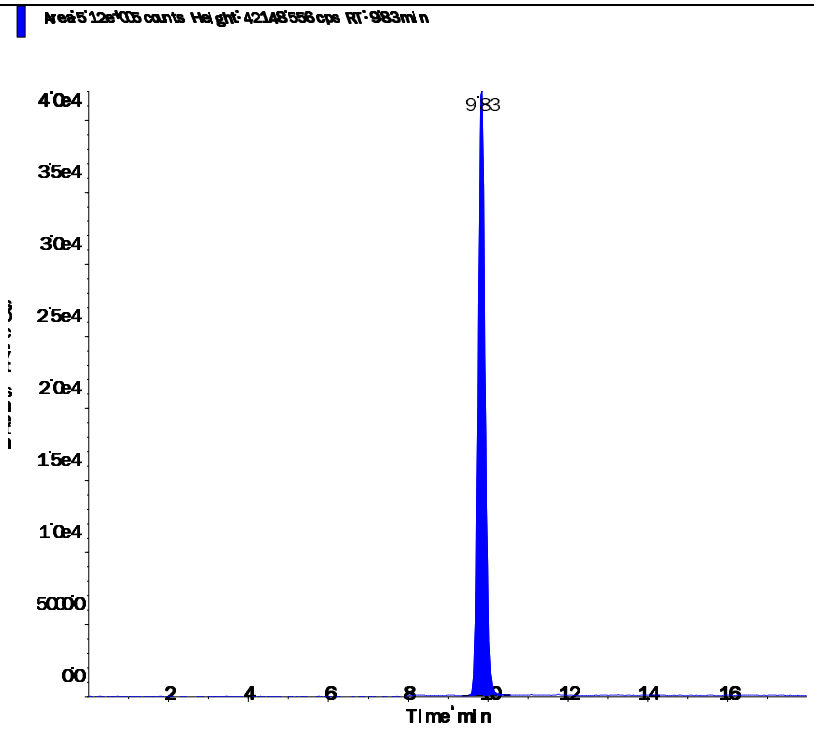

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Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

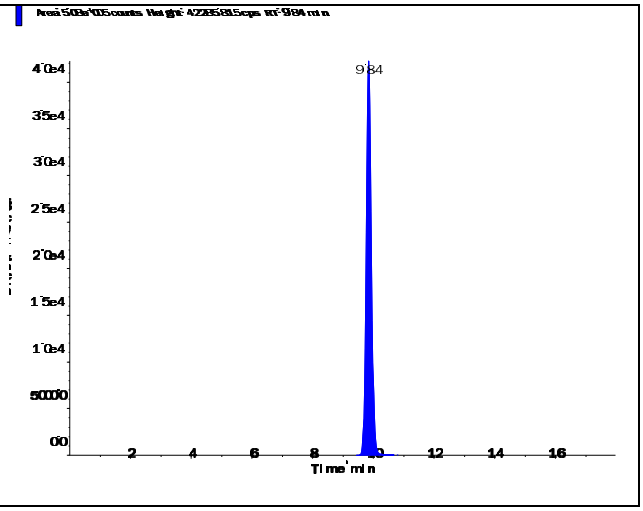

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.332
Sample Type:	(Quality Control)

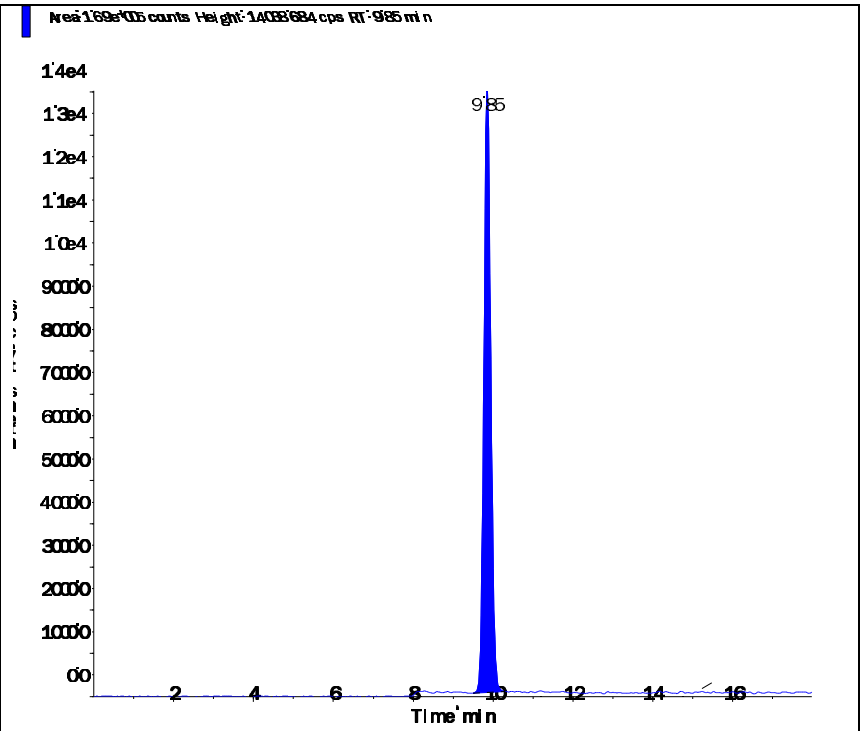

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

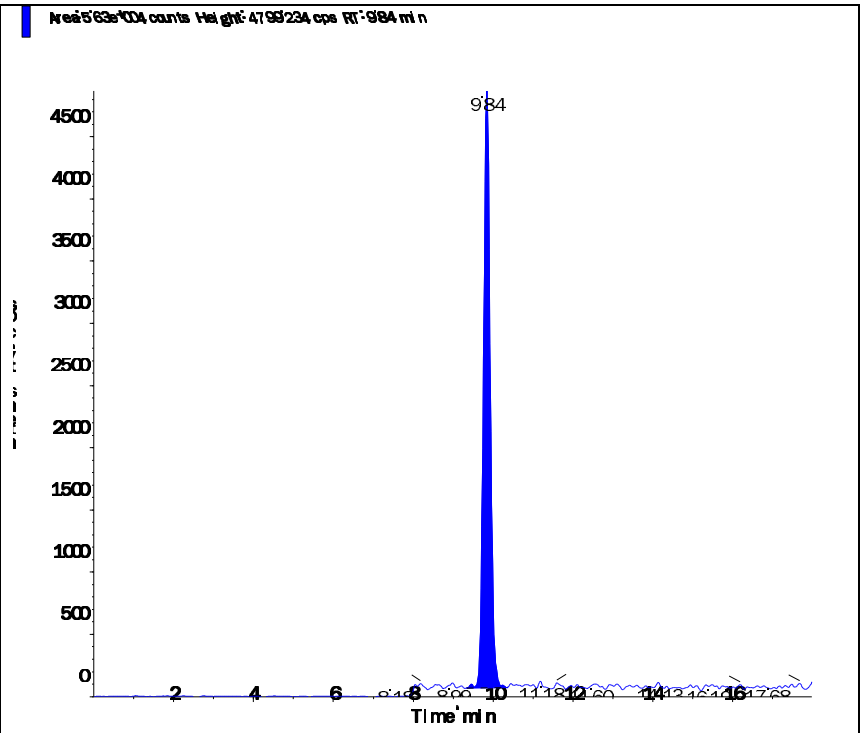

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Data File	LM35416.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 5:06:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35416.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 5:06:54 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.480e+05	9.13	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.510e+05	9.14	1.00	0.997
Perchlorate conf	5.420e+04	9.13	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 9.13(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

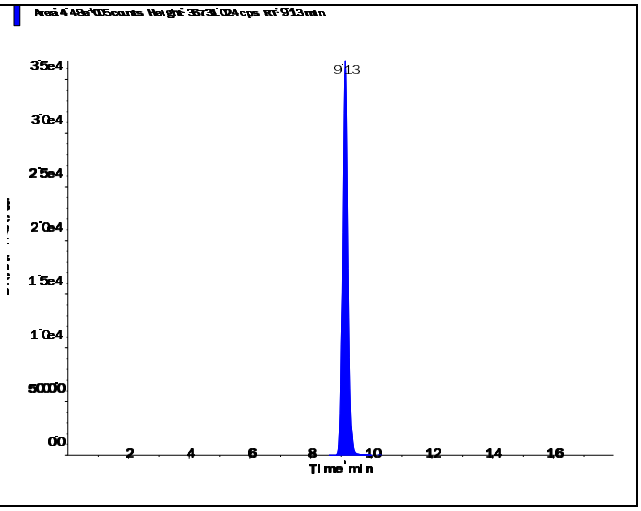

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.14 (9.84) min
Calculated conc:	0.997 ng/ml
Area Ratio:	0.336
Sample Type:	(Quality Control)

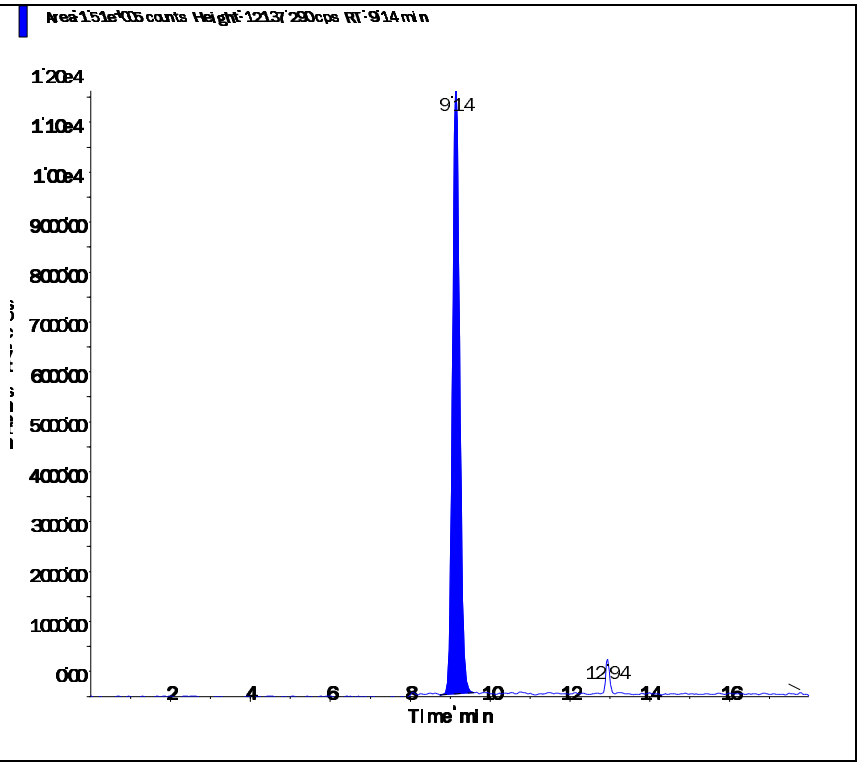

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.13 (9.84) min
Calculated conc:	1.07 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

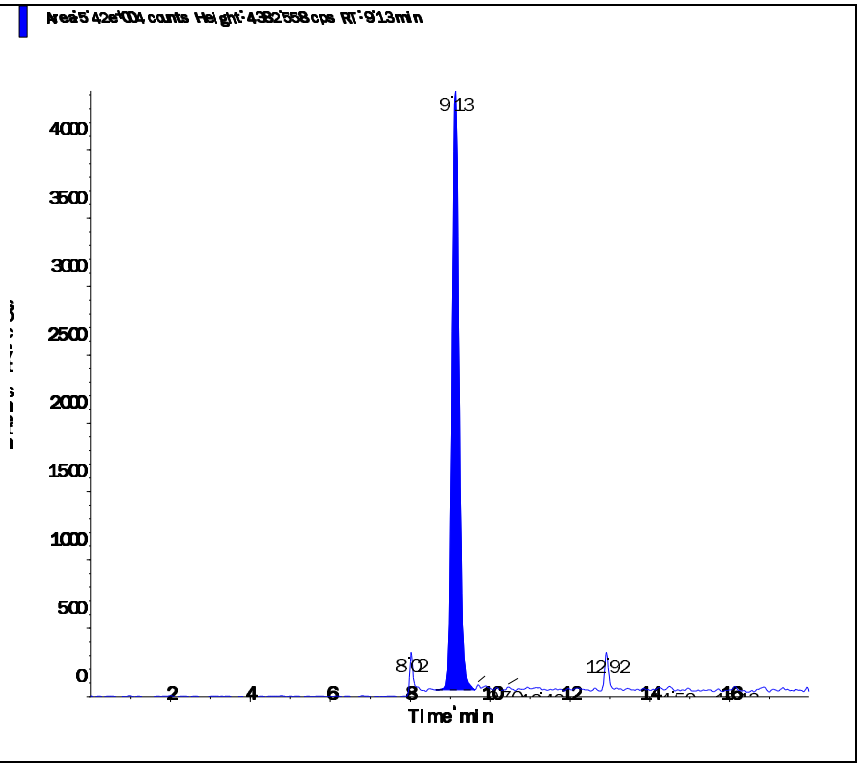

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Data File	LM35428.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 8:54:07 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35428.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 8:54:07 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.900e+05	9.17	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.720e+05	9.18	1.00	1.04
Perchlorate conf	6.140e+04	9.16	1.00	1.10

O18LP (Internal Standard)

RT (Exp. RT): 9.17(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

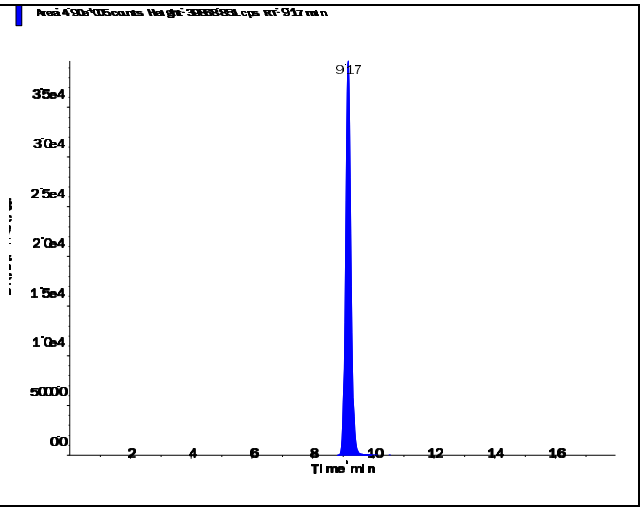

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.18 (9.84) min Calculated conc: 1.04 ng/ml Area Ratio: 0.351 Sample Type: (Quality Control)	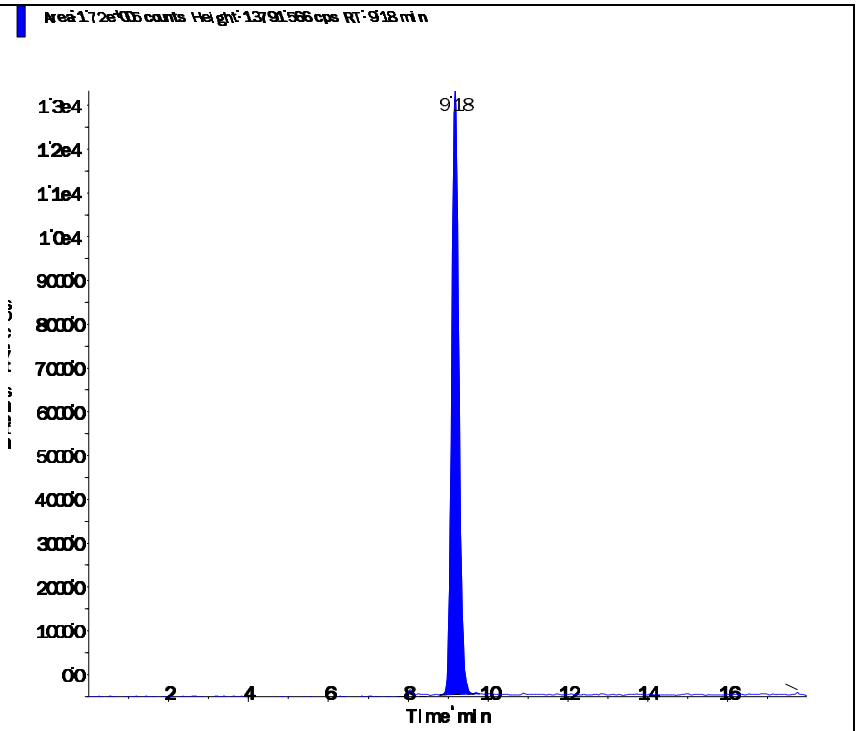
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.16 (9.84) min Calculated conc: 1.10 ng/ml Area Ratio: 0.125 Sample Type: (Quality Control)	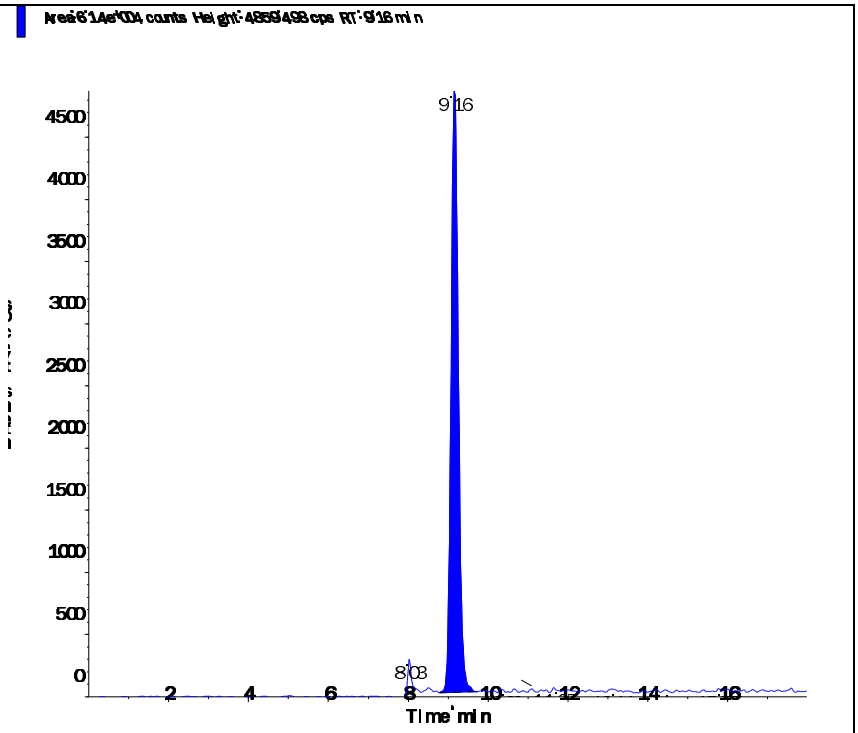

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Data File	LM35439.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 12:22:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35439.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 12:22:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.20	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.760e+05	9.22	1.00	1.03
Perchlorate conf	6.150e+04	9.20	1.00	1.06

O18LP (Internal Standard)

RT (Exp. RT): 9.20(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

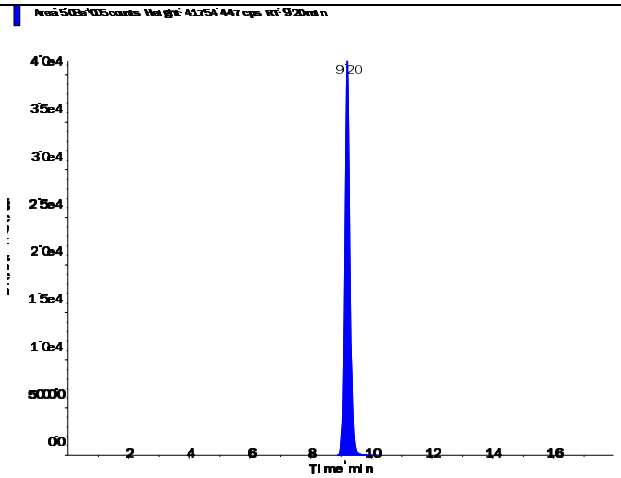

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.22 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.347
Sample Type:	(Quality Control)

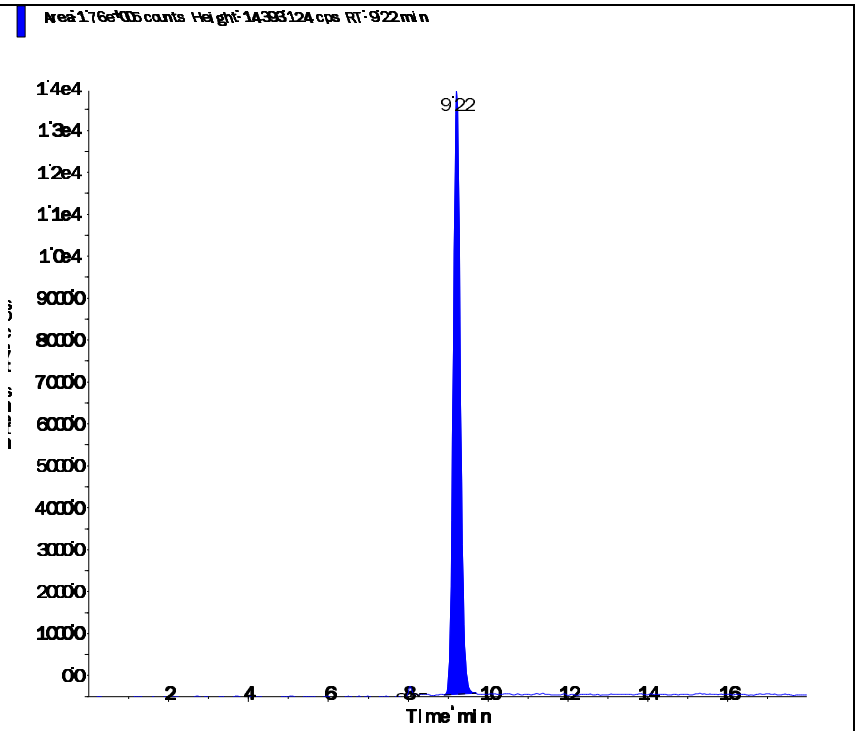

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.20 (9.84) min
Calculated conc:	1.06 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

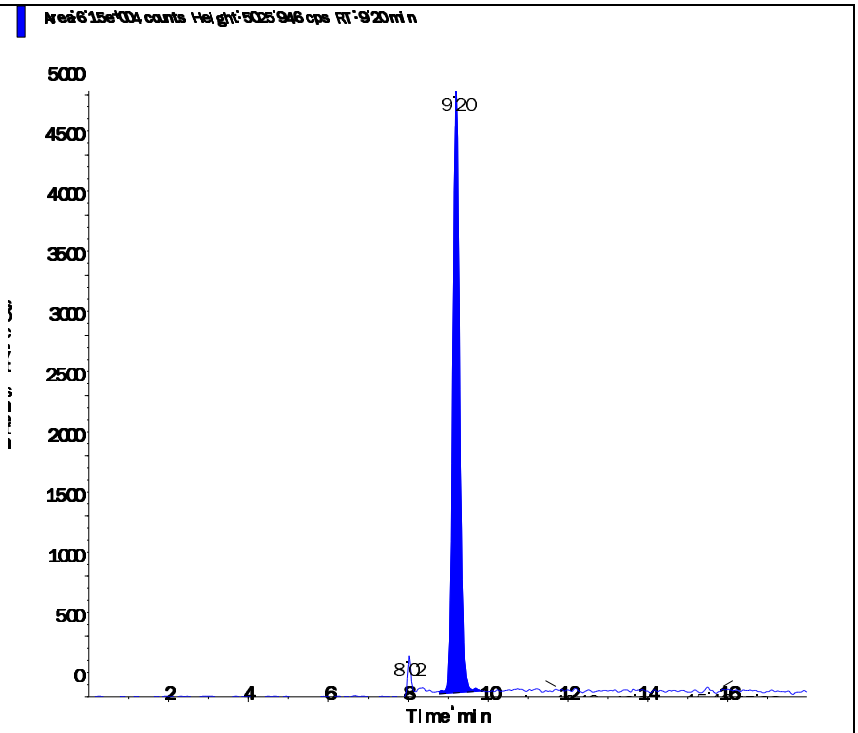

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Data File	LM35446.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 2:34:57 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35446.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 2:34:57 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.820e+05	9.22	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.23	1.00	1.04
Perchlorate conf	5.850e+04	9.22	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 9.22(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

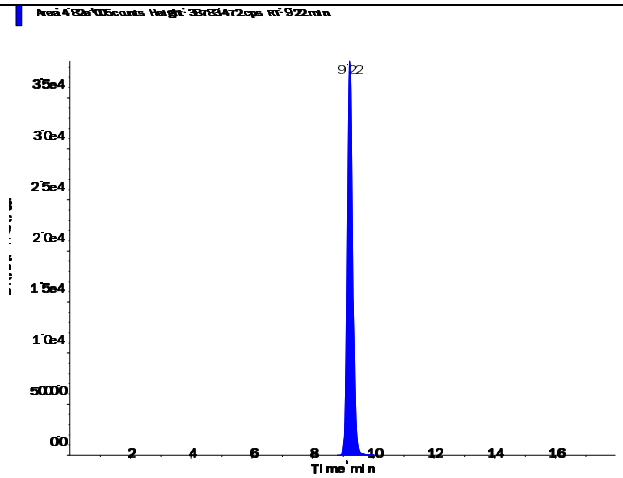

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.23 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.351
Sample Type:	(Quality Control)

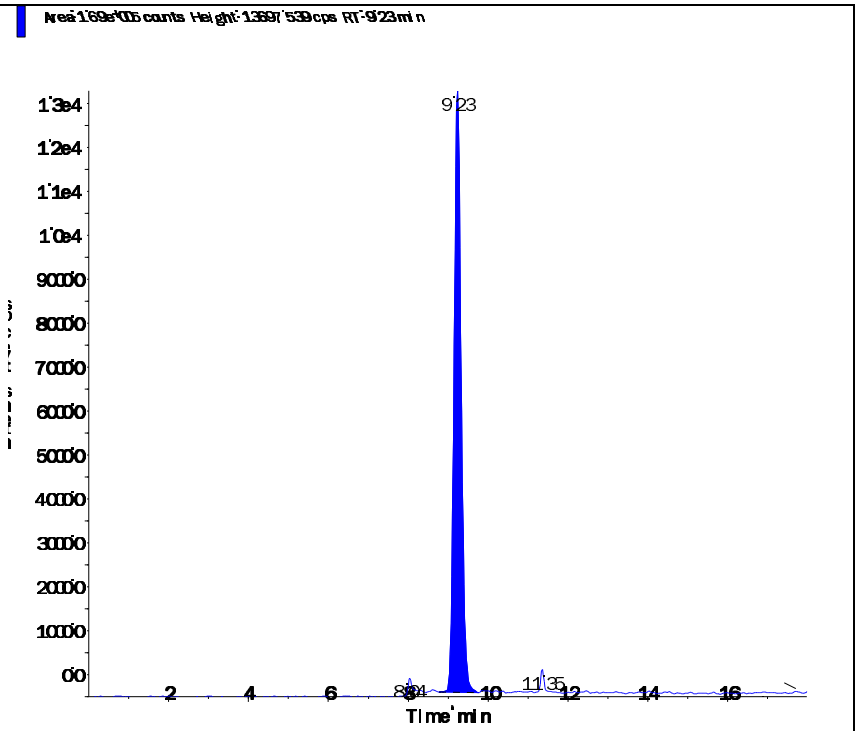

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.22 (9.84) min
Calculated conc:	1.07 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

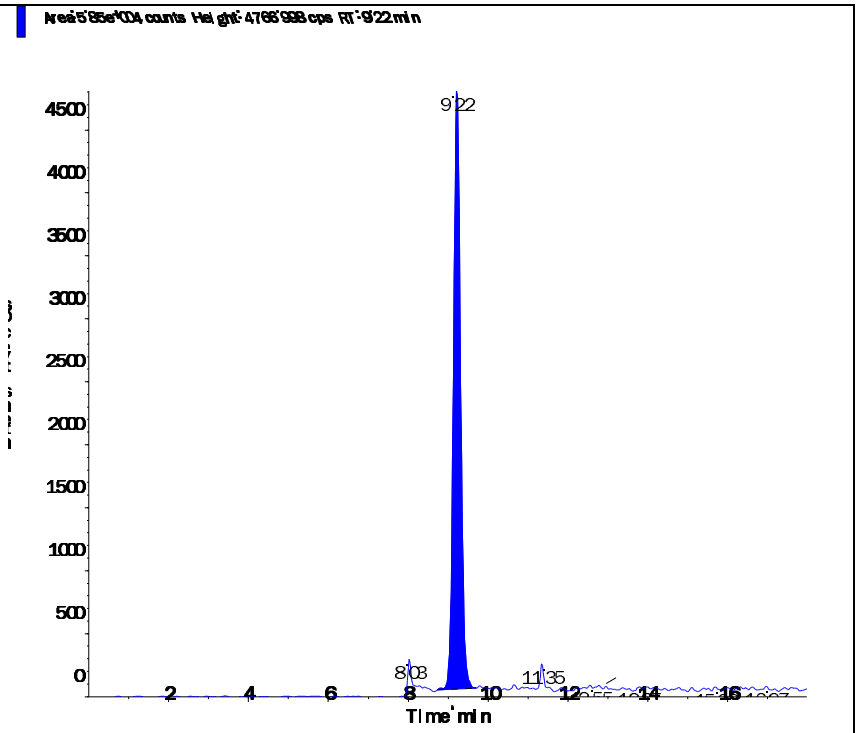

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Data File	LM35449.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 11:49:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35449.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 11:49:25 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.170e+05	9.26	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.420e+05	9.27	1.00	1.01
Perchlorate conf	5.070e+04	9.25	1.00	1.07

O18LP (Internal Standard)

RT (Exp. RT): 9.26(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

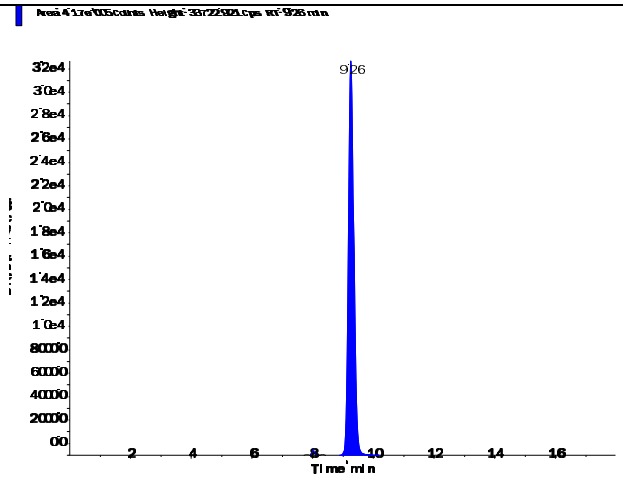

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.27 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.341
Sample Type:	(Quality Control)

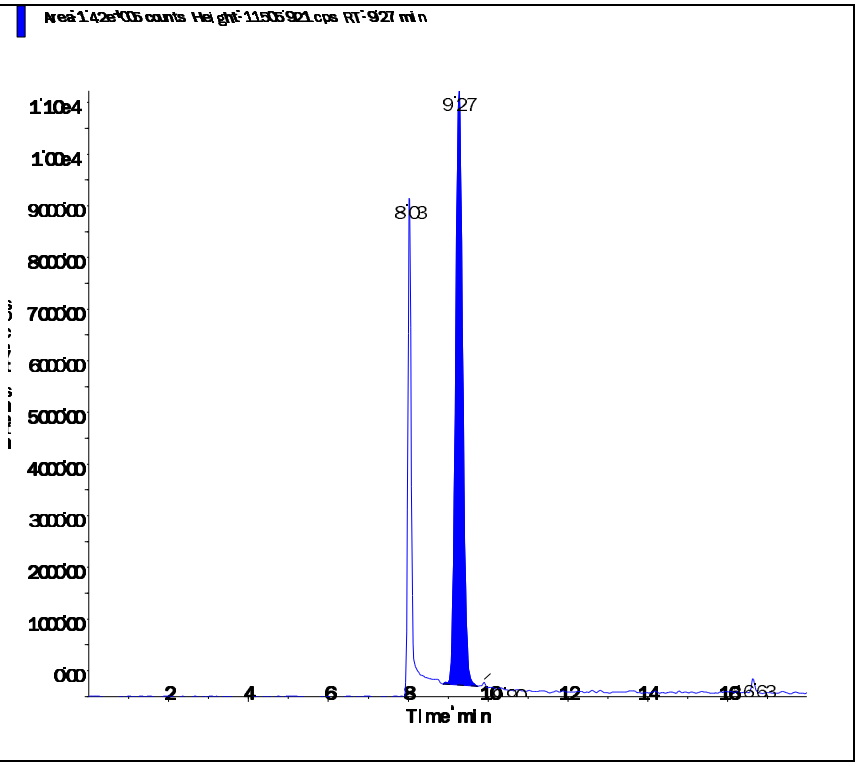

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.25 (9.84) min
Calculated conc:	1.07 ng/ml
Area Ratio:	0.121
Sample Type:	(Quality Control)

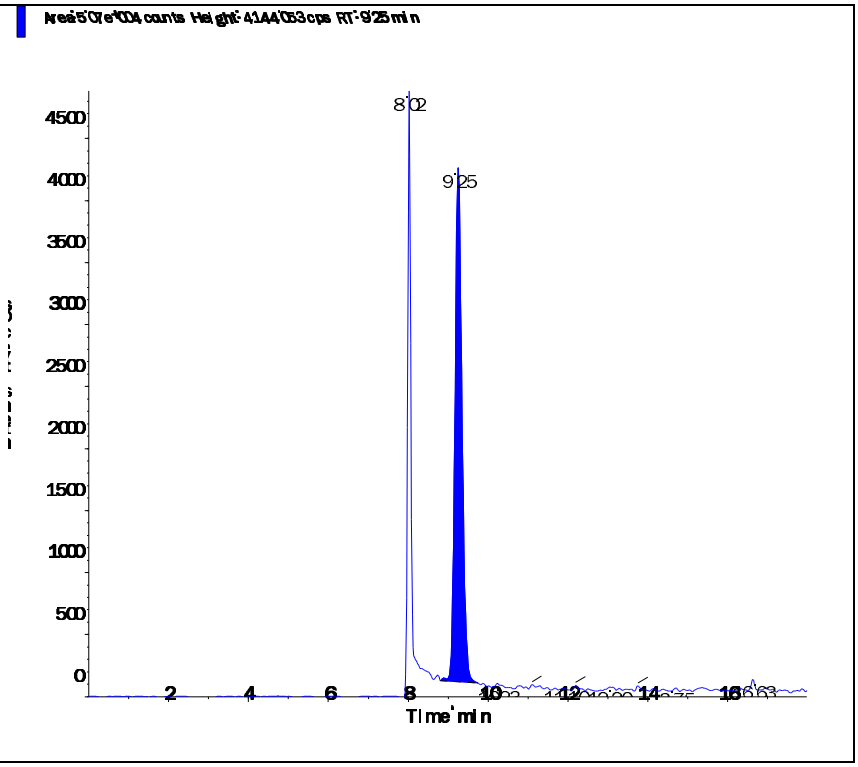

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Data File	LM35459.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 2:58:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-11 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35459.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 2:58:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.720e+05	9.28	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.670e+05	9.29	1.00	1.05
Perchlorate conf	5.600e+04	9.28	1.00	1.04

O18LP (Internal Standard)

RT (Exp. RT): 9.28(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

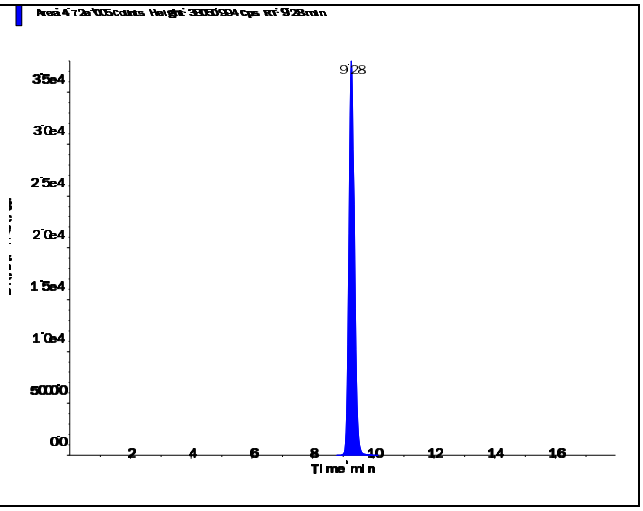

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.29 (9.84) min
Calculated conc:	1.05 ng/ml
Area Ratio:	0.354
Sample Type:	(Quality Control)

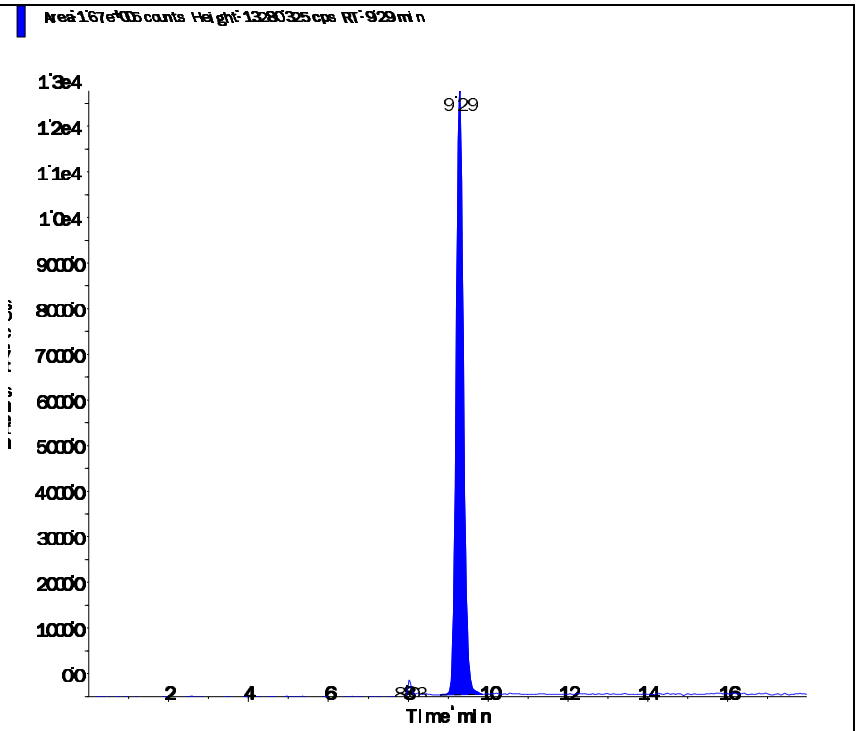

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.28 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.119
Sample Type:	(Quality Control)

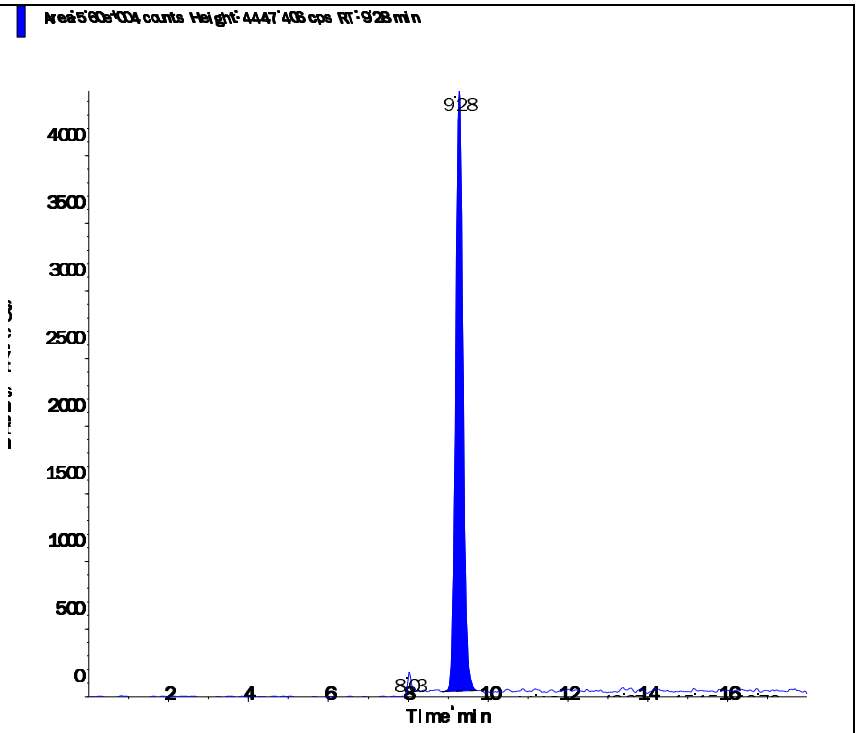

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Data File	LM35417.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 5:25:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-05 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35417.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 5:25:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.430e+05	9.19	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.120e+04	9.20	N/A	0.206
Perchlorate conf	1.120e+04	9.20	N/A	0.206

O18LP (Internal Standard)

RT (Exp. RT): 9.19(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

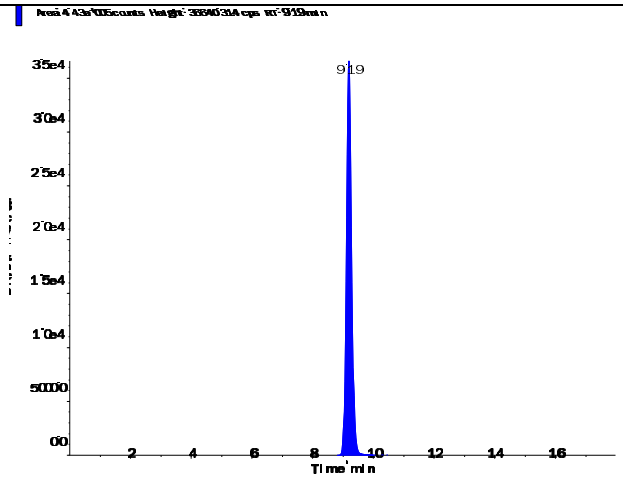

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.20 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

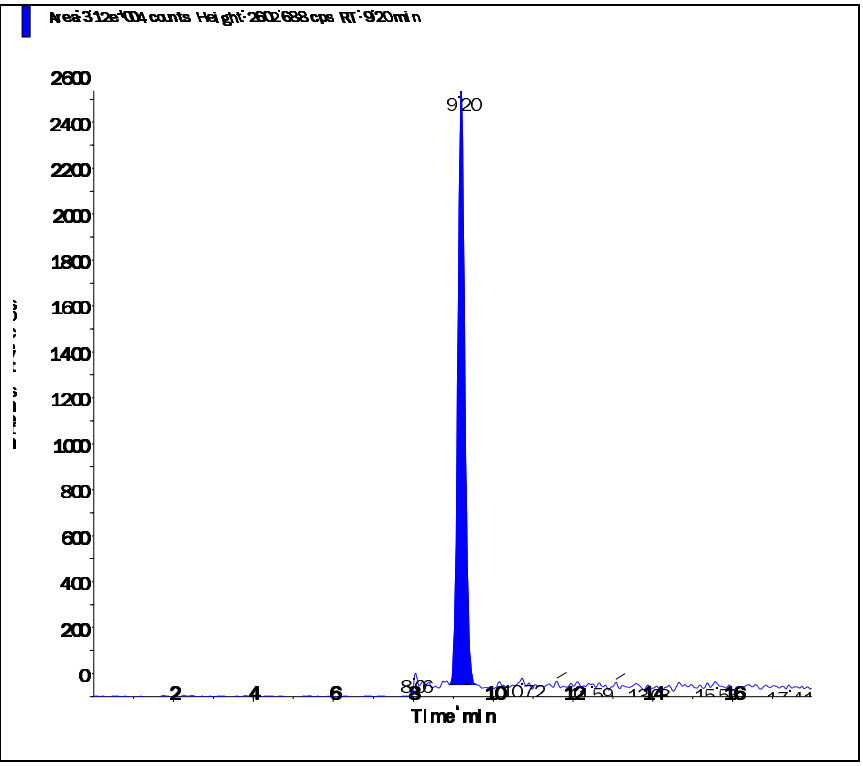

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.20 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

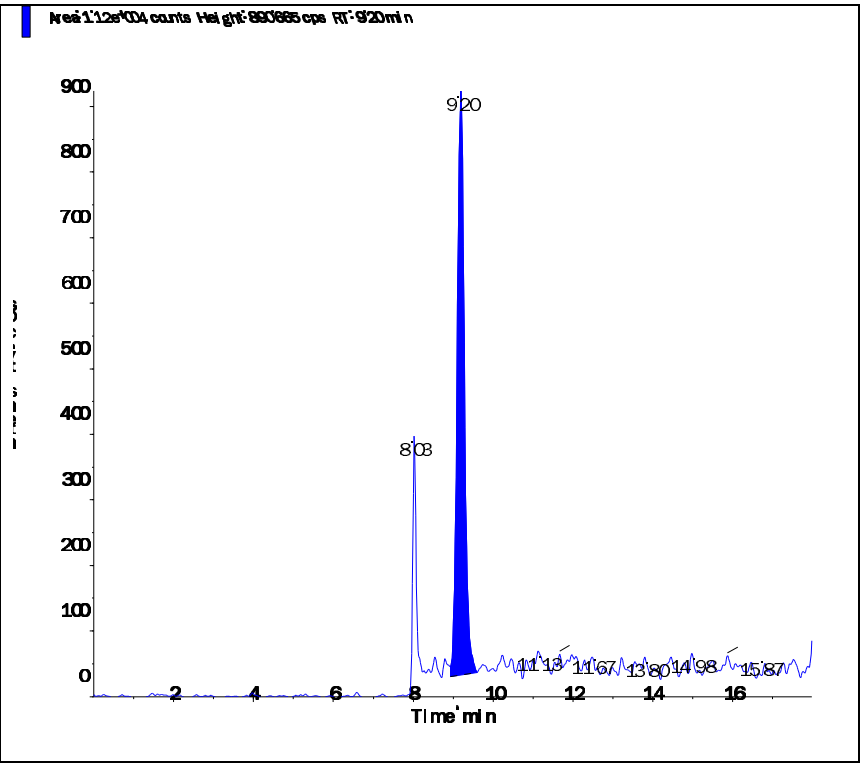

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Data File	LM35429.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 9:13:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-06 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35429.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 9:13:03 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.940e+05	9.23	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.450e+04	9.24	N/A	0.204
Perchlorate conf	1.250e+04	9.22	N/A	0.206

O18LP (Internal Standard)

RT (Exp. RT): 9.23(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

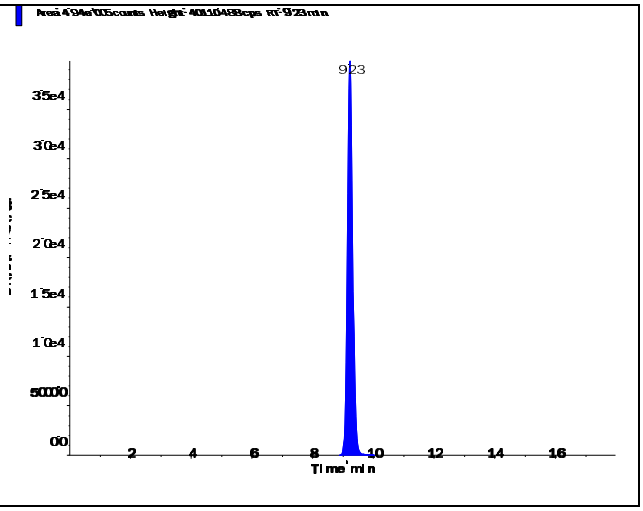

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.24 (9.84) min
Calculated conc:	0.204 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

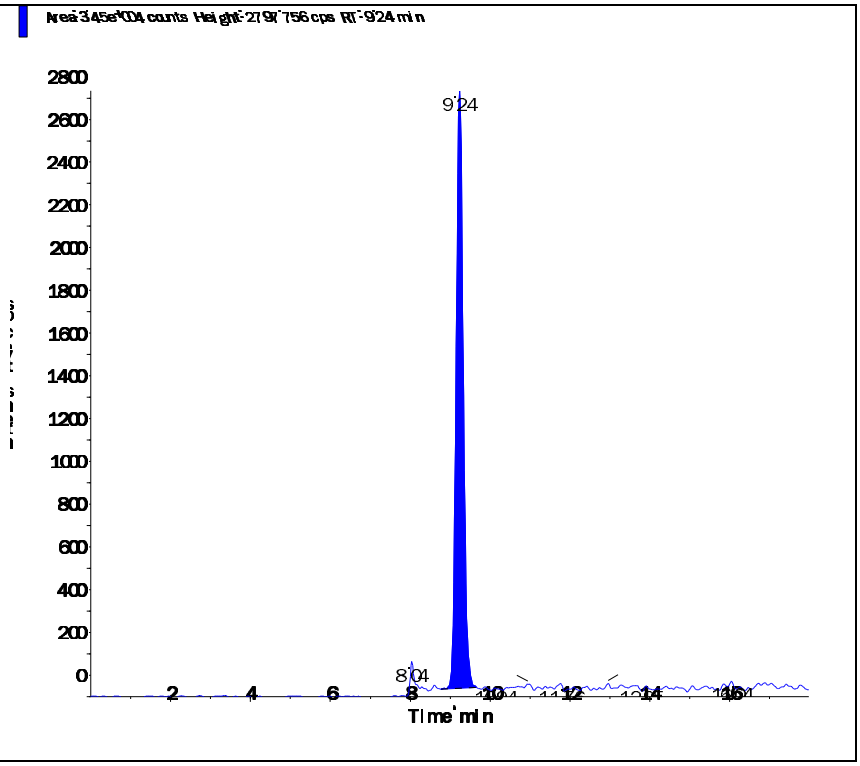

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.22 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

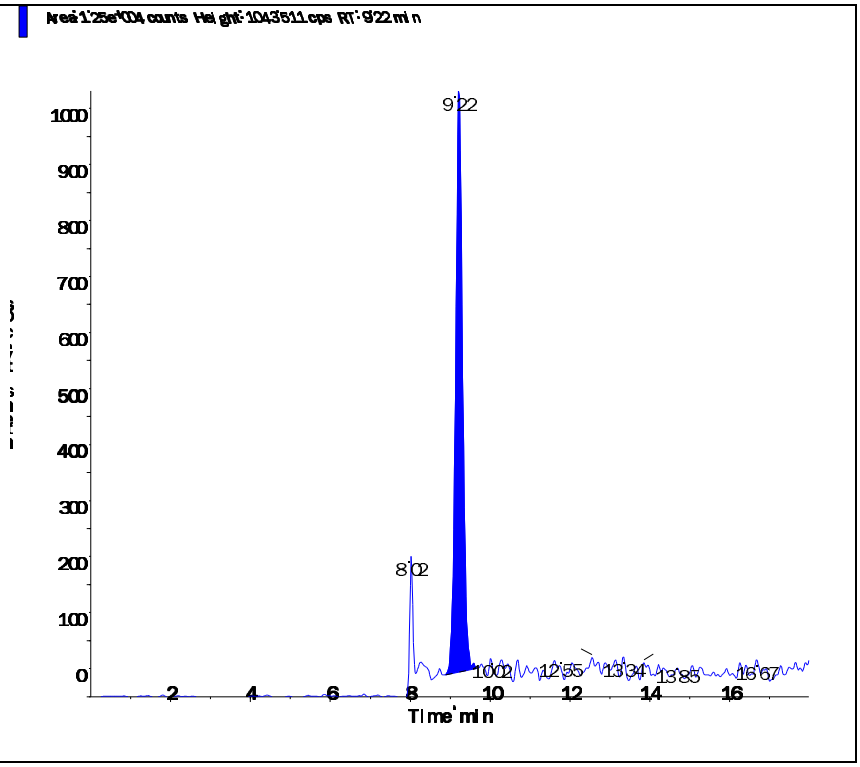

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Data File	LM35440.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 12:41:19 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35440.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 12:41:19 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.090e+05	9.26	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.670e+04	9.27	N/A	0.21
Perchlorate conf	1.290e+04	9.24	N/A	0.207

O18LP (Internal Standard)

RT (Exp. RT): 9.26(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

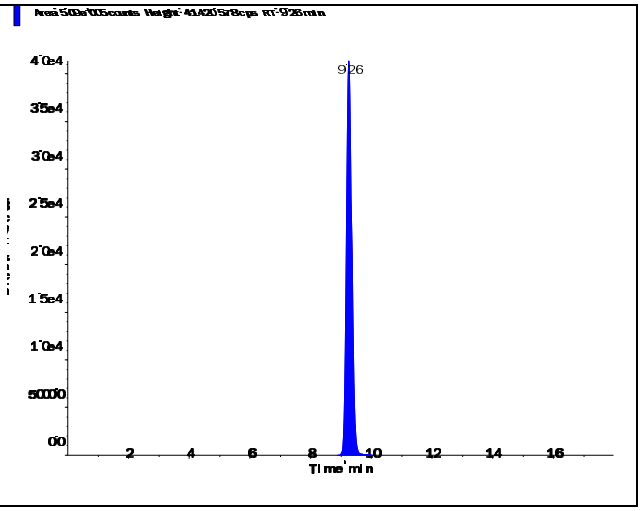

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.27 (9.84) min
Calculated conc:	0.21 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

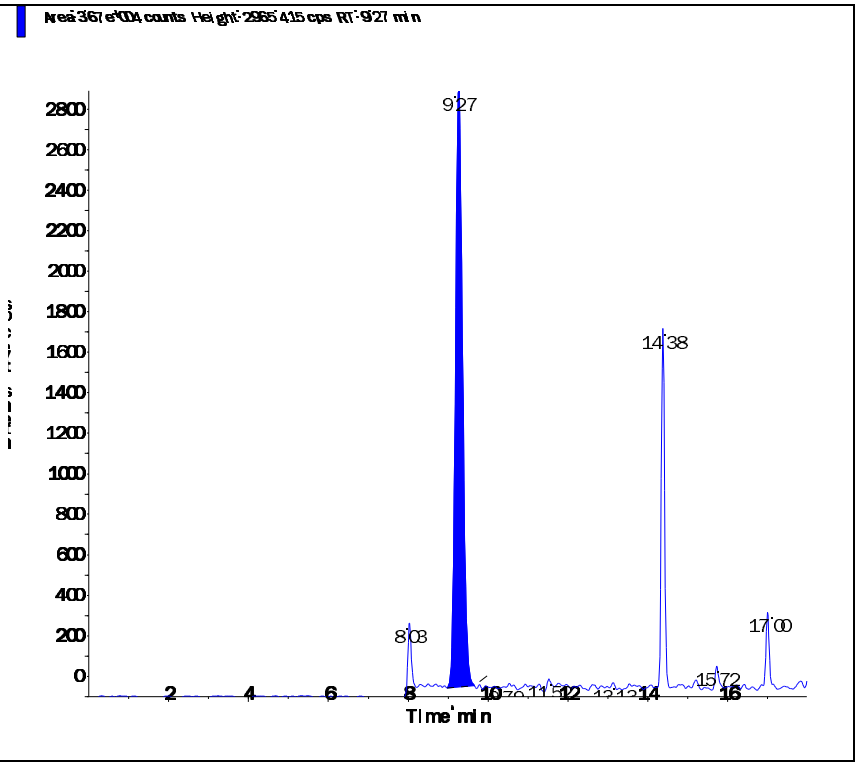

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.24 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

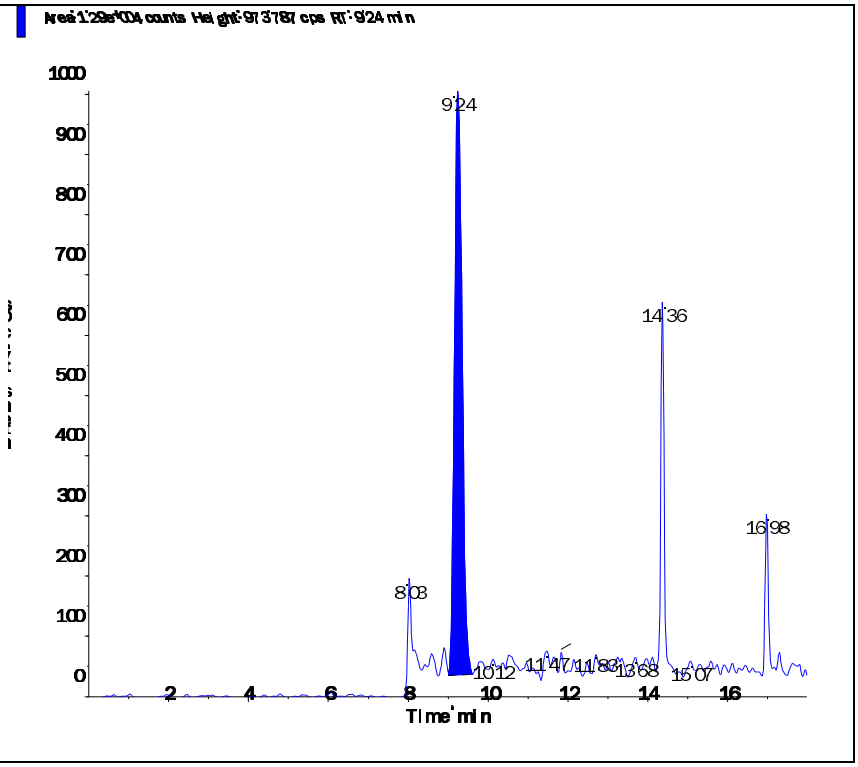

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Data File	LM35447.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 2:53:53 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-08 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35447.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 2:53:53 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.770e+05	9.27	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.480e+04	9.28	N/A	0.214
Perchlorate conf	1.170e+04	9.27	N/A	0.20

O18LP (Internal Standard)

RT (Exp. RT): 9.27(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

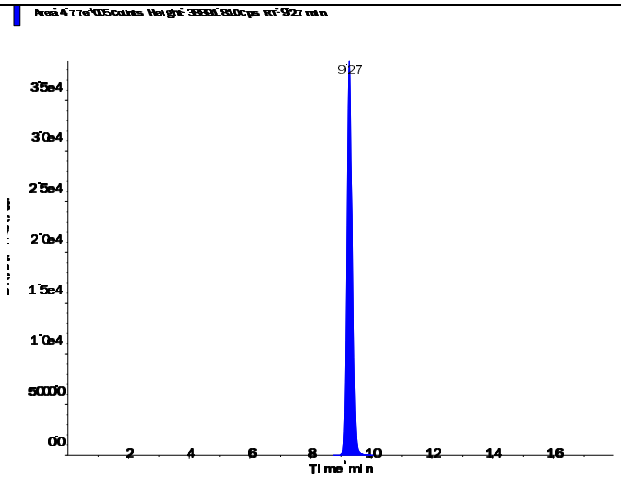

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.28 (9.84) min
Calculated conc:	0.214 ng/ml
Area Ratio:	0.073
Sample Type:	(Unknown)

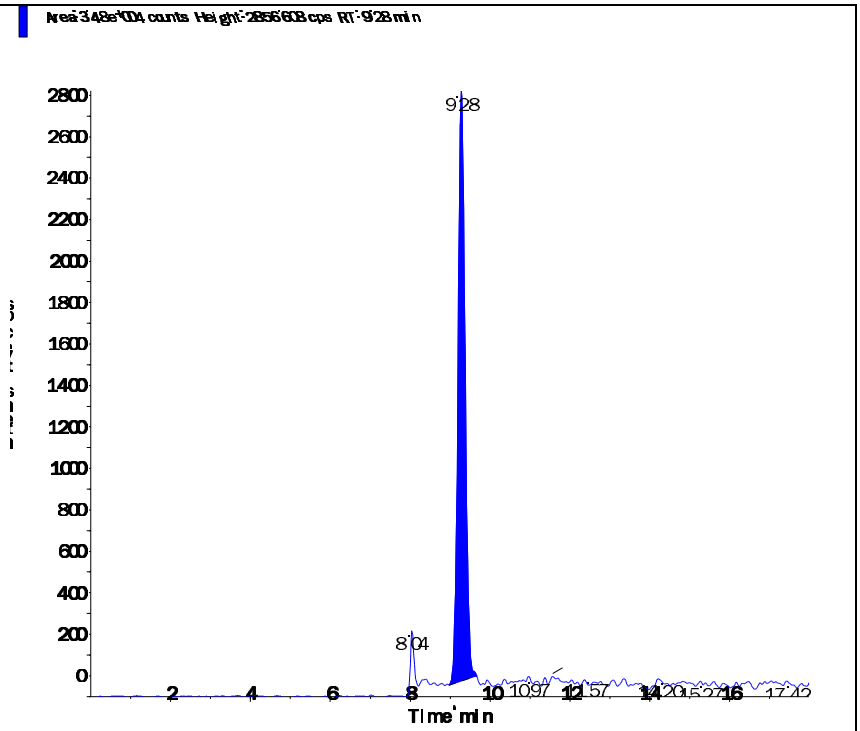

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.27 (9.84) min
Calculated conc:	0.20 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

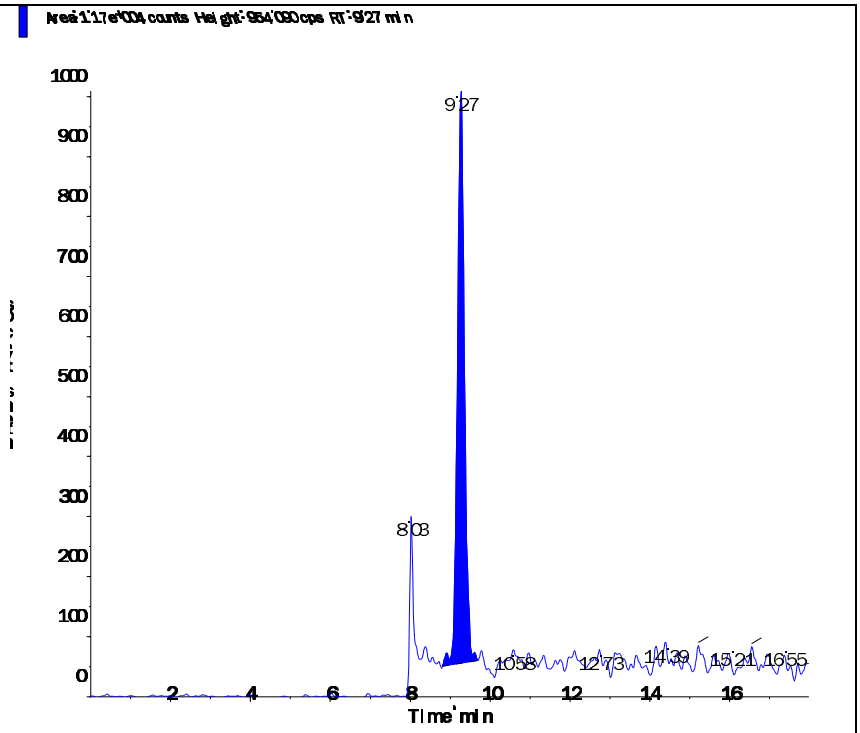

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Data File	LM35450.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 12:08:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-09 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35450.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 12:08:16 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.250e+05	9.31	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.050e+04	9.32	N/A	0.209
Perchlorate conf	1.100e+04	9.31	N/A	0.211

O18LP (Internal Standard)

RT (Exp. RT): 9.31(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

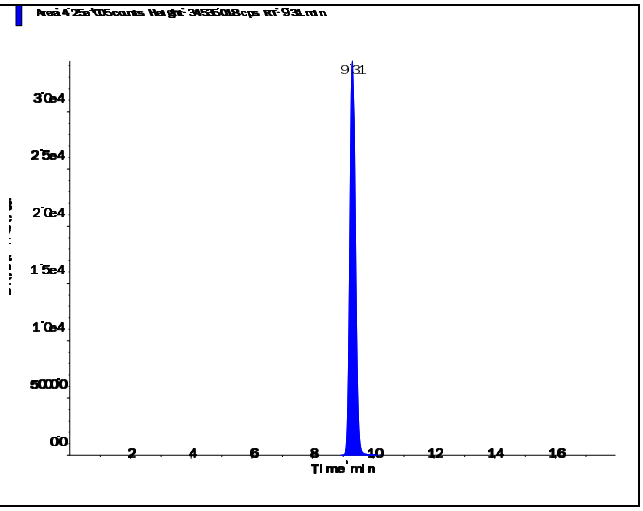

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.32 (9.84) min
Calculated conc:	0.209 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

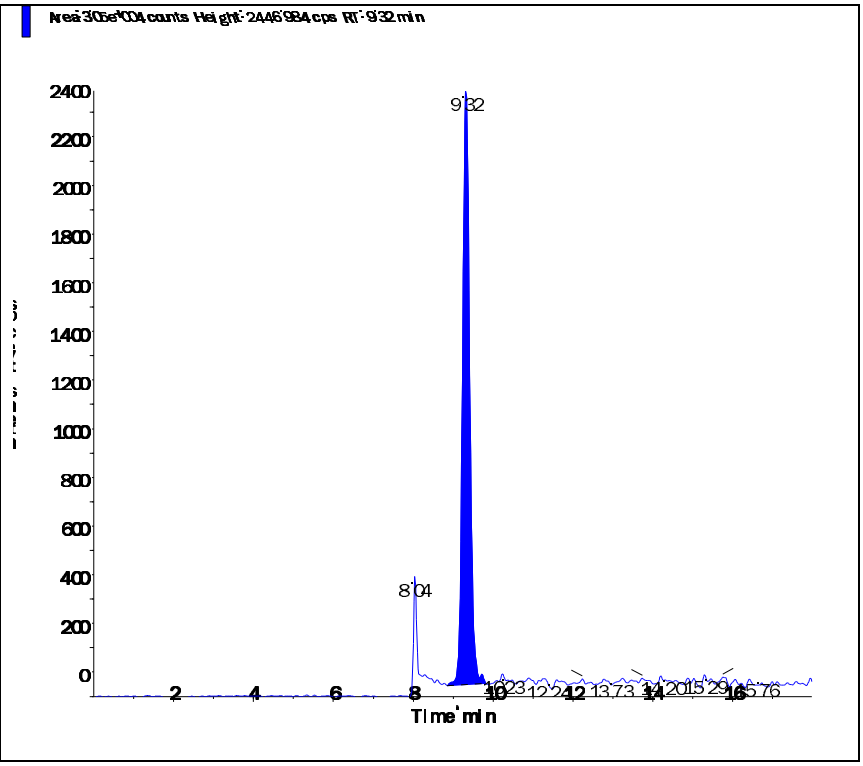

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.31 (9.84) min
Calculated conc:	0.211 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

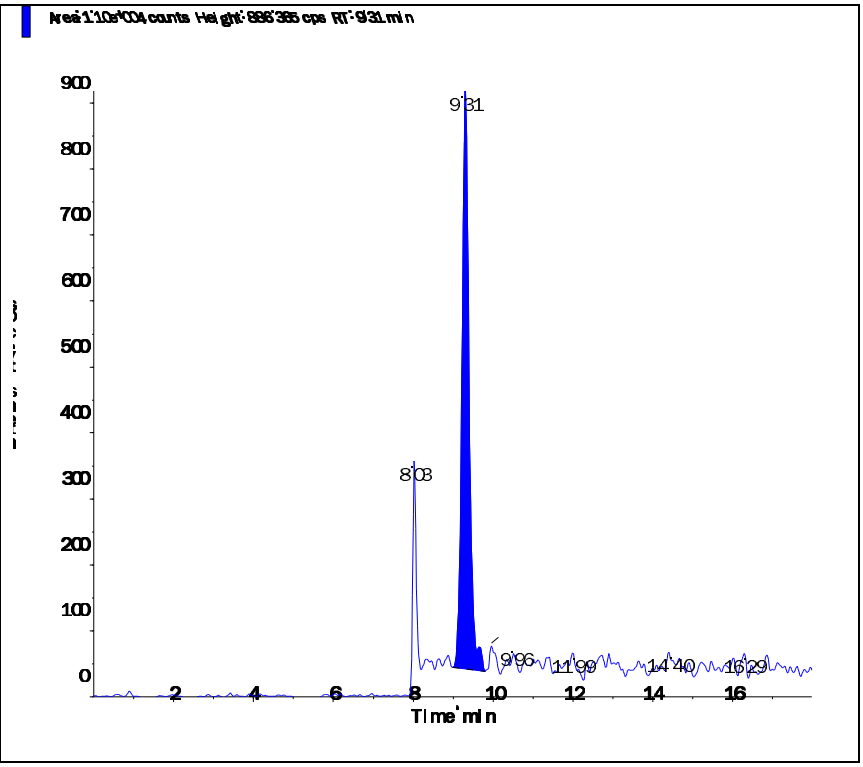

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Data File	LM35460.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 3:17:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-10 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35460.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 3:17:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-10	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.650e+05	9.33	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.200e+04	9.35	N/A	0.201
Perchlorate conf	1.270e+04	9.33	N/A	0.224

O18LP (Internal Standard)

RT (Exp. RT): 9.33(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

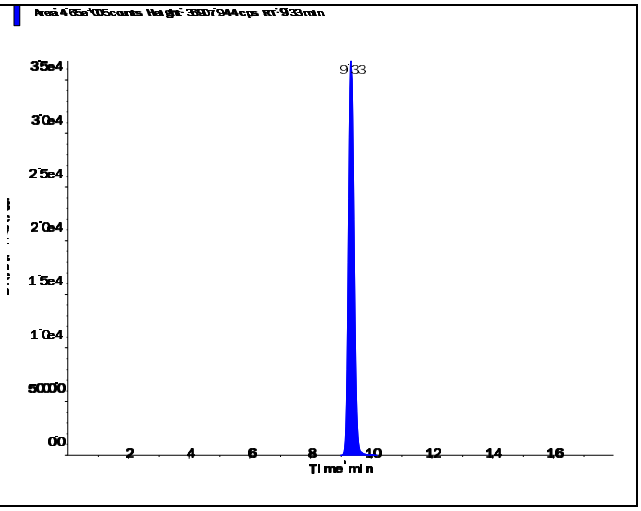

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

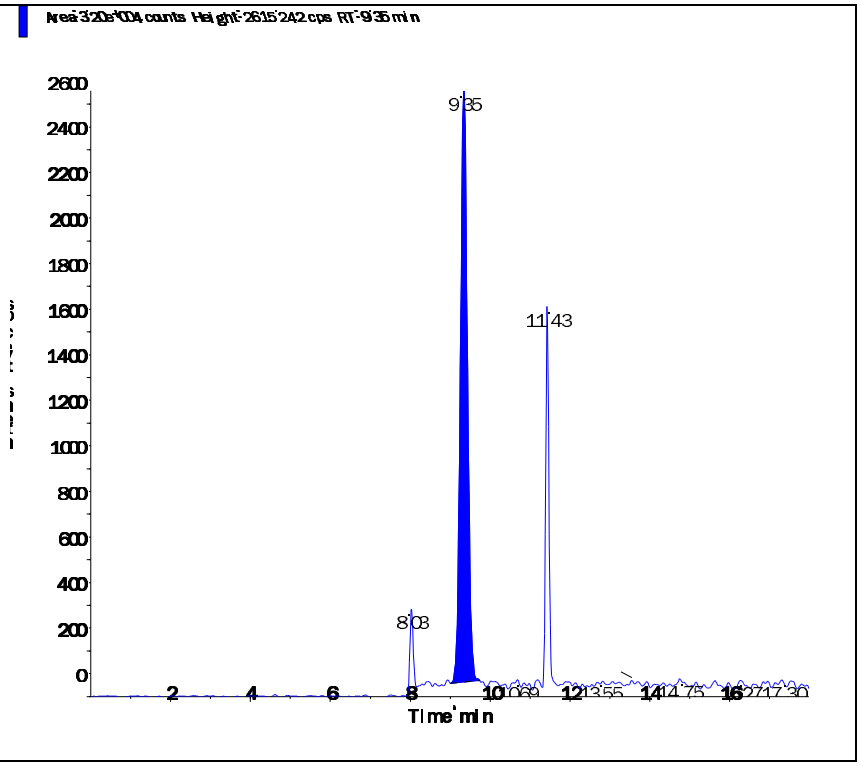

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.33 (9.84) min
Calculated conc:	0.224 ng/ml
Area Ratio:	0.027
Sample Type:	(Unknown)

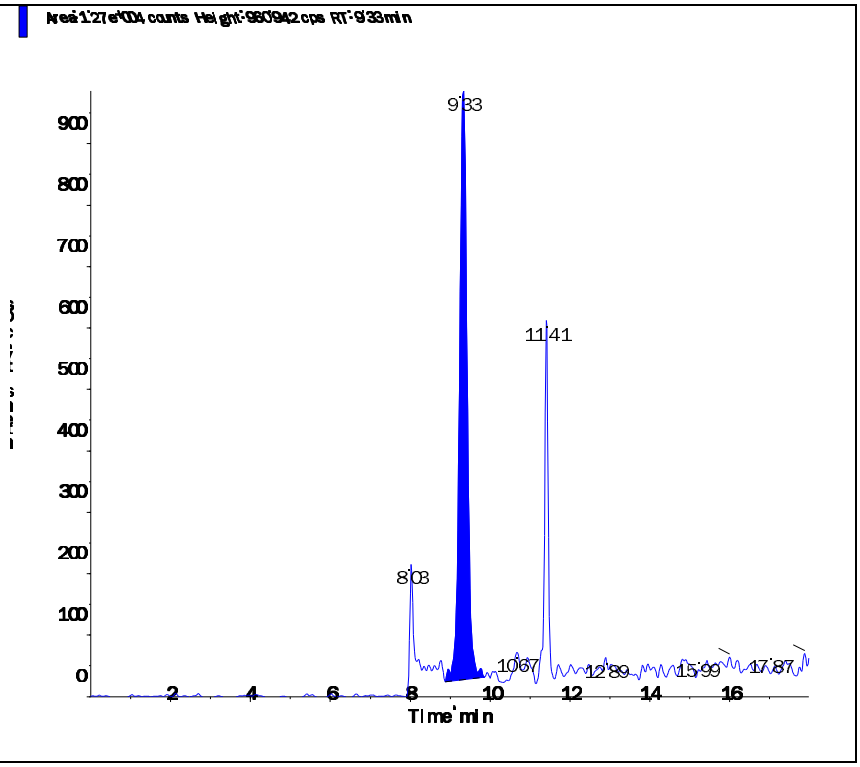

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/23/2016 4:52 PM

Data File	LM35415.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 4:48:02 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-01 CCB	**Injection Vial**	1.00
Data File	LM35415.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 4:48:02 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.750e+05	9.37	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	5.830e+02	9.37	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.37(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

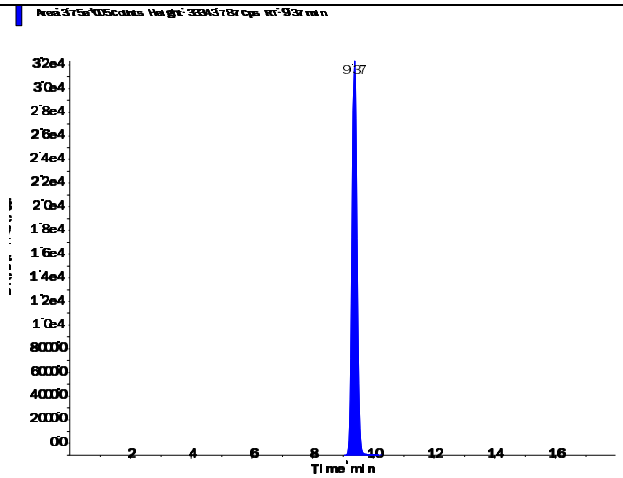

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/23/2016 4:52 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	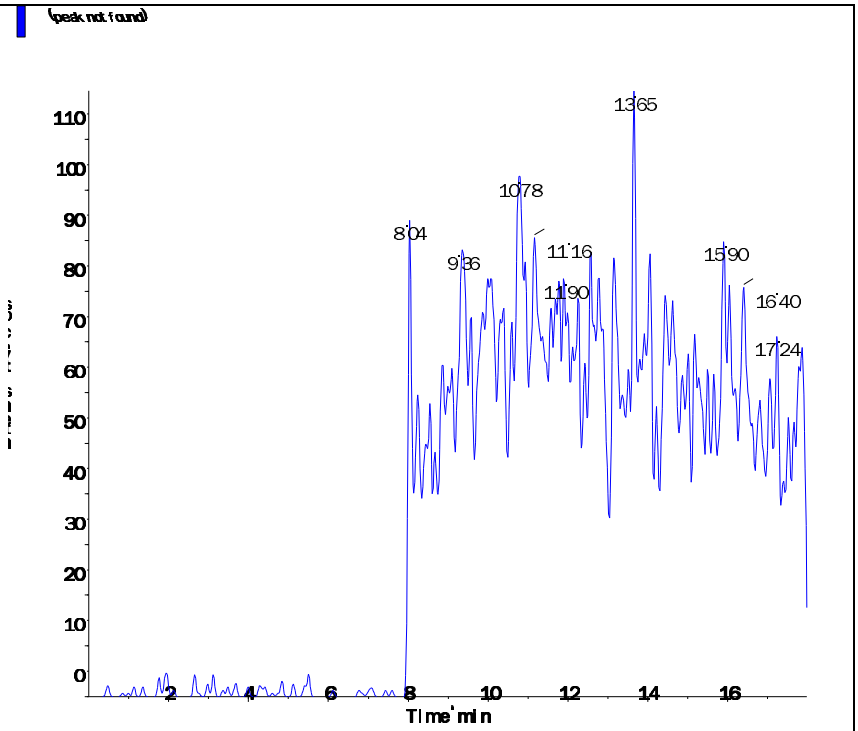
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.37 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	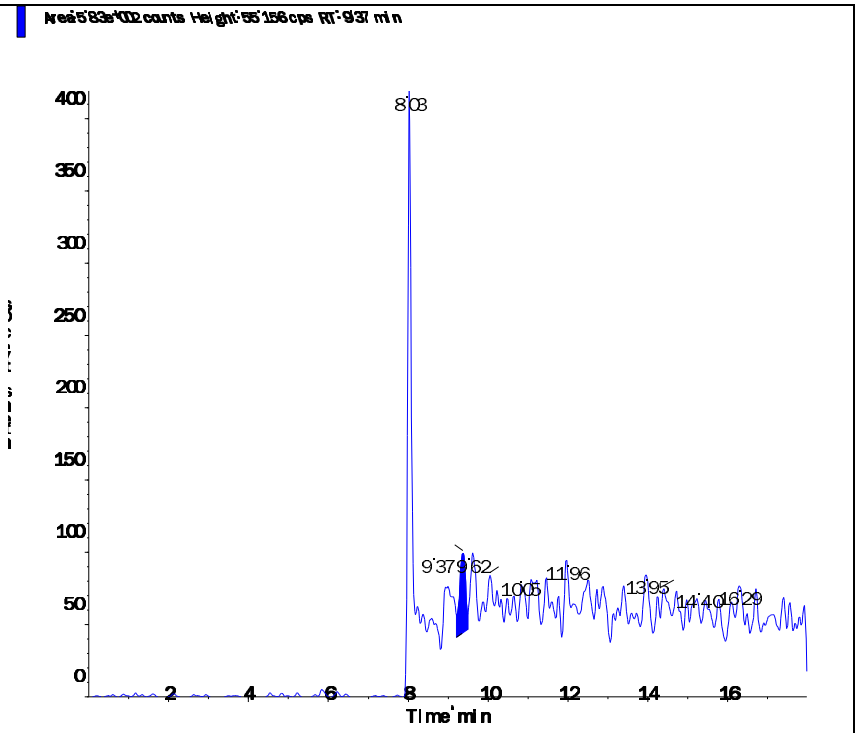

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Created with Analyst Reporter
Printed: 6/23/2016 4:58 PM

Data File	LM35430.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 9:31:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-04 CCB	**Injection Vial**	1.00
Data File	LM35430.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 9:31:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.890e+05	9.42	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	2.230e+02	9.45	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.42(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

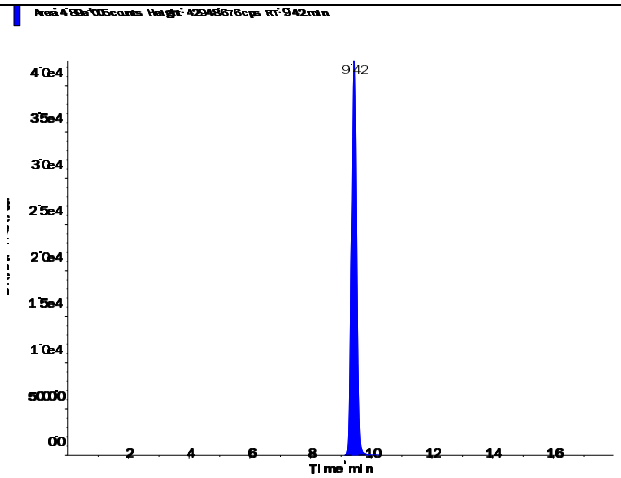

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Printed: 6/23/2016 4:58 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	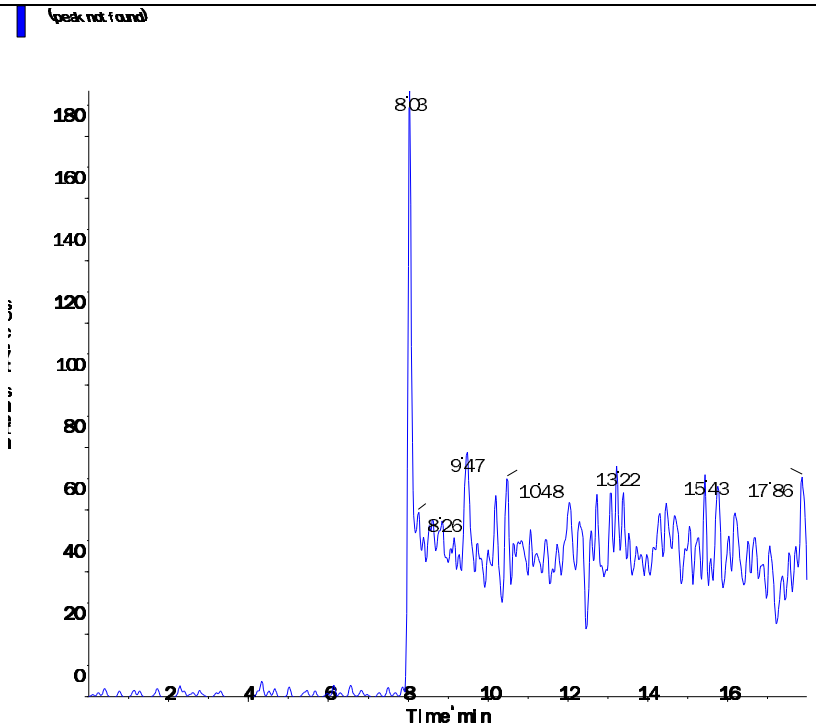
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.45 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	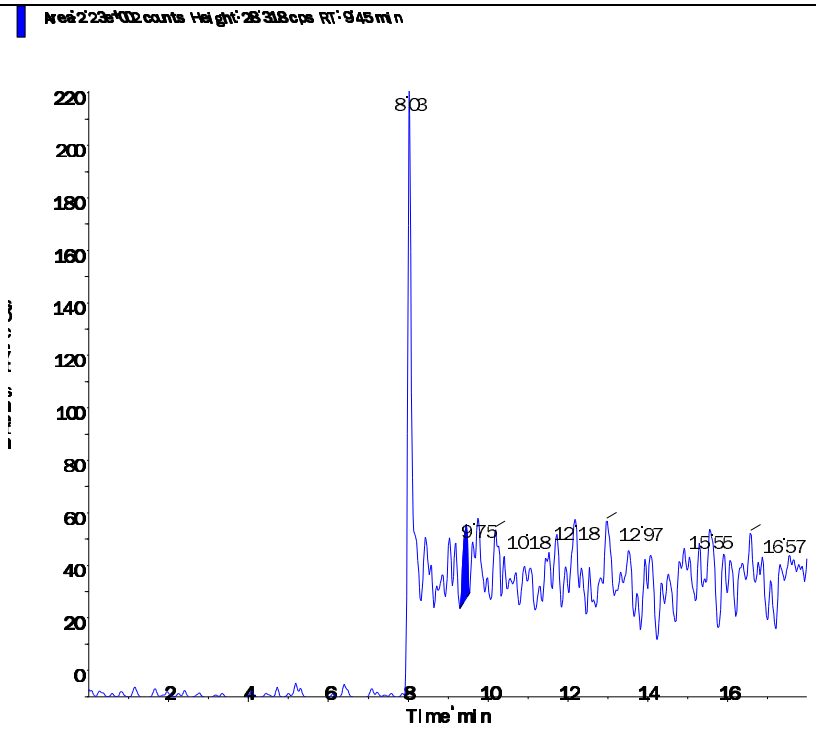

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Created with Analyst Reporter
Printed: 6/23/2016 5:02 PM

Data File	LM35441.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 1:00:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-06 CCB	**Injection Vial**	1.00
Data File	LM35441.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 1:00:15 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.040e+05	9.46	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.46(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

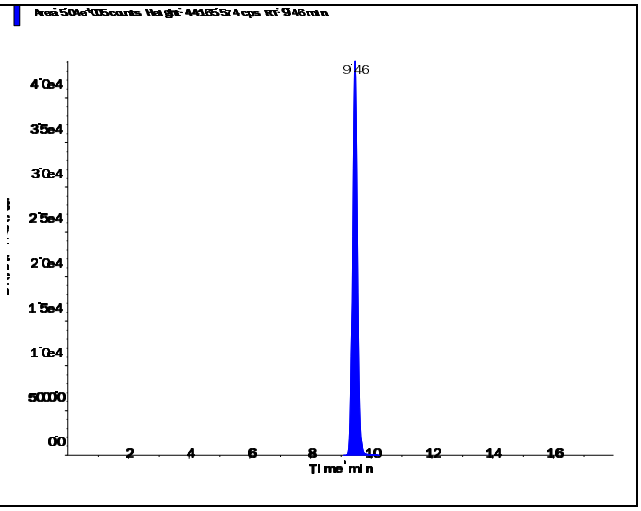

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Created with Analyst Reporter
Printed: 6/23/2016 5:02 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

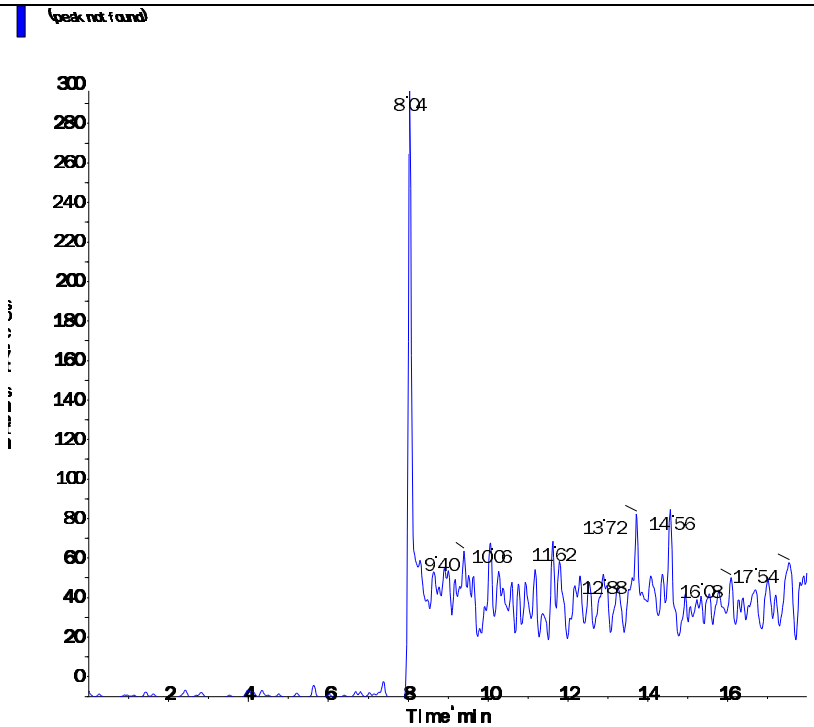

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

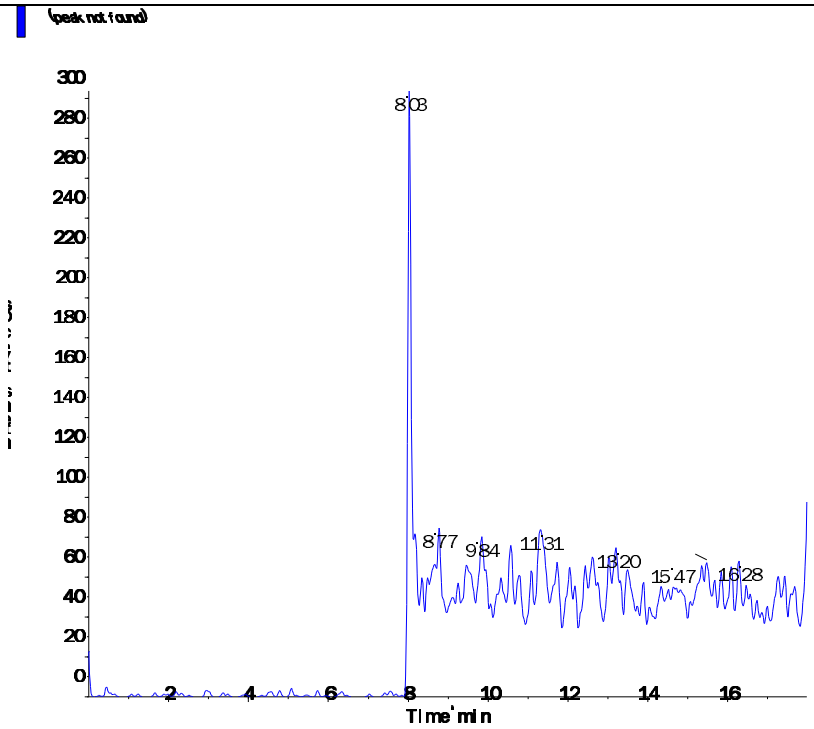

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Created with Analyst Reporter
Printed: 6/23/2016 5:04 PM

Data File	LM35448.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 3:12:48 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-08 CCB	**Injection Vial**	1.00
Data File	LM35448.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 3:12:48 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.850e+05	9.47	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.47(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

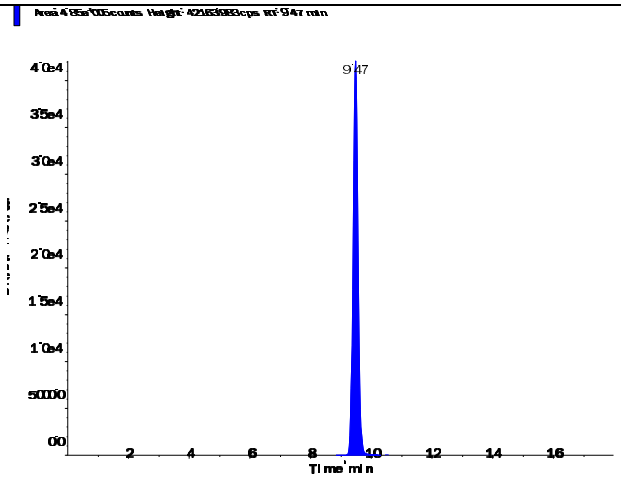

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Created with Analyst Reporter
Printed: 6/23/2016 5:04 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

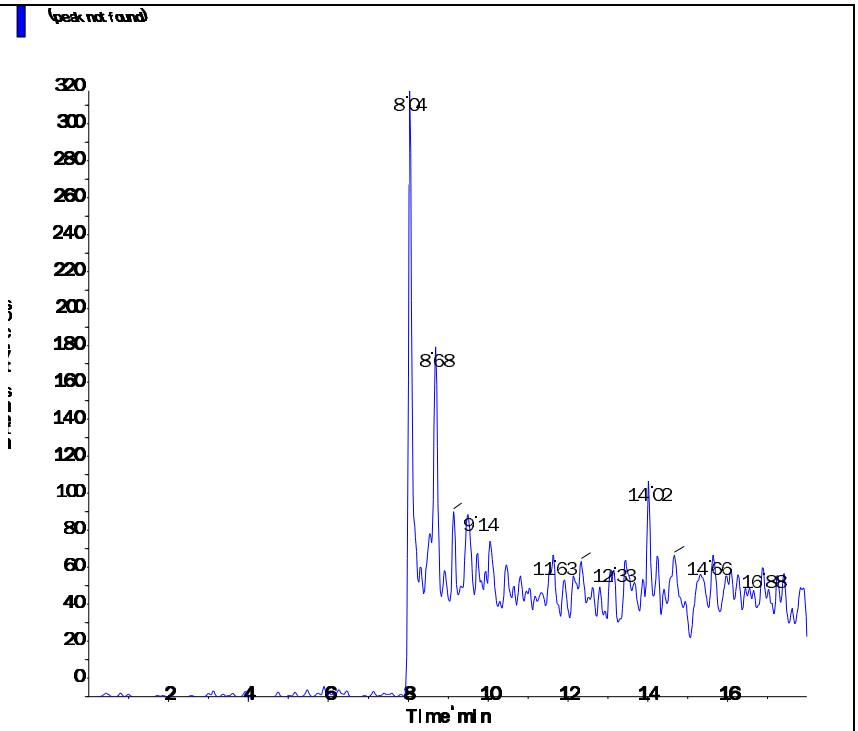

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

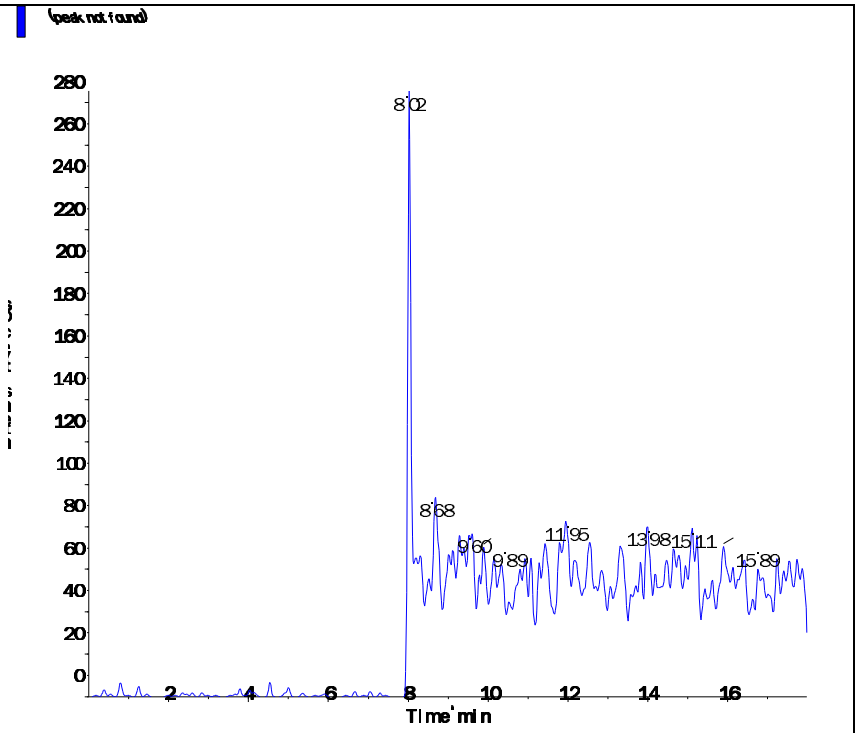

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Created with Analyst Reporter
Printed: 6/23/2016 5:05 PM

Data File	LM35451.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 12:27:11 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-10 CCB	**Injection Vial**	1.00
Data File	LM35451.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 12:27:11 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.370e+05	9.51	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	5.600e+02	9.50	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.51(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

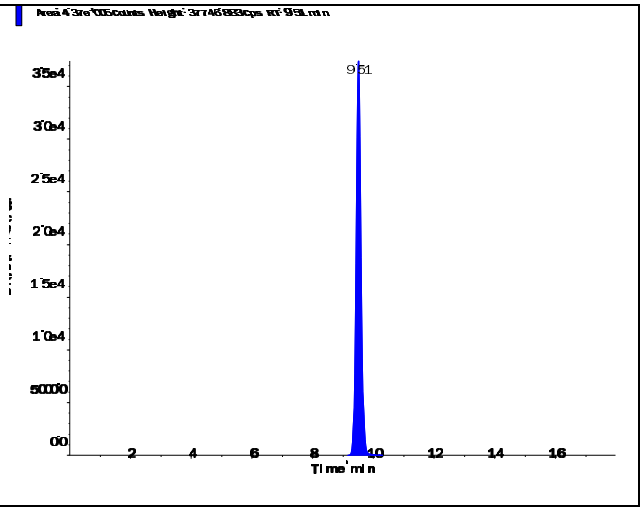

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

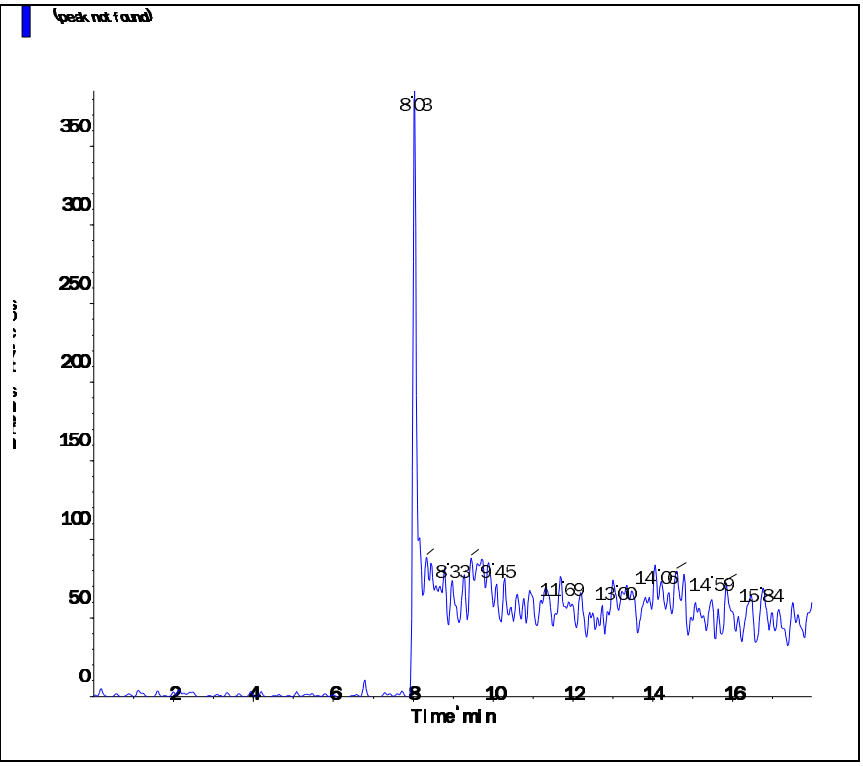

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.50 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

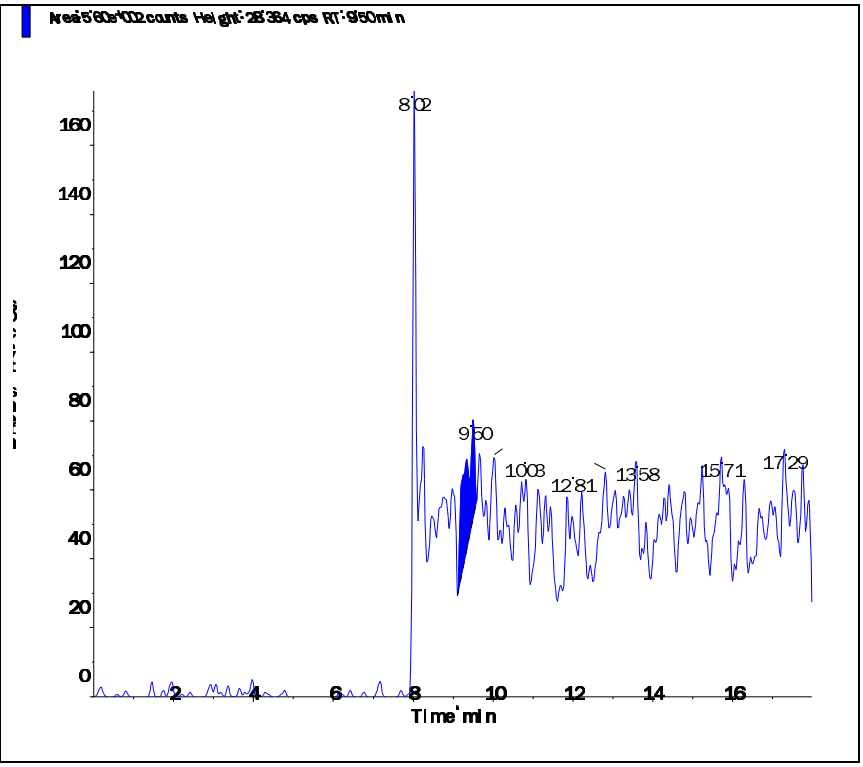

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Created with Analyst Reporter
Printed: 6/23/2016 5:08 PM

Data File	LM35461.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/23/2016 3:36:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573797-12 CCB	**Injection Vial**	1.00
Data File	LM35461.wiff	**Injection Volume**	10.00
Acquisition Date	6/23/2016 3:36:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573797-12	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.660e+05	9.52	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.52(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

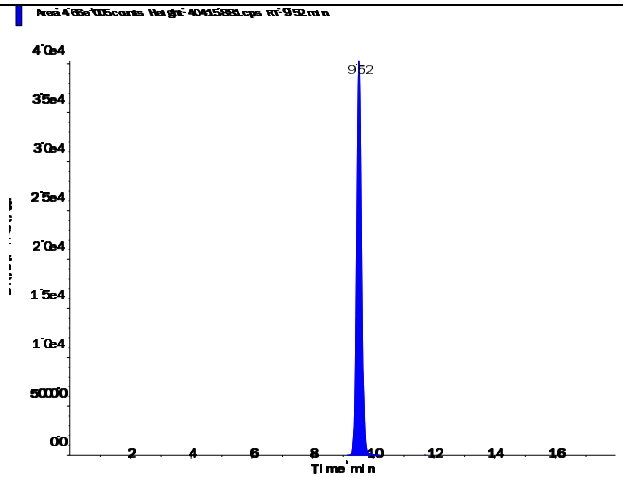

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Printed: 6/23/2016 5:08 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

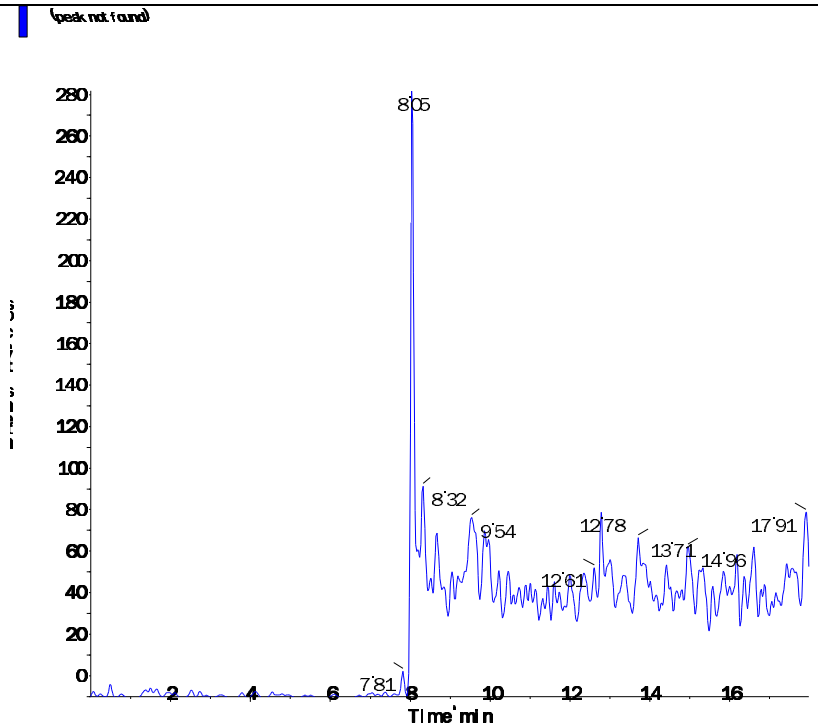

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

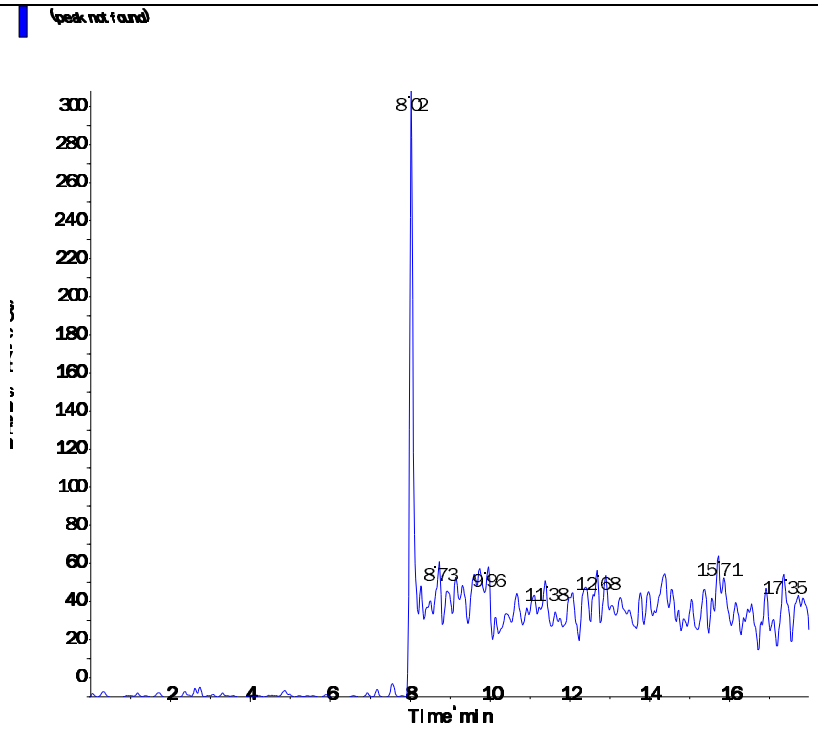

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Created with Analyst Reporter
Printed: 6/23/2016 4:53 PM

Data File	LM35418.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 5:44:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM35418.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 5:44:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.330e+05	8.77	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.850e+04	8.77	N/A	0.192
Perchlorate conf	1.000e+04	8.76	N/A	0.187

O18LP (Internal Standard)

RT (Exp. RT): 8.77(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

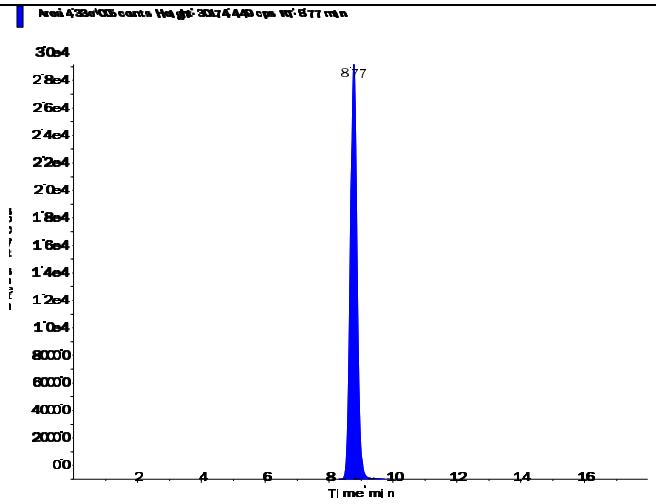

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Printed: 6/23/2016 4:53 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	8.77 (9.84) min
Calculated conc:	0.192 ng/ml
Area Ratio:	0.066
Sample Type:	(Unknown)

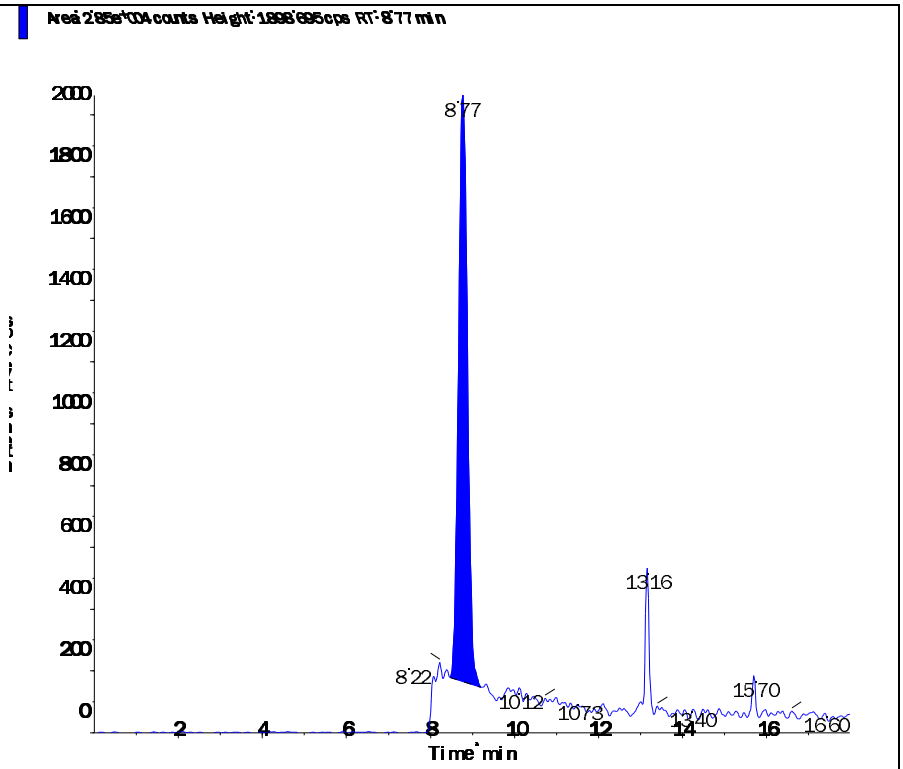

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	8.76 (9.84) min
Calculated conc:	0.187 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

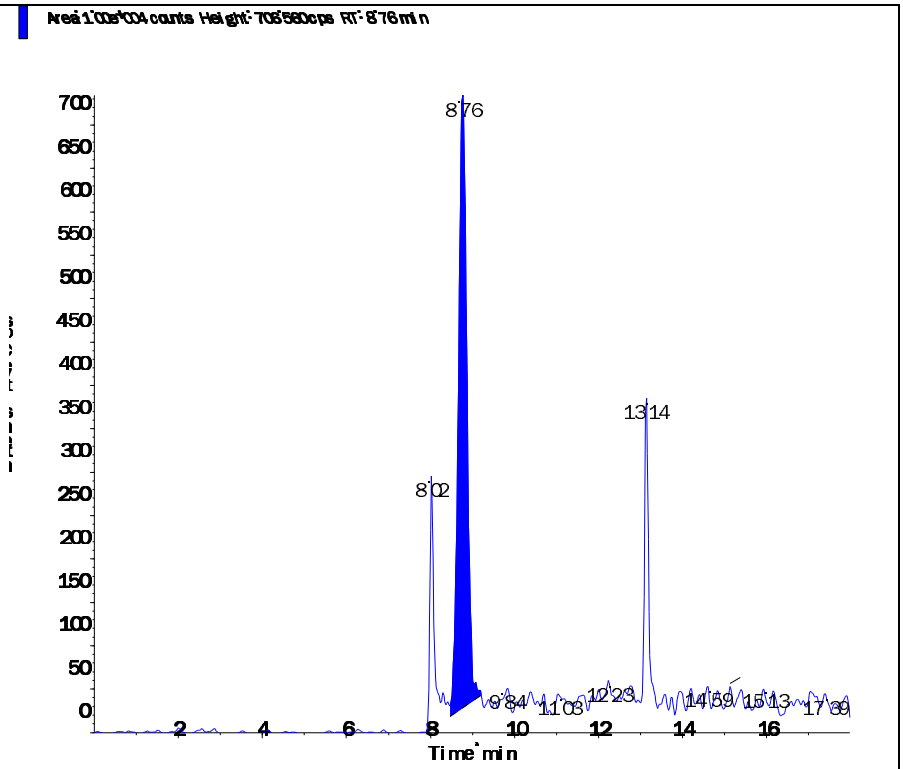

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Printing Time: 6:50:16 PM
Printing Date: Wednesday, June 22, 2016

Sample Name: "WG573791-01 MCT (0.2ug/L)" Sample ID: "WG573791-01" File: "LM35418.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index: 1
Sample Type: Unknown
Concentration: N/A
Calculated Conc: 0.230 ug/L
Acq. Date: 6/22/2016
Acq. Time: 5:44:45 PM

Modified: No
Proc. Algorithm: Analyst Classic
Smoothing Factor: 2
Noise Threshold: 18.48 cps
Area Threshold: 92.40 cps
Num. Smooths: 5
Sep. Width: 0.20
Sep. Height: 0.01
Exp. Peak Ratio: 5.00
Exp. Adj. Ratio: 4.00
Exp. Val. Ratio: 3.00
RT Window: 30.000 sec
Expected RT: 9.84 min
Use Relative RT: Yes

Int. Type: Valley
Retention Time: 8.77 min
Area: 3.40e+004 counts
Height: 1990.014 cps
Start Time: 8.303 min
End Time: 9.417 min

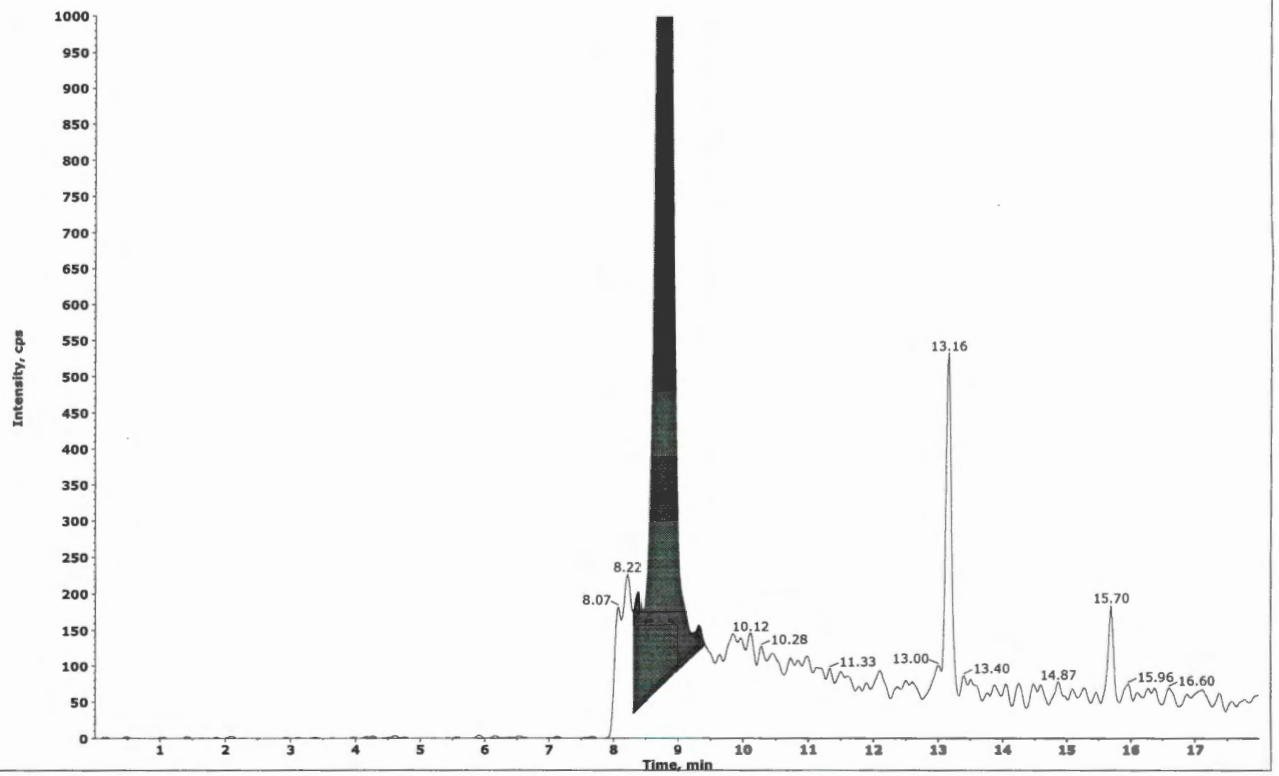

Collected by: N/A
Electronic Signature: no
Operator: lcmsl

Printing Time: 6:52:29 PM
Printing Date: Wednesday, June 22, 2016

Sample Name: "WG573791-01 MCT (0.2ug/L)" Sample ID: "WG573791-01" File: "LM35418.wiff"
Peak Name: "Perchlorate" Mass(es): "98.6/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.192 ug/L
Acq. Date:	6/22/2016
Acq. Time:	5:44:45 PM
Modified:	Yes
Proc. Algorithm:	Analyst Classic
Smoothing Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Sep. Width:	0.20
Sep. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Manual
Retention Time:	8.77 min
Area:	2.85e+004 counts
Height:	1898.695 cps
Start Time:	8.465 min
End Time:	9.194 min

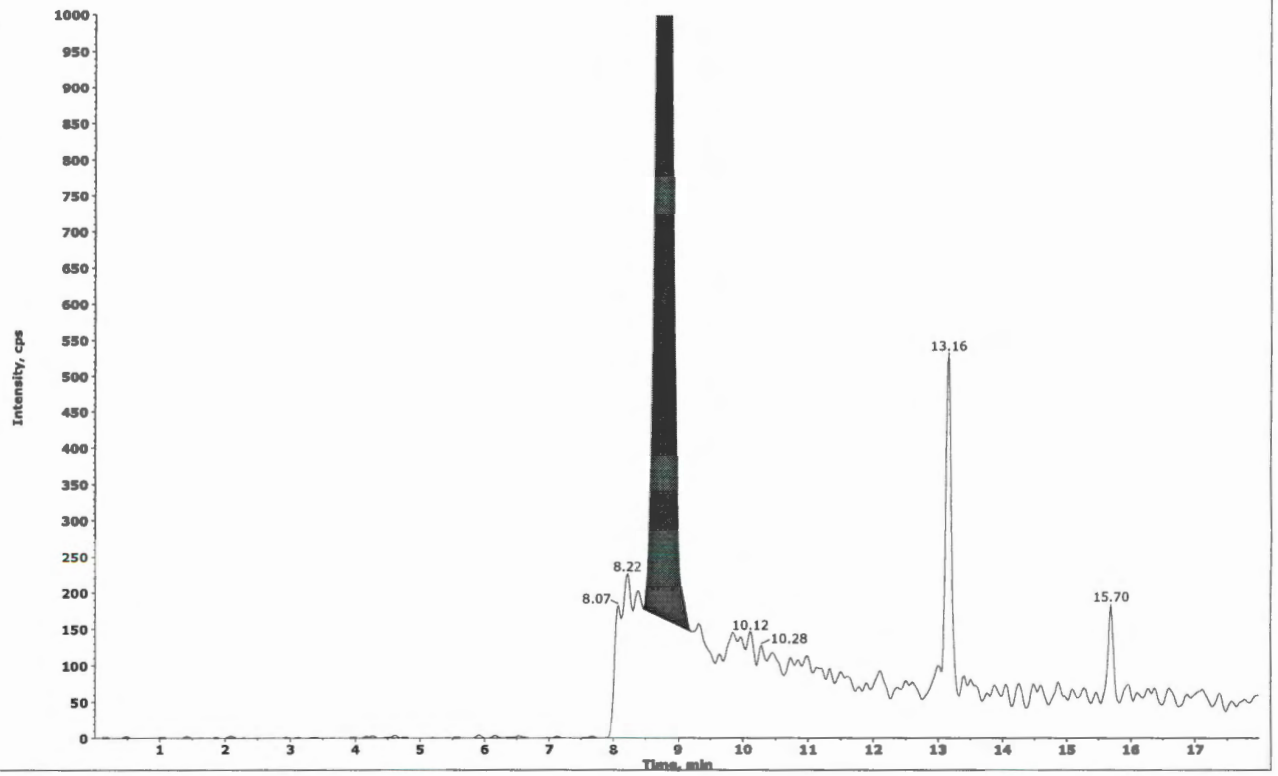

#4
JWR 06/22/16

✓ WD
6-24-16

Collected by: N/A
Electronic Signature: no
Operator: lcms1

2.2.2.5 Raw QC Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/23/2016 4:54 PM

Data File	LM35419.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 6:03:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-02 BLANK	**Injection Vial**	5.00
Data File	LM35419.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 6:03:40 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.360e+05	9.30	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	5.050e+02	9.25	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.30(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

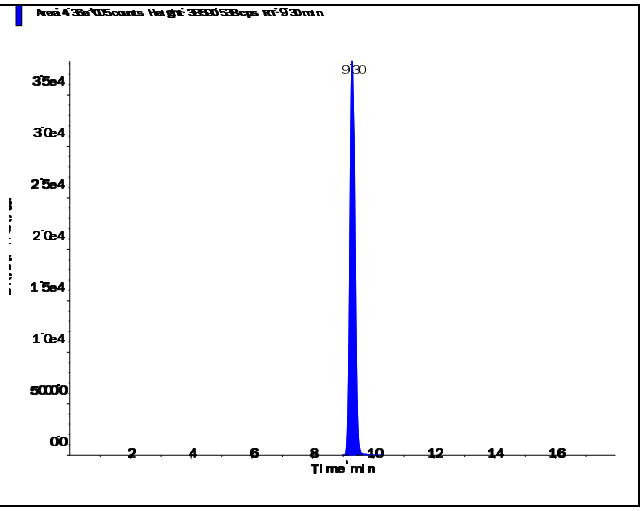

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/23/2016 4:54 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	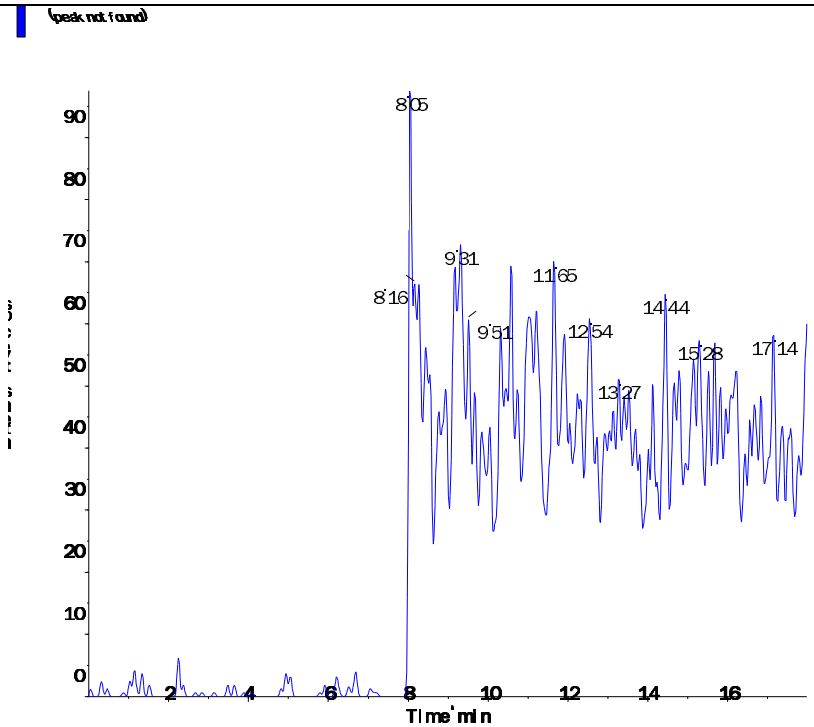
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.25 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	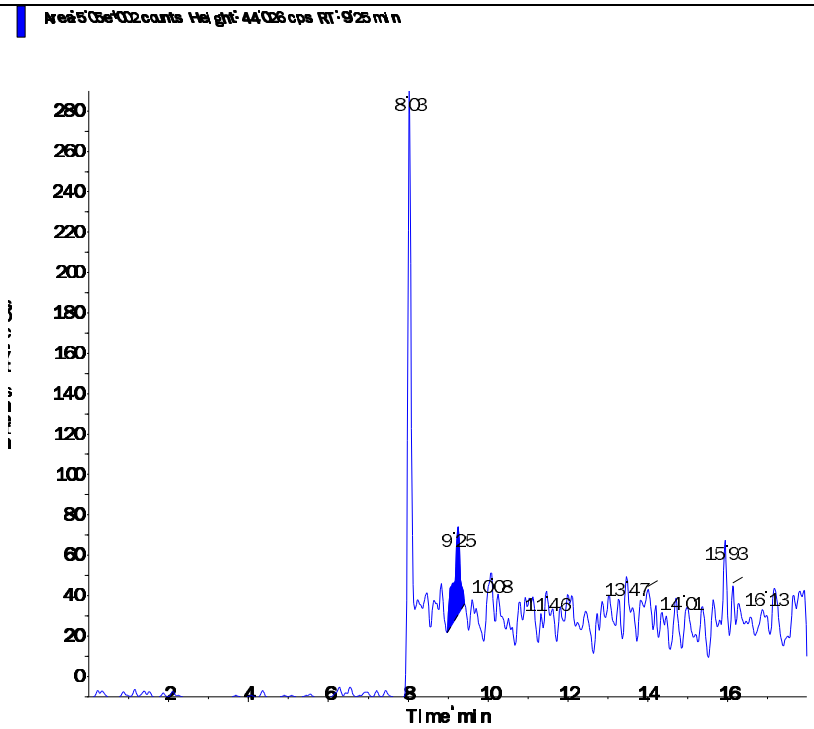

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/23/2016 4:54 PM

Data File	LM35420.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 6:22:36 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM35420.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 6:22:36 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.400e+05	9.33	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.030e+04	9.35	N/A	0.201
Perchlorate conf	1.150e+04	9.33	N/A	0.213

O18LP (Internal Standard)

RT (Exp. RT): 9.33(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

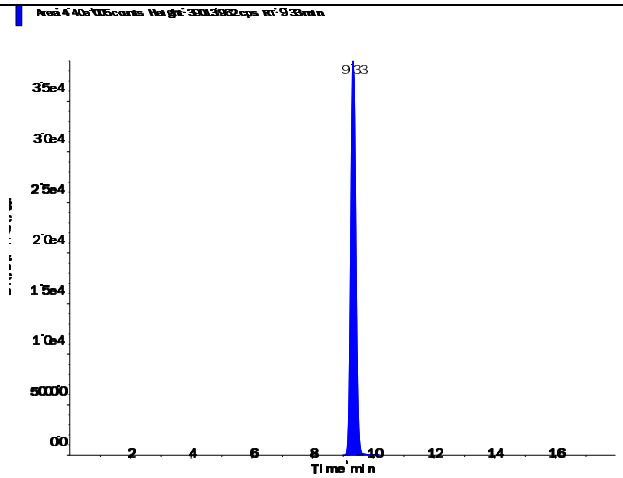

s.dataFile Page 1 of 2

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Printed: 6/23/2016 4:54 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

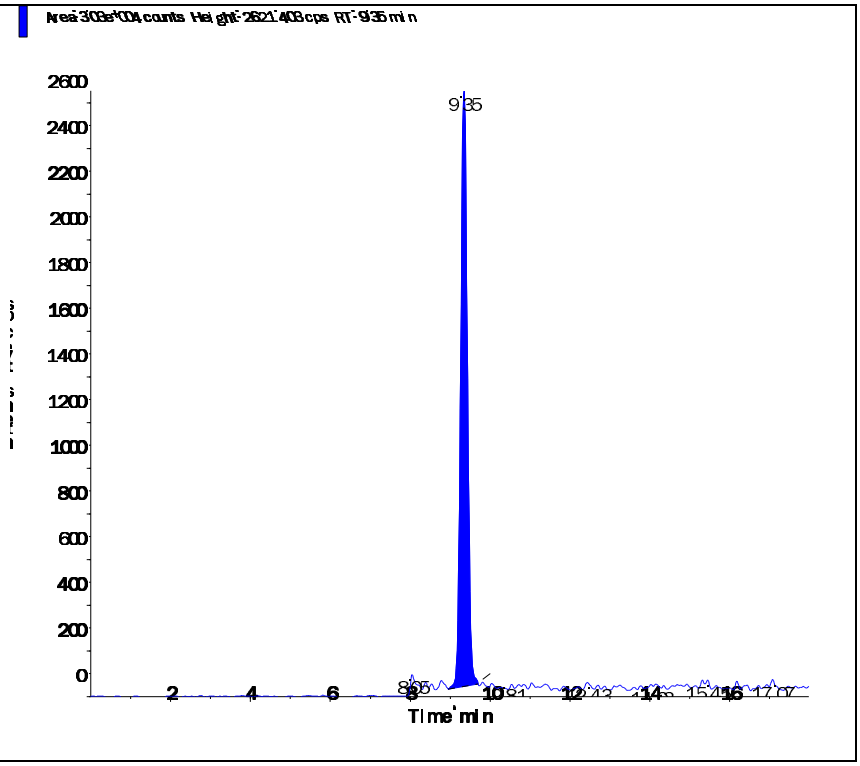

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.33 (9.84) min
Calculated conc:	0.213 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

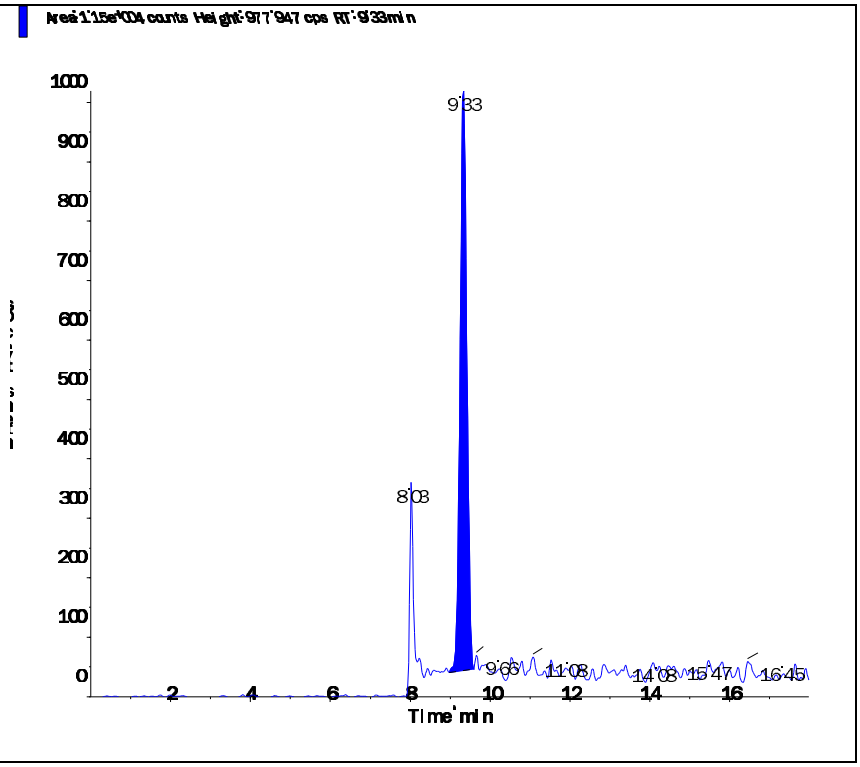

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/23/2016 4:55 PM

Data File	LM35421.wiff	**Result Table**	062216_JWR.rdb
Acquisition Date	6/22/2016 6:41:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG573791-04 LCS2 (0.2ug/L)	**Injection Vial**	7.00
Data File	LM35421.wiff	**Injection Volume**	10.00
Acquisition Date	6/22/2016 6:41:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062216_JWR.rdb
Sample ID	WG573791-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.350e+05	9.36	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.200e+04	9.38	N/A	0.215
Perchlorate conf	1.150e+04	9.36	N/A	0.216

O18LP (Internal Standard)

RT (Exp. RT): 9.36(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

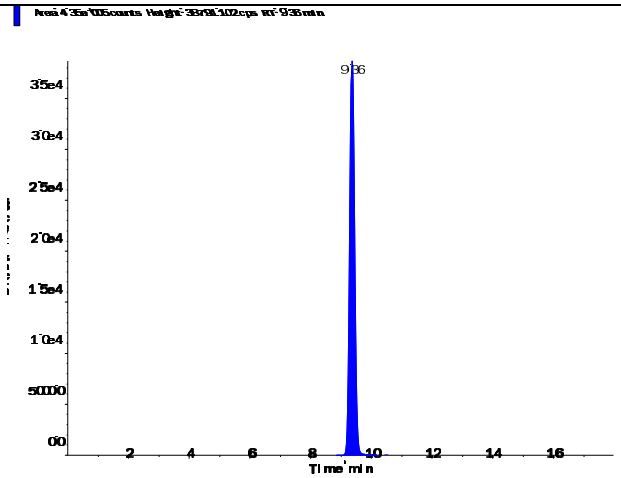

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/23/2016 4:55 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	0.215 ng/ml
Area Ratio:	0.074
Sample Type:	(Unknown)

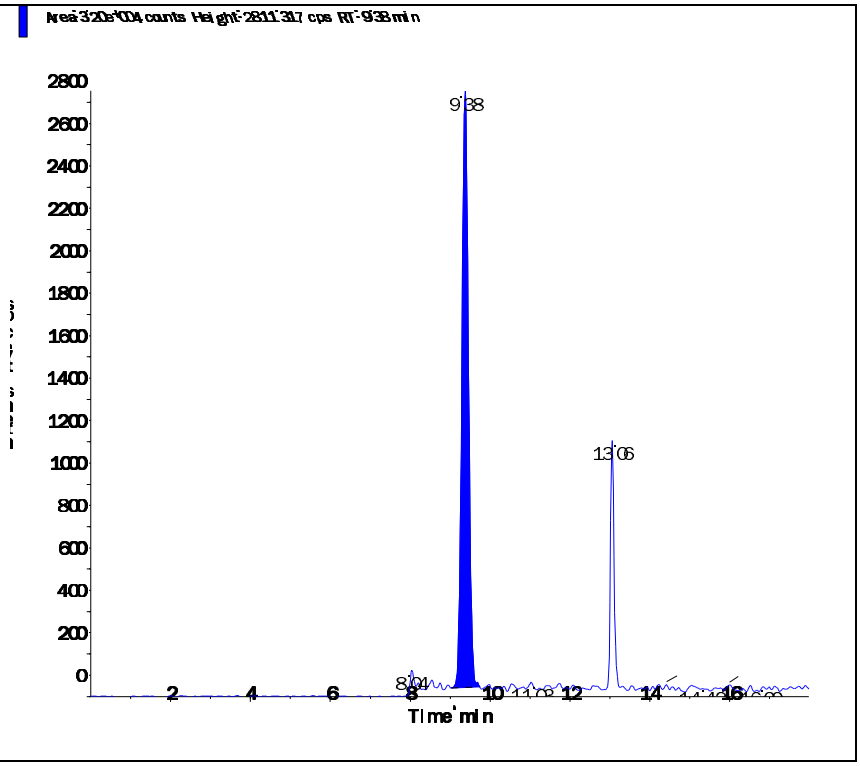

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.36 (9.84) min
Calculated conc:	0.216 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

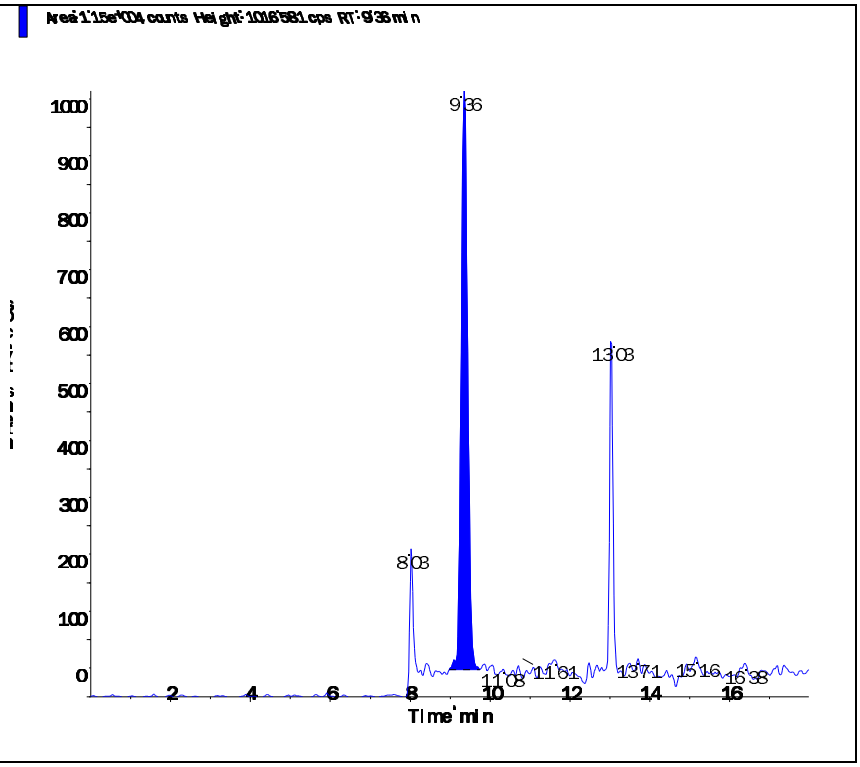

s.dataFile Page 2 of 2

2.3 Metals Data

2.3.1 Metals I C P Data

2.3.1.1 Summary Data

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW03F-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 16:45
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/23/2016 20:25
Collect Date:	06/14/2016 07:40	**Dilution:**	1	**File ID:**	T3.062316.202527
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.100	U	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	8.25		0.500	0.250	0.125
Iron, Total	7439-89-6	2.77		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	5.84		1.00	0.500	0.250
Potassium, Total	7440-09-7	2.16		2.00	1.00	0.500
Sodium, Total	7440-23-5	109		1.00	0.500	0.250

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW03F-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/25/2016 12:36
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/25/2016 13:40
Collect Date:	06/14/2016 07:40	**Dilution:**	1	**File ID:**	T3.062516.134058
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Selenium, Total	7782-49-2	0.00565	J	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW04SW-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/25/2016 12:36
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/25/2016 13:37
Collect Date:	06/14/2016 09:00	**Dilution:**	1	**File ID:**	T3.062516.133704
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW04SW-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 16:45
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/23/2016 20:29
Collect Date:	06/14/2016 09:00	**Dilution:**	1	**File ID:**	T3.062316.202923
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.0639	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	6.72		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	19.1		1.00	0.500	0.250
Potassium, Total	7440-09-7	64.8		2.00	1.00	0.500
Sodium, Total	7440-23-5	117		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18CPTMW04SW-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 16:45
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/23/2016 21:28
Collect Date:	06/14/2016 09:00	**Dilution:**	20	**File ID:**	T3.062316.212816
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	38.2		10.0	5.00	2.50

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.3.1.2 QC Summary Data

Example 6010 Calculations
Thermo Scientific iCAP

1.0 Initial Calibration (ICAL) Parameters
For a multi-point calibration, the system performs linear regression from data consisting of a blank and four standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG573190
Analyst: REK
Spike Analyst: REK
Run Date: 06/17/2016 12:25
Method: 3015
Balance: BAL019
Instrument: MW-4
Instrument Start: 06/17/2016 12:36

SOP: ME407 Revison 19
Spike Solution: STD76576
Spike Witness: VC
HCL Lot #: COA18769
HNO3 Lot #: COA18905
40 & 50 ML. DIGESTION TU COA18987
ICP Filters- fisher-Lot# RGT35619

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG573190-03	BLANK	1	40 mL	50 mL	206.067 g	206.054 g		
2	WG573025-01	FBLK1	17	5 mL	50 mL	204.348 g	204.338 g		
3	WG573190-04	LCS	1	40 mL	50 mL	210.758 g	210.752 g	5 mL	
4	WG573190-01	REF	17	5 mL	50 mL	203.898 g	203.882 g		
5	L16060779-02	RS02	17	5 mL	50 mL	203.898 g	203.882 g		06/24/16
6	WG573190-05	MS	17	5 mL	50 mL	207.438 g	207.431 g	5 mL	
7	L16060779-05	MS02	17	5 mL	50 mL	207.438 g	207.431 g	5 mL	06/24/16
8	WG573190-06	MSD	17	5 mL	50 mL	208.146 g	208.126 g	5 mL	
9	L16060779-08	SD02	17	5 mL	50 mL	208.146 g	208.126 g	5 mL	06/24/16
10	L16060779-11	SAMP	17	5 mL	50 mL	203.893 g	203.879 g		06/24/16
11	L16060779-14	SAMP	17	5 mL	50 mL	205.834 g	205.819 g		06/24/16
12	WG573190-02	REF	1	40 mL	50 mL	205.508 g	205.498 g		
13	L16060808-01	RS01	1	40 mL	50 mL	205.508 g	205.498 g		06/24/16
14	WG573190-07	MS	1	40 mL	50 mL	210.145 g	210.129 g	5 mL	
15	L16060808-03	MS01	1	40 mL	50 mL	210.145 g	210.129 g	5 mL	06/24/16
16	WG573190-08	MSD	1	40 mL	50 mL	210.94 g	210.914 g	5 mL	
17	L16060808-04	SD01	1	40 mL	50 mL	210.94 g	210.914 g	5 mL	06/24/16
18	L16060822-02	SAMP	1	40 mL	50 mL	206.366 g	206.337 g		06/24/16
19	L16060822-03	SAMP	1	40 mL	50 mL	204.086 g	204.053 g		06/24/16
20	L16060823-02	SAMP	1	40 mL	50 mL	205.702 g	205.68 g		06/24/16
21	L16060823-03	SAMP	1	40 mL	50 mL	203.815 g	203.795 g		06/24/16
22	L16060823-04	SAMP	1	40 mL	50 mL	205.586 g	205.557 g		06/24/16
23	L16060883-02	SAMP	1	40 mL	50 mL	204.528 g	204.491 g		06/24/16
24	L16060884-01	SAMP	17	5 mL	50 mL	204.107 g	204.076 g		06/22/16
25	L16060896-01	SAMP	1	40 mL	50 mL	205.437 g	205.412 g		06/27/16
26	L16060896-02	SAMP	1	40 mL	50 mL	207.438 g	207.413 g		06/27/16
27	L16060896-03	SAMP	1	40 mL	50 mL	205.762 g	205.735 g		06/27/16
28	L16060896-04	SAMP	1	40 mL	50 mL	205.858 g	205.827 g		06/27/16
29	L16060896-05	SAMP	1	40 mL	50 mL	205.819 g	205.802 g		06/27/16
30	L16060896-07	SAMP	1	40 mL	50 mL	207.197 g	207.165 g		06/27/16

L16060883-02	FILTERED DIGESTATE

Analyst: [signature]

Reviewer: Erin Potter

MW_DIG - Modified 09/30/2009
PDF ID: 4812653
Report generated: 06/17/2016 13:12

Microbac

TCLP Non-Volatile

Analyst(s): CPD
Date: 6/16/16
Filter Lot #: 9486030
Microbac SOP: TCLP01 Rev #: 12

Analyst / Date		Analyst / Date	
CPD / AMA	6/16/16	CPD	6/17/16
Time On	Temp On °C	Time Off	Temp Off °C
1522	24.6	0814	22.1

Agitator Speed 30 ± 2 rpm ☑

Jug #	Sample #	Tests	Method	Fluid #	Matrix *	% Solid	Pretest pH Initial	Pretest pH Final	Int. Wt. (g)	Fluid Vol. (mL)	Final extract pH
D	06-0779-11	ME	1311	F1-181	S	100	7.01	1.82	25.50	510	4.92
	-02						7.20	1.96	25.35	507	5.01
	-05						7.10	1.78	25.40	508	4.97
	-08						7.13	1.76	25.36	507	4.96
	-14						7.04	1.75	25.35	507	4.98
G-29	06-0829-02	SV		F2-379			12.67	12.62	25.74	514	12.47
D	06-0888-01	300	1312	SPLPF1 -62	S	100	NA	NA	25.12	502	9.47
	-02								25.88	517	9.73
	-03								25.44	508	9.64
	-04								25.43	508	9.75
	-05								25.33	506	9.21
	-06								25.87	517	9.65
	-07								25.52	510	9.60
	-08								25.32	506	9.06
	-09								25.45	509	9.68
	-10								25.27	505	9.97
	-11								25.32	506	9.62
	-12								25.69	513	9.53
	06-0886-01								25.89	517	9.67
	-02								25.16	503	9.55
	-03								25.39	507	9.26
	-04								25.37	507	9.58
	06-0884-01	ME	1311	F1-181	S	100	8.33	3.63	25.22	504	5.61
NA	FBIK1	ME	1311	F1-181	NA	NA	NA	NA	100	100	4.88
	FBIK2	SV		F2-379							2.84
	SPLPF1	300	1312	SPLP F1-62							4.15

CPD 6/16/16

*Matrix Code: (S = solid, sand, soil or sludge) (P = paint) (O = organic) (W = water or aqueous waste)
D = Disposable plastic jug
TCLP Pretest weight will be 5.0 g (± 0.1) unless otherwise noted.
Temperature shall be maintained at 23° ± 2 for 18 ± 2 hours unless otherwise noted.

Comments: N/A

Peer Review By: Allie Alfred 06/17/16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062316T3.2

Analyst1: JYH Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 573973,573749,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.062316.162939	WG574093-01	Calibration Point		1		06/23/16 16:29
2	T3.062316.163338	WG574093-02	Calibration Point		1		06/23/16 16:33
3	T3.062316.163737	WG574093-03	Calibration Point		1		06/23/16 16:37
4	T3.062316.164136	WG574093-04	Calibration Point		1		06/23/16 16:41
5	T3.062316.164514	WG574093-05	Calibration Point		1		06/23/16 16:45
6	T3.062316.164851	WG574093-06	Initial Calibration Verification		1		06/23/16 16:48
7	T3.062316.165229	WG574093-07	Initial Calib Blank		1		06/23/16 16:52
8	T3.062316.165617	WG574093-08	Low Level Initial Calibration V		1		06/23/16 16:56
9	T3.062316.170014	WG574093-09	Low Level Initial Calibration V		1		06/23/16 17:00
10	T3.062316.170408	WG574093-10	Interference Check		1		06/23/16 17:04
11	T3.062316.170801	WG574093-11	Interference Check		1		06/23/16 17:08
12	T3.062316.171145	WG574093-12	CCV		1		06/23/16 17:11
13	T3.062316.171523	WG574093-13	CCB		1		06/23/16 17:15
14	T3.062316.171922	WG573484-02	Method/Prep Blank	40/50	1		06/23/16 17:19
15	T3.062316.172321	WG573484-03	Laboratory Control S	40/50	1		06/23/16 17:23
16	T3.062316.172701	WG573484-01	Reference Sample		1	L16060764-04	06/23/16 17:27
17	T3.062316.173057	WG573484-04	Matrix Spike	40/50	1	L16060764-04	06/23/16 17:30
18	T3.062316.173436	WG573484-05	Matrix Spike Duplica	40/50	1	L16060764-04	06/23/16 17:34
19	T3.062316.173816	L16061098-01	5004-G06-WQ-W0266	40/50	1		06/23/16 17:38
20	T3.062316.174215	L16061098-02	5240-G02-WQ-W0087	40/50	1		06/23/16 17:42
21	T3.062316.174614	WG573952-01	Post Digestion Spike		1	L16061098-02	06/23/16 17:46
22	T3.062316.174955	WG573952-02	Serial Dilution		5	L16061098-02	06/23/16 17:49
23	T3.062316.175355	WG573952-02	Serial Dilution		25	L16061098-02	06/23/16 17:53
24	T3.062316.175755	WG574093-14	CCV		1		06/23/16 17:57
25	T3.062316.180133	WG574093-15	CCB		1		06/23/16 18:01
26	T3.062316.180532	L16061098-03	5320-G02-WQ-W0183	40/50	1		06/23/16 18:05
27	T3.062316.180930	L16061098-04	5506-G02-WQ-W0164	40/50	1		06/23/16 18:09
28	T3.062316.181329	L16060764-01	MW-23-004	40/50	1		06/23/16 18:13
29	T3.062316.181726	L16060764-02	MW-23-002	40/50	1		06/23/16 18:17
30	T3.062316.182122	L16060764-03	FD-061316	40/50	1		06/23/16 18:21
31	T3.062316.182520	L16060957-01	15-12-13 S7	40/50	1		06/23/16 18:25
32	T3.062316.182915	L16060957-02	15-12-13 S7	40/50	1		06/23/16 18:29
33	T3.062316.183311	WG574093-16	CCV		1		06/23/16 18:33
34	T3.062316.183649	WG574093-17	CCB		1		06/23/16 18:36

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Kim H. Rhoden

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062316T3.2
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,573749,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.062316.184048	L16060957-03	15-12-13 S8	40/50	1		06/23/16 18:40
36	T3.062316.184442	L16060957-04	15-12-13 S8	40/50	1		06/23/16 18:44
37	T3.062316.184837	L16060957-05	15-12-13 S5	40/50	1		06/23/16 18:48
38	T3.062316.185233	L16060961-01	GH58HS_MELZER_03-03-0	40/50	1		06/23/16 18:52
39	T3.062316.185630	L16060961-02	GH58HS_MELZER_03-03-0	40/50	1		06/23/16 18:56
40	T3.062316.190026	L16060991-02	MW31-061616		1		06/23/16 19:00
41	T3.062316.190423	L16060995-01	UNTREATED	40/50	1		06/23/16 19:04
42	T3.062316.190829	L16060995-02	AFTER	40/50	1		06/23/16 19:08
43	T3.062316.191235	L16061064-01	59-8-6.02 W1	40/50	1		06/23/16 19:12
44	T3.062316.191630	WG574093-18	CCV		1		06/23/16 19:16
45	T3.062316.192008	WG574093-19	CCB		1		06/23/16 19:20
46	T3.062316.192408	WG573190-03	Method/Prep Blank	40/50	1		06/23/16 19:24
47	T3.062316.192807	WG573190-04	Laboratory Control S	40/50	1		06/23/16 19:28
48	T3.062316.193148	WG573025-01	Fluid Blank 1		1		06/23/16 19:31
49	T3.062316.193546	WG573190-01	Reference Sample		1	L16060779-02	06/23/16 19:35
50	T3.062316.193944	WG573190-05	Matrix Spike	5/50	1	L16060779-02	06/23/16 19:39
51	T3.062316.194323	WG573190-06	Matrix Spike Duplica	5/50	1	L16060779-02	06/23/16 19:43
52	T3.062316.194701	L16060779-11	477-TS02-C0002	5/50	1		06/23/16 19:47
53	T3.062316.195059	WG573973-01	Post Digestion Spike		1	L16060779-11	06/23/16 19:50
54	T3.062316.195438	WG573973-02	Serial Dilution		5	L16060779-11	06/23/16 19:54
55	T3.062316.195838	WG573973-02	Serial Dilution		25	L16060779-11	06/23/16 19:58
56	T3.062316.200238	WG574093-20	CCV		1		06/23/16 20:02
57	T3.062316.200616	WG574093-21	CCB		1		06/23/16 20:06
58	T3.062316.201014	L16060779-14	477-TS01-C0003	5/50	1		06/23/16 20:10
59	T3.062316.201412	WG573190-02	Reference Sample		1	L16060808-01	06/23/16 20:14
60	T3.062316.201808	WG573190-07	Matrix Spike	40/50	1	L16060808-01	06/23/16 20:18
61	T3.062316.202147	WG573190-08	Matrix Spike Duplica	40/50	1	L16060808-01	06/23/16 20:21
62	T3.062316.202527	L16060822-02	18WW03F-061416	40/50	1		06/23/16 20:25
63	T3.062316.202923	L16060822-03	18CPTMW04SW-061416	40/50	1		06/23/16 20:29
64	T3.062316.203318	L16060823-02	126F-061416	40/50	1		06/23/16 20:33
65	T3.062316.203719	L16060823-03	C08-061416	40/50	1		06/23/16 20:37
66	T3.062316.204123	L16060823-04	C03-061416	40/50	1		06/23/16 20:41
67	T3.062316.204516	L16060883-02	WC02	40/50	1		06/23/16 20:45
68	T3.062316.204910	WG574093-22	CCV		1		06/23/16 20:49

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062316T3.2
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,573749,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.062316.205247	WG574093-23	CCB		1		06/23/16 20:52
70	T3.062316.205645	L16060884-01	NI CAKE	5/50	1		06/23/16 20:56
71	T3.062316.210040	L16060896-01	A08-MW02-Y1S2	40/50	1		06/23/16 21:00
72	T3.062316.210433	L16060896-02	A08-MW03-Y1S2	40/50	1		06/23/16 21:04
73	T3.062316.210831	L16060896-03	A08-MW10-Y1S2	40/50	1		06/23/16 21:08
74	T3.062316.211228	L16060896-04	FD-01	40/50	1		06/23/16 21:12
75	T3.062316.211622	L16060896-05	FD-03	40/50	1		06/23/16 21:16
76	T3.062316.212019	L16060896-07	RB01-06-15-16	40/50	1		06/23/16 21:20
77	T3.062316.212418	L16060822-02	18WW03F-061416		20		06/23/16 21:24
78	T3.062316.212816	L16060822-03	18CPTMW04SW-061416	40/50	20		06/23/16 21:28
79	T3.062316.213215	L16060823-02	126F-061416	40/50	20		06/23/16 21:32
80	T3.062316.213611	WG574093-24	CCV		1		06/23/16 21:36
81	T3.062316.213949	WG574093-25	CCB		1		06/23/16 21:39
82	T3.062316.214348	L16060823-03	C08-061416	40/50	20		06/23/16 21:43
83	T3.062316.214744	L16060823-04	C03-061416	40/50	20		06/23/16 21:47
84	T3.062316.215141	L16060883-02	WC02	40/50	20		06/23/16 21:51
85	T3.062316.215540	L16060896-01	A08-MW02-Y1S2	40/50	20		06/23/16 21:55
86	T3.062316.215938	L16060896-02	A08-MW03-Y1S2	40/50	20		06/23/16 21:59
87	T3.062316.220337	L16060896-03	A08-MW10-Y1S2	40/50	20		06/23/16 22:03
88	T3.062316.220736	L16060896-04	FD-01	40/50	20		06/23/16 22:07
89	T3.062316.221134	L16060896-05	FD-03	40/50	20		06/23/16 22:11
90	T3.062316.221533	L16060896-07	RB01-06-15-16	40/50	20		06/23/16 22:15
91	T3.062316.221931	WG574093-26	CCV		1		06/23/16 22:19
92	T3.062316.222310	WG574093-27	CCB		1		06/23/16 22:23
93	T3.062316.222708	WG574093-28	Low Level Continuing Calibra		1		06/23/16 22:27
94	T3.062316.223105	WG574093-29	Low Level Continuing Calibra		1		06/23/16 22:31
95	T3.062316.223500	WG573562-02	Method/Prep Blank	40/50	1		06/23/16 22:35
96	T3.062316.223859	WG573562-03	Laboratory Control S	40/50	1		06/23/16 22:38
97	T3.062316.224239	WG573353-01	Fluid Blank 1		1		06/23/16 22:42
98	T3.062316.224638	WG573353-02	Fluid Blank 2		1		06/23/16 22:46
99	T3.062316.225037	WG573562-01	Reference Sample		1	L16060974-01	06/23/16 22:50
100	T3.062316.225432	WG573562-04	Matrix Spike	40/50	1	L16060974-01	06/23/16 22:54
101	T3.062316.225812	WG573562-05	Matrix Spike Duplica	40/50	1	L16060974-01	06/23/16 22:58
102	T3.062316.230151	L16060903-01	LF30/31-EWTS-EFFLUENT-1	40/50	1		06/23/16 23:01

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Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062316T3.2

Analyst1: JYH Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 573973,573749,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T3.062316.230549	WG573749-03	Post Digestion Spike		1	L16060903-01	06/23/16 23:05
104	T3.062316.230928	WG573749-04	Serial Dilution		5	L16060903-01	06/23/16 23:09
105	T3.062316.231327	WG574093-30	CCV		1		06/23/16 23:13
106	T3.062316.231705	WG574093-31	CCB		1		06/23/16 23:17
107	T3.062316.232104	L16060903-02	LF30/31-EWTS-MH3-15JUNI	40/50	1		06/23/16 23:21
108	T3.062316.232500	L16060903-03	LF30/31-EWTS-MH2-15JUNI	40/50	1		06/23/16 23:25
109	T3.062316.232857	L16060903-04	LF30/31-EWTS-MH1-15JUNI	40/50	1		06/23/16 23:28
110	T3.062316.233254	L16060903-05	LF30/31-EWTS-INFLUENT-1	40/50	1		06/23/16 23:32
111	T3.062316.233650	L16060924-01	K6F0495-01	5/50	1		06/23/16 23:36
112	T3.062316.234055	DI7	DI7		20		06/23/16 23:40
113	T3.062316.234454	DI8	DI8		20		06/23/16 23:44
114	T3.062316.234853	DI9	DI9		20		06/23/16 23:48
115	T3.062316.235252	WG574093-32	CCV		1		06/23/16 23:52
116	T3.062316.235630	WG574093-33	CCB		1		06/23/16 23:56
117	T3.062416.000030	WG574093-34	ICSA		1		06/24/16 00:00
118	T3.062416.000429	WG574093-35	ICSAB		1		06/24/16 00:04
119	T3.062416.000822	WG574093-36	CCV		1		06/24/16 00:08
120	T3.062416.001200	WG574093-37	CCB		1		06/24/16 00:12
121	T3.062416.001600	WG574093-38	Low Level Continuing Calibra		1		06/24/16 00:16
122	T3.062416.001957	WG574093-39	Low Level Continuing Calibra		1		06/24/16 00:19

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Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062516T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,574055,574076,574216,574215,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.062516.122104	WG574249-01	Calibration Point		1		06/25/16 12:21
2	T3.062516.122502	WG574249-02	Calibration Point		1		06/25/16 12:25
3	T3.062516.122900	WG574249-03	Calibration Point		1		06/25/16 12:29
4	T3.062516.123256	WG574249-04	Calibration Point		1		06/25/16 12:32
5	T3.062516.123634	WG574249-05	Calibration Point		1		06/25/16 12:36
6	T3.062516.124009	WG574249-06	Initial Calibration Verification		1		06/25/16 12:40
7	T3.062516.124348	WG574249-07	Initial Calib Blank		1		06/25/16 12:43
8	T3.062516.124745	WG574249-08	Low Level Initial Calibration V		1		06/25/16 12:47
9	T3.062516.125139	WG574249-09	Low Level Initial Calibration V		1		06/25/16 12:51
10	T3.062516.125529	WG574249-10	Interference Check		1		06/25/16 12:55
11	T3.062516.125921	WG574249-11	Interference Check		1		06/25/16 12:59
12	T3.062516.130304	WG574249-12	CCV		1		06/25/16 13:03
13	T3.062516.130641	WG574249-13	CCB		1		06/25/16 13:06
14	T3.062516.131816	WG573190-03	Method/Prep Blank	40/50	1		06/25/16 13:18
15	T3.062516.132214	WG573190-04	Laboratory Control S	40/50	1		06/25/16 13:22
16	T3.062516.132554	WG573190-02	Reference Sample		1	L16060808-01	06/25/16 13:25
17	T3.062516.132950	WG573190-07	Matrix Spike	40/50	1	L16060808-01	06/25/16 13:29
18	T3.062516.133327	WG573190-08	Matrix Spike Duplica	40/50	1	L16060808-01	06/25/16 13:33
19	T3.062516.133704	L16060822-03	18CPTMW04SW-061416	40/50	1		06/25/16 13:37
20	T3.062516.134058	L16060822-02	18WW03F-061416	40/50	1		06/25/16 13:40
21	T3.062516.134452	WG573973-03	Post Digestion Spike		1	L16060822-02	06/25/16 13:44
22	T3.062516.134830	WG573973-04	Serial Dilution		5	L16060822-02	06/25/16 13:48
23	T3.062516.135227	WG573973-04	Serial Dilution		25	L16060822-02	06/25/16 13:52
24	T3.062516.135622	WG574249-14	CCV		1		06/25/16 13:56
25	T3.062516.140001	WG574249-15	CCB		1		06/25/16 14:00
26	T3.062516.140359	L16060823-02	126F-061416	40/50	1		06/25/16 14:03
27	T3.062516.140759	L16060823-03	C08-061416	40/50	1		06/25/16 14:07
28	T3.062516.141200	L16060823-04	C03-061416	40/50	1		06/25/16 14:12
29	T3.062516.141551	L16061148-01	DP005SW0513-007	40/50	1		06/25/16 14:15
30	T3.062516.141945	L16061148-02	DP005SW0514-007	40/50	1		06/25/16 14:19
31	T3.062516.142340	L16061150-01	SS007SW0709-007	40/50	1		06/25/16 14:23
32	T3.062516.142732	L16061150-02	SS007SW0710-007	40/50	1		06/25/16 14:27
33	T3.062516.143125	L16061151-02	LF003SW0311-007 DUP	40/50	1		06/25/16 14:31
34	T3.062516.143519	L16061151-05	LF003SW0312-007	40/50	1		06/25/16 14:35

Page: 1 Approved: June 27, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062516T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,574055,574076,574216,574215,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.062516.143913	WG573707-02	Reference Sample		1	L16061154-01	06/25/16 14:39
36	T3.062516.144313	WG574249-16	CCV		1		06/25/16 14:43
37	T3.062516.144639	WG574249-17	CCB		1		06/25/16 14:46
38	T3.062516.145037	WG573707-07	Matrix Spike	40/50	1	L16061154-01	06/25/16 14:50
39	T3.062516.145424	WG573707-08	Matrix Spike Duplica	40/50	1	L16061154-01	06/25/16 14:54
40	T3.062516.145809	L16061154-04	FQC-RB06201601-CB	40/50	1		06/25/16 14:58
41	T3.062516.150207	L16061155-01	ST008MW0812-007	40/50	1		06/25/16 15:02
42	T3.062516.150559	L16061155-02	ST008MW0809-007	40/50	1		06/25/16 15:05
43	T3.062516.150954	L16061155-03	ST008MW0816-007	40/50	1		06/25/16 15:09
44	T3.062516.151348	L16061178-01	2016PRE-7217NEWENGLAN	40/50	1		06/25/16 15:13
45	T3.062516.151743	L16061227-01	18WW22-062116	40/50	20		06/25/16 15:17
46	T3.062516.152125	L16061227-06	18CPTMW18-062116	40/50	20		06/25/16 15:21
47	T3.062516.152518	WG573994-01	Reference Sample		20	L16061279-02	06/25/16 15:25
48	T3.062516.152911	WG574249-18	CCV		1		06/25/16 15:29
49	T3.062516.153248	WG574249-19	CCB		1		06/25/16 15:32
50	T3.062516.153646	WG573994-04	Matrix Spike	40/50	20	L16061279-02	06/25/16 15:36
51	T3.062516.154039	WG573994-05	Matrix Spike Duplica	40/50	20	L16061279-02	06/25/16 15:40
52	T3.062516.154432	L16061289-01	MW21-062216	40/50	20		06/25/16 15:44
53	T3.062516.154826	L16061129-01	MW-22-002		20		06/25/16 15:48
54	T3.062516.155222	L16061129-02	MW-22-010		20		06/25/16 15:52
55	T3.062516.155620	L16061129-03	MW-22-007		20		06/25/16 15:56
56	T3.062516.160018	L16061129-04	FD061716		20		06/25/16 16:00
57	T3.062516.160415	L16061272-01	SS007MW0B18-007		20		06/25/16 16:04
58	T3.062516.160812	L16061272-02	SS007MWN752-007		20		06/25/16 16:08
59	T3.062516.161208	L16061279-01	XU936TW007A	40/50	20		06/25/16 16:12
60	T3.062516.161603	WG574249-20	CCV		1		06/25/16 16:16
61	T3.062516.161940	WG574249-21	CCB		1		06/25/16 16:19
62	T3.062516.162338	L16061279-05	XU936TW019A	40/50	20		06/25/16 16:23
63	T3.062516.162733	L16061148-01	DP005SW0513-007		20		06/25/16 16:27
64	T3.062516.163130	L16061148-02	DP005SW0514-007		20		06/25/16 16:31
65	T3.062516.163527	L16061150-01	SS007SW0709-007		20		06/25/16 16:35
66	T3.062516.163912	L16061151-02	LF003SW0311-007 DUP		20		06/25/16 16:39
67	T3.062516.164310	L16061151-05	LF003SW0312-007		20		06/25/16 16:43
68	T3.062516.164706	WG573707-02	Reference Sample		20	L16061154-01	06/25/16 16:47

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062516T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,574055,574076,574216,574215,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.062516.165101	WG573707-07	Matrix Spike	40/50	20	L16061154-01	06/25/16 16:51
70	T3.062516.165454	L16061279-08	XU936TW011MSD	40/50	20	WG573707-08	06/25/16 16:54
71	T3.062516.165848	WG574249-22	CCV		1		06/25/16 16:58
72	T3.062516.170225	WG574249-23	CCB		1		06/25/16 17:02
73	T3.062516.170624	L16061155-01	ST008MW0812-007		20		06/25/16 17:06
74	T3.062516.171010	L16061155-02	ST008MW0809-007		20		06/25/16 17:10
75	T3.062516.171407	L16061155-03	ST008MW0816-007		20		06/25/16 17:14
76	T3.062516.171804	WG574249-24	CCV		1		06/25/16 17:18
77	T3.062516.172142	WG574249-25	CCB		1		06/25/16 17:21
78	T3.062516.172540	WG574249-26	Low Level Continuing Calibra		1		06/25/16 17:25
79	T3.062516.172933	WG573530-03	Method/Prep Blank	40/50	1		06/25/16 17:29
80	T3.062516.173331	WG573530-04	Laboratory Control S	40/50	1		06/25/16 17:33
81	T3.062516.173711	WG573530-05	Filter Blank		1		06/25/16 17:37
82	T3.062516.174110	L16060986-02	MW-07-04	40/50	1		06/25/16 17:41
83	T3.062516.174505	L16060986-04	MW-01-10	40/50	1		06/25/16 17:45
84	T3.062516.174856	L16060986-06	MW-03-12	40/50	1		06/25/16 17:48
85	T3.062516.175251	L16060986-08	MW-01-07	40/50	1		06/25/16 17:52
86	T3.062516.175646	WG574216-01	Post Digestion Spike		1	L16060986-08	06/25/16 17:56
87	T3.062516.180025	WG574216-02	Serial Dilution		5	L16060986-08	06/25/16 18:00
88	T3.062516.180418	WG574216-02	Serial Dilution		25	L16060986-08	06/25/16 18:04
89	T3.062516.180815	WG574249-27	CCV		1		06/25/16 18:08
90	T3.062516.181152	WG574249-28	CCB		1		06/25/16 18:11
91	T3.062516.181548	L16060986-10	MW-03-11		1		06/25/16 18:15
92	T3.062516.181942	L16060986-12	MW-01-01		1		06/25/16 18:19
93	T3.062516.182332	L16060986-14	MW-03-09		1		06/25/16 18:23
94	T3.062516.182724	L16060986-16	MW-01-08		1		06/25/16 18:27
95	T3.062516.183114	L16060986-18	MW-03-06		1		06/25/16 18:31
96	T3.062516.183511	L16060986-20	MW-03-05		1		06/25/16 18:35
97	T3.062516.183905	WG573530-01	Reference Sample		1	L16060986-22	06/25/16 18:39
98	T3.062516.184258	WG573530-02	Reference Sample		1	L16060986-24	06/25/16 18:42
99	T3.062516.184649	L16060986-26	MW-01-02		1		06/25/16 18:46
100	T3.062516.185044	L16060986-28	DUP 1		1		06/25/16 18:50
101	T3.062516.185437	WG574249-29	CCV		1		06/25/16 18:54
102	T3.062516.185815	WG574249-30	CCB		1		06/25/16 18:58

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Kim H. Rhoden

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062516T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,574055,574076,574216,574215,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T3.062516.190211	L16060986-30	DUP 2		1		06/25/16 19:02
104	T3.062516.190604	WG573530-06	Matrix Spike		1	L16060986-22	06/25/16 19:06
105	T3.062516.190942	WG573530-07	Matrix Spike Duplica		1	L16060986-22	06/25/16 19:09
106	T3.062516.191321	WG573530-08	Matrix Spike		1	L16060986-24	06/25/16 19:13
107	T3.062516.191658	WG573530-09	Matrix Spike Duplica		1	L16060986-24	06/25/16 19:16
108	T3.062516.192035	L16060986-40	EQUIP BLANK 1		1		06/25/16 19:20
109	T3.062516.192431	L16060986-42	EQUIP BLANK 2		1		06/25/16 19:24
110	T3.062516.192827	WG574249-31	CCV		1		06/25/16 19:28
111	T3.062516.193205	WG574249-32	CCB		1		06/25/16 19:32
112	T3.062516.193603	WG573544-03	Method/Prep Blank	40/50	1		06/25/16 19:36
113	T3.062516.193959	WG573544-04	Laboratory Control S	40/50	1		06/25/16 19:39
114	T3.062516.194338	L16060907-23	MW36-061516	40/50	1		06/25/16 19:43
115	T3.062516.194731	L16060986-01	MW-07-04	40/50	1		06/25/16 19:47
116	T3.062516.195124	L16060986-03	MW-01-10	40/50	1		06/25/16 19:51
117	T3.062516.195515	L16060986-05	MW-03-12	40/50	1		06/25/16 19:55
118	T3.062516.195905	L16060986-07	MW-01-07	40/50	1		06/25/16 19:59
119	T3.062516.200300	WG574215-01	Post Digestion Spike		1	L16060986-07	06/25/16 20:03
120	T3.062516.200637	WG574215-02	Serial Dilution		5	L16060986-07	06/25/16 20:06
121	T3.062516.201030	WG574215-02	Serial Dilution		25	L16060986-07	06/25/16 20:10
122	T3.062516.201426	WG574249-33	CCV		1		06/25/16 20:14
123	T3.062516.201803	WG574249-34	CCB		1		06/25/16 20:18
124	T3.062516.202200	L16060986-09	MW-03-11	40/50	1		06/25/16 20:22
125	T3.062516.202553	L16060986-11	MW-01-01	40/50	1		06/25/16 20:25
126	T3.062516.202942	L16060986-13	MW-03-09	40/50	1		06/25/16 20:29
127	T3.062516.203332	L16060986-15	MW-01-08	40/50	1		06/25/16 20:33
128	T3.062516.203723	L16060986-17	MW-03-06	40/50	1		06/25/16 20:37
129	T3.062516.204116	L16060986-19	MW-03-05	40/50	1		06/25/16 20:41
130	T3.062516.204510	WG573544-01	Reference Sample		1	L16060986-21	06/25/16 20:45
131	T3.062516.204903	WG573544-02	Reference Sample		1	L16060986-23	06/25/16 20:49
132	T3.062516.205255	L16060986-25	MW-01-02	40/50	1		06/25/16 20:52
133	T3.062516.205646	L16060986-27	DUP 1	40/50	1		06/25/16 20:56
134	T3.062516.210036	WG574249-35	CCV		1		06/25/16 21:00
135	T3.062516.210414	WG574249-36	CCB		1		06/25/16 21:04
136	T3.062516.210812	L16060986-29	DUP 2	40/50	1		06/25/16 21:08

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Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062516T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,574055,574076,574216,574215,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	T3.062516.211202	WG573544-05	Matrix Spike	40/50	1	L16060986-21	06/25/16 21:12
138	T3.062516.211541	WG573544-06	Matrix Spike Duplica	40/50	1	L16060986-21	06/25/16 21:15
139	T3.062516.211919	WG573544-07	Matrix Spike	40/50	1	L16060986-23	06/25/16 21:19
140	T3.062516.212256	WG573544-08	Matrix Spike Duplica	40/50	1	L16060986-23	06/25/16 21:22
141	T3.062516.212633	L16060986-39	EQUIP BLANK 1	40/50	1		06/25/16 21:26
142	T3.062516.213031	L16060986-41	EQUIP BLANK 2	40/50	1		06/25/16 21:30
143	T3.062516.213430	WG574249-37	CCV		1		06/25/16 21:34
144	T3.062516.213807	WG574249-38	CCB		1		06/25/16 21:38
145	T3.062516.214203	WG573102-02	Method/Prep Blank	40/50	1		06/25/16 21:42
146	T3.062516.214559	WG573102-03	Laboratory Control S	40/50	1		06/25/16 21:45
147	T3.062516.214937	WG573102-04	Filter Blank		1		06/25/16 21:49
148	T3.062516.215335	WG573102-01	Reference Sample		1	L16060787-09	06/25/16 21:53
149	T3.062516.215728	WG573102-05	Matrix Spike	40/50	1	L16060787-09	06/25/16 21:57
150	T3.062516.220106	WG573102-06	Matrix Spike Duplica	40/50	1	L16060787-09	06/25/16 22:01
151	T3.062516.220444	L16060787-01	EB04	40/50	1		06/25/16 22:04
152	T3.062516.220842	WG573561-03	Post Digestion Spike		1	L16060787-01	06/25/16 22:08
153	T3.062516.221220	WG573561-04	Serial Dilution		5	L16060787-01	06/25/16 22:12
154	T3.062516.221616	WG573561-04	Serial Dilution		25	L16060787-01	06/25/16 22:16
155	T3.062516.222012	WG574249-39	CCV		1		06/25/16 22:20
156	T3.062516.222349	WG574249-40	CCB		1		06/25/16 22:23
157	T3.062516.222746	L16060787-10	U517TW006C	40/50	1		06/25/16 22:27
158	T3.062516.223140	L16060787-18	U517TW008A	40/50	1		06/25/16 22:31
159	T3.062516.223534	L16060787-19	EB05	40/50	1		06/25/16 22:35
160	T3.062516.223931	WG573102-01	Reference Sample		20	L16060787-09	06/25/16 22:39
161	T3.062516.224326	WG573102-05	Matrix Spike	40/50	20	L16060787-09	06/25/16 22:43
162	T3.062516.224719	WG573102-06	Matrix Spike Duplica	40/50	20	L16060787-09	06/25/16 22:47
163	T3.062516.225113	WG574249-41	CCV		1		06/25/16 22:51
164	T3.062516.225451	WG574249-42	CCB		1		06/25/16 22:54
165	T3.062516.225848	WG573484-02	Method/Prep Blank	40/50	1		06/25/16 22:58
166	T3.062516.230246	WG573484-03	Laboratory Control S	40/50	1		06/25/16 23:02
167	T3.062516.230624	WG573484-01	Reference Sample		1	L16060764-04	06/25/16 23:06
168	T3.062516.231017	WG573484-04	Matrix Spike	40/50	1	L16060764-04	06/25/16 23:10
169	T3.062516.231356	WG573484-05	Matrix Spike Duplica	40/50	1	L16060764-04	06/25/16 23:13
170	T3.062516.231733	L16060991-02	MW31-061616	40/50	10		06/25/16 23:17

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Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062516T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,574055,574076,574216,574215,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
171	T3.062516.232126	WG573952-03	Post Digestion Spike		10	L16060991-02	06/25/16 23:21
172	T3.062516.232503	WG573952-04	Serial Dilution		50	L16060991-02	06/25/16 23:25
173	T3.062516.232900	L16060995-01	UNTREATED	40/50	1000		06/25/16 23:29
174	T3.062516.233253	L16060995-02	AFTER	40/50	1000		06/25/16 23:32
175	T3.062516.233647	WG574249-43	CCV		1		06/25/16 23:36
176	T3.062516.234025	WG574249-44	CCB		1		06/25/16 23:40
177	T3.062516.234420	WG574249-45	Interference Check		1		06/25/16 23:44
178	T3.062516.234809	WG574249-46	Interference Check		1		06/25/16 23:48
179	T3.062516.235152	WG574249-47	CCV		1		06/25/16 23:51
180	T3.062516.235530	WG574249-48	CCB		1		06/25/16 23:55
181	T3.062516.235927	WG574249-49	Low Level Continuing Calibra		1		06/25/16 23:59

Comments

Seq.	Rerun	Dil.	Reason	Analytes
69				
Seq. 69-70: wrong WG numbers JYH				

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Kim H. Rhoden

Microbac Laboratories Inc.

Data Checklist

Date: 23-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 574093
Runlog ID: 75909
Analytical Workgroups: 573973,573749,573952

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	764,808
Level 4	1098,779,822,823,883,896,903,924
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer:

Secondary Reviewer:
26-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-26-2016 07:48:33

Microbac Laboratories Inc.

Data Checklist

Date: 25-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 574249
Runlog ID: 75923
Analytical Workgroups: 573973,574055,574076,574216,574215,573952

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1178
Level 4	822,823,1148,1150,1151,1154,1155
	1227,1279,1289,986,787,991,995
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer: Secondary Reviewer: 27-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-27-2016 14:55:21

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010C

AAB#: WG573973

Login Number: L16060822

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW03F-061416	02	06/14/16					06/17/2016	3.2	180		06/25/16	11.3	180	
18WW03F-061416	02	06/14/16					06/17/2016	3.2	180		06/23/16	9.5	180	
18CPTMW04SW-061416	03	06/14/16					06/17/2016	3.1	180		06/23/16	9.5	180	
18CPTMW04SW-061416	03	06/14/16					06/17/2016	3.1	180		06/25/16	11.2	180	
18CPTMW04SW-061416	03	06/14/16					06/17/2016	3.1	180		06/23/16	9.5	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4823894
Report generated 06/27/2016 10:55

METHOD BLANK SUMMARY

Login Number: L16060822
Blank File ID: T3.062316.192408
Prep Date: 06/17/16 12:25
Analyzed Date: 06/23/16 19:24
Analyst: JYH

Work Group: WG573973
Blank Sample ID: WG573190-03
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573190-04	T3.062316.192807	06/23/16 19:28	01
18WW03F-061416	L16060822-02	T3.062316.202527	06/23/16 20:25	01
18CPTMW04SW-061416	L16060822-03	T3.062316.202923	06/23/16 20:29	01
18CPTMW04SW-061416	L16060822-03	T3.062316.212816	06/23/16 21:28	DL01
LCS	WG573190-04	T3.062516.132214	06/25/16 13:22	02
18CPTMW04SW-061416	L16060822-03	T3.062516.133704	06/25/16 13:37	02
18WW03F-061416	L16060822-02	T3.062516.134058	06/25/16 13:40	02

Report Name: BLANK_SUMMARY
PDF File ID: 4823895
Report generated 06/27/2016 10:55

METHOD BLANK SUMMARY

Login Number: L16060822
Blank File ID: T3.062516.131816
Prep Date: 06/17/16 12:25
Analyzed Date: 06/25/16 13:18
Analyst: JYH

Work Group: WG573973
Blank Sample ID: WG573190-03
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573190-04	T3.062316.192807	06/23/16 19:28	01
18WW03F-061416	L16060822-02	T3.062316.202527	06/23/16 20:25	01
18CPTMW04SW-061416	L16060822-03	T3.062316.202923	06/23/16 20:29	01
18CPTMW04SW-061416	L16060822-03	T3.062316.212816	06/23/16 21:28	DL01
LCS	WG573190-04	T3.062516.132214	06/25/16 13:22	02
18CPTMW04SW-061416	L16060822-03	T3.062516.133704	06/25/16 13:37	02
18WW03F-061416	L16060822-02	T3.062516.134058	06/25/16 13:40	02

Report Name: BLANK_SUMMARY
PDF File ID: 4823895
Report generated 06/27/2016 10:55

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060822 Prep Date: 06/17/16 12:25 Sample ID: WG573190-03
Instrument ID: ICP-THERMO3 Run Date: 06/23/16 19:24 Prep Method: 3015
File ID: T3.062316.192408 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG573973 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-23-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Aluminum, Total	0.0500	0.200	0.0500	1	U
Beryllium, Total	0.00500	0.0200	0.00500	1	U
Calcium, Total	0.125	0.500	0.125	1	U
Iron, Total	0.0500	0.200	0.0500	1	U
Magnesium, Total	0.250	1.00	0.250	1	U
Potassium, Total	0.500	2.00	0.500	1	U
Sodium, Total	0.250	1.00	0.412	1	J

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4823896
07-JUL-2016 15:12

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060822 Prep Date: 06/17/16 12:25 Sample ID: WG573190-03
Instrument ID: ICP-THERMO3 Run Date: 06/25/16 13:18 Prep Method: 3015
File ID: T3.062516.131816 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG573973 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-25-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Selenium, Total	0.00500	0.0200	0.00784	1	J

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4823896
07-JUL-2016 15:12

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060822 Run Date: 06/23/2016 Sample ID: WG573190-04
Instrument ID: ICP-THERMO3 Run Time: 19:28 Prep Method: 3015
File ID: T3.062316.192807 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG573973 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76576 Cal ID: ICP-TH-23-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Aluminum, Total	6.25	6.24	99.9	80 - 120	
Beryllium, Total	0.0313	0.0311	99.6	80 - 120	
Calcium, Total	6.25	6.64	106	80 - 120	
Iron, Total	2.50	2.60	104	80 - 120	
Magnesium, Total	6.25	6.49	104	80 - 120	
Potassium, Total	31.3	32.2	103	80 - 120	
Sodium, Total	31.3	32.4	104	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4823897
Report generated: 07/07/2016 15:12

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060822 Run Date: 06/25/2016 Sample ID: WG573190-04
Instrument ID: ICP-THERMO3 Run Time: 13:22 Prep Method: 3015
File ID: T3.062516.132214 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG573973 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76576 Cal ID: ICP-TH-25-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Selenium, Total	0.250	0.233	93.3	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4823897
Report generated: 07/07/2016 15:12

Loginnum: L16060822 Cal ID: ICP-THERMO3 - Worknum: WG573973
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG573190-01 File ID: T3.062316.193546 Dil: 1 Matrix: WATER
Sample ID: WG573190-05 MS File ID: T3.062316.193944 Dil: 1 Units: mg/L
Sample ID: WG573190-06 MSD File ID: T3.062316.194323 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Aluminum	1.05	50.0	52.1	102	50.0	51.8	102	0.579	80 - 120	20	
Beryllium	ND	0.250	0.249	99.4	0.250	0.249	99.5	0.121	80 - 120	20	
Calcium	62.2	50.0	96.9	69.5	50.0	94.6	64.9	2.38	80 - 120	20	*
Iron	0.661	20.0	22.7	110	20.0	21.5	104	5.13	80 - 120	20	
Magnesium	19.2	50.0	60.6	82.9	50.0	61.7	85.1	1.81	80 - 120	20	
Potassium	8.32	250	263	102	250	260	101	1.02	80 - 120	20	
Selenium	ND	2.00	1.99	99.7	2.00	1.93	96.6	3.21	80 - 120	20	
Sodium	1470	250	1750	113	250	1670	81.3	4.64	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4823898
Report generated 07/07/2016 15:12

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060822 Cal ID: ICP-THERMO3 - Worknum: WG573973
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG573190-02 File ID: T3.062316.201412 Dil: 1 Matrix: WATER
Sample ID: WG573190-07 MS File ID: T3.062316.201808 Dil: 1 Units: mg/L
Sample ID: WG573190-08 MSD File ID: T3.062316.202147 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Aluminum	ND	6.25	6.24	99.9	6.25	6.28	101	0.589	80 - 120	20	
Beryllium	ND	0.0313	0.0310	99.3	0.0313	0.0314	100	1.16	80 - 120	20	
Calcium	66.5	6.25	71.3	76.5	6.25	73.1	106	2.53	80 - 120	20	*
Iron	0.336	2.50	2.91	103	2.50	2.93	104	0.788	80 - 120	20	
Magnesium	18.8	6.25	25.0	99.9	6.25	25.4	106	1.47	80 - 120	20	
Potassium	1.76	31.3	33.3	101	31.3	33.9	103	1.61	80 - 120	20	
Sodium	19.9	31.3	51.5	101	31.3	52.3	104	1.67	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4823898
Report generated 07/07/2016 15:12

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060822 Cal ID: ICP-THERMO3 - Worknum: WG573973
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG573190-02 File ID: T3.062516.132554 Dil: 1 Matrix: WATER
Sample ID: WG573190-07 MS File ID: T3.062516.132950 Dil: 1 Units: mg/L
Sample ID: WG573190-08 MSD File ID: T3.062516.133327 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Selenium	ND	0.250	0.241	96.4	0.250	0.240	96.0	0.437	80 - 120	20	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4823898
Report generated 07/07/2016 15:12

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16060822 **Worknum:** WG573973
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG573973-04 **File ID:** T3.062516.134830 **Dil:** 5 **Units:** ug/L
Sample: L16060822-02 **File ID:** T3.062516.134058 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	7.00		ND	U		
Beryllium	0.100		0.600		500.00	E
Calcium	6220		5990		3.69	
Iron	2080		2120		1.93	
Magnesium	4400		4250		3.40	
Potassium	1500		1580		5.21	
Selenium	4.52		ND	U		
Sodium	83200		84000		0.89	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4823892
06/27/2016 10:55

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16060822 **Worknum:** WG573973
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG573973-02 **File ID:** T3.062316.195438 **Dil:** 5 **Units:** ug/L
Sample: L16060779-11 **File ID:** T3.062316.194701 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	173		160		7.72	
Beryllium	0.0300	X	0.100	X	233.00	
Calcium	4280		3960		7.51	
Iron	98.8		139		40.50	E
Magnesium	726		289		60.30	E
Potassium	444		612		37.80	E
Selenium	ND	U	ND	U		
Sodium	142000		130000		8.61	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4823892
06/27/2016 10:55

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060822 **Worknum:** WG573973
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG573973-01 **File ID:** T3.062316.195059 **Dil:** 1 **Units:** ug/L
Sample ID: L16060779-11 **File ID:** T3.062316.194701 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	5140		173		5000	99.6	75 - 125	
BERYLLIUM	25.0		0	U	25	99.8	75 - 125	
CALCIUM	8980		4280		5000	102.5	75 - 125	
IRON	2120		98.8	F	2000	101.7	75 - 125	
MAGNESIUM	5660		726	F	5000	100.1	75 - 125	
POTASSIUM	25600		444	F	25000	100.7	75 - 125	
SELENIUM	192		0	U	200	96.2	75 - 125	
SODIUM	153000		142000		25000	101.9	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4823893
Report generated: 06/27/2016 10:55

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060822 **Worknum:** WG573973
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG573973-03 **File ID:** T3.062516.134452 **Dil:** 1 **Units:** ug/L
Sample ID: L16060822-02 **File ID:** T3.062516.134058 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	4880		0	U	5000	97.5	75 - 125	
BERYLLIUM	24.3		0	U	25	97.1	75 - 125	
CALCIUM	10600		6220		5000	101.0	75 - 125	
IRON	3850		2080		2000	99.0	75 - 125	
MAGNESIUM	8760		4400		5000	96.0	75 - 125	
POTASSIUM	25800		1500	F	25000	97.9	75 - 125	
SELENIUM	192		4.52	F	200	94.2	75 - 125	
SODIUM	100000		83200		25000	100.3	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4823893
Report generated: 06/27/2016 10:55

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16060822	Workgroup (AAB#):	WG573973
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG574093	Initial Calibration Date:	23-JUN-2016 16:45

	WG574093-01		WG574093-02		WG574093-03		WG574093-04		WG574093-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.00129	.1	0.00207	.2	0.00279	10	0.0950	20	0.188	.999993	
BERYLLIUM	0	0.000930	.0005	0.00138	.001	0.00179	.05	0.0552	.1	0.108	.99998	
CALCIUM	0	0.000280	.1	0.00433	.2	0.00735	10	0.497	20	0.993	.999968	
IRON	0	-0.000490	.04	0.000710	.08	0.000970	4	0.0998	8	0.200	.999657	
MAGNESIUM	0	-0.000700	NA	NA	.2	0.000790	10	0.0960	20	0.193	.999996	
POTASSIUM	0	-0.0106	.5	0.0183	1	0.0487	50	3.45	100	6.93	.999984	
SELENIUM	0	-0.000250	NA	NA	.008	-0.000140	.4	0.00687	.8	0.0139	.999993	
SODIUM	0	-0.0645	.5	0.0202	1	0.0962	50	9.63	100	19.4	.999985	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4823901
Report generated: 27-JUN-2016 10:56

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16060822	Workgroup (AAB#):	WG573973
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG574249	Initial Calibration Date:	25-JUN-2016 12:36

	WG574249-01		WG574249-02		WG574249-03		WG574249-04		WG574249-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000800	.1	0.00148	.2	0.00220	10	0.0828	20	0.162	.99995	
BERYLLIUM	0	0.000480	.0005	0.000970	.001	0.00139	.05	0.0482	.1	0.0948	.999766	
CALCIUM	0	0.00288	.1	0.00582	.2	0.00931	10	0.466	20	0.917	.99989	
IRON	0	-0.000710	.04	0.000330	.08	0.00148	4	0.0965	8	0.191	.99933	
MAGNESIUM	0	-0.000260	NA	NA	.2	0.00109	10	0.0796	20	0.159	.99999	
POTASSIUM	0	-0.00661	.5	0.0195	1	0.0419	50	3.07	100	6.10	.999988	
SELENIUM	0	-0.000510	NA	NA	.008	-0.000340	.4	0.00649	.8	0.0134	.999238	
SODIUM	0	-0.0478	.5	0.0267	1	0.108	50	9.20	100	18.4	.99999	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4823901
Report generated: 27-JUN-2016 10:56

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060822
Run Date: 06/23/2016
Sample ID: WG574093-07
Instrument ID: ICP-THERMO3
Run Time: 16:52
Method: 6010C
File ID: T3.062316.165229
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-THERI - 23-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	-.00449	F
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4823903
Report generated 06/27/2016 10:56

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060822
Run Date: 06/25/2016
Sample ID: WG574249-07
Instrument ID: ICP-THERMO3
Run Time: 12:43
Method: 6010C
File ID: T3.062516.124348
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-THERI - 25-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	.0087	*
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4823903
Report generated 06/27/2016 10:56

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/23/2016
Sample ID: WG574093-13
Instrument ID: ICP-THERMO3
Run Time: 17:15
Method: 6010C
File ID: T3.062316.171523
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4823906
Report generated 06/27/2016 10:56

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/23/2016
Sample ID: WG574093-19
Instrument ID: ICP-THERMO3
Run Time: 19:20
Method: 6010C
File ID: T3.062316.192008
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.423	F

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Report generated 06/27/2016 10:56

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/23/2016
Sample ID: WG574093-21
Instrument ID: ICP-THERMO3
Run Time: 20:06
Method: 6010C
File ID: T3.062316.200616
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/23/2016
Sample ID: WG574093-23
Instrument ID: ICP-THERMO3
Run Time: 20:52
Method: 6010C
File ID: T3.062316.205247
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	-0.00415	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/23/2016
Sample ID: WG574093-25
Instrument ID: ICP-THERMO3
Run Time: 21:39
Method: 6010C
File ID: T3.062316.213949
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/25/2016
Sample ID: WG574249-13
Instrument ID: ICP-THERMO3
Run Time: 13:06
Method: 6010C
File ID: T3.062516.130641
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00482	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/25/2016
Sample ID: WG574249-15
Instrument ID: ICP-THERMO3
Run Time: 14:00
Method: 6010C
File ID: T3.062516.140001
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/25/2016
Sample ID: WG574249-44
Instrument ID: ICP-THERMO3
Run Time: 23:40
Method: 6010C
File ID: T3.062516.234025
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4823906
Report generated 06/27/2016 10:56

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/25/2016
Sample ID: WG574249-48
Instrument ID: ICP-THERMO3
Run Time: 23:55
Method: 6010C
File ID: T3.062516.235530
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4823906
Report generated 06/27/2016 10:56

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060822 Run Date: 06/23/2016 Sample ID: WG574093-06
Instrument ID: ICP-THERMO3 Run Time: 16:48 Method: 6010C
File ID: T3.062316.164851 Analyst: JYH Units: mg/L
Workgroup (AAB#): WG573973 Cal ID: ICP-TH - 23-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	10.0	100	90 - 110	
Beryllium		.05	0.0505	101	90 - 110	
Calcium		10	10.0	100	90 - 110	
Iron		4	4.01	100	90 - 110	
Magnesium		10	10.1	101	90 - 110	
Potassium		50	50.2	100	90 - 110	
Selenium		.4	0.399	99.8	90 - 110	
Sodium		50	50.1	100	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4823902
Report generated 06/27/2016 10:56

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060822 Run Date: 06/25/2016 Sample ID: WG574249-06
Instrument ID: ICP-THERMO3 Run Time: 12:40 Method: 6010C
File ID: T3.062516.124009 Analyst: JYH Units: mg/L
Workgroup (AAB#): WG573973 Cal ID: ICP-TH - 25-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	10.1	101	90 - 110	
Beryllium		.05	0.0504	101	90 - 110	
Calcium		10	10.1	101	90 - 110	
Iron		4	4.05	101	90 - 110	
Magnesium		10	10.1	101	90 - 110	
Potassium		50	50.3	101	90 - 110	
Selenium		.4	0.400	100	90 - 110	
Sodium		50	50.1	100	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4823902
Report generated 06/27/2016 10:56

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822
Run Date: 06/23/2016
Sample ID: WG574093-12
Instrument ID: ICP-THERMO3
Run Time: 17:11
Method: 6010C
File ID: T3.062316.171145
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.1	mg/L	101	90 - 110		
Beryllium		0.0500	0.0502	mg/L	100	90 - 110		
Calcium		10.0	10.1	mg/L	101	90 - 110		
Iron		4.00	4.06	mg/L	102	90 - 110		
Magnesium		10.0	10.2	mg/L	102	90 - 110		
Potassium		50.0	50.0	mg/L	100	90 - 110		
Selenium		0.400	0.397	mg/L	99.3	90 - 110		
Sodium		50.0	49.9	mg/L	99.8	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822
Run Date: 06/23/2016
Sample ID: WG574093-18
Instrument ID: ICP-THERMO3
Run Time: 19:16
Method: 6010C
File ID: T3.062316.191630
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.45	mg/L	94.5	90 - 110		
Beryllium		0.0500	0.0476	mg/L	95.2	90 - 110		
Calcium		10.0	9.56	mg/L	95.6	90 - 110		
Iron		4.00	3.80	mg/L	95.0	90 - 110		
Magnesium		10.0	9.52	mg/L	95.2	90 - 110		
Potassium		50.0	47.8	mg/L	95.7	90 - 110		
Selenium		0.400	0.378	mg/L	94.5	90 - 110		
Sodium		50.0	48.1	mg/L	96.3	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822
Run Date: 06/23/2016
Sample ID: WG574093-20
Instrument ID: ICP-THERMO3
Run Time: 20:02
Method: 6010C
File ID: T3.062316.200238
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.57	mg/L	95.7	90 - 110		
Beryllium		0.0500	0.0483	mg/L	96.5	90 - 110		
Calcium		10.0	9.59	mg/L	95.9	90 - 110		
Iron		4.00	3.86	mg/L	96.5	90 - 110		
Magnesium		10.0	9.65	mg/L	96.5	90 - 110		
Potassium		50.0	48.3	mg/L	96.5	90 - 110		
Selenium		0.400	0.384	mg/L	95.9	90 - 110		
Sodium		50.0	47.9	mg/L	95.9	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822
Run Date: 06/23/2016
Sample ID: WG574093-22
Instrument ID: ICP-THERMO3
Run Time: 20:49
Method: 6010C
File ID: T3.062316.204910
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.91	mg/L	99.1	90 - 110		
Beryllium		0.0500	0.0500	mg/L	99.9	90 - 110		
Calcium		10.0	9.85	mg/L	98.5	90 - 110		
Iron		4.00	3.92	mg/L	98.0	90 - 110		
Magnesium		10.0	9.86	mg/L	98.6	90 - 110		
Potassium		50.0	49.3	mg/L	98.6	90 - 110		
Selenium		0.400	0.405	mg/L	101	90 - 110		
Sodium		50.0	49.2	mg/L	98.4	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822
Run Date: 06/23/2016
Sample ID: WG574093-24
Instrument ID: ICP-THERMO3
Run Time: 21:36
Method: 6010C
File ID: T3.062316.213611
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.40	mg/L	94.0	90 - 110		
Beryllium		0.0500	0.0475	mg/L	95.0	90 - 110		
Calcium		10.0	9.50	mg/L	95.0	90 - 110		
Iron		4.00	3.81	mg/L	95.4	90 - 110		
Magnesium		10.0	9.53	mg/L	95.3	90 - 110		
Potassium		50.0	47.4	mg/L	94.9	90 - 110		
Selenium		0.400	0.380	mg/L	95.0	90 - 110		
Sodium		50.0	47.3	mg/L	94.6	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822
Run Date: 06/25/2016
Sample ID: WG574249-12
Instrument ID: ICP-THERMO3
Run Time: 13:03
Method: 6010C
File ID: T3.062516.130304
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.0	mg/L	100	90 - 110		
Beryllium		0.0500	0.0498	mg/L	99.6	90 - 110		
Calcium		10.0	9.94	mg/L	99.4	90 - 110		
Iron		4.00	4.00	mg/L	99.9	90 - 110		
Magnesium		10.0	9.92	mg/L	99.2	90 - 110		
Potassium		50.0	49.2	mg/L	98.4	90 - 110		
Selenium		0.400	0.405	mg/L	101	90 - 110		
Sodium		50.0	49.3	mg/L	98.6	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4823905
Report generated 06/27/2016 10:56

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822
Run Date: 06/25/2016
Sample ID: WG574249-14
Instrument ID: ICP-THERMO3
Run Time: 13:56
Method: 6010C
File ID: T3.062516.135622
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.88	mg/L	98.8	90 - 110		
Beryllium		0.0500	0.0488	mg/L	97.5	90 - 110		
Calcium		10.0	9.94	mg/L	99.4	90 - 110		
Iron		4.00	3.96	mg/L	98.9	90 - 110		
Magnesium		10.0	9.70	mg/L	97.0	90 - 110		
Potassium		50.0	49.1	mg/L	98.2	90 - 110		
Selenium		0.400	0.395	mg/L	98.8	90 - 110		
Sodium		50.0	49.4	mg/L	98.8	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Report generated 06/27/2016 10:56

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822
Run Date: 06/25/2016
Sample ID: WG574249-43
Instrument ID: ICP-THERMO3
Run Time: 23:36
Method: 6010C
File ID: T3.062516.233647
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.2	mg/L	102	90 - 110		
Beryllium		0.0500	0.0497	mg/L	99.5	90 - 110		
Calcium		10.0	10.4	mg/L	104	90 - 110		
Iron		4.00	4.06	mg/L	102	90 - 110		
Magnesium		10.0	9.72	mg/L	97.2	90 - 110		
Potassium		50.0	51.1	mg/L	102	90 - 110		
Selenium		0.400	0.405	mg/L	101	90 - 110		
Sodium		50.0	52.1	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4823905
Report generated 06/27/2016 10:56

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822
Run Date: 06/25/2016
Sample ID: WG574249-47
Instrument ID: ICP-THERMO3
Run Time: 23:51
Method: 6010C
File ID: T3.062516.235152
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.3	mg/L	103	90 - 110		
Beryllium		0.0500	0.0502	mg/L	100	90 - 110		
Calcium		10.0	10.5	mg/L	105	90 - 110		
Iron		4.00	4.08	mg/L	102	90 - 110		
Magnesium		10.0	9.81	mg/L	98.1	90 - 110		
Potassium		50.0	51.1	mg/L	102	90 - 110		
Selenium		0.400	0.412	mg/L	103	90 - 110		
Sodium		50.0	51.8	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4823905
Report generated 06/27/2016 10:56

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060822
Run Date: 06/23/2016
Sample ID: WG574093-08
Instrument ID: ICP-THERMO3
Run Time: 16:56
Method: 6010C
File ID: T3.062316.165617
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.162	mg/L	101	70 - 130		
Beryllium		0.00160	0.00155	mg/L	96.9	70 - 130		
Calcium		0.400	0.451	mg/L	113	70 - 130		
Iron		0.0800	0.0758	mg/L	94.7	70 - 130		
Magnesium		0.400	0.430	mg/L	108	70 - 130		
Potassium		0.800	0.815	mg/L	102	70 - 130		
Sodium		0.400	0.447	mg/L	112	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4823907
Report generated 06/27/2016 10:56

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060822
Run Date: 06/23/2016
Sample ID: WG574093-28
Instrument ID: ICP-THERMO3
Run Time: 22:27
Method: 6010C
File ID: T3.062316.222708
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.137	mg/L	85.5	70 - 130		
Beryllium		0.00160	0.00136	mg/L	85.0	70 - 130		
Calcium		0.400	0.387	mg/L	96.8	70 - 130		
Iron		0.0800	0.0604	mg/L	75.5	70 - 130		
Magnesium		0.400	0.355	mg/L	88.8	70 - 130		
Potassium		0.800	0.745	mg/L	93.1	70 - 130		
Sodium		0.400	0.436	mg/L	109	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4823907
Report generated 06/27/2016 10:56

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060822
Run Date: 06/25/2016
Sample ID: WG574249-08
Instrument ID: ICP-THERMO3
Run Time: 12:47
Method: 6010C
File ID: T3.062516.124745
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.165	mg/L	103	70 - 130		
Beryllium		0.00160	0.00166	mg/L	104	70 - 130		
Calcium		0.400	0.414	mg/L	103	70 - 130		
Iron		0.0800	0.0939	mg/L	117	70 - 130		
Magnesium		0.400	0.441	mg/L	110	70 - 130		
Potassium		0.800	0.887	mg/L	111	70 - 130		
Selenium		0.0160	0.0204	mg/L	127	70 - 130		
Sodium		0.400	0.442	mg/L	110	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4823907
Report generated 06/27/2016 10:56

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060822
Run Date: 06/25/2016
Sample ID: WG574249-26
Instrument ID: ICP-THERMO3
Run Time: 17:25
Method: 6010C
File ID: T3.062516.172540
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.163	mg/L	102	70 - 130		
Beryllium		0.00160	0.00172	mg/L	108	70 - 130		
Calcium		0.400	0.375	mg/L	93.8	70 - 130		
Iron		0.0800	0.0950	mg/L	119	70 - 130		
Potassium		0.800	0.714	mg/L	89.2	70 - 130		
Selenium		0.0160	0.0209	mg/L	131	70 - 130		*
Sodium		0.400	0.408	mg/L	102	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4823907
Report generated 06/27/2016 10:56

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060822
Instrument ID: ICP-THERMO3
Sol. A : WG574093-10 **File ID:** T3.062316.170408
Sol. AB : WG574093-11 **File ID:** T3.062316.170801

Workgroup (AAB#): WG573973
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	266	106	250	265	106	
Beryllium	NS	0	NS	0.250	0.248	99.2	
Calcium	250	253	101	250	252	101	
Iron	100	99.7	99.7	100	97.4	97.4	
Magnesium	250	253	101	250	248	99.2	
Potassium	NS	0.163	NS	5.00	5.24	105	
Selenium	NS	-0.00219	NS	0.250	0.242	96.8	
Sodium	NS	0.0453	NS	5.00	5.37	107	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4823904
Report generated 06/27/2016 10:56

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060822
Instrument ID: ICP-THERMO3
Sol. A : WG574249-10 **File ID:** T3.062516.125529
Sol. AB : WG574249-11 **File ID:** T3.062516.125921

Workgroup (AAB#): WG573973
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	266	106	250	268	107	
Beryllium	NS	0.000110	NS	0.250	0.245	98.0	
Calcium	250	244	97.6	250	247	98.8	
Iron	100	96.8	96.8	100	96.5	96.5	
Magnesium	250	249	99.6	250	249	99.6	
Potassium	NS	0.0533	NS	5.00	5.19	104	
Selenium	NS	-0.00224	NS	0.250	0.249	99.6	
Sodium	NS	0.0404	NS	5.00	5.32	106	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4823904
Report generated 06/27/2016 10:56

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060822
Instrument ID: ICP-THERMO3
Sol. A : WG574249-45 **File ID:** T3.062516.234420
Sol. AB : WG574249-46 **File ID:** T3.062516.234809

Workgroup (AAB#): WG573973
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	263	105	250	271	108	
Beryllium	NS	0.000140	NS	0.250	0.244	97.6	
Calcium	250	248	99.2	250	254	102	
Iron	100	95.6	95.6	100	96.1	96.1	
Magnesium	250	236	94.4	250	239	95.6	
Potassium	NS	-0.0460	NS	5.00	5.21	104	
Selenium	NS	-0.00782	NS	0.250	0.238	95.2	
Sodium	NS	0.0818	NS	5.00	5.50	110	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4823904
Report generated 06/27/2016 10:56

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060822 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	AG	AL	AS	B	BA
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000410	0	0	0
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0.0115	0	-0.0000800
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0.000260	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	-0.000289	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	-0.0000490	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.0000120	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0.0000300	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4823900
Report generated: 06/27/2016 10:56

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060822 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	BE	CA	CD	CO	CR
ALUMINUM	308.20	0	0	0	-0.000820	0
ANTIMONY	206.80	0	0	0	0	0.0200
ARSENIC	189.00	0	0	0	0	-0.00190
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0.00343	0
CADMIUM	228.80	0	0	0	-0.00390	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	-0.000200
COPPER	224.70	0	0	0	0.0000770	-0.00100
IRON	261.10	0	0	0	0	-0.00100
LEAD	220.30	0	0	0	-0.0000130	-0.000132
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.0000500
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	-0.000860	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0.00000500	0	0	0
THALLIUM	190.80	0	0	0	0.00240	0.000276
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	-0.00480
ZINC	206.20	0	0	0	0	-0.00180
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4823900
Report generated: 06/27/2016 10:56

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060822 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	CU	FE	K	LI	MG
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000560	0	0	0
ARSENIC	189.00	0	-0.0000500	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0.000300	0	0	0
CADMIUM	228.80	0	-0.0000190	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000500	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0.00160	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0.000609	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.00000300
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0.0000420	0	0	0
PHOSPHORUS	214.90	-0.323	0.000900	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000270	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000400	0	0	0
VANADIUM	292.40	0	0.00000700	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	-0.0000300	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4823900
Report generated: 06/27/2016 10:56

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060822 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	MN	MO	NA	NI	P
ALUMINUM	308.20	0	0.0163	0	0	0
ANTIMONY	206.80	0	-0.00310	0	-0.00350	0
ARSENIC	189.00	0	0.00120	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	-0.00190	0	0	0
CADMIUM	228.80	0	0.0000320	0	-0.000770	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0.000360	0	0	0	0
COBALT	228.60	0	-0.00200	0	0.000100	0
COPPER	224.70	0	0.00160	0	-0.0123	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	-0.00210	0	0.000110	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	-0.00290	-0.0230	0	0	0
MANGANESE	257.60	0	0.0000300	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0.00710	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0.000600	0.000580	0	0	0
SILICON	212.40	0	0.0187	0	0	0
SILVER	328.00	0	-0.0000430	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0.00100	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000153	0	0	0
VANADIUM	292.40	-0.000200	-0.00830	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4823900
Report generated: 06/27/2016 10:56

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060822 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	PB	SB	SE	SI	SN
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0	0	0	-0.0220
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0.00440	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4823900
Report generated: 06/27/2016 10:56

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060822 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	SR	TI	TL	V	ZN
ALUMINUM	308.20	0	0	0	0.0950	0
ANTIMONY	206.80	0	0.00110	0	-0.00360	0
ARSENIC	189.00	0	0	0	0.000107	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	-0.00000700	0	0.000990	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0.000102	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000550	0	0	0
COBALT	228.60	0	0.00210	0	0.0000200	0
COPPER	224.70	0	0.000269	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	-0.000126	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	-0.00290	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	-0.000110	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	-0.00100	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000720	0	-0.000260	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.000800	0	-0.00490	0
TIN	189.90	0	-0.00190	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0.000820	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4823900
Report generated: 06/27/2016 10:56

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060822 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	ZR
ALUMINUM	308.20	0
ANTIMONY	206.80	0
ARSENIC	189.00	0
BARIUM	455.40	0
BERYLLIUM	313.10	0
BORON	249.60	0
CADMIUM	228.80	0
CALCIUM	422.60	0
CHROMIUM	267.70	0
COBALT	228.60	0
COPPER	224.70	0
IRON	261.10	0
LEAD	220.30	0
LITHIUM	670.70	0
MAGNESIUM	279.00	0
MANGANESE	257.60	0
MOLYBDENUM	202.00	0
NICKEL	231.60	0
PHOSPHORUS	214.90	0
POTASSIUM	766.40	0
SELENIUM	196.00	0
SILICON	212.40	0
SILVER	328.00	0
SODIUM	589.50	0
STRONTIUM	407.70	0
THALLIUM	190.80	0
TIN	189.90	0
TITANIUM	337.20	0
VANADIUM	292.40	0
ZINC	206.20	0
ZIRCONIUM	339.10	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4823900
Report generated: 06/27/2016 10:56

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16060822 **Date:** 04/29/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	900.0
Antimony	20.00	45.0
Arsenic	10.00	45.0
Barium	10.00	45.0
Beryllium	10.00	1.8
Boron	20.00	45.0
Cadmium	20.00	4.5
Calcium	5.00	270.0
Chromium	20.00	36.0
Cobalt	20.00	45.0
Copper	20.00	180.0
Iron	5.00	720.0
Lead	20.00	225.0
Lithium	5.00	36.0
Magnesium	5.00	900.0
Manganese	10.00	36.0
Molybdenum	20.00	27.0
Nickel	20.00	90.0
Phosphorus	20.00	180.0
Potassium	5.00	450.0
Selenium	20.00	90.0
Silicon	20.00	36.0
Silver	10.00	9.0
Sodium	5.00	270.0
Strontium	5.00	9.0
Thallium	20.00	18.0
Tin	20.00	45.0
Titanium	5.00	36.0
Vanadium	20.00	27.0
Zinc	20.00	45.0
Zirconium	10.00	45.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4823899
Report generated: 06/27/2016 10:56

2.3.1.3 Raw Data

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000292	0.057216	0.000000	1.000000
Al 308.215 {109}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.001288	0.009253	0.000000	1.000000
As 189.042 {478}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000077	0.027152	0.000000	1.000000
B 249.678 {135}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.000040	0.025100	0.000000	1.000000
Ba 455.403 { 74}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.031526	2.349165	0.000000	1.000000
Be 313.107 {108}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.000934	1.055405	0.000000	1.000000
Ca 422.673 { 80}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.000283	0.049609	0.000000	1.000000
Cd 228.802 {447}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000142	0.651471	0.000000	1.000000
Co 228.616 {447}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000247	0.409702	0.000000	1.000000
Cr 267.716 {126}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.000367	0.066578	0.000000	1.000000
Cu 224.700 {450}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000343	0.142601	0.000000	1.000000
Fe 261.187 {129}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000490	0.025122	0.000000	1.000000
K 766.490 { 44}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.010609	0.069349	0.000000	1.000000
Li 670.784 { 50}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.011827	1.674850	0.000000	1.000000
Mg 279.079 {121}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000702	0.009699	0.000000	1.000000
Mn 257.610 {131}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000277	0.317266	0.000000	1.000000
Mo 202.030 {467}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.000054	0.203043	0.000000	1.000000
Na 589.592 { 57}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.064533	0.194326	0.000000	1.000000
Ni 231.604 {446}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000942	0.155561	0.000000	1.000000
P 214.914 {457}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000263	0.015029	0.000000	1.000000
Pb 220.353 {453}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000678	0.070221	0.000000	1.000000
Sb 206.833 {463}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.000010	0.034653	0.000000	1.000000
Se 196.090 {472}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000253	0.017694	0.000000	1.000000
Si 212.412 {459}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.002512	0.043862	0.000000	1.000000
Sn 189.989 {477}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.000061	0.078522	0.000000	1.000000
Sr 407.771 { 83}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.002450	3.941080	0.000000	1.000000
Ti 337.280 {100}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.003027	0.134433	0.000000	1.000000
Tl 190.856 {477}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000414	0.032326	0.000000	1.000000
V 292.402 {115}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.000001	0.079042	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.000166	0.468267	0.000000	1.000000
Zr 339.198 { 99}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.019987	0.006947	0.000000	1.000000

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999400	0.000005	0.002814	0.009379	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999993	0.000002	0.011897	0.039658	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999595	0.000003	0.004016	0.013387	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999985	0.000001	0.003782	0.012607	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999987	0.000075	0.001344	0.004481	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999980	0.000002	0.000124	0.000413	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999968	0.000025	0.053022	0.176739	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999778	0.000005	0.000338	0.001128	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999932	0.000006	0.000516	0.001721	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999922	0.000003	0.001537	0.005123	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999931	0.000005	0.001747	0.005824	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999657	0.000017	0.028560	0.095199	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999984	0.000125	0.120772	0.402574	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999884	0.000250	0.004948	0.016494	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999996	0.000003	0.098587	0.328625	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999409	0.000035	0.003174	0.010580	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999985	0.000007	0.000553	0.001844	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999985	0.000335	0.039834	0.132780	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999721	0.000012	0.001443	0.004811	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999997	0.000002	0.009293	0.030977	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999947	0.000002	0.004623	0.015411	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999906	0.000004	0.005569	0.018563	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999993	0.000000	0.008923	0.029743	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999495	0.000044	0.003006	0.010020	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999929	0.000006	0.001139	0.003797	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999996	0.000074	0.000554	0.001846	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999177	0.000035	0.008833	0.029443	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999963	0.000001	0.003985	0.013284	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999980	0.000003	0.001255	0.004184	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999976	0.000021	0.000258	0.000861	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.347379	0.000119	0.361260	1.204198	OK.	1.000000	0.000000	1	0

Sample Name: S0 Acquired: 6/23/2016 16:29:39 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00029**	**.00129**	**-.00008**	**.00004**	**.03153**	**.00093**	**.00028**
Stddev	.00015	.00002	.00014	.00006	.00240	.00003	.00198
%RSD	52.623	1.3157	185.14	142.12	7.6014	3.6422	698.55
#1	-.00011	.00130	.00005	.00006	.03428	.00091	-.00196
#2	-.00038	.00127	-.00005	.00008	.03039	.00092	.00105
#3	-.00038	.00130	-.00023	-.00002	.02991	.00097	.00176

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00014**	**-.00025**	**.00037**	**-.00034**	**-.00049**	**-.01061**	**-.01182**
Stddev	.00021	.00007	.00007	.00028	.00069	.00571	.01080
%RSD	147.13	28.247	17.769	80.896	139.88	53.794	91.363
#1	-.00024	-.00033	.00043	-.00059	.00004	-.01711	-.01999
#2	.00010	-.00020	.00030	-.00004	-.00127	-.00832	.00042
#3	-.00029	-.00021	.00036	-.00039	-.00024	-.00641	-.01590

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00070**	**-.00028**	**.00005**	**-.06454**	**-.00094**	**-.00026**	**-.00068**
Stddev	.00069	.00044	.00010	.00127	.00021	.00003	.00023
%RSD	98.775	157.73	191.66	1.9745	22.162	11.455	33.344
#1	-.00130	.00016	-.00002	-.06443	-.00114	-.00027	-.00091
#2	-.00086	-.00028	.00017	-.06587	-.00072	-.00029	-.00046
#3	.00006	-.00072	.00001	-.06333	-.00096	-.00023	-.00067

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00001**	**-.00025**	**.00251**	**.00006**	**.00245**	**-.00303**	**-.00041**
Stddev	.00016	.00016	.00016	.00001	.00241	.00117	.00012
%RSD	1654.9	64.234	6.3986	13.348	98.630	38.681	28.019
#1	-.00002	-.00035	.00248	.00005	.00157	-.00260	-.00029
#2	-.00014	-.00034	.00237	.00007	.00059	-.00213	-.00042
#3	.00019	-.00007	.00269	.00006	.00518	-.00435	-.00053

Sample Name: S0 Acquired: 6/23/2016 16:29:39 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00000	.00017	-.01999
Stddev	.00010	.00005	.00203
%RSD	13188.	28.598	10.137
#1	.00004	.00021	-.01773
#2	-.00011	.00012	-.02164
#3	.00008	.00017	-.02061

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6699.4	41370.	2127.3
Stddev	40.4	297.	43.0
%RSD	.60365	.71762	2.0194
#1	6718.4	41699.	2078.6
#2	6726.8	41290.	2159.8
#3	6653.0	41122.	2143.5

Sample Name: S1 Acquired: 6/23/2016 16:33:38 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00002**	**.00207**	**.04860**	**.00138**	**.00433**	**.00022**	**.00042**
Stddev	.00014	.00009	.00373	.00005	.00188	.00012	.00011
%RSD	835.38	4.5773	7.6793	3.9714	43.525	57.028	26.394
#1	-.00012	.00203	.04518	.00133	.00557	.00008	.00054
#2	-.00007	.00218	.05258	.00138	.00216	.00025	.00040
#3	.00015	.00200	.04803	.00144	.00525	.00032	.00032

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00058**	**.00026**	**.00071**	**.01834**	**.00157**	**.00165**	**.02022**
Stddev	.00008	.00010	.00029	.00177	.00050	.00017	.00883
%RSD	13.891	39.383	40.273	9.6501	31.586	10.184	43.651
#1	.00049	.00020	.00042	.02032	.00204	.00159	.01736
#2	.00061	.00038	.00072	.01689	.00105	.00184	.01318
#3	.00064	.00021	.00099	.01782	.00163	.00152	.03013

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00007**	**.00087**	**-.00042**	**.00040**	**.00339**	**.00056**	**.03432**
Stddev	.00012	.00001	.00016	.00029	.00012	.00009	.00173
%RSD	168.70	1.1803	37.487	70.628	3.5276	16.358	5.0547
#1	-.00003	.00088	-.00031	.00019	.00333	.00066	.03349
#2	-.00020	.00086	-.00060	.00073	.00330	.00055	.03631
#3	.00002	.00087	-.00035	.00029	.00352	.00048	.03315

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00279**	**.00063**	**.00386**	**-.01703**
Stddev	.00101	.00006	.00004	.00240
%RSD	36.246	8.7705	.91033	14.105
#1	-.00167	.00068	.00390	-.01827
#2	-.00364	.00064	.00384	-.01856
#3	-.00305	.00057	.00384	-.01426

Sample Name: S1 Acquired: 6/23/2016 16:33:38 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6745.7**	**41805.**	**2129.8**
Stddev	22.3	250.	32.4
%RSD	.33088	.59789	1.5201
#1	6735.5	41617.	2128.0
#2	6730.4	42089.	2098.4
#3	6771.4	41710.	2163.1

Sample Name: S2 Acquired: 6/23/2016 16:37:37 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00004**	**.00279**	**.00016**	**.00026**	**.06973**	**.00179**	**.00735**
Stddev	.00008	.00007	.00007	.00002	.00127	.00005	.00035
%RSD	185.58	2.6503	44.732	8.8024	1.8178	2.7546	4.6908
#1	-.00013	.00287	.00008	.00023	.06878	.00184	.00697
#2	-.00000	.00273	.00022	.00027	.07117	.00174	.00747
#3	.00001	.00276	.00018	.00027	.06924	.00179	.00763

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00048**	**.00123**	**.00088**	**.00073**	**.00097**	**.04869**	**.00987**
Stddev	.00017	.00004	.00007	.00007	.00080	.01177	.00041
%RSD	36.245	2.8717	7.5775	10.086	82.497	24.183	4.1595
#1	.00028	.00126	.00081	.00081	.00163	.05564	.00947
#2	.00060	.00124	.00089	.00066	.00008	.03509	.01029
#3	.00056	.00119	.00095	.00072	.00119	.05534	.00985

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00079**	**.00313**	**.00327**	**.09617**	**.00018**	**.00208**	**-.00005**
Stddev	.00042	.00021	.00008	.00423	.00014	.00007	.00012
%RSD	53.033	6.7962	2.3656	4.4010	80.620	3.1401	235.98
#1	.00120	.00337	.00326	.09640	.00034	.00201	.00009
#2	.00080	.00296	.00319	.09182	.00013	.00215	-.00010
#3	.00036	.00306	.00335	.10028	.00006	.00208	-.00013

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00074**	**-.00014**	**.00523**	**.00123**	**.06780**	**-.00103**	**-.00017**
Stddev	.00018	.00007	.00014	.00004	.00229	.00100	.00009
%RSD	24.515	47.215	2.6523	3.3445	3.3781	97.203	54.232
#1	.00091	-.00021	.00538	.00120	.06958	-.00212	-.00021
#2	.00075	-.00013	.00511	.00121	.06861	-.00081	-.00007
#3	.00055	-.00008	.00519	.00127	.06522	-.00015	-.00025

Sample Name: S2 Acquired: 6/23/2016 16:37:37 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**.00124**	**.00773**	**-.01963**
Stddev	.00006	.00011	.00107
%RSD	4.9778	1.3726	5.4480
#1	.00125	.00769	-.01940
#2	.00117	.00765	-.01869
#3	.00129	.00785	-.02079
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6707.0**	**42016.**	**2132.5**
Stddev	31.7	150.	7.6
%RSD	.47214	.35787	.35792
#1	6673.0	41936.	2136.2
#2	6712.3	41922.	2137.6
#3	6735.6	42189.	2123.7

Sample Name: S3 Acquired: 6/23/2016 16:41:36 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.02256**	**.09496**	**.01071**	**.01256**	**2.3852**	**.05519**	**.49691**
Stddev	.00004	.00014	.00002	.00013	.0192	.00031	.00535
%RSD	.17307	.15212	.16075	1.0212	.80533	.56599	1.0768
#1	.02258	.09479	.01070	.01253	2.3633	.05545	.49075
#2	.02251	.09505	.01073	.01245	2.3992	.05484	.50038
#3	.02258	.09504	.01070	.01270	2.3931	.05527	.49960

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.03562**	**.08233**	**.03402**	**.07207**	**.09984**	**3.4482**	**1.6795**
Stddev	.00009	.00032	.00019	.00009	.00122	.0308	.0141
%RSD	.25272	.38620	.54823	.12427	1.2238	.89404	.83921
#1	.03572	.08197	.03404	.07201	.09875	3.4126	1.6633
#2	.03558	.08257	.03383	.07204	.09961	3.4653	1.6862
#3	.03556	.08245	.03420	.07218	.10116	3.4666	1.6890

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.09604**	**.15811**	**.20462**	**9.6297**	**.07778**	**.14758**	**.03484**
Stddev	.00184	.00180	.00109	.0816	.00017	.00014	.00035
%RSD	1.9192	1.1373	.53383	.84731	.21367	.09481	1.0023
#1	.09394	.15608	.20545	9.5375	.07784	.14750	.03445
#2	.09678	.15875	.20503	9.6927	.07791	.14775	.03512
#3	.09739	.15949	.20338	9.6588	.07759	.14751	.03495

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.04088**	**.00687**	**.22552**	**.07884**	**3.9495**	**.13075**	**.01457**
Stddev	.00018	.00008	.00024	.00017	.0426	.00233	.00002
%RSD	.43951	1.1502	.10703	.21290	1.0795	1.7820	.16844
#1	.04086	.00680	.22528	.07865	3.9016	.12806	.01460
#2	.04106	.00686	.22576	.07898	3.9835	.13221	.01455
#3	.04070	.00696	.22552	.07889	3.9633	.13197	.01456

Sample Name: S3 Acquired: 6/23/2016 16:41:36 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**.07955**	**.47276**	**-.01302**
Stddev	.00051	.00054	.00096
%RSD	.63790	.11390	7.4014
#1	.07969	.47336	-.01283
#2	.07898	.47259	-.01406
#3	.07996	.47232	-.01217
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6638.5**	**41219.**	**2121.0**
Stddev	46.3	234.	20.8
%RSD	.69679	.56802	.98295
#1	6589.4	41153.	2142.8
#2	6644.8	41479.	2101.2
#3	6681.3	41025.	2119.2

Sample Name: S4 Acquired: 6/23/2016 16:45:14 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.04536**	**.18763**	**.02145**	**.02504**	**4.7264**	**.10809**	**.99272**
Stddev	.00018	.00035	.00006	.00014	.0350	.00038	.00548
%RSD	.40723	.18482	.29786	.54138	.74034	.35140	.55236
#1	.04517	.18737	.02151	.02493	4.6879	.10794	.98645
#2	.04537	.18748	.02147	.02519	4.7563	.10781	.99661
#3	.04554	.18802	.02139	.02499	4.7351	.10852	.99512

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.07067**	**.16242**	**.06673**	**.14133**	**.20036**	**6.9280**	**3.3265**
Stddev	.00015	.00038	.00017	.00047	.00154	.0408	.0160
%RSD	.20929	.23179	.25203	.33195	.76659	.58859	.48243
#1	.07077	.16232	.06654	.14092	.19934	6.8881	3.3089
#2	.07075	.16283	.06687	.14184	.20213	6.9696	3.3403
#3	.07050	.16210	.06677	.14122	.19962	6.9263	3.3303

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.19280**	**.31594**	**.40461**	**19.378**	**.15355**	**.29587**	**.06972**
Stddev	.00166	.00297	.00142	.119	.00024	.00033	.00055
%RSD	.85870	.94051	.34987	.61191	.15345	.11299	.78837
#1	.19091	.31269	.40561	19.253	.15352	.29579	.06923
#2	.19352	.31659	.40524	19.489	.15380	.29623	.07032
#3	.19397	.31853	.40299	19.392	.15333	.29558	.06962

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.08150**	**.01388**	**.44160**	**.15662**	**7.8766**	**.26694**	**.02902**
Stddev	.00043	.00013	.00090	.00039	.0522	.00276	.00015
%RSD	.53112	.92390	.20356	.24938	.66265	1.0329	.50476
#1	.08128	.01397	.44144	.15669	7.8213	.26376	.02890
#2	.08200	.01394	.44257	.15697	7.9249	.26844	.02918
#3	.08123	.01374	.44079	.15620	7.8835	.26861	.02897

Sample Name: S4 Acquired: 6/23/2016 16:45:14 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**.15703**	**.93159**	**-.00927**
Stddev	.00036	.00158	.00064
%RSD	.22618	.16981	6.9563
#1	.15712	.93104	-.00858
#2	.15664	.93337	-.00938
#3	.15734	.93035	-.00985
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6531.9**	**40084.**	**2097.6**
Stddev	16.2	231.	6.3
%RSD	.24773	.57740	.30149
#1	6549.4	40239.	2103.9
#2	6517.6	40195.	2091.2
#3	6528.6	39818.	2097.7

Sample Name: ICV Acquired: 6/23/2016 16:48:51 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39953**	**10.024**	**.40138**	**.50599**	**1.0070**	**.05053**	**10.036**
Stddev	.00339	.040	.00410	.00222	.0059	.00022	.101
%RSD	.84874	.40015	1.0204	.43801	.58442	.43218	1.0067
#1	.40015	10.065	.39887	.50853	1.0016	.05072	9.9340
#2	.39587	9.9844	.39916	.50451	1.0063	.05029	10.037
#3	.40256	10.022	.40610	.50491	1.0133	.05057	10.136
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05000**	**.20142**	**.50405**	**.50578**	**4.0103**	**50.167**	**1.0145**
Stddev	.00018	.00074	.00219	.00236	.0323	.251	.0072
%RSD	.36119	.36866	.43440	.46709	.80429	.50069	.71348
#1	.04994	.20142	.50464	.50308	4.0274	49.888	1.0064
#2	.05021	.20217	.50162	.50746	3.9731	50.374	1.0203
#3	.04986	.20068	.50588	.50680	4.0305	50.241	1.0167
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.075**	**.50106**	**1.0146**	**50.102**	**.50246**	**9.9799**	**.50553**
Stddev	.156	.00520	.0033	.232	.00089	.0190	.00257
%RSD	1.5448	1.0383	.32210	.46381	.17782	.18993	.50874
#1	9.9213	.49528	1.0136	49.851	.50217	9.9887	.50315
#2	10.071	.50252	1.0182	50.148	.50346	9.9928	.50825
#3	10.233	.50537	1.0119	50.309	.50174	9.9581	.50518
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: ICV Acquired: 6/23/2016 16:48:51 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2034**	**.39904**	**5.0662**	**1.0017**	**1.0068**	**.99368**	**.50263**
Stddev	.0053	.01223	.0118	.0027	.0059	.01682	.00169
%RSD	.44447	3.0652	.23394	.26994	.59001	1.6930	.33671
#1	1.2003	.41278	5.0644	1.0010	1.0005	.98203	.50067
#2	1.2095	.38936	5.0789	1.0047	1.0076	.98605	.50350
#3	1.2003	.39496	5.0554	.99945	1.0123	1.0130	.50370
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0106**	**1.0101**	F **.08377**
Stddev	.0013	.0017	.57243
%RSD	.13014	.17012	683.32
#1	1.0108	1.0096	.41336
#2	1.0092	1.0121	.41517
#3	1.0118	1.0088	-.57721
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-5.0000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6582.9**	**40798.**	**2104.4**
Stddev	57.1	288.	9.3
%RSD	.86719	.70695	.43973
#1	6642.0	40517.	2109.9
#2	6528.1	41093.	2109.6
#3	6578.7	40785.	2093.7

Sample Name: ICB Acquired: 6/23/2016 16:52:29 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00205	.00812	.00204	.00053	.00042	.00004	.08043	.00000
Stddev	.00123	.00380	.00409	.00171	.00048	.00007	.04843	.00019
%RSD	60.002	46.772	200.40	325.30	114.02	191.36	60.215	12542.
#1	.00117	.01182	.00568	-.00071	.00071	-.00005	.13570	.00020
#2	.00153	.00832	-.00239	.00248	.00068	.00009	.04544	-.00018
#3	.00346	.00423	.00283	-.00019	-.00013	.00007	.06015	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	-.00032	.00256	.01917	.26687	-.00090	-.01824	.00334
Stddev	.00068	.00118	.00062	.01550	.00597	.00344	.19098	.00120
%RSD	152.08	365.07	24.256	80.873	2.2373	382.34	1047.0	35.896
#1	.00109	.00091	.00301	.01950	.26758	.00158	-.16456	.00207
#2	-.00027	-.00043	.00283	.00350	.26057	.00055	-.08796	.00445
#3	.00052	-.00145	.00185	.03450	.27245	-.00483	.19780	.00349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00543	.02836	-.00115	.00608	-.00046	.00498	-.00449	-.00458
Stddev	.00101	.00804	.00072	.01165	.00093	.00238	.00576	.00313
%RSD	18.519	28.338	62.364	191.75	202.82	47.775	128.25	68.440
#1	.00443	.02219	-.00190	-.00553	.00045	.00510	-.01053	-.00111
#2	.00542	.03745	-.00110	.00598	-.00041	.00730	-.00387	-.00541
#3	.00644	.02544	-.00046	.01778	-.00141	.00254	.00094	-.00721
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: ICB Acquired: 6/23/2016 16:52:29 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.00059	-.00321	-.00285	-.00021	.00049	-.01967
Stddev	.00049	.00058	.00271	.00281	.00126	.00023	.30758
%RSD	1987.7	98.883	84.402	98.601	601.40	48.028	1563.4
#1	.00048	.00125	-.00307	-.00514	.00122	.00050	-.07765
#2	-.00050	.00018	-.00600	.00028	-.00069	.00072	.31277
#3	.00010	.00032	-.00058	-.00369	-.00116	.00025	-.29414
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6667.4	41423.	2115.8
Stddev	41.6	269.	6.3
%RSD	.62409	.64899	.29744
#1	6626.3	41592.	2109.7
#2	6666.3	41563.	2115.3
#3	6709.5	41113.	2122.3

Sample Name: LLICV Acquired: 6/23/2016 16:56:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00827	.16210	.00867	.07876	.00792	.00155	.45064	.00085
Stddev	.00069	.00016	.00152	.00325	.00022	.00012	.03526	.00030
%RSD	8.3443	.10048	17.555	4.1248	2.8338	7.9064	7.8234	35.681
#1	.00876	.16217	.00804	.07520	.00817	.00167	.42049	.00097
#2	.00858	.16223	.00757	.07953	.00782	.00155	.48940	.00050
#3	.00748	.16192	.01041	.08156	.00775	.00143	.44202	.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00411	.00286	.00483	.07579	.81519	.07605	.43031	.01159
Stddev	.00051	.00122	.00183	.02010	.08172	.00054	.07836	.00240
%RSD	12.383	42.665	37.852	26.521	10.025	.70809	18.211	20.716
#1	.00446	.00209	.00311	.08314	.72240	.07546	.51973	.01210
#2	.00353	.00427	.00463	.05305	.87645	.07652	.37359	.01370
#3	.00433	.00223	.00676	.09119	.84672	.07616	.39761	.00898
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00886	.44734	.01615	.77513	.00676	.08645	.01136	.83408
Stddev	.00038	.03636	.00114	.01025	.00094	.00237	.00475	.00045
%RSD	4.3027	8.1283	7.0552	1.3217	13.970	2.7462	41.818	.05401
#1	.00863	.41320	.01707	.76914	.00779	.08743	.00922	.83393
#2	.00866	.44325	.01488	.78696	.00652	.08374	.01680	.83373
#3	.00930	.48558	.01652	.76928	.00595	.08818	.00805	.83459
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: LLICV Acquired: 6/23/2016 16:56:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39937**	**.04063**	**.02339**	**.14972**	**.00726**	**.01640**	**20.158**
Stddev	.00149	.00022	.00849	.00368	.00013	.00008	.057
%RSD	.37294	.54009	36.301	2.4588	1.7938	.47839	.28459
#1	.40039	.04052	.01395	.15061	.00733	.01635	20.157
#2	.40005	.04089	.02583	.15288	.00711	.01649	20.101
#3	.39766	.04050	.03040	.14568	.00735	.01636	20.216
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6699.9**	**41507.**	**2122.8**
Stddev	10.7	321.	33.0
%RSD	.15908	.77425	1.5534
#1	6695.4	41349.	2085.0
#2	6692.2	41295.	2145.6
#3	6712.1	41877.	2137.8

Sample Name: LLICV Acquired: 6/23/2016 17:00:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01949	.39961	.01957	.19216	.01939	.00378	1.0069
Stddev	.00131	.00492	.00179	.00362	.00127	.00002	.0595
%RSD	6.7128	1.2306	9.1680	1.8843	6.5460	.43946	5.9133
#1	.02095	.40406	.02038	.19600	.02017	.00376	.96045
#2	.01841	.40043	.01752	.18881	.01792	.00378	.98624
#3	.01913	.39433	.02082	.19166	.02007	.00379	1.0740
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00195	.01011	.00920	.01111	.21788	2.0711	.19482
Stddev	.00022	.00045	.00124	.00158	.02611	.1150	.00581
%RSD	11.156	4.4276	13.477	14.191	11.985	5.5533	2.9817
#1	.00196	.01037	.01057	.01272	.21124	2.1436	.18839
#2	.00173	.01037	.00885	.00957	.19573	2.1311	.19636
#3	.00216	.00960	.00817	.01104	.24667	1.9385	.19970
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0302	.01992	.01953	.99004	.04110	1.9033	.01787
Stddev	.1225	.00176	.00044	.02149	.00123	.0089	.00330
%RSD	11.893	8.8312	2.2495	2.1708	2.9826	.46494	18.472
#1	.89819	.01975	.02003	.96810	.03968	1.8971	.02156
#2	1.0522	.01825	.01927	1.0110	.04177	1.9135	.01518
#3	1.1403	.02176	.01928	.99098	.04184	1.8995	.01689
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: LLICV Acquired: 6/23/2016 17:00:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20779	.03211	2.0518	.97692	.09846	.05795	.36369
Stddev	.00270	.00309	.0013	.00240	.00149	.00439	.00103
%RSD	1.2971	9.6240	.06110	.24594	1.5132	7.5738	.28252
#1	.21089	.03387	2.0505	.97555	.09739	.05293	.36373
#2	.20647	.02854	2.0530	.97969	.09783	.06107	.36264
#3	.20602	.03392	2.0519	.97551	.10016	.05984	.36469
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.01983	.04054	F 52.666
Stddev	.00096	.00030	.271
%RSD	4.8538	.74967	.51545
#1	.01995	.04039	52.957
#2	.01882	.04089	52.622
#3	.02073	.04034	52.420
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6722.9	41992.	2132.9
Stddev	4.6	356.	26.2
%RSD	.06888	.84767	1.2278
#1	6727.0	42116.	2114.2
#2	6723.9	42269.	2162.8
#3	6717.8	41590.	2121.7

Sample Name: ICSA Acquired: 6/23/2016 17:04:08 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00149**	**266.38**	**-.00372**	**.01062**	**.00153**	**.00000**	**253.32**
Stddev	.00133	.59	.00223	.00385	.00251	.00008	1.14
%RSD	89.471	.22308	59.913	36.253	163.63	4300.4	.45010
#1	-.00003	267.06	-.00307	.00628	.00113	-.00004	252.01
#2	.00202	266.01	-.00189	.01196	-.00075	-.00004	253.84
#3	.00246	266.05	-.00620	.01362	.00422	.00009	254.10
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00047**	**-.00114**	**-.00174**	**.00303**	**99.707**	**.16334**	**.00688**
Stddev	.00038	.00002	.00038	.00035	.605	.10414	.00241
%RSD	79.353	1.7935	21.793	11.497	.60634	63.757	34.985
#1	.00088	-.00115	-.00217	.00298	99.093	.28269	.00955
#2	.00015	-.00116	-.00144	.00340	99.728	.09096	.00486
#3	.00039	-.00112	-.00162	.00271	100.30	.11636	.00625
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**252.57**	**.00029**	**.00006**	**.04525**	**-.00141**	**.04327**	**-.00195**
Stddev	.76	.00143	.00058	.00703	.00150	.00827	.00429
%RSD	.29957	489.02	1021.2	15.529	106.39	19.108	220.24
#1	251.84	.00193	-.00061	.05054	-.00123	.05059	-.00454
#2	252.51	-.00031	.00047	.04793	-.00001	.04493	.00300
#3	253.35	-.00074	.00031	.03728	-.00299	.03430	-.00431
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: ICSA Acquired: 6/23/2016 17:04:08 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00596**	**-.00219**	**-.00062**	**.00088**	**.00057**	**-.00643**	**.00061**
Stddev	.00409	.01112	.00241	.00133	.00012	.00454	.00641
%RSD	68.491	508.56	387.55	152.27	20.327	70.638	1044.9
#1	-.01030	-.01132	.00215	.00215	.00049	-.00321	.00778
#2	-.00542	-.00543	-.00218	-.00050	.00052	-.00446	-.00133
#3	-.00218	.01019	-.00184	.00098	.00071	-.01163	-.00460
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00692**	**-.00188**	F **-.35802**
Stddev	.00157	.00029	.22129
%RSD	22.711	15.411	61.810
#1	-.00512	-.00157	-.10687
#2	-.00763	-.00196	-.44284
#3	-.00802	-.00213	-.52437
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02000
Low Limit			-.02000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6250.1**	**37849.**	**2031.8**
Stddev	54.8	56.	7.8
%RSD	.87682	.14906	.38488
#1	6190.3	37786.	2027.2
#2	6297.9	37868.	2027.4
#3	6262.0	37894.	2040.9

Sample Name: ICSAB Acquired: 6/23/2016 17:08:01 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52882	265.17	.25293	.00992	.25484	.24777	252.21
Stddev	.00098	.76	.00285	.00453	.00061	.00074	1.18
%RSD	.18558	.28502	1.1258	45.657	.23964	.29732	.46623
#1	.52981	264.89	.25009	.01062	.25418	.24751	252.99
#2	.52881	266.03	.25579	.00508	.25539	.24861	250.86
#3	.52785	264.59	.25291	.01406	.25495	.24721	252.79
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50186	.24161	.25459	.25471	97.424	5.2402	.00666
Stddev	.00151	.00122	.00264	.00209	.509	.0634	.00798
%RSD	.30055	.50701	1.0371	.81915	.52250	1.2106	119.82
#1	.50037	.24023	.25660	.25353	97.770	5.2868	.00639
#2	.50338	.24256	.25160	.25711	96.840	5.1680	.01477
#3	.50184	.24204	.25558	.25347	97.663	5.2658	-.00118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	247.66	.24890	-.00112	5.3746	.48553	.04636	.50217
Stddev	1.37	.00098	.00019	.0121	.00314	.00695	.00280
%RSD	.55427	.39569	17.374	.22614	.64678	14.982	.55722
#1	248.16	.24818	-.00127	5.3707	.48197	.04411	.50327
#2	246.11	.25002	-.00118	5.3648	.48669	.04082	.50425
#3	248.71	.24850	-.00090	5.3882	.48792	.05415	.49899
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: ICSAB Acquired: 6/23/2016 17:08:01 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50735**	**.24194**	**-.00758**	**-.00008**	**.00043**	**-.00758**	**.46915**
Stddev	.00346	.00285	.00236	.00064	.00025	.00399	.00306
%RSD	.68179	1.1790	31.189	795.11	59.086	52.651	.65264
#1	.51111	.24253	-.00918	-.00025	.00026	-.00923	.46976
#2	.50431	.23884	-.00486	.00062	.00031	-.00303	.46582
#3	.50662	.24445	-.00869	-.00061	.00072	-.01049	.47185
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.25055**	**.48484**	F **-.54156**
Stddev	.00015	.00117	.36388
%RSD	.05947	.24090	67.191
#1	.25062	.48352	-.86893
#2	.25038	.48574	-.14978
#3	.25065	.48526	-.60595
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02500
Low Limit			-.02500

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6244.9**	**38520.**	**2058.8**
Stddev	46.1	338.	32.6
%RSD	.73809	.87856	1.5823
#1	6288.3	38547.	2028.4
#2	6196.5	38169.	2093.1
#3	6249.8	38844.	2054.9

Sample Name: CCV Acquired: 6/23/2016 17:11:45 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39852	10.052	.40263	.49843	1.0023	.05021	10.092
Stddev	.00333	.028	.00314	.00166	.0006	.00016	.057
%RSD	.83575	.27814	.78076	.33361	.06012	.31593	.56540
#1	.39689	10.041	.39901	.49807	1.0017	.05007	10.131
#2	.40235	10.030	.40421	.49698	1.0029	.05018	10.027
#3	.39632	10.083	.40467	.50024	1.0023	.05038	10.118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04999	.20043	.50163	.50411	4.0601	50.005	1.0189
Stddev	.00015	.00042	.00302	.00115	.0027	.046	.0052
%RSD	.29315	.20823	.60186	.22714	.06779	.09107	.50520
#1	.05012	.20084	.49900	.50511	4.0627	50.032	1.0215
#2	.04983	.20000	.50096	.50286	4.0604	49.953	1.0130
#3	.05001	.20044	.50492	.50436	4.0572	50.031	1.0222
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.212	.49892	1.0009	49.902	.50256	9.9305	.50524
Stddev	.091	.00599	.0036	.189	.00114	.0123	.00430
%RSD	.88794	1.1999	.36370	.37915	.22664	.12410	.85170
#1	10.107	.49738	1.0047	49.717	.50312	9.9163	.50068
#2	10.266	.49386	1.0004	50.095	.50125	9.9365	.50580
#3	10.263	.50553	.99747	49.894	.50331	9.9386	.50923
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: CCV Acquired: 6/23/2016 17:11:45 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1976**	**.39739**	**5.0461**	**.99886**	**.99946**	**1.0004**	**.50205**
Stddev	.0044	.00576	.0095	.00286	.00488	.0097	.00380
%RSD	.36569	1.4500	.18873	.28629	.48793	.96796	.75754
#1	1.2025	.39818	5.0436	1.0005	.99383	.99232	.49767
#2	1.1964	.39127	5.0380	1.0005	1.0021	.99772	.50399
#3	1.1940	.40272	5.0566	.99556	1.0025	1.0111	.50449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0051**	**1.0042**	F **.84890**
Stddev	.0013	.0014	.43937
%RSD	.13211	.13734	51.758
#1	1.0042	1.0051	.99034
#2	1.0045	1.0026	.35623
#3	1.0066	1.0048	1.2001
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6596.3**	**41288.**	**2118.4**
Stddev	44.5	204.	20.3
%RSD	.67419	.49375	.95799
#1	6545.1	41449.	2095.9
#2	6618.2	41357.	2123.7
#3	6625.5	41059.	2135.5

Sample Name: CCB Acquired: 6/23/2016 17:15:23 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00313**	**.01723**	**.00317**	**.00223**	**-.00086**	**.00005**	**.05209**
Stddev	.00122	.00350	.00117	.00121	.00076	.00008	.06012
%RSD	38.963	20.296	36.752	54.255	88.561	155.39	115.43
#1	.00430	.02036	.00417	.00084	-.00098	.00005	.05688
#2	.00322	.01787	.00345	.00279	-.00004	.00013	.10967
#3	.00186	.01346	.00189	.00306	-.00155	-.00003	-.01029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**.00041**	**.00080**	**.00088**	**.00933**	**.12101**	**-.00019**
Stddev	.00009	.00032	.00113	.00031	.02938	.20550	.00178
%RSD	112.14	77.747	141.29	34.787	314.94	169.82	929.52
#1	-.00002	.00017	.00160	.00098	.03104	-.04316	-.00153
#2	.00015	.00030	.00129	.00054	-.02411	.35147	-.00087
#3	.00013	.00078	-.00049	.00114	.02106	.05472	.00183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.08095**	**.00318**	**.00354**	**.07516**	**-.00052**	**.00211**	**-.00169**
Stddev	.03617	.00076	.00074	.03642	.00171	.00399	.00228
%RSD	44.681	24.034	20.829	48.460	332.21	188.88	134.38
#1	.11808	.00257	.00275	.11180	-.00209	.00394	.00084
#2	.04583	.00292	.00421	.07473	-.00077	-.00247	-.00235
#3	.07893	.00403	.00365	.03896	.00131	.00486	-.00357
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: CCB Acquired: 6/23/2016 17:15:23 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00292**	**.00064**	**-.00112**	**.00037**	**.00055**	**.00009**	**-.00222**
Stddev	.00495	.00211	.00181	.00085	.00039	.00846	.00125
%RSD	169.66	329.79	161.50	228.24	71.494	9095.7	56.323
#1	.00726	.00025	-.00053	.00012	.00049	.00531	-.00357
#2	.00396	.00292	-.00315	.00131	.00097	-.00967	-.00109
#3	-.00247	-.00125	.00032	-.00032	.00019	.00464	-.00201
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00045**	**.00017**	F **-.31880**
Stddev	.00139	.00012	.06794
%RSD	311.50	72.605	21.311
#1	-.00109	.00003	-.30839
#2	.00115	.00026	-.39134
#3	-.00140	.00021	-.25666
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6671.9**	**41329.**	**2107.9**
Stddev	60.0	164.	15.1
%RSD	.89934	.39564	.71641
#1	6603.0	41427.	2098.9
#2	6712.5	41420.	2099.5
#3	6700.3	41140.	2125.4

Sample Name: PBW LJ Acquired: 6/23/2016 17:19:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00080**	**.01261**	**.00190**	**.00491**	**-.00092**	**-.00002**	**.05100**	**.00023**
Stddev	.00084	.00763	.00125	.00212	.00119	.00006	.03078	.00026
%RSD	103.96	60.561	65.725	43.302	129.08	259.98	60.367	110.85
#1	.00134	.02138	.00270	.00692	-.00108	-.00003	.01560	.00021
#2	-.00016	.00898	.00254	.00512	.00034	.00004	.07152	-.00001
#3	.00123	.00746	.00046	.00268	-.00203	-.00008	.06587	.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00037**	**-.00004**	**.00109**	**.01291**	**.08713**	**-.00094**	**.00517**	**.00144**
Stddev	.00024	.00123	.00204	.01662	.13771	.00409	.05412	.00202
%RSD	65.746	3083.5	187.27	128.71	158.06	434.61	1047.5	139.96
#1	.00019	-.00005	-.00097	-.00552	-.06256	.00328	.06512	-.00079
#2	.00064	-.00127	.00113	.02675	.20845	-.00488	-.00956	.00312
#3	.00026	.00119	.00311	.01750	.11550	-.00122	-.04006	.00199
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00095**	**.04152**	**-.00019**	**-.00390**	**-.00371**	**.00030**	**.00094**	**-.01516**
Stddev	.00059	.04832	.00205	.00634	.00397	.00313	.00086	.00318
%RSD	62.354	116.37	1063.0	162.76	106.95	1035.6	91.391	20.967
#1	.00033	.01830	-.00241	-.00387	-.00717	.00089	.00151	-.01165
#2	.00102	.00919	.00019	.00243	.00062	.00310	.00135	-.01599
#3	.00151	.09706	.00164	-.01025	-.00458	-.00308	-.00005	-.01784
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: PBW LJ Acquired: 6/23/2016 17:19:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00033**	**.00039**	**-.00004**	**-.00270**	**-.00095**	**.00140**	**.41056**
Stddev	.00027	.00036	.00305	.00089	.00074	.00017	.24431
%RSD	82.432	92.835	6840.9	33.104	77.766	12.399	59.505
#1	-.00063	.00081	-.00312	-.00373	-.00092	.00123	.69212
#2	-.00012	.00013	.00297	-.00211	-.00022	.00158	.28489
#3	-.00024	.00024	.00002	-.00226	-.00170	.00139	.25468
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6640.4**	**41625.**	**2128.5**
Stddev	17.6	211.	40.6
%RSD	.26566	.50582	1.9066
#1	6652.6	41596.	2081.7
#2	6648.4	41848.	2149.1
#3	6620.1	41430.	2154.5

Sample Name: LCSW LJ Acquired: 6/23/2016 17:23:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20319	5.0131	.20150	.99773	.51668	.02479	5.2442	.02487
Stddev	.00169	.0087	.00325	.00753	.00370	.00010	.0451	.00015
%RSD	.82977	.17310	1.6126	.75506	.71666	.41148	.86061	.60213
#1	.20357	5.0214	.19782	.99002	.52094	.02487	5.2832	.02481
#2	.20466	5.0041	.20272	1.0051	.51488	.02467	5.2546	.02476
#3	.20135	5.0138	.20397	.99808	.51422	.02483	5.1948	.02504
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10159	.25137	.25763	2.1220	25.452	.52645	5.1614	.25904
Stddev	.00032	.00052	.00140	.0264	.157	.00783	.0562	.00289
%RSD	.31802	.20500	.54330	1.2440	.61733	1.4875	1.0892	1.1168
#1	.10195	.25197	.25859	2.1525	25.633	.53504	5.1502	.26071
#2	.10149	.25109	.25602	2.1081	25.375	.52462	5.1116	.26070
#3	.10132	.25106	.25826	2.1055	25.349	.51970	5.2224	.25570
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51626	25.724	.25483	4.8485	.25110	.61184	.19096	2.6019
Stddev	.00266	.216	.00018	.0108	.00443	.00393	.01056	.0098
%RSD	.51446	.83901	.07257	.22239	1.7625	.64191	5.5294	.37803
#1	.51860	25.969	.25482	4.8553	.24906	.61631	.19143	2.6112
#2	.51337	25.641	.25502	4.8360	.24806	.60893	.18017	2.5916
#3	.51679	25.562	.25465	4.8540	.25618	.61029	.20127	2.6028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: LCSW LJ Acquired: 6/23/2016 17:23:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50721	.52436	.50961	.25007	.50364	.50657	.76573
Stddev	.00162	.00527	.01502	.00251	.00102	.00126	.62483
%RSD	.31955	1.0056	2.9465	1.0024	.20335	.24816	81.599
#1	.50743	.53024	.51039	.24815	.50410	.50766	1.3558
#2	.50550	.52279	.52423	.25290	.50247	.50519	.11116
#3	.50872	.52005	.49423	.24914	.50436	.50685	.83021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6575.8	41413.	2125.8
Stddev	38.0	254.	15.3
%RSD	.57733	.61440	.72050
#1	6590.8	41169.	2116.8
#2	6532.6	41394.	2117.1
#3	6603.9	41677.	2143.4

Sample Name: L1606076404 Acquired: 6/23/2016 17:27:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00032**	**.03451**	**.00124**	**.00949**	**.00772**	**.00001**	**37.580**	**.00027**
Stddev	.00100	.00434	.00233	.00396	.00016	.00008	.209	.00010
%RSD	315.71	12.583	187.37	41.736	2.0214	559.86	.55655	38.752
#1	-.00025	.02981	-.00143	.01269	.00789	-.00008	37.790	.00037
#2	.00065	.03535	.00232	.00506	.00758	.00004	37.371	.00027
#3	-.00135	.03837	.00283	.01072	.00769	.00008	37.578	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00036**	**.01239**	**.00232**	**.45824**	**5.1190**	**.00322**	**14.570**	**.10315**
Stddev	.00021	.00017	.00134	.02324	.0359	.00604	.145	.00332
%RSD	57.485	1.3945	57.779	5.0714	.70061	187.38	.99354	3.2187
#1	.00054	.01232	.00335	.43843	5.0785	.00539	14.664	.10664
#2	.00040	.01226	.00280	.48382	5.1320	-.00360	14.403	.10004
#3	.00014	.01258	.00080	.45248	5.1466	.00788	14.643	.10276
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00112**	**35.286**	**.00502**	**.02785**	**.00193**	**.00400**	**.00017**	**4.2205**
Stddev	.00017	.168	.00085	.00292	.00187	.00379	.00613	.0101
%RSD	15.273	.47690	16.934	10.483	97.237	94.733	3643.4	.24042
#1	.00102	35.461	.00444	.02992	.00018	.00832	-.00425	4.2311
#2	.00102	35.126	.00463	.02451	.00170	.00241	-.00240	4.2196
#3	.00131	35.269	.00600	.02912	.00390	.00126	.00716	4.2109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606076404 Acquired: 6/23/2016 17:27:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**.19838**	**-.00352**	**-.00316**	**-.00056**	**.00304**	**.05702**
Stddev	.00048	.00082	.00439	.00352	.00018	.00003	.32731
%RSD	532.68	.41544	124.63	111.42	32.096	1.0103	574.06
#1	-.00061	.19924	-.00146	-.00663	-.00039	.00305	.43214
#2	-.00001	.19830	-.00054	.00041	-.00055	.00306	-.17051
#3	.00035	.19760	-.00855	-.00325	-.00075	.00300	-.09057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6659.9**	**41441.**	**2148.1**
Stddev	17.8	39.	34.6
%RSD	.26678	.09458	1.6087
#1	6640.6	41401.	2109.0
#2	6663.2	41442.	2174.8
#3	6675.7	41479.	2160.4

Sample Name: L1606076405S Acquired: 6/23/2016 17:30:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20092	5.0385	.20312	.99798	.52837	.02495	44.005	.02497
Stddev	.00159	.0071	.00090	.00399	.00863	.00018	.536	.00030
%RSD	.78894	.14165	.44224	.39989	1.6338	.73761	1.2192	1.2169
#1	.20053	5.0320	.20215	1.0021	.53714	.02516	44.468	.02467
#2	.20266	5.0374	.20392	.99408	.52809	.02480	44.130	.02527
#3	.19957	5.0461	.20329	.99779	.51988	.02489	43.417	.02498
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10016	.26480	.25157	2.5877	30.715	.52688	20.416	.36208
Stddev	.00067	.00097	.00149	.0124	.632	.01078	.244	.00320
%RSD	.66866	.36563	.59363	.47820	2.0592	2.0459	1.1951	.88399
#1	.09940	.26587	.24988	2.6017	31.379	.53733	20.633	.36533
#2	.10067	.26457	.25208	2.5782	30.645	.52751	20.464	.36196
#3	.10042	.26397	.25273	2.5832	30.120	.51580	20.152	.35894
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52071	62.572	.25549	5.0021	.25301	.61345	.19142	7.0690
Stddev	.00097	.840	.00144	.0110	.00528	.00259	.00718	.0143
%RSD	.18659	1.3422	.56532	.21968	2.0876	.42179	3.7518	.20212
#1	.52096	63.421	.25626	4.9894	.25249	.61450	.18326	7.0650
#2	.52153	62.553	.25639	5.0088	.25853	.61534	.19422	7.0849
#3	.51964	61.741	.25383	5.0081	.24801	.61050	.19677	7.0571
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606076405S Acquired: 6/23/2016 17:30:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50671	.73344	.51400	.25052	.50766	.50196	.71683
Stddev	.00049	.00764	.00562	.00109	.00170	.00107	.08607
%RSD	.09604	1.0422	1.0940	.43503	.33403	.21255	12.007
#1	.50635	.74103	.51985	.25089	.50822	.50082	.65957
#2	.50651	.73352	.50864	.24929	.50576	.50294	.81581
#3	.50726	.72575	.51349	.25138	.50901	.50210	.67512
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6617.0	40888.	2108.3
Stddev	36.3	229.	43.4
%RSD	.54907	.56042	2.0607
#1	6597.9	40710.	2065.4
#2	6594.1	40808.	2107.2
#3	6658.9	41146.	2152.3

Sample Name: L1606076406SD Acquired: 6/23/2016 17:34:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20158	5.0081	.20119	.99289	.52520	.02487	44.269	.02478
Stddev	.00322	.0181	.00119	.00601	.00285	.00008	.382	.00037
%RSD	1.5962	.36106	.59360	.60498	.54186	.31907	.86303	1.4919
#1	.20051	5.0088	.20213	.99898	.52769	.02491	44.667	.02436
#2	.19904	5.0258	.20161	.99270	.52581	.02493	44.234	.02503
#3	.20520	4.9897	.19985	.98697	.52210	.02478	43.905	.02496
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09994	.26339	.24953	2.5877	30.662	.52181	20.366	.36158
Stddev	.00059	.00143	.00256	.0611	.222	.00474	.372	.00451
%RSD	.59271	.54249	1.0252	2.3607	.72504	.90810	1.8250	1.2464
#1	.09927	.26187	.24744	2.6536	30.906	.52560	20.793	.36652
#2	.10013	.26359	.24876	2.5330	30.471	.52334	20.120	.35770
#3	.10041	.26470	.25238	2.5764	30.609	.51650	20.184	.36051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51522	62.707	.25233	4.9723	.25332	.61176	.19301	7.0733
Stddev	.00118	.507	.00147	.0132	.00160	.00273	.00266	.0075
%RSD	.22851	.80791	.58315	.26561	.63178	.44609	1.3764	.10575
#1	.51652	63.283	.25117	4.9632	.25248	.61207	.19130	7.0646
#2	.51490	62.510	.25184	4.9664	.25231	.61431	.19166	7.0774
#3	.51423	62.328	.25399	4.9875	.25516	.60888	.19607	7.0778
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606076406SD Acquired: 6/23/2016 17:34:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50236	.73208	.50989	.24941	.50289	.49718	.41726
Stddev	.00239	.00589	.01162	.00247	.00231	.00067	.67397
%RSD	.47662	.80444	2.2794	.99175	.45970	.13482	161.52
#1	.49978	.73852	.52268	.24842	.50555	.49665	-.07543
#2	.50451	.73075	.49998	.25223	.50134	.49794	.14190
#3	.50280	.72697	.50700	.24759	.50179	.49697	1.1853
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6608.7	41166.	2120.3
Stddev	11.1	137.	19.6
%RSD	.16723	.33193	.92378
#1	6603.0	41323.	2097.8
#2	6621.5	41090.	2129.6
#3	6601.7	41083.	2133.5

Sample Name: L1606109801 Acquired: 6/23/2016 17:38:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00129	.01287	-.00287	.00614	-.00048	-.00003	.08304	.00009
Stddev	.00159	.00811	.00192	.00213	.00074	.00007	.01337	.00013
%RSD	122.92	63.032	67.055	34.715	154.39	222.73	16.095	139.40
#1	.00212	.02216	-.00081	.00626	-.00008	-.00010	.09008	.00010
#2	.00231	.00925	-.00462	.00395	-.00134	.00003	.09142	-.00004
#3	-.00054	.00720	-.00317	.00821	-.00003	-.00001	.06763	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.00114	.00130	.02096	.10896	-.00006	-.03305	.00197
Stddev	.00044	.00113	.00181	.01243	.08516	.00372	.07886	.00311
%RSD	453.08	99.110	139.52	59.304	78.156	6481.1	238.62	158.05
#1	-.00053	.00170	.00306	.02326	.19673	-.00420	-.07467	-.00106
#2	.00034	-.00016	-.00055	.03207	.02667	.00104	-.08238	.00515
#3	-.00009	.00187	.00138	.00754	.10349	.00299	.05790	.00182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	.45527	.00049	-.00366	.00153	.00122	.00971	-.00748
Stddev	.00030	.03584	.00013	.00895	.00348	.00363	.01502	.00042
%RSD	45.839	7.8733	25.556	244.66	227.48	297.89	154.66	5.5803
#1	.00053	.41497	.00054	-.01374	.00021	.00522	.02568	-.00782
#2	.00044	.46723	.00035	-.00059	-.00110	-.00186	-.00414	-.00701
#3	.00100	.48360	.00058	.00335	.00548	.00030	.00761	-.00761
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606109801 Acquired: 6/23/2016 17:38:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.00480**	**-.00167**	**-.00415**	**-.00006**	**.00240**	**.05406**
Stddev	.00008	.00020	.00916	.00353	.00083	.00017	.09676
%RSD	178.62	4.1888	547.73	84.853	1386.4	7.2187	179.01
#1	-.00014	.00474	.00699	-.00318	.00001	.00255	.07032
#2	-.00003	.00462	-.01126	-.00807	-.00092	.00221	-.04981
#3	.00002	.00502	-.00075	-.00122	.00073	.00245	.14165
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6705.4**	**41704.**	**2110.9**
Stddev	33.1	203.	3.8
%RSD	.49393	.48693	.18234
#1	6717.5	41536.	2115.0
#2	6668.0	41646.	2110.1
#3	6730.8	41930.	2107.4

Sample Name: L1606109802 Acquired: 6/23/2016 17:42:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00131**	**.04120**	**.00085**	**.00475**	**.00003**	**.00006**	**.12679**	**.00004**
Stddev	.00226	.00310	.00173	.00253	.00122	.00003	.01985	.00014
%RSD	172.44	7.5124	203.60	53.268	4293.6	44.669	15.655	354.39
#1	-.00391	.03975	.00123	.00360	.00116	.00006	.11393	-.00006
#2	-.00005	.04475	-.00104	.00766	.00019	.00008	.11680	.00020
#3	.00004	.03909	.00235	.00301	-.00126	.00003	.14965	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00021**	**.00349**	**.00237**	**.18011**	**.09946**	**-.00236**	**.07943**	**.00699**
Stddev	.00033	.00204	.00114	.02015	.07387	.00179	.02978	.00080
%RSD	156.99	58.571	48.052	11.185	74.275	75.957	37.492	11.493
#1	.00015	.00129	.00134	.19792	.08997	-.00029	.05468	.00760
#2	-.00027	.00385	.00359	.18417	.17761	-.00335	.11249	.00608
#3	-.00051	.00533	.00218	.15825	.03079	-.00344	.07113	.00730
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00657**	**.08383**	**.00108**	**-.00632**	**.00042**	**.00155**	**-.00209**	**-.00610**
Stddev	.00027	.01857	.00084	.00291	.00245	.00366	.00646	.00130
%RSD	4.0493	22.151	77.513	46.079	588.34	235.09	308.97	21.310
#1	.00687	.08551	.00034	-.00968	.00101	-.00057	-.00876	-.00625
#2	.00646	.10150	.00091	-.00476	.00251	.00578	.00414	-.00474
#3	.00637	.06448	.00199	-.00452	-.00227	-.00054	-.00165	-.00733
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606109802 Acquired: 6/23/2016 17:42:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00054**	**.00097**	**.00153**	**-.00310**	**-.00091**	**.00301**	**.27773**
Stddev	.00104	.00057	.00430	.00238	.00037	.00011	.05024
%RSD	194.32	58.620	280.21	76.638	40.878	3.7408	18.089
#1	-.00046	.00112	.00644	-.00519	-.00093	.00307	.33422
#2	.00046	.00144	-.00158	-.00051	-.00052	.00288	.23804
#3	-.00161	.00034	-.00025	-.00360	-.00127	.00309	.26094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6708.6**	**41920.**	**2143.4**
Stddev	42.4	304.	28.2
%RSD	.63177	.72485	1.3166
#1	6687.7	42255.	2139.9
#2	6680.7	41839.	2117.2
#3	6757.4	41664.	2173.3

Sample Name: L1606109802PS Acquired: 6/23/2016 17:46:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573952-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20295	4.9978	.19604	.97111	.51605	.02475	5.3316	.02478
Stddev	.00344	.0037	.00197	.00223	.00051	.00014	.0490	.00015
%RSD	1.6972	.07436	1.0027	.22973	.09917	.56068	.91841	.59158
#1	.19936	4.9935	.19463	.96974	.51663	.02489	5.2786	.02492
#2	.20326	5.0002	.19520	.96990	.51565	.02462	5.3752	.02463
#3	.20622	4.9996	.19828	.97368	.51588	.02474	5.3410	.02480
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10156	.25473	.25812	2.2174	25.577	.52251	5.2379	.25866
Stddev	.00037	.00076	.00168	.0428	.016	.00141	.1063	.00557
%RSD	.36206	.29734	.65016	1.9294	.06131	.27078	2.0291	2.1526
#1	.10143	.25529	.25897	2.1982	25.585	.52373	5.2689	.26416
#2	.10128	.25504	.25619	2.2664	25.559	.52096	5.3253	.25303
#3	.10198	.25387	.25920	2.1875	25.587	.52284	5.1196	.25880
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51904	25.731	.25472	4.8394	.25146	.60443	.18808	2.5389
Stddev	.00078	.051	.00178	.0161	.00652	.00703	.00446	.0097
%RSD	.15079	.19825	.69859	.33289	2.5939	1.1635	2.3736	.38131
#1	.51985	25.790	.25678	4.8266	.24420	.60484	.18767	2.5333
#2	.51829	25.701	.25365	4.8340	.25681	.59720	.18383	2.5332
#3	.51899	25.702	.25373	4.8575	.25338	.61125	.19273	2.5500
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606109802PS Acquired: 6/23/2016 17:46:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573952-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50319	.52125	.51263	.24941	.49856	.50658	.41681
Stddev	.00067	.00121	.00461	.00337	.00102	.00107	.18065
%RSD	.13272	.23307	.89973	1.3499	.20406	.21178	43.340
#1	.50331	.52232	.50810	.25329	.49739	.50643	.22345
#2	.50379	.52148	.51246	.24723	.49912	.50559	.44572
#3	.50247	.51993	.51732	.24772	.49918	.50772	.58125
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6634.2	41367.	2120.2
Stddev	45.5	136.	31.3
%RSD	.68551	.32832	1.4752
#1	6675.0	41309.	2085.8
#2	6642.5	41522.	2147.0
#3	6585.2	41269.	2127.8

Sample Name: L1606109802SDL Acquired: 6/23/2016 17:49:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573952-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00136	.01502	.00308	.00439	-.00102	.00008	.05957	.00033
Stddev	.00139	.00670	.00298	.00095	.00092	.00003	.03476	.00004
%RSD	102.34	44.577	96.746	21.522	90.289	33.805	58.357	13.382
#1	.00126	.01153	.00023	.00498	-.00197	.00010	.02372	.00038
#2	.00281	.01080	.00283	.00489	-.00093	.00009	.06187	.00030
#3	.00002	.02274	.00619	.00330	-.00015	.00005	.09313	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	-.00017	.00113	.04078	.05810	.00210	.06165	.00226
Stddev	.00020	.00084	.00062	.00773	.11892	.00364	.08929	.00317
%RSD	251.06	498.56	54.543	18.955	204.67	172.87	144.83	140.01
#1	-.00031	.00011	.00044	.04552	-.07722	.00243	-.01365	-.00138
#2	.00002	.00049	.00161	.03186	.14597	-.00169	.03832	.00380
#3	.00006	-.00111	.00136	.04496	.10555	.00557	.16029	.00437
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00155	.03886	.00061	.00728	.00025	-.00084	-.00741	-.00785
Stddev	.00019	.02607	.00103	.00300	.00248	.00463	.00531	.00300
%RSD	12.485	67.084	170.41	41.143	1006.5	550.34	71.645	38.154
#1	.00155	.03807	-.00057	.00580	-.00067	-.00286	-.00354	-.01115
#2	.00174	.01319	.00103	.00532	.00306	.00445	-.01346	-.00530
#3	.00136	.06531	.00136	.01073	-.00164	-.00411	-.00522	-.00710
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606109802SDL Acquired: 6/23/2016 17:49:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573952-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00088**	**.00057**	**.00094**	**-.00409**	**.00019**	**.00149**	**.45954**
Stddev	.00075	.00043	.01378	.00250	.00054	.00013	.21882
%RSD	85.215	74.163	1462.5	61.137	279.61	9.0143	47.616
#1	-.00150	.00022	-.00662	-.00460	.00077	.00151	.33705
#2	-.00005	.00045	.01685	-.00138	-.00029	.00135	.71218
#3	-.00110	.00105	-.00740	-.00631	.00009	.00162	.32941
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6959.1**	**43239.**	**2203.0**
Stddev	42.9	568.	21.3
%RSD	.61702	1.3134	.96538
#1	6931.5	42983.	2192.4
#2	7008.6	43890.	2227.5
#3	6937.3	42844.	2189.1

Sample Name: L1606109802SDL Acquired: 6/23/2016 17:53:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573952-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00025**	**-.00848**	**.00213**	**-.00007**	**-.00079**	**-.00002**	**.00503**
Stddev	.00182	.00079	.00051	.00320	.00067	.00006	.00717
%RSD	715.84	9.3659	23.973	4723.2	84.264	337.91	142.65
#1	.00063	-.00798	.00169	-.00266	-.00014	-.00004	.01305
#2	.00185	-.00807	.00200	-.00107	-.00147	-.00006	.00280
#3	-.00172	-.00940	.00269	.00352	-.00077	.00005	-.00077
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	**.00018**	**.00059**	**-.00006**	**-.00347**	**.12523**	**.00146**
Stddev	.00022	.00029	.00107	.00164	.02019	.11611	.00742
%RSD	115.68	162.83	180.16	2901.7	582.00	92.721	507.00
#1	-.00042	.00014	.00077	.00098	.00022	-.00797	-.00642
#2	-.00018	.00048	-.00055	.00080	-.02525	.20510	.00830
#3	.00002	-.00009	.00157	-.00195	.01463	.17855	.00251
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04612**	**.00275**	**-.00011**	**.02502**	**-.00021**	**.01583**	**.00003**
Stddev	.09471	.00202	.00043	.02748	.00019	.00290	.00282
%RSD	205.33	73.453	401.99	109.83	87.851	18.294	10124.
#1	.13667	.00063	.00029	.00253	-.00023	.01917	-.00119
#2	-.05226	.00465	-.00004	.01688	-.00002	.01426	.00325
#3	.05396	.00298	-.00056	.05566	-.00039	.01406	-.00198
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: L1606109802SDL Acquired: 6/23/2016 17:53:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573952-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00091**	F **-.01196**	**-.01108**	**-.00050**	**.00003**	**-.00725**	**-.00124**
Stddev	.00148	.00527	.00232	.00100	.00102	.00296	.00502
%RSD	162.61	44.027	20.977	201.11	3086.6	40.796	405.85
#1	-.00253	-.00590	-.01377	-.00126	-.00114	-.00905	-.00509
#2	.00038	-.01454	-.00977	-.00086	.00061	-.00384	-.00306
#3	-.00058	-.01544	-.00971	.00063	.00062	-.00886	.00444
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		90.000					
Low Limit		-.01000					

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00077**	**.00084**	**.22312**
Stddev	.00068	.00020	.30532
%RSD	88.979	23.810	136.84
#1	-.00155	.00083	.52434
#2	-.00032	.00104	-.08613
#3	-.00043	.00064	.23116
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6981.3**	**43420.**	**2189.5**
Stddev	46.4	74.	50.4
%RSD	.66474	.17141	2.3033
#1	6946.3	43470.	2150.2
#2	7033.9	43456.	2171.9
#3	6963.6	43335.	2246.4

Sample Name: CCV Acquired: 6/23/2016 17:57:55 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39465	9.8592	.39426	.49051	.99575	.04951	9.9296
Stddev	.00130	.0543	.00077	.00725	.01287	.00025	.0980
%RSD	.33011	.55085	.19471	1.4789	1.2926	.50940	.98742
#1	.39334	9.8260	.39515	.49135	.98121	.04933	9.8278
#2	.39467	9.9219	.39384	.49731	1.0057	.04980	9.9378
#3	.39594	9.8298	.39380	.48287	1.0003	.04940	10.023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04931	.19809	.49689	.49699	3.9877	49.594	1.0016
Stddev	.00035	.00039	.00097	.00140	.0463	.339	.0098
%RSD	.69996	.19569	.19580	.28221	1.1620	.68359	.97475
#1	.04892	.19768	.49580	.49756	3.9856	49.220	.99073
#2	.04957	.19845	.49718	.49801	3.9424	49.882	1.0096
#3	.04943	.19814	.49768	.49539	4.0350	49.679	1.0045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.8713	.49596	.98783	49.518	.49712	9.8043	.49873
Stddev	.0582	.00613	.00477	.522	.00109	.0177	.00163
%RSD	.58979	1.2355	.48297	1.0550	.21900	.18012	.32630
#1	9.8044	.48970	.99184	48.919	.49799	9.7884	.49800
#2	9.9106	.50194	.98911	49.882	.49748	9.8233	.49759
#3	9.8989	.49623	.98255	49.751	.49590	9.8012	.50059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: CCV Acquired: 6/23/2016 17:57:55 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1826**	**.39764**	**4.9717**	**.98502**	**.99375**	**.98233**	**.49603**
Stddev	.0050	.01088	.0089	.00253	.01310	.00868	.00327
%RSD	.42000	2.7362	.17868	.25689	1.3184	.88336	.65997
#1	1.1879	.39017	4.9692	.98339	.97877	.98140	.49964
#2	1.1780	.41013	4.9816	.98794	1.0031	.99143	.49324
#3	1.1820	.39263	4.9643	.98374	.99940	.97415	.49523
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.99379**	**.99204**	F **.18789**
Stddev	.00563	.00149	.09910
%RSD	.56658	.15028	52.747
#1	.98993	.99220	.30141
#2	1.0003	.99344	.11863
#3	.99118	.99047	.14362
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6631.8**	**40728.**	**2099.0**
Stddev	45.9	503.	16.5
%RSD	.69181	1.2341	.78530
#1	6611.3	41075.	2107.2
#2	6599.8	40151.	2080.0
#3	6684.4	40956.	2109.8

Sample Name: CCB Acquired: 6/23/2016 18:01:33 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.01129	.00078	.00451	-.00045	.00008	-.00465
Stddev	.00148	.00039	.00155	.00327	.00048	.00013	.02449
%RSD	411.84	3.4907	199.15	72.530	105.95	171.62	526.45
#1	-.00053	.01164	.00012	.00090	.00005	.00000	-.02544
#2	.00207	.01087	.00255	.00727	-.00049	-.00000	.02235
#3	-.00046	.01137	-.00034	.00537	-.00091	.00022	-.01087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00018	.00054	.00011	-.01088	.09874	.00114
Stddev	.00029	.00030	.00119	.00044	.03748	.07317	.00332
%RSD	246.95	168.18	220.68	381.54	344.38	74.101	290.12
#1	.00045	.00022	-.00081	.00062	.01794	.03451	-.00267
#2	.00000	.00046	.00100	-.00013	-.05325	.08332	.00343
#3	-.00010	-.00014	.00143	-.00015	.00266	.17839	.00267
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00689	.00204	.00366	.02542	-.00029	.00140	-.00069
Stddev	.06132	.00361	.00131	.02117	.00182	.00788	.00343
%RSD	889.59	177.04	35.712	83.279	629.54	563.60	498.72
#1	.06069	-.00150	.00240	.01760	.00160	.00084	.00259
#2	-.02239	.00571	.00357	.00928	-.00043	.00955	-.00039
#3	-.05898	.00190	.00501	.04939	-.00204	-.00619	-.00426
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: CCB Acquired: 6/23/2016 18:01:33 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00612**	**-.00027**	**.00319**	**.00025**	**.00023**	**-.00325**	**-.00471**
Stddev	.00153	.00342	.00271	.00103	.00038	.00279	.00086
%RSD	25.064	1269.5	84.974	412.62	169.30	85.836	18.269
#1	.00449	-.00355	.00269	-.00074	-.00018	-.00174	-.00566
#2	.00753	-.00053	.00612	.00132	.00028	-.00154	-.00398
#3	.00634	.00327	.00077	.00017	.00058	-.00647	-.00449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00008**	**.00027**	F **.24105**
Stddev	.00092	.00012	.41150
%RSD	1209.9	46.847	170.71
#1	-.00098	.00021	.54842
#2	.00054	.00018	.40117
#3	.00067	.00041	-.22644
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6672.3**	**41768.**	**2119.7**
Stddev	57.6	262.	32.6
%RSD	.86323	.62780	1.5373
#1	6705.6	42016.	2128.0
#2	6705.5	41794.	2083.8
#3	6605.8	41493.	2147.4

Sample Name: L1606109803 Acquired: 6/23/2016 18:05:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00032**	**.03085**	**-.00127**	**.00183**	**-.00146**	**.00004**	**.19954**	**.00007**
Stddev	.00236	.01045	.00348	.00087	.00085	.00007	.02976	.00016
%RSD	746.66	33.859	274.17	47.779	57.997	158.69	14.912	230.00
#1	.00241	.03757	-.00520	.00147	-.00081	.00010	.20422	-.00011
#2	-.00171	.03617	.00140	.00283	-.00242	.00007	.22668	.00018
#3	-.00165	.01882	-.00001	.00120	-.00116	-.00003	.16772	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.00568**	**.00388**	**.39187**	**.10478**	**.00034**	**.12477**	**.01117**
Stddev	.00033	.00040	.00075	.05326	.14846	.00690	.09992	.00202
%RSD	1223.9	7.0496	19.420	13.590	141.68	2058.5	80.089	18.078
#1	-.00037	.00598	.00367	.36606	.20874	.00375	.01013	.01079
#2	.00028	.00523	.00472	.45311	.17085	.00486	.17078	.00937
#3	.00001	.00584	.00326	.35643	-.06524	-.00761	.19339	.01336
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01433**	**.14788**	**.00239**	**-.00401**	**-.00121**	**-.00112**	**-.00779**	**.00373**
Stddev	.00040	.04259	.00040	.00288	.00159	.00565	.00213	.00124
%RSD	2.7886	28.802	16.639	71.900	130.64	504.39	27.319	33.311
#1	.01390	.18295	.00247	-.00583	-.00301	.00539	-.01003	.00233
#2	.01440	.16021	.00274	-.00069	-.00001	-.00484	-.00757	.00419
#3	.01469	.10048	.00196	-.00551	-.00062	-.00391	-.00579	.00468
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606109803 Acquired: 6/23/2016 18:05:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.00160	.00432	-.00693	-.00031	.00470	.05902
Stddev	.00059	.00022	.00543	.00465	.00124	.00007	.04433
%RSD	337.40	13.821	125.73	67.076	399.03	1.4400	75.109
#1	.00054	.00138	-.00146	-.01029	-.00033	.00477	.10269
#2	-.00050	.00182	.00932	-.00163	.00094	.00464	.06031
#3	.00048	.00160	.00510	-.00886	-.00154	.00469	.01406
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6701.9	41737.	2133.3
Stddev	17.7	223.	23.6
%RSD	.26482	.53370	1.1066
#1	6684.0	41936.	2107.7
#2	6702.4	41778.	2138.2
#3	6719.4	41496.	2154.1

Sample Name: L1606109804 Acquired: 6/23/2016 18:09:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.00550	.00148	.00398	.00014	-.00000	.05639	.00011
Stddev	.00219	.00612	.00302	.00090	.00066	.00014	.02441	.00010
%RSD	8054.2	111.32	204.56	22.756	478.27	12248.	43.295	91.576
#1	.00205	-.00072	.00110	.00492	.00048	.00000	.08169	.00011
#2	.00034	.00570	.00467	.00389	-.00062	-.00014	.05452	.00020
#3	-.00231	.01151	-.00134	.00312	.00056	.00014	.03297	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	-.00048	.00039	.00509	.07226	-.00432	.08860	-.00098
Stddev	.00047	.00177	.00047	.00413	.11460	.00188	.02282	.00192
%RSD	981.46	369.62	120.47	81.176	158.60	43.602	25.750	195.61
#1	.00046	-.00226	.00002	.00662	.11487	-.00448	.08077	-.00230
#2	.00015	.00128	.00093	.00041	-.05755	-.00612	.11430	.00122
#3	-.00046	-.00045	.00024	.00823	.15944	-.00236	.07074	-.00186
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	.28447	-.00051	-.01137	-.00379	.00134	-.00025	-.01961
Stddev	.00030	.03222	.00045	.00801	.00241	.00677	.00472	.00119
%RSD	78.960	11.326	89.242	70.503	63.646	504.08	1916.6	6.0610
#1	.00007	.28282	-.00042	-.00434	-.00635	.00646	.00471	-.01950
#2	.00041	.31748	-.00099	-.02009	-.00156	-.00633	-.00469	-.01848
#3	.00066	.25310	-.00010	-.00967	-.00346	.00390	-.00076	-.02085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606109804 Acquired: 6/23/2016 18:09:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	.00727	-.00271	-.00425	.00021	.00148	-.01678
Stddev	.00012	.00034	.00158	.00185	.00078	.00021	.29091
%RSD	149.43	4.6162	58.348	43.577	374.98	14.359	1733.8
#1	.00006	.00757	-.00433	-.00448	.00104	.00139	.18184
#2	-.00016	.00734	-.00263	-.00229	.00011	.00173	.11852
#3	-.00014	.00691	-.00117	-.00598	-.00052	.00134	-.35070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6688.2	41655.	2109.0
Stddev	56.4	133.	18.7
%RSD	.84272	.31956	.88651
#1	6659.9	41774.	2087.4
#2	6753.1	41679.	2119.9
#3	6651.7	41511.	2119.7

Sample Name: L1606076401 Acquired: 6/23/2016 18:13:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00245	.67019	.00010	.00833	.01433	.00003	37.313	.00009
Stddev	.00064	.00585	.00478	.00400	.00127	.00014	.132	.00011
%RSD	26.141	.87236	4915.8	47.991	8.8257	429.53	.35301	115.20
#1	.00243	.67675	-.00530	.00372	.01377	.00008	37.462	.00013
#2	.00182	.66553	.00380	.01082	.01578	.00015	37.267	-.00003
#3	.00310	.66828	.00179	.01046	.01345	-.00013	37.211	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00177	.13494	.00493	2.1093	3.5116	.00538	12.516	.47690
Stddev	.00027	.00081	.00173	.0368	.1337	.00492	.251	.00425
%RSD	15.254	.60366	35.121	1.7452	3.8081	91.565	2.0071	.89198
#1	.00146	.13588	.00619	2.1427	3.6345	.01007	12.781	.48122
#2	.00191	.13437	.00564	2.0698	3.5309	.00580	12.487	.47677
#3	.00195	.13459	.00296	2.1153	3.3692	.00026	12.281	.47272
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00239	7.1134	.06661	.12519	.00353	.00172	.00189	5.8796
Stddev	.00028	.0421	.00053	.00389	.00278	.00471	.00179	.0247
%RSD	11.781	.59130	.79827	3.1089	78.703	273.59	94.695	.41985
#1	.00270	7.1321	.06712	.12451	.00584	-.00218	-.00008	5.8957
#2	.00230	7.0652	.06666	.12938	.00431	.00694	.00342	5.8512
#3	.00216	7.1429	.06605	.12168	.00045	.00040	.00234	5.8918
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606076401 Acquired: 6/23/2016 18:13:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.21848	.02711	-.00526	.00152	.01133	.29378
Stddev	.00053	.00139	.00262	.00115	.00075	.00027	.28967
%RSD	4257.4	.63577	9.6647	21.837	49.639	2.3502	98.600
#1	.00059	.22007	.03006	-.00608	.00213	.01140	.10070
#2	-.00044	.21748	.02623	-.00576	.00176	.01103	.15379
#3	-.00012	.21789	.02504	-.00395	.00068	.01155	.62685
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6666.0	41778.	2147.7
Stddev	21.7	229.	44.3
%RSD	.32537	.54913	2.0641
#1	6658.2	41696.	2121.5
#2	6690.5	41600.	2122.8
#3	6649.4	42037.	2198.9

Sample Name: L1606076402 Acquired: 6/23/2016 18:17:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00113	.17691	.00122	.01438	.01126	-.00007	47.643	.00046
Stddev	.00008	.00451	.00550	.00105	.00043	.00007	.152	.00035
%RSD	6.6984	2.5493	451.48	7.3081	3.8067	88.547	.31914	77.689
#1	-.00121	.17594	.00265	.01351	.01094	-.00002	47.529	.00010
#2	-.00113	.18183	-.00485	.01554	.01110	-.00005	47.816	.00045
#3	-.00106	.17297	.00586	.01408	.01175	-.00015	47.585	.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	.00770	.00173	.25827	3.3547	.00082	13.331	.01953
Stddev	.00066	.00082	.00180	.01292	.0490	.00546	.106	.00183
%RSD	140.89	10.586	103.87	5.0018	1.4609	664.19	.79675	9.3761
#1	-.00028	.00820	-.00034	.25716	3.3133	.00131	13.289	.02164
#2	.00073	.00815	.00288	.24595	3.4088	.00602	13.252	.01835
#3	.00096	.00676	.00265	.27171	3.3420	-.00487	13.451	.01861
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	85.841	.00393	.01987	.00031	.00407	-.00554	4.9290
Stddev	.00036	.284	.00086	.00461	.00230	.00232	.00977	.0097
%RSD	74.124	.33036	21.834	23.192	751.95	56.913	176.51	.19731
#1	.00064	85.671	.00313	.02519	-.00217	.00145	-.01667	4.9400
#2	.00074	85.684	.00381	.01712	.00238	.00583	.00165	4.9218
#3	.00007	86.169	.00484	.01729	.00072	.00495	-.00160	4.9251
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606076402 Acquired: 6/23/2016 18:17:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00172	.17262	-.00265	-.00410	-.00007	.00471	.40901
Stddev	.00082	.00082	.00405	.00250	.00091	.00010	.33393
%RSD	47.322	.47585	153.10	60.989	1359.2	2.0262	81.643
#1	.00252	.17344	-.00309	-.00186	-.00069	.00470	.53676
#2	.00089	.17264	.00161	-.00680	.00097	.00462	.03007
#3	.00176	.17180	-.00646	-.00364	-.00048	.00481	.66021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6546.5	40659.	2108.5
Stddev	28.1	201.	15.3
%RSD	.42958	.49347	.72557
#1	6561.7	40449.	2124.6
#2	6514.1	40849.	2106.9
#3	6563.7	40679.	2094.1

Sample Name: L1606076403 Acquired: 6/23/2016 18:21:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00137	.15342	.00118	.01561	.01121	.00003	46.708	.00034
Stddev	.00144	.01220	.00354	.00156	.00114	.00007	.333	.00016
%RSD	104.86	7.9497	299.98	10.017	10.172	207.11	.71252	47.105
#1	.00276	.15228	.00523	.01638	.01119	.00004	47.070	.00019
#2	.00148	.16615	-.00041	.01663	.01236	.00010	46.637	.00033
#3	-.00012	.14184	-.00128	.01381	.01008	-.00004	46.416	.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	.00847	.00160	.25037	3.2322	-.00343	13.109	.01732
Stddev	.00048	.00215	.00051	.01608	.1197	.00219	.140	.00025
%RSD	105.62	25.328	31.641	6.4231	3.7025	63.908	1.0676	1.4475
#1	.00099	.01061	.00135	.24721	3.1397	-.00591	13.252	.01732
#2	.00010	.00848	.00126	.26779	3.1895	-.00259	13.105	.01706
#3	.00026	.00632	.00218	.23609	3.3674	-.00178	12.972	.01756
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	83.906	.00432	.01477	.00450	.00054	-.00630	4.8394
Stddev	.00021	.704	.00062	.00496	.00594	.00823	.00533	.0108
%RSD	145.51	.83873	14.339	33.621	132.00	1523.4	84.657	.22390
#1	.00024	84.668	.00370	.00922	.00040	-.00564	-.00982	4.8447
#2	.00028	83.772	.00494	.01629	.01131	.00989	-.00890	4.8466
#3	-.00010	83.280	.00432	.01879	.00179	-.00263	-.00016	4.8270
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606076403 Acquired: 6/23/2016 18:21:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00189	.16928	-.00280	-.00350	-.00037	.00427	.33488
Stddev	.00087	.00110	.00261	.00165	.00108	.00027	.28811
%RSD	46.182	.64857	93.235	47.233	289.03	6.2712	86.033
#1	.00253	.17053	-.00577	-.00531	-.00161	.00439	.48732
#2	.00090	.16886	-.00085	-.00207	.00037	.00397	.00258
#3	.00224	.16845	-.00178	-.00311	.00012	.00447	.51476
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6581.0	40913.	2128.6
Stddev	5.4	301.	32.8
%RSD	.08278	.73656	1.5394
#1	6574.8	40952.	2106.9
#2	6584.5	40594.	2112.5
#3	6583.9	41193.	2166.3

Sample Name: L1606095701 Acquired: 6/23/2016 18:25:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.46956	.00251	.02030	.04833	.00003	49.298	.00021
Stddev	.00116	.00247	.00083	.00483	.00100	.00005	.380	.00019
%RSD	283.11	.52507	32.898	23.794	2.0760	143.19	.77063	90.357
#1	.00160	.46729	.00340	.01479	.04946	-.00001	49.398	.00006
#2	-.00072	.47218	.00235	.02380	.04755	.00003	49.618	.00041
#3	.00036	.46920	.00178	.02230	.04798	.00008	48.878	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.00117	.00294	.90286	1.5234	.00299	12.797	.07921
Stddev	.00016	.00017	.00150	.02505	.1258	.00416	.204	.00280
%RSD	34.195	14.848	50.801	2.7744	8.2581	138.79	1.5973	3.5404
#1	.00039	.00098	.00204	.92120	1.4450	-.00175	12.561	.07627
#2	.00038	.00131	.00212	.91306	1.4566	.00596	12.905	.08186
#3	.00067	.00123	.00467	.87432	1.6685	.00477	12.925	.07952
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	3.8733	.00033	.04837	.00336	-.00283	.00062	4.1822
Stddev	.00048	.0248	.00057	.00397	.00588	.00529	.00509	.0038
%RSD	106.40	.63975	174.89	8.1973	175.22	186.90	821.76	.09190
#1	.00063	3.9009	.00047	.05197	.00822	.00326	-.00493	4.1833
#2	-.00009	3.8529	.00082	.04903	-.00318	-.00552	.00170	4.1779
#3	.00081	3.8662	-.00030	.04412	.00504	-.00623	.00508	4.1853
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606095701 Acquired: 6/23/2016 18:25:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.26575**	**-.00460**	**-.00190**	**.00016**	**.00477**	**.18671**
Stddev	.00076	.00141	.00397	.00470	.00026	.00014	.25228
%RSD	1127.9	.53205	86.124	248.06	165.00	2.9160	135.12
#1	.00070	.26627	-.00436	-.00420	.00020	.00486	-.03830
#2	-.00009	.26684	-.00077	.00352	.00040	.00485	.13898
#3	-.00081	.26416	-.00869	-.00501	-.00012	.00461	.45944
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6633.8**	**41376.**	**2099.5**
Stddev	37.1	291.	7.1
%RSD	.55940	.70297	.33861
#1	6661.1	41062.	2100.6
#2	6648.8	41636.	2091.9
#3	6591.5	41431.	2106.0

Sample Name: L1606095702 Acquired: 6/23/2016 18:29:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.02149	-.00029	.01798	.04394	-.00005	48.548	.00016
Stddev	.00120	.00717	.00363	.00283	.00013	.00009	.113	.00020
%RSD	338.55	33.343	1265.1	15.710	.28482	186.99	.23191	128.29
#1	.00155	.02937	-.00024	.01478	.04391	-.00003	48.543	-.00006
#2	.00038	.01536	-.00394	.01905	.04383	.00003	48.664	.00019
#3	-.00086	.01975	.00332	.02012	.04408	-.00015	48.439	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	.00018	.00270	.01333	1.4334	.00181	12.360	.04977
Stddev	.00029	.00074	.00104	.00520	.0107	.00516	.188	.00147
%RSD	124.55	409.37	38.421	39.005	.74428	284.70	1.5241	2.9581
#1	.00010	-.00042	.00376	.01807	1.4222	-.00050	12.567	.04817
#2	-.00039	.00100	.00266	.00777	1.4347	.00772	12.199	.05008
#3	-.00041	-.00004	.00169	.01416	1.4434	-.00179	12.314	.05107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	3.8295	.00047	.00890	-.00152	.00413	-.00556	3.5646
Stddev	.00041	.0622	.00056	.00959	.00091	.00142	.00430	.0105
%RSD	89.215	1.6239	120.78	107.82	59.749	34.322	77.442	.29519
#1	.00025	3.8845	.00007	.00556	-.00178	.00386	-.00914	3.5766
#2	.00020	3.7620	.00111	.00142	-.00226	.00566	-.00674	3.5599
#3	.00094	3.8419	.00022	.01971	-.00051	.00286	-.00079	3.5572
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606095702 Acquired: 6/23/2016 18:29:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.25718	-.01617	-.00292	-.00158	.00276	.25728
Stddev	.00011	.00214	.00935	.00156	.00059	.00016	.40159
%RSD	34.052	.83289	57.848	53.296	37.039	5.8090	156.09
#1	.00022	.25955	-.02691	-.00442	-.00103	.00282	-.15534
#2	.00044	.25539	-.00976	-.00131	-.00219	.00288	.64684
#3	.00029	.25660	-.01185	-.00303	-.00152	.00258	.28035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6634.1	41520.	2136.4
Stddev	35.2	131.	44.7
%RSD	.53089	.31504	2.0909
#1	6598.3	41376.	2086.8
#2	6635.3	41551.	2148.8
#3	6668.7	41632.	2173.6

Sample Name: CCV Acquired: 6/23/2016 18:33:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.37892	9.4387	.37738	.47256	.94946	.04758	9.5075
Stddev	.00148	.0146	.00259	.00305	.00322	.00017	.0685
%RSD	.39011	.15488	.68700	.64544	.33864	.35065	.72027
#1	.38009	9.4240	.38032	.47530	.94608	.04771	9.4676
#2	.37942	9.4533	.37541	.46928	.94982	.04765	9.4684
#3	.37726	9.4389	.37641	.47312	.95247	.04739	9.5866
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04694	.19097	.47642	.48024	3.7454	47.589	.96391
Stddev	.00038	.00060	.00177	.00172	.0267	.209	.00531
%RSD	.81436	.31192	.37218	.35728	.71307	.43924	.55081
#1	.04714	.19166	.47496	.48079	3.7624	47.380	.95931
#2	.04717	.19062	.47589	.48161	3.7146	47.589	.96972
#3	.04649	.19064	.47839	.47831	3.7591	47.798	.96271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.5330	.47716	.95180	47.369	.47779	9.4288	.47264
Stddev	.1380	.00452	.00445	.136	.00101	.0198	.00044
%RSD	1.4480	.94690	.46703	.28759	.21184	.20944	.09281
#1	9.3868	.47739	.95630	47.213	.47768	9.4450	.47285
#2	9.6611	.47253	.95168	47.430	.47683	9.4068	.47292
#3	9.5511	.48156	.94742	47.463	.47885	9.4347	.47213
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: CCV Acquired: 6/23/2016 18:33:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1353**	**.38157**	**4.7878**	**.94812**	**.94630**	**.94801**	**.48121**
Stddev	.0015	.00111	.0073	.00312	.00312	.01023	.00217
%RSD	.12990	.29010	.15352	.32951	.33000	1.0787	.45189
#1	1.1366	.38222	4.7963	.95070	.94271	.93631	.48083
#2	1.1337	.38220	4.7828	.94465	.94841	.95529	.47925
#3	1.1356	.38030	4.7843	.94900	.94778	.95241	.48355
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.95198**	**.95325**	F **.09466**
Stddev	.00202	.00225	.27239
%RSD	.21241	.23553	287.76
#1	.95399	.95580	.19384
#2	.95199	.95239	-.21343
#3	.94995	.95157	.30356
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6829.4**	**42429.**	**2191.9**
Stddev	12.0	491.	25.5
%RSD	.17610	1.1575	1.1649
#1	6837.9	42290.	2175.1
#2	6834.7	42022.	2221.3
#3	6815.6	42975.	2179.4

Sample Name: CCB Acquired: 6/23/2016 18:36:49 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00322**	**.00107**	**-.00054**	**.00322**	**.00006**	**.00009**	**.02193**
Stddev	.00043	.00584	.00138	.00071	.00147	.00001	.03302
%RSD	13.435	544.37	257.70	22.014	2255.3	10.149	150.58
#1	.00309	.00723	.00106	.00367	-.00132	.00008	.01644
#2	.00371	.00039	-.00144	.00240	.00160	.00009	-.00800
#3	.00287	-.00440	-.00123	.00358	-.00009	.00010	.05735
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**.00018**	**-.00042**	**.00126**	**.02179**	**.11279**	**-.00067**
Stddev	.00014	.00038	.00167	.00134	.02326	.08636	.00587
%RSD	182.22	210.03	399.06	106.42	106.75	76.563	872.21
#1	.00024	.00056	-.00036	.00176	.03802	.20919	-.00743
#2	.00004	-.00020	.00122	-.00026	-.00486	.08667	.00222
#3	-.00004	.00019	-.00212	.00226	.03219	.04251	.00319
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02601**	**.00041**	**.00309**	**.08611**	**-.00017**	**.00201**	**-.00231**
Stddev	.00787	.00462	.00037	.06126	.00074	.00369	.00149
%RSD	30.276	1132.0	12.029	71.145	441.11	183.39	64.604
#1	.02246	-.00052	.00267	.06682	.00059	-.00054	-.00062
#2	.02053	.00542	.00337	.03682	-.00020	.00033	-.00285
#3	.03503	-.00368	.00324	.15470	-.00090	.00625	-.00346
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: CCB Acquired: 6/23/2016 18:36:49 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00178**	**.00235**	**.00300**	**.00030**	**.00073**	**-.00027**	**-.00344**
Stddev	.00352	.00736	.00017	.00075	.00010	.00192	.00271
%RSD	198.25	313.53	5.6604	253.34	13.143	700.32	78.666
#1	-.00221	.00539	.00284	.00092	.00062	-.00182	-.00634
#2	.00305	-.00605	.00318	-.00054	.00077	.00188	-.00302
#3	.00448	.00771	.00299	.00050	.00080	-.00088	-.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00023**	**.00017**	F **.30996**
Stddev	.00082	.00026	.44738
%RSD	353.90	152.67	144.34
#1	-.00013	.00031	.51733
#2	.00118	-.00013	-.20349
#3	-.00035	.00032	.61602
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6847.7**	**42764.**	**2190.8**
Stddev	18.6	212.	5.5
%RSD	.27202	.49617	.24955
#1	6838.4	42826.	2184.7
#2	6869.1	42938.	2192.8
#3	6835.5	42527.	2195.1

Sample Name: L1606095703 Acquired: 6/23/2016 18:40:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00157	.59442	.00345	.01544	.05978	.00002	36.179	.00021
Stddev	.00140	.00140	.00372	.00226	.00166	.00008	.233	.00017
%RSD	89.489	.23471	107.82	14.612	2.7840	315.39	.64331	79.288
#1	.00259	.59283	.00035	.01648	.06092	.00011	36.405	.00023
#2	.00214	.59501	.00758	.01285	.06056	-.00003	36.192	.00038
#3	-.00003	.59543	.00243	.01699	.05787	-.00000	35.940	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	.00171	.00235	.99066	1.0189	.00306	4.2466	.34135
Stddev	.00029	.00065	.00116	.00191	.1477	.00520	.1543	.00578
%RSD	57.273	38.095	49.421	.19284	14.493	170.05	3.6338	1.6936
#1	.00018	.00100	.00118	.99000	.97647	.00895	4.1429	.34787
#2	.00074	.00184	.00237	.98917	1.1832	.00113	4.4240	.33684
#3	.00059	.00229	.00350	.99281	.89714	-.00090	4.1730	.33935
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00158	9.9139	.00125	.06880	.00203	.00079	-.00517	4.4030
Stddev	.00038	.0706	.00076	.00768	.00168	.00577	.00107	.0083
%RSD	24.292	.71237	60.961	11.168	82.575	735.03	20.696	.18913
#1	.00191	9.9842	.00113	.06853	.00010	.00362	-.00400	4.4025
#2	.00167	9.8430	.00208	.07661	.00292	.00459	-.00539	4.3950
#3	.00116	9.9146	.00056	.06125	.00308	-.00586	-.00611	4.4116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606095703 Acquired: 6/23/2016 18:40:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.13708	.00451	-.00202	.00078	.00490	.22494
Stddev	.00088	.00079	.01428	.00267	.00035	.00024	.11125
%RSD	513.50	.57511	316.39	132.43	44.919	4.8544	49.458
#1	.00022	.13772	-.01170	-.00500	.00067	.00502	.12100
#2	.00102	.13733	.01523	-.00120	.00118	.00506	.21152
#3	-.00073	.13620	.01000	.00015	.00050	.00463	.34229
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6641.1	41542.	2110.2
Stddev	47.0	387.	42.7
%RSD	.70732	.93262	2.0250
#1	6610.2	41137.	2074.7
#2	6618.0	41909.	2098.4
#3	6695.1	41580.	2157.7

Sample Name: L1606095704 Acquired: 6/23/2016 18:44:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00171	.01427	-.00254	.01401	.04366	.00001	35.183	.00015
Stddev	.00187	.00827	.00245	.00145	.00176	.00007	.524	.00017
%RSD	109.40	57.926	96.490	10.332	4.0281	938.95	1.4883	116.97
#1	.00375	.01991	-.00531	.01561	.04341	-.00008	35.381	.00027
#2	.00007	.00478	-.00065	.01361	.04552	.00004	35.579	-.00005
#3	.00132	.01813	-.00167	.01280	.04203	.00006	34.589	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	.00023	.00314	.00854	.90554	-.00053	4.1738	.13131
Stddev	.00017	.00027	.00209	.01235	.04311	.00195	.0469	.00168
%RSD	61.984	120.89	66.548	144.50	4.7611	368.87	1.1239	1.2783
#1	-.00041	.00004	.00554	-.00223	.92277	.00023	4.1196	.13296
#2	-.00032	.00054	.00170	.02202	.93737	.00093	4.2002	.13137
#3	-.00008	.00010	.00219	.00585	.85648	-.00275	4.2015	.12960
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00146	9.9224	.00122	.02546	.00187	.00274	-.00609	3.6801
Stddev	.00034	.2004	.00114	.01084	.00327	.00376	.00550	.0062
%RSD	23.395	2.0192	93.082	42.580	174.85	137.20	90.310	.16848
#1	.00107	10.130	.00251	.01415	.00529	.00275	-.00747	3.6873
#2	.00171	9.9074	.00082	.02646	.00154	-.00102	-.01077	3.6761
#3	.00161	9.7299	.00034	.03577	-.00122	.00649	-.00003	3.6770
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606095704 Acquired: 6/23/2016 18:44:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00044**	**.13398**	**-.00259**	**-.00487**	**-.00042**	**.00404**	**.39599**
Stddev	.00030	.00097	.00767	.00290	.00014	.00020	.04470
%RSD	68.069	.72204	296.19	59.450	32.889	5.0229	11.288
#1	-.00031	.13510	.00380	-.00161	-.00033	.00423	.39112
#2	-.00079	.13343	-.00047	-.00585	-.00058	.00406	.35393
#3	-.00024	.13342	-.01109	-.00716	-.00035	.00383	.44293
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6691.6**	**41683.**	**2130.5**
Stddev	16.3	188.	44.8
%RSD	.24349	.45009	2.1019
#1	6674.7	41874.	2106.4
#2	6707.2	41499.	2102.9
#3	6692.9	41675.	2182.2

Sample Name: L1606095705 Acquired: 6/23/2016 18:48:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	.18137	.00132	.01393	.05227	.00000	47.576	-.00017
Stddev	.00022	.00236	.00336	.00262	.00068	.00006	.406	.00016
%RSD	27.412	1.3014	254.59	18.802	1.2936	1545.4	.85245	98.177
#1	.00055	.17984	-.00165	.01122	.05295	.00007	47.676	-.00014
#2	.00093	.18018	.00064	.01413	.05226	-.00001	47.129	-.00002
#3	.00093	.18409	.00497	.01644	.05160	-.00005	47.922	-.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.00081	.00165	.24818	.66421	-.00237	5.8917	.04016
Stddev	.00049	.00111	.00028	.02329	.15036	.00580	.1105	.00146
%RSD	327.66	136.79	16.738	9.3859	22.638	244.94	1.8758	3.6247
#1	.00050	.00005	.00195	.26948	.57304	-.00408	6.0110	.04145
#2	.00036	.00030	.00162	.22331	.58183	.00409	5.7928	.04046
#3	-.00041	.00208	.00140	.25176	.83776	-.00711	5.8714	.03858
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	4.2444	.00044	.02145	-.00147	.00210	-.00161	3.9144
Stddev	.00037	.0382	.00138	.00960	.00364	.00064	.00655	.0080
%RSD	69.362	.90092	314.47	44.765	248.05	30.375	406.75	.20417
#1	.00089	4.2867	-.00079	.03237	-.00565	.00257	-.00833	3.9237
#2	.00058	4.2341	.00193	.01434	.00101	.00137	-.00126	3.9100
#3	.00015	4.2123	.00017	.01764	.00024	.00235	.00476	3.9097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606095705 Acquired: 6/23/2016 18:48:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00124**	**.16651**	**-.01359**	**-.00521**	**.00084**	**.00210**	**.15995**
Stddev	.00099	.00174	.00564	.00062	.00055	.00006	.33370
%RSD	79.444	1.0457	41.504	11.980	65.519	2.7028	208.63
#1	-.00013	.16843	-.01365	-.00569	.00109	.00214	.50631
#2	-.00159	.16606	-.00792	-.00450	.00021	.00203	.13299
#3	-.00201	.16504	-.01920	-.00543	.00123	.00212	-.15945
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6676.1**	**41561.**	**2103.6**
Stddev	12.6	161.	24.0
%RSD	.18881	.38711	1.1405
#1	6690.1	41742.	2107.2
#2	6672.8	41433.	2125.6
#3	6665.6	41508.	2078.0

Sample Name: L1606096101 Acquired: 6/23/2016 18:52:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00082	.01430	.00369	.01759	.00065	-.00004	.04649	-.00016
Stddev	.00101	.00586	.00264	.00153	.00060	.00005	.04475	.00011
%RSD	122.72	40.990	71.487	8.6840	91.837	113.85	96.246	67.330
#1	-.00034	.00813	.00410	.01814	.00134	-.00010	.05237	-.00005
#2	.00136	.01498	.00087	.01587	.00033	.00000	.08801	-.00016
#3	.00144	.01979	.00609	.01877	.00028	-.00003	-.00090	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.00024	.01766	.09903	.10656	.00252	-.01866	.00398
Stddev	.00056	.00013	.00069	.02628	.09276	.00342	.06339	.00246
%RSD	164.44	55.453	3.9062	26.535	87.051	136.01	339.78	61.709
#1	.00024	.00020	.01732	.09611	.01800	.00645	-.08612	.00647
#2	-.00016	.00038	.01845	.12665	.09866	.00026	.03967	.00155
#3	.00095	.00013	.01720	.07434	.20302	.00083	-.00952	.00393
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	107.16	-.00002	.03665	.00304	.00296	-.00309	5.9627
Stddev	.00055	1.21	.00170	.00369	.00053	.00129	.00524	.0081
%RSD	1743.4	1.1249	7247.6	10.064	17.513	43.498	169.55	.13655
#1	.00064	108.50	.00194	.03929	.00277	.00155	-.00074	5.9648
#2	-.00012	106.16	-.00110	.03243	.00269	.00407	.00057	5.9537
#3	-.00042	106.82	-.00091	.03823	.00365	.00327	-.00910	5.9696
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606096101 Acquired: 6/23/2016 18:52:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00123**	**.00009**	**-.00012**	**-.00673**	**-.00085**	**.00397**	**.21821**
Stddev	.00042	.00025	.00564	.00413	.00089	.00018	.04757
%RSD	34.134	265.03	4817.0	61.413	103.95	4.5901	21.800
#1	.00144	-.00013	-.00483	-.00336	-.00072	.00394	.16868
#2	.00075	.00004	.00613	-.01134	-.00180	.00381	.26354
#3	.00150	.00037	-.00165	-.00548	-.00004	.00417	.22241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6592.8**	**41252.**	**2103.4**
Stddev	17.0	291.	47.5
%RSD	.25725	.70443	2.2575
#1	6595.4	40916.	2058.8
#2	6574.6	41415.	2153.3
#3	6608.2	41424.	2098.1

Sample Name: L1606096102 Acquired: 6/23/2016 18:56:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00079	.03478	.00589	.01533	.02658	-.00009	27.946	-.00005
Stddev	.00186	.00579	.00137	.00335	.00018	.00004	.659	.00022
%RSD	235.75	16.640	23.210	21.834	.65976	40.468	2.3584	471.56
#1	.00069	.02830	.00447	.01574	.02649	-.00010	28.691	-.00000
#2	-.00287	.03661	.00719	.01180	.02646	-.00005	27.440	-.00029
#3	-.00019	.03942	.00601	.01846	.02678	-.00013	27.706	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.00057	.00211	.07517	.95068	-.00017	4.4154	.12814
Stddev	.00012	.00116	.00118	.01917	.12455	.00106	.0966	.00422
%RSD	122.50	204.26	55.846	25.503	13.101	623.39	2.1883	3.2924
#1	.00017	.00092	.00222	.09509	.80692	-.00137	4.5065	.13251
#2	.00017	.00152	.00323	.05686	1.0194	.00064	4.3140	.12782
#3	-.00004	-.00073	.00088	.07355	1.0258	.00022	4.4257	.12409
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	2.8960	.00155	.00675	-.00147	-.00079	-.00450	1.9147
Stddev	.00018	.0986	.00062	.00402	.00109	.00203	.00538	.0058
%RSD	22.925	3.4051	39.619	59.594	74.555	256.57	119.66	.30207
#1	.00069	2.9809	.00179	.00220	-.00127	.00048	-.01064	1.9214
#2	.00097	2.7878	.00202	.00820	-.00048	-.00314	-.00059	1.9118
#3	.00065	2.9192	.00086	.00985	-.00264	.00028	-.00227	1.9110
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606096102 Acquired: 6/23/2016 18:56:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00047**	**.09203**	**-.00699**	**-.00581**	**.00001**	**.00122**	**.19167**
Stddev	.00152	.00238	.00325	.00218	.00060	.00015	.39664
%RSD	319.98	2.5851	46.457	37.509	4349.6	12.672	206.94
#1	.00001	.09410	-.00457	-.00773	.00065	.00107	.60420
#2	-.00217	.08943	-.01068	-.00344	-.00006	.00121	.15771
#3	.00074	.09257	-.00572	-.00625	-.00055	.00138	-.18689
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6690.9**	**41659.**	**2159.3**
Stddev	15.4	166.	23.9
%RSD	.22972	.39942	1.1048
#1	6679.1	41827.	2132.7
#2	6708.3	41655.	2166.7
#3	6685.3	41494.	2178.6

Sample Name: L1606099102 Acquired: 6/23/2016 19:00:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.18278	.01279	.07089	.02678	.00003	1.1753
Stddev	.00017	.00874	.00230	.00310	.00094	.00004	.0130
%RSD	197.98	4.7790	18.004	4.3721	3.5015	169.52	1.1019
#1	.00028	.18746	.01165	.06786	.02601	.00006	1.1606
#2	.00005	.18819	.01543	.07075	.02651	-.00002	1.1806
#3	-.00007	.17271	.01127	.07405	.02782	.00005	1.1848
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00374	.00173	.10547	.01142	.70686	2.4306	.00285
Stddev	.00031	.00017	.00069	.00091	.00672	.2276	.00410
%RSD	8.3801	9.8737	.65029	7.9351	.95134	9.3634	143.93
#1	.00362	.00160	.10540	.01211	.70453	2.2038	.00005
#2	.00409	.00192	.10482	.01039	.71445	2.4290	.00095
#3	.00349	.00167	.10619	.01174	.70162	2.6590	.00756
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.81483	.00610	.00617	F 411.44	.00858	.68987	.01663
Stddev	.08854	.00159	.00023	1.75	.00104	.00877	.00140
%RSD	10.866	26.091	3.7232	.42582	12.171	1.2720	8.4229
#1	.87256	.00435	.00592	410.10	.00774	.68564	.01502
#2	.71289	.00651	.00637	410.79	.00975	.69996	.01728
#3	.85904	.00745	.00621	413.42	.00825	.68401	.01758
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Sample Name: L1606099102 Acquired: 6/23/2016 19:00:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00429**	**-.00276**	**2.6532**	**.01212**	**.18283**	**.14118**	**-.00012**
Stddev	.00146	.00633	.0058	.00057	.00067	.01057	.00163
%RSD	33.919	229.47	.21752	4.7117	.36652	7.4900	1330.7
#1	.00526	-.00115	2.6467	.01254	.18210	.13107	.00136
#2	.00500	.00261	2.6548	.01147	.18294	.14030	-.00187
#3	.00262	-.00973	2.6579	.01236	.18343	.15217	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.02620**	**.14570**	**6.4213**
Stddev	.00048	.00024	.3214
%RSD	1.8484	.16660	5.0053
#1	.02567	.14542	6.6480
#2	.02632	.14589	6.0535
#3	.02662	.14577	6.5624
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6798.1**	**41761.**	**2199.9**
Stddev	24.0	167.	13.3
%RSD	.35371	.40060	.60321
#1	6803.8	41578.	2190.0
#2	6771.7	41906.	2194.6
#3	6818.8	41798.	2214.9

Sample Name: L1606099501 Acquired: 6/23/2016 19:04:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	.03319	.00198	4.2612	22.007	.00013	F 2231.4
Stddev	.00073	.00812	.00497	.0108	.140	.00007	10.9
%RSD	111.66	24.468	250.83	.25328	.63583	52.114	.49013
#1	.00010	.02381	.00383	4.2649	22.169	.00005	2238.3
#2	.00039	.03790	-.00365	4.2491	21.924	.00018	2218.8
#3	.00149	.03786	.00577	4.2697	21.929	.00017	2237.2
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00230	.00542	.00437	.00761	16.049	77.831	15.290
Stddev	.00066	.00043	.00087	.00268	.109	.457	.102
%RSD	28.682	8.0139	19.948	35.207	.68074	.58771	.66563
#1	.00204	.00521	.00375	.01070	16.175	78.291	15.407
#2	.00305	.00592	.00537	.00603	15.989	77.376	15.216
#3	.00181	.00514	.00400	.00609	15.983	77.827	15.248
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	289.46	2.5248	-.00161	F 5161.1	-.00605	-.04671	-.00084
Stddev	1.34	.0130	.00040	91.9	.00062	.01060	.00404
%RSD	.46449	.51604	24.821	1.7808	10.259	22.695	480.02
#1	290.80	2.5348	-.00118	5246.4	-.00638	-.03903	-.00094
#2	288.11	2.5101	-.00167	5063.8	-.00533	-.05880	.00324
#3	289.46	2.5296	-.00197	5173.3	-.00644	-.04229	-.00483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Sample Name: L1606099501 Acquired: 6/23/2016 19:04:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**.00060**	**1.7140**	**-.00270**	F **293.43**	F **-.23021**	**-.00582**
Stddev	.00390	.00430	.0091	.00145	3.55	.00343	.00281
%RSD	37587.	722.43	.53043	53.583	1.2096	1.4919	48.318
#1	.00450	-.00436	1.7206	-.00436	292.37	-.23049	-.00302
#2	-.00251	.00275	1.7036	-.00173	297.39	-.22665	-.00864
#3	-.00196	.00340	1.7177	-.00201	290.53	-.23350	-.00579
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Pass
High Limit					9.0000	36.000	
Low Limit					-.01000	-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00391**	**.46449**	F **-.84964**
Stddev	.00112	.00152	.26917
%RSD	28.498	.32684	31.680
#1	-.00485	.46570	-1.1604
#2	-.00421	.46278	-.69319
#3	-.00268	.46498	-.69528
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**5043.9**	**30664.**	**1834.7**
Stddev	16.9	150.	7.6
%RSD	.33492	.48802	.41407
#1	5024.6	30608.	1826.5
#2	5056.0	30834.	1836.3
#3	5051.1	30550.	1841.4

Sample Name: L1606099502 Acquired: 6/23/2016 19:08:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00345**	**.02306**	**-.00311**	**4.2770**	**21.493**	**.00016**	F **2199.4**
Stddev	.00099	.01662	.00473	.0112	.107	.00010	10.2
%RSD	28.739	72.096	152.37	.26279	.49855	65.563	.46331
#1	-.00260	.03568	.00094	4.2665	21.584	.00005	2207.7
#2	-.00454	.00422	-.00194	4.2758	21.375	.00025	2202.6
#3	-.00321	.02928	-.00831	4.2888	21.521	.00017	2188.0
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00258**	**.00505**	**.00245**	**.01034**	**14.967**	**76.431**	**15.054**
Stddev	.00018	.00018	.00130	.00137	.073	.482	.075
%RSD	6.8313	3.5760	52.982	13.296	.48454	.63040	.50059
#1	.00238	.00511	.00191	.00878	14.985	76.519	15.096
#2	.00271	.00519	.00151	.01138	14.888	75.911	14.967
#3	.00265	.00485	.00393	.01085	15.029	76.862	15.100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**285.71**	**2.4897**	**-.00104**	F **4892.3**	**-.00500**	**-.05393**	**.00746**
Stddev	1.59	.0149	.00055	124.5	.00081	.00583	.00104
%RSD	.55735	.59915	52.735	2.5451	16.181	10.801	13.884
#1	287.47	2.5069	-.00064	4942.1	-.00421	-.06066	.00665
#2	284.37	2.4802	-.00081	4984.2	-.00495	-.05038	.00710
#3	285.29	2.4820	-.00167	4750.6	-.00582	-.05076	.00863
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Sample Name: L1606099502 Acquired: 6/23/2016 19:08:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00124**	**.00073**	**1.5901**	**-.00205**	F **282.05**	F **-.22951**	**-.00301**
Stddev	.00214	.00258	.0105	.00077	1.08	.01217	.00231
%RSD	172.21	351.60	.66137	37.499	.38242	5.3030	76.703
#1	.00091	.00117	1.5782	-.00289	282.22	-.24190	-.00355
#2	-.00128	.00306	1.5942	-.00138	283.02	-.21757	-.00499
#3	-.00337	-.00204	1.5980	-.00189	280.89	-.22904	-.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Pass
High Limit					9.0000	36.000	
Low Limit					-.01000	-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00411**	**.45318**	F **-.64740**
Stddev	.00129	.00131	.07796
%RSD	31.297	.28971	12.042
#1	-.00333	.45167	-.58664
#2	-.00340	.45405	-.73530
#3	-.00559	.45381	-.62026
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**5048.8**	**30332.**	**1858.4**
Stddev	3.9	253.	17.7
%RSD	.07715	.83404	.95240
#1	5053.2	30378.	1844.8
#2	5046.9	30059.	1852.1
#3	5046.2	30558.	1878.4

Sample Name: L1606106401 Acquired: 6/23/2016 19:12:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00137	.93109	.00053	.03729	.05113	.00000	28.407	.00020
Stddev	.00252	.00902	.00338	.00153	.00202	.00011	.262	.00043
%RSD	183.56	.96930	639.15	4.0949	3.9481	2244.2	.92307	214.59
#1	-.00121	.93101	.00099	.03594	.05319	.00011	28.651	.00015
#2	.00151	.94015	.00365	.03894	.05104	.00001	28.439	-.00020
#3	.00382	.92210	-.00306	.03698	.04915	-.00011	28.129	.00066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00058	.00021	.00488	1.1389	1.0564	-.00108	2.9741	.01385
Stddev	.00032	.00086	.00142	.0345	.0930	.00288	.1109	.00248
%RSD	56.184	402.03	29.165	3.0303	8.7985	268.17	3.7294	17.924
#1	.00057	.00116	.00392	1.1770	1.0142	.00149	3.1007	.01663
#2	.00025	-.00002	.00421	1.1096	.99211	-.00052	2.9273	.01185
#3	.00090	-.00050	.00652	1.1303	1.1630	-.00420	2.8942	.01308
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00103	3.1622	.00158	.08777	.00276	.00045	-.00572	4.3193
Stddev	.00012	.1302	.00086	.00354	.00085	.00135	.01212	.0046
%RSD	11.727	4.1165	54.479	4.0300	30.606	297.83	212.07	.10550
#1	.00117	3.2928	.00230	.08694	.00254	-.00043	.00769	4.3152
#2	.00097	3.1615	.00063	.08472	.00205	.00201	-.01591	4.3242
#3	.00095	3.0324	.00181	.09165	.00370	-.00022	-.00892	4.3184
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606106401 Acquired: 6/23/2016 19:12:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	.09591	.01130	-.00267	.00099	.00793	.56831
Stddev	.00047	.00237	.00917	.00175	.00090	.00003	.52710
%RSD	78.603	2.4713	81.158	65.518	91.033	.34720	92.749
#1	.00074	.09837	.00228	-.00301	.00008	.00796	.23401
#2	.00098	.09572	.01099	-.00422	.00188	.00791	.29499
#3	.00007	.09364	.02061	-.00077	.00100	.00793	1.1759
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6738.4	41869.	2132.0
Stddev	11.1	208.	5.4
%RSD	.16498	.49610	.25526
#1	6728.6	41753.	2129.0
#2	6736.2	41746.	2138.3
#3	6750.5	42109.	2128.7

Sample Name: CCV Acquired: 6/23/2016 19:16:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.37919	9.4539	.37838	.47741	.95410	.04762	9.5636
Stddev	.00221	.0169	.00039	.00245	.00513	.00013	.0372
%RSD	.58374	.17847	.10355	.51410	.53813	.27668	.38859
#1	.38055	9.4678	.37878	.47468	.94817	.04774	9.5214
#2	.38039	9.4588	.37835	.47943	.95695	.04748	9.5914
#3	.37664	9.4351	.37800	.47812	.95718	.04762	9.5780
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04743	.19073	.47732	.47745	3.7981	47.840	.97103
Stddev	.00050	.00017	.00127	.00151	.0352	.199	.00699
%RSD	1.0527	.08963	.26621	.31598	.92728	.41493	.71955
#1	.04779	.19083	.47845	.47601	3.7576	47.614	.96329
#2	.04763	.19053	.47595	.47902	3.8152	47.921	.97687
#3	.04686	.19083	.47757	.47730	3.8215	47.986	.97295
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.5182	.47503	.95370	48.127	.47728	9.3799	.47857
Stddev	.1107	.00550	.00396	.203	.00099	.0039	.00307
%RSD	1.1627	1.1583	.41501	.42134	.20780	.04109	.64155
#1	9.6428	.46909	.95745	47.914	.47781	9.3770	.47874
#2	9.4313	.47605	.95408	48.150	.47790	9.3843	.48155
#3	9.4805	.47995	.94956	48.317	.47614	9.3784	.47541
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: CCV Acquired: 6/23/2016 19:16:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1355**	**.37785**	**4.7735**	**.94584**	**.95950**	**.94974**	**.48314**
Stddev	.0014	.00604	.0057	.00205	.00431	.00481	.00202
%RSD	.12258	1.5984	.11925	.21676	.44891	.50688	.41802
#1	1.1369	.38109	4.7670	.94374	.95466	.94648	.48517
#2	1.1341	.38158	4.7762	.94595	.96094	.95527	.48113
#3	1.1355	.37088	4.7773	.94784	.96291	.94747	.48313
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.95446**	**.95114**	F **.47272**
Stddev	.00286	.00014	.27938
%RSD	.29988	.01520	59.100
#1	.95768	.95118	.66932
#2	.95222	.95127	.15292
#3	.95348	.95099	.59591
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6901.5**	**42860.**	**2195.1**
Stddev	41.4	316.	16.1
%RSD	.60057	.73673	.73557
#1	6924.3	42538.	2183.7
#2	6853.6	42875.	2188.1
#3	6926.5	43169.	2213.6

Sample Name: CCB Acquired: 6/23/2016 19:20:08 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00238**	**-.01466**	**.00143**	**.00483**	**-.00003**	**.00001**	**.07786**
Stddev	.00049	.00200	.00149	.00453	.00214	.00009	.06354
%RSD	20.427	13.611	104.06	93.858	6527.4	940.84	81.613
#1	.00284	-.01261	.00199	.00972	.00118	.00006	.15097
#2	.00187	-.01659	-.00026	.00400	.00122	.00006	.03598
#3	.00244	-.01478	.00255	.00077	-.00250	-.00009	.04662
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**-.00031**	**.00022**	**.00039**	**.00442**	**.00595**	**.00280**
Stddev	.00007	.00052	.00124	.00132	.02693	.06585	.00064
%RSD	37.292	170.19	563.67	338.25	609.56	1107.4	22.926
#1	.00023	-.00057	.00004	-.00106	.01159	.04036	.00265
#2	.00011	-.00065	-.00092	.00069	-.02537	-.06998	.00350
#3	.00023	.00030	.00154	.00154	.02703	.04745	.00224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03600**	**.00167**	**.00345**	**.42320**	**-.00024**	**.00139**	F **-.00578**
Stddev	.09635	.00312	.00061	.03957	.00049	.00443	.00184
%RSD	267.61	187.01	17.568	9.3512	202.30	317.35	31.895
#1	.01890	-.00154	.00285	.45813	-.00079	.00606	-.00650
#2	.13975	.00185	.00406	.43125	.00015	.00087	-.00715
#3	-.05065	.00469	.00345	.38022	-.00009	-.00274	-.00368
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							.00500
Low Limit							-.00500

Sample Name: CCB Acquired: 6/23/2016 19:20:08 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00539**	**-.00364**	**.00090**	**-.00057**	**.00373**	**-.00314**	**.00032**
Stddev	.00515	.00131	.00038	.00067	.00020	.00469	.00190
%RSD	95.593	36.045	42.719	116.62	5.2758	149.60	585.89
#1	.01074	-.00478	.00116	-.00075	.00392	.00167	.00249
#2	.00495	-.00221	.00108	.00016	.00352	-.00771	-.00042
#3	.00047	-.00394	.00046	-.00113	.00373	-.00337	-.00110
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00043**	**.00005**	F **.04542**
Stddev	.00072	.00012	.34069
%RSD	169.53	237.68	750.04
#1	-.00008	-.00001	.43855
#2	-.00125	.00019	-.16363
#3	.00006	-.00003	-.13865
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6967.5**	**43395.**	**2190.0**
Stddev	41.4	704.	41.3
%RSD	.59409	1.6225	1.8846
#1	6953.3	43361.	2223.7
#2	6935.1	44115.	2144.0
#3	7014.1	42708.	2202.3

Sample Name: PBW MC Acquired: 6/23/2016 19:24:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	.01182	-.00092	.00493	-.00012	-.00010	.03899	.00002
Stddev	.00163	.00860	.00408	.00276	.00157	.00005	.01101	.00042
%RSD	702.25	72.769	445.47	56.096	1293.5	54.721	28.229	1843.4
#1	.00065	.00253	-.00537	.00388	.00151	-.00014	.04722	.00048
#2	.00161	.01951	.00264	.00806	-.00023	-.00011	.02649	-.00036
#3	-.00157	.01343	-.00001	.00284	-.00164	-.00004	.04326	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.00049	.00204	.00432	.17133	-.00238	.06048	.00264
Stddev	.00029	.00050	.00040	.03628	.08746	.00474	.03409	.00131
%RSD	168.82	101.29	19.724	840.04	51.052	199.46	56.354	49.484
#1	-.00010	.00067	.00239	-.02516	.27127	.00176	.03814	.00248
#2	-.00049	.00088	.00214	-.00672	.10876	-.00754	.09972	.00142
#3	.00007	-.00007	.00160	.04484	.13394	-.00135	.04360	.00402
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00096	.32980	.00109	-.00655	-.00048	.00411	-.00330	-.02137
Stddev	.00036	.05000	.00076	.00347	.00344	.00130	.00992	.00312
%RSD	37.319	15.161	69.359	52.886	720.16	31.721	300.60	14.588
#1	.00079	.36140	.00194	-.01016	-.00415	.00417	-.01302	-.02373
#2	.00072	.35584	.00049	-.00325	.00266	.00538	.00681	-.02254
#3	.00137	.27215	.00084	-.00625	.00005	.00278	-.00369	-.01784
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: PBW MC Acquired: 6/23/2016 19:24:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00040**	**.00085**	**-.00321**	**-.00159**	**.00013**	**.00182**	**-.03501**
Stddev	.00061	.00058	.00748	.00275	.00086	.00009	.26030
%RSD	153.26	68.513	233.36	172.78	656.72	4.7398	743.52
#1	.00056	.00034	.00354	.00057	-.00054	.00177	-.32167
#2	.00090	.00149	-.01126	-.00468	-.00016	.00177	.03005
#3	-.00028	.00073	-.00190	-.00066	.00110	.00192	.18659
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6713.5**	**41826.**	**2105.1**
Stddev	54.0	279.	25.0
%RSD	.80485	.66739	1.1867
#1	6727.2	41946.	2094.7
#2	6654.0	42025.	2087.1
#3	6759.4	41507.	2133.7

Sample Name: LCSW MC Acquired: 6/23/2016 19:28:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20350	4.9935	.19725	.98212	.51929	.02489	5.3105	.02494
Stddev	.00278	.0008	.00175	.00061	.00709	.00006	.0323	.00007
%RSD	1.3668	.01694	.88835	.06228	1.3650	.26082	.60923	.28776
#1	.20050	4.9929	.19553	.98183	.52566	.02483	5.3424	.02500
#2	.20403	4.9931	.19903	.98282	.52055	.02488	5.3113	.02486
#3	.20598	4.9945	.19719	.98170	.51165	.02496	5.2777	.02497
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10152	.25256	.25516	2.0797	25.740	.52639	5.1902	.25850
Stddev	.00055	.00072	.00042	.0675	.264	.00403	.0928	.00472
%RSD	.53818	.28671	.16566	3.2456	1.0251	.76543	1.7881	1.8242
#1	.10140	.25339	.25549	2.1412	25.923	.53020	5.2421	.26354
#2	.10211	.25215	.25468	2.0904	25.858	.52680	5.2454	.25420
#3	.10104	.25212	.25531	2.0075	25.437	.52218	5.0831	.25775
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51567	25.901	.25435	4.8264	.25513	.60348	.19064	2.5576
Stddev	.00163	.329	.00155	.0089	.00174	.00417	.00132	.0042
%RSD	.31684	1.2719	.61000	.18425	.68292	.69074	.69080	.16255
#1	.51692	26.132	.25556	4.8337	.25335	.60561	.19063	2.5545
#2	.51627	26.047	.25489	4.8291	.25683	.60615	.18933	2.5560
#3	.51382	25.523	.25260	4.8165	.25520	.59868	.19196	2.5623
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: LCSW MC Acquired: 6/23/2016 19:28:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50423	.52568	.51791	.25225	.50435	.50645	.50871
Stddev	.00241	.00482	.00534	.00263	.00086	.00034	.12302
%RSD	.47730	.91755	1.0320	1.0435	.16959	.06729	24.183
#1	.50649	.52965	.52307	.24922	.50405	.50684	.42537
#2	.50170	.52708	.51825	.25391	.50532	.50620	.65001
#3	.50450	.52032	.51240	.25363	.50369	.50631	.45076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6675.8	41467.	2105.7
Stddev	24.4	77.	45.0
%RSD	.36501	.18473	2.1351
#1	6674.7	41472.	2065.5
#2	6652.0	41541.	2097.5
#3	6700.7	41388.	2154.3

Sample Name: F BLANK Acquired: 6/23/2016 19:31:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573025-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00035**	**.01697**	**.00017**	**.00823**	**.00030**	**-.00002**	**.01424**	**.00010**
Stddev	.00143	.00343	.00368	.00159	.00073	.00006	.02636	.00016
%RSD	406.65	20.219	2149.5	19.295	245.04	366.35	185.13	161.49
#1	-.00146	.01939	.00373	.00699	-.00054	.00002	.03225	-.00007
#2	-.00084	.01848	.00040	.00767	.00069	.00002	.02649	.00012
#3	.00126	.01304	-.00362	.01002	.00075	-.00008	-.01602	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**.00071**	**.00022**	**-.00250**	**.21680**	**-.00037**	**.04710**	**.00203**
Stddev	.00058	.00084	.00113	.01048	.06228	.00321	.02108	.00203
%RSD	395.96	117.23	505.81	419.76	28.728	858.57	44.755	100.05
#1	-.00038	.00061	.00120	.00643	.26535	.00293	.05892	.00057
#2	.00005	-.00007	.00049	.00011	.14658	-.00348	.02276	.00117
#3	.00076	.00160	-.00102	-.01403	.23847	-.00057	.05962	.00435
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00063**	**146.49**	**.00027**	**.00148**	**-.00007**	**-.00070**	**-.00157**	**-.01682**
Stddev	.00016	.16	.00052	.00584	.00253	.00452	.00481	.00103
%RSD	25.353	.10971	193.88	395.20	3668.9	645.60	306.24	6.1510
#1	.00048	146.42	-.00030	-.00517	.00173	.00230	.00206	-.01801
#2	.00061	146.38	.00070	.00384	-.00296	.00151	-.00702	-.01610
#3	.00079	146.68	.00040	.00577	.00102	-.00590	.00025	-.01635
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: F BLANK Acquired: 6/23/2016 19:31:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573025-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00050**	**.00113**	**.00420**	**-.00413**	**.00010**	**.00416**	**.06618**
Stddev	.00105	.00030	.00358	.00325	.00062	.00033	.30902
%RSD	208.81	26.175	85.339	78.560	609.38	7.9682	466.95
#1	.00054	.00092	.00586	-.00501	.00082	.00444	.36201
#2	.00153	.00147	.00009	-.00685	-.00027	.00424	.09104
#3	-.00056	.00099	.00664	-.00054	-.00025	.00379	-.25452
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6739.3**	**41425.**	**2117.9**
Stddev	34.7	212.	17.6
%RSD	.51557	.51131	.83142
#1	6776.6	41379.	2104.1
#2	6733.4	41656.	2137.7
#3	6707.8	41240.	2111.8

Sample Name: L1606077902 Acquired: 6/23/2016 19:35:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00041	.10466	.00285	.06045	.05584	-.00002	6.2174	.00046
Stddev	.00116	.00710	.00203	.00084	.00161	.00004	.0446	.00027
%RSD	281.92	6.7835	71.407	1.3870	2.8912	266.76	.71767	58.204
#1	-.00169	.09707	.00256	.05995	.05497	-.00004	6.2605	.00076
#2	-.00009	.10577	.00097	.05998	.05770	-.00005	6.2202	.00025
#3	.00055	.11114	.00501	.06142	.05485	.00003	6.1714	.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	.00071	.00269	.06613	.83231	.00096	1.9162	.03669
Stddev	.00019	.00047	.00085	.02858	.05178	.00081	.1367	.00368
%RSD	41.445	66.440	31.592	43.213	6.2217	84.544	7.1320	10.038
#1	.00040	.00124	.00202	.09508	.77901	.00190	2.0666	.03505
#2	.00066	.00054	.00241	.03794	.88243	.00048	1.8822	.04090
#3	.00030	.00035	.00365	.06539	.83549	.00050	1.7997	.03410
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	146.89	.00039	.00511	.00718	-.00047	-.00261	.31279
Stddev	.00029	.83	.00077	.00679	.00094	.00278	.00523	.00191
%RSD	125.89	.56640	197.90	132.70	13.092	597.43	200.57	.60978
#1	.00003	147.12	.00125	.00567	.00825	-.00357	.00205	.31442
#2	.00057	147.59	-.00024	-.00193	.00647	.00180	-.00827	.31325
#3	.00010	145.97	.00016	.01160	.00682	.00038	-.00160	.31069
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606077902 Acquired: 6/23/2016 19:35:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.03050	.00108	-.00165	-.00052	.01606	.48222
Stddev	.00106	.00016	.00532	.00346	.00115	.00010	.08551
%RSD	113.09	.52207	493.59	209.68	220.39	.59709	17.733
#1	.00063	.03034	.00420	.00102	-.00167	.01612	.45722
#2	.00006	.03050	-.00506	-.00556	.00063	.01595	.57745
#3	.00212	.03066	.00410	-.00041	-.00053	.01610	.41199
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6708.2	41665.	2172.2
Stddev	31.1	139.	27.0
%RSD	.46322	.33365	1.2422
#1	6681.0	41585.	2158.5
#2	6701.6	41584.	2154.7
#3	6742.1	41825.	2203.2

Sample Name: L1606077905S Acquired: 6/23/2016 19:39:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20228	5.2112	.20044	1.0337	.55827	.02485	9.6912	.02500
Stddev	.00166	.0132	.00213	.0032	.00578	.00010	.1284	.00041
%RSD	.82305	.25409	1.0603	.31079	1.0349	.40858	1.3248	1.6502
#1	.20387	5.2188	.19844	1.0331	.56463	.02478	9.8330	.02530
#2	.20055	5.1959	.20020	1.0371	.55682	.02480	9.6578	.02517
#3	.20241	5.2189	.20267	1.0308	.55335	.02497	9.5828	.02453
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09974	.24950	.25228	2.2679	26.280	.52442	6.0599	.27187
Stddev	.00013	.00041	.00146	.0210	.482	.00917	.1252	.00132
%RSD	.12865	.16628	.57688	.92528	1.8346	1.7485	2.0662	.48482
#1	.09988	.24904	.25061	2.2895	26.785	.53322	5.9629	.27277
#2	.09972	.24962	.25292	2.2477	26.232	.52510	6.2012	.27249
#3	.09962	.24984	.25330	2.2665	25.824	.51492	6.0156	.27036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51461	175.16	.24930	4.8996	.25282	.59906	.19939	3.1901
Stddev	.00031	1.57	.00247	.0075	.00056	.00386	.00642	.0017
%RSD	.06092	.89896	.99271	.15227	.22003	.64505	3.2200	.05219
#1	.51467	176.79	.25185	4.8930	.25302	.59517	.19207	3.1907
#2	.51427	175.03	.24915	4.9077	.25325	.60289	.20408	3.1882
#3	.51489	173.65	.24691	4.8982	.25219	.59912	.20203	3.1913
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606077905S Acquired: 6/23/2016 19:39:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50008	.54325	.51187	.24743	.50223	.51373	.44679
Stddev	.00071	.00377	.00743	.00180	.00201	.00029	.30975
%RSD	.14141	.69391	1.4524	.72816	.40098	.05697	69.327
#1	.49932	.54729	.51807	.24579	.50124	.51369	.24650
#2	.50021	.54262	.51392	.24714	.50091	.51403	.29031
#3	.50072	.53983	.50363	.24936	.50455	.51345	.80356
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6683.1	41005.	2151.4
Stddev	6.8	305.	41.0
%RSD	.10241	.74481	1.9080
#1	6678.0	40809.	2104.3
#2	6690.9	41357.	2179.3
#3	6680.4	40849.	2170.6

Sample Name: L1606077908SD Acquired: 6/23/2016 19:43:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20288	5.1811	.19942	1.0150	.55237	.02488	9.4634	.02476
Stddev	.00176	.0005	.00235	.0035	.00196	.00014	.0234	.00044
%RSD	.86650	.00922	1.1808	.34043	.35412	.56384	.24707	1.7705
#1	.20137	5.1816	.19728	1.0163	.55459	.02505	9.4654	.02526
#2	.20245	5.1810	.20195	1.0110	.55090	.02479	9.4391	.02451
#3	.20481	5.1807	.19904	1.0175	.55161	.02482	9.4857	.02450
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10026	.24869	.25215	2.1544	26.013	.51658	6.1704	.26979
Stddev	.00032	.00041	.00151	.0430	.062	.00117	.0894	.00386
%RSD	.31797	.16528	.59908	1.9976	.23856	.22630	1.4482	1.4295
#1	.10042	.24885	.25049	2.2010	26.026	.51657	6.2344	.26873
#2	.10048	.24900	.25345	2.1162	25.946	.51776	6.2085	.27407
#3	.09990	.24822	.25251	2.1458	26.068	.51542	6.0683	.26657
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51646	167.22	.25037	4.9060	.24566	.60333	.19310	3.1314
Stddev	.00260	.31	.00182	.0167	.00482	.00537	.00965	.0091
%RSD	.50438	.18479	.72893	.34087	1.9619	.89072	4.9996	.29092
#1	.51697	167.57	.24950	4.9167	.24626	.60535	.20424	3.1326
#2	.51877	167.00	.25246	4.9146	.25015	.60741	.18713	3.1398
#3	.51363	167.09	.24914	4.8868	.24056	.59724	.18793	3.1217
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606077908SD Acquired: 6/23/2016 19:43:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49955	.54302	.51966	.24675	.50221	.51185	.71645
Stddev	.00029	.00244	.00212	.00186	.00227	.00193	.20134
%RSD	.05847	.45013	.40726	.75321	.45223	.37767	28.103
#1	.49934	.54570	.52008	.24714	.50300	.51112	.72584
#2	.49989	.54245	.52153	.24839	.49965	.51404	.51058
#3	.49944	.54091	.51736	.24473	.50398	.51039	.91294
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6680.0	41465.	2146.4
Stddev	27.3	183.	22.0
%RSD	.40866	.44237	1.0253
#1	6690.0	41465.	2121.9
#2	6649.1	41648.	2153.0
#3	6700.8	41281.	2164.4

Sample Name: L1606077911 Acquired: 6/23/2016 19:47:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00061**	**.17290**	**.00164**	**.05825**	**.04624**	**.00003**	**4.2798**
Stddev	.00118	.00586	.00116	.00187	.00146	.00004	.0673
%RSD	194.32	3.3883	71.027	3.2055	3.1581	127.98	1.5735
#1	-.00071	.17964	.00069	.05609	.04622	.00002	4.3575
#2	.00096	.16999	.00128	.05931	.04771	.00007	4.2378
#3	.00156	.16906	.00294	.05934	.04479	-.00001	4.2442
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00024**	**.00029**	**-.00045**	**.00174**	**.09875**	**.44424**	**.00053**
Stddev	.00014	.00027	.00192	.00071	.01625	.12676	.00083
%RSD	58.518	92.659	422.78	40.567	16.451	28.534	157.87
#1	.00014	.00059	.00168	.00219	.10612	.58035	.00098
#2	.00017	.00020	-.00202	.00093	.11000	.42278	-.00043
#3	.00040	.00008	-.00103	.00212	.08013	.32958	.00104
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.72600**	**.00518**	**.00043**	**142.06**	**.00228**	**.00480**	**-.00087**
Stddev	.03723	.00162	.00026	.88	.00064	.00070	.00109
%RSD	5.1278	31.190	61.921	.61608	28.046	14.500	124.44
#1	.71844	.00688	.00028	143.07	.00166	.00434	.00015
#2	.76644	.00366	.00073	141.60	.00293	.00560	-.00076
#3	.69314	.00502	.00026	141.51	.00224	.00446	-.00201
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: L1606077911 Acquired: 6/23/2016 19:47:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00404**	**-.00935**	**.37687**	**.00027**	**.01793**	**.00337**	**-.00570**
Stddev	.00215	.00588	.00275	.00092	.00024	.00451	.00216
%RSD	53.318	62.841	.73023	343.85	1.3281	134.02	37.974
#1	.00159	-.01397	.37384	-.00077	.01800	-.00085	-.00756
#2	.00487	-.00274	.37757	.00097	.01812	.00283	-.00332
#3	.00566	-.01135	.37921	.00060	.01766	.00813	-.00622
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00079**	**.00664**	F **-.09970**
Stddev	.00084	.00026	.16681
%RSD	107.32	3.9795	167.31
#1	-.00163	.00690	-.09910
#2	.00005	.00665	.06681
#3	-.00078	.00638	-.26680
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6697.8**	**41398.**	**2131.1**
Stddev	24.2	144.	21.0
%RSD	.36115	.34894	.98383
#1	6693.3	41435.	2107.1
#2	6723.9	41521.	2140.2
#3	6676.1	41239.	2145.9

Sample Name: L1606077911PS Acquired: 6/23/2016 19:50:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573973-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20166	5.1361	.19947	1.0226	.54909	.02495	8.9751	.02473
Stddev	.00114	.0195	.00083	.0025	.00185	.00016	.0498	.00035
%RSD	.56716	.37888	.41683	.24775	.33639	.63847	.55502	1.4285
#1	.20230	5.1582	.20042	1.0247	.55108	.02513	8.9915	.02440
#2	.20234	5.1215	.19889	1.0198	.54877	.02481	9.0146	.02510
#3	.20034	5.1285	.19910	1.0233	.54742	.02492	8.9192	.02469
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10039	.24897	.25158	2.1225	25.565	.51154	5.6600	.25879
Stddev	.00018	.00163	.00180	.0342	.089	.00200	.0479	.00217
%RSD	.17967	.65380	.71732	1.6127	.34620	.39088	.84555	.83680
#1	.10051	.24824	.25076	2.1608	25.630	.51077	5.6851	.25647
#2	.10018	.24783	.25365	2.0948	25.465	.51005	5.6902	.26076
#3	.10047	.25083	.25032	2.1119	25.602	.51382	5.6048	.25913
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51470	153.34	.25033	4.8965	.24793	.59559	.19243	2.8850
Stddev	.00123	.64	.00055	.0032	.00147	.00310	.01290	.0015
%RSD	.23864	.41616	.22124	.06430	.59145	.52110	6.7059	.05201
#1	.51611	153.87	.25059	4.8983	.24682	.59605	.19308	2.8838
#2	.51410	153.52	.25070	4.8929	.24959	.59844	.17922	2.8846
#3	.51388	152.63	.24969	4.8984	.24737	.59228	.20500	2.8867
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606077911PS Acquired: 6/23/2016 19:50:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573973-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50192	.53133	.51057	.24460	.50225	.50838	.44531
Stddev	.00111	.00315	.01429	.00114	.00111	.00054	.18642
%RSD	.22110	.59328	2.7983	.46703	.22030	.10637	41.862
#1	.50147	.53348	.52543	.24579	.50343	.50865	.55546
#2	.50112	.53279	.49693	.24352	.50209	.50873	.55041
#3	.50319	.52771	.50934	.24448	.50123	.50775	.23008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6651.9	41058.	2146.9
Stddev	34.9	202.	7.0
%RSD	.52428	.49305	.32439
#1	6618.2	41118.	2148.4
#2	6649.8	40833.	2139.3
#3	6687.9	41224.	2153.0

Sample Name: L1606077911SDL Acquired: 6/23/2016 19:54:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573973-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00006**	**.03191**	**.00319**	**.01017**	**.00812**	**.00002**	**.79168**
Stddev	.00337	.01356	.00266	.00277	.00094	.00006	.04789
%RSD	5775.7	42.477	83.503	27.198	11.538	281.43	6.0487
#1	.00377	.04752	.00625	.01189	.00906	.00005	.74079
#2	-.00077	.02310	.00144	.01163	.00718	-.00005	.83586
#3	-.00282	.02511	.00188	.00698	.00812	.00006	.79839
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**.00020**	**-.00102**	**.00161**	**.02774**	**.12243**	**.00086**
Stddev	.00008	.00022	.00131	.00175	.00237	.07914	.00524
%RSD	112.15	111.56	128.35	108.58	8.5304	64.641	611.10
#1	.00015	-.00005	-.00253	-.00029	.02829	.21145	-.00473
#2	-.00001	.00027	-.00015	.00315	.02514	.09584	.00164
#3	.00009	.00038	-.00039	.00199	.02978	.06001	.00566
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05770**	**.00304**	**.00047**	**25.965**	**-.00008**	**.01273**	**.00119**
Stddev	.09190	.00232	.00015	.345	.00131	.01585	.00647
%RSD	159.28	76.323	31.599	1.3295	1579.4	124.52	542.72
#1	.15485	.00380	.00035	25.792	-.00140	.01160	.00004
#2	.04609	.00044	.00064	25.741	-.00007	.02911	-.00462
#3	-.02785	.00489	.00043	26.363	.00122	-.00253	.00817
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: L1606077911SDL Acquired: 6/23/2016 19:54:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573973-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00030**	**-.00465**	**.06796**	**.00020**	**.00397**	**-.00466**	**-.00173**
Stddev	.00330	.00198	.00111	.00072	.00038	.00590	.00388
%RSD	1090.6	42.606	1.6393	364.61	9.6242	126.80	224.33
#1	.00173	-.00263	.06819	.00039	.00374	-.01146	-.00420
#2	.00148	-.00660	.06894	-.00060	.00441	-.00094	-.00374
#3	-.00411	-.00472	.06675	.00080	.00377	-.00157	.00274
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00000**	**.00179**	F **-.14942**
Stddev	.00024	.00022	.27065
%RSD	17591.	12.069	181.14
#1	-.00010	.00175	-.05629
#2	-.00017	.00203	-.45434
#3	.00028	.00160	.06237
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6956.7**	**42908.**	**2182.4**
Stddev	24.4	138.	8.1
%RSD	.35082	.32162	.37002
#1	6945.3	43022.	2184.2
#2	6984.7	42948.	2173.6
#3	6940.1	42755.	2189.5

Sample Name: L1606077911SDL Acquired: 6/23/2016 19:58:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573973-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00091**	**.00551**	**-.00163**	**.00298**	**.00016**	**-.00004**	**.14622**	**-.00004**
Stddev	.00035	.00230	.00441	.00295	.00019	.00009	.00718	.00022
%RSD	37.880	41.654	270.73	98.999	121.74	255.43	4.9086	633.58
#1	-.00082	.00812	-.00328	.00338	.00020	.00005	.14190	-.00029
#2	-.00130	.00463	.00337	-.00015	.00033	-.00003	.14227	.00014
#3	-.00062	.00379	-.00498	.00571	-.00005	-.00013	.15451	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**-.00012**	**.00129**	**.01297**	**.07882**	**-.00139**	**.02445**	**.00297**
Stddev	.00029	.00066	.00139	.04085	.05847	.00356	.09577	.00349
%RSD	220.77	550.63	108.07	315.10	74.183	257.22	391.63	117.45
#1	-.00041	-.00064	.00208	-.02649	.01827	-.00070	-.02314	-.00101
#2	.00018	-.00034	.00210	.01030	.08323	.00179	-.03820	.00442
#3	-.00016	.00062	-.00032	.05509	.13495	-.00524	.13470	.00550
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**4.6601**	**.00016**	**.01099**	**-.00374**	**-.00006**	**-.00666**	**-.00121**
Stddev	.00064	.0487	.00101	.00932	.00214	.00271	.00377	.00406
%RSD	1145.3	1.0448	617.86	84.814	57.083	4166.1	56.580	334.61
#1	-.00077	4.6317	.00117	.02130	-.00354	.00054	-.01063	.00307
#2	.00017	4.7163	-.00086	.00316	-.00172	-.00302	-.00622	-.00502
#3	.00043	4.6322	.00019	.00850	-.00597	.00229	-.00313	-.00169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606077911SDL Acquired: 6/23/2016 19:58:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573973-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**.00016**	**.00324**	**-.00190**	**.00015**	**.00102**	**.45592**
Stddev	.00090	.00024	.00774	.00281	.00036	.00011	.15548
%RSD	242.24	152.87	238.78	147.46	242.78	10.924	34.103
#1	-.00010	-.00008	-.00569	-.00173	-.00002	.00104	.63162
#2	.00036	.00041	.00759	.00081	.00057	.00089	.33613
#3	-.00138	.00014	.00782	-.00479	-.00009	.00111	.40000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7002.1**	**43421.**	**2180.6**
Stddev	12.5	150.	18.1
%RSD	.17813	.34564	.82992
#1	7007.5	43338.	2178.3
#2	6987.9	43594.	2163.7
#3	7011.0	43331.	2199.7

Sample Name: CCV Acquired: 6/23/2016 20:02:38 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.38352	9.5676	.38149	.48360	.95868	.04827	9.5943
Stddev	.00322	.0401	.00429	.00105	.00492	.00022	.0294
%RSD	.83982	.41946	1.1243	.21691	.51367	.46090	.30624
#1	.38657	9.6123	.37703	.48417	.95340	.04832	9.5754
#2	.38382	9.5347	.38559	.48239	.95948	.04803	9.6282
#3	.38015	9.5558	.38184	.48424	.96315	.04846	9.5794
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04762	.19248	.48389	.48328	3.8584	48.266	.97868
Stddev	.00015	.00028	.00059	.00212	.0428	.089	.00720
%RSD	.31413	.14541	.12117	.43944	1.1080	.18417	.73546
#1	.04779	.19230	.48370	.48346	3.8177	48.266	.97363
#2	.04758	.19280	.48342	.48107	3.8546	48.177	.97549
#3	.04750	.19234	.48455	.48530	3.9029	48.355	.98692
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.6513	.48380	.96301	47.927	.48135	9.5102	.48331
Stddev	.2636	.00656	.00332	.072	.00114	.0199	.00231
%RSD	2.7313	1.3558	.34426	.15061	.23638	.20964	.47887
#1	9.3550	.47806	.96658	47.845	.48232	9.5216	.48282
#2	9.8597	.48238	.96243	47.981	.48165	9.4872	.48129
#3	9.7393	.49095	.96003	47.956	.48010	9.5218	.48584
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: CCV Acquired: 6/23/2016 20:02:38 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1479**	**.38358**	**4.8260**	**.95697**	**.96108**	**.96615**	**.48705**
Stddev	.0066	.01108	.0032	.00258	.00341	.00961	.00179
%RSD	.57598	2.8894	.06586	.26977	.35526	.99472	.36795
#1	1.1549	.37665	4.8269	.95791	.95718	.95798	.48502
#2	1.1417	.39636	4.8286	.95405	.96254	.96374	.48839
#3	1.1472	.37773	4.8224	.95895	.96352	.97674	.48775
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.96626**	**.96309**	F **.37739**
Stddev	.00265	.00068	.17080
%RSD	.27390	.07033	45.257
#1	.96486	.96244	.28567
#2	.96461	.96302	.27206
#3	.96931	.96379	.57445
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6922.0**	**42512.**	**2201.6**
Stddev	21.1	353.	11.3
%RSD	.30486	.83050	.51529
#1	6934.6	42346.	2213.8
#2	6933.8	42273.	2199.8
#3	6897.7	42918.	2191.3

Sample Name: CCB Acquired: 6/23/2016 20:06:16 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	-.00041	.00090	.00065	-.00017	-.00009	.03364	-.00010
Stddev	.00250	.00080	.00202	.00197	.00087	.00003	.02458	.00030
%RSD	1325.3	193.76	223.31	305.36	513.01	38.963	73.061	282.77
#1	-.00159	-.00083	-.00002	.00192	-.00117	-.00006	.00559	-.00032
#2	.00304	.00051	-.00049	.00164	.00038	-.00008	.04390	.00023
#3	-.00089	-.00092	.00322	-.00163	.00029	-.00012	.05142	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	.00089	.00107	.02622	.14403	.00140	.16533	.00084
Stddev	.00031	.00098	.00055	.02571	.09143	.00408	.10839	.00123
%RSD	276.41	109.41	51.427	98.056	63.481	291.75	65.560	147.25
#1	.00047	.00000	.00094	-.00236	.13572	.00290	.28604	.00006
#2	-.00006	.00194	.00060	.03356	.05704	.00451	.07632	.00226
#3	-.00008	.00074	.00168	.04747	.23934	-.00322	.13363	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00296	.11509	-.00013	.00085	.00094	.00629	-.00145	.00187
Stddev	.00021	.03731	.00042	.00219	.00279	.00604	.00094	.00124
%RSD	7.1713	32.413	339.72	257.22	298.65	96.053	64.718	66.434
#1	.00285	.13809	-.00049	.00212	.00095	.00557	-.00045	.00293
#2	.00321	.07205	.00034	.00212	.00372	.01265	-.00231	.00218
#3	.00283	.13514	-.00022	-.00168	-.00186	.00064	-.00160	.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB Acquired: 6/23/2016 20:06:16 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**-.00022**	**-.00145**	**-.00171**	**-.00068**	**.00008**	**.01839**
Stddev	.00140	.00022	.01047	.00376	.00047	.00019	.18176
%RSD	1871.4	101.49	723.55	219.98	69.299	243.52	988.14
#1	-.00163	-.00007	.01060	.00231	-.00016	.00013	.02617
#2	.00109	-.00047	-.00838	-.00514	-.00082	.00023	.19614
#3	.00032	-.00011	-.00656	-.00229	-.00108	-.00013	-.16713
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6970.0**	**43262.**	**2192.2**
Stddev	74.7	174.	9.5
%RSD	1.0710	.40250	.43124
#1	7003.8	43124.	2200.3
#2	7021.8	43458.	2194.3
#3	6884.5	43203.	2181.8

Sample Name: L1606077914 Acquired: 6/23/2016 20:10:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00149	.10628	.00096	.02840	.05288	-.00005	7.4368	.00027
Stddev	.00097	.00356	.00214	.00184	.00085	.00008	.1298	.00005
%RSD	64.971	3.3536	223.67	6.4703	1.6095	158.12	1.7453	17.347
#1	.00054	.10724	-.00146	.02628	.05351	-.00006	7.5825	.00032
#2	.00248	.10234	.00174	.02939	.05191	-.00012	7.3941	.00025
#3	.00145	.10927	.00259	.02952	.05322	.00003	7.3337	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00039	.00052	.00185	.08486	.70361	-.00341	1.3249	.01531
Stddev	.00024	.00198	.00037	.02791	.04945	.00257	.0384	.00314
%RSD	62.961	378.91	20.059	32.893	7.0277	75.397	2.8943	20.533
#1	.00050	.00276	.00177	.06380	.69565	-.00073	1.3540	.01542
#2	.00055	-.00104	.00226	.11652	.75656	-.00364	1.3392	.01211
#3	.00011	-.00015	.00153	.07425	.65863	-.00587	1.2814	.01840
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	136.97	.00087	.00420	.00004	.00045	-.00208	.33477
Stddev	.00023	.63	.00055	.00550	.00261	.00047	.00600	.00123
%RSD	39.437	.45874	63.261	131.00	7265.2	105.14	288.25	.36659
#1	.00032	137.68	.00147	.00987	-.00284	.00003	.00096	.33486
#2	.00071	136.77	.00073	.00385	.00070	.00095	.00179	.33594
#3	.00074	136.47	.00040	-.00112	.00225	.00036	-.00900	.33350
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606077914 Acquired: 6/23/2016 20:10:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.03351	-.00005	-.00700	-.00055	.00972	.13105
Stddev	.00062	.00057	.01222	.00229	.00057	.00011	.18984
%RSD	177.30	1.6905	24453.	32.742	102.06	1.1714	144.86
#1	-.00033	.03393	.00766	-.00548	.00007	.00981	.20911
#2	.00048	.03373	-.01414	-.00589	-.00071	.00959	.26943
#3	.00090	.03286	.00633	-.00964	-.00102	.00975	-.08538
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6756.2	41698.	2168.9
Stddev	15.0	223.	10.5
%RSD	.22178	.53392	.48265
#1	6768.0	41441.	2173.7
#2	6739.3	41816.	2176.1
#3	6761.2	41837.	2156.9

Sample Name: L1606080801 Acquired: 6/23/2016 20:14:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.00981	.00166	.02700	.00536	-.00004	53.221	.00023
Stddev	.00132	.00387	.00350	.00355	.00074	.00005	.458	.00031
%RSD	223.52	39.428	210.37	13.162	13.862	133.64	.86119	137.26
#1	-.00079	.01246	.00412	.02618	.00458	.00002	53.750	-.00010
#2	.00184	.00537	-.00234	.03090	.00606	-.00008	52.944	.00025
#3	.00072	.01160	.00322	.02393	.00543	-.00006	52.968	.00052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	-.00019	.00217	.26849	1.4108	-.00252	15.011	.12291
Stddev	.00031	.00023	.00068	.03341	.0586	.00219	.184	.00135
%RSD	424.72	122.66	31.151	12.444	4.1556	86.964	1.2259	1.0966
#1	-.00007	-.00003	.00235	.24539	1.3436	-.00503	15.179	.12150
#2	-.00038	-.00008	.00142	.25327	1.4510	-.00152	15.040	.12419
#3	.00023	-.00045	.00273	.30679	1.4380	-.00101	14.814	.12302
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	15.947	.00061	.00603	.00298	.00330	-.00384	5.1133
Stddev	.00030	.171	.00079	.00285	.00319	.00406	.01618	.0046
%RSD	57.821	1.0703	128.91	47.356	107.05	123.06	420.92	.09015
#1	.00017	16.102	-.00004	.00833	.00524	-.00067	-.02178	5.1184
#2	.00071	15.975	.00148	.00284	.00438	.00312	.00059	5.1096
#3	.00066	15.764	.00039	.00691	-.00067	.00744	.00965	5.1119
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606080801 Acquired: 6/23/2016 20:14:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00027**	**.17284**	**-.01553**	**-.00411**	**-.00044**	**.00368**	**.21621**
Stddev	.00054	.00134	.00554	.00196	.00032	.00035	.15335
%RSD	203.08	.77573	35.693	47.631	72.739	9.4159	70.926
#1	-.00035	.17423	-.01858	-.00259	-.00007	.00340	.36753
#2	.00031	.17155	-.00913	-.00632	-.00067	.00406	.22018
#3	-.00077	.17274	-.01887	-.00342	-.00059	.00356	.06091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6663.3**	**41709.**	**2149.6**
Stddev	10.8	204.	16.5
%RSD	.16157	.48945	.76736
#1	6671.1	41908.	2131.3
#2	6667.7	41719.	2154.5
#3	6651.0	41500.	2163.2

Sample Name: L1606080803S Acquired: 6/23/2016 20:18:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20531	4.9958	.20276	1.0092	.51435	.02483	57.046	.02496
Stddev	.00292	.0043	.00269	.0024	.00665	.00006	.768	.00030
%RSD	1.4202	.08567	1.3273	.24307	1.2934	.23022	1.3467	1.1942
#1	.20859	4.9909	.20264	1.0074	.52180	.02478	57.925	.02528
#2	.20436	4.9977	.20014	1.0120	.50900	.02489	56.503	.02470
#3	.20300	4.9987	.20552	1.0083	.51225	.02482	56.709	.02490
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09967	.25096	.25022	2.3265	26.678	.52152	20.005	.37815
Stddev	.00055	.00036	.00033	.0587	.264	.00877	.198	.00476
%RSD	.55302	.14274	.13074	2.5243	.98845	1.6818	.98772	1.2593
#1	.10016	.25128	.25042	2.3809	26.980	.53116	20.035	.38218
#2	.09976	.25104	.24984	2.2643	26.497	.51402	19.794	.37290
#3	.09907	.25057	.25040	2.3343	26.556	.51939	20.186	.37938
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52098	41.169	.25038	4.9597	.24975	.60811	.19088	7.6345
Stddev	.00121	.394	.00120	.0047	.00531	.00285	.00510	.0102
%RSD	.23295	.95680	.47973	.09548	2.1271	.46887	2.6703	.13352
#1	.52204	41.621	.25177	4.9644	.24365	.60722	.18517	7.6439
#2	.51965	40.900	.24967	4.9597	.25336	.61129	.19249	7.6237
#3	.52125	40.985	.24970	4.9549	.25223	.60580	.19497	7.6359
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606080803S Acquired: 6/23/2016 20:18:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50663	.69353	.50821	.24979	.50502	.50112	.56844
Stddev	.00206	.00495	.00984	.00132	.00161	.00059	.24983
%RSD	.40682	.71328	1.9372	.52651	.31873	.11783	43.949
#1	.50895	.69918	.50790	.24829	.50330	.50110	.76022
#2	.50591	.69001	.49852	.25075	.50528	.50054	.28593
#3	.50502	.69139	.51821	.25034	.50649	.50172	.65917
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6625.1	41184.	2141.2
Stddev	43.1	220.	34.4
%RSD	.65093	.53421	1.6047
#1	6575.6	40948.	2101.5
#2	6654.8	41222.	2162.6
#3	6644.9	41383.	2159.3

Sample Name: L1606080804SD Acquired: 6/23/2016 20:21:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20417	5.0253	.20216	1.0213	.52389	.02512	58.507	.02515
Stddev	.00061	.0013	.00476	.0019	.00456	.00016	.379	.00007
%RSD	.29699	.02608	2.3559	.18158	.87021	.62066	.64724	.26301
#1	.20348	5.0268	.19939	1.0192	.52806	.02496	58.865	.02518
#2	.20461	5.0245	.20766	1.0224	.52461	.02527	58.546	.02507
#3	.20443	5.0246	.19943	1.0224	.51902	.02514	58.111	.02519
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10013	.25277	.25192	2.3449	27.111	.52740	20.302	.37943
Stddev	.00006	.00076	.00111	.0178	.231	.00552	.216	.00380
%RSD	.06407	.29922	.44124	.75833	.85294	1.0468	1.0620	1.0007
#1	.10006	.25267	.25295	2.3582	27.342	.53203	20.543	.38169
#2	.10018	.25357	.25074	2.3247	27.111	.52888	20.233	.38156
#3	.10015	.25207	.25208	2.3517	26.880	.52129	20.129	.37505
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52376	41.862	.25037	4.9891	.25282	.61284	.19379	7.7402
Stddev	.00119	.339	.00131	.0038	.00458	.00414	.01024	.0102
%RSD	.22762	.81017	.52333	.07550	1.8112	.67508	5.2847	.13142
#1	.52513	42.192	.25099	4.9856	.25772	.61266	.19670	7.7511
#2	.52310	41.879	.25125	4.9931	.24866	.60879	.20226	7.7310
#3	.52304	41.514	.24886	4.9887	.25208	.61705	.18241	7.7384
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606080804SD Acquired: 6/23/2016 20:21:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50881	.70095	.50511	.25346	.50822	.50328	.36568
Stddev	.00118	.00336	.00758	.00055	.00107	.00052	.09051
%RSD	.23262	.47943	1.5010	.21780	.21111	.10273	24.750
#1	.50993	.70351	.51202	.25388	.50727	.50277	.45775
#2	.50891	.70221	.50631	.25366	.50938	.50380	.36245
#3	.50757	.69715	.49700	.25283	.50801	.50326	.27683
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6648.3	41256.	2167.1
Stddev	37.5	212.	35.6
%RSD	.56386	.51441	1.6437
#1	6687.1	41426.	2128.5
#2	6645.3	41018.	2174.1
#3	6612.3	41324.	2198.7

Sample Name: L1606082202 Acquired: 6/23/2016 20:25:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00152	.02026	-.00003	.10248	.15200	.00003	6.5973	.00005
Stddev	.00174	.00884	.00264	.00097	.00250	.00003	.1001	.00016
%RSD	114.35	43.656	8042.8	.94662	1.6469	112.93	1.5178	320.68
#1	-.00041	.02197	.00037	.10136	.15374	.00007	6.6625	.00019
#2	.00200	.02813	-.00285	.10296	.15311	.00001	6.6474	.00008
#3	.00298	.01069	.00238	.10312	.14913	.00001	6.4820	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	-.00052	.00142	2.2172	1.7251	.02347	4.6721	.08008
Stddev	.00019	.00160	.00145	.0203	.1370	.00447	.1537	.00373
%RSD	39.028	307.12	102.30	.91315	7.9439	19.041	3.2904	4.6534
#1	.00065	-.00214	.00215	2.1938	1.8809	.02224	4.7545	.08412
#2	.00052	.00105	-.00025	2.2287	1.6712	.01975	4.7670	.07933
#3	.00028	-.00047	.00236	2.2290	1.6232	.02843	4.4947	.07679
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00084	87.069	.00079	.09610	.00066	.00367	-.00338	12.803
Stddev	.00076	.850	.00109	.00417	.00060	.00400	.00476	.010
%RSD	90.058	.97655	138.31	4.3415	91.329	109.21	141.00	.07526
#1	-.00000	87.844	-.00046	.09129	-.00003	.00288	-.00767	12.795
#2	.00146	87.204	.00156	.09839	.00108	.00011	.00175	12.801
#3	.00107	86.159	.00126	.09864	.00092	.00800	-.00421	12.814
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606082202 Acquired: 6/23/2016 20:25:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00121	.22077	-.00522	-.00363	.00085	.00236	.22639
Stddev	.00050	.00200	.00719	.00112	.00069	.00021	.20548
%RSD	41.542	.90585	137.85	30.833	80.735	8.9617	90.766
#1	-.00156	.22257	-.00824	-.00440	.00009	.00222	.33820
#2	-.00063	.22113	-.01041	-.00235	.00143	.00261	.35171
#3	-.00143	.21862	.00299	-.00415	.00104	.00226	-.01076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6664.8	41248.	2126.9
Stddev	26.9	323.	26.2
%RSD	.40377	.78403	1.2328
#1	6695.8	40876.	2101.3
#2	6647.4	41460.	2125.7
#3	6651.2	41408.	2153.7

Sample Name: L1606082203 Acquired: 6/23/2016 20:29:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00153	.05110	.00192	.03595	.79888	.00004	32.443	.00019
Stddev	.00257	.00394	.00088	.00096	.00490	.00006	.223	.00012
%RSD	168.19	7.7097	45.736	2.6764	.61347	156.15	.68852	63.266
#1	.00450	.04867	.00097	.03585	.80394	.00006	32.700	.00006
#2	.00008	.05565	.00210	.03696	.79416	-.00003	32.293	.00030
#3	.00001	.04899	.00269	.03505	.79852	.00008	32.336	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00307	.00707	.00126	5.3792	51.825	.10776	15.276	.18167
Stddev	.00032	.00094	.00080	.0419	.270	.00194	.142	.00297
%RSD	10.345	13.245	64.108	.77858	.52117	1.8035	.92803	1.6345
#1	.00299	.00617	.00218	5.4159	52.078	.10909	15.426	.17840
#2	.00280	.00804	.00087	5.3881	51.541	.10866	15.144	.18240
#3	.00342	.00701	.00071	5.3336	51.857	.10553	15.259	.18420
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	93.634	.00315	-.00252	.00643	.00340	-.00637	11.872
Stddev	.00025	.401	.00140	.00666	.00138	.00643	.00382	.014
%RSD	298.72	.42875	44.327	264.34	21.428	189.23	59.894	.11647
#1	-.00020	94.085	.00392	-.00701	.00774	.00248	-.00439	11.857
#2	.00021	93.316	.00154	.00513	.00656	.01023	-.00396	11.885
#3	.00024	93.502	.00400	-.00568	.00499	-.00252	-.01077	11.874
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606082203 Acquired: 6/23/2016 20:29:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.82666**	**-.00447**	**-.00598**	**-.00056**	**.00596**	**.27009**
Stddev	.00125	.01637	.00340	.00085	.00033	.00013	.03306
%RSD	751.65	1.9807	76.005	14.225	59.976	2.2544	12.242
#1	.00127	.84555	-.00552	-.00599	-.00043	.00586	.28137
#2	-.00101	.81782	-.00722	-.00682	-.00030	.00611	.29603
#3	-.00076	.81660	-.00067	-.00512	-.00093	.00591	.23286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6576.7**	**40904.**	**2132.1**
Stddev	24.6	214.	16.8
%RSD	.37432	.52260	.78563
#1	6552.2	40790.	2112.8
#2	6576.5	40771.	2141.0
#3	6601.4	41150.	2142.6

Sample Name: L1606082302 Acquired: 6/23/2016 20:33:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00184	.02080	.00098	.02231	7.8783	.00017	255.75
Stddev	.00203	.01187	.00435	.00335	.0432	.00007	1.49
%RSD	110.13	57.087	445.14	15.024	.54831	41.236	.58087
#1	-.00150	.00710	.00584	.02555	7.9220	.00012	256.99
#2	-.00401	.02815	-.00256	.01885	7.8356	.00014	254.11
#3	-.00000	.02715	-.00034	.02253	7.8772	.00025	256.16
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.05342	.00242	.00486	4.7469	3.4904	.13833
Stddev	.00052	.00070	.00059	.00069	.0046	.0030	.00615
%RSD	55.632	1.3175	24.430	14.175	.09644	.08679	4.4491
#1	.00040	.05380	.00272	.00415	4.7522	3.4870	.14015
#2	.00098	.05261	.00174	.00553	4.7443	3.4928	.13147
#3	.00144	.05385	.00281	.00490	4.7442	3.4915	.14336
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	198.54	.84118	-.00019	F 709.80	.01731	.04470	.00329
Stddev	1.62	.00623	.00016	4.09	.00125	.01000	.00583
%RSD	.81609	.74094	85.381	.57589	7.2164	22.367	177.43
#1	200.41	.84837	-.00014	712.90	.01830	.03650	.00825
#2	197.48	.83796	-.00006	705.16	.01772	.04176	.00474
#3	197.74	.83722	-.00036	711.32	.01590	.05584	-.00313
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Sample Name: L1606082302 Acquired: 6/23/2016 20:33:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00699**	**-.00211**	**18.432**	**-.00053**	**5.9869**	F **-.04100**	**-.00343**
Stddev	.00326	.00362	.021	.00131	.0347	.00868	.00076
%RSD	46.731	171.57	.11640	247.46	.57940	21.163	22.234
#1	.00892	.00180	18.414	-.00131	6.0214	-.04734	-.00288
#2	.00882	-.00536	18.426	-.00125	5.9520	-.03111	-.00311
#3	.00322	-.00277	18.456	.00098	5.9872	-.04457	-.00430
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00262**	**.00921**	F **-.07344**
Stddev	.00140	.00009	.18020
%RSD	53.460	.99471	245.36
#1	-.00401	.00912	.10768
#2	-.00261	.00930	-.07530
#3	-.00122	.00920	-.25270
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6211.9**	**37943.**	**2065.9**
Stddev	10.7	171.	36.3
%RSD	.17281	.45038	1.7553
#1	6203.2	38131.	2024.8
#2	6223.9	37902.	2079.8
#3	6208.6	37796.	2093.2

Sample Name: L1606082303 Acquired: 6/23/2016 20:37:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	.09100	.00296	.01304	4.1939	-.00007	203.18
Stddev	.00140	.00531	.00327	.00376	.0297	.00006	1.67
%RSD	388.51	5.8358	110.60	28.801	.70801	88.134	.82056
#1	-.00165	.09683	.00075	.00892	4.2189	-.00004	204.69
#2	.00112	.08975	.00671	.01627	4.1611	-.00014	201.39
#3	-.00055	.08643	.00141	.01393	4.2018	-.00002	203.46
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00062	.00605	.00148	.00325	.50161	1.7415	.06042
Stddev	.00049	.00063	.00113	.00080	.03478	.1908	.00296
%RSD	79.462	10.371	76.602	24.650	6.9332	10.958	4.9058
#1	.00115	.00647	.00038	.00343	.46408	1.6330	.05783
#2	.00054	.00533	.00142	.00237	.53275	1.6297	.06365
#3	.00017	.00634	.00265	.00394	.50800	1.9619	.05979
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	118.15	2.3989	.00023	F 640.12	.00507	.01016	.00289
Stddev	.81	.0242	.00018	10.00	.00123	.00431	.00149
%RSD	.68254	1.0089	76.880	1.5615	24.328	42.407	51.612
#1	118.94	2.4148	.00038	650.69	.00487	.00561	.00152
#2	117.33	2.3711	.00027	630.82	.00639	.01069	.00267
#3	118.17	2.4110	.00003	638.86	.00395	.01418	.00448
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Sample Name: L1606082303 Acquired: 6/23/2016 20:37:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00012**	**-.00944**	**13.225**	**-.00084**	**3.8421**	F **-.03122**	**-.00075**
Stddev	.00335	.00541	.023	.00156	.0312	.00884	.00263
%RSD	2724.2	57.378	.17522	185.97	.81266	28.325	351.62
#1	.00362	-.00548	13.247	.00011	3.8716	-.02289	.00226
#2	-.00306	-.00723	13.225	-.00264	3.8094	-.04050	-.00263
#3	-.00019	-.01560	13.201	.00001	3.8453	-.03028	-.00187
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00215**	**.00570**	**.39111**
Stddev	.00161	.00012	.18787
%RSD	74.559	2.0758	48.034
#1	-.00169	.00568	.30759
#2	-.00394	.00583	.60626
#3	-.00083	.00559	.25948
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6278.4**	**38565.**	**2078.5**
Stddev	22.0	175.	41.0
%RSD	.35101	.45432	1.9726
#1	6265.3	38533.	2033.9
#2	6266.0	38754.	2114.5
#3	6303.8	38408.	2087.2

Sample Name: L1606082304 Acquired: 6/23/2016 20:41:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**.00982**	**.00065**	**.03078**	**1.3316**	**-.00001**	**46.431**
Stddev	.00324	.01473	.00404	.00488	.0087	.00012	.330
%RSD	781.99	150.01	619.18	15.855	.65651	2204.3	.71076
#1	.00226	.02597	.00499	.03065	1.3415	-.00014	46.804
#2	.00231	.00636	-.00301	.03572	1.3252	.00009	46.176
#3	-.00333	-.00287	-.00002	.02596	1.3280	.00003	46.315
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00066**	**-.00016**	F **-.00347**	**.00119**	**84.345**	**3.2107**	**.04191**
Stddev	.00021	.00040	.00039	.00149	.339	.1063	.00251
%RSD	31.873	248.01	11.380	125.50	.40248	3.3107	5.9779
#1	.00060	-.00031	-.00306	.00290	84.661	3.3331	.04445
#2	.00048	-.00046	-.00385	.00044	84.387	3.1411	.03944
#3	.00089	.00029	-.00349	.00022	83.986	3.1580	.04185
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-.00300				

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**29.094**	**1.4706**	**-.00067**	**141.52**	**.00104**	**.07644**	**.00312**
Stddev	.106	.0113	.00040	1.02	.00036	.00458	.00219
%RSD	.36352	.76758	59.671	.72353	34.222	5.9922	69.972
#1	29.216	1.4831	-.00079	142.69	.00136	.08096	.00145
#2	29.030	1.4675	-.00100	141.08	.00110	.07654	.00233
#3	29.037	1.4612	-.00023	140.78	.00066	.07180	.00560
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: L1606082304 Acquired: 6/23/2016 20:41:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**-.00444**	**16.946**	**-.00016**	**1.0594**	**.01618**	**-.00009**
Stddev	.00138	.00283	.014	.00045	.0066	.00613	.00273
%RSD	1084.7	63.725	.08315	282.51	.62739	37.902	3068.2
#1	-.00159	-.00414	16.934	.00035	1.0669	.01325	.00044
#2	.00005	-.00741	16.943	-.00032	1.0545	.02323	.00234
#3	.00116	-.00177	16.961	-.00051	1.0567	.01207	-.00305
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00431**	**.01323**	F **-.28757**
Stddev	.00070	.00016	.06453
%RSD	16.230	1.2047	22.439
#1	-.00354	.01326	-.33446
#2	-.00489	.01337	-.31427
#3	-.00452	.01306	-.21398
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6548.1**	**40764.**	**2104.8**
Stddev	18.7	118.	30.0
%RSD	.28493	.28837	1.4234
#1	6562.8	40898.	2079.6
#2	6554.4	40678.	2096.8
#3	6527.1	40717.	2137.9

Sample Name: L1606088302 Acquired: 6/23/2016 20:45:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00335	.84495	.01492	.13705	.35776	-.00016	61.342	.00073
Stddev	.00192	.00536	.00123	.00168	.00649	.00001	.914	.00037
%RSD	57.476	.63420	8.2502	1.2235	1.8144	6.0991	1.4894	50.484
#1	.00126	.85090	.01399	.13791	.36483	-.00016	62.379	.00100
#2	.00372	.84051	.01632	.13512	.35638	-.00017	60.987	.00089
#3	.00506	.84344	.01445	.13813	.35207	-.00015	60.658	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00790	.00132	.00561	5.6286	11.735	.00962	26.311	2.7437
Stddev	.00012	.00055	.00131	.0909	.087	.00112	.394	.0396
%RSD	1.4821	41.328	23.360	1.6145	.74143	11.624	1.4976	1.4443
#1	.00790	.00105	.00615	5.6698	11.835	.00907	26.689	2.7892
#2	.00779	.00096	.00657	5.6916	11.681	.00887	26.343	2.7252
#3	.00802	.00195	.00412	5.5244	11.688	.01090	25.902	2.7167
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01337	55.014	.02594	.07391	.01768	.00363	-.00148	7.7740
Stddev	.00021	.737	.00058	.00987	.00156	.00456	.00201	.0095
%RSD	1.5352	1.3397	2.2195	13.356	8.8413	125.65	135.81	.12214
#1	.01329	55.834	.02652	.06415	.01943	.00884	.00061	7.7638
#2	.01322	54.801	.02594	.08389	.01641	.00164	-.00340	7.7755
#3	.01361	54.406	.02537	.07370	.01720	.00040	-.00164	7.7826
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606088302 Acquired: 6/23/2016 20:45:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00090**	**.36986**	**.01540**	**-.00118**	**.00118**	**.12530**	**1.4316**
Stddev	.00025	.00460	.01415	.00177	.00035	.00030	.3050
%RSD	27.990	1.2450	91.875	150.26	29.961	.24276	21.302
#1	.00061	.37482	.00658	-.00313	.00110	.12559	1.0819
#2	.00104	.36904	.00789	.00033	.00156	.12533	1.6421
#3	.00105	.36572	.03171	-.00073	.00087	.12498	1.5707
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7921.9**	**49318.**	**2693.6**
Stddev	12.3	123.	25.0
%RSD	.15529	.24979	.92714
#1	7908.5	49427.	2667.6
#2	7924.8	49342.	2717.4
#3	7932.6	49184.	2695.7

Sample Name: CCV Acquired: 6/23/2016 20:49:10 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39590	9.9110	.39526	.48909	.98565	.04996	9.8451
Stddev	.00120	.0339	.00042	.00457	.02803	.00042	.3357
%RSD	.30353	.34216	.10738	.93432	2.8436	.84013	3.4103
#1	.39483	9.8747	.39503	.48786	.95368	.04993	9.4641
#2	.39720	9.9418	.39501	.48526	.99729	.04955	9.9733
#3	.39566	9.9167	.39575	.49415	1.0060	.05039	10.098
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05017	.20113	.49806	.50390	3.9193	49.281	.99930
Stddev	.00013	.00026	.00295	.00102	.1281	1.426	.02793
%RSD	.24979	.12923	.59274	.20262	3.2691	2.8935	2.7947
#1	.05003	.20121	.49990	.50316	3.7715	47.645	.96745
#2	.05025	.20083	.49465	.50347	3.9883	49.937	1.0109
#3	.05024	.20133	.49963	.50506	3.9981	50.261	1.0196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.8643	.49902	1.0085	49.184	.49977	9.8773	.49959
Stddev	.3185	.01772	.0043	1.350	.00010	.0178	.00372
%RSD	3.2291	3.5503	.42423	2.7456	.01960	.18066	.74560
#1	9.4975	.47954	1.0116	47.634	.49976	9.8611	.50047
#2	10.025	.50333	1.0103	49.812	.49987	9.8744	.49550
#3	10.071	.51418	1.0036	50.106	.49968	9.8964	.50280
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: CCV Acquired: 6/23/2016 20:49:10 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2048**	**.40490**	**5.0297**	**1.0004**	**.98725**	**.99313**	**.50297**
Stddev	.0042	.00796	.0039	.0034	.02832	.03209	.00363
%RSD	.34965	1.9650	.07741	.34428	2.8681	3.2307	.72121
#1	1.2087	.41298	5.0259	.99890	.95492	.95803	.50669
#2	1.2003	.40465	5.0296	.99795	.99923	1.0004	.49944
#3	1.2055	.39708	5.0337	1.0043	1.0076	1.0209	.50278
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.99558**	**1.0009**	F **.02289**
Stddev	.00580	.0022	.25371
%RSD	.58246	.21707	1108.2
#1	.99450	.99842	.14548
#2	.99040	1.0017	-.26883
#3	1.0018	1.0025	.19203
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6660.9**	**41801.**	**2169.0**
Stddev	32.3	28.	115.6
%RSD	.48534	.06597	5.3274
#1	6698.0	41774.	2302.5
#2	6639.4	41798.	2102.0
#3	6645.2	41829.	2102.6

Sample Name: CCB Acquired: 6/23/2016 20:52:47 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00186	-.00093	.00316	.00230	.00074	.00006	.02069
Stddev	.00123	.00851	.00342	.00122	.00124	.00008	.05541
%RSD	66.210	911.24	108.19	52.892	166.55	142.19	267.79
#1	.00059	-.01042	.00649	.00167	.00054	-.00003	-.00744
#2	.00195	.00160	.00333	.00153	-.00038	.00006	-.01500
#3	.00305	.00602	-.00034	.00370	.00206	.00014	.08452
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.00039	.00115	.00076	-.01535	.06062	-.00386
Stddev	.00025	.00015	.00083	.00156	.01904	.09913	.00805
%RSD	1273.3	38.748	71.888	205.02	124.01	163.52	208.55
#1	.00015	.00037	.00104	.00077	-.03627	-.05039	.00540
#2	-.00027	.00056	.00039	.00232	.00098	.09196	-.00780
#3	.00017	.00026	.00203	-.00080	-.01077	.14030	-.00918
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01451	-.00216	.00311	.14026	-.00019	.00962	.00081
Stddev	.08285	.00307	.00109	.02230	.00100	.00497	.00347
%RSD	570.85	141.96	34.905	15.899	521.75	51.686	430.66
#1	-.05222	-.00061	.00206	.16585	-.00076	.01507	.00163
#2	.10725	-.00570	.00305	.12497	-.00078	.00533	-.00300
#3	-.01149	-.00018	.00423	.12997	.00096	.00846	.00380
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: CCB Acquired: 6/23/2016 20:52:47 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00098**	**-.00415**	**.00357**	**.00020**	**.00045**	**-.00310**	**-.00314**
Stddev	.00119	.00276	.00144	.00034	.00013	.00169	.00399
%RSD	121.00	66.464	40.393	168.69	30.219	54.451	127.02
#1	-.00049	-.00098	.00477	.00034	.00060	-.00134	-.00058
#2	-.00234	-.00542	.00396	-.00019	.00034	-.00325	-.00773
#3	-.00012	-.00603	.00197	.00045	.00040	-.00471	-.00111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00114**	**.00020**	F **.30264**
Stddev	.00114	.00013	.32767
%RSD	99.237	64.632	108.27
#1	-.00245	.00019	.39170
#2	-.00061	.00033	-.06036
#3	-.00037	.00008	.57657
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6711.0**	**41762.**	**2107.6**
Stddev	39.0	171.	14.5
%RSD	.58138	.41024	.68723
#1	6710.2	41729.	2123.6
#2	6672.4	41947.	2095.3
#3	6750.5	41609.	2103.9

Sample Name: L1606088401 Acquired: 6/23/2016 20:56:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00138**	**.01701**	**.00493**	**.04852**	**.00618**	**-.00007**	**12.628**	**.00247**
Stddev	.00005	.00414	.00116	.00188	.00077	.00012	.147	.00032
%RSD	3.9151	24.333	23.511	3.8697	12.414	161.67	1.1647	12.874
#1	-.00141	.01981	.00570	.04698	.00662	.00006	12.792	.00280
#2	-.00141	.01895	.00549	.04798	.00529	-.00016	12.508	.00217
#3	-.00131	.01225	.00360	.05061	.00662	-.00013	12.584	.00245
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.33204**	**-.00005**	**.12713**	**.00004**	**.29521**	**1.5328**	**3.2466**	**.01448**
Stddev	.00034	.00102	.00048	.01339	.06956	.0143	.1805	.00109
%RSD	.10335	2250.3	.37814	32463.	23.564	.93016	5.5601	7.5480
#1	.33185	.00032	.12750	.00310	.34102	1.5490	3.4388	.01457
#2	.33183	.00074	.12659	-.01461	.32944	1.5271	3.0806	.01335
#3	.33243	-.00120	.12731	.01164	.21517	1.5222	3.2204	.01553
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00093**	**152.98**	**10.187**	**.09320**	**-.00036**	**-.00902**	**-.00316**	**.51224**
Stddev	.00032	1.78	.001	.01280	.00229	.00381	.00857	.00180
%RSD	34.564	1.1612	.01164	13.735	636.44	42.238	271.43	.35176
#1	.00071	155.02	10.189	.07854	-.00010	-.00788	-.00504	.51429
#2	.00079	151.86	10.188	.09884	-.00276	-.00591	.00620	.51148
#3	.00130	152.04	10.186	.10221	.00179	-.01327	-.01063	.51094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606088401 Acquired: 6/23/2016 20:56:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	.06978	-.00044	-.00366	-.00050	.00520	.35447
Stddev	.00021	.00053	.00665	.00240	.00048	.00018	.13127
%RSD	37.225	.76020	1503.3	65.540	95.032	3.3899	37.033
#1	.00077	.07037	-.00450	-.00503	-.00086	.00501	.20475
#2	.00053	.06936	-.00405	-.00089	-.00069	.00524	.40886
#3	.00036	.06960	.00723	-.00506	.00004	.00536	.44980
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6642.8	41062.	2131.9
Stddev	24.2	57.	30.4
%RSD	.36471	.13951	1.4260
#1	6639.2	41009.	2097.0
#2	6620.6	41122.	2152.2
#3	6668.6	41053.	2146.6

Sample Name: L1606089601 Acquired: 6/23/2016 21:00:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00276	.06592	.00541	.02208	.05123	-.00005	4.5311	.00038
Stddev	.00137	.00695	.00371	.00073	.00110	.00012	.0222	.00020
%RSD	49.858	10.542	68.509	3.3035	2.1551	257.77	.49075	51.621
#1	.00357	.06862	.00418	.02271	.05250	.00006	4.5567	.00056
#2	.00353	.05803	.00958	.02226	.05063	-.00017	4.5198	.00017
#3	.00117	.07112	.00247	.02128	.05055	-.00003	4.5168	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.06787	-.00161	.00146	42.996	.90153	-.00084	5.1151	6.0536
Stddev	.00044	.00070	.00153	.463	.08378	.00102	.1337	.0524
%RSD	.64651	43.319	104.57	1.0779	9.2930	121.94	2.6141	.86472
#1	.06763	-.00220	.00017	43.521	.97406	.00034	5.2374	6.1132
#2	.06761	-.00084	.00314	42.825	.80982	-.00134	4.9723	6.0323
#3	.06838	-.00179	.00107	42.642	.92069	-.00151	5.1355	6.0152
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	19.350	.00357	-.00356	.00111	.00096	-.00499	4.5346
Stddev	.00020	.125	.00141	.00838	.00156	.00212	.00300	.0153
%RSD	55.732	.64532	39.385	235.57	139.61	221.63	60.052	.33782
#1	-.00054	19.492	.00220	-.01302	-.00064	.00306	-.00344	4.5188
#2	-.00040	19.300	.00350	.00291	.00231	-.00118	-.00845	4.5355
#3	-.00014	19.259	.00500	-.00056	.00168	.00099	-.00309	4.5494
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606089601 Acquired: 6/23/2016 21:00:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00060**	**.03780**	**.00811**	**-.00381**	**-.00115**	**.00560**	**.10083**
Stddev	.00066	.00049	.00739	.00382	.00028	.00007	.23956
%RSD	110.76	1.2963	91.111	100.26	24.644	1.2642	237.60
#1	.00016	.03802	.00291	-.00026	-.00147	.00553	-.17268
#2	-.00087	.03815	.00485	-.00331	-.00104	.00559	.20174
#3	-.00109	.03724	.01658	-.00784	-.00094	.00567	.27342
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6699.7**	**41605.**	**2147.2**
Stddev	6.0	395.	20.8
%RSD	.08901	.94822	.96897
#1	6705.8	41196.	2129.6
#2	6699.3	41634.	2141.8
#3	6693.9	41984.	2170.2

Sample Name: L1606089602 Acquired: 6/23/2016 21:04:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00115	.04083	.00060	.00715	.00811	-.00006	.41120	.00010
Stddev	.00092	.00909	.00372	.00237	.00130	.00006	.07420	.00010
%RSD	79.895	22.273	617.42	33.111	16.069	103.37	18.045	95.174
#1	.00172	.03036	-.00348	.00464	.00961	-.00013	.44439	.00004
#2	.00163	.04672	.00380	.00935	.00726	-.00004	.46300	.00021
#3	.00009	.04541	.00149	.00745	.00746	-.00001	.32619	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	.00085	.00131	.07554	1.8076	-.00047	.25019	.00154
Stddev	.00047	.00183	.00071	.02271	.0472	.00199	.07424	.00073
%RSD	2125.6	214.06	54.320	30.062	2.6112	424.18	29.673	47.627
#1	-.00052	.00002	.00060	.10056	1.7705	.00136	.32911	.00152
#2	.00004	.00295	.00130	.05624	1.7915	-.00018	.18174	.00229
#3	.00042	-.00040	.00202	.06981	1.8607	-.00259	.23972	.00082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	8.3070	.00081	-.00279	.00077	-.00363	-.00191	9.3341
Stddev	.00042	.0355	.00152	.00730	.00368	.00212	.00752	.0120
%RSD	4219.9	.42734	186.83	261.51	478.27	58.376	393.78	.12811
#1	-.00026	8.3438	.00114	-.00340	.00064	-.00604	.00678	9.3471
#2	.00047	8.2730	-.00084	.00479	-.00284	-.00208	-.00623	9.3318
#3	-.00024	8.3042	.00214	-.00976	.00451	-.00276	-.00628	9.3235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606089602 Acquired: 6/23/2016 21:04:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00104**	**.00271**	**.00141**	**-.00441**	**.00055**	**.00294**	**.09481**
Stddev	.00076	.00065	.00707	.00096	.00059	.00032	.12117
%RSD	73.387	23.817	499.85	21.749	106.89	10.896	127.81
#1	-.00017	.00268	.00405	-.00333	.00004	.00305	.13413
#2	-.00159	.00337	.00678	-.00473	.00120	.00257	-.04114
#3	-.00135	.00208	-.00659	-.00517	.00043	.00318	.19143
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6686.8**	**41808.**	**2134.5**
Stddev	18.1	213.	20.0
%RSD	.27005	.50969	.93843
#1	6699.2	41631.	2111.6
#2	6666.1	41748.	2148.9
#3	6695.1	42044.	2142.9

Sample Name: L1606089603 Acquired: 6/23/2016 21:08:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00102	.11801	.00474	.00963	.06515	.00009	2.8598	-.00002
Stddev	.00304	.00302	.00162	.00102	.00099	.00007	.0117	.00049
%RSD	298.48	2.5577	34.279	10.645	1.5207	83.968	.40938	2310.2
#1	.00427	.12112	.00606	.01075	.06530	.00010	2.8502	-.00015
#2	.00053	.11781	.00292	.00939	.06607	.00015	2.8729	-.00043
#3	-.00175	.11509	.00524	.00874	.06410	.00001	2.8564	.00052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00155	-.00024	.00127	2.7358	3.5730	.00040	1.7276	.02916
Stddev	.00022	.00132	.00125	.0173	.1870	.00308	.0541	.00143
%RSD	13.914	551.57	98.352	.63220	5.2335	762.16	3.1323	4.9029
#1	.00170	-.00168	.00263	2.7557	3.7847	.00309	1.6947	.02869
#2	.00164	.00005	.00099	2.7247	3.4302	-.00295	1.7900	.03077
#3	.00130	.00091	.00018	2.7268	3.5042	.00107	1.6980	.02803
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00031	7.6284	.00235	.00047	-.00082	.00245	-.00905	5.4943
Stddev	.00032	.0301	.00079	.01031	.00433	.00306	.00148	.0133
%RSD	102.08	.39457	33.547	2191.2	526.63	125.12	16.371	.24152
#1	-.00063	7.6521	.00324	.00549	-.00579	.00459	-.00977	5.4890
#2	-.00033	7.6386	.00175	-.01139	.00215	-.00106	-.01004	5.4845
#3	.00001	7.5946	.00205	.00731	.00118	.00382	-.00735	5.5094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606089603 Acquired: 6/23/2016 21:08:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.02218	.00164	-.00426	-.00004	.00835	.14767
Stddev	.00040	.00013	.00288	.00161	.00009	.00018	.44819
%RSD	344.86	.60531	175.60	37.721	191.36	2.1138	303.52
#1	.00047	.02205	-.00008	-.00574	-.00012	.00836	-.32337
#2	-.00031	.02232	.00496	-.00255	.00005	.00853	.19752
#3	.00019	.02218	.00004	-.00448	-.00006	.00817	.56885
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6682.9	41728.	2128.8
Stddev	17.5	288.	26.5
%RSD	.26233	.68938	1.2452
#1	6675.1	41447.	2098.3
#2	6670.6	42022.	2146.0
#3	6703.0	41715.	2142.2

Sample Name: L1606089604 Acquired: 6/23/2016 21:12:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00189	.07787	.00274	.02534	.04671	-.00007	4.6127
Stddev	.00185	.01361	.00115	.00174	.00203	.00009	.0084
%RSD	97.576	17.475	41.979	6.8483	4.3441	132.30	.18280
#1	.00394	.07337	.00237	.02334	.04637	.00002	4.6224
#2	.00037	.09315	.00403	.02650	.04487	-.00016	4.6067
#3	.00136	.06707	.00182	.02616	.04888	-.00006	4.6091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	.07375	-.00139	.00045	44.265	.94195	-.00388
Stddev	.00010	.00022	.00095	.00149	.255	.04262	.00409
%RSD	21.656	.29660	68.674	332.55	.57666	4.5243	105.62
#1	.00034	.07398	-.00166	-.00009	44.524	.94561	-.00857
#2	.00051	.07354	-.00218	-.00070	44.257	.89762	-.00204
#3	.00052	.07372	-.00033	.00214	44.014	.98262	-.00102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	6.3790	6.1215	-.00097	19.253	.00495	-.00232	.00060
Stddev	.0237	.0305	.00040	.056	.00026	.00993	.00262
%RSD	.37160	.49866	40.991	.29188	5.2685	429.04	440.43
#1	6.3989	6.1509	-.00053	19.318	.00524	-.00316	-.00241
#2	6.3528	6.1237	-.00131	19.216	.00473	-.01180	.00179
#3	6.3853	6.0899	-.00108	19.227	.00489	.00801	.00241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: L1606089604 Acquired: 6/23/2016 21:12:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00465**	**-.00637**	**4.5161**	**-.00039**	**.04033**	**.00878**	**-.00291**
Stddev	.00319	.00325	.0073	.00021	.00012	.01173	.00069
%RSD	68.469	51.078	.16173	52.620	.29003	133.62	23.851
#1	.00106	-.00941	4.5223	-.00056	.04037	.01678	-.00220
#2	.00578	-.00675	4.5081	-.00016	.04019	.01426	-.00359
#3	.00712	-.00294	4.5179	-.00046	.04041	-.00469	-.00294
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00260**	**.00552**	F **-.09796**
Stddev	.00057	.00025	.21094
%RSD	21.873	4.5503	215.32
#1	-.00325	.00580	.14398
#2	-.00238	.00531	-.24325
#3	-.00218	.00544	-.19462
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6689.8**	**41666.**	**2101.2**
Stddev	9.9	402.	24.3
%RSD	.14842	.96487	1.1576
#1	6695.2	41372.	2073.4
#2	6678.4	42124.	2111.3
#3	6695.9	41503.	2118.8

Sample Name: L1606089605 Acquired: 6/23/2016 21:16:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.04830	-.00145	.00590	.06272	.00007	2.6789	.00041
Stddev	.00176	.01001	.00427	.00202	.00179	.00010	.0329	.00039
%RSD	2993.4	20.730	295.15	34.254	2.8603	144.40	1.2294	96.299
#1	-.00190	.05947	.00328	.00605	.06424	-.00005	2.7135	.00011
#2	.00153	.04527	-.00502	.00784	.06318	.00013	2.6479	.00085
#3	.00055	.04014	-.00260	.00381	.06074	.00012	2.6754	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00157	-.00035	.00184	.89250	3.4230	-.00452	1.6804	.01911
Stddev	.00028	.00023	.00080	.02843	.0162	.00117	.0608	.00353
%RSD	17.515	67.269	43.308	3.1854	.47175	25.991	3.6163	18.451
#1	.00131	-.00060	.00162	.86545	3.4125	-.00336	1.6187	.02198
#2	.00155	-.00014	.00273	.92213	3.4148	-.00448	1.7402	.01517
#3	.00186	-.00031	.00117	.88990	3.4416	-.00571	1.6824	.02016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00024	7.0650	.00185	-.00101	-.00247	.00326	-.00672	5.2164
Stddev	.00018	.0411	.00050	.00181	.00243	.00063	.00650	.0100
%RSD	75.478	.58180	27.196	179.64	98.576	19.406	96.645	.19223
#1	-.00033	7.1107	.00239	-.00299	-.00232	.00293	.00077	5.2089
#2	-.00037	7.0530	.00139	.00057	-.00497	.00286	-.01006	5.2125
#3	-.00003	7.0312	.00176	-.00061	-.00011	.00399	-.01087	5.2278
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606089605 Acquired: 6/23/2016 21:16:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00041	.02070	-.00116	-.00495	-.00050	.00647	.22434
Stddev	.00061	.00025	.00062	.00270	.00039	.00006	.14133
%RSD	147.06	1.2106	53.841	54.602	79.342	1.0037	62.996
#1	-.00061	.02054	-.00094	-.00697	-.00093	.00640	.33918
#2	.00027	.02099	-.00186	-.00188	-.00039	.00649	.26733
#3	-.00089	.02057	-.00067	-.00601	-.00017	.00652	.06651
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6679.9	41653.	2126.5
Stddev	8.5	193.	24.2
%RSD	.12769	.46319	1.1397
#1	6686.1	41709.	2098.6
#2	6670.2	41811.	2142.5
#3	6683.5	41438.	2138.4

Sample Name: L1606089607 Acquired: 6/23/2016 21:20:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**.00633**	**.00159**	**.00141**	**-.00044**	**-.00001**	**.07933**
Stddev	.00195	.00666	.00483	.00232	.00080	.00015	.08022
%RSD	1049.3	105.18	304.39	163.83	179.45	1810.1	101.12
#1	-.00175	.01203	-.00042	.00047	-.00070	-.00018	.13178
#2	.00017	.00795	.00710	-.00028	-.00108	.00005	-.01301
#3	.00214	-.00099	-.00192	.00405	.00045	.00010	.11922
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00011**	**.00023**	**.00018**	**.00261**	**-.00047**	**.03391**	**-.00323**
Stddev	.00029	.00036	.00083	.00135	.02031	.06552	.00128
%RSD	269.77	155.32	469.03	51.632	4346.1	193.24	39.606
#1	-.00002	.00060	-.00019	.00137	-.00573	.10021	-.00211
#2	-.00010	-.00011	.00113	.00242	.02196	-.03081	-.00295
#3	.00044	.00020	-.00041	.00405	-.01763	.03232	-.00462
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.02721**	**.00109**	**-.00056**	**.23253**	**.00049**	**-.00816**	**-.00015**
Stddev	.04069	.00341	.00026	.02524	.00107	.00624	.00442
%RSD	149.52	313.70	46.647	10.856	219.38	76.495	2897.5
#1	.01942	-.00058	-.00035	.24925	-.00074	-.01380	.00125
#2	-.05550	-.00117	-.00047	.20349	.00124	-.00145	-.00510
#3	-.04556	.00501	-.00085	.24484	.00096	-.00923	.00339
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: L1606089607 Acquired: 6/23/2016 21:20:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00194**	F **-.01015**	**.08416**	**.00022**	**-.00011**	**-.00212**	**-.00416**
Stddev	.00173	.00222	.00063	.00064	.00006	.01168	.00343
%RSD	89.180	21.886	.74271	295.50	49.832	550.35	82.554
#1	-.00101	-.00764	.08452	-.00003	-.00011	-.01340	-.00177
#2	-.00087	-.01186	.08451	-.00027	-.00006	.00993	-.00262
#3	-.00393	-.01095	.08344	.00095	-.00017	-.00289	-.00809
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		90.000					
Low Limit		-.01000					

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00083**	**.00158**	**.28593**
Stddev	.00029	.00007	.07024
%RSD	34.545	4.6737	24.566
#1	-.00055	.00150	.21816
#2	-.00081	.00165	.28123
#3	-.00112	.00159	.35840
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6700.8**	**41736.**	**2133.1**
Stddev	34.6	206.	28.2
%RSD	.51651	.49285	1.3235
#1	6660.9	41521.	2103.9
#2	6723.0	41931.	2160.2
#3	6718.5	41757.	2135.2

Sample Name: L1606082202 Acquired: 6/23/2016 21:24:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00194**	**-.00446**	**.00305**	**.00265**	**.00700**	**.00002**	**.35406**
Stddev	.00134	.00435	.00421	.00519	.00205	.00001	.05184
%RSD	68.787	97.453	137.81	196.12	29.341	37.190	14.641
#1	.00075	-.00690	-.00162	.00667	.00636	.00002	.30481
#2	.00338	.00056	.00423	-.00321	.00930	.00002	.40815
#3	.00169	-.00704	.00655	.00448	.00534	.00003	.34922
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**.00043**	**-.00077**	**.00285**	**.14848**	**-.04278**	**.00212**
Stddev	.00027	.00044	.00098	.00102	.00792	.02901	.00038
%RSD	394.25	102.19	127.46	35.949	5.3356	67.810	17.947
#1	-.00009	.00000	-.00184	.00239	.15626	-.06821	.00218
#2	.00038	.00041	.00008	.00403	.14874	-.04895	.00171
#3	-.00008	.00089	-.00054	.00214	.14043	-.01118	.00246
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.28223**	**.00480**	**-.00038**	**4.3287**	**-.00014**	**.01612**	**.00046**
Stddev	.10559	.00363	.00060	.1420	.00015	.00579	.00219
%RSD	37.411	75.632	157.86	3.2805	107.54	35.905	474.81
#1	.24611	.00764	-.00099	4.3698	-.00016	.01856	-.00192
#2	.19945	.00071	.00020	4.4456	-.00027	.02028	.00239
#3	.40114	.00605	-.00035	4.1706	.00002	.00951	.00092
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: L1606082202 Acquired: 6/23/2016 21:24:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	-.00096	.60016	-.00066	.01034	-.00345	-.00121
Stddev	.00119	.00324	.00463	.00053	.00056	.00260	.00164
%RSD	9663.9	335.88	.77167	79.904	5.4479	75.303	135.44
#1	-.00094	.00170	.59620	-.00020	.00979	-.00115	-.00170
#2	.00134	-.00002	.59904	-.00124	.01092	-.00293	.00062
#3	-.00037	-.00457	.60525	-.00055	.01031	-.00627	-.00255
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00034	.00082	F -.14423
Stddev	.00011	.00006	.30331
%RSD	33.594	7.1986	210.30
#1	.00036	.00078	-.38581
#2	.00045	.00089	-.24305
#3	.00022	.00079	.19617
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6775.7	42604.	2060.5
Stddev	51.6	45.	84.1
%RSD	.76190	.10471	4.0814
#1	6799.5	42589.	2047.0
#2	6811.2	42654.	1984.0
#3	6716.5	42568.	2150.6

Sample Name: L1606082203 Acquired: 6/23/2016 21:28:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00145	.00184	.00074	-.00019	.03852	.00003	1.5262	.00007
Stddev	.00122	.00469	.00175	.00116	.00077	.00012	.0464	.00017
%RSD	84.264	255.24	237.52	615.42	2.0040	388.98	3.0406	258.31
#1	.00264	-.00346	.00229	-.00083	.03875	.00010	1.5782	-.00003
#2	.00020	.00352	.00109	-.00089	.03915	.00011	1.4889	-.00004
#3	.00151	.00546	-.00116	.00115	.03766	-.00011	1.5116	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.00018	.00108	.25045	2.4536	.00344	.67766	.01002
Stddev	.00037	.00129	.00050	.01436	.0243	.00221	.03143	.00186
%RSD	100.70	701.59	46.418	5.7329	.98953	64.075	4.6384	18.607
#1	.00035	.00006	.00058	.23440	2.4813	.00332	.65654	.01217
#2	.00075	.00153	.00159	.26208	2.4433	.00571	.71379	.00880
#3	.00001	-.00104	.00108	.25488	2.4361	.00130	.66266	.00909
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00035	4.5035	-.00023	.01290	-.00147	.00479	-.00584	.55304
Stddev	.00012	.0716	.00036	.00146	.00189	.00145	.00099	.00147
%RSD	35.728	1.5904	157.06	11.351	128.61	30.358	16.944	.26494
#1	-.00047	4.5590	.00019	.01295	-.00040	.00482	-.00623	.55146
#2	-.00035	4.5290	-.00045	.01141	-.00366	.00623	-.00472	.55435
#3	-.00023	4.4227	-.00042	.01433	-.00036	.00332	-.00658	.55332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606082203 Acquired: 6/23/2016 21:28:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.03922	-.00354	-.00320	-.00104	.00103	-.02734
Stddev	.00093	.00042	.00540	.00176	.00049	.00021	.22820
%RSD	4945.8	1.0630	152.76	54.899	47.016	20.853	834.62
#1	.00001	.03970	-.00944	-.00516	-.00118	.00102	.23169
#2	.00095	.03900	.00116	-.00265	-.00144	.00082	-.19873
#3	-.00091	.03895	-.00233	-.00178	-.00049	.00125	-.11499
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6687.3	41441.	2081.5
Stddev	25.3	113.	22.3
%RSD	.37870	.27264	1.0699
#1	6658.6	41368.	2073.0
#2	6706.4	41384.	2064.8
#3	6696.9	41571.	2106.8

Sample Name: L1606082302 Acquired: 6/23/2016 21:32:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**.00297**	**.00273**	**.00225**	**.36313**	**-.00000**	**11.836**
Stddev	.00174	.00449	.00180	.00282	.00235	.00016	.075
%RSD	415.32	151.16	65.994	125.04	.64751	6744.5	.63384
#1	-.00148	.00121	.00168	.00506	.36408	.00008	11.919
#2	.00080	.00807	.00170	.00226	.36486	-.00018	11.773
#3	.00194	-.00038	.00482	-.00057	.36045	.00010	11.815
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.00291**	**.00028**	**.00150**	**.22899**	**.13342**	**.00323**
Stddev	.00018	.00030	.00095	.00047	.02084	.11756	.00252
%RSD	113.97	10.305	343.96	31.522	9.1002	88.111	78.086
#1	-.00018	.00302	-.00007	.00192	.21561	.24582	.00054
#2	.00003	.00257	-.00045	.00158	.21836	.01130	.00554
#3	-.00032	.00314	.00135	.00099	.25300	.14315	.00359
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.3954**	**.04077**	**-.00002**	**33.177**	**.00094**	**.00875**	**-.00140**
Stddev	.0055	.00391	.00017	.158	.00081	.00388	.00293
%RSD	.05884	9.5814	818.90	.47682	86.099	44.289	209.14
#1	9.3987	.04528	.00014	33.360	.00025	.00895	-.00476
#2	9.3986	.03829	-.00000	33.085	.00074	.00478	.00055
#3	9.3891	.03876	-.00020	33.087	.00184	.01252	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: L1606082302 Acquired: 6/23/2016 21:32:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00211	F -.01027	.87158	-.00061	.28366	-.00294	-.00367
Stddev	.00335	.00460	.01165	.00033	.00032	.00246	.00356
%RSD	158.22	44.796	1.3368	53.749	.11189	83.646	96.934
#1	.00240	-.01556	.85944	-.00095	.28358	-.00225	-.00028
#2	.00531	-.00804	.87263	-.00029	.28401	-.00568	-.00738
#3	-.00136	-.00721	.88268	-.00060	.28339	-.00091	-.00335
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		90.000					
Low Limit		-.01000					

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00036	.00115	.04430
Stddev	.00028	.00013	.31486
%RSD	77.980	11.657	710.78
#1	-.00058	.00122	.37480
#2	-.00005	.00100	.01024
#3	-.00044	.00124	-.25215
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6666.9	40963.	2080.0
Stddev	54.9	248.	35.1
%RSD	.82321	.60425	1.6856
#1	6605.2	41025.	2039.5
#2	6685.2	40690.	2100.5
#3	6710.3	41173.	2100.0

Sample Name: CCV Acquired: 6/23/2016 21:36:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.37886	9.4008	.36977	.46580	.94543	.04748	9.4956
Stddev	.00192	.0240	.00492	.00165	.00279	.00009	.0298
%RSD	.50559	.25544	1.3304	.35366	.29493	.18359	.31411
#1	.37848	9.4279	.37519	.46422	.94745	.04749	9.4832
#2	.38093	9.3822	.36851	.46567	.94658	.04756	9.4739
#3	.37716	9.3923	.36560	.46751	.94225	.04739	9.5296
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04722	.18900	.47404	.47679	3.8147	47.440	.96725
Stddev	.00010	.00048	.00128	.00128	.0064	.112	.00455
%RSD	.21398	.25239	.26979	.26927	.16823	.23504	.47080
#1	.04722	.18886	.47544	.47536	3.8073	47.493	.96637
#2	.04711	.18861	.47292	.47785	3.8188	47.516	.97218
#3	.04731	.18953	.47377	.47715	3.8179	47.312	.96320
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.5275	.47798	.95150	47.323	.47305	9.3519	.47463
Stddev	.0772	.00629	.00356	.158	.00089	.0108	.00368
%RSD	.81075	1.3163	.37366	.33377	.18727	.11544	.77586
#1	9.5741	.48274	.95557	47.363	.47379	9.3402	.47038
#2	9.4383	.47085	.94902	47.457	.47331	9.3538	.47650
#3	9.5701	.48036	.94991	47.149	.47207	9.3616	.47699
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: CCV Acquired: 6/23/2016 21:36:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1248**	**.37983**	**4.7469**	**.94195**	**.94936**	**.95013**	**.47646**
Stddev	.0071	.00577	.0107	.00244	.00345	.00861	.00052
%RSD	.63160	1.5193	.22491	.25903	.36313	.90637	.10952
#1	1.1176	.38628	4.7372	.93943	.94930	.94189	.47702
#2	1.1251	.37515	4.7451	.94210	.95284	.94943	.47599
#3	1.1318	.37806	4.7583	.94431	.94595	.95907	.47637
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.94937**	**.94698**	F **.53390**
Stddev	.00172	.00064	.57416
%RSD	.18154	.06770	107.54
#1	.95103	.94624	-.12311
#2	.94951	.94740	.93934
#3	.94759	.94730	.78547
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6847.6**	**42330.**	**2179.9**
Stddev	26.3	36.	23.0
%RSD	.38348	.08457	1.0562
#1	6817.2	42321.	2206.4
#2	6862.7	42299.	2165.2
#3	6862.8	42369.	2168.0

Sample Name: CCB Acquired: 6/23/2016 21:39:49 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00034**	**-.00840**	**.00142**	**.00310**	**-.00097**	**-.00004**	**.04289**
Stddev	.00215	.00740	.00154	.00403	.00114	.00009	.02517
%RSD	634.22	88.117	107.88	130.11	117.13	211.10	58.687
#1	.00114	-.00019	.00313	.00134	-.00178	-.00003	.05755
#2	.00065	-.01045	.00097	.00025	-.00148	.00004	.01383
#3	-.00280	-.01457	.00016	.00772	.00033	-.00014	.05730
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**.00024**	**-.00021**	**.00099**	**.00681**	**.02724**	**.00474**
Stddev	.00017	.00030	.00131	.00197	.01403	.13786	.00231
%RSD	120.69	124.53	625.16	199.14	206.17	506.05	48.675
#1	-.00003	.00049	-.00143	.00036	-.00450	-.09799	.00738
#2	.00014	.00033	-.00037	.00320	.02251	.00476	.00369
#3	.00030	-.00009	.00117	-.00059	.00241	.17496	.00314
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.01627**	**.00349**	**.00316**	**.05656**	**.00129**	**.00259**	**.00220**
Stddev	.06560	.00061	.00054	.03460	.00090	.00126	.00512
%RSD	403.12	17.500	17.006	61.166	69.213	48.482	232.87
#1	.04308	.00418	.00337	.06648	.00145	.00133	.00302
#2	-.00519	.00302	.00356	.01809	.00033	.00384	-.00328
#3	-.08670	.00326	.00255	.08512	.00210	.00261	.00686
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: CCB Acquired: 6/23/2016 21:39:49 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00210**	**.00060**	**-.00131**	**-.00025**	**.00045**	**.00101**	**-.00537**
Stddev	.00282	.00202	.00149	.00144	.00024	.00715	.00270
%RSD	134.10	334.37	113.55	585.99	53.933	705.65	50.282
#1	.00467	-.00103	-.00073	-.00138	.00029	-.00721	-.00765
#2	-.00091	.00286	-.00300	-.00074	.00033	.00583	-.00608
#3	.00255	-.00002	-.00020	.00138	.00073	.00442	-.00239
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00036**	**.00019**	F **.41711**
Stddev	.00059	.00027	.26410
%RSD	164.24	139.43	63.317
#1	-.00011	-.00011	.71541
#2	.00007	.00039	.21306
#3	-.00103	.00030	.32286
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6996.3**	**43082.**	**2193.8**
Stddev	20.8	164.	36.3
%RSD	.29721	.37998	1.6551
#1	6972.3	42895.	2225.5
#2	7007.7	43194.	2201.8
#3	7008.9	43159.	2154.2

Sample Name: L1606082303 Acquired: 6/23/2016 21:43:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.00528	-.00158	.00205	.19615	.00000	9.5412	-.00005
Stddev	.00172	.00389	.00374	.00056	.00167	.00004	.0635	.00015
%RSD	531.26	73.680	236.25	27.382	.84980	2856.4	.66503	295.12
#1	.00039	.00192	-.00320	.00177	.19699	.00004	9.6087	.00011
#2	.00201	.00955	-.00424	.00168	.19423	-.00003	9.4828	-.00019
#3	-.00143	.00438	.00269	.00269	.19724	-.00001	9.5322	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	-.00003	.00137	.01816	.07360	-.00201	5.7035	.11460
Stddev	.00028	.00217	.00077	.02760	.04149	.00162	.1926	.00292
%RSD	57.802	7719.6	56.083	151.98	56.373	80.472	3.3772	2.5499
#1	.00048	-.00239	.00048	.04879	.11308	-.00147	5.9188	.11188
#2	.00020	.00186	.00178	-.00477	.07737	-.00383	5.5474	.11423
#3	.00076	.00045	.00184	.01046	.03036	-.00073	5.6443	.11769
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	30.457	.00028	.01105	.00022	.00112	-.00912	.60825
Stddev	.00054	.348	.00034	.00162	.00227	.00456	.00372	.00164
%RSD	210.59	1.1437	122.90	14.679	1048.7	408.61	40.764	.26908
#1	-.00033	30.637	-.00010	.01036	-.00046	-.00379	-.00828	.60645
#2	.00038	30.056	.00057	.01291	.00274	.00192	-.00590	.60965
#3	.00071	30.679	.00036	.00990	-.00164	.00522	-.01319	.60865
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606082303 Acquired: 6/23/2016 21:43:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00070**	**.18364**	**-.00297**	**-.00161**	**.00010**	**.00105**	**.18385**
Stddev	.00086	.00144	.00537	.00137	.00034	.00025	.28076
%RSD	122.13	.78353	180.76	84.915	342.41	23.814	152.71
#1	-.00168	.18402	-.00642	-.00247	-.00015	.00082	-.00761
#2	-.00010	.18205	.00322	-.00003	-.00005	.00103	.50616
#3	-.00032	.18485	-.00570	-.00232	.00050	.00132	.05301
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6737.6**	**41321.**	**2154.5**
Stddev	10.1	398.	10.5
%RSD	.15056	.96263	.48515
#1	6747.5	41745.	2162.1
#2	6727.2	41262.	2142.5
#3	6738.0	40956.	2158.7

Sample Name: L1606082304 Acquired: 6/23/2016 21:47:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00107	.00763	.00205	.00128	.06210	-.00005	2.2162	-.00002
Stddev	.00070	.00357	.00361	.00281	.00225	.00003	.0545	.00005
%RSD	65.790	46.743	175.75	220.17	3.6308	56.826	2.4590	342.73
#1	.00064	.01174	.00606	-.00197	.06015	-.00004	2.1625	-.00007
#2	.00188	.00577	-.00095	.00288	.06159	-.00009	2.2715	.00004
#3	.00068	.00537	.00106	.00292	.06457	-.00003	2.2145	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	-.00139	.00241	4.0573	.28730	.00089	1.4304	.07372
Stddev	.00015	.00065	.00132	.0516	.13779	.00299	.0553	.00403
%RSD	30.727	46.428	54.848	1.2708	47.960	334.26	3.8623	5.4701
#1	.00066	-.00136	.00091	4.0586	.13895	.00365	1.4701	.07443
#2	.00040	-.00206	.00293	4.0051	.41127	.00130	1.4537	.07736
#3	.00040	-.00076	.00340	4.1081	.31169	-.00228	1.3673	.06938
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	6.7673	.00003	.01064	-.00183	.00117	-.00224	.82027
Stddev	.00026	.0658	.00066	.00541	.00174	.00605	.00594	.00641
%RSD	1414.1	.97251	2005.0	50.852	95.153	515.39	265.01	.78184
#1	-.00017	6.7130	.00068	.01686	-.00367	.00122	-.00440	.81299
#2	-.00008	6.7484	.00006	.00808	-.00161	-.00490	-.00681	.82274
#3	.00031	6.8405	-.00064	.00698	-.00021	.00720	.00448	.82508
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606082304 Acquired: 6/23/2016 21:47:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00062**	**.05041**	**.00372**	**-.00162**	**-.00102**	**.00139**	**.02709**
Stddev	.00054	.00053	.00900	.00223	.00128	.00033	.20037
%RSD	86.087	1.0604	241.81	137.59	125.65	23.588	739.53
#1	-.00016	.04984	-.00362	-.00387	-.00076	.00168	-.08640
#2	-.00121	.05049	.01377	-.00158	-.00240	.00104	.25845
#3	-.00050	.05090	.00102	.00059	.00011	.00145	-.09076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6801.0**	**42034.**	**2119.8**
Stddev	49.8	142.	31.5
%RSD	.73210	.33806	1.4863
#1	6763.5	42178.	2123.4
#2	6782.1	42032.	2149.4
#3	6857.5	41894.	2086.7

Sample Name: L1606088302 Acquired: 6/23/2016 21:51:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.03900	.00448	.00430	.01505	-.00001	2.8996	-.00001
Stddev	.00124	.00075	.00243	.00233	.00060	.00004	.0350	.00023
%RSD	153.65	1.9305	54.189	54.088	3.9770	332.40	1.2074	2343.8
#1	-.00027	.03833	.00184	.00580	.01560	.00003	2.9325	.00014
#2	.00216	.03982	.00662	.00548	.01441	-.00003	2.8628	.00010
#3	.00053	.03886	.00496	.00162	.01514	-.00004	2.9035	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	-.00093	.00225	.26018	.53798	-.00133	1.2540	.13015
Stddev	.00005	.00064	.00096	.01052	.04447	.00237	.1006	.00182
%RSD	10.629	68.468	42.462	4.0434	8.2670	177.47	8.0229	1.3964
#1	.00052	-.00155	.00287	.26853	.50853	-.00040	1.3655	.12853
#2	.00056	-.00028	.00273	.26365	.51627	-.00403	1.2265	.12979
#3	.00045	-.00096	.00115	.24836	.58914	.00042	1.1700	.13212
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	2.6639	.00090	.01608	.00052	.00237	-.00249	.36519
Stddev	.00017	.0233	.00047	.00836	.00171	.00049	.00862	.00186
%RSD	72.830	.87410	52.415	51.991	330.96	20.707	346.32	.51020
#1	.00029	2.6639	.00099	.02573	.00209	.00189	.00736	.36326
#2	.00036	2.6406	.00039	.01116	.00078	.00287	-.00614	.36532
#3	.00004	2.6871	.00132	.01135	-.00131	.00234	-.00868	.36698
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606088302 Acquired: 6/23/2016 21:51:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.01730**	**.00326**	**-.00074**	**-.00020**	**.00699**	**.35536**
Stddev	.00047	.00025	.00678	.00023	.00043	.00024	.51910
%RSD	826.36	1.4568	208.35	30.989	219.10	3.4850	146.08
#1	.00036	.01713	.00871	-.00090	-.00020	.00693	-.23473
#2	-.00056	.01718	-.00434	-.00084	-.00062	.00678	.74156
#3	.00004	.01759	.00541	-.00048	.00024	.00726	.55925
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7019.0**	**43469.**	**2272.3**
Stddev	25.4	199.	24.4
%RSD	.36132	.45762	1.0740
#1	7020.2	43542.	2267.1
#2	6993.1	43621.	2298.9
#3	7043.7	43244.	2250.9

Sample Name: L1606089601 Acquired: 6/23/2016 21:55:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00420**	**.00523**	**.00334**	**.00237**	**.00219**	**.00008**	**.19980**
Stddev	.00278	.00696	.00261	.00237	.00063	.00004	.02591
%RSD	66.297	133.09	78.109	99.957	28.753	51.900	12.967
#1	.00741	.00603	.00348	.00033	.00147	.00009	.18026
#2	.00260	.01174	.00066	.00182	.00265	.00012	.22918
#3	.00258	-.00210	.00587	.00496	.00244	.00003	.18994
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.00302**	**.00023**	**.00052**	**2.0027**	**-.01208**	**-.00040**
Stddev	.00012	.00024	.00052	.00149	.0311	.05532	.00593
%RSD	79.007	7.8027	222.58	284.84	1.5506	458.05	1480.9
#1	-.00011	.00287	.00040	.00177	1.9805	.05152	-.00717
#2	-.00005	.00329	-.00035	-.00112	1.9893	-.03870	.00382
#3	-.00028	.00290	.00064	.00091	2.0382	-.04905	.00215
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.24211**	**.28328**	**-.00023**	**.95184**	**.00021**	**.00495**	**-.00083**
Stddev	.13780	.01030	.00015	.04331	.00103	.00358	.00274
%RSD	56.917	3.6352	65.757	4.5498	490.79	72.184	329.16
#1	.26334	.27250	-.00010	.90187	.00062	.00759	.00169
#2	.09492	.28431	-.00019	.97855	.00097	.00088	-.00043
#3	.36806	.29302	-.00040	.97509	-.00096	.00638	-.00376
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: L1606089601 Acquired: 6/23/2016 21:55:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00174**	**-.00552**	**.20894**	**-.00089**	**.00183**	**.00041**	**-.00355**
Stddev	.00455	.00357	.00152	.00075	.00028	.00397	.00196
%RSD	261.01	64.670	.72600	84.586	15.398	961.73	55.133
#1	-.00696	-.00337	.20831	-.00159	.00215	.00126	-.00263
#2	.00141	-.00964	.20784	-.00009	.00174	.00389	-.00222
#3	.00032	-.00355	.21067	-.00099	.00161	-.00391	-.00580
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00023**	**.00107**	F **-.16350**
Stddev	.00118	.00009	.38488
%RSD	512.00	8.7488	235.40
#1	-.00072	.00105	.00228
#2	-.00109	.00099	.11071
#3	.00111	.00117	-.60348
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6828.9**	**41943.**	**2135.6**
Stddev	63.3	286.	20.3
%RSD	.92751	.68281	.94968
#1	6763.6	42271.	2138.9
#2	6833.1	41741.	2154.0
#3	6890.1	41817.	2113.9

Sample Name: L1606089602 Acquired: 6/23/2016 21:59:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00116	.00173	.00317	.00184	-.00011	.00003	.00624	-.00003
Stddev	.00285	.00778	.00249	.00329	.00125	.00006	.05063	.00023
%RSD	245.09	449.18	78.692	179.21	1183.1	208.66	811.35	713.72
#1	-.00055	.01019	.00053	.00389	-.00026	-.00003	-.04528	.00022
#2	.00445	-.00512	.00349	.00357	-.00127	.00009	.05593	-.00023
#3	-.00041	.00012	.00549	-.00196	.00122	.00003	.00807	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.00046	.00165	-.00531	.07219	-.00031	.05667	.00209
Stddev	.00028	.00102	.00160	.03109	.09458	.00388	.05878	.00182
%RSD	116.13	222.95	97.271	585.63	131.01	1232.5	103.73	87.087
#1	.00001	.00001	.00226	.02472	.15298	-.00298	.09347	.00378
#2	.00016	-.00027	-.00017	-.00328	.09542	.00413	.08765	.00016
#3	.00055	.00163	.00285	-.03736	-.03184	-.00209	-.01113	.00234
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	.39833	-.00077	.00469	.00112	.00031	-.00922	.46168
Stddev	.00006	.02012	.00058	.00167	.00277	.00100	.00659	.00725
%RSD	11.375	5.0505	75.062	35.563	245.83	319.68	71.432	1.5707
#1	-.00061	.37822	-.00128	.00414	.00250	-.00075	-.01634	.45603
#2	-.00049	.39832	-.00088	.00656	-.00206	.00124	-.00799	.45917
#3	-.00057	.41846	-.00014	.00336	.00293	.00045	-.00334	.46986
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606089602 Acquired: 6/23/2016 21:59:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00058**	**.00007**	**-.00373**	**-.00407**	**-.00032**	**.00100**	**-.02035**
Stddev	.00028	.00019	.00957	.00088	.00078	.00036	.45457
%RSD	48.712	259.28	256.71	21.746	243.98	36.577	2234.1
#1	-.00053	.00018	.00727	-.00462	.00006	.00142	-.06540
#2	-.00033	.00018	-.00832	-.00454	.00020	.00080	.45507
#3	-.00089	-.00014	-.01012	-.00305	-.00121	.00077	-.45071
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6764.1**	**42193.**	**2152.3**
Stddev	51.5	150.	58.2
%RSD	.76176	.35597	2.7055
#1	6724.7	42019.	2097.0
#2	6745.2	42282.	2213.0
#3	6822.4	42277.	2146.9

Sample Name: L1606089603 Acquired: 6/23/2016 22:03:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00264**	**.00052**	**.00129**	**.00105**	**.00283**	**.00007**	**.13087**	**-.00015**
Stddev	.00174	.01588	.00262	.00317	.00277	.00004	.02295	.00021
%RSD	65.852	3062.5	203.49	301.32	97.964	60.620	17.533	135.33
#1	.00093	.01257	-.00138	.00463	.00302	.00005	.14125	.00004
#2	.00440	.00646	.00387	-.00005	.00549	.00004	.10457	-.00037
#3	.00259	-.01748	.00137	-.00142	-.00004	.00011	.14679	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00048**	**.00024**	**.00128**	**.12772**	**.20105**	**-.00470**	**.12553**	**.00043**
Stddev	.00031	.00150	.00216	.02497	.11408	.00639	.06203	.00287
%RSD	63.789	616.72	168.54	19.548	56.742	136.10	49.418	664.80
#1	.00045	.00194	-.00101	.11916	.09190	.00173	.17340	-.00027
#2	.00019	-.00030	.00156	.10815	.19176	-.00476	.14774	-.00202
#3	.00080	-.00091	.00330	.15584	.31949	-.01106	.05545	.00359
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.39363**	**-.00055**	**.01390**	**-.00151**	**.00183**	**-.00632**	**.24727**
Stddev	.00045	.04518	.00102	.00707	.00255	.00239	.00219	.00127
%RSD	1327.8	11.477	186.18	50.889	169.36	131.03	34.571	.51246
#1	-.00019	.43317	-.00107	.01491	-.00330	.00328	-.00397	.24716
#2	.00047	.34439	.00063	.02042	.00142	-.00094	-.00828	.24858
#3	-.00038	.40334	-.00121	.00638	-.00264	.00314	-.00672	.24606
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606089603 Acquired: 6/23/2016 22:03:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00047**	**.00125**	**-.01273**	**-.00400**	**-.00003**	**.00095**	**.10691**
Stddev	.00077	.00042	.00925	.00266	.00030	.00011	.21605
%RSD	161.90	33.664	72.615	66.501	1119.1	11.082	202.08
#1	-.00019	.00148	-.00295	-.00574	-.00008	.00101	-.14101
#2	-.00134	.00076	-.01391	-.00094	.00030	.00102	.20680
#3	.00011	.00150	-.02133	-.00533	-.00030	.00083	.25493
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6778.0**	**41534.**	**2155.4**
Stddev	33.3	392.	34.0
%RSD	.49153	.94350	1.5766
#1	6804.2	41394.	2116.9
#2	6740.5	41232.	2181.3
#3	6789.2	41977.	2167.8

Sample Name: L1606089604 Acquired: 6/23/2016 22:07:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00159	.01026	.00044	.00222	.00123	.00002	.21290	.00018
Stddev	.00043	.01032	.00191	.00166	.00091	.00006	.03422	.00024
%RSD	27.269	100.60	437.55	74.707	74.454	271.36	16.075	135.58
#1	.00148	.01567	.00246	.00277	.00044	.00008	.21883	-.00010
#2	.00207	.01676	-.00133	.00035	.00223	.00002	.24377	.00035
#3	.00122	-.00164	.00018	.00353	.00102	-.00004	.17610	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00372	-.00098	.00204	1.9871	.04803	-.00029	.27775	.28079
Stddev	.00019	.00146	.00258	.0500	.09028	.00333	.05841	.00512
%RSD	4.9815	148.68	126.42	2.5186	187.98	1134.6	21.028	1.8227
#1	.00391	-.00254	-.00094	1.9637	-.03733	-.00218	.34159	.28507
#2	.00373	.00037	.00345	1.9529	.03888	.00355	.22701	.27512
#3	.00354	-.00079	.00362	2.0445	.14254	-.00224	.26465	.28217
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	.88820	.00047	.00405	-.00241	-.00066	-.00911	.20760
Stddev	.00009	.05397	.00049	.00324	.00083	.00328	.00427	.00263
%RSD	33.170	6.0764	104.78	80.127	34.563	498.25	46.914	1.2688
#1	-.00017	.85983	.00038	.00127	-.00145	.00099	-.00982	.20605
#2	-.00027	.85432	.00100	.00326	-.00287	.00147	-.00453	.20610
#3	-.00035	.95043	.00003	.00761	-.00292	-.00443	-.01299	.21064
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606089604 Acquired: 6/23/2016 22:07:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.00180**	**.00146**	**-.00008**	**.00002**	**.00083**	**.01606**
Stddev	.00033	.00028	.00448	.00273	.00107	.00008	.15859
%RSD	645.35	15.485	305.81	3306.5	5321.6	9.5646	987.51
#1	-.00043	.00167	.00571	-.00323	-.00007	.00090	-.04948
#2	.00011	.00212	.00190	.00129	-.00100	.00085	-.09926
#3	.00017	.00161	-.00322	.00169	.00113	.00074	.19692
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6852.5**	**41879.**	**2133.3**
Stddev	55.4	422.	31.4
%RSD	.80848	1.0073	1.4729
#1	6793.1	41503.	2112.7
#2	6861.8	42335.	2169.5
#3	6902.7	41799.	2117.7

Sample Name: L1606089605 Acquired: 6/23/2016 22:11:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00325**	**-.00813**	**.00321**	**.00103**	**.00232**	**.00007**	**.13232**
Stddev	.00086	.00834	.00166	.00270	.00015	.00005	.04505
%RSD	26.517	102.62	51.687	262.17	6.5199	65.910	34.048
#1	.00357	-.00015	.00448	.00315	.00234	.00011	.13419
#2	.00227	-.00744	.00133	-.00201	.00246	.00002	.08636
#3	.00390	-.01679	.00380	.00194	.00216	.00008	.17641
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**.00019**	**-.00021**	**-.00051**	**.02399**	**.13993**	**-.00272**
Stddev	.00013	.00048	.00060	.00074	.02883	.04909	.00167
%RSD	59.092	248.65	278.22	144.43	120.17	35.082	61.414
#1	-.00034	.00000	-.00032	-.00045	-.00884	.19045	-.00464
#2	-.00023	.00074	.00043	-.00128	.04519	.13693	-.00190
#3	-.00008	-.00016	-.00075	.00019	.03563	.09241	-.00161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.13116**	**-.00087**	**-.00017**	**.35584**	**.00083**	**.00721**	**.00009**
Stddev	.12028	.00028	.00012	.03175	.00083	.00389	.00231
%RSD	91.707	32.079	72.680	8.9233	100.69	53.875	2586.3
#1	.15231	-.00055	-.00032	.37833	.00083	.00320	-.00213
#2	.23946	-.00098	-.00010	.31952	-.00001	.01096	.00248
#3	.00170	-.00108	-.00010	.36967	.00166	.00747	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: L1606089605 Acquired: 6/23/2016 22:11:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00575**	**.00189**	**.24045**	**-.00028**	**.00101**	**-.00455**	**-.00361**
Stddev	.00192	.00588	.00568	.00092	.00006	.01057	.00467
%RSD	33.402	311.30	2.3620	328.38	6.1198	232.48	129.52
#1	.00788	.00697	.23736	-.00119	.00106	-.01626	-.00722
#2	.00521	.00325	.23698	.00066	.00103	-.00167	-.00528
#3	.00416	-.00455	.24700	-.00032	.00094	.00429	.00167
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00106**	**.00104**	F **-.05759**
Stddev	.00074	.00009	.21862
%RSD	69.542	8.5436	379.61
#1	-.00181	.00101	.17219
#2	-.00033	.00097	-.26300
#3	-.00105	.00114	-.08197
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6837.2**	**42004.**	**2152.4**
Stddev	16.0	173.	9.0
%RSD	.23440	.41281	.41704
#1	6853.2	42014.	2142.1
#2	6821.1	41826.	2156.7
#3	6837.2	42172.	2158.4

Sample Name: L1606089607 Acquired: 6/23/2016 22:15:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00124**	**-.00686**	**.00409**	**.00130**	**-.00066**	**-.00005**	**.03206**	**-.00002**
Stddev	.00132	.01058	.00305	.00213	.00072	.00007	.01681	.00018
%RSD	105.94	154.08	74.558	163.59	109.05	125.85	52.443	856.76
#1	-.00264	-.01401	.00622	.00259	-.00111	-.00005	.04548	-.00001
#2	-.00105	-.01187	.00546	.00246	-.00105	.00001	.01320	.00015
#3	-.00003	.00529	.00060	-.00115	.00017	-.00012	.03751	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00031**	**.00074**	**.00061**	**-.00910**	**-.00529**	**-.00407**	**.02444**	**.00176**
Stddev	.00024	.00180	.00036	.03159	.06755	.00591	.05716	.00378
%RSD	78.629	244.31	60.097	347.19	1277.4	145.34	233.90	215.59
#1	.00037	.00281	.00094	.01641	.06833	-.00447	-.04095	.00014
#2	.00051	-.00035	.00022	-.04443	-.01978	-.00977	.04932	-.00095
#3	.00004	-.00025	.00066	.00073	-.06441	.00203	.06494	.00608
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00073**	**.00595**	**.00025**	**.00693**	**-.00226**	**-.00313**	**-.00892**	**-.00746**
Stddev	.00042	.03243	.00102	.00571	.00047	.00121	.00509	.00076
%RSD	57.397	545.12	410.30	82.361	20.886	38.630	57.024	10.142
#1	-.00072	.04302	.00024	.00636	-.00177	-.00362	-.00954	-.00789
#2	-.00116	-.01720	-.00077	.01291	-.00271	-.00175	-.01368	-.00792
#3	-.00032	-.00797	.00128	.00153	-.00229	-.00401	-.00356	-.00659
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606089607 Acquired: 6/23/2016 22:15:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00050**	**.00006**	**-.00267**	**-.00165**	**-.00070**	**.00059**	**.18991**
Stddev	.00084	.00062	.00845	.00365	.00135	.00010	.03400
%RSD	167.93	1027.2	316.03	221.52	192.73	16.308	17.901
#1	-.00037	-.00011	.00072	-.00580	.00084	.00058	.15066
#2	-.00140	.00075	-.01229	-.00022	-.00169	.00050	.20942
#3	.00027	-.00046	.00355	.00107	-.00126	.00069	.20967
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6854.9**	**42369.**	**2139.0**
Stddev	37.2	282.	6.9
%RSD	.54331	.66600	.32457
#1	6813.1	42056.	2146.4
#2	6867.1	42446.	2132.6
#3	6884.6	42604.	2138.0

Sample Name: CCV Acquired: 6/23/2016 22:19:31 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.37294	9.2890	.37002	.46325	.93343	.04671	9.3219
Stddev	.00058	.0248	.00029	.00298	.00858	.00002	.0885
%RSD	.15646	.26680	.07810	.64298	.91954	.04347	.94918
#1	.37306	9.3173	.36998	.46028	.92385	.04673	9.2510
#2	.37230	9.2715	.36976	.46623	.94043	.04670	9.2937
#3	.37345	9.2781	.37033	.46323	.93599	.04670	9.4210
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04629	.18580	.46699	.46774	3.7375	46.911	.95278
Stddev	.00023	.00060	.00144	.00134	.0018	.467	.00684
%RSD	.48818	.32069	.30929	.28620	.04690	.99443	.71816
#1	.04654	.18545	.46662	.46619	3.7368	46.377	.94493
#2	.04624	.18649	.46859	.46843	3.7395	47.239	.95591
#3	.04609	.18546	.46577	.46859	3.7362	47.116	.95750
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.2808	.46805	.93442	46.553	.46467	9.1850	.46445
Stddev	.1781	.00201	.00336	.432	.00229	.0141	.00099
%RSD	1.9192	.42908	.36011	.92728	.49257	.15361	.21367
#1	9.0878	.46660	.93610	46.055	.46543	9.1763	.46458
#2	9.4388	.47034	.93661	46.821	.46649	9.2013	.46537
#3	9.3158	.46721	.93054	46.783	.46210	9.1774	.46340
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: CCV Acquired: 6/23/2016 22:19:31 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1058**	**.37399**	**4.6590**	**.92793**	**.93602**	**.93884**	**.47136**
Stddev	.0068	.00623	.0143	.00333	.00809	.01829	.00375
%RSD	.61331	1.6668	.30694	.35899	.86439	1.9481	.79529
#1	1.1040	.37143	4.6586	.92611	.92682	.91846	.46721
#2	1.1133	.38110	4.6734	.93177	.94202	.94427	.47237
#3	1.1001	.36945	4.6448	.92590	.93921	.95381	.47450
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.93328**	**.93064**	F **.30272**
Stddev	.00145	.00126	.34844
%RSD	.15486	.13568	115.11
#1	.93249	.92922	.70352
#2	.93240	.93165	.07184
#3	.93495	.93106	.13279
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6994.5**	**42945.**	**2201.9**
Stddev	26.0	472.	17.5
%RSD	.37198	1.0980	.79423
#1	7017.9	42835.	2192.4
#2	6966.5	42539.	2222.1
#3	6999.0	43462.	2191.2

Sample Name: CCB Acquired: 6/23/2016 22:23:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00075**	**-.01234**	**.00307**	**.00387**	**-.00152**	**.00003**	**.02196**
Stddev	.00074	.00351	.00195	.00329	.00037	.00010	.03751
%RSD	98.761	28.475	63.502	85.024	24.368	329.31	170.81
#1	.00146	-.01497	.00353	.00757	-.00195	-.00000	.04383
#2	.00082	-.00835	.00475	.00124	-.00126	.00014	.04339
#3	-.00002	-.01370	.00093	.00281	-.00136	-.00005	-.02135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.00029**	**-.00074**	**.00053**	**-.01044**	**.06034**	**-.00158**
Stddev	.00023	.00031	.00153	.00009	.01838	.08449	.00205
%RSD	314.24	106.88	205.57	16.843	176.11	140.03	130.11
#1	-.00010	-.00004	-.00241	.00043	-.01522	.02142	-.00392
#2	-.00029	.00057	-.00042	.00060	.00986	.15728	-.00009
#3	.00017	.00033	.00060	.00054	-.02595	.00232	-.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.02604**	**-.00075**	**.00305**	**.06420**	**.00000**	**.00651**	**-.00362**
Stddev	.05654	.00328	.00069	.00709	.00080	.00504	.00339
%RSD	217.15	436.24	22.462	11.042	53218.	77.432	93.854
#1	.03584	-.00047	.00226	.06569	.00068	.00969	-.00632
#2	-.07502	.00238	.00342	.07043	-.00088	.00913	-.00473
#3	-.03894	-.00416	.00347	.05649	.00021	.00070	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: CCB Acquired: 6/23/2016 22:23:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00325	-.00859	-.00081	-.00049	.00016	.00095	-.00269
Stddev	.00288	.00100	.00106	.00098	.00044	.00395	.00131
%RSD	88.832	11.667	130.17	199.49	265.70	416.04	48.575
#1	.00425	-.00769	-.00116	-.00120	.00053	-.00220	-.00394
#2	-.00001	-.00968	.00037	.00062	.00028	-.00034	-.00133
#3	.00549	-.00841	-.00166	-.00089	-.00032	.00538	-.00281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00046	.00011	F .20521
Stddev	.00084	.00022	.40407
%RSD	184.00	201.71	196.91
#1	.00051	-.00006	.57360
#2	-.00094	.00036	-.22696
#3	-.00095	.00003	.26899
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6996.7	43446.	2222.8
Stddev	42.9	110.	21.9
%RSD	.61271	.25379	.98413
#1	6948.6	43485.	2197.6
#2	7030.8	43322.	2237.5
#3	7010.7	43532.	2233.2

Sample Name: LLCCV Acquired: 6/23/2016 22:27:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00907	.13685	.00722	.07327	.00636	.00136	.38737	.00083
Stddev	.00127	.00548	.00269	.00354	.00121	.00002	.02958	.00013
%RSD	14.057	4.0063	37.324	4.8356	18.957	1.6251	7.6350	15.322
#1	.00768	.13064	.00454	.06952	.00698	.00135	.41482	.00073
#2	.01019	.13890	.00718	.07656	.00497	.00135	.39124	.00078
#3	.00934	.14102	.00993	.07374	.00713	.00139	.35605	.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00356	.00351	.00643	.06036	.74512	.07304	.35518	.00670
Stddev	.00034	.00083	.00051	.03616	.18336	.00520	.11515	.00028
%RSD	9.6921	23.706	7.9731	59.906	24.608	7.1243	32.420	4.2320
#1	.00383	.00446	.00589	.02265	.76354	.06708	.45336	.00638
#2	.00367	.00316	.00691	.06369	.91857	.07668	.38374	.00683
#3	.00317	.00291	.00648	.09475	.55324	.07536	.22844	.00690
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00743	.43578	.01531	.74167	.00827	.07927	.00569	.77935
Stddev	.00037	.04956	.00080	.00526	.00366	.00493	.00102	.00095
%RSD	5.0056	11.373	5.2515	.70948	44.188	6.2194	17.916	.12251
#1	.00704	.38130	.01503	.74257	.01154	.08395	.00451	.78008
#2	.00779	.47820	.01469	.73602	.00432	.07413	.00628	.77827
#3	.00745	.44783	.01622	.74642	.00896	.07973	.00628	.77970
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: LLCCV Acquired: 6/23/2016 22:27:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.37348	.03865	.02465	.14094	.00676	.01578	19.333
Stddev	.00058	.00060	.00437	.00098	.00113	.00019	.577
%RSD	.15634	1.5628	17.713	.69785	16.700	1.2102	2.9862
#1	.37294	.03795	.02415	.14073	.00773	.01557	19.532
#2	.37410	.03901	.02924	.14008	.00552	.01583	19.783
#3	.37339	.03899	.02055	.14202	.00705	.01594	18.682
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6996.1	43552.	2208.7
Stddev	29.5	407.	29.7
%RSD	.42198	.93392	1.3436
#1	6976.9	43985.	2211.3
#2	7030.1	43494.	2236.9
#3	6981.2	43178.	2177.8

Sample Name: LLCCV Acquired: 6/23/2016 22:31:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02091	.36245	.02162	.18354	.01867	.00356	.98086
Stddev	.00237	.00484	.00558	.00414	.00095	.00018	.04469
%RSD	11.351	1.3361	25.792	2.2543	5.0969	5.1755	4.5561
#1	.01879	.36503	.01522	.18805	.01837	.00338	.94866
#2	.02045	.35687	.02541	.17992	.01791	.00356	.96204
#3	.02347	.36547	.02424	.18267	.01974	.00374	1.0319
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00183	.00959	.00895	.01155	.18702	1.8760	.19064
Stddev	.00040	.00066	.00025	.00083	.02563	.0398	.00709
%RSD	21.803	6.8545	2.7509	7.2203	13.702	2.1189	3.7192
#1	.00229	.01035	.00908	.01200	.20673	1.9212	.19761
#2	.00159	.00922	.00866	.01059	.15805	1.8607	.18344
#3	.00161	.00920	.00910	.01205	.19628	1.8463	.19086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.90135	.02189	.01808	1.0102	.03771	1.7925	.01852
Stddev	.03529	.00047	.00019	.0359	.00135	.0154	.00112
%RSD	3.9156	2.1507	1.0770	3.5580	3.5742	.86119	6.0288
#1	.87617	.02240	.01801	.97340	.03783	1.7983	.01932
#2	.88620	.02181	.01830	1.0119	.03900	1.8043	.01725
#3	.94169	.02146	.01794	1.0452	.03631	1.7750	.01900
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: LLCCV Acquired: 6/23/2016 22:31:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19437**	**.03462**	**1.8270**	**.92649**	**.09469**	**.05843**	**.34726**
Stddev	.00460	.00283	.0121	.00858	.00060	.00582	.00417
%RSD	2.3690	8.1675	.66332	.92568	.63058	9.9521	1.1997
#1	.19959	.03615	1.8304	.92739	.09439	.06509	.34780
#2	.19266	.03636	1.8370	.93459	.09431	.05586	.35113
#3	.19087	.03136	1.8135	.91750	.09538	.05435	.34285
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.01800**	**.03876**	F **49.426**
Stddev	.00023	.00022	.593
%RSD	1.2842	.57319	1.2005
#1	.01823	.03881	50.072
#2	.01777	.03895	48.906
#3	.01800	.03851	49.300
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7011.3**	**43477.**	**2210.1**
Stddev	20.4	40.	14.4
%RSD	.29146	.09218	.65240
#1	7004.2	43507.	2200.5
#2	6995.4	43491.	2226.7
#3	7034.3	43431.	2203.1

Sample Name: PBW 11 Acquired: 6/23/2016 22:35:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573562-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00032**	**.00826**	**.00073**	**.00097**	**-.00161**	**.00009**	**.02504**
Stddev	.00435	.00626	.00116	.00380	.00132	.00015	.01704
%RSD	1361.2	75.725	158.33	393.95	82.078	159.17	68.056
#1	-.00441	.01091	-.00035	.00280	-.00305	.00000	.03508
#2	.00122	.01276	.00059	.00350	-.00132	.00026	.03466
#3	.00414	.00112	.00196	-.00341	-.00045	.00001	.00536
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**-.00009**	**.00011**	**.00179**	**-.00443**	**.01747**	**-.00078**
Stddev	.00037	.00030	.00107	.00110	.02744	.11206	.00643
%RSD	372.56	345.12	981.79	61.211	619.83	641.53	826.74
#1	.00053	-.00038	.00079	.00288	.01410	-.01578	-.00199
#2	-.00009	.00021	-.00112	.00069	-.03595	.14238	.00617
#3	-.00014	-.00009	.00066	.00181	.00857	-.07420	-.00651
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.12116**	**.00145**	**-.00010**	**-.00638**	**-.00006**	**-.00844**	**-.00156**
Stddev	.07020	.00190	.00047	.05241	.00004	.00883	.00308
%RSD	57.940	131.08	475.47	821.85	65.273	104.67	197.22
#1	.10625	-.00074	-.00051	-.02102	-.00009	.00126	.00107
#2	.19761	.00240	-.00019	.05180	-.00002	-.01056	-.00495
#3	.05961	.00268	.00041	-.04991	-.00007	-.01601	-.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: PBW 11 Acquired: 6/23/2016 22:35:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573562-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00235**	F **-.01321**	**-.01211**	**.00005**	**.00012**	**-.01090**	**-.00481**
Stddev	.00434	.00615	.00423	.00130	.00022	.00717	.00224
%RSD	184.96	46.568	34.938	2403.9	182.36	65.767	46.622
#1	-.00650	-.00846	-.00872	-.00069	-.00007	-.00262	-.00253
#2	.00215	-.02016	-.01076	-.00070	.00007	-.01519	-.00488
#3	-.00268	-.01101	-.01685	.00155	.00036	-.01489	-.00701
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		90.000					
Low Limit		-.01000					

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00056**	**.00115**	F **-.06214**
Stddev	.00033	.00011	.40590
%RSD	58.758	9.4676	653.23
#1	-.00093	.00115	.04499
#2	-.00040	.00127	.27945
#3	-.00033	.00105	-.51085
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6526.0**	**40939.**	**2061.7**
Stddev	35.4	294.	34.1
%RSD	.54178	.71898	1.6547
#1	6541.9	40985.	2026.5
#2	6550.5	40624.	2063.9
#3	6485.4	41207.	2094.6

Sample Name: LCSW 11 Acquired: 6/23/2016 22:38:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573562-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20572	5.1016	.20434	.99099	.52273	.02551	5.4134	.02557
Stddev	.00209	.0119	.00205	.00539	.00783	.00018	.0860	.00030
%RSD	1.0158	.23413	1.0041	.54353	1.4983	.70326	1.5893	1.1859
#1	.20812	5.1093	.20580	.99664	.52935	.02536	5.5127	.02591
#2	.20432	5.1075	.20521	.99043	.52477	.02571	5.3662	.02536
#3	.20472	5.0878	.20199	.98591	.51409	.02545	5.3613	.02542
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10385	.25890	.26189	2.1195	25.823	.53451	5.3645	.26403
Stddev	.00010	.00080	.00098	.0266	.322	.00518	.0615	.00364
%RSD	.09428	.30942	.37489	1.2540	1.2452	.96918	1.1457	1.3773
#1	.10374	.25918	.26254	2.1199	26.125	.53986	5.3994	.26710
#2	.10385	.25953	.26237	2.1460	25.858	.53416	5.2935	.26002
#3	.10394	.25800	.26076	2.0928	25.485	.52952	5.4005	.26498
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53004	25.957	.26029	4.9232	.25825	.61920	.19466	2.6294
Stddev	.00026	.317	.00111	.0037	.00566	.00409	.00541	.0065
%RSD	.04851	1.2227	.42516	.07504	2.1932	.66079	2.7789	.24514
#1	.53022	26.268	.26156	4.9218	.25403	.62385	.18855	2.6314
#2	.53016	25.970	.25951	4.9204	.25605	.61617	.19656	2.6346
#3	.52975	25.634	.25981	4.9274	.26469	.61757	.19886	2.6222
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: LCSW 11 Acquired: 6/23/2016 22:38:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573562-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51706**	**.53317**	**.52168**	**.25600**	**.51571**	**.51503**	**1.3110**
Stddev	.00229	.00553	.01335	.00456	.00094	.00046	.2154
%RSD	.44200	1.0369	2.5594	1.7813	.18322	.08969	16.426
#1	.51564	.53801	.52874	.25386	.51673	.51503	1.4161
#2	.51585	.53436	.53002	.26124	.51555	.51550	1.4536
#3	.51970	.52714	.50628	.25291	.51486	.51457	1.0633
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6527.2**	**40455.**	**2087.1**
Stddev	31.3	163.	12.5
%RSD	.47880	.40351	.59802
#1	6563.2	40283.	2074.8
#2	6508.4	40474.	2086.8
#3	6509.8	40608.	2099.8

Sample Name: F BLANK Acquired: 6/23/2016 22:42:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573353-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00101**	**.01349**	**.00278**	**.00644**	**-.00048**	**.00013**	**.02829**	**-.00023**
Stddev	.00147	.00646	.00238	.00275	.00027	.00015	.01012	.00024
%RSD	145.82	47.931	85.631	42.748	55.833	119.23	35.758	102.61
#1	-.00010	.00837	.00376	.00945	-.00079	.00030	.03838	-.00026
#2	.00267	.02075	.00451	.00583	-.00040	.00003	.02835	-.00045
#3	.00045	.01134	.00007	.00405	-.00027	.00005	.01815	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00017**	**-.00021**	**.00115**	**.01618**	**-.02636**	**.00022**	**-.03112**	**.00301**
Stddev	.00025	.00041	.00050	.01401	.02024	.00227	.10093	.00056
%RSD	146.69	193.40	43.311	86.581	76.800	1041.8	324.28	18.733
#1	.00022	.00012	.00058	.01388	-.01342	.00194	.07257	.00362
#2	.00039	-.00067	.00140	.00346	-.01597	.00107	-.03691	.00250
#3	-.00010	-.00008	.00148	.03119	-.04969	-.00236	-.12903	.00293
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00043**	**131.96**	**-.00024**	**-.00817**	**-.00215**	**.00148**	**-.00969**	**-.00282**
Stddev	.00010	.85	.00144	.01034	.00162	.00392	.00917	.00327
%RSD	22.241	.64765	607.00	126.51	75.376	266.02	94.572	115.83
#1	.00044	132.92	.00143	.00262	-.00398	.00318	-.01589	.00093
#2	.00053	131.28	-.00110	-.01799	-.00092	.00426	.00084	-.00431
#3	.00034	131.69	-.00104	-.00915	-.00154	-.00301	-.01402	-.00509
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: F BLANK Acquired: 6/23/2016 22:42:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573353-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**.00010**	**-.00200**	**-.00314**	**.00056**	**.00410**	**.11736**
Stddev	.00046	.00052	.00261	.00021	.00036	.00009	.48090
%RSD	288.96	535.97	130.24	6.7340	64.659	2.2677	409.76
#1	-.00023	.00063	-.00290	-.00292	.00037	.00404	.00662
#2	.00004	.00007	-.00404	-.00316	.00033	.00421	-.29851
#3	.00067	-.00041	.00094	-.00334	.00097	.00406	.64398
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6547.2**	**40321.**	**2096.8**
Stddev	27.3	101.	33.4
%RSD	.41693	.25042	1.5916
#1	6550.7	40326.	2062.9
#2	6572.6	40217.	2129.6
#3	6518.3	40419.	2098.0

Sample Name: F BLANK Acquired: 6/23/2016 22:46:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573353-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00205**	**.01458**	**.00104**	**.00093**	**-.00012**	**-.00011**	**.03413**	**.00007**
Stddev	.00257	.00695	.00149	.00158	.00097	.00015	.06625	.00024
%RSD	125.57	47.660	142.55	168.73	807.82	139.24	194.10	358.50
#1	.00306	.01748	.00276	.00220	-.00059	.00003	.00736	.00006
#2	.00395	.00665	.00032	-.00083	-.00077	-.00008	-.01455	-.00017
#3	-.00087	.01960	.00006	.00144	.00099	-.00027	.10958	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**-.00025**	**.00229**	**.01454**	**.10361**	**-.00161**	**-.00074**	**.00159**
Stddev	.00020	.00099	.00086	.02039	.12854	.00327	.04972	.00150
%RSD	270.27	392.29	37.466	140.25	124.05	203.19	6704.2	94.513
#1	-.00016	-.00139	.00199	-.00883	.15515	.00182	-.05789	.00331
#2	.00020	.00021	.00326	.02371	.19839	-.00196	.02308	.00082
#3	.00019	.00042	.00163	.02874	-.04269	-.00469	.03259	.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.08993**	**.00021**	**-.00044**	**.00171**	**.00115**	**-.00478**	**-.01618**
Stddev	.00021	.02749	.00122	.00310	.00251	.00690	.00614	.00197
%RSD	158.62	30.569	571.20	708.88	146.77	601.02	128.46	12.198
#1	.00007	.10546	-.00067	.00234	-.00022	.00773	-.00669	-.01496
#2	.00036	.10614	-.00029	.00012	.00081	.00175	.00209	-.01845
#3	-.00004	.05819	.00160	-.00377	.00454	-.00604	-.00974	-.01512
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: F BLANK Acquired: 6/23/2016 22:46:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573353-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.00000	-.00849	-.00355	.00002	.00375	.18786
Stddev	.00024	.00006	.00318	.00112	.00121	.00009	.14076
%RSD	171.57	4326.9	37.397	31.641	7603.4	2.4757	74.927
#1	.00012	.00006	-.01213	-.00271	-.00043	.00385	.34927
#2	.00039	-.00000	-.00626	-.00312	-.00090	.00367	.12376
#3	-.00009	-.00006	-.00708	-.00483	.00138	.00373	.09057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6645.1	41415.	2118.1
Stddev	51.0	148.	9.8
%RSD	.76790	.35755	.46386
#1	6671.8	41525.	2108.0
#2	6677.3	41246.	2127.6
#3	6586.3	41473.	2118.7

Sample Name: L1606097401 Acquired: 6/23/2016 22:50:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573562-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00187	.11141	.00185	.13976	.13124	.00006	11.923	.00025
Stddev	.00099	.00961	.00433	.00304	.00120	.00013	.085	.00026
%RSD	52.908	8.6272	234.23	2.1718	.91402	206.81	.71186	103.09
#1	-.00300	.11755	.00322	.14250	.13178	.00021	12.021	.00001
#2	-.00137	.11635	-.00300	.14028	.13207	-.00003	11.884	.00021
#3	-.00123	.10033	.00533	.13649	.12986	.00001	11.865	.00052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00325	.00082	.00243	1.0194	3.4016	.00412	14.829	.47953
Stddev	.00065	.00120	.00106	.0300	.0185	.00138	.053	.00284
%RSD	19.954	146.37	43.821	2.9431	.54459	33.491	.35710	.59200
#1	.00322	-.00007	.00334	.98836	3.3804	.00531	14.788	.47741
#2	.00262	.00219	.00268	1.0217	3.4096	.00444	14.889	.48276
#3	.00391	.00035	.00126	1.0482	3.4148	.00261	14.810	.47842
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	14.029	.00345	-.00115	.00096	.00344	.00640	6.1973
Stddev	.00012	.046	.00111	.00836	.00159	.00074	.00619	.0079
%RSD	73.635	.32793	32.058	726.14	165.09	21.404	96.675	.12766
#1	-.00003	14.048	.00367	-.00743	.00071	.00392	.01206	6.2055
#2	-.00020	14.062	.00443	-.00436	-.00049	.00379	-.00020	6.1968
#3	-.00025	13.976	.00225	.00834	.00266	.00259	.00734	6.1897
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606097401 Acquired: 6/23/2016 22:50:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573562-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.15663	-.00490	-.00350	-.00004	.00381	.27764
Stddev	.00040	.00118	.00403	.00013	.00036	.00005	.25173
%RSD	389.62	.75413	82.244	3.6390	976.32	1.2951	90.667
#1	-.00036	.15760	-.00950	-.00338	-.00044	.00385	.40246
#2	.00031	.15698	-.00318	-.00349	.00013	.00382	.44257
#3	.00036	.15532	-.00201	-.00363	.00021	.00375	-.01211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6619.1	40945.	2109.7
Stddev	10.2	451.	19.0
%RSD	.15337	1.1019	.89902
#1	6615.2	40453.	2097.8
#2	6611.5	41044.	2131.5
#3	6630.6	41339.	2099.6

Sample Name: L1606097409S Acquired: 6/23/2016 22:54:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573562-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20627	5.0015	.19707	1.0840	.63830	.02511	15.216	.02489
Stddev	.00439	.0470	.00646	.0138	.00496	.00023	.159	.00037
%RSD	2.1297	.93911	3.2784	1.2764	.77719	.91601	1.0457	1.4914
#1	.20993	5.0515	.18974	1.0963	.64340	.02535	15.397	.02529
#2	.20140	4.9583	.19954	1.0690	.63801	.02510	15.151	.02456
#3	.20748	4.9946	.20193	1.0866	.63349	.02489	15.099	.02483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10388	.25321	.25314	2.5849	28.688	.52179	17.865	.68847
Stddev	.00035	.00232	.00112	.0115	.394	.00543	.201	.00731
%RSD	.33918	.91513	.44229	.44279	1.3724	1.0405	1.1266	1.0613
#1	.10359	.25588	.25333	2.5862	29.131	.52794	18.088	.69576
#2	.10427	.25175	.25416	2.5957	28.557	.51978	17.697	.68851
#3	.10377	.25199	.25194	2.5729	28.377	.51766	17.810	.68114
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51876	38.405	.25390	4.8710	.24934	.59995	.18589	8.2835
Stddev	.00146	.259	.00011	.0108	.00345	.00191	.00207	.0089
%RSD	.28048	.67387	.04392	.22193	1.3854	.31868	1.1116	.10799
#1	.51718	38.681	.25401	4.8591	.24740	.60185	.18570	8.2732
#2	.51906	38.367	.25379	4.8738	.25333	.59803	.18393	8.2891
#3	.52005	38.168	.25392	4.8802	.24730	.59997	.18804	8.2882
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606097409S Acquired: 6/23/2016 22:54:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573562-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50349	.65950	.51762	.24758	.50743	.50246	.81618
Stddev	.00174	.00452	.01522	.00062	.00357	.00056	.23521
%RSD	.34477	.68510	2.9397	.25174	.70344	.11237	28.818
#1	.50344	.66471	.52198	.24830	.51109	.50181	.58167
#2	.50178	.65703	.53018	.24729	.50396	.50287	.81481
#3	.50525	.65675	.50070	.24716	.50723	.50268	1.0521
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6571.1	40649.	2099.3
Stddev	19.5	291.	11.1
%RSD	.29604	.71659	.53063
#1	6548.6	40317.	2086.9
#2	6582.6	40767.	2102.9
#3	6582.0	40862.	2108.3

Sample Name: L1606097411SD Acquired: 6/23/2016 22:58:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573562-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20301	5.0935	.20254	1.1135	.64720	.02513	17.005	.02529
Stddev	.00131	.0093	.00255	.0073	.00193	.00014	.125	.00014
%RSD	.64434	.18208	1.2591	.65223	.29801	.54856	.73583	.55871
#1	.20180	5.0830	.20062	1.1056	.64841	.02524	16.944	.02527
#2	.20284	5.0968	.20544	1.1153	.64821	.02498	17.149	.02543
#3	.20440	5.1006	.20156	1.1198	.64498	.02518	16.923	.02515
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10473	.25680	.25656	3.0216	28.787	.52889	19.740	.73225
Stddev	.00029	.00169	.00156	.0240	.291	.00510	.166	.00214
%RSD	.27243	.65998	.60790	.79299	1.0111	.96496	.83971	.29254
#1	.10453	.25746	.25836	3.0492	28.796	.52755	19.834	.73428
#2	.10462	.25806	.25556	3.0077	29.074	.53453	19.837	.73246
#3	.10506	.25487	.25576	3.0078	28.492	.52458	19.548	.73001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52618	39.581	.25576	4.8994	.25448	.60988	.19462	8.7250
Stddev	.00060	.184	.00118	.0146	.00431	.00152	.00488	.0127
%RSD	.11470	.46575	.46133	.29829	1.6939	.24983	2.5089	.14588
#1	.52623	39.585	.25707	4.8974	.25909	.60949	.19392	8.7122
#2	.52676	39.763	.25543	4.9148	.25381	.60859	.19982	8.7250
#3	.52555	39.395	.25478	4.8858	.25055	.61156	.19013	8.7376
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606097411SD Acquired: 6/23/2016 22:58:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573562-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50655	.68066	.51426	.25122	.50847	.50678	.50917
Stddev	.00036	.00376	.00731	.00121	.00054	.00037	.18705
%RSD	.07012	.55173	1.4206	.48320	.10539	.07293	36.736
#1	.50668	.67977	.51313	.25144	.50835	.50698	.47043
#2	.50615	.68478	.52206	.25231	.50800	.50700	.34452
#3	.50682	.67742	.50758	.24991	.50905	.50635	.71255
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6599.6	40879.	2125.2
Stddev	36.5	163.	36.7
%RSD	.55319	.39917	1.7271
#1	6558.7	40764.	2124.1
#2	6628.9	40808.	2089.1
#3	6611.1	41066.	2162.5

Sample Name: L1606090301 Acquired: 6/23/2016 23:01:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00171	.01564	.00294	.01850	.00898	-.00004	46.441	.00022
Stddev	.00082	.01258	.00166	.00390	.00087	.00003	.145	.00037
%RSD	47.964	80.448	56.393	21.081	9.6500	63.411	.31216	167.83
#1	.00264	.02660	.00383	.02298	.00987	-.00008	46.595	-.00020
#2	.00144	.01843	.00103	.01664	.00813	-.00002	46.423	.00039
#3	.00106	.00190	.00395	.01587	.00895	-.00004	46.307	.00049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	.00043	.00251	.04392	.36940	-.00187	6.4848	.00401
Stddev	.00055	.00082	.00124	.02745	.02893	.00702	.0718	.00293
%RSD	143.61	190.56	49.243	62.491	7.8320	374.64	1.1071	73.244
#1	.00082	-.00015	.00183	.02878	.35514	-.00147	6.5673	.00719
#2	.00055	.00137	.00394	.07561	.35036	.00493	6.4364	.00342
#3	-.00023	.00007	.00177	.02738	.40269	-.00908	6.4507	.00141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00124	2.3912	.00015	-.00111	.00175	-.00069	-.00611	2.4464
Stddev	.00019	.0146	.00065	.00585	.00193	.00258	.00753	.0043
%RSD	15.055	.61183	443.31	524.60	110.31	375.66	123.28	.17481
#1	.00123	2.3744	.00089	-.00577	.00397	.00193	-.00911	2.4476
#2	.00106	2.4012	-.00016	.00545	.00055	-.00077	.00246	2.4417
#3	.00143	2.3980	-.00029	-.00303	.00072	-.00322	-.01167	2.4500
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606090301 Acquired: 6/23/2016 23:01:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.05094	-.00942	-.00137	.00033	.00855	.12749
Stddev	.00120	.00036	.00450	.00125	.00064	.00008	.22777
%RSD	359.04	.70893	47.793	91.344	191.76	.98957	178.66
#1	-.00095	.05113	-.01374	-.00053	.00015	.00845	.36891
#2	.00142	.05116	-.00475	-.00281	-.00019	.00858	.09713
#3	.00053	.05052	-.00978	-.00077	.00105	.00861	-.08358
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6624.9	41305.	2113.7
Stddev	28.0	611.	12.8
%RSD	.42196	1.4799	.60649
#1	6599.0	41779.	2107.8
#2	6654.5	40615.	2128.4
#3	6621.1	41521.	2104.9

Sample Name: L1606090301PS Acquired: 6/23/2016 23:05:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573749-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20315	5.0351	.19933	.98509	.51723	.02533	46.108	.02517
Stddev	.00237	.0141	.00064	.00471	.00225	.00014	.292	.00010
%RSD	1.1667	.28092	.32345	.47796	.43513	.56006	.63289	.38937
#1	.20113	5.0207	.19918	.98035	.51851	.02535	46.344	.02507
#2	.20576	5.0490	.19878	.98516	.51463	.02547	45.781	.02527
#3	.20255	5.0357	.20004	.98977	.51856	.02518	46.198	.02516
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10028	.25408	.25247	2.0837	25.422	.52185	10.797	.26020
Stddev	.00048	.00013	.00281	.0115	.145	.00302	.049	.00165
%RSD	.47862	.05151	1.1142	.55075	.56995	.57813	.44947	.63512
#1	.10024	.25422	.24943	2.0968	25.589	.52416	10.827	.25832
#2	.10077	.25406	.25499	2.0788	25.328	.51844	10.822	.26141
#3	.09982	.25396	.25300	2.0754	25.349	.52296	10.741	.26088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52036	27.383	.25017	4.9546	.25694	.60707	.19089	4.8076
Stddev	.00073	.158	.00061	.0081	.00347	.00719	.00485	.0007
%RSD	.13971	.57670	.24497	.16395	1.3493	1.1850	2.5386	.01435
#1	.52119	27.447	.24958	4.9632	.25410	.61287	.18545	4.8079
#2	.51984	27.204	.25012	4.9471	.25592	.60931	.19246	4.8068
#3	.52004	27.500	.25080	4.9535	.26081	.59902	.19476	4.8080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606090301PS Acquired: 6/23/2016 23:05:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573749-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50644	.56158	.50038	.25206	.50977	.50584	.50366
Stddev	.00169	.00120	.00839	.00343	.00237	.00060	.30226
%RSD	.33432	.21309	1.6764	1.3594	.46441	.11817	60.013
#1	.50760	.56240	.50354	.25552	.50926	.50626	.73300
#2	.50722	.56020	.49087	.24866	.51235	.50516	.61683
#3	.50450	.56212	.50672	.25200	.50770	.50611	.16114
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6634.2	40772.	2114.5
Stddev	22.4	92.	10.2
%RSD	.33771	.22603	.48307
#1	6611.3	40856.	2104.9
#2	6656.0	40786.	2113.4
#3	6635.2	40673.	2125.2

Sample Name: L1606090301SDL Acquired: 6/23/2016 23:09:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573749-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00125**	**-.00211**	**.00104**	**.00614**	**.00089**	**-.00005**	**8.6724**	**-.00005**
Stddev	.00276	.00609	.00315	.00512	.00101	.00009	.0375	.00023
%RSD	221.14	289.17	302.21	83.373	113.85	164.72	.43247	430.30
#1	.00165	-.00654	-.00255	.00543	.00189	-.00005	8.6376	.00022
#2	.00379	.00484	.00330	.01158	.00093	-.00014	8.6675	-.00019
#3	-.00169	-.00462	.00238	.00141	-.00014	.00003	8.7121	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**-.00015**	**.00151**	**.01774**	**.05719**	**-.00032**	**1.2928**	**.00199**
Stddev	.00032	.00036	.00174	.01658	.07315	.00592	.1368	.00072
%RSD	433.89	237.55	115.25	93.432	127.89	1849.8	10.583	36.311
#1	-.00025	-.00023	.00291	.03261	.10693	.00122	1.1631	.00203
#2	.00038	-.00046	-.00044	-.00013	-.02679	.00468	1.4358	.00125
#3	.00008	.00024	.00207	.02075	.09145	-.00685	1.2797	.00269
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00062**	**.50288**	**.00020**	**.00422**	**-.00347**	**-.00009**	**-.00488**	**.45851**
Stddev	.00015	.01796	.00107	.00310	.00056	.00216	.00737	.00307
%RSD	24.656	3.5717	530.84	73.548	16.155	2299.3	151.12	.67016
#1	.00074	.48937	-.00102	.00065	-.00411	-.00250	-.01008	.45511
#2	.00045	.49600	.00097	.00624	-.00312	.00057	.00356	.46107
#3	.00067	.52326	.00066	.00577	-.00317	.00165	-.00811	.45936
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606090301SDL Acquired: 6/23/2016 23:09:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573749-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00043**	**.00975**	**-.00339**	**.00072**	**-.00071**	**.00182**	**.28982**
Stddev	.00076	.00047	.00412	.00137	.00059	.00016	.40983
%RSD	176.59	4.8404	121.60	190.63	83.639	8.7152	141.41
#1	.00038	.00960	.00073	.00044	-.00028	.00190	.42557
#2	-.00111	.01028	-.00752	.00221	-.00047	.00164	.61455
#3	-.00055	.00937	-.00339	-.00049	-.00139	.00193	-.17066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6811.4**	**42010.**	**2145.9**
Stddev	35.6	211.	19.5
%RSD	.52290	.50301	.90902
#1	6804.9	42193.	2150.1
#2	6779.4	42057.	2163.0
#3	6849.8	41779.	2124.7

Sample Name: CCV Acquired: 6/23/2016 23:13:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41326**	**10.290**	**.40933**	**.51318**	**1.0406**	**.05196**	**10.449**
Stddev	.00367	.031	.00303	.00454	.0017	.00056	.073
%RSD	.88729	.29649	.74071	.88463	.16560	1.0752	.70056
#1	.41222	10.266	.40583	.51598	1.0426	.05202	10.433
#2	.41023	10.281	.41097	.50794	1.0395	.05138	10.384
#3	.41734	10.325	.41118	.51561	1.0396	.05249	10.528
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05188**	**.20751**	**.51860**	**.52298**	**4.1404**	**51.810**	**1.0557**
Stddev	.00032	.00026	.00373	.00169	.0293	.081	.0044
%RSD	.62111	.12412	.72010	.32358	.70759	.15585	.41608
#1	.05162	.20739	.51967	.52267	4.1341	51.858	1.0535
#2	.05178	.20781	.51444	.52146	4.1148	51.717	1.0529
#3	.05224	.20734	.52168	.52480	4.1724	51.855	1.0608
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.434**	**.52450**	**1.0396**	**51.672**	**.51702**	**10.257**	**.51943**
Stddev	.147	.00403	.0017	.210	.00153	.061	.00236
%RSD	1.4125	.76876	.16574	.40642	.29546	.59705	.45451
#1	10.599	.52887	1.0415	51.851	.51530	10.207	.52009
#2	10.315	.52369	1.0381	51.441	.51819	10.240	.51680
#3	10.387	.52093	1.0392	51.724	.51759	10.325	.52138
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: CCV Acquired: 6/23/2016 23:13:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2432**	**.40702**	**5.1978**	**1.0337**	**1.0394**	**1.0354**	**.52041**
Stddev	.0039	.00046	.0143	.0031	.0042	.0035	.00214
%RSD	.31258	.11246	.27417	.30049	.40463	.33586	.41209
#1	1.2391	.40753	5.1883	1.0302	1.0436	1.0350	.52283
#2	1.2437	.40689	5.1909	1.0348	1.0352	1.0322	.51875
#3	1.2468	.40665	5.2142	1.0361	1.0396	1.0391	.51965
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0351**	**1.0403**	F **.25266**
Stddev	.0070	.0016	.10822
%RSD	.68141	.15403	42.834
#1	1.0383	1.0386	.34911
#2	1.0270	1.0404	.13562
#3	1.0400	1.0418	.27323
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6474.0**	**39804.**	**2056.5**
Stddev	41.9	151.	9.5
%RSD	.64647	.37833	.46144
#1	6447.9	39827.	2053.8
#2	6522.3	39942.	2048.6
#3	6451.9	39644.	2067.0

Sample Name: CCB Acquired: 6/23/2016 23:17:05 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00053**	**.01688**	**.00315**	**.00457**	**-.00011**	**.00013**	**.01891**	**.00020**
Stddev	.00350	.01032	.00748	.00212	.00110	.00006	.06314	.00005
%RSD	664.12	61.108	237.21	46.535	973.24	44.359	333.92	24.066
#1	-.00268	.02858	-.00372	.00470	.00043	.00018	.03807	.00024
#2	-.00001	.00908	.00206	.00662	.00061	.00007	-.05159	.00021
#3	.00427	.01299	.01112	.00238	-.00138	.00016	.07025	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**.00073**	**.00146**	**.01871**	**.09919**	**.00074**	**.03193**	**.00172**
Stddev	.00032	.00177	.00126	.01232	.12450	.00566	.07256	.00242
%RSD	651.38	241.69	86.427	65.838	125.51	769.76	227.22	140.80
#1	.00042	-.00122	.00034	.00498	-.03300	-.00467	.10382	.00139
#2	-.00019	.00221	.00282	.02879	.11637	.00026	-.04127	-.00052
#3	-.00008	.00121	.00121	.02235	.21421	.00662	.03325	.00429
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00396**	**.05479**	**-.00105**	**.00648**	**-.00101**	**.00564**	**-.00498**	**.00630**
Stddev	.00092	.03837	.00180	.00453	.00307	.00402	.00631	.00043
%RSD	23.350	70.024	171.44	69.981	304.27	71.194	126.78	6.8811
#1	.00290	.07487	.00083	.01030	.00189	.00526	-.01221	.00676
#2	.00456	.01055	-.00276	.00766	-.00422	.00984	-.00057	.00622
#3	.00443	.07894	-.00122	.00147	-.00069	.00183	-.00216	.00591
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB Acquired: 6/23/2016 23:17:05 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	-.00002	.00408	-.00193	.00037	.00005	.02228
Stddev	.00023	.00019	.00879	.00186	.00041	.00007	.40623
%RSD	41.382	1063.2	215.26	96.532	110.70	135.03	1823.1
#1	.00069	-.00023	-.00341	-.00071	-.00006	-.00002	-.40274
#2	.00029	.00004	.01375	-.00101	.00043	.00013	.06292
#3	.00066	.00013	.00190	-.00407	.00076	.00005	.40667
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6464.5	39816.	2046.0
Stddev	26.9	481.	41.8
%RSD	.41677	1.2077	2.0425
#1	6458.5	39261.	2010.7
#2	6441.1	40106.	2035.2
#3	6493.9	40080.	2092.2

Sample Name: L1606090302 Acquired: 6/23/2016 23:21:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00800	.00182	.01230	.01036	-.00005	47.673	.00026
Stddev	.00085	.00343	.00363	.00358	.00124	.00007	.280	.00015
%RSD	272.61	42.881	200.18	29.113	11.960	128.20	.58740	57.099
#1	.00031	.00879	-.00237	.00886	.01157	-.00001	47.890	.00037
#2	-.00053	.01096	.00415	.01601	.00909	-.00001	47.772	.00032
#3	.00116	.00424	.00367	.01205	.01042	-.00013	47.357	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	.00015	.00261	.09179	.46952	-.00272	6.7874	.01530
Stddev	.00029	.00088	.00094	.00788	.11796	.00383	.0475	.00163
%RSD	527.39	592.21	36.175	8.5807	25.123	140.65	.69987	10.685
#1	-.00038	.00116	.00159	.08468	.47413	-.00254	6.7436	.01564
#2	.00012	-.00040	.00278	.09044	.34932	.00101	6.7806	.01352
#3	.00010	-.00032	.00345	.10026	.58509	-.00664	6.8379	.01673
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00092	2.5218	-.00025	.00306	.00002	-.00071	-.00373	2.5222
Stddev	.00063	.0302	.00136	.00470	.00238	.00277	.00475	.0109
%RSD	68.779	1.1957	538.26	153.23	11843.	388.81	127.31	.43311
#1	.00032	2.5566	.00100	-.00086	.00039	.00133	.00175	2.5345
#2	.00086	2.5031	-.00169	.00178	.00219	.00040	-.00620	2.5136
#3	.00157	2.5056	-.00007	.00827	-.00252	-.00386	-.00675	2.5186
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606090302 Acquired: 6/23/2016 23:21:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**.05280**	**-.00935**	**-.00377**	**-.00005**	**.00235**	**.11164**
Stddev	.00108	.00027	.00453	.00048	.00146	.00015	.26019
%RSD	392.25	.51917	48.460	12.830	2892.9	6.5370	233.05
#1	-.00049	.05310	-.00574	-.00424	.00086	.00248	.33955
#2	.00090	.05256	-.01444	-.00328	.00072	.00218	-.17184
#3	-.00123	.05274	-.00787	-.00379	-.00173	.00238	.16722
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6545.6**	**41303.**	**2131.1**
Stddev	23.7	132.	13.6
%RSD	.36137	.32048	.63580
#1	6530.1	41250.	2117.0
#2	6572.8	41206.	2132.3
#3	6534.0	41454.	2144.0

Sample Name: L1606090303 Acquired: 6/23/2016 23:25:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00263	.00774	.00563	.00796	.00854	-.00002	45.954	.00013
Stddev	.00328	.00668	.00265	.00318	.00150	.00012	.228	.00034
%RSD	124.84	86.299	47.034	39.934	17.503	682.86	.49687	267.94
#1	.00506	.01059	.00367	.00860	.00804	-.00005	45.886	.00049
#2	-.00111	.01253	.00457	.01077	.01022	.00012	46.208	.00008
#3	.00394	.00011	.00864	.00451	.00737	-.00012	45.767	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	-.00004	.00264	.21996	.44485	.00448	6.7971	.02189
Stddev	.00017	.00063	.00127	.02132	.06435	.00051	.0747	.00331
%RSD	77.701	1729.3	48.231	9.6943	14.465	11.277	1.0984	15.131
#1	.00007	.00062	.00404	.23944	.50211	.00394	6.7547	.01807
#2	.00019	-.00009	.00157	.19718	.45723	.00494	6.8833	.02378
#3	.00041	-.00064	.00230	.22325	.37521	.00457	6.7534	.02384
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00090	2.4891	-.00031	.00226	-.00318	.00121	-.00101	2.4462
Stddev	.00023	.0385	.00053	.00868	.00252	.00105	.00896	.0110
%RSD	25.268	1.5452	169.73	384.84	79.079	87.283	885.01	.44916
#1	.00089	2.4503	-.00059	-.00015	-.00309	-.00001	-.00785	2.4500
#2	.00067	2.4900	.00030	.01188	-.00575	.00184	-.00433	2.4549
#3	.00113	2.5272	-.00064	-.00497	-.00072	.00180	.00914	2.4339
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606090303 Acquired: 6/23/2016 23:25:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.05042	-.00867	-.00405	-.00058	.00293	.21469
Stddev	.00068	.00039	.00321	.00395	.00086	.00012	.24147
%RSD	116.53	.76868	37.044	97.556	147.98	4.1433	112.48
#1	.00096	.05045	-.00617	-.00495	-.00048	.00287	.22391
#2	.00100	.05080	-.01229	-.00746	-.00148	.00307	.45141
#3	-.00020	.05002	-.00756	.00027	.00022	.00286	-.03127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6557.1	40614.	2090.8
Stddev	3.1	286.	4.7
%RSD	.04661	.70434	.22607
#1	6559.9	40616.	2093.3
#2	6553.9	40327.	2085.3
#3	6557.7	40899.	2093.7

Sample Name: L1606090304 Acquired: 6/23/2016 23:28:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00249**	**.01012**	**.00464**	**.01066**	**.00806**	**-.00002**	**46.697**	**.00023**
Stddev	.00091	.01191	.00138	.00192	.00037	.00002	.216	.00013
%RSD	36.530	117.71	29.729	17.988	4.5683	108.87	.46335	55.814
#1	.00283	-.00243	.00466	.01137	.00780	-.00002	46.940	.00033
#2	.00319	.01152	.00601	.00849	.00791	.00000	46.527	.00026
#3	.00146	.02127	.00325	.01212	.00849	-.00003	46.623	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00033**	**.00062**	**.00100**	**.51001**	**.64738**	**.00217**	**6.6353**	**.05303**
Stddev	.00037	.00064	.00122	.03061	.09484	.00222	.1713	.00028
%RSD	109.48	103.02	122.22	6.0022	14.650	102.21	2.5823	.52039
#1	-.00001	.00028	.00000	.50309	.73158	.00219	6.5308	.05285
#2	-.00026	.00023	.00063	.48345	.66592	.00439	6.8331	.05291
#3	-.00073	.00136	.00236	.54349	.54463	-.00006	6.5421	.05335
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00050**	**2.5222**	**.00010**	**.00174**	**.00050**	**.00128**	**-.00532**	**2.7225**
Stddev	.00078	.0513	.00045	.01103	.00453	.00439	.00901	.0008
%RSD	156.95	2.0349	434.03	634.47	913.70	343.72	169.31	.03118
#1	-.00033	2.5754	.00043	-.00461	.00243	-.00315	-.01182	2.7217
#2	.00121	2.4730	-.00041	.01448	.00374	.00135	-.00910	2.7234
#3	.00061	2.5183	.00029	-.00465	-.00468	.00562	.00496	2.7225
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606090304 Acquired: 6/23/2016 23:28:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00081**	**.04960**	**-.00329**	**-.00196**	**-.00058**	**.00257**	**.19345**
Stddev	.00125	.00047	.00925	.00100	.00022	.00015	.14173
%RSD	153.83	.94383	281.36	50.890	37.305	5.7376	73.263
#1	-.00194	.04918	-.00253	-.00307	-.00034	.00241	.33632
#2	.00053	.04951	.00556	-.00167	-.00074	.00270	.19114
#3	-.00102	.05011	-.01289	-.00114	-.00067	.00259	.05289
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6594.2**	**40470.**	**2074.5**
Stddev	30.7	142.	46.3
%RSD	.46503	.35187	2.2319
#1	6626.4	40634.	2027.0
#2	6565.3	40392.	2077.0
#3	6590.8	40384.	2119.5

Sample Name: L1606090305 Acquired: 6/23/2016 23:32:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00213	.01717	-.00084	.01089	.00981	.00002	48.923	.00033
Stddev	.00269	.00400	.00320	.00082	.00051	.00009	.164	.00010
%RSD	126.20	23.278	380.73	7.5221	5.1474	403.64	.33444	29.068
#1	-.00080	.01450	.00248	.01170	.01029	.00012	49.107	.00031
#2	.00271	.02176	-.00390	.01090	.00928	.00001	48.795	.00044
#3	.00448	.01524	-.00110	.01007	.00986	-.00006	48.866	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	-.00068	.00177	1.5788	.44150	.00018	6.7726	.08864
Stddev	.00038	.00111	.00108	.0172	.06024	.00100	.1054	.00177
%RSD	191.06	162.17	60.718	1.0921	13.644	545.86	1.5565	1.9982
#1	-.00014	-.00131	.00085	1.5835	.49954	.00095	6.8808	.08930
#2	.00013	.00060	.00296	1.5597	.37928	.00054	6.7668	.08663
#3	.00060	-.00134	.00152	1.5932	.44569	-.00095	6.6702	.08998
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	2.4907	.00039	.00113	.00257	.00234	-.00366	3.0530
Stddev	.00062	.0095	.00077	.00213	.00167	.00385	.01135	.0045
%RSD	175.61	.38135	200.05	188.45	64.988	164.32	310.04	.14641
#1	-.00035	2.4923	-.00007	.00130	.00338	.00574	-.00469	3.0528
#2	.00078	2.4993	.00128	-.00108	.00370	-.00184	-.01446	3.0486
#3	.00062	2.4805	-.00005	.00317	.00065	.00313	.00817	3.0576
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606090305 Acquired: 6/23/2016 23:32:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00063**	**.05089**	**-.00933**	**-.00366**	**-.00080**	**.01192**	**.09534**
Stddev	.00059	.00042	.00867	.00169	.00053	.00018	.35498
%RSD	93.514	.82669	92.914	46.068	66.583	1.5108	372.34
#1	-.00036	.05120	-.01547	-.00172	-.00063	.01174	-.06523
#2	-.00022	.05105	.00059	-.00451	-.00139	.01210	.50224
#3	-.00130	.05041	-.01311	-.00475	-.00037	.01192	-.15099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6602.9**	**40942.**	**2135.9**
Stddev	6.9	324.	25.7
%RSD	.10425	.79054	1.2024
#1	6597.6	40623.	2114.4
#2	6610.7	41270.	2164.3
#3	6600.5	40933.	2129.0

Sample Name: L1606092401 Acquired: 6/23/2016 23:36:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00265	.03744	.60307	2.0253	.01194	.00006	59.280
Stddev	.00277	.00788	.00343	.0045	.00047	.00007	.270
%RSD	104.56	21.060	.56883	.22109	3.9165	122.30	.45465
#1	.00477	.04143	.60414	2.0202	.01227	.00013	59.521
#2	-.00048	.02835	.59924	2.0278	.01216	-.00002	58.989
#3	.00365	.04252	.60585	2.0280	.01141	.00007	59.330
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.00169	.04543	.00223	.02086	20.304	.12271
Stddev	.00012	.00069	.00181	.00172	.03477	.327	.00387
%RSD	33.446	40.936	3.9734	76.929	166.67	1.6108	3.1576
#1	.00045	.00112	.04573	.00336	.05783	20.550	.12442
#2	.00044	.00245	.04349	.00026	.01592	20.429	.12545
#3	.00023	.00148	.04706	.00308	-.01117	19.933	.11828
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.44128	.00138	.09389	F 925.96	-.00083	.00321	-.00198
Stddev	.02883	.00107	.00073	20.38	.00037	.00049	.00073
%RSD	6.5329	77.799	.77502	2.2006	45.088	15.416	37.027
#1	.47443	.00015	.09321	948.64	-.00126	.00268	-.00137
#2	.42732	.00186	.09382	909.19	-.00057	.00328	-.00178
#3	.42208	.00212	.09466	920.06	-.00066	.00367	-.00280
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Sample Name: L1606092401 Acquired: 6/23/2016 23:36:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02428**	**.03016**	**5.4351**	**-.00127**	**.13763**	**-.01760**	**-.00342**
Stddev	.00750	.01129	.0055	.00172	.00098	.00201	.00308
%RSD	30.891	37.425	.10042	135.11	.71182	11.421	90.086
#1	.02439	.02726	5.4392	.00004	.13847	-.01734	-.00405
#2	.03173	.04262	5.4371	-.00064	.13656	-.01973	-.00008
#3	.01673	.02061	5.4289	-.00322	.13787	-.01573	-.00615
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00453**	**.02225**	F **-.12201**
Stddev	.00050	.00015	.18874
%RSD	11.054	.67831	154.69
#1	.00443	.02208	-.21896
#2	.00408	.02238	-.24258
#3	.00507	.02228	.09550
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6296.4**	**38355.**	**2086.6**
Stddev	9.5	124.	22.4
%RSD	.15057	.32201	1.0746
#1	6287.1	38290.	2062.1
#2	6296.1	38498.	2106.2
#3	6306.0	38278.	2091.5

Sample Name: DI7 Acquired: 6/23/2016 23:40:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00122	-.00305	.00325	.01342	.00511	-.00003	.63457	.00006
Stddev	.00070	.00725	.00183	.00147	.00092	.00006	.03174	.00026
%RSD	57.204	237.69	56.132	10.964	18.001	169.74	5.0023	454.53
#1	.00129	-.01124	.00390	.01220	.00527	-.00006	.66854	.00019
#2	.00049	.00254	.00119	.01301	.00412	-.00007	.60566	-.00024
#3	.00189	-.00045	.00467	.01505	.00594	.00003	.62951	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	-.00105	.00137	.04887	.17552	-.00411	.67989	.02289
Stddev	.00029	.00066	.00135	.03758	.14542	.00295	.10949	.00017
%RSD	86.943	62.496	98.260	76.910	82.851	71.791	16.104	.73432
#1	.00007	-.00034	.00163	.08822	.25845	-.00273	.72653	.02297
#2	.00065	-.00118	.00257	.01334	.00761	-.00210	.75834	.02270
#3	.00029	-.00164	-.00009	.04504	.26051	-.00749	.55480	.02300
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00034	.88120	.00036	.00359	-.00382	-.00015	.00024	.27765
Stddev	.00027	.03865	.00120	.00516	.00377	.00137	.00372	.00507
%RSD	80.796	4.3866	328.28	143.80	98.655	910.66	1547.5	1.8265
#1	-.00036	.92576	.00056	.00038	-.00770	-.00061	-.00359	.27282
#2	-.00006	.85668	-.00092	.00954	-.00358	.00139	.00047	.27719
#3	-.00060	.86116	.00145	.00084	-.00017	-.00123	.00384	.28294
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: DI7 Acquired: 6/23/2016 23:40:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.00711**	**-.00708**	**-.00329**	**-.00065**	**.00225**	**.10588**
Stddev	.00142	.00039	.01416	.00145	.00012	.00019	.39638
%RSD	991.52	5.5260	199.93	44.028	18.378	8.2791	374.37
#1	-.00086	.00703	-.01555	-.00371	-.00072	.00228	.22011
#2	.00150	.00677	.00926	-.00449	-.00071	.00242	-.33508
#3	-.00107	.00754	-.01496	-.00168	-.00051	.00205	.43261
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6937.5**	**42404.**	**2145.0**
Stddev	31.4	540.	24.8
%RSD	.45241	1.2743	1.1557
#1	6923.1	42362.	2162.5
#2	6915.9	42964.	2155.8
#3	6973.5	41886.	2116.6

Sample Name: DI8 Acquired: 6/23/2016 23:44:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01092	.24637	.01430	.05175	.02804	.00125	.70558	.00137
Stddev	.00255	.00988	.00240	.00085	.00181	.00008	.05906	.00031
%RSD	23.343	4.0097	16.798	1.6422	6.4611	6.1453	8.3704	22.665
#1	.01275	.23892	.01336	.05090	.02859	.00117	.73476	.00163
#2	.01199	.25758	.01250	.05173	.02602	.00133	.63761	.00146
#3	.00801	.24262	.01702	.05260	.02952	.00124	.74437	.00102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00507	.01122	.01287	.11447	1.4023	.02306	.83494	.03245
Stddev	.00024	.00067	.00189	.02802	.1110	.00136	.03948	.00268
%RSD	4.7987	6.0062	14.707	24.480	7.9171	5.8811	4.7291	8.2701
#1	.00493	.01046	.01351	.14674	1.4178	.02155	.80587	.03520
#2	.00493	.01147	.01074	.10042	1.2843	.02345	.81905	.03233
#3	.00535	.01173	.01436	.09625	1.5047	.02418	.87989	.02983
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02127	1.8562	.01215	.23280	.01067	.03011	.00922	.37328
Stddev	.00053	.0342	.00120	.00909	.00269	.00363	.00276	.00458
%RSD	2.4934	1.8408	9.8651	3.9061	25.214	12.073	29.987	1.2271
#1	.02172	1.8278	.01327	.24205	.00898	.03426	.00781	.37038
#2	.02141	1.8468	.01231	.22387	.01377	.02752	.01240	.37091
#3	.02069	1.8941	.01088	.23248	.00925	.02853	.00745	.37856
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: DI8 Acquired: 6/23/2016 23:44:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02095	.02967	.01993	.00726	.02346	.02475	.30772
Stddev	.00032	.00011	.00361	.00564	.00093	.00004	.15766
%RSD	1.5278	.37363	18.102	77.691	3.9489	.16512	51.234
#1	.02080	.02956	.01706	.01372	.02253	.02472	.37227
#2	.02072	.02978	.02398	.00329	.02439	.02479	.42286
#3	.02131	.02968	.01875	.00477	.02345	.02473	.12803
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6883.6	42542.	2132.1
Stddev	35.9	81.	32.8
%RSD	.52157	.19075	1.5391
#1	6873.8	42453.	2096.2
#2	6923.4	42611.	2160.5
#3	6853.7	42564.	2139.6

Sample Name: DI9 Acquired: 6/23/2016 23:48:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01172**	**.24362**	**.00993**	**.05401**	**.02815**	**.00127**	**.79730**
Stddev	.00152	.00569	.00166	.00158	.00083	.00011	.02246
%RSD	12.924	2.3335	16.753	2.9338	2.9467	8.5602	2.8175
#1	.01069	.24626	.01067	.05290	.02910	.00116	.79850
#2	.01102	.23710	.01110	.05583	.02755	.00137	.81914
#3	.01346	.24751	.00803	.05330	.02780	.00127	.77426
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00129**	**.00488**	**.01079**	**.01208**	**.12723**	**1.2786**	**.02511**
Stddev	.00009	.00006	.00031	.00168	.01475	.0943	.00185
%RSD	6.9948	1.2164	2.8343	13.930	11.594	7.3784	7.3599
#1	.00122	.00481	.01066	.01339	.14076	1.1744	.02529
#2	.00139	.00493	.01057	.01268	.11150	1.3582	.02686
#3	.00125	.00489	.01114	.01018	.12944	1.3031	.02318
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.89576**	**.03366**	**.02131**	**1.9045**	**.01104**	**.23277**	**.01075**
Stddev	.05721	.00137	.00010	.0400	.00057	.00507	.00231
%RSD	6.3863	4.0674	.47440	2.0992	5.1553	2.1800	21.454
#1	.95963	.03212	.02142	1.8638	.01067	.23321	.01329
#2	.84922	.03409	.02122	1.9059	.01170	.22750	.00878
#3	.87844	.03476	.02130	1.9437	.01076	.23762	.01018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: DI9 Acquired: 6/23/2016 23:48:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03181**	**.00568**	**.38831**	**.02056**	**.03131**	**.02182**	**.01037**
Stddev	.00137	.01144	.00136	.00010	.00017	.00825	.00275
%RSD	4.3124	201.38	.34995	.48690	.53387	37.784	26.554
#1	.03338	.01685	.38970	.02064	.03120	.02474	.00719
#2	.03087	-.00602	.38824	.02045	.03123	.02822	.01188
#3	.03117	.00622	.38698	.02060	.03150	.01252	.01204
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.02300**	**.02452**	F **-.17091**
Stddev	.00069	.00018	.04679
%RSD	2.9886	.74679	27.377
#1	.02312	.02467	-.13285
#2	.02363	.02457	-.15673
#3	.02227	.02431	-.22315
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6863.0**	**42455.**	**2140.2**
Stddev	39.9	478.	31.6
%RSD	.58151	1.1260	1.4765
#1	6898.2	41962.	2103.8
#2	6819.6	42485.	2156.2
#3	6871.2	42917.	2160.6

Sample Name: CCV Acquired: 6/23/2016 23:52:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41335	10.421	.41508	.51836	1.0496	.05256	10.492
Stddev	.00039	.045	.00377	.00553	.0024	.00034	.011
%RSD	.09500	.43207	.90936	1.0674	.22730	.64627	.10764
#1	.41368	10.369	.41539	.51316	1.0470	.05217	10.480
#2	.41292	10.443	.41116	.51776	1.0502	.05276	10.503
#3	.41347	10.451	.41869	.52417	1.0517	.05276	10.494
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05201	.20974	.52865	.52594	4.2034	52.520	1.0760
Stddev	.00016	.00127	.00164	.00103	.0566	.261	.0077
%RSD	.30575	.60470	.30961	.19638	1.3473	.49635	.71934
#1	.05219	.20874	.52729	.52653	4.2121	52.227	1.0702
#2	.05189	.20932	.52820	.52475	4.1429	52.726	1.0848
#3	.05194	.21117	.53047	.52654	4.2552	52.606	1.0729
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.516	.52754	1.0503	52.353	.52349	10.349	.52208
Stddev	.065	.00345	.0031	.035	.00255	.035	.00042
%RSD	.61612	.65474	.29626	.06645	.48722	.33829	.08130
#1	10.587	.52445	1.0535	52.313	.52122	10.327	.52177
#2	10.461	.53127	1.0472	52.379	.52299	10.332	.52191
#3	10.500	.52692	1.0503	52.366	.52625	10.390	.52256
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: CCV Acquired: 6/23/2016 23:52:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2512**	**.41632**	**5.2448**	**1.0458**	**1.0501**	**1.0483**	**.52498**
Stddev	.0079	.00080	.0298	.0049	.0030	.0126	.00266
%RSD	.62850	.19294	.56895	.46593	.28810	1.2026	.50623
#1	1.2568	.41583	5.2243	1.0406	1.0479	1.0390	.52296
#2	1.2422	.41589	5.2311	1.0465	1.0488	1.0433	.52399
#3	1.2546	.41725	5.2791	1.0503	1.0535	1.0626	.52799
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0496**	**1.0495**	F **.09970**
Stddev	.0053	.0039	.10577
%RSD	.50966	.36953	106.08
#1	1.0434	1.0481	.19784
#2	1.0529	1.0466	.11360
#3	1.0524	1.0539	-.01233
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6372.6**	**39443.**	**2025.2**
Stddev	36.3	113.	32.7
%RSD	.56912	.28682	1.6135
#1	6379.4	39570.	1991.0
#2	6404.9	39404.	2028.4
#3	6333.4	39354.	2056.1

Sample Name: CCB Acquired: 6/23/2016 23:56:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00038**	**.01156**	**.00056**	**.00234**	**.00056**	**.00010**	**.03716**
Stddev	.00349	.01000	.00359	.00308	.00040	.00012	.04368
%RSD	913.43	86.498	638.46	132.02	72.010	128.40	117.56
#1	.00278	.00590	.00379	.00161	.00011	-.00003	.06293
#2	.00200	.02311	.00120	.00572	.00089	.00010	-.01328
#3	-.00362	.00567	-.00330	-.00032	.00068	.00022	.06182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00024**	**.00016**	**.00067**	**.00127**	**.01578**	**.03402**	**-.00346**
Stddev	.00007	.00014	.00147	.00047	.02063	.10839	.00477
%RSD	29.479	83.436	221.45	36.697	130.75	318.63	137.81
#1	.00027	.00008	-.00033	.00181	.00506	.08712	-.00283
#2	.00029	.00009	-.00003	.00096	.00272	-.09068	-.00851
#3	.00016	.00032	.00236	.00106	.03957	.10561	.00096
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00827**	**.00236**	**.00382**	**.04976**	**.00076**	**.00558**	**-.00126**
Stddev	.03186	.00300	.00012	.02808	.00054	.00951	.00325
%RSD	385.40	127.33	3.0647	56.434	70.960	170.62	257.97
#1	-.01385	.00576	.00377	.02300	.00097	.01389	-.00238
#2	-.00614	.00008	.00395	.07899	.00015	-.00480	.00240
#3	.04479	.00123	.00373	.04728	.00116	.00763	-.00379
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: CCB Acquired: 6/23/2016 23:56:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00469**	**-.00110**	**.00540**	**-.00045**	**.00020**	**-.00579**	**-.00171**
Stddev	.00519	.00566	.00080	.00082	.00023	.00790	.00277
%RSD	110.60	514.68	14.743	182.74	110.97	136.58	162.08
#1	.00345	.00405	.00520	.00050	.00023	-.00735	-.00373
#2	.01039	-.00018	.00628	-.00094	.00042	-.01279	.00145
#3	.00024	-.00717	.00473	-.00090	-.00003	.00278	-.00284
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00035**	**.00012**	F **-.30075**
Stddev	.00143	.00011	.38164
%RSD	413.19	92.936	126.90
#1	.00023	.00022	-.11902
#2	.00071	-.00000	-.73929
#3	-.00198	.00015	-.04394
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6443.5**	**39921.**	**2022.5**
Stddev	30.3	559.	26.8
%RSD	.46979	1.3996	1.3238
#1	6467.0	40295.	2021.5
#2	6409.3	40190.	1996.3
#3	6454.1	39279.	2049.8

Sample Name: ICSA Acquired: 6/24/2016 0:00:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	s -.00181	^F *****	k .00039	s .01077	F -16.124	s .00066
Stddev	.00405	-----	.00084	.01107	27.933	.00100
%RSD	224.07	-----	217.80	102.72	173.24	151.08
#1	s .00084	s .38723	k .00033	s .00228	-48.378	s -.00024
#2	s .00021	s 13.731	k .00125	s .00675	.0154	s .00048
#3	s -.00648	^ -----	k -.00043	s .02329	-.0093	s .00173
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit		300.00			.00400	
Low Limit		200.00			-.00400	

Elem	Ca4226	Cd2288	Co2286	Cr2677	Cu2247	Fe2611
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -17.795	kF -.00145	k .00006	s .00397	kF .00900	kF 13.080
Stddev	30.964	.00234	.00025	.00687	.00196	22.623
%RSD	174.00	161.85	431.98	173.11	21.777	172.95
#1	-53.549	k -.00415	k .00030	s -.00220	k .00711	k 39.203
#2	.1724	k .00000	k .00007	s .00273	k .00885	k .00481
#3	-.0087	k -.00020	k -.00020	s .01137	k .01102	k .03331
Check ?	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Fail
High Limit	300.00	.00080			.00400	120.00
Low Limit	200.00	-.00080			-.00400	80.000

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 303.15	F 17.009	kF 144.99	kF -2.2313	k .00055	F 349.42
Stddev	524.72	29.469	251.19	3.8674	.00057	605.42
%RSD	173.09	173.26	173.25	173.32	104.51	173.26
#1	909.05	51.038	k 435.03	k -6.6970	k -.00009	1048.5
#2	.2954	-.01212	k -.0973	k .00125	k .00102	-.464
#3	.1091	.00231	k .0233	k .00181	k .00071	.231
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Fail
High Limit	.40000	.08000	300.00	.00400		.25000
Low Limit	-.40000	-.08000	200.00	-.00400		-.25000

Sample Name: ICSA Acquired: 6/24/2016 0:00:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k **.00287**	k **.00325**	kF **.01305**	k **.00093**	k **-.00095**	k **-.02524**
Stddev	.00051	.00655	.00114	.00346	.00637	.00077
%RSD	17.929	201.56	8.7344	372.00	672.86	3.0546
#1	k .00291	k .00302	k .01321	k .00198	k -.00342	k -.02442
#2	k .00336	k .00992	k .01183	k .00374	k .00629	k -.02594
#3	k .00234	k -.00319	k .01409	k -.00293	k -.00571	k -.02536
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit			.00400			
Low Limit			-.00400			

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k **-.00038**	F **-.53580**	kF **27.418**	k **.00263**	s **-.00151**	k **.00080**
Stddev	.00064	.93031	47.540	.00108	.00198	.00005
%RSD	165.52	173.63	173.39	41.177	131.41	6.5158
#1	k -.00073	-1.6100	k 82.313	k .00161	s .00053	k .00074
#2	k -.00077	.00282	k -.07422	k .00377	s -.00163	k .00084
#3	k .00035	-.00020	k .01560	k .00250	s -.00343	k .00082
Check ?	Chk Pass	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit		.00800	.02400			
Low Limit		-.00800	-.02400			

Elem	Zr3391
Units	ppm
Avg	kF **2038.2**
Stddev	3532.4
%RSD	173.31
#1	k 6117.0
#2	k -4.501
#3	k 2.059
Check ?	Chk Fail
High Limit	.02000
Low Limit	-.02000

Sample Name: ICSA Acquired: 6/24/2016 0:00:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9727.2**	^ *****	**2367.9**
Stddev	176.1	-----	3403.9
%RSD	1.8108	-----	143.75
#1	9699.2	^ -----	-.533
#2	9915.7	^ -----	835.60
#3	9566.8	^ -----	6268.6

Sample Name: ICSAB Acquired: 6/24/2016 0:04:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	sF .03510	^F *****	kF .02243	s -.00104	F -17.624	sF .01622
Stddev	.03890	-----	.00215	.00199	39.067	.01920
%RSD	110.83	-----	9.5662	190.62	221.67	118.34
#1	s .00126	s -.05314	k .01995	s -.00051	-62.399	s -.00008
#2	s .02644	^ -----	k .02376	s .00063	9.5264	s .01137
#3	s .07761	s 36.789	k .02358	s -.00324	-.0004	s .03738
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Fail	Chk Fail
High Limit	.60000	300.00	.30000		.30000	.30000
Low Limit	.40000	200.00	.20000		.20000	.20000

Elem	Ca4226	Cd2288	Co2286	Cr2677	Cu2247	Fe2611
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -41.394	kF .04368	kF .02300	sF .01591	kF .03181	kF -23.435
Stddev	80.483	.00655	.00163	.02148	.00204	29.861
%RSD	194.43	14.997	7.0968	135.04	6.3986	127.42
#1	-134.15	k .03613	k .02112	s -.00134	k .02989	k -57.047
#2	9.956	k .04777	k .02379	s .00909	k .03394	k -13.288
#3	.012	k .04715	k .02408	s .03996	k .03158	k .0307
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
High Limit	300.00	.60000	.30000	.30000	.30000	120.00
Low Limit	200.00	.40000	.20000	.20000	.20000	80.000

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 64.851	F 12.009	kF -20.121	kF 2.2589	k .00017	F 379.32
Stddev	297.64	30.686	17.446	6.5094	.00008	850.62
%RSD	458.96	255.52	86.705	288.17	49.010	224.25
#1	389.61	46.885	k -30.037	k 9.5964	k .00008	1353.6
#2	-194.93	-10.851	k -30.348	k -2.8212	k .00024	-215.77
#3	-.126	-.0058	k .0229	k .00136	k .00019	.137
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Fail
High Limit	6.0000	.10000	300.00	.30000		6.0000
Low Limit	4.0000	-.10000	200.00	.20000		4.0000

Sample Name: ICSAB Acquired: 6/24/2016 0:04:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	kF **.04829**	k **-.00766**	kF **.05850**	kF **.04638**	kF **.02738**	k **-.02638**
Stddev	.00365	.00766	.00306	.00425	.00303	.00499
%RSD	7.5565	99.904	5.2255	9.1610	11.057	18.931
#1	k .04412	k -.00318	k .05693	k .04159	k .03052	k -.02995
#2	k .05085	k -.00330	k .05656	k .04971	k .02448	k -.02852
#3	k .04991	k -.01650	k .06203	k .04783	k .02714	k -.02067
Check ?	Chk Fail	Chk Pass	Chk Fail	Chk Fail	Chk Fail	Chk Pass
High Limit	.60000		.60000	.60000	.30000	
Low Limit	.40000		.40000	.40000	.20000	

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k **-.00052**	F **.44241**	kF **29.066**	kF **.04366**	sF **.01717**	kF **.04537**
Stddev	.00035	.38366	66.439	.00317	.02029	.00340
%RSD	66.984	86.721	228.58	7.2485	118.19	7.4898
#1	k -.00035	.66466	k 105.09	k .04023	s -.00018	k .04144
#2	k -.00091	.66318	k -17.882	k .04647	s .01220	k .04733
#3	k -.00029	-.00061	k -.0063	k .04429	s .03948	k .04732
Check ?	Chk Pass	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
High Limit		.01000	.03000	.60000	.30000	.60000
Low Limit		-.01000	-.03000	.40000	.20000	.40000

Elem	Zr3391
Units	ppm
Avg	kF **4441.9**
Stddev	9705.7
%RSD	218.50
#1	k 15574.
#2	k -2248.1
#3	k .15
Check ?	Chk Fail
High Limit	.02500
Low Limit	-.02500

Sample Name: ICSAB Acquired: 6/24/2016 0:04:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9862.8	^ *****	713.41
Stddev	938.9	-----	1233.6
%RSD	9.5192	-----	172.91
#1	10665.	^ -----	-.471
#2	10093.	^ -----	2.867
#3	8830.2	^ -----	2137.8

Sample Name: CCV Acquired: 6/24/2016 0:08:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40571**	**10.252**	**.40176**	**.50352**	**1.0259**	**.05216**	**10.249**
Stddev	.00299	.036	.00436	.00116	.0046	.00015	.046
%RSD	.73722	.35335	1.0850	.22983	.44349	.28067	.44972
#1	.40902	10.294	.39676	.50219	1.0215	.05229	10.217
#2	.40321	10.228	.40475	.50401	1.0306	.05200	10.229
#3	.40489	10.234	.40377	.50434	1.0255	.05219	10.302
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05061**	**.20363**	**.51898**	**.51228**	**4.1370**	**50.997**	**1.0462**
Stddev	.00046	.00031	.00258	.00236	.0140	.262	.0028
%RSD	.90962	.15400	.49724	.46108	.33750	.51330	.27175
#1	.05077	.20360	.52152	.50960	4.1210	50.850	1.0429
#2	.05096	.20396	.51636	.51314	4.1438	51.299	1.0477
#3	.05008	.20334	.51907	.51408	4.1463	50.841	1.0479
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.348**	**.51498**	**1.0223**	**50.946**	**.51068**	**10.026**	**.51362**
Stddev	.113	.00344	.0028	.211	.00210	.018	.00135
%RSD	1.0914	.66705	.27479	.41321	.41141	.17759	.26270
#1	10.350	.51110	1.0252	50.805	.51092	10.041	.51220
#2	10.460	.51621	1.0220	51.188	.50847	10.031	.51488
#3	10.234	.51763	1.0196	50.845	.51265	10.006	.51378
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: CCV Acquired: 6/24/2016 0:08:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2074**	**.40666**	**5.0928**	**1.0152**	**1.0270**	**1.0159**	**.51326**
Stddev	.0053	.00225	.0089	.0020	.0057	.0060	.00130
%RSD	.43925	.55339	.17475	.20078	.55230	.59351	.25324
#1	1.2134	.40912	5.0829	1.0130	1.0205	1.0208	.51297
#2	1.2053	.40614	5.1001	1.0158	1.0309	1.0178	.51469
#3	1.2034	.40471	5.0956	1.0169	1.0297	1.0092	.51214
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0354**	**1.0194**	F **.15885**
Stddev	.0015	.0011	.28455
%RSD	.14387	.10553	179.12
#1	1.0371	1.0182	.48730
#2	1.0345	1.0199	-.01296
#3	1.0347	1.0202	.00222
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6365.1**	**39110.**	**2005.2**
Stddev	24.8	486.	19.1
%RSD	.39033	1.2423	.95151
#1	6367.8	38552.	2019.3
#2	6388.5	39438.	1983.5
#3	6339.0	39340.	2012.9

Sample Name: CCB Acquired: 6/24/2016 0:12:00 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00050**	**.01206**	**.00160**	**.00292**	**-.00076**	**.00002**	**.02662**	**.00027**
Stddev	.00084	.00666	.00259	.00138	.00101	.00006	.04195	.00026
%RSD	168.40	55.161	162.13	47.221	133.70	271.30	157.60	96.736
#1	-.00086	.01566	-.00084	.00208	-.00074	.00001	-.00269	.00055
#2	-.00111	.01615	.00432	.00217	.00024	.00009	.07467	.00003
#3	.00046	.00439	.00131	.00451	-.00178	-.00003	.00787	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00031**	**-.00012**	**.00191**	**.00930**	**-.00712**	**-.00214**	**.08690**	**.00263**
Stddev	.00007	.00094	.00113	.01540	.09612	.00388	.02902	.00322
%RSD	21.273	789.62	59.288	165.71	1349.4	181.57	33.396	122.26
#1	.00025	.00095	.00248	.00841	-.09353	-.00318	.11978	.00265
#2	.00039	-.00048	.00263	-.00565	-.02424	.00216	.06485	.00584
#3	.00031	-.00083	.00060	.02512	.09640	-.00539	.07607	-.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00355**	**.02859**	**-.00197**	**.00635**	**-.00184**	**.00648**	**-.00780**	**.00562**
Stddev	.00019	.02702	.00094	.00761	.00466	.00302	.00403	.00110
%RSD	5.3403	94.506	47.726	119.74	253.74	46.674	51.730	19.667
#1	.00349	.02662	-.00294	-.00235	-.00211	.00986	-.01231	.00668
#2	.00339	.00261	-.00192	.01175	-.00636	.00555	-.00455	.00447
#3	.00376	.05655	-.00106	.00967	.00296	.00403	-.00652	.00571
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB Acquired: 6/24/2016 0:12:00 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00037	-.00205	-.00398	-.00052	.00005	-.03486
Stddev	.00199	.00049	.00712	.00235	.00010	.00013	.29949
%RSD	737.85	134.70	347.62	58.933	18.924	280.33	859.07
#1	.00244	-.00019	-.00912	-.00572	-.00063	.00006	.11572
#2	-.00149	.00054	.00512	-.00493	-.00049	-.00009	.15945
#3	-.00013	.00074	-.00215	-.00131	-.00044	.00017	-.37976
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6385.3	39685.	2013.6
Stddev	13.4	625.	15.5
%RSD	.20981	1.5744	.76988
#1	6370.9	40406.	2004.4
#2	6397.5	39350.	2031.5
#3	6387.5	39298.	2004.9

Sample Name: LLCCV Acquired: 6/24/2016 0:16:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00692	.17280	.00777	.08023	.00816	.00159	.47649	.00097
Stddev	.00020	.00275	.00190	.00358	.00068	.00009	.02580	.00026
%RSD	2.8583	1.5889	24.477	4.4629	8.3509	5.9617	5.4139	26.520
#1	.00710	.16995	.00825	.08038	.00802	.00170	.44675	.00126
#2	.00671	.17543	.00940	.08374	.00756	.00154	.48987	.00076
#3	.00694	.17303	.00568	.07658	.00890	.00153	.49285	.00090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00419	.00395	.00595	.08433	.74272	.08170	.43560	.00898
Stddev	.00055	.00077	.00059	.03278	.15549	.00079	.02792	.00231
%RSD	13.081	19.592	9.9605	38.876	20.936	.96348	6.4091	25.784
#1	.00481	.00337	.00657	.12211	.85231	.08123	.41810	.00714
#2	.00397	.00365	.00539	.06743	.81110	.08127	.46780	.01158
#3	.00379	.00483	.00590	.06344	.56476	.08261	.42090	.00822
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00841	.43808	.01603	.80173	.00604	.08746	.00868	.86554
Stddev	.00048	.03267	.00038	.00808	.00286	.00565	.00374	.00329
%RSD	5.6889	7.4567	2.3907	1.0073	47.406	6.4564	43.147	.37989
#1	.00807	.47434	.01600	.80832	.00935	.08147	.01238	.86709
#2	.00820	.41094	.01567	.80416	.00429	.08820	.00489	.86176
#3	.00895	.42897	.01643	.79272	.00448	.09269	.00877	.86777
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: LLCCV Acquired: 6/24/2016 0:16:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41147**	**.04220**	**.01937**	**.15204**	**.00784**	**.01708**	**20.869**
Stddev	.00081	.00045	.00562	.00340	.00117	.00020	.318
%RSD	.19753	1.0715	29.021	2.2390	14.946	1.1523	1.5231
#1	.41153	.04213	.02561	.15455	.00880	.01720	21.227
#2	.41224	.04269	.01469	.15340	.00817	.01718	20.618
#3	.41062	.04179	.01783	.14816	.00653	.01685	20.762
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6476.0**	**40121.**	**2010.8**
Stddev	41.9	341.	10.1
%RSD	.64677	.85050	.50105
#1	6439.6	40107.	2010.7
#2	6521.8	39788.	2020.9
#3	6466.6	40470.	2000.7

Sample Name: LLCCV Acquired: 6/24/2016 0:19:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02136	.41629	.02112	.19510	.02080	.00407	1.0587
Stddev	.00041	.00284	.00410	.00052	.00091	.00010	.0154
%RSD	1.9202	.68293	19.397	.26774	4.3671	2.4437	1.4499
#1	.02183	.41875	.01725	.19543	.02070	.00418	1.0490
#2	.02111	.41695	.02541	.19450	.02176	.00402	1.0764
#3	.02114	.41318	.02071	.19539	.01995	.00401	1.0506
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00191	.01019	.00970	.01209	.22512	2.0312	.20560
Stddev	.00008	.00029	.00094	.00032	.02751	.1478	.00292
%RSD	3.9464	2.8921	9.6498	2.6079	12.219	7.2758	1.4184
#1	.00189	.00987	.00862	.01175	.23193	1.9599	.20462
#2	.00184	.01046	.01027	.01237	.19484	2.2011	.20331
#3	.00199	.01022	.01020	.01214	.24858	1.9325	.20889
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0419	.02143	.01974	1.0634	.04092	1.9580	.02354
Stddev	.1407	.00617	.00054	.0338	.00119	.0082	.00145
%RSD	13.508	28.783	2.7554	3.1802	2.8968	.41842	6.1627
#1	1.1704	.01821	.01917	1.0842	.04126	1.9586	.02462
#2	1.0638	.01754	.01982	1.0815	.03960	1.9658	.02189
#3	.89149	.02854	.02024	1.0243	.04189	1.9495	.02411
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: LLCCV Acquired: 6/24/2016 0:19:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21053**	**.03539**	**2.1191**	**1.0135**	**.10298**	**.05480**	**.37888**
Stddev	.00225	.00798	.0028	.0011	.00044	.01048	.00446
%RSD	1.0680	22.551	.13372	.10864	.43012	19.119	1.1784
#1	.21009	.02618	2.1179	1.0144	.10249	.04402	.38327
#2	.21296	.04014	2.1223	1.0138	.10312	.05543	.37434
#3	.20853	.03987	2.1170	1.0123	.10334	.06494	.37903
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.01937**	**.04203**	F **55.206**
Stddev	.00081	.00024	.600
%RSD	4.1646	.56559	1.0870
#1	.02030	.04231	55.899
#2	.01893	.04187	54.851
#3	.01888	.04193	54.868
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6500.2**	**40568.**	**2033.1**
Stddev	36.1	206.	33.6
%RSD	.55595	.50832	1.6527
#1	6459.1	40580.	1998.8
#2	6514.4	40767.	2065.9
#3	6527.1	40355.	2034.6

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000236	0.051213	0.000000	1.000000
Al 308.215 {109}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000796	0.008044	0.000000	1.000000
As 189.042 {478}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000007	0.025071	0.000000	1.000000
B 249.678 {135}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000040	0.023963	0.000000	1.000000
Ba 455.403 { 74}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.044484	2.168568	0.000000	1.000000
Be 313.107 {108}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000479	0.930119	0.000000	1.000000
Ca 422.673 { 80}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.002874	0.045862	0.000000	1.000000
Cd 228.802 {447}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000038	0.570455	0.000000	1.000000
Co 228.616 {447}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000129	0.339574	0.000000	1.000000
Cr 267.716 {126}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000254	0.058743	0.000000	1.000000
Cu 224.700 {450}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000063	0.129645	0.000000	1.000000
Fe 261.187 {129}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000714	0.024119	0.000000	1.000000
K 766.490 { 44}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.006604	0.061274	0.000000	1.000000
Li 670.784 { 50}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.009415	1.520559	0.000000	1.000000
Mg 279.079 {121}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000260	0.008000	0.000000	1.000000
Mn 257.610 {131}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000470	0.289814	0.000000	1.000000
Mo 202.030 {467}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000054	0.182736	0.000000	1.000000
Na 589.592 { 57}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.047777	0.184477	0.000000	1.000000
Ni 231.604 {446}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000734	0.138990	0.000000	1.000000
P 214.914 {457}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000172	0.014319	0.000000	1.000000
Pb 220.353 {453}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.001186	0.065283	0.000000	1.000000
Sb 206.833 {463}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000368	0.031084	0.000000	1.000000
Se 196.090 {472}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000508	0.017412	0.000000	1.000000
Si 212.412 {459}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.001467	0.039573	0.000000	1.000000
Sn 189.989 {477}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000022	0.066307	0.000000	1.000000
Sr 407.771 { 83}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.001060	3.591964	0.000000	1.000000
Ti 337.280 {100}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.002630	0.122957	0.000000	1.000000
Tl 190.856 {477}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000329	0.028655	0.000000	1.000000
V 292.402 {115}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000071	0.067328	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000142	0.437417	0.000000	1.000000
Zr 339.198 { 99}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.007106	1.219765	0.000000	1.000000

Approved: June 27, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999680	0.000003	0.002344	0.007814	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999950	0.000005	0.010188	0.033959	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999909	0.000001	0.003189	0.010630	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999961	0.000001	0.002963	0.009878	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999951	0.000136	0.001119	0.003729	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999766	0.000007	0.000105	0.000348	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999890	0.000043	0.043792	0.145974	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999970	0.000002	0.000282	0.000940	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999977	0.000003	0.000454	0.001514	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999978	0.000001	0.001307	0.004355	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999889	0.000006	0.001405	0.004682	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999330	0.000022	0.023003	0.076675	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999988	0.000096	0.104199	0.347330	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999977	0.000100	0.004201	0.014002	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999990	0.000003	0.092396	0.307987	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999236	0.000036	0.002652	0.008839	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999956	0.000011	0.000450	0.001500	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999990	0.000264	0.032289	0.107629	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999932	0.000005	0.001180	0.003935	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999990	0.000004	0.007138	0.023792	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999383	0.000007	0.003667	0.012223	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999854	0.000004	0.004516	0.015054	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999238	0.000003	0.006704	0.022346	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999594	0.000036	0.002443	0.008145	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999980	0.000003	0.000986	0.003287	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999952	0.000224	0.000467	0.001557	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999579	0.000023	0.007453	0.024845	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999831	0.000002	0.003284	0.010945	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999969	0.000003	0.001095	0.003650	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999941	0.000030	0.000202	0.000675	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.596446	0.010414	0.001594	0.005312	OK.	1.000000	0.000000	1	0

Approved: June 27, 2016

Sample Name: S0 Acquired: 6/25/2016 12:21:04 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00024**	**.00080**	**-.00001**	**.00004**	**.04448**	**.00048**	**.00288**
Stddev	.00008	.00004	.00007	.00002	.00170	.00005	.00169
%RSD	35.712	4.5527	977.99	54.959	3.8148	10.198	58.629
#1	-.00024	.00076	-.00006	.00003	.04635	.00042	.00096
#2	-.00015	.00081	.00007	.00006	.04405	.00050	.00353
#3	-.00032	.00083	-.00004	.00003	.04304	.00052	.00414

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00004**	**-.00013**	**.00025**	**-.00006**	**-.00071**	**-.00661**	**-.00941**
Stddev	.00006	.00005	.00003	.00023	.00026	.00355	.00965
%RSD	153.97	36.064	10.924	367.85	35.978	53.724	102.48
#1	-.00002	-.00016	.00028	-.00022	-.00093	-.00948	-.01508
#2	-.00010	-.00015	.00025	.00020	-.00043	-.00769	.00173
#3	.00001	-.00008	.00023	-.00018	-.00078	-.00264	-.01488

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00026**	**.00047**	**.00005**	**-.04778**	**-.00073**	**-.00017**	**-.00119**
Stddev	.00066	.00061	.00004	.00421	.00008	.00002	.00008
%RSD	255.00	128.77	78.942	8.8105	11.011	13.180	6.4052
#1	.00045	-.00015	.00007	-.05263	-.00065	-.00015	-.00110
#2	-.00086	.00049	.00001	-.04509	-.00082	-.00019	-.00123
#3	-.00037	.00107	.00009	-.04563	-.00073	-.00017	-.00123

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00037**	**-.00051**	**.00147**	**.00002**	**.00106**	**-.00263**	**-.00033**
Stddev	.00001	.00007	.00009	.00003	.00137	.00025	.00002
%RSD	3.7153	13.815	6.2921	126.34	130.24	9.4020	7.1687
#1	.00035	-.00043	.00157	.00002	.00203	-.00235	-.00030
#2	.00038	-.00057	.00145	-.00000	.00165	-.00283	-.00033
#3	.00037	-.00052	.00138	.00005	-.00052	-.00270	-.00035

Approved: June 27, 2016

Sample Name: S0 Acquired: 6/25/2016 12:21:04 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**-.00007**	**.00014**	**-.00710**
Stddev	.00004	.00005	.00324
%RSD	58.279	35.146	45.700
#1	-.00004	.00009	-.00457
#2	-.00005	.00016	-.01076
#3	-.00012	.00018	-.00597
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9736.8**	**58329.**	**2962.8**
Stddev	24.6	275.	12.4
%RSD	.25315	.47180	.41783
#1	9719.4	58177.	2949.0
#2	9725.9	58162.	2966.1
#3	9765.0	58646.	2973.1

Approved: June 27, 2016

Sample Name: S1 Acquired: 6/25/2016 12:25:02 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00000**	**.00148**	**.06336**	**.00097**	**.00582**	**.00018**	**.00038**
Stddev	.00004	.00005	.00419	.00009	.00234	.00011	.00006
%RSD	838.91	3.6655	6.6080	8.8478	40.284	60.110	16.615
#1	.00001	.00145	.05987	.00105	.00569	.00026	.00043
#2	-.00004	.00145	.06800	.00097	.00822	.00006	.00031
#3	.00004	.00155	.06221	.00088	.00354	.00023	.00041

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00050**	**.00053**	**.00033**	**.01950**	**.00077**	**.00143**	**.02669**
Stddev	.00003	.00011	.00021	.00355	.00009	.00011	.00332
%RSD	5.5692	20.305	62.737	18.223	11.862	7.4791	12.449
#1	.00049	.00060	.00053	.01550	.00083	.00145	.02356
#2	.00048	.00041	.00012	.02070	.00066	.00152	.03018
#3	.00053	.00058	.00034	.02230	.00081	.00131	.02634

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00018**	**.00100**	**-.00086**	**.00059**	**.00297**	**.00055**	**.03302**
Stddev	.00009	.00012	.00030	.00014	.00005	.00006	.00089
%RSD	52.159	12.366	34.406	23.539	1.7045	10.953	2.6942
#1	-.00010	.00113	-.00102	.00051	.00294	.00050	.03225
#2	-.00028	.00098	-.00052	.00075	.00302	.00062	.03399
#3	-.00016	.00088	-.00105	.00050	.00293	.00055	.03280

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00218**	**.00050**	**.00363**	**-.00591**
Stddev	.00071	.00003	.00003	.00134
%RSD	32.781	5.1557	.77751	22.659
#1	-.00139	.00050	.00365	-.00576
#2	-.00277	.00048	.00360	-.00465
#3	-.00237	.00053	.00364	-.00732

Approved: June 27, 2016

Sample Name: S1 Acquired: 6/25/2016 12:25:02 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9839.2**	**59021.**	**2974.6**
Stddev	35.8	140.	1.9
%RSD	.36397	.23691	.06440
#1	9811.4	58880.	2976.5
#2	9826.5	59023.	2972.7
#3	9879.6	59160.	2974.8

Approved: June 27, 2016

Sample Name: S2 Acquired: 6/25/2016 12:29:00 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00011**	**.00220**	**.00018**	**.00025**	**.08112**	**.00139**	**.00931**
Stddev	.00003	.00006	.00005	.00002	.00125	.00003	.00047
%RSD	29.658	2.5782	25.201	8.0082	1.5417	1.8740	5.0396
#1	.00012	.00221	.00013	.00026	.08191	.00140	.00905
#2	.00012	.00214	.00022	.00027	.08177	.00136	.00985
#3	.00007	.00225	.00019	.00023	.07968	.00140	.00903

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00041**	**.00102**	**.00072**	**.00104**	**.00148**	**.04190**	**.01415**
Stddev	.00007	.00003	.00001	.00014	.00030	.00236	.00012
%RSD	16.350	3.0292	1.5873	13.319	20.240	5.6312	.86545
#1	.00045	.00101	.00072	.00109	.00137	.04369	.01405
#2	.00033	.00099	.00073	.00088	.00125	.03923	.01429
#3	.00045	.00105	.00071	.00115	.00182	.04279	.01411

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00109**	**.00274**	**.00298**	**.10797**	**.00048**	**.00211**	**-.00045**
Stddev	.00041	.00057	.00005	.00406	.00013	.00008	.00017
%RSD	37.607	20.931	1.7509	3.7561	26.749	3.7519	39.075
#1	.00144	.00213	.00304	.11260	.00057	.00211	-.00064
#2	.00064	.00283	.00295	.10501	.00033	.00203	-.00031
#3	.00120	.00327	.00295	.10631	.00054	.00219	-.00039

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00105**	**-.00034**	**.00448**	**.00108**	**.06082**	**-.00047**	**-.00014**
Stddev	.00006	.00004	.00009	.00004	.00131	.00089	.00005
%RSD	6.0784	12.562	2.0565	3.6593	2.1502	187.41	36.276
#1	.00109	-.00029	.00447	.00110	.05950	-.00104	-.00016
#2	.00107	-.00037	.00458	.00110	.06212	-.00093	-.00008
#3	.00097	-.00035	.00440	.00103	.06083	.00055	-.00017

Approved: June 27, 2016

Sample Name: S2 Acquired: 6/25/2016 12:29:00 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00105	.00728	-.00437
Stddev	.00006	.00006	.00132
%RSD	5.7588	.85058	30.251
#1	.00102	.00735	-.00588
#2	.00112	.00727	-.00376
#3	.00101	.00722	-.00345
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9827.0	59373.	3004.6
Stddev	11.4	114.	4.0
%RSD	.11574	.19273	.13472
#1	9814.0	59255.	3000.6
#2	9832.7	59484.	3008.7
#3	9834.5	59381.	3004.6

Approved: June 27, 2016

Sample Name: S3 Acquired: 6/25/2016 12:32:56 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.02035	.08278	.00992	.01198	2.2359	.04820	.46599	.03126
Stddev	.00007	.00029	.00007	.00002	.0069	.00016	.00236	.00006
%RSD	.36344	.34990	.73624	.13878	.30693	.33862	.50730	.19965
#1	.02029	.08301	.00987	.01198	2.2433	.04825	.46861	.03126
#2	.02044	.08286	.01000	.01199	2.2346	.04833	.46401	.03132
#3	.02033	.08245	.00988	.01196	2.2297	.04802	.46536	.03119

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.06810	.02991	.06581	.09648	3.0722	1.5250	.07962	.14725
Stddev	.00012	.00021	.00002	.00063	.0027	.0048	.00098	.00051
%RSD	.17879	.70022	.03611	.65013	.08880	.31624	1.2353	.34909
#1	.06804	.03009	.06584	.09719	3.0745	1.5268	.07965	.14783
#2	.06801	.02997	.06579	.09600	3.0692	1.5288	.07861	.14685
#3	.06824	.02968	.06581	.09626	3.0730	1.5196	.08058	.14706

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.18510	9.1987	.06966	.14157	.03222	.03693	.00649	.20808
Stddev	.00068	.0276	.00008	.00029	.00023	.00011	.00003	.00004
%RSD	.36712	.29975	.11504	.20555	.70478	.30304	.43769	.01830
#1	.18567	9.2297	.06963	.14170	.03236	.03694	.00648	.20811
#2	.18529	9.1894	.06975	.14177	.03196	.03703	.00652	.20808
#3	.18435	9.1769	.06959	.14123	.03234	.03681	.00647	.20804

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.06680	3.6291	.12115	.01313	.06767	.44396	3.5474
Stddev	.00012	.0161	.00039	.00012	.00004	.00054	.0233
%RSD	.17282	.44347	.32200	.91385	.05243	.12075	.65596
#1	.06677	3.6476	.12157	.01325	.06770	.44451	3.5656
#2	.06671	3.6220	.12107	.01301	.06768	.44393	3.5554
#3	.06693	3.6179	.12080	.01311	.06763	.44344	3.5212

Approved: June 27, 2016

Sample Name: S3 Acquired: 6/25/2016 12:32:56 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9929.1	59890.	3083.9
Stddev	18.0	90.	16.7
%RSD	.18173	.14986	.54188
#1	9944.3	59787.	3069.2
#2	9933.7	59947.	3080.5
#3	9909.1	59936.	3102.1

Approved: June 27, 2016

Sample Name: S4 Acquired: 6/25/2016 12:36:34 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.04037	.16212	.01994	.02391	4.3553	.09476	.91725	.06225
Stddev	.00010	.00009	.00010	.00008	.0282	.00010	.00714	.00008
%RSD	.26004	.05310	.51424	.32854	.64632	.10278	.77855	.12431
#1	.04040	.16220	.02005	.02399	4.3445	.09472	.91430	.06220
#2	.04046	.16203	.01991	.02383	4.3342	.09469	.91205	.06220
#3	.04026	.16211	.01985	.02390	4.3873	.09487	.92539	.06233

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13502	.05877	.12834	.19056	6.1046	3.0186	.15914	.28946
Stddev	.00023	.00007	.00015	.00161	.0456	.0309	.00223	.00202
%RSD	.17276	.12518	.11394	.84544	.74756	1.0253	1.3995	.69732
#1	.13475	.05870	.12846	.19050	6.0869	3.0140	.15736	.28818
#2	.13515	.05878	.12838	.18897	6.0705	2.9902	.15842	.28841
#3	.13517	.05884	.12818	.19219	6.1564	3.0516	.16164	.29179

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.36324	18.368	.13725	.28094	.06365	.07367	.01336	.39092
Stddev	.00176	.146	.00020	.00054	.00019	.00012	.00006	.00048
%RSD	.48547	.79728	.14492	.19364	.30628	.15884	.42128	.12331
#1	.36486	18.303	.13728	.28153	.06355	.07380	.01339	.39147
#2	.36349	18.266	.13744	.28083	.06388	.07365	.01329	.39059
#3	.36136	18.536	.13705	.28046	.06354	.07357	.01339	.39071

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13179	7.1439	.24230	.02560	.13357	.86773	.12255
Stddev	.00029	.0568	.00280	.00005	.00025	.00172	.00222
%RSD	.21785	.79476	1.1551	.20145	.18401	.19856	1.8114
#1	.13210	7.1181	.24103	.02555	.13357	.86947	.12020
#2	.13172	7.1045	.24036	.02563	.13332	.86769	.12285
#3	.13154	7.2090	.24551	.02564	.13382	.86603	.12461

Approved: June 27, 2016

Sample Name: S4 Acquired: 6/25/2016 12:36:34 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9795.6**	**59125.**	**3064.9**
Stddev	6.6	26.	19.7
%RSD	.06757	.04412	.64222
#1	9799.1	59120.	3071.1
#2	9799.7	59153.	3080.8
#3	9787.9	59102.	3042.9

Approved: June 27, 2016

Sample Name: ICV Acquired: 6/25/2016 12:40:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40482	10.096	.40189	.50535	1.0085	.05038	10.096
Stddev	.00169	.009	.00320	.00259	.0096	.00007	.103
%RSD	.41792	.09100	.79651	.51179	.95284	.13225	1.0175
#1	.40318	10.095	.40558	.50259	.99972	.05037	10.065
#2	.40656	10.106	.40020	.50771	1.0070	.05032	10.013
#3	.40473	10.088	.39988	.50575	1.0188	.05045	10.211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05022	.20172	.50610	.50772	4.0459	50.287	1.0069
Stddev	.00031	.00057	.00078	.00110	.0398	.526	.0059
%RSD	.61395	.28458	.15454	.21701	.98466	1.0464	.58082
#1	.05048	.20224	.50644	.50864	4.0020	49.775	1.0012
#2	.05030	.20181	.50521	.50650	4.0559	50.260	1.0067
#3	.04988	.20110	.50666	.50803	4.0798	50.827	1.0128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.117	.50795	1.0200	50.068	.50832	10.053	.50460
Stddev	.152	.00312	.0050	.377	.00054	.029	.00016
%RSD	1.5029	.61369	.49437	.75311	.10596	.28628	.03077
#1	9.9425	.50440	1.0241	49.665	.50829	10.073	.50452
#2	10.219	.50922	1.0214	50.126	.50888	10.066	.50449
#3	10.191	.51024	1.0144	50.412	.50780	10.020	.50477
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: ICV Acquired: 6/25/2016 12:40:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2132**	**.39981**	**5.2115**	**1.0100**	**1.0094**	**1.0076**	**.50967**
Stddev	.0090	.00367	.0220	.0047	.0093	.0117	.00340
%RSD	.74499	.91900	.42193	.46646	.92212	1.1612	.66719
#1	1.2228	.39652	5.1880	1.0139	.99976	.99418	.50608
#2	1.2117	.40378	5.2316	1.0112	1.0100	1.0128	.51284
#3	1.2049	.39915	5.2149	1.0048	1.0183	1.0157	.51010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0117**	**1.0154**	F **2.9010**
Stddev	.0015	.0015	.0057
%RSD	.14666	.14385	.19619
#1	1.0111	1.0164	2.9026
#2	1.0134	1.0160	2.8946
#3	1.0106	1.0137	2.9057
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			5.0000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9887.2**	**59604.**	**3090.1**
Stddev	2.6	87.	8.3
%RSD	.02633	.14631	.26858
#1	9888.5	59705.	3098.3
#2	9884.2	59557.	3090.3
#3	9888.9	59551.	3081.7

Approved: June 27, 2016

Sample Name: ICB Acquired: 6/25/2016 12:43:48 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00131	-.00019	.00035	.00523	.00097	.00005	-.00769	-.00024
Stddev	.00204	.00299	.00150	.00175	.00089	.00006	.00734	.00011
%RSD	155.46	1561.3	426.44	33.377	91.849	115.36	95.505	46.996
#1	.00317	-.00362	.00181	.00349	.00060	.00012	-.01556	-.00036
#2	-.00088	.00114	-.00118	.00522	.00198	.00002	-.00104	-.00017
#3	.00165	.00191	.00042	.00699	.00032	.00001	-.00646	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00000	.00019	.00069	.02190	.04427	.00252	.00787	.00050
Stddev	.00033	.00096	.00130	.00895	.02254	.00192	.08048	.00146
%RSD	40694.	494.95	189.51	40.889	50.920	76.061	1022.8	292.29
#1	-.00026	-.00067	-.00034	.02348	.04464	.00424	-.08504	-.00108
#2	-.00012	.00002	.00215	.01226	.06662	.00045	.05249	.00079
#3	.00038	.00123	.00025	.02996	.02154	.00288	.05615	.00179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00437	.07087	.00070	.00285	.00118	.00678	.00870	.00121
Stddev	.00041	.01151	.00054	.00868	.00197	.00381	.00450	.00189
%RSD	9.2912	16.248	77.044	304.78	167.53	56.206	51.723	156.22
#1	.00395	.08310	.00020	-.00283	.00108	.00337	.00854	.00310
#2	.00476	.06927	.00064	-.00147	.00320	.00608	.00428	.00120
#3	.00442	.06023	.00127	.01284	-.00074	.01090	.01328	-.00068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: ICB Acquired: 6/25/2016 12:43:48 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00063**	**.00059**	**.00116**	**.00143**	**.00111**	**.00117**	**.00345**
Stddev	.00049	.00006	.00559	.00387	.00033	.00016	.00039
%RSD	77.601	9.5579	481.47	269.75	29.521	13.916	11.209
#1	.00050	.00059	.00521	.00260	.00135	.00105	.00361
#2	.00117	.00064	.00349	-.00288	.00074	.00111	.00300
#3	.00022	.00053	-.00522	.00459	.00124	.00135	.00372
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9709.0**	**58834.**	**2997.3**
Stddev	13.6	105.	11.0
%RSD	.13963	.17854	.36570
#1	9693.7	58895.	2985.3
#2	9713.8	58895.	3006.9
#3	9719.5	58713.	2999.6

Approved: June 27, 2016

Sample Name: LLICV Acquired: 6/25/2016 12:47:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00947	.16517	.00750	.08209	.00794	.00166	.41368	.00078
Stddev	.00234	.00914	.00427	.00134	.00096	.00002	.01542	.00015
%RSD	24.742	5.5361	56.913	1.6344	12.112	1.4530	3.7271	18.963
#1	.01038	.17315	.00639	.08214	.00810	.00169	.40911	.00061
#2	.01123	.15519	.01222	.08341	.00690	.00166	.40107	.00083
#3	.00681	.16717	.00390	.08073	.00880	.00164	.43087	.00089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00435	.00476	.00462	.09393	.88733	.08419	.44121	.00701
Stddev	.00017	.00091	.00136	.00523	.14622	.00363	.12107	.00237
%RSD	3.8803	19.165	29.360	5.5689	16.479	4.3143	27.441	33.765
#1	.00455	.00411	.00608	.08852	.75945	.08105	.39471	.00889
#2	.00425	.00438	.00436	.09433	.85580	.08335	.57864	.00779
#3	.00425	.00581	.00341	.09896	1.0467	.08816	.35028	.00435
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00866	.44156	.01715	.79893	.00705	.08442	.02038	.79310
Stddev	.00052	.01049	.00062	.00929	.00266	.00215	.00191	.00106
%RSD	5.9984	2.3750	3.6174	1.1626	37.766	2.5524	9.3696	.13338
#1	.00809	.45038	.01661	.80194	.00796	.08678	.01818	.79326
#2	.00879	.42997	.01783	.80634	.00405	.08394	.02136	.79407
#3	.00910	.44434	.01701	.78851	.00913	.08255	.02160	.79197
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LLICV Acquired: 6/25/2016 12:47:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41130**	**.04174**	**.02562**	**.15269**	**.00881**	**.01717**	**.13277**
Stddev	.00223	.00064	.00303	.00060	.00064	.00024	.00310
%RSD	.54293	1.5249	11.843	.39147	7.2679	1.3907	2.3338
#1	.41347	.04173	.02710	.15201	.00926	.01741	.13005
#2	.41142	.04111	.02213	.15292	.00808	.01715	.13211
#3	.40901	.04238	.02764	.15314	.00909	.01694	.13614
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9760.6**	**59445.**	**3032.4**
Stddev	2.7	49.	16.0
%RSD	.02790	.08308	.52659
#1	9758.1	59502.	3050.3
#2	9763.5	59418.	3027.2
#3	9760.2	59415.	3019.7

Approved: June 27, 2016

Sample Name: LLICV Acquired: 6/25/2016 12:51:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02232**	**.40482**	**.02105**	**.19795**	**.01981**	**.00414**	**.94713**	**.00209**
Stddev	.00322	.01572	.00276	.00137	.00013	.00016	.01328	.00025
%RSD	14.431	3.8838	13.088	.69255	.67950	3.8114	1.4024	12.129
#1	.02018	.38785	.01788	.19912	.01996	.00396	.94307	.00218
#2	.02076	.40770	.02252	.19644	.01971	.00427	.93634	.00229
#3	.02603	.41890	.02277	.19828	.01975	.00419	.96196	.00181
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00992**	**.00950**	**.01082**	**.20111**	**1.9275**	**.20201**	**.97307**	**.01841**
Stddev	.00043	.00028	.00021	.02025	.1498	.00564	.04542	.00186
%RSD	4.3042	2.9103	1.9731	10.069	7.7699	2.7925	4.6682	10.079
#1	.01005	.00935	.01089	.20826	1.8000	.20412	1.0187	.02052
#2	.00945	.00934	.01100	.21682	1.8900	.19562	.97274	.01702
#3	.01028	.00982	.01059	.17825	2.0924	.20630	.92781	.01771
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01972**	**1.0340**	**.04153**	**1.9482**	**.02271**	**.20123**	**.04411**	**1.9392**
Stddev	.00048	.0096	.00031	.0042	.00204	.00295	.00361	.0022
%RSD	2.4591	.93077	.75288	.21380	8.9612	1.4657	8.1900	.11326
#1	.01969	1.0240	.04132	1.9520	.02496	.20436	.04094	1.9404
#2	.01925	1.0432	.04139	1.9437	.02217	.20085	.04804	1.9406
#3	.02022	1.0348	.04189	1.9488	.02100	.19850	.04333	1.9367
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LLICV Acquired: 6/25/2016 12:51:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0099**	**.10045**	**.06134**	**.37714**	**.02003**	**.04134**	**.29456**
Stddev	.0057	.00069	.00459	.00090	.00046	.00030	.00329
%RSD	.56948	.68667	7.4856	.23976	2.2900	.72946	1.1169
#1	1.0145	.09991	.06229	.37809	.02052	.04128	.29317
#2	1.0117	.10021	.05634	.37629	.01997	.04166	.29219
#3	1.0035	.10123	.06538	.37705	.01961	.04107	.29832
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9725.0**	**59145.**	**3053.0**
Stddev	6.0	91.	15.9
%RSD	.06216	.15348	.52133
#1	9731.9	59116.	3042.4
#2	9721.3	59247.	3071.3
#3	9721.7	59072.	3045.2

Approved: June 27, 2016

Sample Name: ICSA Acquired: 6/25/2016 12:55:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00027**	**265.97**	**.00161**	**-.00823**	**.00056**	**.00011**	**243.96**	**-.00018**
Stddev	.00121	.27	.00172	.00296	.00012	.00009	1.89	.00042
%RSD	450.36	.10204	106.61	35.970	21.237	81.140	.77435	230.52
#1	-.00046	265.69	.00220	-.01033	.00047	.00017	241.81	-.00048
#2	.00103	265.97	-.00032	-.00484	.00069	.00014	245.35	.00030
#3	-.00137	266.24	.00295	-.00951	.00051	.00001	244.72	-.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00099**	**-.00100**	**-.00098**	**96.848**	**.05329**	**.01035**	**248.71**	**-.00176**
Stddev	.00039	.00071	.00330	.692	.06120	.00255	1.99	.00096
%RSD	39.651	70.751	335.23	.71414	114.86	24.670	.80129	54.809
#1	-.00142	-.00119	.00263	96.056	.12150	.01230	246.41	-.00274
#2	-.00085	-.00160	-.00175	97.332	.03517	.00746	249.90	-.00082
#3	-.00068	-.00022	-.00383	97.155	.00318	.01129	249.83	-.00171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00066**	**.04038**	**-.00089**	**.02257**	**.00214**	**-.00550**	**-.00224**	**.00879**
Stddev	.00023	.00410	.00050	.00580	.00444	.00318	.00753	.00258
%RSD	34.448	10.162	56.288	25.707	206.94	57.856	337.10	29.379
#1	-.00088	.04493	-.00121	.01613	.00721	-.00186	.00631	.00581
#2	-.00043	.03696	-.00115	.02418	.00024	-.00776	-.00511	.01037
#3	-.00066	.03925	-.00031	.02740	-.00103	-.00688	-.00791	.01019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: ICSA Acquired: 6/25/2016 12:55:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00053**	**.00100**	**-.00403**	**-.00373**	**-.00305**	**-.00596**	**-.01388**
Stddev	.00149	.00018	.00805	.00252	.00022	.00010	.00081
%RSD	284.28	18.415	199.81	67.478	7.0947	1.6059	5.8325
#1	.00144	.00117	.00514	-.00549	-.00300	-.00603	-.01379
#2	.00134	.00081	-.00728	-.00085	-.00329	-.00601	-.01311
#3	-.00120	.00101	-.00995	-.00485	-.00287	-.00585	-.01473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9184.9**	**55126.**	**2960.9**
Stddev	19.5	129.	17.9
%RSD	.21199	.23455	.60311
#1	9165.3	55274.	2981.6
#2	9185.3	55069.	2950.7
#3	9204.2	55035.	2950.6

Approved: June 27, 2016

Sample Name: ICSAB Acquired: 6/25/2016 12:59:21 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51819**	**267.93**	**.25992**	**-.00749**	**.25012**	**.24499**	**247.43**	**.48653**
Stddev	.00274	.82	.00577	.00323	.00127	.00111	.96	.00069
%RSD	.52949	.30727	2.2185	43.201	.50926	.45301	.38893	.14255
#1	.51744	268.20	.26633	-.00904	.25065	.24547	247.63	.48716
#2	.52123	268.59	.25826	-.00965	.24866	.24578	246.38	.48579
#3	.51590	267.01	.25516	-.00377	.25104	.24372	248.28	.48665
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.24114**	**.25272**	**.25219**	**96.482**	**5.1931**	**.01181**	**249.25**	**.24440**
Stddev	.00029	.00219	.00111	.527	.0571	.00427	1.99	.00318
%RSD	.11831	.86807	.44033	.54597	1.0995	36.192	.80021	1.3017
#1	.24081	.25379	.25307	96.524	5.1297	.01134	249.32	.24432
#2	.24135	.25418	.25256	95.936	5.2405	.00779	247.22	.24763
#3	.24125	.25020	.25095	96.987	5.2091	.01630	251.20	.24127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00056**	**5.3241**	**.48364**	**.08508**	**.49426**	**.50665**	**.24857**	**.00554**
Stddev	.00038	.0216	.00155	.00195	.00579	.00649	.00790	.00251
%RSD	68.178	.40548	.32037	2.2888	1.1716	1.2807	3.1773	45.410
#1	-.00097	5.3151	.48290	.08463	.49996	.50736	.25719	.00434
#2	-.00022	5.3084	.48260	.08721	.48838	.49984	.24167	.00842
#3	-.00048	5.3487	.48542	.08340	.49443	.51276	.24687	.00384
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: ICSAB Acquired: 6/25/2016 12:59:21 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00018**	**.00065**	**-.00404**	**.46188**	**.25332**	**.48100**	**-.01374**
Stddev	.00129	.00010	.00503	.00318	.00107	.00194	.00218
%RSD	732.71	15.906	124.53	.68769	.42266	.40303	15.888
#1	.00146	.00072	-.00979	.45913	.25376	.48104	-.01122
#2	-.00112	.00053	-.00192	.46116	.25410	.48293	-.01498
#3	.00019	.00071	-.00042	.46536	.25210	.47905	-.01502
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9278.3**	**55833.**	**2985.5**
Stddev	15.8	186.	18.9
%RSD	.17001	.33320	.63177
#1	9263.8	55869.	2984.2
#2	9295.1	55632.	3004.9
#3	9275.9	55999.	2967.3

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 13:03:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39792	10.019	.39868	.49351	.99429	.04982	9.9377
Stddev	.00072	.017	.00144	.00412	.00753	.00017	.0996
%RSD	.18044	.17228	.36151	.83518	.75700	.33966	1.0022
#1	.39861	10.034	.39833	.49827	.98705	.04987	9.8876
#2	.39796	10.022	.40027	.49123	1.0021	.04997	10.052
#3	.39718	10.000	.39745	.49104	.99375	.04964	9.8731
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04945	.20002	.50114	.50617	3.9950	49.191	.99914
Stddev	.00013	.00034	.00115	.00138	.0385	.327	.00262
%RSD	.25449	.17079	.22943	.27257	.96478	.66521	.26204
#1	.04957	.20034	.49991	.50465	3.9625	48.889	.99615
#2	.04946	.20007	.50219	.50735	4.0376	49.538	1.0010
#3	.04932	.19966	.50132	.50650	3.9848	49.146	1.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.9162	.49766	1.0071	49.316	.50460	9.9534	.50217
Stddev	.1345	.00161	.0027	.281	.00141	.0056	.00090
%RSD	1.3564	.32258	.27182	.56936	.27993	.05661	.17861
#1	9.8004	.49634	1.0102	49.069	.50585	9.9507	.50282
#2	10.064	.49945	1.0061	49.622	.50307	9.9496	.50115
#3	9.8846	.49718	1.0051	49.257	.50488	9.9599	.50255
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 13:03:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1997**	**.40476**	**5.1642**	**1.0026**	**.99432**	**.99050**	**.50900**
Stddev	.0011	.00080	.0031	.0008	.00541	.00261	.00166
%RSD	.09538	.19644	.06047	.08057	.54374	.26324	.32573
#1	1.2008	.40408	5.1631	1.0035	.99081	.99348	.51044
#2	1.1985	.40563	5.1678	1.0020	1.0005	.98942	.50718
#3	1.1997	.40457	5.1618	1.0022	.99161	.98862	.50937
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0019**	**1.0053**	F **2.8691**
Stddev	.0036	.0009	.0111
%RSD	.35558	.09150	.38634
#1	.99784	1.0055	2.8628
#2	1.0045	1.0043	2.8819
#3	1.0033	1.0060	2.8625
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9877.8**	**59691.**	**3097.9**
Stddev	6.1	104.	11.8
%RSD	.06196	.17495	.38081
#1	9880.1	59766.	3105.5
#2	9870.8	59572.	3084.3
#3	9882.4	59736.	3103.8

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 13:06:41 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00082	.00013	.00057	.00151	.00063	.00002	-.01871	-.00022
Stddev	.00151	.00746	.00362	.00174	.00068	.00003	.02739	.00016
%RSD	185.23	5748.5	636.07	114.92	108.39	116.80	146.42	72.359
#1	.00201	.00304	-.00315	-.00049	.00141	.00001	-.04795	-.00036
#2	-.00088	-.00835	.00078	.00262	.00031	.00006	.00637	-.00027
#3	.00132	.00570	.00408	.00241	.00017	.00001	-.01455	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	.00054	.00076	.03608	.09214	-.00181	-.01859	-.00071
Stddev	.00025	.00025	.00080	.01975	.18930	.00302	.07756	.00052
%RSD	1039.3	46.422	105.73	54.731	205.46	166.60	417.27	72.248
#1	.00013	.00063	.00047	.01630	-.12492	-.00468	-.09449	-.00012
#2	.00011	.00026	.00167	.05580	.17827	.00135	-.02180	-.00101
#3	-.00032	.00073	.00014	.03615	.22306	-.00212	.06053	-.00101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00274	.04401	-.00040	.00332	.00144	-.00005	.00482	-.00649
Stddev	.00039	.03341	.00024	.00918	.00111	.00350	.00394	.00014
%RSD	14.320	75.897	59.933	276.22	77.091	6590.6	81.757	2.1187
#1	.00273	.08068	-.00054	-.00157	.00018	-.00177	.00919	-.00633
#2	.00236	.03606	-.00012	.01392	.00189	-.00236	.00153	-.00657
#3	.00314	.01530	-.00055	-.00237	.00225	.00397	.00375	-.00656
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 13:06:41 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.00039	.00186	-.00089	-.00002	.00003	.00447
Stddev	.00029	.00029	.00050	.00195	.00109	.00004	.00129
%RSD	58.864	74.770	26.876	218.22	5660.3	163.33	28.933
#1	.00018	.00056	.00153	-.00246	.00118	.00003	.00395
#2	.00076	.00054	.00162	-.00151	-.00095	.00007	.00352
#3	.00054	.00005	.00244	.00129	-.00029	-.00002	.00594
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9714.8	59220.	3006.6
Stddev	20.8	167.	18.8
%RSD	.21426	.28151	.62581
#1	9691.7	59319.	2985.4
#2	9732.2	59028.	3021.3
#3	9720.4	59314.	3013.1

Approved: June 27, 2016

Sample Name: PBW MC Acquired: 6/25/2016 13:18:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.00511**	**.00086**	**-.00212**	**.00115**	**.00002**	**-.06747**	**.00005**
Stddev	.00209	.01093	.00117	.00067	.00097	.00011	.03960	.00035
%RSD	552.93	213.69	135.59	31.434	84.150	461.31	58.695	692.60
#1	-.00263	-.00536	-.00048	-.00211	.00011	.00001	-.09775	.00040
#2	.00149	.00426	.00140	-.00146	.00202	-.00008	-.02265	-.00029
#3	.00000	.01644	.00166	-.00279	.00133	.00014	-.08201	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**-.00006**	**.00212**	**.02866**	**-.06431**	**.00509**	**.02259**	**-.00086**
Stddev	.00040	.00091	.00173	.01678	.07316	.00381	.05174	.00149
%RSD	400.23	1393.8	81.515	58.547	113.75	74.903	229.03	173.59
#1	.00052	-.00104	.00296	.02246	-.13473	.00394	-.01043	-.00102
#2	.00004	.00075	.00325	.01586	-.06951	.00199	-.00402	.00071
#3	-.00026	.00010	.00013	.04766	.01130	.00934	.08222	-.00227
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00087**	**-.00687**	**.00001**	**-.00017**	**.00005**	**-.00551**	**.00627**	**.00390**
Stddev	.00030	.03350	.00031	.00833	.00114	.00506	.00234	.00374
%RSD	34.257	487.68	3374.4	4899.3	2181.8	91.834	37.291	95.869
#1	.00091	.01218	.00037	.00506	.00058	-.00133	.00544	.00713
#2	.00056	-.04555	-.00014	-.00978	.00083	-.01113	.00446	-.00020
#3	.00115	.01276	-.00019	.00420	-.00126	-.00406	.00891	.00477
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: PBW MC Acquired: 6/25/2016 13:18:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00012**	**-.00022**	**-.00094**	**-.00120**	**.00059**	**.00019**	**.00136**
Stddev	.00090	.00014	.01001	.00401	.00016	.00009	.00212
%RSD	728.27	61.668	1066.1	333.15	27.157	48.058	155.52
#1	-.00022	-.00007	.00771	-.00405	.00041	.00016	-.00108
#2	.00115	-.00034	-.01190	.00338	.00070	.00012	.00241
#3	-.00056	-.00026	.00137	-.00294	.00066	.00029	.00275
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9802.9**	**59937.**	**3028.8**
Stddev	9.7	136.	16.1
%RSD	.09849	.22735	.53011
#1	9794.7	59785.	3046.3
#2	9813.5	59979.	3014.8
#3	9800.5	60047.	3025.3

Approved: June 27, 2016

Sample Name: LCSW MC Acquired: 6/25/2016 13:22:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19140**	**4.8040**	**.19266**	**.92897**	**.49049**	**.02396**	**4.9270**	**.02412**
Stddev	.00110	.0096	.00124	.00283	.00119	.00006	.0588	.00019
%RSD	.57611	.19942	.64179	.30493	.24273	.25817	1.1941	.78757
#1	.19253	4.7978	.19184	.92575	.49050	.02398	4.9121	.02430
#2	.19133	4.7992	.19408	.93105	.49168	.02402	4.8771	.02392
#3	.19033	4.8151	.19206	.93012	.48929	.02390	4.9919	.02415
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09725**	**.24390**	**.24732**	**1.9838**	**23.909**	**.49943**	**4.9211**	**.24209**
Stddev	.00025	.00056	.00120	.0346	.055	.00048	.0513	.00093
%RSD	.26181	.22973	.48504	1.7424	.23189	.09613	1.0429	.38463
#1	.09749	.24389	.24597	1.9470	23.904	.49915	4.9459	.24237
#2	.09699	.24447	.24774	1.9888	23.968	.49916	4.8621	.24284
#3	.09727	.24335	.24825	2.0156	23.857	.49999	4.9553	.24105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49737**	**24.381**	**.24620**	**4.6982**	**.24508**	**.58185**	**.18662**	**2.4109**
Stddev	.00101	.058	.00194	.0026	.00506	.00206	.00438	.0033
%RSD	.20378	.23960	.78649	.05522	2.0646	.35379	2.3449	.13777
#1	.49803	24.349	.24767	4.6983	.25078	.58403	.18417	2.4135
#2	.49787	24.449	.24692	4.7007	.24112	.57994	.18402	2.4071
#3	.49620	24.346	.24401	4.6956	.24334	.58158	.19167	2.4120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LCSW MC Acquired: 6/25/2016 13:22:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48537**	**.49494**	**.49102**	**.24360**	**.48594**	**.48236**	**.01763**
Stddev	.00248	.00157	.00916	.00175	.00116	.00127	.00304
%RSD	.51037	.31733	1.8663	.71814	.23927	.26228	17.214
#1	.48605	.49357	.49562	.24211	.48702	.48137	.01600
#2	.48744	.49666	.49698	.24315	.48610	.48194	.01576
#3	.48263	.49460	.48047	.24553	.48471	.48379	.02113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9802.2**	**59979.**	**3063.3**
Stddev	16.1	75.	6.7
%RSD	.16429	.12520	.21884
#1	9786.8	59978.	3070.3
#2	9800.7	59904.	3056.9
#3	9818.9	60054.	3062.8

Approved: June 27, 2016

Sample Name: L1606080801 Acquired: 6/25/2016 13:25:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00120	-.00080	-.00163	.02599	.00717	.00000	50.564	.00016
Stddev	.00152	.00397	.00290	.00206	.00115	.00005	.112	.00037
%RSD	125.91	493.45	178.32	7.9153	16.060	1214.4	.22137	235.03
#1	.00226	.00203	-.00429	.02577	.00588	.00002	50.480	.00003
#2	-.00053	.00090	.00147	.02405	.00757	.00004	50.521	-.00014
#3	.00188	-.00534	-.00207	.02815	.00807	-.00005	50.691	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.00083	.00107	.26409	1.2826	.00250	14.201	.11783
Stddev	.00018	.00044	.00061	.01139	.1290	.00132	.067	.00387
%RSD	127.01	53.307	57.172	4.3115	10.056	52.928	.47527	3.2872
#1	.00035	.00131	.00089	.27352	1.4315	.00167	14.162	.12070
#2	.00008	.00073	.00057	.25144	1.2130	.00180	14.162	.11343
#3	.00000	.00044	.00175	.26731	1.2035	.00402	14.279	.11937
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	15.281	.00045	.01127	-.00029	-.00250	-.00036	4.8502
Stddev	.00031	.048	.00109	.00496	.00257	.00086	.00870	.0263
%RSD	48.719	.31261	245.14	44.009	886.73	34.260	2404.6	.54311
#1	.00028	15.230	.00169	.00618	-.00269	-.00223	.00526	4.8717
#2	.00080	15.325	-.00034	.01609	.00243	-.00181	.00404	4.8581
#3	.00082	15.288	-.00001	.01154	-.00061	-.00346	-.01039	4.8208
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606080801 Acquired: 6/25/2016 13:25:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.16531	-.00520	-.00297	.00071	.00304	.00248
Stddev	.00021	.00042	.00147	.00169	.00080	.00019	.00016
%RSD	26.039	.25638	28.334	56.894	114.04	6.1375	6.5372
#1	.00100	.16514	-.00627	-.00112	.00132	.00299	.00242
#2	.00058	.16499	-.00352	-.00336	-.00020	.00288	.00235
#3	.00084	.16579	-.00581	-.00443	.00100	.00324	.00266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9767.4	60311.	3068.7
Stddev	25.3	182.	4.5
%RSD	.25865	.30239	.14809
#1	9787.8	60238.	3069.0
#2	9775.3	60177.	3064.1
#3	9739.2	60519.	3073.1

Approved: June 27, 2016

Sample Name: L1606080803S Acquired: 6/25/2016 13:29:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19425**	**4.8313**	**.19559**	**.97188**	**.49949**	**.02391**	**55.138**	**.02433**
Stddev	.00175	.0086	.00291	.00386	.00064	.00006	.286	.00001
%RSD	.89899	.17760	1.4870	.39759	.12859	.26078	.51899	.03982
#1	.19471	4.8260	.19892	.97122	.49908	.02384	54.823	.02434
#2	.19571	4.8412	.19357	.96839	.49916	.02394	55.383	.02434
#3	.19231	4.8266	.19428	.97603	.50023	.02395	55.206	.02432
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09623**	**.24025**	**.24291**	**2.2142**	**25.706**	**.49995**	**18.850**	**.36055**
Stddev	.00052	.00032	.00081	.0203	.056	.00310	.060	.00310
%RSD	.54129	.13263	.33315	.91450	.21668	.61973	.31584	.86069
#1	.09635	.23989	.24328	2.2335	25.718	.49651	18.866	.35746
#2	.09668	.24035	.24198	2.2161	25.755	.50082	18.784	.36367
#3	.09566	.24050	.24346	2.1931	25.645	.50252	18.899	.36052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50273**	**39.946**	**.24148**	**4.8211**	**.24377**	**.58841**	**.19283**	**7.2475**
Stddev	.00069	.089	.00226	.0078	.00185	.00329	.00168	.0253
%RSD	.13674	.22372	.93733	.16218	.76094	.55837	.87085	.34834
#1	.50346	39.846	.24394	4.8298	.24591	.59218	.19095	7.2767
#2	.50266	40.018	.24099	4.8187	.24276	.58614	.19336	7.2326
#3	.50209	39.974	.23950	4.8148	.24264	.58690	.19419	7.2333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606080803S Acquired: 6/25/2016 13:29:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48600	.66572	.49120	.24058	.48625	.48121	.00549
Stddev	.00062	.00113	.00488	.00183	.00111	.00310	.00062
%RSD	.12721	.16988	.99375	.75886	.22783	.64511	11.331
#1	.48664	.66443	.49684	.23968	.48515	.48355	.00538
#2	.48596	.66654	.48839	.24268	.48622	.48240	.00493
#3	.48540	.66619	.48838	.23938	.48737	.47769	.00616
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9640.1	59155.	3051.9
Stddev	28.9	91.	4.4
%RSD	.29949	.15374	.14285
#1	9607.9	59063.	3056.9
#2	9648.6	59158.	3049.0
#3	9663.8	59244.	3049.8

Approved: June 27, 2016

Sample Name: L1606080804SD Acquired: 6/25/2016 13:33:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19367	4.8696	.19395	.97468	.50079	.02428	55.592	.02458
Stddev	.00103	.0189	.00351	.00126	.00119	.00004	.087	.00002
%RSD	.53221	.38806	1.8082	.12977	.23838	.15828	.15705	.06402
#1	.19313	4.8871	.19259	.97422	.49995	.02427	55.687	.02459
#2	.19486	4.8723	.19133	.97371	.50216	.02425	55.574	.02456
#3	.19302	4.8496	.19794	.97611	.50027	.02433	55.515	.02458
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09687	.24382	.24330	2.1942	25.602	.50391	18.927	.35670
Stddev	.00034	.00139	.00044	.0216	.187	.00317	.145	.00440
%RSD	.35450	.56820	.18086	.98630	.73073	.62836	.76565	1.2346
#1	.09649	.24542	.24364	2.2182	25.415	.50090	18.778	.36166
#2	.09698	.24295	.24347	2.1881	25.600	.50721	19.067	.35519
#3	.09715	.24309	.24280	2.1762	25.789	.50361	18.935	.35325
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50687	40.011	.24239	4.8324	.24609	.59184	.19199	7.3269
Stddev	.00174	.019	.00180	.0039	.00113	.00410	.00494	.0108
%RSD	.34421	.04769	.74422	.07995	.45954	.69206	2.5730	.14791
#1	.50863	40.009	.24329	4.8354	.24728	.59240	.18629	7.3276
#2	.50684	40.031	.24358	4.8338	.24503	.59563	.19457	7.3373
#3	.50514	39.993	.24032	4.8281	.24594	.58749	.19509	7.3157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606080804SD Acquired: 6/25/2016 13:33:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48884	.66564	.48806	.24641	.49385	.48167	.00481
Stddev	.00243	.00060	.00210	.00100	.00262	.00319	.00105
%RSD	.49731	.09007	.43005	.40687	.53028	.66320	21.781
#1	.48902	.66631	.48604	.24752	.49576	.48059	.00363
#2	.49118	.66515	.49023	.24612	.49493	.48526	.00518
#3	.48633	.66545	.48792	.24558	.49086	.47916	.00563
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9643.8	58961.	3032.4
Stddev	19.6	179.	14.4
%RSD	.20367	.30279	.47352
#1	9664.0	58941.	3022.3
#2	9624.8	58793.	3026.2
#3	9642.5	59149.	3048.8

Approved: June 27, 2016

Sample Name: L1606082203 Acquired: 6/25/2016 13:37:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	.03250	.00108	.03413	.76881	.00001	31.323	.00009
Stddev	.00326	.00113	.00298	.00231	.00291	.00007	.069	.00003
%RSD	461.08	3.4738	274.98	6.7818	.37861	986.76	.21967	35.456
#1	-.00056	.03174	-.00033	.03677	.76753	-.00000	31.323	.00006
#2	.00440	.03379	-.00093	.03317	.76676	.00008	31.255	.00011
#3	-.00173	.03195	.00451	.03246	.77215	-.00006	31.393	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00298	.00799	.00175	5.1531	49.440	.10315	14.307	.17132
Stddev	.00036	.00030	.00156	.0220	.158	.00201	.082	.00563
%RSD	12.200	3.7657	89.202	.42624	.31871	1.9519	.57045	3.2873
#1	.00316	.00823	.00355	5.1330	49.302	.10173	14.214	.17528
#2	.00323	.00810	.00078	5.1498	49.405	.10227	14.338	.17381
#3	.00256	.00765	.00092	5.1766	49.612	.10546	14.368	.16487
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	90.168	.00369	.00788	-.00122	.00230	.00147	11.287
Stddev	.00023	.210	.00039	.00442	.00289	.00119	.00467	.027
%RSD	50.114	.23246	10.480	56.105	237.50	51.496	317.01	.23968
#1	.00031	90.009	.00403	.01267	.00108	.00337	.00397	11.318
#2	.00033	90.090	.00327	.00394	-.00447	.00102	-.00391	11.275
#3	.00071	90.405	.00377	.00704	-.00027	.00252	.00436	11.268
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606082203 Acquired: 6/25/2016 13:37:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.79119**	**.00045**	**-.00075**	**.00043**	**.00534**	**-.00006**
Stddev	.00030	.00071	.00315	.00229	.00033	.00006	.00108
%RSD	437.99	.09029	691.72	303.10	75.619	1.1956	1667.5
#1	-.00035	.79036	-.00147	.00135	.00018	.00529	-.00108
#2	-.00009	.79165	-.00125	-.00319	.00032	.00542	.00108
#3	.00024	.79155	.00408	-.00042	.00080	.00532	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9649.6**	**58766.**	**3005.5**
Stddev	29.5	106.	1.2
%RSD	.30621	.18076	.04053
#1	9617.1	58644.	3006.7
#2	9657.0	58831.	3005.5
#3	9674.8	58825.	3004.3

Approved: June 27, 2016

Sample Name: L1606082202 Acquired: 6/25/2016 13:40:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573973-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00163**	**.00700**	**-.00255**	**.09063**	**.14584**	**.00010**	**6.2202**	**-.00011**
Stddev	.00068	.00493	.00215	.00172	.00146	.00002	.0817	.00004
%RSD	41.927	70.458	84.324	1.8967	.99792	21.043	1.3126	39.110
#1	.00225	.01016	-.00441	.09032	.14618	.00008	6.1515	-.00007
#2	.00090	.00132	-.00302	.08908	.14425	.00013	6.1986	-.00016
#3	.00175	.00952	-.00020	.09248	.14710	.00010	6.3104	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.00096**	**.00077**	**2.0756**	**1.5049**	**.02492**	**4.3992**	**.07622**
Stddev	.00041	.00002	.00085	.0056	.1629	.00329	.1257	.00201
%RSD	1133.0	2.0322	110.52	.26897	10.822	13.197	2.8567	2.6344
#1	-.00024	.00097	.00165	2.0692	1.6925	.02131	4.4123	.07724
#2	.00043	.00097	.00070	2.0781	1.3995	.02572	4.2675	.07752
#3	-.00030	.00094	-.00004	2.0795	1.4227	.02774	4.5178	.07391
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**83.246**	**.00061**	**.10079**	**.00421**	**-.00520**	**.00452**	**12.135**
Stddev	.00009	.263	.00086	.00636	.00131	.00271	.00174	.029
%RSD	36.387	.31568	140.09	6.3065	31.208	52.125	38.464	.24257
#1	-.00033	83.275	.00060	.10060	.00298	-.00301	.00254	12.154
#2	-.00015	82.970	.00147	.10724	.00559	-.00823	.00579	12.151
#3	-.00025	83.493	-.00024	.09454	.00404	-.00437	.00523	12.101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606082202 Acquired: 6/25/2016 13:40:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573973-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	.21054	.00087	-.00133	-.00012	.00182	.00052
Stddev	.00041	.00091	.00263	.00076	.00048	.00007	.00152
%RSD	145.47	.43126	300.38	57.105	397.63	3.7016	294.24
#1	.00007	.21002	.00237	-.00045	.00028	.00184	-.00094
#2	.00003	.21002	.00241	-.00174	.00001	.00175	.00210
#3	.00076	.21159	-.00216	-.00179	-.00065	.00188	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9729.1	59376.	3030.4
Stddev	8.6	260.	19.9
%RSD	.08835	.43738	.65516
#1	9720.3	59079.	3018.5
#2	9729.3	59490.	3053.3
#3	9737.5	59559.	3019.5

Approved: June 27, 2016

Sample Name: L1606082202PS Acquired: 6/25/2016 13:44:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573973-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19375**	**4.8752**	**.19613**	**1.0291**	**.62833**	**.02428**	**10.648**	**.02477**
Stddev	.00051	.0099	.00160	.0019	.00588	.00006	.170	.00011
%RSD	.26273	.20232	.81334	.18131	.93614	.24036	1.5959	.45206
#1	.19417	4.8642	.19702	1.0298	.63084	.02431	10.660	.02468
#2	.19391	4.8782	.19429	1.0305	.63254	.02431	10.812	.02489
#3	.19319	4.8832	.19709	1.0270	.62161	.02421	10.473	.02473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09829**	**.24324**	**.24855**	**3.8486**	**25.821**	**.52335**	**8.7582**	**.31225**
Stddev	.00082	.00053	.00056	.0314	.285	.00671	.0434	.00355
%RSD	.83225	.21842	.22566	.81716	1.1038	1.2812	.49530	1.1380
#1	.09742	.24374	.24849	3.8714	25.861	.52361	8.7634	.31338
#2	.09905	.24330	.24914	3.8618	26.083	.52993	8.7125	.31510
#3	.09841	.24268	.24802	3.8128	25.517	.51653	8.7988	.30827
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50486**	**99.997**	**.24562**	**4.8721**	**.24648**	**.59017**	**.19243**	**13.471**
Stddev	.00060	.660	.00153	.0054	.00424	.00393	.00054	.013
%RSD	.11858	.66045	.62190	.11137	1.7208	.66559	.28037	.09301
#1	.50422	100.35	.24553	4.8783	.24168	.58648	.19181	13.458
#2	.50541	100.41	.24414	4.8682	.24971	.59430	.19267	13.471
#3	.50494	99.235	.24719	4.8698	.24807	.58975	.19281	13.483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606082202PS Acquired: 6/25/2016 13:44:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573973-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48807**	**.68216**	**.50019**	**.24323**	**.49372**	**.48957**	**.00258**
Stddev	.00205	.00533	.01089	.00117	.00097	.00018	.00106
%RSD	.41999	.78112	2.1777	.48173	.19621	.03662	41.003
#1	.49029	.68537	.51266	.24188	.49454	.48951	.00281
#2	.48770	.68509	.49539	.24396	.49265	.48978	.00349
#3	.48624	.67601	.49252	.24385	.49397	.48943	.00142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9652.9**	**58738.**	**3022.5**
Stddev	16.4	44.	32.4
%RSD	.17031	.07498	1.0716
#1	9668.7	58757.	3005.1
#2	9654.1	58688.	3002.5
#3	9635.9	58769.	3059.8

Approved: June 27, 2016

Sample Name: L1606082202SDL Acquired: 6/25/2016 13:48:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573973-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00041	-.00874	.00232	.01966	.02846	.00012	1.1981	-.00020
Stddev	.00102	.00520	.00129	.00166	.00164	.00003	.0364	.00029
%RSD	249.96	59.552	55.713	8.4558	5.7787	28.080	3.0406	145.60
#1	-.00049	-.00387	.00244	.02114	.03034	.00013	1.2234	-.00054
#2	.00065	-.00812	.00098	.01996	.02778	.00008	1.1564	-.00008
#3	-.00139	-.01423	.00356	.01786	.02727	.00014	1.2146	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	.00097	.00049	.42314	.31666	.00414	.84994	.01478
Stddev	.00036	.00092	.00031	.02269	.03395	.00078	.10125	.00159
%RSD	202.36	94.832	64.039	5.3615	10.720	18.849	11.912	10.770
#1	-.00059	-.00007	.00031	.40193	.27970	.00483	.89447	.01388
#2	-.00002	.00128	.00031	.42043	.32384	.00429	.92129	.01385
#3	.00008	.00169	.00086	.44706	.34645	.00330	.73406	.01662
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	16.797	-.00010	.02573	.00379	-.00654	-.00062	2.4606
Stddev	.00016	.116	.00075	.00347	.00211	.00206	.00121	.0014
%RSD	105.18	.68795	766.63	13.470	55.760	31.494	195.90	.05654
#1	-.00025	16.870	-.00048	.02714	.00159	-.00786	-.00167	2.4590
#2	-.00024	16.856	-.00058	.02827	.00580	-.00417	-.00090	2.4616
#3	.00003	16.663	.00077	.02178	.00399	-.00761	.00071	2.4611
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606082202SDL Acquired: 6/25/2016 13:48:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573973-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00034**	**.04233**	**.00225**	**-.00298**	**.00005**	**.00069**	**.00014**
Stddev	.00035	.00076	.00380	.00312	.00068	.00008	.00023
%RSD	102.54	1.7878	169.10	104.78	1298.3	11.967	160.88
#1	-.00033	.04309	.00306	.00056	-.00034	.00074	-.00011
#2	.00000	.04232	.00558	-.00534	-.00035	.00059	.00032
#3	-.00071	.04157	-.00189	-.00415	.00084	.00073	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10112.**	**61959.**	**3102.5**
Stddev	25.	335.	21.2
%RSD	.24804	.54051	.68302
#1	10140.	62322.	3081.9
#2	10091.	61890.	3101.4
#3	10107.	61663.	3124.2

Approved: June 27, 2016

Sample Name: L1606082202SDL Acquired: 6/25/2016 13:52:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573973-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**-.00201**	**.00162**	**.00506**	**.00674**	**.00009**	**.22194**	**.00006**
Stddev	.00098	.00612	.00099	.00223	.00036	.00007	.03121	.00010
%RSD	701.06	303.84	61.332	44.136	5.3564	71.933	14.062	159.17
#1	-.00091	-.00825	.00149	.00575	.00715	.00008	.25227	.00003
#2	-.00048	-.00177	.00268	.00256	.00663	.00004	.22363	-.00001
#3	.00097	.00398	.00070	.00686	.00645	.00017	.18992	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.00003**	**.00093**	**.10294**	**.07211**	**-.00053**	**.11677**	**.00303**
Stddev	.00044	.00176	.00026	.00844	.06933	.00190	.04489	.00266
%RSD	660.12	5191.6	27.598	8.2017	96.144	360.65	38.441	87.562
#1	-.00052	.00076	.00092	.11264	.12436	-.00025	.12873	.00344
#2	.00037	-.00197	.00068	.09726	-.00654	-.00255	.06712	.00020
#3	-.00005	.00131	.00120	.09891	.09851	.00122	.15447	.00546
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00046**	**3.4626**	**-.00095**	**.01102**	**.00309**	**-.00448**	**.00254**	**.52285**
Stddev	.00009	.0579	.00053	.00740	.00233	.00663	.00646	.00911
%RSD	18.881	1.6714	55.686	67.190	75.440	147.88	254.92	1.7427
#1	-.00041	3.4180	-.00056	.01783	.00042	-.00172	-.00323	.51493
#2	-.00042	3.4418	-.00074	.01207	.00473	-.01205	.00952	.52082
#3	-.00056	3.5280	-.00155	.00314	.00412	.00032	.00131	.53281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606082202SDL Acquired: 6/25/2016 13:52:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573973-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00039**	**.00876**	**-.00160**	**-.00170**	**.00064**	**.00048**	**.00025**
Stddev	.00024	.00020	.00243	.00072	.00151	.00001	.00052
%RSD	61.212	2.3382	151.62	42.632	234.58	1.6034	205.72
#1	-.00036	.00876	-.00015	-.00219	-.00097	.00048	.00032
#2	-.00064	.00897	-.00025	-.00087	.00088	.00049	-.00030
#3	-.00017	.00856	-.00441	-.00204	.00202	.00048	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10010.**	**61091.**	**3050.7**
Stddev	14.	94.	16.7
%RSD	.14368	.15455	.54708
#1	9999.9	61099.	3067.0
#2	10027.	60993.	3033.7
#3	10004.	61182.	3051.5

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 13:56:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39703	9.8823	.39208	.48360	.99649	.04877	9.9442
Stddev	.00097	.0185	.00108	.00155	.00485	.00012	.0391
%RSD	.24464	.18766	.27635	.32015	.48698	.23806	.39293
#1	.39651	9.9033	.39094	.48432	.99107	.04885	9.8991
#2	.39815	9.8682	.39222	.48182	1.0004	.04883	9.9670
#3	.39642	9.8754	.39309	.48466	.99796	.04864	9.9665
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04952	.19590	.48861	.49872	3.9553	49.086	.99832
Stddev	.00026	.00028	.00039	.00131	.0110	.181	.00236
%RSD	.52554	.14170	.07934	.26171	.27922	.36920	.23624
#1	.04970	.19602	.48888	.50017	3.9554	48.878	.99571
#2	.04922	.19610	.48816	.49764	3.9662	49.210	1.0003
#3	.04964	.19559	.48877	.49836	3.9441	49.170	.99895
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.6989	.49966	.99513	49.378	.49577	9.7713	.49937
Stddev	.0286	.00128	.00487	.189	.00112	.0077	.00125
%RSD	.29470	.25687	.48908	.38358	.22653	.07875	.25024
#1	9.6936	.49933	.99926	49.226	.49626	9.7672	.49899
#2	9.6733	.50107	.99636	49.590	.49656	9.7802	.50076
#3	9.7297	.49857	.98976	49.317	.49448	9.7665	.49835
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 13:56:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1744**	**.39516**	**5.0749**	**.97934**	**.99997**	**.99747**	**.49995**
Stddev	.0050	.00337	.0045	.00061	.00261	.00842	.00315
%RSD	.42778	.85272	.08873	.06267	.26098	.84451	.63052
#1	1.1693	.39868	5.0732	.98005	.99777	.99280	.50104
#2	1.1793	.39197	5.0800	.97900	1.0028	1.0072	.49639
#3	1.1748	.39484	5.0715	.97897	.99928	.99242	.50240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.98727**	**.98962**	F **2.8790**
Stddev	.00224	.00122	.0125
%RSD	.22699	.12332	.43408
#1	.98696	.98924	2.8649
#2	.98519	.99098	2.8888
#3	.98965	.98864	2.8834
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9881.8**	**60025.**	**3051.6**
Stddev	7.5	117.	13.0
%RSD	.07613	.19437	.42745
#1	9874.3	60038.	3066.6
#2	9889.3	60134.	3043.0
#3	9881.9	59902.	3045.3

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 14:00:01 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00037	.00384	.00171	.00288	.00164	.00016	-.02160	-.00002
Stddev	.00056	.00607	.00179	.00157	.00101	.00008	.03268	.00008
%RSD	153.00	158.06	104.81	54.496	61.686	49.488	151.32	357.31
#1	-.00082	.00133	.00363	.00341	.00099	.00008	-.05876	.00002
#2	-.00054	.01077	.00142	.00412	.00280	.00016	-.00868	-.00011
#3	.00026	-.00057	.00008	.00112	.00111	.00023	.00265	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.00089	.00145	.02539	.05830	-.00178	-.00516	-.00289
Stddev	.00025	.00059	.00085	.02878	.16368	.00331	.04118	.00267
%RSD	184.36	65.782	58.421	113.33	280.73	185.62	797.74	92.366
#1	-.00007	.00150	.00078	.04856	-.06991	-.00470	-.03370	-.00034
#2	.00042	.00086	.00240	.03444	.24267	-.00246	.04205	-.00265
#3	.00006	.00033	.00117	-.00682	.00216	.00181	-.02383	-.00566
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00312	.01750	-.00036	.00463	.00110	.00408	.00171	-.00349
Stddev	.00035	.01788	.00074	.00054	.00119	.00430	.00409	.00216
%RSD	11.208	102.15	207.33	11.581	107.78	105.36	238.51	61.802
#1	.00276	.00856	.00044	.00497	-.00027	-.00057	.00622	-.00129
#2	.00346	.03809	-.00047	.00401	.00175	.00791	-.00177	-.00560
#3	.00314	.00586	-.00104	.00491	.00181	.00489	.00070	-.00357
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 14:00:01 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.00055	-.00034	-.00341	.00088	.00013	.00321
Stddev	.00088	.00013	.00661	.00148	.00029	.00021	.00123
%RSD	577.33	24.369	1964.7	43.438	32.521	159.30	38.279
#1	-.00076	.00044	.00453	-.00437	.00106	-.00009	.00194
#2	.00100	.00070	.00232	-.00416	.00055	.00032	.00329
#3	.00022	.00052	-.00786	-.00171	.00104	.00016	.00439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9674.1	59179.	2989.6
Stddev	10.8	80.	18.0
%RSD	.11204	.13474	.60268
#1	9680.4	59116.	2972.7
#2	9661.6	59269.	3008.6
#3	9680.2	59153.	2987.4

Approved: June 27, 2016

Sample Name: L1606082302 Acquired: 6/25/2016 14:03:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.01235**	**.00398**	**.02065**	**7.6114**	**.00014**	**242.99**
Stddev	.00016	.00738	.00092	.00248	.0086	.00009	.50
%RSD	156.01	59.723	23.024	12.009	.11234	64.318	.20416
#1	-.00023	.01740	.00411	.01789	7.6202	.00016	242.85
#2	-.00014	.01576	.00483	.02137	7.6109	.00023	243.54
#3	.00007	.00389	.00301	.02270	7.6032	.00004	242.58
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00045**	**.05380**	**.00122**	**.00261**	**4.4999**	**3.4068**	**.13022**
Stddev	.00043	.00087	.00035	.00011	.0119	.0234	.00431
%RSD	95.240	1.6084	28.402	4.2649	.26410	.68699	3.3105
#1	-.00003	.05465	.00142	.00253	4.4869	3.3837	.13493
#2	.00060	.05384	.00143	.00274	4.5026	3.4062	.12925
#3	.00078	.05292	.00082	.00256	4.5101	3.4305	.12648
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**186.55**	**.80417**	**.00043**	F **676.67**	**.01798**	**.04840**	**.00356**
Stddev	.43	.00344	.00029	5.78	.00081	.00767	.00232
%RSD	.22901	.42830	67.402	.85481	4.4962	15.839	65.024
#1	186.94	.80321	.00050	676.18	.01876	.05723	.00107
#2	186.09	.80800	.00067	682.68	.01714	.04349	.00566
#3	186.63	.80131	.00011	671.15	.01803	.04447	.00396
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 27, 2016

Sample Name: L1606082302 Acquired: 6/25/2016 14:03:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00329	-.00499	17.541	.00002	5.8024	F -.03279	-.00373
Stddev	.00417	.00266	.115	.00016	.0077	.00249	.00217
%RSD	126.77	53.331	.65409	771.83	.13255	7.6037	58.233
#1	-.00765	-.00207	17.622	-.00016	5.8086	-.03219	-.00297
#2	-.00289	-.00563	17.591	.00008	5.8048	-.03065	-.00619
#3	.00066	-.00727	17.409	.00014	5.7938	-.03553	-.00205
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00105	.00822	.00588
Stddev	.00081	.00012	.00100
%RSD	77.437	1.5051	16.931
#1	-.00020	.00826	.00695
#2	-.00112	.00832	.00498
#3	-.00182	.00808	.00571
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9001.2	54623.	2943.0
Stddev	12.7	293.	11.3
%RSD	.14121	.53595	.38250
#1	8986.8	54359.	2937.9
#2	9010.8	54574.	2935.3
#3	9006.1	54938.	2955.9

Approved: June 27, 2016

Sample Name: L1606082303 Acquired: 6/25/2016 14:07:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00097**	**.07689**	**.00082**	**.01317**	**4.0611**	**.00008**	**194.35**
Stddev	.00087	.00794	.00214	.00140	.0013	.00002	.19
%RSD	89.857	10.324	259.83	10.655	.03277	29.564	.09947
#1	.00177	.08422	.00140	.01160	4.0625	.00007	194.28
#2	.00005	.07798	.00261	.01363	4.0599	.00006	194.19
#3	.00109	.06846	-.00155	.01429	4.0610	.00010	194.56
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**.00720**	**.00128**	**.00172**	**.48254**	**1.5553**	**.05921**
Stddev	.00016	.00037	.00008	.00037	.03011	.0518	.00214
%RSD	37.982	5.1555	6.4501	21.255	6.2390	3.3303	3.6194
#1	.00025	.00709	.00125	.00159	.48289	1.5549	.05878
#2	.00056	.00690	.00137	.00144	.45226	1.5037	.05732
#3	.00044	.00762	.00121	.00214	.51247	1.6073	.06154
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**110.52**	**2.3053**	**-.00008**	F **614.40**	**.00312**	**.00621**	**.00333**
Stddev	.38	.0070	.00038	4.80	.00050	.00738	.00101
%RSD	.34277	.30352	457.85	.78181	15.943	118.75	30.264
#1	110.96	2.3090	-.00052	609.47	.00307	-.00184	.00218
#2	110.30	2.2972	.00010	614.65	.00363	.01264	.00406
#3	110.30	2.3096	.00018	619.07	.00264	.00783	.00375
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 27, 2016

Sample Name: L1606082303 Acquired: 6/25/2016 14:07:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00131	-.00398	12.572	-.00061	3.7282	-.02186	-.00195
Stddev	.00101	.00138	.069	.00058	.0049	.00737	.00114
%RSD	77.475	34.690	.54565	95.484	.12996	33.713	58.500
#1	-.00178	-.00242	12.599	.00005	3.7247	-.01374	-.00282
#2	-.00014	-.00503	12.623	-.00084	3.7262	-.02372	-.00066
#3	-.00200	-.00451	12.494	-.00105	3.7337	-.02812	-.00237
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00017	.00519	.00587
Stddev	.00034	.00017	.00146
%RSD	196.61	3.3392	24.813
#1	.00020	.00538	.00454
#2	-.00026	.00515	.00565
#3	-.00046	.00504	.00743
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9113.2	55170.	2962.5
Stddev	17.2	284.	10.8
%RSD	.18895	.51491	.36572
#1	9120.9	54953.	2952.0
#2	9093.5	55065.	2973.6
#3	9125.3	55492.	2961.9

Approved: June 27, 2016

Sample Name: L1606082304 Acquired: 6/25/2016 14:12:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00108**	**.00282**	**.00375**	**.01195**	**1.2873**	**.00004**	**44.812**	**-.00032**
Stddev	.00081	.00175	.00233	.00191	.0068	.00003	.140	.00033
%RSD	75.442	62.066	62.147	15.958	.52861	68.482	.31190	102.13
#1	-.00032	.00374	.00333	.01352	1.2889	.00004	44.884	-.00060
#2	-.00194	.00392	.00166	.00983	1.2799	.00001	44.651	.00004
#3	-.00098	.00080	.00626	.01250	1.2932	.00007	44.900	-.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00062**	**-.00235**	**.00403**	**80.696**	**3.0351**	**.04425**	**27.190**	**1.4212**
Stddev	.00024	.00090	.00186	.288	.0674	.00194	.251	.0124
%RSD	38.213	38.227	46.192	.35704	2.2197	4.3802	.92249	.86964
#1	.00059	-.00132	.00534	80.883	2.9579	.04406	26.967	1.4224
#2	.00088	-.00276	.00485	80.364	3.0650	.04628	27.141	1.4083
#3	.00040	-.00297	.00190	80.840	3.0823	.04242	27.462	1.4329
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00083**	**136.40**	**.00117**	**.05473**	**.00702**	**-.00148**	**-.00406**	**16.093**
Stddev	.00029	.62	.00056	.00919	.00288	.00326	.00473	.052
%RSD	35.125	.45656	47.701	16.792	41.072	220.80	116.61	.32014
#1	-.00064	136.42	.00054	.06475	.00887	-.00465	-.00925	16.145
#2	-.00116	135.77	.00135	.05277	.00848	.00187	.00003	16.091
#3	-.00068	137.01	.00161	.04668	.00370	-.00165	-.00296	16.042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606082304 Acquired: 6/25/2016 14:12:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00141**	**1.0265**	**.02088**	**-.00129**	**-.00025**	**.01157**	**-.01042**
Stddev	.00052	.0054	.00601	.00283	.00173	.00020	.00036
%RSD	36.987	.52659	28.762	219.55	704.92	1.7611	3.4676
#1	.00201	1.0281	.02616	-.00374	-.00225	.01176	-.01080
#2	.00117	1.0205	.01435	.00181	.00074	.01159	-.01039
#3	.00105	1.0309	.02213	-.00193	.00077	.01136	-.01008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9584.5**	**58328.**	**2992.4**
Stddev	11.8	87.	5.0
%RSD	.12317	.14881	.16820
#1	9573.1	58228.	2986.6
#2	9583.6	58387.	2995.2
#3	9596.7	58368.	2995.4

Approved: June 27, 2016

Sample Name: L1606114801 Acquired: 6/25/2016 14:15:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00263	.73135	.00385	.12210	.08262	.00020	27.646	.00018
Stddev	.00073	.00428	.00128	.00118	.00156	.00004	.096	.00015
%RSD	27.764	.58467	33.324	.96789	1.8866	19.880	.34678	80.450
#1	.00220	.73627	.00263	.12346	.08403	.00016	27.689	.00009
#2	.00223	.72927	.00372	.12147	.08287	.00024	27.713	.00035
#3	.00348	.72851	.00519	.12136	.08095	.00020	27.536	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	.00138	.00319	.50952	4.5430	.00820	13.834	.02681
Stddev	.00058	.00089	.00080	.00314	.0592	.00406	.158	.00190
%RSD	107.78	64.361	25.113	.61565	1.3042	49.473	1.1398	7.0691
#1	-.00010	.00066	.00412	.50590	4.4785	.00685	13.879	.02807
#2	.00067	.00110	.00265	.51133	4.5951	.01276	13.964	.02463
#3	.00103	.00237	.00282	.51133	4.5554	.00499	13.658	.02774
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00124	65.018	.00157	.05465	.00287	-.00148	.00632	4.3760
Stddev	.00020	.232	.00022	.00221	.00233	.00288	.00218	.0207
%RSD	16.215	.35629	13.957	4.0445	81.267	194.34	34.507	.47244
#1	.00141	65.009	.00133	.05367	.00373	-.00288	.00878	4.3946
#2	.00130	65.254	.00176	.05719	.00465	-.00339	.00555	4.3795
#3	.00102	64.791	.00160	.05310	.00023	.00183	.00463	4.3537
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606114801 Acquired: 6/25/2016 14:15:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00055**	**.26681**	**.01202**	**-.00269**	**.00480**	**.00516**	**.00567**
Stddev	.00125	.00125	.00081	.00070	.00038	.00011	.00071
%RSD	227.21	.46986	6.7372	25.927	7.9446	2.0641	12.451
#1	-.00072	.26656	.01275	-.00259	.00452	.00521	.00488
#2	.00178	.26818	.01115	-.00205	.00524	.00504	.00622
#3	.00058	.26571	.01216	-.00344	.00465	.00524	.00592
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9685.5**	**59237.**	**3013.9**
Stddev	15.3	70.	21.8
%RSD	.15804	.11840	.72168
#1	9667.9	59212.	3004.6
#2	9692.8	59182.	2998.3
#3	9695.8	59316.	3038.7

Approved: June 27, 2016

Sample Name: L1606114802 Acquired: 6/25/2016 14:19:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00086	.02576	.00392	.13054	.14235	.00004	53.032	.00013
Stddev	.00161	.00264	.00128	.00304	.00093	.00006	.088	.00011
%RSD	186.85	10.249	32.777	2.3320	.65273	165.85	.16643	81.772
#1	-.00048	.02479	.00505	.13055	.14272	-.00002	52.942	.00017
#2	.00053	.02374	.00418	.13357	.14130	.00011	53.037	.00022
#3	-.00263	.02875	.00252	.12748	.14305	.00003	53.119	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.00416	.00255	.05069	2.7172	.00979	45.232	.00619
Stddev	.00057	.00090	.00135	.00895	.0969	.00331	.213	.00128
%RSD	70.201	21.666	53.148	17.648	3.5679	33.803	.47142	20.757
#1	.00109	.00488	.00157	.05068	2.6091	.01132	44.992	.00715
#2	.00016	.00315	.00198	.05964	2.7964	.01206	45.307	.00668
#3	.00119	.00444	.00409	.04175	2.7463	.00599	45.398	.00473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	113.30	.00198	.03363	.00397	-.00032	.00108	5.7426
Stddev	.00005	.15	.00097	.00220	.00496	.00242	.00246	.0270
%RSD	9.2544	.13423	48.767	6.5321	124.89	765.53	227.39	.46957
#1	.00062	113.13	.00098	.03204	.00115	-.00095	-.00128	5.7131
#2	.00062	113.39	.00206	.03614	.00107	.00236	.00363	5.7660
#3	.00052	113.39	.00290	.03272	.00971	-.00236	.00090	5.7486
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606114802 Acquired: 6/25/2016 14:19:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**.36906**	**-.00370**	**-.00072**	**.00779**	**.00692**	**.00331**
Stddev	.00028	.00064	.00411	.00265	.00075	.00021	.00138
%RSD	191.03	.17400	110.98	366.07	9.6620	3.0569	41.716
#1	-.00017	.36882	.00101	-.00049	.00853	.00671	.00489
#2	.00034	.36857	-.00557	.00180	.00703	.00713	.00270
#3	.00027	.36978	-.00654	-.00348	.00781	.00694	.00235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9627.8**	**58951.**	**3062.4**
Stddev	26.1	26.	1.9
%RSD	.27151	.04447	.06237
#1	9657.6	58927.	3060.7
#2	9617.0	58947.	3062.0
#3	9608.7	58979.	3064.5

Approved: June 27, 2016

Sample Name: L1606115001 Acquired: 6/25/2016 14:23:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00134	.94860	.00623	.13672	.10593	.00014	35.066	.00002
Stddev	.00163	.01243	.00298	.00233	.00120	.00009	.208	.00013
%RSD	122.05	1.3105	47.819	1.7071	1.1370	65.235	.59262	741.62
#1	-.00020	.96246	.00332	.13853	.10456	.00018	34.826	.00011
#2	.00116	.93843	.00928	.13754	.10682	.00004	35.168	-.00013
#3	.00306	.94490	.00609	.13408	.10640	.00021	35.202	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00095	.00115	.00402	.75423	2.6231	.00517	21.361	.05361
Stddev	.00038	.00077	.00076	.00983	.0329	.00134	.091	.00159
%RSD	39.586	67.102	19.015	1.3028	1.2541	25.927	.42723	2.9705
#1	.00055	.00114	.00333	.74497	2.6490	.00636	21.310	.05382
#2	.00102	.00192	.00389	.75319	2.6342	.00372	21.307	.05192
#3	.00129	.00038	.00484	.76454	2.5861	.00543	21.467	.05508
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00320	114.16	.00202	.11444	.00566	-.00032	.00352	5.0408
Stddev	.00062	.45	.00043	.00615	.00453	.00176	.00035	.0084
%RSD	19.542	.39163	21.028	5.3725	80.076	549.83	10.037	.16741
#1	.00290	113.69	.00211	.12072	.00935	.00043	.00314	5.0497
#2	.00278	114.20	.00240	.11417	.00060	.00094	.00356	5.0330
#3	.00392	114.58	.00156	.10843	.00702	-.00233	.00385	5.0397
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115001 Acquired: 6/25/2016 14:23:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**.24066**	**.01417**	**-.00245**	**.00766**	**.00892**	**.00404**
Stddev	.00021	.00154	.00348	.00225	.00065	.00011	.00127
%RSD	805.05	.63820	24.568	91.853	8.5297	1.1926	31.485
#1	.00024	.23889	.01059	-.00116	.00840	.00901	.00275
#2	.00001	.24171	.01754	-.00114	.00737	.00895	.00530
#3	-.00018	.24137	.01438	-.00504	.00719	.00880	.00407
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9688.5**	**58932.**	**3057.0**
Stddev	25.8	93.	13.7
%RSD	.26652	.15746	.44955
#1	9698.0	58835.	3047.2
#2	9708.3	59020.	3072.7
#3	9659.3	58940.	3051.0

Approved: June 27, 2016

Sample Name: L1606115002 Acquired: 6/25/2016 14:27:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00203	.48878	.00167	.06520	.04585	.00006	17.152	.00001
Stddev	.00268	.01554	.00141	.00090	.00204	.00009	.173	.00009
%RSD	131.70	3.1791	84.852	1.3869	4.4598	167.56	1.0064	934.85
#1	.00187	.50660	.00286	.06544	.04801	.00015	17.256	-.00009
#2	-.00056	.47801	.00204	.06596	.04394	-.00004	16.953	.00007
#3	.00479	.48175	.00010	.06420	.04559	.00005	17.247	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00168	.00243	.39846	4.7446	.00319	5.4375	.01729
Stddev	.00031	.00066	.00184	.00667	.1185	.00289	.0385	.00153
%RSD	100.89	39.152	75.822	1.6749	2.4966	90.823	.70870	8.8325
#1	.00065	.00096	.00122	.39954	4.7392	.00001	5.4553	.01884
#2	.00006	.00183	.00151	.39131	4.6289	.00567	5.3932	.01727
#3	.00020	.00224	.00454	.40452	4.8657	.00387	5.4638	.01578
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	38.880	.00010	.07228	.00433	-.00020	.00027	1.5503
Stddev	.00033	.402	.00056	.00820	.00375	.00324	.00590	.0251
%RSD	119.49	1.0347	568.40	11.341	86.648	1601.4	2189.5	1.6195
#1	-.00010	39.210	-.00001	.06867	.00198	.00127	.00262	1.5658
#2	.00053	38.432	.00070	.06650	.00235	-.00392	-.00644	1.5637
#3	.00040	38.999	-.00040	.08166	.00865	.00205	.00464	1.5213
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115002 Acquired: 6/25/2016 14:27:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.09712	.00701	-.00122	.00599	.00508	.00239
Stddev	.00062	.00057	.00249	.00352	.00080	.00018	.00169
%RSD	1544.5	.58817	35.547	288.53	13.353	3.5369	70.760
#1	.00058	.09776	.00445	-.00524	.00624	.00503	.00322
#2	-.00064	.09666	.00715	.00026	.00510	.00528	.00044
#3	.00018	.09693	.00942	.00132	.00664	.00493	.00349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9845.3	59884.	3057.5
Stddev	61.7	141.	28.2
%RSD	.62651	.23463	.92251
#1	9792.5	59732.	3034.3
#2	9830.2	60008.	3088.9
#3	9913.1	59914.	3049.2

Approved: June 27, 2016

Sample Name: L1606115102 Acquired: 6/25/2016 14:31:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00159	.14924	.00211	.10945	.07344	.00012	35.265	.00011
Stddev	.00084	.00304	.00150	.00214	.00141	.00005	.199	.00019
%RSD	53.011	2.0340	71.147	1.9507	1.9218	40.963	.56552	183.34
#1	.00069	.14626	.00205	.10856	.07211	.00007	35.174	.00027
#2	.00171	.15233	.00364	.10790	.07329	.00017	35.493	-.00011
#3	.00236	.14912	.00064	.11188	.07492	.00013	35.127	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.00053	.00363	.24070	2.2004	.00754	18.847	.05800
Stddev	.00037	.00064	.00076	.00439	.0134	.00192	.227	.00368
%RSD	71.691	119.20	20.837	1.8247	.61086	25.451	1.2033	6.3535
#1	.00009	-.00001	.00323	.23564	2.1949	.00870	18.615	.05962
#2	.00071	.00038	.00450	.24286	2.2158	.00532	19.068	.05378
#3	.00075	.00124	.00316	.24359	2.1907	.00860	18.858	.06059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00267	93.416	.00066	.05411	.00356	-.00299	.00235	4.9794
Stddev	.00025	.232	.00043	.00846	.00271	.00266	.00452	.0235
%RSD	9.2843	.24821	65.257	15.640	76.210	88.939	192.50	.47215
#1	.00239	93.189	.00082	.06384	.00043	-.00008	-.00245	4.9968
#2	.00274	93.652	.00099	.04849	.00522	-.00529	.00653	4.9888
#3	.00288	93.408	.00017	.05000	.00501	-.00360	.00296	4.9527
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115102 Acquired: 6/25/2016 14:31:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.22720	-.00049	-.00434	.00477	.01199	.00282
Stddev	.00094	.00191	.00341	.00316	.00052	.00018	.00083
%RSD	624.90	.83946	689.70	72.807	10.840	1.4772	29.345
#1	.00091	.22526	.00103	-.00351	.00496	.01201	.00271
#2	-.00090	.22907	-.00440	-.00783	.00516	.01216	.00370
#3	.00043	.22727	.00189	-.00168	.00418	.01181	.00206
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9596.9	58682.	3041.4
Stddev	35.1	192.	10.5
%RSD	.36599	.32727	.34598
#1	9558.5	58834.	3032.3
#2	9605.0	58747.	3039.1
#3	9627.4	58466.	3052.9

Approved: June 27, 2016

Sample Name: L1606115105 Acquired: 6/25/2016 14:35:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	.08611	.00385	.13923	.09101	.00009	44.089	.00002
Stddev	.00149	.00500	.00146	.00310	.00028	.00009	.047	.00004
%RSD	320.61	5.8036	37.928	2.2254	.30236	102.05	.10587	146.93
#1	-.00016	.08678	.00262	.14146	.09069	.00015	44.139	.00006
#2	-.00061	.09074	.00347	.13569	.09114	.00014	44.082	.00002
#3	.00216	.08081	.00547	.14055	.09119	-.00002	44.046	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.00077	.00300	.22257	1.9197	.00784	24.665	.07651
Stddev	.00017	.00044	.00144	.01624	.0794	.00414	.178	.00017
%RSD	34.605	57.594	48.079	7.2986	4.1341	52.815	.72144	.22200
#1	.00066	.00116	.00292	.22095	1.8333	.01224	24.592	.07669
#2	.00046	.00029	.00448	.23956	1.9894	.00402	24.534	.07635
#3	.00033	.00086	.00160	.20719	1.9365	.00726	24.867	.07649
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00251	121.52	.00039	.04724	.00176	-.00202	.00114	5.9103
Stddev	.00040	.42	.00024	.00471	.00159	.00145	.00478	.0521
%RSD	16.119	.34732	62.165	9.9710	90.693	71.551	420.31	.88218
#1	.00228	121.85	.00064	.05267	.00005	-.00053	.00361	5.8778
#2	.00297	121.67	.00016	.04481	.00202	-.00342	.00418	5.9704
#3	.00227	121.04	.00037	.04425	.00320	-.00211	-.00437	5.8826
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115105 Acquired: 6/25/2016 14:35:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00058	.28912	-.00001	-.00113	.00539	.00821	.00159
Stddev	.00104	.00030	.00390	.00110	.00033	.00010	.00078
%RSD	180.18	.10436	27479.	97.280	6.0662	1.2671	48.813
#1	.00169	.28878	.00322	.00014	.00577	.00817	.00171
#2	.00041	.28919	.00108	-.00182	.00517	.00833	.00230
#3	-.00037	.28937	-.00434	-.00172	.00524	.00813	.00076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9591.1	58078.	3001.7
Stddev	50.0	111.	7.0
%RSD	.52084	.19101	.23475
#1	9648.1	57963.	2993.9
#2	9554.9	58185.	3007.6
#3	9570.3	58085.	3003.7

Approved: June 27, 2016

Sample Name: L1606115401 Acquired: 6/25/2016 14:39:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**.06369**	**.00211**	**1.6713**	**.01926**	**.00010**	F **452.03**
Stddev	.00322	.00656	.00351	.0005	.00118	.00010	.89
%RSD	1157.9	10.295	166.24	.02810	6.1016	104.76	.19751
#1	.00114	.06870	-.00193	1.6717	.01795	.00008	451.94
#2	.00198	.05626	.00441	1.6715	.02023	.00000	452.97
#3	-.00396	.06610	.00386	1.6708	.01959	.00021	451.19
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**.00175**	**.00336**	**.00358**	**.08657**	**4.0470**	**.10636**
Stddev	.00024	.00006	.00098	.00171	.01546	.0608	.00217
%RSD	56.333	3.4162	29.186	47.723	17.854	1.5017	2.0382
#1	.00015	.00180	.00230	.00410	.09591	4.0001	.10764
#2	.00053	.00168	.00424	.00167	.09508	4.1156	.10386
#3	.00059	.00177	.00354	.00498	.06873	4.0251	.10759
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**104.45**	**.25861**	**.02316**	F **889.97**	**.00046**	**.03619**	**.00320**
Stddev	.32	.00175	.00063	8.94	.00094	.00407	.00206
%RSD	.30573	.67823	2.7369	1.0045	203.65	11.246	64.428
#1	104.40	.26014	.02389	897.40	-.00019	.03795	.00082
#2	104.79	.25898	.02276	892.47	.00155	.03153	.00442
#3	104.16	.25670	.02283	880.05	.00003	.03907	.00435
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 27, 2016

Sample Name: L1606115401 Acquired: 6/25/2016 14:39:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.04556**	**5.0652**	**-.00092**	**8.3910**	F **-.05563**	**-.00220**
Stddev	.00340	.00461	.0400	.00030	.0291	.00259	.00257
%RSD	2618.0	10.119	.78890	32.506	.34723	4.6498	116.61
#1	-.00398	.04208	5.1054	-.00114	8.4061	-.05807	-.00507
#2	.00246	.05079	5.0645	-.00058	8.4095	-.05590	-.00010
#3	.00113	.04380	5.0255	-.00104	8.3574	-.05292	-.00145
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.01649**	**.00488**	**.00303**
Stddev	.00056	.00014	.00088
%RSD	3.4018	2.9544	29.046
#1	.01604	.00505	.00374
#2	.01712	.00480	.00205
#3	.01632	.00480	.00329
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8680.3**	**53198.**	**2985.6**
Stddev	180.6	1315.	22.8
%RSD	2.0805	2.4712	.76305
#1	8472.3	54211.	3004.6
#2	8770.9	53671.	2960.4
#3	8797.6	51712.	2991.9

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 14:43:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41555	10.459	.41251	.50877	1.0374	.05191	10.456
Stddev	.00198	.038	.00049	.00412	.0216	.00011	.214
%RSD	.47730	.36575	.11809	.80911	2.0778	.21811	2.0454
#1	.41688	10.435	.41304	.50472	1.0594	.05178	10.677
#2	.41327	10.438	.41238	.51295	1.0163	.05199	10.250
#3	.41650	10.503	.41210	.50863	1.0364	.05195	10.439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05257	.20726	.51590	.53004	4.1313	50.651	1.0395
Stddev	.00009	.00077	.00185	.00200	.0874	1.016	.0162
%RSD	.16567	.37212	.35803	.37798	2.1147	2.0061	1.5578
#1	.05256	.20724	.51397	.52980	4.1823	51.735	1.0578
#2	.05249	.20650	.51606	.52817	4.0304	49.720	1.0270
#3	.05266	.20804	.51766	.53216	4.1811	50.499	1.0337
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.150	.52278	1.0570	51.369	.52494	10.305	.52104
Stddev	.208	.00621	.0043	.990	.00089	.023	.00138
%RSD	2.0459	1.1888	.41022	1.9281	.16882	.22613	.26480
#1	10.382	.52905	1.0620	52.419	.52481	10.311	.51949
#2	10.083	.51662	1.0546	50.452	.52412	10.279	.52151
#3	9.9835	.52267	1.0544	51.234	.52588	10.325	.52213
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 14:43:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2435**	**.41340**	**5.3297**	**1.0365**	**1.0404**	**1.0490**	**.52867**
Stddev	.0031	.00239	.0078	.0027	.0194	.0184	.00366
%RSD	.25127	.57838	.14640	.26182	1.8676	1.7498	.69286
#1	1.2461	.41607	5.3340	1.0379	1.0597	1.0678	.52786
#2	1.2400	.41146	5.3207	1.0334	1.0208	1.0311	.53267
#3	1.2443	.41266	5.3345	1.0383	1.0408	1.0483	.52548
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0507**	**1.0444**	F **3.0477**
Stddev	.0007	.0005	.0535
%RSD	.06848	.05207	1.7552
#1	1.0503	1.0446	3.1080
#2	1.0502	1.0438	3.0059
#3	1.0515	1.0449	3.0292
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9539.3**	**57751.**	**2940.1**
Stddev	31.6	140.	48.7
%RSD	.33120	.24295	1.6549
#1	9524.0	57816.	2886.9
#2	9575.6	57847.	2982.3
#3	9518.3	57590.	2951.2

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 14:46:39 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00165	.00284	.00176	.00388	.00113	.00012	-.05362	.00014
Stddev	.00125	.01178	.00236	.00154	.00084	.00005	.04538	.00017
%RSD	75.692	415.29	134.23	39.663	74.227	41.354	84.617	118.22
#1	.00309	-.01077	.00340	.00450	.00053	.00007	-.00140	.00006
#2	.00089	.00942	.00281	.00212	.00078	.00011	-.07612	.00034
#3	.00097	.00986	-.00094	.00500	.00209	.00017	-.08336	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.00081	-.00057	.03333	.05011	.00030	.06903	-.00046
Stddev	.00028	.00137	.00241	.00857	.04565	.00118	.08939	.00080
%RSD	113.95	168.04	420.16	25.719	91.103	392.02	129.50	172.20
#1	.00053	-.00076	.00045	.02973	.09790	.00058	.12386	.00033
#2	.00023	.00164	-.00333	.02715	.04546	-.00100	-.03412	-.00045
#3	-.00003	.00157	.00116	.04312	.00696	.00132	.11734	-.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00329	.09636	-.00015	.00820	-.00027	.00540	.00512	-.00542
Stddev	.00036	.02670	.00052	.00425	.00262	.00178	.00316	.00074
%RSD	10.874	27.706	348.06	51.818	968.89	32.864	61.650	13.619
#1	.00316	.11195	.00032	.01302	.00232	.00377	.00634	-.00562
#2	.00301	.11159	-.00071	.00662	-.00021	.00729	.00749	-.00604
#3	.00369	.06553	-.00007	.00498	-.00292	.00514	.00154	-.00460
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 14:46:39 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.00084	-.00314	-.00152	.00124	-.00002	.00422
Stddev	.00043	.00035	.00315	.00163	.00162	.00008	.00071
%RSD	142.14	41.948	100.51	107.27	131.28	387.02	16.743
#1	.00054	.00124	-.00369	-.00248	.00007	.00002	.00481
#2	.00057	.00059	.00026	.00036	.00055	-.00012	.00343
#3	-.00019	.00069	-.00597	-.00244	.00309	.00004	.00441
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9509.0	57769.	2936.8
Stddev	19.9	100.	17.6
%RSD	.20940	.17266	.59912
#1	9496.2	57883.	2947.5
#2	9532.0	57728.	2946.4
#3	9498.9	57697.	2916.5

Approved: June 27, 2016

Sample Name: L1606115402S Acquired: 6/25/2016 14:50:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20060**	**4.9650**	**.19517**	**2.5768**	**.50183**	**.02406**	F **444.38**
Stddev	.00064	.0130	.00068	.0061	.00191	.00013	.71
%RSD	.32075	.26173	.35003	.23805	.38088	.54060	.15891
#1	.20131	4.9565	.19473	2.5781	.50380	.02409	444.63
#2	.20005	4.9586	.19596	2.5701	.50170	.02392	443.58
#3	.20045	4.9800	.19484	2.5821	.49998	.02418	444.92
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02442**	**.09295**	**.23551**	**.23263**	**1.9191**	**28.985**	**.61166**
Stddev	.00012	.00006	.00093	.00115	.0123	.093	.00400
%RSD	.49172	.06109	.39479	.49604	.64319	.32038	.65326
#1	.02431	.09291	.23631	.23296	1.9231	29.086	.60738
#2	.02455	.09302	.23573	.23359	1.9290	28.966	.61529
#3	.02440	.09293	.23449	.23135	1.9053	28.904	.61230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**105.95**	**.47454**	**.51043**	F **884.75**	**.22811**	**4.9353**	**.22750**
Stddev	.25	.00567	.00309	9.80	.00122	.0272	.00524
%RSD	.23467	1.1953	.60519	1.1073	.53281	.55168	2.3044
#1	105.68	.47627	.51271	882.43	.22677	4.9309	.23221
#2	106.17	.47914	.51168	876.32	.22915	4.9645	.22843
#3	105.99	.46820	.50692	895.49	.22841	4.9105	.22185
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 27, 2016

Sample Name: L1606115402S Acquired: 6/25/2016 14:50:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-07

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.58292**	**.23516**	**7.5230**	**.45764**	**8.4638**	**.43138**	**.22024**
Stddev	.00661	.00590	.0386	.00329	.0240	.00658	.00196
%RSD	1.1347	2.5090	.51250	.71986	.28403	1.5254	.88967
#1	.58964	.23313	7.5444	.46024	8.4871	.43835	.22044
#2	.58270	.23054	7.5461	.45874	8.4651	.43053	.22209
#3	.57642	.24181	7.4785	.45394	8.4391	.42527	.21819
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.50974**	**.45745**	**.02017**
Stddev	.00182	.00152	.00279
%RSD	.35750	.33182	13.807
#1	.50798	.45815	.01724
#2	.50964	.45849	.02049
#3	.51162	.45571	.02279
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8784.0**	**53813.**	**2939.5**
Stddev	58.9	564.	26.0
%RSD	.67031	1.0483	.88591
#1	8819.5	54202.	2951.8
#2	8816.5	54070.	2957.2
#3	8716.1	53166.	2909.6

Approved: June 27, 2016

Sample Name: L1606115403SD Acquired: 6/25/2016 14:54:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19884**	**5.0097**	**.20311**	**2.5960**	**.50146**	**.02443**	F **447.43**
Stddev	.00024	.0049	.00234	.0007	.00093	.00023	1.15
%RSD	.12160	.09827	1.1515	.02603	.18621	.94697	.25628
#1	.19893	5.0097	.20547	2.5958	.50254	.02464	447.39
#2	.19857	5.0047	.20308	2.5967	.50101	.02419	446.31
#3	.19903	5.0146	.20079	2.5954	.50084	.02448	448.60
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02483**	**.09451**	**.23821**	**.23915**	**1.9535**	**28.902**	**.60873**
Stddev	.00032	.00036	.00123	.00189	.0137	.108	.00282
%RSD	1.3026	.38369	.51502	.78901	.69899	.37351	.46252
#1	.02509	.09492	.23941	.23914	1.9479	29.020	.60854
#2	.02447	.09421	.23696	.23726	1.9691	28.808	.61163
#3	.02493	.09441	.23826	.24103	1.9435	28.877	.60601
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**106.60**	**.48110**	**.52231**	F **881.76**	**.23168**	**5.0586**	**.22685**
Stddev	.66	.00483	.00325	3.70	.00136	.0426	.00410
%RSD	.61507	1.0048	.62269	.41950	.58652	.84170	1.8079
#1	107.35	.47570	.52433	877.70	.23164	5.0964	.23130
#2	106.14	.48502	.51856	884.94	.23034	5.0125	.22604
#3	106.32	.48257	.52404	882.64	.23305	5.0670	.22322
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 27, 2016

Sample Name: L1606115403SD Acquired: 6/25/2016 14:54:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-08

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.59871**	**.24615**	**7.5687**	**.46699**	**8.5686**	**.42893**	**.22250**
Stddev	.00609	.00268	.0516	.00318	.0150	.00524	.00079
%RSD	1.0180	1.0870	.68153	.68125	.17550	1.2224	.35602
#1	.60575	.24920	7.6059	.46994	8.5810	.42717	.22334
#2	.59510	.24505	7.5098	.46362	8.5519	.42478	.22177
#3	.59529	.24419	7.5903	.46740	8.5730	.43482	.22237
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.51554**	**.46791**	**.00590**
Stddev	.00333	.00294	.00185
%RSD	.64552	.62860	31.408
#1	.51938	.47002	.00382
#2	.51356	.46455	.00651
#3	.51367	.46915	.00737
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8900.3**	**52138.**	**2849.7**
Stddev	61.9	226.	11.1
%RSD	.69538	.43440	.38823
#1	8858.0	51879.	2838.3
#2	8971.3	52295.	2860.4
#3	8871.6	52242.	2850.4

Approved: June 27, 2016

Sample Name: L1606115404 Acquired: 6/25/2016 14:58:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.00639	-.00036	.01270	.00241	.00013	.28017	.00009
Stddev	.00146	.00656	.00244	.00114	.00043	.00008	.03044	.00010
%RSD	248.07	102.69	686.61	9.0101	18.005	61.828	10.864	104.11
#1	.00089	-.00046	-.00313	.01156	.00227	.00022	.24651	.00012
#2	.00188	.01261	.00061	.01385	.00206	.00012	.28824	-.00001
#3	-.00100	.00700	.00146	.01270	.00289	.00005	.30576	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.01305	.00240	.07792	.04064	-.00228	.12469	.00253
Stddev	.00039	.00070	.00120	.00694	.09353	.00295	.18212	.00145
%RSD	747.32	5.3526	50.113	8.9064	230.14	129.38	146.06	57.512
#1	.00045	.01376	.00301	.08066	.00523	-.00157	.14106	.00090
#2	-.00033	.01305	.00317	.08306	.14671	-.00552	.29807	.00300
#3	.00004	.01236	.00101	.07002	-.03002	.00025	-.06507	.00369
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00228	.75291	.00807	.00690	.00300	-.00255	.00146	.13135
Stddev	.00024	.01638	.00065	.00315	.00148	.00424	.00328	.00151
%RSD	10.641	2.1753	8.1061	45.563	49.471	166.69	225.01	1.1485
#1	.00245	.73694	.00868	.00525	.00160	-.00242	-.00127	.13296
#2	.00238	.75210	.00738	.01053	.00455	-.00685	.00055	.13112
#3	.00200	.76967	.00814	.00493	.00285	.00163	.00509	.12997
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115404 Acquired: 6/25/2016 14:58:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00160	.00282	.00431	-.00324	.00105	.00371	.00033
Stddev	.00036	.00041	.00156	.00193	.00089	.00012	.00066
%RSD	22.302	14.434	36.136	59.618	84.281	3.3596	201.18
#1	.00136	.00295	.00420	-.00210	.00202	.00385	-.00028
#2	.00201	.00236	.00592	-.00547	.00085	.00361	.00023
#3	.00143	.00314	.00281	-.00214	.00028	.00369	.00104
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9713.7	59908.	3002.7
Stddev	32.6	164.	34.0
%RSD	.33561	.27353	1.1337
#1	9740.1	60011.	2965.4
#2	9677.2	59995.	3032.2
#3	9723.7	59719.	3010.3

Approved: June 27, 2016

Sample Name: L1606115501 Acquired: 6/25/2016 15:02:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00226	.00780	.00401	.26646	.17918	.00000	45.474	-.00004
Stddev	.00287	.00301	.00103	.00133	.00076	.00004	.222	.00008
%RSD	126.68	38.602	25.778	.50014	.42327	919.30	.48843	228.57
#1	.00509	.01128	.00462	.26750	.17974	.00002	45.718	.00006
#2	.00233	.00600	.00459	.26694	.17949	-.00004	45.422	-.00008
#3	-.00064	.00613	.00281	.26496	.17832	.00004	45.283	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.00088	.00134	.05774	1.5654	.00884	27.038	1.6699
Stddev	.00027	.00028	.00194	.01943	.1007	.00205	.083	.0027
%RSD	44.880	31.682	144.85	33.650	6.4312	23.214	.30796	.16065
#1	.00083	.00056	-.00088	.03531	1.4495	.00687	26.967	1.6730
#2	.00063	.00109	.00219	.06938	1.6158	.01096	27.130	1.6684
#3	.00031	.00099	.00272	.06852	1.6309	.00869	27.018	1.6684
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00414	74.521	.00232	.02280	.00145	-.00333	.00418	6.9589
Stddev	.00012	.362	.00063	.00622	.00648	.00099	.00335	.0172
%RSD	2.8693	.48589	27.089	27.292	447.38	29.598	80.140	.24675
#1	.00419	74.939	.00163	.02521	-.00229	-.00322	.00046	6.9755
#2	.00400	74.314	.00245	.02746	-.00229	-.00437	.00510	6.9601
#3	.00421	74.311	.00286	.01573	.00893	-.00240	.00696	6.9412
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115501 Acquired: 6/25/2016 15:02:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.31080**	**-.00408**	**-.00246**	**.00074**	**.00517**	**.00097**
Stddev	.00101	.00127	.01220	.00176	.00032	.00009	.00026
%RSD	589.50	.40720	299.39	71.557	43.195	1.7947	26.599
#1	.00067	.31223	.00838	-.00158	.00040	.00528	.00122
#2	-.00129	.30982	-.01601	-.00449	.00079	.00510	.00071
#3	.00011	.31036	-.00459	-.00131	.00103	.00514	.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9554.2**	**58064.**	**2987.7**
Stddev	24.6	152.	17.9
%RSD	.25722	.26211	.59940
#1	9527.5	57892.	2971.4
#2	9576.0	58182.	2984.9
#3	9559.0	58118.	3006.9

Approved: June 27, 2016

Sample Name: L1606115502 Acquired: 6/25/2016 15:05:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00077	.00104	.00250	.19417	.33327	.00001	49.969	.00011
Stddev	.00225	.00260	.00021	.00180	.00208	.00007	.144	.00004
%RSD	293.51	250.20	8.2634	.92950	.62356	535.11	.28842	36.458
#1	.00053	-.00100	.00271	.19484	.33088	.00006	50.109	.00015
#2	-.00336	.00396	.00251	.19555	.33470	.00004	49.821	.00012
#3	.00053	.00015	.00229	.19213	.33422	-.00007	49.978	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	.00039	.00161	4.4932	.30074	.00699	33.094	.46968
Stddev	.00024	.00046	.00055	.0210	.07361	.00374	.139	.00201
%RSD	82.593	118.92	34.456	.46819	24.475	53.562	.42105	.42764
#1	.00002	-.00012	.00218	4.4716	.35097	.00318	33.254	.46985
#2	.00046	.00051	.00108	4.5136	.21625	.00712	33.021	.47160
#3	.00039	.00078	.00156	4.4944	.33501	.01067	33.006	.46759
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00134	56.528	.00048	.02851	.00540	-.00461	.00421	7.9465
Stddev	.00013	.068	.00114	.00462	.00195	.00412	.00583	.0128
%RSD	9.8009	.11946	234.80	16.220	36.120	89.402	138.37	.16106
#1	.00123	56.559	.00179	.03249	.00375	-.00852	-.00246	7.9518
#2	.00130	56.451	-.00006	.02962	.00489	-.00500	.00681	7.9559
#3	.00149	56.575	-.00027	.02344	.00755	-.00031	.00829	7.9320
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115502 Acquired: 6/25/2016 15:05:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.41936**	**-.00337**	**-.00247**	**.00035**	**.00337**	**.00091**
Stddev	.00022	.00050	.00295	.00045	.00041	.00006	.00160
%RSD	168.21	.11997	87.675	18.352	119.11	1.8649	175.07
#1	.00016	.41971	-.00131	-.00286	-.00012	.00341	-.00093
#2	.00033	.41958	-.00675	-.00259	.00050	.00330	.00173
#3	-.00010	.41878	-.00204	-.00197	.00066	.00341	.00194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9627.3**	**58565.**	**2988.6**
Stddev	17.2	39.	5.1
%RSD	.17881	.06667	.17070
#1	9625.0	58521.	2993.1
#2	9645.6	58579.	2989.5
#3	9611.4	58596.	2983.0

Approved: June 27, 2016

Sample Name: L1606115503 Acquired: 6/25/2016 15:09:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00133	.01981	.00070	.15980	.12508	.00001	47.416	.00012
Stddev	.00149	.00690	.00351	.00313	.00043	.00010	.201	.00026
%RSD	112.43	34.815	504.28	1.9589	.34619	838.85	.42403	214.19
#1	.00108	.02777	-.00104	.15681	.12534	.00005	47.373	.00032
#2	-.00003	.01583	-.00161	.16306	.12532	.00009	47.635	.00022
#3	.00292	.01581	.00474	.15953	.12458	-.00010	47.240	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	.00032	.00351	1.3413	.87483	.00900	17.381	.47700
Stddev	.00046	.00045	.00082	.0140	.08308	.00172	.089	.00081
%RSD	429.81	139.46	23.247	1.0398	9.4971	19.124	.51021	.16934
#1	.00045	.00052	.00286	1.3297	.89461	.00799	17.319	.47725
#2	-.00041	.00065	.00443	1.3568	.78364	.01099	17.483	.47609
#3	.00028	-.00019	.00325	1.3373	.94624	.00803	17.342	.47764
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	48.369	.00082	.10919	.00167	-.00062	.00179	5.8799
Stddev	.00025	.203	.00140	.00660	.00170	.00395	.00827	.0280
%RSD	97.415	.41932	171.45	6.0459	101.94	641.48	462.74	.47549
#1	-.00003	48.343	.00233	.10833	.00101	-.00514	.00952	5.8933
#2	-.00053	48.584	.00055	.10306	.00039	.00119	.00277	5.8478
#3	-.00022	48.181	-.00043	.11618	.00360	.00211	-.00693	5.8986
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115503 Acquired: 6/25/2016 15:09:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**.26600**	**-.00537**	**-.00338**	**.00017**	**.00914**	**.00020**
Stddev	.00067	.00095	.00241	.00310	.00116	.00022	.00114
%RSD	345.33	.35889	44.987	91.459	671.24	2.4286	566.35
#1	-.00057	.26556	-.00315	-.00551	-.00106	.00889	.00099
#2	.00050	.26710	-.00794	.00017	.00033	.00931	-.00111
#3	.00065	.26535	-.00501	-.00481	.00125	.00922	.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9587.2**	**58263.**	**2972.1**
Stddev	19.6	279.	4.9
%RSD	.20409	.47925	.16604
#1	9598.2	58004.	2969.9
#2	9598.7	58226.	2968.6
#3	9564.6	58559.	2977.8

Approved: June 27, 2016

Sample Name: L1606117801 Acquired: 6/25/2016 15:13:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00123	.01562	.00788	.04060	.02600	.00012	2.4592	.00007
Stddev	.00244	.00616	.00118	.00330	.00129	.00005	.0606	.00006
%RSD	197.99	39.461	15.044	8.1358	4.9545	44.901	2.4620	79.703
#1	.00387	.02096	.00725	.04075	.02646	.00010	2.5149	.00002
#2	-.00097	.00887	.00713	.04382	.02700	.00008	2.4680	.00013
#3	.00081	.01703	.00924	.03722	.02455	.00018	2.3948	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.00074	.00609	.02685	.43656	.00432	.57708	-.00111
Stddev	.00033	.00144	.00018	.01358	.05030	.00166	.05180	.00137
%RSD	1012.2	194.14	2.9070	50.575	11.522	38.411	8.9754	123.48
#1	-.00025	.00070	.00629	.04250	.40355	.00528	.52291	-.00216
#2	.00039	.00219	.00602	.01809	.49445	.00241	.62611	-.00159
#3	-.00004	-.00068	.00595	.01997	.41167	.00528	.58223	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00299	95.163	-.00070	.01050	.00222	-.00635	.00641	3.4783
Stddev	.00029	.186	.00058	.00517	.00074	.00345	.00307	.0048
%RSD	9.6245	.19542	82.717	49.206	33.276	54.334	47.947	.13892
#1	.00325	95.230	-.00082	.01297	.00142	-.01032	.00356	3.4792
#2	.00268	95.306	-.00121	.00456	.00236	-.00408	.00600	3.4827
#3	.00303	94.953	-.00007	.01396	.00287	-.00464	.00966	3.4731
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606117801 Acquired: 6/25/2016 15:13:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.11699	.00044	-.00188	.00105	.00210	.00054
Stddev	.00103	.00010	.00531	.00109	.00009	.00007	.00166
%RSD	275.08	.08958	1212.8	57.943	8.6567	3.2366	310.87
#1	.00154	.11703	-.00019	-.00063	.00114	.00212	-.00081
#2	-.00042	.11707	-.00453	-.00235	.00105	.00215	.00002
#3	-.00000	.11687	.00604	-.00264	.00096	.00202	.00240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9648.4	58829.	2994.3
Stddev	5.2	37.	6.7
%RSD	.05359	.06360	.22320
#1	9653.7	58809.	2992.7
#2	9643.3	58806.	2988.6
#3	9648.3	58873.	3001.7

Approved: June 27, 2016

Sample Name: L1606122701 Acquired: 6/25/2016 15:17:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00116	.09783	-.00055	.00242	.01519	.00006	7.7326	-.00002
Stddev	.00092	.00377	.00239	.00147	.00198	.00002	.1171	.00010
%RSD	79.355	3.8537	437.80	60.740	13.003	38.615	1.5138	459.39
#1	-.00047	.10163	-.00294	.00351	.01401	.00007	7.7569	.00006
#2	-.00220	.09409	.00184	.00075	.01747	.00007	7.8356	-.00013
#3	-.00081	.09776	-.00054	.00300	.01410	.00003	7.6053	.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00227	.00167	.03463	.33602	-.00038	-.01109	-.00127
Stddev	.00016	.00059	.00051	.00142	.06178	.00154	.10836	.00134
%RSD	58.524	25.933	30.520	4.0976	18.384	404.83	977.09	105.32
#1	.00014	.00159	.00133	.03617	.30512	-.00005	-.09610	-.00256
#2	.00023	.00261	.00225	.03337	.29580	-.00206	.11092	-.00136
#3	.00045	.00260	.00142	.03436	.40715	.00097	-.04809	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	2.3350	.00044	.00731	.00430	-.00426	.00383	1.1328
Stddev	.00020	.0307	.00076	.00233	.00100	.00159	.00576	.0032
%RSD	132.69	1.3153	170.74	31.908	23.273	37.398	150.44	.27905
#1	.00005	2.3000	.00116	.00516	.00531	-.00538	.00306	1.1309
#2	-.00036	2.3574	.00052	.00700	.00430	-.00496	-.00151	1.1310
#3	-.00016	2.3476	-.00035	.00979	.00330	-.00244	.00992	1.1364
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606122701 Acquired: 6/25/2016 15:17:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.25125	.00414	.00180	.00364	.00056	.00136
Stddev	.00018	.00103	.01324	.00145	.00074	.00007	.00130
%RSD	364.81	.41002	320.05	80.159	20.271	13.218	96.223
#1	.00011	.25131	-.01092	.00207	.00450	.00061	.00115
#2	.00019	.25224	.00936	.00024	.00328	.00047	.00016
#3	-.00016	.25018	.01397	.00310	.00316	.00058	.00275
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9969.0	60494.	3048.9
Stddev	15.1	129.	13.3
%RSD	.15159	.21283	.43564
#1	9969.3	60641.	3055.8
#2	9983.9	60438.	3033.6
#3	9953.7	60402.	3057.3

Approved: June 27, 2016

Sample Name: L1606122706 Acquired: 6/25/2016 15:21:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00063**	**.00567**	**.00083**	**.00123**	**.02806**	**.00015**	**13.472**	**-.00038**
Stddev	.00250	.00554	.00101	.00202	.00007	.00007	.038	.00019
%RSD	395.00	97.673	121.57	163.43	.25882	47.682	.28032	49.732
#1	.00247	-.00071	.00042	-.00047	.02810	.00007	13.487	-.00023
#2	.00165	.00924	.00199	.00346	.02810	.00021	13.429	-.00032
#3	-.00222	.00849	.00010	.00072	.02797	.00018	13.501	-.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00101**	**.00061**	**.00157**	**.10367**	**.20316**	**.00472**	**8.1185**	**.10636**
Stddev	.00008	.00062	.00064	.01594	.00836	.00156	.1274	.00158
%RSD	8.0012	102.28	40.873	15.374	4.1155	32.981	1.5689	1.4897
#1	.00092	-.00009	.00190	.11049	.21157	.00610	7.9808	.10550
#2	.00107	.00111	.00198	.11507	.19485	.00503	8.2322	.10539
#3	.00104	.00079	.00083	.08546	.20306	.00303	8.1425	.10819
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00044**	**33.974**	**.00004**	**.00429**	**-.00079**	**-.00333**	**.00187**	**.74797**
Stddev	.00043	.239	.00011	.00671	.00165	.00196	.00470	.01610
%RSD	97.916	.70374	251.40	156.52	208.37	58.883	251.58	2.1527
#1	-.00064	33.727	-.00007	.01191	-.00018	-.00196	-.00208	.73053
#2	-.00073	33.993	.00015	-.00074	.00047	-.00558	.00061	.75112
#3	.00005	34.204	.00006	.00169	-.00266	-.00246	.00707	.76226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606122706 Acquired: 6/25/2016 15:21:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.30857**	**.00233**	**-.00259**	**.00019**	**.00158**	**.00089**
Stddev	.00012	.00270	.00311	.00390	.00060	.00013	.00062
%RSD	87.894	.87470	133.51	150.50	319.58	8.2216	69.559
#1	-.00001	.30602	.00364	-.00319	-.00046	.00143	.00122
#2	-.00015	.30828	-.00122	.00157	.00073	.00163	.00127
#3	-.00026	.31139	.00457	-.00615	.00030	.00167	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9924.8**	**59991.**	**2995.5**
Stddev	18.6	172.	10.6
%RSD	.18782	.28732	.35313
#1	9924.0	59808.	2993.5
#2	9943.8	60150.	3007.0
#3	9906.6	60016.	2986.1

Approved: June 27, 2016

Sample Name: L1606127902 Acquired: 6/25/2016 15:25:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573994-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00298**	**.77289**	**.00033**	**.00803**	**.01053**	**.00016**	**9.3649**	**-.00023**
Stddev	.00188	.01227	.00104	.00267	.00091	.00007	.0910	.00007
%RSD	63.015	1.5872	311.80	33.213	8.6722	42.111	.97197	32.230
#1	.00105	.75975	.00114	.01109	.01057	.00009	9.3786	-.00026
#2	.00309	.78404	.00069	.00619	.01142	.00023	9.4483	-.00028
#3	.00480	.77489	-.00084	.00682	.00960	.00016	9.2678	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00067**	**.00209**	**.00225**	**1.1046**	**.20587**	**.00183**	**3.8329**	**.12468**
Stddev	.00025	.00124	.00151	.0075	.05413	.00323	.0374	.00185
%RSD	36.537	59.143	66.907	.67811	26.294	176.78	.97568	1.4875
#1	.00057	.00084	.00284	1.1048	.18555	.00515	3.8178	.12286
#2	.00096	.00331	.00337	1.1121	.26722	.00166	3.8755	.12657
#3	.00050	.00212	.00054	1.0971	.16483	-.00131	3.8054	.12461
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**.91553**	**.00104**	**.04284**	**.00087**	**-.00434**	**.00416**	**1.4218**
Stddev	.00049	.02558	.00097	.00374	.00128	.00145	.00383	.0304
%RSD	448.71	2.7944	92.896	8.7405	147.22	33.355	92.023	2.1368
#1	.00043	.88763	.00204	.04714	.00040	-.00289	.00799	1.3901
#2	-.00054	.92105	.00011	.04033	-.00011	-.00435	.00416	1.4246
#3	-.00022	.93790	.00097	.04105	.00232	-.00579	.00033	1.4507
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127902 Acquired: 6/25/2016 15:25:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573994-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	.04596	.00940	.00124	.00257	.00907	.00122
Stddev	.00038	.00038	.00559	.00152	.00046	.00027	.00089
%RSD	147.88	.81748	59.487	122.54	17.946	3.0009	73.195
#1	.00017	.04588	.00305	-.00019	.00219	.00893	.00224
#2	-.00038	.04637	.01155	.00284	.00243	.00890	.00056
#3	-.00056	.04564	.01360	.00108	.00308	.00938	.00087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10039.	61079.	3063.3
Stddev	16.	87.	16.8
%RSD	.15707	.14311	.54820
#1	10022.	60979.	3046.2
#2	10041.	61122.	3064.0
#3	10054.	61137.	3079.8

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 15:29:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41474	10.480	.41122	.51129	1.0445	.05223	10.384
Stddev	.00157	.008	.00187	.00319	.0019	.00016	.024
%RSD	.37799	.07401	.45408	.62455	.18188	.31144	.22798
#1	.41325	10.484	.41182	.51035	1.0465	.05219	10.387
#2	.41461	10.484	.41272	.50866	1.0441	.05241	10.359
#3	.41637	10.471	.40913	.51484	1.0428	.05209	10.407
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05244	.20643	.51777	.52807	4.1528	50.626	1.0452
Stddev	.00019	.00026	.00163	.00025	.0357	.257	.0080
%RSD	.36313	.12673	.31564	.04665	.85968	.50669	.76446
#1	.05244	.20669	.51592	.52825	4.1190	50.704	1.0431
#2	.05226	.20644	.51838	.52817	4.1901	50.835	1.0540
#3	.05264	.20617	.51902	.52779	4.1492	50.340	1.0385
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.9629	.52245	1.0531	51.247	.52506	10.312	.52216
Stddev	.0274	.00433	.0047	.134	.00127	.013	.00461
%RSD	.27495	.82847	.44799	.26095	.24264	.12919	.88203
#1	9.9944	.51946	1.0578	51.179	.52653	10.320	.51773
#2	9.9492	.52742	1.0532	51.401	.52432	10.296	.52692
#3	9.9451	.52049	1.0484	51.161	.52433	10.319	.52182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 15:29:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2356**	**.41239**	**5.3381**	**1.0346**	**1.0460**	**1.0497**	**.53160**
Stddev	.0017	.00642	.0057	.0013	.0038	.0052	.00142
%RSD	.13528	1.5556	.10675	.12483	.36598	.49394	.26637
#1	1.2362	.41861	5.3408	1.0357	1.0443	1.0445	.53322
#2	1.2337	.40580	5.3420	1.0349	1.0504	1.0497	.53096
#3	1.2369	.41277	5.3316	1.0332	1.0433	1.0549	.53062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0558**	**1.0420**	F **3.0350**
Stddev	.0013	.0007	.0090
%RSD	.12612	.06683	.29605
#1	1.0548	1.0423	3.0277
#2	1.0553	1.0412	3.0451
#3	1.0573	1.0426	3.0323
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9586.8**	**58077.**	**2975.5**
Stddev	6.0	176.	6.3
%RSD	.06238	.30386	.21060
#1	9587.3	57874.	2969.1
#2	9592.5	58193.	2975.6
#3	9580.6	58165.	2981.7

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 15:32:48 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00000**	**.00002**	**-.00010**	**.00491**	**.00210**	**.00011**	**.00565**	**-.00003**
Stddev	.00087	.00719	.00078	.00229	.00030	.00005	.00049	.00029
%RSD	26249.	33697.	808.92	46.626	14.233	46.346	8.5911	909.94
#1	.00025	.00801	-.00086	.00753	.00176	.00017	.00542	-.00000
#2	.00073	-.00593	.00069	.00390	.00223	.00007	.00533	-.00034
#3	-.00097	-.00201	-.00012	.00330	.00231	.00010	.00621	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00020**	**.00011**	**.00064**	**.03500**	**.03424**	**-.00179**	**.02594**	**-.00052**
Stddev	.00009	.00046	.00051	.01471	.03973	.00240	.07741	.00156
%RSD	43.655	413.87	80.028	42.019	116.03	134.20	298.41	302.41
#1	.00012	-.00018	.00036	.01804	-.01111	-.00218	.05944	-.00155
#2	.00020	.00064	.00123	.04417	.05092	-.00397	.08095	.00128
#3	.00029	-.00013	.00033	.04280	.06290	.00078	-.06257	-.00128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00316**	**.04507**	**.00037**	**.00106**	**.00080**	**.00374**	**.00412**	**.00990**
Stddev	.00041	.02068	.00057	.00881	.00149	.00197	.00171	.00085
%RSD	13.022	45.885	154.95	828.64	185.93	52.502	41.416	8.5529
#1	.00281	.06772	-.00005	.00994	-.00040	.00294	.00217	.01067
#2	.00361	.02718	.00102	.00092	.00033	.00230	.00488	.01002
#3	.00306	.04031	.00014	-.00767	.00246	.00598	.00532	.00899
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 15:32:48 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00048**	**.00057**	**.00333**	**-.00225**	**.00169**	**-.00006**	**.00439**
Stddev	.00073	.00051	.00753	.00264	.00040	.00020	.00135
%RSD	152.10	89.662	226.48	117.22	23.766	306.69	30.851
#1	.00129	.00079	-.00329	-.00367	.00165	-.00017	.00283
#2	-.00014	-.00001	.01153	-.00387	.00130	-.00018	.00508
#3	.00029	.00092	.00174	.00079	.00210	.00016	.00526
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9759.3**	**59359.**	**3013.9**
Stddev	2.3	121.	1.6
%RSD	.02366	.20394	.05186
#1	9761.6	59292.	3015.4
#2	9759.3	59287.	3013.9
#3	9756.9	59499.	3012.3

Approved: June 27, 2016

Sample Name: L1606127903S Acquired: 6/25/2016 15:36:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573994-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01197	1.1036	.01087	.05712	.03304	.00134	9.9729	.00124
Stddev	.00119	.0059	.00187	.00108	.00116	.00008	.0996	.00005
%RSD	9.9297	.53710	17.218	1.8903	3.5218	6.1377	.99838	3.7414
#1	.01115	1.1017	.01246	.05619	.03414	.00126	10.019	.00125
#2	.01142	1.1103	.00881	.05688	.03182	.00135	9.8587	.00119
#3	.01333	1.0989	.01134	.05830	.03317	.00142	10.041	.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00560	.01397	.01462	1.0767	1.4208	.02780	4.2261	.14457
Stddev	.00014	.00108	.00214	.0241	.1192	.00407	.0440	.00290
%RSD	2.4102	7.7598	14.602	2.2369	8.3867	14.648	1.0401	2.0070
#1	.00574	.01498	.01254	1.0620	1.3125	.02932	4.2372	.14280
#2	.00559	.01283	.01680	1.0635	1.4014	.02319	4.1777	.14299
#3	.00547	.01411	.01453	1.1045	1.5484	.03090	4.2635	.14792
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02152	2.1329	.01322	.29583	.01584	.02588	.00942	1.7458
Stddev	.00098	.0418	.00158	.00727	.00355	.00244	.00136	.0125
%RSD	4.5315	1.9579	11.965	2.4574	22.390	9.4200	14.478	.71438
#1	.02231	2.1343	.01139	.30417	.01767	.02397	.01094	1.7523
#2	.02182	2.0905	.01413	.29245	.01809	.02862	.00829	1.7537
#3	.02043	2.1740	.01413	.29086	.01175	.02503	.00905	1.7314
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127903S Acquired: 6/25/2016 15:36:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573994-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02137**	**.07160**	**.03468**	**.01383**	**.02654**	**.02985**	**.00242**
Stddev	.00036	.00081	.00438	.00291	.00046	.00010	.00158
%RSD	1.6937	1.1317	12.615	21.070	1.7354	.32151	65.388
#1	.02178	.07099	.02963	.01549	.02613	.02986	.00141
#2	.02110	.07130	.03735	.01047	.02704	.02975	.00424
#3	.02123	.07252	.03706	.01554	.02644	.02994	.00160
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9975.1**	**60274.**	**3041.7**
Stddev	49.0	118.	22.7
%RSD	.49139	.19506	.74582
#1	9940.1	60350.	3061.9
#2	9954.2	60332.	3046.1
#3	10031.	60138.	3017.2

Approved: June 27, 2016

Sample Name: L1606127904SD Acquired: 6/25/2016 15:40:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573994-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01103**	**1.1028**	**.01203**	**.05464**	**.03364**	**.00143**	**9.8642**	**.00121**
Stddev	.00186	.0090	.00180	.00231	.00086	.00004	.1305	.00006
%RSD	16.883	.81742	14.963	4.2286	2.5577	2.6326	1.3231	5.3301
#1	.00912	1.0960	.01267	.05217	.03303	.00146	9.7151	.00122
#2	.01113	1.1130	.00999	.05675	.03463	.00143	9.9198	.00114
#3	.01284	1.0994	.01342	.05499	.03327	.00139	9.9577	.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00590**	**.01420**	**.01484**	**1.0576**	**1.4598**	**.02493**	**4.2188**	**.14616**
Stddev	.00020	.00048	.00068	.0082	.1286	.00072	.1177	.00241
%RSD	3.3297	3.4140	4.5711	.77893	8.8104	2.9051	2.7895	1.6455
#1	.00602	.01364	.01562	1.0663	1.6059	.02466	4.0843	.14411
#2	.00567	.01444	.01454	1.0499	1.4099	.02439	4.2697	.14557
#3	.00601	.01451	.01437	1.0566	1.3636	.02576	4.3025	.14881
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02217**	**2.1040**	**.01418**	**.30006**	**.01556**	**.02408**	**.01453**	**1.7577**
Stddev	.00072	.0376	.00057	.00408	.00448	.00503	.00712	.0151
%RSD	3.2386	1.7891	4.0074	1.3597	28.796	20.896	49.023	.85907
#1	.02294	2.0606	.01353	.29698	.01280	.02854	.02252	1.7414
#2	.02203	2.1275	.01453	.30469	.02073	.02509	.00885	1.7604
#3	.02153	2.1239	.01449	.29851	.01315	.01862	.01221	1.7712
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127904SD Acquired: 6/25/2016 15:40:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573994-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02276**	**.07116**	**.03577**	**.01268**	**.02759**	**.03003**	**.00230**
Stddev	.00014	.00090	.00737	.00234	.00032	.00029	.00174
%RSD	.61715	1.2587	20.620	18.483	1.1623	.96154	75.576
#1	.02272	.07054	.03703	.01291	.02794	.02969	.00432
#2	.02292	.07076	.02784	.01490	.02752	.03021	.00132
#3	.02264	.07219	.04242	.01023	.02731	.03018	.00128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10006.**	**60810.**	**3063.3**
Stddev	5.	192.	18.4
%RSD	.04992	.31626	.60150
#1	10009.	61010.	3082.6
#2	10009.	60627.	3061.4
#3	10000.	60793.	3045.9

Approved: June 27, 2016

Sample Name: L1606128901 Acquired: 6/25/2016 15:44:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00215	.00687	.00324	.00036	.25940	.00003	8.5369	.00005
Stddev	.00051	.01020	.00141	.00225	.00475	.00006	.1296	.00011
%RSD	23.677	148.57	43.630	628.60	1.8323	170.08	1.5176	227.30
#1	.00216	.01614	.00358	-.00039	.25471	.00001	8.3890	.00017
#2	.00265	.00852	.00169	.00289	.26421	.00010	8.6303	-.00003
#3	.00163	-.00406	.00445	-.00143	.25928	-.00000	8.5913	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00259	.00588	.00175	.08631	.04218	.00151	6.5072	.07542
Stddev	.00040	.00134	.00073	.02244	.04887	.00193	.2142	.00074
%RSD	15.316	22.711	41.571	26.002	115.87	127.81	3.2912	.97595
#1	.00214	.00436	.00096	.06469	.09555	-.00070	6.2873	.07459
#2	.00279	.00683	.00239	.10949	-.00039	.00286	6.5191	.07570
#3	.00285	.00647	.00190	.08474	.03137	.00237	6.7151	.07598
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	23.216	.03092	.00614	.00300	-.00111	.00640	.97050
Stddev	.00039	.461	.00078	.00363	.00087	.00404	.00265	.00247
%RSD	280.63	1.9852	2.5231	59.153	29.021	362.80	41.403	.25451
#1	-.00028	22.689	.03110	.00526	.00208	-.00358	.00616	.97332
#2	.00048	23.539	.03160	.01013	.00311	-.00330	.00916	.96949
#3	.00022	23.422	.03007	.00303	.00381	.00355	.00387	.96870
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606128901 Acquired: 6/25/2016 15:44:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	.16522	-.00360	-.00090	.00125	.00115	.00088
Stddev	.00057	.00251	.00574	.00300	.00085	.00009	.00100
%RSD	111.15	1.5196	159.60	334.58	68.243	8.1341	114.01
#1	-.00005	.16233	-.01006	-.00433	.00031	.00125	.00060
#2	.00108	.16651	.00089	.00117	.00197	.00107	.00199
#3	.00050	.16682	-.00162	.00047	.00148	.00112	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9940.0	60088.	3038.6
Stddev	4.2	150.	44.1
%RSD	.04218	.24912	1.4500
#1	9935.3	60256.	3084.8
#2	9941.7	60040.	2997.0
#3	9943.1	59969.	3034.2

Approved: June 27, 2016

Sample Name: L1606112901 Acquired: 6/25/2016 15:48:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00126	-.00046	-.00005	-.00065	.00318	.00006	4.1415	-.00016
Stddev	.00197	.00573	.00201	.00160	.00151	.00005	.0124	.00023
%RSD	156.91	1238.2	4274.9	245.00	47.612	81.871	.30015	142.20
#1	.00341	-.00015	-.00215	-.00141	.00362	.00006	4.1534	-.00032
#2	-.00045	.00511	.00185	.00118	.00150	.00012	4.1425	.00010
#3	.00081	-.00635	.00016	-.00173	.00443	.00001	4.1286	-.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.00058	.00066	.05376	.10451	-.00223	.92501	.00486
Stddev	.00022	.00057	.00151	.01103	.06065	.00348	.08081	.00144
%RSD	3258.5	98.481	227.65	20.514	58.030	156.17	8.7365	29.653
#1	-.00025	.00121	.00094	.05934	.12513	.00172	.91232	.00510
#2	.00010	.00039	-.00097	.04105	.03624	-.00357	1.0114	.00331
#3	.00016	.00012	.00201	.06088	.15216	-.00484	.85130	.00616
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	3.0376	-.00008	.00578	.00044	-.00230	.00144	.21434
Stddev	.00025	.0744	.00053	.00529	.00227	.00178	.00420	.00577
%RSD	93.741	2.4506	639.89	91.432	509.94	77.275	291.44	2.6916
#1	-.00011	2.9794	.00051	.00238	.00289	-.00166	.00573	.20865
#2	-.00014	3.0119	-.00050	.00310	-.00159	-.00431	-.00267	.21418
#3	-.00056	3.1215	-.00026	.01187	.00003	-.00093	.00126	.22019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606112901 Acquired: 6/25/2016 15:48:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.01265**	**.00270**	**.00064**	**.00099**	**.00067**	**.00092**
Stddev	.00055	.00035	.00371	.00238	.00052	.00018	.00051
%RSD	272.21	2.7272	137.50	373.62	52.293	26.328	55.163
#1	-.00083	.01259	.00376	-.00183	.00159	.00059	.00050
#2	.00008	.01234	-.00143	.00082	.00070	.00087	.00077
#3	.00015	.01303	.00576	.00292	.00069	.00054	.00148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9969.3**	**60775.**	**3044.6**
Stddev	21.9	129.	15.2
%RSD	.22015	.21273	.49841
#1	9984.3	60920.	3056.8
#2	9944.1	60732.	3049.4
#3	9979.5	60672.	3027.6

Approved: June 27, 2016

Sample Name: L1606112902 Acquired: 6/25/2016 15:52:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	.00804	.00035	-.00128	.00288	.00010	2.9594	-.00006
Stddev	.00058	.00641	.00226	.00137	.00187	.00003	.0055	.00010
%RSD	221.07	79.747	653.27	107.46	64.882	33.893	.18419	164.92
#1	.00004	.00818	.00185	.00031	.00398	.00007	2.9654	.00000
#2	.00011	.00156	.00144	-.00200	.00072	.00009	2.9582	-.00001
#3	-.00094	.01439	-.00226	-.00213	.00394	.00014	2.9547	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.00045	.00076	.08667	.10793	.00221	.95476	.02200
Stddev	.00021	.00074	.00096	.00189	.05164	.00058	.08086	.00168
%RSD	3252.3	165.35	125.16	2.1842	47.845	26.260	8.4687	7.6363
#1	.00009	.00055	.00166	.08573	.06794	.00282	.86999	.02017
#2	-.00024	-.00034	.00088	.08885	.16623	.00215	.96327	.02346
#3	.00016	.00114	-.00024	.08543	.08961	.00166	1.0310	.02238
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	1.4239	.00014	.00542	.00025	-.00059	.00178	.20161
Stddev	.00013	.0489	.00086	.00331	.00120	.00643	.00247	.00182
%RSD	52.086	3.4352	596.95	60.989	470.84	1086.5	138.88	.90303
#1	-.00010	1.4077	-.00013	.00438	-.00113	.00173	.00080	.20089
#2	-.00031	1.4789	-.00055	.00913	.00091	-.00786	-.00005	.20368
#3	-.00033	1.3852	.00110	.00276	.00098	.00435	.00459	.20026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606112902 Acquired: 6/25/2016 15:52:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00083	.01066	.00349	-.00281	.00049	.00074	-.00046
Stddev	.00025	.00027	.00348	.00166	.00046	.00011	.00023
%RSD	30.685	2.4916	99.744	59.148	94.747	14.382	50.877
#1	.00087	.01070	.00643	-.00461	.00075	.00069	-.00046
#2	.00056	.01090	.00439	-.00132	-.00005	.00087	-.00023
#3	.00106	.01038	-.00035	-.00252	.00076	.00067	-.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9989.3	60825.	3066.0
Stddev	18.4	89.	4.0
%RSD	.18402	.14693	.13203
#1	10008.	60870.	3065.9
#2	9971.8	60722.	3062.0
#3	9987.6	60883.	3070.1

Approved: June 27, 2016

Sample Name: L1606112903 Acquired: 6/25/2016 15:56:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00034**	**-.00746**	**.00009**	**.00007**	**.00214**	**.00016**	**4.2282**	**-.00031**
Stddev	.00178	.00543	.00185	.00098	.00088	.00001	.1021	.00011
%RSD	518.14	72.757	1962.2	1427.6	41.098	3.6332	2.4147	36.326
#1	-.00212	-.00132	-.00121	.00003	.00116	.00017	4.2310	-.00019
#2	.00143	-.00942	.00221	-.00089	.00287	.00016	4.3288	-.00035
#3	-.00034	-.01164	-.00072	.00107	.00238	.00015	4.1247	-.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00027**	**-.00057**	**-.00029**	**.07902**	**-.03881**	**.00121**	**1.0358**	**.00397**
Stddev	.00063	.00094	.00019	.01076	.01948	.00237	.1206	.00030
%RSD	236.86	166.12	66.025	13.622	50.186	195.96	11.648	7.4974
#1	-.00020	-.00113	-.00052	.06755	-.06059	-.00026	.93657	.00379
#2	.00099	.00052	-.00021	.08890	-.02305	-.00005	1.1701	.00431
#3	.00002	-.00109	-.00016	.08063	-.03281	.00395	1.0007	.00380
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00055**	**2.1503**	**-.00065**	**.00144**	**.00315**	**-.00171**	**-.00059**	**.27406**
Stddev	.00026	.0349	.00083	.00721	.00266	.00193	.00290	.00085
%RSD	47.062	1.6229	127.58	500.84	84.421	112.70	495.02	.31027
#1	-.00082	2.1700	-.00132	-.00288	.00271	.00020	-.00182	.27322
#2	-.00053	2.1710	.00028	-.00257	.00074	-.00366	.00273	.27492
#3	-.00030	2.1101	-.00091	.00976	.00599	-.00168	-.00267	.27403
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606112903 Acquired: 6/25/2016 15:56:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.01267	.00761	-.00035	.00044	.00047	.00034
Stddev	.00036	.00010	.00488	.00192	.00076	.00017	.00099
%RSD	75.051	.78508	64.089	556.65	172.53	36.380	290.00
#1	.00045	.01256	.01172	-.00046	-.00009	.00039	-.00046
#2	.00086	.01267	.00891	.00163	.00010	.00066	.00145
#3	.00013	.01276	.00222	-.00221	.00131	.00034	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9986.0	60665.	3026.9
Stddev	20.7	145.	17.8
%RSD	.20708	.23844	.58822
#1	10007.	60770.	3014.6
#2	9984.8	60726.	3018.9
#3	9966.0	60500.	3047.3

Approved: June 27, 2016

Sample Name: L1606112904 Acquired: 6/25/2016 16:00:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00143**	**.00782**	**.00014**	**-.00105**	**.00318**	**.00018**	**2.9065**	**-.00009**
Stddev	.00049	.00478	.00214	.00233	.00102	.00003	.0438	.00019
%RSD	34.335	61.153	1520.7	221.14	32.071	15.659	1.5085	207.21
#1	.00199	.01026	-.00194	.00103	.00202	.00019	2.8571	-.00015
#2	.00122	.00231	.00002	-.00063	.00358	.00019	2.9407	.00012
#3	.00108	.01088	.00233	-.00357	.00394	.00014	2.9218	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00050**	**.00045**	**.00112**	**.05226**	**.04902**	**.00077**	**.91311**	**.02436**
Stddev	.00068	.00160	.00112	.00414	.07439	.00531	.01971	.00311
%RSD	135.32	357.44	99.972	7.9272	151.77	691.64	2.1590	12.769
#1	.00007	.00219	.00019	.05089	.09310	-.00511	.93142	.02095
#2	.00129	.00012	.00080	.04898	.09083	.00221	.91566	.02510
#3	.00015	-.00096	.00236	.05692	-.03687	.00521	.89224	.02704
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**1.3676**	**-.00081**	**.00778**	**.00502**	**-.00289**	**.00478**	**.20680**
Stddev	.00041	.0202	.00063	.00381	.00153	.00221	.00206	.00531
%RSD	176.12	1.4731	77.366	49.002	30.478	76.529	43.075	2.5661
#1	-.00056	1.3492	-.00140	.01136	.00503	-.00266	.00633	.20082
#2	-.00037	1.3644	-.00015	.00819	.00655	-.00520	.00556	.20859
#3	.00023	1.3891	-.00088	.00377	.00348	-.00080	.00244	.21097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606112904 Acquired: 6/25/2016 16:00:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.01047	.00111	-.00019	.00078	.00080	-.00006
Stddev	.00022	.00018	.00665	.00270	.00041	.00022	.00073
%RSD	116.67	1.7478	597.28	1390.3	52.913	27.125	1123.9
#1	.00044	.01026	.00785	.00028	.00121	.00056	.00012
#2	.00008	.01056	.00093	.00224	.00075	.00085	.00055
#3	.00005	.01059	-.00544	-.00310	.00038	.00099	-.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9957.7	60557.	3030.1
Stddev	15.8	177.	8.6
%RSD	.15901	.29213	.28426
#1	9975.9	60586.	3020.4
#2	9949.3	60718.	3033.0
#3	9947.7	60368.	3036.9

Approved: June 27, 2016

Sample Name: L1606127201 Acquired: 6/25/2016 16:04:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	-.00887	-.00183	.00197	.00056	.00010	.95406	-.00003
Stddev	.00091	.01117	.00052	.00188	.00043	.00011	.05017	.00010
%RSD	325.46	125.87	28.528	95.488	77.565	107.58	5.2586	289.02
#1	.00022	-.02176	-.00218	.00027	.00085	.00010	.90480	.00002
#2	.00122	-.00213	-.00123	.00398	.00076	-.00001	.95228	.00003
#3	-.00060	-.00272	-.00207	.00165	.00006	.00021	1.0051	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	-.00128	.00046	.02799	-.07233	.00197	.21481	.00019
Stddev	.00061	.00045	.00022	.01180	.06961	.00022	.12156	.00200
%RSD	1838.2	35.569	48.564	42.171	96.239	11.394	56.590	1042.3
#1	-.00013	-.00080	.00028	.03989	-.13804	.00212	.34118	.00130
#2	-.00048	-.00170	.00071	.01628	.00061	.00171	.09871	-.00212
#3	.00071	-.00133	.00040	.02780	-.07955	.00208	.20454	.00139
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00067	6.5927	-.00041	.00599	.00226	-.00187	.00139	.23314
Stddev	.00039	.0563	.00074	.00538	.00192	.00575	.00169	.00199
%RSD	58.032	.85407	180.55	89.733	84.902	308.02	122.23	.85400
#1	-.00069	6.5318	-.00010	.00974	.00276	.00008	.00216	.23308
#2	-.00105	6.6428	-.00125	-.00017	.00014	-.00834	-.00056	.23517
#3	-.00027	6.6034	.00012	.00842	.00389	.00266	.00255	.23118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127201 Acquired: 6/25/2016 16:04:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**.00331**	**.00248**	**.00096**	**.00107**	**.00085**	**.00133**
Stddev	.00044	.00056	.00254	.00297	.00078	.00012	.00063
%RSD	192.52	16.945	102.26	309.29	73.373	14.693	47.329
#1	.00017	.00395	.00360	.00246	.00196	.00094	.00062
#2	-.00070	.00291	.00428	.00288	.00074	.00089	.00180
#3	-.00016	.00306	-.00042	-.00246	.00050	.00071	.00159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9972.6**	**60217.**	**3037.7**
Stddev	14.0	83.	14.1
%RSD	.14049	.13799	.46569
#1	9988.5	60309.	3026.4
#2	9967.3	60146.	3033.1
#3	9962.1	60196.	3053.5

Approved: June 27, 2016

Sample Name: L1606127202 Acquired: 6/25/2016 16:08:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**.01060**	**.00084**	**.01591**	**.00482**	**.00013**	**4.8874**	**.00012**
Stddev	.00147	.00116	.00295	.00196	.00045	.00002	.0512	.00031
%RSD	570.05	10.898	350.53	12.303	9.3008	12.581	1.0477	272.03
#1	-.00187	.01061	.00261	.01812	.00447	.00014	4.8299	.00013
#2	.00100	.00945	-.00256	.01523	.00533	.00015	4.9279	.00042
#3	.00009	.01176	.00248	.01439	.00467	.00011	4.9046	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**-.00046**	**.00025**	**.03059**	**.03395**	**.00208**	**2.7028**	**-.00061**
Stddev	.00015	.00087	.00083	.01638	.06594	.00230	.1335	.00149
%RSD	81.112	189.49	337.36	53.558	194.25	110.69	4.9393	243.32
#1	.00003	-.00146	.00109	.04846	-.00968	-.00038	2.8372	-.00173
#2	.00034	.00002	-.00057	.01628	.00172	.00418	2.5702	.00108
#3	.00021	.00006	.00022	.02703	.10981	.00243	2.7010	-.00120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**13.742**	**-.00085**	**.00227**	**.00279**	**-.00269**	**-.00193**	**.47645**
Stddev	.00056	.155	.00030	.00745	.00217	.00177	.00170	.00665
%RSD	217.74	1.1297	35.156	328.49	77.588	65.958	88.159	1.3954
#1	-.00002	13.587	-.00065	-.00435	.00526	-.00088	-.00382	.46927
#2	-.00089	13.898	-.00120	.00082	.00118	-.00276	-.00050	.47768
#3	.00014	13.742	-.00071	.01033	.00194	-.00443	-.00148	.48240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127202 Acquired: 6/25/2016 16:08:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00018**	**.05092**	**.00177**	**.00024**	**.00137**	**.00071**	**.00162**
Stddev	.00083	.00100	.00998	.00193	.00052	.00009	.00084
%RSD	474.40	1.9658	565.04	789.52	37.663	12.612	51.686
#1	-.00049	.05003	.00781	-.00019	.00196	.00074	.00252
#2	-.00081	.05200	-.00975	.00235	.00120	.00078	.00148
#3	.00077	.05072	.00724	-.00143	.00097	.00061	.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9920.3**	**59957.**	**3053.1**
Stddev	9.3	97.	28.1
%RSD	.09367	.16197	.92019
#1	9910.9	59874.	3056.5
#2	9929.5	60064.	3023.5
#3	9920.6	59932.	3079.4

Approved: June 27, 2016

Sample Name: L1606127901 Acquired: 6/25/2016 16:12:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00079**	**.23343**	**-.00035**	**.00697**	**.01048**	**.00010**	**5.5956**	**-.00004**
Stddev	.00151	.00808	.00093	.00046	.00038	.00003	.0897	.00007
%RSD	191.07	3.4604	268.33	6.6127	3.6255	27.106	1.6038	155.88
#1	-.00012	.24183	.00073	.00738	.01041	.00014	5.5127	-.00007
#2	.00027	.23274	-.00087	.00647	.01090	.00009	5.5834	-.00010
#3	-.00251	.22572	-.00090	.00704	.01015	.00009	5.6909	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00030**	**.00040**	**.00104**	**.37949**	**.02999**	**.00120**	**2.2214**	**.04375**
Stddev	.00022	.00063	.00117	.02000	.03448	.00297	.1047	.00042
%RSD	72.888	155.32	112.12	5.2704	114.98	248.44	4.7142	.95613
#1	.00020	.00102	-.00030	.35646	.01685	.00172	2.1668	.04335
#2	.00015	-.00023	.00181	.39248	.06911	.00387	2.1552	.04372
#3	.00056	.00042	.00162	.38953	.00401	-.00200	2.3421	.04419
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.40372**	**.00002**	**.01800**	**.00182**	**-.00229**	**.00534**	**.76285**
Stddev	.00016	.02832	.00029	.00724	.00294	.00133	.00501	.02556
%RSD	124.97	7.0152	1295.9	40.230	161.43	58.036	93.812	3.3508
#1	-.00031	.38955	.00035	.01067	.00373	-.00090	.01054	.73582
#2	-.00001	.38528	-.00008	.01820	-.00157	-.00355	.00492	.76609
#3	-.00007	.43633	-.00020	.02515	.00330	-.00243	.00055	.78664
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127901 Acquired: 6/25/2016 16:12:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00000**	**.02802**	**.00639**	**-.00424**	**.00104**	**.00686**	**-.00053**
Stddev	.00059	.00084	.00088	.00033	.00039	.00027	.00162
%RSD	12664.	3.0023	13.821	7.8780	37.381	4.0081	307.76
#1	.00044	.02706	.00703	-.00390	.00138	.00661	.00100
#2	.00022	.02835	.00538	-.00425	.00062	.00681	-.00222
#3	-.00068	.02864	.00675	-.00456	.00114	.00715	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9995.1**	**60569.**	**3072.5**
Stddev	18.8	83.	17.9
%RSD	.18798	.13702	.58354
#1	10017.	60498.	3093.1
#2	9983.0	60660.	3060.2
#3	9985.6	60548.	3064.2

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 16:16:03 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41279**	**10.433**	**.40298**	**.50323**	**1.0184**	**.05236**	**10.146**
Stddev	.00062	.023	.00491	.00242	.0037	.00006	.030
%RSD	.14995	.22399	1.2186	.48043	.36729	.12018	.29415
#1	.41231	10.415	.40384	.50055	1.0220	.05229	10.131
#2	.41349	10.459	.39769	.50390	1.0146	.05241	10.126
#3	.41257	10.425	.40740	.50524	1.0186	.05238	10.180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05206**	**.20294**	**.51645**	**.52099**	**4.0952**	**49.051**	**1.0295**
Stddev	.00043	.00065	.00457	.00121	.0025	.142	.0088
%RSD	.83054	.31937	.88415	.23159	.06120	.28862	.85476
#1	.05248	.20360	.51186	.52157	4.0943	49.074	1.0305
#2	.05210	.20291	.52099	.52180	4.0933	48.900	1.0203
#3	.05161	.20230	.51649	.51960	4.0980	49.180	1.0378
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.7277**	**.51414**	**1.0402**	**49.935**	**.51586**	**10.134**	**.51189**
Stddev	.0462	.00321	.0047	.095	.00165	.031	.00166
%RSD	.47447	.62359	.45388	.19063	.31918	.30495	.32486
#1	9.7465	.51782	1.0451	50.021	.51766	10.168	.51381
#2	9.6751	.51192	1.0398	49.833	.51549	10.123	.51086
#3	9.7615	.51270	1.0357	49.951	.51442	10.109	.51101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 16:16:03 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2153**	**.40661**	**5.2188**	**1.0211**	**1.0187**	**1.0271**	**.52415**
Stddev	.0058	.00386	.0120	.0013	.0031	.0069	.00046
%RSD	.47598	.95000	.22957	.12690	.30817	.67428	.08834
#1	1.2162	.40345	5.2255	1.0218	1.0207	1.0286	.52363
#2	1.2206	.41091	5.2258	1.0219	1.0150	1.0195	.52433
#3	1.2091	.40546	5.2049	1.0196	1.0203	1.0331	.52450
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0611**	**1.0269**	F **2.9985**
Stddev	.0021	.0010	.0124
%RSD	.19830	.09638	.41405
#1	1.0631	1.0270	3.0047
#2	1.0614	1.0279	2.9842
#3	1.0589	1.0259	3.0065
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9559.6**	**57599.**	**2986.8**
Stddev	4.9	130.	10.5
%RSD	.05148	.22635	.35191
#1	9564.0	57612.	2977.9
#2	9560.6	57462.	2998.4
#3	9554.3	57722.	2984.0

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 16:19:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00185**	**.00626**	**-.00023**	**.00044**	**.00278**	**.00005**	**-.04464**	**.00001**
Stddev	.00025	.00998	.00075	.00197	.00045	.00006	.01589	.00008
%RSD	13.751	159.28	328.05	451.88	16.156	122.09	35.589	834.92
#1	.00158	.01229	-.00019	.00230	.00236	.00010	-.04122	-.00004
#2	.00190	-.00525	.00050	.00063	.00326	-.00002	-.03074	-.00004
#3	.00208	.01176	-.00099	-.00162	.00274	.00006	-.06195	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00039**	**.00030**	**.00108**	**.01891**	**-.08883**	**.00028**	**.04170**	**-.00007**
Stddev	.00014	.00149	.00123	.02463	.04133	.00158	.04172	.00069
%RSD	37.231	490.44	114.38	130.22	46.533	569.52	100.03	937.33
#1	-.00023	.00135	.00225	.04102	-.10527	-.00061	.02819	.00053
#2	-.00043	.00096	-.00021	.02335	-.11941	.00210	.00842	.00008
#3	-.00050	-.00140	.00119	-.00763	-.04180	-.00066	.08850	-.00082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00343**	**.00251**	**-.00012**	**.00363**	**.00401**	**.00489**	**.00879**	**-.00487**
Stddev	.00038	.01645	.00050	.00608	.00167	.00193	.00298	.00028
%RSD	11.063	654.49	431.61	167.28	41.713	39.486	33.953	5.7618
#1	.00299	.00408	-.00004	.00277	.00588	.00378	.00970	-.00459
#2	.00370	-.01467	-.00065	-.00196	.00352	.00712	.01122	-.00515
#3	.00359	.01813	.00034	.01010	.00264	.00378	.00546	-.00487
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 16:19:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00028	.00057	.00214	-.00157	.00060	-.00006	.00421
Stddev	.00055	.00026	.00424	.00416	.00034	.00004	.00038
%RSD	193.42	45.468	198.11	264.68	55.851	78.634	9.1291
#1	-.00056	.00032	.00612	.00235	.00061	-.00008	.00456
#2	-.00063	.00083	-.00232	-.00593	.00093	-.00001	.00426
#3	.00035	.00056	.00262	-.00114	.00026	-.00008	.00380
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9751.1	59011.	2998.0
Stddev	16.0	92.	16.9
%RSD	.16409	.15669	.56327
#1	9735.8	59057.	2997.7
#2	9767.8	59072.	2981.2
#3	9749.7	58905.	3015.0

Approved: June 27, 2016

Sample Name: L1606127905 Acquired: 6/25/2016 16:23:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00112**	**.42892**	**.00254**	**.00885**	**.00931**	**.00014**	**4.1101**	**-.00014**
Stddev	.00085	.00960	.00110	.00026	.00054	.00008	.0226	.00009
%RSD	76.091	2.2373	43.205	2.9736	5.7541	61.416	.54879	60.631
#1	.00187	.41894	.00336	.00888	.00991	.00015	4.0848	-.00017
#2	.00019	.43809	.00129	.00858	.00890	.00022	4.1178	-.00005
#3	.00131	.42973	.00298	.00910	.00911	.00005	4.1279	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00064**	**.00072**	**.00093**	**.46806**	**-.04215**	**.00375**	**2.3175**	**.01534**
Stddev	.00025	.00122	.00082	.01630	.03381	.00237	.0180	.00171
%RSD	38.393	169.05	88.133	3.4825	80.210	63.236	.77530	11.156
#1	.00092	.00051	.00011	.45372	-.08111	.00533	2.3322	.01684
#2	.00057	-.00038	.00092	.46467	-.02046	.00102	2.2974	.01572
#3	.00044	.00203	.00175	.48579	-.02489	.00491	2.3228	.01348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**.79830**	**.00036**	**.03423**	**.00164**	**-.00327**	**.00568**	**1.0453**
Stddev	.00055	.00874	.00054	.00334	.00066	.00436	.00399	.0205
%RSD	130.46	1.0949	148.73	9.7489	39.962	133.66	70.190	1.9601
#1	-.00012	.80324	-.00001	.03061	.00234	-.00815	.00802	1.0252
#2	.00040	.78821	.00099	.03719	.00155	-.00191	.00794	1.0445
#3	.00099	.80344	.00012	.03489	.00104	.00026	.00108	1.0662
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127905 Acquired: 6/25/2016 16:23:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.01799	.00482	-.00230	.00189	.01109	.00007
Stddev	.00065	.00037	.00226	.00232	.00074	.00029	.00211
%RSD	715.49	2.0334	47.005	100.92	39.126	2.6113	3180.6
#1	-.00003	.01830	.00310	.00003	.00148	.01082	.00082
#2	.00080	.01809	.00396	-.00232	.00274	.01107	-.00231
#3	-.00049	.01759	.00738	-.00462	.00144	.01140	.00169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9972.5	60381.	3064.6
Stddev	33.3	69.	2.8
%RSD	.33435	.11363	.09242
#1	10010.	60351.	3061.5
#2	9961.5	60333.	3067.1
#3	9946.1	60460.	3065.2

Approved: June 27, 2016

Sample Name: L1606114801 Acquired: 6/25/2016 16:27:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.03462	.00065	.00821	.00587	.00014	1.4096	-.00013
Stddev	.00034	.00628	.00229	.00098	.00178	.00003	.0346	.00033
%RSD	57.407	18.141	351.58	11.960	30.235	19.203	2.4561	248.47
#1	.00054	.03990	-.00071	.00924	.00790	.00011	1.3926	.00011
#2	.00095	.02767	-.00063	.00729	.00463	.00014	1.4495	-.00000
#3	.00028	.03630	.00329	.00809	.00508	.00016	1.3868	-.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00001	.00030	.04215	.21418	.00024	.69121	.00161
Stddev	.00012	.00038	.00134	.02269	.07335	.00510	.07378	.00189
%RSD	127.75	2953.4	439.05	53.849	34.250	2116.0	10.674	117.34
#1	.00006	.00044	.00117	.03668	.16871	.00256	.67687	-.00053
#2	-.00001	-.00026	.00097	.06707	.29880	.00377	.77111	.00305
#3	.00022	-.00014	-.00123	.02268	.17502	-.00561	.62565	.00230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00000	3.4091	-.00039	.01019	-.00019	-.00195	.00226	.25600
Stddev	.00027	.0299	.00017	.00142	.00263	.00116	.00241	.00788
%RSD	8569.8	.87827	42.602	13.923	1405.5	59.228	106.91	3.0774
#1	.00029	3.3757	-.00048	.01168	-.00018	-.00094	.00166	.24819
#2	-.00005	3.4183	-.00020	.01005	.00244	-.00171	.00492	.25587
#3	-.00025	3.4335	-.00049	.00885	-.00282	-.00321	.00020	.26394
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606114801 Acquired: 6/25/2016 16:27:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00043**	**.01395**	**.00070**	**-.00087**	**.00132**	**.00137**	**.00142**
Stddev	.00051	.00044	.00486	.00154	.00026	.00005	.00170
%RSD	118.61	3.1779	695.33	177.20	19.933	3.3203	119.70
#1	-.00063	.01431	.00581	-.00155	.00155	.00135	.00002
#2	.00015	.01345	.00013	-.00194	.00103	.00135	.00093
#3	-.00082	.01408	-.00385	.00089	.00136	.00143	.00331
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9913.2**	**60132.**	**3023.4**
Stddev	14.6	83.	23.3
%RSD	.14679	.13818	.77035
#1	9929.6	60151.	3030.8
#2	9901.6	60041.	2997.3
#3	9908.5	60204.	3042.1

Approved: June 27, 2016

Sample Name: L1606114802 Acquired: 6/25/2016 16:31:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00158	-.00408	.00026	.00633	.00904	.00015	2.7703	-.00011
Stddev	.00108	.00521	.00166	.00204	.00121	.00009	.0227	.00014
%RSD	68.438	127.59	628.67	32.297	13.379	59.313	.82092	123.10
#1	.00072	-.00923	-.00155	.00429	.00969	.00008	2.7476	-.00002
#2	.00123	.00119	.00169	.00631	.00978	.00025	2.7930	-.00027
#3	.00279	-.00421	.00065	.00838	.00764	.00012	2.7703	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.00002	.00060	.02383	.06717	.00040	2.3757	.00083
Stddev	.00028	.00081	.00057	.01240	.09428	.00275	.0633	.00197
%RSD	81.635	5221.9	93.832	52.028	140.36	693.38	2.6650	237.49
#1	.00044	-.00078	.00046	.02298	.16159	-.00259	2.3743	.00224
#2	.00003	-.00000	.00012	.01188	-.02697	.00095	2.4397	.00167
#3	.00055	.00084	.00122	.03663	.06688	.00283	2.3131	-.00142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	6.0259	-.00040	.00438	.00227	-.00140	.00185	.32995
Stddev	.00024	.0927	.00045	.00883	.00074	.00370	.00550	.00769
%RSD	208.31	1.5391	111.52	201.54	32.728	264.56	298.09	2.3316
#1	.00039	5.9438	-.00070	.01456	.00143	-.00567	.00483	.32126
#2	-.00003	6.1265	.00011	-.00011	.00282	.00058	.00521	.33270
#3	-.00002	6.0074	-.00061	-.00130	.00258	.00089	-.00450	.33589
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606114802 Acquired: 6/25/2016 16:31:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.01996	.00356	-.00001	.00116	.00095	-.00024
Stddev	.00040	.00029	.00718	.00102	.00055	.00026	.00029
%RSD	136.64	1.4402	201.93	7537.5	47.304	27.165	121.82
#1	-.00006	.02008	.00861	-.00117	.00177	.00075	-.00049
#2	.00022	.02016	-.00466	.00037	.00099	.00086	-.00028
#3	.00074	.01963	.00672	.00076	.00071	.00124	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9925.6	60099.	3031.8
Stddev	7.7	64.	18.1
%RSD	.07799	.10696	.59652
#1	9922.2	60109.	3022.9
#2	9920.2	60157.	3019.9
#3	9934.5	60030.	3052.6

Approved: June 27, 2016

Sample Name: L1606115001 Acquired: 6/25/2016 16:35:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00166	.05641	.00050	.00663	.00676	.00016	1.7818	.00015
Stddev	.00049	.00787	.00304	.00311	.00055	.00011	.0479	.00031
%RSD	29.631	13.947	601.42	46.927	8.1582	71.613	2.6886	203.48
#1	.00200	.06510	-.00294	.00991	.00739	.00005	1.7526	.00038
#2	.00109	.05435	.00166	.00372	.00635	.00014	1.8371	-.00020
#3	.00188	.04978	.00279	.00626	.00655	.00027	1.7557	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.00048	.00100	.04970	.00137	.00112	1.1341	.00143
Stddev	.00049	.00051	.00115	.01548	.09645	.00218	.0897	.00096
%RSD	745.24	106.17	114.47	31.142	7038.5	195.00	7.9106	67.253
#1	-.00002	.00105	.00223	.06756	-.03266	.00315	1.0361	.00043
#2	-.00057	.00034	.00081	.04145	.11022	-.00118	1.2123	.00235
#3	.00040	.00005	-.00004	.04010	-.07346	.00137	1.1537	.00152
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	5.9717	-.00015	.00950	-.00176	-.00302	.00622	.28058
Stddev	.00014	.0718	.00043	.00093	.00081	.00221	.00277	.00537
%RSD	53.804	1.2031	276.46	9.7789	45.909	73.167	44.558	1.9140
#1	-.00010	5.9074	-.00014	.01003	-.00249	-.00320	.00355	.27441
#2	-.00036	6.0493	-.00058	.01005	-.00089	-.00072	.00603	.28316
#3	-.00034	5.9584	.00027	.00843	-.00189	-.00513	.00908	.28418
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115001 Acquired: 6/25/2016 16:35:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.01287	.00136	-.00194	.00110	.00114	.00062
Stddev	.00058	.00017	.00295	.00426	.00072	.00013	.00087
%RSD	762.02	1.3177	217.51	219.83	65.867	11.722	140.33
#1	.00015	.01301	.00162	-.00450	.00182	.00119	.00034
#2	-.00054	.01292	.00417	-.00429	.00110	.00099	-.00008
#3	.00061	.01268	-.00172	.00298	.00038	.00124	.00159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9919.3	60059.	3016.8
Stddev	34.5	56.	13.7
%RSD	.34767	.09285	.45386
#1	9942.2	60062.	3013.8
#2	9936.0	60114.	3004.8
#3	9879.6	60002.	3031.7

Approved: June 27, 2016

Sample Name: L1606115102 Acquired: 6/25/2016 16:39:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00105	.00214	.00018	.00362	.00526	.00013	1.7820	.00006
Stddev	.00166	.00346	.00084	.00176	.00021	.00005	.0144	.00011
%RSD	158.53	161.68	476.67	48.690	4.0116	41.814	.80931	182.53
#1	.00213	.00451	-.00003	.00223	.00549	.00009	1.7780	.00003
#2	-.00086	-.00183	-.00054	.00560	.00521	.00010	1.7700	-.00003
#3	.00188	.00375	.00110	.00302	.00507	.00019	1.7980	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.00030	.00081	.02568	-.04054	.00233	1.0068	.00278
Stddev	.00009	.00056	.00053	.02210	.04687	.00374	.0618	.00296
%RSD	39.196	184.13	65.165	86.089	115.61	160.62	6.1428	106.56
#1	.00032	.00005	.00046	.05079	-.00224	.00526	1.0696	.00587
#2	.00013	-.00008	.00055	.00916	-.02657	.00361	.94591	-.00003
#3	.00026	.00094	.00141	.01708	-.09281	-.00188	1.0048	.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00000	4.8272	.00042	.00764	.00031	-.00602	.00252	.26699
Stddev	.00027	.0498	.00058	.00427	.00107	.00140	.00418	.00420
%RSD	7088.8	1.0326	136.65	55.913	346.71	23.202	166.24	1.5735
#1	-.00018	4.7713	.00031	.01044	.00076	-.00742	-.00226	.26233
#2	-.00015	4.8672	-.00009	.00272	.00108	-.00462	.00551	.26815
#3	.00031	4.8430	.00105	.00974	-.00091	-.00602	.00431	.27049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115102 Acquired: 6/25/2016 16:39:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	.01171	-.00105	-.00167	.00048	.00111	-.00010
Stddev	.00036	.00032	.00211	.00218	.00034	.00004	.00053
%RSD	98.761	2.7498	200.92	130.51	71.305	3.3481	503.34
#1	-.00064	.01138	-.00295	-.00411	.00028	.00107	-.00046
#2	-.00048	.01174	.00122	-.00099	.00029	.00113	.00050
#3	.00004	.01202	-.00143	.00009	.00088	.00113	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9924.7	60209.	3035.9
Stddev	21.0	164.	13.4
%RSD	.21110	.27319	.44278
#1	9945.2	60212.	3050.8
#2	9925.5	60043.	3024.7
#3	9903.3	60372.	3032.1

Approved: June 27, 2016

Sample Name: L1606115105 Acquired: 6/25/2016 16:43:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00211	.00219	.00055	.00586	.00711	.00018	2.2105	.00001
Stddev	.00101	.00795	.00092	.00071	.00025	.00010	.0174	.00025
%RSD	47.839	363.29	167.06	12.119	3.4464	53.942	.78551	4197.7
#1	.00096	-.00697	.00162	.00634	.00685	.00013	2.1935	-.00020
#2	.00251	.00621	-.00001	.00619	.00715	.00012	2.2282	.00029
#3	.00286	.00732	.00005	.00504	.00733	.00030	2.2098	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	-.00001	.00002	.02737	.01189	.00109	1.3118	.00125
Stddev	.00029	.00051	.00146	.02301	.05921	.00366	.0639	.00239
%RSD	827.06	7244.7	6104.0	84.080	497.84	335.35	4.8727	191.19
#1	.00035	.00040	.00134	.00788	.02968	-.00236	1.3142	.00227
#2	-.00003	.00015	.00027	.02147	.06017	.00070	1.3745	.00297
#3	-.00022	-.00058	-.00154	.05276	-.05417	.00493	1.2467	-.00148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	6.1621	.00034	.00603	.00215	-.00121	.00114	.31741
Stddev	.00059	.0852	.00146	.00590	.00148	.00098	.00444	.00674
%RSD	252.32	1.3824	433.95	97.933	68.608	80.696	390.40	2.1227
#1	-.00086	6.0786	-.00133	.00455	.00384	-.00161	.00564	.31056
#2	-.00015	6.2489	.00098	.00101	.00153	-.00010	.00100	.31765
#3	.00031	6.1588	.00136	.01253	.00108	-.00192	-.00323	.32403
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115105 Acquired: 6/25/2016 16:43:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.01487**	**-.00053**	**-.00166**	**.00081**	**.00090**	**.00078**
Stddev	.00083	.00056	.00515	.00250	.00073	.00004	.00134
%RSD	533.32	3.7472	973.66	150.50	89.693	4.1812	172.14
#1	-.00110	.01433	.00470	-.00448	.00103	.00087	.00219
#2	.00015	.01545	-.00069	-.00074	.00000	.00094	.00064
#3	.00048	.01482	-.00560	.00025	.00141	.00089	-.00049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9886.5**	**59788.**	**3007.6**
Stddev	13.0	185.	33.5
%RSD	.13157	.30931	1.1137
#1	9901.4	60001.	3037.0
#2	9880.8	59677.	2971.1
#3	9877.4	59685.	3014.8

Approved: June 27, 2016

Sample Name: L1606115401 Acquired: 6/25/2016 16:47:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573707-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	.00056	-.00040	.08474	.00202	.00013	25.077	-.00002
Stddev	.00048	.01146	.00100	.00137	.00093	.00006	.183	.00004
%RSD	125.93	2038.5	249.32	1.6179	46.237	47.434	.73077	179.25
#1	-.00014	.00766	-.00156	.08632	.00308	.00006	25.288	-.00005
#2	.00079	.00669	.00017	.08409	.00131	.00017	24.966	-.00003
#3	.00048	-.01266	.00019	.08382	.00167	.00016	24.976	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	-.00049	.00090	.03824	.13932	.00586	5.7156	.01284
Stddev	.00012	.00049	.00033	.01141	.04539	.00340	.0899	.00260
%RSD	49.754	99.993	36.739	29.841	32.583	57.965	1.5726	20.218
#1	.00011	-.00085	.00123	.04902	.09367	.00206	5.7030	.01056
#2	.00028	-.00069	.00089	.02629	.18446	.00861	5.6327	.01230
#3	.00036	.00007	.00057	.03940	.13984	.00691	5.8112	.01567
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	48.626	-.00075	.01117	.00114	-.00491	.00349	.27480
Stddev	.00026	.111	.00066	.00745	.00133	.00248	.00272	.00312
%RSD	52.573	.22800	87.964	66.704	116.26	50.491	77.811	1.1358
#1	.00024	48.499	-.00062	.01513	.00176	-.00250	.00652	.27222
#2	.00075	48.707	-.00147	.01582	.00206	-.00745	.00269	.27392
#3	.00048	48.670	-.00016	.00258	-.00038	-.00478	.00127	.27827
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115401 Acquired: 6/25/2016 16:47:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573707-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.45176	-.00366	.00143	.00149	.00078	.00089
Stddev	.00028	.00268	.00362	.00047	.00058	.00004	.00106
%RSD	304.19	.59263	98.732	33.094	39.124	5.2122	119.26
#1	.00040	.44867	-.00000	.00088	.00209	.00083	-.00013
#2	-.00012	.45326	-.00375	.00168	.00093	.00076	.00081
#3	-.00001	.45335	-.00723	.00172	.00145	.00075	.00200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9797.1	59243.	3012.9
Stddev	17.5	107.	17.7
%RSD	.17826	.18036	.58631
#1	9776.9	59361.	2997.1
#2	9806.9	59214.	3009.7
#3	9807.4	59153.	3032.0

Approved: June 27, 2016

Sample Name: L1606115402S Acquired: 6/25/2016 16:51:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: ~~WG573994-~~04 WG573707-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01309**	**.25824**	**.01110**	**.13590**	**.02825**	**.00141**	**24.615**	**.00126**
Stddev	.00068	.00760	.00152	.00169	.00035	.00008	.204	.00013
%RSD	5.1924	2.9441	13.682	1.2425	1.2428	5.6800	.82995	10.655
#1	.01329	.24951	.01277	.13422	.02816	.00148	24.549	.00132
#2	.01365	.26341	.01072	.13589	.02864	.00133	24.844	.00111
#3	.01234	.26179	.00981	.13760	.02795	.00143	24.452	.00136
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00516**	**.01347**	**.01556**	**.12663**	**1.3534**	**.03179**	**5.7750**	**.02544**
Stddev	.00029	.00054	.00043	.02761	.0228	.00410	.0699	.00285
%RSD	5.6307	4.0382	2.7758	21.808	1.6862	12.889	1.2101	11.189
#1	.00539	.01407	.01514	.12414	1.3303	.03536	5.8428	.02774
#2	.00525	.01301	.01552	.15541	1.3541	.02732	5.7789	.02226
#3	.00483	.01334	.01600	.10034	1.3759	.03267	5.7032	.02633
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02479**	**48.072**	**.01332**	**.27819**	**.01575**	**.03066**	**.01661**	**.41681**
Stddev	.00011	.553	.00070	.01153	.00513	.00307	.00921	.00803
%RSD	.43243	1.1513	5.2238	4.1456	32.553	10.027	55.466	1.9271
#1	.02491	47.545	.01404	.27355	.01630	.02789	.02173	.40846
#2	.02475	48.649	.01266	.26969	.02058	.03397	.02212	.41747
#3	.02470	48.023	.01326	.29132	.01037	.03013	.00597	.42449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115402S Acquired: 6/25/2016 16:51:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: ~~WG573994-04~~ WG573707-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02366**	**.45706**	**.02085**	**.01353**	**.02750**	**.02826**	**.00274**
Stddev	.00062	.00423	.00301	.00109	.00044	.00035	.00077
%RSD	2.6070	.92537	14.446	8.0746	1.5967	1.2498	28.151
#1	.02338	.45248	.01904	.01478	.02755	.02786	.00198
#2	.02436	.46082	.01917	.01306	.02704	.02846	.00352
#3	.02323	.45789	.02432	.01275	.02792	.02848	.00271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9814.2**	**59172.**	**3008.6**
Stddev	14.0	133.	22.5
%RSD	.14277	.22528	.74717
#1	9829.8	59323.	3030.6
#2	9810.3	59073.	2985.6
#3	9802.6	59119.	3009.6

Approved: June 27, 2016

Sample Name: L1606115403SD Acquired: 6/25/2016 16:54:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: ~~WG573994-05~~ WG573707-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01239	.28748	.01145	.14150	.02764	.00148	24.958	.00130
Stddev	.00114	.00888	.00065	.00093	.00147	.00009	.077	.00038
%RSD	9.2124	3.0872	5.6507	.65421	5.3298	6.1781	.30772	29.306
#1	.01125	.28330	.01179	.14053	.02888	.00144	25.006	.00087
#2	.01353	.28146	.01070	.14159	.02802	.00141	24.999	.00161
#3	.01238	.29767	.01185	.14238	.02601	.00158	24.870	.00142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00611	.01431	.01527	.13086	1.3857	.03280	5.7817	.02287
Stddev	.00054	.00136	.00145	.01260	.0370	.00239	.0561	.00299
%RSD	8.8509	9.4861	9.4751	9.6283	2.6697	7.2716	.97114	13.075
#1	.00671	.01585	.01436	.14435	1.3780	.03556	5.7473	.02433
#2	.00566	.01329	.01452	.11939	1.4259	.03138	5.8465	.01943
#3	.00597	.01379	.01694	.12885	1.3532	.03147	5.7513	.02484
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02737	48.881	.01504	.29126	.01658	.02795	.01955	.43672
Stddev	.00021	.600	.00152	.00741	.00249	.00243	.00943	.00693
%RSD	.75532	1.2279	10.076	2.5426	15.013	8.6768	48.242	1.5861
#1	.02720	48.195	.01331	.29382	.01763	.03060	.01049	.42891
#2	.02732	49.311	.01567	.29705	.01373	.02742	.02931	.43914
#3	.02760	49.136	.01613	.28292	.01836	.02584	.01885	.44211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115403SD Acquired: 6/25/2016 16:54:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: ~~WG573994-05~~ WG573707-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02590	.47018	.02569	.01379	.02893	.02996	.00113
Stddev	.00080	.00475	.00439	.00029	.00110	.00076	.00027
%RSD	3.0868	1.0106	17.097	2.0910	3.8168	2.5433	23.745
#1	.02499	.46471	.02819	.01349	.02776	.02918	.00138
#2	.02647	.47252	.02061	.01406	.02908	.03000	.00115
#3	.02625	.47331	.02825	.01382	.02996	.03071	.00085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9727.4	58906.	3022.7
Stddev	40.6	23.	25.7
%RSD	.41767	.03969	.84864
#1	9765.9	58911.	3039.9
#2	9731.2	58926.	2993.2
#3	9685.0	58880.	3035.0

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 16:58:48 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41361	10.445	.40516	.50612	1.0259	.05224	10.203
Stddev	.00260	.021	.00144	.00287	.0033	.00020	.046
%RSD	.62922	.20256	.35469	.56757	.31739	.38953	.44884
#1	.41655	10.462	.40524	.50908	1.0271	.05242	10.224
#2	.41159	10.421	.40656	.50592	1.0284	.05202	10.235
#3	.41269	10.451	.40369	.50335	1.0222	.05229	10.150
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05215	.20471	.51698	.52477	4.0648	49.423	1.0320
Stddev	.00013	.00021	.00148	.00103	.0369	.189	.0006
%RSD	.23994	.10391	.28587	.19687	.90838	.38306	.06170
#1	.05201	.20470	.51640	.52461	4.1007	49.428	1.0316
#2	.05218	.20450	.51865	.52588	4.0269	49.610	1.0327
#3	.05226	.20492	.51587	.52383	4.0668	49.231	1.0316
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.8590	.51551	1.0404	50.331	.51945	10.229	.51430
Stddev	.0965	.00144	.0039	.173	.00106	.010	.00570
%RSD	.97927	.27876	.37864	.34422	.20472	.09385	1.1081
#1	9.9705	.51433	1.0396	50.428	.51822	10.232	.51032
#2	9.8060	.51711	1.0369	50.435	.52013	10.218	.51175
#3	9.8006	.51508	1.0447	50.131	.51999	10.236	.52083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 16:58:48 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2288**	**.41352**	**5.2624**	**1.0315**	**1.0269**	**1.0279**	**.53017**
Stddev	.0104	.00168	.0015	.0026	.0016	.0023	.00514
%RSD	.84208	.40618	.02811	.25583	.15527	.22255	.96993
#1	1.2288	.41198	5.2628	1.0285	1.0283	1.0298	.53564
#2	1.2391	.41326	5.2608	1.0336	1.0273	1.0286	.52543
#3	1.2184	.41531	5.2637	1.0323	1.0252	1.0254	.52943
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0564**	**1.0308**	F **3.0180**
Stddev	.0015	.0001	.0119
%RSD	.14240	.01349	.39369
#1	1.0580	1.0307	3.0121
#2	1.0561	1.0310	3.0317
#3	1.0550	1.0308	3.0102
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9528.1**	**57486.**	**2960.8**
Stddev	9.3	201.	17.3
%RSD	.09776	.34979	.58425
#1	9517.6	57273.	2962.9
#2	9535.3	57514.	2942.6
#3	9531.5	57672.	2977.0

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 17:02:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00045**	**.00226**	**.00067**	**.00055**	**.00185**	**.00013**	**-.07167**	**-.00014**
Stddev	.00085	.00279	.00119	.00264	.00042	.00005	.02175	.00033
%RSD	189.88	123.24	177.00	483.17	22.573	35.869	30.346	234.73
#1	.00019	-.00053	.00152	-.00019	.00233	.00018	-.09322	-.00050
#2	-.00141	.00505	-.00069	-.00165	.00153	.00012	-.04973	.00014
#3	-.00012	.00226	.00119	.00348	.00171	.00009	-.07206	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.00057**	**.00076**	**.03056**	**-.09613**	**.00228**	**-.13259**	**.00051**
Stddev	.00039	.00056	.00130	.01338	.02053	.00471	.02062	.00136
%RSD	1720.9	98.019	170.60	43.800	21.361	206.77	15.553	268.18
#1	.00020	.00017	-.00074	.01806	-.09726	-.00131	-.14855	-.00092
#2	.00020	.00121	.00148	.02892	-.07505	.00054	-.10931	.00179
#3	-.00047	.00034	.00155	.04468	-.11607	.00761	-.13993	.00066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00325**	**.04047**	**-.00081**	**.00150**	**.00148**	**.00530**	**.00256**	**-.00673**
Stddev	.00022	.01175	.00096	.00183	.00289	.00260	.00237	.00167
%RSD	6.7467	29.033	119.00	121.89	195.62	48.929	92.639	24.783
#1	.00325	.05342	-.00016	.00278	.00470	.00570	.00309	-.00596
#2	.00303	.03049	-.00036	.00231	.00063	.00768	-.00003	-.00558
#3	.00347	.03751	-.00192	-.00059	-.00090	.00253	.00461	-.00864
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 17:02:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**.00044**	**.00426**	**-.00209**	**.00094**	**.00001**	**.00353**
Stddev	.00052	.00045	.00463	.00321	.00096	.00021	.00070
%RSD	128.76	102.93	108.80	153.83	102.68	1611.6	19.702
#1	.00048	.00069	.00959	-.00418	.00024	-.00012	.00320
#2	.00089	.00071	.00120	.00161	.00204	-.00009	.00306
#3	-.00015	-.00008	.00198	-.00369	.00053	.00025	.00433
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9729.2**	**58924.**	**2982.2**
Stddev	14.1	124.	20.8
%RSD	.14444	.21107	.69802
#1	9725.0	58912.	2962.2
#2	9744.9	58806.	3003.8
#3	9717.8	59054.	2980.7

Approved: June 27, 2016

Sample Name: L1606115501 Acquired: 6/25/2016 17:06:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00033	.00180	.00125	.01161	.01032	.00011	2.3136	-.00007
Stddev	.00230	.00043	.00160	.00137	.00099	.00007	.0269	.00019
%RSD	694.54	23.757	128.16	11.776	9.5715	61.393	1.1630	281.96
#1	.00225	.00218	.00194	.01272	.00925	.00003	2.3397	.00009
#2	-.00214	.00134	.00239	.01008	.01120	.00016	2.2860	-.00001
#3	-.00111	.00188	-.00058	.01203	.01051	.00015	2.3151	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	.00014	-.00018	.02935	.09569	-.00047	1.4383	.08572
Stddev	.00040	.00048	.00052	.00252	.08702	.00314	.0635	.00277
%RSD	831.42	341.03	289.17	8.5796	90.931	664.03	4.4136	3.2299
#1	.00005	.00069	-.00054	.02667	.18563	.00276	1.4626	.08626
#2	.00029	-.00017	.00042	.03166	.01192	-.00066	1.4861	.08273
#3	-.00048	-.00010	-.00042	.02972	.08953	-.00352	1.3663	.08818
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	3.8750	.00064	.00454	.00264	-.00168	.00429	.37174
Stddev	.00028	.0249	.00026	.00324	.00293	.00204	.00272	.00091
%RSD	124.52	.64140	39.830	71.430	111.04	121.37	63.452	.24386
#1	-.00008	3.8959	.00063	.00081	.00037	-.00400	.00736	.37278
#2	.00028	3.8475	.00040	.00665	.00594	-.00087	.00338	.37129
#3	.00048	3.8816	.00091	.00616	.00160	-.00017	.00214	.37115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115501 Acquired: 6/25/2016 17:06:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.01613**	**.00436**	**.00049**	**-.00004**	**.00087**	**.00142**
Stddev	.00092	.00051	.00120	.00199	.00066	.00012	.00191
%RSD	2230.2	3.1791	27.456	410.68	1766.6	13.339	134.89
#1	.00087	.01607	.00571	.00178	-.00027	.00083	.00247
#2	-.00002	.01565	.00341	-.00181	.00071	.00100	-.00079
#3	-.00097	.01667	.00397	.00149	-.00055	.00078	.00257
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9938.9**	**60110.**	**3041.6**
Stddev	14.3	99.	8.4
%RSD	.14384	.16440	.27454
#1	9922.4	60057.	3050.1
#2	9946.9	60224.	3033.5
#3	9947.4	60049.	3041.2

Approved: June 27, 2016

Sample Name: L1606115502 Acquired: 6/25/2016 17:10:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	-.00453	-.00033	.00989	.01794	.00013	2.4889	.00011
Stddev	.00144	.01600	.00099	.00264	.00078	.00009	.0280	.00014
%RSD	216.56	353.18	295.78	26.673	4.3403	71.235	1.1261	129.84
#1	.00231	.00655	-.00001	.00702	.01871	.00024	2.4937	.00027
#2	.00001	-.02287	-.00144	.01220	.01715	.00010	2.5143	-.00000
#3	-.00033	.00273	.00045	.01047	.01798	.00006	2.4588	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	-.00044	.00104	.24605	-.07520	-.00217	1.6643	.02363
Stddev	.00022	.00012	.00019	.01179	.12175	.00286	.0624	.00224
%RSD	272.66	27.286	18.718	4.7938	161.89	131.42	3.7522	9.4751
#1	.00027	-.00041	.00090	.23638	.00559	-.00035	1.5996	.02553
#2	.00015	-.00033	.00126	.24256	-.01597	-.00070	1.6689	.02116
#3	-.00017	-.00057	.00095	.25919	-.21524	-.00546	1.7243	.02420
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00021	2.8989	.00016	.00365	.00260	-.00217	.00870	.42450
Stddev	.00065	.0101	.00120	.00396	.00147	.00150	.00507	.00601
%RSD	314.77	.35003	759.93	108.45	56.477	68.876	58.304	1.4160
#1	-.00082	2.8946	-.00099	.00772	.00422	-.00382	.01102	.41775
#2	-.00027	2.9105	.00140	-.00019	.00221	-.00091	.01219	.42650
#3	.00047	2.8917	.00006	.00342	.00137	-.00178	.00288	.42926
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115502 Acquired: 6/25/2016 17:10:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00038**	**.02139**	**.00454**	**-.00050**	**.00021**	**.00050**	**.00118**
Stddev	.00016	.00022	.00843	.00114	.00027	.00017	.00137
%RSD	41.986	1.0329	185.67	229.51	129.67	34.277	116.06
#1	.00030	.02116	.00016	.00076	.00041	.00055	-.00040
#2	.00027	.02139	.01426	-.00146	.00031	.00031	.00208
#3	.00056	.02161	-.00080	-.00078	-.00010	.00064	.00187
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9945.8**	**60248.**	**3055.3**
Stddev	9.2	94.	11.4
%RSD	.09217	.15541	.37444
#1	9945.9	60314.	3061.2
#2	9954.9	60289.	3042.1
#3	9936.5	60141.	3062.6

Approved: June 27, 2016

Sample Name: L1606115503 Acquired: 6/25/2016 17:14:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00200	-.00135	-.00104	.00757	.00737	.00014	2.3997	-.00010
Stddev	.00192	.00661	.00046	.00116	.00061	.00003	.0309	.00022
%RSD	96.141	489.89	44.488	15.290	8.2167	21.217	1.2897	218.06
#1	.00406	-.00575	-.00051	.00624	.00716	.00012	2.3659	-.00020
#2	.00025	-.00456	-.00131	.00835	.00689	.00017	2.4268	-.00025
#3	.00170	.00625	-.00131	.00813	.00805	.00012	2.4063	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	-.00044	-.00019	.10432	-.04481	.00004	.91519	.02191
Stddev	.00035	.00082	.00101	.01415	.09851	.00279	.09371	.00121
%RSD	3296.1	188.98	541.26	13.565	219.83	6329.0	10.240	5.5295
#1	-.00033	.00027	.00027	.10406	-.13456	.00163	.99135	.02326
#2	-.00007	-.00023	-.00134	.09030	-.06048	.00168	.94369	.02093
#3	.00037	-.00134	.00052	.11860	.06059	-.00317	.81054	.02153
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	2.4900	.00017	.00956	.00115	-.00111	.00305	.32330
Stddev	.00005	.0408	.00057	.00296	.00162	.00041	.00349	.00479
%RSD	56.574	1.6398	345.24	30.912	140.85	37.279	114.64	1.4819
#1	-.00011	2.4429	.00078	.00752	.00187	-.00066	-.00055	.31801
#2	-.00013	2.5161	.00008	.00822	-.00070	-.00119	.00642	.32454
#3	-.00003	2.5109	-.00036	.01295	.00229	-.00148	.00327	.32735
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115503 Acquired: 6/25/2016 17:14:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**.01387**	**.00305**	**-.00065**	**.00052**	**.00084**	**.00071**
Stddev	.00081	.00016	.00789	.00174	.00073	.00004	.00140
%RSD	953.07	1.1448	258.94	265.86	139.13	5.0666	198.28
#1	-.00013	.01403	.00198	-.00023	.00032	.00082	.00133
#2	-.00088	.01386	-.00426	.00083	-.00008	.00082	.00169
#3	.00075	.01371	.01142	-.00257	.00133	.00089	-.00090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9910.7**	**60184.**	**3019.4**
Stddev	10.3	175.	9.0
%RSD	.10381	.29035	.29953
#1	9910.7	60334.	3026.1
#2	9921.0	60225.	3023.1
#3	9900.4	59992.	3009.1

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 17:18:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41531**	**10.447**	**.40916**	**.50533**	**1.0238**	**.05217**	**10.225**
Stddev	.00091	.032	.00132	.00054	.0034	.00011	.030
%RSD	.21998	.31066	.32348	.10618	.32870	.20293	.29201
#1	.41613	10.474	.41061	.50566	1.0229	.05229	10.191
#2	.41432	10.411	.40886	.50561	1.0276	.05213	10.247
#3	.41546	10.455	.40801	.50471	1.0211	.05209	10.235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05225**	**.20370**	**.51712**	**.52549**	**4.0444**	**49.392**	**1.0301**
Stddev	.00031	.00034	.00175	.00197	.0184	.117	.0048
%RSD	.59442	.16603	.33927	.37570	.45604	.23752	.46659
#1	.05229	.20396	.51906	.52418	4.0394	49.465	1.0330
#2	.05254	.20382	.51666	.52776	4.0648	49.455	1.0327
#3	.05192	.20332	.51564	.52452	4.0290	49.257	1.0245
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.7951**	**.51327**	**1.0423**	**50.236**	**.51912**	**10.208**	**.51997**
Stddev	.0472	.00504	.0084	.169	.00170	.017	.00372
%RSD	.48165	.98200	.80990	.33677	.32826	.16636	.71476
#1	9.7523	.51223	1.0511	50.262	.52046	10.219	.52035
#2	9.7875	.51875	1.0343	50.391	.51968	10.189	.51607
#3	9.8457	.50883	1.0415	50.056	.51720	10.217	.52348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 17:18:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2238**	**.40709**	**5.2468**	**1.0260**	**1.0230**	**1.0304**	**.52875**
Stddev	.0084	.00511	.0098	.0012	.0023	.0127	.00327
%RSD	.68659	1.2545	.18586	.11540	.22459	1.2311	.61859
#1	1.2260	.40344	5.2580	1.0271	1.0231	1.0165	.53252
#2	1.2308	.40491	5.2428	1.0262	1.0252	1.0415	.52673
#3	1.2145	.41292	5.2398	1.0248	1.0206	1.0331	.52699
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0570**	**1.0310**	F **3.0075**
Stddev	.0056	.0001	.0207
%RSD	.53103	.00939	.68856
#1	1.0633	1.0311	3.0004
#2	1.0553	1.0309	3.0308
#3	1.0525	1.0310	2.9913
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9557.2**	**57623.**	**2979.5**
Stddev	9.7	193.	16.3
%RSD	.10109	.33465	.54600
#1	9546.7	57405.	2979.8
#2	9565.7	57771.	2963.0
#3	9559.4	57693.	2995.6

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 17:21:42 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**-.00563**	**.00200**	**-.00100**	**.00189**	**.00009**	**-.01127**	**-.00004**
Stddev	.00104	.00334	.00233	.00184	.00120	.00004	.03123	.00010
%RSD	1246.5	59.297	116.54	184.11	63.245	40.940	277.20	226.69
#1	-.00074	-.00335	.00466	-.00138	.00302	.00011	-.03377	.00004
#2	-.00027	-.00407	.00108	-.00263	.00202	.00005	.02439	-.00015
#3	.00126	-.00946	.00027	.00100	.00064	.00010	-.02442	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**.00048**	**.00089**	**.00955**	**-.03243**	**.00071**	**-.01124**	**-.00013**
Stddev	.00017	.00075	.00043	.01226	.03763	.00268	.07316	.00129
%RSD	103.61	157.05	48.720	128.38	116.03	378.57	650.98	975.30
#1	.00002	.00095	.00059	-.00410	-.06003	-.00175	-.02665	-.00039
#2	.00035	.00087	.00069	.01962	.01043	.00031	-.07547	-.00128
#3	.00012	-.00039	.00138	.01314	-.04771	.00356	.06840	.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00323**	**.02898**	**-.00046**	**.00432**	**.00328**	**.00454**	**.00410**	**-.00425**
Stddev	.00029	.02008	.00095	.00359	.00221	.00123	.00133	.00064
%RSD	9.1168	69.292	208.78	82.910	67.490	26.995	32.528	15.135
#1	.00298	.02490	-.00038	.00845	.00352	.00323	.00275	-.00470
#2	.00356	.01126	-.00144	.00261	.00095	.00566	.00541	-.00351
#3	.00316	.05079	.00046	.00192	.00536	.00474	.00413	-.00454
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 17:21:42 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	.00021	.00375	-.00110	.00108	-.00009	.00393
Stddev	.00059	.00011	.00446	.00333	.00027	.00003	.00087
%RSD	86.694	51.296	119.05	302.86	25.045	36.058	22.188
#1	.00135	.00012	.00567	.00135	.00136	-.00006	.00491
#2	.00024	.00018	-.00135	.00024	.00107	-.00012	.00363
#3	.00044	.00033	.00692	-.00489	.00082	-.00008	.00324
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9706.7	59138.	3007.6
Stddev	9.6	122.	14.5
%RSD	.09901	.20648	.48341
#1	9697.1	58997.	2992.2
#2	9716.3	59217.	3009.4
#3	9706.6	59200.	3021.1

Approved: June 27, 2016

Sample Name: LLCCV Acquired: 6/25/2016 17:25:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00682	.16326	.00787	.08110	.01015	.00172	.37504	.00080
Stddev	.00230	.01176	.00393	.00058	.00060	.00002	.03274	.00014
%RSD	33.789	7.2031	49.909	.72089	5.8834	1.2548	8.7301	17.457
#1	.00456	.16635	.01239	.08173	.01084	.00173	.33805	.00070
#2	.00916	.17317	.00587	.08058	.00985	.00173	.40031	.00075
#3	.00674	.15026	.00534	.08099	.00976	.00169	.38675	.00096
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00446	.00390	.00484	.09497	.71355	.08241	.33888	.00741
Stddev	.00036	.00087	.00066	.01610	.00812	.00379	.00870	.00176
%RSD	8.1660	22.291	13.622	16.951	1.1379	4.5949	2.5673	23.707
#1	.00488	.00490	.00494	.08463	.70937	.08497	.33660	.00920
#2	.00426	.00332	.00413	.08675	.70838	.08419	.34850	.00734
#3	.00424	.00348	.00544	.11352	.72291	.07806	.33155	.00569
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00855	.40833	.01678	.78916	.01199	.08269	.02089	.77549
Stddev	.00007	.02661	.00076	.00972	.00016	.00111	.00270	.00482
%RSD	.82014	6.5175	4.5074	1.2317	1.3733	1.3390	12.938	.62171
#1	.00856	.42291	.01686	.80033	.01215	.08397	.01985	.78057
#2	.00847	.42447	.01749	.78261	.01182	.08216	.01886	.77494
#3	.00861	.37762	.01598	.78454	.01200	.08195	.02396	.77097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LLCCV Acquired: 6/25/2016 17:25:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40481	.04214	.02257	.15413	.00994	.01699	.13476
Stddev	.00262	.00003	.00404	.00144	.00108	.00007	.00396
%RSD	.64734	.07891	17.895	.93373	10.832	.40613	2.9378
#1	.40763	.04217	.02259	.15502	.01117	.01705	.13268
#2	.40435	.04210	.02661	.15491	.00942	.01692	.13226
#3	.40245	.04214	.01853	.15247	.00922	.01700	.13932
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9757.6	59331.	3007.6
Stddev	3.7	156.	34.2
%RSD	.03744	.26375	1.1357
#1	9754.3	59400.	3008.1
#2	9757.0	59152.	3041.5
#3	9761.5	59441.	2973.2

Approved: June 27, 2016

Sample Name: PBW Y5 Acquired: 6/25/2016 17:29:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00185	.00116	-.00112	-.00084	.00120	.00011	-.01961	-.00006
Stddev	.00045	.01041	.00198	.00240	.00080	.00010	.05200	.00016
%RSD	24.231	897.41	176.31	284.10	67.234	89.198	265.17	288.76
#1	.00153	-.00604	-.00020	.00070	.00046	.00020	.01383	-.00024
#2	.00236	-.00358	.00023	-.00360	.00107	.00014	-.07952	.00007
#3	.00166	.01310	-.00339	.00037	.00206	.00000	.00686	.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	-.00018	.00105	.03412	-.07407	.00236	.02694	.00162
Stddev	.00024	.00064	.00070	.02542	.08098	.00211	.02742	.00224
%RSD	248.33	362.92	67.168	74.514	109.32	89.477	101.81	137.94
#1	.00030	-.00083	.00024	.00498	-.16192	.00417	.01237	.00092
#2	.00016	-.00014	.00146	.05181	-.05788	.00285	.00987	.00413
#3	-.00017	.00044	.00145	.04557	-.00242	.00004	.05857	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	.01025	-.00077	.00507	.00386	-.00192	-.00109	.00437
Stddev	.00004	.01479	.00185	.00580	.00053	.00084	.00245	.00068
%RSD	28.058	144.27	239.74	114.27	13.817	43.798	224.68	15.497
#1	-.00010	.02026	-.00256	.00797	.00348	-.00273	.00112	.00408
#2	-.00015	-.00674	.00113	.00885	.00447	-.00198	-.00067	.00389
#3	-.00017	.01724	-.00088	-.00160	.00363	-.00105	-.00372	.00515
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: PBW Y5 Acquired: 6/25/2016 17:29:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	.00044	.00538	-.00184	.00071	.00062	.00198
Stddev	.00057	.00040	.00350	.00250	.00039	.00016	.00115
%RSD	73.146	89.773	65.128	135.94	54.397	26.345	58.223
#1	.00143	.00035	.00942	-.00427	.00062	.00079	.00279
#2	.00040	.00088	.00331	.00073	.00114	.00048	.00066
#3	.00049	.00010	.00340	-.00198	.00038	.00058	.00249
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9880.3	60109.	3027.1
Stddev	31.5	73.	6.6
%RSD	.31885	.12179	.21761
#1	9847.3	60149.	3030.6
#2	9910.1	60154.	3019.5
#3	9883.5	60025.	3031.2

Approved: June 27, 2016

Sample Name: LCSW Y5 Acquired: 6/25/2016 17:33:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18967**	**4.7620**	**.18828**	**.90013**	**.47555**	**.02395**	**4.7950**	**.02373**
Stddev	.00250	.0081	.00104	.00471	.00273	.00006	.0213	.00018
%RSD	1.3192	.17078	.55148	.52284	.57347	.24848	.44480	.74408
#1	.18907	4.7578	.18718	.89893	.47827	.02388	4.7819	.02392
#2	.19242	4.7714	.18841	.90532	.47282	.02399	4.8196	.02370
#3	.18753	4.7569	.18924	.89614	.47557	.02397	4.7835	.02357
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09489**	**.23803**	**.24292**	**1.9123**	**22.817**	**.48875**	**4.5669**	**.24181**
Stddev	.00039	.00120	.00156	.0298	.036	.00284	.0465	.00007
%RSD	.41346	.50457	.64104	1.5597	.15629	.58110	1.0173	.02751
#1	.09520	.23794	.24291	1.9317	22.780	.48603	4.5750	.24188
#2	.09501	.23927	.24447	1.8779	22.852	.49170	4.5170	.24174
#3	.09445	.23687	.24136	1.9272	22.818	.48851	4.6088	.24180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49027**	**23.490**	**.24091**	**4.5553**	**.24063**	**.56646**	**.18382**	**2.3525**
Stddev	.00145	.113	.00040	.0084	.00352	.00190	.00239	.0014
%RSD	.29550	.48187	.16805	.18553	1.4632	.33509	1.2995	.06062
#1	.48963	23.608	.24065	4.5528	.24014	.56531	.18109	2.3541
#2	.49193	23.382	.24137	4.5647	.24437	.56542	.18555	2.3519
#3	.48925	23.480	.24069	4.5484	.23738	.56865	.18482	2.3515
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LCSW Y5 Acquired: 6/25/2016 17:33:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47085**	**.48454**	**.47923**	**.24546**	**.48968**	**.47202**	**.01198**
Stddev	.00082	.00070	.00116	.00117	.00078	.00042	.00247
%RSD	.17390	.14504	.24256	.47677	.15993	.08855	20.639
#1	.47170	.48509	.47789	.24652	.48877	.47178	.00945
#2	.47079	.48375	.47984	.24421	.49011	.47251	.01208
#3	.47006	.48479	.47995	.24566	.49015	.47178	.01439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9888.6**	**60001.**	**3090.1**
Stddev	19.1	149.	26.5
%RSD	.19299	.24892	.85667
#1	9894.9	60052.	3063.1
#2	9867.1	59834.	3091.3
#3	9903.7	60119.	3116.0

Approved: June 27, 2016

Sample Name: F BLANK Acquired: 6/25/2016 17:37:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00166	-.00148	.00090	.00227	.00163	.00011	-.00468	.00008
Stddev	.00130	.00490	.00188	.00068	.00037	.00003	.02546	.00022
%RSD	78.305	330.55	208.29	29.974	22.968	25.204	544.18	269.24
#1	.00033	-.00239	.00275	.00286	.00197	.00009	-.03398	.00015
#2	.00173	.00381	-.00100	.00243	.00123	.00014	.01206	.00026
#3	.00293	-.00586	.00096	.00153	.00167	.00010	.00788	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.00058	.00129	.04476	.01060	-.00161	-.05710	.00063
Stddev	.00029	.00122	.00029	.02153	.02075	.00622	.06303	.00318
%RSD	276.09	211.55	22.793	48.099	195.81	387.03	110.39	502.59
#1	-.00039	.00184	.00121	.03412	-.00619	.00062	-.09553	.00029
#2	.00018	-.00059	.00161	.06953	.03381	.00319	-.09140	.00397
#3	-.00010	.00048	.00104	.03061	.00418	-.00863	.01564	-.00236
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.05677	-.00011	.00316	.00576	-.00381	.00560	-.00010
Stddev	.00040	.03222	.00050	.00162	.00079	.00329	.00231	.00141
%RSD	72.047	56.761	453.37	51.247	13.705	86.399	41.256	1388.8
#1	.00085	.07680	-.00069	.00292	.00611	-.00013	.00434	-.00092
#2	.00073	.01960	.00014	.00168	.00631	-.00483	.00420	-.00091
#3	.00010	.07391	.00021	.00489	.00485	-.00647	.00827	.00153
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: F BLANK Acquired: 6/25/2016 17:37:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.00021	-.00396	-.00081	.00112	.00164	.00166
Stddev	.00084	.00011	.00377	.00288	.00053	.00013	.00011
%RSD	1212.1	52.839	95.183	357.63	47.087	8.1028	6.9152
#1	-.00082	.00025	-.00813	-.00413	.00144	.00151	.00159
#2	.00085	.00029	-.00300	.00065	.00141	.00165	.00179
#3	.00018	.00008	-.00077	.00106	.00051	.00177	.00159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10015.	61314.	3090.8
Stddev	16.	177.	23.0
%RSD	.15522	.28891	.74279
#1	10012.	61143.	3064.6
#2	10032.	61303.	3107.1
#3	10001.	61497.	3100.8

Approved: June 27, 2016

Sample Name: L1606098602 Acquired: 6/25/2016 17:41:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	-.00042	-.00040	.09099	.02315	.00010	31.081	-.00006
Stddev	.00141	.00402	.00168	.00026	.00060	.00002	.292	.00002
%RSD	160.55	951.46	416.45	.28845	2.5949	20.817	.93935	37.551
#1	.00197	.00339	-.00222	.09093	.02306	.00008	31.173	-.00006
#2	-.00072	-.00463	.00109	.09127	.02259	.00012	30.754	-.00004
#3	.00139	-.00003	-.00008	.09076	.02379	.00010	31.315	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.00059	.00094	.04555	.98402	.01199	5.7014	.03480
Stddev	.00048	.00016	.00041	.01573	.08850	.00357	.0718	.00212
%RSD	197.55	26.299	43.232	34.544	8.9935	29.756	1.2595	6.0810
#1	.00072	.00042	.00054	.02747	.88485	.01459	5.6202	.03718
#2	-.00024	.00064	.00135	.05303	1.0122	.01345	5.7566	.03314
#3	.00026	.00072	.00092	.05614	1.0550	.00792	5.7274	.03406
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00142	119.95	.00080	.00488	.00205	-.00278	-.00166	3.2347
Stddev	.00007	.78	.00132	.00386	.00179	.00227	.00673	.0109
%RSD	4.5853	.65032	165.26	79.044	87.096	81.844	406.14	.33815
#1	.00137	120.20	.00201	.00062	.00137	-.00037	-.00009	3.2461
#2	.00149	119.07	.00100	.00813	.00409	-.00489	.00415	3.2336
#3	.00140	120.57	-.00061	.00590	.00071	-.00307	-.00903	3.2243
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098602 Acquired: 6/25/2016 17:41:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00169	.54147	-.00161	-.00445	.00062	.00187	.00166
Stddev	.00060	.00457	.00418	.00188	.00027	.00011	.00091
%RSD	35.360	.84355	259.35	42.200	43.191	5.8148	54.635
#1	.00106	.54395	-.00040	-.00269	.00035	.00198	.00205
#2	.00225	.53620	.00182	-.00642	.00063	.00186	.00062
#3	.00175	.54425	-.00626	-.00422	.00089	.00176	.00230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9793.0	59457.	3063.6
Stddev	12.2	310.	25.9
%RSD	.12488	.52191	.84399
#1	9783.4	59142.	3057.4
#2	9788.8	59467.	3092.0
#3	9806.7	59762.	3041.4

Approved: June 27, 2016

Sample Name: L1606098604 Acquired: 6/25/2016 17:45:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00188**	**.00192**	**.00240**	**.01933**	**.01606**	**.00017**	**258.27**
Stddev	.00168	.00663	.00025	.00142	.00064	.00002	.74
%RSD	89.608	344.23	10.527	7.3208	4.0034	12.550	.28551
#1	.00265	-.00052	.00267	.01828	.01569	.00019	258.08
#2	.00303	-.00313	.00217	.01877	.01568	.00016	257.65
#3	-.00005	.00943	.00237	.02094	.01680	.00015	259.09
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00045**	**.00038**	**.00085**	**.01097**	**.02808**	**1.7243**	**.01739**
Stddev	.00023	.00042	.00027	.00107	.01426	.0758	.00077
%RSD	50.915	110.30	31.401	9.7605	50.795	4.3949	4.4280
#1	.00057	.00083	.00065	.01199	.02723	1.7078	.01656
#2	.00019	.00033	.00115	.00986	.01426	1.6581	.01808
#3	.00061	-.00001	.00075	.01107	.04275	1.8069	.01753
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**67.436**	**1.3917**	**.00099**	**14.380**	**.00387**	**.00116**	**.00177**
Stddev	.211	.0043	.00004	.031	.00051	.00485	.00143
%RSD	.31235	.30797	4.3492	.21337	13.178	419.65	80.619
#1	67.195	1.3899	.00099	14.411	.00414	.00253	.00287
#2	67.533	1.3886	.00103	14.350	.00328	-.00423	.00229
#3	67.581	1.3966	.00095	14.377	.00419	.00517	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 27, 2016

Sample Name: L1606098604 Acquired: 6/25/2016 17:45:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00130**	**.00146**	**3.7576**	**.00044**	**1.2471**	F **-.03982**	**-.00203**
Stddev	.00495	.00434	.0110	.00062	.0034	.00406	.00082
%RSD	381.66	297.39	.29276	142.20	.26857	10.186	40.503
#1	-.00325	.00313	3.7635	.00113	1.2483	-.04298	-.00122
#2	.00433	.00472	3.7644	.00025	1.2433	-.03524	-.00200
#3	-.00498	-.00347	3.7449	-.00007	1.2496	-.04122	-.00286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00050**	**.03051**	**.00151**
Stddev	.00029	.00016	.00074
%RSD	57.554	.53953	48.929
#1	-.00084	.03044	.00164
#2	-.00033	.03070	.00216
#3	-.00034	.03040	.00071
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9610.5**	**58897.**	**3044.6**
Stddev	3.8	97.	5.6
%RSD	.03917	.16551	.18408
#1	9614.6	58944.	3043.4
#2	9607.2	58961.	3050.7
#3	9609.7	58785.	3039.7

Approved: June 27, 2016

Sample Name: L1606098606 Acquired: 6/25/2016 17:48:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00223	.00972	-.00038	.01373	.06613	.00026	77.440	.00018
Stddev	.00105	.00309	.00132	.00205	.00021	.00009	.075	.00021
%RSD	47.129	31.833	346.72	14.955	.32162	33.087	.09643	116.74
#1	.00235	.00691	-.00086	.01602	.06623	.00027	77.417	.00042
#2	.00112	.00920	-.00139	.01205	.06589	.00034	77.379	.00001
#3	.00321	.01303	.00111	.01311	.06628	.00017	77.523	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00039	.00108	.01311	.03469	1.0666	.00528	22.814	.00226
Stddev	.00015	.00032	.00053	.01962	.0266	.00092	.288	.00095
%RSD	37.987	29.419	4.0055	56.546	2.4929	17.478	1.2638	41.753
#1	.00056	.00082	.01330	.03776	1.0701	.00541	22.650	.00309
#2	.00027	.00143	.01252	.05259	1.0384	.00430	22.645	.00123
#3	.00036	.00097	.01352	.01372	1.0912	.00613	23.147	.00247
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	16.230	.00086	.01073	.00099	-.00405	.00160	2.3863
Stddev	.00023	.056	.00046	.00069	.00181	.00317	.00143	.0169
%RSD	59.834	.34372	53.276	6.4188	182.38	78.406	89.367	.70593
#1	.00032	16.197	.00073	.01029	.00246	-.00129	-.00004	2.4028
#2	.00063	16.198	.00137	.01153	-.00103	-.00752	.00258	2.3871
#3	.00019	16.294	.00048	.01038	.00155	-.00333	.00227	2.3691
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098606 Acquired: 6/25/2016 17:48:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00004**	**.39726**	**-.00928**	**-.00135**	**-.00044**	**.03812**	**.00202**
Stddev	.00081	.00077	.00327	.00251	.00044	.00033	.00118
%RSD	1967.6	.19375	35.277	185.96	101.24	.85896	58.324
#1	.00088	.39645	-.00551	-.00111	-.00048	.03844	.00108
#2	-.00002	.39799	-.01103	.00103	.00002	.03814	.00334
#3	-.00074	.39735	-.01131	-.00397	-.00086	.03779	.00164
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9875.4**	**60112.**	**3085.9**
Stddev	17.7	60.	4.4
%RSD	.17969	.09972	.14239
#1	9863.6	60084.	3084.9
#2	9866.7	60181.	3090.7
#3	9895.8	60072.	3082.1

Approved: June 27, 2016

Sample Name: L1606098608 Acquired: 6/25/2016 17:52:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.00115	.00027	.01585	.03262	.00011	84.217	.00013
Stddev	.00235	.00513	.00111	.00136	.00141	.00004	.314	.00017
%RSD	2475.5	446.86	409.02	8.5842	4.3250	37.715	.37277	125.68
#1	-.00262	.00404	-.00099	.01740	.03376	.00010	84.484	.00019
#2	.00142	-.00477	.00110	.01531	.03104	.00016	84.297	.00026
#3	.00149	.00417	.00071	.01485	.03305	.00008	83.871	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	.00177	.00567	.03434	1.2401	.01415	23.228	.02727
Stddev	.00046	.00068	.00058	.01787	.0425	.00095	.227	.00106
%RSD	299.90	38.444	10.195	52.028	3.4256	6.6956	.97712	3.8827
#1	-.00049	.00241	.00506	.05413	1.2665	.01352	23.122	.02850
#2	.00037	.00184	.00573	.01939	1.1911	.01369	23.489	.02663
#3	-.00034	.00105	.00621	.02950	1.2628	.01524	23.073	.02669
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	12.660	.00033	.00413	.00179	-.00334	-.00002	3.4869
Stddev	.00017	.055	.00044	.00392	.00093	.00378	.00639	.0225
%RSD	23.632	.43231	134.67	94.801	51.837	113.14	36088.	.64396
#1	.00093	12.716	.00084	.00852	.00134	-.00400	-.00400	3.4968
#2	.00069	12.657	.00002	.00099	.00117	-.00675	-.00341	3.5027
#3	.00059	12.607	.00013	.00288	.00285	.00073	.00736	3.4612
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098608 Acquired: 6/25/2016 17:52:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	**.83876**	**-.00998**	**-.00331**	**.00001**	**.01681**	**.00058**
Stddev	.00022	.00442	.00442	.00242	.00077	.00018	.00259
%RSD	112.09	.52651	44.282	73.168	6824.2	1.0650	446.63
#1	-.00039	.84240	-.01091	-.00183	-.00011	.01673	-.00103
#2	-.00022	.84004	-.00517	-.00610	-.00069	.01701	.00357
#3	.00004	.83385	-.01387	-.00199	.00083	.01668	-.00080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9863.7**	**59966.**	**3069.4**
Stddev	33.8	107.	16.4
%RSD	.34299	.17793	.53396
#1	9879.3	59844.	3052.8
#2	9824.9	60042.	3069.7
#3	9886.9	60012.	3085.6

Approved: June 27, 2016

Sample Name: L1606098608PS Acquired: 6/25/2016 17:56:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574216-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19012	4.7962	.18985	.92761	.50579	.02416	80.589	.02376
Stddev	.00115	.0181	.00324	.00188	.00153	.00010	.509	.00031
%RSD	.60416	.37710	1.7085	.20237	.30247	.42369	.63122	1.3080
#1	.18881	4.7997	.18690	.92863	.50534	.02415	80.494	.02389
#2	.19096	4.8123	.19332	.92876	.50750	.02427	81.138	.02341
#3	.19058	4.7766	.18933	.92544	.50454	.02406	80.134	.02399
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09205	.23624	.24131	1.9065	24.291	.50517	25.434	.26103
Stddev	.00018	.00146	.00130	.0143	.039	.00496	.150	.00626
%RSD	.19260	.61641	.53797	.74911	.16017	.98165	.59175	2.3977
#1	.09210	.23659	.24071	1.9177	24.287	.49968	25.563	.26590
#2	.09186	.23464	.24280	1.9113	24.254	.50647	25.268	.26320
#3	.09221	.23749	.24041	1.8904	24.332	.50934	25.470	.25397
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49345	34.822	.23345	4.6884	.23609	.56850	.18268	5.5114
Stddev	.00019	.169	.00142	.0142	.00258	.00539	.00604	.0369
%RSD	.03860	.48533	.60979	.30359	1.0940	.94754	3.3047	.66920
#1	.49323	34.790	.23475	4.6782	.23789	.57472	.18356	5.4689
#2	.49357	35.005	.23367	4.6823	.23725	.56528	.18824	5.5341
#3	.49354	34.671	.23193	4.7047	.23313	.56551	.17626	5.5313
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098608PS Acquired: 6/25/2016 17:56:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574216-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47094**	**1.2232**	**.47334**	**.23988**	**.49331**	**.47631**	**.00522**
Stddev	.00189	.0075	.00962	.00117	.00125	.00347	.00156
%RSD	.40190	.61543	2.0323	.48785	.25347	.72879	29.825
#1	.47068	1.2227	.46319	.24082	.49476	.47230	.00351
#2	.47295	1.2310	.48233	.23857	.49254	.47818	.00558
#3	.46920	1.2160	.47451	.24025	.49265	.47845	.00657
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9831.9**	**59526.**	**3075.8**
Stddev	15.2	194.	19.0
%RSD	.15421	.32611	.61679
#1	9829.8	59604.	3066.0
#2	9817.9	59305.	3063.8
#3	9848.0	59669.	3097.7

Approved: June 27, 2016

Sample Name: L1606098608SDL Acquired: 6/25/2016 18:00:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574216-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00260	-.00514	.00187	.00508	.00868	.00012	17.605	-.00015
Stddev	.00156	.01146	.00424	.00200	.00063	.00008	.142	.00010
%RSD	60.035	222.87	226.36	39.430	7.2120	66.284	.80739	66.159
#1	.00437	.00780	.00118	.00739	.00923	.00013	17.451	-.00025
#2	.00143	-.00924	.00642	.00396	.00881	.00020	17.731	-.00007
#3	.00199	-.01399	-.00198	.00389	.00800	.00004	17.633	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	.00006	.00193	.02399	.21059	-.00038	4.9921	.00509
Stddev	.00017	.00044	.00078	.00583	.02318	.00216	.0797	.00111
%RSD	97.856	772.57	40.443	24.318	11.008	572.98	1.5970	21.792
#1	-.00004	-.00041	.00282	.01859	.23319	.00193	5.0036	.00623
#2	-.00037	.00046	.00138	.03017	.18686	-.00072	4.9072	.00402
#3	-.00011	.00012	.00158	.02319	.21171	-.00234	5.0654	.00500
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	2.6677	-.00071	.00513	.00009	-.00286	-.00058	.72991
Stddev	.00017	.0114	.00035	.00552	.00151	.00279	.00302	.00273
%RSD	51.097	.42653	49.400	107.62	1685.9	97.489	522.92	.37384
#1	.00017	2.6710	-.00044	.00122	.00180	.00001	.00149	.72939
#2	.00033	2.6550	-.00058	.01144	-.00102	-.00304	-.00405	.73285
#3	.00051	2.6770	-.00110	.00273	-.00051	-.00555	.00083	.72747
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098608SDL Acquired: 6/25/2016 18:00:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574216-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.17684**	**.00226**	**.00019**	**.00052**	**.00413**	**.00011**
Stddev	.00027	.00102	.00232	.00368	.00057	.00014	.00068
%RSD	464.39	.57572	102.44	1951.0	110.67	3.3962	623.50
#1	-.00013	.17748	.00403	.00128	.00008	.00397	.00059
#2	.00024	.17567	-.00036	.00320	.00031	.00420	.00041
#3	-.00028	.17737	.00312	-.00392	.00117	.00423	-.00067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9896.0**	**60261.**	**3042.3**
Stddev	25.0	81.	28.3
%RSD	.25242	.13391	.92921
#1	9907.7	60289.	3040.8
#2	9913.0	60324.	3071.3
#3	9867.3	60170.	3014.9

Approved: June 27, 2016

Sample Name: L1606098608SDL Acquired: 6/25/2016 18:04:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574216-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00175	-.00807	-.00063	-.00078	.00182	.00014	3.3399	-.00019
Stddev	.00147	.00382	.00127	.00273	.00016	.00003	.0946	.00023
%RSD	83.969	47.279	200.74	348.35	8.5330	23.588	2.8330	121.57
#1	.00097	-.00874	.00010	.00038	.00196	.00018	3.2721	-.00045
#2	.00084	-.00396	.00010	.00117	.00166	.00011	3.4480	-.00012
#3	.00344	-.01151	-.00210	-.00390	.00185	.00014	3.2995	-.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	-.00037	.00107	.01769	-.08284	.00119	.94569	.00052
Stddev	.00047	.00133	.00130	.01702	.09737	.00358	.05932	.00055
%RSD	1445.4	360.33	120.72	96.212	117.53	302.26	6.2728	105.20
#1	.00035	-.00086	.00167	-.00174	-.18470	.00532	.88043	.00057
#2	-.00050	-.00138	-.00041	.02995	-.07314	-.00085	.96028	.00105
#3	.00025	.00113	.00196	.02486	.00931	-.00092	.99635	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00012	.49987	-.00021	.00755	.00303	-.00541	.00850	.13812
Stddev	.00032	.04592	.00020	.00386	.00188	.00314	.00116	.00966
%RSD	265.16	9.1856	96.762	51.054	62.049	58.070	13.660	6.9939
#1	.00001	.44687	-.00020	.01173	.00086	-.00531	.00838	.12921
#2	-.00049	.52761	-.00041	.00680	.00410	-.00232	.00740	.13676
#3	.00011	.52513	-.00001	.00413	.00413	-.00859	.00972	.14839
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098608SDL Acquired: 6/25/2016 18:04:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574216-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00039**	**.03350**	**.00349**	**.00073**	**.00046**	**.00106**	**.00161**
Stddev	.00032	.00105	.00672	.00069	.00093	.00001	.00112
%RSD	80.289	3.1425	192.33	93.894	202.19	.93440	69.701
#1	.00063	.03282	.00553	-.00006	-.00031	.00105	.00058
#2	.00051	.03471	.00896	.00114	.00020	.00107	.00146
#3	.00004	.03296	-.00401	.00113	.00149	.00107	.00281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10400.**	**61068.**	**3085.8**
Stddev	302.	416.	38.3
%RSD	2.9005	.68044	1.2414
#1	10744.	61402.	3085.7
#2	10277.	61200.	3047.5
#3	10180.	60603.	3124.1

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 18:08:15 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40600	10.196	.39897	.49353	1.0097	.05111	10.072
Stddev	.00134	.005	.00384	.00145	.0055	.00016	.108
%RSD	.32964	.04609	.96241	.29468	.54041	.30777	1.0683
#1	.40454	10.197	.40224	.49289	1.0058	.05115	10.014
#2	.40717	10.200	.39474	.49519	1.0073	.05125	10.006
#3	.40630	10.191	.39992	.49250	1.0159	.05094	10.196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05085	.19930	.50343	.51248	4.0210	48.769	1.0170
Stddev	.00016	.00069	.00173	.00042	.0444	.141	.0095
%RSD	.31221	.34558	.34304	.08145	1.1049	.29004	.93218
#1	.05072	.20005	.50491	.51259	3.9923	48.842	1.0084
#2	.05079	.19915	.50386	.51282	3.9985	48.605	1.0154
#3	.05103	.19869	.50153	.51201	4.0722	48.858	1.0271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.6470	.50568	1.0217	49.589	.50657	9.9463	.50897
Stddev	.0505	.00379	.0050	.266	.00174	.0145	.00224
%RSD	.52402	.74931	.49273	.53683	.34444	.14541	.44016
#1	9.7040	.50521	1.0275	49.574	.50855	9.9602	.50639
#2	9.6294	.50215	1.0196	49.330	.50589	9.9313	.51042
#3	9.6076	.50969	1.0181	49.862	.50527	9.9474	.51010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 18:08:15 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1949**	**.39405**	**5.1402**	**1.0022**	**1.0107**	**.99866**	**.51518**
Stddev	.0031	.00179	.0100	.0005	.0053	.01659	.00058
%RSD	.25554	.45308	.19427	.05270	.52786	1.6608	.11222
#1	1.1981	.39492	5.1482	1.0028	1.0100	1.0024	.51475
#2	1.1944	.39525	5.1290	1.0020	1.0058	.98052	.51584
#3	1.1920	.39200	5.1434	1.0018	1.0164	1.0131	.51497
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0309**	**1.0070**	F **2.9451**
Stddev	.0008	.0014	.0223
%RSD	.08066	.13880	.75803
#1	1.0316	1.0084	2.9555
#2	1.0300	1.0069	2.9195
#3	1.0311	1.0056	2.9603
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9649.2**	**58096.**	**2982.6**
Stddev	5.7	114.	17.5
%RSD	.05915	.19560	.58802
#1	9648.4	58223.	2978.9
#2	9644.0	58003.	3001.7
#3	9655.3	58062.	2967.2

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 18:11:52 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00062**	**.00113**	**.00060**	**-.00134**	**.00269**	**.00016**	**-.00509**	**-.00011**
Stddev	.00447	.01287	.00139	.00141	.00058	.00006	.00999	.00008
%RSD	723.56	1142.0	234.30	105.23	21.456	39.000	196.19	75.399
#1	-.00262	.00580	.00212	.00028	.00233	.00022	-.01646	-.00020
#2	.00450	-.01343	-.00061	-.00230	.00238	.00017	.00228	-.00009
#3	-.00373	.01101	.00028	-.00199	.00335	.00009	-.00109	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.00031**	**.00131**	**.01880**	**-.14052**	**-.00173**	**.03086**	**-.00243**
Stddev	.00043	.00144	.00103	.01556	.08453	.00290	.07623	.00189
%RSD	438.61	470.86	78.889	82.745	60.152	168.14	247.00	77.536
#1	.00038	.00014	.00051	.03667	-.04368	.00153	-.05463	-.00186
#2	-.00045	-.00104	.00248	.01148	-.17839	-.00266	.09175	-.00090
#3	-.00022	.00182	.00094	.00826	-.19949	-.00404	.05546	-.00454
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00375**	**-.00702**	**.00000**	**.00544**	**-.00002**	**.00180**	**.00158**	**.03715**
Stddev	.00019	.01848	.00030	.00537	.00129	.00320	.00255	.00232
%RSD	5.0585	263.40	8008.1	98.759	6600.5	177.29	161.59	6.2433
#1	.00382	-.02711	-.00030	.01149	.00142	.00145	-.00134	.03895
#2	.00354	-.00319	.00002	.00357	-.00108	.00516	.00266	.03453
#3	.00390	.00925	.00029	.00125	-.00040	-.00120	.00341	.03795
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 18:11:52 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	.00036	-.00017	-.00186	.00075	.00012	.00425
Stddev	.00040	.00044	.01020	.00315	.00028	.00007	.00095
%RSD	153.60	122.95	5879.7	169.59	36.989	59.021	22.345
#1	.00000	.00086	.00219	-.00527	.00044	.00006	.00508
#2	.00073	.00017	.00864	-.00126	.00081	.00010	.00321
#3	.00006	.00004	-.01135	.00095	.00098	.00019	.00446
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9372.1	56632.	2874.9
Stddev	24.8	50.	14.1
%RSD	.26420	.08878	.48885
#1	9350.8	56589.	2886.0
#2	9366.2	56619.	2859.1
#3	9399.3	56687.	2879.7

Approved: June 27, 2016

Sample Name: L1606098610 Acquired: 6/25/2016 18:15:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00168	.00613	.00026	.00622	.01341	.00005	115.37	.00029
Stddev	.00132	.00327	.00219	.00120	.00108	.00003	.56	.00010
%RSD	78.702	53.342	840.89	19.355	8.0675	55.551	.48696	35.866
#1	.00017	.00551	-.00222	.00662	.01310	.00009	115.81	.00019
#2	.00222	.00322	.00107	.00487	.01252	.00003	114.73	.00040
#3	.00265	.00967	.00193	.00717	.01462	.00004	115.55	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	.00098	.00166	.06083	.38326	.00831	27.726	.01242
Stddev	.00045	.00011	.00061	.01132	.08932	.00154	.200	.00158
%RSD	1035.7	11.515	36.634	18.614	23.306	18.467	.72137	12.708
#1	-.00034	.00088	.00210	.06356	.35599	.00912	27.699	.01068
#2	-.00027	.00110	.00191	.04839	.48304	.00927	27.542	.01377
#3	.00048	.00096	.00096	.07054	.31076	.00654	27.939	.01280
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	14.397	.00169	.00670	.00176	-.00418	.00480	3.9389
Stddev	.00003	.096	.00045	.00675	.00408	.00345	.00343	.0208
%RSD	3.3704	.66673	26.485	100.67	231.83	82.446	71.530	.52736
#1	.00075	14.373	.00205	.00909	-.00024	-.00395	.00094	3.9592
#2	.00074	14.315	.00119	.01193	.00646	-.00774	.00595	3.9398
#3	.00079	14.503	.00185	-.00091	-.00093	-.00086	.00752	3.9176
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098610 Acquired: 6/25/2016 18:15:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00034**	**.52737**	**-.01662**	**-.00476**	**.00053**	**.01128**	**.00653**
Stddev	.00061	.00238	.00515	.00157	.00069	.00008	.00193
%RSD	181.06	.45087	31.015	32.913	130.43	.73884	29.481
#1	-.00078	.52702	-.01240	-.00297	.00012	.01121	.00451
#2	.00036	.52519	-.01509	-.00547	.00132	.01137	.00674
#3	-.00059	.52991	-.02236	-.00585	.00014	.01126	.00835
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9795.7**	**59337.**	**3075.9**
Stddev	21.1	178.	25.1
%RSD	.21493	.29915	.81568
#1	9771.4	59262.	3048.2
#2	9807.4	59210.	3082.7
#3	9808.3	59540.	3097.0

Approved: June 27, 2016

Sample Name: L1606098612 Acquired: 6/25/2016 18:19:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00237	.00267	-.00060	.08716	.06662	.00041	142.66	.00007
Stddev	.00073	.00275	.00337	.00141	.00149	.00002	1.19	.00021
%RSD	30.688	102.87	562.71	1.6192	2.2393	3.9782	.83233	319.26
#1	.00315	.00518	-.00334	.08576	.06575	.00041	141.33	.00027
#2	.00225	-.00027	-.00161	.08858	.06577	.00039	143.01	.00007
#3	.00171	.00310	.00316	.08713	.06835	.00042	143.63	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.00135	.04528	.02649	1.6602	.01963	40.720	.03253
Stddev	.00034	.00053	.00134	.03733	.1018	.00353	.262	.00324
%RSD	339.50	39.036	2.9680	140.93	6.1325	17.994	.64244	9.9559
#1	.00034	.00170	.04668	.04343	1.6128	.02218	40.440	.02879
#2	-.00029	.00162	.04400	-.01631	1.5907	.02112	40.763	.03448
#3	.00024	.00075	.04516	.05234	1.7770	.01560	40.958	.03432
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00115	26.540	.00106	.02312	.00172	-.00084	.00204	2.4275
Stddev	.00029	.172	.00094	.00593	.00284	.00147	.00269	.0046
%RSD	25.080	.64693	88.979	25.661	164.80	174.96	131.78	.18880
#1	.00089	26.345	.00153	.02349	.00164	-.00125	.00490	2.4289
#2	.00110	26.607	.00167	.01701	.00461	-.00205	-.00043	2.4311
#3	.00146	26.668	-.00003	.02886	-.00107	.00079	.00165	2.4223
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098612 Acquired: 6/25/2016 18:19:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**1.7410**	**-.01626**	**-.00241**	**.00038**	**.05602**	**.00415**
Stddev	.00061	.0138	.00313	.00137	.00051	.00009	.00053
%RSD	273.86	.79166	19.237	56.738	134.14	.16489	12.835
#1	-.00019	1.7255	-.01265	-.00306	.00050	.05591	.00443
#2	.00092	1.7457	-.01795	-.00084	.00081	.05608	.00354
#3	-.00006	1.7519	-.01818	-.00334	-.00018	.05607	.00449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9747.5**	**58989.**	**3047.5**
Stddev	4.1	78.	13.8
%RSD	.04198	.13200	.45213
#1	9749.1	58936.	3063.4
#2	9750.6	59079.	3039.1
#3	9742.9	58952.	3040.0

Approved: June 27, 2016

Sample Name: L1606098614 Acquired: 6/25/2016 18:23:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00279	.01008	-.00066	.03390	.03124	.00010	196.20	.00021
Stddev	.00112	.00383	.00147	.00206	.00013	.00007	.85	.00008
%RSD	40.043	38.038	221.13	6.0906	.42986	73.782	.43251	39.178
#1	.00183	.00766	.00090	.03506	.03108	.00016	195.71	.00030
#2	.00402	.00807	-.00201	.03513	.03132	.00002	195.70	.00014
#3	.00253	.01449	-.00089	.03152	.03131	.00013	197.18	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.00088	.00840	.02428	2.9211	.02334	75.647	.04008
Stddev	.00023	.00045	.00064	.00605	.0291	.00193	.677	.00318
%RSD	446.71	50.770	7.6701	24.929	.99693	8.2676	.89445	7.9254
#1	-.00007	.00063	.00780	.03006	2.8958	.02251	74.950	.04023
#2	.00031	.00062	.00908	.02477	2.9529	.02197	75.691	.03683
#3	-.00009	.00140	.00832	.01799	2.9145	.02555	76.301	.04318
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	22.556	.00040	.01184	.00385	-.00016	.00418	3.4833
Stddev	.00033	.097	.00156	.00464	.00193	.00051	.00681	.0215
%RSD	46.348	.43032	390.32	39.236	50.052	315.18	162.82	.61768
#1	.00068	22.526	-.00110	.00655	.00167	-.00006	.01171	3.5066
#2	.00040	22.478	.00029	.01372	.00533	-.00072	-.00154	3.4792
#3	.00106	22.665	.00201	.01524	.00455	.00029	.00237	3.4641
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098614 Acquired: 6/25/2016 18:23:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**2.3670**	**-.02425**	**-.00232**	**-.00024**	**.02160**	**.00232**
Stddev	.00092	.0076	.00398	.00117	.00100	.00003	.00161
%RSD	715.81	.32195	16.401	50.456	415.47	.12320	69.325
#1	.00091	2.3659	-.02580	-.00236	.00091	.02157	.00413
#2	-.00082	2.3599	-.02722	-.00113	-.00075	.02159	.00107
#3	-.00048	2.3751	-.01973	-.00348	-.00089	.02163	.00175
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9640.5**	**58425.**	**3058.6**
Stddev	20.6	100.	4.7
%RSD	.21337	.17110	.15390
#1	9631.4	58473.	3059.7
#2	9664.1	58492.	3062.6
#3	9626.1	58310.	3053.4

Approved: June 27, 2016

Sample Name: L1606098616 Acquired: 6/25/2016 18:27:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00115	.03265	.00256	.11861	.01251	.00029	229.75	.00020
Stddev	.00195	.00899	.00533	.00161	.00061	.00014	.36	.00016
%RSD	169.27	27.532	208.27	1.3580	4.8819	47.504	.15530	78.536
#1	.00069	.04218	-.00197	.11885	.01280	.00014	229.65	.00038
#2	-.00053	.02433	.00844	.12008	.01292	.00030	229.45	.00006
#3	.00329	.03143	.00122	.11689	.01181	.00042	230.15	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00062	.00178	.06744	.03108	3.2126	.03682	84.360	.29574
Stddev	.00023	.00069	.00047	.01537	.1307	.00386	.426	.00133
%RSD	37.410	38.666	.69994	49.454	4.0677	10.480	.50488	.44809
#1	.00042	.00192	.06781	.02007	3.0741	.03526	83.896	.29633
#2	.00087	.00239	.06691	.04863	3.2299	.03400	84.450	.29422
#3	.00056	.00104	.06760	.02452	3.3338	.04122	84.734	.29667
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00072	71.143	.00123	.03078	.00375	-.00200	.00018	5.1619
Stddev	.00027	.049	.00055	.00199	.00114	.00238	.00481	.0107
%RSD	37.642	.06818	44.575	6.4658	30.424	119.08	2715.0	.20775
#1	.00061	71.192	.00158	.03108	.00244	-.00009	.00517	5.1511
#2	.00102	71.095	.00060	.02865	.00425	-.00467	-.00442	5.1621
#3	.00051	71.141	.00151	.03260	.00456	-.00125	-.00023	5.1725
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098616 Acquired: 6/25/2016 18:27:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	6.5212	-.02963	-.00177	-.00109	.08946	.00332
Stddev	.00060	.0079	.00654	.00230	.00079	.00019	.00190
%RSD	161.30	.12151	22.085	130.49	72.258	.21177	57.202
#1	.00105	6.5204	-.02657	.00051	-.00123	.08936	.00540
#2	.00018	6.5138	-.02518	-.00171	-.00179	.08968	.00287
#3	-.00011	6.5296	-.03715	-.00409	-.00024	.08933	.00168
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9566.8	58078.	3050.1
Stddev	16.9	52.	19.7
%RSD	.17631	.08955	.64584
#1	9563.8	58018.	3068.4
#2	9585.0	58111.	3029.2
#3	9551.7	58106.	3052.7

Approved: June 27, 2016

Sample Name: L1606098618 Acquired: 6/25/2016 18:31:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00155	-.00096	.00289	.04251	.02915	.00005	62.293	-.00011
Stddev	.00038	.00238	.00029	.00109	.00082	.00008	.092	.00019
%RSD	24.410	246.77	9.9664	2.5737	2.7985	149.80	.14819	166.73
#1	.00113	.00168	.00257	.04189	.03009	-.00003	62.335	-.00017
#2	.00185	-.00164	.00314	.04186	.02874	.00005	62.357	.00010
#3	.00168	-.00294	.00296	.04377	.02862	.00013	62.187	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00031	.00347	.01624	1.9071	.02198	20.259	.01093
Stddev	.00021	.00046	.00016	.00938	.1214	.00171	.067	.00376
%RSD	243.30	146.24	4.6588	57.772	6.3644	7.7782	.33311	34.347
#1	.00028	.00083	.00329	.00573	1.8306	.02394	20.336	.01303
#2	.00011	.00015	.00350	.01922	2.0470	.02118	20.230	.00660
#3	-.00013	-.00004	.00361	.02377	1.8435	.02082	20.211	.01318
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00102	25.999	-.00042	.00444	.00244	-.00359	.00392	3.1846
Stddev	.00023	.100	.00069	.00545	.00095	.00188	.00301	.0187
%RSD	22.864	.38558	161.73	122.87	39.121	52.433	76.809	.58628
#1	.00106	26.085	-.00101	-.00067	.00273	-.00311	.00526	3.2018
#2	.00123	26.024	.00033	.00381	.00321	-.00199	.00047	3.1874
#3	.00077	25.889	-.00059	.01018	.00137	-.00566	.00602	3.1647
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098618 Acquired: 6/25/2016 18:31:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	1.4545	-.00154	-.00233	.00037	.00832	.00208
Stddev	.00132	.0032	.00357	.00066	.00141	.00007	.00021
%RSD	228.95	.22347	232.21	28.221	386.86	.88012	10.206
#1	.00206	1.4546	-.00325	-.00241	-.00025	.00825	.00199
#2	-.00043	1.4577	-.00393	-.00294	-.00063	.00831	.00233
#3	.00009	1.4512	.00257	-.00163	.00198	.00839	.00193
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9841.2	59299.	3061.4
Stddev	105.5	272.	4.9
%RSD	1.0718	.45797	.16152
#1	9746.5	58986.	3061.4
#2	9822.2	59458.	3056.4
#3	9954.9	59454.	3066.3

Approved: June 27, 2016

Sample Name: L1606098620 Acquired: 6/25/2016 18:35:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.03312	.00066	.07608	.03474	.00017	4.5650	.00010
Stddev	.00141	.00304	.00168	.00356	.00133	.00010	.0156	.00016
%RSD	3777.7	9.1736	255.45	4.6823	3.8419	59.446	.34129	166.50
#1	-.00004	.03663	-.00075	.08018	.03521	.00029	4.5712	.00011
#2	.00149	.03142	.00252	.07372	.03577	.00014	4.5766	.00025
#3	-.00133	.03132	.00020	.07433	.03323	.00009	4.5473	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00112	.00060	.00299	.05475	.56414	.00988	1.7714	.01450
Stddev	.00021	.00082	.00143	.01752	.07965	.00243	.0462	.00322
%RSD	18.384	137.46	47.864	31.992	14.119	24.596	2.6071	22.223
#1	.00132	.00110	.00244	.06300	.59505	.00894	1.8247	.01687
#2	.00115	.00105	.00462	.03463	.62370	.00806	1.7436	.01579
#3	.00091	-.00035	.00192	.06662	.47367	.01264	1.7459	.01083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00137	251.01	-.00057	.03777	.00214	-.00589	.00108	2.0603
Stddev	.00029	.75	.00178	.00427	.00057	.00380	.00694	.0083
%RSD	21.156	.29997	313.28	11.296	26.364	64.542	640.75	.40056
#1	.00125	251.39	-.00025	.04217	.00279	-.00381	-.00651	2.0621
#2	.00170	251.50	-.00248	.03365	.00178	-.01028	.00710	2.0676
#3	.00115	250.15	.00103	.03749	.00186	-.00358	.00266	2.0514
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098620 Acquired: 6/25/2016 18:35:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00101**	**.14703**	**.00470**	**-.00231**	**.00100**	**.00923**	**.00423**
Stddev	.00046	.00057	.00299	.00179	.00041	.00019	.00094
%RSD	44.993	.38637	63.686	77.674	41.001	2.0938	22.219
#1	.00049	.14737	.00735	-.00044	.00130	.00917	.00391
#2	.00129	.14734	.00531	-.00246	.00116	.00906	.00349
#3	.00126	.14637	.00145	-.00402	.00053	.00944	.00529
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9725.3**	**58367.**	**3028.8**
Stddev	17.5	120.	15.3
%RSD	.18040	.20576	.50451
#1	9742.7	58420.	3020.7
#2	9707.6	58451.	3019.2
#3	9725.6	58230.	3046.4

Approved: June 27, 2016

Sample Name: L1606098622 Acquired: 6/25/2016 18:39:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	-.00596	.00037	.05747	.02764	.00023	127.72	.00011
Stddev	.00093	.00925	.00122	.00204	.00088	.00005	1.04	.00012
%RSD	79.226	155.22	327.64	3.5486	3.1759	23.660	.81279	108.09
#1	.00125	-.01464	.00026	.05716	.02813	.00022	127.35	.00021
#2	.00205	-.00701	-.00078	.05560	.02662	.00018	126.92	.00013
#3	.00020	.00377	.00164	.05965	.02815	.00028	128.89	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00090	.01009	.02031	2.5853	.01995	32.558	.04793
Stddev	.00056	.00109	.00042	.00894	.0945	.00518	.278	.00190
%RSD	208.67	121.92	4.1494	44.026	3.6562	25.950	.85453	3.9665
#1	.00085	.00146	.01042	.02811	2.6682	.02326	32.522	.05007
#2	.00021	-.00036	.01022	.02229	2.4824	.01399	32.299	.04730
#3	-.00026	.00160	.00962	.01055	2.6053	.02261	32.852	.04643
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	46.975	.00038	.00992	.00378	-.00381	.00198	3.5382
Stddev	.00001	.389	.00033	.00514	.00270	.00385	.00283	.0119
%RSD	1.5146	.82774	87.053	51.791	71.542	100.88	142.89	.33659
#1	.00038	46.842	.00000	.00464	.00569	-.00293	.00001	3.5245
#2	.00039	46.670	.00061	.01491	.00068	-.00048	.00522	3.5450
#3	.00039	47.413	.00052	.01022	.00497	-.00802	.00070	3.5451
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098622 Acquired: 6/25/2016 18:39:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	1.7827	-.01653	-.00317	-.00057	.00858	.00262
Stddev	.00056	.0144	.00634	.00502	.00088	.00017	.00024
%RSD	326.45	.80805	38.350	158.35	154.19	1.9458	9.0067
#1	-.00048	1.7747	-.02093	-.00538	-.00155	.00859	.00236
#2	.00051	1.7740	-.00927	.00258	.00014	.00841	.00281
#3	.00049	1.7993	-.01940	-.00671	-.00029	.00875	.00270
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9602.2	57749.	2959.9
Stddev	40.4	252.	26.3
%RSD	.42032	.43708	.88902
#1	9555.9	57561.	2977.4
#2	9630.3	57650.	2972.6
#3	9620.3	58036.	2929.6

Approved: June 27, 2016

Sample Name: L1606098624 Acquired: 6/25/2016 18:42:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00037**	**.00561**	**.00154**	**.40348**	**.02348**	**.00039**	**237.24**
Stddev	.00142	.00394	.00506	.00070	.00039	.00006	.43
%RSD	386.92	70.246	327.66	.17357	1.6661	16.452	.18001
#1	.00014	.00128	.00004	.40369	.02381	.00037	237.56
#2	-.00093	.00658	-.00259	.40270	.02305	.00046	237.41
#3	.00189	.00898	.00718	.40405	.02358	.00034	236.75
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**-.00007**	**.00152**	**.02649**	**.02448**	**5.9223**	**.01174**
Stddev	.00017	.00052	.00056	.00200	.00699	.0587	.00396
%RSD	362.68	725.31	36.507	7.5377	28.540	.99123	33.722
#1	-.00014	.00052	.00185	.02553	.03123	5.8563	.01398
#2	-.00015	-.00040	.00183	.02879	.02493	5.9416	.00717
#3	.00015	-.00034	.00088	.02516	.01728	5.9689	.01408
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**66.698**	**.32515**	**.00019**	**63.762**	**.00021**	**.01502**	**.00144**
Stddev	.426	.00095	.00039	.087	.00030	.00323	.00065
%RSD	.63897	.29073	207.41	.13653	145.82	21.500	44.732
#1	66.222	.32513	-.00023	63.794	-.00012	.01765	.00108
#2	67.045	.32421	.00055	63.829	.00049	.01601	.00219
#3	66.826	.32610	.00024	63.663	.00025	.01142	.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 27, 2016

Sample Name: L1606098624 Acquired: 6/25/2016 18:42:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00149**	**.00522**	**3.3709**	**-.00072**	**1.6690**	F **-.03355**	**-.00155**
Stddev	.00099	.00177	.0249	.00122	.0015	.00264	.00229
%RSD	66.177	33.876	.73770	169.83	.08806	7.8818	147.53
#1	-.00080	.00419	3.3514	-.00109	1.6686	-.03207	.00107
#2	-.00262	.00726	3.3989	-.00171	1.6706	-.03199	-.00316
#3	-.00106	.00421	3.3624	.00064	1.6678	-.03661	-.00256
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00040**	**.00877**	**.00210**
Stddev	.00049	.00015	.00054
%RSD	123.14	1.7509	25.986
#1	-.00082	.00894	.00208
#2	.00014	.00865	.00156
#3	-.00050	.00870	.00265
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9491.7**	**57630.**	**3009.2**
Stddev	78.4	156.	15.6
%RSD	.82592	.27138	.51996
#1	9550.0	57451.	2991.3
#2	9402.6	57694.	3015.7
#3	9522.6	57743.	3020.5

Approved: June 27, 2016

Sample Name: L1606098626 Acquired: 6/25/2016 18:46:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00327	.00679	.00038	.03972	.02631	.00014	117.32	.00023
Stddev	.00072	.00538	.00107	.00258	.00068	.00005	.34	.00019
%RSD	22.022	79.326	284.61	6.5079	2.6006	35.377	.28683	83.944
#1	.00409	.00166	-.00067	.03695	.02674	.00014	117.70	.00003
#2	.00295	.01240	.00033	.04014	.02552	.00019	117.19	.00023
#3	.00276	.00630	.00147	.04206	.02666	.00009	117.07	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.00126	.00604	.03025	1.5600	.01598	35.418	-.00162
Stddev	.00014	.00104	.00157	.00896	.0430	.00117	.155	.00177
%RSD	71.567	82.474	25.938	29.612	2.7589	7.3145	.43775	108.92
#1	.00004	.00238	.00775	.03493	1.5696	.01501	35.426	-.00126
#2	.00029	.00033	.00573	.01992	1.5974	.01567	35.569	-.00006
#3	.00026	.00107	.00466	.03588	1.5130	.01728	35.259	-.00354
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	17.994	-.00024	.00950	.00273	-.00253	.00429	2.8578
Stddev	.00029	.066	.00113	.00146	.00267	.00313	.00183	.0046
%RSD	65.363	.36928	461.23	15.318	98.010	123.57	42.598	.16060
#1	.00011	18.060	.00031	.00854	.00072	.00062	.00280	2.8530
#2	.00057	17.927	.00050	.00879	.00170	-.00564	.00374	2.8621
#3	.00066	17.996	-.00154	.01118	.00576	-.00258	.00633	2.8583
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098626 Acquired: 6/25/2016 18:46:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.95352	-.01676	-.00181	.00025	.00656	.00282
Stddev	.00004	.00361	.00400	.00055	.00086	.00005	.00124
%RSD	36.480	.37812	23.874	30.252	341.08	.79230	44.156
#1	.00017	.95765	-.01632	-.00120	.00116	.00654	.00348
#2	.00013	.95102	-.02097	-.00198	-.00055	.00661	.00138
#3	.00008	.95189	-.01300	-.00225	.00014	.00651	.00358
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9709.6	59301.	3058.5
Stddev	45.7	137.	18.4
%RSD	.47038	.23115	.60138
#1	9758.2	59149.	3039.9
#2	9703.1	59336.	3058.7
#3	9667.6	59417.	3076.7

Approved: June 27, 2016

Sample Name: L1606098628 Acquired: 6/25/2016 18:50:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00127**	**.00062**	**.00226**	**.03408**	**.02631**	**.00011**	**202.60**
Stddev	.00142	.00505	.00320	.00146	.00145	.00006	1.09
%RSD	111.97	810.26	141.74	4.2925	5.4989	52.470	.53642
#1	.00192	-.00172	.00570	.03364	.02795	.00015	202.20
#2	.00225	-.00283	-.00063	.03289	.02521	.00012	201.76
#3	-.00036	.00642	.00171	.03571	.02576	.00005	203.83
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**-.00018**	**.00230**	**.00706**	**.02884**	**3.1108**	**.02231**
Stddev	.00015	.00008	.00109	.00066	.02764	.1253	.00468
%RSD	173.92	43.590	47.288	9.3696	95.862	4.0286	20.962
#1	.00015	-.00019	.00355	.00741	.06027	3.2199	.01700
#2	-.00008	-.00010	.00186	.00630	.00830	2.9739	.02412
#3	.00019	-.00026	.00151	.00747	.01794	3.1385	.02581
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**77.982**	**.03186**	**.00054**	**22.893**	**.00124**	**.00646**	**.00417**
Stddev	.421	.00093	.00029	.135	.00089	.00201	.00077
%RSD	.53979	2.9039	53.423	.59091	71.804	31.048	18.563
#1	77.763	.03137	.00064	22.869	.00109	.00439	.00500
#2	77.715	.03128	.00078	22.771	.00220	.00660	.00405
#3	78.467	.03292	.00022	23.039	.00044	.00839	.00347
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 27, 2016

Sample Name: L1606098628 Acquired: 6/25/2016 18:50:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00202**	**.00107**	**3.6233**	**.00060**	**2.4441**	F **-.03051**	**-.00323**
Stddev	.00386	.00287	.0015	.00175	.0120	.00406	.00089
%RSD	190.96	268.98	.04080	291.82	.49257	13.319	27.545
#1	.00200	.00365	3.6232	-.00046	2.4407	-.03513	-.00322
#2	-.00236	-.00203	3.6248	-.00036	2.4341	-.02890	-.00413
#3	-.00571	.00158	3.6218	.00262	2.4575	-.02750	-.00235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00057**	**.01373**	**.00279**
Stddev	.00055	.00005	.00121
%RSD	96.088	.39414	43.503
#1	-.00086	.01376	.00139
#2	-.00092	.01376	.00355
#3	.00006	.01367	.00343
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9549.4**	**58061.**	**2994.7**
Stddev	10.8	342.	16.3
%RSD	.11322	.58988	.54589
#1	9556.3	57786.	2984.2
#2	9554.9	57953.	3013.5
#3	9536.9	58445.	2986.3

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 18:54:37 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.36142	9.0966	F .35164	F .43504	F .88841	.04556	F 8.8985
Stddev	.00063	.0241	.00214	.00359	.00668	.00015	.0636
%RSD	.17458	.26527	.60772	.82605	.75211	.32062	.71530
#1	.36081	9.1069	.35253	.43880	.88074	.04567	8.8250
#2	.36138	9.0691	.35318	.43467	.89150	.04539	8.9365
#3	.36207	9.1139	.34920	.43164	.89299	.04562	8.9341
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Fail
Value			.40000	.50000	1.0000		10.000
Range			-10.000%	-10.000%	-10.000%		-10.000%

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04504	F .17683	F .44843	.45584	F 3.5682	F 43.223	.90012
Stddev	.00036	.00059	.00210	.00028	.0180	.402	.00642
%RSD	.79578	.33417	.46848	.06078	.50416	.93081	.71346
#1	.04493	.17615	.45006	.45571	3.5475	42.758	.89283
#2	.04475	.17711	.44916	.45565	3.5796	43.446	.90262
#3	.04544	.17723	.44606	.45616	3.5775	43.464	.90492
Check ?	Chk Pass	Chk Fail	Chk Fail	Chk Pass	Chk Fail	Chk Fail	Chk Pass
Value		.20000	.50000		4.0000	50.000	
Range		-10.000%	-10.000%		-10.000%	-10.000%	

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 8.4568	F .44683	.90610	F 43.837	.45006	F 8.8106	F .44997
Stddev	.1941	.00153	.00307	.290	.00031	.0184	.00285
%RSD	2.2957	.34349	.33891	.66256	.06941	.20845	.63417
#1	8.2816	.44509	.90942	43.504	.44975	8.7897	.44790
#2	8.6655	.44738	.90552	43.973	.45037	8.8181	.44879
#3	8.4231	.44801	.90336	44.035	.45007	8.8241	.45322
Check ?	Chk Fail	Chk Fail	Chk Pass	Chk Fail	Chk Pass	Chk Fail	Chk Fail
Value	10.000	.50000		50.000		10.000	.50000
Range	-10.000%	-10.000%		-10.000%		-10.000%	-10.000%

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 18:54:37 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 1.0511	F .35868	4.5430	F .88663	F .88982	F .89732	.46317
Stddev	.0038	.00393	.0064	.00114	.00700	.00126	.00115
%RSD	.35733	1.0963	.14052	.12909	.78679	.14039	.24883
#1	1.0514	.35522	4.5358	.88537	.88186	.89705	.46442
#2	1.0547	.35787	4.5453	.88691	.89256	.89622	.46295
#3	1.0472	.36295	4.5480	.88760	.89503	.89870	.46215
Check ?	Chk Fail	Chk Fail	Chk Pass	Chk Fail	Chk Fail	Chk Fail	Chk Pass
Value	1.2000	.40000		1.0000	1.0000	1.0000	
Range	-10.000%	-10.000%		-10.000%	-10.000%	-10.000%	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.92451	F .89326	F 2.6142
Stddev	.00239	.00079	.0303
%RSD	.25806	.08826	1.1591
#1	.92697	.89416	2.5794
#2	.92435	.89291	2.6285
#3	.92221	.89270	2.6347
Check ?	Chk Pass	Chk Fail	Chk Fail
Value		1.0000	1.0000
Range		-10.000%	10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10436.	62603.	3229.6
Stddev	7.	58.	39.3
%RSD	.06851	.09259	1.2179
#1	10435.	62597.	3274.8
#2	10443.	62548.	3203.4
#3	10429.	62663.	3210.5

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 18:58:15 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00102	-.00634	.00315	-.00143	.00123	.00009	-.03120	-.00001
Stddev	.00036	.00615	.00146	.00223	.00014	.00007	.03757	.00022
%RSD	35.623	96.910	46.271	156.16	11.328	79.889	120.40	3000.5
#1	.00142	-.00623	.00470	-.00112	.00129	.00016	.01024	.00017
#2	.00091	-.01255	.00293	-.00379	.00133	.00004	-.06303	-.00025
#3	.00072	-.00026	.00181	.00063	.00107	.00005	-.04081	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	-.00012	.00040	.00652	.00729	-.00094	.01960	-.00009
Stddev	.00003	.00070	.00057	.00448	.10732	.00258	.12813	.00039
%RSD	340.66	581.54	142.03	68.614	1471.3	275.05	653.72	408.22
#1	-.00000	.00019	-.00025	.00247	.06763	-.00204	-.01079	.00011
#2	.00004	-.00093	.00068	.01133	.07087	.00201	.16019	-.00054
#3	-.00001	.00037	.00077	.00577	-.11662	-.00279	-.09060	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00312	.01765	-.00021	.00497	.00440	.00279	.00542	.03094
Stddev	.00023	.01443	.00123	.00520	.00590	.00458	.00181	.00198
%RSD	7.4573	81.775	586.87	104.64	134.12	164.15	33.357	6.4039
#1	.00298	.03423	-.00101	.00374	.00273	.00293	.00481	.03016
#2	.00339	.00793	-.00083	.01067	.01095	-.00186	.00399	.03319
#3	.00300	.01078	.00121	.00049	-.00049	.00730	.00745	.02947
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 18:58:15 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00029**	**.00057**	**.00328**	**-.00363**	**.00052**	**.00010**	**.00222**
Stddev	.00020	.00050	.00575	.00205	.00106	.00011	.00064
%RSD	66.832	88.088	175.09	56.396	206.25	116.18	28.891
#1	.00017	.00114	-.00137	-.00544	-.00047	.00019	.00164
#2	.00052	.00028	.00971	-.00141	.00038	-.00003	.00291
#3	.00019	.00027	.00151	-.00405	.00164	.00012	.00210
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10029.**	**60890.**	**3064.8**
Stddev	14.	97.	13.9
%RSD	.13680	.15850	.45397
#1	10045.	60780.	3055.3
#2	10022.	60930.	3080.8
#3	10020.	60960.	3058.3

Approved: June 27, 2016

Sample Name: L1606098630 Acquired: 6/25/2016 19:02:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00160**	**.04734**	**-.00156**	**.13569**	**.01871**	**.00015**	**238.04**
Stddev	.00181	.00348	.00404	.00135	.00123	.00008	.85
%RSD	113.48	7.3553	258.52	.99665	6.5967	52.824	.35679
#1	.00017	.04905	-.00155	.13421	.01822	.00022	239.01
#2	.00364	.04964	.00247	.13685	.01779	.00007	237.71
#3	.00098	.04333	-.00561	.13603	.02011	.00014	237.41
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00026**	**.00032**	**.00251**	**.01182**	**.03060**	**3.4183**	**.04090**
Stddev	.00010	.00018	.00081	.00072	.01332	.0462	.00200
%RSD	39.577	56.009	32.204	6.0677	43.540	1.3506	4.8796
#1	.00014	.00047	.00287	.01260	.01963	3.3856	.03874
#2	.00034	.00036	.00308	.01119	.04543	3.4711	.04128
#3	.00028	.00012	.00159	.01167	.02674	3.3981	.04268
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**90.439**	**.21655**	**.00156**	**78.879**	**.00140**	**.01756**	**.00033**
Stddev	.173	.00121	.00013	.416	.00068	.00677	.00046
%RSD	.19086	.55720	8.0204	.52709	48.349	38.536	138.30
#1	90.626	.21726	.00143	79.353	.00191	.01647	.00076
#2	90.405	.21515	.00168	78.710	.00063	.02480	-.00016
#3	90.286	.21722	.00157	78.574	.00166	.01140	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 27, 2016

Sample Name: L1606098630 Acquired: 6/25/2016 19:02:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00294**	**-.00177**	**5.6111**	**-.00017**	**7.0275**	F **-.03316**	**-.00254**
Stddev	.00229	.00087	.0076	.00038	.0379	.00293	.00099
%RSD	77.743	49.294	.13521	227.38	.53946	8.8247	38.798
#1	-.00354	-.00250	5.6121	-.00026	7.0707	-.03043	-.00171
#2	-.00042	-.00199	5.6030	-.00050	7.0124	-.03625	-.00363
#3	-.00488	-.00081	5.6181	.00025	6.9995	-.03280	-.00229
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00065**	**.02003**	**.00667**
Stddev	.00064	.00007	.00116
%RSD	98.374	.34297	17.407
#1	-.00116	.01996	.00557
#2	-.00088	.02003	.00654
#3	.00007	.02010	.00788
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9361.9**	**56594.**	**2990.6**
Stddev	23.4	147.	20.1
%RSD	.24995	.25968	.67365
#1	9379.7	56762.	2967.6
#2	9370.7	56528.	3005.2
#3	9335.4	56491.	2998.9

Approved: June 27, 2016

Sample Name: L1606098632S Acquired: 6/25/2016 19:06:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18902**	**4.8212**	**.19116**	**.97374**	**.50077**	**.02402**	**134.52**	**.02388**
Stddev	.00088	.0081	.00239	.00462	.00118	.00003	.34	.00017
%RSD	.46488	.16867	1.2481	.47438	.23617	.14314	.25228	.70472
#1	.18980	4.8271	.19377	.97198	.50123	.02406	134.68	.02373
#2	.18919	4.8246	.18910	.97898	.49943	.02400	134.13	.02406
#3	.18807	4.8119	.19060	.97026	.50165	.02400	134.75	.02386
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09189**	**.23665**	**.24218**	**1.8859**	**25.617**	**.51395**	**37.596**	**.28166**
Stddev	.00021	.00120	.00028	.0089	.037	.00043	.192	.00203
%RSD	.23170	.50673	.11712	.47202	.14467	.08375	.50984	.71945
#1	.09190	.23534	.24190	1.8828	25.580	.51444	37.585	.28070
#2	.09167	.23691	.24247	1.8960	25.619	.51376	37.792	.28399
#3	.09210	.23769	.24219	1.8790	25.654	.51365	37.409	.28029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49448**	**71.230**	**.23175**	**4.7310**	**.23416**	**.56777**	**.18400**	**6.1097**
Stddev	.00088	.164	.00128	.0060	.00191	.00602	.00319	.0038
%RSD	.17884	.22978	.55101	.12688	.81554	1.0604	1.7354	.06148
#1	.49529	71.252	.23067	4.7327	.23616	.57278	.18033	6.1129
#2	.49354	71.056	.23316	4.7244	.23394	.56944	.18613	6.1108
#3	.49461	71.382	.23142	4.7360	.23236	.56109	.18555	6.1056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098632S Acquired: 6/25/2016 19:06:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.46869**	**2.2839**	**.45630**	**.23531**	**.49366**	**.46774**	**.01477**
Stddev	.00224	.0055	.00571	.00163	.00079	.00046	.00310
%RSD	.47718	.23955	1.2515	.69229	.16011	.09871	21.022
#1	.47047	2.2847	.45118	.23550	.49390	.46819	.01151
#2	.46942	2.2781	.45528	.23360	.49431	.46777	.01510
#3	.46618	2.2889	.46246	.23684	.49278	.46726	.01769
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9505.1**	**57443.**	**2995.1**
Stddev	12.6	181.	7.9
%RSD	.13263	.31567	.26290
#1	9490.9	57238.	2989.7
#2	9509.8	57583.	3004.2
#3	9514.8	57507.	2991.6

Approved: June 27, 2016

Sample Name: L1606098634S Acquired: 6/25/2016 19:09:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19165**	**4.8639**	**.19259**	**.98224**	**.50433**	**.02434**	**136.41**	**.02397**
Stddev	.00283	.0058	.00215	.00673	.00181	.00002	.41	.00039
%RSD	1.4742	.11932	1.1143	.68564	.35885	.08391	.29851	1.6453
#1	.19474	4.8576	.19410	.97512	.50399	.02434	136.06	.02438
#2	.19099	4.8690	.19014	.98851	.50272	.02431	136.30	.02394
#3	.18921	4.8651	.19354	.98310	.50629	.02435	136.86	.02359
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09370**	**.23944**	**.24457**	**1.9014**	**25.851**	**.51838**	**38.336**	**.27292**
Stddev	.00027	.00087	.00143	.0128	.044	.00156	.167	.00356
%RSD	.28910	.36336	.58497	.67456	.17178	.30011	.43499	1.3028
#1	.09395	.23880	.24603	1.9045	25.902	.51991	38.172	.27676
#2	.09341	.23909	.24449	1.9124	25.822	.51842	38.330	.27226
#3	.09373	.24043	.24318	1.8873	25.829	.51680	38.505	.26974
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49947**	**74.848**	**.23412**	**4.7760**	**.23373**	**.57493**	**.18272**	**6.1711**
Stddev	.00101	.224	.00114	.0149	.00097	.00427	.00635	.0140
%RSD	.20163	.29965	.48754	.31111	.41349	.74220	3.4752	.22725
#1	.50053	74.661	.23450	4.7820	.23289	.57819	.18571	6.1610
#2	.49852	74.786	.23283	4.7591	.23352	.57010	.18702	6.1652
#3	.49936	75.096	.23502	4.7869	.23478	.57650	.17542	6.1871
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098634S Acquired: 6/25/2016 19:09:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47482**	**2.3307**	**.45927**	**.23900**	**.49848**	**.47191**	**.00533**
Stddev	.00086	.0091	.01368	.00122	.00164	.00108	.00076
%RSD	.18068	.39132	2.9792	.51192	.32871	.22881	14.237
#1	.47581	2.3242	.47279	.23871	.49842	.47284	.00492
#2	.47440	2.3268	.44543	.23794	.50015	.47073	.00620
#3	.47425	2.3411	.45961	.24034	.49687	.47217	.00485
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9464.2**	**57182.**	**2975.2**
Stddev	11.1	55.	14.2
%RSD	.11755	.09672	.47580
#1	9463.1	57128.	2991.6
#2	9475.9	57180.	2967.1
#3	9453.7	57239.	2967.1

Approved: June 27, 2016

Sample Name: L1606098636SD Acquired: 6/25/2016 19:13:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19162**	**4.8756**	**.19532**	**1.3252**	**.50705**	**.02431**	**243.19**	**.02436**
Stddev	.00178	.0135	.00259	.0039	.00540	.00016	2.22	.00014
%RSD	.92905	.27765	1.3247	.29569	1.0646	.65896	.91281	.56637
#1	.19240	4.8805	.19500	1.3207	.51326	.02435	245.71	.02449
#2	.18958	4.8859	.19805	1.3282	.50441	.02444	242.33	.02421
#3	.19287	4.8603	.19291	1.3265	.50349	.02413	241.52	.02439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09290**	**.23671**	**.29685**	**1.9145**	**29.596**	**.51587**	**71.839**	**.60737**
Stddev	.00022	.00172	.00059	.0369	.191	.00194	.252	.00417
%RSD	.23161	.72762	.19867	1.9280	.64372	.37694	.35080	.68663
#1	.09280	.23499	.29694	1.9564	29.779	.51781	72.039	.61218
#2	.09315	.23843	.29739	1.9005	29.610	.51588	71.921	.60495
#3	.09276	.23672	.29622	1.8867	29.399	.51393	71.556	.60497
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49958**	**89.482**	**.23320**	**4.8335**	**.23655**	**.57885**	**.18210**	**6.3388**
Stddev	.00153	.784	.00050	.0076	.00169	.00511	.00473	.0094
%RSD	.30585	.87569	.21296	.15803	.71424	.88252	2.5997	.14817
#1	.49951	90.366	.23335	4.8331	.23580	.57825	.18575	6.3355
#2	.50114	89.209	.23361	4.8414	.23849	.57407	.18379	6.3494
#3	.49809	88.872	.23265	4.8261	.23537	.58424	.17675	6.3314
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098636SD Acquired: 6/25/2016 19:13:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47318**	**2.1504**	**.45196**	**.23380**	**.49243**	**.47726**	**.00396**
Stddev	.00235	.0203	.01296	.00229	.00254	.00239	.00140
%RSD	.49768	.94209	2.8683	.97909	.51630	.50171	35.414
#1	.47220	2.1736	.45301	.23117	.49302	.48002	.00408
#2	.47587	2.1417	.46436	.23534	.49462	.47583	.00530
#3	.47148	2.1359	.43850	.23489	.48964	.47592	.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9466.5**	**57687.**	**3000.7**
Stddev	28.5	42.	21.4
%RSD	.30105	.07212	.71153
#1	9499.3	57706.	2976.5
#2	9448.1	57639.	3017.0
#3	9452.0	57716.	3008.4

Approved: June 27, 2016

Sample Name: L1606098638SD Acquired: 6/25/2016 19:16:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-09

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19635**	**5.0111**	**.19662**	**1.3658**	**.50590**	**.02455**	**238.74**	**.02470**
Stddev	.00189	.0495	.00202	.0129	.00507	.00013	2.44	.00046
%RSD	.96164	.98714	1.0288	.94297	1.0027	.51871	1.0237	1.8632
#1	.19421	4.9540	.19875	1.3513	.50004	.02440	236.05	.02465
#2	.19777	5.0396	.19638	1.3761	.50894	.02464	240.82	.02518
#3	.19706	5.0398	.19472	1.3699	.50872	.02461	239.35	.02426
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09456**	**.24315**	**.24888**	**1.9280**	**29.506**	**.51676**	**69.466**	**.60260**
Stddev	.00054	.00286	.00145	.0328	.362	.00473	.757	.00806
%RSD	.56749	1.1744	.58163	1.6990	1.2271	.91552	1.0898	1.3377
#1	.09518	.24020	.24797	1.8914	29.119	.51186	68.628	.59529
#2	.09432	.24590	.25055	1.9547	29.837	.52131	70.101	.61124
#3	.09419	.24336	.24812	1.9378	29.562	.51712	69.668	.60126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50828**	**86.839**	**.23731**	**4.9079**	**.23796**	**.58722**	**.18727**	**6.3571**
Stddev	.00153	.812	.00040	.0105	.00122	.00763	.00717	.0147
%RSD	.30188	.93521	.16702	.21476	.51147	1.2987	3.8265	.23138
#1	.50998	85.938	.23758	4.9185	.23889	.59365	.18466	6.3682
#2	.50784	87.516	.23685	4.9076	.23841	.58922	.19537	6.3627
#3	.50701	87.061	.23748	4.8975	.23659	.57879	.18177	6.3405
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098638SD Acquired: 6/25/2016 19:16:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-09

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48230**	**2.1413**	**.45206**	**.24148**	**.50819**	**.47197**	**.00465**
Stddev	.00016	.0221	.00841	.00203	.00480	.00162	.00175
%RSD	.03337	1.0323	1.8614	.84256	.94539	.34380	37.692
#1	.48228	2.1164	.44367	.23931	.50264	.47335	.00633
#2	.48215	2.1586	.45201	.24177	.51108	.47237	.00283
#3	.48247	2.1488	.46050	.24334	.51084	.47018	.00481
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9367.1**	**56617.**	**3005.4**
Stddev	24.2	279.	8.9
%RSD	.25886	.49353	.29743
#1	9345.0	56900.	3015.6
#2	9363.2	56609.	2998.7
#3	9393.0	56341.	3002.0

Approved: June 27, 2016

Sample Name: L1606098640 Acquired: 6/25/2016 19:20:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00070	.00014	.00047	.01204	.00394	.00013	2.2418	.00009
Stddev	.00052	.00246	.00354	.00206	.00041	.00015	.0448	.00026
%RSD	75.327	1722.8	753.06	17.114	10.437	111.96	1.9977	298.05
#1	-.00120	.00298	.00434	.01328	.00360	.00001	2.2906	-.00017
#2	-.00073	-.00107	-.00032	.00966	.00384	.00009	2.2025	.00008
#3	-.00016	-.00148	-.00261	.01318	.00440	.00029	2.2324	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	-.00023	.00162	.03197	.19488	-.00199	.70657	-.00157
Stddev	.00020	.00043	.00063	.03003	.05117	.00159	.10487	.00034
%RSD	172.28	188.43	38.822	93.912	26.255	79.698	14.843	21.723
#1	-.00014	.00024	.00129	.06510	.20250	-.00219	.77648	-.00118
#2	.00010	-.00061	.00122	.00654	.14033	-.00346	.58598	-.00170
#3	-.00030	-.00032	.00234	.02429	.24180	-.00031	.75725	-.00182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	1.3245	-.00000	-.00132	.00155	-.00034	.00103	1.8661
Stddev	.00043	.0047	.00128	.00539	.00283	.00334	.00522	.0030
%RSD	69.622	.35334	42382.	408.47	183.18	979.63	508.03	.16155
#1	.00110	1.3264	-.00135	.00378	-.00057	-.00417	-.00062	1.8696
#2	.00029	1.3279	.00121	-.00695	.00477	.00193	.00687	1.8648
#3	.00045	1.3192	.00013	-.00078	.00045	.00122	-.00317	1.8641
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098640 Acquired: 6/25/2016 19:20:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	.02890	-.00018	-.00245	.00125	.00316	.00092
Stddev	.00104	.00022	.00313	.00122	.00036	.00008	.00187
%RSD	172.87	.75581	1755.3	49.848	28.928	2.5446	202.44
#1	-.00053	.02865	.00335	-.00105	.00165	.00322	-.00102
#2	.00152	.02900	-.00128	-.00328	.00095	.00320	.00271
#3	.00082	.02905	-.00260	-.00302	.00115	.00307	.00108
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9902.6	60698.	3047.4
Stddev	11.3	88.	21.1
%RSD	.11376	.14441	.69149
#1	9915.6	60659.	3066.8
#2	9895.9	60798.	3025.0
#3	9896.3	60636.	3050.3

Approved: June 27, 2016

Sample Name: L1606098642 Acquired: 6/25/2016 19:24:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00084	-.00125	.00012	.00714	.00291	.00014	2.2957	-.00008
Stddev	.00151	.00416	.00315	.00149	.00136	.00010	.0287	.00011
%RSD	179.62	331.72	2535.0	20.853	46.790	76.580	1.2503	140.66
#1	.00086	.00295	-.00350	.00543	.00443	.00023	2.2645	-.00020
#2	-.00134	-.00134	.00221	.00806	.00180	.00015	2.3210	.00001
#3	-.00204	-.00537	.00167	.00794	.00250	.00002	2.3016	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00054	.00126	.01879	.13459	.00101	.70251	-.00031
Stddev	.00021	.00073	.00033	.01779	.06299	.00139	.04015	.00188
%RSD	76.216	135.58	26.342	94.669	46.805	137.70	5.7150	613.21
#1	.00043	.00109	.00162	.03687	.13442	.00244	.65916	.00151
#2	.00035	-.00029	.00096	.01820	.19766	.00092	.73842	-.00224
#3	.00004	.00081	.00121	.00130	.07167	-.00034	.70994	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	1.3914	-.00012	.00599	-.00050	-.00197	.00192	1.9147
Stddev	.00031	.0274	.00128	.00446	.00248	.00478	.00405	.0013
%RSD	265.01	1.9704	1039.6	74.477	491.66	243.04	211.10	.06740
#1	-.00017	1.4067	.00078	.00869	.00158	.00334	.00542	1.9141
#2	.00008	1.4078	.00044	.00843	.00015	-.00331	-.00251	1.9137
#3	.00044	1.3598	-.00159	.00084	-.00325	-.00593	.00284	1.9161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098642 Acquired: 6/25/2016 19:24:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.02978**	**.00659**	**-.00224**	**.00021**	**.00288**	**.00046**
Stddev	.00041	.00031	.00898	.00218	.00024	.00011	.00203
%RSD	319.77	1.0309	136.22	97.103	115.48	3.6974	442.65
#1	.00034	.02969	.01094	-.00308	.00030	.00286	-.00018
#2	-.00043	.03012	.01258	.00023	.00040	.00300	.00273
#3	-.00030	.02953	-.00373	-.00388	-.00006	.00279	-.00117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9910.0**	**60405.**	**3027.1**
Stddev	8.6	109.	25.1
%RSD	.08719	.18086	.83024
#1	9909.0	60400.	3001.0
#2	9919.1	60298.	3029.3
#3	9901.9	60516.	3051.1

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 19:28:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.38218**	**9.6308**	**.37557**	**.46431**	**.95962**	**.04828**	**9.5695**
Stddev	.00218	.0178	.00127	.00116	.00217	.00012	.0717
%RSD	.57165	.18471	.33835	.24921	.22635	.23895	.74942
#1	.37992	9.6388	.37606	.46299	.96032	.04841	9.5557
#2	.38232	9.6104	.37652	.46516	.96137	.04820	9.6471
#3	.38429	9.6432	.37413	.46479	.95719	.04823	9.5057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04801**	**.18801**	**.47395**	**.48473**	**3.7689**	**46.355**	**.97311**
Stddev	.00014	.00020	.00045	.00153	.0264	.220	.00378
%RSD	.29427	.10445	.09483	.31643	.70136	.47512	.38849
#1	.04785	.18823	.47438	.48634	3.7952	46.500	.97746
#2	.04812	.18785	.47399	.48328	3.7693	46.464	.97068
#3	.04806	.18795	.47348	.48458	3.7423	46.102	.97118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.0717**	**.47590**	**.96524**	**47.107**	**.47852**	**9.3733**	**.47882**
Stddev	.0608	.00396	.00399	.173	.00072	.0111	.00296
%RSD	.67059	.83199	.41378	.36832	.15104	.11884	.61810
#1	9.0038	.47335	.96959	47.188	.47773	9.3765	.47551
#2	9.1213	.48046	.96440	47.226	.47916	9.3609	.48123
#3	9.0900	.47388	.96173	46.908	.47866	9.3825	.47971
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 19:28:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1223**	**.37795**	**4.8400**	**.94463**	**.95969**	**.96684**	**.48966**
Stddev	.0016	.00541	.0100	.00151	.00470	.01176	.00307
%RSD	.14404	1.4313	.20631	.15941	.49016	1.2167	.62598
#1	1.1238	.37410	4.8492	.94636	.96229	.96908	.48613
#2	1.1206	.37562	4.8414	.94360	.96253	.97732	.49169
#3	1.1224	.38414	4.8294	.94394	.95426	.95412	.49116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.97958**	**.95235**	F **2.8246**
Stddev	.00154	.00042	.0035
%RSD	.15724	.04377	.12384
#1	.97882	.95263	2.8278
#2	.97857	.95254	2.8252
#3	.98136	.95187	2.8208
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10132.**	**61264.**	**3100.4**
Stddev	.	134.	6.9
%RSD	.00202	.21941	.22117
#1	10132.	61202.	3092.6
#2	10132.	61418.	3103.3
#3	10132.	61171.	3105.3

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 19:32:05 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00027**	**-.00034**	**.00165**	**-.00065**	**.00143**	**.00014**	**-.04509**	**-.00015**
Stddev	.00053	.00835	.00116	.00135	.00075	.00012	.04632	.00018
%RSD	198.69	2437.1	70.395	208.11	52.425	84.191	102.74	120.05
#1	.00081	.00499	.00229	-.00108	.00058	.00001	-.09453	-.00022
#2	.00023	-.00997	.00235	-.00174	.00173	.00020	-.03804	.00005
#3	-.00025	.00395	.00031	.00087	.00199	.00023	-.00270	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**-.00017**	**.00065**	**.02423**	**-.06433**	**-.00295**	**-.01903**	**-.00066**
Stddev	.00013	.00077	.00059	.01555	.07126	.00237	.08401	.00260
%RSD	162.10	456.13	90.441	64.178	110.77	80.373	441.41	395.33
#1	-.00022	-.00087	-.00002	.03897	.01654	-.00026	-.10302	.00036
#2	-.00006	.00066	.00091	.02575	-.09166	-.00387	.06499	-.00361
#3	.00004	-.00030	.00106	.00798	-.11789	-.00472	-.01907	.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00313**	**.02145**	**.00120**	**.00197**	**.00164**	**.00212**	**.00101**	**.04112**
Stddev	.00013	.00743	.00050	.00366	.00312	.00166	.00069	.00272
%RSD	4.1237	34.660	41.579	185.66	190.04	78.472	68.223	6.6255
#1	.00318	.03002	.00170	.00620	.00310	.00128	.00172	.03946
#2	.00323	.01754	.00070	-.00004	.00377	.00104	.00035	.04426
#3	.00298	.01678	.00121	-.00024	-.00194	.00404	.00097	.03964
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 19:32:05 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00072**	**.00051**	**-.00006**	**-.00149**	**-.00026**	**.00006**	**.00316**
Stddev	.00004	.00041	.00466	.00123	.00016	.00032	.00144
%RSD	4.9365	80.523	8195.1	82.501	61.089	521.42	45.405
#1	.00073	.00010	.00498	-.00182	-.00044	-.00016	.00318
#2	.00068	.00091	-.00094	-.00252	-.00020	.00042	.00172
#3	.00075	.00050	-.00421	-.00013	-.00014	-.00008	.00459
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9625.9**	**58446.**	**2947.7**
Stddev	17.4	102.	8.2
%RSD	.18036	.17465	.27941
#1	9605.9	58491.	2954.6
#2	9635.9	58518.	2950.0
#3	9636.0	58329.	2938.6

Approved: June 27, 2016

Sample Name: PBW LH Acquired: 6/25/2016 19:36:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	-.00480	.00297	-.00088	.00071	.00016	-.03609	-.00030
Stddev	.00096	.00538	.00061	.00047	.00081	.00006	.00576	.00022
%RSD	436.54	112.05	20.402	53.250	112.94	41.040	15.975	74.291
#1	-.00063	-.00271	.00258	-.00071	.00057	.00010	-.04014	-.00038
#2	.00002	-.00078	.00267	-.00141	-.00001	.00022	-.03863	-.00005
#3	.00126	-.01092	.00367	-.00052	.00158	.00014	-.02949	-.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.00027	.00021	.03551	.02057	.00058	-.03422	.00199
Stddev	.00019	.00046	.00040	.00062	.11033	.00127	.05831	.00213
%RSD	211.66	173.58	192.44	1.7348	536.36	218.26	170.39	107.33
#1	.00009	.00043	-.00014	.03559	.14793	.00205	.01703	.00051
#2	-.00029	.00063	.00065	.03485	-.04548	-.00019	-.09766	.00101
#3	-.00007	-.00025	.00012	.03607	-.04075	-.00011	-.02203	.00443
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	.01920	-.00013	.00015	.00308	-.00169	.00218	.00530
Stddev	.00020	.01381	.00043	.00436	.00410	.00157	.00344	.00135
%RSD	72.649	71.919	323.98	2952.6	133.25	92.573	157.59	25.417
#1	-.00050	.00540	-.00047	-.00185	.00268	-.00008	.00514	.00605
#2	-.00014	.01919	.00035	-.00286	.00737	-.00321	.00301	.00374
#3	-.00017	.03301	-.00027	.00515	-.00081	-.00179	-.00160	.00610
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: PBW LH Acquired: 6/25/2016 19:36:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.00001**	**.00007**	**-.00205**	**.00056**	**-.00012**	**.00138**
Stddev	.00105	.00006	.00526	.00274	.00041	.00008	.00122
%RSD	278.35	503.89	7708.4	133.89	73.183	68.172	88.458
#1	.00057	-.00005	.00045	-.00401	.00011	-.00018	.00093
#2	-.00020	.00002	-.00537	-.00321	.00065	-.00003	.00045
#3	-.00151	.00007	.00513	.00108	.00091	-.00016	.00276
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10355.**	**62690.**	**3143.1**
Stddev	14.	21.	40.1
%RSD	.13810	.03356	1.2743
#1	10371.	62711.	3176.8
#2	10343.	62669.	3098.8
#3	10351.	62689.	3153.6

Approved: June 27, 2016

Sample Name: LCSW LH Acquired: 6/25/2016 19:39:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19366**	**4.9137**	**.19220**	**.93203**	**.49068**	**.02467**	**4.9632**	**.02443**
Stddev	.00070	.0138	.00341	.00396	.00423	.00007	.0538	.00016
%RSD	.36335	.28142	1.7740	.42472	.86189	.28277	1.0835	.64799
#1	.19288	4.8983	.19002	.92766	.48616	.02461	4.9413	.02459
#2	.19385	4.9180	.19044	.93305	.49453	.02465	5.0244	.02441
#3	.19425	4.9249	.19613	.93537	.49136	.02474	4.9238	.02428
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09715**	**.24544**	**.24999**	**1.9443**	**23.472**	**.50293**	**4.6813**	**.24132**
Stddev	.00066	.00263	.00041	.0106	.182	.00291	.0938	.00318
%RSD	.68088	1.0726	.16565	.54556	.77586	.57762	2.0038	1.3188
#1	.09680	.24301	.25039	1.9373	23.301	.50365	4.6704	.23802
#2	.09792	.24824	.24956	1.9391	23.664	.50540	4.7800	.24157
#3	.09674	.24506	.25002	1.9565	23.450	.49973	4.5934	.24437
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50304**	**24.148**	**.24571**	**4.6828**	**.24554**	**.57884**	**.18202**	**2.4064**
Stddev	.00049	.122	.00061	.0125	.00123	.00461	.00367	.0046
%RSD	.09743	.50324	.24625	.26789	.50266	.79649	2.0171	.19316
#1	.50339	24.028	.24640	4.6758	.24587	.57352	.17868	2.4078
#2	.50325	24.271	.24545	4.6973	.24658	.58167	.18595	2.4102
#3	.50248	24.145	.24528	4.6753	.24418	.58132	.18143	2.4012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LCSW LH Acquired: 6/25/2016 19:39:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48493**	**.49684**	**.48674**	**.24907**	**.50464**	**.48284**	**.01676**
Stddev	.00108	.00397	.00310	.00041	.00236	.00325	.00211
%RSD	.22287	.79928	.63744	.16637	.46686	.67256	12.564
#1	.48462	.49378	.48665	.24947	.50200	.48055	.01435
#2	.48613	.50133	.48369	.24909	.50538	.48656	.01775
#3	.48404	.49542	.48989	.24864	.50653	.48141	.01820
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9761.3**	**59171.**	**3026.9**
Stddev	5.3	58.	23.7
%RSD	.05400	.09751	.78195
#1	9766.4	59236.	3050.7
#2	9755.9	59148.	3003.3
#3	9761.7	59127.	3026.7

Approved: June 27, 2016

Sample Name: L1606090723 Acquired: 6/25/2016 19:43:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	.01800	.14333	.20159	.04322	.00011	82.135	.00062
Stddev	.00074	.00440	.00262	.00108	.00176	.00009	.153	.00002
%RSD	81.113	24.457	1.8284	.53531	4.0750	85.790	.18660	3.6806
#1	.00039	.02274	.14560	.20094	.04396	.00020	82.043	.00061
#2	.00058	.01723	.14046	.20283	.04121	.00011	82.051	.00064
#3	.00176	.01403	.14393	.20099	.04450	.00001	82.312	.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00085	.00186	.00181	3.0759	4.3146	.03826	51.383	.03252
Stddev	.00009	.00076	.00070	.0448	.0921	.00398	.083	.00353
%RSD	10.346	41.113	38.683	1.4576	2.1337	10.401	.16137	10.870
#1	.00081	.00098	.00242	3.0253	4.2316	.04144	51.475	.03488
#2	.00094	.00223	.00197	3.0916	4.4136	.03380	51.362	.02845
#3	.00078	.00237	.00105	3.1108	4.2984	.03956	51.313	.03422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00258	133.73	-.00015	.01191	.00179	-.00228	.00665	8.0891
Stddev	.00008	.12	.00113	.00694	.00129	.00283	.00532	.0280
%RSD	3.2153	.09189	747.26	58.268	71.933	124.12	79.994	.34670
#1	.00264	133.81	-.00126	.01916	.00318	-.00553	.01195	8.1130
#2	.00249	133.59	.00099	.00533	.00159	-.00033	.00671	8.0582
#3	.00262	133.80	-.00018	.01123	.00062	-.00099	.00131	8.0960
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606090723 Acquired: 6/25/2016 19:43:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**2.6416**	**-.00732**	**-.00182**	**-.00046**	**.00542**	**.00128**
Stddev	.00038	.0023	.00771	.00082	.00062	.00021	.00019
%RSD	7616.2	.08543	105.44	45.025	136.48	3.8805	14.578
#1	.00020	2.6400	-.01112	-.00260	-.00073	.00544	.00120
#2	.00025	2.6406	.00156	-.00189	.00026	.00563	.00115
#3	-.00044	2.6441	-.01239	-.00097	-.00089	.00521	.00149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9566.3**	**57706.**	**3016.3**
Stddev	21.2	40.	8.6
%RSD	.22170	.06981	.28561
#1	9583.7	57737.	3006.9
#2	9572.5	57660.	3023.9
#3	9542.7	57721.	3018.2

Approved: June 27, 2016

Sample Name: L1606098601 Acquired: 6/25/2016 19:47:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	.63226	.00101	.09520	.04126	.00012	31.325	.00014
Stddev	.00183	.00734	.00119	.00196	.00050	.00007	.135	.00021
%RSD	298.65	1.1612	118.08	2.0630	1.2197	57.984	.43030	153.25
#1	.00185	.62395	-.00028	.09744	.04176	.00005	31.451	-.00001
#2	-.00149	.63786	.00207	.09436	.04076	.00018	31.183	.00005
#3	.00148	.63498	.00124	.09379	.04125	.00013	31.342	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	.00251	.00378	1.4621	1.2075	.01677	5.9028	.04892
Stddev	.00024	.00020	.00199	.0362	.0294	.00358	.0605	.00066
%RSD	20.175	7.8011	52.767	2.4785	2.4351	21.330	1.0243	1.3538
#1	.00129	.00246	.00338	1.4981	1.1821	.01735	5.9016	.04861
#2	.00090	.00272	.00594	1.4256	1.2008	.02003	5.8430	.04848
#3	.00133	.00234	.00201	1.4624	1.2397	.01294	5.9639	.04969
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00119	122.45	.00122	.03952	.00058	-.00189	.00677	4.0503
Stddev	.00024	.35	.00124	.00581	.00157	.00112	.00463	.0371
%RSD	19.925	.28250	101.52	14.694	270.52	59.209	68.294	.91471
#1	.00135	122.68	.00181	.04077	.00200	-.00256	.00933	4.0789
#2	.00131	122.05	-.00020	.04460	-.00110	-.00252	.00956	4.0634
#3	.00092	122.62	.00206	.03319	.00084	-.00060	.00143	4.0084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098601 Acquired: 6/25/2016 19:47:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.54428**	**.01566**	**-.00252**	**.00147**	**.03503**	**.00138**
Stddev	.00052	.00100	.00262	.00158	.00115	.00040	.00180
%RSD	330.58	.18426	16.757	62.766	78.497	1.1335	130.15
#1	-.00032	.54517	.01814	-.00107	.00112	.03533	.00331
#2	-.00057	.54319	.01592	-.00228	.00275	.03517	-.00024
#3	.00042	.54448	.01291	-.00422	.00053	.03458	.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9674.1**	**58435.**	**3018.4**
Stddev	45.2	129.	18.2
%RSD	.46720	.22152	.60258
#1	9673.0	58340.	2997.4
#2	9719.9	58382.	3028.7
#3	9629.5	58582.	3029.1

Approved: June 27, 2016

Sample Name: L1606098603 Acquired: 6/25/2016 19:51:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00113**	**.08091**	**.00257**	**.02612**	**.02343**	**.00026**	**258.72**
Stddev	.00364	.00403	.00338	.00065	.00023	.00010	.22
%RSD	322.73	4.9793	131.60	2.5002	.99712	37.911	.08495
#1	-.00201	.07953	.00151	.02617	.02317	.00019	258.95
#2	.00512	.08545	-.00015	.02675	.02363	.00037	258.52
#3	.00028	.07776	.00635	.02545	.02348	.00021	258.68
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00056**	**.00486**	**.00101**	**.01760**	**1.6277**	**1.7887**	**.01926**
Stddev	.00018	.00049	.00101	.00048	.0214	.0748	.00269
%RSD	32.935	10.099	100.65	2.7241	1.3157	4.1799	13.963
#1	.00053	.00446	.00070	.01814	1.6519	1.7719	.02232
#2	.00040	.00472	.00018	.01725	1.6198	1.8705	.01729
#3	.00076	.00541	.00214	.01740	1.6113	1.7238	.01816
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**67.571**	**3.7591**	**.00091**	**16.176**	**.00450**	**.03792**	**.00200**
Stddev	.265	.0091	.00013	.042	.00050	.00459	.00102
%RSD	.39176	.24313	14.640	.25963	11.081	12.099	51.049
#1	67.875	3.7689	.00083	16.148	.00428	.03292	.00317
#2	67.391	3.7508	.00083	16.224	.00415	.03891	.00158
#3	67.448	3.7575	.00106	16.157	.00507	.04193	.00126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 27, 2016

Sample Name: L1606098603 Acquired: 6/25/2016 19:51:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00201**	**-.00717**	**3.9929**	**.00071**	**1.4034**	F **-.03512**	**-.00302**
Stddev	.00033	.00269	.0187	.00006	.0013	.00376	.00159
%RSD	16.650	37.521	.46951	8.6416	.08919	10.706	52.853
#1	-.00201	-.00583	3.9724	.00069	1.4035	-.03701	-.00329
#2	-.00234	-.01026	3.9969	.00078	1.4046	-.03756	-.00130
#3	-.00167	-.00541	4.0093	.00066	1.4021	-.03079	-.00446
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00011**	**.03959**	**.00096**
Stddev	.00028	.00012	.00361
%RSD	248.38	.29182	376.14
#1	.00034	.03947	.00158
#2	-.00020	.03969	.00421
#3	.00020	.03962	-.00292
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9451.5**	**57637.**	**3009.6**
Stddev	22.8	186.	22.0
%RSD	.24088	.32311	.72999
#1	9477.8	57852.	2986.4
#2	9439.3	57520.	3012.4
#3	9437.5	57540.	3030.0

Approved: June 27, 2016

Sample Name: L1606098605 Acquired: 6/25/2016 19:55:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00137	.11904	-.00057	.01716	.07339	.00069	79.533	.00007
Stddev	.00111	.00237	.00183	.00141	.00107	.00010	.468	.00014
%RSD	81.063	1.9908	322.69	8.2448	1.4582	14.460	.58849	215.58
#1	-.00160	.12158	.00130	.01581	.07215	.00080	78.994	-.00002
#2	-.00016	.11865	-.00237	.01703	.07401	.00066	79.770	-.00001
#3	-.00235	.11689	-.00063	.01863	.07401	.00061	79.836	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00197	.03453	.22031	1.0996	.00600	23.636	.02412
Stddev	.00010	.00062	.00164	.01719	.0321	.00378	.124	.00114
%RSD	58.539	31.534	4.7611	7.8016	2.9198	62.984	.52590	4.7055
#1	.00028	.00148	.03642	.22738	1.1284	.00174	23.677	.02484
#2	.00008	.00176	.03343	.23283	1.0650	.00731	23.734	.02281
#3	.00016	.00266	.03374	.20072	1.1054	.00895	23.496	.02471
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	16.543	.00139	.02145	.00230	-.00291	.00287	2.5906
Stddev	.00010	.077	.00029	.00514	.00167	.00113	.00378	.0043
%RSD	11.067	.46265	20.622	23.950	72.689	38.933	132.03	.16499
#1	.00094	16.521	.00147	.02583	.00422	-.00367	.00465	2.5950
#2	.00093	16.628	.00163	.02271	.00152	-.00161	-.00148	2.5865
#3	.00076	16.480	.00107	.01580	.00116	-.00345	.00543	2.5902
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098605 Acquired: 6/25/2016 19:55:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**.41216**	**-.00457**	**-.00401**	**.00095**	**.08292**	**.00137**
Stddev	.00045	.00253	.00113	.00092	.00095	.00025	.00112
%RSD	198.91	.61368	24.692	22.922	99.932	.30169	82.337
#1	.00020	.40988	-.00328	-.00486	-.00009	.08312	.00008
#2	.00068	.41488	-.00504	-.00303	.00116	.08301	.00218
#3	-.00021	.41173	-.00539	-.00414	.00177	.08264	.00183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9691.4**	**59019.**	**3013.1**
Stddev	15.7	113.	12.9
%RSD	.16185	.19156	.42939
#1	9673.9	58889.	3028.0
#2	9704.2	59073.	3004.1
#3	9696.2	59095.	3007.4

Approved: June 27, 2016

Sample Name: L1606098607 Acquired: 6/25/2016 19:59:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00078	.03854	.00139	.01595	.03639	.00021	86.351	.00013
Stddev	.00196	.00438	.00171	.00299	.00069	.00005	.183	.00018
%RSD	252.38	11.356	122.54	18.743	1.8946	25.559	.21179	130.52
#1	-.00064	.04027	.00252	.01429	.03564	.00026	86.561	.00033
#2	-.00004	.03356	-.00057	.01941	.03654	.00022	86.226	.00007
#3	.00302	.04179	.00223	.01417	.03700	.00015	86.267	-.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	.00096	.00901	.09595	1.3588	.01896	23.947	.13765
Stddev	.00012	.00155	.00054	.00336	.0905	.00285	.152	.00156
%RSD	14.271	161.05	6.0176	3.5057	6.6619	15.032	.63449	1.1314
#1	.00074	.00257	.00840	.09606	1.2544	.01772	23.782	.13585
#2	.00084	-.00052	.00942	.09926	1.4148	.02223	24.081	.13859
#3	.00099	.00083	.00922	.09254	1.4072	.01695	23.978	.13851
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	12.868	.00006	.00776	.00294	-.00141	.00160	3.6487
Stddev	.00036	.033	.00069	.00647	.00245	.00292	.00413	.0140
%RSD	74.294	.25857	1239.7	83.320	83.569	207.44	258.10	.38292
#1	.00008	12.905	-.00031	.01172	.00013	.00158	.00626	3.6621
#2	.00078	12.859	.00085	.01126	.00466	-.00154	-.00162	3.6496
#3	.00059	12.840	-.00038	.00030	.00403	-.00426	.00017	3.6342
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098607 Acquired: 6/25/2016 19:59:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.85925**	**-.01297**	**-.00261**	**.00027**	**.01872**	**-.00023**
Stddev	.00058	.00368	.00482	.00118	.00049	.00005	.00100
%RSD	1135.5	.42821	37.150	45.319	182.28	.27976	440.95
#1	.00028	.86236	-.00802	-.00398	-.00019	.01878	.00007
#2	-.00072	.86019	-.01323	-.00183	.00021	.01871	.00059
#3	.00028	.85519	-.01765	-.00203	.00079	.01868	-.00134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9667.2**	**58651.**	**3007.8**
Stddev	38.0	90.	17.4
%RSD	.39269	.15372	.57760
#1	9636.2	58610.	2989.6
#2	9655.8	58589.	3009.4
#3	9709.5	58755.	3024.3

Approved: June 27, 2016

Sample Name: L1606098607PS Acquired: 6/25/2016 20:03:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574215-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19549**	**4.9683**	**.19699**	**.95431**	**.52192**	**.02489**	**83.384**	**.02448**
Stddev	.00145	.0012	.00037	.00069	.00335	.00004	.351	.00015
%RSD	.74419	.02324	.18968	.07193	.64144	.17436	.42141	.59448
#1	.19431	4.9671	.19669	.95367	.51889	.02485	83.062	.02455
#2	.19712	4.9693	.19740	.95504	.52551	.02494	83.759	.02458
#3	.19505	4.9687	.19686	.95422	.52137	.02490	83.330	.02431
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09612**	**.24445**	**.24901**	**2.0095**	**25.021**	**.52274**	**26.551**	**.36466**
Stddev	.00060	.00204	.00132	.0079	.209	.00262	.211	.00375
%RSD	.62715	.83504	.52860	.39401	.83514	.50106	.79467	1.0287
#1	.09620	.24322	.24870	2.0100	24.845	.52124	26.458	.36188
#2	.09668	.24681	.25046	2.0172	25.252	.52577	26.792	.36317
#3	.09548	.24332	.24788	2.0014	24.965	.52123	26.403	.36893
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50539**	**35.868**	**.24056**	**4.8300**	**.24330**	**.58213**	**.19141**	**5.6770**
Stddev	.00256	.121	.00174	.0165	.00225	.00117	.00102	.0113
%RSD	.50685	.33731	.72421	.34266	.92572	.20086	.53487	.19978
#1	.50625	35.730	.24173	4.8368	.24292	.58281	.19254	5.6837
#2	.50742	35.956	.24138	4.8421	.24572	.58078	.19056	5.6833
#3	.50251	35.919	.23856	4.8112	.24127	.58280	.19112	5.6639
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098607PS Acquired: 6/25/2016 20:03:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574215-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48483**	**1.2623**	**.48068**	**.24615**	**.50488**	**.48944**	**.00427**
Stddev	.00147	.0060	.00508	.00275	.00238	.00115	.00064
%RSD	.30392	.47569	1.0573	1.1154	.47121	.23489	15.068
#1	.48451	1.2555	.47807	.24920	.50216	.48999	.00389
#2	.48644	1.2668	.48654	.24388	.50587	.49021	.00501
#3	.48354	1.2646	.47744	.24537	.50660	.48812	.00390
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9610.5**	**58019.**	**3004.1**
Stddev	20.4	180.	8.2
%RSD	.21278	.31055	.27313
#1	9607.7	58202.	3005.9
#2	9591.6	58012.	2995.2
#3	9632.2	57842.	3011.3

Approved: June 27, 2016

Sample Name: L1606098607SDL Acquired: 6/25/2016 20:06:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574215-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	.00334	.00170	.00445	.00847	.00009	17.139	.00008
Stddev	.00049	.00730	.00411	.00207	.00008	.00007	.249	.00023
%RSD	88.649	218.69	241.70	46.624	.94243	75.660	1.4519	290.72
#1	.00089	.00593	.00612	.00219	.00843	.00006	17.426	.00034
#2	-.00001	.00899	-.00200	.00488	.00843	.00004	17.001	-.00003
#3	.00078	-.00490	.00098	.00627	.00857	.00017	16.989	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.00037	.00191	.01894	.32539	.00400	4.9234	.02615
Stddev	.00005	.00023	.00083	.00475	.10069	.00194	.1236	.00303
%RSD	9.1063	60.795	43.755	25.087	30.943	48.604	2.5107	11.568
#1	.00062	.00059	.00284	.02402	.21108	.00176	4.9976	.02622
#2	.00053	.00038	.00165	.01821	.40094	.00496	4.9918	.02914
#3	.00053	.00014	.00123	.01460	.36416	.00527	4.7807	.02309
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	2.5977	.00028	.00852	.00297	.00160	.00156	.72149
Stddev	.00021	.0380	.00123	.00414	.00293	.00068	.00366	.00246
%RSD	66.333	1.4636	438.92	48.637	98.645	42.261	235.25	.34147
#1	.00008	2.6376	-.00081	.01268	-.00028	.00113	-.00104	.72244
#2	.00048	2.5938	.00004	.00439	.00377	.00130	.00574	.71869
#3	.00037	2.5619	.00161	.00849	.00542	.00238	-.00003	.72333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098607SDL Acquired: 6/25/2016 20:06:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574215-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.17255**	**.00033**	**-.00095**	**.00100**	**.00419**	**.00060**
Stddev	.00072	.00063	.00618	.00123	.00055	.00013	.00060
%RSD	1344.6	.36773	1857.8	129.31	55.083	2.9985	99.890
#1	-.00060	.17322	-.00395	-.00224	.00116	.00417	-.00009
#2	.00076	.17246	-.00247	-.00083	.00039	.00432	.00094
#3	-.00032	.17196	.00742	.00021	.00145	.00407	.00094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10100.**	**61152.**	**3087.7**
Stddev	17.	221.	3.3
%RSD	.16887	.36180	.10673
#1	10112.	61407.	3088.4
#2	10080.	61005.	3090.6
#3	10107.	61046.	3084.1

Approved: June 27, 2016

Sample Name: L1606098607SDL Acquired: 6/25/2016 20:10:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574215-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**-.00220**	**-.00032**	**-.00063**	**.00197**	**.00015**	**3.3784**	**-.00009**
Stddev	.00281	.00599	.00141	.00122	.00070	.00004	.0403	.00029
%RSD	1738.4	271.64	438.98	193.96	35.714	23.124	1.1918	310.09
#1	.00289	-.00340	.00101	-.00187	.00220	.00018	3.3321	-.00013
#2	-.00273	.00429	-.00181	-.00058	.00253	.00017	3.3977	-.00037
#3	.00033	-.00751	-.00017	.00056	.00118	.00011	3.4054	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**-.00057**	**.00039**	**.03496**	**.02799**	**.00189**	**.96584**	**.00502**
Stddev	.00041	.00109	.00122	.02559	.02173	.00316	.06365	.00248
%RSD	5673.0	191.57	314.78	73.189	77.636	167.39	6.5899	49.517
#1	.00017	-.00161	.00178	.00957	.03029	.00425	1.0133	.00340
#2	.00028	-.00067	-.00011	.06074	.04847	.00313	.99069	.00377
#3	-.00047	.00057	-.00050	.03458	.00520	-.00171	.89352	.00788
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**.48659**	**-.00001**	**.00389**	**.00194**	**-.00589**	**.00123**	**.14706**
Stddev	.00019	.02107	.00027	.00257	.00032	.00198	.00158	.00411
%RSD	50.403	4.3293	3257.2	66.021	16.675	33.653	128.28	2.7928
#1	-.00035	.50181	-.00003	.00472	.00177	-.00726	-.00048	.14268
#2	-.00056	.46255	.00027	.00101	.00173	-.00680	.00263	.15082
#3	-.00019	.49542	-.00027	.00595	.00231	-.00362	.00154	.14770
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098607SDL Acquired: 6/25/2016 20:10:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574215-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**.03404**	**-.00096**	**.00109**	**.00053**	**.00095**	**-.00050**
Stddev	.00021	.00026	.00497	.00270	.00028	.00007	.00147
%RSD	93.819	.76060	519.10	248.53	53.226	6.9237	292.99
#1	-.00042	.03414	.00415	-.00145	.00059	.00088	.00090
#2	-.00001	.03374	-.00578	.00079	.00078	.00097	-.00204
#3	-.00022	.03423	-.00124	.00392	.00022	.00101	-.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10132.**	**61150.**	**3069.8**
Stddev	20.	142.	13.8
%RSD	.19324	.23287	.44985
#1	10144.	61269.	3085.6
#2	10109.	61188.	3063.7
#3	10143.	60992.	3060.0

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 20:14:26 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39742	10.037	.39212	.48448	.99926	.05007	9.9665
Stddev	.00078	.015	.00234	.00170	.00686	.00012	.0639
%RSD	.19741	.14886	.59686	.35046	.68696	.24571	.64080
#1	.39794	10.020	.39189	.48304	1.0007	.05009	10.032
#2	.39780	10.040	.39457	.48635	.99181	.05018	9.9043
#3	.39651	10.049	.38991	.48406	1.0053	.04994	9.9633
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04995	.19662	.49719	.50408	3.9345	48.425	1.0056
Stddev	.00017	.00028	.00293	.00085	.0512	.336	.0066
%RSD	.33202	.14096	.58868	.16772	1.3013	.69474	.65876
#1	.05012	.19642	.49505	.50367	3.9195	48.601	1.0066
#2	.04993	.19694	.50053	.50505	3.8924	48.037	.99858
#3	.04979	.19651	.49600	.50351	3.9915	48.637	1.0117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.6539	.49874	1.0057	49.161	.50061	9.8144	.49889
Stddev	.1152	.00402	.0014	.263	.00048	.0158	.00214
%RSD	1.1928	.80691	.13850	.53437	.09607	.16108	.42961
#1	9.7007	.49641	1.0053	49.311	.50117	9.7964	.49662
#2	9.5228	.49643	1.0072	48.858	.50038	9.8207	.49919
#3	9.7383	.50339	1.0045	49.316	.50029	9.8261	.50087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 20:14:26 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1787**	**.38972**	**5.0552**	**.98705**	**.99934**	**.99527**	**.50770**
Stddev	.0014	.00525	.0102	.00133	.00573	.00628	.00313
%RSD	.12146	1.3477	.20130	.13498	.57306	.63102	.61635
#1	1.1790	.38370	5.0434	.98688	1.0013	.99951	.50582
#2	1.1772	.39212	5.0610	.98581	.99288	.98805	.50598
#3	1.1800	.39334	5.0611	.98846	1.0038	.99824	.51132
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0147**	**.99253**	F **2.9496**
Stddev	.0017	.00087	.0127
%RSD	.16286	.08813	.43029
#1	1.0131	.99259	2.9390
#2	1.0147	.99336	2.9462
#3	1.0164	.99162	2.9637
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9868.5**	**58806.**	**2964.6**
Stddev	19.7	151.	1.8
%RSD	.19965	.25680	.06126
#1	9885.2	58672.	2966.0
#2	9873.5	58776.	2965.4
#3	9846.8	58969.	2962.6

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 20:18:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00132	-.00340	-.00049	.00031	.00192	.00008	-.02002	-.00008
Stddev	.00216	.00700	.00114	.00069	.00099	.00015	.01568	.00025
%RSD	163.88	205.77	232.07	221.43	51.768	179.89	78.343	317.94
#1	.00112	.00138	-.00179	.00077	.00240	-.00004	-.03265	.00011
#2	.00357	-.00014	-.00002	.00066	.00258	.00004	-.00247	-.00036
#3	-.00074	-.01144	.00034	-.00049	.00078	.00025	-.02493	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	.00038	.00063	.02332	-.07555	-.00123	.02786	-.00147
Stddev	.00036	.00095	.00188	.02448	.09270	.00682	.09570	.00329
%RSD	47.976	247.76	298.28	104.94	122.70	553.52	343.47	223.66
#1	.00080	.00146	-.00061	.04476	-.06611	.00634	-.06528	.00195
#2	.00036	.00002	.00279	-.00335	-.17262	-.00687	.02294	-.00462
#3	.00107	-.00033	-.00029	.02856	.01207	-.00317	.12594	-.00174
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00377	.03770	.00015	.00241	-.00006	.00325	.00675	.03903
Stddev	.00019	.01915	.00084	.00431	.00100	.00269	.00806	.00132
%RSD	5.0202	50.799	576.30	178.78	1573.6	82.788	119.45	3.3700
#1	.00388	.01718	.00046	.00371	.00063	.00040	.01512	.04015
#2	.00389	.04082	.00078	-.00240	-.00121	.00574	.00608	.03936
#3	.00355	.05510	-.00080	.00592	.00039	.00360	-.00096	.03758
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 20:18:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.00027**	**.00088**	**-.00106**	**.00004**	**-.00003**	**.00449**
Stddev	.00046	.00064	.00516	.00225	.00089	.00028	.00124
%RSD	6827.2	239.61	583.41	212.27	2439.5	892.40	27.555
#1	.00053	-.00043	-.00417	-.00308	-.00098	.00021	.00367
#2	-.00031	.00040	.00068	.00137	.00041	.00004	.00389
#3	-.00023	.00082	.00615	-.00147	.00068	-.00034	.00592
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9631.9**	**58363.**	**2969.7**
Stddev	4.5	93.	16.5
%RSD	.04685	.16010	.55454
#1	9627.4	58461.	2965.8
#2	9636.4	58275.	2987.8
#3	9631.8	58353.	2955.6

Approved: June 27, 2016

Sample Name: L1606098609 Acquired: 6/25/2016 20:22:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.68625	.00096	.00637	.02063	.00019	116.68	.00011
Stddev	.00130	.00243	.00203	.00124	.00115	.00006	.34	.00020
%RSD	161.33	.35410	210.74	19.489	5.5807	30.863	.28955	179.93
#1	.00013	.68352	.00323	.00768	.02147	.00021	116.54	.00014
#2	.00231	.68708	-.00070	.00521	.01932	.00023	116.43	-.00010
#3	-.00002	.68816	.00037	.00620	.02109	.00012	117.06	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.00251	.00589	.80058	.71511	.00736	28.613	.02306
Stddev	.00014	.00088	.00100	.02799	.18771	.00368	.079	.00071
%RSD	23.262	34.910	17.057	3.4966	26.250	49.956	.27754	3.0949
#1	.00051	.00150	.00680	.80914	.91494	.01159	28.526	.02382
#2	.00075	.00293	.00481	.76931	.68792	.00556	28.632	.02293
#3	.00052	.00310	.00605	.82330	.54247	.00492	28.681	.02241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	14.713	.00303	.03333	.00106	-.00272	.00365	4.8889
Stddev	.00024	.075	.00054	.00378	.00114	.00271	.00111	.0101
%RSD	32.746	.50774	17.920	11.335	108.20	99.808	30.510	.20564
#1	.00047	14.684	.00299	.03128	.00107	-.00577	.00444	4.8999
#2	.00095	14.656	.00359	.03769	-.00009	-.00056	.00238	4.8868
#3	.00081	14.797	.00251	.03102	.00220	-.00183	.00413	4.8801
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098609 Acquired: 6/25/2016 20:22:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**.51888**	**.00260**	**-.00246**	**.00196**	**.03426**	**.00729**
Stddev	.00032	.00275	.00453	.00099	.00037	.00011	.00028
%RSD	1222.6	.53076	174.15	40.180	18.856	.31556	3.8509
#1	.00009	.51844	-.00256	-.00245	.00220	.03417	.00723
#2	-.00032	.51637	.00591	-.00346	.00153	.03438	.00705
#3	.00031	.52183	.00446	-.00148	.00215	.03423	.00760
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9797.7**	**59515.**	**3093.6**
Stddev	11.0	17.	11.2
%RSD	.11267	.02773	.36079
#1	9791.0	59496.	3083.8
#2	9810.4	59520.	3105.7
#3	9791.6	59528.	3091.1

Approved: June 27, 2016

Sample Name: L1606098611 Acquired: 6/25/2016 20:25:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	.67808	-.00318	.08715	.06918	.00114	148.14	.00017
Stddev	.00037	.00569	.00382	.00198	.00070	.00012	.69	.00021
%RSD	151.84	.83972	120.10	2.2728	1.0151	10.946	.46623	125.05
#1	-.00014	.67215	-.00172	.08491	.06933	.00099	148.49	.00006
#2	.00061	.68350	-.00031	.08867	.06980	.00119	147.34	.00003
#3	.00027	.67861	-.00751	.08788	.06842	.00123	148.59	.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00363	.00334	.07531	1.1555	1.9378	.02263	43.443	.16489
Stddev	.00025	.00064	.00057	.0192	.0114	.00045	.331	.00288
%RSD	6.9167	19.099	.75123	1.6613	.58882	1.9873	.76282	1.7487
#1	.00388	.00297	.07511	1.1584	1.9507	.02262	43.610	.16408
#2	.00338	.00297	.07595	1.1731	1.9292	.02219	43.061	.16250
#3	.00362	.00407	.07487	1.1351	1.9335	.02309	43.657	.16809
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00248	25.675	.00454	.04285	.00455	-.00035	-.00286	3.7826
Stddev	.00024	.125	.00067	.00695	.00113	.00106	.00555	.0053
%RSD	9.7863	.48812	14.843	16.217	24.766	306.62	194.07	.13999
#1	.00260	25.775	.00423	.04366	.00585	.00053	-.00927	3.7791
#2	.00220	25.535	.00409	.03554	.00387	-.00004	.00020	3.7887
#3	.00264	25.716	.00532	.04936	.00394	-.00153	.00049	3.7799
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098611 Acquired: 6/25/2016 20:25:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	2.0876	-.00638	-.00280	.00142	.06566	.00394
Stddev	.00055	.0096	.00925	.00066	.00022	.00017	.00141
%RSD	713.59	.45905	144.86	23.607	15.199	.25178	35.771
#1	-.00017	2.0923	-.00754	-.00222	.00163	.06585	.00254
#2	-.00031	2.0765	-.01500	-.00266	.00143	.06556	.00536
#3	.00071	2.0939	.00339	-.00351	.00120	.06556	.00393
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9695.5	58902.	3054.3
Stddev	10.1	156.	10.7
%RSD	.10398	.26470	.35100
#1	9691.1	59006.	3048.2
#2	9688.3	58978.	3066.6
#3	9707.0	58723.	3048.0

Approved: June 27, 2016

Sample Name: L1606098613 Acquired: 6/25/2016 20:29:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00174	5.5730	.00432	.03801	.11035	.00130	203.09	-.00001
Stddev	.00149	.0359	.00264	.00141	.00031	.00003	.17	.00016
%RSD	85.559	.64338	61.135	3.7127	.27868	2.0129	.08522	1090.1
#1	.00010	5.6007	.00735	.03819	.11034	.00128	203.27	.00012
#2	.00211	5.5858	.00310	.03932	.11006	.00133	203.05	.00003
#3	.00302	5.5325	.00251	.03651	.11067	.00131	202.93	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00373	.00967	.08024	7.4517	4.1196	.03087	79.593	.34313
Stddev	.00008	.00046	.00072	.0194	.0319	.00148	.239	.00219
%RSD	2.0959	4.7129	.90070	.26051	.77317	4.7986	.30050	.63957
#1	.00364	.00917	.07941	7.4293	4.0890	.03222	79.370	.34059
#2	.00377	.01007	.08072	7.4635	4.1171	.03112	79.565	.34436
#3	.00379	.00978	.08059	7.4624	4.1526	.02929	79.846	.34443
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00182	24.658	.00975	.17618	.00825	.00008	.00248	10.141
Stddev	.00040	.019	.00024	.00598	.00295	.00311	.00271	.073
%RSD	21.744	.07518	2.5015	3.3961	35.754	3886.1	109.35	.72041
#1	.00146	24.670	.00990	.17816	.00502	.00353	.00373	10.058
#2	.00175	24.669	.00947	.16946	.00891	-.00250	.00433	10.169
#3	.00224	24.637	.00989	.18093	.01080	-.00079	-.00063	10.196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098613 Acquired: 6/25/2016 20:29:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	2.4743	.05397	-.00080	.01073	.41856	.00624
Stddev	.00027	.0052	.00665	.00236	.00131	.00229	.00115
%RSD	39.960	.21077	12.313	294.11	12.169	.54671	18.419
#1	.00089	2.4751	.05254	-.00353	.01217	.41596	.00756
#2	.00073	2.4791	.04816	.00063	.00962	.42027	.00548
#3	.00037	2.4687	.06122	.00049	.01040	.41945	.00567
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9619.4	58503.	3058.9
Stddev	38.3	135.	15.7
%RSD	.39844	.23102	.51315
#1	9576.0	58658.	3041.4
#2	9633.7	58414.	3071.7
#3	9648.5	58435.	3063.7

Approved: June 27, 2016

Sample Name: L1606098615 Acquired: 6/25/2016 20:33:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00201	.53689	.00109	.12769	.02932	.00091	261.33	.00014
Stddev	.00048	.01300	.00276	.00142	.00104	.00011	1.37	.00008
%RSD	23.740	2.4215	252.93	1.1120	3.5600	12.063	.52322	55.108
#1	.00148	.54532	.00299	.12707	.02978	.00081	261.04	.00021
#2	.00215	.54344	.00237	.12931	.03005	.00088	262.83	.00006
#3	.00240	.52192	-.00208	.12669	.02812	.00103	260.14	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	.00167	.04808	1.7755	3.9837	.04482	96.121	.35461
Stddev	.00009	.00172	.00105	.0329	.0639	.00305	.330	.00305
%RSD	12.352	103.13	2.1885	1.8532	1.6044	6.8091	.34352	.86008
#1	.00068	.00125	.04714	1.8121	3.9806	.04242	96.172	.35269
#2	.00071	.00356	.04922	1.7483	4.0491	.04379	96.422	.35813
#3	.00085	.00020	.04788	1.7662	3.9214	.04825	95.768	.35302
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	71.586	.00152	.06528	.00543	-.00023	-.00042	6.3830
Stddev	.00049	.359	.00083	.00282	.00224	.00292	.00309	.0073
%RSD	60.493	.50193	55.060	4.3183	41.272	1275.7	729.65	.11354
#1	.00036	71.588	.00097	.06827	.00795	-.00316	.00167	6.3913
#2	.00132	71.945	.00248	.06488	.00468	-.00019	.00103	6.3782
#3	.00072	71.227	.00110	.06267	.00366	.00267	-.00398	6.3795
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098615 Acquired: 6/25/2016 20:33:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	6.9477	-.01868	-.00208	-.00036	.07416	.00363
Stddev	.00094	.0407	.00365	.00070	.00044	.00028	.00062
%RSD	142.12	.58617	19.553	33.577	122.09	.37861	17.066
#1	.00171	6.9428	-.02024	-.00215	-.00034	.07441	.00412
#2	.00039	6.9907	-.01451	-.00134	-.00081	.07386	.00293
#3	-.00011	6.9097	-.02130	-.00273	.00007	.07420	.00382
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9482.1	57521.	3041.1
Stddev	15.4	119.	13.0
%RSD	.16231	.20772	.42869
#1	9472.3	57649.	3053.5
#2	9499.8	57500.	3027.5
#3	9474.1	57412.	3042.2

Approved: June 27, 2016

Sample Name: L1606098617 Acquired: 6/25/2016 20:37:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00154	.20547	.00214	.04863	.05628	.00015	62.798	.00005
Stddev	.00260	.00707	.00399	.00222	.00076	.00003	.506	.00026
%RSD	168.84	3.4433	186.39	4.5608	1.3548	21.842	.80652	579.39
#1	.00162	.19836	-.00117	.04752	.05710	.00015	63.380	-.00016
#2	.00410	.20553	.00657	.05118	.05613	.00018	62.459	.00034
#3	-.00110	.21251	.00102	.04718	.05560	.00012	62.555	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.00139	.00754	.49751	2.0420	.02056	20.601	.01571
Stddev	.00024	.00096	.00096	.02565	.1117	.00244	.034	.00089
%RSD	70.093	68.878	12.744	5.1552	5.4689	11.879	.16418	5.6341
#1	.00059	.00246	.00739	.47113	2.0254	.02185	20.628	.01672
#2	.00012	.00112	.00857	.52236	1.9395	.01774	20.613	.01507
#3	.00031	.00060	.00666	.49904	2.1610	.02209	20.563	.01535
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00090	26.598	.00080	.00703	.00246	-.00325	.00131	3.4906
Stddev	.00064	.178	.00058	.00500	.00246	.00605	.00554	.0173
%RSD	70.655	.66988	72.589	71.163	99.983	186.20	421.53	.49585
#1	.00155	26.804	.00039	.00280	.00327	-.00237	-.00267	3.5042
#2	.00088	26.495	.00146	.00574	-.00030	-.00969	.00764	3.4966
#3	.00027	26.495	.00054	.01256	.00441	.00231	-.00103	3.4711
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098617 Acquired: 6/25/2016 20:37:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	1.5150	-.00311	-.00236	-.00015	.01447	.00341
Stddev	.00072	.0088	.00641	.00068	.00005	.00011	.00060
%RSD	226.25	.58268	206.23	28.717	34.447	.73139	17.615
#1	.00066	1.5251	-.00263	-.00291	-.00009	.01435	.00287
#2	.00080	1.5088	.00305	-.00160	-.00015	.01454	.00406
#3	-.00051	1.5111	-.00975	-.00256	-.00020	.01452	.00331
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9830.7	59822.	3082.9
Stddev	15.5	147.	23.6
%RSD	.15717	.24641	.76693
#1	9813.6	59963.	3057.5
#2	9843.5	59835.	3104.4
#3	9835.1	59669.	3086.7

Approved: June 27, 2016

Sample Name: L1606098619 Acquired: 6/25/2016 20:41:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00113	.27749	.00069	.06930	.05323	.00039	10.214	.00034
Stddev	.00263	.00318	.00178	.00081	.00134	.00007	.065	.00038
%RSD	232.09	1.1459	258.13	1.1649	2.5186	17.965	.63738	111.28
#1	.00355	.27762	.00105	.06852	.05477	.00042	10.240	.00066
#2	-.00167	.28061	.00227	.06924	.05251	.00044	10.140	.00044
#3	.00153	.27425	-.00125	.07014	.05240	.00031	10.262	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00108	.00071	.02585	.24748	1.2811	.01465	4.6162	.00999
Stddev	.00051	.00114	.00067	.00474	.0573	.00378	.0318	.00359
%RSD	46.988	159.40	2.5887	1.9167	4.4759	25.817	.68816	35.904
#1	.00062	.00202	.02645	.25048	1.2371	.01153	4.5886	.01278
#2	.00162	-.00003	.02513	.24201	1.3460	.01356	4.6509	.01123
#3	.00099	.00015	.02599	.24994	1.2604	.01885	4.6090	.00594
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00123	228.52	.00044	.07963	.00371	-.00207	.00619	2.5103
Stddev	.00028	1.82	.00063	.00808	.00266	.00077	.00393	.0173
%RSD	22.669	.79720	141.35	10.151	71.562	37.379	63.490	.68709
#1	.00153	229.52	.00003	.07034	.00201	-.00126	.00175	2.5018
#2	.00118	226.42	.00013	.08504	.00235	-.00280	.00758	2.4989
#3	.00097	229.62	.00117	.08351	.00677	-.00216	.00924	2.5301
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098619 Acquired: 6/25/2016 20:41:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.22967	.00683	-.00264	.00219	.02256	.00408
Stddev	.00091	.00074	.00628	.00047	.00030	.00021	.00266
%RSD	1371.8	.32350	91.943	17.727	13.766	.92425	65.101
#1	-.00024	.23041	.00516	-.00255	.00222	.02259	.00112
#2	-.00065	.22892	.00155	-.00314	.00188	.02235	.00625
#3	.00109	.22967	.01377	-.00222	.00248	.02276	.00487
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9702.8	58480.	3067.3
Stddev	45.7	28.	15.6
%RSD	.47062	.04775	.50880
#1	9725.9	58510.	3053.5
#2	9732.4	58474.	3084.2
#3	9650.3	58455.	3064.3

Approved: June 27, 2016

Sample Name: L1606098621 Acquired: 6/25/2016 20:45:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	.00121	.00179	.05746	.02986	.00029	128.59	-.00000
Stddev	.00056	.00275	.00384	.00358	.00132	.00008	.53	.00025
%RSD	97.573	226.34	214.60	6.2318	4.4201	27.216	.41011	6271.6
#1	.00040	-.00100	.00602	.06157	.03100	.00034	129.12	-.00029
#2	.00120	.00036	-.00148	.05576	.03017	.00020	128.07	.00019
#3	.00012	.00429	.00083	.05504	.02841	.00032	128.57	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.00173	.01434	.05981	2.5098	.02550	33.269	.15420
Stddev	.00017	.00097	.00185	.00891	.0950	.00146	.060	.00170
%RSD	92.832	55.806	12.905	14.892	3.7837	5.7272	.18077	1.1012
#1	.00010	.00269	.01260	.05052	2.5555	.02390	33.334	.15465
#2	.00007	.00177	.01629	.06064	2.4007	.02586	33.216	.15563
#3	.00038	.00075	.01412	.06828	2.5733	.02675	33.257	.15232
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	47.893	-.00000	.01004	.00162	-.00276	-.00417	3.5790
Stddev	.00060	.257	.00189	.00801	.00056	.00235	.00172	.0047
%RSD	106.13	.53712	269880.	79.763	34.469	85.173	41.117	.13102
#1	.00071	48.149	.00182	.00080	.00218	-.00406	-.00514	3.5827
#2	-.00009	47.634	.00013	.01426	.00163	-.00417	-.00519	3.5737
#3	.00107	47.897	-.00195	.01505	.00106	-.00005	-.00219	3.5806
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098621 Acquired: 6/25/2016 20:45:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**1.8050**	**-.02231**	**-.00291**	**.00001**	**.01004**	**.00207**
Stddev	.00095	.0120	.00564	.00294	.00125	.00002	.00101
%RSD	393.73	.66689	25.288	100.88	21161.	.16952	48.549
#1	.00057	1.8173	-.02371	-.00622	-.00119	.01005	.00218
#2	-.00128	1.7932	-.02711	-.00189	.00130	.01004	.00102
#3	-.00001	1.8046	-.01610	-.00062	-.00009	.01002	.00302
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9662.5**	**58180.**	**3042.4**
Stddev	14.0	47.	7.3
%RSD	.14521	.08141	.24078
#1	9658.0	58146.	3035.1
#2	9678.2	58161.	3042.4
#3	9651.2	58234.	3049.8

Approved: June 27, 2016

Sample Name: L1606098623 Acquired: 6/25/2016 20:49:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00139	.10705	.00198	.41392	.02623	.00027	243.17	.00017
Stddev	.00218	.00541	.00096	.00428	.00052	.00003	1.41	.00011
%RSD	157.63	5.0515	48.506	1.0332	1.9773	12.148	.58072	65.505
#1	.00177	.11044	.00295	.41225	.02682	.00026	243.56	.00005
#2	.00336	.10081	.00102	.41878	.02603	.00030	244.34	.00020
#3	-.00096	.10989	.00198	.41074	.02584	.00024	241.60	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.00125	.02256	.13395	6.1008	.01177	68.965	.45308
Stddev	.00021	.00090	.00053	.00942	.0335	.00473	.254	.00553
%RSD	267.67	72.031	2.3661	7.0298	.54942	40.196	.36871	1.2196
#1	-.00012	.00056	.02318	.12309	6.1028	.01598	68.820	.44996
#2	.00031	.00093	.02221	.13890	6.0663	.00665	69.259	.45946
#3	.00005	.00227	.02231	.13986	6.1333	.01267	68.816	.44983
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00044	66.667	.00075	.01360	.00015	-.00234	.00238	3.6345
Stddev	.00039	.343	.00118	.00476	.00283	.00395	.00376	.0082
%RSD	88.357	.51401	157.96	35.012	1938.3	168.93	158.02	.22548
#1	.00001	66.765	.00108	.01427	-.00296	-.00415	.00669	3.6345
#2	.00056	66.950	-.00056	.00853	.00082	.00219	.00057	3.6426
#3	.00076	66.286	.00172	.01798	.00259	-.00506	-.00014	3.6263
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098623 Acquired: 6/25/2016 20:49:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	1.6999	-.02956	-.00156	.00030	.00857	.00329
Stddev	.00028	.0081	.00507	.00230	.00048	.00011	.00135
%RSD	598.12	.47536	17.163	147.79	160.42	1.3327	41.067
#1	.00005	1.7017	-.03255	.00072	-.00015	.00844	.00173
#2	.00033	1.7069	-.02370	-.00388	.00023	.00859	.00400
#3	-.00023	1.6911	-.03242	-.00151	.00081	.00866	.00415
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9416.4	57429.	3035.8
Stddev	48.0	130.	25.1
%RSD	.51009	.22575	.82551
#1	9467.2	57482.	3016.2
#2	9410.3	57282.	3027.1
#3	9371.8	57525.	3064.1

Approved: June 27, 2016

Sample Name: L1606098625 Acquired: 6/25/2016 20:52:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00225	2.3612	.00034	.04147	.11975	.00023	121.59	.00037
Stddev	.00036	.0069	.00441	.00209	.00117	.00012	.33	.00010
%RSD	15.843	.29306	1297.6	5.0487	.97876	50.808	.26806	27.630
#1	.00211	2.3674	.00539	.03961	.11950	.00036	121.76	.00028
#2	.00199	2.3537	-.00273	.04106	.11872	.00014	121.21	.00033
#3	.00266	2.3625	-.00164	.04374	.12102	.00019	121.79	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00161	.00414	.00666	2.3953	2.5999	.01491	37.526	1.0679
Stddev	.00025	.00072	.00102	.0202	.0477	.00333	.332	.0124
%RSD	15.696	17.478	15.382	.84513	1.8346	22.308	.88561	1.1598
#1	.00188	.00385	.00549	2.3789	2.6109	.01808	37.493	1.0637
#2	.00138	.00496	.00714	2.4179	2.5476	.01145	37.212	1.0581
#3	.00156	.00361	.00736	2.3890	2.6411	.01519	37.874	1.0818
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	18.226	.00269	.05391	.00651	-.00190	.00505	5.9129
Stddev	.00020	.052	.00077	.00146	.00208	.00291	.00127	.0400
%RSD	30.881	.28797	28.786	2.7065	31.918	152.94	25.077	.67624
#1	.00067	18.245	.00228	.05412	.00658	-.00209	.00366	5.9121
#2	.00082	18.167	.00221	.05526	.00440	.00110	.00533	5.9533
#3	.00043	18.267	.00358	.05236	.00855	-.00472	.00614	5.8733
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098625 Acquired: 6/25/2016 20:52:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00035**	**.99462**	**.03044**	**-.00185**	**.00457**	**.15726**	**.00437**
Stddev	.00053	.00442	.00913	.00019	.00047	.00042	.00072
%RSD	150.91	.44485	29.990	10.187	10.282	.27017	16.565
#1	.00010	.99601	.03923	-.00207	.00503	.15763	.00393
#2	-.00093	.98967	.02100	-.00171	.00410	.15735	.00520
#3	-.00022	.99819	.03111	-.00178	.00457	.15680	.00397
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9574.3**	**58285.**	**3022.7**
Stddev	18.0	80.	21.3
%RSD	.18820	.13801	.70548
#1	9553.8	58363.	3008.3
#2	9581.8	58202.	3047.2
#3	9587.4	58291.	3012.6

Approved: June 27, 2016

Sample Name: L1606098627 Acquired: 6/25/2016 20:56:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00254	4.6384	.00407	.03588	.08487	.00132	200.73	.00005
Stddev	.00192	.0173	.00097	.00149	.00032	.00011	.32	.00023
%RSD	75.499	.37394	23.741	4.1641	.37451	8.4866	.15998	422.09
#1	.00186	4.6215	.00464	.03631	.08521	.00120	200.37	.00006
#2	.00106	4.6377	.00461	.03711	.08483	.00141	200.85	-.00018
#3	.00471	4.6561	.00295	.03422	.08457	.00136	200.98	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00295	.00847	.07661	6.3761	4.0467	.02688	78.393	.28594
Stddev	.00029	.00096	.00098	.0153	.0946	.00177	.290	.00214
%RSD	9.9470	11.337	1.2842	.24023	2.3374	6.5906	.37011	.74836
#1	.00263	.00958	.07761	6.3586	3.9534	.02860	78.140	.28832
#2	.00299	.00791	.07658	6.3825	4.0443	.02506	78.709	.28419
#3	.00322	.00791	.07564	6.3872	4.1425	.02698	78.329	.28530
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00106	25.068	.00713	.15173	.00678	-.00194	.00054	8.9965
Stddev	.00058	.104	.00038	.00131	.00344	.00137	.00531	.0286
%RSD	55.068	.41293	5.2660	.86550	50.818	70.752	976.81	.31838
#1	.00130	24.949	.00680	.15078	.01021	-.00340	-.00348	9.0111
#2	.00040	25.140	.00754	.15323	.00679	-.00068	-.00144	9.0150
#3	.00149	25.114	.00704	.15117	.00333	-.00174	.00656	8.9635
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098627 Acquired: 6/25/2016 20:56:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	2.4772	.04490	-.00127	.00901	.16031	.00422
Stddev	.00154	.0067	.00796	.00182	.00061	.00117	.00055
%RSD	173.10	.26965	17.717	142.95	6.7328	.72957	12.944
#1	.00142	2.4695	.04447	-.00241	.00911	.16067	.00359
#2	.00210	2.4809	.03717	.00082	.00836	.16126	.00459
#3	-.00085	2.4812	.05306	-.00223	.00956	.15900	.00448
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9465.6	57841.	2995.1
Stddev	68.7	160.	17.6
%RSD	.72586	.27642	.58883
#1	9445.1	57701.	3013.7
#2	9409.5	58015.	2978.6
#3	9542.2	57807.	2993.1

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 21:00:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40235**	**10.185**	**.39842**	**.49195**	**1.0203**	**.05034**	**10.153**
Stddev	.00325	.028	.00193	.00194	.0055	.00031	.030
%RSD	.80675	.27855	.48505	.39452	.53912	.62290	.29151
#1	.39985	10.214	.39899	.49235	1.0140	.05068	10.126
#2	.40602	10.183	.40000	.49365	1.0227	.05026	10.185
#3	.40118	10.157	.39627	.48984	1.0242	.05007	10.150
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05123**	**.19988**	**.50288**	**.51330**	**4.0070**	**49.596**	**1.0284**
Stddev	.00026	.00047	.00335	.00193	.0033	.230	.0041
%RSD	.51360	.23712	.66679	.37527	.08271	.46359	.40302
#1	.05102	.20030	.50672	.51551	4.0072	49.649	1.0258
#2	.05153	.19997	.50051	.51234	4.0102	49.344	1.0261
#3	.05115	.19937	.50141	.51204	4.0036	49.795	1.0332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.5669**	**.50781**	**1.0249**	**50.362**	**.50842**	**9.9814**	**.50557**
Stddev	.0485	.00742	.0065	.234	.00100	.0181	.00207
%RSD	.50657	1.4609	.62973	.46520	.19680	.18135	.40980
#1	9.6226	.50131	1.0311	50.266	.50877	9.9736	.50596
#2	9.5340	.50622	1.0255	50.191	.50920	10.002	.50742
#3	9.5442	.51589	1.0183	50.629	.50729	9.9685	.50333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 21:00:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2045**	**.39202**	**5.1444**	**1.0010**	**1.0190**	**1.0190**	**.51206**
Stddev	.0033	.00153	.0072	.0031	.0045	.0084	.00251
%RSD	.27464	.38961	.14055	.30711	.44063	.82168	.49020
#1	1.2010	.39059	5.1361	1.0039	1.0167	1.0152	.51490
#2	1.2047	.39363	5.1492	1.0015	1.0162	1.0132	.51015
#3	1.2076	.39184	5.1479	.99778	1.0242	1.0286	.51112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0223**	**1.0141**	F **2.9929**
Stddev	.0031	.0001	.0241
%RSD	.30006	.01208	.80650
#1	1.0229	1.0141	3.0133
#2	1.0190	1.0142	2.9663
#3	1.0251	1.0139	2.9992
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9649.2**	**58649.**	**2955.6**
Stddev	2.7	54.	16.9
%RSD	.02842	.09258	.57071
#1	9646.1	58667.	2944.4
#2	9650.3	58588.	2975.0
#3	9651.2	58692.	2947.5

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 21:04:14 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00098**	**-.00081**	**.00091**	**.00315**	**.00292**	**.00009**	**-.03474**	**.00002**
Stddev	.00124	.00864	.00092	.00201	.00133	.00005	.02919	.00008
%RSD	125.96	1064.0	100.48	64.019	45.548	52.705	84.022	417.72
#1	.00043	-.00670	.00067	.00330	.00336	.00005	-.02620	.00002
#2	-.00151	.00910	.00014	.00508	.00142	.00009	-.01077	-.00006
#3	-.00188	-.00483	.00193	.00106	.00397	.00014	-.06724	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.00125**	**.00083**	**.02088**	**-.14334**	**.00212**	**-.02955**	**.00114**
Stddev	.00066	.00051	.00122	.01391	.04593	.00105	.09306	.00075
%RSD	1530.9	41.168	147.43	66.595	32.046	49.608	314.87	66.235
#1	.00067	.00069	.00144	.03293	-.09030	.00098	-.05631	.00047
#2	-.00016	.00170	-.00058	.02406	-.17011	.00232	-.10630	.00196
#3	-.00064	.00135	.00162	.00566	-.16960	.00305	.07395	.00100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00323**	**.05080**	**-.00020**	**.00483**	**.00058**	**.00191**	**.00111**	**.03921**
Stddev	.00021	.02575	.00089	.00353	.00235	.00387	.00242	.00153
%RSD	6.4882	50.676	441.28	73.104	406.34	202.21	216.78	3.9059
#1	.00300	.07783	.00045	.00259	-.00201	.00626	-.00135	.03746
#2	.00339	.02657	-.00122	.00300	.00257	.00062	.00121	.03991
#3	.00331	.04802	.00016	.00889	.00117	-.00114	.00348	.04027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 21:04:14 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.00029	-.00007	-.00513	.00041	-.00001	.00470
Stddev	.00027	.00000	.00626	.00369	.00015	.00012	.00055
%RSD	55.343	1.4693	8856.4	71.949	37.134	916.05	11.589
#1	.00081	.00028	.00338	-.00666	.00031	.00010	.00427
#2	.00033	.00029	-.00730	-.00092	.00059	.00000	.00453
#3	.00034	.00028	.00370	-.00780	.00035	-.00014	.00531
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9506.6	58497.	2929.7
Stddev	22.3	113.	12.0
%RSD	.23433	.19372	.40841
#1	9532.3	58628.	2919.5
#2	9494.8	58435.	2926.6
#3	9492.6	58429.	2942.8

Approved: June 27, 2016

Sample Name: L1606098629 Acquired: 6/25/2016 21:08:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00070	1.3154	-.00179	.12516	.05800	.00081	247.18	.00018
Stddev	.00097	.0064	.00105	.00195	.00108	.00003	.31	.00008
%RSD	137.44	.48564	58.530	1.5550	1.8687	3.6829	.12350	43.911
#1	.00160	1.3100	-.00292	.12302	.05810	.00083	246.92	.00018
#2	.00082	1.3224	-.00085	.12682	.05904	.00078	247.52	.00010
#3	-.00032	1.3138	-.00160	.12563	.05687	.00083	247.09	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00119	.00401	.04528	2.4364	3.9714	.04409	89.669	.34274
Stddev	.00048	.00063	.00072	.0178	.1152	.00255	.458	.00095
%RSD	40.012	15.569	1.5917	.73079	2.9014	5.7752	.51098	.27642
#1	.00152	.00449	.04490	2.4275	3.9851	.04702	90.007	.34368
#2	.00141	.00424	.04612	2.4569	4.0792	.04281	89.852	.34276
#3	.00065	.00331	.04484	2.4248	3.8500	.04243	89.147	.34178
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00084	72.159	.00306	.12842	.00472	-.00245	-.00232	7.1068
Stddev	.00019	.103	.00116	.00307	.00202	.00283	.00582	.0122
%RSD	22.591	.14315	38.091	2.3898	42.715	115.64	250.20	.17182
#1	.00062	72.124	.00297	.12975	.00386	-.00541	-.00257	7.1178
#2	.00090	72.275	.00194	.13059	.00327	-.00216	-.00801	7.1089
#3	.00099	72.077	.00426	.12491	.00702	.00023	.00361	7.0937
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098629 Acquired: 6/25/2016 21:08:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00063**	**6.8039**	**.00261**	**-.00311**	**.00203**	**.14656**	**.00713**
Stddev	.00109	.0140	.00201	.00153	.00039	.00030	.00139
%RSD	174.70	.20570	77.238	49.135	18.962	.20399	19.505
#1	.00026	6.7979	.00196	-.00298	.00228	.14634	.00715
#2	-.00024	6.8199	.00487	-.00165	.00159	.14690	.00573
#3	.00185	6.7939	.00100	-.00469	.00223	.14643	.00851
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9470.9**	**57988.**	**3007.5**
Stddev	19.0	71.	5.1
%RSD	.20079	.12320	.16890
#1	9472.3	57910.	3001.8
#2	9451.2	58005.	3011.5
#3	9489.2	58049.	3009.1

Approved: June 27, 2016

Sample Name: L1606098631S Acquired: 6/25/2016 21:12:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.18827	4.8059	.19457	.97775	.51082	.02368	136.28	.02401
Stddev	.00146	.0060	.00214	.00486	.00158	.00008	.55	.00011
%RSD	.77669	.12402	1.0980	.49690	.30853	.31910	.40245	.44044
#1	.18949	4.8104	.19700	.98276	.50954	.02372	135.66	.02402
#2	.18665	4.7991	.19298	.97305	.51258	.02359	136.67	.02389
#3	.18867	4.8083	.19374	.97744	.51033	.02373	136.53	.02410
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09298	.23341	.25035	1.9823	26.282	.52091	38.371	.48555
Stddev	.00063	.00083	.00168	.0210	.198	.00132	.105	.00060
%RSD	.67753	.35580	.67127	1.0601	.75241	.25420	.27268	.12393
#1	.09358	.23411	.25193	1.9586	26.065	.52066	38.253	.48489
#2	.09232	.23249	.25054	1.9895	26.453	.52234	38.408	.48570
#3	.09303	.23364	.24858	1.9987	26.329	.51972	38.452	.48607
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49539	77.049	.23394	4.7766	.23491	.57914	.18644	6.1257
Stddev	.00233	.345	.00087	.0076	.00312	.00333	.00623	.0072
%RSD	.47123	.44745	.37273	.15954	1.3288	.57493	3.3395	.11822
#1	.49753	76.664	.23461	4.7848	.23800	.57665	.18760	6.1339
#2	.49574	77.327	.23426	4.7754	.23176	.57786	.17971	6.1201
#3	.49290	77.158	.23296	4.7697	.23495	.58292	.19200	6.1230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098631S Acquired: 6/25/2016 21:12:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47308**	**2.3488**	**.46537**	**.23713**	**.48550**	**.47406**	**.01603**
Stddev	.00180	.0057	.00826	.00130	.00209	.00072	.00324
%RSD	.38025	.24432	1.7741	.54866	.42967	.15151	20.234
#1	.47478	2.3426	.46034	.23744	.48500	.47482	.01233
#2	.47325	2.3539	.46086	.23825	.48371	.47397	.01737
#3	.47120	2.3498	.47490	.23571	.48779	.47340	.01839
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9509.0**	**58216.**	**3011.6**
Stddev	7.0	203.	15.7
%RSD	.07407	.34863	.52135
#1	9501.0	58067.	3028.6
#2	9511.6	58447.	2997.6
#3	9514.3	58134.	3008.7

Approved: June 27, 2016

Sample Name: L1606098633SD Acquired: 6/25/2016 21:15:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19322**	**4.9340**	**.19821**	**1.0094**	**.52302**	**.02438**	**139.13**	**.02459**
Stddev	.00378	.0145	.00351	.0014	.00226	.00009	.67	.00034
%RSD	1.9571	.29336	1.7708	.13572	.43296	.36107	.48341	1.3705
#1	.18918	4.9313	.20201	1.0102	.52283	.02442	139.33	.02427
#2	.19667	4.9211	.19752	1.0078	.52537	.02443	139.68	.02494
#3	.19382	4.9497	.19509	1.0102	.52086	.02428	138.38	.02455
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09514**	**.23910**	**.25336**	**2.0284**	**26.984**	**.53592**	**39.198**	**.43704**
Stddev	.00042	.00077	.00150	.0114	.096	.00060	.184	.00451
%RSD	.44105	.32091	.59054	.56072	.35526	.11184	.46916	1.0308
#1	.09541	.23859	.25475	2.0343	27.015	.53581	38.996	.43232
#2	.09535	.23873	.25356	2.0357	27.059	.53539	39.242	.44129
#3	.09465	.23999	.25178	2.0153	26.876	.53657	39.356	.43751
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50931**	**78.441**	**.23759**	**4.8949**	**.24046**	**.58794**	**.19015**	**6.2655**
Stddev	.00186	.336	.00142	.0178	.00324	.00596	.00110	.0092
%RSD	.36520	.42898	.59954	.36432	1.3470	1.0133	.57938	.14668
#1	.51115	78.549	.23885	4.9125	.24157	.58732	.19136	6.2719
#2	.50933	78.710	.23604	4.8953	.23682	.59419	.18990	6.2695
#3	.50743	78.063	.23787	4.8768	.24301	.58232	.18920	6.2549
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098633SD Acquired: 6/25/2016 21:15:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48269**	**2.3976**	**.47749**	**.23961**	**.50144**	**.48370**	**.00655**
Stddev	.00278	.0083	.00742	.00256	.00242	.00154	.00139
%RSD	.57608	.34786	1.5549	1.0679	.48318	.31822	21.270
#1	.48505	2.3997	.47422	.24207	.50191	.48531	.00572
#2	.48340	2.4047	.47226	.23981	.49882	.48355	.00816
#3	.47963	2.3884	.48599	.23696	.50360	.48224	.00577
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9541.3**	**57975.**	**3017.9**
Stddev	6.7	58.	25.7
%RSD	.06977	.09979	.85022
#1	9537.4	57946.	3002.1
#2	9549.0	58042.	3004.1
#3	9537.6	57938.	3047.5

Approved: June 27, 2016

Sample Name: L1606098635S Acquired: 6/25/2016 21:19:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19277**	**4.9885**	**.19579**	**1.3512**	**.50932**	**.02402**	**246.59**	**.02462**
Stddev	.00213	.0073	.00137	.0073	.00284	.00001	1.33	.00040
%RSD	1.1047	.14711	.70076	.54069	.55753	.03190	.53842	1.6295
#1	.19260	4.9802	.19687	1.3428	.50650	.02402	245.12	.02488
#2	.19498	4.9915	.19425	1.3565	.50929	.02401	246.97	.02416
#3	.19074	4.9939	.19626	1.3542	.51218	.02403	247.69	.02483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09311**	**.23510**	**.26651**	**1.9710**	**30.025**	**.51865**	**72.396**	**.67936**
Stddev	.00111	.00066	.00283	.0124	.152	.00282	.624	.00361
%RSD	1.1973	.28134	1.0623	.63080	.50639	.54413	.86161	.53080
#1	.09375	.23474	.26754	1.9611	29.892	.51908	71.843	.67568
#2	.09182	.23470	.26331	1.9669	29.993	.51564	72.272	.67951
#3	.09375	.23586	.26869	1.9849	30.191	.52123	73.072	.68289
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49951**	**91.017**	**.23206**	**4.8553**	**.23760**	**.58301**	**.18517**	**6.5213**
Stddev	.00475	.491	.00241	.0437	.00246	.00711	.00329	.0728
%RSD	.95179	.53976	1.0367	.89938	1.0354	1.2190	1.7758	1.1160
#1	.50253	90.509	.23402	4.8765	.23815	.58650	.18639	6.5577
#2	.49403	91.051	.22938	4.8051	.23491	.57483	.18144	6.4375
#3	.50197	91.490	.23278	4.8843	.23974	.58769	.18767	6.5687
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098635S Acquired: 6/25/2016 21:19:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47340**	**2.1822**	**.45682**	**.23569**	**.48957**	**.47212**	**.00440**
Stddev	.00586	.0116	.00441	.00472	.00317	.00386	.00078
%RSD	1.2388	.53009	.96525	2.0030	.64754	.81664	17.679
#1	.47626	2.1692	.45177	.23827	.48595	.47646	.00457
#2	.46666	2.1856	.45986	.23024	.49090	.46909	.00508
#3	.47729	2.1916	.45885	.23856	.49186	.47080	.00355
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9474.0**	**57681.**	**2990.6**
Stddev	86.2	193.	10.0
%RSD	.90991	.33483	.33371
#1	9421.7	57902.	3000.6
#2	9573.5	57545.	2990.5
#3	9426.8	57595.	2980.6

Approved: June 27, 2016

Sample Name: L1606098637SD Acquired: 6/25/2016 21:22:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18854**	**4.9112**	**.19745**	**1.3462**	**.50578**	**.02318**	**246.84**	**.02457**
Stddev	.00237	.0122	.00114	.0020	.00229	.00008	1.01	.00037
%RSD	1.2581	.24857	.57516	.14562	.45291	.33396	.40736	1.5133
#1	.18824	4.9085	.19618	1.3456	.50836	.02311	247.86	.02498
#2	.18633	4.9245	.19780	1.3447	.50496	.02326	245.85	.02445
#3	.19105	4.9006	.19837	1.3484	.50401	.02315	246.80	.02427
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09368**	**.23124**	**.24645**	**1.9652**	**29.866**	**.51243**	**71.961**	**.67062**
Stddev	.00032	.00174	.00162	.0103	.162	.00260	.245	.00120
%RSD	.34157	.75435	.65887	.52496	.54204	.50740	.33982	.17871
#1	.09405	.23044	.24793	1.9540	30.010	.51110	72.114	.67080
#2	.09349	.23325	.24471	1.9744	29.691	.51543	71.679	.66935
#3	.09350	.23005	.24671	1.9671	29.897	.51077	72.089	.67172
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50362**	**90.574**	**.23429**	**4.8998**	**.23803**	**.58838**	**.19013**	**6.6122**
Stddev	.00184	.311	.00137	.0310	.00392	.00166	.00571	.0196
%RSD	.36548	.34377	.58644	.63360	1.6481	.28131	3.0018	.29638
#1	.50535	90.891	.23522	4.9314	.24008	.58995	.18521	6.6237
#2	.50169	90.269	.23272	4.8693	.24051	.58666	.19639	6.5896
#3	.50382	90.562	.23494	4.8987	.23351	.58854	.18878	6.6233
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098637SD Acquired: 6/25/2016 21:22:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47518**	**2.1930**	**.45556**	**.23535**	**.47970**	**.47047**	**.00421**
Stddev	.00224	.0050	.00619	.00164	.00083	.00231	.00126
%RSD	.47229	.22774	1.3595	.69822	.17220	.49043	29.868
#1	.47661	2.1987	.46015	.23423	.48048	.47206	.00301
#2	.47259	2.1891	.45801	.23458	.47883	.46782	.00552
#3	.47634	2.1914	.44851	.23723	.47980	.47152	.00409
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9517.7**	**58425.**	**3034.0**
Stddev	30.6	371.	4.3
%RSD	.32191	.63434	.14141
#1	9523.8	58332.	3029.9
#2	9544.8	58110.	3038.5
#3	9484.5	58834.	3033.6

Approved: June 27, 2016

Sample Name: L1606098639 Acquired: 6/25/2016 21:26:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.00422**	**.00040**	**.00975**	**.00108**	**.00009**	**.14419**	**-.00005**
Stddev	.00042	.00758	.00073	.00126	.00087	.00008	.01744	.00009
%RSD	1118.0	179.89	181.74	12.897	80.476	90.859	12.096	178.96
#1	.00028	.01060	-.00028	.01106	.00209	.00013	.16280	-.00014
#2	.00012	-.00417	.00116	.00964	.00057	-.00000	.14155	-.00004
#3	-.00051	.00622	.00032	.00856	.00059	.00013	.12822	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00044**	**.00035**	**.00305**	**.04079**	**-.00706**	**.00203**	**-.02733**	**-.00024**
Stddev	.00042	.00030	.00090	.02484	.04162	.00092	.03833	.00264
%RSD	93.882	85.053	29.494	60.907	589.18	45.533	140.24	1117.6
#1	.00013	.00037	.00205	.05000	-.05467	.00295	-.00835	-.00277
#2	.00091	.00004	.00332	.05971	.01106	.00204	-.00220	-.00044
#3	.00028	.00063	.00378	.01266	.02242	.00110	-.07145	.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00046**	**.23384**	**.00002**	**.00301**	**.00223**	**-.00336**	**.00424**	**.10834**
Stddev	.00025	.02078	.00057	.00488	.00185	.00118	.00213	.00216
%RSD	54.203	8.8874	3135.0	161.94	83.035	35.176	50.129	1.9925
#1	.00023	.25768	.00001	-.00120	.00258	-.00441	.00208	.11078
#2	.00073	.22428	.00059	.00188	.00389	-.00208	.00633	.10755
#3	.00043	.21955	-.00055	.00835	.00023	-.00360	.00432	.10668
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098639 Acquired: 6/25/2016 21:26:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.00188	.00201	-.00117	.00072	.00941	.00130
Stddev	.00073	.00051	.00315	.00081	.00019	.00001	.00060
%RSD	203.49	27.359	156.60	69.426	26.854	.12705	46.035
#1	.00061	.00146	.00564	-.00068	.00081	.00940	.00116
#2	.00093	.00173	.00038	-.00211	.00085	.00941	.00078
#3	-.00047	.00245	.00001	-.00072	.00050	.00942	.00196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9979.7	61621.	3102.9
Stddev	10.2	118.	6.8
%RSD	.10173	.19116	.21926
#1	9983.1	61738.	3101.0
#2	9987.7	61621.	3110.5
#3	9968.3	61503.	3097.3

Approved: June 27, 2016

Sample Name: L1606098641 Acquired: 6/25/2016 21:30:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00155	.00228	-.00074	.00681	.00240	.00007	2.3285	.00015
Stddev	.00195	.00437	.00132	.00259	.00010	.00002	.0225	.00014
%RSD	125.93	191.41	178.17	38.016	4.0011	29.007	.96410	94.650
#1	.00016	.00624	-.00146	.00963	.00251	.00005	2.3542	.00003
#2	.00071	.00302	-.00156	.00453	.00235	.00009	2.3184	.00011
#3	.00378	-.00241	.00078	.00628	.00234	.00008	2.3128	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00014	.00163	.03413	.24665	.00092	.81266	-.00079
Stddev	.00068	.00062	.00075	.01156	.02854	.00423	.01745	.00318
%RSD	1106.1	456.64	45.829	33.860	11.573	458.16	2.1475	404.35
#1	-.00033	.00085	.00092	.03095	.24915	.00580	.81529	.00231
#2	.00085	-.00023	.00241	.02450	.27386	-.00166	.79404	-.00404
#3	-.00034	-.00022	.00156	.04694	.21693	-.00138	.82864	-.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	1.5234	-.00034	.00759	.00193	-.00110	-.00056	1.9225
Stddev	.00028	.0181	.00053	.00504	.00328	.00190	.00524	.0055
%RSD	316.47	1.1895	155.07	66.429	170.02	173.25	938.70	.28386
#1	-.00021	1.5412	-.00096	.00263	.00004	-.00329	-.00638	1.9218
#2	.00035	1.5240	.00002	.00743	.00571	-.00014	.00092	1.9283
#3	.00013	1.5050	-.00009	.01271	.00003	.00014	.00379	1.9175
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098641 Acquired: 6/25/2016 21:30:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.02979**	**.00925**	**-.00425**	**.00079**	**.00575**	**.00161**
Stddev	.00070	.00033	.00260	.00161	.00118	.00006	.00128
%RSD	2613.1	1.1094	28.082	37.920	148.25	1.0430	79.495
#1	-.00014	.02957	.00917	-.00541	.00147	.00579	.00219
#2	.00072	.03017	.01188	-.00492	.00148	.00578	.00014
#3	-.00067	.02963	.00669	-.00241	-.00057	.00568	.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9984.0**	**61505.**	**3103.5**
Stddev	25.4	97.	8.6
%RSD	.25425	.15693	.27670
#1	10013.	61422.	3093.7
#2	9966.4	61611.	3106.9
#3	9972.6	61483.	3109.8

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 21:34:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40382**	**10.228**	**.39903**	**.49252**	**1.0184**	**.05057**	**10.132**
Stddev	.00317	.045	.00339	.00303	.0029	.00010	.084
%RSD	.78510	.44126	.84879	.61522	.28786	.20129	.82686
#1	.40329	10.193	.40176	.48985	1.0165	.05045	10.103
#2	.40723	10.279	.39524	.49189	1.0170	.05064	10.066
#3	.40095	10.211	.40009	.49581	1.0218	.05061	10.226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05109**	**.20032**	**.50425**	**.51389**	**3.9993**	**49.456**	**1.0271**
Stddev	.00034	.00030	.00243	.00134	.0288	.230	.0087
%RSD	.66912	.15054	.48104	.26170	.72080	.46581	.84751
#1	.05096	.20027	.50150	.51248	3.9697	49.237	1.0193
#2	.05148	.20064	.50519	.51515	4.0273	49.435	1.0365
#3	.05084	.20004	.50607	.51404	4.0011	49.697	1.0255
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.5965**	**.50354**	**1.0171**	**50.205**	**.50852**	**9.9839**	**.50630**
Stddev	.0605	.00125	.0104	.188	.00105	.0190	.00443
%RSD	.63000	.24843	1.0188	.37433	.20655	.18977	.87552
#1	9.5498	.50228	1.0149	50.026	.50872	9.9714	.50177
#2	9.5748	.50478	1.0283	50.189	.50945	10.006	.51063
#3	9.6648	.50354	1.0080	50.400	.50738	9.9747	.50650
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 21:34:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2057**	**.39535**	**5.1622**	**1.0068**	**1.0152**	**1.0163**	**.51868**
Stddev	.0009	.00724	.0066	.0035	.0056	.0047	.00189
%RSD	.07645	1.8317	.12822	.34938	.55282	.46463	.36343
#1	1.2067	.40045	5.1563	1.0056	1.0088	1.0109	.51803
#2	1.2055	.39854	5.1610	1.0107	1.0174	1.0194	.51721
#3	1.2048	.38706	5.1694	1.0040	1.0193	1.0187	.52081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0297**	**1.0108**	F **2.9654**
Stddev	.0010	.0013	.0124
%RSD	.09618	.12981	.41944
#1	1.0297	1.0109	2.9530
#2	1.0307	1.0120	2.9654
#3	1.0287	1.0094	2.9779
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9765.3**	**59222.**	**3028.4**
Stddev	12.6	103.	19.9
%RSD	.12950	.17379	.65564
#1	9777.2	59331.	3048.9
#2	9752.0	59127.	3027.1
#3	9766.5	59207.	3009.2

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 21:38:07 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00048	-.00056	.00159	.00238	.00173	.00014	-.05704	-.00011
Stddev	.00089	.00372	.00374	.00230	.00036	.00002	.05178	.00017
%RSD	185.89	660.56	234.30	96.559	20.708	14.400	90.783	156.11
#1	-.00133	.00080	.00118	.00024	.00195	.00012	-.11682	-.00027
#2	-.00055	-.00477	-.00192	.00481	.00132	.00016	-.02846	-.00014
#3	.00045	.00228	.00552	.00209	.00192	.00015	-.02584	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.00048	.00001	.01554	-.08094	.00031	-.00960	.00059
Stddev	.00009	.00037	.00173	.01679	.11260	.00565	.05873	.00171
%RSD	56.610	77.335	20230.	108.07	139.11	1853.2	611.58	288.38
#1	.00024	.00066	.00194	-.00104	.01136	.00158	-.02063	.00007
#2	.00020	.00072	-.00054	.03254	-.20639	-.00588	.05386	.00251
#3	.00006	.00005	-.00138	.01511	-.04780	.00521	-.06203	-.00080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00336	.02885	-.00050	.00712	.00213	.00602	-.00054	.04214
Stddev	.00024	.02974	.00074	.00312	.00180	.00158	.00069	.00013
%RSD	7.0582	103.10	148.29	43.907	84.214	26.247	127.12	.29697
#1	.00323	-.00548	.00008	.00759	.00359	.00782	.00008	.04201
#2	.00321	.04496	-.00024	.00998	.00013	.00485	-.00042	.04226
#3	.00363	.04705	-.00133	.00378	.00268	.00540	-.00129	.04215
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 21:38:07 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00047**	**.00065**	**-.00177**	**-.00021**	**.00113**	**.00005**	**.00375**
Stddev	.00100	.00044	.00221	.00418	.00029	.00020	.00087
%RSD	212.41	68.047	125.42	1958.4	25.944	435.57	23.135
#1	.00160	.00080	.00075	-.00080	.00139	-.00005	.00437
#2	-.00031	.00015	-.00341	-.00407	.00081	.00028	.00276
#3	.00012	.00100	-.00264	.00422	.00119	-.00009	.00413
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9540.4**	**58573.**	**2934.4**
Stddev	6.2	75.	17.1
%RSD	.06498	.12729	.58178
#1	9533.2	58646.	2919.8
#2	9543.3	58575.	2953.2
#3	9544.6	58497.	2930.3

Approved: June 27, 2016

Sample Name: PBW 9A Acquired: 6/25/2016 21:42:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.00614**	**.00175**	**.00056**	**.00231**	**.00012**	**-.04646**	**-.00007**
Stddev	.00171	.00204	.00393	.00252	.00071	.00020	.04124	.00026
%RSD	1283.4	33.141	224.26	449.74	30.683	160.24	88.765	365.50
#1	.00182	.00611	.00626	-.00197	.00237	.00018	-.00258	-.00036
#2	-.00137	.00820	-.00088	.00057	.00157	.00029	-.08442	.00014
#3	-.00085	.00413	-.00013	.00307	.00298	-.00010	-.05240	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**.00010**	**.00080**	**.02407**	**-.12665**	**.00141**	**-.00997**	**-.00231**
Stddev	.00033	.00034	.00081	.01192	.12266	.00378	.02213	.00072
%RSD	90.436	329.64	101.91	49.545	96.850	267.21	222.01	31.042
#1	-.00000	-.00017	-.00014	.03113	-.25310	.00322	.01487	-.00193
#2	-.00045	.00048	.00118	.03078	-.11869	.00395	-.02759	-.00185
#3	-.00065	-.00000	.00135	.01030	-.00816	-.00293	-.01718	-.00313
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00037**	**.03613**	**.00006**	**.00672**	**.00326**	**-.00431**	**-.00184**	**.00566**
Stddev	.00007	.03275	.00077	.00152	.00253	.00485	.00591	.00059
%RSD	18.235	90.627	1212.2	22.673	77.664	112.59	322.28	10.478
#1	.00035	.07347	.00060	.00612	.00546	-.00044	-.00125	.00618
#2	.00032	.02263	-.00082	.00846	.00049	-.00975	.00376	.00501
#3	.00045	.01230	.00041	.00559	.00385	-.00274	-.00802	.00578
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: PBW 9A Acquired: 6/25/2016 21:42:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00063**	**.00033**	**-.00143**	**-.00317**	**.00125**	**.00161**	**.00218**
Stddev	.00053	.00015	.00130	.00329	.00039	.00011	.00081
%RSD	84.270	46.594	90.758	103.97	30.982	7.0758	37.192
#1	.00094	.00050	-.00075	-.00532	.00080	.00148	.00195
#2	.00002	.00020	-.00062	-.00481	.00145	.00171	.00150
#3	.00092	.00028	-.00293	.00062	.00150	.00162	.00308
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9585.8**	**59115.**	**2963.7**
Stddev	26.3	98.	6.0
%RSD	.27487	.16506	.20388
#1	9574.9	59148.	2962.9
#2	9615.8	59005.	2958.2
#3	9566.6	59192.	2970.2

Approved: June 27, 2016

Sample Name: LCSW 9A Acquired: 6/25/2016 21:45:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19278**	**4.8645**	**.19357**	**.92620**	**.49567**	**.02388**	**4.9744**	**.02438**
Stddev	.00059	.0150	.00172	.00296	.00123	.00001	.0131	.00027
%RSD	.30529	.30879	.88618	.31973	.24905	.05168	.26315	1.0959
#1	.19266	4.8773	.19194	.92961	.49521	.02387	4.9745	.02469
#2	.19342	4.8480	.19536	.92439	.49707	.02389	4.9613	.02424
#3	.19226	4.8682	.19339	.92458	.49473	.02389	4.9875	.02421
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09756**	**.24011**	**.24908**	**1.9287**	**23.845**	**.50347**	**4.7458**	**.24452**
Stddev	.00018	.00063	.00057	.0379	.076	.00304	.1100	.00304
%RSD	.18802	.26044	.22811	1.9678	.32025	.60437	2.3184	1.2446
#1	.09771	.24070	.24970	1.9204	23.902	.50653	4.7834	.24200
#2	.09761	.23946	.24858	1.9701	23.875	.50343	4.6218	.24790
#3	.09735	.24018	.24895	1.8956	23.758	.50044	4.8320	.24367
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50361**	**24.550**	**.24652**	**4.6792**	**.24585**	**.57643**	**.18945**	**2.4007**
Stddev	.00079	.045	.00091	.0152	.00374	.00321	.00289	.0038
%RSD	.15600	.18503	.37091	.32489	1.5220	.55613	1.5253	.15739
#1	.50355	24.561	.24748	4.6824	.24789	.57981	.19277	2.4049
#2	.50442	24.588	.24565	4.6926	.24153	.57604	.18748	2.3993
#3	.50285	24.500	.24642	4.6627	.24812	.57343	.18811	2.3978
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LCSW 9A Acquired: 6/25/2016 21:45:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48346**	**.50078**	**.49876**	**.24644**	**.49280**	**.48316**	**.01652**
Stddev	.00157	.00182	.00430	.00290	.00093	.00040	.00416
%RSD	.32431	.36335	.86149	1.1750	.18883	.08190	25.157
#1	.48465	.50112	.49719	.24479	.49339	.48270	.01275
#2	.48404	.50241	.49547	.24978	.49173	.48334	.01583
#3	.48168	.49882	.50362	.24474	.49328	.48342	.02097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9876.1**	**60275.**	**3070.8**
Stddev	6.3	180.	12.0
%RSD	.06355	.29822	.39033
#1	9874.5	60221.	3071.7
#2	9883.0	60476.	3058.4
#3	9870.8	60129.	3082.3

Approved: June 27, 2016

Sample Name: F BLANK Acquired: 6/25/2016 21:49:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	-.00126	-.00015	.00486	.00128	.00012	-.00459	.00000
Stddev	.00056	.00100	.00110	.00023	.00095	.00001	.02969	.00020
%RSD	100.53	79.131	736.67	4.6731	74.371	6.7718	646.26	7554.0
#1	.00064	-.00237	-.00130	.00509	.00028	.00012	.02032	.00019
#2	.00106	-.00043	-.00004	.00484	.00217	.00011	-.03745	-.00020
#3	-.00004	-.00099	.00090	.00463	.00139	.00012	.00335	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.00026	.00088	.03134	-.11502	-.00026	.03535	-.00044
Stddev	.00018	.00121	.00068	.00659	.05233	.00265	.10514	.00096
%RSD	49.613	468.36	76.871	21.019	45.492	1017.6	297.45	218.87
#1	.00058	.00075	.00159	.02374	-.13830	.00130	-.07629	.00060
#2	.00024	.00114	.00082	.03485	-.15168	.00124	.13249	-.00129
#3	.00028	-.00112	.00024	.03543	-.05510	-.00331	.04985	-.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.07370	.00132	.00313	.00117	-.00091	.00077	-.00309
Stddev	.00026	.00588	.00035	.00217	.00118	.00090	.00482	.00173
%RSD	45.817	7.9801	26.636	69.209	100.20	98.397	629.48	56.034
#1	.00085	.06695	.00170	.00515	.00095	-.00029	-.00041	-.00378
#2	.00042	.07645	.00125	.00084	.00245	-.00194	-.00336	-.00438
#3	.00040	.07770	.00101	.00340	.00013	-.00050	.00606	-.00112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: F BLANK Acquired: 6/25/2016 21:49:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.00302	-.00048	-.00333	.00002	.00245	.00132
Stddev	.00077	.00023	.00928	.00236	.00016	.00009	.00057
%RSD	230.12	7.5634	1914.7	70.982	654.43	3.7966	42.974
#1	.00023	.00325	-.01051	-.00146	-.00016	.00251	.00071
#2	.00115	.00279	.00127	-.00253	.00008	.00234	.00183
#3	-.00038	.00303	.00779	-.00598	.00016	.00250	.00143
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9948.0	61128.	3082.2
Stddev	8.3	35.	19.2
%RSD	.08376	.05747	.62310
#1	9943.7	61136.	3060.8
#2	9942.7	61089.	3097.9
#3	9957.6	61158.	3087.8

Approved: June 27, 2016

Sample Name: L1606078709 Acquired: 6/25/2016 21:53:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00106	.32067	.00199	.03822	.08666	.00012	52.298	.00025
Stddev	.00033	.00225	.00178	.00083	.00065	.00013	.384	.00005
%RSD	31.425	.70249	89.821	2.1841	.74667	104.78	.73398	21.021
#1	.00100	.32316	.00023	.03790	.08700	-.00002	52.414	.00024
#2	.00077	.32010	.00380	.03760	.08707	.00018	51.870	.00021
#3	.00143	.31876	.00193	.03917	.08592	.00021	52.611	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.00232	.00233	.31407	.84091	.00625	16.422	.01281
Stddev	.00025	.00123	.00162	.01381	.09733	.00295	.087	.00086
%RSD	177.99	52.851	69.798	4.3981	11.574	47.203	.53048	6.7172
#1	-.00001	.00331	.00164	.32378	.73706	.00531	16.422	.01228
#2	.00000	.00271	.00116	.32018	.93004	.00389	16.510	.01236
#3	.00043	.00095	.00418	.29826	.85562	.00956	16.336	.01381
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	3.5331	.00030	.18004	.00409	-.00180	.00164	8.5479
Stddev	.00032	.0286	.00045	.00328	.00158	.00258	.00446	.0078
%RSD	137.02	.80985	147.61	1.8192	38.579	143.43	271.62	.09172
#1	-.00011	3.5554	-.00012	.17874	.00498	-.00359	.00673	8.5558
#2	.00052	3.5008	.00077	.17762	.00503	-.00297	-.00020	8.5477
#3	.00028	3.5432	.00026	.18377	.00227	.00116	-.00161	8.5401
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078709 Acquired: 6/25/2016 21:53:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.13816	-.00281	-.00107	.00371	.00875	.00154
Stddev	.00042	.00078	.00681	.00141	.00081	.00007	.00044
%RSD	132.89	.56285	242.62	131.61	21.926	.80395	28.630
#1	-.00012	.13842	.00500	-.00130	.00416	.00881	.00162
#2	.00035	.13728	-.00586	-.00235	.00277	.00878	.00193
#3	.00072	.13877	-.00757	.00044	.00421	.00867	.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9876.5	60888.	3069.7
Stddev	11.3	192.	3.6
%RSD	.11437	.31559	.11816
#1	9889.0	60702.	3066.7
#2	9866.9	60874.	3073.8
#3	9873.6	61086.	3068.7

Approved: June 27, 2016

Sample Name: L1606078711S Acquired: 6/25/2016 21:57:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19226**	**5.2769**	**.19700**	**.97637**	**.57407**	**.02377**	**55.412**	**.02464**
Stddev	.00232	.0172	.00210	.00695	.00123	.00006	.275	.00018
%RSD	1.2075	.32678	1.0663	.71175	.21357	.23547	.49636	.71677
#1	.19492	5.2928	.19484	.98432	.57271	.02383	55.376	.02446
#2	.19066	5.2586	.19711	.97142	.57439	.02373	55.156	.02465
#3	.19119	5.2792	.19903	.97337	.57510	.02375	55.703	.02481
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09590**	**.23900**	**.24525**	**2.2503**	**24.873**	**.51320**	**20.375**	**.25171**
Stddev	.00047	.00136	.00161	.0156	.173	.01009	.023	.00267
%RSD	.48644	.56990	.65491	.69491	.69517	1.9665	.11329	1.0594
#1	.09633	.24013	.24639	2.2591	25.016	.52369	20.389	.25241
#2	.09595	.23749	.24595	2.2322	24.681	.50356	20.349	.25396
#3	.09541	.23938	.24342	2.2595	24.921	.51234	20.388	.24877
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50427**	**27.841**	**.24087**	**4.9542**	**.24449**	**.58622**	**.18341**	**11.076**
Stddev	.00227	.102	.00131	.0062	.00416	.00262	.00666	.019
%RSD	.45102	.36806	.54487	.12407	1.6996	.44696	3.6299	.17466
#1	.50494	27.874	.24041	4.9608	.24621	.58442	.18291	11.063
#2	.50614	27.726	.24235	4.9486	.23975	.58502	.19031	11.099
#3	.50174	27.923	.23985	4.9531	.24750	.58923	.17702	11.068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078711S Acquired: 6/25/2016 21:57:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48537**	**.63044**	**.49547**	**.24660**	**.49048**	**.48728**	**.00709**
Stddev	.00041	.00808	.00649	.00259	.00192	.00292	.00024
%RSD	.08494	1.2823	1.3100	1.0500	.39154	.59943	3.4352
#1	.48528	.63362	.48907	.24492	.49247	.49009	.00732
#2	.48501	.63645	.50205	.24958	.48864	.48426	.00711
#3	.48582	.62125	.49531	.24529	.49034	.48750	.00684
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9767.2**	**59939.**	**3081.9**
Stddev	8.4	151.	2.2
%RSD	.08617	.25130	.07156
#1	9776.8	59826.	3083.9
#2	9761.1	60110.	3082.2
#3	9763.8	59880.	3079.5

Approved: June 27, 2016

Sample Name: L1606078712SD Acquired: 6/25/2016 22:01:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19422**	**6.5547**	**.19616**	**.97909**	**.58447**	**.02412**	**57.272**	**.02449**
Stddev	.00043	.0174	.00206	.00320	.00356	.00008	.255	.00025
%RSD	.22056	.26500	1.0502	.32643	.60985	.31860	.44461	1.0216
#1	.19468	6.5722	.19401	.98024	.58211	.02413	57.018	.02471
#2	.19383	6.5546	.19811	.97548	.58857	.02404	57.527	.02422
#3	.19415	6.5375	.19636	.98156	.58273	.02419	57.272	.02454
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09680**	**.24221**	**.24688**	**3.2519**	**25.085**	**.51256**	**21.272**	**.29044**
Stddev	.00024	.00084	.00160	.0305	.123	.00182	.123	.00255
%RSD	.25204	.34673	.64632	.93681	.48984	.35468	.57596	.87927
#1	.09682	.24178	.24538	3.2175	24.965	.51125	21.131	.28769
#2	.09704	.24318	.24856	3.2756	25.081	.51179	21.342	.29274
#3	.09655	.24168	.24672	3.2624	25.210	.51464	21.344	.29089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50646**	**28.018**	**.24386**	**4.9818**	**.24358**	**.58240**	**.18769**	**13.764**
Stddev	.00076	.167	.00147	.0053	.00228	.00382	.00425	.008
%RSD	.15029	.59670	.60238	.10534	.93711	.65545	2.2629	.06131
#1	.50691	27.825	.24251	4.9763	.24111	.57903	.18298	13.756
#2	.50690	28.112	.24543	4.9823	.24561	.58163	.18886	13.772
#3	.50558	28.117	.24364	4.9868	.24402	.58655	.19123	13.765
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078712SD Acquired: 6/25/2016 22:01:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48752**	**.63979**	**.50344**	**.24632**	**.49636**	**.48329**	**.00682**
Stddev	.00123	.00383	.00416	.00077	.00180	.00044	.00097
%RSD	.25232	.59818	.82653	.31336	.36344	.09176	14.263
#1	.48785	.63646	.50591	.24591	.49538	.48373	.00713
#2	.48616	.64397	.49864	.24584	.49525	.48329	.00761
#3	.48856	.63895	.50578	.24721	.49844	.48284	.00573
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9745.6**	**59867.**	**3081.8**
Stddev	9.9	91.	26.0
%RSD	.10194	.15198	.84468
#1	9734.5	59851.	3110.8
#2	9753.6	59965.	3060.5
#3	9748.6	59785.	3074.0

Approved: June 27, 2016

Sample Name: L1606078701 Acquired: 6/25/2016 22:04:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00206	-.00089	-.00017	.00563	.00151	.00011	.08615	.00015
Stddev	.00234	.00167	.00131	.00160	.00060	.00001	.02054	.00021
%RSD	113.42	187.14	751.31	28.470	39.897	9.3705	23.846	140.35
#1	.00316	-.00269	.00118	.00529	.00196	.00012	.07852	-.00008
#2	-.00062	-.00061	-.00144	.00737	.00083	.00010	.07052	.00033
#3	.00364	.00062	-.00027	.00422	.00173	.00012	.10942	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.00093	.00322	.06115	.01246	.00241	.02800	.00003
Stddev	.00003	.00076	.00095	.00519	.08806	.00216	.01589	.00083
%RSD	20.822	82.163	29.586	8.4819	706.92	89.891	56.731	2625.4
#1	.00011	.00029	.00408	.06573	-.03307	.00026	.04634	-.00085
#2	.00017	.00177	.00219	.05552	.11396	.00458	.01831	.00015
#3	.00013	.00071	.00338	.06220	-.04352	.00238	.01936	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	.44862	.00009	.00157	.00319	-.00012	.00644	.10535
Stddev	.00015	.01169	.00041	.00200	.00252	.00436	.00247	.00160
%RSD	36.378	2.6064	429.23	127.80	78.785	3632.8	38.299	1.5199
#1	.00041	.45408	.00056	-.00069	.00238	-.00321	.00918	.10450
#2	.00025	.45659	-.00021	.00226	.00118	.00487	.00438	.10720
#3	.00054	.43520	-.00006	.00313	.00602	-.00202	.00577	.10436
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078701 Acquired: 6/25/2016 22:04:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00114**	**.00134**	**.00464**	**-.00236**	**.00126**	**.00852**	**.00204**
Stddev	.00023	.00031	.01117	.00170	.00022	.00013	.00133
%RSD	19.939	23.344	240.52	72.025	17.171	1.4749	64.993
#1	.00100	.00168	-.00728	-.00407	.00147	.00841	.00183
#2	.00140	.00106	.01487	-.00232	.00127	.00866	.00083
#3	.00102	.00128	.00634	-.00068	.00104	.00851	.00346
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9978.6**	**61725.**	**3108.7**
Stddev	25.8	52.	12.8
%RSD	.25894	.08436	.41157
#1	9949.5	61751.	3109.2
#2	9998.7	61759.	3121.3
#3	9987.8	61665.	3095.7

Approved: June 27, 2016

Sample Name: L1606078701PS Acquired: 6/25/2016 22:08:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573561-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19562**	**4.8670**	**.19417**	**.93274**	**.49617**	**.02396**	**5.0466**	**.02449**
Stddev	.00101	.0014	.00206	.00077	.00126	.00015	.0443	.00024
%RSD	.51610	.02767	1.0615	.08264	.25431	.60837	.87718	.96002
#1	.19561	4.8655	.19531	.93216	.49577	.02379	5.0119	.02471
#2	.19461	4.8672	.19179	.93245	.49515	.02407	5.0964	.02451
#3	.19663	4.8682	.19541	.93362	.49758	.02401	5.0313	.02424
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09815**	**.24178**	**.25186**	**1.9475**	**23.902**	**.50912**	**4.6690**	**.24615**
Stddev	.00038	.00032	.00085	.0476	.079	.00280	.1745	.00176
%RSD	.38848	.13325	.33570	2.4417	.33116	.54926	3.7379	.71493
#1	.09847	.24215	.25095	2.0020	23.984	.51180	4.5199	.24606
#2	.09825	.24158	.25263	1.9144	23.825	.50622	4.6262	.24443
#3	.09773	.24160	.25200	1.9261	23.897	.50934	4.8609	.24795
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50547**	**24.979**	**.24871**	**4.7191**	**.25003**	**.58513**	**.18331**	**2.5397**
Stddev	.00148	.047	.00145	.0045	.00153	.00133	.00963	.0085
%RSD	.29370	.18695	.58415	.09482	.61173	.22744	5.2541	.33396
#1	.50679	24.962	.24995	4.7237	.24937	.58423	.17385	2.5470
#2	.50576	24.943	.24906	4.7186	.24895	.58665	.18298	2.5417
#3	.50387	25.032	.24711	4.7148	.25178	.58449	.19310	2.5304
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078701PS Acquired: 6/25/2016 22:08:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573561-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48806**	**.50437**	**.49939**	**.24983**	**.48939**	**.48880**	**.00250**
Stddev	.00273	.00349	.00591	.00248	.00296	.00032	.00045
%RSD	.55970	.69122	1.1836	.99157	.60527	.06447	18.096
#1	.48918	.50154	.50066	.25202	.49256	.48872	.00242
#2	.49005	.50331	.49295	.25032	.48893	.48914	.00298
#3	.48494	.50827	.50457	.24714	.48669	.48853	.00209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9876.1**	**60662.**	**3087.6**
Stddev	12.0	38.	4.3
%RSD	.12163	.06253	.13975
#1	9869.1	60619.	3083.6
#2	9869.3	60677.	3092.2
#3	9890.0	60690.	3087.1

Approved: June 27, 2016

Sample Name: L1606078701SDL Acquired: 6/25/2016 22:12:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573561-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00226**	**-.00962**	**.00257**	**.00372**	**.00008**	**.00010**	**-.05467**	**-.00005**
Stddev	.00390	.01062	.00091	.00131	.00131	.00006	.03854	.00004
%RSD	172.35	110.37	35.549	35.155	1747.1	57.750	70.491	84.699
#1	.00675	-.01272	.00350	.00225	-.00089	.00014	-.04307	-.00000
#2	.00027	-.01835	.00254	.00475	.00157	.00012	-.09767	-.00007
#3	-.00023	.00220	.00167	.00417	-.00046	.00003	-.02326	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.00076**	**.00146**	**.02792**	**-.10756**	**-.00176**	**-.01577**	**.00085**
Stddev	.00022	.00111	.00071	.01781	.06853	.00352	.01010	.00145
%RSD	144.06	146.16	48.411	63.806	63.714	199.76	64.076	169.31
#1	.00010	.00182	.00216	.04804	-.06727	-.00153	-.01532	-.00005
#2	-.00026	-.00038	.00146	.01416	-.18668	.00163	-.02609	.00009
#3	-.00029	.00083	.00075	.02156	-.06871	-.00539	-.00589	.00252
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00035**	**.12025**	**-.00037**	**.00742**	**.00388**	**-.00036**	**.00693**	**.02501**
Stddev	.00028	.02622	.00009	.00699	.00334	.00491	.00079	.00132
%RSD	80.313	21.803	23.237	94.157	86.143	1346.9	11.341	5.2920
#1	.00057	.14797	-.00041	.00450	.00651	.00107	.00746	.02626
#2	.00045	.09585	-.00027	.01539	.00501	-.00584	.00603	.02362
#3	.00003	.11693	-.00042	.00237	.00012	.00367	.00731	.02515
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078701SDL Acquired: 6/25/2016 22:12:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573561-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.00027	.00391	-.00239	.00091	.00198	.00117
Stddev	.00062	.00058	.00259	.00083	.00057	.00021	.00105
%RSD	170.80	217.03	66.210	34.804	62.977	10.839	89.133
#1	.00032	-.00015	.00203	-.00335	.00041	.00217	.00108
#2	-.00024	.00003	.00686	-.00188	.00153	.00175	.00018
#3	.00100	.00093	.00284	-.00194	.00079	.00202	.00227
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10481.	64804.	3221.0
Stddev	25.	98.	4.2
%RSD	.23393	.15113	.13029
#1	10501.	64916.	3225.8
#2	10489.	64737.	3219.2
#3	10454.	64758.	3217.9

Approved: June 27, 2016

Sample Name: L1606078701SDL Acquired: 6/25/2016 22:16:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573561-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00050**	**-.01671**	**.00066**	**.00174**	**.00117**	**.00007**	**-.03873**	**-.00006**
Stddev	.00055	.00595	.00077	.00373	.00047	.00003	.02526	.00023
%RSD	110.50	35.627	115.52	214.66	39.929	36.665	65.224	418.10
#1	.00087	-.01063	-.00016	.00037	.00065	.00010	-.06018	.00018
#2	-.00014	-.02253	.00136	-.00111	.00156	.00005	-.01089	-.00029
#3	.00077	-.01699	.00080	.00596	.00129	.00006	-.04513	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00020**	**-.00027**	**.00015**	**.01537**	**-.08473**	**-.00313**	**-.04452**	**.00037**
Stddev	.00041	.00031	.00072	.00667	.12317	.00148	.02793	.00217
%RSD	208.97	115.52	489.41	43.427	145.37	47.326	62.733	580.66
#1	.00051	-.00025	-.00010	.01465	-.11440	-.00155	-.01300	-.00212
#2	-.00027	-.00059	-.00042	.02238	.05057	-.00335	-.06618	.00176
#3	.00035	.00003	.00096	.00908	-.19035	-.00448	-.05440	.00148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00052**	**.04068**	**-.00002**	**.00630**	**.00223**	**-.00439**	**.00789**	**.00775**
Stddev	.00014	.01560	.00098	.00605	.00105	.00119	.00333	.00034
%RSD	26.596	38.347	4828.5	96.010	47.199	27.128	42.126	4.3419
#1	-.00068	.05533	-.00110	-.00065	.00121	-.00319	.01093	.00736
#2	-.00042	.02428	.00080	.00920	.00218	-.00557	.00434	.00794
#3	-.00046	.04243	.00023	.01036	.00331	-.00443	.00841	.00794
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078701SDL Acquired: 6/25/2016 22:16:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573561-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00078**	**.00049**	**.00611**	**-.00169**	**-.00019**	**.00076**	**.00104**
Stddev	.00047	.00028	.00364	.00121	.00086	.00008	.00084
%RSD	59.598	55.989	59.553	71.357	443.84	10.636	80.846
#1	-.00025	.00020	.00285	-.00078	-.00105	.00067	.00138
#2	-.00100	.00075	.00545	-.00306	-.00021	.00078	.00165
#3	-.00110	.00052	.01004	-.00123	.00067	.00082	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10473.**	**64343.**	**3185.8**
Stddev	11.	88.	33.4
%RSD	.10369	.13736	1.0486
#1	10479.	64432.	3210.0
#2	10479.	64255.	3199.9
#3	10461.	64342.	3147.7

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 22:20:12 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39676**	**10.011**	**.39200**	**.48774**	**1.0072**	**.04931**	**9.9627**
Stddev	.00166	.042	.00060	.00247	.0020	.00016	.0336
%RSD	.41961	.41526	.15324	.50705	.19487	.32345	.33737
#1	.39852	10.036	.39268	.48499	1.0052	.04934	9.9285
#2	.39656	10.035	.39180	.48843	1.0074	.04945	9.9639
#3	.39521	9.9633	.39153	.48979	1.0091	.04914	9.9956
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05046**	**.19748**	**.49159**	**.50549**	**3.9250**	**48.860**	**1.0117**
Stddev	.00033	.00063	.00167	.00263	.0491	.051	.0023
%RSD	.66275	.32062	.34000	.52017	1.2522	.10387	.22425
#1	.05068	.19812	.49231	.50540	3.8948	48.907	1.0140
#2	.05064	.19745	.49279	.50817	3.9817	48.806	1.0118
#3	.05008	.19686	.48968	.50291	3.8986	48.867	1.0095
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.4449**	**.49486**	**1.0080**	**49.891**	**.50156**	**9.8436**	**.50078**
Stddev	.0163	.00095	.0079	.070	.00172	.0350	.00128
%RSD	.17297	.19183	.78730	.13958	.34250	.35531	.25500
#1	9.4275	.49541	1.0170	49.848	.50286	9.8791	.50070
#2	9.4600	.49376	1.0019	49.971	.50221	9.8426	.49954
#3	9.4471	.49540	1.0052	49.853	.49961	9.8092	.50209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 22:20:12 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1892**	**.38968**	**5.0794**	**.99180**	**1.0052**	**1.0145**	**.50829**
Stddev	.0070	.00637	.0139	.00335	.0009	.0065	.00390
%RSD	.58775	1.6349	.27365	.33789	.09319	.64413	.76634
#1	1.1970	.39094	5.0928	.99452	1.0044	1.0072	.50887
#2	1.1869	.38277	5.0804	.99283	1.0062	1.0197	.51187
#3	1.1836	.39532	5.0651	.98805	1.0048	1.0166	.50414
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0022**	**.99700**	F **2.9158**
Stddev	.0042	.00301	.0038
%RSD	.42153	.30191	.13010
#1	1.0066	.99806	2.9128
#2	1.0017	.99934	2.9201
#3	.99824	.99361	2.9145
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9930.6**	**60612.**	**3086.3**
Stddev	10.1	73.	9.8
%RSD	.10207	.12111	.31687
#1	9941.9	60647.	3097.4
#2	9922.1	60528.	3082.4
#3	9927.9	60661.	3079.1

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 22:23:49 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00100**	**-.00695**	**.00023**	**.00246**	**.00203**	**.00014**	**-.01220**	**.00014**
Stddev	.00181	.00287	.00117	.00195	.00133	.00002	.03027	.00029
%RSD	181.13	41.303	500.29	79.096	65.555	16.180	248.16	212.80
#1	-.00109	-.00504	-.00098	.00360	.00305	.00017	-.03745	.00025
#2	.00205	-.00555	.00136	.00021	.00053	.00014	.02136	-.00019
#3	.00203	-.01025	.00032	.00357	.00251	.00013	-.02050	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**-.00000**	**.00097**	**.02954**	**-.02965**	**-.00129**	**.00088**	**.00163**
Stddev	.00011	.00082	.00136	.00883	.01713	.00234	.03199	.00271
%RSD	74.595	562770.	140.78	29.900	57.784	181.57	3634.1	165.69
#1	.00008	.00083	.00213	.03726	-.04191	-.00397	.03754	.00233
#2	.00008	-.00001	.00130	.01991	-.03697	-.00018	-.01355	.00393
#3	.00027	-.00081	-.00053	.03145	-.01007	.00029	-.02135	-.00135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00354**	**.01474**	**-.00023**	**.00359**	**.00237**	**.00219**	**.00418**	**.03627**
Stddev	.00058	.04847	.00031	.00245	.00060	.00526	.00484	.00058
%RSD	16.314	328.86	136.11	68.357	25.126	240.59	115.86	1.6055
#1	.00288	-.00030	-.00040	.00322	.00284	.00365	.00822	.03616
#2	.00384	.06894	.00013	.00134	.00170	.00656	.00551	.03575
#3	.00391	-.02443	-.00042	.00620	.00257	-.00365	-.00119	.03690
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 22:23:49 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**.00039**	**.00181**	**-.00370**	**.00020**	**.00004**	**.00435**
Stddev	.00110	.00025	.00867	.00085	.00051	.00012	.00191
%RSD	689.85	64.301	479.78	22.978	253.56	271.57	43.946
#1	-.00106	.00012	.00915	-.00439	-.00031	.00014	.00375
#2	.00108	.00042	.00404	-.00397	.00020	.00008	.00281
#3	.00046	.00061	-.00776	-.00275	.00071	-.00009	.00649
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9799.0**	**60424.**	**3020.0**
Stddev	11.5	135.	11.0
%RSD	.11760	.22419	.36496
#1	9789.9	60445.	3025.5
#2	9795.1	60547.	3027.2
#3	9812.0	60279.	3007.3

Approved: June 27, 2016

Sample Name: L1606078710 Acquired: 6/25/2016 22:27:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.22720	.00214	.03806	.08552	.00012	52.208	.00022
Stddev	.00078	.00436	.00063	.00014	.00079	.00005	.232	.00016
%RSD	450.39	1.9170	29.562	.37345	.92041	43.173	.44436	71.173
#1	.00025	.22486	.00206	.03796	.08534	.00008	52.380	.00034
#2	.00030	.22452	.00280	.03822	.08638	.00018	52.301	.00028
#3	-.00108	.23223	.00155	.03799	.08484	.00010	51.944	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.00186	.00266	.23670	.85794	.00848	16.196	.00759
Stddev	.00014	.00018	.00107	.03451	.05555	.00209	.053	.00200
%RSD	849.17	9.9559	40.055	14.580	6.4743	24.705	.32764	26.366
#1	-.00011	.00187	.00273	.22408	.80379	.01054	16.251	.00990
#2	.00017	.00167	.00156	.27574	.91479	.00636	16.192	.00643
#3	-.00001	.00204	.00369	.21027	.85526	.00853	16.145	.00644
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00109	3.4758	.00069	.17816	.00790	-.00197	-.00080	8.3609
Stddev	.00043	.0348	.00145	.00114	.00265	.00100	.00335	.0283
%RSD	39.553	1.0002	208.84	.63768	33.519	50.807	416.39	.33868
#1	.00115	3.5101	.00211	.17685	.00777	-.00150	.00187	8.3874
#2	.00149	3.4766	.00076	.17877	.00531	-.00312	.00028	8.3643
#3	.00063	3.4406	-.00079	.17886	.01060	-.00129	-.00456	8.3311
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078710 Acquired: 6/25/2016 22:27:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00106	.13692	-.00198	-.00343	.00351	.00457	.00538
Stddev	.00037	.00076	.00399	.00152	.00135	.00005	.00158
%RSD	34.945	.55142	201.79	44.378	38.390	1.0573	29.298
#1	.00117	.13773	-.00276	-.00427	.00288	.00452	.00538
#2	.00136	.13624	.00235	-.00167	.00505	.00462	.00381
#3	.00065	.13680	-.00552	-.00433	.00259	.00458	.00696
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9837.0	60854.	3075.5
Stddev	21.0	87.	13.2
%RSD	.21328	.14286	.42972
#1	9813.4	60881.	3070.1
#2	9853.7	60757.	3065.8
#3	9843.8	60924.	3090.5

Approved: June 27, 2016

Sample Name: L1606078718 Acquired: 6/25/2016 22:31:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	1.2702	.00086	.07193	.15344	.00016	53.535	.00010
Stddev	.00088	.0133	.00129	.00289	.00068	.00006	.315	.00014
%RSD	504.87	1.0437	151.37	4.0242	.44552	39.145	.58814	143.56
#1	.00078	1.2717	-.00017	.07191	.15299	.00023	53.705	-.00002
#2	-.00096	1.2563	.00043	.07484	.15310	.00014	53.172	.00025
#3	-.00034	1.2827	.00231	.06905	.15423	.00011	53.729	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00093	.00320	.00404	1.3343	1.2661	.00990	20.655	.10718
Stddev	.00038	.00017	.00073	.0192	.0597	.00249	.173	.00269
%RSD	40.455	5.3029	17.991	1.4379	4.7192	25.172	.83716	2.5057
#1	.00050	.00331	.00423	1.3126	1.1986	.01278	20.828	.10559
#2	.00122	.00328	.00465	1.3416	1.2875	.00842	20.482	.11029
#3	.00107	.00300	.00324	1.3489	1.3123	.00851	20.655	.10568
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00197	9.5571	.00271	.15727	.00713	-.00001	-.00213	9.2004
Stddev	.00025	.0745	.00060	.00312	.00099	.00396	.00180	.0136
%RSD	12.754	.77965	22.028	1.9854	13.840	44119.	84.428	.14793
#1	.00222	9.6099	.00232	.16018	.00745	-.00238	-.00366	9.2098
#2	.00198	9.4719	.00242	.15397	.00602	-.00222	-.00015	9.2066
#3	.00172	9.5895	.00340	.15765	.00792	.00457	-.00260	9.1848
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078718 Acquired: 6/25/2016 22:31:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.21832**	**.00935**	**-.00138**	**.00550**	**.00807**	**.00587**
Stddev	.00077	.00070	.00368	.00189	.00037	.00008	.00139
%RSD	1050.3	.31961	39.319	137.43	6.8010	.96236	23.773
#1	.00067	.21839	.00655	-.00216	.00508	.00811	.00494
#2	-.00003	.21758	.00798	.00078	.00561	.00812	.00519
#3	-.00086	.21897	.01351	-.00275	.00580	.00798	.00747
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9846.3**	**60728.**	**3091.9**
Stddev	3.6	208.	32.5
%RSD	.03671	.34247	1.0518
#1	9850.4	60702.	3069.6
#2	9844.9	60535.	3129.2
#3	9843.6	60948.	3076.8

Approved: June 27, 2016

Sample Name: L1606078719 Acquired: 6/25/2016 22:35:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00022	-.00125	.00081	-.00052	.00163	.00015	.05700	.00032
Stddev	.00275	.01314	.00222	.00254	.00035	.00003	.05177	.00012
%RSD	1222.4	1048.7	273.08	489.15	21.203	21.890	90.827	38.965
#1	-.00200	-.00415	-.00134	.00209	.00158	.00017	.05365	.00040
#2	.00294	.01310	.00068	-.00066	.00200	.00012	.00698	.00018
#3	-.00162	-.01271	.00310	-.00298	.00131	.00018	.11035	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00052	.00450	.02391	-.05991	-.00020	.04697	-.00036
Stddev	.00016	.00162	.00035	.01615	.07304	.00309	.12538	.00213
%RSD	276.80	313.97	7.6965	67.537	121.91	1526.0	266.94	591.72
#1	.00015	.00207	.00475	.04225	-.11673	.00336	-.03849	-.00282
#2	-.00012	.00065	.00464	.01187	-.08546	-.00225	-.01151	.00086
#3	.00015	-.00117	.00410	.01759	.02247	-.00171	.19090	.00088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.25593	-.00012	.00090	.00315	-.00362	.00327	.05573
Stddev	.00023	.02584	.00048	.00460	.00186	.00138	.00112	.00365
%RSD	74.483	10.098	393.31	510.33	59.051	38.233	34.210	6.5471
#1	.00052	.27908	.00017	.00590	.00100	-.00516	.00452	.05848
#2	.00007	.22805	.00014	-.00005	.00421	-.00248	.00234	.05711
#3	.00032	.26066	-.00068	-.00315	.00425	-.00323	.00296	.05159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078719 Acquired: 6/25/2016 22:35:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00098**	**.00207**	**-.00026**	**-.00547**	**.00052**	**.00525**	**.00241**
Stddev	.00027	.00008	.00293	.00052	.00032	.00008	.00097
%RSD	27.115	4.0421	1136.5	9.5358	61.869	1.5786	40.264
#1	.00096	.00217	-.00025	-.00546	.00057	.00519	.00232
#2	.00073	.00203	-.00319	-.00495	.00081	.00521	.00342
#3	.00126	.00203	.00267	-.00599	.00017	.00534	.00149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9914.0**	**61492.**	**3065.3**
Stddev	9.7	119.	10.3
%RSD	.09735	.19352	.33672
#1	9905.1	61523.	3061.5
#2	9924.3	61360.	3057.3
#3	9912.7	61592.	3076.9

Approved: June 27, 2016

Sample Name: L1606078709 Acquired: 6/25/2016 22:39:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573102-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	.01725	.00020	.00148	.00412	.00007	2.5193	.00009
Stddev	.00160	.00300	.00146	.00122	.00055	.00007	.0273	.00025
%RSD	256.33	17.406	733.70	82.744	13.249	105.70	1.0828	269.34
#1	-.00115	.01430	.00189	.00205	.00368	.00003	2.5430	-.00015
#2	.00106	.02030	-.00065	.00007	.00396	.00002	2.4895	.00008
#3	.00197	.01716	-.00064	.00231	.00474	.00015	2.5253	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.00087	.00073	.04349	.03288	.00266	.76988	-.00075
Stddev	.00037	.00063	.00114	.01165	.16835	.00415	.07900	.00106
%RSD	107.35	72.316	156.53	26.779	512.03	155.84	10.261	141.15
#1	.00070	.00029	.00142	.03927	-.06801	.00606	.83027	.00043
#2	-.00004	.00153	.00135	.03454	-.06058	.00390	.79891	-.00163
#3	.00039	.00078	-.00059	.05665	.22723	-.00196	.68048	-.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	.20336	.00039	.01881	.00195	-.00218	-.00099	.41497
Stddev	.00052	.02965	.00044	.00286	.00086	.00256	.00440	.00248
%RSD	323.08	14.579	115.44	15.203	44.305	117.44	445.87	.59653
#1	-.00058	.19785	-.00012	.01994	.00207	-.00390	.00409	.41320
#2	.00043	.23538	.00054	.02093	.00103	-.00339	-.00379	.41391
#3	-.00033	.17686	.00073	.01556	.00275	.00076	-.00326	.41779
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078709 Acquired: 6/25/2016 22:39:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573102-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**.00684**	**.01005**	**.00002**	**.00088**	**.00094**	**.00070**
Stddev	.00032	.00012	.00959	.00200	.00079	.00012	.00147
%RSD	375.67	1.7762	95.434	11093.	88.946	12.687	210.40
#1	.00028	.00687	.01212	-.00222	.00129	.00101	.00212
#2	.00025	.00693	-.00041	.00064	.00138	.00101	.00079
#3	-.00028	.00670	.01844	.00163	-.00002	.00080	-.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10438.**	**64428.**	**3210.2**
Stddev	16.	116.	22.5
%RSD	.15594	.18047	.70191
#1	10456.	64522.	3184.5
#2	10433.	64464.	3226.3
#3	10424.	64298.	3219.8

Approved: June 27, 2016

Sample Name: L1606078711S Acquired: 6/25/2016 22:43:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573102-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00901	.25091	.00908	.04716	.02857	.00129	2.7206	.00112
Stddev	.00226	.00893	.00272	.00090	.00098	.00003	.0190	.00018
%RSD	25.135	3.5576	29.953	1.9149	3.4212	2.0076	.69811	15.952
#1	.00654	.24156	.01090	.04731	.02948	.00128	2.7394	.00096
#2	.00949	.25183	.00595	.04798	.02754	.00132	2.7210	.00131
#3	.01099	.25934	.01039	.04620	.02870	.00128	2.7014	.00109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00484	.01138	.01241	.12881	1.1056	.02562	.95895	.01155
Stddev	.00047	.00095	.00054	.02178	.0733	.00325	.08330	.00186
%RSD	9.6843	8.3365	4.3248	16.912	6.6280	12.671	8.6861	16.074
#1	.00430	.01246	.01288	.12748	1.1086	.02193	.86824	.01328
#2	.00510	.01069	.01253	.10772	1.1774	.02802	1.0320	.00959
#3	.00513	.01099	.01183	.15123	1.0309	.02692	.97661	.01179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02077	1.4247	.01204	.24038	.01720	.02493	.01091	.53474
Stddev	.00067	.0371	.00126	.00484	.00256	.00194	.00301	.00121
%RSD	3.2317	2.6069	10.481	2.0127	14.893	7.7710	27.534	.22565
#1	.02144	1.3934	.01127	.24412	.01465	.02673	.00768	.53472
#2	.02075	1.4149	.01350	.23492	.01719	.02518	.01362	.53595
#3	.02010	1.4657	.01136	.24211	.01977	.02288	.01143	.53354
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078711S Acquired: 6/25/2016 22:43:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573102-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02007**	**.03079**	**.02489**	**.01057**	**.02372**	**.02477**	**.00180**
Stddev	.00062	.00022	.00917	.00037	.00088	.00015	.00112
%RSD	3.0692	.70951	36.838	3.4629	3.6971	.59147	62.402
#1	.02076	.03087	.02809	.01029	.02425	.02492	.00062
#2	.01959	.03097	.01455	.01045	.02271	.02462	.00193
#3	.01984	.03055	.03204	.01098	.02420	.02478	.00285
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10426.**	**64070.**	**3185.9**
Stddev	11.	72.	10.0
%RSD	.10672	.11272	.31382
#1	10417.	64076.	3184.7
#2	10423.	64138.	3176.5
#3	10439.	63994.	3196.4

Approved: June 27, 2016

Sample Name: L1606078712SD Acquired: 6/25/2016 22:47:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573102-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00985	.31033	.01141	.04692	.02793	.00122	2.7514	.00123
Stddev	.00217	.01120	.00035	.00183	.00030	.00009	.0322	.00017
%RSD	21.999	3.6078	3.0998	3.8902	1.0783	7.5455	1.1711	13.538
#1	.00744	.30133	.01139	.04489	.02771	.00131	2.7147	.00104
#2	.01165	.32286	.01106	.04746	.02780	.00124	2.7644	.00130
#3	.01046	.30678	.01177	.04842	.02827	.00112	2.7751	.00135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00442	.01187	.01326	.16770	1.1233	.02635	1.0271	.01377
Stddev	.00036	.00059	.00082	.01226	.1089	.00034	.0701	.00235
%RSD	8.1823	4.9929	6.1530	7.3088	9.6965	1.2889	6.8269	17.054
#1	.00413	.01121	.01277	.16233	1.0153	.02615	1.0429	.01385
#2	.00482	.01235	.01421	.15905	1.2332	.02617	1.0881	.01607
#3	.00430	.01207	.01281	.18173	1.1215	.02675	.95049	.01138
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02146	1.3700	.01235	.24640	.01637	.02615	.01276	.67342
Stddev	.00028	.0367	.00082	.00464	.00030	.00374	.00186	.00470
%RSD	1.2904	2.6782	6.6457	1.8816	1.8039	14.304	14.555	.69838
#1	.02172	1.3476	.01220	.24696	.01603	.02416	.01223	.67004
#2	.02148	1.3500	.01162	.25073	.01656	.02383	.01483	.67143
#3	.02117	1.4123	.01324	.24151	.01651	.03046	.01123	.67879
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078712SD Acquired: 6/25/2016 22:47:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573102-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02141**	**.03084**	**.02074**	**.01089**	**.02357**	**.02510**	**.00112**
Stddev	.00030	.00031	.00329	.00303	.00061	.00018	.00144
%RSD	1.3990	1.0105	15.854	27.843	2.5684	.72342	128.59
#1	.02165	.03055	.02352	.00739	.02416	.02497	-.00034
#2	.02107	.03117	.01711	.01260	.02359	.02501	.00117
#3	.02151	.03078	.02157	.01268	.02295	.02530	.00254
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10421.**	**63887.**	**3174.5**
Stddev	13.	153.	11.8
%RSD	.12017	.23969	.37110
#1	10421.	64063.	3186.8
#2	10434.	63786.	3163.4
#3	10409.	63811.	3173.3

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 22:51:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39829**	**10.014**	**.39328**	**.48763**	**1.0098**	**.04913**	**9.9981**
Stddev	.00170	.014	.00352	.00156	.0114	.00024	.0222
%RSD	.42599	.13477	.89524	.31896	1.1283	.49183	.22224
#1	.39634	10.025	.39615	.48872	1.0228	.04926	10.024
#2	.39905	9.9992	.38935	.48585	1.0049	.04885	9.9823
#3	.39946	10.019	.39433	.48833	1.0016	.04927	9.9886
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05040**	**.19854**	**.49076**	**.50671**	**3.9457**	**49.325**	**1.0128**
Stddev	.00023	.00052	.00245	.00059	.0608	.368	.0109
%RSD	.45580	.25959	.49941	.11597	1.5404	.74655	1.0755
#1	.05026	.19800	.48916	.50736	4.0058	49.743	1.0249
#2	.05027	.19858	.48954	.50622	3.9470	49.185	1.0101
#3	.05066	.19903	.49358	.50654	3.8842	49.047	1.0036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.4894**	**.49712**	**1.0151**	**50.056**	**.50217**	**9.8694**	**.50095**
Stddev	.2168	.00232	.0035	.479	.00145	.0113	.00387
%RSD	2.2847	.46695	.34803	.95643	.28811	.11418	.77216
#1	9.7395	.49968	1.0186	50.588	.50383	9.8565	.50471
#2	9.3739	.49655	1.0152	49.919	.50140	9.8745	.49698
#3	9.3548	.49515	1.0115	49.660	.50126	9.8772	.50116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 22:51:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1957**	**.39554**	**5.0959**	**.99417**	**1.0077**	**1.0177**	**.50994**
Stddev	.0055	.00372	.0051	.00169	.0107	.0101	.00264
%RSD	.46066	.94108	.09932	.17029	1.0641	.98980	.51770
#1	1.1919	.39655	5.0908	.99223	1.0196	1.0259	.51299
#2	1.2020	.39866	5.0958	.99500	1.0048	1.0064	.50861
#3	1.1932	.39142	5.1010	.99530	.99871	1.0207	.50824
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.99906**	**1.0000**	F **2.9202**
Stddev	.00128	.0004	.0305
%RSD	.12818	.03891	1.0450
#1	1.0005	1.0005	2.9552
#2	.99795	.99972	2.9065
#3	.99877	.99993	2.8990
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9918.3**	**60256.**	**3072.6**
Stddev	6.2	156.	34.9
%RSD	.06223	.25822	1.1374
#1	9919.7	60085.	3032.6
#2	9923.7	60388.	3088.2
#3	9911.6	60295.	3097.1

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 22:54:51 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.00017**	**.00165**	**.00199**	**.00201**	**.00011**	**-.05290**	**-.00006**
Stddev	.00211	.00653	.00321	.00079	.00009	.00008	.03288	.00016
%RSD	1282.1	3936.0	193.87	39.670	4.4194	70.107	62.164	240.48
#1	-.00117	.00347	.00046	.00135	.00191	.00015	-.05612	-.00004
#2	.00226	-.00735	.00528	.00288	.00202	.00015	-.08405	.00008
#3	-.00158	.00438	-.00078	.00176	.00209	.00002	-.01852	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.00100**	**.00120**	**.03069**	**-.03948**	**.00003**	**-.00536**	**.00015**
Stddev	.00013	.00044	.00061	.00550	.07927	.00292	.09167	.00308
%RSD	995.60	43.627	50.884	17.919	200.80	8764.3	1709.0	2010.9
#1	-.00014	.00145	.00060	.03538	.05200	-.00061	-.10767	.00091
#2	.00000	.00096	.00116	.03205	-.08238	-.00251	.06932	.00278
#3	.00011	.00058	.00182	.02464	-.08805	.00322	.02226	-.00324
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00351**	**.02455**	**-.00057**	**.00388**	**.00014**	**.00562**	**.00087**	**.03540**
Stddev	.00076	.01905	.00055	.00530	.00438	.00343	.00632	.00172
%RSD	21.717	77.584	95.045	136.67	3025.0	61.032	726.47	4.8534
#1	.00266	.03539	-.00120	-.00182	.00487	.00872	.00338	.03589
#2	.00374	.03571	-.00017	.00867	-.00067	.00193	.00554	.03683
#3	.00413	.00256	-.00036	.00480	-.00377	.00622	-.00632	.03349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 22:54:51 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00099**	**.00045**	**.00606**	**-.00120**	**.00030**	**-.00008**	**.00363**
Stddev	.00065	.00027	.00156	.00179	.00040	.00006	.00038
%RSD	65.956	60.056	25.746	148.69	132.31	80.432	10.554
#1	.00115	.00019	.00786	-.00316	.00076	-.00006	.00364
#2	.00155	.00073	.00529	-.00079	.00014	-.00015	.00325
#3	.00027	.00044	.00504	.00034	.00001	-.00003	.00401
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9678.8**	**59649.**	**2985.7**
Stddev	6.9	105.	9.5
%RSD	.07084	.17603	.31957
#1	9671.2	59575.	2994.0
#2	9681.0	59769.	2975.3
#3	9684.3	59604.	2987.7

Approved: June 27, 2016

Sample Name: PBW LJ Acquired: 6/25/2016 22:58:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00058**	**-.00592**	**.00193**	**-.00086**	**.00070**	**.00018**	**-.07344**	**-.00023**
Stddev	.00178	.00410	.00330	.00167	.00093	.00007	.04096	.00010
%RSD	307.62	69.294	170.45	194.42	133.02	36.643	55.774	43.143
#1	-.00092	-.00625	.00300	-.00003	-.00002	.00015	-.02635	-.00025
#2	-.00217	-.00166	.00456	.00023	.00174	.00026	-.10082	-.00033
#3	.00135	-.00985	-.00176	-.00279	.00036	.00013	-.09313	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.00069**	**.00074**	**.03692**	**-.07694**	**.00146**	**.06376**	**.00092**
Stddev	.00002	.00038	.00020	.01230	.06836	.00025	.04368	.00067
%RSD	10.723	54.599	26.935	33.312	88.851	16.877	68.506	72.982
#1	-.00017	.00098	.00051	.02894	-.09438	.00132	.11194	.00086
#2	-.00017	.00026	.00082	.03073	-.13489	.00174	.05264	.00161
#3	-.00014	.00084	.00088	.05108	-.00155	.00131	.02672	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**.03492**	**.00034**	**.00729**	**.00159**	**-.00194**	**.00113**	**.00052**
Stddev	.00031	.01196	.00046	.00336	.00147	.00263	.00402	.00268
%RSD	159.07	34.258	134.06	46.125	92.547	135.75	357.58	520.37
#1	.00038	.02883	.00039	.00624	.00208	.00024	-.00125	.00071
#2	.00036	.04870	-.00014	.00458	.00275	-.00120	-.00114	.00309
#3	-.00016	.02722	.00078	.01105	-.00006	-.00487	.00577	-.00226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: PBW LJ Acquired: 6/25/2016 22:58:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**-.00008**	**.00508**	**-.00273**	**.00114**	**.00044**	**.00066**
Stddev	.00164	.00051	.01008	.00394	.00109	.00015	.00112
%RSD	14590.	648.58	198.46	144.23	96.326	34.462	168.97
#1	.00174	.00051	.01609	.00176	.00157	.00053	.00180
#2	-.00150	-.00033	-.00371	-.00561	-.00011	.00026	-.00044
#3	-.00028	-.00041	.00287	-.00433	.00195	.00052	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10135.**	**62589.**	**3095.8**
Stddev	24.	186.	5.7
%RSD	.23247	.29671	.18319
#1	10143.	62746.	3101.4
#2	10152.	62637.	3095.9
#3	10108.	62384.	3090.1

Approved: June 27, 2016

Sample Name: LCSW LJ Acquired: 6/25/2016 23:02:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19432**	**4.8961**	**.19607**	**.95390**	**.50477**	**.02378**	**5.0869**	**.02467**
Stddev	.00176	.0169	.00036	.00515	.00157	.00015	.0469	.00006
%RSD	.90778	.34589	.18422	.54033	.31152	.61673	.92299	.23915
#1	.19242	4.8827	.19640	.95171	.50641	.02365	5.1361	.02462
#2	.19591	4.9152	.19569	.95978	.50463	.02394	5.0425	.02466
#3	.19461	4.8905	.19612	.95020	.50328	.02375	5.0822	.02474
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09889**	**.24063**	**.25385**	**1.9878**	**24.436**	**.51652**	**4.7044**	**.24710**
Stddev	.00023	.00063	.00116	.0095	.067	.00203	.0278	.00275
%RSD	.23212	.26116	.45751	.47691	.27355	.39333	.59179	1.1124
#1	.09867	.24099	.25369	1.9863	24.386	.51588	4.7289	.24429
#2	.09913	.24100	.25509	1.9791	24.512	.51880	4.6741	.24978
#3	.09888	.23991	.25278	1.9979	24.411	.51489	4.7100	.24724
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51030**	**25.148**	**.24989**	**4.7689**	**.24945**	**.59139**	**.18766**	**2.4779**
Stddev	.00067	.056	.00070	.0091	.00347	.00400	.01211	.0014
%RSD	.13092	.22440	.27941	.19073	1.3920	.67662	6.4536	.05441
#1	.50970	25.212	.24981	4.7624	.25341	.58680	.17389	2.4770
#2	.51102	25.108	.25063	4.7793	.24803	.59411	.19668	2.4795
#3	.51019	25.124	.24924	4.7649	.24691	.59326	.19239	2.4773
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LCSW LJ Acquired: 6/25/2016 23:02:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49047**	**.51082**	**.50961**	**.24925**	**.49196**	**.48864**	**.01928**
Stddev	.00103	.00205	.00391	.00102	.00174	.00019	.00329
%RSD	.20978	.40119	.76774	.40835	.35306	.03834	17.088
#1	.49156	.51042	.51051	.24964	.49257	.48859	.01592
#2	.49032	.50900	.50533	.25000	.49331	.48848	.01940
#3	.48952	.51304	.51300	.24809	.49000	.48885	.02251
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9771.5**	**60209.**	**3050.2**
Stddev	3.0	103.	25.9
%RSD	.03108	.17103	.84982
#1	9769.0	60280.	3044.5
#2	9774.9	60091.	3027.6
#3	9770.6	60258.	3078.5

Approved: June 27, 2016

Sample Name: L1606076404 Acquired: 6/25/2016 23:06:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	.02745	.00034	.00861	.00996	.00009	36.605	.00012
Stddev	.00060	.00628	.00209	.00113	.00041	.00005	.105	.00023
%RSD	119.14	22.865	609.72	13.086	4.1637	53.570	.28645	187.24
#1	.00015	.03394	.00014	.00762	.01044	.00014	36.606	.00007
#2	.00016	.02699	-.00164	.00984	.00971	.00010	36.500	.00038
#3	.00120	.02142	.00253	.00837	.00974	.00004	36.710	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.01147	.00175	.46715	4.7234	.00625	13.388	.09951
Stddev	.00015	.00054	.00191	.01948	.0341	.00248	.058	.00203
%RSD	171.91	4.6728	109.26	4.1703	.72246	39.751	.43505	2.0444
#1	.00001	.01158	-.00043	.45694	4.6849	.00912	13.373	.10058
#2	-.00027	.01194	.00254	.48961	4.7498	.00477	13.339	.09716
#3	-.00001	.01088	.00314	.45489	4.7356	.00486	13.453	.10078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00119	34.643	.00396	.03562	.00752	.00339	.00429	4.0453
Stddev	.00028	.078	.00076	.00870	.00150	.00394	.00341	.0166
%RSD	23.933	.22458	19.114	24.436	19.891	116.11	79.423	.40956
#1	.00087	34.732	.00311	.02910	.00894	.00791	.00692	4.0642
#2	.00131	34.587	.00454	.03225	.00766	.00162	.00551	4.0386
#3	.00140	34.610	.00424	.04550	.00596	.00065	.00044	4.0331
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606076404 Acquired: 6/25/2016 23:06:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	.19364	.00117	-.00333	.00101	.00286	.00160
Stddev	.00025	.00044	.00456	.00363	.00019	.00020	.00097
%RSD	28.325	.22814	391.45	108.96	18.806	7.1675	60.613
#1	.00083	.19387	-.00007	-.00660	.00107	.00306	.00048
#2	.00116	.19313	.00622	-.00396	.00116	.00265	.00224
#3	.00066	.19392	-.00265	.00057	.00080	.00286	.00207
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9727.8	59976.	3053.1
Stddev	23.9	148.	4.4
%RSD	.24547	.24636	.14325
#1	9700.3	60146.	3049.4
#2	9741.5	59877.	3057.9
#3	9741.8	59905.	3052.0

Approved: June 27, 2016

Sample Name: L1606076405S Acquired: 6/25/2016 23:10:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19582**	**4.9527**	**.19879**	**.95673**	**.51438**	**.02432**	**42.805**	**.02505**
Stddev	.00335	.0137	.00128	.00425	.00065	.00003	.112	.00030
%RSD	1.7110	.27715	.64557	.44412	.12542	.14170	.26049	1.1988
#1	.19856	4.9529	.19764	.95186	.51480	.02435	42.707	.02530
#2	.19683	4.9664	.19856	.95967	.51471	.02433	42.926	.02513
#3	.19208	4.9389	.20017	.95866	.51364	.02429	42.781	.02472
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09757**	**.25598**	**.24917**	**2.4354**	**29.536**	**.52338**	**18.805**	**.34995**
Stddev	.00078	.00042	.00127	.0181	.040	.00393	.025	.00506
%RSD	.79936	.16278	.51136	.74393	.13605	.74997	.13071	1.4469
#1	.09813	.25630	.25060	2.4222	29.582	.51885	18.805	.34467
#2	.09790	.25551	.24817	2.4278	29.516	.52547	18.830	.35476
#3	.09668	.25612	.24874	2.4560	29.509	.52582	18.780	.35044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51541**	**61.224**	**.25128**	**4.8968**	**.24942**	**.59855**	**.19087**	**6.6449**
Stddev	.00129	.228	.00073	.0088	.00234	.00299	.00293	.0075
%RSD	.25084	.37164	.28907	.17909	.93699	.50010	1.5365	.11257
#1	.51663	61.311	.25055	4.9006	.24863	.59583	.18976	6.6461
#2	.51554	61.394	.25129	4.9031	.24758	.60176	.19420	6.6517
#3	.51406	60.965	.25200	4.8868	.25205	.59805	.18866	6.6369
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606076405S Acquired: 6/25/2016 23:10:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49233	.70070	.50542	.24860	.50000	.48511	.00505
Stddev	.00086	.00402	.00572	.00107	.00163	.00066	.00072
%RSD	.17371	.57387	1.1319	.43103	.32683	.13619	14.263
#1	.49184	.70101	.51171	.24742	.49924	.48572	.00441
#2	.49332	.70456	.50403	.24884	.49889	.48521	.00491
#3	.49184	.69653	.50053	.24953	.50188	.48441	.00583
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9652.6	59187.	3022.5
Stddev	17.6	118.	14.2
%RSD	.18215	.19875	.46825
#1	9645.4	59224.	3018.6
#2	9639.7	59281.	3010.7
#3	9672.6	59055.	3038.2

Approved: June 27, 2016

Sample Name: L1606076406SD Acquired: 6/25/2016 23:13:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19161**	**4.9186**	**.19913**	**.95429**	**.51211**	**.02396**	**42.977**	**.02467**
Stddev	.00161	.0125	.00343	.00448	.00436	.00009	.276	.00017
%RSD	.83957	.25322	1.7203	.46971	.85098	.36242	.64279	.68812
#1	.19148	4.9258	.19753	.95898	.51664	.02396	43.237	.02475
#2	.19328	4.9042	.19680	.95004	.51174	.02387	43.008	.02479
#3	.19007	4.9258	.20306	.95385	.50794	.02404	42.687	.02448
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09706**	**.25178**	**.24789**	**2.4233**	**29.585**	**.51807**	**18.712**	**.35011**
Stddev	.00057	.00068	.00034	.0356	.112	.00327	.182	.00396
%RSD	.58951	.26961	.13796	1.4688	.37990	.63166	.97051	1.1325
#1	.09772	.25103	.24806	2.4608	29.711	.51534	18.898	.35283
#2	.09684	.25235	.24811	2.4189	29.497	.52170	18.704	.34556
#3	.09664	.25196	.24749	2.3900	29.545	.51719	18.535	.35193
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51262**	**61.425**	**.24874**	**4.8787**	**.24757**	**.59558**	**.18865**	**6.6917**
Stddev	.00159	.310	.00133	.0141	.00184	.00348	.00465	.0131
%RSD	.30991	.50524	.53301	.28958	.74220	.58390	2.4654	.19574
#1	.51304	61.773	.24994	4.8746	.24617	.59720	.19309	6.6816
#2	.51396	61.322	.24897	4.8944	.24965	.59795	.18905	6.7065
#3	.51087	61.178	.24732	4.8670	.24689	.59159	.18381	6.6870
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606076406SD Acquired: 6/25/2016 23:13:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48585	.69992	.50428	.08491	.49039	.49499	.00464
Stddev	.00076	.00443	.00835	.00108	.00225	.00372	.00157
%RSD	.15628	.63319	1.6562	1.2751	.45854	.75207	33.818
#1	.48649	.70500	.51389	.08368	.49168	.49197	.00317
#2	.48606	.69789	.49873	.08571	.48779	.49386	.00446
#3	.48501	.69687	.50023	.08535	.49169	.49915	.00630
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9674.4	59675.	3057.4
Stddev	5.6	128.	11.6
%RSD	.05826	.21445	.38044
#1	9670.2	59575.	3048.3
#2	9680.8	59819.	3053.4
#3	9672.1	59630.	3070.5

Approved: June 27, 2016

Sample Name: L1606099102 Acquired: 6/25/2016 23:17:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00035	.08527	.00559	.04109	.01538	.00019	.57467	.00159
Stddev	.00233	.00869	.00189	.00114	.00133	.00004	.01094	.00013
%RSD	663.84	10.192	33.720	2.7694	8.6207	22.830	1.9043	7.9131
#1	.00210	.09496	.00628	.04240	.01605	.00016	.56261	.00167
#2	-.00061	.08272	.00346	.04040	.01386	.00017	.57746	.00145
#3	-.00255	.07815	.00704	.04046	.01624	.00024	.58395	.00167
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00096	.05412	.00582	.38755	1.2527	.00289	.47003	.00071
Stddev	.00015	.00024	.00026	.01093	.0635	.00116	.03189	.00162
%RSD	15.476	.43524	4.4250	2.8204	5.0656	40.155	6.7852	226.02
#1	.00113	.05437	.00590	.40001	1.1922	.00164	.49884	-.00098
#2	.00091	.05406	.00602	.38303	1.3188	.00308	.43576	.00089
#3	.00085	.05391	.00553	.37960	1.2473	.00394	.47550	.00224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00360	218.01	.00389	.36041	.01046	-.00372	.00482	1.3728
Stddev	.00017	.12	.00068	.00488	.00162	.00083	.00193	.0038
%RSD	4.7149	.05666	17.447	1.3551	15.457	22.416	40.114	.27490
#1	.00375	218.03	.00311	.35572	.01225	-.00460	.00284	1.3685
#2	.00365	218.13	.00423	.36547	.01003	-.00293	.00492	1.3754
#3	.00341	217.88	.00434	.36004	.00911	-.00364	.00670	1.3745
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606099102 Acquired: 6/25/2016 23:17:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00632**	**.09765**	**.07700**	**-.00067**	**.01524**	**.07845**	**.01879**
Stddev	.00056	.00044	.00219	.00203	.00068	.00014	.00089
%RSD	8.9139	.45291	2.8381	300.30	4.4598	.18118	4.7496
#1	.00609	.09718	.07562	.00166	.01602	.07833	.01918
#2	.00590	.09770	.07952	-.00172	.01485	.07841	.01777
#3	.00696	.09806	.07586	-.00197	.01484	.07861	.01943
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10241.**	**62264.**	**3185.5**
Stddev	15.	196.	4.7
%RSD	.14516	.31405	.14616
#1	10253.	62395.	3189.9
#2	10245.	62357.	3185.8
#3	10224.	62039.	3180.6

Approved: June 27, 2016

Sample Name: L1606099102PS Acquired: 6/25/2016 23:21:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG573952-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20426**	**5.2585**	**.21569**	**1.0545**	**.53374**	**.02552**	**5.8510**	**.02789**
Stddev	.00128	.0258	.00476	.0057	.01070	.00022	.0799	.00005
%RSD	.62816	.49053	2.2048	.54061	2.0041	.85107	1.3656	.17945
#1	.20288	5.2399	.21984	1.0489	.54587	.02533	5.9343	.02786
#2	.20446	5.2478	.21673	1.0543	.52973	.02547	5.7750	.02786
#3	.20543	5.2880	.21050	1.0603	.52563	.02576	5.8438	.02795
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10258**	**.30280**	**.26705**	**2.4069**	**27.035**	**.52853**	**5.3059**	**.25725**
Stddev	.00041	.00101	.00181	.0614	.546	.00889	.1709	.00709
%RSD	.40425	.33448	.67841	2.5526	2.0183	1.6821	3.2205	2.7577
#1	.10253	.30184	.26742	2.4708	27.658	.53822	5.4655	.26479
#2	.10301	.30272	.26864	2.4018	26.642	.52076	5.1256	.25071
#3	.10219	.30386	.26508	2.3482	26.805	.52661	5.3266	.25626
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52291**	**252.79**	**.26034**	**5.5827**	**.26863**	**.62508**	**.20920**	**4.0596**
Stddev	.00363	5.13	.00069	.0240	.00232	.00165	.00657	.0117
%RSD	.69330	2.0298	.26564	.43012	.86233	.26363	3.1385	.28905
#1	.52662	258.69	.26066	5.6009	.26650	.62318	.21182	4.0655
#2	.52272	250.27	.26082	5.5917	.26829	.62599	.21406	4.0673
#3	.51938	249.40	.25955	5.5555	.27109	.62608	.20173	4.0461
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606099102PS Acquired: 6/25/2016 23:21:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG573952-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51599**	**.62613**	**.61043**	**.25381**	**.52664**	**.60277**	**.02286**
Stddev	.00198	.01306	.01573	.00527	.00286	.00158	.00057
%RSD	.38295	2.0851	2.5770	2.0756	.54391	.26285	2.4777
#1	.51752	.64119	.62824	.25887	.52456	.60412	.02234
#2	.51668	.61903	.59844	.25420	.52545	.60318	.02277
#3	.51376	.61815	.60462	.24835	.52991	.60103	.02347
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9624.7**	**58159.**	**2980.0**
Stddev	48.4	89.	45.7
%RSD	.50312	.15320	1.5350
#1	9582.5	58170.	2928.1
#2	9614.0	58242.	2997.3
#3	9677.6	58064.	3014.5

Approved: June 27, 2016

Sample Name: L1606099102SDL Acquired: 6/25/2016 23:25:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 50 Custom ID2: Custom ID3:
Comment: WG573952-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	.01283	.00236	.01119	.00550	.00018	.08026	.00026
Stddev	.00047	.00301	.00204	.00193	.00071	.00008	.03574	.00006
%RSD	40.405	23.474	86.372	17.221	12.910	46.045	44.534	24.105
#1	.00083	.01247	.00021	.01333	.00520	.00027	.04235	.00026
#2	.00098	.01601	.00261	.01064	.00630	.00011	.11335	.00020
#3	.00172	.01002	.00427	.00960	.00498	.00015	.08510	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.01258	.00098	.10105	.18990	-.00151	.06238	.00028
Stddev	.00006	.00091	.00048	.00767	.08103	.00626	.02555	.00271
%RSD	25.732	7.2135	49.236	7.5891	42.670	413.92	40.953	970.07
#1	.00026	.01275	.00118	.09700	.21903	.00544	.04558	.00279
#2	.00015	.01339	.00043	.10990	.09833	-.00328	.04979	.00064
#3	.00024	.01160	.00132	.09626	.25235	-.00669	.09179	-.00259
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00205	47.703	.00017	.08239	.00525	-.00365	.00219	.31315
Stddev	.00019	.192	.00051	.00485	.00385	.00400	.00870	.00335
%RSD	9.3003	.40144	294.11	5.8889	73.348	109.43	397.40	1.0688
#1	.00183	47.834	.00076	.07694	.00083	-.00754	.00399	.31041
#2	.00217	47.483	-.00009	.08400	.00786	-.00387	-.00727	.31216
#3	.00215	47.792	-.00015	.08624	.00708	.00045	.00985	.31688
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606099102SDL Acquired: 6/25/2016 23:25:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 50 Custom ID2: Custom ID3:
Comment: WG573952-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00128**	**.02176**	**.02063**	**.00132**	**.00408**	**.01800**	**.00415**
Stddev	.00053	.00039	.00638	.00109	.00052	.00037	.00045
%RSD	41.627	1.7773	30.936	82.221	12.786	2.0724	10.786
#1	.00158	.02176	.02171	.00142	.00446	.01762	.00425
#2	.00067	.02138	.02640	.00236	.00348	.01802	.00454
#3	.00160	.02215	.01377	.00019	.00429	.01836	.00366
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9804.5**	**59680.**	**2983.6**
Stddev	22.5	103.	15.3
%RSD	.22901	.17203	.51306
#1	9824.1	59682.	2991.0
#2	9809.6	59782.	2993.9
#3	9780.0	59577.	2966.0

Approved: June 27, 2016

Sample Name: L1606099501 Acquired: 6/25/2016 23:29:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	.00231	.00190	.02254	.12371	.00015	15.528	-.00008
Stddev	.00014	.00712	.00142	.00137	.00163	.00003	.200	.00022
%RSD	16.093	308.09	74.696	6.0976	1.3212	21.126	1.2862	282.14
#1	.00100	.01032	.00271	.02232	.12196	.00014	15.307	.00002
#2	.00072	-.00013	.00272	.02129	.12520	.00012	15.695	.00008
#3	.00085	-.00326	.00026	.02401	.12396	.00018	15.583	-.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00027	.00136	.08102	.36083	.08036	1.7207	.01281
Stddev	.00017	.00026	.00081	.01723	.08162	.00488	.0426	.00381
%RSD	55.449	94.239	59.356	21.269	22.620	6.0696	2.4776	29.711
#1	.00018	.00004	.00043	.07010	.45158	.07724	1.7124	.01021
#2	.00026	.00024	.00186	.07209	.29342	.07785	1.6828	.01718
#3	.00051	.00055	.00179	.10089	.33750	.08598	1.7669	.01103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	40.169	.00020	.00739	.00147	-.00261	.00048	.01475
Stddev	.00007	.358	.00037	.00186	.00129	.00197	.00359	.00082
%RSD	116.52	.89035	187.93	25.143	87.719	75.441	741.63	5.5637
#1	.00010	39.803	.00022	.00902	.00206	-.00263	-.00044	.01382
#2	.00008	40.518	.00056	.00537	.00236	-.00063	-.00256	.01539
#3	-.00002	40.186	-.00019	.00779	-.00001	-.00456	.00445	.01503
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606099501 Acquired: 6/25/2016 23:29:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	2.0444	.00152	-.00059	-.00017	.00315	.00110
Stddev	.00034	.0207	.00598	.00278	.00059	.00019	.00107
%RSD	58.480	1.0109	393.49	469.74	343.26	6.1207	97.322
#1	.00020	2.0228	.00742	-.00167	.00024	.00305	.00162
#2	.00070	2.0639	.00167	-.00267	-.00085	.00303	-.00013
#3	.00086	2.0465	-.00453	.00256	.00009	.00337	.00180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9773.4	59741.	3000.7
Stddev	10.5	113.	31.9
%RSD	.10719	.18996	1.0628
#1	9785.4	59856.	3037.0
#2	9766.5	59737.	2977.2
#3	9768.1	59629.	2987.9

Approved: June 27, 2016

Sample Name: L1606099502 Acquired: 6/25/2016 23:32:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	-.00479	-.00049	.02240	.12357	.00014	15.278	-.00007
Stddev	.00142	.00423	.00253	.00505	.00148	.00006	.144	.00014
%RSD	22192.	88.307	518.91	22.533	1.1984	44.965	.94397	206.25
#1	.00014	-.00965	-.00218	.02478	.12272	.00011	15.115	-.00014
#2	.00133	-.00281	-.00170	.02581	.12271	.00021	15.329	.00010
#3	-.00149	-.00191	.00242	.01660	.12528	.00010	15.390	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.00065	.00042	.06837	.37746	.07803	1.6184	.01419
Stddev	.00041	.00112	.00027	.00656	.03147	.00401	.0513	.00310
%RSD	83.614	171.25	62.991	9.6001	8.3371	5.1380	3.1674	21.849
#1	.00050	-.00064	.00063	.07323	.35510	.08210	1.6690	.01383
#2	.00090	.00123	.00012	.06091	.36384	.07791	1.6197	.01745
#3	.00007	.00137	.00052	.07098	.41345	.07408	1.5665	.01128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	39.920	-.00037	.00510	.00199	-.00064	.00335	.01167
Stddev	.00036	.366	.00054	.01025	.00130	.00317	.00244	.00126
%RSD	102.18	.91613	144.37	200.85	65.670	494.36	72.931	10.832
#1	-.00077	39.520	-.00039	.00961	.00071	-.00417	.00384	.01302
#2	-.00018	40.239	-.00090	.01233	.00193	.00029	.00550	.01150
#3	-.00011	40.000	.00017	-.00663	.00331	.00196	.00070	.01051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606099502 Acquired: 6/25/2016 23:32:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00055**	**2.0217**	**-.00337**	**-.00055**	**.00074**	**.00315**	**.00087**
Stddev	.00116	.0191	.00559	.00170	.00084	.00020	.00103
%RSD	210.74	.94683	165.64	307.06	114.28	6.4714	118.16
#1	-.00142	2.0010	.00194	-.00241	.00129	.00330	.00185
#2	.00077	2.0388	-.00920	-.00018	-.00023	.00292	.00097
#3	-.00100	2.0253	-.00287	.00093	.00117	.00324	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9730.5**	**59619.**	**2989.3**
Stddev	18.2	229.	29.6
%RSD	.18733	.38360	.99126
#1	9750.6	59882.	3021.9
#2	9715.1	59468.	2964.1
#3	9725.8	59506.	2981.9

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 23:36:47 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40930**	**10.238**	**.40819**	**.50228**	**1.0459**	**.04973**	**10.404**
Stddev	.00043	.021	.00043	.00341	.0044	.00005	.020
%RSD	.10460	.20815	.10461	.67892	.41689	.09834	.19571
#1	.40883	10.251	.40851	.50622	1.0496	.04974	10.381
#2	.40944	10.250	.40771	.50027	1.0411	.04968	10.418
#3	.40965	10.214	.40835	.50036	1.0470	.04978	10.414
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05210**	**.20379**	**.49816**	**.52303**	**4.0622**	**51.067**	**1.0469**
Stddev	.00019	.00042	.00279	.00142	.0372	.160	.0078
%RSD	.35747	.20724	.56062	.27079	.91500	.31299	.74725
#1	.05231	.20342	.50024	.52229	4.1047	51.143	1.0555
#2	.05194	.20371	.49926	.52467	4.0462	50.883	1.0402
#3	.05207	.20425	.49499	.52215	4.0357	51.175	1.0449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.7214**	**.51746**	**1.0407**	**52.052**	**.51652**	**10.202**	**.51928**
Stddev	.0660	.00152	.0096	.278	.00085	.015	.00145
%RSD	.67863	.29343	.92144	.53407	.16386	.14443	.27838
#1	9.7320	.51900	1.0479	52.343	.51582	10.200	.51894
#2	9.7814	.51597	1.0444	51.789	.51627	10.218	.52086
#3	9.6508	.51742	1.0298	52.022	.51746	10.189	.51803
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 23:36:47 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2277**	**.40544**	**5.2555**	**1.0220**	**1.0464**	**1.0514**	**.52265**
Stddev	.0051	.00303	.0032	.0024	.0054	.0078	.00372
%RSD	.41461	.74796	.06070	.23053	.51974	.73901	.71099
#1	1.2332	.40616	5.2590	1.0221	1.0521	1.0443	.52536
#2	1.2232	.40805	5.2526	1.0196	1.0413	1.0597	.52418
#3	1.2265	.40211	5.2550	1.0243	1.0458	1.0502	.51841
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0117**	**1.0320**	F **2.9933**
Stddev	.0025	.0009	.0109
%RSD	.24458	.08681	.36389
#1	1.0144	1.0330	3.0053
#2	1.0111	1.0312	2.9841
#3	1.0096	1.0318	2.9905
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9691.0**	**59432.**	**3012.0**
Stddev	5.1	44.	12.8
%RSD	.05245	.07397	.42554
#1	9696.2	59404.	2998.2
#2	9686.1	59410.	3023.6
#3	9690.7	59483.	3014.1

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 23:40:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00145**	**-.00660**	**-.00143**	**.00292**	**.00177**	**.00016**	**-.01784**	**.00008**
Stddev	.00180	.00657	.00282	.00130	.00082	.00003	.03649	.00007
%RSD	124.44	99.487	197.72	44.383	46.493	20.281	204.59	79.919
#1	.00061	-.01208	-.00468	.00217	.00185	.00015	-.05680	.00016
#2	-.00276	-.00840	.00028	.00442	.00255	.00019	-.01224	.00005
#3	-.00219	.00068	.00012	.00218	.00091	.00013	.01553	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.00038**	**.00052**	**.02154**	**-.09198**	**-.00110**	**-.01322**	**.00018**
Stddev	.00024	.00088	.00138	.01483	.10535	.00141	.06861	.00246
%RSD	523.34	234.01	265.29	68.833	114.54	127.62	519.13	1371.8
#1	-.00015	.00090	-.00012	.01936	.02327	-.00076	.06137	-.00117
#2	-.00022	-.00064	-.00042	.03733	-.18333	-.00265	-.02738	.00302
#3	.00023	.00086	.00210	.00792	-.11589	.00010	-.07365	-.00132
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00348**	**.04821**	**.00016**	**.00585**	**.00443**	**.00314**	**.00156**	**.03553**
Stddev	.00065	.02773	.00095	.00367	.00371	.00275	.00114	.00188
%RSD	18.560	57.517	582.95	62.725	83.852	87.739	73.200	5.2906
#1	.00289	.07448	.00125	.00268	.00440	.00563	.00189	.03713
#2	.00338	.05093	-.00027	.00499	.00073	.00018	.00029	.03346
#3	.00417	.01922	-.00050	.00987	.00816	.00360	.00249	.03599
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 23:40:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00025**	**.00051**	**.00604**	**-.00528**	**.00062**	**.00012**	**.00482**
Stddev	.00070	.00006	.00458	.00163	.00029	.00008	.00094
%RSD	280.85	11.978	75.793	30.927	46.562	68.537	19.510
#1	.00047	.00050	.00150	-.00357	.00036	.00006	.00376
#2	.00081	.00057	.01066	-.00682	.00057	.00008	.00556
#3	-.00053	.00045	.00597	-.00546	.00093	.00021	.00513
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9759.5**	**60265.**	**3013.5**
Stddev	10.8	85.	17.4
%RSD	.11040	.14047	.57599
#1	9754.6	60307.	3032.0
#2	9771.9	60320.	2997.5
#3	9752.1	60167.	3011.1

Approved: June 27, 2016

Sample Name: ICSA Acquired: 6/25/2016 23:44:20 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -.00562	263.10	.00178	-.00976	.00140	.00014	248.10
Stddev	.00117	.16	.00383	.00309	.00113	.00004	.61
%RSD	20.823	.06041	215.50	31.614	80.449	26.067	.24782
#1	-.00542	263.25	-.00154	-.01064	.00266	.00012	248.67
#2	-.00456	262.94	.00597	-.00633	.00047	.00013	247.45
#3	-.00688	263.13	.00090	-.01231	.00109	.00019	248.17
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.00400						
Low Limit	-.00400						

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	-.00060	-.00056	F .01039	95.630	-.04599	.01242
Stddev	.00016	.00022	.00039	.00101	.248	.03226	.00307
%RSD	92.869	36.608	70.420	9.7281	.25928	70.136	24.681
#1	-.00031	-.00080	-.00098	.00928	95.904	-.06101	.01295
#2	-.00020	-.00063	-.00021	.01127	95.420	-.06800	.01519
#3	.00000	-.00037	-.00048	.01062	95.566	-.00896	.00913
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				.00400			
Low Limit				-.00400			

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	236.10	.00050	-.00055	.08182	-.00122	.03425	.00395
Stddev	.41	.00175	.00028	.01035	.00129	.00383	.00558
%RSD	.17524	347.68	51.671	12.652	105.94	11.172	141.13
#1	236.13	.00226	-.00079	.09323	-.00097	.03151	-.00194
#2	235.67	.00051	-.00062	.07920	-.00262	.03262	.00465
#3	236.50	-.00125	-.00024	.07303	-.00007	.03862	.00916
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 27, 2016

Sample Name: ICSA Acquired: 6/25/2016 23:44:20 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00072	-.00782	.00827	.00013	.00094	-.00929	-.00404
Stddev	.00319	.00204	.00198	.00005	.00018	.00784	.00342
%RSD	442.40	26.134	23.931	35.338	18.766	84.463	84.650
#1	.00212	-.01015	.01018	.00009	.00088	-.00188	-.00347
#2	-.00417	-.00696	.00842	.00012	.00080	-.01750	-.00771
#3	-.00012	-.00634	.00622	.00018	.00114	-.00848	-.00094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00163	-.00560	-.01351
Stddev	.00058	.00018	.00078
%RSD	35.475	3.3032	5.7782
#1	-.00221	-.00565	-.01421
#2	-.00162	-.00574	-.01366
#3	-.00105	-.00539	-.01267
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9256.6	56705.	2976.7
Stddev	13.6	91.	12.8
%RSD	.14727	.16098	.43054
#1	9241.1	56650.	2963.0
#2	9266.9	56811.	2988.4
#3	9261.8	56655.	2978.7

Approved: June 27, 2016

Sample Name: ICSAB Acquired: 6/25/2016 23:48:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52011**	**271.09**	**.26014**	**-.01193**	**.26131**	**.24391**	**254.06**	**.49893**
Stddev	.00309	.31	.00108	.00072	.00207	.00022	1.57	.00035
%RSD	.59470	.11617	.41599	6.0451	.79127	.08930	.61634	.06930
#1	.51910	271.29	.26138	-.01172	.26259	.24374	255.54	.49856
#2	.51765	270.73	.25938	-.01274	.26241	.24383	254.23	.49898
#3	.52358	271.26	.25965	-.01134	.25892	.24415	252.42	.49925
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.24094**	**.25041**	**.26416**	**96.077**	**5.2095**	**.01124**	**238.55**	**.24627**
Stddev	.00056	.00142	.00058	.420	.1352	.00179	1.07	.00329
%RSD	.23299	.56520	.21819	.43687	2.5957	15.928	.44935	1.3378
#1	.24046	.25065	.26387	96.381	5.3478	.01132	239.59	.24346
#2	.24081	.24889	.26378	96.252	5.2032	.00941	238.63	.24545
#3	.24156	.25169	.26482	95.598	5.0776	.01299	237.45	.24990
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00041**	**5.4959**	**.48742**	**.09841**	**.49766**	**.51195**	**.23776**	**.00256**
Stddev	.00052	.0364	.00161	.00635	.00144	.00162	.00501	.00193
%RSD	128.92	.66237	.33105	6.4479	.28893	.31661	2.1076	75.415
#1	-.00068	5.5313	.48557	.09364	.49656	.51344	.24335	.00339
#2	-.00073	5.4979	.48847	.09597	.49929	.51023	.23366	.00393
#3	.00020	5.4586	.48823	.10561	.49712	.51219	.23626	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: ICSAB Acquired: 6/25/2016 23:48:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00140**	**.00103**	**-.00323**	**.47273**	**.25455**	**.48271**	**-.01305**
Stddev	.00059	.00027	.00250	.00229	.00097	.00045	.00046
%RSD	41.750	26.302	77.431	.48347	.38190	.09250	3.5206
#1	.00144	.00120	-.00356	.47420	.25352	.48220	-.01343
#2	.00197	.00072	-.00058	.47010	.25467	.48293	-.01317
#3	.00080	.00116	-.00555	.47390	.25546	.48302	-.01254
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9240.5**	**56174.**	**2955.7**
Stddev	9.6	118.	17.7
%RSD	.10383	.20921	.59797
#1	9251.6	56039.	2946.0
#2	9234.1	56253.	2944.9
#3	9235.9	56229.	2976.1

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 23:51:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41108	10.316	.40843	.50327	1.0436	.05024	10.459
Stddev	.00161	.013	.00298	.00077	.0011	.00011	.030
%RSD	.39215	.12124	.73007	.15382	.10203	.22382	.28694
#1	.41119	10.324	.40804	.50264	1.0446	.05015	10.464
#2	.41263	10.302	.40566	.50304	1.0438	.05037	10.487
#3	.40941	10.323	.41158	.50413	1.0425	.05022	10.428
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05234	.20485	.50201	.52446	4.0759	51.088	1.0484
Stddev	.00020	.00025	.00165	.00123	.0669	.060	.0059
%RSD	.38699	.12298	.32889	.23505	1.6409	.11683	.55819
#1	.05251	.20498	.50023	.52357	4.1126	51.031	1.0491
#2	.05240	.20456	.50349	.52586	3.9987	51.083	1.0423
#3	.05212	.20501	.50230	.52393	4.1164	51.150	1.0539
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.8126	.50786	1.0468	51.847	.51713	10.210	.51778
Stddev	.0274	.00264	.0020	.030	.00045	.013	.00098
%RSD	.27960	.52030	.19073	.05848	.08757	.13121	.18906
#1	9.8005	.51090	1.0485	51.876	.51722	10.201	.51858
#2	9.7933	.50648	1.0474	51.816	.51663	10.204	.51807
#3	9.8440	.50619	1.0446	51.848	.51752	10.226	.51669
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 23:51:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2406**	**.41201**	**5.2627**	**1.0255**	**1.0428**	**1.0401**	**.52263**
Stddev	.0022	.00564	.0065	.0018	.0016	.0094	.00276
%RSD	.17501	1.3693	.12412	.17227	.15774	.90409	.52737
#1	1.2431	.41191	5.2553	1.0271	1.0421	1.0459	.52461
#2	1.2392	.40642	5.2651	1.0236	1.0417	1.0292	.52380
#3	1.2396	.41770	5.2677	1.0258	1.0447	1.0451	.51948
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0216**	**1.0330**	F **3.0271**
Stddev	.0027	.0013	.0163
%RSD	.26838	.12831	.53748
#1	1.0227	1.0315	3.0446
#2	1.0236	1.0335	3.0125
#3	1.0185	1.0340	3.0242
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9680.4**	**59250.**	**3000.1**
Stddev	28.5	27.	16.9
%RSD	.29390	.04497	.56388
#1	9711.9	59280.	2982.6
#2	9672.8	59242.	3016.3
#3	9656.6	59229.	3001.5

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 23:55:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00125	.00182	.00085	.00036	.00255	.00017	-.02838	-.00012
Stddev	.00082	.00761	.00304	.00225	.00150	.00005	.02296	.00019
%RSD	65.454	418.99	358.52	623.67	58.837	28.075	80.890	157.58
#1	.00189	-.00688	.00358	-.00006	.00362	.00012	-.00325	-.00021
#2	.00153	.00513	.00139	-.00165	.00321	.00020	-.04827	-.00024
#3	.00033	.00720	-.00242	.00279	.00083	.00021	-.03363	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00075	.00113	.02762	-.02056	.00086	-.01380	-.00101
Stddev	.00025	.00070	.00060	.00527	.01321	.00185	.01535	.00114
%RSD	279.31	93.710	52.614	19.071	64.270	216.68	111.21	112.81
#1	-.00016	.00013	.00054	.02156	-.02746	-.00001	-.01846	.00029
#2	.00010	.00151	.00112	.03019	-.02889	-.00040	-.02627	-.00181
#3	.00033	.00061	.00173	.03110	-.00532	.00298	.00334	-.00151
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00326	.05197	-.00006	.00537	-.00040	.00432	.00298	.03440
Stddev	.00030	.03661	.00066	.00611	.00131	.00120	.00482	.00043
%RSD	9.1019	70.433	1169.2	113.80	328.70	27.704	161.98	1.2407
#1	.00299	.03235	.00066	.00591	.00062	.00425	-.00005	.03422
#2	.00322	.09421	-.00018	.01119	-.00187	.00556	.00044	.03489
#3	.00358	.02936	-.00065	-.00099	.00005	.00317	.00854	.03409
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 23:55:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**.00044**	**.00562**	**-.00278**	**.00100**	**.00010**	**.00427**
Stddev	.00044	.00041	.00677	.00064	.00081	.00020	.00057
%RSD	558.27	93.814	120.49	22.928	80.799	205.25	13.474
#1	.00052	-.00002	.00467	-.00264	.00112	.00024	.00360
#2	.00007	.00078	.01282	-.00348	.00014	-.00013	.00461
#3	-.00036	.00055	-.00063	-.00223	.00174	.00017	.00459
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9746.4**	**60216.**	**3006.7**
Stddev	3.8	76.	7.9
%RSD	.03876	.12554	.26429
#1	9742.9	60301.	3002.9
#2	9746.0	60157.	3001.3
#3	9750.4	60189.	3015.8

Approved: June 27, 2016

Sample Name: LLCCV Acquired: 6/25/2016 23:59:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00916	.16469	.00814	.08024	.01010	.00165	.38196	.00067
Stddev	.00085	.00884	.00209	.00058	.00103	.00003	.03578	.00008
%RSD	9.3027	5.3671	25.632	.71975	10.222	1.6058	9.3673	12.378
#1	.00982	.16059	.01037	.08090	.01024	.00166	.39925	.00061
#2	.00944	.15864	.00624	.07981	.01105	.00162	.40581	.00076
#3	.00820	.17483	.00780	.08002	.00900	.00168	.34082	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00411	.00454	.00520	.10552	.68660	.08825	.42307	.00800
Stddev	.00033	.00070	.00174	.01827	.09614	.00099	.09575	.00252
%RSD	7.9024	15.364	33.422	17.313	14.002	1.1218	22.633	31.490
#1	.00383	.00377	.00720	.10444	.59286	.08799	.31358	.00534
#2	.00447	.00514	.00437	.12431	.68197	.08934	.49110	.01035
#3	.00404	.00471	.00403	.08782	.78497	.08741	.46454	.00831
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00870	.45736	.01598	.79373	.00972	.08303	.01581	.78238
Stddev	.00060	.01151	.00062	.00779	.00188	.00162	.00507	.00288
%RSD	6.8723	2.5158	3.9084	.98133	19.382	1.9461	32.090	.36823
#1	.00805	.45897	.01600	.80272	.00902	.08401	.02162	.78192
#2	.00924	.44514	.01534	.78909	.01186	.08117	.01226	.78546
#3	.00881	.46798	.01659	.78938	.00829	.08392	.01355	.77975
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LLCCV Acquired: 6/25/2016 23:59:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40813**	**.04261**	**.02883**	**.15405**	**.00896**	**.01738**	**.13453**
Stddev	.00156	.00009	.00723	.00166	.00036	.00005	.00136
%RSD	.38342	.20072	25.085	1.0771	4.0551	.28767	1.0139
#1	.40866	.04260	.02755	.15254	.00855	.01741	.13450
#2	.40935	.04253	.02233	.15583	.00907	.01742	.13318
#3	.40636	.04270	.03662	.15377	.00925	.01733	.13591
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9793.5**	**60446.**	**3011.5**
Stddev	14.7	195.	8.9
%RSD	.15029	.32191	.29401
#1	9810.3	60377.	3006.1
#2	9783.4	60295.	3006.7
#3	9786.6	60666.	3021.7

Approved: June 27, 2016

2.3.2 Metals ICP-MS Data

2.3.2.1 Summary Data

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW03F-061416	**Prep Method:**	3015	**Prep Date:**	06/27/2016 08:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/28/2016 13:15
Workgroup #:	WG574570	**Analyst:**	BKT	**Run Date:**	06/28/2016 20:42
Collect Date:	06/14/2016 07:40	**Dilution:**	1	**File ID:**	NI.062816.204236
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.000919	J	0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.173		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00200	U	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00100	U	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00200	U	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.0960		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00400	U	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW04SW-061416	**Prep Method:**	3015	**Prep Date:**	06/27/2016 08:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/28/2016 13:15
Workgroup #:	WG574570	**Analyst:**	BKT	**Run Date:**	06/28/2016 20:45
Collect Date:	06/14/2016 09:00	**Dilution:**	1	**File ID:**	NI.062816.204547
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00407		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00950		0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00368		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00200	U	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.213		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00574	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18CPTMW04SW-061416	**Prep Method:**	3015	**Prep Date:**	06/27/2016 08:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/29/2016 11:35
Workgroup #:	WG574570	**Analyst:**	BKT	**Run Date:**	06/29/2016 12:25
Collect Date:	06/14/2016 09:00	**Dilution:**	10	**File ID:**	NI.062916.122501
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.936		0.0600	0.0300	0.0150

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer NexION 300X

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	100
Vi = Initial volume	40
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/L)	0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	200
Vi = Initial volume	0.5
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/kg)	40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	40
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	50

50 ug/kg = 0.050 mg/kg

Perkin Elmer NexION ICP/MS

STANDARDS KEY

QC Std 1 - ICV
QC Std 2 - ICB
QC Std 3 - LLICV
QC Std 4 - ICSA
QC Std 5 - ICSAB
QC Std 6 - CCV
QC Std 7 - CCB
QC Std 8 - LLCCV

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.00005	0.05	0.1
Sb	10	0	0.00005	0.05	0.1
As	10	0	0.00005	0.05	0.1
Ba	10	0	0.00005	0.05	0.1
Be	10	0	0.00005	0.05	0.1
Ca	1000	0	0.005	5	10
Cd	10	0	0.0005	0.05	0.1
Cr	10	0	0.0005	0.05	0.1
Co	10	0	0.0005	0.05	0.1
Cu	10	0	0.0005	0.05	0.1
Fe	1000	0	0.005	5	10
Pb	10	0	0.00005	0.05	0.1
Mg	1000	0	0.005	5	10
Mn	10	0	0.00005	0.05	0.1
Ni	10	0	0.00005	0.05	0.1
K	1000	0	0.005	5	10
Se	10	0	0.00005	0.05	0.1
Ag	10	0	0.00005	0.05	0.1
Na	1000	0	0.005	5	10
Tl	10	0	0.00005	0.05	0.1
V	10	0	0.00005	0.05	0.1
U	1000	0	0.00005	0.05	0.1
Zn	10	0	0.00005	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG574242
Analyst: VC
Spike Analyst: VC
Run Date: 06/27/2016 08:30
Method: 3015
Balance: BAL016
Instrument: MW-3
Instrument Start: 06/27/2016 08:39

SOP: ME407 Revison 19
Spike Solution: STD75998
Spike Witness: ERP
HNO3 Lot #: COA18905
40 & 50 ML. DIGESTION TU COA18987
MS Filters- fisher-Lot#R RGT35621

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG574242-02	BLANK	1	20 mL	50 mL	182.814 g	182.793 g		
2	WG574242-03	LCS	1	20 mL	50 mL	183.56 g	183.549 g	.25 mL	
3	L16060794-01	SAMP	1	20 mL	50 mL	184.361 g	184.346 g		06/24/16
4	L16060794-02	SAMP	1	20 mL	50 mL	183.398 g	183.379 g		06/24/16
5	L16060794-03	SAMP	1	20 mL	50 mL	184.044 g	184.009 g		06/24/16
6	L16060794-04	SAMP	1	20 mL	50 mL	182.433 g	182.424 g		06/24/16
7	L16060822-02	SAMP	1	20 mL	50 mL	182.575 g	182.563 g		06/24/16
8	L16060822-03	SAMP	1	20 mL	50 mL	182.733 g	182.696 g		06/24/16
9	L16060823-02	SAMP	1	20 mL	50 mL	184.331 g	184.334 g		06/24/16
10	L16060823-03	SAMP	1	20 mL	50 mL	181.954 g	181.917 g		06/24/16
11	L16060823-04	SAMP	1	20 mL	50 mL	184.816 g	184.809 g		06/24/16
12	WG574242-01	REF	2	20 mL	50 mL	183.706 g	183.7 g		
13	L16060839-01	SAMP	2	20 mL	50 mL	183.706 g	183.7 g		06/22/16
14	L16060843-01	SAMP	2	20 mL	50 mL	179.215 g	179.196 g		06/22/16
15	L16060843-02	SAMP	2	20 mL	50 mL	181.896 g	181.872 g		06/22/16
16	L16061410-01	SAMP	1	20 mL	50 mL	181.139 g	181.127 g		07/01/16
17	L16061412-01	SAMP	1	20 mL	50 mL	181.093 g	181.089 g		07/01/16
18	L16061412-02	SAMP	1	20 mL	50 mL	184.474 g	184.466 g		07/01/16
19	L16061413-01	SAMP	1	20 mL	50 mL	181.294 g	181.262 g		07/01/16
20	L16061416-01	SAMP	1	20 mL	50 mL	183.477 g	183.459 g		07/01/16
21	L16061416-02	SAMP	1	20 mL	50 mL	179.518 g	178.772 g		07/01/16
22	L16061421-01	SAMP	1	20 mL	50 mL	183.973 g	183.93 g		07/01/16
23	WG574242-04	DUP	1	20 mL	50 mL	183.873 g	183.86 g		
24	WG574242-05	MS	1	20 mL	50 mL	181.12 g	181.111 g	.25 mL	
25	WG574242-06	MSD	1	20 mL	50 mL	183.984 g	183.969 g	.25 mL	

Analyst: Vicki Collins

Reviewer: Erin Potter

MW_DIG - Modified 09/30/2009
PDF ID: 4825468
Report generated: 06/27/2016 09:45

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062816A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 572184,573475,574522,574570,574571,574573

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.062816.130257	Blank	Blank		1		06/28/16 13:02
2	NI.062816.130609	WG574537-01	Calibration Point		1		06/28/16 13:06
3	NI.062816.130921	WG574537-02	Calibration Point		1		06/28/16 13:09
4	NI.062816.131232	WG574537-03	Calibration Point		1		06/28/16 13:12
5	NI.062816.131544	WG574537-04	Calibration Point		1		06/28/16 13:15
6	NI.062816.131857	WG574537-05	Initial Calibration Verification		1		06/28/16 13:18
7	NI.062816.132210	WG574537-06	Initial Calib Blank		1		06/28/16 13:22
8	NI.062816.132523	WG574537-07	Low Level Initial Calibration V		1		06/28/16 13:25
9	NI.062816.132834	WG574537-08	Interference Check		1		06/28/16 13:28
10	NI.062816.133145	WG574537-09	Interference Check		1		06/28/16 13:31
11	NI.062816.133459	WG574537-10	CCV		1		06/28/16 13:34
12	NI.062816.133810	WG574537-11	CCB		1		06/28/16 13:38
13	NI.062816.134122	L16060362-03	6060227-03		10		06/28/16 13:41
14	NI.062816.134434	L16060362-04	6060227-04		1		06/28/16 13:44
15	NI.062816.134903	L16060362-03	6060227-03	20/50	10		06/28/16 13:49
16	NI.062816.135218	L16060362-04	6060227-04	20/50	1		06/28/16 13:52
17	NI.062816.135925	L16060362-05	6060227-05	20/50	1		06/28/16 13:59
18	NI.062816.140236	L16060362-06	6060227-06	20/50	1		06/28/16 14:02
19	NI.062816.140602	L16060362-07	6060227-07	20/50	1		06/28/16 14:06
20	NI.062816.140914	L16060362-08	6060227-08	20/50	1		06/28/16 14:09
21	NI.062816.141225	L16060362-09	6060227-09	20/50	1		06/28/16 14:12
22	NI.062816.141537	L16060362-10	6060227-10	20/50	1		06/28/16 14:15
23	NI.062816.141850	WG574537-12	CCV		1		06/28/16 14:18
24	NI.062816.142201	WG574537-13	CCB		1		06/28/16 14:22
25	NI.062816.142514	L16060362-11	6060227-11	20/50	1		06/28/16 14:25
26	NI.062816.142825	L16060362-12	6060227-12	20/50	1		06/28/16 14:28
27	NI.062816.143138	WG574537-14	CCV		1		06/28/16 14:31
28	NI.062816.143450	WG574537-15	CCB		1		06/28/16 14:34
29	NI.062816.143803	WG573333-03	Method/Prep Blank	.25/100	1		06/28/16 14:38
30	NI.062816.144114	WG573333-04	Laboratory Control S	.25/100	1		06/28/16 14:41
31	NI.062816.144426	WG573333-02	Reference Sample		1	L16061053-01	06/28/16 14:44
32	NI.062816.144737	WG573333-07	Matrix Spike	.253/100	1	L16061053-01	06/28/16 14:47
33	NI.062816.145049	WG573333-08	Matrix Spike Duplica	.252/100	1	L16061053-01	06/28/16 14:50
34	NI.062816.145400	L16061048-01	TR0062	.252/100	5		06/28/16 14:54

Page: 1 Approved: June 29, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062816A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 572184,573475,574522,574570,574571,574573

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.062816.145711	WG573475-03	Post Digestion Spike		5	L16061048-01	06/28/16 14:57
36	NI.062816.150023	WG573475-04	Serial Dilution		25	L16061048-01	06/28/16 15:00
37	NI.062816.150336	WG574537-16	Interference Check		1		06/28/16 15:03
38	NI.062816.150647	WG574537-17	Interference Check		1		06/28/16 15:06
39	NI.062816.151001	WG574537-18	CCV		1		06/28/16 15:10
40	NI.062816.151312	WG574537-19	CCB		1		06/28/16 15:13
41	NI.062816.151629	WG574537-20	Low Level Continuing Calibra		1		06/28/16 15:16
42	NI.062816.152424	WG573333-01	Reference Sample		10	L16060787-03	06/28/16 15:24
43	NI.062816.152735	WG573333-05	Matrix Spike	.256/100	10	L16060787-03	06/28/16 15:27
44	NI.062816.153046	WG573333-06	Matrix Spike Duplica	.253/100	10	L16060787-03	06/28/16 15:30
45	NI.062816.153358	L16060787-06	U517SS00512A	.256/100	10		06/28/16 15:33
46	NI.062816.153709	L16060787-08	U517SS00612A	.254/100	10		06/28/16 15:37
47	NI.062816.154021	L16060787-13	U517SS00708A	.252/100	10		06/28/16 15:40
48	NI.062816.154332	L16060787-15	U517SS00808A	.257/100	10		06/28/16 15:43
49	NI.062816.154644	L16060787-16	U517SS00808C	.255/100	10		06/28/16 15:46
50	NI.062816.154955	L16060787-17	U517SS00810A	.259/100	10		06/28/16 15:49
51	NI.062816.155308	WG574537-21	CCV		1		06/28/16 15:53
52	NI.062816.155620	WG574537-22	CCB		1		06/28/16 15:56
53	NI.062816.155933	WG573751-04	Method/Prep Blank	20/50	1		06/28/16 15:59
54	NI.062816.160244	WG573751-05	Laboratory Control S	20/50	1		06/28/16 16:02
55	NI.062816.160556	WG573751-02	Reference Sample		1	L16061151-01	06/28/16 16:05
56	NI.062816.160907	WG573751-07	Matrix Spike	20/50	1	L16061151-01	06/28/16 16:09
57	NI.062816.161219	WG573751-08	Matrix Spike Duplica	20/50	1	L16061151-01	06/28/16 16:12
58	NI.062816.161530	WG573751-01	Reference Sample		1	L16060916-02	06/28/16 16:15
59	NI.062816.161841	WG573751-06	Duplicate	20/50	1	L16060916-02	06/28/16 16:18
60	NI.062816.162153	L16060916-01	PHL 1 FRESHWATER IMPO	20/50	1		06/28/16 16:21
61	NI.062816.162504	WG574522-01	Post Digestion Spike		1	L16060916-01	06/28/16 16:25
62	NI.062816.162816	WG574522-02	Serial Dilution		5	L16060916-01	06/28/16 16:28
63	NI.062816.163129	WG574537-23	CCV		1		06/28/16 16:31
64	NI.062816.163441	WG574537-24	CCB		1		06/28/16 16:34
65	NI.062816.163754	WG574522-02	Serial Dilution		25	L16060916-01	06/28/16 16:37
66	NI.062816.164105	L16061142-01	18WW20-062016	20/50	1		06/28/16 16:41
67	NI.062816.164417	L16061142-03	18WW19F-062016	20/50	1		06/28/16 16:44
68	NI.062816.164728	L16061142-05	18WW19FFD-062016	20/50	1		06/28/16 16:47

Page: 2 Approved: June 29, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062816A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 572184,573475,574522,574570,574571,574573

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.062816.165039	L16061151-02	LF003SW0311-007 DUP	20/50	1		06/28/16 16:50
70	NI.062816.165351	L16061151-05	LF003SW0312-007	20/50	1		06/28/16 16:53
71	NI.062816.165702	WG573751-03	Reference Sample		1	L16061154-01	06/28/16 16:57
72	NI.062816.170014	WG573751-09	Matrix Spike	20/50	1	L16061154-01	06/28/16 17:00
73	NI.062816.170325	WG573751-10	Matrix Spike Duplica	20/50	1	L16061154-01	06/28/16 17:03
74	NI.062816.170637	L16061154-04	FQC-RB06201601-CB	20/50	1		06/28/16 17:06
75	NI.062816.170950	WG574537-25	CCV		1		06/28/16 17:09
76	NI.062816.171301	WG574537-26	CCB		1		06/28/16 17:13
77	NI.062816.171614	L16061155-01	ST008MW0812-007	20/50	1		06/28/16 17:16
78	NI.062816.171926	L16061155-02	ST008MW0809-007	20/50	1		06/28/16 17:19
79	NI.062816.172237	L16061155-03	ST008MW0816-007	20/50	1		06/28/16 17:22
80	NI.062816.172550	WG574537-27	CCV		1		06/28/16 17:25
81	NI.062816.172902	WG574537-28	CCB		1		06/28/16 17:29
82	NI.062816.184632	L16061142-01	18WW20-062016	20/50	10		06/28/16 18:46
83	NI.062816.184946	WG574537-29	CCV		1		06/28/16 18:49
84	NI.062816.185257	WG574537-30	CCB		1		06/28/16 18:52
85	NI.062816.185610	WG574537-31	Low Level Continuing Calibra		1		06/28/16 18:56
86	NI.062816.195129	WG574242-02	Method/Prep Blank	20/50	1		06/28/16 19:51
87	NI.062816.195440	WG574242-03	Laboratory Control S	20/50	1		06/28/16 19:54
88	NI.062816.195752	WG574242-01	Reference Sample		1	L16060839-01	06/28/16 19:57
89	NI.062816.200103	WG574242-04	Duplicate	20/50	1	L16060839-01	06/28/16 20:01
90	NI.062816.200414	WG574242-05	Matrix Spike	20/50	1	L16060839-01	06/28/16 20:04
91	NI.062816.200726	WG574242-06	Matrix Spike Duplica	20/50	1	L16060839-01	06/28/16 20:07
92	NI.062816.201037	L16060843-01	6060966-01	20/50	1		06/28/16 20:10
93	NI.062816.201349	WG574570-01	Post Digestion Spike		1	L16060843-01	06/28/16 20:13
94	NI.062816.201700	WG574570-02	Serial Dilution		5	L16060843-01	06/28/16 20:17
95	NI.062816.202012	WG574570-02	Serial Dilution		25	L16060843-01	06/28/16 20:20
96	NI.062816.202325	WG574537-32	CCV		1		06/28/16 20:23
97	NI.062816.202637	WG574537-33	CCB		1		06/28/16 20:26
98	NI.062816.202950	L16060794-01	A08-MW06-Y1S2	20/50	1		06/28/16 20:29
99	NI.062816.203301	L16060794-02	A08-MW09-Y1S2	20/50	1		06/28/16 20:33
100	NI.062816.203613	L16060794-03	A09-MW02-Y1S2	20/50	1		06/28/16 20:36
101	NI.062816.203924	L16060794-04	A09-MW07-Y1S2	20/50	1		06/28/16 20:39
102	NI.062816.204236	L16060822-02	18WW03F-061416	20/50	1		06/28/16 20:42

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Instrument Run Log

Instrument: ICP-MS2 Dataset: 062816A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 572184,573475,574522,574570,574571,574573

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.062816.204547	L16060822-03	18CPTMW04SW-061416	20/50	1		06/28/16 20:45
104	NI.062816.204859	L16060823-02	126F-061416	20/50	1		06/28/16 20:48
105	NI.062816.205210	L16060823-03	C08-061416	20/50	1		06/28/16 20:52
106	NI.062816.205522	L16060823-04	C03-061416	20/50	1		06/28/16 20:55
107	NI.062816.205833	L16060843-02	6060966-02	20/50	1		06/28/16 20:58
108	NI.062816.210146	WG574537-34	CCV		1		06/28/16 21:01
109	NI.062816.210457	WG574537-35	CCB		1		06/28/16 21:04
110	NI.062816.210810	L16061410-01	SS007MW0704-007	20/50	1		06/28/16 21:08
111	NI.062816.211122	L16061412-01	SS007MW0B05-007	20/50	1		06/28/16 21:11
112	NI.062816.211433	L16061412-02	SS007MW0B02-007	20/50	1		06/28/16 21:14
113	NI.062816.211745	L16061413-01	DP005MW0504-007	20/50	1		06/28/16 21:17
114	NI.062816.212056	L16061416-01	DP005MW0509-007	20/50	1		06/28/16 21:20
115	NI.062816.212408	L16061416-02	DP005MW0518-007	20/50	1		06/28/16 21:24
116	NI.062816.212719	L16061421-01	LF003MW03	20/50	1		06/28/16 21:27
117	NI.062816.213032	WG574537-36	CCV		1		06/28/16 21:30
118	NI.062816.213343	WG574537-37	CCB		1		06/28/16 21:33
119	NI.062816.213655	WG574205-02	Method/Prep Blank	20/50	1		06/28/16 21:36
120	NI.062816.214007	WG574205-03	Laboratory Control S	20/50	1		06/28/16 21:40
121	NI.062816.214318	WG574205-01	Reference Sample		1	L16061343-01	06/28/16 21:43
122	NI.062816.214630	WG574205-04	Duplicate	20/50	1	L16061343-01	06/28/16 21:46
123	NI.062816.214941	WG574205-05	Matrix Spike	20/50	1	L16061343-01	06/28/16 21:49
124	NI.062816.215253	WG574205-06	Matrix Spike Duplica	20/50	1	L16061343-01	06/28/16 21:52
125	NI.062816.215604	L16060732-01	LH18/24-SP650-6371-GRAB	20/50	1		06/28/16 21:56
126	NI.062816.215915	WG574571-01	Post Digestion Spike		1	L16060732-01	06/28/16 21:59
127	NI.062816.220227	WG574571-02	Serial Dilution		5	L16060732-01	06/28/16 22:02
128	NI.062816.220538	WG574571-02	Serial Dilution		25	L16060732-01	06/28/16 22:05
129	NI.062816.220851	WG574537-38	CCV		1		06/28/16 22:08
130	NI.062816.221202	WG574537-39	CCB		1		06/28/16 22:12
131	NI.062816.221514	L16060732-02	LH18/24-SP650-6371-COMP	20/50	1		06/28/16 22:15
132	NI.062816.221825	L16060762-01	MW-24-001	20/50	1		06/28/16 22:18
133	NI.062816.222137	L16061380-01	XU936TW003A	20/50	1		06/28/16 22:21
134	NI.062816.222448	L16061380-02	XU936TW003C	20/50	1		06/28/16 22:24
135	NI.062816.222800	L16061381-06	EB02	20/50	1		06/28/16 22:28
136	NI.062816.223111	L16061393-01	S6F0627-01	20/50	1		06/28/16 22:31

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Instrument Run Log

Instrument: ICP-MS2 Dataset: 062816A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 572184,573475,574522,574570,574571,574573

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	NI.062816.223423	L16061393-02	S6F0627-02	20/50	1		06/28/16 22:34
138	NI.062816.223734	L16061393-03	S6F0627-03	20/50	1		06/28/16 22:37
139	NI.062816.224046	L16061393-04	S6F0627-04	20/50	1		06/28/16 22:40
140	NI.062816.224357	L16061393-05	S6F0627-05	20/50	1		06/28/16 22:43
141	NI.062816.224710	WG574537-40	CCV		1		06/28/16 22:47
142	NI.062816.225022	WG574537-41	CCB		1		06/28/16 22:50
143	NI.062816.225335	L16061393-06	S6F0627-06	20/50	1		06/28/16 22:53
144	NI.062816.225646	L16061393-07	S6F0627-07	20/50	1		06/28/16 22:56
145	NI.062816.225958	L16061401-01	DP005MW0501-007	20/50	1		06/28/16 22:59
146	NI.062816.230309	L16061402-01	SS007MW0715-007	20/50	1		06/28/16 23:03
147	NI.062816.230621	L16061404-01	DP005MW0503-007	20/50	1		06/28/16 23:06
148	NI.062816.230932	L16061408-01	DP005MW0508-007	20/50	1		06/28/16 23:09
149	NI.062816.231244	L16061409-01	ST008MW0818-007	20/50	1		06/28/16 23:12
150	NI.062816.231556	WG574537-42	CCV		1		06/28/16 23:15
151	NI.062816.231908	WG574537-43	CCB		1		06/28/16 23:19
152	NI.062816.232221	WG574537-44	Low Level Continuing Calibra		1		06/28/16 23:22
153	NI.062816.232534	WG574306-02	Method/Prep Blank	.25/100	1		06/28/16 23:25
154	NI.062816.232845	WG574306-03	Laboratory Control S	.25/100	1		06/28/16 23:28
155	NI.062816.233157	L16061297-07	XU936DS01700A		1	WG574306-01	06/28/16 23:31
156	NI.062816.233508	L16061297-08	XU936DS01700MS	.253/100	1	WG574306-04	06/28/16 23:35
157	NI.062816.233819	L16061297-09	XU936DS01700MSD	.255/100	1	WG574306-05	06/28/16 23:38
158	NI.062816.234131	L16061443-01	GS042QACF035SB062416-E	.256/100	1		06/28/16 23:41
159	NI.062816.234442	L16061443-02	GS042QACF035SB062416-E	.256/100	1		06/28/16 23:44
160	NI.062816.234754	WG574573-01	Post Digestion Spike		1	L16061443-02	06/28/16 23:47
161	NI.062816.235105	WG574573-02	Serial Dilution		5	L16061443-02	06/28/16 23:51
162	NI.062816.235417	WG574573-02	Serial Dilution		25	L16061443-02	06/28/16 23:54
163	NI.062816.235730	WG574537-45	CCV		1		06/28/16 23:57
164	NI.062916.000041	WG574537-46	CCB		1		06/29/16 00:00

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Kim H. Rhoden

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Instrument Run Log

Instrument: ICP-MS2 Dataset: 062916A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573722,574570,574572,573717,574688,574690,573790

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.062916.112234	Blank	Blank		1		06/29/16 11:22
2	NI.062916.112545	WG574676-01	Calibration Point		1		06/29/16 11:25
3	NI.062916.112857	WG574676-02	Calibration Point		1		06/29/16 11:28
4	NI.062916.113208	WG574676-03	Calibration Point		1		06/29/16 11:32
5	NI.062916.113520	WG574676-04	Calibration Point		1		06/29/16 11:35
6	NI.062916.113833	WG574676-05	Initial Calibration Verification		1		06/29/16 11:38
7	NI.062916.114146	WG574676-06	Initial Calib Blank		1		06/29/16 11:41
8	NI.062916.114653	WG574676-07	Low Level Initial Calibration V		1		06/29/16 11:46
9	NI.062916.115053	WG574676-08	Interference Check		1		06/29/16 11:50
10	NI.062916.115447	WG574676-09	Interference Check		1		06/29/16 11:54
11	NI.062916.120010	WG574676-10	CCV		1		06/29/16 12:00
12	NI.062916.120734	WG574676-11	CCB		1		06/29/16 12:07
13	NI.062916.121215	L16060661-06	US23SS02502A	.253/100	1		06/29/16 12:12
14	NI.062916.121526	L16060661-07	US23SS02505A	.257/100	1		06/29/16 12:15
15	NI.062916.121838	L16060661-08	US23SS02602A	.257/100	1		06/29/16 12:18
16	NI.062916.122149	L16060661-09	US23SS02605A	.25/100	1		06/29/16 12:21
17	NI.062916.122501	L16060822-03	18CPTMW04SW-061416	20/50	10		06/29/16 12:25
18	NI.062916.122812	L16060823-02	126F-061416	20/50	50		06/29/16 12:28
19	NI.062916.123124	L16060823-03	C08-061416	20/50	50		06/29/16 12:31
20	NI.062916.123435	L16060823-04	C03-061416	20/50	50		06/29/16 12:34
21	NI.062916.123748	WG574676-12	CCV		1		06/29/16 12:37
22	NI.062916.124059	WG574676-13	CCB		1		06/29/16 12:40
23	NI.062916.124412	WG574676-14	Low Level Continuing Calibra		1		06/29/16 12:44
24	NI.062916.125354	WG573548-02	Method/Prep Blank	20/50	1		06/29/16 12:53
25	NI.062916.125705	WG573548-03	Laboratory Control S	20/50	1		06/29/16 12:57
26	NI.062916.130017	WG573548-01	Reference Sample		1	L16060986-23	06/29/16 13:00
27	NI.062916.130328	WG573548-04	Matrix Spike	20/50	1	L16060986-23	06/29/16 13:03
28	NI.062916.130639	WG573548-05	Matrix Spike Duplica	20/50	1	L16060986-23	06/29/16 13:06
29	NI.062916.130951	L16060986-01	MW-07-04	20/50	1		06/29/16 13:09
30	NI.062916.131302	L16060986-03	MW-01-10	20/50	1		06/29/16 13:13
31	NI.062916.131614	WG574572-01	Post Digestion Spike		1	L16060986-03	06/29/16 13:16
32	NI.062916.131925	WG574572-02	Serial Dilution		5	L16060986-03	06/29/16 13:19
33	NI.062916.132237	WG574572-02	Serial Dilution		25	L16060986-03	06/29/16 13:22
34	NI.062916.132550	WG574676-15	CCV		1		06/29/16 13:25

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062916A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573722,574570,574572,573717,574688,574690,573790

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.062916.132901	WG574676-16	CCB		1		06/29/16 13:29
36	NI.062916.133214	L16060986-05	MW-03-12	20/50	1		06/29/16 13:32
37	NI.062916.133526	L16060986-07	MW-01-07	20/50	1		06/29/16 13:35
38	NI.062916.133837	L16060986-09	MW-03-11	20/50	1		06/29/16 13:38
39	NI.062916.134150	L16060986-11	MW-01-01	20/50	1		06/29/16 13:41
40	NI.062916.134502	L16060986-13	MW-03-09	20/50	1		06/29/16 13:45
41	NI.062916.134813	L16060986-15	MW-01-08	20/50	1		06/29/16 13:48
42	NI.062916.135125	L16060986-17	MW-03-06	20/50	1		06/29/16 13:51
43	NI.062916.135436	L16060986-19	MW-03-05	20/50	1		06/29/16 13:54
44	NI.062916.135748	L16060986-25	MW-01-02	20/50	1		06/29/16 13:57
45	NI.062916.140059	L16060986-27	DUP 1	20/50	1		06/29/16 14:00
46	NI.062916.140412	WG574676-17	CCV		1		06/29/16 14:04
47	NI.062916.140723	WG574676-18	CCB		1		06/29/16 14:07
48	NI.062916.141036	L16060986-29	DUP 2	20/50	1		06/29/16 14:10
49	NI.062916.141347	L16060986-39	EQUIP BLANK 1	20/50	1		06/29/16 14:13
50	NI.062916.141659	L16060986-41	EQUIP BLANK 2	20/50	1		06/29/16 14:16
51	NI.062916.145120	L16061026-02	18WW16F-061616	20/50	1		06/29/16 14:51
52	NI.062916.145431	L16061026-04	129-061616	20/50	1		06/29/16 14:54
53	NI.062916.145742	L16061026-06	120F-061616	20/50	1		06/29/16 14:57
54	NI.062916.150054	L16061026-07	123-061616	20/50	1		06/29/16 15:00
55	NI.062916.150407	WG574676-19	CCV		1		06/29/16 15:04
56	NI.062916.150718	WG574676-20	CCB		1		06/29/16 15:07
57	NI.062916.151032	WG573099-02	Method/Prep Blank	.25/100	1		06/29/16 15:10
58	NI.062916.151343	WG573099-03	Laboratory Control S	.25/100	1		06/29/16 15:13
59	NI.062916.151655	WG573099-01	Reference Sample		10	L16060888-03	06/29/16 15:16
60	NI.062916.152006	WG573099-04	Matrix Spike	.255/100	10	L16060888-03	06/29/16 15:20
61	NI.062916.152318	WG573099-05	Matrix Spike Duplica	.254/100	10	L16060888-03	06/29/16 15:23
62	NI.062916.152629	L16060883-01	WC01	.252/100	1		06/29/16 15:26
63	NI.062916.152941	L16060912-01	WH8011	.25/100	1		06/29/16 15:29
64	NI.062916.153252	WG573717-03	Post Digestion Spike		1	L16060912-01	06/29/16 15:32
65	NI.062916.153604	WG573717-04	Serial Dilution		5	L16060912-01	06/29/16 15:36
66	NI.062916.153915	WG573717-04	Serial Dilution		25	L16060912-01	06/29/16 15:39
67	NI.062916.154228	WG574676-21	CCV		1		06/29/16 15:42
68	NI.062916.154540	WG574676-22	CCB		1		06/29/16 15:45

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062916A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573722,574570,574572,573717,574688,574690,573790

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.062916.154853	WG574001-04	Method/Prep Blank	20/50	1		06/29/16 15:48
70	NI.062916.155204	WG574001-05	Laboratory Control S	20/50	1		06/29/16 15:52
71	NI.062916.155516	WG574001-01	Reference Sample		1	L16061247-02	06/29/16 15:55
72	NI.062916.155827	WG574001-06	Duplicate	20/50	1	L16061247-02	06/29/16 15:58
73	NI.062916.160139	WG574001-02	Reference Sample		1	L16061265-01	06/29/16 16:01
74	NI.062916.160450	WG574001-07	Matrix Spike	20/50	1	L16061265-01	06/29/16 16:04
75	NI.062916.160802	WG574001-08	Matrix Spike Duplica	20/50	1	L16061265-01	06/29/16 16:08
76	NI.062916.161113	L16061247-01	WMB09	20/50	1		06/29/16 16:11
77	NI.062916.161425	WG574688-01	Post Digestion Spike		1	L16061247-01	06/29/16 16:14
78	NI.062916.161736	WG574688-02	Serial Dilution		5	L16061247-01	06/29/16 16:17
79	NI.062916.162049	WG574676-23	CCV		1		06/29/16 16:20
80	NI.062916.162401	WG574676-24	CCB		1		06/29/16 16:24
81	NI.062916.162713	WG574688-02	Serial Dilution		25	L16061247-01	06/29/16 16:27
82	NI.062916.163025	L16061265-04	SS007MWOB16-007	20/50	1		06/29/16 16:30
83	NI.062916.163336	L16061265-05	SS007MWOB21-007	20/50	1		06/29/16 16:33
84	NI.062916.163648	L16061265-06	FQC-RB06211601-CC	20/50	1		06/29/16 16:36
85	NI.062916.163959	L16061266-01	ST008MW0805-007	20/50	1		06/29/16 16:39
86	NI.062916.164310	L16061269-01	FT002MW0204-007	20/50	1		06/29/16 16:43
87	NI.062916.164622	L16061272-01	SS007MW0B18-007	20/50	1		06/29/16 16:46
88	NI.062916.164933	L16061272-02	SS007MWN752-007	20/50	1		06/29/16 16:49
89	NI.062916.165245	L16061279-01	XU936TW007A	20/50	1		06/29/16 16:52
90	NI.062916.165556	L16061279-01	XU936TW007A	20/50	50		06/29/16 16:55
91	NI.062916.165909	WG574676-25	CCV		1		06/29/16 16:59
92	NI.062916.170220	WG574676-26	CCB		1		06/29/16 17:02
93	NI.062916.170533	WG574001-03	Reference Sample		1	L16061279-02	06/29/16 17:05
94	NI.062916.170845	WG574001-03	Reference Sample		50	L16061279-02	06/29/16 17:08
95	NI.062916.171156	WG574001-09	Matrix Spike	20/50	1	L16061279-02	06/29/16 17:11
96	NI.062916.171508	WG574001-09	Matrix Spike	20/50	50	L16061279-02	06/29/16 17:15
97	NI.062916.171819	WG574001-10	Matrix Spike Duplica	20/50	1	L16061279-02	06/29/16 17:18
98	NI.062916.172131	WG574001-10	Matrix Spike Duplica	20/50	50	L16061279-02	06/29/16 17:21
99	NI.062916.172442	L16061279-05	XU936TW019A	20/50	1		06/29/16 17:24
100	NI.062916.172754	L16061279-05	XU936TW019A	20/50	50		06/29/16 17:27
101	NI.062916.173105	L16061281-01	J6F0803-01	20/50	1		06/29/16 17:31
102	NI.062916.173419	WG574676-27	CCV		1		06/29/16 17:34

Page: 3 Approved: July 05, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062916A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573722,574570,574572,573717,574688,574690,573790

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.062916.173730	WG574676-28	CCB		1		06/29/16 17:37
104	NI.062916.174043	L16061294-03	EB01	20/50	1		06/29/16 17:40
105	NI.062916.174355	L16061294-03	EB01	20/50	50		06/29/16 17:43
106	NI.062916.174706	L16061296-01	OUTFALL 002/COMP	20/50	1		06/29/16 17:47
107	NI.062916.175019	WG574676-29	Interference Check		1		06/29/16 17:50
108	NI.062916.175331	WG574676-30	Interference Check		1		06/29/16 17:53
109	NI.062916.175644	WG574676-31	CCV		1		06/29/16 17:56
110	NI.062916.175955	WG574676-32	CCB		1		06/29/16 17:59
111	NI.062916.180308	WG574676-33	Low Level Continuing Calibra		1		06/29/16 18:03
112	NI.062916.180621	WG574192-02	Method/Prep Blank	.25/100	1		06/29/16 18:06
113	NI.062916.180932	WG574192-03	Laboratory Control S	.25/100	1		06/29/16 18:09
114	NI.062916.181244	WG574192-01	Reference Sample		1	L16061206-01	06/29/16 18:12
115	NI.062916.181555	L16061206-02	LF003SD0311-007 DUP	.251/100	1		06/29/16 18:15
116	NI.062916.181907	WG574192-04	Matrix Spike	.25/100	1	L16061206-01	06/29/16 18:19
117	NI.062916.182218	WG574192-05	Matrix Spike Duplica	.253/100	1	L16061206-01	06/29/16 18:22
118	NI.062916.182530	L16061206-05	LF003SD0312-007	.25/100	1		06/29/16 18:25
119	NI.062916.182841	WG574690-01	Post Digestion Spike		1	L16061206-05	06/29/16 18:28
120	NI.062916.183153	WG574690-02	Serial Dilution		5	L16061206-05	06/29/16 18:31
121	NI.062916.183504	WG574690-02	Serial Dilution		25	L16061206-05	06/29/16 18:35
122	NI.062916.183818	WG574676-34	CCV		1		06/29/16 18:38
123	NI.062916.184129	WG574676-35	CCB		1		06/29/16 18:41
124	NI.062916.184442	L16061207-01	SS007SD0709-007	.251/100	1		06/29/16 18:44
125	NI.062916.184754	L16061207-02	SS007SD0710-007	.25/100	1		06/29/16 18:47
126	NI.062916.185105	L16061208-01	DP005SD0513-007	.252/100	1		06/29/16 18:51
127	NI.062916.185417	L16061208-02	DP005SD0514-007	.251/100	1		06/29/16 18:54
128	NI.062916.185728	L16061291-01	V6F0270-01	.253/100	1		06/29/16 18:57
129	NI.062916.190040	L16061381-01	XU936DS00500A	.254/100	1		06/29/16 19:00
130	NI.062916.190351	L16061381-01	XU936DS00500A	.254/100	50		06/29/16 19:03
131	NI.062916.190703	L16061381-02	XU936DS00505A	.258/100	1		06/29/16 19:07
132	NI.062916.191014	L16061381-02	XU936DS00505A	.258/100	50		06/29/16 19:10
133	NI.062916.191327	WG574676-36	CCV		1		06/29/16 19:13
134	NI.062916.191639	WG574676-37	CCB		1		06/29/16 19:16
135	NI.062916.191952	L16061381-03	XU936DS00300A	.252/100	1		06/29/16 19:19
136	NI.062916.192303	L16061381-03	XU936DS00300A	.252/100	50		06/29/16 19:23

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062916A.REP

Analyst1: BKT Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705

ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607

CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345

Stannous : Hydroxylamine :

Workgroups: 573722,574570,574572,573717,574688,574690,573790

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	NI.062916.192615	L16061381-04	XU936DS00305A	.25/100	1		06/29/16 19:26
138	NI.062916.192926	L16061381-04	XU936DS00305A	.25/100	50		06/29/16 19:29
139	NI.062916.193237	L16061381-05	XU936DS00305C	.253/100	1		06/29/16 19:32
140	NI.062916.193550	L16061381-05	XU936DS00305C	.253/100	50		06/29/16 19:35
141	NI.062916.193901	L16061381-07	XU936DS00400A	.252/100	1		06/29/16 19:39
142	NI.062916.194213	L16061381-07	XU936DS00400A	.252/100	50		06/29/16 19:42
143	NI.062916.194524	L16061384-02	BFB-16-019	.253/100	1		06/29/16 19:45
144	NI.062916.194835	L16061384-04	BFB-16-020	.253/100	1		06/29/16 19:48
145	NI.062916.195149	WG574676-38	CCV		1		06/29/16 19:51
146	NI.062916.195500	WG574676-39	CCB		1		06/29/16 19:55
147	NI.062916.195813	L16061384-06	BFB-16-021	.253/100	1		06/29/16 19:58
148	NI.062916.200124	L16061384-08	BFB-16-022	.251/100	1		06/29/16 20:01
149	NI.062916.200436	L16061384-10	BFB-16-023	.254/100	1		06/29/16 20:04
150	NI.062916.200747	L16061384-12	BFB-16-024	.254/100	1		06/29/16 20:07
151	NI.062916.201101	WG574676-40	CCV		1		06/29/16 20:11
152	NI.062916.201412	WG574676-41	CCB		1		06/29/16 20:14
153	NI.062916.201726	WG573291-03	Method/Prep Blank	20/50	1		06/29/16 20:17
154	NI.062916.202037	WG573291-04	Laboratory Control S	20/50	1		06/29/16 20:20
155	NI.062916.202348	WG573291-01	Reference Sample		1	L16060974-01	06/29/16 20:23
156	NI.062916.202700	WG573291-05	Matrix Spike	20/50	1	L16060974-01	06/29/16 20:27
157	NI.062916.203011	WG573291-06	Matrix Spike Duplica	20/50	1	L16060974-01	06/29/16 20:30
158	NI.062916.203323	WG573790-03	Post Digestion Spike		1	L16060974-01	06/29/16 20:33
159	NI.062916.203634	WG573790-04	Serial Dilution		5	L16060974-01	06/29/16 20:36
160	NI.062916.203946	WG573790-04	Serial Dilution		25	L16060974-01	06/29/16 20:39
161	NI.062916.204259	WG574676-42	CCV		1		06/29/16 20:42
162	NI.062916.204611	WG574676-43	CCB		1		06/29/16 20:46

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Microbac Laboratories Inc.

Data Checklist

Date: 28-JUN-2016
Analyst: BKT
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 574537
Runlog ID: 75986
Analytical Workgroups: 572184,573475,574522,574570,574571,574573

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	762,1380,1381
Level 4	732,787,822,823,1048,1142,1151,1154
Level 4	1155,1401,1402,1404,1408,1409,1410
Level 4	1412,1413,1416,1421,1443
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BKT
Secondary Reviewer	KHR
Comments	

Primary Reviewer:
29-JUN-2016

Secondary Reviewer:
29-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-29-2016 15:32:08

Microbac Laboratories Inc.

Data Checklist

Date: 29-JUN-2016
Analyst: BKT
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 574676
Runlog ID: 76013
Analytical Workgroups: 573722,574570,574572,573717,574688,574690,573790

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1279,1294,1381,1384
Level 4	661,822,823,883,912,974,986,1026
Level 4	1206,1207,1208,1265,1266,1269,1272
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BKT
Secondary Reviewer	JYH
Comments	

Primary Reviewer:
04-JUL-2016

Secondary Reviewer:
05-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-05-2016 12:36:33

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG574570

Login Number: L16060822

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW03F-061416	02	06/14/16					06/27/2016	13	180		06/28/16	14.5	180	
18CPTMW04SW-061416	03	06/14/16					06/27/2016	13	180		06/29/16	15.1	180	
18CPTMW04SW-061416	03	06/14/16					06/27/2016	13	180		06/28/16	14.5	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4829693
Report generated 06/30/2016 09:23

METHOD BLANK SUMMARY

Login Number: L16060822
Blank File ID: NI.062816.195129
Prep Date: 06/27/16 08:30
Analyzed Date: 06/28/16 19:51
Analyst: BKT

Work Group: WG574570
Blank Sample ID: WG574242-02
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG574242-03	NI.062816.195440	06/28/16 19:54	01
DUP	WG574242-04	NI.062816.200103	06/28/16 20:01	01
18WW03F-061416	L16060822-02	NI.062816.204236	06/28/16 20:42	02
18CPTMW04SW-061416	L16060822-03	NI.062816.204547	06/28/16 20:45	02
18CPTMW04SW-061416	L16060822-03	NI.062916.122501	06/29/16 12:25	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4829694
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060822 Prep Date: 06/27/16 08:30 Sample ID: WG574242-02
Instrument ID: ICP-MS2 Run Date: 06/28/16 19:51 Prep Method: 3015
File ID: NI.062816.195129 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG574570 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-28-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Antimony, Total	0.000500	0.00200	0.000500	1	U
Arsenic, Total	0.000500	0.00200	0.000500	1	U
Barium, Total	0.00150	0.00600	0.00150	1	U
Cadmium, Total	0.000300	0.00120	0.000300	1	U
Chromium, Total	0.00100	0.00400	0.00100	1	U
Cobalt, Total	0.000500	0.00200	0.000500	1	U
Copper, Total	0.00100	0.00400	0.00100	1	U
Lead, Total	0.000500	0.00200	0.000500	1	U
Manganese, Total	0.00100	0.00400	0.00100	1	U
Nickel, Total	0.00200	0.00800	0.00200	1	U
Silver, Total	0.000500	0.00200	0.000500	1	U
Thallium, Total	0.000100	0.000400	0.000100	1	U
Vanadium, Total	0.000500	0.00200	0.000500	1	U
Zinc, Total	0.0125	0.0500	0.0125	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4829695
29-JUN-2016 08:34

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060822 Run Date: 06/28/2016 Sample ID: WG574242-03
Instrument ID: ICP-MS2 Run Time: 19:54 Prep Method: 3015
File ID: NI.062816.195440 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG574570 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD75998 Cal ID: ICP-MS-28-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Antimony, Total	0.125	0.120	96.4	80 - 120	
Arsenic, Total	0.125	0.124	99.0	80 - 120	
Barium, Total	0.125	0.121	96.5	80 - 120	
Cadmium, Total	0.125	0.120	95.7	80 - 120	
Chromium, Total	0.125	0.125	100	80 - 120	
Cobalt, Total	0.125	0.122	97.6	80 - 120	
Copper, Total	0.125	0.127	102	80 - 120	
Lead, Total	0.125	0.125	99.8	80 - 120	
Manganese, Total	0.125	0.128	103	80 - 120	
Nickel, Total	0.125	0.126	100	80 - 120	
Silver, Total	0.125	0.123	98.2	80 - 120	
Thallium, Total	0.125	0.122	97.3	80 - 120	
Vanadium, Total	0.125	0.123	98.1	80 - 120	
Zinc, Total	0.125	0.129	103	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4829696
Report generated: 06/29/2016 08:34

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060822 | Cal ID: ICP-MS2- | Worknum: WG574570
Instrument ID: ICP-MS2 | Contract #: | Method: 6020A
Parent ID: WG574242-01 | File ID: NI.062816.195752 | Dil: 1 | Matrix: WATER
Sample ID: WG574242-05 MS | File ID: NI.062816.200414 | Dil: 1 | Units: mg/L
Sample ID: WG574242-06 MSD | File ID: NI.062816.200726 | Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Antimony	0.000998	0.125	0.123	97.9	0.125	0.120	95.5	2.49	80 - 120	20	
Arsenic	0.00141	0.125	0.127	101	0.125	0.126	99.9	0.561	80 - 120	20	
Barium	0.0414	0.125	0.160	95.3	0.125	0.156	92.0	2.54	80 - 120	20	
Cadmium	ND	0.125	0.121	97.2	0.125	0.118	94.0	3.31	80 - 120	20	
Chromium	ND	0.125	0.121	96.6	0.125	0.124	99.2	2.65	80 - 120	20	
Cobalt	ND	0.125	0.121	97.2	0.125	0.120	96.3	0.931	80 - 120	20	
Copper	0.00439	0.125	0.124	95.7	0.125	0.125	96.4	0.655	80 - 120	20	
Lead	0.00115	0.125	0.126	100	0.125	0.124	98.6	1.64	80 - 120	20	
Manganese	0.00611	0.125	0.129	98.4	0.125	0.129	98.3	0.106	80 - 120	20	
Nickel	0.00410	0.125	0.123	95.0	0.125	0.125	96.9	1.96	80 - 120	20	
Silver	ND	0.125	0.122	97.6	0.125	0.118	94.3	3.46	80 - 120	20	
Thallium	ND	0.125	0.123	98.5	0.125	0.121	97.0	1.54	80 - 120	20	
Vanadium	0.00107	0.125	0.124	98.5	0.125	0.123	97.8	0.621	80 - 120	20	
Zinc	0.0337	0.125	0.154	96.2	0.125	0.156	97.7	1.20	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4829697
Report generated 06/29/2016 08:34

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16060822 **Worknum:** WG574570
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG574570-02 **File ID:** NI.062816.201700 **Dil:** 5 **Units:** ug/L
Sample: L16060843-01 **File ID:** NI.062816.201037 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	0.382	F	2.24	F	486.00	
Arsenic	ND	U	ND	U		
Barium	29.9	X	30.7	X	2.82	
Cadmium	0.151	F	ND	U		
Chromium	ND	U	ND	U		
Cobalt	7.40	X	7.21	X	2.48	
Copper	0.509	F	ND	U		
Lead	ND	U	ND	U		
Manganese	716		689		3.69	
Nickel	17.5	X	17.0	X	2.69	
Silver	ND	U	ND	U		
Thallium	ND	U	ND	U		
Vanadium	ND	U	ND	U		
Zinc	55.5	X	55.3	F	0.51	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4829691
06/29/2016 08:34

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060822 **Worknum:** WG574570
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG574570-01 **File ID:** NI.062816.201349 **Dil:** 1 **Units:** ug/L
Sample ID: L16060843-01 **File ID:** NI.062816.201037 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	49.7		0.382	F	50	98.7	75 - 125	
ARSENIC	51.2		0	U	50	102.5	75 - 125	
BARIUM	78.1		29.9		50	96.4	75 - 125	
CADMIUM	49.2		0.151	F	50	98.1	75 - 125	
CHROMIUM	50.1		0	U	50	100.1	75 - 125	
COBALT	59.3		7.40		50	103.7	75 - 125	
COPPER	50.9		0.509	F	50	100.8	75 - 125	
LEAD	52.4		0	U	50	104.7	75 - 125	
MANGANESE	748		716		50	63.6	75 - 125	N
NICKEL	66.6		17.5		50	98.2	75 - 125	
SILVER	48.6		0	U	50	97.3	75 - 125	
THALLIUM	50.9		0	U	50	101.8	75 - 125	
VANADIUM	50.8		0	U	50	101.7	75 - 125	
ZINC	115		55.5		50	119.5	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4829692
Report generated: 06/29/2016 08:34

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16060822	Workgroup (AAB#):	WG574570
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG574537	Initial Calibration Date:	28-JUN-2016 13:15

	WG574537-01		WG574537-02		WG574537-03		WG574537-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	47.7	.4	303	50	245000	100	482000	.999953	
ARSENIC	0	-33.8	.4	11.1	50	59300	100	117000	.999972	
BARIUM	0	33.7	.4	159	50	107000	100	212000	.999991	
CADMIUM	0	3.30	.4	116	50	110000	100	219000	.999985	
CHROMIUM	0	7410	.4	8070	50	376000	100	727000	.999989	
COBALT	0	227	.4	599	50	370000	100	731000	.999947	
COPPER	0	135	.4	280	50	102000	100	195000	.999984	
LEAD	0	933	.4	2130	50	978000	100	1950000	.999942	
MANGANESE	0	835	.4	1350	50	340000	100	679000	.99986	
NICKEL	0	183	.4	306	50	100000	100	194000	1	
SILVER	0	79.0	.4	455	50	352000	100	679000	.999803	
THALLIUM	0	5.30	.4	473	50	438000	100	866000	.999971	
VANADIUM	0	1490	.4	1870	50	370000	100	719000	.999996	
ZINC	0	520	.4	1010	50	59300	100	114000	.999999	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4829700
Report generated: 30-JUN-2016 09:23

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16060822	Workgroup (AAB#):	WG574570
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG574676	Initial Calibration Date:	29-JUN-2016 11:35

	WG574676-01		WG574676-02		WG574676-03		WG574676-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	28.2	.4	255	50	227000	100	448000	.999981	
ARSENIC	0	-40.0	.4	-10.4	50	57000	100	110000	.999904	
BARIUM	0	25.3	.4	136	50	99600	100	196000	.999974	
CADMIUM	0	1.30	.4	122	50	102000	100	200000	.999946	
CHROMIUM	0	7540	.4	7930	50	379000	100	748000	.999997	
COBALT	0	239	.4	575	50	337000	100	648000	.99988	
COPPER	0	103	.4	285	50	94300	100	184000	.999979	
LEAD	0	873	.4	2280	50	926000	100	1830000	.999949	
MANGANESE	0	784	.4	1380	50	355000	100	686000	.999925	
NICKEL	0	221	.4	324	50	94600	100	186000	.999991	
SILVER	0	86.3	.4	412	50	318000	100	624000	.999961	
THALLIUM	0	1.70	.4	417	50	406000	100	804000	.999963	
VANADIUM	0	1430	.4	1850	50	385000	100	745000	.999935	
ZINC	0	365	.4	549	50	56000	100	108000	.999932	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4829700
Report generated: 30-JUN-2016 09:23

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060822
Run Date: 06/28/2016
Sample ID: WG574537-06
Instrument ID: ICP-MS2
Run Time: 13:22
Method: 6020A
File ID: NI.062816.132210
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574570
Cal ID: ICP-MS2 - 28-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
COPPER	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.405	*
THALLIUM	.04	.16	.04	U
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4829702
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060822
Instrument ID: ICP-MS2
File ID: NI.062916.114146
Workgroup (AAB#): WG574570
Matrix: WATER

Run Date: 06/29/2016
Run Time: 11:41
Analyst: BKT
Cal ID: ICP-MS2 - 29-JUN-16

Sample ID: WG574676-06
Method: 6020A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
COPPER	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.335	F
THALLIUM	.04	.16	.04	U
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4829702
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/28/2016
Sample ID: WG574537-11
Instrument ID: ICP-MS2
Run Time: 13:38
Method: 6020A
File ID: NI.062816.133810
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.259	F
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4829705
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/28/2016
Sample ID: WG574537-15
Instrument ID: ICP-MS2
Run Time: 14:34
Method: 6020A
File ID: NI.062816.143450
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4829705
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/28/2016
Sample ID: WG574537-19
Instrument ID: ICP-MS2
Run Time: 15:13
Method: 6020A
File ID: NI.062816.151312
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.263	F
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4829705
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/28/2016
Sample ID: WG574537-30
Instrument ID: ICP-MS2
Run Time: 18:52
Method: 6020A
File ID: NI.062816.185257
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4829705
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/28/2016
Sample ID: WG574537-33
Instrument ID: ICP-MS2
Run Time: 20:26
Method: 6020A
File ID: NI.062816.202637
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4829705
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Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/28/2016
Sample ID: WG574537-35
Instrument ID: ICP-MS2
Run Time: 21:04
Method: 6020A
File ID: NI.062816.210457
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4829705
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/29/2016
Sample ID: WG574676-11
Instrument ID: ICP-MS2
Run Time: 12:07
Method: 6020A
File ID: NI.062916.120734
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4829705
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/29/2016
Sample ID: WG574676-13
Instrument ID: ICP-MS2
Run Time: 12:40
Method: 6020A
File ID: NI.062916.124059
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4829705
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060822
Run Date: 06/29/2016
Sample ID: WG574676-05
Instrument ID: ICP-MS2
Run Time: 11:38
Method: 6020A
File ID: NI.062916.113833
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 29-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	49.8	99.7	90 - 110	
Arsenic		50	50.9	102	90 - 110	
Barium		50	49.9	99.9	90 - 110	
Cadmium		50	50.3	101	90 - 110	
Chromium		50	50.0	100	90 - 110	
Cobalt		50	50.4	101	90 - 110	
Copper		50	50.8	102	90 - 110	
Lead		50	51.0	102	90 - 110	
Manganese		50	51.9	104	90 - 110	
Nickel		50	50.6	101	90 - 110	
Silver		50	50.9	102	90 - 110	
Thallium		50	50.7	101	90 - 110	
Vanadium		50	51.2	102	90 - 110	
Zinc		50	52.1	104	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4829701
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060822 Run Date: 06/28/2016 Sample ID: WG574537-05
Instrument ID: ICP-MS2 Run Time: 13:18 Method: 6020A
File ID: NI.062816.131857 Analyst: BKT Units: ug/L
Workgroup (AAB#): WG574570 Cal ID: ICP-MS - 28-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	48.3	96.6	90 - 110	
Arsenic		50	50.3	101	90 - 110	
Barium		50	48.2	96.4	90 - 110	
Cadmium		50	49.0	98.0	90 - 110	
Chromium		50	50.0	100	90 - 110	
Cobalt		50	50.2	100	90 - 110	
Copper		50	50.1	100	90 - 110	
Lead		50	48.9	97.7	90 - 110	
Manganese		50	50.2	100	90 - 110	
Nickel		50	49.7	99.4	90 - 110	
Silver		50	49.3	98.6	90 - 110	
Thallium		50	49.1	98.2	90 - 110	
Vanadium		50	49.7	99.5	90 - 110	
Zinc		50	50.7	101	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4829701
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822
Run Date: 06/28/2016
Sample ID: WG574537-10
Instrument ID: ICP-MS2
Run Time: 13:34
Method: 6020A
File ID: NI.062816.133459
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0492	mg/L	98.4	90 - 110		
Arsenic		0.0500	0.0495	mg/L	99.0	90 - 110		
Barium		0.0500	0.0487	mg/L	97.5	90 - 110		
Cadmium		0.0500	0.0487	mg/L	97.4	90 - 110		
Chromium		0.0500	0.0494	mg/L	98.8	90 - 110		
Cobalt		0.0500	0.0512	mg/L	102	90 - 110		
Copper		0.0500	0.0496	mg/L	99.2	90 - 110		
Lead		0.0500	0.0496	mg/L	99.3	90 - 110		
Manganese		0.0500	0.0497	mg/L	99.5	90 - 110		
Nickel		0.0500	0.0495	mg/L	98.9	90 - 110		
Silver		0.0500	0.0487	mg/L	97.3	90 - 110		
Thallium		0.0500	0.0489	mg/L	97.7	90 - 110		
Vanadium		0.0500	0.0499	mg/L	99.8	90 - 110		
Zinc		0.0500	0.0495	mg/L	99.0	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4829704
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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822
Run Date: 06/28/2016
Sample ID: WG574537-14
Instrument ID: ICP-MS2
Run Time: 14:31
Method: 6020A
File ID: NI.062816.143138
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0480	mg/L	96.1	90 - 110		
Arsenic		0.0500	0.0501	mg/L	100	90 - 110		
Barium		0.0500	0.0474	mg/L	94.9	90 - 110		
Cadmium		0.0500	0.0480	mg/L	96.1	90 - 110		
Chromium		0.0500	0.0496	mg/L	99.1	90 - 110		
Cobalt		0.0500	0.0531	mg/L	106	90 - 110		
Copper		0.0500	0.0499	mg/L	99.7	90 - 110		
Lead		0.0500	0.0506	mg/L	101	90 - 110		
Manganese		0.0500	0.0492	mg/L	98.5	90 - 110		
Nickel		0.0500	0.0495	mg/L	99.0	90 - 110		
Silver		0.0500	0.0484	mg/L	96.8	90 - 110		
Thallium		0.0500	0.0490	mg/L	98.1	90 - 110		
Vanadium		0.0500	0.0508	mg/L	102	90 - 110		
Zinc		0.0500	0.0501	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4829704
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822
Run Date: 06/28/2016
Sample ID: WG574537-18
Instrument ID: ICP-MS2
Run Time: 15:10
Method: 6020A
File ID: NI.062816.151001
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0504	mg/L	101	90 - 110		
Arsenic		0.0500	0.0499	mg/L	99.7	90 - 110		
Barium		0.0500	0.0485	mg/L	96.9	90 - 110		
Cadmium		0.0500	0.0487	mg/L	97.5	90 - 110		
Chromium		0.0500	0.0489	mg/L	97.9	90 - 110		
Cobalt		0.0500	0.0517	mg/L	103	90 - 110		
Copper		0.0500	0.0490	mg/L	97.9	90 - 110		
Lead		0.0500	0.0514	mg/L	103	90 - 110		
Manganese		0.0500	0.0487	mg/L	97.5	90 - 110		
Nickel		0.0500	0.0484	mg/L	96.8	90 - 110		
Silver		0.0500	0.0495	mg/L	98.9	90 - 110		
Thallium		0.0500	0.0506	mg/L	101	90 - 110		
Vanadium		0.0500	0.0498	mg/L	99.6	90 - 110		
Zinc		0.0500	0.0494	mg/L	98.9	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4829704
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822 Run Date: 06/28/2016 Sample ID: WG574537-29
Instrument ID: ICP-MS2 Run Time: 18:49 Method: 6020A
File ID: NI.062816.184946 Analyst: BKT QC Key: DOD4
Workgroup (AAB#): WG574570 Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0481	mg/L	96.2	90 - 110		
Arsenic		0.0500	0.0471	mg/L	94.1	90 - 110		
Barium		0.0500	0.0464	mg/L	92.9	90 - 110		
Cadmium		0.0500	0.0463	mg/L	92.7	90 - 110		
Chromium		0.0500	0.0469	mg/L	93.8	90 - 110		
Cobalt		0.0500	0.0469	mg/L	93.8	90 - 110		
Copper		0.0500	0.0475	mg/L	94.9	90 - 110		
Lead		0.0500	0.0484	mg/L	96.7	90 - 110		
Manganese		0.0500	0.0473	mg/L	94.6	90 - 110		
Nickel		0.0500	0.0476	mg/L	95.1	90 - 110		
Silver		0.0500	0.0474	mg/L	94.8	90 - 110		
Thallium		0.0500	0.0474	mg/L	94.8	90 - 110		
Vanadium		0.0500	0.0472	mg/L	94.5	90 - 110		
Zinc		0.0500	0.0472	mg/L	94.5	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4829704
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822
Run Date: 06/28/2016
Sample ID: WG574537-32
Instrument ID: ICP-MS2
Run Time: 20:23
Method: 6020A
File ID: NI.062816.202325
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0502	mg/L	100	90 - 110		
Arsenic		0.0500	0.0499	mg/L	99.8	90 - 110		
Barium		0.0500	0.0488	mg/L	97.7	90 - 110		
Cadmium		0.0500	0.0494	mg/L	98.8	90 - 110		
Chromium		0.0500	0.0508	mg/L	102	90 - 110		
Cobalt		0.0500	0.0517	mg/L	103	90 - 110		
Copper		0.0500	0.0507	mg/L	101	90 - 110		
Lead		0.0500	0.0515	mg/L	103	90 - 110		
Manganese		0.0500	0.0509	mg/L	102	90 - 110		
Nickel		0.0500	0.0501	mg/L	100	90 - 110		
Silver		0.0500	0.0500	mg/L	99.9	90 - 110		
Thallium		0.0500	0.0504	mg/L	101	90 - 110		
Vanadium		0.0500	0.0505	mg/L	101	90 - 110		
Zinc		0.0500	0.0506	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

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PDF File ID: 4829704
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822
Run Date: 06/28/2016
Sample ID: WG574537-34
Instrument ID: ICP-MS2
Run Time: 21:01
Method: 6020A
File ID: NI.062816.210146
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0494	mg/L	98.8	90 - 110		
Arsenic		0.0500	0.0505	mg/L	101	90 - 110		
Barium		0.0500	0.0490	mg/L	98.1	90 - 110		
Cadmium		0.0500	0.0492	mg/L	98.4	90 - 110		
Chromium		0.0500	0.0506	mg/L	101	90 - 110		
Cobalt		0.0500	0.0511	mg/L	102	90 - 110		
Copper		0.0500	0.0509	mg/L	102	90 - 110		
Lead		0.0500	0.0534	mg/L	107	90 - 110		
Manganese		0.0500	0.0526	mg/L	105	90 - 110		
Nickel		0.0500	0.0509	mg/L	102	90 - 110		
Silver		0.0500	0.0485	mg/L	96.9	90 - 110		
Thallium		0.0500	0.0506	mg/L	101	90 - 110		
Vanadium		0.0500	0.0505	mg/L	101	90 - 110		
Zinc		0.0500	0.0506	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822
Run Date: 06/29/2016
Sample ID: WG574676-10
Instrument ID: ICP-MS2
Run Time: 12:00
Method: 6020A
File ID: NI.062916.120010
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0508	mg/L	102	90 - 110		
Arsenic		0.0500	0.0514	mg/L	103	90 - 110		
Barium		0.0500	0.0505	mg/L	101	90 - 110		
Cadmium		0.0500	0.0516	mg/L	103	90 - 110		
Chromium		0.0500	0.0504	mg/L	101	90 - 110		
Cobalt		0.0500	0.0538	mg/L	108	90 - 110		
Copper		0.0500	0.0507	mg/L	101	90 - 110		
Lead		0.0500	0.0529	mg/L	106	90 - 110		
Manganese		0.0500	0.0534	mg/L	107	90 - 110		
Nickel		0.0500	0.0502	mg/L	100	90 - 110		
Silver		0.0500	0.0508	mg/L	102	90 - 110		
Thallium		0.0500	0.0519	mg/L	104	90 - 110		
Vanadium		0.0500	0.0516	mg/L	103	90 - 110		
Zinc		0.0500	0.0510	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822
Run Date: 06/29/2016
Sample ID: WG574676-12
Instrument ID: ICP-MS2
Run Time: 12:37
Method: 6020A
File ID: NI.062916.123748
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0505	mg/L	101	90 - 110		
Arsenic		0.0500	0.0498	mg/L	99.6	90 - 110		
Barium		0.0500	0.0499	mg/L	99.8	90 - 110		
Cadmium		0.0500	0.0506	mg/L	101	90 - 110		
Chromium		0.0500	0.0489	mg/L	97.8	90 - 110		
Cobalt		0.0500	0.0506	mg/L	101	90 - 110		
Copper		0.0500	0.0500	mg/L	99.9	90 - 110		
Lead		0.0500	0.0499	mg/L	99.7	90 - 110		
Manganese		0.0500	0.0500	mg/L	99.9	90 - 110		
Nickel		0.0500	0.0491	mg/L	98.2	90 - 110		
Silver		0.0500	0.0505	mg/L	101	90 - 110		
Thallium		0.0500	0.0497	mg/L	99.4	90 - 110		
Vanadium		0.0500	0.0503	mg/L	101	90 - 110		
Zinc		0.0500	0.0498	mg/L	99.7	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4829704
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060822
Run Date: 06/28/2016
Sample ID: WG574537-07
Instrument ID: ICP-MS2
Run Time: 13:25
Method: 6020A
File ID: NI.062816.132523
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.414	ug/L	104	70 - 130		
Arsenic		0.400	0.419	ug/L	105	70 - 130		
Barium		0.750	0.681	ug/L	90.8	70 - 130		
Cadmium		0.240	0.234	ug/L	97.7	70 - 130		
Chromium		0.800	0.628	ug/L	78.5	70 - 130		
Cobalt		0.400	0.384	ug/L	96.1	70 - 130		
Copper		0.800	0.759	ug/L	94.9	70 - 130		
Lead		0.200	0.183	ug/L	91.6	70 - 130		
Manganese		0.500	0.437	ug/L	87.4	70 - 130		
Nickel		1.60	1.53	ug/L	95.5	70 - 130		
Silver		0.400	0.372	ug/L	92.9	70 - 130		
Thallium		0.0800	0.0768	ug/L	96.0	70 - 130		
Vanadium		0.400	0.332	ug/L	83.0	70 - 130		
Zinc		6.25	6.14	ug/L	98.3	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4829706
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060822
Run Date: 06/28/2016
Sample ID: WG574537-20
Instrument ID: ICP-MS2
Run Time: 15:16
Method: 6020A
File ID: NI.062816.151629
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.429	ug/L	107	70 - 130		
Arsenic		0.400	0.377	ug/L	94.2	70 - 130		
Barium		0.750	0.677	ug/L	90.2	70 - 130		
Cadmium		0.240	0.235	ug/L	98.1	70 - 130		
Chromium		0.800	0.595	ug/L	74.4	70 - 130		
Cobalt		0.400	0.388	ug/L	97.1	70 - 130		
Copper		0.800	0.739	ug/L	92.4	70 - 130		
Lead		0.200	0.192	ug/L	96.0	70 - 130		
Manganese		0.500	0.408	ug/L	81.6	70 - 130		
Nickel		1.60	1.48	ug/L	92.6	70 - 130		
Silver		0.400	0.384	ug/L	96.0	70 - 130		
Thallium		0.0800	0.0804	ug/L	101	70 - 130		
Vanadium		0.400	0.327	ug/L	81.9	70 - 130		
Zinc		6.25	6.24	ug/L	99.9	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4829706
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060822
Run Date: 06/28/2016
Sample ID: WG574537-31
Instrument ID: ICP-MS2
Run Time: 18:56
Method: 6020A
File ID: NI.062816.185610
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.386	ug/L	96.6	70 - 130		
Arsenic		0.400	0.381	ug/L	95.2	70 - 130		
Barium		0.750	0.671	ug/L	89.5	70 - 130		
Cadmium		0.240	0.217	ug/L	90.2	70 - 130		
Chromium		0.800	0.581	ug/L	72.7	70 - 130		
Cobalt		0.400	0.365	ug/L	91.2	70 - 130		
Copper		0.800	0.726	ug/L	90.7	70 - 130		
Lead		0.200	0.188	ug/L	93.9	70 - 130		
Manganese		0.500	0.396	ug/L	79.2	70 - 130		
Nickel		1.60	1.44	ug/L	89.7	70 - 130		
Silver		0.400	0.365	ug/L	91.2	70 - 130		
Thallium		0.0800	0.0752	ug/L	94.0	70 - 130		
Vanadium		0.400	0.309	ug/L	77.3	70 - 130		
Zinc		6.25	5.67	ug/L	90.8	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4829706
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060822
Run Date: 06/28/2016
Sample ID: WG574537-44
Instrument ID: ICP-MS2
Run Time: 23:22
Method: 6020A
File ID: NI.062816.232221
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.384	ug/L	96.1	70 - 130		
Arsenic		0.400	0.418	ug/L	105	70 - 130		
Barium		0.750	0.696	ug/L	92.8	70 - 130		
Cadmium		0.240	0.223	ug/L	92.9	70 - 130		
Chromium		0.800	0.654	ug/L	81.8	70 - 130		
Cobalt		0.400	0.379	ug/L	94.6	70 - 130		
Copper		0.800	0.746	ug/L	93.2	70 - 130		
Lead		0.200	0.200	ug/L	100	70 - 130		
Manganese		0.500	0.444	ug/L	88.8	70 - 130		
Nickel		1.60	1.53	ug/L	95.6	70 - 130		
Silver		0.400	0.372	ug/L	93.0	70 - 130		
Thallium		0.0800	0.0774	ug/L	96.8	70 - 130		
Vanadium		0.400	0.335	ug/L	83.8	70 - 130		
Zinc		6.25	5.99	ug/L	95.8	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4829706
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060822
Run Date: 06/29/2016
Sample ID: WG574676-07
Instrument ID: ICP-MS2
Run Time: 11:46
Method: 6020A
File ID: NI.062916.114653
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.456	ug/L	114	70 - 130		
Arsenic		0.400	0.429	ug/L	107	70 - 130		
Barium		0.750	0.733	ug/L	97.8	70 - 130		
Cadmium		0.240	0.237	ug/L	98.5	70 - 130		
Chromium		0.800	0.739	ug/L	92.4	70 - 130		
Cobalt		0.400	0.414	ug/L	103	70 - 130		
Copper		0.800	0.768	ug/L	96.0	70 - 130		
Lead		0.200	0.181	ug/L	90.3	70 - 130		
Manganese		0.500	0.468	ug/L	93.6	70 - 130		
Nickel		1.60	1.56	ug/L	97.7	70 - 130		
Silver		0.400	0.390	ug/L	97.5	70 - 130		
Thallium		0.0800	0.0871	ug/L	109	70 - 130		
Vanadium		0.400	0.382	ug/L	95.5	70 - 130		
Zinc		6.25	6.64	ug/L	106	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4829706
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060822
Run Date: 06/29/2016
Sample ID: WG574676-14
Instrument ID: ICP-MS2
Run Time: 12:44
Method: 6020A
File ID: NI.062916.124412
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.401	ug/L	100	70 - 130		
Arsenic		0.400	0.394	ug/L	98.6	70 - 130		
Barium		0.750	0.718	ug/L	95.7	70 - 130		
Cadmium		0.240	0.227	ug/L	94.7	70 - 130		
Chromium		0.800	0.768	ug/L	96.0	70 - 130		
Cobalt		0.400	0.405	ug/L	101	70 - 130		
Copper		0.800	0.751	ug/L	93.9	70 - 130		
Lead		0.200	0.179	ug/L	89.4	70 - 130		
Manganese		0.500	0.469	ug/L	93.8	70 - 130		
Nickel		1.60	1.53	ug/L	95.6	70 - 130		
Silver		0.400	0.383	ug/L	95.7	70 - 130		
Thallium		0.0800	0.0809	ug/L	101	70 - 130		
Vanadium		0.400	0.370	ug/L	92.4	70 - 130		
Zinc		6.25	6.89	ug/L	110	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4829706
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060822
Instrument ID: ICP-MS2
Sol. A : WG574537-08 **File ID:** NI.062816.132834
Sol. AB : WG574537-09 **File ID:** NI.062816.133145

Workgroup (AAB#): WG574570
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.0836	NS	100	94.7	94.7	
Arsenic	NS	-0.0118	NS	100	98.9	98.9	
Barium	NS	0.266	NS	100	94.5	94.5	
Cadmium	NS	-0.106	NS	100	95.6	95.6	
Chromium	NS	-0.0468	NS	100	96.5	96.5	
Cobalt	NS	0.0276	NS	100	97.7	97.7	
Copper	NS	0.231	NS	100	96.5	96.5	
Lead	NS	0.0352	NS	100	98.2	98.2	
Manganese	NS	0.0680	NS	100	97.7	97.7	
Nickel	NS	0.332	NS	100	96.0	96.0	
Silver	NS	0.0254	NS	100	89.5	89.5	
Thallium	NS	0.0257	NS	100	96.4	96.4	
Vanadium	NS	-0.0466	NS	100	96.5	96.5	
Zinc	NS	0.903	NS	100	101	101	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4829703
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060822
Instrument ID: ICP-MS2
Sol. A : WG574537-16 **File ID:** NI.062816.150336
Sol. AB : WG574537-17 **File ID:** NI.062816.150647

Workgroup (AAB#): WG574570
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.126	NS	100	101	101	
Arsenic	NS	-0.0170	NS	100	102	102	
Barium	NS	0.271	NS	100	98.3	98.3	
Cadmium	NS	-0.0956	NS	100	99.8	99.8	
Chromium	NS	-0.00590	NS	100	97.3	97.3	
Cobalt	NS	0.0242	NS	100	102	102	
Copper	NS	0.234	NS	100	97.4	97.4	
Lead	NS	0.0422	NS	100	102	102	
Manganese	NS	0.0683	NS	100	97.7	97.7	
Nickel	NS	0.343	NS	100	95.9	95.9	
Silver	NS	0.0228	NS	100	91.0	91.0	
Thallium	NS	0.0182	NS	100	99.2	99.2	
Vanadium	NS	-0.0922	NS	100	100	100	
Zinc	NS	0.968	NS	100	103	103	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4829703
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060822
Instrument ID: ICP-MS2
Sol. A : WG574676-08 **File ID:** NI.062916.115053
Sol. AB : WG574676-09 **File ID:** NI.062916.115447

Workgroup (AAB#): WG574570
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.0658	NS	100	100	100	
Arsenic	NS	0.0161	NS	100	105	105	
Barium	NS	0.303	NS	100	98.4	98.4	
Cadmium	NS	-0.103	NS	100	101	101	
Chromium	NS	0.0680	NS	100	101	101	
Cobalt	NS	0.0292	NS	100	105	105	
Copper	NS	0.245	NS	100	100	100	
Lead	NS	0.0174	NS	100	102	102	
Manganese	NS	0.0629	NS	100	105	105	
Nickel	NS	0.331	NS	100	100	100	
Silver	NS	0.0271	NS	100	95.3	95.3	
Thallium	NS	0.0271	NS	100	100	100	
Vanadium	NS	0.0706	NS	100	103	103	
Zinc	NS	1.14	NS	100	104	104	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4829703
Report generated 06/30/2016 09:23

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060822 **Analytical Method:** 6020
Analytical Workgroup: WG574570 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 28-JUN-2016 13:06

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060822-02	SAMP	28-JUN-2016 20:42	96.563	98.195	99.724
L16060822-03	SAMP	28-JUN-2016 20:45	99.671	105.218	101.024
WG574242-02	BLANK	28-JUN-2016 19:51	99.476	99.537	97.857
WG574242-03	LCS	28-JUN-2016 19:54	99.956	99.501	98.669
WG574537-05	ICV	28-JUN-2016 13:18	106.21	104.263	104.758
WG574537-06	ICB	28-JUN-2016 13:22	103.902	104.951	103.59
WG574537-07	LLICV	28-JUN-2016 13:25	104.131	100.167	102.925
WG574537-08	ICS	28-JUN-2016 13:28	105.453	105.812	102.55
WG574537-09	ICS	28-JUN-2016 13:31	104.707	103.975	104.833
WG574537-10	CCV	28-JUN-2016 13:34	105.977	103.288	105.534
WG574537-11	CCB	28-JUN-2016 13:38	102.403	102.67	102.767
WG574537-14	CCV	28-JUN-2016 14:31	103.407	95.988	101.793
WG574537-15	CCB	28-JUN-2016 14:34	104.225	98.805	100.724
WG574537-16	ICS	28-JUN-2016 15:03	99.952	99.435	100.043
WG574537-17	ICS	28-JUN-2016 15:06	101.575	99.874	97.332
WG574537-18	CCV	28-JUN-2016 15:10	100.244	98.973	99.201
WG574537-19	CCB	28-JUN-2016 15:13	103.776	99.505	101.81
WG574537-20	LLCCV	28-JUN-2016 15:16	99.051	96.111	96.093
WG574537-29	CCV	28-JUN-2016 18:49	100.019	101.137	98.931
WG574537-30	CCB	28-JUN-2016 18:52	100.148	99.202	100.624
WG574537-31	LLCCV	28-JUN-2016 18:56	95.839	97.87	93.931
WG574537-32	CCV	28-JUN-2016 20:23	102.351	100.903	101.064
WG574537-33	CCB	28-JUN-2016 20:26	99.219	96.376	100.773
WG574537-34	CCV	28-JUN-2016 21:01	96.559	99.919	99.677
WG574537-35	CCB	28-JUN-2016 21:04	100.258	102.056	98.569
WG574537-44	LLCCV	28-JUN-2016 23:22	91.439	93.342	91.269
WG574570-01	PSPK	28-JUN-2016 20:13	100.708	100.256	100.218
WG574570-02	SERIAL	28-JUN-2016 20:17	103.535	103.697	101.2

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4829699
Report generated: 06/30/2016 09:23

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060822 **Analytical Method:** 6020
Analytical Workgroup: WG574570 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 29-JUN-2016 11:25

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060822-03	SAMP	29-JUN-2016 12:25	99.273	98.877	99.813
WG574676-05	ICV	29-JUN-2016 11:38	98.257	100.661	96.465
WG574676-06	ICB	29-JUN-2016 11:41	98.914	99.091	98.14
WG574676-07	LLICV	29-JUN-2016 11:46	95.79	95.394	93.877
WG574676-08	ICS	29-JUN-2016 11:50	98.596	98.274	96.165
WG574676-09	ICS	29-JUN-2016 11:54	97.891	98.362	95.991
WG574676-10	CCV	29-JUN-2016 12:00	96.559	97.448	96.281
WG574676-11	CCB	29-JUN-2016 12:07	98.969	97.431	96.855
WG574676-12	CCV	29-JUN-2016 12:37	99.303	102.045	96.376
WG574676-13	CCB	29-JUN-2016 12:40	100.991	102.01	98.548
WG574676-14	LLCCV	29-JUN-2016 12:44	96.535	95.69	95.451

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4829699
Report generated: 06/30/2016 09:23

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060822 **Analytical Method:** 6020
Analytical Workgroup: WG574570 **Matrix:** 2
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 28-JUN-2016 13:06

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060843-01	SAMP	28-JUN-2016 20:10	97.785	95.068	99.061

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4829699
Report generated: 06/30/2016 09:23

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16060822 **Date:** 04/19/2016
Insturment ID: ICP-MS2 **Method:** 6020A

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Uranium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4829698
Report generated: 06/29/2016 08:34

2.3.2.3 Raw Data

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Tuesday, June 28, 2016 12:45:36

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1331	2024	0.706	
Mg	23.985	24.025	4508	2020	0.701	
Co	58.933	58.925	11686	2022	0.701	
In	114.904	114.875	22861	2028	0.696	
U	238.050	238.025	47455	2043	0.688	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	5.573
5.575	2.596
5.625	3.076
5.675	2.368
5.725	2.568
5.775	3.011
5.825	2.517
5.875	2.694
5.925	1.595
5.975	3.373
6.025	3.068
6.075	2.439
6.125	2.845
6.175	3.293
6.225	6.959
6.275	54.149
6.325	79.756
6.375	69.722
6.425	99.103
6.475	35.972
6.525	19.569
6.575	4.348
6.625	4.647
6.675	4.116
6.725	2.239
6.775	2.849
6.825	1.600

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6.875	3.248
6.925	2.794
6.975	1.665
7.025	2.844
7.075	2.994
7.125	3.503
7.175	2.980
7.225	3.713
7.275	5.087
7.325	35.264
7.375	93.541
7.425	136.931
7.475	82.402
7.525	71.261
7.575	39.123
7.625	180.662
7.675	64.358
7.725	47.507
7.775	71.261
7.825	70.711
7.875	52.705
7.925	46.481
7.975	63.888
8.025	74.689
8.075	64.359
8.125	63.888
8.175	34.401
8.225	46.481
8.275	49.793
8.325	81.441
8.375	60.858
8.425	67.420
8.475	108.653
22.525	223.607
22.575	90.014
22.625	44.605
22.675	65.617
22.725	58.975
22.775	40.945
22.825	35.460
22.875	18.054
22.925	42.061
22.975	53.715
23.025	19.357
23.075	24.491
23.125	8.438
23.175	12.837

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23.225	30.858
23.275	24.845
23.325	45.141
23.375	26.438
23.425	14.816
23.475	14.263
23.525	12.137
23.575	3.832
23.625	2.363
23.675	1.595
23.725	2.170
23.775	2.317
23.825	1.497
23.875	1.501
23.925	1.731
23.975	0.863
24.025	2.634
24.075	2.734
24.125	2.053
24.175	2.398
24.225	2.993
24.275	2.883
24.325	7.686
24.375	28.384
24.425	36.617
24.475	12.141
24.525	3.189
24.575	0.926
24.625	1.585
24.675	1.547
24.725	2.051
24.775	1.408
24.825	2.678
24.875	1.711
24.925	1.949
24.975	2.595
25.025	3.005
25.075	2.962
25.125	2.366
25.175	2.463
25.225	2.722
25.275	9.971
25.325	31.599
25.375	47.140
25.425	64.885
25.475	6.734
57.525	8.866

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57.575	5.291
57.625	3.440
57.675	3.697
57.725	3.076
57.775	2.567
57.825	2.416
57.875	1.794
57.925	2.766
57.975	2.199
58.025	1.926
58.075	2.254
58.125	1.436
58.175	1.390
58.225	3.504
58.275	5.534
58.325	34.267
58.375	33.055
58.425	20.772
58.475	14.356
58.525	5.854
58.575	3.115
58.625	4.057
58.675	2.315
58.725	2.604
58.775	2.171
58.825	1.290
58.875	1.298
58.925	2.935
58.975	1.929
59.025	1.078
59.075	1.921
59.125	2.163
59.175	2.388
59.225	3.289
59.275	8.929
59.325	38.030
59.375	58.736
59.425	28.284
59.475	17.563
59.525	12.128
59.575	6.526
59.625	2.279
59.675	2.377
59.725	6.247
59.775	4.326
59.825	2.635
59.875	3.246

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59.925	1.954
59.975	3.753
60.025	5.882
60.075	3.380
60.125	2.788
60.175	3.075
60.225	4.430
60.275	18.947
60.325	43.241
60.375	22.017
60.425	79.756
60.475	50.461
113.525	7.111
113.575	1.614
113.625	3.295
113.675	3.378
113.725	2.143
113.775	2.366
113.825	3.191
113.875	4.581
113.925	1.498
113.975	2.463
114.025	3.675
114.075	2.767
114.125	4.064
114.175	2.276
114.225	6.994
114.275	28.008
114.325	41.691
114.375	17.526
114.425	9.127
114.475	6.547
114.525	3.985
114.575	2.757
114.625	3.785
114.675	2.945
114.725	3.014
114.775	2.252
114.825	1.319
114.875	1.984
114.925	1.415
114.975	0.577
115.025	0.422
115.075	1.851
115.125	0.695
115.175	3.426
115.225	3.732

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115.275	9.818
115.325	57.810
115.375	52.705
115.425	23.458
115.475	18.657
115.525	4.767
115.575	6.521
115.625	4.984
115.675	3.649
115.725	7.463
115.775	7.302
115.825	2.294
115.875	3.587
115.925	2.925
115.975	3.587
116.025	4.548
116.075	6.187
116.125	2.246
116.175	11.560
116.225	3.389
116.275	17.538
116.325	51.618
116.375	52.705
116.425	42.127
116.475	34.312
236.525	
236.575	28.853
236.625	56.165
236.675	51.701
236.725	11.620
236.775	50.775
236.825	27.217
236.875	33.431
236.925	29.881
236.975	45.955
237.025	46.771
237.075	7.402
237.125	30.162
237.175	24.686
237.225	34.297
237.275	16.110
237.325	20.328
237.375	28.770
237.425	26.702
237.475	18.887
237.525	24.816
237.575	6.725

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237.625	8.740
237.675	3.668
237.725	2.023
237.775	1.587
237.825	3.110
237.875	1.530
237.925	2.794
237.975	3.068
238.025	2.967
238.075	2.352
238.125	2.652
238.175	2.474
238.225	2.129
238.275	1.500
238.325	2.197
238.375	3.421
238.425	3.111
238.475	6.669
238.525	16.077
238.575	17.557
238.625	21.969
238.675	32.775
238.725	22.232
238.775	26.146
238.825	21.694
238.875	19.088
238.925	8.384
238.975	17.180
239.025	59.843
239.075	31.485
239.125	33.497
239.175	31.181
239.225	27.834
239.275	28.743
239.325	26.503
239.375	17.174
239.425	9.195
239.475	35.446

Approved: June 29, 2016

SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 6/28/2016 12:50:43 PM
End Time: 6/28/2016 12:52:55 PM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 5221.30
        Obtained Intensity (Mg 23.985): 136183.87
        Obtained Intensity (In 114.904): 66441.11
        Obtained Intensity (U 238.05): 147068.09
        Obtained Intensity (Bkgd 220): 0.20
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.018 (=3731.53 / 205818.69)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.004 (=890.23 / 205818.69)
```

Report Date/Time: Tuesday, June 28, 2016 12:52:56
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Approved: June 29, 2016

SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 6/28/2016 12:50:43 PM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 5221.30
                Obtained Intensity (Mg 23.985): 136183.87
                Obtained Intensity (In 114.904): 66441.11
                Obtained Intensity (U 238.05): 147068.09
                Obtained Intensity (Bkgd 220): 0.20
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.018 (=3731.53 / 205818.69)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.004 (=890.23 / 205818.69)
[Passed]  Optimum value(s): N/A

End Time: 6/28/2016 12:52:55 PM
```


Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Tuesday, June 28, 2016 13:02:57
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81760.1	2.0				ug/L		Standard
	Be	9	16.7	75.5				ug/L		Standard
	Al	27	1410.1	2.3				ug/L		Standard
	Sc	45	39543.2	2.7				ug/L		Standard
	Ti	47	39.0	9.2				ug/L		Standard
	V	51	1415.2	6.8				ug/L		Standard
	Cr	52	6946.3	1.7				ug/L		Standard
	Cr	53	328.3	14.1				ug/L		Standard
	Mn	55	823.0	8.8				ug/L		Standard
	Co	59	251.7	9.6				ug/L		Standard
	Ni	60	192.0	8.0				ug/L		Standard
	Cu	65	140.7	5.3				ug/L		Standard
	Zn	66	490.7	3.4				ug/L		Standard
>	Ge	72	515086.9	1.2				ug/L		Standard
	As	75	19.8	169.9				ug/L		Standard
	Se	82	15.3	19.8				ug/L		Standard
	Se-1	77	48.0	15.7				ug/L		Standard
>	Ga	71	90.0	5.6				mg/L		Standard
	Rb	85	23.3	68.9				ug/L		Standard
	Y	89	448509.9	0.5				ug/L		Standard
>	Rh	103	15.0	66.7				ug/L		Standard
	Mo	98	10.9	19.2				ug/L		Standard
	Ag	107	134.0	44.7				ug/L		Standard
	Cd	111	6.6	57.0				mg/L		Standard
	Cd	114	16.1	68.4				ug/L		Standard
>	In	115	611116.5	1.9				ug/L		Standard
	Sn	118	518.3	7.2				ug/L		Standard
	Sb	123	126.7	13.8				ug/L		Standard
	Ba	135	45.3	39.8				ug/L		Standard
	Ce	140	298.3	72.3				ug/L		Standard
>	Tb	159	977942.3	1.0				ug/L		Standard
	Ho	165	11.7	24.7				ug/L		Standard
	Tl	203	30.7	114.0				ug/L		Standard
	Tl	205	20.0	152.1				ug/L		Standard
	Pb	206	285.7	7.2				ug/L		Standard
	Pb	207	257.0	5.7				ug/L		Standard
	Pb	208	955.7	3.9				ug/L		Standard
	U	238	17.0	67.8				ug/L		Standard
>	Bi	209	557080.4	0.4				ug/L		Standard

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	Na	23	0.0		mg/L	Standard
	Mg	24	31.7	36.5	mg/L	Standard
	K	39	30.0	57.7	mg/L	Standard
	Ca	43	48.3	43.1	mg/L	Standard
	Fe	54	159.3	19.3	mg/L	Standard
	Fe	57	195.0	11.2	mg/L	Standard
>	**Sc-1**	45	39543.2	2.7	mg/L	Standard
	Cl	35	27641.9	2.8	ug/L	Standard
	Kr	83	2.0	50.0	ug/L	Standard
	Br	81	1646.8	11.1	ug/L	Standard
	P	31	15231.0	1.6	ug/L	Standard
	S	34	1845.1	7.5	ug/L	Standard
	Sr	88	70.0	12.4	ug/L	Standard
	C	12	113.3	28.4	mg/L	Standard
	N	14	0.0		mg/L	Standard
	Hg	202	0.0		mg/L	Standard
	Dy	164	12.4	122.2	mg/L	Standard
	Ho-1	165	11.7	24.7	mg/L	Standard
	Er	166	20.0	50.0	mg/L	Standard
	I	127	1161.7	12.0	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Tuesday, June 28, 2016 13:06:09
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83638.6	0.9				ug/L	81760	Standard
	Be	9	11.7	49.5				ug/L	17	Standard
	Al	27	1445.1	4.5				ug/L	1410	Standard
	Sc	45	40184.9	2.0				ug/L	39543	Standard
	Ti	47	38.3	12.0				ug/L	39	Standard
	V	51	1492.6	2.6				ug/L	1415	Standard
	Cr	52	7409.5	2.1				ug/L	6946	Standard
	Cr	53	321.7	15.3				ug/L	328	Standard
	Mn	55	835.0	1.8				ug/L	823	Standard
	Co	59	226.7	11.0				ug/L	252	Standard
	Ni	60	182.7	5.1				ug/L	192	Standard
	Cu	65	134.7	15.9				ug/L	141	Standard
	Zn	66	519.7	4.6				ug/L	491	Standard
>	**Ge**	72	517782.5	2.4				ug/L	515087	Standard
	As	75	-33.8	72.0				ug/L	20	Standard
	Se	82	16.9	27.2				ug/L	15	Standard
	Se-1	77	48.7	14.9				ug/L	48	Standard
>	**Ga**	71	95.0	19.0				mg/L	90	Standard
	Rb	85	33.3	82.6				ug/L	23	Standard
	Y	89	456301.2	1.1				ug/L	448510	Standard
>	**Rh**	103	21.7	58.1				ug/L	15	Standard
	Mo	98	8.3	58.9				ug/L	11	Standard
	Ag	107	79.0	9.1				ug/L	134	Standard
	Cd	111	3.3	17.5				mg/L	7	Standard
	Cd	114	6.2	12.1				ug/L	16	Standard
>	**In**	115	624714.7	2.4				ug/L	611117	Standard
	Sn	118	515.0	5.4				ug/L	518	Standard
	Sb	123	47.7	15.0				ug/L	127	Standard
	Ba	135	33.7	27.6				ug/L	45	Standard
	Ce	140	86.7	24.0				ug/L	298	Standard
>	**Tb**	159	1001347.1	1.8				ug/L	977942	Standard
	Ho	165	6.7	43.3				ug/L	12	Standard
	Tl	203	5.3	60.3				ug/L	31	Standard
	Tl	205	3.3	86.6				ug/L	20	Standard
	Pb	206	276.7	3.7				ug/L	286	Standard
	Pb	207	213.3	7.3				ug/L	257	Standard
	Pb	208	933.0	3.4				ug/L	956	Standard
	U	238	4.7	12.4				ug/L	17	Standard
>	**Bi**	209	562888.8	0.9				ug/L	557080	Standard

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	Na	23	0.0		mg/L	0	Standard
	Mg	24	36.7	7.9	mg/L	32	Standard
	K	39	28.3	44.4	mg/L	30	Standard
	Ca	43	36.7	28.4	mg/L	48	Standard
	Fe	54	172.5	32.0	mg/L	159	Standard
	Fe	57	211.7	34.4	mg/L	195	Standard
>	**Sc-1**	45	40184.9	2.0	mg/L	39543	Standard
	Cl	35	29114.6	1.1	ug/L	27642	Standard
	Kr	83	3.3	96.4	ug/L	2	Standard
	Br	81	1676.8	6.8	ug/L	1647	Standard
	P	31	15918.4	1.2	ug/L	15231	Standard
	S	34	1885.1	11.3	ug/L	1845	Standard
	Sr	88	58.3	21.6	ug/L	70	Standard
	C	12	116.7	24.7	mg/L	113	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	0.0		mg/L	0	Standard
	Dy	164	16.2	93.4	mg/L	12	Standard
	Ho-1	165	6.7	43.3	mg/L	12	Standard
	Er	166	10.0	100.0	mg/L	20	Standard
	I	127	1170.0	16.3	mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Tuesday, June 28, 2016 13:09:21
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82626.5	2.9				ug/L	81760	Standard
	Be	9	60.0	14.4				ug/L	17	Standard
	Al	27	10023.3	4.0				ug/L	1410	Standard
	Sc	45	41007.1	1.4				ug/L	39543	Standard
	Ti	47	69.0	5.8				ug/L	39	Standard
	V	51	1868.4	2.4				ug/L	1415	Standard
	Cr	52	8071.5	1.1				ug/L	6946	Standard
	Cr	53	360.0	4.2				ug/L	328	Standard
	Mn	55	1347.7	1.9				ug/L	823	Standard
	Co	59	599.0	5.9				ug/L	252	Standard
	Ni	60	305.7	5.8				ug/L	192	Standard
	Cu	65	280.3	2.3				ug/L	141	Standard
	Zn	66	1008.0	4.7				ug/L	491	Standard
>	**Ge**	72	539572.1	1.8				ug/L	515087	Standard
	As	75	11.1	230.1				ug/L	20	Standard
	Se	82	20.4	17.1				ug/L	15	Standard
	Se-1	77	60.7	1.9				ug/L	48	Standard
>	**Ga**	71	83.3	19.3				mg/L	90	Standard
	Rb	85	31.7	48.2				ug/L	23	Standard
	Y	89	463986.2	1.2				ug/L	448510	Standard
>	**Rh**	103	13.3	57.3				ug/L	15	Standard
	Mo	98	329.5	2.8				ug/L	11	Standard
	Ag	107	455.0	1.5				ug/L	134	Standard
	Cd	111	115.7	6.5				mg/L	7	Standard
	Cd	114	292.0	6.0				ug/L	16	Standard
>	**In**	115	625608.8	0.7				ug/L	611117	Standard
	Sn	118	920.0	9.2				ug/L	518	Standard
	Sb	123	303.4	7.6				ug/L	127	Standard
	Ba	135	158.7	8.0				ug/L	45	Standard
	Ce	140	88.3	42.5				ug/L	298	Standard
>	**Tb**	159	1002874.0	1.4				ug/L	977942	Standard
	Ho	165	11.7	24.7				ug/L	12	Standard
	Tl	203	472.7	2.0				ug/L	31	Standard
	Tl	205	391.7	11.0				ug/L	20	Standard
	Pb	206	628.7	5.7				ug/L	286	Standard
	Pb	207	539.3	6.7				ug/L	257	Standard
	Pb	208	2133.7	2.7				ug/L	956	Standard
	U	238	388.7	5.1				ug/L	17	Standard
>	**Bi**	209	570508.1	0.4				ug/L	557080	Standard

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	Na	23	0.0		mg/L	0	Standard
	Mg	24	48.3	26.0	mg/L	32	Standard
	K	39	45.0	19.2	mg/L	30	Standard
	Ca	43	36.7	43.8	mg/L	48	Standard
	Fe	54	162.5	17.6	mg/L	159	Standard
	Fe	57	193.3	3.0	mg/L	195	Standard
>	**Sc-1**	45	41007.1	1.4	mg/L	39543	Standard
	Cl	35	29715.1	0.6	ug/L	27642	Standard
	Kr	83	3.0	33.3	ug/L	2	Standard
	Br	81	1836.8	4.6	ug/L	1647	Standard
	P	31	16030.1	3.1	ug/L	15231	Standard
	S	34	1895.1	1.4	ug/L	1845	Standard
	Sr	88	61.7	9.4	ug/L	70	Standard
	C	12	143.3	21.3	mg/L	113	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	0.0		mg/L	0	Standard
	Dy	164	19.5	50.0	mg/L	12	Standard
	Ho-1	165	11.7	24.7	mg/L	12	Standard
	Er	166	10.0	100.0	mg/L	20	Standard
	I	127	1208.4	23.1	mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Tuesday, June 28, 2016 13:12:32
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83151.0	2.6				ug/L	81760	Standard
	Be	9	50594.4	3.3	**50.0000**	0.655	1.3	ug/L	17	Standard
	Al	27	7832644.8	2.3	**50.0000**	1.818	3.6	ug/L	1410	Standard
	Sc	45	42972.5	0.7				ug/L	39543	Standard
	Ti	47	26044.7	0.2	**100.0000**	1.044	1.0	ug/L	39	Standard
	V	51	369925.9	1.5	**50.0000**	0.431	0.9	ug/L	1415	Standard
	Cr	52	376035.2	0.6	**50.0000**	0.381	0.8	ug/L	6946	Standard
	Cr	53	47201.8	2.5	**50.0000**	1.648	3.3	ug/L	328	Standard
	Mn	55	339840.1	0.9	**50.0000**	0.028	0.1	ug/L	823	Standard
	Co	59	369835.8	1.4	**50.0000**	0.329	0.7	ug/L	252	Standard
	Ni	60	100390.8	0.3	**50.0000**	0.410	0.8	ug/L	192	Standard
	Cu	65	101743.1	0.9	**50.0000**	0.203	0.4	ug/L	141	Standard
	Zn	66	59304.5	0.9	**50.0000**	0.371	0.7	ug/L	491	Standard
>	**Ge**	72	547553.1	0.8				ug/L	515087	Standard
	As	75	59263.2	0.8	**50.0000**	0.205	0.4	ug/L	20	Standard
	Se	82	6019.0	1.0	**50.0000**	0.596	1.2	ug/L	15	Standard
	Se-1	77	4068.9	1.3	**50.0000**	0.434	0.9	ug/L	48	Standard
>	**Ga**	71	120.0	22.0				mg/L	90	Standard
	Rb	85	803.4	2.6				ug/L	23	Standard
	Y	89	462085.4	0.0				ug/L	448510	Standard
>	**Rh**	103	33.3	52.7				ug/L	15	Standard
	Mo	98	278482.4	0.5	**100.0000**	0.941	0.9	ug/L	11	Standard
	Ag	107	351728.0	0.3	**50.0000**	0.642	1.3	ug/L	134	Standard
	Cd	111	110396.3	1.4	**50.0000**	0.556	1.1	mg/L	7	Standard
	Cd	114	267604.2	1.4	**50.0000**	0.663	1.3	ug/L	16	Standard
>	**In**	115	627830.2	1.2				ug/L	611117	Standard
	Sn	118	304675.0	1.7	**50.0000**	0.618	1.2	ug/L	518	Standard
	Sb	123	244739.5	0.4	**50.0000**	0.675	1.4	ug/L	127	Standard
	Ba	135	106555.1	1.0	**50.0000**	0.097	0.2	ug/L	45	Standard
	Ce	140	116.7	9.9				ug/L	298	Standard
>	**Tb**	159	1018565.7	2.1				ug/L	977942	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	438004.0	1.2	**50.0000**	0.427	0.9	ug/L	31	Standard
	Tl	205	379940.6	1.7	**50.0000**	0.597	1.2	ug/L	20	Standard
	Pb	206	284208.1	0.3	**50.0000**	0.335	0.7	ug/L	286	Standard
	Pb	207	256392.2	0.5	**50.0000**	0.374	0.7	ug/L	257	Standard
	Pb	208	978425.0	1.4	**50.0000**	0.588	1.2	ug/L	956	Standard
	U	238	371095.6	0.5	**50.0000**	0.490	1.0	ug/L	17	Standard
>	**Bi**	209	583572.7	0.6				ug/L	557080	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	4002.2	2.2	**5.0000**	0.144	2.9	mg/L	32	Standard
K	39	1640.1	4.4	**5.0000**	0.220	4.4	mg/L	30	Standard
Ca	43	73.3	27.6	**5.0000**	2.832	56.6	mg/L	48	Standard
Fe	54	6006.1	1.4	**5.0000**	0.034	0.7	mg/L	159	Standard
Fe	57	1818.4	10.7	**5.0000**	0.606	12.1	mg/L	195	Standard
> **Sc-1**	45	42972.5	0.7				mg/L	39543	Standard
Cl	35	31584.9	0.4				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1736.8	12.0				ug/L	1647	Standard
P	31	18696.5	1.2				ug/L	15231	Standard
S	34	2423.5	4.1				ug/L	1845	Standard
Sr	88	71.7	21.3				ug/L	70	Standard
C	12	110.0	39.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	18.6	110.3				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	30.0	33.3				mg/L	20	Standard
I	127	1405.1	8.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⎣	Rb	85
⎡	Y	89
⎣>	Rh	103
⎡	Mo	98
⎢	Ag	107
⎢	Cd	111
⎢	Cd	114
⎢>	In	115
⎢	Sn	118
⎢	Sb	123
⎣	Ba	135
⎡	Ce	140
⎣>	Tb	159
⎡	Ho	165
⎢	Tl	203
⎢	Tl	205
⎢	Pb	206
⎢	Pb	207
⎢	Pb	208
⎢	U	238
⎣>	Bi	209
⎡	Na	23
⎢	Mg	24
⎢	K	39
⎢	Ca	43
⎢	Fe	54
⎢	Fe	57
⎣>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Tuesday, June 28, 2016 13:15:44
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81919.2	1.8				ug/L	81760	Standard
	Be	9	99366.8	4.2	**99.8402**	3.215	3.2	ug/L	17	Standard
	Al	27	15456145.8	2.8	**100.0514**	1.254	1.3	ug/L	1410	Standard
	Sc	45	41889.5	2.4				ug/L	39543	Standard
	Ti	47	52065.7	3.9	**203.2707**	7.861	3.9	ug/L	39	Standard
	V	51	718696.0	1.3	**100.2818**	2.594	2.6	ug/L	1415	Standard
	Cr	52	727396.2	2.7	**100.4747**	2.418	2.4	ug/L	6946	Standard
	Cr	53	90202.9	3.4	**99.4979**	3.023	3.0	ug/L	328	Standard
	Mn	55	679268.3	1.6	**101.6708**	2.363	2.3	ug/L	823	Standard
	Co	59	730686.9	1.6	**101.0312**	2.535	2.5	ug/L	252	Standard
	Ni	60	193870.4	2.0	**99.9159**	1.756	1.8	ug/L	192	Standard
	Cu	65	194619.8	1.4	**99.4389**	1.906	1.9	ug/L	141	Standard
	Zn	66	113576.2	1.7	**99.8564**	1.521	1.5	ug/L	491	Standard
>	Ge	72	530148.8	1.5				ug/L	515087	Standard
	As	75	116520.9	0.8	**100.7477**	1.604	1.6	ug/L	20	Standard
	Se	82	12083.5	1.4	**101.8724**	2.244	2.2	ug/L	15	Standard
	Se-1	77	7795.3	2.5	**99.8242**	2.540	2.5	ug/L	48	Standard
>	Ga	71	125.0	22.3				mg/L	90	Standard
	Rb	85	1618.4	10.1				ug/L	23	Standard
	Y	89	461192.2	0.4				ug/L	448510	Standard
>	Rh	103	56.7	20.4				ug/L	15	Standard
	Mo	98	556218.8	1.0	**199.4538**	3.118	1.6	ug/L	11	Standard
	Ag	107	678834.5	1.8	**98.0160**	2.327	2.4	ug/L	134	Standard
	Cd	111	219330.5	1.3	**99.4613**	1.808	1.8	mg/L	7	Standard
	Cd	114	534582.7	2.1	**99.7362**	2.615	2.6	ug/L	16	Standard
>	In	115	630478.6	0.6				ug/L	611117	Standard
	Sn	118	609964.7	1.0	**99.8933**	1.520	1.5	ug/L	518	Standard
	Sb	123	482106.0	1.2	**99.0353**	1.710	1.7	ug/L	127	Standard
	Ba	135	212119.9	0.9	**99.5711**	1.444	1.4	ug/L	45	Standard
	Ce	140	165.0	42.7				ug/L	298	Standard
>	Tb	159	1009801.9	0.4				ug/L	977942	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	865813.4	1.1	**100.7605**	1.348	1.3	ug/L	31	Standard
	Tl	205	752692.6	1.1	**100.8681**	0.657	0.7	ug/L	20	Standard
	Pb	206	549987.8	0.2	**99.7256**	0.843	0.8	ug/L	286	Standard
	Pb	207	495989.2	0.5	**99.7047**	0.496	0.5	ug/L	257	Standard
	Pb	208	1945321.0	0.5	**101.0779**	0.484	0.5	ug/L	956	Standard
	U	238	738847.3	0.4	**101.1182**	1.306	1.3	ug/L	17	Standard
>	Bi	209	568134.9	1.0				ug/L	557080	Standard

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Na	23	3.3	86.6	**19.9850**	17.308	86.6	mg/L	0	Standard
Mg	24	8245.6	0.3	**10.3081**	0.247	2.4	mg/L	32	Standard
K	39	3202.0	9.6	**10.0847**	1.159	11.5	mg/L	30	Standard
Ca	43	108.3	26.2	**10.2160**	4.199	41.1	mg/L	48	Standard
Fe	54	12180.7	3.3	**10.2708**	0.331	3.2	mg/L	159	Standard
Fe	57	3313.7	6.4	**9.9500**	0.928	9.3	mg/L	195	Standard
Sc-1	45	41889.5	2.4				mg/L	39543	Standard
Cl	35	30969.0	3.8				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1773.4	7.0				ug/L	1647	Standard
P	31	19072.0	2.1				ug/L	15231	Standard
S	34	2495.2	5.2				ug/L	1845	Standard
Sr	88	56.7	5.1				ug/L	70	Standard
C	12	143.3	29.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	13.0	113.4				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	6.7	173.2				mg/L	20	Standard
I	127	1551.7	12.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Tuesday, June 28, 2016 13:18:57
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81910.8	1.2				ug/L	81760	Standard
	Be	9	50188.0	2.5	**50.4285**	0.671	1.3	ug/L	17	Standard
	Al	27	7919939.7	1.3	**51.2716**	0.184	0.4	ug/L	1410	Standard
	Sc	45	42151.9	1.0				ug/L	39543	Standard
	Ti	47	26799.3	0.9	**103.2216**	1.931	1.9	ug/L	39	Standard
	V	51	362002.1	2.3	**49.7477**	0.555	1.1	ug/L	1415	Standard
	Cr	52	370323.8	0.7	**49.9789**	0.741	1.5	ug/L	6946	Standard
	Cr	53	45478.3	5.4	**49.3268**	1.623	3.3	ug/L	328	Standard
	Mn	55	340081.6	0.1	**50.1792**	1.001	2.0	ug/L	823	Standard
	Co	59	367567.5	0.6	**50.1558**	0.780	1.6	ug/L	252	Standard
	Ni	60	97767.5	1.8	**49.6873**	0.150	0.3	ug/L	192	Standard
	Cu	65	99441.7	2.0	**50.1064**	0.391	0.8	ug/L	141	Standard
	Zn	66	58882.6	2.1	**50.6983**	0.019	0.0	ug/L	491	Standard
>	**Ge**	72	537043.0	2.1				ug/L	515087	Standard
	As	75	58926.0	1.4	**50.3136**	0.381	0.8	ug/L	20	Standard
	Se	82	6003.9	1.4	**49.9034**	0.396	0.8	ug/L	15	Standard
	Se-1	77	4037.5	1.3	**50.7056**	1.619	3.2	ug/L	48	Standard
>	**Ga**	71	113.3	22.2				mg/L	90	Standard
	Rb	85	626.7	7.4				ug/L	23	Standard
	Y	89	465817.4	0.7				ug/L	448510	Standard
>	**Rh**	103	43.3	24.0				ug/L	15	Standard
	Mo	98	284447.8	1.6	**100.4857**	3.626	3.6	ug/L	11	Standard
	Ag	107	346501.9	1.0	**49.2778**	1.406	2.9	ug/L	134	Standard
	Cd	111	109630.9	1.1	**48.9766**	1.535	3.1	mg/L	7	Standard
	Cd	114	266600.1	1.2	**48.9905**	1.146	2.3	ug/L	16	Standard
>	**In**	115	640190.8	2.0				ug/L	611117	Standard
	Sn	118	332613.3	1.3	**53.6148**	1.570	2.9	ug/L	518	Standard
	Sb	123	238639.0	2.2	**48.2943**	2.007	4.2	ug/L	127	Standard
	Ba	135	104330.0	1.0	**48.2232**	0.702	1.5	ug/L	45	Standard
	Ce	140	120.0	15.0				ug/L	298	Standard
>	**Tb**	159	1038346.1	1.3				ug/L	977942	Standard
	Ho	165	16.7	34.6				ug/L	12	Standard
	Tl	203	439433.3	1.3	**49.1017**	0.655	1.3	ug/L	31	Standard
	Tl	205	379171.3	1.2	**48.7970**	1.107	2.3	ug/L	20	Standard
	Pb	206	282861.9	1.4	**49.2211**	1.133	2.3	ug/L	286	Standard
	Pb	207	247275.0	1.2	**47.7052**	1.056	2.2	ug/L	257	Standard
	Pb	208	979823.4	0.2	**48.8569**	0.617	1.3	ug/L	956	Standard
	U	238	361651.7	0.7	**47.5263**	0.839	1.8	ug/L	17	Standard
>	**Bi**	209	591677.6	1.0				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.0435**	17.387	173.1	mg/L	0	Standard
Mg	24	4277.3	3.5	**5.2835**	0.147	2.8	mg/L	32	Standard
K	39	1651.8	3.6	**5.0931**	0.136	2.7	mg/L	30	Standard
Ca	43	81.7	30.2	**6.2885**	3.508	55.8	mg/L	48	Standard
Fe	54	5996.6	1.6	**4.9548**	0.129	2.6	mg/L	159	Standard
Fe	57	1723.4	6.4	**4.8356**	0.391	8.1	mg/L	195	Standard
Sc-1	45	42151.9	1.0				mg/L	39543	Standard
Cl	35	29861.4	1.9				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1713.4	14.2				ug/L	1647	Standard
P	31	18880.1	1.3				ug/L	15231	Standard
S	34	2316.8	4.8				ug/L	1845	Standard
Sr	88	70.0	35.7				ug/L	70	Standard
C	12	156.7	32.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	46.2	33.1				mg/L	12	Standard
Ho-1	165	16.7	34.6				mg/L	12	Standard
Er	166	10.0					mg/L	20	Standard
I	127	1246.7	11.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	100.857		
Al	27	102.543		
Sc	45			
Ti	47	103.222		
V	51	99.495		
Cr	52	99.958		
Cr	53			
Mn	55	100.358		
Co	59	100.312		
Ni	60	99.375		
Cu	65	100.213		
Zn	66	101.397		
Ge	72		104.263	
As	75	100.627		
Se	82	99.807		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	100.486		
Ag	107	98.556		
Cd	111	97.953		
Cd	114			
> In	115		104.758	
Sn	118	107.230		
Sb	123	96.589		
Ba	135	96.446		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.203		
Tl	205			
Pb	206	98.442		
Pb	207	95.410		
Pb	208	97.714		
U	238	95.053		
> Bi	209		106.210	
Na	23	200.869		
Mg	24	105.670		
K	39	101.861		
Ca	43	125.771		
Fe	54	99.097		
Fe	57	96.711		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	

Sample ID: QC Std 1
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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Tuesday, June 28, 2016 13:22:10
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81098.1	0.9				ug/L	81760	Standard
	Be	9	35.0	14.3	**0.0258**	0.005	18.6	ug/L	17	Standard
	Al	27	2568.6	16.6	**0.0024**	0.003	117.4	ug/L	1410	Standard
	Sc	45	40706.3	0.9				ug/L	39543	Standard
	Ti	47	40.7	7.5	**-0.0093**	0.010	110.5	ug/L	39	Standard
	V	51	1184.2	4.7	**-0.0443**	0.005	11.8	ug/L	1415	Standard
	Cr	52	6261.3	1.2	**-0.1999**	0.018	9.1	ug/L	6946	Standard
	Cr	53	338.3	3.7	**0.0258**	0.014	55.9	ug/L	328	Standard
	Mn	55	842.4	4.2	**-0.0247**	0.005	18.3	ug/L	823	Standard
	Co	59	286.0	9.3	**0.0074**	0.003	40.3	ug/L	252	Standard
	Ni	60	199.7	6.5	**-0.0040**	0.005	124.9	ug/L	192	Standard
	Cu	65	142.3	4.7	**-0.0195**	0.003	13.5	ug/L	141	Standard
	Zn	66	529.7	2.7	**-0.3672**	0.009	2.6	ug/L	491	Standard
>	**Ge**	72	540586.6	1.6				ug/L	515087	Standard
	As	75	16.4	99.5	**0.0543**	0.014	25.8	ug/L	20	Standard
	Se	82	18.7	7.6	**0.0353**	0.014	40.6	ug/L	15	Standard
	Se-1	77	50.3	10.9	**-0.0819**	0.075	91.1	ug/L	48	Standard
>	**Ga**	71	86.7	18.5				mg/L	90	Standard
	Rb	85	13.3	78.1				ug/L	23	Standard
	Y	89	464568.8	2.3				ug/L	448510	Standard
>	**Rh**	103	18.3	15.7				ug/L	15	Standard
	Mo	98	439.4	21.7	**0.1377**	0.033	23.9	ug/L	11	Standard
	Ag	107	149.7	25.4	**0.0053**	0.005	102.3	ug/L	134	Standard
	Cd	111	15.2	39.6	**0.0040**	0.003	67.9	mg/L	7	Standard
	Cd	114	45.8	32.1	**0.0036**	0.003	74.9	ug/L	16	Standard
>	**In**	115	633054.7	0.7				ug/L	611117	Standard
	Sn	118	1025.0	34.7	**0.0655**	0.058	89.1	ug/L	518	Standard
	Sb	123	2042.3	25.6	**0.4053**	0.108	26.7	ug/L	127	Standard
	Ba	135	49.7	4.2	**-0.0019**	0.001	60.7	ug/L	45	Standard
	Ce	140	36.7	20.8				ug/L	298	Standard
>	**Tb**	159	1001668.5	0.7				ug/L	977942	Standard
	Ho	165	10.0					ug/L	12	Standard
	Tl	203	78.0	41.6	**0.0041**	0.004	88.8	ug/L	31	Standard
	Tl	205	58.3	47.2	**0.0054**	0.004	66.7	ug/L	20	Standard
	Pb	206	315.3	11.1	**-0.0075**	0.006	81.9	ug/L	286	Standard
	Pb	207	291.3	4.8	**-0.0005**	0.003	477.4	ug/L	257	Standard
	Pb	208	1079.0	5.9	**-0.0054**	0.003	55.4	ug/L	956	Standard
	U	238	63.3	42.9	**0.0055**	0.004	65.2	ug/L	17	Standard
>	**Bi**	209	578819.3	0.5				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	25.0	40.0	**-0.0249**	0.013	50.9	mg/L	32	Standard
K	39	31.7	9.1	**-0.0375**	0.009	24.5	mg/L	30	Standard
Ca	43	41.7	36.7	**0.7901**	2.216	280.5	mg/L	48	Standard
Fe	54	146.0	8.6	**-0.0087**	0.010	113.7	mg/L	159	Standard
Fe	57	195.0	25.3	**0.0139**	0.156	1122.4	mg/L	195	Standard
Sc-1	45	40706.3	0.9				mg/L	39543	Standard
Cl	35	29554.8	2.8				ug/L	27642	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	1693.4	6.8				ug/L	1647	Standard
P	31	17536.8	2.2				ug/L	15231	Standard
S	34	2233.5	3.0				ug/L	1845	Standard
Sr	88	66.7	15.6				ug/L	70	Standard
C	12	96.7	33.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.7	49.8				mg/L	12	Standard
Ho-1	165	10.0					mg/L	12	Standard
Er	166	13.3	86.6				mg/L	20	Standard
I	127	1260.1	15.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		104.951	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.590
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.902
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Ca	43	

Sample ID: QC Std 2
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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Tuesday, June 28, 2016 13:25:23
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79486.3	1.5				ug/L	81760	Standard
	Be	9	236.7	23.6	**0.2350**	0.054	23.1	ug/L	17	Standard
	Al	27	1635.1	14.9	**-0.0035**	0.001	42.0	ug/L	1410	Standard
	Sc	45	39860.7	2.7				ug/L	39543	Standard
	Ti	47	39.7	2.9	**-0.0059**	0.005	91.5	ug/L	39	Standard
	V	51	3750.6	3.6	**0.3321**	0.019	5.7	ug/L	1415	Standard
	Cr	52	11750.6	2.2	**0.6283**	0.044	7.0	ug/L	6946	Standard
	Cr	53	1020.0	3.7	**0.8185**	0.038	4.7	ug/L	328	Standard
	Mn	55	3800.5	0.2	**0.4368**	0.004	0.8	ug/L	823	Standard
	Co	59	2925.3	4.6	**0.3843**	0.020	5.3	ug/L	252	Standard
	Ni	60	3080.3	1.6	**1.5280**	0.033	2.2	ug/L	192	Standard
	Cu	65	1617.4	2.7	**0.7591**	0.027	3.5	ug/L	141	Standard
	Zn	66	7652.9	2.4	**6.1434**	0.191	3.1	ug/L	491	Standard
>	**Ge**	72	515947.7	0.4				ug/L	515087	Standard
	As	75	426.1	10.9	**0.4186**	0.040	9.6	ug/L	20	Standard
	Se	82	65.5	20.2	**0.4487**	0.114	25.5	ug/L	15	Standard
	Se-1	77	77.0	13.5	**0.3017**	0.140	46.4	ug/L	48	Standard
>	**Ga**	71	75.0	29.1				mg/L	90	Standard
	Rb	85	11.7	49.5				ug/L	23	Standard
	Y	89	454544.4	2.9				ug/L	448510	Standard
>	**Rh**	103	11.7	65.5				ug/L	15	Standard
	Mo	98	144.3	6.8	**0.0328**	0.004	11.5	ug/L	11	Standard
	Ag	107	2677.9	4.8	**0.3715**	0.022	5.8	ug/L	134	Standard
	Cd	111	522.1	8.6	**0.2344**	0.020	8.5	mg/L	7	Standard
	Cd	114	1313.6	1.7	**0.2408**	0.006	2.4	ug/L	16	Standard
>	**In**	115	628989.1	0.7				ug/L	611117	Standard
	Sn	118	611.7	1.9	**-0.0014**	0.001	96.1	ug/L	518	Standard
	Sb	123	2074.6	8.0	**0.4143**	0.033	7.9	ug/L	127	Standard
	Ba	135	1500.7	4.3	**0.6813**	0.036	5.2	ug/L	45	Standard
	Ce	140	23.3	24.7				ug/L	298	Standard
>	**Tb**	159	1002704.6	1.0				ug/L	977942	Standard
	Ho	165	21.7	35.3				ug/L	12	Standard
	Tl	203	715.4	2.1	**0.0768**	0.002	2.1	ug/L	31	Standard
	Tl	205	653.3	9.4	**0.0835**	0.008	10.1	ug/L	20	Standard
	Pb	206	1358.4	2.4	**0.1778**	0.007	3.8	ug/L	286	Standard
	Pb	207	1172.0	3.3	**0.1729**	0.010	5.8	ug/L	257	Standard
	Pb	208	4784.3	0.9	**0.1832**	0.004	2.4	ug/L	956	Standard
	U	238	2840.3	2.6	**0.3778**	0.014	3.6	ug/L	17	Standard
>	**Bi**	209	580093.5	1.0				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	33.3	22.9	**-0.0129**	0.011	85.9	mg/L	32	Standard
K	39	38.3	45.8	**-0.0130**	0.059	454.3	mg/L	30	Standard
Ca	43	38.3	41.9	**0.4748**	2.540	535.0	mg/L	48	Standard
Fe	54	103.9	16.3	**-0.0436**	0.016	37.7	mg/L	159	Standard
Fe	57	210.0	19.5	**0.0806**	0.150	185.6	mg/L	195	Standard
> **Sc-1**	45	39860.7	2.7				mg/L	39543	Standard
Cl	35	28271.0	1.2				ug/L	27642	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	1630.1	3.7				ug/L	1647	Standard
P	31	12470.1	4.9				ug/L	15231	Standard
S	34	2090.1	6.4				ug/L	1845	Standard
Sr	88	61.7	72.7				ug/L	70	Standard
C	12	146.7	7.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	26.0	116.4				mg/L	12	Standard
Ho-1	165	21.7	35.3				mg/L	12	Standard
Er	166	13.3	43.3				mg/L	20	Standard
I	127	1031.7	25.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	117.475		
Al	27	-0.351		
Sc	45			
Ti	47			
V	51	83.021		
Cr	52	78.533		
Cr	53			
Mn	55	87.355		
Co	59	96.082		
Ni	60	95.499		
Cu	65	94.881		
Zn	66	98.294		
> Ge	72		100.167	
As	75	104.644		
Se	82	112.180		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	92.871		
Cd	111	97.662		
Cd	114			
> In	115			102.925
Sn	118			
Sb	123	103.570		
Ba	135	90.845		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	95.941		
Tl	205			
Pb	206			
Pb	207			
Pb	208	91.584		
U	238	94.451		
> Bi	209			104.131
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

Sample ID: QC Std 3
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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Tuesday, June 28, 2016 13:28:34
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	85379.9	0.7				ug/L	81760	Standard
	Be	9	28.3	44.4	**0.0176**	0.012	68.3	ug/L	17	Standard
	Al	27	7582301.1	0.5	**47.0918**	0.449	1.0	ug/L	1410	Standard
	Sc	45	42481.1	0.8				ug/L	39543	Standard
	Ti	47	26924.2	1.2	**102.1971**	2.644	2.6	ug/L	39	Standard
	V	51	1177.2	11.7	**-0.0466**	0.017	37.5	ug/L	1415	Standard
	Cr	52	7440.5	1.6	**-0.0468**	0.011	24.4	ug/L	6946	Standard
	Cr	53	2938.6	8.1	**2.8263**	0.310	11.0	ug/L	328	Standard
	Mn	55	1484.1	0.5	**0.0680**	0.007	9.9	ug/L	823	Standard
	Co	59	438.3	7.6	**0.0276**	0.004	13.4	ug/L	252	Standard
	Ni	60	870.4	2.5	**0.3318**	0.004	1.2	ug/L	192	Standard
	Cu	65	647.0	5.3	**0.2309**	0.010	4.5	ug/L	141	Standard
	Zn	66	2006.5	1.8	**0.9027**	0.019	2.1	ug/L	491	Standard
>	Ge	72	545025.5	2.5				ug/L	515087	Standard
	As	75	-62.2	34.4	**-0.0118**	0.017	144.3	ug/L	20	Standard
	Se	82	23.6	6.2	**0.0746**	0.009	12.7	ug/L	15	Standard
	Se-1	77	231.7	5.9	**2.1902**	0.222	10.1	ug/L	48	Standard
>	Ga	71	171.7	17.1				mg/L	90	Standard
	Rb	85	1090.0	4.4				ug/L	23	Standard
	Y	89	452797.1	1.4				ug/L	448510	Standard
>	Rh	103	10.0	100.0				ug/L	15	Standard
	Mo	98	263118.9	1.1	**94.9055**	0.578	0.6	ug/L	11	Standard
	Ag	107	286.7	3.7	**0.0254**	0.002	6.6	ug/L	134	Standard
	Cd	111	-226.3	7.3	**-0.1062**	0.009	8.1	mg/L	7	Standard
	Cd	114	466.4	13.0	**0.0826**	0.011	12.8	ug/L	16	Standard
>	In	115	626700.1	1.0				ug/L	611117	Standard
	Sn	118	941.7	5.7	**0.0533**	0.007	13.8	ug/L	518	Standard
	Sb	123	466.3	29.2	**0.0836**	0.028	33.8	ug/L	127	Standard
	Ba	135	616.7	6.0	**0.2662**	0.017	6.2	ug/L	45	Standard
	Ce	140	233.3	17.2				ug/L	298	Standard
>	Tb	159	1019781.5	0.4				ug/L	977942	Standard
	Ho	165	28.3	27.0				ug/L	12	Standard
	Tl	203	270.7	14.6	**0.0257**	0.004	17.2	ug/L	31	Standard
	Tl	205	205.0	17.1	**0.0243**	0.005	18.8	ug/L	20	Standard
	Pb	206	568.7	4.5	**0.0362**	0.004	12.0	ug/L	286	Standard
	Pb	207	508.0	2.4	**0.0408**	0.002	5.7	ug/L	257	Standard
	Pb	208	1902.0	8.6	**0.0352**	0.008	23.2	ug/L	956	Standard
	U	238	71.7	54.2	**0.0065**	0.005	78.6	ug/L	17	Standard
>	Bi	209	587460.1	0.4				ug/L	557080	Standard

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Na	23	5.0	100.0	**29.8288**	29.665	99.5	mg/L	0	Standard
Mg	24	10050.0	1.2	**12.3961**	0.163	1.3	mg/L	32	Standard
K	39	1535.1	9.7	**4.6887**	0.503	10.7	mg/L	30	Standard
Ca	43	211.7	14.4	**24.5987**	4.529	18.4	mg/L	48	Standard
Fe	54	14184.2	1.5	**11.8132**	0.271	2.3	mg/L	159	Standard
Fe	57	3883.8	1.7	**11.5795**	0.109	0.9	mg/L	195	Standard
Sc-1	45	42481.1	0.8				mg/L	39543	Standard
Cl	35	27442.8	1.7				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1816.8	6.7				ug/L	1647	Standard
P	31	16744.2	0.2				ug/L	15231	Standard
S	34	1956.8	7.4				ug/L	1845	Standard
Sr	88	48.3	53.1				ug/L	70	Standard
C	12	220.0	25.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	27.0				mg/L	0	Standard
Dy	164	24.9	47.6				mg/L	12	Standard
Ho-1	165	28.3	27.0				mg/L	12	Standard
Er	166	36.7	56.8				mg/L	20	Standard
I	127	1896.8	6.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27	0.942		
Sc	45			
Ti	47	102.197		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		105.812	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	94.905		
Ag	107			
Cd	111			
Cd	114			
In	115			102.550
Sn	118			
Sb	123			
Ba	135			
Ce	140			
Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
Bi	209			105.453
Na	23	238.631		
Mg	24	247.921		
K	39	93.774		
Ca	43	163.991		
Fe	54	94.506		
Fe	57	92.636		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	

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QC Std 4	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Tuesday, June 28, 2016 13:31:45
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	87031.0	2.2				ug/L	81760	Standard
	Be	9	104600.0	3.1	**98.9445**	2.636	2.7	ug/L	17	Standard
	Al	27	8235764.9	2.8	**50.1881**	1.494	3.0	ug/L	1410	Standard
	Sc	45	40814.9	1.3				ug/L	39543	Standard
	Ti	47	28557.9	2.6	**110.3128**	3.806	3.5	ug/L	39	Standard
	V	51	698774.9	0.6	**96.5097**	2.203	2.3	ug/L	1415	Standard
	Cr	52	706026.0	2.3	**96.5109**	2.799	2.9	ug/L	6946	Standard
	Cr	53	91691.9	3.7	**100.1429**	4.249	4.2	ug/L	328	Standard
	Mn	55	659133.1	0.8	**97.6603**	2.181	2.2	ug/L	823	Standard
	Co	59	714164.5	1.5	**97.7493**	2.387	2.4	ug/L	252	Standard
	Ni	60	188241.9	2.2	**96.0473**	2.835	3.0	ug/L	192	Standard
	Cu	65	190773.3	1.3	**96.4911**	2.052	2.1	ug/L	141	Standard
	Zn	66	115799.2	0.5	**100.8065**	2.067	2.1	ug/L	491	Standard
>	**Ge**	72	535562.3	1.7				ug/L	515087	Standard
	As	75	115513.0	0.8	**98.8727**	1.879	1.9	ug/L	20	Standard
	Se	82	11807.8	0.8	**98.5471**	2.365	2.4	ug/L	15	Standard
	Se-1	77	7973.8	0.6	**101.0979**	1.926	1.9	ug/L	48	Standard
>	**Ga**	71	195.0	2.6				mg/L	90	Standard
	Rb	85	900.0	5.1				ug/L	23	Standard
	Y	89	467512.1	1.1				ug/L	448510	Standard
>	**Rh**	103	41.7	61.6				ug/L	15	Standard
	Mo	98	278616.6	1.0	**98.3192**	1.671	1.7	ug/L	11	Standard
	Ag	107	629653.8	2.5	**89.4581**	1.609	1.8	ug/L	134	Standard
	Cd	111	214179.9	0.7	**95.5849**	1.082	1.1	mg/L	7	Standard
	Cd	114	513207.5	0.9	**94.2229**	0.578	0.6	ug/L	16	Standard
>	**In**	115	640649.3	1.3				ug/L	611117	Standard
	Sn	118	1085.0	2.4	**0.0732**	0.006	8.8	ug/L	518	Standard
	Sb	123	468645.5	2.2	**94.7292**	1.132	1.2	ug/L	127	Standard
	Ba	135	204538.3	1.7	**94.4814**	1.088	1.2	ug/L	45	Standard
	Ce	140	98.3	7.8				ug/L	298	Standard
>	**Tb**	159	1030592.0	2.2				ug/L	977942	Standard
	Ho	165	16.7	45.8				ug/L	12	Standard
	Tl	203	850272.7	1.9	**96.3847**	2.377	2.5	ug/L	31	Standard
	Tl	205	753805.3	1.5	**98.4067**	2.429	2.5	ug/L	20	Standard
	Pb	206	560444.8	0.3	**98.9799**	0.961	1.0	ug/L	286	Standard
	Pb	207	485626.8	0.4	**95.0861**	1.259	1.3	ug/L	257	Standard
	Pb	208	1940003.2	1.2	**98.1909**	2.155	2.2	ug/L	956	Standard
	U	238	731621.6	1.7	**97.5330**	2.488	2.6	ug/L	17	Standard
>	**Bi**	209	583301.0	1.0				ug/L	557080	Standard

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Na	23	5.0	100.0	**30.9951**	30.718	99.1	mg/L	0	Standard
Mg	24	10642.1	4.7	**13.6704**	0.697	5.1	mg/L	32	Standard
K	39	1555.1	3.7	**4.9498**	0.207	4.2	mg/L	30	Standard
Ca	43	191.7	19.9	**22.8900**	5.801	25.3	mg/L	48	Standard
Fe	54	15478.2	1.2	**13.4350**	0.150	1.1	mg/L	159	Standard
Fe	57	4137.2	0.8	**12.9082**	0.151	1.2	mg/L	195	Standard
Sc-1	45	40814.9	1.3				mg/L	39543	Standard
Cl	35	27689.3	2.5				ug/L	27642	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	1876.8	10.9				ug/L	1647	Standard
P	31	15799.9	3.3				ug/L	15231	Standard
S	34	1943.5	5.2				ug/L	1845	Standard
Sr	88	65.0	27.7				ug/L	70	Standard
C	12	256.7	13.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	15.9	127.8				mg/L	12	Standard
Ho-1	165	16.7	45.8				mg/L	12	Standard
Er	166	16.7	69.3				mg/L	20	Standard
I	127	1231.7	9.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	98.944		
Al	27	1.004		
Sc	45			
Ti	47	110.313		
V	51	96.510		
Cr	52	96.511		
Cr	53			
Mn	55	97.660		
Co	59	97.749		
Ni	60	96.047		
Cu	65	96.491		
Zn	66	100.807		
Ge	72		103.975	
As	75	98.873		
Se	82	98.547		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	98.319		
Ag	107	89.458		
Cd	111	95.585		
Cd	114			
In	115		104.833	
Sn	118			
Sb	123	94.729		
Ba	135	94.481		
Ce	140			
Tb	159			
Ho	165			
Tl	203	96.385		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.191		
U	238	97.533		
Bi	209		104.707	
Na	23	247.961		
Mg	24	273.408		
K	39	98.997		
Ca	43	152.600		
Fe	54	107.480		
Fe	57	103.265		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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QC Std 5	Ca	43

Sample ID: QC Std 5
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 13:34:59
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85572.8	3.1				ug/L	81760	Standard
	Be	9	51348.6	3.0	**49.4131**	1.801	3.6	ug/L	17	Standard
	Al	27	7869928.8	0.7	**48.7904**	1.162	2.4	ug/L	1410	Standard
	Sc	45	41500.1	1.3				ug/L	39543	Standard
	Ti	47	25257.0	1.4	**98.1904**	2.232	2.3	ug/L	39	Standard
	V	51	359717.6	0.9	**49.9155**	1.252	2.5	ug/L	1415	Standard
	Cr	52	362752.3	1.0	**49.4079**	0.954	1.9	ug/L	6946	Standard
	Cr	53	45483.2	1.3	**49.8439**	1.589	3.2	ug/L	328	Standard
	Mn	55	333977.4	0.1	**49.7416**	1.012	2.0	ug/L	823	Standard
	Co	59	371364.3	0.2	**51.1559**	1.087	2.1	ug/L	252	Standard
	Ni	60	96391.0	0.8	**49.4567**	0.760	1.5	ug/L	192	Standard
	Cu	65	97494.7	0.8	**49.5943**	0.620	1.2	ug/L	141	Standard
	Zn	66	56948.5	0.8	**49.4853**	0.762	1.5	ug/L	491	Standard
>	**Ge**	72	532023.1	2.0				ug/L	515087	Standard
	As	75	57437.4	0.6	**49.5161**	1.180	2.4	ug/L	20	Standard
	Se	82	5946.0	0.9	**49.9013**	1.415	2.8	ug/L	15	Standard
	Se-1	77	4004.5	1.6	**50.7471**	0.199	0.4	ug/L	48	Standard
>	**Ga**	71	93.3	16.4				mg/L	90	Standard
	Rb	85	881.7	8.3				ug/L	23	Standard
	Y	89	456900.1	0.4				ug/L	448510	Standard
>	**Rh**	103	26.7	60.3				ug/L	15	Standard
	Mo	98	274645.7	0.6	**96.2670**	1.141	1.2	ug/L	11	Standard
	Ag	107	344865.6	0.2	**48.6675**	0.302	0.6	ug/L	134	Standard
	Cd	111	109918.0	0.6	**48.7237**	0.167	0.3	mg/L	7	Standard
	Cd	114	266820.9	0.9	**48.6598**	0.652	1.3	ug/L	16	Standard
>	**In**	115	644937.8	0.8				ug/L	611117	Standard
	Sn	118	304766.5	1.2	**48.7367**	0.172	0.4	ug/L	518	Standard
	Sb	123	245072.6	0.1	**49.2072**	0.383	0.8	ug/L	127	Standard
	Ba	135	106223.8	1.1	**48.7299**	0.483	1.0	ug/L	45	Standard
	Ce	140	76.7	21.0				ug/L	298	Standard
>	**Tb**	159	1040424.8	0.9				ug/L	977942	Standard
	Ho	165	11.7	89.2				ug/L	12	Standard
	Tl	203	436254.3	0.9	**48.8621**	1.048	2.1	ug/L	31	Standard
	Tl	205	382952.9	1.1	**49.3898**	0.698	1.4	ug/L	20	Standard
	Pb	206	278752.3	0.9	**48.6168**	1.163	2.4	ug/L	286	Standard
	Pb	207	252906.4	1.0	**48.9055**	1.215	2.5	ug/L	257	Standard
	Pb	208	993060.2	1.0	**49.6339**	1.159	2.3	ug/L	956	Standard
	U	238	369537.8	0.4	**48.6731**	0.911	1.9	ug/L	17	Standard
>	**Bi**	209	590375.8	1.5				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4017.2	5.2	**5.0405**	0.318	6.3	mg/L	32	Standard
K	39	1600.1	5.0	**5.0128**	0.329	6.6	mg/L	30	Standard
Ca	43	98.3	19.3	**8.9105**	2.944	33.0	mg/L	48	Standard
Fe	54	5965.0	1.0	**5.0068**	0.016	0.3	mg/L	159	Standard
Fe	57	1785.1	5.1	**5.1208**	0.370	7.2	mg/L	195	Standard
> **Sc-1**	45	41500.1	1.3				mg/L	39543	Standard
Cl	35	29160.0	1.9				ug/L	27642	Standard
Kr	83	3.3	45.8				ug/L	2	Standard
Br	81	1670.1	8.2				ug/L	1647	Standard
P	31	17116.3	2.7				ug/L	15231	Standard
S	34	2186.8	7.3				ug/L	1845	Standard
Sr	88	41.7	34.6				ug/L	70	Standard
C	12	130.0	42.8				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	23.3	24.7				mg/L	12	Standard
Ho-1	165	11.7	89.2				mg/L	12	Standard
Er	166	0.0					mg/L	20	Standard
I	127	1351.7	14.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	98.826		
Al	27	97.581		
Sc	45			
Ti	47	98.190		
V	51	99.831		
Cr	52	98.816		
Cr	53			
Mn	55	99.483		
Co	59	102.312		
Ni	60	98.913		
Cu	65	99.189		
Zn	66	98.971		
> Ge	72		103.288	
As	75	99.032		
Se	82	99.803		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	96.267		
Ag	107	97.335		
Cd	111	97.447		
Cd	114			
> In	115			105.534
Sn	118	97.473		
Sb	123	98.414		
Ba	135	97.460		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	97.724		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.268		
U	238	97.346		
> Bi	209			105.977
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 13:38:10
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82763.8	0.7				ug/L	81760	Standard
	Be	9	40.0	57.3	**0.0300**	0.023	75.9	ug/L	17	Standard
	Al	27	4257.4	63.2	**0.0129**	0.017	134.4	ug/L	1410	Standard
	Sc	45	40355.3	1.7				ug/L	39543	Standard
	Ti	47	44.3	23.5	**0.0085**	0.041	476.8	ug/L	39	Standard
	V	51	1283.7	14.1	**-0.0268**	0.025	92.2	ug/L	1415	Standard
	Cr	52	6366.3	1.6	**-0.1663**	0.013	7.9	ug/L	6946	Standard
	Cr	53	461.7	3.5	**0.1707**	0.014	8.3	ug/L	328	Standard
	Mn	55	939.4	15.6	**-0.0074**	0.022	294.6	ug/L	823	Standard
	Co	59	428.3	39.2	**0.0280**	0.023	82.9	ug/L	252	Standard
	Ni	60	218.7	25.5	**0.0081**	0.029	354.3	ug/L	192	Standard
	Cu	65	184.3	18.2	**0.0036**	0.017	469.2	ug/L	141	Standard
	Zn	66	515.3	2.3	**-0.3696**	0.014	3.7	ug/L	491	Standard
>	**Ge**	72	528838.2	0.8				ug/L	515087	Standard
	As	75	8.3	324.4	**0.0475**	0.023	49.1	ug/L	20	Standard
	Se	82	19.9	12.2	**0.0491**	0.021	43.7	ug/L	15	Standard
	Se-1	77	55.0	4.8	**-0.0079**	0.029	369.8	ug/L	48	Standard
>	**Ga**	71	56.7	39.8				mg/L	90	Standard
	Rb	85	10.0					ug/L	23	Standard
	Y	89	469796.8	1.6				ug/L	448510	Standard
>	**Rh**	103	20.0	25.0				ug/L	15	Standard
	Mo	98	452.3	25.3	**0.1439**	0.042	29.5	ug/L	11	Standard
	Ag	107	307.7	67.7	**0.0286**	0.031	108.2	ug/L	134	Standard
	Cd	111	45.2	95.8	**0.0178**	0.020	112.8	mg/L	7	Standard
	Cd	114	114.8	113.1	**0.0168**	0.025	147.3	ug/L	16	Standard
>	**In**	115	628024.0	1.4				ug/L	611117	Standard
	Sn	118	940.0	23.7	**0.0531**	0.039	73.1	ug/L	518	Standard
	Sb	123	1312.1	39.0	**0.2588**	0.110	42.3	ug/L	127	Standard
	Ba	135	79.3	75.1	**0.0125**	0.029	229.7	ug/L	45	Standard
	Ce	140	28.3	36.7				ug/L	298	Standard
>	**Tb**	159	1003248.8	1.6				ug/L	977942	Standard
	Ho	165	15.0	88.2				ug/L	12	Standard
	Tl	203	265.0	107.1	**0.0261**	0.033	127.7	ug/L	31	Standard
	Tl	205	163.3	84.5	**0.0196**	0.019	95.5	ug/L	20	Standard
	Pb	206	421.0	42.3	**0.0127**	0.033	261.4	ug/L	286	Standard
	Pb	207	362.0	44.3	**0.0147**	0.033	224.6	ug/L	257	Standard
	Pb	208	1358.7	30.8	**0.0100**	0.022	223.6	ug/L	956	Standard
	U	238	139.0	84.9	**0.0161**	0.016	101.8	ug/L	17	Standard
>	**Bi**	209	570467.7	1.7				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.3221**	17.870	173.1	mg/L	0	Standard
Mg	24	30.0	28.9	**-0.0179**	0.012	67.0	mg/L	32	Standard
K	39	31.7	24.1	**-0.0367**	0.024	65.4	mg/L	30	Standard
Ca	43	38.3	15.1	**0.3686**	0.952	258.2	mg/L	48	Standard
Fe	54	115.7	16.2	**-0.0344**	0.017	49.5	mg/L	159	Standard
Fe	57	198.3	8.1	**0.0320**	0.061	191.3	mg/L	195	Standard
> **Sc-1**	45	40355.3	1.7				mg/L	39543	Standard
Cl	35	29509.4	2.2				ug/L	27642	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	1783.4	4.3				ug/L	1647	Standard
P	31	17421.7	1.2				ug/L	15231	Standard
S	34	2170.2	3.8				ug/L	1845	Standard
Sr	88	55.0	15.7				ug/L	70	Standard
C	12	93.3	40.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	8.9	120.7				mg/L	12	Standard
Ho-1	165	15.0	88.2				mg/L	12	Standard
Er	166	23.3	65.5				mg/L	20	Standard
I	127	1233.4	14.2				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		102.670	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.767
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.403
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

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Method 6020 - Summary Report

Sample ID: L1606036203
Sample Date/Time: Tuesday, June 28, 2016 13:41:22
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83400.5	10.2				ug/L	81760	Standard
	Be	9	11.7	65.5	**0.0015**	0.006	425.0	ug/L	17	Standard
	Al	27	3017.0	39.5	**0.0053**	0.009	165.2	ug/L	1410	Standard
	Sc	45	40218.8	12.0				ug/L	39543	Standard
	Ti	47	37.0	23.6	**-0.0163**	0.022	135.1	ug/L	39	Standard
	V	51	613.8	4.6	**-0.1167**	0.012	10.1	ug/L	1415	Standard
	Cr	52	3481.1	12.6	**-0.5531**	0.019	3.4	ug/L	6946	Standard
	Cr	53	250.0	27.5	**-0.0570**	0.057	99.8	ug/L	328	Standard
	Mn	55	1041.4	26.2	**0.0117**	0.027	231.5	ug/L	823	Standard
	Co	59	254.7	5.9	**0.0055**	0.004	71.3	ug/L	252	Standard
	Ni	60	206.3	13.3	**0.0056**	0.009	153.1	ug/L	192	Standard
	Cu	65	131.7	19.5	**-0.0206**	0.013	65.4	ug/L	141	Standard
	Zn	66	531.7	22.4	**-0.3419**	0.069	20.1	ug/L	491	Standard
>	**Ge**	72	510441.4	10.5				ug/L	515087	Standard
	As	75	44.6	25.0	**0.0799**	0.006	7.8	ug/L	20	Standard
	Se	82	38.3	36.8	**0.2107**	0.093	44.1	ug/L	15	Standard
	Se-1	77	32.0	11.3	**-0.2872**	0.062	21.6	ug/L	48	Standard
>	**Ga**	71	61.7	4.7				mg/L	90	Standard
	Rb	85	33.3	37.7				ug/L	23	Standard
	Y	89	399549.3	20.8				ug/L	448510	Standard
>	**Rh**	103	11.7	65.5				ug/L	15	Standard
	Mo	98	155.9	22.2	**0.0482**	0.023	47.8	ug/L	11	Standard
	Ag	107	121.0	24.4	**0.0044**	0.005	118.2	ug/L	134	Standard
	Cd	111	13.4	45.5	**0.0046**	0.004	96.5	mg/L	7	Standard
	Cd	114	43.9	10.7	**0.0047**	0.001	14.6	ug/L	16	Standard
>	**In**	115	541793.5	15.9				ug/L	611117	Standard
	Sn	118	351.7	31.7	**-0.0361**	0.012	32.5	ug/L	518	Standard
	Sb	123	283.1	30.2	**0.0538**	0.012	21.7	ug/L	127	Standard
	Ba	135	37.0	32.8	**-0.0052**	0.004	82.4	ug/L	45	Standard
	Ce	140	30.0	28.9				ug/L	298	Standard
>	**Tb**	159	879683.0	16.9				ug/L	977942	Standard
	Ho	165	8.3	34.6				ug/L	12	Standard
	Tl	203	99.7	75.1	**0.0097**	0.013	137.9	ug/L	31	Standard
	Tl	205	85.0	86.7	**0.0121**	0.015	120.6	ug/L	20	Standard
	Pb	206	313.0	1.9	**0.0011**	0.012	1036.8	ug/L	286	Standard
	Pb	207	266.0	5.5	**0.0034**	0.015	442.4	ug/L	257	Standard
	Pb	208	1233.7	12.3	**0.0133**	0.020	150.4	ug/L	956	Standard
	U	238	39.3	36.7	**0.0031**	0.002	60.3	ug/L	17	Standard
>	**Bi**	209	508733.8	16.9				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	21.7	13.3	**-0.0282**	0.008	27.2	mg/L	32	Standard
K	39	25.0	34.6	**-0.0591**	0.022	36.5	mg/L	30	Standard
Ca	43	40.0	12.5	**0.7483**	1.524	203.6	mg/L	48	Standard
Fe	54	113.2	25.1	**-0.0334**	0.039	117.8	mg/L	159	Standard
Fe	57	238.3	14.7	**0.1717**	0.127	73.7	mg/L	195	Standard
> **Sc-1**	45	40218.8	12.0				mg/L	39543	Standard
Cl	35	13831.7	10.0				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	810.0	8.9				ug/L	1647	Standard
P	31	10527.1	24.9				ug/L	15231	Standard
S	34	970.0	6.2				ug/L	1845	Standard
Sr	88	66.7	11.5				ug/L	70	Standard
C	12	110.0	9.1				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.4	124.8				mg/L	12	Standard
Ho-1	165	8.3	34.6				mg/L	12	Standard
Er	166	20.0	50.0				mg/L	20	Standard
I	127	523.3	19.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.006	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.098	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		88.656
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.321
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 52 Lower	Cr	52	

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Method 6020 - Summary Report

Sample ID: L1606036204
Sample Date/Time: Tuesday, June 28, 2016 13:44:34
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83225.5	7.5				ug/L	81760	Standard
	Be	9	31228.6	61.6	**31.9371**	21.971	68.8	ug/L	17	Standard
	Al	27	8471.1	48.6	**0.0411**	0.031	75.9	ug/L	1410	Standard
	Sc	45	40830.0	2.2				ug/L	39543	Standard
	Ti	47	34.3	11.8	**-0.0297**	0.018	59.1	ug/L	39	Standard
	V	51	224078.9	58.8	**31.3360**	18.302	58.4	ug/L	1415	Standard
	Cr	52	238015.8	57.7	**32.3999**	19.040	58.8	ug/L	6946	Standard
	Cr	53	29690.7	58.7	**32.7502**	19.168	58.5	ug/L	328	Standard
	Mn	55	213724.7	56.8	**32.1044**	18.055	56.2	ug/L	823	Standard
	Co	59	222487.2	58.7	**30.9454**	17.938	58.0	ug/L	252	Standard
	Ni	60	62090.3	57.3	**32.1492**	18.240	56.7	ug/L	192	Standard
	Cu	65	63757.0	57.0	**32.7355**	18.436	56.3	ug/L	141	Standard
	Zn	66	38227.9	57.9	**33.2873**	19.476	58.5	ug/L	491	Standard
>	**Ge**	72	525473.2	1.2				ug/L	515087	Standard
	As	75	36453.5	56.6	**31.7527**	17.695	55.7	ug/L	20	Standard
	Se	82	3780.3	55.0	**31.9968**	17.401	54.4	ug/L	15	Standard
	Se-1	77	2538.3	56.6	**32.2335**	18.366	57.0	ug/L	48	Standard
>	**Ga**	71	76.7	26.4				mg/L	90	Standard
	Rb	85	43.3	17.6				ug/L	23	Standard
	Y	89	474726.4	7.6				ug/L	448510	Standard
>	**Rh**	103	26.7	21.7				ug/L	15	Standard
	Mo	98	564.0	40.4	**0.1823**	0.089	49.0	ug/L	11	Standard
	Ag	107	212096.4	59.4	**30.6350**	19.274	62.9	ug/L	134	Standard
	Cd	111	68030.3	54.2	**30.8198**	17.865	58.0	mg/L	7	Standard
	Cd	114	165078.2	56.3	**30.7839**	18.487	60.1	ug/L	16	Standard
>	**In**	115	641067.2	4.2				ug/L	611117	Standard
	Sn	118	550.0	28.6	**-0.0125**	0.029	234.3	ug/L	518	Standard
	Sb	123	143570.7	60.9	**29.5172**	18.974	64.3	ug/L	127	Standard
	Ba	135	66133.4	54.2	**31.0035**	17.964	57.9	ug/L	45	Standard
	Ce	140	83.3	81.7				ug/L	298	Standard
>	**Tb**	159	1026938.7	4.8				ug/L	977942	Standard
	Ho	165	11.7	65.5				ug/L	12	Standard
	Tl	203	274073.1	56.4	**30.7538**	17.663	57.4	ug/L	31	Standard
	Tl	205	243234.0	54.4	**31.4411**	17.425	55.4	ug/L	20	Standard
	Pb	206	180330.9	55.5	**31.4753**	17.798	56.5	ug/L	286	Standard
	Pb	207	158009.7	55.1	**30.5868**	17.206	56.3	ug/L	257	Standard
	Pb	208	646417.5	54.5	**32.3514**	17.977	55.6	ug/L	956	Standard
	U	238	234720.5	55.2	**30.9733**	17.414	56.2	ug/L	17	Standard
>	**Bi**	209	588853.8	4.4				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.1717**	17.609	173.1	mg/L	0	Standard
Mg	24	26.7	10.8	**-0.0228**	0.004	16.0	mg/L	32	Standard
K	39	36.7	43.8	**-0.0214**	0.052	244.2	mg/L	30	Standard
Ca	43	30.0	66.7	**-0.9172**	2.942	320.7	mg/L	48	Standard
Fe	54	107.6	36.8	**-0.0427**	0.035	81.3	mg/L	159	Standard
Fe	57	220.0	9.9	**0.0952**	0.078	81.4	mg/L	195	Standard
> **Sc-1**	45	40830.0	2.2				mg/L	39543	Standard
Cl	35	20640.2	29.5				ug/L	27642	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	1230.1	37.8				ug/L	1647	Standard
P	31	11926.4	10.7				ug/L	15231	Standard
S	34	1536.7	28.4				ug/L	1845	Standard
Sr	88	66.7	11.5				ug/L	70	Standard
C	12	146.7	27.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	5.9	100.8				mg/L	12	Standard
Ho-1	165	11.7	65.5				mg/L	12	Standard
Er	166	16.7	34.6				mg/L	20	Standard
I	127	785.0	24.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.792	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.016	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.901
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.704
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606036203
Sample Date/Time: Tuesday, June 28, 2016 13:49:03
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90942.6	5.2				ug/L	81760	Standard
	Be	9	53.3	85.1	**0.0399**	0.045	111.9	ug/L	17	Standard
	Al	27	693137.8	2.1	**4.0335**	0.159	3.9	ug/L	1410	Standard
	Sc	45	39909.2	1.1				ug/L	39543	Standard
	Ti	47	362.3	4.5	**1.2955**	0.068	5.3	ug/L	39	Standard
	V	51	2278.9	9.8	**0.1220**	0.031	25.8	ug/L	1415	Standard
	Cr	52	6909.6	1.4	**-0.0622**	0.012	19.7	ug/L	6946	Standard
	Cr	53	1090.0	12.5	**0.9032**	0.155	17.1	ug/L	328	Standard
	Mn	55	5526773.3	1.7	**854.3657**	14.322	1.7	ug/L	823	Standard
	Co	59	9370.2	5.6	**1.3053**	0.073	5.6	ug/L	252	Standard
	Ni	60	2122.5	1.2	**1.0247**	0.015	1.4	ug/L	192	Standard
	Cu	65	2498.9	0.1	**1.2274**	0.002	0.2	ug/L	141	Standard
	Zn	66	6516.4	0.8	**5.1316**	0.039	0.8	ug/L	491	Standard
>	**Ge**	72	513880.5	0.2				ug/L	515087	Standard
	As	75	3228.7	3.4	**2.9189**	0.105	3.6	ug/L	20	Standard
	Se	82	922.2	2.2	**7.9103**	0.196	2.5	ug/L	15	Standard
	Se-1	77	155.0	10.7	**1.3431**	0.217	16.2	ug/L	48	Standard
>	**Ga**	71	388.3	17.5				mg/L	90	Standard
	Rb	85	68372.4	3.2				ug/L	23	Standard
	Y	89	447009.0	1.5				ug/L	448510	Standard
>	**Rh**	103	111.7	20.2				ug/L	15	Standard
	Mo	98	1200247.1	0.8	**451.3790**	8.919	2.0	ug/L	11	Standard
	Ag	107	153.3	18.9	**0.0070**	0.004	61.8	ug/L	134	Standard
	Cd	111	-1054.6	0.6	**-0.5044**	0.004	0.7	mg/L	7	Standard
	Cd	114	1800.6	2.5	**0.3474**	0.013	3.8	ug/L	16	Standard
>	**In**	115	601262.2	1.3				ug/L	611117	Standard
	Sn	118	788.4	4.6	**0.0336**	0.006	17.8	ug/L	518	Standard
	Sb	123	1882.7	34.8	**0.3916**	0.136	34.8	ug/L	127	Standard
	Ba	135	4520.7	1.0	**2.2009**	0.051	2.3	ug/L	45	Standard
	Ce	140	6458.0	2.1				ug/L	298	Standard
>	**Tb**	159	1000527.6	0.4				ug/L	977942	Standard
	Ho	165	130.0	21.4				ug/L	12	Standard
	Tl	203	285.7	2.5	**0.0299**	0.000	1.6	ug/L	31	Standard
	Tl	205	403.3	76.1	**0.0543**	0.043	79.9	ug/L	20	Standard
	Pb	206	899.7	2.3	**0.1068**	0.005	4.7	ug/L	286	Standard
	Pb	207	732.0	4.6	**0.0957**	0.009	9.0	ug/L	257	Standard
	Pb	208	3524.8	26.8	**0.1310**	0.052	40.0	ug/L	956	Standard
	U	238	352.3	76.1	**0.0475**	0.039	81.4	ug/L	17	Standard
>	**Bi**	209	544253.0	1.1				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.4757**	18.136	173.1	mg/L	0	Standard
Mg	24	122834.3	0.9	**161.9583**	0.885	0.5	mg/L	32	Standard
K	39	4865.8	5.3	**16.1536**	1.001	6.2	mg/L	30	Standard
Ca	43	186.7	17.4	**22.7843**	5.205	22.8	mg/L	48	Standard
Fe	54	927.7	8.4	**0.6952**	0.076	10.9	mg/L	159	Standard
Fe	57	461.7	8.7	**0.9208**	0.151	16.4	mg/L	195	Standard
> **Sc-1**	45	39909.2	1.1				mg/L	39543	Standard
Cl	35	47371.9	1.0				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	196320.5	1.2				ug/L	1647	Standard
P	31	16525.7	2.7				ug/L	15231	Standard
S	34	2001.8	3.8				ug/L	1845	Standard
Sr	88	358.3	4.3				ug/L	70	Standard
C	12	246.7	19.2				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	211.1	26.7				mg/L	12	Standard
Ho-1	165	130.0	21.4				mg/L	12	Standard
Er	166	116.7	51.7				mg/L	20	Standard
I	127	1244078.5	12.9				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		111.231	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.766	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.387
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.697
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

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Method 6020 - Summary Report

Sample ID: L1606036204
Sample Date/Time: Tuesday, June 28, 2016 13:52:18
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	103725.5	0.9				ug/L	81760	Standard
	Be	9	18.3	41.7	**0.0048**	0.006	125.1	ug/L	17	Standard
	Al	27	23803073.4	2.1	**121.7007**	1.863	1.5	ug/L	1410	Standard
	Sc	45	41989.8	2.5				ug/L	39543	Standard
	Ti	47	198.3	8.2	**0.6152**	0.056	9.1	ug/L	39	Standard
	V	51	2022.8	10.2	**0.0784**	0.030	38.8	ug/L	1415	Standard
	Cr	52	8025.5	3.2	**0.0718**	0.049	68.1	ug/L	6946	Standard
	Cr	53	1725.1	14.9	**1.5845**	0.307	19.4	ug/L	328	Standard
	Mn	55	8347.3	4.1	**1.1117**	0.038	3.4	ug/L	823	Standard
	Co	59	1991.1	1.1	**0.2461**	0.003	1.1	ug/L	252	Standard
	Ni	60	2784.9	2.6	**1.3428**	0.049	3.7	ug/L	192	Standard
	Cu	65	1676.4	9.2	**0.7724**	0.072	9.4	ug/L	141	Standard
	Zn	66	3951.5	5.5	**2.7003**	0.153	5.7	ug/L	491	Standard
>	**Ge**	72	526193.8	1.1				ug/L	515087	Standard
	As	75	658.8	2.1	**0.6140**	0.018	3.0	ug/L	20	Standard
	Se	82	229.7	4.0	**1.8340**	0.092	5.0	ug/L	15	Standard
	Se-1	77	153.0	9.2	**1.2707**	0.204	16.0	ug/L	48	Standard
>	**Ga**	71	148.3	16.6				mg/L	90	Standard
	Rb	85	683.3	4.9				ug/L	23	Standard
	Y	89	453248.0	2.1				ug/L	448510	Standard
>	**Rh**	103	91.7	27.5				ug/L	15	Standard
	Mo	98	5026.0	6.3	**1.8280**	0.098	5.4	ug/L	11	Standard
	Ag	107	95.3	7.7	**-0.0021**	0.001	57.5	ug/L	134	Standard
	Cd	111	8.0	39.8	**0.0008**	0.001	178.0	mg/L	7	Standard
	Cd	114	50.5	30.0	**0.0047**	0.003	60.8	ug/L	16	Standard
>	**In**	115	615030.5	1.6				ug/L	611117	Standard
	Sn	118	1100.0	6.8	**0.0830**	0.014	16.4	ug/L	518	Standard
	Sb	123	686.5	31.6	**0.1319**	0.046	34.9	ug/L	127	Standard
	Ba	135	22769.8	0.9	**10.9347**	0.080	0.7	ug/L	45	Standard
	Ce	140	320.0	14.9				ug/L	298	Standard
>	**Tb**	159	1016190.3	1.0				ug/L	977942	Standard
	Ho	165	48.3	15.8				ug/L	12	Standard
	Tl	203	156.0	5.7	**0.0132**	0.001	7.6	ug/L	31	Standard
	Tl	205	153.3	14.7	**0.0181**	0.003	17.2	ug/L	20	Standard
	Pb	206	466.3	6.0	**0.0202**	0.005	24.4	ug/L	286	Standard
	Pb	207	405.3	5.2	**0.0227**	0.004	15.6	ug/L	257	Standard
	Pb	208	1478.0	2.2	**0.0157**	0.002	13.7	ug/L	956	Standard
	U	238	1957.8	2.0	**0.2625**	0.004	1.4	ug/L	17	Standard
>	**Bi**	209	573383.4	0.9				ug/L	557080	Standard

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Na	23	8.3	34.6	**50.1179**	16.456	32.8	mg/L	0	Standard
Mg	24	58420.8	1.2	**73.2244**	2.756	3.8	mg/L	32	Standard
K	39	723.4	8.7	**2.1601**	0.187	8.7	mg/L	30	Standard
Ca	43	463.3	11.9	**60.9213**	7.520	12.3	mg/L	48	Standard
Fe	54	191.2	7.7	**0.0260**	0.014	55.5	mg/L	159	Standard
Fe	57	531.7	2.7	**1.0656**	0.010	0.9	mg/L	195	Standard
> **Sc-1**	45	41989.8	2.5				mg/L	39543	Standard
Cl	35	37603.3	1.8				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	30841.4	4.4				ug/L	1647	Standard
P	31	21757.3	1.3				ug/L	15231	Standard
S	34	1778.4	1.5				ug/L	1845	Standard
Sr	88	246.7	9.1				ug/L	70	Standard
C	12	216.7	7.1				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	60.8	24.7				mg/L	12	Standard
Ho-1	165	48.3	15.8				mg/L	12	Standard
Er	166	53.3	10.8				mg/L	20	Standard
I	127	78536.8	23.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		126.866	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.156	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.640
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.927
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606036204
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Method 6020 - Summary Report

Sample ID: L1606036205
Sample Date/Time: Tuesday, June 28, 2016 13:59:25
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	103215.4	0.9				ug/L	81760	Standard
	Be	9	20.0	50.0	**0.0063**	0.008	129.0	ug/L	17	Standard
	Al	27	14439258.9	3.3	**74.2049**	3.024	4.1	ug/L	1410	Standard
	Sc	45	39693.6	2.3				ug/L	39543	Standard
	Ti	47	140.0	4.0	**0.4180**	0.020	4.8	ug/L	39	Standard
	V	51	3604.7	5.2	**0.3305**	0.025	7.7	ug/L	1415	Standard
	Cr	52	7555.2	2.8	**0.0671**	0.025	36.8	ug/L	6946	Standard
	Cr	53	1441.7	2.8	**1.3602**	0.060	4.4	ug/L	328	Standard
	Mn	55	692335.2	1.4	**110.4896**	2.247	2.0	ug/L	823	Standard
	Co	59	1760.4	3.6	**0.2283**	0.011	4.9	ug/L	252	Standard
	Ni	60	2996.0	4.5	**1.5433**	0.085	5.5	ug/L	192	Standard
	Cu	65	1684.1	4.6	**0.8273**	0.040	4.8	ug/L	141	Standard
	Zn	66	2371.2	1.2	**1.4134**	0.020	1.4	ug/L	491	Standard
>	**Ge**	72	497232.9	0.8				ug/L	515087	Standard
	As	75	475.6	6.3	**0.4785**	0.029	6.0	ug/L	20	Standard
	Se	82	111.0	8.1	**0.8794**	0.084	9.6	ug/L	15	Standard
	Se-1	77	118.0	5.1	**0.9042**	0.095	10.5	ug/L	48	Standard
>	**Ga**	71	108.3	35.3				mg/L	90	Standard
	Rb	85	57350.0	0.9				ug/L	23	Standard
	Y	89	457066.8	2.1				ug/L	448510	Standard
>	**Rh**	103	28.3	44.4				ug/L	15	Standard
	Mo	98	255967.1	1.2	**93.6404**	2.667	2.8	ug/L	11	Standard
	Ag	107	89.3	9.3	**-0.0031**	0.001	44.5	ug/L	134	Standard
	Cd	111	-197.3	3.0	**-0.0942**	0.001	1.4	mg/L	7	Standard
	Cd	114	425.0	6.1	**0.0760**	0.006	8.0	ug/L	16	Standard
>	**In**	115	618093.1	1.7				ug/L	611117	Standard
	Sn	118	871.7	7.6	**0.0437**	0.009	20.3	ug/L	518	Standard
	Sb	123	474.5	27.0	**0.0866**	0.026	30.6	ug/L	127	Standard
	Ba	135	13314.9	2.5	**6.3544**	0.263	4.1	ug/L	45	Standard
	Ce	140	228.3	6.3				ug/L	298	Standard
>	**Tb**	159	1010942.5	1.3				ug/L	977942	Standard
	Ho	165	25.0	72.1				ug/L	12	Standard
	Tl	203	239.7	6.5	**0.0241**	0.002	9.5	ug/L	31	Standard
	Tl	205	181.7	22.1	**0.0230**	0.006	26.1	ug/L	20	Standard
	Pb	206	319.7	6.3	**-0.0035**	0.004	108.4	ug/L	286	Standard
	Pb	207	282.7	2.0	**0.0009**	0.002	252.3	ug/L	257	Standard
	Pb	208	1120.3	3.0	**-0.0001**	0.003	3300.1	ug/L	956	Standard
	U	238	733.7	3.0	**0.1011**	0.005	4.9	ug/L	17	Standard
>	**Bi**	209	548318.3	1.8				ug/L	557080	Standard

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Na	23	3.3	173.2	**21.6860**	37.553	173.2	mg/L	0	Standard
Mg	24	97569.9	1.9	**129.3694**	3.560	2.8	mg/L	32	Standard
K	39	4389.0	6.2	**14.6373**	1.001	6.8	mg/L	30	Standard
Ca	43	378.3	2.8	**51.9377**	2.720	5.2	mg/L	48	Standard
Fe	54	155.8	7.4	**0.0035**	0.012	336.9	mg/L	159	Standard
Fe	57	446.7	11.3	**0.8756**	0.135	15.4	mg/L	195	Standard
> **Sc-1**	45	39693.6	2.3				mg/L	39543	Standard
Cl	35	45044.9	1.9				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	18554.7	4.8				ug/L	1647	Standard
P	31	20283.6	3.2				ug/L	15231	Standard
S	34	1950.1	2.9				ug/L	1845	Standard
Sr	88	140.0	14.3				ug/L	70	Standard
C	12	253.3	26.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	47.4	35.9				mg/L	12	Standard
Ho-1	165	25.0	72.1				mg/L	12	Standard
Er	166	53.3	21.7				mg/L	20	Standard
I	127	81681.7	5.6				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		126.242	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.534	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.142	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.427	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606036206
Sample Date/Time: Tuesday, June 28, 2016 14:02:36
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	108188.3	1.9				ug/L	81760	Standard
	Be	9	25.0	69.3	**0.0094**	0.014	144.0	ug/L	17	Standard
	Al	27	23235387.8	1.2	**113.9176**	1.672	1.5	ug/L	1410	Standard
	Sc	45	42060.0	3.5				ug/L	39543	Standard
	Ti	47	152.7	7.7	**0.4364**	0.055	12.6	ug/L	39	Standard
	V	51	2674.6	4.0	**0.1700**	0.012	6.8	ug/L	1415	Standard
	Cr	52	8527.1	1.1	**0.1424**	0.031	21.5	ug/L	6946	Standard
	Cr	53	1513.4	3.0	**1.3470**	0.073	5.5	ug/L	328	Standard
	Mn	55	17845.5	5.4	**2.5461**	0.135	5.3	ug/L	823	Standard
	Co	59	1119.4	15.5	**0.1245**	0.023	18.8	ug/L	252	Standard
	Ni	60	2702.9	1.5	**1.3004**	0.041	3.1	ug/L	192	Standard
	Cu	65	753.4	4.7	**0.2972**	0.013	4.4	ug/L	141	Standard
	Zn	66	1481.1	2.0	**0.4954**	0.035	7.0	ug/L	491	Standard
>	**Ge**	72	526170.8	1.4				ug/L	515087	Standard
	As	75	291.6	5.2	**0.2943**	0.014	4.7	ug/L	20	Standard
	Se	82	87.6	19.6	**0.6269**	0.155	24.7	ug/L	15	Standard
	Se-1	77	124.0	13.8	**0.8941**	0.239	26.7	ug/L	48	Standard
>	**Ga**	71	93.3	13.5				mg/L	90	Standard
	Rb	85	1890.1	1.5				ug/L	23	Standard
	Y	89	457488.4	1.5				ug/L	448510	Standard
>	**Rh**	103	41.7	45.4				ug/L	15	Standard
	Mo	98	1289.7	27.8	**0.4294**	0.125	29.1	ug/L	11	Standard
	Ag	107	132.0	62.6	**0.0022**	0.011	517.7	ug/L	134	Standard
	Cd	111	14.8	9.0	**0.0036**	0.001	18.2	mg/L	7	Standard
	Cd	114	35.3	64.8	**0.0015**	0.004	279.2	ug/L	16	Standard
>	**In**	115	650440.2	1.2				ug/L	611117	Standard
	Sn	118	795.0	5.8	**0.0244**	0.006	26.1	ug/L	518	Standard
	Sb	123	299.9	40.5	**0.0467**	0.023	50.3	ug/L	127	Standard
	Ba	135	16583.1	1.2	**7.5223**	0.109	1.5	ug/L	45	Standard
	Ce	140	573.3	12.7				ug/L	298	Standard
>	**Tb**	159	1070413.0	0.5				ug/L	977942	Standard
	Ho	165	35.0	14.3				ug/L	12	Standard
	Tl	203	143.0	68.4	**0.0109**	0.011	100.1	ug/L	31	Standard
	Tl	205	173.3	55.8	**0.0194**	0.012	61.7	ug/L	20	Standard
	Pb	206	407.0	5.8	**0.0055**	0.005	85.2	ug/L	286	Standard
	Pb	207	361.0	20.9	**0.0099**	0.014	143.4	ug/L	257	Standard
	Pb	208	1551.4	24.3	**0.0150**	0.018	119.8	ug/L	956	Standard
	U	238	2137.8	4.4	**0.2708**	0.011	4.2	ug/L	17	Standard
>	**Bi**	209	607194.4	1.0				ug/L	557080	Standard

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Na	23	15.0	57.7	**91.7381**	54.279	59.2	mg/L	0	Standard
Mg	24	7570.2	0.6	**9.4255**	0.372	3.9	mg/L	32	Standard
K	39	228.3	12.1	**0.5833**	0.074	12.7	mg/L	30	Standard
Ca	43	403.3	9.3	**52.3767**	6.757	12.9	mg/L	48	Standard
Fe	54	189.4	6.8	**0.0240**	0.007	29.2	mg/L	159	Standard
Fe	57	486.7	15.4	**0.9208**	0.241	26.2	mg/L	195	Standard
> **Sc-1**	45	42060.0	3.5				mg/L	39543	Standard
Cl	35	35390.6	1.2				ug/L	27642	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	8392.3	5.9				ug/L	1647	Standard
P	31	21440.2	3.3				ug/L	15231	Standard
S	34	2026.8	8.3				ug/L	1845	Standard
Sr	88	143.3	29.0				ug/L	70	Standard
C	12	223.3	9.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	47.9	21.4				mg/L	12	Standard
Ho-1	165	35.0	14.3				mg/L	12	Standard
Er	166	43.3	35.3				mg/L	20	Standard
I	127	10155.1	10.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.324	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.152	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.435
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.996
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606036207
Sample Date/Time: Tuesday, June 28, 2016 14:06:02
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	107639.4	1.9				ug/L	81760	Standard
	Be	9	20.0	0.0	**0.0056**	0.000	5.4	ug/L	17	Standard
	Al	27	3476504.2	1.7	**17.1173**	0.043	0.3	ug/L	1410	Standard
	Sc	45	39367.8	2.7				ug/L	39543	Standard
	Ti	47	100.3	3.5	**0.2518**	0.007	3.0	ug/L	39	Standard
	V	51	5441.1	3.8	**0.6024**	0.020	3.4	ug/L	1415	Standard
	Cr	52	7747.6	3.6	**0.0931**	0.026	27.8	ug/L	6946	Standard
	Cr	53	1961.8	9.7	**1.9650**	0.153	7.8	ug/L	328	Standard
	Mn	55	12138.9	1.5	**1.7871**	0.034	1.9	ug/L	823	Standard
	Co	59	2054.5	1.6	**0.2711**	0.013	4.9	ug/L	252	Standard
	Ni	60	1564.4	4.1	**0.7535**	0.028	3.7	ug/L	192	Standard
	Cu	65	3547.1	3.0	**1.8404**	0.110	6.0	ug/L	141	Standard
	Zn	66	3174.7	2.0	**2.1684**	0.146	6.7	ug/L	491	Standard
>	**Ge**	72	498440.9	3.0				ug/L	515087	Standard
	As	75	2063.4	4.9	**1.9397**	0.147	7.6	ug/L	20	Standard
	Se	82	279.9	8.8	**2.3986**	0.288	12.0	ug/L	15	Standard
	Se-1	77	196.7	12.4	**1.9867**	0.408	20.5	ug/L	48	Standard
>	**Ga**	71	203.3	22.3				mg/L	90	Standard
	Rb	85	4590.7	1.6				ug/L	23	Standard
	Y	89	429873.2	1.1				ug/L	448510	Standard
>	**Rh**	103	36.7	15.7				ug/L	15	Standard
	Mo	98	411573.4	1.6	**157.7590**	2.905	1.8	ug/L	11	Standard
	Ag	107	97.0	12.7	**-0.0013**	0.002	144.7	ug/L	134	Standard
	Cd	111	-313.3	8.5	**-0.1547**	0.012	7.7	mg/L	7	Standard
	Cd	114	654.0	5.6	**0.1255**	0.007	5.6	ug/L	16	Standard
>	**In**	115	589803.8	0.9				ug/L	611117	Standard
	Sn	118	783.4	15.3	**0.0353**	0.020	57.5	ug/L	518	Standard
	Sb	123	727.4	9.3	**0.1468**	0.014	9.3	ug/L	127	Standard
	Ba	135	15565.3	1.0	**7.7872**	0.095	1.2	ug/L	45	Standard
	Ce	140	646.7	2.7				ug/L	298	Standard
>	**Tb**	159	991896.0	2.4				ug/L	977942	Standard
	Ho	165	86.7	18.5				ug/L	12	Standard
	Tl	203	276.7	3.3	**0.0282**	0.002	5.4	ug/L	31	Standard
	Tl	205	283.3	3.7	**0.0365**	0.002	4.5	ug/L	20	Standard
	Pb	206	399.0	5.4	**0.0104**	0.005	44.3	ug/L	286	Standard
	Pb	207	325.3	5.9	**0.0089**	0.004	45.8	ug/L	257	Standard
	Pb	208	1296.0	0.3	**0.0084**	0.001	12.8	ug/L	956	Standard
	U	238	1382.7	4.5	**0.1905**	0.008	4.1	ug/L	17	Standard
>	**Bi**	209	555677.7	1.4				ug/L	557080	Standard

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Na	23	3.3	86.6	**21.6985**	18.802	86.6	mg/L	0	Standard
Mg	24	201508.1	2.0	**269.4503**	5.984	2.2	mg/L	32	Standard
K	39	1843.4	2.4	**6.1200**	0.302	4.9	mg/L	30	Standard
Ca	43	86.7	16.7	**7.9004**	2.376	30.1	mg/L	48	Standard
Fe	54	134.1	6.8	**-0.0152**	0.007	45.6	mg/L	159	Standard
Fe	57	218.3	31.3	**0.1119**	0.215	192.0	mg/L	195	Standard
> **Sc-1**	45	39367.8	2.7				mg/L	39543	Standard
Cl	35	57177.0	0.5				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	35885.9	6.7				ug/L	1647	Standard
P	31	17845.5	1.4				ug/L	15231	Standard
S	34	1995.1	3.9				ug/L	1845	Standard
Sr	88	96.7	26.5				ug/L	70	Standard
C	12	250.0	28.0				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	68.0	19.9				mg/L	12	Standard
Ho-1	165	86.7	18.5				mg/L	12	Standard
Er	166	180.0	33.3				mg/L	20	Standard
I	127	352295.0	10.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		131.653	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.768	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.512
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.748
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

Sample ID: L1606036207
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Method 6020 - Summary Report

Sample ID: L1606036208
Sample Date/Time: Tuesday, June 28, 2016 14:09:14
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	113878.0	0.7				ug/L	81760	Standard
	Be	9	15.0	33.3	**0.0011**	0.004	325.9	ug/L	17	Standard
	Al	27	36051659.4	1.3	**167.9026**	1.365	0.8	ug/L	1410	Standard
	Sc	45	40123.1	2.7				ug/L	39543	Standard
	Ti	47	157.7	1.6	**0.4795**	0.006	1.3	ug/L	39	Standard
	V	51	2374.4	7.5	**0.1409**	0.028	20.1	ug/L	1415	Standard
	Cr	52	8200.6	0.9	**0.1408**	0.017	11.9	ug/L	6946	Standard
	Cr	53	1531.7	7.2	**1.4329**	0.130	9.1	ug/L	328	Standard
	Mn	55	2760.9	2.4	**0.2845**	0.009	3.3	ug/L	823	Standard
	Co	59	1114.0	4.4	**0.1299**	0.007	5.8	ug/L	252	Standard
	Ni	60	3861.2	1.0	**1.9798**	0.033	1.7	ug/L	192	Standard
	Cu	65	1286.1	5.6	**0.5974**	0.039	6.5	ug/L	141	Standard
	Zn	66	2133.2	3.4	**1.1513**	0.069	6.0	ug/L	491	Standard
>	**Ge**	72	506573.0	0.6				ug/L	515087	Standard
	As	75	124.6	44.5	**0.1528**	0.050	32.6	ug/L	20	Standard
	Se	82	87.7	7.6	**0.6552**	0.055	8.5	ug/L	15	Standard
	Se-1	77	126.7	6.6	**0.9909**	0.116	11.7	ug/L	48	Standard
>	**Ga**	71	56.7	45.3				mg/L	90	Standard
	Rb	85	275.0	18.5				ug/L	23	Standard
	Y	89	450902.0	1.5				ug/L	448510	Standard
>	**Rh**	103	46.7	32.7				ug/L	15	Standard
	Mo	98	3181.2	4.8	**1.1379**	0.054	4.7	ug/L	11	Standard
	Ag	107	86.0	6.5	**-0.0036**	0.001	24.6	ug/L	134	Standard
	Cd	111	11.8	23.2	**0.0025**	0.001	50.9	mg/L	7	Standard
	Cd	114	54.8	27.0	**0.0054**	0.003	50.7	ug/L	16	Standard
>	**In**	115	621612.8	0.6				ug/L	611117	Standard
	Sn	118	878.4	13.7	**0.0442**	0.021	46.4	ug/L	518	Standard
	Sb	123	218.7	21.6	**0.0327**	0.010	30.0	ug/L	127	Standard
	Ba	135	24511.5	2.2	**11.6480**	0.297	2.5	ug/L	45	Standard
	Ce	140	126.7	17.8				ug/L	298	Standard
>	**Tb**	159	1020349.4	1.6				ug/L	977942	Standard
	Ho	165	38.3	41.9				ug/L	12	Standard
	Tl	203	70.7	5.4	**0.0034**	0.000	14.1	ug/L	31	Standard
	Tl	205	50.0	36.1	**0.0044**	0.002	54.4	ug/L	20	Standard
	Pb	206	339.3	6.0	**-0.0025**	0.003	133.5	ug/L	286	Standard
	Pb	207	287.3	3.0	**-0.0007**	0.002	279.9	ug/L	257	Standard
	Pb	208	1133.4	0.9	**-0.0020**	0.001	40.2	ug/L	956	Standard
	U	238	2248.5	2.1	**0.3023**	0.005	1.6	ug/L	17	Standard
>	**Bi**	209	572724.5	0.5				ug/L	557080	Standard

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Na	23	11.7	65.5	**74.1428**	49.752	67.1	mg/L	0	Standard
Mg	24	18449.6	1.2	**24.1624**	0.882	3.7	mg/L	32	Standard
K	39	318.3	12.8	**0.9203**	0.151	16.4	mg/L	30	Standard
Ca	43	671.7	8.0	**95.1609**	6.901	7.3	mg/L	48	Standard
Fe	54	172.3	21.8	**0.0165**	0.033	197.4	mg/L	159	Standard
Fe	57	548.3	9.0	**1.2014**	0.184	15.3	mg/L	195	Standard
> **Sc-1**	45	40123.1	2.7				mg/L	39543	Standard
Cl	35	45031.5	1.7				ug/L	27642	Standard
Kr	83	2.3	89.2				ug/L	2	Standard
Br	81	9216.1	3.8				ug/L	1647	Standard
P	31	22331.4	1.4				ug/L	15231	Standard
S	34	2088.5	6.2				ug/L	1845	Standard
Sr	88	246.7	15.5				ug/L	70	Standard
C	12	346.7	6.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	37.4	4.1				mg/L	12	Standard
Ho-1	165	38.3	41.9				mg/L	12	Standard
Er	166	53.3	60.3				mg/L	20	Standard
I	127	16496.5	38.1				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		139.283	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.347	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.718
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.808
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606036209
Sample Date/Time: Tuesday, June 28, 2016 14:12:25
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	107575.7	2.1				ug/L	81760	Standard
	Be	9	15.0	33.3	**0.0018**	0.004	223.3	ug/L	17	Standard
	Al	27	24368759.8	1.3	**120.1696**	2.653	2.2	ug/L	1410	Standard
	Sc	45	40144.8	3.7				ug/L	39543	Standard
	Ti	47	175.7	9.7	**0.5394**	0.064	11.9	ug/L	39	Standard
	V	51	1717.1	6.1	**0.0398**	0.013	33.2	ug/L	1415	Standard
	Cr	52	8804.6	0.4	**0.2048**	0.007	3.4	ug/L	6946	Standard
	Cr	53	1576.7	7.9	**1.4512**	0.154	10.6	ug/L	328	Standard
	Mn	55	1083613.1	0.9	**166.6059**	0.333	0.2	ug/L	823	Standard
	Co	59	2591.6	2.6	**0.3366**	0.007	2.1	ug/L	252	Standard
	Ni	60	4161.2	1.9	**2.0993**	0.030	1.4	ug/L	192	Standard
	Cu	65	1088.7	1.4	**0.4808**	0.011	2.3	ug/L	141	Standard
	Zn	66	3226.7	2.3	**2.1094**	0.068	3.2	ug/L	491	Standard
>	**Ge**	72	516304.1	0.8				ug/L	515087	Standard
	As	75	854.1	2.3	**0.7983**	0.019	2.4	ug/L	20	Standard
	Se	82	52.5	11.5	**0.3355**	0.056	16.6	ug/L	15	Standard
	Se-1	77	105.7	6.3	**0.6809**	0.097	14.3	ug/L	48	Standard
>	**Ga**	71	153.3	30.3				mg/L	90	Standard
	Rb	85	15286.0	2.4				ug/L	23	Standard
	Y	89	449805.6	1.9				ug/L	448510	Standard
>	**Rh**	103	36.7	43.8				ug/L	15	Standard
	Mo	98	1903.1	2.7	**0.6696**	0.018	2.6	ug/L	11	Standard
	Ag	107	88.0	6.3	**-0.0034**	0.001	30.6	ug/L	134	Standard
	Cd	111	24.4	20.6	**0.0083**	0.002	29.8	mg/L	7	Standard
	Cd	114	75.3	47.3	**0.0092**	0.007	71.3	ug/L	16	Standard
>	**In**	115	624865.1	1.8				ug/L	611117	Standard
	Sn	118	858.4	10.9	**0.0403**	0.018	44.8	ug/L	518	Standard
	Sb	123	598.6	8.7	**0.1114**	0.013	11.4	ug/L	127	Standard
	Ba	135	79235.0	1.1	**37.5150**	0.511	1.4	ug/L	45	Standard
	Ce	140	1043.4	5.0				ug/L	298	Standard
>	**Tb**	159	1006271.6	1.0				ug/L	977942	Standard
	Ho	165	31.7	55.5				ug/L	12	Standard
	Tl	203	94.7	10.4	**0.0060**	0.001	17.2	ug/L	31	Standard
	Tl	205	103.3	26.6	**0.0113**	0.003	31.1	ug/L	20	Standard
	Pb	206	1317.1	2.4	**0.1704**	0.008	4.5	ug/L	286	Standard
	Pb	207	1098.7	2.3	**0.1583**	0.006	3.8	ug/L	257	Standard
	Pb	208	4505.3	1.8	**0.1689**	0.006	3.3	ug/L	956	Standard
	U	238	1688.4	2.2	**0.2232**	0.003	1.5	ug/L	17	Standard
>	**Bi**	209	580367.6	0.9				ug/L	557080	Standard

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Na	23	5.0	100.0	**32.4402**	32.912	101.5	mg/L	0	Standard
Mg	24	8242.2	2.3	**10.7549**	0.236	2.2	mg/L	32	Standard
K	39	375.0	23.7	**1.1102**	0.318	28.6	mg/L	30	Standard
Ca	43	428.3	18.6	**58.5393**	9.751	16.7	mg/L	48	Standard
Fe	54	1288.6	9.8	**1.0145**	0.141	13.9	mg/L	159	Standard
Fe	57	713.4	8.9	**1.7461**	0.160	9.2	mg/L	195	Standard
> **Sc-1**	45	40144.8	3.7				mg/L	39543	Standard
Cl	35	37853.9	1.3				ug/L	27642	Standard
Kr	83	2.3	173.2				ug/L	2	Standard
Br	81	8949.3	3.3				ug/L	1647	Standard
P	31	22830.5	2.4				ug/L	15231	Standard
S	34	2348.5	6.0				ug/L	1845	Standard
Sr	88	131.7	18.7				ug/L	70	Standard
C	12	320.0	23.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	57.1	19.2				mg/L	12	Standard
Ho-1	165	31.7	55.5				mg/L	12	Standard
Er	166	60.0	44.1				mg/L	20	Standard
I	127	12798.7	0.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		131.575	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.236	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	102.250
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	104.180
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606036210
Sample Date/Time: Tuesday, June 28, 2016 14:15:37
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	112279.5	1.4				ug/L	81760	Standard
	Be	9	23.3	32.7	**0.0074**	0.006	75.4	ug/L	17	Standard
	Al	27	11519588.8	0.5	**54.4098**	0.542	1.0	ug/L	1410	Standard
	Sc	45	38345.1	1.2				ug/L	39543	Standard
	Ti	47	94.7	7.9	**0.2480**	0.026	10.6	ug/L	39	Standard
	V	51	2217.7	3.9	**0.1400**	0.014	10.3	ug/L	1415	Standard
	Cr	52	7580.6	0.1	**0.1258**	0.020	16.0	ug/L	6946	Standard
	Cr	53	2436.9	5.1	**2.6754**	0.201	7.5	ug/L	328	Standard
	Mn	55	75388.8	2.2	**12.4826**	0.333	2.7	ug/L	823	Standard
	Co	59	4144.2	3.9	**0.6094**	0.028	4.6	ug/L	252	Standard
	Ni	60	4832.4	1.6	**2.6820**	0.049	1.8	ug/L	192	Standard
	Cu	65	4625.4	2.6	**2.5532**	0.075	2.9	ug/L	141	Standard
	Zn	66	4203.9	2.1	**3.3383**	0.098	2.9	ug/L	491	Standard
>	**Ge**	72	474293.4	1.6				ug/L	515087	Standard
	As	75	1073.0	2.0	**1.0772**	0.038	3.5	ug/L	20	Standard
	Se	82	351.4	3.1	**3.1960**	0.130	4.1	ug/L	15	Standard
	Se-1	77	210.7	7.1	**2.3175**	0.198	8.5	ug/L	48	Standard
>	**Ga**	71	73.3	33.6				mg/L	90	Standard
	Rb	85	56526.9	1.1				ug/L	23	Standard
	Y	89	421082.0	1.6				ug/L	448510	Standard
>	**Rh**	103	96.7	14.9				ug/L	15	Standard
	Mo	98	257904.5	1.0	**100.5156**	1.205	1.2	ug/L	11	Standard
	Ag	107	79.7	12.8	**-0.0037**	0.002	45.1	ug/L	134	Standard
	Cd	111	-189.4	16.3	**-0.0962**	0.015	15.7	mg/L	7	Standard
	Cd	114	358.5	16.9	**0.0677**	0.012	17.5	ug/L	16	Standard
>	**In**	115	580013.8	0.6				ug/L	611117	Standard
	Sn	118	865.0	5.3	**0.0522**	0.009	16.9	ug/L	518	Standard
	Sb	123	234.3	5.5	**0.0395**	0.003	7.3	ug/L	127	Standard
	Ba	135	12298.0	0.4	**6.2513**	0.035	0.6	ug/L	45	Standard
	Ce	140	386.7	8.8				ug/L	298	Standard
>	**Tb**	159	979000.4	0.2				ug/L	977942	Standard
	Ho	165	86.7	26.6				ug/L	12	Standard
	Tl	203	556.3	8.3	**0.0635**	0.006	10.1	ug/L	31	Standard
	Tl	205	491.7	8.6	**0.0672**	0.007	10.1	ug/L	20	Standard
	Pb	206	339.7	4.4	**0.0013**	0.002	176.0	ug/L	286	Standard
	Pb	207	303.3	2.7	**0.0062**	0.001	17.9	ug/L	257	Standard
	Pb	208	1090.3	1.9	**-0.0007**	0.002	299.6	ug/L	956	Standard
	U	238	117.3	12.8	**0.0140**	0.002	17.0	ug/L	17	Standard
>	**Bi**	209	539461.3	1.8				ug/L	557080	Standard

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Na	23	8.3	34.6	**55.0323**	18.599	33.8	mg/L	0	Standard
Mg	24	255159.1	1.2	**350.2417**	6.027	1.7	mg/L	32	Standard
K	39	5237.6	3.5	**18.1047**	0.448	2.5	mg/L	30	Standard
Ca	43	815.0	11.2	**122.4307**	15.864	13.0	mg/L	48	Standard
Fe	54	150.7	21.1	**0.0038**	0.031	813.1	mg/L	159	Standard
Fe	57	818.4	11.3	**2.2227**	0.299	13.5	mg/L	195	Standard
> **Sc-1**	45	38345.1	1.2				mg/L	39543	Standard
Cl	35	84049.9	1.6				ug/L	27642	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	57144.3	3.2				ug/L	1647	Standard
P	31	18494.6	4.2				ug/L	15231	Standard
S	34	1918.5	8.3				ug/L	1845	Standard
Sr	88	445.0	8.9				ug/L	70	Standard
C	12	253.3	16.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	64.7	80.3				mg/L	12	Standard
Ho-1	165	86.7	26.6				mg/L	12	Standard
Er	166	110.0	9.1				mg/L	20	Standard
I	127	999438.0	9.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		137.328	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.080	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.911
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.837
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 14:18:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	108145.2	5.1				ug/L	81760	Standard
	Be	9	64242.8	4.5	**48.9113**	0.992	2.0	ug/L	17	Standard
	Al	27	8304059.2	3.3	**40.7429**	1.039	2.5	ug/L	1410	Standard
	Sc	45	37765.4	4.0				ug/L	39543	Standard
	Ti	47	23471.8	2.0	**97.1021**	1.269	1.3	ug/L	39	Standard
	V	51	349107.5	0.6	**51.5604**	0.772	1.5	ug/L	1415	Standard
	Cr	52	335198.9	1.2	**48.5745**	0.974	2.0	ug/L	6946	Standard
	Cr	53	41869.4	1.3	**48.8267**	1.454	3.0	ug/L	328	Standard
	Mn	55	314993.6	1.3	**49.9295**	0.954	1.9	ug/L	823	Standard
	Co	59	375345.6	0.1	**55.0339**	1.228	2.2	ug/L	252	Standard
	Ni	60	88766.6	0.5	**48.4746**	0.838	1.7	ug/L	192	Standard
	Cu	65	90675.9	1.2	**49.0916**	0.682	1.4	ug/L	141	Standard
	Zn	66	53067.8	0.6	**49.0759**	0.955	1.9	ug/L	491	Standard
>	Ge	72	499870.2	2.1				ug/L	515087	Standard
	As	75	55072.1	0.8	**50.5344**	1.449	2.9	ug/L	20	Standard
	Se	82	6022.1	1.2	**53.7900**	0.803	1.5	ug/L	15	Standard
	Se-1	77	3835.5	2.7	**51.7480**	1.296	2.5	ug/L	48	Standard
>	Ga	71	68.3	34.6				mg/L	90	Standard
	Rb	85	878.4	4.0				ug/L	23	Standard
	Y	89	444195.9	1.0				ug/L	448510	Standard
>	Rh	103	36.7	7.9				ug/L	15	Standard
	Mo	98	271765.3	0.4	**101.0586**	1.139	1.1	ug/L	11	Standard
	Ag	107	335937.1	0.8	**50.2935**	0.228	0.5	ug/L	134	Standard
	Cd	111	104881.4	1.9	**49.3201**	0.733	1.5	mg/L	7	Standard
	Cd	114	258223.7	2.1	**49.9610**	1.276	2.6	ug/L	16	Standard
>	In	115	607920.9	0.8				ug/L	611117	Standard
	Sn	118	297159.7	1.8	**50.4160**	0.583	1.2	ug/L	518	Standard
	Sb	123	233566.6	0.5	**49.7525**	0.427	0.9	ug/L	127	Standard
	Ba	135	100029.2	1.5	**48.6806**	0.509	1.0	ug/L	45	Standard
	Ce	140	56.7	27.0				ug/L	298	Standard
>	Tb	159	990459.3	1.9				ug/L	977942	Standard
	Ho	165	13.3	21.7				ug/L	12	Standard
	Tl	203	438180.8	0.9	**49.9571**	0.368	0.7	ug/L	31	Standard
	Tl	205	400912.4	1.6	**52.6337**	0.214	0.4	ug/L	20	Standard
	Pb	206	285968.6	0.8	**50.7733**	0.808	1.6	ug/L	286	Standard
	Pb	207	258378.5	0.4	**50.8616**	0.645	1.3	ug/L	257	Standard
	Pb	208	1010283.1	0.5	**51.4021**	0.498	1.0	ug/L	956	Standard
	U	238	389330.8	1.6	**52.1963**	0.349	0.7	ug/L	17	Standard
>	Bi	209	579902.5	1.4				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4220.6	3.3	**5.8326**	0.328	5.6	mg/L	32	Standard
K	39	1343.4	3.1	**4.6154**	0.216	4.7	mg/L	30	Standard
Ca	43	66.7	37.7	**5.1699**	3.623	70.1	mg/L	48	Standard
Fe	54	5699.2	5.0	**5.2644**	0.205	3.9	mg/L	159	Standard
Fe	57	1620.1	3.2	**5.1052**	0.186	3.6	mg/L	195	Standard
> **Sc-1**	45	37765.4	4.0				mg/L	39543	Standard
Cl	35	31900.9	3.3				ug/L	27642	Standard
Kr	83	2.3	89.2				ug/L	2	Standard
Br	81	2500.2	16.5				ug/L	1647	Standard
P	31	18272.7	3.1				ug/L	15231	Standard
S	34	2018.5	1.5				ug/L	1845	Standard
Sr	88	43.3	24.0				ug/L	70	Standard
C	12	196.7	21.2				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.4	50.3				mg/L	12	Standard
Ho-1	165	13.3	21.7				mg/L	12	Standard
Er	166	20.0	86.6				mg/L	20	Standard
I	127	32500.9	63.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	97.823		
Al	27	81.486		
Sc	45			
Ti	47	97.102		
V	51	103.121		
Cr	52	97.149		
Cr	53			
Mn	55	99.859		
Co	59	110.068		
Ni	60	96.949		
Cu	65	98.183		
Zn	66	98.152		
> Ge	72		97.046	
As	75	101.069		
Se	82	107.580		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.059		
Ag	107	100.587		
Cd	111	98.640		
Cd	114			
In	115		99.477	
Sn	118	100.832		
Sb	123	99.505		
Ba	135	97.361		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.914		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.804		
U	238	104.393		
Bi	209		104.097	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	
QC Std 6	Co	59	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 14:22:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	101364.8	2.9				ug/L	81760	Standard
	Be	9	38.3	49.4	**0.0216**	0.016	74.7	ug/L	17	Standard
	Al	27	15489.3	94.8	**0.0675**	0.079	117.4	ug/L	1410	Standard
	Sc	45	38064.4	0.9				ug/L	39543	Standard
	Ti	47	37.3	29.4	**-0.0111**	0.045	403.8	ug/L	39	Standard
	V	51	1161.3	1.6	**-0.0351**	0.002	6.4	ug/L	1415	Standard
	Cr	52	5982.8	2.5	**-0.1747**	0.020	11.4	ug/L	6946	Standard
	Cr	53	318.3	7.1	**0.0308**	0.025	81.8	ug/L	328	Standard
	Mn	55	894.7	9.5	**-0.0068**	0.013	197.2	ug/L	823	Standard
	Co	59	241.0	14.9	**0.0039**	0.005	138.8	ug/L	252	Standard
	Ni	60	266.0	10.4	**0.0400**	0.015	37.4	ug/L	192	Standard
	Cu	65	200.0	8.9	**0.0172**	0.009	54.5	ug/L	141	Standard
	Zn	66	430.0	7.9	**-0.4249**	0.030	7.1	ug/L	491	Standard
>	**Ge**	72	501700.0	0.4				ug/L	515087	Standard
	As	75	1.5	1379.3	**0.0417**	0.019	44.5	ug/L	20	Standard
	Se	82	27.3	19.7	**0.1242**	0.049	39.3	ug/L	15	Standard
	Se-1	77	54.3	18.4	**0.0219**	0.139	635.7	ug/L	48	Standard
>	**Ga**	71	63.3	9.1				mg/L	90	Standard
	Rb	85	26.7	28.6				ug/L	23	Standard
	Y	89	434979.7	1.5				ug/L	448510	Standard
>	**Rh**	103	11.7	89.2				ug/L	15	Standard
	Mo	98	412.1	20.1	**0.1325**	0.026	19.5	ug/L	11	Standard
	Ag	107	133.7	24.7	**0.0036**	0.005	131.9	ug/L	134	Standard
	Cd	111	17.6	36.9	**0.0053**	0.003	55.6	mg/L	7	Standard
	Cd	114	37.0	22.5	**0.0022**	0.002	81.0	ug/L	16	Standard
>	**In**	115	612643.0	3.0				ug/L	611117	Standard
	Sn	118	796.7	19.5	**0.0328**	0.028	85.4	ug/L	518	Standard
	Sb	123	465.9	23.7	**0.0860**	0.025	29.2	ug/L	127	Standard
	Ba	135	55.7	25.4	**0.0018**	0.007	380.6	ug/L	45	Standard
	Ce	140	23.3	53.9				ug/L	298	Standard
>	**Tb**	159	991657.2	2.1				ug/L	977942	Standard
	Ho	165	6.7	114.6				ug/L	12	Standard
	Tl	203	81.3	30.4	**0.0043**	0.003	63.5	ug/L	31	Standard
	Tl	205	65.0	13.3	**0.0061**	0.001	17.5	ug/L	20	Standard
	Pb	206	313.0	2.4	**-0.0091**	0.002	17.1	ug/L	286	Standard
	Pb	207	268.3	2.3	**-0.0063**	0.001	16.7	ug/L	257	Standard
	Pb	208	1057.3	6.3	**-0.0078**	0.003	38.5	ug/L	956	Standard
	U	238	61.3	40.7	**0.0051**	0.003	63.9	ug/L	17	Standard
>	**Bi**	209	592397.8	0.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	95.0	63.8	**0.0743**	0.084	112.6	mg/L	32	Standard
K	39	16.7	17.3	**-0.0829**	0.011	12.9	mg/L	30	Standard
Ca	43	31.7	36.5	**-0.3389**	1.874	552.9	mg/L	48	Standard
Fe	54	110.8	32.6	**-0.0331**	0.033	100.8	mg/L	159	Standard
Fe	57	168.3	28.5	**-0.0341**	0.169	494.5	mg/L	195	Standard
> **Sc-1**	45	38064.4	0.9				mg/L	39543	Standard
Cl	35	31593.6	0.5				ug/L	27642	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	1856.8	9.2				ug/L	1647	Standard
P	31	17672.0	1.1				ug/L	15231	Standard
S	34	2055.1	6.3				ug/L	1845	Standard
Sr	88	56.7	18.4				ug/L	70	Standard
C	12	170.0	20.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.3	173.2				mg/L	12	Standard
Ho-1	165	6.7	114.6				mg/L	12	Standard
Er	166	6.7	173.2				mg/L	20	Standard
I	127	7793.7	20.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.401	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.250
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.340
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606036211
Sample Date/Time: Tuesday, June 28, 2016 14:25:14
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	100807.6	1.2				ug/L	81760	Standard
	Be	9	76.7	13.6	**0.0528**	0.008	15.0	ug/L	17	Standard
	Al	27	23829161.3	1.5	**125.3655**	0.841	0.7	ug/L	1410	Standard
	Sc	45	39760.5	3.7				ug/L	39543	Standard
	Ti	47	180.7	0.8	**0.5860**	0.014	2.4	ug/L	39	Standard
	V	51	2583.8	5.2	**0.1775**	0.016	9.1	ug/L	1415	Standard
	Cr	52	8684.5	0.7	**0.2325**	0.005	2.3	ug/L	6946	Standard
	Cr	53	1498.4	3.7	**1.4227**	0.048	3.4	ug/L	328	Standard
	Mn	55	44479.2	1.1	**6.9441**	0.116	1.7	ug/L	823	Standard
	Co	59	1598.1	1.9	**0.2038**	0.006	2.9	ug/L	252	Standard
	Ni	60	3161.3	2.5	**1.6303**	0.047	2.9	ug/L	192	Standard
	Cu	65	697.7	3.7	**0.2888**	0.018	6.1	ug/L	141	Standard
	Zn	66	2205.8	4.6	**1.2527**	0.096	7.7	ug/L	491	Standard
>	**Ge**	72	498311.0	1.0				ug/L	515087	Standard
	As	75	175.3	10.2	**0.2014**	0.015	7.3	ug/L	20	Standard
	Se	82	90.2	6.0	**0.6901**	0.041	6.0	ug/L	15	Standard
	Se-1	77	104.3	15.6	**0.7141**	0.236	33.0	ug/L	48	Standard
>	**Ga**	71	91.7	19.2				mg/L	90	Standard
	Rb	85	3617.1	1.0				ug/L	23	Standard
	Y	89	438807.3	1.1				ug/L	448510	Standard
>	**Rh**	103	23.3	24.7				ug/L	15	Standard
	Mo	98	5340.3	1.5	**1.9620**	0.035	1.8	ug/L	11	Standard
	Ag	107	313.7	8.5	**0.0307**	0.004	14.3	ug/L	134	Standard
	Cd	111	102.5	10.0	**0.0451**	0.004	9.9	mg/L	7	Standard
	Cd	114	269.5	9.6	**0.0471**	0.005	11.0	ug/L	16	Standard
>	**In**	115	609490.3	1.0				ug/L	611117	Standard
	Sn	118	888.4	6.3	**0.0488**	0.011	22.0	ug/L	518	Standard
	Sb	123	739.4	5.4	**0.1443**	0.009	6.4	ug/L	127	Standard
	Ba	135	23651.8	1.3	**11.4620**	0.117	1.0	ug/L	45	Standard
	Ce	140	2515.2	8.7				ug/L	298	Standard
>	**Tb**	159	994391.3	1.1				ug/L	977942	Standard
	Ho	165	61.7	16.9				ug/L	12	Standard
	Tl	203	495.7	2.3	**0.0524**	0.001	2.2	ug/L	31	Standard
	Tl	205	451.7	6.1	**0.0577**	0.003	5.9	ug/L	20	Standard
	Pb	206	782.0	4.2	**0.0770**	0.005	7.0	ug/L	286	Standard
	Pb	207	638.7	5.2	**0.0693**	0.006	8.1	ug/L	257	Standard
	Pb	208	2612.4	2.6	**0.0742**	0.003	3.5	ug/L	956	Standard
	U	238	3078.0	1.8	**0.4146**	0.006	1.5	ug/L	17	Standard
>	**Bi**	209	573149.3	0.8				ug/L	557080	Standard

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Na	23	10.0	50.0	**63.1287**	29.742	47.1	mg/L	0	Standard
Mg	24	8182.2	4.0	**10.7839**	0.556	5.2	mg/L	32	Standard
K	39	235.0	11.8	**0.6477**	0.082	12.7	mg/L	30	Standard
Ca	43	488.3	8.8	**68.4110**	5.631	8.2	mg/L	48	Standard
Fe	54	190.4	22.3	**0.0341**	0.036	104.7	mg/L	159	Standard
Fe	57	451.7	3.2	**0.8921**	0.019	2.1	mg/L	195	Standard
Sc-1	45	39760.5	3.7				mg/L	39543	Standard
Cl	35	36572.1	2.1				ug/L	27642	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	15501.3	5.9				ug/L	1647	Standard
P	31	22299.7	2.1				ug/L	15231	Standard
S	34	2183.5	4.1				ug/L	1845	Standard
Sr	88	141.7	11.3				ug/L	70	Standard
C	12	286.7	23.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	128.1	22.2				mg/L	12	Standard
Ho-1	165	61.7	16.9				mg/L	12	Standard
Er	166	110.0	63.6				mg/L	20	Standard
I	127	9539.7	2.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.297	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.743	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.734
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.884
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606036212
Sample Date/Time: Tuesday, June 28, 2016 14:28:25
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	101556.0	2.3				ug/L	81760	Standard
	Be	9	16.7	34.6	**0.0037**	0.005	121.7	ug/L	17	Standard
	Al	27	17765744.4	2.3	**92.8094**	3.109	3.3	ug/L	1410	Standard
	Sc	45	39087.0	2.2				ug/L	39543	Standard
	Ti	47	247.0	6.3	**0.8686**	0.057	6.6	ug/L	39	Standard
	V	51	2382.1	6.3	**0.1501**	0.021	13.9	ug/L	1415	Standard
	Cr	52	8300.6	1.1	**0.1842**	0.008	4.2	ug/L	6946	Standard
	Cr	53	1501.7	3.0	**1.4394**	0.046	3.2	ug/L	328	Standard
	Mn	55	1258376.0	0.7	**201.9190**	0.817	0.4	ug/L	823	Standard
	Co	59	3356.7	1.5	**0.4660**	0.012	2.5	ug/L	252	Standard
	Ni	60	3550.4	0.9	**1.8576**	0.023	1.3	ug/L	192	Standard
	Cu	65	1089.7	4.5	**0.5061**	0.022	4.4	ug/L	141	Standard
	Zn	66	2532.2	4.9	**1.5769**	0.099	6.3	ug/L	491	Standard
>	**Ge**	72	494799.1	0.8				ug/L	515087	Standard
	As	75	371.2	4.5	**0.3840**	0.014	3.7	ug/L	20	Standard
	Se	82	96.6	14.9	**0.7542**	0.127	16.9	ug/L	15	Standard
	Se-1	77	117.3	12.8	**0.9020**	0.200	22.2	ug/L	48	Standard
>	**Ga**	71	161.7	20.6				mg/L	90	Standard
	Rb	85	5996.2	5.2				ug/L	23	Standard
	Y	89	446186.9	1.4				ug/L	448510	Standard
>	**Rh**	103	35.0	37.8				ug/L	15	Standard
	Mo	98	1982.4	1.7	**0.7175**	0.021	3.0	ug/L	11	Standard
	Ag	107	87.7	6.7	**-0.0031**	0.001	30.7	ug/L	134	Standard
	Cd	111	81.3	17.6	**0.0353**	0.007	20.5	mg/L	7	Standard
	Cd	114	230.7	12.0	**0.0397**	0.006	14.9	ug/L	16	Standard
>	**In**	115	608659.5	1.3				ug/L	611117	Standard
	Sn	118	906.7	3.5	**0.0521**	0.007	12.9	ug/L	518	Standard
	Sb	123	394.5	7.6	**0.0711**	0.006	8.6	ug/L	127	Standard
	Ba	135	51224.8	1.3	**24.8890**	0.366	1.5	ug/L	45	Standard
	Ce	140	3013.6	4.4				ug/L	298	Standard
>	**Tb**	159	974496.5	1.8				ug/L	977942	Standard
	Ho	165	80.0	16.5				ug/L	12	Standard
	Tl	203	128.3	8.3	**0.0104**	0.001	10.4	ug/L	31	Standard
	Tl	205	91.7	22.0	**0.0102**	0.003	28.0	ug/L	20	Standard
	Pb	206	755.4	5.1	**0.0757**	0.008	10.8	ug/L	286	Standard
	Pb	207	644.0	3.0	**0.0736**	0.005	7.3	ug/L	257	Standard
	Pb	208	2468.4	2.8	**0.0700**	0.005	7.5	ug/L	956	Standard
	U	238	1502.1	3.5	**0.2059**	0.006	2.8	ug/L	17	Standard
>	**Bi**	209	559159.1	1.2				ug/L	557080	Standard

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Na	23	5.0	0.0	**32.4897**	0.713	2.2	mg/L	0	Standard
Mg	24	34367.3	2.9	**46.2225**	0.714	1.5	mg/L	32	Standard
K	39	518.3	10.6	**1.6321**	0.206	12.7	mg/L	30	Standard
Ca	43	333.3	3.5	**45.8704**	1.237	2.7	mg/L	48	Standard
Fe	54	313.8	12.6	**0.1508**	0.042	28.0	mg/L	159	Standard
Fe	57	493.3	3.3	**1.0616**	0.089	8.4	mg/L	195	Standard
> **Sc-1**	45	39087.0	2.2				mg/L	39543	Standard
Cl	35	40128.4	3.1				ug/L	27642	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	13105.7	7.2				ug/L	1647	Standard
P	31	21068.0	1.2				ug/L	15231	Standard
S	34	2031.8	3.8				ug/L	1845	Standard
Sr	88	195.0	14.3				ug/L	70	Standard
C	12	220.0	19.8				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	113.5	27.0				mg/L	12	Standard
Ho-1	165	80.0	16.5				mg/L	12	Standard
Er	166	66.7	48.2				mg/L	20	Standard
I	127	14735.5	4.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.212	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.061	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.598
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.373
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 14:31:38
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	96993.2	4.5				ug/L	81760	Standard
	Be	9	59018.4	6.5	**50.0965**	2.769	5.5	ug/L	17	Standard
	Al	27	7977258.4	4.2	**43.6214**	1.029	2.4	ug/L	1410	Standard
	Sc	45	38238.2	1.6				ug/L	39543	Standard
	Ti	47	23612.4	4.0	**98.7594**	3.955	4.0	ug/L	39	Standard
	V	51	340072.0	1.7	**50.7725**	1.247	2.5	ug/L	1415	Standard
	Cr	52	338200.8	3.5	**49.5590**	1.660	3.3	ug/L	6946	Standard
	Cr	53	42016.5	3.2	**49.5286**	1.703	3.4	ug/L	328	Standard
	Mn	55	307360.3	1.5	**49.2454**	0.735	1.5	ug/L	823	Standard
	Co	59	358545.3	2.7	**53.1356**	1.497	2.8	ug/L	252	Standard
	Ni	60	89705.8	2.1	**49.5206**	1.132	2.3	ug/L	192	Standard
	Cu	65	91128.3	2.1	**49.8745**	1.003	2.0	ug/L	141	Standard
	Zn	66	53559.8	1.4	**50.0843**	0.931	1.9	ug/L	491	Standard
>	**Ge**	72	494423.7	1.0				ug/L	515087	Standard
	As	75	53994.0	0.9	**50.0733**	0.496	1.0	ug/L	20	Standard
	Se	82	5715.9	0.2	**51.6065**	0.476	0.9	ug/L	15	Standard
	Se-1	77	3736.8	1.4	**50.9602**	0.952	1.9	ug/L	48	Standard
>	**Ga**	71	70.0	28.6				mg/L	90	Standard
	Rb	85	770.0	3.6				ug/L	23	Standard
	Y	89	445528.9	0.6				ug/L	448510	Standard
>	**Rh**	103	23.3	44.6				ug/L	15	Standard
	Mo	98	264652.3	1.1	**96.1672**	0.791	0.8	ug/L	11	Standard
	Ag	107	331013.3	2.8	**48.4244**	1.155	2.4	ug/L	134	Standard
	Cd	111	104542.0	2.3	**48.0434**	1.120	2.3	mg/L	7	Standard
	Cd	114	255433.5	4.1	**48.2912**	1.921	4.0	ug/L	16	Standard
>	**In**	115	622075.2	0.5				ug/L	611117	Standard
	Sn	118	295472.2	1.9	**48.9864**	0.743	1.5	ug/L	518	Standard
	Sb	123	230757.9	1.7	**48.0319**	0.618	1.3	ug/L	127	Standard
	Ba	135	99769.8	2.2	**47.4498**	0.988	2.1	ug/L	45	Standard
	Ce	140	73.3	7.9				ug/L	298	Standard
>	**Tb**	159	1000112.3	1.5				ug/L	977942	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	427237.6	2.4	**49.0359**	1.247	2.5	ug/L	31	Standard
	Tl	205	388094.9	2.7	**51.3011**	1.717	3.3	ug/L	20	Standard
	Pb	206	274003.7	2.0	**48.9721**	1.261	2.6	ug/L	286	Standard
	Pb	207	249924.4	1.5	**49.5263**	1.133	2.3	ug/L	257	Standard
	Pb	208	988217.1	0.7	**50.6156**	0.799	1.6	ug/L	956	Standard
	U	238	380024.3	2.2	**51.3005**	1.621	3.2	ug/L	17	Standard
>	**Bi**	209	576058.0	1.3				ug/L	557080	Standard

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Na	23	5.0	100.0	**33.2699**	32.995	99.2	mg/L	0	Standard
Mg	24	4203.9	5.4	**5.7315**	0.340	5.9	mg/L	32	Standard
K	39	1220.0	6.7	**4.1203**	0.250	6.1	mg/L	30	Standard
Ca	43	103.3	14.8	**10.9126**	2.675	24.5	mg/L	48	Standard
Fe	54	5915.4	3.1	**5.3996**	0.173	3.2	mg/L	159	Standard
Fe	57	1661.8	2.4	**5.1766**	0.085	1.6	mg/L	195	Standard
> **Sc-1**	45	38238.2	1.6				mg/L	39543	Standard
Cl	35	33728.9	2.6				ug/L	27642	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	1893.5	8.5				ug/L	1647	Standard
P	31	18936.8	1.0				ug/L	15231	Standard
S	34	2451.9	4.7				ug/L	1845	Standard
Sr	88	73.3	14.2				ug/L	70	Standard
C	12	160.0	43.3				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.2	6.0				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	16.7	69.3				mg/L	20	Standard
I	127	3007.0	16.4				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	100.193		
	Al	27	87.243		
	Sc	45			
	Ti	47	98.759		
	V	51	101.545		
	Cr	52	99.118		
	Cr	53			
	Mn	55	98.491		
	Co	59	106.271		
	Ni	60	99.041		
	Cu	65	99.749		
	Zn	66	100.169		
>	Ge	72		95.988	
	As	75	100.147		
	Se	82	103.213		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	96.167		
Ag	107	96.849		
Cd	111	96.087		
Cd	114			
In	115			101.793
Sn	118	97.973		
Sb	123	96.064		
Ba	135	94.900		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.072		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.231		
U	238	102.601		
Bi	209			103.407
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 14:34:50
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92870.5	2.0				ug/L	81760	Standard
	Be	9	15.0	66.7	**0.0036**	0.009	245.7	ug/L	17	Standard
	Al	27	2743.6	21.7	**0.0013**	0.004	284.3	ug/L	1410	Standard
	Sc	45	38460.4	1.3				ug/L	39543	Standard
	Ti	47	30.7	8.2	**-0.0403**	0.010	23.8	ug/L	39	Standard
	V	51	1134.9	2.6	**-0.0414**	0.005	11.0	ug/L	1415	Standard
	Cr	52	5878.1	2.2	**-0.2023**	0.026	12.8	ug/L	6946	Standard
	Cr	53	310.0	1.6	**0.0160**	0.005	29.1	ug/L	328	Standard
	Mn	55	709.4	9.1	**-0.0377**	0.010	26.9	ug/L	823	Standard
	Co	59	233.7	1.1	**0.0023**	0.001	24.5	ug/L	252	Standard
	Ni	60	211.0	9.6	**0.0084**	0.011	126.5	ug/L	192	Standard
	Cu	65	155.3	8.6	**-0.0081**	0.008	96.4	ug/L	141	Standard
	Zn	66	394.0	4.1	**-0.4638**	0.014	3.1	ug/L	491	Standard
>	**Ge**	72	508932.6	0.9				ug/L	515087	Standard
	As	75	-34.1	13.4	**0.0096**	0.004	45.1	ug/L	20	Standard
	Se	82	19.4	20.9	**0.0515**	0.036	69.8	ug/L	15	Standard
	Se-1	77	46.7	12.2	**-0.0918**	0.077	84.0	ug/L	48	Standard
>	**Ga**	71	66.7	8.7				mg/L	90	Standard
	Rb	85	15.0	33.3				ug/L	23	Standard
	Y	89	445570.9	1.5				ug/L	448510	Standard
>	**Rh**	103	15.0	88.2				ug/L	15	Standard
	Mo	98	287.3	16.9	**0.0864**	0.017	20.0	ug/L	11	Standard
	Ag	107	124.0	22.6	**0.0021**	0.004	200.7	ug/L	134	Standard
	Cd	111	14.8	9.5	**0.0040**	0.001	16.6	mg/L	7	Standard
	Cd	114	48.0	37.7	**0.0043**	0.004	82.8	ug/L	16	Standard
>	**In**	115	615541.5	0.9				ug/L	611117	Standard
	Sn	118	883.4	22.9	**0.0465**	0.035	74.9	ug/L	518	Standard
	Sb	123	479.5	25.7	**0.0882**	0.027	30.1	ug/L	127	Standard
	Ba	135	35.7	10.6	**-0.0080**	0.002	22.2	ug/L	45	Standard
	Ce	140	21.7	48.0				ug/L	298	Standard
>	**Tb**	159	980265.4	0.4				ug/L	977942	Standard
	Ho	165	16.7	45.8				ug/L	12	Standard
	Tl	203	63.0	23.1	**0.0024**	0.002	67.2	ug/L	31	Standard
	Tl	205	63.3	31.9	**0.0060**	0.003	42.7	ug/L	20	Standard
	Pb	206	313.3	5.4	**-0.0080**	0.003	36.6	ug/L	286	Standard
	Pb	207	273.0	6.7	**-0.0043**	0.004	87.0	ug/L	257	Standard
	Pb	208	1087.7	7.3	**-0.0051**	0.004	85.3	ug/L	956	Standard
	U	238	49.0	30.5	**0.0036**	0.002	56.1	ug/L	17	Standard
>	**Bi**	209	580619.2	1.2				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	35.0	28.6	**-0.0091**	0.014	156.5	mg/L	32	Standard
K	39	36.7	28.4	**-0.0142**	0.035	248.1	mg/L	30	Standard
Ca	43	26.7	57.3	**-1.1996**	2.339	195.0	mg/L	48	Standard
Fe	54	140.8	15.9	**-0.0061**	0.021	341.9	mg/L	159	Standard
Fe	57	151.7	6.9	**-0.0978**	0.042	43.3	mg/L	195	Standard
> **Sc-1**	45	38460.4	1.3				mg/L	39543	Standard
Cl	35	32500.2	3.2				ug/L	27642	Standard
Kr	83	3.0	0.0				ug/L	2	Standard
Br	81	1736.8	3.3				ug/L	1647	Standard
P	31	17698.7	3.2				ug/L	15231	Standard
S	34	2320.2	10.5				ug/L	1845	Standard
Sr	88	73.3	21.9				ug/L	70	Standard
C	12	133.3	15.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.0	113.3				mg/L	12	Standard
Ho-1	165	16.7	45.8				mg/L	12	Standard
Er	166	20.0	50.0				mg/L	20	Standard
I	127	2206.8	20.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.805	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.724
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.225
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBS M7 WG573333-03
Sample Date/Time: Tuesday, June 28, 2016 14:38:03
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	95050.7	3.1				ug/L	81760	Standard
	Be	9	18.3	87.7	**0.0062**	0.014	223.6	ug/L	17	Standard
	Al	27	17488.4	2.4	**0.0832**	0.003	3.2	ug/L	1410	Standard
	Sc	45	39132.2	2.7				ug/L	39543	Standard
	Ti	47	49.7	51.3	**0.0353**	0.101	286.1	ug/L	39	Standard
	V	51	1251.1	3.7	**-0.0255**	0.008	31.0	ug/L	1415	Standard
	Cr	52	8706.2	0.9	**0.2013**	0.013	6.2	ug/L	6946	Standard
	Cr	53	700.0	11.0	**0.4613**	0.093	20.2	ug/L	328	Standard
	Mn	55	1542.7	1.5	**0.0910**	0.006	6.6	ug/L	823	Standard
	Co	59	278.7	9.1	**0.0085**	0.003	38.3	ug/L	252	Standard
	Ni	60	602.0	5.9	**0.2166**	0.018	8.1	ug/L	192	Standard
	Cu	65	210.7	10.6	**0.0207**	0.012	58.0	ug/L	141	Standard
	Zn	66	1817.8	2.7	**0.8408**	0.028	3.4	ug/L	491	Standard
>	**Ge**	72	511962.6	1.0				ug/L	515087	Standard
	As	75	-35.9	60.1	**0.0082**	0.019	234.7	ug/L	20	Standard
	Se	82	20.1	18.9	**0.0563**	0.034	59.9	ug/L	15	Standard
	Se-1	77	44.7	10.1	**-0.1225**	0.058	47.0	ug/L	48	Standard
>	**Ga**	71	48.3	15.8				mg/L	90	Standard
	Rb	85	66.7	31.2				ug/L	23	Standard
	Y	89	442200.8	1.3				ug/L	448510	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	193.0	16.8	**0.0509**	0.011	21.8	ug/L	11	Standard
	Ag	107	97.0	17.0	**-0.0021**	0.002	110.1	ug/L	134	Standard
	Cd	111	7.4	64.2	**0.0005**	0.002	466.2	mg/L	7	Standard
	Cd	114	31.4	28.6	**0.0010**	0.002	163.8	ug/L	16	Standard
>	**In**	115	622890.2	1.7				ug/L	611117	Standard
	Sn	118	691.7	5.6	**0.0128**	0.005	38.1	ug/L	518	Standard
	Sb	123	212.1	15.5	**0.0312**	0.006	20.3	ug/L	127	Standard
	Ba	135	298.3	2.4	**0.1167**	0.001	1.2	ug/L	45	Standard
	Ce	140	113.3	24.3				ug/L	298	Standard
>	**Tb**	159	998579.7	1.5				ug/L	977942	Standard
	Ho	165	16.7	17.3				ug/L	12	Standard
	Tl	203	39.0	48.9	**-0.0004**	0.002	526.4	ug/L	31	Standard
	Tl	205	20.0	50.0	**0.0003**	0.001	421.9	ug/L	20	Standard
	Pb	206	313.7	9.3	**-0.0086**	0.005	56.5	ug/L	286	Standard
	Pb	207	273.0	2.4	**-0.0050**	0.001	28.4	ug/L	257	Standard
	Pb	208	1093.3	1.9	**-0.0055**	0.001	16.3	ug/L	956	Standard
	U	238	24.3	55.2	**0.0002**	0.002	711.6	ug/L	17	Standard
>	**Bi**	209	587793.8	0.5				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	36.7	7.9	**-0.0078**	0.003	35.7	mg/L	32	Standard
K	39	35.0	51.5	**-0.0208**	0.064	309.0	mg/L	30	Standard
Ca	43	25.0	34.6	**-1.5082**	1.327	88.0	mg/L	48	Standard
Fe	54	165.5	15.5	**0.0140**	0.019	138.8	mg/L	159	Standard
Fe	57	203.3	9.9	**0.0704**	0.084	119.9	mg/L	195	Standard
> **Sc-1**	45	39132.2	2.7				mg/L	39543	Standard
Cl	35	33734.8	0.7				ug/L	27642	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	1786.8	3.4				ug/L	1647	Standard
P	31	17722.0	1.9				ug/L	15231	Standard
S	34	2341.8	1.1				ug/L	1845	Standard
Sr	88	65.0	27.7				ug/L	70	Standard
C	12	180.0	47.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	18.7	93.3				mg/L	12	Standard
Ho-1	165	16.7	17.3				mg/L	12	Standard
Er	166	26.7	21.7				mg/L	20	Standard
I	127	1696.8	8.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.256	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.393	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.927
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.513
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: LCSS M7 WG573333-04
Sample Date/Time: Tuesday, June 28, 2016 14:41:14
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92927.6	3.1				ug/L	81760	Standard
	Be	9	30111.6	3.7	**26.7031**	1.769	6.6	ug/L	17	Standard
	Al	27	18035.9	13.5	**0.0888**	0.016	18.2	ug/L	1410	Standard
	Sc	45	39361.1	1.9				ug/L	39543	Standard
	Ti	47	37.0	28.2	**-0.0130**	0.042	322.2	ug/L	39	Standard
	V	51	182372.3	3.8	**26.6531**	1.518	5.7	ug/L	1415	Standard
	Cr	52	189442.3	3.6	**26.8012**	1.501	5.6	ug/L	6946	Standard
	Cr	53	22922.3	1.8	**26.3866**	1.122	4.3	ug/L	328	Standard
	Mn	55	169435.1	3.2	**26.6017**	1.285	4.8	ug/L	823	Standard
	Co	59	193981.0	3.8	**28.2331**	1.651	5.8	ug/L	252	Standard
	Ni	60	48862.7	3.3	**26.4525**	1.352	5.1	ug/L	192	Standard
	Cu	65	49743.6	2.7	**26.7036**	1.173	4.4	ug/L	141	Standard
	Zn	66	30362.1	3.5	**27.5261**	1.455	5.3	ug/L	491	Standard
>	**Ge**	72	503563.1	2.3				ug/L	515087	Standard
	As	75	29155.1	3.3	**26.5827**	1.325	5.0	ug/L	20	Standard
	Se	82	3055.7	1.7	**27.0468**	1.107	4.1	ug/L	15	Standard
	Se-1	77	2068.5	3.5	**27.3757**	1.137	4.2	ug/L	48	Standard
>	**Ga**	71	53.3	14.3				mg/L	90	Standard
	Rb	85	78.3	16.1				ug/L	23	Standard
	Y	89	444634.7	2.0				ug/L	448510	Standard
>	**Rh**	103	18.3	41.7				ug/L	15	Standard
	Mo	98	104.5	23.9	**0.0190**	0.010	51.3	ug/L	11	Standard
	Ag	107	179344.1	3.7	**26.2092**	1.706	6.5	ug/L	134	Standard
	Cd	111	55845.5	2.3	**25.6355**	1.334	5.2	mg/L	7	Standard
	Cd	114	136877.4	2.6	**25.8483**	1.371	5.3	ug/L	16	Standard
>	**In**	115	623373.0	3.0				ug/L	611117	Standard
	Sn	118	755.0	11.3	**0.0235**	0.016	68.2	ug/L	518	Standard
	Sb	123	124890.1	3.5	**25.9676**	1.618	6.2	ug/L	127	Standard
	Ba	135	53944.6	3.3	**25.6212**	1.575	6.1	ug/L	45	Standard
	Ce	140	106.7	9.8				ug/L	298	Standard
>	**Tb**	159	976375.9	3.3				ug/L	977942	Standard
	Ho	165	15.0	57.7				ug/L	12	Standard
	Tl	203	229696.9	2.8	**26.5184**	1.549	5.8	ug/L	31	Standard
	Tl	205	205993.8	3.8	**27.3937**	1.852	6.8	ug/L	20	Standard
	Pb	206	150555.8	3.2	**27.0395**	1.637	6.1	ug/L	286	Standard
	Pb	207	130667.9	3.7	**26.0217**	1.699	6.5	ug/L	257	Standard
	Pb	208	532429.0	3.5	**27.4071**	1.756	6.4	ug/L	956	Standard
	U	238	197217.2	3.4	**26.7798**	1.720	6.4	ug/L	17	Standard
>	**Bi**	209	573273.6	3.1				ug/L	557080	Standard

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Na	23	3.3	86.6	**21.2655**	18.412	86.6	mg/L	0	Standard
Mg	24	50.0	43.6	**0.0096**	0.028	296.2	mg/L	32	Standard
K	39	30.0	100.0	**-0.0395**	0.101	254.9	mg/L	30	Standard
Ca	43	25.0	40.0	**-1.5307**	1.509	98.6	mg/L	48	Standard
Fe	54	141.7	2.7	**-0.0082**	0.003	33.7	mg/L	159	Standard
Fe	57	226.7	9.9	**0.1435**	0.065	45.0	mg/L	195	Standard
> **Sc-1**	45	39361.1	1.9				mg/L	39543	Standard
Cl	35	35061.2	2.7				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1886.8	4.9				ug/L	1647	Standard
P	31	18956.9	6.3				ug/L	15231	Standard
S	34	2375.2	1.6				ug/L	1845	Standard
Sr	88	65.0	30.8				ug/L	70	Standard
C	12	170.0	38.6				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	12.7	49.8				mg/L	12	Standard
Ho-1	165	15.0	57.7				mg/L	12	Standard
Er	166	13.3	86.6				mg/L	20	Standard
I	127	1553.4	15.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.659	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.763	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.006
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.907
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSS M7 WG573333-04
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Method 6020 - Summary Report

Sample ID: L1606105301 WG573333-02
Sample Date/Time: Tuesday, June 28, 2016 14:44:26
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92504.9	1.8				ug/L	81760	Standard
	Be	9	211.7	3.6	**0.1787**	0.009	5.2	ug/L	17	Standard
	Al	27	476632.7	0.6	**2.7192**	0.058	2.1	ug/L	1410	Standard
	Sc	45	39899.1	1.7				ug/L	39543	Standard
	Ti	47	7508.9	2.4	**29.9625**	0.867	2.9	ug/L	39	Standard
	V	51	54226.8	0.3	**7.5775**	0.105	1.4	ug/L	1415	Standard
	Cr	52	35510.9	0.6	**4.0327**	0.059	1.5	ug/L	6946	Standard
	Cr	53	3988.9	7.5	**4.1910**	0.323	7.7	ug/L	328	Standard
	Mn	55	226862.1	2.5	**34.7724**	1.274	3.7	ug/L	823	Standard
	Co	59	8803.9	0.2	**1.2188**	0.017	1.4	ug/L	252	Standard
	Ni	60	5989.2	1.6	**3.0677**	0.039	1.3	ug/L	192	Standard
	Cu	65	4442.7	0.7	**2.2418**	0.014	0.6	ug/L	141	Standard
	Zn	66	19698.8	1.0	**17.1048**	0.367	2.1	ug/L	491	Standard
>	**Ge**	72	516312.9	1.2				ug/L	515087	Standard
	As	75	2960.6	0.8	**2.6677**	0.048	1.8	ug/L	20	Standard
	Se	82	53.9	7.9	**0.3477**	0.042	12.1	ug/L	15	Standard
	Se-1	77	82.0	6.8	**0.3676**	0.085	23.1	ug/L	48	Standard
>	**Ga**	71	5075.9	3.2				mg/L	90	Standard
	Rb	85	19981.5	3.8				ug/L	23	Standard
	Y	89	472017.4	2.4				ug/L	448510	Standard
>	**Rh**	103	21.7	26.6				ug/L	15	Standard
	Mo	98	6655.2	1.4	**2.4116**	0.043	1.8	ug/L	11	Standard
	Ag	107	178.7	11.3	**0.0101**	0.003	29.0	ug/L	134	Standard
	Cd	111	244.9	9.1	**0.1102**	0.010	9.1	mg/L	7	Standard
	Cd	114	621.2	5.8	**0.1131**	0.007	6.2	ug/L	16	Standard
>	**In**	115	619055.2	0.3				ug/L	611117	Standard
	Sn	118	640.0	5.5	**0.0049**	0.006	124.7	ug/L	518	Standard
	Sb	123	463.5	5.3	**0.0841**	0.005	6.4	ug/L	127	Standard
	Ba	135	41539.5	1.0	**19.8378**	0.203	1.0	ug/L	45	Standard
	Ce	140	324520.8	1.6				ug/L	298	Standard
>	**Tb**	159	988287.6	1.4				ug/L	977942	Standard
	Ho	165	2263.5	6.3				ug/L	12	Standard
	Tl	203	550.3	1.1	**0.0581**	0.001	1.2	ug/L	31	Standard
	Tl	205	506.7	1.1	**0.0644**	0.001	1.1	ug/L	20	Standard
	Pb	206	143402.5	0.9	**25.4978**	0.319	1.3	ug/L	286	Standard
	Pb	207	120708.6	0.6	**23.7943**	0.166	0.7	ug/L	257	Standard
	Pb	208	491539.2	1.4	**25.0461**	0.389	1.6	ug/L	956	Standard
	U	238	1919.1	2.3	**0.2551**	0.006	2.5	ug/L	17	Standard
>	**Bi**	209	578289.7	0.5				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.6918**	18.510	173.1	mg/L	0	Standard
Mg	24	41.7	30.2	**-0.0023**	0.016	678.2	mg/L	32	Standard
K	39	48.3	15.8	**0.0204**	0.026	126.1	mg/L	30	Standard
Ca	43	38.3	27.2	**0.4078**	1.458	357.4	mg/L	48	Standard
Fe	54	3682.2	3.4	**3.1665**	0.134	4.2	mg/L	159	Standard
Fe	57	1100.0	9.6	**3.0601**	0.408	13.3	mg/L	195	Standard
Sc-1	45	39899.1	1.7				mg/L	39543	Standard
Cl	35	32895.7	2.7				ug/L	27642	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	2153.5	9.2				ug/L	1647	Standard
P	31	17883.9	3.0				ug/L	15231	Standard
S	34	2195.2	9.1				ug/L	1845	Standard
Sr	88	71.7	4.0				ug/L	70	Standard
C	12	220.0	19.8				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	40.0	25.0				mg/L	0	Standard
Dy	164	4107.1	8.5				mg/L	12	Standard
Ho-1	165	2263.5	6.3				mg/L	12	Standard
Er	166	2160.2	2.1				mg/L	20	Standard
I	127	7528.5	2.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		113.142	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.238	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.299
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.807
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606105302S WG573333-07
Sample Date/Time: Tuesday, June 28, 2016 14:47:37
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	91483.8	2.5				ug/L	81760	Standard
	Be	9	28575.3	3.7	**25.7021**	0.502	2.0	ug/L	17	Standard
	Al	27	472647.5	0.9	**2.7267**	0.044	1.6	ug/L	1410	Standard
	Sc	45	40355.4	2.6				ug/L	39543	Standard
	Ti	47	8788.9	2.8	**34.8074**	0.551	1.6	ug/L	39	Standard
	V	51	216754.8	1.8	**30.6603**	0.748	2.4	ug/L	1415	Standard
	Cr	52	202224.9	0.6	**27.6955**	0.221	0.8	ug/L	6946	Standard
	Cr	53	25461.4	2.5	**28.3619**	0.467	1.6	ug/L	328	Standard
	Mn	55	374661.4	3.0	**57.0462**	1.611	2.8	ug/L	823	Standard
	Co	59	185021.8	2.1	**26.0317**	0.592	2.3	ug/L	252	Standard
	Ni	60	51684.0	1.6	**27.0535**	0.107	0.4	ug/L	192	Standard
	Cu	65	52133.2	1.4	**27.0623**	0.171	0.6	ug/L	141	Standard
	Zn	66	46187.6	0.8	**40.8778**	0.267	0.7	ug/L	491	Standard
>	**Ge**	72	520472.6	1.2				ug/L	515087	Standard
	As	75	27327.3	2.3	**24.0946**	0.465	1.9	ug/L	20	Standard
	Se	82	2628.8	2.4	**22.4788**	0.502	2.2	ug/L	15	Standard
	Se-1	77	1784.1	1.0	**22.7201**	0.347	1.5	ug/L	48	Standard
>	**Ga**	71	5215.9	5.7				mg/L	90	Standard
	Rb	85	16937.8	2.3				ug/L	23	Standard
	Y	89	458647.4	1.3				ug/L	448510	Standard
>	**Rh**	103	30.0	44.1				ug/L	15	Standard
	Mo	98	18905.8	1.4	**6.8731**	0.106	1.5	ug/L	11	Standard
	Ag	107	155307.6	0.6	**22.7819**	0.123	0.5	ug/L	134	Standard
	Cd	111	52492.7	0.7	**24.1959**	0.317	1.3	mg/L	7	Standard
	Cd	114	128079.2	0.4	**24.2856**	0.076	0.3	ug/L	16	Standard
>	**In**	115	620204.7	0.6				ug/L	611117	Standard
	Sn	118	685.0	20.9	**0.0121**	0.023	191.0	ug/L	518	Standard
	Sb	123	65087.0	0.8	**13.5800**	0.099	0.7	ug/L	127	Standard
	Ba	135	93846.7	0.6	**44.7672**	0.375	0.8	ug/L	45	Standard
	Ce	140	331961.2	1.7				ug/L	298	Standard
>	**Tb**	159	981697.8	0.7				ug/L	977942	Standard
	Ho	165	1903.5	2.0				ug/L	12	Standard
	Tl	203	213525.6	1.3	**24.5875**	0.365	1.5	ug/L	31	Standard
	Tl	205	191177.1	1.7	**25.3529**	0.481	1.9	ug/L	20	Standard
	Pb	206	446032.3	1.2	**80.0233**	1.190	1.5	ug/L	286	Standard
	Pb	207	376762.1	1.5	**74.9381**	1.277	1.7	ug/L	257	Standard
	Pb	208	1506170.9	0.7	**77.4336**	0.690	0.9	ug/L	956	Standard
	U	238	183525.9	0.8	**24.8532**	0.261	1.1	ug/L	17	Standard
>	**Bi**	209	574082.0	0.2				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	51.7	22.3	**0.0106**	0.017	161.8	mg/L	32	Standard
K	39	33.3	8.7	**-0.0312**	0.007	21.8	mg/L	30	Standard
Ca	43	38.3	15.1	**0.3768**	1.024	271.7	mg/L	48	Standard
Fe	54	2984.3	5.7	**2.5132**	0.224	8.9	mg/L	159	Standard
Fe	57	1001.7	4.5	**2.6914**	0.198	7.3	mg/L	195	Standard
> **Sc-1**	45	40355.4	2.6				mg/L	39543	Standard
Cl	35	31360.4	1.4				ug/L	27642	Standard
Kr	83	1.0	173.2				ug/L	2	Standard
Br	81	2753.6	4.6				ug/L	1647	Standard
P	31	16745.9	1.5				ug/L	15231	Standard
S	34	2118.5	5.5				ug/L	1845	Standard
Sr	88	78.3	9.8				ug/L	70	Standard
C	12	286.7	29.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	100.3				mg/L	0	Standard
Dy	164	3434.6	3.8				mg/L	12	Standard
Ho-1	165	1903.5	2.0				mg/L	12	Standard
Er	166	1860.1	3.3				mg/L	20	Standard
I	127	5512.7	1.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.893	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.046	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.487
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.052
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606105303SD WG573333-08
Sample Date/Time: Tuesday, June 28, 2016 14:50:49
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90707.5	2.1				ug/L	81760	Standard
	Be	9	28490.1	1.5	**25.8507**	0.239	0.9	ug/L	17	Standard
	Al	27	517242.7	0.8	**3.0108**	0.045	1.5	ug/L	1410	Standard
	Sc	45	41104.0	1.1				ug/L	39543	Standard
	Ti	47	9706.8	1.9	**39.3684**	1.018	2.6	ug/L	39	Standard
	V	51	220560.4	0.1	**31.9323**	0.545	1.7	ug/L	1415	Standard
	Cr	52	204805.0	1.1	**28.7389**	0.342	1.2	ug/L	6946	Standard
	Cr	53	25147.5	3.9	**28.6674**	1.000	3.5	ug/L	328	Standard
	Mn	55	371807.0	1.2	**57.9433**	1.578	2.7	ug/L	823	Standard
	Co	59	187737.3	0.6	**27.0316**	0.558	2.1	ug/L	252	Standard
	Ni	60	52302.5	0.6	**28.0202**	0.336	1.2	ug/L	192	Standard
	Cu	65	51530.8	0.8	**27.3738**	0.234	0.9	ug/L	141	Standard
	Zn	66	58955.2	1.6	**53.6399**	0.321	0.6	ug/L	491	Standard
>	**Ge**	72	508670.0	1.6				ug/L	515087	Standard
	As	75	26613.2	0.3	**24.0128**	0.310	1.3	ug/L	20	Standard
	Se	82	2643.5	1.0	**23.1344**	0.377	1.6	ug/L	15	Standard
	Se-1	77	1782.1	1.4	**23.2396**	0.549	2.4	ug/L	48	Standard
>	**Ga**	71	5607.7	2.4				mg/L	90	Standard
	Rb	85	19120.4	0.8				ug/L	23	Standard
	Y	89	464944.5	0.8				ug/L	448510	Standard
>	**Rh**	103	20.0	66.1				ug/L	15	Standard
	Mo	98	6589.1	2.9	**2.3569**	0.065	2.7	ug/L	11	Standard
	Ag	107	161248.5	0.9	**23.3982**	0.239	1.0	ug/L	134	Standard
	Cd	111	52808.4	0.9	**24.0772**	0.233	1.0	mg/L	7	Standard
	Cd	114	128062.2	0.6	**24.0198**	0.192	0.8	ug/L	16	Standard
>	**In**	115	626980.9	0.2				ug/L	611117	Standard
	Sn	118	691.7	6.1	**0.0121**	0.007	57.7	ug/L	518	Standard
	Sb	123	64415.1	1.9	**13.2945**	0.276	2.1	ug/L	127	Standard
	Ba	135	100181.1	0.9	**47.2728**	0.453	1.0	ug/L	45	Standard
	Ce	140	306983.9	0.9				ug/L	298	Standard
>	**Tb**	159	992773.6	1.4				ug/L	977942	Standard
	Ho	165	1925.1	2.4				ug/L	12	Standard
	Tl	203	213931.4	0.2	**24.2345**	0.027	0.1	ug/L	31	Standard
	Tl	205	188875.1	1.2	**24.6411**	0.299	1.2	ug/L	20	Standard
	Pb	206	399455.5	0.3	**70.4964**	0.248	0.4	ug/L	286	Standard
	Pb	207	335397.3	0.3	**65.6206**	0.221	0.3	ug/L	257	Standard
	Pb	208	1377394.4	0.8	**69.6587**	0.536	0.8	ug/L	956	Standard
	U	238	183479.9	0.5	**24.4438**	0.133	0.5	ug/L	17	Standard
>	**Bi**	209	583538.4	0.1				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	45.0	11.1	**0.0005**	0.006	1275.5	mg/L	32	Standard
K	39	46.7	12.4	**0.0102**	0.018	179.3	mg/L	30	Standard
Ca	43	46.7	40.6	**1.4697**	2.764	188.0	mg/L	48	Standard
Fe	54	3552.4	2.1	**2.9565**	0.098	3.3	mg/L	159	Standard
Fe	57	1123.4	10.8	**3.0231**	0.384	12.7	mg/L	195	Standard
> **Sc-1**	45	41104.0	1.1				mg/L	39543	Standard
Cl	35	31493.4	1.6				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	2126.8	11.6				ug/L	1647	Standard
P	31	16392.2	2.4				ug/L	15231	Standard
S	34	1988.5	3.7				ug/L	1845	Standard
Sr	88	56.7	20.4				ug/L	70	Standard
C	12	256.7	29.2				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	73.3	34.3				mg/L	0	Standard
Dy	164	3598.5	4.6				mg/L	12	Standard
Ho-1	165	1925.1	2.4				mg/L	12	Standard
Er	166	1710.1	5.6				mg/L	20	Standard
I	127	5772.8	6.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.943	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.754	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.596
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.749
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606104801
Sample Date/Time: Tuesday, June 28, 2016 14:54:00
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	87619.5	3.9				ug/L	81760	Standard
	Be	9	323.3	11.2	**0.2951**	0.044	15.0	ug/L	17	Standard
	Al	27	1546436.6	2.8	**9.3502**	0.142	1.5	ug/L	1410	Standard
	Sc	45	40666.2	2.1				ug/L	39543	Standard
	Ti	47	348.0	4.5	**1.2425**	0.055	4.4	ug/L	39	Standard
	V	51	27678.8	0.4	**3.7995**	0.033	0.9	ug/L	1415	Standard
	Cr	52	26992.7	1.5	**2.8437**	0.051	1.8	ug/L	6946	Standard
	Cr	53	2932.0	5.7	**3.0177**	0.170	5.6	ug/L	328	Standard
	Mn	55	139361.0	0.9	**21.4761**	0.101	0.5	ug/L	823	Standard
	Co	59	8883.9	1.8	**1.2405**	0.015	1.2	ug/L	252	Standard
	Ni	60	10083.0	1.9	**5.2809**	0.102	1.9	ug/L	192	Standard
	Cu	65	17655.3	1.5	**9.2565**	0.148	1.6	ug/L	141	Standard
	Zn	66	24172.6	2.4	**21.3574**	0.493	2.3	ug/L	491	Standard
>	Ge	72	512038.2	0.7				ug/L	515087	Standard
	As	75	255.5	6.8	**0.2688**	0.014	5.3	ug/L	20	Standard
	Se	82	53.2	11.2	**0.3458**	0.053	15.2	ug/L	15	Standard
	Se-1	77	80.3	12.8	**0.3545**	0.144	40.6	ug/L	48	Standard
>	Ga	71	3018.6	3.1				mg/L	90	Standard
	Rb	85	16969.5	1.9				ug/L	23	Standard
	Y	89	529226.2	0.9				ug/L	448510	Standard
>	Rh	103	10.0					ug/L	15	Standard
	Mo	98	313.0	4.7	**0.0960**	0.005	5.5	ug/L	11	Standard
	Ag	107	442.0	1.6	**0.0492**	0.001	1.7	ug/L	134	Standard
	Cd	111	534.5	3.9	**0.2456**	0.011	4.4	mg/L	7	Standard
	Cd	114	1438.1	5.6	**0.2703**	0.019	7.1	ug/L	16	Standard
>	In	115	614980.8	1.4				ug/L	611117	Standard
	Sn	118	1005.0	9.0	**0.0670**	0.016	23.2	ug/L	518	Standard
	Sb	123	831.9	19.2	**0.1627**	0.036	21.9	ug/L	127	Standard
	Ba	135	51902.4	2.2	**24.9562**	0.305	1.2	ug/L	45	Standard
	Ce	140	320029.2	2.5				ug/L	298	Standard
>	Tb	159	977861.1	0.7				ug/L	977942	Standard
	Ho	165	6373.0	4.5				ug/L	12	Standard
	Tl	203	276.7	7.5	**0.0277**	0.002	8.0	ug/L	31	Standard
	Tl	205	265.0	17.0	**0.0335**	0.006	17.4	ug/L	20	Standard
	Pb	206	33506.0	0.9	**6.0646**	0.072	1.2	ug/L	286	Standard
	Pb	207	27548.0	1.0	**5.5276**	0.068	1.2	ug/L	257	Standard
	Pb	208	115638.2	1.3	**6.0000**	0.078	1.3	ug/L	956	Standard
	U	238	6967.9	1.8	**0.9584**	0.022	2.3	ug/L	17	Standard
>	Bi	209	563593.3	0.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	48.3	36.3	**0.0057**	0.024	420.3	mg/L	32	Standard
K	39	71.7	21.3	**0.0944**	0.052	54.8	mg/L	30	Standard
Ca	43	58.3	17.8	**3.2603**	1.450	44.5	mg/L	48	Standard
Fe	54	2389.6	6.6	**1.9680**	0.178	9.0	mg/L	159	Standard
Fe	57	746.7	5.6	**1.8289**	0.182	10.0	mg/L	195	Standard
Sc-1	45	40666.2	2.1				mg/L	39543	Standard
Cl	35	32405.3	1.2				ug/L	27642	Standard
Kr	83	4.0	43.3				ug/L	2	Standard
Br	81	2003.5	7.8				ug/L	1647	Standard
P	31	17084.6	3.9				ug/L	15231	Standard
S	34	2108.5	4.8				ug/L	1845	Standard
Sr	88	73.3	30.7				ug/L	70	Standard
C	12	240.0	38.2				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	20.0				mg/L	0	Standard
Dy	164	9760.8	1.5				mg/L	12	Standard
Ho-1	165	6373.0	4.5				mg/L	12	Standard
Er	166	5897.8	8.3				mg/L	20	Standard
I	127	2141.8	10.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		107.167	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.408	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.632
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.169
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606104801PS WG573475-03
Sample Date/Time: Tuesday, June 28, 2016 14:57:11
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90811.3	0.7				ug/L	81760	Standard
	Be	9	56498.5	1.8	**51.2132**	1.080	2.1	ug/L	17	Standard
	Al	27	1545775.3	0.6	**9.0143**	0.017	0.2	ug/L	1410	Standard
	Sc	45	41961.4	1.6				ug/L	39543	Standard
	Ti	47	342.0	11.2	**1.1864**	0.157	13.2	ug/L	39	Standard
	V	51	392129.2	0.5	**55.2170**	0.488	0.9	ug/L	1415	Standard
	Cr	52	384433.3	0.4	**53.1980**	0.445	0.8	ug/L	6946	Standard
	Cr	53	48853.7	2.8	**54.3367**	1.767	3.3	ug/L	328	Standard
	Mn	55	478138.1	0.8	**72.3045**	0.492	0.7	ug/L	823	Standard
	Co	59	389747.9	0.3	**54.4630**	0.290	0.5	ug/L	252	Standard
	Ni	60	106262.0	0.3	**55.3242**	0.400	0.7	ug/L	192	Standard
	Cu	65	114943.7	0.4	**59.3369**	0.368	0.6	ug/L	141	Standard
	Zn	66	80976.1	0.1	**71.7501**	0.396	0.6	ug/L	491	Standard
>	**Ge**	72	524333.4	0.5				ug/L	515087	Standard
	As	75	59243.0	1.9	**51.8077**	1.242	2.4	ug/L	20	Standard
	Se	82	6211.1	2.1	**52.8798**	1.213	2.3	ug/L	15	Standard
	Se-1	77	4085.6	1.2	**52.5558**	0.559	1.1	ug/L	48	Standard
>	**Ga**	71	3287.0	1.8				mg/L	90	Standard
	Rb	85	16744.3	3.7				ug/L	23	Standard
	Y	89	522998.5	1.8				ug/L	448510	Standard
>	**Rh**	103	28.3	36.7				ug/L	15	Standard
	Mo	98	332.0	9.1	**0.1017**	0.011	11.1	ug/L	11	Standard
	Ag	107	350941.4	1.0	**51.3750**	0.335	0.7	ug/L	134	Standard
	Cd	111	110107.7	1.0	**50.6313**	0.348	0.7	mg/L	7	Standard
	Cd	114	268982.1	1.5	**50.8849**	0.677	1.3	ug/L	16	Standard
>	**In**	115	621693.0	0.4				ug/L	611117	Standard
	Sn	118	1258.4	5.6	**0.1073**	0.012	10.9	ug/L	518	Standard
	Sb	123	241746.4	1.3	**50.3512**	0.498	1.0	ug/L	127	Standard
	Ba	135	155747.4	0.9	**74.1325**	0.655	0.9	ug/L	45	Standard
	Ce	140	312396.1	0.8				ug/L	298	Standard
>	**Tb**	159	997317.5	1.6				ug/L	977942	Standard
	Ho	165	6548.1	1.9				ug/L	12	Standard
	Tl	203	447292.7	0.3	**50.4657**	0.615	1.2	ug/L	31	Standard
	Tl	205	398193.6	1.5	**51.7351**	0.805	1.6	ug/L	20	Standard
	Pb	206	325033.3	0.1	**57.1116**	0.488	0.9	ug/L	286	Standard
	Pb	207	282464.7	0.8	**55.0228**	0.100	0.2	ug/L	257	Standard
	Pb	208	1144735.7	1.0	**57.6431**	0.938	1.6	ug/L	956	Standard
	U	238	386201.4	1.1	**51.2415**	0.797	1.6	ug/L	17	Standard
>	**Bi**	209	586004.9	0.9				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	48.3	41.8	**0.0038**	0.026	698.9	mg/L	32	Standard
K	39	65.0	20.4	**0.0660**	0.045	68.1	mg/L	30	Standard
Ca	43	46.7	27.0	**1.3158**	1.694	128.8	mg/L	48	Standard
Fe	54	2337.7	11.4	**1.8584**	0.246	13.3	mg/L	159	Standard
Fe	57	760.0	13.2	**1.7916**	0.300	16.7	mg/L	195	Standard
> **Sc-1**	45	41961.4	1.6				mg/L	39543	Standard
Cl	35	32737.3	1.7				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	2180.2	6.6				ug/L	1647	Standard
P	31	17061.3	3.2				ug/L	15231	Standard
S	34	2245.2	3.3				ug/L	1845	Standard
Sr	88	81.7	12.7				ug/L	70	Standard
C	12	226.7	6.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	32.7				mg/L	0	Standard
Dy	164	10105.0	3.1				mg/L	12	Standard
Ho-1	165	6548.1	1.9				mg/L	12	Standard
Er	166	5884.5	3.8				mg/L	20	Standard
I	127	2158.5	15.1				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		111.071	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.795	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.731
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.192
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606104801SDL WG573475-04
Sample Date/Time: Tuesday, June 28, 2016 15:00:23
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89188.5	2.4				ug/L	81760	Standard
	Be	9	71.7	4.0	**0.0564**	0.001	2.3	ug/L	17	Standard
	Al	27	302683.6	0.7	**1.7866**	0.056	3.1	ug/L	1410	Standard
	Sc	45	41125.8	3.4				ug/L	39543	Standard
	Ti	47	82.7	6.2	**0.1644**	0.030	18.2	ug/L	39	Standard
	V	51	6527.8	1.5	**0.7233**	0.030	4.1	ug/L	1415	Standard
	Cr	52	10512.6	0.6	**0.4384**	0.054	12.4	ug/L	6946	Standard
	Cr	53	805.0	22.0	**0.5666**	0.199	35.2	ug/L	328	Standard
	Mn	55	27749.4	1.2	**4.0892**	0.112	2.7	ug/L	823	Standard
	Co	59	1936.1	6.5	**0.2412**	0.012	4.8	ug/L	252	Standard
	Ni	60	2147.2	1.2	**1.0241**	0.047	4.6	ug/L	192	Standard
	Cu	65	3398.4	1.3	**1.6803**	0.070	4.1	ug/L	141	Standard
	Zn	66	7011.6	1.2	**5.5054**	0.150	2.7	ug/L	491	Standard
>	**Ge**	72	520536.2	3.0				ug/L	515087	Standard
	As	75	60.9	66.9	**0.0932**	0.035	37.4	ug/L	20	Standard
	Se	82	24.2	49.2	**0.0869**	0.099	113.8	ug/L	15	Standard
	Se-1	77	55.3	11.8	**0.0096**	0.103	1081.5	ug/L	48	Standard
>	**Ga**	71	663.3	7.6				mg/L	90	Standard
	Rb	85	3270.4	5.2				ug/L	23	Standard
	Y	89	464717.5	1.9				ug/L	448510	Standard
>	**Rh**	103	16.7	121.2				ug/L	15	Standard
	Mo	98	80.8	3.1	**0.0096**	0.001	7.0	ug/L	11	Standard
	Ag	107	180.0	20.5	**0.0094**	0.005	54.7	ug/L	134	Standard
	Cd	111	113.9	5.5	**0.0481**	0.003	5.7	mg/L	7	Standard
	Cd	114	303.5	12.8	**0.0510**	0.007	13.8	ug/L	16	Standard
>	**In**	115	638226.3	1.3				ug/L	611117	Standard
	Sn	118	801.7	13.2	**0.0279**	0.017	59.8	ug/L	518	Standard
	Sb	123	2112.7	26.2	**0.4158**	0.111	26.6	ug/L	127	Standard
	Ba	135	10186.4	1.4	**4.7001**	0.102	2.2	ug/L	45	Standard
	Ce	140	62112.1	0.6				ug/L	298	Standard
>	**Tb**	159	1019737.0	1.0				ug/L	977942	Standard
	Ho	165	1263.4	4.0				ug/L	12	Standard
	Tl	203	113.0	16.9	**0.0078**	0.002	24.0	ug/L	31	Standard
	Tl	205	118.3	30.6	**0.0128**	0.004	33.6	ug/L	20	Standard
	Pb	206	6901.2	1.0	**1.1348**	0.029	2.6	ug/L	286	Standard
	Pb	207	5663.1	0.8	**1.0321**	0.019	1.9	ug/L	257	Standard
	Pb	208	22745.7	0.6	**1.0713**	0.025	2.3	ug/L	956	Standard
	U	238	1347.1	2.4	**0.1734**	0.003	1.5	ug/L	17	Standard
>	**Bi**	209	593755.8	1.9				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	45.0	40.1	**0.0009**	0.025	2626.8	mg/L	32	Standard
K	39	30.0	28.9	**-0.0443**	0.026	58.3	mg/L	30	Standard
Ca	43	28.3	20.4	**-1.2169**	0.752	61.8	mg/L	48	Standard
Fe	54	584.0	13.3	**0.3714**	0.068	18.2	mg/L	159	Standard
Fe	57	295.0	14.5	**0.3314**	0.118	35.5	mg/L	195	Standard
> **Sc-1**	45	41125.8	3.4				mg/L	39543	Standard
Cl	35	31826.1	1.1				ug/L	27642	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	1903.5	3.4				ug/L	1647	Standard
P	31	16692.5	3.1				ug/L	15231	Standard
S	34	2128.5	4.6				ug/L	1845	Standard
Sr	88	68.3	36.1				ug/L	70	Standard
C	12	176.7	42.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	1953.3	7.3				mg/L	12	Standard
Ho-1	165	1263.4	4.0				mg/L	12	Standard
Er	166	1116.7	6.8				mg/L	20	Standard
I	127	1450.1	11.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.086	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.058	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.436
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.584
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Tuesday, June 28, 2016 15:03:36
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	89282.3	1.4				ug/L	81760	Standard
	Be	9	15.0	33.3	**0.0041**	0.005	114.8	ug/L	17	Standard
	Al	27	7897505.8	1.4	**46.9037**	0.018	0.0	ug/L	1410	Standard
	Sc	45	39757.1	3.6				ug/L	39543	Standard
	Ti	47	27232.5	2.5	**109.9775**	3.234	2.9	ug/L	39	Standard
	V	51	789.3	35.9	**-0.0922**	0.042	45.6	ug/L	1415	Standard
	Cr	52	7275.7	2.2	**-0.0059**	0.028	478.1	ug/L	6946	Standard
	Cr	53	6823.2	10.4	**7.4758**	0.819	11.0	ug/L	328	Standard
	Mn	55	1397.7	2.4	**0.0683**	0.004	5.9	ug/L	823	Standard
	Co	59	388.0	3.6	**0.0242**	0.002	7.5	ug/L	252	Standard
	Ni	60	839.0	6.3	**0.3431**	0.028	8.3	ug/L	192	Standard
	Cu	65	614.0	0.9	**0.2341**	0.001	0.3	ug/L	141	Standard
	Zn	66	1957.1	1.8	**0.9682**	0.037	3.8	ug/L	491	Standard
>	Ge	72	512179.1	1.0				ug/L	515087	Standard
	As	75	-64.0	70.1	**-0.0170**	0.040	237.0	ug/L	20	Standard
	Se	82	21.9	13.2	**0.0720**	0.027	37.3	ug/L	15	Standard
	Se-1	77	397.7	7.2	**4.5923**	0.428	9.3	ug/L	48	Standard
>	Ga	71	168.3	7.5				mg/L	90	Standard
	Rb	85	1135.0	8.9				ug/L	23	Standard
	Y	89	442720.4	1.1				ug/L	448510	Standard
>	Rh	103	10.0	50.0				ug/L	15	Standard
	Mo	98	272741.3	0.7	**100.8481**	1.185	1.2	ug/L	11	Standard
	Ag	107	262.0	2.0	**0.0228**	0.001	4.1	ug/L	134	Standard
	Cd	111	-198.2	9.3	**-0.0956**	0.008	8.7	mg/L	7	Standard
	Cd	114	465.1	17.4	**0.0845**	0.015	17.7	ug/L	16	Standard
>	In	115	611378.2	0.9				ug/L	611117	Standard
	Sn	118	743.4	13.4	**0.0238**	0.017	73.3	ug/L	518	Standard
	Sb	123	656.7	25.2	**0.1264**	0.036	28.5	ug/L	127	Standard
	Ba	135	610.7	6.5	**0.2705**	0.017	6.2	ug/L	45	Standard
	Ce	140	266.7	9.2				ug/L	298	Standard
>	Tb	159	977869.4	2.5				ug/L	977942	Standard
	Ho	165	16.7	17.3				ug/L	12	Standard
	Tl	203	193.3	8.8	**0.0182**	0.002	10.2	ug/L	31	Standard
	Tl	205	168.3	10.4	**0.0207**	0.002	10.8	ug/L	20	Standard
	Pb	206	552.7	5.7	**0.0387**	0.005	12.2	ug/L	286	Standard
	Pb	207	474.0	2.6	**0.0392**	0.001	3.3	ug/L	257	Standard
	Pb	208	1934.7	0.9	**0.0422**	0.002	5.1	ug/L	956	Standard
	U	238	35.3	29.7	**0.0020**	0.001	71.8	ug/L	17	Standard
>	Bi	209	556811.8	1.3				ug/L	557080	Standard

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Na	23	3.3	173.2	**20.5038**	35.505	173.2	mg/L	0	Standard
Mg	24	10406.9	1.4	**13.7318**	0.472	3.4	mg/L	32	Standard
K	39	1353.4	4.9	**4.4093**	0.243	5.5	mg/L	30	Standard
Ca	43	183.3	3.1	**22.3899**	1.779	7.9	mg/L	48	Standard
Fe	54	14710.0	1.7	**13.1205**	0.693	5.3	mg/L	159	Standard
Fe	57	4182.2	3.4	**13.4196**	0.181	1.3	mg/L	195	Standard
Sc-1	45	39757.1	3.6				mg/L	39543	Standard
Cl	35	33087.4	2.4				ug/L	27642	Standard
Kr	83	1.3	173.2				ug/L	2	Standard
Br	81	1766.8	6.4				ug/L	1647	Standard
P	31	17728.7	3.7				ug/L	15231	Standard
S	34	2340.2	3.3				ug/L	1845	Standard
Sr	88	45.0	0.0				ug/L	70	Standard
C	12	306.7	6.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	93.3	12.4				mg/L	0	Standard
Dy	164	15.1	45.8				mg/L	12	Standard
Ho-1	165	16.7	17.3				mg/L	12	Standard
Er	166	33.3	75.5				mg/L	20	Standard
I	127	1891.8	6.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27	0.938		
Sc	45			
Ti	47	109.978		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.435	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	100.848		
Ag	107			
Cd	111			
Cd	114			
> In	115		100.043	
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209		99.952	
Na	23	164.030		
Mg	24	274.635		
K	39	88.187		
Ca	43	149.266		
Fe	54	104.964		
Fe	57	107.357		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	

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QC Std 4	Ca	43

Sample ID: QC Std 4
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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Tuesday, June 28, 2016 15:06:47
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	87968.0	1.5				ug/L	81760	Standard
	Be	9	111223.4	1.1	**104.1090**	2.678	2.6	ug/L	17	Standard
	Al	27	8303576.6	1.0	**50.0632**	1.083	2.2	ug/L	1410	Standard
	Sc	45	38970.1	2.5				ug/L	39543	Standard
	Ti	47	28030.6	1.5	**112.6949**	1.093	1.0	ug/L	39	Standard
	V	51	696349.8	1.4	**100.1131**	1.784	1.8	ug/L	1415	Standard
	Cr	52	683707.3	0.8	**97.2904**	0.687	0.7	ug/L	6946	Standard
	Cr	53	91713.5	1.8	**104.2725**	1.761	1.7	ug/L	328	Standard
	Mn	55	633248.9	0.6	**97.6578**	0.701	0.7	ug/L	823	Standard
	Co	59	716430.9	0.3	**102.0719**	1.125	1.1	ug/L	252	Standard
	Ni	60	180604.4	0.8	**95.9232**	1.625	1.7	ug/L	192	Standard
	Cu	65	185052.2	0.7	**97.4326**	1.562	1.6	ug/L	141	Standard
	Zn	66	113502.2	0.3	**102.8618**	0.650	0.6	ug/L	491	Standard
>	**Ge**	72	514438.0	0.9				ug/L	515087	Standard
	As	75	114188.1	0.3	**101.7361**	0.865	0.8	ug/L	20	Standard
	Se	82	11752.5	0.4	**102.0988**	1.402	1.4	ug/L	15	Standard
	Se-1	77	8079.2	0.7	**106.6610**	0.727	0.7	ug/L	48	Standard
>	**Ga**	71	190.0	7.0				mg/L	90	Standard
	Rb	85	893.4	6.0				ug/L	23	Standard
	Y	89	434662.6	1.6				ug/L	448510	Standard
>	**Rh**	103	38.3	52.7				ug/L	15	Standard
	Mo	98	282406.5	1.5	**107.3339**	1.537	1.4	ug/L	11	Standard
	Ag	107	594345.7	0.8	**90.9666**	1.393	1.5	ug/L	134	Standard
	Cd	111	207638.0	0.2	**99.8149**	1.587	1.6	mg/L	7	Standard
	Cd	114	499764.2	0.7	**98.8323**	1.071	1.1	ug/L	16	Standard
>	**In**	115	594810.8	1.6				ug/L	611117	Standard
	Sn	118	1138.4	7.8	**0.0959**	0.015	15.6	ug/L	518	Standard
	Sb	123	463528.1	1.1	**100.9493**	2.612	2.6	ug/L	127	Standard
	Ba	135	197524.5	0.1	**98.2892**	1.431	1.5	ug/L	45	Standard
	Ce	140	85.0	21.2				ug/L	298	Standard
>	**Tb**	159	967938.8	1.8				ug/L	977942	Standard
	Ho	165	8.3	69.3				ug/L	12	Standard
	Tl	203	848553.4	0.8	**99.1555**	1.255	1.3	ug/L	31	Standard
	Tl	205	762572.5	0.3	**102.6175**	1.400	1.4	ug/L	20	Standard
	Pb	206	559247.5	0.6	**101.8213**	1.258	1.2	ug/L	286	Standard
	Pb	207	488004.9	0.6	**98.5027**	1.226	1.2	ug/L	257	Standard
	Pb	208	1955600.4	0.4	**102.0354**	1.641	1.6	ug/L	956	Standard
	U	238	737824.6	0.7	**101.3974**	2.083	2.1	ug/L	17	Standard
>	**Bi**	209	565855.3	1.5				ug/L	557080	Standard

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Na	23	3.3	86.6	**21.8863**	18.964	86.6	mg/L	0	Standard
Mg	24	10742.1	1.4	**14.4601**	0.490	3.4	mg/L	32	Standard
K	39	1261.7	7.3	**4.1815**	0.232	5.5	mg/L	30	Standard
Ca	43	183.3	29.9	**22.9918**	8.781	38.2	mg/L	48	Standard
Fe	54	15164.6	1.1	**13.7950**	0.409	3.0	mg/L	159	Standard
Fe	57	4003.9	4.1	**13.0952**	0.606	4.6	mg/L	195	Standard
Sc-1	45	38970.1	2.5				mg/L	39543	Standard
Cl	35	31476.7	2.0				ug/L	27642	Standard
Kr	83	3.3	75.5				ug/L	2	Standard
Br	81	1726.8	7.1				ug/L	1647	Standard
P	31	16804.3	1.0				ug/L	15231	Standard
S	34	2221.8	2.4				ug/L	1845	Standard
Sr	88	46.7	22.3				ug/L	70	Standard
C	12	280.0	21.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	25.2	45.9				mg/L	12	Standard
Ho-1	165	8.3	69.3				mg/L	12	Standard
Er	166	30.0	66.7				mg/L	20	Standard
I	127	1238.4	19.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	104.109		
Al	27	1.001		
Sc	45			
Ti	47	112.695		
V	51	100.113		
Cr	52	97.290		
Cr	53			
Mn	55	97.658		
Co	59	102.072		
Ni	60	95.923		
Cu	65	97.433		
Zn	66	102.862		
Ge	72		99.874	
As	75	101.736		
Se	82	102.099		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	107.334		
Ag	107	90.967		
Cd	111	99.815		
Cd	114			
In	115		97.332	
Sn	118			
Sb	123	100.949		
Ba	135	98.289		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.155		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.035		
U	238	101.397		
Bi	209		101.575	
Na	23	175.090		
Mg	24	289.203		
K	39	83.630		
Ca	43	153.278		
Fe	54	110.360		
Fe	57	104.761		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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QC Std 5	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 15:10:01
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85172.2	3.3				ug/L	81760	Standard
	Be	9	53236.8	4.1	**51.4767**	2.435	4.7	ug/L	17	Standard
	Al	27	7628795.8	0.6	**47.5256**	1.416	3.0	ug/L	1410	Standard
	Sc	45	37696.8	2.0				ug/L	39543	Standard
	Ti	47	24164.9	0.9	**98.0401**	2.312	2.4	ug/L	39	Standard
	V	51	343835.2	0.1	**49.7831**	0.751	1.5	ug/L	1415	Standard
	Cr	52	344282.1	1.0	**48.9253**	1.054	2.2	ug/L	6946	Standard
	Cr	53	43472.3	1.9	**49.7131**	1.693	3.4	ug/L	328	Standard
	Mn	55	313567.9	1.4	**48.7360**	1.405	2.9	ug/L	823	Standard
	Co	59	359786.6	1.1	**51.7171**	1.082	2.1	ug/L	252	Standard
	Ni	60	90351.3	0.3	**48.3759**	0.827	1.7	ug/L	192	Standard
	Cu	65	92251.0	0.7	**48.9699**	0.708	1.4	ug/L	141	Standard
	Zn	66	54515.2	1.1	**49.4372**	1.191	2.4	ug/L	491	Standard
>	**Ge**	72	509796.1	1.5				ug/L	515087	Standard
	As	75	55417.4	0.8	**49.8530**	1.118	2.2	ug/L	20	Standard
	Se	82	5885.8	2.0	**51.5527**	1.791	3.5	ug/L	15	Standard
	Se-1	77	3913.8	2.3	**51.7920**	1.979	3.8	ug/L	48	Standard
>	**Ga**	71	60.0	14.4				mg/L	90	Standard
	Rb	85	760.0	3.9				ug/L	23	Standard
	Y	89	437496.8	1.0				ug/L	448510	Standard
>	**Rh**	103	35.0	28.6				ug/L	15	Standard
	Mo	98	271668.8	0.6	**101.2993**	0.747	0.7	ug/L	11	Standard
	Ag	107	329448.9	0.2	**49.4598**	0.339	0.7	ug/L	134	Standard
	Cd	111	103364.2	1.7	**48.7409**	0.531	1.1	mg/L	7	Standard
	Cd	114	251263.5	1.7	**48.7432**	0.553	1.1	ug/L	16	Standard
>	**In**	115	606236.0	0.6				ug/L	611117	Standard
	Sn	118	288784.4	0.3	**49.1320**	0.341	0.7	ug/L	518	Standard
	Sb	123	235993.4	0.4	**50.4089**	0.456	0.9	ug/L	127	Standard
	Ba	135	99324.5	0.4	**48.4735**	0.237	0.5	ug/L	45	Standard
	Ce	140	126.7	35.6				ug/L	298	Standard
>	**Tb**	159	959991.8	0.1				ug/L	977942	Standard
	Ho	165	8.3	34.6				ug/L	12	Standard
	Tl	203	427212.2	0.6	**50.5774**	0.492	1.0	ug/L	31	Standard
	Tl	205	380951.0	2.1	**51.9422**	1.422	2.7	ug/L	20	Standard
	Pb	206	273119.7	0.4	**50.3511**	0.572	1.1	ug/L	286	Standard
	Pb	207	248886.2	0.4	**50.8720**	0.472	0.9	ug/L	257	Standard
	Pb	208	972505.1	1.3	**51.3811**	0.993	1.9	ug/L	956	Standard
	U	238	367751.0	1.4	**51.2030**	1.055	2.1	ug/L	17	Standard
>	**Bi**	209	558440.3	0.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4133.9	5.5	**5.7164**	0.326	5.7	mg/L	32	Standard
K	39	1253.4	8.2	**4.3011**	0.352	8.2	mg/L	30	Standard
Ca	43	70.0	37.8	**5.7557**	4.052	70.4	mg/L	48	Standard
Fe	54	5742.0	2.6	**5.3173**	0.253	4.8	mg/L	159	Standard
Fe	57	1578.4	3.1	**4.9652**	0.143	2.9	mg/L	195	Standard
Sc-1	45	37696.8	2.0				mg/L	39543	Standard
Cl	35	31580.2	0.9				ug/L	27642	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	1660.1	9.6				ug/L	1647	Standard
P	31	16826.0	2.3				ug/L	15231	Standard
S	34	2313.5	5.0				ug/L	1845	Standard
Sr	88	61.7	26.1				ug/L	70	Standard
C	12	133.3	18.9				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	13.3	114.6				mg/L	12	Standard
Ho-1	165	8.3	34.6				mg/L	12	Standard
Er	166	0.0					mg/L	20	Standard
I	127	1290.1	24.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.953		
Al	27	95.051		
Sc	45			
Ti	47	98.040		
V	51	99.566		
Cr	52	97.851		
Cr	53			
Mn	55	97.472		
Co	59	103.434		
Ni	60	96.752		
Cu	65	97.940		
Zn	66	98.874		
Ge	72		98.973	
As	75	99.706		
Se	82	103.105		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.299		
Ag	107	98.920		
Cd	111	97.482		
Cd	114			
In	115			99.201
Sn	118	98.264		
Sb	123	100.818		
Ba	135	96.947		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.155		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.762		
U	238	102.406		
Bi	209			100.244
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 15:13:12
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88670.5	2.8				ug/L	81760	Standard
	Be	9	51.7	24.4	**0.0381**	0.010	27.4	ug/L	17	Standard
	Al	27	5021.0	57.4	**0.0153**	0.016	105.4	ug/L	1410	Standard
	Sc	45	39924.2	3.2				ug/L	39543	Standard
	Ti	47	36.7	33.9	**-0.0173**	0.048	276.4	ug/L	39	Standard
	V	51	1293.4	14.6	**-0.0198**	0.025	126.5	ug/L	1415	Standard
	Cr	52	6153.2	0.9	**-0.1686**	0.020	12.1	ug/L	6946	Standard
	Cr	53	480.0	7.9	**0.2078**	0.038	18.2	ug/L	328	Standard
	Mn	55	818.0	20.7	**-0.0219**	0.025	112.7	ug/L	823	Standard
	Co	59	362.0	35.7	**0.0203**	0.018	87.2	ug/L	252	Standard
	Ni	60	216.7	22.5	**0.0105**	0.024	233.6	ug/L	192	Standard
	Cu	65	206.0	48.8	**0.0177**	0.051	290.8	ug/L	141	Standard
	Zn	66	512.3	23.8	**-0.3586**	0.106	29.6	ug/L	491	Standard
>	**Ge**	72	512537.5	1.6				ug/L	515087	Standard
	As	75	16.6	529.1	**0.0544**	0.078	142.5	ug/L	20	Standard
	Se	82	20.8	66.0	**0.0610**	0.117	191.3	ug/L	15	Standard
	Se-1	77	56.0	20.1	**0.0270**	0.140	518.0	ug/L	48	Standard
>	**Ga**	71	48.3	15.8				mg/L	90	Standard
	Rb	85	23.3	32.7				ug/L	23	Standard
	Y	89	442158.0	1.4				ug/L	448510	Standard
>	**Rh**	103	8.3	69.3				ug/L	15	Standard
	Mo	98	390.5	34.5	**0.1230**	0.050	40.8	ug/L	11	Standard
	Ag	107	293.7	71.4	**0.0269**	0.031	115.5	ug/L	134	Standard
	Cd	111	93.5	118.9	**0.0403**	0.052	128.0	mg/L	7	Standard
	Cd	114	191.9	127.3	**0.0316**	0.047	147.6	ug/L	16	Standard
>	**In**	115	622178.9	0.7				ug/L	611117	Standard
	Sn	118	798.4	19.1	**0.0306**	0.025	81.3	ug/L	518	Standard
	Sb	123	1327.2	22.5	**0.2633**	0.061	23.3	ug/L	127	Standard
	Ba	135	121.3	95.4	**0.0329**	0.056	169.3	ug/L	45	Standard
	Ce	140	156.7	109.9				ug/L	298	Standard
>	**Tb**	159	979098.8	1.1				ug/L	977942	Standard
	Ho	165	8.3	124.9				ug/L	12	Standard
	Tl	203	319.0	100.9	**0.0316**	0.036	115.5	ug/L	31	Standard
	Tl	205	186.7	86.1	**0.0222**	0.021	94.2	ug/L	20	Standard
	Pb	206	461.3	35.4	**0.0186**	0.029	153.9	ug/L	286	Standard
	Pb	207	392.3	40.1	**0.0194**	0.031	157.4	ug/L	257	Standard
	Pb	208	1505.0	29.2	**0.0164**	0.022	134.2	ug/L	956	Standard
	U	238	157.3	69.9	**0.0181**	0.015	80.5	ug/L	17	Standard
>	**Bi**	209	578116.8	1.4				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	31.7	18.2	**-0.0152**	0.009	57.6	mg/L	32	Standard
K	39	23.3	49.5	**-0.0625**	0.040	64.6	mg/L	30	Standard
Ca	43	25.0	40.0	**-1.6032**	1.411	88.0	mg/L	48	Standard
Fe	54	127.6	20.0	**-0.0223**	0.025	111.2	mg/L	159	Standard
Fe	57	173.3	7.3	**-0.0450**	0.038	85.1	mg/L	195	Standard
> **Sc-1**	45	39924.2	3.2				mg/L	39543	Standard
Cl	35	32496.1	0.6				ug/L	27642	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	1573.4	6.5				ug/L	1647	Standard
P	31	17568.5	2.8				ug/L	15231	Standard
S	34	2373.5	3.0				ug/L	1845	Standard
Sr	88	50.0	26.5				ug/L	70	Standard
C	12	106.7	19.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.5	38.4				mg/L	12	Standard
Ho-1	165	8.3	124.9				mg/L	12	Standard
Er	166	16.7	124.9				mg/L	20	Standard
I	127	1251.7	20.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.505	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	101.810
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.776
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Tuesday, June 28, 2016 15:16:29
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81011.1	2.2				ug/L	81760	Standard
	Be	9	195.0	20.5	**0.1880**	0.037	19.7	ug/L	17	Standard
	Al	27	1493.4	21.7	**-0.0047**	0.002	41.0	ug/L	1410	Standard
	Sc	45	36542.4	1.6				ug/L	39543	Standard
	Ti	47	30.7	9.4	**-0.0369**	0.011	30.3	ug/L	39	Standard
	V	51	3567.1	2.8	**0.3274**	0.017	5.3	ug/L	1415	Standard
	Cr	52	11052.7	0.9	**0.5951**	0.027	4.6	ug/L	6946	Standard
	Cr	53	1095.0	4.8	**0.9563**	0.056	5.9	ug/L	328	Standard
	Mn	55	3466.7	0.6	**0.4079**	0.007	1.6	ug/L	823	Standard
	Co	59	2834.6	2.1	**0.3884**	0.006	1.6	ug/L	252	Standard
	Ni	60	2871.9	0.5	**1.4818**	0.019	1.3	ug/L	192	Standard
	Cu	65	1515.4	2.2	**0.7391**	0.023	3.1	ug/L	141	Standard
	Zn	66	7448.8	1.9	**6.2435**	0.137	2.2	ug/L	491	Standard
>	**Ge**	72	495055.6	0.7				ug/L	515087	Standard
	As	75	363.8	8.2	**0.3769**	0.025	6.6	ug/L	20	Standard
	Se	82	58.7	3.6	**0.4109**	0.015	3.7	ug/L	15	Standard
	Se-1	77	71.3	17.1	**0.2665**	0.171	64.2	ug/L	48	Standard
>	**Ga**	71	38.3	19.9				mg/L	90	Standard
	Rb	85	26.7	28.6				ug/L	23	Standard
	Y	89	415588.9	2.9				ug/L	448510	Standard
>	**Rh**	103	6.7	43.3				ug/L	15	Standard
	Mo	98	101.2	14.2	**0.0199**	0.005	26.4	ug/L	11	Standard
	Ag	107	2581.2	2.0	**0.3840**	0.010	2.6	ug/L	134	Standard
	Cd	111	489.5	5.9	**0.2354**	0.013	5.3	mg/L	7	Standard
	Cd	114	1118.1	7.7	**0.2189**	0.015	6.9	ug/L	16	Standard
>	**In**	115	587241.6	1.2				ug/L	611117	Standard
	Sn	118	508.3	8.2	**-0.0124**	0.008	65.2	ug/L	518	Standard
	Sb	123	2001.1	5.7	**0.4288**	0.031	7.2	ug/L	127	Standard
	Ba	135	1392.4	6.1	**0.6767**	0.039	5.8	ug/L	45	Standard
	Ce	140	30.0	44.1				ug/L	298	Standard
>	**Tb**	159	929212.6	0.4				ug/L	977942	Standard
	Ho	165	13.3	57.3				ug/L	12	Standard
	Tl	203	711.0	4.8	**0.0804**	0.004	5.1	ug/L	31	Standard
	Tl	205	656.7	5.8	**0.0883**	0.005	5.1	ug/L	20	Standard
	Pb	206	1347.1	1.6	**0.1880**	0.004	2.0	ug/L	286	Standard
	Pb	207	1117.4	2.9	**0.1733**	0.005	3.1	ug/L	257	Standard
	Pb	208	4713.3	2.2	**0.1919**	0.007	3.7	ug/L	956	Standard
	U	238	2843.3	0.8	**0.3977**	0.005	1.3	ug/L	17	Standard
>	**Bi**	209	551791.7	0.8				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	26.7	39.0	**-0.0189**	0.015	77.3	mg/L	32	Standard
K	39	20.0	25.0	**-0.0684**	0.018	25.7	mg/L	30	Standard
Ca	43	25.0	40.0	**-1.2235**	1.703	139.2	mg/L	48	Standard
Fe	54	112.3	6.9	**-0.0270**	0.008	31.0	mg/L	159	Standard
Fe	57	200.0	28.8	**0.1050**	0.205	195.5	mg/L	195	Standard
Sc-1	45	36542.4	1.6				mg/L	39543	Standard
Cl	35	31755.9	1.1				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1523.4	8.9				ug/L	1647	Standard
P	31	12263.3	0.6				ug/L	15231	Standard
S	34	2283.5	2.6				ug/L	1845	Standard
Sr	88	63.3	25.4				ug/L	70	Standard
C	12	146.7	38.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	15.9	37.5				mg/L	12	Standard
Ho-1	165	13.3	57.3				mg/L	12	Standard
Er	166	16.7	91.7				mg/L	20	Standard
I	127	1103.4	23.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	94.012		
Al	27			
Sc	45			
Ti	47			
V	51	81.855		
Cr	52	74.385		
Cr	53			
Mn	55	81.586		
Co	59	97.096		
Ni	60	92.611		
Cu	65	92.383		
Zn	66	99.896		
Ge	72		96.111	
As	75	94.213		
Se	82	102.730		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	96.001		
Cd	111	98.068		
Cd	114			
> In	115			96.093
Sn	118			
Sb	123	107.193		
Ba	135	90.223		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.519		
Tl	205			
Pb	206			
Pb	207			
Pb	208	95.932		
U	238	99.422		
> Bi	209			99.051
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078703 WG573333-01
Sample Date/Time: Tuesday, June 28, 2016 15:24:24
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77973.6	3.5				ug/L	81760	Standard
	Be	9	93.3	32.7	**0.0882**	0.029	33.1	ug/L	17	Standard
	Al	27	522182.4	1.6	**3.5410**	0.149	4.2	ug/L	1410	Standard
	Sc	45	36268.4	3.8				ug/L	39543	Standard
	Ti	47	171.7	14.8	**0.5849**	0.118	20.2	ug/L	39	Standard
	V	51	8345.2	3.6	**1.0965**	0.041	3.8	ug/L	1415	Standard
	Cr	52	9135.4	1.3	**0.3675**	0.032	8.6	ug/L	6946	Standard
	Cr	53	715.0	6.0	**0.5424**	0.045	8.2	ug/L	328	Standard
	Mn	55	230272.3	2.4	**38.4029**	0.677	1.8	ug/L	823	Standard
	Co	59	4116.2	4.4	**0.6044**	0.024	3.9	ug/L	252	Standard
	Ni	60	2251.2	4.1	**1.1925**	0.054	4.6	ug/L	192	Standard
	Cu	65	1784.1	4.6	**0.9285**	0.051	5.5	ug/L	141	Standard
	Zn	66	3508.4	21.7	**2.6509**	0.786	29.6	ug/L	491	Standard
>	**Ge**	72	474556.6	0.9				ug/L	515087	Standard
	As	75	172.3	13.5	**0.2068**	0.024	11.5	ug/L	20	Standard
	Se	82	19.4	8.6	**0.0638**	0.017	27.3	ug/L	15	Standard
	Se-1	77	47.7	3.2	**-0.0320**	0.028	88.4	ug/L	48	Standard
>	**Ga**	71	883.4	11.6				mg/L	90	Standard
	Rb	85	7710.3	5.5				ug/L	23	Standard
	Y	89	442484.5	1.8				ug/L	448510	Standard
>	**Rh**	103	20.0	25.0				ug/L	15	Standard
	Mo	98	50.0	20.9	**0.0005**	0.004	864.7	ug/L	11	Standard
	Ag	107	103.7	35.8	**0.0001**	0.006	5294.7	ug/L	134	Standard
	Cd	111	33.9	43.4	**0.0139**	0.007	52.6	mg/L	7	Standard
	Cd	114	75.2	57.1	**0.0104**	0.009	84.2	ug/L	16	Standard
>	**In**	115	577946.8	0.2				ug/L	611117	Standard
	Sn	118	366.7	11.4	**-0.0364**	0.008	20.8	ug/L	518	Standard
	Sb	123	219.5	27.2	**0.0364**	0.013	37.0	ug/L	127	Standard
	Ba	135	15089.5	2.8	**7.7036**	0.230	3.0	ug/L	45	Standard
	Ce	140	101663.3	0.5				ug/L	298	Standard
>	**Tb**	159	912358.4	0.5				ug/L	977942	Standard
	Ho	165	1823.4	12.2				ug/L	12	Standard
	Tl	203	96.3	39.3	**0.0070**	0.005	65.1	ug/L	31	Standard
	Tl	205	60.0	22.0	**0.0062**	0.002	29.8	ug/L	20	Standard
	Pb	206	5271.9	0.9	**0.9471**	0.013	1.4	ug/L	286	Standard
	Pb	207	4329.0	2.2	**0.8620**	0.023	2.7	ug/L	257	Standard
	Pb	208	18126.6	1.5	**0.9354**	0.019	2.1	ug/L	956	Standard
	U	238	313.3	4.9	**0.0423**	0.002	4.7	ug/L	17	Standard
>	**Bi**	209	537668.4	0.5				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	30.0	60.1	**-0.0138**	0.025	183.5	mg/L	32	Standard
K	39	53.3	37.9	**0.0534**	0.067	124.6	mg/L	30	Standard
Ca	43	48.3	6.0	**2.6636**	0.532	20.0	mg/L	48	Standard
Fe	54	632.5	2.4	**0.4873**	0.016	3.2	mg/L	159	Standard
Fe	57	343.3	3.0	**0.6393**	0.010	1.6	mg/L	195	Standard
> **Sc-1**	45	36268.4	3.8				mg/L	39543	Standard
Cl	35	30788.6	1.3				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1480.1	1.8				ug/L	1647	Standard
P	31	7060.0	1.2				ug/L	15231	Standard
S	34	2285.2	6.0				ug/L	1845	Standard
Sr	88	48.3	21.5				ug/L	70	Standard
C	12	146.7	76.6				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	3101.1	5.7				mg/L	12	Standard
Ho-1	165	1823.4	12.2				mg/L	12	Standard
Er	166	1723.4	3.7				mg/L	20	Standard
I	127	1973.5	19.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.369	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.131	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.572
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.515
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078704S WG573333-05
Sample Date/Time: Tuesday, June 28, 2016 15:27:35
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77117.5	2.8				ug/L	81760	Standard
	Be	9	2866.9	4.2	**3.0501**	0.044	1.4	ug/L	17	Standard
	Al	27	530634.0	2.5	**3.6356**	0.032	0.9	ug/L	1410	Standard
	Sc	45	36769.6	1.1				ug/L	39543	Standard
	Ti	47	373.0	7.6	**1.4053**	0.111	7.9	ug/L	39	Standard
	V	51	27357.6	1.0	**3.9153**	0.028	0.7	ug/L	1415	Standard
	Cr	52	27754.1	2.5	**3.1178**	0.072	2.3	ug/L	6946	Standard
	Cr	53	3205.3	2.9	**3.4822**	0.093	2.7	ug/L	328	Standard
	Mn	55	199454.4	1.6	**32.0700**	0.433	1.4	ug/L	823	Standard
	Co	59	21527.3	1.4	**3.1772**	0.038	1.2	ug/L	252	Standard
	Ni	60	6879.6	1.3	**3.7203**	0.017	0.5	ug/L	192	Standard
	Cu	65	6482.7	2.3	**3.4817**	0.050	1.4	ug/L	141	Standard
	Zn	66	6297.6	0.7	**5.1896**	0.074	1.4	ug/L	491	Standard
>	**Ge**	72	491870.4	0.9				ug/L	515087	Standard
	As	75	2731.5	2.2	**2.5846**	0.063	2.4	ug/L	20	Standard
	Se	82	265.3	2.1	**2.2945**	0.068	3.0	ug/L	15	Standard
	Se-1	77	206.7	1.5	**2.1542**	0.060	2.8	ug/L	48	Standard
>	**Ga**	71	993.4	9.7				mg/L	90	Standard
	Rb	85	7418.5	3.4				ug/L	23	Standard
	Y	89	432036.7	0.9				ug/L	448510	Standard
>	**Rh**	103	6.7	86.6				ug/L	15	Standard
	Mo	98	97.6	12.4	**0.0190**	0.004	23.4	ug/L	11	Standard
	Ag	107	16692.5	1.2	**2.6046**	0.053	2.0	ug/L	134	Standard
	Cd	111	5558.2	2.0	**2.7376**	0.075	2.7	mg/L	7	Standard
	Cd	114	13660.0	0.7	**2.7659**	0.042	1.5	ug/L	16	Standard
>	**In**	115	579914.2	0.8				ug/L	611117	Standard
	Sn	118	355.0	9.2	**-0.0387**	0.005	13.8	ug/L	518	Standard
	Sb	123	2408.5	2.5	**0.5252**	0.017	3.2	ug/L	127	Standard
	Ba	135	18788.0	0.3	**9.5654**	0.079	0.8	ug/L	45	Standard
	Ce	140	97333.3	0.8				ug/L	298	Standard
>	**Tb**	159	916801.1	0.1				ug/L	977942	Standard
	Ho	165	2003.5	4.3				ug/L	12	Standard
	Tl	203	21211.2	1.5	**2.5655**	0.023	0.9	ug/L	31	Standard
	Tl	205	18352.8	1.2	**2.5587**	0.022	0.9	ug/L	20	Standard
	Pb	206	18796.3	1.3	**3.4874**	0.034	1.0	ug/L	286	Standard
	Pb	207	16054.8	0.9	**3.3044**	0.015	0.5	ug/L	257	Standard
	Pb	208	66020.8	0.7	**3.5136**	0.008	0.2	ug/L	956	Standard
	U	238	18577.7	1.3	**2.6444**	0.019	0.7	ug/L	17	Standard
>	**Bi**	209	545605.1	0.6				ug/L	557080	Standard

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Na	23	3.3	86.6	**23.0608**	19.970	86.6	mg/L	0	Standard
Mg	24	33.3	17.3	**-0.0095**	0.008	83.3	mg/L	32	Standard
K	39	50.0	30.0	**0.0407**	0.057	139.0	mg/L	30	Standard
Ca	43	23.3	86.6	**-1.5565**	3.262	209.6	mg/L	48	Standard
Fe	54	789.3	5.9	**0.6315**	0.054	8.6	mg/L	159	Standard
Fe	57	388.3	19.5	**0.7873**	0.291	37.0	mg/L	195	Standard
> **Sc-1**	45	36769.6	1.1				mg/L	39543	Standard
Cl	35	31616.3	0.3				ug/L	27642	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	1516.7	10.3				ug/L	1647	Standard
P	31	7133.3	2.5				ug/L	15231	Standard
S	34	2288.5	0.7				ug/L	1845	Standard
Sr	88	63.3	12.1				ug/L	70	Standard
C	12	90.0	50.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	3099.8	4.3				mg/L	12	Standard
Ho-1	165	2003.5	4.3				mg/L	12	Standard
Er	166	1750.1	2.1				mg/L	20	Standard
I	127	2031.8	18.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.322	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.493	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.894
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.940
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078705SD WG573333-06
Sample Date/Time: Tuesday, June 28, 2016 15:30:46
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74501.2	2.9				ug/L	81760	Standard
	Be	9	2816.9	5.3	**3.1033**	0.143	4.6	ug/L	17	Standard
	Al	27	652490.2	1.4	**4.6325**	0.073	1.6	ug/L	1410	Standard
	Sc	45	35373.0	4.0				ug/L	39543	Standard
	Ti	47	288.0	4.5	**1.0503**	0.068	6.5	ug/L	39	Standard
	V	51	27556.1	4.5	**3.9507**	0.115	2.9	ug/L	1415	Standard
	Cr	52	29741.5	2.7	**3.4242**	0.036	1.1	ug/L	6946	Standard
	Cr	53	3408.7	4.0	**3.7308**	0.095	2.5	ug/L	328	Standard
	Mn	55	239390.4	1.7	**38.5872**	0.363	0.9	ug/L	823	Standard
	Co	59	21175.8	2.9	**3.1300**	0.064	2.1	ug/L	252	Standard
	Ni	60	7152.0	2.5	**3.8782**	0.013	0.3	ug/L	192	Standard
	Cu	65	6817.5	3.4	**3.6719**	0.046	1.3	ug/L	141	Standard
	Zn	66	6491.4	2.6	**5.3843**	0.067	1.2	ug/L	491	Standard
>	**Ge**	72	491074.4	2.2				ug/L	515087	Standard
	As	75	2669.0	1.7	**2.5305**	0.018	0.7	ug/L	20	Standard
	Se	82	259.6	0.9	**2.2467**	0.073	3.2	ug/L	15	Standard
	Se-1	77	214.7	9.1	**2.2690**	0.247	10.9	ug/L	48	Standard
>	**Ga**	71	1028.4	8.9				mg/L	90	Standard
	Rb	85	7220.1	2.0				ug/L	23	Standard
	Y	89	434100.4	1.8				ug/L	448510	Standard
>	**Rh**	103	11.7	24.7				ug/L	15	Standard
	Mo	98	220.7	3.6	**0.0685**	0.004	5.3	ug/L	11	Standard
	Ag	107	16241.0	2.2	**2.5784**	0.042	1.6	ug/L	134	Standard
	Cd	111	5563.7	4.0	**2.7880**	0.091	3.3	mg/L	7	Standard
	Cd	114	13468.2	1.0	**2.7750**	0.021	0.8	ug/L	16	Standard
>	**In**	115	569849.5	0.7				ug/L	611117	Standard
	Sn	118	353.3	16.1	**-0.0379**	0.010	26.3	ug/L	518	Standard
	Sb	123	2719.7	5.6	**0.6052**	0.030	5.0	ug/L	127	Standard
	Ba	135	20622.4	3.5	**10.6862**	0.314	2.9	ug/L	45	Standard
	Ce	140	98046.3	2.6				ug/L	298	Standard
>	**Tb**	159	907491.8	2.5				ug/L	977942	Standard
	Ho	165	2030.1	2.1				ug/L	12	Standard
	Tl	203	20792.6	2.1	**2.5412**	0.024	1.0	ug/L	31	Standard
	Tl	205	18564.7	0.9	**2.6157**	0.018	0.7	ug/L	20	Standard
	Pb	206	19134.8	4.2	**3.5891**	0.137	3.8	ug/L	286	Standard
	Pb	207	16318.5	3.9	**3.3949**	0.097	2.9	ug/L	257	Standard
	Pb	208	68373.0	0.9	**3.6800**	0.027	0.7	ug/L	956	Standard
	U	238	18425.5	1.4	**2.6505**	0.039	1.5	ug/L	17	Standard
>	**Bi**	209	539937.0	1.4				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	30.0	44.1	**-0.0120**	0.022	182.1	mg/L	32	Standard
K	39	43.3	29.0	**0.0214**	0.044	203.2	mg/L	30	Standard
Ca	43	31.7	50.8	**-0.0240**	2.524	10500.7	mg/L	48	Standard
Fe	54	837.2	3.3	**0.7115**	0.061	8.6	mg/L	159	Standard
Fe	57	390.0	5.9	**0.8507**	0.142	16.6	mg/L	195	Standard
> **Sc-1**	45	35373.0	4.0				mg/L	39543	Standard
Cl	35	30539.4	1.3				ug/L	27642	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	1456.7	10.3				ug/L	1647	Standard
P	31	7050.0	3.7				ug/L	15231	Standard
S	34	2141.8	2.3				ug/L	1845	Standard
Sr	88	61.7	12.4				ug/L	70	Standard
C	12	110.0	32.8				mg/L	113	Standard
N	14	6.7	86.6				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	3163.0	6.4				mg/L	12	Standard
Ho-1	165	2030.1	2.1				mg/L	12	Standard
Er	166	1753.4	8.6				mg/L	20	Standard
I	127	1965.1	14.8				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.122	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.338	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.247
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.923
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606078706
Sample Date/Time: Tuesday, June 28, 2016 15:33:58
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76028.8	3.5				ug/L	81760	Standard
	Be	9	38.3	19.9	**0.0318**	0.009	27.2	ug/L	17	Standard
	Al	27	238262.4	1.5	**1.6489**	0.050	3.0	ug/L	1410	Standard
	Sc	45	37198.9	1.1				ug/L	39543	Standard
	Ti	47	135.7	11.8	**0.3914**	0.065	16.6	ug/L	39	Standard
	V	51	5276.5	1.4	**0.5679**	0.012	2.1	ug/L	1415	Standard
	Cr	52	6498.4	1.5	**-0.1047**	0.015	14.1	ug/L	6946	Standard
	Cr	53	391.7	9.7	**0.1138**	0.045	39.3	ug/L	328	Standard
	Mn	55	119285.7	3.0	**18.6233**	0.543	2.9	ug/L	823	Standard
	Co	59	1493.7	2.3	**0.1855**	0.005	2.9	ug/L	252	Standard
	Ni	60	894.4	1.7	**0.3795**	0.008	2.0	ug/L	192	Standard
	Cu	65	697.3	2.0	**0.2836**	0.007	2.5	ug/L	141	Standard
	Zn	66	2625.6	1.0	**1.6163**	0.028	1.8	ug/L	491	Standard
>	**Ge**	72	504872.7	0.1				ug/L	515087	Standard
	As	75	131.9	5.5	**0.1599**	0.007	4.3	ug/L	20	Standard
	Se	82	16.6	26.9	**0.0277**	0.040	143.8	ug/L	15	Standard
	Se-1	77	42.3	11.2	**-0.1455**	0.065	44.4	ug/L	48	Standard
>	**Ga**	71	331.7	11.3				mg/L	90	Standard
	Rb	85	2800.3	5.6				ug/L	23	Standard
	Y	89	425969.9	0.3				ug/L	448510	Standard
>	**Rh**	103	21.7	96.1				ug/L	15	Standard
	Mo	98	33.2	18.6	**-0.0062**	0.003	40.5	ug/L	11	Standard
	Ag	107	87.7	13.4	**-0.0025**	0.002	77.6	ug/L	134	Standard
	Cd	111	11.3	20.5	**0.0026**	0.001	43.1	mg/L	7	Standard
	Cd	114	30.9	19.2	**0.0013**	0.001	87.3	ug/L	16	Standard
>	**In**	115	583702.0	1.1				ug/L	611117	Standard
	Sn	118	278.3	22.7	**-0.0527**	0.011	20.3	ug/L	518	Standard
	Sb	123	103.7	16.2	**0.0102**	0.004	35.3	ug/L	127	Standard
	Ba	135	9187.1	1.4	**4.6338**	0.016	0.3	ug/L	45	Standard
	Ce	140	45456.4	1.3				ug/L	298	Standard
>	**Tb**	159	930779.6	1.7				ug/L	977942	Standard
	Ho	165	850.0	2.4				ug/L	12	Standard
	Tl	203	23.3	23.6	**-0.0020**	0.001	31.7	ug/L	31	Standard
	Tl	205	35.0	37.8	**0.0025**	0.002	71.7	ug/L	20	Standard
	Pb	206	2536.5	1.2	**0.4062**	0.009	2.2	ug/L	286	Standard
	Pb	207	2050.5	1.7	**0.3630**	0.010	2.7	ug/L	257	Standard
	Pb	208	8421.9	1.7	**0.3865**	0.010	2.6	ug/L	956	Standard
	U	238	103.3	13.1	**0.0115**	0.002	17.1	ug/L	17	Standard
>	**Bi**	209	556617.5	0.8				ug/L	557080	Standard

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Na	23	1.7	173.2	**11.3116**	19.584	173.1	mg/L	0	Standard
Mg	24	31.7	9.1	**-0.0123**	0.005	37.6	mg/L	32	Standard
K	39	50.0	10.0	**0.0383**	0.020	51.6	mg/L	30	Standard
Ca	43	18.3	103.3	**-2.3989**	3.033	126.4	mg/L	48	Standard
Fe	54	317.8	14.7	**0.1684**	0.043	25.3	mg/L	159	Standard
Fe	57	280.0	19.3	**0.3807**	0.196	51.6	mg/L	195	Standard
> **Sc-1**	45	37198.9	1.1				mg/L	39543	Standard
Cl	35	30150.0	0.9				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1330.1	6.0				ug/L	1647	Standard
P	31	7115.0	3.6				ug/L	15231	Standard
S	34	2203.5	6.4				ug/L	1845	Standard
Sr	88	73.3	23.9				ug/L	70	Standard
C	12	136.7	33.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	1461.3	2.6				mg/L	12	Standard
Ho-1	165	850.0	2.4				mg/L	12	Standard
Er	166	740.0	2.3				mg/L	20	Standard
I	127	1331.7	15.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.990	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.017	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.514
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.917
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606078708
Sample Date/Time: Tuesday, June 28, 2016 15:37:09
Number of Replicates: 3
Autosampler Position: 227
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75812.6	2.8				ug/L	81760	Standard
	Be	9	48.3	21.5	**0.0428**	0.011	26.6	ug/L	17	Standard
	Al	27	1071474.1	1.0	**7.4874**	0.284	3.8	ug/L	1410	Standard
	Sc	45	37513.1	2.1				ug/L	39543	Standard
	Ti	47	158.0	12.8	**0.5014**	0.093	18.5	ug/L	39	Standard
	V	51	6689.1	0.4	**0.8020**	0.010	1.2	ug/L	1415	Standard
	Cr	52	7515.2	0.4	**0.0743**	0.008	10.8	ug/L	6946	Standard
	Cr	53	588.3	8.1	**0.3608**	0.056	15.4	ug/L	328	Standard
	Mn	55	205213.7	2.8	**33.0324**	1.280	3.9	ug/L	823	Standard
	Co	59	2212.5	3.2	**0.2987**	0.013	4.3	ug/L	252	Standard
	Ni	60	1404.4	3.4	**0.6767**	0.035	5.1	ug/L	192	Standard
	Cu	65	1102.0	3.5	**0.5169**	0.018	3.4	ug/L	141	Standard
	Zn	66	2607.9	0.9	**1.6660**	0.041	2.5	ug/L	491	Standard
>	**Ge**	72	491532.3	1.1				ug/L	515087	Standard
	As	75	127.5	11.1	**0.1592**	0.014	8.7	ug/L	20	Standard
	Se	82	17.3	29.3	**0.0385**	0.047	123.2	ug/L	15	Standard
	Se-1	77	43.3	11.6	**-0.1157**	0.075	64.9	ug/L	48	Standard
>	**Ga**	71	450.0	13.5				mg/L	90	Standard
	Rb	85	3788.8	1.3				ug/L	23	Standard
	Y	89	433725.3	2.1				ug/L	448510	Standard
>	**Rh**	103	18.3	31.5				ug/L	15	Standard
	Mo	98	38.5	4.2	**-0.0045**	0.000	10.9	ug/L	11	Standard
	Ag	107	93.3	12.0	**-0.0020**	0.002	78.2	ug/L	134	Standard
	Cd	111	23.9	23.2	**0.0085**	0.003	31.3	mg/L	7	Standard
	Cd	114	45.7	16.0	**0.0041**	0.001	34.3	ug/L	16	Standard
>	**In**	115	598611.3	0.9				ug/L	611117	Standard
	Sn	118	346.7	46.9	**-0.0421**	0.028	66.0	ug/L	518	Standard
	Sb	123	86.1	26.8	**0.0058**	0.005	89.2	ug/L	127	Standard
	Ba	135	10124.4	4.3	**4.9826**	0.248	5.0	ug/L	45	Standard
	Ce	140	56269.4	3.6				ug/L	298	Standard
>	**Tb**	159	935742.2	1.5				ug/L	977942	Standard
	Ho	165	1033.4	8.1				ug/L	12	Standard
	Tl	203	29.7	5.1	**-0.0013**	0.000	18.3	ug/L	31	Standard
	Tl	205	31.7	18.2	**0.0020**	0.001	35.8	ug/L	20	Standard
	Pb	206	3055.6	2.0	**0.5003**	0.022	4.4	ug/L	286	Standard
	Pb	207	2503.2	3.8	**0.4542**	0.030	6.6	ug/L	257	Standard
	Pb	208	10181.4	1.0	**0.4779**	0.016	3.3	ug/L	956	Standard
	U	238	166.3	6.9	**0.0202**	0.002	9.9	ug/L	17	Standard
>	**Bi**	209	558847.5	2.0				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	26.7	28.6	**-0.0198**	0.010	52.5	mg/L	32	Standard
K	39	46.7	22.3	**0.0253**	0.040	158.3	mg/L	30	Standard
Ca	43	46.7	43.3	**2.1703**	3.421	157.6	mg/L	48	Standard
Fe	54	430.9	12.9	**0.2746**	0.059	21.6	mg/L	159	Standard
Fe	57	336.7	7.3	**0.5728**	0.068	12.0	mg/L	195	Standard
Sc-1	45	37513.1	2.1				mg/L	39543	Standard
Cl	35	31262.2	0.8				ug/L	27642	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	1390.1	8.3				ug/L	1647	Standard
P	31	7195.0	0.6				ug/L	15231	Standard
S	34	2350.2	4.3				ug/L	1845	Standard
Sr	88	86.7	13.3				ug/L	70	Standard
C	12	130.0	15.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	1824.8	9.6				mg/L	12	Standard
Ho-1	165	1033.4	8.1				mg/L	12	Standard
Er	166	946.7	6.2				mg/L	20	Standard
I	127	1363.4	17.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.726	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.427	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	97.954	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.317	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606078713
Sample Date/Time: Tuesday, June 28, 2016 15:40:21
Number of Replicates: 3
Autosampler Position: 228
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75663.5	2.7				ug/L	81760	Standard
	Be	9	81.7	30.2	**0.0793**	0.028	34.9	ug/L	17	Standard
	Al	27	416574.6	1.3	**2.9066**	0.048	1.7	ug/L	1410	Standard
	Sc	45	36378.7	3.4				ug/L	39543	Standard
	Ti	47	126.3	10.5	**0.3773**	0.057	15.2	ug/L	39	Standard
	V	51	8315.3	0.5	**1.0708**	0.007	0.7	ug/L	1415	Standard
	Cr	52	8765.5	1.6	**0.2875**	0.022	7.8	ug/L	6946	Standard
	Cr	53	728.4	7.9	**0.5445**	0.070	12.8	ug/L	328	Standard
	Mn	55	93455.4	1.8	**15.2441**	0.287	1.9	ug/L	823	Standard
	Co	59	3649.1	3.3	**0.5232**	0.019	3.5	ug/L	252	Standard
	Ni	60	1651.1	5.4	**0.8312**	0.052	6.2	ug/L	192	Standard
	Cu	65	1200.0	2.8	**0.5835**	0.019	3.3	ug/L	141	Standard
	Zn	66	2593.9	1.4	**1.6993**	0.037	2.2	ug/L	491	Standard
>	**Ge**	72	482399.4	0.1				ug/L	515087	Standard
	As	75	167.0	21.6	**0.1989**	0.034	17.3	ug/L	20	Standard
	Se	82	15.9	30.3	**0.0282**	0.045	158.8	ug/L	15	Standard
	Se-1	77	52.3	6.7	**0.0228**	0.050	216.8	ug/L	48	Standard
>	**Ga**	71	573.3	13.4				mg/L	90	Standard
	Rb	85	5119.2	1.4				ug/L	23	Standard
	Y	89	439888.1	1.2				ug/L	448510	Standard
>	**Rh**	103	13.3	78.1				ug/L	15	Standard
	Mo	98	43.4	10.8	**-0.0024**	0.002	79.1	ug/L	11	Standard
	Ag	107	106.7	10.0	**0.0002**	0.002	826.8	ug/L	134	Standard
	Cd	111	22.9	46.1	**0.0082**	0.005	63.6	mg/L	7	Standard
	Cd	114	51.2	44.0	**0.0052**	0.004	84.1	ug/L	16	Standard
>	**In**	115	591171.7	0.9				ug/L	611117	Standard
	Sn	118	328.3	8.7	**-0.0445**	0.005	12.1	ug/L	518	Standard
	Sb	123	88.5	32.5	**0.0066**	0.006	98.7	ug/L	127	Standard
	Ba	135	15979.8	0.8	**7.9763**	0.029	0.4	ug/L	45	Standard
	Ce	140	70630.9	0.7				ug/L	298	Standard
>	**Tb**	159	919155.3	2.1				ug/L	977942	Standard
	Ho	165	1308.4	8.9				ug/L	12	Standard
	Tl	203	43.3	33.8	**0.0005**	0.002	355.9	ug/L	31	Standard
	Tl	205	45.0	58.8	**0.0041**	0.004	93.0	ug/L	20	Standard
	Pb	206	4127.6	1.0	**0.7213**	0.011	1.5	ug/L	286	Standard
	Pb	207	3419.4	2.4	**0.6628**	0.016	2.5	ug/L	257	Standard
	Pb	208	14423.4	1.0	**0.7255**	0.013	1.8	ug/L	956	Standard
	U	238	157.3	5.4	**0.0196**	0.001	6.2	ug/L	17	Standard
>	**Bi**	209	542054.4	0.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	38.3	7.5	**-0.0016**	0.005	296.7	mg/L	32	Standard
K	39	31.7	55.5	**-0.0245**	0.065	264.7	mg/L	30	Standard
Ca	43	18.3	56.8	**-2.3425**	1.620	69.1	mg/L	48	Standard
Fe	54	638.8	9.9	**0.4927**	0.076	15.4	mg/L	159	Standard
Fe	57	368.3	10.9	**0.7248**	0.101	14.0	mg/L	195	Standard
> **Sc-1**	45	36378.7	3.4				mg/L	39543	Standard
Cl	35	31640.3	1.2				ug/L	27642	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	1476.7	9.6				ug/L	1647	Standard
P	31	7046.6	3.0				ug/L	15231	Standard
S	34	2278.5	11.1				ug/L	1845	Standard
Sr	88	80.0	28.6				ug/L	70	Standard
C	12	116.7	26.2				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2168.9	5.7				mg/L	12	Standard
Ho-1	165	1308.4	8.9				mg/L	12	Standard
Er	166	1140.0	7.8				mg/L	20	Standard
I	127	1385.1	16.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.543	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.654	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.736
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.303
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078715
Sample Date/Time: Tuesday, June 28, 2016 15:43:32
Number of Replicates: 3
Autosampler Position: 229
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72672.4	3.8				ug/L	81760	Standard
	Be	9	136.7	16.5	**0.1453**	0.027	18.6	ug/L	17	Standard
	Al	27	1143496.8	3.3	**8.3341**	0.197	2.4	ug/L	1410	Standard
	Sc	45	36597.5	3.0				ug/L	39543	Standard
	Ti	47	230.0	1.3	**0.8041**	0.017	2.1	ug/L	39	Standard
	V	51	11413.9	1.0	**1.5144**	0.038	2.5	ug/L	1415	Standard
	Cr	52	15036.8	0.3	**1.2067**	0.029	2.4	ug/L	6946	Standard
	Cr	53	1373.4	5.7	**1.2975**	0.078	6.0	ug/L	328	Standard
	Mn	55	293360.4	0.3	**47.2738**	0.683	1.4	ug/L	823	Standard
	Co	59	6852.2	0.9	**0.9907**	0.018	1.8	ug/L	252	Standard
	Ni	60	4182.9	0.4	**2.2225**	0.021	0.9	ug/L	192	Standard
	Cu	65	2749.2	1.6	**1.4253**	0.010	0.7	ug/L	141	Standard
	Zn	66	5934.8	0.5	**4.8465**	0.046	1.0	ug/L	491	Standard
>	**Ge**	72	491565.9	1.3				ug/L	515087	Standard
	As	75	281.2	9.9	**0.3023**	0.024	7.9	ug/L	20	Standard
	Se	82	16.6	41.5	**0.0313**	0.062	197.6	ug/L	15	Standard
	Se-1	77	52.7	11.4	**0.0136**	0.082	602.5	ug/L	48	Standard
>	**Ga**	71	1726.8	3.8				mg/L	90	Standard
	Rb	85	17453.4	2.4				ug/L	23	Standard
	Y	89	433246.4	2.7				ug/L	448510	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	40.4	18.8	**-0.0027**	0.003	116.5	ug/L	11	Standard
	Ag	107	118.3	7.6	**0.0030**	0.002	54.7	ug/L	134	Standard
	Cd	111	36.9	12.4	**0.0159**	0.002	13.6	mg/L	7	Standard
	Cd	114	100.1	28.9	**0.0161**	0.006	36.4	ug/L	16	Standard
>	**In**	115	559969.6	1.0				ug/L	611117	Standard
	Sn	118	245.0	14.3	**-0.0567**	0.006	11.1	ug/L	518	Standard
	Sb	123	73.5	14.6	**0.0042**	0.003	63.0	ug/L	127	Standard
	Ba	135	26697.5	0.7	**14.0890**	0.209	1.5	ug/L	45	Standard
	Ce	140	126090.9	1.2				ug/L	298	Standard
>	**Tb**	159	888471.0	0.2				ug/L	977942	Standard
	Ho	165	2013.5	3.3				ug/L	12	Standard
	Tl	203	105.3	16.7	**0.0083**	0.002	26.4	ug/L	31	Standard
	Tl	205	98.3	26.1	**0.0118**	0.004	31.7	ug/L	20	Standard
	Pb	206	7239.7	1.0	**1.3394**	0.022	1.6	ug/L	286	Standard
	Pb	207	5907.2	0.7	**1.2110**	0.009	0.7	ug/L	257	Standard
	Pb	208	24779.9	1.0	**1.3155**	0.008	0.6	ug/L	956	Standard
	U	238	285.0	3.3	**0.0387**	0.001	3.3	ug/L	17	Standard
>	**Bi**	209	531928.0	0.6				ug/L	557080	Standard

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Na	23	1.7	173.2	**11.1992**	19.389	173.1	mg/L	0	Standard
Mg	24	35.0	0.0	**-0.0068**	0.002	22.3	mg/L	32	Standard
K	39	70.0	24.7	**0.1145**	0.065	56.7	mg/L	30	Standard
Ca	43	41.7	48.5	**1.5107**	3.417	226.2	mg/L	48	Standard
Fe	54	1498.6	2.3	**1.3298**	0.075	5.6	mg/L	159	Standard
Fe	57	515.0	3.5	**1.2558**	0.109	8.7	mg/L	195	Standard
> **Sc-1**	45	36597.5	3.0				mg/L	39543	Standard
Cl	35	30785.2	1.5				ug/L	27642	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	1506.7	9.5				ug/L	1647	Standard
P	31	6974.9	2.8				ug/L	15231	Standard
S	34	2301.8	4.8				ug/L	1845	Standard
Sr	88	70.0	28.6				ug/L	70	Standard
C	12	113.3	31.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	3365.6	4.6				mg/L	12	Standard
Ho-1	165	2013.5	3.3				mg/L	12	Standard
Er	166	1770.1	9.2				mg/L	20	Standard
I	127	1690.1	9.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.885	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.434	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.631
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.485
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078716
Sample Date/Time: Tuesday, June 28, 2016 15:46:44
Number of Replicates: 3
Autosampler Position: 230
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72657.2	3.0				ug/L	81760	Standard
	Be	9	110.0	13.6	**0.1151**	0.019	16.6	ug/L	17	Standard
	Al	27	964168.3	0.2	**7.0283**	0.202	2.9	ug/L	1410	Standard
	Sc	45	36550.7	1.7				ug/L	39543	Standard
	Ti	47	122.3	2.9	**0.3511**	0.018	5.2	ug/L	39	Standard
	V	51	5582.1	3.3	**0.6361**	0.029	4.5	ug/L	1415	Standard
	Cr	52	12113.5	1.9	**0.7686**	0.019	2.4	ug/L	6946	Standard
	Cr	53	1075.0	5.2	**0.9442**	0.085	9.0	ug/L	328	Standard
	Mn	55	296391.3	0.6	**47.8289**	1.096	2.3	ug/L	823	Standard
	Co	59	5108.9	2.5	**0.7319**	0.032	4.3	ug/L	252	Standard
	Ni	60	3102.7	1.4	**1.6241**	0.056	3.4	ug/L	192	Standard
	Cu	65	3067.6	0.7	**1.6034**	0.043	2.7	ug/L	141	Standard
	Zn	66	5597.7	1.7	**4.5323**	0.178	3.9	ug/L	491	Standard
>	**Ge**	72	490975.8	1.9				ug/L	515087	Standard
	As	75	34.9	42.7	**0.0731**	0.015	20.1	ug/L	20	Standard
	Se	82	17.1	13.6	**0.0368**	0.020	54.2	ug/L	15	Standard
	Se-1	77	53.7	6.0	**0.0281**	0.032	114.8	ug/L	48	Standard
>	**Ga**	71	1235.1	6.5				mg/L	90	Standard
	Rb	85	7633.6	0.9				ug/L	23	Standard
	Y	89	431776.8	2.6				ug/L	448510	Standard
>	**Rh**	103	15.0	66.7				ug/L	15	Standard
	Mo	98	19.3	30.7	**-0.0115**	0.002	20.4	ug/L	11	Standard
	Ag	107	114.7	7.5	**0.0018**	0.001	48.3	ug/L	134	Standard
	Cd	111	65.3	10.2	**0.0294**	0.003	8.8	mg/L	7	Standard
	Cd	114	154.6	13.1	**0.0266**	0.003	12.9	ug/L	16	Standard
>	**In**	115	577281.8	2.6				ug/L	611117	Standard
	Sn	118	261.7	10.5	**-0.0551**	0.004	6.8	ug/L	518	Standard
	Sb	123	70.5	12.0	**0.0029**	0.001	50.3	ug/L	127	Standard
	Ba	135	31515.4	1.1	**16.1422**	0.456	2.8	ug/L	45	Standard
	Ce	140	108483.7	1.5				ug/L	298	Standard
>	**Tb**	159	919053.3	0.1				ug/L	977942	Standard
	Ho	165	2146.8	3.5				ug/L	12	Standard
	Tl	203	55.7	15.3	**0.0020**	0.001	51.1	ug/L	31	Standard
	Tl	205	56.7	10.2	**0.0057**	0.001	13.8	ug/L	20	Standard
	Pb	206	8383.7	0.8	**1.5358**	0.026	1.7	ug/L	286	Standard
	Pb	207	6950.9	2.1	**1.4122**	0.046	3.3	ug/L	257	Standard
	Pb	208	28623.6	0.6	**1.5044**	0.028	1.9	ug/L	956	Standard
	U	238	278.7	6.7	**0.0371**	0.002	6.0	ug/L	17	Standard
>	**Bi**	209	540360.9	1.3				ug/L	557080	Standard

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Na	23	3.3	86.6	**23.0232**	19.940	86.6	mg/L	0	Standard
Mg	24	31.7	36.5	**-0.0117**	0.016	134.2	mg/L	32	Standard
K	39	40.0	57.3	**0.0042**	0.082	1950.6	mg/L	30	Standard
Ca	43	45.0	19.2	**2.0338**	1.285	63.2	mg/L	48	Standard
Fe	54	558.7	3.5	**0.4103**	0.028	6.8	mg/L	159	Standard
Fe	57	366.7	19.3	**0.7123**	0.240	33.7	mg/L	195	Standard
> **Sc-1**	45	36550.7	1.7				mg/L	39543	Standard
Cl	35	30424.5	0.4				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	1540.1	8.3				ug/L	1647	Standard
P	31	6878.2	1.3				ug/L	15231	Standard
S	34	2278.5	4.6				ug/L	1845	Standard
Sr	88	71.7	29.0				ug/L	70	Standard
C	12	150.0	33.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	0	Standard
Dy	164	3587.7	5.2				mg/L	12	Standard
Ho-1	165	2146.8	3.5				mg/L	12	Standard
Er	166	1936.8	10.5				mg/L	20	Standard
I	127	1943.5	8.8				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.866	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.319	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.463
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.999
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078717
Sample Date/Time: Tuesday, June 28, 2016 15:49:55
Number of Replicates: 3
Autosampler Position: 231
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72923.4	1.2				ug/L	81760	Standard
	Be	9	50.0	43.6	**0.0466**	0.024	52.0	ug/L	17	Standard
	Al	27	245816.4	0.3	**1.7738**	0.027	1.5	ug/L	1410	Standard
	Sc	45	37411.1	1.3				ug/L	39543	Standard
	Ti	47	150.7	7.6	**0.4619**	0.045	9.8	ug/L	39	Standard
	V	51	5992.6	2.2	**0.6857**	0.015	2.1	ug/L	1415	Standard
	Cr	52	7687.3	1.9	**0.0860**	0.027	31.9	ug/L	6946	Standard
	Cr	53	518.3	10.1	**0.2697**	0.061	22.7	ug/L	328	Standard
	Mn	55	119301.5	0.3	**18.8992**	0.085	0.4	ug/L	823	Standard
	Co	59	2188.2	2.9	**0.2910**	0.008	2.8	ug/L	252	Standard
	Ni	60	1191.7	0.5	**0.5500**	0.007	1.2	ug/L	192	Standard
	Cu	65	843.0	2.1	**0.3684**	0.010	2.8	ug/L	141	Standard
	Zn	66	2526.9	1.6	**1.5588**	0.051	3.2	ug/L	491	Standard
>	**Ge**	72	497647.3	0.6				ug/L	515087	Standard
	As	75	96.2	13.8	**0.1289**	0.013	9.7	ug/L	20	Standard
	Se	82	10.6	36.2	**-0.0241**	0.035	144.8	ug/L	15	Standard
	Se-1	77	46.0	14.3	**-0.0871**	0.088	100.8	ug/L	48	Standard
>	**Ga**	71	388.3	9.7				mg/L	90	Standard
	Rb	85	3552.1	4.5				ug/L	23	Standard
	Y	89	408184.3	3.4				ug/L	448510	Standard
>	**Rh**	103	16.7	17.3				ug/L	15	Standard
	Mo	98	62.0	6.5	**0.0053**	0.001	22.5	ug/L	11	Standard
	Ag	107	95.7	11.7	**-0.0010**	0.002	195.1	ug/L	134	Standard
	Cd	111	10.9	9.2	**0.0025**	0.001	23.6	mg/L	7	Standard
	Cd	114	23.2	24.4	**-0.0002**	0.001	811.4	ug/L	16	Standard
>	**In**	115	574185.6	1.8				ug/L	611117	Standard
	Sn	118	255.0	18.7	**-0.0561**	0.008	14.6	ug/L	518	Standard
	Sb	123	68.2	5.6	**0.0025**	0.001	35.8	ug/L	127	Standard
	Ba	135	10138.1	0.2	**5.2024**	0.085	1.6	ug/L	45	Standard
	Ce	140	49457.3	0.9				ug/L	298	Standard
>	**Tb**	159	906877.5	2.2				ug/L	977942	Standard
	Ho	165	853.4	7.8				ug/L	12	Standard
	Tl	203	26.0	16.8	**-0.0016**	0.001	32.4	ug/L	31	Standard
	Tl	205	21.7	26.6	**0.0008**	0.001	106.7	ug/L	20	Standard
	Pb	206	2799.3	1.6	**0.4682**	0.011	2.3	ug/L	286	Standard
	Pb	207	2286.8	2.0	**0.4236**	0.011	2.7	ug/L	257	Standard
	Pb	208	9380.8	1.4	**0.4502**	0.009	2.0	ug/L	956	Standard
	U	238	106.7	2.9	**0.0123**	0.000	3.6	ug/L	17	Standard
>	**Bi**	209	542636.2	0.5				ug/L	557080	Standard

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Na	23	3.3	86.6	**22.4620**	19.449	86.6	mg/L	0	Standard
Mg	24	26.7	21.7	**-0.0196**	0.008	42.2	mg/L	32	Standard
K	39	36.7	7.9	**-0.0105**	0.010	94.8	mg/L	30	Standard
Ca	43	36.7	56.8	**0.5265**	3.309	628.5	mg/L	48	Standard
Fe	54	389.3	2.1	**0.2354**	0.013	5.4	mg/L	159	Standard
Fe	57	280.0	3.1	**0.3744**	0.024	6.3	mg/L	195	Standard
> **Sc-1**	45	37411.1	1.3				mg/L	39543	Standard
Cl	35	30529.4	0.4				ug/L	27642	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1530.1	5.4				ug/L	1647	Standard
P	31	7263.4	2.6				ug/L	15231	Standard
S	34	2140.2	5.9				ug/L	1845	Standard
Sr	88	53.3	23.6				ug/L	70	Standard
C	12	100.0	75.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	1448.1	5.9				mg/L	12	Standard
Ho-1	165	853.4	7.8				mg/L	12	Standard
Er	166	736.7	15.9				mg/L	20	Standard
I	127	6059.5	4.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.192	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.614	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.957
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.407
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 15:53:08
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80037.6	2.2				ug/L	81760	Standard
	Be	9	50415.4	0.4	**51.8632**	1.062	2.0	ug/L	17	Standard
	Al	27	7611642.9	1.2	**50.4371**	0.677	1.3	ug/L	1410	Standard
	Sc	45	41097.3	0.2				ug/L	39543	Standard
	Ti	47	25369.9	1.7	**101.8781**	2.068	2.0	ug/L	39	Standard
	V	51	351293.9	2.1	**50.3394**	0.543	1.1	ug/L	1415	Standard
	Cr	52	361193.1	2.4	**50.8341**	0.636	1.3	ug/L	6946	Standard
	Cr	53	45189.0	2.1	**51.1421**	0.625	1.2	ug/L	328	Standard
	Mn	55	322540.4	1.4	**49.6098**	0.122	0.2	ug/L	823	Standard
	Co	59	356756.8	0.9	**50.7536**	0.285	0.6	ug/L	252	Standard
	Ni	60	97064.3	2.1	**51.4369**	0.357	0.7	ug/L	192	Standard
	Cu	65	97360.2	2.2	**51.1525**	0.591	1.2	ug/L	141	Standard
	Zn	66	56918.1	2.1	**51.1056**	0.446	0.9	ug/L	491	Standard
>	Ge	72	515026.5	1.4				ug/L	515087	Standard
	As	75	56903.6	1.1	**50.6598**	0.179	0.4	ug/L	20	Standard
	Se	82	5856.2	1.8	**50.7515**	0.222	0.4	ug/L	15	Standard
	Se-1	77	3927.8	0.7	**51.4293**	0.511	1.0	ug/L	48	Standard
>	Ga	71	66.7	30.3				mg/L	90	Standard
	Rb	85	760.0	4.6				ug/L	23	Standard
	Y	89	447852.9	1.0				ug/L	448510	Standard
>	Rh	103	25.0	34.6				ug/L	15	Standard
	Mo	98	271272.3	0.9	**98.6404**	1.710	1.7	ug/L	11	Standard
	Ag	107	339950.6	2.5	**49.7752**	1.742	3.5	ug/L	134	Standard
	Cd	111	107240.7	1.0	**49.3177**	0.985	2.0	mg/L	7	Standard
	Cd	114	262943.6	0.6	**49.7461**	0.816	1.6	ug/L	16	Standard
>	In	115	621725.8	1.1				ug/L	611117	Standard
	Sn	118	299388.1	2.0	**49.6643**	0.590	1.2	ug/L	518	Standard
	Sb	123	239448.5	1.8	**49.8807**	1.390	2.8	ug/L	127	Standard
	Ba	135	102748.9	0.7	**48.8974**	0.441	0.9	ug/L	45	Standard
	Ce	140	90.0	5.6				ug/L	298	Standard
>	Tb	159	985013.6	1.3				ug/L	977942	Standard
	Ho	165	16.7	45.8				ug/L	12	Standard
	Tl	203	430595.1	1.2	**49.9408**	0.227	0.5	ug/L	31	Standard
	Tl	205	380549.9	0.8	**50.8302**	0.446	0.9	ug/L	20	Standard
	Pb	206	272066.9	1.5	**49.1343**	0.429	0.9	ug/L	286	Standard
	Pb	207	246215.9	1.8	**49.3013**	0.781	1.6	ug/L	257	Standard
	Pb	208	985827.4	0.9	**51.0241**	0.323	0.6	ug/L	956	Standard
	U	238	363383.0	0.6	**49.5660**	0.508	1.0	ug/L	17	Standard
>	Bi	209	570034.9	1.5				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.2894**	17.813	173.1	mg/L	0	Standard
Mg	24	3815.5	2.6	**4.8299**	0.134	2.8	mg/L	32	Standard
K	39	1281.7	1.9	**4.0254**	0.078	1.9	mg/L	30	Standard
Ca	43	63.3	19.9	**3.9099**	1.840	47.1	mg/L	48	Standard
Fe	54	5945.2	1.8	**5.0400**	0.102	2.0	mg/L	159	Standard
Fe	57	1733.4	4.2	**5.0061**	0.238	4.8	mg/L	195	Standard
> **Sc-1**	45	41097.3	0.2				mg/L	39543	Standard
Cl	35	35020.4	1.1				ug/L	27642	Standard
Kr	83	3.0	57.7				ug/L	2	Standard
Br	81	1666.8	6.4				ug/L	1647	Standard
P	31	18748.3	2.5				ug/L	15231	Standard
S	34	2583.6	5.3				ug/L	1845	Standard
Sr	88	53.3	28.6				ug/L	70	Standard
C	12	110.0	24.1				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.4	101.7				mg/L	12	Standard
Ho-1	165	16.7	45.8				mg/L	12	Standard
Er	166	13.3	86.6				mg/L	20	Standard
I	127	1388.4	22.1				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	103.726		
	Al	27	100.874		
	Sc	45			
	Ti	47	101.878		
	V	51	100.679		
	Cr	52	101.668		
	Cr	53			
	Mn	55	99.220		
	Co	59	101.507		
	Ni	60	102.874		
	Cu	65	102.305		
	Zn	66	102.211		
>	Ge	72		99.988	
	As	75	101.320		
	Se	82	101.503		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	98.640		
Ag	107	99.550		
Cd	111	98.635		
Cd	114			
In	115			101.736
Sn	118	99.329		
Sb	123	99.761		
Ba	135	97.795		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.882		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.048		
U	238	99.132		
Bi	209			102.325
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 15:56:20
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79843.2	1.6				ug/L	81760	Standard
	Be	9	23.3	75.3	**0.0144**	0.018	125.7	ug/L	17	Standard
	Al	27	2505.2	18.4	**0.0022**	0.003	136.7	ug/L	1410	Standard
	Sc	45	39966.0	1.7				ug/L	39543	Standard
	Ti	47	35.3	11.4	**-0.0209**	0.017	83.6	ug/L	39	Standard
	V	51	1133.0	9.8	**-0.0412**	0.016	39.7	ug/L	1415	Standard
	Cr	52	6206.9	2.0	**-0.1524**	0.017	11.1	ug/L	6946	Standard
	Cr	53	315.0	2.7	**0.0227**	0.013	56.9	ug/L	328	Standard
	Mn	55	686.0	7.5	**-0.0412**	0.007	17.6	ug/L	823	Standard
	Co	59	254.3	2.2	**0.0054**	0.001	12.6	ug/L	252	Standard
	Ni	60	171.3	1.2	**-0.0127**	0.001	8.3	ug/L	192	Standard
	Cu	65	123.3	12.6	**-0.0250**	0.008	31.0	ug/L	141	Standard
	Zn	66	449.3	3.1	**-0.4117**	0.013	3.2	ug/L	491	Standard
>	**Ge**	72	507665.8	0.8				ug/L	515087	Standard
	As	75	-25.2	101.2	**0.0174**	0.023	132.3	ug/L	20	Standard
	Se	82	17.2	13.7	**0.0322**	0.020	60.6	ug/L	15	Standard
	Se-1	77	51.3	10.7	**-0.0277**	0.072	260.3	ug/L	48	Standard
>	**Ga**	71	48.3	15.8				mg/L	90	Standard
	Rb	85	30.0	44.1				ug/L	23	Standard
	Y	89	444982.9	1.9				ug/L	448510	Standard
>	**Rh**	103	16.7	34.6				ug/L	15	Standard
	Mo	98	252.7	24.3	**0.0725**	0.022	30.7	ug/L	11	Standard
	Ag	107	129.7	3.6	**0.0027**	0.001	26.2	ug/L	134	Standard
	Cd	111	17.2	9.0	**0.0050**	0.001	14.0	mg/L	7	Standard
	Cd	114	47.7	10.5	**0.0041**	0.001	23.1	ug/L	16	Standard
>	**In**	115	623883.8	0.1				ug/L	611117	Standard
	Sn	118	770.0	14.1	**0.0256**	0.018	70.0	ug/L	518	Standard
	Sb	123	507.4	30.1	**0.0925**	0.032	34.2	ug/L	127	Standard
	Ba	135	38.7	5.4	**-0.0068**	0.001	14.6	ug/L	45	Standard
	Ce	140	40.0	21.7				ug/L	298	Standard
>	**Tb**	159	974680.3	0.5				ug/L	977942	Standard
	Ho	165	13.3	78.1				ug/L	12	Standard
	Tl	203	68.0	6.7	**0.0032**	0.001	15.5	ug/L	31	Standard
	Tl	205	66.7	11.5	**0.0068**	0.001	14.7	ug/L	20	Standard
	Pb	206	289.3	1.4	**-0.0104**	0.001	6.9	ug/L	286	Standard
	Pb	207	250.7	7.8	**-0.0070**	0.004	55.4	ug/L	257	Standard
	Pb	208	1099.7	2.8	**-0.0025**	0.002	60.9	ug/L	956	Standard
	U	238	62.3	42.5	**0.0057**	0.004	64.1	ug/L	17	Standard
>	**Bi**	209	560756.1	0.5				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	33.3	45.8	**-0.0130**	0.021	161.7	mg/L	32	Standard
K	39	33.3	17.3	**-0.0301**	0.018	60.0	mg/L	30	Standard
Ca	43	38.3	27.2	**0.4086**	1.513	370.3	mg/L	48	Standard
Fe	54	141.0	17.0	**-0.0107**	0.022	208.8	mg/L	159	Standard
Fe	57	213.3	13.7	**0.0887**	0.105	118.5	mg/L	195	Standard
> **Sc-1**	45	39966.0	1.7				mg/L	39543	Standard
Cl	35	34581.4	2.4				ug/L	27642	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	1706.8	4.2				ug/L	1647	Standard
P	31	18139.2	2.9				ug/L	15231	Standard
S	34	2418.5	8.0				ug/L	1845	Standard
Sr	88	68.3	11.2				ug/L	70	Standard
C	12	130.0	53.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.8	101.7				mg/L	12	Standard
Ho-1	165	13.3	78.1				mg/L	12	Standard
Er	166	3.3	173.2				mg/L	20	Standard
I	127	1121.7	18.5				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.559	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.089
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.660
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW 45 WG573751-04
Sample Date/Time: Tuesday, June 28, 2016 15:59:33
Number of Replicates: 3
Autosampler Position: 232
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80427.9	0.7				ug/L	81760	Standard
	Be	9	20.0	43.3	**0.0107**	0.009	82.0	ug/L	17	Standard
	Al	27	16896.1	3.6	**0.0970**	0.004	4.0	ug/L	1410	Standard
	Sc	45	39630.1	2.3				ug/L	39543	Standard
	Ti	47	34.3	28.0	**-0.0290**	0.037	127.4	ug/L	39	Standard
	V	51	1241.7	7.6	**-0.0303**	0.012	39.4	ug/L	1415	Standard
	Cr	52	8808.2	2.5	**0.1923**	0.015	7.8	ug/L	6946	Standard
	Cr	53	705.0	11.9	**0.4526**	0.107	23.5	ug/L	328	Standard
	Mn	55	5471.7	0.3	**0.6851**	0.014	2.1	ug/L	823	Standard
	Co	59	272.7	7.3	**0.0070**	0.003	48.0	ug/L	252	Standard
	Ni	60	321.0	11.4	**0.0633**	0.019	30.2	ug/L	192	Standard
	Cu	65	232.7	11.6	**0.0301**	0.014	46.8	ug/L	141	Standard
	Zn	66	2018.1	1.4	**0.9905**	0.004	0.4	ug/L	491	Standard
>	**Ge**	72	521638.1	1.4				ug/L	515087	Standard
	As	75	-54.9	36.7	**-0.0079**	0.017	218.9	ug/L	20	Standard
	Se	82	10.0	20.3	**-0.0338**	0.018	54.1	ug/L	15	Standard
	Se-1	77	48.0	14.4	**-0.0888**	0.100	112.7	ug/L	48	Standard
>	**Ga**	71	53.3	28.6				mg/L	90	Standard
	Rb	85	156.7	21.7				ug/L	23	Standard
	Y	89	436462.5	0.8				ug/L	448510	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	82.2	21.1	**0.0108**	0.006	59.5	ug/L	11	Standard
	Ag	107	93.7	16.2	**-0.0025**	0.002	87.2	ug/L	134	Standard
	Cd	111	11.9	25.2	**0.0025**	0.001	54.5	mg/L	7	Standard
	Cd	114	46.6	47.9	**0.0039**	0.004	108.7	ug/L	16	Standard
>	**In**	115	622987.2	0.5				ug/L	611117	Standard
	Sn	118	873.4	7.7	**0.0429**	0.010	24.2	ug/L	518	Standard
	Sb	123	225.0	36.0	**0.0339**	0.017	49.6	ug/L	127	Standard
	Ba	135	668.7	0.9	**0.2926**	0.004	1.5	ug/L	45	Standard
	Ce	140	103.3	7.4				ug/L	298	Standard
>	**Tb**	159	980754.1	0.6				ug/L	977942	Standard
	Ho	165	13.3	78.1				ug/L	12	Standard
	Tl	203	31.7	30.7	**-0.0012**	0.001	94.5	ug/L	31	Standard
	Tl	205	30.0	86.6	**0.0017**	0.003	203.8	ug/L	20	Standard
	Pb	206	380.3	5.4	**0.0044**	0.003	72.4	ug/L	286	Standard
	Pb	207	331.3	8.5	**0.0076**	0.005	67.3	ug/L	257	Standard
	Pb	208	1302.7	2.5	**0.0063**	0.001	19.3	ug/L	956	Standard
	U	238	25.3	53.6	**0.0004**	0.002	408.2	ug/L	17	Standard
>	**Bi**	209	576453.2	0.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	33.3	8.7	**-0.0129**	0.003	22.5	mg/L	32	Standard
K	39	48.3	15.8	**0.0218**	0.028	129.2	mg/L	30	Standard
Ca	43	18.3	78.7	**-2.5918**	2.118	81.7	mg/L	48	Standard
Fe	54	122.7	28.9	**-0.0266**	0.030	114.3	mg/L	159	Standard
Fe	57	223.3	24.1	**0.1269**	0.176	138.7	mg/L	195	Standard
Sc-1	45	39630.1	2.3				mg/L	39543	Standard
Cl	35	33807.0	1.7				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1633.4	2.0				ug/L	1647	Standard
P	31	17535.1	2.2				ug/L	15231	Standard
S	34	2338.5	7.5				ug/L	1845	Standard
Sr	88	75.0	30.6				ug/L	70	Standard
C	12	106.7	19.5				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.4	3.0				mg/L	12	Standard
Ho-1	165	13.3	78.1				mg/L	12	Standard
Er	166	13.3	43.3				mg/L	20	Standard
I	127	955.0	19.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		98.371	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.272	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.942
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.478
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: LCSW 45 WG573451-05
Sample Date/Time: Tuesday, June 28, 2016 16:02:44
Number of Replicates: 3
Autosampler Position: 233
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81285.8	1.4				ug/L	81760	Standard
	Be	9	49444.0	4.0	**50.0648**	1.744	3.5	ug/L	17	Standard
	Al	27	14440.2	1.6	**0.0798**	0.002	2.1	ug/L	1410	Standard
	Sc	45	40522.5	4.2				ug/L	39543	Standard
	Ti	47	35.7	14.1	**-0.0217**	0.021	96.5	ug/L	39	Standard
	V	51	343445.8	1.5	**49.2175**	1.714	3.5	ug/L	1415	Standard
	Cr	52	355835.3	1.6	**50.0593**	1.026	2.0	ug/L	6946	Standard
	Cr	53	43403.8	4.1	**49.0831**	1.336	2.7	ug/L	328	Standard
	Mn	55	327263.1	1.9	**50.3439**	1.847	3.7	ug/L	823	Standard
	Co	59	357909.9	1.9	**50.9146**	1.589	3.1	ug/L	252	Standard
	Ni	60	94484.4	2.0	**50.0595**	0.992	2.0	ug/L	192	Standard
	Cu	65	95887.5	1.7	**50.3702**	0.997	2.0	ug/L	141	Standard
	Zn	66	56697.9	0.9	**50.8990**	0.801	1.6	ug/L	491	Standard
>	**Ge**	72	515232.3	2.4				ug/L	515087	Standard
	As	75	56137.8	1.3	**49.9742**	1.270	2.5	ug/L	20	Standard
	Se	82	5754.2	0.4	**49.8676**	1.316	2.6	ug/L	15	Standard
	Se-1	77	3847.2	2.4	**50.3547**	1.829	3.6	ug/L	48	Standard
>	**Ga**	71	80.0	38.0				mg/L	90	Standard
	Rb	85	45.0	58.8				ug/L	23	Standard
	Y	89	449389.0	2.2				ug/L	448510	Standard
>	**Rh**	103	28.3	66.8				ug/L	15	Standard
	Mo	98	72.0	12.6	**0.0070**	0.003	48.7	ug/L	11	Standard
	Ag	107	332360.6	2.0	**48.5009**	1.256	2.6	ug/L	134	Standard
	Cd	111	105950.1	2.1	**48.5677**	1.420	2.9	mg/L	7	Standard
	Cd	114	259244.9	2.6	**48.8950**	1.818	3.7	ug/L	16	Standard
>	**In**	115	623755.7	1.2				ug/L	611117	Standard
	Sn	118	950.0	6.3	**0.0554**	0.008	14.9	ug/L	518	Standard
	Sb	123	235787.4	1.4	**48.9583**	1.261	2.6	ug/L	127	Standard
	Ba	135	101234.2	2.5	**48.0272**	1.604	3.3	ug/L	45	Standard
	Ce	140	53.3	5.4				ug/L	298	Standard
>	**Tb**	159	962831.7	2.3				ug/L	977942	Standard
	Ho	165	6.7	114.6				ug/L	12	Standard
	Tl	203	424492.3	2.2	**49.7361**	1.545	3.1	ug/L	31	Standard
	Tl	205	378457.4	1.6	**51.0672**	1.520	3.0	ug/L	20	Standard
	Pb	206	276584.3	1.3	**50.4636**	1.380	2.7	ug/L	286	Standard
	Pb	207	241372.6	1.3	**48.8258**	1.366	2.8	ug/L	257	Standard
	Pb	208	990155.6	1.9	**51.7752**	1.712	3.3	ug/L	956	Standard
	U	238	358184.2	2.6	**49.3578**	1.903	3.9	ug/L	17	Standard
>	**Bi**	209	564381.2	1.4				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.8762**	18.829	173.1	mg/L	0	Standard
Mg	24	28.3	71.3	**-0.0199**	0.028	139.9	mg/L	32	Standard
K	39	45.0	40.1	**0.0061**	0.057	941.7	mg/L	30	Standard
Ca	43	25.0	60.0	**-1.6629**	2.211	133.0	mg/L	48	Standard
Fe	54	141.6	12.0	**-0.0123**	0.010	79.8	mg/L	159	Standard
Fe	57	180.0	5.6	**-0.0319**	0.009	26.7	mg/L	195	Standard
> **Sc-1**	45	40522.5	4.2				mg/L	39543	Standard
Cl	35	33285.9	3.1				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	5364.3	7.6				ug/L	1647	Standard
P	31	17471.7	4.0				ug/L	15231	Standard
S	34	2361.9	6.4				ug/L	1845	Standard
Sr	88	63.3	24.1				ug/L	70	Standard
C	12	126.7	43.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	15.9	34.8				mg/L	12	Standard
Ho-1	165	6.7	114.6				mg/L	12	Standard
Er	166	16.7	69.3				mg/L	20	Standard
I	127	856.7	31.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.420	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.028	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.068
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.311
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606115101 WG573751-02
Sample Date/Time: Tuesday, June 28, 2016 16:05:56
Number of Replicates: 3
Autosampler Position: 234
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77671.9	1.4				ug/L	81760	Standard
	Be	9	26.7	39.0	**0.0185**	0.011	58.4	ug/L	17	Standard
	Al	27	13955917.4	1.2	**95.3134**	2.493	2.6	ug/L	1410	Standard
	Sc	45	39321.0	0.9				ug/L	39543	Standard
	Ti	47	301.7	10.7	**1.0707**	0.148	13.8	ug/L	39	Standard
	V	51	16198.5	2.2	**2.1650**	0.025	1.2	ug/L	1415	Standard
	Cr	52	10911.9	4.6	**0.5376**	0.044	8.1	ug/L	6946	Standard
	Cr	53	3267.0	16.4	**3.4384**	0.551	16.0	ug/L	328	Standard
	Mn	55	181411.8	1.7	**28.3397**	0.987	3.5	ug/L	823	Standard
	Co	59	976.7	3.3	**0.1102**	0.006	5.4	ug/L	252	Standard
	Ni	60	1471.7	0.7	**0.6905**	0.022	3.2	ug/L	192	Standard
	Cu	65	1872.1	2.6	**0.9119**	0.023	2.5	ug/L	141	Standard
	Zn	66	6550.4	2.0	**5.2541**	0.063	1.2	ug/L	491	Standard
>	**Ge**	72	506178.8	2.0				ug/L	515087	Standard
	As	75	931.2	4.4	**0.8837**	0.051	5.8	ug/L	20	Standard
	Se	82	231.2	4.1	**1.9256**	0.108	5.6	ug/L	15	Standard
	Se-1	77	230.7	3.7	**2.3974**	0.119	5.0	ug/L	48	Standard
>	**Ga**	71	195.0	5.1				mg/L	90	Standard
	Rb	85	19537.6	1.2				ug/L	23	Standard
	Y	89	432314.6	1.1				ug/L	448510	Standard
>	**Rh**	103	61.7	12.4				ug/L	15	Standard
	Mo	98	3291.8	1.3	**1.2330**	0.013	1.0	ug/L	11	Standard
	Ag	107	150.7	8.2	**0.0069**	0.002	29.9	ug/L	134	Standard
	Cd	111	62.2	4.0	**0.0270**	0.001	5.4	mg/L	7	Standard
	Cd	114	153.0	45.9	**0.0254**	0.014	55.2	ug/L	16	Standard
>	**In**	115	594394.0	1.1				ug/L	611117	Standard
	Sn	118	883.4	9.5	**0.0516**	0.013	25.0	ug/L	518	Standard
	Sb	123	639.6	8.2	**0.1265**	0.011	8.6	ug/L	127	Standard
	Ba	135	68518.2	0.3	**34.1005**	0.460	1.3	ug/L	45	Standard
	Ce	140	2645.2	17.9				ug/L	298	Standard
>	**Tb**	159	950271.0	0.7				ug/L	977942	Standard
	Ho	165	53.3	10.8				ug/L	12	Standard
	Tl	203	411.7	14.6	**0.0459**	0.008	17.1	ug/L	31	Standard
	Tl	205	376.7	19.3	**0.0511**	0.011	20.8	ug/L	20	Standard
	Pb	206	1679.8	1.4	**0.2582**	0.003	1.3	ug/L	286	Standard
	Pb	207	1366.4	3.8	**0.2322**	0.009	3.7	ug/L	257	Standard
	Pb	208	5841.1	1.9	**0.2602**	0.004	1.4	ug/L	956	Standard
	U	238	9731.1	2.1	**1.4034**	0.022	1.5	ug/L	17	Standard
>	**Bi**	209	537950.1	0.8				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	34736.4	1.4	**46.4420**	0.278	0.6	mg/L	32	Standard
K	39	261.7	6.7	**0.7474**	0.052	7.0	mg/L	30	Standard
Ca	43	178.3	24.5	**21.8549**	6.453	29.5	mg/L	48	Standard
Fe	54	262.3	8.0	**0.1018**	0.020	19.8	mg/L	159	Standard
Fe	57	341.7	2.2	**0.5353**	0.023	4.3	mg/L	195	Standard
Sc-1	45	39321.0	0.9				mg/L	39543	Standard
Cl	35	35275.1	3.8				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	35124.1	4.7				ug/L	1647	Standard
P	31	18164.2	1.2				ug/L	15231	Standard
S	34	2260.2	2.8				ug/L	1845	Standard
Sr	88	231.7	13.9				ug/L	70	Standard
C	12	256.7	41.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	63.6	33.9				mg/L	12	Standard
Ho-1	165	53.3	10.8				mg/L	12	Standard
Er	166	63.3	36.5				mg/L	20	Standard
I	127	311901.7	7.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.000	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.271	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.264
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.566
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606115103S WG573751-07
Sample Date/Time: Tuesday, June 28, 2016 16:09:07
Number of Replicates: 3
Autosampler Position: 235
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82738.6	0.2				ug/L	81760	Standard
	Be	9	50932.1	1.3	**50.6700**	0.765	1.5	ug/L	17	Standard
	Al	27	14256616.7	2.2	**91.3792**	1.822	2.0	ug/L	1410	Standard
	Sc	45	41140.8	1.3				ug/L	39543	Standard
	Ti	47	371.0	4.6	**1.3119**	0.075	5.7	ug/L	39	Standard
	V	51	355266.5	2.0	**50.3881**	1.016	2.0	ug/L	1415	Standard
	Cr	52	348734.5	0.9	**48.5348**	0.604	1.2	ug/L	6946	Standard
	Cr	53	45906.1	1.2	**51.4332**	1.330	2.6	ug/L	328	Standard
	Mn	55	484874.0	0.4	**73.8916**	1.228	1.7	ug/L	823	Standard
	Co	59	330526.6	1.2	**46.5427**	1.213	2.6	ug/L	252	Standard
	Ni	60	91208.4	1.4	**47.8307**	0.262	0.5	ug/L	192	Standard
	Cu	65	93139.1	0.3	**48.4331**	0.711	1.5	ug/L	141	Standard
	Zn	66	61775.3	0.7	**54.9696**	1.209	2.2	ug/L	491	Standard
>	**Ge**	72	520412.6	1.6				ug/L	515087	Standard
	As	75	57188.6	0.5	**50.3925**	0.724	1.4	ug/L	20	Standard
	Se	82	5643.2	0.1	**48.4036**	0.791	1.6	ug/L	15	Standard
	Se-1	77	3992.2	4.4	**51.7398**	2.452	4.7	ug/L	48	Standard
>	**Ga**	71	230.0	28.3				mg/L	90	Standard
	Rb	85	19777.9	1.1				ug/L	23	Standard
	Y	89	433897.5	1.4				ug/L	448510	Standard
>	**Rh**	103	81.7	39.4				ug/L	15	Standard
	Mo	98	3301.1	2.4	**1.2202**	0.040	3.3	ug/L	11	Standard
	Ag	107	315385.8	0.9	**47.6558**	0.862	1.8	ug/L	134	Standard
	Cd	111	99498.3	0.6	**47.2265**	0.833	1.8	mg/L	7	Standard
	Cd	114	242671.7	0.4	**47.3834**	0.530	1.1	ug/L	16	Standard
>	**In**	115	602380.0	1.2				ug/L	611117	Standard
	Sn	118	866.7	11.7	**0.0467**	0.016	33.5	ug/L	518	Standard
	Sb	123	233832.7	0.4	**50.2714**	0.769	1.5	ug/L	127	Standard
	Ba	135	168472.5	0.5	**82.7716**	1.205	1.5	ug/L	45	Standard
	Ce	140	3190.3	1.8				ug/L	298	Standard
>	**Tb**	159	975538.4	0.7				ug/L	977942	Standard
	Ho	165	55.0	50.6				ug/L	12	Standard
	Tl	203	405391.8	0.6	**48.6809**	0.381	0.8	ug/L	31	Standard
	Tl	205	349844.8	1.2	**48.3796**	0.623	1.3	ug/L	20	Standard
	Pb	206	268733.3	0.7	**50.2550**	0.909	1.8	ug/L	286	Standard
	Pb	207	232854.8	1.2	**48.2799**	1.141	2.4	ug/L	257	Standard
	Pb	208	923192.2	0.6	**49.4693**	0.366	0.7	ug/L	956	Standard
	U	238	355626.8	0.4	**50.2227**	0.621	1.2	ug/L	17	Standard
>	**Bi**	209	550570.6	1.2				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	35867.4	1.9	**45.8327**	0.548	1.2	mg/L	32	Standard
K	39	318.3	2.4	**0.8927**	0.038	4.2	mg/L	30	Standard
Ca	43	141.7	5.4	**15.3452**	1.333	8.7	mg/L	48	Standard
Fe	54	233.9	13.6	**0.0666**	0.029	43.8	mg/L	159	Standard
Fe	57	373.3	5.1	**0.5873**	0.073	12.3	mg/L	195	Standard
> **Sc-1**	45	41140.8	1.3				mg/L	39543	Standard
Cl	35	36665.0	1.2				ug/L	27642	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	38074.5	2.7				ug/L	1647	Standard
P	31	19512.6	0.4				ug/L	15231	Standard
S	34	2426.9	4.9				ug/L	1845	Standard
Sr	88	241.7	11.4				ug/L	70	Standard
C	12	183.3	31.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	66.3	40.2				mg/L	12	Standard
Ho-1	165	55.0	50.6				mg/L	12	Standard
Er	166	76.7	15.1				mg/L	20	Standard
I	127	311628.4	3.8				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.197	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.034	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606115103S WG573751-07
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.570
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.831
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606115304SD WG573751-08
Sample Date/Time: Tuesday, June 28, 2016 16:12:19
Number of Replicates: 3
Autosampler Position: 236
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82914.6	1.7				ug/L	81760	Standard
	Be	9	51258.3	2.2	**50.8925**	1.250	2.5	ug/L	17	Standard
	Al	27	15399778.5	0.9	**98.5192**	1.923	2.0	ug/L	1410	Standard
	Sc	45	40084.7	2.9				ug/L	39543	Standard
	Ti	47	640.0	9.7	**2.4715**	0.230	9.3	ug/L	39	Standard
	V	51	358753.7	1.2	**52.7008**	0.680	1.3	ug/L	1415	Standard
	Cr	52	354784.4	1.1	**51.1849**	0.073	0.1	ug/L	6946	Standard
	Cr	53	47661.6	3.5	**55.3029**	1.433	2.6	ug/L	328	Standard
	Mn	55	529314.6	1.5	**83.5469**	1.579	1.9	ug/L	823	Standard
	Co	59	345503.9	1.1	**50.3773**	0.891	1.8	ug/L	252	Standard
	Ni	60	92308.7	1.0	**50.1355**	0.426	0.9	ug/L	192	Standard
	Cu	65	93613.0	1.4	**50.4100**	0.723	1.4	ug/L	141	Standard
	Zn	66	64567.0	0.6	**59.5553**	0.411	0.7	ug/L	491	Standard
>	**Ge**	72	502524.4	1.0				ug/L	515087	Standard
	As	75	56933.1	0.7	**51.9453**	0.162	0.3	ug/L	20	Standard
	Se	82	5947.1	1.7	**52.8275**	0.666	1.3	ug/L	15	Standard
	Se-1	77	3965.5	2.7	**53.2435**	1.801	3.4	ug/L	48	Standard
>	**Ga**	71	291.7	11.2				mg/L	90	Standard
	Rb	85	22576.8	1.0				ug/L	23	Standard
	Y	89	439067.8	2.2				ug/L	448510	Standard
>	**Rh**	103	73.3	7.9				ug/L	15	Standard
	Mo	98	3536.7	2.2	**1.2876**	0.021	1.6	ug/L	11	Standard
	Ag	107	318639.0	0.2	**47.3947**	0.683	1.4	ug/L	134	Standard
	Cd	111	102545.7	0.7	**47.9082**	0.269	0.6	mg/L	7	Standard
	Cd	114	249882.8	0.5	**48.0284**	0.370	0.8	ug/L	16	Standard
>	**In**	115	611940.4	1.2				ug/L	611117	Standard
	Sn	118	1045.0	4.1	**0.0745**	0.005	6.8	ug/L	518	Standard
	Sb	123	235512.7	0.7	**49.8406**	0.693	1.4	ug/L	127	Standard
	Ba	135	174610.3	1.9	**84.4342**	0.545	0.6	ug/L	45	Standard
	Ce	140	5954.5	2.4				ug/L	298	Standard
>	**Tb**	159	973344.6	0.2				ug/L	977942	Standard
	Ho	165	121.7	6.3				ug/L	12	Standard
	Tl	203	413217.7	0.6	**49.7797**	0.456	0.9	ug/L	31	Standard
	Tl	205	363310.0	1.7	**50.4036**	0.986	2.0	ug/L	20	Standard
	Pb	206	270026.6	0.5	**50.6539**	0.212	0.4	ug/L	286	Standard
	Pb	207	235774.0	0.4	**49.0358**	0.293	0.6	ug/L	257	Standard
	Pb	208	947837.4	0.9	**50.9548**	0.634	1.2	ug/L	956	Standard
	U	238	363550.4	1.8	**51.5051**	1.028	2.0	ug/L	17	Standard
>	**Bi**	209	548791.6	0.3				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.4900**	18.160	173.1	mg/L	0	Standard
Mg	24	38714.4	0.7	**50.8180**	1.880	3.7	mg/L	32	Standard
K	39	343.3	15.2	**1.0066**	0.203	20.2	mg/L	30	Standard
Ca	43	156.7	1.8	**18.1495**	1.124	6.2	mg/L	48	Standard
Fe	54	374.0	6.7	**0.1967**	0.015	7.7	mg/L	159	Standard
Fe	57	400.0	0.0	**0.7083**	0.040	5.6	mg/L	195	Standard
> **Sc-1**	45	40084.7	2.9				mg/L	39543	Standard
Cl	35	38416.6	0.8				ug/L	27642	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	40474.1	6.0				ug/L	1647	Standard
P	31	20383.7	1.9				ug/L	15231	Standard
S	34	2388.5	6.8				ug/L	1845	Standard
Sr	88	235.0	8.5				ug/L	70	Standard
C	12	253.3	25.1				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	175.2	19.1				mg/L	12	Standard
Ho-1	165	121.7	6.3				mg/L	12	Standard
Er	166	100.0	26.5				mg/L	20	Standard
I	127	354555.7	8.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.412	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.561	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606115304SD WG573751-08
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.135	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.512	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606091602 WG573751-01
Sample Date/Time: Tuesday, June 28, 2016 16:15:30
Number of Replicates: 3
Autosampler Position: 237
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83752.6	2.6				ug/L	81760	Standard
	Be	9	50.0	26.5	**0.0395**	0.014	34.7	ug/L	17	Standard
	Al	27	2701508.7	2.5	**17.0954**	0.130	0.8	ug/L	1410	Standard
	Sc	45	39755.5	3.1				ug/L	39543	Standard
	Ti	47	56.0	11.2	**0.0633**	0.027	42.8	ug/L	39	Standard
	V	51	1924.8	3.9	**0.0741**	0.009	12.6	ug/L	1415	Standard
	Cr	52	10285.8	1.8	**0.4408**	0.012	2.7	ug/L	6946	Standard
	Cr	53	1156.7	1.7	**0.9947**	0.041	4.2	ug/L	328	Standard
	Mn	55	253930.8	1.4	**39.5649**	0.851	2.1	ug/L	823	Standard
	Co	59	1951.8	2.9	**0.2502**	0.004	1.8	ug/L	252	Standard
	Ni	60	1859.1	3.7	**0.8956**	0.027	3.0	ug/L	192	Standard
	Cu	65	1000.0	2.6	**0.4428**	0.017	3.9	ug/L	141	Standard
	Zn	66	2280.8	1.9	**1.2819**	0.026	2.1	ug/L	491	Standard
>	**Ge**	72	508105.2	1.4				ug/L	515087	Standard
	As	75	151.5	17.1	**0.1768**	0.022	12.7	ug/L	20	Standard
	Se	82	39.2	12.0	**0.2256**	0.041	18.4	ug/L	15	Standard
	Se-1	77	70.3	2.2	**0.2277**	0.025	11.1	ug/L	48	Standard
>	**Ga**	71	73.3	3.9				mg/L	90	Standard
	Rb	85	9319.5	3.0				ug/L	23	Standard
	Y	89	446629.7	1.4				ug/L	448510	Standard
>	**Rh**	103	35.0	37.8				ug/L	15	Standard
	Mo	98	255.3	4.6	**0.0742**	0.003	4.3	ug/L	11	Standard
	Ag	107	140.0	17.3	**0.0044**	0.004	86.0	ug/L	134	Standard
	Cd	111	34.5	15.3	**0.0130**	0.002	17.2	mg/L	7	Standard
	Cd	114	78.1	40.8	**0.0099**	0.006	59.3	ug/L	16	Standard
>	**In**	115	618896.7	1.2				ug/L	611117	Standard
	Sn	118	878.4	9.4	**0.0447**	0.013	28.2	ug/L	518	Standard
	Sb	123	309.3	20.5	**0.0520**	0.014	26.9	ug/L	127	Standard
	Ba	135	35857.7	1.5	**17.1253**	0.158	0.9	ug/L	45	Standard
	Ce	140	1368.4	3.3				ug/L	298	Standard
>	**Tb**	159	968292.7	1.7				ug/L	977942	Standard
	Ho	165	100.0	15.0				ug/L	12	Standard
	Tl	203	175.7	13.5	**0.0159**	0.003	15.9	ug/L	31	Standard
	Tl	205	158.3	30.0	**0.0192**	0.006	31.5	ug/L	20	Standard
	Pb	206	469.3	2.7	**0.0227**	0.001	2.5	ug/L	286	Standard
	Pb	207	387.3	8.4	**0.0210**	0.006	30.5	ug/L	257	Standard
	Pb	208	1635.4	0.6	**0.0258**	0.001	5.1	ug/L	956	Standard
	U	238	220.3	6.6	**0.0276**	0.001	5.0	ug/L	17	Standard
>	**Bi**	209	560335.5	2.1				ug/L	557080	Standard

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Na	23	3.3	173.2	**20.5537**	35.591	173.2	mg/L	0	Standard
Mg	24	3380.4	0.3	**4.4213**	0.131	3.0	mg/L	32	Standard
K	39	168.3	9.1	**0.4237**	0.034	8.1	mg/L	30	Standard
Ca	43	108.3	14.8	**11.0098**	2.304	20.9	mg/L	48	Standard
Fe	54	282.4	10.4	**0.1178**	0.034	28.5	mg/L	159	Standard
Fe	57	291.7	21.2	**0.3561**	0.217	61.0	mg/L	195	Standard
> **Sc-1**	45	39755.5	3.1				mg/L	39543	Standard
Cl	35	40081.0	2.5				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	4644.1	13.8				ug/L	1647	Standard
P	31	18102.5	2.7				ug/L	15231	Standard
S	34	2331.8	2.8				ug/L	1845	Standard
Sr	88	118.3	8.8				ug/L	70	Standard
C	12	123.3	9.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	117.9	56.1				mg/L	12	Standard
Ho-1	165	100.0	15.0				mg/L	12	Standard
Er	166	43.3	48.0				mg/L	20	Standard
I	127	21574.4	25.8				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.437	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.645	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.273
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.584
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606091602DP WG573751-06
Sample Date/Time: Tuesday, June 28, 2016 16:18:41
Number of Replicates: 3
Autosampler Position: 238
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81912.6	2.5				ug/L	81760	Standard
	Be	9	38.3	32.8	**0.0286**	0.012	41.1	ug/L	17	Standard
	Al	27	2661315.3	2.5	**17.2245**	0.558	3.2	ug/L	1410	Standard
	Sc	45	39553.2	2.2				ug/L	39543	Standard
	Ti	47	60.3	10.8	**0.0810**	0.030	36.5	ug/L	39	Standard
	V	51	1771.3	1.7	**0.0516**	0.003	5.3	ug/L	1415	Standard
	Cr	52	10216.4	1.4	**0.4303**	0.018	4.2	ug/L	6946	Standard
	Cr	53	1328.4	4.4	**1.1923**	0.072	6.1	ug/L	328	Standard
	Mn	55	248102.9	0.7	**38.6399**	0.746	1.9	ug/L	823	Standard
	Co	59	1844.8	1.4	**0.2347**	0.001	0.3	ug/L	252	Standard
	Ni	60	1828.1	4.4	**0.8792**	0.056	6.4	ug/L	192	Standard
	Cu	65	995.0	2.4	**0.4399**	0.012	2.7	ug/L	141	Standard
	Zn	66	2165.5	0.6	**1.1746**	0.022	1.8	ug/L	491	Standard
>	**Ge**	72	508291.1	1.3				ug/L	515087	Standard
	As	75	90.4	12.4	**0.1217**	0.009	7.5	ug/L	20	Standard
	Se	82	34.1	11.8	**0.1803**	0.032	17.6	ug/L	15	Standard
	Se-1	77	74.3	14.5	**0.2819**	0.154	54.5	ug/L	48	Standard
>	**Ga**	71	68.3	30.5				mg/L	90	Standard
	Rb	85	9142.8	6.3				ug/L	23	Standard
	Y	89	450226.3	2.8				ug/L	448510	Standard
>	**Rh**	103	21.7	58.1				ug/L	15	Standard
	Mo	98	245.2	4.8	**0.0704**	0.005	7.4	ug/L	11	Standard
	Ag	107	87.7	6.3	**-0.0033**	0.001	21.6	ug/L	134	Standard
	Cd	111	23.2	17.5	**0.0078**	0.002	23.8	mg/L	7	Standard
	Cd	114	58.3	13.8	**0.0061**	0.001	23.6	ug/L	16	Standard
>	**In**	115	619551.5	1.3				ug/L	611117	Standard
	Sn	118	933.4	2.4	**0.0538**	0.006	10.7	ug/L	518	Standard
	Sb	123	201.2	19.7	**0.0293**	0.009	30.0	ug/L	127	Standard
	Ba	135	34661.9	0.9	**16.5369**	0.177	1.1	ug/L	45	Standard
	Ce	140	1260.1	4.6				ug/L	298	Standard
>	**Tb**	159	963340.8	1.2				ug/L	977942	Standard
	Ho	165	88.3	18.2				ug/L	12	Standard
	Tl	203	85.3	6.5	**0.0054**	0.001	13.0	ug/L	31	Standard
	Tl	205	83.3	17.3	**0.0091**	0.002	21.1	ug/L	20	Standard
	Pb	206	415.0	2.1	**0.0134**	0.001	8.9	ug/L	286	Standard
	Pb	207	359.0	2.4	**0.0158**	0.001	8.8	ug/L	257	Standard
	Pb	208	1485.0	2.9	**0.0185**	0.003	14.1	ug/L	956	Standard
	U	238	164.0	3.4	**0.0200**	0.001	3.7	ug/L	17	Standard
>	**Bi**	209	555403.6	0.6				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	3443.7	5.9	**4.5314**	0.377	8.3	mg/L	32	Standard
K	39	158.3	7.9	**0.3934**	0.041	10.4	mg/L	30	Standard
Ca	43	93.3	12.4	**8.8061**	1.479	16.8	mg/L	48	Standard
Fe	54	304.0	6.5	**0.1380**	0.017	12.0	mg/L	159	Standard
Fe	57	313.3	6.4	**0.4340**	0.087	20.1	mg/L	195	Standard
> **Sc-1**	45	39553.2	2.2				mg/L	39543	Standard
Cl	35	40893.8	1.8				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	3857.2	4.5				ug/L	1647	Standard
P	31	18868.4	1.0				ug/L	15231	Standard
S	34	2383.5	7.0				ug/L	1845	Standard
Sr	88	95.0	13.9				ug/L	70	Standard
C	12	200.0	17.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	96.2	30.5				mg/L	12	Standard
Ho-1	165	88.3	18.2				mg/L	12	Standard
Er	166	80.0	37.5				mg/L	20	Standard
I	127	15653.1	0.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.187	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.681	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606091602DP WG573751-06
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.380
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.699
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606091601
Sample Date/Time: Tuesday, June 28, 2016 16:21:53
Number of Replicates: 3
Autosampler Position: 239
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81664.5	1.8				ug/L	81760	Standard
	Be	9	26.7	28.6	**0.0172**	0.008	47.1	ug/L	17	Standard
	Al	27	4275643.4	2.5	**27.7561**	0.463	1.7	ug/L	1410	Standard
	Sc	45	38087.8	3.0				ug/L	39543	Standard
	Ti	47	54.7	26.0	**0.0548**	0.059	108.3	ug/L	39	Standard
	V	51	1697.6	8.1	**0.0374**	0.021	56.8	ug/L	1415	Standard
	Cr	52	10296.2	0.8	**0.4201**	0.020	4.7	ug/L	6946	Standard
	Cr	53	1460.1	7.5	**1.3201**	0.135	10.2	ug/L	328	Standard
	Mn	55	64493.4	3.0	**9.7887**	0.389	4.0	ug/L	823	Standard
	Co	59	427.0	5.1	**0.0294**	0.004	12.3	ug/L	252	Standard
	Ni	60	847.0	2.5	**0.3443**	0.016	4.7	ug/L	192	Standard
	Cu	65	826.7	6.2	**0.3435**	0.022	6.5	ug/L	141	Standard
	Zn	66	9487.6	0.7	**7.8171**	0.052	0.7	ug/L	491	Standard
>	**Ge**	72	515789.8	1.2				ug/L	515087	Standard
	As	75	95.2	47.1	**0.1249**	0.040	32.1	ug/L	20	Standard
	Se	82	32.5	28.2	**0.1620**	0.079	48.7	ug/L	15	Standard
	Se-1	77	78.3	8.3	**0.3202**	0.098	30.6	ug/L	48	Standard
>	**Ga**	71	58.3	50.2				mg/L	90	Standard
	Rb	85	8367.3	1.9				ug/L	23	Standard
	Y	89	424791.4	2.4				ug/L	448510	Standard
>	**Rh**	103	81.7	19.7				ug/L	15	Standard
	Mo	98	367.2	2.9	**0.1192**	0.004	3.5	ug/L	11	Standard
	Ag	107	119.3	48.0	**0.0019**	0.009	460.3	ug/L	134	Standard
	Cd	111	50.7	68.6	**0.0212**	0.017	78.0	mg/L	7	Standard
	Cd	114	102.4	71.8	**0.0151**	0.014	95.2	ug/L	16	Standard
>	**In**	115	600349.6	1.0				ug/L	611117	Standard
	Sn	118	1276.7	2.5	**0.1178**	0.004	3.0	ug/L	518	Standard
	Sb	123	200.9	15.6	**0.0306**	0.007	23.5	ug/L	127	Standard
	Ba	135	168683.5	0.8	**83.1505**	0.843	1.0	ug/L	45	Standard
	Ce	140	160.0	17.4				ug/L	298	Standard
>	**Tb**	159	943339.1	0.8				ug/L	977942	Standard
	Ho	165	5.0	100.0				ug/L	12	Standard
	Tl	203	103.7	83.0	**0.0076**	0.010	135.3	ug/L	31	Standard
	Tl	205	65.0	38.5	**0.0066**	0.003	51.6	ug/L	20	Standard
	Pb	206	449.7	4.5	**0.0200**	0.004	18.4	ug/L	286	Standard
	Pb	207	373.7	5.2	**0.0190**	0.004	20.9	ug/L	257	Standard
	Pb	208	1469.0	1.7	**0.0178**	0.001	8.0	ug/L	956	Standard
	U	238	195.0	9.9	**0.0244**	0.003	11.1	ug/L	17	Standard
>	**Bi**	209	554105.5	0.2				ug/L	557080	Standard

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Na	23	1.7	173.2	**11.2769**	19.523	173.1	mg/L	0	Standard
Mg	24	4872.5	3.1	**6.6831**	0.365	5.5	mg/L	32	Standard
K	39	180.0	11.1	**0.4891**	0.054	11.0	mg/L	30	Standard
Ca	43	71.7	49.5	**5.8566**	5.217	89.1	mg/L	48	Standard
Fe	54	187.0	32.7	**0.0391**	0.060	153.5	mg/L	159	Standard
Fe	57	275.0	13.7	**0.3422**	0.158	46.1	mg/L	195	Standard
> **Sc-1**	45	38087.8	3.0				mg/L	39543	Standard
Cl	35	39985.4	2.3				ug/L	27642	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	5007.5	9.4				ug/L	1647	Standard
P	31	18170.9	2.8				ug/L	15231	Standard
S	34	2413.5	5.6				ug/L	1845	Standard
Sr	88	318.3	14.3				ug/L	70	Standard
C	12	223.3	5.2				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	59.7	16.8				mg/L	12	Standard
Ho-1	165	5.0	100.0				mg/L	12	Standard
Er	166	6.7	86.6				mg/L	20	Standard
I	127	27700.4	6.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.883	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.136	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.238
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.466
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606091601PS WG574522-01
Sample Date/Time: Tuesday, June 28, 2016 16:25:04
Number of Replicates: 3
Autosampler Position: 240
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84128.0	1.7				ug/L	81760	Standard
	Be	9	52619.6	0.9	**51.4982**	1.298	2.5	ug/L	17	Standard
	Al	27	4326633.2	0.4	**27.2707**	0.550	2.0	ug/L	1410	Standard
	Sc	45	39650.1	0.7				ug/L	39543	Standard
	Ti	47	62.3	14.0	**0.0872**	0.038	43.9	ug/L	39	Standard
	V	51	353435.0	1.4	**50.9243**	0.391	0.8	ug/L	1415	Standard
	Cr	52	362779.9	0.9	**51.3507**	0.534	1.0	ug/L	6946	Standard
	Cr	53	45635.3	3.2	**51.9244**	0.938	1.8	ug/L	328	Standard
	Mn	55	384138.6	0.3	**59.4407**	0.957	1.6	ug/L	823	Standard
	Co	59	352427.3	0.4	**50.4121**	0.778	1.5	ug/L	252	Standard
	Ni	60	95802.0	1.3	**51.0471**	0.630	1.2	ug/L	192	Standard
	Cu	65	98413.6	0.9	**51.9931**	0.640	1.2	ug/L	141	Standard
	Zn	66	63162.1	1.4	**57.1168**	0.348	0.6	ug/L	491	Standard
>	**Ge**	72	512293.3	1.9				ug/L	515087	Standard
	As	75	56566.0	1.5	**50.6330**	0.812	1.6	ug/L	20	Standard
	Se	82	5805.6	1.0	**50.5901**	0.677	1.3	ug/L	15	Standard
	Se-1	77	3921.2	1.4	**51.6223**	0.909	1.8	ug/L	48	Standard
>	**Ga**	71	60.0	50.7				mg/L	90	Standard
	Rb	85	8215.6	0.6				ug/L	23	Standard
	Y	89	438501.2	1.8				ug/L	448510	Standard
>	**Rh**	103	71.7	28.2				ug/L	15	Standard
	Mo	98	368.8	5.9	**0.1169**	0.008	6.7	ug/L	11	Standard
	Ag	107	334626.2	0.5	**49.6506**	0.360	0.7	ug/L	134	Standard
	Cd	111	105047.6	0.7	**48.9601**	0.529	1.1	mg/L	7	Standard
	Cd	114	254060.7	2.8	**48.7162**	1.522	3.1	ug/L	16	Standard
>	**In**	115	613389.4	0.3				ug/L	611117	Standard
	Sn	118	1936.8	37.5	**0.2241**	0.121	54.0	ug/L	518	Standard
	Sb	123	237358.9	1.9	**50.1080**	0.980	2.0	ug/L	127	Standard
	Ba	135	267735.0	1.3	**129.1838**	2.081	1.6	ug/L	45	Standard
	Ce	140	231.7	21.3				ug/L	298	Standard
>	**Tb**	159	964479.2	1.1				ug/L	977942	Standard
	Ho	165	18.3	56.8				ug/L	12	Standard
	Tl	203	432424.0	0.5	**50.0145**	0.262	0.5	ug/L	31	Standard
	Tl	205	382714.9	0.3	**50.9759**	0.183	0.4	ug/L	20	Standard
	Pb	206	282966.8	1.1	**50.9646**	0.635	1.2	ug/L	286	Standard
	Pb	207	246387.7	1.3	**49.1992**	0.690	1.4	ug/L	257	Standard
	Pb	208	985942.4	0.8	**50.8876**	0.399	0.8	ug/L	956	Standard
	U	238	365334.3	1.0	**49.6910**	0.475	1.0	ug/L	17	Standard
>	**Bi**	209	571593.5	0.1				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4890.8	3.1	**6.4355**	0.187	2.9	mg/L	32	Standard
K	39	161.7	23.2	**0.4031**	0.125	30.9	mg/L	30	Standard
Ca	43	113.3	24.3	**11.8087**	4.086	34.6	mg/L	48	Standard
Fe	54	177.2	7.7	**0.0228**	0.011	49.5	mg/L	159	Standard
Fe	57	255.0	15.6	**0.2338**	0.132	56.3	mg/L	195	Standard
> **Sc-1**	45	39650.1	0.7				mg/L	39543	Standard
Cl	35	40732.7	2.1				ug/L	27642	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	4914.1	11.2				ug/L	1647	Standard
P	31	18529.7	1.8				ug/L	15231	Standard
S	34	2476.9	6.8				ug/L	1845	Standard
Sr	88	310.0	4.8				ug/L	70	Standard
C	12	160.0	18.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	12.7	117.1				mg/L	12	Standard
Ho-1	165	18.3	56.8				mg/L	12	Standard
Er	166	13.3	86.6				mg/L	20	Standard
I	127	27421.5	4.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.896	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.458	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.372
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.605
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606091601SDL WG574522-02
Sample Date/Time: Tuesday, June 28, 2016 16:28:16
Number of Replicates: 3
Autosampler Position: 241
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82723.6	2.3				ug/L	81760	Standard
	Be	9	23.3	12.4	**0.0135**	0.003	18.7	ug/L	17	Standard
	Al	27	900313.9	2.1	**5.7596**	0.136	2.4	ug/L	1410	Standard
	Sc	45	39763.8	0.8				ug/L	39543	Standard
	Ti	47	29.7	9.7	**-0.0430**	0.012	28.1	ug/L	39	Standard
	V	51	1735.9	7.6	**0.0491**	0.020	40.6	ug/L	1415	Standard
	Cr	52	8352.3	2.2	**0.1715**	0.035	20.7	ug/L	6946	Standard
	Cr	53	645.0	2.8	**0.4109**	0.024	5.9	ug/L	328	Standard
	Mn	55	14377.5	0.8	**2.1221**	0.018	0.8	ug/L	823	Standard
	Co	59	301.0	11.3	**0.0125**	0.005	41.5	ug/L	252	Standard
	Ni	60	410.7	1.2	**0.1183**	0.004	3.1	ug/L	192	Standard
	Cu	65	611.3	5.6	**0.2385**	0.017	7.2	ug/L	141	Standard
	Zn	66	7975.8	0.8	**6.6226**	0.085	1.3	ug/L	491	Standard
>	**Ge**	72	503109.1	0.7				ug/L	515087	Standard
	As	75	19.7	109.3	**0.0582**	0.020	33.7	ug/L	20	Standard
	Se	82	17.8	58.3	**0.0388**	0.092	237.9	ug/L	15	Standard
	Se-1	77	57.7	14.7	**0.0653**	0.120	183.5	ug/L	48	Standard
>	**Ga**	71	58.3	44.0				mg/L	90	Standard
	Rb	85	1753.4	3.2				ug/L	23	Standard
	Y	89	444634.9	0.6				ug/L	448510	Standard
>	**Rh**	103	21.7	48.0				ug/L	15	Standard
	Mo	98	88.5	3.1	**0.0131**	0.001	5.4	ug/L	11	Standard
	Ag	107	142.0	4.2	**0.0046**	0.001	16.3	ug/L	134	Standard
	Cd	111	23.2	23.8	**0.0077**	0.002	31.6	mg/L	7	Standard
	Cd	114	28.0	34.6	**0.0004**	0.002	477.3	ug/L	16	Standard
>	**In**	115	620921.1	1.0				ug/L	611117	Standard
	Sn	118	821.7	5.2	**0.0348**	0.006	16.8	ug/L	518	Standard
	Sb	123	2051.2	21.4	**0.4156**	0.096	23.0	ug/L	127	Standard
	Ba	135	34796.2	0.2	**16.5640**	0.119	0.7	ug/L	45	Standard
	Ce	140	63.3	12.1				ug/L	298	Standard
>	**Tb**	159	973024.2	1.8				ug/L	977942	Standard
	Ho	165	8.3	124.9				ug/L	12	Standard
	Tl	203	97.0	5.7	**0.0066**	0.000	6.5	ug/L	31	Standard
	Tl	205	68.3	44.1	**0.0070**	0.004	57.1	ug/L	20	Standard
	Pb	206	360.7	11.0	**0.0024**	0.006	236.3	ug/L	286	Standard
	Pb	207	322.3	9.7	**0.0075**	0.006	86.2	ug/L	257	Standard
	Pb	208	1339.4	1.1	**0.0099**	0.001	10.7	ug/L	956	Standard
	U	238	86.3	6.6	**0.0090**	0.001	5.9	ug/L	17	Standard
>	**Bi**	209	562189.7	2.5				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	991.7	7.3	**1.2554**	0.092	7.3	mg/L	32	Standard
K	39	51.7	11.2	**0.0323**	0.021	64.1	mg/L	30	Standard
Ca	43	40.0	45.1	**0.6884**	2.694	391.4	mg/L	48	Standard
Fe	54	140.9	19.7	**-0.0104**	0.024	229.0	mg/L	159	Standard
Fe	57	241.7	4.8	**0.1865**	0.032	17.2	mg/L	195	Standard
> **Sc-1**	45	39763.8	0.8				mg/L	39543	Standard
Cl	35	40635.1	0.7				ug/L	27642	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	2310.2	7.5				ug/L	1647	Standard
P	31	19332.3	4.6				ug/L	15231	Standard
S	34	2451.9	6.9				ug/L	1845	Standard
Sr	88	125.0	21.2				ug/L	70	Standard
C	12	163.3	25.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.5	88.8				mg/L	12	Standard
Ho-1	165	8.3	124.9				mg/L	12	Standard
Er	166	10.0	100.0				mg/L	20	Standard
I	127	7598.6	6.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.179	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.675	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.604
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.917
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 16:31:29
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79881.8	2.3				ug/L	81760	Standard
	Be	9	50840.2	1.3	**52.4015**	1.145	2.2	ug/L	17	Standard
	Al	27	7585830.9	1.9	**50.3677**	1.194	2.4	ug/L	1410	Standard
	Sc	45	39128.8	0.6				ug/L	39543	Standard
	Ti	47	24998.6	0.9	**102.1788**	1.762	1.7	ug/L	39	Standard
	V	51	348429.9	1.4	**50.8229**	0.271	0.5	ug/L	1415	Standard
	Cr	52	355416.3	0.4	**50.9232**	0.579	1.1	ug/L	6946	Standard
	Cr	53	44443.4	1.1	**51.2031**	0.906	1.8	ug/L	328	Standard
	Mn	55	315927.2	0.8	**49.4624**	0.575	1.2	ug/L	823	Standard
	Co	59	353189.3	0.9	**51.1457**	0.854	1.7	ug/L	252	Standard
	Ni	60	94600.8	0.9	**51.0293**	0.136	0.3	ug/L	192	Standard
	Cu	65	95833.5	0.4	**51.2541**	0.406	0.8	ug/L	141	Standard
	Zn	66	56109.7	0.5	**51.2906**	0.852	1.7	ug/L	491	Standard
>	Ge	72	505999.1	1.2				ug/L	515087	Standard
	As	75	55945.5	0.4	**50.6968**	0.402	0.8	ug/L	20	Standard
	Se	82	5756.3	0.8	**50.7852**	1.001	2.0	ug/L	15	Standard
	Se-1	77	3889.8	1.1	**51.8484**	1.021	2.0	ug/L	48	Standard
>	Ga	71	51.7	20.1				mg/L	90	Standard
	Rb	85	811.7	9.0				ug/L	23	Standard
	Y	89	426423.1	2.5				ug/L	448510	Standard
>	Rh	103	31.7	24.1				ug/L	15	Standard
	Mo	98	265386.1	0.2	**99.3199**	0.619	0.6	ug/L	11	Standard
	Ag	107	333927.0	1.2	**50.3137**	0.313	0.6	ug/L	134	Standard
	Cd	111	105484.6	1.1	**49.9277**	0.764	1.5	mg/L	7	Standard
	Cd	114	258596.4	2.6	**50.3494**	1.108	2.2	ug/L	16	Standard
>	In	115	604027.1	0.8				ug/L	611117	Standard
	Sn	118	295796.4	1.2	**50.5150**	0.923	1.8	ug/L	518	Standard
	Sb	123	237014.9	1.1	**50.8107**	0.333	0.7	ug/L	127	Standard
	Ba	135	100914.0	1.4	**49.4318**	0.852	1.7	ug/L	45	Standard
	Ce	140	80.0	0.0				ug/L	298	Standard
>	Tb	159	968181.4	1.1				ug/L	977942	Standard
	Ho	165	8.3	69.3				ug/L	12	Standard
	Tl	203	430250.2	1.2	**50.7804**	1.115	2.2	ug/L	31	Standard
	Tl	205	381434.8	2.3	**51.8414**	1.366	2.6	ug/L	20	Standard
	Pb	206	273103.8	0.8	**50.1867**	0.395	0.8	ug/L	286	Standard
	Pb	207	246704.6	0.5	**50.2667**	0.621	1.2	ug/L	257	Standard
	Pb	208	974193.4	0.6	**51.3084**	0.901	1.8	ug/L	956	Standard
	U	238	366221.1	0.4	**50.8280**	0.746	1.5	ug/L	17	Standard
>	Bi	209	560252.8	1.6				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	3943.8	5.4	**5.2490**	0.301	5.7	mg/L	32	Standard
K	39	1356.7	5.3	**4.4904**	0.223	5.0	mg/L	30	Standard
Ca	43	83.3	18.3	**7.4389**	2.295	30.8	mg/L	48	Standard
Fe	54	5957.3	2.0	**5.3112**	0.093	1.8	mg/L	159	Standard
Fe	57	1600.1	10.0	**4.8365**	0.580	12.0	mg/L	195	Standard
> **Sc-1**	45	39128.8	0.6				mg/L	39543	Standard
Cl	35	37049.3	3.3				ug/L	27642	Standard
Kr	83	2.0	132.3				ug/L	2	Standard
Br	81	1520.1	14.1				ug/L	1647	Standard
P	31	19898.1	2.1				ug/L	15231	Standard
S	34	2718.6	2.9				ug/L	1845	Standard
Sr	88	73.3	20.8				ug/L	70	Standard
C	12	120.0	43.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.0	113.3				mg/L	12	Standard
Ho-1	165	8.3	69.3				mg/L	12	Standard
Er	166	20.0	50.0				mg/L	20	Standard
I	127	2098.5	16.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	104.803		
Al	27	100.735		
Sc	45			
Ti	47	102.179		
V	51	101.646		
Cr	52	101.846		
Cr	53			
Mn	55	98.925		
Co	59	102.291		
Ni	60	102.059		
Cu	65	102.508		
Zn	66	102.581		
> Ge	72		98.236	
As	75	101.394		
Se	82	101.570		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	99.320		
Ag	107	100.627		
Cd	111	99.855		
Cd	114			
> In	115			98.840
Sn	118	101.030		
Sb	123	101.621		
Ba	135	98.864		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.561		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.617		
U	238	101.656		
> Bi	209			100.569
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 16:34:41
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77653.6	3.2				ug/L	81760	Standard
	Be	9	28.3	27.0	**0.0205**	0.009	43.8	ug/L	17	Standard
	Al	27	2033.5	6.8	**-0.0005**	0.001	113.9	ug/L	1410	Standard
	Sc	45	38149.6	0.7				ug/L	39543	Standard
	Ti	47	33.0	16.0	**-0.0290**	0.023	78.1	ug/L	39	Standard
	V	51	1124.7	5.5	**-0.0407**	0.010	23.8	ug/L	1415	Standard
	Cr	52	6085.9	0.6	**-0.1604**	0.016	10.1	ug/L	6946	Standard
	Cr	53	345.0	11.5	**0.0612**	0.041	67.1	ug/L	328	Standard
	Mn	55	652.0	2.2	**-0.0453**	0.002	5.1	ug/L	823	Standard
	Co	59	236.0	7.4	**0.0031**	0.003	92.5	ug/L	252	Standard
	Ni	60	163.3	9.5	**-0.0160**	0.008	51.9	ug/L	192	Standard
	Cu	65	132.3	11.7	**-0.0193**	0.009	47.2	ug/L	141	Standard
	Zn	66	446.3	5.3	**-0.4102**	0.017	4.3	ug/L	491	Standard
>	**Ge**	72	502289.8	1.3				ug/L	515087	Standard
	As	75	-42.3	118.5	**0.0014**	0.046	3304.8	ug/L	20	Standard
	Se	82	15.3	48.7	**0.0168**	0.064	382.8	ug/L	15	Standard
	Se-1	77	51.0	21.6	**-0.0257**	0.142	551.0	ug/L	48	Standard
>	**Ga**	71	38.3	27.2				mg/L	90	Standard
	Rb	85	10.0	86.6				ug/L	23	Standard
	Y	89	438316.4	0.6				ug/L	448510	Standard
>	**Rh**	103	15.0	0.0				ug/L	15	Standard
	Mo	98	228.3	18.4	**0.0667**	0.015	22.0	ug/L	11	Standard
	Ag	107	123.7	9.2	**0.0025**	0.002	72.5	ug/L	134	Standard
	Cd	111	11.3	56.7	**0.0024**	0.003	123.9	mg/L	7	Standard
	Cd	114	32.3	39.0	**0.0014**	0.003	178.7	ug/L	16	Standard
>	**In**	115	601315.6	1.3				ug/L	611117	Standard
	Sn	118	783.4	33.2	**0.0331**	0.047	140.5	ug/L	518	Standard
	Sb	123	646.2	31.1	**0.1267**	0.045	35.7	ug/L	127	Standard
	Ba	135	40.3	7.6	**-0.0052**	0.002	33.4	ug/L	45	Standard
	Ce	140	38.3	19.9				ug/L	298	Standard
>	**Tb**	159	937082.2	1.4				ug/L	977942	Standard
	Ho	165	5.0	100.0				ug/L	12	Standard
	Tl	203	49.7	12.9	**0.0012**	0.001	66.7	ug/L	31	Standard
	Tl	205	40.0	57.3	**0.0033**	0.003	97.6	ug/L	20	Standard
	Pb	206	275.3	5.0	**-0.0116**	0.003	25.8	ug/L	286	Standard
	Pb	207	258.0	7.0	**-0.0041**	0.003	84.6	ug/L	257	Standard
	Pb	208	1051.3	3.4	**-0.0036**	0.002	41.9	ug/L	956	Standard
	U	238	50.3	16.2	**0.0042**	0.001	28.1	ug/L	17	Standard
>	**Bi**	209	546028.7	0.7				ug/L	557080	Standard

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Na	23	3.3	86.6	**22.1550**	19.184	86.6	mg/L	0	Standard
Mg	24	31.7	50.8	**-0.0134**	0.022	167.6	mg/L	32	Standard
K	39	30.0	28.9	**-0.0362**	0.031	85.5	mg/L	30	Standard
Ca	43	30.0	66.7	**-0.6084**	3.177	522.1	mg/L	48	Standard
Fe	54	168.0	24.0	**0.0206**	0.039	187.8	mg/L	159	Standard
Fe	57	143.3	24.5	**-0.1229**	0.124	101.2	mg/L	195	Standard
Sc-1	45	38149.6	0.7				mg/L	39543	Standard
Cl	35	36673.0	2.0				ug/L	27642	Standard
Kr	83	1.0	173.2				ug/L	2	Standard
Br	81	1570.1	7.0				ug/L	1647	Standard
P	31	19050.3	3.5				ug/L	15231	Standard
S	34	2736.9	0.8				ug/L	1845	Standard
Sr	88	48.3	15.8				ug/L	70	Standard
C	12	133.3	4.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	5.7	217.0				mg/L	12	Standard
Ho-1	165	5.0	100.0				mg/L	12	Standard
Er	166	20.0	100.0				mg/L	20	Standard
I	127	1683.4	18.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.516	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.396
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.016
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606091601SDL WG574522-02
Sample Date/Time: Tuesday, June 28, 2016 16:37:54
Number of Replicates: 3
Autosampler Position: 242
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80481.5	1.5				ug/L	81760	Standard
	Be	9	31.7	9.1	**0.0226**	0.003	11.9	ug/L	17	Standard
	Al	27	181010.0	1.7	**1.1789**	0.039	3.3	ug/L	1410	Standard
	Sc	45	40285.2	2.7				ug/L	39543	Standard
	Ti	47	30.3	10.1	**-0.0420**	0.014	34.3	ug/L	39	Standard
	V	51	1262.3	9.3	**-0.0236**	0.014	61.0	ug/L	1415	Standard
	Cr	52	6637.8	2.8	**-0.0958**	0.014	14.1	ug/L	6946	Standard
	Cr	53	403.3	17.4	**0.1211**	0.074	61.5	ug/L	328	Standard
	Mn	55	3292.4	3.2	**0.3636**	0.014	3.8	ug/L	823	Standard
	Co	59	275.7	13.5	**0.0082**	0.005	64.5	ug/L	252	Standard
	Ni	60	218.7	22.1	**0.0120**	0.025	207.8	ug/L	192	Standard
	Cu	65	189.7	2.7	**0.0098**	0.003	33.4	ug/L	141	Standard
	Zn	66	2022.1	5.3	**1.0328**	0.100	9.7	ug/L	491	Standard
>	**Ge**	72	510876.9	1.9				ug/L	515087	Standard
	As	75	-16.1	411.9	**0.0255**	0.059	233.0	ug/L	20	Standard
	Se	82	17.9	79.1	**0.0373**	0.123	328.7	ug/L	15	Standard
	Se-1	77	53.0	5.0	**-0.0093**	0.040	429.4	ug/L	48	Standard
>	**Ga**	71	26.7	10.8				mg/L	90	Standard
	Rb	85	385.0	11.5				ug/L	23	Standard
	Y	89	434970.9	1.3				ug/L	448510	Standard
>	**Rh**	103	13.3	57.3				ug/L	15	Standard
	Mo	98	105.1	23.0	**0.0193**	0.009	45.6	ug/L	11	Standard
	Ag	107	160.3	33.6	**0.0074**	0.008	107.2	ug/L	134	Standard
	Cd	111	27.8	77.7	**0.0099**	0.010	100.3	mg/L	7	Standard
	Cd	114	89.4	76.6	**0.0121**	0.013	107.6	ug/L	16	Standard
>	**In**	115	618555.8	0.1				ug/L	611117	Standard
	Sn	118	705.0	14.2	**0.0159**	0.017	105.2	ug/L	518	Standard
	Sb	123	323.1	28.2	**0.0548**	0.019	34.7	ug/L	127	Standard
	Ba	135	6967.6	1.3	**3.3092**	0.040	1.2	ug/L	45	Standard
	Ce	140	23.3	65.5				ug/L	298	Standard
>	**Tb**	159	976647.8	1.4				ug/L	977942	Standard
	Ho	165	15.0	57.7				ug/L	12	Standard
	Tl	203	112.7	67.1	**0.0081**	0.009	105.4	ug/L	31	Standard
	Tl	205	90.0	29.4	**0.0096**	0.003	35.2	ug/L	20	Standard
	Pb	206	345.7	14.3	**-0.0019**	0.008	437.8	ug/L	286	Standard
	Pb	207	297.3	11.3	**0.0008**	0.006	736.1	ug/L	257	Standard
	Pb	208	1206.4	8.6	**0.0013**	0.005	370.6	ug/L	956	Standard
	U	238	79.3	55.4	**0.0077**	0.006	75.6	ug/L	17	Standard
>	**Bi**	209	576852.7	1.1				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	251.7	21.2	**0.2729**	0.077	28.4	mg/L	32	Standard
K	39	35.0	75.6	**-0.0238**	0.089	375.8	mg/L	30	Standard
Ca	43	41.7	66.1	**0.8623**	4.157	482.1	mg/L	48	Standard
Fe	54	139.7	6.2	**-0.0128**	0.010	79.6	mg/L	159	Standard
Fe	57	215.0	8.1	**0.0878**	0.054	61.5	mg/L	195	Standard
Sc-1	45	40285.2	2.7				mg/L	39543	Standard
Cl	35	36209.9	2.0				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1783.4	3.4				ug/L	1647	Standard
P	31	18659.8	1.9				ug/L	15231	Standard
S	34	2565.2	1.9				ug/L	1845	Standard
Sr	88	76.7	26.4				ug/L	70	Standard
C	12	126.7	24.1				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	19.2	52.1				mg/L	12	Standard
Ho-1	165	15.0	57.7				mg/L	12	Standard
Er	166	16.7	34.6				mg/L	20	Standard
I	127	2670.2	2.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		98.436	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.183	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.217
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.549
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606114201
Sample Date/Time: Tuesday, June 28, 2016 16:41:05
Number of Replicates: 3
Autosampler Position: 243
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80520.1	1.9				ug/L	81760	Standard
	Be	9	30.0	16.7	**0.0209**	0.005	21.7	ug/L	17	Standard
	Al	27	1224587.7	1.8	**8.0560**	0.286	3.6	ug/L	1410	Standard
	Sc	45	42140.2	1.9				ug/L	39543	Standard
	Ti	47	397.3	21.3	**1.4906**	0.359	24.1	ug/L	39	Standard
	V	51	2122.9	0.3	**0.1097**	0.002	1.5	ug/L	1415	Standard
	Cr	52	14472.9	1.3	**1.0963**	0.024	2.2	ug/L	6946	Standard
	Cr	53	2878.6	1.5	**3.0550**	0.050	1.6	ug/L	328	Standard
	Mn	55	698464.2	0.4	**111.4396**	0.282	0.3	ug/L	823	Standard
	Co	59	22132.5	0.4	**3.2312**	0.012	0.4	ug/L	252	Standard
	Ni	60	7435.8	1.3	**3.9843**	0.043	1.1	ug/L	192	Standard
	Cu	65	724.4	2.6	**0.3040**	0.008	2.7	ug/L	141	Standard
	Zn	66	6121.2	1.0	**4.9565**	0.034	0.7	ug/L	491	Standard
>	**Ge**	72	497323.9	0.5				ug/L	515087	Standard
	As	75	171.3	19.9	**0.1980**	0.031	15.4	ug/L	20	Standard
	Se	82	64.0	10.3	**0.4560**	0.056	12.4	ug/L	15	Standard
	Se-1	77	106.7	7.0	**0.7479**	0.110	14.7	ug/L	48	Standard
>	**Ga**	71	88.3	6.5				mg/L	90	Standard
	Rb	85	4614.0	1.5				ug/L	23	Standard
	Y	89	442742.2	2.0				ug/L	448510	Standard
>	**Rh**	103	21.7	35.3				ug/L	15	Standard
	Mo	98	335.3	5.4	**0.1033**	0.008	7.8	ug/L	11	Standard
	Ag	107	92.0	14.2	**-0.0027**	0.002	71.5	ug/L	134	Standard
	Cd	111	86.4	7.6	**0.0370**	0.004	9.6	mg/L	7	Standard
	Cd	114	204.2	9.6	**0.0339**	0.004	12.0	ug/L	16	Standard
>	**In**	115	619678.1	1.4				ug/L	611117	Standard
	Sn	118	898.4	6.0	**0.0480**	0.011	22.7	ug/L	518	Standard
	Sb	123	324.0	26.0	**0.0551**	0.019	33.6	ug/L	127	Standard
	Ba	135	76873.5	0.9	**36.7017**	0.677	1.8	ug/L	45	Standard
	Ce	140	3832.2	0.5				ug/L	298	Standard
>	**Tb**	159	963958.5	1.3				ug/L	977942	Standard
	Ho	165	96.7	23.3				ug/L	12	Standard
	Tl	203	122.3	9.5	**0.0098**	0.001	14.0	ug/L	31	Standard
	Tl	205	126.7	13.9	**0.0151**	0.002	14.9	ug/L	20	Standard
	Pb	206	564.7	2.8	**0.0417**	0.003	6.6	ug/L	286	Standard
	Pb	207	477.0	3.5	**0.0406**	0.003	8.6	ug/L	257	Standard
	Pb	208	2018.4	2.1	**0.0474**	0.002	3.2	ug/L	956	Standard
	U	238	92.7	4.5	**0.0101**	0.001	6.9	ug/L	17	Standard
>	**Bi**	209	552929.6	1.0				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.1351**	17.546	173.1	mg/L	0	Standard
Mg	24	7430.2	1.6	**9.2261**	0.222	2.4	mg/L	32	Standard
K	39	131.7	22.3	**0.2750**	0.084	30.6	mg/L	30	Standard
Ca	43	50.0	10.0	**1.7747**	0.605	34.1	mg/L	48	Standard
Fe	54	2749.1	1.6	**2.1977**	0.008	0.4	mg/L	159	Standard
Fe	57	918.4	0.8	**2.2851**	0.038	1.7	mg/L	195	Standard
> **Sc-1**	45	42140.2	1.9				mg/L	39543	Standard
Cl	35	36101.6	0.8				ug/L	27642	Standard
Kr	83	3.3	75.5				ug/L	2	Standard
Br	81	12138.2	7.4				ug/L	1647	Standard
P	31	25736.8	1.2				ug/L	15231	Standard
S	34	2443.5	6.8				ug/L	1845	Standard
Sr	88	88.3	31.2				ug/L	70	Standard
C	12	360.0	10.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	87.0	21.3				mg/L	12	Standard
Ho-1	165	96.7	23.3				mg/L	12	Standard
Er	166	63.3	48.2				mg/L	20	Standard
I	127	223077.6	8.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.483	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.551	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.401	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.255	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606114203
Sample Date/Time: Tuesday, June 28, 2016 16:44:17
Number of Replicates: 3
Autosampler Position: 244
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81992.9	1.1				ug/L	81760	Standard
	Be	9	28.3	27.0	**0.0187**	0.008	41.6	ug/L	17	Standard
	Al	27	794059.8	1.7	**5.1234**	0.139	2.7	ug/L	1410	Standard
	Sc	45	39785.5	1.2				ug/L	39543	Standard
	Ti	47	377.0	7.0	**1.3367**	0.105	7.9	ug/L	39	Standard
	V	51	6234.1	1.0	**0.6819**	0.005	0.8	ug/L	1415	Standard
	Cr	52	12611.2	0.3	**0.7377**	0.006	0.8	ug/L	6946	Standard
	Cr	53	1423.4	7.9	**1.2652**	0.132	10.4	ug/L	328	Standard
	Mn	55	579693.3	1.0	**88.4369**	1.228	1.4	ug/L	823	Standard
	Co	59	3503.7	1.5	**0.4627**	0.007	1.6	ug/L	252	Standard
	Ni	60	3465.4	2.9	**1.7179**	0.054	3.1	ug/L	192	Standard
	Cu	65	1070.0	1.6	**0.4670**	0.008	1.6	ug/L	141	Standard
	Zn	66	3004.0	2.3	**1.8876**	0.071	3.8	ug/L	491	Standard
>	**Ge**	72	519952.2	0.4				ug/L	515087	Standard
	As	75	346.7	9.3	**0.3458**	0.028	8.2	ug/L	20	Standard
	Se	82	27.6	23.7	**0.1179**	0.056	47.6	ug/L	15	Standard
	Se-1	77	61.3	6.2	**0.0875**	0.047	53.2	ug/L	48	Standard
>	**Ga**	71	168.3	22.5				mg/L	90	Standard
	Rb	85	8202.2	4.2				ug/L	23	Standard
	Y	89	450084.2	2.9				ug/L	448510	Standard
>	**Rh**	103	20.0	50.0				ug/L	15	Standard
	Mo	98	804.4	3.7	**0.2777**	0.016	5.8	ug/L	11	Standard
	Ag	107	104.7	4.0	**-0.0007**	0.001	91.7	ug/L	134	Standard
	Cd	111	177.3	6.3	**0.0797**	0.005	6.4	mg/L	7	Standard
	Cd	114	412.5	12.7	**0.0743**	0.011	14.2	ug/L	16	Standard
>	**In**	115	613204.5	2.4				ug/L	611117	Standard
	Sn	118	838.4	3.1	**0.0394**	0.004	11.4	ug/L	518	Standard
	Sb	123	255.2	2.7	**0.0411**	0.003	6.6	ug/L	127	Standard
	Ba	135	46232.8	2.2	**22.2974**	0.510	2.3	ug/L	45	Standard
	Ce	140	10413.6	4.0				ug/L	298	Standard
>	**Tb**	159	959024.8	2.1				ug/L	977942	Standard
	Ho	165	235.0	14.0				ug/L	12	Standard
	Tl	203	65.0	35.5	**0.0028**	0.003	94.5	ug/L	31	Standard
	Tl	205	33.3	45.8	**0.0022**	0.002	93.6	ug/L	20	Standard
	Pb	206	995.4	6.0	**0.1186**	0.010	8.6	ug/L	286	Standard
	Pb	207	825.7	1.1	**0.1096**	0.003	2.3	ug/L	257	Standard
	Pb	208	3331.5	0.8	**0.1144**	0.002	1.9	ug/L	956	Standard
	U	238	237.0	6.0	**0.0298**	0.002	6.6	ug/L	17	Standard
>	**Bi**	209	562917.3	0.4				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	1456.7	5.2	**1.8709**	0.119	6.4	mg/L	32	Standard
K	39	195.0	2.6	**0.5136**	0.022	4.3	mg/L	30	Standard
Ca	43	66.7	37.7	**4.7333**	3.876	81.9	mg/L	48	Standard
Fe	54	1995.7	3.8	**1.6587**	0.089	5.4	mg/L	159	Standard
Fe	57	716.7	4.0	**1.7796**	0.068	3.8	mg/L	195	Standard
> **Sc-1**	45	39785.5	1.2				mg/L	39543	Standard
Cl	35	34494.6	2.9				ug/L	27642	Standard
Kr	83	1.3	173.2				ug/L	2	Standard
Br	81	3500.4	9.9				ug/L	1647	Standard
P	31	20160.1	3.5				ug/L	15231	Standard
S	34	2286.8	4.4				ug/L	1845	Standard
Sr	88	110.0	28.4				ug/L	70	Standard
C	12	216.7	25.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	341.7	16.9				mg/L	12	Standard
Ho-1	165	235.0	14.0				mg/L	12	Standard
Er	166	243.3	11.9				mg/L	20	Standard
I	127	25506.6	11.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.285	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.945	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.342
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.048
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606114205
Sample Date/Time: Tuesday, June 28, 2016 16:47:28
Number of Replicates: 3
Autosampler Position: 245
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82787.3	1.4				ug/L	81760	Standard
	Be	9	48.3	23.9	**0.0383**	0.011	29.1	ug/L	17	Standard
	Al	27	819185.4	1.5	**5.2350**	0.125	2.4	ug/L	1410	Standard
	Sc	45	40940.2	1.5				ug/L	39543	Standard
	Ti	47	480.0	5.9	**1.6939**	0.112	6.6	ug/L	39	Standard
	V	51	6800.6	1.0	**0.7356**	0.007	0.9	ug/L	1415	Standard
	Cr	52	13980.4	1.6	**0.8771**	0.035	4.0	ug/L	6946	Standard
	Cr	53	1753.4	3.0	**1.5823**	0.062	3.9	ug/L	328	Standard
	Mn	55	596277.6	1.3	**88.4306**	1.209	1.4	ug/L	823	Standard
	Co	59	3687.4	0.3	**0.4741**	0.004	0.7	ug/L	252	Standard
	Ni	60	3717.1	1.3	**1.7958**	0.025	1.4	ug/L	192	Standard
	Cu	65	1213.0	2.2	**0.5240**	0.015	2.9	ug/L	141	Standard
	Zn	66	2977.6	2.2	**1.7886**	0.052	2.9	ug/L	491	Standard
>	**Ge**	72	534849.8	0.4				ug/L	515087	Standard
	As	75	377.9	7.0	**0.3640**	0.023	6.2	ug/L	20	Standard
	Se	82	30.4	15.6	**0.1347**	0.040	29.6	ug/L	15	Standard
	Se-1	77	66.7	7.4	**0.1333**	0.063	47.3	ug/L	48	Standard
>	**Ga**	71	223.3	16.2				mg/L	90	Standard
	Rb	85	9057.7	1.9				ug/L	23	Standard
	Y	89	448330.1	1.0				ug/L	448510	Standard
>	**Rh**	103	13.3	21.7				ug/L	15	Standard
	Mo	98	830.0	4.5	**0.2872**	0.016	5.5	ug/L	11	Standard
	Ag	107	122.7	18.8	**0.0020**	0.004	175.3	ug/L	134	Standard
	Cd	111	156.2	7.4	**0.0700**	0.006	8.4	mg/L	7	Standard
	Cd	114	373.1	12.2	**0.0667**	0.009	13.8	ug/L	16	Standard
>	**In**	115	612810.6	0.7				ug/L	611117	Standard
	Sn	118	755.0	9.6	**0.0254**	0.012	48.6	ug/L	518	Standard
	Sb	123	285.8	9.7	**0.0476**	0.006	12.8	ug/L	127	Standard
	Ba	135	48731.6	0.5	**23.5144**	0.057	0.2	ug/L	45	Standard
	Ce	140	12518.5	3.0				ug/L	298	Standard
>	**Tb**	159	979236.7	1.3				ug/L	977942	Standard
	Ho	165	273.3	12.2				ug/L	12	Standard
	Tl	203	95.3	25.1	**0.0062**	0.003	47.7	ug/L	31	Standard
	Tl	205	61.7	4.7	**0.0059**	0.000	5.9	ug/L	20	Standard
	Pb	206	1176.7	3.8	**0.1481**	0.011	7.4	ug/L	286	Standard
	Pb	207	985.7	2.0	**0.1385**	0.005	4.0	ug/L	257	Standard
	Pb	208	4033.5	3.6	**0.1475**	0.011	7.5	ug/L	956	Standard
	U	238	279.0	8.7	**0.0349**	0.004	10.9	ug/L	17	Standard
>	**Bi**	209	573358.0	1.7				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.1692**	17.605	173.1	mg/L	0	Standard
Mg	24	1471.7	7.4	**1.8343**	0.119	6.5	mg/L	32	Standard
K	39	181.7	21.4	**0.4516**	0.129	28.5	mg/L	30	Standard
Ca	43	60.0	36.3	**3.4344**	3.118	90.8	mg/L	48	Standard
Fe	54	2300.2	8.7	**1.8724**	0.148	7.9	mg/L	159	Standard
Fe	57	716.7	8.3	**1.7108**	0.158	9.3	mg/L	195	Standard
> **Sc-1**	45	40940.2	1.5				mg/L	39543	Standard
Cl	35	34657.6	1.8				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	3160.3	4.1				ug/L	1647	Standard
P	31	20585.6	2.1				ug/L	15231	Standard
S	34	2273.5	1.5				ug/L	1845	Standard
Sr	88	120.0	11.0				ug/L	70	Standard
C	12	246.7	23.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	334.1	26.2				mg/L	12	Standard
Ho-1	165	273.3	12.2				mg/L	12	Standard
Er	166	263.3	24.4				mg/L	20	Standard
I	127	21154.8	6.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.256	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.837	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.277
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.922
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606115102
Sample Date/Time: Tuesday, June 28, 2016 16:50:39
Number of Replicates: 3
Autosampler Position: 246
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83962.1	2.2				ug/L	81760	Standard
	Be	9	23.3	32.7	**0.0132**	0.008	57.7	ug/L	17	Standard
	Al	27	14475219.3	2.2	**91.4576**	2.716	3.0	ug/L	1410	Standard
	Sc	45	40821.6	0.4				ug/L	39543	Standard
	Ti	47	413.3	6.2	**1.5180**	0.138	9.1	ug/L	39	Standard
	V	51	16629.8	2.6	**2.2151**	0.113	5.1	ug/L	1415	Standard
	Cr	52	10947.0	2.1	**0.5345**	0.067	12.6	ug/L	6946	Standard
	Cr	53	3965.5	4.7	**4.2265**	0.126	3.0	ug/L	328	Standard
	Mn	55	185468.7	3.9	**28.8128**	1.697	5.9	ug/L	823	Standard
	Co	59	997.7	2.0	**0.1124**	0.006	4.9	ug/L	252	Standard
	Ni	60	1478.4	4.6	**0.6898**	0.053	7.7	ug/L	192	Standard
	Cu	65	1958.8	1.9	**0.9525**	0.040	4.2	ug/L	141	Standard
	Zn	66	8106.5	2.8	**6.6572**	0.319	4.8	ug/L	491	Standard
>	**Ge**	72	509236.4	2.2				ug/L	515087	Standard
	As	75	962.9	2.3	**0.9070**	0.035	3.9	ug/L	20	Standard
	Se	82	228.1	4.7	**1.8861**	0.120	6.4	ug/L	15	Standard
	Se-1	77	223.7	5.0	**2.2872**	0.212	9.3	ug/L	48	Standard
>	**Ga**	71	265.0	37.9				mg/L	90	Standard
	Rb	85	21039.6	2.1				ug/L	23	Standard
	Y	89	444144.2	0.6				ug/L	448510	Standard
>	**Rh**	103	50.0	20.0				ug/L	15	Standard
	Mo	98	3394.4	4.1	**1.2339**	0.051	4.2	ug/L	11	Standard
	Ag	107	107.3	13.1	**-0.0003**	0.002	751.8	ug/L	134	Standard
	Cd	111	62.6	4.9	**0.0263**	0.001	5.7	mg/L	7	Standard
	Cd	114	195.9	21.1	**0.0327**	0.008	24.5	ug/L	16	Standard
>	**In**	115	612517.0	0.3				ug/L	611117	Standard
	Sn	118	836.7	5.7	**0.0392**	0.008	20.1	ug/L	518	Standard
	Sb	123	547.1	4.7	**0.1028**	0.005	5.0	ug/L	127	Standard
	Ba	135	71666.8	2.3	**34.6081**	0.699	2.0	ug/L	45	Standard
	Ce	140	3362.0	2.6				ug/L	298	Standard
>	**Tb**	159	988372.6	0.5				ug/L	977942	Standard
	Ho	165	63.3	75.9				ug/L	12	Standard
	Tl	203	105.7	10.4	**0.0078**	0.001	16.0	ug/L	31	Standard
	Tl	205	108.3	39.8	**0.0125**	0.006	45.9	ug/L	20	Standard
	Pb	206	1800.1	2.5	**0.2697**	0.008	3.1	ug/L	286	Standard
	Pb	207	1518.4	2.6	**0.2536**	0.007	2.9	ug/L	257	Standard
	Pb	208	6212.5	1.8	**0.2692**	0.011	4.0	ug/L	956	Standard
	U	238	10075.0	2.3	**1.4043**	0.047	3.4	ug/L	17	Standard
>	**Bi**	209	556782.3	1.6				ug/L	557080	Standard

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Na	23	3.3	86.6	**20.7586**	17.973	86.6	mg/L	0	Standard
Mg	24	36599.2	3.6	**47.1388**	1.781	3.8	mg/L	32	Standard
K	39	311.7	20.3	**0.8782**	0.204	23.2	mg/L	30	Standard
Ca	43	200.0	10.0	**24.0730**	2.845	11.8	mg/L	48	Standard
Fe	54	272.4	27.9	**0.1018**	0.067	65.8	mg/L	159	Standard
Fe	57	400.0	17.2	**0.6830**	0.221	32.3	mg/L	195	Standard
Sc-1	45	40821.6	0.4				mg/L	39543	Standard
Cl	35	37764.4	4.8				ug/L	27642	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	41179.3	5.9				ug/L	1647	Standard
P	31	20392.0	1.6				ug/L	15231	Standard
S	34	2350.2	4.9				ug/L	1845	Standard
Sr	88	246.7	3.1				ug/L	70	Standard
C	12	240.0	16.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	93.2	27.3				mg/L	12	Standard
Ho-1	165	63.3	75.9				mg/L	12	Standard
Er	166	73.3	7.9				mg/L	20	Standard
I	127	267945.4	8.8				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		102.693	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.864	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.229
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.946
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606115105
Sample Date/Time: Tuesday, June 28, 2016 16:53:51
Number of Replicates: 3
Autosampler Position: 247
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81681.4	3.1				ug/L	81760	Standard
	Be	9	16.7	45.8	**0.0069**	0.007	104.2	ug/L	17	Standard
	Al	27	18070414.8	1.1	**117.3803**	2.444	2.1	ug/L	1410	Standard
	Sc	45	40721.3	2.6				ug/L	39543	Standard
	Ti	47	244.7	8.0	**0.8457**	0.069	8.1	ug/L	39	Standard
	V	51	17618.4	3.0	**2.3985**	0.046	1.9	ug/L	1415	Standard
	Cr	52	10888.2	1.3	**0.5506**	0.002	0.4	ug/L	6946	Standard
	Cr	53	4290.6	7.0	**4.6855**	0.402	8.6	ug/L	328	Standard
	Mn	55	234137.7	1.0	**36.9743**	0.056	0.2	ug/L	823	Standard
	Co	59	907.0	1.1	**0.1013**	0.001	0.9	ug/L	252	Standard
	Ni	60	1595.4	2.1	**0.7658**	0.017	2.3	ug/L	192	Standard
	Cu	65	1678.8	2.6	**0.8172**	0.017	2.1	ug/L	141	Standard
	Zn	66	5525.3	1.2	**4.3540**	0.048	1.1	ug/L	491	Standard
>	**Ge**	72	501124.8	1.2				ug/L	515087	Standard
	As	75	1072.7	4.1	**1.0212**	0.046	4.5	ug/L	20	Standard
	Se	82	264.0	5.9	**2.2378**	0.139	6.2	ug/L	15	Standard
	Se-1	77	284.0	16.7	**3.1586**	0.667	21.1	ug/L	48	Standard
>	**Ga**	71	116.7	13.8				mg/L	90	Standard
	Rb	85	15923.4	4.0				ug/L	23	Standard
	Y	89	444308.5	1.8				ug/L	448510	Standard
>	**Rh**	103	68.3	40.3				ug/L	15	Standard
	Mo	98	3823.6	1.7	**1.4182**	0.006	0.4	ug/L	11	Standard
	Ag	107	76.3	4.0	**-0.0047**	0.001	10.8	ug/L	134	Standard
	Cd	111	40.8	13.4	**0.0165**	0.003	15.5	mg/L	7	Standard
	Cd	114	111.3	16.3	**0.0169**	0.004	22.4	ug/L	16	Standard
>	**In**	115	601437.2	1.6				ug/L	611117	Standard
	Sn	118	1256.7	47.3	**0.1130**	0.098	86.7	ug/L	518	Standard
	Sb	123	502.0	6.8	**0.0953**	0.009	9.3	ug/L	127	Standard
	Ba	135	85456.0	1.5	**42.0358**	0.440	1.0	ug/L	45	Standard
	Ce	140	1221.7	20.4				ug/L	298	Standard
>	**Tb**	159	951914.7	0.8				ug/L	977942	Standard
	Ho	165	38.3	39.8				ug/L	12	Standard
	Tl	203	109.0	4.0	**0.0087**	0.001	7.8	ug/L	31	Standard
	Tl	205	100.0	13.2	**0.0120**	0.002	15.9	ug/L	20	Standard
	Pb	206	942.7	3.4	**0.1187**	0.004	3.7	ug/L	286	Standard
	Pb	207	751.4	3.5	**0.1031**	0.007	7.3	ug/L	257	Standard
	Pb	208	3320.1	1.9	**0.1235**	0.005	4.4	ug/L	956	Standard
	U	238	12716.0	1.7	**1.8521**	0.048	2.6	ug/L	17	Standard
>	**Bi**	209	533061.4	1.1				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.4978**	18.174	173.1	mg/L	0	Standard
Mg	24	45127.2	3.7	**58.2718**	1.297	2.2	mg/L	32	Standard
K	39	268.3	17.6	**0.7391**	0.156	21.1	mg/L	30	Standard
Ca	43	230.0	5.8	**28.6229**	2.753	9.6	mg/L	48	Standard
Fe	54	227.2	16.5	**0.0631**	0.037	58.2	mg/L	159	Standard
Fe	57	321.7	8.6	**0.4294**	0.079	18.3	mg/L	195	Standard
> **Sc-1**	45	40721.3	2.6				mg/L	39543	Standard
Cl	35	40535.5	2.1				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	42472.8	3.2				ug/L	1647	Standard
P	31	21144.7	2.2				ug/L	15231	Standard
S	34	2520.2	4.3				ug/L	1845	Standard
Sr	88	268.3	23.3				ug/L	70	Standard
C	12	270.0	30.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	48.6	21.1				mg/L	12	Standard
Ho-1	165	38.3	39.8				mg/L	12	Standard
Er	166	30.0	33.3				mg/L	20	Standard
I	127	357293.3	4.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.904	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.289	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.416
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.688
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606115401 WG573751-03
Sample Date/Time: Tuesday, June 28, 2016 16:57:02
Number of Replicates: 3
Autosampler Position: 248
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	100430.3	2.8				ug/L	81760	Standard
	Be	9	28.3	56.7	**0.0134**	0.013	96.3	ug/L	17	Standard
	Al	27	81335563.7	1.7	**429.6767**	8.046	1.9	ug/L	1410	Standard
	Sc	45	36054.5	1.3				ug/L	39543	Standard
	Ti	47	276.7	4.4	**1.0861**	0.041	3.8	ug/L	39	Standard
	V	51	56034.7	2.7	**8.8625**	0.243	2.7	ug/L	1415	Standard
	Cr	52	12377.7	0.7	**0.9433**	0.019	2.0	ug/L	6946	Standard
	Cr	53	23940.6	3.3	**30.3443**	1.215	4.0	ug/L	328	Standard
	Mn	55	741944.6	0.9	**128.6152**	2.806	2.2	ug/L	823	Standard
	Co	59	3502.1	2.3	**0.5295**	0.021	4.0	ug/L	252	Standard
	Ni	60	10135.4	1.6	**5.9492**	0.102	1.7	ug/L	192	Standard
	Cu	65	4993.5	1.7	**2.8661**	0.085	3.0	ug/L	141	Standard
	Zn	66	5821.5	1.7	**5.1486**	0.184	3.6	ug/L	491	Standard
>	**Ge**	72	457910.9	1.5				ug/L	515087	Standard
	As	75	1957.2	6.1	**1.9997**	0.145	7.2	ug/L	20	Standard
	Se	82	3071.1	3.5	**29.9014**	1.486	5.0	ug/L	15	Standard
	Se-1	77	4244.3	1.8	**62.6742**	2.070	3.3	ug/L	48	Standard
>	**Ga**	71	138.3	10.4				mg/L	90	Standard
	Rb	85	9993.3	0.6				ug/L	23	Standard
	Y	89	397349.5	0.4				ug/L	448510	Standard
>	**Rh**	103	1400.1	6.9				ug/L	15	Standard
	Mo	98	28731.5	0.6	**12.2349**	0.110	0.9	ug/L	11	Standard
	Ag	107	395.7	2.6	**0.0517**	0.002	4.3	ug/L	134	Standard
	Cd	111	92.0	15.6	**0.0467**	0.008	17.2	mg/L	7	Standard
	Cd	114	319.4	5.6	**0.0659**	0.004	5.6	ug/L	16	Standard
>	**In**	115	530125.1	0.7				ug/L	611117	Standard
	Sn	118	1140.0	5.3	**0.1203**	0.011	8.8	ug/L	518	Standard
	Sb	123	532.5	6.0	**0.1172**	0.007	5.9	ug/L	127	Standard
	Ba	135	16736.6	1.8	**9.3206**	0.182	2.0	ug/L	45	Standard
	Ce	140	1620.1	9.0				ug/L	298	Standard
>	**Tb**	159	890828.2	2.0				ug/L	977942	Standard
	Ho	165	38.3	27.2				ug/L	12	Standard
	Tl	203	267.7	7.7	**0.0327**	0.003	10.1	ug/L	31	Standard
	Tl	205	231.7	6.6	**0.0350**	0.002	6.9	ug/L	20	Standard
	Pb	206	883.7	4.8	**0.1290**	0.007	5.4	ug/L	286	Standard
	Pb	207	738.7	4.5	**0.1206**	0.010	8.0	ug/L	257	Standard
	Pb	208	2811.4	0.6	**0.1152**	0.004	3.5	ug/L	956	Standard
	U	238	63722.1	1.7	**10.4767**	0.095	0.9	ug/L	17	Standard
>	**Bi**	209	472777.8	1.7				ug/L	557080	Standard

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Na	23	15.0	33.3	**105.9031**	36.283	34.3	mg/L	0	Standard
Mg	24	356514.1	0.8	**520.5310**	10.800	2.1	mg/L	32	Standard
K	39	430.0	2.3	**1.4525**	0.056	3.9	mg/L	30	Standard
Ca	43	1840.1	5.6	**301.0738**	13.488	4.5	mg/L	48	Standard
Fe	54	188.6	12.1	**0.0500**	0.021	41.8	mg/L	159	Standard
Fe	57	1585.1	2.5	**5.2457**	0.200	3.8	mg/L	195	Standard
> **Sc-1**	45	36054.5	1.3				mg/L	39543	Standard
Cl	35	90598.1	1.3				ug/L	27642	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	42312.4	3.9				ug/L	1647	Standard
P	31	19347.4	2.8				ug/L	15231	Standard
S	34	2421.9	2.4				ug/L	1845	Standard
Sr	88	6231.3	0.9				ug/L	70	Standard
C	12	243.3	12.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	37.9	25.6				mg/L	12	Standard
Ho-1	165	38.3	27.2				mg/L	12	Standard
Er	166	43.3	96.1				mg/L	20	Standard
I	127	118064.4	6.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		122.835	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		88.900	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	86.747
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	84.867
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606115401 WG573751-03
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Method 6020 - Summary Report

Sample ID: L1606115402S WG573751-09
Sample Date/Time: Tuesday, June 28, 2016 17:00:14
Number of Replicates: 3
Autosampler Position: 249
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	111794.4	2.2				ug/L	81760	Standard
	Be	9	61074.6	3.8	**44.9573**	0.853	1.9	ug/L	17	Standard
	Al	27	84589452.8	4.6	**401.1886**	9.792	2.4	ug/L	1410	Standard
	Sc	45	39148.9	4.1				ug/L	39543	Standard
	Ti	47	272.0	24.8	**0.9934**	0.318	32.0	ug/L	39	Standard
	V	51	406216.4	3.4	**61.4172**	0.609	1.0	ug/L	1415	Standard
	Cr	52	347340.1	3.9	**51.5532**	0.830	1.6	ug/L	6946	Standard
	Cr	53	63548.0	2.3	**76.0057**	0.198	0.3	ug/L	328	Standard
	Mn	55	986761.6	2.9	**160.3601**	1.162	0.7	ug/L	823	Standard
	Co	59	344414.5	2.6	**51.6648**	0.567	1.1	ug/L	252	Standard
	Ni	60	96461.7	3.6	**53.9005**	0.670	1.2	ug/L	192	Standard
	Cu	65	88941.7	2.7	**49.2712**	0.171	0.3	ug/L	141	Standard
	Zn	66	55366.0	3.1	**52.4384**	0.443	0.8	ug/L	491	Standard
>	**Ge**	72	488431.6	2.5				ug/L	515087	Standard
	As	75	59145.7	4.0	**55.5035**	0.877	1.6	ug/L	20	Standard
	Se	82	9257.9	4.7	**84.6512**	1.891	2.2	ug/L	15	Standard
	Se-1	77	8241.9	2.0	**114.6628**	0.599	0.5	ug/L	48	Standard
>	**Ga**	71	135.0	3.7				mg/L	90	Standard
	Rb	85	11232.5	8.2				ug/L	23	Standard
	Y	89	424780.5	4.2				ug/L	448510	Standard
>	**Rh**	103	1410.1	5.3				ug/L	15	Standard
	Mo	98	28554.4	4.0	**11.2353**	0.049	0.4	ug/L	11	Standard
	Ag	107	298500.0	4.4	**47.3531**	0.325	0.7	ug/L	134	Standard
	Cd	111	96838.7	4.3	**48.2572**	0.264	0.5	mg/L	7	Standard
	Cd	114	236461.6	3.9	**48.4818**	0.307	0.6	ug/L	16	Standard
>	**In**	115	573601.2	3.7				ug/L	611117	Standard
	Sn	118	926.7	16.3	**0.0649**	0.025	39.2	ug/L	518	Standard
	Sb	123	232072.7	4.2	**52.3852**	0.509	1.0	ug/L	127	Standard
	Ba	135	113861.5	4.7	**58.7202**	0.562	1.0	ug/L	45	Standard
	Ce	140	1120.0	4.0				ug/L	298	Standard
>	**Tb**	159	960238.4	4.5				ug/L	977942	Standard
	Ho	165	33.3	75.5				ug/L	12	Standard
	Tl	203	395828.3	3.1	**51.4711**	0.762	1.5	ug/L	31	Standard
	Tl	205	346560.1	3.5	**51.8878**	0.159	0.3	ug/L	20	Standard
	Pb	206	263890.3	2.7	**53.4438**	0.979	1.8	ug/L	286	Standard
	Pb	207	230261.5	2.5	**51.7030**	0.928	1.8	ug/L	257	Standard
	Pb	208	887552.6	2.9	**51.5030**	0.554	1.1	ug/L	956	Standard
	U	238	419873.0	2.9	**64.2072**	0.642	1.0	ug/L	17	Standard
>	**Bi**	209	508536.8	3.8				ug/L	557080	Standard

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Na	23	21.7	35.3	**139.6053**	45.304	32.5	mg/L	0	Standard
Mg	24	357824.7	2.8	**481.2852**	10.577	2.2	mg/L	32	Standard
K	39	491.7	6.5	**1.5399**	0.155	10.1	mg/L	30	Standard
Ca	43	1775.1	1.7	**267.3999**	15.688	5.9	mg/L	48	Standard
Fe	54	171.9	15.3	**0.0199**	0.020	102.8	mg/L	159	Standard
Fe	57	1550.1	0.6	**4.6666**	0.208	4.5	mg/L	195	Standard
> **Sc-1**	45	39148.9	4.1				mg/L	39543	Standard
Cl	35	91435.3	3.5				ug/L	27642	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	45418.1	6.1				ug/L	1647	Standard
P	31	20330.3	5.5				ug/L	15231	Standard
S	34	2288.5	3.3				ug/L	1845	Standard
Sr	88	6416.4	6.4				ug/L	70	Standard
C	12	206.7	37.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	21.9	50.9				mg/L	12	Standard
Ho-1	165	33.3	75.5				mg/L	12	Standard
Er	166	30.0	57.7				mg/L	20	Standard
I	127	49499.1	2.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		136.735	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.825	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	93.861
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	91.286
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Se-1 77 Upper, S, EEE	Se-1	77	

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Method 6020 - Summary Report

Sample ID: L1606115403SD WG573751-10
Sample Date/Time: Tuesday, June 28, 2016 17:03:25
Number of Replicates: 3
Autosampler Position: 250
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	118994.0	2.6				ug/L	81760	Standard
	Be	9	64654.3	0.9	**44.7357**	0.820	1.8	ug/L	17	Standard
	Al	27	87741403.7	3.4	**391.0655**	6.582	1.7	ug/L	1410	Standard
	Sc	45	41172.5	1.6				ug/L	39543	Standard
	Ti	47	259.3	3.7	**0.9238**	0.057	6.2	ug/L	39	Standard
	V	51	425385.5	3.2	**63.6566**	1.295	2.0	ug/L	1415	Standard
	Cr	52	362069.3	1.9	**53.2267**	0.604	1.1	ug/L	6946	Standard
	Cr	53	64441.8	2.0	**76.2717**	0.872	1.1	ug/L	328	Standard
	Mn	55	1073606.3	3.1	**172.6721**	4.096	2.4	ug/L	823	Standard
	Co	59	369825.3	3.2	**54.8942**	1.128	2.1	ug/L	252	Standard
	Ni	60	100548.2	1.5	**55.6131**	0.149	0.3	ug/L	192	Standard
	Cu	65	92359.0	1.3	**50.6385**	0.319	0.6	ug/L	141	Standard
	Zn	66	57865.3	2.6	**54.2651**	0.864	1.6	ug/L	491	Standard
>	**Ge**	72	493572.0	1.8				ug/L	515087	Standard
	As	75	61885.0	3.3	**57.4777**	1.381	2.4	ug/L	20	Standard
	Se	82	9664.4	3.7	**87.4717**	2.250	2.6	ug/L	15	Standard
	Se-1	77	8366.3	3.5	**115.1653**	2.897	2.5	ug/L	48	Standard
>	**Ga**	71	118.3	21.7				mg/L	90	Standard
	Rb	85	11170.8	6.4				ug/L	23	Standard
	Y	89	447220.0	3.1				ug/L	448510	Standard
>	**Rh**	103	1640.1	8.8				ug/L	15	Standard
	Mo	98	29726.0	4.1	**11.0857**	0.160	1.4	ug/L	11	Standard
	Ag	107	312572.9	2.2	**47.0220**	0.762	1.6	ug/L	134	Standard
	Cd	111	102356.1	3.3	**48.3584**	0.794	1.6	mg/L	7	Standard
	Cd	114	246212.9	4.6	**47.8408**	0.884	1.8	ug/L	16	Standard
>	**In**	115	605206.5	3.7				ug/L	611117	Standard
	Sn	118	1233.4	10.6	**0.1085**	0.018	16.3	ug/L	518	Standard
	Sb	123	240651.4	1.9	**51.5127**	0.935	1.8	ug/L	127	Standard
	Ba	135	117995.0	3.4	**57.6913**	0.169	0.3	ug/L	45	Standard
	Ce	140	1415.1	2.3				ug/L	298	Standard
>	**Tb**	159	994298.0	3.0				ug/L	977942	Standard
	Ho	165	46.7	12.4				ug/L	12	Standard
	Tl	203	412661.0	1.3	**51.8933**	0.197	0.4	ug/L	31	Standard
	Tl	205	366877.2	3.6	**53.1179**	1.107	2.1	ug/L	20	Standard
	Pb	206	275320.1	2.3	**53.9118**	0.413	0.8	ug/L	286	Standard
	Pb	207	238830.1	2.6	**51.8469**	0.552	1.1	ug/L	257	Standard
	Pb	208	936516.1	2.9	**52.5472**	0.756	1.4	ug/L	956	Standard
	U	238	442147.9	3.9	**65.3698**	1.598	2.4	ug/L	17	Standard
>	**Bi**	209	525736.2	1.5				ug/L	557080	Standard

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Na	23	31.7	48.2	**194.7966**	93.559	48.0	mg/L	0	Standard
Mg	24	381865.2	2.0	**488.2175**	12.226	2.5	mg/L	32	Standard
K	39	475.0	11.9	**1.3985**	0.159	11.4	mg/L	30	Standard
Ca	43	1828.4	7.5	**261.2707**	17.620	6.7	mg/L	48	Standard
Fe	54	210.4	5.2	**0.0459**	0.012	26.9	mg/L	159	Standard
Fe	57	1693.4	5.0	**4.8640**	0.189	3.9	mg/L	195	Standard
> **Sc-1**	45	41172.5	1.6				mg/L	39543	Standard
Cl	35	96785.1	3.5				ug/L	27642	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	48665.0	7.0				ug/L	1647	Standard
P	31	21074.7	3.4				ug/L	15231	Standard
S	34	2411.9	0.6				ug/L	1845	Standard
Sr	88	7001.6	9.4				ug/L	70	Standard
C	12	253.3	28.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	54.1	45.2				mg/L	12	Standard
Ho-1	165	46.7	12.4				mg/L	12	Standard
Er	166	53.3	28.6				mg/L	20	Standard
I	127	96813.1	12.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		145.540	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.823	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.033
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.373
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Se-1 77 Upper, S, EEE	Se-1	77	

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Method 6020 - Summary Report

Sample ID: L1606115404
Sample Date/Time: Tuesday, June 28, 2016 17:06:37
Number of Replicates: 3
Autosampler Position: 251
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	100804.3	1.4				ug/L	81760	Standard
	Be	9	43.3	6.7	**0.0257**	0.002	9.1	ug/L	17	Standard
	Al	27	95134.9	5.2	**0.4862**	0.026	5.4	ug/L	1410	Standard
	Sc	45	38767.9	2.5				ug/L	39543	Standard
	Ti	47	56.0	17.6	**0.0568**	0.042	74.0	ug/L	39	Standard
	V	51	2653.2	7.2	**0.1688**	0.023	13.6	ug/L	1415	Standard
	Cr	52	16846.0	0.3	**1.3242**	0.040	3.0	ug/L	6946	Standard
	Cr	53	2448.5	10.3	**2.4055**	0.318	13.2	ug/L	328	Standard
	Mn	55	6416.4	0.3	**0.8254**	0.012	1.5	ug/L	823	Standard
	Co	59	385.0	5.1	**0.0226**	0.003	13.2	ug/L	252	Standard
	Ni	60	1595.4	9.2	**0.7282**	0.071	9.8	ug/L	192	Standard
	Cu	65	1383.7	5.1	**0.6260**	0.046	7.3	ug/L	141	Standard
	Zn	66	3329.0	1.8	**2.1614**	0.092	4.3	ug/L	491	Standard
>	**Ge**	72	523540.2	1.3				ug/L	515087	Standard
	As	75	21.6	288.4	**0.0594**	0.054	91.4	ug/L	20	Standard
	Se	82	48.4	30.2	**0.2956**	0.131	44.3	ug/L	15	Standard
	Se-1	77	118.7	6.2	**0.8319**	0.117	14.0	ug/L	48	Standard
>	**Ga**	71	35.0	51.5				mg/L	90	Standard
	Rb	85	285.0	10.7				ug/L	23	Standard
	Y	89	449294.4	0.5				ug/L	448510	Standard
>	**Rh**	103	35.0	14.3				ug/L	15	Standard
	Mo	98	461.6	2.9	**0.1485**	0.005	3.0	ug/L	11	Standard
	Ag	107	143.3	7.2	**0.0047**	0.002	32.8	ug/L	134	Standard
	Cd	111	43.9	7.3	**0.0172**	0.002	8.8	mg/L	7	Standard
	Cd	114	151.5	5.9	**0.0237**	0.002	7.4	ug/L	16	Standard
>	**In**	115	622732.4	0.3				ug/L	611117	Standard
	Sn	118	3920.5	2.1	**0.5488**	0.015	2.8	ug/L	518	Standard
	Sb	123	270.3	27.2	**0.0434**	0.015	35.5	ug/L	127	Standard
	Ba	135	1327.1	1.7	**0.6057**	0.011	1.9	ug/L	45	Standard
	Ce	140	168.3	16.4				ug/L	298	Standard
>	**Tb**	159	980536.6	0.9				ug/L	977942	Standard
	Ho	165	21.7	13.3				ug/L	12	Standard
	Tl	203	266.3	8.1	**0.0259**	0.003	10.5	ug/L	31	Standard
	Tl	205	201.7	5.7	**0.0244**	0.001	5.0	ug/L	20	Standard
	Pb	206	459.0	5.5	**0.0188**	0.005	29.2	ug/L	286	Standard
	Pb	207	389.7	6.3	**0.0195**	0.006	29.5	ug/L	257	Standard
	Pb	208	1625.7	6.2	**0.0231**	0.006	26.8	ug/L	956	Standard
	U	238	121.7	7.4	**0.0135**	0.001	9.9	ug/L	17	Standard
>	**Bi**	209	574701.5	1.2				ug/L	557080	Standard

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Na	23	5.0	100.0	**32.7163**	32.227	98.5	mg/L	0	Standard
Mg	24	330.0	22.9	**0.3898**	0.094	24.2	mg/L	32	Standard
K	39	33.3	43.3	**-0.0268**	0.048	179.7	mg/L	30	Standard
Ca	43	33.3	43.3	**-0.2011**	2.146	1067.4	mg/L	48	Standard
Fe	54	141.8	17.1	**-0.0059**	0.025	416.6	mg/L	159	Standard
Fe	57	216.7	23.3	**0.1207**	0.166	137.9	mg/L	195	Standard
Sc-1	45	38767.9	2.5				mg/L	39543	Standard
Cl	35	43132.0	0.5				ug/L	27642	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	3107.0	8.7				ug/L	1647	Standard
P	31	17094.6	3.8				ug/L	15231	Standard
S	34	2171.8	4.7				ug/L	1845	Standard
Sr	88	71.7	31.5				ug/L	70	Standard
C	12	180.0	44.1				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.3	86.6				mg/L	12	Standard
Ho-1	165	21.7	13.3				mg/L	12	Standard
Er	166	6.7	86.6				mg/L	20	Standard
I	127	6683.3	38.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		123.293	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.641	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.901
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.163
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 17:09:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	98106.9	3.9				ug/L	81760	Standard
	Be	9	60781.9	5.8	**50.9762**	1.224	2.4	ug/L	17	Standard
	Al	27	8271215.1	2.8	**44.7180**	0.568	1.3	ug/L	1410	Standard
	Sc	45	39052.0	5.6				ug/L	39543	Standard
	Ti	47	24646.4	4.4	**101.4481**	2.619	2.6	ug/L	39	Standard
	V	51	347970.7	1.4	**51.1411**	0.534	1.0	ug/L	1415	Standard
	Cr	52	354198.6	3.4	**51.1178**	0.779	1.5	ug/L	6946	Standard
	Cr	53	44595.6	4.3	**51.7475**	1.396	2.7	ug/L	328	Standard
	Mn	55	315347.9	1.9	**49.7410**	0.694	1.4	ug/L	823	Standard
	Co	59	365725.5	2.3	**53.3530**	0.828	1.6	ug/L	252	Standard
	Ni	60	93315.9	2.3	**50.7083**	0.301	0.6	ug/L	192	Standard
	Cu	65	94072.6	2.8	**50.6778**	0.428	0.8	ug/L	141	Standard
	Zn	66	55586.5	1.6	**51.1865**	0.432	0.8	ug/L	491	Standard
>	**Ge**	72	502280.1	2.3				ug/L	515087	Standard
	As	75	55868.4	1.2	**51.0087**	0.746	1.5	ug/L	20	Standard
	Se	82	5921.1	2.6	**52.6309**	1.371	2.6	ug/L	15	Standard
	Se-1	77	3936.2	0.2	**52.8821**	1.332	2.5	ug/L	48	Standard
>	**Ga**	71	43.3	6.7				mg/L	90	Standard
	Rb	85	853.4	12.0				ug/L	23	Standard
	Y	89	445806.9	0.5				ug/L	448510	Standard
>	**Rh**	103	45.0	61.9				ug/L	15	Standard
	Mo	98	273081.8	2.1	**98.9265**	1.774	1.8	ug/L	11	Standard
	Ag	107	339843.9	2.2	**49.5651**	0.762	1.5	ug/L	134	Standard
	Cd	111	106758.1	1.3	**48.9107**	0.367	0.7	mg/L	7	Standard
	Cd	114	258025.9	1.5	**48.6321**	0.403	0.8	ug/L	16	Standard
>	**In**	115	623979.7	0.7				ug/L	611117	Standard
	Sn	118	298451.0	1.1	**49.3312**	0.224	0.5	ug/L	518	Standard
	Sb	123	238781.4	2.0	**49.5506**	0.796	1.6	ug/L	127	Standard
	Ba	135	101752.9	1.4	**48.2444**	0.388	0.8	ug/L	45	Standard
	Ce	140	83.3	6.9				ug/L	298	Standard
>	**Tb**	159	999812.3	3.7				ug/L	977942	Standard
	Ho	165	18.3	56.8				ug/L	12	Standard
	Tl	203	438487.8	2.0	**50.5214**	0.372	0.7	ug/L	31	Standard
	Tl	205	396911.7	0.7	**52.6785**	1.200	2.3	ug/L	20	Standard
	Pb	206	278860.8	1.5	**50.0350**	0.542	1.1	ug/L	286	Standard
	Pb	207	252734.9	2.4	**50.2714**	0.461	0.9	ug/L	257	Standard
	Pb	208	1008405.1	1.0	**51.8566**	0.775	1.5	ug/L	956	Standard
	U	238	385967.4	0.9	**52.3060**	0.849	1.6	ug/L	17	Standard
>	**Bi**	209	573840.1	2.4				ug/L	557080	Standard

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Na	23	6.7	43.3	**42.7715**	15.957	37.3	mg/L	0	Standard
Mg	24	4330.6	4.7	**5.7850**	0.241	4.2	mg/L	32	Standard
K	39	1310.1	5.5	**4.3410**	0.087	2.0	mg/L	30	Standard
Ca	43	75.0	17.6	**6.2533**	2.500	40.0	mg/L	48	Standard
Fe	54	6082.2	3.3	**5.4477**	0.350	6.4	mg/L	159	Standard
Fe	57	1690.1	5.8	**5.1531**	0.140	2.7	mg/L	195	Standard
Sc-1	45	39052.0	5.6				mg/L	39543	Standard
Cl	35	36312.2	3.9				ug/L	27642	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	2130.1	3.3				ug/L	1647	Standard
P	31	18776.6	1.2				ug/L	15231	Standard
S	34	2388.5	6.0				ug/L	1845	Standard
Sr	88	65.0	13.3				ug/L	70	Standard
C	12	133.3	33.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.7	43.5				mg/L	12	Standard
Ho-1	165	18.3	56.8				mg/L	12	Standard
Er	166	13.3	86.6				mg/L	20	Standard
I	127	2708.6	18.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	101.952		
Al	27	89.436		
Sc	45			
Ti	47	101.448		
V	51	102.282		
Cr	52	102.236		
Cr	53			
Mn	55	99.482		
Co	59	106.706		
Ni	60	101.417		
Cu	65	101.356		
Zn	66	102.373		
Ge	72		97.514	
As	75	102.017		
Se	82	105.262		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	98.926		
Ag	107	99.130		
Cd	111	97.821		
Cd	114			
In	115		102.105	
Sn	118	98.662		
Sb	123	99.101		
Ba	135	96.489		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.043		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.713		
U	238	104.612		
Bi	209		103.008	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 17:13:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	92565.4	2.9				ug/L	81760	Standard
	Be	9	53.3	124.8	**0.0389**	0.062	158.6	ug/L	17	Standard
	Al	27	40870.6	146.9	**0.2266**	0.357	157.4	ug/L	1410	Standard
	Sc	45	37247.5	4.3				ug/L	39543	Standard
	Ti	47	28.7	28.0	**-0.0471**	0.033	70.8	ug/L	39	Standard
	V	51	1306.5	27.0	**-0.0143**	0.053	368.2	ug/L	1415	Standard
	Cr	52	6317.0	3.9	**-0.1289**	0.039	29.9	ug/L	6946	Standard
	Cr	53	723.4	11.4	**0.5015**	0.098	19.5	ug/L	328	Standard
	Mn	55	1084.7	54.0	**0.0228**	0.093	407.7	ug/L	823	Standard
	Co	59	338.3	37.8	**0.0179**	0.019	104.7	ug/L	252	Standard
	Ni	60	322.7	24.3	**0.0703**	0.043	61.2	ug/L	192	Standard
	Cu	65	237.7	21.2	**0.0371**	0.027	74.0	ug/L	141	Standard
	Zn	66	487.7	9.0	**-0.3725**	0.041	11.1	ug/L	491	Standard
>	Ge	72	503592.6	0.3				ug/L	515087	Standard
	As	75	-19.3	188.6	**0.0227**	0.033	146.0	ug/L	20	Standard
	Se	82	22.8	34.7	**0.0835**	0.070	83.8	ug/L	15	Standard
	Se-1	77	71.3	3.2	**0.2496**	0.032	12.8	ug/L	48	Standard
>	Ga	71	43.3	46.6				mg/L	90	Standard
	Rb	85	33.3	37.7				ug/L	23	Standard
	Y	89	434857.2	0.6				ug/L	448510	Standard
>	Rh	103	13.3	43.3				ug/L	15	Standard
	Mo	98	288.2	19.1	**0.0890**	0.021	23.1	ug/L	11	Standard
	Ag	107	295.0	92.5	**0.0287**	0.042	146.5	ug/L	134	Standard
	Cd	111	58.8	115.8	**0.0253**	0.033	130.1	mg/L	7	Standard
	Cd	114	179.7	150.5	**0.0306**	0.054	175.0	ug/L	16	Standard
>	In	115	602649.0	1.7				ug/L	611117	Standard
	Sn	118	880.0	23.1	**0.0494**	0.037	75.1	ug/L	518	Standard
	Sb	123	564.4	53.6	**0.1091**	0.067	61.4	ug/L	127	Standard
	Ba	135	113.7	104.6	**0.0312**	0.059	190.7	ug/L	45	Standard
	Ce	140	26.7	21.7				ug/L	298	Standard
>	Tb	159	956287.2	0.6				ug/L	977942	Standard
	Ho	165	6.7	173.2				ug/L	12	Standard
	Tl	203	302.3	107.0	**0.0307**	0.038	123.1	ug/L	31	Standard
	Tl	205	353.3	119.4	**0.0454**	0.057	124.8	ug/L	20	Standard
	Pb	206	425.3	47.1	**0.0143**	0.036	251.9	ug/L	286	Standard
	Pb	207	353.0	32.9	**0.0137**	0.023	168.1	ug/L	257	Standard
	Pb	208	1674.0	55.6	**0.0274**	0.048	175.9	ug/L	956	Standard
	U	238	298.0	132.6	**0.0381**	0.054	142.5	ug/L	17	Standard
>	Bi	209	561401.5	0.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	206.7	141.8	**0.2403**	0.424	176.4	mg/L	32	Standard
K	39	28.3	71.3	**-0.0379**	0.076	200.2	mg/L	30	Standard
Ca	43	35.0	24.7	**0.2817**	1.299	461.1	mg/L	48	Standard
Fe	54	147.7	17.2	**0.0057**	0.030	525.6	mg/L	159	Standard
Fe	57	195.0	14.3	**0.0744**	0.099	133.6	mg/L	195	Standard
Sc-1	45	37247.5	4.3				mg/L	39543	Standard
Cl	35	35032.5	2.2				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1893.5	11.2				ug/L	1647	Standard
P	31	18479.6	2.3				ug/L	15231	Standard
S	34	2273.5	3.9				ug/L	1845	Standard
Sr	88	81.7	3.5				ug/L	70	Standard
C	12	186.7	15.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.5	186.3				mg/L	12	Standard
Ho-1	165	6.7	173.2				mg/L	12	Standard
Er	166	10.0	100.0				mg/L	20	Standard
I	127	2043.5	19.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.768	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.614
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.776
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606115501
Sample Date/Time: Tuesday, June 28, 2016 17:16:14
Number of Replicates: 3
Autosampler Position: 252
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92590.4	1.6				ug/L	81760	Standard
	Be	9	26.7	47.2	**0.0141**	0.012	82.4	ug/L	17	Standard
	Al	27	22123057.0	1.6	**126.7281**	1.652	1.3	ug/L	1410	Standard
	Sc	45	39028.5	1.1				ug/L	39543	Standard
	Ti	47	160.7	8.5	**0.5119**	0.051	9.9	ug/L	39	Standard
	V	51	4388.8	2.7	**0.4554**	0.016	3.5	ug/L	1415	Standard
	Cr	52	10159.7	1.1	**0.4737**	0.053	11.2	ug/L	6946	Standard
	Cr	53	1711.8	8.9	**1.7064**	0.233	13.7	ug/L	328	Standard
	Mn	55	4816073.5	0.9	**779.0277**	27.654	3.5	ug/L	823	Standard
	Co	59	2714.6	0.9	**0.3738**	0.009	2.5	ug/L	252	Standard
	Ni	60	3772.1	1.1	**1.9951**	0.039	2.0	ug/L	192	Standard
	Cu	65	754.7	3.1	**0.3255**	0.008	2.4	ug/L	141	Standard
	Zn	66	4017.9	2.4	**3.0152**	0.057	1.9	ug/L	491	Standard
>	**Ge**	72	491414.0	2.7				ug/L	515087	Standard
	As	75	1051.2	2.3	**1.0210**	0.045	4.4	ug/L	20	Standard
	Se	82	143.6	4.5	**1.1879**	0.030	2.5	ug/L	15	Standard
	Se-1	77	105.7	15.2	**0.7547**	0.249	32.9	ug/L	48	Standard
>	**Ga**	71	188.3	17.7				mg/L	90	Standard
	Rb	85	950.0	0.9				ug/L	23	Standard
	Y	89	424439.8	0.9				ug/L	448510	Standard
>	**Rh**	103	96.7	7.9				ug/L	15	Standard
	Mo	98	5849.5	0.5	**2.2126**	0.029	1.3	ug/L	11	Standard
	Ag	107	89.7	21.1	**-0.0024**	0.003	128.8	ug/L	134	Standard
	Cd	111	11.8	58.9	**0.0028**	0.003	121.4	mg/L	7	Standard
	Cd	114	46.1	44.3	**0.0042**	0.004	96.2	ug/L	16	Standard
>	**In**	115	592706.9	1.7				ug/L	611117	Standard
	Sn	118	891.7	9.5	**0.0535**	0.013	23.6	ug/L	518	Standard
	Sb	123	236.5	14.9	**0.0388**	0.007	18.8	ug/L	127	Standard
	Ba	135	171509.6	0.5	**85.6510**	1.837	2.1	ug/L	45	Standard
	Ce	140	703.3	3.9				ug/L	298	Standard
>	**Tb**	159	954495.6	1.0				ug/L	977942	Standard
	Ho	165	26.7	60.3				ug/L	12	Standard
	Tl	203	128.7	6.5	**0.0108**	0.001	9.4	ug/L	31	Standard
	Tl	205	116.7	2.5	**0.0140**	0.000	2.9	ug/L	20	Standard
	Pb	206	518.0	5.9	**0.0341**	0.006	17.0	ug/L	286	Standard
	Pb	207	434.7	5.8	**0.0328**	0.005	16.1	ug/L	257	Standard
	Pb	208	1843.7	3.4	**0.0392**	0.003	8.9	ug/L	956	Standard
	U	238	11694.2	0.7	**1.6602**	0.012	0.7	ug/L	17	Standard
>	**Bi**	209	546693.4	0.1				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.9680**	18.988	173.1	mg/L	0	Standard
Mg	24	30276.9	1.0	**40.7793**	0.477	1.2	mg/L	32	Standard
K	39	240.0	12.5	**0.6798**	0.099	14.5	mg/L	30	Standard
Ca	43	255.0	15.3	**33.9356**	6.415	18.9	mg/L	48	Standard
Fe	54	184.3	20.5	**0.0318**	0.034	107.2	mg/L	159	Standard
Fe	57	341.7	3.0	**0.5441**	0.035	6.5	mg/L	195	Standard
> **Sc-1**	45	39028.5	1.1				mg/L	39543	Standard
Cl	35	37440.9	1.2				ug/L	27642	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	32190.8	1.7				ug/L	1647	Standard
P	31	22541.8	0.7				ug/L	15231	Standard
S	34	2386.9	3.2				ug/L	1845	Standard
Sr	88	303.3	20.6				ug/L	70	Standard
C	12	480.0	6.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	27.6	75.9				mg/L	12	Standard
Ho-1	165	26.7	60.3				mg/L	12	Standard
Er	166	50.0	40.0				mg/L	20	Standard
I	127	1264643.9	6.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.247	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.404	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.988
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.135
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606115502
Sample Date/Time: Tuesday, June 28, 2016 17:19:26
Number of Replicates: 3
Autosampler Position: 253
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	94157.1	4.7				ug/L	81760	Standard
	Be	9	20.0	50.0	**0.0078**	0.009	115.3	ug/L	17	Standard
	Al	27	28931934.4	4.0	**163.0048**	1.392	0.9	ug/L	1410	Standard
	Sc	45	40320.3	3.5				ug/L	39543	Standard
	Ti	47	168.3	17.1	**0.5232**	0.117	22.4	ug/L	39	Standard
	V	51	1551.4	10.5	**0.0205**	0.027	130.5	ug/L	1415	Standard
	Cr	52	10328.9	2.0	**0.4515**	0.024	5.3	ug/L	6946	Standard
	Cr	53	2665.2	7.9	**2.7435**	0.199	7.2	ug/L	328	Standard
	Mn	55	1534029.1	1.0	**240.4438**	3.129	1.3	ug/L	823	Standard
	Co	59	1102.0	2.8	**0.1281**	0.004	3.4	ug/L	252	Standard
	Ni	60	1786.8	2.8	**0.8597**	0.029	3.3	ug/L	192	Standard
	Cu	65	955.7	1.4	**0.4206**	0.012	3.0	ug/L	141	Standard
	Zn	66	3611.4	2.8	**2.5229**	0.115	4.5	ug/L	491	Standard
>	**Ge**	72	506659.2	1.8				ug/L	515087	Standard
	As	75	1883.3	1.6	**1.7433**	0.024	1.4	ug/L	20	Standard
	Se	82	155.4	0.8	**1.2536**	0.030	2.4	ug/L	15	Standard
	Se-1	77	168.7	6.6	**1.5590**	0.181	11.6	ug/L	48	Standard
>	**Ga**	71	140.0	15.6				mg/L	90	Standard
	Rb	85	1435.1	8.2				ug/L	23	Standard
	Y	89	449200.8	1.5				ug/L	448510	Standard
>	**Rh**	103	93.3	16.4				ug/L	15	Standard
	Mo	98	2699.1	0.6	**0.9667**	0.027	2.8	ug/L	11	Standard
	Ag	107	94.7	12.7	**-0.0023**	0.002	96.2	ug/L	134	Standard
	Cd	111	15.7	16.0	**0.0044**	0.001	31.4	mg/L	7	Standard
	Cd	114	28.9	55.3	**0.0006**	0.003	513.8	ug/L	16	Standard
>	**In**	115	619397.8	3.1				ug/L	611117	Standard
	Sn	118	1035.0	8.9	**0.0707**	0.012	17.4	ug/L	518	Standard
	Sb	123	177.5	18.8	**0.0244**	0.008	32.9	ug/L	127	Standard
	Ba	135	342505.9	1.5	**163.7121**	2.675	1.6	ug/L	45	Standard
	Ce	140	470.0	1.8				ug/L	298	Standard
>	**Tb**	159	978535.3	2.3				ug/L	977942	Standard
	Ho	165	33.3	17.3				ug/L	12	Standard
	Tl	203	95.7	2.4	**0.0067**	0.000	2.7	ug/L	31	Standard
	Tl	205	98.3	7.8	**0.0112**	0.001	8.1	ug/L	20	Standard
	Pb	206	616.7	3.3	**0.0513**	0.003	5.5	ug/L	286	Standard
	Pb	207	520.0	3.8	**0.0494**	0.003	5.9	ug/L	257	Standard
	Pb	208	2224.4	1.1	**0.0583**	0.001	1.4	ug/L	956	Standard
	U	238	39.7	29.5	**0.0026**	0.002	61.0	ug/L	17	Standard
>	**Bi**	209	553220.4	1.1				ug/L	557080	Standard

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Na	23	5.0	0.0	**31.5109**	1.087	3.4	mg/L	0	Standard
Mg	24	25140.9	3.4	**32.7721**	0.865	2.6	mg/L	32	Standard
K	39	73.3	23.9	**0.1023**	0.063	61.8	mg/L	30	Standard
Ca	43	243.3	6.6	**30.9203**	2.535	8.2	mg/L	48	Standard
Fe	54	2629.1	2.7	**2.1972**	0.059	2.7	mg/L	159	Standard
Fe	57	1076.7	7.2	**2.9489**	0.380	12.9	mg/L	195	Standard
> **Sc-1**	45	40320.3	3.5				mg/L	39543	Standard
Cl	35	39998.8	2.6				ug/L	27642	Standard
Kr	83	2.7	43.3				ug/L	2	Standard
Br	81	32989.2	3.3				ug/L	1647	Standard
P	31	24089.1	1.8				ug/L	15231	Standard
S	34	2583.6	5.0				ug/L	1845	Standard
Sr	88	433.3	4.7				ug/L	70	Standard
C	12	350.0	5.7				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	25.7	20.9				mg/L	12	Standard
Ho-1	165	33.3	17.3				mg/L	12	Standard
Er	166	20.0	50.0				mg/L	20	Standard
I	127	377170.1	0.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.163	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.364	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	101.355
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.307
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606115503
Sample Date/Time: Tuesday, June 28, 2016 17:22:37
Number of Replicates: 3
Autosampler Position: 254
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	93460.7	0.5				ug/L	81760	Standard
	Be	9	35.0	14.3	**0.0211**	0.004	21.2	ug/L	17	Standard
	Al	27	14187081.3	1.7	**80.5012**	1.275	1.6	ug/L	1410	Standard
	Sc	45	39556.6	4.7				ug/L	39543	Standard
	Ti	47	229.0	18.7	**0.7435**	0.168	22.5	ug/L	39	Standard
	V	51	2172.0	8.1	**0.1016**	0.022	21.3	ug/L	1415	Standard
	Cr	52	10167.4	1.5	**0.3846**	0.034	8.8	ug/L	6946	Standard
	Cr	53	1090.0	15.2	**0.8840**	0.185	20.9	ug/L	328	Standard
	Mn	55	1432250.3	1.3	**217.9180**	5.450	2.5	ug/L	823	Standard
	Co	59	795.7	6.2	**0.0804**	0.008	9.7	ug/L	252	Standard
	Ni	60	1574.1	4.4	**0.7198**	0.033	4.6	ug/L	192	Standard
	Cu	65	1999.1	3.4	**0.9475**	0.036	3.8	ug/L	141	Standard
	Zn	66	5797.8	1.6	**4.3927**	0.080	1.8	ug/L	491	Standard
>	**Ge**	72	521945.3	1.2				ug/L	515087	Standard
	As	75	168.7	6.2	**0.1883**	0.009	4.6	ug/L	20	Standard
	Se	82	81.0	7.2	**0.5749**	0.055	9.6	ug/L	15	Standard
	Se-1	77	72.3	14.9	**0.2276**	0.131	57.6	ug/L	48	Standard
>	**Ga**	71	155.0	23.3				mg/L	90	Standard
	Rb	85	10031.7	2.6				ug/L	23	Standard
	Y	89	435099.7	2.5				ug/L	448510	Standard
>	**Rh**	103	70.0	28.6				ug/L	15	Standard
	Mo	98	145.2	5.2	**0.0354**	0.003	8.7	ug/L	11	Standard
	Ag	107	85.3	8.5	**-0.0033**	0.001	30.7	ug/L	134	Standard
	Cd	111	76.7	2.3	**0.0335**	0.001	2.5	mg/L	7	Standard
	Cd	114	203.1	19.3	**0.0347**	0.008	22.4	ug/L	16	Standard
>	**In**	115	602973.5	0.6				ug/L	611117	Standard
	Sn	118	941.7	4.9	**0.0595**	0.009	14.6	ug/L	518	Standard
	Sb	123	323.8	6.4	**0.0567**	0.004	7.5	ug/L	127	Standard
	Ba	135	119338.2	0.9	**58.5639**	0.899	1.5	ug/L	45	Standard
	Ce	140	855.0	10.9				ug/L	298	Standard
>	**Tb**	159	952983.8	1.5				ug/L	977942	Standard
	Ho	165	36.7	41.7				ug/L	12	Standard
	Tl	203	88.7	6.9	**0.0057**	0.001	14.0	ug/L	31	Standard
	Tl	205	55.0	27.3	**0.0052**	0.002	38.2	ug/L	20	Standard
	Pb	206	861.0	5.9	**0.0956**	0.010	10.1	ug/L	286	Standard
	Pb	207	708.7	5.0	**0.0873**	0.008	9.7	ug/L	257	Standard
	Pb	208	2964.1	2.3	**0.0967**	0.005	5.3	ug/L	956	Standard
	U	238	696.7	2.0	**0.0942**	0.003	2.9	ug/L	17	Standard
>	**Bi**	209	557355.1	1.0				ug/L	557080	Standard

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Na	23	6.7	43.3	**42.2849**	16.098	38.1	mg/L	0	Standard
Mg	24	19544.3	4.8	**25.9961**	1.909	7.3	mg/L	32	Standard
K	39	113.3	15.5	**0.2405**	0.047	19.5	mg/L	30	Standard
Ca	43	286.7	25.9	**38.5627**	12.897	33.4	mg/L	48	Standard
Fe	54	997.4	5.8	**0.7664**	0.064	8.4	mg/L	159	Standard
Fe	57	530.0	13.9	**1.1674**	0.275	23.5	mg/L	195	Standard
> **Sc-1**	45	39556.6	4.7				mg/L	39543	Standard
Cl	35	38409.3	3.3				ug/L	27642	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	17249.8	6.1				ug/L	1647	Standard
P	31	22414.9	3.0				ug/L	15231	Standard
S	34	2625.2	3.4				ug/L	1845	Standard
Sr	88	228.3	6.7				ug/L	70	Standard
C	12	260.0	15.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	21.4	67.1				mg/L	12	Standard
Ho-1	165	36.7	41.7				mg/L	12	Standard
Er	166	40.0	75.0				mg/L	20	Standard
I	127	663837.8	8.8				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.311	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.332	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.668
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.049
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 17:25:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	91554.4	4.0				ug/L	81760	Standard
	Be	9	59302.5	0.5	**53.3655**	1.843	3.5	ug/L	17	Standard
	Al	27	8323459.6	1.6	**48.2773**	2.634	5.5	ug/L	1410	Standard
	Sc	45	40460.6	1.5				ug/L	39543	Standard
	Ti	47	25609.3	2.1	**100.1533**	1.793	1.8	ug/L	39	Standard
	V	51	364470.3	1.4	**50.8781**	0.853	1.7	ug/L	1415	Standard
	Cr	52	366105.1	1.7	**50.1771**	0.675	1.3	ug/L	6946	Standard
	Cr	53	45260.8	0.4	**49.8893**	0.509	1.0	ug/L	328	Standard
	Mn	55	332731.4	2.3	**49.8507**	1.205	2.4	ug/L	823	Standard
	Co	59	382266.4	2.9	**52.9683**	1.437	2.7	ug/L	252	Standard
	Ni	60	97387.3	1.2	**50.2694**	0.545	1.1	ug/L	192	Standard
	Cu	65	98831.3	1.3	**50.5786**	0.557	1.1	ug/L	141	Standard
	Zn	66	57834.9	1.6	**50.5762**	0.877	1.7	ug/L	491	Standard
>	Ge	72	528768.9	1.2				ug/L	515087	Standard
	As	75	58724.5	1.2	**50.9203**	0.224	0.4	ug/L	20	Standard
	Se	82	6151.0	1.0	**51.9261**	0.245	0.5	ug/L	15	Standard
	Se-1	77	4089.2	2.2	**52.1522**	0.563	1.1	ug/L	48	Standard
>	Ga	71	85.0	21.2				mg/L	90	Standard
	Rb	85	851.7	6.5				ug/L	23	Standard
	Y	89	456324.8	0.4				ug/L	448510	Standard
>	Rh	103	36.7	39.4				ug/L	15	Standard
	Mo	98	284202.4	1.9	**102.0947**	3.648	3.6	ug/L	11	Standard
	Ag	107	351396.4	1.1	**50.8197**	1.435	2.8	ug/L	134	Standard
	Cd	111	110732.8	1.5	**50.3025**	1.470	2.9	mg/L	7	Standard
	Cd	114	271688.9	2.3	**50.7793**	1.915	3.8	ug/L	16	Standard
>	In	115	629514.4	1.7				ug/L	611117	Standard
	Sn	118	310739.2	0.7	**50.9245**	0.924	1.8	ug/L	518	Standard
	Sb	123	246166.6	1.6	**50.6553**	1.659	3.3	ug/L	127	Standard
	Ba	135	104825.0	0.9	**49.2805**	1.265	2.6	ug/L	45	Standard
	Ce	140	70.0	55.8				ug/L	298	Standard
>	Tb	159	987475.2	1.7				ug/L	977942	Standard
	Ho	165	5.0	100.0				ug/L	12	Standard
	Tl	203	444397.7	1.4	**50.9180**	1.232	2.4	ug/L	31	Standard
	Tl	205	396866.3	1.6	**52.3722**	1.695	3.2	ug/L	20	Standard
	Pb	206	284750.7	1.1	**50.8069**	1.281	2.5	ug/L	286	Standard
	Pb	207	259280.5	1.3	**51.2940**	1.414	2.8	ug/L	257	Standard
	Pb	208	1040337.0	1.7	**53.1998**	1.656	3.1	ug/L	956	Standard
	U	238	390662.1	1.3	**52.6405**	1.349	2.6	ug/L	17	Standard
>	Bi	209	577126.2	1.6				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4445.7	6.0	**5.7289**	0.397	6.9	mg/L	32	Standard
K	39	1320.1	5.5	**4.2194**	0.276	6.5	mg/L	30	Standard
Ca	43	81.7	24.7	**6.7579**	2.904	43.0	mg/L	48	Standard
Fe	54	5927.1	5.8	**5.1036**	0.243	4.8	mg/L	159	Standard
Fe	57	1661.8	3.7	**4.8569**	0.121	2.5	mg/L	195	Standard
Sc-1	45	40460.6	1.5				mg/L	39543	Standard
Cl	35	38764.2	1.7				ug/L	27642	Standard
Kr	83	2.3	107.9				ug/L	2	Standard
Br	81	2123.5	9.4				ug/L	1647	Standard
P	31	21915.8	3.2				ug/L	15231	Standard
S	34	2866.9	6.9				ug/L	1845	Standard
Sr	88	56.7	10.2				ug/L	70	Standard
C	12	170.0	44.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	173.2				mg/L	0	Standard
Dy	164	9.7	103.3				mg/L	12	Standard
Ho-1	165	5.0	100.0				mg/L	12	Standard
Er	166	6.7	86.6				mg/L	20	Standard
I	127	21360.9	50.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	106.731		
Al	27	96.555		
Sc	45			
Ti	47	100.153		
V	51	101.756		
Cr	52	100.354		
Cr	53			
Mn	55	99.701		
Co	59	105.937		
Ni	60	100.539		
Cu	65	101.157		
Zn	66	101.152		
Ge	72		102.656	
As	75	101.841		
Se	82	103.852		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	102.095		
Ag	107	101.639		
Cd	111	100.605		
Cd	114			
> In	115			103.011
Sn	118	101.849		
Sb	123	101.311		
Ba	135	98.561		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.836		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.400		
U	238	105.281		
> Bi	209			103.598
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 17:29:02
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89289.0	1.1				ug/L	81760	Standard
	Be	9	35.0	51.5	**0.0225**	0.017	74.1	ug/L	17	Standard
	Al	27	14272.5	142.7	**0.0706**	0.122	172.0	ug/L	1410	Standard
	Sc	45	39427.9	1.8				ug/L	39543	Standard
	Ti	47	28.0	28.3	**-0.0534**	0.032	59.3	ug/L	39	Standard
	V	51	1205.0	11.4	**-0.0346**	0.020	56.4	ug/L	1415	Standard
	Cr	52	6173.6	1.1	**-0.1773**	0.009	5.0	ug/L	6946	Standard
	Cr	53	500.0	6.0	**0.2236**	0.034	15.3	ug/L	328	Standard
	Mn	55	1435.1	83.0	**0.0711**	0.182	256.2	ug/L	823	Standard
	Co	59	252.7	26.0	**0.0043**	0.009	214.7	ug/L	252	Standard
	Ni	60	265.7	8.4	**0.0350**	0.012	33.5	ug/L	192	Standard
	Cu	65	144.0	13.3	**-0.0157**	0.010	63.6	ug/L	141	Standard
	Zn	66	428.7	4.3	**-0.4396**	0.017	3.8	ug/L	491	Standard
>	**Ge**	72	519199.6	0.1				ug/L	515087	Standard
	As	75	-13.2	109.3	**0.0287**	0.013	44.2	ug/L	20	Standard
	Se	82	24.7	35.1	**0.0933**	0.075	79.8	ug/L	15	Standard
	Se-1	77	53.0	16.4	**-0.0209**	0.115	551.4	ug/L	48	Standard
>	**Ga**	71	56.7	41.7				mg/L	90	Standard
	Rb	85	13.3	78.1				ug/L	23	Standard
	Y	89	435848.4	0.6				ug/L	448510	Standard
>	**Rh**	103	16.7	45.8				ug/L	15	Standard
	Mo	98	252.5	21.9	**0.0755**	0.022	29.1	ug/L	11	Standard
	Ag	107	123.0	3.3	**0.0023**	0.000	14.7	ug/L	134	Standard
	Cd	111	11.8	114.0	**0.0027**	0.006	236.7	mg/L	7	Standard
	Cd	114	47.6	83.9	**0.0044**	0.008	178.8	ug/L	16	Standard
>	**In**	115	604937.7	1.9				ug/L	611117	Standard
	Sn	118	835.0	26.8	**0.0403**	0.035	87.6	ug/L	518	Standard
	Sb	123	438.3	28.1	**0.0807**	0.025	30.6	ug/L	127	Standard
	Ba	135	40.7	30.0	**-0.0052**	0.006	117.6	ug/L	45	Standard
	Ce	140	35.0	37.8				ug/L	298	Standard
>	**Tb**	159	968167.7	1.8				ug/L	977942	Standard
	Ho	165	8.3	124.9				ug/L	12	Standard
	Tl	203	65.7	40.9	**0.0028**	0.003	111.1	ug/L	31	Standard
	Tl	205	198.3	119.2	**0.0243**	0.032	131.1	ug/L	20	Standard
	Pb	206	312.0	4.9	**-0.0071**	0.003	48.0	ug/L	286	Standard
	Pb	207	265.7	2.9	**-0.0047**	0.002	47.8	ug/L	257	Standard
	Pb	208	1274.7	38.3	**0.0057**	0.026	450.9	ug/L	956	Standard
	U	238	172.3	130.6	**0.0207**	0.031	149.9	ug/L	17	Standard
>	**Bi**	209	569803.2	1.6				ug/L	557080	Standard

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Na	23	3.3	86.6	**21.6890**	18.779	86.6	mg/L	0	Standard
Mg	24	61.7	47.5	**0.0256**	0.040	158.0	mg/L	32	Standard
K	39	26.7	10.8	**-0.0510**	0.010	20.5	mg/L	30	Standard
Ca	43	21.7	48.0	**-2.0553**	1.552	75.5	mg/L	48	Standard
Fe	54	129.4	21.4	**-0.0198**	0.024	119.8	mg/L	159	Standard
Fe	57	196.7	34.5	**0.0395**	0.221	559.0	mg/L	195	Standard
Sc-1	45	39427.9	1.8				mg/L	39543	Standard
Cl	35	37196.3	1.0				ug/L	27642	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	1853.4	7.9				ug/L	1647	Standard
P	31	20680.8	2.7				ug/L	15231	Standard
S	34	2700.2	3.5				ug/L	1845	Standard
Sr	88	68.3	23.5				ug/L	70	Standard
C	12	133.3	38.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.5	107.6				mg/L	12	Standard
Ho-1	165	8.3	124.9				mg/L	12	Standard
Er	166	10.0	100.0				mg/L	20	Standard
I	127	7115.0	15.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.798	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.989	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	102.284	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606114201
Sample Date/Time: Tuesday, June 28, 2016 18:46:32
Number of Replicates: 3
Autosampler Position: 255
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78164.5	2.4				ug/L	81760	Standard
	Be	9	18.3	41.7	**0.0097**	0.008	86.8	ug/L	17	Standard
	Al	27	121659.9	1.7	**0.8116**	0.028	3.5	ug/L	1410	Standard
	Sc	45	40555.9	2.8				ug/L	39543	Standard
	Ti	47	55.7	15.0	**0.0583**	0.036	61.2	ug/L	39	Standard
	V	51	1460.1	6.7	**0.0028**	0.012	438.4	ug/L	1415	Standard
	Cr	52	7975.8	0.8	**0.0855**	0.018	21.3	ug/L	6946	Standard
	Cr	53	690.0	12.1	**0.4421**	0.091	20.5	ug/L	328	Standard
	Mn	55	73452.6	0.4	**11.1499**	0.088	0.8	ug/L	823	Standard
	Co	59	2365.9	3.2	**0.3044**	0.010	3.2	ug/L	252	Standard
	Ni	60	956.0	2.8	**0.4012**	0.010	2.4	ug/L	192	Standard
	Cu	65	203.7	5.3	**0.0160**	0.005	33.1	ug/L	141	Standard
	Zn	66	1994.1	0.1	**0.9866**	0.018	1.8	ug/L	491	Standard
>	**Ge**	72	516559.4	1.0				ug/L	515087	Standard
	As	75	-28.9	32.9	**0.0147**	0.008	56.4	ug/L	20	Standard
	Se	82	19.3	15.0	**0.0479**	0.026	53.5	ug/L	15	Standard
	Se-1	77	59.0	13.2	**0.0614**	0.097	157.2	ug/L	48	Standard
>	**Ga**	71	36.7	51.6				mg/L	90	Standard
	Rb	85	463.3	2.5				ug/L	23	Standard
	Y	89	448462.9	2.6				ug/L	448510	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	65.9	7.4	**0.0053**	0.002	42.6	ug/L	11	Standard
	Ag	107	82.7	4.2	**-0.0039**	0.001	16.6	ug/L	134	Standard
	Cd	111	8.9	29.8	**0.0012**	0.001	94.7	mg/L	7	Standard
	Cd	114	20.4	73.3	**-0.0010**	0.003	278.6	ug/L	16	Standard
>	**In**	115	611220.6	1.9				ug/L	611117	Standard
	Sn	118	670.0	14.0	**0.0115**	0.017	148.1	ug/L	518	Standard
	Sb	123	214.2	30.6	**0.0326**	0.014	43.4	ug/L	127	Standard
	Ba	135	7677.9	3.5	**3.6947**	0.165	4.5	ug/L	45	Standard
	Ce	140	396.7	10.7				ug/L	298	Standard
>	**Tb**	159	963569.5	0.7				ug/L	977942	Standard
	Ho	165	16.7	45.8				ug/L	12	Standard
	Tl	203	21.7	17.5	**-0.0022**	0.000	19.5	ug/L	31	Standard
	Tl	205	13.3	21.7	**-0.0005**	0.000	79.8	ug/L	20	Standard
	Pb	206	368.7	4.6	**0.0040**	0.003	86.3	ug/L	286	Standard
	Pb	207	283.0	4.1	**-0.0005**	0.002	459.4	ug/L	257	Standard
	Pb	208	1139.7	3.0	**-0.0006**	0.002	246.5	ug/L	956	Standard
	U	238	10.3	39.1	**-0.0015**	0.001	36.3	ug/L	17	Standard
>	**Bi**	209	562456.7	0.5				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	763.4	13.7	**0.9351**	0.146	15.6	mg/L	32	Standard
K	39	31.7	39.7	**-0.0363**	0.045	123.6	mg/L	30	Standard
Ca	43	18.3	31.5	**-2.6404**	0.796	30.1	mg/L	48	Standard
Fe	54	359.1	17.1	**0.1792**	0.047	26.3	mg/L	159	Standard
Fe	57	273.3	13.7	**0.2778**	0.149	53.6	mg/L	195	Standard
> **Sc-1**	45	40555.9	2.8				mg/L	39543	Standard
Cl	35	37427.5	0.7				ug/L	27642	Standard
Kr	83	0.0					ug/L	2	Standard
Br	81	2536.9	6.5				ug/L	1647	Standard
P	31	19003.6	0.9				ug/L	15231	Standard
S	34	2375.2	4.8				ug/L	1845	Standard
Sr	88	91.7	13.7				ug/L	70	Standard
C	12	86.7	29.0				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	29.2	34.3				mg/L	12	Standard
Ho-1	165	16.7	45.8				mg/L	12	Standard
Er	166	16.7	34.6				mg/L	20	Standard
I	127	22815.7	12.2				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		95.602	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.286	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.017
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.965
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 18:49:46
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77476.0	3.1				ug/L	81760	Standard
	Be	9	45015.2	3.8	**47.8878**	3.193	6.7	ug/L	17	Standard
	Al	27	6953697.9	2.2	**47.6359**	2.288	4.8	ug/L	1410	Standard
	Sc	45	38896.5	2.1				ug/L	39543	Standard
	Ti	47	23530.3	2.9	**93.4171**	3.639	3.9	ug/L	39	Standard
	V	51	333406.5	0.5	**47.2267**	0.631	1.3	ug/L	1415	Standard
	Cr	52	337441.2	2.6	**46.8861**	1.719	3.7	ug/L	6946	Standard
	Cr	53	42128.5	3.1	**47.1231**	1.874	4.0	ug/L	328	Standard
	Mn	55	311025.1	1.6	**47.2965**	1.233	2.6	ug/L	823	Standard
	Co	59	333541.6	0.3	**46.9106**	0.523	1.1	ug/L	252	Standard
	Ni	60	90766.5	2.7	**47.5598**	1.737	3.7	ug/L	192	Standard
	Cu	65	91363.1	2.5	**47.4629**	1.646	3.5	ug/L	141	Standard
	Zn	66	53283.5	1.9	**47.2487**	1.367	2.9	ug/L	491	Standard
>	Ge	72	520941.4	1.0				ug/L	515087	Standard
	As	75	53453.8	0.5	**47.0530**	0.571	1.2	ug/L	20	Standard
	Se	82	5409.0	0.9	**46.3406**	0.883	1.9	ug/L	15	Standard
	Se-1	77	3695.1	1.5	**47.7773**	0.360	0.8	ug/L	48	Standard
>	Ga	71	58.3	27.6				mg/L	90	Standard
	Rb	85	731.7	6.2				ug/L	23	Standard
	Y	89	433135.5	0.5				ug/L	448510	Standard
>	Rh	103	21.7	13.3				ug/L	15	Standard
	Mo	98	251705.5	0.6	**94.1208**	1.331	1.4	ug/L	11	Standard
	Ag	107	314845.2	1.8	**47.3955**	0.605	1.3	ug/L	134	Standard
	Cd	111	98007.4	2.2	**46.3425**	0.750	1.6	mg/L	7	Standard
	Cd	114	239351.7	3.2	**46.5659**	1.544	3.3	ug/L	16	Standard
>	In	115	604583.1	1.4				ug/L	611117	Standard
	Sn	118	276455.2	2.3	**47.1543**	0.498	1.1	ug/L	518	Standard
	Sb	123	224560.9	2.5	**48.0923**	0.641	1.3	ug/L	127	Standard
	Ba	135	94923.9	3.0	**46.4488**	1.094	2.4	ug/L	45	Standard
	Ce	140	80.0	22.5				ug/L	298	Standard
>	Tb	159	958457.8	2.2				ug/L	977942	Standard
	Ho	165	13.3	21.7				ug/L	12	Standard
	Tl	203	399564.4	2.5	**47.4112**	1.332	2.8	ug/L	31	Standard
	Tl	205	347775.3	2.0	**47.5216**	1.083	2.3	ug/L	20	Standard
	Pb	206	259967.8	1.3	**48.0301**	0.722	1.5	ug/L	286	Standard
	Pb	207	236539.5	0.9	**48.4530**	0.488	1.0	ug/L	257	Standard
	Pb	208	913309.7	2.1	**48.3569**	1.176	2.4	ug/L	956	Standard
	U	238	337839.3	1.6	**47.1413**	0.910	1.9	ug/L	17	Standard
>	Bi	209	557186.5	0.3				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	3633.8	7.1	**4.8666**	0.455	9.3	mg/L	32	Standard
K	39	1313.4	12.2	**4.3752**	0.599	13.7	mg/L	30	Standard
Ca	43	51.7	20.1	**2.6371**	1.625	61.6	mg/L	48	Standard
Fe	54	5289.1	7.8	**4.7357**	0.483	10.2	mg/L	159	Standard
Fe	57	1531.7	10.1	**4.6389**	0.613	13.2	mg/L	195	Standard
> **Sc-1**	45	38896.5	2.1				mg/L	39543	Standard
Cl	35	35022.4	1.4				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	1490.1	8.7				ug/L	1647	Standard
P	31	19075.3	3.9				ug/L	15231	Standard
S	34	2581.9	1.6				ug/L	1845	Standard
Sr	88	70.0	18.9				ug/L	70	Standard
C	12	143.3	33.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	6.0	193.9				mg/L	12	Standard
Ho-1	165	13.3	21.7				mg/L	12	Standard
Er	166	13.3	43.3				mg/L	20	Standard
I	127	2193.5	28.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	95.776		
Al	27	95.272		
Sc	45			
Ti	47	93.417		
V	51	94.453		
Cr	52	93.772		
Cr	53			
Mn	55	94.593		
Co	59	93.821		
Ni	60	95.120		
Cu	65	94.926		
Zn	66	94.497		
> Ge	72		101.137	
As	75	94.106		
Se	82	92.681		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	94.121		
Ag	107	94.791		
Cd	111	92.685		
Cd	114			
> In	115			98.931
Sn	118	94.309		
Sb	123	96.185		
Ba	135	92.898		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	94.822		
Tl	205			
Pb	206			
Pb	207			
Pb	208	96.714		
U	238	94.283		
> Bi	209			100.019
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 18:52:57
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75264.9	3.1				ug/L	81760	Standard
	Be	9	28.3	44.4	**0.0211**	0.013	62.2	ug/L	17	Standard
	Al	27	1848.4	7.3	**-0.0014**	0.001	57.2	ug/L	1410	Standard
	Sc	45	39733.8	3.9				ug/L	39543	Standard
	Ti	47	30.7	21.2	**-0.0408**	0.026	64.0	ug/L	39	Standard
	V	51	1157.9	3.5	**-0.0386**	0.007	18.1	ug/L	1415	Standard
	Cr	52	6209.6	2.0	**-0.1578**	0.015	9.7	ug/L	6946	Standard
	Cr	53	373.3	6.7	**0.0873**	0.028	32.1	ug/L	328	Standard
	Mn	55	647.3	1.5	**-0.0478**	0.002	4.7	ug/L	823	Standard
	Co	59	232.0	9.1	**0.0019**	0.003	163.0	ug/L	252	Standard
	Ni	60	166.3	9.0	**-0.0160**	0.007	44.1	ug/L	192	Standard
	Cu	65	124.7	14.0	**-0.0248**	0.008	34.1	ug/L	141	Standard
	Zn	66	405.0	8.1	**-0.4552**	0.029	6.3	ug/L	491	Standard
>	**Ge**	72	510975.0	1.4				ug/L	515087	Standard
	As	75	-43.1	41.4	**0.0017**	0.016	900.9	ug/L	20	Standard
	Se	82	19.6	25.0	**0.0525**	0.045	86.4	ug/L	15	Standard
	Se-1	77	59.7	5.9	**0.0797**	0.050	62.7	ug/L	48	Standard
>	**Ga**	71	36.7	39.4				mg/L	90	Standard
	Rb	85	23.3	32.7				ug/L	23	Standard
	Y	89	435979.5	2.5				ug/L	448510	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	250.3	25.6	**0.0730**	0.024	32.3	ug/L	11	Standard
	Ag	107	100.0	11.8	**-0.0014**	0.002	125.8	ug/L	134	Standard
	Cd	111	11.9	34.0	**0.0026**	0.002	71.6	mg/L	7	Standard
	Cd	114	45.3	6.7	**0.0038**	0.000	13.0	ug/L	16	Standard
>	**In**	115	614932.8	1.3				ug/L	611117	Standard
	Sn	118	795.0	23.6	**0.0316**	0.031	97.7	ug/L	518	Standard
	Sb	123	431.0	25.7	**0.0779**	0.023	29.6	ug/L	127	Standard
	Ba	135	30.3	24.3	**-0.0105**	0.003	32.1	ug/L	45	Standard
	Ce	140	20.0	66.1				ug/L	298	Standard
>	**Tb**	159	946813.4	1.4				ug/L	977942	Standard
	Ho	165	11.7	89.2				ug/L	12	Standard
	Tl	203	48.3	29.0	**0.0009**	0.002	172.8	ug/L	31	Standard
	Tl	205	35.0	86.9	**0.0025**	0.004	165.9	ug/L	20	Standard
	Pb	206	284.0	5.8	**-0.0111**	0.003	26.2	ug/L	286	Standard
	Pb	207	257.7	11.7	**-0.0053**	0.006	110.9	ug/L	257	Standard
	Pb	208	990.3	3.8	**-0.0080**	0.002	20.6	ug/L	956	Standard
	U	238	43.0	24.2	**0.0030**	0.001	48.0	ug/L	17	Standard
>	**Bi**	209	557905.1	0.6				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	31.7	18.2	**-0.0149**	0.009	60.8	mg/L	32	Standard
K	39	20.0	50.0	**-0.0742**	0.034	46.2	mg/L	30	Standard
Ca	43	35.0	62.3	**-0.0114**	3.447	30330.8	mg/L	48	Standard
Fe	54	144.1	21.6	**-0.0065**	0.032	498.8	mg/L	159	Standard
Fe	57	238.3	3.2	**0.1775**	0.054	30.7	mg/L	195	Standard
Sc-1	45	39733.8	3.9				mg/L	39543	Standard
Cl	35	35783.5	1.7				ug/L	27642	Standard
Kr	83	3.3	45.8				ug/L	2	Standard
Br	81	1466.7	6.9				ug/L	1647	Standard
P	31	19612.7	1.4				ug/L	15231	Standard
S	34	2756.9	2.6				ug/L	1845	Standard
Sr	88	66.7	37.0				ug/L	70	Standard
C	12	86.7	6.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	32.7	47.4				mg/L	12	Standard
Ho-1	165	11.7	89.2				mg/L	12	Standard
Er	166	13.3	43.3				mg/L	20	Standard
I	127	1593.4	21.8				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.202	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.624
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.148
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Tuesday, June 28, 2016 18:56:10
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71096.5	2.9				ug/L	81760	Standard
	Be	9	180.0	15.5	**0.1982**	0.026	13.3	ug/L	17	Standard
	Al	27	1130.0	11.5	**-0.0060**	0.001	12.9	ug/L	1410	Standard
	Sc	45	37422.8	0.9				ug/L	39543	Standard
	Ti	47	25.0	10.6	**-0.0625**	0.010	16.0	ug/L	39	Standard
	V	51	3508.6	1.4	**0.3092**	0.005	1.6	ug/L	1415	Standard
	Cr	52	11162.1	1.4	**0.5814**	0.031	5.3	ug/L	6946	Standard
	Cr	53	975.0	4.9	**0.7938**	0.066	8.3	ug/L	328	Standard
	Mn	55	3454.1	1.9	**0.3960**	0.015	3.8	ug/L	823	Standard
	Co	59	2721.9	4.1	**0.3646**	0.019	5.1	ug/L	252	Standard
	Ni	60	2839.3	1.0	**1.4356**	0.026	1.8	ug/L	192	Standard
	Cu	65	1518.4	2.5	**0.7258**	0.025	3.5	ug/L	141	Standard
	Zn	66	6972.6	1.8	**5.6720**	0.065	1.1	ug/L	491	Standard
>	**Ge**	72	504116.3	0.9				ug/L	515087	Standard
	As	75	374.9	9.7	**0.3808**	0.031	8.0	ug/L	20	Standard
	Se	82	63.0	8.6	**0.4404**	0.052	11.9	ug/L	15	Standard
	Se-1	77	80.7	10.3	**0.3758**	0.122	32.5	ug/L	48	Standard
>	**Ga**	71	33.3	52.7				mg/L	90	Standard
	Rb	85	16.7	96.4				ug/L	23	Standard
	Y	89	427965.8	1.5				ug/L	448510	Standard
>	**Rh**	103	20.0	25.0				ug/L	15	Standard
	Mo	98	72.3	5.2	**0.0094**	0.001	12.5	ug/L	11	Standard
	Ag	107	2402.2	4.6	**0.3647**	0.015	4.1	ug/L	134	Standard
	Cd	111	440.5	3.4	**0.2165**	0.007	3.2	mg/L	7	Standard
	Cd	114	1158.4	0.8	**0.2324**	0.001	0.2	ug/L	16	Standard
>	**In**	115	574029.4	1.1				ug/L	611117	Standard
	Sn	118	496.7	16.4	**-0.0124**	0.016	125.3	ug/L	518	Standard
	Sb	123	1769.4	0.8	**0.3864**	0.003	0.7	ug/L	127	Standard
	Ba	135	1350.1	0.7	**0.6712**	0.012	1.8	ug/L	45	Standard
	Ce	140	15.0	0.0				ug/L	298	Standard
>	**Tb**	159	914394.0	1.1				ug/L	977942	Standard
	Ho	165	6.7	43.3				ug/L	12	Standard
	Tl	203	645.7	4.5	**0.0752**	0.004	4.8	ug/L	31	Standard
	Tl	205	546.7	2.9	**0.0757**	0.002	3.3	ug/L	20	Standard
	Pb	206	1234.7	1.4	**0.1748**	0.002	1.1	ug/L	286	Standard
	Pb	207	1077.0	1.2	**0.1725**	0.004	2.3	ug/L	257	Standard
	Pb	208	4484.6	3.2	**0.1877**	0.008	4.4	ug/L	956	Standard
	U	238	2602.6	1.7	**0.3761**	0.010	2.6	ug/L	17	Standard
>	**Bi**	209	533901.6	0.9				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	26.7	10.8	**-0.0196**	0.004	19.0	mg/L	32	Standard
K	39	28.3	10.2	**-0.0403**	0.010	24.0	mg/L	30	Standard
Ca	43	38.3	7.5	**0.8090**	0.513	63.4	mg/L	48	Standard
Fe	54	99.0	17.7	**-0.0423**	0.018	41.4	mg/L	159	Standard
Fe	57	198.3	16.4	**0.0831**	0.119	142.8	mg/L	195	Standard
Sc-1	45	37422.8	0.9				mg/L	39543	Standard
Cl	35	34311.5	2.9				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1263.4	4.0				ug/L	1647	Standard
P	31	12998.9	1.6				ug/L	15231	Standard
S	34	2533.5	5.7				ug/L	1845	Standard
Sr	88	71.7	29.0				ug/L	70	Standard
C	12	70.0	24.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	5.9	100.8				mg/L	12	Standard
Ho-1	165	6.7	43.3				mg/L	12	Standard
Er	166	16.7	34.6				mg/L	20	Standard
I	127	1311.7	25.8				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	99.121		
Al	27			
Sc	45			
Ti	47			
V	51	77.290		
Cr	52	72.680		
Cr	53			
Mn	55	79.198		
Co	59	91.138		
Ni	60	89.723		
Cu	65	90.724		
Zn	66	90.752		
Ge	72		97.870	
As	75	95.209		
Se	82	110.096		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	91.178		
Cd	111	90.212		
Cd	114			
> In	115			93.931
Sn	118			
Sb	123	96.601		
Ba	135	89.490		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	93.978		
Tl	205			
Pb	206			
Pb	207			
Pb	208	93.825		
U	238	94.023		
> Bi	209			95.839
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW A9 WG572242-02
Sample Date/Time: Tuesday, June 28, 2016 19:51:29
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73456.0	1.1				ug/L	81760	Standard
	Be	9	13.3	21.7	**0.0052**	0.003	59.5	ug/L	17	Standard
	Al	27	9322.9	1.9	**0.0529**	0.001	1.2	ug/L	1410	Standard
	Sc	45	38756.2	2.9				ug/L	39543	Standard
	Ti	47	33.7	15.2	**-0.0290**	0.022	74.1	ug/L	39	Standard
	V	51	1394.3	5.5	**-0.0051**	0.010	198.0	ug/L	1415	Standard
	Cr	52	7883.4	0.8	**0.0807**	0.013	16.5	ug/L	6946	Standard
	Cr	53	506.7	16.0	**0.2387**	0.095	39.9	ug/L	328	Standard
	Mn	55	1210.0	2.0	**0.0390**	0.005	11.7	ug/L	823	Standard
	Co	59	188.0	6.5	**-0.0045**	0.002	42.5	ug/L	252	Standard
	Ni	60	230.3	1.3	**0.0179**	0.002	10.0	ug/L	192	Standard
	Cu	65	157.0	8.9	**-0.0078**	0.008	102.0	ug/L	141	Standard
	Zn	66	1546.4	2.1	**0.5897**	0.023	3.8	ug/L	491	Standard
>	**Ge**	72	512703.5	0.7				ug/L	515087	Standard
	As	75	-32.6	48.2	**0.0111**	0.014	127.3	ug/L	20	Standard
	Se	82	19.2	20.1	**0.0486**	0.034	70.8	ug/L	15	Standard
	Se-1	77	50.0	10.6	**-0.0518**	0.075	145.3	ug/L	48	Standard
>	**Ga**	71	33.3	34.6				mg/L	90	Standard
	Rb	85	33.3	31.2				ug/L	23	Standard
	Y	89	438886.4	1.2				ug/L	448510	Standard
>	**Rh**	103	13.3	43.3				ug/L	15	Standard
	Mo	98	27.2	14.3	**-0.0088**	0.001	17.0	ug/L	11	Standard
	Ag	107	75.7	8.8	**-0.0047**	0.001	18.4	ug/L	134	Standard
	Cd	111	4.3	48.7	**-0.0009**	0.001	113.9	mg/L	7	Standard
	Cd	114	21.5	41.2	**-0.0007**	0.002	246.6	ug/L	16	Standard
>	**In**	115	598021.6	1.3				ug/L	611117	Standard
	Sn	118	688.3	6.3	**0.0170**	0.007	40.8	ug/L	518	Standard
	Sb	123	162.8	37.0	**0.0223**	0.013	56.3	ug/L	127	Standard
	Ba	135	50.0	12.0	**-0.0003**	0.003	1000.2	ug/L	45	Standard
	Ce	140	36.7	78.7				ug/L	298	Standard
>	**Tb**	159	940667.7	2.2				ug/L	977942	Standard
	Ho	165	18.3	56.8				ug/L	12	Standard
	Tl	203	9.0	22.2	**-0.0037**	0.000	6.2	ug/L	31	Standard
	Tl	205	5.0	0.0	**-0.0016**	0.000	0.7	ug/L	20	Standard
	Pb	206	302.0	8.3	**-0.0074**	0.006	75.2	ug/L	286	Standard
	Pb	207	237.7	5.4	**-0.0090**	0.003	32.3	ug/L	257	Standard
	Pb	208	966.3	1.0	**-0.0090**	0.001	6.5	ug/L	956	Standard
	U	238	4.3	48.0	**-0.0024**	0.000	12.3	ug/L	17	Standard
>	**Bi**	209	554162.6	1.6				ug/L	557080	Standard

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	Na	23	0.0		**0.0050**			mg/L	0	Standard
	Mg	24	41.7	18.3	**-0.0005**	0.010	2017.0	mg/L	32	Standard
	K	39	30.0	33.3	**-0.0385**	0.033	84.7	mg/L	30	Standard
	Ca	43	16.7	91.7	**-2.7218**	2.434	89.4	mg/L	48	Standard
	Fe	54	121.1	16.6	**-0.0249**	0.021	84.8	mg/L	159	Standard
	Fe	57	230.0	15.2	**0.1658**	0.100	60.0	mg/L	195	Standard
>	**Sc-1**	45	38756.2	2.9				mg/L	39543	Standard
	Cl	35	36900.9	1.9				ug/L	27642	Standard
	Kr	83	1.3	43.3				ug/L	2	Standard
	Br	81	1656.8	8.0				ug/L	1647	Standard
	P	31	17782.1	2.2				ug/L	15231	Standard
	S	34	2408.5	10.1				ug/L	1845	Standard
	Sr	88	75.0	29.1				ug/L	70	Standard
	C	12	50.0	52.9				mg/L	113	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	0	Standard
	Dy	164	9.5	105.0				mg/L	12	Standard
	Ho-1	165	18.3	56.8				mg/L	12	Standard
	Er	166	10.0					mg/L	20	Standard
	I	127	1248.4	23.8				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		89.843	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.537	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.857
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.476
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW A9 WG572242-03
Sample Date/Time: Tuesday, June 28, 2016 19:54:40
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74125.9	0.7				ug/L	81760	Standard
	Be	9	45613.6	2.5	**50.6567**	1.536	3.0	ug/L	17	Standard
	Al	27	52265.0	2.7	**0.3596**	0.008	2.3	ug/L	1410	Standard
	Sc	45	39738.7	2.1				ug/L	39543	Standard
	Ti	47	34.0	10.6	**-0.0277**	0.015	52.7	ug/L	39	Standard
	V	51	340531.5	1.6	**49.0319**	0.683	1.4	ug/L	1415	Standard
	Cr	52	354579.7	0.6	**50.1386**	0.494	1.0	ug/L	6946	Standard
	Cr	53	44436.8	3.3	**50.5389**	1.845	3.7	ug/L	328	Standard
	Mn	55	331885.6	0.6	**51.3034**	0.483	0.9	ug/L	823	Standard
	Co	59	341252.7	1.0	**48.7823**	0.497	1.0	ug/L	252	Standard
	Ni	60	94292.8	0.4	**50.2138**	0.089	0.2	ug/L	192	Standard
	Cu	65	96497.7	0.5	**50.9494**	0.130	0.3	ug/L	141	Standard
	Zn	66	57251.0	0.4	**51.6689**	0.417	0.8	ug/L	491	Standard
>	**Ge**	72	512516.5	0.4				ug/L	515087	Standard
	As	75	55356.1	0.6	**49.5225**	0.094	0.2	ug/L	20	Standard
	Se	82	5489.9	0.8	**47.8062**	0.574	1.2	ug/L	15	Standard
	Se-1	77	3699.5	2.3	**48.6318**	0.978	2.0	ug/L	48	Standard
>	**Ga**	71	51.7	29.6				mg/L	90	Standard
	Rb	85	58.3	27.6				ug/L	23	Standard
	Y	89	427399.3	0.3				ug/L	448510	Standard
>	**Rh**	103	20.0	66.1				ug/L	15	Standard
	Mo	98	50.9	5.4	**0.0000**	0.001	4406.4	ug/L	11	Standard
	Ag	107	325451.5	0.2	**49.1242**	0.412	0.8	ug/L	134	Standard
	Cd	111	100950.5	1.5	**47.8617**	0.611	1.3	mg/L	7	Standard
	Cd	114	243935.8	0.5	**47.5806**	0.389	0.8	ug/L	16	Standard
>	**In**	115	602979.8	0.8				ug/L	611117	Standard
	Sn	118	653.3	9.2	**0.0100**	0.010	97.1	ug/L	518	Standard
	Sb	123	224336.4	0.4	**48.1778**	0.461	1.0	ug/L	127	Standard
	Ba	135	98286.4	0.2	**48.2270**	0.385	0.8	ug/L	45	Standard
	Ce	140	205.0	19.4				ug/L	298	Standard
>	**Tb**	159	962904.7	0.9				ug/L	977942	Standard
	Ho	165	11.7	49.5				ug/L	12	Standard
	Tl	203	409811.5	0.9	**48.6592**	0.503	1.0	ug/L	31	Standard
	Tl	205	358097.5	0.9	**48.9662**	0.679	1.4	ug/L	20	Standard
	Pb	206	272798.6	0.1	**50.4414**	0.712	1.4	ug/L	286	Standard
	Pb	207	236678.2	0.4	**48.5210**	0.945	1.9	ug/L	257	Standard
	Pb	208	941837.1	1.1	**49.9011**	0.393	0.8	ug/L	956	Standard
	U	238	343975.4	0.3	**48.0328**	0.703	1.5	ug/L	17	Standard
>	**Bi**	209	556837.1	1.5				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.3983**	18.002	173.1	mg/L	0	Standard
Mg	24	58.3	27.6	**0.0205**	0.023	110.8	mg/L	32	Standard
K	39	16.7	45.8	**-0.0851**	0.027	31.2	mg/L	30	Standard
Ca	43	23.3	32.7	**-1.8206**	1.160	63.7	mg/L	48	Standard
Fe	54	118.7	10.7	**-0.0303**	0.010	31.4	mg/L	159	Standard
Fe	57	200.0	10.0	**0.0482**	0.079	163.5	mg/L	195	Standard
Sc-1	45	39738.7	2.1				mg/L	39543	Standard
Cl	35	36016.8	1.9				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	3627.1	7.0				ug/L	1647	Standard
P	31	18584.7	0.6				ug/L	15231	Standard
S	34	2266.8	5.1				ug/L	1845	Standard
Sr	88	53.3	23.6				ug/L	70	Standard
C	12	126.7	32.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	9.0	105.3				mg/L	12	Standard
Ho-1	165	11.7	49.5				mg/L	12	Standard
Er	166	20.0	50.0				mg/L	20	Standard
I	127	1253.4	17.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.663	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.501	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.669
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.956
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606083901 WG574242-01
Sample Date/Time: Tuesday, June 28, 2016 19:57:52
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73849.6	1.9				ug/L	81760	Standard
	Be	9	25.0	0.0	**0.0181**	0.001	2.9	ug/L	17	Standard
	Al	27	15521751.4	1.0	**111.4854**	1.467	1.3	ug/L	1410	Standard
	Sc	45	39103.8	3.8				ug/L	39543	Standard
	Ti	47	591.7	5.1	**2.3246**	0.153	6.6	ug/L	39	Standard
	V	51	4219.1	3.4	**0.4282**	0.015	3.5	ug/L	1415	Standard
	Cr	52	8895.6	2.0	**0.2798**	0.040	14.2	ug/L	6946	Standard
	Cr	53	3360.4	10.4	**3.6642**	0.437	11.9	ug/L	328	Standard
	Mn	55	16077.2	1.4	**2.4454**	0.007	0.3	ug/L	823	Standard
	Co	59	1032.0	3.9	**0.1223**	0.006	4.9	ug/L	252	Standard
	Ni	60	3143.3	2.0	**1.6407**	0.018	1.1	ug/L	192	Standard
	Cu	65	3355.0	2.0	**1.7559**	0.016	0.9	ug/L	141	Standard
	Zn	66	14991.7	0.7	**13.4797**	0.137	1.0	ug/L	491	Standard
>	**Ge**	72	492452.2	1.1				ug/L	515087	Standard
	As	75	562.8	15.9	**0.5640**	0.084	14.9	ug/L	20	Standard
	Se	82	67.0	15.0	**0.4895**	0.090	18.3	ug/L	15	Standard
	Se-1	77	207.3	11.8	**2.1604**	0.344	15.9	ug/L	48	Standard
>	**Ga**	71	103.3	23.9				mg/L	90	Standard
	Rb	85	20340.3	1.9				ug/L	23	Standard
	Y	89	439150.3	1.0				ug/L	448510	Standard
>	**Rh**	103	18.3	15.7				ug/L	15	Standard
	Mo	98	1185.2	3.1	**0.4267**	0.016	3.7	ug/L	11	Standard
	Ag	107	124.0	3.2	**0.0026**	0.001	26.5	ug/L	134	Standard
	Cd	111	35.9	29.2	**0.0141**	0.005	34.6	mg/L	7	Standard
	Cd	114	96.0	6.6	**0.0139**	0.001	9.0	ug/L	16	Standard
>	**In**	115	601194.2	0.6				ug/L	611117	Standard
	Sn	118	770.0	3.2	**0.0304**	0.004	13.3	ug/L	518	Standard
	Sb	123	1910.7	20.7	**0.3992**	0.088	22.0	ug/L	127	Standard
	Ba	135	33674.7	0.4	**16.5556**	0.054	0.3	ug/L	45	Standard
	Ce	140	1643.4	3.5				ug/L	298	Standard
>	**Tb**	159	946228.9	1.7				ug/L	977942	Standard
	Ho	165	41.7	36.7				ug/L	12	Standard
	Tl	203	211.3	8.6	**0.0215**	0.002	11.4	ug/L	31	Standard
	Tl	205	188.3	11.1	**0.0247**	0.003	12.3	ug/L	20	Standard
	Pb	206	2721.9	1.8	**0.4638**	0.014	3.1	ug/L	286	Standard
	Pb	207	2208.8	1.5	**0.4164**	0.010	2.4	ug/L	257	Standard
	Pb	208	9386.5	1.8	**0.4607**	0.014	3.1	ug/L	956	Standard
	U	238	2364.2	1.6	**0.3425**	0.008	2.2	ug/L	17	Standard
>	**Bi**	209	532104.5	1.0				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.9240**	18.912	173.1	mg/L	0	Standard
Mg	24	14932.4	1.8	**20.0717**	1.109	5.5	mg/L	32	Standard
K	39	851.7	12.5	**2.7753**	0.419	15.1	mg/L	30	Standard
Ca	43	323.3	7.9	**44.3168**	3.500	7.9	mg/L	48	Standard
Fe	54	180.7	15.7	**0.0282**	0.024	84.5	mg/L	159	Standard
Fe	57	355.0	6.1	**0.5869**	0.046	7.9	mg/L	195	Standard
> **Sc-1**	45	39103.8	3.8				mg/L	39543	Standard
Cl	35	38446.7	1.8				ug/L	27642	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	10497.0	5.2				ug/L	1647	Standard
P	31	21567.0	1.7				ug/L	15231	Standard
S	34	2493.5	2.8				ug/L	1845	Standard
Sr	88	151.7	7.6				ug/L	70	Standard
C	12	210.0	39.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	67.9	17.5				mg/L	12	Standard
Ho-1	165	41.7	36.7				mg/L	12	Standard
Er	166	43.3	93.3				mg/L	20	Standard
I	127	29340.1	3.5				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		90.325	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.606	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.376
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.517
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606083901DP WG574242-04
Sample Date/Time: Tuesday, June 28, 2016 20:01:03
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74496.0	1.1				ug/L	81760	Standard
	Be	9	20.0	25.0	**0.0124**	0.006	45.8	ug/L	17	Standard
	Al	27	15458448.5	1.4	**110.0484**	0.587	0.5	ug/L	1410	Standard
	Sc	45	38253.3	3.4				ug/L	39543	Standard
	Ti	47	558.7	5.4	**2.1548**	0.155	7.2	ug/L	39	Standard
	V	51	4067.8	2.6	**0.3973**	0.009	2.2	ug/L	1415	Standard
	Cr	52	9024.7	1.6	**0.2811**	0.031	11.1	ug/L	6946	Standard
	Cr	53	3592.1	3.4	**3.8809**	0.090	2.3	ug/L	328	Standard
	Mn	55	13517.4	2.1	**2.0039**	0.068	3.4	ug/L	823	Standard
	Co	59	1022.7	3.5	**0.1189**	0.006	5.0	ug/L	252	Standard
	Ni	60	3054.6	1.9	**1.5691**	0.041	2.6	ug/L	192	Standard
	Cu	65	3452.1	3.2	**1.7838**	0.034	1.9	ug/L	141	Standard
	Zn	66	14844.3	0.5	**13.1506**	0.169	1.3	ug/L	491	Standard
>	**Ge**	72	499109.4	1.4				ug/L	515087	Standard
	As	75	584.5	8.0	**0.5768**	0.041	7.2	ug/L	20	Standard
	Se	82	58.0	10.0	**0.3998**	0.046	11.4	ug/L	15	Standard
	Se-1	77	200.7	10.2	**2.0328**	0.318	15.6	ug/L	48	Standard
>	**Ga**	71	100.0	13.2				mg/L	90	Standard
	Rb	85	19739.5	1.7				ug/L	23	Standard
	Y	89	436250.9	1.8				ug/L	448510	Standard
>	**Rh**	103	38.3	7.5				ug/L	15	Standard
	Mo	98	1219.4	1.0	**0.4525**	0.003	0.7	ug/L	11	Standard
	Ag	107	99.7	5.7	**-0.0007**	0.001	125.7	ug/L	134	Standard
	Cd	111	32.6	12.4	**0.0130**	0.002	14.9	mg/L	7	Standard
	Cd	114	81.5	18.5	**0.0115**	0.003	24.6	ug/L	16	Standard
>	**In**	115	584572.0	1.4				ug/L	611117	Standard
	Sn	118	751.7	6.1	**0.0310**	0.009	27.5	ug/L	518	Standard
	Sb	123	786.1	12.1	**0.1616**	0.023	14.4	ug/L	127	Standard
	Ba	135	32184.1	0.9	**16.2729**	0.095	0.6	ug/L	45	Standard
	Ce	140	490.0	7.4				ug/L	298	Standard
>	**Tb**	159	929479.8	0.3				ug/L	977942	Standard
	Ho	165	31.7	24.1				ug/L	12	Standard
	Tl	203	152.7	10.6	**0.0145**	0.002	14.7	ug/L	31	Standard
	Tl	205	146.7	17.2	**0.0191**	0.004	18.8	ug/L	20	Standard
	Pb	206	2610.2	1.4	**0.4511**	0.005	1.2	ug/L	286	Standard
	Pb	207	2110.5	2.5	**0.4033**	0.013	3.2	ug/L	257	Standard
	Pb	208	8866.0	0.9	**0.4405**	0.006	1.4	ug/L	956	Standard
	U	238	2335.8	3.1	**0.3444**	0.010	2.9	ug/L	17	Standard
>	**Bi**	209	522741.7	0.4				ug/L	557080	Standard

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Na	23	1.7	173.2	**11.1196**	19.251	173.1	mg/L	0	Standard
Mg	24	14720.5	1.4	**20.2196**	0.936	4.6	mg/L	32	Standard
K	39	903.4	10.8	**3.0129**	0.317	10.5	mg/L	30	Standard
Ca	43	308.3	1.9	**43.1033**	1.939	4.5	mg/L	48	Standard
Fe	54	132.3	23.0	**-0.0139**	0.024	174.3	mg/L	159	Standard
Fe	57	371.7	11.8	**0.6755**	0.185	27.4	mg/L	195	Standard
> **Sc-1**	45	38253.3	3.4				mg/L	39543	Standard
Cl	35	39853.0	2.0				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	7995.4	3.8				ug/L	1647	Standard
P	31	20689.1	2.4				ug/L	15231	Standard
S	34	2350.2	5.7				ug/L	1845	Standard
Sr	88	115.0	7.5				ug/L	70	Standard
C	12	266.7	11.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	41.7	57.7				mg/L	12	Standard
Ho-1	165	31.7	24.1				mg/L	12	Standard
Er	166	33.3	75.5				mg/L	20	Standard
I	127	28308.1	3.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.115	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.898	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.656
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.836
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606083901S WG574242-05
Sample Date/Time: Tuesday, June 28, 2016 20:04:14
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77052.1	1.2				ug/L	81760	Standard
	Be	9	48365.4	1.4	**51.6767**	1.282	2.5	ug/L	17	Standard
	Al	27	15205678.0	0.8	**104.6750**	1.999	1.9	ug/L	1410	Standard
	Sc	45	39767.1	2.3				ug/L	39543	Standard
	Ti	47	566.0	2.6	**2.1182**	0.041	1.9	ug/L	39	Standard
	V	51	345428.5	0.5	**49.6572**	0.625	1.3	ug/L	1415	Standard
	Cr	52	342558.9	0.4	**48.3219**	0.886	1.8	ug/L	6946	Standard
	Cr	53	45610.2	2.6	**51.7999**	1.901	3.7	ug/L	328	Standard
	Mn	55	334844.2	1.7	**51.6671**	0.130	0.3	ug/L	823	Standard
	Co	59	340587.2	2.1	**48.5963**	0.256	0.5	ug/L	252	Standard
	Ni	60	92425.4	0.6	**49.1352**	0.675	1.4	ug/L	192	Standard
	Cu	65	94140.2	0.6	**49.6217**	0.865	1.7	ug/L	141	Standard
	Zn	66	68169.3	0.4	**61.5791**	1.173	1.9	ug/L	491	Standard
>	**Ge**	72	513441.7	1.6				ug/L	515087	Standard
	As	75	56899.2	0.6	**50.8164**	0.583	1.1	ug/L	20	Standard
	Se	82	5653.4	1.3	**49.1454**	0.462	0.9	ug/L	15	Standard
	Se-1	77	3932.8	1.5	**51.6632**	1.250	2.4	ug/L	48	Standard
>	**Ga**	71	93.3	35.7				mg/L	90	Standard
	Rb	85	19300.6	2.7				ug/L	23	Standard
	Y	89	425453.4	2.7				ug/L	448510	Standard
>	**Rh**	103	45.0	19.2				ug/L	15	Standard
	Mo	98	1218.6	0.9	**0.4503**	0.008	1.7	ug/L	11	Standard
	Ag	107	314898.7	0.6	**48.8175**	0.102	0.2	ug/L	134	Standard
	Cd	111	99777.7	0.5	**48.5906**	0.622	1.3	mg/L	7	Standard
	Cd	114	243059.8	0.9	**48.6969**	0.795	1.6	ug/L	16	Standard
>	**In**	115	587073.7	0.8				ug/L	611117	Standard
	Sn	118	733.4	7.3	**0.0272**	0.010	36.7	ug/L	518	Standard
	Sb	123	223776.0	1.4	**49.3561**	0.290	0.6	ug/L	127	Standard
	Ba	135	127336.9	0.7	**64.1810**	0.344	0.5	ug/L	45	Standard
	Ce	140	335.0	9.1				ug/L	298	Standard
>	**Tb**	159	937062.8	1.0				ug/L	977942	Standard
	Ho	165	41.7	79.9				ug/L	12	Standard
	Tl	203	401801.7	0.6	**49.2378**	0.579	1.2	ug/L	31	Standard
	Tl	205	351031.6	0.7	**49.5383**	0.691	1.4	ug/L	20	Standard
	Pb	206	267916.7	0.7	**51.1246**	0.591	1.2	ug/L	286	Standard
	Pb	207	234005.3	0.9	**49.5047**	0.372	0.8	ug/L	257	Standard
	Pb	208	924903.3	0.8	**50.5781**	0.765	1.5	ug/L	956	Standard
	U	238	349197.5	0.5	**50.3229**	0.614	1.2	ug/L	17	Standard
>	**Bi**	209	539520.7	0.7				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.8832**	18.842	173.1	mg/L	0	Standard
Mg	24	14542.0	3.3	**19.1893**	0.286	1.5	mg/L	32	Standard
K	39	753.4	10.6	**2.3925**	0.305	12.7	mg/L	30	Standard
Ca	43	295.0	12.2	**39.3051**	6.421	16.3	mg/L	48	Standard
Fe	54	140.6	16.7	**-0.0107**	0.020	183.5	mg/L	159	Standard
Fe	57	348.3	9.1	**0.5437**	0.082	15.1	mg/L	195	Standard
> **Sc-1**	45	39767.1	2.3				mg/L	39543	Standard
Cl	35	39860.4	1.2				ug/L	27642	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	7565.2	10.7				ug/L	1647	Standard
P	31	21044.6	3.8				ug/L	15231	Standard
S	34	2540.2	5.7				ug/L	1845	Standard
Sr	88	145.0	22.6				ug/L	70	Standard
C	12	196.7	11.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	48.4	54.7				mg/L	12	Standard
Ho-1	165	41.7	79.9				mg/L	12	Standard
Er	166	33.3	45.8				mg/L	20	Standard
I	127	26943.9	1.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.242	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.681	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.066
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.848
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606083901SD WG574242-06
Sample Date/Time: Tuesday, June 28, 2016 20:07:26
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77184.4	1.1				ug/L	81760	Standard
	Be	9	48315.3	1.2	**51.5258**	0.436	0.8	ug/L	17	Standard
	Al	27	15387465.4	1.3	**105.7299**	0.773	0.7	ug/L	1410	Standard
	Sc	45	40039.5	2.3				ug/L	39543	Standard
	Ti	47	554.0	4.1	**2.1409**	0.093	4.3	ug/L	39	Standard
	V	51	332776.2	1.5	**49.3498**	0.268	0.5	ug/L	1415	Standard
	Cr	52	340776.8	0.8	**49.6175**	0.095	0.2	ug/L	6946	Standard
	Cr	53	45466.5	0.7	**53.2763**	0.775	1.5	ug/L	328	Standard
	Mn	55	324192.4	1.4	**51.6123**	0.258	0.5	ug/L	823	Standard
	Co	59	327045.3	2.1	**48.1461**	0.569	1.2	ug/L	252	Standard
	Ni	60	91364.7	1.1	**50.1099**	0.072	0.1	ug/L	192	Standard
	Cu	65	91854.3	0.9	**49.9479**	0.081	0.2	ug/L	141	Standard
	Zn	66	66866.6	0.8	**62.3204**	0.118	0.2	ug/L	491	Standard
>	Ge	72	497622.9	1.0				ug/L	515087	Standard
	As	75	54845.8	1.7	**50.5323**	0.480	1.0	ug/L	20	Standard
	Se	82	5429.5	1.2	**48.6954**	0.265	0.5	ug/L	15	Standard
	Se-1	77	3850.8	1.9	**52.1872**	0.544	1.0	ug/L	48	Standard
>	Ga	71	85.0	11.8				mg/L	90	Standard
	Rb	85	19015.3	1.2				ug/L	23	Standard
	Y	89	421533.6	0.8				ug/L	448510	Standard
>	Rh	103	55.0	15.7				ug/L	15	Standard
	Mo	98	1205.1	2.4	**0.4408**	0.012	2.7	ug/L	11	Standard
	Ag	107	307002.5	0.8	**47.1551**	0.386	0.8	ug/L	134	Standard
	Cd	111	97425.8	0.9	**47.0062**	0.430	0.9	mg/L	7	Standard
	Cd	114	239795.9	0.5	**47.5975**	0.300	0.6	ug/L	16	Standard
>	In	115	592518.8	0.1				ug/L	611117	Standard
	Sn	118	761.7	9.1	**0.0309**	0.012	38.7	ug/L	518	Standard
	Sb	123	220298.1	1.2	**48.1440**	0.631	1.3	ug/L	127	Standard
	Ba	135	125301.0	0.6	**62.5732**	0.412	0.7	ug/L	45	Standard
	Ce	140	340.0	1.5				ug/L	298	Standard
>	Tb	159	948091.3	1.9				ug/L	977942	Standard
	Ho	165	23.3	65.5				ug/L	12	Standard
	Tl	203	394026.8	0.4	**48.4831**	0.151	0.3	ug/L	31	Standard
	Tl	205	348699.1	1.4	**49.4146**	1.048	2.1	ug/L	20	Standard
	Pb	206	261711.9	1.4	**50.1430**	0.483	1.0	ug/L	286	Standard
	Pb	207	228078.7	1.5	**48.4479**	0.479	1.0	ug/L	257	Standard
	Pb	208	906176.6	0.5	**49.7571**	0.517	1.0	ug/L	956	Standard
	U	238	340376.9	0.5	**49.2541**	0.514	1.0	ug/L	17	Standard
>	Bi	209	537295.6	0.7				ug/L	557080	Standard

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Na	23	3.3	86.6	**20.8666**	18.067	86.6	mg/L	0	Standard
Mg	24	14582.0	2.3	**19.1163**	0.419	2.2	mg/L	32	Standard
K	39	795.0	3.8	**2.5139**	0.164	6.5	mg/L	30	Standard
Ca	43	345.0	2.9	**46.4459**	2.697	5.8	mg/L	48	Standard
Fe	54	142.5	14.7	**-0.0097**	0.018	187.3	mg/L	159	Standard
Fe	57	408.3	2.5	**0.7378**	0.065	8.9	mg/L	195	Standard
> **Sc-1**	45	40039.5	2.3				mg/L	39543	Standard
Cl	35	39300.2	1.1				ug/L	27642	Standard
Kr	83	1.7	173.2				ug/L	2	Standard
Br	81	7651.9	3.5				ug/L	1647	Standard
P	31	20634.0	3.2				ug/L	15231	Standard
S	34	2398.5	2.0				ug/L	1845	Standard
Sr	88	180.0	15.5				ug/L	70	Standard
C	12	226.7	27.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	27.4	58.7				mg/L	12	Standard
Ho-1	165	23.3	65.5				mg/L	12	Standard
Er	166	53.3	108.3				mg/L	20	Standard
I	127	27065.8	3.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.404	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.610	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.957
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.448
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606084301
Sample Date/Time: Tuesday, June 28, 2016 20:10:37
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80372.6	1.6				ug/L	81760	Standard
	Be	9	41.7	45.4	**0.0330**	0.020	59.2	ug/L	17	Standard
	Al	27	7042054.5	1.4	**46.4726**	1.334	2.9	ug/L	1410	Standard
	Sc	45	38211.6	5.6				ug/L	39543	Standard
	Ti	47	149.3	19.8	**0.4676**	0.133	28.4	ug/L	39	Standard
	V	51	1769.8	3.9	**0.0612**	0.007	10.9	ug/L	1415	Standard
	Cr	52	8360.6	4.6	**0.2060**	0.044	21.1	ug/L	6946	Standard
	Cr	53	938.4	5.4	**0.7826**	0.048	6.1	ug/L	328	Standard
	Mn	55	4412856.2	0.9	**715.8990**	5.361	0.7	ug/L	823	Standard
	Co	59	49628.8	1.9	**7.3983**	0.034	0.5	ug/L	252	Standard
	Ni	60	31518.1	1.1	**17.4994**	0.073	0.4	ug/L	192	Standard
	Cu	65	1083.7	2.3	**0.5092**	0.018	3.5	ug/L	141	Standard
	Zn	66	58737.0	1.3	**55.5464**	0.787	1.4	ug/L	491	Standard
>	**Ge**	72	489683.3	1.5				ug/L	515087	Standard
	As	75	118.1	28.8	**0.1508**	0.032	21.2	ug/L	20	Standard
	Se	82	133.7	3.3	**1.1023**	0.049	4.4	ug/L	15	Standard
	Se-1	77	146.3	10.3	**1.3266**	0.239	18.0	ug/L	48	Standard
>	**Ga**	71	230.0	39.9				mg/L	90	Standard
	Rb	85	13262.5	1.5				ug/L	23	Standard
	Y	89	437622.3	1.3				ug/L	448510	Standard
>	**Rh**	103	40.0	43.3				ug/L	15	Standard
	Mo	98	84.3	2.5	**0.0124**	0.001	5.4	ug/L	11	Standard
	Ag	107	135.7	14.4	**0.0042**	0.003	69.6	ug/L	134	Standard
	Cd	111	325.5	6.3	**0.1508**	0.009	6.1	mg/L	7	Standard
	Cd	114	800.8	5.2	**0.1507**	0.008	5.1	ug/L	16	Standard
>	**In**	115	605376.8	0.3				ug/L	611117	Standard
	Sn	118	716.7	15.8	**0.0204**	0.019	93.4	ug/L	518	Standard
	Sb	123	1846.5	24.8	**0.3824**	0.099	25.9	ug/L	127	Standard
	Ba	135	61196.0	0.7	**29.8977**	0.107	0.4	ug/L	45	Standard
	Ce	140	4327.3	3.4				ug/L	298	Standard
>	**Tb**	159	946751.9	1.1				ug/L	977942	Standard
	Ho	165	113.3	17.8				ug/L	12	Standard
	Tl	203	274.7	6.5	**0.0286**	0.002	7.3	ug/L	31	Standard
	Tl	205	308.3	53.1	**0.0408**	0.023	55.8	ug/L	20	Standard
	Pb	206	584.3	5.1	**0.0470**	0.006	11.8	ug/L	286	Standard
	Pb	207	484.3	1.7	**0.0436**	0.002	3.9	ug/L	257	Standard
	Pb	208	2242.1	13.2	**0.0611**	0.016	25.8	ug/L	956	Standard
	U	238	167.0	68.8	**0.0208**	0.016	78.4	ug/L	17	Standard
>	**Bi**	209	544741.6	0.3				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	6142.9	1.9	**8.4190**	0.399	4.7	mg/L	32	Standard
K	39	320.0	19.2	**0.9720**	0.149	15.3	mg/L	30	Standard
Ca	43	193.3	18.7	**25.2140**	6.755	26.8	mg/L	48	Standard
Fe	54	272.9	8.2	**0.1197**	0.034	28.2	mg/L	159	Standard
Fe	57	298.3	20.0	**0.4171**	0.202	48.3	mg/L	195	Standard
Sc-1	45	38211.6	5.6				mg/L	39543	Standard
Cl	35	43040.4	2.1				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	3493.7	8.6				ug/L	1647	Standard
P	31	19535.9	3.1				ug/L	15231	Standard
S	34	2298.5	3.2				ug/L	1845	Standard
Sr	88	191.7	4.0				ug/L	70	Standard
C	12	103.3	24.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	171.7	2.4				mg/L	12	Standard
Ho-1	165	113.3	17.8				mg/L	12	Standard
Er	166	103.3	43.6				mg/L	20	Standard
I	127	15184.3	1.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		98.303	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.068	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.061
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.785
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606084301PS WG574570-01
Sample Date/Time: Tuesday, June 28, 2016 20:13:49
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84132.9	0.3				ug/L	81760	Standard
	Be	9	53800.4	2.5	**52.6389**	1.459	2.8	ug/L	17	Standard
	Al	27	7286262.3	0.5	**45.9217**	0.095	0.2	ug/L	1410	Standard
	Sc	45	39187.3	1.8				ug/L	39543	Standard
	Ti	47	167.0	8.4	**0.5053**	0.064	12.8	ug/L	39	Standard
	V	51	355576.0	1.4	**50.8299**	0.802	1.6	ug/L	1415	Standard
	Cr	52	356673.6	1.0	**50.0684**	1.233	2.5	ug/L	6946	Standard
	Cr	53	44503.6	1.2	**50.2498**	1.575	3.1	ug/L	328	Standard
	Mn	55	4859292.5	1.8	**747.6759**	17.580	2.4	ug/L	823	Standard
	Co	59	417615.7	1.3	**59.2660**	0.892	1.5	ug/L	252	Standard
	Ni	60	125871.4	1.4	**66.5870**	2.033	3.1	ug/L	192	Standard
	Cu	65	97106.5	1.0	**50.8947**	0.717	1.4	ug/L	141	Standard
	Zn	66	127581.2	0.7	**115.3025**	1.913	1.7	ug/L	491	Standard
>	**Ge**	72	516403.0	2.2				ug/L	515087	Standard
	As	75	57691.6	2.0	**51.2302**	0.986	1.9	ug/L	20	Standard
	Se	82	6053.8	2.8	**52.3316**	1.116	2.1	ug/L	15	Standard
	Se-1	77	3949.2	3.8	**51.5591**	1.119	2.2	ug/L	48	Standard
>	**Ga**	71	251.7	10.0				mg/L	90	Standard
	Rb	85	13841.3	3.1				ug/L	23	Standard
	Y	89	444794.9	3.0				ug/L	448510	Standard
>	**Rh**	103	78.3	24.2				ug/L	15	Standard
	Mo	98	86.4	4.3	**0.0128**	0.001	7.7	ug/L	11	Standard
	Ag	107	327259.4	2.3	**48.6313**	0.643	1.3	ug/L	134	Standard
	Cd	111	105349.6	1.3	**49.1793**	0.322	0.7	mg/L	7	Standard
	Cd	114	257271.1	1.0	**49.4173**	1.101	2.2	ug/L	16	Standard
>	**In**	115	612449.2	2.0				ug/L	611117	Standard
	Sn	118	941.7	3.9	**0.0570**	0.004	7.5	ug/L	518	Standard
	Sb	123	235069.6	1.3	**49.7050**	0.359	0.7	ug/L	127	Standard
	Ba	135	161643.1	1.4	**78.1070**	0.551	0.7	ug/L	45	Standard
	Ce	140	4429.0	1.8				ug/L	298	Standard
>	**Tb**	159	958659.2	2.3				ug/L	977942	Standard
	Ho	165	101.7	15.0				ug/L	12	Standard
	Tl	203	432017.4	2.0	**50.9163**	0.725	1.4	ug/L	31	Standard
	Tl	205	384793.0	2.1	**52.2411**	1.764	3.4	ug/L	20	Standard
	Pb	206	286141.9	1.8	**52.5195**	0.925	1.8	ug/L	286	Standard
	Pb	207	249240.4	1.8	**50.7143**	0.544	1.1	ug/L	257	Standard
	Pb	208	995726.4	2.1	**52.3723**	1.044	2.0	ug/L	956	Standard
	U	238	370701.4	1.5	**51.3906**	1.394	2.7	ug/L	17	Standard
>	**Bi**	209	561025.3	2.5				ug/L	557080	Standard

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Na	23	5.0	0.0	**32.4034**	0.594	1.8	mg/L	0	Standard
Mg	24	6414.7	1.1	**8.5623**	0.246	2.9	mg/L	32	Standard
K	39	321.7	9.1	**0.9561**	0.110	11.5	mg/L	30	Standard
Ca	43	185.0	8.1	**22.9936**	1.940	8.4	mg/L	48	Standard
Fe	54	250.2	14.1	**0.0912**	0.029	32.3	mg/L	159	Standard
Fe	57	306.7	15.8	**0.4183**	0.145	34.7	mg/L	195	Standard
> **Sc-1**	45	39187.3	1.8				mg/L	39543	Standard
Cl	35	43079.8	1.6				ug/L	27642	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	3410.4	11.2				ug/L	1647	Standard
P	31	19879.7	4.3				ug/L	15231	Standard
S	34	2313.5	2.6				ug/L	1845	Standard
Sr	88	201.7	5.2				ug/L	70	Standard
C	12	140.0	32.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	196.2	20.7				mg/L	12	Standard
Ho-1	165	101.7	15.0				mg/L	12	Standard
Er	166	80.0	76.0				mg/L	20	Standard
I	127	16267.1	4.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.902	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.256	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.218
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.708
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606084301SDL WG574570-02
Sample Date/Time: Tuesday, June 28, 2016 20:17:00
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84610.6	1.2				ug/L	81760	Standard
	Be	9	31.7	24.1	**0.0210**	0.007	33.6	ug/L	17	Standard
	Al	27	1535529.0	0.5	**9.6123**	0.084	0.9	ug/L	1410	Standard
	Sc	45	40586.0	2.0				ug/L	39543	Standard
	Ti	47	54.0	14.5	**0.0442**	0.029	66.4	ug/L	39	Standard
	V	51	1510.6	4.6	**0.0030**	0.011	356.0	ug/L	1415	Standard
	Cr	52	7700.6	1.7	**0.0097**	0.022	221.3	ug/L	6946	Standard
	Cr	53	548.3	6.2	**0.2609**	0.037	14.0	ug/L	328	Standard
	Mn	55	927997.3	1.4	**137.8897**	1.374	1.0	ug/L	823	Standard
	Co	59	10741.5	3.1	**1.4429**	0.042	2.9	ug/L	252	Standard
	Ni	60	6856.2	1.9	**3.4057**	0.060	1.7	ug/L	192	Standard
	Cu	65	384.3	5.5	**0.1042**	0.011	10.3	ug/L	141	Standard
	Zn	66	13504.0	1.8	**11.0531**	0.162	1.5	ug/L	491	Standard
>	**Ge**	72	534132.0	0.6				ug/L	515087	Standard
	As	75	-8.2	426.8	**0.0333**	0.030	90.7	ug/L	20	Standard
	Se	82	34.3	14.2	**0.1678**	0.041	24.5	ug/L	15	Standard
	Se-1	77	77.7	7.3	**0.2756**	0.079	28.6	ug/L	48	Standard
>	**Ga**	71	133.3	12.1				mg/L	90	Standard
	Rb	85	2885.3	6.5				ug/L	23	Standard
	Y	89	438369.8	1.0				ug/L	448510	Standard
>	**Rh**	103	21.7	13.3				ug/L	15	Standard
	Mo	98	33.0	37.7	**-0.0070**	0.005	64.6	ug/L	11	Standard
	Ag	107	108.0	7.3	**-0.0003**	0.002	523.1	ug/L	134	Standard
	Cd	111	82.3	4.3	**0.0351**	0.001	2.2	mg/L	7	Standard
	Cd	114	247.3	23.3	**0.0421**	0.011	25.9	ug/L	16	Standard
>	**In**	115	618448.1	2.5				ug/L	611117	Standard
	Sn	118	536.7	11.9	**-0.0124**	0.008	66.9	ug/L	518	Standard
	Sb	123	2208.8	28.0	**0.4480**	0.119	26.5	ug/L	127	Standard
	Ba	135	12894.8	1.5	**6.1480**	0.082	1.3	ug/L	45	Standard
	Ce	140	871.7	9.1				ug/L	298	Standard
>	**Tb**	159	974992.3	2.7				ug/L	977942	Standard
	Ho	165	33.3	48.2				ug/L	12	Standard
	Tl	203	98.0	7.7	**0.0064**	0.001	11.0	ug/L	31	Standard
	Tl	205	90.0	24.2	**0.0096**	0.003	27.9	ug/L	20	Standard
	Pb	206	392.7	2.7	**0.0066**	0.003	42.8	ug/L	286	Standard
	Pb	207	318.0	2.7	**0.0050**	0.001	23.7	ug/L	257	Standard
	Pb	208	1352.7	4.0	**0.0088**	0.002	18.5	ug/L	956	Standard
	U	238	56.0	29.8	**0.0046**	0.002	47.0	ug/L	17	Standard
>	**Bi**	209	576774.8	1.6				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.6259**	18.396	173.1	mg/L	0	Standard
Mg	24	1335.1	0.6	**1.6748**	0.038	2.2	mg/L	32	Standard
K	39	83.3	27.1	**0.1320**	0.069	52.2	mg/L	30	Standard
Ca	43	66.7	4.3	**4.5227**	0.490	10.8	mg/L	48	Standard
Fe	54	158.9	15.8	**0.0030**	0.021	715.4	mg/L	159	Standard
Fe	57	226.7	20.8	**0.1225**	0.167	136.7	mg/L	195	Standard
> **Sc-1**	45	40586.0	2.0				mg/L	39543	Standard
Cl	35	41629.1	0.8				ug/L	27642	Standard
Kr	83	4.7	24.7				ug/L	2	Standard
Br	81	2016.8	5.8				ug/L	1647	Standard
P	31	19454.2	1.7				ug/L	15231	Standard
S	34	2286.8	4.6				ug/L	1845	Standard
Sr	88	108.3	9.6				ug/L	70	Standard
C	12	106.7	39.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	58.6	31.0				mg/L	12	Standard
Ho-1	165	33.3	48.2				mg/L	12	Standard
Er	166	30.0	57.7				mg/L	20	Standard
I	127	4460.7	6.1				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		103.486	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		103.697	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.200
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.535
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606084301SDL WG574570-02
Sample Date/Time: Tuesday, June 28, 2016 20:20:12
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84917.5	3.2				ug/L	81760	Standard
	Be	9	15.0	66.7	**0.0050**	0.010	200.3	ug/L	17	Standard
	Al	27	312447.8	1.9	**1.9378**	0.034	1.7	ug/L	1410	Standard
	Sc	45	41284.5	3.3				ug/L	39543	Standard
	Ti	47	45.7	48.8	**0.0117**	0.082	700.7	ug/L	39	Standard
	V	51	1463.2	5.6	**-0.0026**	0.007	263.9	ug/L	1415	Standard
	Cr	52	7659.3	1.8	**0.0098**	0.004	44.8	ug/L	6946	Standard
	Cr	53	423.3	16.3	**0.1274**	0.086	67.2	ug/L	328	Standard
	Mn	55	187375.9	0.8	**27.8813**	0.482	1.7	ug/L	823	Standard
	Co	59	2308.5	0.8	**0.2873**	0.008	2.8	ug/L	252	Standard
	Ni	60	1540.7	3.0	**0.6883**	0.022	3.2	ug/L	192	Standard
	Cu	65	216.7	7.3	**0.0197**	0.006	31.0	ug/L	141	Standard
	Zn	66	4319.6	1.9	**2.9936**	0.025	0.8	ug/L	491	Standard
>	**Ge**	72	531260.9	2.2				ug/L	515087	Standard
	As	75	-47.8	76.7	**-0.0014**	0.032	2343.8	ug/L	20	Standard
	Se	82	17.0	17.8	**0.0237**	0.023	96.9	ug/L	15	Standard
	Se-1	77	59.0	6.1	**0.0400**	0.030	74.0	ug/L	48	Standard
>	**Ga**	71	86.7	31.8				mg/L	90	Standard
	Rb	85	596.7	10.5				ug/L	23	Standard
	Y	89	453907.4	1.0				ug/L	448510	Standard
>	**Rh**	103	8.3	34.6				ug/L	15	Standard
	Mo	98	28.3	9.0	**-0.0090**	0.001	10.4	ug/L	11	Standard
	Ag	107	92.0	2.2	**-0.0030**	0.000	8.2	ug/L	134	Standard
	Cd	111	15.3	15.1	**0.0040**	0.001	27.2	mg/L	7	Standard
	Cd	114	38.2	13.4	**0.0022**	0.001	41.3	ug/L	16	Standard
>	**In**	115	632674.4	0.8				ug/L	611117	Standard
	Sn	118	625.0	9.7	**0.0002**	0.010	5977.1	ug/L	518	Standard
	Sb	123	614.9	31.7	**0.1128**	0.039	34.5	ug/L	127	Standard
	Ba	135	2594.2	0.9	**1.1887**	0.008	0.6	ug/L	45	Standard
	Ce	140	198.3	20.2				ug/L	298	Standard
>	**Tb**	159	988615.6	0.9				ug/L	977942	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	26.7	16.9	**-0.0018**	0.000	28.3	ug/L	31	Standard
	Tl	205	16.7	75.5	**-0.0001**	0.002	1448.6	ug/L	20	Standard
	Pb	206	345.0	3.1	**-0.0028**	0.002	58.3	ug/L	286	Standard
	Pb	207	303.3	7.6	**0.0012**	0.004	352.8	ug/L	257	Standard
	Pb	208	1152.7	2.7	**-0.0023**	0.002	71.0	ug/L	956	Standard
	U	238	16.0	21.7	**-0.0008**	0.000	54.8	ug/L	17	Standard
>	**Bi**	209	585233.9	0.6				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	291.7	12.4	**0.3140**	0.035	11.1	mg/L	32	Standard
K	39	48.3	6.0	**0.0153**	0.013	86.9	mg/L	30	Standard
Ca	43	35.0	28.6	**-0.2811**	1.306	464.6	mg/L	48	Standard
Fe	54	153.8	34.6	**-0.0038**	0.045	1180.2	mg/L	159	Standard
Fe	57	170.0	8.8	**-0.0754**	0.036	48.4	mg/L	195	Standard
> **Sc-1**	45	41284.5	3.3				mg/L	39543	Standard
Cl	35	41099.7	0.8				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1820.1	5.7				ug/L	1647	Standard
P	31	19375.7	1.6				ug/L	15231	Standard
S	34	2545.2	4.1				ug/L	1845	Standard
Sr	88	58.3	27.6				ug/L	70	Standard
C	12	110.0	39.6				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	28.2	93.4				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	36.7	15.7				mg/L	20	Standard
I	127	1790.1	13.3				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		103.862	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		103.140	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.528
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.054
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 20:23:25
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	82271.2	2.6				ug/L	81760	Standard
	Be	9	51878.7	2.6	**51.9060**	0.474	0.9	ug/L	17	Standard
	Al	27	7912369.8	3.4	**50.9914**	0.481	0.9	ug/L	1410	Standard
	Sc	45	40149.8	1.3				ug/L	39543	Standard
	Ti	47	25445.3	0.9	**101.2486**	0.646	0.6	ug/L	39	Standard
	V	51	355257.7	1.2	**50.4501**	0.253	0.5	ug/L	1415	Standard
	Cr	52	364176.4	2.0	**50.7897**	0.304	0.6	ug/L	6946	Standard
	Cr	53	45239.1	0.4	**50.7395**	0.592	1.2	ug/L	328	Standard
	Mn	55	333791.7	0.4	**50.8845**	0.584	1.1	ug/L	823	Standard
	Co	59	367088.8	1.7	**51.7480**	0.425	0.8	ug/L	252	Standard
	Ni	60	95399.1	1.8	**50.0959**	0.391	0.8	ug/L	192	Standard
	Cu	65	97309.2	2.1	**50.6606**	0.365	0.7	ug/L	141	Standard
	Zn	66	56912.4	2.6	**50.6269**	0.602	1.2	ug/L	491	Standard
>	Ge	72	519736.7	1.5				ug/L	515087	Standard
	As	75	56554.6	1.5	**49.8917**	0.034	0.1	ug/L	20	Standard
	Se	82	5843.7	2.8	**50.1784**	0.757	1.5	ug/L	15	Standard
	Se-1	77	3965.5	1.4	**51.4490**	0.315	0.6	ug/L	48	Standard
>	Ga	71	118.3	13.6				mg/L	90	Standard
	Rb	85	848.4	6.2				ug/L	23	Standard
	Y	89	451425.6	1.6				ug/L	448510	Standard
>	Rh	103	31.7	71.2				ug/L	15	Standard
	Mo	98	272060.7	0.6	**99.5752**	0.551	0.6	ug/L	11	Standard
	Ag	107	339081.9	1.7	**49.9711**	1.119	2.2	ug/L	134	Standard
	Cd	111	106686.1	0.8	**49.3843**	0.588	1.2	mg/L	7	Standard
	Cd	114	259655.5	1.7	**49.4494**	1.121	2.3	ug/L	16	Standard
>	In	115	617617.8	0.6				ug/L	611117	Standard
	Sn	118	302897.0	2.2	**50.5905**	1.415	2.8	ug/L	518	Standard
	Sb	123	239436.4	1.3	**50.2037**	0.916	1.8	ug/L	127	Standard
	Ba	135	101930.1	0.6	**48.8299**	0.530	1.1	ug/L	45	Standard
	Ce	140	63.3	9.1				ug/L	298	Standard
>	Tb	159	978625.5	0.9				ug/L	977942	Standard
	Ho	165	8.3	69.3				ug/L	12	Standard
	Tl	203	434700.2	0.8	**50.4033**	0.455	0.9	ug/L	31	Standard
	Tl	205	381183.1	1.9	**50.8972**	0.874	1.7	ug/L	20	Standard
	Pb	206	277544.1	1.7	**50.1113**	0.892	1.8	ug/L	286	Standard
	Pb	207	250965.9	2.0	**50.2393**	1.021	2.0	ug/L	257	Standard
	Pb	208	994830.3	0.3	**51.4752**	0.269	0.5	ug/L	956	Standard
	U	238	372750.7	1.1	**50.8268**	0.592	1.2	ug/L	17	Standard
>	Bi	209	570174.9	0.2				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4207.3	2.1	**5.4598**	0.160	2.9	mg/L	32	Standard
K	39	1353.4	1.9	**4.3620**	0.034	0.8	mg/L	30	Standard
Ca	43	68.3	23.5	**4.8558**	2.284	47.0	mg/L	48	Standard
Fe	54	6096.4	4.5	**5.2968**	0.235	4.4	mg/L	159	Standard
Fe	57	1726.8	6.1	**5.1204**	0.425	8.3	mg/L	195	Standard
Sc-1	45	40149.8	1.3				mg/L	39543	Standard
Cl	35	38223.5	2.9				ug/L	27642	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	1710.1	6.5				ug/L	1647	Standard
P	31	20984.5	3.6				ug/L	15231	Standard
S	34	2836.9	3.0				ug/L	1845	Standard
Sr	88	73.3	32.2				ug/L	70	Standard
C	12	176.7	8.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	26.3	80.0				mg/L	12	Standard
Ho-1	165	8.3	69.3				mg/L	12	Standard
Er	166	6.7	86.6				mg/L	20	Standard
I	127	1388.4	24.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	103.812		
Al	27	101.983		
Sc	45			
Ti	47	101.249		
V	51	100.900		
Cr	52	101.579		
Cr	53			
Mn	55	101.769		
Co	59	103.496		
Ni	60	100.192		
Cu	65	101.321		
Zn	66	101.254		
Ge	72		100.903	
As	75	99.783		
Se	82	100.357		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	99.575		
Ag	107	99.942		
Cd	111	98.769		
Cd	114			
In	115			101.064
Sn	118	101.181		
Sb	123	100.407		
Ba	135	97.660		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.807		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.950		
U	238	101.654		
Bi	209			102.351
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 20:26:37
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77291.7	2.7				ug/L	81760	Standard
	Be	9	25.0	40.0	**0.0170**	0.011	63.1	ug/L	17	Standard
	Al	27	2576.9	24.9	**0.0032**	0.004	126.1	ug/L	1410	Standard
	Sc	45	39050.3	1.7				ug/L	39543	Standard
	Ti	47	33.7	13.4	**-0.0246**	0.019	78.0	ug/L	39	Standard
	V	51	1167.6	8.0	**-0.0323**	0.013	41.5	ug/L	1415	Standard
	Cr	52	6011.5	1.2	**-0.1610**	0.012	7.3	ug/L	6946	Standard
	Cr	53	398.3	5.1	**0.1293**	0.022	17.0	ug/L	328	Standard
	Mn	55	883.7	9.4	**-0.0071**	0.013	183.2	ug/L	823	Standard
	Co	59	243.0	13.8	**0.0045**	0.005	107.7	ug/L	252	Standard
	Ni	60	165.0	10.4	**-0.0141**	0.009	65.1	ug/L	192	Standard
	Cu	65	129.3	4.3	**-0.0202**	0.003	14.1	ug/L	141	Standard
	Zn	66	451.0	1.9	**-0.4007**	0.009	2.3	ug/L	491	Standard
>	**Ge**	72	496420.0	0.5				ug/L	515087	Standard
	As	75	-52.8	22.7	**-0.0085**	0.011	133.2	ug/L	20	Standard
	Se	82	7.8	31.0	**-0.0491**	0.022	44.9	ug/L	15	Standard
	Se-1	77	52.0	3.8	**-0.0027**	0.026	948.5	ug/L	48	Standard
>	**Ga**	71	61.7	18.7				mg/L	90	Standard
	Rb	85	18.3	103.3				ug/L	23	Standard
	Y	89	442161.2	1.2				ug/L	448510	Standard
>	**Rh**	103	6.7	43.3				ug/L	15	Standard
	Mo	98	281.8	35.5	**0.0839**	0.034	41.1	ug/L	11	Standard
	Ag	107	122.3	22.2	**0.0018**	0.004	200.6	ug/L	134	Standard
	Cd	111	14.5	44.1	**0.0038**	0.003	74.5	mg/L	7	Standard
	Cd	114	43.1	30.3	**0.0033**	0.002	70.6	ug/L	16	Standard
>	**In**	115	615841.7	2.0				ug/L	611117	Standard
	Sn	118	753.4	17.4	**0.0248**	0.024	98.6	ug/L	518	Standard
	Sb	123	596.8	25.3	**0.1131**	0.034	30.2	ug/L	127	Standard
	Ba	135	38.0	16.0	**-0.0069**	0.003	39.0	ug/L	45	Standard
	Ce	140	8.3	91.7				ug/L	298	Standard
>	**Tb**	159	956084.4	3.2				ug/L	977942	Standard
	Ho	165	5.0	100.0				ug/L	12	Standard
	Tl	203	73.0	30.8	**0.0039**	0.003	64.7	ug/L	31	Standard
	Tl	205	60.0	44.1	**0.0059**	0.003	58.6	ug/L	20	Standard
	Pb	206	307.3	5.4	**-0.0063**	0.002	32.6	ug/L	286	Standard
	Pb	207	254.3	1.8	**-0.0055**	0.000	8.7	ug/L	257	Standard
	Pb	208	1093.3	8.1	**-0.0021**	0.004	180.6	ug/L	956	Standard
	U	238	62.0	42.0	**0.0057**	0.004	62.4	ug/L	17	Standard
>	**Bi**	209	552726.9	1.8				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.8094**	18.714	173.1	mg/L	0	Standard
Mg	24	20.0	100.0	**-0.0300**	0.027	91.7	mg/L	32	Standard
K	39	31.7	50.8	**-0.0336**	0.053	157.9	mg/L	30	Standard
Ca	43	16.7	17.3	**-2.7773**	0.490	17.6	mg/L	48	Standard
Fe	54	136.0	26.0	**-0.0122**	0.034	282.8	mg/L	159	Standard
Fe	57	233.3	19.3	**0.1724**	0.147	85.5	mg/L	195	Standard
Sc-1	45	39050.3	1.7				mg/L	39543	Standard
Cl	35	37106.7	0.9				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	1596.8	5.3				ug/L	1647	Standard
P	31	19597.7	1.6				ug/L	15231	Standard
S	34	2643.6	3.6				ug/L	1845	Standard
Sr	88	53.3	61.0				ug/L	70	Standard
C	12	110.0	32.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	9.4	104.3				mg/L	12	Standard
Ho-1	165	5.0	100.0				mg/L	12	Standard
Er	166	13.3	43.3				mg/L	20	Standard
I	127	1173.4	25.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.376	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.773
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.219
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606079401
Sample Date/Time: Tuesday, June 28, 2016 20:29:50
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76244.9	4.1				ug/L	81760	Standard
	Be	9	31.7	63.8	**0.0239**	0.020	83.5	ug/L	17	Standard
	Al	27	4859544.3	1.6	**33.8379**	1.720	5.1	ug/L	1410	Standard
	Sc	45	41316.3	3.1				ug/L	39543	Standard
	Ti	47	1613.1	8.6	**6.3222**	0.521	8.2	ug/L	39	Standard
	V	51	5296.6	3.8	**0.5556**	0.022	4.0	ug/L	1415	Standard
	Cr	52	9948.6	1.0	**0.3727**	0.012	3.3	ug/L	6946	Standard
	Cr	53	1300.1	3.5	**1.1398**	0.032	2.8	ug/L	328	Standard
	Mn	55	10830112.5	0.4	**1671.2513**	23.447	1.4	ug/L	823	Standard
	Co	59	98900.4	0.9	**14.0508**	0.072	0.5	ug/L	252	Standard
	Ni	60	5918.2	0.8	**3.0389**	0.039	1.3	ug/L	192	Standard
	Cu	65	1492.7	4.1	**0.6949**	0.022	3.2	ug/L	141	Standard
	Zn	66	3606.1	2.5	**2.4634**	0.043	1.7	ug/L	491	Standard
>	**Ge**	72	514893.7	1.4				ug/L	515087	Standard
	As	75	2838.5	0.7	**2.5661**	0.029	1.1	ug/L	20	Standard
	Se	82	67.5	5.6	**0.4677**	0.041	8.7	ug/L	15	Standard
	Se-1	77	72.7	2.9	**0.2462**	0.031	12.7	ug/L	48	Standard
>	**Ga**	71	795.0	2.5				mg/L	90	Standard
	Rb	85	32504.8	2.3				ug/L	23	Standard
	Y	89	435925.3	2.8				ug/L	448510	Standard
>	**Rh**	103	93.3	3.1				ug/L	15	Standard
	Mo	98	343.6	1.5	**0.1114**	0.005	4.3	ug/L	11	Standard
	Ag	107	117.7	11.3	**0.0018**	0.002	118.8	ug/L	134	Standard
	Cd	111	40.7	19.8	**0.0166**	0.004	21.3	mg/L	7	Standard
	Cd	114	97.5	38.9	**0.0145**	0.008	54.8	ug/L	16	Standard
>	**In**	115	595657.1	2.2				ug/L	611117	Standard
	Sn	118	961.7	5.9	**0.0649**	0.008	12.2	ug/L	518	Standard
	Sb	123	345.9	22.0	**0.0622**	0.015	24.5	ug/L	127	Standard
	Ba	135	208994.2	0.7	**103.8626**	2.069	2.0	ug/L	45	Standard
	Ce	140	33943.0	0.8				ug/L	298	Standard
>	**Tb**	159	940708.8	1.0				ug/L	977942	Standard
	Ho	165	610.0	7.0				ug/L	12	Standard
	Tl	203	714.0	4.8	**0.0811**	0.003	4.2	ug/L	31	Standard
	Tl	205	651.7	8.6	**0.0881**	0.009	9.8	ug/L	20	Standard
	Pb	206	1354.7	2.2	**0.1905**	0.003	1.6	ug/L	286	Standard
	Pb	207	1119.4	1.4	**0.1747**	0.005	2.8	ug/L	257	Standard
	Pb	208	4748.3	2.1	**0.1947**	0.004	1.9	ug/L	956	Standard
	U	238	416.3	2.3	**0.0559**	0.002	3.0	ug/L	17	Standard
>	**Bi**	209	549596.9	1.2				ug/L	557080	Standard

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Na	23	6.7	114.6	**41.1239**	47.883	116.4	mg/L	0	Standard
Mg	24	3483.7	2.6	**4.3856**	0.231	5.3	mg/L	32	Standard
K	39	496.7	14.5	**1.4639**	0.222	15.1	mg/L	30	Standard
Ca	43	190.0	16.0	**22.2436**	4.083	18.4	mg/L	48	Standard
Fe	54	7377.0	1.5	**6.2559**	0.190	3.0	mg/L	159	Standard
Fe	57	2103.5	3.2	**6.1801**	0.414	6.7	mg/L	195	Standard
Sc-1	45	41316.3	3.1				mg/L	39543	Standard
Cl	35	35106.6	2.5				ug/L	27642	Standard
Kr	83	2.3	107.9				ug/L	2	Standard
Br	81	13476.0	5.7				ug/L	1647	Standard
P	31	22598.5	5.8				ug/L	15231	Standard
S	34	2571.9	2.2				ug/L	1845	Standard
Sr	88	433.3	9.8				ug/L	70	Standard
C	12	150.0	35.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	882.4	15.5				mg/L	12	Standard
Ho-1	165	610.0	7.0				mg/L	12	Standard
Er	166	576.7	6.6				mg/L	20	Standard
I	127	50022.6	4.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.254	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.963	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.470
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.657
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606079402
Sample Date/Time: Tuesday, June 28, 2016 20:33:01
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75678.5	1.2				ug/L	81760	Standard
	Be	9	111.7	13.7	**0.1118**	0.017	15.0	ug/L	17	Standard
	Al	27	1429595.1	1.1	**10.0072**	0.228	2.3	ug/L	1410	Standard
	Sc	45	39138.8	1.6				ug/L	39543	Standard
	Ti	47	278.3	21.3	**0.9895**	0.212	21.4	ug/L	39	Standard
	V	51	1557.1	6.8	**0.0252**	0.009	34.9	ug/L	1415	Standard
	Cr	52	8352.6	6.5	**0.1848**	0.041	22.0	ug/L	6946	Standard
	Cr	53	1770.1	12.2	**1.7430**	0.191	11.0	ug/L	328	Standard
	Mn	55	34175.5	2.4	**5.3156**	0.224	4.2	ug/L	823	Standard
	Co	59	3266.0	5.1	**0.4499**	0.010	2.1	ug/L	252	Standard
	Ni	60	1953.8	3.9	**0.9695**	0.017	1.8	ug/L	192	Standard
	Cu	65	1358.7	2.9	**0.6499**	0.011	1.6	ug/L	141	Standard
	Zn	66	4870.4	2.4	**3.7758**	0.058	1.5	ug/L	491	Standard
>	**Ge**	72	497312.9	3.3				ug/L	515087	Standard
	As	75	54.7	94.2	**0.0915**	0.049	53.2	ug/L	20	Standard
	Se	82	40.7	27.3	**0.2488**	0.112	45.1	ug/L	15	Standard
	Se-1	77	77.0	9.4	**0.3389**	0.077	22.7	ug/L	48	Standard
>	**Ga**	71	155.0	28.1				mg/L	90	Standard
	Rb	85	30158.3	1.3				ug/L	23	Standard
	Y	89	432228.9	1.1				ug/L	448510	Standard
>	**Rh**	103	11.7	49.5				ug/L	15	Standard
	Mo	98	72.4	21.3	**0.0082**	0.006	70.5	ug/L	11	Standard
	Ag	107	118.3	24.0	**0.0017**	0.004	249.1	ug/L	134	Standard
	Cd	111	44.6	10.6	**0.0183**	0.002	12.1	mg/L	7	Standard
	Cd	114	123.7	31.0	**0.0193**	0.007	38.8	ug/L	16	Standard
>	**In**	115	600554.1	0.2				ug/L	611117	Standard
	Sn	118	733.4	8.7	**0.0243**	0.011	44.6	ug/L	518	Standard
	Sb	123	231.2	28.1	**0.0370**	0.014	37.8	ug/L	127	Standard
	Ba	135	65483.6	1.3	**32.2516**	0.425	1.3	ug/L	45	Standard
	Ce	140	2745.2	3.0				ug/L	298	Standard
>	**Tb**	159	936903.6	1.4				ug/L	977942	Standard
	Ho	165	75.0	17.6				ug/L	12	Standard
	Tl	203	221.3	13.5	**0.0222**	0.003	15.7	ug/L	31	Standard
	Tl	205	186.7	13.2	**0.0239**	0.003	14.3	ug/L	20	Standard
	Pb	206	523.0	7.4	**0.0358**	0.006	17.6	ug/L	286	Standard
	Pb	207	464.7	6.5	**0.0400**	0.008	19.0	ug/L	257	Standard
	Pb	208	1837.7	5.9	**0.0397**	0.005	13.6	ug/L	956	Standard
	U	238	125.7	23.1	**0.0151**	0.004	27.1	ug/L	17	Standard
>	**Bi**	209	541937.8	1.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	2726.9	0.4	**3.6111**	0.076	2.1	mg/L	32	Standard
K	39	506.7	5.1	**1.5885**	0.091	5.7	mg/L	30	Standard
Ca	43	36.7	15.7	**0.2847**	0.917	322.3	mg/L	48	Standard
Fe	54	182.6	18.3	**0.0302**	0.033	110.1	mg/L	159	Standard
Fe	57	203.3	25.6	**0.0706**	0.187	264.3	mg/L	195	Standard
Sc-1	45	39138.8	1.6				mg/L	39543	Standard
Cl	35	34567.4	3.2				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	6558.1	13.2				ug/L	1647	Standard
P	31	21156.4	3.6				ug/L	15231	Standard
S	34	2326.8	9.7				ug/L	1845	Standard
Sr	88	76.7	13.6				ug/L	70	Standard
C	12	236.7	44.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	150.6	9.6				mg/L	12	Standard
Ho-1	165	75.0	17.6				mg/L	12	Standard
Er	166	56.7	40.8				mg/L	20	Standard
I	127	9424.6	4.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		92.562	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.549	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.272
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.282
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606079403
Sample Date/Time: Tuesday, June 28, 2016 20:36:13
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76753.9	0.3				ug/L	81760	Standard
	Be	9	53.3	32.9	**0.0475**	0.019	39.7	ug/L	17	Standard
	Al	27	2019995.9	2.1	**13.9455**	0.321	2.3	ug/L	1410	Standard
	Sc	45	39648.5	2.7				ug/L	39543	Standard
	Ti	47	884.4	21.1	**3.3748**	0.755	22.4	ug/L	39	Standard
	V	51	4216.0	3.5	**0.3970**	0.022	5.5	ug/L	1415	Standard
	Cr	52	11350.6	1.0	**0.5656**	0.020	3.6	ug/L	6946	Standard
	Cr	53	3082.0	1.2	**3.1525**	0.043	1.4	ug/L	328	Standard
	Mn	55	1462715.3	1.2	**224.3814**	2.702	1.2	ug/L	823	Standard
	Co	59	3343.0	3.0	**0.4421**	0.013	2.9	ug/L	252	Standard
	Ni	60	3343.7	2.8	**1.6618**	0.047	2.8	ug/L	192	Standard
	Cu	65	1050.7	3.0	**0.4594**	0.015	3.2	ug/L	141	Standard
	Zn	66	4988.5	1.4	**3.7017**	0.077	2.1	ug/L	491	Standard
>	**Ge**	72	517603.4	0.3				ug/L	515087	Standard
	As	75	193.9	14.0	**0.2119**	0.024	11.1	ug/L	20	Standard
	Se	82	57.1	5.5	**0.3743**	0.026	6.9	ug/L	15	Standard
	Se-1	77	124.7	7.3	**0.9281**	0.125	13.4	ug/L	48	Standard
>	**Ga**	71	286.7	21.7				mg/L	90	Standard
	Rb	85	31280.6	0.6				ug/L	23	Standard
	Y	89	445698.9	0.7				ug/L	448510	Standard
>	**Rh**	103	16.7	45.8				ug/L	15	Standard
	Mo	98	229.5	3.6	**0.0662**	0.004	6.0	ug/L	11	Standard
	Ag	107	129.3	14.3	**0.0031**	0.003	91.8	ug/L	134	Standard
	Cd	111	79.6	15.3	**0.0346**	0.006	17.8	mg/L	7	Standard
	Cd	114	219.2	32.9	**0.0375**	0.014	38.3	ug/L	16	Standard
>	**In**	115	608521.7	1.3				ug/L	611117	Standard
	Sn	118	713.4	5.3	**0.0192**	0.007	34.1	ug/L	518	Standard
	Sb	123	215.5	21.1	**0.0330**	0.009	27.4	ug/L	127	Standard
	Ba	135	73971.5	1.1	**35.9586**	0.191	0.5	ug/L	45	Standard
	Ce	140	14728.8	3.9				ug/L	298	Standard
>	**Tb**	159	956871.9	1.4				ug/L	977942	Standard
	Ho	165	336.7	6.7				ug/L	12	Standard
	Tl	203	279.3	8.0	**0.0283**	0.003	10.3	ug/L	31	Standard
	Tl	205	295.0	11.9	**0.0379**	0.004	11.8	ug/L	20	Standard
	Pb	206	724.7	2.0	**0.0702**	0.002	2.4	ug/L	286	Standard
	Pb	207	605.7	5.7	**0.0660**	0.008	12.2	ug/L	257	Standard
	Pb	208	2584.1	3.2	**0.0763**	0.006	7.3	ug/L	956	Standard
	U	238	605.0	8.8	**0.0814**	0.008	10.1	ug/L	17	Standard
>	**Bi**	209	558048.4	1.1				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4734.1	2.7	**6.2297**	0.190	3.1	mg/L	32	Standard
K	39	378.3	13.8	**1.1326**	0.165	14.5	mg/L	30	Standard
Ca	43	55.0	18.2	**3.0097**	1.672	55.5	mg/L	48	Standard
Fe	54	512.5	3.2	**0.3260**	0.027	8.3	mg/L	159	Standard
Fe	57	288.3	19.9	**0.3473**	0.203	58.5	mg/L	195	Standard
> **Sc-1**	45	39648.5	2.7				mg/L	39543	Standard
Cl	35	35720.7	1.2				ug/L	27642	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	10650.4	4.7				ug/L	1647	Standard
P	31	21555.3	1.7				ug/L	15231	Standard
S	34	2313.5	4.4				ug/L	1845	Standard
Sr	88	90.0	14.7				ug/L	70	Standard
C	12	206.7	17.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	611.8	5.5				mg/L	12	Standard
Ho-1	165	336.7	6.7				mg/L	12	Standard
Er	166	310.0	11.6				mg/L	20	Standard
I	127	51010.9	6.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.877	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.489	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.575	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.174	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606079404
Sample Date/Time: Tuesday, June 28, 2016 20:39:24
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77373.8	1.6				ug/L	81760	Standard
	Be	9	33.3	45.8	**0.0257**	0.016	61.7	ug/L	17	Standard
	Al	27	6530294.9	1.7	**44.7685**	1.484	3.3	ug/L	1410	Standard
	Sc	45	40462.3	2.9				ug/L	39543	Standard
	Ti	47	1753.8	22.2	**6.9932**	1.564	22.4	ug/L	39	Standard
	V	51	4913.4	4.4	**0.5113**	0.026	5.2	ug/L	1415	Standard
	Cr	52	10044.0	5.5	**0.4080**	0.064	15.7	ug/L	6946	Standard
	Cr	53	2381.9	7.8	**2.4159**	0.236	9.8	ug/L	328	Standard
	Mn	55	8647420.3	0.2	**1354.8198**	14.536	1.1	ug/L	823	Standard
	Co	59	169235.6	0.5	**24.4356**	0.161	0.7	ug/L	252	Standard
	Ni	60	12361.0	0.9	**6.5619**	0.023	0.4	ug/L	192	Standard
	Cu	65	806.0	0.9	**0.3401**	0.009	2.5	ug/L	141	Standard
	Zn	66	7577.2	1.7	**6.1942**	0.082	1.3	ug/L	491	Standard
>	**Ge**	72	507111.0	1.2				ug/L	515087	Standard
	As	75	265.8	16.5	**0.2802**	0.037	13.2	ug/L	20	Standard
	Se	82	64.6	10.0	**0.4504**	0.053	11.9	ug/L	15	Standard
	Se-1	77	107.0	10.8	**0.7228**	0.140	19.4	ug/L	48	Standard
>	**Ga**	71	598.3	9.8				mg/L	90	Standard
	Rb	85	32554.9	1.8				ug/L	23	Standard
	Y	89	447221.5	3.0				ug/L	448510	Standard
>	**Rh**	103	20.0	50.0				ug/L	15	Standard
	Mo	98	99.0	16.4	**0.0174**	0.006	35.0	ug/L	11	Standard
	Ag	107	155.7	70.8	**0.0069**	0.016	237.9	ug/L	134	Standard
	Cd	111	107.8	50.7	**0.0474**	0.026	54.2	mg/L	7	Standard
	Cd	114	265.0	52.4	**0.0460**	0.027	58.4	ug/L	16	Standard
>	**In**	115	613219.8	0.3				ug/L	611117	Standard
	Sn	118	870.0	6.6	**0.0447**	0.010	22.4	ug/L	518	Standard
	Sb	123	214.6	24.5	**0.0325**	0.011	34.6	ug/L	127	Standard
	Ba	135	118463.0	0.8	**57.1584**	0.254	0.4	ug/L	45	Standard
	Ce	140	43559.2	3.6				ug/L	298	Standard
>	**Tb**	159	953430.3	1.1				ug/L	977942	Standard
	Ho	165	631.7	5.3				ug/L	12	Standard
	Tl	203	508.0	24.8	**0.0560**	0.015	27.1	ug/L	31	Standard
	Tl	205	431.7	17.4	**0.0571**	0.010	17.4	ug/L	20	Standard
	Pb	206	1022.0	12.5	**0.1271**	0.024	19.0	ug/L	286	Standard
	Pb	207	848.0	9.6	**0.1173**	0.017	14.2	ug/L	257	Standard
	Pb	208	3317.1	5.1	**0.1168**	0.009	7.7	ug/L	956	Standard
	U	238	210.3	17.6	**0.0266**	0.005	19.3	ug/L	17	Standard
>	**Bi**	209	552632.4	0.7				ug/L	557080	Standard

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Na	23	3.3	86.6	**20.7118**	17.947	86.6	mg/L	0	Standard
Mg	24	5764.4	1.5	**7.4467**	0.270	3.6	mg/L	32	Standard
K	39	563.3	10.2	**1.7170**	0.152	8.8	mg/L	30	Standard
Ca	43	75.0	17.6	**5.8105**	2.161	37.2	mg/L	48	Standard
Fe	54	999.2	5.7	**0.7481**	0.074	9.9	mg/L	159	Standard
Fe	57	490.0	3.5	**0.9936**	0.094	9.5	mg/L	195	Standard
> **Sc-1**	45	40462.3	2.9				mg/L	39543	Standard
Cl	35	35374.6	1.6				ug/L	27642	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	12395.1	8.6				ug/L	1647	Standard
P	31	20597.3	1.4				ug/L	15231	Standard
S	34	2416.9	2.7				ug/L	1845	Standard
Sr	88	128.3	19.6				ug/L	70	Standard
C	12	236.7	2.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	1138.1	44.8				mg/L	12	Standard
Ho-1	165	631.7	5.3				mg/L	12	Standard
Er	166	596.7	6.3				mg/L	20	Standard
I	127	203787.2	10.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.635	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.452	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.344
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.202
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606079404
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Method 6020 - Summary Report

Sample ID: L1606082202
Sample Date/Time: Tuesday, June 28, 2016 20:42:36
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79831.5	1.5				ug/L	81760	Standard
	Be	9	18.3	63.0	**0.0091**	0.012	129.5	ug/L	17	Standard
	Al	27	3326140.8	2.2	**22.0876**	0.529	2.4	ug/L	1410	Standard
	Sc	45	40903.5	2.4				ug/L	39543	Standard
	Ti	47	258.3	7.7	**0.8950**	0.111	12.4	ug/L	39	Standard
	V	51	1427.8	26.8	**0.0038**	0.061	1620.7	ug/L	1415	Standard
	Cr	52	8606.8	1.2	**0.2025**	0.023	11.3	ug/L	6946	Standard
	Cr	53	7031.6	3.4	**7.8173**	0.215	2.7	ug/L	328	Standard
	Mn	55	245282.9	2.4	**38.3872**	0.371	1.0	ug/L	823	Standard
	Co	59	360.0	5.7	**0.0208**	0.001	6.7	ug/L	252	Standard
	Ni	60	675.7	7.1	**0.2607**	0.030	11.7	ug/L	192	Standard
	Cu	65	319.3	4.0	**0.0805**	0.011	13.1	ug/L	141	Standard
	Zn	66	1777.8	5.5	**0.8236**	0.060	7.3	ug/L	491	Standard
>	**Ge**	72	505790.0	3.0				ug/L	515087	Standard
	As	75	361.2	27.3	**0.3676**	0.091	24.7	ug/L	20	Standard
	Se	82	151.2	10.8	**1.2184**	0.141	11.6	ug/L	15	Standard
	Se-1	77	286.7	5.2	**3.1548**	0.107	3.4	ug/L	48	Standard
>	**Ga**	71	148.3	15.6				mg/L	90	Standard
	Rb	85	12600.2	4.8				ug/L	23	Standard
	Y	89	440998.1	2.4				ug/L	448510	Standard
>	**Rh**	103	48.3	6.0				ug/L	15	Standard
	Mo	98	329.5	7.2	**0.1031**	0.007	6.5	ug/L	11	Standard
	Ag	107	82.7	3.0	**-0.0039**	0.000	4.5	ug/L	134	Standard
	Cd	111	39.1	14.9	**0.0154**	0.002	16.0	mg/L	7	Standard
	Cd	114	93.5	42.9	**0.0131**	0.008	57.9	ug/L	16	Standard
>	**In**	115	609428.7	1.7				ug/L	611117	Standard
	Sn	118	616.7	6.1	**0.0027**	0.008	296.4	ug/L	518	Standard
	Sb	123	172.8	22.7	**0.0238**	0.008	32.2	ug/L	127	Standard
	Ba	135	142178.1	1.8	**69.0335**	0.137	0.2	ug/L	45	Standard
	Ce	140	378.3	16.5				ug/L	298	Standard
>	**Tb**	159	949587.4	3.3				ug/L	977942	Standard
	Ho	165	25.0	20.0				ug/L	12	Standard
	Tl	203	147.7	1.7	**0.0134**	0.001	4.1	ug/L	31	Standard
	Tl	205	166.7	29.1	**0.0214**	0.007	33.5	ug/L	20	Standard
	Pb	206	309.7	2.3	**-0.0043**	0.001	31.8	ug/L	286	Standard
	Pb	207	262.7	4.1	**-0.0022**	0.002	83.4	ug/L	257	Standard
	Pb	208	1080.7	3.0	**-0.0011**	0.001	98.3	ug/L	956	Standard
	U	238	30.0	28.9	**0.0014**	0.001	94.3	ug/L	17	Standard
>	**Bi**	209	537934.0	1.4				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.6139**	18.375	173.1	mg/L	0	Standard
Mg	24	32371.2	3.9	**41.6322**	2.388	5.7	mg/L	32	Standard
K	39	260.0	20.1	**0.7087**	0.176	24.8	mg/L	30	Standard
Ca	43	58.3	19.8	**3.1978**	1.533	48.0	mg/L	48	Standard
Fe	54	1294.3	5.1	**0.9965**	0.083	8.3	mg/L	159	Standard
Fe	57	445.0	8.5	**0.8270**	0.105	12.6	mg/L	195	Standard
Sc-1	45	40903.5	2.4				mg/L	39543	Standard
Cl	35	36431.1	1.6				ug/L	27642	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	35805.7	4.9				ug/L	1647	Standard
P	31	25079.1	3.1				ug/L	15231	Standard
S	34	2408.5	3.8				ug/L	1845	Standard
Sr	88	206.7	19.6				ug/L	70	Standard
C	12	176.7	45.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	28.1	3.0				mg/L	12	Standard
Ho-1	165	25.0	20.0				mg/L	12	Standard
Er	166	40.0	43.3				mg/L	20	Standard
I	127	201681.5	7.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		97.641	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.195	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.724
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.563
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606082203
Sample Date/Time: Tuesday, June 28, 2016 20:45:47
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90191.0	1.0				ug/L	81760	Standard
	Be	9	23.3	68.9	**0.0116**	0.015	127.2	ug/L	17	Standard
	Al	27	11365406.0	0.9	**66.8332**	1.185	1.8	ug/L	1410	Standard
	Sc	45	43861.8	3.4				ug/L	39543	Standard
	Ti	47	293.7	8.7	**0.9575**	0.101	10.6	ug/L	39	Standard
	V	51	2061.8	11.0	**0.0753**	0.031	41.0	ug/L	1415	Standard
	Cr	52	35560.4	1.1	**3.7982**	0.065	1.7	ug/L	6946	Standard
	Cr	53	13979.8	6.4	**14.7966**	1.011	6.8	ug/L	328	Standard
	Mn	55	581441.7	2.8	**85.0974**	2.668	3.1	ug/L	823	Standard
	Co	59	11104.7	2.7	**1.4708**	0.043	3.0	ug/L	252	Standard
	Ni	60	4756.1	1.3	**2.2951**	0.027	1.2	ug/L	192	Standard
	Cu	65	585.0	3.7	**0.2018**	0.012	5.9	ug/L	141	Standard
	Zn	66	4219.9	2.2	**2.8317**	0.093	3.3	ug/L	491	Standard
>	**Ge**	72	541965.4	0.4				ug/L	515087	Standard
	As	75	1879.3	4.8	**1.6291**	0.081	5.0	ug/L	20	Standard
	Se	82	403.3	6.2	**3.2102**	0.210	6.5	ug/L	15	Standard
	Se-1	77	499.0	5.4	**5.5758**	0.322	5.8	ug/L	48	Standard
>	**Ga**	71	170.0	12.8				mg/L	90	Standard
	Rb	85	898318.0	1.7				ug/L	23	Standard
	Y	89	454033.5	1.6				ug/L	448510	Standard
>	**Rh**	103	158.3	15.6				ug/L	15	Standard
	Mo	98	390.2	3.3	**0.1238**	0.006	4.6	ug/L	11	Standard
	Ag	107	91.7	18.8	**-0.0027**	0.003	94.7	ug/L	134	Standard
	Cd	111	57.3	18.5	**0.0236**	0.005	19.9	mg/L	7	Standard
	Cd	114	162.3	23.5	**0.0261**	0.008	29.2	ug/L	16	Standard
>	**In**	115	617377.1	1.4				ug/L	611117	Standard
	Sn	118	971.7	10.6	**0.0609**	0.019	30.8	ug/L	518	Standard
	Sb	123	275.2	12.0	**0.0450**	0.008	16.8	ug/L	127	Standard
	Ba	135	754414.8	1.4	**361.7131**	4.988	1.4	ug/L	45	Standard
	Ce	140	4038.9	3.4				ug/L	298	Standard
>	**Tb**	159	972701.2	1.2				ug/L	977942	Standard
	Ho	165	60.0					ug/L	12	Standard
	Tl	203	156.0	13.2	**0.0138**	0.002	16.1	ug/L	31	Standard
	Tl	205	116.7	13.1	**0.0137**	0.002	15.9	ug/L	20	Standard
	Pb	206	526.0	2.4	**0.0341**	0.004	10.3	ug/L	286	Standard
	Pb	207	425.7	3.6	**0.0296**	0.004	13.9	ug/L	257	Standard
	Pb	208	1793.4	1.5	**0.0349**	0.002	5.6	ug/L	956	Standard
	U	238	113.7	2.7	**0.0130**	0.001	4.0	ug/L	17	Standard
>	**Bi**	209	555248.6	1.3				ug/L	557080	Standard

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Na	23	1.7	173.2	**9.3851**	16.247	173.1	mg/L	0	Standard
Mg	24	35620.2	1.5	**42.7261**	1.684	3.9	mg/L	32	Standard
K	39	6901.6	2.1	**20.9070**	1.156	5.5	mg/L	30	Standard
Ca	43	215.0	12.3	**24.1234**	3.813	15.8	mg/L	48	Standard
Fe	54	3077.7	3.9	**2.3743**	0.067	2.8	mg/L	159	Standard
Fe	57	1036.7	11.9	**2.5246**	0.275	10.9	mg/L	195	Standard
Sc-1	45	43861.8	3.4				mg/L	39543	Standard
Cl	35	37418.9	4.6				ug/L	27642	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	90214.6	3.4				ug/L	1647	Standard
P	31	25815.3	2.7				ug/L	15231	Standard
S	34	2615.2	3.8				ug/L	1845	Standard
Sr	88	703.3	5.7				ug/L	70	Standard
C	12	206.7	5.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	96.0	27.7				mg/L	12	Standard
Ho-1	165	60.0					mg/L	12	Standard
Er	166	83.3	6.9				mg/L	20	Standard
I	127	135411.8	5.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.312	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.218	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.024	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.671	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606082302
Sample Date/Time: Tuesday, June 28, 2016 20:48:59
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	108277.4	2.9				ug/L	81760	Standard
	Be	9	45.0	44.4	**0.0244**	0.015	61.4	ug/L	17	Standard
	Al	27	155300534.6	2.6	**761.2127**	30.613	4.0	ug/L	1410	Standard
	Sc	45	45277.6	3.5				ug/L	39543	Standard
	Ti	47	403.3	5.8	**1.4273**	0.064	4.5	ug/L	39	Standard
	V	51	3112.6	16.0	**0.2334**	0.070	30.2	ug/L	1415	Standard
	Cr	52	14043.2	7.2	**0.9232**	0.105	11.4	ug/L	6946	Standard
	Cr	53	48930.1	15.5	**54.3111**	7.500	13.8	ug/L	328	Standard
	Mn	55	2748271.5	3.9	**416.1426**	7.847	1.9	ug/L	823	Standard
	Co	59	187853.6	1.8	**26.2312**	0.060	0.2	ug/L	252	Standard
	Ni	60	24191.7	7.1	**12.5042**	0.665	5.3	ug/L	192	Standard
	Cu	65	2608.9	7.7	**1.2568**	0.078	6.2	ug/L	141	Standard
	Zn	66	8434.7	3.5	**6.7297**	0.123	1.8	ug/L	491	Standard
>	**Ge**	72	524401.5	2.0				ug/L	515087	Standard
	As	75	6667.1	7.6	**5.8608**	0.340	5.8	ug/L	20	Standard
	Se	82	2463.0	3.4	**20.8902**	0.307	1.5	ug/L	15	Standard
	Se-1	77	5803.1	9.1	**74.8730**	5.475	7.3	ug/L	48	Standard
>	**Ga**	71	283.3	11.5				mg/L	90	Standard
	Rb	85	14086.5	1.8				ug/L	23	Standard
	Y	89	450377.0	4.3				ug/L	448510	Standard
>	**Rh**	103	1153.4	2.0				ug/L	15	Standard
	Mo	98	228.3	2.1	**0.0678**	0.002	2.3	ug/L	11	Standard
	Ag	107	100.7	7.3	**-0.0008**	0.001	114.3	ug/L	134	Standard
	Cd	111	85.9	11.5	**0.0385**	0.005	14.0	mg/L	7	Standard
	Cd	114	207.5	20.1	**0.0360**	0.007	20.1	ug/L	16	Standard
>	**In**	115	594734.3	2.8				ug/L	611117	Standard
	Sn	118	838.4	7.1	**0.0436**	0.007	15.0	ug/L	518	Standard
	Sb	123	341.7	13.9	**0.0614**	0.008	13.7	ug/L	127	Standard
	Ba	135	7531184.6	2.9	**3748.3398**	4.365	0.1	ug/L	45	Standard
	Ce	140	2656.9	7.0				ug/L	298	Standard
>	**Tb**	159	994456.1	1.2				ug/L	977942	Standard
	Ho	165	153.3	5.0				ug/L	12	Standard
	Tl	203	149.0	11.0	**0.0143**	0.002	16.0	ug/L	31	Standard
	Tl	205	131.7	44.0	**0.0171**	0.008	49.5	ug/L	20	Standard
	Pb	206	558.3	2.7	**0.0476**	0.002	3.6	ug/L	286	Standard
	Pb	207	480.7	4.4	**0.0481**	0.004	8.4	ug/L	257	Standard
	Pb	208	1800.4	1.7	**0.0423**	0.001	2.5	ug/L	956	Standard
	U	238	2848.6	3.5	**0.4250**	0.011	2.7	ug/L	17	Standard
>	**Bi**	209	517504.0	1.7				ug/L	557080	Standard

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Na	23	15.0	33.3	**83.8040**	26.058	31.1	mg/L	0	Standard
Mg	24	304856.8	3.2	**354.4066**	5.599	1.6	mg/L	32	Standard
K	39	523.3	14.8	**1.3989**	0.174	12.4	mg/L	30	Standard
Ca	43	1175.0	5.2	**150.6324**	9.407	6.2	mg/L	48	Standard
Fe	54	2706.9	4.6	**2.0025**	0.071	3.5	mg/L	159	Standard
Fe	57	1593.4	6.7	**4.0698**	0.154	3.8	mg/L	195	Standard
> **Sc-1**	45	45277.6	3.5				mg/L	39543	Standard
Cl	35	40644.4	1.3				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	610984.3	3.4				ug/L	1647	Standard
P	31	30180.0	2.7				ug/L	15231	Standard
S	34	2781.9	5.2				ug/L	1845	Standard
Sr	88	4374.0	2.8				ug/L	70	Standard
C	12	443.3	22.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	166.1	26.6				mg/L	12	Standard
Ho-1	165	153.3	5.0				mg/L	12	Standard
Er	166	220.0	28.4				mg/L	20	Standard
I	127	589063.3	13.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.433	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.808	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.319
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	92.896
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606082303
Sample Date/Time: Tuesday, June 28, 2016 20:52:10
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	93244.4	1.1				ug/L	81760	Standard
	Be	9	28.3	10.2	**0.0153**	0.003	16.9	ug/L	17	Standard
	Al	27	94744933.1	0.6	**538.9798**	6.462	1.2	ug/L	1410	Standard
	Sc	45	47113.2	4.5				ug/L	39543	Standard
	Ti	47	553.7	11.7	**2.0175**	0.206	10.2	ug/L	39	Standard
	V	51	4328.2	13.5	**0.4057**	0.092	22.6	ug/L	1415	Standard
	Cr	52	14490.9	2.4	**0.9864**	0.018	1.8	ug/L	6946	Standard
	Cr	53	43709.7	3.6	**48.5418**	1.565	3.2	ug/L	328	Standard
	Mn	55	8319616.3	2.0	**1259.6840**	13.722	1.1	ug/L	823	Standard
	Co	59	19767.9	2.2	**2.7309**	0.056	2.1	ug/L	252	Standard
	Ni	60	10810.2	4.4	**5.5279**	0.127	2.3	ug/L	192	Standard
	Cu	65	2456.2	2.4	**1.1782**	0.021	1.8	ug/L	141	Standard
	Zn	66	5426.0	2.4	**4.0320**	0.062	1.5	ug/L	491	Standard
>	**Ge**	72	524719.7	2.2				ug/L	515087	Standard
	As	75	3752.6	7.8	**3.3171**	0.255	7.7	ug/L	20	Standard
	Se	82	1738.6	3.2	**14.7077**	0.502	3.4	ug/L	15	Standard
	Se-1	77	4761.1	4.1	**61.3297**	2.628	4.3	ug/L	48	Standard
>	**Ga**	71	408.3	8.7				mg/L	90	Standard
	Rb	85	9714.8	3.7				ug/L	23	Standard
	Y	89	460620.0	3.3				ug/L	448510	Standard
>	**Rh**	103	891.7	10.4				ug/L	15	Standard
	Mo	98	389.5	4.4	**0.1260**	0.003	2.4	ug/L	11	Standard
	Ag	107	110.7	7.4	**0.0004**	0.001	272.1	ug/L	134	Standard
	Cd	111	332.6	3.0	**0.1538**	0.007	4.3	mg/L	7	Standard
	Cd	114	853.2	3.8	**0.1605**	0.008	5.1	ug/L	16	Standard
>	**In**	115	607039.3	2.6				ug/L	611117	Standard
	Sn	118	751.7	13.7	**0.0260**	0.016	61.8	ug/L	518	Standard
	Sb	123	376.4	10.5	**0.0674**	0.007	10.4	ug/L	127	Standard
	Ba	135	4357695.0	1.8	**2125.2206**	17.296	0.8	ug/L	45	Standard
	Ce	140	11329.2	2.7				ug/L	298	Standard
>	**Tb**	159	992575.1	2.0				ug/L	977942	Standard
	Ho	165	278.3	9.0				ug/L	12	Standard
	Tl	203	135.0	5.8	**0.0123**	0.001	6.8	ug/L	31	Standard
	Tl	205	110.0	27.6	**0.0138**	0.004	31.4	ug/L	20	Standard
	Pb	206	907.4	3.0	**0.1159**	0.005	4.7	ug/L	286	Standard
	Pb	207	750.0	6.5	**0.1064**	0.009	8.4	ug/L	257	Standard
	Pb	208	3103.1	4.1	**0.1154**	0.005	4.4	ug/L	956	Standard
	U	238	44356.2	2.2	**6.6145**	0.107	1.6	ug/L	17	Standard
>	**Bi**	209	521151.7	1.4				ug/L	557080	Standard

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Na	23	10.0	86.6	**54.6526**	47.439	86.8	mg/L	0	Standard
Mg	24	287663.3	3.0	**321.5385**	8.440	2.6	mg/L	32	Standard
K	39	226.7	14.2	**0.5032**	0.104	20.6	mg/L	30	Standard
Ca	43	1070.0	2.9	**131.3674**	10.299	7.8	mg/L	48	Standard
Fe	54	476.6	5.9	**0.2261**	0.038	16.9	mg/L	159	Standard
Fe	57	1008.4	3.2	**2.2367**	0.165	7.4	mg/L	195	Standard
> **Sc-1**	45	47113.2	4.5				mg/L	39543	Standard
Cl	35	40790.8	0.7				ug/L	27642	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	436089.5	3.9				ug/L	1647	Standard
P	31	27271.2	4.0				ug/L	15231	Standard
S	34	2836.9	4.2				ug/L	1845	Standard
Sr	88	2816.9	2.8				ug/L	70	Standard
C	12	376.7	12.5				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	0	Standard
Dy	164	345.0	17.3				mg/L	12	Standard
Ho-1	165	278.3	9.0				mg/L	12	Standard
Er	166	243.3	18.5				mg/L	20	Standard
I	127	900084.0	10.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.046	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.870	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.333
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.551
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606082303
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Method 6020 - Summary Report

Sample ID: L1606082304
Sample Date/Time: Tuesday, June 28, 2016 20:55:22
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74476.1	3.3				ug/L	81760	Standard
	Be	9	15.0	115.5	**0.0072**	0.020	276.2	ug/L	17	Standard
	Al	27	20080706.8	2.9	**143.0136**	1.080	0.8	ug/L	1410	Standard
	Sc	45	42894.0	3.7				ug/L	39543	Standard
	Ti	47	325.7	10.6	**1.1562**	0.137	11.8	ug/L	39	Standard
	V	51	1429.9	29.9	**0.0011**	0.063	5474.1	ug/L	1415	Standard
	Cr	52	7720.6	1.3	**0.0621**	0.011	18.4	ug/L	6946	Standard
	Cr	53	9723.1	6.1	**10.8363**	0.676	6.2	ug/L	328	Standard
	Mn	55	4663144.1	0.8	**725.7255**	4.778	0.7	ug/L	823	Standard
	Co	59	1828.4	1.1	**0.2313**	0.003	1.3	ug/L	252	Standard
	Ni	60	1442.4	3.3	**0.6679**	0.026	3.9	ug/L	192	Standard
	Cu	65	719.0	5.1	**0.2910**	0.019	6.5	ug/L	141	Standard
	Zn	66	7525.5	1.3	**6.1013**	0.101	1.7	ug/L	491	Standard
>	**Ge**	72	510419.4	0.4				ug/L	515087	Standard
	As	75	3004.5	4.7	**2.7368**	0.118	4.3	ug/L	20	Standard
	Se	82	527.6	3.3	**4.5049**	0.149	3.3	ug/L	15	Standard
	Se-1	77	877.0	5.5	**11.0280**	0.616	5.6	ug/L	48	Standard
>	**Ga**	71	135.0	44.9				mg/L	90	Standard
	Rb	85	21460.2	1.4				ug/L	23	Standard
	Y	89	449502.6	1.2				ug/L	448510	Standard
>	**Rh**	103	240.0	18.2				ug/L	15	Standard
	Mo	98	71.6	8.8	**0.0080**	0.002	28.5	ug/L	11	Standard
	Ag	107	77.3	9.2	**-0.0044**	0.001	24.3	ug/L	134	Standard
	Cd	111	102.2	7.3	**0.0460**	0.004	8.2	mg/L	7	Standard
	Cd	114	276.1	15.2	**0.0494**	0.008	16.6	ug/L	16	Standard
>	**In**	115	597587.3	0.9				ug/L	611117	Standard
	Sn	118	641.7	5.5	**0.0090**	0.005	57.4	ug/L	518	Standard
	Sb	123	117.8	11.7	**0.0127**	0.003	24.6	ug/L	127	Standard
	Ba	135	1219381.1	1.8	**603.9591**	5.851	1.0	ug/L	45	Standard
	Ce	140	360.0	14.7				ug/L	298	Standard
>	**Tb**	159	948906.4	1.3				ug/L	977942	Standard
	Ho	165	16.7	17.3				ug/L	12	Standard
	Tl	203	82.3	3.1	**0.0057**	0.000	3.2	ug/L	31	Standard
	Tl	205	61.7	24.8	**0.0067**	0.002	33.3	ug/L	20	Standard
	Pb	206	418.0	3.1	**0.0190**	0.003	17.6	ug/L	286	Standard
	Pb	207	378.0	5.3	**0.0247**	0.003	13.2	ug/L	257	Standard
	Pb	208	1532.7	1.1	**0.0263**	0.002	6.1	ug/L	956	Standard
	U	238	34.3	24.8	**0.0022**	0.001	61.6	ug/L	17	Standard
>	**Bi**	209	521633.3	1.5				ug/L	557080	Standard

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Na	23	3.3	173.2	**19.9869**	34.610	173.2	mg/L	0	Standard
Mg	24	52154.6	2.1	**63.9697**	1.039	1.6	mg/L	32	Standard
K	39	548.3	16.2	**1.5625**	0.223	14.3	mg/L	30	Standard
Ca	43	246.7	5.1	**29.2175**	2.054	7.0	mg/L	48	Standard
Fe	54	45285.0	1.2	**37.6782**	1.468	3.9	mg/L	159	Standard
Fe	57	11722.9	3.7	**35.8594**	0.146	0.4	mg/L	195	Standard
> **Sc-1**	45	42894.0	3.7				mg/L	39543	Standard
Cl	35	35015.1	2.5				ug/L	27642	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	123689.6	1.5				ug/L	1647	Standard
P	31	28713.9	1.8				ug/L	15231	Standard
S	34	2633.6	10.4				ug/L	1845	Standard
Sr	88	703.3	3.4				ug/L	70	Standard
C	12	210.0	12.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	32.1	16.4				mg/L	12	Standard
Ho-1	165	16.7	17.3				mg/L	12	Standard
Er	166	26.7	57.3				mg/L	20	Standard
I	127	194264.8	2.9				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		91.091	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.094	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.786
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	93.637
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606084302
Sample Date/Time: Tuesday, June 28, 2016 20:58:33
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77271.6	2.1				ug/L	81760	Standard
	Be	9	30.0	44.1	**0.0221**	0.014	61.6	ug/L	17	Standard
	Al	27	13023291.9	1.0	**89.3957**	1.109	1.2	ug/L	1410	Standard
	Sc	45	41354.7	3.2				ug/L	39543	Standard
	Ti	47	172.3	20.3	**0.4975**	0.149	29.9	ug/L	39	Standard
	V	51	1869.8	10.2	**0.0496**	0.023	45.4	ug/L	1415	Standard
	Cr	52	9029.4	5.3	**0.1789**	0.049	27.5	ug/L	6946	Standard
	Cr	53	1933.5	16.3	**1.7631**	0.385	21.8	ug/L	328	Standard
	Mn	55	2010517.0	2.2	**295.6150**	12.044	4.1	ug/L	823	Standard
	Co	59	28381.9	0.9	**3.8204**	0.101	2.6	ug/L	252	Standard
	Ni	60	51973.3	1.5	**26.2049**	0.504	1.9	ug/L	192	Standard
	Cu	65	2375.5	2.3	**1.1012**	0.038	3.5	ug/L	141	Standard
	Zn	66	19572.0	0.3	**16.1981**	0.371	2.3	ug/L	491	Standard
>	**Ge**	72	540385.6	2.0				ug/L	515087	Standard
	As	75	349.5	8.0	**0.3364**	0.018	5.2	ug/L	20	Standard
	Se	82	126.5	4.8	**0.9278**	0.047	5.1	ug/L	15	Standard
	Se-1	77	166.7	13.3	**1.3933**	0.317	22.7	ug/L	48	Standard
>	**Ga**	71	106.7	22.2				mg/L	90	Standard
	Rb	85	40220.0	0.6				ug/L	23	Standard
	Y	89	449597.2	1.4				ug/L	448510	Standard
>	**Rh**	103	146.7	12.0				ug/L	15	Standard
	Mo	98	594.8	3.0	**0.2021**	0.008	3.8	ug/L	11	Standard
	Ag	107	92.7	31.3	**-0.0024**	0.004	183.9	ug/L	134	Standard
	Cd	111	161.3	7.4	**0.0729**	0.005	7.5	mg/L	7	Standard
	Cd	114	441.9	5.3	**0.0806**	0.004	5.2	ug/L	16	Standard
>	**In**	115	608035.7	0.5				ug/L	611117	Standard
	Sn	118	676.7	9.6	**0.0131**	0.012	88.5	ug/L	518	Standard
	Sb	123	188.3	22.2	**0.0273**	0.009	32.4	ug/L	127	Standard
	Ba	135	24154.9	0.6	**11.7345**	0.088	0.8	ug/L	45	Standard
	Ce	140	2120.1	7.8				ug/L	298	Standard
>	**Tb**	159	946861.5	2.0				ug/L	977942	Standard
	Ho	165	63.3	29.9				ug/L	12	Standard
	Tl	203	1826.8	0.7	**0.2203**	0.002	1.1	ug/L	31	Standard
	Tl	205	1685.1	3.3	**0.2367**	0.005	2.2	ug/L	20	Standard
	Pb	206	439.0	7.7	**0.0207**	0.006	26.8	ug/L	286	Standard
	Pb	207	381.0	5.7	**0.0231**	0.004	17.6	ug/L	257	Standard
	Pb	208	1509.0	1.3	**0.0226**	0.000	0.8	ug/L	956	Standard
	U	238	1189.4	4.4	**0.1693**	0.007	4.4	ug/L	17	Standard
>	**Bi**	209	536700.0	1.2				ug/L	557080	Standard

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Na	23	5.0	100.0	**30.9676**	31.632	102.1	mg/L	0	Standard
Mg	24	21311.6	1.7	**27.0900**	1.076	4.0	mg/L	32	Standard
K	39	978.4	4.6	**3.0186**	0.057	1.9	mg/L	30	Standard
Ca	43	386.7	7.5	**50.8608**	4.765	9.4	mg/L	48	Standard
Fe	54	204.3	23.4	**0.0400**	0.042	106.1	mg/L	159	Standard
Fe	57	446.7	11.3	**0.8216**	0.208	25.3	mg/L	195	Standard
> **Sc-1**	45	41354.7	3.2				mg/L	39543	Standard
Cl	35	48993.8	3.0				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	7075.0	5.6				ug/L	1647	Standard
P	31	18566.4	1.9				ug/L	15231	Standard
S	34	2263.5	0.1				ug/L	1845	Standard
Sr	88	423.3	3.6				ug/L	70	Standard
C	12	123.3	40.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	104.0	29.5				mg/L	12	Standard
Ho-1	165	63.3	29.9				mg/L	12	Standard
Er	166	56.7	27.0				mg/L	20	Standard
I	127	48509.5	7.5				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		94.510	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		104.912	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.496
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.342
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 21:01:46
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77410.6	1.1				ug/L	81760	Standard
	Be	9	48694.9	4.0	**51.7876**	2.330	4.5	ug/L	17	Standard
	Al	27	7498260.2	2.7	**51.3685**	1.536	3.0	ug/L	1410	Standard
	Sc	45	39994.4	1.6				ug/L	39543	Standard
	Ti	47	24919.8	1.5	**100.1235**	0.955	1.0	ug/L	39	Standard
	V	51	352037.7	1.5	**50.4818**	0.410	0.8	ug/L	1415	Standard
	Cr	52	359056.3	3.2	**50.5608**	1.258	2.5	ug/L	6946	Standard
	Cr	53	45264.2	3.2	**51.2590**	1.232	2.4	ug/L	328	Standard
	Mn	55	341978.2	1.6	**52.6439**	0.559	1.1	ug/L	823	Standard
	Co	59	358967.4	0.9	**51.1022**	0.460	0.9	ug/L	252	Standard
	Ni	60	95904.1	3.3	**50.8527**	1.284	2.5	ug/L	192	Standard
	Cu	65	96846.7	3.1	**50.9133**	1.132	2.2	ug/L	141	Standard
	Zn	66	56366.4	2.4	**50.6359**	0.804	1.6	ug/L	491	Standard
>	Ge	72	514670.0	0.9				ug/L	515087	Standard
	As	75	56653.0	2.7	**50.4646**	0.946	1.9	ug/L	20	Standard
	Se	82	5738.6	2.7	**49.7611**	0.957	1.9	ug/L	15	Standard
	Se-1	77	3922.2	4.5	**51.3791**	2.097	4.1	ug/L	48	Standard
>	Ga	71	78.3	3.7				mg/L	90	Standard
	Rb	85	913.4	7.9				ug/L	23	Standard
	Y	89	449629.1	4.0				ug/L	448510	Standard
>	Rh	103	26.7	60.3				ug/L	15	Standard
	Mo	98	269192.0	0.5	**99.9193**	1.745	1.7	ug/L	11	Standard
	Ag	107	324356.7	1.6	**48.4664**	0.560	1.2	ug/L	134	Standard
	Cd	111	104800.0	2.8	**49.1868**	1.080	2.2	mg/L	7	Standard
	Cd	114	253765.7	3.7	**48.9997**	1.658	3.4	ug/L	16	Standard
>	In	115	609141.6	2.1				ug/L	611117	Standard
	Sn	118	292076.9	3.3	**49.4485**	0.824	1.7	ug/L	518	Standard
	Sb	123	232366.9	1.6	**49.3998**	0.394	0.8	ug/L	127	Standard
	Ba	135	100964.1	2.8	**49.0412**	1.097	2.2	ug/L	45	Standard
	Ce	140	81.7	25.5				ug/L	298	Standard
>	Tb	159	939122.1	2.3				ug/L	977942	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	411985.1	1.5	**50.6376**	0.301	0.6	ug/L	31	Standard
	Tl	205	371737.4	2.9	**52.6085**	0.609	1.2	ug/L	20	Standard
	Pb	206	267607.7	0.9	**51.2233**	0.555	1.1	ug/L	286	Standard
	Pb	207	243032.3	0.6	**51.5800**	0.780	1.5	ug/L	257	Standard
	Pb	208	974203.2	1.1	**53.4395**	0.502	0.9	ug/L	956	Standard
	U	238	359093.2	2.3	**51.8989**	0.179	0.3	ug/L	17	Standard
>	Bi	209	537912.3	2.0				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	3960.5	5.8	**5.1535**	0.239	4.6	mg/L	32	Standard
K	39	1450.1	5.1	**4.7011**	0.180	3.8	mg/L	30	Standard
Ca	43	56.7	22.2	**3.1676**	1.896	59.9	mg/L	48	Standard
Fe	54	5602.2	1.3	**4.8773**	0.145	3.0	mg/L	159	Standard
Fe	57	1671.8	3.1	**4.9554**	0.149	3.0	mg/L	195	Standard
Sc-1	45	39994.4	1.6				mg/L	39543	Standard
Cl	35	34924.3	5.3				ug/L	27642	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	3010.3	3.5				ug/L	1647	Standard
P	31	18342.8	3.8				ug/L	15231	Standard
S	34	2438.5	4.7				ug/L	1845	Standard
Sr	88	55.0	47.2				ug/L	70	Standard
C	12	96.7	23.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	23.2	100.3				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	3.3	173.2				mg/L	20	Standard
I	127	10668.8	10.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	103.575		
Al	27	102.737		
Sc	45			
Ti	47	100.123		
V	51	100.964		
Cr	52	101.122		
Cr	53			
Mn	55	105.288		
Co	59	102.204		
Ni	60	101.705		
Cu	65	101.827		
Zn	66	101.272		
Ge	72		99.919	
As	75	100.929		
Se	82	99.522		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	99.919		
Ag	107	96.933		
Cd	111	98.374		
Cd	114			
In	115			99.677
Sn	118	98.897		
Sb	123	98.800		
Ba	135	98.082		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.275		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.879		
U	238	103.798		
Bi	209			96.559
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 21:04:57
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	76325.1	1.4				ug/L	81760	Standard
	Be	9	36.7	47.9	**0.0297**	0.018	61.9	ug/L	17	Standard
	Al	27	7433.8	52.1	**0.0370**	0.026	70.5	ug/L	1410	Standard
	Sc	45	39083.7	0.3				ug/L	39543	Standard
	Ti	47	29.0	21.5	**-0.0509**	0.024	47.8	ug/L	39	Standard
	V	51	1130.0	4.7	**-0.0473**	0.008	16.3	ug/L	1415	Standard
	Cr	52	6124.9	1.6	**-0.1950**	0.012	6.3	ug/L	6946	Standard
	Cr	53	786.7	2.0	**0.5367**	0.019	3.5	ug/L	328	Standard
	Mn	55	1151.0	22.6	**0.0255**	0.040	155.2	ug/L	823	Standard
	Co	59	234.7	8.8	**0.0014**	0.003	211.9	ug/L	252	Standard
	Ni	60	158.3	5.7	**-0.0226**	0.005	21.5	ug/L	192	Standard
	Cu	65	164.3	12.7	**-0.0061**	0.011	179.5	ug/L	141	Standard
	Zn	66	470.3	2.4	**-0.4072**	0.010	2.5	ug/L	491	Standard
>	Ge	72	525676.3	0.2				ug/L	515087	Standard
	As	75	-22.3	21.6	**0.0209**	0.004	19.9	ug/L	20	Standard
	Se	82	22.8	31.8	**0.0747**	0.062	82.4	ug/L	15	Standard
	Se-1	77	66.0	18.9	**0.1398**	0.164	117.4	ug/L	48	Standard
>	Ga	71	56.7	10.2				mg/L	90	Standard
	Rb	85	51.7	11.2				ug/L	23	Standard
	Y	89	445574.4	3.2				ug/L	448510	Standard
>	Rh	103	28.3	36.7				ug/L	15	Standard
	Mo	98	286.8	35.9	**0.0884**	0.038	42.5	ug/L	11	Standard
	Ag	107	119.3	19.2	**0.0018**	0.003	188.2	ug/L	134	Standard
	Cd	111	12.1	17.7	**0.0028**	0.001	35.0	mg/L	7	Standard
	Cd	114	42.6	30.2	**0.0034**	0.003	75.4	ug/L	16	Standard
>	In	115	602370.1	0.9				ug/L	611117	Standard
	Sn	118	773.4	17.1	**0.0309**	0.024	76.6	ug/L	518	Standard
	Sb	123	433.3	25.4	**0.0805**	0.024	30.2	ug/L	127	Standard
	Ba	135	290.7	43.2	**0.1174**	0.060	51.4	ug/L	45	Standard
	Ce	140	18.3	56.8				ug/L	298	Standard
>	Tb	159	950012.1	0.7				ug/L	977942	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	71.7	40.5	**0.0037**	0.004	95.1	ug/L	31	Standard
	Tl	205	85.0	56.1	**0.0094**	0.007	71.5	ug/L	20	Standard
	Pb	206	271.0	4.2	**-0.0136**	0.003	20.1	ug/L	286	Standard
	Pb	207	260.3	8.3	**-0.0047**	0.005	107.3	ug/L	257	Standard
	Pb	208	1029.7	7.7	**-0.0060**	0.005	82.3	ug/L	956	Standard
	U	238	47.7	42.8	**0.0037**	0.003	79.6	ug/L	17	Standard
>	Bi	209	558519.2	1.3				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	48.3	11.9	**0.0079**	0.008	95.2	mg/L	32	Standard
K	39	18.3	56.8	**-0.0788**	0.036	45.2	mg/L	30	Standard
Ca	43	31.7	24.1	**-0.4803**	1.172	244.0	mg/L	48	Standard
Fe	54	125.9	16.2	**-0.0218**	0.019	87.4	mg/L	159	Standard
Fe	57	238.3	12.6	**0.1894**	0.102	54.0	mg/L	195	Standard
Sc-1	45	39083.7	0.3				mg/L	39543	Standard
Cl	35	33723.5	2.9				ug/L	27642	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	2386.9	5.5				ug/L	1647	Standard
P	31	18112.5	4.7				ug/L	15231	Standard
S	34	2391.9	4.0				ug/L	1845	Standard
Sr	88	68.3	29.6				ug/L	70	Standard
C	12	100.0	36.1				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	18.9	54.4				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	23.3	65.5				mg/L	20	Standard
I	127	7351.8	8.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.056	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.569
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.258
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606141001
Sample Date/Time: Tuesday, June 28, 2016 21:08:10
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79030.6	2.3				ug/L	81760	Standard
	Be	9	11.7	89.2	**0.0026**	0.011	425.8	ug/L	17	Standard
	Al	27	44776805.2	0.7	**300.5948**	6.187	2.1	ug/L	1410	Standard
	Sc	45	43343.6	2.1				ug/L	39543	Standard
	Ti	47	192.3	8.0	**0.6107**	0.056	9.2	ug/L	39	Standard
	V	51	4772.2	4.6	**0.4823**	0.029	6.1	ug/L	1415	Standard
	Cr	52	9840.2	0.5	**0.3614**	0.015	4.2	ug/L	6946	Standard
	Cr	53	1230.1	5.5	**1.0645**	0.072	6.7	ug/L	328	Standard
	Mn	55	4769620.0	0.5	**738.1503**	9.110	1.2	ug/L	823	Standard
	Co	59	9207.1	1.6	**1.2837**	0.028	2.2	ug/L	252	Standard
	Ni	60	5238.9	2.1	**2.6865**	0.062	2.3	ug/L	192	Standard
	Cu	65	718.7	4.1	**0.2886**	0.013	4.4	ug/L	141	Standard
	Zn	66	2924.3	0.9	**1.8496**	0.029	1.6	ug/L	491	Standard
>	**Ge**	72	513321.3	0.8				ug/L	515087	Standard
	As	75	4203.4	1.1	**3.7919**	0.050	1.3	ug/L	20	Standard
	Se	82	127.5	8.3	**0.9927**	0.098	9.9	ug/L	15	Standard
	Se-1	77	88.3	31.6	**0.4581**	0.375	81.9	ug/L	48	Standard
>	**Ga**	71	145.0	24.1				mg/L	90	Standard
	Rb	85	2930.3	3.3				ug/L	23	Standard
	Y	89	443412.2	1.4				ug/L	448510	Standard
>	**Rh**	103	140.0	15.6				ug/L	15	Standard
	Mo	98	1185.9	4.8	**0.4170**	0.022	5.4	ug/L	11	Standard
	Ag	107	98.0	15.7	**-0.0017**	0.002	128.2	ug/L	134	Standard
	Cd	111	19.9	13.4	**0.0063**	0.001	18.0	mg/L	7	Standard
	Cd	114	87.1	38.1	**0.0117**	0.006	53.6	ug/L	16	Standard
>	**In**	115	614969.4	1.2				ug/L	611117	Standard
	Sn	118	790.0	17.2	**0.0309**	0.023	75.8	ug/L	518	Standard
	Sb	123	280.0	20.4	**0.0462**	0.012	26.5	ug/L	127	Standard
	Ba	135	192282.6	1.4	**92.5375**	1.689	1.8	ug/L	45	Standard
	Ce	140	2006.8	4.1				ug/L	298	Standard
>	**Tb**	159	961897.3	2.5				ug/L	977942	Standard
	Ho	165	81.7	52.8				ug/L	12	Standard
	Tl	203	119.7	8.5	**0.0099**	0.002	15.4	ug/L	31	Standard
	Tl	205	98.3	15.5	**0.0116**	0.002	19.8	ug/L	20	Standard
	Pb	206	482.7	4.9	**0.0287**	0.002	8.4	ug/L	286	Standard
	Pb	207	424.0	4.8	**0.0319**	0.005	14.5	ug/L	257	Standard
	Pb	208	1694.0	1.8	**0.0325**	0.004	11.5	ug/L	956	Standard
	U	238	15563.7	1.1	**2.2446**	0.071	3.2	ug/L	17	Standard
>	**Bi**	209	538649.3	2.3				ug/L	557080	Standard

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Na	23	16.7	75.5	**98.5166**	75.230	76.4	mg/L	0	Standard
Mg	24	9014.3	3.2	**10.8981**	0.573	5.3	mg/L	32	Standard
K	39	116.7	19.3	**0.2184**	0.072	32.8	mg/L	30	Standard
Ca	43	525.0	6.7	**67.4527**	5.707	8.5	mg/L	48	Standard
Fe	54	1820.8	2.9	**1.3668**	0.058	4.2	mg/L	159	Standard
Fe	57	973.4	7.5	**2.3749**	0.248	10.4	mg/L	195	Standard
Sc-1	45	43343.6	2.1				mg/L	39543	Standard
Cl	35	38331.8	2.6				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	27825.5	3.4				ug/L	1647	Standard
P	31	23363.0	0.7				ug/L	15231	Standard
S	34	2495.2	2.5				ug/L	1845	Standard
Sr	88	533.3	5.7				ug/L	70	Standard
C	12	353.3	5.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	83.6	23.1				mg/L	12	Standard
Ho-1	165	81.7	52.8				mg/L	12	Standard
Er	166	63.3	50.8				mg/L	20	Standard
I	127	532195.8	11.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		96.662	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.657	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.630	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	96.691	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606141201
Sample Date/Time: Tuesday, June 28, 2016 21:11:22
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79318.7	0.7				ug/L	81760	Standard
	Be	9	16.7	45.8	**0.0076**	0.008	106.2	ug/L	17	Standard
	Al	27	14913651.7	1.4	**99.7256**	2.143	2.1	ug/L	1410	Standard
	Sc	45	40395.5	2.6				ug/L	39543	Standard
	Ti	47	500.3	4.7	**1.8979**	0.055	2.9	ug/L	39	Standard
	V	51	36055.9	2.6	**5.1139**	0.040	0.8	ug/L	1415	Standard
	Cr	52	13456.3	2.4	**0.9269**	0.086	9.3	ug/L	6946	Standard
	Cr	53	9844.9	11.5	**11.1480**	1.101	9.9	ug/L	328	Standard
	Mn	55	27340.3	1.0	**4.1779**	0.048	1.1	ug/L	823	Standard
	Co	59	924.7	1.8	**0.1037**	0.005	4.9	ug/L	252	Standard
	Ni	60	2165.5	2.9	**1.0744**	0.025	2.4	ug/L	192	Standard
	Cu	65	1308.7	4.1	**0.6156**	0.023	3.7	ug/L	141	Standard
	Zn	66	7243.7	2.3	**5.9517**	0.120	2.0	ug/L	491	Standard
>	**Ge**	72	502171.0	2.0				ug/L	515087	Standard
	As	75	1256.7	3.1	**1.1867**	0.017	1.5	ug/L	20	Standard
	Se	82	736.7	2.2	**6.4443**	0.037	0.6	ug/L	15	Standard
	Se-1	77	926.0	3.3	**11.8887**	0.285	2.4	ug/L	48	Standard
>	**Ga**	71	176.7	6.5				mg/L	90	Standard
	Rb	85	2561.9	8.5				ug/L	23	Standard
	Y	89	439495.0	0.9				ug/L	448510	Standard
>	**Rh**	103	90.0	38.9				ug/L	15	Standard
	Mo	98	758.7	2.1	**0.2744**	0.005	1.7	ug/L	11	Standard
	Ag	107	112.7	8.8	**0.0013**	0.001	110.1	ug/L	134	Standard
	Cd	111	18.4	13.8	**0.0061**	0.001	20.0	mg/L	7	Standard
	Cd	114	55.1	29.0	**0.0062**	0.003	52.0	ug/L	16	Standard
>	**In**	115	584464.7	0.6				ug/L	611117	Standard
	Sn	118	741.7	7.5	**0.0292**	0.010	34.2	ug/L	518	Standard
	Sb	123	322.5	19.3	**0.0586**	0.014	23.6	ug/L	127	Standard
	Ba	135	23648.1	1.5	**11.9524**	0.216	1.8	ug/L	45	Standard
	Ce	140	4514.0	4.6				ug/L	298	Standard
>	**Tb**	159	922323.8	0.6				ug/L	977942	Standard
	Ho	165	91.7	12.6				ug/L	12	Standard
	Tl	203	130.7	10.2	**0.0124**	0.002	15.2	ug/L	31	Standard
	Tl	205	113.3	46.8	**0.0149**	0.008	53.9	ug/L	20	Standard
	Pb	206	585.3	3.6	**0.0562**	0.004	7.1	ug/L	286	Standard
	Pb	207	533.0	4.2	**0.0629**	0.005	7.8	ug/L	257	Standard
	Pb	208	2107.4	5.4	**0.0632**	0.008	12.1	ug/L	956	Standard
	U	238	32845.9	1.3	**5.0682**	0.050	1.0	ug/L	17	Standard
>	**Bi**	209	503585.9	0.8				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	118021.2	0.8	**153.7808**	2.811	1.8	mg/L	32	Standard
K	39	101.7	17.3	**0.1948**	0.058	29.7	mg/L	30	Standard
Ca	43	335.0	15.7	**44.3505**	6.519	14.7	mg/L	48	Standard
Fe	54	237.2	9.3	**0.0729**	0.016	22.5	mg/L	159	Standard
Fe	57	498.3	12.0	**1.0226**	0.198	19.4	mg/L	195	Standard
> **Sc-1**	45	40395.5	2.6				mg/L	39543	Standard
Cl	35	43781.2	1.0				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	58978.2	6.0				ug/L	1647	Standard
P	31	22017.7	1.7				ug/L	15231	Standard
S	34	2351.8	1.8				ug/L	1845	Standard
Sr	88	240.0	11.0				ug/L	70	Standard
C	12	356.7	26.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	169.3	7.0				mg/L	12	Standard
Ho-1	165	91.7	12.6				mg/L	12	Standard
Er	166	83.3	13.9				mg/L	20	Standard
I	127	31387.7	30.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.014	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.492	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.639
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.397
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606141202
Sample Date/Time: Tuesday, June 28, 2016 21:14:33
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83650.3	1.0				ug/L	81760	Standard
	Be	9	21.7	53.3	**0.0115**	0.011	97.0	ug/L	17	Standard
	Al	27	38632215.5	2.3	**244.9578**	5.868	2.4	ug/L	1410	Standard
	Sc	45	43420.5	1.6				ug/L	39543	Standard
	Ti	47	186.0	10.8	**0.5354**	0.077	14.4	ug/L	39	Standard
	V	51	26880.1	4.2	**3.4128**	0.061	1.8	ug/L	1415	Standard
	Cr	52	10918.6	2.1	**0.4115**	0.017	4.1	ug/L	6946	Standard
	Cr	53	7481.8	4.1	**7.6462**	0.526	6.9	ug/L	328	Standard
	Mn	55	33664.4	1.6	**4.7149**	0.144	3.1	ug/L	823	Standard
	Co	59	762.7	5.1	**0.0704**	0.007	10.1	ug/L	252	Standard
	Ni	60	2375.2	1.6	**1.0759**	0.011	1.0	ug/L	192	Standard
	Cu	65	711.7	7.3	**0.2600**	0.027	10.4	ug/L	141	Standard
	Zn	66	3134.0	1.7	**1.8510**	0.112	6.1	ug/L	491	Standard
>	**Ge**	72	550214.2	2.6				ug/L	515087	Standard
	As	75	794.1	8.2	**0.7027**	0.072	10.2	ug/L	20	Standard
	Se	82	234.2	3.9	**1.7863**	0.091	5.1	ug/L	15	Standard
	Se-1	77	482.0	4.4	**5.2700**	0.176	3.3	ug/L	48	Standard
>	**Ga**	71	80.0	16.5				mg/L	90	Standard
	Rb	85	1268.4	2.0				ug/L	23	Standard
	Y	89	467702.3	2.0				ug/L	448510	Standard
>	**Rh**	103	125.0	4.0				ug/L	15	Standard
	Mo	98	395.0	8.4	**0.1254**	0.010	8.1	ug/L	11	Standard
	Ag	107	91.7	6.0	**-0.0027**	0.001	31.4	ug/L	134	Standard
	Cd	111	17.7	18.1	**0.0053**	0.002	30.5	mg/L	7	Standard
	Cd	114	70.4	32.3	**0.0084**	0.004	47.5	ug/L	16	Standard
>	**In**	115	618005.7	2.3				ug/L	611117	Standard
	Sn	118	668.3	14.3	**0.0101**	0.018	180.4	ug/L	518	Standard
	Sb	123	172.5	13.4	**0.0233**	0.005	22.3	ug/L	127	Standard
	Ba	135	80657.5	2.0	**38.6136**	0.662	1.7	ug/L	45	Standard
	Ce	140	231.7	23.7				ug/L	298	Standard
>	**Tb**	159	976289.5	2.7				ug/L	977942	Standard
	Ho	165	20.0	50.0				ug/L	12	Standard
	Tl	203	130.7	0.4	**0.0112**	0.000	4.3	ug/L	31	Standard
	Tl	205	103.3	15.6	**0.0123**	0.003	20.6	ug/L	20	Standard
	Pb	206	343.3	3.7	**0.0019**	0.004	206.6	ug/L	286	Standard
	Pb	207	309.0	3.8	**0.0073**	0.004	55.0	ug/L	257	Standard
	Pb	208	1267.4	6.3	**0.0088**	0.006	66.3	ug/L	956	Standard
	U	238	23437.4	1.1	**3.3661**	0.068	2.0	ug/L	17	Standard
>	**Bi**	209	541066.6	2.7				ug/L	557080	Standard

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Na	23	10.0	100.0	**57.8886**	57.492	99.3	mg/L	0	Standard
Mg	24	42571.4	0.8	**51.5637**	1.207	2.3	mg/L	32	Standard
K	39	90.0	30.9	**0.1357**	0.087	64.2	mg/L	30	Standard
Ca	43	438.3	26.2	**55.1842**	15.190	27.5	mg/L	48	Standard
Fe	54	177.1	8.1	**0.0090**	0.012	139.0	mg/L	159	Standard
Fe	57	461.7	5.0	**0.7949**	0.071	8.9	mg/L	195	Standard
Sc-1	45	43420.5	1.6				mg/L	39543	Standard
Cl	35	42170.0	2.1				ug/L	27642	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	34382.4	5.6				ug/L	1647	Standard
P	31	23767.0	4.2				ug/L	15231	Standard
S	34	2608.6	3.1				ug/L	1845	Standard
Sr	88	431.7	5.4				ug/L	70	Standard
C	12	273.3	10.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	32.2	46.2				mg/L	12	Standard
Ho-1	165	20.0	50.0				mg/L	12	Standard
Er	166	23.3	89.2				mg/L	20	Standard
I	127	35633.6	4.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		102.312	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.820	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.127	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.125	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606141301
Sample Date/Time: Tuesday, June 28, 2016 21:17:45
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79916.9	1.5				ug/L	81760	Standard
	Be	9	28.3	27.0	**0.0194**	0.007	38.6	ug/L	17	Standard
	Al	27	38023288.5	2.1	**252.3385**	1.857	0.7	ug/L	1410	Standard
	Sc	45	42571.5	4.4				ug/L	39543	Standard
	Ti	47	396.7	7.8	**1.4239**	0.097	6.8	ug/L	39	Standard
	V	51	6119.0	6.6	**0.6719**	0.073	10.9	ug/L	1415	Standard
	Cr	52	11441.3	0.3	**0.5818**	0.031	5.4	ug/L	6946	Standard
	Cr	53	9654.8	11.4	**10.6403**	1.449	13.6	ug/L	328	Standard
	Mn	55	1634887.0	2.2	**251.2478**	2.194	0.9	ug/L	823	Standard
	Co	59	3215.3	1.8	**0.4249**	0.007	1.5	ug/L	252	Standard
	Ni	60	4170.9	0.8	**2.1033**	0.039	1.9	ug/L	192	Standard
	Cu	65	1200.4	3.8	**0.5391**	0.026	4.9	ug/L	141	Standard
	Zn	66	3234.7	1.4	**2.1147**	0.035	1.7	ug/L	491	Standard
>	**Ge**	72	516685.2	1.8				ug/L	515087	Standard
	As	75	16545.6	0.8	**14.7132**	0.205	1.4	ug/L	20	Standard
	Se	82	192.8	5.0	**1.5497**	0.062	4.0	ug/L	15	Standard
	Se-1	77	648.0	6.7	**7.8638**	0.716	9.1	ug/L	48	Standard
>	**Ga**	71	125.0	18.3				mg/L	90	Standard
	Rb	85	1723.4	7.4				ug/L	23	Standard
	Y	89	425819.3	3.1				ug/L	448510	Standard
>	**Rh**	103	118.3	17.1				ug/L	15	Standard
	Mo	98	4050.2	1.8	**1.5330**	0.030	2.0	ug/L	11	Standard
	Ag	107	94.7	12.2	**-0.0016**	0.002	127.1	ug/L	134	Standard
	Cd	111	117.7	9.5	**0.0542**	0.007	12.3	mg/L	7	Standard
	Cd	114	297.9	4.3	**0.0546**	0.005	8.5	ug/L	16	Standard
>	**In**	115	590223.7	3.4				ug/L	611117	Standard
	Sn	118	1010.0	10.9	**0.0746**	0.013	17.7	ug/L	518	Standard
	Sb	123	1963.6	1.5	**0.4183**	0.013	3.0	ug/L	127	Standard
	Ba	135	194231.1	1.1	**97.4394**	2.308	2.4	ug/L	45	Standard
	Ce	140	3857.2	6.5				ug/L	298	Standard
>	**Tb**	159	963155.2	4.7				ug/L	977942	Standard
	Ho	165	81.7	25.5				ug/L	12	Standard
	Tl	203	50.3	12.9	**0.0015**	0.001	66.6	ug/L	31	Standard
	Tl	205	46.7	32.7	**0.0044**	0.002	52.1	ug/L	20	Standard
	Pb	206	2455.5	1.0	**0.4110**	0.018	4.4	ug/L	286	Standard
	Pb	207	2061.1	1.1	**0.3836**	0.016	4.1	ug/L	257	Standard
	Pb	208	8494.6	1.5	**0.4098**	0.011	2.7	ug/L	956	Standard
	U	238	9671.1	1.3	**1.4065**	0.038	2.7	ug/L	17	Standard
>	**Bi**	209	533828.4	3.8				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	104970.9	3.0	**129.8006**	2.883	2.2	mg/L	32	Standard
K	39	241.7	3.2	**0.6187**	0.058	9.4	mg/L	30	Standard
Ca	43	386.7	15.6	**49.0389**	6.282	12.8	mg/L	48	Standard
Fe	54	7303.8	3.7	**6.0094**	0.321	5.3	mg/L	159	Standard
Fe	57	2221.8	6.0	**6.3400**	0.172	2.7	mg/L	195	Standard
> **Sc-1**	45	42571.5	4.4				mg/L	39543	Standard
Cl	35	37833.2	3.5				ug/L	27642	Standard
Kr	83	4.7	44.6				ug/L	2	Standard
Br	81	42533.0	4.1				ug/L	1647	Standard
P	31	23852.1	1.0				ug/L	15231	Standard
S	34	2610.2	4.2				ug/L	1845	Standard
Sr	88	403.3	5.0				ug/L	70	Standard
C	12	1170.0	10.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	0	Standard
Dy	164	115.7	9.7				mg/L	12	Standard
Ho-1	165	81.7	25.5				mg/L	12	Standard
Er	166	90.0	29.4				mg/L	20	Standard
I	127	137002.4	10.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.746	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.310	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.581
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.826
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606141601
Sample Date/Time: Tuesday, June 28, 2016 21:20:56
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92372.4	1.4				ug/L	81760	Standard
	Be	9	16.7	45.8	**0.0051**	0.007	132.4	ug/L	17	Standard
	Al	27	74980741.0	2.1	**430.5985**	11.194	2.6	ug/L	1410	Standard
	Sc	45	42273.9	1.4				ug/L	39543	Standard
	Ti	47	206.0	5.5	**0.6860**	0.049	7.2	ug/L	39	Standard
	V	51	76665.0	2.1	**11.1242**	0.138	1.2	ug/L	1415	Standard
	Cr	52	20589.0	2.5	**1.9813**	0.052	2.6	ug/L	6946	Standard
	Cr	53	16427.3	7.3	**18.8858**	1.445	7.7	ug/L	328	Standard
	Mn	55	4403.6	9.9	**0.5498**	0.075	13.7	ug/L	823	Standard
	Co	59	1375.4	0.7	**0.1698**	0.002	1.0	ug/L	252	Standard
	Ni	60	4849.1	3.4	**2.5400**	0.080	3.2	ug/L	192	Standard
	Cu	65	2467.2	2.0	**1.2432**	0.032	2.6	ug/L	141	Standard
	Zn	66	3268.7	3.6	**2.2359**	0.099	4.4	ug/L	491	Standard
>	**Ge**	72	501391.0	1.2				ug/L	515087	Standard
	As	75	1723.8	1.9	**1.6153**	0.015	1.0	ug/L	20	Standard
	Se	82	1818.6	2.0	**16.1069**	0.131	0.8	ug/L	15	Standard
	Se-1	77	2238.8	2.0	**29.8099**	0.421	1.4	ug/L	48	Standard
>	**Ga**	71	70.0	35.7				mg/L	90	Standard
	Rb	85	6024.5	1.3				ug/L	23	Standard
	Y	89	451516.3	2.4				ug/L	448510	Standard
>	**Rh**	103	580.0	3.0				ug/L	15	Standard
	Mo	98	4894.1	3.5	**1.7784**	0.027	1.5	ug/L	11	Standard
	Ag	107	107.3	12.0	**-0.0004**	0.002	428.3	ug/L	134	Standard
	Cd	111	61.6	14.8	**0.0258**	0.005	19.6	mg/L	7	Standard
	Cd	114	169.0	6.0	**0.0274**	0.002	5.8	ug/L	16	Standard
>	**In**	115	615602.8	3.1				ug/L	611117	Standard
	Sn	118	783.4	1.3	**0.0296**	0.003	11.3	ug/L	518	Standard
	Sb	123	203.3	3.5	**0.0299**	0.001	4.8	ug/L	127	Standard
	Ba	135	8199.6	0.5	**3.9202**	0.126	3.2	ug/L	45	Standard
	Ce	140	360.0	9.7				ug/L	298	Standard
>	**Tb**	159	979932.9	1.3				ug/L	977942	Standard
	Ho	165	28.3	20.4				ug/L	12	Standard
	Tl	203	89.3	17.1	**0.0065**	0.002	28.6	ug/L	31	Standard
	Tl	205	80.0	25.0	**0.0093**	0.003	29.8	ug/L	20	Standard
	Pb	206	345.7	2.0	**0.0043**	0.002	47.1	ug/L	286	Standard
	Pb	207	309.7	5.2	**0.0094**	0.004	39.7	ug/L	257	Standard
	Pb	208	1290.0	0.3	**0.0121**	0.001	10.3	ug/L	956	Standard
	U	238	27903.3	2.3	**4.1288**	0.057	1.4	ug/L	17	Standard
>	**Bi**	209	525055.5	1.5				ug/L	557080	Standard

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Na	23	21.7	48.0	**130.4724**	63.085	48.4	mg/L	0	Standard
Mg	24	101248.9	2.2	**126.0185**	2.508	2.0	mg/L	32	Standard
K	39	313.3	18.1	**0.8505**	0.192	22.6	mg/L	30	Standard
Ca	43	933.4	7.3	**127.1886**	7.858	6.2	mg/L	48	Standard
Fe	54	133.4	13.8	**-0.0242**	0.015	63.9	mg/L	159	Standard
Fe	57	858.4	5.3	**2.0873**	0.173	8.3	mg/L	195	Standard
> **Sc-1**	45	42273.9	1.4				mg/L	39543	Standard
Cl	35	65275.0	2.4				ug/L	27642	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	32608.5	7.2				ug/L	1647	Standard
P	31	23807.1	4.7				ug/L	15231	Standard
S	34	2403.5	5.0				ug/L	1845	Standard
Sr	88	2410.2	4.8				ug/L	70	Standard
C	12	193.3	34.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	21.1	69.3				mg/L	12	Standard
Ho-1	165	28.3	20.4				mg/L	12	Standard
Er	166	46.7	53.9				mg/L	20	Standard
I	127	42467.9	5.2				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		112.980	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.341	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	100.734	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	94.251	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606141602
Sample Date/Time: Tuesday, June 28, 2016 21:24:08
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88434.1	2.2				ug/L	81760	Standard
	Be	9	13.3	57.3	**0.0028**	0.007	262.6	ug/L	17	Standard
	Al	27	52144460.9	0.4	**312.8622**	8.112	2.6	ug/L	1410	Standard
	Sc	45	37740.3	1.5				ug/L	39543	Standard
	Ti	47	227.7	10.0	**0.8076**	0.101	12.5	ug/L	39	Standard
	V	51	38489.9	1.8	**5.6761**	0.140	2.5	ug/L	1415	Standard
	Cr	52	19640.1	1.0	**1.9398**	0.010	0.5	ug/L	6946	Standard
	Cr	53	17715.4	1.9	**21.0942**	0.301	1.4	ug/L	328	Standard
	Mn	55	4373.0	6.9	**0.5679**	0.048	8.4	ug/L	823	Standard
	Co	59	870.4	1.6	**0.1002**	0.001	1.2	ug/L	252	Standard
	Ni	60	2666.6	2.1	**1.3989**	0.023	1.6	ug/L	192	Standard
	Cu	65	1074.7	4.8	**0.5100**	0.030	5.9	ug/L	141	Standard
	Zn	66	2890.6	2.0	**1.9736**	0.048	2.4	ug/L	491	Standard
>	**Ge**	72	484924.7	0.7				ug/L	515087	Standard
	As	75	2458.8	5.8	**2.3632**	0.133	5.6	ug/L	20	Standard
	Se	82	892.7	6.7	**8.1181**	0.571	7.0	ug/L	15	Standard
	Se-1	77	1757.1	0.5	**24.0557**	0.109	0.5	ug/L	48	Standard
>	**Ga**	71	76.7	13.6				mg/L	90	Standard
	Rb	85	4900.8	2.1				ug/L	23	Standard
	Y	89	417881.5	5.4				ug/L	448510	Standard
>	**Rh**	103	255.0	18.7				ug/L	15	Standard
	Mo	98	772.2	2.1	**0.2950**	0.006	2.2	ug/L	11	Standard
	Ag	107	68.7	21.6	**-0.0049**	0.003	53.5	ug/L	134	Standard
	Cd	111	15.0	33.1	**0.0048**	0.003	56.9	mg/L	7	Standard
	Cd	114	24.6	131.5	**0.0004**	0.007	1725.2	ug/L	16	Standard
>	**In**	115	555990.7	3.0				ug/L	611117	Standard
	Sn	118	696.7	10.1	**0.0278**	0.015	54.6	ug/L	518	Standard
	Sb	123	106.5	16.8	**0.0120**	0.005	38.5	ug/L	127	Standard
	Ba	135	12524.8	3.0	**6.6489**	0.344	5.2	ug/L	45	Standard
	Ce	140	808.4	5.3				ug/L	298	Standard
>	**Tb**	159	897664.5	1.7				ug/L	977942	Standard
	Ho	165	23.3	68.9				ug/L	12	Standard
	Tl	203	89.0	17.6	**0.0071**	0.002	31.3	ug/L	31	Standard
	Tl	205	90.0	0.0	**0.0115**	0.000	1.5	ug/L	20	Standard
	Pb	206	365.7	4.1	**0.0124**	0.004	32.4	ug/L	286	Standard
	Pb	207	325.3	1.4	**0.0169**	0.000	0.6	ug/L	257	Standard
	Pb	208	1289.4	1.1	**0.0163**	0.000	2.7	ug/L	956	Standard
	U	238	25222.0	1.6	**3.9519**	0.013	0.3	ug/L	17	Standard
>	**Bi**	209	495840.1	1.2				ug/L	557080	Standard

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Na	23	3.3	86.6	**22.3577**	19.364	86.6	mg/L	0	Standard
Mg	24	65916.4	2.1	**91.8901**	2.205	2.4	mg/L	32	Standard
K	39	221.7	4.7	**0.6432**	0.031	4.9	mg/L	30	Standard
Ca	43	530.0	9.4	**79.0853**	9.116	11.5	mg/L	48	Standard
Fe	54	138.0	10.0	**-0.0062**	0.012	195.9	mg/L	159	Standard
Fe	57	510.0	5.1	**1.1793**	0.086	7.3	mg/L	195	Standard
> **Sc-1**	45	37740.3	1.5				mg/L	39543	Standard
Cl	35	44130.9	1.6				ug/L	27642	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	28483.4	4.0				ug/L	1647	Standard
P	31	20263.6	4.9				ug/L	15231	Standard
S	34	2148.5	1.6				ug/L	1845	Standard
Sr	88	1128.4	6.6				ug/L	70	Standard
C	12	163.3	25.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	36.0	33.6				mg/L	12	Standard
Ho-1	165	23.3	68.9				mg/L	12	Standard
Er	166	13.3	114.6				mg/L	20	Standard
I	127	19656.1	3.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.163	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.144	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.979
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		89.007
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606142101
Sample Date/Time: Tuesday, June 28, 2016 21:27:19
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86072.2	1.7				ug/L	81760	Standard
	Be	9	31.7	65.7	**0.0204**	0.019	95.2	ug/L	17	Standard
	Al	27	37149346.8	0.4	**228.9677**	4.521	2.0	ug/L	1410	Standard
	Sc	45	40693.0	3.6				ug/L	39543	Standard
	Ti	47	211.7	4.5	**0.7055**	0.031	4.4	ug/L	39	Standard
	V	51	19470.4	0.9	**2.6593**	0.027	1.0	ug/L	1415	Standard
	Cr	52	9577.4	0.5	**0.3506**	0.020	5.8	ug/L	6946	Standard
	Cr	53	13504.4	2.9	**15.3965**	0.370	2.4	ug/L	328	Standard
	Mn	55	2482687.2	1.9	**391.6677**	8.445	2.2	ug/L	823	Standard
	Co	59	1010.4	4.1	**0.1158**	0.006	5.6	ug/L	252	Standard
	Ni	60	2375.2	1.3	**1.1855**	0.029	2.4	ug/L	192	Standard
	Cu	65	1289.7	5.2	**0.6034**	0.030	5.0	ug/L	141	Standard
	Zn	66	3124.3	3.5	**2.0882**	0.083	4.0	ug/L	491	Standard
>	**Ge**	72	503476.5	0.9				ug/L	515087	Standard
	As	75	9860.1	0.9	**9.0129**	0.111	1.2	ug/L	20	Standard
	Se	82	502.3	2.2	**4.3447**	0.140	3.2	ug/L	15	Standard
	Se-1	77	853.4	2.0	**10.8689**	0.134	1.2	ug/L	48	Standard
>	**Ga**	71	115.0	32.8				mg/L	90	Standard
	Rb	85	655.0	2.3				ug/L	23	Standard
	Y	89	413248.4	1.0				ug/L	448510	Standard
>	**Rh**	103	123.3	18.3				ug/L	15	Standard
	Mo	98	77.7	17.1	**0.0125**	0.006	46.7	ug/L	11	Standard
	Ag	107	81.3	4.3	**-0.0029**	0.001	26.3	ug/L	134	Standard
	Cd	111	15.2	10.0	**0.0049**	0.001	14.6	mg/L	7	Standard
	Cd	114	38.3	10.8	**0.0032**	0.001	30.4	ug/L	16	Standard
>	**In**	115	557968.8	1.5				ug/L	611117	Standard
	Sn	118	745.0	12.3	**0.0359**	0.015	41.7	ug/L	518	Standard
	Sb	123	991.0	1.5	**0.2172**	0.002	1.1	ug/L	127	Standard
	Ba	135	220850.7	1.1	**117.1448**	0.521	0.4	ug/L	45	Standard
	Ce	140	1566.7	2.4				ug/L	298	Standard
>	**Tb**	159	920767.6	2.2				ug/L	977942	Standard
	Ho	165	58.3	38.7				ug/L	12	Standard
	Tl	203	55.7	23.2	**0.0023**	0.002	74.7	ug/L	31	Standard
	Tl	205	45.0	38.5	**0.0043**	0.003	60.7	ug/L	20	Standard
	Pb	206	169197.9	0.8	**33.4745**	0.521	1.6	ug/L	286	Standard
	Pb	207	142071.0	0.5	**31.1598**	0.218	0.7	ug/L	257	Standard
	Pb	208	579992.3	2.5	**32.8772**	0.549	1.7	ug/L	956	Standard
	U	238	648.7	2.7	**0.0940**	0.004	4.0	ug/L	17	Standard
>	**Bi**	209	520066.6	1.1				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.0185**	17.344	173.1	mg/L	0	Standard
Mg	24	83474.3	1.3	**108.0258**	4.532	4.2	mg/L	32	Standard
K	39	53.3	28.6	**0.0335**	0.050	147.9	mg/L	30	Standard
Ca	43	435.0	11.3	**58.7409**	4.908	8.4	mg/L	48	Standard
Fe	54	1115.5	8.0	**0.8464**	0.111	13.2	mg/L	159	Standard
Fe	57	721.7	4.0	**1.7451**	0.132	7.5	mg/L	195	Standard
Sc-1	45	40693.0	3.6				mg/L	39543	Standard
Cl	35	37196.3	1.1				ug/L	27642	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	117004.1	4.8				ug/L	1647	Standard
P	31	21849.1	2.8				ug/L	15231	Standard
S	34	2463.5	4.3				ug/L	1845	Standard
Sr	88	470.0	11.8				ug/L	70	Standard
C	12	400.0	4.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	47.0	20.8				mg/L	12	Standard
Ho-1	165	58.3	38.7				mg/L	12	Standard
Er	166	63.3	9.1				mg/L	20	Standard
I	127	290371.1	9.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		105.274	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.746	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.303
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.356
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 21:30:32
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80064.5	3.2				ug/L	81760	Standard
	Be	9	49945.6	4.7	**51.3339**	1.054	2.1	ug/L	17	Standard
	Al	27	7446953.3	1.3	**49.3416**	1.021	2.1	ug/L	1410	Standard
	Sc	45	39994.4	3.1				ug/L	39543	Standard
	Ti	47	24563.6	1.8	**103.4611**	0.538	0.5	ug/L	39	Standard
	V	51	332459.7	1.4	**49.9760**	0.258	0.5	ug/L	1415	Standard
	Cr	52	346732.4	1.5	**51.2013**	0.219	0.4	ug/L	6946	Standard
	Cr	53	44092.4	3.1	**52.3486**	0.902	1.7	ug/L	328	Standard
	Mn	55	316773.7	1.0	**51.1225**	0.963	1.9	ug/L	823	Standard
	Co	59	338255.6	0.9	**50.4803**	0.452	0.9	ug/L	252	Standard
	Ni	60	91110.2	2.0	**50.6466**	0.186	0.4	ug/L	192	Standard
	Cu	65	91902.3	2.1	**50.6488**	0.160	0.3	ug/L	141	Standard
	Zn	66	53757.9	1.1	**50.6325**	0.663	1.3	ug/L	491	Standard
>	Ge	72	490984.9	1.8				ug/L	515087	Standard
	As	75	53512.8	1.1	**49.9767**	0.363	0.7	ug/L	20	Standard
	Se	82	5576.6	0.4	**50.7061**	0.891	1.8	ug/L	15	Standard
	Se-1	77	3693.5	2.8	**50.7124**	1.021	2.0	ug/L	48	Standard
>	Ga	71	63.3	29.9				mg/L	90	Standard
	Rb	85	831.7	5.0				ug/L	23	Standard
	Y	89	421530.5	1.2				ug/L	448510	Standard
>	Rh	103	28.3	44.4				ug/L	15	Standard
	Mo	98	254944.7	0.2	**97.5527**	0.365	0.4	ug/L	11	Standard
	Ag	107	312741.7	1.2	**48.1812**	0.687	1.4	ug/L	134	Standard
	Cd	111	100992.4	1.1	**48.8720**	0.473	1.0	mg/L	7	Standard
	Cd	114	246539.5	0.8	**49.0819**	0.317	0.6	ug/L	16	Standard
>	In	115	590755.4	0.3				ug/L	611117	Standard
	Sn	118	285297.8	0.9	**49.8102**	0.309	0.6	ug/L	518	Standard
	Sb	123	223087.7	1.5	**48.8998**	0.798	1.6	ug/L	127	Standard
	Ba	135	97286.0	1.5	**48.7240**	0.868	1.8	ug/L	45	Standard
	Ce	140	78.3	36.9				ug/L	298	Standard
>	Tb	159	940662.6	1.7				ug/L	977942	Standard
	Ho	165	20.0	25.0				ug/L	12	Standard
	Tl	203	402817.7	0.9	**49.5894**	0.553	1.1	ug/L	31	Standard
	Tl	205	361515.5	0.7	**51.2534**	0.688	1.3	ug/L	20	Standard
	Pb	206	256836.7	1.0	**49.2334**	0.527	1.1	ug/L	286	Standard
	Pb	207	233772.2	1.4	**49.6819**	0.304	0.6	ug/L	257	Standard
	Pb	208	939106.3	0.8	**51.5898**	0.228	0.4	ug/L	956	Standard
	U	238	351652.3	0.3	**50.9098**	0.427	0.8	ug/L	17	Standard
>	Bi	209	537054.5	1.2				ug/L	557080	Standard

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Na	23	5.0	173.2	**32.8471**	56.884	173.2	mg/L	0	Standard
Mg	24	4075.5	3.9	**5.3128**	0.340	6.4	mg/L	32	Standard
K	39	1373.4	2.2	**4.4475**	0.053	1.2	mg/L	30	Standard
Ca	43	71.7	22.4	**5.4062**	2.324	43.0	mg/L	48	Standard
Fe	54	5589.4	3.1	**4.8672**	0.205	4.2	mg/L	159	Standard
Fe	57	1635.1	4.9	**4.8331**	0.203	4.2	mg/L	195	Standard
> **Sc-1**	45	39994.4	3.1				mg/L	39543	Standard
Cl	35	35754.8	4.0				ug/L	27642	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	3610.5	34.2				ug/L	1647	Standard
P	31	19324.0	4.2				ug/L	15231	Standard
S	34	2706.9	5.1				ug/L	1845	Standard
Sr	88	63.3	27.7				ug/L	70	Standard
C	12	143.3	42.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	5.9	100.8				mg/L	12	Standard
Ho-1	165	20.0	25.0				mg/L	12	Standard
Er	166	16.7	34.6				mg/L	20	Standard
I	127	9711.8	44.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	102.668		
Al	27	98.683		
Sc	45			
Ti	47	103.461		
V	51	99.952		
Cr	52	102.403		
Cr	53			
Mn	55	102.245		
Co	59	100.961		
Ni	60	101.293		
Cu	65	101.298		
Zn	66	101.265		
> Ge	72		95.321	
As	75	99.953		
Se	82	101.412		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	97.553		
Ag	107	96.362		
Cd	111	97.744		
Cd	114			
> In	115			96.668
Sn	118	99.620		
Sb	123	97.800		
Ba	135	97.448		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.179		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.180		
U	238	101.820		
> Bi	209			96.405
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
Report Date/Time: Tuesday, June 28, 2016 21:32:49
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 21:33:43
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77306.8	2.0				ug/L	81760	Standard
	Be	9	21.7	26.6	**0.0134**	0.006	48.3	ug/L	17	Standard
	Al	27	7303.5	27.4	**0.0355**	0.013	36.3	ug/L	1410	Standard
	Sc	45	38198.1	0.8				ug/L	39543	Standard
	Ti	47	25.7	25.3	**-0.0566**	0.027	47.6	ug/L	39	Standard
	V	51	1109.0	7.8	**-0.0386**	0.015	38.5	ug/L	1415	Standard
	Cr	52	6097.9	0.7	**-0.1350**	0.015	10.8	ug/L	6946	Standard
	Cr	53	763.4	6.1	**0.5733**	0.039	6.9	ug/L	328	Standard
	Mn	55	836.4	10.1	**-0.0128**	0.011	87.4	ug/L	823	Standard
	Co	59	230.3	21.5	**0.0031**	0.007	222.1	ug/L	252	Standard
	Ni	60	176.3	3.3	**-0.0064**	0.005	75.2	ug/L	192	Standard
	Cu	65	147.3	9.8	**-0.0093**	0.007	71.2	ug/L	141	Standard
	Zn	66	414.7	6.5	**-0.4297**	0.019	4.3	ug/L	491	Standard
>	**Ge**	72	489415.0	1.8				ug/L	515087	Standard
	As	75	-13.4	315.6	**0.0274**	0.040	146.9	ug/L	20	Standard
	Se	82	21.4	39.0	**0.0756**	0.076	100.0	ug/L	15	Standard
	Se-1	77	62.3	3.3	**0.1522**	0.035	23.1	ug/L	48	Standard
>	**Ga**	71	55.0	41.7				mg/L	90	Standard
	Rb	85	21.7	26.6				ug/L	23	Standard
	Y	89	425437.4	1.2				ug/L	448510	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	273.7	29.6	**0.0854**	0.031	36.3	ug/L	11	Standard
	Ag	107	107.7	30.0	**0.0003**	0.005	1550.1	ug/L	134	Standard
	Cd	111	12.2	52.2	**0.0030**	0.003	103.1	mg/L	7	Standard
	Cd	114	23.6	69.2	**-0.0002**	0.003	1385.1	ug/L	16	Standard
>	**In**	115	592746.5	0.3				ug/L	611117	Standard
	Sn	118	735.0	15.8	**0.0262**	0.020	76.7	ug/L	518	Standard
	Sb	123	418.9	32.2	**0.0787**	0.029	37.2	ug/L	127	Standard
	Ba	135	58.7	27.6	**0.0042**	0.008	193.4	ug/L	45	Standard
	Ce	140	16.7	34.6				ug/L	298	Standard
>	**Tb**	159	928666.7	1.6				ug/L	977942	Standard
	Ho	165	11.7	89.2				ug/L	12	Standard
	Tl	203	77.0	34.1	**0.0046**	0.003	68.4	ug/L	31	Standard
	Tl	205	76.7	35.9	**0.0085**	0.004	45.8	ug/L	20	Standard
	Pb	206	287.0	11.8	**-0.0088**	0.007	78.2	ug/L	286	Standard
	Pb	207	252.0	6.9	**-0.0047**	0.004	83.8	ug/L	257	Standard
	Pb	208	1038.7	6.8	**-0.0037**	0.004	102.1	ug/L	956	Standard
	U	238	52.3	19.6	**0.0046**	0.001	32.5	ug/L	17	Standard
>	**Bi**	209	540535.6	1.1				ug/L	557080	Standard

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Na	23	1.7	173.2	**11.1254**	19.261	173.1	mg/L	0	Standard
Mg	24	41.7	25.0	**0.0002**	0.014	5858.2	mg/L	32	Standard
K	39	25.0	20.0	**-0.0539**	0.018	33.4	mg/L	30	Standard
Ca	43	40.0	25.0	**0.9508**	1.613	169.6	mg/L	48	Standard
Fe	54	117.8	25.5	**-0.0268**	0.028	102.8	mg/L	159	Standard
Fe	57	235.0	7.7	**0.1964**	0.057	28.8	mg/L	195	Standard
> **Sc-1**	45	38198.1	0.8				mg/L	39543	Standard
Cl	35	35245.6	1.5				ug/L	27642	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	2320.2	7.7				ug/L	1647	Standard
P	31	18950.2	2.2				ug/L	15231	Standard
S	34	2475.2	4.2				ug/L	1845	Standard
Sr	88	68.3	27.7				ug/L	70	Standard
C	12	103.3	5.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	0	Standard
Dy	164	8.9	118.0				mg/L	12	Standard
Ho-1	165	11.7	89.2				mg/L	12	Standard
Er	166	23.3	49.5				mg/L	20	Standard
I	127	4469.0	13.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.016	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.994
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.030
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW 82 WG574205-02
Sample Date/Time: Tuesday, June 28, 2016 21:36:55
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77750.7	1.6				ug/L	81760	Standard
	Be	9	23.3	24.7	**0.0149**	0.006	38.5	ug/L	17	Standard
	Al	27	11095.9	27.0	**0.0614**	0.021	33.8	ug/L	1410	Standard
	Sc	45	39309.3	3.2				ug/L	39543	Standard
	Ti	47	35.7	19.9	**-0.0160**	0.027	171.9	ug/L	39	Standard
	V	51	1269.4	3.8	**-0.0162**	0.012	71.1	ug/L	1415	Standard
	Cr	52	7452.2	2.1	**0.0582**	0.015	26.3	ug/L	6946	Standard
	Cr	53	805.0	4.3	**0.6140**	0.043	7.0	ug/L	328	Standard
	Mn	55	3268.0	4.0	**0.3772**	0.034	9.1	ug/L	823	Standard
	Co	59	296.7	4.7	**0.0126**	0.001	9.3	ug/L	252	Standard
	Ni	60	300.3	5.8	**0.0613**	0.013	21.5	ug/L	192	Standard
	Cu	65	252.7	4.2	**0.0478**	0.009	19.3	ug/L	141	Standard
	Zn	66	1868.1	1.9	**0.9480**	0.028	3.0	ug/L	491	Standard
>	**Ge**	72	494530.1	2.9				ug/L	515087	Standard
	As	75	-37.6	66.7	**0.0055**	0.023	429.2	ug/L	20	Standard
	Se	82	15.9	27.5	**0.0238**	0.038	158.5	ug/L	15	Standard
	Se-1	77	56.7	8.0	**0.0642**	0.051	79.2	ug/L	48	Standard
>	**Ga**	71	51.7	31.1				mg/L	90	Standard
	Rb	85	45.0	48.4				ug/L	23	Standard
	Y	89	413936.1	2.9				ug/L	448510	Standard
>	**Rh**	103	23.3	32.7				ug/L	15	Standard
	Mo	98	83.2	8.2	**0.0127**	0.003	23.0	ug/L	11	Standard
	Ag	107	95.3	10.0	**-0.0016**	0.002	102.9	ug/L	134	Standard
	Cd	111	39.5	14.4	**0.0162**	0.003	18.5	mg/L	7	Standard
	Cd	114	83.7	13.3	**0.0117**	0.002	21.2	ug/L	16	Standard
>	**In**	115	592344.0	1.8				ug/L	611117	Standard
	Sn	118	795.0	11.2	**0.0369**	0.017	47.0	ug/L	518	Standard
	Sb	123	176.9	20.5	**0.0258**	0.007	28.3	ug/L	127	Standard
	Ba	135	88.3	8.2	**0.0191**	0.004	22.5	ug/L	45	Standard
	Ce	140	48.3	15.8				ug/L	298	Standard
>	**Tb**	159	936174.2	1.5				ug/L	977942	Standard
	Ho	165	6.7	114.6				ug/L	12	Standard
	Tl	203	128.0	4.9	**0.0106**	0.001	7.1	ug/L	31	Standard
	Tl	205	116.7	44.6	**0.0139**	0.007	52.1	ug/L	20	Standard
	Pb	206	358.0	3.9	**0.0036**	0.003	73.1	ug/L	286	Standard
	Pb	207	341.0	6.5	**0.0129**	0.005	36.4	ug/L	257	Standard
	Pb	208	1292.4	1.6	**0.0090**	0.001	13.2	ug/L	956	Standard
	U	238	93.7	24.0	**0.0103**	0.003	31.1	ug/L	17	Standard
>	**Bi**	209	549438.7	0.1				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.5912**	18.336	173.1	mg/L	0	Standard
Mg	24	55.0	47.2	**0.0170**	0.036	211.2	mg/L	32	Standard
K	39	38.3	52.7	**-0.0104**	0.070	678.8	mg/L	30	Standard
Ca	43	46.7	16.4	**1.7858**	1.139	63.8	mg/L	48	Standard
Fe	54	125.7	11.9	**-0.0224**	0.015	66.3	mg/L	159	Standard
Fe	57	226.7	12.1	**0.1455**	0.093	63.6	mg/L	195	Standard
> **Sc-1**	45	39309.3	3.2				mg/L	39543	Standard
Cl	35	34398.3	0.8				ug/L	27642	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	1940.1	5.9				ug/L	1647	Standard
P	31	18074.1	0.8				ug/L	15231	Standard
S	34	2498.5	3.0				ug/L	1845	Standard
Sr	88	61.7	46.1				ug/L	70	Standard
C	12	113.3	13.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	9.2	3.0				mg/L	12	Standard
Ho-1	165	6.7	114.6				mg/L	12	Standard
Er	166	16.7	34.6				mg/L	20	Standard
I	127	3242.0	12.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.096	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.009	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.928
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.628
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 82 WG574205-03
Sample Date/Time: Tuesday, June 28, 2016 21:40:07
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77370.5	2.5				ug/L	81760	Standard
	Be	9	47069.7	3.6	**50.0685**	0.762	1.5	ug/L	17	Standard
	Al	27	8339.0	0.8	**0.0428**	0.001	2.3	ug/L	1410	Standard
	Sc	45	38442.1	2.3				ug/L	39543	Standard
	Ti	47	32.3	15.3	**-0.0274**	0.023	83.9	ug/L	39	Standard
	V	51	328373.9	1.3	**49.7728**	1.098	2.2	ug/L	1415	Standard
	Cr	52	340284.0	1.1	**50.6522**	0.528	1.0	ug/L	6946	Standard
	Cr	53	43268.4	1.2	**51.8066**	1.337	2.6	ug/L	328	Standard
	Mn	55	314954.5	0.2	**51.2439**	0.720	1.4	ug/L	823	Standard
	Co	59	331722.8	0.6	**49.9116**	0.628	1.3	ug/L	252	Standard
	Ni	60	91188.9	0.7	**51.1120**	0.365	0.7	ug/L	192	Standard
	Cu	65	91760.4	1.1	**50.9900**	0.227	0.4	ug/L	141	Standard
	Zn	66	54150.6	1.3	**51.4287**	0.106	0.2	ug/L	491	Standard
>	**Ge**	72	486985.3	1.4				ug/L	515087	Standard
	As	75	52577.5	0.5	**49.5070**	0.430	0.9	ug/L	20	Standard
	Se	82	5439.8	1.4	**49.8572**	0.058	0.1	ug/L	15	Standard
	Se-1	77	3674.8	1.0	**50.8806**	0.838	1.6	ug/L	48	Standard
>	**Ga**	71	70.0	21.4				mg/L	90	Standard
	Rb	85	35.0	37.8				ug/L	23	Standard
	Y	89	431830.9	0.7				ug/L	448510	Standard
>	**Rh**	103	38.3	15.1				ug/L	15	Standard
	Mo	98	69.3	10.5	**0.0074**	0.003	42.1	ug/L	11	Standard
	Ag	107	312423.9	0.2	**48.0443**	1.285	2.7	ug/L	134	Standard
	Cd	111	99250.2	0.2	**47.9394**	1.102	2.3	mg/L	7	Standard
	Cd	114	241436.3	0.5	**47.9735**	0.947	2.0	ug/L	16	Standard
>	**In**	115	592091.2	2.5				ug/L	611117	Standard
	Sn	118	838.4	9.3	**0.0444**	0.014	30.4	ug/L	518	Standard
	Sb	123	213126.5	0.4	**46.6279**	1.103	2.4	ug/L	127	Standard
	Ba	135	94941.2	1.6	**47.4531**	1.010	2.1	ug/L	45	Standard
	Ce	140	68.3	22.4				ug/L	298	Standard
>	**Tb**	159	920874.0	1.0				ug/L	977942	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	395784.4	0.5	**49.2144**	0.506	1.0	ug/L	31	Standard
	Tl	205	352148.8	0.9	**50.4246**	0.261	0.5	ug/L	20	Standard
	Pb	206	261292.0	1.2	**50.5931**	0.633	1.3	ug/L	286	Standard
	Pb	207	229140.8	1.1	**49.1895**	0.516	1.0	ug/L	257	Standard
	Pb	208	939702.2	0.3	**52.1447**	0.484	0.9	ug/L	956	Standard
	U	238	338970.6	0.7	**49.5659**	0.166	0.3	ug/L	17	Standard
>	**Bi**	209	531689.3	0.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	35.0	0.0	**-0.0092**	0.001	12.0	mg/L	32	Standard
K	39	35.0	42.9	**-0.0195**	0.052	268.3	mg/L	30	Standard
Ca	43	38.3	32.8	**0.6220**	1.885	303.1	mg/L	48	Standard
Fe	54	132.7	8.8	**-0.0133**	0.014	103.8	mg/L	159	Standard
Fe	57	226.7	10.4	**0.1628**	0.084	51.6	mg/L	195	Standard
Sc-1	45	38442.1	2.3				mg/L	39543	Standard
Cl	35	35188.8	3.0				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1823.4	6.0				ug/L	1647	Standard
P	31	17611.9	0.6				ug/L	15231	Standard
S	34	2310.2	2.3				ug/L	1845	Standard
Sr	88	75.0	17.6				ug/L	70	Standard
C	12	96.7	46.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	5.9	194.5				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	16.7	34.6				mg/L	20	Standard
I	127	2716.9	12.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.631	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.544	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.887
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.442
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 82 WG574205-03
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Method 6020 - Summary Report

Sample ID: L1606134301 WG574205-01
Sample Date/Time: Tuesday, June 28, 2016 21:43:18
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74323.5	0.8				ug/L	81760	Standard
	Be	9	31.7	36.5	**0.0253**	0.013	49.8	ug/L	17	Standard
	Al	27	2998278.2	0.6	**21.3833**	0.050	0.2	ug/L	1410	Standard
	Sc	45	38510.6	3.3				ug/L	39543	Standard
	Ti	47	232.7	4.1	**0.8126**	0.032	3.9	ug/L	39	Standard
	V	51	1652.5	23.4	**0.0414**	0.055	131.6	ug/L	1415	Standard
	Cr	52	135321.3	0.7	**19.2638**	0.330	1.7	ug/L	6946	Standard
	Cr	53	19187.1	1.5	**22.5044**	0.281	1.2	ug/L	328	Standard
	Mn	55	3959.9	4.4	**0.4904**	0.040	8.1	ug/L	823	Standard
	Co	59	833.7	4.3	**0.0927**	0.008	8.3	ug/L	252	Standard
	Ni	60	44655.7	0.7	**24.6837**	0.632	2.6	ug/L	192	Standard
	Cu	65	31746.9	0.7	**17.3740**	0.276	1.6	ug/L	141	Standard
	Zn	66	57137.2	0.4	**53.6669**	1.121	2.1	ug/L	491	Standard
>	**Ge**	72	492860.3	1.9				ug/L	515087	Standard
	As	75	122.8	20.0	**0.1545**	0.023	14.7	ug/L	20	Standard
	Se	82	36.2	8.8	**0.2097**	0.035	16.8	ug/L	15	Standard
	Se-1	77	205.3	7.5	**2.1323**	0.253	11.9	ug/L	48	Standard
>	**Ga**	71	501.7	15.2				mg/L	90	Standard
	Rb	85	10964.0	0.9				ug/L	23	Standard
	Y	89	418533.1	1.8				ug/L	448510	Standard
>	**Rh**	103	56.7	31.0				ug/L	15	Standard
	Mo	98	2829.4	1.2	**1.1053**	0.009	0.8	ug/L	11	Standard
	Ag	107	25274.7	1.2	**4.0283**	0.033	0.8	ug/L	134	Standard
	Cd	111	119.1	9.1	**0.0569**	0.005	9.6	mg/L	7	Standard
	Cd	114	490.9	6.4	**0.0966**	0.006	6.7	ug/L	16	Standard
>	**In**	115	568910.2	0.4				ug/L	611117	Standard
	Sn	118	49674.7	2.3	**8.9227**	0.228	2.6	ug/L	518	Standard
	Sb	123	2415.2	17.6	**0.5368**	0.095	17.6	ug/L	127	Standard
	Ba	135	20410.1	0.9	**10.5946**	0.091	0.9	ug/L	45	Standard
	Ce	140	566.7	11.5				ug/L	298	Standard
>	**Tb**	159	895351.1	0.7				ug/L	977942	Standard
	Ho	165	20.0	25.0				ug/L	12	Standard
	Tl	203	216.3	14.7	**0.0231**	0.004	18.6	ug/L	31	Standard
	Tl	205	211.7	17.7	**0.0291**	0.005	18.1	ug/L	20	Standard
	Pb	206	14582.7	1.0	**2.8682**	0.053	1.8	ug/L	286	Standard
	Pb	207	11703.2	0.8	**2.5502**	0.014	0.5	ug/L	257	Standard
	Pb	208	49274.0	0.6	**2.7782**	0.042	1.5	ug/L	956	Standard
	U	238	116.0	23.9	**0.0146**	0.004	29.7	ug/L	17	Standard
>	**Bi**	209	512746.8	0.9				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	23663.5	1.4	**32.3162**	1.385	4.3	mg/L	32	Standard
K	39	683.3	9.3	**2.2286**	0.197	8.8	mg/L	30	Standard
Ca	43	95.0	32.9	**9.3774**	4.330	46.2	mg/L	48	Standard
Fe	54	183.2	7.6	**0.0331**	0.009	27.1	mg/L	159	Standard
Fe	57	263.3	14.4	**0.2873**	0.119	41.4	mg/L	195	Standard
> **Sc-1**	45	38510.6	3.3				mg/L	39543	Standard
Cl	35	35170.8	1.9				ug/L	27642	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	3347.0	4.4				ug/L	1647	Standard
P	31	18034.1	2.9				ug/L	15231	Standard
S	34	2231.8	5.1				ug/L	1845	Standard
Sr	88	143.3	22.7				ug/L	70	Standard
C	12	123.3	47.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	12.4	90.1				mg/L	12	Standard
Ho-1	165	20.0	25.0				mg/L	12	Standard
Er	166	20.0	86.6				mg/L	20	Standard
I	127	33806.0	2.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.904	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.685	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.094
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.042
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606134301DP WG574205-04
Sample Date/Time: Tuesday, June 28, 2016 21:46:30
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75650.1	1.3				ug/L	81760	Standard
	Be	9	38.3	7.5	**0.0320**	0.004	11.5	ug/L	17	Standard
	Al	27	3034197.2	1.7	**21.2640**	0.568	2.7	ug/L	1410	Standard
	Sc	45	38358.5	1.6				ug/L	39543	Standard
	Ti	47	242.3	3.4	**0.8481**	0.030	3.6	ug/L	39	Standard
	V	51	2921.5	21.4	**0.2301**	0.091	39.7	ug/L	1415	Standard
	Cr	52	132102.7	0.7	**18.6755**	0.034	0.2	ug/L	6946	Standard
	Cr	53	19672.8	2.2	**22.9627**	0.596	2.6	ug/L	328	Standard
	Mn	55	13082.6	2.2	**1.9497**	0.036	1.8	ug/L	823	Standard
	Co	59	922.0	4.8	**0.1051**	0.006	5.6	ug/L	252	Standard
	Ni	60	44071.0	1.0	**24.2264**	0.187	0.8	ug/L	192	Standard
	Cu	65	31222.8	1.1	**16.9947**	0.096	0.6	ug/L	141	Standard
	Zn	66	55768.5	0.9	**52.0764**	0.197	0.4	ug/L	491	Standard
>	**Ge**	72	495382.5	0.5				ug/L	515087	Standard
	As	75	105.3	17.2	**0.1377**	0.017	12.5	ug/L	20	Standard
	Se	82	31.4	9.3	**0.1642**	0.025	15.2	ug/L	15	Standard
	Se-1	77	224.7	3.6	**2.3824**	0.126	5.3	ug/L	48	Standard
>	**Ga**	71	485.0	9.9				mg/L	90	Standard
	Rb	85	10640.4	0.2				ug/L	23	Standard
	Y	89	407749.6	1.6				ug/L	448510	Standard
>	**Rh**	103	56.7	27.0				ug/L	15	Standard
	Mo	98	2759.9	2.4	**1.0902**	0.013	1.1	ug/L	11	Standard
	Ag	107	24718.5	0.6	**3.9851**	0.067	1.7	ug/L	134	Standard
	Cd	111	119.1	7.2	**0.0577**	0.005	8.8	mg/L	7	Standard
	Cd	114	389.6	30.3	**0.0764**	0.024	30.9	ug/L	16	Standard
>	**In**	115	562489.2	1.2				ug/L	611117	Standard
	Sn	118	48104.7	5.2	**8.7400**	0.532	6.1	ug/L	518	Standard
	Sb	123	1085.9	11.8	**0.2370**	0.026	11.2	ug/L	127	Standard
	Ba	135	21279.9	0.9	**11.1745**	0.156	1.4	ug/L	45	Standard
	Ce	140	1446.7	1.7				ug/L	298	Standard
>	**Tb**	159	899809.7	0.9				ug/L	977942	Standard
	Ho	165	38.3	37.7				ug/L	12	Standard
	Tl	203	211.3	8.9	**0.0223**	0.003	11.4	ug/L	31	Standard
	Tl	205	171.7	14.4	**0.0230**	0.004	16.6	ug/L	20	Standard
	Pb	206	14329.4	1.7	**2.7934**	0.069	2.5	ug/L	286	Standard
	Pb	207	11471.7	1.5	**2.4775**	0.050	2.0	ug/L	257	Standard
	Pb	208	48196.5	1.3	**2.6929**	0.035	1.3	ug/L	956	Standard
	U	238	162.0	9.3	**0.0214**	0.002	11.2	ug/L	17	Standard
>	**Bi**	209	517046.0	0.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	23364.7	1.2	**32.0144**	0.886	2.8	mg/L	32	Standard
K	39	620.0	6.9	**2.0197**	0.176	8.7	mg/L	30	Standard
Ca	43	98.3	39.5	**10.0220**	6.022	60.1	mg/L	48	Standard
Fe	54	175.4	14.5	**0.0269**	0.026	96.7	mg/L	159	Standard
Fe	57	298.3	7.6	**0.4146**	0.094	22.7	mg/L	195	Standard
> **Sc-1**	45	38358.5	1.6				mg/L	39543	Standard
Cl	35	35843.0	1.2				ug/L	27642	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	4177.2	4.7				ug/L	1647	Standard
P	31	18070.8	1.2				ug/L	15231	Standard
S	34	2273.5	5.8				ug/L	1845	Standard
Sr	88	125.0	20.0				ug/L	70	Standard
C	12	143.3	21.3				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	0	Standard
Dy	164	45.4	50.3				mg/L	12	Standard
Ho-1	165	38.3	37.7				mg/L	12	Standard
Er	166	26.7	21.7				mg/L	20	Standard
I	127	32309.4	0.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.527	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.175	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		92.043
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.814
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606134301S WG574205-05
Sample Date/Time: Tuesday, June 28, 2016 21:49:41
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	76159.4	2.8				ug/L	81760	Standard
	Be	9	48450.7	1.7	**52.3785**	0.949	1.8	ug/L	17	Standard
	Al	27	2895043.9	1.0	**20.1618**	0.737	3.7	ug/L	1410	Standard
	Sc	45	38742.8	1.9				ug/L	39543	Standard
	Ti	47	240.0	7.2	**0.8720**	0.082	9.4	ug/L	39	Standard
	V	51	323841.2	0.8	**49.8512**	0.902	1.8	ug/L	1415	Standard
	Cr	52	453207.8	1.4	**68.8842**	0.591	0.9	ug/L	6946	Standard
	Cr	53	60472.1	1.8	**73.6607**	0.780	1.1	ug/L	328	Standard
	Mn	55	309167.0	1.2	**51.0846**	0.705	1.4	ug/L	823	Standard
	Co	59	322466.2	0.8	**49.2767**	0.754	1.5	ug/L	252	Standard
	Ni	60	129806.7	1.0	**73.9391**	0.553	0.7	ug/L	192	Standard
	Cu	65	118360.2	1.2	**66.8253**	0.317	0.5	ug/L	141	Standard
	Zn	66	105137.5	0.6	**102.2235**	1.030	1.0	ug/L	491	Standard
>	Ge	72	479488.8	1.1				ug/L	515087	Standard
	As	75	53941.4	1.7	**51.5891**	1.400	2.7	ug/L	20	Standard
	Se	82	5350.1	0.9	**49.8082**	0.982	2.0	ug/L	15	Standard
	Se-1	77	3727.1	2.1	**52.4361**	1.513	2.9	ug/L	48	Standard
>	Ga	71	476.7	2.2				mg/L	90	Standard
	Rb	85	10533.7	3.9				ug/L	23	Standard
	Y	89	417307.7	1.3				ug/L	448510	Standard
>	Rh	103	73.3	25.8				ug/L	15	Standard
	Mo	98	2762.6	0.6	**1.0591**	0.012	1.2	ug/L	11	Standard
	Ag	107	321242.3	0.9	**50.4672**	0.741	1.5	ug/L	134	Standard
	Cd	111	96845.5	0.4	**47.7898**	0.498	1.0	mg/L	7	Standard
	Cd	114	233334.7	1.1	**47.3688**	0.646	1.4	ug/L	16	Standard
>	In	115	579360.0	0.8				ug/L	611117	Standard
	Sn	118	55146.4	13.8	**9.7304**	1.292	13.3	ug/L	518	Standard
	Sb	123	221114.9	0.1	**49.4220**	0.385	0.8	ug/L	127	Standard
	Ba	135	112895.7	0.5	**57.6594**	0.626	1.1	ug/L	45	Standard
	Ce	140	313.3	11.5				ug/L	298	Standard
>	Tb	159	912553.5	0.8				ug/L	977942	Standard
	Ho	165	15.0	66.7				ug/L	12	Standard
	Tl	203	384933.8	0.5	**49.0255**	0.608	1.2	ug/L	31	Standard
	Tl	205	344367.9	0.4	**50.5097**	0.783	1.5	ug/L	20	Standard
	Pb	206	266968.5	0.3	**52.9500**	0.690	1.3	ug/L	286	Standard
	Pb	207	232893.3	0.6	**51.2096**	0.463	0.9	ug/L	257	Standard
	Pb	208	948808.9	1.4	**53.9303**	1.097	2.0	ug/L	956	Standard
	U	238	335133.4	0.9	**50.1950**	0.747	1.5	ug/L	17	Standard
>	Bi	209	519140.8	1.4				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	23122.6	1.5	**31.3670**	0.821	2.6	mg/L	32	Standard
K	39	550.0	13.4	**1.7528**	0.224	12.8	mg/L	30	Standard
Ca	43	93.3	3.1	**9.1209**	0.222	2.4	mg/L	48	Standard
Fe	54	147.8	38.5	**0.0002**	0.055	34709.4	mg/L	159	Standard
Fe	57	261.7	11.7	**0.2782**	0.120	43.1	mg/L	195	Standard
> **Sc-1**	45	38742.8	1.9				mg/L	39543	Standard
Cl	35	35887.1	0.6				ug/L	27642	Standard
Kr	83	2.3	89.2				ug/L	2	Standard
Br	81	3013.6	4.3				ug/L	1647	Standard
P	31	18511.3	3.1				ug/L	15231	Standard
S	34	2173.5	7.9				ug/L	1845	Standard
Sr	88	115.0	4.3				ug/L	70	Standard
C	12	143.3	35.1				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	12.7	50.0				mg/L	12	Standard
Ho-1	165	15.0	66.7				mg/L	12	Standard
Er	166	13.3	114.6				mg/L	20	Standard
I	127	29318.3	1.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.150	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.089	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606134301S WG574205-05
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.804
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.190
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1606134301SD WG574205-06
Sample Date/Time: Tuesday, June 28, 2016 21:52:53
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74233.3	4.4				ug/L	81760	Standard
	Be	9	46944.3	0.7	**52.1161**	2.208	4.2	ug/L	17	Standard
	Al	27	2867977.1	1.8	**20.5130**	1.211	5.9	ug/L	1410	Standard
	Sc	45	37107.1	4.7				ug/L	39543	Standard
	Ti	47	208.3	2.4	**0.7439**	0.023	3.1	ug/L	39	Standard
	V	51	314357.5	0.7	**48.8632**	0.269	0.5	ug/L	1415	Standard
	Cr	52	443013.9	1.2	**67.9920**	0.699	1.0	ug/L	6946	Standard
	Cr	53	57726.4	1.5	**71.0049**	0.771	1.1	ug/L	328	Standard
	Mn	55	299003.6	1.5	**49.8899**	0.541	1.1	ug/L	823	Standard
	Co	59	310607.5	1.9	**47.9296**	0.658	1.4	ug/L	252	Standard
	Ni	60	125816.0	1.4	**72.3742**	0.740	1.0	ug/L	192	Standard
	Cu	65	116930.9	2.0	**66.6728**	1.005	1.5	ug/L	141	Standard
	Zn	66	105389.9	0.9	**103.4925**	0.359	0.3	ug/L	491	Standard
>	**Ge**	72	474757.8	0.5				ug/L	515087	Standard
	As	75	52320.0	1.0	**50.5276**	0.214	0.4	ug/L	20	Standard
	Se	82	5199.8	1.3	**48.8839**	0.776	1.6	ug/L	15	Standard
	Se-1	77	3645.4	2.7	**51.7794**	1.336	2.6	ug/L	48	Standard
>	**Ga**	71	471.7	1.2				mg/L	90	Standard
	Rb	85	10923.9	0.7				ug/L	23	Standard
	Y	89	414912.1	1.8				ug/L	448510	Standard
>	**Rh**	103	51.7	22.3				ug/L	15	Standard
	Mo	98	2810.6	3.1	**1.1098**	0.050	4.5	ug/L	11	Standard
	Ag	107	309794.3	1.1	**50.0964**	1.925	3.8	ug/L	134	Standard
	Cd	111	92939.1	0.1	**47.2004**	1.405	3.0	mg/L	7	Standard
	Cd	114	227712.2	0.8	**47.5835**	1.757	3.7	ug/L	16	Standard
>	**In**	115	563239.5	3.0				ug/L	611117	Standard
	Sn	118	48800.3	6.0	**8.8657**	0.749	8.5	ug/L	518	Standard
	Sb	123	213681.9	0.5	**49.1574**	1.598	3.3	ug/L	127	Standard
	Ba	135	108173.8	0.8	**56.8630**	1.899	3.3	ug/L	45	Standard
	Ce	140	258.3	11.8				ug/L	298	Standard
>	**Tb**	159	874543.1	3.3				ug/L	977942	Standard
	Ho	165	16.7	62.4				ug/L	12	Standard
	Tl	203	370949.6	0.9	**49.2226**	1.185	2.4	ug/L	31	Standard
	Tl	205	332170.0	0.6	**50.7579**	1.084	2.1	ug/L	20	Standard
	Pb	206	260124.0	0.8	**53.7518**	1.191	2.2	ug/L	286	Standard
	Pb	207	226333.8	1.1	**51.8538**	1.336	2.6	ug/L	257	Standard
	Pb	208	924176.8	1.2	**54.7310**	1.509	2.8	ug/L	956	Standard
	U	238	327055.2	1.2	**51.0349**	1.235	2.4	ug/L	17	Standard
>	**Bi**	209	498348.0	1.6				ug/L	557080	Standard

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Na	23	5.0	173.2	**33.3751**	57.799	173.2	mg/L	0	Standard
Mg	24	22616.9	1.7	**32.0867**	1.983	6.2	mg/L	32	Standard
K	39	585.0	8.2	**1.9630**	0.088	4.5	mg/L	30	Standard
Ca	43	106.7	21.1	**11.9418**	3.627	30.4	mg/L	48	Standard
Fe	54	143.6	9.6	**0.0016**	0.013	810.1	mg/L	159	Standard
Fe	57	260.0	25.0	**0.3188**	0.279	87.4	mg/L	195	Standard
> **Sc-1**	45	37107.1	4.7				mg/L	39543	Standard
Cl	35	35012.4	2.2				ug/L	27642	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	3463.7	1.0				ug/L	1647	Standard
P	31	17954.0	1.9				ug/L	15231	Standard
S	34	2235.2	3.1				ug/L	1845	Standard
Sr	88	115.0	27.2				ug/L	70	Standard
C	12	173.3	16.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	0	Standard
Dy	164	16.2	97.3				mg/L	12	Standard
Ho-1	165	16.7	62.4				mg/L	12	Standard
Er	166	10.0	100.0				mg/L	20	Standard
I	127	29468.6	2.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.794	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.170	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	92.166
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	89.457
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1606073201
Sample Date/Time: Tuesday, June 28, 2016 21:56:04
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79995.7	1.9				ug/L	81760	Standard
	Be	9	111.7	43.0	**0.1055**	0.050	47.4	ug/L	17	Standard
	Al	27	26418031.8	2.7	**175.1861**	5.381	3.1	ug/L	1410	Standard
	Sc	45	39758.8	3.3				ug/L	39543	Standard
	Ti	47	586.7	3.3	**2.3079**	0.104	4.5	ug/L	39	Standard
	V	51	2345.3	13.2	**0.1468**	0.044	29.9	ug/L	1415	Standard
	Cr	52	26092.8	3.1	**2.8709**	0.089	3.1	ug/L	6946	Standard
	Cr	53	22536.8	6.4	**26.5559**	1.479	5.6	ug/L	328	Standard
	Mn	55	128770.6	1.1	**20.6681**	0.068	0.3	ug/L	823	Standard
	Co	59	4370.6	1.2	**0.6206**	0.009	1.4	ug/L	252	Standard
	Ni	60	4217.9	1.8	**2.2421**	0.029	1.3	ug/L	192	Standard
	Cu	65	1551.7	2.2	**0.7650**	0.010	1.3	ug/L	141	Standard
	Zn	66	53557.8	1.5	**50.3807**	0.333	0.7	ug/L	491	Standard
>	**Ge**	72	491490.5	1.0				ug/L	515087	Standard
	As	75	918.5	14.0	**0.8957**	0.112	12.5	ug/L	20	Standard
	Se	82	316.6	5.4	**2.7619**	0.129	4.7	ug/L	15	Standard
	Se-1	77	1234.4	4.8	**16.4500**	0.704	4.3	ug/L	48	Standard
>	**Ga**	71	80.0	6.3				mg/L	90	Standard
	Rb	85	7720.3	1.4				ug/L	23	Standard
	Y	89	403861.7	0.4				ug/L	448510	Standard
>	**Rh**	103	80.0	50.0				ug/L	15	Standard
	Mo	98	355.0	5.6	**0.1283**	0.008	5.9	ug/L	11	Standard
	Ag	107	141.3	9.2	**0.0074**	0.002	31.2	ug/L	134	Standard
	Cd	111	202.7	10.3	**0.1036**	0.012	11.2	mg/L	7	Standard
	Cd	114	507.6	13.6	**0.1047**	0.015	13.9	ug/L	16	Standard
>	**In**	115	544497.8	0.6				ug/L	611117	Standard
	Sn	118	1023.4	24.9	**0.0925**	0.050	53.7	ug/L	518	Standard
	Sb	123	669.1	12.6	**0.1463**	0.019	13.2	ug/L	127	Standard
	Ba	135	206763.5	2.5	**112.3722**	2.187	1.9	ug/L	45	Standard
	Ce	140	411.7	6.1				ug/L	298	Standard
>	**Tb**	159	889575.8	1.3				ug/L	977942	Standard
	Ho	165	35.0	37.8				ug/L	12	Standard
	Tl	203	749.0	2.3	**0.0953**	0.003	3.6	ug/L	31	Standard
	Tl	205	685.0	13.9	**0.1029**	0.013	12.2	ug/L	20	Standard
	Pb	206	776.0	1.1	**0.0981**	0.006	5.8	ug/L	286	Standard
	Pb	207	670.3	1.0	**0.0968**	0.005	4.8	ug/L	257	Standard
	Pb	208	2692.4	0.9	**0.1003**	0.005	4.6	ug/L	956	Standard
	U	238	1446.7	3.3	**0.2244**	0.006	2.7	ug/L	17	Standard
>	**Bi**	209	494871.3	2.5				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.6945**	18.515	173.1	mg/L	0	Standard
Mg	24	122893.2	2.3	**162.6797**	1.668	1.0	mg/L	32	Standard
K	39	163.3	4.7	**0.4080**	0.035	8.6	mg/L	30	Standard
Ca	43	160.0	24.8	**18.8525**	6.186	32.8	mg/L	48	Standard
Fe	54	210.9	15.7	**0.0529**	0.031	58.0	mg/L	159	Standard
Fe	57	311.7	8.2	**0.4207**	0.052	12.3	mg/L	195	Standard
> **Sc-1**	45	39758.8	3.3				mg/L	39543	Standard
Cl	35	36983.1	0.7				ug/L	27642	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	75233.3	4.9				ug/L	1647	Standard
P	31	24466.4	2.9				ug/L	15231	Standard
S	34	2258.5	3.0				ug/L	1845	Standard
Sr	88	378.3	24.5				ug/L	70	Standard
C	12	350.0	10.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	120.9	45.9				mg/L	12	Standard
Ho-1	165	35.0	37.8				mg/L	12	Standard
Er	166	50.0	20.0				mg/L	20	Standard
I	127	539973.2	10.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.842	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.419	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.099
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		88.833
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606073201PS WG574571-01
Sample Date/Time: Tuesday, June 28, 2016 21:59:15
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83254.8	1.5				ug/L	81760	Standard
	Be	9	50562.6	1.1	**49.9976**	0.969	1.9	ug/L	17	Standard
	Al	27	27107676.6	2.1	**172.7073**	3.970	2.3	ug/L	1410	Standard
	Sc	45	41809.3	4.0				ug/L	39543	Standard
	Ti	47	632.7	1.1	**2.4753**	0.055	2.2	ug/L	39	Standard
	V	51	341856.0	1.3	**50.8320**	0.708	1.4	ug/L	1415	Standard
	Cr	52	363663.1	1.5	**53.1642**	1.402	2.6	ug/L	6946	Standard
	Cr	53	65238.5	1.6	**76.7756**	0.750	1.0	ug/L	328	Standard
	Mn	55	438903.0	0.5	**70.1258**	2.130	3.0	ug/L	823	Standard
	Co	59	331676.0	1.2	**48.9632**	1.267	2.6	ug/L	252	Standard
	Ni	60	91787.9	1.2	**50.4717**	0.832	1.6	ug/L	192	Standard
	Cu	65	90254.4	2.3	**49.1926**	0.475	1.0	ug/L	141	Standard
	Zn	66	107316.4	1.1	**100.7774**	1.488	1.5	ug/L	491	Standard
>	**Ge**	72	496483.6	2.5				ug/L	515087	Standard
	As	75	55410.9	1.5	**51.1805**	0.552	1.1	ug/L	20	Standard
	Se	82	5728.8	0.9	**51.5315**	1.616	3.1	ug/L	15	Standard
	Se-1	77	4873.5	1.7	**66.4041**	0.559	0.8	ug/L	48	Standard
>	**Ga**	71	86.7	34.8				mg/L	90	Standard
	Rb	85	8242.2	2.9				ug/L	23	Standard
	Y	89	419418.3	1.5				ug/L	448510	Standard
>	**Rh**	103	96.7	18.2				ug/L	15	Standard
	Mo	98	373.5	3.6	**0.1304**	0.006	4.5	ug/L	11	Standard
	Ag	107	276030.5	2.3	**44.4706**	1.418	3.2	ug/L	134	Standard
	Cd	111	97190.1	1.0	**49.1769**	0.174	0.4	mg/L	7	Standard
	Cd	114	234963.3	0.8	**48.9150**	0.797	1.6	ug/L	16	Standard
>	**In**	115	564991.8	0.9				ug/L	611117	Standard
	Sn	118	1183.4	5.3	**0.1145**	0.011	9.2	ug/L	518	Standard
	Sb	123	221298.1	1.9	**50.7268**	1.390	2.7	ug/L	127	Standard
	Ba	135	302634.3	0.9	**158.5372**	1.746	1.1	ug/L	45	Standard
	Ce	140	460.0	11.5				ug/L	298	Standard
>	**Tb**	159	913205.8	1.2				ug/L	977942	Standard
	Ho	165	30.0	16.7				ug/L	12	Standard
	Tl	203	392737.2	0.1	**50.5926**	0.297	0.6	ug/L	31	Standard
	Tl	205	346685.2	1.3	**51.4296**	0.576	1.1	ug/L	20	Standard
	Pb	206	257242.2	1.9	**51.6050**	1.169	2.3	ug/L	286	Standard
	Pb	207	223447.5	1.6	**49.6960**	0.910	1.8	ug/L	257	Standard
	Pb	208	904356.3	0.4	**51.9882**	0.250	0.5	ug/L	956	Standard
	U	238	346838.0	0.8	**52.5438**	0.601	1.1	ug/L	17	Standard
>	**Bi**	209	513215.0	0.6				ug/L	557080	Standard

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Na	23	1.7	173.2	**9.7143**	16.817	173.1	mg/L	0	Standard
Mg	24	126816.9	1.1	**159.8003**	7.491	4.7	mg/L	32	Standard
K	39	205.0	11.2	**0.5135**	0.066	12.9	mg/L	30	Standard
Ca	43	170.0	5.9	**19.0779**	1.160	6.1	mg/L	48	Standard
Fe	54	195.8	12.4	**0.0303**	0.016	52.3	mg/L	159	Standard
Fe	57	350.0	26.8	**0.4863**	0.252	51.8	mg/L	195	Standard
> **Sc-1**	45	41809.3	4.0				mg/L	39543	Standard
Cl	35	38499.5	1.5				ug/L	27642	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	75812.6	2.8				ug/L	1647	Standard
P	31	25067.4	2.7				ug/L	15231	Standard
S	34	2465.2	4.5				ug/L	1845	Standard
Sr	88	373.3	2.8				ug/L	70	Standard
C	12	380.0	17.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	29.2	88.7				mg/L	12	Standard
Ho-1	165	30.0	16.7				mg/L	12	Standard
Er	166	16.7	69.3				mg/L	20	Standard
I	127	574284.0	7.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.828	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.388	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	92.452
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	92.126
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606073202SDL WG574571-02
Sample Date/Time: Tuesday, June 28, 2016 22:02:27
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80721.2	1.7				ug/L	81760	Standard
	Be	9	38.3	19.9	**0.0293**	0.007	25.3	ug/L	17	Standard
	Al	27	5438081.5	1.8	**35.7222**	0.611	1.7	ug/L	1410	Standard
	Sc	45	40838.3	2.8				ug/L	39543	Standard
	Ti	47	147.3	1.4	**0.4611**	0.014	3.1	ug/L	39	Standard
	V	51	1818.8	6.0	**0.0702**	0.022	30.8	ug/L	1415	Standard
	Cr	52	11457.0	0.2	**0.6827**	0.037	5.5	ug/L	6946	Standard
	Cr	53	6112.9	0.7	**7.0202**	0.190	2.7	ug/L	328	Standard
	Mn	55	27400.4	0.7	**4.3193**	0.101	2.3	ug/L	823	Standard
	Co	59	1102.0	5.1	**0.1343**	0.005	3.9	ug/L	252	Standard
	Ni	60	1029.7	4.0	**0.4727**	0.014	2.9	ug/L	192	Standard
	Cu	65	552.3	3.6	**0.2164**	0.013	6.0	ug/L	141	Standard
	Zn	66	17277.2	1.2	**15.8333**	0.273	1.7	ug/L	491	Standard
>	**Ge**	72	487411.0	2.0				ug/L	515087	Standard
	As	75	241.2	19.0	**0.2666**	0.040	15.0	ug/L	20	Standard
	Se	82	96.0	8.9	**0.7616**	0.066	8.7	ug/L	15	Standard
	Se-1	77	318.7	3.3	**3.7527**	0.181	4.8	ug/L	48	Standard
>	**Ga**	71	61.7	24.8				mg/L	90	Standard
	Rb	85	1698.4	2.7				ug/L	23	Standard
	Y	89	428587.6	1.1				ug/L	448510	Standard
>	**Rh**	103	33.3	37.7				ug/L	15	Standard
	Mo	98	99.2	5.5	**0.0185**	0.002	11.0	ug/L	11	Standard
	Ag	107	280.0	31.3	**0.0265**	0.013	49.6	ug/L	134	Standard
	Cd	111	57.2	23.8	**0.0245**	0.006	26.0	mg/L	7	Standard
	Cd	114	159.7	10.5	**0.0266**	0.003	11.9	ug/L	16	Standard
>	**In**	115	596430.5	0.6				ug/L	611117	Standard
	Sn	118	631.7	19.2	**0.0076**	0.022	282.9	ug/L	518	Standard
	Sb	123	2037.7	21.9	**0.4301**	0.100	23.2	ug/L	127	Standard
	Ba	135	42595.5	1.1	**21.1150**	0.168	0.8	ug/L	45	Standard
	Ce	140	145.0	24.9				ug/L	298	Standard
>	**Tb**	159	930009.8	1.5				ug/L	977942	Standard
	Ho	165	10.0					ug/L	12	Standard
	Tl	203	287.0	3.9	**0.0311**	0.001	3.3	ug/L	31	Standard
	Tl	205	238.3	17.8	**0.0321**	0.006	20.0	ug/L	20	Standard
	Pb	206	467.7	4.1	**0.0276**	0.003	10.6	ug/L	286	Standard
	Pb	207	403.3	2.0	**0.0292**	0.001	2.3	ug/L	257	Standard
	Pb	208	1685.7	2.5	**0.0338**	0.002	5.7	ug/L	956	Standard
	U	238	344.0	11.7	**0.0476**	0.005	11.0	ug/L	17	Standard
>	**Bi**	209	528241.9	1.3				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	25095.8	1.4	**32.3042**	0.912	2.8	mg/L	32	Standard
K	39	53.3	28.6	**0.0336**	0.053	158.1	mg/L	30	Standard
Ca	43	51.7	14.8	**2.2359**	0.907	40.5	mg/L	48	Standard
Fe	54	140.6	10.4	**-0.0136**	0.016	114.2	mg/L	159	Standard
Fe	57	253.3	13.1	**0.2033**	0.104	51.3	mg/L	195	Standard
> **Sc-1**	45	40838.3	2.8				mg/L	39543	Standard
Cl	35	38490.2	0.9				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	17116.3	3.1				ug/L	1647	Standard
P	31	18993.6	2.2				ug/L	15231	Standard
S	34	2316.8	7.4				ug/L	1845	Standard
Sr	88	121.7	17.1				ug/L	70	Standard
C	12	150.0	13.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	5.2	126.3				mg/L	12	Standard
Ho-1	165	10.0					mg/L	12	Standard
Er	166	30.0	57.7				mg/L	20	Standard
I	127	133767.9	0.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.729	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.627	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.597
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.823
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606073202SDL WG574571-02
Sample Date/Time: Tuesday, June 28, 2016 22:05:38
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76053.8	2.7				ug/L	81760	Standard
	Be	9	25.0	34.6	**0.0174**	0.009	54.5	ug/L	17	Standard
	Al	27	1128796.7	0.4	**7.8615**	0.198	2.5	ug/L	1410	Standard
	Sc	45	38686.0	0.8				ug/L	39543	Standard
	Ti	47	55.3	34.5	**0.0617**	0.078	127.2	ug/L	39	Standard
	V	51	1638.9	5.5	**0.0337**	0.013	38.4	ug/L	1415	Standard
	Cr	52	8717.5	0.5	**0.2193**	0.011	4.9	ug/L	6946	Standard
	Cr	53	2070.1	6.6	**2.0621**	0.160	7.7	ug/L	328	Standard
	Mn	55	6629.8	1.0	**0.8938**	0.008	0.9	ug/L	823	Standard
	Co	59	385.0	3.7	**0.0245**	0.002	8.1	ug/L	252	Standard
	Ni	60	384.7	1.7	**0.1032**	0.003	2.7	ug/L	192	Standard
	Cu	65	339.7	2.9	**0.0913**	0.005	5.2	ug/L	141	Standard
	Zn	66	9883.2	1.3	**8.3627**	0.143	1.7	ug/L	491	Standard
>	**Ge**	72	505388.6	0.3				ug/L	515087	Standard
	As	75	-13.0	254.9	**0.0286**	0.030	104.7	ug/L	20	Standard
	Se	82	27.4	29.7	**0.1233**	0.072	58.7	ug/L	15	Standard
	Se-1	77	108.0	8.5	**0.7425**	0.129	17.3	ug/L	48	Standard
>	**Ga**	71	48.3	46.6				mg/L	90	Standard
	Rb	85	370.0	8.2				ug/L	23	Standard
	Y	89	428119.2	2.9				ug/L	448510	Standard
>	**Rh**	103	23.3	44.6				ug/L	15	Standard
	Mo	98	45.2	4.1	**-0.0015**	0.001	60.8	ug/L	11	Standard
	Ag	107	113.3	16.4	**0.0016**	0.003	172.3	ug/L	134	Standard
	Cd	111	14.3	24.6	**0.0041**	0.002	39.1	mg/L	7	Standard
	Cd	114	49.9	58.5	**0.0052**	0.006	113.8	ug/L	16	Standard
>	**In**	115	579695.7	1.7				ug/L	611117	Standard
	Sn	118	626.7	2.3	**0.0098**	0.004	44.1	ug/L	518	Standard
	Sb	123	500.2	33.4	**0.0994**	0.039	39.6	ug/L	127	Standard
	Ba	135	8786.5	0.8	**4.4621**	0.051	1.1	ug/L	45	Standard
	Ce	140	53.3	19.5				ug/L	298	Standard
>	**Tb**	159	899038.1	0.5				ug/L	977942	Standard
	Ho	165	3.3	86.6				ug/L	12	Standard
	Tl	203	124.3	3.7	**0.0110**	0.001	5.1	ug/L	31	Standard
	Tl	205	108.3	13.3	**0.0136**	0.002	15.1	ug/L	20	Standard
	Pb	206	338.3	5.2	**0.0034**	0.004	109.0	ug/L	286	Standard
	Pb	207	309.3	7.0	**0.0098**	0.005	45.9	ug/L	257	Standard
	Pb	208	1266.0	2.0	**0.0114**	0.001	11.9	ug/L	956	Standard
	U	238	68.0	9.6	**0.0072**	0.001	13.2	ug/L	17	Standard
>	**Bi**	209	520681.9	0.4				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	5104.2	1.7	**6.8887**	0.170	2.5	mg/L	32	Standard
K	39	40.0	37.5	**-0.0032**	0.052	1630.6	mg/L	30	Standard
Ca	43	30.0	57.7	**-0.6841**	2.704	395.3	mg/L	48	Standard
Fe	54	149.1	25.4	**0.0007**	0.034	4947.2	mg/L	159	Standard
Fe	57	220.0	14.9	**0.1340**	0.108	80.4	mg/L	195	Standard
Sc-1	45	38686.0	0.8				mg/L	39543	Standard
Cl	35	39148.5	1.2				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	4957.5	4.0				ug/L	1647	Standard
P	31	18357.8	2.1				ug/L	15231	Standard
S	34	2318.5	4.4				ug/L	1845	Standard
Sr	88	78.3	18.4				ug/L	70	Standard
C	12	130.0	27.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.2	116.5				mg/L	12	Standard
Ho-1	165	3.3	86.6				mg/L	12	Standard
Er	166	16.7	91.7				mg/L	20	Standard
I	127	32523.3	5.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		93.021	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.117	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.858
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.466
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 22:08:51
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74027.2	2.8				ug/L	81760	Standard
	Be	9	46885.8	2.2	**52.1458**	1.090	2.1	ug/L	17	Standard
	Al	27	7258519.9	1.3	**52.0333**	2.108	4.1	ug/L	1410	Standard
	Sc	45	37711.9	1.9				ug/L	39543	Standard
	Ti	47	24276.8	0.9	**101.7561**	0.915	0.9	ug/L	39	Standard
	V	51	338117.2	0.9	**50.5811**	0.467	0.9	ug/L	1415	Standard
	Cr	52	344759.2	1.1	**50.6515**	0.612	1.2	ug/L	6946	Standard
	Cr	53	43998.8	1.8	**51.9886**	0.950	1.8	ug/L	328	Standard
	Mn	55	319756.8	1.7	**51.3453**	0.844	1.6	ug/L	823	Standard
	Co	59	342187.7	2.1	**50.8146**	1.023	2.0	ug/L	252	Standard
	Ni	60	91463.9	0.8	**50.5986**	0.401	0.8	ug/L	192	Standard
	Cu	65	92539.7	0.2	**50.7558**	0.132	0.3	ug/L	141	Standard
	Zn	66	54475.1	1.3	**51.0616**	0.732	1.4	ug/L	491	Standard
>	**Ge**	72	493368.3	0.1				ug/L	515087	Standard
	As	75	54361.0	0.4	**50.5191**	0.195	0.4	ug/L	20	Standard
	Se	82	5570.4	0.7	**50.3948**	0.327	0.6	ug/L	15	Standard
	Se-1	77	3889.2	2.7	**53.1789**	1.513	2.8	ug/L	48	Standard
>	**Ga**	71	56.7	13.5				mg/L	90	Standard
	Rb	85	710.0	9.2				ug/L	23	Standard
	Y	89	427120.1	2.2				ug/L	448510	Standard
>	**Rh**	103	20.0	50.0				ug/L	15	Standard
	Mo	98	255476.4	1.0	**100.3761**	0.479	0.5	ug/L	11	Standard
	Ag	107	311158.3	0.6	**49.2259**	0.757	1.5	ug/L	134	Standard
	Cd	111	98620.7	1.2	**49.0052**	0.618	1.3	mg/L	7	Standard
	Cd	114	238558.2	0.5	**48.7672**	0.251	0.5	ug/L	16	Standard
>	**In**	115	575337.5	0.9				ug/L	611117	Standard
	Sn	118	277257.2	0.9	**49.7064**	0.586	1.2	ug/L	518	Standard
	Sb	123	223054.4	0.8	**50.2070**	0.812	1.6	ug/L	127	Standard
	Ba	135	94954.3	0.7	**48.8337**	0.782	1.6	ug/L	45	Standard
	Ce	140	61.7	16.9				ug/L	298	Standard
>	**Tb**	159	913449.5	0.5				ug/L	977942	Standard
	Ho	165	10.0	86.6				ug/L	12	Standard
	Tl	203	397249.4	0.6	**50.3639**	0.352	0.7	ug/L	31	Standard
	Tl	205	354959.8	0.3	**51.8245**	0.065	0.1	ug/L	20	Standard
	Pb	206	256290.8	0.6	**50.5971**	0.273	0.5	ug/L	286	Standard
	Pb	207	233188.9	1.2	**51.0418**	0.565	1.1	ug/L	257	Standard
	Pb	208	935979.9	1.1	**52.9561**	0.623	1.2	ug/L	956	Standard
	U	238	344850.7	0.5	**51.4151**	0.322	0.6	ug/L	17	Standard
>	**Bi**	209	521458.9	0.2				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	3802.1	3.0	**5.2525**	0.237	4.5	mg/L	32	Standard
K	39	1311.7	9.2	**4.5102**	0.493	10.9	mg/L	30	Standard
Ca	43	78.3	7.4	**7.1225**	0.723	10.1	mg/L	48	Standard
Fe	54	5407.8	4.5	**4.9980**	0.312	6.2	mg/L	159	Standard
Fe	57	1643.4	4.4	**5.1911**	0.156	3.0	mg/L	195	Standard
> **Sc-1**	45	37711.9	1.9				mg/L	39543	Standard
Cl	35	36184.5	2.9				ug/L	27642	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	1690.1	2.4				ug/L	1647	Standard
P	31	19537.6	2.2				ug/L	15231	Standard
S	34	2665.2	5.3				ug/L	1845	Standard
Sr	88	80.0	12.5				ug/L	70	Standard
C	12	116.7	9.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	9.4	109.4				mg/L	12	Standard
Ho-1	165	10.0	86.6				mg/L	12	Standard
Er	166	13.3	43.3				mg/L	20	Standard
I	127	5821.1	15.1				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	104.292		
	Al	27	104.067		
	Sc	45			
	Ti	47	101.756		
	V	51	101.162		
	Cr	52	101.303		
	Cr	53			
	Mn	55	102.691		
	Co	59	101.629		
	Ni	60	101.197		
	Cu	65	101.512		
	Zn	66	102.123		
>	Ge	72		95.784	
	As	75	101.038		
	Se	82	100.790		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	100.376		
Ag	107	98.452		
Cd	111	98.010		
Cd	114			
In	115			94.145
Sn	118	99.413		
Sb	123	100.414		
Ba	135	97.667		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.728		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.912		
U	238	102.830		
Bi	209			93.606
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 22:12:02
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72720.8	1.4				ug/L	81760	Standard
	Be	9	31.7	9.1	**0.0261**	0.003	13.4	ug/L	17	Standard
	Al	27	3567.1	29.0	**0.0117**	0.008	67.2	ug/L	1410	Standard
	Sc	45	39132.1	1.1				ug/L	39543	Standard
	Ti	47	37.0	21.5	**-0.0116**	0.034	290.1	ug/L	39	Standard
	V	51	1125.9	7.5	**-0.0395**	0.013	33.1	ug/L	1415	Standard
	Cr	52	6280.0	4.7	**-0.1269**	0.043	33.9	ug/L	6946	Standard
	Cr	53	665.0	3.8	**0.4397**	0.027	6.1	ug/L	328	Standard
	Mn	55	716.0	7.9	**-0.0346**	0.009	26.9	ug/L	823	Standard
	Co	59	261.7	5.4	**0.0070**	0.002	26.9	ug/L	252	Standard
	Ni	60	220.7	25.5	**0.0158**	0.031	194.2	ug/L	192	Standard
	Cu	65	175.7	31.3	**0.0045**	0.030	664.0	ug/L	141	Standard
	Zn	66	494.7	12.2	**-0.3623**	0.056	15.6	ug/L	491	Standard
>	**Ge**	72	499522.9	0.5				ug/L	515087	Standard
	As	75	-22.4	199.4	**0.0197**	0.041	208.7	ug/L	20	Standard
	Se	82	18.1	44.1	**0.0430**	0.071	165.8	ug/L	15	Standard
	Se-1	77	56.7	13.4	**0.0566**	0.102	180.9	ug/L	48	Standard
>	**Ga**	71	45.0	38.5				mg/L	90	Standard
	Rb	85	31.7	45.6				ug/L	23	Standard
	Y	89	417360.5	0.9				ug/L	448510	Standard
>	**Rh**	103	6.7	114.6				ug/L	15	Standard
	Mo	98	287.6	23.9	**0.0927**	0.026	27.9	ug/L	11	Standard
	Ag	107	190.3	4.8	**0.0136**	0.002	11.9	ug/L	134	Standard
	Cd	111	25.8	62.0	**0.0098**	0.008	81.4	mg/L	7	Standard
	Cd	114	75.5	64.7	**0.0104**	0.010	96.5	ug/L	16	Standard
>	**In**	115	581386.0	1.0				ug/L	611117	Standard
	Sn	118	788.4	29.5	**0.0382**	0.041	108.2	ug/L	518	Standard
	Sb	123	553.2	30.8	**0.1105**	0.038	34.6	ug/L	127	Standard
	Ba	135	104.3	62.1	**0.0282**	0.034	119.2	ug/L	45	Standard
	Ce	140	15.0	88.2				ug/L	298	Standard
>	**Tb**	159	916886.1	2.0				ug/L	977942	Standard
	Ho	165	6.7	43.3				ug/L	12	Standard
	Tl	203	96.0	40.0	**0.0072**	0.005	66.3	ug/L	31	Standard
	Tl	205	80.0	25.0	**0.0092**	0.003	29.7	ug/L	20	Standard
	Pb	206	283.3	0.7	**-0.0085**	0.001	14.2	ug/L	286	Standard
	Pb	207	242.3	7.5	**-0.0058**	0.004	64.9	ug/L	257	Standard
	Pb	208	1066.3	4.7	**-0.0011**	0.002	176.0	ug/L	956	Standard
	U	238	68.3	24.9	**0.0070**	0.002	33.1	ug/L	17	Standard
>	**Bi**	209	530213.7	1.5				ug/L	557080	Standard

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Na	23	5.0	100.0	**32.2313**	32.195	99.9	mg/L	0	Standard
Mg	24	43.3	46.6	**0.0012**	0.027	2331.0	mg/L	32	Standard
K	39	38.3	41.9	**-0.0103**	0.056	538.4	mg/L	30	Standard
Ca	43	25.0	20.0	**-1.5137**	0.732	48.3	mg/L	48	Standard
Fe	54	136.0	18.8	**-0.0125**	0.025	197.8	mg/L	159	Standard
Fe	57	235.0	17.0	**0.1764**	0.130	73.9	mg/L	195	Standard
Sc-1	45	39132.1	1.1				mg/L	39543	Standard
Cl	35	35003.7	1.3				ug/L	27642	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1530.1	14.2				ug/L	1647	Standard
P	31	18486.3	1.6				ug/L	15231	Standard
S	34	2496.9	3.2				ug/L	1845	Standard
Sr	88	51.7	31.1				ug/L	70	Standard
C	12	86.7	52.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.5	5.0				mg/L	12	Standard
Ho-1	165	6.7	43.3				mg/L	12	Standard
Er	166	10.0	100.0				mg/L	20	Standard
I	127	4170.6	14.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.978	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.135
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.177
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606073202
Sample Date/Time: Tuesday, June 28, 2016 22:15:14
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76318.4	2.0				ug/L	81760	Standard
	Be	9	40.0	69.6	**0.0330**	0.029	88.9	ug/L	17	Standard
	Al	27	23571551.0	1.4	**163.8296**	2.147	1.3	ug/L	1410	Standard
	Sc	45	39020.2	3.0				ug/L	39543	Standard
	Ti	47	595.0	5.6	**2.3771**	0.145	6.1	ug/L	39	Standard
	V	51	1578.4	25.4	**0.0346**	0.061	176.4	ug/L	1415	Standard
	Cr	52	21713.5	1.1	**2.2571**	0.032	1.4	ug/L	6946	Standard
	Cr	53	25227.7	4.6	**30.1930**	1.400	4.6	ug/L	328	Standard
	Mn	55	113835.4	1.3	**18.5078**	0.247	1.3	ug/L	823	Standard
	Co	59	3991.2	2.2	**0.5722**	0.015	2.6	ug/L	252	Standard
	Ni	60	3905.8	1.2	**2.0985**	0.020	1.0	ug/L	192	Standard
	Cu	65	1542.7	2.9	**0.7718**	0.023	3.0	ug/L	141	Standard
	Zn	66	25635.3	1.1	**24.0224**	0.322	1.3	ug/L	491	Standard
>	**Ge**	72	484802.3	0.3				ug/L	515087	Standard
	As	75	911.4	10.9	**0.9016**	0.094	10.4	ug/L	20	Standard
	Se	82	285.6	1.4	**2.5161**	0.032	1.3	ug/L	15	Standard
	Se-1	77	1182.4	4.2	**15.9563**	0.701	4.4	ug/L	48	Standard
>	**Ga**	71	88.3	32.7				mg/L	90	Standard
	Rb	85	8777.5	4.2				ug/L	23	Standard
	Y	89	401864.9	0.9				ug/L	448510	Standard
>	**Rh**	103	95.0	19.0				ug/L	15	Standard
	Mo	98	789.3	4.8	**0.3176**	0.018	5.8	ug/L	11	Standard
	Ag	107	101.3	14.3	**0.0012**	0.002	197.6	ug/L	134	Standard
	Cd	111	81.6	8.8	**0.0411**	0.003	8.4	mg/L	7	Standard
	Cd	114	236.0	13.0	**0.0475**	0.007	15.0	ug/L	16	Standard
>	**In**	115	530144.7	1.0				ug/L	611117	Standard
	Sn	118	770.0	10.1	**0.0481**	0.014	28.6	ug/L	518	Standard
	Sb	123	728.9	13.4	**0.1651**	0.022	13.6	ug/L	127	Standard
	Ba	135	185424.0	0.3	**103.5140**	0.966	0.9	ug/L	45	Standard
	Ce	140	496.7	18.3				ug/L	298	Standard
>	**Tb**	159	867434.9	1.9				ug/L	977942	Standard
	Ho	165	20.0	0.0				ug/L	12	Standard
	Tl	203	239.3	4.0	**0.0278**	0.001	4.3	ug/L	31	Standard
	Tl	205	225.0	20.4	**0.0330**	0.007	22.5	ug/L	20	Standard
	Pb	206	582.0	1.5	**0.0598**	0.001	1.4	ug/L	286	Standard
	Pb	207	480.3	3.9	**0.0549**	0.005	9.4	ug/L	257	Standard
	Pb	208	1935.7	1.6	**0.0572**	0.003	4.8	ug/L	956	Standard
	U	238	1057.0	6.3	**0.1661**	0.010	5.7	ug/L	17	Standard
>	**Bi**	209	486031.1	0.8				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	123145.1	1.2	**166.1283**	3.309	2.0	mg/L	32	Standard
K	39	193.3	27.9	**0.5225**	0.193	37.0	mg/L	30	Standard
Ca	43	155.0	19.6	**18.5842**	5.220	28.1	mg/L	48	Standard
Fe	54	201.4	15.9	**0.0482**	0.034	70.8	mg/L	159	Standard
Fe	57	301.7	7.8	**0.4095**	0.108	26.4	mg/L	195	Standard
Sc-1	45	39020.2	3.0				mg/L	39543	Standard
Cl	35	36882.8	1.2				ug/L	27642	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	66321.6	2.9				ug/L	1647	Standard
P	31	23950.6	0.8				ug/L	15231	Standard
S	34	2285.2	3.2				ug/L	1845	Standard
Sr	88	326.7	6.4				ug/L	70	Standard
C	12	383.3	11.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	24.1	87.6				mg/L	12	Standard
Ho-1	165	20.0	0.0				mg/L	12	Standard
Er	166	53.3	28.6				mg/L	20	Standard
I	127	490270.4	8.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		93.344	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		94.121	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	86.750
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	87.246
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606076201
Sample Date/Time: Tuesday, June 28, 2016 22:18:25
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74725.5	1.6				ug/L	81760	Standard
	Be	9	33.3	56.8	**0.0272**	0.022	79.2	ug/L	17	Standard
	Al	27	1272215.4	1.6	**9.0180**	0.230	2.5	ug/L	1410	Standard
	Sc	45	40079.6	0.9				ug/L	39543	Standard
	Ti	47	73.0	21.4	**0.1312**	0.065	49.6	ug/L	39	Standard
	V	51	1912.1	11.7	**0.0708**	0.033	46.3	ug/L	1415	Standard
	Cr	52	9243.8	1.7	**0.2820**	0.015	5.4	ug/L	6946	Standard
	Cr	53	1550.1	16.6	**1.4381**	0.284	19.7	ug/L	328	Standard
	Mn	55	4050.6	51.7	**0.4818**	0.327	67.8	ug/L	823	Standard
	Co	59	576.0	42.1	**0.0513**	0.035	68.0	ug/L	252	Standard
	Ni	60	659.3	6.6	**0.2481**	0.023	9.5	ug/L	192	Standard
	Cu	65	493.7	5.0	**0.1712**	0.013	7.5	ug/L	141	Standard
	Zn	66	2294.8	5.3	**1.2839**	0.114	8.9	ug/L	491	Standard
>	**Ge**	72	510757.4	0.7				ug/L	515087	Standard
	As	75	-15.4	127.0	**0.0265**	0.018	66.6	ug/L	20	Standard
	Se	82	23.9	38.0	**0.0895**	0.079	87.8	ug/L	15	Standard
	Se-1	77	93.7	16.1	**0.5342**	0.193	36.2	ug/L	48	Standard
>	**Ga**	71	58.3	17.8				mg/L	90	Standard
	Rb	85	1476.7	6.6				ug/L	23	Standard
	Y	89	432514.2	1.7				ug/L	448510	Standard
>	**Rh**	103	26.7	39.0				ug/L	15	Standard
	Mo	98	146.0	48.2	**0.0371**	0.027	72.5	ug/L	11	Standard
	Ag	107	112.7	13.4	**0.0013**	0.002	181.1	ug/L	134	Standard
	Cd	111	43.2	14.9	**0.0182**	0.003	18.1	mg/L	7	Standard
	Cd	114	109.3	34.7	**0.0170**	0.007	43.8	ug/L	16	Standard
>	**In**	115	586396.8	0.9				ug/L	611117	Standard
	Sn	118	771.7	15.6	**0.0341**	0.022	63.3	ug/L	518	Standard
	Sb	123	236.4	15.7	**0.0394**	0.008	21.0	ug/L	127	Standard
	Ba	135	3173.0	2.9	**1.5769**	0.056	3.5	ug/L	45	Standard
	Ce	140	2270.2	3.3				ug/L	298	Standard
>	**Tb**	159	916697.6	0.7				ug/L	977942	Standard
	Ho	165	490.0	12.4				ug/L	12	Standard
	Tl	203	130.7	10.3	**0.0114**	0.002	13.6	ug/L	31	Standard
	Tl	205	215.0	77.4	**0.0282**	0.023	82.9	ug/L	20	Standard
	Pb	206	395.3	3.6	**0.0126**	0.003	22.5	ug/L	286	Standard
	Pb	207	368.7	19.2	**0.0207**	0.015	70.3	ug/L	257	Standard
	Pb	208	1630.7	27.1	**0.0295**	0.024	80.4	ug/L	956	Standard
	U	238	158.7	69.5	**0.0200**	0.016	79.0	ug/L	17	Standard
>	**Bi**	209	534609.1	0.7				ug/L	557080	Standard

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Na	23	5.0	100.0	**31.5470**	31.355	99.4	mg/L	0	Standard
Mg	24	598.3	11.5	**0.7287**	0.091	12.5	mg/L	32	Standard
K	39	176.7	18.2	**0.4475**	0.107	24.0	mg/L	30	Standard
Ca	43	93.3	48.6	**8.6233**	6.782	78.6	mg/L	48	Standard
Fe	54	114.2	15.8	**-0.0351**	0.016	46.3	mg/L	159	Standard
Fe	57	271.7	7.4	**0.2806**	0.074	26.3	mg/L	195	Standard
> **Sc-1**	45	40079.6	0.9				mg/L	39543	Standard
Cl	35	37059.3	1.9				ug/L	27642	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	3193.7	9.3				ug/L	1647	Standard
P	31	19133.7	1.0				ug/L	15231	Standard
S	34	2435.2	3.0				ug/L	1845	Standard
Sr	88	116.7	19.8				ug/L	70	Standard
C	12	110.0	24.1				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	699.7	7.7				mg/L	12	Standard
Ho-1	165	490.0	12.4				mg/L	12	Standard
Er	166	563.3	4.5				mg/L	20	Standard
I	127	24296.3	37.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.396	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.159	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.955
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.966
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606138001
Sample Date/Time: Tuesday, June 28, 2016 22:21:37
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79317.1	2.1				ug/L	81760	Standard
	Be	9	923.4	3.6	**0.9491**	0.046	4.8	ug/L	17	Standard
	Al	27	22322355.7	1.2	**149.2842**	1.816	1.2	ug/L	1410	Standard
	Sc	45	50147.9	2.6				ug/L	39543	Standard
	Ti	47	26223.7	0.7	**107.9697**	0.846	0.8	ug/L	39	Standard
	V	51	127306.3	1.5	**18.5751**	0.291	1.6	ug/L	1415	Standard
	Cr	52	100654.9	1.1	**13.7705**	0.145	1.1	ug/L	6946	Standard
	Cr	53	12865.5	4.5	**14.6884**	0.707	4.8	ug/L	328	Standard
	Mn	55	4304305.9	0.4	**680.6871**	4.381	0.6	ug/L	823	Standard
	Co	59	49359.3	0.1	**7.1725**	0.024	0.3	ug/L	252	Standard
	Ni	60	30538.1	1.5	**16.5228**	0.280	1.7	ug/L	192	Standard
	Cu	65	24616.6	0.6	**13.1942**	0.101	0.8	ug/L	141	Standard
	Zn	66	126791.0	1.1	**117.7932**	1.321	1.1	ug/L	491	Standard
>	**Ge**	72	502314.8	0.3				ug/L	515087	Standard
	As	75	6358.7	2.6	**5.8397**	0.152	2.6	ug/L	20	Standard
	Se	82	52.0	15.4	**0.3436**	0.072	20.9	ug/L	15	Standard
	Se-1	77	111.0	6.5	**0.7919**	0.097	12.2	ug/L	48	Standard
>	**Ga**	71	15155.9	0.2				mg/L	90	Standard
	Rb	85	244761.5	1.6				ug/L	23	Standard
	Y	89	581808.2	2.1				ug/L	448510	Standard
>	**Rh**	103	81.7	28.3				ug/L	15	Standard
	Mo	98	7400.1	1.4	**2.8571**	0.099	3.5	ug/L	11	Standard
	Ag	107	359.7	8.1	**0.0401**	0.005	12.7	ug/L	134	Standard
	Cd	111	226.0	4.7	**0.1082**	0.006	6.0	mg/L	7	Standard
	Cd	114	572.5	10.7	**0.1110**	0.014	12.9	ug/L	16	Standard
>	**In**	115	581977.2	2.1				ug/L	611117	Standard
	Sn	118	1150.0	8.4	**0.1021**	0.013	12.6	ug/L	518	Standard
	Sb	123	1041.4	3.0	**0.2191**	0.011	5.1	ug/L	127	Standard
	Ba	135	264934.9	0.4	**134.7601**	2.267	1.7	ug/L	45	Standard
	Ce	140	872470.7	0.6				ug/L	298	Standard
>	**Tb**	159	944063.2	1.7				ug/L	977942	Standard
	Ho	165	13182.4	3.3				ug/L	12	Standard
	Tl	203	1500.7	3.5	**0.1808**	0.008	4.2	ug/L	31	Standard
	Tl	205	1268.4	3.4	**0.1783**	0.007	4.2	ug/L	20	Standard
	Pb	206	85066.5	1.3	**16.3322**	0.328	2.0	ug/L	286	Standard
	Pb	207	70090.8	1.2	**14.9184**	0.287	1.9	ug/L	257	Standard
	Pb	208	293052.1	0.7	**16.1237**	0.113	0.7	ug/L	956	Standard
	U	238	6791.5	1.5	**0.9844**	0.021	2.1	ug/L	17	Standard
>	**Bi**	209	534845.3	0.8				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	2491.9	2.3	**2.5590**	0.057	2.2	mg/L	32	Standard
K	39	860.0	5.6	**2.1528**	0.183	8.5	mg/L	30	Standard
Ca	43	481.7	3.2	**52.3892**	3.048	5.8	mg/L	48	Standard
Fe	54	14060.9	4.3	**9.8944**	0.202	2.0	mg/L	159	Standard
Fe	57	4057.2	4.0	**10.1835**	0.599	5.9	mg/L	195	Standard
> **Sc-1**	45	50147.9	2.6				mg/L	39543	Standard
Cl	35	34061.6	1.3				ug/L	27642	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	3443.7	4.1				ug/L	1647	Standard
P	31	33871.2	1.5				ug/L	15231	Standard
S	34	2461.9	2.1				ug/L	1845	Standard
Sr	88	305.0	8.2				ug/L	70	Standard
C	12	206.7	29.6				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	40.0	50.0				mg/L	0	Standard
Dy	164	22121.1	1.8				mg/L	12	Standard
Ho-1	165	13182.4	3.3				mg/L	12	Standard
Er	166	12021.4	0.9				mg/L	20	Standard
I	127	158658.4	11.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.012	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.520	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.232
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.009
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	

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Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606138002
Sample Date/Time: Tuesday, June 28, 2016 22:24:48
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80508.4	1.6				ug/L	81760	Standard
	Be	9	865.0	8.5	**0.8749**	0.075	8.6	ug/L	17	Standard
	Al	27	22868958.8	1.7	**150.6704**	2.885	1.9	ug/L	1410	Standard
	Sc	45	49400.4	2.8				ug/L	39543	Standard
	Ti	47	23164.7	1.4	**96.5938**	1.528	1.6	ug/L	39	Standard
	V	51	124883.8	1.8	**18.4559**	0.304	1.6	ug/L	1415	Standard
	Cr	52	103466.8	1.3	**14.3825**	0.239	1.7	ug/L	6946	Standard
	Cr	53	12758.7	1.5	**14.7559**	0.244	1.7	ug/L	328	Standard
	Mn	55	4407919.2	0.3	**706.0993**	3.755	0.5	ug/L	823	Standard
	Co	59	51228.1	1.3	**7.5421**	0.111	1.5	ug/L	252	Standard
	Ni	60	30969.0	1.2	**16.9756**	0.235	1.4	ug/L	192	Standard
	Cu	65	25034.7	0.7	**13.5947**	0.118	0.9	ug/L	141	Standard
	Zn	66	152662.0	1.2	**143.8470**	1.906	1.3	ug/L	491	Standard
>	**Ge**	72	495895.8	0.2				ug/L	515087	Standard
	As	75	6401.6	1.0	**5.9544**	0.051	0.9	ug/L	20	Standard
	Se	82	65.6	3.6	**0.4728**	0.020	4.3	ug/L	15	Standard
	Se-1	77	120.3	12.9	**0.9403**	0.215	22.9	ug/L	48	Standard
>	**Ga**	71	15282.7	1.5				mg/L	90	Standard
	Rb	85	248664.6	2.3				ug/L	23	Standard
	Y	89	598252.6	1.6				ug/L	448510	Standard
>	**Rh**	103	61.7	4.7				ug/L	15	Standard
	Mo	98	8173.4	1.7	**3.0442**	0.032	1.1	ug/L	11	Standard
	Ag	107	334.0	5.8	**0.0342**	0.003	8.9	ug/L	134	Standard
	Cd	111	175.2	4.5	**0.0802**	0.004	5.0	mg/L	7	Standard
	Cd	114	424.7	8.5	**0.0779**	0.007	8.4	ug/L	16	Standard
>	**In**	115	603234.5	0.7				ug/L	611117	Standard
	Sn	118	1006.7	2.2	**0.0706**	0.004	6.0	ug/L	518	Standard
	Sb	123	981.2	4.8	**0.1979**	0.011	5.8	ug/L	127	Standard
	Ba	135	265403.3	0.1	**130.2141**	0.915	0.7	ug/L	45	Standard
	Ce	140	904460.6	1.2				ug/L	298	Standard
>	**Tb**	159	953156.2	1.3				ug/L	977942	Standard
	Ho	165	13287.5	2.7				ug/L	12	Standard
	Tl	203	1338.1	1.2	**0.1623**	0.004	2.2	ug/L	31	Standard
	Tl	205	1380.1	21.0	**0.1966**	0.045	23.0	ug/L	20	Standard
	Pb	206	85143.9	1.2	**16.5139**	0.424	2.6	ug/L	286	Standard
	Pb	207	70337.2	0.8	**15.1235**	0.335	2.2	ug/L	257	Standard
	Pb	208	299122.5	0.5	**16.6275**	0.345	2.1	ug/L	956	Standard
	U	238	7037.6	3.1	**1.0308**	0.048	4.7	ug/L	17	Standard
>	**Bi**	209	529543.6	1.6				ug/L	557080	Standard

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Na	23	5.0	0.0	**25.7128**	0.720	2.8	mg/L	0	Standard
Mg	24	2751.9	1.6	**2.8760**	0.054	1.9	mg/L	32	Standard
K	39	820.0	12.4	**2.0772**	0.274	13.2	mg/L	30	Standard
Ca	43	460.0	15.1	**50.7618**	10.089	19.9	mg/L	48	Standard
Fe	54	14800.2	1.5	**10.5924**	0.445	4.2	mg/L	159	Standard
Fe	57	4213.9	2.7	**10.7740**	0.623	5.8	mg/L	195	Standard
Sc-1	45	49400.4	2.8				mg/L	39543	Standard
Cl	35	34900.8	0.4				ug/L	27642	Standard
Kr	83	3.0	0.0				ug/L	2	Standard
Br	81	3303.7	3.6				ug/L	1647	Standard
P	31	33101.1	2.4				ug/L	15231	Standard
S	34	2478.5	3.3				ug/L	1845	Standard
Sr	88	288.3	13.9				ug/L	70	Standard
C	12	206.7	17.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	53.3	65.8				mg/L	0	Standard
Dy	164	23538.0	3.9				mg/L	12	Standard
Ho-1	165	13287.5	2.7				mg/L	12	Standard
Er	166	12271.6	4.5				mg/L	20	Standard
I	127	174817.7	8.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		98.469	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.274	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.710
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.057
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606138106
Sample Date/Time: Tuesday, June 28, 2016 22:28:00
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75884.6	2.0				ug/L	81760	Standard
	Be	9	26.7	10.8	**0.0192**	0.003	17.5	ug/L	17	Standard
	Al	27	26057.5	7.4	**0.1676**	0.010	6.0	ug/L	1410	Standard
	Sc	45	39473.0	0.8				ug/L	39543	Standard
	Ti	47	39.3	21.6	**-0.0051**	0.035	681.9	ug/L	39	Standard
	V	51	1622.1	7.1	**0.0295**	0.017	56.8	ug/L	1415	Standard
	Cr	52	8616.4	0.2	**0.1952**	0.003	1.5	ug/L	6946	Standard
	Cr	53	775.0	5.7	**0.5518**	0.051	9.2	ug/L	328	Standard
	Mn	55	5073.2	5.2	**0.6432**	0.042	6.5	ug/L	823	Standard
	Co	59	305.3	2.9	**0.0126**	0.001	10.1	ug/L	252	Standard
	Ni	60	336.7	8.9	**0.0759**	0.016	21.2	ug/L	192	Standard
	Cu	65	1953.8	0.6	**0.9495**	0.006	0.6	ug/L	141	Standard
	Zn	66	2327.2	0.6	**1.3204**	0.013	1.0	ug/L	491	Standard
>	**Ge**	72	509122.8	0.0				ug/L	515087	Standard
	As	75	-29.7	15.9	**0.0136**	0.004	31.1	ug/L	20	Standard
	Se	82	19.1	15.2	**0.0489**	0.026	52.3	ug/L	15	Standard
	Se-1	77	54.3	12.9	**0.0108**	0.094	874.4	ug/L	48	Standard
>	**Ga**	71	61.7	23.4				mg/L	90	Standard
	Rb	85	193.3	9.8				ug/L	23	Standard
	Y	89	438080.9	2.7				ug/L	448510	Standard
>	**Rh**	103	13.3	94.4				ug/L	15	Standard
	Mo	98	1348.1	2.9	**0.4917**	0.018	3.6	ug/L	11	Standard
	Ag	107	96.0	6.3	**-0.0016**	0.001	59.2	ug/L	134	Standard
	Cd	111	29.0	10.6	**0.0110**	0.001	13.2	mg/L	7	Standard
	Cd	114	62.4	58.3	**0.0074**	0.007	97.2	ug/L	16	Standard
>	**In**	115	596825.6	0.5				ug/L	611117	Standard
	Sn	118	1153.4	11.3	**0.0978**	0.023	23.4	ug/L	518	Standard
	Sb	123	161.5	18.7	**0.0222**	0.007	29.7	ug/L	127	Standard
	Ba	135	505.0	6.7	**0.2253**	0.016	7.0	ug/L	45	Standard
	Ce	140	233.3	21.5				ug/L	298	Standard
>	**Tb**	159	918727.2	0.8				ug/L	977942	Standard
	Ho	165	6.7	43.3				ug/L	12	Standard
	Tl	203	77.0	15.3	**0.0048**	0.001	30.3	ug/L	31	Standard
	Tl	205	70.0	7.1	**0.0078**	0.001	10.7	ug/L	20	Standard
	Pb	206	353.0	8.2	**0.0052**	0.006	124.2	ug/L	286	Standard
	Pb	207	316.0	5.0	**0.0102**	0.004	41.5	ug/L	257	Standard
	Pb	208	1279.0	2.9	**0.0109**	0.002	20.1	ug/L	956	Standard
	U	238	66.0	9.1	**0.0067**	0.001	13.4	ug/L	17	Standard
>	**Bi**	209	529518.6	1.3				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.6931**	18.512	173.1	mg/L	0	Standard
Mg	24	105.0	31.2	**0.0830**	0.044	52.9	mg/L	32	Standard
K	39	31.7	9.1	**-0.0342**	0.011	31.1	mg/L	30	Standard
Ca	43	30.0	66.7	**-0.7662**	3.081	402.2	mg/L	48	Standard
Fe	54	132.0	13.9	**-0.0174**	0.016	93.3	mg/L	159	Standard
Fe	57	243.3	16.5	**0.1990**	0.142	71.4	mg/L	195	Standard
Sc-1	45	39473.0	0.8				mg/L	39543	Standard
Cl	35	35269.0	1.4				ug/L	27642	Standard
Kr	83	2.3	107.9				ug/L	2	Standard
Br	81	2306.8	8.4				ug/L	1647	Standard
P	31	16594.1	0.5				ug/L	15231	Standard
S	34	2131.8	6.4				ug/L	1845	Standard
Sr	88	88.3	36.8				ug/L	70	Standard
C	12	163.3	23.2				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	9.0	110.6				mg/L	12	Standard
Ho-1	165	6.7	43.3				mg/L	12	Standard
Er	166	20.0	0.0				mg/L	20	Standard
I	127	8462.7	47.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		92.814	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.842	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.661
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.052
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606139301
Sample Date/Time: Tuesday, June 28, 2016 22:31:11
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75653.4	0.9				ug/L	81760	Standard
	Be	9	36.7	15.7	**0.0301**	0.006	19.8	ug/L	17	Standard
	Al	27	730309.3	1.1	**5.1065**	0.100	1.9	ug/L	1410	Standard
	Sc	45	40455.6	1.8				ug/L	39543	Standard
	Ti	47	3049.6	0.8	**12.0214**	0.208	1.7	ug/L	39	Standard
	V	51	20044.5	0.4	**2.6590**	0.030	1.1	ug/L	1415	Standard
	Cr	52	14783.9	1.2	**1.0533**	0.031	2.9	ug/L	6946	Standard
	Cr	53	1555.1	3.4	**1.4185**	0.043	3.0	ug/L	328	Standard
	Mn	55	57374.1	1.8	**8.6446**	0.070	0.8	ug/L	823	Standard
	Co	59	1706.1	0.5	**0.2099**	0.002	1.1	ug/L	252	Standard
	Ni	60	1958.1	2.2	**0.9282**	0.028	3.1	ug/L	192	Standard
	Cu	65	11994.7	1.9	**6.1812**	0.063	1.0	ug/L	141	Standard
	Zn	66	20161.1	0.6	**17.4500**	0.168	1.0	ug/L	491	Standard
>	**Ge**	72	518413.1	1.4				ug/L	515087	Standard
	As	75	157.8	25.1	**0.1801**	0.037	20.6	ug/L	20	Standard
	Se	82	23.1	48.8	**0.0801**	0.098	121.9	ug/L	15	Standard
	Se-1	77	63.3	7.3	**0.1169**	0.069	59.2	ug/L	48	Standard
>	**Ga**	71	505.0	4.5				mg/L	90	Standard
	Rb	85	7842.0	2.0				ug/L	23	Standard
	Y	89	431479.5	0.9				ug/L	448510	Standard
>	**Rh**	103	15.0	100.0				ug/L	15	Standard
	Mo	98	468.3	2.4	**0.1592**	0.005	3.4	ug/L	11	Standard
	Ag	107	177.3	7.3	**0.0110**	0.002	18.6	ug/L	134	Standard
	Cd	111	203.8	5.3	**0.0952**	0.005	5.7	mg/L	7	Standard
	Cd	114	524.4	13.4	**0.0989**	0.013	13.5	ug/L	16	Standard
>	**In**	115	593880.8	0.6				ug/L	611117	Standard
	Sn	118	2320.2	4.6	**0.3018**	0.016	5.3	ug/L	518	Standard
	Sb	123	1520.6	3.7	**0.3188**	0.011	3.4	ug/L	127	Standard
	Ba	135	21231.5	1.4	**10.5571**	0.086	0.8	ug/L	45	Standard
	Ce	140	21453.5	1.1				ug/L	298	Standard
>	**Tb**	159	941666.6	1.6				ug/L	977942	Standard
	Ho	165	511.7	11.3				ug/L	12	Standard
	Tl	203	106.0	9.9	**0.0082**	0.001	16.0	ug/L	31	Standard
	Tl	205	85.0	31.1	**0.0097**	0.004	38.6	ug/L	20	Standard
	Pb	206	17358.9	1.4	**3.2466**	0.044	1.3	ug/L	286	Standard
	Pb	207	14395.2	1.0	**2.9852**	0.035	1.2	ug/L	257	Standard
	Pb	208	59327.6	0.5	**3.1814**	0.019	0.6	ug/L	956	Standard
	U	238	205.3	8.1	**0.0266**	0.002	9.0	ug/L	17	Standard
>	**Bi**	209	540531.5	0.2				ug/L	557080	Standard

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Na	23	3.3	173.2	**21.0062**	36.375	173.2	mg/L	0	Standard
Mg	24	250.0	13.1	**0.2677**	0.037	13.9	mg/L	32	Standard
K	39	110.0	28.4	**0.2220**	0.104	47.1	mg/L	30	Standard
Ca	43	51.7	20.1	**2.3448**	1.674	71.4	mg/L	48	Standard
Fe	54	595.3	12.6	**0.3888**	0.057	14.6	mg/L	159	Standard
Fe	57	388.3	11.5	**0.6585**	0.168	25.5	mg/L	195	Standard
Sc-1	45	40455.6	1.8				mg/L	39543	Standard
Cl	35	34669.0	0.4				ug/L	27642	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	3693.8	7.2				ug/L	1647	Standard
P	31	17358.3	1.4				ug/L	15231	Standard
S	34	2180.2	7.0				ug/L	1845	Standard
Sr	88	80.0	38.0				ug/L	70	Standard
C	12	186.7	21.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	0	Standard
Dy	164	723.1	8.6				mg/L	12	Standard
Ho-1	165	511.7	11.3				mg/L	12	Standard
Er	166	493.3	12.2				mg/L	20	Standard
I	127	46309.3	8.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		92.531	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.646	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.180
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.029
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606139302
Sample Date/Time: Tuesday, June 28, 2016 22:34:23
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76487.6	0.6				ug/L	81760	Standard
	Be	9	26.7	57.3	**0.0190**	0.016	86.6	ug/L	17	Standard
	Al	27	422387.9	1.8	**2.9148**	0.060	2.0	ug/L	1410	Standard
	Sc	45	40846.7	1.8				ug/L	39543	Standard
	Ti	47	1809.8	2.0	**7.1474**	0.208	2.9	ug/L	39	Standard
	V	51	13250.7	0.8	**1.7088**	0.032	1.8	ug/L	1415	Standard
	Cr	52	14384.8	1.8	**1.0188**	0.008	0.8	ug/L	6946	Standard
	Cr	53	1510.1	5.3	**1.3859**	0.061	4.4	ug/L	328	Standard
	Mn	55	44577.2	1.1	**6.7600**	0.108	1.6	ug/L	823	Standard
	Co	59	1155.0	3.6	**0.1339**	0.008	5.8	ug/L	252	Standard
	Ni	60	2034.1	3.4	**0.9799**	0.027	2.8	ug/L	192	Standard
	Cu	65	13331.2	1.6	**6.9601**	0.242	3.5	ug/L	141	Standard
	Zn	66	18863.7	1.1	**16.4635**	0.229	1.4	ug/L	491	Standard
>	**Ge**	72	512762.7	2.0				ug/L	515087	Standard
	As	75	120.3	20.8	**0.1481**	0.025	16.6	ug/L	20	Standard
	Se	82	22.7	50.1	**0.0800**	0.103	128.5	ug/L	15	Standard
	Se-1	77	66.7	3.8	**0.1706**	0.046	27.2	ug/L	48	Standard
>	**Ga**	71	313.3	7.5				mg/L	90	Standard
	Rb	85	9062.7	6.6				ug/L	23	Standard
	Y	89	438095.5	1.1				ug/L	448510	Standard
>	**Rh**	103	11.7	65.5				ug/L	15	Standard
	Mo	98	749.7	5.2	**0.2622**	0.015	5.9	ug/L	11	Standard
	Ag	107	250.0	4.9	**0.0215**	0.002	9.3	ug/L	134	Standard
	Cd	111	268.7	5.4	**0.1246**	0.007	5.7	mg/L	7	Standard
	Cd	114	686.3	8.9	**0.1290**	0.012	9.4	ug/L	16	Standard
>	**In**	115	602735.5	0.4				ug/L	611117	Standard
	Sn	118	2001.8	9.6	**0.2412**	0.032	13.1	ug/L	518	Standard
	Sb	123	1551.7	1.3	**0.3206**	0.005	1.5	ug/L	127	Standard
	Ba	135	10171.4	0.7	**4.9702**	0.026	0.5	ug/L	45	Standard
	Ce	140	10203.4	3.4				ug/L	298	Standard
>	**Tb**	159	943711.5	1.3				ug/L	977942	Standard
	Ho	165	201.7	2.9				ug/L	12	Standard
	Tl	203	136.7	14.9	**0.0117**	0.003	21.7	ug/L	31	Standard
	Tl	205	126.7	4.6	**0.0153**	0.001	5.0	ug/L	20	Standard
	Pb	206	13666.8	0.5	**2.5119**	0.014	0.6	ug/L	286	Standard
	Pb	207	11351.3	1.7	**2.3133**	0.023	1.0	ug/L	257	Standard
	Pb	208	47777.6	0.4	**2.5197**	0.028	1.1	ug/L	956	Standard
	U	238	179.7	5.5	**0.0226**	0.001	5.2	ug/L	17	Standard
>	**Bi**	209	546981.3	0.8				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	296.7	10.2	**0.3250**	0.036	11.0	mg/L	32	Standard
K	39	131.7	25.3	**0.2905**	0.116	40.0	mg/L	30	Standard
Ca	43	28.3	44.4	**-1.1569**	1.919	165.9	mg/L	48	Standard
Fe	54	412.0	10.8	**0.2238**	0.038	16.8	mg/L	159	Standard
Fe	57	300.0	5.8	**0.3560**	0.058	16.2	mg/L	195	Standard
> **Sc-1**	45	40846.7	1.8				mg/L	39543	Standard
Cl	35	35351.2	2.0				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	2080.1	6.1				ug/L	1647	Standard
P	31	17501.8	0.9				ug/L	15231	Standard
S	34	2256.8	4.2				ug/L	1845	Standard
Sr	88	83.3	24.2				ug/L	70	Standard
C	12	216.7	41.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	66.7				mg/L	0	Standard
Dy	164	374.4	8.4				mg/L	12	Standard
Ho-1	165	201.7	2.9				mg/L	12	Standard
Er	166	186.7	17.2				mg/L	20	Standard
I	127	9588.0	8.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.551	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.549	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.629
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.187
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606139303
Sample Date/Time: Tuesday, June 28, 2016 22:37:34
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75224.7	2.8				ug/L	81760	Standard
	Be	9	26.7	47.2	**0.0195**	0.014	72.7	ug/L	17	Standard
	Al	27	335427.7	1.4	**2.3514**	0.039	1.7	ug/L	1410	Standard
	Sc	45	40873.4	3.2				ug/L	39543	Standard
	Ti	47	1306.7	3.3	**5.2014**	0.227	4.4	ug/L	39	Standard
	V	51	16739.3	1.3	**2.2527**	0.061	2.7	ug/L	1415	Standard
	Cr	52	12212.3	0.6	**0.7342**	0.019	2.6	ug/L	6946	Standard
	Cr	53	1208.4	9.2	**1.0637**	0.123	11.6	ug/L	328	Standard
	Mn	55	30356.4	1.8	**4.6331**	0.125	2.7	ug/L	823	Standard
	Co	59	971.0	0.7	**0.1098**	0.003	2.3	ug/L	252	Standard
	Ni	60	1423.4	2.9	**0.6666**	0.013	2.0	ug/L	192	Standard
	Cu	65	8494.4	2.1	**4.4744**	0.140	3.1	ug/L	141	Standard
	Zn	66	12099.5	0.6	**10.4446**	0.200	1.9	ug/L	491	Standard
>	**Ge**	72	504506.4	1.3				ug/L	515087	Standard
	As	75	95.4	18.1	**0.1269**	0.016	12.6	ug/L	20	Standard
	Se	82	22.1	16.3	**0.0773**	0.034	44.4	ug/L	15	Standard
	Se-1	77	59.3	9.3	**0.0847**	0.065	76.5	ug/L	48	Standard
>	**Ga**	71	286.7	13.3				mg/L	90	Standard
	Rb	85	4860.8	3.1				ug/L	23	Standard
	Y	89	447487.9	1.5				ug/L	448510	Standard
>	**Rh**	103	10.0	50.0				ug/L	15	Standard
	Mo	98	335.7	2.2	**0.1056**	0.003	3.1	ug/L	11	Standard
	Ag	107	149.3	7.8	**0.0061**	0.002	27.6	ug/L	134	Standard
	Cd	111	92.8	5.9	**0.0407**	0.003	6.7	mg/L	7	Standard
	Cd	114	275.4	18.0	**0.0483**	0.009	19.4	ug/L	16	Standard
>	**In**	115	608945.1	0.4				ug/L	611117	Standard
	Sn	118	2160.2	6.9	**0.2646**	0.024	9.0	ug/L	518	Standard
	Sb	123	1475.9	3.1	**0.3011**	0.011	3.5	ug/L	127	Standard
	Ba	135	7298.8	1.0	**3.5230**	0.049	1.4	ug/L	45	Standard
	Ce	140	7186.7	3.0				ug/L	298	Standard
>	**Tb**	159	941207.0	0.6				ug/L	977942	Standard
	Ho	165	175.0	29.8				ug/L	12	Standard
	Tl	203	127.3	10.7	**0.0108**	0.002	16.0	ug/L	31	Standard
	Tl	205	91.7	22.0	**0.0106**	0.003	26.7	ug/L	20	Standard
	Pb	206	10382.9	0.6	**1.9175**	0.012	0.6	ug/L	286	Standard
	Pb	207	8724.8	0.9	**1.7876**	0.028	1.6	ug/L	257	Standard
	Pb	208	36599.7	1.1	**1.9407**	0.035	1.8	ug/L	956	Standard
	U	238	138.7	9.6	**0.0170**	0.002	11.7	ug/L	17	Standard
>	**Bi**	209	540229.2	0.6				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	201.7	23.0	**0.2027**	0.061	30.0	mg/L	32	Standard
K	39	85.0	15.6	**0.1365**	0.043	31.8	mg/L	30	Standard
Ca	43	46.7	34.4	**1.4659**	2.107	143.8	mg/L	48	Standard
Fe	54	348.6	7.5	**0.1680**	0.018	11.0	mg/L	159	Standard
Fe	57	325.0	9.4	**0.4364**	0.086	19.7	mg/L	195	Standard
> **Sc-1**	45	40873.4	3.2				mg/L	39543	Standard
Cl	35	35045.8	0.8				ug/L	27642	Standard
Kr	83	2.3	107.9				ug/L	2	Standard
Br	81	1873.4	9.4				ug/L	1647	Standard
P	31	17319.9	1.5				ug/L	15231	Standard
S	34	2126.8	6.5				ug/L	1845	Standard
Sr	88	78.3	28.8				ug/L	70	Standard
C	12	160.0	25.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	78.1				mg/L	0	Standard
Dy	164	223.9	25.3				mg/L	12	Standard
Ho-1	165	175.0	29.8				mg/L	12	Standard
Er	166	126.7	25.4				mg/L	20	Standard
I	127	7363.5	5.1				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		92.007	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.946	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.645
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.975
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606139304
Sample Date/Time: Tuesday, June 28, 2016 22:40:46
Number of Replicates: 3
Autosampler Position: 346
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74628.4	2.8				ug/L	81760	Standard
	Be	9	20.0	25.0	**0.0122**	0.005	40.5	ug/L	17	Standard
	Al	27	327323.4	5.6	**2.3109**	0.073	3.1	ug/L	1410	Standard
	Sc	45	39232.4	1.5				ug/L	39543	Standard
	Ti	47	1081.7	2.8	**4.2827**	0.197	4.6	ug/L	39	Standard
	V	51	17364.8	3.6	**2.3462**	0.053	2.3	ug/L	1415	Standard
	Cr	52	11969.4	3.2	**0.6998**	0.018	2.6	ug/L	6946	Standard
	Cr	53	1151.7	1.8	**0.9999**	0.045	4.5	ug/L	328	Standard
	Mn	55	27710.7	5.0	**4.2196**	0.194	4.6	ug/L	823	Standard
	Co	59	805.7	4.4	**0.0858**	0.004	4.6	ug/L	252	Standard
	Ni	60	1156.4	2.7	**0.5226**	0.014	2.7	ug/L	192	Standard
	Cu	65	7318.8	3.6	**3.8448**	0.072	1.9	ug/L	141	Standard
	Zn	66	9717.1	4.5	**8.2301**	0.259	3.2	ug/L	491	Standard
>	**Ge**	72	504100.5	3.0				ug/L	515087	Standard
	As	75	86.2	19.2	**0.1185**	0.013	11.2	ug/L	20	Standard
	Se	82	21.0	26.2	**0.0675**	0.052	77.2	ug/L	15	Standard
	Se-1	77	57.7	9.6	**0.0648**	0.094	144.5	ug/L	48	Standard
>	**Ga**	71	233.3	13.9				mg/L	90	Standard
	Rb	85	3882.2	6.3				ug/L	23	Standard
	Y	89	430223.1	5.6				ug/L	448510	Standard
>	**Rh**	103	8.3	124.9				ug/L	15	Standard
	Mo	98	801.5	6.3	**0.2860**	0.012	4.3	ug/L	11	Standard
	Ag	107	120.7	5.8	**0.0023**	0.000	18.3	ug/L	134	Standard
	Cd	111	92.6	9.2	**0.0417**	0.004	9.3	mg/L	7	Standard
	Cd	114	241.3	24.7	**0.0431**	0.013	29.2	ug/L	16	Standard
>	**In**	115	593856.9	3.7				ug/L	611117	Standard
	Sn	118	1755.1	4.0	**0.2036**	0.011	5.3	ug/L	518	Standard
	Sb	123	1169.8	3.7	**0.2423**	0.004	1.7	ug/L	127	Standard
	Ba	135	5956.2	4.1	**2.9440**	0.065	2.2	ug/L	45	Standard
	Ce	140	5319.3	7.3				ug/L	298	Standard
>	**Tb**	159	910819.3	2.0				ug/L	977942	Standard
	Ho	165	128.3	12.5				ug/L	12	Standard
	Tl	203	88.0	5.7	**0.0062**	0.001	12.2	ug/L	31	Standard
	Tl	205	70.0	25.8	**0.0077**	0.003	33.5	ug/L	20	Standard
	Pb	206	8718.5	3.6	**1.6271**	0.072	4.4	ug/L	286	Standard
	Pb	207	7163.0	4.3	**1.4818**	0.072	4.9	ug/L	257	Standard
	Pb	208	29853.9	4.1	**1.5981**	0.065	4.1	ug/L	956	Standard
	U	238	115.3	2.6	**0.0139**	0.000	1.6	ug/L	17	Standard
>	**Bi**	209	531672.0	1.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	220.0	2.3	**0.2381**	0.006	2.4	mg/L	32	Standard
K	39	73.3	3.9	**0.1083**	0.007	6.4	mg/L	30	Standard
Ca	43	31.7	24.1	**-0.5049**	1.115	220.9	mg/L	48	Standard
Fe	54	263.9	12.4	**0.1035**	0.028	27.1	mg/L	159	Standard
Fe	57	248.3	16.1	**0.2213**	0.145	65.6	mg/L	195	Standard
> **Sc-1**	45	39232.4	1.5				mg/L	39543	Standard
Cl	35	34033.6	5.9				ug/L	27642	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	1946.8	12.8				ug/L	1647	Standard
P	31	16857.7	2.7				ug/L	15231	Standard
S	34	2100.1	4.5				ug/L	1845	Standard
Sr	88	66.7	28.4				ug/L	70	Standard
C	12	176.7	23.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	134.9	39.4				mg/L	12	Standard
Ho-1	165	128.3	12.5				mg/L	12	Standard
Er	166	106.7	10.8				mg/L	20	Standard
I	127	6791.5	2.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.277	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.867	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.176
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.439
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606139305
Sample Date/Time: Tuesday, June 28, 2016 22:43:57
Number of Replicates: 3
Autosampler Position: 347
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74899.7	0.9				ug/L	81760	Standard
	Be	9	18.3	15.7	**0.0104**	0.003	29.0	ug/L	17	Standard
	Al	27	328437.1	1.5	**2.3115**	0.035	1.5	ug/L	1410	Standard
	Sc	45	40647.8	2.1				ug/L	39543	Standard
	Ti	47	1117.7	1.6	**4.2600**	0.050	1.2	ug/L	39	Standard
	V	51	13332.6	0.8	**1.6821**	0.023	1.4	ug/L	1415	Standard
	Cr	52	11640.1	0.5	**0.5893**	0.015	2.6	ug/L	6946	Standard
	Cr	53	1158.4	10.6	**0.9575**	0.132	13.8	ug/L	328	Standard
	Mn	55	25508.1	0.7	**3.7255**	0.023	0.6	ug/L	823	Standard
	Co	59	795.0	2.3	**0.0800**	0.002	2.0	ug/L	252	Standard
	Ni	60	1111.4	4.5	**0.4759**	0.022	4.7	ug/L	192	Standard
	Cu	65	7781.0	2.0	**3.9419**	0.127	3.2	ug/L	141	Standard
	Zn	66	11686.8	2.5	**9.6690**	0.148	1.5	ug/L	491	Standard
>	**Ge**	72	523177.1	1.2				ug/L	515087	Standard
	As	75	150.7	20.5	**0.1724**	0.029	16.5	ug/L	20	Standard
	Se	82	42.9	7.7	**0.2478**	0.029	11.9	ug/L	15	Standard
	Se-1	77	60.7	2.5	**0.0739**	0.016	21.3	ug/L	48	Standard
>	**Ga**	71	226.7	1.3				mg/L	90	Standard
	Rb	85	5315.9	7.9				ug/L	23	Standard
	Y	89	431953.8	1.9				ug/L	448510	Standard
>	**Rh**	103	15.0	66.7				ug/L	15	Standard
	Mo	98	276.3	6.3	**0.0857**	0.006	6.9	ug/L	11	Standard
	Ag	107	169.0	7.2	**0.0096**	0.002	19.7	ug/L	134	Standard
	Cd	111	162.4	6.5	**0.0750**	0.005	6.0	mg/L	7	Standard
	Cd	114	335.5	8.9	**0.0613**	0.005	8.9	ug/L	16	Standard
>	**In**	115	595959.3	0.7				ug/L	611117	Standard
	Sn	118	1471.7	5.0	**0.1534**	0.014	9.4	ug/L	518	Standard
	Sb	123	1173.4	5.5	**0.2422**	0.014	5.7	ug/L	127	Standard
	Ba	135	5837.1	3.3	**2.8740**	0.084	2.9	ug/L	45	Standard
	Ce	140	5496.0	2.0				ug/L	298	Standard
>	**Tb**	159	937149.5	1.0				ug/L	977942	Standard
	Ho	165	138.3	7.5				ug/L	12	Standard
	Tl	203	94.3	16.1	**0.0066**	0.002	26.5	ug/L	31	Standard
	Tl	205	66.7	26.3	**0.0070**	0.002	32.8	ug/L	20	Standard
	Pb	206	8082.5	0.7	**1.4592**	0.036	2.4	ug/L	286	Standard
	Pb	207	6688.5	1.5	**1.3390**	0.041	3.1	ug/L	257	Standard
	Pb	208	27392.7	1.4	**1.4181**	0.004	0.2	ug/L	956	Standard
	U	238	108.7	8.4	**0.0125**	0.002	12.3	ug/L	17	Standard
>	**Bi**	209	547233.0	1.6				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.3347**	17.892	173.1	mg/L	0	Standard
Mg	24	221.7	15.4	**0.2295**	0.039	17.1	mg/L	32	Standard
K	39	100.0	17.3	**0.1871**	0.055	29.3	mg/L	30	Standard
Ca	43	26.7	60.3	**-1.4304**	2.300	160.8	mg/L	48	Standard
Fe	54	289.4	9.6	**0.1178**	0.025	21.2	mg/L	159	Standard
Fe	57	271.7	9.3	**0.2686**	0.097	36.1	mg/L	195	Standard
> **Sc-1**	45	40647.8	2.1				mg/L	39543	Standard
Cl	35	33690.1	1.5				ug/L	27642	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	7261.7	1.9				ug/L	1647	Standard
P	31	16325.5	0.4				ug/L	15231	Standard
S	34	1950.1	10.4				ug/L	1845	Standard
Sr	88	81.7	9.4				ug/L	70	Standard
C	12	186.7	18.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	222.3	16.3				mg/L	12	Standard
Ho-1	165	138.3	7.5				mg/L	12	Standard
Er	166	160.0	6.3				mg/L	20	Standard
I	127	6493.1	4.1				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		91.609	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.571	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.520
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.232
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 22:47:10
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	71793.2	3.7				ug/L	81760	Standard
	Be	9	44618.9	1.2	**51.1958**	1.696	3.3	ug/L	17	Standard
	Al	27	6865175.8	2.0	**50.7482**	1.963	3.9	ug/L	1410	Standard
	Sc	45	39468.0	3.1				ug/L	39543	Standard
	Ti	47	23906.5	1.3	**96.7870**	2.402	2.5	ug/L	39	Standard
	V	51	334011.6	0.6	**48.2557**	0.941	2.0	ug/L	1415	Standard
	Cr	52	340377.2	0.5	**48.2561**	1.001	2.1	ug/L	6946	Standard
	Cr	53	42902.3	1.0	**48.9484**	1.164	2.4	ug/L	328	Standard
	Mn	55	309303.1	1.2	**47.9606**	0.591	1.2	ug/L	823	Standard
	Co	59	332037.9	0.8	**47.6215**	0.384	0.8	ug/L	252	Standard
	Ni	60	90431.4	0.3	**48.3175**	0.794	1.6	ug/L	192	Standard
	Cu	65	91394.5	0.3	**48.4155**	0.851	1.8	ug/L	141	Standard
	Zn	66	53482.9	1.3	**48.3851**	1.341	2.8	ug/L	491	Standard
>	Ge	72	510859.4	1.5				ug/L	515087	Standard
	As	75	54007.5	0.9	**48.4846**	1.105	2.3	ug/L	20	Standard
	Se	82	5360.1	0.8	**46.8280**	0.601	1.3	ug/L	15	Standard
	Se-1	77	3686.4	1.7	**48.6230**	0.812	1.7	ug/L	48	Standard
>	Ga	71	56.7	18.4				mg/L	90	Standard
	Rb	85	810.0	4.5				ug/L	23	Standard
	Y	89	431931.2	2.6				ug/L	448510	Standard
>	Rh	103	26.7	43.3				ug/L	15	Standard
	Mo	98	251225.1	0.7	**96.8468**	1.378	1.4	ug/L	11	Standard
	Ag	107	304440.8	0.4	**47.2505**	0.474	1.0	ug/L	134	Standard
	Cd	111	96060.5	0.9	**46.8341**	0.834	1.8	mg/L	7	Standard
	Cd	114	238889.8	1.2	**47.9103**	0.301	0.6	ug/L	16	Standard
>	In	115	586435.3	1.3				ug/L	611117	Standard
	Sn	118	269259.0	2.4	**47.3660**	1.700	3.6	ug/L	518	Standard
	Sb	123	219432.6	0.9	**48.4541**	0.360	0.7	ug/L	127	Standard
	Ba	135	92563.9	0.7	**46.7027**	0.660	1.4	ug/L	45	Standard
	Ce	140	88.3	61.1				ug/L	298	Standard
>	Tb	159	918919.9	0.8				ug/L	977942	Standard
	Ho	165	13.3	21.7				ug/L	12	Standard
	Tl	203	386832.4	0.9	**48.5637**	0.777	1.6	ug/L	31	Standard
	Tl	205	343277.1	1.0	**49.6247**	0.132	0.3	ug/L	20	Standard
	Pb	206	249448.7	0.4	**48.7606**	0.291	0.6	ug/L	286	Standard
	Pb	207	228146.2	0.6	**49.4471**	0.531	1.1	ug/L	257	Standard
	Pb	208	902842.6	0.2	**50.5774**	0.397	0.8	ug/L	956	Standard
	U	238	333363.3	0.9	**49.2162**	0.753	1.5	ug/L	17	Standard
>	Bi	209	526646.5	0.9				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.4874**	18.156	173.1	mg/L	0	Standard
Mg	24	3567.1	3.5	**4.7067**	0.317	6.7	mg/L	32	Standard
K	39	1421.7	5.7	**4.6773**	0.373	8.0	mg/L	30	Standard
Ca	43	60.0	8.3	**3.7779**	0.573	15.2	mg/L	48	Standard
Fe	54	5303.1	4.9	**4.6695**	0.087	1.9	mg/L	159	Standard
Fe	57	1570.1	3.9	**4.6916**	0.328	7.0	mg/L	195	Standard
Sc-1	45	39468.0	3.1				mg/L	39543	Standard
Cl	35	34178.5	1.9				ug/L	27642	Standard
Kr	83	1.7	124.9				ug/L	2	Standard
Br	81	1696.8	1.5				ug/L	1647	Standard
P	31	17313.2	2.3				ug/L	15231	Standard
S	34	2535.2	5.3				ug/L	1845	Standard
Sr	88	81.7	40.8				ug/L	70	Standard
C	12	120.0	14.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	8.9	11.2				mg/L	12	Standard
Ho-1	165	13.3	21.7				mg/L	12	Standard
Er	166	23.3	89.2				mg/L	20	Standard
I	127	2468.5	18.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.392		
Al	27	101.496		
Sc	45			
Ti	47	96.787		
V	51	96.511		
Cr	52	96.512		
Cr	53			
Mn	55	95.921		
Co	59	95.243		
Ni	60	96.635		
Cu	65	96.831		
Zn	66	96.770		
Ge	72		99.179	
As	75	96.969		
Se	82	93.656		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	96.847		
Ag	107	94.501		
Cd	111	93.668		
Cd	114			
In	115			95.961
Sn	118	94.732		
Sb	123	96.908		
Ba	135	93.405		
Ce	140			
Tb	159			
Ho	165			
Tl	203	97.127		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.155		
U	238	98.432		
Bi	209			94.537
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 22:50:22
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72519.8	1.9				ug/L	81760	Standard
	Be	9	21.7	113.8	**0.0146**	0.027	188.1	ug/L	17	Standard
	Al	27	2256.8	25.0	**0.0021**	0.004	187.1	ug/L	1410	Standard
	Sc	45	39016.8	1.3				ug/L	39543	Standard
	Ti	47	28.7	19.2	**-0.0470**	0.020	43.5	ug/L	39	Standard
	V	51	1194.9	2.1	**-0.0301**	0.006	21.3	ug/L	1415	Standard
	Cr	52	6354.0	0.6	**-0.1199**	0.015	12.7	ug/L	6946	Standard
	Cr	53	495.0	4.6	**0.2373**	0.020	8.3	ug/L	328	Standard
	Mn	55	724.7	7.6	**-0.0338**	0.007	19.6	ug/L	823	Standard
	Co	59	253.7	9.1	**0.0057**	0.003	47.4	ug/L	252	Standard
	Ni	60	174.7	5.0	**-0.0098**	0.003	33.3	ug/L	192	Standard
	Cu	65	124.0	10.1	**-0.0239**	0.006	23.4	ug/L	141	Standard
	Zn	66	416.7	1.4	**-0.4373**	0.011	2.5	ug/L	491	Standard
>	**Ge**	72	501758.9	1.8				ug/L	515087	Standard
	As	75	-30.1	127.3	**0.0123**	0.035	285.9	ug/L	20	Standard
	Se	82	17.1	40.3	**0.0328**	0.058	178.2	ug/L	15	Standard
	Se-1	77	51.3	18.1	**-0.0207**	0.113	545.7	ug/L	48	Standard
>	**Ga**	71	38.3	27.2				mg/L	90	Standard
	Rb	85	28.3	36.7				ug/L	23	Standard
	Y	89	432168.4	0.3				ug/L	448510	Standard
>	**Rh**	103	15.0	66.7				ug/L	15	Standard
	Mo	98	274.3	30.4	**0.0862**	0.033	37.9	ug/L	11	Standard
	Ag	107	126.3	11.5	**0.0033**	0.002	71.2	ug/L	134	Standard
	Cd	111	15.5	45.6	**0.0046**	0.003	75.0	mg/L	7	Standard
	Cd	114	32.8	69.1	**0.0016**	0.005	280.8	ug/L	16	Standard
>	**In**	115	589750.3	1.0				ug/L	611117	Standard
	Sn	118	705.0	18.1	**0.0215**	0.021	98.3	ug/L	518	Standard
	Sb	123	430.7	24.1	**0.0816**	0.022	27.0	ug/L	127	Standard
	Ba	135	35.7	21.2	**-0.0072**	0.004	55.2	ug/L	45	Standard
	Ce	140	38.3	41.9				ug/L	298	Standard
>	**Tb**	159	920829.0	0.8				ug/L	977942	Standard
	Ho	165	5.0	100.0				ug/L	12	Standard
	Tl	203	59.7	35.8	**0.0027**	0.003	98.6	ug/L	31	Standard
	Tl	205	48.3	29.9	**0.0047**	0.002	43.8	ug/L	20	Standard
	Pb	206	270.0	6.9	**-0.0110**	0.004	33.8	ug/L	286	Standard
	Pb	207	257.3	3.4	**-0.0024**	0.002	65.9	ug/L	257	Standard
	Pb	208	1000.7	8.0	**-0.0046**	0.004	92.2	ug/L	956	Standard
	U	238	61.0	23.2	**0.0060**	0.002	34.0	ug/L	17	Standard
>	**Bi**	209	528739.4	0.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	23.3	86.6	**-0.0259**	0.027	103.6	mg/L	32	Standard
K	39	31.7	48.2	**-0.0333**	0.052	155.8	mg/L	30	Standard
Ca	43	30.0	72.6	**-0.7014**	3.391	483.5	mg/L	48	Standard
Fe	54	129.4	20.1	**-0.0182**	0.025	139.3	mg/L	159	Standard
Fe	57	250.0	16.4	**0.2316**	0.148	64.1	mg/L	195	Standard
Sc-1	45	39016.8	1.3				mg/L	39543	Standard
Cl	35	33625.3	1.5				ug/L	27642	Standard
Kr	83	3.3	124.9				ug/L	2	Standard
Br	81	1580.1	13.5				ug/L	1647	Standard
P	31	17735.4	1.8				ug/L	15231	Standard
S	34	2481.9	5.6				ug/L	1845	Standard
Sr	88	73.3	14.2				ug/L	70	Standard
C	12	113.3	41.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	9.4	5.9				mg/L	12	Standard
Ho-1	165	5.0	100.0				mg/L	12	Standard
Er	166	13.3	86.6				mg/L	20	Standard
I	127	1860.1	15.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.412	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.504
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.913
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606139306
Sample Date/Time: Tuesday, June 28, 2016 22:53:35
Number of Replicates: 3
Autosampler Position: 348
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70220.8	3.4				ug/L	81760	Standard
	Be	9	21.7	48.0	**0.0156**	0.012	75.7	ug/L	17	Standard
	Al	27	339019.6	1.3	**2.5478**	0.066	2.6	ug/L	1410	Standard
	Sc	45	39077.0	1.3				ug/L	39543	Standard
	Ti	47	1359.1	3.4	**5.3458**	0.211	3.9	ug/L	39	Standard
	V	51	13893.8	2.6	**1.8093**	0.072	4.0	ug/L	1415	Standard
	Cr	52	10697.1	2.4	**0.4928**	0.058	11.9	ug/L	6946	Standard
	Cr	53	1106.7	6.2	**0.9306**	0.098	10.5	ug/L	328	Standard
	Mn	55	27827.9	2.7	**4.1809**	0.179	4.3	ug/L	823	Standard
	Co	59	887.0	0.6	**0.0960**	0.003	2.8	ug/L	252	Standard
	Ni	60	1041.0	6.1	**0.4528**	0.043	9.5	ug/L	192	Standard
	Cu	65	6718.2	2.4	**3.4752**	0.137	3.9	ug/L	141	Standard
	Zn	66	10492.3	2.9	**8.8264**	0.376	4.3	ug/L	491	Standard
>	**Ge**	72	510902.9	1.6				ug/L	515087	Standard
	As	75	95.4	28.2	**0.1256**	0.023	18.4	ug/L	20	Standard
	Se	82	17.2	18.1	**0.0307**	0.025	82.4	ug/L	15	Standard
	Se-1	77	52.3	18.1	**-0.0171**	0.139	811.5	ug/L	48	Standard
>	**Ga**	71	256.7	6.0				mg/L	90	Standard
	Rb	85	4037.2	4.0				ug/L	23	Standard
	Y	89	441838.7	1.2				ug/L	448510	Standard
>	**Rh**	103	13.3	43.3				ug/L	15	Standard
	Mo	98	321.3	2.1	**0.1057**	0.004	4.2	ug/L	11	Standard
	Ag	107	134.7	13.7	**0.0048**	0.003	55.1	ug/L	134	Standard
	Cd	111	94.4	13.5	**0.0434**	0.006	14.4	mg/L	7	Standard
	Cd	114	184.5	30.3	**0.0322**	0.011	33.4	ug/L	16	Standard
>	**In**	115	582517.6	1.6				ug/L	611117	Standard
	Sn	118	1633.4	8.5	**0.1881**	0.027	14.5	ug/L	518	Standard
	Sb	123	1202.8	2.0	**0.2547**	0.009	3.5	ug/L	127	Standard
	Ba	135	5625.0	0.7	**2.8338**	0.047	1.7	ug/L	45	Standard
	Ce	140	7943.7	1.7				ug/L	298	Standard
>	**Tb**	159	895525.5	0.4				ug/L	977942	Standard
	Ho	165	181.7	15.7				ug/L	12	Standard
	Tl	203	104.3	12.5	**0.0084**	0.002	20.6	ug/L	31	Standard
	Tl	205	91.7	22.0	**0.0111**	0.003	27.4	ug/L	20	Standard
	Pb	206	6727.8	0.5	**1.2603**	0.018	1.4	ug/L	286	Standard
	Pb	207	5614.0	0.6	**1.1666**	0.017	1.4	ug/L	257	Standard
	Pb	208	23664.6	2.1	**1.2740**	0.038	3.0	ug/L	956	Standard
	U	238	141.7	17.4	**0.0181**	0.004	20.7	ug/L	17	Standard
>	**Bi**	209	523874.2	0.9				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	196.7	25.5	**0.2078**	0.067	32.2	mg/L	32	Standard
K	39	58.3	32.5	**0.0586**	0.068	115.6	mg/L	30	Standard
Ca	43	33.3	48.2	**-0.2427**	2.425	998.9	mg/L	48	Standard
Fe	54	342.2	5.9	**0.1765**	0.023	12.8	mg/L	159	Standard
Fe	57	293.3	7.1	**0.3778**	0.076	20.2	mg/L	195	Standard
Sc-1	45	39077.0	1.3				mg/L	39543	Standard
Cl	35	33443.5	2.1				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1690.1	11.7				ug/L	1647	Standard
P	31	17176.4	4.2				ug/L	15231	Standard
S	34	2306.8	4.6				ug/L	1845	Standard
Sr	88	88.3	31.2				ug/L	70	Standard
C	12	143.3	10.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	0	Standard
Dy	164	280.6	4.7				mg/L	12	Standard
Ho-1	165	181.7	15.7				mg/L	12	Standard
Er	166	196.7	36.8				mg/L	20	Standard
I	127	4592.4	1.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		85.886	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.188	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.320
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.039
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606139307
Sample Date/Time: Tuesday, June 28, 2016 22:56:46
Number of Replicates: 3
Autosampler Position: 349
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72494.7	0.8				ug/L	81760	Standard
	Be	9	18.3	15.7	**0.0111**	0.003	30.5	ug/L	17	Standard
	Al	27	342418.0	1.1	**2.4911**	0.036	1.4	ug/L	1410	Standard
	Sc	45	40101.3	1.0				ug/L	39543	Standard
	Ti	47	932.7	2.7	**3.5634**	0.149	4.2	ug/L	39	Standard
	V	51	14612.8	2.1	**1.8826**	0.024	1.3	ug/L	1415	Standard
	Cr	52	11386.6	1.0	**0.5692**	0.057	10.1	ug/L	6946	Standard
	Cr	53	1260.1	6.9	**1.0869**	0.132	12.1	ug/L	328	Standard
	Mn	55	23640.1	1.0	**3.4768**	0.122	3.5	ug/L	823	Standard
	Co	59	741.4	0.2	**0.0735**	0.003	3.5	ug/L	252	Standard
	Ni	60	1110.0	3.0	**0.4811**	0.030	6.3	ug/L	192	Standard
	Cu	65	7534.9	0.8	**3.8515**	0.130	3.4	ug/L	141	Standard
	Zn	66	11297.5	1.4	**9.4161**	0.135	1.4	ug/L	491	Standard
>	**Ge**	72	518404.2	2.6				ug/L	515087	Standard
	As	75	185.7	13.2	**0.2041**	0.018	8.6	ug/L	20	Standard
	Se	82	58.4	11.2	**0.3845**	0.051	13.1	ug/L	15	Standard
	Se-1	77	57.0	12.3	**0.0333**	0.095	284.1	ug/L	48	Standard
>	**Ga**	71	201.7	7.6				mg/L	90	Standard
	Rb	85	5255.9	2.3				ug/L	23	Standard
	Y	89	429044.9	0.4				ug/L	448510	Standard
>	**Rh**	103	18.3	68.6				ug/L	15	Standard
	Mo	98	299.7	1.8	**0.0961**	0.002	1.9	ug/L	11	Standard
	Ag	107	153.3	22.0	**0.0075**	0.005	67.1	ug/L	134	Standard
	Cd	111	143.0	17.2	**0.0665**	0.011	16.8	mg/L	7	Standard
	Cd	114	356.8	31.1	**0.0663**	0.022	32.5	ug/L	16	Standard
>	**In**	115	588246.1	1.2				ug/L	611117	Standard
	Sn	118	1550.1	10.3	**0.1702**	0.025	14.7	ug/L	518	Standard
	Sb	123	1125.9	6.3	**0.2350**	0.013	5.6	ug/L	127	Standard
	Ba	135	5627.4	4.0	**2.8066**	0.107	3.8	ug/L	45	Standard
	Ce	140	5279.3	1.4				ug/L	298	Standard
>	**Tb**	159	929768.7	1.5				ug/L	977942	Standard
	Ho	165	90.0	24.2				ug/L	12	Standard
	Tl	203	125.7	60.8	**0.0104**	0.009	86.4	ug/L	31	Standard
	Tl	205	76.7	65.3	**0.0084**	0.007	82.2	ug/L	20	Standard
	Pb	206	9321.2	0.6	**1.7003**	0.038	2.2	ug/L	286	Standard
	Pb	207	7700.6	1.2	**1.5576**	0.043	2.8	ug/L	257	Standard
	Pb	208	32126.4	0.5	**1.6815**	0.027	1.6	ug/L	956	Standard
	U	238	95.0	19.2	**0.0106**	0.002	23.3	ug/L	17	Standard
>	**Bi**	209	544815.4	1.6				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	241.7	8.4	**0.2600**	0.024	9.1	mg/L	32	Standard
K	39	93.3	13.5	**0.1697**	0.044	25.8	mg/L	30	Standard
Ca	43	48.3	11.9	**1.8938**	0.874	46.1	mg/L	48	Standard
Fe	54	296.6	3.5	**0.1277**	0.009	7.4	mg/L	159	Standard
Fe	57	275.0	13.7	**0.2917**	0.134	46.0	mg/L	195	Standard
> **Sc-1**	45	40101.3	1.0				mg/L	39543	Standard
Cl	35	33371.4	1.5				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	12191.6	6.9				ug/L	1647	Standard
P	31	16642.5	2.2				ug/L	15231	Standard
S	34	2221.8	1.3				ug/L	1845	Standard
Sr	88	81.7	3.5				ug/L	70	Standard
C	12	180.0	14.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	78.1				mg/L	0	Standard
Dy	164	179.2	25.7				mg/L	12	Standard
Ho-1	165	90.0	24.2				mg/L	12	Standard
Er	166	86.7	26.6				mg/L	20	Standard
I	127	5902.8	5.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.668	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.644	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.258
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.798
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606140101
Sample Date/Time: Tuesday, June 28, 2016 22:59:58
Number of Replicates: 3
Autosampler Position: 350
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81815.4	2.6				ug/L	81760	Standard
	Be	9	21.7	13.3	**0.0121**	0.003	22.9	ug/L	17	Standard
	Al	27	45785308.7	4.2	**296.7336**	5.244	1.8	ug/L	1410	Standard
	Sc	45	41065.6	3.8				ug/L	39543	Standard
	Ti	47	178.0	12.2	**0.5887**	0.089	15.1	ug/L	39	Standard
	V	51	35448.4	4.1	**5.1643**	0.153	3.0	ug/L	1415	Standard
	Cr	52	9787.8	5.7	**0.4235**	0.068	16.1	ug/L	6946	Standard
	Cr	53	17411.8	14.2	**20.5297**	2.734	13.3	ug/L	328	Standard
	Mn	55	165972.1	5.7	**26.8086**	1.220	4.6	ug/L	823	Standard
	Co	59	1056.4	5.8	**0.1270**	0.007	5.7	ug/L	252	Standard
	Ni	60	3143.3	7.3	**1.6522**	0.109	6.6	ug/L	192	Standard
	Cu	65	2057.8	4.7	**1.0496**	0.040	3.9	ug/L	141	Standard
	Zn	66	6024.5	5.7	**4.9599**	0.261	5.3	ug/L	491	Standard
>	**Ge**	72	489001.5	1.3				ug/L	515087	Standard
	As	75	1112.2	8.9	**1.0817**	0.080	7.4	ug/L	20	Standard
	Se	82	302.7	9.2	**2.6482**	0.222	8.4	ug/L	15	Standard
	Se-1	77	1245.1	18.8	**16.6637**	3.078	18.5	ug/L	48	Standard
>	**Ga**	71	58.3	55.1				mg/L	90	Standard
	Rb	85	2691.9	5.7				ug/L	23	Standard
	Y	89	432812.2	6.0				ug/L	448510	Standard
>	**Rh**	103	128.3	14.8				ug/L	15	Standard
	Mo	98	642.1	7.2	**0.2310**	0.011	4.8	ug/L	11	Standard
	Ag	107	89.7	20.6	**-0.0021**	0.003	162.7	ug/L	134	Standard
	Cd	111	183.2	13.1	**0.0876**	0.014	15.6	mg/L	7	Standard
	Cd	114	423.4	6.2	**0.0810**	0.006	6.9	ug/L	16	Standard
>	**In**	115	580206.4	3.0				ug/L	611117	Standard
	Sn	118	1115.0	4.7	**0.0968**	0.010	9.8	ug/L	518	Standard
	Sb	123	200.7	10.2	**0.0319**	0.003	10.9	ug/L	127	Standard
	Ba	135	44440.1	3.3	**22.6462**	0.082	0.4	ug/L	45	Standard
	Ce	140	446.7	12.1				ug/L	298	Standard
>	**Tb**	159	929235.2	2.2				ug/L	977942	Standard
	Ho	165	38.3	7.5				ug/L	12	Standard
	Tl	203	126.0	16.1	**0.0119**	0.003	21.7	ug/L	31	Standard
	Tl	205	103.3	17.0	**0.0135**	0.003	21.8	ug/L	20	Standard
	Pb	206	396.7	5.3	**0.0183**	0.002	11.9	ug/L	286	Standard
	Pb	207	341.7	4.5	**0.0202**	0.002	8.5	ug/L	257	Standard
	Pb	208	1505.0	2.0	**0.0286**	0.002	5.8	ug/L	956	Standard
	U	238	10687.1	4.8	**1.6615**	0.054	3.3	ug/L	17	Standard
>	**Bi**	209	499114.9	2.7				ug/L	557080	Standard

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Na	23	8.3	91.7	**52.4138**	47.655	90.9	mg/L	0	Standard
Mg	24	165387.3	4.5	**211.9511**	6.406	3.0	mg/L	32	Standard
K	39	600.0	13.6	**1.8174**	0.318	17.5	mg/L	30	Standard
Ca	43	581.7	9.4	**79.6243**	5.149	6.5	mg/L	48	Standard
Fe	54	126.1	20.1	**-0.0269**	0.024	89.8	mg/L	159	Standard
Fe	57	591.7	6.9	**1.2999**	0.139	10.7	mg/L	195	Standard
> **Sc-1**	45	41065.6	3.8				mg/L	39543	Standard
Cl	35	47499.7	3.6				ug/L	27642	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	60832.3	7.6				ug/L	1647	Standard
P	31	21663.8	6.1				ug/L	15231	Standard
S	34	2320.2	3.1				ug/L	1845	Standard
Sr	88	470.0	1.1				ug/L	70	Standard
C	12	286.7	5.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	31.1	36.4				mg/L	12	Standard
Ho-1	165	38.3	7.5				mg/L	12	Standard
Er	166	46.7	44.6				mg/L	20	Standard
I	127	79897.5	13.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.068	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.936	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606140101
Report Date/Time: Tuesday, June 28, 2016 23:02:15
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.942
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		89.595
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606140201
Sample Date/Time: Tuesday, June 28, 2016 23:03:09
Number of Replicates: 3
Autosampler Position: 351
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76605.0	3.1				ug/L	81760	Standard
	Be	9	21.7	13.3	**0.0135**	0.003	20.6	ug/L	17	Standard
	Al	27	26105502.1	1.1	**180.8194**	3.801	2.1	ug/L	1410	Standard
	Sc	45	39097.0	0.2				ug/L	39543	Standard
	Ti	47	562.0	2.4	**2.2655**	0.057	2.5	ug/L	39	Standard
	V	51	4742.4	3.6	**0.5271**	0.022	4.2	ug/L	1415	Standard
	Cr	52	10082.4	1.2	**0.5007**	0.019	3.8	ug/L	6946	Standard
	Cr	53	12313.3	5.4	**14.7485**	0.907	6.2	ug/L	328	Standard
	Mn	55	1295871.4	1.2	**214.8489**	3.945	1.8	ug/L	823	Standard
	Co	59	1407.4	1.1	**0.1841**	0.002	1.1	ug/L	252	Standard
	Ni	60	4305.3	1.8	**2.3535**	0.034	1.4	ug/L	192	Standard
	Cu	65	1020.0	5.2	**0.4867**	0.034	6.9	ug/L	141	Standard
	Zn	66	18219.9	0.4	**17.0511**	0.173	1.0	ug/L	491	Standard
>	**Ge**	72	478933.9	0.7				ug/L	515087	Standard
	As	75	17040.6	2.0	**16.3399**	0.219	1.3	ug/L	20	Standard
	Se	82	892.6	3.4	**8.2180**	0.229	2.8	ug/L	15	Standard
	Se-1	77	753.4	7.3	**10.0390**	0.842	8.4	ug/L	48	Standard
>	**Ga**	71	218.3	6.6				mg/L	90	Standard
	Rb	85	3558.8	1.6				ug/L	23	Standard
	Y	89	416573.3	1.7				ug/L	448510	Standard
>	**Rh**	103	118.3	21.3				ug/L	15	Standard
	Mo	98	260.0	1.1	**0.0877**	0.004	4.4	ug/L	11	Standard
	Ag	107	80.3	26.9	**-0.0029**	0.004	134.9	ug/L	134	Standard
	Cd	111	40.9	26.1	**0.0184**	0.006	33.2	mg/L	7	Standard
	Cd	114	102.6	27.3	**0.0171**	0.006	37.8	ug/L	16	Standard
>	**In**	115	551143.5	2.5				ug/L	611117	Standard
	Sn	118	835.0	12.0	**0.0548**	0.020	37.1	ug/L	518	Standard
	Sb	123	829.1	3.5	**0.1820**	0.004	2.4	ug/L	127	Standard
	Ba	135	332622.5	0.7	**178.6804**	3.714	2.1	ug/L	45	Standard
	Ce	140	6094.6	2.7				ug/L	298	Standard
>	**Tb**	159	884304.9	2.4				ug/L	977942	Standard
	Ho	165	73.3	20.8				ug/L	12	Standard
	Tl	203	115.3	18.9	**0.0110**	0.003	28.4	ug/L	31	Standard
	Tl	205	95.0	13.9	**0.0127**	0.002	15.2	ug/L	20	Standard
	Pb	206	48021.0	1.3	**10.1649**	0.107	1.1	ug/L	286	Standard
	Pb	207	40222.3	0.8	**9.4401**	0.093	1.0	ug/L	257	Standard
	Pb	208	168471.0	1.1	**10.2223**	0.060	0.6	ug/L	956	Standard
	U	238	714.0	7.4	**0.1118**	0.009	8.4	ug/L	17	Standard
>	**Bi**	209	483931.7	1.1				ug/L	557080	Standard

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Na	23	8.3	34.6	**54.1394**	18.829	34.8	mg/L	0	Standard
Mg	24	106065.1	2.2	**142.7401**	3.063	2.1	mg/L	32	Standard
K	39	148.3	8.5	**0.3655**	0.044	12.0	mg/L	30	Standard
Ca	43	363.3	11.2	**50.4710**	6.294	12.5	mg/L	48	Standard
Fe	54	1618.9	1.4	**1.3448**	0.023	1.7	mg/L	159	Standard
Fe	57	835.0	5.7	**2.2263**	0.157	7.1	mg/L	195	Standard
> **Sc-1**	45	39097.0	0.2				mg/L	39543	Standard
Cl	35	36261.3	1.4				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	214333.6	4.1				ug/L	1647	Standard
P	31	21892.5	1.8				ug/L	15231	Standard
S	34	2305.2	3.8				ug/L	1845	Standard
Sr	88	363.3	12.3				ug/L	70	Standard
C	12	390.0	0.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	133.0	23.5				mg/L	12	Standard
Ho-1	165	73.3	20.8				mg/L	12	Standard
Er	166	76.7	66.9				mg/L	20	Standard
I	127	398539.7	6.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.695	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.981	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.186
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		86.869
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606140201
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Method 6020 - Summary Report

Sample ID: L1606140401
Sample Date/Time: Tuesday, June 28, 2016 23:06:21
Number of Replicates: 3
Autosampler Position: 352
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74993.5	0.5				ug/L	81760	Standard
	Be	9	21.7	13.3	**0.0141**	0.003	22.5	ug/L	17	Standard
	Al	27	30278310.9	1.4	**214.1402**	2.917	1.4	ug/L	1410	Standard
	Sc	45	39486.4	2.9				ug/L	39543	Standard
	Ti	47	193.3	4.5	**0.6334**	0.048	7.5	ug/L	39	Standard
	V	51	22966.6	2.4	**3.1851**	0.035	1.1	ug/L	1415	Standard
	Cr	52	11319.6	0.7	**0.6125**	0.031	5.1	ug/L	6946	Standard
	Cr	53	1811.8	4.8	**1.7776**	0.107	6.0	ug/L	328	Standard
	Mn	55	8657.1	1.2	**1.2226**	0.034	2.8	ug/L	823	Standard
	Co	59	565.7	7.8	**0.0513**	0.007	13.0	ug/L	252	Standard
	Ni	60	1945.8	2.7	**0.9557**	0.026	2.7	ug/L	192	Standard
	Cu	65	60353.0	0.9	**32.5191**	0.515	1.6	ug/L	141	Standard
	Zn	66	48175.8	1.3	**44.3004**	1.008	2.3	ug/L	491	Standard
>	**Ge**	72	501772.7	1.4				ug/L	515087	Standard
	As	75	367.9	8.8	**0.3760**	0.025	6.7	ug/L	20	Standard
	Se	82	110.4	13.6	**0.8639**	0.120	13.9	ug/L	15	Standard
	Se-1	77	129.0	8.1	**1.0381**	0.123	11.8	ug/L	48	Standard
>	**Ga**	71	68.3	27.7				mg/L	90	Standard
	Rb	85	1198.4	2.3				ug/L	23	Standard
	Y	89	417957.0	1.4				ug/L	448510	Standard
>	**Rh**	103	78.3	35.2				ug/L	15	Standard
	Mo	98	388.3	6.2	**0.1355**	0.009	6.9	ug/L	11	Standard
	Ag	107	94.3	4.8	**-0.0011**	0.001	61.6	ug/L	134	Standard
	Cd	111	42.7	19.5	**0.0186**	0.004	22.3	mg/L	7	Standard
	Cd	114	106.8	24.4	**0.0172**	0.005	31.6	ug/L	16	Standard
>	**In**	115	568064.8	0.3				ug/L	611117	Standard
	Sn	118	741.7	8.4	**0.0330**	0.012	35.5	ug/L	518	Standard
	Sb	123	163.0	3.3	**0.0243**	0.001	4.6	ug/L	127	Standard
	Ba	135	87619.3	0.7	**45.6318**	0.199	0.4	ug/L	45	Standard
	Ce	140	530.0	5.7				ug/L	298	Standard
>	**Tb**	159	902463.1	0.6				ug/L	977942	Standard
	Ho	165	31.7	24.1				ug/L	12	Standard
	Tl	203	89.3	3.6	**0.0068**	0.000	7.0	ug/L	31	Standard
	Tl	205	80.0	18.8	**0.0096**	0.002	23.2	ug/L	20	Standard
	Pb	206	4637.4	0.5	**0.8697**	0.009	1.0	ug/L	286	Standard
	Pb	207	3892.8	1.5	**0.8106**	0.017	2.1	ug/L	257	Standard
	Pb	208	15697.9	1.6	**0.8448**	0.009	1.1	ug/L	956	Standard
	U	238	6211.6	0.5	**0.9400**	0.010	1.1	ug/L	17	Standard
>	**Bi**	209	512163.0	0.7				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.8762**	18.829	173.1	mg/L	0	Standard
Mg	24	25888.8	0.8	**34.4779**	1.238	3.6	mg/L	32	Standard
K	39	206.7	17.0	**0.5565**	0.104	18.6	mg/L	30	Standard
Ca	43	238.3	20.2	**30.9565**	7.726	25.0	mg/L	48	Standard
Fe	54	118.7	26.0	**-0.0297**	0.026	88.1	mg/L	159	Standard
Fe	57	376.7	12.0	**0.6523**	0.186	28.5	mg/L	195	Standard
> **Sc-1**	45	39486.4	2.9				mg/L	39543	Standard
Cl	35	38202.8	1.2				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	11808.0	7.7				ug/L	1647	Standard
P	31	21151.4	0.3				ug/L	15231	Standard
S	34	2466.9	2.1				ug/L	1845	Standard
Sr	88	291.7	10.5				ug/L	70	Standard
C	12	196.7	43.2				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	28.2	2.0				mg/L	12	Standard
Ho-1	165	31.7	24.1				mg/L	12	Standard
Er	166	36.7	31.5				mg/L	20	Standard
I	127	34317.5	11.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.724	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.415	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		92.955
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.937
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606140801
Sample Date/Time: Tuesday, June 28, 2016 23:09:32
Number of Replicates: 3
Autosampler Position: 353
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78174.6	2.2				ug/L	81760	Standard
	Be	9	35.0	24.7	**0.0270**	0.008	30.6	ug/L	17	Standard
	Al	27	18286645.8	1.2	**124.0948**	2.663	2.1	ug/L	1410	Standard
	Sc	45	40988.7	1.5				ug/L	39543	Standard
	Ti	47	225.3	13.4	**0.7985**	0.121	15.1	ug/L	39	Standard
	V	51	51258.6	3.2	**7.6390**	0.153	2.0	ug/L	1415	Standard
	Cr	52	11486.4	2.6	**0.6992**	0.069	9.9	ug/L	6946	Standard
	Cr	53	8145.5	5.8	**9.5287**	0.474	5.0	ug/L	328	Standard
	Mn	55	98520.0	1.7	**16.0208**	0.120	0.7	ug/L	823	Standard
	Co	59	769.4	2.9	**0.0851**	0.002	2.7	ug/L	252	Standard
	Ni	60	1615.4	2.4	**0.8080**	0.032	4.0	ug/L	192	Standard
	Cu	65	1131.0	3.0	**0.5425**	0.014	2.7	ug/L	141	Standard
	Zn	66	4403.0	3.4	**3.4460**	0.103	3.0	ug/L	491	Standard
>	**Ge**	72	484103.1	1.4				ug/L	515087	Standard
	As	75	1970.8	6.0	**1.9047**	0.087	4.5	ug/L	20	Standard
	Se	82	191.5	8.8	**1.6489**	0.132	8.0	ug/L	15	Standard
	Se-1	77	529.7	10.7	**6.7555**	0.697	10.3	ug/L	48	Standard
>	**Ga**	71	85.0	31.1				mg/L	90	Standard
	Rb	85	2531.9	3.1				ug/L	23	Standard
	Y	89	421592.5	4.0				ug/L	448510	Standard
>	**Rh**	103	66.7	30.3				ug/L	15	Standard
	Mo	98	353.3	5.0	**0.1209**	0.007	5.4	ug/L	11	Standard
	Ag	107	105.0	57.1	**0.0006**	0.010	1741.0	ug/L	134	Standard
	Cd	111	58.7	7.1	**0.0265**	0.001	5.4	mg/L	7	Standard
	Cd	114	139.6	12.3	**0.0238**	0.003	13.4	ug/L	16	Standard
>	**In**	115	570844.6	2.8				ug/L	611117	Standard
	Sn	118	760.0	5.7	**0.0358**	0.009	25.3	ug/L	518	Standard
	Sb	123	136.8	41.6	**0.0182**	0.013	71.7	ug/L	127	Standard
	Ba	135	27343.0	2.9	**14.1534**	0.097	0.7	ug/L	45	Standard
	Ce	140	1776.8	2.1				ug/L	298	Standard
>	**Tb**	159	907261.5	0.9				ug/L	977942	Standard
	Ho	165	38.3	32.8				ug/L	12	Standard
	Tl	203	160.7	51.8	**0.0162**	0.011	66.8	ug/L	31	Standard
	Tl	205	123.3	9.4	**0.0162**	0.002	11.0	ug/L	20	Standard
	Pb	206	469.0	16.1	**0.0318**	0.015	47.2	ug/L	286	Standard
	Pb	207	405.3	12.5	**0.0333**	0.011	33.4	ug/L	257	Standard
	Pb	208	1576.7	3.7	**0.0314**	0.003	10.7	ug/L	956	Standard
	U	238	14465.9	3.7	**2.2164**	0.080	3.6	ug/L	17	Standard
>	**Bi**	209	506765.8	0.4				ug/L	557080	Standard

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Na	23	3.3	86.6	**20.4816**	17.733	86.6	mg/L	0	Standard
Mg	24	76429.0	2.1	**98.0879**	0.872	0.9	mg/L	32	Standard
K	39	103.3	20.1	**0.1958**	0.071	36.2	mg/L	30	Standard
Ca	43	268.3	18.7	**34.0467**	7.923	23.3	mg/L	48	Standard
Fe	54	210.5	5.9	**0.0466**	0.009	18.4	mg/L	159	Standard
Fe	57	346.7	13.1	**0.5032**	0.132	26.3	mg/L	195	Standard
Sc-1	45	40988.7	1.5				mg/L	39543	Standard
Cl	35	41040.2	0.8				ug/L	27642	Standard
Kr	83	2.0	173.2				ug/L	2	Standard
Br	81	20580.7	5.3				ug/L	1647	Standard
P	31	21832.4	1.0				ug/L	15231	Standard
S	34	2461.9	6.1				ug/L	1845	Standard
Sr	88	228.3	13.2				ug/L	70	Standard
C	12	196.7	34.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	38.1	77.6				mg/L	12	Standard
Ho-1	165	38.3	32.8				mg/L	12	Standard
Er	166	40.0	90.1				mg/L	20	Standard
I	127	105209.9	5.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.615	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.985	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	93.410
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	90.968
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606140901
Sample Date/Time: Tuesday, June 28, 2016 23:12:44
Number of Replicates: 3
Autosampler Position: 354
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78595.1	3.1				ug/L	81760	Standard
	Be	9	26.7	57.3	**0.0179**	0.015	85.3	ug/L	17	Standard
	Al	27	20167615.6	1.1	**136.1889**	4.854	3.6	ug/L	1410	Standard
	Sc	45	39818.9	1.9				ug/L	39543	Standard
	Ti	47	311.7	10.4	**1.1846**	0.135	11.4	ug/L	39	Standard
	V	51	55787.4	0.6	**8.4391**	0.018	0.2	ug/L	1415	Standard
	Cr	52	16179.6	1.9	**1.4466**	0.047	3.2	ug/L	6946	Standard
	Cr	53	12833.8	2.8	**15.4070**	0.434	2.8	ug/L	328	Standard
	Mn	55	13187.4	1.1	**2.0427**	0.028	1.4	ug/L	823	Standard
	Co	59	670.0	4.7	**0.0714**	0.005	7.2	ug/L	252	Standard
	Ni	60	2540.2	2.3	**1.3479**	0.032	2.4	ug/L	192	Standard
	Cu	65	810.4	1.3	**0.3686**	0.005	1.5	ug/L	141	Standard
	Zn	66	2808.3	3.3	**1.9320**	0.083	4.3	ug/L	491	Standard
>	**Ge**	72	478186.0	0.4				ug/L	515087	Standard
	As	75	1572.1	0.9	**1.5465**	0.010	0.6	ug/L	20	Standard
	Se	82	338.5	3.3	**3.0475**	0.114	3.7	ug/L	15	Standard
	Se-1	77	792.0	6.7	**10.6055**	0.757	7.1	ug/L	48	Standard
>	**Ga**	71	71.7	10.7				mg/L	90	Standard
	Rb	85	3450.4	2.1				ug/L	23	Standard
	Y	89	421286.0	4.0				ug/L	448510	Standard
>	**Rh**	103	76.7	10.0				ug/L	15	Standard
	Mo	98	1179.3	2.2	**0.4594**	0.016	3.6	ug/L	11	Standard
	Ag	107	70.0	6.5	**-0.0048**	0.001	13.6	ug/L	134	Standard
	Cd	111	26.3	13.5	**0.0106**	0.002	18.0	mg/L	7	Standard
	Cd	114	71.5	14.0	**0.0102**	0.002	20.9	ug/L	16	Standard
>	**In**	115	557486.7	1.6				ug/L	611117	Standard
	Sn	118	753.4	2.1	**0.0377**	0.003	7.4	ug/L	518	Standard
	Sb	123	140.1	13.9	**0.0197**	0.005	23.1	ug/L	127	Standard
	Ba	135	30044.1	2.0	**15.9271**	0.116	0.7	ug/L	45	Standard
	Ce	140	1501.7	8.9				ug/L	298	Standard
>	**Tb**	159	887600.8	1.1				ug/L	977942	Standard
	Ho	165	38.3	27.2				ug/L	12	Standard
	Tl	203	136.3	15.5	**0.0135**	0.003	21.6	ug/L	31	Standard
	Tl	205	116.7	8.9	**0.0158**	0.002	10.2	ug/L	20	Standard
	Pb	206	477.7	6.1	**0.0364**	0.006	16.6	ug/L	286	Standard
	Pb	207	398.0	3.8	**0.0344**	0.003	8.7	ug/L	257	Standard
	Pb	208	1707.0	2.5	**0.0420**	0.002	4.6	ug/L	956	Standard
	U	238	23354.0	0.6	**3.6864**	0.026	0.7	ug/L	17	Standard
>	**Bi**	209	492176.6	0.6				ug/L	557080	Standard

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Na	23	8.3	124.9	**53.9308**	68.028	126.1	mg/L	0	Standard
Mg	24	78221.4	0.2	**103.3688**	1.796	1.7	mg/L	32	Standard
K	39	181.7	9.7	**0.4684**	0.061	12.9	mg/L	30	Standard
Ca	43	295.0	5.9	**39.1939**	3.495	8.9	mg/L	48	Standard
Fe	54	173.9	5.6	**0.0192**	0.007	35.0	mg/L	159	Standard
Fe	57	403.3	17.1	**0.7302**	0.251	34.4	mg/L	195	Standard
> **Sc-1**	45	39818.9	1.9				mg/L	39543	Standard
Cl	35	38063.1	1.8				ug/L	27642	Standard
Kr	83	1.3	173.2				ug/L	2	Standard
Br	81	39401.2	2.9				ug/L	1647	Standard
P	31	23753.6	2.5				ug/L	15231	Standard
S	34	2233.5	3.9				ug/L	1845	Standard
Sr	88	295.0	6.1				ug/L	70	Standard
C	12	220.0	31.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	222.1	127.8				mg/L	12	Standard
Ho-1	165	38.3	27.2				mg/L	12	Standard
Er	166	26.7	78.1				mg/L	20	Standard
I	127	56189.0	1.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		96.129	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.836	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.224
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		88.349
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 23:15:56
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73471.1	1.2				ug/L	81760	Standard
	Be	9	47618.1	3.0	**53.3659**	2.229	4.2	ug/L	17	Standard
	Al	27	7287296.4	1.0	**52.5966**	0.249	0.5	ug/L	1410	Standard
	Sc	45	40183.2	3.0				ug/L	39543	Standard
	Ti	47	24656.7	0.7	**99.9368**	1.445	1.4	ug/L	39	Standard
	V	51	342959.6	1.5	**49.6067**	0.741	1.5	ug/L	1415	Standard
	Cr	52	350575.7	1.6	**49.7880**	0.923	1.9	ug/L	6946	Standard
	Cr	53	44859.7	1.2	**51.2482**	0.358	0.7	ug/L	328	Standard
	Mn	55	313688.7	1.9	**48.6980**	0.765	1.6	ug/L	823	Standard
	Co	59	336351.1	1.2	**48.2963**	0.507	1.1	ug/L	252	Standard
	Ni	60	92893.3	2.1	**49.6893**	0.993	2.0	ug/L	192	Standard
	Cu	65	92858.0	0.8	**49.2454**	0.445	0.9	ug/L	141	Standard
	Zn	66	54854.1	1.5	**49.6985**	0.961	1.9	ug/L	491	Standard
>	Ge	72	510232.1	0.7				ug/L	515087	Standard
	As	75	53972.2	1.6	**48.5043**	0.935	1.9	ug/L	20	Standard
	Se	82	5467.9	0.8	**47.8296**	0.724	1.5	ug/L	15	Standard
	Se-1	77	3829.5	1.2	**50.5966**	0.465	0.9	ug/L	48	Standard
>	Ga	71	55.0	32.8				mg/L	90	Standard
	Rb	85	740.0	22.2				ug/L	23	Standard
	Y	89	417471.8	0.9				ug/L	448510	Standard
>	Rh	103	28.3	40.8				ug/L	15	Standard
	Mo	98	255774.9	1.1	**100.4324**	1.068	1.1	ug/L	11	Standard
	Ag	107	314263.4	0.6	**49.6826**	0.310	0.6	ug/L	134	Standard
	Cd	111	99244.0	2.0	**49.2800**	0.642	1.3	mg/L	7	Standard
	Cd	114	244609.6	0.7	**49.9721**	0.117	0.2	ug/L	16	Standard
>	In	115	575695.1	0.7				ug/L	611117	Standard
	Sn	118	277518.7	1.2	**49.7196**	0.393	0.8	ug/L	518	Standard
	Sb	123	223405.3	1.0	**50.2498**	0.315	0.6	ug/L	127	Standard
	Ba	135	95362.2	0.9	**49.0082**	0.194	0.4	ug/L	45	Standard
	Ce	140	66.7	18.9				ug/L	298	Standard
>	Tb	159	900469.8	1.2				ug/L	977942	Standard
	Ho	165	0.0					ug/L	12	Standard
	Tl	203	399704.8	0.8	**50.1537**	0.324	0.6	ug/L	31	Standard
	Tl	205	354566.9	2.1	**51.2307**	0.689	1.3	ug/L	20	Standard
	Pb	206	258134.8	1.1	**50.4360**	0.346	0.7	ug/L	286	Standard
	Pb	207	234508.0	1.0	**50.8014**	0.140	0.3	ug/L	257	Standard
	Pb	208	934488.0	0.8	**52.3272**	0.390	0.7	ug/L	956	Standard
	U	238	348175.4	0.3	**51.3787**	0.514	1.0	ug/L	17	Standard
>	Bi	209	526902.0	1.3				ug/L	557080	Standard

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Na	23	5.0	100.0	**32.0442**	31.868	99.5	mg/L	0	Standard
Mg	24	3947.2	3.3	**5.1157**	0.206	4.0	mg/L	32	Standard
K	39	1291.7	6.0	**4.1569**	0.313	7.5	mg/L	30	Standard
Ca	43	78.3	13.3	**6.3383**	1.191	18.8	mg/L	48	Standard
Fe	54	5567.6	3.6	**4.8270**	0.308	6.4	mg/L	159	Standard
Fe	57	1653.4	2.1	**4.8734**	0.265	5.4	mg/L	195	Standard
> **Sc-1**	45	40183.2	3.0				mg/L	39543	Standard
Cl	35	36099.6	2.2				ug/L	27642	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	2486.9	19.4				ug/L	1647	Standard
P	31	18199.3	2.9				ug/L	15231	Standard
S	34	2558.5	2.4				ug/L	1845	Standard
Sr	88	88.3	13.1				ug/L	70	Standard
C	12	123.3	18.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.5	205.9				mg/L	12	Standard
Ho-1	165	0.0					mg/L	12	Standard
Er	166	16.7	69.3				mg/L	20	Standard
I	127	3410.4	24.1				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	106.732		
	Al	27	105.193		
	Sc	45			
	Ti	47	99.937		
	V	51	99.213		
	Cr	52	99.576		
	Cr	53			
	Mn	55	97.396		
	Co	59	96.593		
	Ni	60	99.379		
	Cu	65	98.491		
	Zn	66	99.397		
>	Ge	72		99.057	
	As	75	97.009		
	Se	82	95.659		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	100.432		
Ag	107	99.365		
Cd	111	98.560		
Cd	114			
In	115			94.204
Sn	118	99.439		
Sb	123	100.500		
Ba	135	98.016		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.307		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.654		
U	238	102.757		
Bi	209			94.583
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 23:19:08
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74688.6	0.5				ug/L	81760	Standard
	Be	9	23.3	68.9	**0.0159**	0.018	110.7	ug/L	17	Standard
	Al	27	6963.5	51.4	**0.0350**	0.025	72.0	ug/L	1410	Standard
	Sc	45	39526.5	2.8				ug/L	39543	Standard
	Ti	47	29.3	2.0	**-0.0430**	0.003	6.9	ug/L	39	Standard
	V	51	1022.6	3.0	**-0.0543**	0.006	11.1	ug/L	1415	Standard
	Cr	52	6275.6	1.6	**-0.1243**	0.005	4.1	ug/L	6946	Standard
	Cr	53	655.0	2.0	**0.4308**	0.021	5.0	ug/L	328	Standard
	Mn	55	708.0	10.7	**-0.0355**	0.011	31.8	ug/L	823	Standard
	Co	59	254.0	9.4	**0.0060**	0.003	53.0	ug/L	252	Standard
	Ni	60	190.7	1.6	**-0.0002**	0.001	475.8	ug/L	192	Standard
	Cu	65	144.3	16.1	**-0.0123**	0.012	100.6	ug/L	141	Standard
	Zn	66	441.0	4.3	**-0.4114**	0.015	3.7	ug/L	491	Standard
>	**Ge**	72	497792.7	1.0				ug/L	515087	Standard
	As	75	-15.2	258.6	**0.0262**	0.036	138.8	ug/L	20	Standard
	Se	82	23.5	16.0	**0.0916**	0.033	35.7	ug/L	15	Standard
	Se-1	77	63.7	3.3	**0.1558**	0.037	23.6	ug/L	48	Standard
>	**Ga**	71	50.0	34.6				mg/L	90	Standard
	Rb	85	33.3	56.8				ug/L	23	Standard
	Y	89	425942.8	1.0				ug/L	448510	Standard
>	**Rh**	103	6.7	43.3				ug/L	15	Standard
	Mo	98	281.0	37.4	**0.0876**	0.040	45.9	ug/L	11	Standard
	Ag	107	137.7	21.7	**0.0048**	0.005	95.8	ug/L	134	Standard
	Cd	111	15.2	29.8	**0.0044**	0.002	50.1	mg/L	7	Standard
	Cd	114	43.1	89.6	**0.0036**	0.008	212.7	ug/L	16	Standard
>	**In**	115	595727.8	0.7				ug/L	611117	Standard
	Sn	118	753.4	17.4	**0.0287**	0.023	78.8	ug/L	518	Standard
	Sb	123	441.8	17.1	**0.0832**	0.016	19.8	ug/L	127	Standard
	Ba	135	56.0	54.4	**0.0027**	0.015	556.5	ug/L	45	Standard
	Ce	140	23.3	12.4				ug/L	298	Standard
>	**Tb**	159	931120.0	0.7				ug/L	977942	Standard
	Ho	165	10.0	86.6				ug/L	12	Standard
	Tl	203	88.3	51.6	**0.0060**	0.006	92.0	ug/L	31	Standard
	Tl	205	63.3	63.8	**0.0066**	0.006	85.2	ug/L	20	Standard
	Pb	206	308.0	15.6	**-0.0049**	0.009	177.6	ug/L	286	Standard
	Pb	207	259.7	11.6	**-0.0032**	0.006	187.4	ug/L	257	Standard
	Pb	208	1046.3	7.8	**-0.0033**	0.004	126.3	ug/L	956	Standard
	U	238	64.3	43.1	**0.0063**	0.004	62.8	ug/L	17	Standard
>	**Bi**	209	540861.2	0.7				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.5148**	18.203	173.1	mg/L	0	Standard
Mg	24	55.0	41.7	**0.0162**	0.030	187.5	mg/L	32	Standard
K	39	25.0	20.0	**-0.0566**	0.019	34.0	mg/L	30	Standard
Ca	43	33.3	34.6	**-0.2594**	1.827	704.2	mg/L	48	Standard
Fe	54	134.2	10.1	**-0.0157**	0.009	57.1	mg/L	159	Standard
Fe	57	241.7	9.3	**0.1932**	0.098	50.6	mg/L	195	Standard
Sc-1	45	39526.5	2.8				mg/L	39543	Standard
Cl	35	35813.0	1.8				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1830.1	10.1				ug/L	1647	Standard
P	31	18830.0	1.9				ug/L	15231	Standard
S	34	2625.2	3.0				ug/L	1845	Standard
Sr	88	65.0	33.5				ug/L	70	Standard
C	12	80.0	21.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	19.2	93.8				mg/L	12	Standard
Ho-1	165	10.0	86.6				mg/L	12	Standard
Er	166	16.7	91.7				mg/L	20	Standard
I	127	2391.9	12.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.642	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.482
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.089
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Tuesday, June 28, 2016 23:22:21
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70209.0	1.7				ug/L	81760	Standard
	Be	9	180.0	16.9	**0.2017**	0.039	19.3	ug/L	17	Standard
	Al	27	5133.2	109.4	**0.0240**	0.041	173.1	ug/L	1410	Standard
	Sc	45	36931.6	2.6				ug/L	39543	Standard
	Ti	47	20.7	36.3	**-0.0758**	0.033	44.0	ug/L	39	Standard
	V	51	3515.4	3.3	**0.3352**	0.014	4.2	ug/L	1415	Standard
	Cr	52	11116.7	0.6	**0.6541**	0.028	4.2	ug/L	6946	Standard
	Cr	53	1220.0	4.0	**1.1474**	0.049	4.3	ug/L	328	Standard
	Mn	55	3585.8	2.9	**0.4442**	0.023	5.1	ug/L	823	Standard
	Co	59	2687.2	1.7	**0.3785**	0.013	3.3	ug/L	252	Standard
	Ni	60	2873.6	1.1	**1.5299**	0.031	2.0	ug/L	192	Standard
	Cu	65	1483.4	2.9	**0.7455**	0.015	2.0	ug/L	141	Standard
	Zn	66	6969.9	1.2	**5.9869**	0.185	3.1	ug/L	491	Standard
>	**Ge**	72	480794.8	1.6				ug/L	515087	Standard
	As	75	396.5	4.3	**0.4183**	0.021	5.0	ug/L	20	Standard
	Se	82	61.9	5.1	**0.4561**	0.020	4.4	ug/L	15	Standard
	Se-1	77	78.3	14.0	**0.3969**	0.172	43.4	ug/L	48	Standard
>	**Ga**	71	46.7	32.7				mg/L	90	Standard
	Rb	85	21.7	13.3				ug/L	23	Standard
	Y	89	400775.4	1.5				ug/L	448510	Standard
>	**Rh**	103	13.3	21.7				ug/L	15	Standard
	Mo	98	70.5	1.1	**0.0095**	0.000	1.9	ug/L	11	Standard
	Ag	107	2377.2	2.1	**0.3719**	0.012	3.3	ug/L	134	Standard
	Cd	111	440.9	3.8	**0.2230**	0.005	2.1	mg/L	7	Standard
	Cd	114	1065.8	11.0	**0.2200**	0.026	11.9	ug/L	16	Standard
>	**In**	115	557761.4	1.6				ug/L	611117	Standard
	Sn	118	468.3	18.8	**-0.0150**	0.017	116.5	ug/L	518	Standard
	Sb	123	1709.9	1.5	**0.3843**	0.009	2.4	ug/L	127	Standard
	Ba	135	1358.4	3.9	**0.6957**	0.022	3.2	ug/L	45	Standard
	Ce	140	15.0	33.3				ug/L	298	Standard
>	**Tb**	159	873882.2	1.3				ug/L	977942	Standard
	Ho	165	8.3	124.9				ug/L	12	Standard
	Tl	203	633.3	2.0	**0.0774**	0.002	2.5	ug/L	31	Standard
	Tl	205	590.0	17.7	**0.0858**	0.015	17.2	ug/L	20	Standard
	Pb	206	1230.0	0.6	**0.1853**	0.002	0.8	ug/L	286	Standard
	Pb	207	1060.4	4.9	**0.1798**	0.012	6.4	ug/L	257	Standard
	Pb	208	4496.6	3.9	**0.2002**	0.009	4.3	ug/L	956	Standard
	U	238	2637.6	2.9	**0.3996**	0.008	2.0	ug/L	17	Standard
>	**Bi**	209	509391.4	0.9				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	38.3	30.1	**-0.0027**	0.016	586.9	mg/L	32	Standard
K	39	28.3	44.4	**-0.0396**	0.043	109.0	mg/L	30	Standard
Ca	43	26.7	43.3	**-1.0379**	1.747	168.3	mg/L	48	Standard
Fe	54	112.3	22.9	**-0.0284**	0.024	85.0	mg/L	159	Standard
Fe	57	253.3	17.2	**0.2902**	0.150	51.8	mg/L	195	Standard
> **Sc-1**	45	36931.6	2.6				mg/L	39543	Standard
Cl	35	34628.2	2.2				ug/L	27642	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1663.4	2.8				ug/L	1647	Standard
P	31	13167.4	6.3				ug/L	15231	Standard
S	34	2550.2	3.7				ug/L	1845	Standard
Sr	88	81.7	12.7				ug/L	70	Standard
C	12	96.7	15.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	22.7	104.3				mg/L	12	Standard
Ho-1	165	8.3	124.9				mg/L	12	Standard
Er	166	13.3	173.2				mg/L	20	Standard
I	127	1815.1	19.4				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	100.854		
	Al	27			
	Sc	45			
	Ti	47			
	V	51	83.798		
	Cr	52	81.760		
	Cr	53			
	Mn	55	88.848		
	Co	59	94.629		
	Ni	60	95.622		
	Cu	65	93.183		
	Zn	66	95.791		
>	Ge	72		93.342	
	As	75	104.574		
	Se	82	114.027		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	92.977		
Cd	111	92.929		
Cd	114			
> In	115			91.269
Sn	118			
Sb	123	96.075		
Ba	135	92.766		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	96.789		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.122		
U	238	99.892		
> Bi	209			91.439
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBS M4 WG574306-02
Sample Date/Time: Tuesday, June 28, 2016 23:25:34
Number of Replicates: 3
Autosampler Position: 401
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73219.9	2.0				ug/L	81760	Standard
	Be	9	21.7	13.3	**0.0146**	0.003	19.0	ug/L	17	Standard
	Al	27	8870.9	1.6	**0.0499**	0.001	2.1	ug/L	1410	Standard
	Sc	45	39242.4	3.0				ug/L	39543	Standard
	Ti	47	26.0	21.4	**-0.0565**	0.021	37.8	ug/L	39	Standard
	V	51	1183.1	4.4	**-0.0293**	0.008	27.7	ug/L	1415	Standard
	Cr	52	7819.4	0.5	**0.1132**	0.035	31.1	ug/L	6946	Standard
	Cr	53	706.7	5.7	**0.4968**	0.043	8.6	ug/L	328	Standard
	Mn	55	910.4	1.2	**-0.0022**	0.005	247.3	ug/L	823	Standard
	Co	59	210.7	7.4	**-0.0001**	0.003	2281.1	ug/L	252	Standard
	Ni	60	270.7	10.1	**0.0449**	0.018	40.4	ug/L	192	Standard
	Cu	65	197.3	7.2	**0.0174**	0.009	50.7	ug/L	141	Standard
	Zn	66	1637.4	3.9	**0.7282**	0.056	7.7	ug/L	491	Standard
>	**Ge**	72	494675.2	2.7				ug/L	515087	Standard
	As	75	-22.9	72.5	**0.0188**	0.016	85.6	ug/L	20	Standard
	Se	82	19.6	24.9	**0.0572**	0.041	70.8	ug/L	15	Standard
	Se-1	77	57.0	14.0	**0.0674**	0.090	134.0	ug/L	48	Standard
>	**Ga**	71	43.3	17.6				mg/L	90	Standard
	Rb	85	43.3	35.3				ug/L	23	Standard
	Y	89	424600.8	0.9				ug/L	448510	Standard
>	**Rh**	103	15.0	66.7				ug/L	15	Standard
	Mo	98	68.5	24.2	**0.0070**	0.006	90.8	ug/L	11	Standard
	Ag	107	79.3	10.7	**-0.0041**	0.001	32.3	ug/L	134	Standard
	Cd	111	8.5	44.3	**0.0012**	0.002	151.3	mg/L	7	Standard
	Cd	114	29.3	97.6	**0.0009**	0.006	647.6	ug/L	16	Standard
>	**In**	115	594639.0	0.2				ug/L	611117	Standard
	Sn	118	648.3	4.2	**0.0107**	0.005	42.7	ug/L	518	Standard
	Sb	123	146.0	12.4	**0.0190**	0.004	20.5	ug/L	127	Standard
	Ba	135	94.3	2.4	**0.0219**	0.001	5.5	ug/L	45	Standard
	Ce	140	41.7	27.7				ug/L	298	Standard
>	**Tb**	159	926166.4	1.8				ug/L	977942	Standard
	Ho	165	11.7	24.7				ug/L	12	Standard
	Tl	203	20.7	43.9	**-0.0022**	0.001	49.4	ug/L	31	Standard
	Tl	205	15.0	33.3	**-0.0001**	0.001	484.0	ug/L	20	Standard
	Pb	206	313.0	7.9	**-0.0032**	0.004	138.6	ug/L	286	Standard
	Pb	207	286.3	1.1	**0.0033**	0.001	36.5	ug/L	257	Standard
	Pb	208	1144.7	1.9	**0.0029**	0.001	51.3	ug/L	956	Standard
	U	238	10.7	32.9	**-0.0014**	0.001	35.7	ug/L	17	Standard
>	**Bi**	209	533593.4	0.9				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	31.7	39.7	**-0.0149**	0.016	104.8	mg/L	32	Standard
K	39	41.7	69.3	**0.0013**	0.101	7981.1	mg/L	30	Standard
Ca	43	18.3	15.7	**-2.5418**	0.422	16.6	mg/L	48	Standard
Fe	54	144.2	9.3	**-0.0052**	0.016	301.7	mg/L	159	Standard
Fe	57	226.7	13.5	**0.1451**	0.083	57.3	mg/L	195	Standard
Sc-1	45	39242.4	3.0				mg/L	39543	Standard
Cl	35	36295.4	2.3				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	2233.5	3.2				ug/L	1647	Standard
P	31	18441.2	3.0				ug/L	15231	Standard
S	34	2560.2	3.7				ug/L	1845	Standard
Sr	88	61.7	26.1				ug/L	70	Standard
C	12	130.0	20.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	22.9	112.2				mg/L	12	Standard
Ho-1	165	11.7	24.7				mg/L	12	Standard
Er	166	10.0	100.0				mg/L	20	Standard
I	127	1601.8	24.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.555	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.037	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.304
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.784
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBS M4 WG574306-02
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Method 6020 - Summary Report

Sample ID: LCSS M4 WG574306-03
Sample Date/Time: Tuesday, June 28, 2016 23:28:45
Number of Replicates: 3
Autosampler Position: 402
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72376.0	3.8				ug/L	81760	Standard
	Be	9	23423.1	1.4	**26.6532**	0.807	3.0	ug/L	17	Standard
	Al	27	9074.4	3.8	**0.0521**	0.003	4.9	ug/L	1410	Standard
	Sc	45	39197.3	2.4				ug/L	39543	Standard
	Ti	47	29.3	7.1	**-0.0442**	0.007	16.8	ug/L	39	Standard
	V	51	169885.7	0.8	**24.8594**	0.272	1.1	ug/L	1415	Standard
	Cr	52	181506.5	1.2	**25.6821**	0.081	0.3	ug/L	6946	Standard
	Cr	53	22394.9	2.0	**25.8190**	0.261	1.0	ug/L	328	Standard
	Mn	55	162938.5	1.1	**25.6253**	0.137	0.5	ug/L	823	Standard
	Co	59	171171.6	1.4	**24.9527**	0.363	1.5	ug/L	252	Standard
	Ni	60	47214.1	1.2	**25.6031**	0.067	0.3	ug/L	192	Standard
	Cu	65	47011.2	0.9	**25.2811**	0.042	0.2	ug/L	141	Standard
	Zn	66	28788.3	1.3	**26.1066**	0.165	0.6	ug/L	491	Standard
>	**Ge**	72	502290.9	1.0				ug/L	515087	Standard
	As	75	27387.3	0.6	**25.0208**	0.130	0.5	ug/L	20	Standard
	Se	82	2754.4	0.7	**24.4154**	0.147	0.6	ug/L	15	Standard
	Se-1	77	1916.1	0.9	**25.3637**	0.129	0.5	ug/L	48	Standard
>	**Ga**	71	55.0	18.2				mg/L	90	Standard
	Rb	85	31.7	18.2				ug/L	23	Standard
	Y	89	439399.0	0.9				ug/L	448510	Standard
>	**Rh**	103	31.7	24.1				ug/L	15	Standard
	Mo	98	98.7	7.7	**0.0186**	0.002	12.0	ug/L	11	Standard
	Ag	107	158446.9	0.8	**24.3265**	0.298	1.2	ug/L	134	Standard
	Cd	111	51639.0	0.8	**24.9106**	0.321	1.3	mg/L	7	Standard
	Cd	114	123238.5	0.9	**24.4562**	0.275	1.1	ug/L	16	Standard
>	**In**	115	592677.3	1.9				ug/L	611117	Standard
	Sn	118	653.3	6.2	**0.0119**	0.005	41.0	ug/L	518	Standard
	Sb	123	110361.6	0.7	**24.1094**	0.310	1.3	ug/L	127	Standard
	Ba	135	48745.3	0.9	**24.3246**	0.340	1.4	ug/L	45	Standard
	Ce	140	51.7	39.1				ug/L	298	Standard
>	**Tb**	159	905963.3	1.2				ug/L	977942	Standard
	Ho	165	11.7	65.5				ug/L	12	Standard
	Tl	203	202415.8	0.8	**25.4126**	0.129	0.5	ug/L	31	Standard
	Tl	205	180512.3	0.1	**26.1008**	0.236	0.9	ug/L	20	Standard
	Pb	206	132596.7	0.6	**25.8949**	0.268	1.0	ug/L	286	Standard
	Pb	207	115831.1	1.1	**25.0809**	0.349	1.4	ug/L	257	Standard
	Pb	208	485807.7	1.5	**27.1937**	0.548	2.0	ug/L	956	Standard
	U	238	174705.5	0.6	**25.7950**	0.133	0.5	ug/L	17	Standard
>	**Bi**	209	526543.8	0.9				ug/L	557080	Standard

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	Na	23	0.0		**0.0050**			mg/L	0	Standard
	Mg	24	28.3	53.9	**-0.0192**	0.020	104.0	mg/L	32	Standard
	K	39	18.3	78.7	**-0.0794**	0.048	60.3	mg/L	30	Standard
	Ca	43	26.7	21.7	**-1.2726**	0.799	62.8	mg/L	48	Standard
	Fe	54	143.6	13.2	**-0.0059**	0.017	289.5	mg/L	159	Standard
	Fe	57	241.7	12.5	**0.2002**	0.121	60.5	mg/L	195	Standard
>	**Sc-1**	45	39197.3	2.4				mg/L	39543	Standard
	Cl	35	35988.7	2.8				ug/L	27642	Standard
	Kr	83	3.3	17.3				ug/L	2	Standard
	Br	81	1690.1	11.1				ug/L	1647	Standard
	P	31	17910.6	1.0				ug/L	15231	Standard
	S	34	2548.5	6.5				ug/L	1845	Standard
	Sr	88	75.0	24.0				ug/L	70	Standard
	C	12	120.0	16.7				mg/L	113	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	0	Standard
	Dy	164	16.5	68.3				mg/L	12	Standard
	Ho-1	165	11.7	65.5				mg/L	12	Standard
	Er	166	3.3	173.2				mg/L	20	Standard
	I	127	1618.4	15.4				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		88.522	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.516	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.983
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.518
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSS M4 WG574306-03
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Method 6020 - Summary Report

Sample ID: L1606129707 WG574306-01
Sample Date/Time: Tuesday, June 28, 2016 23:31:57
Number of Replicates: 3
Autosampler Position: 403
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73039.0	1.3				ug/L	81760	Standard
	Be	9	626.7	10.9	**0.6973**	0.086	12.3	ug/L	17	Standard
	Al	27	6016122.3	2.0	**43.6794**	0.992	2.3	ug/L	1410	Standard
	Sc	45	43592.6	1.8				ug/L	39543	Standard
	Ti	47	1645.1	1.5	**6.4955**	0.085	1.3	ug/L	39	Standard
	V	51	103833.7	2.4	**14.8338**	0.288	1.9	ug/L	1415	Standard
	Cr	52	59851.7	1.4	**7.6005**	0.153	2.0	ug/L	6946	Standard
	Cr	53	7268.4	3.1	**7.9966**	0.305	3.8	ug/L	328	Standard
	Mn	55	3268160.2	1.2	**507.4707**	9.760	1.9	ug/L	823	Standard
	Co	59	39533.2	0.9	**5.6343**	0.098	1.7	ug/L	252	Standard
	Ni	60	18874.4	2.7	**9.9863**	0.299	3.0	ug/L	192	Standard
	Cu	65	69246.2	1.1	**36.6021**	0.305	0.8	ug/L	141	Standard
	Zn	66	86637.7	0.8	**78.7605**	0.745	0.9	ug/L	491	Standard
>	**Ge**	72	511586.4	0.8				ug/L	515087	Standard
	As	75	4823.9	1.5	**4.3600**	0.029	0.7	ug/L	20	Standard
	Se	82	100.3	6.0	**0.7578**	0.047	6.2	ug/L	15	Standard
	Se-1	77	133.3	1.1	**1.0631**	0.006	0.6	ug/L	48	Standard
>	**Ga**	71	7216.7	0.8				mg/L	90	Standard
	Rb	85	77067.2	0.1				ug/L	23	Standard
	Y	89	607493.8	2.8				ug/L	448510	Standard
>	**Rh**	103	25.0	34.6				ug/L	15	Standard
	Mo	98	512.0	2.8	**0.1759**	0.005	2.9	ug/L	11	Standard
	Ag	107	750.4	6.7	**0.0988**	0.008	7.8	ug/L	134	Standard
	Cd	111	815.5	1.0	**0.3898**	0.005	1.3	mg/L	7	Standard
	Cd	114	2038.2	2.1	**0.3989**	0.010	2.4	ug/L	16	Standard
>	**In**	115	593721.9	0.4				ug/L	611117	Standard
	Sn	118	941.7	10.4	**0.0620**	0.016	26.6	ug/L	518	Standard
	Sb	123	1005.8	16.4	**0.2066**	0.037	17.7	ug/L	127	Standard
	Ba	135	393236.3	1.1	**196.0335**	2.433	1.2	ug/L	45	Standard
	Ce	140	857283.3	2.5				ug/L	298	Standard
>	**Tb**	159	944884.3	0.7				ug/L	977942	Standard
	Ho	165	15139.2	2.1				ug/L	12	Standard
	Tl	203	479.0	10.1	**0.0546**	0.006	10.6	ug/L	31	Standard
	Tl	205	396.7	12.4	**0.0544**	0.008	14.1	ug/L	20	Standard
	Pb	206	209606.6	0.8	**40.4302**	0.428	1.1	ug/L	286	Standard
	Pb	207	173972.5	0.8	**37.2011**	0.310	0.8	ug/L	257	Standard
	Pb	208	734775.6	0.6	**40.6204**	0.824	2.0	ug/L	956	Standard
	U	238	3055.0	2.6	**0.4423**	0.014	3.2	ug/L	17	Standard
>	**Bi**	209	533598.4	1.5				ug/L	557080	Standard

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Na	23	3.3	173.2	**19.2926**	33.407	173.2	mg/L	0	Standard
Mg	24	75.0	26.7	**0.0334**	0.024	70.8	mg/L	32	Standard
K	39	210.0	4.8	**0.5021**	0.023	4.7	mg/L	30	Standard
Ca	43	75.0	29.1	**4.9537**	2.848	57.5	mg/L	48	Standard
Fe	54	6552.0	2.8	**5.2441**	0.230	4.4	mg/L	159	Standard
Fe	57	1841.8	2.3	**5.0156**	0.091	1.8	mg/L	195	Standard
> **Sc-1**	45	43592.6	1.8				mg/L	39543	Standard
Cl	35	34528.0	1.5				ug/L	27642	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	3080.3	6.6				ug/L	1647	Standard
P	31	18262.7	4.8				ug/L	15231	Standard
S	34	2550.2	4.9				ug/L	1845	Standard
Sr	88	106.7	7.2				ug/L	70	Standard
C	12	370.0	20.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	40.0				mg/L	0	Standard
Dy	164	25551.2	3.2				mg/L	12	Standard
Ho-1	165	15139.2	2.1				mg/L	12	Standard
Er	166	14156.6	1.1				mg/L	20	Standard
I	127	14104.9	1.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.333	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.320	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.154
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.785
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129708S WG574306-04
Sample Date/Time: Tuesday, June 28, 2016 23:35:08
Number of Replicates: 3
Autosampler Position: 404
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77425.7	0.5				ug/L	81760	Standard
	Be	9	24978.9	2.1	**26.5514**	0.597	2.2	ug/L	17	Standard
	Al	27	20723622.4	0.1	**141.9584**	0.685	0.5	ug/L	1410	Standard
	Sc	45	47225.2	3.2				ug/L	39543	Standard
	Ti	47	4499.3	2.9	**18.2724**	0.558	3.1	ug/L	39	Standard
	V	51	344846.0	0.3	**50.3538**	0.699	1.4	ug/L	1415	Standard
	Cr	52	312957.5	0.8	**44.7646**	1.096	2.4	ug/L	6946	Standard
	Cr	53	39581.6	1.4	**45.6150**	1.229	2.7	ug/L	328	Standard
	Mn	55	5573425.5	1.4	**875.8629**	6.350	0.7	ug/L	823	Standard
	Co	59	254404.2	1.0	**36.8653**	0.333	0.9	ug/L	252	Standard
	Ni	60	98601.5	0.1	**53.2500**	0.840	1.6	ug/L	192	Standard
	Cu	65	83052.3	0.8	**44.4536**	0.827	1.9	ug/L	141	Standard
	Zn	66	91760.7	0.8	**84.4843**	0.972	1.2	ug/L	491	Standard
>	**Ge**	72	505521.9	1.6				ug/L	515087	Standard
	As	75	29384.3	0.4	**26.6737**	0.341	1.3	ug/L	20	Standard
	Se	82	1902.3	1.0	**16.7176**	0.177	1.1	ug/L	15	Standard
	Se-1	77	1368.1	4.0	**17.7813**	0.553	3.1	ug/L	48	Standard
>	**Ga**	71	22081.1	1.8				mg/L	90	Standard
	Rb	85	217862.7	3.0				ug/L	23	Standard
	Y	89	681158.2	0.5				ug/L	448510	Standard
>	**Rh**	103	41.7	13.9				ug/L	15	Standard
	Mo	98	502.0	0.9	**0.1763**	0.003	1.6	ug/L	11	Standard
	Ag	107	151390.6	0.2	**23.7106**	0.326	1.4	ug/L	134	Standard
	Cd	111	50168.4	0.1	**24.6878**	0.285	1.2	mg/L	7	Standard
	Cd	114	122073.8	0.4	**24.7133**	0.372	1.5	ug/L	16	Standard
>	**In**	115	580961.0	1.3				ug/L	611117	Standard
	Sn	118	790.0	7.7	**0.0385**	0.009	23.5	ug/L	518	Standard
	Sb	123	3165.4	5.9	**0.6928**	0.037	5.4	ug/L	127	Standard
	Ba	135	532338.7	0.4	**271.2464**	4.110	1.5	ug/L	45	Standard
	Ce	140	1309534.5	1.1				ug/L	298	Standard
>	**Tb**	159	945803.3	0.3				ug/L	977942	Standard
	Ho	165	21665.5	2.8				ug/L	12	Standard
	Tl	203	195988.5	0.7	**24.3661**	0.181	0.7	ug/L	31	Standard
	Tl	205	172319.6	2.0	**24.6721**	0.452	1.8	ug/L	20	Standard
	Pb	206	254741.0	0.7	**49.3204**	0.423	0.9	ug/L	286	Standard
	Pb	207	216152.1	1.4	**46.3962**	0.722	1.6	ug/L	257	Standard
	Pb	208	888930.7	0.3	**49.3200**	0.099	0.2	ug/L	956	Standard
	U	238	171966.4	0.9	**25.1430**	0.188	0.7	ug/L	17	Standard
>	**Bi**	209	531711.1	0.2				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	125.0	34.9	**0.0812**	0.045	55.3	mg/L	32	Standard
K	39	518.3	8.6	**1.3288**	0.177	13.3	mg/L	30	Standard
Ca	43	238.3	9.5	**24.9959**	3.131	12.5	mg/L	48	Standard
Fe	54	18930.5	0.8	**14.2167**	0.407	2.9	mg/L	159	Standard
Fe	57	5154.2	3.0	**13.9467**	0.213	1.5	mg/L	195	Standard
> **Sc-1**	45	47225.2	3.2				mg/L	39543	Standard
Cl	35	33388.1	1.2				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2326.8	4.2				ug/L	1647	Standard
P	31	19087.0	1.5				ug/L	15231	Standard
S	34	2648.6	1.1				ug/L	1845	Standard
Sr	88	121.7	17.1				ug/L	70	Standard
C	12	206.7	36.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	56.8				mg/L	0	Standard
Dy	164	35480.3	0.5				mg/L	12	Standard
Ho-1	165	21665.5	2.8				mg/L	12	Standard
Er	166	19556.0	2.5				mg/L	20	Standard
I	127	13694.5	2.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.699	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.143	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.065
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.446
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129709SD WG574306-05
Sample Date/Time: Tuesday, June 28, 2016 23:38:19
Number of Replicates: 3
Autosampler Position: 405
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74161.1	1.1				ug/L	81760	Standard
	Be	9	23705.2	3.8	**26.3039**	0.872	3.3	ug/L	17	Standard
	Al	27	6111125.0	1.3	**43.6951**	0.516	1.2	ug/L	1410	Standard
	Sc	45	44620.6	1.2				ug/L	39543	Standard
	Ti	47	2932.6	3.4	**11.8635**	0.492	4.1	ug/L	39	Standard
	V	51	246865.2	0.2	**36.0158**	0.450	1.2	ug/L	1415	Standard
	Cr	52	213059.8	1.6	**30.1549**	0.173	0.6	ug/L	6946	Standard
	Cr	53	26094.1	1.0	**29.9771**	0.650	2.2	ug/L	328	Standard
	Mn	55	1521366.7	1.6	**239.1613**	2.815	1.2	ug/L	823	Standard
	Co	59	194513.2	1.8	**28.2005**	0.410	1.5	ug/L	252	Standard
	Ni	60	61728.2	1.1	**33.3195**	0.163	0.5	ug/L	192	Standard
	Cu	65	74436.8	1.3	**39.8619**	0.705	1.8	ug/L	141	Standard
	Zn	66	58904.3	0.8	**53.9789**	0.545	1.0	ug/L	491	Standard
>	**Ge**	72	505111.3	1.2				ug/L	515087	Standard
	As	75	31837.0	1.5	**28.9187**	0.503	1.7	ug/L	20	Standard
	Se	82	2328.1	1.1	**20.5054**	0.470	2.3	ug/L	15	Standard
	Se-1	77	1619.4	1.4	**21.2042**	0.440	2.1	ug/L	48	Standard
>	**Ga**	71	6334.7	3.0				mg/L	90	Standard
	Rb	85	74980.1	1.6				ug/L	23	Standard
	Y	89	605551.0	0.9				ug/L	448510	Standard
>	**Rh**	103	31.7	39.7				ug/L	15	Standard
	Mo	98	404.4	5.7	**0.1335**	0.008	5.8	ug/L	11	Standard
	Ag	107	149725.6	1.6	**22.7377**	0.610	2.7	ug/L	134	Standard
	Cd	111	49979.3	1.2	**23.8462**	0.386	1.6	mg/L	7	Standard
	Cd	114	121386.1	1.5	**23.8269**	0.554	2.3	ug/L	16	Standard
>	**In**	115	599198.2	1.3				ug/L	611117	Standard
	Sn	118	811.7	7.5	**0.0382**	0.012	32.5	ug/L	518	Standard
	Sb	123	19138.7	1.5	**4.1252**	0.117	2.8	ug/L	127	Standard
	Ba	135	258930.8	0.8	**127.9040**	1.896	1.5	ug/L	45	Standard
	Ce	140	760518.7	0.8				ug/L	298	Standard
>	**Tb**	159	951283.8	0.9				ug/L	977942	Standard
	Ho	165	14106.6	0.1				ug/L	12	Standard
	Tl	203	188730.2	0.5	**23.1187**	0.087	0.4	ug/L	31	Standard
	Tl	205	170134.9	1.0	**24.0027**	0.337	1.4	ug/L	20	Standard
	Pb	206	208981.3	1.7	**39.8515**	0.361	0.9	ug/L	286	Standard
	Pb	207	178505.4	0.4	**37.7421**	0.330	0.9	ug/L	257	Standard
	Pb	208	755416.1	1.2	**41.2868**	0.479	1.2	ug/L	956	Standard
	U	238	170025.1	1.0	**24.4935**	0.095	0.4	ug/L	17	Standard
>	**Bi**	209	539649.3	0.9				ug/L	557080	Standard

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Na	23	3.3	86.6	**19.0051**	16.458	86.6	mg/L	0	Standard
Mg	24	83.3	27.7	**0.0410**	0.026	64.1	mg/L	32	Standard
K	39	181.7	7.9	**0.4027**	0.045	11.2	mg/L	30	Standard
Ca	43	75.0	26.7	**4.7351**	2.622	55.4	mg/L	48	Standard
Fe	54	5650.5	3.5	**4.3963**	0.211	4.8	mg/L	159	Standard
Fe	57	1623.4	7.9	**4.2316**	0.365	8.6	mg/L	195	Standard
> **Sc-1**	45	44620.6	1.2				mg/L	39543	Standard
Cl	35	32136.0	1.3				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1900.1	7.1				ug/L	1647	Standard
P	31	17840.5	2.2				ug/L	15231	Standard
S	34	2363.5	5.1				ug/L	1845	Standard
Sr	88	98.3	20.5				ug/L	70	Standard
C	12	150.0	37.1				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	20.0				mg/L	0	Standard
Dy	164	23948.7	0.5				mg/L	12	Standard
Ho-1	165	14106.6	0.1				mg/L	12	Standard
Er	166	12898.8	4.1				mg/L	20	Standard
I	127	5567.7	3.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.706	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.063	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.050
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.871
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606129709SD WG574306-05
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Method 6020 - Summary Report

Sample ID: L1606144301
Sample Date/Time: Tuesday, June 28, 2016 23:41:31
Number of Replicates: 3
Autosampler Position: 406
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72988.8	2.0				ug/L	81760	Standard
	Be	9	916.7	4.9	**1.0251**	0.070	6.9	ug/L	17	Standard
	Al	27	29327581.2	1.7	**213.1994**	7.066	3.3	ug/L	1410	Standard
	Sc	45	42180.3	1.1				ug/L	39543	Standard
	Ti	47	15217.0	2.1	**62.4530**	1.008	1.6	ug/L	39	Standard
	V	51	58550.8	0.3	**8.4144**	0.093	1.1	ug/L	1415	Standard
	Cr	52	50375.3	2.1	**6.3484**	0.119	1.9	ug/L	6946	Standard
	Cr	53	5892.8	2.4	**6.5282**	0.148	2.3	ug/L	328	Standard
	Mn	55	1501608.8	1.0	**236.8837**	1.387	0.6	ug/L	823	Standard
	Co	59	11082.4	1.1	**1.5829**	0.023	1.4	ug/L	252	Standard
	Ni	60	9938.9	1.0	**5.2962**	0.105	2.0	ug/L	192	Standard
	Cu	65	12880.8	1.6	**6.8461**	0.032	0.5	ug/L	141	Standard
	Zn	66	52551.7	1.1	**48.2375**	0.337	0.7	ug/L	491	Standard
>	**Ge**	72	503346.2	1.1				ug/L	515087	Standard
	As	75	9638.5	1.8	**8.8128**	0.107	1.2	ug/L	20	Standard
	Se	82	89.1	11.5	**0.6728**	0.088	13.1	ug/L	15	Standard
	Se-1	77	112.0	20.6	**0.8047**	0.328	40.8	ug/L	48	Standard
>	**Ga**	71	5402.6	1.6				mg/L	90	Standard
	Rb	85	27092.5	2.9				ug/L	23	Standard
	Y	89	512619.4	0.7				ug/L	448510	Standard
>	**Rh**	103	40.0	45.1				ug/L	15	Standard
	Mo	98	2129.4	2.5	**0.7922**	0.032	4.0	ug/L	11	Standard
	Ag	107	397.3	28.5	**0.0446**	0.016	36.8	ug/L	134	Standard
	Cd	111	847.6	0.8	**0.4054**	0.009	2.1	mg/L	7	Standard
	Cd	114	2047.7	3.4	**0.4008**	0.011	2.7	ug/L	16	Standard
>	**In**	115	593663.8	1.5				ug/L	611117	Standard
	Sn	118	1955.1	5.4	**0.2386**	0.021	8.9	ug/L	518	Standard
	Sb	123	857.9	5.2	**0.1744**	0.012	7.0	ug/L	127	Standard
	Ba	135	91007.2	1.4	**45.3648**	1.263	2.8	ug/L	45	Standard
	Ce	140	427372.5	1.2				ug/L	298	Standard
>	**Tb**	159	914890.2	3.3				ug/L	977942	Standard
	Ho	165	5369.3	2.3				ug/L	12	Standard
	Tl	203	3260.4	2.3	**0.4133**	0.015	3.6	ug/L	31	Standard
	Tl	205	2856.9	4.2	**0.4193**	0.011	2.7	ug/L	20	Standard
	Pb	206	241551.6	0.7	**48.2276**	1.641	3.4	ug/L	286	Standard
	Pb	207	199984.5	0.7	**44.2621**	1.381	3.1	ug/L	257	Standard
	Pb	208	845904.8	0.5	**48.3946**	1.395	2.9	ug/L	956	Standard
	U	238	4244.6	0.7	**0.6370**	0.016	2.5	ug/L	17	Standard
>	**Bi**	209	515907.9	2.8				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.1607**	17.590	173.1	mg/L	0	Standard
Mg	24	176.7	13.4	**0.1635**	0.031	19.2	mg/L	32	Standard
K	39	111.7	29.8	**0.2126**	0.107	50.1	mg/L	30	Standard
Ca	43	486.7	20.1	**63.9109**	13.520	21.2	mg/L	48	Standard
Fe	54	4570.1	3.9	**3.7396**	0.111	3.0	mg/L	159	Standard
Fe	57	1611.8	3.6	**4.4774**	0.217	4.9	mg/L	195	Standard
> **Sc-1**	45	42180.3	1.1				mg/L	39543	Standard
Cl	35	34952.3	0.5				ug/L	27642	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	2820.3	6.2				ug/L	1647	Standard
P	31	18733.3	7.5				ug/L	15231	Standard
S	34	2421.9	7.6				ug/L	1845	Standard
Sr	88	105.0	16.5				ug/L	70	Standard
C	12	266.7	9.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	83.3	60.4				mg/L	0	Standard
Dy	164	8334.8	4.4				mg/L	12	Standard
Ho-1	165	5369.3	2.3				mg/L	12	Standard
Er	166	5100.9	4.8				mg/L	20	Standard
I	127	10480.3	8.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.272	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.721	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.144
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	92.609
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606144302
Sample Date/Time: Tuesday, June 28, 2016 23:44:42
Number of Replicates: 3
Autosampler Position: 407
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71243.8	1.4				ug/L	81760	Standard
	Be	9	1080.0	8.5	**1.2377**	0.094	7.6	ug/L	17	Standard
	Al	27	5504266.2	2.7	**40.9647**	0.928	2.3	ug/L	1410	Standard
	Sc	45	42188.7	3.4				ug/L	39543	Standard
	Ti	47	15737.8	0.6	**62.0152**	0.652	1.1	ug/L	39	Standard
	V	51	45512.4	1.5	**6.2276**	0.158	2.5	ug/L	1415	Standard
	Cr	52	44821.9	1.8	**5.2702**	0.176	3.3	ug/L	6946	Standard
	Cr	53	5345.9	2.2	**5.6430**	0.187	3.3	ug/L	328	Standard
	Mn	55	1510551.7	1.4	**228.8078**	5.482	2.4	ug/L	823	Standard
	Co	59	8314.6	0.3	**1.1314**	0.011	1.0	ug/L	252	Standard
	Ni	60	7372.1	1.0	**3.7410**	0.046	1.2	ug/L	192	Standard
	Cu	65	13129.7	1.4	**6.6988**	0.146	2.2	ug/L	141	Standard
	Zn	66	50712.1	0.8	**44.6331**	0.723	1.6	ug/L	491	Standard
>	**Ge**	72	524277.6	1.0				ug/L	515087	Standard
	As	75	7848.1	0.4	**6.8989**	0.093	1.3	ug/L	20	Standard
	Se	82	94.2	13.2	**0.6849**	0.109	15.9	ug/L	15	Standard
	Se-1	77	110.0	9.5	**0.7149**	0.123	17.2	ug/L	48	Standard
>	**Ga**	71	4740.7	7.0				mg/L	90	Standard
	Rb	85	22735.4	3.5				ug/L	23	Standard
	Y	89	510942.2	1.8				ug/L	448510	Standard
>	**Rh**	103	18.3	110.2				ug/L	15	Standard
	Mo	98	3616.2	2.9	**1.3869**	0.053	3.8	ug/L	11	Standard
	Ag	107	415.3	27.2	**0.0487**	0.017	35.1	ug/L	134	Standard
	Cd	111	879.6	1.3	**0.4294**	0.003	0.8	mg/L	7	Standard
	Cd	114	2156.4	4.6	**0.4311**	0.017	3.9	ug/L	16	Standard
>	**In**	115	581659.3	1.0				ug/L	611117	Standard
	Sn	118	1941.8	8.1	**0.2429**	0.025	10.2	ug/L	518	Standard
	Sb	123	795.2	3.5	**0.1642**	0.005	3.1	ug/L	127	Standard
	Ba	135	105670.2	0.5	**53.7566**	0.798	1.5	ug/L	45	Standard
	Ce	140	489350.3	0.7				ug/L	298	Standard
>	**Tb**	159	914906.3	0.9				ug/L	977942	Standard
	Ho	165	5852.8	3.2				ug/L	12	Standard
	Tl	203	2193.8	7.0	**0.2695**	0.018	6.5	ug/L	31	Standard
	Tl	205	1858.4	8.2	**0.2655**	0.024	8.9	ug/L	20	Standard
	Pb	206	250441.6	1.0	**48.7728**	1.107	2.3	ug/L	286	Standard
	Pb	207	208820.1	0.2	**45.0828**	0.807	1.8	ug/L	257	Standard
	Pb	208	871187.9	1.2	**48.6248**	1.437	3.0	ug/L	956	Standard
	U	238	4748.1	0.9	**0.6954**	0.016	2.3	ug/L	17	Standard
>	**Bi**	209	528719.9	1.7				ug/L	557080	Standard

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Na	23	6.7	43.3	**39.8641**	16.152	40.5	mg/L	0	Standard
Mg	24	568.3	2.7	**0.6523**	0.023	3.6	mg/L	32	Standard
K	39	88.3	11.8	**0.1385**	0.034	24.4	mg/L	30	Standard
Ca	43	236.7	18.2	**28.4335**	6.608	23.2	mg/L	48	Standard
Fe	54	3607.3	1.4	**2.9257**	0.132	4.5	mg/L	159	Standard
Fe	57	1208.4	3.1	**3.2044**	0.245	7.6	mg/L	195	Standard
> **Sc-1**	45	42188.7	3.4				mg/L	39543	Standard
Cl	35	33795.0	1.6				ug/L	27642	Standard
Kr	83	3.3	75.5				ug/L	2	Standard
Br	81	2200.2	4.1				ug/L	1647	Standard
P	31	17892.2	3.9				ug/L	15231	Standard
S	34	2398.5	0.8				ug/L	1845	Standard
Sr	88	86.7	23.3				ug/L	70	Standard
C	12	246.7	15.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	76.7	30.1				mg/L	0	Standard
Dy	164	8934.1	5.5				mg/L	12	Standard
Ho-1	165	5852.8	3.2				mg/L	12	Standard
Er	166	5817.8	2.9				mg/L	20	Standard
I	127	10927.3	3.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		87.138	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.784	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.180
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.909
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606144302PS WG574573-01
Sample Date/Time: Tuesday, June 28, 2016 23:47:54
Number of Replicates: 3
Autosampler Position: 408
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74517.8	1.0				ug/L	81760	Standard
	Be	9	49025.9	0.9	**54.1590**	0.839	1.5	ug/L	17	Standard
	Al	27	5488864.5	1.0	**39.0606**	0.777	2.0	ug/L	1410	Standard
	Sc	45	43992.1	1.6				ug/L	39543	Standard
	Ti	47	15590.7	1.3	**62.0794**	2.775	4.5	ug/L	39	Standard
	V	51	384779.8	0.6	**54.7401**	1.764	3.2	ug/L	1415	Standard
	Cr	52	400124.0	1.3	**56.0091**	2.445	4.4	ug/L	6946	Standard
	Cr	53	50664.6	1.6	**56.9262**	0.956	1.7	ug/L	328	Standard
	Mn	55	1785071.4	0.4	**273.1709**	9.729	3.6	ug/L	823	Standard
	Co	59	343226.4	0.5	**48.4551**	1.560	3.2	ug/L	252	Standard
	Ni	60	101539.8	1.7	**53.4214**	2.390	4.5	ug/L	192	Standard
	Cu	65	107630.3	0.5	**56.1285**	1.666	3.0	ug/L	141	Standard
	Zn	66	105446.7	0.4	**94.6554**	2.823	3.0	ug/L	491	Standard
>	Ge	72	519316.9	3.3				ug/L	515087	Standard
	As	75	63635.8	1.4	**56.2203**	2.024	3.6	ug/L	20	Standard
	Se	82	5672.0	2.3	**48.8026**	2.645	5.4	ug/L	15	Standard
	Se-1	77	3855.8	0.1	**50.0819**	1.642	3.3	ug/L	48	Standard
>	Ga	71	4749.1	6.7				mg/L	90	Standard
	Rb	85	22398.2	1.3				ug/L	23	Standard
	Y	89	511504.7	2.1				ug/L	448510	Standard
>	Rh	103	58.3	34.6				ug/L	15	Standard
	Mo	98	3550.9	0.5	**1.3279**	0.015	1.1	ug/L	11	Standard
	Ag	107	317741.2	0.8	**48.5166**	0.462	1.0	ug/L	134	Standard
	Cd	111	103027.6	1.2	**49.4156**	0.686	1.4	mg/L	7	Standard
	Cd	114	250223.1	1.7	**49.3820**	1.399	2.8	ug/L	16	Standard
>	In	115	596094.6	1.6				ug/L	611117	Standard
	Sn	118	2016.8	5.9	**0.2476**	0.017	6.7	ug/L	518	Standard
	Sb	123	226110.3	0.9	**49.1269**	0.970	2.0	ug/L	127	Standard
	Ba	135	199376.6	0.4	**98.9961**	1.356	1.4	ug/L	45	Standard
	Ce	140	473631.7	1.6				ug/L	298	Standard
>	Tb	159	946510.9	0.6				ug/L	977942	Standard
	Ho	165	5706.1	1.8				ug/L	12	Standard
	Tl	203	404565.2	1.6	**49.2192**	0.432	0.9	ug/L	31	Standard
	Tl	205	358549.4	2.4	**50.2279**	0.323	0.6	ug/L	20	Standard
	Pb	206	506766.3	0.6	**96.0764**	1.688	1.8	ug/L	286	Standard
	Pb	207	430425.5	0.4	**90.4686**	1.648	1.8	ug/L	257	Standard
	Pb	208	1789019.3	1.0	**97.1851**	0.775	0.8	ug/L	956	Standard
	U	238	348425.0	0.3	**49.8561**	0.765	1.5	ug/L	17	Standard
>	Bi	209	543434.9	1.8				ug/L	557080	Standard

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Na	23	3.3	86.6	**19.2423**	16.666	86.6	mg/L	0	Standard
Mg	24	530.0	3.8	**0.5773**	0.030	5.2	mg/L	32	Standard
K	39	95.0	5.3	**0.1471**	0.014	9.3	mg/L	30	Standard
Ca	43	235.0	26.6	**26.8058**	8.969	33.5	mg/L	48	Standard
Fe	54	3632.6	2.6	**2.8189**	0.112	4.0	mg/L	159	Standard
Fe	57	1290.1	7.8	**3.2920**	0.337	10.2	mg/L	195	Standard
> **Sc-1**	45	43992.1	1.6				mg/L	39543	Standard
Cl	35	33127.5	1.3				ug/L	27642	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	2050.1	2.6				ug/L	1647	Standard
P	31	18372.8	5.1				ug/L	15231	Standard
S	34	2410.2	0.9				ug/L	1845	Standard
Sr	88	108.3	17.5				ug/L	70	Standard
C	12	236.7	47.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	86.7	70.5				mg/L	0	Standard
Dy	164	8282.4	2.8				mg/L	12	Standard
Ho-1	165	5706.1	1.8				mg/L	12	Standard
Er	166	5427.6	1.3				mg/L	20	Standard
I	127	10600.4	5.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.142	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.821	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606144302PS WG574573-01
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.542
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.551
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606144302SDL WG574573-02
Sample Date/Time: Tuesday, June 28, 2016 23:51:05
Number of Replicates: 3
Autosampler Position: 409
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73539.7	0.5				ug/L	81760	Standard
	Be	9	228.3	17.7	**0.2458**	0.045	18.1	ug/L	17	Standard
	Al	27	1128305.0	2.6	**8.1231**	0.173	2.1	ug/L	1410	Standard
	Sc	45	40995.4	3.1				ug/L	39543	Standard
	Ti	47	3133.3	3.6	**12.6953**	0.331	2.6	ug/L	39	Standard
	V	51	9700.8	3.1	**1.2183**	0.050	4.1	ug/L	1415	Standard
	Cr	52	13743.6	3.1	**0.9582**	0.044	4.6	ug/L	6946	Standard
	Cr	53	1285.1	5.5	**1.1537**	0.099	8.6	ug/L	328	Standard
	Mn	55	302649.7	2.2	**47.5055**	0.538	1.1	ug/L	823	Standard
	Co	59	1856.8	5.3	**0.2384**	0.012	4.9	ug/L	252	Standard
	Ni	60	1619.8	3.4	**0.7729**	0.024	3.1	ug/L	192	Standard
	Cu	65	2766.6	1.1	**1.3956**	0.008	0.6	ug/L	141	Standard
	Zn	66	11859.0	1.8	**10.2169**	0.056	0.5	ug/L	491	Standard
>	Ge	72	504593.5	1.7				ug/L	515087	Standard
	As	75	1530.8	2.0	**1.4307**	0.048	3.3	ug/L	20	Standard
	Se	82	33.4	31.2	**0.1774**	0.094	53.0	ug/L	15	Standard
	Se-1	77	64.7	12.6	**0.1577**	0.113	71.7	ug/L	48	Standard
>	Ga	71	975.0	10.5				mg/L	90	Standard
	Rb	85	4577.4	4.1				ug/L	23	Standard
	Y	89	452862.0	1.2				ug/L	448510	Standard
>	Rh	103	23.3	32.7				ug/L	15	Standard
	Mo	98	722.3	4.5	**0.2491**	0.011	4.3	ug/L	11	Standard
	Ag	107	159.0	11.1	**0.0076**	0.003	35.4	ug/L	134	Standard
	Cd	111	175.3	14.8	**0.0794**	0.012	14.8	mg/L	7	Standard
	Cd	114	462.3	4.9	**0.0844**	0.004	4.5	ug/L	16	Standard
>	In	115	608749.5	0.7				ug/L	611117	Standard
	Sn	118	845.0	9.9	**0.0416**	0.014	34.5	ug/L	518	Standard
	Sb	123	2112.7	19.6	**0.4370**	0.091	20.8	ug/L	127	Standard
	Ba	135	21046.6	3.7	**10.2079**	0.317	3.1	ug/L	45	Standard
	Ce	140	96335.3	1.6				ug/L	298	Standard
>	Tb	159	932545.8	1.3				ug/L	977942	Standard
	Ho	165	1166.7	10.3				ug/L	12	Standard
	Tl	203	511.3	6.9	**0.0588**	0.004	6.8	ug/L	31	Standard
	Tl	205	456.7	14.9	**0.0631**	0.009	14.8	ug/L	20	Standard
	Pb	206	50001.0	0.8	**9.6268**	0.026	0.3	ug/L	286	Standard
	Pb	207	41687.9	1.1	**8.8985**	0.042	0.5	ug/L	257	Standard
	Pb	208	175842.9	0.5	**9.7051**	0.030	0.3	ug/L	956	Standard
	U	238	977.7	3.5	**0.1400**	0.006	4.1	ug/L	17	Standard
>	Bi	209	531859.1	0.7				ug/L	557080	Standard

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Na	23	3.3	86.6	**20.9199**	18.126	86.6	mg/L	0	Standard
Mg	24	148.3	20.6	**0.1326**	0.034	25.5	mg/L	32	Standard
K	39	35.0	24.7	**-0.0267**	0.032	120.4	mg/L	30	Standard
Ca	43	75.0	20.0	**5.6602**	2.270	40.1	mg/L	48	Standard
Fe	54	775.4	6.3	**0.5410**	0.062	11.5	mg/L	159	Standard
Fe	57	435.0	3.0	**0.7919**	0.003	0.4	mg/L	195	Standard
> **Sc-1**	45	40995.4	3.1				mg/L	39543	Standard
Cl	35	32746.0	2.5				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1743.4	12.5				ug/L	1647	Standard
P	31	17056.3	1.5				ug/L	15231	Standard
S	34	2336.8	6.2				ug/L	1845	Standard
Sr	88	78.3	20.5				ug/L	70	Standard
C	12	126.7	27.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	89.2				mg/L	0	Standard
Dy	164	1870.0	3.5				mg/L	12	Standard
Ho-1	165	1166.7	10.3				mg/L	12	Standard
Er	166	1116.7	18.2				mg/L	20	Standard
I	127	3388.7	11.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.946	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.963	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.613
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.473
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606144302SDL WG574573-02
Sample Date/Time: Tuesday, June 28, 2016 23:54:17
Number of Replicates: 3
Autosampler Position: 410
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70935.7	2.2				ug/L	81760	Standard
	Be	9	55.0	15.7	**0.0540**	0.009	16.0	ug/L	17	Standard
	Al	27	218570.5	1.6	**1.6201**	0.011	0.7	ug/L	1410	Standard
	Sc	45	39984.4	1.2				ug/L	39543	Standard
	Ti	47	627.7	4.3	**2.4198**	0.114	4.7	ug/L	39	Standard
	V	51	2847.0	3.0	**0.2129**	0.013	6.1	ug/L	1415	Standard
	Cr	52	7618.6	1.2	**0.0637**	0.011	17.1	ug/L	6946	Standard
	Cr	53	580.0	9.6	**0.3354**	0.068	20.2	ug/L	328	Standard
	Mn	55	61547.4	1.3	**9.5745**	0.188	2.0	ug/L	823	Standard
	Co	59	523.0	3.3	**0.0449**	0.003	6.0	ug/L	252	Standard
	Ni	60	493.7	5.6	**0.1635**	0.016	10.1	ug/L	192	Standard
	Cu	65	675.0	3.2	**0.2729**	0.010	3.6	ug/L	141	Standard
	Zn	66	4565.4	1.3	**3.4380**	0.075	2.2	ug/L	491	Standard
>	**Ge**	72	502988.1	0.7				ug/L	515087	Standard
	As	75	269.2	10.7	**0.2856**	0.028	9.7	ug/L	20	Standard
	Se	82	20.7	22.3	**0.0646**	0.042	64.7	ug/L	15	Standard
	Se-1	77	45.7	15.4	**-0.0984**	0.093	94.5	ug/L	48	Standard
>	**Ga**	71	186.7	12.1				mg/L	90	Standard
	Rb	85	835.0	12.4				ug/L	23	Standard
	Y	89	441201.2	2.7				ug/L	448510	Standard
>	**Rh**	103	13.3	94.4				ug/L	15	Standard
	Mo	98	189.0	7.0	**0.0532**	0.006	12.0	ug/L	11	Standard
	Ag	107	91.3	11.0	**-0.0021**	0.002	87.0	ug/L	134	Standard
	Cd	111	37.0	12.7	**0.0150**	0.002	15.9	mg/L	7	Standard
	Cd	114	85.9	30.8	**0.0122**	0.005	43.3	ug/L	16	Standard
>	**In**	115	591854.8	2.3				ug/L	611117	Standard
	Sn	118	648.3	6.3	**0.0113**	0.007	65.4	ug/L	518	Standard
	Sb	123	522.8	33.2	**0.1022**	0.041	39.7	ug/L	127	Standard
	Ba	135	4107.2	1.3	**2.0294**	0.025	1.2	ug/L	45	Standard
	Ce	140	18988.6	1.0				ug/L	298	Standard
>	**Tb**	159	914076.3	1.3				ug/L	977942	Standard
	Ho	165	253.3	13.1				ug/L	12	Standard
	Tl	203	112.3	10.6	**0.0094**	0.002	17.3	ug/L	31	Standard
	Tl	205	90.0	29.4	**0.0108**	0.004	36.1	ug/L	20	Standard
	Pb	206	10230.5	2.1	**1.9438**	0.049	2.5	ug/L	286	Standard
	Pb	207	8531.4	1.5	**1.7976**	0.010	0.6	ug/L	257	Standard
	Pb	208	36086.5	0.6	**1.9686**	0.029	1.5	ug/L	956	Standard
	U	238	209.0	10.0	**0.0280**	0.003	11.9	ug/L	17	Standard
>	**Bi**	209	525348.3	0.9				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	68.3	18.4	**0.0329**	0.017	52.2	mg/L	32	Standard
K	39	41.7	42.1	**-0.0025**	0.057	2323.2	mg/L	30	Standard
Ca	43	35.0	49.5	**-0.0873**	2.606	2984.1	mg/L	48	Standard
Fe	54	276.1	10.3	**0.1102**	0.028	25.1	mg/L	159	Standard
Fe	57	273.3	14.9	**0.2889**	0.146	50.5	mg/L	195	Standard
> **Sc-1**	45	39984.4	1.2				mg/L	39543	Standard
Cl	35	32328.5	1.4				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1603.4	8.8				ug/L	1647	Standard
P	31	16148.6	1.7				ug/L	15231	Standard
S	34	2251.8	6.8				ug/L	1845	Standard
Sr	88	76.7	35.9				ug/L	70	Standard
C	12	146.7	10.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	330.4	18.3				mg/L	12	Standard
Ho-1	165	253.3	13.1				mg/L	12	Standard
Er	166	270.0	22.5				mg/L	20	Standard
I	127	1720.1	18.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		86.761	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.651	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	96.848
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	94.304
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 23:57:30
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72062.8	4.4				ug/L	81760	Standard
	Be	9	45152.2	3.9	**51.5939**	1.461	2.8	ug/L	17	Standard
	Al	27	7383002.3	3.7	**54.3407**	0.756	1.4	ug/L	1410	Standard
	Sc	45	39518.2	3.2				ug/L	39543	Standard
	Ti	47	24690.4	0.9	**102.0722**	0.550	0.5	ug/L	39	Standard
	V	51	333814.0	1.2	**49.2501**	0.769	1.6	ug/L	1415	Standard
	Cr	52	345665.5	1.2	**50.0774**	0.577	1.2	ug/L	6946	Standard
	Cr	53	43291.8	1.9	**50.4406**	0.792	1.6	ug/L	328	Standard
	Mn	55	319563.2	0.6	**50.6110**	0.452	0.9	ug/L	823	Standard
	Co	59	337944.7	0.8	**49.4985**	0.535	1.1	ug/L	252	Standard
	Ni	60	91064.9	0.9	**49.6861**	0.418	0.8	ug/L	192	Standard
	Cu	65	92447.5	0.3	**50.0106**	0.369	0.7	ug/L	141	Standard
	Zn	66	53973.0	1.5	**49.8813**	0.957	1.9	ug/L	491	Standard
>	Ge	72	500217.2	0.4				ug/L	515087	Standard
	As	75	53742.2	1.5	**49.2630**	0.862	1.7	ug/L	20	Standard
	Se	82	5467.6	1.7	**48.7858**	1.017	2.1	ug/L	15	Standard
	Se-1	77	3788.8	1.0	**51.0702**	0.720	1.4	ug/L	48	Standard
>	Ga	71	51.7	5.6				mg/L	90	Standard
	Rb	85	820.0	10.6				ug/L	23	Standard
	Y	89	441206.7	0.2				ug/L	448510	Standard
>	Rh	103	33.3	8.7				ug/L	15	Standard
	Mo	98	251795.6	1.0	**94.4274**	1.474	1.6	ug/L	11	Standard
	Ag	107	307525.6	0.6	**46.4306**	0.349	0.8	ug/L	134	Standard
	Cd	111	100206.1	1.3	**47.5308**	1.177	2.5	mg/L	7	Standard
	Cd	114	244073.0	1.7	**47.6209**	0.821	1.7	ug/L	16	Standard
>	In	115	602825.2	1.4				ug/L	611117	Standard
	Sn	118	281047.8	1.1	**48.0844**	0.236	0.5	ug/L	518	Standard
	Sb	123	222239.4	0.2	**47.7427**	0.588	1.2	ug/L	127	Standard
	Ba	135	96470.5	0.6	**47.3499**	0.512	1.1	ug/L	45	Standard
	Ce	140	125.0	48.0				ug/L	298	Standard
>	Tb	159	921870.8	1.1				ug/L	977942	Standard
	Ho	165	11.7	65.5				ug/L	12	Standard
	Tl	203	392459.6	0.5	**49.4989**	0.479	1.0	ug/L	31	Standard
	Tl	205	352339.7	0.4	**51.1783**	0.770	1.5	ug/L	20	Standard
	Pb	206	250499.8	0.3	**49.1963**	0.428	0.9	ug/L	286	Standard
	Pb	207	226961.6	0.5	**49.4195**	0.337	0.7	ug/L	257	Standard
	Pb	208	926488.8	0.6	**52.1497**	0.850	1.6	ug/L	956	Standard
	U	238	343296.3	1.3	**50.9156**	0.444	0.9	ug/L	17	Standard
>	Bi	209	524204.3	1.1				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.4692**	18.124	173.1	mg/L	0	Standard
Mg	24	3737.1	0.3	**4.9245**	0.180	3.7	mg/L	32	Standard
K	39	1403.4	10.2	**4.6088**	0.536	11.6	mg/L	30	Standard
Ca	43	78.3	16.1	**6.5318**	1.619	24.8	mg/L	48	Standard
Fe	54	5604.3	1.6	**4.9425**	0.217	4.4	mg/L	159	Standard
Fe	57	1713.4	2.9	**5.1658**	0.187	3.6	mg/L	195	Standard
Sc-1	45	39518.2	3.2				mg/L	39543	Standard
Cl	35	33439.5	0.8				ug/L	27642	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	1523.4	5.0				ug/L	1647	Standard
P	31	18217.6	1.7				ug/L	15231	Standard
S	34	2641.9	8.4				ug/L	1845	Standard
Sr	88	48.3	11.9				ug/L	70	Standard
C	12	93.3	12.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	9.4	104.5				mg/L	12	Standard
Ho-1	165	11.7	65.5				mg/L	12	Standard
Er	166	13.3	114.6				mg/L	20	Standard
I	127	1510.1	17.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	103.188		
Al	27	108.681		
Sc	45			
Ti	47	102.072		
V	51	98.500		
Cr	52	100.155		
Cr	53			
Mn	55	101.222		
Co	59	98.997		
Ni	60	99.372		
Cu	65	100.021		
Zn	66	99.763		
Ge	72		97.113	
As	75	98.526		
Se	82	97.572		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	94.427		
Ag	107	92.861		
Cd	111	95.062		
Cd	114			
> In	115			98.643
Sn	118	96.169		
Sb	123	95.485		
Ba	135	94.700		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.998		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.299		
U	238	101.831		
> Bi	209			94.098
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 00:00:41
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70070.0	1.8				ug/L	81760	Standard
	Be	9	30.0	16.7	**0.0256**	0.006	25.2	ug/L	17	Standard
	Al	27	3812.2	30.7	**0.0144**	0.008	57.9	ug/L	1410	Standard
	Sc	45	40014.5	4.3				ug/L	39543	Standard
	Ti	47	26.7	12.1	**-0.0568**	0.013	23.6	ug/L	39	Standard
	V	51	1145.1	6.3	**-0.0403**	0.010	25.4	ug/L	1415	Standard
	Cr	52	6171.9	1.7	**-0.1619**	0.014	8.6	ug/L	6946	Standard
	Cr	53	411.7	3.9	**0.1320**	0.019	14.5	ug/L	328	Standard
	Mn	55	924.7	19.7	**-0.0044**	0.029	653.9	ug/L	823	Standard
	Co	59	261.3	12.2	**0.0062**	0.005	75.0	ug/L	252	Standard
	Ni	60	171.3	8.8	**-0.0131**	0.008	64.0	ug/L	192	Standard
	Cu	65	132.0	5.3	**-0.0207**	0.004	18.6	ug/L	141	Standard
	Zn	66	427.3	9.5	**-0.4339**	0.039	8.9	ug/L	491	Standard
>	**Ge**	72	510161.6	0.4				ug/L	515087	Standard
	As	75	-21.8	127.1	**0.0207**	0.025	120.4	ug/L	20	Standard
	Se	82	17.0	25.9	**0.0293**	0.038	129.6	ug/L	15	Standard
	Se-1	77	53.7	12.0	**0.0005**	0.088	17869.4	ug/L	48	Standard
>	**Ga**	71	35.0	28.6				mg/L	90	Standard
	Rb	85	33.3	60.6				ug/L	23	Standard
	Y	89	437929.1	1.0				ug/L	448510	Standard
>	**Rh**	103	6.7	43.3				ug/L	15	Standard
	Mo	98	269.2	32.9	**0.0838**	0.033	39.3	ug/L	11	Standard
	Ag	107	120.7	16.7	**0.0024**	0.003	124.0	ug/L	134	Standard
	Cd	111	21.8	34.3	**0.0077**	0.004	48.1	mg/L	7	Standard
	Cd	114	36.7	62.4	**0.0024**	0.005	190.6	ug/L	16	Standard
>	**In**	115	590666.4	0.9				ug/L	611117	Standard
	Sn	118	743.4	12.2	**0.0282**	0.017	60.4	ug/L	518	Standard
	Sb	123	532.5	22.4	**0.1040**	0.027	25.7	ug/L	127	Standard
	Ba	135	71.0	29.1	**0.0104**	0.010	96.8	ug/L	45	Standard
	Ce	140	91.7	65.8				ug/L	298	Standard
>	**Tb**	159	911246.7	0.8				ug/L	977942	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	81.7	41.2	**0.0055**	0.004	77.1	ug/L	31	Standard
	Tl	205	68.3	66.0	**0.0076**	0.007	85.7	ug/L	20	Standard
	Pb	206	297.7	10.9	**-0.0054**	0.007	123.4	ug/L	286	Standard
	Pb	207	283.7	16.0	**0.0035**	0.010	283.6	ug/L	257	Standard
	Pb	208	1155.4	11.3	**0.0043**	0.008	176.0	ug/L	956	Standard
	U	238	70.3	39.4	**0.0074**	0.004	55.5	ug/L	17	Standard
>	**Bi**	209	527005.8	1.2				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	25.0	20.0	**-0.0244**	0.005	21.9	mg/L	32	Standard
K	39	18.3	31.5	**-0.0799**	0.021	26.0	mg/L	30	Standard
Ca	43	16.7	17.3	**-2.8535**	0.318	11.1	mg/L	48	Standard
Fe	54	122.6	39.6	**-0.0261**	0.047	179.6	mg/L	159	Standard
Fe	57	230.0	17.0	**0.1451**	0.148	101.7	mg/L	195	Standard
> **Sc-1**	45	40014.5	4.3				mg/L	39543	Standard
Cl	35	33255.8	1.4				ug/L	27642	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	1523.4	4.7				ug/L	1647	Standard
P	31	17488.4	2.6				ug/L	15231	Standard
S	34	2358.5	3.1				ug/L	1845	Standard
Sr	88	70.0	25.8				ug/L	70	Standard
C	12	73.3	39.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.5	100.0				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	10.0	100.0				mg/L	20	Standard
I	127	1368.4	18.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.044	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.654
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.601
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Wednesday, June 29, 2016 09:50:03

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	6.975	1323	2024	0.699	
Mg	23.985	23.975	4506	2020	0.705	
Co	58.933	58.975	11694	2022	0.697	
In	114.904	114.925	22865	2028	0.690	
U	238.050	238.025	47450	2043	0.688	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	9.254
5.575	1.459
5.625	2.417
5.675	3.442
5.725	2.231
5.775	2.296
5.825	3.784
5.875	3.197
5.925	2.400
5.975	1.087
6.025	1.670
6.075	3.521
6.125	2.277
6.175	2.559
6.225	20.588
6.275	74.689
6.325	108.327
6.375	83.853
6.425	69.722
6.475	32.808
6.525	10.642
6.575	8.985
6.625	1.429
6.675	0.941
6.725	0.857
6.775	3.333
6.825	0.822

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6.875	1.277
6.925	1.899
6.975	1.561
7.025	1.195
7.075	1.059
7.125	1.545
7.175	1.743
7.225	3.248
7.275	8.142
7.325	57.701
7.375	91.287
7.425	51.602
7.475	55.902
7.525	100.000
7.575	69.869
7.625	81.441
7.675	81.441
7.725	70.711
7.775	55.902
7.825	59.266
7.875	49.793
7.925	104.583
7.975	98.543
8.025	94.786
8.075	223.607
8.125	81.441
8.175	84.265
8.225	61.237
8.275	81.312
8.325	81.441
8.375	91.287
8.425	82.402
8.475	22.822
22.525	149.071
22.575	52.705
22.625	46.771
22.675	48.627
22.725	39.087
22.775	18.109
22.825	22.048
22.875	36.422
22.925	32.723
22.975	82.685
23.025	39.239
23.075	25.529
23.125	43.064
23.175	21.317

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23.225	22.232
23.275	15.408
23.325	42.127
23.375	37.172
23.425	24.296
23.475	14.668
23.525	3.807
23.575	1.593
23.625	2.258
23.675	1.180
23.725	1.542
23.775	1.943
23.825	1.185
23.875	1.595
23.925	1.324
23.975	1.055
24.025	1.809
24.075	1.103
24.125	1.249
24.175	0.652
24.225	1.203
24.275	3.614
24.325	39.316
24.375	52.355
24.425	20.738
24.475	5.001
24.525	5.067
24.575	0.930
24.625	1.241
24.675	0.972
24.725	1.552
24.775	0.581
24.825	0.736
24.875	1.684
24.925	0.952
24.975	1.395
25.025	0.762
25.075	1.498
25.125	1.418
25.175	1.145
25.225	6.288
25.275	44.605
25.325	50.990
25.375	73.823
25.425	57.334
25.475	7.010
57.525	8.193

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57.575	3.609
57.625	2.367
57.675	3.747
57.725	3.869
57.775	3.226
57.825	1.406
57.875	2.220
57.925	2.049
57.975	2.397
58.025	3.045
58.075	0.897
58.125	1.397
58.175	1.608
58.225	1.481
58.275	5.244
58.325	6.996
58.375	14.816
58.425	39.994
58.475	18.390
58.525	7.862
58.575	1.876
58.625	1.684
58.675	0.757
58.725	2.431
58.775	2.139
58.825	2.293
58.875	1.987
58.925	2.134
58.975	1.760
59.025	2.893
59.075	1.855
59.125	4.126
59.175	3.545
59.225	2.980
59.275	6.918
59.325	57.198
59.375	79.057
59.425	39.123
59.475	32.983
59.525	7.337
59.575	10.704
59.625	4.888
59.675	5.230
59.725	3.575
59.775	2.279
59.825	3.495
59.875	0.859

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59.925	2.164
59.975	4.187
60.025	3.749
60.075	1.767
60.125	4.373
60.175	1.581
60.225	1.647
60.275	29.768
60.325	42.377
60.375	71.261
60.425	71.261
60.475	69.722
113.525	10.800
113.575	6.260
113.625	1.672
113.675	1.646
113.725	1.420
113.775	2.281
113.825	1.446
113.875	0.820
113.925	1.607
113.975	1.407
114.025	1.046
114.075	2.403
114.125	2.090
114.175	3.331
114.225	5.316
114.275	12.354
114.325	37.872
114.375	26.082
114.425	15.800
114.475	3.831
114.525	4.062
114.575	1.808
114.625	2.980
114.675	3.272
114.725	2.895
114.775	1.904
114.825	1.941
114.875	1.809
114.925	0.906
114.975	0.414
115.025	2.617
115.075	0.808
115.125	1.618
115.175	2.428
115.225	3.339

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115.275	5.459
115.325	14.203
115.375	69.869
115.425	66.254
115.475	26.966
115.525	18.235
115.575	7.589
115.625	3.788
115.675	2.661
115.725	3.661
115.775	2.867
115.825	3.952
115.875	6.794
115.925	4.558
115.975	5.421
116.025	1.319
116.075	4.928
116.125	7.259
116.175	4.689
116.225	9.289
116.275	22.491
116.325	26.307
116.375	26.146
116.425	67.711
116.475	40.825
236.525	
236.575	13.258
236.625	39.219
236.675	66.333
236.725	37.815
236.775	20.039
236.825	39.510
236.875	22.934
236.925	27.407
236.975	8.537
237.025	28.853
237.075	45.928
237.125	41.937
237.175	36.377
237.225	26.058
237.275	27.285
237.325	43.196
237.375	45.018
237.425	23.111
237.475	20.908
237.525	26.413
237.575	10.671

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237.625	6.558
237.675	4.584
237.725	2.707
237.775	1.019
237.825	0.867
237.875	0.837
237.925	1.315
237.975	0.556
238.025	1.099
238.075	0.473
238.125	0.980
238.175	0.943
238.225	1.564
238.275	1.714
238.325	1.785
238.375	2.057
238.425	2.571
238.475	6.163
238.525	10.798
238.575	23.407
238.625	35.493
238.675	33.171
238.725	15.721
238.775	9.421
238.825	23.516
238.875	27.721
238.925	14.417
238.975	30.010
239.025	24.993
239.075	29.933
239.125	17.678
239.175	38.433
239.225	46.981
239.275	15.215
239.325	48.601
239.375	50.659
239.425	23.570
239.475	38.955

Approved: July 04, 2016

SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 6/29/2016 10:01:57 AM
End Time: 6/29/2016 10:04:08 AM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 4651.78
        Obtained Intensity (Mg 23.985): 162439.88
        Obtained Intensity (In 114.904): 66202.13
        Obtained Intensity (U 238.05): 140216.56
        Obtained Intensity (Bkgd 220): 0.33
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.018 (=3640.50 / 205153.73)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.004 (=909.89 / 205153.73)
```


Approved: July 04, 2016

SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 6/29/2016 10:01:57 AM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 4651.78
                Obtained Intensity (Mg 23.985): 162439.88
                Obtained Intensity (In 114.904): 66202.13
                Obtained Intensity (U 238.05): 140216.56
                Obtained Intensity (Bkgd 220): 0.33
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.018 (=3640.50 / 205153.73)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.004 (=909.89 / 205153.73)
[Passed]  Optimum value(s): N/A

End Time: 6/29/2016 10:04:08 AM
```


Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Wednesday, June 29, 2016 11:22:34
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74698.8	3.1				ug/L		Standard
	Be	9	8.3	124.9				ug/L		Standard
	Al	27	1493.4	9.1				ug/L		Standard
	Sc	45	61029.4	2.9				ug/L		Standard
	Ti	47	35.0	12.5				ug/L		Standard
	V	51	1434.8	4.3				ug/L		Standard
	Cr	52	7634.6	2.5				ug/L		Standard
	Cr	53	363.3	0.8				ug/L		Standard
	Mn	55	747.0	1.6				ug/L		Standard
	Co	59	233.7	7.1				ug/L		Standard
	Ni	60	214.7	3.5				ug/L		Standard
	Cu	65	104.0	12.0				ug/L		Standard
	Zn	66	363.0	3.8				ug/L		Standard
>	Ge	72	495142.3	1.3				ug/L		Standard
	As	75	-49.8	7.8				ug/L		Standard
	Se	82	13.7	23.9				ug/L		Standard
	Se-1	77	42.3	9.8				ug/L		Standard
>	Ga	71	41.7	25.0				mg/L		Standard
	Rb	85	16.7	91.7				ug/L		Standard
	Y	89	417098.4	0.9				ug/L		Standard
>	Rh	103	13.3	86.6				ug/L		Standard
	Mo	98	10.7	10.9				ug/L		Standard
	Ag	107	68.0	6.4				ug/L		Standard
	Cd	111	2.3	24.9				mg/L		Standard
	Cd	114	11.7	106.5				ug/L		Standard
>	In	115	587441.1	0.5				ug/L		Standard
	Sn	118	496.7	9.7				ug/L		Standard
	Sb	123	77.7	34.7				ug/L		Standard
	Ba	135	24.3	19.4				ug/L		Standard
	Ce	140	25.0	20.0				ug/L		Standard
>	Tb	159	939701.0	1.8				ug/L		Standard
	Ho	165	10.0	50.0				ug/L		Standard
	Tl	203	4.0	25.0				ug/L		Standard
	Tl	205	1.7	173.2				ug/L		Standard
	Pb	206	239.7	3.6				ug/L		Standard
	Pb	207	197.7	3.9				ug/L		Standard
	Pb	208	883.3	3.3				ug/L		Standard
	U	238	3.3	17.3				ug/L		Standard
>	Bi	209	523984.5	1.3				ug/L		Standard

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	Na	23	0.0		mg/L	Standard
	Mg	24	36.7	55.1	mg/L	Standard
	K	39	38.3	52.7	mg/L	Standard
	Ca	43	10.0	50.0	mg/L	Standard
	Fe	54	179.1	14.9	mg/L	Standard
	Fe	57	335.0	10.3	mg/L	Standard
>	**Sc-1**	45	61029.4	2.9	mg/L	Standard
	Cl	35	20194.8	0.8	ug/L	Standard
	Kr	83	4.3	70.5	ug/L	Standard
	Br	81	1546.7	2.4	ug/L	Standard
	P	31	15286.0	3.7	ug/L	Standard
	S	34	1571.7	2.7	ug/L	Standard
	Sr	88	73.3	3.9	ug/L	Standard
	C	12	63.3	24.1	mg/L	Standard
	N	14	0.0		mg/L	Standard
	Hg	202	3.3	173.2	mg/L	Standard
	Dy	164	6.0	187.1	mg/L	Standard
	Ho-1	165	10.0	50.0	mg/L	Standard
	Er	166	13.3	86.6	mg/L	Standard
	I	127	1391.7	17.5	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: Blank
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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Blank
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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Wednesday, June 29, 2016 11:25:45
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75658.5	2.0				ug/L	74699	Standard
	Be	9	1.7	173.2				ug/L	8	Standard
	Al	27	1555.1	3.1				ug/L	1493	Standard
	Sc	45	60145.9	2.9				ug/L	61029	Standard
	Ti	47	32.7	4.7				ug/L	35	Standard
	V	51	1434.9	4.0				ug/L	1435	Standard
	Cr	52	7544.5	2.5				ug/L	7635	Standard
	Cr	53	365.0	18.0				ug/L	363	Standard
	Mn	55	783.7	0.8				ug/L	747	Standard
	Co	59	239.0	2.9				ug/L	234	Standard
	Ni	60	220.7	1.8				ug/L	215	Standard
	Cu	65	103.0	8.3				ug/L	104	Standard
	Zn	66	365.0	4.1				ug/L	363	Standard
>	**Ge**	72	495351.7	2.1				ug/L	495142	Standard
	As	75	-40.0	8.7				ug/L	-50	Standard
	Se	82	19.1	38.4				ug/L	14	Standard
	Se-1	77	47.3	15.6				ug/L	42	Standard
>	**Ga**	71	53.3	47.2				mg/L	42	Standard
	Rb	85	15.0	88.2				ug/L	17	Standard
	Y	89	427717.4	1.6				ug/L	417098	Standard
>	**Rh**	103	8.3	34.6				ug/L	13	Standard
	Mo	98	11.1	31.8				ug/L	11	Standard
	Ag	107	86.3	19.8				ug/L	68	Standard
	Cd	111	1.3	43.8				mg/L	2	Standard
	Cd	114	3.6	152.7				ug/L	12	Standard
>	**In**	115	599155.0	1.0				ug/L	587441	Standard
	Sn	118	486.7	3.3				ug/L	497	Standard
	Sb	123	28.2	25.8				ug/L	78	Standard
	Ba	135	25.3	13.9				ug/L	24	Standard
	Ce	140	31.7	59.8				ug/L	25	Standard
>	**Tb**	159	985563.2	0.5				ug/L	939701	Standard
	Ho	165	6.7	86.6				ug/L	10	Standard
	Tl	203	1.7	91.7				ug/L	4	Standard
	Tl	205	0.0					ug/L	2	Standard
	Pb	206	249.7	4.0				ug/L	240	Standard
	Pb	207	216.0	2.0				ug/L	198	Standard
	Pb	208	873.0	4.1				ug/L	883	Standard
	U	238	3.3	34.6				ug/L	3	Standard
>	**Bi**	209	535312.9	0.6				ug/L	523984	Standard

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Na	23	3.3	173.2	mg/L	0	Standard
Mg	24	31.7	18.2	mg/L	37	Standard
K	39	26.7	28.6	mg/L	38	Standard
Ca	43	35.0	24.7	mg/L	10	Standard
Fe	54	130.8	15.0	mg/L	179	Standard
Fe	57	305.0	2.8	mg/L	335	Standard
Sc-1	45	60145.9	2.9	mg/L	61029	Standard
Cl	35	20341.6	1.8	ug/L	20195	Standard
Kr	83	3.0	33.3	ug/L	4	Standard
Br	81	1546.7	10.4	ug/L	1547	Standard
P	31	15145.9	1.8	ug/L	15286	Standard
S	34	1610.1	6.1	ug/L	1572	Standard
Sr	88	86.7	14.5	ug/L	73	Standard
C	12	60.0	28.9	mg/L	63	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	0.0		mg/L	3	Standard
Dy	164	5.7	108.5	mg/L	6	Standard
Ho-1	165	6.7	86.6	mg/L	10	Standard
Er	166	20.0	50.0	mg/L	13	Standard
I	127	1368.4	7.8	mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Wednesday, June 29, 2016 11:28:57
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73081.0	3.5				ug/L	74699	Standard
	Be	9	36.7	56.8				ug/L	8	Standard
	Al	27	9102.7	2.7				ug/L	1493	Standard
	Sc	45	58226.8	3.4				ug/L	61029	Standard
	Ti	47	79.0	2.2				ug/L	35	Standard
	V	51	1848.7	2.3				ug/L	1435	Standard
	Cr	52	7933.1	1.4				ug/L	7635	Standard
	Cr	53	350.0	15.1				ug/L	363	Standard
	Mn	55	1375.4	4.6				ug/L	747	Standard
	Co	59	574.7	5.8				ug/L	234	Standard
	Ni	60	324.3	7.6				ug/L	215	Standard
	Cu	65	285.0	4.9				ug/L	104	Standard
	Zn	66	549.3	0.4				ug/L	363	Standard
>	**Ge**	72	493663.5	1.5				ug/L	495142	Standard
	As	75	-10.4	282.1				ug/L	-50	Standard
	Se	82	20.6	18.5				ug/L	14	Standard
	Se-1	77	49.0	19.5				ug/L	42	Standard
>	**Ga**	71	58.3	27.6				mg/L	42	Standard
	Rb	85	25.0	60.0				ug/L	17	Standard
	Y	89	437555.0	0.8				ug/L	417098	Standard
>	**Rh**	103	25.0	34.6				ug/L	13	Standard
	Mo	98	283.4	4.8				ug/L	11	Standard
	Ag	107	412.3	3.2				ug/L	68	Standard
	Cd	111	121.8	9.1				mg/L	2	Standard
	Cd	114	268.9	5.0				ug/L	12	Standard
>	**In**	115	590951.3	0.9				ug/L	587441	Standard
	Sn	118	850.0	6.4				ug/L	497	Standard
	Sb	123	254.5	2.7				ug/L	78	Standard
	Ba	135	136.0	15.7				ug/L	24	Standard
	Ce	140	18.3	56.8				ug/L	25	Standard
>	**Tb**	159	941723.8	1.9				ug/L	939701	Standard
	Ho	165	3.3	86.6				ug/L	10	Standard
	Tl	203	417.3	5.5				ug/L	4	Standard
	Tl	205	348.3	7.4				ug/L	2	Standard
	Pb	206	633.0	0.8				ug/L	240	Standard
	Pb	207	557.0	2.2				ug/L	198	Standard
	Pb	208	2275.4	1.7				ug/L	883	Standard
	U	238	366.3	0.7				ug/L	3	Standard
>	**Bi**	209	512414.5	1.5				ug/L	523984	Standard

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	Na	23	0.0		mg/L	0	Standard
	Mg	24	51.7	24.4	mg/L	37	Standard
	K	39	51.7	24.4	mg/L	38	Standard
	Ca	43	38.3	19.9	mg/L	10	Standard
	Fe	54	160.9	17.5	mg/L	179	Standard
	Fe	57	303.3	9.1	mg/L	335	Standard
>	**Sc-1**	45	58226.8	3.4	mg/L	61029	Standard
	Cl	35	20887.7	1.1	ug/L	20195	Standard
	Kr	83	2.3	107.9	ug/L	4	Standard
	Br	81	1533.4	9.8	ug/L	1547	Standard
	P	31	14952.4	2.3	ug/L	15286	Standard
	S	34	1701.8	4.5	ug/L	1572	Standard
	Sr	88	66.7	31.2	ug/L	73	Standard
	C	12	46.7	65.5	mg/L	63	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	0.0		mg/L	3	Standard
	Dy	164	12.7	89.9	mg/L	6	Standard
	Ho-1	165	3.3	86.6	mg/L	10	Standard
	Er	166	13.3	43.3	mg/L	13	Standard
	I	127	1343.4	21.4	mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 2
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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Wednesday, June 29, 2016 11:32:08
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70836.9	0.7				ug/L	74699	Standard
	Be	9	41495.2	4.9	**50.0000**	2.291	4.6	ug/L	8	Standard
	Al	27	6913642.3	1.4	**50.0000**	0.333	0.7	ug/L	1493	Standard
	Sc	45	58109.6	1.6				ug/L	61029	Standard
	Ti	47	38024.7	0.9	**100.0000**	1.896	1.9	ug/L	35	Standard
	V	51	385028.2	1.3	**50.0000**	1.023	2.0	ug/L	1435	Standard
	Cr	52	378864.5	0.8	**50.0000**	0.813	1.6	ug/L	7635	Standard
	Cr	53	46780.4	0.7	**50.0000**	0.853	1.7	ug/L	363	Standard
	Mn	55	354877.0	1.3	**50.0000**	1.137	2.3	ug/L	747	Standard
	Co	59	336932.8	1.2	**50.0000**	1.027	2.1	ug/L	234	Standard
	Ni	60	94633.6	0.8	**50.0000**	0.638	1.3	ug/L	215	Standard
	Cu	65	94252.3	1.0	**50.0000**	0.913	1.8	ug/L	104	Standard
	Zn	66	55983.3	1.5	**50.0000**	1.110	2.2	ug/L	363	Standard
>	**Ge**	72	497274.4	1.0				ug/L	495142	Standard
	As	75	56952.3	0.9	**50.0000**	0.907	1.8	ug/L	-50	Standard
	Se	82	5614.6	2.5	**50.0000**	1.630	3.3	ug/L	14	Standard
	Se-1	77	3760.8	2.5	**50.0000**	1.757	3.5	ug/L	42	Standard
>	**Ga**	71	60.0	22.0				mg/L	42	Standard
	Rb	85	735.0	7.4				ug/L	17	Standard
	Y	89	413691.0	2.8				ug/L	417098	Standard
>	**Rh**	103	28.3	27.0				ug/L	13	Standard
	Mo	98	261684.0	1.3	**100.0000**	1.411	1.4	ug/L	11	Standard
	Ag	107	317580.7	1.1	**50.0000**	0.030	0.1	ug/L	68	Standard
	Cd	111	102024.7	1.3	**50.0000**	0.465	0.9	mg/L	2	Standard
	Cd	114	251691.0	1.5	**50.0000**	1.089	2.2	ug/L	12	Standard
>	**In**	115	567339.3	1.1				ug/L	587441	Standard
	Sn	118	284919.2	1.1	**50.0000**	0.694	1.4	ug/L	497	Standard
	Sb	123	226852.6	0.2	**50.0000**	0.610	1.2	ug/L	78	Standard
	Ba	135	99575.8	0.1	**50.0000**	0.595	1.2	ug/L	24	Standard
	Ce	140	83.3	34.6				ug/L	25	Standard
>	**Tb**	159	932165.5	0.9				ug/L	939701	Standard
	Ho	165	13.3	21.7				ug/L	10	Standard
	Tl	203	405993.6	0.4	**50.0000**	0.749	1.5	ug/L	4	Standard
	Tl	205	349857.0	1.5	**50.0000**	0.282	0.6	ug/L	2	Standard
	Pb	206	265201.9	0.6	**50.0000**	0.817	1.6	ug/L	240	Standard
	Pb	207	235754.7	0.6	**50.0000**	0.829	1.7	ug/L	198	Standard
	Pb	208	926203.5	0.6	**50.0000**	0.626	1.3	ug/L	883	Standard
	U	238	337413.2	1.0	**50.0000**	0.543	1.1	ug/L	3	Standard
>	**Bi**	209	511781.8	1.3				ug/L	523984	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	3782.1	6.2	**5.0000**	0.388	7.8	mg/L	37	Standard
K	39	2271.8	5.5	**5.0000**	0.254	5.1	mg/L	38	Standard
Ca	43	120.0	23.2	**5.0000**	1.671	33.4	mg/L	10	Standard
Fe	54	5877.0	6.9	**5.0000**	0.418	8.4	mg/L	179	Standard
Fe	57	1703.4	4.4	**5.0000**	0.228	4.6	mg/L	335	Standard
> **Sc-1**	45	58109.6	1.6				mg/L	61029	Standard
Cl	35	22061.4	1.9				ug/L	20195	Standard
Kr	83	2.7	94.4				ug/L	4	Standard
Br	81	1433.4	2.5				ug/L	1547	Standard
P	31	17349.9	2.8				ug/L	15286	Standard
S	34	2026.8	6.8				ug/L	1572	Standard
Sr	88	76.7	26.4				ug/L	73	Standard
C	12	43.3	48.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	33.0	63.6				mg/L	6	Standard
Ho-1	165	13.3	21.7				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	1500.1	14.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Wednesday, June 29, 2016 11:35:20
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	70562.3	0.6				ug/L	74699	Standard
	Be	9	83650.3	2.2	**100.5872**	1.689	1.7	ug/L	8	Standard
	Al	27	13996690.0	1.6	**100.8115**	1.548	1.5	ug/L	1493	Standard
	Sc	45	58977.9	1.4				ug/L	61029	Standard
	Ti	47	75710.7	1.4	**200.4046**	3.310	1.7	ug/L	35	Standard
	V	51	745374.0	1.7	**98.8583**	0.465	0.5	ug/L	1435	Standard
	Cr	52	747654.3	1.6	**100.2327**	0.593	0.6	ug/L	7635	Standard
	Cr	53	92243.3	0.8	**99.8509**	0.489	0.5	ug/L	363	Standard
	Mn	55	686210.3	1.7	**98.7774**	1.044	1.1	ug/L	747	Standard
	Co	59	647972.6	0.9	**98.4550**	0.479	0.5	ug/L	234	Standard
	Ni	60	186003.6	1.6	**99.5867**	0.367	0.4	ug/L	215	Standard
	Cu	65	184421.8	1.6	**99.3502**	0.739	0.7	ug/L	104	Standard
	Zn	66	108058.7	1.7	**98.8348**	0.723	0.7	ug/L	363	Standard
>	Ge	72	493312.7	1.3				ug/L	495142	Standard
	As	75	109996.7	2.4	**98.6160**	1.152	1.2	ug/L	-50	Standard
	Se	82	10772.1	0.2	**98.3851**	1.295	1.3	ug/L	14	Standard
	Se-1	77	7226.7	2.3	**98.6814**	1.085	1.1	ug/L	42	Standard
>	Ga	71	88.3	19.9				mg/L	42	Standard
	Rb	85	1528.4	8.2				ug/L	17	Standard
	Y	89	411133.1	2.0				ug/L	417098	Standard
>	Rh	103	50.0	20.0				ug/L	13	Standard
	Mo	98	506691.6	2.0	**196.6866**	6.239	3.2	ug/L	11	Standard
	Ag	107	624459.9	0.9	**99.1146**	1.822	1.8	ug/L	68	Standard
	Cd	111	200021.3	0.6	**98.9639**	1.657	1.7	mg/L	2	Standard
	Cd	114	487602.9	1.3	**98.3617**	2.136	2.2	ug/L	12	Standard
>	In	115	567890.6	1.1				ug/L	587441	Standard
	Sn	118	560558.1	0.7	**99.1782**	1.388	1.4	ug/L	497	Standard
	Sb	123	448476.6	1.3	**99.3779**	2.340	2.4	ug/L	78	Standard
	Ba	135	196432.8	0.6	**99.2744**	1.775	1.8	ug/L	24	Standard
	Ce	140	161.7	46.3				ug/L	25	Standard
>	Tb	159	938936.1	1.2				ug/L	939701	Standard
	Ho	165	10.0					ug/L	10	Standard
	Tl	203	803908.2	0.6	**99.1382**	1.002	1.0	ug/L	4	Standard
	Tl	205	702848.2	0.9	**99.8673**	1.348	1.3	ug/L	2	Standard
	Pb	206	517801.9	1.0	**98.4705**	1.644	1.7	ug/L	240	Standard
	Pb	207	459764.9	1.8	**98.4124**	2.372	2.4	ug/L	198	Standard
	Pb	208	1827348.6	0.4	**98.9940**	0.966	1.0	ug/L	883	Standard
	U	238	674609.9	0.9	**99.6270**	1.321	1.3	ug/L	3	Standard
>	Bi	209	515462.4	0.6				ug/L	523984	Standard

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Na	23	1.7	173.2	**19.9850**	34.606	173.2	mg/L	0	Standard
Mg	24	7435.2	2.2	**9.8676**	0.257	2.6	mg/L	37	Standard
K	39	4282.3	4.3	**9.6823**	0.481	5.0	mg/L	38	Standard
Ca	43	178.3	18.2	**9.1297**	2.109	23.1	mg/L	10	Standard
Fe	54	11328.6	1.8	**9.8033**	0.307	3.1	mg/L	179	Standard
Fe	57	3145.3	5.1	**9.9880**	0.532	5.3	mg/L	335	Standard
Sc-1	45	58977.9	1.4				mg/L	61029	Standard
Cl	35	21244.2	2.5				ug/L	20195	Standard
Kr	83	1.7	34.6				ug/L	4	Standard
Br	81	1583.4	3.9				ug/L	1547	Standard
P	31	17550.2	2.6				ug/L	15286	Standard
S	34	2090.1	3.5				ug/L	1572	Standard
Sr	88	83.3	42.6				ug/L	73	Standard
C	12	56.7	62.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	22.9	66.8				mg/L	6	Standard
Ho-1	165	10.0					mg/L	10	Standard
Er	166	10.0					mg/L	13	Standard
I	127	1638.4	19.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998
Corr. Coef.	Ca	43	Correlation coefficient < 0.998

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Wednesday, June 29, 2016 11:38:33
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	69383.6	2.2				ug/L	74699	Standard
	Be	9	41665.5	1.0	**50.9761**	1.262	2.5	ug/L	8	Standard
	Al	27	7007266.1	0.7	**51.3351**	1.064	2.1	ug/L	1493	Standard
	Sc	45	57040.5	0.5				ug/L	61029	Standard
	Ti	47	39782.2	0.5	**104.1738**	1.427	1.4	ug/L	35	Standard
	V	51	390724.1	1.4	**51.2089**	1.334	2.6	ug/L	1435	Standard
	Cr	52	380689.4	0.9	**50.0149**	1.033	2.1	ug/L	7635	Standard
	Cr	53	46596.6	2.0	**49.7615**	1.193	2.4	ug/L	363	Standard
	Mn	55	364452.5	1.9	**51.8606**	1.232	2.4	ug/L	747	Standard
	Co	59	335357.4	2.0	**50.4145**	0.943	1.9	ug/L	234	Standard
	Ni	60	95528.2	0.6	**50.5685**	0.768	1.5	ug/L	215	Standard
	Cu	65	95355.8	0.8	**50.7995**	0.891	1.8	ug/L	104	Standard
	Zn	66	57795.4	0.9	**52.1095**	0.303	0.6	ug/L	363	Standard
>	Ge	72	498415.5	1.2				ug/L	495142	Standard
	As	75	57290.2	0.4	**50.8755**	0.674	1.3	ug/L	-50	Standard
	Se	82	5486.5	1.1	**49.5278**	0.838	1.7	ug/L	14	Standard
	Se-1	77	3797.8	2.0	**51.0456**	1.569	3.1	ug/L	42	Standard
>	Ga	71	88.3	43.2				mg/L	42	Standard
	Rb	85	576.7	2.8				ug/L	17	Standard
	Y	89	413113.3	1.2				ug/L	417098	Standard
>	Rh	103	26.7	92.5				ug/L	13	Standard
	Mo	98	275236.9	1.8	**107.0386**	1.474	1.4	ug/L	11	Standard
	Ag	107	320241.4	0.9	**50.9276**	0.747	1.5	ug/L	68	Standard
	Cd	111	101502.5	0.4	**50.3185**	0.332	0.7	mg/L	2	Standard
	Cd	114	248344.9	2.5	**50.2016**	1.511	3.0	ug/L	12	Standard
>	In	115	566676.1	0.5				ug/L	587441	Standard
	Sn	118	310270.4	1.9	**54.9671**	1.097	2.0	ug/L	497	Standard
	Sb	123	224427.6	0.4	**49.8273**	0.118	0.2	ug/L	78	Standard
	Ba	135	98607.5	0.6	**49.9289**	0.574	1.1	ug/L	24	Standard
	Ce	140	138.3	11.0				ug/L	25	Standard
>	Tb	159	931841.4	1.3				ug/L	939701	Standard
	Ho	165	10.0	86.6				ug/L	10	Standard
	Tl	203	410286.1	0.9	**50.6578**	0.710	1.4	ug/L	4	Standard
	Tl	205	350970.1	0.3	**49.9294**	0.473	0.9	ug/L	2	Standard
	Pb	206	272426.4	0.6	**51.8371**	0.812	1.6	ug/L	240	Standard
	Pb	207	234103.7	0.5	**50.1331**	0.525	1.0	ug/L	198	Standard
	Pb	208	940824.8	0.3	**50.9948**	0.649	1.3	ug/L	883	Standard
	U	238	333596.8	0.3	**49.3228**	0.442	0.9	ug/L	3	Standard
>	Bi	209	514849.0	1.0				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3822.1	2.3	**5.2142**	0.148	2.8	mg/L	37	Standard
K	39	2126.8	6.1	**4.9163**	0.328	6.7	mg/L	38	Standard
Ca	43	118.3	24.4	**5.4681**	1.919	35.1	mg/L	10	Standard
Fe	54	5948.1	0.7	**5.2575**	0.061	1.2	mg/L	179	Standard
Fe	57	1791.8	1.9	**5.4420**	0.142	2.6	mg/L	335	Standard
> **Sc-1**	45	57040.5	0.5				mg/L	61029	Standard
Cl	35	20895.1	0.7				ug/L	20195	Standard
Kr	83	2.7	57.3				ug/L	4	Standard
Br	81	1520.1	6.3				ug/L	1547	Standard
P	31	17665.3	1.6				ug/L	15286	Standard
S	34	2033.5	1.7				ug/L	1572	Standard
Sr	88	80.0	10.8				ug/L	73	Standard
C	12	70.0	24.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	23.0	24.5				mg/L	6	Standard
Ho-1	165	10.0	86.6				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	1353.4	28.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	101.952		
Al	27	102.670		
Sc	45			
Ti	47	104.174		
V	51	102.418		
Cr	52	100.030		
Cr	53			
Mn	55	103.721		
Co	59	100.829		
Ni	60	101.137		
Cu	65	101.599		
Zn	66	104.219		
> Ge	72		100.661	
As	75	101.751		
Se	82	99.056		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	107.039		
Ag	107	101.855		
Cd	111	100.637		
Cd	114			
> In	115		96.465	
Sn	118	109.934		
Sb	123	99.655		
Ba	135	99.858		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.316		
Tl	205			
Pb	206	103.674		
Pb	207	100.266		
Pb	208	101.990		
U	238	98.646		
> Bi	209		98.257	
Na	23	0.100		
Mg	24	104.283		
K	39	98.326		
Ca	43	109.361		
Fe	54	105.151		
Fe	57	108.840		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Wednesday, June 29, 2016 11:41:46
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70378.1	2.5				ug/L	74699	Standard
	Be	9	20.0	25.0	**0.0316**	0.005	17.2	ug/L	8	Standard
	Al	27	2221.8	11.1	**0.0027**	0.002	62.7	ug/L	1493	Standard
	Sc	45	58138.1	3.2				ug/L	61029	Standard
	Ti	47	47.0	20.3	**0.0161**	0.026	158.4	ug/L	35	Standard
	V	51	1216.9	5.3	**-0.0330**	0.008	24.4	ug/L	1435	Standard
	Cr	52	6478.4	1.5	**-0.1416**	0.009	6.0	ug/L	7635	Standard
	Cr	53	358.3	10.7	**0.0617**	0.046	74.0	ug/L	363	Standard
	Mn	55	785.0	2.1	**-0.0343**	0.003	7.5	ug/L	747	Standard
	Co	59	292.7	8.2	**0.0075**	0.004	50.2	ug/L	234	Standard
	Ni	60	209.7	4.3	**-0.0109**	0.006	51.3	ug/L	215	Standard
	Cu	65	121.0	5.8	**-0.0381**	0.003	8.4	ug/L	104	Standard
	Zn	66	398.3	6.4	**-0.0865**	0.023	26.3	ug/L	363	Standard
>	**Ge**	72	490643.1	1.0				ug/L	495142	Standard
	As	75	-2.3	851.2	**0.0577**	0.017	30.2	ug/L	-50	Standard
	Se	82	15.9	39.8	**0.0087**	0.059	680.3	ug/L	14	Standard
	Se-1	77	51.3	11.1	**0.0869**	0.077	88.1	ug/L	42	Standard
>	**Ga**	71	46.7	16.4				mg/L	42	Standard
	Rb	85	33.3	45.8				ug/L	17	Standard
	Y	89	424498.7	1.6				ug/L	417098	Standard
>	**Rh**	103	10.0	50.0				ug/L	13	Standard
	Mo	98	405.0	23.6	**0.1487**	0.033	22.3	ug/L	11	Standard
	Ag	107	128.3	5.2	**0.0071**	0.001	8.6	ug/L	68	Standard
	Cd	111	15.0	38.7	**-0.0006**	0.003	474.1	mg/L	2	Standard
	Cd	114	47.2	8.1	**0.0073**	0.001	11.6	ug/L	12	Standard
>	**In**	115	576512.9	2.1				ug/L	587441	Standard
	Sn	118	851.7	19.9	**0.0543**	0.032	58.8	ug/L	497	Standard
	Sb	123	1550.0	28.1	**0.3352**	0.100	29.7	ug/L	78	Standard
	Ba	135	36.7	23.2	**0.0022**	0.004	189.8	ug/L	24	Standard
	Ce	140	21.7	93.3				ug/L	25	Standard
>	**Tb**	159	924023.3	3.2				ug/L	939701	Standard
	Ho	165	10.0	100.0				ug/L	10	Standard
	Tl	203	60.7	18.1	**0.0057**	0.001	22.9	ug/L	4	Standard
	Tl	205	61.7	61.4	**0.0089**	0.005	59.3	ug/L	2	Standard
	Pb	206	271.3	7.0	**-0.0198**	0.004	19.8	ug/L	240	Standard
	Pb	207	237.3	7.1	**-0.0194**	0.004	21.0	ug/L	198	Standard
	Pb	208	1028.3	6.0	**-0.0187**	0.003	15.4	ug/L	883	Standard
	U	238	47.7	28.5	**0.0026**	0.002	78.0	ug/L	3	Standard
>	**Bi**	209	518292.4	0.9				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	35.0	42.9	**-0.0179**	0.019	107.8	mg/L	37	Standard
K	39	36.7	39.4	**-0.0284**	0.035	124.9	mg/L	38	Standard
Ca	43	25.0	40.0	**-0.8569**	0.683	79.6	mg/L	10	Standard
Fe	54	125.6	8.4	**-0.0262**	0.013	49.1	mg/L	179	Standard
Fe	57	296.7	4.9	**-0.0150**	0.061	408.2	mg/L	335	Standard
Sc-1	45	58138.1	3.2				mg/L	61029	Standard
Cl	35	20966.5	2.9				ug/L	20195	Standard
Kr	83	2.3	89.2				ug/L	4	Standard
Br	81	1540.1	1.7				ug/L	1547	Standard
P	31	17027.9	2.4				ug/L	15286	Standard
S	34	1976.8	0.6				ug/L	1572	Standard
Sr	88	85.0	5.9				ug/L	73	Standard
C	12	30.0	33.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	6.3	86.9				mg/L	6	Standard
Ho-1	165	10.0	100.0				mg/L	10	Standard
Er	166	6.7	173.2				mg/L	13	Standard
I	127	1458.4	25.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.091	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.140
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.914
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Ca	43	

Sample ID: QC Std 2
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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Wednesday, June 29, 2016 11:46:53
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66549.2	2.6				ug/L	74699	Standard
	Be	9	181.7	3.2	**0.2393**	0.009	3.6	ug/L	8	Standard
	Al	27	1430.1	59.0	**-0.0024**	0.007	267.2	ug/L	1493	Standard
	Sc	45	54693.6	2.6				ug/L	61029	Standard
	Ti	47	40.3	11.5	**0.0025**	0.013	506.9	ug/L	35	Standard
	V	51	4161.2	3.6	**0.3819**	0.016	4.1	ug/L	1435	Standard
	Cr	52	12463.1	1.9	**0.7390**	0.018	2.5	ug/L	7635	Standard
	Cr	53	996.7	1.0	**0.8006**	0.013	1.6	ug/L	363	Standard
	Mn	55	4091.6	2.3	**0.4679**	0.008	1.8	ug/L	747	Standard
	Co	59	2840.6	1.4	**0.4137**	0.010	2.4	ug/L	234	Standard
	Ni	60	3014.0	1.2	**1.5638**	0.035	2.2	ug/L	215	Standard
	Cu	65	1546.7	1.4	**0.7676**	0.020	2.7	ug/L	104	Standard
	Zn	66	7394.5	0.3	**6.6420**	0.044	0.7	ug/L	363	Standard
>	**Ge**	72	472336.8	0.9				ug/L	495142	Standard
	As	75	394.7	6.3	**0.4290**	0.024	5.7	ug/L	-50	Standard
	Se	82	54.4	27.0	**0.3818**	0.143	37.5	ug/L	14	Standard
	Se-1	77	75.3	14.2	**0.4599**	0.162	35.3	ug/L	42	Standard
>	**Ga**	71	58.3	44.0				mg/L	42	Standard
	Rb	85	8.3	34.6				ug/L	17	Standard
	Y	89	402582.8	1.9				ug/L	417098	Standard
>	**Rh**	103	5.0	100.0				ug/L	13	Standard
	Mo	98	114.4	34.0	**0.0400**	0.016	39.3	ug/L	11	Standard
	Ag	107	2464.9	1.7	**0.3900**	0.008	2.1	ug/L	68	Standard
	Cd	111	479.8	5.6	**0.2365**	0.013	5.7	mg/L	2	Standard
	Cd	114	1217.0	2.5	**0.2507**	0.007	2.6	ug/L	12	Standard
>	**In**	115	551471.6	0.4				ug/L	587441	Standard
	Sn	118	548.3	23.3	**0.0053**	0.024	443.1	ug/L	497	Standard
	Sb	123	2017.6	6.1	**0.4562**	0.029	6.4	ug/L	78	Standard
	Ba	135	1439.7	3.7	**0.7333**	0.029	4.0	ug/L	24	Standard
	Ce	140	11.7	49.5				ug/L	25	Standard
>	**Tb**	159	887425.9	1.8				ug/L	939701	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	701.7	6.6	**0.0871**	0.005	5.3	ug/L	4	Standard
	Tl	205	588.3	14.1	**0.0861**	0.013	15.2	ug/L	2	Standard
	Pb	206	1333.4	2.9	**0.1894**	0.006	3.1	ug/L	240	Standard
	Pb	207	1083.0	1.4	**0.1683**	0.005	3.1	ug/L	198	Standard
	Pb	208	4575.3	2.2	**0.1806**	0.004	2.0	ug/L	883	Standard
	U	238	2677.9	3.2	**0.4017**	0.012	2.9	ug/L	3	Standard
>	**Bi**	209	501924.0	1.5				ug/L	523984	Standard

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Na	23	1.7	173.2	**21.9523**	38.014	173.2	mg/L	0	Standard
Mg	24	43.3	29.0	**-0.0023**	0.020	841.8	mg/L	37	Standard
K	39	33.3	37.7	**-0.0317**	0.032	101.1	mg/L	38	Standard
Ca	43	46.7	12.4	**0.7738**	0.482	62.2	mg/L	10	Standard
Fe	54	100.7	18.6	**-0.0432**	0.016	36.6	mg/L	179	Standard
Fe	57	325.0	8.1	**0.1578**	0.085	53.5	mg/L	335	Standard
> **Sc-1**	45	54693.6	2.6				mg/L	61029	Standard
Cl	35	21199.5	1.6				ug/L	20195	Standard
Kr	83	3.3	17.3				ug/L	4	Standard
Br	81	1403.4	5.3				ug/L	1547	Standard
P	31	11833.0	1.6				ug/L	15286	Standard
S	34	2000.1	8.0				ug/L	1572	Standard
Sr	88	93.3	20.3				ug/L	73	Standard
C	12	56.7	10.2				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	13.0	89.8				mg/L	6	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	1430.1	34.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	119.656		
Al	27	-0.244		
Sc	45			
Ti	47			
V	51	95.473		
Cr	52	92.381		
Cr	53			
Mn	55	93.583		
Co	59	103.429		
Ni	60	97.737		
Cu	65	95.951		
Zn	66	106.273		
> Ge	72		95.394	
As	75	107.259		
Se	82	95.456		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	97.496		
Cd	111	98.556		
Cd	114			
> In	115			93.877
Sn	118			
Sb	123	114.045		
Ba	135	97.779		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	108.827		
Tl	205			
Pb	206			
Pb	207			
Pb	208	90.316		
U	238	100.429		
> Bi	209			95.790
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Wednesday, June 29, 2016 11:50:53
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	71628.9	1.8				ug/L	74699	Standard
	Be	9	13.3	43.3	**0.0235**	0.007	30.3	ug/L	8	Standard
	Al	27	7079214.4	1.4	**50.2405**	1.571	3.1	ug/L	1493	Standard
	Sc	45	57092.4	1.6				ug/L	61029	Standard
	Ti	47	41841.7	1.2	**112.2257**	1.296	1.2	ug/L	35	Standard
	V	51	1975.7	11.7	**0.0706**	0.031	44.3	ug/L	1435	Standard
	Cr	52	7951.4	1.4	**0.0680**	0.015	21.7	ug/L	7635	Standard
	Cr	53	3292.0	3.5	**3.2946**	0.126	3.8	ug/L	363	Standard
	Mn	55	1443.4	4.1	**0.0629**	0.009	13.6	ug/L	747	Standard
	Co	59	431.3	5.1	**0.0292**	0.003	11.6	ug/L	234	Standard
	Ni	60	837.4	1.6	**0.3312**	0.007	2.2	ug/L	215	Standard
	Cu	65	638.0	4.2	**0.2451**	0.015	6.0	ug/L	104	Standard
	Zn	66	1716.8	2.4	**1.1448**	0.039	3.4	ug/L	363	Standard
>	Ge	72	486594.7	0.0				ug/L	495142	Standard
	As	75	-47.8	111.3	**0.0161**	0.048	300.1	ug/L	-50	Standard
	Se	82	12.5	17.3	**-0.0221**	0.020	90.2	ug/L	14	Standard
	Se-1	77	285.3	3.8	**3.3530**	0.150	4.5	ug/L	42	Standard
>	Ga	71	146.7	5.2				mg/L	42	Standard
	Rb	85	1056.7	1.8				ug/L	17	Standard
	Y	89	409909.2	0.2				ug/L	417098	Standard
>	Rh	103	11.7	99.0				ug/L	13	Standard
	Mo	98	258876.2	1.4	**101.0110**	2.466	2.4	ug/L	11	Standard
	Ag	107	250.7	8.2	**0.0271**	0.004	13.5	ug/L	68	Standard
	Cd	111	-191.4	6.3	**-0.1031**	0.005	5.1	mg/L	2	Standard
	Cd	114	476.2	9.0	**0.0945**	0.009	9.4	ug/L	12	Standard
>	In	115	564912.9	1.1				ug/L	587441	Standard
	Sn	118	765.0	2.0	**0.0415**	0.002	5.8	ug/L	497	Standard
	Sb	123	314.8	31.7	**0.0658**	0.022	32.8	ug/L	78	Standard
	Ba	135	628.0	0.0	**0.3031**	0.004	1.2	ug/L	24	Standard
	Ce	140	243.3	10.5				ug/L	25	Standard
>	Tb	159	934364.8	1.3				ug/L	939701	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	234.7	3.6	**0.0271**	0.001	3.8	ug/L	4	Standard
	Tl	205	175.0	22.3	**0.0250**	0.006	22.8	ug/L	2	Standard
	Pb	206	514.7	3.8	**0.0265**	0.004	16.6	ug/L	240	Standard
	Pb	207	427.7	5.6	**0.0214**	0.005	22.5	ug/L	198	Standard
	Pb	208	1691.4	2.8	**0.0174**	0.002	11.4	ug/L	883	Standard
	U	238	20.7	10.1	**-0.0014**	0.000	22.7	ug/L	3	Standard
>	Bi	209	516629.8	0.9				ug/L	523984	Standard

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Na	23	8.3	34.6	**102.8074**	36.030	35.0	mg/L	0	Standard
Mg	24	9604.7	1.9	**13.1909**	0.366	2.8	mg/L	37	Standard
K	39	2033.5	6.6	**4.6893**	0.286	6.1	mg/L	38	Standard
Ca	43	250.0	4.0	**14.3615**	0.772	5.4	mg/L	10	Standard
Fe	54	14441.1	1.7	**12.9538**	0.416	3.2	mg/L	179	Standard
Fe	57	3845.5	3.6	**12.9047**	0.714	5.5	mg/L	335	Standard
> **Sc-1**	45	57092.4	1.6				mg/L	61029	Standard
Cl	35	20428.4	2.1				ug/L	20195	Standard
Kr	83	3.0	57.7				ug/L	4	Standard
Br	81	1493.4	8.7				ug/L	1547	Standard
P	31	15903.3	2.0				ug/L	15286	Standard
S	34	1818.4	8.5				ug/L	1572	Standard
Sr	88	70.0	35.7				ug/L	73	Standard
C	12	136.7	22.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	86.6				mg/L	3	Standard
Dy	164	12.2	93.4				mg/L	6	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	23.3	24.7				mg/L	13	Standard
I	127	2226.8	19.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27	1.005		
Sc	45			
Ti	47	112.226		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.274	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	101.011		
Ag	107			
Cd	111			
Cd	114			
> In	115		96.165	
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209		98.596	
Na	23	822.459		
Mg	24	263.819		
K	39	93.787		
Ca	43	95.743		
Fe	54	103.630		
Fe	57	103.238		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Wednesday, June 29, 2016 11:54:47
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72764.4	2.4				ug/L	74699	Standard
	Be	9	86093.9	0.6	**100.4334**	2.352	2.3	ug/L	8	Standard
	Al	27	7577089.0	1.5	**52.9410**	1.751	3.3	ug/L	1493	Standard
	Sc	45	54926.1	3.1				ug/L	61029	Standard
	Ti	47	43156.4	1.1	**115.6496**	0.651	0.6	ug/L	35	Standard
	V	51	767037.5	0.7	**103.0563**	0.476	0.5	ug/L	1435	Standard
	Cr	52	743370.8	0.7	**100.9527**	0.091	0.1	ug/L	7635	Standard
	Cr	53	95736.5	0.4	**104.9834**	0.488	0.5	ug/L	363	Standard
	Mn	55	719673.0	1.2	**104.9487**	1.961	1.9	ug/L	747	Standard
	Co	59	684381.8	1.6	**105.3392**	2.464	2.3	ug/L	234	Standard
	Ni	60	184775.9	0.8	**100.2112**	0.878	0.9	ug/L	215	Standard
	Cu	65	183945.6	0.7	**100.3790**	1.285	1.3	ug/L	104	Standard
	Zn	66	111716.4	0.5	**103.5231**	0.465	0.4	ug/L	363	Standard
>	**Ge**	72	487033.1	0.8				ug/L	495142	Standard
	As	75	115123.8	0.6	**104.5507**	0.234	0.2	ug/L	-50	Standard
	Se	82	11162.3	1.3	**103.2681**	1.937	1.9	ug/L	14	Standard
	Se-1	77	7790.3	1.4	**107.8133**	0.940	0.9	ug/L	42	Standard
>	**Ga**	71	155.0	24.4				mg/L	42	Standard
	Rb	85	853.4	12.0				ug/L	17	Standard
	Y	89	414937.1	1.1				ug/L	417098	Standard
>	**Rh**	103	48.3	21.5				ug/L	13	Standard
	Mo	98	271334.5	0.2	**106.0489**	0.711	0.7	ug/L	11	Standard
	Ag	107	596492.9	1.3	**95.3413**	1.752	1.8	ug/L	68	Standard
	Cd	111	202245.3	1.2	**100.7713**	1.934	1.9	mg/L	2	Standard
	Cd	114	489634.1	0.4	**99.4602**	0.649	0.7	ug/L	12	Standard
>	**In**	115	563893.1	0.8				ug/L	587441	Standard
	Sn	118	898.4	12.5	**0.0654**	0.019	28.7	ug/L	497	Standard
	Sb	123	448934.9	1.4	**100.1777**	2.039	2.0	ug/L	78	Standard
	Ba	135	193320.5	0.8	**98.3885**	1.494	1.5	ug/L	24	Standard
	Ce	140	68.3	16.9				ug/L	25	Standard
>	**Tb**	159	922182.5	1.6				ug/L	939701	Standard
	Ho	165	15.0	57.7				ug/L	10	Standard
	Tl	203	808287.0	0.7	**100.1763**	1.478	1.5	ug/L	4	Standard
	Tl	205	710155.2	1.4	**101.4182**	2.560	2.5	ug/L	2	Standard
	Pb	206	542765.1	0.5	**103.7300**	0.986	1.0	ug/L	240	Standard
	Pb	207	466015.8	1.0	**100.2432**	1.559	1.6	ug/L	198	Standard
	Pb	208	1879754.6	0.3	**102.3429**	1.262	1.2	ug/L	883	Standard
	U	238	673426.3	1.1	**99.9548**	2.202	2.2	ug/L	3	Standard
>	**Bi**	209	512933.6	1.2				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	10138.4	1.8	**14.4874**	0.596	4.1	mg/L	37	Standard
K	39	2125.1	3.3	**5.1060**	0.147	2.9	mg/L	38	Standard
Ca	43	265.0	8.2	**16.1201**	2.142	13.3	mg/L	10	Standard
Fe	54	14876.0	0.8	**13.8828**	0.353	2.5	mg/L	179	Standard
Fe	57	3958.9	4.0	**13.8986**	1.069	7.7	mg/L	335	Standard
Sc-1	45	54926.1	3.1				mg/L	61029	Standard
Cl	35	20351.0	1.2				ug/L	20195	Standard
Kr	83	1.7	91.7				ug/L	4	Standard
Br	81	1600.1	9.2				ug/L	1547	Standard
P	31	14895.7	0.4				ug/L	15286	Standard
S	34	1618.4	8.3				ug/L	1572	Standard
Sr	88	85.0	10.2				ug/L	73	Standard
C	12	116.7	71.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	16.2	38.3				mg/L	6	Standard
Ho-1	165	15.0	57.7				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	1496.7	25.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	100.433		
Al	27	1.059		
Sc	45			
Ti	47	115.650		
V	51	103.056		
Cr	52	100.953		
Cr	53			
Mn	55	104.949		
Co	59	105.339		
Ni	60	100.211		
Cu	65	100.379		
Zn	66	103.523		
Ge	72		98.362	
As	75	104.551		
Se	82	103.268		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	106.049		
Ag	107	95.341		
Cd	111	100.771		
Cd	114			
> In	115		95.991	
Sn	118			
Sb	123	100.178		
Ba	135	98.389		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.176		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.343		
U	238	99.955		
> Bi	209		97.891	
Na	23	0.040		
Mg	24	289.748		
K	39	102.121		
Ca	43	107.468		
Fe	54	111.063		
Fe	57	111.189		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

Sample ID: QC Std 5
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 12:00:10
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74127.8	4.1				ug/L	74699	Standard
	Be	9	44057.3	2.0	**50.4723**	1.532	3.0	ug/L	8	Standard
	Al	27	7182862.5	0.8	**49.2846**	1.691	3.4	ug/L	1493	Standard
	Sc	45	54972.9	1.9				ug/L	61029	Standard
	Ti	47	37035.5	1.0	**100.2235**	3.375	3.4	ug/L	35	Standard
	V	51	380987.7	1.2	**51.6037**	1.920	3.7	ug/L	1435	Standard
	Cr	52	371095.9	0.5	**50.3905**	1.647	3.3	ug/L	7635	Standard
	Cr	53	45648.7	0.9	**50.3715**	0.927	1.8	ug/L	363	Standard
	Mn	55	362758.6	1.1	**53.3556**	2.033	3.8	ug/L	747	Standard
	Co	59	346170.1	1.6	**53.7955**	2.203	4.1	ug/L	234	Standard
	Ni	60	91822.1	1.5	**50.2407**	2.119	4.2	ug/L	215	Standard
	Cu	65	92043.5	2.0	**50.6873**	2.359	4.7	ug/L	104	Standard
	Zn	66	54708.9	1.1	**50.9762**	1.937	3.8	ug/L	363	Standard
>	Ge	72	482505.9	2.7				ug/L	495142	Standard
	As	75	56019.2	1.2	**51.4117**	1.775	3.5	ug/L	-50	Standard
	Se	82	5615.5	1.4	**52.4035**	2.100	4.0	ug/L	14	Standard
	Se-1	77	3787.5	1.5	**52.6293**	2.112	4.0	ug/L	42	Standard
>	Ga	71	63.3	9.1				mg/L	42	Standard
	Rb	85	771.7	5.9				ug/L	17	Standard
	Y	89	419939.4	2.7				ug/L	417098	Standard
>	Rh	103	31.7	9.1				ug/L	13	Standard
	Mo	98	262674.3	2.0	**102.5093**	6.034	5.9	ug/L	11	Standard
	Ag	107	318557.4	0.8	**50.8058**	2.007	4.0	ug/L	68	Standard
	Cd	111	103808.6	0.6	**51.6156**	2.157	4.2	mg/L	2	Standard
	Cd	114	253134.5	2.1	**51.2889**	1.034	2.0	ug/L	12	Standard
>	In	115	565595.5	4.0				ug/L	587441	Standard
	Sn	118	290084.1	1.0	**51.5381**	2.174	4.2	ug/L	497	Standard
	Sb	123	228198.9	1.3	**50.8307**	2.651	5.2	ug/L	78	Standard
	Ba	135	99366.1	0.6	**50.4579**	1.943	3.9	ug/L	24	Standard
	Ce	140	78.3	13.3				ug/L	25	Standard
>	Tb	159	913248.6	2.6				ug/L	939701	Standard
	Ho	165	3.3	86.6				ug/L	10	Standard
	Tl	203	413066.5	1.0	**51.9084**	1.016	2.0	ug/L	4	Standard
	Tl	205	363184.8	0.9	**52.5982**	1.678	3.2	ug/L	2	Standard
	Pb	206	268800.2	0.8	**52.0649**	1.553	3.0	ug/L	240	Standard
	Pb	207	239468.7	1.2	**52.2107**	1.790	3.4	ug/L	198	Standard
	Pb	208	958802.6	0.9	**52.9068**	1.662	3.1	ug/L	883	Standard
	U	238	349772.5	0.2	**52.6413**	1.317	2.5	ug/L	3	Standard
>	Bi	209	505954.2	2.3				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3805.5	5.3	**5.3881**	0.260	4.8	mg/L	37	Standard
K	39	2106.8	1.9	**5.0574**	0.179	3.5	mg/L	38	Standard
Ca	43	101.7	5.7	**4.6110**	0.501	10.9	mg/L	10	Standard
Fe	54	5879.5	1.7	**5.3975**	0.172	3.2	mg/L	179	Standard
Fe	57	1785.1	7.3	**5.6694**	0.625	11.0	mg/L	335	Standard
> **Sc-1**	45	54972.9	1.9				mg/L	61029	Standard
Cl	35	21821.7	0.9				ug/L	20195	Standard
Kr	83	2.0	0.0				ug/L	4	Standard
Br	81	1470.1	4.5				ug/L	1547	Standard
P	31	16677.5	6.0				ug/L	15286	Standard
S	34	1955.1	4.5				ug/L	1572	Standard
Sr	88	73.3	14.2				ug/L	73	Standard
C	12	80.0	66.1				mg/L	63	Standard
N	14	6.7	86.6				mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	15.9	32.3				mg/L	6	Standard
Ho-1	165	3.3	86.6				mg/L	10	Standard
Er	166	16.7	124.9				mg/L	13	Standard
I	127	1668.4	28.6				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	100.945		
	Al	27	98.569		
	Sc	45			
	Ti	47	100.224		
	V	51	103.207		
	Cr	52	100.781		
	Cr	53			
	Mn	55	106.711		
	Co	59	107.591		
	Ni	60	100.481		
	Cu	65	101.375		
	Zn	66	101.952		
>	Ge	72		97.448	
	As	75	102.823		
	Se	82	104.807		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	102.509		
Ag	107	101.612		
Cd	111	103.231		
Cd	114			
> In	115			96.281
Sn	118	103.076		
Sb	123	101.661		
Ba	135	100.916		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	103.817		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.814		
U	238	105.283		
> Bi	209			96.559
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 12:07:34
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74348.6	1.0				ug/L	74699	Standard
	Be	9	21.7	26.6	**0.0324**	0.007	20.7	ug/L	8	Standard
	Al	27	1840.1	21.7	**-0.0008**	0.003	358.1	ug/L	1493	Standard
	Sc	45	56396.5	2.8				ug/L	61029	Standard
	Ti	47	36.7	15.0	**-0.0098**	0.014	147.0	ug/L	35	Standard
	V	51	1326.6	5.0	**-0.0153**	0.008	51.0	ug/L	1435	Standard
	Cr	52	6702.5	2.0	**-0.0955**	0.015	16.1	ug/L	7635	Standard
	Cr	53	393.3	15.3	**0.1070**	0.067	63.0	ug/L	363	Standard
	Mn	55	742.7	5.5	**-0.0386**	0.005	13.8	ug/L	747	Standard
	Co	59	250.3	1.5	**0.0016**	0.000	18.8	ug/L	234	Standard
	Ni	60	195.0	9.2	**-0.0170**	0.010	58.7	ug/L	215	Standard
	Cu	65	108.7	1.4	**-0.0438**	0.000	1.1	ug/L	104	Standard
	Zn	66	377.3	7.3	**-0.1000**	0.024	24.2	ug/L	363	Standard
>	**Ge**	72	482419.6	0.7				ug/L	495142	Standard
	As	75	-16.3	122.1	**0.0447**	0.018	40.8	ug/L	-50	Standard
	Se	82	12.2	10.1	**-0.0240**	0.012	49.4	ug/L	14	Standard
	Se-1	77	52.7	12.2	**0.1177**	0.089	75.6	ug/L	42	Standard
>	**Ga**	71	61.7	33.8				mg/L	42	Standard
	Rb	85	30.0	50.0				ug/L	17	Standard
	Y	89	414790.7	2.9				ug/L	417098	Standard
>	**Rh**	103	1.7	173.2				ug/L	13	Standard
	Mo	98	135.9	9.5	**0.0469**	0.005	10.2	ug/L	11	Standard
	Ag	107	96.3	7.3	**0.0024**	0.001	45.2	ug/L	68	Standard
	Cd	111	7.4	43.0	**-0.0042**	0.002	37.1	mg/L	2	Standard
	Cd	114	24.8	51.6	**0.0029**	0.003	88.9	ug/L	12	Standard
>	**In**	115	568967.0	0.5				ug/L	587441	Standard
	Sn	118	628.3	16.1	**0.0164**	0.018	110.8	ug/L	497	Standard
	Sb	123	617.2	40.6	**0.1324**	0.056	42.3	ug/L	78	Standard
	Ba	135	30.7	16.1	**-0.0005**	0.003	469.7	ug/L	24	Standard
	Ce	140	23.3	68.9				ug/L	25	Standard
>	**Tb**	159	918183.5	1.2				ug/L	939701	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	30.3	14.9	**0.0020**	0.001	31.1	ug/L	4	Standard
	Tl	205	23.3	24.7	**0.0035**	0.001	22.2	ug/L	2	Standard
	Pb	206	259.3	0.6	**-0.0221**	0.001	4.2	ug/L	240	Standard
	Pb	207	198.7	1.6	**-0.0277**	0.001	4.0	ug/L	198	Standard
	Pb	208	894.0	2.8	**-0.0259**	0.002	7.7	ug/L	883	Standard
	U	238	15.0	35.3	**-0.0022**	0.001	35.0	ug/L	3	Standard
>	**Bi**	209	518580.7	1.8				ug/L	523984	Standard

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Na	23	1.7	173.2	**20.6253**	35.715	173.2	mg/L	0	Standard
Mg	24	31.7	32.9	**-0.0207**	0.015	73.7	mg/L	37	Standard
K	39	51.7	24.4	**0.0090**	0.027	299.1	mg/L	38	Standard
Ca	43	33.3	31.2	**-0.2319**	0.781	336.6	mg/L	10	Standard
Fe	54	140.8	7.6	**-0.0093**	0.006	67.4	mg/L	179	Standard
Fe	57	256.7	18.9	**-0.1295**	0.180	138.6	mg/L	335	Standard
Sc-1	45	56396.5	2.8				mg/L	61029	Standard
Cl	35	21372.4	1.3				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	1540.1	8.8				ug/L	1547	Standard
P	31	15931.7	0.9				ug/L	15286	Standard
S	34	1863.4	1.4				ug/L	1572	Standard
Sr	88	58.3	17.8				ug/L	73	Standard
C	12	56.7	27.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	6.2	186.6				mg/L	6	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	10.0					mg/L	13	Standard
I	127	1518.4	26.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.431	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.855
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.969
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606066106
Sample Date/Time: Wednesday, June 29, 2016 12:12:15
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78301.9	3.0				ug/L	74699	Standard
	Be	9	591.7	15.8	**0.6482**	0.094	14.5	ug/L	8	Standard
	Al	27	14033022.6	1.2	**91.1117**	1.566	1.7	ug/L	1493	Standard
	Sc	45	64031.7	1.2				ug/L	61029	Standard
	Ti	47	6936.9	1.2	**18.7002**	0.397	2.1	ug/L	35	Standard
	V	51	136379.5	0.6	**18.3618**	0.342	1.9	ug/L	1435	Standard
	Cr	52	135090.6	0.2	**17.7119**	0.504	2.8	ug/L	7635	Standard
	Cr	53	16100.2	3.4	**17.5840**	1.043	5.9	ug/L	363	Standard
	Mn	55	2727656.7	0.9	**402.5207**	10.967	2.7	ug/L	747	Standard
	Co	59	46530.0	0.2	**7.2050**	0.195	2.7	ug/L	234	Standard
	Ni	60	31243.2	1.0	**17.0295**	0.585	3.4	ug/L	215	Standard
	Cu	65	40278.5	0.5	**22.1396**	0.604	2.7	ug/L	104	Standard
	Zn	66	62615.1	0.3	**58.4626**	1.558	2.7	ug/L	363	Standard
>	**Ge**	72	481946.2	2.4				ug/L	495142	Standard
	As	75	4644.7	1.4	**4.3222**	0.154	3.6	ug/L	-50	Standard
	Se	82	54.0	14.6	**0.3688**	0.086	23.4	ug/L	14	Standard
	Se-1	77	96.0	5.2	**0.7275**	0.040	5.5	ug/L	42	Standard
>	**Ga**	71	12810.4	4.6				mg/L	42	Standard
	Rb	85	116256.0	0.7				ug/L	17	Standard
	Y	89	585719.0	1.0				ug/L	417098	Standard
>	**Rh**	103	45.0	33.3				ug/L	13	Standard
	Mo	98	935.2	3.6	**0.3550**	0.010	2.8	ug/L	11	Standard
	Ag	107	931.4	1.2	**0.1340**	0.001	0.5	ug/L	68	Standard
	Cd	111	782.7	0.6	**0.3771**	0.007	1.8	mg/L	2	Standard
	Cd	114	1959.7	7.4	**0.3906**	0.025	6.5	ug/L	12	Standard
>	**In**	115	571359.2	1.2				ug/L	587441	Standard
	Sn	118	1011.7	7.7	**0.0833**	0.012	14.7	ug/L	497	Standard
	Sb	123	336.5	28.9	**0.0698**	0.021	29.4	ug/L	78	Standard
	Ba	135	394959.7	1.6	**198.3814**	1.476	0.7	ug/L	24	Standard
	Ce	140	893729.8	1.7				ug/L	25	Standard
>	**Tb**	159	948738.0	1.3				ug/L	939701	Standard
	Ho	165	15724.8	2.6				ug/L	10	Standard
	Tl	203	658.0	2.7	**0.0791**	0.002	2.2	ug/L	4	Standard
	Tl	205	583.3	11.6	**0.0828**	0.010	12.2	ug/L	2	Standard
	Pb	206	370590.1	1.2	**70.2116**	0.816	1.2	ug/L	240	Standard
	Pb	207	304396.4	0.8	**64.9093**	0.988	1.5	ug/L	198	Standard
	Pb	208	1254498.7	1.7	**67.7133**	1.716	2.5	ug/L	883	Standard
	U	238	3382.4	2.2	**0.4935**	0.016	3.3	ug/L	3	Standard
>	**Bi**	209	517229.2	1.1				ug/L	523984	Standard

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Na	23	3.3	173.2	**36.6019**	63.388	173.2	mg/L	0	Standard
Mg	24	128.3	15.7	**0.0927**	0.024	25.5	mg/L	37	Standard
K	39	566.7	14.3	**1.0807**	0.180	16.7	mg/L	38	Standard
Ca	43	418.3	12.7	**22.6893**	3.491	15.4	mg/L	10	Standard
Fe	54	12793.3	3.0	**10.1983**	0.198	1.9	mg/L	179	Standard
Fe	57	3678.8	1.9	**10.8461**	0.363	3.4	mg/L	335	Standard
Sc-1	45	64031.7	1.2				mg/L	61029	Standard
Cl	35	22050.7	1.1				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	2173.5	11.7				ug/L	1547	Standard
P	31	16252.1	5.4				ug/L	15286	Standard
S	34	2065.1	4.4				ug/L	1572	Standard
Sr	88	140.0	9.4				ug/L	73	Standard
C	12	143.3	22.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	203.3	10.2				mg/L	3	Standard
Dy	164	25060.4	3.8				mg/L	6	Standard
Ho-1	165	15724.8	2.6				mg/L	10	Standard
Er	166	13529.4	4.1				mg/L	13	Standard
I	127	8297.3	2.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		104.824	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.335	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.262
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.711
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606066106
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Method 6020 - Summary Report

Sample ID: L1606066107
Sample Date/Time: Wednesday, June 29, 2016 12:15:26
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79855.0	3.3				ug/L	74699	Standard
	Be	9	765.0	6.8	**0.8219**	0.077	9.4	ug/L	8	Standard
	Al	27	26230756.6	0.7	**167.0452**	4.333	2.6	ug/L	1493	Standard
	Sc	45	64585.8	4.1				ug/L	61029	Standard
	Ti	47	7966.1	1.8	**21.8574**	0.352	1.6	ug/L	35	Standard
	V	51	155637.7	1.4	**21.3440**	0.459	2.1	ug/L	1435	Standard
	Cr	52	137713.7	0.8	**18.3989**	0.313	1.7	ug/L	7635	Standard
	Cr	53	16806.0	3.9	**18.6780**	0.841	4.5	ug/L	363	Standard
	Mn	55	4726467.2	1.1	**709.3402**	2.876	0.4	ug/L	747	Standard
	Co	59	64550.2	0.1	**10.1794**	0.081	0.8	ug/L	234	Standard
	Ni	60	42709.8	0.1	**23.7183**	0.226	1.0	ug/L	215	Standard
	Cu	65	23683.8	1.0	**13.1970**	0.251	1.9	ug/L	104	Standard
	Zn	66	44795.8	1.0	**42.4101**	0.817	1.9	ug/L	363	Standard
>	**Ge**	72	473762.9	0.9				ug/L	495142	Standard
	As	75	7180.0	1.6	**6.7588**	0.066	1.0	ug/L	-50	Standard
	Se	82	142.2	5.2	**1.2157**	0.067	5.5	ug/L	14	Standard
	Se-1	77	110.3	7.6	**0.9569**	0.126	13.2	ug/L	42	Standard
>	**Ga**	71	17858.9	0.4				mg/L	42	Standard
	Rb	85	152815.2	1.7				ug/L	17	Standard
	Y	89	630725.5	1.5				ug/L	417098	Standard
>	**Rh**	103	41.7	25.0				ug/L	13	Standard
	Mo	98	1176.0	1.0	**0.4476**	0.010	2.2	ug/L	11	Standard
	Ag	107	471.0	1.7	**0.0613**	0.002	3.5	ug/L	68	Standard
	Cd	111	231.8	9.8	**0.1061**	0.013	12.1	mg/L	2	Standard
	Cd	114	548.2	12.6	**0.1078**	0.015	13.9	ug/L	12	Standard
>	**In**	115	571871.5	1.5				ug/L	587441	Standard
	Sn	118	1063.4	7.5	**0.0923**	0.015	16.1	ug/L	497	Standard
	Sb	123	198.5	41.2	**0.0396**	0.018	46.2	ug/L	78	Standard
	Ba	135	410562.2	0.2	**206.0643**	2.723	1.3	ug/L	24	Standard
	Ce	140	1020863.3	0.8				ug/L	25	Standard
>	**Tb**	159	935971.5	1.4				ug/L	939701	Standard
	Ho	165	18616.4	1.9				ug/L	10	Standard
	Tl	203	969.7	3.1	**0.1217**	0.006	4.6	ug/L	4	Standard
	Tl	205	781.7	5.1	**0.1148**	0.005	4.1	ug/L	2	Standard
	Pb	206	74583.8	0.8	**14.5751**	0.129	0.9	ug/L	240	Standard
	Pb	207	60293.4	1.5	**13.2552**	0.050	0.4	ug/L	198	Standard
	Pb	208	253434.0	0.7	**14.1059**	0.309	2.2	ug/L	883	Standard
	U	238	4763.7	0.8	**0.7216**	0.012	1.7	ug/L	3	Standard
>	**Bi**	209	499544.2	1.5				ug/L	523984	Standard

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Na	23	8.3	34.6	**90.1824**	29.248	32.4	mg/L	0	Standard
Mg	24	323.3	10.9	**0.3294**	0.041	12.6	mg/L	37	Standard
K	39	788.4	10.3	**1.5298**	0.110	7.2	mg/L	38	Standard
Ca	43	663.3	6.3	**37.0621**	1.711	4.6	mg/L	10	Standard
Fe	54	18630.5	1.2	**14.8018**	0.561	3.8	mg/L	179	Standard
Fe	57	5110.9	3.8	**15.3724**	1.217	7.9	mg/L	335	Standard
Sc-1	45	64585.8	4.1				mg/L	61029	Standard
Cl	35	22235.6	2.9				ug/L	20195	Standard
Kr	83	0.7	173.2				ug/L	4	Standard
Br	81	23104.3	4.2				ug/L	1547	Standard
P	31	15829.9	2.1				ug/L	15286	Standard
S	34	2033.5	3.2				ug/L	1572	Standard
Sr	88	161.7	12.5				ug/L	73	Standard
C	12	96.7	41.8				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	31177.2	1.6				mg/L	6	Standard
Ho-1	165	18616.4	1.9				mg/L	10	Standard
Er	166	16976.2	1.7				mg/L	13	Standard
I	127	9242.8	4.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		106.903	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.682	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	97.350	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	95.336	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606066108
Sample Date/Time: Wednesday, June 29, 2016 12:18:38
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77986.9	1.5				ug/L	74699	Standard
	Be	9	848.4	8.3	**0.9313**	0.087	9.4	ug/L	8	Standard
	Al	27	17300686.4	1.1	**112.7510**	0.475	0.4	ug/L	1493	Standard
	Sc	45	64965.7	2.0				ug/L	61029	Standard
	Ti	47	6993.9	0.6	**18.3803**	0.198	1.1	ug/L	35	Standard
	V	51	170039.3	0.3	**22.3624**	0.095	0.4	ug/L	1435	Standard
	Cr	52	135852.7	1.1	**17.3429**	0.173	1.0	ug/L	7635	Standard
	Cr	53	16400.5	1.1	**17.4496**	0.150	0.9	ug/L	363	Standard
	Mn	55	3732645.2	0.8	**537.0232**	5.661	1.1	ug/L	747	Standard
	Co	59	59499.9	1.1	**8.9910**	0.146	1.6	ug/L	234	Standard
	Ni	60	38977.4	1.0	**20.7345**	0.185	0.9	ug/L	215	Standard
	Cu	65	32324.4	0.5	**17.2976**	0.098	0.6	ug/L	104	Standard
	Zn	66	55484.7	0.8	**50.4392**	0.445	0.9	ug/L	363	Standard
>	Ge	72	494184.7	0.5				ug/L	495142	Standard
	As	75	5935.1	0.6	**5.3688**	0.057	1.1	ug/L	-50	Standard
	Se	82	56.5	10.0	**0.3782**	0.052	13.7	ug/L	14	Standard
	Se-1	77	118.0	0.8	**0.9965**	0.019	1.9	ug/L	42	Standard
>	Ga	71	16687.5	1.9				mg/L	42	Standard
	Rb	85	157851.4	1.2				ug/L	17	Standard
	Y	89	635672.9	1.6				ug/L	417098	Standard
>	Rh	103	68.3	27.7				ug/L	13	Standard
	Mo	98	1214.1	0.7	**0.4777**	0.002	0.4	ug/L	11	Standard
	Ag	107	767.0	3.0	**0.1120**	0.004	3.7	ug/L	68	Standard
	Cd	111	562.6	3.0	**0.2776**	0.008	3.0	mg/L	2	Standard
	Cd	114	1264.6	12.4	**0.2596**	0.032	12.4	ug/L	12	Standard
>	In	115	553515.9	0.3				ug/L	587441	Standard
	Sn	118	763.4	11.0	**0.0440**	0.015	34.7	ug/L	497	Standard
	Sb	123	242.9	15.0	**0.0510**	0.008	16.4	ug/L	78	Standard
	Ba	135	429181.6	1.6	**222.5293**	3.912	1.8	ug/L	24	Standard
	Ce	140	1102655.1	2.3				ug/L	25	Standard
>	Tb	159	923824.1	1.4				ug/L	939701	Standard
	Ho	165	18663.2	2.9				ug/L	10	Standard
	Tl	203	782.7	3.6	**0.0981**	0.005	5.3	ug/L	4	Standard
	Tl	205	701.7	8.6	**0.1034**	0.010	10.1	ug/L	2	Standard
	Pb	206	213507.8	0.5	**41.9534**	0.898	2.1	ug/L	240	Standard
	Pb	207	175202.2	0.5	**38.7416**	0.683	1.8	ug/L	198	Standard
	Pb	208	727362.3	0.6	**40.7140**	1.033	2.5	ug/L	883	Standard
	U	238	4175.6	1.0	**0.6335**	0.018	2.9	ug/L	3	Standard
>	Bi	209	498479.4	1.9				ug/L	523984	Standard

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Na	23	1.7	173.2	**18.0364**	31.231	173.2	mg/L	0	Standard
Mg	24	140.0	21.7	**0.1047**	0.037	35.2	mg/L	37	Standard
K	39	708.4	12.8	**1.3550**	0.168	12.4	mg/L	38	Standard
Ca	43	508.3	5.0	**27.6291**	0.895	3.2	mg/L	10	Standard
Fe	54	15324.4	1.1	**12.0707**	0.309	2.6	mg/L	179	Standard
Fe	57	4262.3	3.3	**12.5338**	0.279	2.2	mg/L	335	Standard
> **Sc-1**	45	64965.7	2.0				mg/L	61029	Standard
Cl	35	21927.9	1.6				ug/L	20195	Standard
Kr	83	2.7	78.1				ug/L	4	Standard
Br	81	2823.6	3.3				ug/L	1547	Standard
P	31	16612.4	1.0				ug/L	15286	Standard
S	34	2085.1	7.7				ug/L	1572	Standard
Sr	88	245.0	14.1				ug/L	73	Standard
C	12	116.7	27.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	93.3	49.5				mg/L	3	Standard
Dy	164	30954.0	1.2				mg/L	6	Standard
Ho-1	165	18663.2	2.9				mg/L	10	Standard
Er	166	16615.8	2.6				mg/L	13	Standard
I	127	11766.2	5.8				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		104.402	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.807	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.225
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.132
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606066109
Sample Date/Time: Wednesday, June 29, 2016 12:21:49
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77037.0	1.5				ug/L	74699	Standard
	Be	9	378.3	6.2	**0.4242**	0.022	5.2	ug/L	8	Standard
	Al	27	13254869.5	1.3	**87.4672**	2.449	2.8	ug/L	1493	Standard
	Sc	45	63133.0	3.0				ug/L	61029	Standard
	Ti	47	8144.2	1.7	**21.2616**	0.854	4.0	ug/L	35	Standard
	V	51	109381.5	1.5	**14.2029**	0.301	2.1	ug/L	1435	Standard
	Cr	52	127693.7	2.3	**16.1132**	0.755	4.7	ug/L	7635	Standard
	Cr	53	15149.2	3.9	**15.9774**	1.000	6.3	ug/L	363	Standard
	Mn	55	3010101.1	0.9	**429.7771**	13.412	3.1	ug/L	747	Standard
	Co	59	32158.1	0.7	**4.8045**	0.098	2.0	ug/L	234	Standard
	Ni	60	23283.5	0.8	**12.2424**	0.383	3.1	ug/L	215	Standard
	Cu	65	9940.9	0.4	**5.2071**	0.131	2.5	ug/L	104	Standard
	Zn	66	24785.3	0.2	**22.1054**	0.470	2.1	ug/L	363	Standard
>	**Ge**	72	498160.0	2.3				ug/L	495142	Standard
	As	75	2943.4	0.7	**2.6727**	0.077	2.9	ug/L	-50	Standard
	Se	82	39.1	13.2	**0.2170**	0.054	24.7	ug/L	14	Standard
	Se-1	77	75.7	11.2	**0.4068**	0.103	25.3	ug/L	42	Standard
>	**Ga**	71	9034.4	2.0				mg/L	42	Standard
	Rb	85	68682.0	2.5				ug/L	17	Standard
	Y	89	539979.1	1.9				ug/L	417098	Standard
>	**Rh**	103	11.7	24.7				ug/L	13	Standard
	Mo	98	3058.1	1.5	**1.1809**	0.018	1.5	ug/L	11	Standard
	Ag	107	334.3	34.2	**0.0400**	0.017	43.3	ug/L	68	Standard
	Cd	111	137.9	39.4	**0.0601**	0.026	43.1	mg/L	2	Standard
	Cd	114	340.6	39.5	**0.0664**	0.026	39.4	ug/L	12	Standard
>	**In**	115	568023.6	1.3				ug/L	587441	Standard
	Sn	118	973.4	3.3	**0.0776**	0.003	4.4	ug/L	497	Standard
	Sb	123	217.2	33.7	**0.0438**	0.016	35.6	ug/L	78	Standard
	Ba	135	138215.3	1.3	**69.8220**	0.106	0.2	ug/L	24	Standard
	Ce	140	545871.5	1.0				ug/L	25	Standard
>	**Tb**	159	946980.1	0.3				ug/L	939701	Standard
	Ho	165	11547.7	1.8				ug/L	10	Standard
	Tl	203	458.7	30.8	**0.0539**	0.017	31.9	ug/L	4	Standard
	Tl	205	360.0	14.1	**0.0505**	0.007	14.1	ug/L	2	Standard
	Pb	206	30575.5	1.0	**5.6549**	0.063	1.1	ug/L	240	Standard
	Pb	207	24590.3	1.3	**5.1132**	0.071	1.4	ug/L	198	Standard
	Pb	208	101567.1	0.7	**5.3447**	0.038	0.7	ug/L	883	Standard
	U	238	5591.0	1.3	**0.8082**	0.011	1.4	ug/L	3	Standard
>	**Bi**	209	523773.4	0.1				ug/L	523984	Standard

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Na	23	1.7	173.2	**19.1528**	33.165	173.2	mg/L	0	Standard
Mg	24	88.3	26.1	**0.0447**	0.026	57.5	mg/L	37	Standard
K	39	410.0	24.0	**0.7638**	0.217	28.4	mg/L	38	Standard
Ca	43	368.3	13.4	**20.0310**	3.643	18.2	mg/L	10	Standard
Fe	54	11096.4	1.9	**8.9581**	0.101	1.1	mg/L	179	Standard
Fe	57	2985.3	3.6	**8.7334**	0.110	1.3	mg/L	335	Standard
Sc-1	45	63133.0	3.0				mg/L	61029	Standard
Cl	35	21859.8	1.0				ug/L	20195	Standard
Kr	83	1.0	0.0				ug/L	4	Standard
Br	81	1696.8	5.1				ug/L	1547	Standard
P	31	15684.8	2.6				ug/L	15286	Standard
S	34	1883.5	4.2				ug/L	1572	Standard
Sr	88	116.7	19.3				ug/L	73	Standard
C	12	100.0	26.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	18768.7	3.5				mg/L	6	Standard
Ho-1	165	11547.7	1.8				mg/L	10	Standard
Er	166	10790.5	1.6				mg/L	13	Standard
I	127	6703.2	5.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		103.130	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.609	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.695
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.960
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606082203
Sample Date/Time: Wednesday, June 29, 2016 12:25:01
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75246.5	2.8				ug/L	74699	Standard
	Be	9	6.7	114.6	**0.0150**	0.008	55.4	ug/L	8	Standard
	Al	27	1140453.8	1.3	**7.6935**	0.186	2.4	ug/L	1493	Standard
	Sc	45	58880.9	1.2				ug/L	61029	Standard
	Ti	47	77.7	5.2	**0.0982**	0.010	10.0	ug/L	35	Standard
	V	51	1502.7	7.0	**0.0058**	0.017	290.5	ug/L	1435	Standard
	Cr	52	10404.9	0.3	**0.3964**	0.023	5.7	ug/L	7635	Standard
	Cr	53	878.4	11.3	**0.6323**	0.120	19.0	ug/L	363	Standard
	Mn	55	64288.8	1.0	**9.1920**	0.174	1.9	ug/L	747	Standard
	Co	59	1249.1	3.1	**0.1540**	0.006	4.1	ug/L	234	Standard
	Ni	60	673.3	4.1	**0.2398**	0.011	4.6	ug/L	215	Standard
	Cu	65	229.7	8.0	**0.0211**	0.010	48.0	ug/L	104	Standard
	Zn	66	2146.2	1.5	**1.5328**	0.038	2.5	ug/L	363	Standard
>	**Ge**	72	489582.8	1.5				ug/L	495142	Standard
	As	75	99.3	9.7	**0.1492**	0.008	5.6	ug/L	-50	Standard
	Se	82	43.5	22.3	**0.2617**	0.085	32.3	ug/L	14	Standard
	Se-1	77	67.7	6.2	**0.3148**	0.059	18.8	ug/L	42	Standard
>	**Ga**	71	61.7	40.8				mg/L	42	Standard
	Rb	85	88606.7	2.0				ug/L	17	Standard
	Y	89	430024.7	1.6				ug/L	417098	Standard
>	**Rh**	103	28.3	50.9				ug/L	13	Standard
	Mo	98	81.5	16.2	**0.0249**	0.005	20.1	ug/L	11	Standard
	Ag	107	97.7	18.1	**0.0021**	0.003	124.3	ug/L	68	Standard
	Cd	111	13.9	57.3	**-0.0013**	0.004	291.1	mg/L	2	Standard
	Cd	114	23.0	35.9	**0.0024**	0.002	67.9	ug/L	12	Standard
>	**In**	115	586341.4	0.7				ug/L	587441	Standard
	Sn	118	508.3	13.9	**-0.0076**	0.011	151.7	ug/L	497	Standard
	Sb	123	156.7	24.2	**0.0294**	0.008	27.7	ug/L	78	Standard
	Ba	135	76489.9	1.2	**37.4252**	0.302	0.8	ug/L	24	Standard
	Ce	140	665.0	13.3				ug/L	25	Standard
>	**Tb**	159	934158.4	1.1				ug/L	939701	Standard
	Ho	165	15.0	66.7				ug/L	10	Standard
	Tl	203	113.7	11.3	**0.0121**	0.002	13.7	ug/L	4	Standard
	Tl	205	93.3	44.6	**0.0133**	0.006	44.3	ug/L	2	Standard
	Pb	206	362.0	5.5	**-0.0029**	0.004	131.1	ug/L	240	Standard
	Pb	207	281.3	6.6	**-0.0103**	0.004	38.7	ug/L	198	Standard
	Pb	208	1197.0	7.1	**-0.0098**	0.005	49.2	ug/L	883	Standard
	U	238	25.0	34.9	**-0.0008**	0.001	168.5	ug/L	3	Standard
>	**Bi**	209	520173.1	0.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3547.1	5.1	**4.6793**	0.186	4.0	mg/L	37	Standard
K	39	1096.7	1.1	**2.3987**	0.055	2.3	mg/L	38	Standard
Ca	43	51.7	27.9	**0.8562**	0.931	108.7	mg/L	10	Standard
Fe	54	433.8	1.2	**0.2430**	0.009	3.5	mg/L	179	Standard
Fe	57	376.7	13.8	**0.2532**	0.189	74.5	mg/L	335	Standard
> **Sc-1**	45	58880.9	1.2				mg/L	61029	Standard
Cl	35	22906.6	0.4				ug/L	20195	Standard
Kr	83	2.3	65.5				ug/L	4	Standard
Br	81	9496.3	3.0				ug/L	1547	Standard
P	31	16589.1	2.9				ug/L	15286	Standard
S	34	2071.8	1.6				ug/L	1572	Standard
Sr	88	118.3	17.1				ug/L	73	Standard
C	12	53.3	10.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	19.0	47.5				mg/L	6	Standard
Ho-1	165	15.0	66.7				mg/L	10	Standard
Er	166	20.0	100.0				mg/L	13	Standard
I	127	14315.1	5.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.733	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.877	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.813
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.273
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606082302
Sample Date/Time: Wednesday, June 29, 2016 12:28:12
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75794.1	0.6				ug/L	74699	Standard
	Be	9	13.3	21.7	**0.0225**	0.003	14.2	ug/L	8	Standard
	Al	27	2805598.0	0.7	**18.8025**	0.242	1.3	ug/L	1493	Standard
	Sc	45	59848.0	1.2				ug/L	61029	Standard
	Ti	47	42.3	20.1	**0.0017**	0.021	1272.3	ug/L	35	Standard
	V	51	1764.1	8.5	**0.0361**	0.018	49.9	ug/L	1435	Standard
	Cr	52	8282.9	3.5	**0.0853**	0.037	43.4	ug/L	7635	Standard
	Cr	53	906.7	14.2	**0.6437**	0.138	21.5	ug/L	363	Standard
	Mn	55	61274.7	1.5	**8.5848**	0.068	0.8	ug/L	747	Standard
	Co	59	3907.8	2.1	**0.5500**	0.015	2.7	ug/L	234	Standard
	Ni	60	654.7	3.9	**0.2231**	0.012	5.6	ug/L	215	Standard
	Cu	65	222.3	1.8	**0.0148**	0.001	8.1	ug/L	104	Standard
	Zn	66	2204.5	3.0	**1.5481**	0.054	3.5	ug/L	363	Standard
>	**Ge**	72	498979.3	0.8				ug/L	495142	Standard
	As	75	72.7	46.8	**0.1239**	0.030	24.0	ug/L	-50	Standard
	Se	82	52.0	6.1	**0.3317**	0.029	8.6	ug/L	14	Standard
	Se-1	77	105.0	8.3	**0.8037**	0.108	13.5	ug/L	42	Standard
>	**Ga**	71	56.7	13.5				mg/L	42	Standard
	Rb	85	343.3	5.1				ug/L	17	Standard
	Y	89	428520.0	1.9				ug/L	417098	Standard
>	**Rh**	103	38.3	27.2				ug/L	13	Standard
	Mo	98	38.4	23.3	**0.0089**	0.004	39.5	ug/L	11	Standard
	Ag	107	77.7	2.7	**-0.0008**	0.000	47.2	ug/L	68	Standard
	Cd	111	5.6	57.3	**-0.0052**	0.002	30.1	mg/L	2	Standard
	Cd	114	18.7	97.5	**0.0016**	0.004	227.0	ug/L	12	Standard
>	**In**	115	580343.3	0.7				ug/L	587441	Standard
	Sn	118	485.0	23.2	**-0.0106**	0.020	190.8	ug/L	497	Standard
	Sb	123	114.5	31.8	**0.0207**	0.008	39.1	ug/L	78	Standard
	Ba	135	150889.3	1.2	**74.6061**	0.512	0.7	ug/L	24	Standard
	Ce	140	123.3	15.3				ug/L	25	Standard
>	**Tb**	159	936316.1	1.2				ug/L	939701	Standard
	Ho	165	18.3	31.5				ug/L	10	Standard
	Tl	203	189.0	9.5	**0.0214**	0.002	8.8	ug/L	4	Standard
	Tl	205	161.7	6.4	**0.0230**	0.002	7.6	ug/L	2	Standard
	Pb	206	327.3	6.0	**-0.0093**	0.004	47.2	ug/L	240	Standard
	Pb	207	269.3	8.1	**-0.0127**	0.005	36.6	ug/L	198	Standard
	Pb	208	1102.3	4.7	**-0.0147**	0.003	21.5	ug/L	883	Standard
	U	238	62.7	10.4	**0.0048**	0.001	17.9	ug/L	3	Standard
>	**Bi**	209	519166.0	1.5				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	5325.9	0.2	**6.9463**	0.099	1.4	mg/L	37	Standard
K	39	75.0	37.1	**0.0544**	0.061	111.8	mg/L	38	Standard
Ca	43	86.7	3.3	**3.0583**	0.130	4.3	mg/L	10	Standard
Fe	54	170.8	11.8	**0.0094**	0.018	186.9	mg/L	179	Standard
Fe	57	311.7	10.3	**0.0068**	0.121	1775.6	mg/L	335	Standard
> **Sc-1**	45	59848.0	1.2				mg/L	61029	Standard
Cl	35	23747.3	1.3				ug/L	20195	Standard
Kr	83	2.7	78.1				ug/L	4	Standard
Br	81	11654.5	4.8				ug/L	1547	Standard
P	31	16051.8	4.0				ug/L	15286	Standard
S	34	1918.5	1.8				ug/L	1572	Standard
Sr	88	140.0	9.4				ug/L	73	Standard
C	12	53.3	39.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	12.2	186.8				mg/L	6	Standard
Ho-1	165	18.3	31.5				mg/L	10	Standard
Er	166	23.3	24.7				mg/L	13	Standard
I	127	13899.7	5.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.466	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.775	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.792
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.080
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606082303
Sample Date/Time: Wednesday, June 29, 2016 12:31:24
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76244.7	1.6				ug/L	74699	Standard
	Be	9	10.0	50.0	**0.0187**	0.005	28.8	ug/L	8	Standard
	Al	27	1789441.8	2.2	**11.9153**	0.077	0.6	ug/L	1493	Standard
	Sc	45	61370.7	1.9				ug/L	61029	Standard
	Ti	47	59.7	11.8	**0.0448**	0.018	40.0	ug/L	35	Standard
	V	51	1976.3	1.1	**0.0601**	0.005	8.2	ug/L	1435	Standard
	Cr	52	8828.6	1.1	**0.1403**	0.016	11.5	ug/L	7635	Standard
	Cr	53	945.0	0.5	**0.6692**	0.006	1.0	ug/L	363	Standard
	Mn	55	180374.5	2.7	**25.1617**	0.439	1.7	ug/L	747	Standard
	Co	59	619.0	3.1	**0.0543**	0.004	7.0	ug/L	234	Standard
	Ni	60	405.7	6.0	**0.0878**	0.011	12.8	ug/L	215	Standard
	Cu	65	208.0	10.3	**0.0056**	0.012	222.0	ug/L	104	Standard
	Zn	66	6989.3	1.3	**5.7979**	0.130	2.2	ug/L	363	Standard
>	**Ge**	72	506777.4	1.1				ug/L	495142	Standard
	As	75	17.4	166.6	**0.0747**	0.025	33.6	ug/L	-50	Standard
	Se	82	43.0	5.9	**0.2447**	0.022	8.9	ug/L	14	Standard
	Se-1	77	89.0	9.0	**0.5677**	0.097	17.0	ug/L	42	Standard
>	**Ga**	71	55.0	18.2				mg/L	42	Standard
	Rb	85	226.7	20.8				ug/L	17	Standard
	Y	89	430230.4	1.6				ug/L	417098	Standard
>	**Rh**	103	23.3	12.4				ug/L	13	Standard
	Mo	98	43.4	8.2	**0.0107**	0.002	14.5	ug/L	11	Standard
	Ag	107	80.3	9.2	**-0.0005**	0.001	248.5	ug/L	68	Standard
	Cd	111	11.9	16.8	**-0.0022**	0.001	43.2	mg/L	2	Standard
	Cd	114	28.1	50.1	**0.0034**	0.003	82.8	ug/L	12	Standard
>	**In**	115	584282.7	1.3				ug/L	587441	Standard
	Sn	118	445.0	7.0	**-0.0181**	0.005	24.8	ug/L	497	Standard
	Sb	123	113.1	24.2	**0.0201**	0.006	28.5	ug/L	78	Standard
	Ba	135	83408.3	1.0	**40.9596**	0.601	1.5	ug/L	24	Standard
	Ce	140	301.7	22.6				ug/L	25	Standard
>	**Tb**	159	946714.8	0.6				ug/L	939701	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	182.7	3.3	**0.0205**	0.001	3.9	ug/L	4	Standard
	Tl	205	160.0	30.8	**0.0227**	0.007	30.9	ug/L	2	Standard
	Pb	206	288.0	1.3	**-0.0170**	0.001	5.3	ug/L	240	Standard
	Pb	207	270.7	6.0	**-0.0126**	0.003	25.4	ug/L	198	Standard
	Pb	208	1097.0	10.5	**-0.0153**	0.006	38.6	ug/L	883	Standard
	U	238	866.7	1.0	**0.1222**	0.001	0.8	ug/L	3	Standard
>	**Bi**	209	520921.7	0.5				ug/L	523984	Standard

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Na	23	1.7	173.2	**19.3655**	33.533	173.2	mg/L	0	Standard
Mg	24	4915.8	1.0	**6.2466**	0.131	2.1	mg/L	37	Standard
K	39	50.0	20.0	**-0.0042**	0.023	541.6	mg/L	38	Standard
Ca	43	65.0	0.0	**1.5606**	0.079	5.0	mg/L	10	Standard
Fe	54	160.0	11.0	**-0.0035**	0.013	359.3	mg/L	179	Standard
Fe	57	281.7	9.1	**-0.1230**	0.068	55.3	mg/L	335	Standard
Sc-1	45	61370.7	1.9				mg/L	61029	Standard
Cl	35	23872.8	0.3				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	8675.8	8.1				ug/L	1547	Standard
P	31	16263.7	3.0				ug/L	15286	Standard
S	34	1945.1	6.6				ug/L	1572	Standard
Sr	88	130.0	24.0				ug/L	73	Standard
C	12	46.7	44.6				mg/L	63	Standard
N	14	6.7	86.6				mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	19.0	57.5				mg/L	6	Standard
Ho-1	165	8.3	34.6				mg/L	10	Standard
Er	166	20.0	100.0				mg/L	13	Standard
I	127	19577.6	2.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		102.070	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.350	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.462
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.415
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606082304
Sample Date/Time: Wednesday, June 29, 2016 12:34:35
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76966.7	2.1				ug/L	74699	Standard
	Be	9	8.3	91.7	**0.0169**	0.009	50.5	ug/L	8	Standard
	Al	27	441491.6	0.4	**2.9030**	0.060	2.1	ug/L	1493	Standard
	Sc	45	60155.9	2.7				ug/L	61029	Standard
	Ti	47	44.0	12.0	**0.0058**	0.013	219.4	ug/L	35	Standard
	V	51	1675.2	9.7	**0.0239**	0.019	79.8	ug/L	1435	Standard
	Cr	52	8137.2	4.7	**0.0630**	0.039	62.0	ug/L	7635	Standard
	Cr	53	611.7	11.7	**0.3248**	0.069	21.3	ug/L	363	Standard
	Mn	55	105254.7	1.8	**14.8182**	0.156	1.1	ug/L	747	Standard
	Co	59	259.7	5.8	**0.0017**	0.003	156.1	ug/L	234	Standard
	Ni	60	230.0	4.9	**-0.0022**	0.007	321.8	ug/L	215	Standard
	Cu	65	165.3	1.5	**-0.0157**	0.002	12.9	ug/L	104	Standard
	Zn	66	2212.5	1.5	**1.5507**	0.010	0.6	ug/L	363	Standard
>	**Ge**	72	500132.0	1.1				ug/L	495142	Standard
	As	75	21.8	38.4	**0.0789**	0.008	9.6	ug/L	-50	Standard
	Se	82	26.9	8.6	**0.1047**	0.023	22.2	ug/L	14	Standard
	Se-1	77	64.0	26.1	**0.2460**	0.230	93.4	ug/L	42	Standard
>	**Ga**	71	55.0	41.7				mg/L	42	Standard
	Rb	85	421.7	18.5				ug/L	17	Standard
	Y	89	429897.2	1.0				ug/L	417098	Standard
>	**Rh**	103	6.7	43.3				ug/L	13	Standard
	Mo	98	29.2	13.0	**0.0052**	0.001	25.4	ug/L	11	Standard
	Ag	107	87.7	6.3	**0.0005**	0.001	182.2	ug/L	68	Standard
	Cd	111	7.0	28.7	**-0.0046**	0.001	19.4	mg/L	2	Standard
	Cd	114	21.6	74.7	**0.0021**	0.003	150.8	ug/L	12	Standard
>	**In**	115	589054.0	1.8				ug/L	587441	Standard
	Sn	118	438.3	5.7	**-0.0199**	0.003	16.6	ug/L	497	Standard
	Sb	123	106.2	8.9	**0.0185**	0.002	12.5	ug/L	78	Standard
	Ba	135	25689.8	1.2	**12.5057**	0.379	3.0	ug/L	24	Standard
	Ce	140	65.0	26.6				ug/L	25	Standard
>	**Tb**	159	953435.2	1.7				ug/L	939701	Standard
	Ho	165	13.3	43.3				ug/L	10	Standard
	Tl	203	91.7	10.9	**0.0091**	0.001	12.8	ug/L	4	Standard
	Tl	205	101.7	11.4	**0.0141**	0.002	11.0	ug/L	2	Standard
	Pb	206	281.0	2.2	**-0.0197**	0.001	5.9	ug/L	240	Standard
	Pb	207	219.0	9.1	**-0.0248**	0.004	16.3	ug/L	198	Standard
	Pb	208	999.0	3.0	**-0.0219**	0.001	6.3	ug/L	883	Standard
	U	238	2.7	21.7	**-0.0040**	0.000	2.0	ug/L	3	Standard
>	**Bi**	209	535313.4	0.3				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	1101.7	8.8	**1.3766**	0.099	7.2	mg/L	37	Standard
K	39	50.0	26.5	**-0.0017**	0.031	1783.7	mg/L	38	Standard
Ca	43	43.3	17.6	**0.2622**	0.555	211.4	mg/L	10	Standard
Fe	54	1079.1	4.5	**0.7903**	0.045	5.7	mg/L	179	Standard
Fe	57	550.0	4.8	**0.8245**	0.134	16.2	mg/L	335	Standard
> **Sc-1**	45	60155.9	2.7				mg/L	61029	Standard
Cl	35	23751.9	0.9				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	3913.8	0.4				ug/L	1547	Standard
P	31	16552.4	4.0				ug/L	15286	Standard
S	34	1948.5	5.9				ug/L	1572	Standard
Sr	88	68.3	30.5				ug/L	73	Standard
C	12	63.3	36.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	19.7	135.8				mg/L	6	Standard
Ho-1	165	13.3	43.3				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	5207.6	8.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.036	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.008	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.275
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.162
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 12:37:48
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72653.8	1.6				ug/L	74699	Standard
	Be	9	42693.4	2.4	**49.8778**	1.581	3.2	ug/L	8	Standard
	Al	27	7018269.3	1.5	**49.0877**	0.211	0.4	ug/L	1493	Standard
	Sc	45	58700.2	1.7				ug/L	61029	Standard
	Ti	47	37360.7	1.5	**96.4941**	1.122	1.2	ug/L	35	Standard
	V	51	389361.0	0.6	**50.3345**	0.950	1.9	ug/L	1435	Standard
	Cr	52	377308.6	0.5	**48.8761**	0.835	1.7	ug/L	7635	Standard
	Cr	53	46063.3	3.3	**48.5325**	2.229	4.6	ug/L	363	Standard
	Mn	55	355991.7	2.4	**49.9570**	0.746	1.5	ug/L	747	Standard
	Co	59	341523.2	1.7	**50.6452**	0.528	1.0	ug/L	234	Standard
	Ni	60	94080.5	0.6	**49.1230**	0.490	1.0	ug/L	215	Standard
	Cu	65	95078.4	0.9	**49.9689**	1.178	2.4	ug/L	104	Standard
	Zn	66	56040.5	0.8	**49.8274**	0.722	1.4	ug/L	363	Standard
>	Ge	72	505267.2	1.6				ug/L	495142	Standard
	As	75	56871.7	1.3	**49.8175**	0.372	0.7	ug/L	-50	Standard
	Se	82	5593.2	2.1	**49.8004**	0.347	0.7	ug/L	14	Standard
	Se-1	77	3775.1	1.7	**50.0311**	0.568	1.1	ug/L	42	Standard
>	Ga	71	75.0	13.3				mg/L	42	Standard
	Rb	85	800.0	10.3				ug/L	17	Standard
	Y	89	408700.7	0.8				ug/L	417098	Standard
>	Rh	103	18.3	41.7				ug/L	13	Standard
	Mo	98	257910.1	1.9	**100.4657**	4.126	4.1	ug/L	11	Standard
	Ag	107	316989.6	1.3	**50.4692**	0.906	1.8	ug/L	68	Standard
	Cd	111	101914.0	1.0	**50.5948**	1.545	3.1	mg/L	2	Standard
	Cd	114	242699.9	2.4	**49.1311**	2.013	4.1	ug/L	12	Standard
>	In	115	566154.7	2.7				ug/L	587441	Standard
	Sn	118	281464.1	1.7	**49.9153**	1.113	2.2	ug/L	497	Standard
	Sb	123	227316.6	0.8	**50.5420**	1.534	3.0	ug/L	78	Standard
	Ba	135	98379.4	0.9	**49.8785**	1.233	2.5	ug/L	24	Standard
	Ce	140	113.3	20.8				ug/L	25	Standard
>	Tb	159	932106.1	1.1				ug/L	939701	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	406761.4	0.1	**49.7003**	0.911	1.8	ug/L	4	Standard
	Tl	205	354916.5	2.0	**49.9771**	1.877	3.8	ug/L	2	Standard
	Pb	206	263562.6	0.6	**49.6234**	0.874	1.8	ug/L	240	Standard
	Pb	207	235278.4	0.8	**49.8612**	1.016	2.0	ug/L	198	Standard
	Pb	208	929662.3	0.8	**49.8673**	1.247	2.5	ug/L	883	Standard
	U	238	336021.4	1.5	**49.1730**	1.579	3.2	ug/L	3	Standard
>	Bi	209	520331.8	1.7				ug/L	523984	Standard

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Na	23	1.7	173.2	**19.5945**	33.930	173.2	mg/L	0	Standard
Mg	24	3858.8	4.6	**5.1144**	0.246	4.8	mg/L	37	Standard
K	39	2055.1	3.6	**4.6098**	0.203	4.4	mg/L	38	Standard
Ca	43	130.0	23.4	**5.9979**	1.898	31.6	mg/L	10	Standard
Fe	54	5737.9	3.9	**4.9227**	0.278	5.7	mg/L	179	Standard
Fe	57	1583.4	3.8	**4.5245**	0.301	6.7	mg/L	335	Standard
Sc-1	45	58700.2	1.7				mg/L	61029	Standard
Cl	35	23099.6	1.9				ug/L	20195	Standard
Kr	83	2.3	65.5				ug/L	4	Standard
Br	81	1760.1	10.8				ug/L	1547	Standard
P	31	17002.9	0.9				ug/L	15286	Standard
S	34	2305.2	8.6				ug/L	1572	Standard
Sr	88	76.7	10.0				ug/L	73	Standard
C	12	60.0	33.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	9.0	191.6				mg/L	6	Standard
Ho-1	165	8.3	91.7				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	2030.1	31.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	99.756		
Al	27	98.175		
Sc	45			
Ti	47	96.494		
V	51	100.669		
Cr	52	97.752		
Cr	53			
Mn	55	99.914		
Co	59	101.290		
Ni	60	98.246		
Cu	65	99.938		
Zn	66	99.655		
Ge	72		102.045	
As	75	99.635		
Se	82	99.601		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	100.466		
Ag	107	100.938		
Cd	111	101.190		
Cd	114			
In	115			96.376
Sn	118	99.831		
Sb	123	101.084		
Ba	135	99.757		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.401		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.735		
U	238	98.346		
Bi	209			99.303
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 12:40:59
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73745.7	1.0				ug/L	74699	Standard
	Be	9	45.0	86.8	**0.0596**	0.045	76.2	ug/L	8	Standard
	Al	27	10763.7	138.2	**0.0612**	0.103	168.8	ug/L	1493	Standard
	Sc	45	59794.4	0.5				ug/L	61029	Standard
	Ti	47	63.7	40.2	**0.0565**	0.070	123.9	ug/L	35	Standard
	V	51	1309.0	5.1	**-0.0256**	0.009	36.2	ug/L	1435	Standard
	Cr	52	7144.0	4.7	**-0.0780**	0.064	81.5	ug/L	7635	Standard
	Cr	53	391.7	5.2	**0.0859**	0.030	34.5	ug/L	363	Standard
	Mn	55	2203.3	114.3	**0.1667**	0.364	218.6	ug/L	747	Standard
	Co	59	375.0	36.8	**0.0187**	0.022	116.6	ug/L	234	Standard
	Ni	60	226.7	25.3	**-0.0048**	0.033	679.9	ug/L	215	Standard
	Cu	65	137.7	45.7	**-0.0307**	0.035	113.4	ug/L	104	Standard
	Zn	66	391.7	8.9	**-0.1025**	0.038	37.5	ug/L	363	Standard
>	**Ge**	72	505094.9	1.9				ug/L	495142	Standard
	As	75	-30.0	135.0	**0.0336**	0.035	105.0	ug/L	-50	Standard
	Se	82	18.1	21.6	**0.0240**	0.035	145.0	ug/L	14	Standard
	Se-1	77	51.7	16.7	**0.0700**	0.104	148.9	ug/L	42	Standard
>	**Ga**	71	55.0	27.3				mg/L	42	Standard
	Rb	85	30.0	72.6				ug/L	17	Standard
	Y	89	416389.1	0.5				ug/L	417098	Standard
>	**Rh**	103	18.3	56.8				ug/L	13	Standard
	Mo	98	292.6	24.5	**0.1060**	0.029	27.7	ug/L	11	Standard
	Ag	107	123.7	36.8	**0.0063**	0.007	108.0	ug/L	68	Standard
	Cd	111	19.1	60.5	**0.0013**	0.005	411.5	mg/L	2	Standard
	Cd	114	51.4	75.2	**0.0080**	0.007	93.3	ug/L	12	Standard
>	**In**	115	578912.4	1.7				ug/L	587441	Standard
	Sn	118	756.7	23.6	**0.0364**	0.029	79.3	ug/L	497	Standard
	Sb	123	391.4	30.7	**0.0806**	0.025	30.9	ug/L	78	Standard
	Ba	135	64.3	74.2	**0.0157**	0.023	147.1	ug/L	24	Standard
	Ce	140	98.3	142.4				ug/L	25	Standard
>	**Tb**	159	938659.9	2.1				ug/L	939701	Standard
	Ho	165	16.7	45.8				ug/L	10	Standard
	Tl	203	80.3	33.4	**0.0079**	0.003	39.1	ug/L	4	Standard
	Tl	205	263.3	142.0	**0.0362**	0.051	140.6	ug/L	2	Standard
	Pb	206	290.0	20.9	**-0.0175**	0.011	60.1	ug/L	240	Standard
	Pb	207	255.0	4.1	**-0.0168**	0.002	14.3	ug/L	198	Standard
	Pb	208	1806.4	80.0	**0.0207**	0.074	360.4	ug/L	883	Standard
	U	238	234.3	149.2	**0.0289**	0.049	171.5	ug/L	3	Standard
>	**Bi**	209	529175.1	1.6				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	48.3	47.8	**-0.0014**	0.030	2108.5	mg/L	37	Standard
K	39	68.3	15.2	**0.0400**	0.023	56.9	mg/L	38	Standard
Ca	43	21.7	74.2	**-1.1227**	1.047	93.2	mg/L	10	Standard
Fe	54	169.2	23.1	**0.0081**	0.034	414.8	mg/L	179	Standard
Fe	57	310.0	16.4	**0.0019**	0.182	9789.6	mg/L	335	Standard
Sc-1	45	59794.4	0.5				mg/L	61029	Standard
Cl	35	23378.7	0.4				ug/L	20195	Standard
Kr	83	4.3	58.1				ug/L	4	Standard
Br	81	1630.1	3.1				ug/L	1547	Standard
P	31	16767.6	2.6				ug/L	15286	Standard
S	34	2153.5	8.8				ug/L	1572	Standard
Sr	88	65.0	27.7				ug/L	73	Standard
C	12	66.7	17.3				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	9.4	186.5				mg/L	6	Standard
Ho-1	165	16.7	45.8				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	1680.1	29.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.010	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.548	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.991	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Wednesday, June 29, 2016 12:44:12
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71218.7	0.8				ug/L	74699	Standard
	Be	9	178.3	13.3	**0.2201**	0.029	13.2	ug/L	8	Standard
	Al	27	1766.8	29.5	**-0.0008**	0.004	458.8	ug/L	1493	Standard
	Sc	45	56025.1	1.1				ug/L	61029	Standard
	Ti	47	28.0	7.1	**-0.0318**	0.007	20.5	ug/L	35	Standard
	V	51	4079.9	5.1	**0.3696**	0.041	11.2	ug/L	1435	Standard
	Cr	52	12699.0	0.7	**0.7676**	0.041	5.4	ug/L	7635	Standard
	Cr	53	1050.0	6.6	**0.8579**	0.085	9.9	ug/L	363	Standard
	Mn	55	4110.2	0.9	**0.4692**	0.021	4.5	ug/L	747	Standard
	Co	59	2790.3	0.6	**0.4045**	0.014	3.5	ug/L	234	Standard
	Ni	60	2962.3	1.6	**1.5299**	0.023	1.5	ug/L	215	Standard
	Cu	65	1521.1	1.5	**0.7509**	0.034	4.5	ug/L	104	Standard
	Zn	66	7672.3	2.1	**6.8861**	0.035	0.5	ug/L	363	Standard
>	**Ge**	72	473802.8	2.6				ug/L	495142	Standard
	As	75	358.5	4.9	**0.3943**	0.021	5.3	ug/L	-50	Standard
	Se	82	48.3	16.1	**0.3230**	0.086	26.5	ug/L	14	Standard
	Se-1	77	78.0	9.0	**0.4927**	0.075	15.2	ug/L	42	Standard
>	**Ga**	71	35.0	24.7				mg/L	42	Standard
	Rb	85	21.7	35.3				ug/L	17	Standard
	Y	89	406616.3	2.6				ug/L	417098	Standard
>	**Rh**	103	13.3	43.3				ug/L	13	Standard
	Mo	98	80.8	10.7	**0.0260**	0.003	11.1	ug/L	11	Standard
	Ag	107	2461.5	2.7	**0.3827**	0.004	1.0	ug/L	68	Standard
	Cd	111	469.2	3.6	**0.2272**	0.006	2.5	mg/L	2	Standard
	Cd	114	1121.7	10.1	**0.2273**	0.026	11.5	ug/L	12	Standard
>	**In**	115	560717.1	1.7				ug/L	587441	Standard
	Sn	118	496.7	12.6	**-0.0055**	0.012	217.4	ug/L	497	Standard
	Sb	123	1804.7	2.2	**0.4010**	0.016	3.9	ug/L	78	Standard
	Ba	135	1433.1	2.6	**0.7176**	0.020	2.8	ug/L	24	Standard
	Ce	140	53.3	43.3				ug/L	25	Standard
>	**Tb**	159	901191.9	2.3				ug/L	939701	Standard
	Ho	165	5.0	0.0				ug/L	10	Standard
	Tl	203	658.3	6.7	**0.0809**	0.005	6.0	ug/L	4	Standard
	Tl	205	580.0	6.7	**0.0841**	0.005	5.7	ug/L	2	Standard
	Pb	206	1314.1	4.2	**0.1836**	0.008	4.1	ug/L	240	Standard
	Pb	207	1090.4	5.0	**0.1679**	0.009	5.1	ug/L	198	Standard
	Pb	208	4577.3	1.3	**0.1788**	0.005	3.0	ug/L	883	Standard
	U	238	2625.2	2.7	**0.3906**	0.007	1.9	ug/L	3	Standard
>	**Bi**	209	505831.0	1.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	40.0	12.5	**-0.0088**	0.007	78.9	mg/L	37	Standard
K	39	38.3	19.9	**-0.0218**	0.018	84.6	mg/L	38	Standard
Ca	43	36.7	75.1	**-0.0119**	1.877	15817.5	mg/L	10	Standard
Fe	54	97.1	24.3	**-0.0484**	0.023	47.3	mg/L	179	Standard
Fe	57	295.0	11.9	**0.0175**	0.123	699.1	mg/L	335	Standard
> **Sc-1**	45	56025.1	1.1				mg/L	61029	Standard
Cl	35	22767.8	1.3				ug/L	20195	Standard
Kr	83	2.7	57.3				ug/L	4	Standard
Br	81	1303.4	5.0				ug/L	1547	Standard
P	31	11956.4	1.3				ug/L	15286	Standard
S	34	2061.8	6.1				ug/L	1572	Standard
Sr	88	80.0	22.5				ug/L	73	Standard
C	12	80.0	33.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	0.0					mg/L	6	Standard
Ho-1	165	5.0	0.0				mg/L	10	Standard
Er	166	0.0					mg/L	13	Standard
I	127	1360.1	35.3				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	110.075		
	Al	27			
	Sc	45			
	Ti	47			
	V	51	92.400		
	Cr	52	95.955		
	Cr	53			
	Mn	55	93.844		
	Co	59	101.134		
	Ni	60	95.616		
	Cu	65	93.867		
	Zn	66	110.178		
>	Ge	72		95.690	
	As	75	98.586		
	Se	82	80.738		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	95.685		
Cd	111	94.646		
Cd	114			
> In	115			95.451
Sn	118			
Sb	123	100.239		
Ba	135	95.683		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.186		
Tl	205			
Pb	206			
Pb	207			
Pb	208	89.410		
U	238	97.655		
> Bi	209			96.535
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
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Method 6020 - Summary Report

Sample ID: PBW 7 WG573548-02
Sample Date/Time: Wednesday, June 29, 2016 12:53:54
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74857.8	1.6				ug/L	74699	Standard
	Be	9	16.7	75.5	**0.0264**	0.014	53.3	ug/L	8	Standard
	Al	27	80794.9	2.0	**0.5353**	0.014	2.5	ug/L	1493	Standard
	Sc	45	58461.0	3.0				ug/L	61029	Standard
	Ti	47	78.0	5.9	**0.0921**	0.013	14.5	ug/L	35	Standard
	V	51	1804.8	0.8	**0.0380**	0.004	11.0	ug/L	1435	Standard
	Cr	52	9792.5	0.9	**0.2676**	0.021	7.7	ug/L	7635	Standard
	Cr	53	633.3	5.7	**0.3397**	0.038	11.1	ug/L	363	Standard
	Mn	55	7868.0	0.9	**0.9563**	0.019	2.0	ug/L	747	Standard
	Co	59	389.7	6.7	**0.0204**	0.003	16.2	ug/L	234	Standard
	Ni	60	396.3	4.2	**0.0829**	0.008	9.4	ug/L	215	Standard
	Cu	65	182.0	8.2	**-0.0081**	0.009	109.2	ug/L	104	Standard
	Zn	66	1432.4	5.9	**0.8274**	0.087	10.5	ug/L	363	Standard
>	**Ge**	72	506709.7	1.0				ug/L	495142	Standard
	As	75	61.7	54.0	**0.1136**	0.029	25.8	ug/L	-50	Standard
	Se	82	57.7	7.0	**0.3762**	0.040	10.6	ug/L	14	Standard
	Se-1	77	48.3	5.2	**0.0243**	0.031	128.3	ug/L	42	Standard
>	**Ga**	71	106.7	35.5				mg/L	42	Standard
	Rb	85	413.3	4.9				ug/L	17	Standard
	Y	89	414741.4	0.4				ug/L	417098	Standard
>	**Rh**	103	15.0	100.0				ug/L	13	Standard
	Mo	98	46.5	23.9	**0.0125**	0.004	33.5	ug/L	11	Standard
	Ag	107	1549.7	3.3	**0.2354**	0.012	5.1	ug/L	68	Standard
	Cd	111	17.2	8.9	**0.0007**	0.001	113.7	mg/L	2	Standard
	Cd	114	63.6	36.2	**0.0109**	0.005	44.4	ug/L	12	Standard
>	**In**	115	562869.1	1.7				ug/L	587441	Standard
	Sn	118	736.7	11.6	**0.0370**	0.017	44.6	ug/L	497	Standard
	Sb	123	216.9	10.9	**0.0443**	0.006	12.6	ug/L	78	Standard
	Ba	135	906.0	5.8	**0.4461**	0.030	6.6	ug/L	24	Standard
	Ce	140	1735.1	5.3				ug/L	25	Standard
>	**Tb**	159	918530.3	1.8				ug/L	939701	Standard
	Ho	165	31.7	32.9				ug/L	10	Standard
	Tl	203	89.3	15.5	**0.0092**	0.002	18.3	ug/L	4	Standard
	Tl	205	86.7	13.3	**0.0124**	0.002	13.0	ug/L	2	Standard
	Pb	206	378.0	4.1	**0.0001**	0.003	2503.4	ug/L	240	Standard
	Pb	207	310.7	3.7	**-0.0040**	0.002	56.8	ug/L	198	Standard
	Pb	208	1268.7	1.9	**-0.0059**	0.001	22.1	ug/L	883	Standard
	U	238	52.0	18.9	**0.0032**	0.001	44.2	ug/L	3	Standard
>	**Bi**	209	520017.2	0.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	98.3	32.7	**0.0678**	0.045	67.0	mg/L	37	Standard
K	39	61.7	9.4	**0.0281**	0.012	42.4	mg/L	38	Standard
Ca	43	31.7	55.5	**-0.4154**	1.202	289.4	mg/L	10	Standard
Fe	54	153.7	8.4	**-0.0024**	0.007	308.5	mg/L	179	Standard
Fe	57	316.7	15.8	**0.0490**	0.173	353.8	mg/L	335	Standard
> **Sc-1**	45	58461.0	3.0				mg/L	61029	Standard
Cl	35	22819.8	1.0				ug/L	20195	Standard
Kr	83	3.7	31.5				ug/L	4	Standard
Br	81	12281.6	4.1				ug/L	1547	Standard
P	31	15094.2	2.5				ug/L	15286	Standard
S	34	1958.5	7.0				ug/L	1572	Standard
Sr	88	78.3	19.5				ug/L	73	Standard
C	12	96.7	21.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	48.1	42.1				mg/L	6	Standard
Ho-1	165	31.7	32.9				mg/L	10	Standard
Er	166	40.0	25.0				mg/L	13	Standard
I	127	2060.1	27.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.213	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.336	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	95.817	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.243	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 7 WG573548-03
Sample Date/Time: Wednesday, June 29, 2016 12:57:05
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75779.1	1.4				ug/L	74699	Standard
	Be	9	44266.3	2.0	**49.5806**	1.413	2.8	ug/L	8	Standard
	Al	27	95277.1	2.2	**0.6259**	0.022	3.5	ug/L	1493	Standard
	Sc	45	60008.6	1.7				ug/L	61029	Standard
	Ti	47	61.3	19.5	**0.0533**	0.033	61.1	ug/L	35	Standard
	V	51	383994.5	1.5	**50.7641**	0.334	0.7	ug/L	1435	Standard
	Cr	52	391642.5	1.8	**51.9470**	0.996	1.9	ug/L	7635	Standard
	Cr	53	48176.5	1.3	**51.9174**	0.408	0.8	ug/L	363	Standard
	Mn	55	379234.4	0.1	**54.4505**	0.406	0.7	ug/L	747	Standard
	Co	59	337441.4	0.9	**51.1841**	0.650	1.3	ug/L	234	Standard
	Ni	60	96944.2	1.6	**51.7745**	0.652	1.3	ug/L	215	Standard
	Cu	65	97447.4	0.9	**52.3759**	0.338	0.6	ug/L	104	Standard
	Zn	66	58710.9	1.4	**53.4195**	0.683	1.3	ug/L	363	Standard
>	**Ge**	72	493989.7	0.8				ug/L	495142	Standard
	As	75	54420.0	2.0	**48.7560**	0.745	1.5	ug/L	-50	Standard
	Se	82	5499.8	2.1	**50.0913**	1.110	2.2	ug/L	14	Standard
	Se-1	77	3757.5	2.3	**50.9460**	1.277	2.5	ug/L	42	Standard
>	**Ga**	71	331.7	6.3				mg/L	42	Standard
	Rb	85	1905.1	7.7				ug/L	17	Standard
	Y	89	430193.5	2.2				ug/L	417098	Standard
>	**Rh**	103	21.7	13.3				ug/L	13	Standard
	Mo	98	200.3	5.0	**0.0686**	0.004	5.6	ug/L	11	Standard
	Ag	107	325181.2	0.5	**49.3255**	0.456	0.9	ug/L	68	Standard
	Cd	111	102382.7	0.7	**48.4138**	0.589	1.2	mg/L	2	Standard
	Cd	114	246010.3	1.2	**47.4297**	0.453	1.0	ug/L	12	Standard
>	**In**	115	594099.2	0.9				ug/L	587441	Standard
	Sn	118	733.4	7.5	**0.0295**	0.010	35.4	ug/L	497	Standard
	Sb	123	222790.7	0.6	**47.1842**	0.681	1.4	ug/L	78	Standard
	Ba	135	100456.3	0.7	**48.5175**	0.574	1.2	ug/L	24	Standard
	Ce	140	3297.0	2.9				ug/L	25	Standard
>	**Tb**	159	953975.0	2.3				ug/L	939701	Standard
	Ho	165	81.7	3.5				ug/L	10	Standard
	Tl	203	411383.7	1.0	**49.0691**	0.983	2.0	ug/L	4	Standard
	Tl	205	358822.0	2.1	**49.3118**	1.192	2.4	ug/L	2	Standard
	Pb	206	272876.4	0.6	**50.1549**	0.805	1.6	ug/L	240	Standard
	Pb	207	232281.8	1.2	**48.0517**	0.976	2.0	ug/L	198	Standard
	Pb	208	938885.2	1.2	**49.1601**	1.120	2.3	ug/L	883	Standard
	U	238	337957.9	0.3	**48.2703**	0.691	1.4	ug/L	3	Standard
>	**Bi**	209	532979.3	1.2				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	40.0	12.5	**-0.0126**	0.007	52.7	mg/L	37	Standard
K	39	58.3	21.6	**0.0173**	0.030	174.9	mg/L	38	Standard
Ca	43	60.0	16.7	**1.3313**	0.636	47.7	mg/L	10	Standard
Fe	54	427.3	5.7	**0.2300**	0.018	7.6	mg/L	179	Standard
Fe	57	393.3	4.8	**0.2864**	0.089	31.1	mg/L	335	Standard
> **Sc-1**	45	60008.6	1.7				mg/L	61029	Standard
Cl	35	22904.0	1.4				ug/L	20195	Standard
Kr	83	0.7	86.6				ug/L	4	Standard
Br	81	1933.5	11.4				ug/L	1547	Standard
P	31	15693.1	2.0				ug/L	15286	Standard
S	34	1913.5	5.4				ug/L	1572	Standard
Sr	88	85.0	21.2				ug/L	73	Standard
C	12	106.7	37.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	149.3	43.4				mg/L	6	Standard
Ho-1	165	81.7	3.5				mg/L	10	Standard
Er	166	83.3	45.4				mg/L	13	Standard
I	127	1690.1	32.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.446	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.767	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		101.133
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		101.717
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 7 WG573548-03
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Method 6020 - Summary Report

Sample ID: L1606098623 WG573548-01
Sample Date/Time: Wednesday, June 29, 2016 13:00:17
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85536.1	4.6				ug/L	74699	Standard
	Be	9	131.7	4.4	**0.1385**	0.009	6.7	ug/L	8	Standard
	Al	27	51229429.5	1.9	**304.6734**	8.454	2.8	ug/L	1493	Standard
	Sc	45	58156.4	0.7				ug/L	61029	Standard
	Ti	47	291.7	4.0	**0.6976**	0.027	3.9	ug/L	35	Standard
	V	51	2731.2	8.5	**0.1837**	0.035	19.3	ug/L	1435	Standard
	Cr	52	11798.6	2.2	**0.6453**	0.034	5.3	ug/L	7635	Standard
	Cr	53	1541.7	10.7	**1.4199**	0.200	14.1	ug/L	363	Standard
	Mn	55	1519614.4	1.3	**228.6645**	1.850	0.8	ug/L	747	Standard
	Co	59	1958.8	0.9	**0.2737**	0.000	0.1	ug/L	234	Standard
	Ni	60	5664.7	1.6	**3.0483**	0.071	2.3	ug/L	215	Standard
	Cu	65	19925.4	0.1	**11.1201**	0.082	0.7	ug/L	104	Standard
	Zn	66	6263.0	2.6	**5.5559**	0.126	2.3	ug/L	363	Standard
>	**Ge**	72	472304.7	0.8				ug/L	495142	Standard
	As	75	721.9	3.2	**0.7353**	0.022	3.1	ug/L	-50	Standard
	Se	82	400.4	3.0	**3.6870**	0.142	3.9	ug/L	14	Standard
	Se-1	77	187.0	7.2	**2.0610**	0.173	8.4	ug/L	42	Standard
>	**Ga**	71	100.0	8.7				mg/L	42	Standard
	Rb	85	5192.6	2.9				ug/L	17	Standard
	Y	89	424150.6	2.5				ug/L	417098	Standard
>	**Rh**	103	291.7	21.8				ug/L	13	Standard
	Mo	98	1037.1	3.0	**0.3904**	0.016	4.1	ug/L	11	Standard
	Ag	107	150.3	11.8	**0.0106**	0.003	25.5	ug/L	68	Standard
	Cd	111	86.5	9.0	**0.0342**	0.004	11.5	mg/L	2	Standard
	Cd	114	235.1	23.0	**0.0445**	0.010	23.2	ug/L	12	Standard
>	**In**	115	577173.5	1.1				ug/L	587441	Standard
	Sn	118	1115.0	2.8	**0.0996**	0.004	4.3	ug/L	497	Standard
	Sb	123	1725.9	23.2	**0.3715**	0.084	22.5	ug/L	78	Standard
	Ba	135	22344.1	0.8	**11.0965**	0.201	1.8	ug/L	24	Standard
	Ce	140	1543.4	4.9				ug/L	25	Standard
>	**Tb**	159	936227.5	1.2				ug/L	939701	Standard
	Ho	165	78.3	35.2				ug/L	10	Standard
	Tl	203	240.0	4.8	**0.0287**	0.001	5.1	ug/L	4	Standard
	Tl	205	171.7	9.4	**0.0253**	0.002	9.3	ug/L	2	Standard
	Pb	206	666.7	6.9	**0.0592**	0.009	15.2	ug/L	240	Standard
	Pb	207	558.7	0.1	**0.0529**	0.000	0.3	ug/L	198	Standard
	Pb	208	2267.7	0.3	**0.0522**	0.000	0.9	ug/L	883	Standard
	U	238	28225.3	0.9	**4.2785**	0.042	1.0	ug/L	3	Standard
>	**Bi**	209	501665.1	0.1				ug/L	523984	Standard

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Na	23	13.3	43.3	**161.5718**	71.131	44.0	mg/L	0	Standard
Mg	24	24900.4	1.1	**33.6647**	0.149	0.4	mg/L	37	Standard
K	39	1233.4	1.4	**2.7469**	0.062	2.2	mg/L	38	Standard
Ca	43	1560.1	5.5	**100.8648**	4.911	4.9	mg/L	10	Standard
Fe	54	167.1	25.8	**0.0105**	0.039	372.7	mg/L	179	Standard
Fe	57	958.4	6.3	**2.3440**	0.212	9.0	mg/L	335	Standard
Sc-1	45	58156.4	0.7				mg/L	61029	Standard
Cl	35	40465.3	2.5				ug/L	20195	Standard
Kr	83	2.7	57.3				ug/L	4	Standard
Br	81	58241.9	4.1				ug/L	1547	Standard
P	31	17453.4	1.6				ug/L	15286	Standard
S	34	1810.1	8.9				ug/L	1572	Standard
Sr	88	1313.4	8.1				ug/L	73	Standard
C	12	273.3	15.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	3	Standard
Dy	164	89.3	16.3				mg/L	6	Standard
Ho-1	165	78.3	35.2				mg/L	10	Standard
Er	166	83.3	18.3				mg/L	13	Standard
I	127	135078.2	7.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		114.508	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.388	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.252
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.740
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606098635S WG573548-04
Sample Date/Time: Wednesday, June 29, 2016 13:03:28
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	96645.6	0.2				ug/L	74699	Standard
	Be	9	56332.9	2.6	**49.4619**	1.222	2.5	ug/L	8	Standard
	Al	27	56565131.5	1.0	**297.4859**	3.609	1.2	ug/L	1493	Standard
	Sc	45	58999.8	4.0				ug/L	61029	Standard
	Ti	47	369.0	11.5	**0.8968**	0.108	12.0	ug/L	35	Standard
	V	51	390242.6	0.5	**53.2266**	0.984	1.8	ug/L	1435	Standard
	Cr	52	371857.5	2.1	**50.8419**	0.408	0.8	ug/L	7635	Standard
	Cr	53	46974.4	2.3	**52.2114**	1.040	2.0	ug/L	363	Standard
	Mn	55	1851169.7	0.3	**274.7367**	3.654	1.3	ug/L	747	Standard
	Co	59	350457.1	0.5	**54.8326**	0.988	1.8	ug/L	234	Standard
	Ni	60	94372.4	2.0	**51.9777**	0.274	0.5	ug/L	215	Standard
	Cu	65	115580.4	2.6	**64.0828**	0.734	1.1	ug/L	104	Standard
	Zn	66	61118.4	0.5	**57.3902**	0.612	1.1	ug/L	363	Standard
>	Ge	72	478993.7	1.6				ug/L	495142	Standard
	As	75	59122.1	0.8	**54.6260**	0.454	0.8	ug/L	-50	Standard
	Se	82	6294.5	0.9	**59.1515**	0.578	1.0	ug/L	14	Standard
	Se-1	77	4101.2	2.7	**57.4162**	0.662	1.2	ug/L	42	Standard
>	Ga	71	100.0	18.0				mg/L	42	Standard
	Rb	85	5364.3	1.3				ug/L	17	Standard
	Y	89	423648.2	2.3				ug/L	417098	Standard
>	Rh	103	290.0	15.8				ug/L	13	Standard
	Mo	98	1231.1	6.2	**0.4537**	0.027	5.8	ug/L	11	Standard
	Ag	107	140053.7	1.3	**21.3673**	0.341	1.6	ug/L	68	Standard
	Cd	111	101619.5	1.1	**48.3438**	0.154	0.3	mg/L	2	Standard
	Cd	114	248812.6	0.3	**48.2667**	0.577	1.2	ug/L	12	Standard
>	In	115	590497.7	1.3				ug/L	587441	Standard
	Sn	118	1276.7	2.9	**0.1227**	0.007	5.6	ug/L	497	Standard
	Sb	123	230648.9	1.4	**49.1452**	0.703	1.4	ug/L	78	Standard
	Ba	135	121100.4	1.0	**58.8551**	1.255	2.1	ug/L	24	Standard
	Ce	140	1580.1	12.1				ug/L	25	Standard
>	Tb	159	967679.2	1.8				ug/L	939701	Standard
	Ho	165	70.0	12.4				ug/L	10	Standard
	Tl	203	411213.8	0.9	**50.0486**	0.144	0.3	ug/L	4	Standard
	Tl	205	371375.3	1.6	**52.0881**	1.342	2.6	ug/L	2	Standard
	Pb	206	271184.0	0.3	**50.8655**	0.565	1.1	ug/L	240	Standard
	Pb	207	230172.1	0.3	**48.5918**	0.740	1.5	ug/L	198	Standard
	Pb	208	934549.0	0.8	**49.9358**	0.874	1.8	ug/L	883	Standard
	U	238	386476.6	1.1	**56.3336**	1.024	1.8	ug/L	3	Standard
>	Bi	209	522269.6	1.2				ug/L	523984	Standard

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Na	23	8.3	91.7	**99.7813**	89.869	90.1	mg/L	0	Standard
Mg	24	26446.4	1.6	**35.2703**	0.863	2.4	mg/L	37	Standard
K	39	1201.7	4.6	**2.6333**	0.063	2.4	mg/L	38	Standard
Ca	43	1648.4	4.4	**105.1755**	1.490	1.4	mg/L	10	Standard
Fe	54	207.2	35.2	**0.0431**	0.061	140.9	mg/L	179	Standard
Fe	57	976.7	6.7	**2.3580**	0.131	5.6	mg/L	335	Standard
Sc-1	45	58999.8	4.0				mg/L	61029	Standard
Cl	35	42664.0	0.9				ug/L	20195	Standard
Kr	83	3.0	33.3				ug/L	4	Standard
Br	81	62512.1	2.5				ug/L	1547	Standard
P	31	18094.1	2.0				ug/L	15286	Standard
S	34	1855.1	3.1				ug/L	1572	Standard
Sr	88	1376.7	4.2				ug/L	73	Standard
C	12	206.7	24.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	73.5	28.0				mg/L	6	Standard
Ho-1	165	70.0	12.4				mg/L	10	Standard
Er	166	66.7	34.6				mg/L	13	Standard
I	127	146421.6	4.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		129.380	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.739	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.520
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.673
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606098637SD WG573548-05
Sample Date/Time: Wednesday, June 29, 2016 13:06:39
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	99478.9	1.8				ug/L	74699	Standard
	Be	9	55809.3	1.7	**47.6121**	0.679	1.4	ug/L	8	Standard
	Al	27	57079276.5	2.7	**291.6498**	6.801	2.3	ug/L	1493	Standard
	Sc	45	56220.8	1.7				ug/L	61029	Standard
	Ti	47	357.7	29.4	**0.8728**	0.310	35.5	ug/L	35	Standard
	V	51	392795.1	0.3	**53.7087**	1.385	2.6	ug/L	1435	Standard
	Cr	52	364211.2	1.2	**49.9063**	1.054	2.1	ug/L	7635	Standard
	Cr	53	45092.0	2.6	**50.2220**	0.967	1.9	ug/L	363	Standard
	Mn	55	1864825.2	1.1	**277.4410**	6.534	2.4	ug/L	747	Standard
	Co	59	357216.6	1.3	**56.0166**	0.665	1.2	ug/L	234	Standard
	Ni	60	94064.4	0.7	**51.9434**	1.099	2.1	ug/L	215	Standard
	Cu	65	96872.1	1.3	**53.8290**	0.581	1.1	ug/L	104	Standard
	Zn	66	56756.1	1.1	**53.3877**	0.715	1.3	ug/L	363	Standard
>	**Ge**	72	477920.9	2.4				ug/L	495142	Standard
	As	75	58834.8	0.8	**54.4924**	0.918	1.7	ug/L	-50	Standard
	Se	82	6411.7	0.6	**60.4029**	1.057	1.7	ug/L	14	Standard
	Se-1	77	4156.6	3.0	**58.3446**	1.540	2.6	ug/L	42	Standard
>	**Ga**	71	126.7	16.4				mg/L	42	Standard
	Rb	85	5344.3	1.7				ug/L	17	Standard
	Y	89	425761.1	0.9				ug/L	417098	Standard
>	**Rh**	103	338.3	14.4				ug/L	13	Standard
	Mo	98	943.7	3.1	**0.3564**	0.013	3.7	ug/L	11	Standard
	Ag	107	126054.2	0.9	**19.7696**	0.296	1.5	ug/L	68	Standard
	Cd	111	100507.1	1.6	**49.1528**	0.361	0.7	mg/L	2	Standard
	Cd	114	240725.5	3.1	**47.9933**	0.862	1.8	ug/L	12	Standard
>	**In**	115	574417.4	1.5				ug/L	587441	Standard
	Sn	118	1058.4	4.2	**0.0905**	0.005	5.8	ug/L	497	Standard
	Sb	123	229849.5	0.5	**50.3475**	0.456	0.9	ug/L	78	Standard
	Ba	135	119199.1	0.7	**59.5474**	0.534	0.9	ug/L	24	Standard
	Ce	140	1411.7	10.5				ug/L	25	Standard
>	**Tb**	159	946510.5	1.0				ug/L	939701	Standard
	Ho	165	61.7	32.8				ug/L	10	Standard
	Tl	203	404314.5	1.0	**50.2968**	0.720	1.4	ug/L	4	Standard
	Tl	205	368989.1	0.6	**52.8952**	1.157	2.2	ug/L	2	Standard
	Pb	206	274418.5	1.5	**52.6043**	0.331	0.6	ug/L	240	Standard
	Pb	207	233408.5	1.0	**50.3596**	0.394	0.8	ug/L	198	Standard
	Pb	208	945417.2	0.6	**51.6312**	0.704	1.4	ug/L	883	Standard
	U	238	390395.6	1.2	**58.1569**	0.854	1.5	ug/L	3	Standard
>	**Bi**	209	511024.4	1.7				ug/L	523984	Standard

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Na	23	13.3	21.7	**167.0389**	37.375	22.4	mg/L	0	Standard
Mg	24	26820.4	2.0	**37.5161**	0.222	0.6	mg/L	37	Standard
K	39	1165.0	5.8	**2.6799**	0.118	4.4	mg/L	38	Standard
Ca	43	1491.7	10.9	**99.7885**	11.256	11.3	mg/L	10	Standard
Fe	54	157.1	11.5	**0.0062**	0.015	238.1	mg/L	179	Standard
Fe	57	1011.7	5.7	**2.6573**	0.164	6.2	mg/L	335	Standard
Sc-1	45	56220.8	1.7				mg/L	61029	Standard
Cl	35	42892.6	1.5				ug/L	20195	Standard
Kr	83	2.7	43.3				ug/L	4	Standard
Br	81	62984.0	1.3				ug/L	1547	Standard
P	31	17081.3	3.0				ug/L	15286	Standard
S	34	1805.1	2.7				ug/L	1572	Standard
Sr	88	1383.4	10.5				ug/L	73	Standard
C	12	180.0	14.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	124.6	33.0				mg/L	6	Standard
Ho-1	165	61.7	32.8				mg/L	10	Standard
Er	166	43.3	35.3				mg/L	13	Standard
I	127	140810.4	4.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		133.173	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.522	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.783
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.527
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606098637SD WG573548-05
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Method 6020 - Summary Report

Sample ID: L1606098601
Sample Date/Time: Wednesday, June 29, 2016 13:09:51
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	102324.4	1.8				ug/L	74699	Standard
	Be	9	88.3	32.2	**0.0810**	0.024	30.0	ug/L	8	Standard
	Al	27	5114148.7	1.9	**25.3952**	0.605	2.4	ug/L	1493	Standard
	Sc	45	60191.0	1.9				ug/L	61029	Standard
	Ti	47	2779.9	0.6	**7.0936**	0.108	1.5	ug/L	35	Standard
	V	51	5111.4	5.6	**0.4688**	0.033	7.0	ug/L	1435	Standard
	Cr	52	13420.3	3.5	**0.7542**	0.051	6.8	ug/L	7635	Standard
	Cr	53	1458.4	3.3	**1.2196**	0.051	4.2	ug/L	363	Standard
	Mn	55	181173.8	0.3	**25.4046**	0.180	0.7	ug/L	747	Standard
	Co	59	2348.5	2.0	**0.3119**	0.007	2.1	ug/L	234	Standard
	Ni	60	2310.5	3.1	**1.0878**	0.031	2.9	ug/L	215	Standard
	Cu	65	2308.5	3.6	**1.1141**	0.034	3.0	ug/L	104	Standard
	Zn	66	22662.3	0.5	**19.9177**	0.090	0.4	ug/L	363	Standard
>	**Ge**	72	504254.4	0.9				ug/L	495142	Standard
	As	75	859.1	5.1	**0.8126**	0.036	4.5	ug/L	-50	Standard
	Se	82	56.8	14.9	**0.3708**	0.079	21.2	ug/L	14	Standard
	Se-1	77	87.3	17.2	**0.5507**	0.190	34.5	ug/L	42	Standard
>	**Ga**	71	526.7	8.3				mg/L	42	Standard
	Rb	85	16517.3	5.3				ug/L	17	Standard
	Y	89	430302.4	1.6				ug/L	417098	Standard
>	**Rh**	103	86.7	33.8				ug/L	13	Standard
	Mo	98	1898.6	1.4	**0.7136**	0.022	3.1	ug/L	11	Standard
	Ag	107	115.3	8.0	**0.0050**	0.001	29.0	ug/L	68	Standard
	Cd	111	60.8	33.2	**0.0215**	0.010	47.6	mg/L	2	Standard
	Cd	114	128.6	20.8	**0.0232**	0.005	20.9	ug/L	12	Standard
>	**In**	115	581907.5	1.7				ug/L	587441	Standard
	Sn	118	1231.7	10.8	**0.1183**	0.024	20.7	ug/L	497	Standard
	Sb	123	520.8	14.7	**0.1084**	0.016	15.1	ug/L	78	Standard
	Ba	135	41346.0	0.9	**20.3791**	0.217	1.1	ug/L	24	Standard
	Ce	140	23020.8	2.4				ug/L	25	Standard
>	**Tb**	159	964144.3	1.8				ug/L	939701	Standard
	Ho	165	513.3	9.3				ug/L	10	Standard
	Tl	203	211.3	12.7	**0.0234**	0.003	14.7	ug/L	4	Standard
	Tl	205	253.3	62.3	**0.0350**	0.022	63.0	ug/L	2	Standard
	Pb	206	1500.1	2.6	**0.2039**	0.008	4.0	ug/L	240	Standard
	Pb	207	1190.0	4.0	**0.1756**	0.010	5.7	ug/L	198	Standard
	Pb	208	4936.0	2.0	**0.1838**	0.008	4.3	ug/L	883	Standard
	U	238	2034.5	10.8	**0.2852**	0.034	11.8	ug/L	3	Standard
>	**Bi**	209	535012.0	1.1				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	50263.2	0.4	**65.7389**	1.477	2.2	mg/L	37	Standard
K	39	250.0	7.2	**0.4466**	0.047	10.5	mg/L	38	Standard
Ca	43	233.3	8.9	**12.4104**	1.127	9.1	mg/L	10	Standard
Fe	54	825.5	3.8	**0.5718**	0.038	6.7	mg/L	179	Standard
Fe	57	516.7	4.4	**0.7058**	0.045	6.4	mg/L	335	Standard
> **Sc-1**	45	60191.0	1.9				mg/L	61029	Standard
Cl	35	28383.9	2.7				ug/L	20195	Standard
Kr	83	2.0	0.0				ug/L	4	Standard
Br	81	8439.0	2.4				ug/L	1547	Standard
P	31	17857.2	2.8				ug/L	15286	Standard
S	34	1791.8	4.6				ug/L	1572	Standard
Sr	88	506.7	4.7				ug/L	73	Standard
C	12	153.3	22.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	893.4	9.1				mg/L	6	Standard
Ho-1	165	513.3	9.3				mg/L	10	Standard
Er	166	416.7	13.2				mg/L	13	Standard
I	127	18778.3	7.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		136.983	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.840	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.058	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	102.105	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606098603
Sample Date/Time: Wednesday, June 29, 2016 13:13:02
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	106961.3	1.6				ug/L	74699	Standard
	Be	9	178.3	7.1	**0.1492**	0.012	8.2	ug/L	8	Standard
	Al	27	64490531.4	4.4	**306.3886**	9.864	3.2	ug/L	1493	Standard
	Sc	45	59811.2	2.1				ug/L	61029	Standard
	Ti	47	416.0	0.2	**0.9910**	0.025	2.5	ug/L	35	Standard
	V	51	3004.3	2.1	**0.2029**	0.003	1.2	ug/L	1435	Standard
	Cr	52	11901.7	1.5	**0.5854**	0.019	3.3	ug/L	7635	Standard
	Cr	53	991.7	2.3	**0.7459**	0.050	6.7	ug/L	363	Standard
	Mn	55	12370472.2	4.2	**1779.3602**	31.656	1.8	ug/L	747	Standard
	Co	59	18875.4	5.7	**2.8249**	0.100	3.5	ug/L	234	Standard
	Ni	60	12202.3	4.0	**6.4037**	0.114	1.8	ug/L	215	Standard
	Cu	65	16836.0	2.8	**8.9582**	0.039	0.4	ug/L	104	Standard
	Zn	66	24869.4	2.3	**22.3549**	0.039	0.2	ug/L	363	Standard
>	**Ge**	72	494237.2	2.4				ug/L	495142	Standard
	As	75	1554.4	6.7	**1.4489**	0.061	4.2	ug/L	-50	Standard
	Se	82	71.5	7.7	**0.5142**	0.037	7.1	ug/L	14	Standard
	Se-1	77	63.0	12.4	**0.2431**	0.119	49.1	ug/L	42	Standard
>	**Ga**	71	356.7	10.3				mg/L	42	Standard
	Rb	85	9309.5	2.8				ug/L	17	Standard
	Y	89	460268.8	4.1				ug/L	417098	Standard
>	**Rh**	103	310.0	9.7				ug/L	13	Standard
	Mo	98	1407.8	3.5	**0.5012**	0.005	1.0	ug/L	11	Standard
	Ag	107	101.3	22.9	**0.0020**	0.003	151.7	ug/L	68	Standard
	Cd	111	246.3	7.9	**0.1051**	0.008	7.2	mg/L	2	Standard
	Cd	114	605.6	11.0	**0.1111**	0.009	8.4	ug/L	12	Standard
>	**In**	115	612194.6	4.4				ug/L	587441	Standard
	Sn	118	1470.1	15.0	**0.1461**	0.027	18.7	ug/L	497	Standard
	Sb	123	727.1	5.4	**0.1452**	0.003	2.2	ug/L	78	Standard
	Ba	135	24533.2	4.5	**11.4855**	0.055	0.5	ug/L	24	Standard
	Ce	140	44839.6	2.7				ug/L	25	Standard
>	**Tb**	159	1002318.5	3.7				ug/L	939701	Standard
	Ho	165	778.4	7.8				ug/L	10	Standard
	Tl	203	123.7	14.4	**0.0129**	0.002	13.5	ug/L	4	Standard
	Tl	205	116.7	9.9	**0.0161**	0.001	9.2	ug/L	2	Standard
	Pb	206	819.0	5.9	**0.0785**	0.008	10.4	ug/L	240	Standard
	Pb	207	658.0	2.8	**0.0655**	0.007	10.9	ug/L	198	Standard
	Pb	208	2733.4	3.4	**0.0682**	0.002	2.2	ug/L	883	Standard
	U	238	29463.0	4.0	**4.1728**	0.071	1.7	ug/L	3	Standard
>	**Bi**	209	536825.9	2.9				ug/L	523984	Standard

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Na	23	18.3	31.5	**216.6166**	73.255	33.8	mg/L	0	Standard
Mg	24	7246.7	2.5	**9.4794**	0.084	0.9	mg/L	37	Standard
K	39	393.3	11.0	**0.7727**	0.091	11.8	mg/L	38	Standard
Ca	43	1938.5	3.9	**122.4130**	4.002	3.3	mg/L	10	Standard
Fe	54	1213.7	6.6	**0.9123**	0.078	8.6	mg/L	179	Standard
Fe	57	1360.1	3.5	**3.6434**	0.167	4.6	mg/L	335	Standard
> **Sc-1**	45	59811.2	2.1				mg/L	61029	Standard
Cl	35	41831.0	3.4				ug/L	20195	Standard
Kr	83	1.7	91.7				ug/L	4	Standard
Br	81	8062.1	5.5				ug/L	1547	Standard
P	31	19340.7	4.7				ug/L	15286	Standard
S	34	2026.8	7.6				ug/L	1572	Standard
Sr	88	1283.4	13.4				ug/L	73	Standard
C	12	153.3	19.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	1258.4	10.3				mg/L	6	Standard
Ho-1	165	778.4	7.8				mg/L	10	Standard
Er	166	800.0	9.9				mg/L	13	Standard
I	127	76815.4	9.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		143.190	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.817	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.214
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.451
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606098603PS WG574572-01
Sample Date/Time: Wednesday, June 29, 2016 13:16:14
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	107768.6	1.4				ug/L	74699	Standard
	Be	9	63154.7	2.1	**49.7293**	0.735	1.5	ug/L	8	Standard
	Al	27	62883924.9	0.4	**296.6156**	4.197	1.4	ug/L	1493	Standard
	Sc	45	60669.6	1.7				ug/L	61029	Standard
	Ti	47	431.3	11.1	**1.0313**	0.120	11.7	ug/L	35	Standard
	V	51	423481.5	0.7	**56.0150**	0.782	1.4	ug/L	1435	Standard
	Cr	52	394353.4	1.0	**52.3183**	0.613	1.2	ug/L	7635	Standard
	Cr	53	48385.5	1.4	**52.1545**	1.086	2.1	ug/L	363	Standard
	Mn	55	12676353.0	0.9	**1825.0939**	28.984	1.6	ug/L	747	Standard
	Co	59	406698.1	0.5	**61.7025**	0.702	1.1	ug/L	234	Standard
	Ni	60	105609.8	0.7	**56.4229**	0.793	1.4	ug/L	215	Standard
	Cu	65	109624.8	0.4	**58.9403**	0.355	0.6	ug/L	104	Standard
	Zn	66	80974.1	1.0	**73.8592**	1.163	1.6	ug/L	363	Standard
>	**Ge**	72	493944.8	0.7				ug/L	495142	Standard
	As	75	62963.2	0.4	**56.4099**	0.584	1.0	ug/L	-50	Standard
	Se	82	6528.2	1.4	**59.4919**	1.250	2.1	ug/L	14	Standard
	Se-1	77	4208.9	2.0	**57.1456**	1.224	2.1	ug/L	42	Standard
>	**Ga**	71	341.7	3.7				mg/L	42	Standard
	Rb	85	9437.9	2.3				ug/L	17	Standard
	Y	89	453637.5	2.0				ug/L	417098	Standard
>	**Rh**	103	333.3	4.8				ug/L	13	Standard
	Mo	98	1406.8	1.9	**0.5023**	0.008	1.6	ug/L	11	Standard
	Ag	107	336751.7	1.1	**49.7241**	0.838	1.7	ug/L	68	Standard
	Cd	111	110645.7	0.7	**50.9305**	0.669	1.3	mg/L	2	Standard
	Cd	114	268194.0	0.5	**50.3333**	0.438	0.9	ug/L	12	Standard
>	**In**	115	610323.2	0.7				ug/L	587441	Standard
	Sn	118	1538.4	2.3	**0.1588**	0.006	3.5	ug/L	497	Standard
	Sb	123	241381.6	1.1	**49.7617**	0.807	1.6	ug/L	78	Standard
	Ba	135	126394.4	1.4	**59.4274**	1.193	2.0	ug/L	24	Standard
	Ce	140	44334.8	0.8				ug/L	25	Standard
>	**Tb**	159	999714.8	1.0				ug/L	939701	Standard
	Ho	165	786.7	10.3				ug/L	10	Standard
	Tl	203	445077.8	1.6	**52.3048**	0.918	1.8	ug/L	4	Standard
	Tl	205	409895.5	2.2	**55.5017**	1.265	2.3	ug/L	2	Standard
	Pb	206	293321.0	0.4	**53.1218**	0.228	0.4	ug/L	240	Standard
	Pb	207	252054.7	0.9	**51.3779**	0.617	1.2	ug/L	198	Standard
	Pb	208	1026149.4	0.5	**52.9396**	0.195	0.4	ug/L	883	Standard
	U	238	420484.7	1.6	**59.1737**	0.984	1.7	ug/L	3	Standard
>	**Bi**	209	540895.8	0.3				ug/L	523984	Standard

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Na	23	16.7	45.8	**192.4294**	85.849	44.6	mg/L	0	Standard
Mg	24	7256.7	2.5	**9.3609**	0.349	3.7	mg/L	37	Standard
K	39	406.7	8.6	**0.7894**	0.064	8.1	mg/L	38	Standard
Ca	43	1853.4	4.6	**115.2974**	6.640	5.8	mg/L	10	Standard
Fe	54	1091.3	5.4	**0.7921**	0.036	4.5	mg/L	179	Standard
Fe	57	1315.1	6.5	**3.4198**	0.224	6.6	mg/L	335	Standard
> **Sc-1**	45	60669.6	1.7				mg/L	61029	Standard
Cl	35	43150.7	2.4				ug/L	20195	Standard
Kr	83	2.3	49.5				ug/L	4	Standard
Br	81	7932.1	5.6				ug/L	1547	Standard
P	31	18981.9	3.1				ug/L	15286	Standard
S	34	1910.1	1.6				ug/L	1572	Standard
Sr	88	1396.7	9.1				ug/L	73	Standard
C	12	166.7	22.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	1221.7	7.2				mg/L	6	Standard
Ho-1	165	786.7	10.3				mg/L	10	Standard
Er	166	800.0	7.6				mg/L	13	Standard
I	127	76722.5	5.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		144.271	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.758	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.895
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.227
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606098603PS WG574572-01
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Method 6020 - Summary Report

Sample ID: L1606098603SDL WG574572-02
Sample Date/Time: Wednesday, June 29, 2016 13:19:25
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	109627.0	2.2				ug/L	74699	Standard
	Be	9	55.0	32.8	**0.0501**	0.014	27.0	ug/L	8	Standard
	Al	27	13052757.9	2.1	**60.5215**	1.604	2.7	ug/L	1493	Standard
	Sc	45	62358.1	1.0				ug/L	61029	Standard
	Ti	47	123.0	14.7	**0.1926**	0.050	25.7	ug/L	35	Standard
	V	51	2451.6	1.0	**0.1057**	0.008	7.9	ug/L	1435	Standard
	Cr	52	10290.8	1.8	**0.2648**	0.008	2.8	ug/L	7635	Standard
	Cr	53	588.3	10.7	**0.2610**	0.063	24.3	ug/L	363	Standard
	Mn	55	2629853.6	1.6	**350.4744**	10.232	2.9	ug/L	747	Standard
	Co	59	4233.3	3.1	**0.5577**	0.018	3.3	ug/L	234	Standard
	Ni	60	2886.6	1.8	**1.3071**	0.037	2.8	ug/L	215	Standard
	Cu	65	3859.5	1.6	**1.8207**	0.021	1.2	ug/L	104	Standard
	Zn	66	7087.3	1.2	**5.5680**	0.153	2.7	ug/L	363	Standard
>	**Ge**	72	533577.2	1.8				ug/L	495142	Standard
	As	75	314.5	3.2	**0.3203**	0.010	3.2	ug/L	-50	Standard
	Se	82	28.2	16.0	**0.1004**	0.037	37.2	ug/L	14	Standard
	Se-1	77	51.7	9.9	**0.0349**	0.075	214.8	ug/L	42	Standard
>	**Ga**	71	153.3	21.0				mg/L	42	Standard
	Rb	85	1916.8	2.5				ug/L	17	Standard
	Y	89	457911.1	1.7				ug/L	417098	Standard
>	**Rh**	103	73.3	17.2				ug/L	13	Standard
	Mo	98	334.8	7.8	**0.1120**	0.009	8.5	ug/L	11	Standard
	Ag	107	142.0	14.1	**0.0075**	0.003	37.0	ug/L	68	Standard
	Cd	111	78.8	16.1	**0.0274**	0.006	20.4	mg/L	2	Standard
	Cd	114	171.7	29.4	**0.0293**	0.009	31.0	ug/L	12	Standard
>	**In**	115	626915.6	0.6				ug/L	587441	Standard
	Sn	118	618.3	15.8	**0.0044**	0.015	338.7	ug/L	497	Standard
	Sb	123	2031.6	21.7	**0.4032**	0.086	21.3	ug/L	78	Standard
	Ba	135	5054.8	0.4	**2.2983**	0.024	1.0	ug/L	24	Standard
	Ce	140	9302.9	0.9				ug/L	25	Standard
>	**Tb**	159	1014481.9	2.3				ug/L	939701	Standard
	Ho	165	175.0	2.9				ug/L	10	Standard
	Tl	203	125.0	17.4	**0.0120**	0.002	18.4	ug/L	4	Standard
	Tl	205	85.0	15.6	**0.0110**	0.002	15.7	ug/L	2	Standard
	Pb	206	501.3	9.2	**0.0141**	0.008	53.2	ug/L	240	Standard
	Pb	207	392.0	5.3	**0.0051**	0.005	98.5	ug/L	198	Standard
	Pb	208	1534.0	5.0	**0.0003**	0.005	1457.8	ug/L	883	Standard
	U	238	6033.2	1.4	**0.7925**	0.020	2.5	ug/L	3	Standard
>	**Bi**	209	576425.9	1.5				ug/L	523984	Standard

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Na	23	3.3	173.2	**37.9583**	65.737	173.2	mg/L	0	Standard
Mg	24	1580.1	4.3	**1.9318**	0.105	5.4	mg/L	37	Standard
K	39	138.3	24.1	**0.1853**	0.073	39.3	mg/L	38	Standard
Ca	43	413.3	5.7	**23.0292**	1.446	6.3	mg/L	10	Standard
Fe	54	367.9	5.4	**0.1671**	0.019	11.4	mg/L	179	Standard
Fe	57	475.0	7.9	**0.5062**	0.132	26.1	mg/L	335	Standard
Sc-1	45	62358.1	1.0				mg/L	61029	Standard
Cl	35	34619.5	1.5				ug/L	20195	Standard
Kr	83	1.3	86.6				ug/L	4	Standard
Br	81	3197.0	3.6				ug/L	1547	Standard
P	31	18749.9	1.5				ug/L	15286	Standard
S	34	2010.1	3.0				ug/L	1572	Standard
Sr	88	305.0	20.5				ug/L	73	Standard
C	12	113.3	31.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	348.8	17.3				mg/L	6	Standard
Ho-1	165	175.0	2.9				mg/L	10	Standard
Er	166	163.3	52.8				mg/L	13	Standard
I	127	19115.4	2.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		146.759	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		107.762	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606098603SDL WG574572-02
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.720
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.008
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606098603SDL WG574572-02
Sample Date/Time: Wednesday, June 29, 2016 13:22:37
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	107882.7	0.8				ug/L	74699	Standard
	Be	9	30.0	44.1	**0.0312**	0.010	32.7	ug/L	8	Standard
	Al	27	2675117.5	0.8	**12.5917**	0.213	1.7	ug/L	1493	Standard
	Sc	45	65760.7	1.1				ug/L	61029	Standard
	Ti	47	48.3	10.6	**0.0072**	0.012	160.2	ug/L	35	Standard
	V	51	2266.6	5.1	**0.0781**	0.015	19.5	ug/L	1435	Standard
	Cr	52	10143.4	2.6	**0.2243**	0.020	8.9	ug/L	7635	Standard
	Cr	53	413.3	17.1	**0.0775**	0.065	83.8	ug/L	363	Standard
	Mn	55	539662.1	1.4	**70.5366**	0.569	0.8	ug/L	747	Standard
	Co	59	1015.0	2.6	**0.1030**	0.006	5.9	ug/L	234	Standard
	Ni	60	769.4	2.6	**0.2509**	0.010	4.1	ug/L	215	Standard
	Cu	65	948.0	4.2	**0.3607**	0.016	4.4	ug/L	104	Standard
	Zn	66	2642.9	1.7	**1.7518**	0.018	1.1	ug/L	363	Standard
>	**Ge**	72	543000.4	1.8				ug/L	495142	Standard
	As	75	12.5	225.4	**0.0698**	0.023	32.5	ug/L	-50	Standard
	Se	82	15.8	49.7	**-0.0063**	0.066	1051.8	ug/L	14	Standard
	Se-1	77	45.3	17.1	**-0.0563**	0.096	170.3	ug/L	42	Standard
>	**Ga**	71	85.0	15.6				mg/L	42	Standard
	Rb	85	428.3	11.2				ug/L	17	Standard
	Y	89	460200.9	1.8				ug/L	417098	Standard
>	**Rh**	103	35.0	24.7				ug/L	13	Standard
	Mo	98	83.6	11.1	**0.0226**	0.003	14.3	ug/L	11	Standard
	Ag	107	112.7	14.2	**0.0027**	0.002	80.0	ug/L	68	Standard
	Cd	111	20.9	22.0	**0.0011**	0.002	176.9	mg/L	2	Standard
	Cd	114	53.5	39.5	**0.0073**	0.004	50.6	ug/L	12	Standard
>	**In**	115	649578.1	0.2				ug/L	587441	Standard
	Sn	118	553.3	9.5	**-0.0090**	0.008	92.4	ug/L	497	Standard
	Sb	123	558.9	31.9	**0.1041**	0.035	33.4	ug/L	78	Standard
	Ba	135	1064.4	0.7	**0.4543**	0.003	0.7	ug/L	24	Standard
	Ce	140	1928.5	4.3				ug/L	25	Standard
>	**Tb**	159	1049822.6	1.3				ug/L	939701	Standard
	Ho	165	40.0	33.1				ug/L	10	Standard
	Tl	203	40.7	35.8	**0.0026**	0.002	59.7	ug/L	4	Standard
	Tl	205	45.0	38.5	**0.0057**	0.002	36.9	ug/L	2	Standard
	Pb	206	372.0	6.6	**-0.0102**	0.004	38.7	ug/L	240	Standard
	Pb	207	294.7	6.9	**-0.0156**	0.004	25.6	ug/L	198	Standard
	Pb	208	1159.4	2.3	**-0.0199**	0.001	7.3	ug/L	883	Standard
	U	238	1206.0	0.9	**0.1490**	0.002	1.2	ug/L	3	Standard
>	**Bi**	209	598311.7	0.5				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.6400**	30.545	173.2	mg/L	0	Standard
Mg	24	363.3	29.0	**0.3711**	0.131	35.3	mg/L	37	Standard
K	39	63.3	27.7	**0.0157**	0.035	226.7	mg/L	38	Standard
Ca	43	110.0	12.0	**3.9202**	0.707	18.0	mg/L	10	Standard
Fe	54	190.5	10.6	**0.0117**	0.017	142.3	mg/L	179	Standard
Fe	57	268.3	12.0	**-0.2271**	0.110	48.6	mg/L	335	Standard
> **Sc-1**	45	65760.7	1.1				mg/L	61029	Standard
Cl	35	34122.4	1.0				ug/L	20195	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	2286.8	8.5				ug/L	1547	Standard
P	31	19529.2	1.3				ug/L	15286	Standard
S	34	2301.8	4.6				ug/L	1572	Standard
Sr	88	130.0	32.9				ug/L	73	Standard
C	12	83.3	6.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	60.8	35.4				mg/L	6	Standard
Ho-1	165	40.0	33.1				mg/L	10	Standard
Er	166	53.3	28.6				mg/L	13	Standard
I	127	5874.5	8.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		144.424	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.666	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	110.578
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	114.185
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 13:25:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	96295.4	4.3				ug/L	74699	Standard
	Be	9	56739.5	4.7	**50.0144**	1.617	3.2	ug/L	8	Standard
	Al	27	8198811.7	1.9	**43.2979**	1.271	2.9	ug/L	1493	Standard
	Sc	45	60020.3	2.0				ug/L	61029	Standard
	Ti	47	38068.4	0.4	**97.0435**	0.523	0.5	ug/L	35	Standard
	V	51	407671.2	1.0	**52.0137**	0.145	0.3	ug/L	1435	Standard
	Cr	52	382711.8	0.9	**48.9253**	0.135	0.3	ug/L	7635	Standard
	Cr	53	47653.2	2.5	**49.5394**	1.027	2.1	ug/L	363	Standard
	Mn	55	366963.7	3.6	**50.8236**	1.362	2.7	ug/L	747	Standard
	Co	59	380449.1	2.9	**55.6813**	1.097	2.0	ug/L	234	Standard
	Ni	60	94585.7	1.1	**48.7401**	0.435	0.9	ug/L	215	Standard
	Cu	65	94763.8	1.5	**49.1432**	0.553	1.1	ug/L	104	Standard
	Zn	66	56752.8	2.3	**49.7949**	0.707	1.4	ug/L	363	Standard
>	Ge	72	511914.0	0.9				ug/L	495142	Standard
	As	75	57985.2	1.9	**50.1285**	0.568	1.1	ug/L	-50	Standard
	Se	82	5989.4	2.5	**52.6418**	0.964	1.8	ug/L	14	Standard
	Se-1	77	3921.2	2.5	**51.3010**	0.802	1.6	ug/L	42	Standard
>	Ga	71	220.0	19.4				mg/L	42	Standard
	Rb	85	765.0	2.0				ug/L	17	Standard
	Y	89	446724.4	3.3				ug/L	417098	Standard
>	Rh	103	20.0	43.3				ug/L	13	Standard
	Mo	98	280984.3	2.1	**102.0498**	2.098	2.1	ug/L	11	Standard
	Ag	107	335763.8	0.9	**49.8677**	1.010	2.0	ug/L	68	Standard
	Cd	111	105816.2	1.8	**48.9835**	0.569	1.2	mg/L	2	Standard
	Cd	114	257781.1	1.6	**48.6563**	0.589	1.2	ug/L	12	Standard
>	In	115	606960.1	2.8				ug/L	587441	Standard
	Sn	118	295693.2	2.0	**48.9061**	0.749	1.5	ug/L	497	Standard
	Sb	123	236523.1	0.9	**49.0438**	0.901	1.8	ug/L	78	Standard
	Ba	135	99992.2	1.5	**47.2781**	0.609	1.3	ug/L	24	Standard
	Ce	140	91.7	6.3				ug/L	25	Standard
>	Tb	159	985978.7	1.6				ug/L	939701	Standard
	Ho	165	11.7	89.2				ug/L	10	Standard
	Tl	203	433708.5	1.0	**49.3829**	0.257	0.5	ug/L	4	Standard
	Tl	205	391770.8	1.1	**51.3967**	0.163	0.3	ug/L	2	Standard
	Pb	206	284957.7	0.7	**50.0002**	0.477	1.0	ug/L	240	Standard
	Pb	207	255175.6	1.7	**50.3910**	0.211	0.4	ug/L	198	Standard
	Pb	208	1010912.5	1.9	**50.5251**	0.466	0.9	ug/L	883	Standard
	U	238	378758.8	0.6	**51.6451**	0.416	0.8	ug/L	3	Standard
>	Bi	209	558275.4	1.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4168.9	2.3	**5.4065**	0.021	0.4	mg/L	37	Standard
K	39	1983.5	2.5	**4.3432**	0.044	1.0	mg/L	38	Standard
Ca	43	106.7	26.7	**4.3258**	1.829	42.3	mg/L	10	Standard
Fe	54	6165.0	5.0	**5.1771**	0.265	5.1	mg/L	179	Standard
Fe	57	1720.1	9.9	**4.8644**	0.466	9.6	mg/L	335	Standard
Sc-1	45	60020.3	2.0				mg/L	61029	Standard
Cl	35	28213.0	5.7				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	1853.5	23.0				ug/L	1547	Standard
P	31	20223.5	3.5				ug/L	15286	Standard
S	34	2575.2	6.1				ug/L	1572	Standard
Sr	88	78.3	26.6				ug/L	73	Standard
C	12	100.0	34.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	9.2	116.5				mg/L	6	Standard
Ho-1	165	11.7	89.2				mg/L	10	Standard
Er	166	16.7	91.7				mg/L	13	Standard
I	127	2436.9	25.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	100.029		
Al	27	86.596		
Sc	45			
Ti	47	97.044		
V	51	104.027		
Cr	52	97.851		
Cr	53			
Mn	55	101.647		
Co	59	111.363		
Ni	60	97.480		
Cu	65	98.286		
Zn	66	99.590		
Ge	72		103.387	
As	75	100.257		
Se	82	105.284		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	102.050		
Ag	107	99.735		
Cd	111	97.967		
Cd	114			
> In	115		103.323	
Sn	118	97.812		
Sb	123	98.088		
Ba	135	94.556		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.766		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.050		
U	238	103.290		
> Bi	209		106.544	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	
QC Std 6	Co	59	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 13:29:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	94691.7	1.8				ug/L	74699	Standard
	Be	9	76.7	106.2	**0.0755**	0.071	94.2	ug/L	8	Standard
	Al	27	36843.1	136.1	**0.1814**	0.263	145.0	ug/L	1493	Standard
	Sc	45	60632.8	2.3				ug/L	61029	Standard
	Ti	47	43.0	36.1	**-0.0010**	0.038	3637.8	ug/L	35	Standard
	V	51	1519.7	11.1	**-0.0035**	0.019	532.9	ug/L	1435	Standard
	Cr	52	7045.6	5.2	**-0.1157**	0.044	37.8	ug/L	7635	Standard
	Cr	53	391.7	11.6	**0.0747**	0.044	59.2	ug/L	363	Standard
	Mn	55	7226.9	125.7	**0.8342**	1.228	147.2	ug/L	747	Standard
	Co	59	517.7	90.4	**0.0371**	0.066	179.1	ug/L	234	Standard
	Ni	60	246.3	39.3	**0.0014**	0.048	3317.1	ug/L	215	Standard
	Cu	65	191.7	56.6	**-0.0057**	0.054	949.5	ug/L	104	Standard
	Zn	66	417.3	10.8	**-0.0898**	0.036	40.1	ug/L	363	Standard
>	**Ge**	72	518398.0	1.4				ug/L	495142	Standard
	As	75	-30.5	76.0	**0.0334**	0.020	59.9	ug/L	-50	Standard
	Se	82	13.4	12.4	**-0.0212**	0.016	76.0	ug/L	14	Standard
	Se-1	77	53.3	15.9	**0.0746**	0.106	141.7	ug/L	42	Standard
>	**Ga**	71	155.0	18.0				mg/L	42	Standard
	Rb	85	21.7	93.3				ug/L	17	Standard
	Y	89	436745.4	0.7				ug/L	417098	Standard
>	**Rh**	103	15.0	33.3				ug/L	13	Standard
	Mo	98	315.2	32.1	**0.1069**	0.036	33.6	ug/L	11	Standard
	Ag	107	222.7	75.6	**0.0196**	0.025	125.0	ug/L	68	Standard
	Cd	111	57.8	114.5	**0.0184**	0.030	163.6	mg/L	2	Standard
	Cd	114	159.0	130.1	**0.0274**	0.038	140.1	ug/L	12	Standard
>	**In**	115	616374.3	0.2				ug/L	587441	Standard
	Sn	118	845.0	17.1	**0.0432**	0.024	55.2	ug/L	497	Standard
	Sb	123	593.6	13.2	**0.1170**	0.016	13.9	ug/L	78	Standard
	Ba	135	102.7	102.4	**0.0317**	0.049	153.8	ug/L	24	Standard
	Ce	140	58.3	55.8				ug/L	25	Standard
>	**Tb**	159	995160.6	1.6				ug/L	939701	Standard
	Ho	165	15.0	100.0				ug/L	10	Standard
	Tl	203	219.0	114.2	**0.0226**	0.028	122.3	ug/L	4	Standard
	Tl	205	381.7	141.6	**0.0491**	0.069	140.6	ug/L	2	Standard
	Pb	206	388.0	38.6	**-0.0042**	0.025	597.1	ug/L	240	Standard
	Pb	207	336.0	35.9	**-0.0047**	0.023	485.4	ug/L	198	Standard
	Pb	208	2012.1	79.6	**0.0246**	0.078	315.7	ug/L	883	Standard
	U	238	395.3	145.1	**0.0482**	0.076	157.9	ug/L	3	Standard
>	**Bi**	209	567355.9	1.2				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	58.3	34.6	**0.0111**	0.028	248.5	mg/L	37	Standard
K	39	40.0	12.5	**-0.0251**	0.012	46.0	mg/L	38	Standard
Ca	43	31.7	9.1	**-0.5078**	0.213	41.9	mg/L	10	Standard
Fe	54	155.5	6.6	**-0.0056**	0.009	155.5	mg/L	179	Standard
Fe	57	230.0	7.8	**-0.2862**	0.078	27.3	mg/L	335	Standard
> **Sc-1**	45	60632.8	2.3				mg/L	61029	Standard
Cl	35	27178.4	0.6				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	1736.8	2.2				ug/L	1547	Standard
P	31	19502.5	1.8				ug/L	15286	Standard
S	34	2301.8	3.7				ug/L	1572	Standard
Sr	88	75.0	26.7				ug/L	73	Standard
C	12	86.7	17.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	12.7	93.2				mg/L	6	Standard
Ho-1	165	15.0	100.0				mg/L	10	Standard
Er	166	13.3	86.6				mg/L	13	Standard
I	127	1935.1	25.0				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		104.697	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 7
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.925
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.277
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Mn	55	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606098605
Sample Date/Time: Wednesday, June 29, 2016 13:32:14
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	93251.1	1.7				ug/L	74699	Standard
	Be	9	326.7	10.4	**0.3052**	0.035	11.6	ug/L	8	Standard
	Al	27	19740200.2	0.7	**107.5996**	1.185	1.1	ug/L	1493	Standard
	Sc	45	60365.1	2.3				ug/L	61029	Standard
	Ti	47	450.3	3.0	**1.0603**	0.030	2.8	ug/L	35	Standard
	V	51	4644.9	8.0	**0.4097**	0.047	11.5	ug/L	1435	Standard
	Cr	52	12104.2	0.3	**0.5838**	0.010	1.7	ug/L	7635	Standard
	Cr	53	928.4	3.1	**0.6586**	0.026	3.9	ug/L	363	Standard
	Mn	55	98559.3	4.8	**13.7841**	0.650	4.7	ug/L	747	Standard
	Co	59	3296.0	4.6	**0.4539**	0.021	4.7	ug/L	234	Standard
	Ni	60	3163.0	1.8	**1.5389**	0.038	2.4	ug/L	215	Standard
	Cu	65	32310.7	0.8	**16.9827**	0.169	1.0	ug/L	104	Standard
	Zn	66	47105.4	0.5	**41.9893**	0.365	0.9	ug/L	363	Standard
>	**Ge**	72	503086.3	0.5				ug/L	495142	Standard
	As	75	294.8	15.7	**0.3186**	0.040	12.5	ug/L	-50	Standard
	Se	82	52.3	21.7	**0.3309**	0.101	30.6	ug/L	14	Standard
	Se-1	77	70.7	11.4	**0.3303**	0.114	34.4	ug/L	42	Standard
>	**Ga**	71	295.0	9.0				mg/L	42	Standard
	Rb	85	9109.4	3.7				ug/L	17	Standard
	Y	89	448266.6	2.2				ug/L	417098	Standard
>	**Rh**	103	83.3	28.4				ug/L	13	Standard
	Mo	98	1843.0	5.2	**0.6500**	0.034	5.3	ug/L	11	Standard
	Ag	107	226.3	74.5	**0.0200**	0.024	121.9	ug/L	68	Standard
	Cd	111	104.1	84.7	**0.0392**	0.040	101.3	mg/L	2	Standard
	Cd	114	254.7	74.3	**0.0449**	0.035	77.3	ug/L	12	Standard
>	**In**	115	619535.9	1.6				ug/L	587441	Standard
	Sn	118	1750.1	13.2	**0.1895**	0.038	20.1	ug/L	497	Standard
	Sb	123	790.9	17.9	**0.1564**	0.028	18.0	ug/L	78	Standard
	Ba	135	72683.9	1.3	**33.6664**	0.969	2.9	ug/L	24	Standard
	Ce	140	5139.2	3.4				ug/L	25	Standard
>	**Tb**	159	985815.7	2.2				ug/L	939701	Standard
	Ho	165	223.3	9.3				ug/L	10	Standard
	Tl	203	317.0	96.7	**0.0353**	0.035	100.6	ug/L	4	Standard
	Tl	205	193.3	47.9	**0.0263**	0.012	46.4	ug/L	2	Standard
	Pb	206	1382.4	8.3	**0.1795**	0.018	10.0	ug/L	240	Standard
	Pb	207	1152.7	10.0	**0.1653**	0.022	13.1	ug/L	198	Standard
	Pb	208	4722.3	7.7	**0.1699**	0.018	10.3	ug/L	883	Standard
	U	238	9861.9	3.5	**1.3841**	0.043	3.1	ug/L	3	Standard
>	**Bi**	209	540670.7	1.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	6986.6	1.5	**9.0573**	0.310	3.4	mg/L	37	Standard
K	39	308.3	17.9	**0.5733**	0.109	19.0	mg/L	38	Standard
Ca	43	606.7	4.1	**36.2577**	2.485	6.9	mg/L	10	Standard
Fe	54	348.6	15.4	**0.1605**	0.045	28.3	mg/L	179	Standard
Fe	57	585.0	8.4	**0.9378**	0.194	20.7	mg/L	335	Standard
> **Sc-1**	45	60365.1	2.3				mg/L	61029	Standard
Cl	35	31561.5	3.4				ug/L	20195	Standard
Kr	83	0.7	173.2				ug/L	4	Standard
Br	81	4964.2	11.3				ug/L	1547	Standard
P	31	20053.3	1.8				ug/L	15286	Standard
S	34	2155.2	4.8				ug/L	1572	Standard
Sr	88	343.3	18.3				ug/L	73	Standard
C	12	163.3	34.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	294.3	16.7				mg/L	6	Standard
Ho-1	165	223.3	9.3				mg/L	10	Standard
Er	166	120.0	16.7				mg/L	13	Standard
I	127	9371.2	3.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.836	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.604	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.463
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.184
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606098607
Sample Date/Time: Wednesday, June 29, 2016 13:35:26
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	96566.8	1.9				ug/L	74699	Standard
	Be	9	85.0	29.4	**0.0821**	0.021	25.7	ug/L	8	Standard
	Al	27	20333697.9	3.0	**107.0230**	2.931	2.7	ug/L	1493	Standard
	Sc	45	62230.9	2.2				ug/L	61029	Standard
	Ti	47	287.7	7.2	**0.6119**	0.056	9.2	ug/L	35	Standard
	V	51	3941.3	2.6	**0.3001**	0.017	5.7	ug/L	1435	Standard
	Cr	52	11512.0	2.6	**0.4518**	0.053	11.8	ug/L	7635	Standard
	Cr	53	838.4	4.6	**0.5317**	0.044	8.4	ug/L	363	Standard
	Mn	55	502202.8	0.8	**68.3542**	0.721	1.1	ug/L	747	Standard
	Co	59	4570.7	1.4	**0.6201**	0.010	1.6	ug/L	234	Standard
	Ni	60	3293.0	0.7	**1.5464**	0.014	0.9	ug/L	215	Standard
	Cu	65	6694.1	1.0	**3.3123**	0.070	2.1	ug/L	104	Standard
	Zn	66	11579.4	0.2	**9.6129**	0.092	1.0	ug/L	363	Standard
>	**Ge**	72	521399.1	1.0				ug/L	495142	Standard
	As	75	65.2	31.2	**0.1148**	0.017	14.9	ug/L	-50	Standard
	Se	82	28.9	16.0	**0.1117**	0.041	36.5	ug/L	14	Standard
	Se-1	77	63.7	8.1	**0.2056**	0.068	33.2	ug/L	42	Standard
>	**Ga**	71	136.7	35.5				mg/L	42	Standard
	Rb	85	5054.2	2.4				ug/L	17	Standard
	Y	89	452894.0	2.8				ug/L	417098	Standard
>	**Rh**	103	165.0	28.9				ug/L	13	Standard
	Mo	98	1211.0	1.7	**0.4303**	0.008	1.9	ug/L	11	Standard
	Ag	107	106.3	11.0	**0.0028**	0.002	64.6	ug/L	68	Standard
	Cd	111	72.3	5.5	**0.0253**	0.002	7.2	mg/L	2	Standard
	Cd	114	189.4	18.5	**0.0333**	0.006	19.3	ug/L	12	Standard
>	**In**	115	612132.4	0.4				ug/L	587441	Standard
	Sn	118	1080.0	6.7	**0.0827**	0.012	15.0	ug/L	497	Standard
	Sb	123	567.1	13.2	**0.1124**	0.015	13.5	ug/L	78	Standard
	Ba	135	35457.1	0.1	**16.6089**	0.050	0.3	ug/L	24	Standard
	Ce	140	1880.1	4.7				ug/L	25	Standard
>	**Tb**	159	996852.4	0.7				ug/L	939701	Standard
	Ho	165	58.3	17.8				ug/L	10	Standard
	Tl	203	60.0	16.9	**0.0051**	0.001	23.4	ug/L	4	Standard
	Tl	205	60.0	16.7	**0.0081**	0.001	15.8	ug/L	2	Standard
	Pb	206	636.0	0.7	**0.0415**	0.001	3.4	ug/L	240	Standard
	Pb	207	529.0	3.2	**0.0355**	0.003	9.7	ug/L	198	Standard
	Pb	208	2291.4	2.0	**0.0416**	0.003	7.7	ug/L	883	Standard
	U	238	20180.8	2.1	**2.7702**	0.079	2.9	ug/L	3	Standard
>	**Bi**	209	553749.9	0.8				ug/L	523984	Standard

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Na	23	5.0	100.0	**57.0696**	57.922	101.5	mg/L	0	Standard
Mg	24	5551.0	3.6	**6.9630**	0.244	3.5	mg/L	37	Standard
K	39	316.7	11.2	**0.5727**	0.081	14.1	mg/L	38	Standard
Ca	43	636.7	7.9	**36.9594**	3.698	10.0	mg/L	10	Standard
Fe	54	176.9	14.5	**0.0085**	0.018	212.8	mg/L	179	Standard
Fe	57	531.7	3.6	**0.6989**	0.084	12.0	mg/L	335	Standard
> **Sc-1**	45	62230.9	2.2				mg/L	61029	Standard
Cl	35	31386.5	1.7				ug/L	20195	Standard
Kr	83	2.3	89.2				ug/L	4	Standard
Br	81	3093.6	2.6				ug/L	1547	Standard
P	31	20912.8	5.9				ug/L	15286	Standard
S	34	2228.5	4.5				ug/L	1572	Standard
Sr	88	703.3	5.1				ug/L	73	Standard
C	12	126.7	40.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	102.2	30.1				mg/L	6	Standard
Ho-1	165	58.3	17.8				mg/L	10	Standard
Er	166	93.3	6.2				mg/L	13	Standard
I	127	29892.9	5.9				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		129.275	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		105.303	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.203
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	105.681
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606098609
Sample Date/Time: Wednesday, June 29, 2016 13:38:37
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	96550.0	0.2				ug/L	74699	Standard
	Be	9	53.3	14.3	**0.0545**	0.007	12.5	ug/L	8	Standard
	Al	27	22878376.4	1.6	**120.4307**	1.945	1.6	ug/L	1493	Standard
	Sc	45	62031.7	0.8				ug/L	61029	Standard
	Ti	47	1850.4	1.6	**4.6226**	0.192	4.2	ug/L	35	Standard
	V	51	5461.8	0.6	**0.5052**	0.022	4.3	ug/L	1435	Standard
	Cr	52	13396.9	1.2	**0.7280**	0.058	8.0	ug/L	7635	Standard
	Cr	53	1881.8	4.3	**1.6444**	0.138	8.4	ug/L	363	Standard
	Mn	55	79733.3	1.7	**10.9451**	0.135	1.2	ug/L	747	Standard
	Co	59	2496.2	2.4	**0.3289**	0.007	2.0	ug/L	234	Standard
	Ni	60	4821.8	0.8	**2.3714**	0.068	2.9	ug/L	215	Standard
	Cu	65	4208.3	2.7	**2.0873**	0.088	4.2	ug/L	104	Standard
	Zn	66	20900.1	0.5	**18.0858**	0.567	3.1	ug/L	363	Standard
>	**Ge**	72	511251.4	2.6				ug/L	495142	Standard
	As	75	201.6	14.3	**0.2338**	0.023	9.7	ug/L	-50	Standard
	Se	82	54.1	5.4	**0.3394**	0.016	4.7	ug/L	14	Standard
	Se-1	77	103.0	11.2	**0.7418**	0.124	16.8	ug/L	42	Standard
>	**Ga**	71	510.0	8.0				mg/L	42	Standard
	Rb	85	13392.6	2.9				ug/L	17	Standard
	Y	89	437578.5	1.9				ug/L	417098	Standard
>	**Rh**	103	115.0	21.7				ug/L	13	Standard
	Mo	98	379.6	2.6	**0.1321**	0.004	2.9	ug/L	11	Standard
	Ag	107	107.7	0.5	**0.0031**	0.000	8.0	ug/L	68	Standard
	Cd	111	160.7	1.3	**0.0664**	0.001	1.0	mg/L	2	Standard
	Cd	114	395.9	2.3	**0.0726**	0.002	3.0	ug/L	12	Standard
>	**In**	115	607119.7	1.0				ug/L	587441	Standard
	Sn	118	1270.1	2.5	**0.1157**	0.007	5.8	ug/L	497	Standard
	Sb	123	941.4	6.3	**0.1909**	0.012	6.2	ug/L	78	Standard
	Ba	135	18081.1	0.3	**8.5321**	0.064	0.8	ug/L	24	Standard
	Ce	140	9564.7	2.3				ug/L	25	Standard
>	**Tb**	159	994932.9	1.3				ug/L	939701	Standard
	Ho	165	368.3	5.1				ug/L	10	Standard
	Tl	203	147.3	4.5	**0.0153**	0.001	4.3	ug/L	4	Standard
	Tl	205	150.0	15.3	**0.0202**	0.003	16.2	ug/L	2	Standard
	Pb	206	1807.1	1.2	**0.2512**	0.001	0.3	ug/L	240	Standard
	Pb	207	1489.4	1.7	**0.2291**	0.005	2.2	ug/L	198	Standard
	Pb	208	6035.1	2.4	**0.2326**	0.004	1.7	ug/L	883	Standard
	U	238	2872.6	2.3	**0.3933**	0.005	1.2	ug/L	3	Standard
>	**Bi**	209	549776.1	1.1				ug/L	523984	Standard

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Na	23	6.7	114.6	**75.5001**	86.744	114.9	mg/L	0	Standard
Mg	24	5847.8	3.3	**7.3629**	0.301	4.1	mg/L	37	Standard
K	39	155.0	19.6	**0.2229**	0.066	29.5	mg/L	38	Standard
Ca	43	803.4	3.4	**47.4095**	2.024	4.3	mg/L	10	Standard
Fe	54	459.0	5.6	**0.2447**	0.024	9.9	mg/L	179	Standard
Fe	57	691.7	11.1	**1.2400**	0.273	22.0	mg/L	335	Standard
> **Sc-1**	45	62031.7	0.8				mg/L	61029	Standard
Cl	35	35055.2	1.5				ug/L	20195	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	8335.6	0.3				ug/L	1547	Standard
P	31	19207.2	4.0				ug/L	15286	Standard
S	34	2091.8	7.3				ug/L	1572	Standard
Sr	88	440.0	15.9				ug/L	73	Standard
C	12	146.7	7.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	580.9	19.4				mg/L	6	Standard
Ho-1	165	368.3	5.1				mg/L	10	Standard
Er	166	330.0	13.9				mg/L	13	Standard
I	127	13649.5	1.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.252	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.253	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.350
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	104.922
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606098611
Sample Date/Time: Wednesday, June 29, 2016 13:41:50
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	94928.2	1.7				ug/L	74699	Standard
	Be	9	611.7	2.1	**0.5543**	0.002	0.4	ug/L	8	Standard
	Al	27	35531075.2	1.8	**190.3104**	6.477	3.4	ug/L	1493	Standard
	Sc	45	58926.0	1.1				ug/L	61029	Standard
	Ti	47	1221.7	3.3	**3.0767**	0.071	2.3	ug/L	35	Standard
	V	51	7317.6	1.4	**0.7622**	0.017	2.2	ug/L	1435	Standard
	Cr	52	16086.9	1.7	**1.1219**	0.012	1.1	ug/L	7635	Standard
	Cr	53	9996.6	2.0	**10.3612**	0.096	0.9	ug/L	363	Standard
	Mn	55	583301.8	0.5	**82.6724**	0.812	1.0	ug/L	747	Standard
	Co	59	14960.7	0.8	**2.2024**	0.031	1.4	ug/L	234	Standard
	Ni	60	6882.6	4.3	**3.5089**	0.114	3.2	ug/L	215	Standard
	Cu	65	67223.1	1.5	**35.5977**	0.129	0.4	ug/L	104	Standard
	Zn	66	37202.6	1.0	**33.2122**	0.242	0.7	ug/L	363	Standard
>	**Ge**	72	500908.0	1.1				ug/L	495142	Standard
	As	75	1307.8	5.6	**1.2134**	0.054	4.4	ug/L	-50	Standard
	Se	82	362.7	2.0	**3.1282**	0.043	1.4	ug/L	14	Standard
	Se-1	77	555.0	5.1	**6.8873**	0.307	4.5	ug/L	42	Standard
>	**Ga**	71	435.0	11.9				mg/L	42	Standard
	Rb	85	18344.4	2.4				ug/L	17	Standard
	Y	89	436166.7	1.7				ug/L	417098	Standard
>	**Rh**	103	445.0	7.4				ug/L	13	Standard
	Mo	98	3054.9	0.8	**1.1522**	0.023	2.0	ug/L	11	Standard
	Ag	107	121.7	12.3	**0.0060**	0.002	41.3	ug/L	68	Standard
	Cd	111	41.7	14.4	**0.0123**	0.003	24.8	mg/L	2	Standard
	Cd	114	142.6	14.6	**0.0260**	0.004	14.4	ug/L	12	Standard
>	**In**	115	581588.5	1.2				ug/L	587441	Standard
	Sn	118	2201.8	2.3	**0.2861**	0.011	3.9	ug/L	497	Standard
	Sb	123	1347.5	5.7	**0.2874**	0.019	6.6	ug/L	78	Standard
	Ba	135	63997.2	1.5	**31.5730**	0.849	2.7	ug/L	24	Standard
	Ce	140	22939.0	3.1				ug/L	25	Standard
>	**Tb**	159	946929.2	0.6				ug/L	939701	Standard
	Ho	165	348.3	12.2				ug/L	10	Standard
	Tl	203	270.7	7.5	**0.0312**	0.002	6.9	ug/L	4	Standard
	Tl	205	231.7	2.5	**0.0327**	0.001	2.0	ug/L	2	Standard
	Pb	206	3400.0	1.8	**0.5672**	0.008	1.4	ug/L	240	Standard
	Pb	207	2794.6	0.7	**0.5207**	0.008	1.5	ug/L	198	Standard
	Pb	208	11397.0	1.2	**0.5356**	0.008	1.6	ug/L	883	Standard
	U	238	7265.4	1.1	**1.0543**	0.007	0.7	ug/L	3	Standard
>	**Bi**	209	522379.2	0.9				ug/L	523984	Standard

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Na	23	10.0	50.0	**119.8009**	60.997	50.9	mg/L	0	Standard
Mg	24	10421.9	2.0	**13.8711**	0.425	3.1	mg/L	37	Standard
K	39	453.3	5.1	**0.9237**	0.053	5.7	mg/L	38	Standard
Ca	43	1046.7	6.1	**65.9862**	4.937	7.5	mg/L	10	Standard
Fe	54	728.6	2.4	**0.5015**	0.016	3.2	mg/L	179	Standard
Fe	57	860.0	12.2	**1.9559**	0.399	20.4	mg/L	335	Standard
> **Sc-1**	45	58926.0	1.1				mg/L	61029	Standard
Cl	35	32129.4	1.2				ug/L	20195	Standard
Kr	83	1.0	0.0				ug/L	4	Standard
Br	81	75514.4	2.1				ug/L	1547	Standard
P	31	20090.0	4.4				ug/L	15286	Standard
S	34	2098.5	7.9				ug/L	1572	Standard
Sr	88	1583.4	4.7				ug/L	73	Standard
C	12	130.0	7.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	561.0	7.3				mg/L	6	Standard
Ho-1	165	348.3	12.2				mg/L	10	Standard
Er	166	256.7	6.0				mg/L	13	Standard
I	127	84570.2	9.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		127.081	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.164	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.004
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.694
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606098613
Sample Date/Time: Wednesday, June 29, 2016 13:45:02
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	101811.1	2.5				ug/L	74699	Standard
	Be	9	780.0	6.8	**0.6573**	0.030	4.5	ug/L	8	Standard
	Al	27	69460342.3	2.9	**346.7492**	1.873	0.5	ug/L	1493	Standard
	Sc	45	66852.2	1.8				ug/L	61029	Standard
	Ti	47	16395.2	2.4	**40.4139**	0.750	1.9	ug/L	35	Standard
	V	51	44929.4	0.9	**5.3782**	0.102	1.9	ug/L	1435	Standard
	Cr	52	38038.0	1.4	**3.7847**	0.045	1.2	ug/L	7635	Standard
	Cr	53	5357.6	0.6	**5.1013**	0.082	1.6	ug/L	363	Standard
	Mn	55	1205027.8	2.1	**162.0424**	5.610	3.5	ug/L	747	Standard
	Co	59	15267.0	2.9	**2.1291**	0.080	3.8	ug/L	234	Standard
	Ni	60	13379.6	2.6	**6.5697**	0.065	1.0	ug/L	215	Standard
	Cu	65	74766.0	1.3	**37.5331**	0.708	1.9	ug/L	104	Standard
	Zn	66	182914.0	1.7	**156.4214**	2.327	1.5	ug/L	363	Standard
>	**Ge**	72	528583.9	2.0				ug/L	495142	Standard
	As	75	2539.4	2.2	**2.1832**	0.013	0.6	ug/L	-50	Standard
	Se	82	108.7	5.6	**0.7905**	0.071	9.0	ug/L	14	Standard
	Se-1	77	150.3	9.2	**1.3050**	0.161	12.3	ug/L	42	Standard
>	**Ga**	71	5017.5	0.9				mg/L	42	Standard
	Rb	85	95755.1	2.6				ug/L	17	Standard
	Y	89	484844.4	1.2				ug/L	417098	Standard
>	**Rh**	103	451.7	17.2				ug/L	13	Standard
	Mo	98	2711.0	1.7	**0.9675**	0.010	1.1	ug/L	11	Standard
	Ag	107	547.0	8.0	**0.0673**	0.005	7.7	ug/L	68	Standard
	Cd	111	100.9	10.4	**0.0383**	0.005	14.0	mg/L	2	Standard
	Cd	114	263.2	6.1	**0.0470**	0.003	5.8	ug/L	12	Standard
>	**In**	115	613966.8	2.2				ug/L	587441	Standard
	Sn	118	1991.8	3.6	**0.2317**	0.015	6.6	ug/L	497	Standard
	Sb	123	971.4	9.0	**0.1947**	0.014	7.1	ug/L	78	Standard
	Ba	135	97214.2	0.8	**45.4386**	0.665	1.5	ug/L	24	Standard
	Ce	140	163522.7	0.6				ug/L	25	Standard
>	**Tb**	159	1011575.1	2.5				ug/L	939701	Standard
	Ho	165	4682.4	4.2				ug/L	10	Standard
	Tl	203	573.7	3.0	**0.0642**	0.003	4.6	ug/L	4	Standard
	Tl	205	525.0	7.2	**0.0698**	0.005	7.8	ug/L	2	Standard
	Pb	206	15938.7	1.8	**2.7562**	0.018	0.6	ug/L	240	Standard
	Pb	207	13053.6	0.6	**2.5367**	0.043	1.7	ug/L	198	Standard
	Pb	208	53401.0	1.9	**2.6245**	0.013	0.5	ug/L	883	Standard
	U	238	38818.0	2.5	**5.3391**	0.057	1.1	ug/L	3	Standard
>	**Bi**	209	553002.2	2.3				ug/L	523984	Standard

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Na	23	8.3	34.6	**88.0394**	31.556	35.8	mg/L	0	Standard
Mg	24	10193.4	4.3	**11.9448**	0.378	3.2	mg/L	37	Standard
K	39	798.4	2.0	**1.4974**	0.060	4.0	mg/L	38	Standard
Ca	43	1498.4	4.4	**83.9112**	4.508	5.4	mg/L	10	Standard
Fe	54	4251.3	3.0	**3.1535**	0.141	4.5	mg/L	179	Standard
Fe	57	1956.8	0.6	**4.9983**	0.081	1.6	mg/L	335	Standard
Sc-1	45	66852.2	1.8				mg/L	61029	Standard
Cl	35	38555.7	1.3				ug/L	20195	Standard
Kr	83	2.7	78.1				ug/L	4	Standard
Br	81	16405.6	4.1				ug/L	1547	Standard
P	31	22243.0	1.3				ug/L	15286	Standard
S	34	1961.8	3.3				ug/L	1572	Standard
Sr	88	2096.8	8.9				ug/L	73	Standard
C	12	170.0	21.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	107.9				mg/L	3	Standard
Dy	164	7687.7	5.1				mg/L	6	Standard
Ho-1	165	4682.4	4.2				mg/L	10	Standard
Er	166	4197.2	1.1				mg/L	13	Standard
I	127	34873.4	0.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		136.295	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.754	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.515
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.538
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Zn 66 Upper, S, EEE	Zn	66

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Method 6020 - Summary Report

Sample ID: L1606098615
Sample Date/Time: Wednesday, June 29, 2016 13:48:13
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	104439.3	4.8				ug/L	74699	Standard
	Be	9	536.7	12.4	**0.4427**	0.037	8.4	ug/L	8	Standard
	Al	27	77862989.2	8.3	**378.5121**	14.291	3.8	ug/L	1493	Standard
	Sc	45	58982.2	11.3				ug/L	61029	Standard
	Ti	47	2461.2	11.7	**6.5990**	0.434	6.6	ug/L	35	Standard
	V	51	4945.2	8.0	**0.4817**	0.017	3.5	ug/L	1435	Standard
	Cr	52	13134.4	7.3	**0.8107**	0.065	8.0	ug/L	7635	Standard
	Cr	53	1810.1	8.3	**1.6977**	0.117	6.9	ug/L	363	Standard
	Mn	55	1145096.1	8.2	**169.9719**	4.564	2.7	ug/L	747	Standard
	Co	59	4019.2	11.3	**0.5913**	0.032	5.4	ug/L	234	Standard
	Ni	60	7177.1	13.9	**3.8310**	0.314	8.2	ug/L	215	Standard
	Cu	65	41403.8	8.7	**22.8999**	0.588	2.6	ug/L	104	Standard
	Zn	66	43831.2	7.7	**41.0562**	0.750	1.8	ug/L	363	Standard
>	**Ge**	72	478398.7	6.6				ug/L	495142	Standard
	As	75	638.2	9.5	**0.6495**	0.045	6.9	ug/L	-50	Standard
	Se	82	102.9	17.3	**0.8353**	0.172	20.6	ug/L	14	Standard
	Se-1	77	94.0	19.4	**0.7027**	0.185	26.4	ug/L	42	Standard
>	**Ga**	71	463.3	11.0				mg/L	42	Standard
	Rb	85	23055.9	7.7				ug/L	17	Standard
	Y	89	432649.5	7.6				ug/L	417098	Standard
>	**Rh**	103	1188.4	10.3				ug/L	13	Standard
	Mo	98	1350.9	6.9	**0.5044**	0.013	2.5	ug/L	11	Standard
	Ag	107	139.0	6.4	**0.0086**	0.002	19.3	ug/L	68	Standard
	Cd	111	44.6	6.8	**0.0137**	0.002	16.4	mg/L	2	Standard
	Cd	114	129.2	31.8	**0.0237**	0.010	43.4	ug/L	12	Standard
>	**In**	115	583863.5	7.1				ug/L	587441	Standard
	Sn	118	2513.5	5.1	**0.3387**	0.012	3.5	ug/L	497	Standard
	Sb	123	705.1	6.8	**0.1478**	0.002	1.6	ug/L	78	Standard
	Ba	135	26452.2	7.2	**12.9866**	0.138	1.1	ug/L	24	Standard
	Ce	140	27398.2	9.1				ug/L	25	Standard
>	**Tb**	159	958605.6	6.1				ug/L	939701	Standard
	Ho	165	645.0	4.0				ug/L	10	Standard
	Tl	203	134.0	9.5	**0.0146**	0.001	7.1	ug/L	4	Standard
	Tl	205	118.3	6.5	**0.0169**	0.002	13.2	ug/L	2	Standard
	Pb	206	2508.9	7.1	**0.4009**	0.002	0.4	ug/L	240	Standard
	Pb	207	1976.5	6.7	**0.3487**	0.007	2.0	ug/L	198	Standard
	Pb	208	8160.9	6.7	**0.3634**	0.004	1.2	ug/L	883	Standard
	U	238	17292.6	7.2	**2.5205**	0.006	0.2	ug/L	3	Standard
>	**Bi**	209	521380.1	7.3				ug/L	523984	Standard

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Na	23	15.0	57.7	**176.9361**	92.757	52.4	mg/L	0	Standard
Mg	24	28440.1	8.6	**38.0068**	1.323	3.5	mg/L	37	Standard
K	39	673.3	1.9	**1.4418**	0.213	14.8	mg/L	38	Standard
Ca	43	1596.8	5.0	**102.4296**	8.312	8.1	mg/L	10	Standard
Fe	54	1077.2	5.0	**0.8118**	0.070	8.7	mg/L	179	Standard
Fe	57	1203.4	10.1	**3.1714**	0.327	10.3	mg/L	335	Standard
> **Sc-1**	45	58982.2	11.3				mg/L	61029	Standard
Cl	35	41482.2	7.1				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	15648.1	7.3				ug/L	1547	Standard
P	31	20014.9	6.8				ug/L	15286	Standard
S	34	1913.5	9.5				ug/L	1572	Standard
Sr	88	5429.3	11.3				ug/L	73	Standard
C	12	203.3	27.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	3	Standard
Dy	164	1127.2	20.3				mg/L	6	Standard
Ho-1	165	645.0	4.0				mg/L	10	Standard
Er	166	546.7	6.4				mg/L	13	Standard
I	127	112969.0	6.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		139.814	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.618	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.391
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.503
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606098617
Sample Date/Time: Wednesday, June 29, 2016 13:51:25
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	95101.0	2.9				ug/L	74699	Standard
	Be	9	61.7	9.4	**0.0626**	0.004	5.8	ug/L	8	Standard
	Al	27	16761639.5	0.8	**89.6118**	1.975	2.2	ug/L	1493	Standard
	Sc	45	53828.8	0.6				ug/L	61029	Standard
	Ti	47	756.4	12.3	**2.0144**	0.253	12.6	ug/L	35	Standard
	V	51	3040.4	3.6	**0.2328**	0.013	5.5	ug/L	1435	Standard
	Cr	52	11892.0	0.9	**0.6842**	0.022	3.3	ug/L	7635	Standard
	Cr	53	1066.7	2.7	**0.8986**	0.036	4.1	ug/L	363	Standard
	Mn	55	57447.7	1.9	**8.6332**	0.089	1.0	ug/L	747	Standard
	Co	59	1276.7	2.2	**0.1685**	0.005	2.7	ug/L	234	Standard
	Ni	60	2114.5	5.4	**1.0778**	0.056	5.2	ug/L	215	Standard
	Cu	65	5578.0	1.5	**3.0859**	0.022	0.7	ug/L	104	Standard
	Zn	66	8715.8	0.2	**8.0380**	0.061	0.8	ug/L	363	Standard
>	**Ge**	72	465226.7	0.9				ug/L	495142	Standard
	As	75	386.7	5.7	**0.4269**	0.018	4.2	ug/L	-50	Standard
	Se	82	42.7	8.0	**0.2761**	0.036	13.2	ug/L	14	Standard
	Se-1	77	67.0	16.1	**0.3532**	0.150	42.5	ug/L	42	Standard
>	**Ga**	71	183.3	18.2				mg/L	42	Standard
	Rb	85	8882.6	2.7				ug/L	17	Standard
	Y	89	409246.0	2.8				ug/L	417098	Standard
>	**Rh**	103	295.0	13.6				ug/L	13	Standard
	Mo	98	1514.9	3.6	**0.5995**	0.027	4.5	ug/L	11	Standard
	Ag	107	86.3	3.5	**0.0012**	0.001	48.9	ug/L	68	Standard
	Cd	111	45.4	6.6	**0.0152**	0.002	11.0	mg/L	2	Standard
	Cd	114	119.3	31.2	**0.0227**	0.008	33.9	ug/L	12	Standard
>	**In**	115	551838.0	2.1				ug/L	587441	Standard
	Sn	118	896.7	9.3	**0.0688**	0.017	24.4	ug/L	497	Standard
	Sb	123	476.3	5.5	**0.1045**	0.008	7.8	ug/L	78	Standard
	Ba	135	51101.0	1.7	**26.5634**	0.162	0.6	ug/L	24	Standard
	Ce	140	4162.2	9.3				ug/L	25	Standard
>	**Tb**	159	892953.9	1.2				ug/L	939701	Standard
	Ho	165	111.7	20.2				ug/L	10	Standard
	Tl	203	71.0	9.8	**0.0072**	0.001	12.5	ug/L	4	Standard
	Tl	205	50.0	10.0	**0.0075**	0.001	10.0	ug/L	2	Standard
	Pb	206	834.7	3.9	**0.0918**	0.006	7.0	ug/L	240	Standard
	Pb	207	668.0	3.0	**0.0768**	0.004	5.0	ug/L	198	Standard
	Pb	208	2813.8	1.3	**0.0825**	0.002	2.7	ug/L	883	Standard
	U	238	2276.2	2.7	**0.3405**	0.008	2.4	ug/L	3	Standard
>	**Bi**	209	502274.9	0.4				ug/L	523984	Standard

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Na	23	1.7	173.2	**21.6273**	37.451	173.2	mg/L	0	Standard
Mg	24	11037.4	4.7	**16.0863**	0.689	4.3	mg/L	37	Standard
K	39	470.0	10.1	**1.0642**	0.126	11.9	mg/L	38	Standard
Ca	43	383.3	8.5	**24.9281**	2.309	9.3	mg/L	10	Standard
Fe	54	307.3	17.1	**0.1571**	0.051	32.4	mg/L	179	Standard
Fe	57	490.0	5.4	**0.8143**	0.108	13.3	mg/L	335	Standard
> **Sc-1**	45	53828.8	0.6				mg/L	61029	Standard
Cl	35	29673.0	1.2				ug/L	20195	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	4564.0	9.2				ug/L	1547	Standard
P	31	17653.6	5.5				ug/L	15286	Standard
S	34	1876.8	5.1				ug/L	1572	Standard
Sr	88	1206.7	6.6				ug/L	73	Standard
C	12	186.7	18.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	3	Standard
Dy	164	173.0	22.9				mg/L	6	Standard
Ho-1	165	111.7	20.2				mg/L	10	Standard
Er	166	76.7	30.1				mg/L	13	Standard
I	127	8810.9	16.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		127.313	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.958	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.939
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.857
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606098619
Sample Date/Time: Wednesday, June 29, 2016 13:54:36
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	96013.3	1.6				ug/L	74699	Standard
	Be	9	225.0	13.5	**0.2062**	0.024	11.6	ug/L	8	Standard
	Al	27	3833929.3	1.4	**20.2847**	0.231	1.1	ug/L	1493	Standard
	Sc	45	56757.9	4.8				ug/L	61029	Standard
	Ti	47	657.0	3.0	**1.6551**	0.023	1.4	ug/L	35	Standard
	V	51	6468.0	2.1	**0.6763**	0.022	3.3	ug/L	1435	Standard
	Cr	52	12143.2	0.5	**0.6446**	0.043	6.7	ug/L	7635	Standard
	Cr	53	1533.4	8.3	**1.3595**	0.147	10.8	ug/L	363	Standard
	Mn	55	41319.9	1.1	**5.8936**	0.094	1.6	ug/L	747	Standard
	Co	59	1041.4	1.4	**0.1233**	0.005	3.8	ug/L	234	Standard
	Ni	60	1381.7	2.6	**0.6272**	0.001	0.2	ug/L	215	Standard
	Cu	65	22006.0	2.1	**11.9309**	0.100	0.8	ug/L	104	Standard
	Zn	66	12936.5	1.8	**11.6003**	0.101	0.9	ug/L	363	Standard
>	**Ge**	72	486496.6	2.4				ug/L	495142	Standard
	As	75	1429.3	4.7	**1.3578**	0.030	2.2	ug/L	-50	Standard
	Se	82	368.2	2.0	**3.2780**	0.104	3.2	ug/L	14	Standard
	Se-1	77	166.3	2.4	**1.6971**	0.106	6.2	ug/L	42	Standard
>	**Ga**	71	256.7	8.8				mg/L	42	Standard
	Rb	85	6678.1	5.5				ug/L	17	Standard
	Y	89	411615.1	2.5				ug/L	417098	Standard
>	**Rh**	103	45.0	40.1				ug/L	13	Standard
	Mo	98	2416.6	3.5	**0.9418**	0.055	5.8	ug/L	11	Standard
	Ag	107	106.0	14.6	**0.0040**	0.002	49.0	ug/L	68	Standard
	Cd	111	306.3	1.8	**0.1451**	0.002	1.4	mg/L	2	Standard
	Cd	114	658.6	9.3	**0.1319**	0.011	8.6	ug/L	12	Standard
>	**In**	115	562685.3	3.0				ug/L	587441	Standard
	Sn	118	1296.7	5.8	**0.1370**	0.009	6.5	ug/L	497	Standard
	Sb	123	1866.5	3.1	**0.4132**	0.007	1.8	ug/L	78	Standard
	Ba	135	49124.5	1.8	**25.0474**	0.324	1.3	ug/L	24	Standard
	Ce	140	4487.3	4.7				ug/L	25	Standard
>	**Tb**	159	930596.3	3.6				ug/L	939701	Standard
	Ho	165	203.3	14.2				ug/L	10	Standard
	Tl	203	145.3	15.0	**0.0163**	0.002	14.2	ug/L	4	Standard
	Tl	205	131.7	4.4	**0.0191**	0.000	1.8	ug/L	2	Standard
	Pb	206	1800.8	1.2	**0.2755**	0.007	2.5	ug/L	240	Standard
	Pb	207	1451.7	2.6	**0.2445**	0.002	0.8	ug/L	198	Standard
	Pb	208	5832.1	0.4	**0.2459**	0.009	3.7	ug/L	883	Standard
	U	238	34205.2	1.0	**5.1077**	0.154	3.0	ug/L	3	Standard
>	**Bi**	209	509656.0	3.1				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	92209.8	1.7	**128.1856**	8.381	6.5	mg/L	37	Standard
K	39	298.3	3.5	**0.5957**	0.033	5.6	mg/L	38	Standard
Ca	43	80.0	6.3	**2.9252**	0.551	18.8	mg/L	10	Standard
Fe	54	254.0	14.7	**0.0930**	0.030	32.4	mg/L	179	Standard
Fe	57	333.3	5.3	**0.1453**	0.073	50.0	mg/L	335	Standard
> **Sc-1**	45	56757.9	4.8				mg/L	61029	Standard
Cl	35	31152.7	1.5				ug/L	20195	Standard
Kr	83	0.7	86.6				ug/L	4	Standard
Br	81	53109.7	4.4				ug/L	1547	Standard
P	31	17403.3	2.0				ug/L	15286	Standard
S	34	1883.5	7.3				ug/L	1572	Standard
Sr	88	213.3	3.6				ug/L	73	Standard
C	12	256.7	12.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	288.4	16.8				mg/L	6	Standard
Ho-1	165	203.3	14.2				mg/L	10	Standard
Er	166	173.3	23.3				mg/L	13	Standard
I	127	470221.1	5.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.534	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.254	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.786
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.265
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606098625
Sample Date/Time: Wednesday, June 29, 2016 13:57:48
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	102613.0	0.8				ug/L	74699	Standard
	Be	9	78.3	9.8	**0.0724**	0.006	8.8	ug/L	8	Standard
	Al	27	33905192.3	1.5	**167.9500**	3.413	2.0	ug/L	1493	Standard
	Sc	45	63494.4	0.7				ug/L	61029	Standard
	Ti	47	6149.2	2.1	**15.7581**	0.447	2.8	ug/L	35	Standard
	V	51	12969.6	1.6	**1.4837**	0.027	1.8	ug/L	1435	Standard
	Cr	52	17892.2	0.6	**1.3372**	0.031	2.3	ug/L	7635	Standard
	Cr	53	3548.7	0.7	**3.4248**	0.009	0.3	ug/L	363	Standard
	Mn	55	3105877.1	1.7	**436.1197**	10.576	2.4	ug/L	747	Standard
	Co	59	6022.9	2.6	**0.8547**	0.030	3.5	ug/L	234	Standard
	Ni	60	6318.7	1.1	**3.1764**	0.053	1.7	ug/L	215	Standard
	Cu	65	5119.5	1.0	**2.5860**	0.011	0.4	ug/L	104	Standard
	Zn	66	19836.6	0.9	**17.3044**	0.276	1.6	ug/L	363	Standard
>	Ge	72	506357.7	0.8				ug/L	495142	Standard
	As	75	1090.3	6.9	**1.0117**	0.071	7.0	ug/L	-50	Standard
	Se	82	334.6	3.6	**2.8439**	0.125	4.4	ug/L	14	Standard
	Se-1	77	270.0	7.0	**2.9935**	0.272	9.1	ug/L	42	Standard
>	Ga	71	1363.4	8.0				mg/L	42	Standard
	Rb	85	42725.2	0.9				ug/L	17	Standard
	Y	89	453938.8	1.4				ug/L	417098	Standard
>	Rh	103	198.3	19.1				ug/L	13	Standard
	Mo	98	1348.4	1.8	**0.4789**	0.005	1.1	ug/L	11	Standard
	Ag	107	259.3	4.5	**0.0252**	0.002	7.6	ug/L	68	Standard
	Cd	111	351.0	2.3	**0.1529**	0.002	1.6	mg/L	2	Standard
	Cd	114	808.7	5.9	**0.1490**	0.010	6.6	ug/L	12	Standard
>	In	115	613191.6	0.9				ug/L	587441	Standard
	Sn	118	795.0	1.9	**0.0357**	0.003	9.4	ug/L	497	Standard
	Sb	123	319.9	2.9	**0.0614**	0.002	3.0	ug/L	78	Standard
	Ba	135	112678.5	1.7	**52.7237**	0.702	1.3	ug/L	24	Standard
	Ce	140	37260.8	2.0				ug/L	25	Standard
>	Tb	159	1001354.7	0.4				ug/L	939701	Standard
	Ho	165	1051.7	3.8				ug/L	10	Standard
	Tl	203	322.7	6.7	**0.0353**	0.003	7.6	ug/L	4	Standard
	Tl	205	283.3	17.7	**0.0376**	0.006	16.6	ug/L	2	Standard
	Pb	206	8100.8	1.1	**1.3649**	0.025	1.8	ug/L	240	Standard
	Pb	207	6526.4	1.1	**1.2323**	0.027	2.2	ug/L	198	Standard
	Pb	208	27115.2	0.7	**1.2953**	0.018	1.4	ug/L	883	Standard
	U	238	26591.0	2.4	**3.6542**	0.116	3.2	ug/L	3	Standard
>	Bi	209	553363.8	1.0				ug/L	523984	Standard

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Na	23	5.0	100.0	**55.1859**	55.233	100.1	mg/L	0	Standard
Mg	24	8027.1	0.4	**9.8947**	0.087	0.9	mg/L	37	Standard
K	39	523.3	14.3	**0.9970**	0.152	15.2	mg/L	38	Standard
Ca	43	861.7	11.2	**49.8050**	6.018	12.1	mg/L	10	Standard
Fe	54	1108.4	4.4	**0.7648**	0.035	4.5	mg/L	179	Standard
Fe	57	975.0	10.7	**2.1112**	0.341	16.2	mg/L	335	Standard
> **Sc-1**	45	63494.4	0.7				mg/L	61029	Standard
Cl	35	33805.7	1.3				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	35418.0	3.4				ug/L	1547	Standard
P	31	20113.3	1.1				ug/L	15286	Standard
S	34	2053.5	4.6				ug/L	1572	Standard
Sr	88	896.7	5.2				ug/L	73	Standard
C	12	130.0	35.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	1595.5	8.0				mg/L	6	Standard
Ho-1	165	1051.7	3.8				mg/L	10	Standard
Er	166	1000.0	4.0				mg/L	13	Standard
I	127	43091.5	8.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		137.369	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.265	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.384
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.607
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606098625
Report Date/Time: Wednesday, June 29, 2016 14:00:05
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Method 6020 - Summary Report

Sample ID: L1606098627
Sample Date/Time: Wednesday, June 29, 2016 14:00:59
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	98891.7	1.0				ug/L	74699	Standard
	Be	9	638.3	5.3	**0.5552**	0.024	4.3	ug/L	8	Standard
	Al	27	63228292.3	2.4	**324.9422**	4.583	1.4	ug/L	1493	Standard
	Sc	45	59185.4	3.1				ug/L	61029	Standard
	Ti	47	12099.8	1.5	**31.9570**	0.495	1.6	ug/L	35	Standard
	V	51	31610.6	0.8	**4.0089**	0.089	2.2	ug/L	1435	Standard
	Cr	52	29501.7	2.0	**2.9745**	0.066	2.2	ug/L	7635	Standard
	Cr	53	4110.6	4.5	**4.1359**	0.142	3.4	ug/L	363	Standard
	Mn	55	939161.3	0.8	**135.3408**	0.783	0.6	ug/L	747	Standard
	Co	59	11927.7	1.5	**1.7769**	0.013	0.7	ug/L	234	Standard
	Ni	60	10174.7	1.2	**5.3344**	0.025	0.5	ug/L	215	Standard
	Cu	65	63138.6	0.6	**33.9717**	0.415	1.2	ug/L	104	Standard
	Zn	66	96624.1	0.5	**88.3979**	1.021	1.2	ug/L	363	Standard
>	**Ge**	72	492984.7	1.4				ug/L	495142	Standard
	As	75	1814.9	1.7	**1.6870**	0.014	0.9	ug/L	-50	Standard
	Se	82	95.5	0.5	**0.7363**	0.016	2.2	ug/L	14	Standard
	Se-1	77	118.3	17.1	**1.0027**	0.256	25.5	ug/L	42	Standard
>	**Ga**	71	3340.4	1.3				mg/L	42	Standard
	Rb	85	72434.4	1.9				ug/L	17	Standard
	Y	89	474043.5	0.9				ug/L	417098	Standard
>	**Rh**	103	386.7	16.4				ug/L	13	Standard
	Mo	98	2396.5	0.7	**0.9091**	0.018	1.9	ug/L	11	Standard
	Ag	107	338.3	4.7	**0.0399**	0.003	6.7	ug/L	68	Standard
	Cd	111	101.2	9.9	**0.0414**	0.005	12.6	mg/L	2	Standard
	Cd	114	230.2	21.2	**0.0435**	0.009	20.9	ug/L	12	Standard
>	**In**	115	577417.6	1.2				ug/L	587441	Standard
	Sn	118	1793.4	6.6	**0.2178**	0.023	10.5	ug/L	497	Standard
	Sb	123	600.3	4.8	**0.1267**	0.008	6.1	ug/L	78	Standard
	Ba	135	70114.5	1.5	**34.8357**	0.414	1.2	ug/L	24	Standard
	Ce	140	125576.7	1.8				ug/L	25	Standard
>	**Tb**	159	953741.7	1.0				ug/L	939701	Standard
	Ho	165	3755.5	3.8				ug/L	10	Standard
	Tl	203	452.7	12.3	**0.0539**	0.006	11.6	ug/L	4	Standard
	Tl	205	385.0	10.1	**0.0548**	0.005	9.0	ug/L	2	Standard
	Pb	206	12183.9	0.5	**2.2443**	0.020	0.9	ug/L	240	Standard
	Pb	207	9920.2	0.8	**2.0519**	0.018	0.9	ug/L	198	Standard
	Pb	208	42107.7	1.6	**2.2055**	0.026	1.2	ug/L	883	Standard
	U	238	36138.4	1.7	**5.3249**	0.032	0.6	ug/L	3	Standard
>	**Bi**	209	516181.2	1.2				ug/L	523984	Standard

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Na	23	8.3	91.7	**99.8498**	90.493	90.6	mg/L	0	Standard
Mg	24	9524.7	1.9	**12.6179**	0.315	2.5	mg/L	37	Standard
K	39	723.4	10.8	**1.5367**	0.198	12.9	mg/L	38	Standard
Ca	43	1308.4	8.3	**82.6186**	4.814	5.8	mg/L	10	Standard
Fe	54	3102.8	2.2	**2.5749**	0.034	1.3	mg/L	179	Standard
Fe	57	1665.1	3.0	**4.7616**	0.022	0.5	mg/L	335	Standard
> **Sc-1**	45	59185.4	3.1				mg/L	61029	Standard
Cl	35	38114.5	0.9				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	13185.7	5.6				ug/L	1547	Standard
P	31	20465.5	3.4				ug/L	15286	Standard
S	34	1960.1	7.7				ug/L	1572	Standard
Sr	88	1940.1	7.4				ug/L	73	Standard
C	12	216.7	23.7				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	3	Standard
Dy	164	5933.6	2.4				mg/L	6	Standard
Ho-1	165	3755.5	3.8				mg/L	10	Standard
Er	166	3430.4	0.6				mg/L	13	Standard
I	127	31850.1	1.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.387	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.564	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.294
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.511
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 14:04:12
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	95022.8	6.4				ug/L	74699	Standard
	Be	9	57413.6	2.5	**51.3575**	1.980	3.9	ug/L	8	Standard
	Al	27	7949888.2	1.3	**42.6051**	2.208	5.2	ug/L	1493	Standard
	Sc	45	58088.0	4.8				ug/L	61029	Standard
	Ti	47	37651.4	1.9	**100.2698**	3.249	3.2	ug/L	35	Standard
	V	51	404346.6	1.8	**53.8882**	0.844	1.6	ug/L	1435	Standard
	Cr	52	381698.1	1.1	**51.0223**	1.642	3.2	ug/L	7635	Standard
	Cr	53	47042.9	0.3	**51.1128**	1.842	3.6	ug/L	363	Standard
	Mn	55	357326.2	3.2	**51.6830**	0.417	0.8	ug/L	747	Standard
	Co	59	371699.6	2.5	**56.8155**	0.522	0.9	ug/L	234	Standard
	Ni	60	94541.7	1.4	**50.9011**	1.597	3.1	ug/L	215	Standard
	Cu	65	94983.8	1.5	**51.4773**	2.133	4.1	ug/L	104	Standard
	Zn	66	56900.0	0.7	**52.1829**	1.541	3.0	ug/L	363	Standard
>	Ge	72	490310.3	3.4				ug/L	495142	Standard
	As	75	57867.9	1.8	**52.2509**	0.921	1.8	ug/L	-50	Standard
	Se	82	5817.8	2.4	**53.4067**	0.847	1.6	ug/L	14	Standard
	Se-1	77	4012.5	1.4	**54.8814**	1.095	2.0	ug/L	42	Standard
>	Ga	71	80.0	6.3				mg/L	42	Standard
	Rb	85	831.7	8.5				ug/L	17	Standard
	Y	89	423000.5	2.4				ug/L	417098	Standard
>	Rh	103	26.7	57.3				ug/L	13	Standard
	Mo	98	279510.1	1.2	**103.0732**	1.481	1.4	ug/L	11	Standard
	Ag	107	337025.9	0.7	**50.8187**	0.653	1.3	ug/L	68	Standard
	Cd	111	104719.9	1.6	**49.2197**	0.492	1.0	mg/L	2	Standard
	Cd	114	254484.5	1.8	**48.7789**	1.357	2.8	ug/L	12	Standard
>	In	115	597695.8	1.6				ug/L	587441	Standard
	Sn	118	297589.5	3.3	**49.9660**	0.932	1.9	ug/L	497	Standard
	Sb	123	237800.4	0.6	**50.0611**	0.480	1.0	ug/L	78	Standard
	Ba	135	98785.4	1.3	**47.4247**	0.676	1.4	ug/L	24	Standard
	Ce	140	118.3	6.5				ug/L	25	Standard
>	Tb	159	962162.8	1.8				ug/L	939701	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	431721.7	1.4	**50.5906**	0.299	0.6	ug/L	4	Standard
	Tl	205	386667.7	1.8	**52.2055**	0.331	0.6	ug/L	2	Standard
	Pb	206	286495.7	0.6	**51.7458**	1.032	2.0	ug/L	240	Standard
	Pb	207	254256.8	1.2	**51.6830**	0.707	1.4	ug/L	198	Standard
	Pb	208	993731.8	1.4	**51.1193**	0.294	0.6	ug/L	883	Standard
	U	238	371822.3	1.0	**52.1805**	0.682	1.3	ug/L	3	Standard
>	Bi	209	542470.6	1.9				ug/L	523984	Standard

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Na	23	1.7	173.2	**20.6892**	35.826	173.2	mg/L	0	Standard
Mg	24	4115.6	5.8	**5.5148**	0.066	1.2	mg/L	37	Standard
K	39	1971.8	1.5	**4.4711**	0.214	4.8	mg/L	38	Standard
Ca	43	71.7	16.1	**2.2502**	0.891	39.6	mg/L	10	Standard
Fe	54	5897.1	1.5	**5.1229**	0.272	5.3	mg/L	179	Standard
Fe	57	1798.4	2.6	**5.3592**	0.387	7.2	mg/L	335	Standard
Sc-1	45	58088.0	4.8				mg/L	61029	Standard
Cl	35	26443.8	4.7				ug/L	20195	Standard
Kr	83	1.0	0.0				ug/L	4	Standard
Br	81	1943.5	9.9				ug/L	1547	Standard
P	31	18503.0	1.3				ug/L	15286	Standard
S	34	2213.5	3.2				ug/L	1572	Standard
Sr	88	76.7	10.0				ug/L	73	Standard
C	12	120.0	43.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	2.9	217.0				mg/L	6	Standard
Ho-1	165	8.3	34.6				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	3483.8	25.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.715		
Al	27	85.210		
Sc	45			
Ti	47	100.270		
V	51	107.776		
Cr	52	102.045		
Cr	53			
Mn	55	103.366		
Co	59	113.631		
Ni	60	101.802		
Cu	65	102.955		
Zn	66	104.366		
Ge	72		99.024	
As	75	104.502		
Se	82	106.813		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	103.073		
Ag	107	101.637		
Cd	111	98.439		
Cd	114			
In	115		101.746	
Sn	118	99.932		
Sb	123	100.122		
Ba	135	94.849		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.181		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.239		
U	238	104.361		
Bi	209		103.528	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	
QC Std 6	Co	59	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 14:07:23
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	87483.9	4.7				ug/L	74699	Standard
	Be	9	21.7	96.1	**0.0292**	0.021	73.0	ug/L	8	Standard
	Al	27	18230.8	94.8	**0.0950**	0.107	112.2	ug/L	1493	Standard
	Sc	45	56471.8	3.5				ug/L	61029	Standard
	Ti	47	36.0	46.7	**-0.0098**	0.050	510.8	ug/L	35	Standard
	V	51	1334.8	2.3	**-0.0125**	0.010	80.4	ug/L	1435	Standard
	Cr	52	6684.1	1.9	**-0.0897**	0.031	35.0	ug/L	7635	Standard
	Cr	53	393.3	6.4	**0.1115**	0.043	38.6	ug/L	363	Standard
	Mn	55	1346.4	57.0	**0.0546**	0.123	224.6	ug/L	747	Standard
	Co	59	278.3	17.3	**0.0065**	0.009	139.3	ug/L	234	Standard
	Ni	60	177.0	5.9	**-0.0261**	0.004	17.0	ug/L	215	Standard
	Cu	65	145.0	10.8	**-0.0230**	0.009	41.3	ug/L	104	Standard
	Zn	66	399.3	2.4	**-0.0757**	0.021	28.0	ug/L	363	Standard
>	**Ge**	72	478426.6	3.3				ug/L	495142	Standard
	As	75	-39.3	49.9	**0.0231**	0.019	81.6	ug/L	-50	Standard
	Se	82	16.5	11.7	**0.0181**	0.023	124.9	ug/L	14	Standard
	Se-1	77	38.7	26.9	**-0.0773**	0.131	170.1	ug/L	42	Standard
>	**Ga**	71	66.7	15.6				mg/L	42	Standard
	Rb	85	18.3	41.7				ug/L	17	Standard
	Y	89	416242.9	2.8				ug/L	417098	Standard
>	**Rh**	103	15.0	57.7				ug/L	13	Standard
	Mo	98	272.1	23.3	**0.0976**	0.024	24.4	ug/L	11	Standard
	Ag	107	106.0	6.8	**0.0036**	0.001	28.2	ug/L	68	Standard
	Cd	111	10.2	22.2	**-0.0030**	0.001	37.6	mg/L	2	Standard
	Cd	114	31.6	53.8	**0.0041**	0.003	80.7	ug/L	12	Standard
>	**In**	115	580179.3	0.7				ug/L	587441	Standard
	Sn	118	746.7	16.1	**0.0348**	0.022	62.5	ug/L	497	Standard
	Sb	123	368.4	24.4	**0.0758**	0.020	26.4	ug/L	78	Standard
	Ba	135	41.0	10.6	**0.0043**	0.002	51.4	ug/L	24	Standard
	Ce	140	38.3	61.6				ug/L	25	Standard
>	**Tb**	159	945404.9	0.5				ug/L	939701	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	65.7	8.7	**0.0061**	0.001	8.8	ug/L	4	Standard
	Tl	205	95.0	45.9	**0.0133**	0.006	45.0	ug/L	2	Standard
	Pb	206	276.0	7.9	**-0.0202**	0.003	15.8	ug/L	240	Standard
	Pb	207	258.0	12.6	**-0.0163**	0.006	36.3	ug/L	198	Standard
	Pb	208	1134.3	12.6	**-0.0143**	0.008	56.7	ug/L	883	Standard
	U	238	91.0	75.8	**0.0087**	0.010	115.9	ug/L	3	Standard
>	**Bi**	209	530301.2	1.8				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	46.7	81.1	**0.0007**	0.054	7923.6	mg/L	37	Standard
K	39	40.0	45.1	**-0.0194**	0.039	202.6	mg/L	38	Standard
Ca	43	28.3	20.4	**-0.5841**	0.427	73.1	mg/L	10	Standard
Fe	54	129.2	39.5	**-0.0191**	0.049	258.2	mg/L	179	Standard
Fe	57	241.7	27.6	**-0.1803**	0.270	149.7	mg/L	335	Standard
> **Sc-1**	45	56471.8	3.5				mg/L	61029	Standard
Cl	35	26027.0	1.3				ug/L	20195	Standard
Kr	83	3.0	57.7				ug/L	4	Standard
Br	81	1783.4	6.5				ug/L	1547	Standard
P	31	18152.5	2.7				ug/L	15286	Standard
S	34	2168.5	1.2				ug/L	1572	Standard
Sr	88	56.7	27.0				ug/L	73	Standard
C	12	93.3	24.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	6.5	86.7				mg/L	6	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	2606.9	21.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.624	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.764	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	101.206	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Wednesday, June 29, 2016 14:09:40
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Method 6020 - Summary Report

Sample ID: L1606098629
Sample Date/Time: Wednesday, June 29, 2016 14:10:36
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	98303.0	2.6				ug/L	74699	Standard
	Be	9	480.0	19.8	**0.4216**	0.078	18.5	ug/L	8	Standard
	Al	27	74581592.0	2.0	**385.7852**	11.899	3.1	ug/L	1493	Standard
	Sc	45	57877.0	1.4				ug/L	61029	Standard
	Ti	47	6572.4	2.9	**18.4374**	0.321	1.7	ug/L	35	Standard
	V	51	8784.7	0.2	**1.0487**	0.019	1.8	ug/L	1435	Standard
	Cr	52	16164.0	1.7	**1.3092**	0.018	1.4	ug/L	7635	Standard
	Cr	53	2105.1	0.9	**2.1070**	0.052	2.5	ug/L	363	Standard
	Mn	55	1145494.2	1.1	**175.8506**	2.171	1.2	ug/L	747	Standard
	Co	59	6198.3	3.2	**0.9668**	0.035	3.6	ug/L	234	Standard
	Ni	60	8328.3	2.3	**4.6339**	0.069	1.5	ug/L	215	Standard
	Cu	65	39558.9	1.3	**22.6316**	0.139	0.6	ug/L	104	Standard
	Zn	66	37507.0	2.0	**36.2726**	0.401	1.1	ug/L	363	Standard
>	**Ge**	72	462898.1	1.3				ug/L	495142	Standard
	As	75	729.1	4.9	**0.7559**	0.035	4.6	ug/L	-50	Standard
	Se	82	97.9	9.3	**0.8168**	0.100	12.2	ug/L	14	Standard
	Se-1	77	92.7	14.7	**0.7365**	0.213	29.0	ug/L	42	Standard
>	**Ga**	71	1238.4	2.6				mg/L	42	Standard
	Rb	85	36981.8	1.6				ug/L	17	Standard
	Y	89	423750.9	0.9				ug/L	417098	Standard
>	**Rh**	103	1170.0	7.1				ug/L	13	Standard
	Mo	98	1333.1	1.3	**0.5111**	0.005	0.9	ug/L	11	Standard
	Ag	107	159.7	2.8	**0.0124**	0.001	8.3	ug/L	68	Standard
	Cd	111	50.7	12.0	**0.0171**	0.003	15.0	mg/L	2	Standard
	Cd	114	154.3	14.1	**0.0289**	0.004	13.0	ug/L	12	Standard
>	**In**	115	568573.6	2.1				ug/L	587441	Standard
	Sn	118	2385.2	8.8	**0.3269**	0.032	9.8	ug/L	497	Standard
	Sb	123	701.5	2.0	**0.1511**	0.004	2.9	ug/L	78	Standard
	Ba	135	49620.1	0.4	**25.0380**	0.447	1.8	ug/L	24	Standard
	Ce	140	69524.2	1.7				ug/L	25	Standard
>	**Tb**	159	941672.2	2.5				ug/L	939701	Standard
	Ho	165	1511.7	2.5				ug/L	10	Standard
	Tl	203	215.3	8.2	**0.0254**	0.002	6.7	ug/L	4	Standard
	Tl	205	171.7	4.4	**0.0251**	0.001	2.6	ug/L	2	Standard
	Pb	206	5244.6	2.1	**0.9485**	0.002	0.2	ug/L	240	Standard
	Pb	207	4168.9	1.9	**0.8423**	0.008	0.9	ug/L	198	Standard
	Pb	208	17565.0	0.7	**0.8990**	0.013	1.4	ug/L	883	Standard
	U	238	17410.3	1.3	**2.6228**	0.019	0.7	ug/L	3	Standard
>	**Bi**	209	504494.7	1.9				ug/L	523984	Standard

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Na	23	13.3	78.1	**161.6266**	126.012	78.0	mg/L	0	Standard
Mg	24	27959.1	0.6	**37.9939**	0.282	0.7	mg/L	37	Standard
K	39	733.4	5.5	**1.5946**	0.079	5.0	mg/L	38	Standard
Ca	43	1693.4	2.8	**110.2950**	4.030	3.7	mg/L	10	Standard
Fe	54	1507.3	3.7	**1.2090**	0.035	2.9	mg/L	179	Standard
Fe	57	1286.7	5.0	**3.5362**	0.177	5.0	mg/L	335	Standard
> **Sc-1**	45	57877.0	1.4				mg/L	61029	Standard
Cl	35	39812.2	0.7				ug/L	20195	Standard
Kr	83	2.3	24.7				ug/L	4	Standard
Br	81	15855.0	0.8				ug/L	1547	Standard
P	31	19874.7	1.1				ug/L	15286	Standard
S	34	1861.8	8.3				ug/L	1572	Standard
Sr	88	5489.3	0.8				ug/L	73	Standard
C	12	143.3	29.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	2426.6	8.1				mg/L	6	Standard
Ho-1	165	1511.7	2.5				mg/L	10	Standard
Er	166	1466.7	15.1				mg/L	13	Standard
I	127	114010.2	6.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		131.599	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.488	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.788
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.280
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606098639
Sample Date/Time: Wednesday, June 29, 2016 14:13:47
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	95709.8	2.9				ug/L	74699	Standard
	Be	9	26.7	92.5	**0.0314**	0.022	70.9	ug/L	8	Standard
	Al	27	47777.1	19.3	**0.2396**	0.041	17.2	ug/L	1493	Standard
	Sc	45	57199.5	2.6				ug/L	61029	Standard
	Ti	47	140.3	60.7	**0.2633**	0.227	86.2	ug/L	35	Standard
	V	51	2113.6	5.5	**0.0856**	0.015	17.8	ug/L	1435	Standard
	Cr	52	11519.7	1.7	**0.5382**	0.024	4.4	ug/L	7635	Standard
	Cr	53	731.7	8.2	**0.4658**	0.068	14.5	ug/L	363	Standard
	Mn	55	10046.3	0.4	**1.3019**	0.003	0.2	ug/L	747	Standard
	Co	59	277.3	4.9	**0.0049**	0.002	38.1	ug/L	234	Standard
	Ni	60	403.7	2.5	**0.0928**	0.006	6.6	ug/L	215	Standard
	Cu	65	2594.2	1.0	**1.2969**	0.011	0.8	ug/L	104	Standard
	Zn	66	5488.0	1.5	**4.5940**	0.065	1.4	ug/L	363	Standard
>	**Ge**	72	492746.6	0.5				ug/L	495142	Standard
	As	75	-23.9	159.7	**0.0381**	0.034	90.0	ug/L	-50	Standard
	Se	82	16.9	42.3	**0.0162**	0.065	398.3	ug/L	14	Standard
	Se-1	77	44.7	15.2	**-0.0080**	0.091	1136.4	ug/L	42	Standard
>	**Ga**	71	35.0	24.7				mg/L	42	Standard
	Rb	85	228.3	6.7				ug/L	17	Standard
	Y	89	426313.2	2.4				ug/L	417098	Standard
>	**Rh**	103	20.0	66.1				ug/L	13	Standard
	Mo	98	146.2	8.6	**0.0487**	0.005	10.8	ug/L	11	Standard
	Ag	107	84.7	10.6	**-0.0000**	0.001	3427.7	ug/L	68	Standard
	Cd	111	14.4	26.2	**-0.0011**	0.002	163.5	mg/L	2	Standard
	Cd	114	36.0	7.5	**0.0048**	0.001	11.2	ug/L	12	Standard
>	**In**	115	592771.3	1.1				ug/L	587441	Standard
	Sn	118	1206.7	2.0	**0.1101**	0.007	6.0	ug/L	497	Standard
	Sb	123	2747.6	2.7	**0.5790**	0.016	2.8	ug/L	78	Standard
	Ba	135	327.7	1.8	**0.1426**	0.002	1.3	ug/L	24	Standard
	Ce	140	215.0	46.7				ug/L	25	Standard
>	**Tb**	159	942434.8	1.8				ug/L	939701	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	30.7	28.5	**0.0019**	0.001	54.2	ug/L	4	Standard
	Tl	205	31.7	59.8	**0.0045**	0.003	57.0	ug/L	2	Standard
	Pb	206	347.7	8.5	**-0.0077**	0.005	63.4	ug/L	240	Standard
	Pb	207	296.0	3.8	**-0.0091**	0.002	22.4	ug/L	198	Standard
	Pb	208	1207.0	5.0	**-0.0113**	0.003	23.3	ug/L	883	Standard
	U	238	16.7	21.1	**-0.0021**	0.000	23.4	ug/L	3	Standard
>	**Bi**	209	536687.4	0.8				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	78.3	9.8	**0.0427**	0.008	19.8	mg/L	37	Standard
K	39	33.3	56.8	**-0.0347**	0.047	136.1	mg/L	38	Standard
Ca	43	38.3	27.2	**0.0551**	0.672	1218.0	mg/L	10	Standard
Fe	54	152.5	13.6	**-0.0001**	0.021	24429.9	mg/L	179	Standard
Fe	57	270.0	10.3	**-0.0961**	0.083	86.0	mg/L	335	Standard
Sc-1	45	57199.5	2.6				mg/L	61029	Standard
Cl	35	30633.6	0.6				ug/L	20195	Standard
Kr	83	2.7	78.1				ug/L	4	Standard
Br	81	2093.5	12.2				ug/L	1547	Standard
P	31	17446.7	2.4				ug/L	15286	Standard
S	34	1971.8	2.9				ug/L	1572	Standard
Sr	88	48.3	26.0				ug/L	73	Standard
C	12	116.7	34.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	9.0	108.0				mg/L	6	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	4304.0	50.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		128.128	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.516	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.907
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.424
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606098641
Sample Date/Time: Wednesday, June 29, 2016 14:16:59
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	87267.4	3.2				ug/L	74699	Standard
	Be	9	11.7	49.5	**0.0189**	0.005	28.8	ug/L	8	Standard
	Al	27	605511.0	1.7	**3.5149**	0.083	2.4	ug/L	1493	Standard
	Sc	45	54390.8	2.9				ug/L	61029	Standard
	Ti	47	93.0	12.4	**0.1442**	0.032	22.4	ug/L	35	Standard
	V	51	1794.1	5.9	**0.0496**	0.015	30.2	ug/L	1435	Standard
	Cr	52	10365.2	1.5	**0.4195**	0.024	5.7	ug/L	7635	Standard
	Cr	53	613.3	8.2	**0.3551**	0.058	16.5	ug/L	363	Standard
	Mn	55	4513.0	1.6	**0.5208**	0.012	2.3	ug/L	747	Standard
	Co	59	310.3	5.3	**0.0112**	0.002	21.0	ug/L	234	Standard
	Ni	60	490.0	6.7	**0.1461**	0.017	11.6	ug/L	215	Standard
	Cu	65	1018.0	2.6	**0.4608**	0.017	3.7	ug/L	104	Standard
	Zn	66	3968.5	2.5	**3.2944**	0.091	2.8	ug/L	363	Standard
>	**Ge**	72	479837.7	0.4				ug/L	495142	Standard
	As	75	-18.8	39.3	**0.0423**	0.007	15.9	ug/L	-50	Standard
	Se	82	16.1	20.6	**0.0139**	0.032	229.1	ug/L	14	Standard
	Se-1	77	51.0	14.8	**0.0980**	0.104	105.7	ug/L	42	Standard
>	**Ga**	71	46.7	22.3				mg/L	42	Standard
	Rb	85	2146.8	6.0				ug/L	17	Standard
	Y	89	405082.7	1.5				ug/L	417098	Standard
>	**Rh**	103	10.0	86.6				ug/L	13	Standard
	Mo	98	183.9	8.1	**0.0672**	0.006	9.5	ug/L	11	Standard
	Ag	107	85.0	8.5	**0.0009**	0.001	123.2	ug/L	68	Standard
	Cd	111	58.3	9.8	**0.0215**	0.003	12.3	mg/L	2	Standard
	Cd	114	162.0	10.0	**0.0312**	0.003	9.6	ug/L	12	Standard
>	**In**	115	556306.9	1.6				ug/L	587441	Standard
	Sn	118	983.4	6.5	**0.0831**	0.013	16.0	ug/L	497	Standard
	Sb	123	290.8	14.6	**0.0617**	0.011	17.2	ug/L	78	Standard
	Ba	135	1301.4	2.0	**0.6554**	0.007	1.1	ug/L	24	Standard
	Ce	140	1251.7	2.7				ug/L	25	Standard
>	**Tb**	159	894371.7	2.0				ug/L	939701	Standard
	Ho	165	23.3	61.9				ug/L	10	Standard
	Tl	203	26.7	21.3	**0.0015**	0.001	46.3	ug/L	4	Standard
	Tl	205	18.3	68.6	**0.0028**	0.002	63.1	ug/L	2	Standard
	Pb	206	368.7	5.0	**-0.0008**	0.004	496.5	ug/L	240	Standard
	Pb	207	301.3	5.5	**-0.0052**	0.004	82.3	ug/L	198	Standard
	Pb	208	1198.4	1.5	**-0.0089**	0.002	20.6	ug/L	883	Standard
	U	238	7.7	32.8	**-0.0033**	0.000	11.3	ug/L	3	Standard
>	**Bi**	209	513924.4	1.5				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	638.3	13.6	**0.8624**	0.151	17.5	mg/L	37	Standard
K	39	86.7	3.3	**0.1010**	0.012	12.3	mg/L	38	Standard
Ca	43	31.7	48.2	**-0.2871**	1.074	374.0	mg/L	10	Standard
Fe	54	129.1	21.5	**-0.0150**	0.029	192.4	mg/L	179	Standard
Fe	57	250.0	12.2	**-0.1181**	0.141	119.7	mg/L	335	Standard
Sc-1	45	54390.8	2.9				mg/L	61029	Standard
Cl	35	28123.4	3.1				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	1706.8	4.2				ug/L	1547	Standard
P	31	17456.7	1.2				ug/L	15286	Standard
S	34	1960.1	4.3				ug/L	1572	Standard
Sr	88	86.7	3.3				ug/L	73	Standard
C	12	86.7	35.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	22.9	67.6				mg/L	6	Standard
Ho-1	165	23.3	61.9				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	6631.5	5.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		116.826	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.909	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.700
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.080
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606102602
Sample Date/Time: Wednesday, June 29, 2016 14:51:20
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	98959.1	4.1				ug/L	74699	Standard
	Be	9	893.4	7.1	**0.7730**	0.024	3.1	ug/L	8	Standard
	Al	27	86838575.1	3.0	**446.1622**	5.675	1.3	ug/L	1493	Standard
	Sc	45	59841.3	1.2				ug/L	61029	Standard
	Ti	47	724.7	2.7	**1.9675**	0.086	4.4	ug/L	35	Standard
	V	51	-99401.9	27.0	**-14.4927**	3.863	26.7	ug/L	1435	Standard
	Cr	52	14286817.6	0.7	**2092.1702**	38.595	1.8	ug/L	7635	Standard
	Cr	53	1819264.9	1.0	**2136.8631**	30.527	1.4	ug/L	363	Standard
	Mn	55	9369393.8	2.3	**1460.7209**	18.166	1.2	ug/L	747	Standard
	Co	59	953653.0	0.8	**156.7618**	2.325	1.5	ug/L	234	Standard
	Ni	60	10094931.6	0.5	**5854.0954**	89.919	1.5	ug/L	215	Standard
	Cu	65	555284.9	0.4	**323.8508**	6.370	2.0	ug/L	104	Standard
	Zn	66	64094.6	1.0	**63.2545**	1.058	1.7	ug/L	363	Standard
>	**Ge**	72	456115.5	1.9				ug/L	495142	Standard
	As	75	3627.2	1.9	**3.5767**	0.135	3.8	ug/L	-50	Standard
	Se	82	1754.2	3.0	**17.2111**	0.289	1.7	ug/L	14	Standard
	Se-1	77	3450.1	4.6	**50.7001**	3.400	6.7	ug/L	42	Standard
>	**Ga**	71	493.3	9.8				mg/L	42	Standard
	Rb	85	15579.7	1.3				ug/L	17	Standard
	Y	89	510259.3	1.5				ug/L	417098	Standard
>	**Rh**	103	536.7	10.8				ug/L	13	Standard
	Mo	98	52406.3	2.2	**22.0721**	0.200	0.9	ug/L	11	Standard
	Ag	107	797.7	2.2	**0.1246**	0.004	3.1	ug/L	68	Standard
	Cd	111	4820.0	1.8	**2.5808**	0.025	1.0	mg/L	2	Standard
	Cd	114	11654.3	2.8	**2.5494**	0.039	1.5	ug/L	12	Standard
>	**In**	115	523117.8	1.3				ug/L	587441	Standard
	Sn	118	2368.5	5.4	**0.3606**	0.023	6.4	ug/L	497	Standard
	Sb	123	2240.5	1.3	**0.5347**	0.001	0.2	ug/L	78	Standard
	Ba	135	135783.1	0.9	**74.4848**	0.361	0.5	ug/L	24	Standard
	Ce	140	104687.1	1.1				ug/L	25	Standard
>	**Tb**	159	898543.7	0.7				ug/L	939701	Standard
	Ho	165	6684.8	2.2				ug/L	10	Standard
	Tl	203	178.0	4.1	**0.0225**	0.001	5.6	ug/L	4	Standard
	Tl	205	203.3	37.2	**0.0321**	0.012	38.4	ug/L	2	Standard
	Pb	206	1304.4	5.0	**0.2026**	0.016	8.1	ug/L	240	Standard
	Pb	207	1055.7	2.5	**0.1793**	0.004	2.5	ug/L	198	Standard
	Pb	208	4341.2	2.0	**0.1854**	0.004	2.0	ug/L	883	Standard
	U	238	4585.0	0.8	**0.7423**	0.007	0.9	ug/L	3	Standard
>	**Bi**	209	467454.5	1.3				ug/L	523984	Standard

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Na	23	5.0	0.0	**58.7812**	0.729	1.2	mg/L	0	Standard
Mg	24	188890.8	2.9	**248.6881**	10.353	4.2	mg/L	37	Standard
K	39	2185.2	4.4	**4.8106**	0.175	3.6	mg/L	38	Standard
Ca	43	1135.0	6.5	**70.5642**	3.873	5.5	mg/L	10	Standard
Fe	54	9878.2	4.8	**8.4031**	0.399	4.8	mg/L	179	Standard
Fe	57	3267.0	5.5	**10.2558**	0.748	7.3	mg/L	335	Standard
> **Sc-1**	45	59841.3	1.2				mg/L	61029	Standard
Cl	35	28240.3	1.1				ug/L	20195	Standard
Kr	83	2.7	142.0				ug/L	4	Standard
Br	81	339155.5	2.6				ug/L	1547	Standard
P	31	29607.2	0.7				ug/L	15286	Standard
S	34	2378.5	1.9				ug/L	1572	Standard
Sr	88	1895.1	7.4				ug/L	73	Standard
C	12	120.0	28.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	86.7	35.3				mg/L	3	Standard
Dy	164	9299.8	2.7				mg/L	6	Standard
Ho-1	165	6684.8	2.2				mg/L	10	Standard
Er	166	6331.3	1.7				mg/L	13	Standard
I	127	153619.9	12.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.478	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.118	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	89.050
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	89.212
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
V 51 Lower	V	51	

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Cr 52 Upper, S, EEE	Cr	52
Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Co 59 Upper, S, EEE	Co	59
Ni 60 Upper, S, EEE	Ni	60
Cu 65 Upper, S, EEE	Cu	65

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Method 6020 - Summary Report

Sample ID: L1606102604
Sample Date/Time: Wednesday, June 29, 2016 14:54:31
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82386.8	1.6				ug/L	74699	Standard
	Be	9	41.7	50.0	**0.0505**	0.021	41.9	ug/L	8	Standard
	Al	27	6418180.7	1.0	**39.5946**	1.017	2.6	ug/L	1493	Standard
	Sc	45	68191.6	3.4				ug/L	61029	Standard
	Ti	47	2431.5	5.8	**6.2763**	0.263	4.2	ug/L	35	Standard
	V	51	8932.1	2.8	**0.9822**	0.034	3.4	ug/L	1435	Standard
	Cr	52	19971.2	5.8	**1.6585**	0.113	6.8	ug/L	7635	Standard
	Cr	53	16018.5	1.2	**16.9336**	0.479	2.8	ug/L	363	Standard
	Mn	55	134583.1	0.5	**19.1035**	0.326	1.7	ug/L	747	Standard
	Co	59	5374.0	2.6	**0.7730**	0.008	1.1	ug/L	234	Standard
	Ni	60	7430.2	8.6	**3.8249**	0.274	7.2	ug/L	215	Standard
	Cu	65	1488.1	5.9	**0.6921**	0.035	5.0	ug/L	104	Standard
	Zn	66	5451.0	0.8	**4.5156**	0.102	2.3	ug/L	363	Standard
>	**Ge**	72	497254.0	1.7				ug/L	495142	Standard
	As	75	427.8	16.4	**0.4399**	0.063	14.3	ug/L	-50	Standard
	Se	82	161.6	5.9	**1.3278**	0.065	4.9	ug/L	14	Standard
	Se-1	77	695.3	4.1	**8.8552**	0.225	2.5	ug/L	42	Standard
>	**Ga**	71	420.0	2.4				mg/L	42	Standard
	Rb	85	8292.3	2.6				ug/L	17	Standard
	Y	89	430205.9	2.4				ug/L	417098	Standard
>	**Rh**	103	40.0	12.5				ug/L	13	Standard
	Mo	98	177.9	8.2	**0.0624**	0.005	8.3	ug/L	11	Standard
	Ag	107	97.3	5.7	**0.0023**	0.001	38.0	ug/L	68	Standard
	Cd	111	330.0	5.3	**0.1533**	0.008	5.4	mg/L	2	Standard
	Cd	114	777.4	4.0	**0.1527**	0.007	4.3	ug/L	12	Standard
>	**In**	115	575297.3	2.0				ug/L	587441	Standard
	Sn	118	1836.8	3.5	**0.2263**	0.005	2.3	ug/L	497	Standard
	Sb	123	541.3	2.5	**0.1143**	0.005	4.2	ug/L	78	Standard
	Ba	135	259403.2	1.0	**129.4148**	1.250	1.0	ug/L	24	Standard
	Ce	140	48153.1	1.6				ug/L	25	Standard
>	**Tb**	159	953820.3	0.6				ug/L	939701	Standard
	Ho	165	763.4	3.9				ug/L	10	Standard
	Tl	203	147.7	11.5	**0.0162**	0.002	12.5	ug/L	4	Standard
	Tl	205	135.0	25.9	**0.0192**	0.005	26.2	ug/L	2	Standard
	Pb	206	2333.8	1.6	**0.3679**	0.004	1.0	ug/L	240	Standard
	Pb	207	1897.5	1.5	**0.3318**	0.006	1.8	ug/L	198	Standard
	Pb	208	7911.8	1.2	**0.3500**	0.006	1.7	ug/L	883	Standard
	U	238	272.0	3.5	**0.0353**	0.002	4.3	ug/L	3	Standard
>	**Bi**	209	521315.2	0.9				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	45454.8	3.6	**52.4459**	0.539	1.0	mg/L	37	Standard
K	39	88.3	3.3	**0.0609**	0.011	18.4	mg/L	38	Standard
Ca	43	100.0	8.7	**3.1440**	0.659	21.0	mg/L	10	Standard
Fe	54	556.2	7.6	**0.2841**	0.037	12.9	mg/L	179	Standard
Fe	57	410.0	16.9	**0.1734**	0.212	122.1	mg/L	335	Standard
> **Sc-1**	45	68191.6	3.4				mg/L	61029	Standard
Cl	35	26725.6	1.1				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	35244.3	3.6				ug/L	1547	Standard
P	31	35015.4	1.7				ug/L	15286	Standard
S	34	2091.8	5.9				ug/L	1572	Standard
Sr	88	225.0	20.0				ug/L	73	Standard
C	12	103.3	39.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	93.3	12.4				mg/L	3	Standard
Dy	164	1034.1	12.7				mg/L	6	Standard
Ho-1	165	763.4	3.9				mg/L	10	Standard
Er	166	680.0	15.4				mg/L	13	Standard
I	127	80476.5	1.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.292	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.426	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.933
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.491
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606102606
Sample Date/Time: Wednesday, June 29, 2016 14:57:42
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	93356.7	0.9				ug/L	74699	Standard
	Be	9	136.7	43.6	**0.1318**	0.054	40.9	ug/L	8	Standard
	Al	27	4727947.0	2.8	**25.7324**	0.870	3.4	ug/L	1493	Standard
	Sc	45	71265.6	1.4				ug/L	61029	Standard
	Ti	47	7167.7	1.1	**18.5395**	0.116	0.6	ug/L	35	Standard
	V	51	33631.6	0.4	**4.1963**	0.093	2.2	ug/L	1435	Standard
	Cr	52	43684.3	3.9	**4.7878**	0.170	3.6	ug/L	7635	Standard
	Cr	53	18915.1	0.4	**19.8540**	0.330	1.7	ug/L	363	Standard
	Mn	55	527300.2	1.1	**74.5358**	0.480	0.6	ug/L	747	Standard
	Co	59	47125.2	1.5	**6.9996**	0.016	0.2	ug/L	234	Standard
	Ni	60	57578.9	1.0	**30.2025**	0.274	0.9	ug/L	215	Standard
	Cu	65	3787.5	1.8	**1.9028**	0.007	0.4	ug/L	104	Standard
	Zn	66	29686.7	1.5	**26.3448**	0.262	1.0	ug/L	363	Standard
>	**Ge**	72	502153.4	1.7				ug/L	495142	Standard
	As	75	1552.5	5.8	**1.4257**	0.058	4.0	ug/L	-50	Standard
	Se	82	328.6	4.9	**2.8136**	0.101	3.6	ug/L	14	Standard
	Se-1	77	866.0	3.6	**11.0672**	0.235	2.1	ug/L	42	Standard
>	**Ga**	71	2006.8	3.5				mg/L	42	Standard
	Rb	85	28431.7	2.8				ug/L	17	Standard
	Y	89	467809.8	1.5				ug/L	417098	Standard
>	**Rh**	103	28.3	36.7				ug/L	13	Standard
	Mo	98	2788.7	2.4	**1.0189**	0.018	1.8	ug/L	11	Standard
	Ag	107	187.0	8.5	**0.0152**	0.002	14.7	ug/L	68	Standard
	Cd	111	184.5	8.6	**0.0785**	0.007	8.5	mg/L	2	Standard
	Cd	114	502.9	12.6	**0.0940**	0.013	13.9	ug/L	12	Standard
>	**In**	115	599816.0	1.2				ug/L	587441	Standard
	Sn	118	1385.1	2.5	**0.1375**	0.003	2.2	ug/L	497	Standard
	Sb	123	315.5	7.5	**0.0620**	0.005	7.5	ug/L	78	Standard
	Ba	135	37805.8	2.1	**18.0728**	0.162	0.9	ug/L	24	Standard
	Ce	140	83749.2	1.1				ug/L	25	Standard
>	**Tb**	159	971524.4	1.2				ug/L	939701	Standard
	Ho	165	1393.4	2.1				ug/L	10	Standard
	Tl	203	289.7	7.1	**0.0339**	0.002	6.5	ug/L	4	Standard
	Tl	205	258.3	11.0	**0.0368**	0.004	11.7	ug/L	2	Standard
	Pb	206	3853.2	1.2	**0.6604**	0.004	0.6	ug/L	240	Standard
	Pb	207	3010.0	1.5	**0.5732**	0.009	1.6	ug/L	198	Standard
	Pb	208	13337.3	2.3	**0.6473**	0.013	1.9	ug/L	883	Standard
	U	238	859.0	4.4	**0.1221**	0.005	4.0	ug/L	3	Standard
>	**Bi**	209	516635.2	0.9				ug/L	523984	Standard

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Na	23	1.7	173.2	**16.3563**	28.321	173.2	mg/L	0	Standard
Mg	24	103702.1	2.0	**114.5988**	3.552	3.1	mg/L	37	Standard
K	39	251.7	12.0	**0.3627**	0.062	17.2	mg/L	38	Standard
Ca	43	61.7	26.1	**0.8208**	0.922	112.4	mg/L	10	Standard
Fe	54	1412.4	2.3	**0.8871**	0.015	1.7	mg/L	179	Standard
Fe	57	645.0	2.8	**0.8030**	0.026	3.3	mg/L	335	Standard
Sc-1	45	71265.6	1.4				mg/L	61029	Standard
Cl	35	28407.3	0.4				ug/L	20195	Standard
Kr	83	1.7	34.6				ug/L	4	Standard
Br	81	49253.3	3.6				ug/L	1547	Standard
P	31	41409.9	2.5				ug/L	15286	Standard
S	34	2068.5	4.4				ug/L	1572	Standard
Sr	88	155.0	22.6				ug/L	73	Standard
C	12	133.3	34.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	57.3				mg/L	3	Standard
Dy	164	2353.9	2.8				mg/L	6	Standard
Ho-1	165	1393.4	2.1				mg/L	10	Standard
Er	166	1453.4	9.2				mg/L	13	Standard
I	127	3067238.7	11.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		124.978	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.416	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.107
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.597
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606102607
Sample Date/Time: Wednesday, June 29, 2016 15:00:54
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86025.2	1.8				ug/L	74699	Standard
	Be	9	83.3	29.6	**0.0901**	0.026	28.3	ug/L	8	Standard
	Al	27	3430436.9	1.2	**20.2582**	0.272	1.3	ug/L	1493	Standard
	Sc	45	67818.2	2.7				ug/L	61029	Standard
	Ti	47	2650.2	2.1	**6.1960**	0.095	1.5	ug/L	35	Standard
	V	51	9706.1	1.4	**0.9634**	0.025	2.6	ug/L	1435	Standard
	Cr	52	14237.0	2.0	**0.7086**	0.035	4.9	ug/L	7635	Standard
	Cr	53	2521.9	11.8	**2.1295**	0.275	12.9	ug/L	363	Standard
	Mn	55	50752.2	3.1	**6.4246**	0.167	2.6	ug/L	747	Standard
	Co	59	8541.7	4.1	**1.1290**	0.040	3.6	ug/L	234	Standard
	Ni	60	2905.6	5.8	**1.2753**	0.074	5.8	ug/L	215	Standard
	Cu	65	1384.7	3.1	**0.5672**	0.017	3.0	ug/L	104	Standard
	Zn	66	5145.2	1.6	**3.7928**	0.039	1.0	ug/L	363	Standard
>	**Ge**	72	549096.7	0.7				ug/L	495142	Standard
	As	75	307.3	24.2	**0.3069**	0.059	19.1	ug/L	-50	Standard
	Se	82	131.2	8.7	**0.9395**	0.088	9.3	ug/L	14	Standard
	Se-1	77	177.7	11.5	**1.5705**	0.241	15.4	ug/L	42	Standard
>	**Ga**	71	765.0	18.4				mg/L	42	Standard
	Rb	85	11574.4	1.2				ug/L	17	Standard
	Y	89	476523.2	1.2				ug/L	417098	Standard
>	**Rh**	103	40.0	54.5				ug/L	13	Standard
	Mo	98	552.0	3.2	**0.1876**	0.008	4.1	ug/L	11	Standard
	Ag	107	103.3	5.6	**0.0019**	0.001	51.8	ug/L	68	Standard
	Cd	111	131.7	9.5	**0.0509**	0.006	12.0	mg/L	2	Standard
	Cd	114	303.7	9.9	**0.0531**	0.005	10.1	ug/L	12	Standard
>	**In**	115	629575.3	1.6				ug/L	587441	Standard
	Sn	118	1851.8	1.5	**0.2011**	0.002	0.9	ug/L	497	Standard
	Sb	123	475.2	2.5	**0.0908**	0.004	4.2	ug/L	78	Standard
	Ba	135	119108.2	2.3	**54.2912**	1.481	2.7	ug/L	24	Standard
	Ce	140	65755.7	1.8				ug/L	25	Standard
>	**Tb**	159	1004571.7	2.5				ug/L	939701	Standard
	Ho	165	1471.7	8.7				ug/L	10	Standard
	Tl	203	123.3	5.2	**0.0121**	0.001	4.7	ug/L	4	Standard
	Tl	205	98.3	10.6	**0.0129**	0.002	11.8	ug/L	2	Standard
	Pb	206	2854.9	1.5	**0.4229**	0.014	3.4	ug/L	240	Standard
	Pb	207	2325.8	2.5	**0.3831**	0.018	4.6	ug/L	198	Standard
	Pb	208	9906.6	0.9	**0.4144**	0.011	2.7	ug/L	883	Standard
	U	238	660.3	1.2	**0.0843**	0.002	2.3	ug/L	3	Standard
>	**Bi**	209	566874.3	1.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	9059.4	5.1	**10.4668**	0.674	6.4	mg/L	37	Standard
K	39	175.0	7.6	**0.2337**	0.017	7.4	mg/L	38	Standard
Ca	43	76.7	10.0	**1.8315**	0.359	19.6	mg/L	10	Standard
Fe	54	778.8	6.8	**0.4564**	0.046	10.1	mg/L	179	Standard
Fe	57	450.0	7.8	**0.3039**	0.129	42.4	mg/L	335	Standard
> **Sc-1**	45	67818.2	2.7				mg/L	61029	Standard
Cl	35	27265.2	1.0				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	4797.4	2.1				ug/L	1547	Standard
P	31	22328.1	2.9				ug/L	15286	Standard
S	34	1868.4	11.0				ug/L	1572	Standard
Sr	88	170.0	23.0				ug/L	73	Standard
C	12	116.7	4.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	2276.8	3.2				mg/L	6	Standard
Ho-1	165	1471.7	8.7				mg/L	10	Standard
Er	166	1323.4	4.9				mg/L	13	Standard
I	127	142556.3	31.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.163	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.897	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.172
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.185
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 15:04:07
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83434.4	4.1				ug/L	74699	Standard
	Be	9	52151.3	1.6	**53.0799**	1.438	2.7	ug/L	8	Standard
	Al	27	8001829.5	1.2	**48.7762**	1.563	3.2	ug/L	1493	Standard
	Sc	45	63472.7	2.1				ug/L	61029	Standard
	Ti	47	41544.5	0.5	**100.8598**	1.507	1.5	ug/L	35	Standard
	V	51	430823.0	0.6	**52.3478**	0.567	1.1	ug/L	1435	Standard
	Cr	52	414183.8	1.0	**50.4520**	0.020	0.0	ug/L	7635	Standard
	Cr	53	51435.5	2.1	**50.9262**	0.597	1.2	ug/L	363	Standard
	Mn	55	402509.0	2.2	**53.1108**	1.647	3.1	ug/L	747	Standard
	Co	59	395807.1	0.7	**55.1753**	0.902	1.6	ug/L	234	Standard
	Ni	60	102515.7	1.1	**50.3079**	0.215	0.4	ug/L	215	Standard
	Cu	65	102297.5	1.1	**50.5232**	0.685	1.4	ug/L	104	Standard
	Zn	66	61288.7	1.4	**51.2272**	0.860	1.7	ug/L	363	Standard
>	Ge	72	537577.7	1.0				ug/L	495142	Standard
	As	75	61234.0	0.5	**50.4168**	0.738	1.5	ug/L	-50	Standard
	Se	82	6132.0	1.1	**51.3300**	1.089	2.1	ug/L	14	Standard
	Se-1	77	4299.6	0.9	**53.6055**	0.977	1.8	ug/L	42	Standard
>	Ga	71	78.3	42.5				mg/L	42	Standard
	Rb	85	866.7	7.4				ug/L	17	Standard
	Y	89	460058.1	1.7				ug/L	417098	Standard
>	Rh	103	33.3	31.2				ug/L	13	Standard
	Mo	98	295506.5	0.5	**103.9241**	2.114	2.0	ug/L	11	Standard
	Ag	107	348188.0	0.5	**50.0657**	0.748	1.5	ug/L	68	Standard
	Cd	111	111062.0	1.3	**49.7777**	0.346	0.7	mg/L	2	Standard
	Cd	114	271614.5	0.9	**49.6432**	0.990	2.0	ug/L	12	Standard
>	In	115	626816.0	1.9				ug/L	587441	Standard
	Sn	118	313548.1	1.3	**50.2246**	1.384	2.8	ug/L	497	Standard
	Sb	123	246409.0	0.1	**49.4692**	0.867	1.8	ug/L	78	Standard
	Ba	135	105775.6	0.8	**48.4328**	1.255	2.6	ug/L	24	Standard
	Ce	140	66.7	48.8				ug/L	25	Standard
>	Tb	159	996778.4	1.8				ug/L	939701	Standard
	Ho	165	16.7	34.6				ug/L	10	Standard
	Tl	203	442598.6	0.7	**50.9461**	0.764	1.5	ug/L	4	Standard
	Tl	205	402531.2	1.7	**53.3816**	0.705	1.3	ug/L	2	Standard
	Pb	206	287928.0	0.2	**51.0713**	0.393	0.8	ug/L	240	Standard
	Pb	207	257921.1	0.2	**51.4941**	0.566	1.1	ug/L	198	Standard
	Pb	208	1040092.9	0.4	**52.5571**	0.545	1.0	ug/L	883	Standard
	U	238	381264.5	1.2	**52.5495**	0.479	0.9	ug/L	3	Standard
>	Bi	209	552262.9	0.9				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4305.6	5.5	**5.2771**	0.213	4.0	mg/L	37	Standard
K	39	2275.2	2.4	**4.7239**	0.217	4.6	mg/L	38	Standard
Ca	43	126.7	42.6	**5.1579**	3.228	62.6	mg/L	10	Standard
Fe	54	6415.2	4.5	**5.0956**	0.328	6.4	mg/L	179	Standard
Fe	57	1851.8	4.1	**4.9827**	0.373	7.5	mg/L	335	Standard
> **Sc-1**	45	63472.7	2.1				mg/L	61029	Standard
Cl	35	28119.4	1.3				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	2310.2	13.5				ug/L	1547	Standard
P	31	19991.5	1.1				ug/L	15286	Standard
S	34	2273.5	5.1				ug/L	1572	Standard
Sr	88	71.7	10.7				ug/L	73	Standard
C	12	66.7	8.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	8.6	116.8				mg/L	6	Standard
Ho-1	165	16.7	34.6				mg/L	10	Standard
Er	166	30.0	0.0				mg/L	13	Standard
I	127	25116.6	23.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	106.160		
Al	27	97.552		
Sc	45			
Ti	47	100.860		
V	51	104.696		
Cr	52	100.904		
Cr	53			
Mn	55	106.222		
Co	59	110.351		
Ni	60	100.616		
Cu	65	101.046		
Zn	66	102.454		
> Ge	72		108.570	
As	75	100.834		
Se	82	102.660		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	103.924		
Ag	107	100.131		
Cd	111	99.555		
Cd	114			
In	115			106.703
Sn	118	100.449		
Sb	123	98.938		
Ba	135	96.866		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.892		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.114		
U	238	105.099		
Bi	209			105.397
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Co	59	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 15:07:18
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85012.9	2.0				ug/L	74699	Standard
	Be	9	28.3	27.0	**0.0359**	0.008	21.1	ug/L	8	Standard
	Al	27	3885.6	39.7	**0.0100**	0.010	97.9	ug/L	1493	Standard
	Sc	45	66216.1	1.0				ug/L	61029	Standard
	Ti	47	42.3	11.2	**-0.0066**	0.011	167.9	ug/L	35	Standard
	V	51	1610.8	4.5	**0.0001**	0.010	18188.0	ug/L	1435	Standard
	Cr	52	7733.0	4.2	**-0.0667**	0.042	62.7	ug/L	7635	Standard
	Cr	53	656.7	7.6	**0.3218**	0.049	15.4	ug/L	363	Standard
	Mn	55	934.4	2.8	**-0.0250**	0.004	15.9	ug/L	747	Standard
	Co	59	270.3	16.3	**0.0003**	0.006	2278.1	ug/L	234	Standard
	Ni	60	353.0	46.0	**0.0492**	0.080	162.9	ug/L	215	Standard
	Cu	65	160.7	5.6	**-0.0245**	0.004	18.2	ug/L	104	Standard
	Zn	66	427.3	1.4	**-0.0957**	0.006	6.2	ug/L	363	Standard
>	**Ge**	72	539852.0	0.5				ug/L	495142	Standard
	As	75	-35.2	72.3	**0.0308**	0.021	67.1	ug/L	-50	Standard
	Se	82	23.4	13.4	**0.0577**	0.027	47.1	ug/L	14	Standard
	Se-1	77	65.0	15.6	**0.1944**	0.131	67.4	ug/L	42	Standard
>	**Ga**	71	48.3	15.8				mg/L	42	Standard
	Rb	85	13.3	21.7				ug/L	17	Standard
	Y	89	460334.1	1.4				ug/L	417098	Standard
>	**Rh**	103	15.0	57.7				ug/L	13	Standard
	Mo	98	325.6	30.7	**0.1063**	0.035	33.0	ug/L	11	Standard
	Ag	107	121.0	14.9	**0.0041**	0.003	62.9	ug/L	68	Standard
	Cd	111	13.2	31.2	**-0.0021**	0.002	85.0	mg/L	2	Standard
	Cd	114	51.9	43.2	**0.0072**	0.004	56.5	ug/L	12	Standard
>	**In**	115	641477.2	0.6				ug/L	587441	Standard
	Sn	118	860.0	23.5	**0.0400**	0.031	77.0	ug/L	497	Standard
	Sb	123	396.3	20.9	**0.0735**	0.016	21.4	ug/L	78	Standard
	Ba	135	45.3	20.4	**0.0043**	0.004	99.1	ug/L	24	Standard
	Ce	140	36.7	15.7				ug/L	25	Standard
>	**Tb**	159	1015779.3	0.6				ug/L	939701	Standard
	Ho	165	5.0	100.0				ug/L	10	Standard
	Tl	203	76.0	35.5	**0.0066**	0.003	43.8	ug/L	4	Standard
	Tl	205	63.3	18.2	**0.0082**	0.001	17.5	ug/L	2	Standard
	Pb	206	309.7	4.7	**-0.0185**	0.002	12.2	ug/L	240	Standard
	Pb	207	263.0	6.6	**-0.0197**	0.003	14.7	ug/L	198	Standard
	Pb	208	1081.0	8.8	**-0.0217**	0.004	19.1	ug/L	883	Standard
	U	238	55.3	39.0	**0.0029**	0.003	97.3	ug/L	3	Standard
>	**Bi**	209	576716.4	0.8				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.8612**	30.928	173.2	mg/L	0	Standard
Mg	24	48.3	39.2	**-0.0075**	0.023	309.1	mg/L	37	Standard
K	39	65.0	38.5	**0.0181**	0.050	275.9	mg/L	38	Standard
Ca	43	31.7	9.1	**-0.6795**	0.172	25.4	mg/L	10	Standard
Fe	54	165.7	15.0	**-0.0089**	0.019	210.6	mg/L	179	Standard
Fe	57	258.3	12.9	**-0.2654**	0.099	37.5	mg/L	335	Standard
Sc-1	45	66216.1	1.0				mg/L	61029	Standard
Cl	35	27856.9	0.3				ug/L	20195	Standard
Kr	83	4.0	43.3				ug/L	4	Standard
Br	81	1983.5	3.1				ug/L	1547	Standard
P	31	20308.6	3.1				ug/L	15286	Standard
S	34	2271.8	3.7				ug/L	1572	Standard
Sr	88	51.7	22.3				ug/L	73	Standard
C	12	73.3	34.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	20.0	86.6				mg/L	6	Standard
Ho-1	165	5.0	100.0				mg/L	10	Standard
Er	166	0.0					mg/L	13	Standard
I	127	13137.4	11.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		109.030	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.199
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.064
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Wednesday, June 29, 2016 15:09:35
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Method 6020 - Summary Report

Sample ID: PBS M5 WG573099-02
Sample Date/Time: Wednesday, June 29, 2016 15:10:32
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82837.5	1.4				ug/L	74699	Standard
	Be	9	20.0	75.0	**0.0280**	0.015	53.9	ug/L	8	Standard
	Al	27	15988.5	12.5	**0.0848**	0.014	16.0	ug/L	1493	Standard
	Sc	45	64671.1	2.4				ug/L	61029	Standard
	Ti	47	45.0	20.0	**-0.0015**	0.023	1562.0	ug/L	35	Standard
	V	51	1647.0	1.8	**0.0017**	0.004	236.7	ug/L	1435	Standard
	Cr	52	11218.5	4.3	**0.3456**	0.052	15.0	ug/L	7635	Standard
	Cr	53	1063.4	5.0	**0.7116**	0.068	9.6	ug/L	363	Standard
	Mn	55	1756.1	5.1	**0.0801**	0.011	14.2	ug/L	747	Standard
	Co	59	312.3	6.3	**0.0055**	0.003	48.1	ug/L	234	Standard
	Ni	60	1377.4	15.3	**0.5415**	0.099	18.4	ug/L	215	Standard
	Cu	65	261.7	8.1	**0.0235**	0.011	45.2	ug/L	104	Standard
	Zn	66	1613.1	3.7	**0.8814**	0.040	4.6	ug/L	363	Standard
>	**Ge**	72	547319.5	1.5				ug/L	495142	Standard
	As	75	-42.5	100.6	**0.0255**	0.034	133.0	ug/L	-50	Standard
	Se	82	18.0	18.7	**0.0100**	0.027	272.2	ug/L	14	Standard
	Se-1	77	65.0	16.6	**0.1841**	0.145	78.6	ug/L	42	Standard
>	**Ga**	71	66.7	22.9				mg/L	42	Standard
	Rb	85	36.7	56.8				ug/L	17	Standard
	Y	89	450480.7	0.9				ug/L	417098	Standard
>	**Rh**	103	26.7	10.8				ug/L	13	Standard
	Mo	98	139.4	1.7	**0.0435**	0.001	2.2	ug/L	11	Standard
	Ag	107	102.7	18.1	**0.0019**	0.003	140.0	ug/L	68	Standard
	Cd	111	13.1	71.9	**-0.0020**	0.004	209.6	mg/L	2	Standard
	Cd	114	24.5	136.0	**0.0024**	0.006	256.9	ug/L	12	Standard
>	**In**	115	624818.4	0.5				ug/L	587441	Standard
	Sn	118	765.0	2.8	**0.0284**	0.003	12.0	ug/L	497	Standard
	Sb	123	189.1	20.4	**0.0339**	0.008	23.4	ug/L	78	Standard
	Ba	135	83.0	7.9	**0.0221**	0.003	14.0	ug/L	24	Standard
	Ce	140	301.7	18.8				ug/L	25	Standard
>	**Tb**	159	992078.8	0.6				ug/L	939701	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	40.0	57.5	**0.0027**	0.003	94.2	ug/L	4	Standard
	Tl	205	43.3	29.0	**0.0058**	0.002	28.5	ug/L	2	Standard
	Pb	206	319.7	11.1	**-0.0160**	0.006	36.6	ug/L	240	Standard
	Pb	207	262.0	4.6	**-0.0191**	0.002	12.7	ug/L	198	Standard
	Pb	208	1094.7	2.8	**-0.0202**	0.002	8.1	ug/L	883	Standard
	U	238	22.0	58.0	**-0.0015**	0.002	114.9	ug/L	3	Standard
>	**Bi**	209	568214.1	0.6				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	43.3	17.6	**-0.0124**	0.008	67.7	mg/L	37	Standard
K	39	35.0	51.5	**-0.0416**	0.036	86.5	mg/L	38	Standard
Ca	43	30.0	28.9	**-0.7286**	0.543	74.5	mg/L	10	Standard
Fe	54	174.1	18.8	**0.0014**	0.029	2030.6	mg/L	179	Standard
Fe	57	266.7	22.0	**-0.2161**	0.204	94.4	mg/L	335	Standard
> **Sc-1**	45	64671.1	2.4				mg/L	61029	Standard
Cl	35	28617.0	1.0				ug/L	20195	Standard
Kr	83	2.0	100.0				ug/L	4	Standard
Br	81	1953.5	6.4				ug/L	1547	Standard
P	31	19132.1	3.4				ug/L	15286	Standard
S	34	2278.5	6.0				ug/L	1572	Standard
Sr	88	68.3	29.6				ug/L	73	Standard
C	12	83.3	13.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	15.5	39.0				mg/L	6	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	23.3	49.5				mg/L	13	Standard
I	127	8569.1	14.4				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		110.895	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		110.538	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.363
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.441
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSS M5 WG573099-03
Sample Date/Time: Wednesday, June 29, 2016 15:13:43
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83551.5	2.3				ug/L	74699	Standard
	Be	9	25751.9	2.9	**26.1593**	0.514	2.0	ug/L	8	Standard
	Al	27	17496.8	6.9	**0.0930**	0.006	6.2	ug/L	1493	Standard
	Sc	45	66115.6	1.8				ug/L	61029	Standard
	Ti	47	52.7	14.3	**0.0175**	0.016	92.6	ug/L	35	Standard
	V	51	220707.2	1.1	**26.4464**	0.390	1.5	ug/L	1435	Standard
	Cr	52	221818.0	0.7	**26.2660**	0.546	2.1	ug/L	7635	Standard
	Cr	53	27359.7	0.9	**26.6591**	0.406	1.5	ug/L	363	Standard
	Mn	55	204818.9	1.5	**26.6717**	0.451	1.7	ug/L	747	Standard
	Co	59	196776.0	1.4	**27.1279**	0.304	1.1	ug/L	234	Standard
	Ni	60	55651.4	0.4	**26.9765**	0.492	1.8	ug/L	215	Standard
	Cu	65	54836.4	0.8	**26.7594**	0.556	2.1	ug/L	104	Standard
	Zn	66	32934.1	1.1	**27.0387**	0.809	3.0	ug/L	363	Standard
>	**Ge**	72	543210.6	2.2				ug/L	495142	Standard
	As	75	31720.5	1.5	**25.8765**	0.351	1.4	ug/L	-50	Standard
	Se	82	3103.9	1.9	**25.6428**	0.383	1.5	ug/L	14	Standard
	Se-1	77	2231.2	2.7	**27.2211**	0.278	1.0	ug/L	42	Standard
>	**Ga**	71	55.0	47.2				mg/L	42	Standard
	Rb	85	35.0	42.9				ug/L	17	Standard
	Y	89	467716.3	0.8				ug/L	417098	Standard
>	**Rh**	103	13.3	43.3				ug/L	13	Standard
	Mo	98	194.8	10.9	**0.0603**	0.008	12.8	ug/L	11	Standard
	Ag	107	10349.2	1.8	**1.4201**	0.038	2.7	ug/L	68	Standard
	Cd	111	56717.0	1.5	**24.4699**	0.504	2.1	mg/L	2	Standard
	Cd	114	136634.8	1.7	**24.0382**	0.506	2.1	ug/L	12	Standard
>	**In**	115	651063.9	0.8				ug/L	587441	Standard
	Sn	118	761.7	5.5	**0.0229**	0.007	28.6	ug/L	497	Standard
	Sb	123	128047.0	1.0	**24.7441**	0.436	1.8	ug/L	78	Standard
	Ba	135	54350.3	0.9	**23.9455**	0.395	1.6	ug/L	24	Standard
	Ce	140	61.7	26.1				ug/L	25	Standard
>	**Tb**	159	1033159.0	0.5				ug/L	939701	Standard
	Ho	165	16.7	17.3				ug/L	10	Standard
	Tl	203	227266.1	0.5	**24.7175**	0.218	0.9	ug/L	4	Standard
	Tl	205	203485.9	1.6	**25.5015**	0.511	2.0	ug/L	2	Standard
	Pb	206	152382.5	0.6	**25.5050**	0.255	1.0	ug/L	240	Standard
	Pb	207	130131.8	0.7	**24.5130**	0.243	1.0	ug/L	198	Standard
	Pb	208	530327.1	0.9	**25.2835**	0.262	1.0	ug/L	883	Standard
	U	238	189200.1	1.2	**24.6397**	0.334	1.4	ug/L	3	Standard
>	**Bi**	209	584433.1	0.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	41.7	36.7	**-0.0156**	0.017	112.1	mg/L	37	Standard
K	39	38.3	52.7	**-0.0354**	0.042	119.1	mg/L	38	Standard
Ca	43	25.0	52.9	**-1.0705**	0.758	70.8	mg/L	10	Standard
Fe	54	141.4	21.3	**-0.0274**	0.025	92.5	mg/L	179	Standard
Fe	57	241.7	15.7	**-0.3151**	0.126	40.1	mg/L	335	Standard
Sc-1	45	66115.6	1.8				mg/L	61029	Standard
Cl	35	28385.2	0.6				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	2056.8	1.5				ug/L	1547	Standard
P	31	18911.8	2.1				ug/L	15286	Standard
S	34	2256.8	4.9				ug/L	1572	Standard
Sr	88	70.0	39.8				ug/L	73	Standard
C	12	60.0	66.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	9.5	5.0				mg/L	6	Standard
Ho-1	165	16.7	17.3				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	6019.5	14.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		111.851	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		109.708	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.831
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		111.536
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606088803 WG573099-01
Sample Date/Time: Wednesday, June 29, 2016 15:16:55
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	87864.2	2.8				ug/L	74699	Standard
	Be	9	1871.8	7.3	**1.8142**	0.100	5.5	ug/L	8	Standard
	Al	27	17464438.5	2.2	**101.0382**	1.686	1.7	ug/L	1493	Standard
	Sc	45	88916.8	1.0				ug/L	61029	Standard
	Ti	47	8105.2	1.6	**20.2503**	0.364	1.8	ug/L	35	Standard
	V	51	266665.9	0.8	**33.4185**	0.188	0.6	ug/L	1435	Standard
	Cr	52	308197.4	0.8	**38.5684**	0.415	1.1	ug/L	7635	Standard
	Cr	53	37658.4	2.2	**38.4602**	0.742	1.9	ug/L	363	Standard
	Mn	55	19789542.3	0.8	**2705.9402**	31.717	1.2	ug/L	747	Standard
	Co	59	276278.5	0.6	**39.7944**	0.401	1.0	ug/L	234	Standard
	Ni	60	160372.4	1.4	**81.4241**	1.275	1.6	ug/L	215	Standard
	Cu	65	107769.0	1.4	**55.0229**	0.902	1.6	ug/L	104	Standard
	Zn	66	213527.8	0.7	**185.6475**	1.406	0.8	ug/L	363	Standard
>	**Ge**	72	520092.2	0.4				ug/L	495142	Standard
	As	75	6170.4	1.0	**5.3042**	0.070	1.3	ug/L	-50	Standard
	Se	82	90.8	2.7	**0.6494**	0.023	3.5	ug/L	14	Standard
	Se-1	77	157.7	4.9	**1.4330**	0.106	7.4	ug/L	42	Standard
>	**Ga**	71	47343.9	1.1				mg/L	42	Standard
	Rb	85	380728.2	1.5				ug/L	17	Standard
	Y	89	1106618.3	0.2				ug/L	417098	Standard
>	**Rh**	103	63.3	24.1				ug/L	13	Standard
	Mo	98	980.4	3.2	**0.3366**	0.010	3.0	ug/L	11	Standard
	Ag	107	955.0	6.8	**0.1236**	0.011	9.1	ug/L	68	Standard
	Cd	111	2225.7	2.0	**0.9829**	0.017	1.8	mg/L	2	Standard
	Cd	114	5479.9	1.8	**0.9924**	0.001	0.1	ug/L	12	Standard
>	**In**	115	631161.9	1.7				ug/L	587441	Standard
	Sn	118	413.3	14.8	**-0.0289**	0.009	31.0	ug/L	497	Standard
	Sb	123	370.7	34.4	**0.0695**	0.025	35.4	ug/L	78	Standard
	Ba	135	385428.4	1.0	**175.2729**	2.367	1.4	ug/L	24	Standard
	Ce	140	2007459.4	3.6				ug/L	25	Standard
>	**Tb**	159	1048778.2	1.5				ug/L	939701	Standard
	Ho	165	53168.1	1.9				ug/L	10	Standard
	Tl	203	2332.8	1.5	**0.2668**	0.007	2.6	ug/L	4	Standard
	Tl	205	2056.8	1.1	**0.2730**	0.001	0.5	ug/L	2	Standard
	Pb	206	102474.4	0.3	**18.1326**	0.189	1.0	ug/L	240	Standard
	Pb	207	82544.6	1.5	**16.4326**	0.141	0.9	ug/L	198	Standard
	Pb	208	353310.3	0.4	**17.8060**	0.180	1.0	ug/L	883	Standard
	U	238	9355.9	0.7	**1.2854**	0.017	1.3	ug/L	3	Standard
>	**Bi**	209	552227.6	1.4				ug/L	523984	Standard

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Na	23	1.7	173.2	**13.3403**	23.097	173.1	mg/L	0	Standard
Mg	24	320.0	5.6	**0.2185**	0.016	7.5	mg/L	37	Standard
K	39	1080.0	10.5	**1.5233**	0.156	10.2	mg/L	38	Standard
Ca	43	916.7	12.0	**37.2112**	4.625	12.4	mg/L	10	Standard
Fe	54	75887.5	2.1	**44.0256**	1.050	2.4	mg/L	179	Standard
Fe	57	19502.5	1.2	**44.4256**	0.652	1.5	mg/L	335	Standard
> **Sc-1**	45	88916.8	1.0				mg/L	61029	Standard
Cl	35	27513.6	0.5				ug/L	20195	Standard
Kr	83	0.3	173.2				ug/L	4	Standard
Br	81	3467.1	2.9				ug/L	1547	Standard
P	31	21865.8	2.4				ug/L	15286	Standard
S	34	2631.9	4.0				ug/L	1572	Standard
Sr	88	220.0	6.0				ug/L	73	Standard
C	12	66.7	37.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	15.7				mg/L	3	Standard
Dy	164	86599.4	2.5				mg/L	6	Standard
Ho-1	165	53168.1	1.9				mg/L	10	Standard
Er	166	47260.3	0.7				mg/L	13	Standard
I	127	6809.9	9.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.625	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.039	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	107.443
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	105.390
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606088803S WG573099-04
Sample Date/Time: Wednesday, June 29, 2016 15:20:06
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88784.5	2.9				ug/L	74699	Standard
	Be	9	27508.3	0.4	**26.3080**	0.631	2.4	ug/L	8	Standard
	Al	27	20794150.5	3.6	**119.0173**	0.902	0.8	ug/L	1493	Standard
	Sc	45	96992.9	2.3				ug/L	61029	Standard
	Ti	47	11606.4	2.4	**28.2553**	0.997	3.5	ug/L	35	Standard
	V	51	594819.7	3.2	**72.7593**	3.186	4.4	ug/L	1435	Standard
	Cr	52	602098.1	1.8	**74.2282**	2.325	3.1	ug/L	7635	Standard
	Cr	53	74295.1	1.5	**74.1206**	1.783	2.4	ug/L	363	Standard
	Mn	55	28090211.5	1.2	**3736.5671**	85.696	2.3	ug/L	747	Standard
	Co	59	552502.8	1.4	**77.4533**	1.929	2.5	ug/L	234	Standard
	Ni	60	270132.5	1.6	**133.5117**	3.898	2.9	ug/L	215	Standard
	Cu	65	201432.2	2.2	**100.1412**	3.335	3.3	ug/L	104	Standard
	Zn	66	320182.0	2.8	**271.0655**	11.001	4.1	ug/L	363	Standard
>	**Ge**	72	534719.5	1.4				ug/L	495142	Standard
	As	75	41934.7	2.3	**34.7370**	1.197	3.4	ug/L	-50	Standard
	Se	82	2480.2	1.5	**20.7934**	0.607	2.9	ug/L	14	Standard
	Se-1	77	1799.1	2.3	**22.1951**	0.836	3.8	ug/L	42	Standard
>	**Ga**	71	63861.1	4.0				mg/L	42	Standard
	Rb	85	554637.9	1.8				ug/L	17	Standard
	Y	89	1250941.0	3.4				ug/L	417098	Standard
>	**Rh**	103	88.3	8.6				ug/L	13	Standard
	Mo	98	1454.1	4.8	**0.5217**	0.033	6.4	ug/L	11	Standard
	Ag	107	4814.4	4.1	**0.7006**	0.018	2.6	ug/L	68	Standard
	Cd	111	56224.0	1.3	**25.9728**	0.111	0.4	mg/L	2	Standard
	Cd	114	138439.7	3.6	**26.0717**	0.493	1.9	ug/L	12	Standard
>	**In**	115	608045.3	1.7				ug/L	587441	Standard
	Sn	118	518.3	2.0	**-0.0090**	0.001	16.4	ug/L	497	Standard
	Sb	123	2325.7	1.7	**0.4771**	0.008	1.7	ug/L	78	Standard
	Ba	135	587827.7	1.5	**277.4602**	0.795	0.3	ug/L	24	Standard
	Ce	140	2927642.8	0.6				ug/L	25	Standard
>	**Tb**	159	1033681.4	2.7				ug/L	939701	Standard
	Ho	165	68191.4	0.6				ug/L	10	Standard
	Tl	203	212892.3	0.8	**25.4932**	0.083	0.3	ug/L	4	Standard
	Tl	205	191048.7	1.2	**26.3598**	0.091	0.3	ug/L	2	Standard
	Pb	206	260602.6	2.5	**48.0843**	0.971	2.0	ug/L	240	Standard
	Pb	207	216580.3	1.8	**44.9759**	0.652	1.4	ug/L	198	Standard
	Pb	208	918219.8	1.2	**48.2652**	0.290	0.6	ug/L	883	Standard
	U	238	196774.7	2.4	**28.2131**	0.460	1.6	ug/L	3	Standard
>	**Bi**	209	530811.0	1.1				ug/L	523984	Standard

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Na	23	1.7	173.2	**12.2205**	21.158	173.1	mg/L	0	Standard
Mg	24	365.0	3.6	**0.2314**	0.007	3.2	mg/L	37	Standard
K	39	1516.7	5.6	**1.9963**	0.137	6.9	mg/L	38	Standard
Ca	43	726.7	5.8	**26.3770**	1.992	7.6	mg/L	10	Standard
Fe	54	108682.6	3.2	**57.8341**	0.799	1.4	mg/L	179	Standard
Fe	57	27718.7	1.4	**58.2169**	0.892	1.5	mg/L	335	Standard
Sc-1	45	96992.9	2.3				mg/L	61029	Standard
Cl	35	26216.7	4.4				ug/L	20195	Standard
Kr	83	3.0	33.3				ug/L	4	Standard
Br	81	4344.0	8.1				ug/L	1547	Standard
P	31	22273.0	3.2				ug/L	15286	Standard
S	34	2523.5	5.1				ug/L	1572	Standard
Sr	88	263.3	11.4				ug/L	73	Standard
C	12	56.7	10.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	52.9				mg/L	3	Standard
Dy	164	111985.6	3.7				mg/L	6	Standard
Ho-1	165	68191.4	0.6				mg/L	10	Standard
Er	166	57569.3	4.1				mg/L	13	Standard
I	127	6513.1	8.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.857	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.993	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.507
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.303
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	

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Cu 65 Upper, S, EEE	Cu	65
Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606088803SD WG573099-05
Sample Date/Time: Wednesday, June 29, 2016 15:23:18
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86779.6	2.9				ug/L	74699	Standard
	Be	9	26783.7	4.5	**26.1889**	0.607	2.3	ug/L	8	Standard
	Al	27	17495490.1	2.1	**102.4852**	1.702	1.7	ug/L	1493	Standard
	Sc	45	84971.1	3.4				ug/L	61029	Standard
	Ti	47	11032.7	2.5	**25.6633**	0.769	3.0	ug/L	35	Standard
	V	51	492228.0	0.7	**57.5050**	0.764	1.3	ug/L	1435	Standard
	Cr	52	556079.4	1.4	**65.4064**	1.154	1.8	ug/L	7635	Standard
	Cr	53	67044.7	1.2	**63.8916**	0.827	1.3	ug/L	363	Standard
	Mn	55	16288704.5	1.7	**2071.2097**	47.470	2.3	ug/L	747	Standard
	Co	59	487642.9	2.1	**65.3439**	1.764	2.7	ug/L	234	Standard
	Ni	60	230286.3	2.0	**108.7653**	2.155	2.0	ug/L	215	Standard
	Cu	65	186555.0	1.4	**88.6352**	1.512	1.7	ug/L	104	Standard
	Zn	66	269449.8	1.5	**217.9309**	3.745	1.7	ug/L	363	Standard
>	**Ge**	72	559301.6	0.7				ug/L	495142	Standard
	As	75	32569.4	2.0	**25.8033**	0.648	2.5	ug/L	-50	Standard
	Se	82	2764.3	2.2	**22.1623**	0.630	2.8	ug/L	14	Standard
	Se-1	77	1950.8	4.1	**23.0256**	1.042	4.5	ug/L	42	Standard
>	**Ga**	71	55862.8	2.2				mg/L	42	Standard
	Rb	85	472783.4	2.1				ug/L	17	Standard
	Y	89	931018.8	1.5				ug/L	417098	Standard
>	**Rh**	103	36.7	47.9				ug/L	13	Standard
	Mo	98	833.5	3.5	**0.3003**	0.015	5.0	ug/L	11	Standard
	Ag	107	3972.2	0.3	**0.5833**	0.011	1.9	ug/L	68	Standard
	Cd	111	54996.2	0.6	**25.7204**	0.316	1.2	mg/L	2	Standard
	Cd	114	133681.6	2.4	**25.4888**	0.206	0.8	ug/L	12	Standard
>	**In**	115	600647.8	1.6				ug/L	587441	Standard
	Sn	118	466.7	16.3	**-0.0167**	0.012	70.0	ug/L	497	Standard
	Sb	123	3387.1	2.7	**0.7053**	0.008	1.2	ug/L	78	Standard
	Ba	135	467382.4	1.0	**223.3343**	2.175	1.0	ug/L	24	Standard
	Ce	140	1516729.6	1.2				ug/L	25	Standard
>	**Tb**	159	1007426.2	2.1				ug/L	939701	Standard
	Ho	165	39640.1	1.9				ug/L	10	Standard
	Tl	203	211811.1	1.3	**24.5598**	0.357	1.5	ug/L	4	Standard
	Tl	205	187359.9	1.8	**25.0339**	0.597	2.4	ug/L	2	Standard
	Pb	206	219015.7	1.1	**39.1225**	0.790	2.0	ug/L	240	Standard
	Pb	207	182856.8	0.5	**36.7608**	0.679	1.8	ug/L	198	Standard
	Pb	208	768036.7	1.8	**39.0813**	0.960	2.5	ug/L	883	Standard
	U	238	187429.9	1.2	**26.0258**	0.546	2.1	ug/L	3	Standard
>	**Bi**	209	548237.3	1.8				ug/L	523984	Standard

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Na	23	6.7	43.3	**55.5842**	25.460	45.8	mg/L	0	Standard
Mg	24	348.3	15.5	**0.2571**	0.039	15.2	mg/L	37	Standard
K	39	1421.7	3.5	**2.1441**	0.098	4.5	mg/L	38	Standard
Ca	43	383.3	17.4	**14.9477**	3.560	23.8	mg/L	10	Standard
Fe	54	86673.1	2.4	**52.6645**	1.510	2.9	mg/L	179	Standard
Fe	57	21795.7	3.1	**52.2085**	3.369	6.5	mg/L	335	Standard
> **Sc-1**	45	84971.1	3.4				mg/L	61029	Standard
Cl	35	24892.4	3.3				ug/L	20195	Standard
Kr	83	2.3	65.5				ug/L	4	Standard
Br	81	3257.0	4.5				ug/L	1547	Standard
P	31	20836.0	2.5				ug/L	15286	Standard
S	34	2406.9	4.4				ug/L	1572	Standard
Sr	88	191.7	46.0				ug/L	73	Standard
C	12	76.7	15.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	20.0				mg/L	3	Standard
Dy	164	63526.1	1.7				mg/L	6	Standard
Ho-1	165	39640.1	1.9				mg/L	10	Standard
Er	166	35224.2	2.0				mg/L	13	Standard
I	127	5139.2	9.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.173	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		112.958	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	102.248
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	104.629
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	

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Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606088301
Sample Date/Time: Wednesday, June 29, 2016 15:26:29
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84384.4	1.7				ug/L	74699	Standard
	Be	9	1073.4	1.5	**1.0872**	0.032	3.0	ug/L	8	Standard
	Al	27	11940771.9	2.8	**71.9363**	2.792	3.9	ug/L	1493	Standard
	Sc	45	76626.6	1.2				ug/L	61029	Standard
	Ti	47	4374.3	2.0	**10.2834**	0.247	2.4	ug/L	35	Standard
	V	51	162703.8	1.0	**19.2014**	0.098	0.5	ug/L	1435	Standard
	Cr	52	132016.8	1.7	**15.0167**	0.347	2.3	ug/L	7635	Standard
	Cr	53	16153.6	0.8	**15.4073**	0.063	0.4	ug/L	363	Standard
	Mn	55	3262876.5	0.6	**421.8414**	5.005	1.2	ug/L	747	Standard
	Co	59	67832.8	0.7	**9.2120**	0.089	1.0	ug/L	234	Standard
	Ni	60	42623.2	1.3	**20.3743**	0.274	1.3	ug/L	215	Standard
	Cu	65	31205.8	0.3	**14.9935**	0.149	1.0	ug/L	104	Standard
	Zn	66	53134.7	1.9	**43.3429**	0.711	1.6	ug/L	363	Standard
>	**Ge**	72	549915.9	0.8				ug/L	495142	Standard
	As	75	3335.6	3.0	**2.7409**	0.080	2.9	ug/L	-50	Standard
	Se	82	46.6	19.0	**0.2449**	0.076	30.9	ug/L	14	Standard
	Se-1	77	111.7	5.1	**0.7542**	0.066	8.8	ug/L	42	Standard
>	**Ga**	71	17852.2	2.1				mg/L	42	Standard
	Rb	85	173572.1	2.0				ug/L	17	Standard
	Y	89	703667.4	2.2				ug/L	417098	Standard
>	**Rh**	103	33.3	34.6				ug/L	13	Standard
	Mo	98	357.4	3.8	**0.1158**	0.007	6.2	ug/L	11	Standard
	Ag	107	550.0	6.6	**0.0636**	0.007	11.1	ug/L	68	Standard
	Cd	111	273.3	3.2	**0.1105**	0.006	5.2	mg/L	2	Standard
	Cd	114	617.1	4.0	**0.1069**	0.006	5.7	ug/L	12	Standard
>	**In**	115	648944.8	3.3				ug/L	587441	Standard
	Sn	118	606.7	6.6	**-0.0008**	0.003	418.3	ug/L	497	Standard
	Sb	123	137.4	14.1	**0.0224**	0.003	13.8	ug/L	78	Standard
	Ba	135	318337.1	2.2	**140.8176**	2.386	1.7	ug/L	24	Standard
	Ce	140	1211648.5	1.9				ug/L	25	Standard
>	**Tb**	159	1041543.0	2.5				ug/L	939701	Standard
	Ho	165	19666.1	3.2				ug/L	10	Standard
	Tl	203	1035.0	3.0	**0.1143**	0.004	3.7	ug/L	4	Standard
	Tl	205	953.4	8.0	**0.1233**	0.009	7.5	ug/L	2	Standard
	Pb	206	127279.7	1.1	**21.9443**	0.442	2.0	ug/L	240	Standard
	Pb	207	103046.6	1.5	**19.9907**	0.426	2.1	ug/L	198	Standard
	Pb	208	441148.5	1.4	**21.6612**	0.196	0.9	ug/L	883	Standard
	U	238	5034.2	0.5	**0.6713**	0.005	0.8	ug/L	3	Standard
>	**Bi**	209	567168.2	1.1				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	340.0	3.9	**0.2844**	0.011	3.7	mg/L	37	Standard
K	39	688.3	2.3	**1.0975**	0.019	1.8	mg/L	38	Standard
Ca	43	145.0	15.8	**4.7718**	1.160	24.3	mg/L	10	Standard
Fe	54	17324.9	3.4	**11.5598**	0.337	2.9	mg/L	179	Standard
Fe	57	4550.7	3.6	**11.2444**	0.399	3.5	mg/L	335	Standard
Sc-1	45	76626.6	1.2				mg/L	61029	Standard
Cl	35	25558.2	1.3				ug/L	20195	Standard
Kr	83	0.7	173.2				ug/L	4	Standard
Br	81	2263.5	8.1				ug/L	1547	Standard
P	31	20323.6	0.9				ug/L	15286	Standard
S	34	2258.5	1.1				ug/L	1572	Standard
Sr	88	101.7	10.2				ug/L	73	Standard
C	12	116.7	13.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	49.5				mg/L	3	Standard
Dy	164	32996.6	2.0				mg/L	6	Standard
Ho-1	165	19666.1	3.2				mg/L	10	Standard
Er	166	17349.9	3.1				mg/L	13	Standard
I	127	11507.7	1.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		112.966	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		111.062	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.470
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.241
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606088301
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Method 6020 - Summary Report

Sample ID: L1606091201
Sample Date/Time: Wednesday, June 29, 2016 15:29:41
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84277.1	1.0				ug/L	74699	Standard
	Be	9	1593.4	6.0	**1.6114**	0.083	5.1	ug/L	8	Standard
	Al	27	15243679.1	1.9	**91.9299**	1.967	2.1	ug/L	1493	Standard
	Sc	45	83538.1	3.1				ug/L	61029	Standard
	Ti	47	10307.8	1.1	**23.4331**	0.360	1.5	ug/L	35	Standard
	V	51	410563.1	0.8	**46.8597**	0.438	0.9	ug/L	1435	Standard
	Cr	52	261972.4	0.3	**29.5747**	0.180	0.6	ug/L	7635	Standard
	Cr	53	32057.2	1.7	**29.6933**	0.417	1.4	ug/L	363	Standard
	Mn	55	12908980.1	3.2	**1604.9549**	58.354	3.6	ug/L	747	Standard
	Co	59	181241.6	3.1	**23.7226**	0.846	3.6	ug/L	234	Standard
	Ni	60	66685.8	0.9	**30.7063**	0.259	0.8	ug/L	215	Standard
	Cu	65	73374.2	0.7	**34.0220**	0.398	1.2	ug/L	104	Standard
	Zn	66	143517.2	0.9	**113.2755**	1.322	1.2	ug/L	363	Standard
>	**Ge**	72	572023.7	0.5				ug/L	495142	Standard
	As	75	16668.5	2.4	**12.9416**	0.353	2.7	ug/L	-50	Standard
	Se	82	187.7	6.4	**1.3421**	0.095	7.1	ug/L	14	Standard
	Se-1	77	232.0	7.5	**2.1278**	0.217	10.2	ug/L	42	Standard
>	**Ga**	71	37605.0	3.4				mg/L	42	Standard
	Rb	85	431124.7	1.0				ug/L	17	Standard
	Y	89	907846.1	0.7				ug/L	417098	Standard
>	**Rh**	103	28.3	27.0				ug/L	13	Standard
	Mo	98	1317.8	2.4	**0.4515**	0.009	1.9	ug/L	11	Standard
	Ag	107	1338.4	1.8	**0.1770**	0.004	2.5	ug/L	68	Standard
	Cd	111	803.3	6.8	**0.3473**	0.022	6.2	mg/L	2	Standard
	Cd	114	1888.8	7.2	**0.3384**	0.023	6.7	ug/L	12	Standard
>	**In**	115	635240.6	1.1				ug/L	587441	Standard
	Sn	118	608.3	2.5	**0.0016**	0.002	109.2	ug/L	497	Standard
	Sb	123	242.0	3.6	**0.0438**	0.002	4.9	ug/L	78	Standard
	Ba	135	645480.7	0.7	**291.6323**	1.817	0.6	ug/L	24	Standard
	Ce	140	2459220.7	0.8				ug/L	25	Standard
>	**Tb**	159	1043691.8	1.6				ug/L	939701	Standard
	Ho	165	34592.8	2.2				ug/L	10	Standard
	Tl	203	3164.7	1.5	**0.3540**	0.007	2.0	ug/L	4	Standard
	Tl	205	2843.6	5.4	**0.3684**	0.020	5.4	ug/L	2	Standard
	Pb	206	325793.2	0.7	**56.4391**	0.926	1.6	ug/L	240	Standard
	Pb	207	262124.0	0.3	**51.1005**	0.344	0.7	ug/L	198	Standard
	Pb	208	1122453.0	1.2	**55.3927**	1.161	2.1	ug/L	883	Standard
	U	238	18503.6	0.6	**2.4863**	0.037	1.5	ug/L	3	Standard
>	**Bi**	209	565563.6	0.9				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	148.3	19.2	**0.0751**	0.029	38.8	mg/L	37	Standard
K	39	1071.7	2.8	**1.6167**	0.038	2.4	mg/L	38	Standard
Ca	43	301.7	16.4	**11.4520**	2.661	23.2	mg/L	10	Standard
Fe	54	45977.7	1.1	**28.3556**	0.839	3.0	mg/L	179	Standard
Fe	57	11742.9	4.0	**28.0839**	0.746	2.7	mg/L	335	Standard
> **Sc-1**	45	83538.1	3.1				mg/L	61029	Standard
Cl	35	25586.9	0.8				ug/L	20195	Standard
Kr	83	2.3	65.5				ug/L	4	Standard
Br	81	3940.5	1.8				ug/L	1547	Standard
P	31	20170.1	2.1				ug/L	15286	Standard
S	34	2405.2	3.2				ug/L	1572	Standard
Sr	88	111.7	6.8				ug/L	73	Standard
C	12	316.7	15.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	146.7	35.0				mg/L	3	Standard
Dy	164	57194.9	2.2				mg/L	6	Standard
Ho-1	165	34592.8	2.2				mg/L	10	Standard
Er	166	32892.3	1.1				mg/L	13	Standard
I	127	48256.8	4.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.823	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		115.527	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	108.137
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	107.935
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606091201PS WG573717-03
Sample Date/Time: Wednesday, June 29, 2016 15:32:52
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84925.7	1.3				ug/L	74699	Standard
	Be	9	54409.2	0.5	**54.3741**	0.919	1.7	ug/L	8	Standard
	Al	27	15619580.7	1.4	**93.4869**	2.147	2.3	ug/L	1493	Standard
	Sc	45	84914.0	2.3				ug/L	61029	Standard
	Ti	47	10489.6	2.4	**24.7035**	0.475	1.9	ug/L	35	Standard
	V	51	847646.1	0.7	**100.4344**	1.074	1.1	ug/L	1435	Standard
	Cr	52	696222.3	1.3	**83.2031**	0.580	0.7	ug/L	7635	Standard
	Cr	53	86425.9	2.6	**83.5032**	1.546	1.9	ug/L	363	Standard
	Mn	55	12964778.0	1.1	**1669.4256**	16.996	1.0	ug/L	747	Standard
	Co	59	568224.0	0.4	**77.1151**	0.744	1.0	ug/L	234	Standard
	Ni	60	176707.0	1.9	**84.4902**	0.918	1.1	ug/L	215	Standard
	Cu	65	181984.3	1.8	**87.5571**	0.864	1.0	ug/L	104	Standard
	Zn	66	208968.8	1.8	**171.0579**	1.957	1.1	ug/L	363	Standard
>	**Ge**	72	552256.5	0.8				ug/L	495142	Standard
	As	75	82371.4	1.6	**65.9929**	0.953	1.4	ug/L	-50	Standard
	Se	82	6597.3	1.6	**53.7542**	0.590	1.1	ug/L	14	Standard
	Se-1	77	4584.4	1.6	**55.6563**	1.034	1.9	ug/L	42	Standard
>	**Ga**	71	37593.3	1.5				mg/L	42	Standard
	Rb	85	428376.8	2.4				ug/L	17	Standard
	Y	89	890825.8	0.7				ug/L	417098	Standard
>	**Rh**	103	50.0	10.0				ug/L	13	Standard
	Mo	98	1335.6	2.9	**0.4503**	0.014	3.2	ug/L	11	Standard
	Ag	107	364007.1	1.3	**50.8126**	0.330	0.6	ug/L	68	Standard
	Cd	111	115695.5	1.2	**50.3468**	0.384	0.8	mg/L	2	Standard
	Cd	114	280904.1	1.9	**49.8365**	0.143	0.3	ug/L	12	Standard
>	**In**	115	645589.3	1.8				ug/L	587441	Standard
	Sn	118	755.0	4.3	**0.0229**	0.003	13.2	ug/L	497	Standard
	Sb	123	254065.1	1.3	**49.5173**	0.623	1.3	ug/L	78	Standard
	Ba	135	752068.0	1.2	**334.3566**	2.055	0.6	ug/L	24	Standard
	Ce	140	2468196.2	1.3				ug/L	25	Standard
>	**Tb**	159	1069312.5	1.3				ug/L	939701	Standard
	Ho	165	35102.3	1.1				ug/L	10	Standard
	Tl	203	458369.6	1.1	**50.4504**	0.349	0.7	ug/L	4	Standard
	Tl	205	409805.1	0.9	**51.9806**	1.259	2.4	ug/L	2	Standard
	Pb	206	619020.9	0.8	**105.0729**	1.076	1.0	ug/L	240	Standard
	Pb	207	511972.0	0.6	**97.8107**	1.381	1.4	ug/L	198	Standard
	Pb	208	2150459.1	0.4	**103.9876**	1.211	1.2	ug/L	883	Standard
	U	238	395808.0	0.4	**52.1735**	0.789	1.5	ug/L	3	Standard
>	**Bi**	209	577539.6	1.5				ug/L	523984	Standard

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Na	23	6.7	43.3	**54.9152**	22.487	40.9	mg/L	0	Standard
Mg	24	118.3	17.1	**0.0444**	0.016	36.3	mg/L	37	Standard
K	39	1026.7	7.6	**1.5167**	0.116	7.6	mg/L	38	Standard
Ca	43	296.7	14.3	**10.9789**	2.237	20.4	mg/L	10	Standard
Fe	54	45524.1	0.4	**27.6104**	0.565	2.0	mg/L	179	Standard
Fe	57	12291.7	1.9	**28.9717**	1.259	4.3	mg/L	335	Standard
> **Sc-1**	45	84914.0	2.3				mg/L	61029	Standard
Cl	35	25819.3	0.8				ug/L	20195	Standard
Kr	83	2.0	0.0				ug/L	4	Standard
Br	81	3963.9	6.7				ug/L	1547	Standard
P	31	20629.0	3.4				ug/L	15286	Standard
S	34	2280.2	5.7				ug/L	1572	Standard
Sr	88	103.3	12.2				ug/L	73	Standard
C	12	333.3	17.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	140.0	7.1				mg/L	3	Standard
Dy	164	56592.8	3.3				mg/L	6	Standard
Ho-1	165	35102.3	1.1				mg/L	10	Standard
Er	166	32397.9	1.1				mg/L	13	Standard
I	127	48815.3	4.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.691	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.535	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.899
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.221
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Upper, S, EEE	V	51	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135
Pb 206 Upper, S, EEE	Pb	206
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1606091201SDL WG573717-04
Sample Date/Time: Wednesday, June 29, 2016 15:36:04
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83450.9	2.1				ug/L	74699	Standard
	Be	9	378.3	16.7	**0.3916**	0.058	14.9	ug/L	8	Standard
	Al	27	3082760.3	2.5	**18.7625**	0.099	0.5	ug/L	1493	Standard
	Sc	45	72303.8	2.1				ug/L	61029	Standard
	Ti	47	2033.1	4.6	**4.7237**	0.243	5.1	ug/L	35	Standard
	V	51	79797.1	0.9	**9.3216**	0.052	0.6	ug/L	1435	Standard
	Cr	52	57744.9	2.6	**5.9945**	0.158	2.6	ug/L	7635	Standard
	Cr	53	6483.1	2.8	**5.9884**	0.155	2.6	ug/L	363	Standard
	Mn	55	2512242.8	1.3	**324.8710**	1.825	0.6	ug/L	747	Standard
	Co	59	34712.7	2.2	**4.6975**	0.071	1.5	ug/L	234	Standard
	Ni	60	13460.0	2.9	**6.3513**	0.158	2.5	ug/L	215	Standard
	Cu	65	15009.4	2.6	**7.1598**	0.141	2.0	ug/L	104	Standard
	Zn	66	29256.2	2.4	**23.6692**	0.389	1.6	ug/L	363	Standard
>	**Ge**	72	549686.2	0.8				ug/L	495142	Standard
	As	75	3156.6	2.0	**2.5979**	0.033	1.3	ug/L	-50	Standard
	Se	82	47.1	17.6	**0.2490**	0.070	28.2	ug/L	14	Standard
	Se-1	77	77.0	11.9	**0.3268**	0.106	32.4	ug/L	42	Standard
>	**Ga**	71	7136.7	1.1				mg/L	42	Standard
	Rb	85	84221.8	1.7				ug/L	17	Standard
	Y	89	569587.4	0.8				ug/L	417098	Standard
>	**Rh**	103	25.0	91.7				ug/L	13	Standard
	Mo	98	271.1	6.9	**0.0847**	0.006	6.6	ug/L	11	Standard
	Ag	107	378.0	10.8	**0.0387**	0.005	13.9	ug/L	68	Standard
	Cd	111	185.8	10.3	**0.0712**	0.009	12.3	mg/L	2	Standard
	Cd	114	406.5	6.5	**0.0684**	0.004	6.4	ug/L	12	Standard
>	**In**	115	660230.6	1.0				ug/L	587441	Standard
	Sn	118	501.7	8.5	**-0.0183**	0.006	32.3	ug/L	497	Standard
	Sb	123	1797.9	20.8	**0.3384**	0.070	20.8	ug/L	78	Standard
	Ba	135	129725.4	1.6	**56.3802**	0.972	1.7	ug/L	24	Standard
	Ce	140	480517.5	2.7				ug/L	25	Standard
>	**Tb**	159	1042248.3	0.8				ug/L	939701	Standard
	Ho	165	6823.2	4.6				ug/L	10	Standard
	Tl	203	727.7	7.7	**0.0794**	0.006	7.1	ug/L	4	Standard
	Tl	205	616.7	4.2	**0.0795**	0.002	2.4	ug/L	2	Standard
	Pb	206	64359.4	2.2	**11.0114**	0.128	1.2	ug/L	240	Standard
	Pb	207	51665.3	2.6	**9.9429**	0.134	1.3	ug/L	198	Standard
	Pb	208	222946.4	0.6	**10.8660**	0.247	2.3	ug/L	883	Standard
	U	238	3701.1	2.3	**0.4902**	0.006	1.1	ug/L	3	Standard
>	**Bi**	209	569638.6	2.0				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	61.7	28.5	**0.0019**	0.018	942.5	mg/L	37	Standard
K	39	203.3	18.5	**0.2649**	0.067	25.4	mg/L	38	Standard
Ca	43	75.0	26.7	**1.4632**	0.987	67.5	mg/L	10	Standard
Fe	54	9325.9	3.5	**6.5358**	0.204	3.1	mg/L	179	Standard
Fe	57	2630.2	2.1	**6.4718**	0.055	0.8	mg/L	335	Standard
> **Sc-1**	45	72303.8	2.1				mg/L	61029	Standard
Cl	35	24972.6	0.9				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	2286.8	8.4				ug/L	1547	Standard
P	31	19043.6	4.4				ug/L	15286	Standard
S	34	2180.2	1.2				ug/L	1572	Standard
Sr	88	81.7	35.9				ug/L	73	Standard
C	12	93.3	22.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	57.3				mg/L	3	Standard
Dy	164	11677.0	2.4				mg/L	6	Standard
Ho-1	165	6823.2	4.6				mg/L	10	Standard
Er	166	6424.7	2.9				mg/L	13	Standard
I	127	12089.8	7.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.717	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.016	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	112.391
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	108.713
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606091201SDL WG573717-04
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Method 6020 - Summary Report

Sample ID: L1606091201SDL WG573717-04
Sample Date/Time: Wednesday, June 29, 2016 15:39:15
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80082.8	1.5				ug/L	74699	Standard
	Be	9	80.0	10.8	**0.0924**	0.009	10.2	ug/L	8	Standard
	Al	27	638793.5	0.9	**4.0416**	0.057	1.4	ug/L	1493	Standard
	Sc	45	66977.8	2.5				ug/L	61029	Standard
	Ti	47	422.3	5.3	**0.8899**	0.044	4.9	ug/L	35	Standard
	V	51	17807.2	0.8	**1.9190**	0.038	2.0	ug/L	1435	Standard
	Cr	52	18051.7	1.5	**1.1605**	0.015	1.3	ug/L	7635	Standard
	Cr	53	1846.8	4.0	**1.4619**	0.067	4.6	ug/L	363	Standard
	Mn	55	540671.4	1.9	**69.4959**	1.549	2.2	ug/L	747	Standard
	Co	59	7520.2	3.3	**0.9841**	0.038	3.8	ug/L	234	Standard
	Ni	60	2912.3	1.6	**1.2710**	0.019	1.5	ug/L	215	Standard
	Cu	65	3203.0	1.2	**1.4395**	0.003	0.2	ug/L	104	Standard
	Zn	66	8550.1	1.3	**6.5648**	0.083	1.3	ug/L	363	Standard
>	**Ge**	72	552153.4	1.0				ug/L	495142	Standard
	As	75	624.0	5.3	**0.5591**	0.024	4.4	ug/L	-50	Standard
	Se	82	21.8	25.1	**0.0396**	0.043	108.7	ug/L	14	Standard
	Se-1	77	57.0	8.0	**0.0772**	0.050	64.2	ug/L	42	Standard
>	**Ga**	71	1470.1	2.9				mg/L	42	Standard
	Rb	85	17425.0	3.8				ug/L	17	Standard
	Y	89	497203.9	1.3				ug/L	417098	Standard
>	**Rh**	103	10.0	50.0				ug/L	13	Standard
	Mo	98	65.7	10.1	**0.0165**	0.003	15.8	ug/L	11	Standard
	Ag	107	156.7	8.7	**0.0087**	0.002	18.0	ug/L	68	Standard
	Cd	111	38.9	11.8	**0.0089**	0.002	23.3	mg/L	2	Standard
	Cd	114	108.8	14.4	**0.0170**	0.003	15.1	ug/L	12	Standard
>	**In**	115	651862.8	1.7				ug/L	587441	Standard
	Sn	118	480.0	4.2	**-0.0206**	0.003	16.7	ug/L	497	Standard
	Sb	123	490.3	31.4	**0.0908**	0.031	34.3	ug/L	78	Standard
	Ba	135	26415.7	0.1	**11.6170**	0.204	1.8	ug/L	24	Standard
	Ce	140	98329.7	0.4				ug/L	25	Standard
>	**Tb**	159	1007324.2	1.5				ug/L	939701	Standard
	Ho	165	1405.1	5.7				ug/L	10	Standard
	Tl	203	169.0	1.6	**0.0177**	0.000	0.8	ug/L	4	Standard
	Tl	205	175.0	8.6	**0.0234**	0.002	8.3	ug/L	2	Standard
	Pb	206	13505.0	1.4	**2.3274**	0.057	2.5	ug/L	240	Standard
	Pb	207	10900.6	1.3	**2.1089**	0.044	2.1	ug/L	198	Standard
	Pb	208	47029.6	1.3	**2.3051**	0.014	0.6	ug/L	883	Standard
	U	238	743.4	3.4	**0.0980**	0.002	2.1	ug/L	3	Standard
>	**Bi**	209	552389.3	1.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	33.3	17.3	**-0.0260**	0.006	22.5	mg/L	37	Standard
K	39	50.0	36.1	**-0.0133**	0.037	281.6	mg/L	38	Standard
Ca	43	41.7	48.5	**-0.1354**	1.146	846.9	mg/L	10	Standard
Fe	54	2020.3	1.1	**1.4233**	0.051	3.6	mg/L	179	Standard
Fe	57	728.4	10.0	**1.1787**	0.168	14.2	mg/L	335	Standard
> **Sc-1**	45	66977.8	2.5				mg/L	61029	Standard
Cl	35	24720.8	1.1				ug/L	20195	Standard
Kr	83	2.7	43.3				ug/L	4	Standard
Br	81	1860.1	4.8				ug/L	1547	Standard
P	31	18349.4	1.0				ug/L	15286	Standard
S	34	1845.1	4.4				ug/L	1572	Standard
Sr	88	65.0	27.7				ug/L	73	Standard
C	12	66.7	31.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	2304.6	5.8				mg/L	6	Standard
Ho-1	165	1405.1	5.7				mg/L	10	Standard
Er	166	1370.1	4.1				mg/L	13	Standard
I	127	4489.0	15.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.208	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.514	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.966
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.421
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 15:42:28
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79858.3	1.9				ug/L	74699	Standard
	Be	9	50198.1	2.5	**53.3484**	1.401	2.6	ug/L	8	Standard
	Al	27	8066966.3	0.3	**51.3427**	0.865	1.7	ug/L	1493	Standard
	Sc	45	68357.2	2.3				ug/L	61029	Standard
	Ti	47	43587.6	0.3	**105.7066**	1.724	1.6	ug/L	35	Standard
	V	51	433103.8	0.8	**52.5653**	0.576	1.1	ug/L	1435	Standard
	Cr	52	431112.3	0.9	**52.4990**	0.789	1.5	ug/L	7635	Standard
	Cr	53	52653.0	1.0	**52.0862**	0.689	1.3	ug/L	363	Standard
	Mn	55	405815.5	1.7	**53.4827**	1.214	2.3	ug/L	747	Standard
	Co	59	390955.7	1.0	**54.4418**	1.354	2.5	ug/L	234	Standard
	Ni	60	105213.1	1.7	**51.5742**	0.488	0.9	ug/L	215	Standard
	Cu	65	104377.6	0.2	**51.4980**	0.905	1.8	ug/L	104	Standard
	Zn	66	61654.9	0.7	**51.4853**	1.289	2.5	ug/L	363	Standard
>	Ge	72	538231.7	1.8				ug/L	495142	Standard
	As	75	61802.6	0.2	**50.8282**	0.881	1.7	ug/L	-50	Standard
	Se	82	6211.6	1.2	**51.9313**	0.364	0.7	ug/L	14	Standard
	Se-1	77	4323.6	2.0	**53.8508**	1.659	3.1	ug/L	42	Standard
>	Ga	71	60.0	28.9				mg/L	42	Standard
	Rb	85	955.0	5.2				ug/L	17	Standard
	Y	89	475770.1	1.3				ug/L	417098	Standard
>	Rh	103	25.0	34.6				ug/L	13	Standard
	Mo	98	290643.5	0.8	**97.6712**	0.653	0.7	ug/L	11	Standard
	Ag	107	354998.2	1.8	**48.7852**	1.288	2.6	ug/L	68	Standard
	Cd	111	115105.3	1.2	**49.3038**	0.151	0.3	mg/L	2	Standard
	Cd	114	278592.4	1.8	**48.6531**	0.360	0.7	ug/L	12	Standard
>	In	115	655825.0	1.0				ug/L	587441	Standard
	Sn	118	319548.2	1.2	**48.9035**	0.256	0.5	ug/L	497	Standard
	Sb	123	249456.0	1.2	**47.8604**	0.919	1.9	ug/L	78	Standard
	Ba	135	108215.4	0.8	**47.3455**	0.546	1.2	ug/L	24	Standard
	Ce	140	256.7	76.3				ug/L	25	Standard
>	Tb	159	1025574.2	1.9				ug/L	939701	Standard
	Ho	165	15.0	0.0				ug/L	10	Standard
	Tl	203	443897.9	1.2	**50.1327**	1.058	2.1	ug/L	4	Standard
	Tl	205	398087.0	0.7	**51.8003**	0.814	1.6	ug/L	2	Standard
	Pb	206	280554.3	0.5	**48.8226**	0.728	1.5	ug/L	240	Standard
	Pb	207	249585.9	0.6	**48.8846**	0.533	1.1	ug/L	198	Standard
	Pb	208	1026713.8	0.6	**50.9050**	1.131	2.2	ug/L	883	Standard
	U	238	372550.1	0.8	**50.3866**	1.127	2.2	ug/L	3	Standard
>	Bi	209	562933.7	1.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4292.3	1.6	**4.8821**	0.035	0.7	mg/L	37	Standard
K	39	2345.2	3.1	**4.5133**	0.080	1.8	mg/L	38	Standard
Ca	43	103.3	10.1	**3.3018**	0.528	16.0	mg/L	10	Standard
Fe	54	6681.2	2.2	**4.9206**	0.153	3.1	mg/L	179	Standard
Fe	57	1928.5	4.0	**4.7824**	0.344	7.2	mg/L	335	Standard
Sc-1	45	68357.2	2.3				mg/L	61029	Standard
Cl	35	26753.6	0.7				ug/L	20195	Standard
Kr	83	3.3	45.8				ug/L	4	Standard
Br	81	1833.4	8.1				ug/L	1547	Standard
P	31	20395.4	2.2				ug/L	15286	Standard
S	34	2408.5	8.3				ug/L	1572	Standard
Sr	88	85.0	25.6				ug/L	73	Standard
C	12	53.3	28.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	15.2	35.5				mg/L	6	Standard
Ho-1	165	15.0	0.0				mg/L	10	Standard
Er	166	30.0	57.7				mg/L	13	Standard
I	127	2536.9	16.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	106.697		
Al	27	102.685		
Sc	45			
Ti	47	105.707		
V	51	105.131		
Cr	52	104.998		
Cr	53			
Mn	55	106.965		
Co	59	108.884		
Ni	60	103.148		
Cu	65	102.996		
Zn	66	102.971		
Ge	72		108.702	
As	75	101.656		
Se	82	103.863		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	97.671		
Ag	107	97.570		
Cd	111	98.608		
Cd	114			
In	115			111.641
Sn	118	97.807		
Sb	123	95.721		
Ba	135	94.691		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.265		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.810		
U	238	100.773		
Bi	209			107.433
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 15:45:40
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	76618.3	2.3				ug/L	74699	Standard
	Be	9	25.0	40.0	**0.0352**	0.010	29.8	ug/L	8	Standard
	Al	27	2451.9	23.9	**0.0029**	0.004	131.5	ug/L	1493	Standard
	Sc	45	64234.2	1.5				ug/L	61029	Standard
	Ti	47	38.0	9.5	**-0.0165**	0.010	60.4	ug/L	35	Standard
	V	51	1363.5	4.5	**-0.0292**	0.006	19.9	ug/L	1435	Standard
	Cr	52	7102.3	0.4	**-0.1401**	0.016	11.4	ug/L	7635	Standard
	Cr	53	373.3	16.1	**0.0429**	0.063	148.1	ug/L	363	Standard
	Mn	55	1097.0	20.0	**-0.0025**	0.031	1279.7	ug/L	747	Standard
	Co	59	247.3	6.4	**-0.0027**	0.003	101.3	ug/L	234	Standard
	Ni	60	180.3	4.0	**-0.0351**	0.003	7.6	ug/L	215	Standard
	Cu	65	132.0	9.2	**-0.0382**	0.007	18.6	ug/L	104	Standard
	Zn	66	415.3	4.4	**-0.1038**	0.019	18.2	ug/L	363	Standard
>	Ge	72	537099.7	1.7				ug/L	495142	Standard
	As	75	-44.5	23.9	**0.0230**	0.008	35.8	ug/L	-50	Standard
	Se	82	14.3	4.3	**-0.0180**	0.004	23.6	ug/L	14	Standard
	Se-1	77	59.7	7.9	**0.1303**	0.047	35.8	ug/L	42	Standard
>	Ga	71	51.7	29.6				mg/L	42	Standard
	Rb	85	35.0	0.0				ug/L	17	Standard
	Y	89	479758.9	0.4				ug/L	417098	Standard
>	Rh	103	8.3	34.6				ug/L	13	Standard
	Mo	98	277.2	29.2	**0.0885**	0.026	29.3	ug/L	11	Standard
	Ag	107	131.7	17.8	**0.0055**	0.003	58.6	ug/L	68	Standard
	Cd	111	17.2	29.5	**-0.0005**	0.002	465.0	mg/L	2	Standard
	Cd	114	40.7	69.7	**0.0051**	0.005	98.6	ug/L	12	Standard
>	In	115	646048.6	1.6				ug/L	587441	Standard
	Sn	118	843.4	4.5	**0.0366**	0.007	19.0	ug/L	497	Standard
	Sb	123	501.9	29.2	**0.0939**	0.030	32.1	ug/L	78	Standard
	Ba	135	52.0	15.0	**0.0071**	0.003	45.6	ug/L	24	Standard
	Ce	140	70.0	58.5				ug/L	25	Standard
>	Tb	159	979678.9	1.9				ug/L	939701	Standard
	Ho	165	13.3	114.6				ug/L	10	Standard
	Tl	203	68.0	38.6	**0.0062**	0.003	47.0	ug/L	4	Standard
	Tl	205	56.7	27.0	**0.0078**	0.002	25.4	ug/L	2	Standard
	Pb	206	311.7	5.0	**-0.0149**	0.002	16.8	ug/L	240	Standard
	Pb	207	257.0	6.3	**-0.0177**	0.002	12.3	ug/L	198	Standard
	Pb	208	1140.4	10.1	**-0.0154**	0.005	31.9	ug/L	883	Standard
	U	238	55.7	48.1	**0.0033**	0.004	107.8	ug/L	3	Standard
>	Bi	209	542619.7	2.4				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.9504**	31.082	173.2	mg/L	0	Standard
Mg	24	40.0	54.5	**-0.0162**	0.026	161.8	mg/L	37	Standard
K	39	53.3	59.5	**-0.0020**	0.067	3445.3	mg/L	38	Standard
Ca	43	18.3	103.3	**-1.4157**	1.156	81.6	mg/L	10	Standard
Fe	54	130.7	11.8	**-0.0329**	0.014	41.5	mg/L	179	Standard
Fe	57	301.7	9.1	**-0.1005**	0.081	80.3	mg/L	335	Standard
> **Sc-1**	45	64234.2	1.5				mg/L	61029	Standard
Cl	35	26295.5	2.8				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	1633.4	7.7				ug/L	1547	Standard
P	31	19669.4	2.1				ug/L	15286	Standard
S	34	2230.2	5.1				ug/L	1572	Standard
Sr	88	70.0	21.4				ug/L	73	Standard
C	12	46.7	61.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	12.2	49.4				mg/L	6	Standard
Ho-1	165	13.3	114.6				mg/L	10	Standard
Er	166	23.3	107.9				mg/L	13	Standard
I	127	1980.1	22.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.474	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.977
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.556
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Wednesday, June 29, 2016 15:47:57
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Method 6020 - Summary Report

Sample ID: PBW 60 WG574001-04
Sample Date/Time: Wednesday, June 29, 2016 15:48:53
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79282.0	2.9				ug/L	74699	Standard
	Be	9	31.7	134.3	**0.0407**	0.044	108.3	ug/L	8	Standard
	Al	27	19345.2	59.5	**0.1093**	0.069	63.4	ug/L	1493	Standard
	Sc	45	67500.3	4.8				ug/L	61029	Standard
	Ti	47	51.7	27.5	**0.0181**	0.032	177.8	ug/L	35	Standard
	V	51	1877.4	33.1	**0.0362**	0.072	198.6	ug/L	1435	Standard
	Cr	52	9295.2	4.7	**0.1500**	0.032	21.3	ug/L	7635	Standard
	Cr	53	908.4	6.4	**0.5905**	0.063	10.7	ug/L	363	Standard
	Mn	55	10971.3	111.8	**1.3060**	1.603	122.8	ug/L	747	Standard
	Co	59	555.3	78.4	**0.0407**	0.060	146.5	ug/L	234	Standard
	Ni	60	485.3	47.2	**0.1173**	0.109	92.6	ug/L	215	Standard
	Cu	65	307.3	25.1	**0.0504**	0.035	70.1	ug/L	104	Standard
	Zn	66	1901.5	5.5	**1.1744**	0.056	4.8	ug/L	363	Standard
>	**Ge**	72	528898.5	2.0				ug/L	495142	Standard
	As	75	-0.1	63053.1	**0.0590**	0.043	73.0	ug/L	-50	Standard
	Se	82	20.7	41.6	**0.0373**	0.070	187.2	ug/L	14	Standard
	Se-1	77	69.7	5.4	**0.2713**	0.061	22.4	ug/L	42	Standard
>	**Ga**	71	70.0	75.3				mg/L	42	Standard
	Rb	85	391.7	126.9				ug/L	17	Standard
	Y	89	488721.1	2.3				ug/L	417098	Standard
>	**Rh**	103	16.7	105.4				ug/L	13	Standard
	Mo	98	140.7	71.4	**0.0402**	0.032	80.6	ug/L	11	Standard
	Ag	107	241.3	88.8	**0.0193**	0.028	147.0	ug/L	68	Standard
	Cd	111	97.4	139.8	**0.0324**	0.056	173.4	mg/L	2	Standard
	Cd	114	250.4	134.1	**0.0402**	0.057	140.7	ug/L	12	Standard
>	**In**	115	673056.2	1.0				ug/L	587441	Standard
	Sn	118	918.4	10.7	**0.0424**	0.014	32.3	ug/L	497	Standard
	Sb	123	377.5	33.3	**0.0663**	0.023	34.5	ug/L	78	Standard
	Ba	135	710.7	130.6	**0.2849**	0.392	137.5	ug/L	24	Standard
	Ce	140	2190.4	144.6				ug/L	25	Standard
>	**Tb**	159	1033072.6	2.9				ug/L	939701	Standard
	Ho	165	46.7	118.0				ug/L	10	Standard
	Tl	203	354.0	129.7	**0.0375**	0.050	134.0	ug/L	4	Standard
	Tl	205	175.0	119.3	**0.0226**	0.026	116.3	ug/L	2	Standard
	Pb	206	584.7	65.9	**0.0302**	0.064	211.0	ug/L	240	Standard
	Pb	207	508.0	67.6	**0.0291**	0.064	219.9	ug/L	198	Standard
	Pb	208	1976.7	53.7	**0.0238**	0.049	207.9	ug/L	883	Standard
	U	238	147.7	117.1	**0.0152**	0.023	148.4	ug/L	3	Standard
>	**Bi**	209	558931.4	2.9				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	38.3	32.8	**-0.0206**	0.014	67.5	mg/L	37	Standard
K	39	46.7	37.6	**-0.0214**	0.032	149.6	mg/L	38	Standard
Ca	43	20.0	0.0	**-1.3794**	0.055	4.0	mg/L	10	Standard
Fe	54	191.0	21.0	**0.0073**	0.024	325.9	mg/L	179	Standard
Fe	57	261.7	19.2	**-0.2718**	0.132	48.6	mg/L	335	Standard
> **Sc-1**	45	67500.3	4.8				mg/L	61029	Standard
Cl	35	25962.2	2.0				ug/L	20195	Standard
Kr	83	3.0	33.3				ug/L	4	Standard
Br	81	2216.8	6.9				ug/L	1547	Standard
P	31	19524.2	2.3				ug/L	15286	Standard
S	34	2248.5	4.1				ug/L	1572	Standard
Sr	88	73.3	27.6				ug/L	73	Standard
C	12	46.7	44.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	67.1	124.3				mg/L	6	Standard
Ho-1	165	46.7	118.0				mg/L	10	Standard
Er	166	60.0	130.2				mg/L	13	Standard
I	127	1978.5	35.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.136	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.817	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.574
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.669
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 60 WG574001-05
Sample Date/Time: Wednesday, June 29, 2016 15:52:04
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	78008.7	2.7				ug/L	74699	Standard
	Be	9	49798.4	3.1	**54.1693**	0.583	1.1	ug/L	8	Standard
	Al	27	8265.6	3.2	**0.0405**	0.001	2.7	ug/L	1493	Standard
	Sc	45	64878.8	4.3				ug/L	61029	Standard
	Ti	47	43.0	16.3	**-0.0042**	0.019	444.7	ug/L	35	Standard
	V	51	424123.5	0.9	**51.5862**	0.653	1.3	ug/L	1435	Standard
	Cr	52	430096.1	0.4	**52.4970**	1.185	2.3	ug/L	7635	Standard
	Cr	53	53307.0	1.3	**52.8599**	1.230	2.3	ug/L	363	Standard
	Mn	55	405428.0	0.3	**53.5518**	1.000	1.9	ug/L	747	Standard
	Co	59	387903.4	0.1	**54.1349**	1.154	2.1	ug/L	234	Standard
	Ni	60	106395.6	1.4	**52.2826**	1.359	2.6	ug/L	215	Standard
	Cu	65	107418.5	1.1	**53.1215**	1.283	2.4	ug/L	104	Standard
	Zn	66	63602.2	0.4	**53.2433**	1.221	2.3	ug/L	363	Standard
>	Ge	72	537059.3	2.0				ug/L	495142	Standard
	As	75	62286.8	1.3	**51.3419**	1.295	2.5	ug/L	-50	Standard
	Se	82	6132.0	1.6	**51.3807**	0.931	1.8	ug/L	14	Standard
	Se-1	77	4215.6	1.2	**52.6015**	0.951	1.8	ug/L	42	Standard
>	Ga	71	76.7	32.8				mg/L	42	Standard
	Rb	85	50.0	36.1				ug/L	17	Standard
	Y	89	473307.8	1.1				ug/L	417098	Standard
>	Rh	103	23.3	75.3				ug/L	13	Standard
	Mo	98	59.9	20.8	**0.0148**	0.004	26.5	ug/L	11	Standard
	Ag	107	358191.0	0.9	**50.3679**	1.706	3.4	ug/L	68	Standard
	Cd	111	112882.0	2.3	**49.4684**	1.332	2.7	mg/L	2	Standard
	Cd	114	273909.8	1.0	**48.9526**	1.484	3.0	ug/L	12	Standard
>	In	115	641215.1	2.7				ug/L	587441	Standard
	Sn	118	785.0	7.1	**0.0286**	0.011	37.9	ug/L	497	Standard
	Sb	123	249794.4	1.0	**49.0383**	1.564	3.2	ug/L	78	Standard
	Ba	135	107708.9	1.4	**48.2176**	1.451	3.0	ug/L	24	Standard
	Ce	140	101.7	27.1				ug/L	25	Standard
>	Tb	159	990038.9	2.7				ug/L	939701	Standard
	Ho	165	11.7	99.0				ug/L	10	Standard
	Tl	203	439976.8	0.4	**51.4932**	0.969	1.9	ug/L	4	Standard
	Tl	205	398605.3	0.6	**53.7491**	0.791	1.5	ug/L	2	Standard
	Pb	206	290681.6	0.4	**52.4241**	0.636	1.2	ug/L	240	Standard
	Pb	207	247225.7	0.4	**50.1841**	0.852	1.7	ug/L	198	Standard
	Pb	208	1030904.4	0.6	**52.9701**	1.178	2.2	ug/L	883	Standard
	U	238	368133.3	0.5	**51.5924**	0.851	1.6	ug/L	3	Standard
>	Bi	209	543222.2	1.6				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	35.0	28.6	**-0.0227**	0.012	52.0	mg/L	37	Standard
K	39	28.3	50.9	**-0.0559**	0.027	48.5	mg/L	38	Standard
Ca	43	35.0	28.6	**-0.4579**	0.506	110.5	mg/L	10	Standard
Fe	54	138.7	22.6	**-0.0277**	0.025	88.8	mg/L	179	Standard
Fe	57	243.3	16.6	**-0.2916**	0.161	55.3	mg/L	335	Standard
> **Sc-1**	45	64878.8	4.3				mg/L	61029	Standard
Cl	35	24949.9	2.3				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	1880.1	6.1				ug/L	1547	Standard
P	31	18362.8	1.6				ug/L	15286	Standard
S	34	2046.8	4.1				ug/L	1572	Standard
Sr	88	70.0	18.9				ug/L	73	Standard
C	12	56.7	56.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	2.2	249.0				mg/L	6	Standard
Ho-1	165	11.7	99.0				mg/L	10	Standard
Er	166	23.3	49.5				mg/L	13	Standard
I	127	1781.8	25.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.431	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.466	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.154
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.671
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606124702 WG574001-01
Sample Date/Time: Wednesday, June 29, 2016 15:55:16
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	134635.3	6.0				ug/L	74699	Standard
	Be	9	80.0	18.8	**0.0585**	0.013	21.4	ug/L	8	Standard
	Al	27	38117257.0	1.5	**144.1796**	7.359	5.1	ug/L	1493	Standard
	Sc	45	57575.9	1.8				ug/L	61029	Standard
	Ti	47	164.0	8.6	**0.3117**	0.039	12.5	ug/L	35	Standard
	V	51	2694.7	7.4	**0.1512**	0.027	17.7	ug/L	1435	Standard
	Cr	52	13340.2	1.7	**0.7256**	0.017	2.4	ug/L	7635	Standard
	Cr	53	1556.7	8.2	**1.3078**	0.145	11.1	ug/L	363	Standard
	Mn	55	855520.0	4.5	**119.2592**	4.647	3.9	ug/L	747	Standard
	Co	59	4433.3	4.9	**0.6151**	0.027	4.4	ug/L	234	Standard
	Ni	60	11360.3	1.4	**5.7737**	0.123	2.1	ug/L	215	Standard
	Cu	65	4582.0	1.3	**2.2889**	0.015	0.7	ug/L	104	Standard
	Zn	66	3866.8	1.4	**2.9861**	0.052	1.7	ug/L	363	Standard
>	**Ge**	72	509457.0	0.7				ug/L	495142	Standard
	As	75	332.4	10.8	**0.3479**	0.030	8.6	ug/L	-50	Standard
	Se	82	161.9	7.9	**1.2952**	0.108	8.4	ug/L	14	Standard
	Se-1	77	102.3	14.4	**0.7391**	0.192	26.0	ug/L	42	Standard
>	**Ga**	71	95.0	18.2				mg/L	42	Standard
	Rb	85	141592.2	2.6				ug/L	17	Standard
	Y	89	417616.8	3.6				ug/L	417098	Standard
>	**Rh**	103	198.3	13.9				ug/L	13	Standard
	Mo	98	173.0	3.6	**0.0623**	0.003	5.6	ug/L	11	Standard
	Ag	107	339.3	7.8	**0.0417**	0.005	13.0	ug/L	68	Standard
	Cd	111	139.7	8.2	**0.0622**	0.007	10.5	mg/L	2	Standard
	Cd	114	358.4	9.8	**0.0712**	0.009	12.2	ug/L	12	Standard
>	**In**	115	560534.9	2.1				ug/L	587441	Standard
	Sn	118	620.0	5.6	**0.0166**	0.008	49.6	ug/L	497	Standard
	Sb	123	641.7	15.5	**0.1401**	0.024	17.2	ug/L	78	Standard
	Ba	135	5098.9	2.7	**2.5958**	0.100	3.9	ug/L	24	Standard
	Ce	140	815.0	33.2				ug/L	25	Standard
>	**Tb**	159	928792.3	1.3				ug/L	939701	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	1143.7	8.4	**0.1440**	0.014	9.4	ug/L	4	Standard
	Tl	205	1088.4	7.4	**0.1600**	0.012	7.4	ug/L	2	Standard
	Pb	206	578.7	9.2	**0.0425**	0.010	23.1	ug/L	240	Standard
	Pb	207	493.0	9.5	**0.0393**	0.012	31.8	ug/L	198	Standard
	Pb	208	1938.4	3.0	**0.0345**	0.004	12.8	ug/L	883	Standard
	U	238	1219.0	4.3	**0.1816**	0.009	5.1	ug/L	3	Standard
>	**Bi**	209	499083.1	3.3				ug/L	523984	Standard

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Na	23	20.0	43.3	**245.3647**	110.079	44.9	mg/L	0	Standard
Mg	24	80086.1	0.7	**109.5385**	2.239	2.0	mg/L	37	Standard
K	39	1376.7	6.5	**3.1098**	0.163	5.2	mg/L	38	Standard
Ca	43	2828.6	6.5	**186.7611**	8.963	4.8	mg/L	10	Standard
Fe	54	188.7	25.7	**0.0318**	0.047	146.5	mg/L	179	Standard
Fe	57	1751.8	4.9	**5.2348**	0.203	3.9	mg/L	335	Standard
> **Sc-1**	45	57575.9	1.8				mg/L	61029	Standard
Cl	35	65110.3	1.2				ug/L	20195	Standard
Kr	83	3.7	68.6				ug/L	4	Standard
Br	81	22346.5	6.5				ug/L	1547	Standard
P	31	17116.3	3.4				ug/L	15286	Standard
S	34	2223.5	6.9				ug/L	1572	Standard
Sr	88	836.7	13.9				ug/L	73	Standard
C	12	76.7	74.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	52.1	77.4				mg/L	6	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	26.7	57.3				mg/L	13	Standard
I	127	41219.6	7.8				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		180.238	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		102.891	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.420
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.248
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606124702DP WG574001-06
Sample Date/Time: Wednesday, June 29, 2016 15:58:27
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	151702.5	2.0				ug/L	74699	Standard
	Be	9	51.7	59.1	**0.0368**	0.018	48.5	ug/L	8	Standard
	Al	27	41839885.7	0.1	**140.2128**	2.854	2.0	ug/L	1493	Standard
	Sc	45	56811.4	3.1				ug/L	61029	Standard
	Ti	47	131.7	6.1	**0.2545**	0.026	10.2	ug/L	35	Standard
	V	51	2376.3	9.9	**0.1332**	0.026	19.9	ug/L	1435	Standard
	Cr	52	12951.9	1.5	**0.8048**	0.052	6.4	ug/L	7635	Standard
	Cr	53	1565.1	1.7	**1.4417**	0.042	2.9	ug/L	363	Standard
	Mn	55	867683.1	1.0	**130.2493**	3.502	2.7	ug/L	747	Standard
	Co	59	4344.6	3.7	**0.6509**	0.022	3.4	ug/L	234	Standard
	Ni	60	12342.7	0.7	**6.7729**	0.126	1.9	ug/L	215	Standard
	Cu	65	4552.0	1.4	**2.4548**	0.036	1.5	ug/L	104	Standard
	Zn	66	4125.6	2.3	**3.4960**	0.055	1.6	ug/L	363	Standard
>	**Ge**	72	473381.7	2.0				ug/L	495142	Standard
	As	75	389.2	1.9	**0.4231**	0.002	0.6	ug/L	-50	Standard
	Se	82	181.1	4.2	**1.5888**	0.099	6.2	ug/L	14	Standard
	Se-1	77	106.3	18.0	**0.8981**	0.248	27.6	ug/L	42	Standard
>	**Ga**	71	78.3	22.4				mg/L	42	Standard
	Rb	85	147149.5	0.7				ug/L	17	Standard
	Y	89	405581.1	1.8				ug/L	417098	Standard
>	**Rh**	103	178.3	29.5				ug/L	13	Standard
	Mo	98	220.6	12.3	**0.0817**	0.013	15.7	ug/L	11	Standard
	Ag	107	177.0	68.0	**0.0160**	0.020	127.1	ug/L	68	Standard
	Cd	111	65.9	51.9	**0.0256**	0.018	71.0	mg/L	2	Standard
	Cd	114	151.1	49.7	**0.0291**	0.016	55.4	ug/L	12	Standard
>	**In**	115	557347.0	2.4				ug/L	587441	Standard
	Sn	118	766.7	0.4	**0.0437**	0.004	8.6	ug/L	497	Standard
	Sb	123	305.8	17.0	**0.0650**	0.013	20.6	ug/L	78	Standard
	Ba	135	5047.2	3.4	**2.5853**	0.149	5.7	ug/L	24	Standard
	Ce	140	491.7	100.3				ug/L	25	Standard
>	**Tb**	159	935324.5	2.7				ug/L	939701	Standard
	Ho	165	18.3	103.3				ug/L	10	Standard
	Tl	203	947.0	9.8	**0.1179**	0.014	11.5	ug/L	4	Standard
	Tl	205	846.7	27.0	**0.1237**	0.035	28.6	ug/L	2	Standard
	Pb	206	418.3	37.6	**0.0106**	0.032	302.9	ug/L	240	Standard
	Pb	207	351.7	32.0	**0.0074**	0.026	354.3	ug/L	198	Standard
	Pb	208	1404.0	30.0	**0.0041**	0.025	608.6	ug/L	883	Standard
	U	238	972.4	9.3	**0.1427**	0.016	11.1	ug/L	3	Standard
>	**Bi**	209	503603.8	1.5				ug/L	523984	Standard

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Na	23	25.0	34.6	**311.2656**	112.939	36.3	mg/L	0	Standard
Mg	24	85343.0	0.9	**118.3682**	4.384	3.7	mg/L	37	Standard
K	39	1298.4	2.9	**2.9712**	0.147	4.9	mg/L	38	Standard
Ca	43	2830.3	7.5	**189.4839**	12.043	6.4	mg/L	10	Standard
Fe	54	146.6	14.0	**-0.0044**	0.021	483.2	mg/L	179	Standard
Fe	57	1698.4	7.8	**5.1376**	0.623	12.1	mg/L	335	Standard
> **Sc-1**	45	56811.4	3.1				mg/L	61029	Standard
Cl	35	65999.5	1.4				ug/L	20195	Standard
Kr	83	1.3	114.6				ug/L	4	Standard
Br	81	22520.1	6.6				ug/L	1547	Standard
P	31	16799.3	3.7				ug/L	15286	Standard
S	34	2040.1	3.0				ug/L	1572	Standard
Sr	88	920.0	8.9				ug/L	73	Standard
C	12	83.3	25.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	3	Standard
Dy	164	32.1	98.6				mg/L	6	Standard
Ho-1	165	18.3	103.3				mg/L	10	Standard
Er	166	26.7	43.3				mg/L	13	Standard
I	127	45859.6	7.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		203.086	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.605	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.877
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.110
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606126501 WG574001-02
Sample Date/Time: Wednesday, June 29, 2016 16:01:39
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	112017.9	3.5				ug/L	74699	Standard
	Be	9	21.7	35.3	**0.0242**	0.006	26.3	ug/L	8	Standard
	Al	27	58851331.1	1.0	**267.2037**	7.701	2.9	ug/L	1493	Standard
	Sc	45	63265.2	2.1				ug/L	61029	Standard
	Ti	47	314.3	6.0	**0.7250**	0.050	6.9	ug/L	35	Standard
	V	51	84379.6	0.6	**11.0401**	0.098	0.9	ug/L	1435	Standard
	Cr	52	25344.2	1.7	**2.4155**	0.065	2.7	ug/L	7635	Standard
	Cr	53	30644.3	3.7	**33.0161**	1.295	3.9	ug/L	363	Standard
	Mn	55	3058.3	0.3	**0.2937**	0.003	0.9	ug/L	747	Standard
	Co	59	981.4	1.2	**0.1122**	0.002	1.4	ug/L	234	Standard
	Ni	60	4598.7	1.8	**2.3463**	0.051	2.2	ug/L	215	Standard
	Cu	65	1226.7	2.1	**0.5592**	0.015	2.8	ug/L	104	Standard
	Zn	66	2978.0	3.2	**2.2873**	0.091	4.0	ug/L	363	Standard
>	**Ge**	72	492356.2	0.3				ug/L	495142	Standard
	As	75	3467.1	5.3	**3.1728**	0.175	5.5	ug/L	-50	Standard
	Se	82	1561.8	3.2	**14.1732**	0.483	3.4	ug/L	14	Standard
	Se-1	77	3085.3	7.4	**41.8633**	3.228	7.7	ug/L	42	Standard
>	**Ga**	71	63.3	27.7				mg/L	42	Standard
	Rb	85	9206.1	3.0				ug/L	17	Standard
	Y	89	442169.1	3.5				ug/L	417098	Standard
>	**Rh**	103	255.0	11.9				ug/L	13	Standard
	Mo	98	5205.2	3.3	**1.8993**	0.033	1.7	ug/L	11	Standard
	Ag	107	803.7	5.3	**0.1074**	0.005	4.8	ug/L	68	Standard
	Cd	111	45.0	9.2	**0.0131**	0.002	16.6	mg/L	2	Standard
	Cd	114	163.3	22.8	**0.0289**	0.007	22.9	ug/L	12	Standard
>	**In**	115	602229.8	3.0				ug/L	587441	Standard
	Sn	118	683.3	9.8	**0.0193**	0.009	45.4	ug/L	497	Standard
	Sb	123	210.7	19.8	**0.0397**	0.008	19.9	ug/L	78	Standard
	Ba	135	21407.4	0.7	**10.1914**	0.253	2.5	ug/L	24	Standard
	Ce	140	328.3	10.1				ug/L	25	Standard
>	**Tb**	159	984916.0	0.2				ug/L	939701	Standard
	Ho	165	35.0	24.7				ug/L	10	Standard
	Tl	203	94.3	9.0	**0.0098**	0.001	12.0	ug/L	4	Standard
	Tl	205	65.0	40.7	**0.0094**	0.004	40.6	ug/L	2	Standard
	Pb	206	401.3	3.0	**0.0049**	0.001	28.2	ug/L	240	Standard
	Pb	207	354.0	5.2	**0.0056**	0.003	55.2	ug/L	198	Standard
	Pb	208	1436.0	3.5	**0.0035**	0.003	74.9	ug/L	883	Standard
	U	238	31993.4	1.5	**4.7067**	0.092	1.9	ug/L	3	Standard
>	**Bi**	209	517006.9	1.2				ug/L	523984	Standard

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Na	23	5.0	100.0	**55.9813**	56.756	101.4	mg/L	0	Standard
Mg	24	180057.1	1.6	**224.1644**	1.858	0.8	mg/L	37	Standard
K	39	641.7	5.8	**1.2549**	0.096	7.6	mg/L	38	Standard
Ca	43	708.3	7.0	**40.6474**	3.060	7.5	mg/L	10	Standard
Fe	54	157.9	5.8	**-0.0091**	0.008	86.4	mg/L	179	Standard
Fe	57	550.0	17.3	**0.7314**	0.333	45.5	mg/L	335	Standard
> **Sc-1**	45	63265.2	2.1				mg/L	61029	Standard
Cl	35	33676.1	1.7				ug/L	20195	Standard
Kr	83	0.3	173.2				ug/L	4	Standard
Br	81	48808.6	5.5				ug/L	1547	Standard
P	31	23084.3	3.5				ug/L	15286	Standard
S	34	2106.8	4.3				ug/L	1572	Standard
Sr	88	1195.0	6.7				ug/L	73	Standard
C	12	130.0	40.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	9.0	113.3				mg/L	6	Standard
Ho-1	165	35.0	24.7				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	49504.2	3.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		149.959	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.437	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.517
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.668
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606126501 WG574001-02
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Method 6020 - Summary Report

Sample ID: L1606126502S WG574001-07
Sample Date/Time: Wednesday, June 29, 2016 16:04:50
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	109865.8	4.5				ug/L	74699	Standard
	Be	9	61395.8	1.0	**47.4912**	2.348	4.9	ug/L	8	Standard
	Al	27	61297739.1	1.7	**284.0961**	17.361	6.1	ug/L	1493	Standard
	Sc	45	64222.6	2.9				ug/L	61029	Standard
	Ti	47	334.7	6.1	**0.7462**	0.065	8.7	ug/L	35	Standard
	V	51	514269.3	0.9	**65.7128**	0.488	0.7	ug/L	1435	Standard
	Cr	52	414721.1	1.2	**53.1400**	0.316	0.6	ug/L	7635	Standard
	Cr	53	79122.8	2.2	**82.5246**	0.802	1.0	ug/L	363	Standard
	Mn	55	379075.2	0.4	**52.5566**	0.801	1.5	ug/L	747	Standard
	Co	59	375122.1	1.7	**54.9533**	1.379	2.5	ug/L	234	Standard
	Ni	60	98886.4	1.8	**50.9941**	0.435	0.9	ug/L	215	Standard
	Cu	65	94781.9	0.9	**49.1885**	0.428	0.9	ug/L	104	Standard
	Zn	66	59708.1	1.0	**52.4531**	0.349	0.7	ug/L	363	Standard
>	Ge	72	511580.8	1.5				ug/L	495142	Standard
	As	75	64226.1	0.6	**55.5617**	0.582	1.0	ug/L	-50	Standard
	Se	82	7637.7	1.0	**67.2251**	1.117	1.7	ug/L	14	Standard
	Se-1	77	7177.4	2.9	**94.4764**	1.329	1.4	ug/L	42	Standard
>	Ga	71	96.7	7.9				mg/L	42	Standard
	Rb	85	9571.4	0.6				ug/L	17	Standard
	Y	89	459795.2	1.7				ug/L	417098	Standard
>	Rh	103	293.3	12.0				ug/L	13	Standard
	Mo	98	5421.1	3.7	**1.9704**	0.066	3.4	ug/L	11	Standard
	Ag	107	318338.0	1.0	**47.4485**	0.356	0.8	ug/L	68	Standard
	Cd	111	104991.2	1.0	**48.7852**	0.464	1.0	mg/L	2	Standard
	Cd	114	250399.7	1.5	**47.4405**	0.760	1.6	ug/L	12	Standard
>	In	115	604563.1	0.3				ug/L	587441	Standard
	Sn	118	798.4	4.4	**0.0381**	0.006	16.0	ug/L	497	Standard
	Sb	123	240747.3	1.0	**50.1002**	0.397	0.8	ug/L	78	Standard
	Ba	135	122571.5	0.3	**58.1746**	0.379	0.7	ug/L	24	Standard
	Ce	140	328.3	0.9				ug/L	25	Standard
>	Tb	159	981221.4	1.4				ug/L	939701	Standard
	Ho	165	28.3	44.4				ug/L	10	Standard
	Tl	203	414235.7	0.7	**51.0974**	0.645	1.3	ug/L	4	Standard
	Tl	205	378219.2	0.6	**53.7534**	0.090	0.2	ug/L	2	Standard
	Pb	206	277784.6	0.1	**52.8053**	0.305	0.6	ug/L	240	Standard
	Pb	207	237018.9	0.5	**50.7105**	0.514	1.0	ug/L	198	Standard
	Pb	208	965977.0	0.4	**52.3096**	0.506	1.0	ug/L	883	Standard
	U	238	407586.9	0.7	**60.2072**	0.700	1.2	ug/L	3	Standard
>	Bi	209	515321.0	0.6				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.6720**	30.600	173.2	mg/L	0	Standard
Mg	24	189285.1	1.3	**232.3057**	9.548	4.1	mg/L	37	Standard
K	39	641.7	6.1	**1.2328**	0.045	3.6	mg/L	38	Standard
Ca	43	760.0	12.3	**43.0240**	4.391	10.2	mg/L	10	Standard
Fe	54	185.4	16.8	**0.0114**	0.028	245.2	mg/L	179	Standard
Fe	57	630.0	4.2	**0.9612**	0.087	9.0	mg/L	335	Standard
> **Sc-1**	45	64222.6	2.9				mg/L	61029	Standard
Cl	35	34933.6	1.5				ug/L	20195	Standard
Kr	83	2.7	114.6				ug/L	4	Standard
Br	81	53306.9	1.0				ug/L	1547	Standard
P	31	23740.3	1.4				ug/L	15286	Standard
S	34	2118.5	3.3				ug/L	1572	Standard
Sr	88	1145.0	3.3				ug/L	73	Standard
C	12	140.0	21.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	28.6	38.4				mg/L	6	Standard
Ho-1	165	28.3	44.4				mg/L	10	Standard
Er	166	30.0	66.7				mg/L	13	Standard
I	127	81496.0	7.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		147.078	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.320	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.915	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.347	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606126502S WG574001-07
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Method 6020 - Summary Report

Sample ID: L1606126503SD WG574001-08
Sample Date/Time: Wednesday, June 29, 2016 16:08:02
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	108017.3	3.5				ug/L	74699	Standard
	Be	9	61104.9	5.2	**47.9870**	0.846	1.8	ug/L	8	Standard
	Al	27	60436124.3	2.1	**284.5445**	9.073	3.2	ug/L	1493	Standard
	Sc	45	65195.1	3.6				ug/L	61029	Standard
	Ti	47	321.3	5.9	**0.6738**	0.054	8.0	ug/L	35	Standard
	V	51	521782.6	1.8	**63.5667**	1.206	1.9	ug/L	1435	Standard
	Cr	52	431117.5	0.3	**52.6702**	0.983	1.9	ug/L	7635	Standard
	Cr	53	81998.0	1.1	**81.5509**	0.729	0.9	ug/L	363	Standard
	Mn	55	379421.8	1.7	**50.1647**	1.838	3.7	ug/L	747	Standard
	Co	59	378746.6	2.0	**52.9167**	2.098	4.0	ug/L	234	Standard
	Ni	60	101643.5	0.7	**49.9872**	1.144	2.3	ug/L	215	Standard
	Cu	65	96036.4	1.2	**47.5169**	0.455	1.0	ug/L	104	Standard
	Zn	66	60629.4	1.5	**50.7689**	0.479	0.9	ug/L	363	Standard
>	**Ge**	72	536566.5	1.9				ug/L	495142	Standard
	As	75	65668.7	0.7	**54.1701**	0.796	1.5	ug/L	-50	Standard
	Se	82	7769.6	1.1	**65.2136**	1.970	3.0	ug/L	14	Standard
	Se-1	77	7316.4	1.6	**91.8340**	1.824	2.0	ug/L	42	Standard
>	**Ga**	71	56.7	22.2				mg/L	42	Standard
	Rb	85	9684.8	3.9				ug/L	17	Standard
	Y	89	458590.9	3.1				ug/L	417098	Standard
>	**Rh**	103	275.0	12.6				ug/L	13	Standard
	Mo	98	5397.9	1.9	**1.9792**	0.040	2.0	ug/L	11	Standard
	Ag	107	315299.7	0.9	**47.4082**	1.008	2.1	ug/L	68	Standard
	Cd	111	105649.0	0.5	**49.5183**	0.751	1.5	mg/L	2	Standard
	Cd	114	256574.5	1.5	**49.0334**	1.028	2.1	ug/L	12	Standard
>	**In**	115	599465.1	2.0				ug/L	587441	Standard
	Sn	118	820.0	11.4	**0.0428**	0.015	34.4	ug/L	497	Standard
	Sb	123	245153.5	0.2	**51.4644**	0.950	1.8	ug/L	78	Standard
	Ba	135	122768.4	0.8	**58.7829**	1.524	2.6	ug/L	24	Standard
	Ce	140	333.3	10.5				ug/L	25	Standard
>	**Tb**	159	983758.7	0.8				ug/L	939701	Standard
	Ho	165	18.3	41.7				ug/L	10	Standard
	Tl	203	416470.0	0.7	**50.8907**	0.470	0.9	ug/L	4	Standard
	Tl	205	377588.7	0.1	**53.1619**	0.172	0.3	ug/L	2	Standard
	Pb	206	279930.3	0.5	**52.7144**	0.351	0.7	ug/L	240	Standard
	Pb	207	238634.3	0.7	**50.5762**	0.275	0.5	ug/L	198	Standard
	Pb	208	958199.8	1.0	**51.4011**	0.688	1.3	ug/L	883	Standard
	U	238	405052.0	0.8	**59.2716**	0.671	1.1	ug/L	3	Standard
>	**Bi**	209	520189.0	0.3				ug/L	523984	Standard

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Na	23	5.0	173.2	**51.9909**	90.042	173.2	mg/L	0	Standard
Mg	24	184795.4	2.1	**223.5320**	12.550	5.6	mg/L	37	Standard
K	39	668.3	13.7	**1.2668**	0.164	13.0	mg/L	38	Standard
Ca	43	725.0	7.3	**40.3567**	2.975	7.4	mg/L	10	Standard
Fe	54	151.4	21.3	**-0.0183**	0.024	132.3	mg/L	179	Standard
Fe	57	623.3	16.5	**0.9045**	0.268	29.6	mg/L	335	Standard
> **Sc-1**	45	65195.1	3.6				mg/L	61029	Standard
Cl	35	33686.7	1.5				ug/L	20195	Standard
Kr	83	1.7	91.7				ug/L	4	Standard
Br	81	51370.3	3.2				ug/L	1547	Standard
P	31	23124.3	1.4				ug/L	15286	Standard
S	34	2101.8	2.3				ug/L	1572	Standard
Sr	88	1251.7	9.6				ug/L	73	Standard
C	12	163.3	19.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	9.4	104.3				mg/L	6	Standard
Ho-1	165	18.3	41.7				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	90519.1	8.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		144.604	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.366	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.047	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.276	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606124701
Sample Date/Time: Wednesday, June 29, 2016 16:11:13
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	160464.4	3.8				ug/L	74699	Standard
	Be	9	12485.1	1.8	**6.6126**	0.132	2.0	ug/L	8	Standard
	Al	27	129371635.5	1.7	**410.0067**	8.683	2.1	ug/L	1493	Standard
	Sc	45	97873.5	2.0				ug/L	61029	Standard
	Ti	47	12940.2	2.9	**32.4229**	1.439	4.4	ug/L	35	Standard
	V	51	62587.9	0.8	**7.6988**	0.173	2.3	ug/L	1435	Standard
	Cr	52	130472.4	1.2	**15.7449**	0.176	1.1	ug/L	7635	Standard
	Cr	53	17299.9	2.8	**17.4949**	0.102	0.6	ug/L	363	Standard
	Mn	55	53885293.3	1.0	**7372.4056**	142.217	1.9	ug/L	747	Standard
	Co	59	1486809.2	2.0	**214.4609**	6.754	3.1	ug/L	234	Standard
	Ni	60	953927.1	1.9	**485.1518**	7.673	1.6	ug/L	215	Standard
	Cu	65	14021.8	2.7	**7.0705**	0.048	0.7	ug/L	104	Standard
	Zn	66	1250022.8	1.4	**1089.5042**	11.046	1.0	ug/L	363	Standard
>	**Ge**	72	519921.5	2.2				ug/L	495142	Standard
	As	75	2369.9	1.5	**2.0748**	0.031	1.5	ug/L	-50	Standard
	Se	82	334.2	2.8	**2.7639**	0.140	5.1	ug/L	14	Standard
	Se-1	77	477.7	9.4	**5.6016**	0.492	8.8	ug/L	42	Standard
>	**Ga**	71	3503.7	1.4				mg/L	42	Standard
	Rb	85	155749.9	1.6				ug/L	17	Standard
	Y	89	3051185.4	0.7				ug/L	417098	Standard
>	**Rh**	103	200.0	9.0				ug/L	13	Standard
	Mo	98	648.1	0.8	**0.2277**	0.002	1.0	ug/L	11	Standard
	Ag	107	406.3	10.5	**0.0469**	0.006	13.8	ug/L	68	Standard
	Cd	111	4037.2	2.2	**1.8458**	0.056	3.0	mg/L	2	Standard
	Cd	114	10321.7	4.5	**1.9292**	0.065	3.4	ug/L	12	Standard
>	**In**	115	612067.4	1.8				ug/L	587441	Standard
	Sn	118	936.7	6.3	**0.0593**	0.012	20.5	ug/L	497	Standard
	Sb	123	674.3	5.8	**0.1344**	0.006	4.1	ug/L	78	Standard
	Ba	135	15717.8	1.3	**7.3556**	0.136	1.8	ug/L	24	Standard
	Ce	140	2639736.8	0.7				ug/L	25	Standard
>	**Tb**	159	1213429.7	1.8				ug/L	939701	Standard
	Ho	165	212831.1	0.7				ug/L	10	Standard
	Tl	203	2423.5	3.4	**0.2853**	0.011	3.9	ug/L	4	Standard
	Tl	205	2225.2	6.3	**0.3038**	0.017	5.8	ug/L	2	Standard
	Pb	206	7086.3	0.1	**1.2240**	0.010	0.8	ug/L	240	Standard
	Pb	207	5547.0	2.2	**1.0710**	0.022	2.1	ug/L	198	Standard
	Pb	208	23218.6	1.0	**1.1348**	0.005	0.5	ug/L	883	Standard
	U	238	25740.2	1.8	**3.6463**	0.044	1.2	ug/L	3	Standard
>	**Bi**	209	536711.9	0.7				ug/L	523984	Standard

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Na	23	40.0	57.3	**285.3574**	160.270	56.2	mg/L	0	Standard
Mg	24	87773.6	1.9	**70.5914**	1.090	1.5	mg/L	37	Standard
K	39	1211.7	2.8	**1.5562**	0.053	3.4	mg/L	38	Standard
Ca	43	3308.7	4.2	**127.7939**	4.640	3.6	mg/L	10	Standard
Fe	54	180981.2	2.7	**95.5321**	0.892	0.9	mg/L	179	Standard
Fe	57	48873.8	3.4	**102.4969**	2.098	2.0	mg/L	335	Standard
Sc-1	45	97873.5	2.0				mg/L	61029	Standard
Cl	35	64420.7	1.3				ug/L	20195	Standard
Kr	83	1.3	86.6				ug/L	4	Standard
Br	81	26873.8	3.7				ug/L	1547	Standard
P	31	52208.1	1.4				ug/L	15286	Standard
S	34	1956.8	2.0				ug/L	1572	Standard
Sr	88	1171.7	10.6				ug/L	73	Standard
C	12	126.7	46.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	329920.1	1.3				mg/L	6	Standard
Ho-1	165	212831.1	0.7				mg/L	10	Standard
Er	166	185158.1	1.8				mg/L	13	Standard
I	127	88143.1	6.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		214.815	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		105.004	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.192
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.429
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Co 59 Upper, S, EEE	Co	59
Ni 60 Upper, S, EEE	Ni	60
Zn 66 Upper, S, EEE	Zn	66

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Method 6020 - Summary Report

Sample ID: L1606124701PS WG574688-01
Sample Date/Time: Wednesday, June 29, 2016 16:14:25
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	166369.0	3.1				ug/L	74699	Standard
	Be	9	78228.1	1.5	**39.9183**	0.744	1.9	ug/L	8	Standard
	Al	27	127858501.0	1.9	**390.7420**	6.863	1.8	ug/L	1493	Standard
	Sc	45	95075.8	2.0				ug/L	61029	Standard
	Ti	47	12076.5	3.4	**30.6847**	0.840	2.7	ug/L	35	Standard
	V	51	487373.4	0.7	**62.1823**	0.880	1.4	ug/L	1435	Standard
	Cr	52	506749.0	0.5	**65.0704**	0.602	0.9	ug/L	7635	Standard
	Cr	53	63546.3	1.7	**66.1298**	1.201	1.8	ug/L	363	Standard
	Mn	55	53730576.4	0.3	**7459.5309**	74.503	1.0	ug/L	747	Standard
	Co	59	1866113.9	0.2	**273.1251**	3.396	1.2	ug/L	234	Standard
	Ni	60	1009610.1	0.8	**521.0961**	4.502	0.9	ug/L	215	Standard
	Cu	65	102190.2	1.2	**52.9646**	0.037	0.1	ug/L	104	Standard
	Zn	66	1265218.7	0.3	**1119.1475**	11.121	1.0	ug/L	363	Standard
>	**Ge**	72	512284.2	1.2				ug/L	495142	Standard
	As	75	65072.9	0.3	**56.2148**	0.511	0.9	ug/L	-50	Standard
	Se	82	7179.2	1.0	**63.0878**	0.484	0.8	ug/L	14	Standard
	Se-1	77	4836.8	0.7	**63.3901**	0.749	1.2	ug/L	42	Standard
>	**Ga**	71	3398.7	7.2				mg/L	42	Standard
	Rb	85	158551.9	0.5				ug/L	17	Standard
	Y	89	3079691.2	1.3				ug/L	417098	Standard
>	**Rh**	103	243.3	6.3				ug/L	13	Standard
	Mo	98	610.5	4.6	**0.2160**	0.008	3.7	ug/L	11	Standard
	Ag	107	329069.5	0.6	**48.8691**	0.577	1.2	ug/L	68	Standard
	Cd	111	109320.3	0.2	**50.6101**	0.459	0.9	mg/L	2	Standard
	Cd	114	265491.9	0.4	**50.1152**	0.608	1.2	ug/L	12	Standard
>	**In**	115	606831.5	1.0				ug/L	587441	Standard
	Sn	118	1098.4	5.9	**0.0874**	0.012	14.0	ug/L	497	Standard
	Sb	123	240923.7	1.8	**49.9558**	1.171	2.3	ug/L	78	Standard
	Ba	135	113288.6	0.8	**53.5705**	0.782	1.5	ug/L	24	Standard
	Ce	140	2588807.2	1.1				ug/L	25	Standard
>	**Tb**	159	1203377.0	1.6				ug/L	939701	Standard
	Ho	165	210409.6	1.8				ug/L	10	Standard
	Tl	203	437720.2	1.4	**52.3305**	0.744	1.4	ug/L	4	Standard
	Tl	205	404409.4	0.6	**55.7069**	0.222	0.4	ug/L	2	Standard
	Pb	206	295264.9	0.3	**54.4023**	0.212	0.4	ug/L	240	Standard
	Pb	207	250626.5	0.1	**51.9726**	0.335	0.6	ug/L	198	Standard
	Pb	208	1033784.3	0.4	**54.2614**	0.547	1.0	ug/L	883	Standard
	U	238	423217.8	0.6	**60.5919**	0.666	1.1	ug/L	3	Standard
>	**Bi**	209	531687.2	0.6				ug/L	523984	Standard

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Na	23	31.7	32.9	**235.3667**	80.946	34.4	mg/L	0	Standard
Mg	24	88559.7	0.9	**73.3333**	1.498	2.0	mg/L	37	Standard
K	39	1311.7	6.5	**1.7460**	0.092	5.3	mg/L	38	Standard
Ca	43	3437.1	1.4	**136.8797**	3.742	2.7	mg/L	10	Standard
Fe	54	183063.9	0.7	**99.5077**	1.370	1.4	mg/L	179	Standard
Fe	57	49900.4	2.7	**107.8438**	4.358	4.0	mg/L	335	Standard
> **Sc-1**	45	95075.8	2.0				mg/L	61029	Standard
Cl	35	63889.8	1.2				ug/L	20195	Standard
Kr	83	1.7	34.6				ug/L	4	Standard
Br	81	26186.0	7.9				ug/L	1547	Standard
P	31	52633.0	2.3				ug/L	15286	Standard
S	34	1903.5	2.7				ug/L	1572	Standard
Sr	88	1258.4	8.1				ug/L	73	Standard
C	12	153.3	16.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	3	Standard
Dy	164	329580.7	1.9				mg/L	6	Standard
Ho-1	165	210409.6	1.8				mg/L	10	Standard
Er	166	182077.6	1.3				mg/L	13	Standard
I	127	87547.6	5.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		222.720	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.462	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.301
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.470
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Co 59 Upper, S, EEE	Co	59
Ni 60 Upper, S, EEE	Ni	60
Zn 66 Upper, S, EEE	Zn	66

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Method 6020 - Summary Report

Sample ID: L1606124701SDL WG574688-02
Sample Date/Time: Wednesday, June 29, 2016 16:17:36
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	115043.6	2.7				ug/L	74699	Standard
	Be	9	2510.2	6.0	**1.8579**	0.064	3.4	ug/L	8	Standard
	Al	27	26603666.2	1.3	**117.5773**	3.118	2.7	ug/L	1493	Standard
	Sc	45	70520.4	2.0				ug/L	61029	Standard
	Ti	47	2655.2	2.4	**6.2496**	0.159	2.5	ug/L	35	Standard
	V	51	13651.6	1.3	**1.4451**	0.028	2.0	ug/L	1435	Standard
	Cr	52	32029.5	0.6	**2.9000**	0.113	3.9	ug/L	7635	Standard
	Cr	53	4062.2	6.0	**3.6565**	0.147	4.0	ug/L	363	Standard
	Mn	55	11326454.5	1.3	**1476.9710**	52.700	3.6	ug/L	747	Standard
	Co	59	315829.2	0.8	**43.3845**	1.293	3.0	ug/L	234	Standard
	Ni	60	206220.6	0.5	**99.8677**	2.554	2.6	ug/L	215	Standard
	Cu	65	3227.7	3.3	**1.4714**	0.087	5.9	ug/L	104	Standard
	Zn	66	276031.8	0.8	**228.9686**	6.765	3.0	ug/L	363	Standard
>	**Ge**	72	545622.5	2.3				ug/L	495142	Standard
	As	75	529.0	5.1	**0.4886**	0.031	6.3	ug/L	-50	Standard
	Se	82	109.8	7.8	**0.7692**	0.061	7.9	ug/L	14	Standard
	Se-1	77	127.7	10.6	**0.9669**	0.203	21.0	ug/L	42	Standard
>	**Ga**	71	896.7	4.3				mg/L	42	Standard
	Rb	85	33246.4	0.8				ug/L	17	Standard
	Y	89	1035711.2	2.7				ug/L	417098	Standard
>	**Rh**	103	68.3	33.0				ug/L	13	Standard
	Mo	98	137.2	4.4	**0.0416**	0.001	3.0	ug/L	11	Standard
	Ag	107	193.7	13.0	**0.0144**	0.003	20.5	ug/L	68	Standard
	Cd	111	922.1	1.5	**0.3978**	0.011	2.7	mg/L	2	Standard
	Cd	114	2202.4	8.0	**0.3929**	0.032	8.2	ug/L	12	Standard
>	**In**	115	638835.9	2.4				ug/L	587441	Standard
	Sn	118	601.7	4.7	**-0.0000**	0.004	76937.0	ug/L	497	Standard
	Sb	123	1960.6	22.3	**0.3834**	0.095	24.7	ug/L	78	Standard
	Ba	135	3410.7	1.0	**1.5171**	0.049	3.2	ug/L	24	Standard
	Ce	140	553030.9	1.0				ug/L	25	Standard
>	**Tb**	159	1064988.1	1.7				ug/L	939701	Standard
	Ho	165	44299.7	1.5				ug/L	10	Standard
	Tl	203	596.3	8.1	**0.0662**	0.006	8.4	ug/L	4	Standard
	Tl	205	613.3	10.1	**0.0808**	0.008	10.1	ug/L	2	Standard
	Pb	206	1759.1	0.5	**0.2383**	0.002	0.8	ug/L	240	Standard
	Pb	207	1407.7	5.3	**0.2088**	0.015	7.2	ug/L	198	Standard
	Pb	208	5898.4	2.6	**0.2216**	0.008	3.7	ug/L	883	Standard
	U	238	5357.3	1.2	**0.7271**	0.010	1.3	ug/L	3	Standard
>	**Bi**	209	557502.4	0.2				ug/L	523984	Standard

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Na	23	11.7	89.2	**117.5100**	105.501	89.8	mg/L	0	Standard
Mg	24	18105.8	1.6	**20.1624**	0.144	0.7	mg/L	37	Standard
K	39	321.7	3.6	**0.5016**	0.035	6.9	mg/L	38	Standard
Ca	43	733.4	8.9	**37.5359**	2.964	7.9	mg/L	10	Standard
Fe	54	38163.2	2.6	**27.8607**	0.186	0.7	mg/L	179	Standard
Fe	57	10221.8	1.3	**28.9959**	0.316	1.1	mg/L	335	Standard
> **Sc-1**	45	70520.4	2.0				mg/L	61029	Standard
Cl	35	31180.1	1.1				ug/L	20195	Standard
Kr	83	2.3	89.2				ug/L	4	Standard
Br	81	7325.1	3.6				ug/L	1547	Standard
P	31	24873.7	0.5				ug/L	15286	Standard
S	34	1646.8	8.5				ug/L	1572	Standard
Sr	88	296.7	11.0				ug/L	73	Standard
C	12	96.7	53.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	69181.7	2.0				mg/L	6	Standard
Ho-1	165	44299.7	1.5				mg/L	10	Standard
Er	166	39063.6	1.3				mg/L	13	Standard
I	127	21375.1	3.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		154.010	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.195	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.749
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.397
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Zn 66 Upper, S, EEE	Zn	66

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 16:20:49
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	104492.8	3.9				ug/L	74699	Standard
	Be	9	63869.3	1.0	**51.9084**	1.516	2.9	ug/L	8	Standard
	Al	27	9148865.9	2.6	**44.5067**	0.724	1.6	ug/L	1493	Standard
	Sc	45	68447.7	3.2				ug/L	61029	Standard
	Ti	47	43923.6	1.6	**106.2047**	1.334	1.3	ug/L	35	Standard
	V	51	454775.2	0.5	**55.0469**	0.468	0.8	ug/L	1435	Standard
	Cr	52	431898.3	0.6	**52.4410**	0.316	0.6	ug/L	7635	Standard
	Cr	53	53343.8	2.8	**52.6203**	1.459	2.8	ug/L	363	Standard
	Mn	55	427711.0	4.2	**56.2006**	1.985	3.5	ug/L	747	Standard
	Co	59	425402.4	1.1	**59.0619**	0.614	1.0	ug/L	234	Standard
	Ni	60	106741.4	0.9	**52.1773**	0.185	0.4	ug/L	215	Standard
	Cu	65	106457.4	0.4	**52.3703**	0.176	0.3	ug/L	104	Standard
	Zn	66	63607.9	0.7	**52.9682**	0.530	1.0	ug/L	363	Standard
>	Ge	72	539725.1	0.7				ug/L	495142	Standard
	As	75	63945.9	1.5	**52.4378**	1.123	2.1	ug/L	-50	Standard
	Se	82	6584.0	0.6	**54.8988**	0.684	1.2	ug/L	14	Standard
	Se-1	77	4386.3	1.4	**54.4772**	1.111	2.0	ug/L	42	Standard
>	Ga	71	80.0	16.5				mg/L	42	Standard
	Rb	85	970.0	8.8				ug/L	17	Standard
	Y	89	494238.2	2.5				ug/L	417098	Standard
>	Rh	103	45.0	11.1				ug/L	13	Standard
	Mo	98	317512.9	0.8	**102.4795**	1.834	1.8	ug/L	11	Standard
	Ag	107	378789.7	0.9	**49.9860**	0.591	1.2	ug/L	68	Standard
	Cd	111	119686.6	0.4	**49.2403**	0.865	1.8	mg/L	2	Standard
	Cd	114	291890.5	1.4	**48.9669**	1.322	2.7	ug/L	12	Standard
>	In	115	682927.0	1.5				ug/L	587441	Standard
	Sn	118	338721.1	0.8	**49.7884**	0.723	1.5	ug/L	497	Standard
	Sb	123	263759.6	1.2	**48.5931**	0.331	0.7	ug/L	78	Standard
	Ba	135	111614.3	0.7	**46.9010**	0.972	2.1	ug/L	24	Standard
	Ce	140	1265.1	98.5				ug/L	25	Standard
>	Tb	159	1064058.1	1.0				ug/L	939701	Standard
	Ho	165	88.3	85.2				ug/L	10	Standard
	Tl	203	475263.7	0.7	**51.4258**	1.211	2.4	ug/L	4	Standard
	Tl	205	438160.3	0.4	**54.6297**	1.400	2.6	ug/L	2	Standard
	Pb	206	306629.0	0.6	**51.1326**	1.396	2.7	ug/L	240	Standard
	Pb	207	272793.9	0.3	**51.2040**	1.495	2.9	ug/L	198	Standard
	Pb	208	1100211.2	0.6	**52.2716**	1.709	3.3	ug/L	883	Standard
	U	238	414469.5	0.5	**53.7134**	1.693	3.2	ug/L	3	Standard
>	Bi	209	587705.0	2.9				ug/L	523984	Standard

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Na	23	3.3	173.2	**35.5299**	61.531	173.2	mg/L	0	Standard
Mg	24	4809.1	8.0	**5.4678**	0.353	6.5	mg/L	37	Standard
K	39	2090.1	1.6	**4.0082**	0.167	4.2	mg/L	38	Standard
Ca	43	111.7	10.3	**3.7837**	0.862	22.8	mg/L	10	Standard
Fe	54	7082.4	2.6	**5.2191**	0.217	4.1	mg/L	179	Standard
Fe	57	2040.1	4.3	**5.1108**	0.267	5.2	mg/L	335	Standard
Sc-1	45	68447.7	3.2				mg/L	61029	Standard
Cl	35	25830.7	1.4				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	2190.2	6.5				ug/L	1547	Standard
P	31	18406.2	0.9				ug/L	15286	Standard
S	34	1965.1	6.7				ug/L	1572	Standard
Sr	88	71.7	21.3				ug/L	73	Standard
C	12	103.3	29.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	152.5	102.6				mg/L	6	Standard
Ho-1	165	88.3	85.2				mg/L	10	Standard
Er	166	86.7	74.2				mg/L	13	Standard
I	127	2766.9	21.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	103.817		
Al	27	89.013		
Sc	45			
Ti	47	106.205		
V	51	110.094		
Cr	52	104.882		
Cr	53			
Mn	55	112.401		
Co	59	118.124		
Ni	60	104.355		
Cu	65	104.741		
Zn	66	105.936		
Ge	72		109.004	
As	75	104.876		
Se	82	109.798		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	102.479		
Ag	107	99.972		
Cd	111	98.481		
Cd	114			
In	115		116.255	
Sn	118	99.577		
Sb	123	97.186		
Ba	135	93.802		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.852		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.543		
U	238	107.427		
Bi	209		112.161	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	
QC Std 6	V	51	
QC Std 6	Mn	55	

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QC Std 6	Co	59

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 16:24:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	100067.7	1.3				ug/L	74699	Standard
	Be	9	36.7	7.9	**0.0387**	0.002	5.2	ug/L	8	Standard
	Al	27	10153.6	30.4	**0.0381**	0.015	39.5	ug/L	1493	Standard
	Sc	45	67434.8	2.7				ug/L	61029	Standard
	Ti	47	38.3	21.7	**-0.0212**	0.020	92.7	ug/L	35	Standard
	V	51	1502.7	1.2	**-0.0231**	0.006	25.9	ug/L	1435	Standard
	Cr	52	7451.2	2.4	**-0.1523**	0.012	7.6	ug/L	7635	Standard
	Cr	53	503.3	11.6	**0.1429**	0.063	44.4	ug/L	363	Standard
	Mn	55	3693.5	26.8	**0.3137**	0.134	42.8	ug/L	747	Standard
	Co	59	358.3	10.7	**0.0099**	0.006	62.4	ug/L	234	Standard
	Ni	60	209.7	4.9	**-0.0268**	0.006	22.7	ug/L	215	Standard
	Cu	65	198.7	7.2	**-0.0110**	0.009	80.7	ug/L	104	Standard
	Zn	66	532.3	5.7	**-0.0316**	0.034	106.3	ug/L	363	Standard
>	**Ge**	72	571298.3	2.3				ug/L	495142	Standard
	As	75	-12.4	42.9	**0.0499**	0.004	8.8	ug/L	-50	Standard
	Se	82	23.5	9.9	**0.0476**	0.021	43.8	ug/L	14	Standard
	Se-1	77	58.7	7.7	**0.0749**	0.069	91.8	ug/L	42	Standard
>	**Ga**	71	75.0	26.7				mg/L	42	Standard
	Rb	85	36.7	55.1				ug/L	17	Standard
	Y	89	500557.3	2.5				ug/L	417098	Standard
>	**Rh**	103	30.0	44.1				ug/L	13	Standard
	Mo	98	301.0	26.9	**0.0924**	0.026	27.9	ug/L	11	Standard
	Ag	107	165.0	21.0	**0.0091**	0.004	49.2	ug/L	68	Standard
	Cd	111	19.8	28.3	**0.0003**	0.002	699.6	mg/L	2	Standard
	Cd	114	46.5	85.8	**0.0058**	0.007	116.4	ug/L	12	Standard
>	**In**	115	675355.4	0.8				ug/L	587441	Standard
	Sn	118	876.7	18.6	**0.0359**	0.025	69.7	ug/L	497	Standard
	Sb	123	599.5	22.8	**0.1076**	0.026	24.3	ug/L	78	Standard
	Ba	135	42.7	23.9	**0.0021**	0.004	201.6	ug/L	24	Standard
	Ce	140	140.0	34.4				ug/L	25	Standard
>	**Tb**	159	1044716.9	1.2				ug/L	939701	Standard
	Ho	165	20.0	50.0				ug/L	10	Standard
	Tl	203	103.0	21.9	**0.0094**	0.003	27.0	ug/L	4	Standard
	Tl	205	70.0	58.5	**0.0089**	0.005	57.1	ug/L	2	Standard
	Pb	206	338.7	4.4	**-0.0148**	0.002	16.0	ug/L	240	Standard
	Pb	207	277.7	9.1	**-0.0179**	0.005	28.1	ug/L	198	Standard
	Pb	208	1213.0	9.6	**-0.0165**	0.006	36.1	ug/L	883	Standard
	U	238	62.0	33.9	**0.0036**	0.003	76.1	ug/L	3	Standard
>	**Bi**	209	588682.5	1.2				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.0278**	29.484	173.2	mg/L	0	Standard
Mg	24	56.7	20.4	**0.0014**	0.015	1120.4	mg/L	37	Standard
K	39	36.7	28.4	**-0.0407**	0.021	51.2	mg/L	38	Standard
Ca	43	26.7	28.6	**-1.0029**	0.415	41.4	mg/L	10	Standard
Fe	54	187.4	12.0	**0.0055**	0.017	304.1	mg/L	179	Standard
Fe	57	261.7	6.1	**-0.2681**	0.071	26.5	mg/L	335	Standard
Sc-1	45	67434.8	2.7				mg/L	61029	Standard
Cl	35	26219.3	0.7				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	2243.5	3.0				ug/L	1547	Standard
P	31	19277.3	3.9				ug/L	15286	Standard
S	34	2016.8	11.3				ug/L	1572	Standard
Sr	88	70.0	35.7				ug/L	73	Standard
C	12	120.0	25.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	49.4	87.7				mg/L	6	Standard
Ho-1	165	20.0	50.0				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	2125.2	22.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		115.381	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.966
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		112.347
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Wednesday, June 29, 2016 16:26:17
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Method 6020 - Summary Report

Sample ID: L1606124701SDL WG574688-02
Sample Date/Time: Wednesday, June 29, 2016 16:27:13
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	105717.5	0.5				ug/L	74699	Standard
	Be	9	553.3	1.4	**0.4517**	0.004	0.8	ug/L	8	Standard
	Al	27	5662006.5	2.5	**27.2120**	0.787	2.9	ug/L	1493	Standard
	Sc	45	72131.5	3.8				ug/L	61029	Standard
	Ti	47	604.0	7.1	**1.2783**	0.109	8.5	ug/L	35	Standard
	V	51	3941.0	1.4	**0.2585**	0.002	0.9	ug/L	1435	Standard
	Cr	52	12715.3	2.3	**0.4691**	0.023	4.9	ug/L	7635	Standard
	Cr	53	1340.1	9.1	**0.9313**	0.103	11.1	ug/L	363	Standard
	Mn	55	2452895.1	0.8	**306.4368**	3.099	1.0	ug/L	747	Standard
	Co	59	67057.1	0.2	**8.7998**	0.112	1.3	ug/L	234	Standard
	Ni	60	46732.3	0.4	**21.5970**	0.233	1.1	ug/L	215	Standard
	Cu	65	904.0	6.3	**0.3188**	0.021	6.7	ug/L	104	Standard
	Zn	66	62660.6	1.1	**49.4618**	0.122	0.2	ug/L	363	Standard
>	**Ge**	72	569030.6	1.4				ug/L	495142	Standard
	As	75	59.1	19.2	**0.1055**	0.009	8.4	ug/L	-50	Standard
	Se	82	34.4	3.8	**0.1350**	0.014	10.1	ug/L	14	Standard
	Se-1	77	82.7	11.5	**0.3621**	0.106	29.4	ug/L	42	Standard
>	**Ga**	71	288.3	19.2				mg/L	42	Standard
	Rb	85	7325.1	4.9				ug/L	17	Standard
	Y	89	616528.9	0.8				ug/L	417098	Standard
>	**Rh**	103	13.3	78.1				ug/L	13	Standard
	Mo	98	112.4	8.7	**0.0298**	0.003	9.5	ug/L	11	Standard
	Ag	107	122.3	20.4	**0.0029**	0.003	108.6	ug/L	68	Standard
	Cd	111	198.8	14.6	**0.0723**	0.012	16.2	mg/L	2	Standard
	Cd	114	516.3	5.9	**0.0829**	0.006	6.9	ug/L	12	Standard
>	**In**	115	696026.2	0.9				ug/L	587441	Standard
	Sn	118	760.0	4.7	**0.0151**	0.006	37.2	ug/L	497	Standard
	Sb	123	350.2	21.1	**0.0592**	0.014	23.4	ug/L	78	Standard
	Ba	135	775.0	6.3	**0.3035**	0.019	6.3	ug/L	24	Standard
	Ce	140	119180.2	0.3				ug/L	25	Standard
>	**Tb**	159	1103880.2	1.1				ug/L	939701	Standard
	Ho	165	9261.2	2.5				ug/L	10	Standard
	Tl	203	155.7	9.5	**0.0145**	0.001	9.9	ug/L	4	Standard
	Tl	205	156.7	24.4	**0.0191**	0.005	23.7	ug/L	2	Standard
	Pb	206	668.3	5.9	**0.0368**	0.005	14.8	ug/L	240	Standard
	Pb	207	530.0	3.8	**0.0264**	0.004	13.6	ug/L	198	Standard
	Pb	208	2281.7	2.6	**0.0309**	0.002	6.9	ug/L	883	Standard
	U	238	1160.7	2.8	**0.1411**	0.004	2.6	ug/L	3	Standard
>	**Bi**	209	607087.1	0.9				ug/L	523984	Standard

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Na	23	1.7	173.2	**16.5008**	28.572	173.2	mg/L	0	Standard
Mg	24	3728.8	3.6	**4.0090**	0.135	3.4	mg/L	37	Standard
K	39	85.0	42.4	**0.0464**	0.073	156.7	mg/L	38	Standard
Ca	43	183.3	11.4	**7.2814**	1.162	16.0	mg/L	10	Standard
Fe	54	8713.3	2.8	**6.1146**	0.148	2.4	mg/L	179	Standard
Fe	57	2506.9	1.7	**6.1424**	0.321	5.2	mg/L	335	Standard
> **Sc-1**	45	72131.5	3.8				mg/L	61029	Standard
Cl	35	26208.6	1.1				ug/L	20195	Standard
Kr	83	2.7	21.7				ug/L	4	Standard
Br	81	3227.0	4.8				ug/L	1547	Standard
P	31	20363.7	0.5				ug/L	15286	Standard
S	34	1863.4	4.5				ug/L	1572	Standard
Sr	88	105.0	21.8				ug/L	73	Standard
C	12	56.7	36.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	14855.4	4.1				mg/L	6	Standard
Ho-1	165	9261.2	2.5				mg/L	10	Standard
Er	166	8048.8	4.7				mg/L	13	Standard
I	127	5796.1	1.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		141.525	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.923	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	118.484
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	115.860
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606126504
Sample Date/Time: Wednesday, June 29, 2016 16:30:25
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	101552.6	1.9				ug/L	74699	Standard
	Be	9	25.0	72.1	**0.0287**	0.016	54.3	ug/L	8	Standard
	Al	27	16250197.0	1.8	**81.3578**	2.887	3.5	ug/L	1493	Standard
	Sc	45	67044.7	1.9				ug/L	61029	Standard
	Ti	47	394.3	10.9	**0.8437**	0.094	11.2	ug/L	35	Standard
	V	51	39093.2	1.3	**4.5488**	0.169	3.7	ug/L	1435	Standard
	Cr	52	19068.3	2.3	**1.3348**	0.101	7.6	ug/L	7635	Standard
	Cr	53	5326.0	20.8	**4.9620**	1.165	23.5	ug/L	363	Standard
	Mn	55	6239.0	2.5	**0.6731**	0.027	4.0	ug/L	747	Standard
	Co	59	851.0	2.5	**0.0808**	0.004	4.5	ug/L	234	Standard
	Ni	60	1951.8	2.1	**0.8314**	0.029	3.5	ug/L	215	Standard
	Cu	65	1321.1	4.3	**0.5464**	0.014	2.5	ug/L	104	Standard
	Zn	66	5985.8	0.6	**4.5673**	0.118	2.6	ug/L	363	Standard
>	**Ge**	72	540512.2	2.5				ug/L	495142	Standard
	As	75	1446.2	5.5	**1.2419**	0.041	3.3	ug/L	-50	Standard
	Se	82	841.6	2.6	**6.8893**	0.246	3.6	ug/L	14	Standard
	Se-1	77	609.0	15.5	**7.0254**	1.243	17.7	ug/L	42	Standard
>	**Ga**	71	105.0	12.6				mg/L	42	Standard
	Rb	85	1541.7	7.2				ug/L	17	Standard
	Y	89	489017.5	2.4				ug/L	417098	Standard
>	**Rh**	103	70.0	18.9				ug/L	13	Standard
	Mo	98	501.8	4.3	**0.1636**	0.005	2.9	ug/L	11	Standard
	Ag	107	97.0	7.4	**0.0005**	0.001	200.8	ug/L	68	Standard
	Cd	111	26.4	23.0	**0.0035**	0.003	79.3	mg/L	2	Standard
	Cd	114	74.1	18.4	**0.0109**	0.002	21.9	ug/L	12	Standard
>	**In**	115	652860.7	1.6				ug/L	587441	Standard
	Sn	118	840.0	9.7	**0.0347**	0.012	35.4	ug/L	497	Standard
	Sb	123	289.8	10.9	**0.0517**	0.007	12.7	ug/L	78	Standard
	Ba	135	17710.3	0.6	**7.7715**	0.161	2.1	ug/L	24	Standard
	Ce	140	1525.1	0.6				ug/L	25	Standard
>	**Tb**	159	1031518.0	1.9				ug/L	939701	Standard
	Ho	165	43.3	24.0				ug/L	10	Standard
	Tl	203	163.3	10.6	**0.0174**	0.002	9.6	ug/L	4	Standard
	Tl	205	133.3	16.9	**0.0182**	0.003	18.7	ug/L	2	Standard
	Pb	206	441.3	2.3	**0.0087**	0.001	8.9	ug/L	240	Standard
	Pb	207	362.0	4.8	**0.0037**	0.003	70.2	ug/L	198	Standard
	Pb	208	1549.4	2.6	**0.0058**	0.001	11.8	ug/L	883	Standard
	U	238	23538.3	0.9	**3.3015**	0.086	2.6	ug/L	3	Standard
>	**Bi**	209	542188.4	2.1				ug/L	523984	Standard

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Na	23	3.3	173.2	**35.7447**	61.903	173.2	mg/L	0	Standard
Mg	24	119069.4	0.9	**139.8814**	3.117	2.2	mg/L	37	Standard
K	39	143.3	11.2	**0.1739**	0.028	15.9	mg/L	38	Standard
Ca	43	463.3	1.6	**24.1242**	0.657	2.7	mg/L	10	Standard
Fe	54	197.6	4.4	**0.0142**	0.006	45.1	mg/L	179	Standard
Fe	57	435.0	13.1	**0.2738**	0.196	71.7	mg/L	335	Standard
> **Sc-1**	45	67044.7	1.9				mg/L	61029	Standard
Cl	35	31470.7	2.7				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	73323.9	4.5				ug/L	1547	Standard
P	31	23608.4	2.5				ug/L	15286	Standard
S	34	1800.1	6.6				ug/L	1572	Standard
Sr	88	293.3	6.9				ug/L	73	Standard
C	12	193.3	41.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	86.5	19.9				mg/L	6	Standard
Ho-1	165	43.3	24.0				mg/L	10	Standard
Er	166	73.3	34.3				mg/L	13	Standard
I	127	54762.3	5.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		135.949	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.163	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.136
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.474
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606126505
Sample Date/Time: Wednesday, June 29, 2016 16:33:36
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	99450.4	1.4				ug/L	74699	Standard
	Be	9	58.3	30.1	**0.0575**	0.016	27.1	ug/L	8	Standard
	Al	27	32118811.5	1.4	**164.1461**	0.108	0.1	ug/L	1493	Standard
	Sc	45	70749.8	1.3				ug/L	61029	Standard
	Ti	47	642.0	2.2	**1.4252**	0.030	2.1	ug/L	35	Standard
	V	51	8228.7	11.8	**0.7915**	0.119	15.1	ug/L	1435	Standard
	Cr	52	11308.2	2.8	**0.3584**	0.044	12.4	ug/L	7635	Standard
	Cr	53	3712.1	10.4	**3.3091**	0.391	11.8	ug/L	363	Standard
	Mn	55	3368829.0	1.1	**438.1329**	6.772	1.5	ug/L	747	Standard
	Co	59	3400.7	28.1	**0.4294**	0.132	30.8	ug/L	234	Standard
	Ni	60	4538.7	3.1	**2.0720**	0.077	3.7	ug/L	215	Standard
	Cu	65	1589.1	4.3	**0.6697**	0.036	5.3	ug/L	104	Standard
	Zn	66	6182.6	5.7	**4.6729**	0.311	6.7	ug/L	363	Standard
>	**Ge**	72	546665.5	0.5				ug/L	495142	Standard
	As	75	6156.5	0.5	**5.0379**	0.006	0.1	ug/L	-50	Standard
	Se	82	164.0	1.8	**1.2151**	0.026	2.2	ug/L	14	Standard
	Se-1	77	258.7	9.7	**2.5862**	0.322	12.5	ug/L	42	Standard
>	**Ga**	71	188.3	13.1				mg/L	42	Standard
	Rb	85	1378.4	10.6				ug/L	17	Standard
	Y	89	484009.6	2.1				ug/L	417098	Standard
>	**Rh**	103	118.3	6.5				ug/L	13	Standard
	Mo	98	286.3	31.1	**0.0925**	0.030	32.6	ug/L	11	Standard
	Ag	107	183.3	43.5	**0.0128**	0.011	86.7	ug/L	68	Standard
	Cd	111	248.2	17.8	**0.1006**	0.018	18.1	mg/L	2	Standard
	Cd	114	590.9	17.2	**0.1032**	0.017	16.3	ug/L	12	Standard
>	**In**	115	642069.8	1.9				ug/L	587441	Standard
	Sn	118	836.7	5.6	**0.0365**	0.010	26.8	ug/L	497	Standard
	Sb	123	288.3	29.8	**0.0524**	0.017	32.5	ug/L	78	Standard
	Ba	135	131296.8	1.0	**58.6819**	0.595	1.0	ug/L	24	Standard
	Ce	140	6513.1	10.5				ug/L	25	Standard
>	**Tb**	159	1012113.9	1.4				ug/L	939701	Standard
	Ho	165	216.7	7.1				ug/L	10	Standard
	Tl	203	185.3	61.4	**0.0202**	0.013	66.8	ug/L	4	Standard
	Tl	205	276.7	88.2	**0.0379**	0.033	87.8	ug/L	2	Standard
	Pb	206	891.4	31.8	**0.0916**	0.052	56.6	ug/L	240	Standard
	Pb	207	748.7	30.8	**0.0839**	0.048	56.6	ug/L	198	Standard
	Pb	208	3050.1	30.7	**0.0846**	0.049	57.6	ug/L	883	Standard
	U	238	21997.6	2.6	**3.1135**	0.091	2.9	ug/L	3	Standard
>	**Bi**	209	537104.2	0.4				ug/L	523984	Standard

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Na	23	13.3	57.3	**132.8617**	77.017	58.0	mg/L	0	Standard
Mg	24	104917.1	1.8	**116.7540**	0.597	0.5	mg/L	37	Standard
K	39	116.7	8.9	**0.1082**	0.018	16.4	mg/L	38	Standard
Ca	43	916.7	6.0	**47.4532**	3.610	7.6	mg/L	10	Standard
Fe	54	3013.9	2.4	**2.0666**	0.083	4.0	mg/L	179	Standard
Fe	57	1381.7	4.1	**2.9770**	0.162	5.4	mg/L	335	Standard
> **Sc-1**	45	70749.8	1.3				mg/L	61029	Standard
Cl	35	30215.4	1.0				ug/L	20195	Standard
Kr	83	1.3	114.6				ug/L	4	Standard
Br	81	35768.9	2.6				ug/L	1547	Standard
P	31	25429.7	2.5				ug/L	15286	Standard
S	34	2313.5	0.3				ug/L	1572	Standard
Sr	88	551.7	8.2				ug/L	73	Standard
C	12	433.3	25.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	3	Standard
Dy	164	279.9	12.3				mg/L	6	Standard
Ho-1	165	216.7	7.1				mg/L	10	Standard
Er	166	280.0	18.9				mg/L	13	Standard
I	127	794211.5	6.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		133.135	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.406	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.299
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.504
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606126505
Report Date/Time: Wednesday, June 29, 2016 16:35:53
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Method 6020 - Summary Report

Sample ID: L1606126506
Sample Date/Time: Wednesday, June 29, 2016 16:36:48
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	100252.3	1.1				ug/L	74699	Standard
	Be	9	26.7	39.0	**0.0303**	0.009	29.8	ug/L	8	Standard
	Al	27	69444.0	4.9	**0.3387**	0.017	5.1	ug/L	1493	Standard
	Sc	45	71205.3	1.8				ug/L	61029	Standard
	Ti	47	113.0	20.9	**0.1414**	0.055	38.5	ug/L	35	Standard
	V	51	2901.2	2.9	**0.1267**	0.013	10.0	ug/L	1435	Standard
	Cr	52	23756.9	1.1	**1.6651**	0.003	0.2	ug/L	7635	Standard
	Cr	53	2710.2	4.1	**2.1308**	0.127	5.9	ug/L	363	Standard
	Mn	55	7460.8	10.3	**0.7511**	0.098	13.0	ug/L	747	Standard
	Co	59	456.0	8.6	**0.0207**	0.006	26.8	ug/L	234	Standard
	Ni	60	2497.2	2.2	**0.9949**	0.023	2.3	ug/L	215	Standard
	Cu	65	984.0	1.2	**0.3398**	0.007	2.0	ug/L	104	Standard
	Zn	66	8303.3	0.9	**5.9218**	0.058	1.0	ug/L	363	Standard
>	**Ge**	72	590298.4	1.1				ug/L	495142	Standard
	As	75	7.9	237.8	**0.0655**	0.014	21.6	ug/L	-50	Standard
	Se	82	27.7	14.2	**0.0742**	0.032	43.2	ug/L	14	Standard
	Se-1	77	72.3	15.2	**0.2091**	0.134	63.9	ug/L	42	Standard
>	**Ga**	71	91.7	20.7				mg/L	42	Standard
	Rb	85	308.3	4.1				ug/L	17	Standard
	Y	89	498995.2	1.7				ug/L	417098	Standard
>	**Rh**	103	21.7	48.0				ug/L	13	Standard
	Mo	98	716.7	9.5	**0.2259**	0.023	10.1	ug/L	11	Standard
	Ag	107	155.3	16.4	**0.0076**	0.003	44.6	ug/L	68	Standard
	Cd	111	44.4	12.9	**0.0104**	0.002	21.8	mg/L	2	Standard
	Cd	114	117.5	18.7	**0.0177**	0.004	21.5	ug/L	12	Standard
>	**In**	115	682064.0	0.6				ug/L	587441	Standard
	Sn	118	4689.1	2.4	**0.5966**	0.013	2.3	ug/L	497	Standard
	Sb	123	228.7	11.3	**0.0380**	0.005	12.5	ug/L	78	Standard
	Ba	135	1034.0	4.7	**0.4191**	0.020	4.8	ug/L	24	Standard
	Ce	140	486.7	14.8				ug/L	25	Standard
>	**Tb**	159	1056147.0	0.9				ug/L	939701	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	43.7	26.0	**0.0029**	0.001	43.8	ug/L	4	Standard
	Tl	205	50.0	26.5	**0.0063**	0.002	26.5	ug/L	2	Standard
	Pb	206	665.7	3.1	**0.0376**	0.003	7.4	ug/L	240	Standard
	Pb	207	542.7	5.2	**0.0299**	0.006	20.6	ug/L	198	Standard
	Pb	208	2227.4	4.5	**0.0297**	0.006	20.4	ug/L	883	Standard
	U	238	38.7	20.9	**0.0005**	0.001	221.1	ug/L	3	Standard
>	**Bi**	209	599996.8	1.5				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	216.7	5.8	**0.1745**	0.010	5.5	mg/L	37	Standard
K	39	46.7	49.5	**-0.0257**	0.044	170.8	mg/L	38	Standard
Ca	43	30.0	16.7	**-0.8971**	0.290	32.3	mg/L	10	Standard
Fe	54	200.7	16.8	**0.0076**	0.025	326.7	mg/L	179	Standard
Fe	57	248.3	11.1	**-0.3516**	0.067	19.2	mg/L	335	Standard
> **Sc-1**	45	71205.3	1.8				mg/L	61029	Standard
Cl	35	31458.6	1.1				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	3110.3	10.8				ug/L	1547	Standard
P	31	21037.9	1.6				ug/L	15286	Standard
S	34	2263.5	3.0				ug/L	1572	Standard
Sr	88	58.3	27.6				ug/L	73	Standard
C	12	113.3	13.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	38.9	27.0				mg/L	6	Standard
Ho-1	165	8.3	69.3				mg/L	10	Standard
Er	166	23.3	65.5				mg/L	13	Standard
I	127	20210.2	61.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		134.209	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		119.218	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		116.108
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		114.507
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606126601
Sample Date/Time: Wednesday, June 29, 2016 16:39:59
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	101321.2	3.1				ug/L	74699	Standard
	Be	9	18.3	56.8	**0.0228**	0.008	36.0	ug/L	8	Standard
	Al	27	44431569.1	0.7	**222.9926**	5.415	2.4	ug/L	1493	Standard
	Sc	45	71310.8	2.2				ug/L	61029	Standard
	Ti	47	275.3	6.3	**0.5272**	0.047	8.9	ug/L	35	Standard
	V	51	27907.2	1.9	**3.0387**	0.030	1.0	ug/L	1435	Standard
	Cr	52	13580.1	0.8	**0.5803**	0.015	2.6	ug/L	7635	Standard
	Cr	53	2821.9	2.8	**2.3430**	0.081	3.4	ug/L	363	Standard
	Mn	55	153037.1	1.2	**19.0926**	0.078	0.4	ug/L	747	Standard
	Co	59	1012.0	1.5	**0.0969**	0.001	1.5	ug/L	234	Standard
	Ni	60	4370.3	2.4	**1.9194**	0.048	2.5	ug/L	215	Standard
	Cu	65	751.7	5.3	**0.2499**	0.020	8.0	ug/L	104	Standard
	Zn	66	3518.1	1.4	**2.3650**	0.050	2.1	ug/L	363	Standard
>	**Ge**	72	565652.8	1.1				ug/L	495142	Standard
	As	75	1269.0	4.3	**1.0512**	0.035	3.4	ug/L	-50	Standard
	Se	82	382.5	3.3	**2.9130**	0.125	4.3	ug/L	14	Standard
	Se-1	77	193.3	14.8	**1.6975**	0.369	21.7	ug/L	42	Standard
>	**Ga**	71	66.7	18.9				mg/L	42	Standard
	Rb	85	2323.5	7.7				ug/L	17	Standard
	Y	89	480038.2	1.2				ug/L	417098	Standard
>	**Rh**	103	150.0	3.3				ug/L	13	Standard
	Mo	98	638.7	4.4	**0.2084**	0.010	5.0	ug/L	11	Standard
	Ag	107	92.0	14.1	**-0.0003**	0.002	569.4	ug/L	68	Standard
	Cd	111	195.2	3.6	**0.0755**	0.003	3.5	mg/L	2	Standard
	Cd	114	469.8	19.5	**0.0797**	0.016	19.7	ug/L	12	Standard
>	**In**	115	657497.5	0.6				ug/L	587441	Standard
	Sn	118	753.4	8.5	**0.0205**	0.010	48.9	ug/L	497	Standard
	Sb	123	222.8	13.6	**0.0384**	0.006	15.3	ug/L	78	Standard
	Ba	135	100054.6	0.7	**43.6617**	0.503	1.2	ug/L	24	Standard
	Ce	140	173.3	6.0				ug/L	25	Standard
>	**Tb**	159	1045560.4	1.5				ug/L	939701	Standard
	Ho	165	40.0	25.0				ug/L	10	Standard
	Tl	203	129.3	1.6	**0.0127**	0.000	3.7	ug/L	4	Standard
	Tl	205	133.3	20.7	**0.0174**	0.003	20.0	ug/L	2	Standard
	Pb	206	412.3	3.7	**0.0001**	0.002	2456.7	ug/L	240	Standard
	Pb	207	343.7	8.9	**-0.0032**	0.005	165.7	ug/L	198	Standard
	Pb	208	1432.7	1.3	**-0.0035**	0.002	56.3	ug/L	883	Standard
	U	238	43636.7	0.7	**5.8505**	0.120	2.1	ug/L	3	Standard
>	**Bi**	209	567479.2	1.8				ug/L	523984	Standard

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Na	23	5.0	100.0	**48.6438**	48.507	99.7	mg/L	0	Standard
Mg	24	35550.0	1.9	**39.2140**	0.699	1.8	mg/L	37	Standard
K	39	165.0	24.1	**0.1975**	0.071	36.0	mg/L	38	Standard
Ca	43	596.7	5.4	**29.7553**	2.186	7.3	mg/L	10	Standard
Fe	54	190.1	10.6	**-0.0004**	0.014	3403.7	mg/L	179	Standard
Fe	57	555.0	7.7	**0.5391**	0.093	17.2	mg/L	335	Standard
> **Sc-1**	45	71310.8	2.2				mg/L	61029	Standard
Cl	35	33374.1	0.9				ug/L	20195	Standard
Kr	83	2.0	132.3				ug/L	4	Standard
Br	81	77209.6	1.2				ug/L	1547	Standard
P	31	24828.7	1.5				ug/L	15286	Standard
S	34	2263.5	4.7				ug/L	1572	Standard
Sr	88	591.7	14.4				ug/L	73	Standard
C	12	253.3	22.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	25.0				mg/L	3	Standard
Dy	164	40.1	59.8				mg/L	6	Standard
Ho-1	165	40.0	25.0				mg/L	10	Standard
Er	166	66.7	37.7				mg/L	13	Standard
I	127	2058609.0	7.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		135.640	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.240	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.926
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.301
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606126901
Sample Date/Time: Wednesday, June 29, 2016 16:43:10
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	97179.0	1.2				ug/L	74699	Standard
	Be	9	23.3	44.6	**0.0281**	0.009	33.4	ug/L	8	Standard
	Al	27	25054309.4	1.7	**131.0332**	1.604	1.2	ug/L	1493	Standard
	Sc	45	69363.5	2.7				ug/L	61029	Standard
	Ti	47	323.3	2.8	**0.6992**	0.021	2.9	ug/L	35	Standard
	V	51	12024.0	2.6	**1.3128**	0.037	2.9	ug/L	1435	Standard
	Cr	52	11840.6	1.6	**0.4900**	0.025	5.0	ug/L	7635	Standard
	Cr	53	2901.9	3.9	**2.6451**	0.119	4.5	ug/L	363	Standard
	Mn	55	490032.6	0.8	**66.5395**	0.816	1.2	ug/L	747	Standard
	Co	59	931.7	2.1	**0.0964**	0.003	3.3	ug/L	234	Standard
	Ni	60	2217.5	3.2	**0.9981**	0.030	3.0	ug/L	215	Standard
	Cu	65	599.0	3.0	**0.2013**	0.011	5.4	ug/L	104	Standard
	Zn	66	4806.1	1.2	**3.7141**	0.039	1.0	ug/L	363	Standard
>	**Ge**	72	522601.4	0.6				ug/L	495142	Standard
	As	75	2361.3	3.3	**2.0571**	0.073	3.5	ug/L	-50	Standard
	Se	82	593.9	4.2	**4.9896**	0.230	4.6	ug/L	14	Standard
	Se-1	77	179.7	2.8	**1.7086**	0.076	4.5	ug/L	42	Standard
>	**Ga**	71	105.0	9.5				mg/L	42	Standard
	Rb	85	2805.3	2.5				ug/L	17	Standard
	Y	89	474068.5	3.1				ug/L	417098	Standard
>	**Rh**	103	81.7	12.7				ug/L	13	Standard
	Mo	98	305.2	1.9	**0.0985**	0.004	4.4	ug/L	11	Standard
	Ag	107	99.7	12.7	**0.0010**	0.002	153.4	ug/L	68	Standard
	Cd	111	19.2	16.0	**0.0004**	0.001	278.0	mg/L	2	Standard
	Cd	114	49.5	42.7	**0.0067**	0.004	59.0	ug/L	12	Standard
>	**In**	115	645532.6	2.3				ug/L	587441	Standard
	Sn	118	888.4	9.9	**0.0435**	0.010	24.0	ug/L	497	Standard
	Sb	123	240.8	4.4	**0.0427**	0.002	4.3	ug/L	78	Standard
	Ba	135	155622.1	0.5	**69.2020**	1.756	2.5	ug/L	24	Standard
	Ce	140	928.4	7.9				ug/L	25	Standard
>	**Tb**	159	1004174.2	1.0				ug/L	939701	Standard
	Ho	165	23.3	32.7				ug/L	10	Standard
	Tl	203	115.7	10.5	**0.0121**	0.001	11.5	ug/L	4	Standard
	Tl	205	128.3	22.2	**0.0179**	0.004	22.0	ug/L	2	Standard
	Pb	206	395.0	0.9	**0.0016**	0.001	57.1	ug/L	240	Standard
	Pb	207	323.3	6.0	**-0.0029**	0.004	138.0	ug/L	198	Standard
	Pb	208	1415.7	2.0	**0.0002**	0.001	432.7	ug/L	883	Standard
	U	238	7265.7	2.0	**1.0348**	0.023	2.2	ug/L	3	Standard
>	**Bi**	209	532226.3	0.6				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.4177**	30.160	173.2	mg/L	0	Standard
Mg	24	119202.1	1.4	**135.3768**	3.695	2.7	mg/L	37	Standard
K	39	220.0	8.2	**0.3143**	0.042	13.4	mg/L	38	Standard
Ca	43	398.3	4.4	**19.6130**	0.698	3.6	mg/L	10	Standard
Fe	54	252.1	18.1	**0.0493**	0.029	59.6	mg/L	179	Standard
Fe	57	418.3	9.7	**0.1785**	0.138	77.4	mg/L	335	Standard
Sc-1	45	69363.5	2.7				mg/L	61029	Standard
Cl	35	32454.7	1.8				ug/L	20195	Standard
Kr	83	1.0	173.2				ug/L	4	Standard
Br	81	137582.4	3.7				ug/L	1547	Standard
P	31	24828.7	1.5				ug/L	15286	Standard
S	34	2306.8	3.7				ug/L	1572	Standard
Sr	88	291.7	6.0				ug/L	73	Standard
C	12	323.3	19.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	15.2	73.1				mg/L	6	Standard
Ho-1	165	23.3	32.7				mg/L	10	Standard
Er	166	30.0	33.3				mg/L	13	Standard
I	127	310633.7	2.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		130.094	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		105.546	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.889
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.573
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606127201
Sample Date/Time: Wednesday, June 29, 2016 16:46:22
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	94337.9	2.3				ug/L	74699	Standard
	Be	9	23.3	53.9	**0.0288**	0.012	40.8	ug/L	8	Standard
	Al	27	2978340.1	2.2	**16.0395**	0.522	3.3	ug/L	1493	Standard
	Sc	45	67137.0	4.7				ug/L	61029	Standard
	Ti	47	236.7	18.3	**0.4520**	0.099	21.9	ug/L	35	Standard
	V	51	33734.3	0.8	**3.8201**	0.030	0.8	ug/L	1435	Standard
	Cr	52	13200.4	3.0	**0.5779**	0.062	10.7	ug/L	7635	Standard
	Cr	53	1396.7	5.5	**1.0289**	0.077	7.5	ug/L	363	Standard
	Mn	55	5810.0	55.0	**0.6034**	0.416	68.9	ug/L	747	Standard
	Co	59	597.0	23.2	**0.0441**	0.019	43.4	ug/L	234	Standard
	Ni	60	839.7	12.2	**0.2798**	0.055	19.7	ug/L	215	Standard
	Cu	65	499.7	4.1	**0.1378**	0.013	9.3	ug/L	104	Standard
	Zn	66	1881.8	10.3	**1.0958**	0.181	16.5	ug/L	363	Standard
>	**Ge**	72	550779.1	1.5				ug/L	495142	Standard
	As	75	823.5	3.7	**0.7205**	0.021	2.9	ug/L	-50	Standard
	Se	82	534.3	3.8	**4.2403**	0.211	5.0	ug/L	14	Standard
	Se-1	77	394.7	5.2	**4.2338**	0.183	4.3	ug/L	42	Standard
>	**Ga**	71	76.7	13.6				mg/L	42	Standard
	Rb	85	1120.0	6.4				ug/L	17	Standard
	Y	89	478775.5	2.0				ug/L	417098	Standard
>	**Rh**	103	33.3	52.7				ug/L	13	Standard
	Mo	98	1510.8	4.0	**0.5152**	0.028	5.4	ug/L	11	Standard
	Ag	107	155.0	42.6	**0.0091**	0.010	106.9	ug/L	68	Standard
	Cd	111	66.6	64.6	**0.0216**	0.019	89.7	mg/L	2	Standard
	Cd	114	188.5	50.4	**0.0319**	0.018	55.0	ug/L	12	Standard
>	**In**	115	639482.4	2.0				ug/L	587441	Standard
	Sn	118	738.4	13.9	**0.0215**	0.017	79.5	ug/L	497	Standard
	Sb	123	301.8	22.4	**0.0554**	0.014	26.0	ug/L	78	Standard
	Ba	135	10964.6	1.7	**4.9054**	0.035	0.7	ug/L	24	Standard
	Ce	140	728.4	65.5				ug/L	25	Standard
>	**Tb**	159	995838.4	2.1				ug/L	939701	Standard
	Ho	165	55.0	78.7				ug/L	10	Standard
	Tl	203	165.3	64.1	**0.0175**	0.012	69.7	ug/L	4	Standard
	Tl	205	88.3	34.1	**0.0121**	0.004	34.3	ug/L	2	Standard
	Pb	206	371.3	17.5	**-0.0043**	0.012	275.3	ug/L	240	Standard
	Pb	207	297.3	13.9	**-0.0098**	0.008	82.9	ug/L	198	Standard
	Pb	208	1253.7	10.6	**-0.0098**	0.007	68.1	ug/L	883	Standard
	U	238	7715.3	1.4	**1.0741**	0.027	2.5	ug/L	3	Standard
>	**Bi**	209	544657.1	1.1				ug/L	523984	Standard

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Na	23	8.3	34.6	**87.3928**	30.523	34.9	mg/L	0	Standard
Mg	24	56818.0	2.0	**66.6625**	1.829	2.7	mg/L	37	Standard
K	39	118.3	28.8	**0.1220**	0.059	48.6	mg/L	38	Standard
Ca	43	173.3	14.2	**7.4463**	1.537	20.6	mg/L	10	Standard
Fe	54	200.1	8.9	**0.0164**	0.019	116.3	mg/L	179	Standard
Fe	57	341.7	12.8	**-0.0156**	0.156	997.8	mg/L	335	Standard
> **Sc-1**	45	67137.0	4.7				mg/L	61029	Standard
Cl	35	31870.8	2.6				ug/L	20195	Standard
Kr	83	0.7	173.2				ug/L	4	Standard
Br	81	13232.4	3.4				ug/L	1547	Standard
P	31	22137.8	2.1				ug/L	15286	Standard
S	34	2160.2	8.0				ug/L	1572	Standard
Sr	88	146.7	24.2				ug/L	73	Standard
C	12	170.0	10.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	64.3	100.4				mg/L	6	Standard
Ho-1	165	55.0	78.7				mg/L	10	Standard
Er	166	50.0	60.0				mg/L	13	Standard
I	127	62898.8	4.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		126.291	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.237	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.859
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.945
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606127202
Sample Date/Time: Wednesday, June 29, 2016 16:49:33
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	98788.0	4.1				ug/L	74699	Standard
	Be	9	13.3	57.3	**0.0192**	0.007	36.1	ug/L	8	Standard
	Al	27	43121483.9	2.2	**221.9923**	5.444	2.5	ug/L	1493	Standard
	Sc	45	66930.9	3.1				ug/L	61029	Standard
	Ti	47	1039.7	26.4	**2.4141**	0.661	27.4	ug/L	35	Standard
	V	51	49957.2	0.9	**5.8910**	0.067	1.1	ug/L	1435	Standard
	Cr	52	18344.1	1.8	**1.2538**	0.038	3.0	ug/L	7635	Standard
	Cr	53	24960.6	4.5	**24.5202**	1.080	4.4	ug/L	363	Standard
	Mn	55	17873.9	4.1	**2.2143**	0.103	4.7	ug/L	747	Standard
	Co	59	1405.4	6.7	**0.1586**	0.013	8.4	ug/L	234	Standard
	Ni	60	3876.2	1.9	**1.7810**	0.032	1.8	ug/L	215	Standard
	Cu	65	1407.4	2.7	**0.5921**	0.020	3.4	ug/L	104	Standard
	Zn	66	4623.4	0.6	**3.4401**	0.014	0.4	ug/L	363	Standard
>	**Ge**	72	538103.3	0.3				ug/L	495142	Standard
	As	75	2665.5	0.4	**2.2493**	0.008	0.3	ug/L	-50	Standard
	Se	82	859.9	5.4	**7.0717**	0.401	5.7	ug/L	14	Standard
	Se-1	77	1900.1	5.6	**23.3152**	1.302	5.6	ug/L	42	Standard
>	**Ga**	71	205.0	14.8				mg/L	42	Standard
	Rb	85	12111.5	1.9				ug/L	17	Standard
	Y	89	447538.5	3.5				ug/L	417098	Standard
>	**Rh**	103	186.7	5.6				ug/L	13	Standard
	Mo	98	4087.3	1.0	**1.4942**	0.026	1.7	ug/L	11	Standard
	Ag	107	258.7	10.6	**0.0259**	0.004	14.5	ug/L	68	Standard
	Cd	111	70.2	15.3	**0.0250**	0.005	21.6	mg/L	2	Standard
	Cd	114	224.5	9.2	**0.0407**	0.004	8.7	ug/L	12	Standard
>	**In**	115	600654.0	1.1				ug/L	587441	Standard
	Sn	118	765.0	14.6	**0.0335**	0.020	60.1	ug/L	497	Standard
	Sb	123	166.1	4.9	**0.0306**	0.002	5.1	ug/L	78	Standard
	Ba	135	52090.1	1.0	**24.8744**	0.038	0.2	ug/L	24	Standard
	Ce	140	4474.0	3.6				ug/L	25	Standard
>	**Tb**	159	974974.5	0.9				ug/L	939701	Standard
	Ho	165	80.0	27.2				ug/L	10	Standard
	Tl	203	82.0	10.0	**0.0082**	0.001	13.1	ug/L	4	Standard
	Tl	205	63.3	43.5	**0.0090**	0.004	42.2	ug/L	2	Standard
	Pb	206	1123.7	3.1	**0.1383**	0.006	4.7	ug/L	240	Standard
	Pb	207	914.0	2.3	**0.1218**	0.004	3.1	ug/L	198	Standard
	Pb	208	3779.9	2.5	**0.1267**	0.006	5.0	ug/L	883	Standard
	U	238	23648.8	1.1	**3.4170**	0.057	1.7	ug/L	3	Standard
>	**Bi**	209	526202.0	0.7				ug/L	523984	Standard

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Na	23	5.0	100.0	**53.6294**	53.947	100.6	mg/L	0	Standard
Mg	24	113104.0	1.5	**133.1465**	4.642	3.5	mg/L	37	Standard
K	39	478.3	11.2	**0.8485**	0.082	9.7	mg/L	38	Standard
Ca	43	695.0	6.9	**37.5535**	3.460	9.2	mg/L	10	Standard
Fe	54	250.5	4.6	**0.0553**	0.004	6.4	mg/L	179	Standard
Fe	57	631.7	3.6	**0.8833**	0.015	1.7	mg/L	335	Standard
> **Sc-1**	45	66930.9	3.1				mg/L	61029	Standard
Cl	35	32927.1	2.7				ug/L	20195	Standard
Kr	83	2.7	57.3				ug/L	4	Standard
Br	81	41968.1	3.2				ug/L	1547	Standard
P	31	23413.1	2.8				ug/L	15286	Standard
S	34	2041.8	4.5				ug/L	1572	Standard
Sr	88	750.0	13.9				ug/L	73	Standard
C	12	126.7	19.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	103.6	24.2				mg/L	6	Standard
Ho-1	165	80.0	27.2				mg/L	10	Standard
Er	166	63.3	32.9				mg/L	13	Standard
I	127	36619.2	2.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.248	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.676	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.249
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.423
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606127901
Sample Date/Time: Wednesday, June 29, 2016 16:52:45
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	94669.8	0.8				ug/L	74699	Standard
	Be	9	153.3	14.7	**0.1451**	0.021	14.4	ug/L	8	Standard
	Al	27	36828943.8	1.6	**197.7220**	2.539	1.3	ug/L	1493	Standard
	Sc	45	72494.8	2.9				ug/L	61029	Standard
	Ti	47	9823.2	1.5	**22.6070**	0.583	2.6	ug/L	35	Standard
	V	51	40160.9	1.2	**4.4642**	0.016	0.4	ug/L	1435	Standard
	Cr	52	82051.3	1.3	**8.6794**	0.190	2.2	ug/L	7635	Standard
	Cr	53	10588.7	4.0	**9.7108**	0.425	4.4	ug/L	363	Standard
	Mn	55	3156665.4	1.9	**397.2480**	11.605	2.9	ug/L	747	Standard
	Co	59	13202.1	1.7	**1.7150**	0.048	2.8	ug/L	234	Standard
	Ni	60	14584.3	1.0	**6.7029**	0.116	1.7	ug/L	215	Standard
	Cu	65	6796.9	2.1	**3.0972**	0.099	3.2	ug/L	104	Standard
	Zn	66	29601.9	0.7	**23.2962**	0.407	1.7	ug/L	363	Standard
>	**Ge**	72	565029.1	1.1				ug/L	495142	Standard
	As	75	1169.4	2.0	**0.9746**	0.024	2.5	ug/L	-50	Standard
	Se	82	54.4	2.8	**0.2964**	0.014	4.6	ug/L	14	Standard
	Se-1	77	95.3	8.8	**0.5209**	0.088	16.8	ug/L	42	Standard
>	**Ga**	71	2745.3	10.7				mg/L	42	Standard
	Rb	85	40779.8	2.2				ug/L	17	Standard
	Y	89	501434.2	0.6				ug/L	417098	Standard
>	**Rh**	103	116.7	40.7				ug/L	13	Standard
	Mo	98	6510.4	0.7	**2.1843**	0.030	1.4	ug/L	11	Standard
	Ag	107	146.0	1.2	**0.0072**	0.000	3.6	ug/L	68	Standard
	Cd	111	54.1	19.4	**0.0153**	0.004	28.2	mg/L	2	Standard
	Cd	114	169.8	20.2	**0.0276**	0.006	22.4	ug/L	12	Standard
>	**In**	115	655252.5	1.2				ug/L	587441	Standard
	Sn	118	1435.1	4.4	**0.1255**	0.007	5.6	ug/L	497	Standard
	Sb	123	419.8	7.1	**0.0764**	0.005	6.8	ug/L	78	Standard
	Ba	135	167537.6	1.4	**73.3690**	0.619	0.8	ug/L	24	Standard
	Ce	140	144147.5	0.8				ug/L	25	Standard
>	**Tb**	159	1041877.9	1.3				ug/L	939701	Standard
	Ho	165	2731.9	2.9				ug/L	10	Standard
	Tl	203	237.3	5.5	**0.0244**	0.001	5.3	ug/L	4	Standard
	Tl	205	228.3	8.3	**0.0292**	0.002	8.4	ug/L	2	Standard
	Pb	206	7357.1	0.9	**1.1818**	0.018	1.5	ug/L	240	Standard
	Pb	207	5920.5	2.7	**1.0648**	0.026	2.5	ug/L	198	Standard
	Pb	208	25273.6	1.1	**1.1521**	0.016	1.4	ug/L	883	Standard
	U	238	16614.4	0.8	**2.1915**	0.022	1.0	ug/L	3	Standard
>	**Bi**	209	575969.2	0.6				ug/L	523984	Standard

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Na	23	3.3	86.6	**32.3968**	28.087	86.7	mg/L	0	Standard
Mg	24	3568.8	4.7	**3.8119**	0.091	2.4	mg/L	37	Standard
K	39	285.0	24.6	**0.4167**	0.132	31.6	mg/L	38	Standard
Ca	43	908.4	6.1	**45.7783**	2.516	5.5	mg/L	10	Standard
Fe	54	3605.6	1.3	**2.4364**	0.072	2.9	mg/L	179	Standard
Fe	57	1446.7	0.5	**3.0674**	0.109	3.5	mg/L	335	Standard
Sc-1	45	72494.8	2.9				mg/L	61029	Standard
Cl	35	31293.6	1.2				ug/L	20195	Standard
Kr	83	2.3	49.5				ug/L	4	Standard
Br	81	8015.5	4.3				ug/L	1547	Standard
P	31	26808.7	3.1				ug/L	15286	Standard
S	34	2353.5	0.9				ug/L	1572	Standard
Sr	88	506.7	5.4				ug/L	73	Standard
C	12	183.3	20.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	3	Standard
Dy	164	4522.3	4.2				mg/L	6	Standard
Ho-1	165	2731.9	2.9				mg/L	10	Standard
Er	166	2333.5	8.8				mg/L	13	Standard
I	127	38263.4	7.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		126.735	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		114.114	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	111.544
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	109.921
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606127901
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Method 6020 - Summary Report

Sample ID: L1606127901
Sample Date/Time: Wednesday, June 29, 2016 16:55:56
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	94757.1	0.6				ug/L	74699	Standard
	Be	9	16.7	34.6	**0.0226**	0.005	23.2	ug/L	8	Standard
	Al	27	809583.1	0.4	**4.3294**	0.010	0.2	ug/L	1493	Standard
	Sc	45	70063.3	2.2				ug/L	61029	Standard
	Ti	47	239.7	2.8	**0.4418**	0.016	3.7	ug/L	35	Standard
	V	51	2635.2	3.3	**0.1083**	0.010	9.6	ug/L	1435	Standard
	Cr	52	10594.0	0.1	**0.2214**	0.004	1.7	ug/L	7635	Standard
	Cr	53	1061.7	10.6	**0.6708**	0.107	16.0	ug/L	363	Standard
	Mn	55	69843.0	1.9	**8.5894**	0.152	1.8	ug/L	747	Standard
	Co	59	472.7	1.3	**0.0251**	0.001	3.3	ug/L	234	Standard
	Ni	60	497.3	0.6	**0.1075**	0.002	1.4	ug/L	215	Standard
	Cu	65	314.7	2.4	**0.0436**	0.003	7.6	ug/L	104	Standard
	Zn	66	3346.7	3.2	**2.2142**	0.089	4.0	ug/L	363	Standard
>	**Ge**	72	568460.2	0.3				ug/L	495142	Standard
	As	75	-20.7	45.1	**0.0435**	0.007	16.6	ug/L	-50	Standard
	Se	82	18.3	17.6	**0.0072**	0.025	350.3	ug/L	14	Standard
	Se-1	77	58.0	6.2	**0.0694**	0.043	62.2	ug/L	42	Standard
>	**Ga**	71	123.3	16.9				mg/L	42	Standard
	Rb	85	875.0	6.6				ug/L	17	Standard
	Y	89	490331.7	1.2				ug/L	417098	Standard
>	**Rh**	103	16.7	45.8				ug/L	13	Standard
	Mo	98	175.2	3.1	**0.0513**	0.001	2.5	ug/L	11	Standard
	Ag	107	187.0	5.8	**0.0120**	0.001	10.3	ug/L	68	Standard
	Cd	111	8.4	36.2	**-0.0044**	0.001	27.6	mg/L	2	Standard
	Cd	114	20.0	63.9	**0.0013**	0.002	167.4	ug/L	12	Standard
>	**In**	115	676596.2	0.9				ug/L	587441	Standard
	Sn	118	621.7	13.0	**-0.0023**	0.012	549.8	ug/L	497	Standard
	Sb	123	148.0	17.5	**0.0233**	0.005	19.5	ug/L	78	Standard
	Ba	135	3597.4	2.3	**1.5099**	0.025	1.6	ug/L	24	Standard
	Ce	140	3133.7	5.7				ug/L	25	Standard
>	**Tb**	159	1053037.0	0.7				ug/L	939701	Standard
	Ho	165	73.3	37.6				ug/L	10	Standard
	Tl	203	38.7	9.8	**0.0024**	0.000	14.0	ug/L	4	Standard
	Tl	205	30.0	57.7	**0.0039**	0.002	55.8	ug/L	2	Standard
	Pb	206	500.3	0.4	**0.0113**	0.001	11.7	ug/L	240	Standard
	Pb	207	394.7	10.5	**0.0033**	0.008	256.3	ug/L	198	Standard
	Pb	208	1728.4	3.9	**0.0071**	0.003	37.0	ug/L	883	Standard
	U	238	362.3	7.5	**0.0420**	0.004	8.9	ug/L	3	Standard
>	**Bi**	209	594905.3	1.7				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.1214**	29.647	173.2	mg/L	0	Standard
Mg	24	156.7	18.1	**0.1107**	0.028	25.7	mg/L	37	Standard
K	39	30.0	60.1	**-0.0567**	0.034	59.1	mg/L	38	Standard
Ca	43	53.3	5.4	**0.4139**	0.213	51.5	mg/L	10	Standard
Fe	54	254.1	20.9	**0.0493**	0.038	78.1	mg/L	179	Standard
Fe	57	286.7	7.0	**-0.2249**	0.071	31.4	mg/L	335	Standard
> **Sc-1**	45	70063.3	2.2				mg/L	61029	Standard
Cl	35	33357.3	0.7				ug/L	20195	Standard
Kr	83	2.3	89.2				ug/L	4	Standard
Br	81	2703.6	11.1				ug/L	1547	Standard
P	31	21573.7	6.4				ug/L	15286	Standard
S	34	2518.5	1.8				ug/L	1572	Standard
Sr	88	90.0	20.0				ug/L	73	Standard
C	12	76.7	7.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	3	Standard
Dy	164	206.2	21.0				mg/L	6	Standard
Ho-1	165	73.3	37.6				mg/L	10	Standard
Er	166	80.0	12.5				mg/L	13	Standard
I	127	6318.0	20.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		126.852	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.807	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	115.177
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	113.535
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 16:59:09
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92097.4	0.2				ug/L	74699	Standard
	Be	9	59332.7	2.3	**54.6708**	1.340	2.5	ug/L	8	Standard
	Al	27	8920018.4	1.0	**49.2175**	0.589	1.2	ug/L	1493	Standard
	Sc	45	68374.0	2.7				ug/L	61029	Standard
	Ti	47	44746.6	0.7	**103.2626**	1.432	1.4	ug/L	35	Standard
	V	51	467593.6	0.9	**54.0107**	0.396	0.7	ug/L	1435	Standard
	Cr	52	444978.1	1.4	**51.5506**	1.111	2.2	ug/L	7635	Standard
	Cr	53	54491.2	2.0	**51.2973**	1.411	2.7	ug/L	363	Standard
	Mn	55	420710.6	2.8	**52.7641**	1.799	3.4	ug/L	747	Standard
	Co	59	425350.8	2.7	**56.3649**	1.831	3.2	ug/L	234	Standard
	Ni	60	109363.3	1.2	**51.0215**	0.971	1.9	ug/L	215	Standard
	Cu	65	108714.3	1.3	**51.0413**	1.018	2.0	ug/L	104	Standard
	Zn	66	63872.0	1.2	**50.7455**	1.020	2.0	ug/L	363	Standard
>	**Ge**	72	565538.7	0.9				ug/L	495142	Standard
	As	75	65590.6	1.0	**51.3298**	0.623	1.2	ug/L	-50	Standard
	Se	82	6676.5	1.4	**53.1245**	0.865	1.6	ug/L	14	Standard
	Se-1	77	4570.7	2.8	**54.1793**	1.989	3.7	ug/L	42	Standard
>	**Ga**	71	90.0	25.5				mg/L	42	Standard
	Rb	85	980.0	1.8				ug/L	17	Standard
	Y	89	481101.3	1.3				ug/L	417098	Standard
>	**Rh**	103	36.7	20.8				ug/L	13	Standard
	Mo	98	317636.1	2.3	**106.0178**	2.920	2.8	ug/L	11	Standard
	Ag	107	377887.3	1.0	**51.5689**	0.593	1.2	ug/L	68	Standard
	Cd	111	119799.3	1.9	**50.9674**	1.189	2.3	mg/L	2	Standard
	Cd	114	291345.5	1.8	**50.5384**	1.150	2.3	ug/L	12	Standard
>	**In**	115	660345.6	0.5				ug/L	587441	Standard
	Sn	118	333887.3	1.0	**50.7546**	0.756	1.5	ug/L	497	Standard
	Sb	123	263770.3	1.5	**50.2579**	0.987	2.0	ug/L	78	Standard
	Ba	135	110751.0	1.4	**48.1238**	0.926	1.9	ug/L	24	Standard
	Ce	140	100.0	13.2				ug/L	25	Standard
>	**Tb**	159	1027328.3	1.0				ug/L	939701	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	469667.3	0.3	**51.2282**	0.784	1.5	ug/L	4	Standard
	Tl	205	432915.4	1.7	**54.4135**	1.621	3.0	ug/L	2	Standard
	Pb	206	304012.7	1.3	**51.1045**	1.311	2.6	ug/L	240	Standard
	Pb	207	269196.3	1.3	**50.9328**	1.301	2.6	ug/L	198	Standard
	Pb	208	1105976.1	1.5	**52.9652**	1.506	2.8	ug/L	883	Standard
	U	238	408284.4	0.8	**53.3305**	1.093	2.0	ug/L	3	Standard
>	**Bi**	209	582837.4	1.3				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4664.1	3.2	**5.3139**	0.299	5.6	mg/L	37	Standard
K	39	2066.8	2.7	**3.9658**	0.176	4.4	mg/L	38	Standard
Ca	43	83.3	3.5	**2.1752**	0.111	5.1	mg/L	10	Standard
Fe	54	7259.4	3.7	**5.3547**	0.102	1.9	mg/L	179	Standard
Fe	57	2016.8	2.5	**5.0496**	0.304	6.0	mg/L	335	Standard
Sc-1	45	68374.0	2.7				mg/L	61029	Standard
Cl	35	31290.3	2.5				ug/L	20195	Standard
Kr	83	2.3	65.5				ug/L	4	Standard
Br	81	2203.5	6.4				ug/L	1547	Standard
P	31	22518.4	0.7				ug/L	15286	Standard
S	34	2795.3	6.4				ug/L	1572	Standard
Sr	88	58.3	13.1				ug/L	73	Standard
C	12	70.0	37.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	25.1	45.0				mg/L	6	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	33.3	34.6				mg/L	13	Standard
I	127	4404.0	17.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	109.342		
Al	27	98.435		
Sc	45			
Ti	47	103.263		
V	51	108.021		
Cr	52	103.101		
Cr	53			
Mn	55	105.528		
Co	59	112.730		
Ni	60	102.043		
Cu	65	102.083		
Zn	66	101.491		
Ge	72		114.217	
As	75	102.660		
Se	82	106.249		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	106.018		
Ag	107	103.138		
Cd	111	101.935		
Cd	114			
In	115		112.411	
Sn	118	101.509		
Sb	123	100.516		
Ba	135	96.248		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.456		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.930		
U	238	106.661		
Bi	209		111.232	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Co	59	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 17:02:20
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92622.3	1.7				ug/L	74699	Standard
	Be	9	38.3	64.3	**0.0426**	0.023	52.8	ug/L	8	Standard
	Al	27	23370.4	151.2	**0.1159**	0.196	168.9	ug/L	1493	Standard
	Sc	45	68951.6	1.3				ug/L	61029	Standard
	Ti	47	40.3	21.1	**-0.0139**	0.019	138.6	ug/L	35	Standard
	V	51	1665.7	22.9	**0.0015**	0.044	2840.4	ug/L	1435	Standard
	Cr	52	7712.6	2.1	**-0.0923**	0.036	39.5	ug/L	7635	Standard
	Cr	53	583.3	10.9	**0.2339**	0.049	21.0	ug/L	363	Standard
	Mn	55	4624.3	138.3	**0.4433**	0.816	184.2	ug/L	747	Standard
	Co	59	398.3	65.9	**0.0165**	0.035	212.9	ug/L	234	Standard
	Ni	60	246.3	49.7	**-0.0062**	0.058	932.9	ug/L	215	Standard
	Cu	65	154.7	27.9	**-0.0294**	0.020	68.5	ug/L	104	Standard
	Zn	66	470.3	19.7	**-0.0693**	0.075	107.9	ug/L	363	Standard
>	**Ge**	72	553538.3	2.4				ug/L	495142	Standard
	As	75	-38.0	63.4	**0.0295**	0.019	62.8	ug/L	-50	Standard
	Se	82	20.6	12.7	**0.0307**	0.026	83.7	ug/L	14	Standard
	Se-1	77	63.0	12.0	**0.1490**	0.085	57.3	ug/L	42	Standard
>	**Ga**	71	71.7	14.5				mg/L	42	Standard
	Rb	85	25.0	0.0				ug/L	17	Standard
	Y	89	484828.2	0.4				ug/L	417098	Standard
>	**Rh**	103	11.7	65.5				ug/L	13	Standard
	Mo	98	326.7	26.1	**0.0989**	0.027	26.9	ug/L	11	Standard
	Ag	107	215.0	76.0	**0.0152**	0.021	139.6	ug/L	68	Standard
	Cd	111	16.1	49.4	**-0.0013**	0.003	242.1	mg/L	2	Standard
	Cd	114	45.0	78.6	**0.0054**	0.006	109.2	ug/L	12	Standard
>	**In**	115	687277.7	0.8				ug/L	587441	Standard
	Sn	118	931.7	18.6	**0.0418**	0.027	63.5	ug/L	497	Standard
	Sb	123	489.1	40.1	**0.0853**	0.036	41.8	ug/L	78	Standard
	Ba	135	52.0	47.0	**0.0057**	0.010	177.6	ug/L	24	Standard
	Ce	140	81.7	78.0				ug/L	25	Standard
>	**Tb**	159	1059717.9	1.6				ug/L	939701	Standard
	Ho	165	6.7	86.6				ug/L	10	Standard
	Tl	203	97.3	80.9	**0.0086**	0.008	97.3	ug/L	4	Standard
	Tl	205	126.7	77.5	**0.0158**	0.012	76.4	ug/L	2	Standard
	Pb	206	434.7	47.9	**0.0006**	0.034	5998.1	ug/L	240	Standard
	Pb	207	327.7	41.4	**-0.0091**	0.025	275.6	ug/L	198	Standard
	Pb	208	1259.4	26.8	**-0.0148**	0.016	107.4	ug/L	883	Standard
	U	238	94.7	104.8	**0.0077**	0.013	165.1	ug/L	3	Standard
>	**Bi**	209	593862.7	2.1				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	88.3	93.4	**0.0352**	0.093	262.9	mg/L	37	Standard
K	39	41.7	30.2	**-0.0325**	0.025	77.1	mg/L	38	Standard
Ca	43	21.7	58.1	**-1.3088**	0.708	54.1	mg/L	10	Standard
Fe	54	169.3	10.4	**-0.0113**	0.012	105.6	mg/L	179	Standard
Fe	57	255.0	7.1	**-0.3067**	0.061	20.0	mg/L	335	Standard
> **Sc-1**	45	68951.6	1.3				mg/L	61029	Standard
Cl	35	30862.1	1.0				ug/L	20195	Standard
Kr	83	3.7	31.5				ug/L	4	Standard
Br	81	2130.2	6.5				ug/L	1547	Standard
P	31	22533.4	1.3				ug/L	15286	Standard
S	34	2576.9	2.2				ug/L	1572	Standard
Sr	88	61.7	20.4				ug/L	73	Standard
C	12	70.0	62.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	15.1	95.9				mg/L	6	Standard
Ho-1	165	6.7	86.6				mg/L	10	Standard
Er	166	33.3	69.3				mg/L	13	Standard
I	127	3348.7	10.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.794	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		116.995
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		113.336
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Mn	55	

Sample ID: QC Std 7
Report Date/Time: Wednesday, June 29, 2016 17:04:37
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Method 6020 - Summary Report

Sample ID: L1606127902 WG574001-03
Sample Date/Time: Wednesday, June 29, 2016 17:05:33
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	97844.9	1.2				ug/L	74699	Standard
	Be	9	628.3	5.4	**0.5525**	0.030	5.3	ug/L	8	Standard
	Al	27	67592650.7	0.8	**351.1766**	6.777	1.9	ug/L	1493	Standard
	Sc	45	76196.2	3.2				ug/L	61029	Standard
	Ti	47	35031.5	1.8	**85.4603**	1.454	1.7	ug/L	35	Standard
	V	51	127107.8	0.4	**15.3856**	0.087	0.6	ug/L	1435	Standard
	Cr	52	144594.0	0.9	**17.0395**	0.185	1.1	ug/L	7635	Standard
	Cr	53	17708.7	3.4	**17.4084**	0.576	3.3	ug/L	363	Standard
	Mn	55	9638149.6	0.5	**1281.4698**	6.113	0.5	ug/L	747	Standard
	Co	59	44221.4	1.1	**6.1626**	0.079	1.3	ug/L	234	Standard
	Ni	60	29440.2	0.7	**14.4336**	0.102	0.7	ug/L	215	Standard
	Cu	65	18715.2	1.1	**9.2058**	0.118	1.3	ug/L	104	Standard
	Zn	66	49911.7	1.0	**41.8483**	0.443	1.1	ug/L	363	Standard
>	**Ge**	72	534821.8	0.2				ug/L	495142	Standard
	As	75	5363.3	0.7	**4.4926**	0.039	0.9	ug/L	-50	Standard
	Se	82	81.7	4.2	**0.5509**	0.030	5.5	ug/L	14	Standard
	Se-1	77	90.0	5.1	**0.5184**	0.056	10.8	ug/L	42	Standard
>	**Ga**	71	10246.8	1.6				mg/L	42	Standard
	Rb	85	128176.6	1.2				ug/L	17	Standard
	Y	89	611826.2	1.2				ug/L	417098	Standard
>	**Rh**	103	203.3	5.1				ug/L	13	Standard
	Mo	98	8459.2	1.1	**2.8837**	0.063	2.2	ug/L	11	Standard
	Ag	107	335.7	32.7	**0.0339**	0.015	43.7	ug/L	68	Standard
	Cd	111	167.4	13.2	**0.0649**	0.009	13.6	mg/L	2	Standard
	Cd	114	471.4	29.4	**0.0814**	0.024	29.1	ug/L	12	Standard
>	**In**	115	645352.1	1.1				ug/L	587441	Standard
	Sn	118	2433.5	1.0	**0.2845**	0.006	2.0	ug/L	497	Standard
	Sb	123	747.2	5.1	**0.1415**	0.006	4.4	ug/L	78	Standard
	Ba	135	186708.8	1.1	**83.0208**	0.490	0.6	ug/L	24	Standard
	Ce	140	555105.9	0.4				ug/L	25	Standard
>	**Tb**	159	1017797.9	1.6				ug/L	939701	Standard
	Ho	165	10682.1	1.8				ug/L	10	Standard
	Tl	203	801.4	12.7	**0.0906**	0.011	12.4	ug/L	4	Standard
	Tl	205	726.7	5.1	**0.0967**	0.005	5.6	ug/L	2	Standard
	Pb	206	28687.5	0.5	**5.0315**	0.023	0.5	ug/L	240	Standard
	Pb	207	23046.8	1.0	**4.5438**	0.005	0.1	ug/L	198	Standard
	Pb	208	100519.8	0.6	**5.0199**	0.074	1.5	ug/L	883	Standard
	U	238	32058.9	0.6	**4.4211**	0.050	1.1	ug/L	3	Standard
>	**Bi**	209	551473.5	0.9				ug/L	523984	Standard

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Na	23	16.7	17.3	**153.4719**	22.118	14.4	mg/L	0	Standard
Mg	24	8050.5	4.4	**8.2571**	0.176	2.1	mg/L	37	Standard
K	39	990.0	1.3	**1.6393**	0.041	2.5	mg/L	38	Standard
Ca	43	1383.4	8.1	**67.3924**	3.470	5.1	mg/L	10	Standard
Fe	54	12019.5	0.9	**8.0301**	0.303	3.8	mg/L	179	Standard
Fe	57	3888.8	1.5	**9.5221**	0.470	4.9	mg/L	335	Standard
Sc-1	45	76196.2	3.2				mg/L	61029	Standard
Cl	35	38282.3	2.8				ug/L	20195	Standard
Kr	83	1.7	124.9				ug/L	4	Standard
Br	81	9239.5	4.1				ug/L	1547	Standard
P	31	33428.5	3.8				ug/L	15286	Standard
S	34	2046.8	10.4				ug/L	1572	Standard
Sr	88	885.0	8.4				ug/L	73	Standard
C	12	223.3	22.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	3	Standard
Dy	164	18454.9	2.8				mg/L	6	Standard
Ho-1	165	10682.1	1.8				mg/L	10	Standard
Er	166	9956.6	4.7				mg/L	13	Standard
I	127	65381.5	9.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		130.986	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		108.014	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.858
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.246
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606127902 WG574001-03
Sample Date/Time: Wednesday, June 29, 2016 17:08:45
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	97333.3	1.1				ug/L	74699	Standard
	Be	9	23.3	32.7	**0.0279**	0.007	23.3	ug/L	8	Standard
	Al	27	1471688.9	2.0	**7.6717**	0.099	1.3	ug/L	1493	Standard
	Sc	45	68584.9	0.8				ug/L	61029	Standard
	Ti	47	736.0	3.1	**1.5714**	0.076	4.9	ug/L	35	Standard
	V	51	4360.2	2.0	**0.3040**	0.018	5.9	ug/L	1435	Standard
	Cr	52	10891.2	1.4	**0.2475**	0.011	4.5	ug/L	7635	Standard
	Cr	53	901.7	3.1	**0.5139**	0.018	3.4	ug/L	363	Standard
	Mn	55	209342.7	1.0	**25.8667**	0.657	2.5	ug/L	747	Standard
	Co	59	1184.0	8.5	**0.1180**	0.016	13.3	ug/L	234	Standard
	Ni	60	823.4	2.4	**0.2566**	0.015	5.7	ug/L	215	Standard
	Cu	65	604.0	5.8	**0.1771**	0.017	9.7	ug/L	104	Standard
	Zn	66	3536.4	2.1	**2.3459**	0.038	1.6	ug/L	363	Standard
>	**Ge**	72	572433.6	1.6				ug/L	495142	Standard
	As	75	56.5	19.8	**0.1032**	0.008	8.2	ug/L	-50	Standard
	Se	82	22.7	8.9	**0.0409**	0.015	36.5	ug/L	14	Standard
	Se-1	77	56.3	3.7	**0.0451**	0.032	71.6	ug/L	42	Standard
>	**Ga**	71	286.7	20.8				mg/L	42	Standard
	Rb	85	2816.9	8.1				ug/L	17	Standard
	Y	89	483993.7	0.1				ug/L	417098	Standard
>	**Rh**	103	11.7	65.5				ug/L	13	Standard
	Mo	98	255.8	9.6	**0.0784**	0.008	10.6	ug/L	11	Standard
	Ag	107	215.7	39.7	**0.0161**	0.012	72.2	ug/L	68	Standard
	Cd	111	33.2	125.7	**0.0061**	0.018	290.4	mg/L	2	Standard
	Cd	114	83.8	140.0	**0.0123**	0.020	164.2	ug/L	12	Standard
>	**In**	115	670122.5	0.4				ug/L	587441	Standard
	Sn	118	730.0	9.6	**0.0149**	0.011	73.4	ug/L	497	Standard
	Sb	123	198.5	22.7	**0.0331**	0.009	26.1	ug/L	78	Standard
	Ba	135	4104.6	4.5	**1.7422**	0.086	5.0	ug/L	24	Standard
	Ce	140	11919.7	3.4				ug/L	25	Standard
>	**Tb**	159	1040073.5	0.3				ug/L	939701	Standard
	Ho	165	248.3	25.2				ug/L	10	Standard
	Tl	203	119.3	122.5	**0.0111**	0.016	142.6	ug/L	4	Standard
	Tl	205	45.0	44.4	**0.0058**	0.003	43.8	ug/L	2	Standard
	Pb	206	1027.4	11.1	**0.0985**	0.020	20.7	ug/L	240	Standard
	Pb	207	828.0	1.8	**0.0839**	0.004	4.9	ug/L	198	Standard
	Pb	208	3389.1	2.4	**0.0853**	0.005	6.3	ug/L	883	Standard
	U	238	690.0	3.8	**0.0840**	0.004	4.3	ug/L	3	Standard
>	**Bi**	209	594228.5	1.0				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	215.0	6.2	**0.1819**	0.016	8.8	mg/L	37	Standard
K	39	53.3	14.3	**-0.0093**	0.014	153.2	mg/L	38	Standard
Ca	43	48.3	15.8	**0.1914**	0.411	214.9	mg/L	10	Standard
Fe	54	443.5	15.8	**0.1966**	0.055	28.1	mg/L	179	Standard
Fe	57	323.3	11.7	**-0.0960**	0.118	122.9	mg/L	335	Standard
> **Sc-1**	45	68584.9	0.8				mg/L	61029	Standard
Cl	35	29711.8	0.5				ug/L	20195	Standard
Kr	83	0.7	173.2				ug/L	4	Standard
Br	81	2166.8	7.4				ug/L	1547	Standard
P	31	19419.1	3.8				ug/L	15286	Standard
S	34	2206.8	3.0				ug/L	1572	Standard
Sr	88	96.7	19.6				ug/L	73	Standard
C	12	46.7	49.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	390.3	4.3				mg/L	6	Standard
Ho-1	165	248.3	25.2				mg/L	10	Standard
Er	166	203.3	36.3				mg/L	13	Standard
I	127	5617.8	25.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		130.301	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		115.610	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.075
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		113.406
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606127903S WG574001-09
Sample Date/Time: Wednesday, June 29, 2016 17:11:56
Number of Replicates: 3
Autosampler Position: 227
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	103734.0	1.8				ug/L	74699	Standard
	Be	9	62659.4	2.5	**51.2580**	0.858	1.7	ug/L	8	Standard
	Al	27	65559814.6	2.9	**321.3254**	12.360	3.8	ug/L	1493	Standard
	Sc	45	78765.9	1.8				ug/L	61029	Standard
	Ti	47	33652.0	1.4	**81.0287**	2.211	2.7	ug/L	35	Standard
	V	51	549023.7	0.9	**66.2300**	1.368	2.1	ug/L	1435	Standard
	Cr	52	510507.6	0.8	**61.9303**	1.817	2.9	ug/L	7635	Standard
	Cr	53	62490.3	1.3	**61.4602**	1.770	2.9	ug/L	363	Standard
	Mn	55	9311676.0	0.4	**1221.9970**	25.998	2.1	ug/L	747	Standard
	Co	59	420012.9	0.8	**58.0870**	1.492	2.6	ug/L	234	Standard
	Ni	60	121605.8	1.9	**59.2404**	2.250	3.8	ug/L	215	Standard
	Cu	65	110409.9	1.5	**54.1128**	1.822	3.4	ug/L	104	Standard
	Zn	66	101498.2	0.9	**84.4641**	2.491	2.9	ug/L	363	Standard
>	**Ge**	72	542031.1	2.4				ug/L	495142	Standard
	As	75	66455.1	1.4	**54.2648**	0.548	1.0	ug/L	-50	Standard
	Se	82	6239.8	1.8	**51.8120**	1.305	2.5	ug/L	14	Standard
	Se-1	77	4136.2	2.8	**51.1231**	1.591	3.1	ug/L	42	Standard
>	**Ga**	71	10863.9	0.3				mg/L	42	Standard
	Rb	85	119392.1	2.4				ug/L	17	Standard
	Y	89	586391.1	1.2				ug/L	417098	Standard
>	**Rh**	103	175.0	15.1				ug/L	13	Standard
	Mo	98	5740.7	2.3	**1.9719**	0.058	3.0	ug/L	11	Standard
	Ag	107	333249.6	2.0	**46.9378**	1.203	2.6	ug/L	68	Standard
	Cd	111	109090.4	0.8	**47.8987**	0.737	1.5	mg/L	2	Standard
	Cd	114	263561.8	0.5	**47.1881**	0.999	2.1	ug/L	12	Standard
>	**In**	115	639905.2	1.9				ug/L	587441	Standard
	Sn	118	1925.1	5.8	**0.2078**	0.017	8.3	ug/L	497	Standard
	Sb	123	124661.9	1.5	**24.5159**	0.713	2.9	ug/L	78	Standard
	Ba	135	268706.4	1.4	**120.5245**	2.161	1.8	ug/L	24	Standard
	Ce	140	538323.1	0.7				ug/L	25	Standard
>	**Tb**	159	1045169.0	2.0				ug/L	939701	Standard
	Ho	165	11317.6	5.4				ug/L	10	Standard
	Tl	203	438870.4	1.4	**49.1992**	0.166	0.3	ug/L	4	Standard
	Tl	205	398898.5	1.5	**51.5243**	0.281	0.5	ug/L	2	Standard
	Pb	206	314887.1	0.5	**54.4073**	0.494	0.9	ug/L	240	Standard
	Pb	207	267442.5	0.8	**52.0088**	0.664	1.3	ug/L	198	Standard
	Pb	208	1101699.4	1.8	**54.2208**	0.536	1.0	ug/L	883	Standard
	U	238	415059.0	1.7	**55.7208**	0.743	1.3	ug/L	3	Standard
>	**Bi**	209	566992.1	1.1				ug/L	523984	Standard

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Na	23	8.3	69.3	**74.8950**	52.957	70.7	mg/L	0	Standard
Mg	24	7490.2	5.9	**7.4319**	0.549	7.4	mg/L	37	Standard
K	39	995.0	6.5	**1.5912**	0.134	8.4	mg/L	38	Standard
Ca	43	1293.4	1.8	**60.7979**	1.957	3.2	mg/L	10	Standard
Fe	54	10550.1	1.1	**6.7940**	0.164	2.4	mg/L	179	Standard
Fe	57	3448.7	1.2	**8.0106**	0.227	2.8	mg/L	335	Standard
> **Sc-1**	45	78765.9	1.8				mg/L	61029	Standard
Cl	35	36168.5	1.3				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	7995.5	8.9				ug/L	1547	Standard
P	31	34405.7	2.4				ug/L	15286	Standard
S	34	1880.1	7.8				ug/L	1572	Standard
Sr	88	881.7	7.6				ug/L	73	Standard
C	12	140.0	46.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	3	Standard
Dy	164	18849.9	4.6				mg/L	6	Standard
Ho-1	165	11317.6	5.4				mg/L	10	Standard
Er	166	9863.2	2.6				mg/L	13	Standard
I	127	61177.5	10.8				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		138.870	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		109.470	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	108.931
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	108.208
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606127903S WG574001-09
Sample Date/Time: Wednesday, June 29, 2016 17:15:08
Number of Replicates: 3
Autosampler Position: 228
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	100014.2	2.8				ug/L	74699	Standard
	Be	9	1316.7	11.4	**1.1231**	0.100	8.9	ug/L	8	Standard
	Al	27	1420391.6	2.6	**7.2057**	0.041	0.6	ug/L	1493	Standard
	Sc	45	65355.8	3.5				ug/L	61029	Standard
	Ti	47	751.7	2.2	**1.7435**	0.043	2.4	ug/L	35	Standard
	V	51	12553.2	2.5	**1.3568**	0.030	2.2	ug/L	1435	Standard
	Cr	52	18458.6	1.1	**1.3028**	0.035	2.7	ug/L	7635	Standard
	Cr	53	1771.8	3.3	**1.4619**	0.098	6.7	ug/L	363	Standard
	Mn	55	203580.1	1.5	**27.1635**	0.320	1.2	ug/L	747	Standard
	Co	59	9135.1	1.0	**1.2550**	0.021	1.7	ug/L	234	Standard
	Ni	60	2779.3	1.4	**1.2628**	0.031	2.5	ug/L	215	Standard
	Cu	65	2563.2	1.7	**1.1828**	0.027	2.3	ug/L	104	Standard
	Zn	66	4447.0	0.1	**3.3488**	0.082	2.5	ug/L	363	Standard
>	**Ge**	72	530183.0	2.3				ug/L	495142	Standard
	As	75	1256.2	4.8	**1.1077**	0.065	5.9	ug/L	-50	Standard
	Se	82	144.5	11.0	**1.0936**	0.160	14.6	ug/L	14	Standard
	Se-1	77	149.3	5.6	**1.2873**	0.101	7.8	ug/L	42	Standard
>	**Ga**	71	291.7	12.0				mg/L	42	Standard
	Rb	85	2473.5	8.7				ug/L	17	Standard
	Y	89	480063.9	1.1				ug/L	417098	Standard
>	**Rh**	103	18.3	15.7				ug/L	13	Standard
	Mo	98	168.4	5.0	**0.0496**	0.003	5.9	ug/L	11	Standard
	Ag	107	7406.8	1.4	**0.9815**	0.012	1.2	ug/L	68	Standard
	Cd	111	2324.9	2.0	**0.9649**	0.013	1.3	mg/L	2	Standard
	Cd	114	5499.5	2.5	**0.9362**	0.028	2.9	ug/L	12	Standard
>	**In**	115	671407.0	1.0				ug/L	587441	Standard
	Sn	118	800.0	6.0	**0.0251**	0.007	29.1	ug/L	497	Standard
	Sb	123	3310.0	4.5	**0.6160**	0.025	4.0	ug/L	78	Standard
	Ba	135	5738.4	0.8	**2.4371**	0.009	0.4	ug/L	24	Standard
	Ce	140	11352.6	1.4				ug/L	25	Standard
>	**Tb**	159	1030086.3	0.3				ug/L	939701	Standard
	Ho	165	295.0	7.8				ug/L	10	Standard
	Tl	203	9225.5	0.2	**0.9995**	0.013	1.3	ug/L	4	Standard
	Tl	205	8459.0	5.0	**1.0575**	0.041	3.9	ug/L	2	Standard
	Pb	206	6958.9	0.8	**1.0943**	0.025	2.3	ug/L	240	Standard
	Pb	207	5899.8	0.2	**1.0421**	0.014	1.4	ug/L	198	Standard
	Pb	208	25022.5	1.7	**1.1197**	0.025	2.3	ug/L	883	Standard
	U	238	8748.9	2.2	**1.1326**	0.025	2.2	ug/L	3	Standard
>	**Bi**	209	585775.3	1.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	185.0	5.4	**0.1579**	0.009	5.9	mg/L	37	Standard
K	39	46.7	32.7	**-0.0170**	0.035	202.9	mg/L	38	Standard
Ca	43	53.3	5.4	**0.6286**	0.271	43.1	mg/L	10	Standard
Fe	54	400.2	11.9	**0.1796**	0.048	26.7	mg/L	179	Standard
Fe	57	335.0	9.8	**-0.0119**	0.080	674.7	mg/L	335	Standard
Sc-1	45	65355.8	3.5				mg/L	61029	Standard
Cl	35	29320.3	1.0				ug/L	20195	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	2030.1	9.5				ug/L	1547	Standard
P	31	19806.3	2.6				ug/L	15286	Standard
S	34	2145.2	0.2				ug/L	1572	Standard
Sr	88	86.7	23.3				ug/L	73	Standard
C	12	80.0	66.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	379.6	21.3				mg/L	6	Standard
Ho-1	165	295.0	7.8				mg/L	10	Standard
Er	166	216.7	11.6				mg/L	13	Standard
I	127	5157.6	28.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		133.890	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		107.077	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.294
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		111.792
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606127904SD WG574001-10
Sample Date/Time: Wednesday, June 29, 2016 17:18:19
Number of Replicates: 3
Autosampler Position: 229
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	100168.4	0.8				ug/L	74699	Standard
	Be	9	61913.0	2.3	**52.4502**	1.133	2.2	ug/L	8	Standard
	Al	27	66193036.9	1.4	**335.9039**	6.576	2.0	ug/L	1493	Standard
	Sc	45	75343.6	2.4				ug/L	61029	Standard
	Ti	47	40945.9	1.4	**103.9053**	1.926	1.9	ug/L	35	Standard
	V	51	552663.1	1.5	**70.2550**	1.056	1.5	ug/L	1435	Standard
	Cr	52	495290.7	1.7	**63.3235**	1.419	2.2	ug/L	7635	Standard
	Cr	53	60987.5	1.0	**63.2038**	0.948	1.5	ug/L	363	Standard
	Mn	55	9453870.8	1.1	**1307.2105**	20.907	1.6	ug/L	747	Standard
	Co	59	421300.3	0.1	**61.3867**	0.363	0.6	ug/L	234	Standard
	Ni	60	119269.8	2.5	**61.2106**	1.745	2.9	ug/L	215	Standard
	Cu	65	106997.2	1.7	**55.2474**	1.210	2.2	ug/L	104	Standard
	Zn	66	101243.5	1.4	**88.7847**	1.659	1.9	ug/L	363	Standard
>	**Ge**	72	514295.3	0.5				ug/L	495142	Standard
	As	75	64887.3	0.7	**55.8337**	0.652	1.2	ug/L	-50	Standard
	Se	82	6128.3	0.4	**53.6210**	0.432	0.8	ug/L	14	Standard
	Se-1	77	4025.2	1.7	**52.4403**	1.142	2.2	ug/L	42	Standard
>	**Ga**	71	13474.3	0.3				mg/L	42	Standard
	Rb	85	148814.4	3.2				ug/L	17	Standard
	Y	89	590511.6	1.2				ug/L	417098	Standard
>	**Rh**	103	170.0	19.3				ug/L	13	Standard
	Mo	98	5249.8	1.8	**1.8847**	0.047	2.5	ug/L	11	Standard
	Ag	107	319729.4	0.9	**47.0680**	0.306	0.7	ug/L	68	Standard
	Cd	111	105379.0	1.4	**48.3587**	0.323	0.7	mg/L	2	Standard
	Cd	114	254720.6	1.7	**47.6605**	0.543	1.1	ug/L	12	Standard
>	**In**	115	612131.8	1.0				ug/L	587441	Standard
	Sn	118	2201.8	4.9	**0.2670**	0.017	6.2	ug/L	497	Standard
	Sb	123	135513.9	0.7	**27.8528**	0.396	1.4	ug/L	78	Standard
	Ba	135	276700.5	0.9	**129.7213**	0.066	0.1	ug/L	24	Standard
	Ce	140	594096.9	1.6				ug/L	25	Standard
>	**Tb**	159	982831.9	0.9				ug/L	939701	Standard
	Ho	165	12233.3	1.6				ug/L	10	Standard
	Tl	203	424338.5	0.5	**50.3728**	0.553	1.1	ug/L	4	Standard
	Tl	205	393687.9	2.5	**53.8449**	1.302	2.4	ug/L	2	Standard
	Pb	206	310823.5	0.5	**56.8661**	0.171	0.3	ug/L	240	Standard
	Pb	207	265328.4	0.5	**54.6347**	0.327	0.6	ug/L	198	Standard
	Pb	208	1090751.7	0.6	**56.8486**	0.519	0.9	ug/L	883	Standard
	U	238	409441.4	1.4	**58.2033**	0.887	1.5	ug/L	3	Standard
>	**Bi**	209	535481.7	0.7				ug/L	523984	Standard

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Na	23	6.7	86.6	**61.5240**	53.288	86.6	mg/L	0	Standard
Mg	24	7358.5	1.6	**7.6312**	0.188	2.5	mg/L	37	Standard
K	39	1028.4	3.5	**1.7267**	0.031	1.8	mg/L	38	Standard
Ca	43	1340.1	2.9	**66.0398**	1.115	1.7	mg/L	10	Standard
Fe	54	11628.0	2.4	**7.8474**	0.058	0.7	mg/L	179	Standard
Fe	57	3898.8	5.2	**9.6559**	0.353	3.7	mg/L	335	Standard
Sc-1	45	75343.6	2.4				mg/L	61029	Standard
Cl	35	34624.2	2.4				ug/L	20195	Standard
Kr	83	1.7	34.6				ug/L	4	Standard
Br	81	10260.1	1.8				ug/L	1547	Standard
P	31	37270.8	0.5				ug/L	15286	Standard
S	34	1845.1	3.3				ug/L	1572	Standard
Sr	88	923.4	9.7				ug/L	73	Standard
C	12	203.3	29.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	3	Standard
Dy	164	20358.1	1.7				mg/L	6	Standard
Ho-1	165	12233.3	1.6				mg/L	10	Standard
Er	166	11334.2	2.0				mg/L	13	Standard
I	127	62766.8	7.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		134.096	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.868	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.203
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.194
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ti 47 Upper, S, EEE	Ti	47	

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Mn 55 Upper, S, EEE	Mn	55
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606127904SD WG574001-10
Sample Date/Time: Wednesday, June 29, 2016 17:21:31
Number of Replicates: 3
Autosampler Position: 230
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	96610.6	3.3				ug/L	74699	Standard
	Be	9	1288.4	4.7	**1.1394**	0.049	4.3	ug/L	8	Standard
	Al	27	1461113.0	0.9	**7.6780**	0.187	2.4	ug/L	1493	Standard
	Sc	45	62711.5	6.5				ug/L	61029	Standard
	Ti	47	920.7	1.4	**2.1467**	0.013	0.6	ug/L	35	Standard
	V	51	13378.9	3.6	**1.4502**	0.085	5.9	ug/L	1435	Standard
	Cr	52	18691.9	1.7	**1.3185**	0.044	3.3	ug/L	7635	Standard
	Cr	53	1716.8	3.7	**1.3959**	0.091	6.5	ug/L	363	Standard
	Mn	55	207917.4	1.7	**27.5865**	0.619	2.2	ug/L	747	Standard
	Co	59	9044.0	2.3	**1.2346**	0.031	2.5	ug/L	234	Standard
	Ni	60	2824.3	2.7	**1.2771**	0.044	3.5	ug/L	215	Standard
	Cu	65	2601.9	3.8	**1.1945**	0.050	4.2	ug/L	104	Standard
	Zn	66	4831.1	2.2	**3.6537**	0.142	3.9	ug/L	363	Standard
>	**Ge**	72	533228.6	1.6				ug/L	495142	Standard
	As	75	1337.8	3.9	**1.1692**	0.061	5.2	ug/L	-50	Standard
	Se	82	140.1	2.8	**1.0475**	0.027	2.6	ug/L	14	Standard
	Se-1	77	133.7	3.0	**1.0773**	0.056	5.2	ug/L	42	Standard
>	**Ga**	71	393.3	11.4				mg/L	42	Standard
	Rb	85	3227.0	1.4				ug/L	17	Standard
	Y	89	450037.4	1.9				ug/L	417098	Standard
>	**Rh**	103	18.3	87.7				ug/L	13	Standard
	Mo	98	147.9	13.7	**0.0463**	0.009	18.8	ug/L	11	Standard
	Ag	107	7379.1	1.6	**1.0451**	0.031	3.0	ug/L	68	Standard
	Cd	111	2296.2	2.5	**1.0190**	0.058	5.7	mg/L	2	Standard
	Cd	114	5492.1	3.4	**0.9981**	0.024	2.4	ug/L	12	Standard
>	**In**	115	629018.5	3.2				ug/L	587441	Standard
	Sn	118	580.0	12.2	**-0.0020**	0.010	499.8	ug/L	497	Standard
	Sb	123	3693.7	7.1	**0.7349**	0.053	7.2	ug/L	78	Standard
	Ba	135	5980.2	1.6	**2.7136**	0.046	1.7	ug/L	24	Standard
	Ce	140	12665.3	1.3				ug/L	25	Standard
>	**Tb**	159	1007879.7	3.3				ug/L	939701	Standard
	Ho	165	265.0	7.5				ug/L	10	Standard
	Tl	203	9323.2	2.1	**1.0256**	0.019	1.8	ug/L	4	Standard
	Tl	205	8567.4	1.0	**1.0883**	0.033	3.0	ug/L	2	Standard
	Pb	206	7313.4	2.1	**1.1727**	0.042	3.6	ug/L	240	Standard
	Pb	207	6050.9	2.1	**1.0885**	0.043	4.0	ug/L	198	Standard
	Pb	208	24824.3	2.0	**1.1284**	0.015	1.4	ug/L	883	Standard
	U	238	8436.0	2.0	**1.1088**	0.013	1.2	ug/L	3	Standard
>	**Bi**	209	577014.5	3.2				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	200.0	10.9	**0.1869**	0.033	17.5	mg/L	37	Standard
K	39	61.7	46.1	**0.0210**	0.066	315.1	mg/L	38	Standard
Ca	43	46.7	12.4	**0.3502**	0.375	107.1	mg/L	10	Standard
Fe	54	378.5	13.7	**0.1751**	0.049	28.1	mg/L	179	Standard
Fe	57	365.0	16.4	**0.1419**	0.250	175.9	mg/L	335	Standard
> **Sc-1**	45	62711.5	6.5				mg/L	61029	Standard
Cl	35	27760.1	3.1				ug/L	20195	Standard
Kr	83	3.3	45.8				ug/L	4	Standard
Br	81	2080.1	7.5				ug/L	1547	Standard
P	31	18322.7	2.7				ug/L	15286	Standard
S	34	1913.5	2.4				ug/L	1572	Standard
Sr	88	98.3	10.6				ug/L	73	Standard
C	12	103.3	31.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	615.8	1.7				mg/L	6	Standard
Ho-1	165	265.0	7.5				mg/L	10	Standard
Er	166	296.7	10.3				mg/L	13	Standard
I	127	5109.3	32.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.334	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.692	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.078
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.121
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: L1606127904SD WG574001-10
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Method 6020 - Summary Report

Sample ID: L1606127905
Sample Date/Time: Wednesday, June 29, 2016 17:24:42
Number of Replicates: 3
Autosampler Position: 231
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	98923.6	1.9				ug/L	74699	Standard
	Be	9	425.0	5.1	**0.3722**	0.020	5.4	ug/L	8	Standard
	Al	27	40729181.9	0.9	**209.2967**	3.040	1.5	ug/L	1493	Standard
	Sc	45	74965.2	4.5				ug/L	61029	Standard
	Ti	47	31002.7	2.7	**78.7018**	1.731	2.2	ug/L	35	Standard
	V	51	100570.7	0.4	**12.6354**	0.094	0.7	ug/L	1435	Standard
	Cr	52	71317.5	0.6	**8.2486**	0.021	0.3	ug/L	7635	Standard
	Cr	53	8882.6	3.6	**8.9299**	0.295	3.3	ug/L	363	Standard
	Mn	55	1183907.3	1.1	**163.7014**	1.986	1.2	ug/L	747	Standard
	Co	59	16826.7	0.9	**2.4180**	0.026	1.1	ug/L	234	Standard
	Ni	60	14706.8	1.9	**7.4444**	0.110	1.5	ug/L	215	Standard
	Cu	65	7822.7	1.1	**3.9461**	0.031	0.8	ug/L	104	Standard
	Zn	66	28811.4	1.3	**24.9594**	0.201	0.8	ug/L	363	Standard
>	**Ge**	72	513872.0	0.5				ug/L	495142	Standard
	As	75	2302.8	2.2	**2.0406**	0.054	2.6	ug/L	-50	Standard
	Se	82	647.6	3.3	**5.5477**	0.199	3.6	ug/L	14	Standard
	Se-1	77	492.7	1.9	**5.8772**	0.106	1.8	ug/L	42	Standard
>	**Ga**	71	9201.1	2.2				mg/L	42	Standard
	Rb	85	118130.4	0.8				ug/L	17	Standard
	Y	89	544220.1	0.8				ug/L	417098	Standard
>	**Rh**	103	83.3	19.3				ug/L	13	Standard
	Mo	98	4972.1	0.8	**1.6995**	0.011	0.6	ug/L	11	Standard
	Ag	107	221.0	6.7	**0.0181**	0.002	11.5	ug/L	68	Standard
	Cd	111	99.4	11.4	**0.0355**	0.005	13.9	mg/L	2	Standard
	Cd	114	258.8	15.4	**0.0440**	0.007	16.4	ug/L	12	Standard
>	**In**	115	642627.7	0.7				ug/L	587441	Standard
	Sn	118	4954.1	4.3	**0.6806**	0.035	5.1	ug/L	497	Standard
	Sb	123	697.4	10.3	**0.1324**	0.015	11.0	ug/L	78	Standard
	Ba	135	175907.0	0.9	**78.5481**	0.493	0.6	ug/L	24	Standard
	Ce	140	308696.3	0.2				ug/L	25	Standard
>	**Tb**	159	1018138.8	1.9				ug/L	939701	Standard
	Ho	165	5902.8	0.8				ug/L	10	Standard
	Tl	203	694.0	1.8	**0.0782**	0.000	0.4	ug/L	4	Standard
	Tl	205	615.0	15.7	**0.0817**	0.011	14.1	ug/L	2	Standard
	Pb	206	15714.8	1.1	**2.7233**	0.017	0.6	ug/L	240	Standard
	Pb	207	12858.1	1.8	**2.5034**	0.026	1.0	ug/L	198	Standard
	Pb	208	54664.4	0.6	**2.6954**	0.031	1.2	ug/L	883	Standard
	U	238	8998.7	0.4	**1.2376**	0.021	1.7	ug/L	3	Standard
>	**Bi**	209	551643.9	1.7				ug/L	523984	Standard

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Na	23	5.0	100.0	**46.3980**	45.060	97.1	mg/L	0	Standard
Mg	24	7338.4	2.5	**7.6542**	0.303	4.0	mg/L	37	Standard
K	39	668.3	6.0	**1.0889**	0.064	5.9	mg/L	38	Standard
Ca	43	676.7	13.4	**32.4506**	6.121	18.9	mg/L	10	Standard
Fe	54	6512.7	2.4	**4.3601**	0.118	2.7	mg/L	179	Standard
Fe	57	2150.2	3.4	**4.8854**	0.383	7.8	mg/L	335	Standard
Sc-1	45	74965.2	4.5				mg/L	61029	Standard
Cl	35	28544.2	1.7				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	11494.4	5.7				ug/L	1547	Standard
P	31	34679.6	1.6				ug/L	15286	Standard
S	34	2073.5	2.2				ug/L	1572	Standard
Sr	88	356.7	8.9				ug/L	73	Standard
C	12	163.3	55.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	3	Standard
Dy	164	9835.4	4.4				mg/L	6	Standard
Ho-1	165	5902.8	0.8				mg/L	10	Standard
Er	166	5037.5	9.2				mg/L	13	Standard
I	127	62917.2	4.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		132.430	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.783	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.394
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.279
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606127905
Sample Date/Time: Wednesday, June 29, 2016 17:27:54
Number of Replicates: 3
Autosampler Position: 232
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	95902.7	2.3				ug/L	74699	Standard
	Be	9	26.7	54.1	**0.0312**	0.013	41.0	ug/L	8	Standard
	Al	27	866639.8	0.6	**4.5819**	0.130	2.8	ug/L	1493	Standard
	Sc	45	64717.9	1.3				ug/L	61029	Standard
	Ti	47	665.3	5.2	**1.4927**	0.099	6.6	ug/L	35	Standard
	V	51	3898.6	6.9	**0.2752**	0.030	11.1	ug/L	1435	Standard
	Cr	52	9682.4	1.6	**0.1679**	0.023	13.9	ug/L	7635	Standard
	Cr	53	670.0	10.3	**0.3316**	0.072	21.7	ug/L	363	Standard
	Mn	55	29584.3	8.9	**3.7268**	0.331	8.9	ug/L	747	Standard
	Co	59	652.3	12.4	**0.0528**	0.011	20.6	ug/L	234	Standard
	Ni	60	547.0	3.7	**0.1426**	0.010	7.1	ug/L	215	Standard
	Cu	65	341.3	5.6	**0.0636**	0.011	17.0	ug/L	104	Standard
	Zn	66	2764.3	3.0	**1.8532**	0.047	2.5	ug/L	363	Standard
>	**Ge**	72	542890.6	1.0				ug/L	495142	Standard
	As	75	11.1	320.4	**0.0688**	0.029	42.5	ug/L	-50	Standard
	Se	82	31.5	11.6	**0.1237**	0.032	26.0	ug/L	14	Standard
	Se-1	77	57.7	24.7	**0.0971**	0.173	178.1	ug/L	42	Standard
>	**Ga**	71	253.3	16.8				mg/L	42	Standard
	Rb	85	2388.5	2.4				ug/L	17	Standard
	Y	89	480185.0	1.7				ug/L	417098	Standard
>	**Rh**	103	16.7	34.6				ug/L	13	Standard
	Mo	98	144.5	13.4	**0.0432**	0.007	17.2	ug/L	11	Standard
	Ag	107	273.0	44.6	**0.0250**	0.018	70.2	ug/L	68	Standard
	Cd	111	17.1	70.4	**-0.0005**	0.005	1058.7	mg/L	2	Standard
	Cd	114	57.8	101.1	**0.0081**	0.010	129.1	ug/L	12	Standard
>	**In**	115	652419.9	1.9				ug/L	587441	Standard
	Sn	118	705.0	11.1	**0.0141**	0.014	98.8	ug/L	497	Standard
	Sb	123	247.5	32.3	**0.0437**	0.016	37.3	ug/L	78	Standard
	Ba	135	3842.5	3.8	**1.6750**	0.079	4.7	ug/L	24	Standard
	Ce	140	6778.2	3.5				ug/L	25	Standard
>	**Tb**	159	1017174.6	0.9				ug/L	939701	Standard
	Ho	165	125.0	20.8				ug/L	10	Standard
	Tl	203	149.7	88.3	**0.0148**	0.015	98.5	ug/L	4	Standard
	Tl	205	133.3	80.1	**0.0172**	0.014	79.0	ug/L	2	Standard
	Pb	206	748.0	16.8	**0.0568**	0.021	37.3	ug/L	240	Standard
	Pb	207	613.7	10.2	**0.0482**	0.012	24.5	ug/L	198	Standard
	Pb	208	2588.8	11.0	**0.0521**	0.014	26.1	ug/L	883	Standard
	U	238	255.3	28.9	**0.0295**	0.010	33.0	ug/L	3	Standard
>	**Bi**	209	573070.1	0.3				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.8927**	30.982	173.2	mg/L	0	Standard
Mg	24	208.3	5.5	**0.1886**	0.017	8.9	mg/L	37	Standard
K	39	35.0	14.3	**-0.0411**	0.011	27.7	mg/L	38	Standard
Ca	43	31.7	18.2	**-0.6344**	0.363	57.2	mg/L	10	Standard
Fe	54	281.0	17.0	**0.0865**	0.040	45.9	mg/L	179	Standard
Fe	57	258.3	4.5	**-0.2461**	0.039	15.8	mg/L	335	Standard
> **Sc-1**	45	64717.9	1.3				mg/L	61029	Standard
Cl	35	29516.1	1.1				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	2206.8	1.5				ug/L	1547	Standard
P	31	18893.4	3.4				ug/L	15286	Standard
S	34	2140.2	7.5				ug/L	1572	Standard
Sr	88	85.0	23.5				ug/L	73	Standard
C	12	63.3	39.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	226.9	17.7				mg/L	6	Standard
Ho-1	165	125.0	20.8				mg/L	10	Standard
Er	166	133.3	38.5				mg/L	13	Standard
I	127	4113.9	27.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.386	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.643	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.061
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.368
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606128101
Sample Date/Time: Wednesday, June 29, 2016 17:31:05
Number of Replicates: 3
Autosampler Position: 233
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	95248.6	2.8				ug/L	74699	Standard
	Be	9	20.0	25.0	**0.0254**	0.004	15.8	ug/L	8	Standard
	Al	27	13040665.4	1.7	**69.5953**	1.139	1.6	ug/L	1493	Standard
	Sc	45	60164.2	2.0				ug/L	61029	Standard
	Ti	47	192.7	16.8	**0.4120**	0.087	21.1	ug/L	35	Standard
	V	51	8357.2	4.3	**0.9387**	0.048	5.1	ug/L	1435	Standard
	Cr	52	21860.8	2.2	**2.0003**	0.082	4.1	ug/L	7635	Standard
	Cr	53	28106.1	2.4	**30.8448**	0.828	2.7	ug/L	363	Standard
	Mn	55	35106.1	13.3	**5.0193**	0.674	13.4	ug/L	747	Standard
	Co	59	6553.8	6.0	**0.9799**	0.056	5.7	ug/L	234	Standard
	Ni	60	21271.9	1.7	**11.5228**	0.221	1.9	ug/L	215	Standard
	Cu	65	394730.4	1.5	**217.3087**	4.048	1.9	ug/L	104	Standard
	Zn	66	2800.3	3.3	**2.1735**	0.095	4.3	ug/L	363	Standard
>	Ge	72	483031.9	0.6				ug/L	495142	Standard
	As	75	2746.8	5.9	**2.5735**	0.152	5.9	ug/L	-50	Standard
	Se	82	892.7	0.7	**8.1998**	0.096	1.2	ug/L	14	Standard
	Se-1	77	2323.2	2.5	**31.9871**	0.998	3.1	ug/L	42	Standard
>	Ga	71	476.7	6.4				mg/L	42	Standard
	Rb	85	346107.5	1.7				ug/L	17	Standard
	Y	89	415017.7	1.3				ug/L	417098	Standard
>	Rh	103	195.0	26.0				ug/L	13	Standard
	Mo	98	2991.9	3.1	**1.1870**	0.038	3.2	ug/L	11	Standard
	Ag	107	283.3	10.3	**0.0333**	0.004	13.4	ug/L	68	Standard
	Cd	111	47.5	106.4	**0.0162**	0.025	157.7	mg/L	2	Standard
	Cd	114	106.7	47.6	**0.0200**	0.010	52.0	ug/L	12	Standard
>	In	115	552878.2	0.7				ug/L	587441	Standard
	Sn	118	3292.0	3.2	**0.5041**	0.021	4.2	ug/L	497	Standard
	Sb	123	2817.9	0.9	**0.6371**	0.010	1.5	ug/L	78	Standard
	Ba	135	115236.2	0.6	**59.8088**	0.708	1.2	ug/L	24	Standard
	Ce	140	265.0	80.7				ug/L	25	Standard
>	Tb	159	913633.5	1.5				ug/L	939701	Standard
	Ho	165	16.7	45.8				ug/L	10	Standard
	Tl	203	132.0	58.6	**0.0163**	0.011	65.5	ug/L	4	Standard
	Tl	205	136.7	39.5	**0.0217**	0.009	39.6	ug/L	2	Standard
	Pb	206	460.3	26.2	**0.0258**	0.026	100.0	ug/L	240	Standard
	Pb	207	366.3	38.5	**0.0169**	0.034	199.7	ug/L	198	Standard
	Pb	208	1427.4	18.1	**0.0116**	0.016	136.8	ug/L	883	Standard
	U	238	88.7	86.2	**0.0101**	0.013	124.4	ug/L	3	Standard
>	Bi	209	465790.3	0.8				ug/L	523984	Standard

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Na	23	8.3	69.3	**97.9562**	69.038	70.5	mg/L	0	Standard
Mg	24	359246.1	3.7	**470.2454**	9.358	2.0	mg/L	37	Standard
K	39	24917.1	2.4	**55.7677**	1.861	3.3	mg/L	38	Standard
Ca	43	1330.1	6.9	**82.7516**	6.716	8.1	mg/L	10	Standard
Fe	54	200.7	20.7	**0.0339**	0.032	94.4	mg/L	179	Standard
Fe	57	1015.0	10.0	**2.4309**	0.415	17.1	mg/L	335	Standard
> **Sc-1**	45	60164.2	2.0				mg/L	61029	Standard
Cl	35	38169.4	0.5				ug/L	20195	Standard
Kr	83	1.0	0.0				ug/L	4	Standard
Br	81	223802.3	3.7				ug/L	1547	Standard
P	31	18462.9	1.8				ug/L	15286	Standard
S	34	2156.8	3.7				ug/L	1572	Standard
Sr	88	483.3	16.2				ug/L	73	Standard
C	12	163.3	15.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	24.7				mg/L	3	Standard
Dy	164	32.2	122.0				mg/L	6	Standard
Ho-1	165	16.7	45.8				mg/L	10	Standard
Er	166	23.3	99.0				mg/L	13	Standard
I	127	949274.2	9.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		127.510	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.554	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.116
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		88.894
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 17:34:19
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89879.3	3.0				ug/L	74699	Standard
	Be	9	54419.2	2.1	**51.4171**	2.152	4.2	ug/L	8	Standard
	Al	27	8256861.3	1.5	**46.7135**	1.756	3.8	ug/L	1493	Standard
	Sc	45	65086.2	2.0				ug/L	61029	Standard
	Ti	47	41554.9	1.2	**98.5544**	1.167	1.2	ug/L	35	Standard
	V	51	424002.3	1.3	**50.3253**	0.743	1.5	ug/L	1435	Standard
	Cr	52	412948.6	1.6	**49.1234**	1.130	2.3	ug/L	7635	Standard
	Cr	53	52872.1	1.4	**51.1473**	0.096	0.2	ug/L	363	Standard
	Mn	55	374015.3	1.0	**48.1957**	0.700	1.5	ug/L	747	Standard
	Co	59	377049.8	1.0	**51.3472**	0.802	1.6	ug/L	234	Standard
	Ni	60	101943.5	0.6	**48.8763**	0.675	1.4	ug/L	215	Standard
	Cu	65	101706.9	0.4	**49.0730**	0.490	1.0	ug/L	104	Standard
	Zn	66	60100.6	1.2	**49.0556**	0.165	0.3	ug/L	363	Standard
>	**Ge**	72	550256.1	1.3				ug/L	495142	Standard
	As	75	60702.3	2.0	**48.8234**	0.606	1.2	ug/L	-50	Standard
	Se	82	6059.9	1.5	**49.5453**	0.269	0.5	ug/L	14	Standard
	Se-1	77	4264.3	0.7	**51.9185**	0.539	1.0	ug/L	42	Standard
>	**Ga**	71	80.0	16.5				mg/L	42	Standard
	Rb	85	943.4	9.9				ug/L	17	Standard
	Y	89	456697.4	1.9				ug/L	417098	Standard
>	**Rh**	103	31.7	32.9				ug/L	13	Standard
	Mo	98	286840.3	1.0	**98.7855**	2.014	2.0	ug/L	11	Standard
	Ag	107	350242.5	1.1	**49.3132**	0.224	0.5	ug/L	68	Standard
	Cd	111	110565.3	0.7	**48.5306**	0.244	0.5	mg/L	2	Standard
	Cd	114	270182.5	3.7	**48.3546**	1.830	3.8	ug/L	12	Standard
>	**In**	115	640022.5	1.2				ug/L	587441	Standard
	Sn	118	309740.9	1.1	**48.5773**	0.779	1.6	ug/L	497	Standard
	Sb	123	247251.7	1.0	**48.6061**	0.525	1.1	ug/L	78	Standard
	Ba	135	103942.0	1.5	**46.5980**	0.695	1.5	ug/L	24	Standard
	Ce	140	81.7	18.7				ug/L	25	Standard
>	**Tb**	159	1011086.0	0.8				ug/L	939701	Standard
	Ho	165	13.3	94.4				ug/L	10	Standard
	Tl	203	438780.7	1.5	**49.1134**	0.474	1.0	ug/L	4	Standard
	Tl	205	398617.2	2.3	**51.4045**	0.522	1.0	ug/L	2	Standard
	Pb	206	284136.3	1.1	**49.0127**	0.824	1.7	ug/L	240	Standard
	Pb	207	252190.2	0.9	**48.9661**	0.976	2.0	ug/L	198	Standard
	Pb	208	1023481.0	1.1	**50.2926**	0.682	1.4	ug/L	883	Standard
	U	238	380510.7	2.1	**50.9985**	0.305	0.6	ug/L	3	Standard
>	**Bi**	209	567945.0	2.2				ug/L	523984	Standard

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Na	23	1.7	173.2	**18.3524**	31.779	173.2	mg/L	0	Standard
Mg	24	4450.7	2.4	**5.3249**	0.232	4.3	mg/L	37	Standard
K	39	2040.1	4.0	**4.1161**	0.223	5.4	mg/L	38	Standard
Ca	43	101.7	19.9	**3.5019**	1.219	34.8	mg/L	10	Standard
Fe	54	6522.9	1.9	**5.0481**	0.108	2.1	mg/L	179	Standard
Fe	57	1916.8	5.3	**5.0325**	0.229	4.6	mg/L	335	Standard
Sc-1	45	65086.2	2.0				mg/L	61029	Standard
Cl	35	28870.1	1.5				ug/L	20195	Standard
Kr	83	2.7	43.3				ug/L	4	Standard
Br	81	3490.4	22.1				ug/L	1547	Standard
P	31	20260.2	3.0				ug/L	15286	Standard
S	34	2420.2	2.6				ug/L	1572	Standard
Sr	88	90.0	19.2				ug/L	73	Standard
C	12	86.7	6.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	9.5	5.0				mg/L	6	Standard
Ho-1	165	13.3	94.4				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	23970.8	64.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.834		
Al	27	93.427		
Sc	45			
Ti	47	98.554		
V	51	100.651		
Cr	52	98.247		
Cr	53			
Mn	55	96.391		
Co	59	102.694		
Ni	60	97.753		
Cu	65	98.146		
Zn	66	98.111		
Ge	72		111.131	
As	75	97.647		
Se	82	99.091		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.786		
Ag	107	98.626		
Cd	111	97.061		
Cd	114			
> In	115			108.951
Sn	118	97.155		
Sb	123	97.212		
Ba	135	93.196		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.227		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.585		
U	238	101.997		
> Bi	209			108.390
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 17:37:30
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90192.8	3.2				ug/L	74699	Standard
	Be	9	55.0	102.4	**0.0584**	0.051	86.9	ug/L	8	Standard
	Al	27	41697.2	123.7	**0.2160**	0.280	129.5	ug/L	1493	Standard
	Sc	45	66865.6	0.3				ug/L	61029	Standard
	Ti	47	70.3	63.0	**0.0618**	0.107	173.0	ug/L	35	Standard
	V	51	1545.5	1.7	**-0.0068**	0.004	62.6	ug/L	1435	Standard
	Cr	52	7551.9	5.0	**-0.0837**	0.044	52.6	ug/L	7635	Standard
	Cr	53	1056.7	15.9	**0.7243**	0.162	22.4	ug/L	363	Standard
	Mn	55	2100.5	33.7	**0.1299**	0.092	71.2	ug/L	747	Standard
	Co	59	307.3	14.8	**0.0056**	0.006	108.6	ug/L	234	Standard
	Ni	60	288.7	41.6	**0.0182**	0.059	321.7	ug/L	215	Standard
	Cu	65	326.7	64.3	**0.0580**	0.103	178.3	ug/L	104	Standard
	Zn	66	465.0	14.2	**-0.0620**	0.054	86.6	ug/L	363	Standard
>	**Ge**	72	536712.4	0.6				ug/L	495142	Standard
	As	75	-14.2	293.5	**0.0478**	0.034	71.9	ug/L	-50	Standard
	Se	82	26.6	3.7	**0.0859**	0.008	9.9	ug/L	14	Standard
	Se-1	77	71.3	25.4	**0.2781**	0.225	81.0	ug/L	42	Standard
>	**Ga**	71	51.7	22.3				mg/L	42	Standard
	Rb	85	111.7	73.6				ug/L	17	Standard
	Y	89	476031.3	1.1				ug/L	417098	Standard
>	**Rh**	103	26.7	47.2				ug/L	13	Standard
	Mo	98	310.3	31.4	**0.0963**	0.033	33.9	ug/L	11	Standard
	Ag	107	196.3	41.5	**0.0135**	0.011	82.4	ug/L	68	Standard
	Cd	111	44.4	76.9	**0.0108**	0.014	134.5	mg/L	2	Standard
	Cd	114	106.2	73.2	**0.0161**	0.013	83.2	ug/L	12	Standard
>	**In**	115	671001.8	0.7				ug/L	587441	Standard
	Sn	118	950.0	11.1	**0.0476**	0.015	31.2	ug/L	497	Standard
	Sb	123	463.6	17.0	**0.0827**	0.014	17.2	ug/L	78	Standard
	Ba	135	113.3	53.3	**0.0326**	0.026	80.4	ug/L	24	Standard
	Ce	140	100.0	52.9				ug/L	25	Standard
>	**Tb**	159	1042844.6	0.4				ug/L	939701	Standard
	Ho	165	21.7	53.3				ug/L	10	Standard
	Tl	203	169.7	59.1	**0.0166**	0.011	64.7	ug/L	4	Standard
	Tl	205	136.7	25.7	**0.0173**	0.004	24.8	ug/L	2	Standard
	Pb	206	350.0	21.1	**-0.0125**	0.012	95.5	ug/L	240	Standard
	Pb	207	292.7	21.7	**-0.0148**	0.012	78.6	ug/L	198	Standard
	Pb	208	1272.0	10.4	**-0.0133**	0.006	44.8	ug/L	883	Standard
	U	238	124.3	70.3	**0.0117**	0.011	96.0	ug/L	3	Standard
>	**Bi**	209	584508.5	0.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	165.0	89.4	**0.1290**	0.173	134.2	mg/L	37	Standard
K	39	35.0	14.3	**-0.0435**	0.010	22.9	mg/L	38	Standard
Ca	43	33.3	22.9	**-0.6014**	0.442	73.5	mg/L	10	Standard
Fe	54	222.3	16.4	**0.0337**	0.028	82.1	mg/L	179	Standard
Fe	57	293.3	1.0	**-0.1642**	0.011	6.9	mg/L	335	Standard
Sc-1	45	66865.6	0.3				mg/L	61029	Standard
Cl	35	28993.0	1.1				ug/L	20195	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	2536.9	15.9				ug/L	1547	Standard
P	31	21593.7	3.8				ug/L	15286	Standard
S	34	2441.9	4.5				ug/L	1572	Standard
Sr	88	71.7	39.7				ug/L	73	Standard
C	12	43.3	53.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	2.2	286.4				mg/L	6	Standard
Ho-1	165	21.7	53.3				mg/L	10	Standard
Er	166	23.3	65.5				mg/L	13	Standard
I	127	6326.4	22.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		108.396	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.225
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		111.551
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129403
Sample Date/Time: Wednesday, June 29, 2016 17:40:43
Number of Replicates: 3
Autosampler Position: 234
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	91138.4	2.1				ug/L	74699	Standard
	Be	9	18.3	31.5	**0.0246**	0.005	20.1	ug/L	8	Standard
	Al	27	19782.9	2.5	**0.0970**	0.003	3.0	ug/L	1493	Standard
	Sc	45	69032.0	3.0				ug/L	61029	Standard
	Ti	47	54.0	3.2	**0.0194**	0.002	12.6	ug/L	35	Standard
	V	51	1966.3	6.5	**0.0390**	0.011	28.1	ug/L	1435	Standard
	Cr	52	10805.9	1.1	**0.2915**	0.043	14.7	ug/L	7635	Standard
	Cr	53	2143.5	1.8	**1.7623**	0.077	4.4	ug/L	363	Standard
	Mn	55	3844.5	2.2	**0.3500**	0.018	5.0	ug/L	747	Standard
	Co	59	327.3	8.7	**0.0074**	0.003	41.0	ug/L	234	Standard
	Ni	60	356.0	5.4	**0.0475**	0.008	16.5	ug/L	215	Standard
	Cu	65	696.0	2.6	**0.2337**	0.014	6.0	ug/L	104	Standard
	Zn	66	2205.8	3.0	**1.3661**	0.024	1.8	ug/L	363	Standard
>	**Ge**	72	549152.6	2.2				ug/L	495142	Standard
	As	75	-29.6	63.4	**0.0356**	0.015	42.9	ug/L	-50	Standard
	Se	82	23.9	20.2	**0.0586**	0.040	68.9	ug/L	14	Standard
	Se-1	77	94.7	7.0	**0.5478**	0.105	19.2	ug/L	42	Standard
>	**Ga**	71	51.7	14.8				mg/L	42	Standard
	Rb	85	138.3	25.6				ug/L	17	Standard
	Y	89	465979.4	3.6				ug/L	417098	Standard
>	**Rh**	103	13.3	21.7				ug/L	13	Standard
	Mo	98	5139.1	1.4	**1.7220**	0.056	3.3	ug/L	11	Standard
	Ag	107	110.0	6.9	**0.0022**	0.001	48.4	ug/L	68	Standard
	Cd	111	15.0	26.6	**-0.0015**	0.002	117.9	mg/L	2	Standard
	Cd	114	55.2	20.3	**0.0075**	0.002	25.2	ug/L	12	Standard
>	**In**	115	655841.8	1.8				ug/L	587441	Standard
	Sn	118	1048.4	10.6	**0.0659**	0.015	22.6	ug/L	497	Standard
	Sb	123	219.8	14.7	**0.0379**	0.005	14.5	ug/L	78	Standard
	Ba	135	307.7	5.8	**0.1187**	0.008	7.0	ug/L	24	Standard
	Ce	140	120.0	27.3				ug/L	25	Standard
>	**Tb**	159	1025647.2	2.3				ug/L	939701	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	102.7	26.3	**0.0095**	0.003	29.3	ug/L	4	Standard
	Tl	205	93.3	17.2	**0.0120**	0.002	17.6	ug/L	2	Standard
	Pb	206	348.0	5.5	**-0.0123**	0.003	25.6	ug/L	240	Standard
	Pb	207	291.0	7.0	**-0.0146**	0.003	21.1	ug/L	198	Standard
	Pb	208	1220.0	1.5	**-0.0152**	0.002	10.4	ug/L	883	Standard
	U	238	43.7	3.5	**0.0013**	0.000	20.2	ug/L	3	Standard
>	**Bi**	209	579311.4	1.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	70.0	14.3	**0.0151**	0.014	91.8	mg/L	37	Standard
K	39	41.7	36.7	**-0.0323**	0.032	98.5	mg/L	38	Standard
Ca	43	23.3	24.7	**-1.2220**	0.307	25.1	mg/L	10	Standard
Fe	54	180.7	18.1	**-0.0033**	0.021	642.1	mg/L	179	Standard
Fe	57	228.3	18.9	**-0.3899**	0.112	28.8	mg/L	335	Standard
> **Sc-1**	45	69032.0	3.0				mg/L	61029	Standard
Cl	35	29393.1	0.1				ug/L	20195	Standard
Kr	83	3.7	41.7				ug/L	4	Standard
Br	81	2280.2	16.1				ug/L	1547	Standard
P	31	20889.4	5.8				ug/L	15286	Standard
S	34	2440.2	2.2				ug/L	1572	Standard
Sr	88	78.3	9.8				ug/L	73	Standard
C	12	90.0	19.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	5.2	126.6				mg/L	6	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	30.0	66.7				mg/L	13	Standard
I	127	4447.3	11.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		122.008	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.908	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.644
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.559
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606129403
Sample Date/Time: Wednesday, June 29, 2016 17:43:55
Number of Replicates: 3
Autosampler Position: 235
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89753.4	1.3				ug/L	74699	Standard
	Be	9	13.3	43.3	**0.0203**	0.006	27.7	ug/L	8	Standard
	Al	27	7761551.3	2.6	**43.9444**	1.176	2.7	ug/L	1493	Standard
	Sc	45	64855.2	1.4				ug/L	61029	Standard
	Ti	47	206.0	13.1	**0.3915**	0.063	16.1	ug/L	35	Standard
	V	51	6651.8	1.7	**0.6159**	0.016	2.5	ug/L	1435	Standard
	Cr	52	10534.3	3.3	**0.2860**	0.045	15.8	ug/L	7635	Standard
	Cr	53	2358.5	8.3	**2.0219**	0.206	10.2	ug/L	363	Standard
	Mn	55	48108.9	1.2	**6.2182**	0.039	0.6	ug/L	747	Standard
	Co	59	779.0	1.7	**0.0714**	0.002	2.2	ug/L	234	Standard
	Ni	60	2066.1	2.9	**0.8928**	0.027	3.0	ug/L	215	Standard
	Cu	65	1897.5	0.8	**0.8356**	0.011	1.4	ug/L	104	Standard
	Zn	66	4161.9	4.0	**3.0555**	0.122	4.0	ug/L	363	Standard
>	**Ge**	72	537411.3	0.6				ug/L	495142	Standard
	As	75	1930.1	2.9	**1.6472**	0.048	2.9	ug/L	-50	Standard
	Se	82	65.9	12.2	**0.4151**	0.071	17.1	ug/L	14	Standard
	Se-1	77	143.0	7.4	**1.1820**	0.141	12.0	ug/L	42	Standard
>	**Ga**	71	281.7	11.8				mg/L	42	Standard
	Rb	85	9322.9	0.6				ug/L	17	Standard
	Y	89	483828.6	0.3				ug/L	417098	Standard
>	**Rh**	103	65.0	35.3				ug/L	13	Standard
	Mo	98	2420.2	2.2	**0.8025**	0.008	1.0	ug/L	11	Standard
	Ag	107	86.7	9.0	**-0.0011**	0.001	98.3	ug/L	68	Standard
	Cd	111	21.1	19.4	**0.0011**	0.002	172.0	mg/L	2	Standard
	Cd	114	57.2	8.0	**0.0078**	0.001	8.8	ug/L	12	Standard
>	**In**	115	659947.0	1.4				ug/L	587441	Standard
	Sn	118	1036.7	2.5	**0.0632**	0.002	2.8	ug/L	497	Standard
	Sb	123	514.2	4.3	**0.0939**	0.005	5.0	ug/L	78	Standard
	Ba	135	42292.6	1.8	**18.3786**	0.354	1.9	ug/L	24	Standard
	Ce	140	906.7	5.0				ug/L	25	Standard
>	**Tb**	159	1004743.5	1.0				ug/L	939701	Standard
	Ho	165	30.0	33.3				ug/L	10	Standard
	Tl	203	321.7	3.2	**0.0348**	0.001	3.5	ug/L	4	Standard
	Tl	205	263.3	19.0	**0.0346**	0.006	17.3	ug/L	2	Standard
	Pb	206	528.0	6.8	**0.0212**	0.005	24.5	ug/L	240	Standard
	Pb	207	478.3	8.2	**0.0244**	0.009	35.8	ug/L	198	Standard
	Pb	208	1973.7	3.1	**0.0244**	0.005	18.6	ug/L	883	Standard
	U	238	903.7	2.1	**0.1184**	0.002	1.8	ug/L	3	Standard
>	**Bi**	209	560080.8	1.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	9985.0	3.9	**12.0618**	0.357	3.0	mg/L	37	Standard
K	39	420.0	7.4	**0.7593**	0.061	8.1	mg/L	38	Standard
Ca	43	263.3	2.9	**13.1350**	0.654	5.0	mg/L	10	Standard
Fe	54	210.7	11.6	**0.0297**	0.017	57.3	mg/L	179	Standard
Fe	57	393.3	9.5	**0.1838**	0.119	64.8	mg/L	335	Standard
> **Sc-1**	45	64855.2	1.4				mg/L	61029	Standard
Cl	35	32877.0	2.8				ug/L	20195	Standard
Kr	83	0.7	86.6				ug/L	4	Standard
Br	81	8902.6	4.1				ug/L	1547	Standard
P	31	19829.6	4.1				ug/L	15286	Standard
S	34	2240.2	4.2				ug/L	1572	Standard
Sr	88	221.7	14.7				ug/L	73	Standard
C	12	126.7	4.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	64.1	36.5				mg/L	6	Standard
Ho-1	165	30.0	33.3				mg/L	10	Standard
Er	166	53.3	21.7				mg/L	13	Standard
I	127	24610.0	6.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		120.154	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.537	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.343
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.889
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606129601
Sample Date/Time: Wednesday, June 29, 2016 17:47:06
Number of Replicates: 3
Autosampler Position: 236
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89414.7	0.8				ug/L	74699	Standard
	Be	9	18.3	41.7	**0.0250**	0.007	28.7	ug/L	8	Standard
	Al	27	159581.9	4.0	**0.8936**	0.029	3.3	ug/L	1493	Standard
	Sc	45	67088.2	1.1				ug/L	61029	Standard
	Ti	47	35.7	1.6	**-0.0268**	0.002	7.8	ug/L	35	Standard
	V	51	2172.9	6.2	**0.0559**	0.017	29.8	ug/L	1435	Standard
	Cr	52	9358.6	1.2	**0.0800**	0.026	32.1	ug/L	7635	Standard
	Cr	53	761.7	7.6	**0.3908**	0.063	16.2	ug/L	363	Standard
	Mn	55	2132.8	0.4	**0.1197**	0.005	4.4	ug/L	747	Standard
	Co	59	232.7	3.6	**-0.0065**	0.001	22.5	ug/L	234	Standard
	Ni	60	263.3	7.3	**-0.0009**	0.011	1213.2	ug/L	215	Standard
	Cu	65	215.7	8.8	**-0.0024**	0.009	395.1	ug/L	104	Standard
	Zn	66	2535.5	4.0	**1.5735**	0.060	3.8	ug/L	363	Standard
>	**Ge**	72	566628.0	1.5				ug/L	495142	Standard
	As	75	0.7	2838.5	**0.0602**	0.015	24.5	ug/L	-50	Standard
	Se	82	16.5	13.6	**-0.0062**	0.020	325.1	ug/L	14	Standard
	Se-1	77	57.7	30.4	**0.0671**	0.205	305.9	ug/L	42	Standard
>	**Ga**	71	65.0	35.3				mg/L	42	Standard
	Rb	85	218.3	8.7				ug/L	17	Standard
	Y	89	474347.0	1.6				ug/L	417098	Standard
>	**Rh**	103	16.7	45.8				ug/L	13	Standard
	Mo	98	108.8	9.6	**0.0309**	0.003	10.7	ug/L	11	Standard
	Ag	107	170.0	11.0	**0.0105**	0.003	26.1	ug/L	68	Standard
	Cd	111	6.5	32.0	**-0.0051**	0.001	17.0	mg/L	2	Standard
	Cd	114	10.6	76.1	**-0.0002**	0.001	576.3	ug/L	12	Standard
>	**In**	115	655393.1	1.0				ug/L	587441	Standard
	Sn	118	536.7	6.3	**-0.0123**	0.006	49.5	ug/L	497	Standard
	Sb	123	179.2	10.0	**0.0302**	0.004	12.2	ug/L	78	Standard
	Ba	135	901.0	1.9	**0.3786**	0.012	3.1	ug/L	24	Standard
	Ce	140	38.3	52.7				ug/L	25	Standard
>	**Tb**	159	1019773.4	1.2				ug/L	939701	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	34.7	13.6	**0.0021**	0.001	27.9	ug/L	4	Standard
	Tl	205	33.3	52.7	**0.0044**	0.002	51.3	ug/L	2	Standard
	Pb	206	333.0	5.0	**-0.0144**	0.003	23.5	ug/L	240	Standard
	Pb	207	282.3	6.2	**-0.0157**	0.004	25.6	ug/L	198	Standard
	Pb	208	1187.0	2.0	**-0.0164**	0.002	10.6	ug/L	883	Standard
	U	238	27.0	25.9	**-0.0009**	0.001	108.4	ug/L	3	Standard
>	**Bi**	209	574894.3	1.4				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.3542**	30.050	173.2	mg/L	0	Standard
Mg	24	255.0	18.0	**0.2345**	0.054	23.2	mg/L	37	Standard
K	39	41.7	36.7	**-0.0306**	0.030	98.0	mg/L	38	Standard
Ca	43	31.7	18.2	**-0.7022**	0.343	48.8	mg/L	10	Standard
Fe	54	182.6	4.3	**0.0025**	0.004	177.8	mg/L	179	Standard
Fe	57	238.3	19.9	**-0.3363**	0.155	46.0	mg/L	335	Standard
Sc-1	45	67088.2	1.1				mg/L	61029	Standard
Cl	35	32679.2	0.8				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	2083.5	4.4				ug/L	1547	Standard
P	31	19699.5	2.2				ug/L	15286	Standard
S	34	2248.5	3.2				ug/L	1572	Standard
Sr	88	70.0	56.7				ug/L	73	Standard
C	12	60.0	76.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	42.4	37.5				mg/L	6	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	20.0	86.6				mg/L	13	Standard
I	127	3452.1	27.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		119.700	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		114.437	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.567
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.716
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Wednesday, June 29, 2016 17:50:19
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88962.1	0.9				ug/L	74699	Standard
	Be	9	13.3	43.3	**0.0204**	0.006	27.5	ug/L	8	Standard
	Al	27	8687475.6	2.0	**49.6312**	1.401	2.8	ug/L	1493	Standard
	Sc	45	67439.8	1.2				ug/L	61029	Standard
	Ti	47	49495.1	1.8	**118.6714**	2.776	2.3	ug/L	35	Standard
	V	51	2497.1	11.5	**0.1050**	0.033	31.3	ug/L	1435	Standard
	Cr	52	8893.6	0.7	**0.0677**	0.012	17.4	ug/L	7635	Standard
	Cr	53	8300.6	3.8	**7.8359**	0.175	2.2	ug/L	363	Standard
	Mn	55	1506.4	1.9	**0.0487**	0.003	6.1	ug/L	747	Standard
	Co	59	411.3	2.2	**0.0194**	0.002	11.4	ug/L	234	Standard
	Ni	60	986.0	7.4	**0.3548**	0.029	8.2	ug/L	215	Standard
	Cu	65	754.7	3.5	**0.2650**	0.009	3.4	ug/L	104	Standard
	Zn	66	1997.5	3.6	**1.2085**	0.053	4.4	ug/L	363	Standard
>	**Ge**	72	544457.7	1.7				ug/L	495142	Standard
	As	75	-43.8	164.6	**0.0238**	0.058	245.3	ug/L	-50	Standard
	Se	82	18.8	19.8	**0.0181**	0.034	186.0	ug/L	14	Standard
	Se-1	77	455.0	4.4	**5.0437**	0.245	4.9	ug/L	42	Standard
>	**Ga**	71	186.7	17.4				mg/L	42	Standard
	Rb	85	1130.0	9.7				ug/L	17	Standard
	Y	89	464215.3	1.7				ug/L	417098	Standard
>	**Rh**	103	10.0	100.0				ug/L	13	Standard
	Mo	98	300673.2	0.9	**102.5347**	1.457	1.4	ug/L	11	Standard
	Ag	107	252.3	6.3	**0.0223**	0.003	12.6	ug/L	68	Standard
	Cd	111	-194.8	14.0	**-0.0926**	0.012	12.9	mg/L	2	Standard
	Cd	114	577.1	3.2	**0.1002**	0.004	4.2	ug/L	12	Standard
>	**In**	115	646355.5	1.8				ug/L	587441	Standard
	Sn	118	791.7	5.4	**0.0285**	0.006	21.5	ug/L	497	Standard
	Sb	123	195.6	12.5	**0.0338**	0.004	11.9	ug/L	78	Standard
	Ba	135	712.0	4.0	**0.3001**	0.008	2.7	ug/L	24	Standard
	Ce	140	246.7	7.1				ug/L	25	Standard
>	**Tb**	159	1024202.6	1.1				ug/L	939701	Standard
	Ho	165	23.3	61.9				ug/L	10	Standard
	Tl	203	122.3	9.8	**0.0119**	0.001	11.8	ug/L	4	Standard
	Tl	205	90.0	11.1	**0.0118**	0.001	10.5	ug/L	2	Standard
	Pb	206	533.7	2.0	**0.0208**	0.002	10.5	ug/L	240	Standard
	Pb	207	414.7	3.2	**0.0105**	0.002	21.4	ug/L	198	Standard
	Pb	208	1800.4	3.2	**0.0144**	0.003	21.4	ug/L	883	Standard
	U	238	18.7	20.3	**-0.0019**	0.001	26.8	ug/L	3	Standard
>	**Bi**	209	568876.5	0.5				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	11507.7	5.3	**13.3841**	0.868	6.5	mg/L	37	Standard
K	39	2163.5	5.0	**4.2129**	0.203	4.8	mg/L	38	Standard
Ca	43	273.3	20.1	**13.1286**	3.349	25.5	mg/L	10	Standard
Fe	54	17120.6	2.5	**12.9991**	0.385	3.0	mg/L	179	Standard
Fe	57	4470.7	3.8	**12.6745**	0.387	3.1	mg/L	335	Standard
> **Sc-1**	45	67439.8	1.2				mg/L	61029	Standard
Cl	35	28777.3	2.0				ug/L	20195	Standard
Kr	83	1.7	91.7				ug/L	4	Standard
Br	81	2086.8	10.9				ug/L	1547	Standard
P	31	20233.5	1.2				ug/L	15286	Standard
S	34	2398.5	7.6				ug/L	1572	Standard
Sr	88	63.3	35.6				ug/L	73	Standard
C	12	173.3	8.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	80.0	69.6				mg/L	3	Standard
Dy	164	11.6	52.9				mg/L	6	Standard
Ho-1	165	23.3	61.9				mg/L	10	Standard
Er	166	36.7	56.8				mg/L	13	Standard
I	127	2830.3	21.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27	0.993		
Sc	45			
Ti	47	118.671		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.960	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	102.535		
Ag	107			
Cd	111			
Cd	114			
In	115			110.029
Sn	118			
Sb	123			
Ba	135			
Ce	140			
Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
Bi	209			108.567
Na	23	0.040		
Mg	24	267.683		
K	39	84.259		
Ca	43	87.524		
Fe	54	103.992		
Fe	57	101.396		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	

Sample ID: QC Std 4
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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Wednesday, June 29, 2016 17:53:31
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88668.7	1.6				ug/L	74699	Standard
	Be	9	115505.6	3.3	**110.5278**	2.817	2.5	ug/L	8	Standard
	Al	27	8938177.8	2.5	**51.2202**	0.471	0.9	ug/L	1493	Standard
	Sc	45	65087.9	3.1				ug/L	61029	Standard
	Ti	47	50197.4	1.2	**122.5394**	1.491	1.2	ug/L	35	Standard
	V	51	859522.7	1.3	**105.1949**	1.380	1.3	ug/L	1435	Standard
	Cr	52	831098.2	2.0	**102.8267**	1.943	1.9	ug/L	7635	Standard
	Cr	53	106911.0	2.3	**106.7884**	2.096	2.0	ug/L	363	Standard
	Mn	55	780341.4	1.6	**103.6433**	1.453	1.4	ug/L	747	Standard
	Co	59	785536.0	0.5	**110.1234**	0.547	0.5	ug/L	234	Standard
	Ni	60	203753.2	2.0	**100.6522**	1.808	1.8	ug/L	215	Standard
	Cu	65	201732.1	0.8	**100.2703**	0.833	0.8	ug/L	104	Standard
	Zn	66	122540.9	0.7	**103.4323**	0.376	0.4	ug/L	363	Standard
>	**Ge**	72	534677.6	0.4				ug/L	495142	Standard
	As	75	124456.8	0.2	**102.9556**	0.389	0.4	ug/L	-50	Standard
	Se	82	12596.7	0.4	**106.1488**	0.433	0.4	ug/L	14	Standard
	Se-1	77	8794.6	0.8	**110.8893**	1.382	1.2	ug/L	42	Standard
>	**Ga**	71	163.3	10.8				mg/L	42	Standard
	Rb	85	966.7	4.8				ug/L	17	Standard
	Y	89	476525.6	1.7				ug/L	417098	Standard
>	**Rh**	103	56.7	53.9				ug/L	13	Standard
	Mo	98	309227.9	0.6	**104.8818**	1.132	1.1	ug/L	11	Standard
	Ag	107	592523.9	2.1	**82.1821**	1.932	2.4	ug/L	68	Standard
	Cd	111	228625.7	1.0	**98.8467**	0.904	0.9	mg/L	2	Standard
	Cd	114	551600.1	1.5	**97.2335**	1.523	1.6	ug/L	12	Standard
>	**In**	115	649797.8	0.6				ug/L	587441	Standard
	Sn	118	1576.7	4.2	**0.1493**	0.011	7.5	ug/L	497	Standard
	Sb	123	495027.3	1.9	**95.8585**	2.358	2.5	ug/L	78	Standard
	Ba	135	210763.3	1.3	**93.0830**	1.687	1.8	ug/L	24	Standard
	Ce	140	70.0	24.7				ug/L	25	Standard
>	**Tb**	159	1005734.4	0.5				ug/L	939701	Standard
	Ho	165	11.7	49.5				ug/L	10	Standard
	Tl	203	893894.1	1.2	**101.2389**	0.317	0.3	ug/L	4	Standard
	Tl	205	815034.2	0.6	**106.3608**	0.654	0.6	ug/L	2	Standard
	Pb	206	583528.7	0.9	**101.9143**	0.243	0.2	ug/L	240	Standard
	Pb	207	499626.1	1.2	**98.2110**	0.372	0.4	ug/L	198	Standard
	Pb	208	2105185.2	0.8	**104.7451**	0.431	0.4	ug/L	883	Standard
	U	238	779429.7	1.7	**105.7078**	0.634	0.6	ug/L	3	Standard
>	**Bi**	209	561247.5	1.2				ug/L	523984	Standard

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Na	23	1.7	173.2	**18.1880**	31.494	173.2	mg/L	0	Standard
Mg	24	12009.8	3.1	**14.4710**	0.020	0.1	mg/L	37	Standard
K	39	2150.2	4.2	**4.3456**	0.256	5.9	mg/L	38	Standard
Ca	43	251.7	12.1	**12.4083**	2.087	16.8	mg/L	10	Standard
Fe	54	17836.2	2.6	**14.0504**	0.592	4.2	mg/L	179	Standard
Fe	57	4537.3	4.4	**13.3981**	0.845	6.3	mg/L	335	Standard
Sc-1	45	65087.9	3.1				mg/L	61029	Standard
Cl	35	27559.7	2.9				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	1986.8	4.8				ug/L	1547	Standard
P	31	19052.0	2.9				ug/L	15286	Standard
S	34	2286.8	6.3				ug/L	1572	Standard
Sr	88	50.0	10.0				ug/L	73	Standard
C	12	120.0	54.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	3	Standard
Dy	164	6.0	200.7				mg/L	6	Standard
Ho-1	165	11.7	49.5				mg/L	10	Standard
Er	166	13.3	86.6				mg/L	13	Standard
I	127	2065.1	25.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	110.528		
Al	27	1.024		
Sc	45			
Ti	47	122.539		
V	51	105.195		
Cr	52	102.827		
Cr	53			
Mn	55	103.643		
Co	59	110.123		
Ni	60	100.652		
Cu	65	100.270		
Zn	66	103.432		
Ge	72		107.985	
As	75	102.956		
Se	82	106.149		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	104.882		
Ag	107	82.182		
Cd	111	98.847		
Cd	114			
In	115		110.615	
Sn	118			
Sb	123	95.858		
Ba	135	93.083		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.239		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.745		
U	238	105.708		
Bi	209		107.111	
Na	23	145.504		
Mg	24	289.419		
K	39	86.911		
Ca	43	82.722		
Fe	54	112.403		
Fe	57	107.185		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Ti	47	
QC Std 5	Na	23	

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QC Std 5	Mg	24

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 17:56:44
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	88001.7	3.8				ug/L	74699	Standard
	Be	9	58491.1	3.4	**56.4121**	0.807	1.4	ug/L	8	Standard
	Al	27	8741223.1	1.9	**50.5126**	1.685	3.3	ug/L	1493	Standard
	Sc	45	66566.0	2.9				ug/L	61029	Standard
	Ti	47	44065.3	0.6	**105.8464**	2.393	2.3	ug/L	35	Standard
	V	51	439728.9	0.9	**52.8674**	1.388	2.6	ug/L	1435	Standard
	Cr	52	434693.1	0.1	**52.4281**	0.919	1.8	ug/L	7635	Standard
	Cr	53	53735.1	1.4	**52.6541**	1.206	2.3	ug/L	363	Standard
	Mn	55	394255.2	1.0	**51.4522**	0.719	1.4	ug/L	747	Standard
	Co	59	403494.7	0.9	**55.6456**	1.136	2.0	ug/L	234	Standard
	Ni	60	106493.3	0.2	**51.7076**	0.770	1.5	ug/L	215	Standard
	Cu	65	105229.8	0.3	**51.4208**	1.011	2.0	ug/L	104	Standard
	Zn	66	61955.4	1.5	**51.2322**	1.156	2.3	ug/L	363	Standard
>	Ge	72	543443.2	1.7				ug/L	495142	Standard
	As	75	62757.8	1.3	**51.1208**	1.290	2.5	ug/L	-50	Standard
	Se	82	6411.0	0.6	**53.0945**	1.065	2.0	ug/L	14	Standard
	Se-1	77	4401.6	1.7	**54.2995**	1.443	2.7	ug/L	42	Standard
>	Ga	71	61.7	12.4				mg/L	42	Standard
	Rb	85	943.4	4.4				ug/L	17	Standard
	Y	89	472814.1	2.0				ug/L	417098	Standard
>	Rh	103	31.7	36.5				ug/L	13	Standard
	Mo	98	301859.8	0.5	**101.5547**	1.508	1.5	ug/L	11	Standard
	Ag	107	366041.5	1.2	**50.3642**	1.561	3.1	ug/L	68	Standard
	Cd	111	117544.4	1.3	**50.4048**	0.748	1.5	mg/L	2	Standard
	Cd	114	286950.2	2.0	**50.1688**	0.955	1.9	ug/L	12	Standard
>	In	115	655193.6	1.9				ug/L	587441	Standard
	Sn	118	333959.0	1.2	**51.1818**	1.510	3.0	ug/L	497	Standard
	Sb	123	261510.0	1.1	**50.2357**	1.515	3.0	ug/L	78	Standard
	Ba	135	110572.3	0.3	**48.4318**	0.852	1.8	ug/L	24	Standard
	Ce	140	81.7	46.0				ug/L	25	Standard
>	Tb	159	1009652.9	1.9				ug/L	939701	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	466012.5	0.6	**52.5145**	1.216	2.3	ug/L	4	Standard
	Tl	205	428260.1	0.9	**55.6109**	1.642	3.0	ug/L	2	Standard
	Pb	206	294247.5	0.8	**51.0977**	1.194	2.3	ug/L	240	Standard
	Pb	207	260542.8	0.7	**50.9223**	1.007	2.0	ug/L	198	Standard
	Pb	208	1081629.9	0.8	**53.5152**	1.532	2.9	ug/L	883	Standard
	U	238	403586.7	0.9	**54.4635**	1.402	2.6	ug/L	3	Standard
>	Bi	209	564239.9	2.1				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4549.0	2.0	**5.3196**	0.066	1.2	mg/L	37	Standard
K	39	2091.8	2.6	**4.1250**	0.021	0.5	mg/L	38	Standard
Ca	43	106.7	9.8	**3.6589**	0.645	17.6	mg/L	10	Standard
Fe	54	6853.2	4.1	**5.1952**	0.357	6.9	mg/L	179	Standard
Fe	57	1901.8	4.2	**4.8507**	0.081	1.7	mg/L	335	Standard
> **Sc-1**	45	66566.0	2.9				mg/L	61029	Standard
Cl	35	28481.4	2.6				ug/L	20195	Standard
Kr	83	3.3	75.5				ug/L	4	Standard
Br	81	1840.1	18.3				ug/L	1547	Standard
P	31	20427.1	5.4				ug/L	15286	Standard
S	34	2438.5	6.3				ug/L	1572	Standard
Sr	88	80.0	32.5				ug/L	73	Standard
C	12	76.7	7.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	3	Standard
Dy	164	6.5	86.7				mg/L	6	Standard
Ho-1	165	8.3	34.6				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	2150.2	26.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	112.824		
Al	27	101.025		
Sc	45			
Ti	47	105.846		
V	51	105.735		
Cr	52	104.856		
Cr	53			
Mn	55	102.904		
Co	59	111.291		
Ni	60	103.415		
Cu	65	102.842		
Zn	66	102.464		
> Ge	72		109.755	
As	75	102.242		
Se	82	106.189		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.555		
Ag	107	100.728		
Cd	111	100.810		
Cd	114			
In	115		111.533	
Sn	118	102.364		
Sb	123	100.471		
Ba	135	96.864		
Ce	140			
Tb	159			
Ho	165			
Tl	203	105.029		
Tl	205			
Pb	206			
Pb	207			
Pb	208	107.030		
U	238	108.927		
Bi	209		107.683	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Co	59	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 17:59:55
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86353.7	1.4				ug/L	74699	Standard
	Be	9	83.3	67.4	**0.0891**	0.054	60.5	ug/L	8	Standard
	Al	27	42873.5	92.7	**0.2376**	0.231	97.1	ug/L	1493	Standard
	Sc	45	65305.4	1.2				ug/L	61029	Standard
	Ti	47	79.7	51.6	**0.0788**	0.097	123.4	ug/L	35	Standard
	V	51	1461.2	4.4	**-0.0225**	0.008	34.9	ug/L	1435	Standard
	Cr	52	7626.9	6.9	**-0.1029**	0.066	64.1	ug/L	7635	Standard
	Cr	53	760.0	14.8	**0.4057**	0.109	26.8	ug/L	363	Standard
	Mn	55	4546.9	137.2	**0.4388**	0.807	183.9	ug/L	747	Standard
	Co	59	626.0	93.3	**0.0478**	0.080	167.0	ug/L	234	Standard
	Ni	60	409.0	51.9	**0.0715**	0.102	142.7	ug/L	215	Standard
	Cu	65	272.7	44.7	**0.0274**	0.059	215.3	ug/L	104	Standard
	Zn	66	514.0	23.7	**-0.0335**	0.100	300.2	ug/L	363	Standard
>	**Ge**	72	553485.6	1.3				ug/L	495142	Standard
	As	75	-6.7	474.8	**0.0545**	0.025	45.9	ug/L	-50	Standard
	Se	82	20.4	10.3	**0.0278**	0.015	55.0	ug/L	14	Standard
	Se-1	77	66.3	4.4	**0.1906**	0.046	24.0	ug/L	42	Standard
>	**Ga**	71	50.0	10.0				mg/L	42	Standard
	Rb	85	45.0	48.4				ug/L	17	Standard
	Y	89	474090.9	1.7				ug/L	417098	Standard
>	**Rh**	103	18.3	41.7				ug/L	13	Standard
	Mo	98	533.3	54.8	**0.1739**	0.097	56.0	ug/L	11	Standard
	Ag	107	205.7	25.6	**0.0154**	0.007	45.9	ug/L	68	Standard
	Cd	111	43.3	79.3	**0.0106**	0.015	137.7	mg/L	2	Standard
	Cd	114	160.8	66.0	**0.0260**	0.018	70.8	ug/L	12	Standard
>	**In**	115	653140.9	0.6				ug/L	587441	Standard
	Sn	118	840.0	19.7	**0.0347**	0.026	74.7	ug/L	497	Standard
	Sb	123	1054.2	24.1	**0.1991**	0.050	25.2	ug/L	78	Standard
	Ba	135	82.0	54.8	**0.0199**	0.020	97.9	ug/L	24	Standard
	Ce	140	78.3	62.0				ug/L	25	Standard
>	**Tb**	159	1021325.7	0.5				ug/L	939701	Standard
	Ho	165	20.0	66.1				ug/L	10	Standard
	Tl	203	163.0	50.8	**0.0163**	0.009	56.1	ug/L	4	Standard
	Tl	205	543.4	156.5	**0.0696**	0.109	156.0	ug/L	2	Standard
	Pb	206	336.7	16.7	**-0.0136**	0.010	70.5	ug/L	240	Standard
	Pb	207	309.7	12.8	**-0.0104**	0.008	73.2	ug/L	198	Standard
	Pb	208	2162.1	83.2	**0.0313**	0.088	280.1	ug/L	883	Standard
	U	238	524.4	153.4	**0.0652**	0.107	163.8	ug/L	3	Standard
>	**Bi**	209	573163.8	0.1				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.8448**	30.899	173.2	mg/L	0	Standard
Mg	24	123.3	127.6	**0.0829**	0.188	227.1	mg/L	37	Standard
K	39	30.0	66.7	**-0.0524**	0.041	77.8	mg/L	38	Standard
Ca	43	21.7	35.3	**-1.2409**	0.467	37.7	mg/L	10	Standard
Fe	54	185.6	27.6	**0.0086**	0.039	460.9	mg/L	179	Standard
Fe	57	268.3	10.3	**-0.2224**	0.079	35.7	mg/L	335	Standard
> **Sc-1**	45	65305.4	1.2				mg/L	61029	Standard
Cl	35	28806.0	1.7				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	1900.1	3.3				ug/L	1547	Standard
P	31	20240.2	2.7				ug/L	15286	Standard
S	34	2435.2	7.1				ug/L	1572	Standard
Sr	88	65.0	20.4				ug/L	73	Standard
C	12	60.0					mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	25.5	84.0				mg/L	6	Standard
Ho-1	165	20.0	66.1				mg/L	10	Standard
Er	166	23.3	65.5				mg/L	13	Standard
I	127	1926.8	28.8				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		111.783	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.184
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.386
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Wednesday, June 29, 2016 18:03:08
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84590.6	2.3				ug/L	74699	Standard
	Be	9	260.0	12.0	**0.2687**	0.034	12.7	ug/L	8	Standard
	Al	27	3603.8	43.5	**0.0082**	0.009	110.1	ug/L	1493	Standard
	Sc	45	65034.3	0.9				ug/L	61029	Standard
	Ti	47	43.7	32.9	**-0.0008**	0.035	4199.9	ug/L	35	Standard
	V	51	4694.6	2.2	**0.3894**	0.008	2.0	ug/L	1435	Standard
	Cr	52	14076.2	0.6	**0.7639**	0.008	1.0	ug/L	7635	Standard
	Cr	53	1435.1	6.7	**1.1315**	0.098	8.6	ug/L	363	Standard
	Mn	55	4379.0	3.5	**0.4438**	0.017	3.9	ug/L	747	Standard
	Co	59	3208.0	4.2	**0.4198**	0.015	3.5	ug/L	234	Standard
	Ni	60	3464.1	1.9	**1.6175**	0.036	2.2	ug/L	215	Standard
	Cu	65	1802.1	7.0	**0.8073**	0.055	6.8	ug/L	104	Standard
	Zn	66	8137.9	1.9	**6.5566**	0.074	1.1	ug/L	363	Standard
>	**Ge**	72	526101.8	0.9				ug/L	495142	Standard
	As	75	520.8	10.5	**0.4970**	0.042	8.4	ug/L	-50	Standard
	Se	82	68.5	3.0	**0.4490**	0.013	3.0	ug/L	14	Standard
	Se-1	77	97.0	14.4	**0.6266**	0.169	26.9	ug/L	42	Standard
>	**Ga**	71	35.0	42.9				mg/L	42	Standard
	Rb	85	53.3	5.4				ug/L	17	Standard
	Y	89	462050.3	3.1				ug/L	417098	Standard
>	**Rh**	103	11.7	24.7				ug/L	13	Standard
	Mo	98	178.6	39.2	**0.0548**	0.024	44.0	ug/L	11	Standard
	Ag	107	2989.6	2.3	**0.4006**	0.011	2.7	ug/L	68	Standard
	Cd	111	543.3	9.6	**0.2264**	0.024	10.6	mg/L	2	Standard
	Cd	114	1493.6	11.4	**0.2605**	0.031	12.1	ug/L	12	Standard
>	**In**	115	651766.1	0.6				ug/L	587441	Standard
	Sn	118	551.7	10.5	**-0.0096**	0.009	97.6	ug/L	497	Standard
	Sb	123	2328.3	1.4	**0.4453**	0.009	1.9	ug/L	78	Standard
	Ba	135	1600.4	3.6	**0.6889**	0.030	4.3	ug/L	24	Standard
	Ce	140	6.7	86.6				ug/L	25	Standard
>	**Tb**	159	1010895.5	0.8				ug/L	939701	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	860.7	17.5	**0.0936**	0.016	16.7	ug/L	4	Standard
	Tl	205	718.4	10.6	**0.0918**	0.008	8.5	ug/L	2	Standard
	Pb	206	1533.1	9.5	**0.1909**	0.020	10.6	ug/L	240	Standard
	Pb	207	1247.1	5.1	**0.1700**	0.007	4.3	ug/L	198	Standard
	Pb	208	5357.0	3.3	**0.1870**	0.005	2.6	ug/L	883	Standard
	U	238	3040.0	2.0	**0.3994**	0.014	3.4	ug/L	3	Standard
>	**Bi**	209	573346.3	2.5				ug/L	523984	Standard

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Na	23	1.7	173.2	**18.2178**	31.546	173.2	mg/L	0	Standard
Mg	24	50.0	50.0	**-0.0044**	0.031	706.6	mg/L	37	Standard
K	39	35.0	24.7	**-0.0415**	0.018	44.0	mg/L	38	Standard
Ca	43	26.7	43.3	**-0.9446**	0.676	71.5	mg/L	10	Standard
Fe	54	105.0	32.5	**-0.0546**	0.028	51.3	mg/L	179	Standard
Fe	57	230.0	24.7	**-0.3395**	0.189	55.5	mg/L	335	Standard
Sc-1	45	65034.3	0.9				mg/L	61029	Standard
Cl	35	27747.4	0.7				ug/L	20195	Standard
Kr	83	1.0	0.0				ug/L	4	Standard
Br	81	1776.8	9.7				ug/L	1547	Standard
P	31	14345.1	1.0				ug/L	15286	Standard
S	34	2316.8	2.0				ug/L	1572	Standard
Sr	88	78.3	41.5				ug/L	73	Standard
C	12	70.0	28.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	6.0	100.4				mg/L	6	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	1788.4	30.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	134.333		
Al	27			
Sc	45			
Ti	47			
V	51	97.347		
Cr	52	95.485		
Cr	53			
Mn	55	88.762		
Co	59	104.961		
Ni	60	101.093		
Cu	65	100.908		
Zn	66	104.906		
Ge	72		106.253	
As	75	124.241		
Se	82	112.254		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	100.142		
Cd	111	94.325		
Cd	114			
> In	115			110.950
Sn	118			
Sb	123	111.327		
Ba	135	91.848		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	116.967		
Tl	205			
Pb	206			
Pb	207			
Pb	208	93.500		
U	238	99.844		
> Bi	209			109.420
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 8	Be	9	

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Method 6020 - Summary Report

Sample ID: PBS M9 WG574192-02
Sample Date/Time: Wednesday, June 29, 2016 18:06:21
Number of Replicates: 3
Autosampler Position: 237
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84464.8	1.8				ug/L	74699	Standard
	Be	9	13.3	94.4	**0.0212**	0.013	60.4	ug/L	8	Standard
	Al	27	11484.4	1.6	**0.0557**	0.001	1.2	ug/L	1493	Standard
	Sc	45	65588.4	2.6				ug/L	61029	Standard
	Ti	47	51.3	20.8	**0.0150**	0.026	174.5	ug/L	35	Standard
	V	51	1499.5	1.3	**-0.0137**	0.003	18.5	ug/L	1435	Standard
	Cr	52	8909.3	1.2	**0.0773**	0.005	6.6	ug/L	7635	Standard
	Cr	53	853.4	5.0	**0.5155**	0.034	6.6	ug/L	363	Standard
	Mn	55	1324.4	4.8	**0.0262**	0.011	41.6	ug/L	747	Standard
	Co	59	237.0	9.4	**-0.0044**	0.004	80.7	ug/L	234	Standard
	Ni	60	317.3	8.0	**0.0315**	0.014	46.0	ug/L	215	Standard
	Cu	65	277.0	2.0	**0.0327**	0.005	14.4	ug/L	104	Standard
	Zn	66	2117.5	3.0	**1.3211**	0.055	4.2	ug/L	363	Standard
>	**Ge**	72	540634.9	1.6				ug/L	495142	Standard
	As	75	-19.3	191.5	**0.0441**	0.030	68.3	ug/L	-50	Standard
	Se	82	22.9	30.4	**0.0532**	0.060	113.4	ug/L	14	Standard
	Se-1	77	66.3	3.1	**0.2096**	0.028	13.1	ug/L	42	Standard
>	**Ga**	71	40.0	45.1				mg/L	42	Standard
	Rb	85	45.0	40.1				ug/L	17	Standard
	Y	89	495113.6	1.2				ug/L	417098	Standard
>	**Rh**	103	20.0	50.0				ug/L	13	Standard
	Mo	98	103.4	4.5	**0.0285**	0.002	7.3	ug/L	11	Standard
	Ag	107	105.3	22.1	**0.0013**	0.003	227.8	ug/L	68	Standard
	Cd	111	14.8	35.7	**-0.0017**	0.002	127.2	mg/L	2	Standard
	Cd	114	30.3	51.7	**0.0031**	0.003	86.4	ug/L	12	Standard
>	**In**	115	666604.9	1.7				ug/L	587441	Standard
	Sn	118	860.0	2.1	**0.0351**	0.004	11.7	ug/L	497	Standard
	Sb	123	400.3	27.4	**0.0716**	0.022	30.7	ug/L	78	Standard
	Ba	135	277.0	2.3	**0.1032**	0.001	0.8	ug/L	24	Standard
	Ce	140	75.0	20.0				ug/L	25	Standard
>	**Tb**	159	1002064.8	2.5				ug/L	939701	Standard
	Ho	165	13.3	21.7				ug/L	10	Standard
	Tl	203	23.7	14.8	**0.0009**	0.000	40.1	ug/L	4	Standard
	Tl	205	18.3	56.8	**0.0026**	0.001	51.0	ug/L	2	Standard
	Pb	206	383.3	7.2	**-0.0041**	0.004	93.5	ug/L	240	Standard
	Pb	207	304.7	4.5	**-0.0100**	0.002	23.2	ug/L	198	Standard
	Pb	208	1385.4	1.0	**-0.0050**	0.001	21.8	ug/L	883	Standard
	U	238	16.0	18.8	**-0.0023**	0.000	16.8	ug/L	3	Standard
>	**Bi**	209	560531.0	1.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	51.7	11.2	**-0.0029**	0.008	286.8	mg/L	37	Standard
K	39	28.3	27.0	**-0.0560**	0.015	26.7	mg/L	38	Standard
Ca	43	25.0	34.6	**-1.0611**	0.483	45.5	mg/L	10	Standard
Fe	54	209.4	8.6	**0.0268**	0.012	44.3	mg/L	179	Standard
Fe	57	206.7	9.2	**-0.4211**	0.048	11.4	mg/L	335	Standard
> **Sc-1**	45	65588.4	2.6				mg/L	61029	Standard
Cl	35	29295.6	1.0				ug/L	20195	Standard
Kr	83	1.7	91.7				ug/L	4	Standard
Br	81	3250.3	3.7				ug/L	1547	Standard
P	31	19926.4	1.7				ug/L	15286	Standard
S	34	2431.9	7.4				ug/L	1572	Standard
Sr	88	63.3	32.9				ug/L	73	Standard
C	12	60.0	16.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	23.2	64.8				mg/L	6	Standard
Ho-1	165	13.3	21.7				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	1665.1	25.5				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		113.074	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		109.188	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.476
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.975
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSS M9 WG574192-03
Sample Date/Time: Wednesday, June 29, 2016 18:09:32
Number of Replicates: 3
Autosampler Position: 238
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83350.4	2.2				ug/L	74699	Standard
	Be	9	28323.1	1.8	**28.8492**	0.865	3.0	ug/L	8	Standard
	Al	27	10196.8	1.6	**0.0488**	0.002	4.6	ug/L	1493	Standard
	Sc	45	65183.2	0.6				ug/L	61029	Standard
	Ti	47	95.7	13.6	**0.1113**	0.027	24.3	ug/L	35	Standard
	V	51	224256.1	0.6	**25.7588**	0.522	2.0	ug/L	1435	Standard
	Cr	52	224696.6	1.0	**25.4792**	0.636	2.5	ug/L	7635	Standard
	Cr	53	27321.3	1.7	**25.5112**	0.743	2.9	ug/L	363	Standard
	Mn	55	202745.7	1.5	**25.3082**	0.750	3.0	ug/L	747	Standard
	Co	59	203564.8	2.3	**26.9126**	1.011	3.8	ug/L	234	Standard
	Ni	60	54379.7	0.7	**25.2634**	0.489	1.9	ug/L	215	Standard
	Cu	65	53975.6	1.0	**25.2465**	0.617	2.4	ug/L	104	Standard
	Zn	66	33582.8	1.1	**26.4199**	0.666	2.5	ug/L	363	Standard
>	**Ge**	72	566570.7	1.5				ug/L	495142	Standard
	As	75	31915.6	1.0	**24.9643**	0.450	1.8	ug/L	-50	Standard
	Se	82	3210.1	2.6	**25.4315**	0.960	3.8	ug/L	14	Standard
	Se-1	77	2232.8	4.1	**26.1060**	1.397	5.4	ug/L	42	Standard
>	**Ga**	71	91.7	13.7				mg/L	42	Standard
	Rb	85	96.7	31.2				ug/L	17	Standard
	Y	89	463441.3	2.1				ug/L	417098	Standard
>	**Rh**	103	25.0	40.0				ug/L	13	Standard
	Mo	98	76.3	5.4	**0.0207**	0.001	6.1	ug/L	11	Standard
	Ag	107	186996.6	1.0	**26.4732**	0.339	1.3	ug/L	68	Standard
	Cd	111	58916.9	1.6	**26.0048**	0.541	2.1	mg/L	2	Standard
	Cd	114	141808.0	1.8	**25.5238**	0.616	2.4	ug/L	12	Standard
>	**In**	115	636399.6	0.6				ug/L	587441	Standard
	Sn	118	665.0	9.8	**0.0103**	0.010	94.1	ug/L	497	Standard
	Sb	123	127977.1	1.2	**25.3000**	0.453	1.8	ug/L	78	Standard
	Ba	135	55490.8	0.9	**25.0111**	0.350	1.4	ug/L	24	Standard
	Ce	140	61.7	36.6				ug/L	25	Standard
>	**Tb**	159	977939.2	1.1				ug/L	939701	Standard
	Ho	165	5.0	100.0				ug/L	10	Standard
	Tl	203	232757.9	0.8	**26.2994**	0.658	2.5	ug/L	4	Standard
	Tl	205	213539.2	0.1	**27.8001**	0.582	2.1	ug/L	2	Standard
	Pb	206	150898.4	0.7	**26.2407**	0.649	2.5	ug/L	240	Standard
	Pb	207	129115.2	1.2	**25.2720**	0.800	3.2	ug/L	198	Standard
	Pb	208	547777.7	0.6	**27.1359**	0.615	2.3	ug/L	883	Standard
	U	238	197609.3	0.3	**26.7341**	0.481	1.8	ug/L	3	Standard
>	**Bi**	209	562718.9	2.0				ug/L	523984	Standard

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Na	23	3.3	86.6	**35.9815**	31.158	86.6	mg/L	0	Standard
Mg	24	53.3	23.6	**-0.0007**	0.015	2138.9	mg/L	37	Standard
K	39	36.7	90.8	**-0.0380**	0.070	183.0	mg/L	38	Standard
Ca	43	26.7	28.6	**-0.9444**	0.462	48.9	mg/L	10	Standard
Fe	54	149.2	16.7	**-0.0198**	0.020	102.0	mg/L	179	Standard
Fe	57	258.3	10.7	**-0.2518**	0.092	36.6	mg/L	335	Standard
> **Sc-1**	45	65183.2	0.6				mg/L	61029	Standard
Cl	35	28068.6	2.1				ug/L	20195	Standard
Kr	83	2.0	0.0				ug/L	4	Standard
Br	81	1853.4	3.5				ug/L	1547	Standard
P	31	20221.8	1.7				ug/L	15286	Standard
S	34	2256.8	4.8				ug/L	1572	Standard
Sr	88	75.0	24.0				ug/L	73	Standard
C	12	113.3	53.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	2.9	203.0				mg/L	6	Standard
Ho-1	165	5.0	100.0				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	1621.8	26.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.582	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.426	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.334
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.392
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSS M9 WG574192-03
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Method 6020 - Summary Report

Sample ID: L1606120601 WG574192-01
Sample Date/Time: Wednesday, June 29, 2016 18:12:44
Number of Replicates: 3
Autosampler Position: 239
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89463.4	1.2				ug/L	74699	Standard
	Be	9	386.7	13.6	**0.3740**	0.046	12.2	ug/L	8	Standard
	Al	27	7605562.2	1.6	**43.1976**	0.340	0.8	ug/L	1493	Standard
	Sc	45	72243.5	1.6				ug/L	61029	Standard
	Ti	47	9362.6	0.8	**21.8169**	0.679	3.1	ug/L	35	Standard
	V	51	123334.5	1.4	**14.2946**	0.165	1.2	ug/L	1435	Standard
	Cr	52	107034.1	1.6	**11.7966**	0.478	4.1	ug/L	7635	Standard
	Cr	53	12683.6	2.9	**11.8556**	0.642	5.4	ug/L	363	Standard
	Mn	55	2726083.5	2.1	**347.2409**	2.026	0.6	ug/L	747	Standard
	Co	59	29531.4	3.0	**3.9299**	0.043	1.1	ug/L	234	Standard
	Ni	60	23196.4	0.4	**10.8725**	0.312	2.9	ug/L	215	Standard
	Cu	65	77156.3	0.7	**36.6848**	0.692	1.9	ug/L	104	Standard
	Zn	66	748003.6	1.6	**607.1548**	7.539	1.2	ug/L	363	Standard
>	**Ge**	72	558122.4	2.5				ug/L	495142	Standard
	As	75	3312.8	2.4	**2.6835**	0.016	0.6	ug/L	-50	Standard
	Se	82	112.5	6.7	**0.7726**	0.083	10.8	ug/L	14	Standard
	Se-1	77	130.7	4.7	**0.9656**	0.087	9.0	ug/L	42	Standard
>	**Ga**	71	7793.7	3.0				mg/L	42	Standard
	Rb	85	97459.1	1.1				ug/L	17	Standard
	Y	89	585281.5	2.1				ug/L	417098	Standard
>	**Rh**	103	56.7	13.5				ug/L	13	Standard
	Mo	98	1826.8	4.5	**0.5887**	0.034	5.8	ug/L	11	Standard
	Ag	107	1189.0	7.2	**0.1453**	0.012	8.4	ug/L	68	Standard
	Cd	111	5739.0	1.3	**2.3714**	0.004	0.2	mg/L	2	Standard
	Cd	114	13674.5	3.2	**2.3090**	0.056	2.4	ug/L	12	Standard
>	**In**	115	677670.9	1.2				ug/L	587441	Standard
	Sn	118	2238.5	6.9	**0.2377**	0.027	11.3	ug/L	497	Standard
	Sb	123	1060.8	22.9	**0.1924**	0.043	22.3	ug/L	78	Standard
	Ba	135	275486.3	0.7	**116.6679**	1.279	1.1	ug/L	24	Standard
	Ce	140	521396.3	0.5				ug/L	25	Standard
>	**Tb**	159	1067665.8	1.0				ug/L	939701	Standard
	Ho	165	8012.1	4.7				ug/L	10	Standard
	Tl	203	658.7	5.9	**0.0698**	0.004	5.8	ug/L	4	Standard
	Tl	205	588.3	7.1	**0.0738**	0.005	7.2	ug/L	2	Standard
	Pb	206	280687.1	0.1	**46.9821**	0.294	0.6	ug/L	240	Standard
	Pb	207	217657.6	0.6	**40.9978**	0.453	1.1	ug/L	198	Standard
	Pb	208	937818.9	1.0	**44.7144**	0.652	1.5	ug/L	883	Standard
	U	238	5450.3	0.5	**0.7046**	0.003	0.4	ug/L	3	Standard
>	**Bi**	209	585148.7	0.6				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	733.4	5.7	**0.7343**	0.035	4.8	mg/L	37	Standard
K	39	401.7	1.9	**0.6360**	0.019	3.0	mg/L	38	Standard
Ca	43	643.3	17.5	**31.7962**	5.845	18.4	mg/L	10	Standard
Fe	54	8818.1	2.4	**6.1777**	0.130	2.1	mg/L	179	Standard
Fe	57	2673.6	4.7	**6.5999**	0.243	3.7	mg/L	335	Standard
Sc-1	45	72243.5	1.6				mg/L	61029	Standard
Cl	35	29798.6	1.4				ug/L	20195	Standard
Kr	83	0.7	86.6				ug/L	4	Standard
Br	81	3707.1	5.8				ug/L	1547	Standard
P	31	20168.4	2.0				ug/L	15286	Standard
S	34	2373.5	6.9				ug/L	1572	Standard
Sr	88	256.7	13.8				ug/L	73	Standard
C	12	350.0	7.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	130.0	53.3				mg/L	3	Standard
Dy	164	13278.3	0.5				mg/L	6	Standard
Ho-1	165	8012.1	4.7				mg/L	10	Standard
Er	166	7608.6	3.8				mg/L	13	Standard
I	127	89948.0	2.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		119.765	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		112.720	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	115.360
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	111.673
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606120602
Sample Date/Time: Wednesday, June 29, 2016 18:15:55
Number of Replicates: 3
Autosampler Position: 240
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88784.4	1.1				ug/L	74699	Standard
	Be	9	281.7	5.7	**0.2767**	0.013	4.7	ug/L	8	Standard
	Al	27	7005404.7	2.4	**40.0898**	0.625	1.6	ug/L	1493	Standard
	Sc	45	70594.2	3.3				ug/L	61029	Standard
	Ti	47	10155.7	1.6	**24.3492**	0.468	1.9	ug/L	35	Standard
	V	51	153110.0	0.2	**18.3086**	0.101	0.6	ug/L	1435	Standard
	Cr	52	102957.6	0.7	**11.6568**	0.092	0.8	ug/L	7635	Standard
	Cr	53	11732.9	3.0	**11.2567**	0.305	2.7	ug/L	363	Standard
	Mn	55	2052735.8	1.1	**268.9604**	2.146	0.8	ug/L	747	Standard
	Co	59	33492.3	1.4	**4.5921**	0.057	1.2	ug/L	234	Standard
	Ni	60	26642.1	0.7	**12.8642**	0.053	0.4	ug/L	215	Standard
	Cu	65	40463.3	0.7	**19.7403**	0.183	0.9	ug/L	104	Standard
	Zn	66	608360.3	0.1	**507.8962**	1.599	0.3	ug/L	363	Standard
>	**Ge**	72	542468.6	0.4				ug/L	495142	Standard
	As	75	4231.0	2.7	**3.5076**	0.102	2.9	ug/L	-50	Standard
	Se	82	256.2	4.5	**1.9932**	0.099	5.0	ug/L	14	Standard
	Se-1	77	208.7	7.7	**1.9860**	0.210	10.6	ug/L	42	Standard
>	**Ga**	71	5872.8	1.9				mg/L	42	Standard
	Rb	85	68412.5	1.5				ug/L	17	Standard
	Y	89	570393.2	0.3				ug/L	417098	Standard
>	**Rh**	103	206.7	25.4				ug/L	13	Standard
	Mo	98	11374.8	0.4	**3.8637**	0.075	1.9	ug/L	11	Standard
	Ag	107	1353.7	2.3	**0.1754**	0.001	0.8	ug/L	68	Standard
	Cd	111	5491.2	1.2	**2.3732**	0.046	1.9	mg/L	2	Standard
	Cd	114	13400.9	1.9	**2.3668**	0.045	1.9	ug/L	12	Standard
>	**In**	115	648040.3	1.6				ug/L	587441	Standard
	Sn	118	1990.1	9.0	**0.2145**	0.033	15.4	ug/L	497	Standard
	Sb	123	589.0	13.2	**0.1100**	0.013	12.1	ug/L	78	Standard
	Ba	135	226861.9	1.0	**100.4795**	2.067	2.1	ug/L	24	Standard
	Ce	140	495305.9	0.7				ug/L	25	Standard
>	**Tb**	159	1028084.3	0.7				ug/L	939701	Standard
	Ho	165	7586.9	1.7				ug/L	10	Standard
	Tl	203	574.7	1.8	**0.0640**	0.002	2.9	ug/L	4	Standard
	Tl	205	501.7	7.3	**0.0663**	0.004	6.1	ug/L	2	Standard
	Pb	206	2490204.6	1.0	**439.6443**	9.561	2.2	ug/L	240	Standard
	Pb	207	1941338.7	1.0	**385.7578**	8.533	2.2	ug/L	198	Standard
	Pb	208	8788859.7	0.3	**442.0013**	4.418	1.0	ug/L	883	Standard
	U	238	27264.2	0.8	**3.7315**	0.055	1.5	ug/L	3	Standard
>	**Bi**	209	555601.8	1.3				ug/L	523984	Standard

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Na	23	15.0	66.7	**151.5495**	103.438	68.3	mg/L	0	Standard
Mg	24	875.0	7.4	**0.9112**	0.062	6.8	mg/L	37	Standard
K	39	308.3	17.3	**0.4774**	0.118	24.7	mg/L	38	Standard
Ca	43	2528.5	1.9	**135.7080**	7.063	5.2	mg/L	10	Standard
Fe	54	8423.7	4.4	**6.0457**	0.457	7.6	mg/L	179	Standard
Fe	57	3312.0	6.3	**8.6682**	0.763	8.8	mg/L	335	Standard
> **Sc-1**	45	70594.2	3.3				mg/L	61029	Standard
Cl	35	33743.5	0.4				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	4283.9	2.2				ug/L	1547	Standard
P	31	21890.8	1.3				ug/L	15286	Standard
S	34	2663.6	6.3				ug/L	1572	Standard
Sr	88	533.3	8.7				ug/L	73	Standard
C	12	600.0	5.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	100.0	26.5				mg/L	3	Standard
Dy	164	11590.5	1.3				mg/L	6	Standard
Ho-1	165	7586.9	1.7				mg/L	10	Standard
Er	166	6698.1	4.4				mg/L	13	Standard
I	127	108507.7	4.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.857	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.558	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	110.316
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	106.034
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

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Sample ID: L1606120603S WG574192-04
Sample Date/Time: Wednesday, June 29, 2016 18:19:07
Number of Replicates: 3
Autosampler Position: 241
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86561.6	0.8				ug/L	74699	Standard
	Be	9	28455.1	4.4	**27.8947**	1.031	3.7	ug/L	8	Standard
	Al	27	11326081.2	0.4	**66.4980**	0.812	1.2	ug/L	1493	Standard
	Sc	45	74033.8	1.5				ug/L	61029	Standard
	Ti	47	13830.6	1.3	**31.7218**	0.771	2.4	ug/L	35	Standard
	V	51	404083.1	0.7	**46.4723**	0.823	1.8	ug/L	1435	Standard
	Cr	52	396378.6	0.5	**45.6257**	0.448	1.0	ug/L	7635	Standard
	Cr	53	48917.2	0.9	**45.8335**	0.539	1.2	ug/L	363	Standard
	Mn	55	3610519.8	1.3	**452.1326**	4.314	1.0	ug/L	747	Standard
	Co	59	243070.7	1.0	**32.0670**	0.356	1.1	ug/L	234	Standard
	Ni	60	87954.6	1.3	**40.8489**	0.598	1.5	ug/L	215	Standard
	Cu	65	138890.7	1.2	**64.9805**	0.614	0.9	ug/L	104	Standard
	Zn	66	982893.1	0.9	**784.3980**	13.633	1.7	ug/L	363	Standard
>	**Ge**	72	567734.3	1.2				ug/L	495142	Standard
	As	75	35264.6	1.3	**27.5210**	0.578	2.1	ug/L	-50	Standard
	Se	82	3103.1	1.8	**24.5237**	0.601	2.4	ug/L	14	Standard
	Se-1	77	2151.2	2.8	**25.0663**	0.745	3.0	ug/L	42	Standard
>	**Ga**	71	14508.6	3.6				mg/L	42	Standard
	Rb	85	180073.9	1.5				ug/L	17	Standard
	Y	89	616764.0	1.9				ug/L	417098	Standard
>	**Rh**	103	85.0	11.8				ug/L	13	Standard
	Mo	98	3441.4	2.1	**1.1615**	0.033	2.8	ug/L	11	Standard
	Ag	107	170180.4	0.7	**23.5897**	0.078	0.3	ug/L	68	Standard
	Cd	111	63817.8	1.8	**27.5852**	0.736	2.7	mg/L	2	Standard
	Cd	114	155790.6	2.3	**27.4604**	0.877	3.2	ug/L	12	Standard
>	**In**	115	649912.7	0.9				ug/L	587441	Standard
	Sn	118	2755.3	3.8	**0.3317**	0.018	5.5	ug/L	497	Standard
	Sb	123	11515.0	1.7	**2.2251**	0.028	1.3	ug/L	78	Standard
	Ba	135	420339.6	0.5	**185.6246**	2.179	1.2	ug/L	24	Standard
	Ce	140	771001.7	1.2				ug/L	25	Standard
>	**Tb**	159	1033151.8	0.5				ug/L	939701	Standard
	Ho	165	11344.2	1.5				ug/L	10	Standard
	Tl	203	220759.0	0.5	**24.6088**	0.113	0.5	ug/L	4	Standard
	Tl	205	203485.6	0.4	**26.1371**	0.140	0.5	ug/L	2	Standard
	Pb	206	518067.3	0.6	**89.0511**	0.447	0.5	ug/L	240	Standard
	Pb	207	415032.4	0.7	**80.2896**	0.537	0.7	ug/L	198	Standard
	Pb	208	1813547.0	1.2	**88.8061**	1.200	1.4	ug/L	883	Standard
	U	238	196913.8	1.4	**26.2850**	0.405	1.5	ug/L	3	Standard
>	**Bi**	209	570191.4	0.2				ug/L	523984	Standard

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Na	23	6.7	43.3	**63.0881**	26.284	41.7	mg/L	0	Standard
Mg	24	761.7	8.6	**0.7448**	0.057	7.6	mg/L	37	Standard
K	39	698.3	9.3	**1.1574**	0.103	8.9	mg/L	38	Standard
Ca	43	761.7	2.5	**37.1357**	0.619	1.7	mg/L	10	Standard
Fe	54	13661.1	2.3	**9.4129**	0.352	3.7	mg/L	179	Standard
Fe	57	3945.5	4.9	**9.9839**	0.617	6.2	mg/L	335	Standard
> **Sc-1**	45	74033.8	1.5				mg/L	61029	Standard
Cl	35	29672.4	3.3				ug/L	20195	Standard
Kr	83	0.7	86.6				ug/L	4	Standard
Br	81	5120.9	2.8				ug/L	1547	Standard
P	31	21184.8	2.3				ug/L	15286	Standard
S	34	2585.2	3.6				ug/L	1572	Standard
Sr	88	278.3	7.3				ug/L	73	Standard
C	12	453.3	23.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	180.0	28.9				mg/L	3	Standard
Dy	164	18295.9	3.4				mg/L	6	Standard
Ho-1	165	11344.2	1.5				mg/L	10	Standard
Er	166	10350.2	2.2				mg/L	13	Standard
I	127	155575.8	4.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.881	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.661	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	110.635
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	108.818
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606120603S WG574192-04
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Method 6020 - Summary Report

Sample ID: L1606120604SD WG574192-05
Sample Date/Time: Wednesday, June 29, 2016 18:22:18
Number of Replicates: 3
Autosampler Position: 242
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88318.4	2.5				ug/L	74699	Standard
	Be	9	28910.9	0.8	**27.7911**	0.552	2.0	ug/L	8	Standard
	Al	27	11678142.6	0.8	**67.2186**	1.350	2.0	ug/L	1493	Standard
	Sc	45	75929.8	1.2				ug/L	61029	Standard
	Ti	47	15202.6	0.9	**34.3685**	0.367	1.1	ug/L	35	Standard
	V	51	408247.6	0.9	**46.2682**	0.632	1.4	ug/L	1435	Standard
	Cr	52	411599.1	1.0	**46.7151**	0.586	1.3	ug/L	7635	Standard
	Cr	53	50226.5	2.4	**46.3783**	0.843	1.8	ug/L	363	Standard
	Mn	55	4064951.2	0.1	**501.7134**	5.151	1.0	ug/L	747	Standard
	Co	59	242783.8	0.7	**31.5662**	0.473	1.5	ug/L	234	Standard
	Ni	60	92537.7	0.8	**42.3583**	0.203	0.5	ug/L	215	Standard
	Cu	65	135365.1	1.4	**62.4070**	0.241	0.4	ug/L	104	Standard
	Zn	66	1025151.4	1.0	**806.2133**	6.015	0.7	ug/L	363	Standard
>	**Ge**	72	576071.4	1.0				ug/L	495142	Standard
	As	75	35892.9	0.1	**27.6040**	0.298	1.1	ug/L	-50	Standard
	Se	82	2975.5	0.8	**23.1647**	0.155	0.7	ug/L	14	Standard
	Se-1	77	2118.1	0.7	**24.3051**	0.149	0.6	ug/L	42	Standard
>	**Ga**	71	16053.5	1.5				mg/L	42	Standard
	Rb	85	192660.5	0.7				ug/L	17	Standard
	Y	89	633758.5	0.9				ug/L	417098	Standard
>	**Rh**	103	91.7	22.7				ug/L	13	Standard
	Mo	98	2104.9	2.7	**0.6926**	0.023	3.3	ug/L	11	Standard
	Ag	107	176068.8	0.4	**23.8725**	0.248	1.0	ug/L	68	Standard
	Cd	111	64701.8	0.7	**27.3512**	0.177	0.6	mg/L	2	Standard
	Cd	114	157399.0	1.1	**27.1310**	0.176	0.6	ug/L	12	Standard
>	**In**	115	664480.0	1.2				ug/L	587441	Standard
	Sn	118	2676.9	2.8	**0.3105**	0.015	4.8	ug/L	497	Standard
	Sb	123	10363.1	2.2	**1.9584**	0.055	2.8	ug/L	78	Standard
	Ba	135	439420.6	0.3	**189.8023**	2.264	1.2	ug/L	24	Standard
	Ce	140	842883.5	1.0				ug/L	25	Standard
>	**Tb**	159	1049787.1	1.3				ug/L	939701	Standard
	Ho	165	12211.6	1.7				ug/L	10	Standard
	Tl	203	222058.4	0.3	**24.4396**	0.316	1.3	ug/L	4	Standard
	Tl	205	202828.8	1.6	**25.7185**	0.095	0.4	ug/L	2	Standard
	Pb	206	574235.7	0.3	**97.4667**	1.839	1.9	ug/L	240	Standard
	Pb	207	457211.7	0.6	**87.3408**	1.861	2.1	ug/L	198	Standard
	Pb	208	1979847.3	0.4	**95.7233**	1.171	1.2	ug/L	883	Standard
	U	238	197274.4	0.9	**26.0018**	0.641	2.5	ug/L	3	Standard
>	**Bi**	209	577596.9	1.6				ug/L	523984	Standard

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Na	23	5.0	0.0	**46.3267**	0.533	1.2	mg/L	0	Standard
Mg	24	961.7	5.5	**0.9325**	0.047	5.0	mg/L	37	Standard
K	39	738.4	15.4	**1.1991**	0.216	18.0	mg/L	38	Standard
Ca	43	858.4	11.4	**41.0973**	5.443	13.2	mg/L	10	Standard
Fe	54	16143.5	2.3	**10.8618**	0.122	1.1	mg/L	179	Standard
Fe	57	4519.0	2.4	**11.2744**	0.427	3.8	mg/L	335	Standard
Sc-1	45	75929.8	1.2				mg/L	61029	Standard
Cl	35	29136.0	1.4				ug/L	20195	Standard
Kr	83	1.0	0.0				ug/L	4	Standard
Br	81	5384.3	8.1				ug/L	1547	Standard
P	31	20994.5	3.6				ug/L	15286	Standard
S	34	2526.9	1.1				ug/L	1572	Standard
Sr	88	265.0	8.2				ug/L	73	Standard
C	12	466.7	15.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	193.3	16.6				mg/L	3	Standard
Dy	164	19678.1	2.3				mg/L	6	Standard
Ho-1	165	12211.6	1.7				mg/L	10	Standard
Er	166	11454.3	2.8				mg/L	13	Standard
I	127	133210.9	5.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		118.233	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		116.345	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	113.114
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	110.232
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606120605
Sample Date/Time: Wednesday, June 29, 2016 18:25:30
Number of Replicates: 3
Autosampler Position: 243
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90694.1	2.2				ug/L	74699	Standard
	Be	9	526.7	6.5	**0.5004**	0.031	6.1	ug/L	8	Standard
	Al	27	8237088.6	1.8	**46.1607**	0.953	2.1	ug/L	1493	Standard
	Sc	45	76241.4	2.3				ug/L	61029	Standard
	Ti	47	9939.3	1.0	**23.0163**	0.554	2.4	ug/L	35	Standard
	V	51	146708.3	2.5	**16.9369**	0.672	4.0	ug/L	1435	Standard
	Cr	52	214286.2	1.5	**24.4749**	0.700	2.9	ug/L	7635	Standard
	Cr	53	25651.7	1.8	**24.1415**	0.427	1.8	ug/L	363	Standard
	Mn	55	2369893.5	2.4	**300.0787**	12.076	4.0	ug/L	747	Standard
	Co	59	42091.1	2.2	**5.5844**	0.210	3.8	ug/L	234	Standard
	Ni	60	29674.7	1.4	**13.8532**	0.382	2.8	ug/L	215	Standard
	Cu	65	80108.6	1.5	**37.8555**	1.188	3.1	ug/L	104	Standard
	Zn	66	402296.4	1.3	**324.3434**	9.485	2.9	ug/L	363	Standard
>	**Ge**	72	561626.1	1.7				ug/L	495142	Standard
	As	75	4613.8	0.6	**3.6915**	0.048	1.3	ug/L	-50	Standard
	Se	82	73.3	11.4	**0.4501**	0.057	12.7	ug/L	14	Standard
	Se-1	77	107.3	9.4	**0.6736**	0.125	18.5	ug/L	42	Standard
>	**Ga**	71	10595.4	4.5				mg/L	42	Standard
	Rb	85	117987.7	1.5				ug/L	17	Standard
	Y	89	650208.5	0.3				ug/L	417098	Standard
>	**Rh**	103	85.0	38.6				ug/L	13	Standard
	Mo	98	1074.4	2.1	**0.3404**	0.008	2.3	ug/L	11	Standard
	Ag	107	1521.7	2.8	**0.1876**	0.005	2.8	ug/L	68	Standard
	Cd	111	14943.9	2.9	**6.1278**	0.124	2.0	mg/L	2	Standard
	Cd	114	36335.4	1.3	**6.0807**	0.042	0.7	ug/L	12	Standard
>	**In**	115	684218.1	1.0				ug/L	587441	Standard
	Sn	118	4600.7	0.6	**0.5815**	0.007	1.3	ug/L	497	Standard
	Sb	123	346.8	6.2	**0.0596**	0.003	5.7	ug/L	78	Standard
	Ba	135	305952.3	0.8	**128.3272**	1.108	0.9	ug/L	24	Standard
	Ce	140	926252.0	0.8				ug/L	25	Standard
>	**Tb**	159	1067500.9	0.3				ug/L	939701	Standard
	Ho	165	12695.3	1.4				ug/L	10	Standard
	Tl	203	780.0	9.1	**0.0850**	0.009	10.5	ug/L	4	Standard
	Tl	205	700.0	0.7	**0.0898**	0.001	1.1	ug/L	2	Standard
	Pb	206	317389.9	0.7	**54.3657**	1.082	2.0	ug/L	240	Standard
	Pb	207	249270.6	1.1	**48.0507**	1.100	2.3	ug/L	198	Standard
	Pb	208	1104553.9	2.1	**53.8955**	1.488	2.8	ug/L	883	Standard
	U	238	5524.0	2.1	**0.7309**	0.022	3.0	ug/L	3	Standard
>	**Bi**	209	572007.3	1.4				ug/L	523984	Standard

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Na	23	8.3	34.6	**77.0658**	27.245	35.4	mg/L	0	Standard
Mg	24	545.0	4.9	**0.4986**	0.038	7.7	mg/L	37	Standard
K	39	528.3	15.8	**0.8195**	0.134	16.4	mg/L	38	Standard
Ca	43	966.7	6.0	**46.3930**	3.592	7.7	mg/L	10	Standard
Fe	54	12851.8	4.3	**8.5861**	0.399	4.6	mg/L	179	Standard
Fe	57	3822.2	7.3	**9.3402**	1.007	10.8	mg/L	335	Standard
Sc-1	45	76241.4	2.3				mg/L	61029	Standard
Cl	35	29717.8	2.2				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	3207.0	9.1				ug/L	1547	Standard
P	31	20467.1	0.8				ug/L	15286	Standard
S	34	2505.2	3.0				ug/L	1572	Standard
Sr	88	263.3	8.6				ug/L	73	Standard
C	12	196.7	5.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	123.3	46.8				mg/L	3	Standard
Dy	164	19864.2	0.8				mg/L	6	Standard
Ho-1	165	12695.3	1.4				mg/L	10	Standard
Er	166	11821.3	4.6				mg/L	13	Standard
I	127	41200.9	0.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		121.413	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		113.427	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	116.474
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	109.165
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606120605PS WG574690-01
Sample Date/Time: Wednesday, June 29, 2016 18:28:41
Number of Replicates: 3
Autosampler Position: 244
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85371.5	1.3				ug/L	74699	Standard
	Be	9	57838.5	0.7	**57.4989**	0.995	1.7	ug/L	8	Standard
	Al	27	8190235.3	0.9	**48.7593**	1.052	2.2	ug/L	1493	Standard
	Sc	45	74174.5	1.1				ug/L	61029	Standard
	Ti	47	9905.9	1.1	**22.7993**	0.140	0.6	ug/L	35	Standard
	V	51	615589.0	1.1	**71.2575**	1.604	2.3	ug/L	1435	Standard
	Cr	52	662720.1	2.0	**77.3523**	0.990	1.3	ug/L	7635	Standard
	Cr	53	81212.1	1.6	**76.6855**	0.228	0.3	ug/L	363	Standard
	Mn	55	2850355.8	1.2	**358.7372**	7.553	2.1	ug/L	747	Standard
	Co	59	453959.9	1.8	**60.2304**	1.747	2.9	ug/L	234	Standard
	Ni	60	139316.4	1.9	**65.0924**	0.607	0.9	ug/L	215	Standard
	Cu	65	189057.7	1.5	**88.9267**	0.405	0.5	ug/L	104	Standard
	Zn	66	476114.4	1.0	**381.6097**	5.307	1.4	ug/L	363	Standard
>	**Ge**	72	564919.1	1.3				ug/L	495142	Standard
	As	75	71672.0	0.5	**56.1469**	0.522	0.9	ug/L	-50	Standard
	Se	82	6681.0	0.4	**53.2203**	0.482	0.9	ug/L	14	Standard
	Se-1	77	4575.0	1.8	**54.2855**	1.161	2.1	ug/L	42	Standard
>	**Ga**	71	10925.6	2.3				mg/L	42	Standard
	Rb	85	119128.2	1.4				ug/L	17	Standard
	Y	89	658944.3	2.5				ug/L	417098	Standard
>	**Rh**	103	98.3	24.0				ug/L	13	Standard
	Mo	98	1073.3	2.3	**0.3534**	0.015	4.1	ug/L	11	Standard
	Ag	107	364831.9	0.7	**49.9049**	1.416	2.8	ug/L	68	Standard
	Cd	111	132655.1	1.4	**56.5569**	1.029	1.8	mg/L	2	Standard
	Cd	114	321468.3	0.7	**55.8946**	1.680	3.0	ug/L	12	Standard
>	**In**	115	659074.5	2.5				ug/L	587441	Standard
	Sn	118	1318.4	1.7	**0.1066**	0.008	7.5	ug/L	497	Standard
	Sb	123	258576.1	0.4	**49.3799**	1.200	2.4	ug/L	78	Standard
	Ba	135	409891.1	0.5	**178.5483**	4.068	2.3	ug/L	24	Standard
	Ce	140	929186.0	0.4				ug/L	25	Standard
>	**Tb**	159	1023915.1	1.8				ug/L	939701	Standard
	Ho	165	12935.5	3.1				ug/L	10	Standard
	Tl	203	455240.8	0.8	**52.4471**	0.837	1.6	ug/L	4	Standard
	Tl	205	420642.4	0.2	**55.8346**	0.392	0.7	ug/L	2	Standard
	Pb	206	614831.5	0.9	**109.2366**	1.843	1.7	ug/L	240	Standard
	Pb	207	503849.3	0.9	**100.7500**	1.617	1.6	ug/L	198	Standard
	Pb	208	2170185.0	1.2	**109.8441**	2.227	2.0	ug/L	883	Standard
	U	238	393858.5	1.0	**54.3381**	1.023	1.9	ug/L	3	Standard
>	**Bi**	209	551780.7	0.8				ug/L	523984	Standard

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Na	23	10.0	86.6	**95.2332**	83.153	87.3	mg/L	0	Standard
Mg	24	453.3	5.6	**0.4164**	0.027	6.4	mg/L	37	Standard
K	39	480.0	7.5	**0.7589**	0.067	8.8	mg/L	38	Standard
Ca	43	940.0	10.6	**46.3668**	5.650	12.2	mg/L	10	Standard
Fe	54	12349.5	1.2	**8.4763**	0.023	0.3	mg/L	179	Standard
Fe	57	3702.1	2.7	**9.2777**	0.167	1.8	mg/L	335	Standard
Sc-1	45	74174.5	1.1				mg/L	61029	Standard
Cl	35	30087.8	0.9				ug/L	20195	Standard
Kr	83	2.7	43.3				ug/L	4	Standard
Br	81	3260.4	2.1				ug/L	1547	Standard
P	31	20787.6	1.7				ug/L	15286	Standard
S	34	2500.2	2.8				ug/L	1572	Standard
Sr	88	245.0	12.4				ug/L	73	Standard
C	12	160.0	54.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	103.3	22.3				mg/L	3	Standard
Dy	164	20338.3	3.5				mg/L	6	Standard
Ho-1	165	12935.5	3.1				mg/L	10	Standard
Er	166	11817.9	3.9				mg/L	13	Standard
I	127	39775.5	3.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		114.288	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		114.092	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	112.194
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	105.305
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1606120605SDL WG574690-02
Sample Date/Time: Wednesday, June 29, 2016 18:31:53
Number of Replicates: 3
Autosampler Position: 245
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84476.5	1.1				ug/L	74699	Standard
	Be	9	178.3	18.7	**0.1869**	0.035	18.6	ug/L	8	Standard
	Al	27	1736036.7	3.1	**10.4319**	0.283	2.7	ug/L	1493	Standard
	Sc	45	72059.3	1.7				ug/L	61029	Standard
	Ti	47	2123.5	6.6	**4.6249**	0.308	6.7	ug/L	35	Standard
	V	51	32734.7	3.8	**3.4666**	0.135	3.9	ug/L	1435	Standard
	Cr	52	51911.1	1.7	**4.8949**	0.101	2.1	ug/L	7635	Standard
	Cr	53	5774.4	3.1	**4.9492**	0.156	3.2	ug/L	363	Standard
	Mn	55	492914.2	2.0	**59.6732**	1.219	2.0	ug/L	747	Standard
	Co	59	9193.8	6.0	**1.1391**	0.070	6.1	ug/L	234	Standard
	Ni	60	6665.5	3.0	**2.8840**	0.083	2.9	ug/L	215	Standard
	Cu	65	17774.1	0.7	**7.9654**	0.025	0.3	ug/L	104	Standard
	Zn	66	87339.7	0.8	**67.1049**	0.286	0.4	ug/L	363	Standard
>	**Ge**	72	585998.9	0.5				ug/L	495142	Standard
	As	75	970.2	5.1	**0.7914**	0.035	4.4	ug/L	-50	Standard
	Se	82	25.1	35.6	**0.0547**	0.068	124.2	ug/L	14	Standard
	Se-1	77	82.0	5.6	**0.3262**	0.050	15.4	ug/L	42	Standard
>	**Ga**	71	2373.5	5.4				mg/L	42	Standard
	Rb	85	23598.4	1.4				ug/L	17	Standard
	Y	89	515408.4	0.8				ug/L	417098	Standard
>	**Rh**	103	21.7	35.3				ug/L	13	Standard
	Mo	98	369.9	37.1	**0.1174**	0.046	39.0	ug/L	11	Standard
	Ag	107	699.0	38.5	**0.0822**	0.037	44.7	ug/L	68	Standard
	Cd	111	3080.1	3.0	**1.2985**	0.040	3.1	mg/L	2	Standard
	Cd	114	7389.1	5.7	**1.2756**	0.072	5.6	ug/L	12	Standard
>	**In**	115	662403.8	0.2				ug/L	587441	Standard
	Sn	118	660.0	13.5	**0.0055**	0.013	245.5	ug/L	497	Standard
	Sb	123	2141.2	12.8	**0.4025**	0.052	13.0	ug/L	78	Standard
	Ba	135	63716.0	0.4	**27.5914**	0.127	0.5	ug/L	24	Standard
	Ce	140	193219.3	1.3				ug/L	25	Standard
>	**Tb**	159	1027182.9	1.4				ug/L	939701	Standard
	Ho	165	2611.9	6.2				ug/L	10	Standard
	Tl	203	353.7	43.7	**0.0374**	0.017	46.4	ug/L	4	Standard
	Tl	205	421.7	67.1	**0.0541**	0.036	67.5	ug/L	2	Standard
	Pb	206	67035.7	2.8	**11.3788**	0.381	3.4	ug/L	240	Standard
	Pb	207	53097.6	2.6	**10.1377**	0.324	3.2	ug/L	198	Standard
	Pb	208	229986.8	1.7	**11.1165**	0.256	2.3	ug/L	883	Standard
	U	238	1351.4	18.8	**0.1748**	0.035	19.9	ug/L	3	Standard
>	**Bi**	209	574350.4	0.6				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	130.0	13.3	**0.0772**	0.020	26.0	mg/L	37	Standard
K	39	128.3	6.0	**0.1263**	0.018	14.2	mg/L	38	Standard
Ca	43	216.7	23.7	**9.0911**	2.889	31.8	mg/L	10	Standard
Fe	54	2661.6	0.9	**1.7733**	0.039	2.2	mg/L	179	Standard
Fe	57	965.0	5.3	**1.7027**	0.101	5.9	mg/L	335	Standard
> **Sc-1**	45	72059.3	1.7				mg/L	61029	Standard
Cl	35	30260.9	1.5				ug/L	20195	Standard
Kr	83	0.3	173.2				ug/L	4	Standard
Br	81	2210.2	10.2				ug/L	1547	Standard
P	31	20780.9	2.4				ug/L	15286	Standard
S	34	2430.2	2.3				ug/L	1572	Standard
Sr	88	83.3	13.9				ug/L	73	Standard
C	12	56.7	40.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	17.3				mg/L	3	Standard
Dy	164	4484.9	5.6				mg/L	6	Standard
Ho-1	165	2611.9	6.2				mg/L	10	Standard
Er	166	2556.9	13.6				mg/L	13	Standard
I	127	10483.6	6.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.090	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		118.350	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.761
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.612
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606120605SDL WG574690-02
Sample Date/Time: Wednesday, June 29, 2016 18:35:04
Number of Replicates: 3
Autosampler Position: 246
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83239.9	3.6				ug/L	74699	Standard
	Be	9	38.3	32.8	**0.0467**	0.013	27.9	ug/L	8	Standard
	Al	27	353337.7	1.0	**2.1460**	0.078	3.6	ug/L	1493	Standard
	Sc	45	70061.7	2.7				ug/L	61029	Standard
	Ti	47	444.3	5.4	**0.9019**	0.065	7.2	ug/L	35	Standard
	V	51	7638.3	1.2	**0.6761**	0.009	1.3	ug/L	1435	Standard
	Cr	52	17382.6	1.1	**0.9981**	0.034	3.5	ug/L	7635	Standard
	Cr	53	1533.4	2.6	**1.0999**	0.009	0.8	ug/L	363	Standard
	Mn	55	100723.4	1.5	**12.3208**	0.101	0.8	ug/L	747	Standard
	Co	59	1988.5	0.8	**0.2223**	0.008	3.5	ug/L	234	Standard
	Ni	60	1493.7	0.8	**0.5638**	0.012	2.1	ug/L	215	Standard
	Cu	65	3674.4	3.3	**1.5981**	0.060	3.8	ug/L	104	Standard
	Zn	66	19238.9	1.8	**14.7255**	0.173	1.2	ug/L	363	Standard
>	**Ge**	72	574541.2	2.2				ug/L	495142	Standard
	As	75	156.2	2.1	**0.1799**	0.005	2.7	ug/L	-50	Standard
	Se	82	23.9	29.5	**0.0491**	0.053	108.8	ug/L	14	Standard
	Se-1	77	58.0	21.2	**0.0603**	0.130	215.1	ug/L	42	Standard
>	**Ga**	71	518.3	4.3				mg/L	42	Standard
	Rb	85	4807.4	2.9				ug/L	17	Standard
	Y	89	501442.7	1.9				ug/L	417098	Standard
>	**Rh**	103	25.0	20.0				ug/L	13	Standard
	Mo	98	84.6	15.3	**0.0217**	0.004	18.8	ug/L	11	Standard
	Ag	107	254.3	9.6	**0.0208**	0.003	15.4	ug/L	68	Standard
	Cd	111	620.8	2.0	**0.2487**	0.004	1.5	mg/L	2	Standard
	Cd	114	1552.7	9.2	**0.2596**	0.025	9.8	ug/L	12	Standard
>	**In**	115	679737.8	0.5				ug/L	587441	Standard
	Sn	118	525.0	13.7	**-0.0171**	0.010	60.3	ug/L	497	Standard
	Sb	123	593.1	26.9	**0.1056**	0.030	28.3	ug/L	78	Standard
	Ba	135	12802.7	1.3	**5.3901**	0.099	1.8	ug/L	24	Standard
	Ce	140	39412.9	3.5				ug/L	25	Standard
>	**Tb**	159	1032176.9	1.0				ug/L	939701	Standard
	Ho	165	550.0	19.7				ug/L	10	Standard
	Tl	203	66.7	15.4	**0.0056**	0.001	20.8	ug/L	4	Standard
	Tl	205	78.3	41.0	**0.0102**	0.004	40.5	ug/L	2	Standard
	Pb	206	13522.4	0.6	**2.2309**	0.023	1.0	ug/L	240	Standard
	Pb	207	10801.2	2.0	**1.9994**	0.022	1.1	ug/L	198	Standard
	Pb	208	47468.1	0.8	**2.2283**	0.042	1.9	ug/L	883	Standard
	U	238	258.3	8.4	**0.0297**	0.002	8.2	ug/L	3	Standard
>	**Bi**	209	576211.7	1.3				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	46.7	16.4	**-0.0125**	0.009	74.1	mg/L	37	Standard
K	39	58.3	35.7	**-0.0022**	0.039	1787.9	mg/L	38	Standard
Ca	43	95.0	32.0	**2.7333**	1.777	65.0	mg/L	10	Standard
Fe	54	697.3	2.7	**0.3769**	0.020	5.3	mg/L	179	Standard
Fe	57	380.0	7.9	**0.0519**	0.104	201.0	mg/L	335	Standard
> **Sc-1**	45	70061.7	2.7				mg/L	61029	Standard
Cl	35	30787.9	1.4				ug/L	20195	Standard
Kr	83	2.3	107.9				ug/L	4	Standard
Br	81	2130.1	1.6				ug/L	1547	Standard
P	31	20966.2	4.2				ug/L	15286	Standard
S	34	2485.2	3.8				ug/L	1572	Standard
Sr	88	90.0	33.3				ug/L	73	Standard
C	12	40.0	66.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	3	Standard
Dy	164	970.4	12.1				mg/L	6	Standard
Ho-1	165	550.0	19.7				mg/L	10	Standard
Er	166	480.0	14.6				mg/L	13	Standard
I	127	3620.4	13.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.434	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		116.036	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		115.712
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.967
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 18:38:18
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	82768.9	2.2				ug/L	74699	Standard
	Be	9	55586.8	2.9	**56.9851**	0.437	0.8	ug/L	8	Standard
	Al	27	8619622.5	1.7	**52.9268**	0.666	1.3	ug/L	1493	Standard
	Sc	45	69535.9	1.6				ug/L	61029	Standard
	Ti	47	45959.0	2.5	**108.3957**	2.700	2.5	ug/L	35	Standard
	V	51	452339.2	1.9	**53.3985**	1.095	2.1	ug/L	1435	Standard
	Cr	52	452917.5	1.6	**53.6621**	0.813	1.5	ug/L	7635	Standard
	Cr	53	54972.9	2.4	**52.8966**	1.385	2.6	ug/L	363	Standard
	Mn	55	414134.0	1.2	**53.0785**	0.725	1.4	ug/L	747	Standard
	Co	59	411024.9	0.5	**55.6590**	0.257	0.5	ug/L	234	Standard
	Ni	60	111206.0	1.9	**53.0242**	0.984	1.9	ug/L	215	Standard
	Cu	65	110023.1	1.1	**52.7940**	0.716	1.4	ug/L	104	Standard
	Zn	66	64745.4	0.8	**52.5833**	0.259	0.5	ug/L	363	Standard
>	Ge	72	553341.4	0.3				ug/L	495142	Standard
	As	75	65551.1	0.4	**52.4265**	0.227	0.4	ug/L	-50	Standard
	Se	82	6664.4	1.0	**54.1963**	0.405	0.7	ug/L	14	Standard
	Se-1	77	4501.0	1.7	**54.5222**	0.959	1.8	ug/L	42	Standard
>	Ga	71	63.3	38.9				mg/L	42	Standard
	Rb	85	948.4	4.5				ug/L	17	Standard
	Y	89	490323.1	1.2				ug/L	417098	Standard
>	Rh	103	18.3	41.7				ug/L	13	Standard
	Mo	98	304786.5	0.3	**99.6729**	0.315	0.3	ug/L	11	Standard
	Ag	107	371315.6	1.3	**49.6520**	0.733	1.5	ug/L	68	Standard
	Cd	111	119443.2	1.0	**49.7891**	0.404	0.8	mg/L	2	Standard
	Cd	114	290803.0	0.5	**49.4253**	0.213	0.4	ug/L	12	Standard
>	In	115	673907.8	0.2				ug/L	587441	Standard
	Sn	118	339134.4	2.1	**50.5123**	1.079	2.1	ug/L	497	Standard
	Sb	123	262026.6	0.8	**48.9184**	0.455	0.9	ug/L	78	Standard
	Ba	135	111822.5	0.7	**47.6088**	0.434	0.9	ug/L	24	Standard
	Ce	140	206.7	14.6				ug/L	25	Standard
>	Tb	159	1024624.4	0.5				ug/L	939701	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	457896.5	0.3	**51.5737**	0.953	1.8	ug/L	4	Standard
	Tl	205	420019.2	1.0	**54.5041**	0.795	1.5	ug/L	2	Standard
	Pb	206	290158.6	1.2	**50.3552**	0.541	1.1	ug/L	240	Standard
	Pb	207	256755.7	1.2	**50.1530**	0.630	1.3	ug/L	198	Standard
	Pb	208	1071548.3	0.3	**52.9883**	1.261	2.4	ug/L	883	Standard
	U	238	389229.1	0.1	**52.5000**	1.135	2.2	ug/L	3	Standard
>	Bi	209	564495.9	2.1				ug/L	523984	Standard

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Na	23	1.7	173.2	**16.7614**	29.023	173.2	mg/L	0	Standard
Mg	24	4642.4	0.2	**5.1955**	0.100	1.9	mg/L	37	Standard
K	39	2168.5	2.0	**4.0939**	0.144	3.5	mg/L	38	Standard
Ca	43	86.7	35.3	**2.2659**	1.624	71.7	mg/L	10	Standard
Fe	54	7113.4	2.2	**5.1545**	0.030	0.6	mg/L	179	Standard
Fe	57	2041.8	2.3	**5.0193**	0.241	4.8	mg/L	335	Standard
> **Sc-1**	45	69535.9	1.6				mg/L	61029	Standard
Cl	35	30041.8	1.0				ug/L	20195	Standard
Kr	83	1.3	86.6				ug/L	4	Standard
Br	81	1843.4	4.1				ug/L	1547	Standard
P	31	21683.8	2.5				ug/L	15286	Standard
S	34	2823.6	5.0				ug/L	1572	Standard
Sr	88	53.3	39.0				ug/L	73	Standard
C	12	53.3	78.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	12.9	179.7				mg/L	6	Standard
Ho-1	165	8.3	34.6				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	2093.5	24.6				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	113.970		
	Al	27	105.854		
	Sc	45			
	Ti	47	108.396		
	V	51	106.797		
	Cr	52	107.324		
	Cr	53			
	Mn	55	106.157		
	Co	59	111.318		
	Ni	60	106.048		
	Cu	65	105.588		
	Zn	66	105.167		
>	Ge	72		111.754	
	As	75	104.853		
	Se	82	108.393		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	99.673		
Ag	107	99.304		
Cd	111	99.578		
Cd	114			
In	115		114.719	
Sn	118	101.025		
Sb	123	97.837		
Ba	135	95.218		
Ce	140			
Tb	159			
Ho	165			
Tl	203	103.147		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.977		
U	238	105.000		
Bi	209		107.731	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Co	59	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 18:41:29
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83048.8	2.8				ug/L	74699	Standard
	Be	9	23.3	68.9	**0.0313**	0.016	52.2	ug/L	8	Standard
	Al	27	3078.7	25.1	**0.0054**	0.004	78.6	ug/L	1493	Standard
	Sc	45	71367.7	1.6				ug/L	61029	Standard
	Ti	47	35.3	33.5	**-0.0277**	0.025	91.3	ug/L	35	Standard
	V	51	1419.9	5.2	**-0.0309**	0.006	18.5	ug/L	1435	Standard
	Cr	52	7844.0	0.2	**-0.0958**	0.021	21.7	ug/L	7635	Standard
	Cr	53	443.3	5.7	**0.0910**	0.034	37.3	ug/L	363	Standard
	Mn	55	990.7	12.0	**-0.0236**	0.012	50.6	ug/L	747	Standard
	Co	59	281.0	9.0	**-0.0000**	0.003	39793.0	ug/L	234	Standard
	Ni	60	196.7	7.3	**-0.0319**	0.005	14.4	ug/L	215	Standard
	Cu	65	145.3	12.4	**-0.0353**	0.007	21.2	ug/L	104	Standard
	Zn	66	464.0	9.4	**-0.0826**	0.026	32.0	ug/L	363	Standard
>	**Ge**	72	564975.6	2.4				ug/L	495142	Standard
	As	75	-39.3	63.0	**0.0286**	0.020	68.3	ug/L	-50	Standard
	Se	82	26.6	20.4	**0.0737**	0.038	51.8	ug/L	14	Standard
	Se-1	77	58.7	15.8	**0.0805**	0.100	124.7	ug/L	42	Standard
>	**Ga**	71	41.7	25.0				mg/L	42	Standard
	Rb	85	35.0	75.6				ug/L	17	Standard
	Y	89	486175.7	0.9				ug/L	417098	Standard
>	**Rh**	103	21.7	58.1				ug/L	13	Standard
	Mo	98	275.2	23.2	**0.0821**	0.020	24.6	ug/L	11	Standard
	Ag	107	144.3	16.7	**0.0059**	0.003	51.4	ug/L	68	Standard
	Cd	111	18.2	29.8	**-0.0005**	0.002	416.8	mg/L	2	Standard
	Cd	114	40.0	61.5	**0.0045**	0.004	89.7	ug/L	12	Standard
>	**In**	115	690622.1	0.6				ug/L	587441	Standard
	Sn	118	806.7	10.4	**0.0228**	0.013	56.6	ug/L	497	Standard
	Sb	123	553.4	29.9	**0.0967**	0.030	31.3	ug/L	78	Standard
	Ba	135	70.0	42.9	**0.0130**	0.012	94.6	ug/L	24	Standard
	Ce	140	61.7	54.0				ug/L	25	Standard
>	**Tb**	159	1047202.6	1.6				ug/L	939701	Standard
	Ho	165	16.7	34.6				ug/L	10	Standard
	Tl	203	75.3	48.5	**0.0063**	0.004	58.9	ug/L	4	Standard
	Tl	205	73.3	27.6	**0.0093**	0.002	26.3	ug/L	2	Standard
	Pb	206	333.0	14.3	**-0.0156**	0.007	42.7	ug/L	240	Standard
	Pb	207	293.0	14.2	**-0.0150**	0.006	43.1	ug/L	198	Standard
	Pb	208	1234.7	14.5	**-0.0154**	0.007	47.2	ug/L	883	Standard
	U	238	61.3	33.0	**0.0035**	0.002	69.2	ug/L	3	Standard
>	**Bi**	209	587080.9	2.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	38.3	15.1	**-0.0227**	0.007	30.4	mg/L	37	Standard
K	39	33.3	22.9	**-0.0512**	0.014	27.0	mg/L	38	Standard
Ca	43	28.3	50.9	**-0.9868**	0.802	81.3	mg/L	10	Standard
Fe	54	132.7	11.9	**-0.0421**	0.011	25.9	mg/L	179	Standard
Fe	57	280.0	10.7	**-0.2593**	0.100	38.4	mg/L	335	Standard
Sc-1	45	71367.7	1.6				mg/L	61029	Standard
Cl	35	29768.6	1.4				ug/L	20195	Standard
Kr	83	1.3	173.2				ug/L	4	Standard
Br	81	2106.8	7.7				ug/L	1547	Standard
P	31	21775.6	2.2				ug/L	15286	Standard
S	34	2523.5	3.0				ug/L	1572	Standard
Sr	88	70.0	49.5				ug/L	73	Standard
C	12	66.7	48.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	19.2	48.3				mg/L	6	Standard
Ho-1	165	16.7	34.6				mg/L	10	Standard
Er	166	16.7	91.7				mg/L	13	Standard
I	127	1905.1	33.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		114.104	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		117.564
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		112.042
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606120701
Sample Date/Time: Wednesday, June 29, 2016 18:44:42
Number of Replicates: 3
Autosampler Position: 247
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82529.2	0.7				ug/L	74699	Standard
	Be	9	748.4	11.5	**0.7773**	0.092	11.9	ug/L	8	Standard
	Al	27	5186124.5	1.1	**31.9282**	0.368	1.2	ug/L	1493	Standard
	Sc	45	73214.8	0.3				ug/L	61029	Standard
	Ti	47	12465.8	1.5	**28.7779**	0.271	0.9	ug/L	35	Standard
	V	51	254152.3	1.7	**29.3595**	0.344	1.2	ug/L	1435	Standard
	Cr	52	145419.2	1.0	**16.2106**	0.127	0.8	ug/L	7635	Standard
	Cr	53	17483.4	2.8	**16.2818**	0.208	1.3	ug/L	363	Standard
	Mn	55	3993207.5	1.0	**503.6001**	3.344	0.7	ug/L	747	Standard
	Co	59	68748.0	1.0	**9.1067**	0.083	0.9	ug/L	234	Standard
	Ni	60	27938.1	3.3	**12.9787**	0.214	1.6	ug/L	215	Standard
	Cu	65	24664.7	1.5	**11.5352**	0.050	0.4	ug/L	104	Standard
	Zn	66	148101.8	1.7	**118.6204**	0.288	0.2	ug/L	363	Standard
>	**Ge**	72	563786.2	1.7				ug/L	495142	Standard
	As	75	6453.5	1.8	**5.1196**	0.031	0.6	ug/L	-50	Standard
	Se	82	62.5	2.1	**0.3624**	0.012	3.2	ug/L	14	Standard
	Se-1	77	114.0	16.7	**0.7504**	0.247	32.9	ug/L	42	Standard
>	**Ga**	71	11409.3	2.4				mg/L	42	Standard
	Rb	85	132848.2	0.6				ug/L	17	Standard
	Y	89	719521.7	0.4				ug/L	417098	Standard
>	**Rh**	103	43.3	43.7				ug/L	13	Standard
	Mo	98	809.7	3.4	**0.2640**	0.011	4.2	ug/L	11	Standard
	Ag	107	5298.9	1.5	**0.7088**	0.004	0.5	ug/L	68	Standard
	Cd	111	3980.4	2.6	**1.6822**	0.055	3.3	mg/L	2	Standard
	Cd	114	9713.7	1.4	**1.6793**	0.030	1.8	ug/L	12	Standard
>	**In**	115	661793.4	1.1				ug/L	587441	Standard
	Sn	118	911.7	2.8	**0.0439**	0.005	10.9	ug/L	497	Standard
	Sb	123	350.1	17.1	**0.0624**	0.012	19.0	ug/L	78	Standard
	Ba	135	341983.5	0.6	**148.3035**	0.748	0.5	ug/L	24	Standard
	Ce	140	2710163.1	0.4				ug/L	25	Standard
>	**Tb**	159	1034801.7	0.1				ug/L	939701	Standard
	Ho	165	19319.0	1.7				ug/L	10	Standard
	Tl	203	872.7	2.5	**0.0967**	0.002	2.5	ug/L	4	Standard
	Tl	205	843.4	5.5	**0.1098**	0.006	5.6	ug/L	2	Standard
	Pb	206	283131.4	1.0	**49.2257**	0.472	1.0	ug/L	240	Standard
	Pb	207	230315.5	1.3	**45.0642**	0.519	1.2	ug/L	198	Standard
	Pb	208	999318.0	0.9	**49.4947**	0.507	1.0	ug/L	883	Standard
	U	238	4899.8	1.7	**0.6576**	0.010	1.6	ug/L	3	Standard
>	**Bi**	209	563366.5	0.2				ug/L	523984	Standard

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Na	23	5.0	0.0	**48.0405**	0.159	0.3	mg/L	0	Standard
Mg	24	875.0	7.7	**0.8766**	0.075	8.6	mg/L	37	Standard
K	39	536.7	5.1	**0.8747**	0.054	6.2	mg/L	38	Standard
Ca	43	571.7	16.7	**27.5670**	4.925	17.9	mg/L	10	Standard
Fe	54	14788.8	1.9	**10.3138**	0.228	2.2	mg/L	179	Standard
Fe	57	4073.9	8.9	**10.4697**	1.059	10.1	mg/L	335	Standard
> **Sc-1**	45	73214.8	0.3				mg/L	61029	Standard
Cl	35	28264.3	0.5				ug/L	20195	Standard
Kr	83	2.0	0.0				ug/L	4	Standard
Br	81	3023.6	7.8				ug/L	1547	Standard
P	31	20599.0	2.2				ug/L	15286	Standard
S	34	2595.2	1.7				ug/L	1572	Standard
Sr	88	203.3	16.4				ug/L	73	Standard
C	12	130.0	40.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	150.0	43.7				mg/L	3	Standard
Dy	164	31532.4	1.2				mg/L	6	Standard
Ho-1	165	19319.0	1.7				mg/L	10	Standard
Er	166	17720.4	2.1				mg/L	13	Standard
I	127	25842.0	0.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.483	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		113.863	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.657
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.516
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606120702
Sample Date/Time: Wednesday, June 29, 2016 18:47:54
Number of Replicates: 3
Autosampler Position: 248
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85381.8	3.5				ug/L	74699	Standard
	Be	9	623.3	3.3	**0.6272**	0.018	2.8	ug/L	8	Standard
	Al	27	4620203.8	1.9	**27.5041**	0.647	2.4	ug/L	1493	Standard
	Sc	45	75576.5	3.2				ug/L	61029	Standard
	Ti	47	6206.6	0.5	**14.3105**	0.192	1.3	ug/L	35	Standard
	V	51	134133.3	1.8	**15.4410**	0.153	1.0	ug/L	1435	Standard
	Cr	52	96500.3	0.7	**10.4416**	0.108	1.0	ug/L	7635	Standard
	Cr	53	11224.2	2.7	**10.3669**	0.448	4.3	ug/L	363	Standard
	Mn	55	3577332.4	1.7	**452.2740**	8.609	1.9	ug/L	747	Standard
	Co	59	47345.9	1.4	**6.2757**	0.086	1.4	ug/L	234	Standard
	Ni	60	24689.4	1.0	**11.4869**	0.101	0.9	ug/L	215	Standard
	Cu	65	29948.9	2.1	**14.0640**	0.244	1.7	ug/L	104	Standard
	Zn	66	164514.2	1.7	**132.1464**	1.033	0.8	ug/L	363	Standard
>	**Ge**	72	562390.3	1.6				ug/L	495142	Standard
	As	75	2776.0	3.7	**2.2412**	0.056	2.5	ug/L	-50	Standard
	Se	82	106.3	15.9	**0.7139**	0.124	17.3	ug/L	14	Standard
	Se-1	77	132.3	11.0	**0.9743**	0.190	19.5	ug/L	42	Standard
>	**Ga**	71	12940.5	1.1				mg/L	42	Standard
	Rb	85	250383.8	1.2				ug/L	17	Standard
	Y	89	695657.2	0.8				ug/L	417098	Standard
>	**Rh**	103	35.0	62.3				ug/L	13	Standard
	Mo	98	1645.8	3.3	**0.5188**	0.023	4.4	ug/L	11	Standard
	Ag	107	671.7	7.7	**0.0746**	0.007	9.4	ug/L	68	Standard
	Cd	111	2017.5	2.8	**0.8116**	0.028	3.5	mg/L	2	Standard
	Cd	114	4822.6	1.0	**0.7964**	0.005	0.7	ug/L	12	Standard
>	**In**	115	691832.3	1.1				ug/L	587441	Standard
	Sn	118	616.7	6.1	**-0.0050**	0.006	126.3	ug/L	497	Standard
	Sb	123	493.2	8.1	**0.0855**	0.008	9.1	ug/L	78	Standard
	Ba	135	281871.8	0.7	**116.9321**	1.732	1.5	ug/L	24	Standard
	Ce	140	1017603.0	1.2				ug/L	25	Standard
>	**Tb**	159	1062512.9	1.9				ug/L	939701	Standard
	Ho	165	14416.9	1.8				ug/L	10	Standard
	Tl	203	1059.0	3.0	**0.1166**	0.005	4.1	ug/L	4	Standard
	Tl	205	896.7	14.9	**0.1158**	0.019	16.8	ug/L	2	Standard
	Pb	206	100858.6	1.2	**17.3191**	0.532	3.1	ug/L	240	Standard
	Pb	207	81475.8	1.0	**15.7413**	0.458	2.9	ug/L	198	Standard
	Pb	208	356757.6	0.9	**17.4487**	0.446	2.6	ug/L	883	Standard
	U	238	6683.8	3.5	**0.8902**	0.048	5.4	ug/L	3	Standard
>	**Bi**	209	569106.4	1.9				ug/L	523984	Standard

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Na	23	3.3	86.6	**31.5301**	27.313	86.6	mg/L	0	Standard
Mg	24	745.0	7.0	**0.7121**	0.061	8.5	mg/L	37	Standard
K	39	773.4	6.0	**1.2683**	0.120	9.5	mg/L	38	Standard
Ca	43	171.7	3.4	**6.2441**	0.546	8.7	mg/L	10	Standard
Fe	54	10724.1	1.5	**7.2104**	0.318	4.4	mg/L	179	Standard
Fe	57	2831.9	1.0	**6.7023**	0.187	2.8	mg/L	335	Standard
> **Sc-1**	45	75576.5	3.2				mg/L	61029	Standard
Cl	35	27596.4	1.5				ug/L	20195	Standard
Kr	83	4.0	66.1				ug/L	4	Standard
Br	81	8432.3	2.7				ug/L	1547	Standard
P	31	20674.1	3.5				ug/L	15286	Standard
S	34	2360.2	7.8				ug/L	1572	Standard
Sr	88	120.0	18.2				ug/L	73	Standard
C	12	350.0	15.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	106.7	43.3				mg/L	3	Standard
Dy	164	23142.4	1.5				mg/L	6	Standard
Ho-1	165	14416.9	1.8				mg/L	10	Standard
Er	166	13422.6	4.3				mg/L	13	Standard
I	127	174464.7	3.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.301	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		113.582	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	117.770
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	108.611
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606120702
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Method 6020 - Summary Report

Sample ID: L1606120801
Sample Date/Time: Wednesday, June 29, 2016 18:51:05
Number of Replicates: 3
Autosampler Position: 249
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83030.4	3.3				ug/L	74699	Standard
	Be	9	1115.0	11.0	**1.1453**	0.091	8.0	ug/L	8	Standard
	Al	27	17314833.4	0.9	**106.0421**	2.666	2.5	ug/L	1493	Standard
	Sc	45	77183.1	5.1				ug/L	61029	Standard
	Ti	47	40548.2	1.5	**95.7436**	2.793	2.9	ug/L	35	Standard
	V	51	251782.0	1.4	**29.6946**	1.634	5.5	ug/L	1435	Standard
	Cr	52	243737.7	2.0	**28.4388**	0.710	2.5	ug/L	7635	Standard
	Cr	53	29872.8	2.3	**28.6239**	0.690	2.4	ug/L	363	Standard
	Mn	55	3685844.9	1.5	**474.5740**	27.736	5.8	ug/L	747	Standard
	Co	59	66271.6	1.6	**8.9620**	0.528	5.9	ug/L	234	Standard
	Ni	60	46026.2	2.6	**21.8948**	0.433	2.0	ug/L	215	Standard
	Cu	65	42002.8	1.5	**20.1164**	0.608	3.0	ug/L	104	Standard
	Zn	66	111824.0	2.6	**91.2379**	1.710	1.9	ug/L	363	Standard
>	**Ge**	72	553103.7	4.4				ug/L	495142	Standard
	As	75	5557.5	3.1	**4.5033**	0.093	2.1	ug/L	-50	Standard
	Se	82	102.2	5.1	**0.6977**	0.072	10.3	ug/L	14	Standard
	Se-1	77	134.3	12.1	**1.0314**	0.270	26.2	ug/L	42	Standard
>	**Ga**	71	24266.1	1.0				mg/L	42	Standard
	Rb	85	181545.0	2.7				ug/L	17	Standard
	Y	89	698995.8	3.0				ug/L	417098	Standard
>	**Rh**	103	88.3	6.5				ug/L	13	Standard
	Mo	98	2397.1	2.7	**0.8492**	0.049	5.8	ug/L	11	Standard
	Ag	107	1012.7	3.0	**0.1348**	0.009	6.5	ug/L	68	Standard
	Cd	111	911.2	3.1	**0.4060**	0.012	2.9	mg/L	2	Standard
	Cd	114	2080.2	4.3	**0.3830**	0.011	2.9	ug/L	12	Standard
>	**In**	115	618664.5	3.1				ug/L	587441	Standard
	Sn	118	1240.1	3.1	**0.1071**	0.013	12.0	ug/L	497	Standard
	Sb	123	1640.7	2.7	**0.3299**	0.019	5.8	ug/L	78	Standard
	Ba	135	534847.9	1.0	**248.3132**	9.882	4.0	ug/L	24	Standard
	Ce	140	1227932.9	1.4				ug/L	25	Standard
>	**Tb**	159	991058.9	3.3				ug/L	939701	Standard
	Ho	165	19152.1	0.5				ug/L	10	Standard
	Tl	203	1084.7	2.8	**0.1294**	0.004	2.8	ug/L	4	Standard
	Tl	205	976.7	6.4	**0.1361**	0.004	2.8	ug/L	2	Standard
	Pb	206	122644.8	1.6	**22.8364**	1.340	5.9	ug/L	240	Standard
	Pb	207	98294.5	1.0	**20.5914**	1.111	5.4	ug/L	198	Standard
	Pb	208	423360.3	0.4	**22.4444**	1.000	4.5	ug/L	883	Standard
	U	238	7556.2	1.8	**1.0902**	0.045	4.1	ug/L	3	Standard
>	**Bi**	209	526041.8	4.3				ug/L	523984	Standard

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Na	23	10.0	50.0	**92.8331**	50.540	54.4	mg/L	0	Standard
Mg	24	373.3	13.0	**0.3164**	0.050	15.9	mg/L	37	Standard
K	39	846.7	3.0	**1.3673**	0.064	4.7	mg/L	38	Standard
Ca	43	1881.8	8.7	**91.3781**	4.657	5.1	mg/L	10	Standard
Fe	54	16605.4	3.8	**11.0236**	0.942	8.5	mg/L	179	Standard
Fe	57	5247.6	6.9	**13.0290**	0.645	4.9	mg/L	335	Standard
Sc-1	45	77183.1	5.1				mg/L	61029	Standard
Cl	35	28165.5	0.9				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	3540.4	14.7				ug/L	1547	Standard
P	31	23239.5	5.6				ug/L	15286	Standard
S	34	2426.9	3.5				ug/L	1572	Standard
Sr	88	415.0	11.5				ug/L	73	Standard
C	12	173.3	6.7				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	66.7	60.6				mg/L	3	Standard
Dy	164	30988.1	3.0				mg/L	6	Standard
Ho-1	165	19152.1	0.5				mg/L	10	Standard
Er	166	17717.0	2.5				mg/L	13	Standard
I	127	27493.3	1.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		111.154	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		111.706	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	105.315
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.393
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606120802
Sample Date/Time: Wednesday, June 29, 2016 18:54:17
Number of Replicates: 3
Autosampler Position: 250
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88923.6	2.8				ug/L	74699	Standard
	Be	9	661.7	11.4	**0.6387**	0.067	10.5	ug/L	8	Standard
	Al	27	15492795.6	1.0	**88.5762**	1.812	2.0	ug/L	1493	Standard
	Sc	45	80386.0	1.0				ug/L	61029	Standard
	Ti	47	20524.2	1.6	**45.7756**	1.470	3.2	ug/L	35	Standard
	V	51	220306.5	1.3	**24.5176**	0.534	2.2	ug/L	1435	Standard
	Cr	52	643370.5	1.6	**72.5457**	2.733	3.8	ug/L	7635	Standard
	Cr	53	78035.6	3.0	**71.2237**	3.200	4.5	ug/L	363	Standard
	Mn	55	3332205.3	1.0	**405.3306**	7.931	2.0	ug/L	747	Standard
	Co	59	49008.5	0.3	**6.2510**	0.159	2.5	ug/L	234	Standard
	Ni	60	36936.6	2.2	**16.5952**	0.689	4.2	ug/L	215	Standard
	Cu	65	48506.2	1.8	**21.9786**	0.680	3.1	ug/L	104	Standard
	Zn	66	431997.7	0.4	**334.6356**	8.273	2.5	ug/L	363	Standard
>	**Ge**	72	584593.6	2.3				ug/L	495142	Standard
	As	75	4706.8	0.7	**3.6196**	0.063	1.8	ug/L	-50	Standard
	Se	82	170.0	3.4	**1.1737**	0.017	1.5	ug/L	14	Standard
	Se-1	77	180.7	11.7	**1.4743**	0.259	17.6	ug/L	42	Standard
>	**Ga**	71	19881.4	1.3				mg/L	42	Standard
	Rb	85	200103.0	1.8				ug/L	17	Standard
	Y	89	657665.4	0.6				ug/L	417098	Standard
>	**Rh**	103	171.7	7.3				ug/L	13	Standard
	Mo	98	1216.9	1.5	**0.3934**	0.011	2.8	ug/L	11	Standard
	Ag	107	1006.0	3.7	**0.1221**	0.007	5.4	ug/L	68	Standard
	Cd	111	4519.9	2.1	**1.8818**	0.049	2.6	mg/L	2	Standard
	Cd	114	11256.2	1.6	**1.9163**	0.030	1.6	ug/L	12	Standard
>	**In**	115	672127.4	1.5				ug/L	587441	Standard
	Sn	118	1105.0	15.3	**0.0707**	0.026	36.7	ug/L	497	Standard
	Sb	123	229.1	10.3	**0.0387**	0.005	12.5	ug/L	78	Standard
	Ba	135	361495.2	1.1	**154.3886**	3.928	2.5	ug/L	24	Standard
	Ce	140	936346.8	0.9				ug/L	25	Standard
>	**Tb**	159	1070983.4	3.2				ug/L	939701	Standard
	Ho	165	13711.2	2.1				ug/L	10	Standard
	Tl	203	1023.7	3.8	**0.1103**	0.006	5.8	ug/L	4	Standard
	Tl	205	995.0	4.8	**0.1256**	0.007	5.2	ug/L	2	Standard
	Pb	206	1451242.4	0.5	**244.9779**	5.608	2.3	ug/L	240	Standard
	Pb	207	1189055.7	0.7	**225.9168**	5.756	2.5	ug/L	198	Standard
	Pb	208	5216722.9	1.2	**250.8847**	7.037	2.8	ug/L	883	Standard
	U	238	9013.7	1.2	**1.1768**	0.034	2.9	ug/L	3	Standard
>	**Bi**	209	581076.6	1.9				ug/L	523984	Standard

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Na	23	6.7	173.2	**57.8631**	100.213	173.2	mg/L	0	Standard
Mg	24	553.3	14.7	**0.4776**	0.083	17.4	mg/L	37	Standard
K	39	1005.0	9.9	**1.5724**	0.167	10.6	mg/L	38	Standard
Ca	43	1240.1	6.3	**56.9237**	3.160	5.6	mg/L	10	Standard
Fe	54	17498.7	0.5	**11.1262**	0.159	1.4	mg/L	179	Standard
Fe	57	5124.2	2.5	**12.1481**	0.285	2.3	mg/L	335	Standard
Sc-1	45	80386.0	1.0				mg/L	61029	Standard
Cl	35	28790.7	0.3				ug/L	20195	Standard
Kr	83	3.0	33.3				ug/L	4	Standard
Br	81	8875.9	6.3				ug/L	1547	Standard
P	31	20292.0	8.4				ug/L	15286	Standard
S	34	2478.5	4.1				ug/L	1572	Standard
Sr	88	438.3	2.4				ug/L	73	Standard
C	12	323.3	22.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	136.7	34.6				mg/L	3	Standard
Dy	164	22618.6	1.5				mg/L	6	Standard
Ho-1	165	13711.2	2.1				mg/L	10	Standard
Er	166	12578.6	1.5				mg/L	13	Standard
I	127	73652.8	8.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		119.043	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		118.066	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	114.416
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	110.896
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1606129101
Sample Date/Time: Wednesday, June 29, 2016 18:57:28
Number of Replicates: 3
Autosampler Position: 251
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89580.8	1.7				ug/L	74699	Standard
	Be	9	360.0	14.7	**0.3489**	0.053	15.3	ug/L	8	Standard
	Al	27	3187676.8	1.0	**18.0772**	0.341	1.9	ug/L	1493	Standard
	Sc	45	73445.9	1.6				ug/L	61029	Standard
	Ti	47	23807.7	6.7	**54.3513**	2.712	5.0	ug/L	35	Standard
	V	51	62405.7	2.9	**6.9715**	0.072	1.0	ug/L	1435	Standard
	Cr	52	100378.5	1.9	**10.7261**	0.052	0.5	ug/L	7635	Standard
	Cr	53	11571.1	3.7	**10.5314**	0.357	3.4	ug/L	363	Standard
	Mn	55	3995310.3	0.7	**497.7426**	6.886	1.4	ug/L	747	Standard
	Co	59	12689.3	1.5	**1.6298**	0.018	1.1	ug/L	234	Standard
	Ni	60	15702.5	1.8	**7.1516**	0.026	0.4	ug/L	215	Standard
	Cu	65	1030601.6	2.5	**480.2115**	2.610	0.5	ug/L	104	Standard
	Zn	66	647092.9	2.6	**513.3926**	3.363	0.7	ug/L	363	Standard
>	**Ge**	72	570780.0	2.0				ug/L	495142	Standard
	As	75	23305.2	1.3	**18.1104**	0.138	0.8	ug/L	-50	Standard
	Se	82	481.4	2.5	**3.6678**	0.121	3.3	ug/L	14	Standard
	Se-1	77	377.3	9.1	**3.8600**	0.402	10.4	ug/L	42	Standard
>	**Ga**	71	43582.7	4.5				mg/L	42	Standard
	Rb	85	26201.0	3.0				ug/L	17	Standard
	Y	89	551000.5	1.0				ug/L	417098	Standard
>	**Rh**	103	178.3	18.7				ug/L	13	Standard
	Mo	98	21134.4	1.3	**6.6476**	0.191	2.9	ug/L	11	Standard
	Ag	107	15204.6	2.3	**1.9441**	0.032	1.6	ug/L	68	Standard
	Cd	111	1466.1	5.3	**0.5801**	0.025	4.4	mg/L	2	Standard
	Cd	114	3712.7	3.5	**0.6050**	0.007	1.1	ug/L	12	Standard
>	**In**	115	700391.9	2.5				ug/L	587441	Standard
	Sn	118	18187.6	2.5	**2.5189**	0.131	5.2	ug/L	497	Standard
	Sb	123	7709.0	2.8	**1.3807**	0.022	1.6	ug/L	78	Standard
	Ba	135	971846.2	1.7	**398.2918**	4.112	1.0	ug/L	24	Standard
	Ce	140	138638.2	1.7				ug/L	25	Standard
>	**Tb**	159	1070571.9	3.6				ug/L	939701	Standard
	Ho	165	2720.2	8.8				ug/L	10	Standard
	Tl	203	657.3	30.6	**0.0422**	0.014	32.0	ug/L	4	Standard
	Tl	205	563.3	26.0	**0.0436**	0.011	26.1	ug/L	2	Standard
	Pb	206	89328.6	2.2	**9.1434**	0.147	1.6	ug/L	240	Standard
	Pb	207	72922.4	1.4	**8.3969**	0.107	1.3	ug/L	198	Standard
	Pb	208	316979.9	0.6	**9.2432**	0.217	2.4	ug/L	883	Standard
	U	238	78871.8	1.7	**6.3120**	0.222	3.5	ug/L	3	Standard
>	**Bi**	209	950965.0	2.0				ug/L	523984	Standard

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Na	23	5.0	173.2	**48.7719**	84.467	173.2	mg/L	0	Standard
Mg	24	613.3	9.8	**0.5934**	0.073	12.3	mg/L	37	Standard
K	39	323.3	7.3	**0.4798**	0.044	9.2	mg/L	38	Standard
Ca	43	198.3	14.8	**7.8949**	1.614	20.4	mg/L	10	Standard
Fe	54	8830.8	5.5	**6.0856**	0.392	6.4	mg/L	179	Standard
Fe	57	2530.2	2.9	**6.0730**	0.228	3.8	mg/L	335	Standard
Sc-1	45	73445.9	1.6				mg/L	61029	Standard
Cl	35	25952.9	0.3				ug/L	20195	Standard
Kr	83	2.0	100.0				ug/L	4	Standard
Br	81	8005.5	5.5				ug/L	1547	Standard
P	31	19060.3	1.8				ug/L	15286	Standard
S	34	1756.8	1.0				ug/L	1572	Standard
Sr	88	518.3	2.8				ug/L	73	Standard
C	12	1226.7	9.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1270.1	11.0				mg/L	3	Standard
Dy	164	4157.3	8.4				mg/L	6	Standard
Ho-1	165	2720.2	8.8				mg/L	10	Standard
Er	166	2643.6	8.4				mg/L	13	Standard
I	127	191520.8	4.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		119.923	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		115.276	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	119.228
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	181.487
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Cu 65 Upper, S, EEE	Cu	65	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135	
Bi 209 Int Std for sample	Bi	209	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606138101
Sample Date/Time: Wednesday, June 29, 2016 19:00:40
Number of Replicates: 3
Autosampler Position: 252
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	96098.8	1.2				ug/L	74699	Standard
	Be	9	1650.1	8.9	**1.4642**	0.124	8.5	ug/L	8	Standard
	Al	27	23502208.7	0.7	**124.3024**	1.056	0.8	ug/L	1493	Standard
	Sc	45	81510.4	1.4				ug/L	61029	Standard
	Ti	47	9357.2	0.5	**21.1737**	0.376	1.8	ug/L	35	Standard
	V	51	257600.4	1.3	**29.2098**	0.781	2.7	ug/L	1435	Standard
	Cr	52	224787.2	0.6	**25.1231**	0.400	1.6	ug/L	7635	Standard
	Cr	53	27600.1	3.0	**25.4059**	0.410	1.6	ug/L	363	Standard
	Mn	55	5543699.6	0.4	**686.2289**	8.924	1.3	ug/L	747	Standard
	Co	59	117640.6	0.9	**15.3216**	0.399	2.6	ug/L	234	Standard
	Ni	60	64249.3	0.8	**29.4562**	0.340	1.2	ug/L	215	Standard
	Cu	65	57365.7	1.4	**26.4629**	0.232	0.9	ug/L	104	Standard
	Zn	66	103406.0	1.2	**81.1457**	1.055	1.3	ug/L	363	Standard
>	**Ge**	72	574477.7	1.7				ug/L	495142	Standard
	As	75	12246.4	0.5	**9.4841**	0.110	1.2	ug/L	-50	Standard
	Se	82	125.1	3.5	**0.8446**	0.024	2.8	ug/L	14	Standard
	Se-1	77	164.3	2.5	**1.3176**	0.070	5.3	ug/L	42	Standard
>	**Ga**	71	29587.2	2.2				mg/L	42	Standard
	Rb	85	313937.1	2.6				ug/L	17	Standard
	Y	89	822636.0	0.8				ug/L	417098	Standard
>	**Rh**	103	38.3	49.4				ug/L	13	Standard
	Mo	98	757.2	4.8	**0.2454**	0.010	4.2	ug/L	11	Standard
	Ag	107	953.4	1.4	**0.1164**	0.003	2.3	ug/L	68	Standard
	Cd	111	1588.5	0.6	**0.6638**	0.009	1.4	mg/L	2	Standard
	Cd	114	3783.2	0.8	**0.6501**	0.009	1.4	ug/L	12	Standard
>	**In**	115	664448.0	1.0				ug/L	587441	Standard
	Sn	118	643.3	5.2	**0.0026**	0.004	152.2	ug/L	497	Standard
	Sb	123	269.8	13.5	**0.0469**	0.007	15.6	ug/L	78	Standard
	Ba	135	662128.9	0.5	**286.0118**	2.987	1.0	ug/L	24	Standard
	Ce	140	1687892.1	1.1				ug/L	25	Standard
>	**Tb**	159	1062435.8	0.8				ug/L	939701	Standard
	Ho	165	27182.7	2.2				ug/L	10	Standard
	Tl	203	1364.1	4.3	**0.1521**	0.007	4.3	ug/L	4	Standard
	Tl	205	1335.1	6.0	**0.1737**	0.010	5.7	ug/L	2	Standard
	Pb	206	284182.0	0.3	**49.3998**	0.214	0.4	ug/L	240	Standard
	Pb	207	234533.7	1.0	**45.8828**	0.448	1.0	ug/L	198	Standard
	Pb	208	1023299.4	0.1	**50.6751**	0.295	0.6	ug/L	883	Standard
	U	238	6312.3	2.1	**0.8483**	0.014	1.7	ug/L	3	Standard
>	**Bi**	209	563477.4	0.7				ug/L	523984	Standard

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Na	23	3.3	86.6	**28.8214**	24.963	86.6	mg/L	0	Standard
Mg	24	151.7	18.2	**0.0816**	0.027	33.5	mg/L	37	Standard
K	39	1206.7	9.1	**1.8839**	0.198	10.5	mg/L	38	Standard
Ca	43	230.0	38.1	**8.3188**	4.002	48.1	mg/L	10	Standard
Fe	54	27991.0	1.6	**17.6350**	0.523	3.0	mg/L	179	Standard
Fe	57	7366.8	1.7	**17.6771**	0.511	2.9	mg/L	335	Standard
Sc-1	45	81510.4	1.4				mg/L	61029	Standard
Cl	35	28359.2	2.3				ug/L	20195	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	4510.7	3.7				ug/L	1547	Standard
P	31	20567.3	1.1				ug/L	15286	Standard
S	34	2398.5	2.1				ug/L	1572	Standard
Sr	88	138.3	12.7				ug/L	73	Standard
C	12	220.0	4.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	113.3	35.7				mg/L	3	Standard
Dy	164	44981.5	2.0				mg/L	6	Standard
Ho-1	165	27182.7	2.2				mg/L	10	Standard
Er	166	24606.7	4.9				mg/L	13	Standard
I	127	24668.4	3.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		128.648	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		116.023	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.109
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.537
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606138101
Sample Date/Time: Wednesday, June 29, 2016 19:03:51
Number of Replicates: 3
Autosampler Position: 253
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89738.3	1.4				ug/L	74699	Standard
	Be	9	41.7	6.9	**0.0470**	0.003	6.5	ug/L	8	Standard
	Al	27	505536.2	3.8	**2.8498**	0.087	3.1	ug/L	1493	Standard
	Sc	45	72476.3	1.0				ug/L	61029	Standard
	Ti	47	238.7	3.3	**0.4178**	0.015	3.5	ug/L	35	Standard
	V	51	6994.4	2.1	**0.5793**	0.021	3.7	ug/L	1435	Standard
	Cr	52	13067.6	0.8	**0.4515**	0.011	2.5	ug/L	7635	Standard
	Cr	53	1060.0	5.3	**0.6298**	0.052	8.3	ug/L	363	Standard
	Mn	55	117506.1	2.5	**13.9721**	0.301	2.2	ug/L	747	Standard
	Co	59	2633.2	1.9	**0.2964**	0.006	2.1	ug/L	234	Standard
	Ni	60	1579.1	3.6	**0.5819**	0.030	5.1	ug/L	215	Standard
	Cu	65	1415.4	1.9	**0.5327**	0.017	3.2	ug/L	104	Standard
	Zn	66	4415.0	0.5	**2.9272**	0.025	0.9	ug/L	363	Standard
>	**Ge**	72	591804.3	0.7				ug/L	495142	Standard
	As	75	188.6	12.3	**0.2004**	0.017	8.4	ug/L	-50	Standard
	Se	82	17.7	38.3	**-0.0030**	0.051	1669.1	ug/L	14	Standard
	Se-1	77	53.3	24.5	**-0.0120**	0.145	1206.4	ug/L	42	Standard
>	**Ga**	71	651.7	3.8				mg/L	42	Standard
	Rb	85	6646.5	2.9				ug/L	17	Standard
	Y	89	496582.4	1.4				ug/L	417098	Standard
>	**Rh**	103	10.0	86.6				ug/L	13	Standard
	Mo	98	63.7	13.0	**0.0149**	0.003	17.4	ug/L	11	Standard
	Ag	107	138.0	7.0	**0.0054**	0.001	21.7	ug/L	68	Standard
	Cd	111	41.6	25.2	**0.0093**	0.004	47.8	mg/L	2	Standard
	Cd	114	78.4	6.5	**0.0111**	0.001	8.0	ug/L	12	Standard
>	**In**	115	680653.4	0.9				ug/L	587441	Standard
	Sn	118	558.3	7.0	**-0.0122**	0.005	43.2	ug/L	497	Standard
	Sb	123	143.1	16.8	**0.0222**	0.004	19.8	ug/L	78	Standard
	Ba	135	14129.9	0.6	**5.9423**	0.035	0.6	ug/L	24	Standard
	Ce	140	36747.8	1.4				ug/L	25	Standard
>	**Tb**	159	1046560.0	0.5				ug/L	939701	Standard
	Ho	165	620.0	6.6				ug/L	10	Standard
	Tl	203	40.7	9.9	**0.0027**	0.000	16.9	ug/L	4	Standard
	Tl	205	38.3	19.9	**0.0050**	0.001	18.8	ug/L	2	Standard
	Pb	206	6390.7	0.3	**1.0069**	0.002	0.2	ug/L	240	Standard
	Pb	207	5305.6	1.7	**0.9374**	0.017	1.8	ug/L	198	Standard
	Pb	208	22358.8	1.4	**1.0005**	0.020	2.0	ug/L	883	Standard
	U	238	147.3	10.0	**0.0149**	0.002	12.5	ug/L	3	Standard
>	**Bi**	209	581458.5	0.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	36.7	41.7	**-0.0251**	0.017	67.5	mg/L	37	Standard
K	39	73.3	27.6	**0.0225**	0.038	170.4	mg/L	38	Standard
Ca	43	25.0	40.0	**-1.1927**	0.538	45.1	mg/L	10	Standard
Fe	54	777.1	4.9	**0.4166**	0.030	7.2	mg/L	179	Standard
Fe	57	423.3	1.8	**0.1373**	0.012	9.1	mg/L	335	Standard
> **Sc-1**	45	72476.3	1.0				mg/L	61029	Standard
Cl	35	26907.2	2.4				ug/L	20195	Standard
Kr	83	1.7	124.9				ug/L	4	Standard
Br	81	2140.2	2.1				ug/L	1547	Standard
P	31	19854.7	4.5				ug/L	15286	Standard
S	34	2031.8	8.8				ug/L	1572	Standard
Sr	88	61.7	24.8				ug/L	73	Standard
C	12	66.7	82.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	1031.0	18.9				mg/L	6	Standard
Ho-1	165	620.0	6.6				mg/L	10	Standard
Er	166	536.7	12.4				mg/L	13	Standard
I	127	3175.3	27.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		120.134	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		119.522	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		115.868
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.969
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606138102
Sample Date/Time: Wednesday, June 29, 2016 19:07:03
Number of Replicates: 3
Autosampler Position: 254
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	93009.7	1.6				ug/L	74699	Standard
	Be	9	1248.4	3.0	**1.1470**	0.051	4.5	ug/L	8	Standard
	Al	27	40124336.3	0.4	**219.2936**	2.793	1.3	ug/L	1493	Standard
	Sc	45	83437.5	1.7				ug/L	61029	Standard
	Ti	47	9733.8	0.5	**22.4436**	0.290	1.3	ug/L	35	Standard
	V	51	219254.4	2.3	**25.2954**	0.490	1.9	ug/L	1435	Standard
	Cr	52	167385.2	0.7	**18.8093**	0.105	0.6	ug/L	7635	Standard
	Cr	53	20240.2	3.5	**18.8976**	0.529	2.8	ug/L	363	Standard
	Mn	55	6543259.4	1.4	**825.1579**	15.855	1.9	ug/L	747	Standard
	Co	59	86492.3	2.3	**11.4640**	0.252	2.2	ug/L	234	Standard
	Ni	60	58233.4	1.3	**27.1864**	0.121	0.4	ug/L	215	Standard
	Cu	65	35144.1	1.8	**16.4764**	0.210	1.3	ug/L	104	Standard
	Zn	66	61921.6	1.7	**49.3206**	0.509	1.0	ug/L	363	Standard
>	**Ge**	72	563884.1	0.9				ug/L	495142	Standard
	As	75	5876.5	0.9	**4.6669**	0.080	1.7	ug/L	-50	Standard
	Se	82	62.7	20.2	**0.3638**	0.101	27.7	ug/L	14	Standard
	Se-1	77	116.3	8.0	**0.7757**	0.099	12.7	ug/L	42	Standard
>	**Ga**	71	24224.4	1.6				mg/L	42	Standard
	Rb	85	231886.4	1.9				ug/L	17	Standard
	Y	89	788603.8	0.2				ug/L	417098	Standard
>	**Rh**	103	76.7	50.7				ug/L	13	Standard
	Mo	98	590.2	6.7	**0.1909**	0.011	6.0	ug/L	11	Standard
	Ag	107	590.3	14.1	**0.0675**	0.010	15.2	ug/L	68	Standard
	Cd	111	402.0	10.7	**0.1627**	0.016	9.9	mg/L	2	Standard
	Cd	114	896.6	5.0	**0.1531**	0.007	4.5	ug/L	12	Standard
>	**In**	115	661468.7	1.5				ug/L	587441	Standard
	Sn	118	563.3	17.0	**-0.0090**	0.016	173.2	ug/L	497	Standard
	Sb	123	168.4	11.6	**0.0279**	0.004	15.0	ug/L	78	Standard
	Ba	135	766980.0	0.9	**332.7995**	3.011	0.9	ug/L	24	Standard
	Ce	140	1513996.2	0.9				ug/L	25	Standard
>	**Tb**	159	1057537.7	1.8				ug/L	939701	Standard
	Ho	165	25513.1	1.6				ug/L	10	Standard
	Tl	203	1321.7	3.8	**0.1489**	0.005	3.2	ug/L	4	Standard
	Tl	205	1201.7	6.5	**0.1579**	0.009	5.7	ug/L	2	Standard
	Pb	206	69846.7	2.1	**12.2126**	0.140	1.1	ug/L	240	Standard
	Pb	207	56032.1	2.8	**11.0205**	0.188	1.7	ug/L	198	Standard
	Pb	208	243026.5	0.6	**12.1032**	0.059	0.5	ug/L	883	Standard
	U	238	7981.8	0.7	**1.0851**	0.004	0.3	ug/L	3	Standard
>	**Bi**	209	557709.9	1.1				ug/L	523984	Standard

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Na	23	6.7	86.6	**56.4197**	48.874	86.6	mg/L	0	Standard
Mg	24	238.3	32.7	**0.1607**	0.077	48.1	mg/L	37	Standard
K	39	688.3	8.8	**0.9980**	0.083	8.3	mg/L	38	Standard
Ca	43	911.7	12.3	**39.6249**	5.390	13.6	mg/L	10	Standard
Fe	54	20800.6	0.9	**12.7625**	0.173	1.4	mg/L	179	Standard
Fe	57	6012.9	2.1	**13.8749**	0.248	1.8	mg/L	335	Standard
Sc-1	45	83437.5	1.7				mg/L	61029	Standard
Cl	35	29332.4	1.9				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	2603.6	11.5				ug/L	1547	Standard
P	31	21632.1	2.1				ug/L	15286	Standard
S	34	2746.9	3.7				ug/L	1572	Standard
Sr	88	253.3	10.9				ug/L	73	Standard
C	12	116.7	27.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	45.8				mg/L	3	Standard
Dy	164	42471.8	1.0				mg/L	6	Standard
Ho-1	165	25513.1	1.6				mg/L	10	Standard
Er	166	22212.9	0.4				mg/L	13	Standard
I	127	23259.5	0.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		124.513	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		113.883	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.602
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.436
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606138102
Sample Date/Time: Wednesday, June 29, 2016 19:10:14
Number of Replicates: 3
Autosampler Position: 255
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85837.5	1.0				ug/L	74699	Standard
	Be	9	38.3	19.9	**0.0455**	0.007	16.1	ug/L	8	Standard
	Al	27	829500.0	3.1	**4.8979**	0.105	2.1	ug/L	1493	Standard
	Sc	45	72806.2	1.9				ug/L	61029	Standard
	Ti	47	228.0	6.2	**0.3999**	0.033	8.1	ug/L	35	Standard
	V	51	5937.2	2.5	**0.4694**	0.017	3.6	ug/L	1435	Standard
	Cr	52	11356.6	1.4	**0.2725**	0.020	7.2	ug/L	7635	Standard
	Cr	53	790.0	13.9	**0.3928**	0.096	24.5	ug/L	363	Standard
	Mn	55	140399.5	1.1	**16.9108**	0.252	1.5	ug/L	747	Standard
	Co	59	1986.1	4.2	**0.2171**	0.011	4.8	ug/L	234	Standard
	Ni	60	1398.7	1.4	**0.5081**	0.009	1.8	ug/L	215	Standard
	Cu	65	887.4	6.1	**0.2997**	0.027	8.9	ug/L	104	Standard
	Zn	66	3530.4	0.8	**2.2796**	0.035	1.5	ug/L	363	Standard
>	**Ge**	72	585343.3	0.6				ug/L	495142	Standard
	As	75	60.2	40.7	**0.1052**	0.019	17.9	ug/L	-50	Standard
	Se	82	19.5	23.7	**0.0127**	0.037	290.2	ug/L	14	Standard
	Se-1	77	54.0	19.3	**0.0032**	0.122	3775.1	ug/L	42	Standard
>	**Ga**	71	611.7	10.2				mg/L	42	Standard
	Rb	85	4939.1	4.6				ug/L	17	Standard
	Y	89	509652.0	1.0				ug/L	417098	Standard
>	**Rh**	103	5.0	100.0				ug/L	13	Standard
	Mo	98	44.1	7.7	**0.0084**	0.001	14.8	ug/L	11	Standard
	Ag	107	136.0	8.3	**0.0049**	0.002	33.6	ug/L	68	Standard
	Cd	111	13.6	15.2	**-0.0024**	0.001	32.7	mg/L	2	Standard
	Cd	114	34.6	39.9	**0.0036**	0.002	62.3	ug/L	12	Standard
>	**In**	115	689569.5	1.2				ug/L	587441	Standard
	Sn	118	635.0	8.5	**-0.0021**	0.008	369.1	ug/L	497	Standard
	Sb	123	120.9	7.4	**0.0179**	0.002	10.7	ug/L	78	Standard
	Ba	135	16312.1	1.7	**6.7731**	0.043	0.6	ug/L	24	Standard
	Ce	140	31461.0	1.2				ug/L	25	Standard
>	**Tb**	159	1048084.0	0.7				ug/L	939701	Standard
	Ho	165	503.3	20.9				ug/L	10	Standard
	Tl	203	28.0	9.4	**0.0013**	0.000	21.0	ug/L	4	Standard
	Tl	205	13.3	21.7	**0.0019**	0.000	19.6	ug/L	2	Standard
	Pb	206	1789.4	1.9	**0.2333**	0.006	2.6	ug/L	240	Standard
	Pb	207	1416.1	2.7	**0.2012**	0.009	4.3	ug/L	198	Standard
	Pb	208	6428.2	1.8	**0.2375**	0.004	1.7	ug/L	883	Standard
	U	238	157.3	5.4	**0.0164**	0.001	7.5	ug/L	3	Standard
>	**Bi**	209	576421.5	0.5				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	65.0	13.3	**0.0052**	0.008	161.5	mg/L	37	Standard
K	39	56.7	10.2	**-0.0092**	0.009	98.8	mg/L	38	Standard
Ca	43	46.7	16.4	**-0.0469**	0.452	963.7	mg/L	10	Standard
Fe	54	615.5	5.2	**0.2993**	0.025	8.2	mg/L	179	Standard
Fe	57	410.0	10.0	**0.0928**	0.096	103.4	mg/L	335	Standard
> **Sc-1**	45	72806.2	1.9				mg/L	61029	Standard
Cl	35	29355.1	3.4				ug/L	20195	Standard
Kr	83	2.3	24.7				ug/L	4	Standard
Br	81	1910.1	15.3				ug/L	1547	Standard
P	31	20493.9	2.3				ug/L	15286	Standard
S	34	2463.5	6.9				ug/L	1572	Standard
Sr	88	83.3	42.1				ug/L	73	Standard
C	12	50.0	34.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	991.0	1.5				mg/L	6	Standard
Ho-1	165	503.3	20.9				mg/L	10	Standard
Er	166	466.7	4.5				mg/L	13	Standard
I	127	2401.9	23.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.911	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		118.217	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		117.385
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.007
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 19:13:27
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83999.1	3.6				ug/L	74699	Standard
	Be	9	57157.7	3.6	**57.7443**	0.451	0.8	ug/L	8	Standard
	Al	27	8858742.4	2.0	**53.6133**	0.921	1.7	ug/L	1493	Standard
	Sc	45	70122.0	3.5				ug/L	61029	Standard
	Ti	47	47445.5	0.9	**109.3528**	3.353	3.1	ug/L	35	Standard
	V	51	471838.1	3.0	**54.4025**	0.466	0.9	ug/L	1435	Standard
	Cr	52	466548.5	1.7	**54.0130**	1.261	2.3	ug/L	7635	Standard
	Cr	53	57204.5	1.8	**53.7881**	1.637	3.0	ug/L	363	Standard
	Mn	55	422873.4	1.8	**52.9497**	1.131	2.1	ug/L	747	Standard
	Co	59	420575.5	1.8	**55.6399**	1.134	2.0	ug/L	234	Standard
	Ni	60	114954.2	1.8	**53.5507**	1.121	2.1	ug/L	215	Standard
	Cu	65	113826.7	2.0	**53.3592**	1.065	2.0	ug/L	104	Standard
	Zn	66	66150.5	1.8	**52.4882**	1.217	2.3	ug/L	363	Standard
>	**Ge**	72	566689.7	3.9				ug/L	495142	Standard
	As	75	66474.1	0.9	**51.9549**	1.668	3.2	ug/L	-50	Standard
	Se	82	6669.2	0.5	**53.0020**	1.808	3.4	ug/L	14	Standard
	Se-1	77	4569.4	1.3	**54.0883**	1.963	3.6	ug/L	42	Standard
>	**Ga**	71	60.0	25.0				mg/L	42	Standard
	Rb	85	973.4	4.9				ug/L	17	Standard
	Y	89	482055.4	0.8				ug/L	417098	Standard
>	**Rh**	103	21.7	35.3				ug/L	13	Standard
	Mo	98	311127.6	1.9	**101.8685**	1.475	1.4	ug/L	11	Standard
	Ag	107	381455.1	1.8	**51.0679**	0.625	1.2	ug/L	68	Standard
	Cd	111	122240.5	1.1	**51.0178**	0.254	0.5	mg/L	2	Standard
	Cd	114	297421.0	1.0	**50.6157**	0.803	1.6	ug/L	12	Standard
>	**In**	115	673075.7	0.6				ug/L	587441	Standard
	Sn	118	341770.5	1.5	**50.9666**	0.480	0.9	ug/L	497	Standard
	Sb	123	266115.5	1.9	**49.7407**	0.724	1.5	ug/L	78	Standard
	Ba	135	114468.8	0.7	**48.7952**	0.078	0.2	ug/L	24	Standard
	Ce	140	298.3	40.9				ug/L	25	Standard
>	**Tb**	159	1044481.4	1.5				ug/L	939701	Standard
	Ho	165	18.3	83.3				ug/L	10	Standard
	Tl	203	467319.7	1.5	**52.0663**	0.128	0.2	ug/L	4	Standard
	Tl	205	421316.6	1.5	**54.0865**	0.384	0.7	ug/L	2	Standard
	Pb	206	294059.2	2.1	**50.4836**	0.259	0.5	ug/L	240	Standard
	Pb	207	260305.8	2.4	**50.2976**	0.406	0.8	ug/L	198	Standard
	Pb	208	1086866.5	0.8	**53.1659**	0.550	1.0	ug/L	883	Standard
	U	238	395799.2	0.7	**52.8135**	0.760	1.4	ug/L	3	Standard
>	**Bi**	209	570529.8	1.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4777.4	3.9	**5.3091**	0.347	6.5	mg/L	37	Standard
K	39	2250.2	3.7	**4.2173**	0.198	4.7	mg/L	38	Standard
Ca	43	128.3	12.5	**4.5532**	1.080	23.7	mg/L	10	Standard
Fe	54	7377.7	1.8	**5.3086**	0.144	2.7	mg/L	179	Standard
Fe	57	2055.1	1.5	**5.0082**	0.127	2.5	mg/L	335	Standard
> **Sc-1**	45	70122.0	3.5				mg/L	61029	Standard
Cl	35	30001.0	0.9				ug/L	20195	Standard
Kr	83	1.7	91.7				ug/L	4	Standard
Br	81	2183.5	6.8				ug/L	1547	Standard
P	31	22995.8	1.5				ug/L	15286	Standard
S	34	2830.3	2.9				ug/L	1572	Standard
Sr	88	66.7	24.1				ug/L	73	Standard
C	12	80.0	50.0				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	9.0	108.0				mg/L	6	Standard
Ho-1	165	18.3	83.3				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	1968.5	24.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	115.489		
Al	27	107.227		
Sc	45			
Ti	47	109.353		
V	51	108.805		
Cr	52	108.026		
Cr	53			
Mn	55	105.899		
Co	59	111.280		
Ni	60	107.101		
Cu	65	106.718		
Zn	66	104.976		
> Ge	72		114.450	
As	75	103.910		
Se	82	106.004		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.868		
Ag	107	102.136		
Cd	111	102.036		
Cd	114			
In	115		114.578	
Sn	118	101.933		
Sb	123	99.481		
Ba	135	97.590		
Ce	140			
Tb	159			
Ho	165			
Tl	203	104.133		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.332		
U	238	105.627		
Bi	209		108.883	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Co	59	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 19:16:39
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83692.3	2.8				ug/L	74699	Standard
	Be	9	18.3	15.7	**0.0263**	0.003	12.9	ug/L	8	Standard
	Al	27	3213.7	25.4	**0.0061**	0.004	71.9	ug/L	1493	Standard
	Sc	45	70726.5	3.0				ug/L	61029	Standard
	Ti	47	41.0	12.2	**-0.0158**	0.012	73.1	ug/L	35	Standard
	V	51	1525.1	1.9	**-0.0214**	0.005	22.4	ug/L	1435	Standard
	Cr	52	7659.9	0.9	**-0.1324**	0.015	11.0	ug/L	7635	Standard
	Cr	53	410.0	16.0	**0.0526**	0.061	116.5	ug/L	363	Standard
	Mn	55	997.7	7.3	**-0.0244**	0.010	41.0	ug/L	747	Standard
	Co	59	260.3	1.6	**-0.0033**	0.000	10.0	ug/L	234	Standard
	Ni	60	195.0	3.6	**-0.0341**	0.004	11.2	ug/L	215	Standard
	Cu	65	140.7	10.7	**-0.0385**	0.007	19.0	ug/L	104	Standard
	Zn	66	386.7	3.7	**-0.1493**	0.008	5.7	ug/L	363	Standard
>	**Ge**	72	574185.4	0.9				ug/L	495142	Standard
	As	75	-49.3	11.6	**0.0216**	0.004	19.9	ug/L	-50	Standard
	Se	82	18.5	26.4	**0.0072**	0.039	544.3	ug/L	14	Standard
	Se-1	77	51.3	18.1	**-0.0155**	0.115	739.5	ug/L	42	Standard
>	**Ga**	71	41.7	30.2				mg/L	42	Standard
	Rb	85	33.3	22.9				ug/L	17	Standard
	Y	89	508899.9	2.4				ug/L	417098	Standard
>	**Rh**	103	10.0	50.0				ug/L	13	Standard
	Mo	98	287.2	24.5	**0.0857**	0.020	22.8	ug/L	11	Standard
	Ag	107	140.0	24.8	**0.0054**	0.004	76.0	ug/L	68	Standard
	Cd	111	18.8	30.5	**-0.0003**	0.002	828.9	mg/L	2	Standard
	Cd	114	42.6	5.3	**0.0050**	0.000	2.5	ug/L	12	Standard
>	**In**	115	688571.2	3.6				ug/L	587441	Standard
	Sn	118	896.7	13.9	**0.0365**	0.020	55.6	ug/L	497	Standard
	Sb	123	419.7	28.4	**0.0731**	0.025	33.8	ug/L	78	Standard
	Ba	135	58.0	33.3	**0.0081**	0.008	93.7	ug/L	24	Standard
	Ce	140	43.3	17.6				ug/L	25	Standard
>	**Tb**	159	1032903.3	2.1				ug/L	939701	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	69.3	37.1	**0.0059**	0.003	47.0	ug/L	4	Standard
	Tl	205	78.3	57.2	**0.0101**	0.006	55.2	ug/L	2	Standard
	Pb	206	303.3	6.2	**-0.0195**	0.003	14.1	ug/L	240	Standard
	Pb	207	260.7	8.9	**-0.0200**	0.005	24.1	ug/L	198	Standard
	Pb	208	1157.4	6.9	**-0.0179**	0.003	17.6	ug/L	883	Standard
	U	238	52.0	46.8	**0.0024**	0.003	129.1	ug/L	3	Standard
>	**Bi**	209	575232.2	1.3				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	36.7	28.4	**-0.0241**	0.012	50.4	mg/L	37	Standard
K	39	50.0	26.5	**-0.0190**	0.023	121.8	mg/L	38	Standard
Ca	43	26.7	39.0	**-1.0625**	0.584	55.0	mg/L	10	Standard
Fe	54	147.5	7.0	**-0.0305**	0.005	15.7	mg/L	179	Standard
Fe	57	216.7	8.1	**-0.4394**	0.033	7.6	mg/L	335	Standard
Sc-1	45	70726.5	3.0				mg/L	61029	Standard
Cl	35	29273.6	1.2				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	2073.5	10.2				ug/L	1547	Standard
P	31	23289.7	10.5				ug/L	15286	Standard
S	34	2535.2	3.8				ug/L	1572	Standard
Sr	88	68.3	37.5				ug/L	73	Standard
C	12	66.7	22.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	16.3	126.2				mg/L	6	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	1766.8	31.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		115.964	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		117.215
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.780
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Wednesday, June 29, 2016 19:18:56
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Method 6020 - Summary Report

Sample ID: L1606138103
Sample Date/Time: Wednesday, June 29, 2016 19:19:52
Number of Replicates: 3
Autosampler Position: 256
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88921.9	2.3				ug/L	74699	Standard
	Be	9	1191.7	0.9	**1.1451**	0.025	2.2	ug/L	8	Standard
	Al	27	19716870.1	2.2	**112.7701**	5.073	4.5	ug/L	1493	Standard
	Sc	45	82006.5	3.2				ug/L	61029	Standard
	Ti	47	8807.2	1.6	**20.0178**	0.269	1.3	ug/L	35	Standard
	V	51	208539.0	1.3	**23.7197**	0.153	0.6	ug/L	1435	Standard
	Cr	52	166877.0	1.1	**18.4795**	0.081	0.4	ug/L	7635	Standard
	Cr	53	19956.5	0.7	**18.3731**	0.126	0.7	ug/L	363	Standard
	Mn	55	4948296.7	1.6	**615.4227**	6.037	1.0	ug/L	747	Standard
	Co	59	82754.8	2.1	**10.8165**	0.154	1.4	ug/L	234	Standard
	Ni	60	51698.7	0.5	**23.7942**	0.298	1.3	ug/L	215	Standard
	Cu	65	48855.0	1.6	**22.6321**	0.340	1.5	ug/L	104	Standard
	Zn	66	105467.2	1.2	**83.1726**	0.384	0.5	ug/L	363	Standard
>	**Ge**	72	571655.8	0.7				ug/L	495142	Standard
	As	75	9636.9	0.9	**7.5116**	0.042	0.6	ug/L	-50	Standard
	Se	82	70.5	8.3	**0.4184**	0.042	10.1	ug/L	14	Standard
	Se-1	77	129.0	9.9	**0.9077**	0.153	16.9	ug/L	42	Standard
>	**Ga**	71	22341.5	2.4				mg/L	42	Standard
	Rb	85	210691.8	1.9				ug/L	17	Standard
	Y	89	776017.6	0.9				ug/L	417098	Standard
>	**Rh**	103	61.7	24.8				ug/L	13	Standard
	Mo	98	1324.4	9.6	**0.4208**	0.045	10.6	ug/L	11	Standard
	Ag	107	918.4	2.4	**0.1080**	0.004	3.7	ug/L	68	Standard
	Cd	111	891.1	4.2	**0.3578**	0.020	5.5	mg/L	2	Standard
	Cd	114	2180.6	6.0	**0.3625**	0.017	4.8	ug/L	12	Standard
>	**In**	115	684819.6	1.2				ug/L	587441	Standard
	Sn	118	1785.1	3.5	**0.1674**	0.006	3.8	ug/L	497	Standard
	Sb	123	354.4	3.1	**0.0609**	0.003	4.6	ug/L	78	Standard
	Ba	135	461342.5	1.4	**193.3434**	2.631	1.4	ug/L	24	Standard
	Ce	140	1368480.3	1.7				ug/L	25	Standard
>	**Tb**	159	1075718.6	2.2				ug/L	939701	Standard
	Ho	165	22026.0	1.7				ug/L	10	Standard
	Tl	203	1135.0	2.0	**0.1247**	0.001	0.6	ug/L	4	Standard
	Tl	205	1093.4	11.6	**0.1404**	0.014	10.2	ug/L	2	Standard
	Pb	206	147882.6	1.3	**25.3549**	0.415	1.6	ug/L	240	Standard
	Pb	207	119862.3	0.6	**23.1268**	0.424	1.8	ug/L	198	Standard
	Pb	208	520445.5	2.0	**25.4242**	0.898	3.5	ug/L	883	Standard
	U	238	4663.1	0.9	**0.6178**	0.006	0.9	ug/L	3	Standard
>	**Bi**	209	570570.9	1.5				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	126.7	27.7	**0.0563**	0.032	56.3	mg/L	37	Standard
K	39	878.4	3.1	**1.3326**	0.091	6.9	mg/L	38	Standard
Ca	43	426.7	4.7	**17.5293**	0.460	2.6	mg/L	10	Standard
Fe	54	21094.2	3.4	**13.1896**	0.865	6.6	mg/L	179	Standard
Fe	57	5826.1	1.4	**13.6721**	0.491	3.6	mg/L	335	Standard
> **Sc-1**	45	82006.5	3.2				mg/L	61029	Standard
Cl	35	28772.6	2.0				ug/L	20195	Standard
Kr	83	3.0	66.7				ug/L	4	Standard
Br	81	3580.4	3.6				ug/L	1547	Standard
P	31	21750.6	1.3				ug/L	15286	Standard
S	34	2703.6	0.6				ug/L	1572	Standard
Sr	88	178.3	13.8				ug/L	73	Standard
C	12	233.3	9.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	96.7	36.3				mg/L	3	Standard
Dy	164	37298.5	1.0				mg/L	6	Standard
Ho-1	165	22026.0	1.7				mg/L	10	Standard
Er	166	20383.7	1.3				mg/L	13	Standard
I	127	19701.1	3.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.041	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		115.453	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	116.577
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	108.891
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606138103
Sample Date/Time: Wednesday, June 29, 2016 19:23:03
Number of Replicates: 3
Autosampler Position: 257
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82351.7	3.3				ug/L	74699	Standard
	Be	9	43.3	24.0	**0.0523**	0.011	20.3	ug/L	8	Standard
	Al	27	430174.7	3.0	**2.6419**	0.016	0.6	ug/L	1493	Standard
	Sc	45	73040.6	1.2				ug/L	61029	Standard
	Ti	47	215.7	6.2	**0.3839**	0.033	8.6	ug/L	35	Standard
	V	51	5937.3	2.7	**0.4853**	0.017	3.5	ug/L	1435	Standard
	Cr	52	11052.0	1.3	**0.2679**	0.017	6.2	ug/L	7635	Standard
	Cr	53	723.4	5.6	**0.3480**	0.038	11.0	ug/L	363	Standard
	Mn	55	109527.8	0.6	**13.4774**	0.102	0.8	ug/L	747	Standard
	Co	59	1998.1	1.8	**0.2248**	0.006	2.5	ug/L	234	Standard
	Ni	60	1283.7	2.7	**0.4700**	0.016	3.4	ug/L	215	Standard
	Cu	65	1177.7	1.9	**0.4444**	0.009	2.1	ug/L	104	Standard
	Zn	66	4258.3	1.3	**2.9218**	0.029	1.0	ug/L	363	Standard
>	**Ge**	72	571680.5	0.6				ug/L	495142	Standard
	As	75	130.4	5.6	**0.1604**	0.006	3.7	ug/L	-50	Standard
	Se	82	14.1	16.1	**-0.0268**	0.018	65.5	ug/L	14	Standard
	Se-1	77	58.0	6.9	**0.0653**	0.044	66.8	ug/L	42	Standard
>	**Ga**	71	521.7	4.0				mg/L	42	Standard
	Rb	85	4554.0	2.0				ug/L	17	Standard
	Y	89	512515.9	2.6				ug/L	417098	Standard
>	**Rh**	103	11.7	24.7				ug/L	13	Standard
	Mo	98	90.4	4.4	**0.0229**	0.001	6.5	ug/L	11	Standard
	Ag	107	144.3	4.6	**0.0058**	0.001	16.1	ug/L	68	Standard
	Cd	111	21.8	34.6	**0.0009**	0.003	335.6	mg/L	2	Standard
	Cd	114	67.8	46.0	**0.0090**	0.005	55.6	ug/L	12	Standard
>	**In**	115	696556.9	1.5				ug/L	587441	Standard
	Sn	118	640.0	3.6	**-0.0023**	0.005	204.9	ug/L	497	Standard
	Sb	123	182.0	15.1	**0.0287**	0.006	19.2	ug/L	78	Standard
	Ba	135	9992.3	2.7	**4.1009**	0.069	1.7	ug/L	24	Standard
	Ce	140	29587.2	2.0				ug/L	25	Standard
>	**Tb**	159	1058949.6	2.5				ug/L	939701	Standard
	Ho	165	493.3	6.5				ug/L	10	Standard
	Tl	203	41.7	21.8	**0.0028**	0.001	37.1	ug/L	4	Standard
	Tl	205	43.3	54.5	**0.0057**	0.003	52.4	ug/L	2	Standard
	Pb	206	3583.8	1.2	**0.5358**	0.012	2.2	ug/L	240	Standard
	Pb	207	2855.9	1.4	**0.4744**	0.011	2.4	ug/L	198	Standard
	Pb	208	12510.0	0.4	**0.5295**	0.006	1.1	ug/L	883	Standard
	U	238	110.3	6.2	**0.0101**	0.001	8.0	ug/L	3	Standard
>	**Bi**	209	579224.4	1.1				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	51.7	29.6	**-0.0092**	0.017	184.4	mg/L	37	Standard
K	39	41.7	61.6	**-0.0375**	0.047	124.3	mg/L	38	Standard
Ca	43	26.7	10.8	**-1.1162**	0.146	13.1	mg/L	10	Standard
Fe	54	584.0	15.6	**0.2752**	0.062	22.7	mg/L	179	Standard
Fe	57	388.3	5.2	**0.0289**	0.063	219.5	mg/L	335	Standard
> **Sc-1**	45	73040.6	1.2				mg/L	61029	Standard
Cl	35	28933.6	1.8				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	2263.5	5.9				ug/L	1547	Standard
P	31	20116.7	3.4				ug/L	15286	Standard
S	34	2530.2	7.0				ug/L	1572	Standard
Sr	88	75.0	23.1				ug/L	73	Standard
C	12	66.7	56.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	963.7	4.1				mg/L	6	Standard
Ho-1	165	493.3	6.5				mg/L	10	Standard
Er	166	410.0	6.5				mg/L	13	Standard
I	127	2373.5	31.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.245	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		115.458	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		118.575
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.542
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606138104
Sample Date/Time: Wednesday, June 29, 2016 19:26:15
Number of Replicates: 3
Autosampler Position: 258
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85261.0	2.3				ug/L	74699	Standard
	Be	9	1065.0	16.2	**1.0661**	0.158	14.8	ug/L	8	Standard
	Al	27	15142099.3	1.2	**90.2750**	1.228	1.4	ug/L	1493	Standard
	Sc	45	77933.3	2.2				ug/L	61029	Standard
	Ti	47	7118.0	1.5	**16.2707**	0.118	0.7	ug/L	35	Standard
	V	51	161044.2	0.8	**18.4034**	0.196	1.1	ug/L	1435	Standard
	Cr	52	146045.2	0.2	**16.1669**	0.325	2.0	ug/L	7635	Standard
	Cr	53	17793.8	1.2	**16.4664**	0.462	2.8	ug/L	363	Standard
	Mn	55	4299510.8	1.0	**538.5113**	8.104	1.5	ug/L	747	Standard
	Co	59	67815.8	1.0	**8.9211**	0.182	2.0	ug/L	234	Standard
	Ni	60	46536.4	1.1	**21.5551**	0.152	0.7	ug/L	215	Standard
	Cu	65	28919.6	1.2	**13.4506**	0.294	2.2	ug/L	104	Standard
	Zn	66	52781.1	1.6	**41.6917**	0.739	1.8	ug/L	363	Standard
>	**Ge**	72	567729.5	1.7				ug/L	495142	Standard
	As	75	4550.5	2.3	**3.6043**	0.141	3.9	ug/L	-50	Standard
	Se	82	43.5	41.5	**0.2091**	0.148	70.8	ug/L	14	Standard
	Se-1	77	118.3	4.0	**0.7906**	0.045	5.7	ug/L	42	Standard
>	**Ga**	71	21335.0	2.6				mg/L	42	Standard
	Rb	85	199689.0	1.1				ug/L	17	Standard
	Y	89	717025.3	1.7				ug/L	417098	Standard
>	**Rh**	103	53.3	39.0				ug/L	13	Standard
	Mo	98	750.2	3.3	**0.2455**	0.003	1.3	ug/L	11	Standard
	Ag	107	572.7	8.1	**0.0655**	0.005	7.5	ug/L	68	Standard
	Cd	111	313.3	5.6	**0.1259**	0.007	5.6	mg/L	2	Standard
	Cd	114	729.6	4.4	**0.1250**	0.007	5.3	ug/L	12	Standard
>	**In**	115	657920.1	2.1				ug/L	587441	Standard
	Sn	118	513.3	6.6	**-0.0162**	0.005	32.2	ug/L	497	Standard
	Sb	123	156.7	10.3	**0.0258**	0.004	14.3	ug/L	78	Standard
	Ba	135	278778.0	0.4	**121.6374**	2.867	2.4	ug/L	24	Standard
	Ce	140	1205012.6	0.9				ug/L	25	Standard
>	**Tb**	159	1028655.6	1.0				ug/L	939701	Standard
	Ho	165	19245.5	0.5				ug/L	10	Standard
	Tl	203	1022.7	4.2	**0.1168**	0.004	3.6	ug/L	4	Standard
	Tl	205	930.0	6.2	**0.1244**	0.008	6.1	ug/L	2	Standard
	Pb	206	75172.7	1.1	**13.3810**	0.239	1.8	ug/L	240	Standard
	Pb	207	60753.2	0.6	**12.1662**	0.152	1.3	ug/L	198	Standard
	Pb	208	268421.8	0.9	**13.6089**	0.053	0.4	ug/L	883	Standard
	U	238	4956.8	1.6	**0.6840**	0.014	2.1	ug/L	3	Standard
>	**Bi**	209	548179.9	0.7				ug/L	523984	Standard

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Na	23	3.3	173.2	**29.7760**	51.565	173.2	mg/L	0	Standard
Mg	24	116.7	8.9	**0.0527**	0.008	15.2	mg/L	37	Standard
K	39	606.7	4.1	**0.9368**	0.065	7.0	mg/L	38	Standard
Ca	43	223.3	26.5	**8.5548**	3.074	35.9	mg/L	10	Standard
Fe	54	18758.0	3.4	**12.3136**	0.167	1.4	mg/L	179	Standard
Fe	57	5059.2	5.4	**12.3881**	0.534	4.3	mg/L	335	Standard
Sc-1	45	77933.3	2.2				mg/L	61029	Standard
Cl	35	27511.6	2.5				ug/L	20195	Standard
Kr	83	4.0	50.0				ug/L	4	Standard
Br	81	2450.2	6.4				ug/L	1547	Standard
P	31	19838.0	2.4				ug/L	15286	Standard
S	34	2438.5	4.0				ug/L	1572	Standard
Sr	88	130.0	10.2				ug/L	73	Standard
C	12	76.7	41.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	124.9				mg/L	3	Standard
Dy	164	31319.3	1.6				mg/L	6	Standard
Ho-1	165	19245.5	0.5				mg/L	10	Standard
Er	166	17009.5	2.0				mg/L	13	Standard
I	127	14255.0	0.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		114.140	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		114.660	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	111.998
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	104.618
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606138104
Sample Date/Time: Wednesday, June 29, 2016 19:29:26
Number of Replicates: 3
Autosampler Position: 259
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81019.4	0.7				ug/L	74699	Standard
	Be	9	41.7	18.3	**0.0512**	0.008	15.3	ug/L	8	Standard
	Al	27	329954.8	1.9	**2.0568**	0.044	2.2	ug/L	1493	Standard
	Sc	45	70853.8	4.4				ug/L	61029	Standard
	Ti	47	170.0	4.8	**0.2650**	0.022	8.2	ug/L	35	Standard
	V	51	4919.9	1.5	**0.3475**	0.009	2.6	ug/L	1435	Standard
	Cr	52	11144.8	0.5	**0.2299**	0.010	4.3	ug/L	7635	Standard
	Cr	53	798.4	9.1	**0.3907**	0.073	18.6	ug/L	363	Standard
	Mn	55	93006.7	2.2	**10.9903**	0.351	3.2	ug/L	747	Standard
	Co	59	1669.1	4.9	**0.1734**	0.010	5.5	ug/L	234	Standard
	Ni	60	1239.4	3.4	**0.4280**	0.019	4.5	ug/L	215	Standard
	Cu	65	783.4	0.7	**0.2472**	0.006	2.3	ug/L	104	Standard
	Zn	66	3223.7	4.0	**2.0065**	0.120	6.0	ug/L	363	Standard
>	**Ge**	72	593953.7	1.0				ug/L	495142	Standard
	As	75	25.6	116.2	**0.0786**	0.022	28.0	ug/L	-50	Standard
	Se	82	15.5	11.3	**-0.0201**	0.014	71.9	ug/L	14	Standard
	Se-1	77	55.7	3.7	**0.0130**	0.019	145.3	ug/L	42	Standard
>	**Ga**	71	496.7	9.6				mg/L	42	Standard
	Rb	85	4318.9	1.6				ug/L	17	Standard
	Y	89	493099.4	1.2				ug/L	417098	Standard
>	**Rh**	103	8.3	91.7				ug/L	13	Standard
	Mo	98	63.8	10.3	**0.0154**	0.002	13.8	ug/L	11	Standard
	Ag	107	130.3	15.7	**0.0047**	0.003	56.8	ug/L	68	Standard
	Cd	111	7.2	21.0	**-0.0049**	0.001	12.8	mg/L	2	Standard
	Cd	114	27.0	44.7	**0.0025**	0.002	80.8	ug/L	12	Standard
>	**In**	115	665068.2	0.5				ug/L	587441	Standard
	Sn	118	545.0	15.7	**-0.0123**	0.013	107.4	ug/L	497	Standard
	Sb	123	150.6	9.1	**0.0243**	0.003	11.0	ug/L	78	Standard
	Ba	135	6015.5	0.5	**2.5800**	0.016	0.6	ug/L	24	Standard
	Ce	140	25678.4	3.6				ug/L	25	Standard
>	**Tb**	159	1023204.1	0.9				ug/L	939701	Standard
	Ho	165	420.0	5.5				ug/L	10	Standard
	Tl	203	37.3	22.8	**0.0024**	0.001	40.1	ug/L	4	Standard
	Tl	205	30.0	50.0	**0.0040**	0.002	46.9	ug/L	2	Standard
	Pb	206	1995.8	4.0	**0.2734**	0.016	6.0	ug/L	240	Standard
	Pb	207	1576.4	5.4	**0.2364**	0.019	8.0	ug/L	198	Standard
	Pb	208	6805.9	1.7	**0.2606**	0.003	1.1	ug/L	883	Standard
	U	238	99.3	2.5	**0.0089**	0.000	2.4	ug/L	3	Standard
>	**Bi**	209	568219.3	0.9				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	30.0	66.7	**-0.0312**	0.023	74.2	mg/L	37	Standard
K	39	65.0	30.8	**0.0108**	0.043	395.4	mg/L	38	Standard
Ca	43	20.0	0.0	**-1.4338**	0.047	3.3	mg/L	10	Standard
Fe	54	499.3	4.0	**0.2265**	0.010	4.2	mg/L	179	Standard
Fe	57	346.7	6.8	**-0.0592**	0.056	94.8	mg/L	335	Standard
> **Sc-1**	45	70853.8	4.4				mg/L	61029	Standard
Cl	35	26917.9	3.4				ug/L	20195	Standard
Kr	83	2.0	0.0				ug/L	4	Standard
Br	81	1996.8	2.8				ug/L	1547	Standard
P	31	19530.9	2.5				ug/L	15286	Standard
S	34	2235.2	2.4				ug/L	1572	Standard
Sr	88	70.0	18.9				ug/L	73	Standard
C	12	83.3	38.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	818.0	9.1				mg/L	6	Standard
Ho-1	165	420.0	5.5				mg/L	10	Standard
Er	166	390.0	11.8				mg/L	13	Standard
I	127	1930.1	32.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.461	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		119.956	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.214
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.442
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606138105
Sample Date/Time: Wednesday, June 29, 2016 19:32:37
Number of Replicates: 3
Autosampler Position: 260
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86630.3	1.6				ug/L	74699	Standard
	Be	9	1345.1	15.8	**1.3230**	0.188	14.2	ug/L	8	Standard
	Al	27	25518871.0	0.5	**149.7364**	2.025	1.4	ug/L	1493	Standard
	Sc	45	82793.9	1.1				ug/L	61029	Standard
	Ti	47	9047.0	1.1	**21.0343**	0.216	1.0	ug/L	35	Standard
	V	51	241144.8	2.1	**28.0828**	0.136	0.5	ug/L	1435	Standard
	Cr	52	185820.6	3.2	**21.1812**	0.417	2.0	ug/L	7635	Standard
	Cr	53	22667.0	3.7	**21.3886**	0.515	2.4	ug/L	363	Standard
	Mn	55	5666490.2	1.7	**720.7034**	2.244	0.3	ug/L	747	Standard
	Co	59	89984.1	1.6	**12.0322**	0.097	0.8	ug/L	234	Standard
	Ni	60	57928.9	2.2	**27.2782**	0.178	0.7	ug/L	215	Standard
	Cu	65	41127.1	3.0	**19.4650**	0.281	1.4	ug/L	104	Standard
	Zn	66	70831.6	3.1	**56.9699**	0.880	1.5	ug/L	363	Standard
>	**Ge**	72	559032.2	1.6				ug/L	495142	Standard
	As	75	9088.7	3.2	**7.2452**	0.123	1.7	ug/L	-50	Standard
	Se	82	66.3	23.6	**0.3960**	0.117	29.7	ug/L	14	Standard
	Se-1	77	130.0	4.3	**0.9538**	0.045	4.7	ug/L	42	Standard
>	**Ga**	71	25715.1	2.4				mg/L	42	Standard
	Rb	85	243499.9	2.1				ug/L	17	Standard
	Y	89	766854.2	0.5				ug/L	417098	Standard
>	**Rh**	103	51.7	5.6				ug/L	13	Standard
	Mo	98	760.8	5.6	**0.2496**	0.019	7.7	ug/L	11	Standard
	Ag	107	727.0	8.3	**0.0869**	0.010	11.3	ug/L	68	Standard
	Cd	111	420.9	5.2	**0.1721**	0.013	7.6	mg/L	2	Standard
	Cd	114	1021.1	15.6	**0.1761**	0.030	17.3	ug/L	12	Standard
>	**In**	115	657583.1	2.2				ug/L	587441	Standard
	Sn	118	706.7	9.4	**0.0135**	0.012	91.4	ug/L	497	Standard
	Sb	123	160.0	3.9	**0.0265**	0.002	7.0	ug/L	78	Standard
	Ba	135	489546.4	1.0	**213.7510**	6.703	3.1	ug/L	24	Standard
	Ce	140	1473172.3	0.9				ug/L	25	Standard
>	**Tb**	159	1043758.3	1.4				ug/L	939701	Standard
	Ho	165	23187.7	0.9				ug/L	10	Standard
	Tl	203	1287.4	7.3	**0.1458**	0.012	8.5	ug/L	4	Standard
	Tl	205	1168.4	5.5	**0.1545**	0.010	6.8	ug/L	2	Standard
	Pb	206	110607.4	2.3	**19.4839**	0.695	3.6	ug/L	240	Standard
	Pb	207	89635.8	2.2	**17.7667**	0.631	3.6	ug/L	198	Standard
	Pb	208	392577.0	0.9	**19.6965**	0.434	2.2	ug/L	883	Standard
	U	238	8119.8	0.8	**1.1095**	0.020	1.8	ug/L	3	Standard
>	**Bi**	209	554986.0	1.4				ug/L	523984	Standard

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Na	23	5.0	100.0	**42.5482**	42.299	99.4	mg/L	0	Standard
Mg	24	165.0	16.0	**0.0921**	0.027	29.3	mg/L	37	Standard
K	39	870.0	2.5	**1.3032**	0.021	1.6	mg/L	38	Standard
Ca	43	623.3	6.5	**26.5121**	2.122	8.0	mg/L	10	Standard
Fe	54	24836.5	3.4	**15.3836**	0.500	3.3	mg/L	179	Standard
Fe	57	6766.5	3.6	**15.8771**	0.513	3.2	mg/L	335	Standard
> **Sc-1**	45	82793.9	1.1				mg/L	61029	Standard
Cl	35	27591.1	0.8				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	2510.2	7.0				ug/L	1547	Standard
P	31	20592.3	2.0				ug/L	15286	Standard
S	34	2640.2	1.7				ug/L	1572	Standard
Sr	88	220.0	6.0				ug/L	73	Standard
C	12	86.7	24.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	44.6				mg/L	3	Standard
Dy	164	40115.6	1.1				mg/L	6	Standard
Ho-1	165	23187.7	0.9				mg/L	10	Standard
Er	166	21645.5	1.0				mg/L	13	Standard
I	127	13629.5	5.8				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		115.973	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		112.903	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	111.940
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	105.916
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606138105
Sample Date/Time: Wednesday, June 29, 2016 19:35:50
Number of Replicates: 3
Autosampler Position: 401
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81775.3	3.6				ug/L	74699	Standard
	Be	9	45.0	11.1	**0.0544**	0.006	11.5	ug/L	8	Standard
	Al	27	547945.2	2.8	**3.3933**	0.048	1.4	ug/L	1493	Standard
	Sc	45	73444.3	1.5				ug/L	61029	Standard
	Ti	47	212.7	8.9	**0.3795**	0.037	9.9	ug/L	35	Standard
	V	51	6482.3	2.1	**0.5523**	0.015	2.6	ug/L	1435	Standard
	Cr	52	11556.7	2.9	**0.3347**	0.014	4.0	ug/L	7635	Standard
	Cr	53	865.0	10.6	**0.4848**	0.072	14.9	ug/L	363	Standard
	Mn	55	123099.8	1.9	**15.2575**	0.218	1.4	ug/L	747	Standard
	Co	59	2101.5	1.5	**0.2401**	0.008	3.5	ug/L	234	Standard
	Ni	60	1463.7	4.5	**0.5572**	0.024	4.3	ug/L	215	Standard
	Cu	65	1004.0	2.5	**0.3664**	0.012	3.3	ug/L	104	Standard
	Zn	66	6132.9	2.2	**4.4370**	0.037	0.8	ug/L	363	Standard
>	**Ge**	72	568314.4	1.9				ug/L	495142	Standard
	As	75	135.4	21.1	**0.1651**	0.024	14.5	ug/L	-50	Standard
	Se	82	20.1	25.4	**0.0217**	0.043	197.6	ug/L	14	Standard
	Se-1	77	47.3	2.4	**-0.0575**	0.019	32.3	ug/L	42	Standard
>	**Ga**	71	615.0	5.6				mg/L	42	Standard
	Rb	85	5134.2	2.0				ug/L	17	Standard
	Y	89	506159.2	1.9				ug/L	417098	Standard
>	**Rh**	103	11.7	107.9				ug/L	13	Standard
	Mo	98	50.7	18.0	**0.0105**	0.003	28.3	ug/L	11	Standard
	Ag	107	125.7	10.6	**0.0035**	0.002	48.0	ug/L	68	Standard
	Cd	111	10.9	48.5	**-0.0035**	0.002	62.7	mg/L	2	Standard
	Cd	114	42.4	34.4	**0.0049**	0.002	48.6	ug/L	12	Standard
>	**In**	115	689821.8	0.4				ug/L	587441	Standard
	Sn	118	595.0	5.8	**-0.0080**	0.005	59.8	ug/L	497	Standard
	Sb	123	118.9	14.7	**0.0175**	0.003	18.8	ug/L	78	Standard
	Ba	135	10423.6	1.2	**4.3208**	0.035	0.8	ug/L	24	Standard
	Ce	140	31651.4	0.9				ug/L	25	Standard
>	**Tb**	159	1043112.5	1.4				ug/L	939701	Standard
	Ho	165	500.0	7.2				ug/L	10	Standard
	Tl	203	34.0	12.8	**0.0020**	0.000	23.2	ug/L	4	Standard
	Tl	205	20.0	66.1	**0.0027**	0.002	61.7	ug/L	2	Standard
	Pb	206	2645.2	1.4	**0.3784**	0.005	1.3	ug/L	240	Standard
	Pb	207	2160.5	2.6	**0.3433**	0.011	3.1	ug/L	198	Standard
	Pb	208	9496.8	0.4	**0.3858**	0.004	1.1	ug/L	883	Standard
	U	238	183.7	2.7	**0.0198**	0.001	4.5	ug/L	3	Standard
>	**Bi**	209	577076.9	1.0				ug/L	523984	Standard

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Na	23	1.7	173.2	**15.9398**	27.600	173.2	mg/L	0	Standard
Mg	24	31.7	39.7	**-0.0310**	0.014	45.0	mg/L	37	Standard
K	39	75.0	17.6	**0.0236**	0.024	101.0	mg/L	38	Standard
Ca	43	45.0	44.4	**-0.1502**	1.087	724.0	mg/L	10	Standard
Fe	54	679.1	0.8	**0.3402**	0.010	2.9	mg/L	179	Standard
Fe	57	390.0	9.7	**0.0271**	0.102	376.6	mg/L	335	Standard
Sc-1	45	73444.3	1.5				mg/L	61029	Standard
Cl	35	27695.3	0.4				ug/L	20195	Standard
Kr	83	1.3	114.6				ug/L	4	Standard
Br	81	2046.8	15.0				ug/L	1547	Standard
P	31	20195.1	3.7				ug/L	15286	Standard
S	34	2511.9	7.3				ug/L	1572	Standard
Sr	88	68.3	42.9				ug/L	73	Standard
C	12	50.0	40.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	3	Standard
Dy	164	1042.0	9.5				mg/L	6	Standard
Ho-1	165	500.0	7.2				mg/L	10	Standard
Er	166	446.7	15.2				mg/L	13	Standard
I	127	1841.8	32.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		109.473	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		114.778	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		117.428
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.132
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606138107
Sample Date/Time: Wednesday, June 29, 2016 19:39:01
Number of Replicates: 3
Autosampler Position: 402
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84183.2	0.7				ug/L	74699	Standard
	Be	9	1125.0	5.6	**1.1418**	0.071	6.2	ug/L	8	Standard
	Al	27	16362118.1	1.0	**98.7783**	0.357	0.4	ug/L	1493	Standard
	Sc	45	80079.5	2.6				ug/L	61029	Standard
	Ti	47	5684.7	1.2	**13.0248**	0.178	1.4	ug/L	35	Standard
	V	51	193164.5	0.6	**22.2022**	0.395	1.8	ug/L	1435	Standard
	Cr	52	144926.2	1.3	**16.0993**	0.107	0.7	ug/L	7635	Standard
	Cr	53	17089.6	2.1	**15.8598**	0.165	1.0	ug/L	363	Standard
	Mn	55	4945150.4	1.2	**621.8545**	12.591	2.0	ug/L	747	Standard
	Co	59	79442.1	0.4	**10.4972**	0.101	1.0	ug/L	234	Standard
	Ni	60	48759.0	0.6	**22.6802**	0.156	0.7	ug/L	215	Standard
	Cu	65	44548.4	1.0	**20.8546**	0.085	0.4	ug/L	104	Standard
	Zn	66	116987.3	1.0	**93.3289**	1.249	1.3	ug/L	363	Standard
>	**Ge**	72	565487.8	1.3				ug/L	495142	Standard
	As	75	12786.6	1.5	**10.0557**	0.155	1.5	ug/L	-50	Standard
	Se	82	93.9	6.5	**0.6112**	0.058	9.6	ug/L	14	Standard
	Se-1	77	134.7	12.3	**0.9941**	0.220	22.1	ug/L	42	Standard
>	**Ga**	71	20750.9	1.1				mg/L	42	Standard
	Rb	85	229576.4	1.2				ug/L	17	Standard
	Y	89	760564.3	0.9				ug/L	417098	Standard
>	**Rh**	103	26.7	39.0				ug/L	13	Standard
	Mo	98	714.7	6.9	**0.2279**	0.017	7.3	ug/L	11	Standard
	Ag	107	706.7	2.8	**0.0816**	0.003	4.3	ug/L	68	Standard
	Cd	111	991.8	3.3	**0.4053**	0.015	3.7	mg/L	2	Standard
	Cd	114	2256.1	2.3	**0.3810**	0.005	1.2	ug/L	12	Standard
>	**In**	115	674434.0	1.0				ug/L	587441	Standard
	Sn	118	836.7	10.4	**0.0300**	0.012	41.1	ug/L	497	Standard
	Sb	123	542.0	6.0	**0.0969**	0.005	5.6	ug/L	78	Standard
	Ba	135	363437.5	1.5	**154.6607**	2.916	1.9	ug/L	24	Standard
	Ce	140	1323769.8	0.4				ug/L	25	Standard
>	**Tb**	159	1046974.9	0.8				ug/L	939701	Standard
	Ho	165	21420.1	0.8				ug/L	10	Standard
	Tl	203	1015.7	4.2	**0.1138**	0.005	4.5	ug/L	4	Standard
	Tl	205	906.7	2.2	**0.1191**	0.002	2.0	ug/L	2	Standard
	Pb	206	225485.9	0.9	**39.5300**	0.272	0.7	ug/L	240	Standard
	Pb	207	184080.5	0.2	**36.3178**	0.069	0.2	ug/L	198	Standard
	Pb	208	811320.1	0.8	**40.5199**	0.434	1.1	ug/L	883	Standard
	U	238	5280.9	2.0	**0.7154**	0.017	2.3	ug/L	3	Standard
>	**Bi**	209	558508.9	0.3				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	105.0	49.7	**0.0390**	0.054	139.2	mg/L	37	Standard
K	39	875.0	3.0	**1.3597**	0.017	1.3	mg/L	38	Standard
Ca	43	123.3	10.2	**3.4107**	0.543	15.9	mg/L	10	Standard
Fe	54	18540.3	2.4	**11.8486**	0.489	4.1	mg/L	179	Standard
Fe	57	5050.8	2.1	**12.0198**	0.614	5.1	mg/L	335	Standard
> **Sc-1**	45	80079.5	2.6				mg/L	61029	Standard
Cl	35	26211.3	2.3				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	4010.5	1.9				ug/L	1547	Standard
P	31	18821.7	2.8				ug/L	15286	Standard
S	34	2180.2	5.1				ug/L	1572	Standard
Sr	88	100.0	25.0				ug/L	73	Standard
C	12	166.7	30.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	70.0	28.6				mg/L	3	Standard
Dy	164	35314.8	2.4				mg/L	6	Standard
Ho-1	165	21420.1	0.8				mg/L	10	Standard
Er	166	18965.2	4.5				mg/L	13	Standard
I	127	21211.5	3.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.697	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.207	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	114.809
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	106.589
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606138107
Sample Date/Time: Wednesday, June 29, 2016 19:42:13
Number of Replicates: 3
Autosampler Position: 403
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79962.1	1.1				ug/L	74699	Standard
	Be	9	35.0	37.8	**0.0449**	0.015	32.4	ug/L	8	Standard
	Al	27	348986.4	2.3	**2.2050**	0.043	1.9	ug/L	1493	Standard
	Sc	45	69050.4	2.1				ug/L	61029	Standard
	Ti	47	147.7	4.0	**0.2190**	0.009	4.2	ug/L	35	Standard
	V	51	5537.0	5.1	**0.4222**	0.040	9.5	ug/L	1435	Standard
	Cr	52	11219.2	0.9	**0.2513**	0.015	5.8	ug/L	7635	Standard
	Cr	53	801.7	3.8	**0.4006**	0.025	6.2	ug/L	363	Standard
	Mn	55	101661.8	3.0	**12.1540**	0.524	4.3	ug/L	747	Standard
	Co	59	1813.1	5.5	**0.1941**	0.015	7.9	ug/L	234	Standard
	Ni	60	1251.7	0.2	**0.4392**	0.009	2.1	ug/L	215	Standard
	Cu	65	1098.7	4.3	**0.3937**	0.026	6.7	ug/L	104	Standard
	Zn	66	4663.4	1.9	**3.1415**	0.081	2.6	ug/L	363	Standard
>	**Ge**	72	587910.1	1.4				ug/L	495142	Standard
	As	75	208.3	5.8	**0.2162**	0.008	3.9	ug/L	-50	Standard
	Se	82	14.6	52.1	**-0.0264**	0.056	213.9	ug/L	14	Standard
	Se-1	77	58.3	15.6	**0.0509**	0.111	217.0	ug/L	42	Standard
>	**Ga**	71	483.3	11.4				mg/L	42	Standard
	Rb	85	4672.4	3.2				ug/L	17	Standard
	Y	89	494582.5	2.5				ug/L	417098	Standard
>	**Rh**	103	10.0	50.0				ug/L	13	Standard
	Mo	98	50.9	2.1	**0.0113**	0.001	5.2	ug/L	11	Standard
	Ag	107	137.0	5.3	**0.0059**	0.001	14.4	ug/L	68	Standard
	Cd	111	22.2	22.2	**0.0016**	0.002	123.1	mg/L	2	Standard
	Cd	114	55.9	25.6	**0.0077**	0.003	34.0	ug/L	12	Standard
>	**In**	115	657881.3	1.7				ug/L	587441	Standard
	Sn	118	586.7	15.6	**-0.0052**	0.012	239.2	ug/L	497	Standard
	Sb	123	130.5	4.0	**0.0208**	0.001	5.8	ug/L	78	Standard
	Ba	135	7584.6	1.4	**3.2933**	0.054	1.6	ug/L	24	Standard
	Ce	140	27601.8	1.0				ug/L	25	Standard
>	**Tb**	159	1004279.0	0.4				ug/L	939701	Standard
	Ho	165	470.0	12.8				ug/L	10	Standard
	Tl	203	31.3	21.7	**0.0018**	0.001	42.5	ug/L	4	Standard
	Tl	205	38.3	39.8	**0.0052**	0.002	37.2	ug/L	2	Standard
	Pb	206	5039.5	2.9	**0.8074**	0.036	4.5	ug/L	240	Standard
	Pb	207	4082.6	3.5	**0.7312**	0.039	5.3	ug/L	198	Standard
	Pb	208	17367.6	1.6	**0.7884**	0.025	3.2	ug/L	883	Standard
	U	238	118.3	14.2	**0.0116**	0.002	21.2	ug/L	3	Standard
>	**Bi**	209	562827.5	1.3				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	41.7	6.9	**-0.0175**	0.004	24.7	mg/L	37	Standard
K	39	65.0	46.8	**0.0126**	0.058	464.1	mg/L	38	Standard
Ca	43	20.0	66.1	**-1.4118**	0.719	50.9	mg/L	10	Standard
Fe	54	548.6	17.9	**0.2728**	0.072	26.3	mg/L	179	Standard
Fe	57	318.3	8.7	**-0.1165**	0.103	88.6	mg/L	335	Standard
> **Sc-1**	45	69050.4	2.1				mg/L	61029	Standard
Cl	35	24683.4	2.1				ug/L	20195	Standard
Kr	83	3.0	33.3				ug/L	4	Standard
Br	81	2036.8	6.4				ug/L	1547	Standard
P	31	17868.9	0.9				ug/L	15286	Standard
S	34	1880.1	5.1				ug/L	1572	Standard
Sr	88	70.0	32.7				ug/L	73	Standard
C	12	63.3	32.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	851.3	21.1				mg/L	6	Standard
Ho-1	165	470.0	12.8				mg/L	10	Standard
Er	166	460.0	19.0				mg/L	13	Standard
I	127	2083.5	32.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.046	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		118.736	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.991
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.413
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606138402
Sample Date/Time: Wednesday, June 29, 2016 19:45:24
Number of Replicates: 3
Autosampler Position: 404
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78829.6	2.0				ug/L	74699	Standard
	Be	9	476.7	4.8	**0.5211**	0.034	6.6	ug/L	8	Standard
	Al	27	790696.4	0.9	**5.0858**	0.055	1.1	ug/L	1493	Standard
	Sc	45	79546.6	1.7				ug/L	61029	Standard
	Ti	47	5657.7	0.8	**12.8152**	0.349	2.7	ug/L	35	Standard
	V	51	106854.5	1.6	**12.0511**	0.193	1.6	ug/L	1435	Standard
	Cr	52	263051.4	1.4	**29.7045**	0.729	2.5	ug/L	7635	Standard
	Cr	53	32229.3	4.0	**29.8443**	0.696	2.3	ug/L	363	Standard
	Mn	55	1259215.6	0.6	**156.4341**	3.728	2.4	ug/L	747	Standard
	Co	59	45647.0	0.6	**5.9475**	0.157	2.6	ug/L	234	Standard
	Ni	60	134444.3	1.6	**62.0317**	0.857	1.4	ug/L	215	Standard
	Cu	65	50137.5	0.5	**23.2180**	0.523	2.3	ug/L	104	Standard
	Zn	66	191528.7	0.9	**151.3328**	2.746	1.8	ug/L	363	Standard
>	**Ge**	72	572152.6	2.7				ug/L	495142	Standard
	As	75	5700.3	1.6	**4.4645**	0.048	1.1	ug/L	-50	Standard
	Se	82	330.0	4.2	**2.4632**	0.049	2.0	ug/L	14	Standard
	Se-1	77	314.7	3.0	**3.1071**	0.115	3.7	ug/L	42	Standard
>	**Ga**	71	3685.4	1.6				mg/L	42	Standard
	Rb	85	41053.9	1.7				ug/L	17	Standard
	Y	89	1388727.0	1.6				ug/L	417098	Standard
>	**Rh**	103	25.0	0.0				ug/L	13	Standard
	Mo	98	3897.2	2.0	**1.2782**	0.019	1.5	ug/L	11	Standard
	Ag	107	551.3	5.8	**0.0614**	0.003	5.7	ug/L	68	Standard
	Cd	111	1240.5	0.7	**0.5131**	0.007	1.4	mg/L	2	Standard
	Cd	114	2915.5	4.4	**0.4970**	0.020	4.1	ug/L	12	Standard
>	**In**	115	669008.5	1.2				ug/L	587441	Standard
	Sn	118	676.7	8.2	**0.0070**	0.008	114.7	ug/L	497	Standard
	Sb	123	186.6	3.8	**0.0309**	0.001	3.8	ug/L	78	Standard
	Ba	135	221251.7	0.3	**94.9139**	1.345	1.4	ug/L	24	Standard
	Ce	140	471655.7	0.9				ug/L	25	Standard
>	**Tb**	159	1067869.0	0.9				ug/L	939701	Standard
	Ho	165	47698.3	1.5				ug/L	10	Standard
	Tl	203	1397.7	2.5	**0.1543**	0.005	3.4	ug/L	4	Standard
	Tl	205	1176.7	6.0	**0.1515**	0.008	5.0	ug/L	2	Standard
	Pb	206	21429.5	1.2	**3.6210**	0.069	1.9	ug/L	240	Standard
	Pb	207	15728.2	0.6	**2.9798**	0.021	0.7	ug/L	198	Standard
	Pb	208	70387.8	1.2	**3.3811**	0.084	2.5	ug/L	883	Standard
	U	238	18087.1	1.2	**2.4141**	0.054	2.2	ug/L	3	Standard
>	**Bi**	209	569388.1	1.3				ug/L	523984	Standard

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Na	23	5.0	173.2	**43.9188**	76.061	173.2	mg/L	0	Standard
Mg	24	210.0	6.3	**0.1429**	0.013	9.0	mg/L	37	Standard
K	39	275.0	8.3	**0.3521**	0.037	10.4	mg/L	38	Standard
Ca	43	148.3	19.8	**4.6742**	1.471	31.5	mg/L	10	Standard
Fe	54	12478.7	2.5	**7.9817**	0.313	3.9	mg/L	179	Standard
Fe	57	3430.4	4.1	**7.8688**	0.221	2.8	mg/L	335	Standard
> **Sc-1**	45	79546.6	1.7				mg/L	61029	Standard
Cl	35	26111.8	0.7				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	2043.5	3.5				ug/L	1547	Standard
P	31	19195.5	2.0				ug/L	15286	Standard
S	34	2368.5	5.4				ug/L	1572	Standard
Sr	88	153.3	13.2				ug/L	73	Standard
C	12	70.0	14.3				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	140.0	18.9				mg/L	3	Standard
Dy	164	65719.4	1.8				mg/L	6	Standard
Ho-1	165	47698.3	1.5				mg/L	10	Standard
Er	166	45979.7	1.2				mg/L	13	Standard
I	127	5242.6	1.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.530	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		115.553	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	113.885
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	108.665
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1606138404
Sample Date/Time: Wednesday, June 29, 2016 19:48:35
Number of Replicates: 3
Autosampler Position: 405
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80955.8	1.9				ug/L	74699	Standard
	Be	9	880.0	13.6	**0.9302**	0.126	13.6	ug/L	8	Standard
	Al	27	4591606.5	1.6	**28.8172**	0.235	0.8	ug/L	1493	Standard
	Sc	45	81773.4	1.2				ug/L	61029	Standard
	Ti	47	8450.7	1.8	**19.2499**	0.245	1.3	ug/L	35	Standard
	V	51	185955.1	1.6	**21.1827**	0.308	1.5	ug/L	1435	Standard
	Cr	52	431888.4	0.7	**49.5778**	0.407	0.8	ug/L	7635	Standard
	Cr	53	54036.2	1.9	**50.4433**	1.377	2.7	ug/L	363	Standard
	Mn	55	1979621.7	0.4	**246.7487**	3.142	1.3	ug/L	747	Standard
	Co	59	89211.3	2.3	**11.6929**	0.262	2.2	ug/L	234	Standard
	Ni	60	241828.7	1.1	**112.0223**	0.265	0.2	ug/L	215	Standard
	Cu	65	79842.9	1.5	**37.1424**	0.248	0.7	ug/L	104	Standard
	Zn	66	363879.1	1.7	**288.7674**	1.874	0.6	ug/L	363	Standard
>	**Ge**	72	570278.1	1.3				ug/L	495142	Standard
	As	75	11266.0	1.4	**8.7923**	0.037	0.4	ug/L	-50	Standard
	Se	82	562.8	1.7	**4.3149**	0.122	2.8	ug/L	14	Standard
	Se-1	77	468.7	10.3	**4.9506**	0.587	11.9	ug/L	42	Standard
>	**Ga**	71	6996.6	2.8				mg/L	42	Standard
	Rb	85	75201.3	3.4				ug/L	17	Standard
	Y	89	1637404.7	1.2				ug/L	417098	Standard
>	**Rh**	103	40.0	12.5				ug/L	13	Standard
	Mo	98	6065.7	2.4	**2.0076**	0.060	3.0	ug/L	11	Standard
	Ag	107	921.4	1.6	**0.1122**	0.003	2.7	ug/L	68	Standard
	Cd	111	1933.3	0.9	**0.8101**	0.015	1.9	mg/L	2	Standard
	Cd	114	4671.7	0.8	**0.8037**	0.006	0.7	ug/L	12	Standard
>	**In**	115	664089.4	1.0				ug/L	587441	Standard
	Sn	118	708.3	7.1	**0.0125**	0.007	53.2	ug/L	497	Standard
	Sb	123	171.2	9.0	**0.0282**	0.003	10.1	ug/L	78	Standard
	Ba	135	217409.8	1.0	**93.9488**	0.914	1.0	ug/L	24	Standard
	Ce	140	744689.2	0.9				ug/L	25	Standard
>	**Tb**	159	1077211.2	1.7				ug/L	939701	Standard
	Ho	165	62662.7	1.1				ug/L	10	Standard
	Tl	203	2865.3	1.3	**0.3204**	0.004	1.2	ug/L	4	Standard
	Tl	205	2535.2	5.2	**0.3286**	0.016	4.9	ug/L	2	Standard
	Pb	206	40598.7	0.9	**6.9743**	0.127	1.8	ug/L	240	Standard
	Pb	207	29975.3	2.2	**5.7854**	0.186	3.2	ug/L	198	Standard
	Pb	208	132785.8	0.6	**6.4904**	0.091	1.4	ug/L	883	Standard
	U	238	27584.4	0.2	**3.7106**	0.059	1.6	ug/L	3	Standard
>	**Bi**	209	565317.9	1.5				ug/L	523984	Standard

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Na	23	1.7	173.2	**14.1527**	24.505	173.1	mg/L	0	Standard
Mg	24	243.3	11.7	**0.1691**	0.025	14.5	mg/L	37	Standard
K	39	461.7	5.5	**0.6478**	0.049	7.5	mg/L	38	Standard
Ca	43	205.0	4.9	**7.1444**	0.559	7.8	mg/L	10	Standard
Fe	54	23854.6	1.3	**14.9557**	0.059	0.4	mg/L	179	Standard
Fe	57	6316.3	1.9	**14.9472**	0.123	0.8	mg/L	335	Standard
> **Sc-1**	45	81773.4	1.2				mg/L	61029	Standard
Cl	35	26395.0	1.0				ug/L	20195	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	8435.7	8.5				ug/L	1547	Standard
P	31	20819.3	1.9				ug/L	15286	Standard
S	34	2495.2	1.6				ug/L	1572	Standard
Sr	88	186.7	12.1				ug/L	73	Standard
C	12	26.7	21.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	520.0	8.4				mg/L	3	Standard
Dy	164	85733.4	1.4				mg/L	6	Standard
Ho-1	165	62662.7	1.1				mg/L	10	Standard
Er	166	61347.3	2.7				mg/L	13	Standard
I	127	12962.2	2.6				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		108.376	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		115.175	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.048
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.888
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 19:51:49
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79632.1	2.5				ug/L	74699	Standard
	Be	9	53037.7	1.9	**56.5448**	1.909	3.4	ug/L	8	Standard
	Al	27	8288547.2	1.5	**52.9043**	0.899	1.7	ug/L	1493	Standard
	Sc	45	68251.7	0.4				ug/L	61029	Standard
	Ti	47	44871.7	1.2	**102.9405**	2.024	2.0	ug/L	35	Standard
	V	51	450952.2	1.7	**51.7787**	1.350	2.6	ug/L	1435	Standard
	Cr	52	441674.6	0.8	**50.8503**	0.824	1.6	ug/L	7635	Standard
	Cr	53	54163.4	3.4	**50.6767**	1.716	3.4	ug/L	363	Standard
	Mn	55	408648.7	3.2	**50.9466**	2.025	4.0	ug/L	747	Standard
	Co	59	404996.9	2.1	**53.3495**	1.595	3.0	ug/L	234	Standard
	Ni	60	109209.9	1.2	**50.6487**	1.081	2.1	ug/L	215	Standard
	Cu	65	108068.7	1.0	**50.4372**	0.990	2.0	ug/L	104	Standard
	Zn	66	63914.2	1.2	**50.4711**	0.538	1.1	ug/L	363	Standard
>	Ge	72	568913.3	1.0				ug/L	495142	Standard
	As	75	64596.5	1.7	**50.2573**	1.198	2.4	ug/L	-50	Standard
	Se	82	6434.6	2.8	**50.8949**	1.678	3.3	ug/L	14	Standard
	Se-1	77	4404.6	0.9	**51.8699**	0.916	1.8	ug/L	42	Standard
>	Ga	71	81.7	19.7				mg/L	42	Standard
	Rb	85	868.4	8.5				ug/L	17	Standard
	Y	89	484608.1	0.7				ug/L	417098	Standard
>	Rh	103	25.0	40.0				ug/L	13	Standard
	Mo	98	300990.3	2.1	**101.3882**	1.976	1.9	ug/L	11	Standard
	Ag	107	359716.1	0.6	**49.5455**	0.289	0.6	ug/L	68	Standard
	Cd	111	115140.5	0.5	**49.4382**	0.205	0.4	mg/L	2	Standard
	Cd	114	277323.3	2.2	**48.5511**	1.074	2.2	ug/L	12	Standard
>	In	115	654244.8	0.1				ug/L	587441	Standard
	Sn	118	326410.3	0.9	**50.0768**	0.438	0.9	ug/L	497	Standard
	Sb	123	257734.5	0.6	**49.5626**	0.244	0.5	ug/L	78	Standard
	Ba	135	107937.1	0.2	**47.3350**	0.075	0.2	ug/L	24	Standard
	Ce	140	156.7	33.8				ug/L	25	Standard
>	Tb	159	993573.1	1.0				ug/L	939701	Standard
	Ho	165	18.3	41.7				ug/L	10	Standard
	Tl	203	442343.3	0.6	**51.3703**	0.497	1.0	ug/L	4	Standard
	Tl	205	397679.6	3.2	**53.2177**	1.929	3.6	ug/L	2	Standard
	Pb	206	282572.7	0.8	**50.5712**	0.781	1.5	ug/L	240	Standard
	Pb	207	252130.0	1.0	**50.7898**	0.969	1.9	ug/L	198	Standard
	Pb	208	1034503.8	1.3	**52.7468**	1.180	2.2	ug/L	883	Standard
	U	238	372072.1	1.5	**51.7486**	1.271	2.5	ug/L	3	Standard
>	Bi	209	547364.2	0.9				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.1101**	29.627	173.2	mg/L	0	Standard
Mg	24	4437.3	1.9	**5.0568**	0.105	2.1	mg/L	37	Standard
K	39	2166.8	4.9	**4.1677**	0.193	4.6	mg/L	38	Standard
Ca	43	105.0	40.7	**3.4097**	2.426	71.2	mg/L	10	Standard
Fe	54	6964.2	0.4	**5.1415**	0.037	0.7	mg/L	179	Standard
Fe	57	2053.5	5.5	**5.1659**	0.318	6.1	mg/L	335	Standard
> **Sc-1**	45	68251.7	0.4				mg/L	61029	Standard
Cl	35	27215.8	2.7				ug/L	20195	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	1920.1	6.9				ug/L	1547	Standard
P	31	20039.9	1.0				ug/L	15286	Standard
S	34	2546.9	7.4				ug/L	1572	Standard
Sr	88	71.7	29.0				ug/L	73	Standard
C	12	70.0	24.7				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	11.7	100.8				mg/L	6	Standard
Ho-1	165	18.3	41.7				mg/L	10	Standard
Er	166	33.3	34.6				mg/L	13	Standard
I	127	1696.8	22.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	113.090		
Al	27	105.809		
Sc	45			
Ti	47	102.941		
V	51	103.557		
Cr	52	101.701		
Cr	53			
Mn	55	101.893		
Co	59	106.699		
Ni	60	101.297		
Cu	65	100.874		
Zn	66	100.942		
> Ge	72		114.899	
As	75	100.515		
Se	82	101.790		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.388		
Ag	107	99.091		
Cd	111	98.876		
Cd	114			
In	115		111.372	
Sn	118	100.154		
Sb	123	99.125		
Ba	135	94.670		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.741		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.494		
U	238	103.497		
Bi	209		104.462	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 19:55:00
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78377.2	0.9				ug/L	74699	Standard
	Be	9	16.7	17.3	**0.0256**	0.003	11.6	ug/L	8	Standard
	Al	27	3955.5	8.5	**0.0123**	0.002	16.7	ug/L	1493	Standard
	Sc	45	70123.6	2.1				ug/L	61029	Standard
	Ti	47	44.3	19.2	**-0.0067**	0.022	331.3	ug/L	35	Standard
	V	51	1494.9	5.1	**-0.0231**	0.005	19.5	ug/L	1435	Standard
	Cr	52	7869.7	1.7	**-0.0976**	0.038	39.0	ug/L	7635	Standard
	Cr	53	438.3	4.0	**0.0839**	0.027	31.8	ug/L	363	Standard
	Mn	55	1323.4	11.3	**0.0175**	0.017	96.4	ug/L	747	Standard
	Co	59	292.0	15.1	**0.0012**	0.005	416.2	ug/L	234	Standard
	Ni	60	231.7	5.0	**-0.0160**	0.006	40.4	ug/L	215	Standard
	Cu	65	142.7	7.1	**-0.0369**	0.003	9.0	ug/L	104	Standard
	Zn	66	477.7	7.4	**-0.0736**	0.020	26.8	ug/L	363	Standard
>	**Ge**	72	568079.4	2.5				ug/L	495142	Standard
	As	75	-36.3	34.6	**0.0313**	0.010	31.8	ug/L	-50	Standard
	Se	82	17.1	26.2	**-0.0026**	0.033	1282.0	ug/L	14	Standard
	Se-1	77	54.3	9.3	**0.0268**	0.068	253.5	ug/L	42	Standard
>	**Ga**	71	40.0	12.5				mg/L	42	Standard
	Rb	85	38.3	19.9				ug/L	17	Standard
	Y	89	483139.1	0.9				ug/L	417098	Standard
>	**Rh**	103	11.7	99.0				ug/L	13	Standard
	Mo	98	291.7	36.0	**0.0908**	0.037	40.3	ug/L	11	Standard
	Ag	107	161.3	21.3	**0.0089**	0.005	57.1	ug/L	68	Standard
	Cd	111	21.8	28.2	**0.0012**	0.002	201.3	mg/L	2	Standard
	Cd	114	48.0	10.4	**0.0061**	0.001	15.7	ug/L	12	Standard
>	**In**	115	669206.2	1.8				ug/L	587441	Standard
	Sn	118	881.7	18.2	**0.0375**	0.022	58.1	ug/L	497	Standard
	Sb	123	447.3	19.7	**0.0797**	0.015	18.9	ug/L	78	Standard
	Ba	135	111.0	14.0	**0.0316**	0.007	21.6	ug/L	24	Standard
	Ce	140	185.0	42.5				ug/L	25	Standard
>	**Tb**	159	1027080.2	0.9				ug/L	939701	Standard
	Ho	165	28.3	10.2				ug/L	10	Standard
	Tl	203	102.0	27.3	**0.0095**	0.003	32.1	ug/L	4	Standard
	Tl	205	76.7	13.6	**0.0100**	0.001	13.1	ug/L	2	Standard
	Pb	206	326.3	10.0	**-0.0155**	0.005	35.3	ug/L	240	Standard
	Pb	207	292.3	4.6	**-0.0139**	0.002	17.4	ug/L	198	Standard
	Pb	208	1226.7	4.7	**-0.0145**	0.003	18.0	ug/L	883	Standard
	U	238	78.7	31.6	**0.0060**	0.003	54.4	ug/L	3	Standard
>	**Bi**	209	574845.6	0.5				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	46.7	34.4	**-0.0124**	0.019	155.4	mg/L	37	Standard
K	39	46.7	44.6	**-0.0238**	0.042	178.2	mg/L	38	Standard
Ca	43	26.7	57.3	**-1.0457**	0.868	83.0	mg/L	10	Standard
Fe	54	161.1	25.9	**-0.0190**	0.033	173.6	mg/L	179	Standard
Fe	57	251.7	19.3	**-0.3314**	0.129	38.8	mg/L	335	Standard
Sc-1	45	70123.6	2.1				mg/L	61029	Standard
Cl	35	27868.9	0.6				ug/L	20195	Standard
Kr	83	0.7	86.6				ug/L	4	Standard
Br	81	2040.1	1.8				ug/L	1547	Standard
P	31	20417.1	4.9				ug/L	15286	Standard
S	34	2425.2	3.5				ug/L	1572	Standard
Sr	88	45.0	40.1				ug/L	73	Standard
C	12	50.0	52.9				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	11.9	129.9				mg/L	6	Standard
Ho-1	165	28.3	10.2				mg/L	10	Standard
Er	166	30.0	57.7				mg/L	13	Standard
I	127	1460.1	42.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		114.731	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.919
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.707
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606138406
Sample Date/Time: Wednesday, June 29, 2016 19:58:13
Number of Replicates: 3
Autosampler Position: 406
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77039.0	4.7				ug/L	74699	Standard
	Be	9	588.3	14.0	**0.6548**	0.074	11.3	ug/L	8	Standard
	Al	27	832772.7	0.7	**5.4883**	0.227	4.1	ug/L	1493	Standard
	Sc	45	75047.3	4.1				ug/L	61029	Standard
	Ti	47	6368.7	0.7	**14.6522**	0.311	2.1	ug/L	35	Standard
	V	51	122665.5	0.9	**14.0720**	0.287	2.0	ug/L	1435	Standard
	Cr	52	293324.5	0.5	**33.7422**	0.348	1.0	ug/L	7635	Standard
	Cr	53	35827.3	1.9	**33.7165**	0.271	0.8	ug/L	363	Standard
	Mn	55	1790039.2	2.5	**225.6481**	2.955	1.3	ug/L	747	Standard
	Co	59	59513.4	2.6	**7.8774**	0.097	1.2	ug/L	234	Standard
	Ni	60	162230.6	1.1	**75.9835**	0.734	1.0	ug/L	215	Standard
	Cu	65	58756.0	0.7	**27.6257**	0.286	1.0	ug/L	104	Standard
	Zn	66	213240.6	1.5	**171.0057**	1.221	0.7	ug/L	363	Standard
>	**Ge**	72	563753.3	1.5				ug/L	495142	Standard
	As	75	6354.9	1.3	**5.0439**	0.138	2.7	ug/L	-50	Standard
	Se	82	268.5	3.3	**2.0114**	0.102	5.1	ug/L	14	Standard
	Se-1	77	256.0	4.1	**2.4577**	0.168	6.8	ug/L	42	Standard
>	**Ga**	71	4010.5	2.8				mg/L	42	Standard
	Rb	85	39651.9	3.3				ug/L	17	Standard
	Y	89	1622063.0	2.1				ug/L	417098	Standard
>	**Rh**	103	33.3	8.7				ug/L	13	Standard
	Mo	98	4372.5	0.7	**1.4952**	0.034	2.3	ug/L	11	Standard
	Ag	107	608.3	2.2	**0.0725**	0.003	3.7	ug/L	68	Standard
	Cd	111	1369.4	3.4	**0.5916**	0.033	5.6	mg/L	2	Standard
	Cd	114	3220.4	7.1	**0.5731**	0.054	9.4	ug/L	12	Standard
>	**In**	115	642314.3	2.8				ug/L	587441	Standard
	Sn	118	866.7	3.3	**0.0411**	0.007	16.9	ug/L	497	Standard
	Sb	123	475.1	9.4	**0.0890**	0.010	11.7	ug/L	78	Standard
	Ba	135	210364.7	1.0	**94.0146**	1.722	1.8	ug/L	24	Standard
	Ce	140	620778.1	1.3				ug/L	25	Standard
>	**Tb**	159	1035282.0	2.1				ug/L	939701	Standard
	Ho	165	58499.4	0.8				ug/L	10	Standard
	Tl	203	1670.8	3.4	**0.1930**	0.007	3.5	ug/L	4	Standard
	Tl	205	1583.4	5.7	**0.2129**	0.013	6.3	ug/L	2	Standard
	Pb	206	23886.1	1.1	**4.2252**	0.039	0.9	ug/L	240	Standard
	Pb	207	17508.1	0.9	**3.4746**	0.041	1.2	ug/L	198	Standard
	Pb	208	79776.0	1.1	**4.0140**	0.064	1.6	ug/L	883	Standard
	U	238	22400.5	0.6	**3.1225**	0.026	0.8	ug/L	3	Standard
>	**Bi**	209	545342.1	0.8				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	190.0	5.3	**0.1344**	0.009	6.3	mg/L	37	Standard
K	39	241.7	12.5	**0.3203**	0.051	16.0	mg/L	38	Standard
Ca	43	168.3	3.4	**6.1267**	0.214	3.5	mg/L	10	Standard
Fe	54	12517.1	3.0	**8.4992**	0.364	4.3	mg/L	179	Standard
Fe	57	3428.7	4.4	**8.4118**	0.531	6.3	mg/L	335	Standard
> **Sc-1**	45	75047.3	4.1				mg/L	61029	Standard
Cl	35	26434.4	2.8				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	2270.2	3.9				ug/L	1547	Standard
P	31	19440.8	0.5				ug/L	15286	Standard
S	34	2256.8	6.7				ug/L	1572	Standard
Sr	88	170.0	33.4				ug/L	73	Standard
C	12	76.7	54.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	300.0	18.6				mg/L	3	Standard
Dy	164	81135.2	0.1				mg/L	6	Standard
Ho-1	165	58499.4	0.8				mg/L	10	Standard
Er	166	56983.6	0.5				mg/L	13	Standard
I	127	5462.7	4.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.133	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		113.857	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	109.341
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	104.076
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1606138408
Sample Date/Time: Wednesday, June 29, 2016 20:01:24
Number of Replicates: 3
Autosampler Position: 407
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79667.3	1.9				ug/L	74699	Standard
	Be	9	540.0	10.4	**0.5836**	0.070	11.9	ug/L	8	Standard
	Al	27	892686.6	1.0	**5.6842**	0.164	2.9	ug/L	1493	Standard
	Sc	45	78111.0	3.7				ug/L	61029	Standard
	Ti	47	6171.3	0.9	**13.8487**	0.141	1.0	ug/L	35	Standard
	V	51	131186.8	0.8	**14.6946**	0.149	1.0	ug/L	1435	Standard
	Cr	52	291322.4	2.4	**32.6724**	0.743	2.3	ug/L	7635	Standard
	Cr	53	35120.7	4.3	**32.2467**	1.471	4.6	ug/L	363	Standard
	Mn	55	2233691.8	2.2	**274.8758**	6.127	2.2	ug/L	747	Standard
	Co	59	65245.2	1.7	**8.4325**	0.147	1.7	ug/L	234	Standard
	Ni	60	190260.1	2.2	**86.9887**	2.023	2.3	ug/L	215	Standard
	Cu	65	66483.6	1.3	**30.5171**	0.399	1.3	ug/L	104	Standard
	Zn	66	187493.0	1.2	**146.6893**	2.307	1.6	ug/L	363	Standard
>	**Ge**	72	577612.7	0.6				ug/L	495142	Standard
	As	75	6445.8	1.9	**4.9929**	0.116	2.3	ug/L	-50	Standard
	Se	82	222.3	2.5	**1.5982**	0.037	2.3	ug/L	14	Standard
	Se-1	77	243.0	1.1	**2.2298**	0.039	1.8	ug/L	42	Standard
>	**Ga**	71	4360.6	1.0				mg/L	42	Standard
	Rb	85	41170.9	1.0				ug/L	17	Standard
	Y	89	1636669.5	0.9				ug/L	417098	Standard
>	**Rh**	103	33.3	22.9				ug/L	13	Standard
	Mo	98	4750.5	1.5	**1.5922**	0.009	0.6	ug/L	11	Standard
	Ag	107	651.7	5.1	**0.0767**	0.003	4.5	ug/L	68	Standard
	Cd	111	1476.5	1.8	**0.6252**	0.009	1.4	mg/L	2	Standard
	Cd	114	3537.9	6.1	**0.6161**	0.029	4.7	ug/L	12	Standard
>	**In**	115	655238.7	1.5				ug/L	587441	Standard
	Sn	118	965.0	3.4	**0.0534**	0.004	7.7	ug/L	497	Standard
	Sb	123	268.7	11.3	**0.0474**	0.005	10.8	ug/L	78	Standard
	Ba	135	196413.8	1.6	**86.0176**	0.137	0.2	ug/L	24	Standard
	Ce	140	596487.3	1.9				ug/L	25	Standard
>	**Tb**	159	1073225.5	1.0				ug/L	939701	Standard
	Ho	165	61178.3	1.7				ug/L	10	Standard
	Tl	203	2456.5	1.8	**0.2718**	0.001	0.3	ug/L	4	Standard
	Tl	205	2150.2	4.8	**0.2763**	0.017	6.1	ug/L	2	Standard
	Pb	206	24200.3	1.9	**4.0880**	0.010	0.3	ug/L	240	Standard
	Pb	207	17656.3	0.7	**3.3464**	0.078	2.3	ug/L	198	Standard
	Pb	208	79187.0	3.1	**3.8025**	0.046	1.2	ug/L	883	Standard
	U	238	22940.4	1.4	**3.0557**	0.038	1.2	ug/L	3	Standard
>	**Bi**	209	570736.3	2.0				ug/L	523984	Standard

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Na	23	3.3	173.2	**28.7877**	49.853	173.2	mg/L	0	Standard
Mg	24	161.7	15.3	**0.0975**	0.019	19.1	mg/L	37	Standard
K	39	273.3	12.8	**0.3583**	0.064	17.7	mg/L	38	Standard
Ca	43	191.7	9.9	**6.9329**	0.825	11.9	mg/L	10	Standard
Fe	54	12889.7	4.6	**8.4015**	0.298	3.5	mg/L	179	Standard
Fe	57	3420.4	5.7	**8.0292**	0.829	10.3	mg/L	335	Standard
Sc-1	45	78111.0	3.7				mg/L	61029	Standard
Cl	35	25108.8	1.1				ug/L	20195	Standard
Kr	83	1.0	173.2				ug/L	4	Standard
Br	81	1990.1	4.1				ug/L	1547	Standard
P	31	18960.2	2.1				ug/L	15286	Standard
S	34	2216.8	7.1				ug/L	1572	Standard
Sr	88	153.3	28.5				ug/L	73	Standard
C	12	110.0	9.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	313.3	12.9				mg/L	3	Standard
Dy	164	83986.8	2.5				mg/L	6	Standard
Ho-1	165	61178.3	1.7				mg/L	10	Standard
Er	166	57776.6	0.9				mg/L	13	Standard
I	127	4875.8	1.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		106.651	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		116.656	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	111.541
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	108.922
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1606138410
Sample Date/Time: Wednesday, June 29, 2016 20:04:36
Number of Replicates: 3
Autosampler Position: 408
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82222.6	2.1				ug/L	74699	Standard
	Be	9	466.7	0.6	**0.4893**	0.010	2.0	ug/L	8	Standard
	Al	27	798979.6	1.9	**4.9264**	0.080	1.6	ug/L	1493	Standard
	Sc	45	79640.5	1.7				ug/L	61029	Standard
	Ti	47	5792.4	2.5	**13.1770**	0.593	4.5	ug/L	35	Standard
	V	51	95139.7	1.4	**10.7518**	0.246	2.3	ug/L	1435	Standard
	Cr	52	279542.5	2.0	**31.7533**	0.664	2.1	ug/L	7635	Standard
	Cr	53	34038.2	1.3	**31.6794**	0.880	2.8	ug/L	363	Standard
	Mn	55	1053790.0	0.3	**131.3975**	3.080	2.3	ug/L	747	Standard
	Co	59	35027.1	0.6	**4.5723**	0.080	1.8	ug/L	234	Standard
	Ni	60	156240.8	1.2	**72.3985**	1.638	2.3	ug/L	215	Standard
	Cu	65	48550.0	0.3	**22.5657**	0.405	1.8	ug/L	104	Standard
	Zn	66	257712.2	0.3	**204.5897**	4.503	2.2	ug/L	363	Standard
>	**Ge**	72	569889.2	2.0				ug/L	495142	Standard
	As	75	6132.6	2.6	**4.8186**	0.190	4.0	ug/L	-50	Standard
	Se	82	361.1	9.2	**2.7244**	0.314	11.5	ug/L	14	Standard
	Se-1	77	331.7	7.4	**3.3212**	0.233	7.0	ug/L	42	Standard
>	**Ga**	71	4152.2	2.1				mg/L	42	Standard
	Rb	85	52623.0	3.5				ug/L	17	Standard
	Y	89	1425089.1	0.3				ug/L	417098	Standard
>	**Rh**	103	33.3	8.7				ug/L	13	Standard
	Mo	98	3927.9	0.3	**1.2648**	0.018	1.4	ug/L	11	Standard
	Ag	107	467.0	2.9	**0.0489**	0.003	5.2	ug/L	68	Standard
	Cd	111	1169.0	3.4	**0.4740**	0.011	2.3	mg/L	2	Standard
	Cd	114	2891.7	1.0	**0.4840**	0.007	1.5	ug/L	12	Standard
>	**In**	115	681463.1	1.2				ug/L	587441	Standard
	Sn	118	755.0	5.0	**0.0168**	0.007	41.1	ug/L	497	Standard
	Sb	123	219.3	13.0	**0.0363**	0.005	13.2	ug/L	78	Standard
	Ba	135	73803.3	1.7	**31.0670**	0.270	0.9	ug/L	24	Standard
	Ce	140	554709.1	1.1				ug/L	25	Standard
>	**Tb**	159	1094015.2	1.4				ug/L	939701	Standard
	Ho	165	50373.6	1.6				ug/L	10	Standard
	Tl	203	1120.7	1.3	**0.1214**	0.002	2.0	ug/L	4	Standard
	Tl	205	941.7	7.2	**0.1194**	0.008	6.7	ug/L	2	Standard
	Pb	206	24028.0	1.2	**4.0020**	0.045	1.1	ug/L	240	Standard
	Pb	207	17504.4	0.3	**3.2701**	0.054	1.6	ug/L	198	Standard
	Pb	208	78967.6	0.8	**3.7402**	0.091	2.4	ug/L	883	Standard
	U	238	25248.7	0.7	**3.3178**	0.077	2.3	ug/L	3	Standard
>	**Bi**	209	578682.9	1.6				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	188.3	33.0	**0.1211**	0.061	50.1	mg/L	37	Standard
K	39	248.3	3.1	**0.3067**	0.020	6.4	mg/L	38	Standard
Ca	43	173.3	7.3	**5.8747**	0.743	12.6	mg/L	10	Standard
Fe	54	14056.9	1.9	**8.9942**	0.034	0.4	mg/L	179	Standard
Fe	57	3822.2	6.9	**8.8892**	0.835	9.4	mg/L	335	Standard
> **Sc-1**	45	79640.5	1.7				mg/L	61029	Standard
Cl	35	25424.6	1.4				ug/L	20195	Standard
Kr	83	1.3	114.6				ug/L	4	Standard
Br	81	2053.5	6.1				ug/L	1547	Standard
P	31	20016.5	1.3				ug/L	15286	Standard
S	34	2301.8	5.1				ug/L	1572	Standard
Sr	88	141.7	32.0				ug/L	73	Standard
C	12	56.7	36.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	133.3	11.5				mg/L	3	Standard
Dy	164	72545.2	2.7				mg/L	6	Standard
Ho-1	165	50373.6	1.6				mg/L	10	Standard
Er	166	47160.0	0.9				mg/L	13	Standard
I	127	6799.9	2.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.072	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		115.096	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	116.005
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	110.439
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1606138412
Sample Date/Time: Wednesday, June 29, 2016 20:07:47
Number of Replicates: 3
Autosampler Position: 409
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81391.5	3.4				ug/L	74699	Standard
	Be	9	565.0	6.9	**0.5962**	0.020	3.4	ug/L	8	Standard
	Al	27	802320.4	2.6	**4.9984**	0.082	1.6	ug/L	1493	Standard
	Sc	45	77871.4	3.1				ug/L	61029	Standard
	Ti	47	8431.3	2.1	**19.3525**	0.252	1.3	ug/L	35	Standard
	V	51	136034.9	0.6	**15.5641**	0.178	1.1	ug/L	1435	Standard
	Cr	52	292890.6	0.7	**33.5584**	0.660	2.0	ug/L	7635	Standard
	Cr	53	35682.0	1.9	**33.4491**	0.599	1.8	ug/L	363	Standard
	Mn	55	2260782.0	0.5	**283.9966**	5.862	2.1	ug/L	747	Standard
	Co	59	82153.8	0.1	**10.8487**	0.184	1.7	ug/L	234	Standard
	Ni	60	172794.1	1.0	**80.6313**	1.536	1.9	ug/L	215	Standard
	Cu	65	63565.7	0.4	**29.7801**	0.432	1.5	ug/L	104	Standard
	Zn	66	251019.4	0.8	**200.6145**	2.591	1.3	ug/L	363	Standard
>	**Ge**	72	565970.9	1.7				ug/L	495142	Standard
	As	75	7636.9	2.3	**6.0250**	0.142	2.4	ug/L	-50	Standard
	Se	82	426.3	0.8	**3.2611**	0.084	2.6	ug/L	14	Standard
	Se-1	77	381.7	1.3	**3.9506**	0.115	2.9	ug/L	42	Standard
>	**Ga**	71	4992.5	2.6				mg/L	42	Standard
	Rb	85	46121.8	0.5				ug/L	17	Standard
	Y	89	1754842.6	1.7				ug/L	417098	Standard
>	**Rh**	103	43.3	35.3				ug/L	13	Standard
	Mo	98	5382.6	1.1	**1.7465**	0.044	2.5	ug/L	11	Standard
	Ag	107	637.3	4.9	**0.0719**	0.004	5.2	ug/L	68	Standard
	Cd	111	1430.5	6.2	**0.5853**	0.028	4.9	mg/L	2	Standard
	Cd	114	3407.8	7.3	**0.5746**	0.047	8.2	ug/L	12	Standard
>	**In**	115	677210.7	1.5				ug/L	587441	Standard
	Sn	118	780.0	4.5	**0.0212**	0.006	30.1	ug/L	497	Standard
	Sb	123	243.4	9.9	**0.0411**	0.005	12.6	ug/L	78	Standard
	Ba	135	199262.8	0.6	**84.4450**	1.189	1.4	ug/L	24	Standard
	Ce	140	678125.1	0.7				ug/L	25	Standard
>	**Tb**	159	1071624.9	1.1				ug/L	939701	Standard
	Ho	165	67051.4	0.5				ug/L	10	Standard
	Tl	203	1859.8	4.4	**0.2096**	0.007	3.5	ug/L	4	Standard
	Tl	205	1828.4	5.2	**0.2396**	0.011	4.7	ug/L	2	Standard
	Pb	206	33182.6	0.6	**5.7494**	0.057	1.0	ug/L	240	Standard
	Pb	207	24419.7	0.3	**4.7511**	0.035	0.7	ug/L	198	Standard
	Pb	208	111320.6	0.3	**5.4889**	0.050	0.9	ug/L	883	Standard
	U	238	25349.9	1.3	**3.4462**	0.014	0.4	ug/L	3	Standard
>	**Bi**	209	559224.1	1.0				ug/L	523984	Standard

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Na	23	3.3	86.6	**30.2574**	26.235	86.7	mg/L	0	Standard
Mg	24	168.3	9.1	**0.1052**	0.014	12.9	mg/L	37	Standard
K	39	280.0	6.4	**0.3709**	0.027	7.3	mg/L	38	Standard
Ca	43	176.7	27.2	**6.2736**	2.632	42.0	mg/L	10	Standard
Fe	54	15625.1	2.7	**10.2448**	0.046	0.4	mg/L	179	Standard
Fe	57	4357.3	3.7	**10.5343**	0.341	3.2	mg/L	335	Standard
> **Sc-1**	45	77871.4	3.1				mg/L	61029	Standard
Cl	35	26050.4	2.2				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	2310.2	5.7				ug/L	1547	Standard
P	31	19966.5	2.1				ug/L	15286	Standard
S	34	2301.8	1.2				ug/L	1572	Standard
Sr	88	181.7	8.4				ug/L	73	Standard
C	12	60.0	66.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	466.7	15.8				mg/L	3	Standard
Dy	164	94635.2	0.7				mg/L	6	Standard
Ho-1	165	67051.4	0.5				mg/L	10	Standard
Er	166	62943.8	1.5				mg/L	13	Standard
I	127	6689.8	6.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.960	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.305	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	115.281
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	106.725
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 20:11:01
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78720.7	2.9				ug/L	74699	Standard
	Be	9	53925.8	1.9	**58.1477**	1.206	2.1	ug/L	8	Standard
	Al	27	8443805.5	1.2	**54.5410**	1.847	3.4	ug/L	1493	Standard
	Sc	45	68074.4	3.5				ug/L	61029	Standard
	Ti	47	45146.2	1.1	**105.2966**	1.372	1.3	ug/L	35	Standard
	V	51	452407.6	0.9	**52.8112**	0.533	1.0	ug/L	1435	Standard
	Cr	52	439865.6	0.2	**51.4989**	0.494	1.0	ug/L	7635	Standard
	Cr	53	55131.8	1.5	**52.4610**	1.191	2.3	ug/L	363	Standard
	Mn	55	411766.6	1.7	**52.1886**	1.083	2.1	ug/L	747	Standard
	Co	59	411137.6	1.8	**55.0576**	1.090	2.0	ug/L	234	Standard
	Ni	60	108563.6	1.0	**51.1869**	0.633	1.2	ug/L	215	Standard
	Cu	65	108514.2	0.8	**51.4879**	0.273	0.5	ug/L	104	Standard
	Zn	66	63813.1	1.5	**51.2390**	0.656	1.3	ug/L	363	Standard
>	**Ge**	72	559563.9	0.9				ug/L	495142	Standard
	As	75	65025.3	0.7	**51.4299**	0.351	0.7	ug/L	-50	Standard
	Se	82	6607.2	0.8	**53.1327**	0.267	0.5	ug/L	14	Standard
	Se-1	77	4509.3	0.5	**54.0117**	0.383	0.7	ug/L	42	Standard
>	**Ga**	71	68.3	11.2				mg/L	42	Standard
	Rb	85	971.7	11.9				ug/L	17	Standard
	Y	89	484276.8	2.3				ug/L	417098	Standard
>	**Rh**	103	33.3	52.7				ug/L	13	Standard
	Mo	98	305352.5	1.7	**102.8803**	2.601	2.5	ug/L	11	Standard
	Ag	107	366186.0	1.2	**50.4411**	0.533	1.1	ug/L	68	Standard
	Cd	111	118185.8	1.5	**50.7502**	0.681	1.3	mg/L	2	Standard
	Cd	114	288421.2	1.0	**50.5001**	0.711	1.4	ug/L	12	Standard
>	**In**	115	654225.0	1.4				ug/L	587441	Standard
	Sn	118	325668.1	1.2	**49.9654**	0.174	0.3	ug/L	497	Standard
	Sb	123	260726.4	2.1	**50.1401**	0.797	1.6	ug/L	78	Standard
	Ba	135	109583.9	1.3	**48.0616**	0.591	1.2	ug/L	24	Standard
	Ce	140	191.7	20.9				ug/L	25	Standard
>	**Tb**	159	983539.2	1.4				ug/L	939701	Standard
	Ho	165	21.7	13.3				ug/L	10	Standard
	Tl	203	449254.6	0.7	**52.6820**	0.493	0.9	ug/L	4	Standard
	Tl	205	410287.0	1.8	**55.4353**	1.032	1.9	ug/L	2	Standard
	Pb	206	287176.7	1.5	**51.8952**	0.724	1.4	ug/L	240	Standard
	Pb	207	254226.6	1.1	**51.7082**	0.492	1.0	ug/L	198	Standard
	Pb	208	1062593.6	0.7	**54.7051**	0.438	0.8	ug/L	883	Standard
	U	238	383746.1	0.8	**53.8863**	0.314	0.6	ug/L	3	Standard
>	**Bi**	209	542059.3	0.3				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.9421**	31.068	173.2	mg/L	0	Standard
Mg	24	4572.4	3.8	**5.2291**	0.219	4.2	mg/L	37	Standard
K	39	2235.2	5.1	**4.3138**	0.121	2.8	mg/L	38	Standard
Ca	43	108.3	35.8	**3.6601**	2.380	65.0	mg/L	10	Standard
Fe	54	7126.2	2.9	**5.2851**	0.313	5.9	mg/L	179	Standard
Fe	57	2081.8	4.0	**5.2741**	0.321	6.1	mg/L	335	Standard
Sc-1	45	68074.4	3.5				mg/L	61029	Standard
Cl	35	27726.7	0.9				ug/L	20195	Standard
Kr	83	0.7	86.6				ug/L	4	Standard
Br	81	1910.1	6.0				ug/L	1547	Standard
P	31	20502.2	2.0				ug/L	15286	Standard
S	34	2426.9	4.0				ug/L	1572	Standard
Sr	88	50.0	26.5				ug/L	73	Standard
C	12	73.3	20.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	15.9	37.3				mg/L	6	Standard
Ho-1	165	21.7	13.3				mg/L	10	Standard
Er	166	16.7	34.6				mg/L	13	Standard
I	127	1525.1	31.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	116.295		
Al	27	109.082		
Sc	45			
Ti	47	105.297		
V	51	105.622		
Cr	52	102.998		
Cr	53			
Mn	55	104.377		
Co	59	110.115		
Ni	60	102.374		
Cu	65	102.976		
Zn	66	102.478		
Ge	72		113.011	
As	75	102.860		
Se	82	106.265		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	102.880		
Ag	107	100.882		
Cd	111	101.500		
Cd	114			
In	115		111.369	
Sn	118	99.931		
Sb	123	100.280		
Ba	135	96.123		
Ce	140			
Tb	159			
Ho	165			
Tl	203	105.364		
Tl	205			
Pb	206			
Pb	207			
Pb	208	109.410		
U	238	107.773		
Bi	209		103.450	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Co	59	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 20:14:12
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79194.8	0.3				ug/L	74699	Standard
	Be	9	31.7	9.1	**0.0415**	0.003	7.4	ug/L	8	Standard
	Al	27	5331.0	39.7	**0.0208**	0.013	64.7	ug/L	1493	Standard
	Sc	45	70443.5	2.7				ug/L	61029	Standard
	Ti	47	45.0	15.6	**-0.0077**	0.016	206.1	ug/L	35	Standard
	V	51	1613.4	5.4	**-0.0133**	0.013	95.3	ug/L	1435	Standard
	Cr	52	7981.4	3.6	**-0.1047**	0.047	45.2	ug/L	7635	Standard
	Cr	53	418.3	25.3	**0.0570**	0.103	180.4	ug/L	363	Standard
	Mn	55	1741.1	30.3	**0.0658**	0.068	103.0	ug/L	747	Standard
	Co	59	378.7	17.0	**0.0117**	0.009	74.2	ug/L	234	Standard
	Ni	60	306.7	29.3	**0.0162**	0.043	265.9	ug/L	215	Standard
	Cu	65	193.0	22.7	**-0.0150**	0.021	143.0	ug/L	104	Standard
	Zn	66	576.0	19.1	**-0.0039**	0.093	2387.7	ug/L	363	Standard
>	**Ge**	72	580508.2	1.5				ug/L	495142	Standard
	As	75	-17.3	276.0	**0.0468**	0.036	77.6	ug/L	-50	Standard
	Se	82	19.7	47.6	**0.0162**	0.076	468.0	ug/L	14	Standard
	Se-1	77	62.3	8.8	**0.1062**	0.073	68.4	ug/L	42	Standard
>	**Ga**	71	43.3	24.0				mg/L	42	Standard
	Rb	85	53.3	27.1				ug/L	17	Standard
	Y	89	466004.6	0.7				ug/L	417098	Standard
>	**Rh**	103	18.3	41.7				ug/L	13	Standard
	Mo	98	326.5	17.1	**0.1045**	0.019	18.6	ug/L	11	Standard
	Ag	107	195.7	20.5	**0.0141**	0.005	38.2	ug/L	68	Standard
	Cd	111	49.8	49.3	**0.0134**	0.010	76.8	mg/L	2	Standard
	Cd	114	97.6	30.0	**0.0150**	0.005	33.6	ug/L	12	Standard
>	**In**	115	653349.0	0.9				ug/L	587441	Standard
	Sn	118	958.4	16.5	**0.0527**	0.023	43.7	ug/L	497	Standard
	Sb	123	468.2	24.3	**0.0858**	0.021	24.7	ug/L	78	Standard
	Ba	135	169.0	53.9	**0.0580**	0.039	67.5	ug/L	24	Standard
	Ce	140	383.3	72.7				ug/L	25	Standard
>	**Tb**	159	1008003.3	2.5				ug/L	939701	Standard
	Ho	165	33.3	56.8				ug/L	10	Standard
	Tl	203	138.0	27.1	**0.0136**	0.004	29.9	ug/L	4	Standard
	Tl	205	128.3	47.6	**0.0167**	0.008	47.6	ug/L	2	Standard
	Pb	206	364.7	12.5	**-0.0084**	0.008	93.5	ug/L	240	Standard
	Pb	207	321.7	11.0	**-0.0076**	0.006	84.7	ug/L	198	Standard
	Pb	208	1298.7	10.5	**-0.0103**	0.007	67.0	ug/L	883	Standard
	U	238	121.3	35.3	**0.0118**	0.006	48.9	ug/L	3	Standard
>	**Bi**	209	569222.6	0.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	31.7	50.8	**-0.0295**	0.019	63.3	mg/L	37	Standard
K	39	58.3	13.1	**-0.0021**	0.017	817.3	mg/L	38	Standard
Ca	43	26.7	28.6	**-1.0586**	0.442	41.7	mg/L	10	Standard
Fe	54	154.2	11.8	**-0.0252**	0.011	43.9	mg/L	179	Standard
Fe	57	258.3	4.9	**-0.3125**	0.056	18.0	mg/L	335	Standard
> **Sc-1**	45	70443.5	2.7				mg/L	61029	Standard
Cl	35	27476.9	1.3				ug/L	20195	Standard
Kr	83	1.3	86.6				ug/L	4	Standard
Br	81	1946.8	3.9				ug/L	1547	Standard
P	31	20592.3	4.9				ug/L	15286	Standard
S	34	2348.5	2.8				ug/L	1572	Standard
Sr	88	75.0	46.7				ug/L	73	Standard
C	12	43.3	13.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	74.1	39.2				mg/L	6	Standard
Ho-1	165	33.3	56.8				mg/L	10	Standard
Er	166	53.3	71.0				mg/L	13	Standard
I	127	1293.4	30.4				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		117.241	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.219
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.633
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW 43 WG573291-03
Sample Date/Time: Wednesday, June 29, 2016 20:17:26
Number of Replicates: 3
Autosampler Position: 410
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78266.6	1.0				ug/L	74699	Standard
	Be	9	21.7	58.1	**0.0312**	0.014	44.4	ug/L	8	Standard
	Al	27	32901.2	14.4	**0.2003**	0.031	15.3	ug/L	1493	Standard
	Sc	45	68990.1	1.1				ug/L	61029	Standard
	Ti	47	59.7	25.6	**0.0271**	0.036	131.8	ug/L	35	Standard
	V	51	1740.6	13.9	**0.0036**	0.029	816.2	ug/L	1435	Standard
	Cr	52	10743.1	2.3	**0.2282**	0.033	14.5	ug/L	7635	Standard
	Cr	53	856.7	10.0	**0.4710**	0.086	18.2	ug/L	363	Standard
	Mn	55	4965.9	44.9	**0.4694**	0.280	59.7	ug/L	747	Standard
	Co	59	438.7	27.8	**0.0202**	0.016	81.0	ug/L	234	Standard
	Ni	60	464.7	17.9	**0.0906**	0.040	44.1	ug/L	215	Standard
	Cu	65	288.0	10.4	**0.0300**	0.015	49.7	ug/L	104	Standard
	Zn	66	2615.6	1.4	**1.6135**	0.041	2.5	ug/L	363	Standard
>	**Ge**	72	573366.1	0.8				ug/L	495142	Standard
	As	75	-37.9	81.3	**0.0303**	0.024	78.8	ug/L	-50	Standard
	Se	82	11.3	32.8	**-0.0488**	0.029	60.5	ug/L	14	Standard
	Se-1	77	61.0	9.1	**0.0990**	0.067	67.3	ug/L	42	Standard
>	**Ga**	71	31.7	9.1				mg/L	42	Standard
	Rb	85	100.0	26.5				ug/L	17	Standard
	Y	89	479627.1	2.2				ug/L	417098	Standard
>	**Rh**	103	1.7	173.2				ug/L	13	Standard
	Mo	98	155.9	47.8	**0.0477**	0.025	52.9	ug/L	11	Standard
	Ag	107	191.7	76.1	**0.0140**	0.020	145.7	ug/L	68	Standard
	Cd	111	21.5	58.8	**0.0014**	0.005	377.2	mg/L	2	Standard
	Cd	114	53.4	80.4	**0.0074**	0.008	102.3	ug/L	12	Standard
>	**In**	115	641242.2	1.6				ug/L	587441	Standard
	Sn	118	930.0	4.7	**0.0512**	0.008	15.1	ug/L	497	Standard
	Sb	123	286.5	19.6	**0.0520**	0.011	21.3	ug/L	78	Standard
	Ba	135	402.7	93.5	**0.1636**	0.167	102.4	ug/L	24	Standard
	Ce	140	951.7	120.0				ug/L	25	Standard
>	**Tb**	159	992014.1	1.0				ug/L	939701	Standard
	Ho	165	68.3	105.1				ug/L	10	Standard
	Tl	203	138.0	108.8	**0.0140**	0.017	122.9	ug/L	4	Standard
	Tl	205	136.7	67.7	**0.0182**	0.012	67.1	ug/L	2	Standard
	Pb	206	481.7	43.4	**0.0137**	0.037	272.5	ug/L	240	Standard
	Pb	207	395.0	43.8	**0.0084**	0.035	416.2	ug/L	198	Standard
	Pb	208	1692.0	26.2	**0.0108**	0.023	209.9	ug/L	883	Standard
	U	238	120.3	76.5	**0.0121**	0.013	104.7	ug/L	3	Standard
>	**Bi**	209	557465.1	0.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	46.7	43.3	**-0.0120**	0.023	188.7	mg/L	37	Standard
K	39	41.7	73.3	**-0.0331**	0.059	178.0	mg/L	38	Standard
Ca	43	16.7	45.8	**-1.5897**	0.437	27.5	mg/L	10	Standard
Fe	54	190.8	15.9	**0.0047**	0.022	466.7	mg/L	179	Standard
Fe	57	281.7	18.5	**-0.2277**	0.154	67.5	mg/L	335	Standard
Sc-1	45	68990.1	1.1				mg/L	61029	Standard
Cl	35	27241.8	2.0				ug/L	20195	Standard
Kr	83	3.3	34.6				ug/L	4	Standard
Br	81	1960.1	2.7				ug/L	1547	Standard
P	31	19042.0	2.0				ug/L	15286	Standard
S	34	2271.8	2.5				ug/L	1572	Standard
Sr	88	70.0	14.3				ug/L	73	Standard
C	12	93.3	12.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	57.4	72.5				mg/L	6	Standard
Ho-1	165	68.3	105.1				mg/L	10	Standard
Er	166	53.3	75.8				mg/L	13	Standard
I	127	1241.7	37.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		104.776	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		115.798	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: PBW 43 WG573291-03
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.159
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.390
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 43 WG573291-03
Report Date/Time: Wednesday, June 29, 2016 20:19:42
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Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: LCSW 43 WG573291-04
Sample Date/Time: Wednesday, June 29, 2016 20:20:37
Number of Replicates: 3
Autosampler Position: 411
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79286.9	1.2				ug/L	74699	Standard
	Be	9	55518.2	1.7	**59.4178**	0.565	1.0	ug/L	8	Standard
	Al	27	18234.3	3.1	**0.1035**	0.005	4.4	ug/L	1493	Standard
	Sc	45	71925.5	3.7				ug/L	61029	Standard
	Ti	47	66.7	12.9	**0.0416**	0.023	54.2	ug/L	35	Standard
	V	51	464385.2	1.4	**52.3659**	1.151	2.2	ug/L	1435	Standard
	Cr	52	468709.1	0.6	**53.0500**	1.578	3.0	ug/L	7635	Standard
	Cr	53	57400.2	0.6	**52.7689**	1.471	2.8	ug/L	363	Standard
	Mn	55	425738.4	0.7	**52.1249**	1.035	2.0	ug/L	747	Standard
	Co	59	411335.9	1.2	**53.2163**	1.483	2.8	ug/L	234	Standard
	Ni	60	114540.7	1.0	**52.1842**	1.705	3.3	ug/L	215	Standard
	Cu	65	115424.0	0.4	**52.9151**	1.312	2.5	ug/L	104	Standard
	Zn	66	68318.0	0.2	**53.0163**	1.377	2.6	ug/L	363	Standard
>	**Ge**	72	579422.8	2.7				ug/L	495142	Standard
	As	75	63888.1	1.5	**48.8227**	1.412	2.9	ug/L	-50	Standard
	Se	82	6548.4	1.5	**50.8872**	2.152	4.2	ug/L	14	Standard
	Se-1	77	4570.0	2.1	**52.8570**	0.847	1.6	ug/L	42	Standard
>	**Ga**	71	68.3	27.7				mg/L	42	Standard
	Rb	85	96.7	7.9				ug/L	17	Standard
	Y	89	471340.1	1.5				ug/L	417098	Standard
>	**Rh**	103	33.3	52.7				ug/L	13	Standard
	Mo	98	1844.9	1.6	**0.6204**	0.021	3.4	ug/L	11	Standard
	Ag	107	386699.9	0.4	**53.6468**	1.108	2.1	ug/L	68	Standard
	Cd	111	120754.4	0.7	**52.2256**	1.320	2.5	mg/L	2	Standard
	Cd	114	290744.9	1.2	**51.2713**	1.454	2.8	ug/L	12	Standard
>	**In**	115	649724.4	1.8				ug/L	587441	Standard
	Sn	118	890.0	5.4	**0.0430**	0.007	15.1	ug/L	497	Standard
	Sb	123	259622.2	1.1	**50.2896**	1.419	2.8	ug/L	78	Standard
	Ba	135	113320.2	1.2	**50.0586**	1.415	2.8	ug/L	24	Standard
	Ce	140	216.7	24.0				ug/L	25	Standard
>	**Tb**	159	1024515.0	4.0				ug/L	939701	Standard
	Ho	165	13.3	57.3				ug/L	10	Standard
	Tl	203	467714.3	0.2	**50.8953**	1.428	2.8	ug/L	4	Standard
	Tl	205	419104.4	1.0	**52.5470**	1.541	2.9	ug/L	2	Standard
	Pb	206	302725.5	0.9	**50.7682**	1.716	3.4	ug/L	240	Standard
	Pb	207	257785.2	0.8	**48.6571**	1.672	3.4	ug/L	198	Standard
	Pb	208	1092150.5	0.9	**52.1642**	0.990	1.9	ug/L	883	Standard
	U	238	389261.3	0.3	**50.7252**	1.507	3.0	ug/L	3	Standard
>	**Bi**	209	584427.6	2.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	56.7	20.4	**-0.0027**	0.015	535.8	mg/L	37	Standard
K	39	35.0	42.9	**-0.0491**	0.026	52.4	mg/L	38	Standard
Ca	43	18.3	15.7	**-1.5405**	0.154	10.0	mg/L	10	Standard
Fe	54	173.6	39.1	**-0.0145**	0.044	301.9	mg/L	179	Standard
Fe	57	231.7	7.6	**-0.4064**	0.037	9.2	mg/L	335	Standard
Sc-1	45	71925.5	3.7				mg/L	61029	Standard
Cl	35	25598.9	2.5				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	1866.8	9.1				ug/L	1547	Standard
P	31	19263.9	1.4				ug/L	15286	Standard
S	34	2041.8	5.6				ug/L	1572	Standard
Sr	88	55.0	27.3				ug/L	73	Standard
C	12	76.7	37.7				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	3	Standard
Dy	164	19.2	93.9				mg/L	6	Standard
Ho-1	165	13.3	57.3				mg/L	10	Standard
Er	166	16.7	124.9				mg/L	13	Standard
I	127	1405.1	22.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.142	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		117.021	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.602
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		111.535
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606097401 WG573291-01
Sample Date/Time: Wednesday, June 29, 2016 20:23:48
Number of Replicates: 3
Autosampler Position: 412
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81548.9	1.6				ug/L	74699	Standard
	Be	9	36.7	15.7	**0.0457**	0.006	12.1	ug/L	8	Standard
	Al	27	11596363.1	1.3	**72.2698**	0.564	0.8	ug/L	1493	Standard
	Sc	45	73884.7	1.3				ug/L	61029	Standard
	Ti	47	344.7	7.0	**0.7127**	0.059	8.2	ug/L	35	Standard
	V	51	2330.4	3.5	**0.0834**	0.015	17.8	ug/L	1435	Standard
	Cr	52	13306.8	2.8	**0.5995**	0.076	12.7	ug/L	7635	Standard
	Cr	53	1323.4	7.3	**0.9647**	0.110	11.4	ug/L	363	Standard
	Mn	55	1766896.9	0.7	**229.1909**	3.866	1.7	ug/L	747	Standard
	Co	59	11800.3	0.6	**1.5775**	0.021	1.4	ug/L	234	Standard
	Ni	60	3337.7	1.4	**1.4870**	0.026	1.7	ug/L	215	Standard
	Cu	65	729.0	2.5	**0.2502**	0.002	1.0	ug/L	104	Standard
	Zn	66	5843.1	1.1	**4.3791**	0.046	1.0	ug/L	363	Standard
>	**Ge**	72	548022.2	2.0				ug/L	495142	Standard
	As	75	368.2	8.1	**0.3569**	0.029	8.2	ug/L	-50	Standard
	Se	82	62.0	10.3	**0.3726**	0.060	16.1	ug/L	14	Standard
	Se-1	77	77.3	2.7	**0.3344**	0.023	6.7	ug/L	42	Standard
>	**Ga**	71	126.7	17.8				mg/L	42	Standard
	Rb	85	31524.4	1.4				ug/L	17	Standard
	Y	89	492847.4	3.2				ug/L	417098	Standard
>	**Rh**	103	60.0	14.4				ug/L	13	Standard
	Mo	98	169.7	8.5	**0.0488**	0.006	11.4	ug/L	11	Standard
	Ag	107	132.7	27.4	**0.0046**	0.005	112.7	ug/L	68	Standard
	Cd	111	39.0	30.5	**0.0081**	0.005	64.3	mg/L	2	Standard
	Cd	114	83.8	14.7	**0.0119**	0.002	19.5	ug/L	12	Standard
>	**In**	115	686408.4	2.0				ug/L	587441	Standard
	Sn	118	1350.1	6.2	**0.1033**	0.015	14.9	ug/L	497	Standard
	Sb	123	1853.5	25.3	**0.3348**	0.082	24.4	ug/L	78	Standard
	Ba	135	131659.9	0.9	**55.0560**	1.555	2.8	ug/L	24	Standard
	Ce	140	2260.2	0.8				ug/L	25	Standard
>	**Tb**	159	1046624.7	1.4				ug/L	939701	Standard
	Ho	165	75.0	29.1				ug/L	10	Standard
	Tl	203	216.3	9.4	**0.0226**	0.002	8.3	ug/L	4	Standard
	Tl	205	203.3	8.6	**0.0265**	0.002	7.2	ug/L	2	Standard
	Pb	206	535.3	4.4	**0.0217**	0.002	11.2	ug/L	240	Standard
	Pb	207	421.7	4.6	**0.0124**	0.003	25.0	ug/L	198	Standard
	Pb	208	1891.4	2.2	**0.0194**	0.001	4.1	ug/L	883	Standard
	U	238	92.7	15.8	**0.0080**	0.002	21.9	ug/L	3	Standard
>	**Bi**	209	565094.9	1.8				ug/L	523984	Standard

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Na	23	1.7	173.2	**16.0814**	27.845	173.2	mg/L	0	Standard
Mg	24	5874.5	4.9	**6.2016**	0.379	6.1	mg/L	37	Standard
K	39	696.7	5.3	**1.1574**	0.052	4.5	mg/L	38	Standard
Ca	43	108.3	19.2	**3.1206**	1.021	32.7	mg/L	10	Standard
Fe	54	752.2	10.4	**0.3885**	0.054	13.9	mg/L	179	Standard
Fe	57	410.0	11.6	**0.0774**	0.139	179.8	mg/L	335	Standard
Sc-1	45	73884.7	1.3				mg/L	61029	Standard
Cl	35	27603.8	2.8				ug/L	20195	Standard
Kr	83	3.0	66.7				ug/L	4	Standard
Br	81	11711.2	8.2				ug/L	1547	Standard
P	31	22032.7	3.4				ug/L	15286	Standard
S	34	2200.2	1.4				ug/L	1572	Standard
Sr	88	218.3	6.6				ug/L	73	Standard
C	12	103.3	43.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	96.2	10.7				mg/L	6	Standard
Ho-1	165	75.0	29.1				mg/L	10	Standard
Er	166	80.0	33.1				mg/L	13	Standard
I	127	173019.2	10.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		109.170	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		110.680	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606097401 WG573291-01
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		116.847
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.846
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606097401 WG573291-01
Report Date/Time: Wednesday, June 29, 2016 20:26:05
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Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606097409S WG573291-05
Sample Date/Time: Wednesday, June 29, 2016 20:27:00
Number of Replicates: 3
Autosampler Position: 413
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77620.1	3.1				ug/L	74699	Standard
	Be	9	53947.6	2.9	**58.9852**	0.884	1.5	ug/L	8	Standard
	Al	27	10156417.9	2.3	**66.5068**	0.592	0.9	ug/L	1493	Standard
	Sc	45	69663.2	3.3				ug/L	61029	Standard
	Ti	47	217.3	7.1	**0.4124**	0.032	7.7	ug/L	35	Standard
	V	51	458159.6	2.1	**55.0030**	1.779	3.2	ug/L	1435	Standard
	Cr	52	452840.8	0.8	**54.5717**	1.179	2.2	ug/L	7635	Standard
	Cr	53	56488.5	2.6	**55.2901**	2.221	4.0	ug/L	363	Standard
	Mn	55	2082250.4	1.8	**271.9842**	8.205	3.0	ug/L	747	Standard
	Co	59	416796.8	1.5	**57.3937**	1.632	2.8	ug/L	234	Standard
	Ni	60	112326.5	0.8	**54.4621**	1.176	2.2	ug/L	215	Standard
	Cu	65	110417.6	0.6	**53.8701**	0.759	1.4	ug/L	104	Standard
	Zn	66	70959.5	1.2	**58.6468**	1.068	1.8	ug/L	363	Standard
>	Ge	72	544304.5	1.4				ug/L	495142	Standard
	As	75	66583.4	2.1	**54.1492**	1.789	3.3	ug/L	-50	Standard
	Se	82	6605.0	1.3	**54.6200**	1.423	2.6	ug/L	14	Standard
	Se-1	77	4636.4	0.8	**57.1316**	0.988	1.7	ug/L	42	Standard
>	Ga	71	90.0	19.2				mg/L	42	Standard
	Rb	85	30654.3	2.7				ug/L	17	Standard
	Y	89	497057.5	2.9				ug/L	417098	Standard
>	Rh	103	38.3	52.7				ug/L	13	Standard
	Mo	98	163.0	7.4	**0.0487**	0.002	4.2	ug/L	11	Standard
	Ag	107	371099.4	2.0	**50.7567**	1.341	2.6	ug/L	68	Standard
	Cd	111	118377.9	2.8	**50.4636**	1.124	2.2	mg/L	2	Standard
	Cd	114	281427.9	1.4	**48.9324**	1.490	3.0	ug/L	12	Standard
>	In	115	659308.0	4.2				ug/L	587441	Standard
	Sn	118	1090.0	7.1	**0.0721**	0.019	25.7	ug/L	497	Standard
	Sb	123	259620.0	1.8	**49.5761**	1.212	2.4	ug/L	78	Standard
	Ba	135	232712.5	1.7	**101.3728**	3.182	3.1	ug/L	24	Standard
	Ce	140	941.7	8.0				ug/L	25	Standard
>	Tb	159	982549.7	3.5				ug/L	939701	Standard
	Ho	165	31.7	24.1				ug/L	10	Standard
	Tl	203	453507.3	1.5	**53.4353**	0.634	1.2	ug/L	4	Standard
	Tl	205	415041.8	2.5	**56.3402**	0.862	1.5	ug/L	2	Standard
	Pb	206	296774.5	1.1	**53.8916**	0.589	1.1	ug/L	240	Standard
	Pb	207	252251.9	1.7	**51.5506**	0.378	0.7	ug/L	198	Standard
	Pb	208	1071354.8	2.3	**55.4200**	1.065	1.9	ug/L	883	Standard
	U	238	381907.7	2.6	**53.8787**	0.717	1.3	ug/L	3	Standard
>	Bi	209	539522.1	2.0				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.4920**	30.288	173.2	mg/L	0	Standard
Mg	24	5339.3	3.4	**5.9734**	0.106	1.8	mg/L	37	Standard
K	39	681.7	10.6	**1.2038**	0.100	8.3	mg/L	38	Standard
Ca	43	128.3	25.3	**4.6217**	2.038	44.1	mg/L	10	Standard
Fe	54	542.4	5.6	**0.2649**	0.028	10.4	mg/L	179	Standard
Fe	57	371.7	15.7	**0.0334**	0.176	526.0	mg/L	335	Standard
> **Sc-1**	45	69663.2	3.3				mg/L	61029	Standard
Cl	35	28661.1	2.0				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	10680.4	5.1				ug/L	1547	Standard
P	31	21703.9	3.0				ug/L	15286	Standard
S	34	2123.5	4.7				ug/L	1572	Standard
Sr	88	153.3	22.2				ug/L	73	Standard
C	12	123.3	28.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	57.6	48.4				mg/L	6	Standard
Ho-1	165	31.7	24.1				mg/L	10	Standard
Er	166	50.0	91.7				mg/L	13	Standard
I	127	154285.8	7.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.911	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.929	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606097409S WG573291-05
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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	112.234
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.965
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606097411SD WG573291-06
Sample Date/Time: Wednesday, June 29, 2016 20:30:11
Number of Replicates: 3
Autosampler Position: 414
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77405.6	1.5				ug/L	74699	Standard
	Be	9	55655.4	2.7	**61.0164**	1.576	2.6	ug/L	8	Standard
	Al	27	12086433.4	1.6	**79.3694**	1.985	2.5	ug/L	1493	Standard
	Sc	45	69212.8	2.6				ug/L	61029	Standard
	Ti	47	325.0	3.5	**0.6412**	0.031	4.8	ug/L	35	Standard
	V	51	466207.8	0.7	**53.8111**	1.021	1.9	ug/L	1435	Standard
	Cr	52	460631.7	1.4	**53.3535**	1.026	1.9	ug/L	7635	Standard
	Cr	53	56936.8	2.6	**53.5625**	1.349	2.5	ug/L	363	Standard
	Mn	55	2273187.5	1.8	**285.5286**	8.405	2.9	ug/L	747	Standard
	Co	59	417957.8	1.5	**55.3411**	1.481	2.7	ug/L	234	Standard
	Ni	60	114539.0	0.3	**53.3968**	0.715	1.3	ug/L	215	Standard
	Cu	65	111050.1	0.5	**52.0971**	0.842	1.6	ug/L	104	Standard
	Zn	66	69817.2	1.2	**55.4674**	1.299	2.3	ug/L	363	Standard
>	**Ge**	72	566018.8	1.2				ug/L	495142	Standard
	As	75	67402.1	1.8	**52.7097**	1.486	2.8	ug/L	-50	Standard
	Se	82	6620.3	2.0	**52.6418**	1.659	3.2	ug/L	14	Standard
	Se-1	77	4557.0	3.8	**53.9777**	2.700	5.0	ug/L	42	Standard
>	**Ga**	71	128.3	43.8				mg/L	42	Standard
	Rb	85	32409.6	0.5				ug/L	17	Standard
	Y	89	470382.0	1.0				ug/L	417098	Standard
>	**Rh**	103	61.7	24.8				ug/L	13	Standard
	Mo	98	196.1	5.9	**0.0618**	0.004	5.9	ug/L	11	Standard
	Ag	107	374581.1	0.3	**52.7275**	0.291	0.6	ug/L	68	Standard
	Cd	111	118658.6	1.5	**52.0656**	0.397	0.8	mg/L	2	Standard
	Cd	114	286274.0	2.6	**51.2138**	0.959	1.9	ug/L	12	Standard
>	**In**	115	640194.5	0.7				ug/L	587441	Standard
	Sn	118	1251.7	9.2	**0.1018**	0.017	16.3	ug/L	497	Standard
	Sb	123	263336.7	0.4	**51.7531**	0.327	0.6	ug/L	78	Standard
	Ba	135	250997.3	0.8	**112.5129**	0.934	0.8	ug/L	24	Standard
	Ce	140	2000.1	6.5				ug/L	25	Standard
>	**Tb**	159	984120.1	1.6				ug/L	939701	Standard
	Ho	165	48.3	11.9				ug/L	10	Standard
	Tl	203	459854.1	0.1	**53.6772**	0.823	1.5	ug/L	4	Standard
	Tl	205	414544.5	0.5	**55.7557**	1.089	2.0	ug/L	2	Standard
	Pb	206	298100.5	1.1	**53.6266**	1.109	2.1	ug/L	240	Standard
	Pb	207	253941.0	0.3	**51.4145**	0.875	1.7	ug/L	198	Standard
	Pb	208	1061848.2	0.5	**54.4146**	0.782	1.4	ug/L	883	Standard
	U	238	385197.1	0.6	**53.8449**	1.070	2.0	ug/L	3	Standard
>	**Bi**	209	544631.3	1.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	5929.5	2.1	**6.6847**	0.075	1.1	mg/L	37	Standard
K	39	801.7	4.2	**1.4479**	0.027	1.8	mg/L	38	Standard
Ca	43	125.0	31.2	**4.4423**	2.177	49.0	mg/L	10	Standard
Fe	54	841.7	6.4	**0.4916**	0.050	10.2	mg/L	179	Standard
Fe	57	441.7	5.4	**0.2489**	0.040	15.9	mg/L	335	Standard
> **Sc-1**	45	69212.8	2.6				mg/L	61029	Standard
Cl	35	28869.5	0.9				ug/L	20195	Standard
Kr	83	3.7	56.8				ug/L	4	Standard
Br	81	12511.8	0.5				ug/L	1547	Standard
P	31	22511.8	6.4				ug/L	15286	Standard
S	34	2320.2	4.3				ug/L	1572	Standard
Sr	88	170.0	8.8				ug/L	73	Standard
C	12	80.0	25.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	3	Standard
Dy	164	93.8	22.7				mg/L	6	Standard
Ho-1	165	48.3	11.9				mg/L	10	Standard
Er	166	60.0	57.7				mg/L	13	Standard
I	127	186712.7	7.5				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		103.624	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		114.314	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	108.980
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.940
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606097411SD WG573291-06
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Method 6020 - Summary Report

Sample ID: L1606097401PS WG573790-03
Sample Date/Time: Wednesday, June 29, 2016 20:33:23
Number of Replicates: 3
Autosampler Position: 415
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77767.4	1.4				ug/L	74699	Standard
	Be	9	54620.0	3.0	**59.5914**	1.002	1.7	ug/L	8	Standard
	Al	27	11452990.5	1.0	**74.8575**	1.594	2.1	ug/L	1493	Standard
	Sc	45	70666.1	1.7				ug/L	61029	Standard
	Ti	47	337.7	3.5	**0.6996**	0.031	4.4	ug/L	35	Standard
	V	51	448357.3	1.6	**53.6764**	0.056	0.1	ug/L	1435	Standard
	Cr	52	455460.2	1.4	**54.7521**	0.846	1.5	ug/L	7635	Standard
	Cr	53	57375.1	1.7	**56.0052**	0.200	0.4	ug/L	363	Standard
	Mn	55	2154709.7	0.5	**280.7294**	3.122	1.1	ug/L	747	Standard
	Co	59	404569.2	0.4	**55.5661**	0.653	1.2	ug/L	234	Standard
	Ni	60	112633.8	1.0	**54.4757**	0.921	1.7	ug/L	215	Standard
	Cu	65	109355.9	1.1	**53.2239**	1.011	1.9	ug/L	104	Standard
	Zn	66	70498.3	1.6	**58.1166**	0.789	1.4	ug/L	363	Standard
>	**Ge**	72	545627.2	1.6				ug/L	495142	Standard
	As	75	64850.8	0.9	**52.6029**	0.345	0.7	ug/L	-50	Standard
	Se	82	6485.5	1.8	**53.4847**	0.149	0.3	ug/L	14	Standard
	Se-1	77	4411.0	1.9	**54.1848**	0.787	1.5	ug/L	42	Standard
>	**Ga**	71	161.7	1.8				mg/L	42	Standard
	Rb	85	30524.1	1.7				ug/L	17	Standard
	Y	89	474875.4	0.7				ug/L	417098	Standard
>	**Rh**	103	60.0	16.7				ug/L	13	Standard
	Mo	98	163.5	8.5	**0.0491**	0.004	8.3	ug/L	11	Standard
	Ag	107	365805.1	1.5	**50.1795**	1.312	2.6	ug/L	68	Standard
	Cd	111	117534.8	0.9	**50.2525**	0.249	0.5	mg/L	2	Standard
	Cd	114	285376.1	1.5	**49.7475**	0.497	1.0	ug/L	12	Standard
>	**In**	115	657058.7	1.4				ug/L	587441	Standard
	Sn	118	1523.4	8.4	**0.1383**	0.017	12.1	ug/L	497	Standard
	Sb	123	259036.8	1.0	**49.6101**	1.139	2.3	ug/L	78	Standard
	Ba	135	239792.4	1.1	**104.7386**	1.629	1.6	ug/L	24	Standard
	Ce	140	2208.5	2.2				ug/L	25	Standard
>	**Tb**	159	1019758.9	1.4				ug/L	939701	Standard
	Ho	165	71.7	21.3				ug/L	10	Standard
	Tl	203	456925.9	1.0	**51.8248**	0.434	0.8	ug/L	4	Standard
	Tl	205	410087.8	1.3	**53.5969**	1.082	2.0	ug/L	2	Standard
	Pb	206	289464.5	1.3	**50.5998**	1.170	2.3	ug/L	240	Standard
	Pb	207	248071.4	0.9	**48.8073**	1.130	2.3	ug/L	198	Standard
	Pb	208	1050860.8	0.8	**52.3325**	1.144	2.2	ug/L	883	Standard
	U	238	380364.0	0.7	**51.6678**	1.019	2.0	ug/L	3	Standard
>	**Bi**	209	560465.1	1.6				ug/L	523984	Standard

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Na	23	1.7	173.2	**16.2901**	28.207	173.2	mg/L	0	Standard
Mg	24	5812.8	3.2	**6.4153**	0.191	3.0	mg/L	37	Standard
K	39	706.7	5.8	**1.2347**	0.072	5.8	mg/L	38	Standard
Ca	43	108.3	32.4	**3.3848**	1.922	56.8	mg/L	10	Standard
Fe	54	723.0	16.6	**0.3920**	0.096	24.5	mg/L	179	Standard
Fe	57	435.0	5.7	**0.2027**	0.073	35.8	mg/L	335	Standard
> **Sc-1**	45	70666.1	1.7				mg/L	61029	Standard
Cl	35	28625.7	0.6				ug/L	20195	Standard
Kr	83	1.7	34.6				ug/L	4	Standard
Br	81	11964.7	4.0				ug/L	1547	Standard
P	31	22167.9	1.3				ug/L	15286	Standard
S	34	2268.5	2.8				ug/L	1572	Standard
Sr	88	201.7	11.5				ug/L	73	Standard
C	12	93.3	34.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	3	Standard
Dy	164	120.1	22.8				mg/L	6	Standard
Ho-1	165	71.7	21.3				mg/L	10	Standard
Er	166	66.7	60.6				mg/L	13	Standard
I	127	179600.9	7.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.108	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.196	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.851
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.962
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606097401PS WG573790-03
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Method 6020 - Summary Report

Sample ID: L1606097401SDL WG573790-04
Sample Date/Time: Wednesday, June 29, 2016 20:36:34
Number of Replicates: 3
Autosampler Position: 416
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77070.7	3.6				ug/L	74699	Standard
	Be	9	45.0	33.3	**0.0568**	0.015	26.1	ug/L	8	Standard
	Al	27	2260304.8	1.2	**14.9037**	0.448	3.0	ug/L	1493	Standard
	Sc	45	68278.6	3.1				ug/L	61029	Standard
	Ti	47	83.0	9.9	**0.0892**	0.019	21.8	ug/L	35	Standard
	V	51	2192.5	3.4	**0.0673**	0.008	12.3	ug/L	1435	Standard
	Cr	52	10144.1	1.9	**0.2156**	0.020	9.5	ug/L	7635	Standard
	Cr	53	686.7	4.8	**0.3429**	0.034	10.1	ug/L	363	Standard
	Mn	55	355711.8	1.3	**46.1130**	0.456	1.0	ug/L	747	Standard
	Co	59	2492.2	1.8	**0.3045**	0.007	2.2	ug/L	234	Standard
	Ni	60	828.7	2.9	**0.2769**	0.011	3.8	ug/L	215	Standard
	Cu	65	280.0	0.7	**0.0325**	0.001	2.6	ug/L	104	Standard
	Zn	66	2517.5	2.7	**1.6325**	0.059	3.6	ug/L	363	Standard
>	**Ge**	72	546825.8	0.3				ug/L	495142	Standard
	As	75	65.5	45.7	**0.1126**	0.024	21.6	ug/L	-50	Standard
	Se	82	28.6	15.9	**0.0977**	0.038	38.5	ug/L	14	Standard
	Se-1	77	61.3	12.0	**0.1380**	0.090	65.2	ug/L	42	Standard
>	**Ga**	71	98.3	5.9				mg/L	42	Standard
	Rb	85	6301.3	2.8				ug/L	17	Standard
	Y	89	489576.3	2.2				ug/L	417098	Standard
>	**Rh**	103	21.7	48.0				ug/L	13	Standard
	Mo	98	47.0	21.8	**0.0100**	0.004	35.1	ug/L	11	Standard
	Ag	107	179.0	15.1	**0.0115**	0.004	30.5	ug/L	68	Standard
	Cd	111	35.6	11.4	**0.0072**	0.002	22.2	mg/L	2	Standard
	Cd	114	102.0	28.8	**0.0155**	0.005	31.8	ug/L	12	Standard
>	**In**	115	661161.0	0.8				ug/L	587441	Standard
	Sn	118	795.0	15.7	**0.0261**	0.018	68.8	ug/L	497	Standard
	Sb	123	2322.3	23.7	**0.4382**	0.107	24.4	ug/L	78	Standard
	Ba	135	26230.7	1.3	**11.3705**	0.051	0.4	ug/L	24	Standard
	Ce	140	480.0	13.3				ug/L	25	Standard
>	**Tb**	159	1000122.3	1.4				ug/L	939701	Standard
	Ho	165	26.7	10.8				ug/L	10	Standard
	Tl	203	156.0	22.9	**0.0163**	0.004	24.4	ug/L	4	Standard
	Tl	205	150.0	15.3	**0.0202**	0.003	14.3	ug/L	2	Standard
	Pb	206	403.0	8.6	**0.0007**	0.006	871.4	ug/L	240	Standard
	Pb	207	342.3	5.9	**-0.0013**	0.004	288.2	ug/L	198	Standard
	Pb	208	1497.0	5.1	**0.0020**	0.004	181.5	ug/L	883	Standard
	U	238	114.0	13.2	**0.0113**	0.002	17.4	ug/L	3	Standard
>	**Bi**	209	549941.1	1.0				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	1213.4	3.4	**1.3365**	0.084	6.3	mg/L	37	Standard
K	39	180.0	11.1	**0.2425**	0.050	20.5	mg/L	38	Standard
Ca	43	46.7	22.3	**0.1064**	0.547	514.2	mg/L	10	Standard
Fe	54	286.0	10.0	**0.0782**	0.017	21.6	mg/L	179	Standard
Fe	57	306.7	10.9	**-0.1437**	0.079	55.0	mg/L	335	Standard
> **Sc-1**	45	68278.6	3.1				mg/L	61029	Standard
Cl	35	28506.1	0.3				ug/L	20195	Standard
Kr	83	1.7	34.6				ug/L	4	Standard
Br	81	3947.2	6.9				ug/L	1547	Standard
P	31	19479.2	3.3				ug/L	15286	Standard
S	34	2088.5	5.3				ug/L	1572	Standard
Sr	88	101.7	24.8				ug/L	73	Standard
C	12	60.0	60.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	52.5	9.9				mg/L	6	Standard
Ho-1	165	26.7	10.8				mg/L	10	Standard
Er	166	16.7	69.3				mg/L	13	Standard
I	127	39316.0	2.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.175	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.438	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606097401SDL WG573790-04
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.549
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.954
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606097401SDL WG573790-04
Sample Date/Time: Wednesday, June 29, 2016 20:39:46
Number of Replicates: 3
Autosampler Position: 417
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76547.9	2.1				ug/L	74699	Standard
	Be	9	28.3	27.0	**0.0389**	0.008	20.5	ug/L	8	Standard
	Al	27	465099.1	0.7	**3.0756**	0.044	1.4	ug/L	1493	Standard
	Sc	45	68169.7	0.9				ug/L	61029	Standard
	Ti	47	36.7	6.9	**-0.0243**	0.006	24.2	ug/L	35	Standard
	V	51	2063.3	3.2	**0.0438**	0.007	16.8	ug/L	1435	Standard
	Cr	52	9662.1	0.8	**0.1188**	0.007	6.3	ug/L	7635	Standard
	Cr	53	523.3	10.2	**0.1664**	0.051	30.7	ug/L	363	Standard
	Mn	55	72938.2	2.1	**9.0325**	0.175	1.9	ug/L	747	Standard
	Co	59	731.7	15.3	**0.0598**	0.015	24.7	ug/L	234	Standard
	Ni	60	309.0	4.2	**0.0207**	0.006	30.5	ug/L	215	Standard
	Cu	65	310.7	4.3	**0.0426**	0.006	14.7	ug/L	104	Standard
	Zn	66	2601.2	2.1	**1.6324**	0.044	2.7	ug/L	363	Standard
>	**Ge**	72	565002.4	0.2				ug/L	495142	Standard
	As	75	-33.8	92.8	**0.0331**	0.025	74.3	ug/L	-50	Standard
	Se	82	20.9	22.0	**0.0285**	0.036	128.0	ug/L	14	Standard
	Se-1	77	57.7	17.5	**0.0697**	0.122	174.5	ug/L	42	Standard
>	**Ga**	71	58.3	9.9				mg/L	42	Standard
	Rb	85	1335.1	7.2				ug/L	17	Standard
	Y	89	490772.8	1.5				ug/L	417098	Standard
>	**Rh**	103	15.0	57.7				ug/L	13	Standard
	Mo	98	24.2	10.4	**0.0025**	0.001	32.4	ug/L	11	Standard
	Ag	107	143.3	39.3	**0.0071**	0.008	112.3	ug/L	68	Standard
	Cd	111	11.6	65.7	**-0.0029**	0.003	116.5	mg/L	2	Standard
	Cd	114	25.4	61.7	**0.0024**	0.003	115.9	ug/L	12	Standard
>	**In**	115	647709.2	0.5				ug/L	587441	Standard
	Sn	118	543.3	5.3	**-0.0103**	0.004	42.8	ug/L	497	Standard
	Sb	123	784.5	24.6	**0.1481**	0.037	24.8	ug/L	78	Standard
	Ba	135	5327.9	0.7	**2.3449**	0.015	0.6	ug/L	24	Standard
	Ce	140	110.0	7.9				ug/L	25	Standard
>	**Tb**	159	986009.2	0.5				ug/L	939701	Standard
	Ho	165	10.0	100.0				ug/L	10	Standard
	Tl	203	50.7	34.9	**0.0041**	0.002	51.6	ug/L	4	Standard
	Tl	205	46.7	71.3	**0.0064**	0.005	70.3	ug/L	2	Standard
	Pb	206	376.3	19.7	**-0.0043**	0.014	323.1	ug/L	240	Standard
	Pb	207	290.7	20.1	**-0.0119**	0.012	103.4	ug/L	198	Standard
	Pb	208	1284.0	11.0	**-0.0091**	0.008	86.4	ug/L	883	Standard
	U	238	44.0	79.9	**0.0017**	0.005	294.8	ug/L	3	Standard
>	**Bi**	209	552760.9	1.2				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	246.7	9.1	**0.2201**	0.028	12.6	mg/L	37	Standard
K	39	50.0	40.0	**-0.0154**	0.039	250.4	mg/L	38	Standard
Ca	43	20.0	43.3	**-1.3952**	0.477	34.2	mg/L	10	Standard
Fe	54	182.5	25.5	**0.0004**	0.036	9653.1	mg/L	179	Standard
Fe	57	256.7	8.8	**-0.2933**	0.068	23.1	mg/L	335	Standard
Sc-1	45	68169.7	0.9				mg/L	61029	Standard
Cl	35	28987.0	1.4				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	2360.2	9.1				ug/L	1547	Standard
P	31	19090.4	2.0				ug/L	15286	Standard
S	34	2190.2	0.6				ug/L	1572	Standard
Sr	88	73.3	27.6				ug/L	73	Standard
C	12	46.7	44.6				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	22.7	102.4				mg/L	6	Standard
Ho-1	165	10.0	100.0				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	10453.6	7.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.475	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.109	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.259
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.492
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 20:42:59
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73968.6	3.7				ug/L	74699	Standard
	Be	9	51786.8	4.7	**59.3953**	0.618	1.0	ug/L	8	Standard
	Al	27	8138418.2	2.1	**55.9353**	1.016	1.8	ug/L	1493	Standard
	Sc	45	66422.0	2.7				ug/L	61029	Standard
	Ti	47	44367.5	1.4	**105.9251**	2.261	2.1	ug/L	35	Standard
	V	51	448161.7	0.9	**53.5504**	0.563	1.1	ug/L	1435	Standard
	Cr	52	438098.2	0.5	**52.5206**	0.674	1.3	ug/L	7635	Standard
	Cr	53	53648.2	1.8	**52.2574**	1.658	3.2	ug/L	363	Standard
	Mn	55	415062.2	0.8	**53.8560**	1.244	2.3	ug/L	747	Standard
	Co	59	407202.7	0.3	**55.8201**	1.033	1.9	ug/L	234	Standard
	Ni	60	107214.7	0.8	**51.7442**	0.748	1.4	ug/L	215	Standard
	Cu	65	106835.8	1.9	**51.8884**	1.090	2.1	ug/L	104	Standard
	Zn	66	63121.9	0.7	**51.8882**	0.831	1.6	ug/L	363	Standard
>	Ge	72	546729.2	1.7				ug/L	495142	Standard
	As	75	63950.8	1.3	**51.7792**	1.311	2.5	ug/L	-50	Standard
	Se	82	6522.2	2.4	**53.7001**	1.978	3.7	ug/L	14	Standard
	Se-1	77	4462.7	1.0	**54.7224**	0.944	1.7	ug/L	42	Standard
>	Ga	71	48.3	11.9				mg/L	42	Standard
	Rb	85	921.7	10.0				ug/L	17	Standard
	Y	89	469877.0	1.2				ug/L	417098	Standard
>	Rh	103	31.7	45.6				ug/L	13	Standard
	Mo	98	306064.1	0.6	**105.7488**	1.650	1.6	ug/L	11	Standard
	Ag	107	358011.4	0.7	**50.5757**	0.461	0.9	ug/L	68	Standard
	Cd	111	116953.2	1.0	**51.5035**	0.389	0.8	mg/L	2	Standard
	Cd	114	288128.0	0.1	**51.7395**	0.785	1.5	ug/L	12	Standard
>	In	115	637946.0	1.6				ug/L	587441	Standard
	Sn	118	327214.8	2.0	**51.4831**	0.238	0.5	ug/L	497	Standard
	Sb	123	254525.5	0.5	**50.2034**	0.722	1.4	ug/L	78	Standard
	Ba	135	108828.5	1.0	**48.9489**	0.332	0.7	ug/L	24	Standard
	Ce	140	90.0	29.4				ug/L	25	Standard
>	Tb	159	958314.6	1.8				ug/L	939701	Standard
	Ho	165	11.7	49.5				ug/L	10	Standard
	Tl	203	447416.0	0.6	**53.4811**	1.019	1.9	ug/L	4	Standard
	Tl	205	409322.9	1.6	**56.3810**	1.712	3.0	ug/L	2	Standard
	Pb	206	283417.6	0.7	**52.2045**	0.689	1.3	ug/L	240	Standard
	Pb	207	252263.1	0.7	**52.2984**	0.513	1.0	ug/L	198	Standard
	Pb	208	1062273.6	1.1	**55.7538**	1.546	2.8	ug/L	883	Standard
	U	238	385444.7	0.9	**55.1725**	1.082	2.0	ug/L	3	Standard
>	Bi	209	531871.1	1.6				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4377.3	2.2	**5.1285**	0.149	2.9	mg/L	37	Standard
K	39	2180.2	1.8	**4.3148**	0.109	2.5	mg/L	38	Standard
Ca	43	118.3	10.6	**4.3366**	0.588	13.6	mg/L	10	Standard
Fe	54	6990.5	4.3	**5.3088**	0.233	4.4	mg/L	179	Standard
Fe	57	2083.5	2.8	**5.4386**	0.352	6.5	mg/L	335	Standard
> **Sc-1**	45	66422.0	2.7				mg/L	61029	Standard
Cl	35	29309.7	0.2				ug/L	20195	Standard
Kr	83	2.3	24.7				ug/L	4	Standard
Br	81	2156.8	3.9				ug/L	1547	Standard
P	31	21223.2	2.6				ug/L	15286	Standard
S	34	2665.2	2.0				ug/L	1572	Standard
Sr	88	71.7	8.1				ug/L	73	Standard
C	12	56.7	40.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	19.8	1.4				mg/L	6	Standard
Ho-1	165	11.7	49.5				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	2623.6	23.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	118.791		
Al	27	111.871		
Sc	45			
Ti	47	105.925		
V	51	107.101		
Cr	52	105.041		
Cr	53			
Mn	55	107.712		
Co	59	111.640		
Ni	60	103.488		
Cu	65	103.777		
Zn	66	103.776		
> Ge	72		110.419	
As	75	103.558		
Se	82	107.400		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	105.749		
Ag	107	101.151		
Cd	111	103.007		
Cd	114			
In	115		108.597	
Sn	118	102.966		
Sb	123	100.407		
Ba	135	97.898		
Ce	140			
Tb	159			
Ho	165			
Tl	203	106.962		
Tl	205			
Pb	206			
Pb	207			
Pb	208	111.508		
U	238	110.345		
Bi	209		101.505	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	
QC Std 6	Co	59	

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QC Std 6	Pb	208
QC Std 6	U	238

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 20:46:11
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75383.8	1.3				ug/L	74699	Standard
	Be	9	28.3	20.4	**0.0395**	0.006	15.9	ug/L	8	Standard
	Al	27	2638.6	20.0	**0.0044**	0.003	78.6	ug/L	1493	Standard
	Sc	45	68713.9	3.5				ug/L	61029	Standard
	Ti	47	37.7	13.4	**-0.0232**	0.011	49.4	ug/L	35	Standard
	V	51	1533.2	3.6	**-0.0202**	0.008	41.3	ug/L	1435	Standard
	Cr	52	7879.4	2.2	**-0.1054**	0.029	27.9	ug/L	7635	Standard
	Cr	53	448.3	16.3	**0.0885**	0.063	71.1	ug/L	363	Standard
	Mn	55	901.4	5.8	**-0.0363**	0.007	18.9	ug/L	747	Standard
	Co	59	283.3	10.0	**-0.0002**	0.004	1542.3	ug/L	234	Standard
	Ni	60	186.3	2.6	**-0.0379**	0.003	8.3	ug/L	215	Standard
	Cu	65	132.7	3.4	**-0.0421**	0.001	3.4	ug/L	104	Standard
	Zn	66	415.3	5.4	**-0.1263**	0.014	10.9	ug/L	363	Standard
>	Ge	72	573402.3	1.2				ug/L	495142	Standard
	As	75	-34.2	13.3	**0.0332**	0.003	10.5	ug/L	-50	Standard
	Se	82	17.2	23.7	**-0.0025**	0.031	1279.2	ug/L	14	Standard
	Se-1	77	54.3	12.3	**0.0204**	0.082	402.5	ug/L	42	Standard
>	Ga	71	35.0	37.8				mg/L	42	Standard
	Rb	85	30.0	28.9				ug/L	17	Standard
	Y	89	465691.4	1.8				ug/L	417098	Standard
>	Rh	103	6.7	43.3				ug/L	13	Standard
	Mo	98	268.8	25.2	**0.0874**	0.025	29.0	ug/L	11	Standard
	Ag	107	132.7	5.0	**0.0058**	0.001	22.7	ug/L	68	Standard
	Cd	111	15.2	35.4	**-0.0012**	0.003	209.6	mg/L	2	Standard
	Cd	114	58.4	20.0	**0.0084**	0.002	23.7	ug/L	12	Standard
>	In	115	638175.3	2.2				ug/L	587441	Standard
	Sn	118	866.7	15.8	**0.0416**	0.019	45.6	ug/L	497	Standard
	Sb	123	616.5	30.1	**0.1169**	0.034	29.1	ug/L	78	Standard
	Ba	135	50.7	18.3	**0.0068**	0.005	67.0	ug/L	24	Standard
	Ce	140	28.3	27.0				ug/L	25	Standard
>	Tb	159	990005.2	3.0				ug/L	939701	Standard
	Ho	165	6.7	86.6				ug/L	10	Standard
	Tl	203	92.0	24.5	**0.0086**	0.003	32.5	ug/L	4	Standard
	Tl	205	76.7	43.4	**0.0102**	0.005	44.4	ug/L	2	Standard
	Pb	206	305.7	10.6	**-0.0179**	0.007	38.8	ug/L	240	Standard
	Pb	207	274.7	5.9	**-0.0162**	0.004	23.3	ug/L	198	Standard
	Pb	208	1058.7	7.3	**-0.0216**	0.005	23.5	ug/L	883	Standard
	U	238	60.3	25.7	**0.0037**	0.002	61.2	ug/L	3	Standard
>	Bi	209	564302.2	2.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	35.0	37.8	**-0.0253**	0.014	54.1	mg/L	37	Standard
K	39	45.0	19.2	**-0.0261**	0.014	54.4	mg/L	38	Standard
Ca	43	26.7	39.0	**-1.0220**	0.608	59.5	mg/L	10	Standard
Fe	54	162.5	17.8	**-0.0163**	0.018	110.8	mg/L	179	Standard
Fe	57	258.3	8.1	**-0.2948**	0.047	15.9	mg/L	335	Standard
Sc-1	45	68713.9	3.5				mg/L	61029	Standard
Cl	35	28935.6	0.2				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	1740.1	12.2				ug/L	1547	Standard
P	31	21446.8	2.8				ug/L	15286	Standard
S	34	2463.5	5.1				ug/L	1572	Standard
Sr	88	71.7	17.6				ug/L	73	Standard
C	12	43.3	13.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	12.9	115.2				mg/L	6	Standard
Ho-1	165	6.7	86.6				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	2023.5	28.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		115.806	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.636
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.694
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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2.3.3 Metals CVAA Data (Mercury)

2.3.3.1 Summary Data

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-02	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18WW03F-061416	**Prep Method:**	7470A	**Prep Date:**	06/16/2016 07:27
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/26/2016 12:23
Workgroup #:	WG573236	**Analyst:**	AMA	**Run Date:**	06/26/2016 13:14
Collect Date:	06/14/2016 07:40	**Dilution:**	1	**File ID:**	M7.062616.131428
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060822-03	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18CPTMW04SW-061416	**Prep Method:**	7470A	**Prep Date:**	06/16/2016 07:27
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/26/2016 12:23
Workgroup #:	WG573236	**Analyst:**	AMA	**Run Date:**	06/26/2016 13:16
Collect Date:	06/14/2016 09:00	**Dilution:**	1	**File ID:**	M7.062616.131659
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060822
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.3.2 QC Summary

Example Cold Vapor Mercury Calculations
Hydra AA Mercury Analyzer / CETAC M-7600 Quick Trace Mercury Analyzer

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and five standards.

2.0 Calculating the concentration (C) of an element in water using data from run log and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to Volume (mL)	40
Vi = Aliquot Volume (mL)	40
D = Manual dilution factor, if required (10X = 10)	1
Cx = Concentration of element in ppb (ug/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Ws} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to volume (mL)	40
Ws = Aliquot weight (g)	0.6
D = Manual dilution factor	1
Cx = Concentration of element in ug/kg	6.67

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

1 Cx = Concentration calculated as received (wet basis)	6.67
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	8.33

8.33 ug/kg = 0.00833 mg/kg

Microbac Laboratories Inc.
Metals Digest Log

Workgroup: WG572915
Analyst: REK
Spike Analyst: REK
Method: 7470A
Run Date: 06/16/2016 07:27
Hotblock Start Temp: 95.2 @ 07:15
Hotblock End Temp: 95 @ 09:15
Instrument: HB7

SOP: ME404 Revison 17
Spike Solution: STD76639
Spike Witness: VC
H2SO4 Lot #: COA18359
40 & 50 ML. DIGESTION TU COA18772
HNO3 Lot #: COA18905
K2S2O8 1:1 Lot #: RGT37046
KMnO4 1:1 Lot #: RGT37082
Mercury Water ICV Lot #: STD76641
HG H2O STDS 10PPM Lot #: STD76647

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Spike Amount	Due Date
1	WG572915-02	BLANK	1	40 mL	40 mL		
2	WG572915-03	LCS	1	40 mL	40 mL	4 mL	
3	L16060764-01	SAMP	1	40 mL	40 mL		06/28/16
4	L16060764-02	SAMP	1	40 mL	40 mL		06/28/16
5	L16060764-03	SAMP	1	40 mL	40 mL		06/28/16
6	WG572915-01	REF	1	40 mL	40 mL		
7	L16060764-04	RS01	1	40 mL	40 mL		06/28/16
8	WG572915-04	MS	1	36 mL	40 mL	4 mL	
9	L16060764-05	MS01	1	36 mL	40 mL	4 mL	06/28/16
10	WG572915-05	MSD	1	36 mL	40 mL	4 mL	
11	L16060764-06	SD01	1	36 mL	40 mL	4 mL	06/28/16
12	L16060794-01	SAMP	1	40 mL	40 mL		06/24/16
13	L16060794-02	SAMP	1	40 mL	40 mL		06/24/16
14	L16060794-03	SAMP	1	40 mL	40 mL		06/24/16
15	L16060794-04	SAMP	1	40 mL	40 mL		06/24/16
16	L16060822-02	SAMP	1	40 mL	40 mL		06/24/16
17	L16060822-03	SAMP	1	40 mL	40 mL		06/24/16
18	L16060823-02	SAMP	1	40 mL	40 mL		06/24/16
19	L16060823-03	SAMP	1	40 mL	40 mL		06/24/16
20	L16060823-04	SAMP	1	40 mL	40 mL		06/24/16
21	L16060840-01	SAMP	1	40 mL	40 mL		06/29/16
22	L16060840-02	SAMP	1	40 mL	40 mL		06/29/16
23	L16060840-03	SAMP	1	40 mL	40 mL		06/29/16
24	L16060840-04	SAMP	1	40 mL	40 mL		06/29/16
25	L16060840-05	SAMP	1	40 mL	40 mL		06/29/16
26	L16060840-06	SAMP	1	40 mL	40 mL		06/29/16

Analyst: [signature]

Reviewer: [signature]

* All calibration and check standards are prepared and digested with sample batch following the procedures in section 7.0 of SOP ME404/ME405.

HB_DIG - Modified 07/26/2012
PDF ID: 4809802
Report generated: 06/16/2016 12:16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 062616A.CSV
Analyst1: AMA Analyst2: N/A
Method: 7470A/245.1 SOP: ME404 Rev: 17
Maintenance Log ID:

Calibration Std: STD76647 ICV Std: STD76641 Post Spike: STD76647
ICSA: N/A ICSAB: N/A Int. Std:
CCV: LLCCV: Tuning Sol :
Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 573236

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	M7.062616.121106	WG574322-01	Calibration Point		1		06/26/16 12:11
2	M7.062616.121337	WG574322-02	Calibration Point		1		06/26/16 12:13
3	M7.062616.121609	WG574322-03	Calibration Point		1		06/26/16 12:16
4	M7.062616.121841	WG574322-04	Calibration Point		1		06/26/16 12:18
5	M7.062616.122114	WG574322-05	Calibration Point		1		06/26/16 12:21
6	M7.062616.122348	WG574322-06	Calibration Point		1		06/26/16 12:23
7	M7.062616.122622	WG574322-07	Initial Calibration Verification		1		06/26/16 12:26
8	M7.062616.122853	WG574322-08	Initial Calib Blank		1		06/26/16 12:28
9	M7.062616.123125	WG574322-09	CCV		1		06/26/16 12:31
10	M7.062616.123356	WG574322-10	CCB		1		06/26/16 12:33
11	M7.062616.123627	WG572915-02	Method/Prep Blank	40/40	1		06/26/16 12:36
12	M7.062616.123858	WG572915-03	Laboratory Control S	40/40	1		06/26/16 12:38
13	M7.062616.124129	L16060764-01	MW-23-004	40/40	1		06/26/16 12:41
14	M7.062616.124401	WG573236-01	Post Digestion Spike		1	L16060764-01	06/26/16 12:44
15	M7.062616.124633	L16060764-02	MW-23-002		1		06/26/16 12:46
16	M7.062616.124905	L16060764-03	FD-061316		1		06/26/16 12:49
17	M7.062616.125137	WG572915-05	Matrix Spike Duplica	36/40	1	L16060764-04	06/26/16 12:51
18	M7.062616.125410	L16060764-04	MW-23-005		1	WG572915-01	06/26/16 12:54
19	M7.062616.125643	WG572915-04	Matrix Spike	36/40	1	L16060764-04	06/26/16 12:56
20	M7.062616.125916	L16060794-01	A08-MW06-Y1S2	40/40	1		06/26/16 12:59
21	M7.062616.130149	WG574322-11	CCV		1		06/26/16 13:01
22	M7.062616.130420	WG574322-12	CCB		1		06/26/16 13:04
23	M7.062616.130654	L16060794-02	A08-MW09-Y1S2	40/40	1		06/26/16 13:06
24	M7.062616.130927	L16060794-03	A09-MW02-Y1S2	40/40	1		06/26/16 13:09
25	M7.062616.131158	L16060794-04	A09-MW07-Y1S2	40/40	1		06/26/16 13:11
26	M7.062616.131428	L16060822-02	18WW03F-061416	40/40	1		06/26/16 13:14
27	M7.062616.131659	L16060822-03	18CPTMW04SW-061416	40/40	1		06/26/16 13:16
28	M7.062616.131930	L16060823-02	126F-061416	40/40	1		06/26/16 13:19
29	M7.062616.132202	L16060823-03	C08-061416	40/40	1		06/26/16 13:22
30	M7.062616.132434	L16060823-04	C03-061416	40/40	1		06/26/16 13:24
31	M7.062616.132706	L16060840-01	MW-24-004R	40/40	1		06/26/16 13:27
32	M7.062616.132938	L16060840-02	MW-24-003R	40/40	1		06/26/16 13:29
33	M7.062616.133211	WG574322-13	CCV		1		06/26/16 13:32
34	M7.062616.133441	WG574322-14	CCB		1		06/26/16 13:34

Page: 1 Approved: June 29, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 062616A.CSV

Analyst1: AMA Analyst2: N/A

Method: 7470A/245.1 SOP: ME404 Rev: 17

Maintenance Log ID:

Calibration Std: STD76647 ICV Std: STD76641 Post Spike: STD76647

ICSA: N/A ICSAB: N/A Int. Std:

CCV: LLCCV: Tuning Sol :

Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 573236

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	M7.062616.133714	L16060840-03	FR-061416-24	40/40	1		06/26/16 13:37
36	M7.062616.133947	L16060840-04	MW-24-002R	40/40	1		06/26/16 13:39
37	M7.062616.134220	L16060840-05	MW-24-005	40/40	1		06/26/16 13:42
38	M7.062616.134454	L16060840-06	EB-LOW FLOW TUBING	40/40	1		06/26/16 13:44
39	M7.062616.134726	WG574322-15	CCV		1		06/26/16 13:47
40	M7.062616.134957	WG574322-16	CCB		1		06/26/16 13:49

Page: 2 Approved: June 29, 2016

Microbac Laboratories Inc.

Data Checklist

Date: 26-JUN-2016
Analyst: AMA
Analyst: NA
Method: 7470A/245.1
Instrument: CVAA1
Curve Workgroup: 574322
Runlog ID: 75946
Analytical Workgroups: 573236

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	0794, 0822, 0823, 0840
Client Forms	X
Level X	
Level 3	0840
Level 4	0794, 0822, 0823
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	AMA
Secondary Reviewer	BKT
Comments	

Primary Reviewer:
28-JUN-2016
Alexandra M. Alfred

Secondary Reviewer:
29-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-29-2016 12:56:19

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 7470A

AAB#: WG573236

Login Number: L16060822

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW03F-061416	02	06/14/16					06/16/2016	2	28		06/26/16	12.2	28	
18CPTMW04SW-061416	03	06/14/16					06/16/2016	1.9	28		06/26/16	12.2	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4828268
Report generated 06/28/2016 10:47

METHOD BLANK SUMMARY

Login Number: L16060822
Blank File ID: M7.062616.123627
Prep Date: 06/16/16 07:27
Analyzed Date: 06/26/16 12:36
Analyst: AMA

Work Group: WG573236
Blank Sample ID: WG572915-02
Instrument ID: CVAA1
Method: 7470A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572915-03	M7.062616.123858	06/26/16 12:38	01
18WW03F-061416	L16060822-02	M7.062616.131428	06/26/16 13:14	01
18CPTMW04SW-061416	L16060822-03	M7.062616.131659	06/26/16 13:16	01

Report Name: BLANK_SUMMARY
PDF File ID: 4828269
Report generated 06/28/2016 10:47

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060822 Prep Date: 06/16/16 07:27 Sample ID: WG572915-02
Instrument ID: CVAA1 Run Date: 06/26/16 12:36 Prep Method: 7470A
File ID: M7.062616.123627 Analyst: AMA Method: 7470A
Workgroup (AAB#): WG573236 Matrix: Water Units: mg/L
Contract #: Cal ID: CVAA1-26-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Mercury	0.000100	0.000400	0.000100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4828270
28-JUN-2016 10:48

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060822 Run Date: 06/26/2016 Sample ID: WG572915-03
Instrument ID: CVAA1 Run Time: 12:38 Prep Method: 7470A
File ID: M7.062616.123858 Analyst: AMA Method: 7470A
Workgroup (AAB#): WG573236 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76639 Cal ID: CVAA1-26-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Mercury	0.00400	0.00421	105	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4828271
Report generated: 06/28/2016 10:48

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060822 Cal ID: CVAA1 - Worknum: WG573236
Instrument ID: CVAA1 Contract #: Method: 7470A
Parent ID: WG572915-01 File ID: M7.062616.125410 Dil: 1 Matrix: WATER
Sample ID: WG572915-04 MS File ID: M7.062616.125643 Dil: 1 Units: mg/L
Sample ID: WG572915-05 MSD File ID: M7.062616.125137 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Mercury	ND	0.00444	0.00479	108	0.00444	0.00480	108	0.0463	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4828272
Report generated 06/28/2016 10:48

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060822 **Worknum:** WG573236
Instrument ID: CVAA1 **Method:** 7470A
Post Spike ID: WG573236-01 **File ID:** M7.062616.124401 **Dil:** 1 **Units:** ug/L
Sample ID: L16060764-01 **File ID:** M7.062616.124129 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MERCURY	1.07		0	U	1	107.1	85 - 115	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4828267
Report generated: 06/28/2016 10:47

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060822
Analytical Method: 7470A
ICAL Worknum: WG574322

Workgroup (AAB#): WG573236
Instrument ID: CVAA1
Initial Calibration Date: 06/26/2016 12:23

Analyte	WG574322-01		WG574322-02		WG574322-03		WG574322-04		WG574322-05		WG574322-06	
	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT
Mercury	0	57.64	0.200	2673	1.00	13280	2.00	26640	5.00	66160	10.0	128600

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4828273
Report generated 06/28/2016 10:48

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060822
Analytical Method: 7470A
ICAL Worknum: WG574322

Workgroup (AAB#): WG573236
Instrument ID: CVAA1
Initial Calibration Date: 06/26/2016 12:23

Analyte	R	Q
Mercury	1.000	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4828273
Report generated 06/28/2016 10:48

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060822
Run Date: 06/26/2016
Sample ID: WG574322-08
Instrument ID: CVAA1
Run Time: 12:28
Method: 7470A
File ID: M7.062616.122853
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG573236
Cal ID: CVAA1 - 26-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
MERCURY	.1	.4	.1	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4828275
Report generated 06/28/2016 10:48

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/26/2016
Sample ID: WG574322-10
Instrument ID: CVAA1
Run Time: 12:33
Method: 7470A
File ID: M7.062616.123356
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG573236
Cal ID: CVAA1 - 26-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4828277
Report generated 06/28/2016 10:48

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/26/2016
Sample ID: WG574322-12
Instrument ID: CVAA1
Run Time: 13:04
Method: 7470A
File ID: M7.062616.130420
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG573236
Cal ID: CVAA1 - 26-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4828277
Report generated 06/28/2016 10:48

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060822
Run Date: 06/26/2016
Sample ID: WG574322-14
Instrument ID: CVAA1
Run Time: 13:34
Method: 7470A
File ID: M7.062616.133441
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG573236
Cal ID: CVAA1 - 26-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4828277
Report generated 06/28/2016 10:48

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060822
Run Date: 06/26/2016
Sample ID: WG574322-07
Instrument ID: CVAA1
Run Time: 12:26
Method: 7470A
File ID: M7.062616.122622
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG573236
Cal ID: CVAA1 - 26-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Mercury		2	2.12	106	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4828274
Report generated 06/28/2016 10:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822
Run Date: 06/26/2016
Sample ID: WG574322-09
Instrument ID: CVAA1
Run Time: 12:31
Method: 7470A
File ID: M7.062616.123125
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG573236
Cal ID: CVAA1 - 26-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00210	mg/L	105	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4828276
Report generated 06/28/2016 10:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822
Run Date: 06/26/2016
Sample ID: WG574322-11
Instrument ID: CVAA1
Run Time: 13:01
Method: 7470A
File ID: M7.062616.130149
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG573236
Cal ID: CVAA1 - 26-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00219	mg/L	109	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4828276
Report generated 06/28/2016 10:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060822
Run Date: 06/26/2016
Sample ID: WG574322-13
Instrument ID: CVAA1
Run Time: 13:32
Method: 7470A
File ID: M7.062616.133211
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG573236
Cal ID: CVAA1 - 26-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00223	mg/L	112	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4828276
Report generated 06/28/2016 10:48

2.3.3.3 Raw Data

PDM CVAA1 245.1/7470/7471

Report Generated By CETAC QuickTrace
Analyst: VOA
Worksheet file: C:\Program Files (x86)\QuickTrace\Worksheets\062616A.wsz
Date Started: 6/26/2016 11:26:47 AM
Comment:

Results

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
Standard #0					STD	06/26/16 12:11:06 pm	0.0000	58	36.36		1.00
Replicates	72.2	26.9	61.9	69.6							
Standard #1 (0.2 ug/L)					STD	06/26/16 12:13:37 pm	0.2000	2673	0.35		1.00
Replicates	2686.9	2668.0	2667.5	2669.0							
Standard #2 (1.0 ug/L)					STD	06/26/16 12:16:09 pm	1.0000	13283	0.12		1.00
Replicates	13271.5	13294.2	13266.7	13300.2							
Standard #3 (2.0 ug/L)					STD	06/26/16 12:18:41 pm	2.0000	26641	0.01		1.00
Replicates	26642.8	26641.1	26641.1	26638.4							
Standard #4 (5.0 ug/L)					STD	06/26/16 12:21:14 pm	5.0000	66159	0.11		1.00
Replicates	66221.6	66218.8	66109.5	66085.3							
Standard #5 (10.0 ug/L)					STD	06/26/16 12:23:48 pm	10.0000	128636	0.07		1.00
Replicates	128716.2	128712.3	128583.1	128533.8							

Calibration

Equation: A = 499.952 + 12881.860C
R2: 0.99980
SEE: 796.4388
Flags:

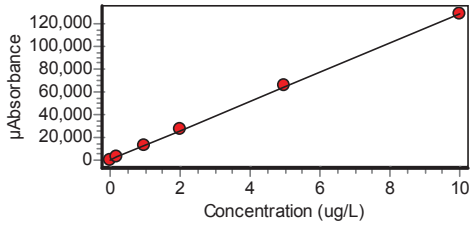

ICV					ICV	06/26/16 12:26:22 pm	2.1170	27772	0.16		1.00
Replicates	27815.3	27806.0	27744.4	27723.2							
% Recovery	105.86										

Approved: June 28, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
ICB					ICB	06/26/16 12:28:53 pm	-0.0379	11	291.32		1.00
Replicates	4.1	-22.5	57.6	6.8							
CCV					CCV	06/26/16 12:31:25 pm	2.0950	27485	0.16		1.00
Replicates	27434.8	27461.4	27527.1	27517.9							
% Recovery	104.74										
CCB					CCB	06/26/16 12:33:56 pm	-0.0387	1	964.00		1.00
Replicates	9.0	5.0	-0.8	-9.8							
WG572915-02					UNK	06/26/16 12:36:27 pm	-0.0350	50	39.52		1.00
Replicates	72.8	57.2	40.4	27.9							
WG572915-03					UNK	06/26/16 12:38:58 pm	4.2070	54690	0.15		1.00
Replicates	54575.2	54727.8	54702.1	54755.0							
L1606076401					UNK	06/26/16 12:41:29 pm	-0.0379	11	72.00		1.00
Replicates	8.4	14.3	21.3	1.9							
WG573236-01					SPK	06/26/16 12:44:01 pm	1.0710	14290	0.11		1.00
Replicates	14266.8	14293.4	14303.5	14296.9							
% Recovery	110.84										
L1606076402					UNK	06/26/16 12:46:33 pm	-0.0345	56	29.18		1.00
Replicates	46.7	78.1	41.1	58.6							
L1606076403					UNK	06/26/16 12:49:05 pm	-0.0307	104	20.90		1.00
Replicates	76.8	97.6	116.7	125.9							
WG572915-01					UNK	06/26/16 12:51:37 pm	4.3160	56092	0.13		1.00
Replicates	56018.1	56175.3	56135.9	56040.3							
L1606076405					MSK	06/26/16 12:54:10 pm	-0.0402	-17	79.85	N	1.00
Replicates	-11.0	-38.2	-11.2	-9.2							
% Recovery	-108.89										
L1606076406					MSDUP	06/26/16 12:56:43 pm	4.3140	56069	0.23	D	1.00
Replicates	55903.2	56042.6	56133.8	56194.6							
% Recovery	-0.05	RPD 203.76									

Approved: June 28, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1606079401					UNK	06/26/16 12:59:16 pm	-0.0393	-7	153.33		1.00
Replicates	-17.5	2.6	1.3	-12.4							
CCV					CCV	06/26/16 01:01:49 pm	2.1870	28674	0.28		1.00
Replicates	28565.4	28662.0	28726.3	28743.6							
% Recovery	109.36										
CCB					CCB	06/26/16 01:04:20 pm	-0.0400	-15	71.00		1.00
Replicates	-20.6	-24.4	-16.6	0.3							
L1606079402					UNK	06/26/16 01:06:54 pm	-0.0360	36	40.24		1.00
Replicates	40.1	23.8	25.1	54.5							
L1606079403					UNK	06/26/16 01:09:27 pm	0.0214	775	1.64		1.00
Replicates	766.0	779.2	763.7	791.0							
L1606079404					UNK	06/26/16 01:11:58 pm	-0.0321	87	18.96		1.00
Replicates	68.6	84.0	86.7	108.7							
L1606082202					UNK	06/26/16 01:14:28 pm	-0.0340	62	33.50		1.00
Replicates	78.3	50.1	79.4	38.2							
L1606082203					UNK	06/26/16 01:16:59 pm	-0.0350	49	26.85		1.00
Replicates	46.5	64.4	52.2	32.7							
L1606082302					UNK	06/26/16 01:19:30 pm	-0.0247	181	8.96		1.00
Replicates	178.7	199.1	187.1	160.4							
L1606082303					UNK	06/26/16 01:22:02 pm	-0.0283	135	14.85		1.00
Replicates	148.4	150.3	135.4	106.8							
L1606082304					UNK	06/26/16 01:24:34 pm	-0.0349	51	26.20		1.00
Replicates	38.5	67.5	41.8	55.0							
L1606084001					UNK	06/26/16 01:27:06 pm	-0.0336	67	31.06		1.00
Replicates	78.3	84.6	37.9	65.6							

Approved: June 28, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1606084002					UNK	06/26/16 01:29:38 pm	-0.0355	42	37.05		1.00
Replicates	37.5	51.9	22.2	56.9							
CCV					CCV	06/26/16 01:32:11 pm	2.2310	29245	0.47		1.00
Replicates	29065.4	29210.7	29333.0	29372.9							
% Recovery	111.57										
CCB					CCB	06/26/16 01:34:41 pm	-0.0387	1	222.94		1.00
Replicates	7.9	10.6	18.4	-34.1							
L1606084003					UNK	06/26/16 01:37:14 pm	-0.0343	58	10.23		1.00
Replicates	58.3	56.5	65.5	51.2							
L1606084004					UNK	06/26/16 01:39:47 pm	-0.0311	99	14.17		1.00
Replicates	85.9	113.0	88.0	109.0							
L1606084005					UNK	06/26/16 01:42:20 pm	-0.0347	53	38.40		1.00
Replicates	51.7	58.0	26.5	75.7							
L1606084006					UNK	06/26/16 01:44:54 pm	-0.0362	34	52.68		1.00
Replicates	39.2	7.6	40.3	47.5							
CCV					CCV	06/26/16 01:47:26 pm	2.2480	29454	0.57		1.00
Replicates	29236.8	29421.4	29529.4	29626.5							
% Recovery	112.38										
CCB					CCB	06/26/16 01:49:57 pm	-0.0385	4	182.59		1.00
Replicates	14.9	-3.5	0.5	5.6							

Approved: June 28, 2016

Alexandra M. Alfred

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
July 7, 2016

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BNB - Brandi N. Bentley
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJQ - Cameron J. Quick
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
CV - Carl Volkman
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
EMW - ERIC M. WILKEN
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LJH - Lacey J. Hendershot
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
NPH - Natalie P. Hart
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
July 07, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
July 07, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory: Microbac POC: Stephanie Mossburg	Project Manager: Debra Richmann	Mail to: Linda Raabe	
Address: 158 Starlite Drive	Phone/Fax Number: 210-296-2000	112 East Pecan STE. 400	
Marietta, OH 45750	Sampler (print): Scott Beesinger	San Antonio, TX 78205	
Phone: 1-800-373-4071		210-296-2000	
Client: AECOM	Signature: Scott Beesinger	Fed Ex Airbill No:	
Address: 112 East Pecan Ste. 400			
San Antonio, TX 78205			
Turn Around Time: STANDARD	pH:	Program:	
Project Name/Location: Longhorn			
Project Number: 60274185.0013BH 1824 MR10		ERPIMS REQUIRED FIELDS	

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Total Metals	1,4 - DIOXANE					SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 18/24	18WW03-061416			6/14/16	0740		✓	W	6	✓	✓		✓									
	18WW03F-061416			6/14/16	0740		✓	W	1			✓										
	18CPTMW04SW-061416			6/14/16	0900		✓	W	7	✓	✓	✓	✓									
	18CPTMW04-061416			6/14/16	1000		✓	W	6	✓	✓		✓									
	18CPTMW04FD-061416			6/14/16	1000		✓	W	6	✓	✓		✓									
	TRIP BLANK			6/14/16			✓	W	2	✓												

Comments: **STANDARD TAT**

	Date	Time	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature) Scott Beesinger	6/14/16	1530					
Relinquished by: (Signature)	Date	Time	Rec (Sig			Time	Remarks:

Microbac OVD
Received: 06/15/2016 09:54
By: BRENDA GREGORY 221000087198

Brenda Gregory

*Homogenize all composite samples prior to analysis

...nager, Pink QA/QC Manager

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060822
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 24-JUN-2016

Samplenum	Container ID	Products
L16060822-01	760842	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	ORG4	15-JUN-2016 14:47	BRG		
2	STORE	ORG4	A1	29-JUN-2016 12:15	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	15-JUN-2016 14:47	BRG		
2	ANALYZ	V1	ORG4	16-JUN-2016 08:16	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:15	CLS	JST	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	15-JUN-2016 14:47	BRG		
2	ANALYZ	V1	ORG4	16-JUN-2016 08:16	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:15	CLS	JST	

Samplenum	Container ID	Products
L16060822-01	760843	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:47	BRG		
2	PREP	W1	EXT	15-JUN-2016 17:32	CPD	AZH	
3	DISP	EXT	DISP	16-JUN-2016 15:22	BJO	BJO	
4	ANALYZ*	EXT	SEMI	20-JUN-2016 09:18	NPH	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:47	BRG		
2	STORE	W1	A1	24-JUN-2016 10:00	BRG	BRG	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060822-01	760844	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:47	BRG		
2	ANALYZ	W1	SEM	22-JUN-2016 14:47	JWR	CLS	
3	STORE	SEM	A1	24-JUN-2016 12:04	BRG	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060822
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 24-JUN-2016

Samplenum	Container ID	Products
L16060822-02	760845	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:47	BRG		
2	PREP	W1	DIG	15-JUN-2016 14:59	AC	CLS	
3	ANALYZ*	DIG	METALS	17-JUN-2016 14:30	CJQ	AC	
4	STORE	DIG	A1	17-JUN-2016 14:50	CLS	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060822-03	760846	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	15-JUN-2016 14:47	BRG		
2	ANALYZ	V1	ORG4	16-JUN-2016 08:16	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:15	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	15-JUN-2016 14:47	BRG		
2	ANALYZ	V1	ORG4	16-JUN-2016 08:16	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:14	CLS	JST	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	15-JUN-2016 14:47	BRG		
2	ANALYZ	V1	ORG4	16-JUN-2016 08:16	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:14	CLS	JST	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060822
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 24-JUN-2016

Samplenum	Container ID	Products
L16060822-03	760847	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:47	BRG		
2	PREP	W1	EXT	15-JUN-2016 17:32	CPD	AZH	
3	DISP	EXT	DISP	16-JUN-2016 15:23	BJO	BJO	
4	ANALYZ*	EXT	SEMI	20-JUN-2016 09:18	NPH	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:47	BRG		
2	STORE	W1	A1	24-JUN-2016 08:22	BRG	BRG	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060822-03	760848	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:47	BRG		
2	ANALYZ	W1	SEM	22-JUN-2016 14:47	JWR	CLS	
3	STORE	SEM	A1	24-JUN-2016 12:04	BRG	JWR	

Samplenum	Container ID	Products
L16060822-03	760849	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:47	BRG		
2	PREP	W1	DIG	15-JUN-2016 14:59	AC	CLS	
3	ANALYZ*	DIG	METALS	17-JUN-2016 14:30	CJQ	AC	
4	STORE	DIG	A1	17-JUN-2016 14:50	CLS	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060822
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 24-JUN-2016

Samplenum	Container ID	Products
L16060822-04	760850	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	15-JUN-2016 14:47	BRG		
2	ANALYZ	V1	ORG4	16-JUN-2016 08:16	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:15	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	15-JUN-2016 14:47	BRG		
2	ANALYZ	V1	ORG4	16-JUN-2016 08:16	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:15	CLS	JST	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	15-JUN-2016 14:47	BRG		
2	ANALYZ	V1	ORG4	16-JUN-2016 08:16	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:15	CLS	JST	

Samplenum	Container ID	Products
L16060822-04	760851	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:47	BRG		
2	PREP	W1	EXT	15-JUN-2016 17:32	CPD	AZH	
3	DISP	EXT	DISP	16-JUN-2016 15:22	BJO	BJO	
4	ANALYZ*	EXT	SEMI	20-JUN-2016 09:18	NPH	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:47	BRG		
2	STORE	W1	A1	24-JUN-2016 08:23	BRG	BRG	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060822
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 24-JUN-2016

Samplenum	Container ID	Products
L16060822-04	760852	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:47	BRG		
2	ANALYZ	W1	SEM	22-JUN-2016 14:47	JWR	CLS	
3	STORE	SEM	A1	24-JUN-2016 12:04	BRG	JWR	

Samplenum	Container ID	Products
L16060822-05	760853	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	15-JUN-2016 14:47	BRG		
2	ANALYZ	V1	ORG4	16-JUN-2016 08:16	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:15	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	15-JUN-2016 14:47	BRG		
2	ANALYZ	V1	ORG4	16-JUN-2016 08:16	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:15	CLS	JST	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	15-JUN-2016 14:47	BRG		
2	ANALYZ	V1	ORG4	16-JUN-2016 08:16	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:15	CLS	JST	

A1 - Sample Archive (COLD)
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F1 - Volatiles Freezer in Login
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W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060822
Account: 2551
Project: 2551.096
Samples: 6
Due Date: 24-JUN-2016

Samplenum	Container ID	Products
L16060822-05	760854	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:47	BRG		
2	PREP	W1	EXT	15-JUN-2016 17:32	CPD	AZH	
3	DISP	EXT	DISP	16-JUN-2016 15:22	BJO	BJO	
4	ANALYZ*	EXT	SEMI	20-JUN-2016 09:18	NPH	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:47	BRG		
2	STORE	W1	A1	24-JUN-2016 08:23	BRG	BRG	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060822-05	760855	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:47	BRG		
2	ANALYZ	W1	SEM	22-JUN-2016 14:47	JWR	CLS	
3	STORE	SEM	A1	24-JUN-2016 12:04	BRG	JWR	

Samplenum	Container ID	Products
L16060822-06	760856	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	15-JUN-2016 14:47	BRG		
2	ANALYZ	V1	ORG4	16-JUN-2016 08:16	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:15	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	15-JUN-2016 14:47	BRG		
2	ANALYZ	V1	ORG4	16-JUN-2016 08:16	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:15	CLS	JST	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16060823

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Michelle Taylor – Client Services Specialist
(740) 373-4071
Michelle.Taylor@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on July 08 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
0018103	H	3.0		J2317165009	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
126-061416	L16060823-01	06/14/2016 11:10	06/15/2016 09:56
126F-061416	L16060823-02	06/14/2016 11:10	06/15/2016 09:56
C08-061416	L16060823-03	06/14/2016 13:10	06/15/2016 09:56
C03-061416	L16060823-04	06/14/2016 14:15	06/15/2016 09:56
TRIP BLANK	L16060823-05	06/14/2016 00:01	06/15/2016 09:56

Microbac REPORT L16060823
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.1 Narratives 6
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2.1.1.2 QC Summary Data 75
2.1.1.3 Sample Data 106
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1.0 Summary Data

1.1 Narratives

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060823
Project Name:		**Method:**	8260
Prep Batch Number(s):	573038	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-07-07 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden		Analyst I	2016-07-07 20:45:33

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060823
Project Name:		**Method:**	8260
Prep Batch Number(s):	573038	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-07-07 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?		X			1
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				
Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060823
Project Name:		**Method:**	8260
Prep Batch Number(s):	573038	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-07-07 00:00:00		

Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				
Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060823
Project Name:		**Method:**	8260
Prep Batch Number(s):	573038	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-07-07 00:00:00		

Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			2
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					
Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060823
Project Name:		**Method:**	8260
Prep Batch Number(s):	573038	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-07-07 00:00:00		

Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;

2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);

3. NA = Not applicable;

4. NR = Not reviewed;

5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) 1,2-Dichloroethane-d4 marginally exceeded the UCL in samples 01 and 04, target compounds were not detected above the reporting limit. Reanalysis not required.

2) Bromomethane was below the LCL and 2,2-Dichloropropane exceeded the UCL in CCV WG573037-02.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060823
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572806	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-23 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-06-23 18:23:03

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060823
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572806	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-23 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060823
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572806	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-23 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060823
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572806	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-23 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060823
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572806	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-23 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060823
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG572806	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-23 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

There are no exceptions.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060823
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574101	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Wade DeLong	Wade DeLong	Chemist I	2016-06-28 17:39:56

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060823
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574101	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060823
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574101	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060823
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574101	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060823
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574101	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

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Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060823
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574101	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	126-061416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573038	**Analyst:**	FJB	**Run Date:**	06/16/2016 20:50
Collect Date:	06/14/2016 11:10	**Dilution:**	1	**File ID:**	8M413045
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	Q	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	Q	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	Q	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	Q	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	Q	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	Q	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	Q	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	Q	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	Q	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	Q	2.00	1.00	0.500
Chloroform	67-66-3	0.250	Q	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	Q	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	Q	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	Q	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	Q	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	Q	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	Q	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	Q	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	Q	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	Q	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	Q	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	Q	1.00	0.500	0.250

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	Q	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	Q	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	Q	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	Q	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	Q	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	Q	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	Q	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	1.28	J	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	Q	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	Q	1.00	0.250	0.125
Styrene	100-42-5	0.250	Q	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	Q	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	Q	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	Q	1.00	0.500	0.250
Toluene	108-88-3	0.500	Q	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	Q	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	Q	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	Q	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	Q	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	Q	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	Q	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	Q	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	Q	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	Q	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	Q	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	114	85	115	
1,2-Dichloroethane-d4	121	70	120	*
Toluene-d8	101	85	120	
4-Bromofluorobenzene	99.5	75	120	

J	The reported result is an estimated value.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	126-061416	**Prep Method:**	3520C	**Prep Date:**	06/15/2016 18:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573365	**Analyst:**	MES	**Run Date:**	06/21/2016 18:40
Collect Date:	06/14/2016 11:10	**Dilution:**	1	**File ID:**	15M18480
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	73.6	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	126-061416	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/24/2016 21:44
Collect Date:	06/14/2016 11:10	**Dilution:**	1	**File ID:**	1LM.LM35468
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.140	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	126F-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 16:45
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/23/2016 20:33
Collect Date:	06/14/2016 11:10	**Dilution:**	1	**File ID:**	T3.062316.203318
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.100	U	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	5.93		0.200	0.100	0.0500
Potassium, Total	7440-09-7	4.36		2.00	1.00	0.500

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	126F-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/25/2016 12:36
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/25/2016 14:03
Collect Date:	06/14/2016 11:10	**Dilution:**	1	**File ID:**	T3.062516.140359
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	126F-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 16:45
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/23/2016 21:32
Collect Date:	06/14/2016 11:10	**Dilution:**	20	**File ID:**	T3.062316.213215
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	296		10.0	5.00	2.50
Magnesium, Total	7439-95-4	235		20.0	10.0	5.00
Sodium, Total	7440-23-5	829		20.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	126F-061416	**Prep Method:**	3015	**Prep Date:**	06/27/2016 08:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/28/2016 13:15
Workgroup #:	WG574570	**Analyst:**	BKT	**Run Date:**	06/28/2016 20:48
Collect Date:	06/14/2016 11:10	**Dilution:**	1	**File ID:**	NI.062816.204859
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.0147		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00231	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.0656		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00314	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0313		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.000584	J	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0168	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	126F-061416	**Prep Method:**	3015	**Prep Date:**	06/27/2016 08:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/29/2016 11:35
Workgroup #:	WG574570	**Analyst:**	BKT	**Run Date:**	06/29/2016 12:28
Collect Date:	06/14/2016 11:10	**Dilution:**	50	**File ID:**	NI.062916.122812
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	9.33		0.300	0.150	0.0750
Manganese, Total	7439-96-5	1.07		0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-02	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	126F-061416	**Prep Method:**	7470A	**Prep Date:**	06/16/2016 07:27
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/26/2016 12:23
Workgroup #:	WG573236	**Analyst:**	AMA	**Run Date:**	06/26/2016 13:19
Collect Date:	06/14/2016 11:10	**Dilution:**	1	**File ID:**	M7.062616.131930
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	C08-061416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573038	**Analyst:**	FJB	**Run Date:**	06/16/2016 21:19
Collect Date:	06/14/2016 13:10	**Dilution:**	1	**File ID:**	8M413046
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	5.61		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	119	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	100	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	C08-061416	**Prep Method:**	3520C	**Prep Date:**	06/15/2016 18:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573365	**Analyst:**	MES	**Run Date:**	06/21/2016 19:02
Collect Date:	06/14/2016 13:10	**Dilution:**	1	**File ID:**	15M18481
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	44.3	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	C08-061416	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/24/2016 22:03
Collect Date:	06/14/2016 13:10	**Dilution:**	1	**File ID:**	1LM.LM35469
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	C08-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/25/2016 12:36
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/25/2016 14:07
Collect Date:	06/14/2016 13:10	**Dilution:**	1	**File ID:**	T3.062516.140759
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	C08-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 16:45
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/23/2016 20:37
Collect Date:	06/14/2016 13:10	**Dilution:**	1	**File ID:**	T3.062316.203719
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.114	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	0.627		0.200	0.100	0.0500
Potassium, Total	7440-09-7	2.18		2.00	1.00	0.500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	C08-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 16:45
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/23/2016 21:43
Collect Date:	06/14/2016 13:10	**Dilution:**	20	**File ID:**	T3.062316.214348
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	239		10.0	5.00	2.50
Magnesium, Total	7439-95-4	143		20.0	10.0	5.00
Sodium, Total	7440-23-5	761		20.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	C08-061416	**Prep Method:**	3015	**Prep Date:**	06/27/2016 08:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/28/2016 13:15
Workgroup #:	WG574570	**Analyst:**	BKT	**Run Date:**	06/28/2016 20:52
Collect Date:	06/14/2016 13:10	**Dilution:**	1	**File ID:**	NI.062816.205210
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00829		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000385	J	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00247	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00683		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00295	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0138		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00101	J	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	C08-061416	**Prep Method:**	3015	**Prep Date:**	06/27/2016 08:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/29/2016 11:35
Workgroup #:	WG574570	**Analyst:**	BKT	**Run Date:**	06/29/2016 12:31
Collect Date:	06/14/2016 13:10	**Dilution:**	50	**File ID:**	NI.062916.123124
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	5.12		0.300	0.150	0.0750
Manganese, Total	7439-96-5	3.15		0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-03	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	C08-061416	**Prep Method:**	7470A	**Prep Date:**	06/16/2016 07:27
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/26/2016 12:23
Workgroup #:	WG573236	**Analyst:**	AMA	**Run Date:**	06/26/2016 13:22
Collect Date:	06/14/2016 13:10	**Dilution:**	1	**File ID:**	M7.062616.132202
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	C03-061416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573038	**Analyst:**	FJB	**Run Date:**	06/16/2016 21:48
Collect Date:	06/14/2016 14:15	**Dilution:**	1	**File ID:**	8M413047
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	Q	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	Q	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	Q	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	Q	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	Q	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	Q	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	Q	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	Q	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	Q	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	Q	2.00	1.00	0.500
Chloroform	67-66-3	0.250	Q	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	Q	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	Q	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	Q	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	Q	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	Q	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	Q	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	Q	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	Q	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	Q	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	Q	1.00	0.500	0.250

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	Q	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	Q	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	Q	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	Q	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	Q	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	Q	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	Q	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	Q	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	Q	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	Q	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	Q	1.00	0.250	0.125
Styrene	100-42-5	0.250	Q	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	Q	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	Q	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	Q	1.00	0.500	0.250
Toluene	108-88-3	0.500	Q	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	Q	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	Q	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	Q	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	Q	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	Q	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	Q	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	Q	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	Q	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	Q	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	Q	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	121	70	120	*
Toluene-d8	104	85	120	
4-Bromofluorobenzene	100	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	C03-061416	**Prep Method:**	3520C	**Prep Date:**	06/15/2016 18:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573365	**Analyst:**	MES	**Run Date:**	06/21/2016 19:25
Collect Date:	06/14/2016 14:15	**Dilution:**	1	**File ID:**	15M18482
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	43.2	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	C03-061416	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/24/2016 22:22
Collect Date:	06/14/2016 14:15	**Dilution:**	10	**File ID:**	1LM.LM35470
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	5.48		4.00	2.00	1.00

Certificate of Analysis

Sample #:	L16060823-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	C03-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/25/2016 12:36
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/25/2016 14:12
Collect Date:	06/14/2016 14:15	**Dilution:**	1	**File ID:**	T3.062516.141200
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	C03-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 16:45
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/23/2016 20:41
Collect Date:	06/14/2016 14:15	**Dilution:**	1	**File ID:**	T3.062316.204123
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.100	U	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Potassium, Total	7440-09-7	4.01		2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	C03-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 16:45
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/23/2016 21:47
Collect Date:	06/14/2016 14:15	**Dilution:**	20	**File ID:**	T3.062316.214744
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	55.4		10.0	5.00	2.50
Iron, Total	7439-89-6	101		4.00	2.00	1.00
Magnesium, Total	7439-95-4	35.8		20.0	10.0	5.00
Sodium, Total	7440-23-5	169		20.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	C03-061416	**Prep Method:**	3015	**Prep Date:**	06/27/2016 08:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/28/2016 13:15
Workgroup #:	WG574570	**Analyst:**	BKT	**Run Date:**	06/28/2016 20:55
Collect Date:	06/14/2016 14:15	**Dilution:**	1	**File ID:**	NI.062816.205522
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00684		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00200	U	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.000578	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00200	U	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.00400	U	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0153	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	C03-061416	**Prep Method:**	3015	**Prep Date:**	06/27/2016 08:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/29/2016 11:35
Workgroup #:	WG574570	**Analyst:**	BKT	**Run Date:**	06/29/2016 12:34
Collect Date:	06/14/2016 14:15	**Dilution:**	50	**File ID:**	NI.062916.123435
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	1.56		0.300	0.150	0.0750
Manganese, Total	7439-96-5	1.85		0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-04	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	C03-061416	**Prep Method:**	7470A	**Prep Date:**	06/16/2016 07:27
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/26/2016 12:23
Workgroup #:	WG573236	**Analyst:**	AMA	**Run Date:**	06/26/2016 13:24
Collect Date:	06/14/2016 14:15	**Dilution:**	1	**File ID:**	M7.062616.132434
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573038	**Analyst:**	FJB	**Run Date:**	06/16/2016 19:23
Collect Date:	06/14/2016 00:01	**Dilution:**	1	**File ID:**	8M413042
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	114	70	120	
Toluene-d8	106	85	120	
4-Bromofluorobenzene	102	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	126-061416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573038	**Analyst:**	FJB	**Run Date:**	06/16/2016 20:50
Collect Date:	06/14/2016 11:10	**Dilution:**	1	**File ID:**	8M413045
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	Q	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	Q	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	Q	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	Q	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	Q	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	Q	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	Q	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	Q	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	Q	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	Q	2.00	1.00	0.500
Chloroform	67-66-3	0.250	Q	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	Q	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	Q	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	Q	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	Q	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	Q	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	Q	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	Q	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	Q	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	Q	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	Q	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	Q	1.00	0.500	0.250

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	Q	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	Q	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	Q	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	Q	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	Q	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	Q	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	Q	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	1.28	J	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	Q	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	Q	1.00	0.250	0.125
Styrene	100-42-5	0.250	Q	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	Q	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	Q	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	Q	1.00	0.500	0.250
Toluene	108-88-3	0.500	Q	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	Q	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	Q	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	Q	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	Q	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	Q	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	Q	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	Q	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	Q	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	Q	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	Q	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	114	85	115	
1,2-Dichloroethane-d4	121	70	120	*
Toluene-d8	101	85	120	
4-Bromofluorobenzene	99.5	75	120	

J	The reported result is an estimated value.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	C08-061416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573038	**Analyst:**	FJB	**Run Date:**	06/16/2016 21:19
Collect Date:	06/14/2016 13:10	**Dilution:**	1	**File ID:**	8M413046
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	5.61		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	119	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	100	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	C03-061416	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573038	**Analyst:**	FJB	**Run Date:**	06/16/2016 21:48
Collect Date:	06/14/2016 14:15	**Dilution:**	1	**File ID:**	8M413047
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	Q	10.0	5.00	2.50
Benzene	71-43-2	0.250	Q	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	Q	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	Q	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	Q	1.00	0.500	0.250
Bromoform	75-25-2	1.00	Q	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	Q	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	Q	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	Q	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	Q	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	Q	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	Q	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	Q	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	Q	2.00	1.00	0.500
Chloroform	67-66-3	0.250	Q	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	Q	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	Q	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	Q	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	Q	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	Q	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	Q	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	Q	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	Q	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	Q	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	Q	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	Q	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	Q	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	Q	1.00	0.500	0.250

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	Q	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	Q	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	Q	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	Q	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	Q	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	Q	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	Q	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	Q	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	Q	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	Q	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	Q	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	Q	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	Q	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	Q	1.00	0.250	0.125
Styrene	100-42-5	0.250	Q	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	Q	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	Q	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	Q	1.00	0.500	0.250
Toluene	108-88-3	0.500	Q	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	Q	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	Q	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	Q	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	Q	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	Q	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	Q	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	Q	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	Q	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	Q	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	Q	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	Q	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	121	70	120	*
Toluene-d8	104	85	120	
4-Bromofluorobenzene	100	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573038	**Analyst:**	FJB	**Run Date:**	06/16/2016 19:23
Collect Date:	06/14/2016 00:01	**Dilution:**	1	**File ID:**	8M413042
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	110	85	115	
1,2-Dichloroethane-d4	114	70	120	
Toluene-d8	106	85	120	
4-Bromofluorobenzene	102	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051316
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53752

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG568561

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412209	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 08:38
8M412210	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 08:57
8M412211	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 09:29
8M412212	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 09:56
8M412213	WG568561-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/13/16 10:19
8M412214	WG568561-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/13/16 10:51
8M412215	WG568565-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76072	05/13/16 11:36
8M412216	BFB CHECK	NA	1	1	STD76034	05/13/16 12:04
8M412217	BFB CHECK	NA	1	1	STD76034	05/13/16 12:18
8M412218	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 12:36
8M412219	RINSE	NA	1	1		05/13/16 13:00
8M412220	WG568561-02 0.3ug/L STD 8260	NA	1	1	STD76127	05/13/16 13:29
8M412221	WG568561-03 0.4ug/L STD 8260	NA	1	1	STD76127	05/13/16 13:58
8M412222	WG568561-04 1ug/L STD 8260	NA	1	1	STD76127	05/13/16 14:27
8M412223	WG568561-05 2ug/L STD 8260	NA	1	1	STD76127	05/13/16 14:56
8M412224	WG568561-06 5ug/L STD 8260	NA	1	1	STD76127	05/13/16 15:25
8M412225	WG568561-07 20ug/L STD 8260	NA	1	1	STD76127	05/13/16 15:54
8M412226	WG568561-08 50ug/L STD 8260	NA	1	1	STD76127	05/13/16 16:23
8M412227	WG568561-09 100ug/L STD 8260	NA	1	1	STD76127	05/13/16 16:52
8M412228	WG568561-10 200ug/L STD 8260	NA	1	1	STD76127	05/13/16 17:21
8M412229	WG568561-11 300ug/L STD 8260	NA	1	1	STD76127	05/13/16 17:50
8M412230	RINSE	NA	1	1		05/13/16 18:19
8M412231	RINSE	NA	1	1		05/13/16 18:49
8M412232	WG568561-12 50ug/L ALT SRC STD 8260	NA	1	1	STD76109	05/13/16 19:17
8M412233	RINSE	NA	1	1		05/13/16 19:46

Comments

Seq.	Rerun	Dil.	Reason	Analytes
5	X			
File ID: 8M412213				
	Several compounds were low, DNR.			
6				
File ID: 8M412214				

Approved: May 20, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS8	Dataset:	051316		
Analyst1:	TMB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	23
Method:	624	SOP:	MSV10	Rev:	14
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:	53752				

Internal Standard: STD75899 Surrogate Standard: STD75899

CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG568561

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			Two C compounds failed. DNR. Run a curve.	
7 File ID: 8M412215				
			DNR.	

Approved: May 20, 2016

Page: 2

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051716
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76072; STD76127 LCS: STD76109; STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG569079; WG569083

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412319	WG569084-01 50ng BFB STD 8260	NA	1	1	STD76034	05/17/16 08:53
8M412320	WG569084-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/17/16 09:18
8M412321	WG569079-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76072	05/17/16 09:47
8M412322	WG569079-03 50ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 10:16
8M412323	WG569079-04 20ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 10:44
8M412324	WG569079-05 5ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 11:13
8M412325	WG569079-06 200ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 11:42
8M412326	WG569079-07 300ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 12:40
8M412327	WG569079-08 400ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 13:10
8M412328	WG569079-09 500ug/L A9/FOO STD 8260	NA	1	1	STD76072	05/17/16 13:39
8M412329	RINSE	NA	1	1		05/17/16 14:08
8M412330	RINSE	NA	1	1		05/17/16 14:37
8M412331	WG569079-10 100ug/L ALT SRC STD 826	NA	1	1	STD75801	05/17/16 15:06
8M412332	WG569259-01 BFB 50ng 8260	NA	1	1	STD76034	05/17/16 18:27
8M412333	WG569259-02 50ug/L CCV 8260	NA	1	1	STD76034	05/17/16 18:53
8M412334	WG569260-01 100ug/L CCV A9	NA	1	1	STD76072	05/17/16 19:22
8M412335	WG569083-01 VBLK0517 BLANK 8260	NA	1	1		05/17/16 19:51
8M412336	WG569083-02 20ug/L LCS 8260	NA	1	1	STD76109	05/17/16 20:20
8M412337	WG569083-03 20ug/L LCS2 8260	NA	1	1	STD76109	05/17/16 20:49
8M412338	WG569083-04 100ug/L LCS A9	NA	1	1	STD75801	05/17/16 21:18
8M412339	WG569083-05 100ug/L LCS2 A9	NA	1	1	STD75801	05/17/16 21:46
8M412340	L16050844-01 TB A 826-A9-SPE	5	1	1		05/17/16 22:16
8M412341	L16050844-07 EB A 826-A9-SPE	5	1	1		05/17/16 22:45
8M412342	L16050844-11 AB A 826-A9-SPE	5	1	1		05/17/16 23:14
8M412343	L16050844-02 A 826-A9-SPE	6	1	1		05/17/16 23:43
8M412344	L16050844-05 A 826-A9-SPE	6	1	1		05/18/16 00:12
8M412345	L16050844-06 A 826-A9-SPE	6	1	1		05/18/16 00:41
8M412346	L16050844-12 A 826-A9-SPE	6	1	1		05/18/16 01:10
8M412347	L16050840-01 A 826-A9-SPE	7	1	1		05/18/16 01:38
8M412348	L16050844-08 A 826-A9-SPE	7	1	1		05/18/16 02:07
8M412349	L16050844-13 A 826-A9-SPE	7	1	1		05/18/16 02:36
8M412350	L16050844-15 A 826-A9-SPE	7	1	1		05/18/16 03:05
8M412351	L16050839-01 A 826-A9-SPE	7	1	1		05/18/16 03:33
8M412352	L16050844-03 2.5X A 826-A9-SPE	7	1	2.5		05/18/16 04:02

Approved: May 20, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051716
Analyst1: TMB Analyst2: FJB
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76072; STD76127 LCS: STD76109; STD75801 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG569079; WG569083

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412353	L16050844-04 5X A 826-A9-SPE	7	1	5		05/18/16 04:31
8M412354	L16050844-09 5X A 826-A9-SPE	7	1	5		05/18/16 05:01
8M412355	L16050844-10 5X A 826-A9-SPE	7	1	5		05/18/16 05:30
8M412356	L16050844-14 50X A 826-A9-SPE	7	1	50		05/18/16 05:59
8M412357	RINSE	NA	1	1		05/18/16 06:28

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
File ID: 8M412320				
	DNR. Running an a9/foo curve.			
32	X	10	Over Calibration Range	CIS12-DCE
File ID: 8M412350				
40	X	2.5	Analyzed too dilute	
File ID: 8M412353				
	DNR.			
37	X	25	Over Calibration Range	TCE
File ID: 8M412355				
38	X	20	Analyzed too dilute	
File ID: 8M412356				
	DNR.			

Approved: May 20, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 061616
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75370 Surrogate Standard: STD76370
CCV: STD76578 LCS: STD76597 MS/MSD: STD76597

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG573038

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M413031	WG573037-01 BFB 50ng 8260	NA	1	1	STD76496	06/16/16 14:02
8M413032	WG573037-02 50ug/L CCV 8260	NA	1	1	STD76578	06/16/16 14:25
8M413033	WG573XXX-01 100ug/L CCV A9	NA	1	1	STD7XXXX	06/16/16 14:54
8M413034	WG573038-01 BLANK 6/16 8260	NA	1	1		06/16/16 15:23
8M413035	WG573038-02 20ug/L LCS 8260	NA	1	1	STD76597	06/16/16 15:52
8M413036	WG573038-03 20ug/L LCS2 8260	NA	1	1	STD76597	06/16/16 16:21
8M413037	L16060637-04 TB A 826-SPE	<2	1	1		06/16/16 16:58
8M413038	L16060756-05 TB A 826-SPE	<2	1	1		06/16/16 17:27
8M413039	L16060765-01 TB A 826-SPE	<2	1	1		06/16/16 17:56
8M413040	L16060730-04 TB A 826-LOW	<2	1	1		06/16/16 18:25
8M413041	L16060732-03 TB A 826-LOW	<2	1	1		06/16/16 18:54
8M413042	L16060823-05 TB A 826-LOW	<2	1	1		06/16/16 19:23
8M413043	L16060616-01 B 826-LOW	<2	1	1		06/16/16 19:52
8M413044	L16060732-01 A 826-LOW	<2	1	1		06/16/16 20:21
8M413045	L16060823-01 A 826-LOW	<2	1	1		06/16/16 20:50
8M413046	L16060823-03 A 826-LOW	<2	1	1		06/16/16 21:19
8M413047	L16060823-04 A 826-LOW	<2	1	1		06/16/16 21:48
8M413048	L16060730-03 A 826-LOW	<2	1	1		06/16/16 22:17
8M413049	L16060765-02 A 826-SPE	<2	1	1		06/16/16 22:46
8M413050	L16060765-03 A 826-SPE	<2	1	1		06/16/16 23:15
8M413051	L16060765-04 A 826-SPE	<2	1	1		06/16/16 23:43
8M413052	L16060730-01 A 826-SPE	<2	1	1		06/17/16 00:12
8M413053	L16060730-02 A 826-SPE	<2	1	1		06/17/16 00:41
8M413054	L16060637-03 A 826-SPE	<2	1	1		06/17/16 01:10
8M413055	L16060756-04 A 826-SPE	<2	1	1		06/17/16 01:38
8M413056	RINSE	NA	1	1		06/17/16 02:07
8M413057	RINSE	NA	1	1		06/17/16 02:37
8M413058	RINSE	NA	1	1		06/17/16 03:05

Comments

Seq.	Rerun	Dil.	Reason	Analytes
14	X		Carry-over contamination	
File ID: 8M413044				

Approved: June 23, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 061616
Analyst1: ADC Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75370 Surrogate Standard: STD76370
CCV: STD76578 LCS: STD76597 MS/MSD: STD76597

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG573038

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
	L16060732-01			
15 File ID: 8M413045				
	L16060823-01 high surrogate but sample is ND.			
17 File ID: 8M413047	X		Surrogate standard failure	
	L16060823-04			
18 File ID: 8M413048	X		Surrogate standard failure	
	L16060730-03			
24 File ID: 8M413054	X	20	Over Calibration Range	CFORM, CTET, TCE
	L16060637-03			
25 File ID: 8M413055	X	20	Over Calibration Range	CB
	L16060756-04			

Approved: June 23, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Data Checklist

Date: 13-MAY-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75126
Analytical Workgroups: WG568561

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	TMB
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
17-MAY-2016
Tiffany Bailey

Secondary Reviewer:
20-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2016 11:18:36

Microbac Laboratories Inc.

Data Checklist

Date: 17-MAY-2016
Analyst: TMB
Analyst: FJB
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75174
Analytical Workgroups: WG569079; WG569083

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
19-MAY-2016
Tiffany Bailey

Secondary Reviewer:
20-MAY-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2016 11:05:37

Microbac Laboratories Inc.

Data Checklist

Date: 16-JUN-2016
Analyst: ADC
Analyst: NA
Method: 8260
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75860
Analytical Workgroups: WG573038

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	ADC
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	ADC
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
22-JUN-2016

Secondary Reviewer:
23-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-23-2016 13:34:00

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG573038

Login Number: L16060823

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
126-061416	01	06/14/16					06/16/2016	2.4	14		06/16/16	2.4	14	
C08-061416	03	06/14/16					06/16/2016	2.3	14		06/16/16	2.3	14	
C03-061416	04	06/14/16					06/16/2016	2.3	14		06/16/16	2.3	14	
TRIP BLANK	05	06/14/16					06/16/2016	2.8	14		06/16/16	2.8	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4819682
Report generated 07/07/2016 16:44

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060823
Instrument Id: HPMS8
Workgroup (AAB#): WG573038

Method: 8260
CAL ID: HPMS8-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16060823-01	1.00	01	121	114	99.5	101
L16060823-03	1.00	01	119	112	100	104
L16060823-04	1.00	01	121	113	100	104
L16060823-05	1.00	01	114	110	102	106
WG573038-01	1.00	01	114	109	102	106
WG573038-02	1.00	01	118	110	99.2	104
WG573038-03	1.00	01	114	108	98.9	104

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4819690
Report generated: 07/07/2016 16:44

METHOD BLANK SUMMARY

Login Number: L16060823
Blank File ID: 8M413034
Prep Date: 06/16/16 15:23
Analyzed Date: 06/16/16 15:23
Analyst: FJB

Work Group: WG573038
Blank Sample ID: WG573038-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573038-02	8M413035	06/16/16 15:52	01
LCS2	WG573038-03	8M413036	06/16/16 16:21	01
TRIP BLANK	L16060823-05	8M413042	06/16/16 19:23	01
126-061416	L16060823-01	8M413045	06/16/16 20:50	01
C08-061416	L16060823-03	8M413046	06/16/16 21:19	01
C03-061416	L16060823-04	8M413047	06/16/16 21:48	01

Report Name: BLANK_SUMMARY
PDF File ID: 4819683
Report generated 07/07/2016 16:44

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16060823 Prep Date: 06/16/16 15:23 Sample ID: WG573038-01
Instrument ID: HPMS8 Run Date: 06/16/16 15:23 Prep Method: 5030B/5030C/503
File ID: 8M413034 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573038 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4819684
07-JUL-2016 16:44

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060823 Prep Date: 06/16/16 15:23 Sample ID: WG573038-01
Instrument ID: HPMS8 Run Date: 06/16/16 15:23 Prep Method: 5030B/5030C/503
File ID: 8M413034 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573038 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	109	85 - 115	PASS
1,2-Dichloroethane-d4	114	70 - 120	PASS
Toluene-d8	106	85 - 120	PASS
4-Bromofluorobenzene	102	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4819684
07-JUL-2016 16:44

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060823 Analyst: FJB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG573038 Units: ug/L
QC Key: DOD4 Lot #: STD76597

Sample ID: WG573038-02 LCS File ID: 8M413035 Run Date: 06/16/2016 15:52
Sample ID: WG573038-03 LCS2 File ID: 8M413036 Run Date: 06/16/2016 16:21

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	20.8	104	20.0	20.9	105	0.576	80 - 130	30	
1,1,1-Trichloroethane	20.0	22.5	112	20.0	23.2	116	3.45	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	17.7	88.5	20.0	18.1	90.5	2.29	65 - 130	30	
1,1,2-Trichloroethane	20.0	19.6	97.9	20.0	19.6	98.1	0.148	75 - 125	30	
1,1-Dichloroethane	20.0	19.5	97.5	20.0	19.9	99.5	2.06	70 - 135	30	
1,1-Dichloroethene	20.0	18.9	94.6	20.0	19.6	98.2	3.75	70 - 130	30	
1,1-Dichloropropene	20.0	20.6	103	20.0	21.0	105	2.03	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	19.0	94.8	20.0	19.4	96.8	2.05	55 - 140	30	
1,2,3-Trichloropropane	20.0	19.8	99.1	20.0	19.6	97.8	1.36	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	19.4	96.9	20.0	20.1	100	3.60	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	19.9	99.5	20.0	20.3	102	2.19	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	19.7	98.7	20.0	21.4	107	7.93	50 - 130	30	
1,2-Dibromoethane	20.0	20.1	100	20.0	19.9	99.3	1.19	80 - 120	30	
1,2-Dichlorobenzene	20.0	19.7	98.6	20.0	20.3	102	3.14	70 - 120	30	
1,2-Dichloroethane	20.0	23.3	117	20.0	23.5	118	0.816	70 - 130	30	
1,2-Dichloropropane	20.0	20.4	102	20.0	21.0	105	3.16	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	20.3	102	20.0	20.9	105	3.05	75 - 130	30	
1,3-Dichlorobenzene	20.0	20.0	99.9	20.0	20.6	103	3.29	75 - 125	30	
1,3-Dichloropropane	20.0	20.7	103	20.0	21.0	105	1.29	75 - 125	30	
1,4-Dichlorobenzene	20.0	19.7	98.6	20.0	20.4	102	3.14	75 - 125	30	
2,2-Dichloropropane	20.0	23.0	115	20.0	23.5	118	2.50	70 - 135	30	
2-Butanone	20.0	20.2	101	20.0	20.8	104	3.17	30 - 150	30	
2-Chlorotoluene	20.0	20.3	102	20.0	20.6	103	1.51	75 - 125	30	
2-Hexanone	20.0	18.6	93.0	20.0	17.8	89.1	4.24	55 - 130	30	
4-Chlorotoluene	20.0	19.7	98.5	20.0	20.0	100	1.77	75 - 130	30	
4-Methyl-2-pentanone	20.0	19.8	98.8	20.0	20.7	103	4.57	60 - 135	30	
Acetone	20.0	21.8	109	20.0	24.1	121	10.2	40 - 140	30	
Benzene	20.0	20.4	102	20.0	21.1	105	3.43	80 - 120	30	
Bromobenzene	20.0	19.2	95.9	20.0	19.7	98.4	2.64	75 - 125	30	
Bromochloromethane	20.0	20.7	103	20.0	20.6	103	0.508	65 - 130	30	
Bromodichloromethane	20.0	21.6	108	20.0	22.5	112	4.14	75 - 120	30	
Bromoform	20.0	20.0	99.8	20.0	20.0	99.9	0.134	70 - 130	30	
Bromomethane	20.0	14.0	70.2	20.0	15.7	78.3	11.0	30 - 145	30	
Carbon disulfide	20.0	18.1	90.6	20.0	18.6	92.9	2.55	35 - 160	30	
Carbon tetrachloride	20.0	22.5	112	20.0	23.1	115	2.71	65 - 140	30	
Chlorobenzene	20.0	20.4	102	20.0	20.7	104	1.62	80 - 120	30	
Chloroethane	20.0	20.4	102	20.0	21.7	109	6.06	60 - 135	30	
Chloroform	20.0	21.2	106	20.0	21.7	108	2.28	65 - 135	30	
Chloromethane	20.0	18.9	94.7	20.0	20.2	101	6.46	40 - 125	30	
cis-1,2-Dichloroethene	20.0	20.5	102	20.0	21.2	106	3.58	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4819685
Report generated: 07/07/2016 16:44

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060823 Analyst: FJB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG573038 Units: ug/L
QC Key: DOD4 Lot #: STD76597

Sample ID: WG573038-02 LCS File ID: 8M413035 Run Date: 06/16/2016 15:52
Sample ID: WG573038-03 LCS2 File ID: 8M413036 Run Date: 06/16/2016 16:21

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	23.1	115	20.0	23.5	117	1.55	70 - 130	30	
Chlorodibromomethane	20.0	20.5	102	20.0	20.8	104	1.79	60 - 135	30	
Dibromomethane	20.0	19.9	99.3	20.0	19.9	99.6	0.358	75 - 125	30	
Dichlorodifluoromethane	20.0	20.8	104	20.0	21.8	109	4.81	30 - 155	30	
Ethylbenzene	20.0	19.9	99.3	20.0	19.9	99.5	0.215	75 - 125	30	
Hexachlorobutadiene	20.0	21.3	106	20.0	21.7	108	1.84	50 - 140	30	
Isopropylbenzene	20.0	21.6	108	20.0	22.0	110	1.89	75 - 125	30	
m-,p-Xylene	40.0	40.9	102	40.0	41.7	104	2.14	75 - 130	30	
Methylene chloride	20.0	19.3	96.4	20.0	19.9	99.5	3.13	55 - 140	30	
n-Butylbenzene	20.0	19.4	97.2	20.0	19.8	99.2	2.07	70 - 135	30	
n-Propylbenzene	20.0	20.4	102	20.0	21.0	105	2.87	70 - 130	30	
Naphthalene	20.0	17.4	87.0	20.0	18.1	90.5	3.97	55 - 140	30	
o-Xylene	20.0	21.1	106	20.0	21.4	107	1.39	80 - 120	30	
p-Isopropyltoluene	20.0	20.0	100	20.0	20.9	104	4.05	75 - 130	30	
sec-Butylbenzene	20.0	20.2	101	20.0	20.7	104	2.34	70 - 125	30	
Styrene	20.0	20.7	103	20.0	21.1	106	2.22	65 - 135	30	
tert-Butylbenzene	20.0	19.7	98.5	20.0	20.4	102	3.70	70 - 130	30	
Tetrachloroethene	20.0	20.1	101	20.0	20.5	102	1.70	45 - 150	30	
Toluene	20.0	19.7	98.6	20.0	20.1	101	1.94	75 - 120	30	
trans-1,2-Dichloroethene	20.0	20.1	100	20.0	20.4	102	1.57	60 - 140	30	
trans-1,3-Dichloropropene	20.0	20.9	104	20.0	21.1	105	0.925	55 - 140	30	
Trichloroethene	20.0	21.8	109	20.0	22.5	112	3.24	70 - 125	30	
Trichlorofluoromethane	20.0	22.3	111	20.0	22.8	114	2.49	60 - 145	30	
Vinyl chloride	20.0	23.0	115	20.0	24.1	121	4.97	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	118	114	70 - 120	PASS
Dibromofluoromethane	110	108	85 - 115	PASS
4-Bromofluorobenzene	99.2	98.9	75 - 120	PASS
Toluene-d8	104	104	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4819685
Report generated: 07/07/2016 16:44

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060823
Instrument: HPMS8
Analyst: TMB
Workgroup: WG568561

Tune ID: WG568561-01
Run Date: 05/13/2016
Run Time: 12:36
File ID: 8M412218
Cal ID: HPMS8 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	16.7	6575	PASS
75.0	95.0	30.0	60.0	51.3	20171	PASS
95.0	95.0	100	100	100	39312	PASS
96.0	95.0	5.00	9.00	6.74	2649	PASS
173	174	0	2.00	0.363	122	PASS
174	95.0	50.0	100	85.5	33616	PASS
175	174	5.00	9.00	8.17	2746	PASS
176	174	95.0	101	99.2	33360	PASS
177	176	5.00	9.00	6.80	2267	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG568561-02	STD	01	05/13/2016 13:29	
WG568561-03	STD	01	05/13/2016 13:58	
WG568561-04	STD	01	05/13/2016 14:27	
WG568561-05	STD	01	05/13/2016 14:56	
WG568561-06	STD	01	05/13/2016 15:25	
WG568561-07	STD	01	05/13/2016 15:54	
WG568561-08	STD-CCV	01	05/13/2016 16:23	
WG568561-09	STD	01	05/13/2016 16:52	
WG568561-10	STD	01	05/13/2016 17:21	
WG568561-11	STD	01	05/13/2016 17:50	
WG568561-12	SSCV	01	05/13/2016 19:17	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4819687
Report generated 07/07/2016 16:44

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060823
Instrument: HPMS8
Analyst: TMB
Workgroup: WG569084

Tune ID: WG569084-01
Run Date: 05/17/2016
Run Time: 08:53
File ID: 8M412319
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.1	6316	PASS
75.0	95.0	30.0	60.0	54.7	18130	PASS
95.0	95.0	100	100	100	33138	PASS
96.0	95.0	5.00	9.00	6.76	2241	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	72.2	23934	PASS
175	174	5.00	9.00	7.88	1886	PASS
176	174	95.0	101	96.8	23159	PASS
177	176	5.00	9.00	7.15	1655	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG569079-01	STD-CCV	01	05/17/2016 09:47	
WG569079-03	STD	01	05/17/2016 10:16	
WG569079-04	STD	01	05/17/2016 10:44	
WG569079-05	STD	01	05/17/2016 11:13	
WG569079-06	STD	01	05/17/2016 11:42	
WG569079-07	STD	01	05/17/2016 12:40	
WG569079-08	STD	01	05/17/2016 13:10	
WG569079-09	STD	01	05/17/2016 13:39	
WG569079-10	SSCV	01	05/17/2016 15:06	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4819687
Report generated 07/07/2016 16:44

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060823
Instrument: HPMS8
Analyst: FJB
Workgroup: WG573037

Tune ID: WG573037-01
Run Date: 06/16/2016
Run Time: 14:02
File ID: 8M413031
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.9	6352	PASS
75.0	95.0	30.0	60.0	57.2	18249	PASS
95.0	95.0	100	100	100	31890	PASS
96.0	95.0	5.00	9.00	7.42	2366	PASS
173	174	0	2.00	1.50	352	PASS
174	95.0	50.0	100	73.7	23499	PASS
175	174	5.00	9.00	7.96	1870	PASS
176	174	95.0	101	97.3	22869	PASS
177	176	5.00	9.00	6.73	1538	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573037-02	CCV	01	06/16/2016 14:25	
WG573038-01	BLANK	01	06/16/2016 15:23	
WG573038-02	LCS	01	06/16/2016 15:52	
WG573038-03	LCS2	01	06/16/2016 16:21	
L16060823-05	TRIP BLANK	01	06/16/2016 19:23	
L16060823-01	126-061416	01	06/16/2016 20:50	
L16060823-03	C08-061416	01	06/16/2016 21:19	
L16060823-04	C03-061416	01	06/16/2016 21:48	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4819687
Report generated 07/07/2016 16:44

Calibration Table Report
Method: 8260WT.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Calibration: Sat May 14 18:08:06 2016
Curve: WG568561
Calibration Files

	Compound	0.3 8M412220.D	0.4 8M412221.D	1 8M412222.D	2 8M412223.D	5 8M412224.D	20 8M412225.D	50 8M412226.D	100 8M412227.D	200 8M412228.D	300 8M412229.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane		0.427	0.390	0.397	0.364	0.468	0.439	0.452	0.427	0.408	0.419	7.751		
P	Chloromethane			0.264	0.257	0.223	0.253	0.240	0.240	0.239	0.241	0.245	5.336		
C	Vinyl Chloride		0.274	0.296	0.297	0.277	0.299	0.292	0.299	0.292	0.288	0.290	3.191		
T	1,3-Butadiene				0.218	0.208	0.242	0.251	0.277	0.254	0.254	0.243	9.644		
T	Bromomethane			0.129	0.133	0.127	0.162	0.167	0.187	0.205	0.212	0.165	20.449		1.000
T	Chloroethane		0.173	0.157	0.153	0.143	0.164	0.157	0.163	0.164	0.164	0.160	5.354		
T	Trichlorofluoromethane		0.544	0.538	0.559	0.506	0.570	0.538	0.551	0.531	0.525	0.540	3.520		
T	Diethyl ether			0.130	0.138	0.123	0.132	0.125	0.128		0.127	0.129	3.866		
T	Isoprene		0.335	0.351	0.334	0.293	0.334	0.320	0.334	0.322	0.329	0.328	4.867		
T	Acrolein				0.012	0.010	0.010	0.011	0.012		0.014	0.012	12.987		
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.256	0.269	0.240	0.260	0.249	0.257	0.251	0.250	0.254	3.397		
T	Acetone					0.023	0.030	0.029	0.030	0.028	0.028	0.028	9.132		
C	1,1-Dichloroethene		0.424	0.407	0.406	0.387	0.416	0.398	0.409	0.400	0.393	0.404	2.830		
T	Tert-Butyl Alcohol				0.010	0.009	0.009	0.009	0.009		0.009	0.009	2.872		
T	Dimethyl Sulfide		0.133	0.142	0.152	0.137	0.145	0.142	0.151	0.147	0.151	0.145	4.534		
T	Iodomethane				0.019	0.024	0.066	0.101	0.129	0.135	0.131	0.087	58.244		0.998
T	Methyl acetate					0.075	0.076	0.074	0.078	0.076	0.078	0.076	2.221		
T	Methylene Chloride			0.274	0.265	0.244	0.263	0.250	0.255	0.254	0.252	0.257	3.686		
T	Carbon Disulfide			0.888	0.922	0.801	0.873	0.816	0.854	0.813	0.802	0.846	5.346		
T	Acrylonitrile			0.027	0.035	0.033	0.038	0.038	0.039		0.044	0.036	14.671		
T	Methyl Tert Butyl Ether			0.534	0.543	0.521	0.586	0.579	0.585	0.560	0.546	0.557	4.455		
T	trans-1,2-Dichloroethene		0.389	0.395	0.364	0.352	0.381	0.367	0.372	0.364	0.358	0.371	3.858		
T	n-Hexane					0.265	0.280	0.270	0.286	0.275	0.279	0.276	2.732		
T	Diisopropyl ether			0.600	0.607	0.548	0.588	0.572	0.571		0.567	0.579	3.559		
T	Vinyl Acetate				0.256	0.243	0.270	0.275	0.266	0.271	0.275	0.265	4.509		
P	1,1-Dichloroethane		0.441	0.463	0.486	0.434	0.488	0.464	0.470	0.459	0.447	0.461	4.012		
T	Ethyl-Tert-Butyl ether			0.616	0.645	0.590	0.641	0.628	0.619		0.603	0.620	3.188		
T	2-Butanone					0.035	0.042	0.043	0.045	0.041	0.043	0.041	8.268		
T	Propionitrile			0.010	0.012	0.012	0.013	0.012	0.013		0.013	0.012	8.354		
T	2,2-Dichloropropane		0.471	0.462	0.520	0.476	0.503	0.494	0.497	0.483	0.470	0.486	3.839		
T	cis-1,2-Dichloroethene		0.299	0.298	0.291	0.267	0.295	0.282	0.289	0.283	0.277	0.287	3.685		
C	Chloroform	0.563	0.567	0.581	0.536	0.509	0.566	0.543	0.546	0.529	0.506	0.545	4.619		
T	1-Bromopropane			0.034	0.040	0.040	0.043	0.041	0.043	0.043	0.044	0.041	7.649		
T	Bromochloromethane		0.131	0.164	0.147	0.137	0.154	0.148	0.151	0.148	0.145	0.147	6.598		
T	Tetrahydrofuran			0.034	0.028	0.025	0.026	0.026	0.026		0.026	0.027	11.724		
S	Dibromofluoromethane			0.249	0.261	0.257	0.280	0.271	0.284	0.271	0.275	0.269	4.465		
T	1,1,1-Trichloroethane		0.492	0.537	0.515	0.496	0.545	0.525	0.533	0.515	0.499	0.517	3.660		
T	Cyclohexane			0.373	0.369	0.335	0.359	0.344	0.366	0.356	0.364	0.358	3.619		
T	1,1-Dichloropropene			0.414	0.399	0.369	0.403	0.395	0.399	0.392	0.382	0.394	3.488		
T	Tert-Amyl-Methyl ether			0.567	0.587	0.534	0.576	0.568	0.561		0.549	0.563	3.077		
T	Carbon Tetrachloride		0.444	0.456	0.462	0.441	0.481	0.465	0.474	0.462	0.448	0.4594	2.92173		
S	1,2-Dichloroethane-d4			0.241	0.309	0.276	0.312	0.295	0.301	0.284	0.286	0.288	7.93644		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.347	0.335	0.354	0.336	0.371	0.36	0.364	0.349	0.338	0.3505	3.65503		
T	Benzene		1.128	1.084	1.071	0.977	1.085	1.033	1.019	0.963	0.883	1.0269	7.39343		
T	Trichloroethene		0.285	0.275	0.276	0.251	0.283	0.273	0.279	0.273	0.27	0.2739	3.66126		
T	Methylcyclohexane					0.396	0.426	0.408	0.429	0.416	0.422	0.4161	2.94153		
C	1,2-Dichloropropane		0.239	0.222	0.233	0.207	0.238	0.226	0.233	0.231	0.229	0.2286	4.30096		
T	Bromodichloromethane		0.369	0.382	0.412	0.385	0.426	0.421	0.417	0.41	0.395	0.4018	4.93305		
T	1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.0011	14.5817		
T	Dibromomethane		0.141	0.13	0.137	0.128	0.141	0.134	0.137	0.136	0.133	0.1353	3.26799		
T	2-Chloroethyl Vinyl Ether				0.1	0.084	0.103	0.104	0.103	0.095	0.098	0.0983	7.09792		
T	4-Methyl-2-Pentanone					0.033	0.042	0.042	0.043	0.04	0.041	0.0401	8.66859		
T	cis-1,3-Dichloropropene		0.391	0.393	0.386	0.398	0.431	0.428	0.428	0.42	0.405	0.409	4.41527		

T	Dimethyl Disulfide					0.182	0.218	0.221	0.23	0.229	0.23	0.2183	8.49419	
I	Chlorobenzene-d5	ISTD												
S	Toluene-d8			1.282	1.295	1.228	1.385	1.333	1.378	1.289	1.278	1.3084	4.07746	
C	Toluene		1.653	1.696	1.678	1.507	1.647	1.554	1.545	1.418	1.27	1.552	8.98325	
T	Ethyl Methacrylate			0.251	0.293	0.268	0.314	0.314	0.327	0.309	0.31	0.2981	8.76897	
T	Paraldehyde											0	0	
T	trans-1,3-Dichloropropene			0.472	0.51	0.466	0.561	0.552	0.553	0.533	0.515	0.5201	7.01006	
T	1,1,2-Trichloroethane		0.261	0.241	0.242	0.222	0.254	0.249	0.252	0.243	0.241	0.2449	4.54209	
T	2-Hexanone					0.042	0.053	0.053	0.056	0.051	0.053	0.0515	9.50479	
T	1,3-Dichloropropane		0.355	0.442	0.465	0.42	0.468	0.454	0.457	0.437	0.428	0.436	7.93348	
T	Tetrachloroethene		0.355	0.337	0.336	0.306	0.333	0.325	0.337	0.334	0.33	0.3325	3.83886	
T	Dibromochloromethane		0.349	0.336	0.338	0.328	0.373	0.372	0.383	0.373	0.367	0.3576	5.60043	
T	1,2-Dibromoethane		0.233	0.234	0.234	0.227	0.259	0.254	0.258	0.251	0.247	0.2441	5.04151	
T	1-Chlorohexane		0.532	0.584	0.505	0.502	0.54	0.52	0.547	0.521	0.516	0.5298	4.7826	
P	Chlorobenzene		1.029	1.173	1.09	1.007	1.099	1.037	1.043	1.002	0.939	1.0466	6.41465	
T	1,1,1,2-Tetrachloroethane		0.392	0.399	0.403	0.357	0.431	0.414	0.424	0.417	0.413	0.4055	5.39495	
C	Ethylbenzene		0.6	0.594	0.59	0.532	0.586	0.559	0.57	0.564	0.558	0.5726	3.7769	
T	m-,p-Xylene		0.744	0.696	0.691	0.643	0.713	0.67	0.673	0.634	0.581	0.6716	7.12586	
T	o-Xylene			0.691	0.651	0.614	0.692	0.658	0.667	0.65	0.63	0.6567	4.11758	
T	Styrene		1.05	1.06	1.096	1.043	1.159	1.124	1.12	1.061	0.98	1.077	4.96781	
P	Bromoform			0.177	0.21	0.181	0.226	0.221	0.232	0.227	0.223	0.2121	10.0546	
T	Isopropylbenzene		1.853	1.891	1.871	1.708	1.897	1.781	1.75	1.573	1.377	1.7444	9.92447	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.426	0.492	0.503	0.486	0.543	0.51	0.527	0.513	0.514	0.5018	6.60291	
S	p-Bromofluorobenzene				1.054	0.976	1.071	1.016	1.053	1.031	1.046	1.0352	3.05136	
T	1,2,3-Trichloropropane			0.119	0.158	0.161	0.162	0.155	0.162	0.16	0.158	0.1545	9.40789	
T	trans-1,4-Dichloro-2-Butene			0.085	0.118	0.12	0.149	0.151	0.16	0.159	0.161	0.1376	19.9543	1.000
T	n-Propylbenzene		4.139	4.239	4.243	4.051	4.241	3.953	3.882	3.419	2.935	3.9003	11.4439	
T	Bromobenzene	0.796	0.708	0.843	0.837	0.778	0.84	0.798	0.817	0.803	0.803	0.8022	4.93253	
T	1,3,5-Trimethylbenzene		2.941	2.93	2.941	2.839	3.053	2.882	2.871	2.689	2.423	2.8411	6.50391	
T	2-Chlorotoluene		2.917	2.935	2.929	2.712	2.861	2.795	2.682	2.533	2.145	2.7231	9.37022	
T	4-Chlorotoluene		2.681	2.596	2.581	2.474	2.625	2.326	2.447	2.286	2.121	2.4597	7.49558	
T	a-Methylstyrene					1.257	1.406	1.34	1.384	1.35	1.351	1.3479	3.77654	
T	tert-Butylbenzene			0.587	0.555	0.53	0.571	0.533	0.552	0.561	0.558	0.5558	3.34508	
T	1,2,4-Trimethylbenzene		2.955	3.168	3.127	2.936	3.12	2.914	2.937	2.709	2.427	2.9214	7.97314	
T	sec-Butylbenzene			3.701	3.536	3.487	3.607	3.34	3.332	3.045	2.69	3.3424	9.93324	
T	p-Isopropyltoluene			3.112	3.062	2.903	2.988	2.813	2.809	2.634	2.382	2.8379	8.45265	
T	1,3-Dichlorobenzene		1.484	1.617	1.627	1.53	1.605	1.531	1.549	1.51	1.45	1.5448	3.95774	
T	1,4-Dichlorobenzene	1.713	1.524	1.672	1.594	1.503	1.6	1.511	1.535	1.49	1.431	1.5574	5.56562	
T	n-Butylbenzene			3.143	2.96	2.895	3.002	2.791	2.792	2.571	2.292	2.8056	9.55812	
T	1,2-Dichlorobenzene	1.59	1.307	1.415	1.41	1.322	1.404	1.333	1.356	1.315	1.286	1.3739	6.4618	
T	1,2-Dibromo-3-Chloropropane				0.085	0.103	0.102	0.103	0.106	0.104	0.103	0.1007	6.86771	
T	1,2,4-Trichlorobenzene		1.074	1.01	1.028	0.982	1.069	1.013	1.036	1.029	1.002	1.0269	2.90829	
T	Hexachlorobutadiene		0.516	0.476	0.483	0.447	0.487	0.459	0.48	0.485	0.485	0.4798	4.00465	
T	Naphthalene		1.594	1.457	1.574	1.455	1.63	1.552	1.564	1.485	1.422	1.5258	4.75891	
T	1,2,3-Trichlorobenzene	0.913	0.934	0.905	0.862	0.805	0.877	0.824	0.862	0.846	0.835	0.8664	4.7474	

Tue May 17 11:49:41 2016

Calibration Table Report
Method: A9FOOWT.M
Title: A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Calibration: Thu May 19 08:54:31 2016
Curve: WG569079
Calibration Files

	Compound	5 8M412324.D	20 8M412323.D	50 8M412322.D	100 8M412321.D	200 8M412325.D	300 8M412326.D	400 8M412327.D	500 8M412328.D	Avg	%RSD
I	Fluorobenzene	ISTD									
T	Acetonitrile		0.009	0.010	0.010	0.010	0.010	0.010	0.010	0.010	2.076
T	3-Chloro-1-propene	0.306	0.330	0.335	0.331	0.324	0.307	0.304	0.304	0.318	4.307
T	2-Chloro-1,3-butadiene	0.368	0.420	0.420	0.419	0.419	0.392	0.389	0.387	0.402	5.022
T	Ethyl Acetate	0.080	0.096	0.097	0.100	0.099	0.098	0.100	0.095	0.096	6.751
T	Methacrylonitrile	0.041	0.054	0.055	0.055	0.055	0.054	0.055	0.052	0.053	9.227
T	Isobutyl Alcohol			0.003	0.003	0.003	0.003	0.003	0.003	0.003	3.599
T	1-Butanol									0.000	0.000
T	Methyl methacrylate	0.089	0.106	0.106	0.105	0.106	0.105	0.107	0.102	0.103	5.868
T	2-Nitropropane		0.041	0.042	0.043	0.046	0.047	0.048	0.046	0.045	5.992
I	Chlorobenzene-d5	ISTD									
I	1,4-Dichlorobenzene-d4	ISTD									
T	Cyclohexanone		0.011	0.010	0.010	0.009	0.010	0.011	0.010	0.010	4.971

Thu May 19 09:04:52 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060823 Run Date: 05/13/2016 Sample ID: WG568561-12
Instrument ID: HPMS8 Run Time: 19:17 Method: 8260B
File ID: 8M412232 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG568561 Cal ID: HPMS8 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.1	ug/L	0.513	5.70	20	
1,1-Dichloroethene	CCC	50.0	46.0	ug/L	0.372	8.10	20	
1,2-Dichloropropane	CCC	50.0	51.0	ug/L	0.233	1.90	20	
Ethylbenzene	CCC	50.0	48.2	ug/L	0.552	3.60	20	
Toluene	CCC	50.0	49.1	ug/L	1.52	1.80	20	
Vinyl Chloride	CCC	50.0	52.4	ug/L	0.304	4.80	20	
Bromoform	SPCC	50.0	48.2	ug/L	0.205	3.60	20	
Chlorobenzene	SPCC	50.0	50.2	ug/L	1.05	0.400	20	
Chloromethane	SPCC	50.0	50.7	ug/L	0.248	1.40	20	
1,1-Dichloroethane	SPCC	50.0	46.7	ug/L	0.431	6.60	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.6	ug/L	0.498	0.800	20	
Acetone		50.0	57.5	ug/L	0.0324	15.1	20	
Benzene		50.0	48.5	ug/L	0.997	3.00	20	
Bromobenzene		50.0	49.5	ug/L	0.794	1.10	20	
Bromochloromethane		50.0	47.5	ug/L	0.140	4.90	20	
Bromodichloromethane		50.0	48.3	ug/L	0.388	3.40	20	
Bromomethane		50.0	46.4	ug/L	0.162	7.20	20	
2-Butanone		50.0	53.0	ug/L	0.0438	6.00	20	
n-Butylbenzene		50.0	49.7	ug/L	2.79	0.700	20	
sec-Butylbenzene		50.0	51.3	ug/L	3.43	2.70	20	
tert-Butylbenzene		50.0	50.9	ug/L	0.566	1.90	20	
Carbon Disulfide		50.0	42.3	ug/L	0.716	15.4	20	
Carbon Tetrachloride		50.0	46.2	ug/L	0.425	7.50	20	
Dibromochloromethane		50.0	49.7	ug/L	0.355	0.700	20	
Chloroethane		50.0	53.3	ug/L	0.170	6.70	20	
2-Chlorotoluene		50.0	51.6	ug/L	2.81	3.10	20	
4-Chlorotoluene		50.0	48.3	ug/L	2.37	3.50	20	
1,2-Dibromo-3-Chloropropane		50.0	48.5	ug/L	0.0977	3.00	20	
1,2-Dibromoethane		50.0	51.1	ug/L	0.250	2.20	20	
Dibromomethane		50.0	45.8	ug/L	0.124	8.40	20	
1,2-Dichlorobenzene		50.0	50.5	ug/L	1.39	1.00	20	
1,3-Dichlorobenzene		50.0	50.9	ug/L	1.57	1.80	20	
1,4-Dichlorobenzene		50.0	50.5	ug/L	1.57	0.900	20	
Dichlorodifluoromethane		50.0	54.2	ug/L	0.455	8.40	20	
1,2-Dichloroethane		50.0	49.0	ug/L	0.344	2.00	20	
cis-1,2-Dichloroethene		50.0	48.9	ug/L	0.281	2.20	20	
trans-1,2-Dichloroethene		50.0	48.1	ug/L	0.357	3.90	20	
1,3-Dichloropropane		50.0	53.7	ug/L	0.468	7.30	20	
2,2-Dichloropropane		50.0	47.9	ug/L	0.466	4.20	20	
cis-1,3-Dichloropropene		50.0	53.9	ug/L	0.441	7.80	20	
trans-1,3-Dichloropropene		50.0	50.7	ug/L	0.527	1.30	20	
1,1-Dichloropropene		50.0	47.5	ug/L	0.374	5.10	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4819686
Report generated 07/07/2016 16:44

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060823 Run Date: 05/13/2016 Sample ID: WG568561-12
Instrument ID: HPMS8 Run Time: 19:17 Method: 8260B
File ID: 8M412232 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG568561 Cal ID: HPMS8 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	53.6	ug/L	0.0552	7.20	20	
Hexachlorobutadiene		50.0	52.1	ug/L	0.500	4.20	20	
Isopropylbenzene		50.0	51.1	ug/L	1.78	2.20	20	
p-Isopropyltoluene		50.0	50.1	ug/L	2.85	0.300	20	
4-Methyl-2-Pentanone		50.0	51.9	ug/L	0.0416	3.70	20	
Methylene Chloride		50.0	48.4	ug/L	0.249	3.10	20	
Naphthalene		50.0	45.8	ug/L	1.40	8.40	20	
n-Propylbenzene		50.0	51.9	ug/L	4.05	3.80	20	
Styrene		50.0	51.5	ug/L	1.11	3.00	20	
1,1,1,2-Tetrachloroethane		50.0	49.4	ug/L	0.400	1.20	20	
Tetrachloroethene		50.0	47.8	ug/L	0.318	4.40	20	
1,2,3-Trichlorobenzene		50.0	47.7	ug/L	0.827	4.50	20	
1,2,4-Trichlorobenzene		50.0	50.1	ug/L	1.03	0.200	20	
1,1,1-Trichloroethane		50.0	47.6	ug/L	0.492	4.80	20	
1,1,2-Trichloroethane		50.0	49.0	ug/L	0.240	1.90	20	
Trichloroethene		50.0	51.1	ug/L	0.280	2.10	20	
Trichlorofluoromethane		50.0	46.9	ug/L	0.507	6.10	20	
1,2,3-Trichloropropane		50.0	50.1	ug/L	0.155	0.200	20	
1,2,4-Trimethylbenzene		50.0	49.7	ug/L	2.90	0.700	20	
1,3,5-Trimethylbenzene		50.0	51.6	ug/L	2.93	3.30	20	
o-Xylene		50.0	50.6	ug/L	0.664	1.10	20	
m-,p-Xylene		100	101	ug/L	0.679	1.10	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4819686
Report generated 07/07/2016 16:44

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823 Run Date: 06/16/2016 Sample ID: WG573037-02
Instrument ID: HPMS8 Run Time: 14:25 Method: 8260B
File ID: 8M413032 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG573038 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	54.8	ug/L	0.597	9.65	20	
1,1-Dichloroethene	CCC	50.0	54.7	ug/L	0.442	9.30	20	
1,2-Dichloropropane	CCC	50.0	48.6	ug/L	0.222	2.70	20	
Ethylbenzene	CCC	50.0	50.5	ug/L	0.578	0.905	20	
Toluene	CCC	50.0	50.3	ug/L	1.56	0.600	20	
Vinyl Chloride	CCC	50.0	55.1	ug/L	0.320	10.2	20	
Bromoform	SPCC	50.0	50.9	ug/L	0.216	1.72	20	
Chlorobenzene	SPCC	50.0	49.8	ug/L	1.04	0.474	20	
Chloromethane	SPCC	50.0	46.6	ug/L	0.228	6.88	20	
1,1-Dichloroethane	SPCC	50.0	52.3	ug/L	0.483	4.61	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	41.5	ug/L	0.416	17.0	20	
Xylenes		150	154	ug/L	0.683	2.90	20	
Acetone		50.0	52.2	ug/L	0.0293	4.31	20	
Benzene		50.0	52.0	ug/L	1.07	3.99	20	
Bromobenzene		50.0	48.0	ug/L	0.770	4.08	20	
Bromochloromethane		50.0	51.3	ug/L	0.151	2.54	20	
Bromodichloromethane		50.0	55.4	ug/L	0.445	10.8	20	
Bromomethane		50.0	37.0	ug/L	0.128	26.0	20	*
2-Butanone		50.0	45.9	ug/L	0.0380	8.13	20	
n-Butylbenzene		50.0	50.5	ug/L	2.83	1.00	20	
sec-Butylbenzene		50.0	50.3	ug/L	3.37	0.699	20	
tert-Butylbenzene		50.0	48.9	ug/L	0.544	2.12	20	
Carbon Disulfide		50.0	53.0	ug/L	0.897	6.05	20	
Carbon Tetrachloride		50.0	60.0	ug/L	0.551	20.0	20	
Dibromochloromethane		50.0	50.5	ug/L	0.361	0.983	20	
Chloroethane		50.0	48.9	ug/L	0.156	2.14	20	
2-Chlorotoluene		50.0	47.7	ug/L	2.60	4.50	20	
4-Chlorotoluene		50.0	49.7	ug/L	2.44	0.615	20	
1,2-Dibromo-3-Chloropropane		50.0	44.0	ug/L	0.0886	12.0	20	
1,2-Dibromoethane		50.0	47.2	ug/L	0.230	5.67	20	
Dibromomethane		50.0	49.7	ug/L	0.135	0.584	20	
1,2-Dichlorobenzene		50.0	46.6	ug/L	1.28	6.76	20	
1,3-Dichlorobenzene		50.0	49.6	ug/L	1.53	0.820	20	
1,4-Dichlorobenzene		50.0	47.6	ug/L	1.48	4.82	20	
Dichlorodifluoromethane		50.0	57.6	ug/L	0.483	15.3	20	
1,2-Dichloroethane		50.0	56.7	ug/L	0.397	13.3	20	
cis-1,2-Dichloroethene		50.0	50.9	ug/L	0.292	1.90	20	
trans-1,2-Dichloroethene		50.0	52.1	ug/L	0.387	4.10	20	
1,3-Dichloropropane		50.0	47.0	ug/L	0.410	5.96	20	
2,2-Dichloropropane		50.0	61.8	ug/L	0.601	23.6	20	*
cis-1,3-Dichloropropene		50.0	53.3	ug/L	0.436	6.58	20	
trans-1,3-Dichloropropene		50.0	51.1	ug/L	0.532	2.30	20	

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823 Run Date: 06/16/2016 Sample ID: WG573037-02
Instrument ID: HPMS8 Run Time: 14:25 Method: 8260B
File ID: 8M413032 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG573038 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	54.6	ug/L	0.430	9.13	20	
2-Hexanone		50.0	44.4	ug/L	0.0457	11.3	20	
Hexachlorobutadiene		50.0	54.7	ug/L	0.525	9.43	20	
Isopropylbenzene		50.0	54.0	ug/L	1.88	7.91	20	
p-Isopropyltoluene		50.0	50.6	ug/L	2.87	1.20	20	
4-Methyl-2-Pentanone		50.0	45.5	ug/L	0.0366	8.93	20	
Methylene Chloride		50.0	48.8	ug/L	0.251	2.36	20	
Naphthalene		50.0	43.5	ug/L	1.33	13.0	20	
n-Propylbenzene		50.0	49.8	ug/L	3.88	0.484	20	
Styrene		50.0	52.0	ug/L	1.12	4.02	20	
1,1,1,2-Tetrachloroethane		50.0	52.3	ug/L	0.424	4.56	20	
Tetrachloroethene		50.0	53.6	ug/L	0.356	7.11	20	
1,2,3-Trichlorobenzene		50.0	45.4	ug/L	0.786	9.28	20	
1,2,4-Trichlorobenzene		50.0	48.6	ug/L	0.997	2.89	20	
1,1,1-Trichloroethane		50.0	59.6	ug/L	0.616	19.1	20	
1,1,2-Trichloroethane		50.0	46.3	ug/L	0.227	7.39	20	
Trichloroethene		50.0	54.0	ug/L	0.296	7.92	20	
Trichlorofluoromethane		50.0	59.7	ug/L	0.645	19.5	20	
1,2,3-Trichloropropane		50.0	45.0	ug/L	0.139	10.0	20	
1,2,4-Trimethylbenzene		50.0	50.1	ug/L	2.93	0.254	20	
1,3,5-Trimethylbenzene		50.0	50.2	ug/L	2.85	0.347	20	
o-Xylene		50.0	51.2	ug/L	0.673	2.46	20	
m-,p-Xylene		100	103	ug/L	0.693	3.11	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4819688
Report generated 07/07/2016 16:44

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060823
Instrument ID: HPMS8
Workgroup (AAB#): WG573038

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	288225	539116	778260
Upper Limit	NA	NA	576450	1078232	1556520
Lower Limit	NA	NA	144113	269558	389130
L16060823-01	1.00	01	295882	526044	672547
L16060823-03	1.00	01	289710	517845	676219
L16060823-04	1.00	01	287793	517811	671491
L16060823-05	1.00	01	289040	525559	704722
WG573038-01	1.00	01	292043	533754	717429
WG573038-02	1.00	01	307888	540053	724153
WG573038-03	1.00	01	312159	553122	735322

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4819689
Report generated 07/07/2016 16:44

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060823
Instrument ID: HPMS8
Workgroup (AAB#): WG573038

ICAL CCV Number: WG568561-08
CAL ID: HPMS8-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	17.6	14.58	10.71
Upper Limit	NA	NA	18.1	15.08	11.21
Lower Limit	NA	NA	17.1	14.08	10.21
L16060823-01	1.00	01	17.6	14.57	10.71
L16060823-03	1.00	01	17.6	14.58	10.71
L16060823-04	1.00	01	17.6	14.57	10.71
L16060823-05	1.00	01	17.6	14.58	10.71
WG573038-01	1.00	01	17.6	14.57	10.71
WG573038-02	1.00	01	17.6	14.57	10.71
WG573038-03	1.00	01	17.6	14.57	10.71

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4819691
Report generated: 07/07/2016 16:44

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413045.D Vial: 15
Acq On : 16 Jun 2016 20:50 Operator: FJB
Sample : L16060823-01 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:18:24 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	672547	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	526044	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	295882	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	205604	28.4536 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 113.80%		
43) 1,2-Dichloroethane-d4	10.30	65	234064	30.2095 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 120.84%#		
58) Toluene-d8	12.68	98	698178	25.3600 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.44%		
80) p-Bromofluorobenzene	16.08	95	304815	24.8796 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.52%		

Target Compounds					Qvalue
3) Chloromethane	3.60	50	937	0.1424 ug/L	80
47) Trichloroethene	11.21	130	1071	0.1454 ug/L #	72
92) p-Isopropyltoluene	17.32	119	42966	1.2792 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M413045.D 8260WT.M Mon Jun 20 09:20:05 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413045.D Vial: 15
Acq On : 16 Jun 2016 20:50 Operator: FJB
Sample : L16060823-01 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 8:18 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

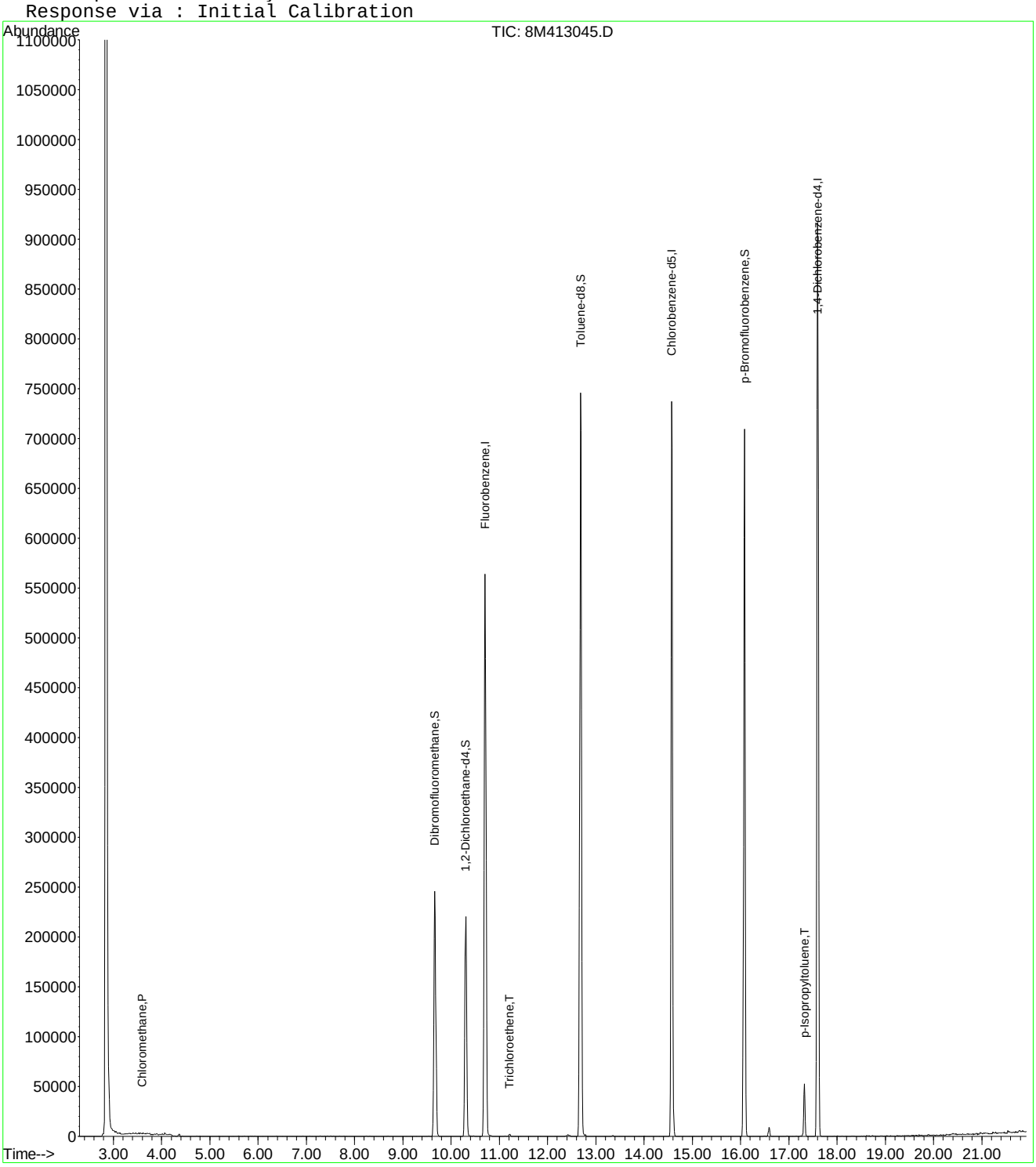

8M413045.D 8260WT.M Mon Jun 20 09:20:06 2016 Page 2

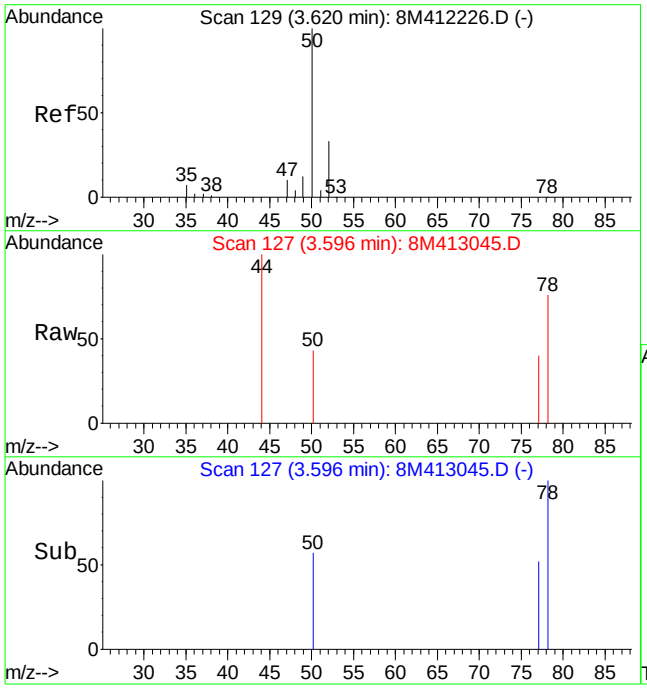

#3
Chloromethane
Concen: 0.14 ug/L
RT: 3.60 min Scan# 127
Delta R.T. -0.02 min
Lab File: 8M413045.D
Acq: 16 Jun 2016 20:50

Tgt Ion: 50 Resp: 937

Ion	Ratio	Lower	Upper
50	100		
52	21.7	19.9	46.3

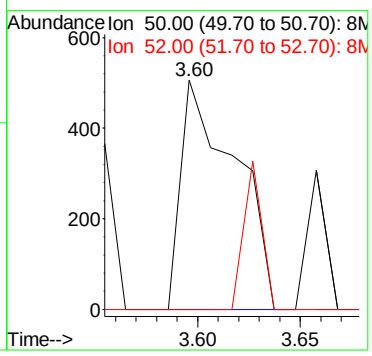

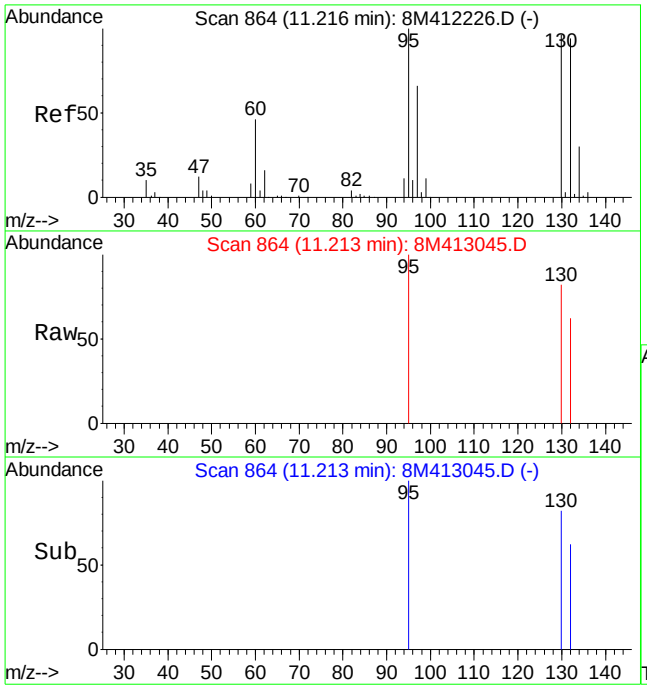

#47
Trichloroethene
Concen: 0.15 ug/L
RT: 11.21 min Scan# 864
Delta R.T. -0.00 min
Lab File: 8M413045.D
Acq: 16 Jun 2016 20:50

Tgt Ion:130 Resp: 1071

Ion	Ratio	Lower	Upper
130	100		
132	48.3	58.0	135.2#
95	117.9	64.9	151.5

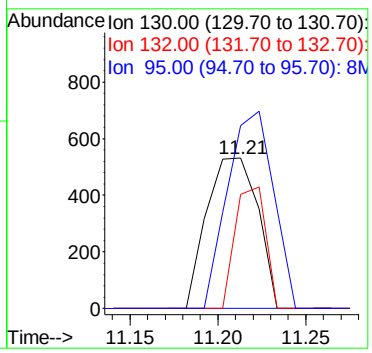

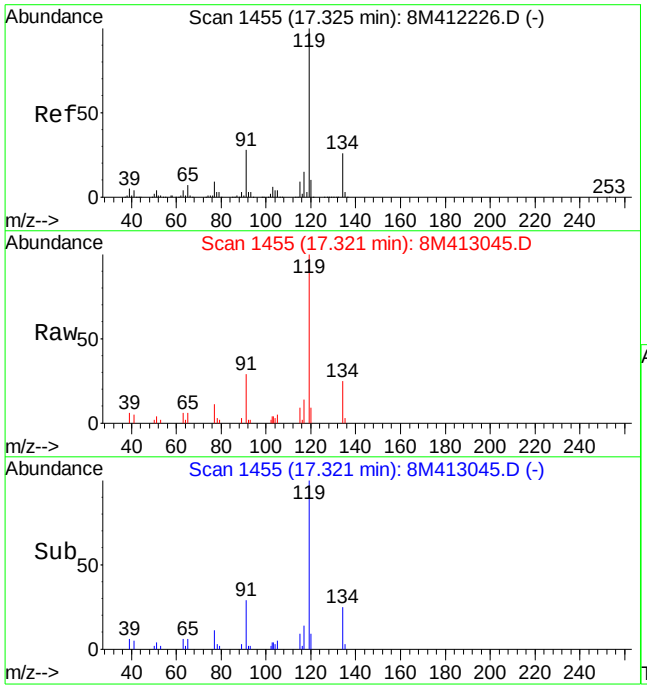

#92
p-Isopropyltoluene
Concen: 1.28 ug/L
RT: 17.32 min Scan# 1455
Delta R.T. -0.00 min
Lab File: 8M413045.D
Acq: 16 Jun 2016 20:50

Tgt Ion:119 Resp: 42966

Ion	Ratio	Lower	Upper
119	100		
134	23.9	15.2	35.6

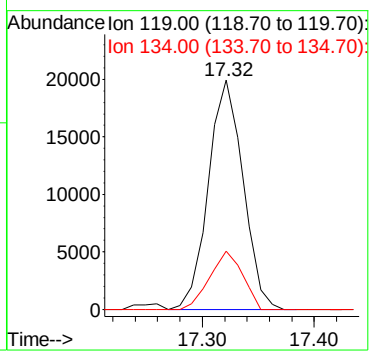

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413046.D Vial: 16
Acq On : 16 Jun 2016 21:19 Operator: FJB
Sample : L16060823-03 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:18:25 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	676219	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	517845	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	289710	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	203536	28.0144 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 112.04%		
43) 1,2-Dichloroethane-d4	10.30	65	232456	29.8391 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 119.36%		
58) Toluene-d8	12.68	98	703041	25.9409 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.76%		
80) p-Bromofluorobenzene	16.08	95	300473	25.0476 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.20%		
Target Compounds					Qvalue
3) Chloromethane	3.62	50	1964	0.2968 ug/L #	42
32) cis-1,2-Dichloroethene	9.17	96	1645	0.2119 ug/L	72
47) Trichloroethene	11.21	130	41569	5.6110 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413046.D 8260WT.M Mon Jun 20 09:20:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413046.D Vial: 16
Acq On : 16 Jun 2016 21:19 Operator: FJB
Sample : L16060823-03 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 8:18 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

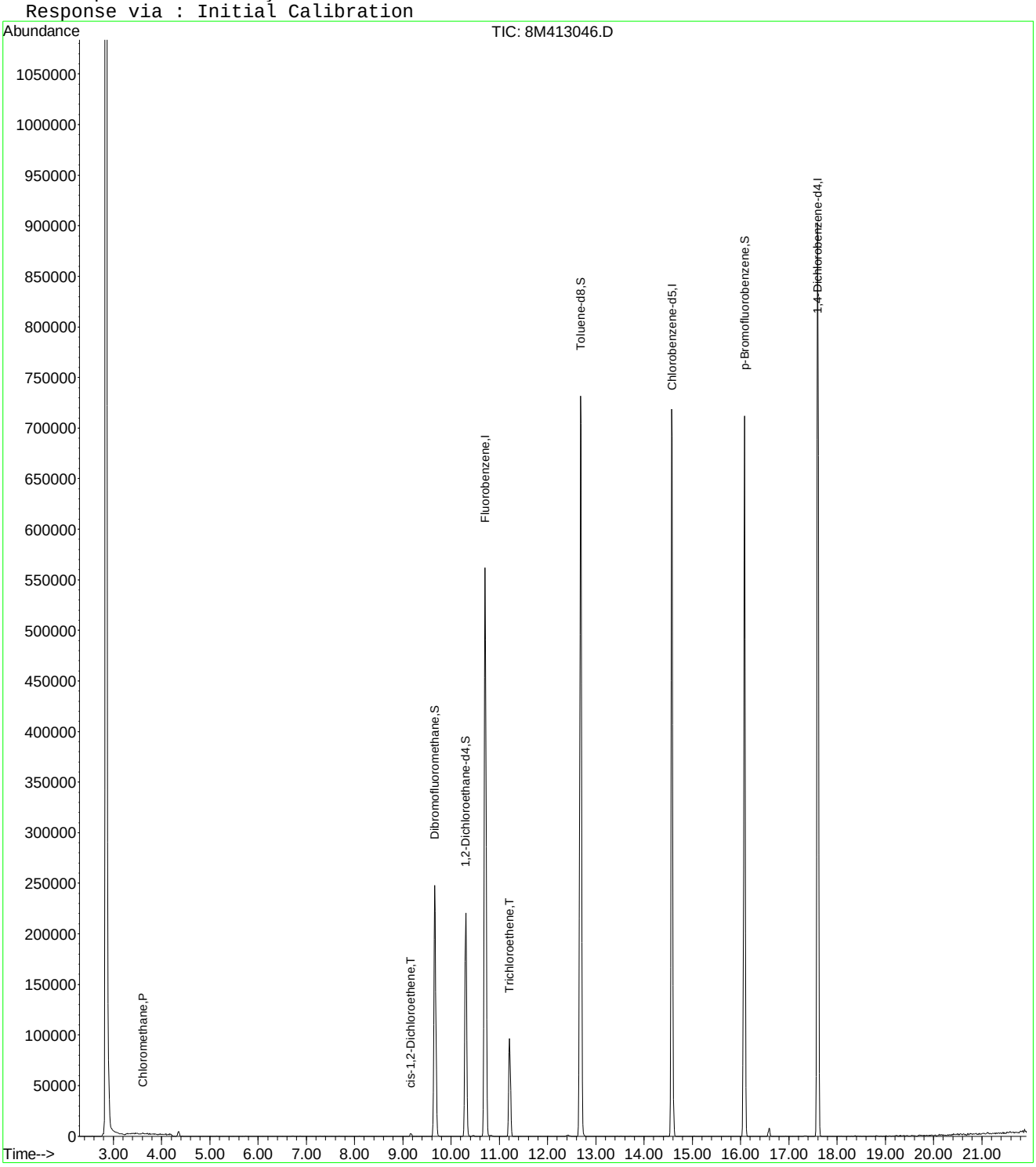

8M413046.D 8260WT.M Mon Jun 20 09:20:10 2016 Page 2

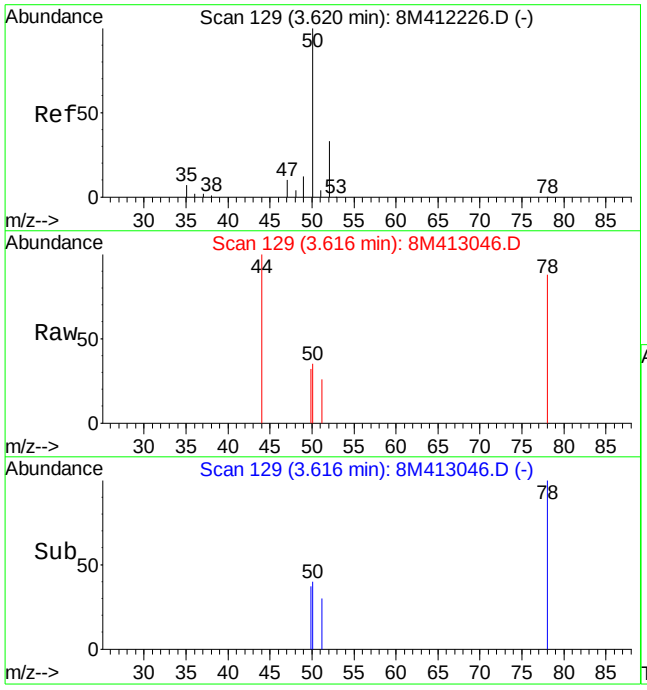

#3
Chloromethane
Concen: 0.30 ug/L
RT: 3.62 min Scan# 129
Delta R.T. -0.00 min
Lab File: 8M413046.D
Acq: 16 Jun 2016 21:19

Tgt Ion: 50 Resp: 1964

Ion	Ratio	Lower	Upper
50	100		
52	0.0	19.9	46.3#

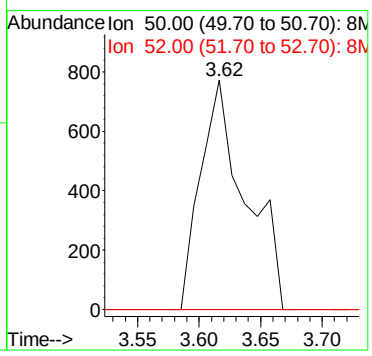

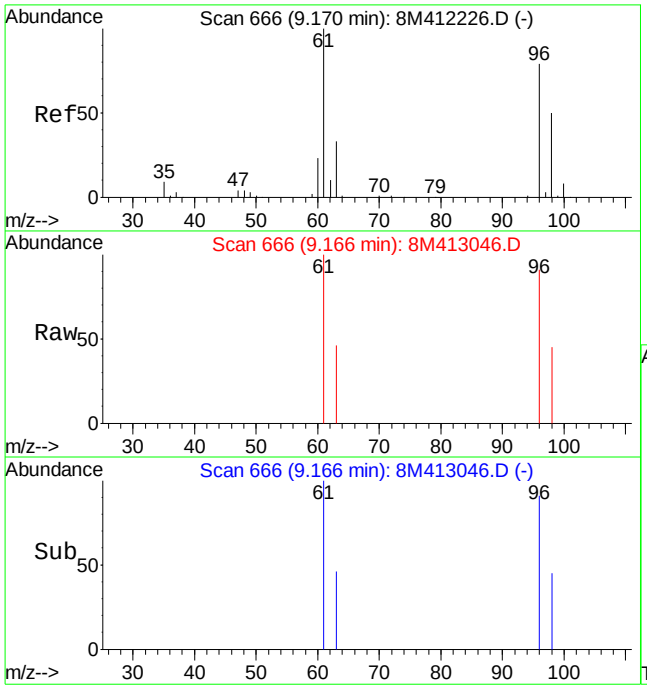

#32
cis-1,2-Dichloroethene
Concen: 0.21 ug/L
RT: 9.17 min Scan# 666
Delta R.T. -0.00 min
Lab File: 8M413046.D
Acq: 16 Jun 2016 21:19

Tgt Ion: 96 Resp: 1645

Ion	Ratio	Lower	Upper
96	100		
61	116.5	91.5	213.5

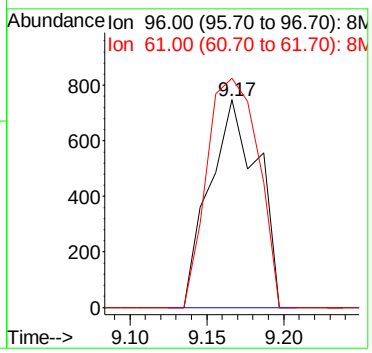

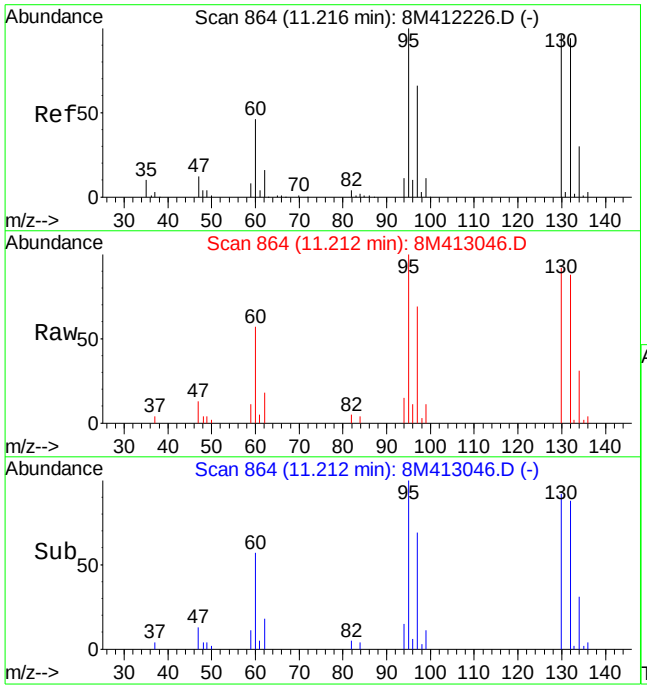

#47
Trichloroethene
Concen: 5.61 ug/L
RT: 11.21 min Scan# 864
Delta R.T. -0.00 min
Lab File: 8M413046.D
Acq: 16 Jun 2016 21:19

Tgt Ion:130 Resp: 41569

Ion	Ratio	Lower	Upper
130	100		
132	96.8	58.0	135.2
95	106.6	64.9	151.5

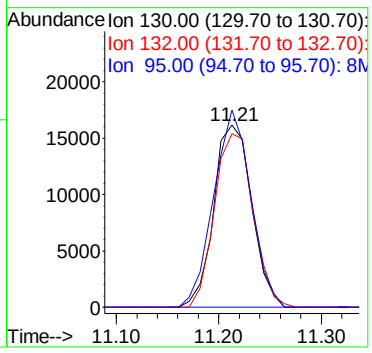

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413047.D Vial: 17
Acq On : 16 Jun 2016 21:48 Operator: FJB
Sample : L16060823-04 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:18:25 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	671491	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	517811	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	287793	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	203988	28.2743 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 113.08%		
43) 1,2-Dichloroethane-d4	10.30	65	233925	30.2391 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 120.96%#		
58) Toluene-d8	12.68	98	705263	26.0246 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.08%		
80) p-Bromofluorobenzene	16.08	95	298621	25.0591 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.24%		

Target Compounds					Qvalue
3) Chloromethane	3.63	50	1302	0.1981 ug/L #	42

(#) = qualifier out of range (m) = manual integration
8M413047.D 8260WT.M Mon Jun 20 09:20:14 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413047.D Vial: 17
Acq On : 16 Jun 2016 21:48 Operator: FJB
Sample : L16060823-04 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 8:18 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

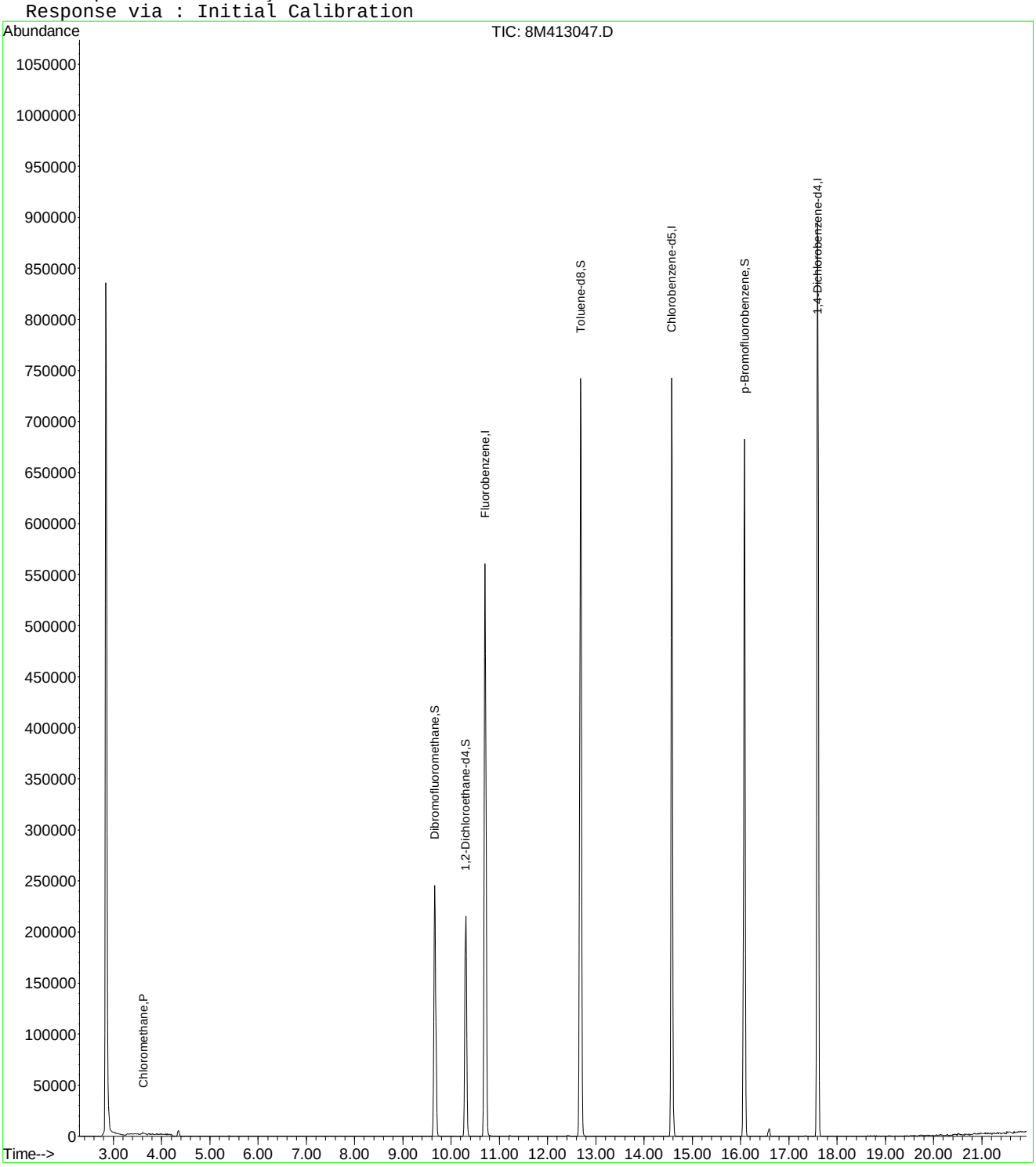

8M413047.D 8260WT.M Mon Jun 20 09:20:14 2016 Page 2

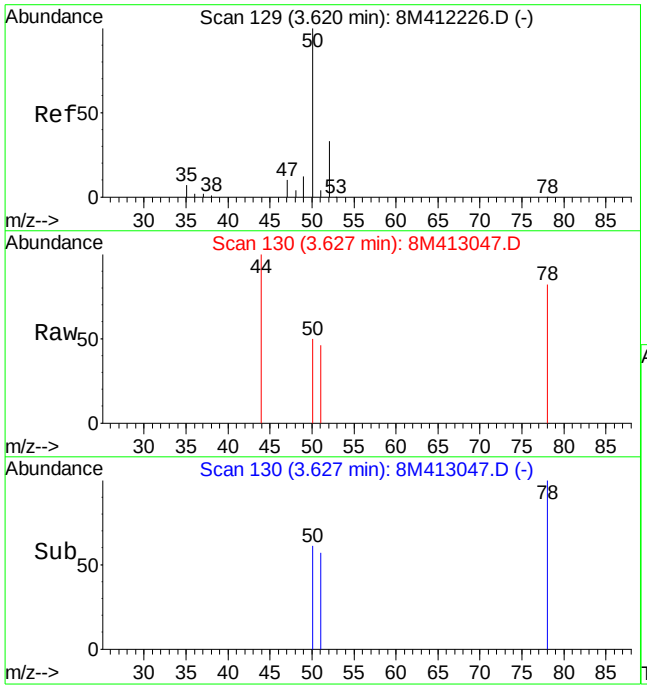

#3
Chloromethane
Concen: 0.20 ug/L
RT: 3.63 min Scan# 130
Delta R.T. 0.01 min
Lab File: 8M413047.D
Acq: 16 Jun 2016 21:48

Tgt Ion: 50 Resp: 1302

Ion	Ratio	Lower	Upper
50	100		
52	0.0	19.9	46.3#

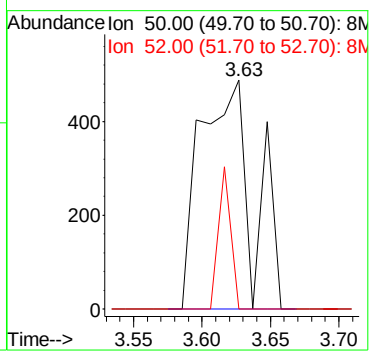

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413042.D Vial: 12
Acq On : 16 Jun 2016 19:23 Operator: FJB
Sample : L16060823-05 TB A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:18:24 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	704722	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	525559	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	289040	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	208489	27.5355 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.16%		
43) 1,2-Dichloroethane-d4	10.30	65	231607	28.5277 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 114.12%		
58) Toluene-d8	12.68	98	729703	26.5295 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 106.12%		
80) p-Bromofluorobenzene	16.08	95	306574	25.6155 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.48%		

Target Compounds					Qvalue
36) Tetrahydrofuran	9.65	42	1074	1.3998 ug/L #	56

(#) = qualifier out of range (m) = manual integration
8M413042.D 8260WT.M Mon Jun 20 09:19:51 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413042.D Vial: 12
Acq On : 16 Jun 2016 19:23 Operator: FJB
Sample : L16060823-05 TB A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 8:18 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

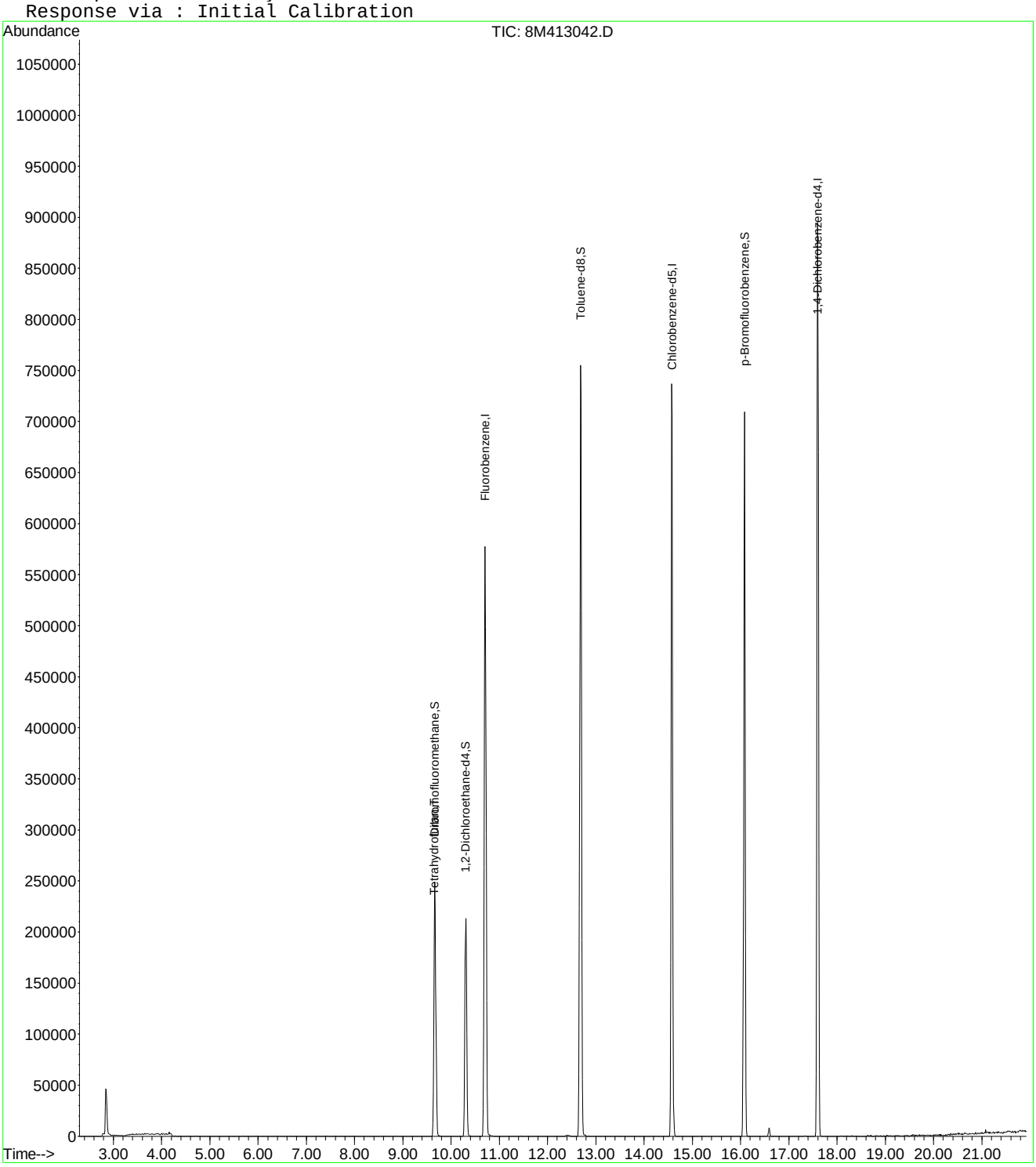

8M413042.D 8260WT.M Mon Jun 20 09:19:52 2016 Page 2

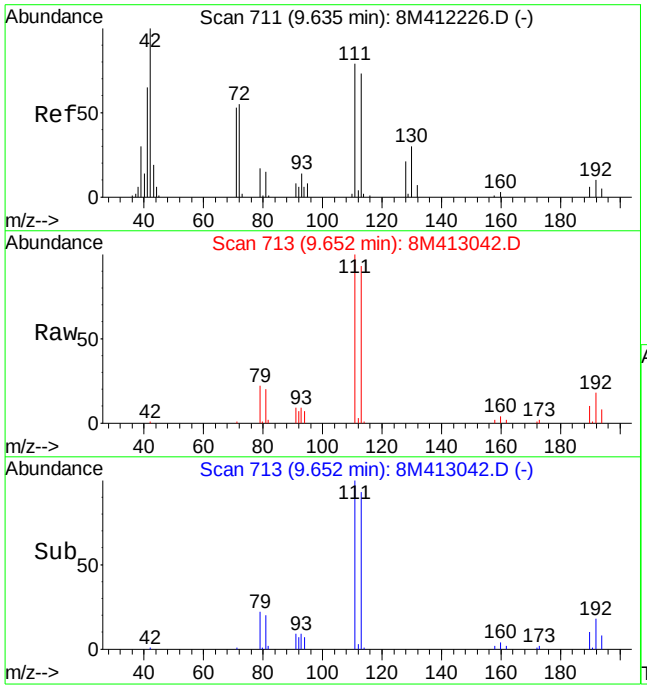

#36
Tetrahydrofuran
Concen: 1.40 ug/L
RT: 9.65 min Scan# 713
Delta R.T. 0.02 min
Lab File: 8M413042.D
Acq: 16 Jun 2016 19:23

Tgt Ion: 42 Resp: 1074

Ion	Ratio	Lower	Upper
42	100		
72	27.6	33.8	78.8#
71	18.9	32.0	74.8#

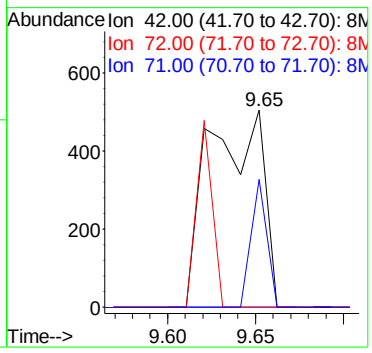

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:40:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	823748	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	571926	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	299321	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	12.68	98	567	0.0189 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.08%#	
80) p-Bromofluorobenzene	16.08	95	313	0.0253 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	3836	0.2778 ug/L	91
3) Chloromethane	3.62	50	3658	0.4537 ug/L	95
4) Vinyl Chloride	3.85	62	2516	0.2630 ug/L #	58
5) 1,3-Butadiene	3.91	54	2079	0.2592 ug/L	71
6) Bromomethane	4.73	94	1152	0.6530 ug/L #	55
7) Chloroethane	4.90	64	1112	0.2113 ug/L #	72
8) Trichlorofluoromethane	5.35	101	2706	0.1520 ug/L #	53
10) Isoprene	5.93	67	2147	0.1987 ug/L	85
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1746	0.2087 ug/L	97
14) 1,1-Dichloroethene	6.48	61	3332	0.2501 ug/L	75
16) Dimethyl Sulfide	6.73	62	1099	0.2308 ug/L	95
19) Methylene Chloride	7.26	84	3414	0.4028 ug/L	88
20) Carbon Disulfide	7.30	76	10739	0.3853 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	4927	0.2686 ug/L #	60
23) trans-1,2-Dichloroethene	7.70	61	3879	0.3170 ug/L	98
24) n-Hexane	7.78	57	2794	0.3075 ug/L	85
26) Vinyl Acetate	8.30	43	1973	0.2259 ug/L #	70
27) 1,1-Dichloroethane	8.33	63	4881	0.3212 ug/L #	88
31) 2,2-Dichloropropane	9.11	77	4966	0.3101 ug/L	89
32) cis-1,2-Dichloroethene	9.17	96	2958	0.3128 ug/L	87
33) Chloroform	9.37	83	5564	0.3101 ug/L	95
34) 1-Bromopropane	9.52	122	210	0.1551 ug/L #	1
35) Bromochloromethane	9.60	130	1386	0.2858 ug/L	76
36) Tetrahydrofuran	9.62	42	1849	2.0617 ug/L #	60
38) 1,1,1-Trichloroethane	9.91	97	4978	0.2921 ug/L	95
39) Cyclohexane	9.93	56	3120	0.2644 ug/L #	85
40) 1,1-Dichloropropene	10.11	75	3779	0.2909 ug/L	97
42) Carbon Tetrachloride	10.24	117	4835	0.3194 ug/L #	74
45) 1,2-Dichloroethane	10.43	62	3295	0.2853 ug/L #	81
46) Benzene	10.46	78	11279	0.3333 ug/L	93
47) Trichloroethene	11.20	130	2410	0.2670 ug/L	97
48) Methylcyclohexane	11.31	83	3936	0.2871 ug/L	84
49) 1,2-Dichloropropane	11.42	63	2136	0.2836 ug/L	88
50) Bromodichloromethane	11.73	83	3767	0.2845 ug/L #	91
52) Dibromomethane	11.82	93	700	0.1570 ug/L #	59
53) 2-Chloroethyl Vinyl Ether	12.02	63	847	0.2616 ug/L #	47
55) cis-1,3-Dichloropropene	12.36	75	4763	0.3535 ug/L	84
56) Dimethyl Disulfide	12.63	79	1647	0.2290 ug/L	82
59) Toluene	12.78	91	11513	0.3243 ug/L	92
60) Ethyl Methacrylate	12.89	69	1631	0.2392 ug/L #	64

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:40:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
62)	trans-1,3-Dichloropropene	12.96	75	3626	0.3047 ug/L		82
63)	1,1,2-Trichloroethane	13.18	97	1409	0.2515 ug/L		98
65)	1,3-Dichloropropane	13.49	76	2584	0.2590 ug/L		93
66)	Tetrachloroethene	13.61	164	2678	0.3520 ug/L	#	75
67)	Dibromochloromethane	13.87	129	2126	0.2599 ug/L		79
68)	1,2-Dibromoethane	14.12	107	1895	0.3394 ug/L		91
69)	1-Chlorohexane	14.21	91	3835	0.3164 ug/L		99
70)	Chlorobenzene	14.62	112	7968	0.3328 ug/L		88
71)	1,1,1,2-Tetrachloroethane	14.67	131	2872	0.3096 ug/L		87
72)	Ethylbenzene	14.64	106	3844	0.2934 ug/L		81
73)	m-,p-Xylene	14.75	106	10447	0.6799 ug/L		96
74)	o-Xylene	15.31	106	4577	0.3047 ug/L		97
75)	Styrene	15.35	104	7545	0.3062 ug/L		95
76)	Bromoform	15.84	173	1301	0.2681 ug/L	#	51
77)	Isopropylbenzene	15.74	105	13119	0.3287 ug/L		90
79)	1,1,2,2-Tetrachloroethane	15.96	83	1714	0.2853 ug/L	#	85
83)	n-Propylbenzene	16.24	91	15676	0.3357 ug/L		92
84)	Bromobenzene	16.38	156	2859	0.2977 ug/L		90
85)	1,3,5-Trimethylbenzene	16.43	105	10873	0.3196 ug/L		99
86)	2-Chlorotoluene	16.52	91	11133	0.3415 ug/L		96
87)	4-Chlorotoluene	16.56	91	10305	0.3499 ug/L		97
88)	a-Methylstyrene	16.83	118	4090	0.2534 ug/L		86
89)	tert-Butylbenzene	16.90	134	1734	0.2606 ug/L		72
90)	1,2,4-Trimethylbenzene	16.95	105	10734	0.3069 ug/L		89
91)	sec-Butylbenzene	17.16	105	13749	0.3436 ug/L		97
92)	p-Isopropyltoluene	17.32	119	10847	0.3192 ug/L		95
93)	1,3-Dichlorobenzene	17.52	146	6023	0.3257 ug/L		99
94)	1,4-Dichlorobenzene	17.65	146	6152	0.3299 ug/L	#	60
95)	n-Butylbenzene	17.85	91	11161	0.3323 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	5711	0.3472 ug/L		92
98)	1,2,4-Trichlorobenzene	20.29	180	4203	0.3418 ug/L		91
99)	Hexachlorobutadiene	20.43	225	1894	0.3297 ug/L		84
100)	Naphthalene	20.65	128	6039	0.3306 ug/L		91
101)	1,2,3-Trichlorobenzene	20.96	180	3279	0.3161 ug/L		86

(#) = qualifier out of range (m) = manual integration
8M412220.D 8260WT.M Tue May 17 11:40:55 2016 Page 2

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2778	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.4537	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.2630	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	0.2592	0.0	100	0.03
6	T	Bromomethane	-1.0000	0.9911	0.0	100	0.00
7	T	Chloroethane	-1.0000	0.2113	0.0	100	0.00
8	T	Trichlorofluoromethane	-1.0000	0.1520	0.0	100	-0.02
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.90#
10	T	Isoprene	-1.0000	0.1987	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.13#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2087	0.0	100	0.00
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	-1.0000	0.2501	0.0	100	0.02
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.58#
16	T	Dimethyl Sulfide	-1.0000	0.2308	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.0000	0.0	0	-7.00#
19	T	Methylene Chloride	-1.0000	0.4028	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.3853	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.43#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2686	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	-1.0000	0.3170	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.3075	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.2259	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.3212	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.98#
31	T	2,2-Dichloropropane	-1.0000	0.3101	0.0	100	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.3128	0.0	100	0.00
33	C	Chloroform	0.3000	0.3101	-3.4	100	0.00
34		1-Bromopropane	-1.0000	0.1551	0.0	100	0.00
35	T	Bromochloromethane	-1.0000	0.2858	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	2.0617	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	-1.0000	0.2921	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.2644	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.2909	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	-1.0000	0.3194	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	-1.0000	0.2853	0.0	100	0.00
46	T	Benzene	-1.0000	0.3333	0.0	100	0.00
47	T	Trichloroethene	-1.0000	0.2670	0.0	100	-0.01
48	T	Methylcyclohexane	-1.0000	0.2871	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2836	0.0	100	0.00
50	T	Bromodichloromethane	-1.0000	0.2845	0.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	-1.0000	0.1570	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2616	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.05#

(#) = Out of Range

8M412220.D 8260WT.M Sat May 14 18:03:33 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.3535	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2290	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0189	0.0	100	0.00
59	C	Toluene	-1.0000	0.3243	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2392	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3047	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.2515	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	-1.0000	0.2590	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.3520	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.2599	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.3394	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.3164	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.3328	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.3096	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.2934	0.0	100	-0.01
73	T	m-,p-Xylene	-1.0000	0.6799	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.3047	0.0	100	0.00
75	T	Styrene	-1.0000	0.3062	0.0	100	0.00
76	P	Bromoform	-1.0000	0.2681	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.3287	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2853	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0253	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.1103	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	-1.0000	0.3357	0.0	100	0.00
84	T	Bromobenzene	0.3000	0.2977	0.8	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.3196	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.3415	0.0	100	0.00
87	T	4-Chlorotoluene	-1.0000	0.3499	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2534	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.2606	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.3069	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3436	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.3192	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.3257	0.0	100	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.3299	-10.0	100	0.00
95	T	n-Butylbenzene	-1.0000	0.3323	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.3472	-15.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.3418	0.0	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.3297	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.3306	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.3161	-5.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412220.D 8260WT.M Sat May 14 18:03:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	801173	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	557498	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	293108	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
80) p-Bromofluorobenzene	16.08	95	343	0.0286 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	5478	0.3262 ug/L	79
3) Chloromethane	3.63	50	3930	0.2484 ug/L	85
4) Vinyl Chloride	3.84	62	3512	0.3288 ug/L	97
5) 1,3-Butadiene	3.90	54	2479	0.2375 ug/L #	75
6) Bromomethane	4.73	94	1343	0.9497 ug/L	85
7) Chloroethane	4.90	64	2219	0.3174 ug/L #	43
8) Trichlorofluoromethane	5.36	101	6974	0.3289 ug/L #	93
10) Isoprene	5.94	67	4288	0.3952 ug/L #	62
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	3168	0.3263 ug/L #	40
14) 1,1-Dichloroethene	6.47	61	5431	0.2882 ug/L	92
16) Dimethyl Sulfide	6.74	62	1708	0.2453 ug/L	64
19) Methylene Chloride	7.24	84	3785	0.4239 ug/L #	43
20) Carbon Disulfide	7.29	76	12437	0.4565 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	6580	0.3336 ug/L #	76
23) trans-1,2-Dichloroethene	7.71	61	4990	0.2928 ug/L	96
24) n-Hexane	7.79	57	3110	0.2011 ug/L	99
26) Vinyl Acetate	8.31	43	2753	0.1566 ug/L	100
27) 1,1-Dichloroethane	8.32	63	5655	0.2774 ug/L #	92
31) 2,2-Dichloropropane	9.10	77	6035	0.3360 ug/L	82
32) cis-1,2-Dichloroethene	9.16	96	3837	0.3762 ug/L	74
33) Chloroform	9.37	83	7267	0.3842 ug/L	100
34) 1-Bromopropane	9.50	122	234	0.1456 ug/L #	1
35) Bromochloromethane	9.60	130	1674	0.3137 ug/L	62
36) Tetrahydrofuran	9.62	42	447	0.2146 ug/L #	41
38) 1,1,1-Trichloroethane	9.91	97	6304	0.3305 ug/L	90
39) Cyclohexane	9.94	56	4658	0.2238 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	5172	0.3768 ug/L	80
42) Carbon Tetrachloride	10.25	117	5692	0.3172 ug/L	95
45) 1,2-Dichloroethane	10.43	62	4443	0.2796 ug/L #	63
46) Benzene	10.46	78	14456	0.4134 ug/L #	77
47) Trichloroethene	11.21	130	3659	0.3626 ug/L	98
48) Methylcyclohexane	11.29	83	5025	0.3562 ug/L	84
49) 1,2-Dichloropropane	11.42	63	3060	0.3007 ug/L	98
50) Bromodichloromethane	11.73	83	4734	0.3343 ug/L #	93
52) Dibromomethane	11.82	93	1805	0.3767 ug/L	84
55) cis-1,3-Dichloropropene	12.36	75	5008	0.3514 ug/L	90
56) Dimethyl Disulfide	12.63	79	1921	0.2573 ug/L	85
59) Toluene	12.78	91	14742	0.4416 ug/L	98
60) Ethyl Methacrylate	12.90	69	2062	0.3292 ug/L	66
62) trans-1,3-Dichloropropene	12.96	75	3693	0.3171 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
63)	1,1,2-Trichloroethane	13.18	97	2326	0.4391 ug/L		70
65)	1,3-Dichloropropane	13.49	76	3163	0.3219 ug/L		88
66)	Tetrachloroethene	13.61	164	3164	0.4185 ug/L		93
67)	Dibromochloromethane	13.87	129	3113	0.3727 ug/L		86
68)	1,2-Dibromoethane	14.12	107	2076	0.3760 ug/L		90
69)	1-Chlorohexane	14.21	91	4746	0.4174 ug/L		80
70)	Chlorobenzene	14.62	112	9180	0.3960 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.66	131	3501	0.3876 ug/L		95
72)	Ethylbenzene	14.65	106	5348	0.4066 ug/L		84
73)	m-,p-Xylene	14.75	106	13269	0.8757 ug/L		89
74)	o-Xylene	15.31	106	6019	0.3943 ug/L		97
75)	Styrene	15.35	104	9370	0.3849 ug/L		95
76)	Bromoform	15.83	173	1198	0.2500 ug/L	#	76
77)	Isopropylbenzene	15.73	105	16528	0.4270 ug/L		92
79)	1,1,2,2-Tetrachloroethane	15.96	83	1999	0.3419 ug/L	#	83
83)	n-Propylbenzene	16.25	91	19410	0.4297 ug/L		95
84)	Bromobenzene	16.37	156	3319	0.3524 ug/L		75
85)	1,3,5-Trimethylbenzene	16.42	105	13794	0.4127 ug/L		95
86)	2-Chlorotoluene	16.51	91	13678	0.4729 ug/L		90
87)	4-Chlorotoluene	16.56	91	12572	0.4219 ug/L		98
88)	a-Methylstyrene	16.84	118	5739	0.3485 ug/L		96
89)	tert-Butylbenzene	16.90	134	2254	0.3403 ug/L		55
90)	1,2,4-Trimethylbenzene	16.95	105	13859	0.4051 ug/L		90
91)	sec-Butylbenzene	17.17	105	17612	0.4382 ug/L		90
92)	p-Isopropyltoluene	17.32	119	13616	0.3968 ug/L		90
93)	1,3-Dichlorobenzene	17.52	146	6961	0.3724 ug/L		86
94)	1,4-Dichlorobenzene	17.64	146	7149	0.3832 ug/L	#	1
95)	n-Butylbenzene	17.85	91	15223	0.4664 ug/L		91
96)	1,2-Dichlorobenzene	18.14	146	6129	0.3742 ug/L		92
98)	1,2,4-Trichlorobenzene	20.28	180	5035	0.3969 ug/L		97
99)	Hexachlorobutadiene	20.44	225	2420	0.4122 ug/L		83
100)	Naphthalene	20.65	128	7474	0.3874 ug/L	#	84
101)	1,2,3-Trichlorobenzene	20.96	180	4378	0.4056 ug/L	#	78

(#) = qualifier out of range (m) = manual integration
8M412221.D 8260WT.M Fri May 13 14:20:39 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

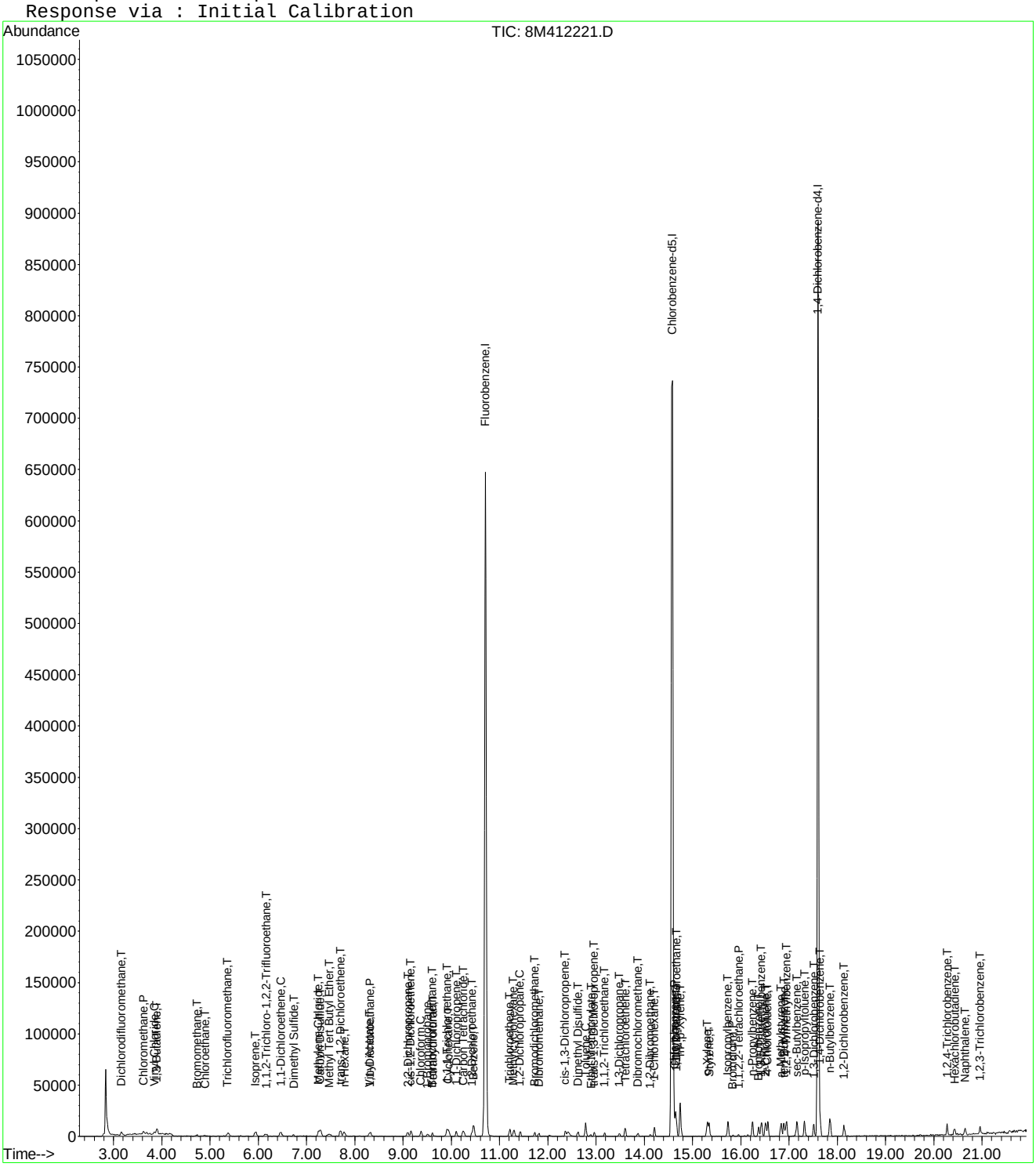

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	0.4000	0.4078	-2.0	100	0.00
3	P	Chloromethane	-1.0000	0.5012	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.3775	5.6	100	0.00
5	T	1,3-Butadiene	-1.0000	0.3178	0.0	100	0.02
6	T	Bromomethane	-1.0000	1.0253	0.0	100	0.00
7	T	Chloroethane	0.4000	0.4335	-8.4	100	0.00
8	T	Trichlorofluoromethane	0.4000	0.4029	-0.7	100	-0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.90#
10	T	Isoprene	0.4000	0.4079	-2.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.13#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3894	0.0	100	0.02
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	0.4000	0.4192	-4.8	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.58#
16	T	Dimethyl Sulfide	0.4000	0.3687	7.8	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.2179	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4591	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4587	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.43#
22	T	Methyl Tert Butyl Ether	-1.0000	0.3688	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.4193	-4.8	100	0.00
24	T	n-Hexane	-1.0000	0.3519	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.3241	0.0	100	0.02
27	P	1,1-Dichloroethane	0.4000	0.3826	4.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.98#
31	T	2,2-Dichloropropane	0.4000	0.3874	3.1	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.4172	-4.3	100	-0.01
33	C	Chloroform	0.4000	0.4164	-4.1	100	0.00
34		1-Bromopropane	-1.0000	0.1776	0.0	100	-0.01
35	T	Bromochloromethane	0.4000	0.3550	11.3	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.5125	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	0.4000	0.3803	4.9	100	0.00
39	T	Cyclohexane	-1.0000	0.4058	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4093	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	0.4000	0.3867	3.3	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	0.4000	0.3955	1.1	100	0.00
46	T	Benzene	0.4000	0.4393	-9.8	100	0.00
47	T	Trichloroethene	0.4000	0.4169	-4.2	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3768	0.0	100	-0.01
49	C	1,2-Dichloropropane	0.4000	0.4177	-4.4	100	0.00
50	T	Bromodichloromethane	0.4000	0.3676	8.1	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	0.4000	0.4162	-4.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1401	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.05#

(#) = Out of Range

8M412221.D 8260WT.M Sat May 14 18:03:54 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3821	4.5	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2746	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0000	0.0	0	-12.68#
59	C	Toluene	0.4000	0.4259	-6.5	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3102	0.0	100	0.02
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3184	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.4259	-6.5	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	0.4000	0.3253	18.7	100	0.00
66	T	Tetrachloroethene	0.4000	0.4267	-6.7	100	0.00
67	T	Dibromochloromethane	0.4000	0.3904	2.4	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.3814	4.6	100	0.00
69	T	1-Chlorohexane	0.4000	0.4017	-0.4	100	0.00
70	P	Chlorobenzene	0.4000	0.3933	1.7	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3872	3.2	100	0.00
72	C	Ethylbenzene	0.4000	0.4188	-4.7	100	0.00
73	T	m-,p-Xylene	0.8000	0.8859	-10.7	100	0.00
74	T	o-Xylene	-1.0000	0.4110	0.0	100	0.00
75	T	Styrene	0.4000	0.3901	2.5	100	0.00
76	P	Bromoform	-1.0000	0.2533	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.4249	-6.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.3398	15.1	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0283	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.14#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	0.4000	0.4245	-6.1	100	0.00
84	T	Bromobenzene	0.4000	0.3529	11.8	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.4141	-3.5	100	0.00
86	T	2-Chlorotoluene	0.4000	0.4284	-7.1	100	0.00
87	T	4-Chlorotoluene	0.4000	0.4359	-9.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.3631	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3459	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	0.4000	0.4046	-1.2	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.4494	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4092	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.3844	3.9	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.3915	2.1	100	0.00
95	T	n-Butylbenzene	-1.0000	0.4628	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.3805	4.9	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	0.4000	0.4182	-4.5	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.4302	-7.5	100	0.00
100	T	Naphthalene	0.4000	0.4178	-4.5	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.4310	-7.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412221.D 8260WT.M Sat May 14 18:03:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	795577	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	547129	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	284579	25.00 ug/L	0.01
System Monitoring Compounds					
37) Dibromofluoromethane	9.65	111	3962	0.3966 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery	= 1.60%#	
43) 1,2-Dichloroethane-d4	10.31	65	3835	0.3356 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery	= 1.36%#	
58) Toluene-d8	12.68	98	14023	0.4957 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 2.00%#	
80) p-Bromofluorobenzene	16.08	95	6483	0.5565 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery	= 2.24%#	
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	12402	0.7438 ug/L	97
3) Chloromethane	3.62	50	8415	0.5357 ug/L #	75
4) Vinyl Chloride	3.84	62	9412	0.8873 ug/L	89
5) 1,3-Butadiene	3.90	54	6974	0.6729 ug/L	81
6) Bromomethane	4.73	94	4114	1.3123 ug/L	92
7) Chloroethane	4.90	64	4983	0.7178 ug/L #	80
8) Trichlorofluoromethane	5.38	101	17133	0.8136 ug/L #	96
9) Diethyl ether	5.90	59	20707	3.2140 ug/L	84
10) Isoprene	5.94	67	11176	1.0373 ug/L	76
11) Acrolein	6.14	56	246	0.4300 ug/L #	15
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	8135	0.8438 ug/L	96
13) Acetone	6.24	43	413	0.2115 ug/L #	48
14) 1,1-Dichloroethene	6.46	61	12947	0.6919 ug/L	91
15) Tert-Butyl Alcohol	6.59	59	3316	7.3747 ug/L #	55
16) Dimethyl Sulfide	6.72	62	4505	0.6515 ug/L	79
18) Methyl acetate	7.00	43	2119	0.3630 ug/L #	66
19) Methylene Chloride	7.24	84	8723	0.9837 ug/L #	43
20) Carbon Disulfide	7.29	76	28246	1.0441 ug/L	100
21) Acrylonitrile	7.43	53	2164	0.8620 ug/L	76
22) Methyl Tert Butyl Ether	7.47	73	16998	0.8678 ug/L	84
23) trans-1,2-Dichloroethene	7.70	61	12571	0.7427 ug/L	100
24) n-Hexane	7.78	57	9382	0.6109 ug/L	82
25) Diisopropyl ether	8.12	45	95400	2.1939 ug/L #	91
26) Vinyl Acetate	8.30	43	6750	0.3867 ug/L #	89
27) 1,1-Dichloroethane	8.32	63	14721	0.7271 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	97972	3.2102 ug/L	88
29) 2-Butanone	8.88	43	380	0.1215 ug/L #	57
30) Propionitrile	8.99	54	1593	2.0138 ug/L #	56
31) 2,2-Dichloropropane	9.09	77	14691	0.8236 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	9482	0.9362 ug/L	72
33) Chloroform	9.37	83	18494	0.9845 ug/L	94
34) 1-Bromopropane	9.50	122	1092	0.6844 ug/L	80
35) Bromochloromethane	9.61	130	5234	0.9877 ug/L #	55
36) Tetrahydrofuran	9.63	42	5415	2.6185 ug/L #	68
38) 1,1,1-Trichloroethane	9.91	97	17074	0.9016 ug/L	92
39) Cyclohexane	9.94	56	11865	0.5740 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	13172	0.9663 ug/L	87
41) Tert-Amyl-Methyl ether	10.21	73	90255	4.6173 ug/L #	88
42) Carbon Tetrachloride	10.25	117	14515	0.8146 ug/L	95
45) 1,2-Dichloroethane	10.42	62	10675	0.6766 ug/L	85

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	10.47	78	34504	0.9938 ug/L		84
47)	Trichloroethene	11.21	130	8752	0.8735 ug/L		93
48)	Methylcyclohexane	11.30	83	13513	0.9646 ug/L		79
49)	1,2-Dichloropropane	11.43	63	7057	0.6982 ug/L	#	67
50)	Bromodichloromethane	11.73	83	12147	0.8638 ug/L		96
52)	Dibromomethane	11.81	93	4130	0.8681 ug/L		95
53)	2-Chloroethyl Vinyl Ether	12.03	63	2694	0.6366 ug/L		86
54)	4-Methyl-2-Pentanone	12.06	58	848	0.3671 ug/L	#	41
55)	cis-1,3-Dichloropropene	12.36	75	12521	0.8847 ug/L		97
56)	Dimethyl Disulfide	12.63	79	5799	0.7821 ug/L		96
59)	Toluene	12.79	91	37114	1.1328 ug/L		95
60)	Ethyl Methacrylate	12.88	69	5490	0.8930 ug/L		69
62)	trans-1,3-Dichloropropene	12.96	75	10328	0.9035 ug/L		92
63)	1,1,2-Trichloroethane	13.18	97	5274	1.0144 ug/L		93
64)	2-Hexanone	13.10	58	397	0.2127 ug/L	#	1
65)	1,3-Dichloropropane	13.49	76	9673	1.0032 ug/L		73
66)	Tetrachloroethene	13.61	164	7373	0.9937 ug/L		95
67)	Dibromochloromethane	13.87	129	7358	0.8977 ug/L		95
68)	1,2-Dibromoethane	14.13	107	5123	0.9454 ug/L		95
69)	1-Chlorohexane	14.21	91	12790	1.1461 ug/L		79
70)	Chlorobenzene	14.62	112	25662	1.1281 ug/L		89
71)	1,1,1,2-Tetrachloroethane	14.66	131	8722	0.9838 ug/L		94
72)	Ethylbenzene	14.65	106	13009	1.0078 ug/L		87
73)	m-,p-Xylene	14.75	106	30465	2.0486 ug/L		84
74)	o-Xylene	15.31	106	15133	1.0101 ug/L		84
75)	Styrene	15.35	104	23191	0.9707 ug/L		91
76)	Bromoform	15.84	173	3875	0.8240 ug/L		96
77)	Isopropylbenzene	15.74	105	41382	1.0895 ug/L		95
79)	1,1,2,2-Tetrachloroethane	15.95	83	5604	0.9873 ug/L	#	93
81)	1,2,3-Trichloropropane	16.15	110	1355	0.7428 ug/L	#	1
82)	trans-1,4-Dichloro-2-Buten	16.19	53	962	0.3479 ug/L	#	1
83)	n-Propylbenzene	16.25	91	48249	1.1002 ug/L		99
84)	Bromobenzene	16.37	156	9598	1.0497 ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	33355	1.0278 ug/L		96
86)	2-Chlorotoluene	16.51	91	33408	1.1895 ug/L		94
87)	4-Chlorotoluene	16.56	91	29548	1.0213 ug/L		95
88)	a-Methylstyrene	16.84	118	14414	0.9014 ug/L		91
89)	tert-Butylbenzene	16.89	134	6686	1.0398 ug/L		86
90)	1,2,4-Trimethylbenzene	16.95	105	36066	1.0857 ug/L		96
91)	sec-Butylbenzene	17.16	105	42128	1.0796 ug/L		96
92)	p-Isopropyltoluene	17.32	119	35424	1.0633 ug/L		94
93)	1,3-Dichlorobenzene	17.52	146	18409	1.0144 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	19031	1.0506 ug/L	#	62
95)	n-Butylbenzene	17.85	91	35772	1.1288 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	16104	1.0126 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.14	75	1262	1.0152 ug/L	#	53
98)	1,2,4-Trichlorobenzene	20.28	180	11494	0.9331 ug/L		98
99)	Hexachlorobutadiene	20.43	225	5421	0.9510 ug/L		98
100)	Naphthalene	20.65	128	16581	0.8853 ug/L		100
101)	1,2,3-Trichlorobenzene	20.96	180	10306	0.9835 ug/L		94

(#) = qualifier out of range (m) = manual integration
8M412222.D 8260WT.M Fri May 13 14:49:48 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

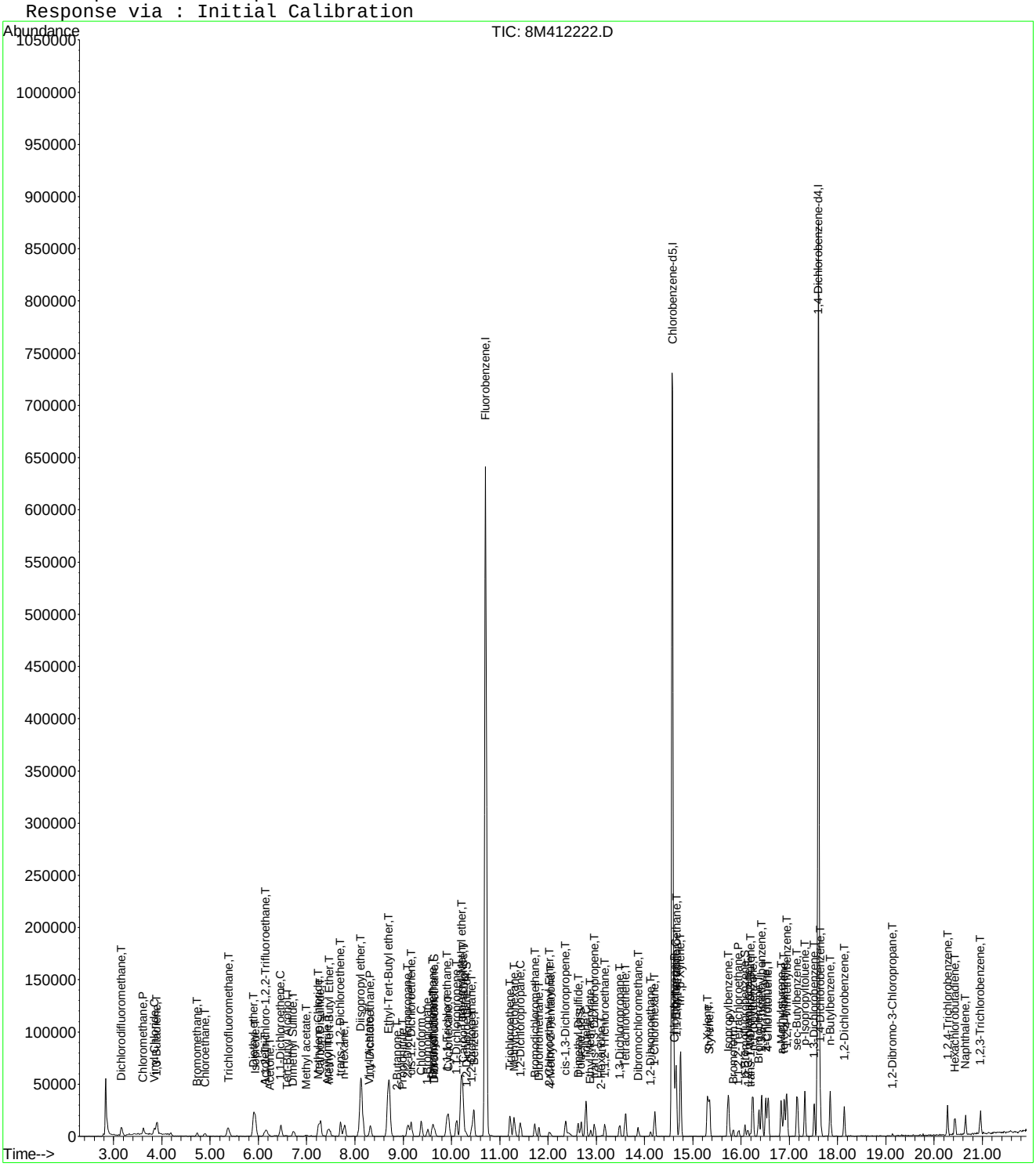

8M412222.D 8260WT.M Fri May 13 14:49:48 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:05:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9298	7.0	100	0.00
3	P	Chloromethane	1.0000	1.0808	-8.1	100	0.00
4	C	Vinyl Chloride	1.0000	1.0189	-1.9	100	0.00
5	T	1,3-Butadiene	-1.0000	0.9002	0.0	100	0.02
6	T	Bromomethane	1.0000	1.2082	-20.8	100	0.00
7	T	Chloroethane	1.0000	0.9803	2.0	100	0.00
8	T	Trichlorofluoromethane	1.0000	0.9968	0.3	100	0.00
9	T	Diethyl ether	5.0000	5.0462	-0.9	100	0.00
10	T	Isoprene	1.0000	1.0707	-7.1	100	0.00
11	T	Acrolein	-1.0000	0.6696	0.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0069	-0.7	100	0.00
13	T	Acetone	-1.0000	0.4614	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	1.0064	-0.6	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	11.5604	0.0	0	0.02
16	T	Dimethyl Sulfide	1.0000	0.9794	2.1	100	-0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.8758	0.0	100	0.00
19	T	Methylene Chloride	1.0000	1.0655	-6.5	100	0.00
20	T	Carbon Disulfide	1.0000	1.0492	-4.9	100	0.00
21	T	Acrylonitrile	2.5000	1.8633	25.5#	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9593	4.1	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	1.0636	-6.4	100	0.00
24	T	n-Hexane	-1.0000	1.0690	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	5.1784	-3.6	100	0.00
26	T	Vinyl Acetate	-1.0000	0.8002	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0029	-0.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.9635	0.7	100	0.00
29	T	2-Butanone	-1.0000	0.2889	0.0	100	0.00
30	T	Propionitrile	5.0000	4.1566	16.9	100	0.00
31	T	2,2-Dichloropropane	1.0000	0.9498	5.0	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	1.0383	-3.8	100	0.00
33	C	Chloroform	1.0000	1.0671	-6.7	100	0.00
34		1-Bromopropane	1.0000	0.8348	16.5	100	-0.01
35	T	Bromochloromethane	1.0000	1.1177	-11.8	100	0.00
36	T	Tetrahydrofuran	5.0000	6.2516	-25.0#	100	0.00
37	S	Dibromofluoromethane	0.5000	0.4635	7.3	100	-0.01
38	T	1,1,1-Trichloroethane	1.0000	1.0372	-3.7	100	0.00
39	T	Cyclohexane	1.0000	1.0411	-4.1	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0498	-5.0	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	5.0344	-0.7	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.9930	0.7	100	0.00
43	S	1,2-Dichloroethane-d4	0.5000	0.4184	16.3	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	1.0000	0.9570	4.3	100	0.00
46	T	Benzene	1.0000	1.0558	-5.6	100	0.00
47	T	Trichloroethene	1.0000	1.0041	-0.4	100	0.00
48	T	Methylcyclohexane	-1.0000	1.0205	0.0	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.9700	3.0	100	0.00
50	T	Bromodichloromethane	1.0000	0.9500	5.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	1.0000	0.9590	4.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.8616	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.6639	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:05:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9621	3.8	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.8348	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	0.5000	0.4897	2.1	100	0.00
59	C	Toluene	1.0000	1.0927	-9.3	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.8416	15.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	1.0000	0.9073	9.3	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.9840	1.6	100	0.00
64	T	2-Hexanone	-1.0000	0.3525	0.0	100	-0.01
65	T	1,3-Dichloropropane	1.0000	1.0137	-1.4	100	0.00
66	T	Tetrachloroethene	1.0000	1.0132	-1.3	100	0.00
67	T	Dibromochloromethane	1.0000	0.9402	6.0	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.9590	4.1	100	0.00
69	T	1-Chlorohexane	1.0000	1.1031	-10.3	100	0.00
70	P	Chlorobenzene	1.0000	1.1204	-12.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.9829	1.7	100	0.00
72	C	Ethylbenzene	1.0000	1.0381	-3.8	100	0.00
73	T	m-,p-Xylene	2.0000	2.0726	-3.6	100	0.00
74	T	o-Xylene	1.0000	1.0530	-5.3	100	0.00
75	T	Styrene	1.0000	0.9839	1.6	100	0.00
76	P	Bromoform	1.0000	0.8348	16.5	100	0.00
77	T	Isopropylbenzene	1.0000	1.0840	-8.4	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	0.9810	1.9	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5502	0.0	100	0.00
81	T	1,2,3-Trichloropropane	1.0000	0.7703	23.0	100	0.02
82	T	trans-1,4-Dichloro-2-Butene	1.0000	1.1443	-14.4	100	0.00
83	T	n-Propylbenzene	1.0000	1.0868	-8.7	100	0.00
84	T	Bromobenzene	1.0000	1.0510	-5.1	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	1.0314	-3.1	100	0.00
86	T	2-Chlorotoluene	1.0000	1.0778	-7.8	100	0.00
87	T	4-Chlorotoluene	1.0000	1.0553	-5.5	100	0.00
88	T	a-Methylstyrene	-1.0000	0.9394	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	1.0567	-5.7	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	1.0845	-8.5	100	0.00
91	T	sec-Butylbenzene	1.0000	1.1073	-10.7	100	0.00
92	T	p-Isopropyltoluene	1.0000	1.0966	-9.7	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0469	-4.7	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	1.0735	-7.3	100	0.00
95	T	n-Butylbenzene	1.0000	1.1201	-12.0	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0297	-3.0	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.1006	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	1.0000	0.9832	1.7	100	0.00
99	T	Hexachlorobutadiene	1.0000	0.9925	0.7	100	0.00
100	T	Naphthalene	1.0000	0.9547	4.5	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	1.0450	-4.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412222.D 8260WT.M Sat May 14 18:05:50 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	782460	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.57	117	543252	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	286450	25.00	ug/L	0.01

System Monitoring Compounds						
37) Dibromofluoromethane	9.66	111	8161	0.8307	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.32%#		
43) 1,2-Dichloroethane-d4	10.30	65	9681	0.8613	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.44%#		
58) Toluene-d8	12.68	98	28135	1.0016	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.00%#		
80) p-Bromofluorobenzene	16.08	95	12079	1.0302	ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.12%#		

Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.16	85	24870	1.5166	ug/L	98
3) Chloromethane	3.62	50	16106	1.0425	ug/L	93
4) Vinyl Chloride	3.85	62	18562	1.7792	ug/L	94
5) 1,3-Butadiene	3.90	54	13617	1.3360	ug/L	92
6) Bromomethane	4.73	94	8329	1.8804	ug/L	94
7) Chloroethane	4.90	64	9562	1.4006	ug/L	86
8) Trichlorofluoromethane	5.39	101	34970	1.6885	ug/L	97
9) Diethyl ether	5.90	59	107986	17.0420	ug/L	79
10) Isoprene	5.93	67	20936	1.9757	ug/L	73
11) Acrolein	6.14	56	4864	8.6444	ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	16832	1.7751	ug/L	99
13) Acetone	6.23	43	1519	0.7908	ug/L #	48
14) 1,1-Dichloroethene	6.47	61	25394	1.3798	ug/L	89
15) Tert-Butyl Alcohol	6.58	59	14891	33.6725	ug/L	85
16) Dimethyl Sulfide	6.73	62	9489	1.3953	ug/L	79
17) Iodomethane	6.98	142	1211	1.3472	ug/L #	60
18) Methyl acetate	7.01	43	5064	0.8821	ug/L #	79
19) Methylene Chloride	7.25	84	16579	1.9010	ug/L	52
20) Carbon Disulfide	7.29	76	57693	2.1683	ug/L	98
21) Acrylonitrile	7.43	53	13848	5.6089	ug/L	93
22) Methyl Tert Butyl Ether	7.47	73	33991	1.7644	ug/L	84
23) trans-1,2-Dichloroethene	7.70	61	22786	1.3688	ug/L	88
24) n-Hexane	7.79	57	18282	1.2105	ug/L	84
25) Diisopropyl ether	8.12	45	475271	11.1128	ug/L #	92
26) Vinyl Acetate	8.29	43	15998	0.9318	ug/L	93
27) 1,1-Dichloroethane	8.32	63	30419	1.5277	ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	505010	16.8250	ug/L	89
29) 2-Butanone	8.90	43	2250	0.7313	ug/L #	57
30) Propionitrile	8.99	54	9373	12.0479	ug/L	86
31) 2,2-Dichloropropane	9.10	77	32521	1.8538	ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	18238	1.8309	ug/L	91
33) Chloroform	9.37	83	33543	1.8156	ug/L	99
34) 1-Bromopropane	9.52	122	2513	1.6014	ug/L	88
35) Bromochloromethane	9.60	130	9189	1.7632	ug/L	67
36) Tetrahydrofuran	9.63	42	22074	10.8529	ug/L #	66
38) 1,1,1-Trichloroethane	9.90	97	32268	1.7324	ug/L	96
39) Cyclohexane	9.93	56	23097	1.1362	ug/L #	65
40) 1,1-Dichloropropene	10.10	75	24988	1.8639	ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	459535	23.9029	ug/L	87
42) Carbon Tetrachloride	10.24	117	28935	1.6512	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412223.D 8260WT.M Fri May 13 15:18:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.42	62	22142	1.4270 ug/L #	83
46)	Benzene	10.46	78	67028	1.9629 ug/L	83
47)	Trichloroethene	11.21	130	17287	1.7543 ug/L	96
48)	Methylcyclohexane	11.30	83	26050	1.8907 ug/L	84
49)	1,2-Dichloropropane	11.42	63	14582	1.4670 ug/L	77
50)	Bromodichloromethane	11.73	83	25794	1.8651 ug/L	93
51)	1,4-Dioxane	11.73	88	1282	32.3515 ug/L	74
52)	Dibromomethane	11.81	93	8575	1.8325 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.02	63	6234	1.4979 ug/L	100
54)	4-Methyl-2-Pentanone	12.06	58	2139	0.9416 ug/L	84
55)	cis-1,3-Dichloropropene	12.37	75	24153	1.7353 ug/L	98
56)	Dimethyl Disulfide	12.62	79	12288	1.6851 ug/L	99
59)	Toluene	12.79	91	72944	2.2423 ug/L	95
60)	Ethyl Methacrylate	12.88	69	12716	2.0832 ug/L	71
62)	trans-1,3-Dichloropropene	12.96	75	22163	1.9527 ug/L	100
63)	1,1,2-Trichloroethane	13.18	97	10537	2.0412 ug/L	99
64)	2-Hexanone	13.13	58	2200	1.1873 ug/L #	65
65)	1,3-Dichloropropane	13.49	76	20212	2.1112 ug/L	72
66)	Tetrachloroethene	13.60	164	14595	1.9811 ug/L	90
67)	Dibromochloromethane	13.87	129	14698	1.8061 ug/L	98
68)	1,2-Dibromoethane	14.12	107	10152	1.8869 ug/L	95
69)	1-Chlorohexane	14.21	91	21960	1.9818 ug/L	89
70)	Chlorobenzene	14.62	112	47376	2.0974 ug/L	81
71)	1,1,1,2-Tetrachloroethane	14.66	131	17526	1.9910 ug/L	97
72)	Ethylbenzene	14.66	106	25628	1.9996 ug/L	92
73)	m-,p-Xylene	14.74	106	60087	4.0693 ug/L	84
74)	o-Xylene	15.31	106	28289	1.9017 ug/L	79
75)	Styrene	15.35	104	47644	2.0086 ug/L	92
76)	Bromoform	15.84	173	9145	1.9585 ug/L	95
77)	Isopropylbenzene	15.73	105	81301	2.1557 ug/L	97
79)	1,1,2,2-Tetrachloroethane	15.95	83	11538	2.0194 ug/L	95
81)	1,2,3-Trichloropropane	16.13	110	3630	1.9770 ug/L	94
82)	trans-1,4-Dichloro-2-Buten	16.19	53	2699	0.9698 ug/L #	36
83)	n-Propylbenzene	16.24	91	97233	2.2026 ug/L	96
84)	Bromobenzene	16.37	156	19174	2.0834 ug/L	92
85)	1,3,5-Trimethylbenzene	16.42	105	67395	2.0631 ug/L	97
86)	2-Chlorotoluene	16.51	91	67110	2.3739 ug/L	94
87)	4-Chlorotoluene	16.56	91	59154	2.0313 ug/L	92
88)	a-Methylstyrene	16.84	118	29415	1.8275 ug/L	86
89)	tert-Butylbenzene	16.89	134	12716	1.9647 ug/L	67
90)	1,2,4-Trimethylbenzene	16.95	105	71669	2.1435 ug/L	94
91)	sec-Butylbenzene	17.17	105	81038	2.0632 ug/L	98
92)	p-Isopropyltoluene	17.32	119	70170	2.0924 ug/L	92
93)	1,3-Dichlorobenzene	17.52	146	37289	2.0413 ug/L	93
94)	1,4-Dichlorobenzene	17.64	146	36528	2.0034 ug/L #	73
95)	n-Butylbenzene	17.85	91	67823	2.1262 ug/L	96
96)	1,2-Dichlorobenzene	18.14	146	32322	2.0190 ug/L	92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	1955	1.5624 ug/L	94
98)	1,2,4-Trichlorobenzene	20.28	180	23558	1.9000 ug/L	98
99)	Hexachlorobutadiene	20.43	225	11066	1.9286 ug/L	99
100)	Naphthalene	20.65	128	36066	1.9130 ug/L	99
101)	1,2,3-Trichlorobenzene	20.96	180	19765	1.8738 ug/L	95

(#) = qualifier out of range (m) = manual integration
8M412223.D 8260WT.M Fri May 13 15:18:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

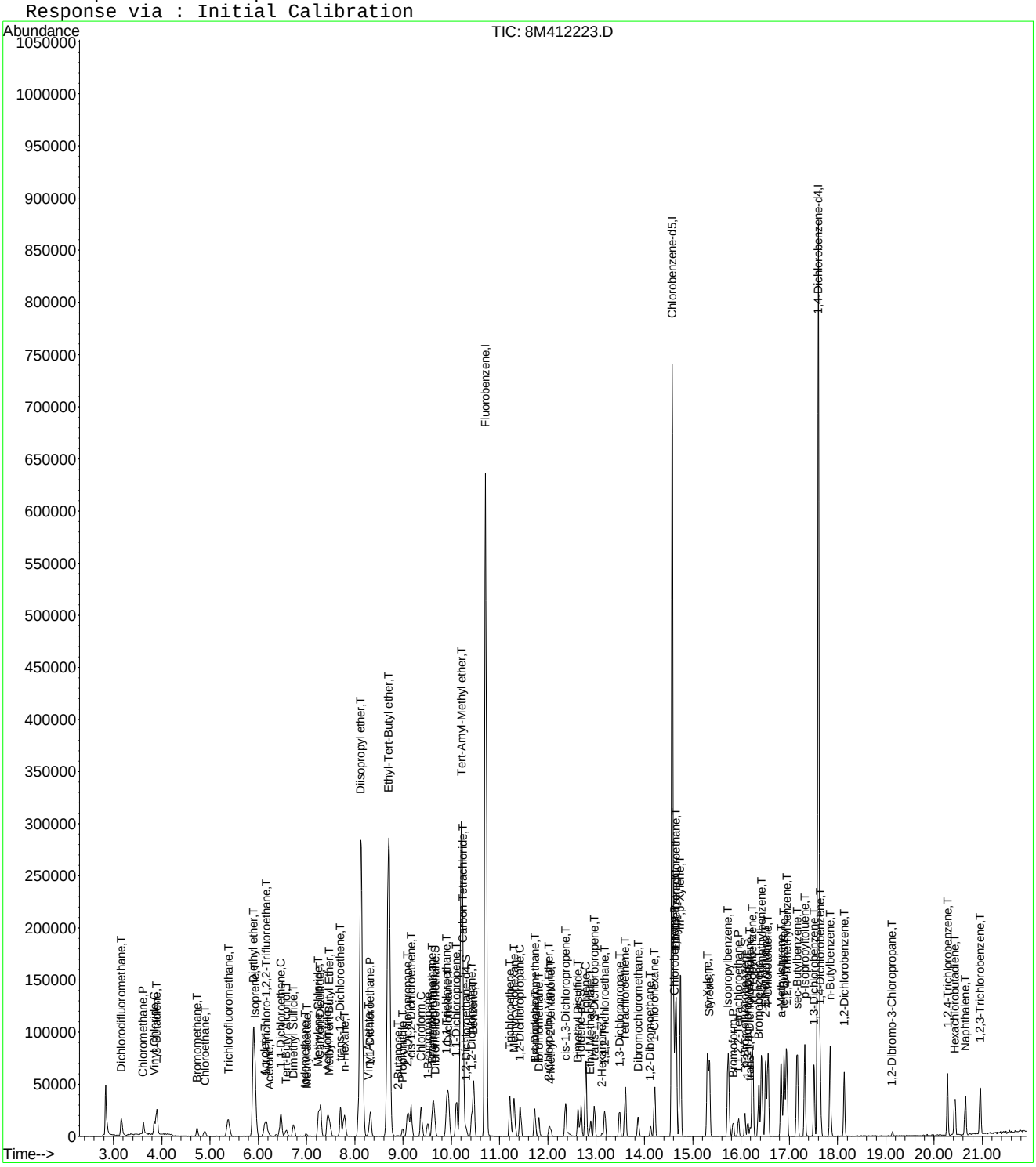

8M412223.D 8260WT.M Fri May 13 15:18:37 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.8958	5.2	100	0.00
3	P	Chloromethane	2.0000	2.1033	-5.2	100	0.00
4	C	Vinyl Chloride	2.0000	2.0431	-2.2	100	0.00
5	T	1,3-Butadiene	2.0000	1.7872	10.6	100	0.02
6	T	Bromomethane	2.0000	2.0126	-0.6	100	0.00
7	T	Chloroethane	2.0000	1.9127	4.4	100	0.00
8	T	Trichlorofluoromethane	2.0000	2.0686	-3.4	100	0.00
9	T	Diethyl ether	25.0000	26.7567	-7.0	100	0.00
10	T	Isoprene	2.0000	2.0394	-2.0	100	0.00
11	T	Acrolein	12.5000	13.4606	-7.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	2.1182	-5.9	100	0.02
13	T	Acetone	-1.0000	1.7255	0.0	100	-0.01
14	C	1,1-Dichloroethene	2.0000	2.0070	-0.4	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	52.7840	-5.6	100	0.00
16	T	Dimethyl Sulfide	2.0000	2.0975	-4.9	100	0.00
17	T	Iodomethane	2.0000	3.0680	-53.4#	100	0.00
18	T	Methyl acetate	-1.0000	2.1281	0.0	100	0.00
19	T	Methylene Chloride	2.0000	2.0590	-3.0	100	0.00
20	T	Carbon Disulfide	2.0000	2.1789	-8.9	100	0.00
21	T	Acrylonitrile	12.5000	12.1237	3.0	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.9505	2.5	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.9603	2.0	100	0.00
24	T	n-Hexane	-1.0000	2.1181	0.0	100	0.00
25	T	Diisopropyl ether	25.0000	26.2305	-4.9	100	0.00
26	T	Vinyl Acetate	2.0000	1.9284	3.6	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.1072	-5.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	26.0139	-4.1	100	0.00
29	T	2-Butanone	-1.0000	1.7396	0.0	100	0.02
30	T	Propionitrile	25.0000	24.8668	0.5	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1378	-6.9	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0306	-1.5	100	0.00
33	C	Chloroform	2.0000	1.9679	1.6	100	0.00
34		1-Bromopropane	2.0000	1.9533	2.3	100	0.00
35	T	Bromochloromethane	2.0000	1.9951	0.2	100	0.00
36	T	Tetrahydrofuran	25.0000	25.9117	-3.6	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9708	2.9	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.9930	0.3	100	0.00
39	T	Cyclohexane	2.0000	2.0605	-3.0	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0248	-1.2	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	26.0627	-4.3	100	0.00
42	T	Carbon Tetrachloride	2.0000	2.0126	-0.6	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0740	-7.4	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	2.0000	2.0183	-0.9	100	0.00
46	T	Benzene	2.0000	2.0854	-4.3	100	0.00
47	T	Trichloroethene	2.0000	2.0166	-0.8	100	0.00
48	T	Methylcyclohexane	-1.0000	2.0003	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0380	-1.9	100	0.00
50	T	Bromodichloromethane	2.0000	2.0511	-2.6	100	0.00
51	T	1,4-Dioxane	-1.0000	35.6688	0.0	100	0.02
52	T	Dibromomethane	2.0000	2.0246	-1.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	2.0271	-1.4	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.7027	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.8869	5.7	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.7986	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	0.9896	1.0	100	0.00
59	C	Toluene	2.0000	2.1628	-8.1	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.9633	1.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	2.0000	1.9609	2.0	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.9800	1.0	100	0.00
64	T	2-Hexanone	-1.0000	1.9672	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.1332	-6.7	100	0.00
66	T	Tetrachloroethene	2.0000	2.0198	-1.0	100	0.00
67	T	Dibromochloromethane	2.0000	1.8915	5.4	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.9141	4.3	100	0.00
69	T	1-Chlorohexane	2.0000	1.9075	4.6	100	0.00
70	P	Chlorobenzene	2.0000	2.0831	-4.2	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.9892	0.5	100	0.00
72	C	Ethylbenzene	2.0000	2.0596	-3.0	100	0.00
73	T	m-,p-Xylene	4.0000	4.1170	-2.9	100	0.00
74	T	o-Xylene	2.0000	1.9825	0.9	100	0.00
75	T	Styrene	2.0000	2.0358	-1.8	100	0.00
76	P	Bromoform	2.0000	1.9841	0.8	100	0.00
77	T	Isopropylbenzene	2.0000	2.1448	-7.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	2.0066	-0.3	100	0.00
80	S	p-Bromofluorobenzene	1.0000	1.0184	-1.8	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	2.0501	-2.5	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	2.0915	-4.6	100	0.00
83	T	n-Propylbenzene	2.0000	2.1757	-8.8	100	0.00
84	T	Bromobenzene	2.0000	2.0859	-4.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.0703	-3.5	100	0.00
86	T	2-Chlorotoluene	2.0000	2.1509	-7.5	100	0.00
87	T	4-Chlorotoluene	2.0000	2.0989	-4.9	100	0.00
88	T	a-Methylstyrene	-1.0000	1.9045	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	1.9967	0.2	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.1411	-7.1	100	0.00
91	T	sec-Butylbenzene	2.0000	2.1161	-5.8	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.1579	-7.9	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.1067	-5.3	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.0470	-2.4	100	0.00
95	T	n-Butylbenzene	2.0000	2.1098	-5.5	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0532	-2.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.6938	15.3	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	2.0021	-0.1	100	0.00
99	T	Hexachlorobutadiene	2.0000	2.0128	-0.6	100	0.00
100	T	Naphthalene	2.0000	2.0630	-3.2	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9910	0.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	768397	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	534372	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	274234	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	19775	2.0496 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	8.20%#	
43) 1,2-Dichloroethane-d4	10.30	65	21200	1.9207 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	7.68%#	
58) Toluene-d8	12.68	98	65647	2.3758 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	9.52%#	
80) p-Bromofluorobenzene	16.08	95	26759	2.3838 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	9.52%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	55961	3.4750 ug/L	99
3) Chloromethane	3.62	50	34194	2.2538 ug/L	100
4) Vinyl Chloride	3.84	62	42506	4.1488 ug/L	99
5) 1,3-Butadiene	3.89	54	32006	3.1976 ug/L	93
6) Bromomethane	4.72	94	19582	3.4204 ug/L	94
7) Chloroethane	4.90	64	22000	3.2814 ug/L	84
8) Trichlorofluoromethane	5.37	101	77715	3.8212 ug/L	96
9) Diethyl ether	5.90	59	188516	30.2955 ug/L	79
10) Isoprene	5.94	67	44975	4.3218 ug/L	78
11) Acrolein	6.15	56	7712	13.9568 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	36867	3.9591 ug/L	99
13) Acetone	6.24	43	3578	1.8967 ug/L	85
14) 1,1-Dichloroethene	6.47	61	59405	3.2870 ug/L	95
15) Tert-Butyl Alcohol	6.58	59	27833	64.0897 ug/L #	82
16) Dimethyl Sulfide	6.73	62	21102	3.1597 ug/L	77
17) Iodomethane	6.99	142	3667	1.8964 ug/L	95
18) Methyl acetate	7.00	43	11500	2.0398 ug/L #	86
19) Methylene Chloride	7.24	84	37533	4.3823 ug/L	52
20) Carbon Disulfide	7.29	76	123060	4.7097 ug/L	100
21) Acrylonitrile	7.43	53	25653	10.5804 ug/L	99
22) Methyl Tert Butyl Ether	7.47	73	80005	4.2289 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	54124	3.3108 ug/L	94
24) n-Hexane	7.78	57	40758	2.7480 ug/L	82
25) Diisopropyl ether	8.12	45	841400	20.0337 ug/L #	91
26) Vinyl Acetate	8.30	43	37284	2.2113 ug/L #	90
27) 1,1-Dichloroethane	8.32	63	66711	3.4116 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	907423	30.7852 ug/L	89
29) 2-Butanone	8.89	43	5359	1.7738 ug/L #	82
30) Propionitrile	8.99	54	17933	23.4726 ug/L	100
31) 2,2-Dichloropropane	9.10	77	73150	4.2462 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	41036	4.1950 ug/L	89
33) Chloroform	9.37	83	78227	4.3116 ug/L	99
34) 1-Bromopropane	9.52	122	6162	3.9986 ug/L	99
35) Bromochloromethane	9.60	130	20988	4.1009 ug/L #	62
36) Tetrahydrofuran	9.62	42	38098	19.0742 ug/L #	62
38) 1,1,1-Trichloroethane	9.91	97	76152	4.1633 ug/L	97
39) Cyclohexane	9.94	56	51439	2.5767 ug/L #	66
40) 1,1-Dichloropropene	10.11	75	56645	4.3027 ug/L	93
41) Tert-Amyl-Methyl ether	10.21	73	821180	43.4958 ug/L	87
42) Carbon Tetrachloride	10.25	117	67831	3.9416 ug/L	96

(#) = qualifier out of range (m) = manual integration
8M412224.D 8260WT.M Fri May 13 15:47:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	51708	3.3934 ug/L		85
46)	Benzene	10.46	78	150204	4.4792 ug/L		86
47)	Trichloroethene	11.21	130	38500	3.9784 ug/L		94
48)	Methylcyclohexane	11.30	83	60897	4.5008 ug/L		81
49)	1,2-Dichloropropane	11.43	63	31773	3.2549 ug/L		77
50)	Bromodichloromethane	11.73	83	59127	4.3535 ug/L		94
51)	1,4-Dioxane	11.71	88	2719	69.8702 ug/L	#	62
52)	Dibromomethane	11.81	93	19711	4.2894 ug/L		96
53)	2-Chloroethyl Vinyl Ether	12.03	63	12946	3.1676 ug/L		98
54)	4-Methyl-2-Pentanone	12.05	58	5129	2.2991 ug/L	#	78
55)	cis-1,3-Dichloropropene	12.36	75	61169	4.4752 ug/L		94
56)	Dimethyl Disulfide	12.62	79	27966	3.9053 ug/L		98
59)	Toluene	12.78	91	161007	5.0316 ug/L		97
60)	Ethyl Methacrylate	12.88	69	28595	4.7624 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	49791	4.4599 ug/L		97
63)	1,1,2-Trichloroethane	13.18	97	23678	4.6631 ug/L		99
64)	2-Hexanone	13.11	58	4499	2.4685 ug/L	#	97
65)	1,3-Dichloropropane	13.49	76	44838	4.7614 ug/L		73
66)	Tetrachloroethene	13.60	164	32715	4.5144 ug/L		97
67)	Dibromochloromethane	13.87	129	35009	4.3734 ug/L		98
68)	1,2-Dibromoethane	14.13	107	24247	4.5815 ug/L		99
69)	1-Chlorohexane	14.21	91	53599	4.9176 ug/L		84
70)	Chlorobenzene	14.62	112	107618	4.8437 ug/L		95
71)	1,1,1,2-Tetrachloroethane	14.65	131	38120	4.4025 ug/L		96
72)	Ethylbenzene	14.65	106	56905	4.5138 ug/L		91
73)	m-,p-Xylene	14.75	106	137390	9.4592 ug/L		86
74)	o-Xylene	15.31	106	65650	4.4866 ug/L		85
75)	Styrene	15.35	104	111433	4.7758 ug/L		91
76)	Bromoform	15.84	173	19346	4.2121 ug/L		97
77)	Isopropylbenzene	15.73	105	182523	4.9200 ug/L		96
79)	1,1,2,2-Tetrachloroethane	15.95	83	26655	4.8730 ug/L		99
81)	1,2,3-Trichloropropane	16.13	110	8840	5.0289 ug/L		81
82)	trans-1,4-Dichloro-2-Buten	16.19	53	6584	2.4712 ug/L	#	51
83)	n-Propylbenzene	16.24	91	222196	5.2576 ug/L		96
84)	Bromobenzene	16.37	156	42665	4.8423 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	155714	4.9790 ug/L		93
86)	2-Chlorotoluene	16.52	91	148764	5.4968 ug/L		94
87)	4-Chlorotoluene	16.56	91	135679	4.8666 ug/L		94
88)	a-Methylstyrene	16.84	118	68945	4.4743 ug/L		91
89)	tert-Butylbenzene	16.89	134	29069	4.6914 ug/L		77
90)	1,2,4-Trimethylbenzene	16.95	105	161016	5.0301 ug/L		94
91)	sec-Butylbenzene	17.17	105	191273	5.0866 ug/L		94
92)	p-Isopropyltoluene	17.32	119	159232	4.9597 ug/L		93
93)	1,3-Dichlorobenzene	17.52	146	83896	4.7972 ug/L		95
94)	1,4-Dichlorobenzene	17.64	146	82462	4.7242 ug/L		86
95)	n-Butylbenzene	17.85	91	158787	5.1996 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	72524	4.7321 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	5629	4.6990 ug/L		76
98)	1,2,4-Trichlorobenzene	20.28	180	53855	4.5369 ug/L		98
99)	Hexachlorobutadiene	20.43	225	24504	4.4608 ug/L		93
100)	Naphthalene	20.65	128	79806	4.4217 ug/L		98
101)	1,2,3-Trichlorobenzene	20.96	180	44150	4.3720 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412224.D 8260WT.M Fri May 13 15:47:44 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

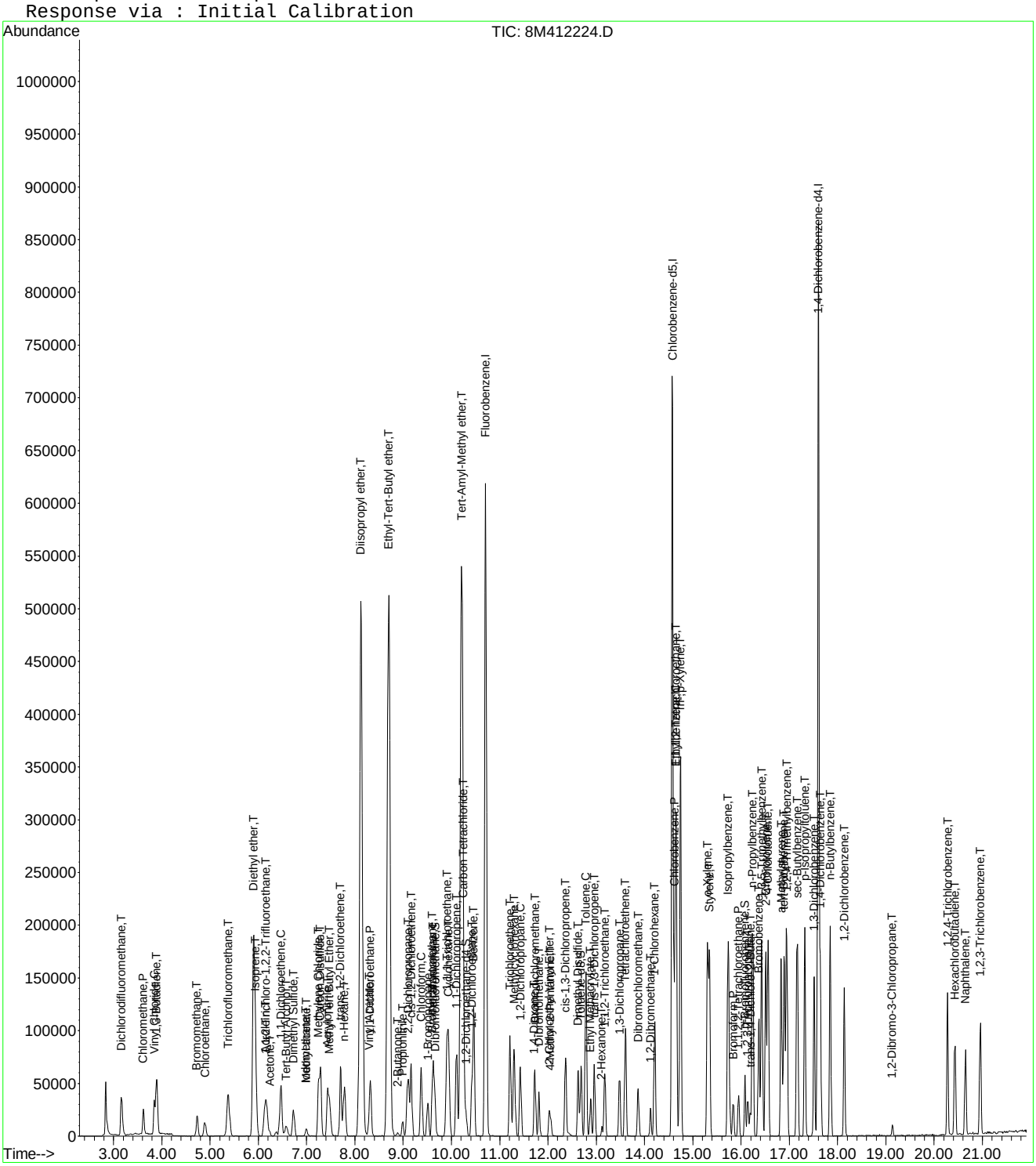

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.3438	13.1	100	0.00
3	P	Chloromethane	5.0000	4.5471	9.1	100	0.00
4	C	Vinyl Chloride	5.0000	4.7641	4.7	100	0.00
5	T	1,3-Butadiene	5.0000	4.2777	14.4	100	0.00
6	T	Bromomethane	5.0000	4.1880	16.2	100	-0.01
7	T	Chloroethane	5.0000	4.4813	10.4	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.6812	6.4	100	0.00
9	T	Diethyl ether	50.0000	47.5652	4.9	100	0.00
10	T	Isoprene	5.0000	4.4611	10.8	100	0.00
11	T	Acrolein	25.0000	21.7328	13.1	100	0.02
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.7244	5.5	100	0.00
13	T	Acetone	5.0000	4.1387	17.2	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.7810	4.4	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	100.4650	-0.5	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.7499	5.0	100	0.00
17	T	Iodomethane	5.0000	3.7634	24.7	100	0.00
18	T	Methyl acetate	5.0000	4.9211	1.6	100	0.00
19	T	Methylene Chloride	5.0000	4.7467	5.1	100	0.00
20	T	Carbon Disulfide	5.0000	4.7328	5.3	100	0.00
21	T	Acrylonitrile	25.0000	22.8698	8.5	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.6750	6.5	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.7415	5.2	100	0.00
24	T	n-Hexane	5.0000	4.8084	3.8	100	0.00
25	T	Diisopropyl ether	50.0000	47.2872	5.4	100	0.00
26	T	Vinyl Acetate	5.0000	4.5766	8.5	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.7058	5.9	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	47.5984	4.8	100	0.00
29	T	2-Butanone	5.0000	4.2191	15.6	100	0.00
30	T	Propionitrile	50.0000	48.4475	3.1	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.8965	2.1	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.6525	7.0	100	0.00
33	C	Chloroform	5.0000	4.6735	6.5	100	0.00
34		1-Bromopropane	5.0000	4.8774	2.5	100	0.00
35	T	Bromochloromethane	5.0000	4.6403	7.2	100	0.00
36	T	Tetrahydrofuran	50.0000	45.5400	8.9	100	-0.01
37	S	Dibromofluoromethane	2.5000	2.3953	4.2	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.7896	4.2	100	0.00
39	T	Cyclohexane	5.0000	4.6730	6.5	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.6741	6.5	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	47.6211	4.8	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.8044	3.9	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.3949	4.2	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	5.0000	4.7996	4.0	100	0.00
46	T	Benzene	5.0000	4.7588	4.8	100	0.00
47	T	Trichloroethene	5.0000	4.5733	8.5	100	0.00
48	T	Methylcyclohexane	5.0000	4.7616	4.8	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.5219	9.6	100	0.00
50	T	Bromodichloromethane	5.0000	4.7878	4.2	100	0.00
51	T	1,4-Dioxane	100.0000	77.0346	23.0	100	0.00
52	T	Dibromomethane	5.0000	4.7390	5.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.2867	14.3	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.1576	16.8	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.8662	2.7	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.1683	16.6	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.3473	6.1	100	0.00
59	C	Toluene	5.0000	4.8533	2.9	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.4883	10.2	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	5.0000	4.4786	10.4	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.5231	9.5	100	0.00
64	T	2-Hexanone	5.0000	4.0898	18.2	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.8109	3.8	100	0.00
66	T	Tetrachloroethene	5.0000	4.6028	7.9	100	0.00
67	T	Dibromochloromethane	5.0000	4.5802	8.4	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.6475	7.1	100	0.00
69	T	1-Chlorohexane	5.0000	4.7331	5.3	100	0.00
70	P	Chlorobenzene	5.0000	4.8107	3.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.3984	12.0	100	0.00
72	C	Ethylbenzene	5.0000	4.6492	7.0	100	0.00
73	T	m-,p-Xylene	10.0000	9.5700	4.3	100	0.00
74	T	o-Xylene	5.0000	4.6773	6.5	100	0.00
75	T	Styrene	5.0000	4.8405	3.2	100	0.00
76	P	Bromoform	5.0000	4.2672	14.7	100	0.00
77	T	Isopropylbenzene	5.0000	4.8951	2.1	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	4.8422	3.2	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.3565	5.7	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.2150	-4.3	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.3781	12.4	100	0.00
83	T	n-Propylbenzene	5.0000	5.1935	-3.9	100	0.00
84	T	Bromobenzene	5.0000	4.8483	3.0	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	4.9964	0.1	100	0.00
86	T	2-Chlorotoluene	5.0000	4.9803	0.4	100	0.00
87	T	4-Chlorotoluene	5.0000	5.0286	-0.6	100	0.00
88	T	a-Methylstyrene	5.0000	4.6629	6.7	100	0.00
89	T	tert-Butylbenzene	5.0000	4.7677	4.6	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.0245	-0.5	100	0.00
91	T	sec-Butylbenzene	5.0000	5.2170	-4.3	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.1150	-2.3	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	4.9511	1.0	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	4.8270	3.5	100	0.00
95	T	n-Butylbenzene	5.0000	5.1595	-3.2	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	4.8122	3.8	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	5.0942	-1.9	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.7808	4.4	100	0.00
99	T	Hexachlorobutadiene	5.0000	4.6555	6.9	100	0.00
100	T	Naphthalene	5.0000	4.7684	4.6	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.6455	7.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412224.D 8260WT.M Sat May 14 18:08:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	770027	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	531490	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	283594	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	86295	10.9569 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 43.84%#		
43) 1,2-Dichloroethane-d4	10.30	65	96239	11.3450 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 45.36%#		
58) Toluene-d8	12.68	98	294491	10.9223 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 43.68%#		
80) p-Bromofluorobenzene	16.08	95	121459	10.5490 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 42.20%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	288235	23.7135 ug/L	99
3) Chloromethane	3.62	50	155712	20.3784 ug/L	98
4) Vinyl Chloride	3.84	62	184250	20.9368 ug/L	95
5) 1,3-Butadiene	3.89	54	149348	22.7750 ug/L	96
6) Bromomethane	4.73	94	100098	25.0143 ug/L	99
7) Chloroethane	4.89	64	100876	20.9404 ug/L	91
8) Trichlorofluoromethane	5.37	101	351299	21.2512 ug/L	98
9) Diethyl ether	5.90	59	324317	80.8265 ug/L	78
10) Isoprene	5.94	67	205842	20.3622 ug/L	77
11) Acrolein	6.14	56	12049	34.8201 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	159996	20.3859 ug/L	97
13) Acetone	6.25	43	18459	25.7405 ug/L	98
14) 1,1-Dichloroethene	6.47	61	256241	20.5065 ug/L	92
15) Tert-Butyl Alcohol	6.57	59	43922	153.5712 ug/L	93
16) Dimethyl Sulfide	6.73	62	89456	20.6087 ug/L	83
17) Iodomethane	6.99	142	40622	61.0474 ug/L	93
18) Methyl acetate	7.00	43	46598	20.2171 ug/L #	85
19) Methylene Chloride	7.25	84	161897	20.1338 ug/L	52
20) Carbon Disulfide	7.30	76	538090	20.0802 ug/L	98
21) Acrylonitrile	7.43	53	46305	46.9889 ug/L	100
22) Methyl Tert Butyl Ether	7.47	73	361116	22.0137 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	234754	20.3175 ug/L	90
24) n-Hexane	7.78	57	172498	21.1165 ug/L	84
25) Diisopropyl ether	8.12	45	1447822	80.3755 ug/L #	91
26) Vinyl Acetate	8.30	43	166501	21.7017 ug/L #	88
27) 1,1-Dichloroethane	8.33	63	300321	21.3849 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	1579265	83.0733 ug/L	89
29) 2-Butanone	8.88	43	25681	23.9099 ug/L	87
30) Propionitrile	8.98	54	30953	89.5673 ug/L	94
31) 2,2-Dichloropropane	9.10	77	309575	20.8527 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	181973	20.4488 ug/L	89
33) Chloroform	9.37	83	348925	20.5535 ug/L	96
34) 1-Bromopropane	9.52	122	26723	22.7206 ug/L	96
35) Bromochloromethane	9.61	130	94952	21.3181 ug/L	65
36) Tetrahydrofuran	9.63	42	63066	70.5772 ug/L #	57
38) 1,1,1-Trichloroethane	9.91	97	335486	21.3640 ug/L	99
39) Cyclohexane	9.94	56	221040	19.9984 ug/L #	64
40) 1,1-Dichloropropene	10.11	75	248373	20.4717 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1418183	81.7883 ug/L	88
42) Carbon Tetrachloride	10.25	117	296471	21.3449 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412225.D 8260WT.M Fri May 13 16:16:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	228665	21.6403	ug/L		85
46)	Benzene	10.46	78	668449	20.3769	ug/L		86
47)	Trichloroethene	11.21	130	174107	20.7980	ug/L		96
48)	Methylcyclohexane	11.29	83	262275	21.4887	ug/L		82
49)	1,2-Dichloropropane	11.43	63	146868	21.1883	ug/L	#	72
50)	Bromodichloromethane	11.73	83	262192	21.9986	ug/L		98
51)	1,4-Dioxane	11.71	88	5351	196.3837	ug/L		76
52)	Dibromomethane	11.81	93	86951	21.0734	ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	63586	22.4600	ug/L		91
54)	4-Methyl-2-Pentanone	12.05	58	25754	25.0531	ug/L	#	73
55)	cis-1,3-Dichloropropene	12.36	75	265439	21.9841	ug/L		99
56)	Dimethyl Disulfide	12.63	79	134192	23.9412	ug/L		100
59)	Toluene	12.78	91	700473	20.1722	ug/L		99
60)	Ethyl Methacrylate	12.88	69	133361	23.2046	ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	238585	23.2548	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	107901	21.0216	ug/L		99
64)	2-Hexanone	13.11	58	22561	25.2093	ug/L	#	85
65)	1,3-Dichloropropane	13.49	76	198804	22.2491	ug/L		74
66)	Tetrachloroethene	13.60	164	141791	20.0055	ug/L		94
67)	Dibromochloromethane	13.87	129	158465	22.0695	ug/L		99
68)	1,2-Dibromoethane	14.13	107	110085	22.3366	ug/L		100
69)	1-Chlorohexane	14.21	91	229753	20.3591	ug/L		83
70)	Chlorobenzene	14.62	112	467492	20.4613	ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.65	131	183079	22.2095	ug/L		96
72)	Ethylbenzene	14.65	106	249016	20.2289	ug/L		90
73)	m-,p-Xylene	14.75	106	606381	41.1308	ug/L		88
74)	o-Xylene	15.30	106	294106	21.2106	ug/L		90
75)	Styrene	15.35	104	492781	21.8207	ug/L		89
76)	Bromoform	15.83	173	95911	23.8070	ug/L		99
77)	Isopropylbenzene	15.73	105	806678	20.7280	ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	123253	22.7779	ug/L		95
81)	1,2,3-Trichloropropane	16.14	110	36712	22.1354	ug/L		94
82)	trans-1,4-Dichloro-2-Buten	16.18	53	33702	27.6513	ug/L	#	56
83)	n-Propylbenzene	16.24	91	962196	20.3511	ug/L		97
84)	Bromobenzene	16.37	156	190566	21.2033	ug/L		94
85)	1,3,5-Trimethylbenzene	16.43	105	692633	20.9615	ug/L		94
86)	2-Chlorotoluene	16.51	91	649077	19.9155	ug/L		96
87)	4-Chlorotoluene	16.56	91	595446	20.3225	ug/L		95
88)	a-Methylstyrene	16.83	118	318960	22.3680	ug/L		92
89)	tert-Butylbenzene	16.90	134	129440	20.4705	ug/L		83
90)	1,2,4-Trimethylbenzene	16.95	105	707749	20.4783	ug/L		94
91)	sec-Butylbenzene	17.17	105	818359	20.1802	ug/L		97
92)	p-Isopropyltoluene	17.32	119	677859	19.7492	ug/L		96
93)	1,3-Dichlorobenzene	17.52	146	364065	20.5126	ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	363066	19.9874	ug/L		92
95)	n-Butylbenzene	17.85	91	681055	20.0187	ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	318612	19.9358	ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	23070	21.6419	ug/L		93
98)	1,2,4-Trichlorobenzene	20.28	180	242455	20.8863	ug/L		98
99)	Hexachlorobutadiene	20.43	225	110384	20.2523	ug/L		96
100)	Naphthalene	20.65	128	369849	21.4526	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	198876	19.8356	ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration

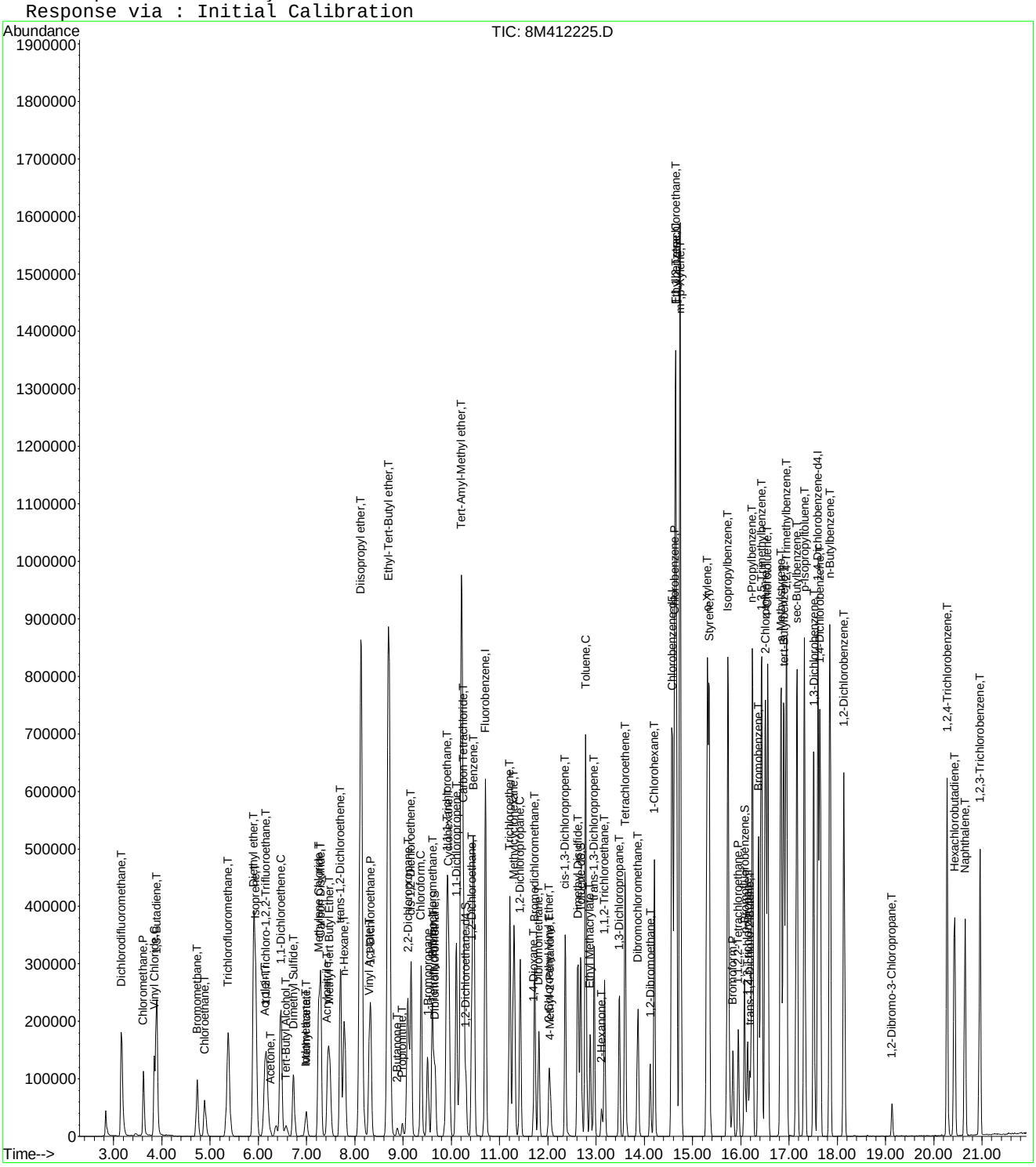

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45:30 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	778260	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	539116	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	288225	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	211053	26.5139 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.04%		
43) 1,2-Dichloroethane-d4	10.31	65	229348	26.7504 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.00%		
58) Toluene-d8	12.68	98	718491	26.2709 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.08%		
80) p-Bromofluorobenzene	16.07	95	292755	25.0180 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.08%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	682745	55.5761 ug/L	100
3) Chloromethane	3.62	50	372858	48.2806 ug/L	98
4) Vinyl Chloride	3.85	62	453905	51.0328 ug/L	96
5) 1,3-Butadiene	3.88	54	390501	58.9199 ug/L	99
6) Bromomethane	4.74	94	260493	64.4080 ug/L	97
7) Chloroethane	4.89	64	244336	50.1840 ug/L	91
8) Trichlorofluoromethane	5.38	101	837676	50.1376 ug/L	99
9) Diethyl ether	5.90	59	389327	96.0019 ug/L	79
10) Isoprene	5.94	67	498060	48.7477 ug/L	76
11) Acrolein	6.13	56	17644	50.4496 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	387643	48.8691 ug/L	97
13) Acetone	6.25	43	45901	63.3305 ug/L	97
14) 1,1-Dichloroethene	6.46	61	619744	49.0724 ug/L	94
15) Tert-Butyl Alcohol	6.58	59	53656	185.6211 ug/L	91
16) Dimethyl Sulfide	6.73	62	221107	50.3993 ug/L	82
17) Iodomethane	6.98	142	157872	234.7428 ug/L	94
18) Methyl acetate	7.00	43	114759	49.2629 ug/L #	81
19) Methylene Chloride	7.25	84	389653	47.9453 ug/L	52
20) Carbon Disulfide	7.29	76	1269941	46.8897 ug/L	99
21) Acrylonitrile	7.43	53	59882	60.1236 ug/L	97
22) Methyl Tert Butyl Ether	7.46	73	901668	54.3843 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	571507	48.9396 ug/L	93
24) n-Hexane	7.79	57	419656	50.8290 ug/L	83
25) Diisopropyl ether	8.13	45	1781012	97.8265 ug/L #	90
26) Vinyl Acetate	8.29	43	428708	55.2866 ug/L #	89
27) 1,1-Dichloroethane	8.32	63	722574	50.9078 ug/L	96
28) Ethyl-Tert-Butyl ether	8.71	59	1955100	101.7552 ug/L	89
29) 2-Butanone	8.88	43	66579	61.3316 ug/L #	82
30) Propionitrile	8.98	54	38235	109.4684 ug/L	95
31) 2,2-Dichloropropane	9.10	77	768496	51.2175 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	439590	48.8754 ug/L	91
33) Chloroform	9.38	83	844564	49.2230 ug/L	97
34) 1-Bromopropane	9.51	122	63442	53.3693 ug/L	99
35) Bromochloromethane	9.60	130	230119	51.1185 ug/L	66
36) Tetrahydrofuran	9.64	42	79437	87.9575 ug/L #	62
38) 1,1,1-Trichloroethane	9.90	97	817606	51.5150 ug/L	99
39) Cyclohexane	9.93	56	535882	47.9707 ug/L #	65
40) 1,1-Dichloropropene	10.10	75	615439	50.1899 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1769381	100.9628 ug/L	88
42) Carbon Tetrachloride	10.24	117	724058	51.5782 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412226.D 8260WT.M Fri May 13 16:45:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45:30 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	561107	52.5401 ug/L		85
46)	Benzene	10.46	78	1607407	48.4816 ug/L		86
47)	Trichloroethene	11.22	130	424998	50.2312 ug/L		96
48)	Methylcyclohexane	11.30	83	635339	51.5040 ug/L		83
49)	1,2-Dichloropropane	11.42	63	351908	50.2320 ug/L	#	71
50)	Bromodichloromethane	11.72	83	654943	54.3701 ug/L		97
51)	1,4-Dioxane	11.71	88	7573	274.9918 ug/L		73
52)	Dibromomethane	11.82	93	209167	50.1574 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	162319	56.7281 ug/L		93
54)	4-Methyl-2-Pentanone	12.05	58	64928	62.4928 ug/L		80
55)	cis-1,3-Dichloropropene	12.36	75	666861	54.6463 ug/L		98
56)	Dimethyl Disulfide	12.62	79	343446	60.6260 ug/L		96
59)	Toluene	12.79	91	1676069	47.5846 ug/L		100
60)	Ethyl Methacrylate	12.88	69	338996	58.1503 ug/L		69
62)	trans-1,3-Dichloropropene	12.96	75	594749	57.1499 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	268432	51.5570 ug/L		98
64)	2-Hexanone	13.12	58	56859	62.6347 ug/L	#	83
65)	1,3-Dichloropropane	13.48	76	489226	53.9770 ug/L		75
66)	Tetrachloroethene	13.60	164	350332	48.7296 ug/L		95
67)	Dibromochloromethane	13.86	129	401149	55.0780 ug/L		100
68)	1,2-Dibromoethane	14.12	107	273580	54.7252 ug/L		99
69)	1-Chlorohexane	14.21	91	560883	48.9984 ug/L		82
70)	Chlorobenzene	14.63	112	1117812	48.2326 ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	446892	53.4462 ug/L		99
72)	Ethylbenzene	14.66	106	603074	48.2980 ug/L		91
73)	m-,p-Xylene	14.74	106	1443780	96.5463 ug/L		90
74)	o-Xylene	15.31	106	709244	50.4265 ug/L		90
75)	Styrene	15.34	104	1212099	52.9133 ug/L		91
76)	Bromoform	15.84	173	238354	58.3272 ug/L		100
77)	Isopropylbenzene	15.73	105	1919993	48.6372 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	294266	53.5083 ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	89279	52.9656 ug/L		93
82)	trans-1,4-Dichloro-2-Buten	16.19	53	86829	70.0956 ug/L	#	53
83)	n-Propylbenzene	16.24	91	2278994	47.4277 ug/L		98
84)	Bromobenzene	16.37	156	459959	50.3549 ug/L		93
85)	1,3,5-Trimethylbenzene	16.43	105	1661486	49.4745 ug/L		95
86)	2-Chlorotoluene	16.51	91	1611031	48.6367 ug/L		97
87)	4-Chlorotoluene	16.56	91	1341051	45.0344 ug/L		95
88)	a-Methylstyrene	16.83	118	772611	53.3111 ug/L		90
89)	tert-Butylbenzene	16.89	134	307503	47.8493 ug/L		81
90)	1,2,4-Trimethylbenzene	16.94	105	1679809	47.8234 ug/L		95
91)	sec-Butylbenzene	17.16	105	1925411	46.7166 ug/L		97
92)	p-Isopropyltoluene	17.32	119	1621383	46.4795 ug/L		95
93)	1,3-Dichlorobenzene	17.51	146	882656	48.9327 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	871210	47.1909 ug/L		92
95)	n-Butylbenzene	17.85	91	1608832	46.5296 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	768548	47.3159 ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	59586	54.9992 ug/L		86
98)	1,2,4-Trichlorobenzene	20.28	180	583880	49.4902 ug/L		100
99)	Hexachlorobutadiene	20.44	225	264699	47.7844 ug/L		98
100)	Naphthalene	20.65	128	894629	51.0579 ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	475246	46.6387 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412226.D 8260WT.M Fri May 13 16:45:33 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration

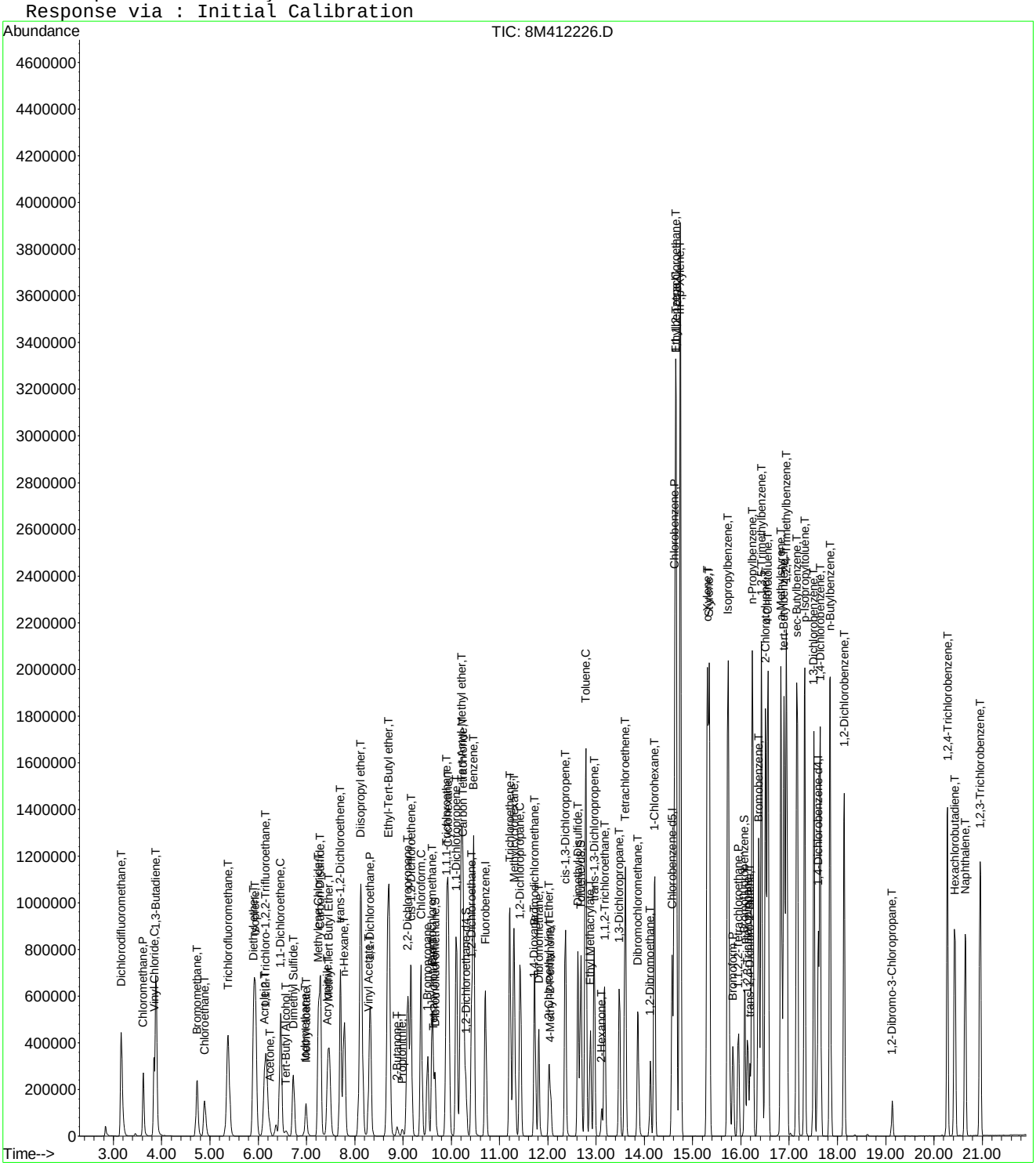

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	809533	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	559075	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	296193	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	460283	53.9056 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 215.64%#		
43) 1,2-Dichloroethane-d4	10.30	65	488116	52.5821 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 210.32%#		
58) Toluene-d8	12.68	98	1540572	52.8075 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 211.24%#		
80) p-Bromofluorobenzene	16.08	95	623735	51.1573 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 204.64%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	1463283	109.1068 ug/L	100
3) Chloromethane	3.62	50	778702	97.2380 ug/L	98
4) Vinyl Chloride	3.84	62	968312	103.4979 ug/L	95
5) 1,3-Butadiene	3.88	54	896569	120.4972 ug/L	95
6) Bromomethane	4.73	94	605228	129.8677 ug/L	99
7) Chloroethane	4.89	64	528153	103.4126 ug/L	90
8) Trichlorofluoromethane	5.37	101	1782726	101.4754 ug/L	99
9) Diethyl ether	5.90	59	828091	197.4770 ug/L	79
10) Isoprene	5.94	67	1080684	101.8037 ug/L	78
11) Acrolein	6.14	56	38655	109.5572 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	833546	101.0906 ug/L	97
13) Acetone	6.24	43	97515	109.1944 ug/L	100
14) 1,1-Dichloroethene	6.46	61	1323999	100.6729 ug/L	93
15) Tert-Butyl Alcohol	6.57	59	114220	387.5328 ug/L	91
16) Dimethyl Sulfide	6.73	62	489571	106.5996 ug/L	82
17) Iodomethane	6.99	142	416890	244.5557 ug/L	97
18) Methyl acetate	7.00	43	252444	104.3161 ug/L #	81
19) Methylene Chloride	7.24	84	827241	98.5346 ug/L	53
20) Carbon Disulfide	7.29	76	2766110	99.3432 ug/L	100
21) Acrylonitrile	7.43	53	126153	113.2272 ug/L	98
22) Methyl Tert Butyl Ether	7.46	73	1894494	105.8643 ug/L	87
23) trans-1,2-Dichloroethene	7.70	61	1203701	99.1822 ug/L	93
24) n-Hexane	7.78	57	926226	105.3097 ug/L	84
25) Diisopropyl ether	8.12	45	3699807	196.0386 ug/L #	90
26) Vinyl Acetate	8.29	43	860820	101.8643 ug/L #	88
27) 1,1-Dichloroethane	8.32	63	1521237	101.5567 ug/L	96
28) Ethyl-Tert-Butyl ether	8.70	59	4005676	198.2271 ug/L	89
29) 2-Butanone	8.88	43	145126	112.6698 ug/L #	81
30) Propionitrile	8.98	54	83038	219.1648 ug/L	97
31) 2,2-Dichloropropane	9.11	77	1610615	102.0557 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	935490	99.9944 ug/L	89
33) Chloroform	9.37	83	1766988	98.8341 ug/L	98
34) 1-Bromopropane	9.51	122	139657	108.5299 ug/L	100
35) Bromochloromethane	9.61	130	488678	102.8480 ug/L	66
36) Tetrahydrofuran	9.63	42	167812	187.5699 ug/L #	61
38) 1,1,1-Trichloroethane	9.91	97	1724504	102.7713 ug/L	100
39) Cyclohexane	9.94	56	1185537	102.8628 ug/L #	66
40) 1,1-Dichloropropene	10.11	75	1293224	100.8377 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	3634806	198.1264 ug/L	88
42) Carbon Tetrachloride	10.25	117	1534696	103.3979 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412227.D 8260WT.M Fri May 13 17:14:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	1177876	103.7352	ug/L		85
46)	Benzene	10.46	78	3298928	95.8405	ug/L		87
47)	Trichloroethene	11.21	130	903490	101.9036	ug/L		97
48)	Methylcyclohexane	11.30	83	1389528	104.6454	ug/L		83
49)	1,2-Dichloropropane	11.43	63	755128	102.5297	ug/L		73
50)	Bromodichloromethane	11.73	83	1351612	104.6036	ug/L		99
51)	1,4-Dioxane	11.72	88	16303	473.9624	ug/L		68
52)	Dibromomethane	11.81	93	445130	101.6543	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.02	63	333977	105.4228	ug/L		92
54)	4-Methyl-2-Pentanone	12.05	58	138980	110.1494	ug/L	#	77
55)	cis-1,3-Dichloropropene	12.36	75	1387475	105.9136	ug/L		100
56)	Dimethyl Disulfide	12.62	79	745504	111.3169	ug/L		97
59)	Toluene	12.78	91	3455614	95.2346	ug/L		99
60)	Ethyl Methacrylate	12.88	69	731009	113.5760	ug/L		70
62)	trans-1,3-Dichloropropene	12.96	75	1236182	107.9445	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	564076	103.0604	ug/L		99
64)	2-Hexanone	13.12	58	126268	114.5366	ug/L	#	79
65)	1,3-Dichloropropane	13.48	76	1021082	105.2672	ug/L		74
66)	Tetrachloroethene	13.60	164	752835	101.4023	ug/L		95
67)	Dibromochloromethane	13.87	129	856499	109.6525	ug/L		100
68)	1,2-Dibromoethane	14.12	107	577701	107.6426	ug/L		98
69)	1-Chlorohexane	14.21	91	1222720	103.0385	ug/L		82
70)	Chlorobenzene	14.62	112	2332247	97.2408	ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	947925	106.1463	ug/L		99
72)	Ethylbenzene	14.66	106	1275519	98.8771	ug/L		97
73)	m-,p-Xylene	14.75	106	3009424	194.2602	ug/L		98
74)	o-Xylene	15.31	106	1490638	100.8068	ug/L		93
75)	Styrene	15.35	104	2503721	102.8373	ug/L		88
76)	Bromoform	15.83	173	517827	114.0520	ug/L		100
77)	Isopropylbenzene	15.73	105	3913141	95.4433	ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	624965	106.8610	ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	192087	107.3268	ug/L		97
82)	trans-1,4-Dichloro-2-Buten	16.18	53	189214	128.4818	ug/L	#	59
83)	n-Propylbenzene	16.24	91	4599057	93.6644	ug/L		100
84)	Bromobenzene	16.37	156	968011	102.1426	ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	3401719	97.9556	ug/L		97
86)	2-Chlorotoluene	16.52	91	3177047	93.8267	ug/L		98
87)	4-Chlorotoluene	16.56	91	2899171	96.0712	ug/L		96
88)	a-Methylstyrene	16.84	118	1639166	103.6811	ug/L		90
89)	tert-Butylbenzene	16.90	134	654025	99.4199	ug/L		85
90)	1,2,4-Trimethylbenzene	16.95	105	3479295	96.7054	ug/L		97
91)	sec-Butylbenzene	17.17	105	3947832	94.2785	ug/L		98
92)	p-Isopropyltoluene	17.32	119	3328450	94.4148	ug/L		97
93)	1,3-Dichlorobenzene	17.52	146	1834740	98.9074	ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	1818309	96.6271	ug/L		92
95)	n-Butylbenzene	17.85	91	3308330	94.4002	ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	1606254	97.0179	ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	125368	107.7020	ug/L		87
98)	1,2,4-Trichlorobenzene	20.28	180	1227926	100.7076	ug/L		99
99)	Hexachlorobutadiene	20.43	225	569213	100.5231	ug/L		97
100)	Naphthalene	20.65	128	1852486	101.2968	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	1021163	98.5794	ug/L		100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration

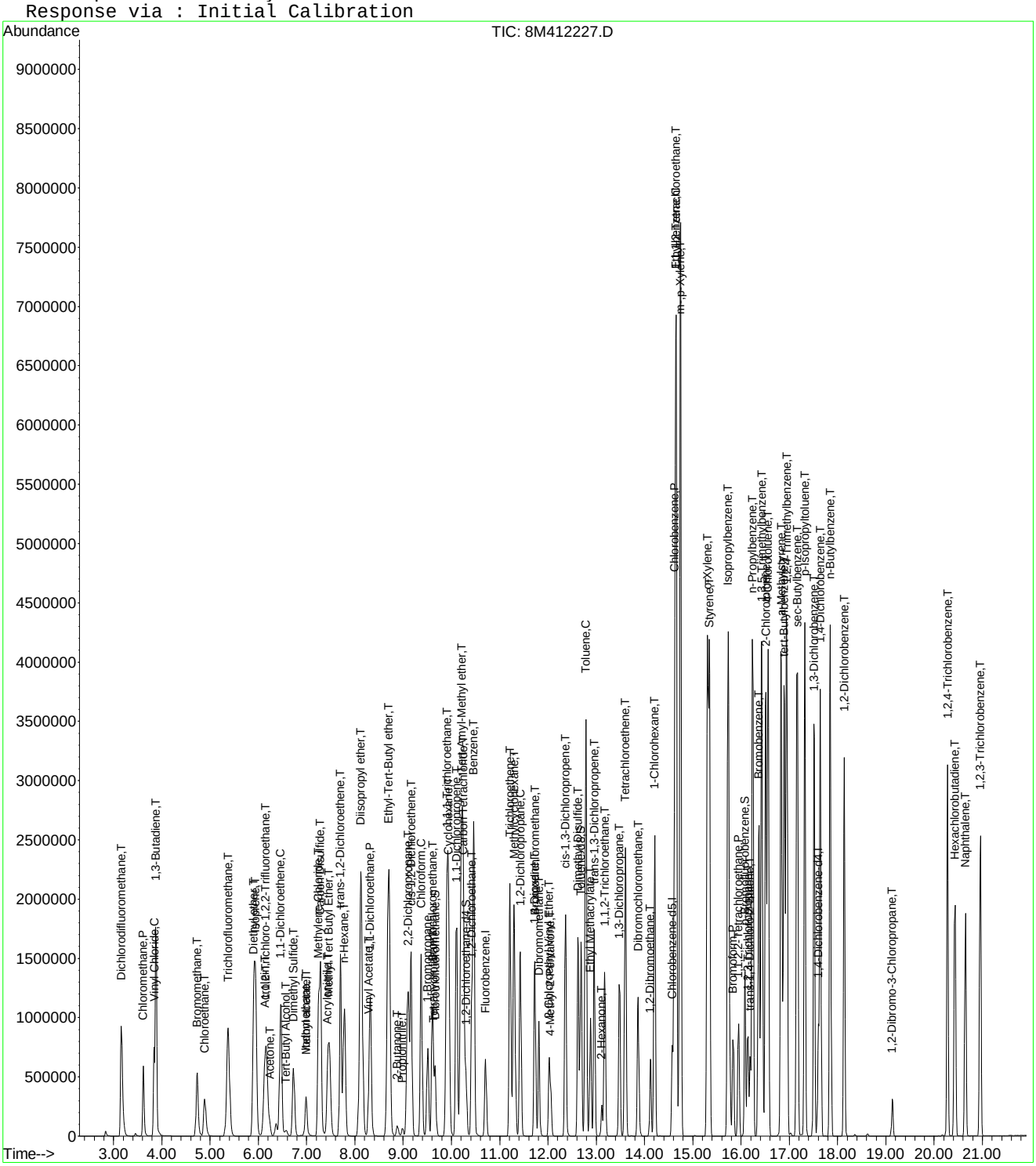

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	828540	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	578848	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	301401	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	898145	101.4517 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 405.80%#		
43) 1,2-Dichloroethane-d4	10.30	65	939848	98.0779 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 392.32%#		
58) Toluene-d8	12.68	98	2984162	97.8805 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 391.52%#		
80) p-Bromofluorobenzene	16.08	95	1242720	99.7023 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 398.80%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	2830517	203.5621 ug/L	98
3) Chloromethane	3.62	50	1586058	194.4056 ug/L	97
4) Vinyl Chloride	3.83	62	1935009	201.0738 ug/L	94
5) 1,3-Butadiene	3.88	54	1684964	212.5477 ug/L	94
6) Bromomethane	4.72	94	1358068	271.2231 ug/L	99
7) Chloroethane	4.89	64	1084803	206.5255 ug/L	90
8) Trichlorofluoromethane	5.37	101	3516760	195.1756 ug/L	99
10) Isoprene	5.94	67	2136665	196.1573 ug/L	78
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1662142	196.5993 ug/L	95
13) Acetone	6.24	43	187748	200.7963 ug/L	97
14) 1,1-Dichloroethene	6.46	61	2649821	196.6732 ug/L	92
15) Tert-Butyl Alcohol	6.58	59	6024	20.0950 ug/L #	87
16) Dimethyl Sulfide	6.73	62	976862	205.8822 ug/L	82
17) Iodomethane	6.99	142	896947	398.7987 ug/L	100
18) Methyl acetate	7.00	43	504293	201.4324 ug/L #	81
19) Methylene Chloride	7.25	84	1684780	196.5546 ug/L	52
20) Carbon Disulfide	7.29	76	5386210	189.2120 ug/L	99
21) Acrylonitrile	7.45	53	30354	26.0447 ug/L #	32
22) Methyl Tert Butyl Ether	7.46	73	3711011	200.6529 ug/L	87
23) trans-1,2-Dichloroethene	7.70	61	2410498	194.2902 ug/L	92
24) n-Hexane	7.78	57	1821777	199.7288 ug/L	84
26) Vinyl Acetate	8.29	43	1796217	206.9060 ug/L #	88
27) 1,1-Dichloroethane	8.32	63	3042055	197.9863 ug/L	95
29) 2-Butanone	8.88	43	271767	199.8193 ug/L #	77
30) Propionitrile	8.90	54	208	0.5280 ug/L #	1
31) 2,2-Dichloropropane	9.11	77	3202633	197.6970 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	1875631	195.8883 ug/L	89
33) Chloroform	9.37	83	3506648	191.9199 ug/L	99
34) 1-Bromopropane	9.51	122	286158	214.2313 ug/L	99
35) Bromochloromethane	9.60	130	980373	200.7807 ug/L	66
36) Tetrahydrofuran	9.62	42	2381	2.6275 ug/L	87
38) 1,1,1-Trichloroethane	9.91	97	3410306	197.7909 ug/L	99
39) Cyclohexane	9.94	56	2357393	198.8974 ug/L #	66
40) 1,1-Dichloropropene	10.10	75	2601175	197.8946 ug/L	96
42) Carbon Tetrachloride	10.25	117	3062767	200.6417 ug/L	99
45) 1,2-Dichloroethane	10.42	62	2313662	198.0324 ug/L	85
46) Benzene	10.46	78	6379817	182.1771 ug/L	89
47) Trichloroethene	11.21	130	1810459	198.9741 ug/L	97
48) Methylcyclohexane	11.30	83	2755373	200.4193 ug/L	83
49) 1,2-Dichloropropane	11.43	63	1528407	202.0331 ug/L	74

(#) = qualifier out of range (m) = manual integration
8M412228.D 8260WT.M Fri May 13 17:43:34 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
50)	Bromodichloromethane	11.73	83	2716764	204.0895 ug/L		99
51)	1,4-Dioxane	11.73	88	3865	104.9352 ug/L	#	18
52)	Dibromomethane	11.81	93	898971	200.1154 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.02	63	631656	192.7236 ug/L		90
54)	4-Methyl-2-Pentanone	12.05	58	262702	198.3957 ug/L	#	75
55)	cis-1,3-Dichloropropene	12.36	75	2784162	205.9153 ug/L		99
56)	Dimethyl Disulfide	12.62	79	1518705	215.4711 ug/L		95
59)	Toluene	12.78	91	6564353	175.9274 ug/L		96
60)	Ethyl Methacrylate	12.88	69	1429837	209.8161 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	2468609	205.4771 ug/L		98
63)	1,1,2-Trichloroethane	13.18	97	1124672	197.6019 ug/L		100
64)	2-Hexanone	13.12	58	237678	200.9290 ug/L	#	81
65)	1,3-Dichloropropane	13.48	76	2023247	199.9545 ug/L		76
66)	Tetrachloroethene	13.60	164	1546618	200.8018 ug/L		97
67)	Dibromochloromethane	13.87	129	1726523	210.5823 ug/L		100
68)	1,2-Dibromoethane	14.12	107	1163160	207.0667 ug/L		99
69)	1-Chlorohexane	14.21	91	2414147	195.6413 ug/L		83
70)	Chlorobenzene	14.62	112	4641169	187.6386 ug/L		94
71)	1,1,1,2-Tetrachloroethane	14.66	131	1929251	206.8372 ug/L		99
72)	Ethylbenzene	14.66	106	2611321	195.8267 ug/L		88
73)	m-,p-Xylene	14.75	106	5876234	367.8657 ug/L		83
74)	o-Xylene	15.31	106	3012318	196.4899 ug/L		98
75)	Styrene	15.35	104	4913204	194.1235 ug/L		86
76)	Bromoform	15.83	173	1052629	218.7989 ug/L		100
77)	Isopropylbenzene	15.73	105	7284624	172.7305 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	1237171	205.8673 ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	386738	209.7906 ug/L	#	54
82)	trans-1,4-Dichloro-2-Buten	16.19	53	382467	243.6526 ug/L		76
83)	n-Propylbenzene	16.24	91	8244387	166.5110 ug/L		93
84)	Bromobenzene	16.37	156	1935166	200.1305 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	6482975	183.9948 ug/L		98
86)	2-Chlorotoluene	16.52	91	6108308	178.8549 ug/L		99
87)	4-Chlorotoluene	16.56	91	5513221	180.5508 ug/L		99
88)	a-Methylstyrene	16.84	118	3255254	200.4995 ug/L		89
89)	tert-Butylbenzene	16.90	134	1351569	202.1005 ug/L		92
90)	1,2,4-Trimethylbenzene	16.95	105	6531416	179.2445 ug/L		97
91)	sec-Butylbenzene	17.17	105	7342730	173.9814 ug/L		97
92)	p-Isopropyltoluene	17.32	119	6352010	178.7315 ug/L		99
93)	1,3-Dichlorobenzene	17.52	146	3640547	193.1654 ug/L		90
94)	1,4-Dichlorobenzene	17.64	146	3593548	188.4603 ug/L		91
95)	n-Butylbenzene	17.85	91	6198060	175.4375 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	3171699	188.9651 ug/L		89
97)	1,2-Dibromo-3-Chloropropan	19.13	75	249646	207.5645 ug/L		88
98)	1,2,4-Trichlorobenzene	20.28	180	2480626	199.7296 ug/L		99
99)	Hexachlorobutadiene	20.43	225	1169411	202.7981 ug/L		98
100)	Naphthalene	20.65	128	3580198	192.0323 ug/L		97
101)	1,2,3-Trichlorobenzene	20.96	180	2040570	193.9298 ug/L		100

(#) = qualifier out of range (m) = manual integration
8M412228.D 8260WT.M Fri May 13 17:43:35 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration

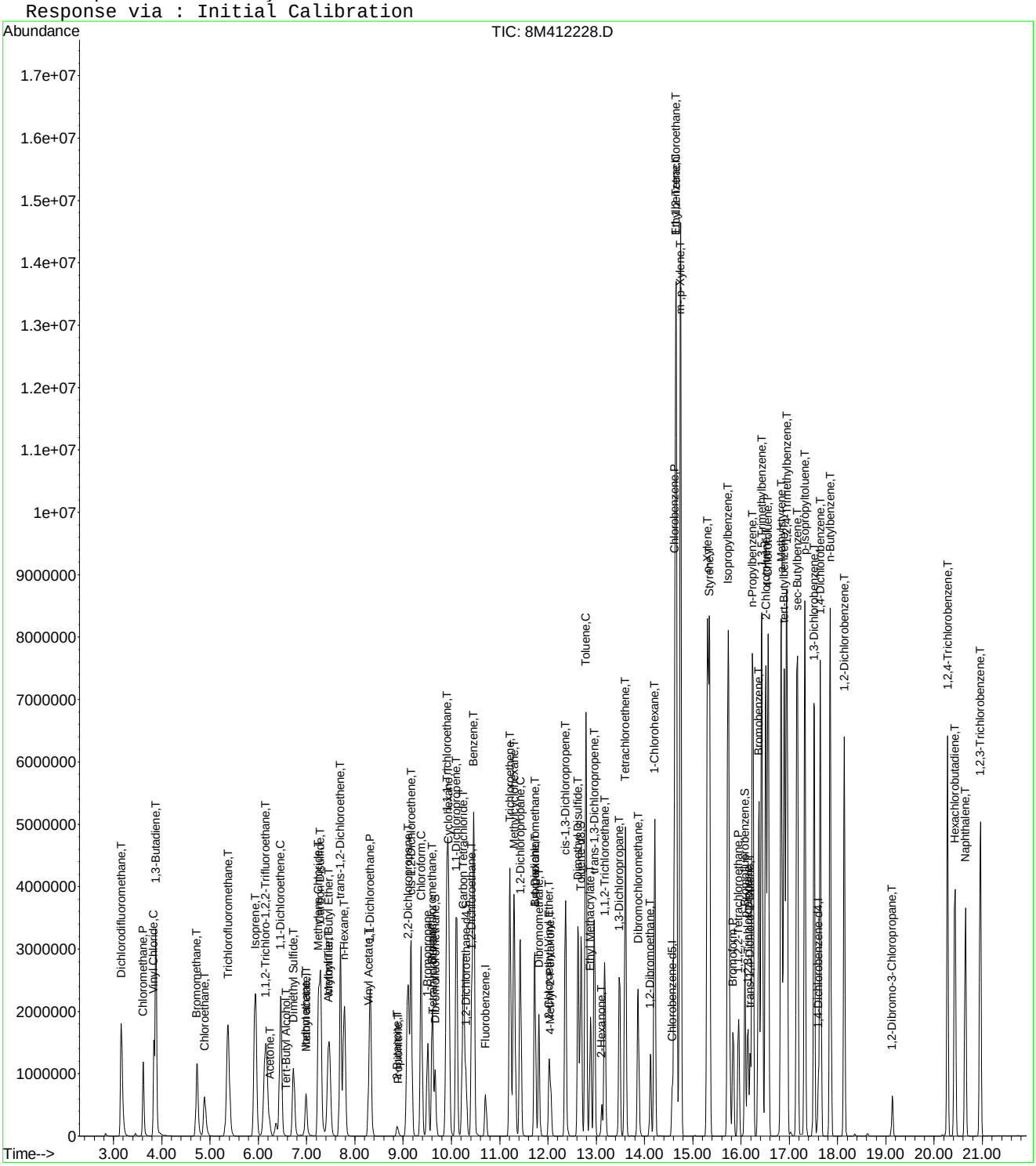

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	855409	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	599314	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	305726	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	1411837	154.4674 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 617.88%#		
43) 1,2-Dichloroethane-d4	10.30	65	1466019	148.1811 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 592.72%#		
58) Toluene-d8	12.69	98	4594713	145.5601 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 582.24%#		
80) p-Bromofluorobenzene	16.08	95	1918996	151.7813 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 607.12%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	4191932	292.0014 ug/L	97
3) Chloromethane	3.62	50	2474035	293.7212 ug/L	97
4) Vinyl Chloride	3.83	62	2956347	297.5552 ug/L	94
5) 1,3-Butadiene	3.87	54	2605506	318.3447 ug/L	94
6) Bromomethane	4.72	94	2177550	421.2239 ug/L	98
7) Chloroethane	4.89	64	1688005	311.2693 ug/L	90
8) Trichlorofluoromethane	5.37	101	5387662	289.6161 ug/L	99
9) Diethyl ether	5.90	59	1306432	295.4610 ug/L	80
10) Isoprene	5.93	67	3377164	300.3032 ug/L	78
11) Acrolein	6.14	56	70572	185.7401 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	2563878	293.7317 ug/L	94
13) Acetone	6.24	43	283185	293.3529 ug/L	90
14) 1,1-Dichloroethene	6.46	61	4031745	289.8421 ug/L	91
15) Tert-Butyl Alcohol	6.58	59	181796	587.3907 ug/L	90
16) Dimethyl Sulfide	6.73	62	1553493	317.1280 ug/L	81
17) Iodomethane	6.99	142	1347307	580.2206 ug/L	98
18) Methyl acetate	7.00	43	800046	309.5287 ug/L #	80
19) Methylene Chloride	7.24	84	2587731	292.4144 ug/L	52
20) Carbon Disulfide	7.29	76	8228181	279.9683 ug/L	98
21) Acrylonitrile	7.43	53	228227	189.6753 ug/L	94
22) Methyl Tert Butyl Ether	7.46	73	5605924	293.5892 ug/L	88
23) trans-1,2-Dichloroethene	7.70	61	3678699	287.1957 ug/L	92
24) n-Hexane	7.78	57	2863434	304.0691 ug/L	86
25) Diisopropyl ether	8.12	45	5819647	292.7898 ug/L #	89
26) Vinyl Acetate	8.30	43	2819503	314.5767 ug/L #	87
27) 1,1-Dichloroethane	8.32	63	4586531	289.1293 ug/L	94
28) Ethyl-Tert-Butyl ether	8.70	59	6190206	290.3321 ug/L	89
29) 2-Butanone	8.88	43	439359	312.8959 ug/L #	76
30) Propionitrile	8.99	54	133197	327.4673 ug/L	95
31) 2,2-Dichloropropane	9.10	77	4821388	288.2735 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	2847005	287.9976 ug/L	89
33) Chloroform	9.37	83	5197860	275.5447 ug/L	100
34) 1-Bromopropane	9.51	122	450012	326.3179 ug/L	100
35) Bromochloromethane	9.61	130	1490221	295.6112 ug/L	66
36) Tetrahydrofuran	9.63	42	271736	290.4491 ug/L #	62
38) 1,1,1-Trichloroethane	9.91	97	5126354	287.9792 ug/L	98
39) Cyclohexane	9.94	56	3733392	305.0987 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	3923871	289.1471 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	5639573	291.3713 ug/L	88
42) Carbon Tetrachloride	10.25	117	4598150	291.7629 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412229.D 8260WT.M Fri May 13 18:12:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.43	62	3468738	287.5726 ug/L	86
46)	Benzene	10.46	78	9065861	250.7462 ug/L	93
47)	Trichloroethene	11.21	130	2772282	295.1106 ug/L	97
48)	Methylcyclohexane	11.30	83	4327357	304.8748 ug/L	84
49)	1,2-Dichloropropane	11.43	63	2350729	300.9718 ug/L	74
50)	Bromodichloromethane	11.73	83	4051493	294.7973 ug/L	99
51)	1,4-Dioxane	11.72	88	26614	699.8767 ug/L	67
52)	Dibromomethane	11.81	93	1369945	295.3776 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.03	63	1006317	297.3917 ug/L	90
54)	4-Methyl-2-Pentanone	12.06	58	424684	310.6522 ug/L #	76
55)	cis-1,3-Dichloropropene	12.36	75	4156310	297.7431 ug/L	97
56)	Dimethyl Disulfide	12.63	79	2359825	324.2911 ug/L	94
59)	Toluene	12.78	91	9135213	236.4669 ug/L	90
60)	Ethyl Methacrylate	12.88	69	2228037	315.7801 ug/L	71
62)	trans-1,3-Dichloropropene	12.96	75	3700845	297.5240 ug/L	96
63)	1,1,2-Trichloroethane	13.18	97	1730199	293.6104 ug/L	100
64)	2-Hexanone	13.11	58	381967	311.8816 ug/L #	78
65)	1,3-Dichloropropane	13.49	76	3080177	294.0141 ug/L	76
66)	Tetrachloroethene	13.60	164	2374435	297.7522 ug/L	96
67)	Dibromochloromethane	13.87	129	2638145	310.7838 ug/L	100
68)	1,2-Dibromoethane	14.13	107	1778561	305.8085 ug/L	99
69)	1-Chlorohexane	14.21	91	3712592	290.5924 ug/L	84
70)	Chlorobenzene	14.63	112	6754240	263.7433 ug/L	90
71)	1,1,1,2-Tetrachloroethane	14.65	131	2967650	307.3001 ug/L	100
72)	Ethylbenzene	14.65	106	4014412	290.7661 ug/L	70
73)	m-,p-Xylene	14.75	106	8357822	505.3514 ug/L	70
74)	o-Xylene	15.31	106	4530840	285.4488 ug/L	88
75)	Styrene	15.35	104	7050702	269.0641 ug/L	82
76)	Bromoform	15.84	173	1602587	321.7373 ug/L	99
77)	Isopropylbenzene	15.73	105	9900817	226.7477 ug/L	90
79)	1,1,2,2-Tetrachloroethane	15.95	83	1885953	309.3861 ug/L	98
81)	1,2,3-Trichloropropane	16.14	110	581198	310.8176 ug/L	61
82)	trans-1,4-Dichloro-2-Buten	16.18	53	589705	370.3601 ug/L	82
83)	n-Propylbenzene	16.25	91	10768378	214.4110 ug/L	86
84)	Bromobenzene	16.37	156	2947671	300.5290 ug/L	99
85)	1,3,5-Trimethylbenzene	16.43	105	8890651	248.7580 ug/L	92
86)	2-Chlorotoluene	16.51	91	7868844	227.1449 ug/L	92
87)	4-Chlorotoluene	16.57	91	7782731	251.2687 ug/L	93
88)	a-Methylstyrene	16.84	118	4955768	300.9205 ug/L	86
89)	tert-Butylbenzene	16.90	134	2046401	301.6701 ug/L	95
90)	1,2,4-Trimethylbenzene	16.95	105	8903769	240.8932 ug/L	89
91)	sec-Butylbenzene	17.17	105	9867862	230.5051 ug/L	91
92)	p-Isopropyltoluene	17.32	119	8738927	242.4155 ug/L	94
93)	1,3-Dichlorobenzene	17.52	146	5319954	278.2806 ug/L	87
94)	1,4-Dichlorobenzene	17.64	146	5248511	271.3593 ug/L	88
95)	n-Butylbenzene	17.85	91	8408157	234.6279 ug/L	92
96)	1,2-Dichlorobenzene	18.14	146	4717385	277.0787 ug/L	87
97)	1,2-Dibromo-3-Chloropropan	19.13	75	377070	309.0741 ug/L	91
98)	1,2,4-Trichlorobenzene	20.28	180	3677657	291.9206 ug/L	98
99)	Hexachlorobutadiene	20.43	225	1780695	304.4378 ug/L	96
100)	Naphthalene	20.65	128	5216751	275.8542 ug/L	95
101)	1,2,3-Trichlorobenzene	20.96	180	3064908	287.1593 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412229.D 8260WT.M Fri May 13 18:12:36 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration

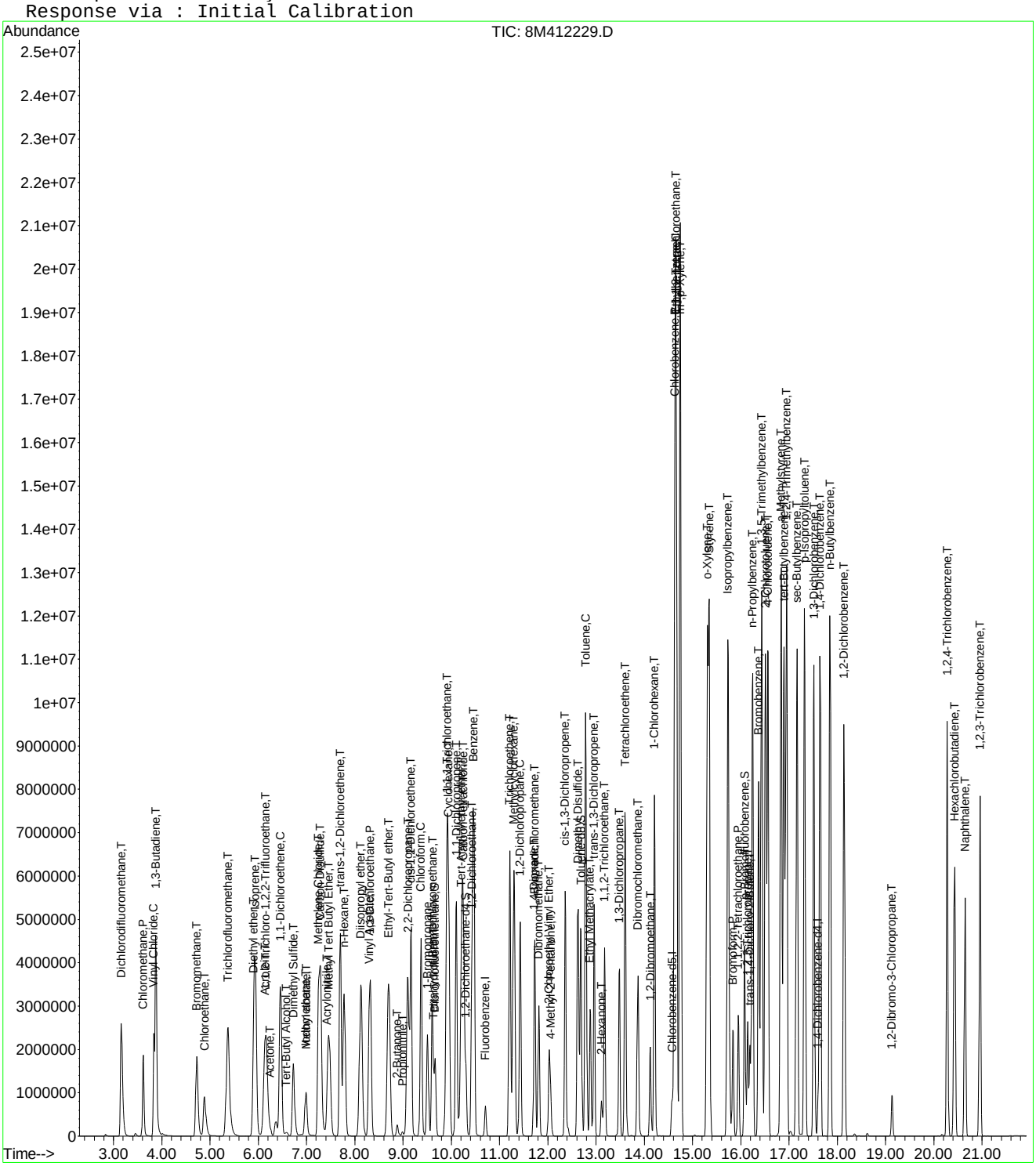

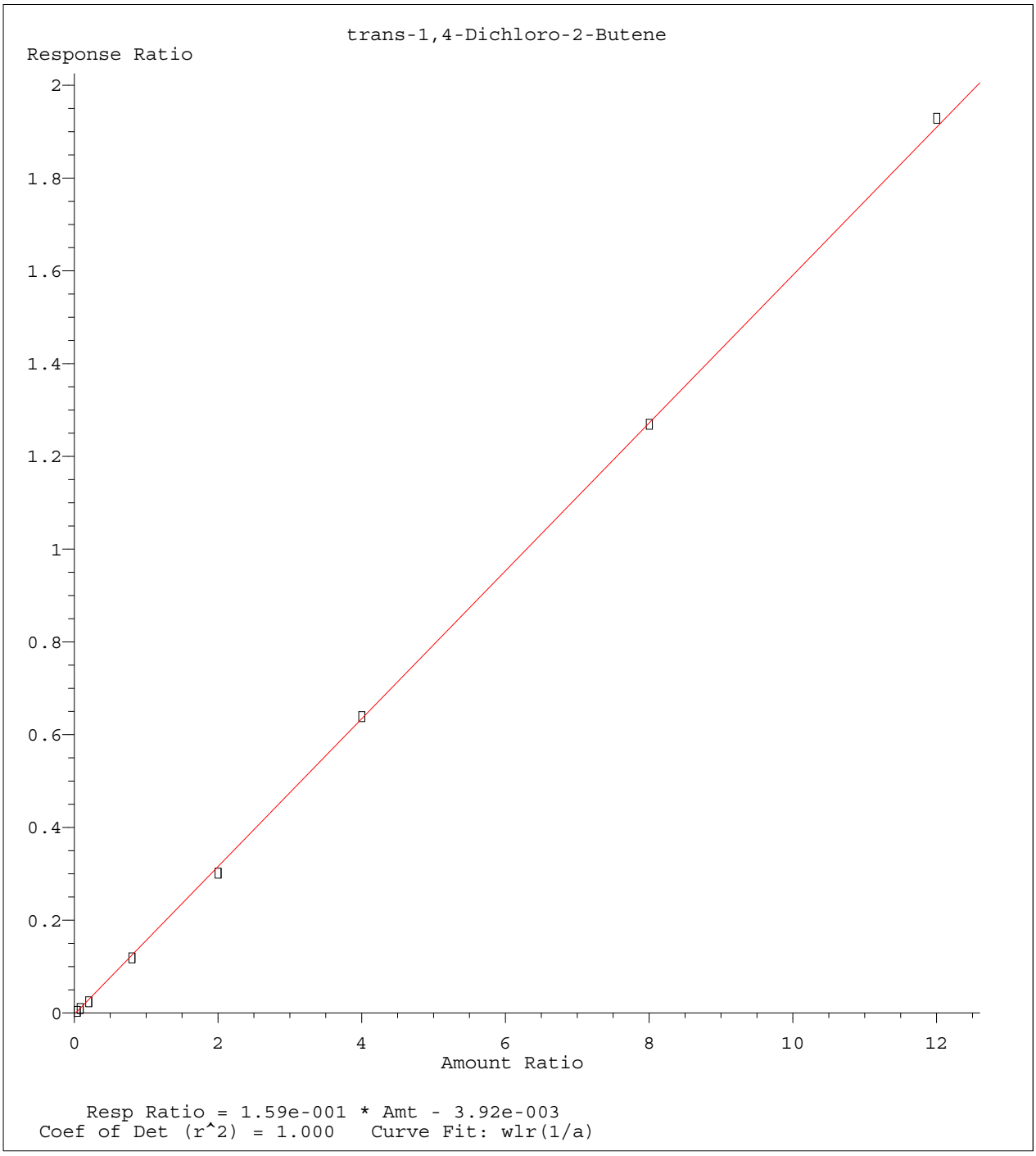

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

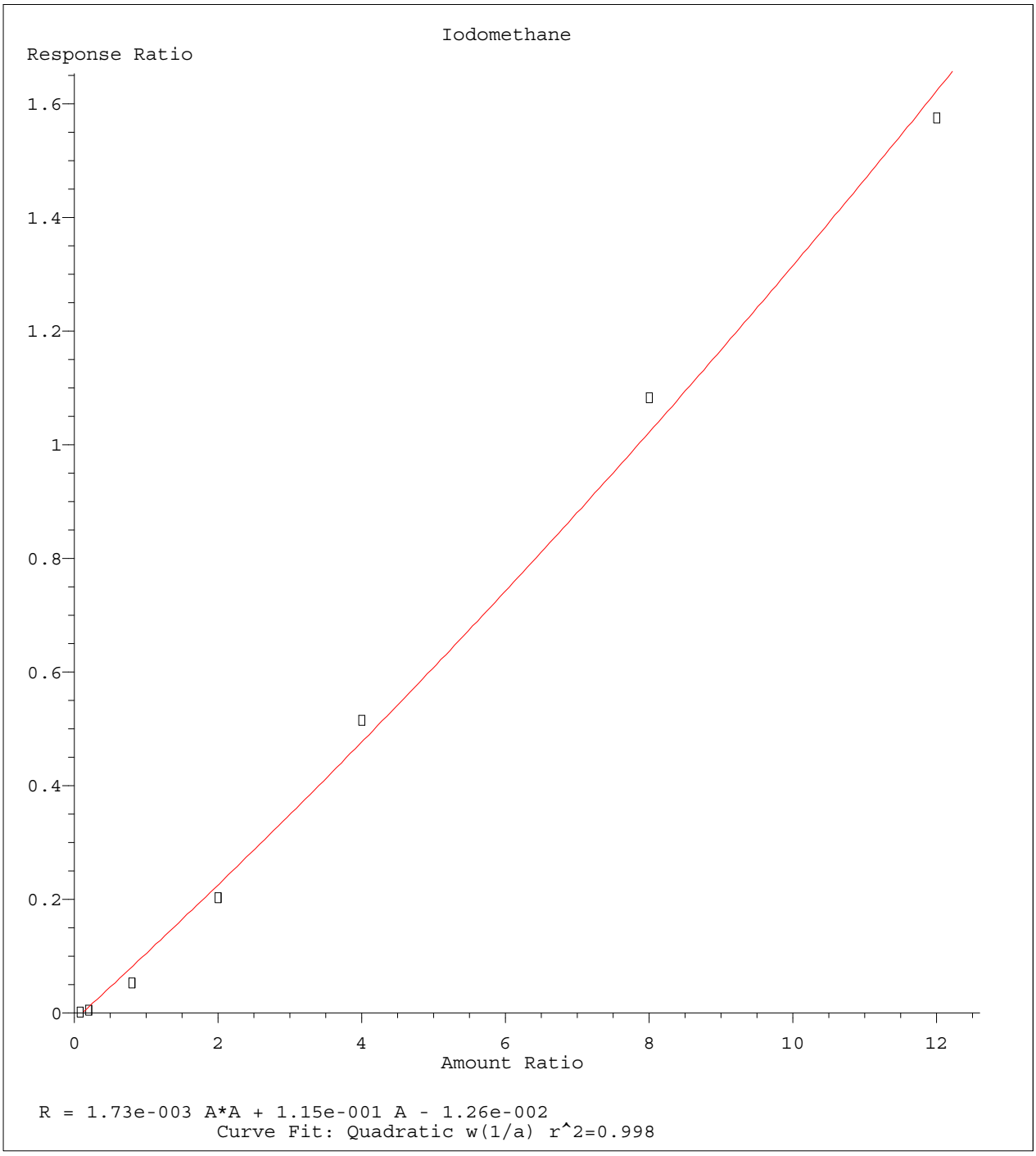

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

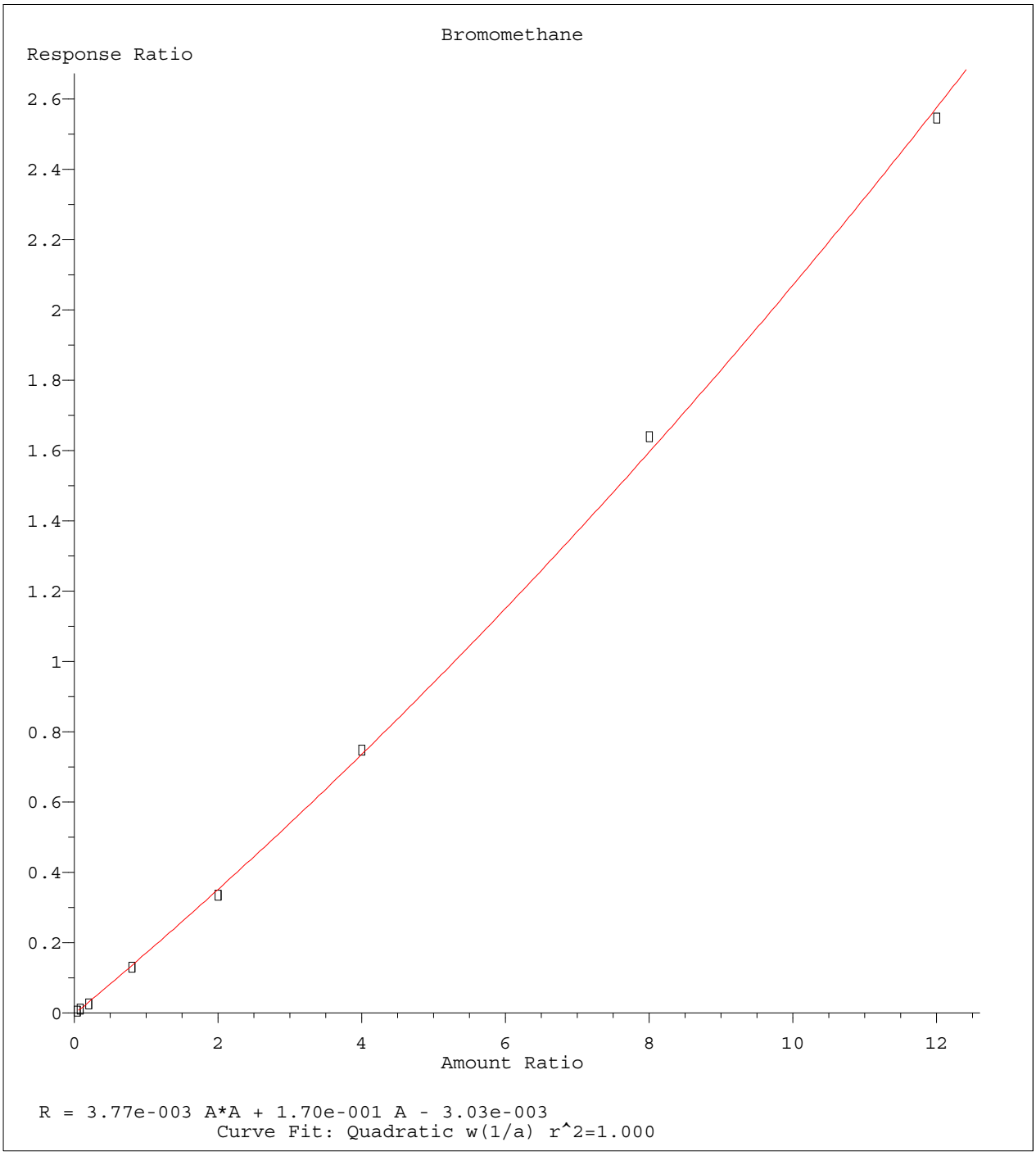

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:44:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Tue May 17 11:43:20 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	837879	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	574720	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	304324	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	229742	25.5204 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.08%		
43) 1,2-Dichloroethane-d4	10.31	65	238672	24.7259 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.92%		
58) Toluene-d8	12.68	98	776362	25.8115 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.24%		
80) p-Bromofluorobenzene	16.07	95	315683	25.0519 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.20%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	761591	54.2141 ug/L	99
3) Chloromethane	3.62	50	415589	50.6814 ug/L	100
4) Vinyl Chloride	3.84	62	509607	52.3810 ug/L	100
5) 1,3-Butadiene	3.88	54	347562	42.6002 ug/L	97
6) Bromomethane	4.73	94	272060	46.3924 ug/L	99
7) Chloroethane	4.88	64	285509	53.3336 ug/L	98
8) Trichlorofluoromethane	5.37	101	849580	46.9313 ug/L	100
9) Diethyl ether	5.90	59	451307	104.4282 ug/L	99
10) Isoprene	5.93	67	582863	53.0208 ug/L	99
11) Acrolein	6.13	56	38877	100.4722 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	419584	49.3091 ug/L	97
13) Acetone	6.23	43	54234	57.5310 ug/L	94
14) 1,1-Dichloroethene	6.46	61	622831	45.9700 ug/L	99
15) Tert-Butyl Alcohol	6.59	59	59797	197.9422 ug/L	97
16) Dimethyl Sulfide	6.73	62	351814	72.6234 ug/L	98
17) Iodomethane	6.99	142	92716	26.2832 ug/L	99
18) Methyl acetate	7.00	43	127540	50.0514 ug/L	98
19) Methylene Chloride	7.25	84	417642	48.4385 ug/L	99
20) Carbon Disulfide	7.29	76	1199899	42.3200 ug/L	100
21) Acrylonitrile	7.43	53	65324	53.4074 ug/L	93
22) Methyl Tert Butyl Ether	7.46	73	949572	50.8859 ug/L	97
23) trans-1,2-Dichloroethene	7.70	61	598296	48.0666 ug/L	99
24) n-Hexane	7.77	57	425106	45.9930 ug/L	99
25) Diisopropyl ether	8.13	45	2040382	105.1615 ug/L	98
26) Vinyl Acetate	8.29	43	415568	46.7802 ug/L	99
27) 1,1-Dichloroethane	8.32	63	721661	46.6846 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	2040020	98.1343 ug/L	99
29) 2-Butanone	8.88	43	73394	52.9905 ug/L	99
30) Propionitrile	8.98	54	42290	104.7756 ug/L	100
31) 2,2-Dichloropropane	9.10	77	780073	47.8861 ug/L	99
32) cis-1,2-Dichloroethene	9.16	96	470465	48.9162 ug/L	98
33) Chloroform	9.38	83	860252	47.1317 ug/L	100
34) 1-Bromopropane	9.51	122	98585	71.5615 ug/L	98
35) Bromochloromethane	9.60	130	234493	47.5456 ug/L	99
36) Tetrahydrofuran	9.62	42	86049	94.3281 ug/L	99
38) 1,1,1-Trichloroethane	9.90	97	825167	47.5949 ug/L	100
39) Cyclohexane	9.93	56	586721	48.8808 ug/L	97
40) 1,1-Dichloropropene	10.10	75	627217	47.4632 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1962875	103.9618 ug/L	99
42) Carbon Tetrachloride	10.24	117	711823	46.2363 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M412232.D 8260WT.M Tue May 17 11:44:38 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	108	0.00
2	T	Dichlorodifluoromethane	50.0000	54.2141	-8.4	112	0.00
3	P	Chloromethane	50.0000	50.6814	-1.4	111	0.00
4	C	Vinyl Chloride	50.0000	52.3811	-4.8	112	-0.01
5	T	1,3-Butadiene	50.0000	42.6002	14.8	89	0.00
6	T	Bromomethane	50.0000	46.3924	7.2	104	-0.01
7	T	Chloroethane	50.0000	53.3336	-6.7	117	-0.01
8	T	Trichlorofluoromethane	50.0000	46.9313	6.1	101	-0.01
9	T	Diethyl ether	100.0000	104.4282	-4.4	116	0.00
10	T	Isoprene	50.0000	53.0208	-6.0	117	0.00
11	T	Acrolein	50.0000	100.4722	-100.9#	220	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	49.3091	1.4	108	0.00
13	T	Acetone	50.0000	57.5310	-15.1	118	-0.01
14	C	1,1-Dichloroethene	50.0000	45.9700	8.1	100	0.00
15	T	Tert-Butyl Alcohol	200.0000	197.9423	1.0	108	0.01
16	T	Dimethyl Sulfide	50.0000	72.6234	-45.2#	159	0.00
17	T	Iodomethane	50.0000	26.2832	47.4#	59	0.01
18	T	Methyl acetate	50.0000	50.0514	-0.1	111	0.00
19	T	Methylene Chloride	50.0000	48.4385	3.1	107	0.00
20	T	Carbon Disulfide	50.0000	42.3200	15.4	94	0.00
21	T	Acrylonitrile	50.0000	53.4074	-6.8	109	0.00
22	T	Methyl Tert Butyl Ether	50.0000	50.8859	-1.8	105	0.00
23	T	trans-1,2-Dichloroethene	50.0000	48.0666	3.9	105	0.00
24	T	n-Hexane	50.0000	45.9930	8.0	101	-0.01
25	T	Diisopropyl ether	100.0000	105.1615	-5.2	115	0.00
26	T	Vinyl Acetate	50.0000	46.7802	6.4	97	0.00
27	P	1,1-Dichloroethane	50.0000	46.6846	6.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.1343	1.9	104	0.00
29	T	2-Butanone	50.0000	52.9905	-6.0	110	0.00
30	T	Propionitrile	100.0000	104.7756	-4.8	111	0.00
31	T	2,2-Dichloropropane	50.0000	47.8861	4.2	102	0.00
32	T	cis-1,2-Dichloroethene	50.0000	48.9162	2.2	107	-0.01
33	C	Chloroform	50.0000	47.1317	5.7	102	0.00
34		1-Bromopropane	50.0000	71.5615	-43.1#	155	0.00
35	T	Bromochloromethane	50.0000	47.5456	4.9	102	0.00
36	T	Tetrahydrofuran	100.0000	94.3281	5.7	108	-0.01
37	S	Dibromofluoromethane	25.0000	25.5204	-2.1	109	0.00
38	T	1,1,1-Trichloroethane	50.0000	47.5949	4.8	101	0.00
39	T	Cyclohexane	50.0000	48.8808	2.2	109	0.00
40	T	1,1-Dichloropropene	50.0000	47.4632	5.1	102	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	103.9618	-4.0	111	0.00
42	T	Carbon Tetrachloride	50.0000	46.2363	7.5	98	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.7259	1.1	104	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	49.0148	2.0	103	0.00
46	T	Benzene	50.0000	48.5232	3.0	104	0.00
47	T	Trichloroethene	50.0000	51.0658	-2.1	110	0.00
48	T	Methylcyclohexane	50.0000	49.8573	0.3	109	0.00
49	C	1,2-Dichloropropane	50.0000	50.9747	-1.9	111	0.00
50	T	Bromodichloromethane	50.0000	48.3053	3.4	99	0.00
51	T	1,4-Dioxane	200.0000	216.9538	-8.5	110	0.01
52	T	Dibromomethane	50.0000	45.8126	8.4	99	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	51.2623	-2.5	104	0.00
54	T	4-Methyl-2-Pentanone	50.0000	51.8715	-3.7	107	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.8979	-7.8	111	0.00
56	T	Dimethyl Disulfide	50.0000	52.2714	-4.5	111	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	107	0.00
58	S	Toluene-d8	25.0000	25.8115	-3.2	108	0.00
59	C	Toluene	50.0000	49.0912	1.8	105	0.00
60	T	Ethyl Methacrylate	50.0000	55.9509	-11.9	113	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	50.6740	-1.3	102	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.0377	1.9	103	0.00
64	T	2-Hexanone	50.0000	53.6057	-7.2	112	0.00
65	T	1,3-Dichloropropane	50.0000	53.6720	-7.3	110	0.00
66	T	Tetrachloroethene	50.0000	47.8053	4.4	104	0.00
67	T	Dibromochloromethane	50.0000	49.6585	0.7	102	0.00
68	T	1,2-Dibromoethane	50.0000	51.1121	-2.2	105	0.00
69	T	1-Chlorohexane	50.0000	51.0611	-2.1	111	0.00
70	P	Chlorobenzene	50.0000	50.1844	-0.4	108	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	49.3793	1.2	103	0.00
72	C	Ethylbenzene	50.0000	48.2013	3.6	105	0.00
73	T	m-,p-Xylene	100.0000	101.1341	-1.1	108	0.00
74	T	o-Xylene	50.0000	50.5675	-1.1	108	0.00
75	T	Styrene	50.0000	51.5086	-3.0	105	0.00
76	P	Bromoform	50.0000	48.2227	3.6	99	0.00
77	T	Isopropylbenzene	50.0000	51.1140	-2.2	107	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	106	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	49.6172	0.8	103	0.00
80	S	p-Bromofluorobenzene	25.0000	25.0519	-0.2	108	0.00
81	T	1,2,3-Trichloropropane	50.0000	50.0849	-0.2	106	0.01
82	T	trans-1,4-Dichloro-2-Butene	50.0000	39.2043	21.6	86	0.00
83	T	n-Propylbenzene	50.0000	51.9237	-3.8	108	0.00
84	T	Bromobenzene	50.0000	49.4648	1.1	105	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	51.6344	-3.3	107	0.00
86	T	2-Chlorotoluene	50.0000	51.5639	-3.1	106	0.00
87	T	4-Chlorotoluene	50.0000	48.2650	3.5	108	0.00
88	T	a-Methylstyrene	50.0000	56.4132	-12.8	120	0.00
89	T	tert-Butylbenzene	50.0000	50.9494	-1.9	112	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	49.6617	0.7	105	0.00
91	T	sec-Butylbenzene	50.0000	51.3386	-2.7	108	0.00
92	T	p-Isopropyltoluene	50.0000	50.1261	-0.3	107	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.8943	-1.8	108	0.00
94	T	1,4-Dichlorobenzene	50.0000	50.4742	-0.9	110	0.00
95	T	n-Butylbenzene	50.0000	49.6520	0.7	105	0.00
96	T	1,2-Dichlorobenzene	50.0000	50.4907	-1.0	110	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	48.4851	3.0	100	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	50.1129	-0.2	107	0.00
99	T	Hexachlorobutadiene	50.0000	52.0919	-4.2	115	0.00
100	T	Naphthalene	50.0000	45.8047	8.4	95	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	47.7353	4.5	106	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412232.D 8260WT.M Sat May 14 18:09:03 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:21 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	709364	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	505399	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	272922	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	27428	100.2132 ug/L	99
3) 3-Chloro-1-propene	7.07	41	940418	104.3259 ug/L	82
4) 2-Chloro-1,3-butadiene	8.45	53	1188994	104.3183 ug/L	86
5) Ethyl Acetate	9.10	43	283167	104.3264 ug/L	95
6) Methacrylonitrile	9.25	67	155775	104.5365 ug/L #	63
7) Isobutyl Alcohol	9.25	43	17893	197.3629 ug/L #	96
9) Methyl methacrylate	11.42	41	298802	102.0346 ug/L	70
10) 2-Nitropropane	11.75	43	121321	95.8263 ug/L	97
13) Cyclohexanone	15.84	55	11401	102.1363 ug/L #	70

(#) = qualifier out of range (m) = manual integration
8M412321.D A9FOOWT.M Thu May 19 09:01:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

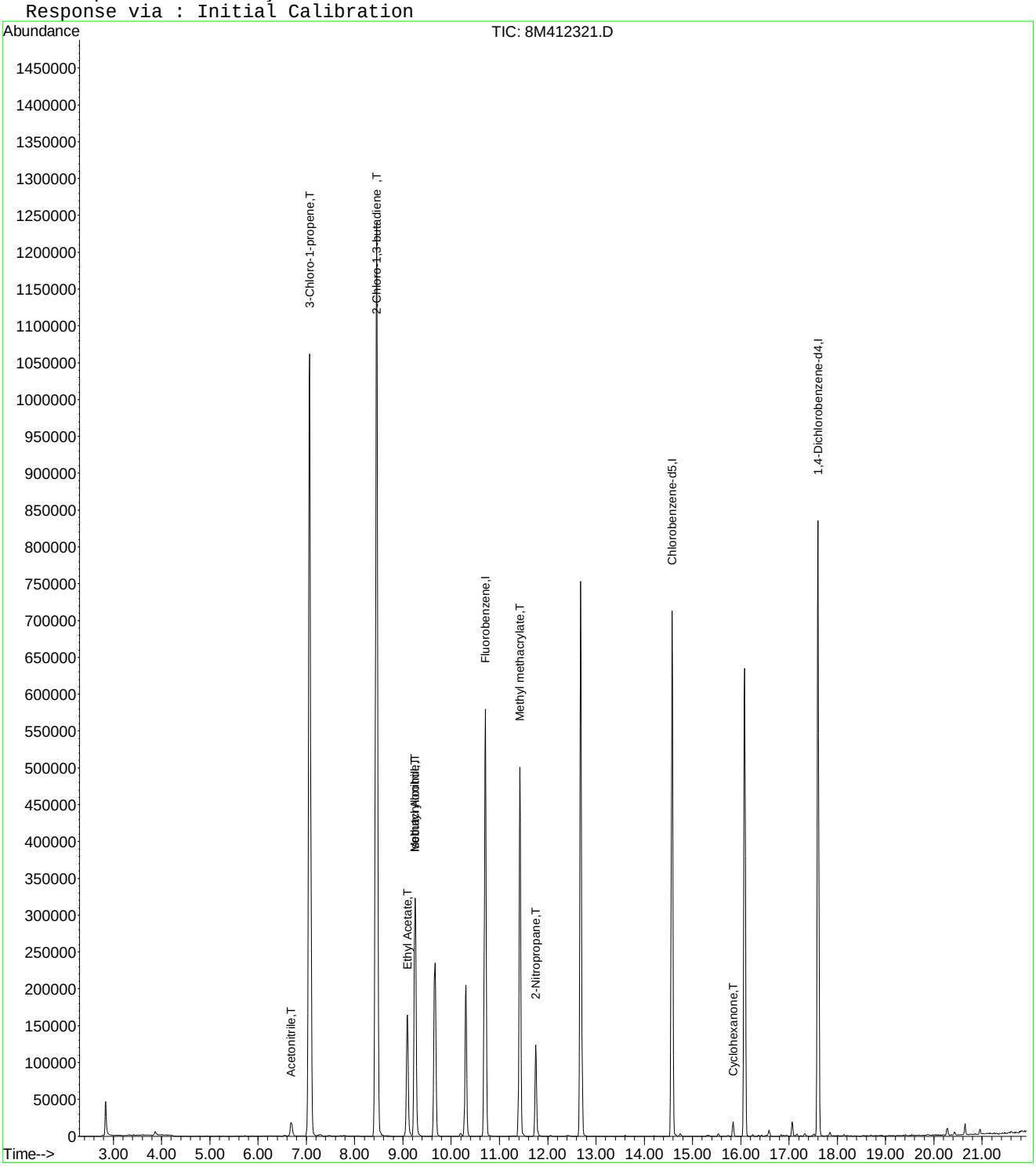

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412321.D Vial: 3
Acq On : 17 May 2016 9:47 Operator: TMB
Sample : WG569079-01 100ug/L A9 CCV STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	100.0000	100.2132	-0.2	100	0.00
3	T	3-Chloro-1-propene	100.0000	104.3259	-4.3	100	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	104.3183	-4.3	100	0.00
5	T	Ethyl Acetate	100.0000	104.3264	-4.3	100	0.00
6	T	Methacrylonitrile	100.0000	104.5365	-4.5	100	0.00
7	T	Isobutyl Alcohol	200.0000	197.3629	1.3	100	-0.01
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.02
9	T	Methyl methacrylate	100.0000	102.0346	-2.0	100	0.00
10	T	2-Nitropropane	100.0000	95.8263	4.2	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	100.0000	102.1363	-2.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412321.D A9FOOWT.M Thu May 19 09:02:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:20:35 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	677339	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	488377	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	260939	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	13323	50.9795 ug/L	98
3) 3-Chloro-1-propene	7.07	41	453655	52.7060 ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	568765	52.2609 ug/L	87
5) Ethyl Acetate	9.09	43	131636	50.7913 ug/L	97
6) Methacrylonitrile	9.25	67	74064	52.0523 ug/L #	62
7) Isobutyl Alcohol	9.26	43	8483	97.9930 ug/L	95
9) Methyl methacrylate	11.42	41	143892	51.4593 ug/L	70
10) 2-Nitropropane	11.75	43	56559	46.7858 ug/L	95
13) Cyclohexanone	15.84	55	5225	48.9579 ug/L	83

(#) = qualifier out of range (m) = manual integration
8M412322.D A9FOOWT.M Thu May 19 09:20:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:19 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

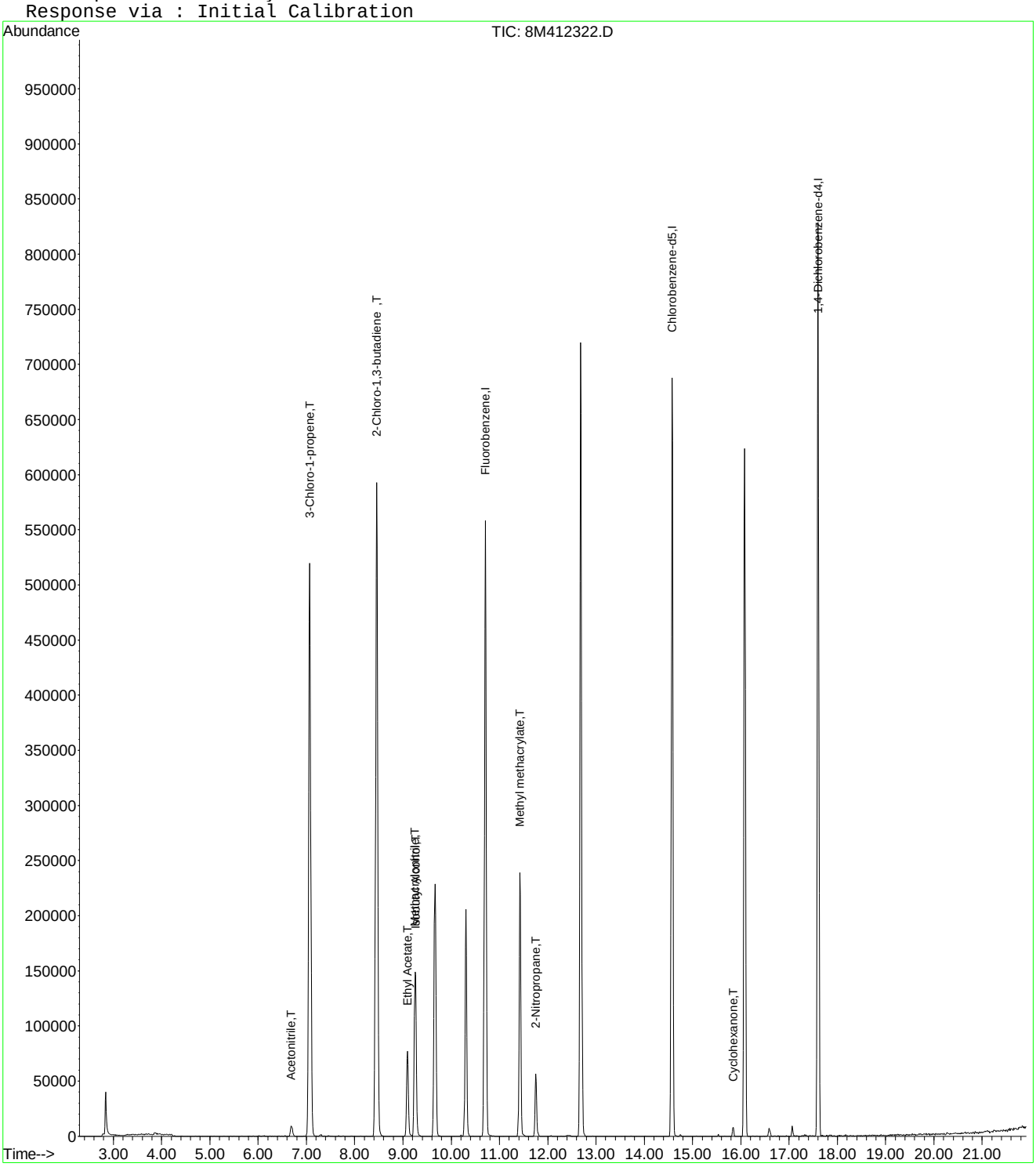

8M412322.D A9FOOWT.M Thu May 19 09:20:36 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412322.D Vial: 4
Acq On : 17 May 2016 10:16 Operator: TMB
Sample : WG569079-03 50ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	50.0000	50.9795	-2.0	100	0.00
3	T	3-Chloro-1-propene	50.0000	52.7060	-5.4	100	0.00
4	T	2-Chloro-1,3-butadiene	50.0000	52.2609	-4.5	100	0.00
5	T	Ethyl Acetate	50.0000	50.7913	-1.6	100	0.00
6	T	Methacrylonitrile	50.0000	52.0523	-4.1	100	0.00
7	T	Isobutyl Alcohol	100.0000	97.9929	2.0	100	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.02
9	T	Methyl methacrylate	50.0000	51.4592	-2.9	100	0.00
10	T	2-Nitropropane	50.0000	46.7858	6.4	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	50.0000	48.9579	2.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412322.D A9FOOWT.M Thu May 19 09:02:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:22:33 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	652985	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	476539	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	256082	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	4873	19.3416 ug/L	80
3) 3-Chloro-1-propene	7.07	41	172467	20.7847 ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	219296	20.9015 ug/L	87
5) Ethyl Acetate	9.09	43	50385	20.1659 ug/L	100
6) Methacrylonitrile	9.26	67	28119	20.4992 ug/L #	63
7) Isobutyl Alcohol	9.27	43	2774	33.2395 ug/L #	8
9) Methyl methacrylate	11.42	41	55309	20.5176 ug/L	73
10) 2-Nitropropane	11.75	43	21584	18.5202 ug/L	99
13) Cyclohexanone	15.84	55	2230	21.2913 ug/L	87

(#) = qualifier out of range (m) = manual integration
8M412323.D A9FOOWT.M Thu May 19 09:22:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:21 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

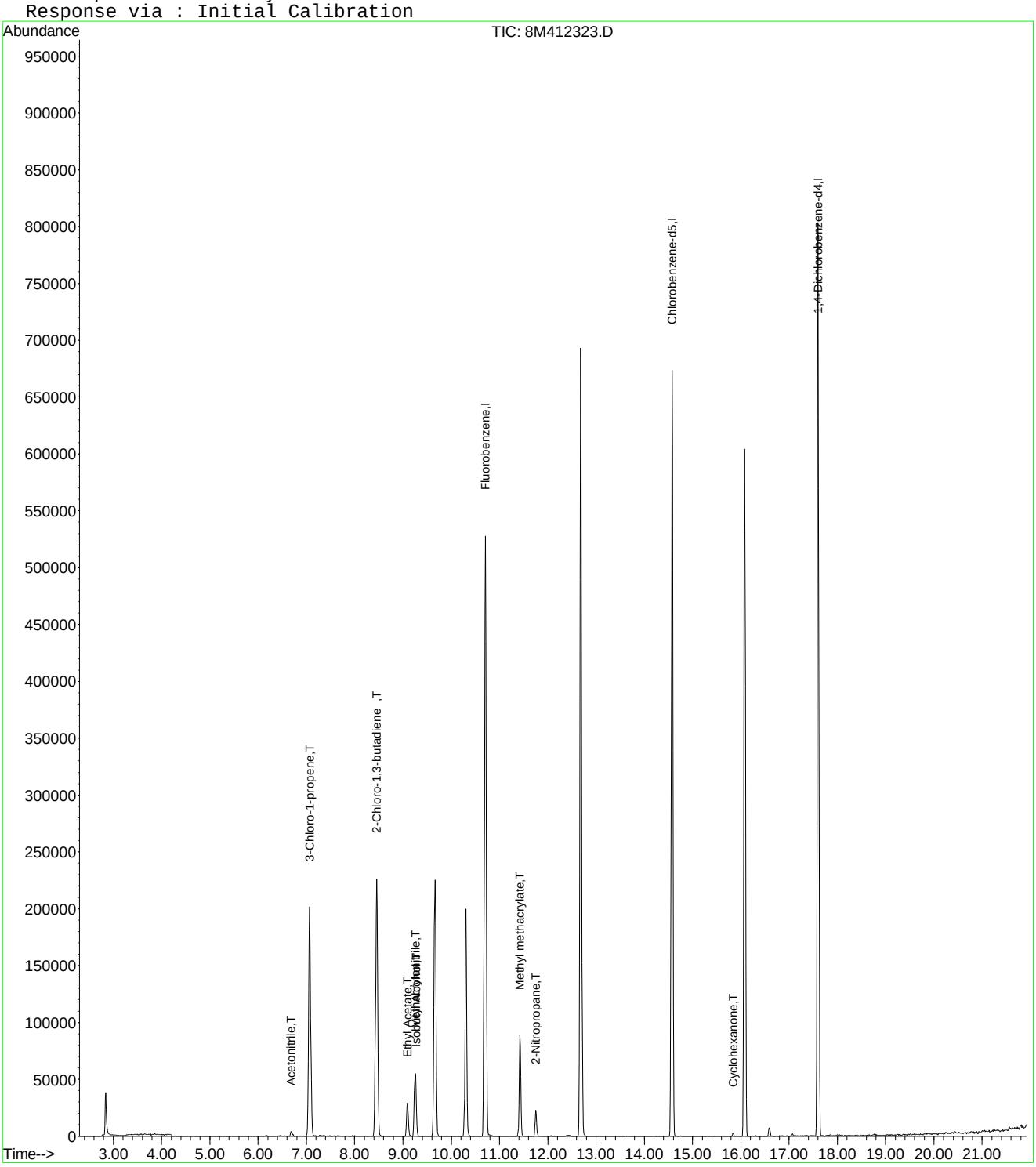

8M412323.D A9FOOWT.M Thu May 19 09:22:34 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412323.D Vial: 5
Acq On : 17 May 2016 10:44 Operator: TMB
Sample : WG569079-04 20ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	20.0000	19.3416	3.3	100	0.00
3	T	3-Chloro-1-propene	20.0000	20.7847	-3.9	100	0.00
4	T	2-Chloro-1,3-butadiene	20.0000	20.9015	-4.5	100	0.00
5	T	Ethyl Acetate	20.0000	20.1659	-0.8	100	0.00
6	T	Methacrylonitrile	20.0000	20.4992	-2.5	100	0.00
7	T	Isobutyl Alcohol	-1.0000	33.2395	0.0	0	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.18#
9	T	Methyl methacrylate	20.0000	20.5176	-2.6	100	0.00
10	T	2-Nitropropane	20.0000	18.5203	7.4	100	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	20.0000	21.2913	-6.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412323.D A9FOOWT.M Thu May 19 09:02:17 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:22:43 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	665645	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	483812	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	257678	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.70	41	405	1.5769 ug/L #	23
3) 3-Chloro-1-propene	7.07	41	40699	4.8115 ug/L	84
4) 2-Chloro-1,3-butadiene	8.45	53	48973	4.5789 ug/L	81
5) Ethyl Acetate	9.09	43	10675	4.1913 ug/L	95
6) Methacrylonitrile	9.26	67	5417	3.8740 ug/L #	72
7) Isobutyl Alcohol	9.27	43	441	5.1838 ug/L #	8
9) Methyl methacrylate	11.43	41	11811	4.2981 ug/L	65
10) 2-Nitropropane	11.76	43	4170	3.5100 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412324.D A9FOOWT.M Thu May 19 09:22:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:21 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

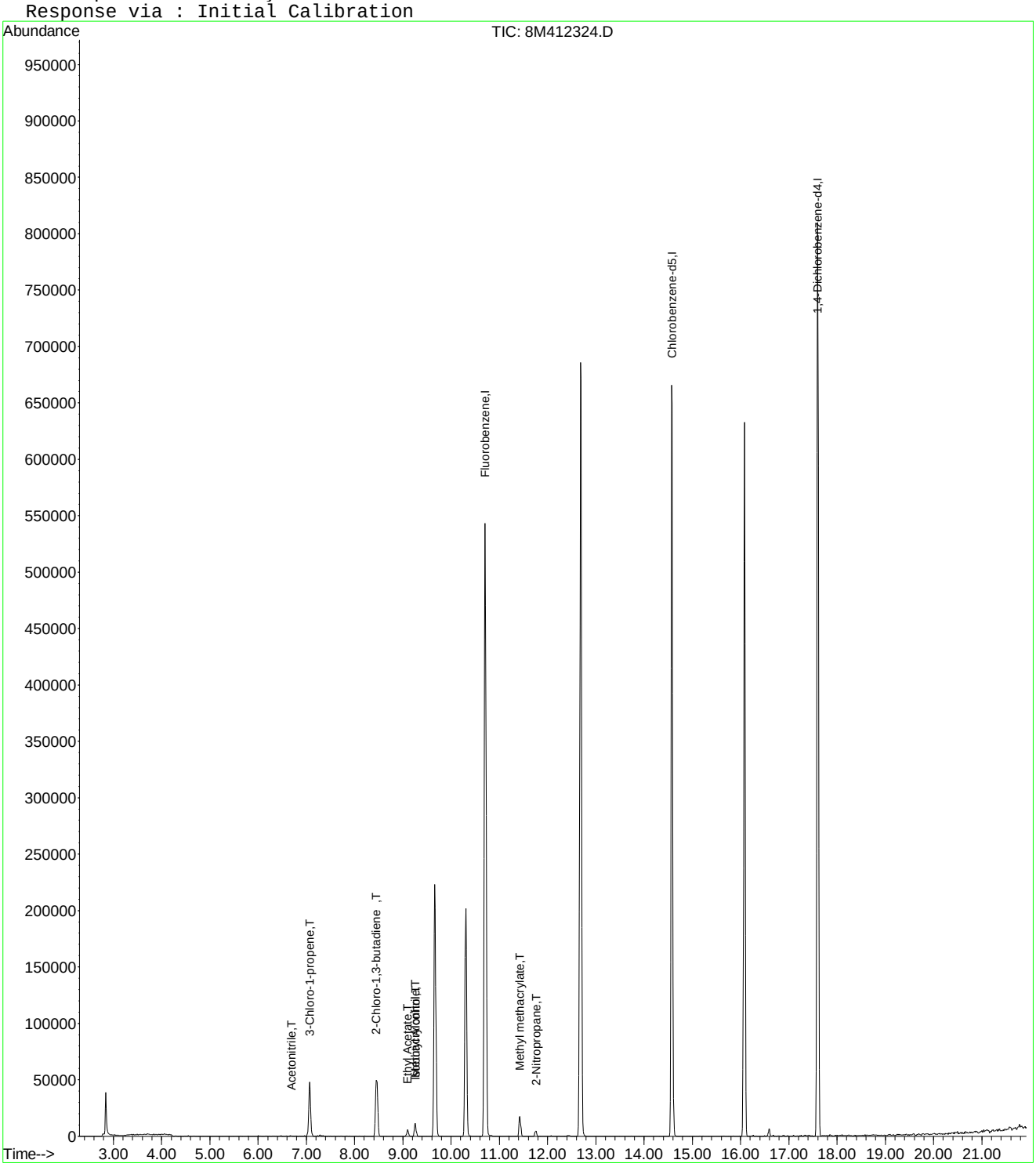

8M412324.D A9FOOWT.M Thu May 19 09:22:43 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412324.D Vial: 6
Acq On : 17 May 2016 11:13 Operator: TMB
Sample : WG569079-05 5ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Acetonitrile	-1.0000	1.5769	0.0	0	0.00
3	T	3-Chloro-1-propene	5.0000	4.8115	3.8	100	0.00
4	T	2-Chloro-1,3-butadiene	5.0000	4.5789	8.4	100	0.00
5	T	Ethyl Acetate	5.0000	4.1913	16.2	100	0.00
6	T	Methacrylonitrile	5.0000	3.8740	22.5	100	0.00
7	T	Isobutyl Alcohol	-1.0000	5.1838	0.0	0	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	-10.18#
9	T	Methyl methacrylate	5.0000	4.2981	14.0	100	0.00
10	T	2-Nitropropane	-1.0000	3.5100	0.0	0	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
13	T	Cyclohexanone	-1.0000	0.0000	0.0	0	-15.84#

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412324.D A9FOOWT.M Thu May 19 09:02:03 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412325.D Vial: 7
Acq On : 17 May 2016 11:42 Operator: TMB
Sample : WG569079-06 200ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:27 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	682012	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.58	117	491515	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	261877	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.68	41	52022	197.6946 ug/L	97
3) 3-Chloro-1-propene	7.06	41	1768403	204.0468 ug/L	83
4) 2-Chloro-1,3-butadiene	8.46	53	2283706	208.4003 ug/L	87
5) Ethyl Acetate	9.09	43	537585	206.0040 ug/L	94
6) Methacrylonitrile	9.25	67	297408	207.5869 ug/L #	63
7) Isobutyl Alcohol	9.26	43	34441	395.1256 ug/L	95
9) Methyl methacrylate	11.42	41	577612	205.1526 ug/L	72
10) 2-Nitropropane	11.75	43	248395	204.0652 ug/L	95
13) Cyclohexanone	15.85	55	19752	184.4122 ug/L #	59

(#) = qualifier out of range (m) = manual integration
8M412325.D A9FOOWT.M Thu May 19 09:01:28 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412325.D Vial: 7
Acq On : 17 May 2016 11:42 Operator: TMB
Sample : WG569079-06 200ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

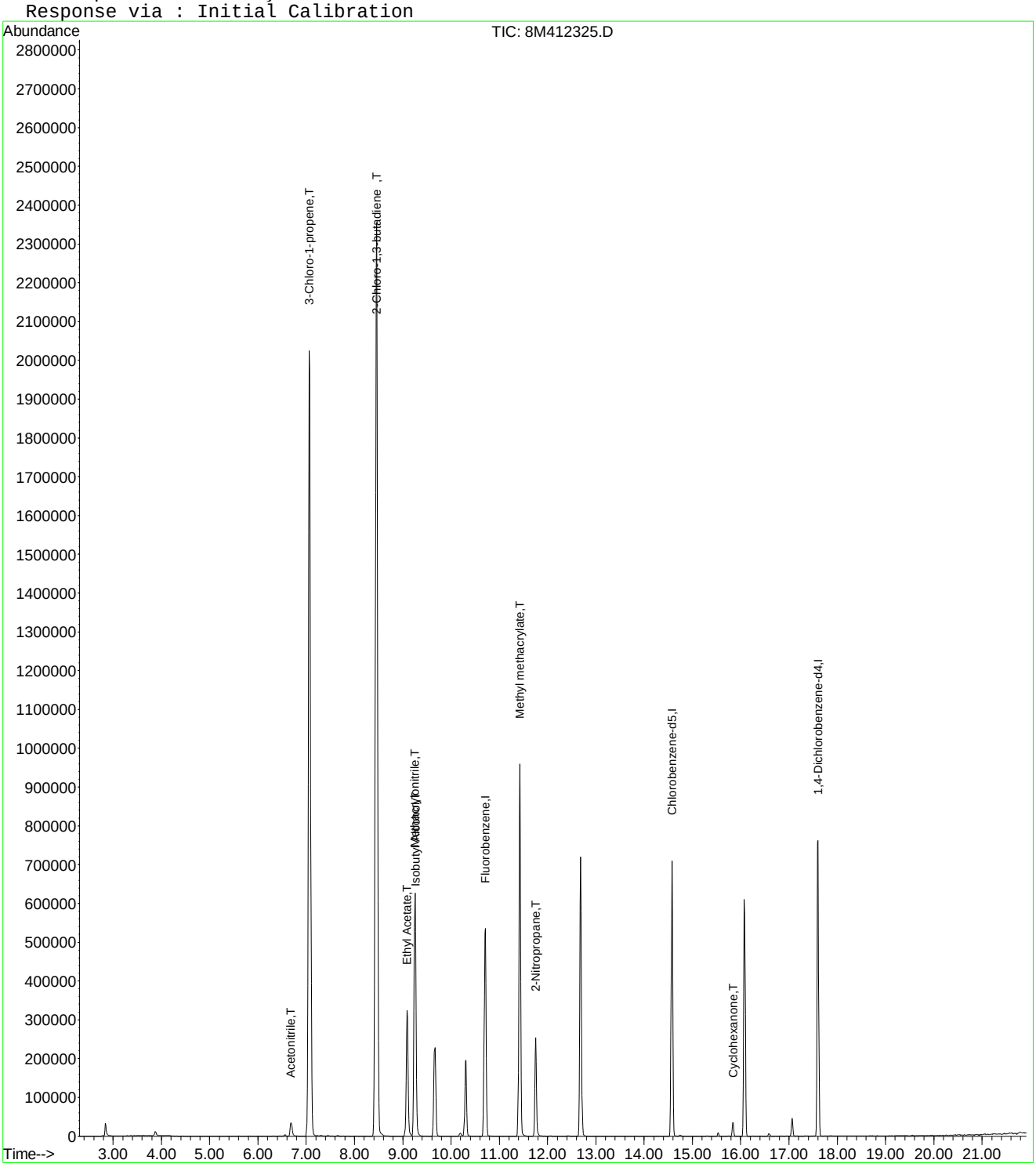

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412326.D Vial: 8
Acq On : 17 May 2016 12:40 Operator: TMB
Sample : WG569079-07 300ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:29 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	694903	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	496643	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	267309	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.69	41	81471	303.8636	ug/L	98
3) 3-Chloro-1-propene	7.06	41	2563559	290.3084	ug/L	83
4) 2-Chloro-1,3-butadiene	8.46	53	3270971	292.9562	ug/L	86
5) Ethyl Acetate	9.09	43	821184	308.8424	ug/L	95
6) Methacrylonitrile	9.25	67	451708	309.4374	ug/L #	62
7) Isobutyl Alcohol	9.26	43	55071	620.0836	ug/L	94
9) Methyl methacrylate	11.42	41	874430	304.8132	ug/L	70
10) 2-Nitropropane	11.75	43	392965	316.8456	ug/L	94
13) Cyclohexanone	15.84	55	33523	306.6233	ug/L #	61

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412326.D Vial: 8
Acq On : 17 May 2016 12:40 Operator: TMB
Sample : WG569079-07 300ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

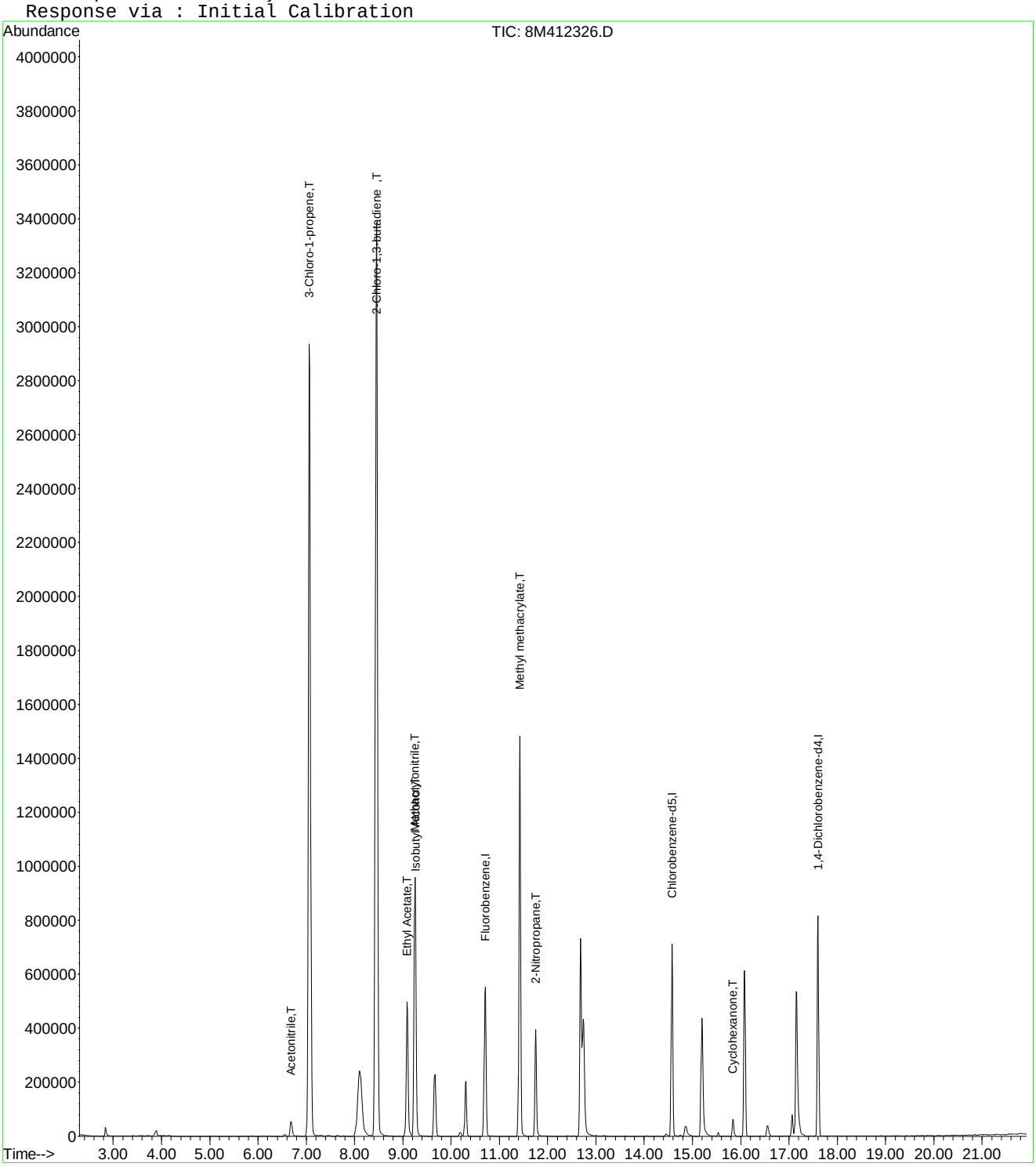

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412327.D Vial: 9
Acq On : 17 May 2016 13:10 Operator: TMB
Sample : WG569079-08 400ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:30 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	700514	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	502552	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	270883	25.00 ug/L	0.00

Target Compounds					Qvalue
2) Acetonitrile	6.69	41	110761	409.7980 ug/L	97
3) 3-Chloro-1-propene	7.07	41	3406131	382.6353 ug/L	82
4) 2-Chloro-1,3-butadiene	8.45	53	4356691	387.0705 ug/L	85
5) Ethyl Acetate	9.09	43	1116818	416.6642 ug/L	94
6) Methacrylonitrile	9.25	67	615482	418.2517 ug/L #	62
7) Isobutyl Alcohol	9.26	43	75472	842.9862 ug/L	97
9) Methyl methacrylate	11.42	41	1199317	414.7153 ug/L	71
10) 2-Nitropropane	11.75	43	538580	430.7760 ug/L	94
13) Cyclohexanone	15.84	55	45874	414.0575 ug/L #	55

(#) = qualifier out of range (m) = manual integration
8M412327.D A9FOOWT.M Thu May 19 09:01:31 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412327.D Vial: 9
Acq On : 17 May 2016 13:10 Operator: TMB
Sample : WG569079-08 400ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

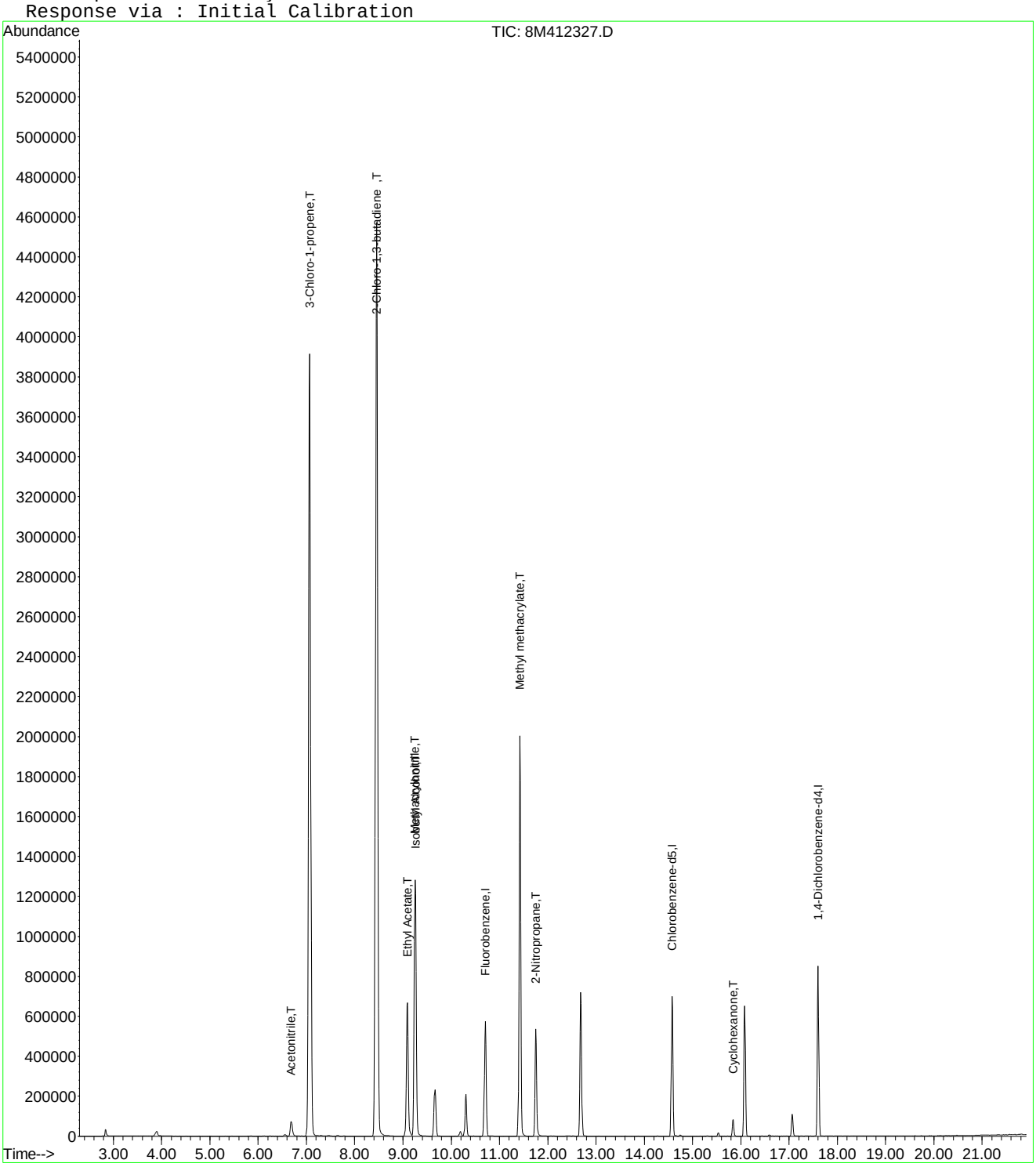

8M412327.D A9FOOWT.M Thu May 19 09:01:31 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412328.D Vial: 10
Acq On : 17 May 2016 13:39 Operator: TMB
Sample : WG569079-09 500ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:31 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	695694	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	495257	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	266442	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.69	41	132245	492.6753	ug/L	99
3) 3-Chloro-1-propene	7.06	41	4228273	478.2834	ug/L	82
4) 2-Chloro-1,3-butadiene	8.46	53	5390856	482.2693	ug/L	85
5) Ethyl Acetate	9.09	43	1321922	496.6017	ug/L	95
6) Methacrylonitrile	9.25	67	729852	499.4083	ug/L #	61
7) Isobutyl Alcohol	9.26	43	85200	958.2367	ug/L	96
9) Methyl methacrylate	11.42	41	1416438	493.1877	ug/L	72
10) 2-Nitropropane	11.75	43	637335	513.2956	ug/L	93
13) Cyclohexanone	15.84	55	52070	477.8160	ug/L #	61

(#) = qualifier out of range (m) = manual integration
8M412328.D A9FOOWT.M Thu May 19 09:01:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412328.D Vial: 10
Acq On : 17 May 2016 13:39 Operator: TMB
Sample : WG569079-09 500ug/L A9/FOO STD 8260 Inst : HPMS8
Misc : 1,1 STD76072 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

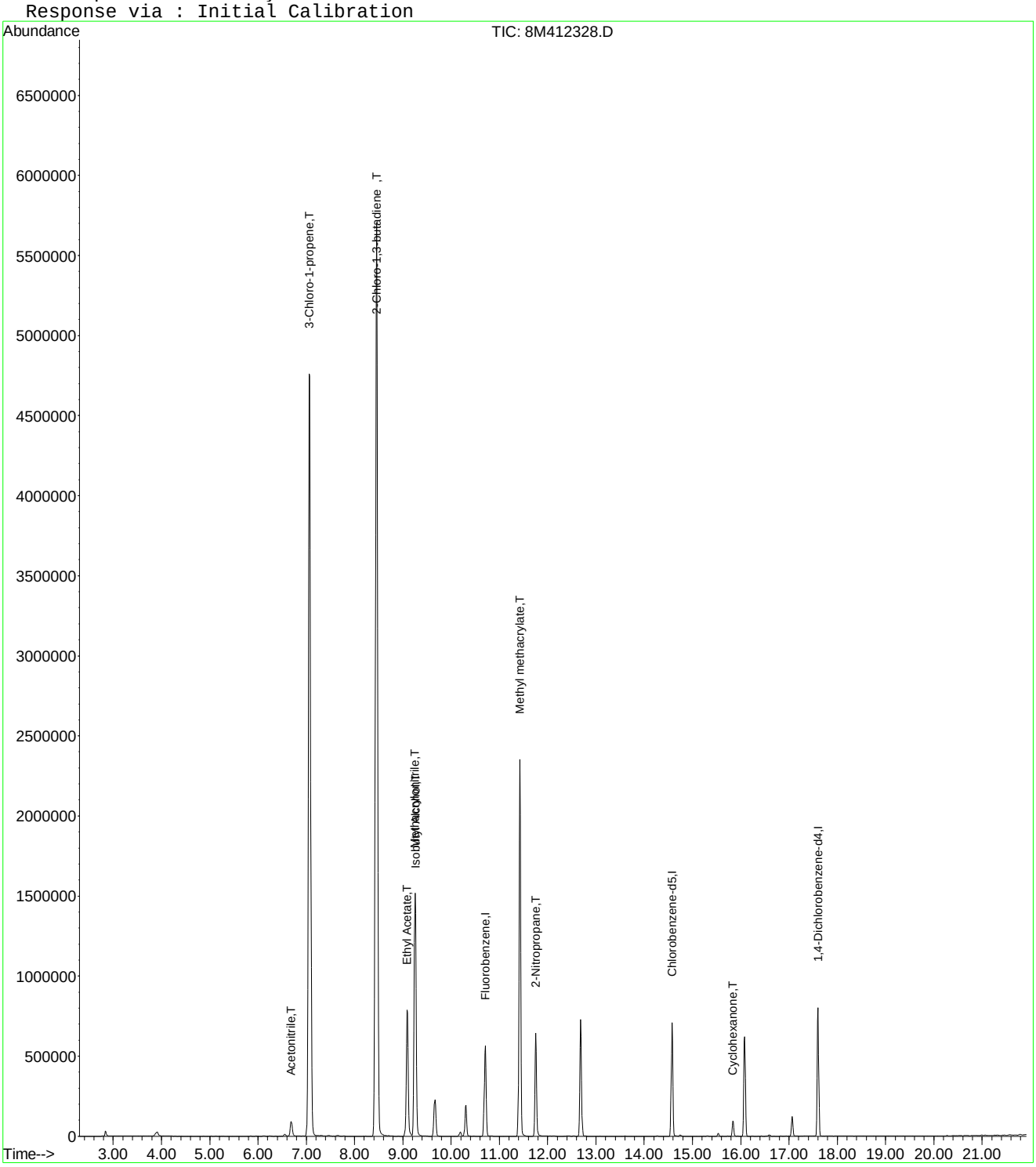

8M412328.D A9FOOWT.M Thu May 19 09:01:32 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 09:01:32 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	676765	25.00	ug/L	0.00
11) Chlorobenzene-d5	14.57	117	486447	25.00	ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	263036	25.00	ug/L	0.00

Target Compounds						Qvalue
2) Acetonitrile	6.69	41	29876	114.4154	ug/L	97
3) 3-Chloro-1-propene	7.07	41	858035	99.7718	ug/L	83
4) 2-Chloro-1,3-butadiene	8.45	53	1224194	112.5803	ug/L	87
5) Ethyl Acetate	9.09	43	295545	114.1317	ug/L	96
6) Methacrylonitrile	9.25	67	161574	113.6509	ug/L #	63
7) Isobutyl Alcohol	9.26	43	19948	230.6285	ug/L	94
9) Methyl methacrylate	11.42	41	326465	116.8508	ug/L	72
10) 2-Nitropropane	11.75	43	131261	108.6716	ug/L	94
13) Cyclohexanone	15.83	55	10459	97.2189	ug/L #	74

(#) = qualifier out of range (m) = manual integration
8M412331.D A9FOOWT.M Thu May 19 09:01:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 19 9:00 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Initial Calibration

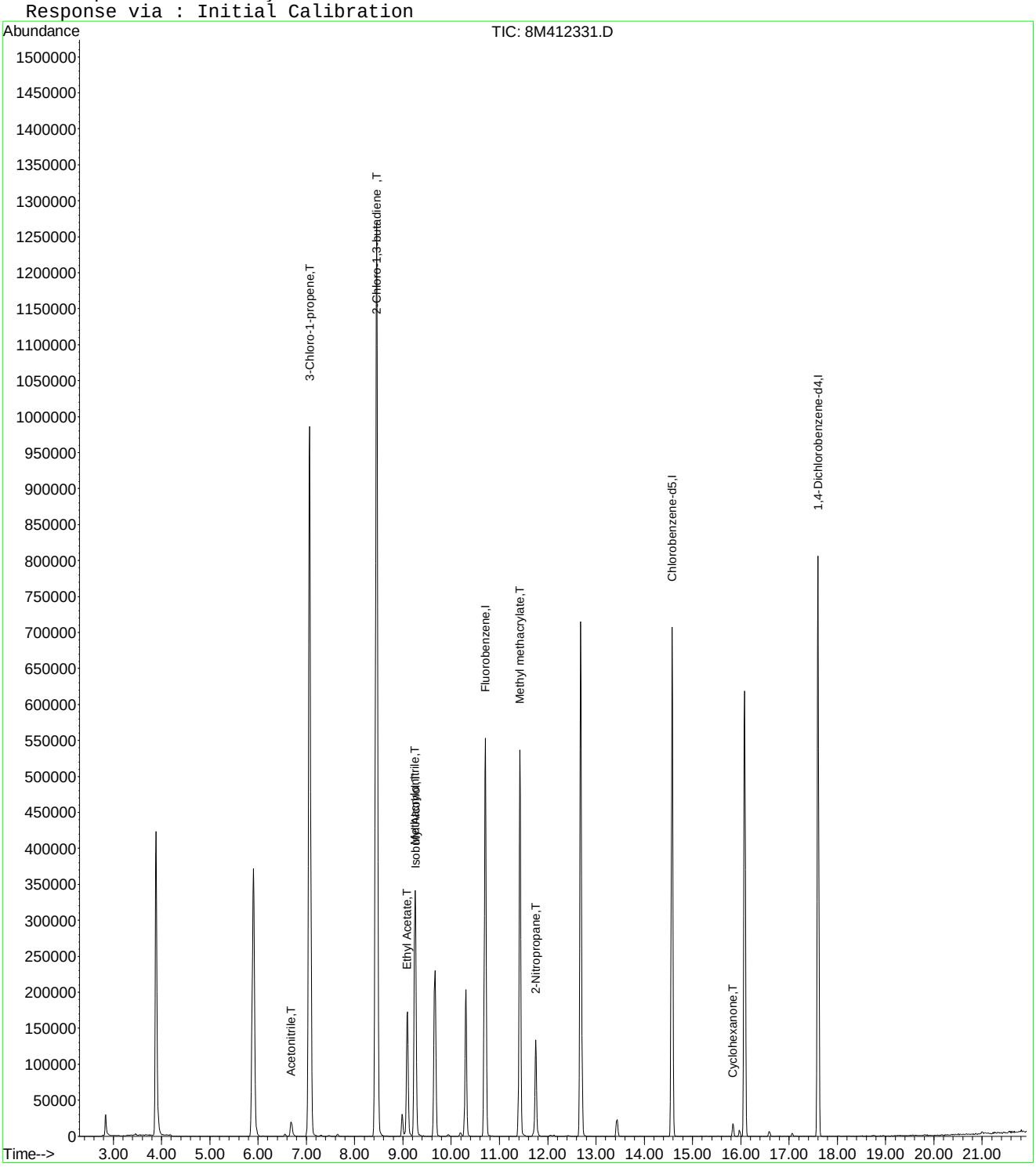

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\051716\8M412331.D Vial: 13
Acq On : 17 May 2016 15:06 Operator: TMB
Sample : WG569079-10 100ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD75801 Multiplr: 1.00
MS Integration Params: rteint.p

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 08:54:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 1% Max. R.T. Dev 0.50min
Max. RRF Dev : 75% Max. Rel. Area : 200%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	95	0.00
2	T	Acetonitrile	100.0000	114.4154	-14.4	109	0.00
3	T	3-Chloro-1-propene	100.0000	99.7718	0.2	91	0.00
4	T	2-Chloro-1,3-butadiene	100.0000	112.5803	-12.6	103	0.00
5	T	Ethyl Acetate	100.0000	114.1317	-14.1	104	0.00
6	T	Methacrylonitrile	100.0000	113.6509	-13.7	104	0.00
7	T	Isobutyl Alcohol	200.0000	230.6285	-15.3	111	0.00
8	T	1-Butanol	-1.0000	0.0000	0.0	0	0.01
9	T	Methyl methacrylate	100.0000	116.8508	-16.9	109	0.00
10	T	2-Nitropropane	100.0000	108.6716	-8.7	108	0.00
11	I	Chlorobenzene-d5	25.0000	25.0000	0.0	96	0.00
12	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	96	0.00
13	T	Cyclohexanone	100.0000	97.2189	2.8	92	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412331.D A9FOOWT.M Thu May 19 09:03:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413032.D Vial: 2
Acq On : 16 Jun 2016 14:25 Operator: FJB
Sample : WG573037-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 20 09:11:28 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	733857	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	538326	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	307491	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	215897	27.3819 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.52%		
43) 1,2-Dichloroethane-d4	10.30	65	234596	27.7486 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.00%		
58) Toluene-d8	12.68	98	742553	26.3564 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.44%		
80) p-Bromofluorobenzene	16.08	95	315298	24.7636 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.04%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	709296	57.6485 ug/L	100
3) Chloromethane	3.62	50	334378	46.5578 ug/L	99
4) Vinyl Chloride	3.84	62	469712	55.1239 ug/L	99
5) 1,3-Butadiene	3.89	54	449731	62.9364 ug/L	97
6) Bromomethane	4.73	94	187928	36.9767 ug/L	99
7) Chloroethane	4.89	64	229428	48.9325 ug/L	97
8) Trichlorofluoromethane	5.37	101	947245	59.7435 ug/L	99
9) Diethyl ether	5.91	59	359174	94.8900 ug/L	97
10) Isoprene	5.94	67	490773	50.9718 ug/L	97
11) Acrolein	6.14	56	15092	44.5317 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	413268	55.4511 ug/L	96
13) Acetone	6.24	43	43062	52.1548 ug/L	100
14) 1,1-Dichloroethene	6.47	61	648526	54.6514 ug/L	98
15) Tert-Butyl Alcohol	6.57	59	62702	236.9793 ug/L	98
16) Dimethyl Sulfide	6.73	62	205530	48.4405 ug/L	98
17) Iodomethane	6.99	142	88941	28.4929 ug/L	92
18) Methyl acetate	7.00	43	95456	42.7704 ug/L	98
19) Methylene Chloride	7.26	84	368680	48.8209 ug/L	100
20) Carbon Disulfide	7.29	76	1316779	53.0253 ug/L	100
21) Acrylonitrile	7.43	53	50980	47.5881 ug/L	94
22) Methyl Tert Butyl Ether	7.46	73	815898	49.9201 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	567448	52.0503 ug/L	100
24) n-Hexane	7.78	57	440578	54.4236 ug/L	99
25) Diisopropyl ether	8.12	45	1629728	95.9026 ug/L	96
26) Vinyl Acetate	8.30	43	383450	49.2832 ug/L	99
27) 1,1-Dichloroethane	8.33	63	708177	52.3061 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1837543	100.9239 ug/L	98
29) 2-Butanone	8.88	43	55723	45.9348 ug/L	98
30) Propionitrile	8.99	54	34053	96.3269 ug/L	98
31) 2,2-Dichloropropane	9.11	77	881786	61.8026 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	429176	50.9485 ug/L	97
33) Chloroform	9.37	83	876461	54.8264 ug/L	100
34) 1-Bromopropane	9.51	122	69827	57.8711 ug/L	99
35) Bromochloromethane	9.61	130	221472	51.2707 ug/L	96
36) Tetrahydrofuran	9.63	42	65588	82.0898 ug/L	92
38) 1,1,1-Trichloroethane	9.91	97	904390	59.5586 ug/L	99
39) Cyclohexane	9.94	56	543065	51.6569 ug/L	96
40) 1,1-Dichloropropene	10.11	75	631550	54.5654 ug/L	100
41) Tert-Amyl-Methyl ether	10.21	73	1667474	100.8347 ug/L	100
42) Carbon Tetrachloride	10.25	117	809209	60.0125 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413032.D Vial: 2
Acq On : 16 Jun 2016 14:25 Operator: FJB
Sample : WG573037-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 20 09:11:28 2016 Quant Results File: 8260WT.RES

Quant Method : K:\ORGANICS\V...\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	583022	56.6636	ug/L		98
46)	Benzene	10.46	78	1567451	51.9972	ug/L		99
47)	Trichloroethene	11.21	130	433837	53.9600	ug/L		99
48)	Methylcyclohexane	11.30	83	676953	55.4235	ug/L		100
49)	1,2-Dichloropropane	11.43	63	326457	48.6480	ug/L		86
50)	Bromodichloromethane	11.73	83	653209	55.3826	ug/L		100
51)	1,4-Dioxane	11.72	88	7428	220.3548	ug/L		98
52)	Dibromomethane	11.81	93	197458	49.7082	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.03	63	129844	45.0178	ug/L		95
54)	4-Methyl-2-Pentanone	12.06	58	53646	45.5327	ug/L		94
55)	cis-1,3-Dichloropropene	12.36	75	639780	53.2922	ug/L		100
56)	Dimethyl Disulfide	12.63	79	328801	51.3144	ug/L		99
59)	Toluene	12.78	91	1681041	50.3002	ug/L		100
60)	Ethyl Methacrylate	12.88	69	300733	46.8562	ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	572847	51.1483	ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	244197	46.3057	ug/L		99
64)	2-Hexanone	13.12	58	49168	44.3674	ug/L	#	100
65)	1,3-Dichloropropane	13.48	76	441493	47.0219	ug/L		97
66)	Tetrachloroethene	13.60	164	383463	53.5544	ug/L		98
67)	Dibromochloromethane	13.87	129	388793	50.4917	ug/L		99
68)	1,2-Dibromoethane	14.13	107	247883	47.1634	ug/L		98
69)	1-Chlorohexane	14.21	91	594465	52.1092	ug/L		98
70)	Chlorobenzene	14.62	112	1121470	49.7630	ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.66	131	456454	52.2807	ug/L		100
72)	Ethylbenzene	14.66	106	622088	50.4524	ug/L		99
73)	m-,p-Xylene	14.75	106	1491287	103.1131	ug/L		100
74)	o-Xylene	15.31	106	724388	51.2307	ug/L		99
75)	Styrene	15.35	104	1206191	52.0104	ug/L		96
76)	Bromoform	15.84	173	232298	50.8617	ug/L		99
77)	Isopropylbenzene	15.73	105	2026613	53.9527	ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	256105	41.4928	ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	85494	44.9807	ug/L		72
82)	trans-1,4-Dichloro-2-Buten	16.18	53	84374	43.6303	ug/L	#	51
83)	n-Propylbenzene	16.24	91	2386990	49.7580	ug/L		99
84)	Bromobenzene	16.37	156	473221	47.9586	ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	1753288	50.1733	ug/L		100
86)	2-Chlorotoluene	16.52	91	1599256	47.7491	ug/L		100
87)	4-Chlorotoluene	16.56	91	1503375	49.6923	ug/L		100
88)	a-Methylstyrene	16.84	118	786649	47.4481	ug/L		98
89)	tert-Butylbenzene	16.90	134	334560	48.9377	ug/L		99
90)	1,2,4-Trimethylbenzene	16.95	105	1801178	50.1269	ug/L		100
91)	sec-Butylbenzene	17.17	105	2069862	50.3494	ug/L		99
92)	p-Isopropyltoluene	17.32	119	1766300	50.6022	ug/L		99
93)	1,3-Dichlorobenzene	17.52	146	942205	49.5900	ug/L		98
94)	1,4-Dichlorobenzene	17.64	146	911590	47.5896	ug/L		99
95)	n-Butylbenzene	17.85	91	1742674	50.5007	ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	787813	46.6205	ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	54489	43.9791	ug/L		98
98)	1,2,4-Trichlorobenzene	20.28	180	613274	48.5529	ug/L		100
99)	Hexachlorobutadiene	20.43	225	322898	54.7126	ug/L		99
100)	Naphthalene	20.65	128	816338	43.5006	ug/L		100
101)	1,2,3-Trichlorobenzene	20.96	180	483344	45.3576	ug/L		99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413032.D Vial: 2
Acq On : 16 Jun 2016 14:25 Operator: FJB
Sample : WG573037-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 20 9:11 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

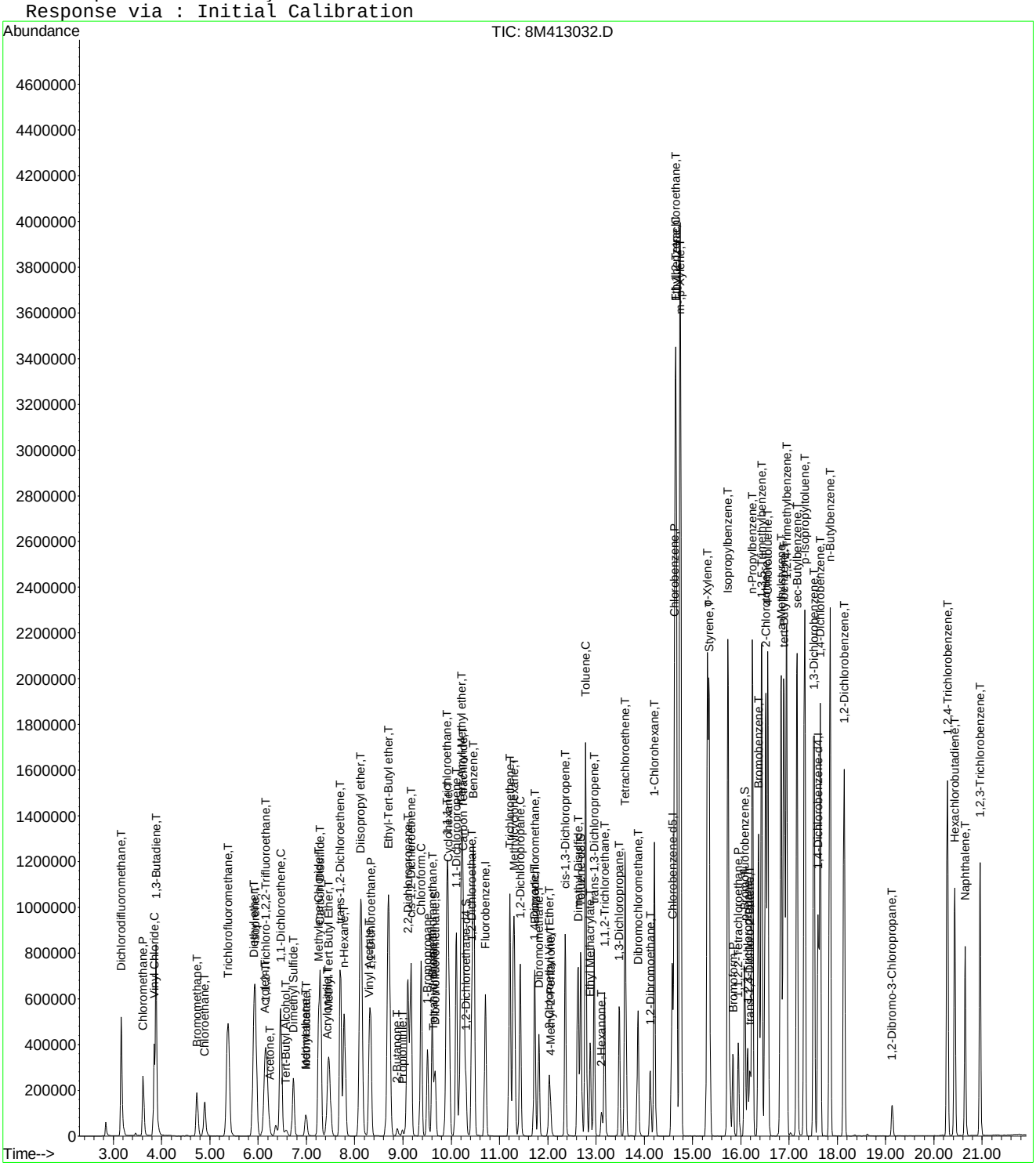

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413032.D Vial: 2
Acq On : 16 Jun 2016 14:25 Operator: FJB
Sample : WG573037-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	94	0.00
2	T	Dichlorodifluoromethane	0.4192	0.4833	-15.3	104	0.00
3	P	Chloromethane	0.2447	0.2278	6.9	90	0.00
4	C	Vinyl Chloride	0.2903	0.3200	-10.2	103	0.00
5	T	1,3-Butadiene	0.2434	0.3064	-25.9#	115	0.00
6	T	Bromomethane	0.1654	0.1280	22.6	72	0.00
7	T	Chloroethane	0.1597	0.1563	2.1	94	0.00
8	T	Trichlorofluoromethane	0.5401	0.6454	-19.5	113	0.00
9	T	Diethyl ether	0.1290	0.1224	5.1	92	0.00
10	T	Isoprene	0.3280	0.3344	-1.9	99	0.00
11	T	Acrolein	0.0116	0.0103	11.0	86	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2539	0.2816	-10.9	107	0.00
13	T	Acetone	0.0281	0.0293	-4.3	94	0.00
14	C	1,1-Dichloroethene	0.4043	0.4419	-9.3	105	0.00
15	T	Tert-Butyl Alcohol	0.0090	0.0107	-18.5	113	0.00
16	T	Dimethyl Sulfide	0.1445	0.1400	3.1	93	0.00
17	T	Iodomethane	0.0866	0.0606	30.0#	56	0.00
18	T	Methyl acetate	0.0760	0.0650	14.5	83	0.00
19	T	Methylene Chloride	0.2573	0.2512	2.4	95	0.00
20	T	Carbon Disulfide	0.8460	0.8972	-6.0	104	0.00
21	T	Acrylonitrile	0.0365	0.0347	4.8	85	0.00
22	T	Methyl Tert Butyl Ether	0.5568	0.5559	0.2	90	0.00
23	T	trans-1,2-Dichloroethene	0.3714	0.3866	-4.1	99	0.00
24	T	n-Hexane	0.2758	0.3002	-8.8	105	0.00
25	T	Diisopropyl ether	0.5789	0.5552	4.1	92	0.00
26	T	Vinyl Acetate	0.2651	0.2613	1.4	89	0.00
27	P	1,1-Dichloroethane	0.4612	0.4825	-4.6	98	0.00
28	T	Ethyl-Tert-Butyl ether	0.6203	0.6260	-0.9	94	0.00
29	T	2-Butanone	0.0413	0.0380	8.1	84	0.00
30	T	Propionitrile	0.0120	0.0116	3.7	89	0.00
31	T	2,2-Dichloropropane	0.4860	0.6008	-23.6	115	0.00
32	T	cis-1,2-Dichloroethene	0.2870	0.2924	-1.9	98	0.00
33	C	Chloroform	0.5446	0.5972	-9.7	104	0.00
34		1-Bromopropane	0.0411	0.0476	-15.8	110	0.00
35	T	Bromochloromethane	0.1472	0.1509	-2.5	96	0.00
36	T	Tetrahydrofuran	0.0272	0.0223	17.9	83	0.00
37	S	Dibromofluoromethane	0.2686	0.2942	-9.5	102	0.00
38	T	1,1,1-Trichloroethane	0.5173	0.6162	-19.1	111	0.00
39	T	Cyclohexane	0.3581	0.3700	-3.3	101	0.00
40	T	1,1-Dichloropropene	0.3943	0.4303	-9.1	103	0.00
41	T	Tert-Amyl-Methyl ether	0.5634	0.5681	-0.8	94	0.00
42	T	Carbon Tetrachloride	0.4593	0.5513	-20.0	112	0.00
43	S	1,2-Dichloroethane-d4	0.2880	0.3197	-11.0	102	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.3505	0.3972	-13.3	104	0.00
46	T	Benzene	1.0269	1.0680	-4.0	98	0.00
47	T	Trichloroethene	0.2739	0.2956	-7.9	102	0.00
48	T	Methylcyclohexane	0.4161	0.4612	-10.8	107	0.00
49	C	1,2-Dichloropropane	0.2286	0.2224	2.7	93	0.00
50	T	Bromodichloromethane	0.4018	0.4451	-10.8	100	0.00
51	T	1,4-Dioxane	0.0012	0.0013	-10.4	98	0.00
52	T	Dibromomethane	0.1353	0.1345	0.6	94	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0983	0.0885	10.0	80	0.00
54	T	4-Methyl-2-Pentanone	0.0401	0.0365	8.9	83	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413032.D Vial: 2
Acq On : 16 Jun 2016 14:25 Operator: FJB
Sample : WG573037-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4090	0.4359	-6.6	96	0.00
56	T	Dimethyl Disulfide	0.2183	0.2240	-2.6	96	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	100	0.00
58	S	Toluene-d8	1.3084	1.3794	-5.4	103	0.00
59	C	Toluene	1.5520	1.5614	-0.6	100	0.00
60	T	Ethyl Methacrylate	0.2981	0.2793	6.3	89	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.5201	0.5321	-2.3	96	0.00
63	T	1,1,2-Trichloroethane	0.2449	0.2268	7.4	91	0.00
64	T	2-Hexanone	0.0515	0.0457	11.3	86	0.00
65	T	1,3-Dichloropropane	0.4360	0.4101	6.0	90	0.00
66	T	Tetrachloroethene	0.3325	0.3562	-7.1	109	0.00
67	T	Dibromochloromethane	0.3576	0.3611	-1.0	97	0.00
68	T	1,2-Dibromoethane	0.2441	0.2302	5.7	91	0.00
69	T	1-Chlorohexane	0.5298	0.5521	-4.2	106	0.00
70	P	Chlorobenzene	1.0466	1.0416	0.5	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4055	0.4240	-4.6	102	0.00
72	C	Ethylbenzene	0.5726	0.5778	-0.9	103	0.00
73	T	m-,p-Xylene	0.6716	0.6926	-3.1	103	0.00
74	T	o-Xylene	0.6566	0.6728	-2.5	102	0.00
75	T	Styrene	1.0770	1.1203	-4.0	100	0.00
76	P	Bromoform	0.2121	0.2158	-1.7	97	0.00
77	T	Isopropylbenzene	1.7444	1.8823	-7.9	106	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	107	0.00
79	P	1,1,2,2-Tetrachloroethane	0.5018	0.4164	17.0	87	0.00
80	S	p-Bromofluorobenzene	1.0352	1.0254	0.9	108	0.00
81	T	1,2,3-Trichloropropane	0.1545	0.1390	10.0	96	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1376	0.1372	0.3	97	0.00
83	T	n-Propylbenzene	3.9003	3.8814	0.5	105	0.00
84	T	Bromobenzene	0.8022	0.7695	4.1	103	0.00
85	T	1,3,5-Trimethylbenzene	2.8411	2.8510	-0.3	106	0.00
86	T	2-Chlorotoluene	2.7231	2.6005	4.5	99	0.00
87	T	4-Chlorotoluene	2.4597	2.4446	0.6	112	0.00
88	T	a-Methylstyrene	1.3479	1.2791	5.1	102	0.00
89	T	tert-Butylbenzene	0.5558	0.5440	2.1	109	0.00
90	T	1,2,4-Trimethylbenzene	2.9214	2.9288	-0.3	107	0.00
91	T	sec-Butylbenzene	3.3424	3.3657	-0.7	108	0.00
92	T	p-Isopropyltoluene	2.8379	2.8721	-1.2	109	0.00
93	T	1,3-Dichlorobenzene	1.5448	1.5321	0.8	107	0.00
94	T	1,4-Dichlorobenzene	1.5574	1.4823	4.8	105	0.00
95	T	n-Butylbenzene	2.8056	2.8337	-1.0	108	0.00
96	T	1,2-Dichlorobenzene	1.3739	1.2810	6.8	103	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1007	0.0886	12.0	91	0.00
98	T	1,2,4-Trichlorobenzene	1.0269	0.9972	2.9	105	0.00
99	T	Hexachlorobutadiene	0.4798	0.5251	-9.4	122	0.00
100	T	Naphthalene	1.5257	1.3274	13.0	91	0.00
101	T	1,2,3-Trichlorobenzene	0.8664	0.7860	9.3	102	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413032.D 8260WT.M Mon Jun 20 09:11:49 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413032.D Vial: 2
Acq On : 16 Jun 2016 14:25 Operator: FJB
Sample : WG573037-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	94	0.00
2	T	Dichlorodifluoromethane	50.0000	57.6485	-15.3	104	0.00
3	P	Chloromethane	50.0000	46.5578	6.9	90	0.00
4	C	Vinyl Chloride	50.0000	55.1240	-10.2	103	0.00
5	T	1,3-Butadiene	50.0000	62.9364	-25.9#	115	0.00
6	T	Bromomethane	50.0000	36.9767	26.0#	72	0.00
7	T	Chloroethane	50.0000	48.9325	2.1	94	0.00
8	T	Trichlorofluoromethane	50.0000	59.7435	-19.5	113	0.00
9	T	Diethyl ether	100.0000	94.8900	5.1	92	0.00
10	T	Isoprene	50.0000	50.9718	-1.9	99	0.00
11	T	Acrolein	50.0000	44.5317	10.9	86	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	55.4511	-10.9	107	0.00
13	T	Acetone	50.0000	52.1548	-4.3	94	0.00
14	C	1,1-Dichloroethene	50.0000	54.6514	-9.3	105	0.00
15	T	Tert-Butyl Alcohol	200.0000	236.9793	-18.5	113	0.00
16	T	Dimethyl Sulfide	50.0000	48.4405	3.1	93	0.00
17	T	Iodomethane	50.0000	28.4930	43.0#	56	0.00
18	T	Methyl acetate	50.0000	42.7704	14.5	83	0.00
19	T	Methylene Chloride	50.0000	48.8209	2.4	95	0.00
20	T	Carbon Disulfide	50.0000	53.0253	-6.1	104	0.00
21	T	Acrylonitrile	50.0000	47.5881	4.8	85	0.00
22	T	Methyl Tert Butyl Ether	50.0000	49.9201	0.2	90	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.0503	-4.1	99	0.00
24	T	n-Hexane	50.0000	54.4236	-8.8	105	0.00
25	T	Diisopropyl ether	100.0000	95.9026	4.1	92	0.00
26	T	Vinyl Acetate	50.0000	49.2832	1.4	89	0.00
27	P	1,1-Dichloroethane	50.0000	52.3061	-4.6	98	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	100.9239	-0.9	94	0.00
29	T	2-Butanone	50.0000	45.9348	8.1	84	0.00
30	T	Propionitrile	100.0000	96.3269	3.7	89	0.00
31	T	2,2-Dichloropropane	50.0000	61.8026	-23.6	115	0.00
32	T	cis-1,2-Dichloroethene	50.0000	50.9485	-1.9	98	0.00
33	C	Chloroform	50.0000	54.8264	-9.7	104	0.00
34		1-Bromopropane	50.0000	57.8711	-15.7	110	0.00
35	T	Bromochloromethane	50.0000	51.2707	-2.5	96	0.00
36	T	Tetrahydrofuran	100.0000	82.0898	17.9	83	0.00
37	S	Dibromofluoromethane	25.0000	27.3819	-9.5	102	0.00
38	T	1,1,1-Trichloroethane	50.0000	59.5586	-19.1	111	0.00
39	T	Cyclohexane	50.0000	51.6569	-3.3	101	0.00
40	T	1,1-Dichloropropene	50.0000	54.5654	-9.1	103	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	100.8347	-0.8	94	0.00
42	T	Carbon Tetrachloride	50.0000	60.0125	-20.0	112	0.00
43	S	1,2-Dichloroethane-d4	25.0000	27.7486	-11.0	102	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	56.6636	-13.3	104	0.00
46	T	Benzene	50.0000	51.9972	-4.0	98	0.00
47	T	Trichloroethene	50.0000	53.9600	-7.9	102	0.00
48	T	Methylcyclohexane	50.0000	55.4235	-10.8	107	0.00
49	C	1,2-Dichloropropane	50.0000	48.6480	2.7	93	0.00
50	T	Bromodichloromethane	50.0000	55.3826	-10.8	100	0.00
51	T	1,4-Dioxane	200.0000	220.3548	-10.2	98	0.00
52	T	Dibromomethane	50.0000	49.7082	0.6	94	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	45.0178	10.0	80	0.00
54	T	4-Methyl-2-Pentanone	50.0000	45.5327	8.9	83	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413032.D Vial: 2
Acq On : 16 Jun 2016 14:25 Operator: FJB
Sample : WG573037-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.2922	-6.6	96	0.00
56	T	Dimethyl Disulfide	50.0000	51.3144	-2.6	96	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	25.0000	26.3564	-5.4	103	0.00
59	C	Toluene	50.0000	50.3002	-0.6	100	0.00
60	T	Ethyl Methacrylate	50.0000	46.8562	6.3	89	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	51.1483	-2.3	96	0.00
63	T	1,1,2-Trichloroethane	50.0000	46.3057	7.4	91	0.00
64	T	2-Hexanone	50.0000	44.3674	11.3	86	0.00
65	T	1,3-Dichloropropane	50.0000	47.0219	6.0	90	0.00
66	T	Tetrachloroethene	50.0000	53.5544	-7.1	109	0.00
67	T	Dibromochloromethane	50.0000	50.4917	-1.0	97	0.00
68	T	1,2-Dibromoethane	50.0000	47.1634	5.7	91	0.00
69	T	1-Chlorohexane	50.0000	52.1093	-4.2	106	0.00
70	P	Chlorobenzene	50.0000	49.7630	0.5	100	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	52.2807	-4.6	102	0.00
72	C	Ethylbenzene	50.0000	50.4524	-0.9	103	0.00
73	T	m-,p-Xylene	100.0000	103.1131	-3.1	103	0.00
74	T	o-Xylene	50.0000	51.2307	-2.5	102	0.00
75	T	Styrene	50.0000	52.0104	-4.0	100	0.00
76	P	Bromoform	50.0000	50.8617	-1.7	97	0.00
77	T	Isopropylbenzene	50.0000	53.9527	-7.9	106	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	107	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	41.4928	17.0	87	0.00
80	S	p-Bromofluorobenzene	25.0000	24.7636	0.9	108	0.00
81	T	1,2,3-Trichloropropane	50.0000	44.9807	10.0	96	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	43.6303	12.7	97	0.00
83	T	n-Propylbenzene	50.0000	49.7580	0.5	105	0.00
84	T	Bromobenzene	50.0000	47.9586	4.1	103	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	50.1733	-0.3	106	0.00
86	T	2-Chlorotoluene	50.0000	47.7491	4.5	99	0.00
87	T	4-Chlorotoluene	50.0000	49.6923	0.6	112	0.00
88	T	a-Methylstyrene	50.0000	47.4481	5.1	102	0.00
89	T	tert-Butylbenzene	50.0000	48.9378	2.1	109	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	50.1269	-0.3	107	0.00
91	T	sec-Butylbenzene	50.0000	50.3494	-0.7	108	0.00
92	T	p-Isopropyltoluene	50.0000	50.6022	-1.2	109	0.00
93	T	1,3-Dichlorobenzene	50.0000	49.5900	0.8	107	0.00
94	T	1,4-Dichlorobenzene	50.0000	47.5896	4.8	105	0.00
95	T	n-Butylbenzene	50.0000	50.5007	-1.0	108	0.00
96	T	1,2-Dichlorobenzene	50.0000	46.6205	6.8	103	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	43.9791	12.0	91	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	48.5529	2.9	105	0.00
99	T	Hexachlorobutadiene	50.0000	54.7126	-9.4	122	0.00
100	T	Naphthalene	50.0000	43.5006	13.0	91	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	45.3576	9.3	102	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413032.D 8260WT.M Mon Jun 20 09:11:52 2016 Page 2

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\2\DATA\051316\8M412218.D          Vial: 3
Acq On    : 13 May 2016  12:36                       Operator: TMB
Sample    : WG568561-01 50ng BFB STD 8260            Inst    : HPMS8
Misc      : 1,1 STD76034                             Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title     : SOP:OVL MSV01
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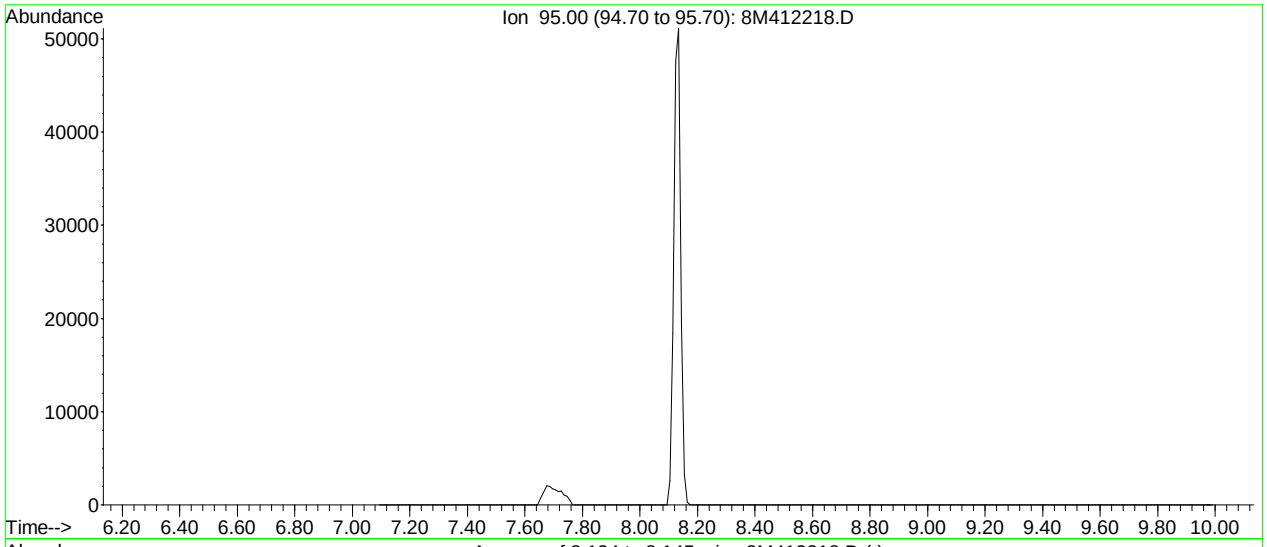

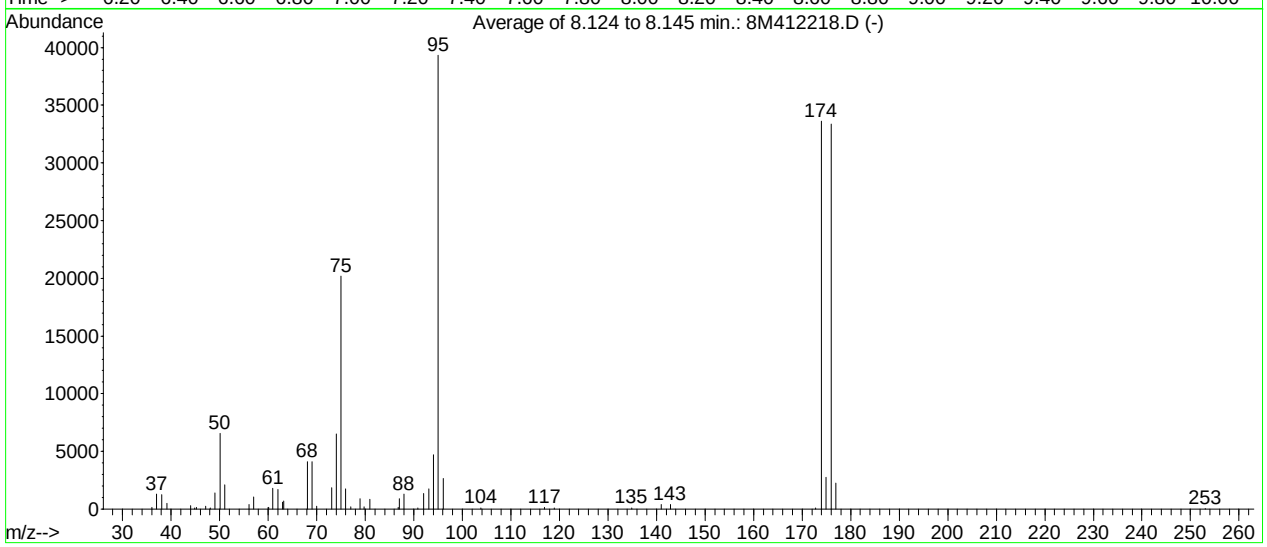

AutoFind: Scans 102, 103, 104; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.7	6575	PASS
75	95	30	60	51.3	20171	PASS
95	95	100	100	100.0	39312	PASS
96	95	5	9	6.7	2649	PASS
173	174	0.00	2	0.4	122	PASS
174	95	50	100	85.5	33616	PASS
175	174	5	9	8.2	2746	PASS
176	174	95	101	99.2	33360	PASS
177	176	5	9	6.8	2267	PASS

8M412218.D BFB.M Fri May 13 12:47:24 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413031.D Vial: 1
Acq On    : 16 Jun 2016  14:02                        Operator: FJB
Sample    : WG573037-01 BFB 50ng 8260                 Inst    : HPMS8
Misc      : 1,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title     : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
```

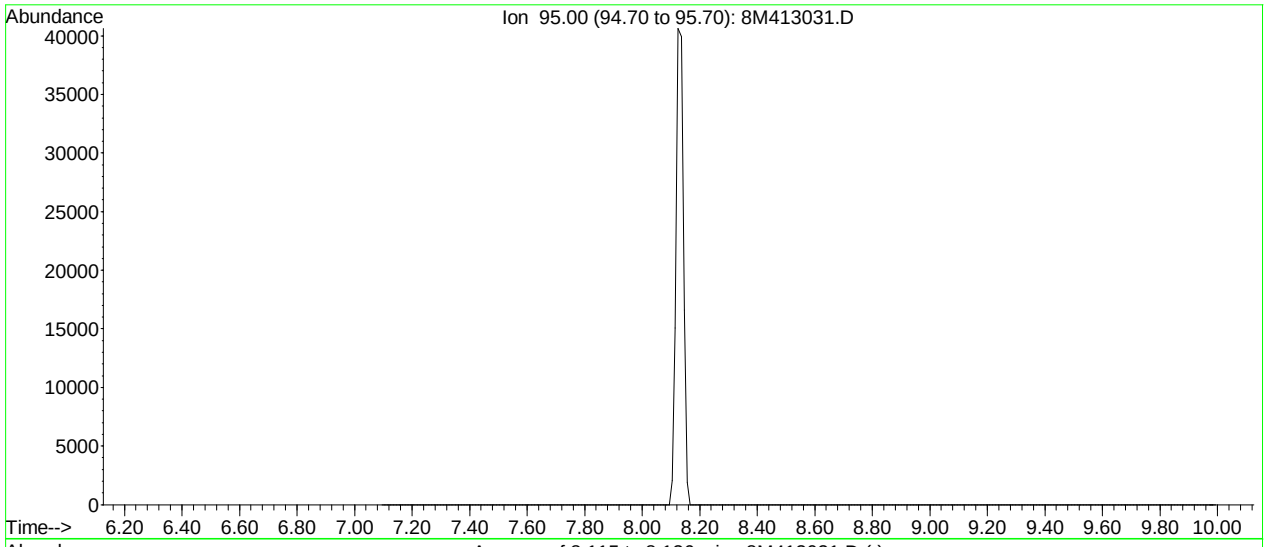

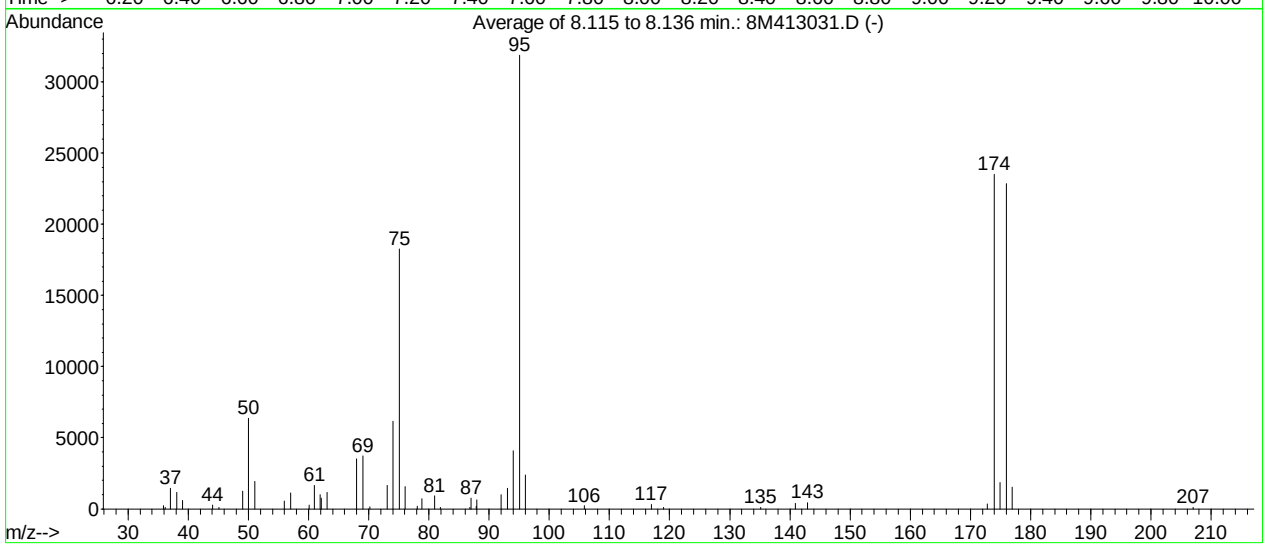

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.9	6352	PASS
75	95	30	60	57.2	18249	PASS
95	95	100	100	100.0	31890	PASS
96	95	5	9	7.4	2366	PASS
173	174	0.00	2	1.5	352	PASS
174	95	50	100	73.7	23499	PASS
175	174	5	9	8.0	1870	PASS
176	174	95	101	97.3	22869	PASS
177	176	5	9	6.7	1538	PASS

8M413031.D 8260WT.M Mon Jun 20 09:08:01 2016

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413034.D Vial: 4
Acq On : 16 Jun 2016 15:23 Operator: FJB
Sample : WG573038-01 BLANK 6/16 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:18:21 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	717429	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	533754	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	292043	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	209977	27.2409 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 108.96%		
43) 1,2-Dichloroethane-d4	10.30	65	235474	28.4902 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 113.96%		
58) Toluene-d8	12.68	98	740524	26.5096 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 106.04%		
80) p-Bromofluorobenzene	16.08	95	307463	25.4256 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.72%		
Target Compounds					Qvalue
36) Tetrahydrofuran	9.64	42	956	1.2239 ug/L	79

(#) = qualifier out of range (m) = manual integration
8M413034.D 8260WT.M Mon Jun 20 09:19:27 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413034.D Vial: 4
Acq On : 16 Jun 2016 15:23 Operator: FJB
Sample : WG573038-01 BLANK 6/16 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 8:18 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

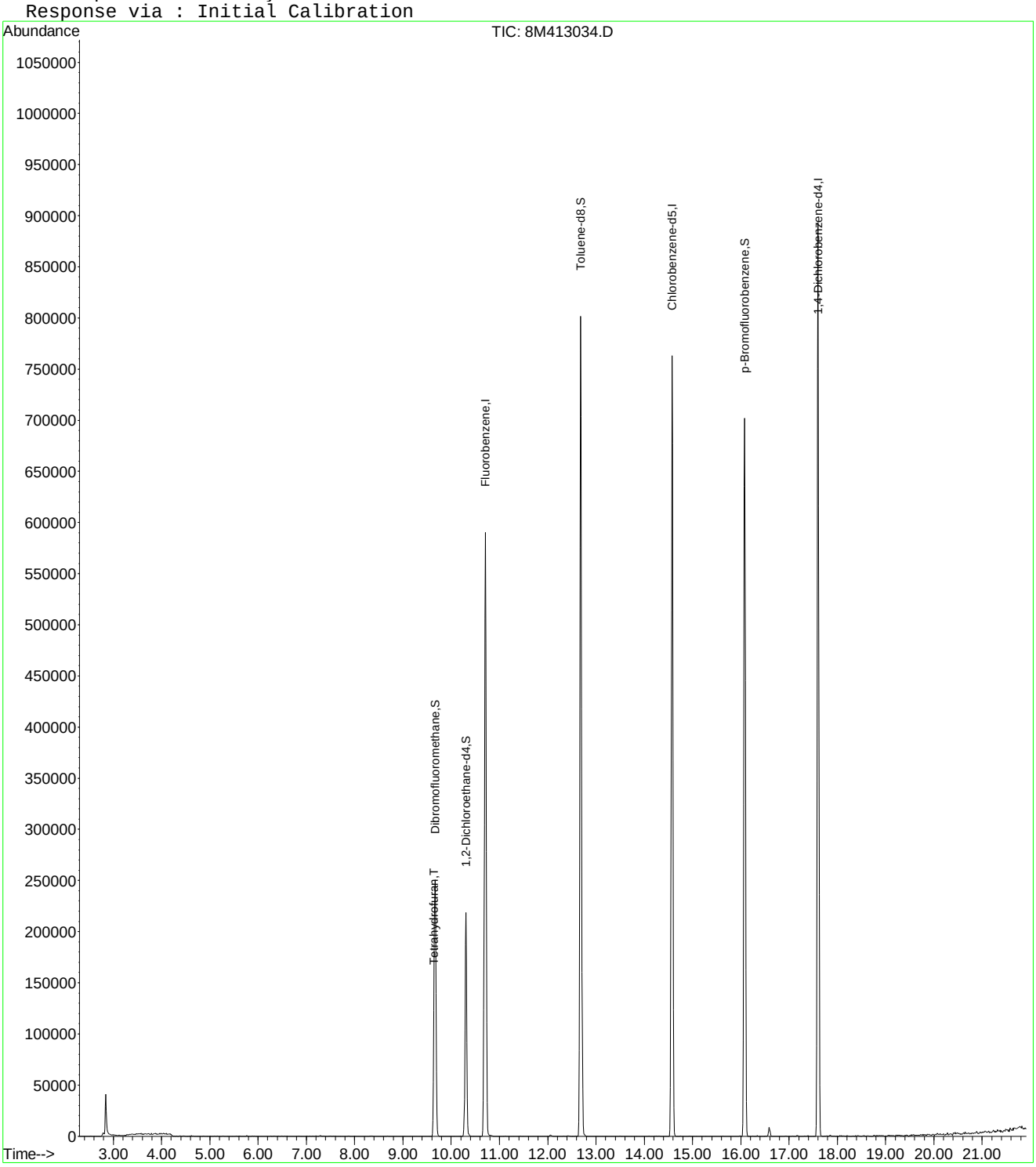

8M413034.D 8260WT.M Mon Jun 20 09:19:28 2016 Page 2

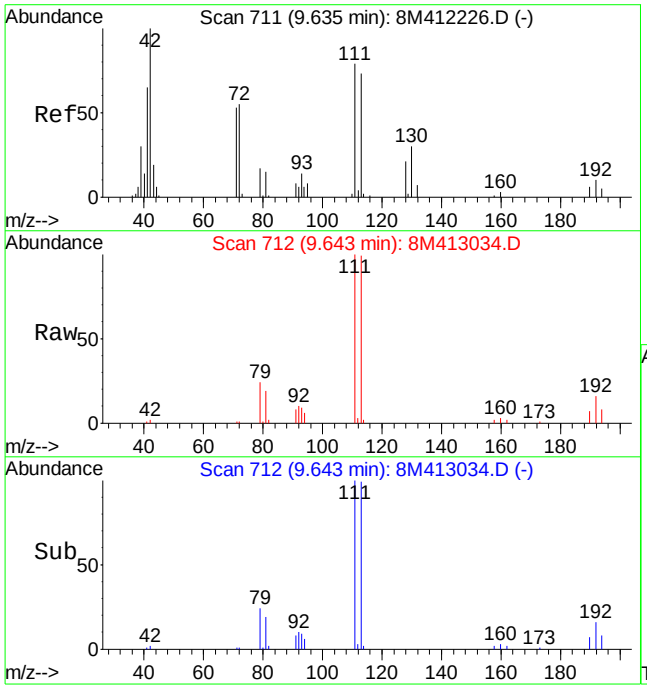

#36
Tetrahydrofuran
Concen: 1.22 ug/L
RT: 9.64 min Scan# 712
Delta R.T. 0.01 min
Lab File: 8M413034.D
Acq: 16 Jun 2016 15:23

Tgt Ion: 42 Resp: 956

Ion	Ratio	Lower	Upper
42	100		
72	74.6	33.8	78.8
71	41.9	32.0	74.8

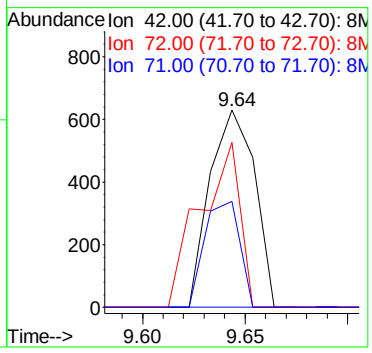

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413035.D Vial: 5
Acq On : 16 Jun 2016 15:52 Operator: FJB
Sample : WG573038-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:18:21 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	724153	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	540053	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	307888	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	213643	27.4591 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.84%		
43) 1,2-Dichloroethane-d4	10.31	65	245621	29.4420 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 117.76%		
58) Toluene-d8	12.68	98	736706	26.0653 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.28%		
80) p-Bromofluorobenzene	16.08	95	316242	24.8057 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.24%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	252315	20.7819 ug/L	99
3) Chloromethane	3.62	50	134208	18.9371 ug/L	99
4) Vinyl Chloride	3.85	62	192999	22.9533 ug/L	100
5) 1,3-Butadiene	3.88	54	21596	3.0627 ug/L	93
6) Bromomethane	4.72	94	67601	14.0319 ug/L	96
7) Chloroethane	4.89	64	94578	20.4419 ug/L	99
8) Trichlorofluoromethane	5.38	101	348634	22.2833 ug/L	99
9) Diethyl ether	5.90	59	376158	100.7087 ug/L	98
10) Isoprene	5.93	67	202345	21.2972 ug/L	96
11) Acrolein	6.13	56	30585	91.4560 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	157632	21.4340 ug/L	96
13) Acetone	6.23	43	17743	21.7775 ug/L	94
14) 1,1-Dichloroethene	6.46	61	221517	18.9174 ug/L	99
15) Tert-Butyl Alcohol	6.58	59	54296	207.9591 ug/L	97
16) Dimethyl Sulfide	6.73	62	149005	35.5890 ug/L	99
17) Iodomethane	6.99	142	33488	12.6554 ug/L	96
18) Methyl acetate	7.00	43	45239	20.5416 ug/L	98
19) Methylene Chloride	7.26	84	143716	19.2860 ug/L	97
20) Carbon Disulfide	7.29	76	443914	18.1155 ug/L	99
21) Acrylonitrile	7.44	53	20303	19.2061 ug/L	97
22) Methyl Tert Butyl Ether	7.46	73	362621	22.4840 ug/L	97
23) trans-1,2-Dichloroethene	7.70	61	216143	20.0918 ug/L	99
24) n-Hexane	7.78	57	148742	18.6200 ug/L	98
25) Diisopropyl ether	8.12	45	1674940	99.8839 ug/L	96
26) Vinyl Acetate	8.30	43	113665	14.8046 ug/L	99
27) 1,1-Dichloroethane	8.32	63	260446	19.4944 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	1819224	101.2567 ug/L	98
29) 2-Butanone	8.88	43	24177	20.1972 ug/L	96
30) Propionitrile	8.99	54	32822	94.0889 ug/L	98
31) 2,2-Dichloropropane	9.11	77	323361	22.9674 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	170309	20.4887 ug/L	97
33) Chloroform	9.37	83	334264	21.1899 ug/L	100
34) 1-Bromopropane	9.51	122	36217	30.4181 ug/L	100
35) Bromochloromethane	9.60	130	88133	20.6762 ug/L	92
36) Tetrahydrofuran	9.62	42	66083	83.8177 ug/L	91
38) 1,1,1-Trichloroethane	9.91	97	336501	22.4572 ug/L	100
39) Cyclohexane	9.94	56	203672	19.6331 ug/L	95
40) 1,1-Dichloropropene	10.10	75	235033	20.5788 ug/L	98
41) Tert-Amyl-Methyl ether	10.21	73	1758569	107.7684 ug/L	100
42) Carbon Tetrachloride	10.25	117	299046	22.4750 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M413035.D 8260WT.M Mon Jun 20 09:08:47 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413035.D Vial: 5
Acq On : 16 Jun 2016 15:52 Operator: FJB
Sample : WG573038-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:18:21 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	236926	23.3353	ug/L		98
46)	Benzene	10.46	78	605690	20.3618	ug/L		99
47)	Trichloroethene	11.21	130	172682	21.7657	ug/L		99
48)	Methylcyclohexane	11.30	83	251284	20.8488	ug/L		98
49)	1,2-Dichloropropane	11.42	63	134844	20.3635	ug/L		90
50)	Bromodichloromethane	11.73	83	251163	21.5803	ug/L		98
51)	1,4-Dioxane	11.72	88	5908	177.6120	ug/L		98
52)	Dibromomethane	11.81	93	77825	19.8542	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.03	63	55535	19.5124	ug/L		91
54)	4-Methyl-2-Pentanone	12.05	58	22978	19.7642	ug/L		93
55)	cis-1,3-Dichloropropene	12.36	75	273539	23.0905	ug/L		100
56)	Dimethyl Disulfide	12.62	79	137758	21.7873	ug/L		95
59)	Toluene	12.79	91	661287	19.7238	ug/L		99
60)	Ethyl Methacrylate	12.88	69	133238	20.6930	ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	234780	20.8960	ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	103597	19.5817	ug/L		97
64)	2-Hexanone	13.12	58	20672	18.5940	ug/L	#	95
65)	1,3-Dichloropropane	13.48	76	194941	20.6961	ug/L		95
66)	Tetrachloroethene	13.60	164	144676	20.1408	ug/L		99
67)	Dibromochloromethane	13.87	129	158132	20.4706	ug/L		100
68)	1,2-Dibromoethane	14.12	107	105951	20.0943	ug/L		99
69)	1-Chlorohexane	14.21	91	223061	19.4904	ug/L		97
70)	Chlorobenzene	14.63	112	460997	20.3904	ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.66	131	182348	20.8187	ug/L		99
72)	Ethylbenzene	14.66	106	245573	19.8527	ug/L		100
73)	m-,p-Xylene	14.75	106	592898	40.8641	ug/L		95
74)	o-Xylene	15.31	106	299422	21.1082	ug/L		99
75)	Styrene	15.35	104	480813	20.6661	ug/L		96
76)	Bromoform	15.83	173	91438	19.9564	ug/L		99
77)	Isopropylbenzene	15.73	105	813144	21.5784	ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	109337	17.6914	ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	37733	19.8268	ug/L		73
82)	trans-1,4-Dichloro-2-Buten	16.19	53	28275	15.0111	ug/L		99
83)	n-Propylbenzene	16.24	91	981466	20.4328	ug/L		100
84)	Bromobenzene	16.37	156	189420	19.1720	ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	710541	20.3071	ug/L		100
86)	2-Chlorotoluene	16.51	91	681730	20.3282	ug/L		98
87)	4-Chlorotoluene	16.56	91	596710	19.6981	ug/L		99
88)	a-Methylstyrene	16.83	118	344648	20.7612	ug/L		100
89)	tert-Butylbenzene	16.90	134	134805	19.6932	ug/L		98
90)	1,2,4-Trimethylbenzene	16.94	105	716254	19.9077	ug/L		99
91)	sec-Butylbenzene	17.16	105	833548	20.2499	ug/L		99
92)	p-Isopropyltoluene	17.32	119	700643	20.0466	ug/L		100
93)	1,3-Dichlorobenzene	17.51	146	379985	19.9735	ug/L		100
94)	1,4-Dichlorobenzene	17.64	146	378307	19.7240	ug/L		99
95)	n-Butylbenzene	17.85	91	671796	19.4428	ug/L		100
96)	1,2-Dichlorobenzene	18.14	146	333637	19.7182	ug/L		97
97)	1,2-Dibromo-3-Chloropropan	19.13	75	24498	19.7473	ug/L		99
98)	1,2,4-Trichlorobenzene	20.28	180	244999	19.3716	ug/L		99
99)	Hexachlorobutadiene	20.43	225	125683	21.2686	ug/L		98
100)	Naphthalene	20.65	128	326897	17.3970	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	202292	18.9589	ug/L		97

(#) = qualifier out of range (m) = manual integration
8M413035.D 8260WT.M Mon Jun 20 09:08:47 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413035.D Vial: 5
Acq On : 16 Jun 2016 15:52 Operator: FJB
Sample : WG573038-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 8:18 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

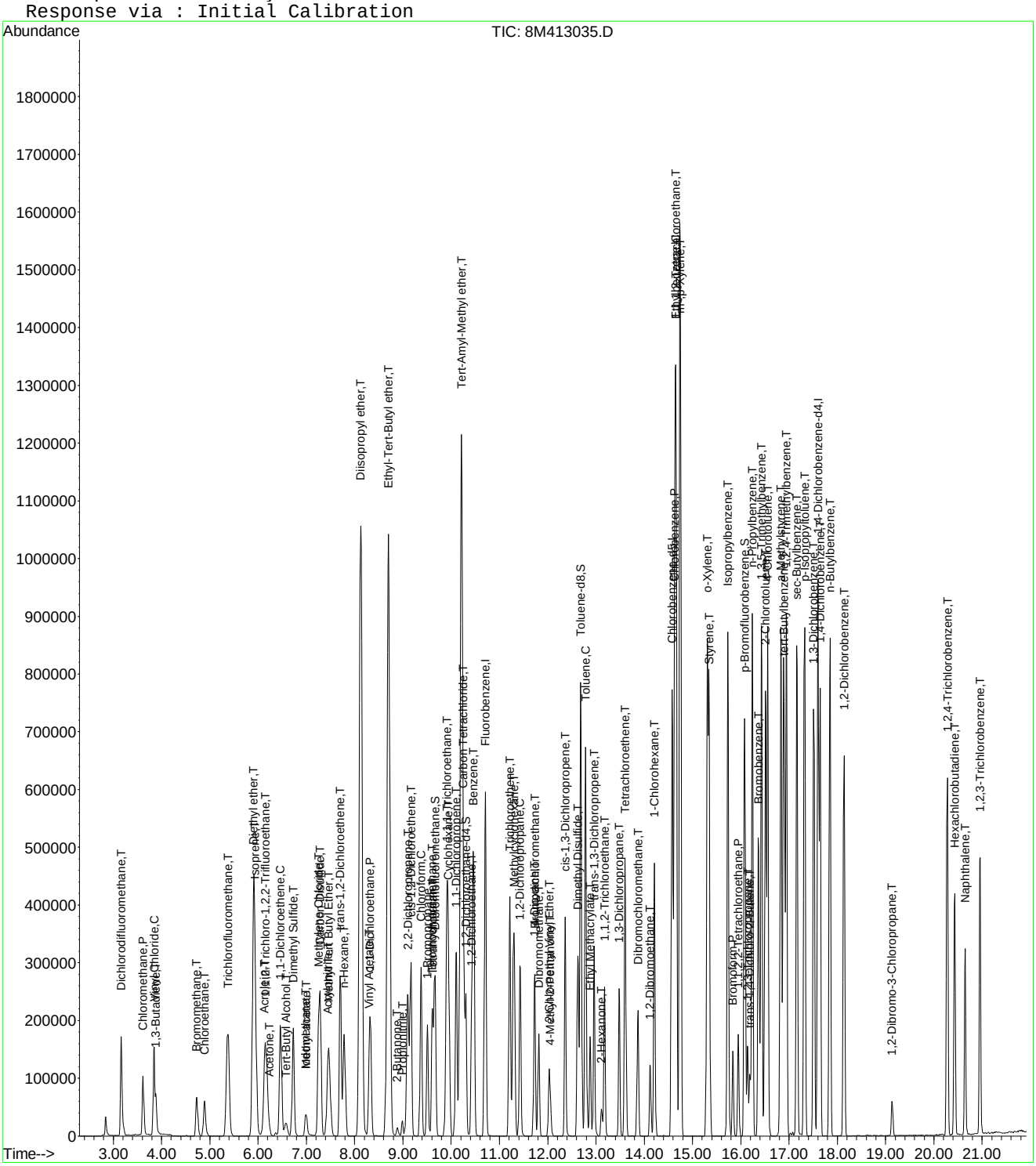

8M413035.D 8260WT.M Mon Jun 20 09:08:48 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413036.D Vial: 6
Acq On : 16 Jun 2016 16:21 Operator: FJB
Sample : WG573038-03 20ug/L LCS2 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:18:22 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	735322	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	553122	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	312159	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	213768	27.0578 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 108.24%		
43) 1,2-Dichloroethane-d4	10.30	65	240558	28.3971 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 113.60%		
58) Toluene-d8	12.68	98	752327	25.9891 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.96%		
80) p-Bromofluorobenzene	16.08	95	319552	24.7224 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.88%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	268839	21.8065 ug/L	99
3) Chloromethane	3.62	50	145372	20.2008 ug/L	99
4) Vinyl Chloride	3.85	62	205956	24.1222 ug/L	100
5) 1,3-Butadiene	3.88	54	22591	3.1551 ug/L	94
6) Bromomethane	4.72	94	76970	15.6580 ug/L	99
7) Chloroethane	4.89	64	102039	21.7196 ug/L	98
8) Trichlorofluoromethane	5.38	101	362939	22.8452 ug/L	98
9) Diethyl ether	5.90	59	397097	104.6998 ug/L	97
10) Isoprene	5.94	67	218692	22.6682 ug/L	99
11) Acrolein	6.14	56	33320	98.1209 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	161414	21.6149 ug/L	94
13) Acetone	6.23	43	19963	24.1301 ug/L	97
14) 1,1-Dichloroethene	6.46	61	233526	19.6401 ug/L	99
15) Tert-Butyl Alcohol	6.57	59	65029	245.2844 ug/L	97
16) Dimethyl Sulfide	6.73	62	155773	36.6403 ug/L	99
17) Iodomethane	6.99	142	48971	16.9853 ug/L	95
18) Methyl acetate	7.00	43	45727	20.4478 ug/L	97
19) Methylene Chloride	7.25	84	150567	19.8985 ug/L	100
20) Carbon Disulfide	7.29	76	462391	18.5829 ug/L	100
21) Acrylonitrile	7.43	53	21986	20.4823 ug/L	92
22) Methyl Tert Butyl Ether	7.47	73	371382	22.6774 ug/L	98
23) trans-1,2-Dichloroethene	7.70	61	222944	20.4092 ug/L	100
24) n-Hexane	7.78	57	159355	19.6456 ug/L	98
25) Diisopropyl ether	8.12	45	1757628	103.2229 ug/L	96
26) Vinyl Acetate	8.30	43	118636	15.2174 ug/L	100
27) 1,1-Dichloroethane	8.32	63	269975	19.9007 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1896750	103.9682 ug/L	98
29) 2-Butanone	8.88	43	25340	20.8472 ug/L	94
30) Propionitrile	8.99	54	36109	101.9393 ug/L	100
31) 2,2-Dichloropropane	9.10	77	336668	23.5494 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	179241	21.2357 ug/L	98
33) Chloroform	9.37	83	347237	21.6779 ug/L	100
34) 1-Bromopropane	9.51	122	37842	31.3001 ug/L	100
35) Bromochloromethane	9.61	130	89039	20.5714 ug/L	96
36) Tetrahydrofuran	9.63	42	72974	91.1522 ug/L	97
38) 1,1,1-Trichloroethane	9.91	97	353698	23.2464 ug/L	100
39) Cyclohexane	9.93	56	214088	20.3237 ug/L	97
40) 1,1-Dichloropropene	10.11	75	243549	21.0005 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1837419	110.8902 ug/L	99
42) Carbon Tetrachloride	10.25	117	311990	23.0917 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413036.D 8260WT.M Mon Jun 20 09:08:50 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413036.D Vial: 6
Acq On : 16 Jun 2016 16:21 Operator: FJB
Sample : WG573038-03 20ug/L LCS2 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 08:18:22 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	242552	23.5265 ug/L		98
46)	Benzene	10.46	78	636475	21.0718 ug/L		100
47)	Trichloroethene	11.21	130	181127	22.4834 ug/L		99
48)	Methylcyclohexane	11.30	83	268536	21.9418 ug/L		99
49)	1,2-Dichloropropane	11.42	63	141319	21.0171 ug/L		89
50)	Bromodichloromethane	11.73	83	265829	22.4935 ug/L		99
51)	1,4-Dioxane	11.72	88	6780	200.7309 ug/L		99
52)	Dibromomethane	11.81	93	79309	19.9255 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.02	63	56761	19.6402 ug/L		94
54)	4-Methyl-2-Pentanone	12.06	58	24424	20.6889 ug/L		92
55)	cis-1,3-Dichloropropene	12.36	75	282091	23.4507 ug/L		99
56)	Dimethyl Disulfide	12.62	79	140775	21.9263 ug/L		94
59)	Toluene	12.79	91	690537	20.1096 ug/L		99
60)	Ethyl Methacrylate	12.88	69	134927	20.4602 ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	242695	21.0901 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	106261	19.6107 ug/L		98
64)	2-Hexanone	13.12	58	20293	17.8218 ug/L	#	97
65)	1,3-Dichloropropane	13.48	76	202255	20.9653 ug/L		97
66)	Tetrachloroethene	13.60	164	150723	20.4869 ug/L		99
67)	Dibromochloromethane	13.87	129	164885	20.8405 ug/L		100
68)	1,2-Dibromoethane	14.12	107	107229	19.8562 ug/L		100
69)	1-Chlorohexane	14.21	91	238806	20.3731 ug/L		97
70)	Chlorobenzene	14.63	112	479877	20.7240 ug/L		100
71)	1,1,1,2-Tetrachloroethane	14.66	131	187840	20.9390 ug/L		99
72)	Ethylbenzene	14.66	106	252056	19.8954 ug/L		96
73)	m-,p-Xylene	14.75	106	620374	41.7475 ug/L		96
74)	o-Xylene	15.31	106	310957	21.4035 ug/L		98
75)	Styrene	15.35	104	503519	21.1307 ug/L		97
76)	Bromoform	15.83	173	93776	19.9830 ug/L		98
77)	Isopropylbenzene	15.73	105	848704	21.9899 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	113419	18.1008 ug/L		100
81)	1,2,3-Trichloropropane	16.14	110	37740	19.5591 ug/L		73
82)	trans-1,4-Dichloro-2-Buten	16.19	53	34462	17.9212 ug/L		82
83)	n-Propylbenzene	16.24	91	1024017	21.0269 ug/L		99
84)	Bromobenzene	16.37	156	197176	19.6840 ug/L		97
85)	1,3,5-Trimethylbenzene	16.42	105	742680	20.9352 ug/L		99
86)	2-Chlorotoluene	16.51	91	701689	20.6371 ug/L		98
87)	4-Chlorotoluene	16.56	91	615763	20.0490 ug/L		99
88)	a-Methylstyrene	16.83	118	365485	21.7152 ug/L		99
89)	tert-Butylbenzene	16.89	134	141823	20.4349 ug/L		98
90)	1,2,4-Trimethylbenzene	16.94	105	742233	20.3475 ug/L		100
91)	sec-Butylbenzene	17.16	105	865092	20.7287 ug/L		100
92)	p-Isopropyltoluene	17.32	119	739719	20.8751 ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	398135	20.6412 ug/L		100
94)	1,4-Dichlorobenzene	17.64	146	395783	20.3529 ug/L		99
95)	n-Butylbenzene	17.85	91	695375	19.8498 ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	349070	20.3481 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	26890	21.3789 ug/L		96
98)	1,2,4-Trichlorobenzene	20.28	180	257503	20.0816 ug/L		99
99)	Hexachlorobutadiene	20.43	225	129798	21.6644 ug/L		98
100)	Naphthalene	20.65	128	344850	18.1014 ug/L		100
101)	1,2,3-Trichlorobenzene	20.96	180	209338	19.3508 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M413036.D 8260WT.M Mon Jun 20 09:08:51 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\061616\8M413036.D Vial: 6
Acq On : 16 Jun 2016 16:21 Operator: FJB
Sample : WG573038-03 20ug/L LCS2 8260 Inst : HPMS8
Misc : 1,1 STD76597 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 17 8:18 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

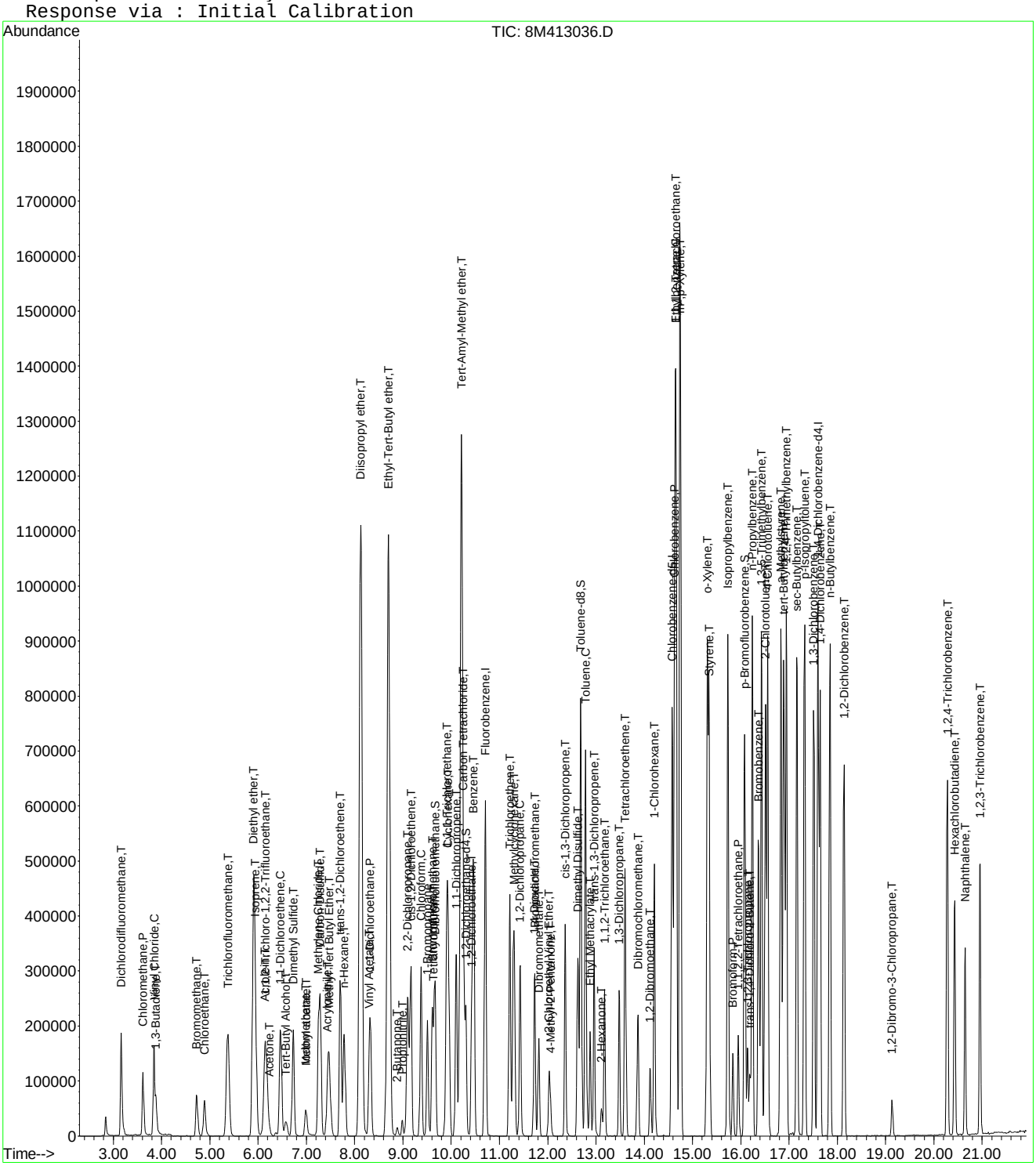

2.2 Semivolatiles Data

2.2.1 Semivolatiles GC/MS Data (Dioxane)

2.2.1.1 Summary Data

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	126-061416	**Prep Method:**	3520C	**Prep Date:**	06/15/2016 18:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573365	**Analyst:**	MES	**Run Date:**	06/21/2016 18:40
Collect Date:	06/14/2016 11:10	**Dilution:**	1	**File ID:**	15M18480
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	73.6	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	C08-061416	**Prep Method:**	3520C	**Prep Date:**	06/15/2016 18:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573365	**Analyst:**	MES	**Run Date:**	06/21/2016 19:02
Collect Date:	06/14/2016 13:10	**Dilution:**	1	**File ID:**	15M18481
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	44.3	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	C03-061416	**Prep Method:**	3520C	**Prep Date:**	06/15/2016 18:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573365	**Analyst:**	MES	**Run Date:**	06/21/2016 19:25
Collect Date:	06/14/2016 14:15	**Dilution:**	1	**File ID:**	15M18482
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	43.2	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.2.1.2 QC Summary Data

Example 8270 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	1261197
Cis = Concentration of the specific internal standard (ug/mL)	40
Ais = Area of the characteristic ion of the specific internal standard	608044
Cx = Concentration of the compound in the standard being measured (ug/mL)	50
RF = Calculated Response Factor	**1.65935**

2.0 Calculating the concentration (C) of a compound in water using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Vi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Vi = Initial volume of sample extracted from prep log (mL)	1021
Cx = Concentration of the compound in the sample being measured (ug/mL)	0.016947
Cx = Concentration of the compound in the sample being measured (ug/L)	**16.947**

3.0 Calculating the concentration (C) of a compound in soil using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Wi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Wi = Initial weight of sample extracted (g) from prep log	30
Cx = Concentration of the compound in the sample being measured (ug/g)	0.576763
Cx = Concentration of the compound in the sample being measured (ug/kg)	**576.7627**

Dry weight correction:

Percent solids (PCT_S)	50
Cd = (Cx) (100)/PCT_S	**1153.525** ug/kg

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve plot

b = intercept from curve plot

Step 2: Calculate y from Quantitation Report

y = 16790/784838 = 0.02139

Step 3: Solve for x

x = (y - b)/m = [(0.02139 -(- 0.0435)]/ 0.0783 = 0.829

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.829) = 20.72 ug/L

Example Spreadsheet Calculation:

Slope from curve, m:	0.0783	
Intercept from curve, b:	-0.0435	
Area of analyte, Ax:	16790	
Area of Internal Standard , Ais:	784484	
Concentration of IS, Cis	25.00	ug/L
Response Ratio (y) :	0.021403	
Amount Ratio:	0.828897	
Concentration (Cx):	20.72241	ug/L

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**0.0259**	
Value of B from plot:	**0.0596**	
Value of C from plot:	**-0.0165**	
Area of analyte from quantitation report:	**203233**	
Area of IS from quantiation report:	**1425653**	
Response ratio, y:	**0.142554**	
C - y:	**-0.15905**	
Root 1 - Computed amount ratio , X1:	**-3.88278**	
Root 2 - Computed amount ratio , X2:	**1.581623**	use this solution
Concentration of IS, Cis:	**40.00**	
Concentration of analyte, Cx:	**63.26**	ug/L

Microbac Laboratories Inc.
Continuous Sample Extract Log

Workgroup: WG572806
Analyst: CPD
Spike Analyst: CPD
Method: 3520C
Run Date: 06/15/2016 18:01
SOP: EXB01 Revison 20
Spike Witness: JDH
Surr Solution: STD74051

TIME ON: 19:15 OFF: 13:30 ON: 17:50 OFF: 12:00

CH2CL2 Lot #: COA18982
sodium sulfate Lot #: COA18814
10N NaOH Lot #: RGT37076
1:1 H2SO4 Lot #: RGT36755

	SAMPLE #	Type	Reference	Prod	pH	Init Amnt	Surr Amnt	Spike Amnt	Spike Sol	Final Vol	Color
1	L16060730-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Colored
2	L16060730-02	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Colored
3	L16060730-03	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
4	L16060756-04	SAMP		827-DIOX	<2>12	1000 mL	.05 mL			1 mL	Colored
5	L16060809-03	SAMP		827-DIOX	<2>12	1000 mL	.05 mL			1 mL	Colored
6	L16060822-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Colored
7	L16060822-03	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
8	L16060822-04	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
9	L16060822-05	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
10	L16060823-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
11	L16060823-03	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Colored
12	L16060823-04	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
13	L16060854-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Colored
14	WG572806-01	BLANK		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
15	WG572806-02	LCS		827-DIOXANE	<2>12	1000 mL	.05 mL	.05 mL	STD75256	1 mL	Transparent
16	WG572806-03	LCS2		827-DIOXANE	<2>12	1000 mL	.05 mL	.05 mL	STD75256	1 mL	Transparent

Due to insufficient sample volume, this preparation batch failed to include the method prescribed MS and MSD.

LCS TV3 Cell 6
LCS DUP TV3 Cell 1

Analyst: Chelsie Davis

Reviewer: Chris Hill

EXTRACT - Modified 01/23/2009
PDF ID: 4813908
Report generated: 06/20/2016 08:50

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062116
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573365

Internal STD: STD76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: STD74214 MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18455	BAKEOUT	1	1		06/21/16 08:46
2	15M18456	WG573501-01 5PPM DFTPP STD	1	1	STD75016	06/21/16 09:05
3	15M18457	WG573501-01 5PPM DFTPP STD	1	1	STD75016	06/21/16 09:34
4	15M18458	WG573501-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 09:52
5	15M18459	WG573501-03 10 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 10:27
6	15M18460	WG573501-04 7.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 10:49
7	15M18461	WG573501-05 2.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:12
8	15M18462	WG573501-06 1 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:34
9	15M18463	WG573501-07 0.4 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:57
10	15M18464	WG573501-08 5PPM 1,4-DIOXANE ALT SRC	1	1	STD74214	06/21/16 12:20
11	15M18465	WG572806-01 BLANK 6/15	1	1		06/21/16 12:54
12	15M18466	WG572806-02 LCS 6/15	1	1		06/21/16 13:17
13	15M18467	WG572806-03 LCSDUP 6/15	1	1		06/21/16 13:40
14	15M18468	WG573008-01 BLANK 6/17	7	1	SOIL	06/21/16 14:03
15	15M18469	WG573008-02 LCS 6/17	7	1	SOIL	06/21/16 14:26
16	15M18470	WG573008-03 LCSDUP 6/17	7	1	SOIL	06/21/16 14:48
17	15M18471	L16060730-01	1	1		06/21/16 15:11
18	15M18472	L16060730-02	1	1		06/21/16 15:34
19	15M18473	L16060854-01	1	1		06/21/16 15:57
20	15M18474	L16060730-03	1	1		06/21/16 16:19
21	15M18475	L16060756-04 827-DIOX	1	1		06/21/16 16:46
22	15M18476	L16060822-01	1	1		06/21/16 17:08
23	15M18477	L16060822-03	1	1		06/21/16 17:31
24	15M18478	L16060822-04	1	1		06/21/16 17:54
25	15M18479	L16060822-05	1	1		06/21/16 18:17
26	15M18480	L16060823-01	1	1		06/21/16 18:40
27	15M18481	L16060823-03	1	1		06/21/16 19:02
28	15M18482	L16060823-04	1	1		06/21/16 19:25
29	15M18483	L16060809-03 827-DIOX	1	1		06/21/16 19:48
30	15M18484	L16060854-01 2X	1	2		06/21/16 20:10
31	15M18485	BAKEOUT	1	1		06/21/16 20:33
32	15M18486	BAKEOUT	1	1		06/21/16 20:55
33	15M18487	BAKEOUT	1	1		06/21/16 21:18

Page: 1 Approved: 22-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062116

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573365

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD: STD74214

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
	WG573501-01 5PPM DFTPP STD rerun DFTPP, pentachlorophenol tailing >2.			
14				
	WG573008-01 BLANK 6/17 DNR-not needed.			
15				
	WG573008-02 LCS DNR-not needed.			
16				
	WG573008-03 LCSDUP DNR-not needed.			
19	X	2	Over Calibration Range	
	L16060854-01			

Page: 2 Approved: 22-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 21-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75850
Analytical Workgroups: L16060730, 060756, 060809, 060822, 060823, 060854

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 22-JUN-2016

Secondary Reviewer: 22-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-22-2016 16:00:51

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8270D

AAB#: WG573365

Login Number: L16060823

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
126-061416	01	06/14/16					06/15/2016	1.3	7		06/21/16	6	40	
C08-061416	03	06/14/16					06/15/2016	1.2	7		06/21/16	6	40	
C03-061416	04	06/14/16					06/15/2016	1.2	7		06/21/16	6.1	40	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4819086
Report generated 06/23/2016 13:28

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060823
Instrument Id: HPMS15
Workgroup (AAB#): WG573365

Method: 827-DIOXANE
CAL ID: HPMS15-21-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1
L16060823-01	1.00	01	73.6
L16060823-03	1.00	01	44.3
L16060823-04	1.00	01	43.2
WG572806-01	1.00	02	61.7
WG572806-02	1.00	02	62.5
WG572806-03	1.00	02	46.5

Surrogates	Surrogate Limits		
1 - 1,4-Dioxane-d8	20	-	129

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4819093
Report generated: 06/23/2016 13:28

METHOD BLANK SUMMARY

Login Number: L16060823
Blank File ID: 15M18465
Prep Date: 06/15/16 18:01
Analyzed Date: 06/21/16 12:54
Analyst: MES

Work Group: WG573365
Blank Sample ID: WG572806-01
Instrument ID: HPMS15
Method: 8270D

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572806-02	15M18466	06/21/16 13:17	02
LCS2	WG572806-03	15M18467	06/21/16 13:40	02
126-061416	L16060823-01	15M18480	06/21/16 18:40	01
C08-061416	L16060823-03	15M18481	06/21/16 19:02	01
C03-061416	L16060823-04	15M18482	06/21/16 19:25	01

Report Name: BLANK_SUMMARY
PDF File ID: 4821148
Report generated 06/23/2016 13:28

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060823 Prep Date: 06/15/16 18:01 Sample ID: WG572806-01
Instrument ID: HPMS15 Run Date: 06/21/16 12:54 Prep Method: 3520C
File ID: 15M18465 Analyst: MES Method: 8270D
Workgroup (AAB#): WG573365 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS15-21-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
1,4-Dioxane	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	61.7	20 - 129	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4819087
23-JUN-2016 13:28

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060823 Analyst: MES Prep Method: 3520C
Instrument ID: HPMS15 Matrix: Water Method: 8270D
Workgroup (AAB#): WG573365 Units: ug/L
QC Key: DOD4 Lot #: STD75256

Sample ID: WG572806-02 LCS File ID: 15M18466 Run Date: 06/21/2016 13:17
Sample ID: WG572806-03 LCS2 File ID: 15M18467 Run Date: 06/21/2016 13:40

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,4-Dioxane	5.00	3.03	60.6	5.00	2.27	45.5	28.6	30 - 104	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,4-Dioxane-d8	62.5	46.5	20 - 129	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4819088
Report generated: 06/23/2016 13:28

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16060823
Instrument: HPMS15
Analyst: MES
Workgroup: WG573501

Tune ID: WG573501-01
Run Date: 06/21/2016
Run Time: 09:34
File ID: 15M18457
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	38.8	34488	PASS
68.0	69.0	0	2.00	1.36	500	PASS
69.0	198	0	100	41.4	36833	PASS
70.0	69.0	0	2.00	0.467	172	PASS
127	198	40.0	60.0	51.9	46131	PASS
197	198	0	1.00	0	0	PASS
198	198	100	100	100	88880	PASS
199	198	5.00	9.00	6.66	5918	PASS
275	198	10.0	30.0	24.9	22090	PASS
365	198	1.00	100	2.65	2358	PASS
441	443	0.0100	100	75.7	9586	PASS
442	198	40.0	100	73.4	65261	PASS
443	442	17.0	23.0	19.4	12659	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573501-02	STD-CCV	01	06/21/2016 09:52	
WG573501-03	STD	01	06/21/2016 10:27	
WG573501-04	STD	01	06/21/2016 10:49	
WG573501-05	STD	01	06/21/2016 11:12	
WG573501-06	STD	01	06/21/2016 11:34	
WG573501-07	STD	01	06/21/2016 11:57	
WG573501-08	SSCV	01	06/21/2016 12:20	
WG572806-01	BLANK	02	06/21/2016 12:54	
WG572806-02	LCS	02	06/21/2016 13:17	
WG572806-03	LCS2	02	06/21/2016 13:40	
L16060823-01	126-061416	01	06/21/2016 18:40	
L16060823-03	C08-061416	01	06/21/2016 19:02	
L16060823-04	C03-061416	01	06/21/2016 19:25	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4819091
Report generated 06/23/2016 13:28

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060823
Analytical Method: 8270D
ICAL Workgroup: WG573501

Instrument ID: HPMS15
Initial Calibration Date: 21-JUN-16 11:57
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
1,4-Dioxane		0.3060	2.56		

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4819089
Report generated 06/23/2016 13:28

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060823

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 21-JUN-16 11:57

Column ID: F

Analyte	WG573501-02			WG573501-03			WG573501-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	5.00	60883.0000	0.3073	10.0	138820.000	0.3164	7.50	103182.000	0.3106

INT_CAL - Modified 03/06/2008
PDF File ID: 4819089
Report generated 06/23/2016 13:28

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060823

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 21-JUN-16 11:57

Column ID: F

Analyte	WG573501-05			WG573501-06			WG573501-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	2.50	26333.0000	0.2969	1.00	13250.0000	0.2966	0.400	5650.00000	0.3081

INT_CAL - Modified 03/06/2008
PDF File ID: 4819089
Report generated 06/23/2016 13:28

Calibration Table Report
Method: DIOXANE_D8.M
Title: OVD MSS01 SIM 1,4-dioxane ICAL 062116
Last Calibration: Tue Jun 21 12:51:17 2016
Curve:WG573501
Calibration Files

Compound	10 15M18459.D	7.5 15M18460.D	5 15M18458.D	2.5 15M18461.D	1 15M18462.D	0.4 15M18463.D	Avg	%RSD
1,4-Dichlorobenzene-d4	ISTD							
1,4-Dioxane	0.316	0.311	0.307	0.297	0.297	0.308	0.306	2.558
1,4-Dioxane-d8	0.426	0.418	0.417	0.402	0.395		0.411	3.044
Nitrobenzene-d5	1.202	1.173	1.128	1.002	0.927	0.906	1.056	12.163
2-Fluorobiphenyl	2.735	2.736	2.691	2.621	2.563	2.651	2.666	2.548
p-Terphenyl-d14	2.793	2.774	2.622	2.460	2.367	2.405	2.570	7.266

Wed Jun 22 12:17:33 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060823 Run Date: 06/21/2016 Sample ID: WG573501-08
Instrument ID: HPMS15 Run Time: 12:20 Method: 8270D
File ID: 15M18464 Analyst: MES QC Key: DOD4
ICal Workgroup: WG573501 Cal ID: HPMS15 - 21-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
1,4-Dioxane		5000	5050	ug/L	0.309	0.900	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4819090
Report generated 06/23/2016 13:28

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060823
Instrument ID: HPMS15
Workgroup (AAB#): WG573365

ICAL CCV Number: WG573501-02
CAL ID: HPMS15-21-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG573501-02	NA	NA	39637
Upper Limit	NA	NA	79274
Lower Limit	NA	NA	19819
L16060823-01	1.00	01	32097
L16060823-03	1.00	01	24731
L16060823-04	1.00	01	24008
WG572806-01	1.00	02	38899
WG572806-02	1.00	02	27126
WG572806-03	1.00	02	34071

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4819092
Report generated 06/23/2016 13:28

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060823
Instrument ID: HPMS15
Workgroup (AAB#): WG573365

ICAL CCV Number: WG573501-02
CAL ID: HPMS15 - 21-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG573501-02	NA	NA	6.93
Upper Limit	NA	NA	7.43
Lower Limit	NA	NA	6.43
L16060823-01	1.00	01	6.936
L16060823-03	1.00	01	6.936
L16060823-04	1.00	01	6.936
WG572806-01	1.00	02	6.936
WG572806-02	1.00	02	6.933
WG572806-03	1.00	02	6.933

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4821149
Report generated: 06/23/2016 13:28

2.2.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18480.D
Acq On : 21 Jun 2016 18:40
Operator : MES
Sample : L16060823-01
Misc : 1,1
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Jun 22 12:26:34 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.936	152	32097	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	48618	3.6811	ug/L	0.00
Spiked Amount 5.000			Recovery	=	73.60%	
4) Nitrobenzene-d5	7.436	82	6000	0.1770	ug/L	0.00
Spiked Amount 5.000			Recovery	=	3.60%	
5) 2-Fluorobiphenyl	8.926	172	1168	0.0136	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.20%	
6) p-Terphenyl-d14	12.203	244	1355	0.0164	ug/L	0.02
Spiked Amount 5.000			Recovery	=	0.40%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18480.D
Acq On : 21 Jun 2016 18:40
Operator : MES
Sample : L16060823-01
Misc : 1,1
ALS Vial : 23 Sample Multiplier: 1

Quant Time: Jun 22 12:26:34 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

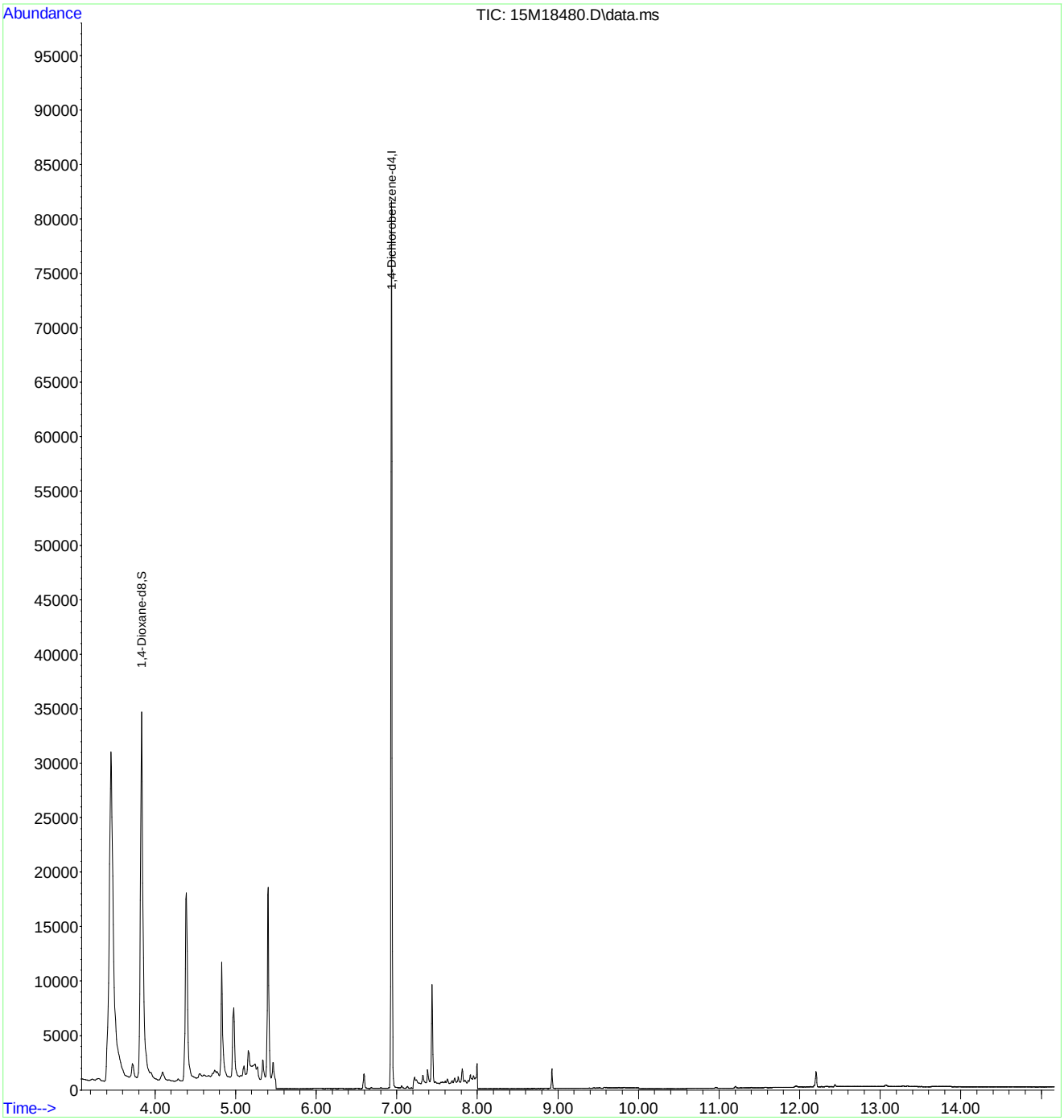

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18481.D
Acq On : 21 Jun 2016 19:02
Operator : MES
Sample : L16060823-03
Misc : 1,1
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Jun 22 08:03:40 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.936	152	24731	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.820	96	22524	2.2134	ug/L	0.00
Spiked Amount 5.000			Recovery	=	44.20%	
4) Nitrobenzene-d5	7.436	82	2394	0.0916	ug/L	0.00
Spiked Amount 5.000			Recovery	=	1.80%	
5) 2-Fluorobiphenyl	8.926	172	86	0.0013	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.203	244	909	0.0143	ug/L	0.02
Spiked Amount 5.000			Recovery	=	0.20%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18481.D
Acq On : 21 Jun 2016 19:02
Operator : MES
Sample : L16060823-03
Misc : 1,1
ALS Vial : 24 Sample Multiplier: 1

Quant Time: Jun 22 08:03:40 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

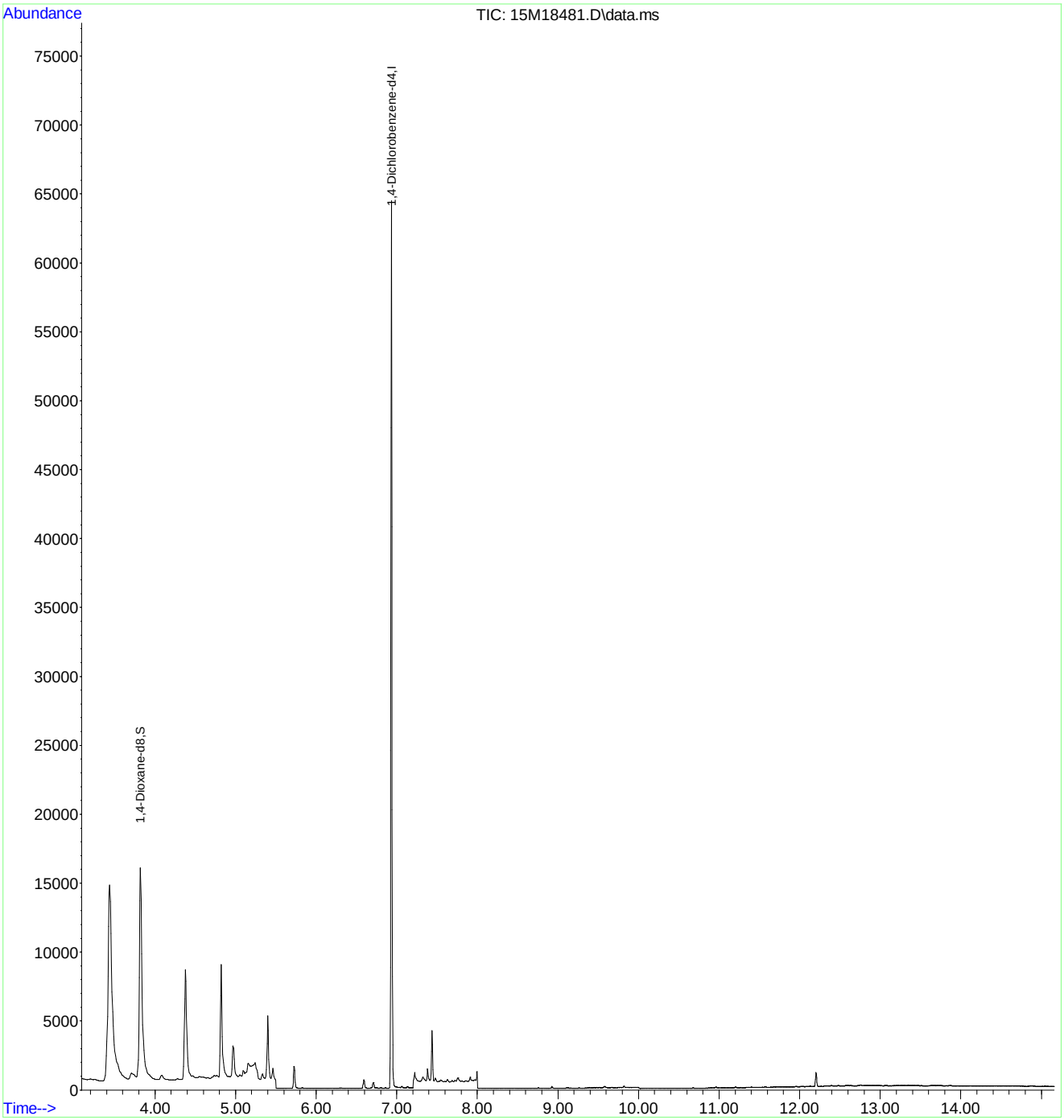

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18482.D
Acq On : 21 Jun 2016 19:25
Operator : MES
Sample : L16060823-04
Misc : 1,1
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Jun 22 08:03:43 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.936	152	24008	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.820	96	21324	2.1585	ug/L	0.00
Spiked Amount 5.000			Recovery	=	43.20%	
4) Nitrobenzene-d5	7.436	82	1135	0.0448	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.80%	
5) 2-Fluorobiphenyl	8.926	172	139	0.0022	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.188	244	796	0.0129	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.20%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18482.D
Acq On : 21 Jun 2016 19:25
Operator : MES
Sample : L16060823-04
Misc : 1,1
ALS Vial : 25 Sample Multiplier: 1

Quant Time: Jun 22 08:03:43 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

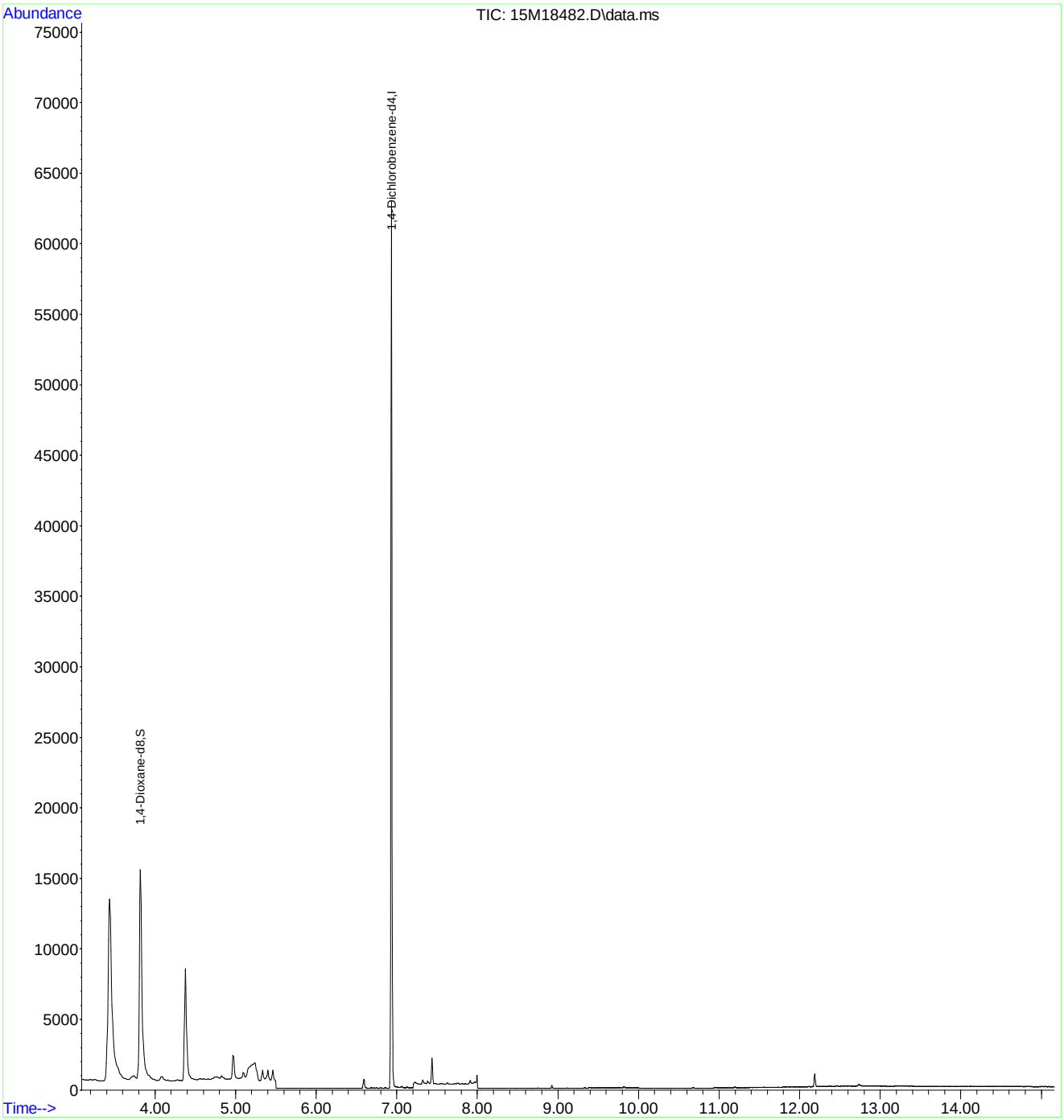

2.2.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 22 08:04:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	39637	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.827	96	82573	5.0627 ug/L	0.00
Spiked Amount 5.000			Recovery	= 101.20%	
4) Nitrobenzene-d5	7.431	82	223381	5.3353 ug/L	0.00
Spiked Amount 5.000			Recovery	= 106.80%	
5) 2-Fluorobiphenyl	8.922	172	533101	5.0444 ug/L	0.00
Spiked Amount 5.000			Recovery	= 100.80%	
6) p-Terphenyl-d14	12.184	244	519544	5.1003 ug/L	0.00
Spiked Amount 5.000			Recovery	= 102.00%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.862	58	60883	5.0202 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 22 08:04:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

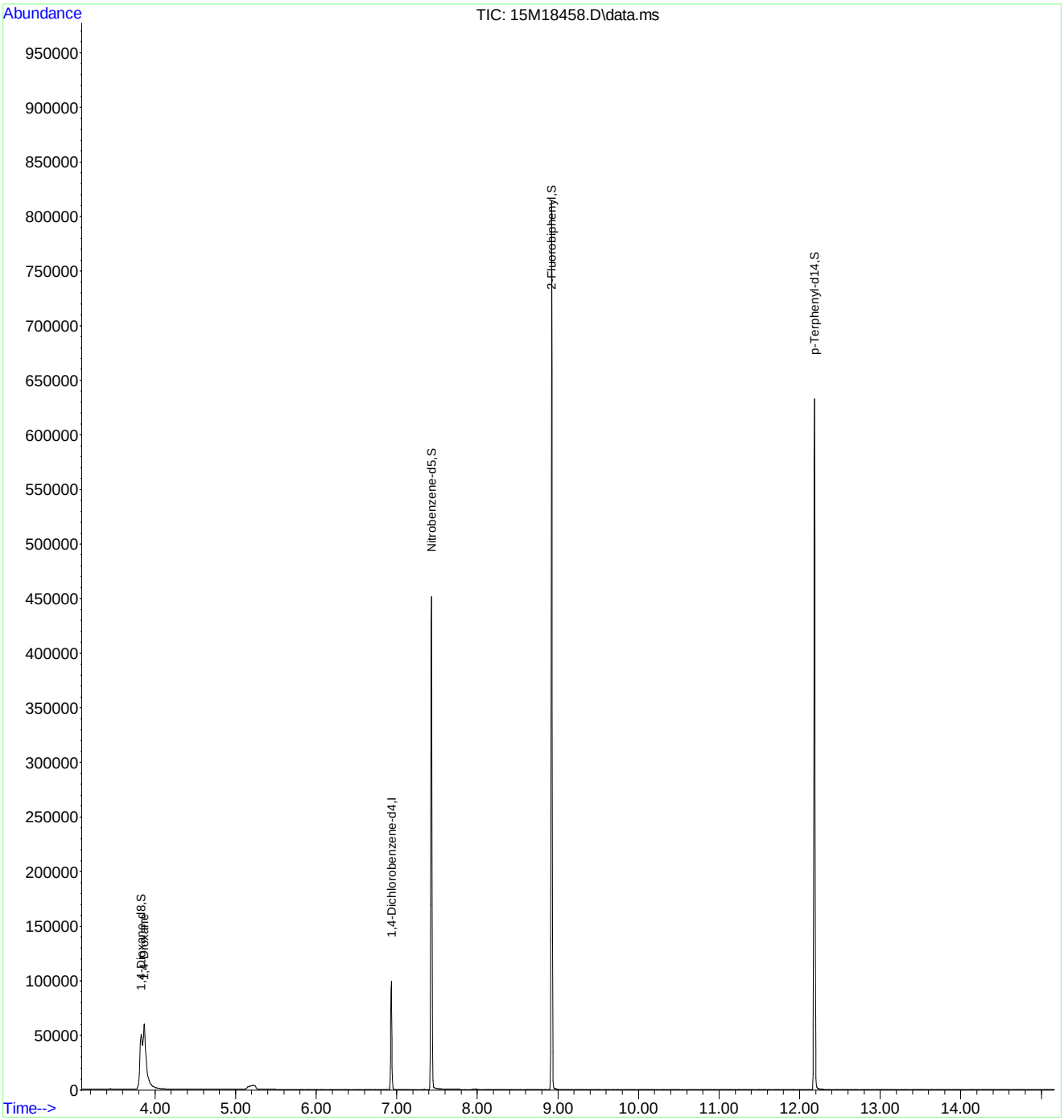

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18459.D
Acq On : 21 Jun 2016 10:27
Operator : MES
Sample : WG573501-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 22 08:04:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	43874	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	186767	10.3452	ug/L	0.00
Spiked Amount 5.000			Recovery = 207.00%			
4) Nitrobenzene-d5	7.431	82	527549	11.3834	ug/L	0.00
Spiked Amount 5.000			Recovery = 227.60%			
5) 2-Fluorobiphenyl	8.926	172	1199799	10.2565	ug/L	0.00
Spiked Amount 5.000			Recovery = 205.20%			
6) p-Terphenyl-d14	12.240	244	1225328	10.8672	ug/L	0.06
Spiked Amount 5.000			Recovery = 217.40%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	138820	10.3412	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18459.D
Acq On : 21 Jun 2016 10:27
Operator : MES
Sample : WG573501-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 22 08:04:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

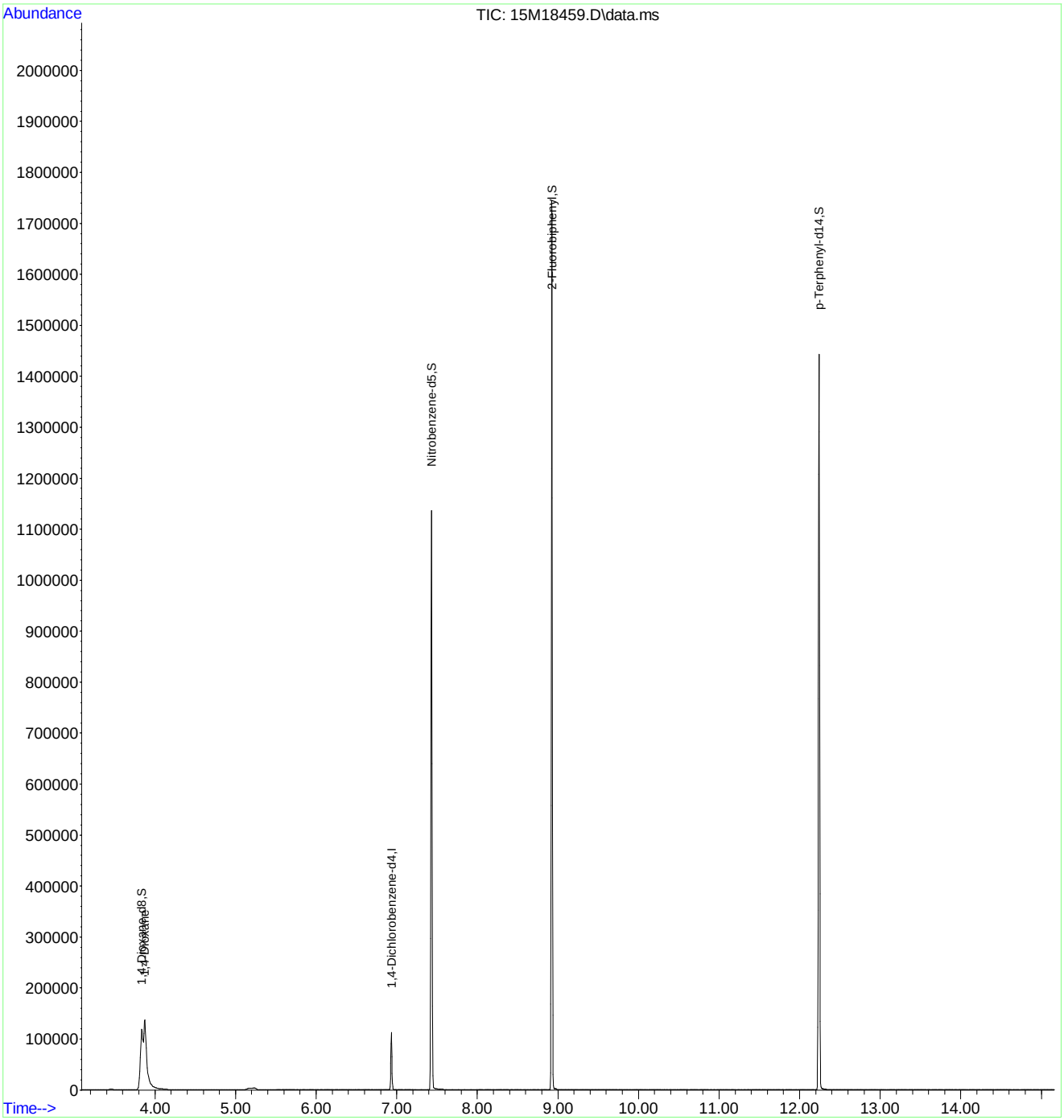

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18460.D
Acq On : 21 Jun 2016 10:49
Operator : MES
Sample : WG573501-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 22 08:04:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	44299	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.834	96	138833	7.6163 ug/L	0.00
Spiked Amount 5.000			Recovery	= 152.40%	
4) Nitrobenzene-d5	7.431	82	389810	8.3306 ug/L	0.00
Spiked Amount 5.000			Recovery	= 166.60%	
5) 2-Fluorobiphenyl	8.923	172	909050	7.6965 ug/L	0.00
Spiked Amount 5.000			Recovery	= 154.00%	
6) p-Terphenyl-d14	12.203	244	921380	8.0931 ug/L	0.02
Spiked Amount 5.000			Recovery	= 161.80%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.876	58	103182	7.6127 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18460.D
Acq On : 21 Jun 2016 10:49
Operator : MES
Sample : WG573501-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 22 08:04:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

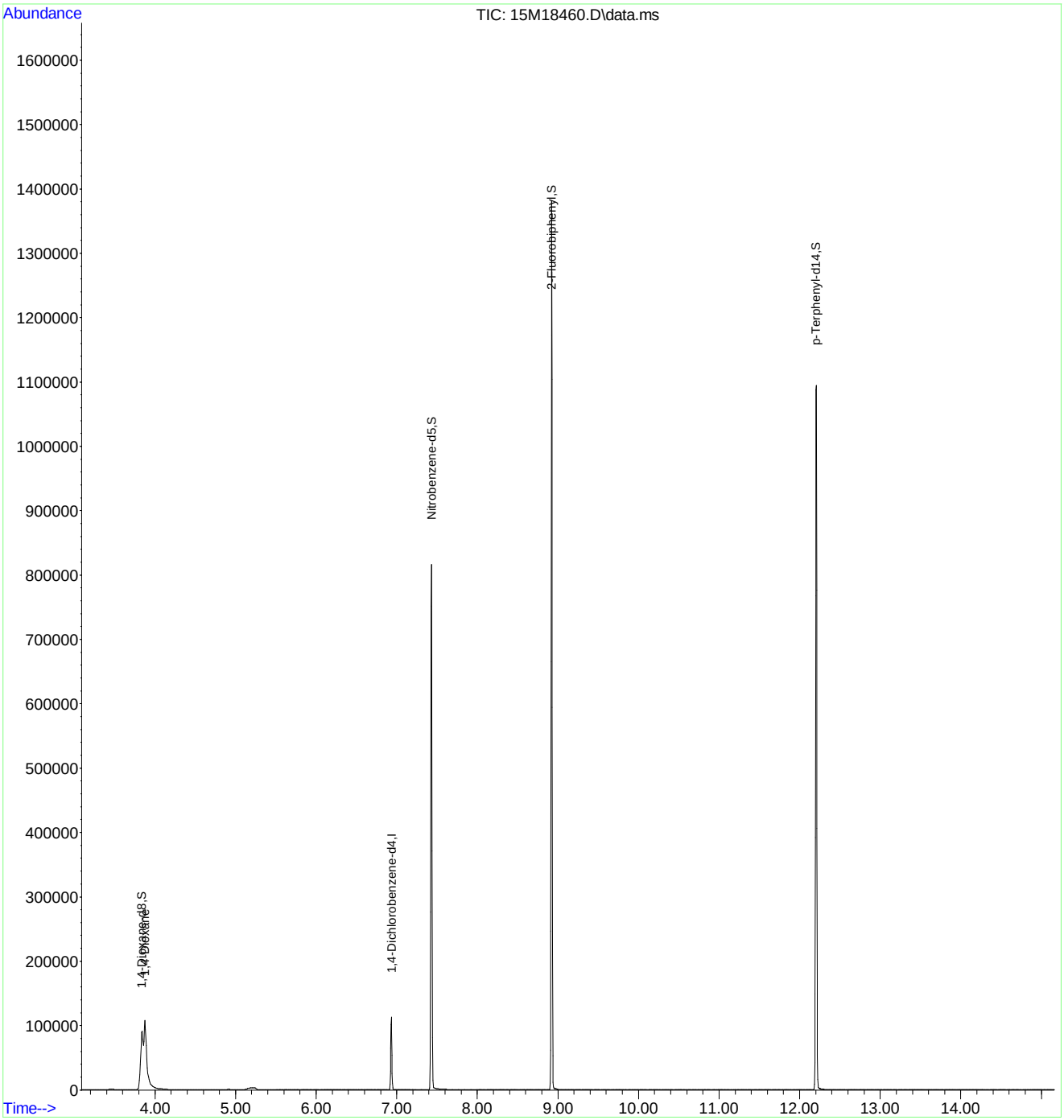

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18461.D
Acq On : 21 Jun 2016 11:12
Operator : MES
Sample : WG573501-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 22 08:04:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	35478	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.827	96	35630	2.4406	ug/L	0.00
Spiked Amount 5.000			Recovery = 48.80%			
4) Nitrobenzene-d5	7.431	82	88869	2.3714	ug/L	0.00
Spiked Amount 5.000			Recovery = 47.40%			
5) 2-Fluorobiphenyl	8.923	172	232500	2.4579	ug/L	0.00
Spiked Amount 5.000			Recovery = 49.20%			
6) p-Terphenyl-d14	12.199	244	218191	2.3930	ug/L	0.02
Spiked Amount 5.000			Recovery = 47.80%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.862	58	26333	2.4259	ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18461.D
Acq On : 21 Jun 2016 11:12
Operator : MES
Sample : WG573501-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 22 08:04:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

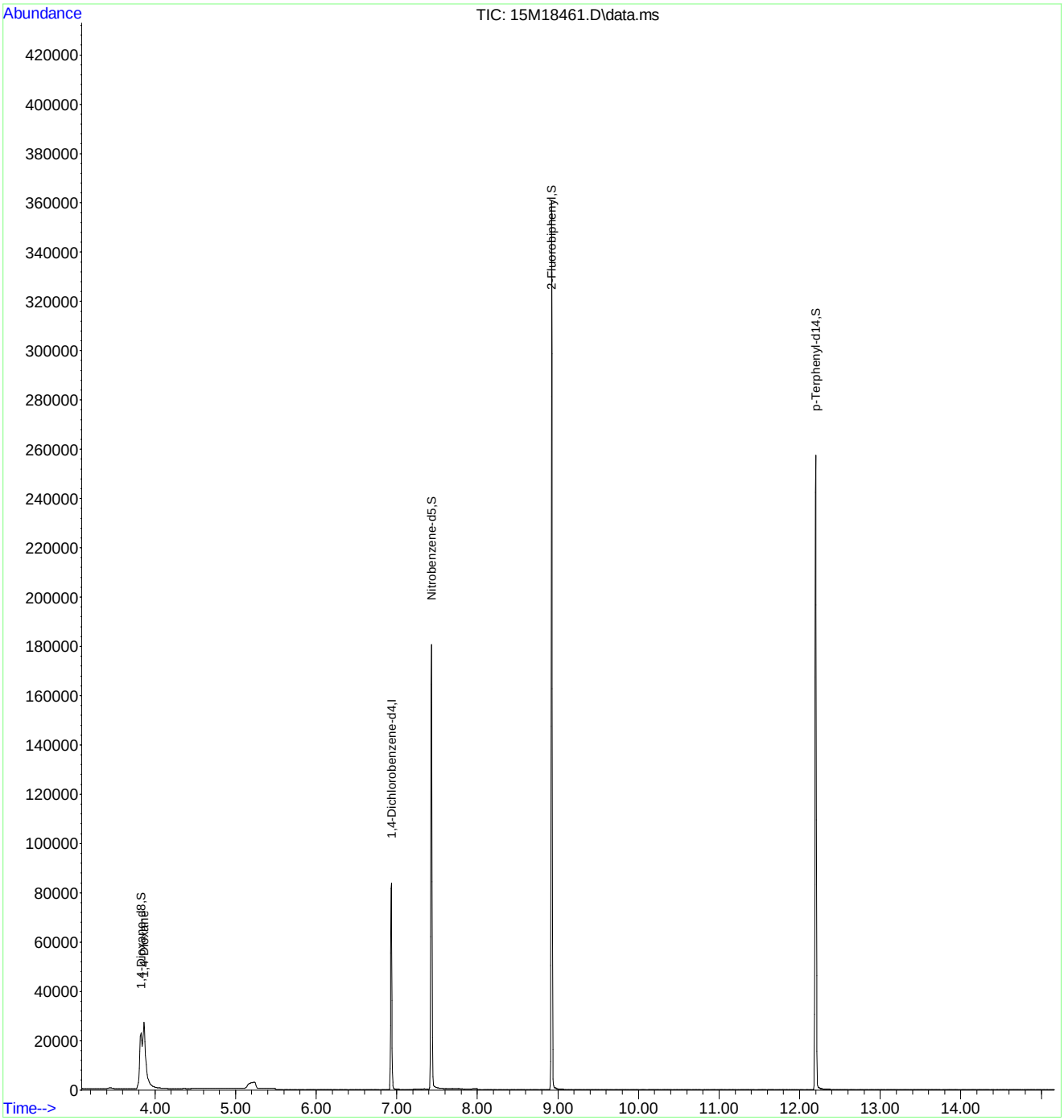

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18462.D
Acq On : 21 Jun 2016 11:34
Operator : MES
Sample : WG573501-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 22 08:04:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	44672	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.841	96	17660	0.9607	ug/L	0.01
Spiked Amount 5.000			Recovery	=	19.20%	
4) Nitrobenzene-d5	7.431	82	41409	0.8776	ug/L	0.00
Spiked Amount 5.000			Recovery	=	17.60%	
5) 2-Fluorobiphenyl	8.922	172	114491	0.9612	ug/L	0.00
Spiked Amount 5.000			Recovery	=	19.20%	
6) p-Terphenyl-d14	12.203	244	105713	0.9208	ug/L	0.02
Spiked Amount 5.000			Recovery	=	18.40%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.876	58	13250	0.9694	ug/L	82

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18462.D
Acq On : 21 Jun 2016 11:34
Operator : MES
Sample : WG573501-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 22 08:04:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

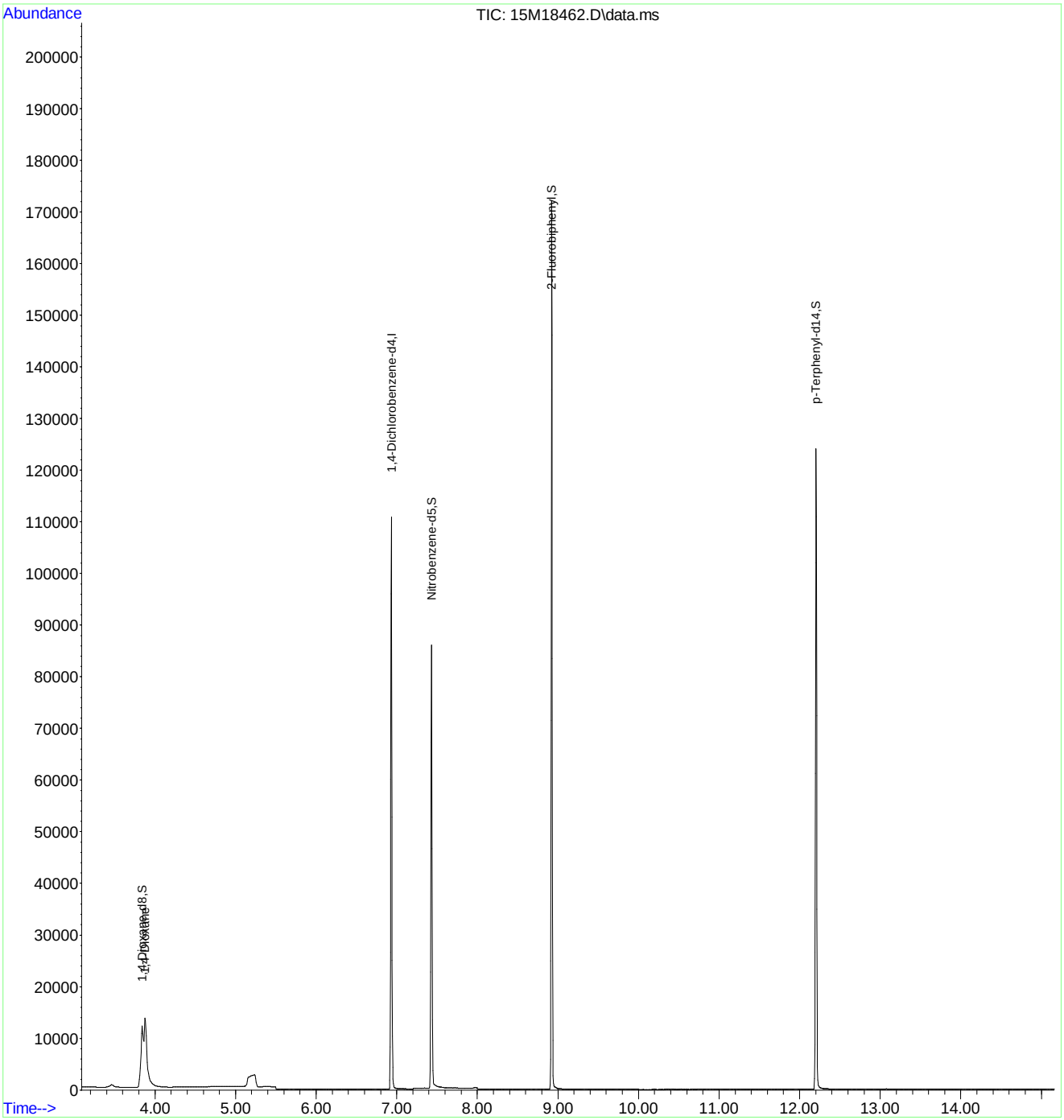

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18463.D
Acq On : 21 Jun 2016 11:57
Operator : MES
Sample : WG573501-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 22 08:04:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	45840	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.841	96	7629	0.4045	ug/L	0.01
Spiked Amount 5.000			Recovery	=	8.00%	
4) Nitrobenzene-d5	7.431	82	16604	0.3429	ug/L	0.00
Spiked Amount 5.000			Recovery	=	6.80%	
5) 2-Fluorobiphenyl	8.923	172	48617	0.3978	ug/L	0.00
Spiked Amount 5.000			Recovery	=	8.00%	
6) p-Terphenyl-d14	12.210	244	44097	0.3743	ug/L	0.03
Spiked Amount 5.000			Recovery	=	7.40%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.876	58	5650	0.4028	ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18463.D
Acq On : 21 Jun 2016 11:57
Operator : MES
Sample : WG573501-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 22 08:04:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

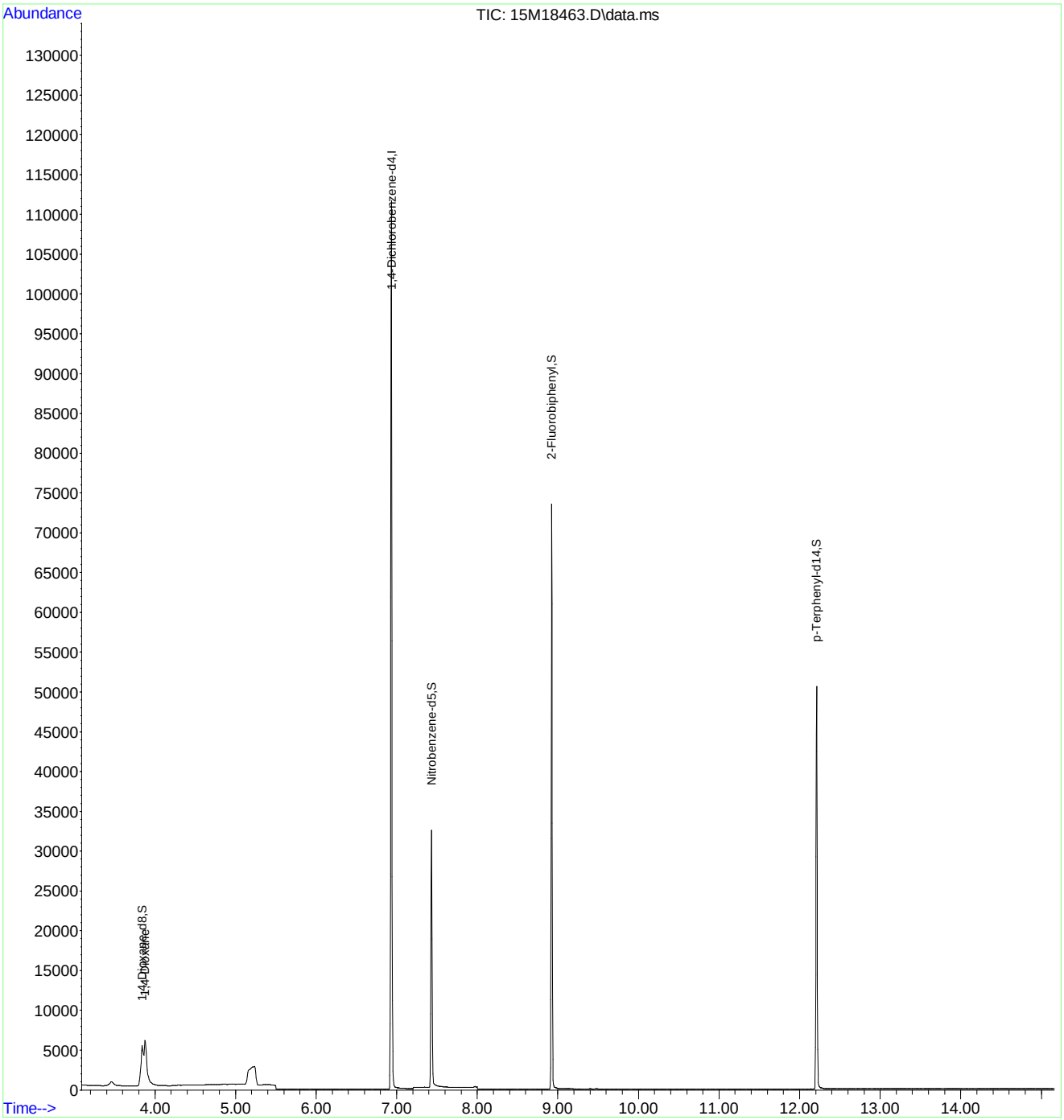

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	41944	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.792	96	22	0.0013	ug/L	-0.04
Spiked Amount 5.000			Recovery	=	0.00%	
4) Nitrobenzene-d5	7.436	82	56	0.0013	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
5) 2-Fluorobiphenyl	8.926	172	23	0.0002	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.214	244	128	0.0012	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	64750	5.0454	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

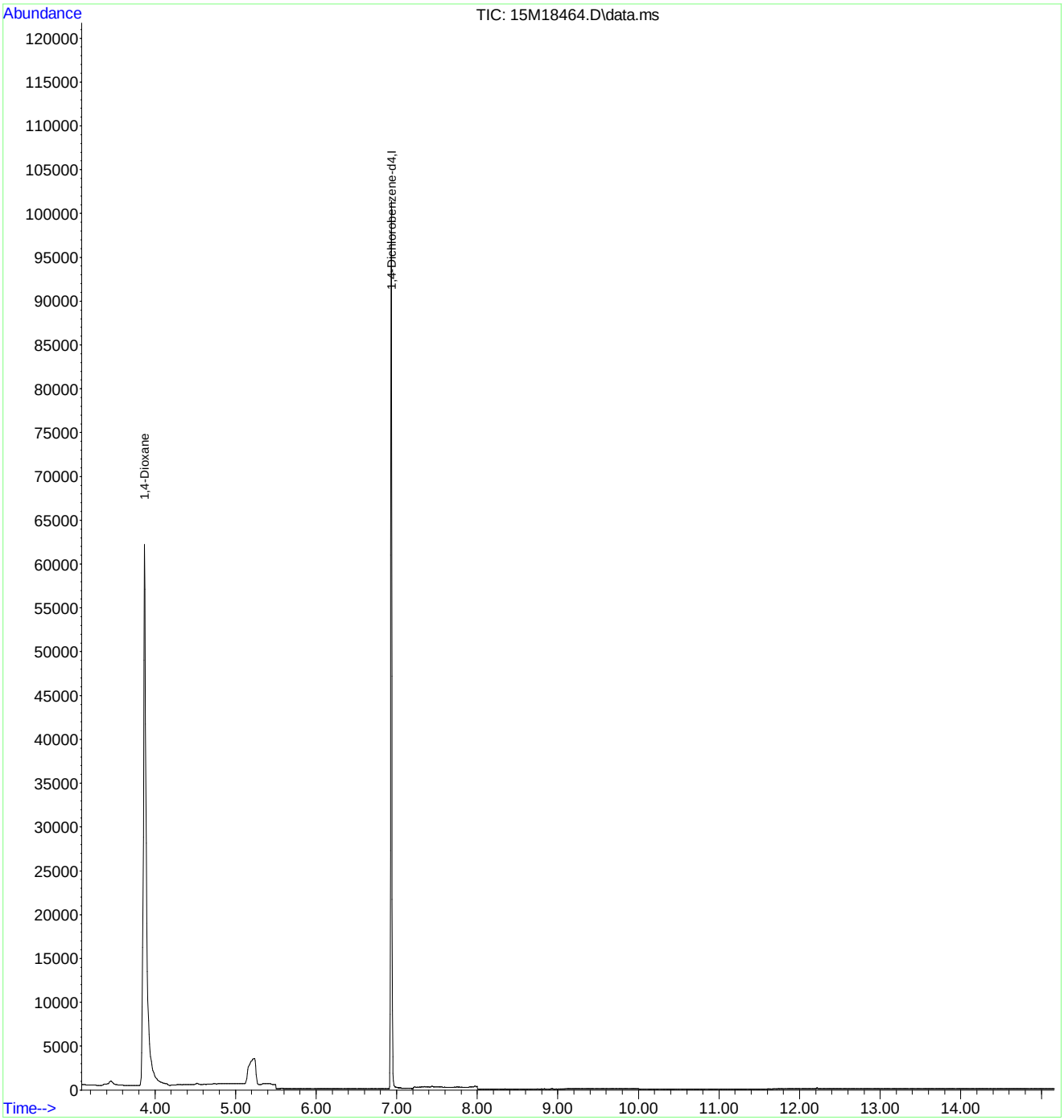

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	106	0.00
2	1,4-Dioxane	5.000	5.045	-0.9	106	0.00
3 S	1,4-Dioxane-d8	5.000	0.001	100.0#	0	-0.04
4 S	Nitrobenzene-d5	5.000	0.001	100.0#	0	0.00
5 S	2-Fluorobiphenyl	5.000	0.000	100.0#	0	0.00
6 S	p-Terphenyl-d14	5.000	0.001	100.0#	0	0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

2.2.1.5 Raw QC Data

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

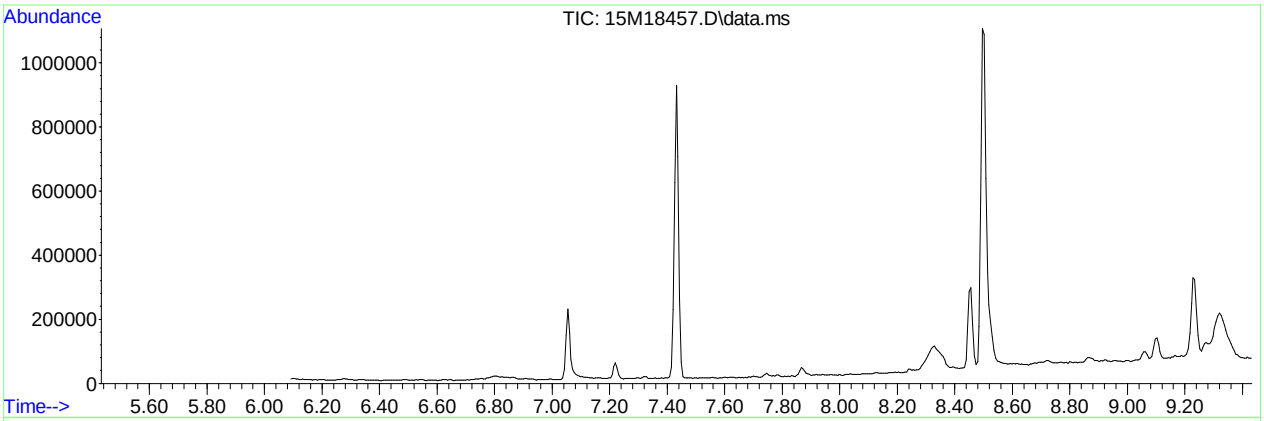

AutoFind: Scans 234, 235, 236; Background Corrected with Scan 228

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	38.8	34488	PASS
68	69	0.00	2	1.4	500	PASS
69	198	0.00	100	41.4	36833	PASS
70	69	0.00	2	0.5	172	PASS
127	198	40	60	51.9	46131	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	88880	PASS
199	198	5	9	6.7	5918	PASS
275	198	10	30	24.9	22090	PASS
365	198	1	100	2.7	2358	PASS
441	443	0.01	100	75.7	9586	PASS
442	198	40	100	73.4	65261	PASS
443	442	17	23	19.4	12659	PASS

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

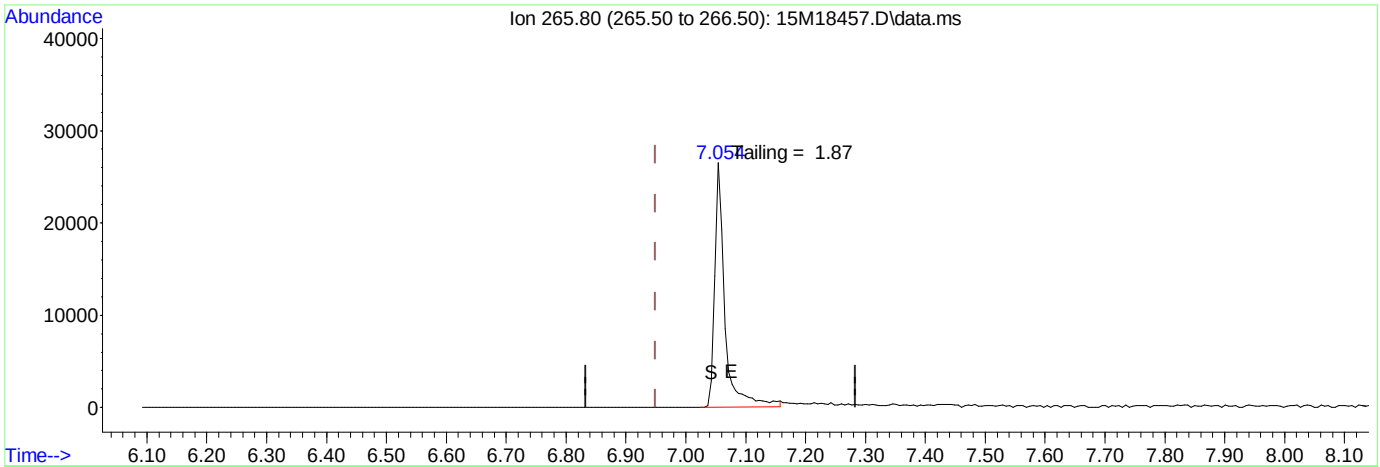

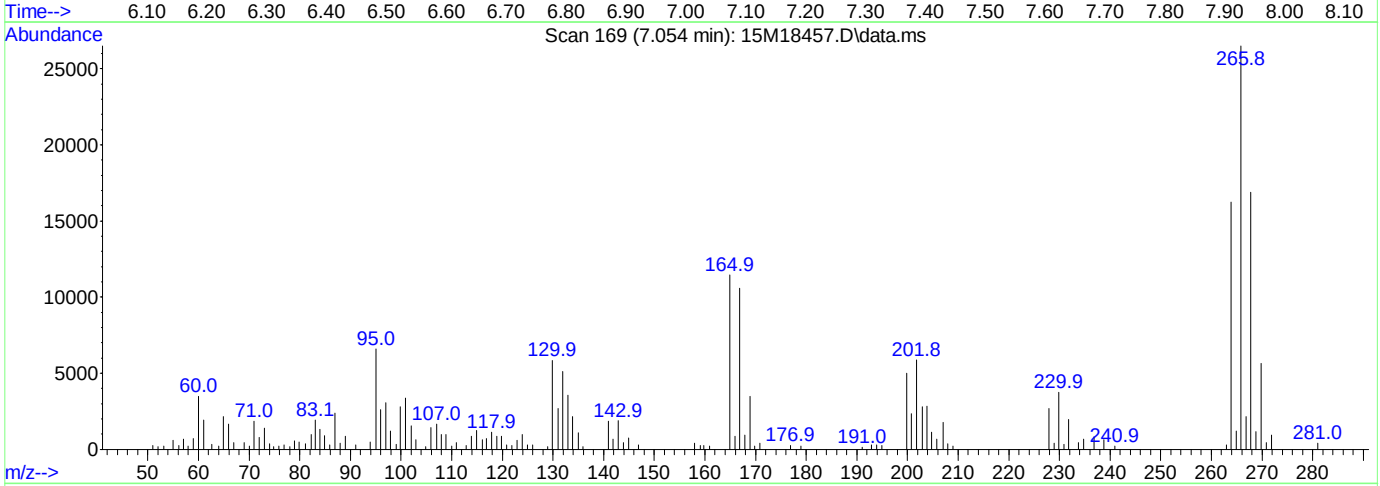

TIC: 15M18457.D\data.ms

(1) Pentachlorophenol

7.054min (+ 0.105) 0.00 ug/ml

response 30738

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

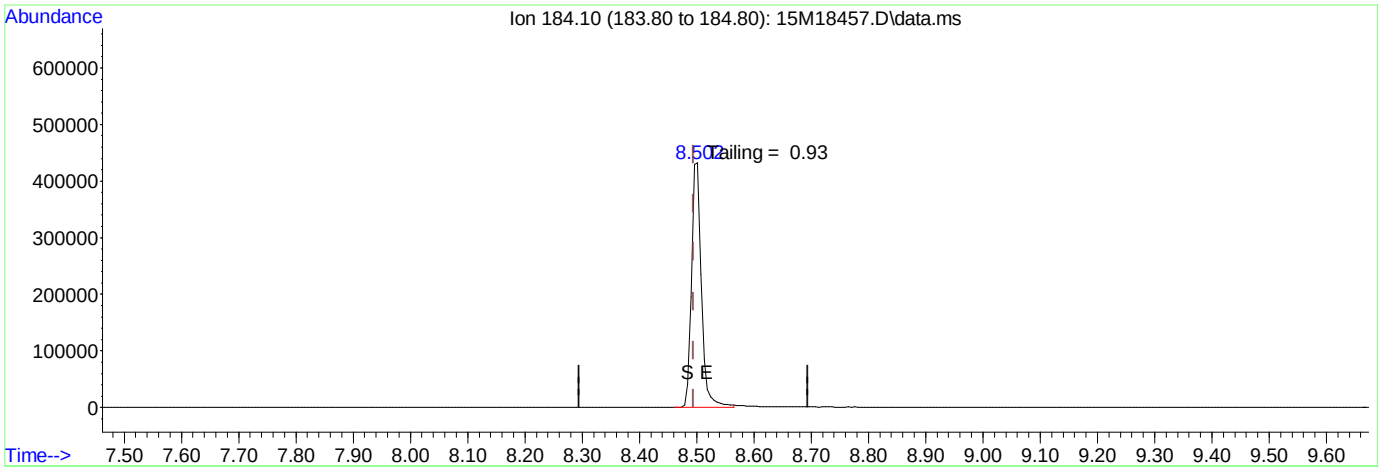

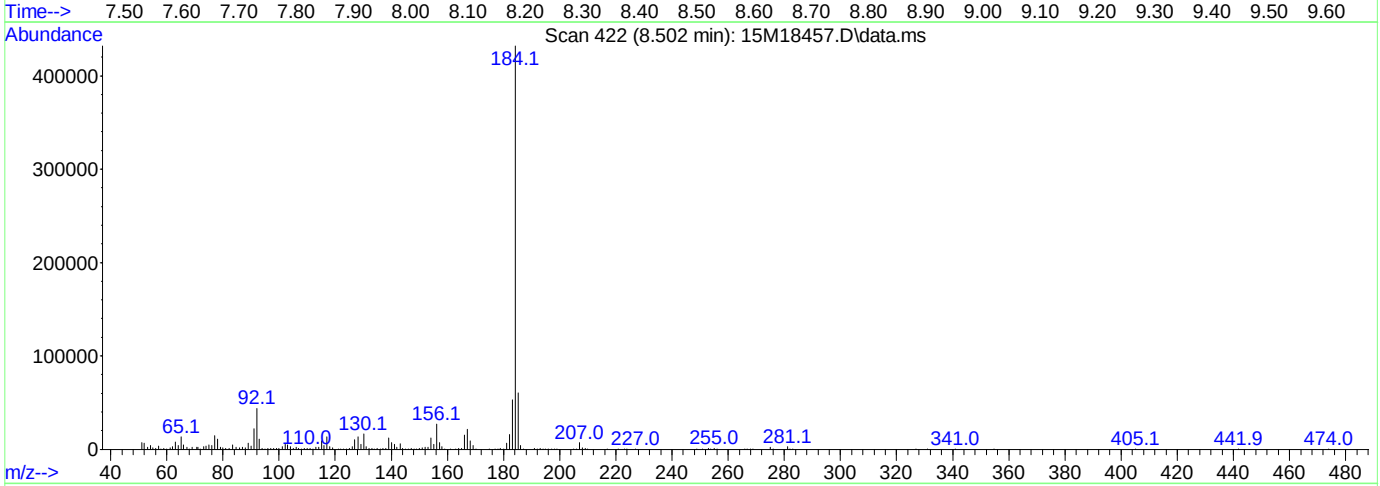

TIC: 15M18457.D\data.ms

(2) Benzidine

8.502min (+ 0.008) 0.00 ug/ml

response 532770

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

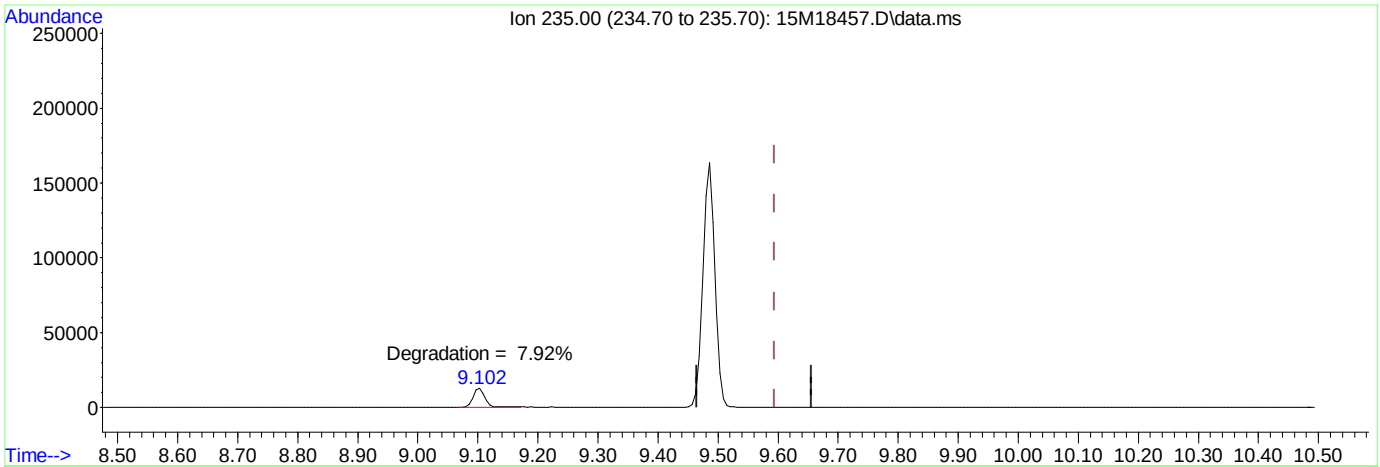

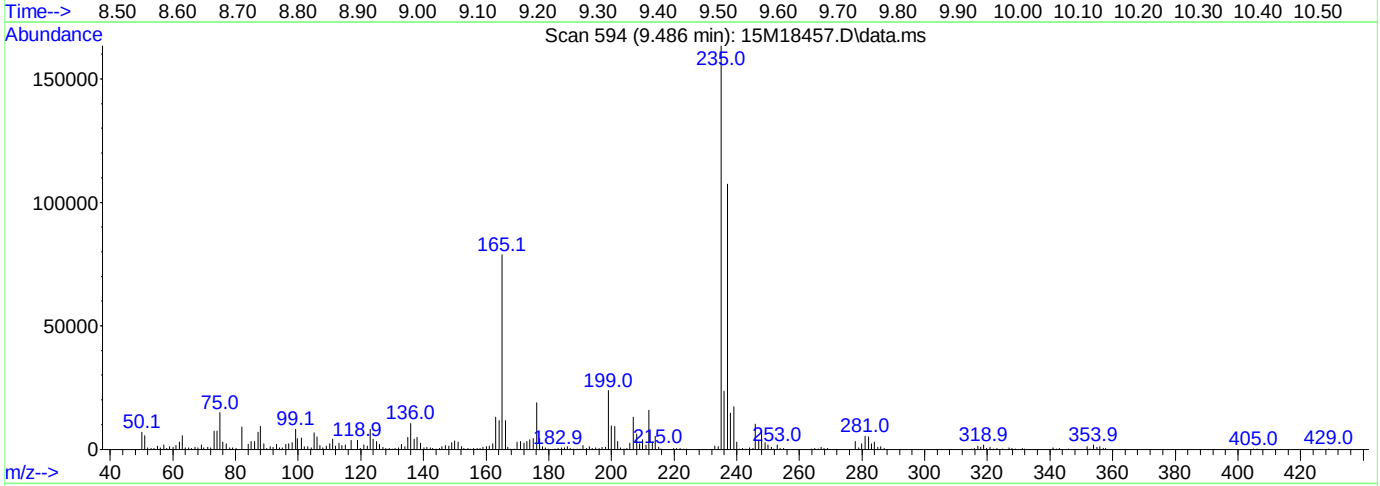

TIC: 15M18457.D\data.ms

(3) DDT

9.486min (-0.108) 0.00 ug/ml

response 180187

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18465.D
Acq On : 21 Jun 2016 12:54
Operator : MES
Sample : WG572806-01 BLANK 6/15
Misc : 1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 21 16:33:15 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.936	152	38899	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	49398	3.0862	ug/L	0.00
Spiked Amount 5.000			Recovery = 61.80%			
4) Nitrobenzene-d5	7.431	82	1663307	40.4808	ug/L	0.00
Spiked Amount 5.000			Recovery = 809.60%			
5) 2-Fluorobiphenyl	8.926	172	3076633	29.6644	ug/L	0.00
Spiked Amount 5.000			Recovery = 593.20%			
6) p-Terphenyl-d14	12.258	244	4064361	40.6562	ug/L	0.07
Spiked Amount 5.000			Recovery = 813.20%			

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18465.D
Acq On : 21 Jun 2016 12:54
Operator : MES
Sample : WG572806-01 BLANK 6/15
Misc : 1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 21 16:33:15 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

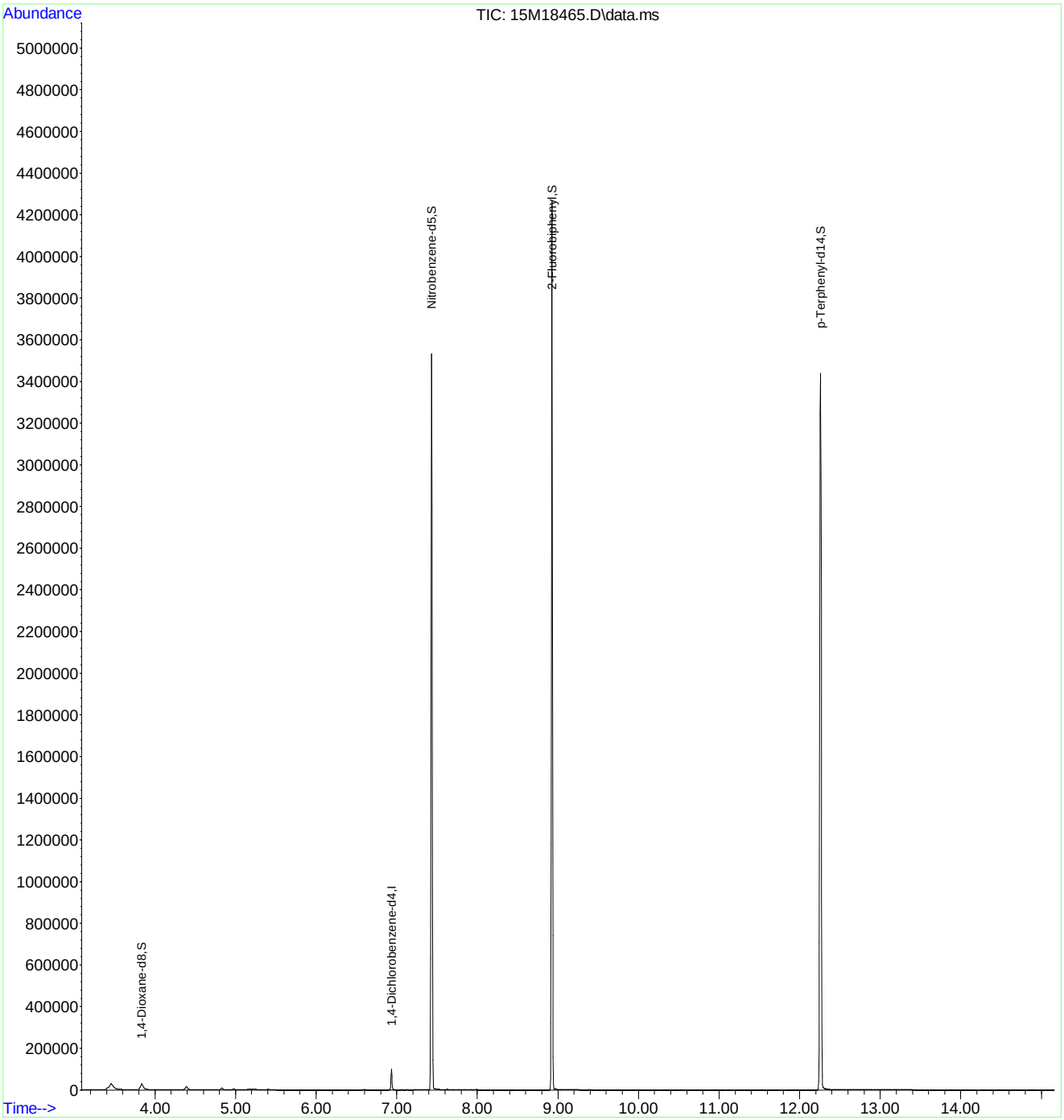

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18466.D
Acq On : 21 Jun 2016 13:17
Operator : MES
Sample : WG572806-02 LCS 6/15
Misc : 1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 22 08:05:00 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	27126	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.820	96	34886	3.1254	ug/L	0.00
Spiked Amount 5.000			Recovery	=	62.60%	
4) Nitrobenzene-d5	7.436	82	2047	0.0714	ug/L	0.00
Spiked Amount 5.000			Recovery	=	1.40%	
5) 2-Fluorobiphenyl	8.923	172	526	0.0073	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.20%	
6) p-Terphenyl-d14	12.229	244	1164	0.0167	ug/L	0.04
Spiked Amount 5.000			Recovery	=	0.40%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.855	58	25161	3.0316	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18466.D
Acq On : 21 Jun 2016 13:17
Operator : MES
Sample : WG572806-02 LCS 6/15
Misc : 1,1
ALS Vial : 10 Sample Multiplier: 1

Quant Time: Jun 22 08:05:00 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

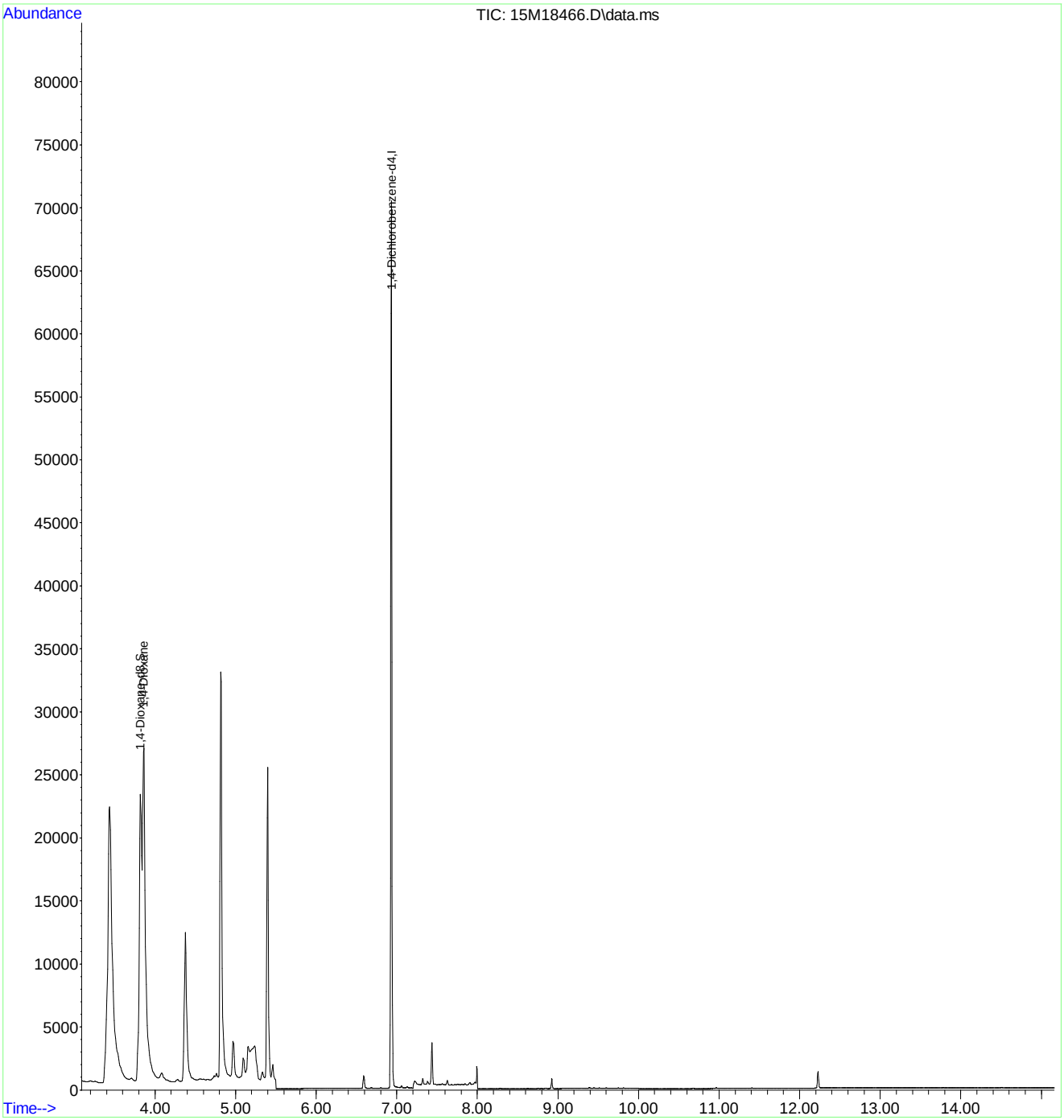

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18467.D
Acq On : 21 Jun 2016 13:40
Operator : MES
Sample : WG572806-03 LCSDUP 6/15
Misc : 1,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jun 22 08:05:03 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	34071	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	32606	2.3257	ug/L	0.00
Spiked Amount 5.000			Recovery	=	46.60%	
4) Nitrobenzene-d5	7.238	82	1167	0.0324	ug/L	-0.19
Spiked Amount 5.000			Recovery	=	0.60%	
5) 2-Fluorobiphenyl	8.923	172	1594	0.0175	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.40%	
6) p-Terphenyl-d14	12.207	244	949	0.0108	ug/L	0.02
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	23691	2.2726	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18467.D
Acq On : 21 Jun 2016 13:40
Operator : MES
Sample : WG572806-03 LCSDUP 6/15
Misc : 1,1
ALS Vial : 11 Sample Multiplier: 1

Quant Time: Jun 22 08:05:03 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

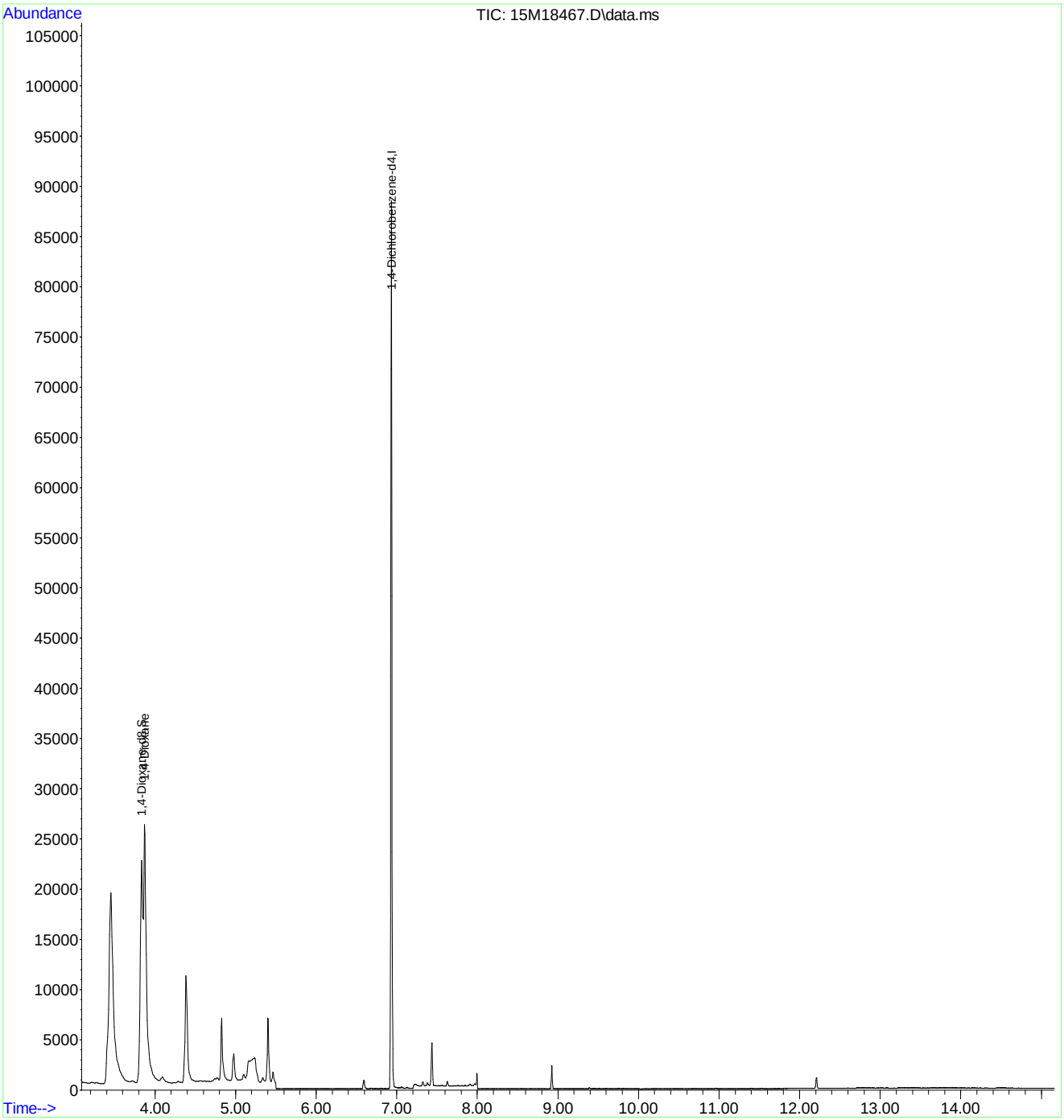

2.2 General Chromatography Data

2.2.2 6850 LC/MS Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	126-061416	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/24/2016 21:44
Collect Date:	06/14/2016 11:10	**Dilution:**	1	**File ID:**	1LM.LM35468
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.140	J	0.400	0.200	0.100

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	C08-061416	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/24/2016 22:03
Collect Date:	06/14/2016 13:10	**Dilution:**	1	**File ID:**	1LM.LM35469
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.200	U	0.400	0.200	0.100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	C03-061416	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/24/2016 22:22
Collect Date:	06/14/2016 14:15	**Dilution:**	10	**File ID:**	1LM.LM35470
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	5.48		4.00	2.00	1.00

2.2.2.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1380 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG574101-01 MCT	9,990.	
-02 Blank	0.33	
-03 LCS	0.48	
-04 LCS2	0.51	
L16060823-01	9,120.	
-03	7,440.	
-04	1,943.	
L16060927-01	750.	
-02	652.	
-03	446.	
-04	162.7	
L16061026-01	6,910.	
-03	238.	
-04	965.	
-05	1,526.	
-07	220.	
L16061142-01	165.3	
-02	81.1	
-04	83.1	
-06	728.	
-07	74.2	
L16061144-01	118.6	
-02	118.7	
-03	110.1	

Analyst: John Richards

Date/Time: 06/27/16 / 20:00

DCN#119317

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

Page: 1 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

Page: 2 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 062416_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG574101 (waters)

Internal STD: STD18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments: Samples initially analyzed at dilutions were done so based on their historical results. Samples tagged with (NR) did not conform to their historical results. These samples were reanalyzed on the end of the sequence as neat or at dilutions based on the results of their initial analysis.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35462	WG574102-01 CCB	1	1		06/24/16 19:50
2	1LM.LM35463	WG574102-02 CCV (1.0ug/L)	1	1	STD75510	06/24/16 20:09
3	1LM.LM35464	WG574101-05 MRL (0.2ug/L)	1	1	STD75510	06/24/16 20:28
4	1LM.LM35465	WG574101-01 MCT (0.2ug/L)	1	1	STD75512	06/24/16 20:47
5	1LM.LM35466	WG574101-02 BLANK	1	1		06/24/16 21:06
6	1LM.LM35467	WG574101-03 LCS (0.2ug/L)	1	1	STD75512	06/24/16 21:25
7	1LM.LM35468	L16060823-01	1	1		06/24/16 21:44
8	1LM.LM35469	L16060823-03	1	1		06/24/16 22:03
9	1LM.LM35470	L16060823-04 (10x)	1	10		06/24/16 22:22
10	1LM.LM35471	L16060927-01 (100x) (NR)	1	100		06/24/16 22:41
11	1LM.LM35472	L16060927-02 (100x) (NR)	1	100		06/24/16 23:00
12	1LM.LM35473	L16060927-03	1	1		06/24/16 23:18
13	1LM.LM35474	L16060927-04	1	1		06/24/16 23:37
14	1LM.LM35475	WG574102-03 CCV (1.0ug/L)	1	1	STD75510	06/24/16 23:56
15	1LM.LM35476	WG574101-06 MRL (0.2ug/L)	1	1	STD75510	06/25/16 00:15
16	1LM.LM35477	WG574102-04 CCB	1	1		06/25/16 00:34
17	1LM.LM35478	L16061026-01 (100x) (NR)	1	100		06/25/16 00:53
18	1LM.LM35479	L16061026-03 (100x)	1	100		06/25/16 01:12
19	1LM.LM35480	L16061026-04 (10,000x)	1	10000		06/25/16 01:31
20	1LM.LM35481	L16061026-05 (100,000x) (NR)	1	100000		06/25/16 01:50
21	1LM.LM35482	L16061026-07 (10x) (NR)	1	10		06/25/16 02:09
22	1LM.LM35483	L16061142-01	1	1		06/25/16 02:28
23	1LM.LM35484	L16061142-02	1	1		06/25/16 02:47
24	1LM.LM35485	L16061142-04	1	1		06/25/16 03:06
25	1LM.LM35486	L16061142-06 (10x) (NR)	1	10		06/25/16 03:25
26	1LM.LM35487	L16061142-07	1	1		06/25/16 03:44
27	1LM.LM35488	WG574102-05 CCV (1.0ug/L)	1	1	STD75510	06/25/16 04:03
28	1LM.LM35489	WG574101-07 MRL (0.2ug/L)	1	1	STD75510	06/25/16 04:22
29	1LM.LM35490	WG574102-06 CCB	1	1		06/25/16 04:40
30	1LM.LM35491	WG574101-04 LCS2 (0.2ug/L)	1	1	STD75512	06/25/16 04:59
31	1LM.LM35492	L16061144-01	1	1		06/25/16 05:18
32	1LM.LM35493	L16061144-02	1	1		06/25/16 05:37
33	1LM.LM35494	L16061144-03 (10x) (NR)	1	10		06/25/16 05:56

Page: 1 Approved: 28-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 062416_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG574101 (waters)

Internal STD: STD18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 NA

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM35495	WG574102-07 CCV (1.0ug/L)	1	1	STD75510	06/25/16 06:15
35	1LM.LM35496	WG574101-08 MRL (0.2ug/L)	1	1	STD75510	06/25/16 06:34
36	1LM.LM35497	WG574102-08 CCB	1	1		06/25/16 06:53
37	1LM.LM35498	WG574102-09 CCV (1.0ug/L)	1	1	STD75510	06/25/16 18:06
38	1LM.LM35499	WG574101-09 MRL (0.2ug/L)	1	1	STD75510	06/25/16 18:25
39	1LM.LM35500	WG574102-10 CCB	1	1		06/25/16 18:44
40	1LM.LM35501	L16060927-01 (RR Neat)	1	1		06/25/16 19:02
41	1LM.LM35502	L16060927-02 (RR 1000x)	1	1000		06/25/16 19:21
42	1LM.LM35503	L16061026-01 (RR Neat)	1	1		06/25/16 19:40
43	1LM.LM35504	L16061026-05 (RR 10,000x)	1	10000		06/25/16 19:59
44	1LM.LM35505	L16061026-07 (RR 50x)	1	50		06/25/16 20:18
45	1LM.LM35506	L16061142-06 (RR Neat)	1	1		06/25/16 20:37
46	1LM.LM35507	L16061144-03 (RR Neat)	1	1		06/25/16 20:56
47	1LM.LM35508	WG574102-11 CCV (1.0ug/L)	1	1	STD75510	06/25/16 21:15
48	1LM.LM35509	WG574101-10 MRL (0.2ug/L)	1	1	STD75510	06/25/16 21:34
49	1LM.LM35510	WG574102-12 CCB	1	1		06/25/16 21:53

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 2 Approved: 28-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
04-MAY-2016
John Richards

Secondary Reviewer:
05-MAY-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 24-JUN-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 75960
Analytical Workgroups: L16060823, 0927, 1026, 1142, 1144

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
27-JUN-2016

Secondary Reviewer:
28-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-28-2016 14:00:55

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG574101

Login Number: L16060823

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
126-061416	01	06/14/16					06/24/2016	10.3	28		06/24/16	.1	28	
C08-061416	03	06/14/16					06/24/2016	10.2	28		06/24/16	.1	28	
C03-061416	04	06/14/16					06/24/2016	10.2	28		06/24/16	.1	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4827762
Report generated 06/28/2016 14:14

METHOD BLANK SUMMARY

Login Number: L16060823
Blank File ID: 1LM.LM35466
Prep Date: 06/24/16 19:00
Analyzed Date: 06/24/16 21:06
Analyst: JWR

Work Group: WG574101
Blank Sample ID: WG574101-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG574101-05	1LM.LM35464	06/24/16 20:28	01
MCT	WG574101-01	1LM.LM35465	06/24/16 20:47	01
LCS	WG574101-03	1LM.LM35467	06/24/16 21:25	01
126-061416	L16060823-01	1LM.LM35468	06/24/16 21:44	01
C08-061416	L16060823-03	1LM.LM35469	06/24/16 22:03	01
C03-061416	L16060823-04	1LM.LM35470	06/24/16 22:22	DL01
QCMRL	WG574101-06	1LM.LM35476	06/25/16 00:15	01
QCMRL	WG574101-07	1LM.LM35489	06/25/16 04:22	01
LCS2	WG574101-04	1LM.LM35491	06/25/16 04:59	01
QCMRL	WG574101-08	1LM.LM35496	06/25/16 06:34	01
QCMRL	WG574101-09	1LM.LM35499	06/25/16 18:25	01
QCMRL	WG574101-10	1LM.LM35509	06/25/16 21:34	01

Report Name: BLANK_SUMMARY
PDF File ID: 4827763
Report generated 06/28/2016 14:14

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060823 Prep Date: 06/24/16 19:00 Sample ID: WG574101-02
Instrument ID: LCMS1 Run Date: 06/24/16 21:06 Prep Method: 6850
File ID: 1LM.LM35466 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4827764
28-JUN-2016 14:14

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060823 Analyst: JWR Prep Method: 6850
Instrument ID: LCMS1 Matrix: Water Method: 6850
Workgroup (AAB#): WG574101 Units: ug/L
QC Key: DOD4 Lot #: STD75512

Sample ID: WG574101-03 LCS File ID: 1LM.LM35467 Run Date: 06/24/2016 21:25
Sample ID: WG574101-04 LCS2 File ID: 1LM.LM35491 Run Date: 06/25/2016 04:59

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Perchlorate	0.200	0.208	104	0.200	0.213	107	2.38	80 - 120	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4827765
Report generated: 06/28/2016 14:14

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060823
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4828694
Report generated 06/28/2016 14:14

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060823

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4828694
Report generated 06/28/2016 14:14

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060823

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4828694
Report generated 06/28/2016 14:14

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060823

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008
PDF File ID: 4828694
Report generated 06/28/2016 14:14

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060823 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4828695
Report generated 06/28/2016 14:15

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/24/2016
Sample ID: WG574102-01
Instrument ID: LCMS1
Run Time: 19:50
Method: 6850
File ID: 1LM.LM35462
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827768
Report generated 06/28/2016 14:15

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/25/2016
Sample ID: WG574102-04
Instrument ID: LCMS1
Run Time: 00:34
Method: 6850
File ID: 1LM.LM35477
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827768
Report generated 06/28/2016 14:15

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/25/2016
Sample ID: WG574102-06
Instrument ID: LCMS1
Run Time: 04:40
Method: 6850
File ID: 1LM.LM35490
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827768
Report generated 06/28/2016 14:15

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/25/2016
Sample ID: WG574102-08
Instrument ID: LCMS1
Run Time: 06:53
Method: 6850
File ID: 1LM.LM35497
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827768
Report generated 06/28/2016 14:15

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/25/2016
Sample ID: WG574102-10
Instrument ID: LCMS1
Run Time: 18:44
Method: 6850
File ID: 1LM.LM35500
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827768
Report generated 06/28/2016 14:15

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/25/2016
Sample ID: WG574102-12
Instrument ID: LCMS1
Run Time: 21:53
Method: 6850
File ID: 1LM.LM35510
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827768
Report generated 06/28/2016 14:15

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823 Run Date: 06/24/2016 Sample ID: WG574102-02
Instrument ID: LCMS1 Run Time: 20:09 Method: 6850
File ID: 1LM.LM35463 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG574101 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.70	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827767
Report generated 06/28/2016 14:15

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/24/2016
Sample ID: WG574102-03
Instrument ID: LCMS1
Run Time: 23:56
Method: 6850
File ID: 1LM.LM35475
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.70	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827767
Report generated 06/28/2016 14:15

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/25/2016
Sample ID: WG574102-05
Instrument ID: LCMS1
Run Time: 04:03
Method: 6850
File ID: 1LM.LM35488
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.75	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827767
Report generated 06/28/2016 14:15

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/25/2016
Sample ID: WG574102-07
Instrument ID: LCMS1
Run Time: 06:15
Method: 6850
File ID: 1LM.LM35495
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.72	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827767
Report generated 06/28/2016 14:15

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/25/2016
Sample ID: WG574102-09
Instrument ID: LCMS1
Run Time: 18:06
Method: 6850
File ID: 1LM.LM35498
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.76	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827767
Report generated 06/28/2016 14:15

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/25/2016
Sample ID: WG574102-11
Instrument ID: LCMS1
Run Time: 21:15
Method: 6850
File ID: 1LM.LM35508
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.73	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827767
Report generated 06/28/2016 14:15

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060823 Run Date: 06/24/2016 Sample ID: WG574101-05

Instrument ID: LCMS1 Run Time: 20:28 Prep Method: 6850

File ID: 1LM.LM35464 Analyst: JWR Method: 6850

Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L

Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827766
Report generated 06/28/2016 14:14

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060823 Run Date: 06/25/2016 Sample ID: WG574101-06

Instrument ID: LCMS1 Run Time: 00:15 Prep Method: 6850

File ID: 1LM.LM35476 Analyst: JWR Method: 6850

Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L

Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.198	99.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827766
Report generated 06/28/2016 14:14

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060823 Run Date: 06/25/2016 Sample ID: WG574101-07
Instrument ID: LCMS1 Run Time: 04:22 Prep Method: 6850
File ID: 1LM.LM35489 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.211	106	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827766
Report generated 06/28/2016 14:14

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060823 Run Date: 06/25/2016 Sample ID: WG574101-08
Instrument ID: LCMS1 Run Time: 06:34 Prep Method: 6850
File ID: 1LM.LM35496 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.201	101	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827766
Report generated 06/28/2016 14:14

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060823 Run Date: 06/25/2016 Sample ID: WG574101-09

Instrument ID: LCMS1 Run Time: 18:25 Prep Method: 6850

File ID: 1LM.LM35499 Analyst: JWR Method: 6850

Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L

Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.207	104	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827766
Report generated 06/28/2016 14:14

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060823 Run Date: 06/25/2016 Sample ID: WG574101-10
Instrument ID: LCMS1 Run Time: 21:34 Prep Method: 6850
File ID: 1LM.LM35509 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827766
Report generated 06/28/2016 14:14

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16060823
Instrument ID: LCMS1
Workgroup (AAB#): WG574101

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16060823-01	1.00	01	350000
L16060823-03	1.00	01	343000
L16060823-04	10.0	DL01	405000
WG574101-02	1.00	01	443000
WG574101-03	1.00	01	444000
WG574101-04	1.00	01	526000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4827769
Report generated 06/28/2016 14:15

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**	6850	**Samplenum:**	L16060823-01
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35468
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 21:44	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	16900	6640	2.55	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**	6850	**Samplenum:**	L16060823-03
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35469
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 22:03	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	6790	3320	2.05	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**	6850	**Samplenum:**	L16060823-04
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35470
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 22:22	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	75100	26200	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**	6850	**Samplenum:**	WG574101-01
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35465
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 20:47	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	28100	10000	2.81	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**	6850	**Samplenum:**	WG574101-02
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35466
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 21:06	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**	6850	**Samplenum:**	WG574101-03
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35467
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 21:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	31600	11800	2.68	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**	6850	**Samplenum:**	WG574101-04
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35491
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 04:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38300	14000	2.74	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**	6850	**Samplenum:**	WG574101-05
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35464
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 20:28	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	31600	12100	2.61	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**	6850	**Samplenum:**	WG574101-06
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35476
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 00:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35000	13100	2.67	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**	6850	**Samplenum:**	WG574101-07
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35489
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 04:22	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38900	13400	2.90	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**	6850	**Samplenum:**	WG574101-08
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35496
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 06:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38000	14100	2.70	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**	6850	**Samplenum:**	WG574101-09
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35499
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 18:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32900	11500	2.86	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**	6850	**Samplenum:**	WG574101-10
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35509
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 21:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37900	14000	2.71	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**		**Samplenum:**	WG574102-01
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:50	**File ID:**	1LM.LM35462
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 19:50	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**		**Samplenum:**	WG574102-02
Instrument:	LCMS1	**Prep Date:**	06/24/2016 20:09	**File ID:**	1LM.LM35463
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 20:09	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	152000	55500	2.74	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**		**Samplenum:**	WG574102-03
Instrument:	LCMS1	**Prep Date:**	06/24/2016 23:56	**File ID:**	1LM.LM35475
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 23:56	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	170000	57500	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**		**Samplenum:**	WG574102-04
Instrument:	LCMS1	**Prep Date:**	06/25/2016 00:34	**File ID:**	1LM.LM35477
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 00:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	824	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**		**Samplenum:**	WG574102-05
Instrument:	LCMS1	**Prep Date:**	06/25/2016 04:03	**File ID:**	1LM.LM35488
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 04:03	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	179000	60200	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**		**Samplenum:**	WG574102-06
Instrument:	LCMS1	**Prep Date:**	06/25/2016 04:40	**File ID:**	1LM.LM35490
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 04:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**		**Samplenum:**	WG574102-07
Instrument:	LCMS1	**Prep Date:**	06/25/2016 06:15	**File ID:**	1LM.LM35495
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 06:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	189000	63400	2.98	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**		**Samplenum:**	WG574102-08
Instrument:	LCMS1	**Prep Date:**	06/25/2016 06:53	**File ID:**	1LM.LM35497
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 06:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	518	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**		**Samplenum:**	WG574102-09
Instrument:	LCMS1	**Prep Date:**	06/25/2016 18:06	**File ID:**	1LM.LM35498
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 18:06	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	161000	56700	2.84	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**		**Samplenum:**	WG574102-10
Instrument:	LCMS1	**Prep Date:**	06/25/2016 18:44	**File ID:**	1LM.LM35500
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 18:44	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**		**Samplenum:**	WG574102-11
Instrument:	LCMS1	**Prep Date:**	06/25/2016 21:15	**File ID:**	1LM.LM35508
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 21:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	176000	59300	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060823	**Prep Method:**		**Samplenum:**	WG574102-12
Instrument:	LCMS1	**Prep Date:**	06/25/2016 21:53	**File ID:**	1LM.LM35510
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 21:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

2.2.2.3 Sample Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:40 PM

Data File	LM35468.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 9:44:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060823-01	**Injection Vial**	8.00
Data File	LM35468.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 9:44:17 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	L16060823-01	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.500e+05	9.10	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+04	9.10	N/A	0.14
Perchlorate conf	6.640e+03	9.11	N/A	0.149

O18LP (Internal Standard)

RT (Exp. RT): 9.10(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

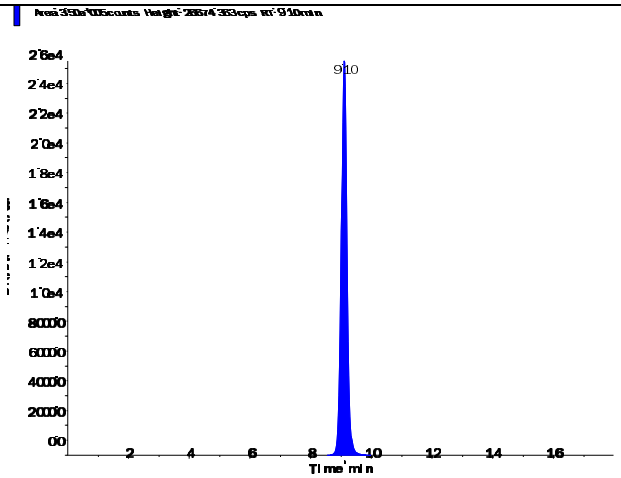

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:40 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.10 (9.84) min Calculated conc: 0.14 ng/ml Area Ratio: 0.048 Sample Type: (Unknown)	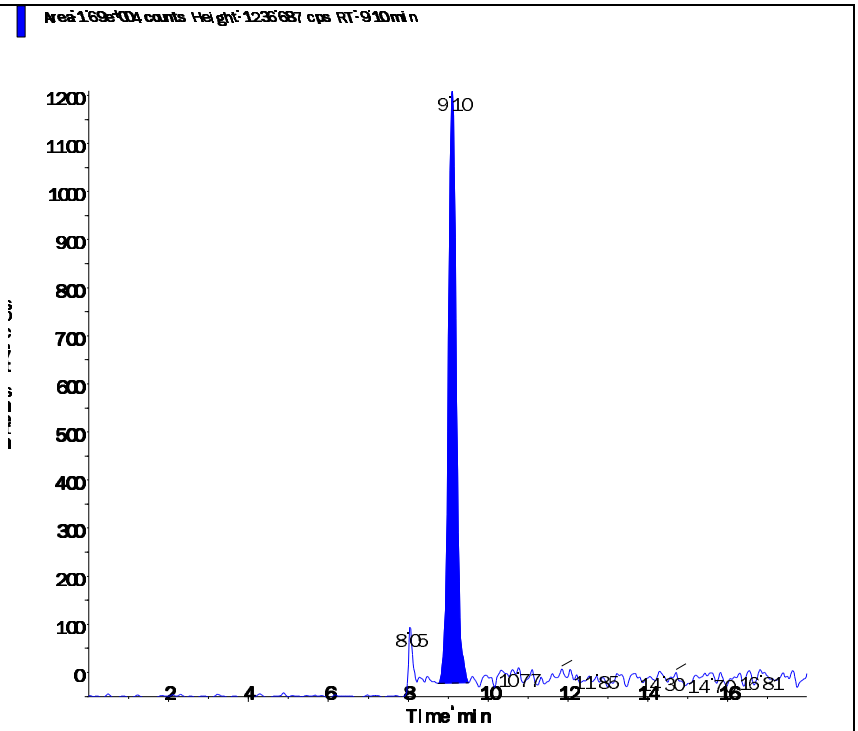
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.11 (9.84) min Calculated conc: 0.149 ng/ml Area Ratio: 0.019 Sample Type: (Unknown)	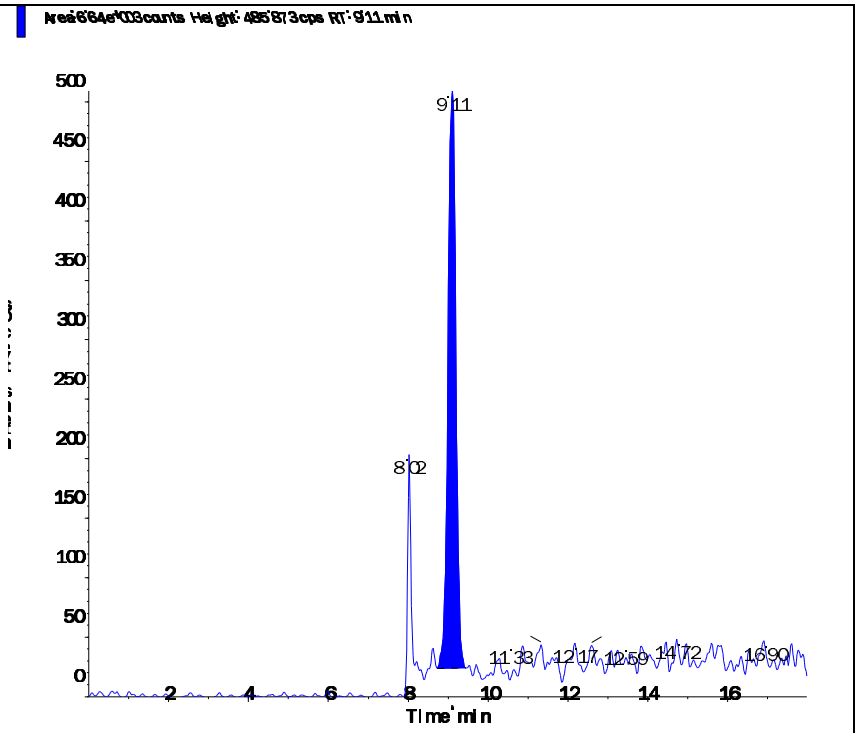

s.dataFile Page 2 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:41 PM

Data File	LM35469.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 10:03:12 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060823-03	**Injection Vial**	9.00
Data File	LM35469.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 10:03:12 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	L16060823-03	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.430e+05	9.09	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	6.790e+03	9.12	N/A	0.055
Perchlorate conf	3.320e+03	9.10	N/A	0.0661

O18LP (Internal Standard)

RT (Exp. RT): 9.09(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

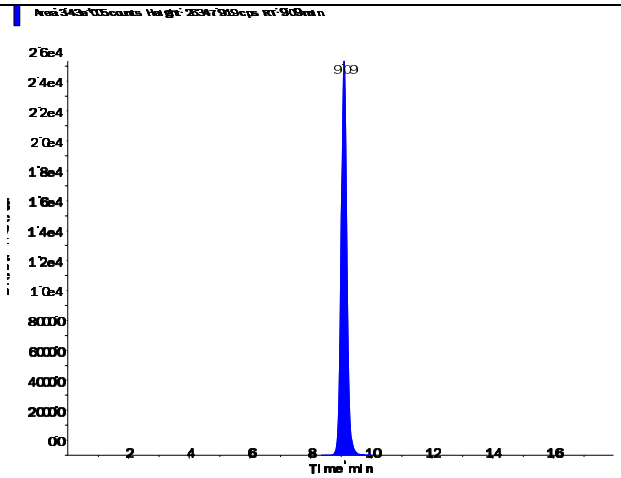

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.12 (9.84) min
Calculated conc:	0.055 ng/ml
Area Ratio:	0.02
Sample Type:	(Unknown)

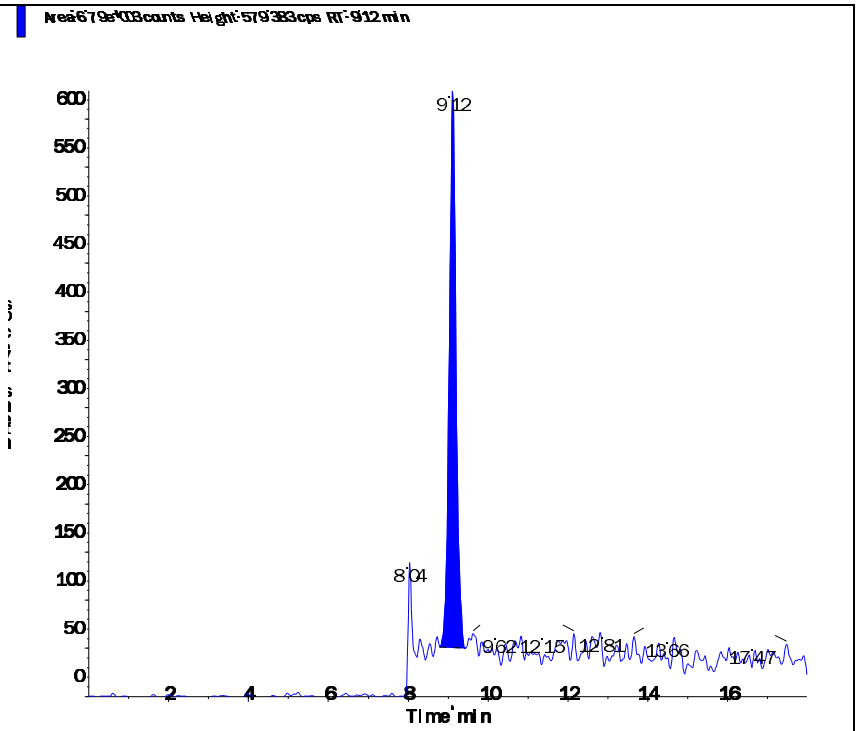

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.10 (9.84) min
Calculated conc:	0.0661 ng/ml
Area Ratio:	0.01
Sample Type:	(Unknown)

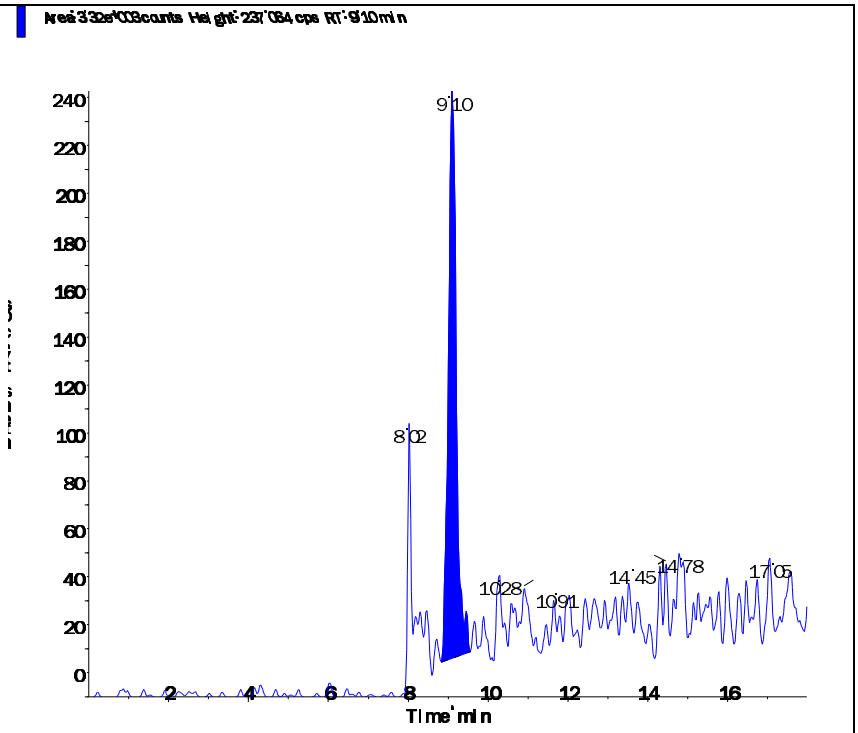

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Data File	LM35470.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 10:22:07 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060823-04 (10x)	**Injection Vial**	10.00
Data File	LM35470.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 10:22:07 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	L16060823-04	**Dilution Factor**	1.00
Sample Comment	1,10 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.050e+05	9.49	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	7.510e+04	9.51	N/A	0.548
Perchlorate conf	2.620e+04	9.50	N/A	0.56

O18LP (Internal Standard)

RT (Exp. RT): 9.49(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

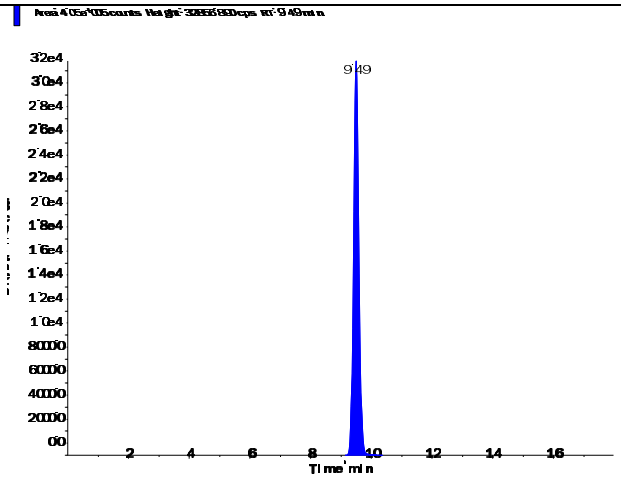

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.51 (9.84) min
Calculated conc:	0.548 ng/ml
Area Ratio:	0.185
Sample Type:	(Unknown)

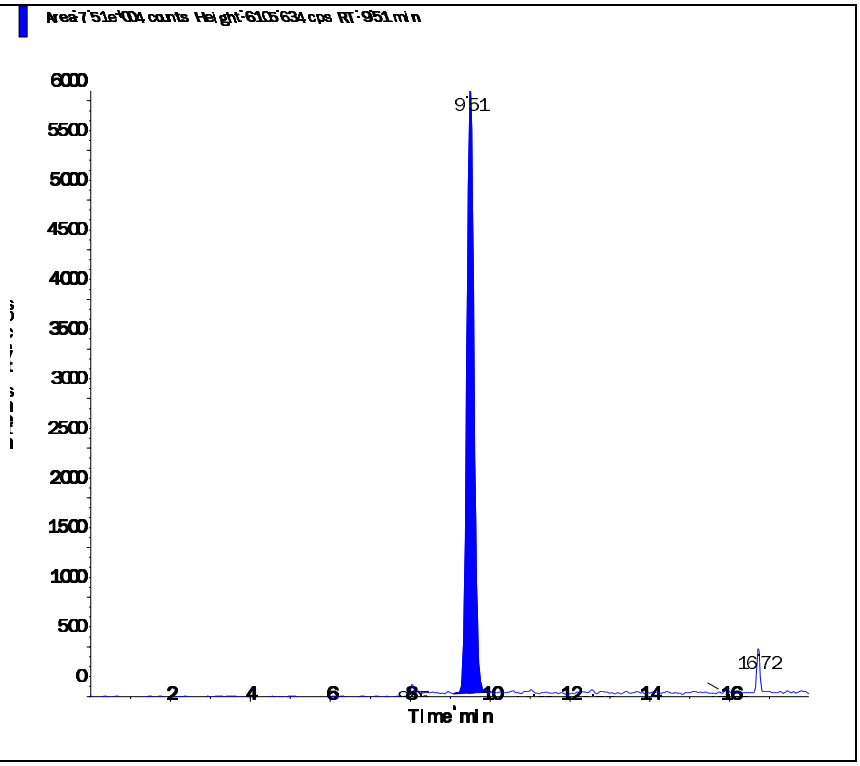

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.50 (9.84) min
Calculated conc:	0.56 ng/ml
Area Ratio:	0.065
Sample Type:	(Unknown)

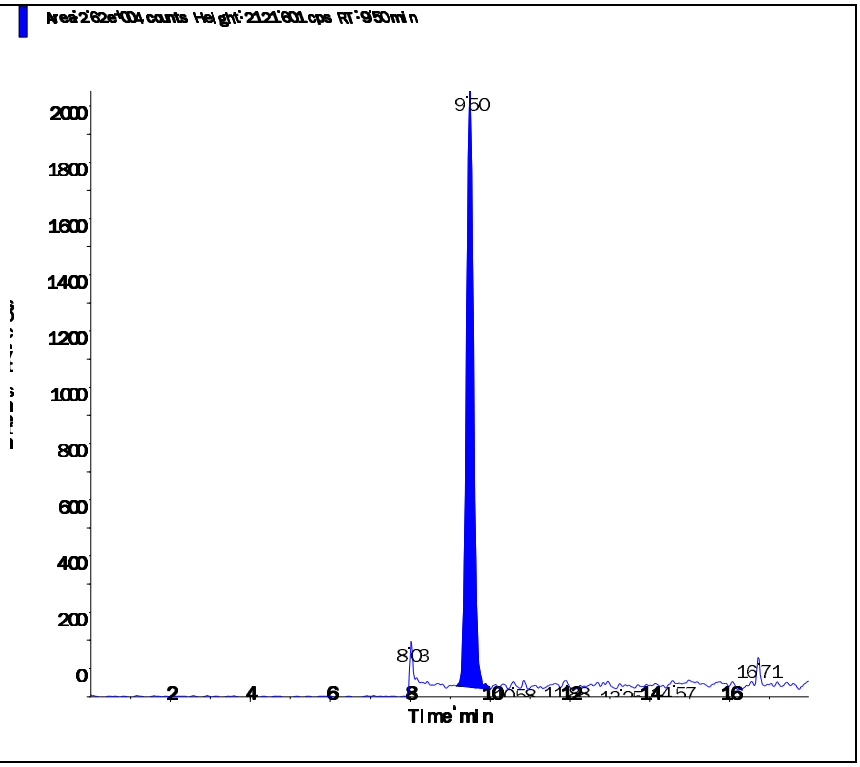

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2.2.2.4 Standards Data

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Data File	LM34686.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

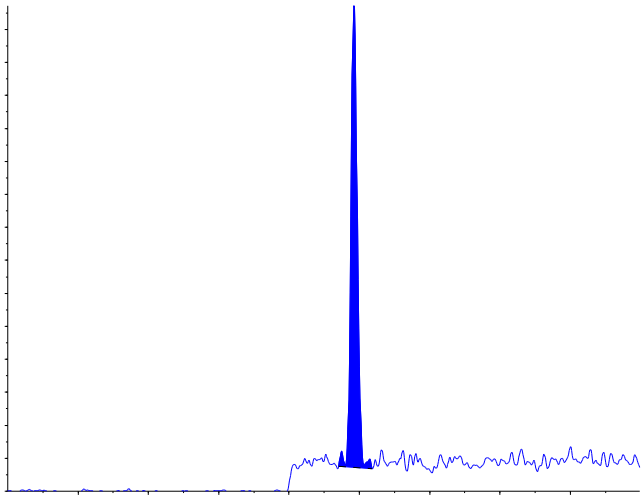

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

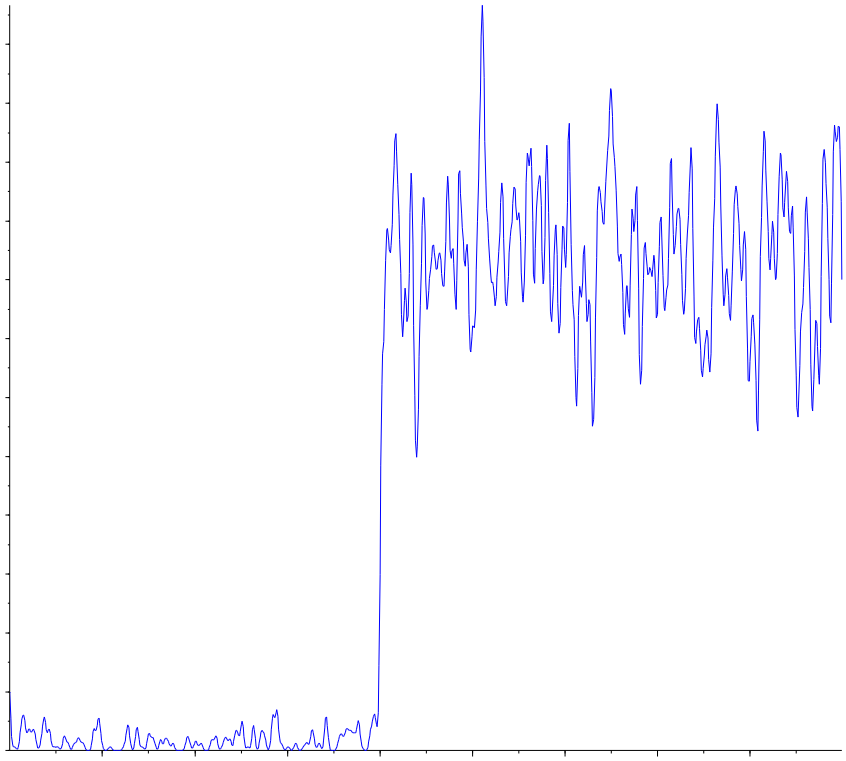

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

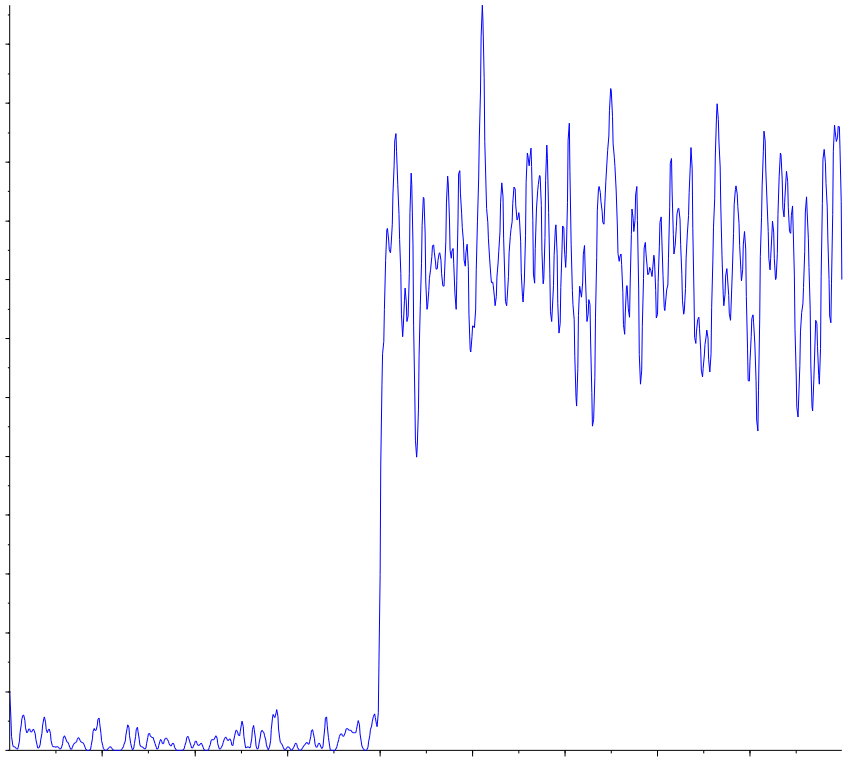

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Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

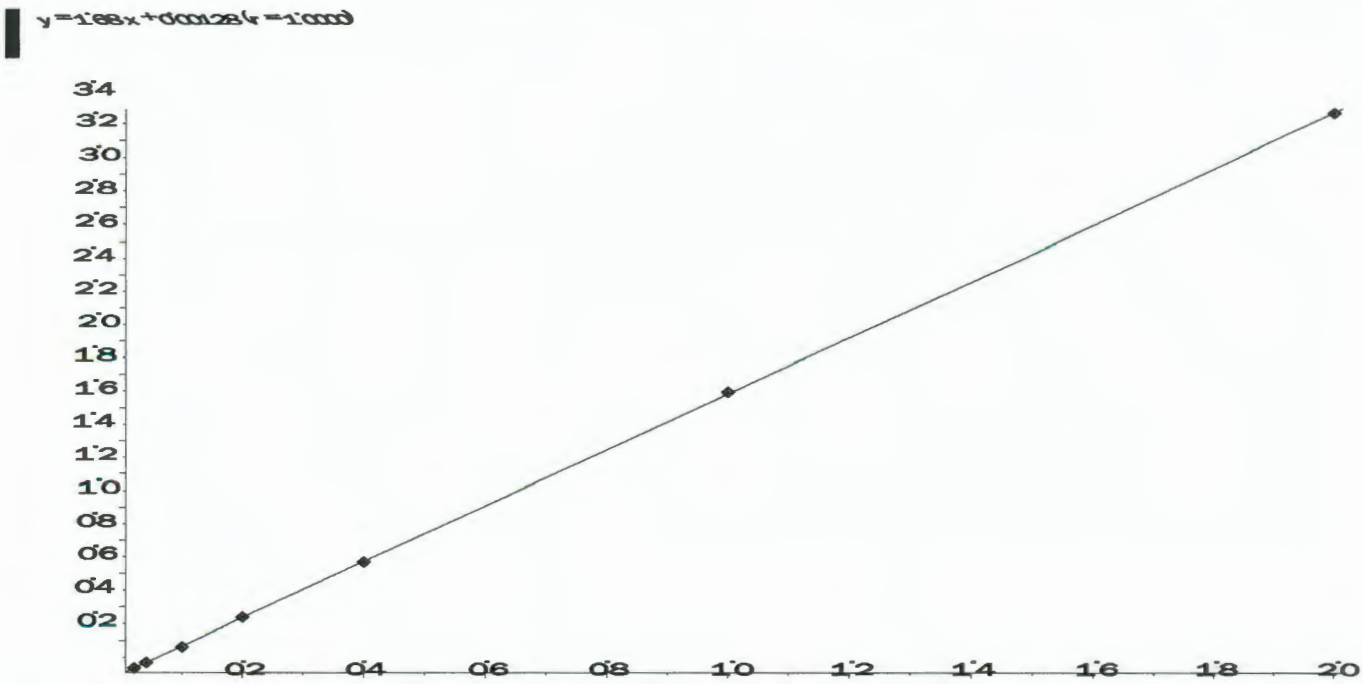

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Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

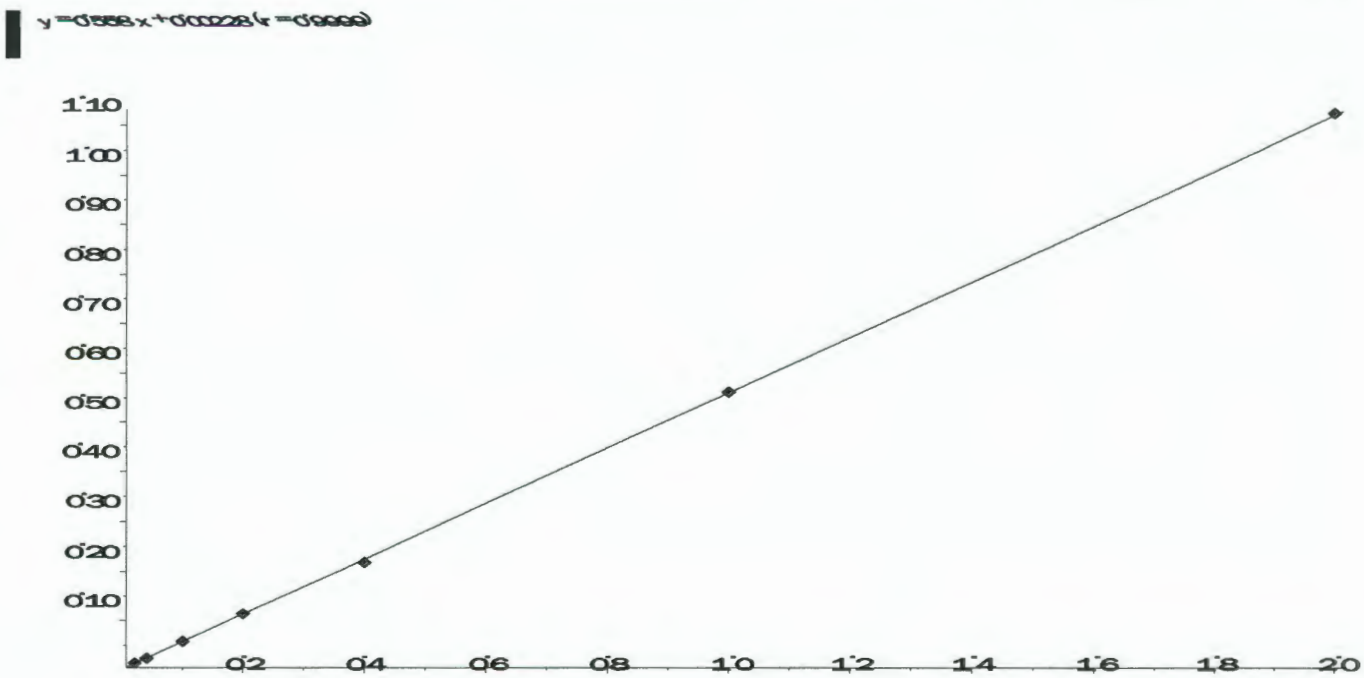

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Data File	LM34687.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

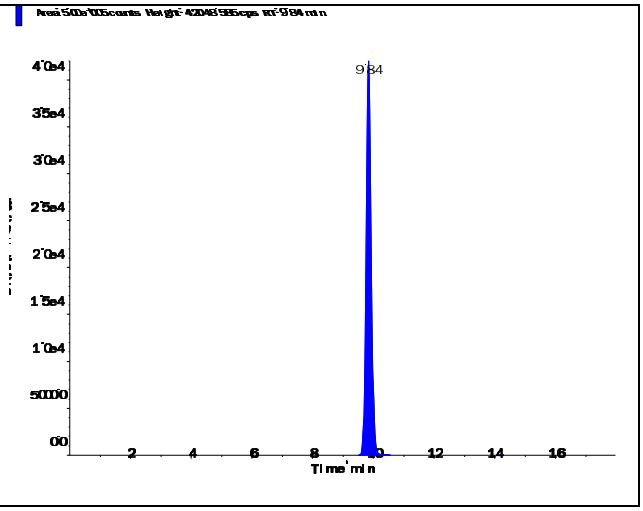

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.85 (9.84) min Calculated conc: 0.103 ng/ml Area Ratio: 0.036 Sample Type: (Standard)	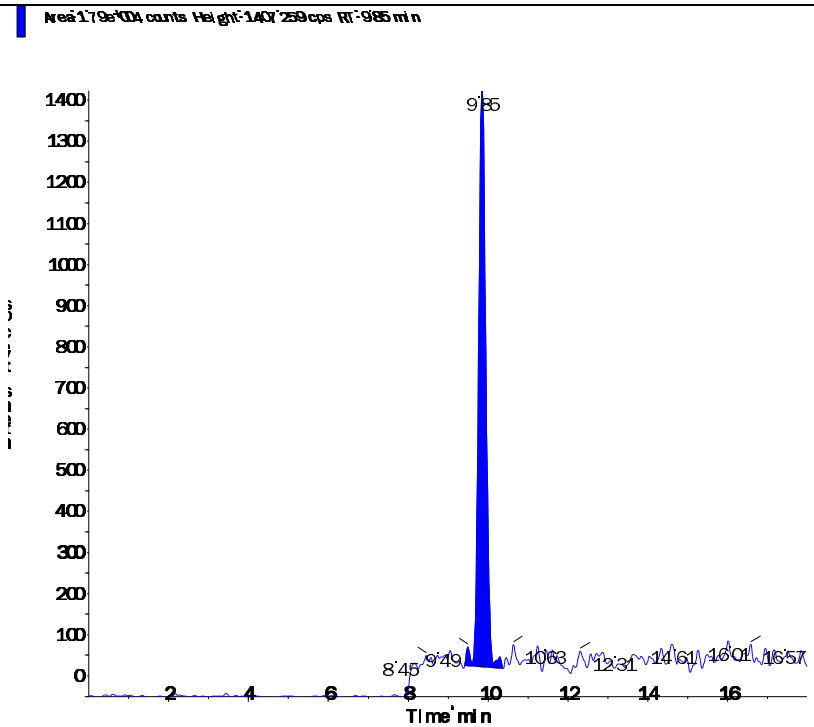
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.83 (9.84) min Calculated conc: 0.104 ng/ml Area Ratio: 0.014 Sample Type: (Standard)	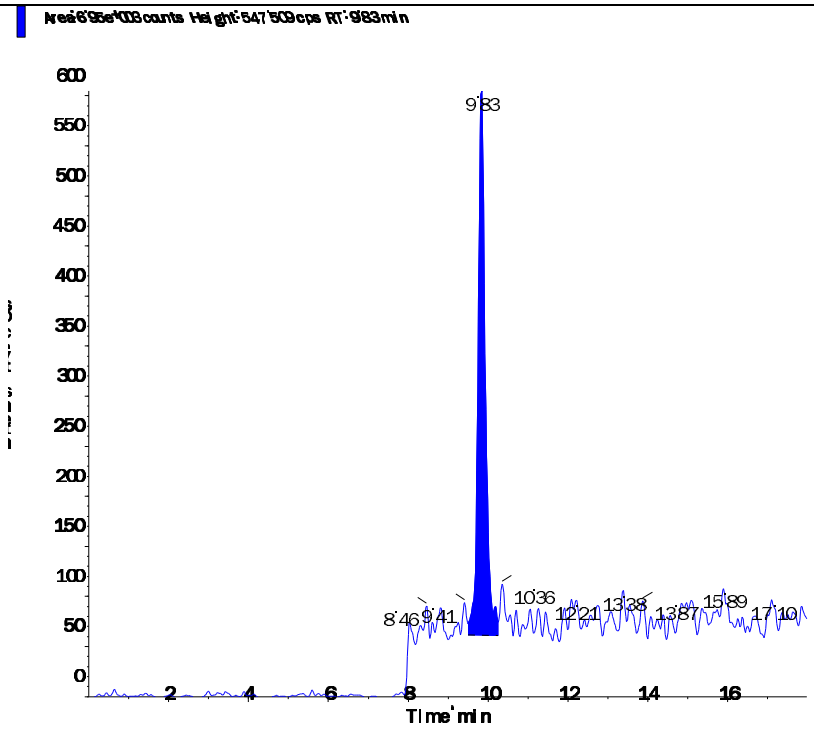

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Data File	LM34688.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

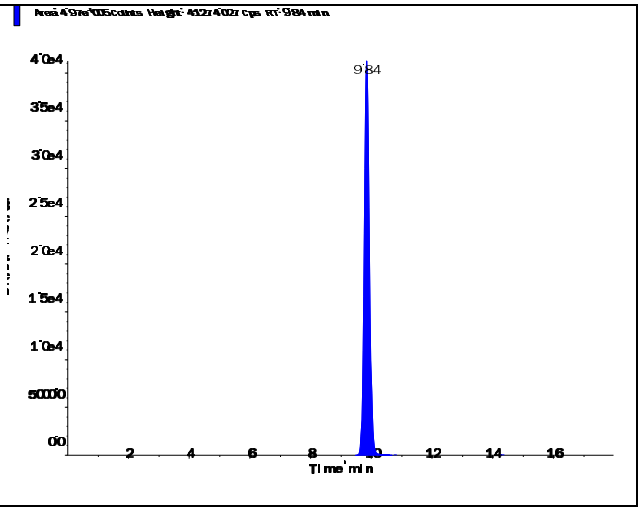

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

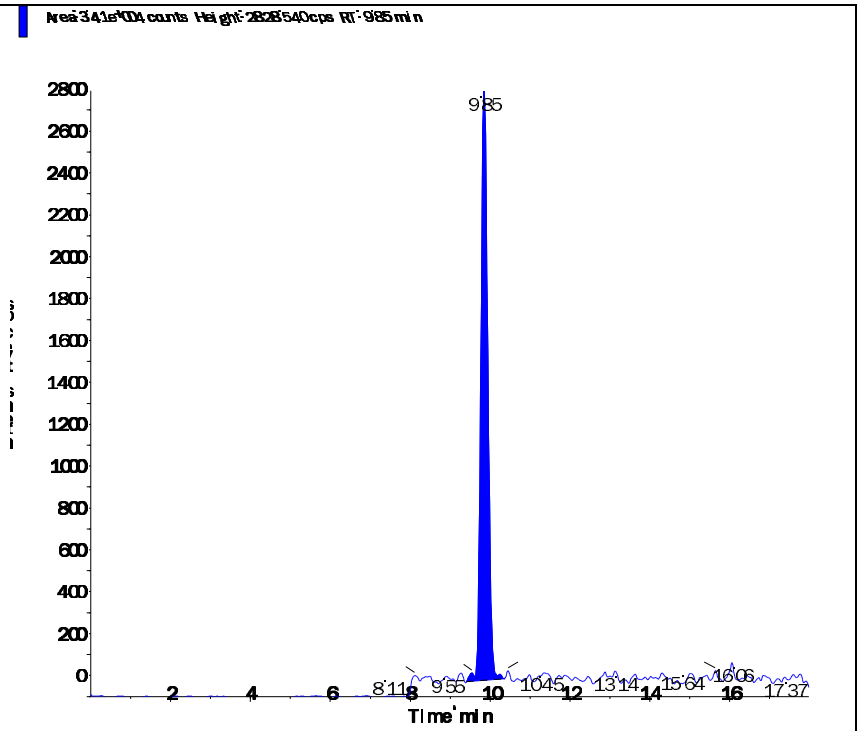

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

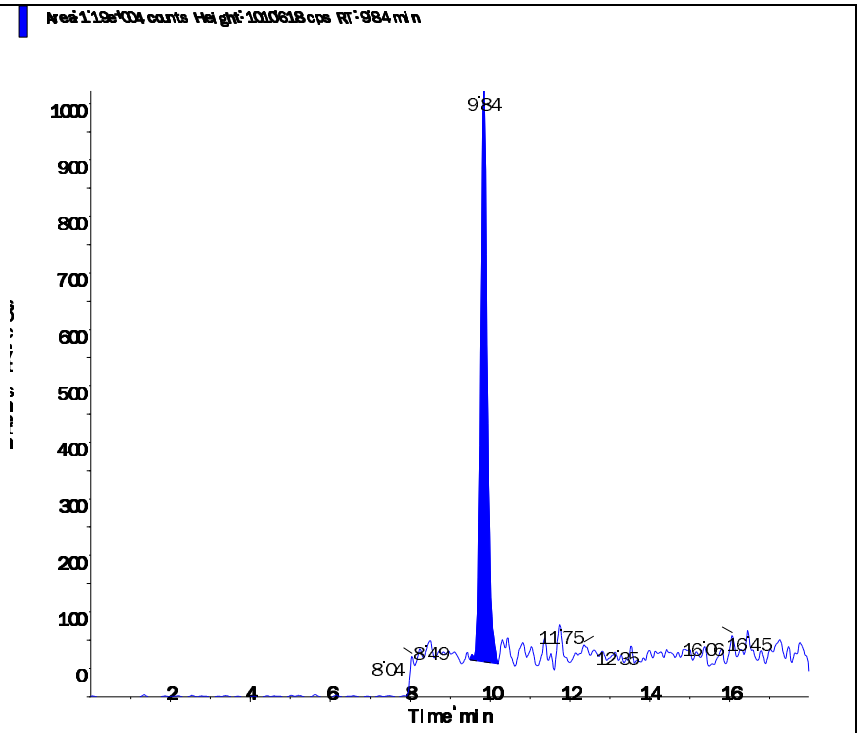

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Data File	LM34689.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

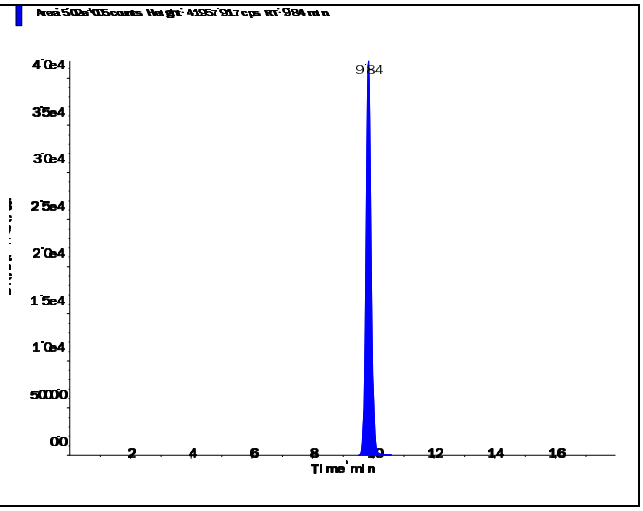

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.483 ng/ml
Area Ratio:	0.164
Sample Type:	(Standard)

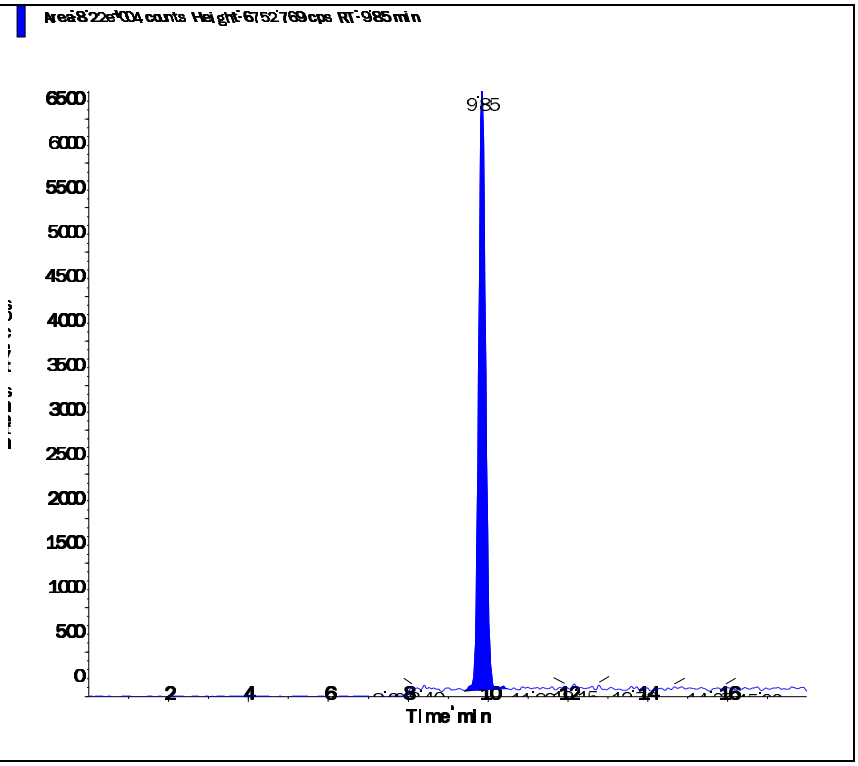

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.503 ng/ml
Area Ratio:	0.058
Sample Type:	(Standard)

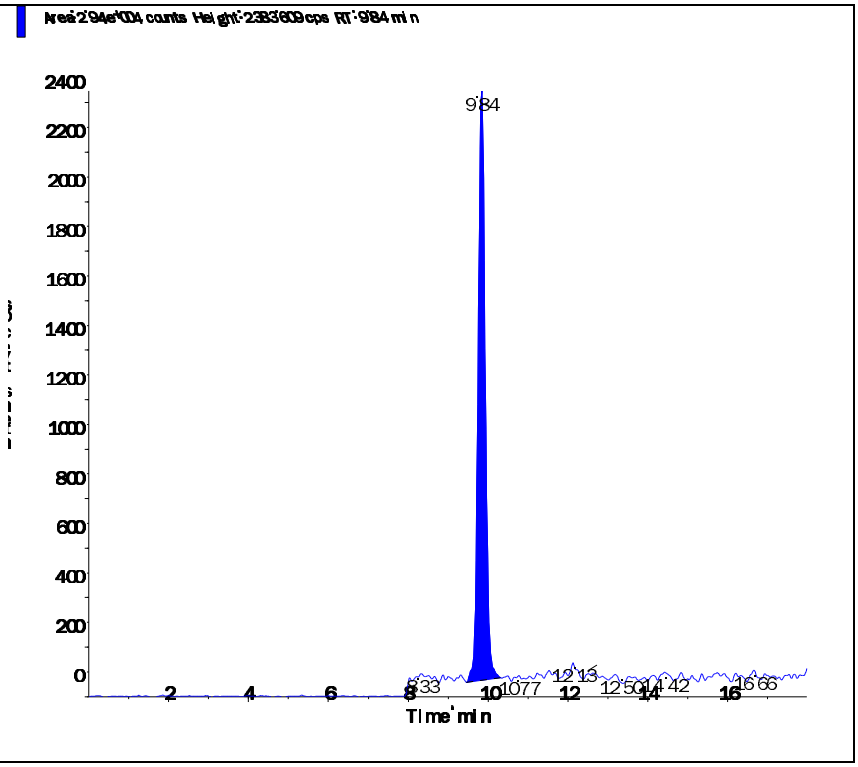

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Data File	LM34690.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

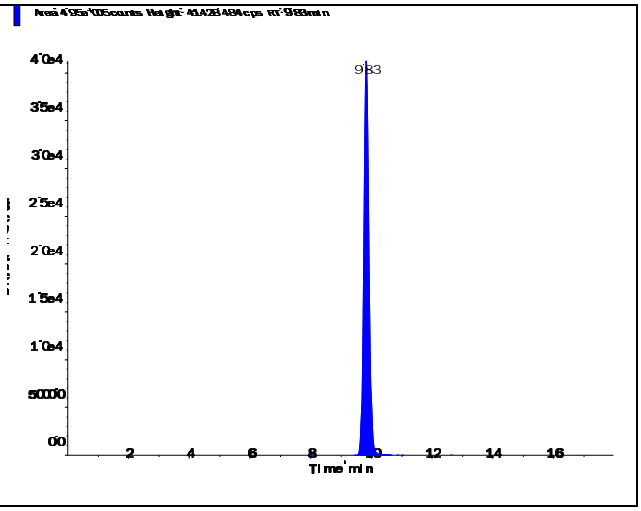

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

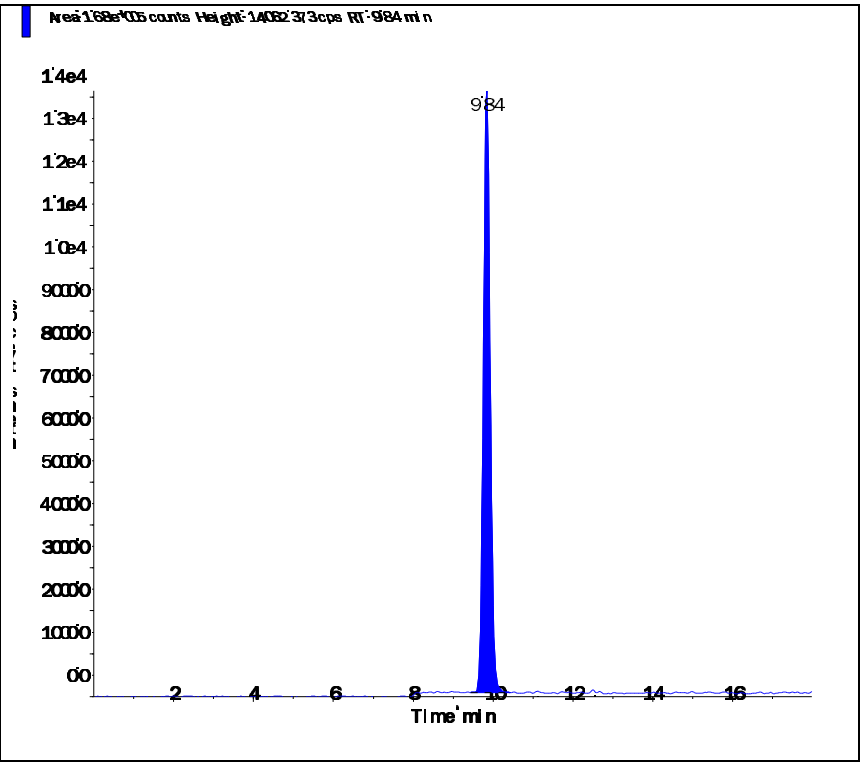

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

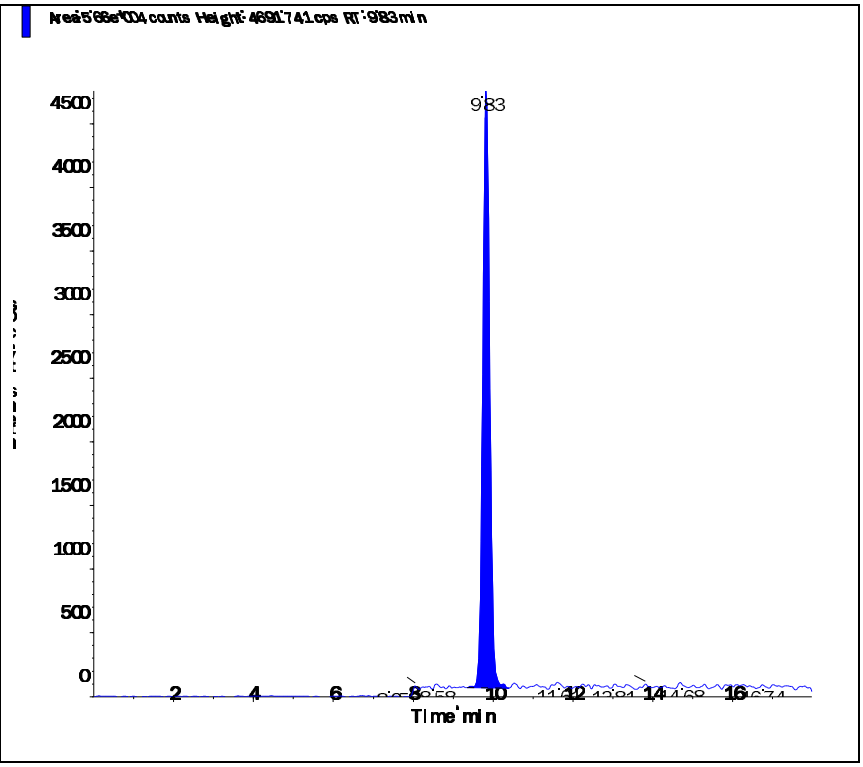

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Printed: 6/27/2016 7:37 PM

Data File	LM34691.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

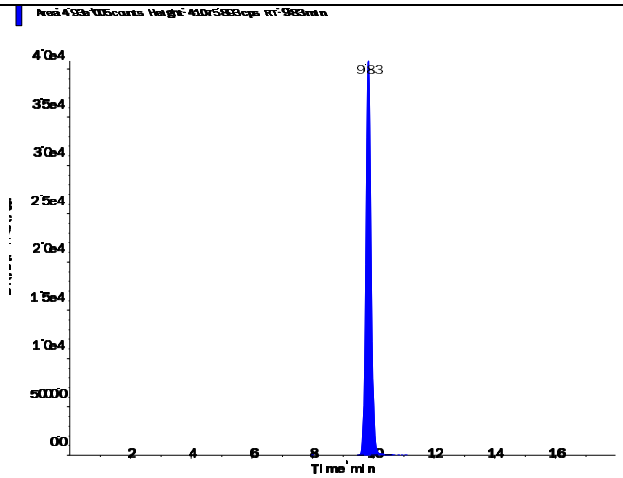

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.99 ng/ml
Area Ratio:	0.669
Sample Type:	(Standard)

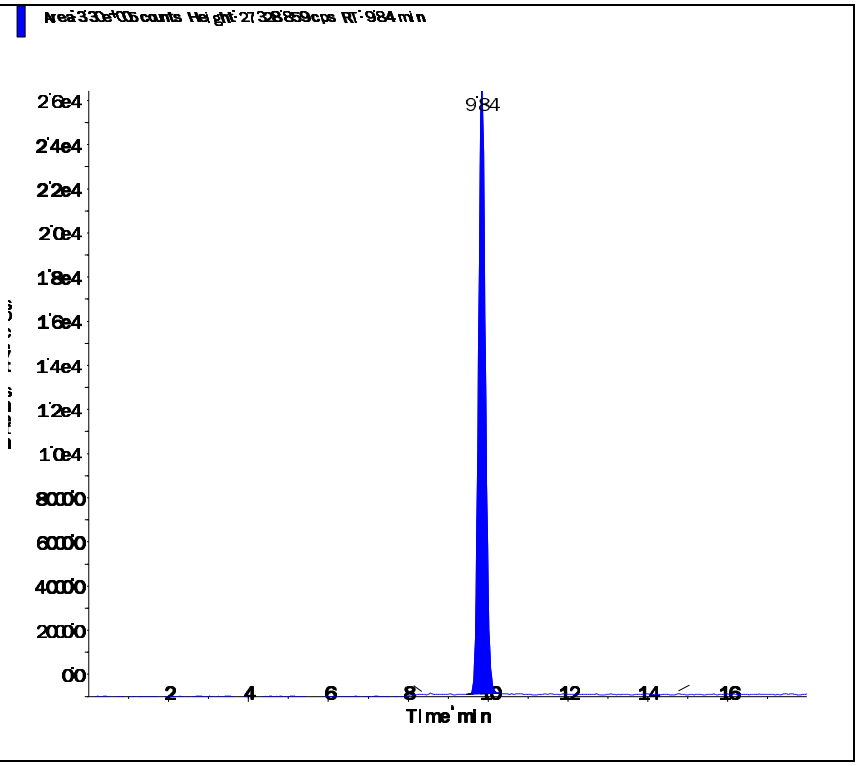

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.94 ng/ml
Area Ratio:	0.219
Sample Type:	(Standard)

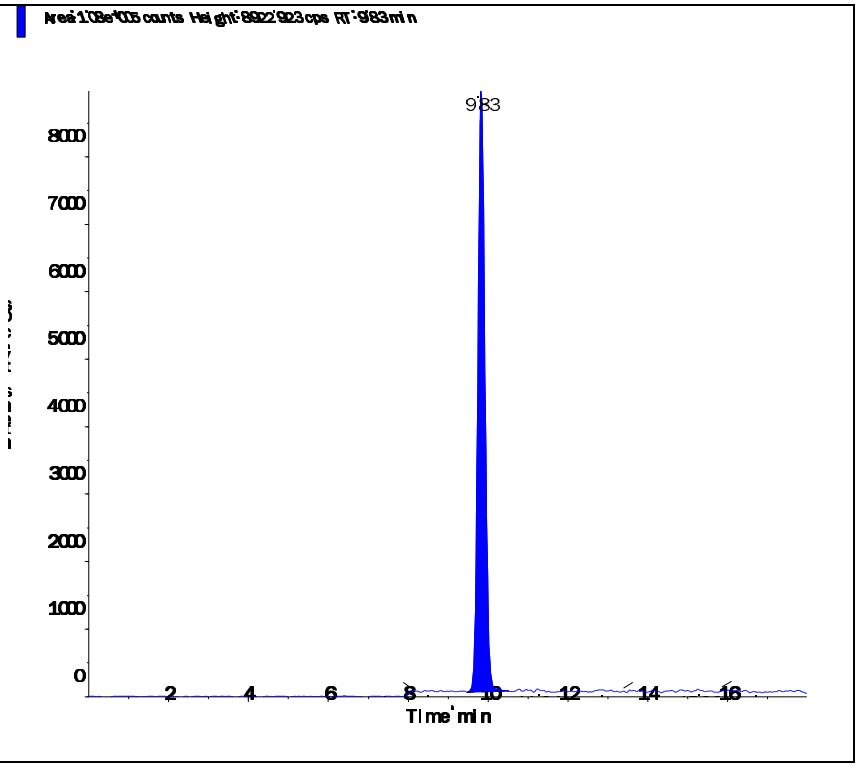

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Printed: 6/27/2016 7:38 PM

Data File	LM34692.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

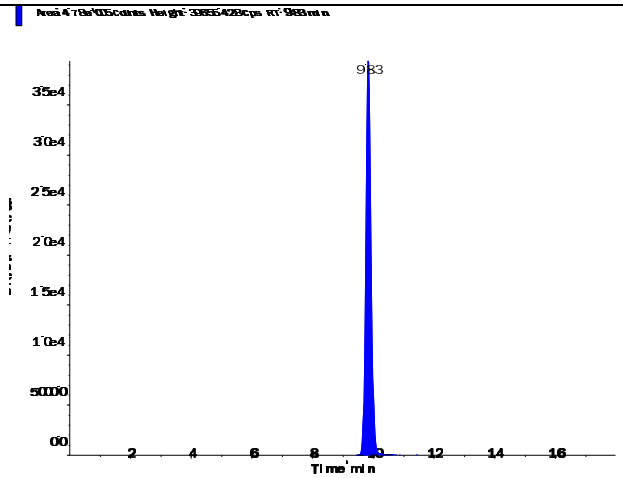

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

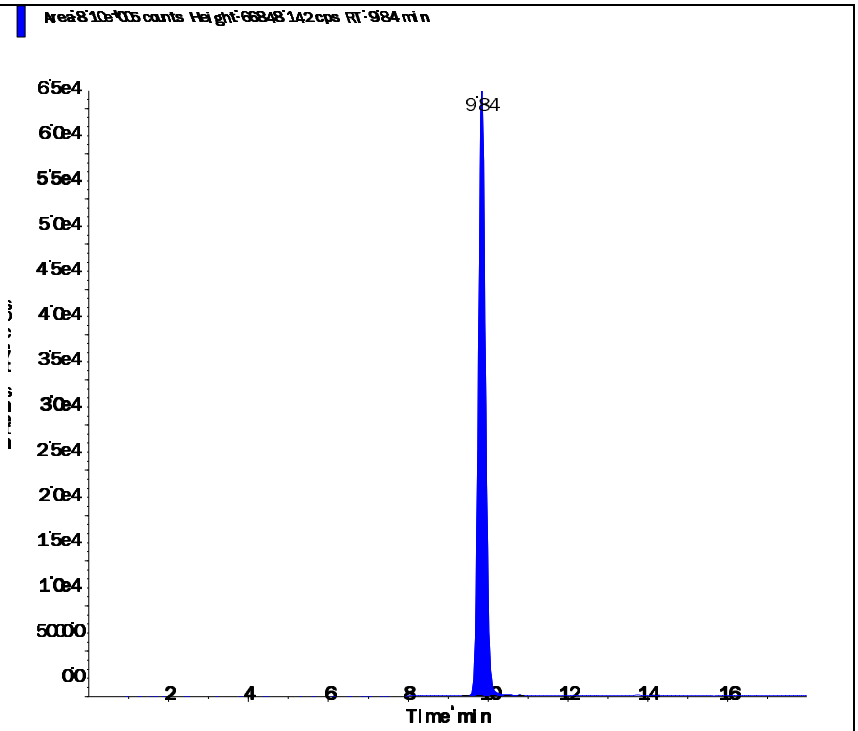

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

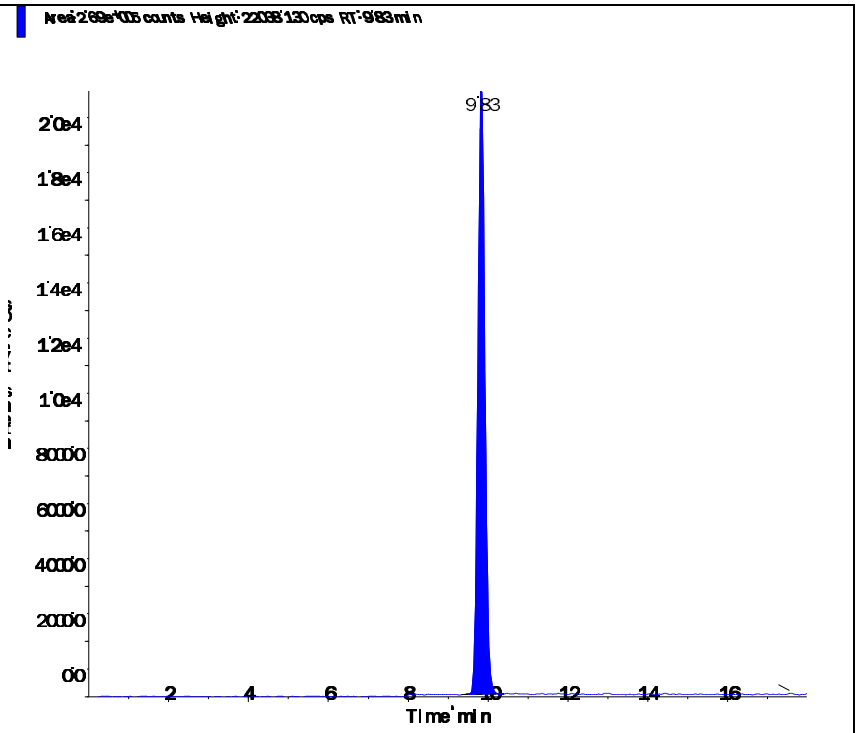

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Data File	LM34693.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

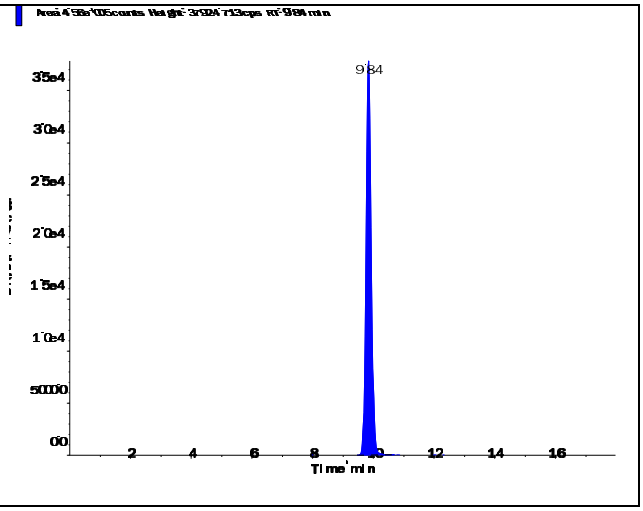

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	9.99 ng/ml
Area Ratio:	3.36
Sample Type:	(Standard)

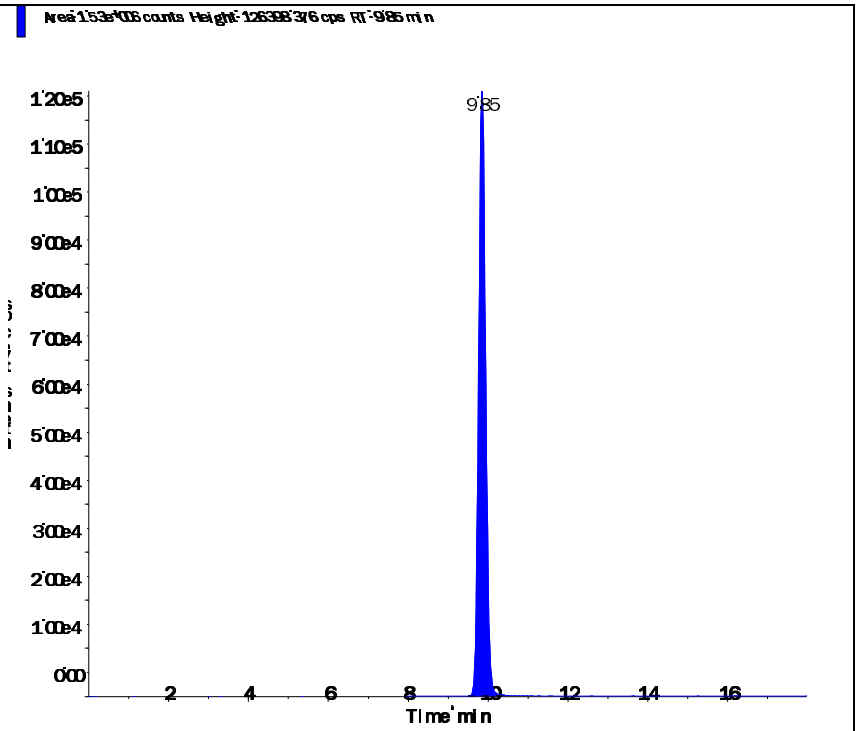

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	10.00 ng/ml
Area Ratio:	1.122
Sample Type:	(Standard)

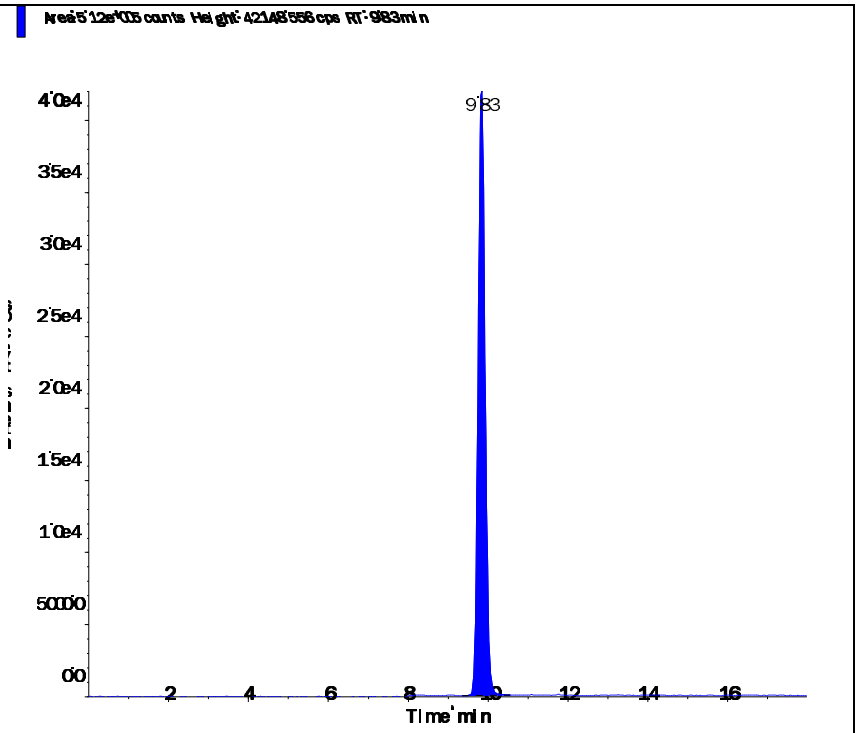

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Printed: 5/4/2016 1:23 PM

Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

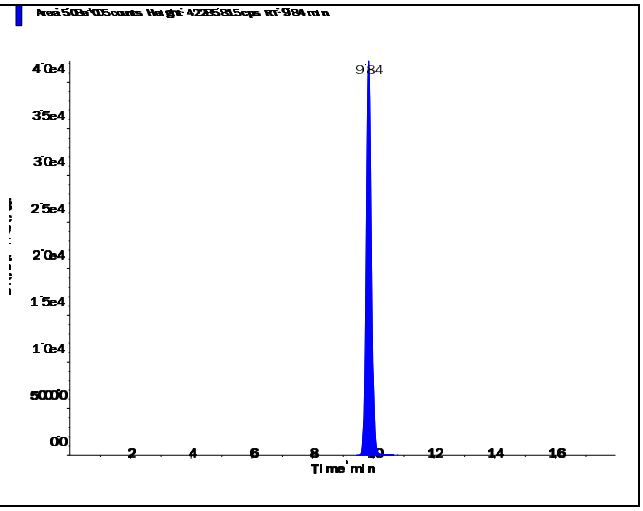

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.332
Sample Type:	(Quality Control)

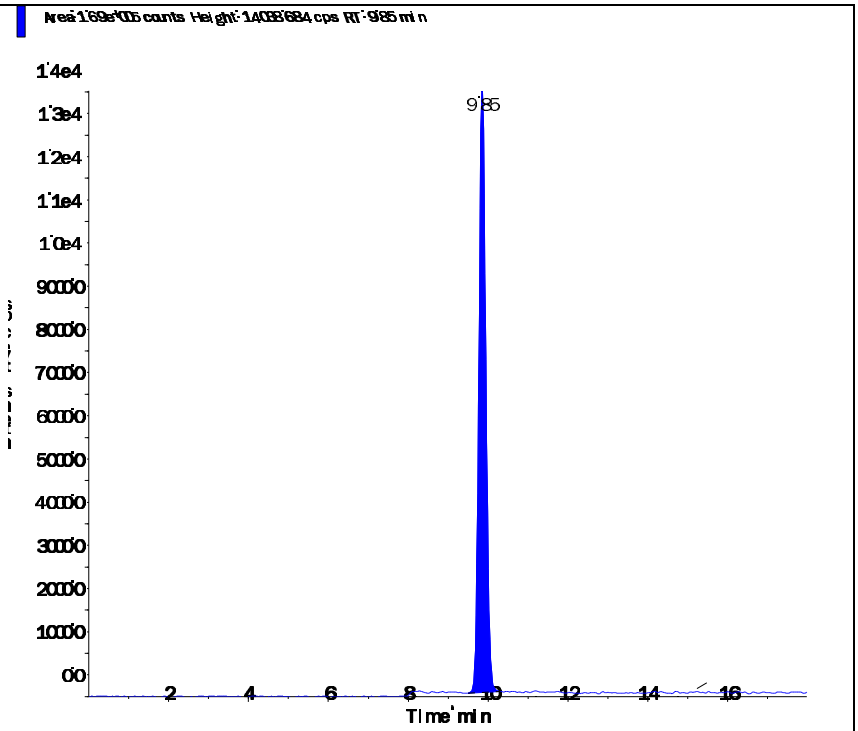

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

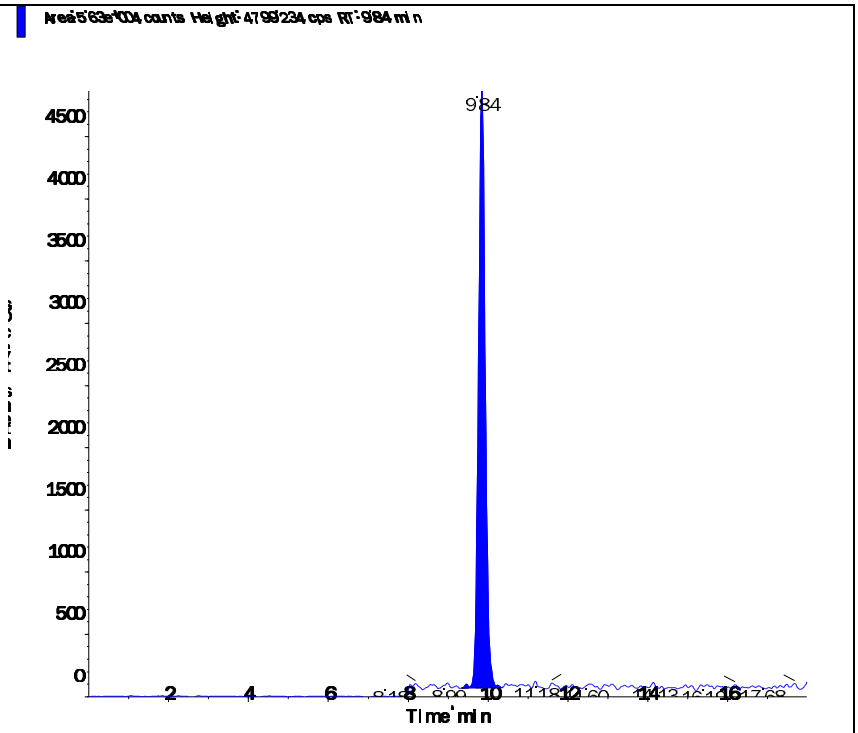

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Printed: 6/27/2016 7:39 PM

Data File	LM35463.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 8:09:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35463.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 8:09:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.450e+05	9.34	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.520e+05	9.35	1.00	1.01
Perchlorate conf	5.550e+04	9.33	1.00	1.10

O18LP (Internal Standard)

RT (Exp. RT): 9.34(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

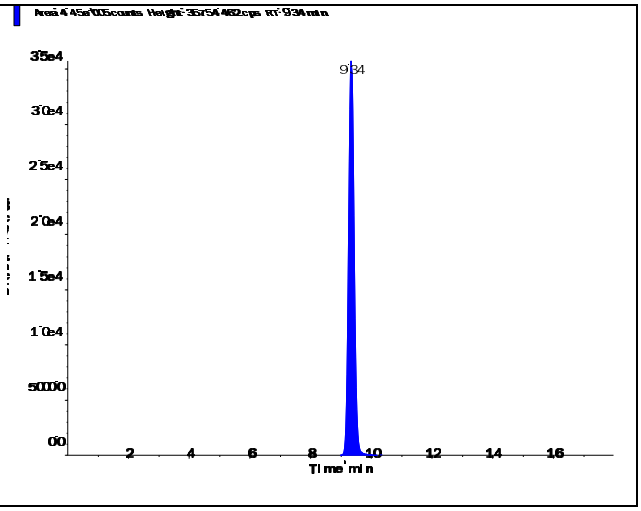

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.341
Sample Type:	(Quality Control)

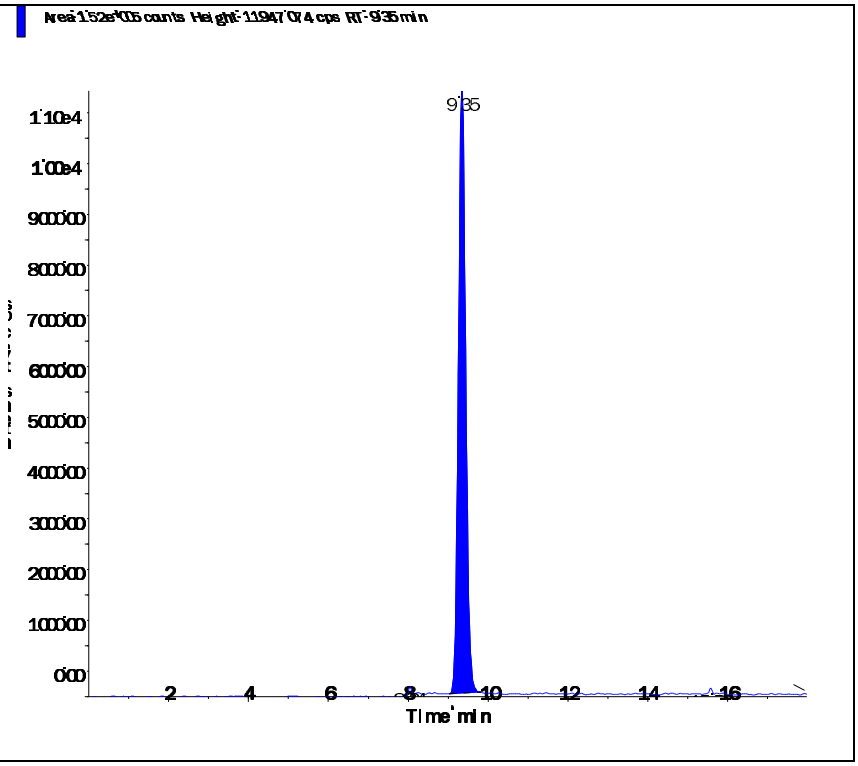

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.33 (9.84) min
Calculated conc:	1.10 ng/ml
Area Ratio:	0.125
Sample Type:	(Quality Control)

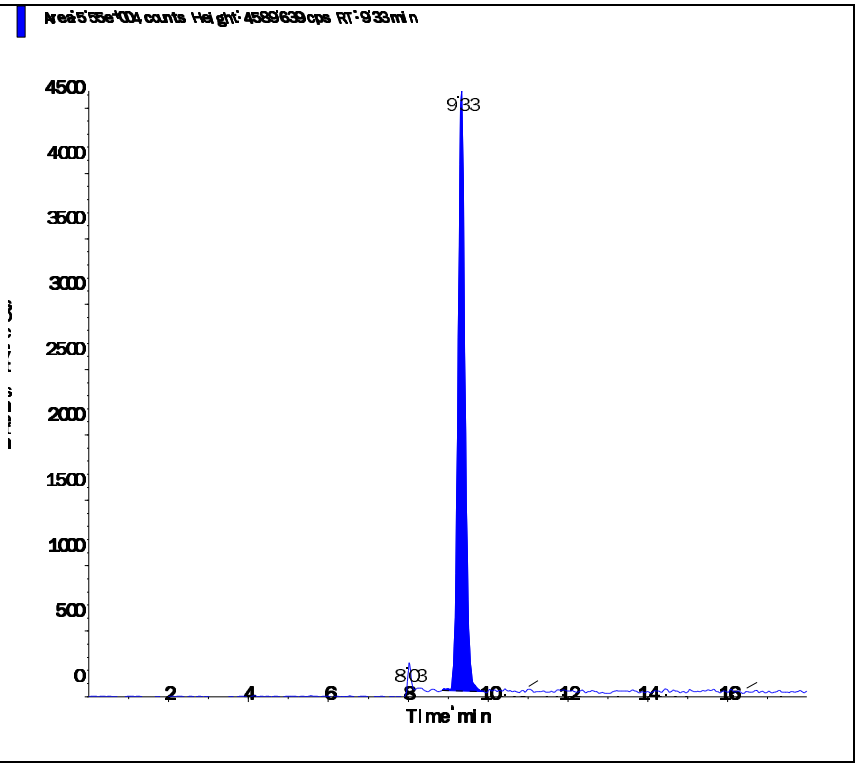

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Data File	LM35475.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 11:56:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35475.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 11:56:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.980e+05	9.32	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.700e+05	9.33	1.00	1.01
Perchlorate conf	5.750e+04	9.32	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.32(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

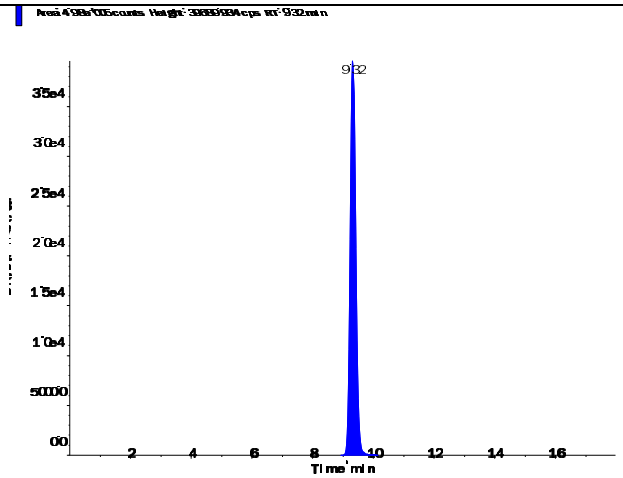

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Printed: 6/27/2016 7:43 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.33 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.34
Sample Type:	(Quality Control)

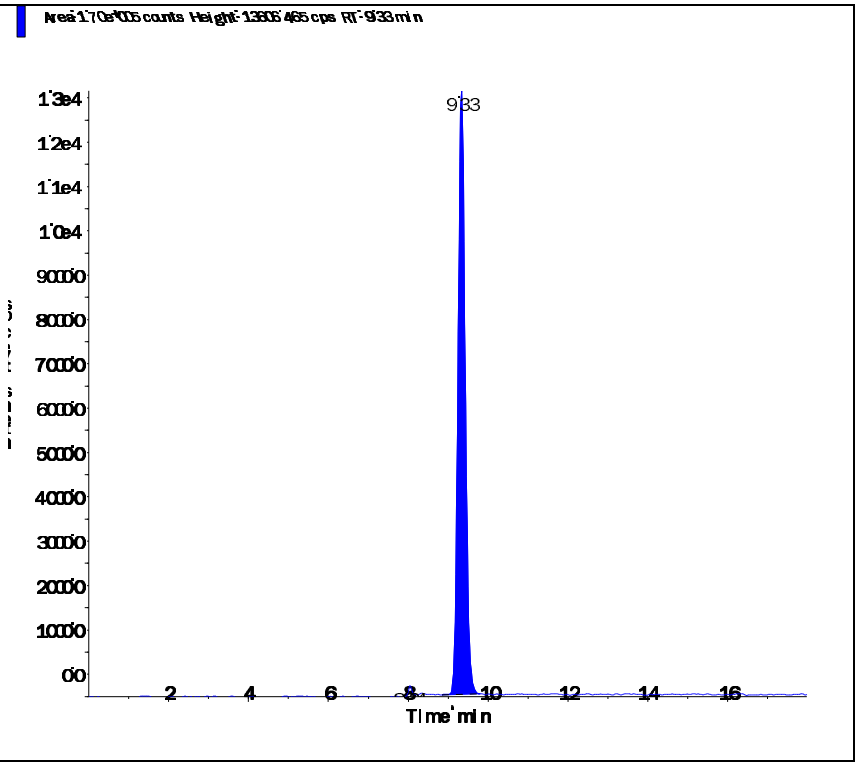

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.32 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.115
Sample Type:	(Quality Control)

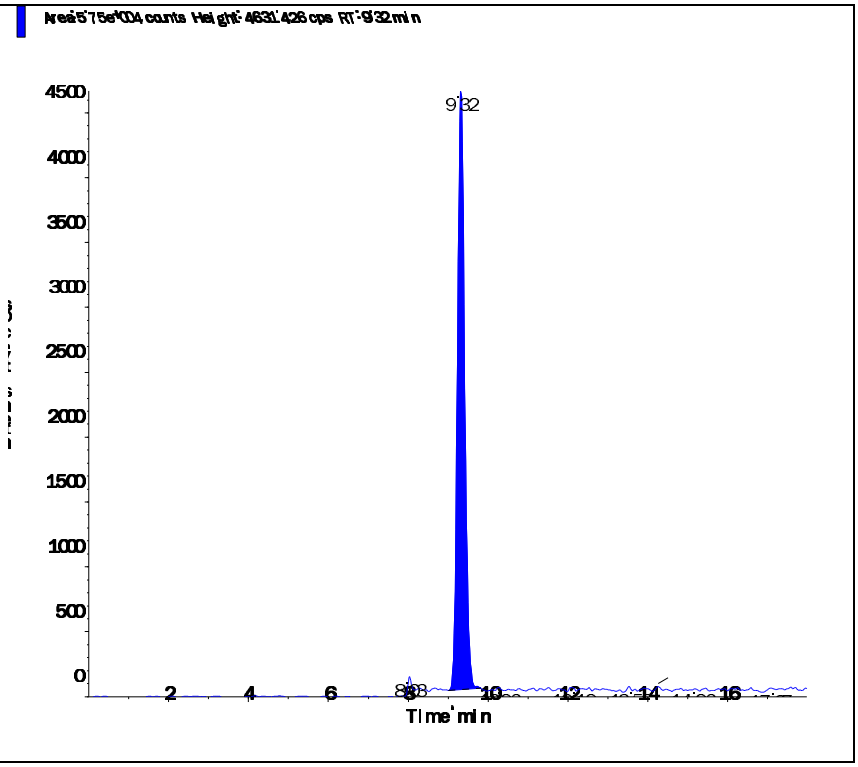

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Printed: 6/27/2016 7:47 PM

Data File	LM35488.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 4:03:05 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35488.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 4:03:05 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.33	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+05	9.34	1.00	1.04
Perchlorate conf	6.020e+04	9.32	1.00	1.03

O18LP (Internal Standard)

RT (Exp. RT): 9.33(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

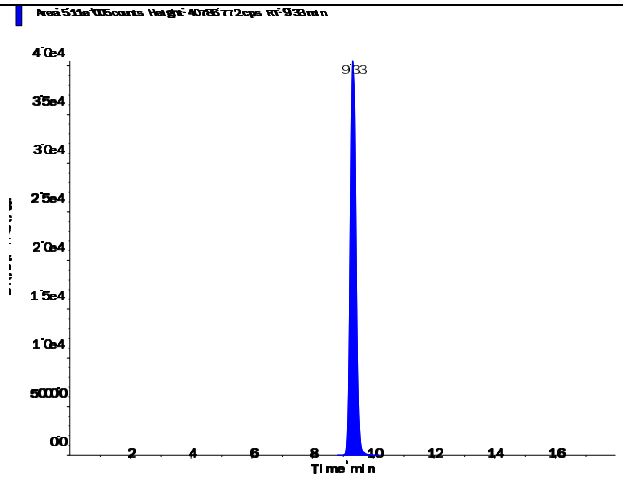

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Printed: 6/27/2016 7:47 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.34 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.35
Sample Type:	(Quality Control)

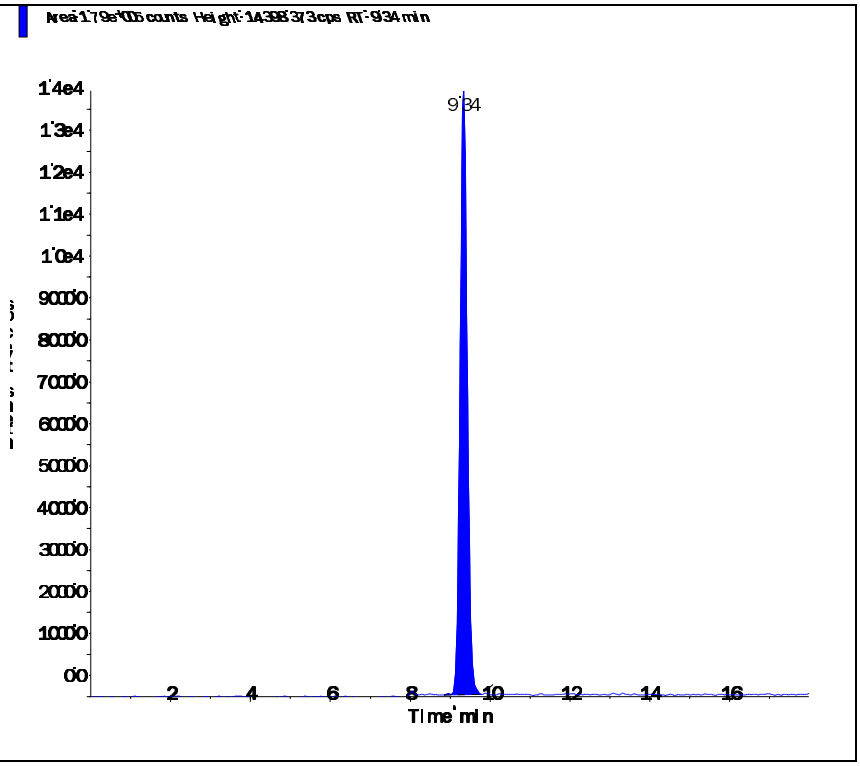

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.32 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.118
Sample Type:	(Quality Control)

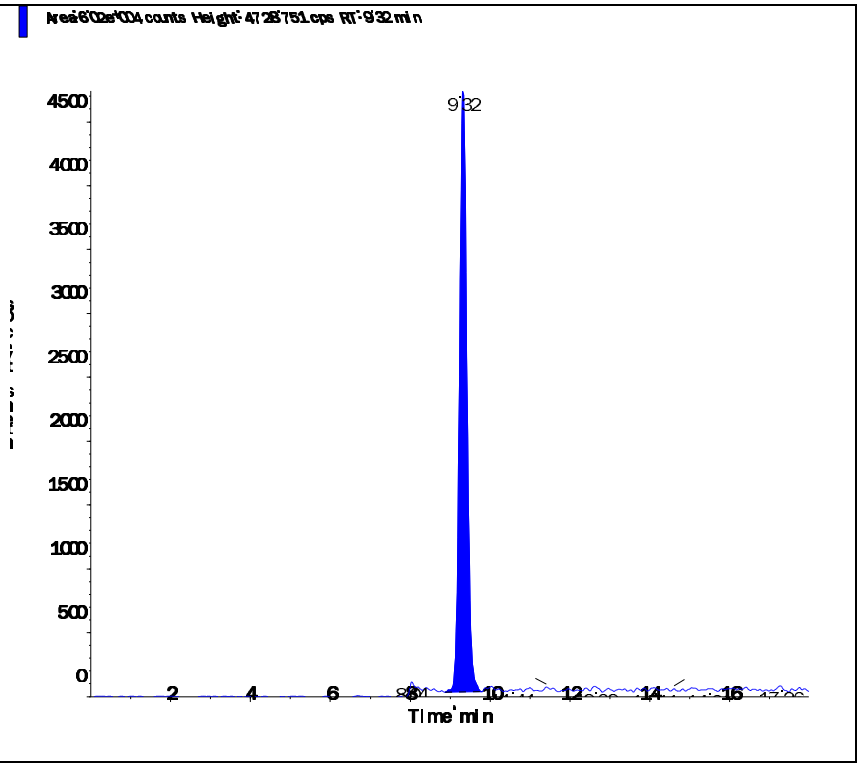

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Printed: 6/27/2016 7:50 PM

Data File	LM35495.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:15:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35495.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:15:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.500e+05	9.33	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.890e+05	9.35	1.00	1.02
Perchlorate conf	6.340e+04	9.33	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.33(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

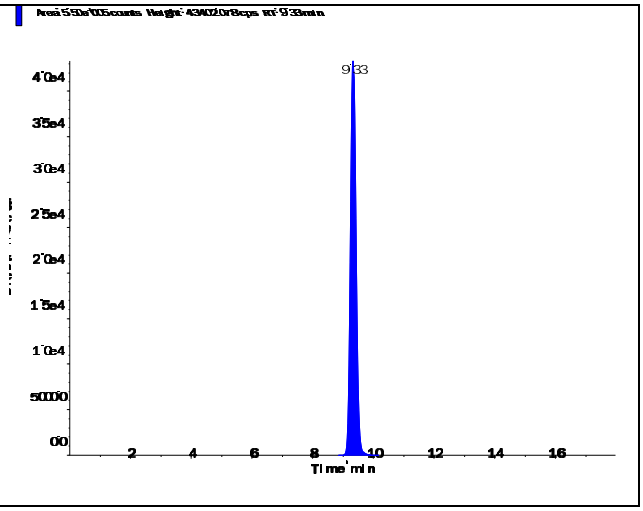

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.345
Sample Type:	(Quality Control)

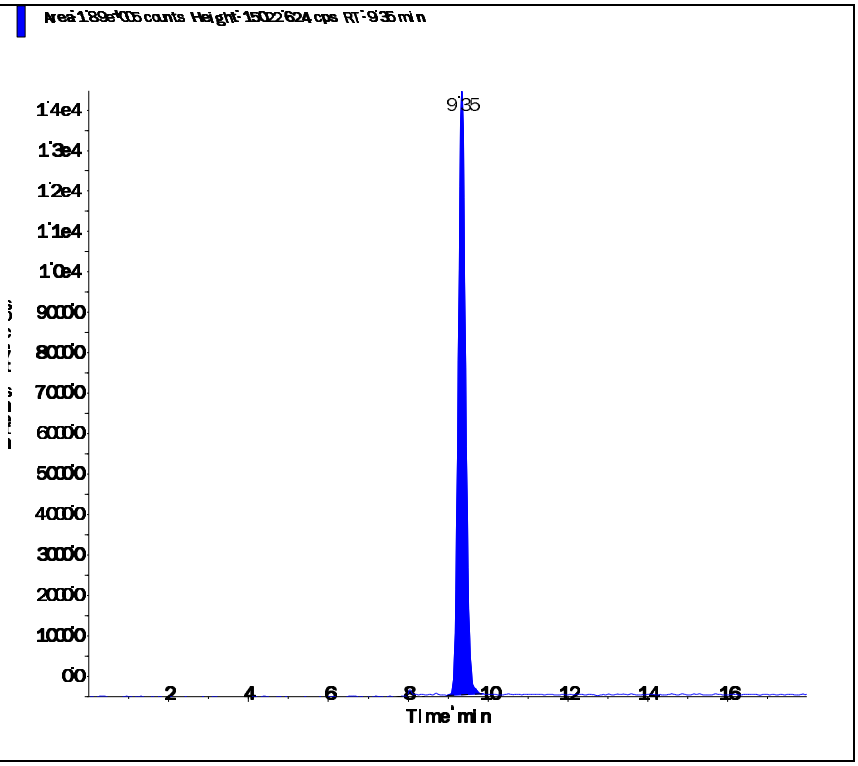

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.33 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.115
Sample Type:	(Quality Control)

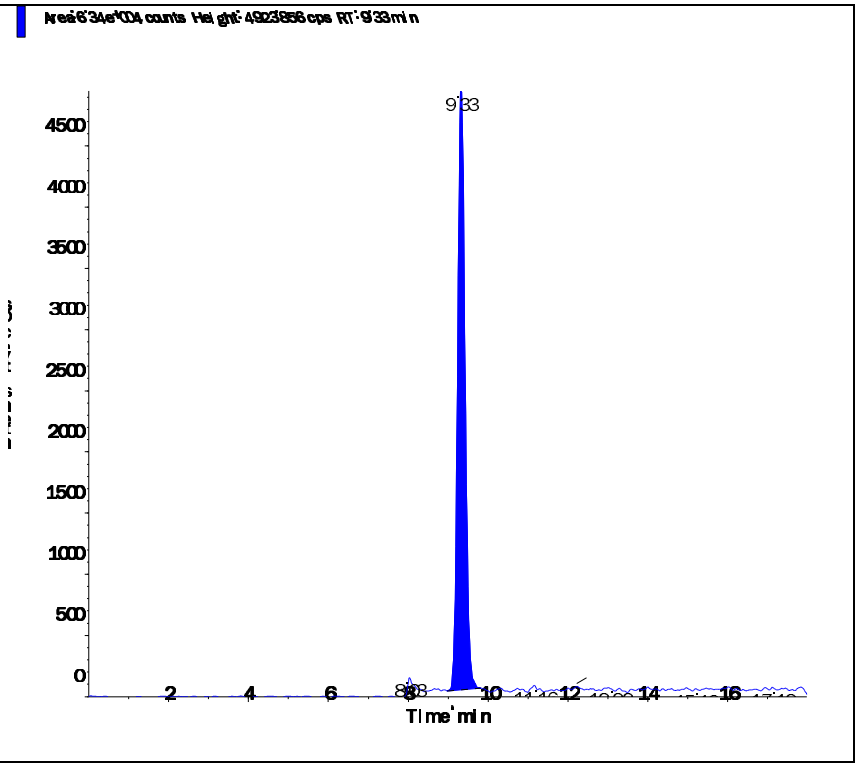

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Data File	LM35498.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:06:10 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35498.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:06:10 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.580e+05	9.34	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.610e+05	9.35	1.00	1.04
Perchlorate conf	5.670e+04	9.34	1.00	1.09

O18LP (Internal Standard)

RT (Exp. RT): 9.34(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

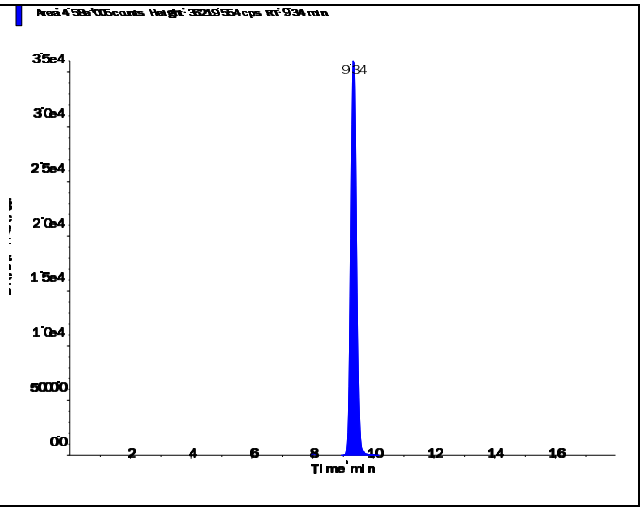

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.353
Sample Type:	(Quality Control)

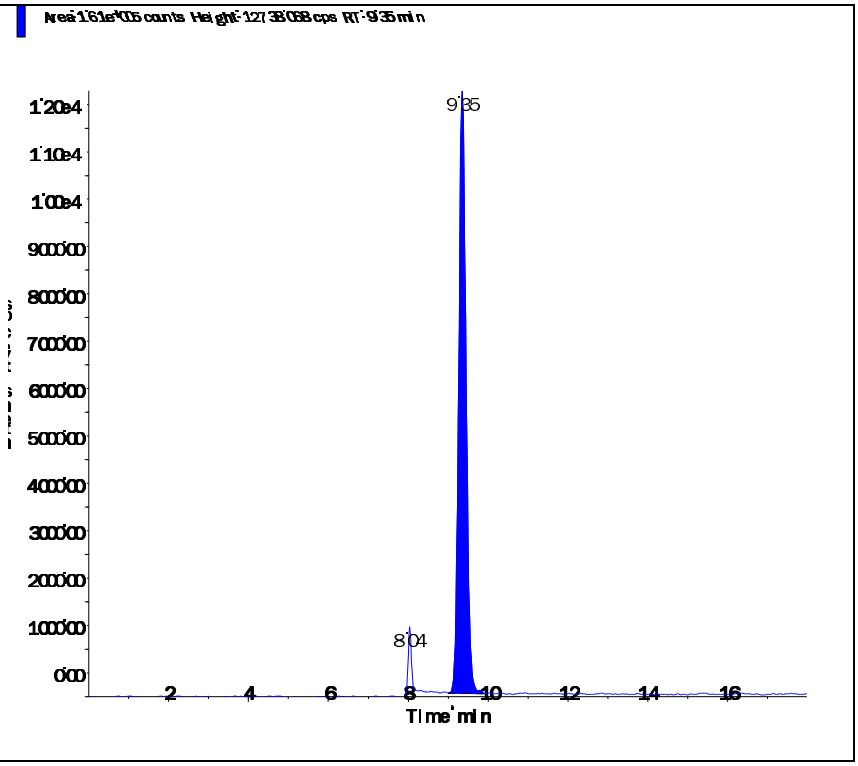

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.34 (9.84) min
Calculated conc:	1.09 ng/ml
Area Ratio:	0.124
Sample Type:	(Quality Control)

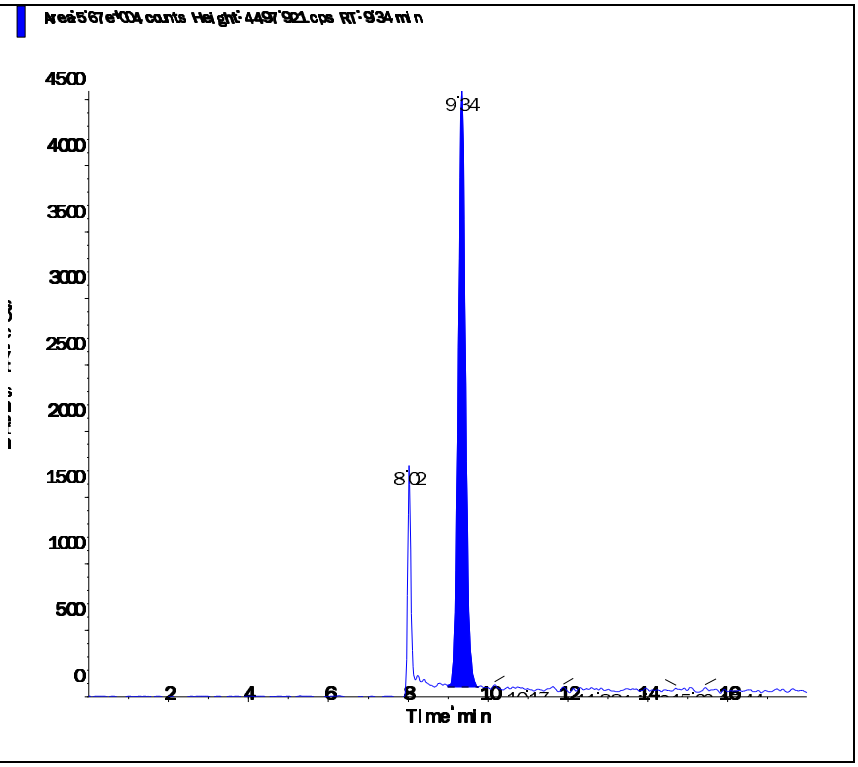

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Data File	LM35508.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 9:15:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-11 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35508.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 9:15:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.090e+05	9.35	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.760e+05	9.36	1.00	1.02
Perchlorate conf	5.930e+04	9.35	1.00	1.02

O18LP (Internal Standard)

RT (Exp. RT): 9.35(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

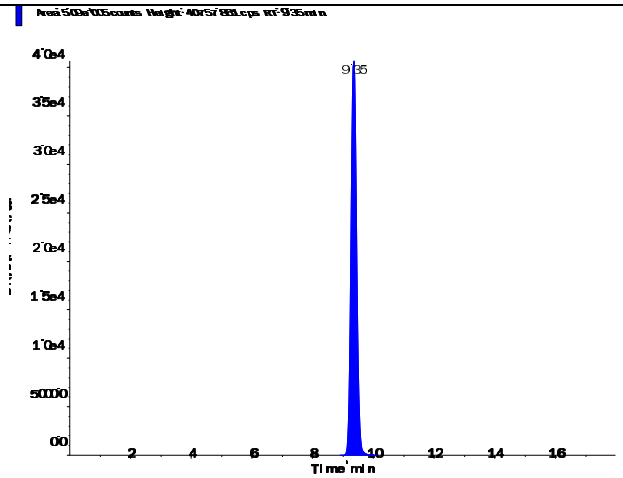

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.36 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.345
Sample Type:	(Quality Control)

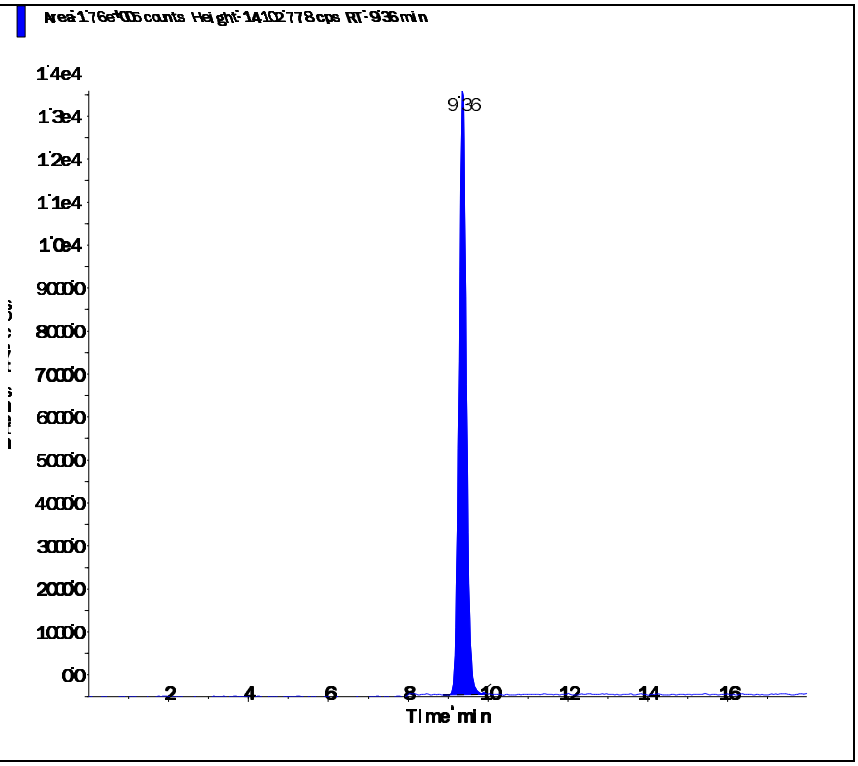

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.117
Sample Type:	(Quality Control)

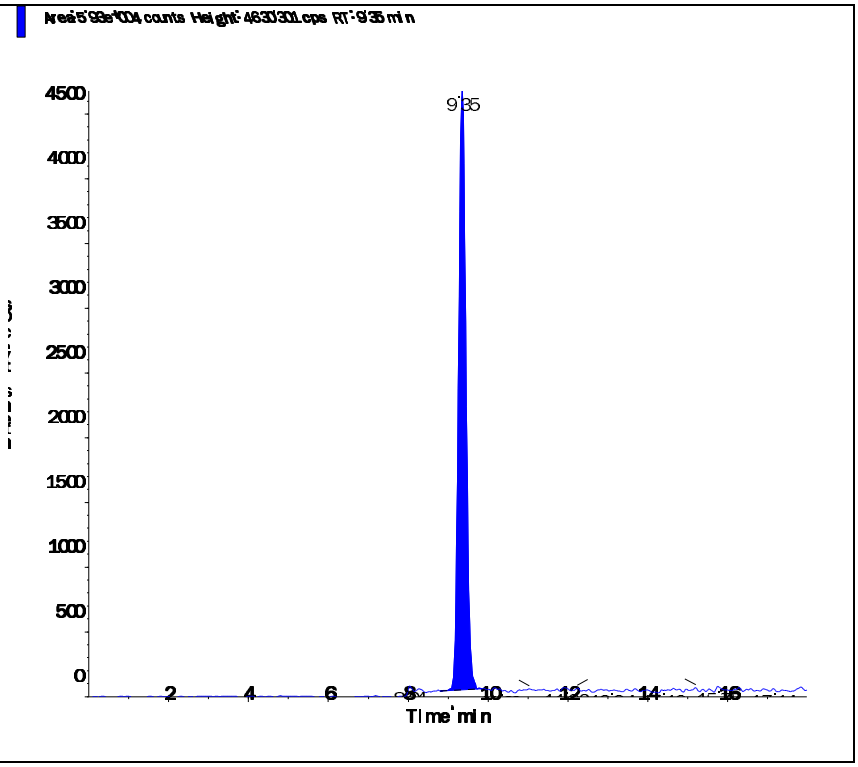

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Data File	LM35464.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 8:28:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-05 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35464.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 8:28:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.490e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.160e+04	9.40	N/A	0.206
Perchlorate conf	1.210e+04	9.37	N/A	0.222

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

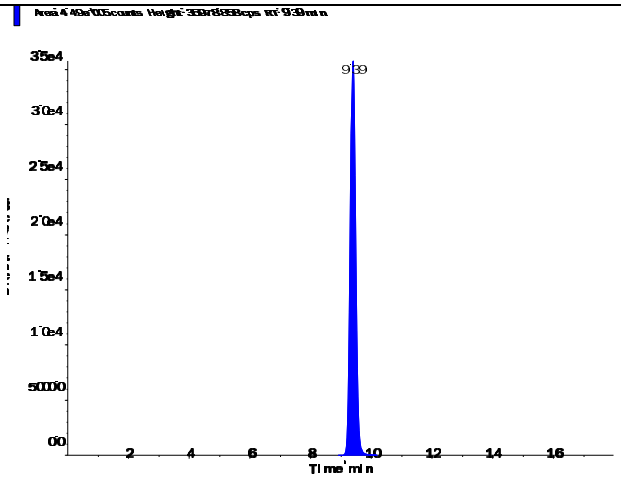

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.40 (9.84) min Calculated conc: 0.206 ng/ml Area Ratio: 0.07 Sample Type: (Unknown)	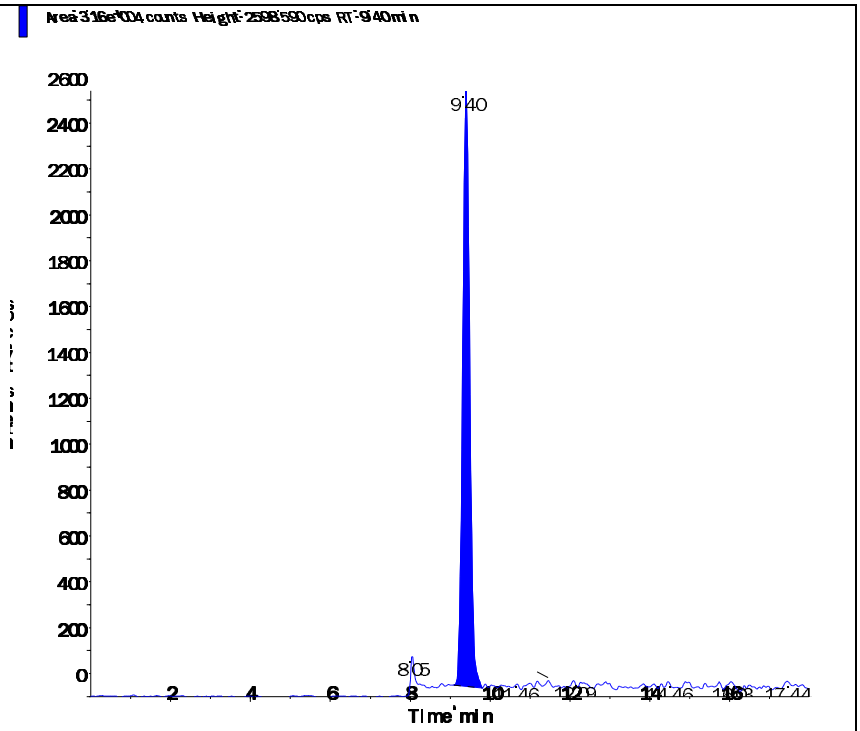
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.37 (9.84) min Calculated conc: 0.222 ng/ml Area Ratio: 0.027 Sample Type: (Unknown)	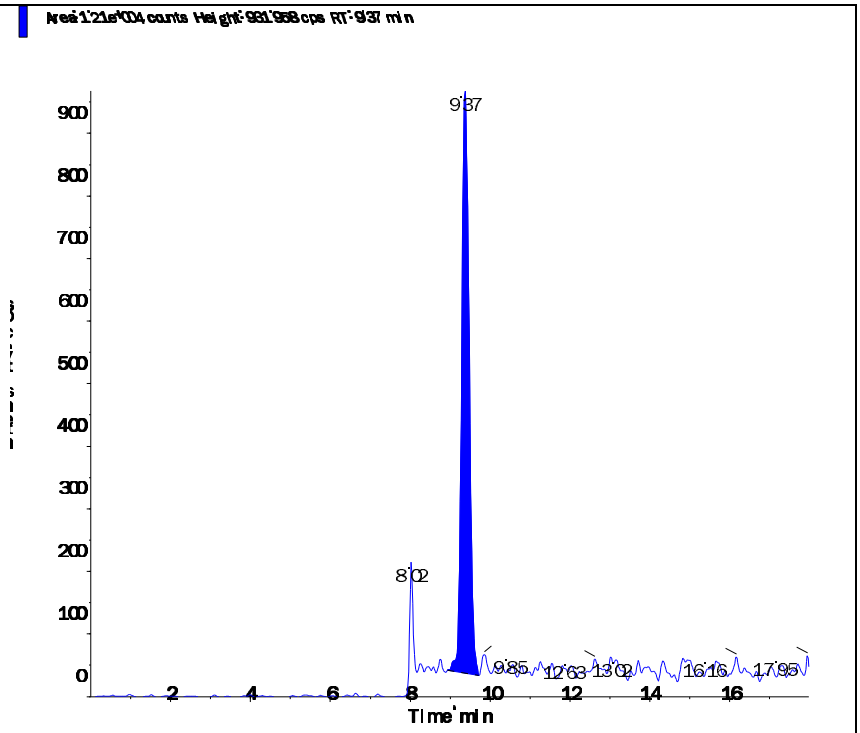

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Data File	LM35476.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 12:15:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-06 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35476.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 12:15:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.160e+05	9.36	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.500e+04	9.37	N/A	0.198
Perchlorate conf	1.310e+04	9.35	N/A	0.207

O18LP (Internal Standard)

RT (Exp. RT): 9.36(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

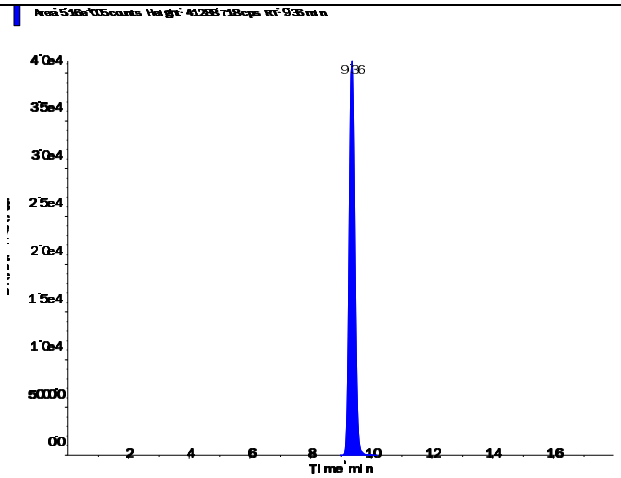

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.37 (9.84) min
Calculated conc:	0.198 ng/ml
Area Ratio:	0.068
Sample Type:	(Unknown)

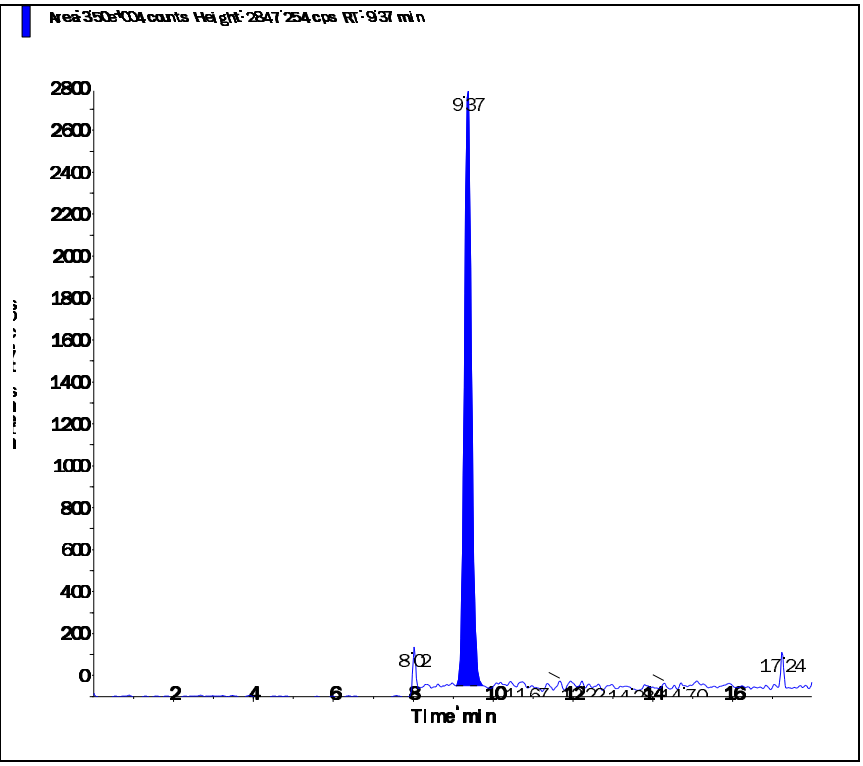

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

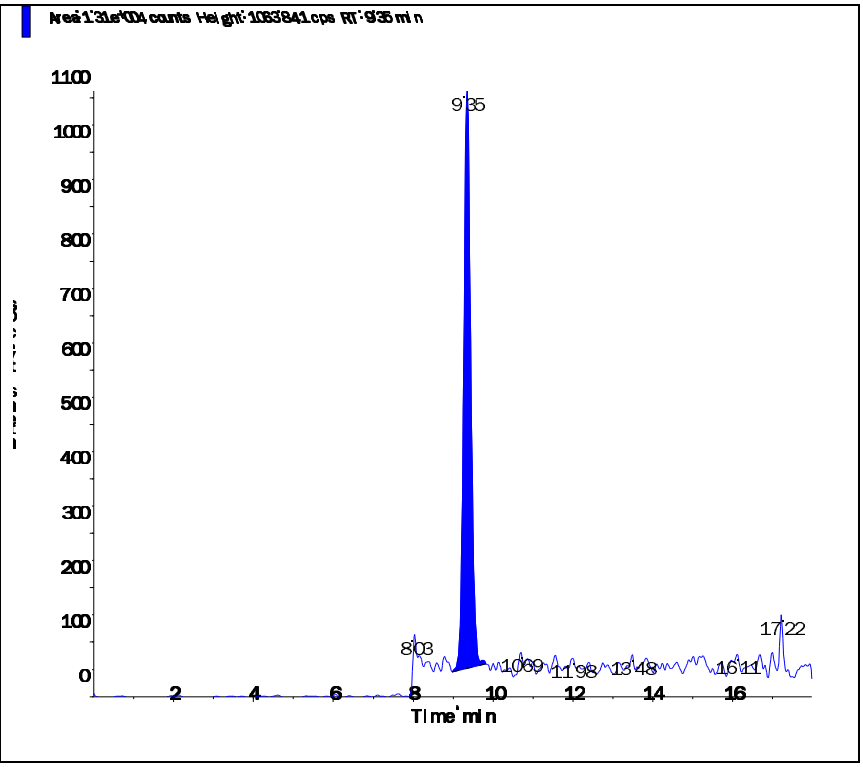

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Data File	LM35489.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 4:22:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35489.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 4:22:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.380e+05	9.37	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.890e+04	9.39	N/A	0.211
Perchlorate conf	1.340e+04	9.38	N/A	0.202

O18LP (Internal Standard)

RT (Exp. RT): 9.37(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

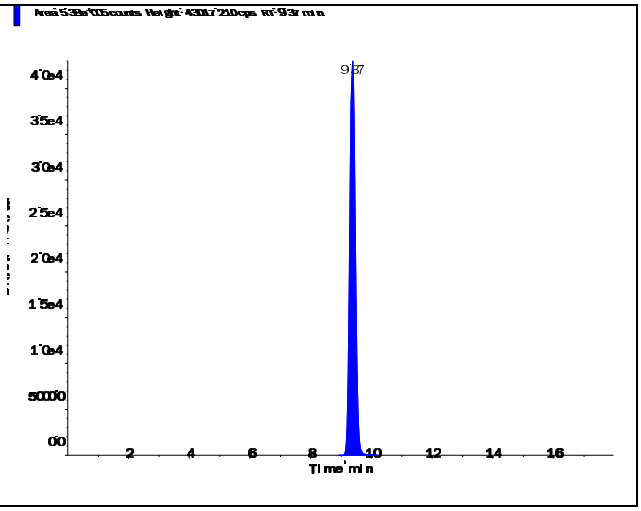

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.39 (9.84) min Calculated conc: 0.211 ng/ml Area Ratio: 0.072 Sample Type: (Unknown)	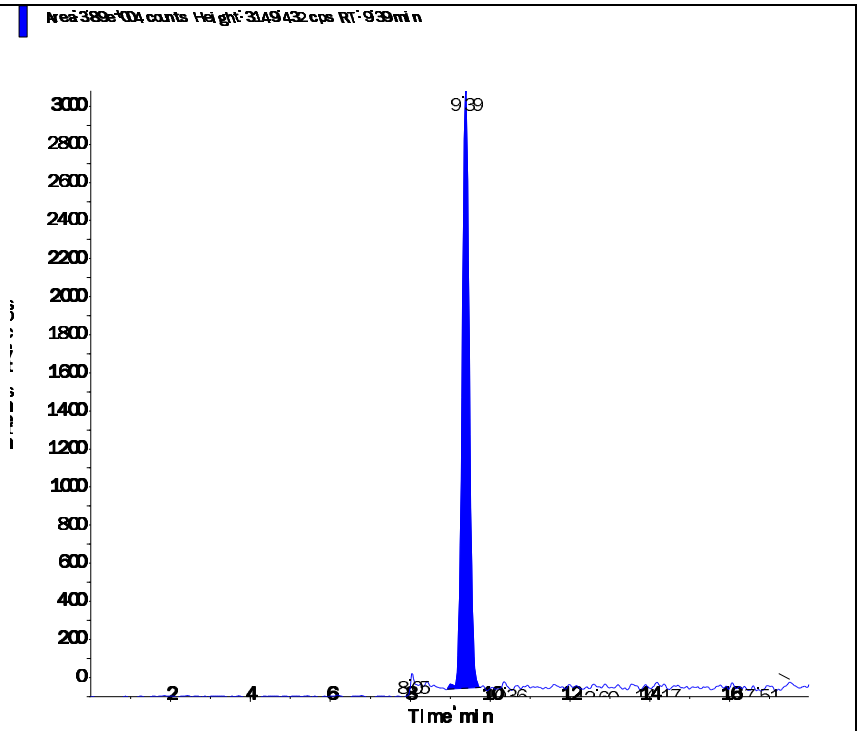
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.38 (9.84) min Calculated conc: 0.202 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	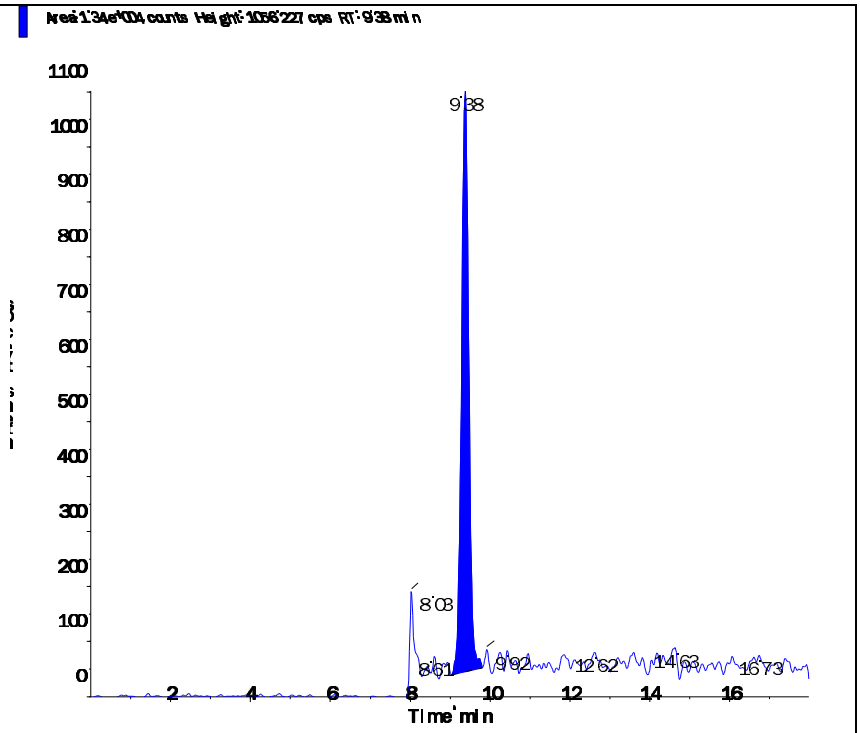

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Data File	LM35496.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:34:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-08 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35496.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:34:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.520e+05	9.38	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.800e+04	9.39	N/A	0.201
Perchlorate conf	1.410e+04	9.38	N/A	0.208

O18LP (Internal Standard)

RT (Exp. RT): 9.38(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

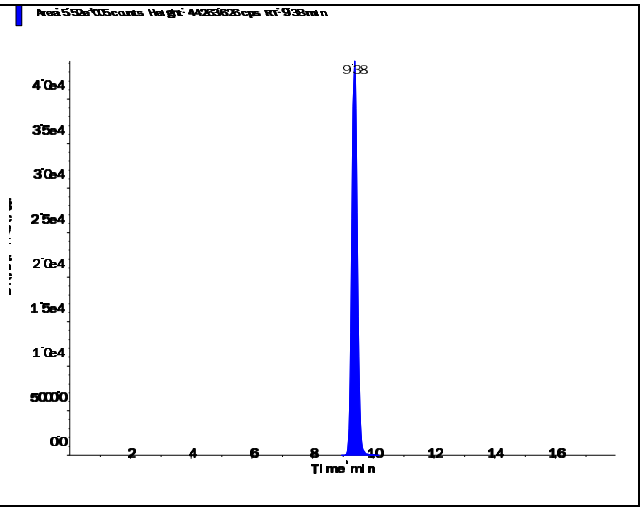

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

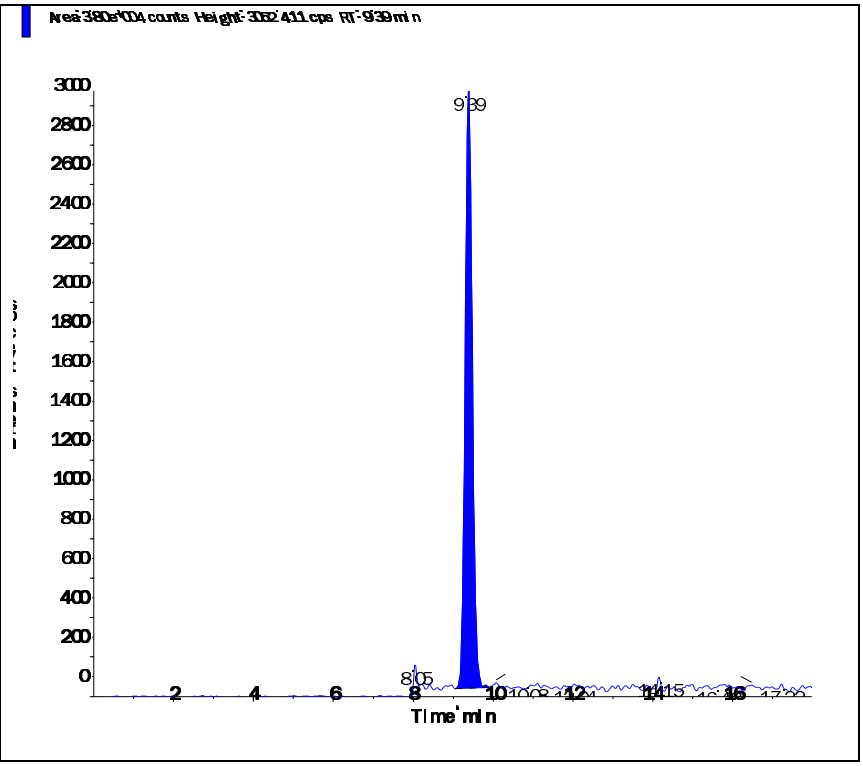

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	0.208 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

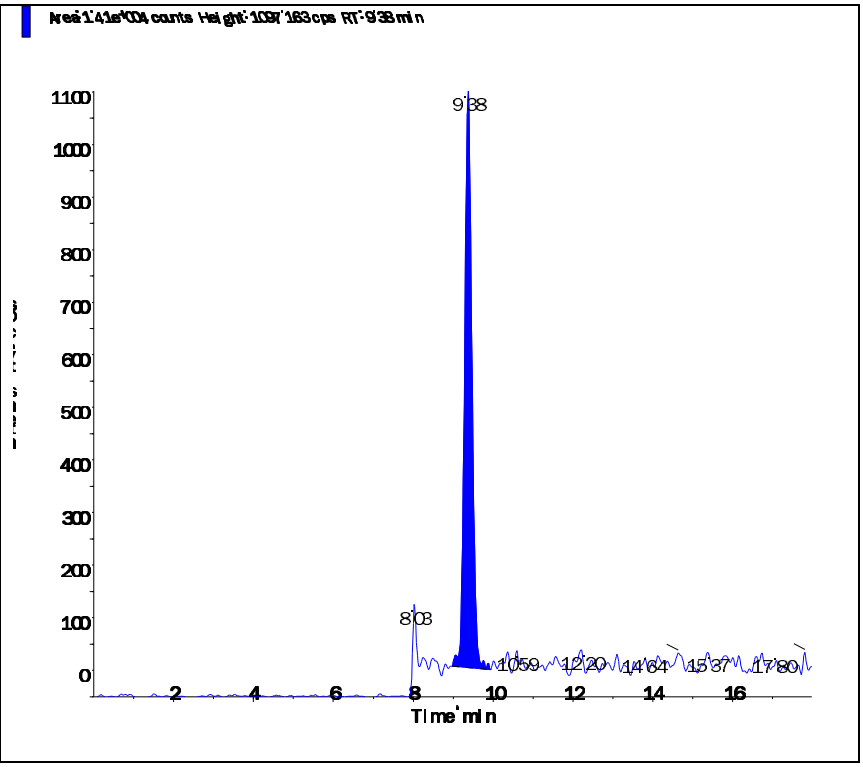

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Data File	LM35499.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:25:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-09 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35499.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:25:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.640e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.290e+04	9.40	N/A	0.207
Perchlorate conf	1.150e+04	9.38	N/A	0.201

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

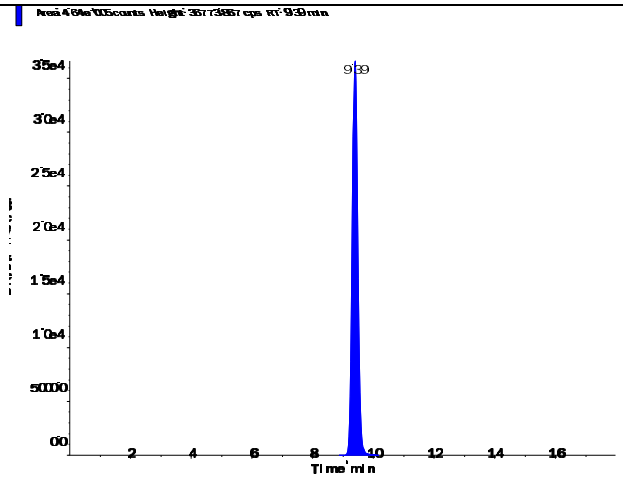

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

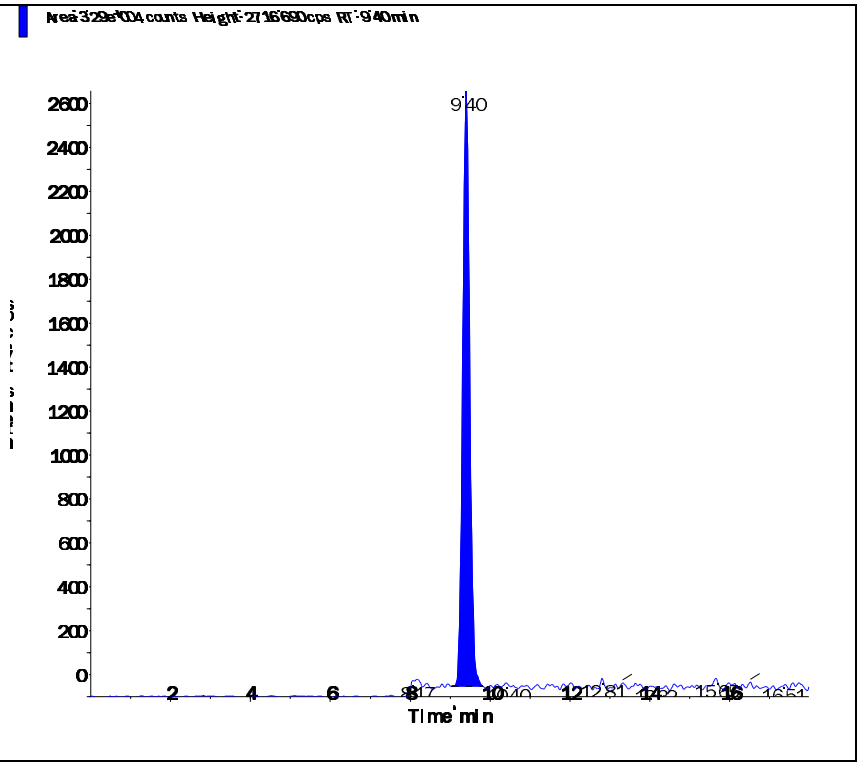

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

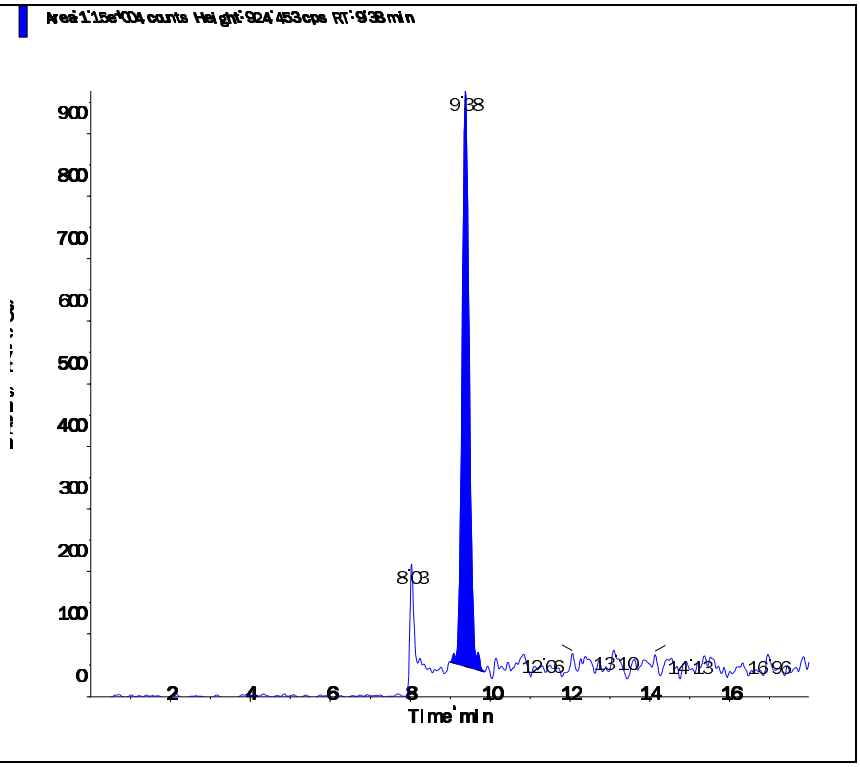

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Data File	LM35509.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 9:34:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-10 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35509.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 9:34:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-10	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.370e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.790e+04	9.40	N/A	0.206
Perchlorate conf	1.400e+04	9.39	N/A	0.214

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

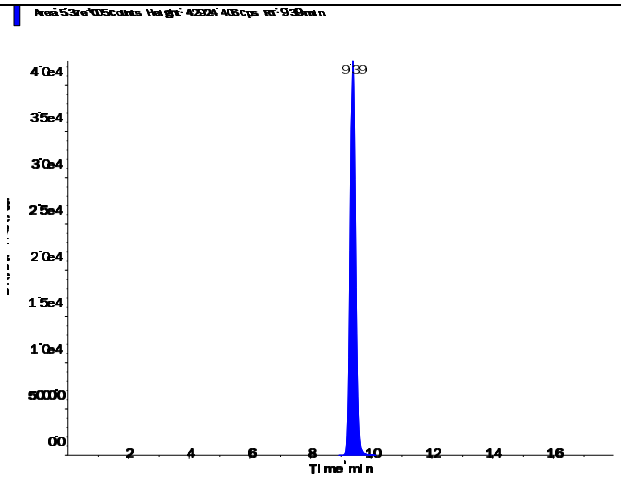

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.40 (9.84) min Calculated conc: 0.206 ng/ml Area Ratio: 0.071 Sample Type: (Unknown)	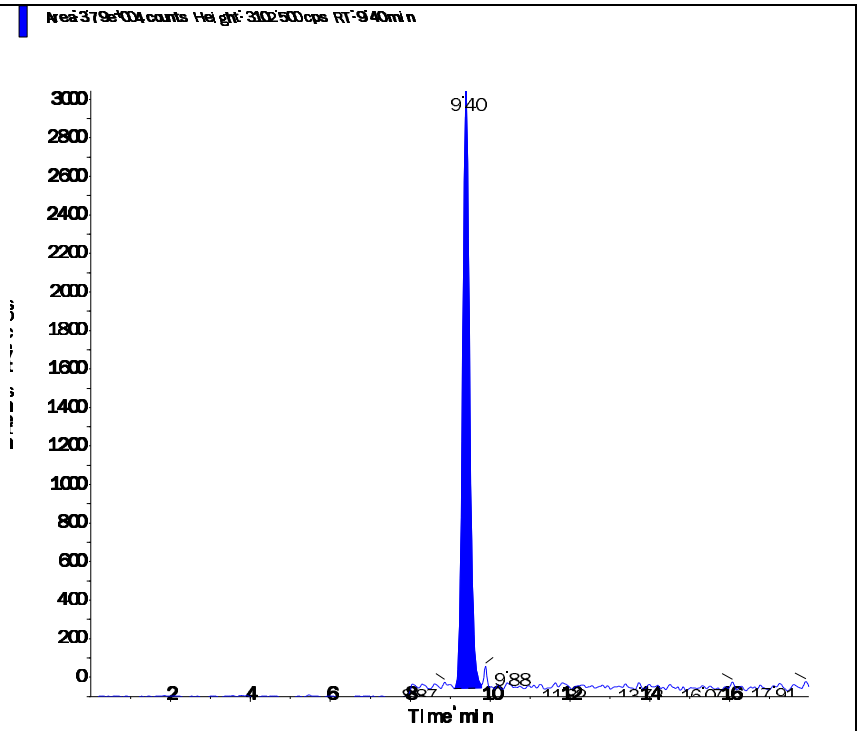
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.39 (9.84) min Calculated conc: 0.214 ng/ml Area Ratio: 0.026 Sample Type: (Unknown)	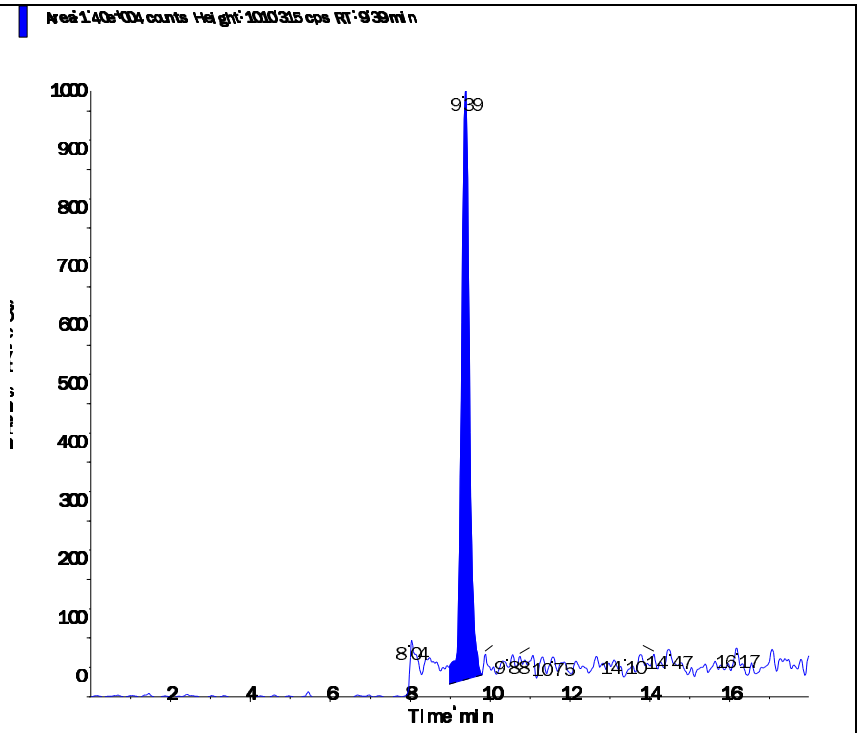

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Data File	LM35462.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 7:50:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-01 CCB	**Injection Vial**	1.00
Data File	LM35462.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 7:50:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.420e+05	9.58	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.58(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

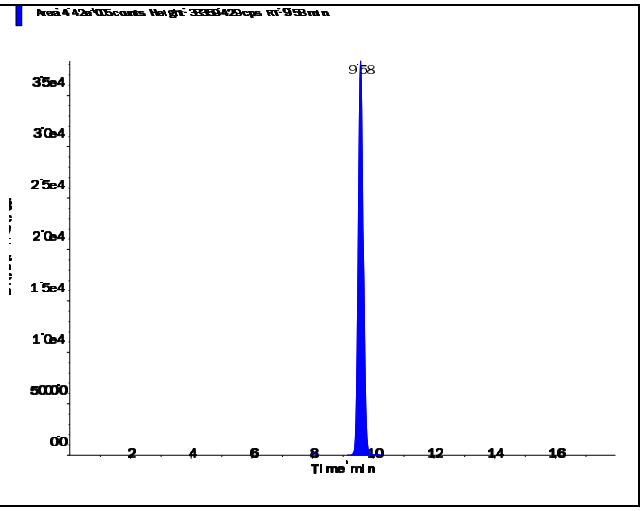

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	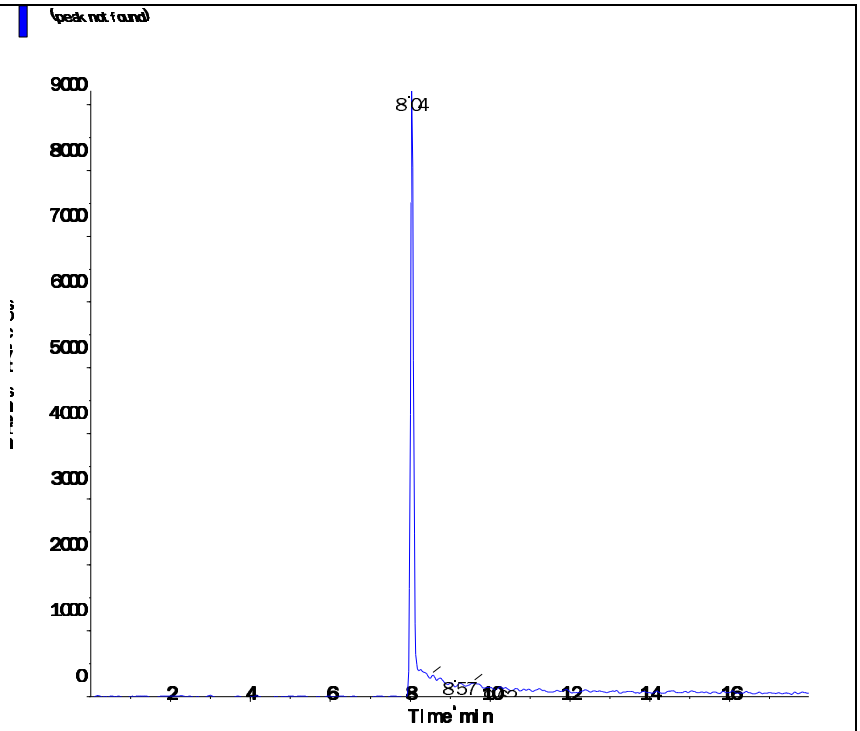
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	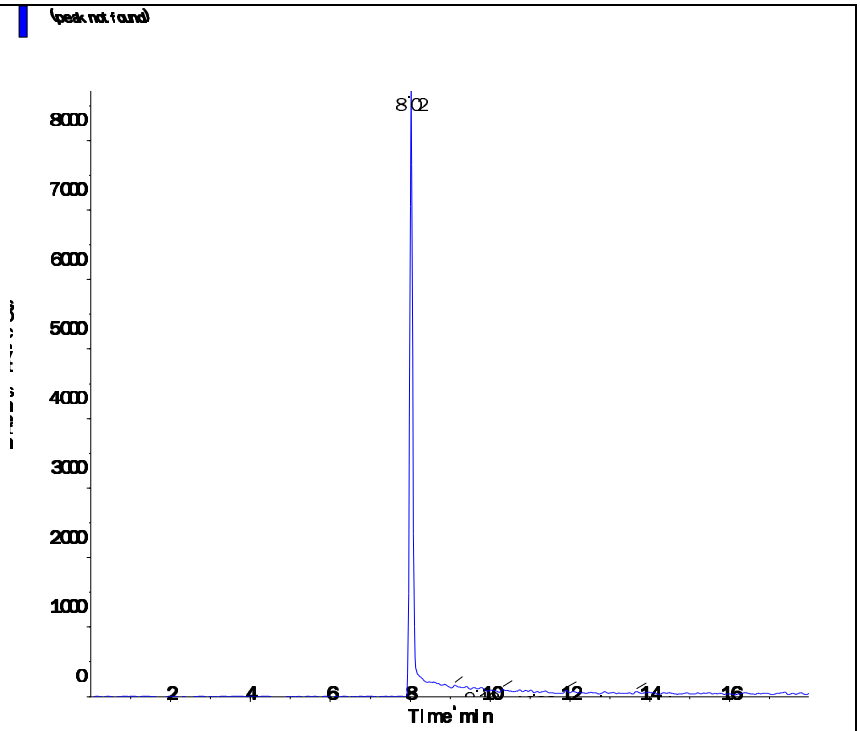

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Printed: 6/27/2016 7:43 PM

Data File	LM35477.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 12:34:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-04 CCB	**Injection Vial**	1.00
Data File	LM35477.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 12:34:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.240e+05	9.57	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	8.240e+02	9.53	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.57(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

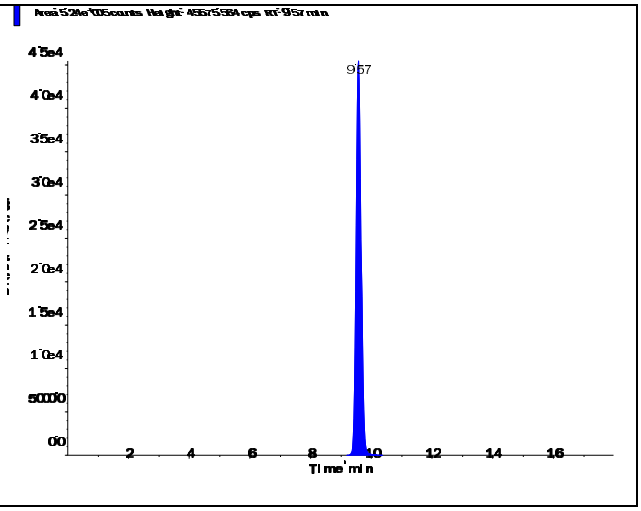

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	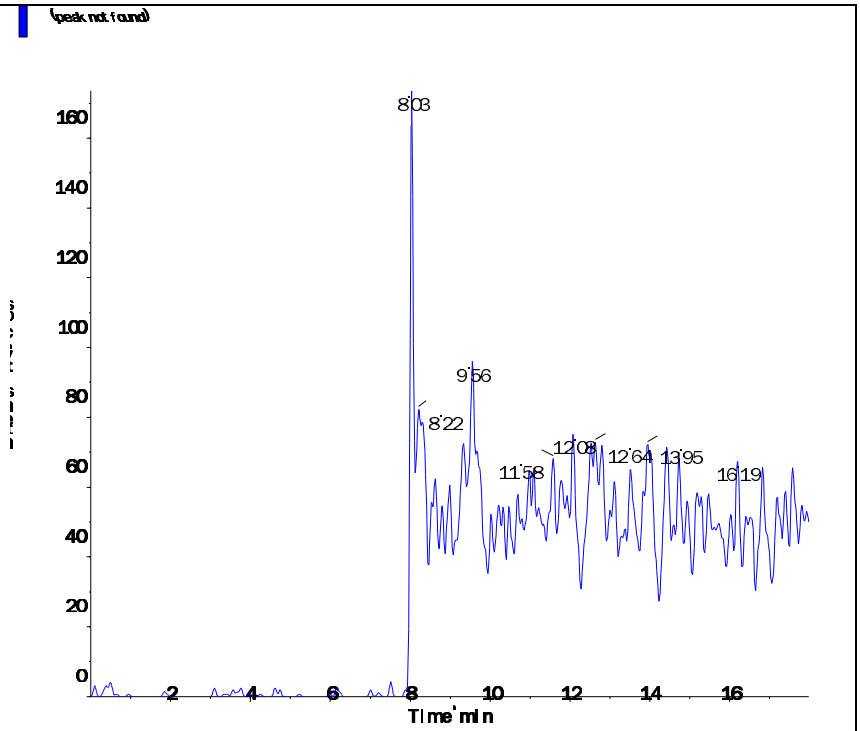
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.53 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	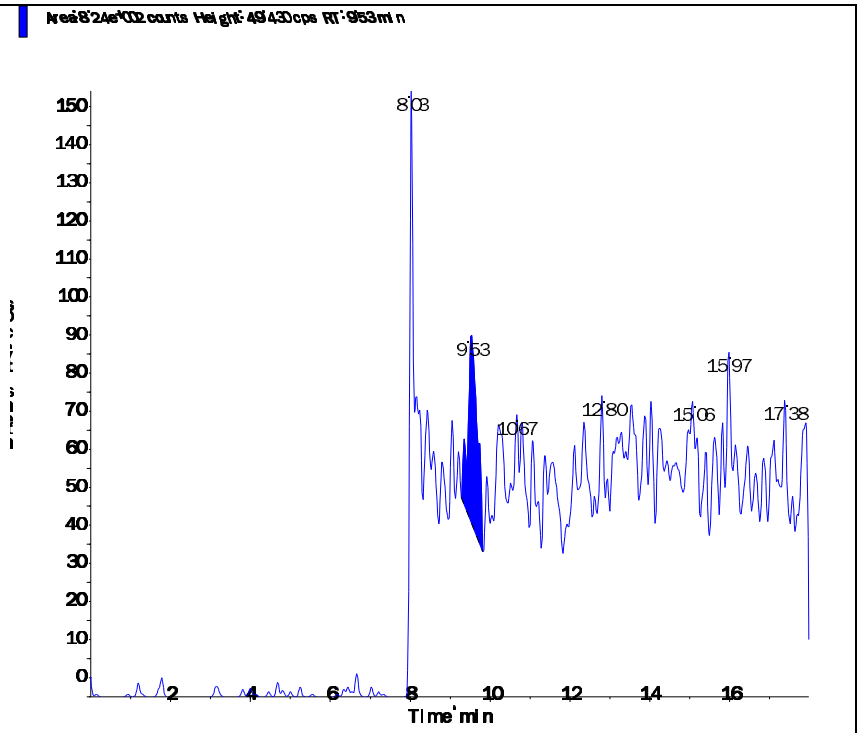

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Data File	LM35490.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 4:40:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-06 CCB	**Injection Vial**	1.00
Data File	LM35490.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 4:40:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.420e+05	9.59	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.59(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

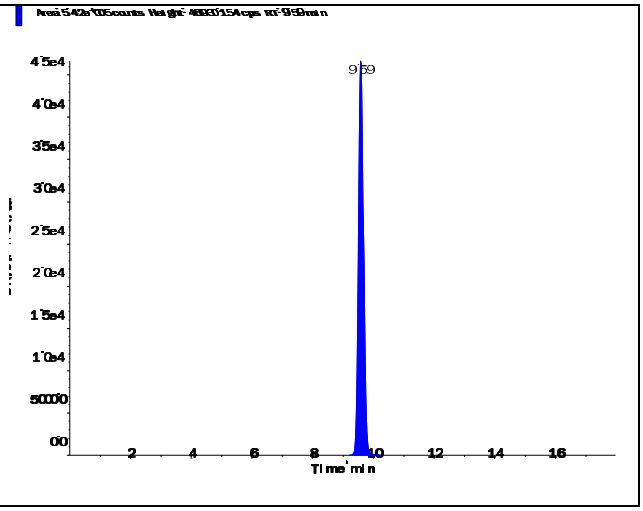

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

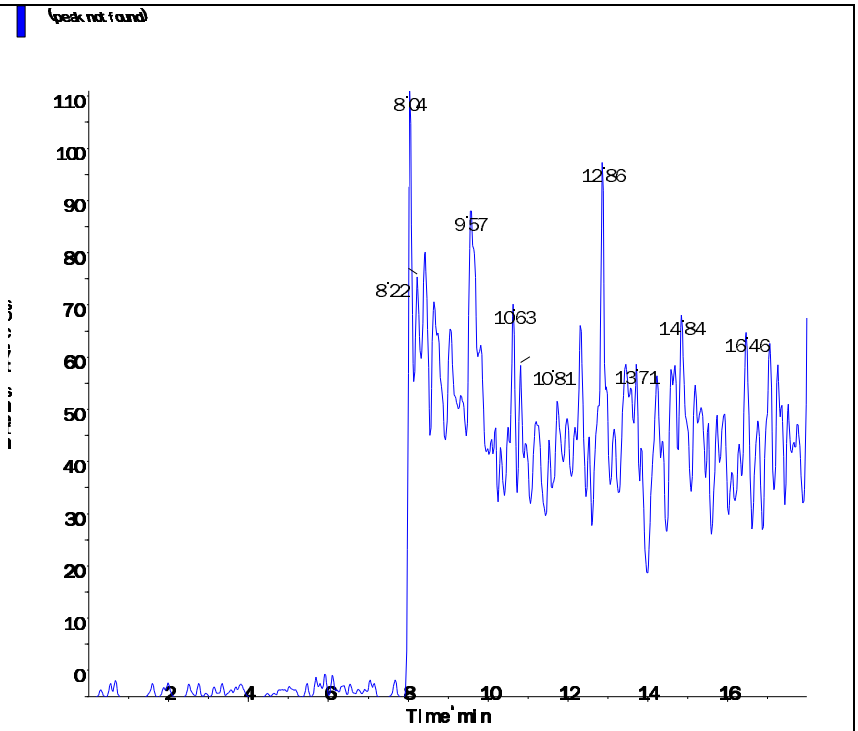

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

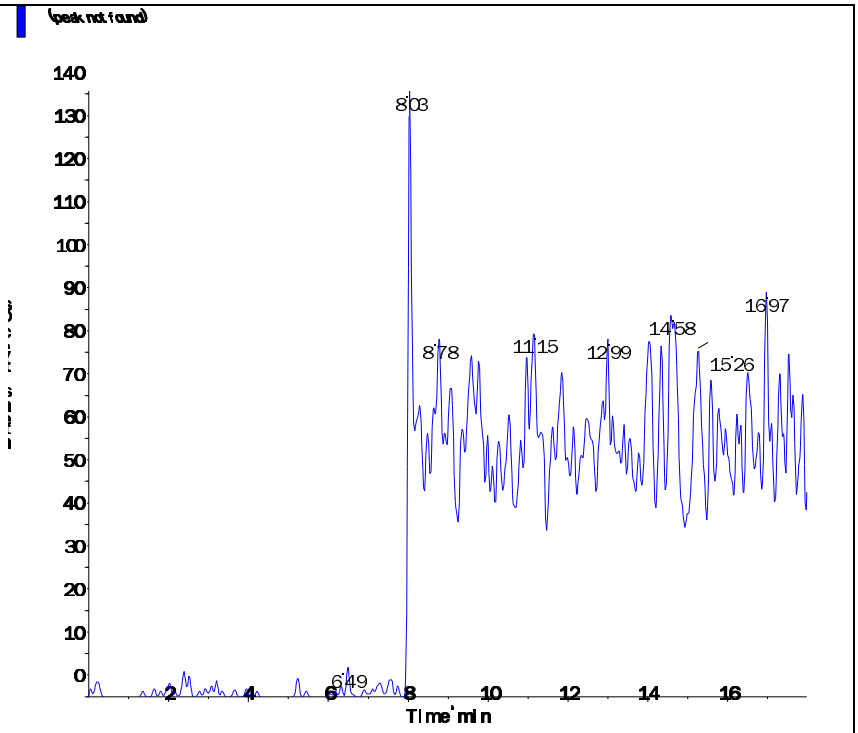

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Data File	LM35497.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:53:28 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-08 CCB	**Injection Vial**	1.00
Data File	LM35497.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:53:28 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.550e+05	9.59	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	5.180e+02	9.63	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.59(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

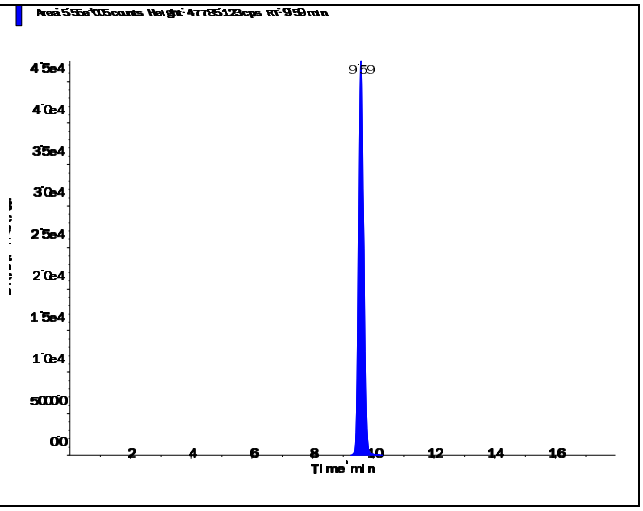

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

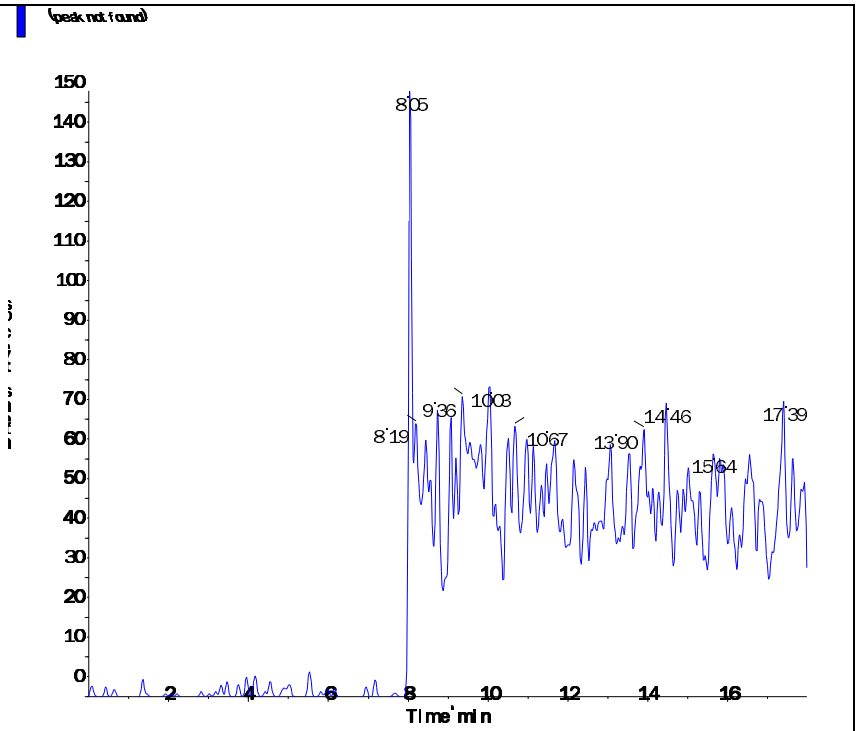

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.001
Sample Type:	(Unknown)

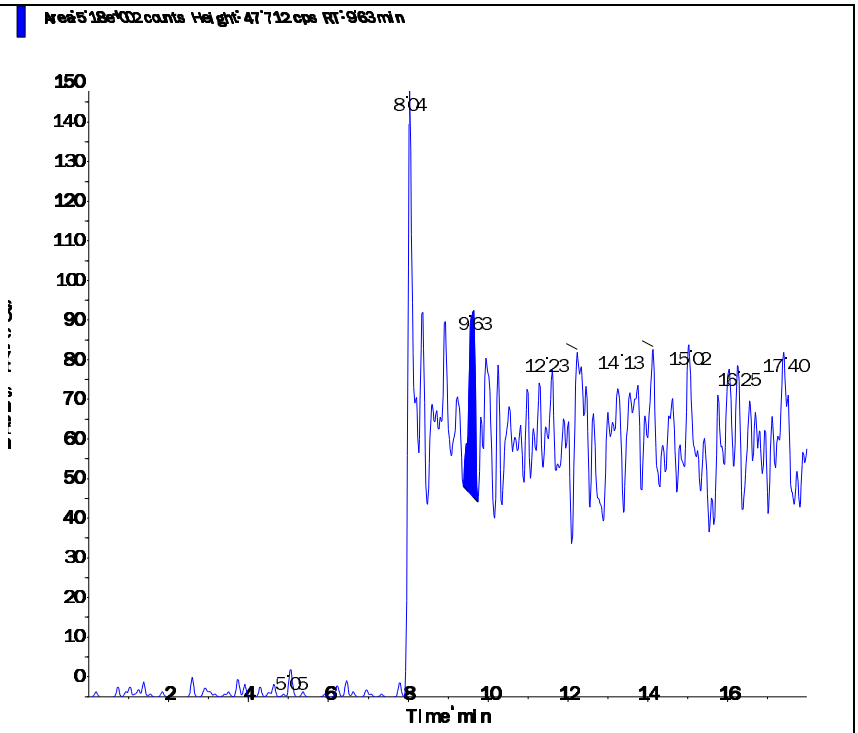

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Data File	LM35500.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:44:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-10 CCB	**Injection Vial**	1.00
Data File	LM35500.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:44:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.840e+05	9.61	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.61(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

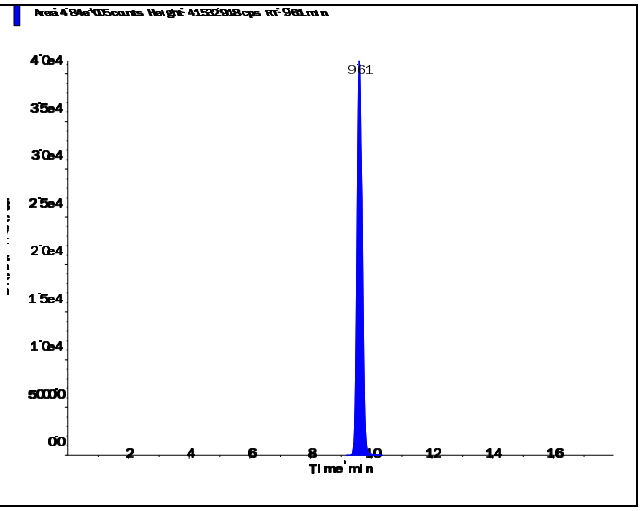

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

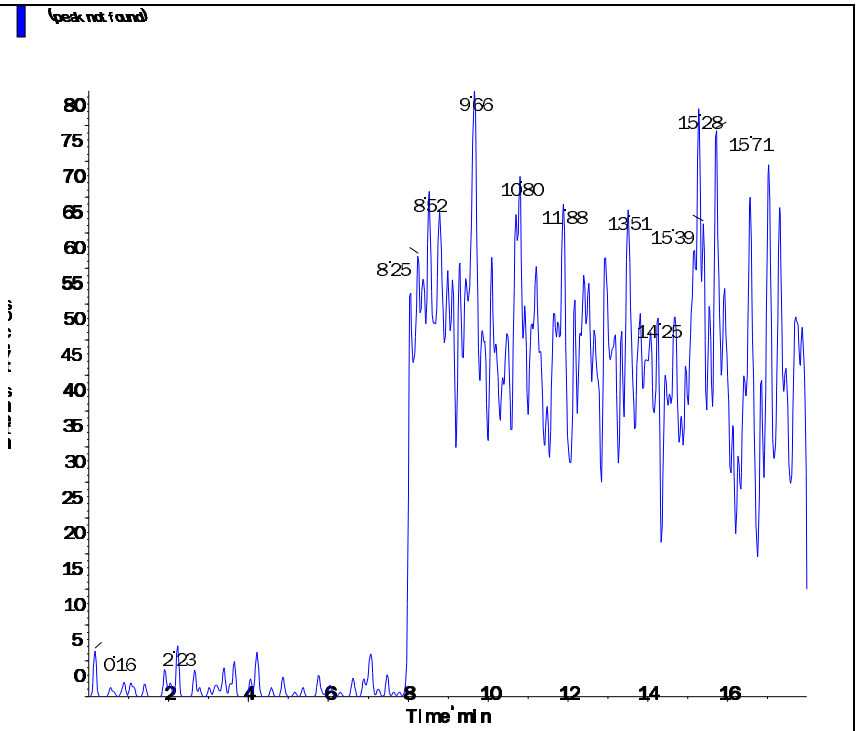

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

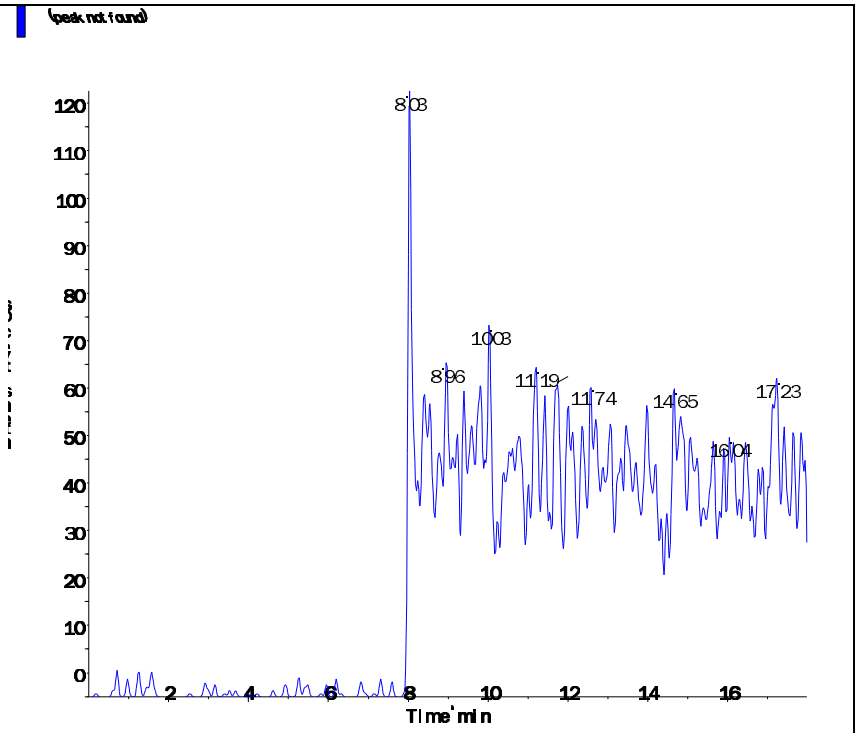

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Data File	LM35510.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 9:53:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-12 CCB	**Injection Vial**	1.00
Data File	LM35510.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 9:53:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-12	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.380e+05	9.61	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.61(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

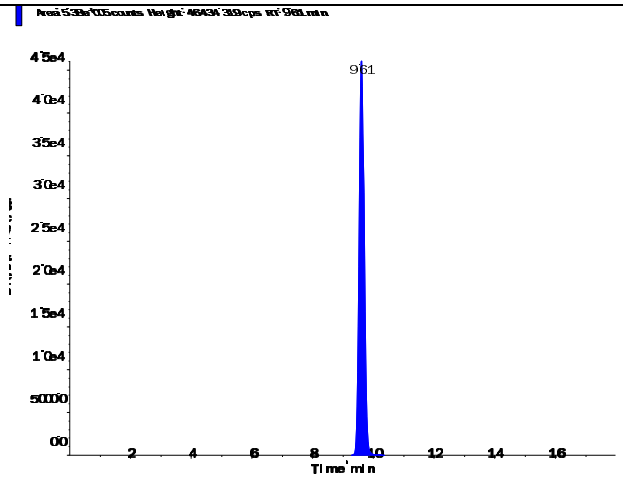

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

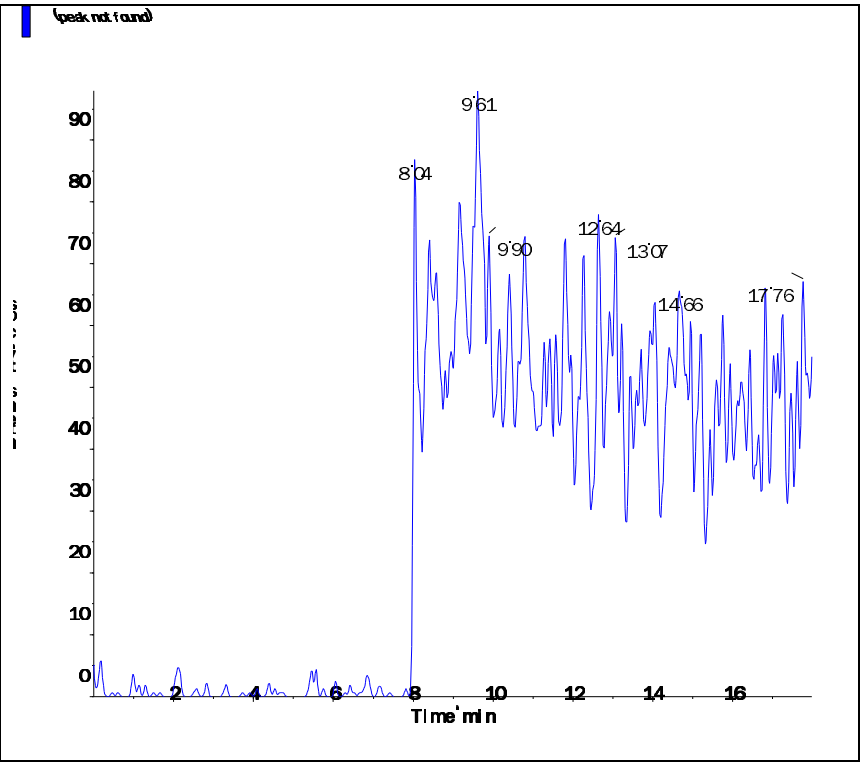

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

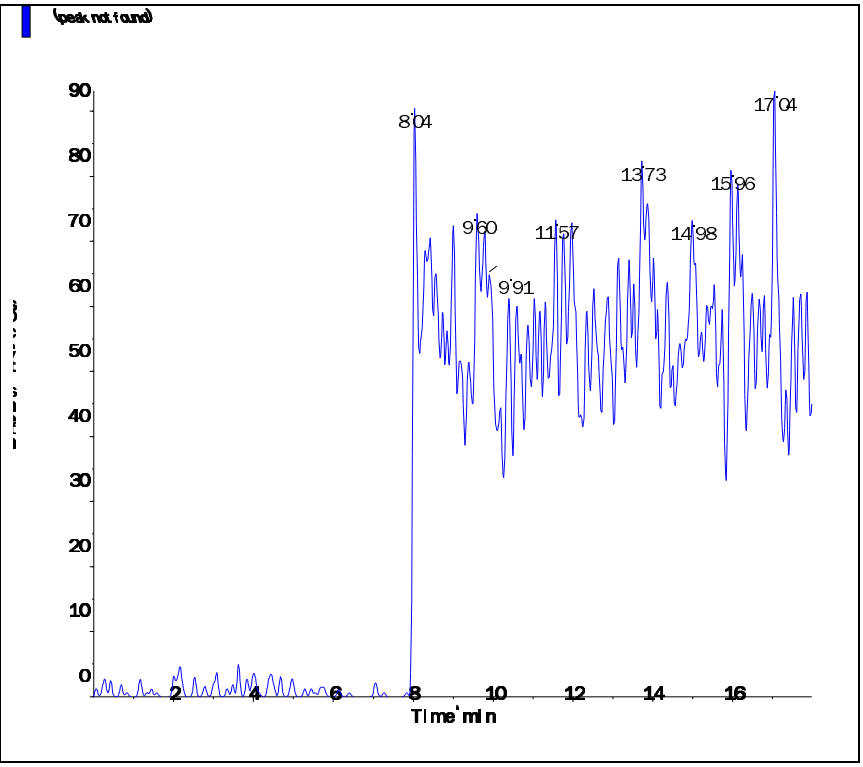

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Data File	LM35465.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 8:47:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM35465.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 8:47:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.320e+05	8.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.810e+04	8.97	N/A	0.19
Perchlorate conf	1.000e+04	8.95	N/A	0.188

O18LP (Internal Standard)

RT (Exp. RT): 8.95(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

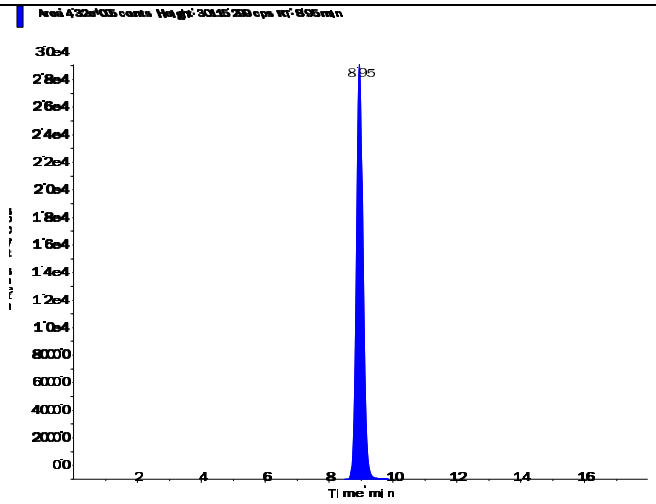

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	8.97 (9.84) min
Calculated conc:	0.19 ng/ml
Area Ratio:	0.065
Sample Type:	(Unknown)

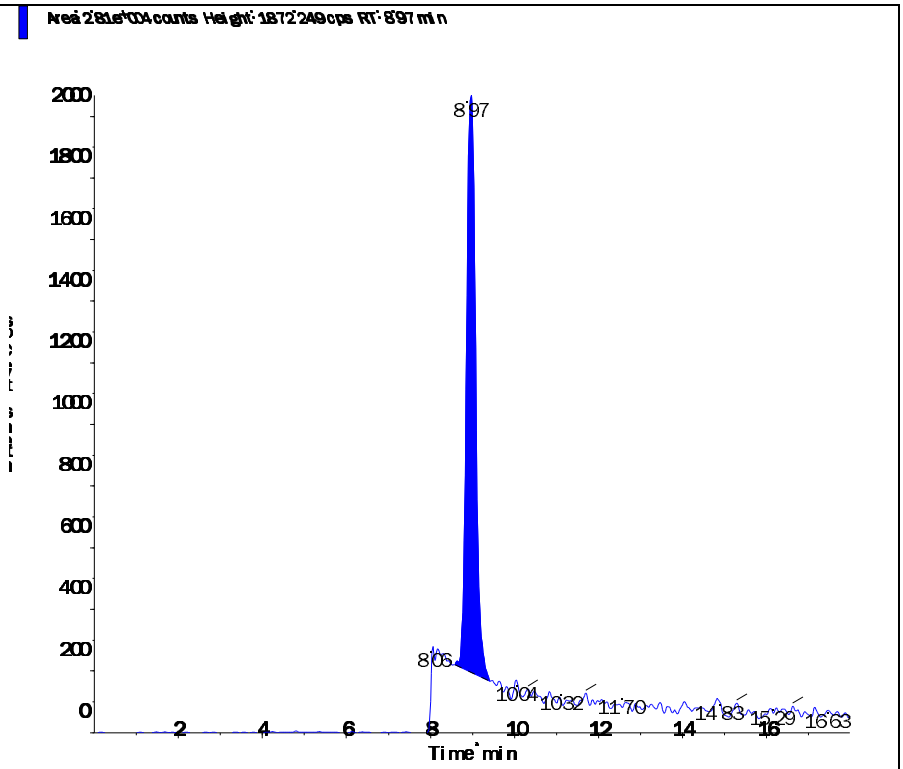

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	8.95 (9.84) min
Calculated conc:	0.188 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

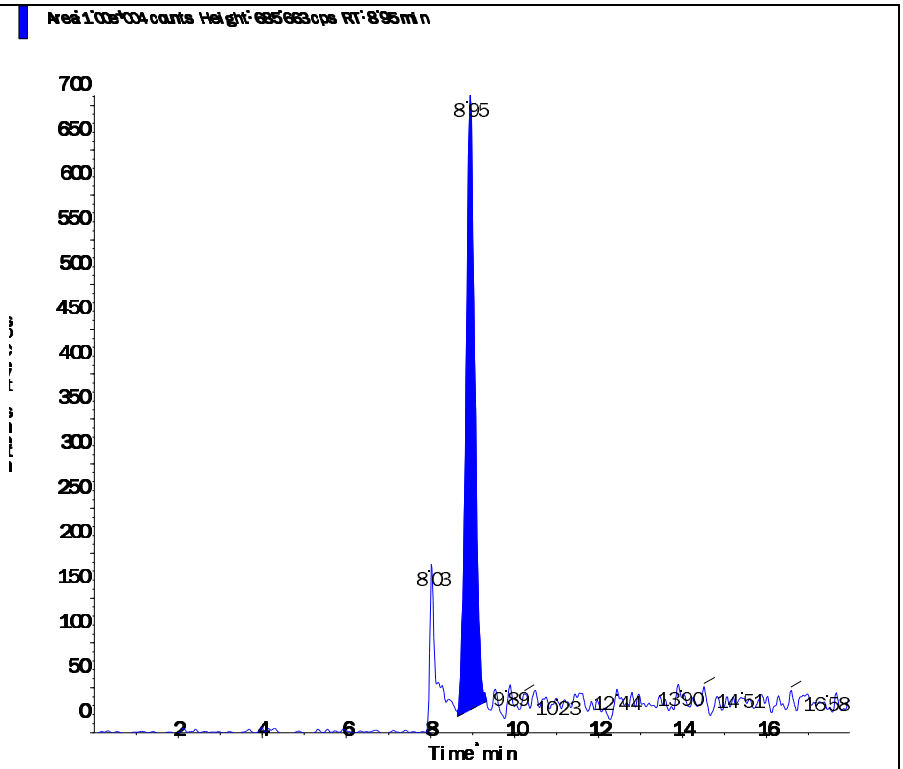

Printing Time: 4:34:28 PM
Printing Date: Saturday, June 25, 2016

Sample Name: "WG574101-01 MCT (0.2ug/L)" Sample ID: "WG574101-01" File: "LM35465.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.219 ug/L
Acq. Date:	6/24/2016
Acq. Time:	8:47:28 PM
Modified:	No
Proc. Algorithm:	Analyst Classic
Bunching Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Exp. Width:	0.20
Exp. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Valley
Retention Time:	8.97 min
Area:	3.23e+004 counts
Height:	1951.523 cps
Start Time:	8.526 min
End Time:	9.417 min

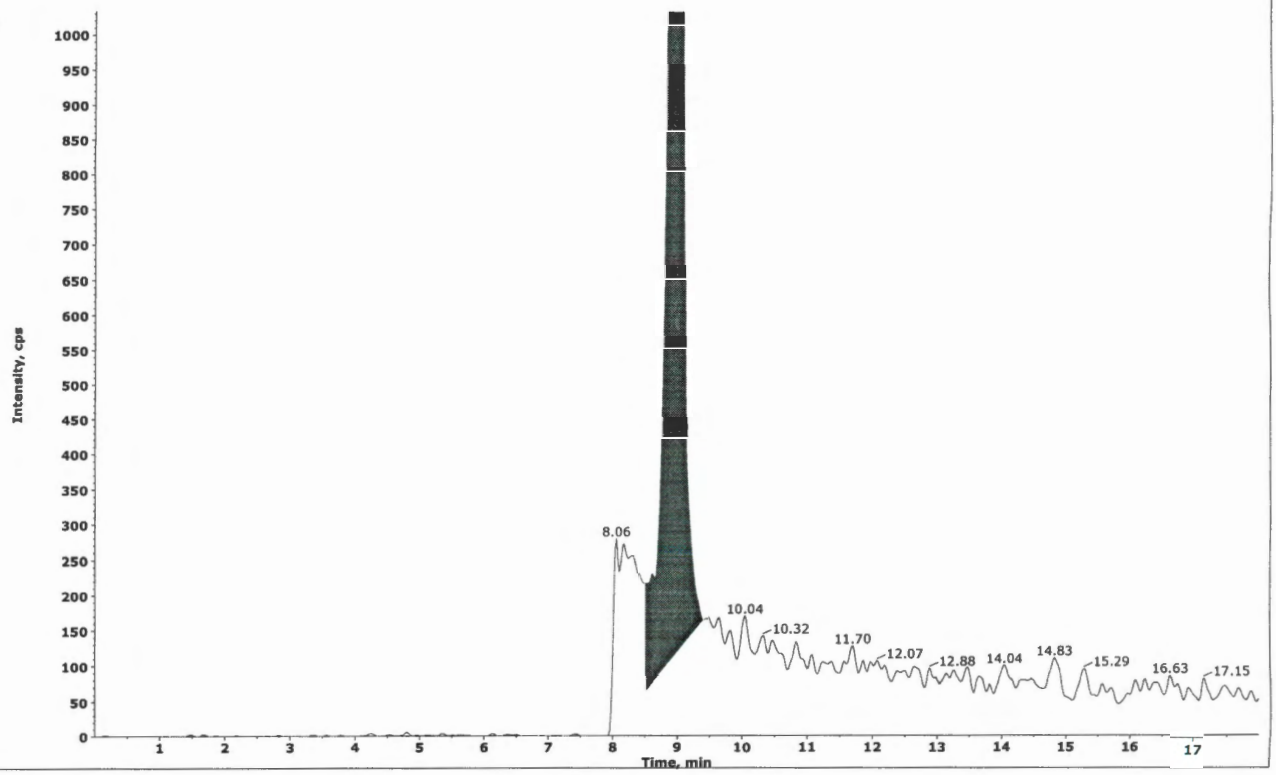

Collected by: N/A
Electronic Signature: no
Operator: lcmsl

Printing Time: 4:36:56 PM
Printing Date: Saturday, June 25, 2016

Sample Name: "WG574101-01 MCT (0.2ug/L)" Sample ID: "WG574101-01" File: "LM35465.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index: 1
Sample Type: Unknown
Concentration: N/A
Calculated Conc: 0.190 ug/L
Acq. Date: 6/24/2016
Acq. Time: 8:47:28 PM

Modified: Yes
Proc. Algorithm: Analyst Classic
Smoothing Factor: 2
Noise Threshold: 18.48 cps
Area Threshold: 92.40 cps
Num. Smooths: 5
Sep. Width: 0.20
Sep. Height: 0.01
Exp. Peak Ratio: 5.00
Exp. Adj. Ratio: 4.00
Exp. Val. Ratio: 3.00
RT Window: 30.000 sec
Expected RT: 9.84 min
Use Relative RT: Yes

Int. Type: Manual
Retention Time: 8.97 min
Area: 2.81e+004 counts
Height: 1872.249 cps
Start Time: 8.587 min
End Time: 9.417 min

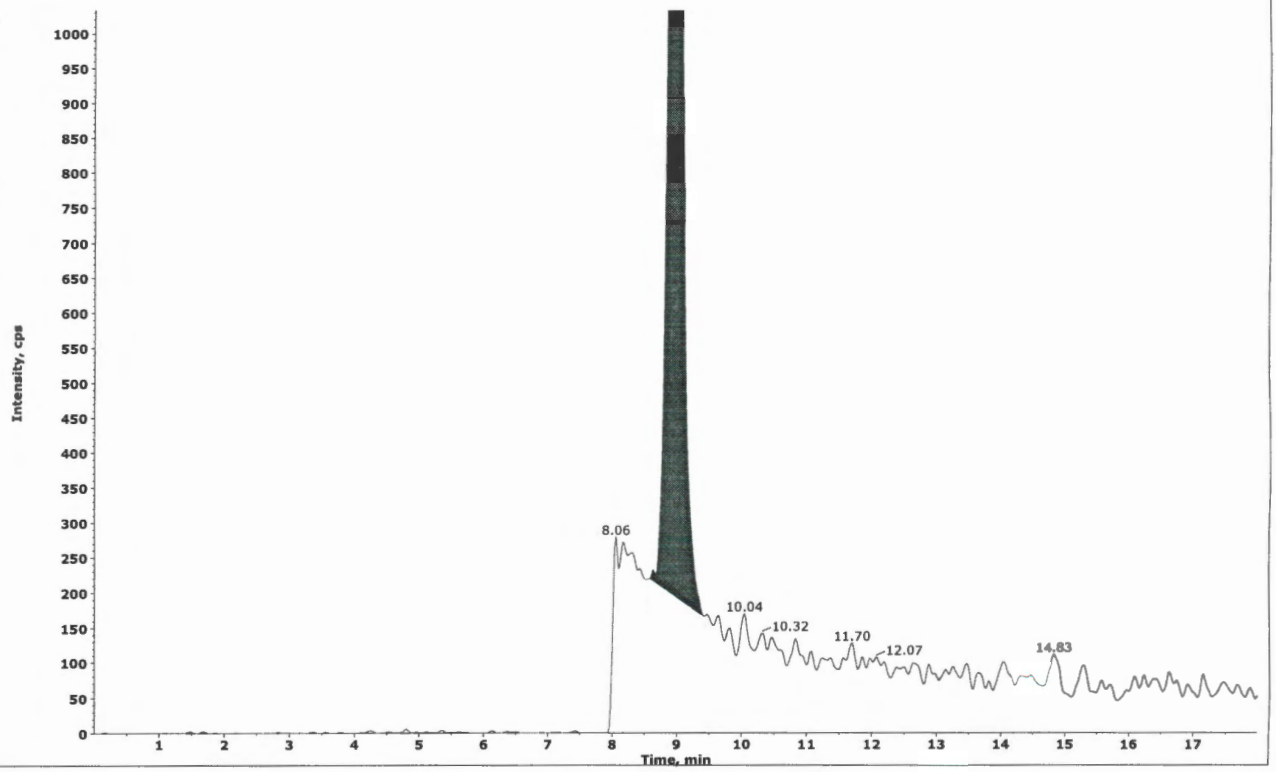

#4
JWR 06/25/16

✓ WTD
06-28-16

Collected by: N/A
Electronic Signature: no
Operator: lcms1

2.2.2.5 Raw QC Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:40 PM

Data File	LM35466.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 9:06:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-02 BLANK	**Injection Vial**	5.00
Data File	LM35466.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 9:06:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.430e+05	9.50	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.50(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

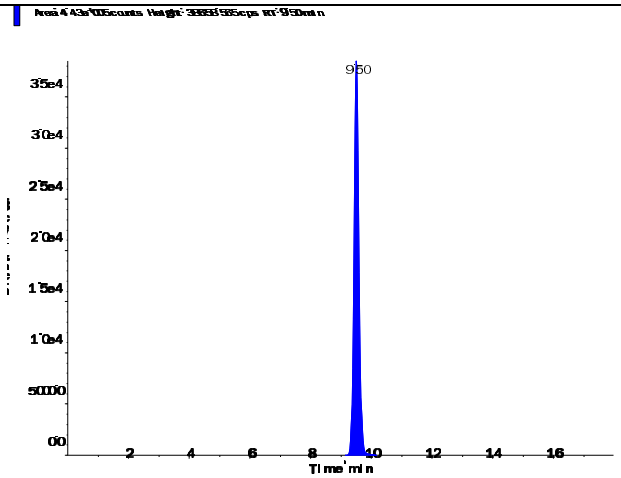

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:40 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

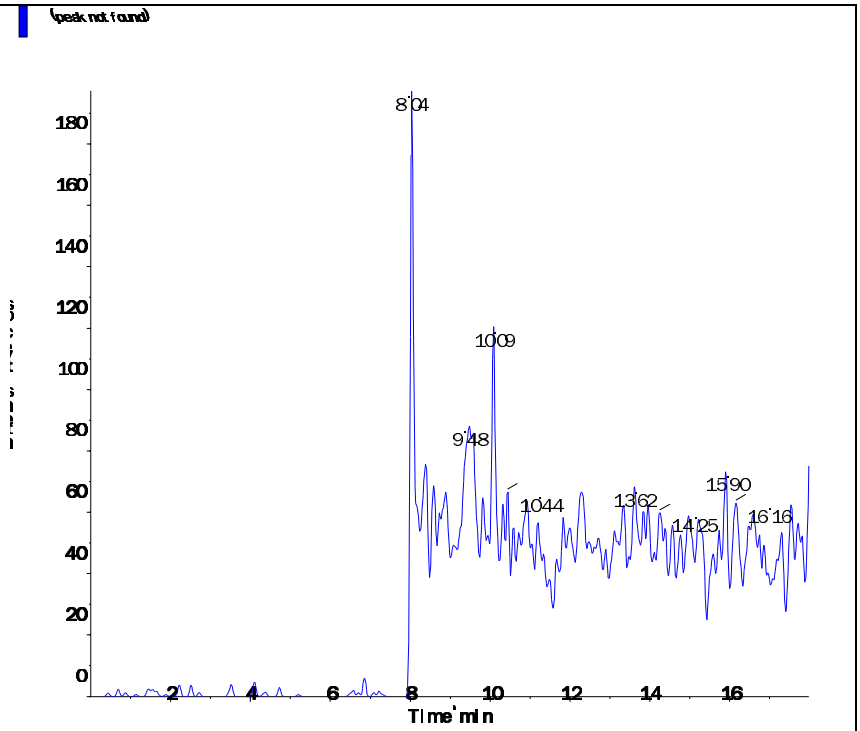

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

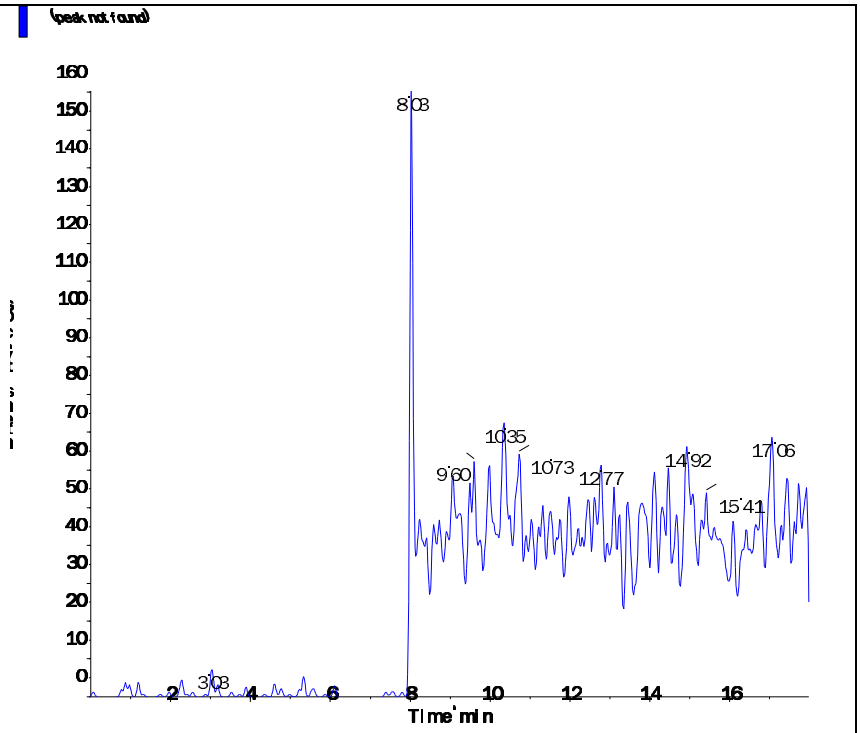

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:40 PM

Data File	LM35467.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 9:25:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM35467.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 9:25:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.440e+05	9.53	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.160e+04	9.54	N/A	0.208
Perchlorate conf	1.180e+04	9.53	N/A	0.217

O18LP (Internal Standard)

RT (Exp. RT): 9.53(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

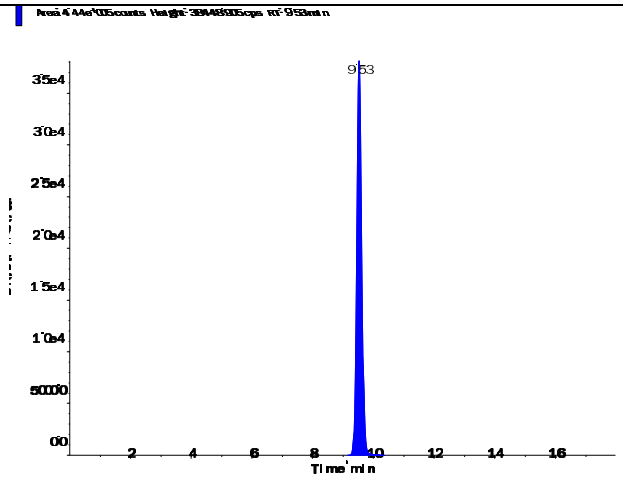

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:40 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.54 (9.84) min
Calculated conc:	0.208 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

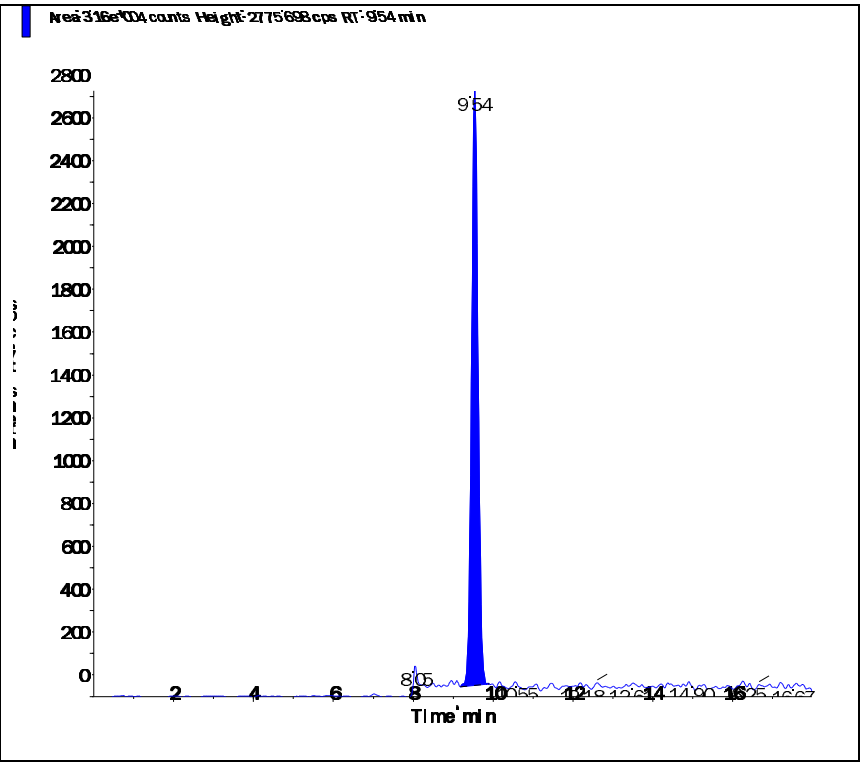

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.53 (9.84) min
Calculated conc:	0.217 ng/ml
Area Ratio:	0.027
Sample Type:	(Unknown)

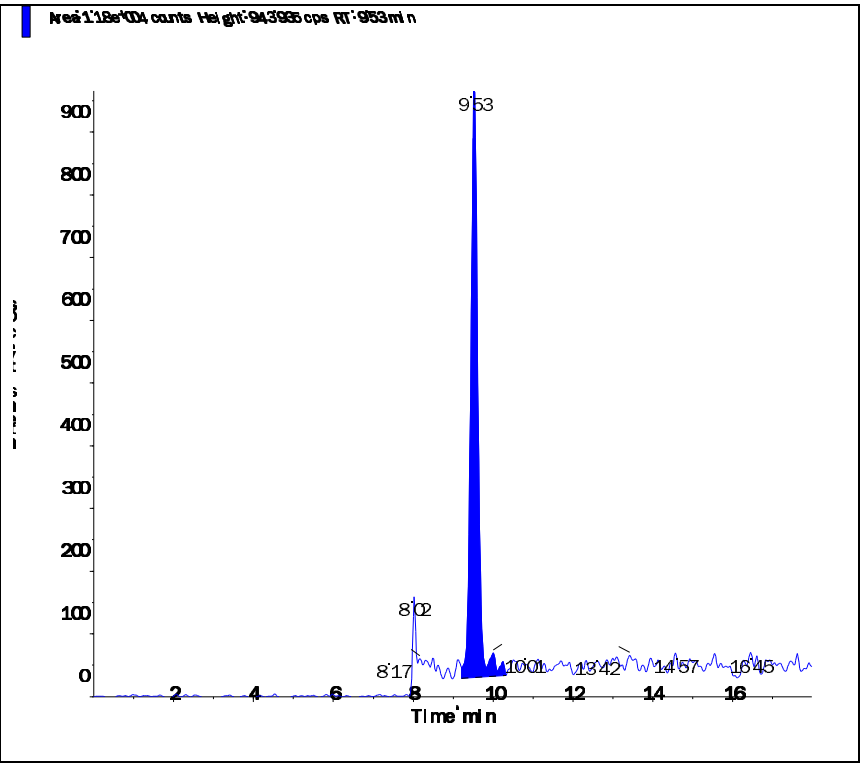

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:48 PM

Data File	LM35491.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 4:59:54 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-04 LCS2 (0.2ug/L)	**Injection Vial**	7.00
Data File	LM35491.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 4:59:54 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.260e+05	9.57	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.830e+04	9.59	N/A	0.213
Perchlorate conf	1.400e+04	9.57	N/A	0.218

O18LP (Internal Standard)

RT (Exp. RT): 9.57(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

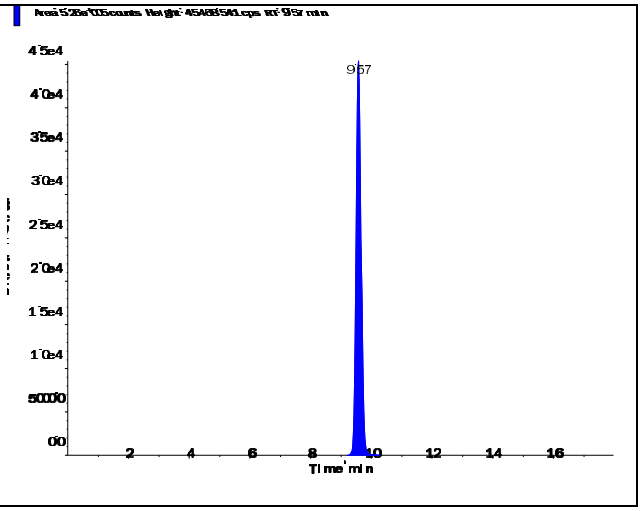

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:48 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.59 (9.84) min
Calculated conc:	0.213 ng/ml
Area Ratio:	0.073
Sample Type:	(Unknown)

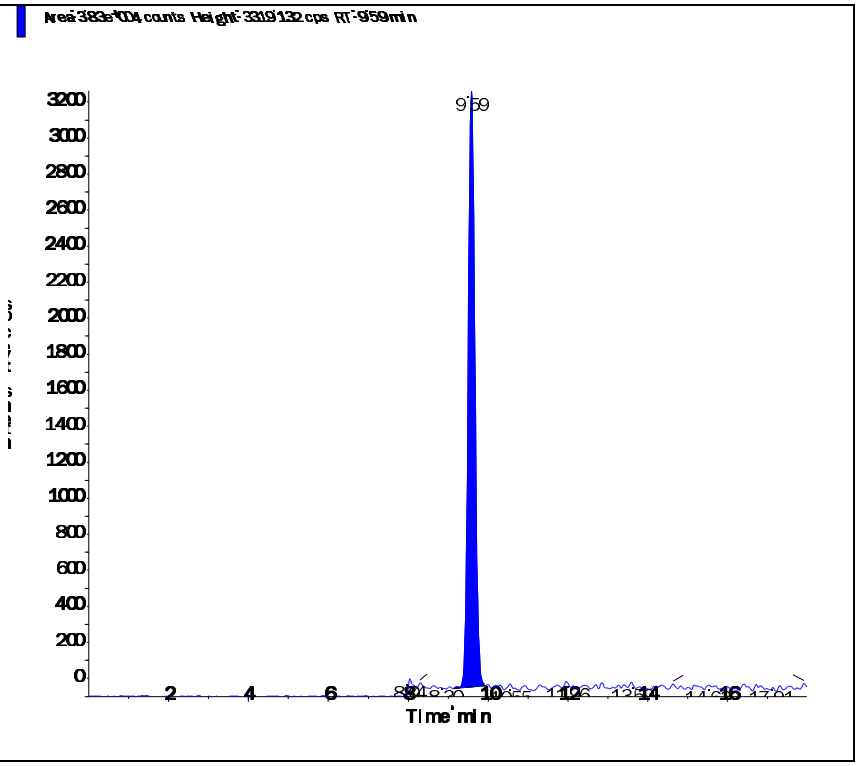

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.57 (9.84) min
Calculated conc:	0.218 ng/ml
Area Ratio:	0.027
Sample Type:	(Unknown)

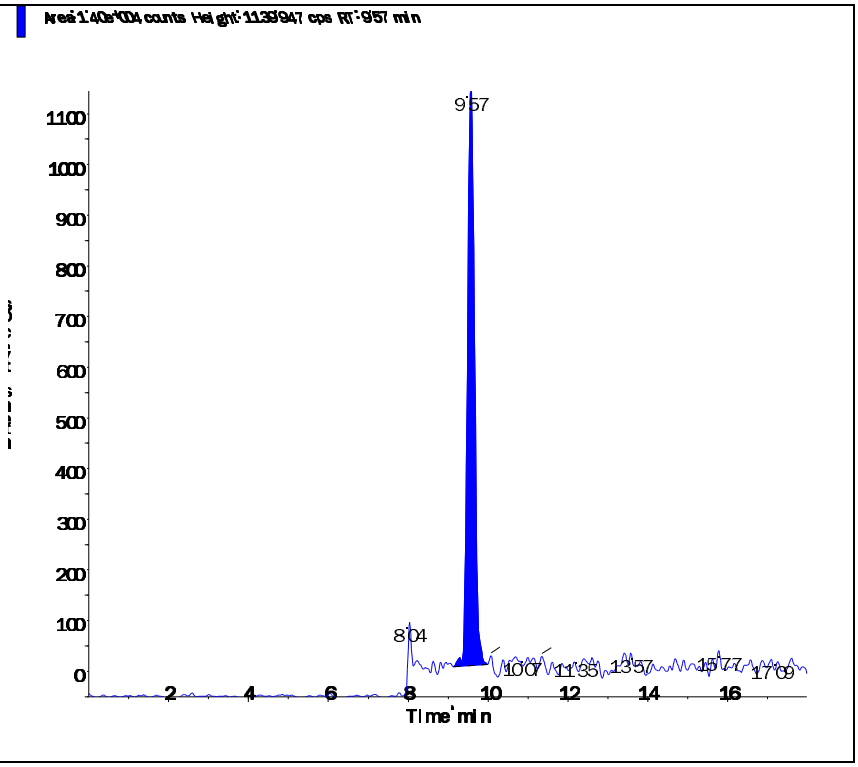

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2.3 Metals Data

2.3.1 Metals I C P Data

2.3.1.1 Summary Data

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	126F-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 16:45
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/23/2016 20:33
Collect Date:	06/14/2016 11:10	**Dilution:**	1	**File ID:**	T3.062316.203318
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.100	U	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	5.93		0.200	0.100	0.0500
Potassium, Total	7440-09-7	4.36		2.00	1.00	0.500

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	126F-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/25/2016 12:36
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/25/2016 14:03
Collect Date:	06/14/2016 11:10	**Dilution:**	1	**File ID:**	T3.062516.140359
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	126F-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 16:45
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/23/2016 21:32
Collect Date:	06/14/2016 11:10	**Dilution:**	20	**File ID:**	T3.062316.213215
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	296		10.0	5.00	2.50
Magnesium, Total	7439-95-4	235		20.0	10.0	5.00
Sodium, Total	7440-23-5	829		20.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	C08-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/25/2016 12:36
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/25/2016 14:07
Collect Date:	06/14/2016 13:10	**Dilution:**	1	**File ID:**	T3.062516.140759
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	C08-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 16:45
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/23/2016 20:37
Collect Date:	06/14/2016 13:10	**Dilution:**	1	**File ID:**	T3.062316.203719
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.114	J	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Iron, Total	7439-89-6	0.627		0.200	0.100	0.0500
Potassium, Total	7440-09-7	2.18		2.00	1.00	0.500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	C08-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 16:45
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/23/2016 21:43
Collect Date:	06/14/2016 13:10	**Dilution:**	20	**File ID:**	T3.062316.214348
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	239		10.0	5.00	2.50
Magnesium, Total	7439-95-4	143		20.0	10.0	5.00
Sodium, Total	7440-23-5	761		20.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	C03-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 16:45
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/23/2016 20:41
Collect Date:	06/14/2016 14:15	**Dilution:**	1	**File ID:**	T3.062316.204123
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.100	U	0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Potassium, Total	7440-09-7	4.01		2.00	1.00	0.500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	C03-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/25/2016 12:36
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/25/2016 14:12
Collect Date:	06/14/2016 14:15	**Dilution:**	1	**File ID:**	T3.062516.141200
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	C03-061416	**Prep Method:**	3015	**Prep Date:**	06/17/2016 12:25
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/23/2016 16:45
Workgroup #:	WG573973	**Analyst:**	JYH	**Run Date:**	06/23/2016 21:47
Collect Date:	06/14/2016 14:15	**Dilution:**	20	**File ID:**	T3.062316.214744
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	55.4		10.0	5.00	2.50
Iron, Total	7439-89-6	101		4.00	2.00	1.00
Magnesium, Total	7439-95-4	35.8		20.0	10.0	5.00
Sodium, Total	7440-23-5	169		20.0	10.0	5.00

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.3.1.2 QC Summary Data

Example 6010 Calculations
Thermo Scientific iCAP

1.0 Initial Calibration (ICAL) Parameters
For a multi-point calibration, the system performs linear regression from data consisting of a blank and four standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG573190
Analyst: REK
Spike Analyst: REK
Run Date: 06/17/2016 12:25
Method: 3015
Balance: BAL019
Instrument: MW-4
Instrument Start: 06/17/2016 12:36

SOP: ME407 Revison 19
Spike Solution: STD76576
Spike Witness: VC
HCL Lot #: COA18769
HNO3 Lot #: COA18905
40 & 50 ML. DIGESTION TU COA18987
ICP Filters- fisher-Lot# RGT35619

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG573190-03	BLANK	1	40 mL	50 mL	206.067 g	206.054 g		
2	WG573025-01	FBLK1	17	5 mL	50 mL	204.348 g	204.338 g		
3	WG573190-04	LCS	1	40 mL	50 mL	210.758 g	210.752 g	5 mL	
4	WG573190-01	REF	17	5 mL	50 mL	203.898 g	203.882 g		
5	L16060779-02	RS02	17	5 mL	50 mL	203.898 g	203.882 g		06/24/16
6	WG573190-05	MS	17	5 mL	50 mL	207.438 g	207.431 g	5 mL	
7	L16060779-05	MS02	17	5 mL	50 mL	207.438 g	207.431 g	5 mL	06/24/16
8	WG573190-06	MSD	17	5 mL	50 mL	208.146 g	208.126 g	5 mL	
9	L16060779-08	SD02	17	5 mL	50 mL	208.146 g	208.126 g	5 mL	06/24/16
10	L16060779-11	SAMP	17	5 mL	50 mL	203.893 g	203.879 g		06/24/16
11	L16060779-14	SAMP	17	5 mL	50 mL	205.834 g	205.819 g		06/24/16
12	WG573190-02	REF	1	40 mL	50 mL	205.508 g	205.498 g		
13	L16060808-01	RS01	1	40 mL	50 mL	205.508 g	205.498 g		06/24/16
14	WG573190-07	MS	1	40 mL	50 mL	210.145 g	210.129 g	5 mL	
15	L16060808-03	MS01	1	40 mL	50 mL	210.145 g	210.129 g	5 mL	06/24/16
16	WG573190-08	MSD	1	40 mL	50 mL	210.94 g	210.914 g	5 mL	
17	L16060808-04	SD01	1	40 mL	50 mL	210.94 g	210.914 g	5 mL	06/24/16
18	L16060822-02	SAMP	1	40 mL	50 mL	206.366 g	206.337 g		06/24/16
19	L16060822-03	SAMP	1	40 mL	50 mL	204.086 g	204.053 g		06/24/16
20	L16060823-02	SAMP	1	40 mL	50 mL	205.702 g	205.68 g		06/24/16
21	L16060823-03	SAMP	1	40 mL	50 mL	203.815 g	203.795 g		06/24/16
22	L16060823-04	SAMP	1	40 mL	50 mL	205.586 g	205.557 g		06/24/16
23	L16060883-02	SAMP	1	40 mL	50 mL	204.528 g	204.491 g		06/24/16
24	L16060884-01	SAMP	17	5 mL	50 mL	204.107 g	204.076 g		06/22/16
25	L16060896-01	SAMP	1	40 mL	50 mL	205.437 g	205.412 g		06/27/16
26	L16060896-02	SAMP	1	40 mL	50 mL	207.438 g	207.413 g		06/27/16
27	L16060896-03	SAMP	1	40 mL	50 mL	205.762 g	205.735 g		06/27/16
28	L16060896-04	SAMP	1	40 mL	50 mL	205.858 g	205.827 g		06/27/16
29	L16060896-05	SAMP	1	40 mL	50 mL	205.819 g	205.802 g		06/27/16
30	L16060896-07	SAMP	1	40 mL	50 mL	207.197 g	207.165 g		06/27/16

L16060883-02	FILTERED DIGESTATE

Analyst: _____

Reviewer: _____

MW_DIG - Modified 09/30/2009
PDF ID: 4812648
Report generated: 06/17/2016 13:11

TCLP Non-Volatile

Analyst(s): CPD
Date: 6/16/16
Filter Lot #: 9486030
Microbac SOP: TCLP01 Rev #: 12

Analyst / Date		Analyst / Date	
CPD / AMA	6/16/16	CPD	6/17/16
Time On	Temp On °C	Time Off	Temp Off °C
1522	24.6	0814	22.1

Agitator Speed 30 ± 2 rpm ☑

Jug #	Sample #	Tests	Method	Fluid #	Matrix *	% Solid	Pretest pH Initial	Pretest pH Final	Int. Wt. (g)	Fluid Vol. (mL)	Final extract pH
D	06-0779-11	ME	1311	F1-181	S	100	7.01	1.82	25.50	510	4.92
	-02						7.20	1.96	25.35	507	5.01
	-05						7.10	1.78	25.40	508	4.97
	-08						7.13	1.76	25.36	507	4.96
	-14						7.04	1.75	25.35	507	4.98
G-29	06-0829-02	SV		F2-379			12.67	12.62	25.74	514	12.47
D	06-0888-01	300	1312	SPLPF1 -62	S	100	NA	NA	25.12	502	9.47
	-02								25.88	517	9.73
	-03								25.44	508	9.64
	-04								25.43	508	9.75
	-05								25.33	506	9.21
	-06								25.87	517	9.65
	-07								25.52	510	9.60
	-08								25.32	506	9.06
	-09								25.45	509	9.68
	-10								25.27	505	9.97
	-11								25.32	506	9.62
	-12								25.69	513	9.53
	06-0886-01								25.89	517	9.67
	-02								25.16	503	9.55
	-03								25.39	507	9.26
	-04								25.37	507	9.58
	06-0884-01	ME	1311	F1-181	S	100	8.33	3.63	25.22	504	5.61
NA	FBIK1	ME	1311	F1-181	NA	NA	NA	NA	100	100	4.88
	FBIK2	SV		F2-379							2.84
	SPLPF1	300	1312	SPLP F1-62							4.15

CPD 6/16/16

*Matrix Code: (S = solid, sand, soil or sludge) (P = paint) (O = organic) (W = water or aqueous waste)
D = Disposable plastic jug
TCLP Pretest weight will be 5.0 g (± 0.1) unless otherwise noted.
Temperature shall be maintained at 23° ± 2 for 18 ± 2 hours unless otherwise noted.

Comments: N/A

Peer Review By: Allie Alfred 06/17/16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062316T3.2

Analyst1: JYH Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 573973,573749,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.062316.162939	WG574093-01	Calibration Point		1		06/23/16 16:29
2	T3.062316.163338	WG574093-02	Calibration Point		1		06/23/16 16:33
3	T3.062316.163737	WG574093-03	Calibration Point		1		06/23/16 16:37
4	T3.062316.164136	WG574093-04	Calibration Point		1		06/23/16 16:41
5	T3.062316.164514	WG574093-05	Calibration Point		1		06/23/16 16:45
6	T3.062316.164851	WG574093-06	Initial Calibration Verification		1		06/23/16 16:48
7	T3.062316.165229	WG574093-07	Initial Calib Blank		1		06/23/16 16:52
8	T3.062316.165617	WG574093-08	Low Level Initial Calibration V		1		06/23/16 16:56
9	T3.062316.170014	WG574093-09	Low Level Initial Calibration V		1		06/23/16 17:00
10	T3.062316.170408	WG574093-10	Interference Check		1		06/23/16 17:04
11	T3.062316.170801	WG574093-11	Interference Check		1		06/23/16 17:08
12	T3.062316.171145	WG574093-12	CCV		1		06/23/16 17:11
13	T3.062316.171523	WG574093-13	CCB		1		06/23/16 17:15
14	T3.062316.171922	WG573484-02	Method/Prep Blank	40/50	1		06/23/16 17:19
15	T3.062316.172321	WG573484-03	Laboratory Control S	40/50	1		06/23/16 17:23
16	T3.062316.172701	WG573484-01	Reference Sample		1	L16060764-04	06/23/16 17:27
17	T3.062316.173057	WG573484-04	Matrix Spike	40/50	1	L16060764-04	06/23/16 17:30
18	T3.062316.173436	WG573484-05	Matrix Spike Duplica	40/50	1	L16060764-04	06/23/16 17:34
19	T3.062316.173816	L16061098-01	5004-G06-WQ-W0266	40/50	1		06/23/16 17:38
20	T3.062316.174215	L16061098-02	5240-G02-WQ-W0087	40/50	1		06/23/16 17:42
21	T3.062316.174614	WG573952-01	Post Digestion Spike		1	L16061098-02	06/23/16 17:46
22	T3.062316.174955	WG573952-02	Serial Dilution		5	L16061098-02	06/23/16 17:49
23	T3.062316.175355	WG573952-02	Serial Dilution		25	L16061098-02	06/23/16 17:53
24	T3.062316.175755	WG574093-14	CCV		1		06/23/16 17:57
25	T3.062316.180133	WG574093-15	CCB		1		06/23/16 18:01
26	T3.062316.180532	L16061098-03	5320-G02-WQ-W0183	40/50	1		06/23/16 18:05
27	T3.062316.180930	L16061098-04	5506-G02-WQ-W0164	40/50	1		06/23/16 18:09
28	T3.062316.181329	L16060764-01	MW-23-004	40/50	1		06/23/16 18:13
29	T3.062316.181726	L16060764-02	MW-23-002	40/50	1		06/23/16 18:17
30	T3.062316.182122	L16060764-03	FD-061316	40/50	1		06/23/16 18:21
31	T3.062316.182520	L16060957-01	15-12-13 S7	40/50	1		06/23/16 18:25
32	T3.062316.182915	L16060957-02	15-12-13 S7	40/50	1		06/23/16 18:29
33	T3.062316.183311	WG574093-16	CCV		1		06/23/16 18:33
34	T3.062316.183649	WG574093-17	CCB		1		06/23/16 18:36

Page: 1 Approved: June 26, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062316T3.2
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,573749,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.062316.184048	L16060957-03	15-12-13 S8	40/50	1		06/23/16 18:40
36	T3.062316.184442	L16060957-04	15-12-13 S8	40/50	1		06/23/16 18:44
37	T3.062316.184837	L16060957-05	15-12-13 S5	40/50	1		06/23/16 18:48
38	T3.062316.185233	L16060961-01	GH58HS_MELZER_03-03-0	40/50	1		06/23/16 18:52
39	T3.062316.185630	L16060961-02	GH58HS_MELZER_03-03-0	40/50	1		06/23/16 18:56
40	T3.062316.190026	L16060991-02	MW31-061616		1		06/23/16 19:00
41	T3.062316.190423	L16060995-01	UNTREATED	40/50	1		06/23/16 19:04
42	T3.062316.190829	L16060995-02	AFTER	40/50	1		06/23/16 19:08
43	T3.062316.191235	L16061064-01	59-8-6.02 W1	40/50	1		06/23/16 19:12
44	T3.062316.191630	WG574093-18	CCV		1		06/23/16 19:16
45	T3.062316.192008	WG574093-19	CCB		1		06/23/16 19:20
46	T3.062316.192408	WG573190-03	Method/Prep Blank	40/50	1		06/23/16 19:24
47	T3.062316.192807	WG573190-04	Laboratory Control S	40/50	1		06/23/16 19:28
48	T3.062316.193148	WG573025-01	Fluid Blank 1		1		06/23/16 19:31
49	T3.062316.193546	WG573190-01	Reference Sample		1	L16060779-02	06/23/16 19:35
50	T3.062316.193944	WG573190-05	Matrix Spike	5/50	1	L16060779-02	06/23/16 19:39
51	T3.062316.194323	WG573190-06	Matrix Spike Duplica	5/50	1	L16060779-02	06/23/16 19:43
52	T3.062316.194701	L16060779-11	477-TS02-C0002	5/50	1		06/23/16 19:47
53	T3.062316.195059	WG573973-01	Post Digestion Spike		1	L16060779-11	06/23/16 19:50
54	T3.062316.195438	WG573973-02	Serial Dilution		5	L16060779-11	06/23/16 19:54
55	T3.062316.195838	WG573973-02	Serial Dilution		25	L16060779-11	06/23/16 19:58
56	T3.062316.200238	WG574093-20	CCV		1		06/23/16 20:02
57	T3.062316.200616	WG574093-21	CCB		1		06/23/16 20:06
58	T3.062316.201014	L16060779-14	477-TS01-C0003	5/50	1		06/23/16 20:10
59	T3.062316.201412	WG573190-02	Reference Sample		1	L16060808-01	06/23/16 20:14
60	T3.062316.201808	WG573190-07	Matrix Spike	40/50	1	L16060808-01	06/23/16 20:18
61	T3.062316.202147	WG573190-08	Matrix Spike Duplica	40/50	1	L16060808-01	06/23/16 20:21
62	T3.062316.202527	L16060822-02	18WW03F-061416	40/50	1		06/23/16 20:25
63	T3.062316.202923	L16060822-03	18CPTMW04SW-061416	40/50	1		06/23/16 20:29
64	T3.062316.203318	L16060823-02	126F-061416	40/50	1		06/23/16 20:33
65	T3.062316.203719	L16060823-03	C08-061416	40/50	1		06/23/16 20:37
66	T3.062316.204123	L16060823-04	C03-061416	40/50	1		06/23/16 20:41
67	T3.062316.204516	L16060883-02	WC02	40/50	1		06/23/16 20:45
68	T3.062316.204910	WG574093-22	CCV		1		06/23/16 20:49

Page: 2 Approved: June 26, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062316T3.2

Analyst1: JYH Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 573973,573749,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.062316.205247	WG574093-23	CCB		1		06/23/16 20:52
70	T3.062316.205645	L16060884-01	NI CAKE	5/50	1		06/23/16 20:56
71	T3.062316.210040	L16060896-01	A08-MW02-Y1S2	40/50	1		06/23/16 21:00
72	T3.062316.210433	L16060896-02	A08-MW03-Y1S2	40/50	1		06/23/16 21:04
73	T3.062316.210831	L16060896-03	A08-MW10-Y1S2	40/50	1		06/23/16 21:08
74	T3.062316.211228	L16060896-04	FD-01	40/50	1		06/23/16 21:12
75	T3.062316.211622	L16060896-05	FD-03	40/50	1		06/23/16 21:16
76	T3.062316.212019	L16060896-07	RB01-06-15-16	40/50	1		06/23/16 21:20
77	T3.062316.212418	L16060822-02	18WW03F-061416		20		06/23/16 21:24
78	T3.062316.212816	L16060822-03	18CPTMW04SW-061416	40/50	20		06/23/16 21:28
79	T3.062316.213215	L16060823-02	126F-061416	40/50	20		06/23/16 21:32
80	T3.062316.213611	WG574093-24	CCV		1		06/23/16 21:36
81	T3.062316.213949	WG574093-25	CCB		1		06/23/16 21:39
82	T3.062316.214348	L16060823-03	C08-061416	40/50	20		06/23/16 21:43
83	T3.062316.214744	L16060823-04	C03-061416	40/50	20		06/23/16 21:47
84	T3.062316.215141	L16060883-02	WC02	40/50	20		06/23/16 21:51
85	T3.062316.215540	L16060896-01	A08-MW02-Y1S2	40/50	20		06/23/16 21:55
86	T3.062316.215938	L16060896-02	A08-MW03-Y1S2	40/50	20		06/23/16 21:59
87	T3.062316.220337	L16060896-03	A08-MW10-Y1S2	40/50	20		06/23/16 22:03
88	T3.062316.220736	L16060896-04	FD-01	40/50	20		06/23/16 22:07
89	T3.062316.221134	L16060896-05	FD-03	40/50	20		06/23/16 22:11
90	T3.062316.221533	L16060896-07	RB01-06-15-16	40/50	20		06/23/16 22:15
91	T3.062316.221931	WG574093-26	CCV		1		06/23/16 22:19
92	T3.062316.222310	WG574093-27	CCB		1		06/23/16 22:23
93	T3.062316.222708	WG574093-28	Low Level Continuing Calibra		1		06/23/16 22:27
94	T3.062316.223105	WG574093-29	Low Level Continuing Calibra		1		06/23/16 22:31
95	T3.062316.223500	WG573562-02	Method/Prep Blank	40/50	1		06/23/16 22:35
96	T3.062316.223859	WG573562-03	Laboratory Control S	40/50	1		06/23/16 22:38
97	T3.062316.224239	WG573353-01	Fluid Blank 1		1		06/23/16 22:42
98	T3.062316.224638	WG573353-02	Fluid Blank 2		1		06/23/16 22:46
99	T3.062316.225037	WG573562-01	Reference Sample		1	L16060974-01	06/23/16 22:50
100	T3.062316.225432	WG573562-04	Matrix Spike	40/50	1	L16060974-01	06/23/16 22:54
101	T3.062316.225812	WG573562-05	Matrix Spike Duplica	40/50	1	L16060974-01	06/23/16 22:58
102	T3.062316.230151	L16060903-01	LF30/31-EWTS-EFFLUENT-1	40/50	1		06/23/16 23:01

Page: 3 Approved: June 26, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062316T3.2

Analyst1: JYH Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76382 ICSAB: STD76321 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 573973,573749,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T3.062316.230549	WG573749-03	Post Digestion Spike		1	L16060903-01	06/23/16 23:05
104	T3.062316.230928	WG573749-04	Serial Dilution		5	L16060903-01	06/23/16 23:09
105	T3.062316.231327	WG574093-30	CCV		1		06/23/16 23:13
106	T3.062316.231705	WG574093-31	CCB		1		06/23/16 23:17
107	T3.062316.232104	L16060903-02	LF30/31-EWTS-MH3-15JUNI	40/50	1		06/23/16 23:21
108	T3.062316.232500	L16060903-03	LF30/31-EWTS-MH2-15JUNI	40/50	1		06/23/16 23:25
109	T3.062316.232857	L16060903-04	LF30/31-EWTS-MH1-15JUNI	40/50	1		06/23/16 23:28
110	T3.062316.233254	L16060903-05	LF30/31-EWTS-INFLUENT-1	40/50	1		06/23/16 23:32
111	T3.062316.233650	L16060924-01	K6F0495-01	5/50	1		06/23/16 23:36
112	T3.062316.234055	DI7	DI7		20		06/23/16 23:40
113	T3.062316.234454	DI8	DI8		20		06/23/16 23:44
114	T3.062316.234853	DI9	DI9		20		06/23/16 23:48
115	T3.062316.235252	WG574093-32	CCV		1		06/23/16 23:52
116	T3.062316.235630	WG574093-33	CCB		1		06/23/16 23:56
117	T3.062416.000030	WG574093-34	ICSA		1		06/24/16 00:00
118	T3.062416.000429	WG574093-35	ICSAB		1		06/24/16 00:04
119	T3.062416.000822	WG574093-36	CCV		1		06/24/16 00:08
120	T3.062416.001200	WG574093-37	CCB		1		06/24/16 00:12
121	T3.062416.001600	WG574093-38	Low Level Continuing Calibra		1		06/24/16 00:16
122	T3.062416.001957	WG574093-39	Low Level Continuing Calibra		1		06/24/16 00:19

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Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062516T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,574055,574076,574216,574215,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.062516.122104	WG574249-01	Calibration Point		1		06/25/16 12:21
2	T3.062516.122502	WG574249-02	Calibration Point		1		06/25/16 12:25
3	T3.062516.122900	WG574249-03	Calibration Point		1		06/25/16 12:29
4	T3.062516.123256	WG574249-04	Calibration Point		1		06/25/16 12:32
5	T3.062516.123634	WG574249-05	Calibration Point		1		06/25/16 12:36
6	T3.062516.124009	WG574249-06	Initial Calibration Verification		1		06/25/16 12:40
7	T3.062516.124348	WG574249-07	Initial Calib Blank		1		06/25/16 12:43
8	T3.062516.124745	WG574249-08	Low Level Initial Calibration V		1		06/25/16 12:47
9	T3.062516.125139	WG574249-09	Low Level Initial Calibration V		1		06/25/16 12:51
10	T3.062516.125529	WG574249-10	Interference Check		1		06/25/16 12:55
11	T3.062516.125921	WG574249-11	Interference Check		1		06/25/16 12:59
12	T3.062516.130304	WG574249-12	CCV		1		06/25/16 13:03
13	T3.062516.130641	WG574249-13	CCB		1		06/25/16 13:06
14	T3.062516.131816	WG573190-03	Method/Prep Blank	40/50	1		06/25/16 13:18
15	T3.062516.132214	WG573190-04	Laboratory Control S	40/50	1		06/25/16 13:22
16	T3.062516.132554	WG573190-02	Reference Sample		1	L16060808-01	06/25/16 13:25
17	T3.062516.132950	WG573190-07	Matrix Spike	40/50	1	L16060808-01	06/25/16 13:29
18	T3.062516.133327	WG573190-08	Matrix Spike Duplica	40/50	1	L16060808-01	06/25/16 13:33
19	T3.062516.133704	L16060822-03	18CPTMW04SW-061416	40/50	1		06/25/16 13:37
20	T3.062516.134058	L16060822-02	18WW03F-061416	40/50	1		06/25/16 13:40
21	T3.062516.134452	WG573973-03	Post Digestion Spike		1	L16060822-02	06/25/16 13:44
22	T3.062516.134830	WG573973-04	Serial Dilution		5	L16060822-02	06/25/16 13:48
23	T3.062516.135227	WG573973-04	Serial Dilution		25	L16060822-02	06/25/16 13:52
24	T3.062516.135622	WG574249-14	CCV		1		06/25/16 13:56
25	T3.062516.140001	WG574249-15	CCB		1		06/25/16 14:00
26	T3.062516.140359	L16060823-02	126F-061416	40/50	1		06/25/16 14:03
27	T3.062516.140759	L16060823-03	C08-061416	40/50	1		06/25/16 14:07
28	T3.062516.141200	L16060823-04	C03-061416	40/50	1		06/25/16 14:12
29	T3.062516.141551	L16061148-01	DP005SW0513-007	40/50	1		06/25/16 14:15
30	T3.062516.141945	L16061148-02	DP005SW0514-007	40/50	1		06/25/16 14:19
31	T3.062516.142340	L16061150-01	SS007SW0709-007	40/50	1		06/25/16 14:23
32	T3.062516.142732	L16061150-02	SS007SW0710-007	40/50	1		06/25/16 14:27
33	T3.062516.143125	L16061151-02	LF003SW0311-007 DUP	40/50	1		06/25/16 14:31
34	T3.062516.143519	L16061151-05	LF003SW0312-007	40/50	1		06/25/16 14:35

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Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062516T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,574055,574076,574216,574215,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.062516.143913	WG573707-02	Reference Sample		1	L16061154-01	06/25/16 14:39
36	T3.062516.144313	WG574249-16	CCV		1		06/25/16 14:43
37	T3.062516.144639	WG574249-17	CCB		1		06/25/16 14:46
38	T3.062516.145037	WG573707-07	Matrix Spike	40/50	1	L16061154-01	06/25/16 14:50
39	T3.062516.145424	WG573707-08	Matrix Spike Duplica	40/50	1	L16061154-01	06/25/16 14:54
40	T3.062516.145809	L16061154-04	FQC-RB06201601-CB	40/50	1		06/25/16 14:58
41	T3.062516.150207	L16061155-01	ST008MW0812-007	40/50	1		06/25/16 15:02
42	T3.062516.150559	L16061155-02	ST008MW0809-007	40/50	1		06/25/16 15:05
43	T3.062516.150954	L16061155-03	ST008MW0816-007	40/50	1		06/25/16 15:09
44	T3.062516.151348	L16061178-01	2016PRE-7217NEWENGLAN	40/50	1		06/25/16 15:13
45	T3.062516.151743	L16061227-01	18WW22-062116	40/50	20		06/25/16 15:17
46	T3.062516.152125	L16061227-06	18CPTMW18-062116	40/50	20		06/25/16 15:21
47	T3.062516.152518	WG573994-01	Reference Sample		20	L16061279-02	06/25/16 15:25
48	T3.062516.152911	WG574249-18	CCV		1		06/25/16 15:29
49	T3.062516.153248	WG574249-19	CCB		1		06/25/16 15:32
50	T3.062516.153646	WG573994-04	Matrix Spike	40/50	20	L16061279-02	06/25/16 15:36
51	T3.062516.154039	WG573994-05	Matrix Spike Duplica	40/50	20	L16061279-02	06/25/16 15:40
52	T3.062516.154432	L16061289-01	MW21-062216	40/50	20		06/25/16 15:44
53	T3.062516.154826	L16061129-01	MW-22-002		20		06/25/16 15:48
54	T3.062516.155222	L16061129-02	MW-22-010		20		06/25/16 15:52
55	T3.062516.155620	L16061129-03	MW-22-007		20		06/25/16 15:56
56	T3.062516.160018	L16061129-04	FD061716		20		06/25/16 16:00
57	T3.062516.160415	L16061272-01	SS007MW0B18-007		20		06/25/16 16:04
58	T3.062516.160812	L16061272-02	SS007MWN752-007		20		06/25/16 16:08
59	T3.062516.161208	L16061279-01	XU936TW007A	40/50	20		06/25/16 16:12
60	T3.062516.161603	WG574249-20	CCV		1		06/25/16 16:16
61	T3.062516.161940	WG574249-21	CCB		1		06/25/16 16:19
62	T3.062516.162338	L16061279-05	XU936TW019A	40/50	20		06/25/16 16:23
63	T3.062516.162733	L16061148-01	DP005SW0513-007		20		06/25/16 16:27
64	T3.062516.163130	L16061148-02	DP005SW0514-007		20		06/25/16 16:31
65	T3.062516.163527	L16061150-01	SS007SW0709-007		20		06/25/16 16:35
66	T3.062516.163912	L16061151-02	LF003SW0311-007 DUP		20		06/25/16 16:39
67	T3.062516.164310	L16061151-05	LF003SW0312-007		20		06/25/16 16:43
68	T3.062516.164706	WG573707-02	Reference Sample		20	L16061154-01	06/25/16 16:47

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Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062516T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,574055,574076,574216,574215,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	T3.062516.165101	WG573707-07	Matrix Spike	40/50	20	L16061154-01	06/25/16 16:51
70	T3.062516.165454	L16061279-08	XU936TW011MSD	40/50	20	WG573707-08	06/25/16 16:54
71	T3.062516.165848	WG574249-22	CCV		1		06/25/16 16:58
72	T3.062516.170225	WG574249-23	CCB		1		06/25/16 17:02
73	T3.062516.170624	L16061155-01	ST008MW0812-007		20		06/25/16 17:06
74	T3.062516.171010	L16061155-02	ST008MW0809-007		20		06/25/16 17:10
75	T3.062516.171407	L16061155-03	ST008MW0816-007		20		06/25/16 17:14
76	T3.062516.171804	WG574249-24	CCV		1		06/25/16 17:18
77	T3.062516.172142	WG574249-25	CCB		1		06/25/16 17:21
78	T3.062516.172540	WG574249-26	Low Level Continuing Calibra		1		06/25/16 17:25
79	T3.062516.172933	WG573530-03	Method/Prep Blank	40/50	1		06/25/16 17:29
80	T3.062516.173331	WG573530-04	Laboratory Control S	40/50	1		06/25/16 17:33
81	T3.062516.173711	WG573530-05	Filter Blank		1		06/25/16 17:37
82	T3.062516.174110	L16060986-02	MW-07-04	40/50	1		06/25/16 17:41
83	T3.062516.174505	L16060986-04	MW-01-10	40/50	1		06/25/16 17:45
84	T3.062516.174856	L16060986-06	MW-03-12	40/50	1		06/25/16 17:48
85	T3.062516.175251	L16060986-08	MW-01-07	40/50	1		06/25/16 17:52
86	T3.062516.175646	WG574216-01	Post Digestion Spike		1	L16060986-08	06/25/16 17:56
87	T3.062516.180025	WG574216-02	Serial Dilution		5	L16060986-08	06/25/16 18:00
88	T3.062516.180418	WG574216-02	Serial Dilution		25	L16060986-08	06/25/16 18:04
89	T3.062516.180815	WG574249-27	CCV		1		06/25/16 18:08
90	T3.062516.181152	WG574249-28	CCB		1		06/25/16 18:11
91	T3.062516.181548	L16060986-10	MW-03-11		1		06/25/16 18:15
92	T3.062516.181942	L16060986-12	MW-01-01		1		06/25/16 18:19
93	T3.062516.182332	L16060986-14	MW-03-09		1		06/25/16 18:23
94	T3.062516.182724	L16060986-16	MW-01-08		1		06/25/16 18:27
95	T3.062516.183114	L16060986-18	MW-03-06		1		06/25/16 18:31
96	T3.062516.183511	L16060986-20	MW-03-05		1		06/25/16 18:35
97	T3.062516.183905	WG573530-01	Reference Sample		1	L16060986-22	06/25/16 18:39
98	T3.062516.184258	WG573530-02	Reference Sample		1	L16060986-24	06/25/16 18:42
99	T3.062516.184649	L16060986-26	MW-01-02		1		06/25/16 18:46
100	T3.062516.185044	L16060986-28	DUP 1		1		06/25/16 18:50
101	T3.062516.185437	WG574249-29	CCV		1		06/25/16 18:54
102	T3.062516.185815	WG574249-30	CCB		1		06/25/16 18:58

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062516T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,574055,574076,574216,574215,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	T3.062516.190211	L16060986-30	DUP 2		1		06/25/16 19:02
104	T3.062516.190604	WG573530-06	Matrix Spike		1	L16060986-22	06/25/16 19:06
105	T3.062516.190942	WG573530-07	Matrix Spike Duplica		1	L16060986-22	06/25/16 19:09
106	T3.062516.191321	WG573530-08	Matrix Spike		1	L16060986-24	06/25/16 19:13
107	T3.062516.191658	WG573530-09	Matrix Spike Duplica		1	L16060986-24	06/25/16 19:16
108	T3.062516.192035	L16060986-40	EQUIP BLANK 1		1		06/25/16 19:20
109	T3.062516.192431	L16060986-42	EQUIP BLANK 2		1		06/25/16 19:24
110	T3.062516.192827	WG574249-31	CCV		1		06/25/16 19:28
111	T3.062516.193205	WG574249-32	CCB		1		06/25/16 19:32
112	T3.062516.193603	WG573544-03	Method/Prep Blank	40/50	1		06/25/16 19:36
113	T3.062516.193959	WG573544-04	Laboratory Control S	40/50	1		06/25/16 19:39
114	T3.062516.194338	L16060907-23	MW36-061516	40/50	1		06/25/16 19:43
115	T3.062516.194731	L16060986-01	MW-07-04	40/50	1		06/25/16 19:47
116	T3.062516.195124	L16060986-03	MW-01-10	40/50	1		06/25/16 19:51
117	T3.062516.195515	L16060986-05	MW-03-12	40/50	1		06/25/16 19:55
118	T3.062516.195905	L16060986-07	MW-01-07	40/50	1		06/25/16 19:59
119	T3.062516.200300	WG574215-01	Post Digestion Spike		1	L16060986-07	06/25/16 20:03
120	T3.062516.200637	WG574215-02	Serial Dilution		5	L16060986-07	06/25/16 20:06
121	T3.062516.201030	WG574215-02	Serial Dilution		25	L16060986-07	06/25/16 20:10
122	T3.062516.201426	WG574249-33	CCV		1		06/25/16 20:14
123	T3.062516.201803	WG574249-34	CCB		1		06/25/16 20:18
124	T3.062516.202200	L16060986-09	MW-03-11	40/50	1		06/25/16 20:22
125	T3.062516.202553	L16060986-11	MW-01-01	40/50	1		06/25/16 20:25
126	T3.062516.202942	L16060986-13	MW-03-09	40/50	1		06/25/16 20:29
127	T3.062516.203332	L16060986-15	MW-01-08	40/50	1		06/25/16 20:33
128	T3.062516.203723	L16060986-17	MW-03-06	40/50	1		06/25/16 20:37
129	T3.062516.204116	L16060986-19	MW-03-05	40/50	1		06/25/16 20:41
130	T3.062516.204510	WG573544-01	Reference Sample		1	L16060986-21	06/25/16 20:45
131	T3.062516.204903	WG573544-02	Reference Sample		1	L16060986-23	06/25/16 20:49
132	T3.062516.205255	L16060986-25	MW-01-02	40/50	1		06/25/16 20:52
133	T3.062516.205646	L16060986-27	DUP 1	40/50	1		06/25/16 20:56
134	T3.062516.210036	WG574249-35	CCV		1		06/25/16 21:00
135	T3.062516.210414	WG574249-36	CCB		1		06/25/16 21:04
136	T3.062516.210812	L16060986-29	DUP 2	40/50	1		06/25/16 21:08

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Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062516T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,574055,574076,574216,574215,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	T3.062516.211202	WG573544-05	Matrix Spike	40/50	1	L16060986-21	06/25/16 21:12
138	T3.062516.211541	WG573544-06	Matrix Spike Duplica	40/50	1	L16060986-21	06/25/16 21:15
139	T3.062516.211919	WG573544-07	Matrix Spike	40/50	1	L16060986-23	06/25/16 21:19
140	T3.062516.212256	WG573544-08	Matrix Spike Duplica	40/50	1	L16060986-23	06/25/16 21:22
141	T3.062516.212633	L16060986-39	EQUIP BLANK 1	40/50	1		06/25/16 21:26
142	T3.062516.213031	L16060986-41	EQUIP BLANK 2	40/50	1		06/25/16 21:30
143	T3.062516.213430	WG574249-37	CCV		1		06/25/16 21:34
144	T3.062516.213807	WG574249-38	CCB		1		06/25/16 21:38
145	T3.062516.214203	WG573102-02	Method/Prep Blank	40/50	1		06/25/16 21:42
146	T3.062516.214559	WG573102-03	Laboratory Control S	40/50	1		06/25/16 21:45
147	T3.062516.214937	WG573102-04	Filter Blank		1		06/25/16 21:49
148	T3.062516.215335	WG573102-01	Reference Sample		1	L16060787-09	06/25/16 21:53
149	T3.062516.215728	WG573102-05	Matrix Spike	40/50	1	L16060787-09	06/25/16 21:57
150	T3.062516.220106	WG573102-06	Matrix Spike Duplica	40/50	1	L16060787-09	06/25/16 22:01
151	T3.062516.220444	L16060787-01	EB04	40/50	1		06/25/16 22:04
152	T3.062516.220842	WG573561-03	Post Digestion Spike		1	L16060787-01	06/25/16 22:08
153	T3.062516.221220	WG573561-04	Serial Dilution		5	L16060787-01	06/25/16 22:12
154	T3.062516.221616	WG573561-04	Serial Dilution		25	L16060787-01	06/25/16 22:16
155	T3.062516.222012	WG574249-39	CCV		1		06/25/16 22:20
156	T3.062516.222349	WG574249-40	CCB		1		06/25/16 22:23
157	T3.062516.222746	L16060787-10	U517TW006C	40/50	1		06/25/16 22:27
158	T3.062516.223140	L16060787-18	U517TW008A	40/50	1		06/25/16 22:31
159	T3.062516.223534	L16060787-19	EB05	40/50	1		06/25/16 22:35
160	T3.062516.223931	WG573102-01	Reference Sample		20	L16060787-09	06/25/16 22:39
161	T3.062516.224326	WG573102-05	Matrix Spike	40/50	20	L16060787-09	06/25/16 22:43
162	T3.062516.224719	WG573102-06	Matrix Spike Duplica	40/50	20	L16060787-09	06/25/16 22:47
163	T3.062516.225113	WG574249-41	CCV		1		06/25/16 22:51
164	T3.062516.225451	WG574249-42	CCB		1		06/25/16 22:54
165	T3.062516.225848	WG573484-02	Method/Prep Blank	40/50	1		06/25/16 22:58
166	T3.062516.230246	WG573484-03	Laboratory Control S	40/50	1		06/25/16 23:02
167	T3.062516.230624	WG573484-01	Reference Sample		1	L16060764-04	06/25/16 23:06
168	T3.062516.231017	WG573484-04	Matrix Spike	40/50	1	L16060764-04	06/25/16 23:10
169	T3.062516.231356	WG573484-05	Matrix Spike Duplica	40/50	1	L16060764-04	06/25/16 23:13
170	T3.062516.231733	L16060991-02	MW31-061616	40/50	10		06/25/16 23:17

Page: 5 Approved: June 27, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062516T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 573973,574055,574076,574216,574215,573952

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
171	T3.062516.232126	WG573952-03	Post Digestion Spike		10	L16060991-02	06/25/16 23:21
172	T3.062516.232503	WG573952-04	Serial Dilution		50	L16060991-02	06/25/16 23:25
173	T3.062516.232900	L16060995-01	UNTREATED	40/50	1000		06/25/16 23:29
174	T3.062516.233253	L16060995-02	AFTER	40/50	1000		06/25/16 23:32
175	T3.062516.233647	WG574249-43	CCV		1		06/25/16 23:36
176	T3.062516.234025	WG574249-44	CCB		1		06/25/16 23:40
177	T3.062516.234420	WG574249-45	Interference Check		1		06/25/16 23:44
178	T3.062516.234809	WG574249-46	Interference Check		1		06/25/16 23:48
179	T3.062516.235152	WG574249-47	CCV		1		06/25/16 23:51
180	T3.062516.235530	WG574249-48	CCB		1		06/25/16 23:55
181	T3.062516.235927	WG574249-49	Low Level Continuing Calibra		1		06/25/16 23:59

Comments

Seq.	Rerun	Dil.	Reason	Analytes
69				
Seq. 69-70: wrong WG numbers JYH				

Page: 6 Approved: June 27, 2016

Kim H. Rhoden

Microbac Laboratories Inc.

Data Checklist

Date: 23-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 574093
Runlog ID: 75909
Analytical Workgroups: 573973,573749,573952

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	764,808
Level 4	1098,779,822,823,883,896,903,924
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer:

Secondary Reviewer:
26-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-26-2016 07:48:33

Microbac Laboratories Inc.

Data Checklist

Date: 25-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 574249
Runlog ID: 75923
Analytical Workgroups: 573973,574055,574076,574216,574215,573952

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1178
Level 4	822,823,1148,1150,1151,1154,1155
	1227,1279,1289,986,787,991,995
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer: Secondary Reviewer:
27-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-27-2016 14:55:21

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010C

AAB#: WG573973

Login Number: L16060823

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
126F-061416	02	06/14/16					06/17/2016	3.1	180		06/23/16	9.4	180	
126F-061416	02	06/14/16					06/17/2016	3.1	180		06/23/16	9.4	180	
126F-061416	02	06/14/16					06/17/2016	3.1	180		06/25/16	11.1	180	
C08-061416	03	06/14/16					06/17/2016	3	180		06/25/16	11	180	
C08-061416	03	06/14/16					06/17/2016	3	180		06/23/16	9.3	180	
C08-061416	03	06/14/16					06/17/2016	3	180		06/23/16	9.4	180	
C03-061416	04	06/14/16					06/17/2016	2.9	180		06/25/16	11	180	
C03-061416	04	06/14/16					06/17/2016	2.9	180		06/23/16	9.3	180	
C03-061416	04	06/14/16					06/17/2016	2.9	180		06/23/16	9.3	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4823910
Report generated 06/27/2016 10:56

METHOD BLANK SUMMARY

Login Number: L16060823
Blank File ID: T3.062316.192408
Prep Date: 06/17/16 12:25
Analyzed Date: 06/23/16 19:24
Analyst: JYH

Work Group: WG573973
Blank Sample ID: WG573190-03
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573190-04	T3.062316.192807	06/23/16 19:28	01
126F-061416	L16060823-02	T3.062316.203318	06/23/16 20:33	01
C08-061416	L16060823-03	T3.062316.203719	06/23/16 20:37	01
C03-061416	L16060823-04	T3.062316.204123	06/23/16 20:41	01
126F-061416	L16060823-02	T3.062316.213215	06/23/16 21:32	DL01
C08-061416	L16060823-03	T3.062316.214348	06/23/16 21:43	DL01
C03-061416	L16060823-04	T3.062316.214744	06/23/16 21:47	DL01
LCS	WG573190-04	T3.062516.132214	06/25/16 13:22	02
126F-061416	L16060823-02	T3.062516.140359	06/25/16 14:03	02
C08-061416	L16060823-03	T3.062516.140759	06/25/16 14:07	02
C03-061416	L16060823-04	T3.062516.141200	06/25/16 14:12	02

Report Name: BLANK_SUMMARY
PDF File ID: 4823911
Report generated 06/27/2016 10:56

METHOD BLANK SUMMARY

Login Number: L16060823
Blank File ID: T3.062516.131816
Prep Date: 06/17/16 12:25
Analyzed Date: 06/25/16 13:18
Analyst: JYH

Work Group: WG573973
Blank Sample ID: WG573190-03
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573190-04	T3.062316.192807	06/23/16 19:28	01
126F-061416	L16060823-02	T3.062316.203318	06/23/16 20:33	01
C08-061416	L16060823-03	T3.062316.203719	06/23/16 20:37	01
C03-061416	L16060823-04	T3.062316.204123	06/23/16 20:41	01
126F-061416	L16060823-02	T3.062316.213215	06/23/16 21:32	DL01
C08-061416	L16060823-03	T3.062316.214348	06/23/16 21:43	DL01
C03-061416	L16060823-04	T3.062316.214744	06/23/16 21:47	DL01
LCS	WG573190-04	T3.062516.132214	06/25/16 13:22	02
126F-061416	L16060823-02	T3.062516.140359	06/25/16 14:03	02
C08-061416	L16060823-03	T3.062516.140759	06/25/16 14:07	02
C03-061416	L16060823-04	T3.062516.141200	06/25/16 14:12	02

Report Name: BLANK_SUMMARY
PDF File ID: 4823911
Report generated 06/27/2016 10:56

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060823 Prep Date: 06/17/16 12:25 Sample ID: WG573190-03
Instrument ID: ICP-THERMO3 Run Date: 06/23/16 19:24 Prep Method: 3015
File ID: T3.062316.192408 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG573973 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-23-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Aluminum, Total	0.0500	0.200	0.0500	1	U
Beryllium, Total	0.00500	0.0200	0.00500	1	U
Calcium, Total	0.125	0.500	0.125	1	U
Iron, Total	0.0500	0.200	0.0500	1	U
Magnesium, Total	0.250	1.00	0.250	1	U
Potassium, Total	0.500	2.00	0.500	1	U
Sodium, Total	0.250	1.00	0.412	1	J

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4823912
07-JUL-2016 17:47

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060823 Prep Date: 06/17/16 12:25 Sample ID: WG573190-03
Instrument ID: ICP-THERMO3 Run Date: 06/25/16 13:18 Prep Method: 3015
File ID: T3.062516.131816 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG573973 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-25-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Selenium, Total	0.00500	0.0200	0.00784	1	J

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4823912
07-JUL-2016 17:47

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060823 Run Date: 06/23/2016 Sample ID: WG573190-04
Instrument ID: ICP-THERMO3 Run Time: 19:28 Prep Method: 3015
File ID: T3.062316.192807 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG573973 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76576 Cal ID: ICP-TH-23-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Aluminum, Total	6.25	6.24	99.9	80 - 120	
Beryllium, Total	0.0313	0.0311	99.6	80 - 120	
Calcium, Total	6.25	6.64	106	80 - 120	
Iron, Total	2.50	2.60	104	80 - 120	
Magnesium, Total	6.25	6.49	104	80 - 120	
Potassium, Total	31.3	32.2	103	80 - 120	
Sodium, Total	31.3	32.4	104	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4823913
Report generated: 07/07/2016 17:47

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060823 Run Date: 06/25/2016 Sample ID: WG573190-04
Instrument ID: ICP-THERMO3 Run Time: 13:22 Prep Method: 3015
File ID: T3.062516.132214 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG573973 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76576 Cal ID: ICP-TH-25-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Selenium, Total	0.250	0.233	93.3	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4823913
Report generated: 07/07/2016 17:47

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060823 Cal ID: ICP-THERMO3 - Worknum: WG573973
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG573190-02 File ID: T3.062316.201412 Dil: 1 Matrix: WATER
Sample ID: WG573190-07 MS File ID: T3.062316.201808 Dil: 1 Units: mg/L
Sample ID: WG573190-08 MSD File ID: T3.062316.202147 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Aluminum	ND	6.25	6.24	99.9	6.25	6.28	101	0.589	80 - 120	20	
Beryllium	ND	0.0313	0.0310	99.3	0.0313	0.0314	100	1.16	80 - 120	20	
Calcium	66.5	6.25	71.3	76.5	6.25	73.1	106	2.53	80 - 120	20	*
Iron	0.336	2.50	2.91	103	2.50	2.93	104	0.788	80 - 120	20	
Magnesium	18.8	6.25	25.0	99.9	6.25	25.4	106	1.47	80 - 120	20	
Potassium	1.76	31.3	33.3	101	31.3	33.9	103	1.61	80 - 120	20	
Sodium	19.9	31.3	51.5	101	31.3	52.3	104	1.67	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4823914
Report generated 07/07/2016 17:47

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060823 Cal ID: ICP-THERMO3 - Worknum: WG573973
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG573190-02 File ID: T3.062516.132554 Dil: 1 Matrix: WATER
Sample ID: WG573190-07 MS File ID: T3.062516.132950 Dil: 1 Units: mg/L
Sample ID: WG573190-08 MSD File ID: T3.062516.133327 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Selenium	ND	0.250	0.241	96.4	0.250	0.240	96.0	0.437	80 - 120	20	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4823914
Report generated 07/07/2016 17:47

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16060823 **Worknum:** WG573973
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG573973-04 **File ID:** T3.062516.134830 **Dil:** 5 **Units:** ug/L
Sample: L16060822-02 **File ID:** T3.062516.134058 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	7.00		ND	U		
Beryllium	0.100		0.600		500.00	E
Calcium	6220		5990		3.69	
Iron	2080		2120		1.93	
Magnesium	4400		4250		3.40	
Potassium	1500		1580		5.21	
Selenium	4.52		ND	U		
Sodium	83200		84000		0.89	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4823908
06/27/2016 15:01

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16060823 **Worknum:** WG573973
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG573973-02 **File ID:** T3.062316.195438 **Dil:** 5 **Units:** ug/L
Sample: L16060779-11 **File ID:** T3.062316.194701 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	173		160		7.72	
Beryllium	0.0300	X	0.100	X	233.00	
Calcium	4280		3960		7.51	
Iron	98.8		139		40.50	E
Magnesium	726		289		60.30	E
Potassium	444		612		37.80	E
Selenium	ND	U	ND	U		
Sodium	142000		130000		8.61	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4823908
06/27/2016 15:01

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060823 **Worknum:** WG573973
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG573973-01 **File ID:** T3.062316.195059 **Dil:** 1 **Units:** ug/L
Sample ID: L16060779-11 **File ID:** T3.062316.194701 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	5140		173		5000	99.6	75 - 125	
BERYLLIUM	25.0		0	U	25	99.8	75 - 125	
CALCIUM	8980		4280		5000	102.5	75 - 125	
IRON	2120		98.8	F	2000	101.7	75 - 125	
MAGNESIUM	5660		726	F	5000	100.1	75 - 125	
POTASSIUM	25600		444	F	25000	100.7	75 - 125	
SELENIUM	192		0	U	200	96.2	75 - 125	
SODIUM	153000		142000		25000	101.9	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4823909
Report generated: 06/27/2016 15:01

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060823 **Worknum:** WG573973
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG573973-03 **File ID:** T3.062516.134452 **Dil:** 1 **Units:** ug/L
Sample ID: L16060822-02 **File ID:** T3.062516.134058 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	4880		0	U	5000	97.5	75 - 125	
BERYLLIUM	24.3		0	U	25	97.1	75 - 125	
CALCIUM	10600		6220		5000	101.0	75 - 125	
IRON	3850		2080		2000	99.0	75 - 125	
MAGNESIUM	8760		4400		5000	96.0	75 - 125	
POTASSIUM	25800		1500	F	25000	97.9	75 - 125	
SELENIUM	192		4.52	F	200	94.2	75 - 125	
SODIUM	100000		83200		25000	100.3	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4823909
Report generated: 06/27/2016 15:01

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16060823	Workgroup (AAB#):	WG573973
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG574093	Initial Calibration Date:	23-JUN-2016 16:45

	WG574093-01		WG574093-02		WG574093-03		WG574093-04		WG574093-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.00129	.1	0.00207	.2	0.00279	10	0.0950	20	0.188	.999993	
BERYLLIUM	0	0.000930	.0005	0.00138	.001	0.00179	.05	0.0552	.1	0.108	.99998	
CALCIUM	0	0.000280	.1	0.00433	.2	0.00735	10	0.497	20	0.993	.999968	
IRON	0	-0.000490	.04	0.000710	.08	0.000970	4	0.0998	8	0.200	.999657	
MAGNESIUM	0	-0.000700	NA	NA	.2	0.000790	10	0.0960	20	0.193	.999996	
POTASSIUM	0	-0.0106	.5	0.0183	1	0.0487	50	3.45	100	6.93	.999984	
SELENIUM	0	-0.000250	NA	NA	.008	-0.000140	.4	0.00687	.8	0.0139	.999993	
SODIUM	0	-0.0645	.5	0.0202	1	0.0962	50	9.63	100	19.4	.999985	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4823917
Report generated: 27-JUN-2016 15:01

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16060823	Workgroup (AAB#):	WG573973
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG574249	Initial Calibration Date:	25-JUN-2016 12:36

	WG574249-01		WG574249-02		WG574249-03		WG574249-04		WG574249-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000800	.1	0.00148	.2	0.00220	10	0.0828	20	0.162	.99995	
BERYLLIUM	0	0.000480	.0005	0.000970	.001	0.00139	.05	0.0482	.1	0.0948	.999766	
CALCIUM	0	0.00288	.1	0.00582	.2	0.00931	10	0.466	20	0.917	.99989	
IRON	0	-0.000710	.04	0.000330	.08	0.00148	4	0.0965	8	0.191	.99933	
MAGNESIUM	0	-0.000260	NA	NA	.2	0.00109	10	0.0796	20	0.159	.99999	
POTASSIUM	0	-0.00661	.5	0.0195	1	0.0419	50	3.07	100	6.10	.999988	
SELENIUM	0	-0.000510	NA	NA	.008	-0.000340	.4	0.00649	.8	0.0134	.999238	
SODIUM	0	-0.0478	.5	0.0267	1	0.108	50	9.20	100	18.4	.99999	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4823917
Report generated: 27-JUN-2016 15:01

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060823
Run Date: 06/23/2016
Sample ID: WG574093-07
Instrument ID: ICP-THERMO3
Run Time: 16:52
Method: 6010C
File ID: T3.062316.165229
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-THERI - 23-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	-.00449	F
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4823919
Report generated 06/27/2016 15:02

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060823
Instrument ID: ICP-THERMO3
File ID: T3.062516.124348
Workgroup (AAB#): WG573973
Matrix: WATER

Run Date: 06/25/2016
Run Time: 12:43
Analyst: JYH
Cal ID: ICP-THERI - 25-JUN-16

Sample ID: WG574249-07
Method: 6010C
Units: mg/L

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	.0087	*
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4823919
Report generated 06/27/2016 15:02

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/23/2016
Sample ID: WG574093-13
Instrument ID: ICP-THERMO3
Run Time: 17:15
Method: 6010C
File ID: T3.062316.171523
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4823922
Report generated 06/27/2016 15:03

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/23/2016
Sample ID: WG574093-19
Instrument ID: ICP-THERMO3
Run Time: 19:20
Method: 6010C
File ID: T3.062316.192008
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.423	F

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4823922
Report generated 06/27/2016 15:03

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/23/2016
Sample ID: WG574093-21
Instrument ID: ICP-THERMO3
Run Time: 20:06
Method: 6010C
File ID: T3.062316.200616
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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PDF File ID: 4823922
Report generated 06/27/2016 15:03

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/23/2016
Sample ID: WG574093-23
Instrument ID: ICP-THERMO3
Run Time: 20:52
Method: 6010C
File ID: T3.062316.205247
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	-0.00415	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4823922
Report generated 06/27/2016 15:03

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/23/2016
Sample ID: WG574093-25
Instrument ID: ICP-THERMO3
Run Time: 21:39
Method: 6010C
File ID: T3.062316.213949
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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PDF File ID: 4823922
Report generated 06/27/2016 15:03

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/23/2016
Sample ID: WG574093-27
Instrument ID: ICP-THERMO3
Run Time: 22:23
Method: 6010C
File ID: T3.062316.222310
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	-0.00859	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4823922
Report generated 06/27/2016 15:03

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/25/2016
Sample ID: WG574249-13
Instrument ID: ICP-THERMO3
Run Time: 13:06
Method: 6010C
File ID: T3.062516.130641
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00482	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4823922
Report generated 06/27/2016 15:03

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/25/2016
Sample ID: WG574249-15
Instrument ID: ICP-THERMO3
Run Time: 14:00
Method: 6010C
File ID: T3.062516.140001
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4823922
Report generated 06/27/2016 15:03

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/25/2016
Sample ID: WG574249-17
Instrument ID: ICP-THERMO3
Run Time: 14:46
Method: 6010C
File ID: T3.062516.144639
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00512	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4823922
Report generated 06/27/2016 15:03

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/25/2016
Sample ID: WG574249-44
Instrument ID: ICP-THERMO3
Run Time: 23:40
Method: 6010C
File ID: T3.062516.234025
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4823922
Report generated 06/27/2016 15:03

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/25/2016
Sample ID: WG574249-48
Instrument ID: ICP-THERMO3
Run Time: 23:55
Method: 6010C
File ID: T3.062516.235530
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4823922
Report generated 06/27/2016 15:03

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060823
Run Date: 06/23/2016
Sample ID: WG574093-06
Instrument ID: ICP-THERMO3
Run Time: 16:48
Method: 6010C
File ID: T3.062316.164851
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	10.0	100	90 - 110	
Beryllium		.05	0.0505	101	90 - 110	
Calcium		10	10.0	100	90 - 110	
Iron		4	4.01	100	90 - 110	
Magnesium		10	10.1	101	90 - 110	
Potassium		50	50.2	100	90 - 110	
Selenium		.4	0.399	99.8	90 - 110	
Sodium		50	50.1	100	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4823918
Report generated 06/27/2016 15:01

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060823 Run Date: 06/25/2016 Sample ID: WG574249-06
Instrument ID: ICP-THERMO3 Run Time: 12:40 Method: 6010C
File ID: T3.062516.124009 Analyst: JYH Units: mg/L
Workgroup (AAB#): WG573973 Cal ID: ICP-TH - 25-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	10.1	101	90 - 110	
Beryllium		.05	0.0504	101	90 - 110	
Calcium		10	10.1	101	90 - 110	
Iron		4	4.05	101	90 - 110	
Magnesium		10	10.1	101	90 - 110	
Potassium		50	50.3	101	90 - 110	
Selenium		.4	0.400	100	90 - 110	
Sodium		50	50.1	100	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4823918
Report generated 06/27/2016 15:01

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/23/2016
Sample ID: WG574093-12
Instrument ID: ICP-THERMO3
Run Time: 17:11
Method: 6010C
File ID: T3.062316.171145
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.1	mg/L	101	90 - 110		
Beryllium		0.0500	0.0502	mg/L	100	90 - 110		
Calcium		10.0	10.1	mg/L	101	90 - 110		
Iron		4.00	4.06	mg/L	102	90 - 110		
Magnesium		10.0	10.2	mg/L	102	90 - 110		
Potassium		50.0	50.0	mg/L	100	90 - 110		
Selenium		0.400	0.397	mg/L	99.3	90 - 110		
Sodium		50.0	49.9	mg/L	99.8	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4823921
Report generated 06/27/2016 15:03

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/23/2016
Sample ID: WG574093-18
Instrument ID: ICP-THERMO3
Run Time: 19:16
Method: 6010C
File ID: T3.062316.191630
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.45	mg/L	94.5	90 - 110		
Beryllium		0.0500	0.0476	mg/L	95.2	90 - 110		
Calcium		10.0	9.56	mg/L	95.6	90 - 110		
Iron		4.00	3.80	mg/L	95.0	90 - 110		
Magnesium		10.0	9.52	mg/L	95.2	90 - 110		
Potassium		50.0	47.8	mg/L	95.7	90 - 110		
Selenium		0.400	0.378	mg/L	94.5	90 - 110		
Sodium		50.0	48.1	mg/L	96.3	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4823921
Report generated 06/27/2016 15:03

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/23/2016
Sample ID: WG574093-20
Instrument ID: ICP-THERMO3
Run Time: 20:02
Method: 6010C
File ID: T3.062316.200238
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.57	mg/L	95.7	90 - 110		
Beryllium		0.0500	0.0483	mg/L	96.5	90 - 110		
Calcium		10.0	9.59	mg/L	95.9	90 - 110		
Iron		4.00	3.86	mg/L	96.5	90 - 110		
Magnesium		10.0	9.65	mg/L	96.5	90 - 110		
Potassium		50.0	48.3	mg/L	96.5	90 - 110		
Selenium		0.400	0.384	mg/L	95.9	90 - 110		
Sodium		50.0	47.9	mg/L	95.9	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4823921
Report generated 06/27/2016 15:03

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/23/2016
Sample ID: WG574093-22
Instrument ID: ICP-THERMO3
Run Time: 20:49
Method: 6010C
File ID: T3.062316.204910
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.91	mg/L	99.1	90 - 110		
Beryllium		0.0500	0.0500	mg/L	99.9	90 - 110		
Calcium		10.0	9.85	mg/L	98.5	90 - 110		
Iron		4.00	3.92	mg/L	98.0	90 - 110		
Magnesium		10.0	9.86	mg/L	98.6	90 - 110		
Potassium		50.0	49.3	mg/L	98.6	90 - 110		
Selenium		0.400	0.405	mg/L	101	90 - 110		
Sodium		50.0	49.2	mg/L	98.4	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Report generated 06/27/2016 15:03

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/23/2016
Sample ID: WG574093-24
Instrument ID: ICP-THERMO3
Run Time: 21:36
Method: 6010C
File ID: T3.062316.213611
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.40	mg/L	94.0	90 - 110		
Beryllium		0.0500	0.0475	mg/L	95.0	90 - 110		
Calcium		10.0	9.50	mg/L	95.0	90 - 110		
Iron		4.00	3.81	mg/L	95.4	90 - 110		
Magnesium		10.0	9.53	mg/L	95.3	90 - 110		
Potassium		50.0	47.4	mg/L	94.9	90 - 110		
Selenium		0.400	0.380	mg/L	95.0	90 - 110		
Sodium		50.0	47.3	mg/L	94.6	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/23/2016
Sample ID: WG574093-26
Instrument ID: ICP-THERMO3
Run Time: 22:19
Method: 6010C
File ID: T3.062316.221931
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.29	mg/L	92.9	90 - 110		
Beryllium		0.0500	0.0467	mg/L	93.4	90 - 110		
Calcium		10.0	9.32	mg/L	93.2	90 - 110		
Iron		4.00	3.74	mg/L	93.4	90 - 110		
Magnesium		10.0	9.28	mg/L	92.8	90 - 110		
Potassium		50.0	46.9	mg/L	93.8	90 - 110		
Selenium		0.400	0.374	mg/L	93.5	90 - 110		
Sodium		50.0	46.6	mg/L	93.1	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/25/2016
Sample ID: WG574249-12
Instrument ID: ICP-THERMO3
Run Time: 13:03
Method: 6010C
File ID: T3.062516.130304
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.0	mg/L	100	90 - 110		
Beryllium		0.0500	0.0498	mg/L	99.6	90 - 110		
Calcium		10.0	9.94	mg/L	99.4	90 - 110		
Iron		4.00	4.00	mg/L	99.9	90 - 110		
Magnesium		10.0	9.92	mg/L	99.2	90 - 110		
Potassium		50.0	49.2	mg/L	98.4	90 - 110		
Selenium		0.400	0.405	mg/L	101	90 - 110		
Sodium		50.0	49.3	mg/L	98.6	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4823921
Report generated 06/27/2016 15:03

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/25/2016
Sample ID: WG574249-14
Instrument ID: ICP-THERMO3
Run Time: 13:56
Method: 6010C
File ID: T3.062516.135622
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.88	mg/L	98.8	90 - 110		
Beryllium		0.0500	0.0488	mg/L	97.5	90 - 110		
Calcium		10.0	9.94	mg/L	99.4	90 - 110		
Iron		4.00	3.96	mg/L	98.9	90 - 110		
Magnesium		10.0	9.70	mg/L	97.0	90 - 110		
Potassium		50.0	49.1	mg/L	98.2	90 - 110		
Selenium		0.400	0.395	mg/L	98.8	90 - 110		
Sodium		50.0	49.4	mg/L	98.8	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4823921
Report generated 06/27/2016 15:03

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/25/2016
Sample ID: WG574249-16
Instrument ID: ICP-THERMO3
Run Time: 14:43
Method: 6010C
File ID: T3.062516.144313
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.5	mg/L	105	90 - 110		
Beryllium		0.0500	0.0519	mg/L	104	90 - 110		
Calcium		10.0	10.5	mg/L	105	90 - 110		
Iron		4.00	4.13	mg/L	103	90 - 110		
Magnesium		10.0	10.2	mg/L	102	90 - 110		
Potassium		50.0	50.7	mg/L	101	90 - 110		
Selenium		0.400	0.413	mg/L	103	90 - 110		
Sodium		50.0	51.4	mg/L	103	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/25/2016
Sample ID: WG574249-43
Instrument ID: ICP-THERMO3
Run Time: 23:36
Method: 6010C
File ID: T3.062516.233647
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.2	mg/L	102	90 - 110		
Beryllium		0.0500	0.0497	mg/L	99.5	90 - 110		
Calcium		10.0	10.4	mg/L	104	90 - 110		
Iron		4.00	4.06	mg/L	102	90 - 110		
Magnesium		10.0	9.72	mg/L	97.2	90 - 110		
Potassium		50.0	51.1	mg/L	102	90 - 110		
Selenium		0.400	0.405	mg/L	101	90 - 110		
Sodium		50.0	52.1	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4823921
Report generated 06/27/2016 15:03

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/25/2016
Sample ID: WG574249-47
Instrument ID: ICP-THERMO3
Run Time: 23:51
Method: 6010C
File ID: T3.062516.235152
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.3	mg/L	103	90 - 110		
Beryllium		0.0500	0.0502	mg/L	100	90 - 110		
Calcium		10.0	10.5	mg/L	105	90 - 110		
Iron		4.00	4.08	mg/L	102	90 - 110		
Magnesium		10.0	9.81	mg/L	98.1	90 - 110		
Potassium		50.0	51.1	mg/L	102	90 - 110		
Selenium		0.400	0.412	mg/L	103	90 - 110		
Sodium		50.0	51.8	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4823921
Report generated 06/27/2016 15:03

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060823
Run Date: 06/23/2016
Sample ID: WG574093-08
Instrument ID: ICP-THERMO3
Run Time: 16:56
Method: 6010C
File ID: T3.062316.165617
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.162	mg/L	101	70 - 130		
Beryllium		0.00160	0.00155	mg/L	96.9	70 - 130		
Calcium		0.400	0.451	mg/L	113	70 - 130		
Iron		0.0800	0.0758	mg/L	94.7	70 - 130		
Magnesium		0.400	0.430	mg/L	108	70 - 130		
Potassium		0.800	0.815	mg/L	102	70 - 130		
Sodium		0.400	0.447	mg/L	112	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4823923
Report generated 06/27/2016 15:04

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060823
Run Date: 06/23/2016
Sample ID: WG574093-28
Instrument ID: ICP-THERMO3
Run Time: 22:27
Method: 6010C
File ID: T3.062316.222708
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 23-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.137	mg/L	85.5	70 - 130		
Beryllium		0.00160	0.00136	mg/L	85.0	70 - 130		
Calcium		0.400	0.387	mg/L	96.8	70 - 130		
Iron		0.0800	0.0604	mg/L	75.5	70 - 130		
Magnesium		0.400	0.355	mg/L	88.8	70 - 130		
Potassium		0.800	0.745	mg/L	93.1	70 - 130		
Sodium		0.400	0.436	mg/L	109	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4823923
Report generated 06/27/2016 15:04

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060823
Run Date: 06/25/2016
Sample ID: WG574249-08
Instrument ID: ICP-THERMO3
Run Time: 12:47
Method: 6010C
File ID: T3.062516.124745
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.165	mg/L	103	70 - 130		
Beryllium		0.00160	0.00166	mg/L	104	70 - 130		
Calcium		0.400	0.414	mg/L	103	70 - 130		
Iron		0.0800	0.0939	mg/L	117	70 - 130		
Magnesium		0.400	0.441	mg/L	110	70 - 130		
Potassium		0.800	0.887	mg/L	111	70 - 130		
Selenium		0.0160	0.0204	mg/L	127	70 - 130		
Sodium		0.400	0.442	mg/L	110	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4823923
Report generated 06/27/2016 15:04

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060823
Run Date: 06/25/2016
Sample ID: WG574249-26
Instrument ID: ICP-THERMO3
Run Time: 17:25
Method: 6010C
File ID: T3.062516.172540
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG573973
Cal ID: ICP-TH - 25-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.163	mg/L	102	70 - 130		
Beryllium		0.00160	0.00172	mg/L	108	70 - 130		
Calcium		0.400	0.375	mg/L	93.8	70 - 130		
Iron		0.0800	0.0950	mg/L	119	70 - 130		
Potassium		0.800	0.714	mg/L	89.2	70 - 130		
Selenium		0.0160	0.0209	mg/L	131	70 - 130		*
Sodium		0.400	0.408	mg/L	102	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4823923
Report generated 06/27/2016 15:04

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060823
Instrument ID: ICP-THERMO3
Sol. A : WG574093-10 **File ID:** T3.062316.170408
Sol. AB : WG574093-11 **File ID:** T3.062316.170801

Workgroup (AAB#): WG573973
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	266	106	250	265	106	
Beryllium	NS	0	NS	0.250	0.248	99.2	
Calcium	250	253	101	250	252	101	
Iron	100	99.7	99.7	100	97.4	97.4	
Magnesium	250	253	101	250	248	99.2	
Potassium	NS	0.163	NS	5.00	5.24	105	
Selenium	NS	-0.00219	NS	0.250	0.242	96.8	
Sodium	NS	0.0453	NS	5.00	5.37	107	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4823920
Report generated 06/27/2016 15:02

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060823
Instrument ID: ICP-THERMO3
Sol. A : WG574249-10 **File ID:** T3.062516.125529
Sol. AB : WG574249-11 **File ID:** T3.062516.125921

Workgroup (AAB#): WG573973
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	266	106	250	268	107	
Beryllium	NS	0.000110	NS	0.250	0.245	98.0	
Calcium	250	244	97.6	250	247	98.8	
Iron	100	96.8	96.8	100	96.5	96.5	
Magnesium	250	249	99.6	250	249	99.6	
Potassium	NS	0.0533	NS	5.00	5.19	104	
Selenium	NS	-0.00224	NS	0.250	0.249	99.6	
Sodium	NS	0.0404	NS	5.00	5.32	106	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4823920
Report generated 06/27/2016 15:02

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060823
Instrument ID: ICP-THERMO3
Sol. A : WG574249-45 **File ID:** T3.062516.234420
Sol. AB : WG574249-46 **File ID:** T3.062516.234809

Workgroup (AAB#): WG573973
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	263	105	250	271	108	
Beryllium	NS	0.000140	NS	0.250	0.244	97.6	
Calcium	250	248	99.2	250	254	102	
Iron	100	95.6	95.6	100	96.1	96.1	
Magnesium	250	236	94.4	250	239	95.6	
Potassium	NS	-0.0460	NS	5.00	5.21	104	
Selenium	NS	-0.00782	NS	0.250	0.238	95.2	
Sodium	NS	0.0818	NS	5.00	5.50	110	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4823920
Report generated 06/27/2016 15:02

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060823 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	AG	AL	AS	B	BA
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000410	0	0	0
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0.0115	0	-0.0000800
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0.000260	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	-0.000289	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	-0.0000490	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.0000120	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0.0000300	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4823916
Report generated: 06/27/2016 10:56

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060823 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	BE	CA	CD	CO	CR
ALUMINUM	308.20	0	0	0	-0.000820	0
ANTIMONY	206.80	0	0	0	0	0.0200
ARSENIC	189.00	0	0	0	0	-0.00190
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0.00343	0
CADMIUM	228.80	0	0	0	-0.00390	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	-0.000200
COPPER	224.70	0	0	0	0.0000770	-0.00100
IRON	261.10	0	0	0	0	-0.00100
LEAD	220.30	0	0	0	-0.0000130	-0.000132
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.0000500
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	-0.000860	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0.00000500	0	0	0
THALLIUM	190.80	0	0	0	0.00240	0.000276
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	-0.00480
ZINC	206.20	0	0	0	0	-0.00180
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4823916
Report generated: 06/27/2016 10:56

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060823 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	CU	FE	K	LI	MG
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000560	0	0	0
ARSENIC	189.00	0	-0.0000500	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0.000300	0	0	0
CADMIUM	228.80	0	-0.0000190	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000500	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0.00160	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0.000609	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.00000300
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0.0000420	0	0	0
PHOSPHORUS	214.90	-0.323	0.000900	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000270	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000400	0	0	0
VANADIUM	292.40	0	0.00000700	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	-0.0000300	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4823916
Report generated: 06/27/2016 10:56

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060823 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	MN	MO	NA	NI	P
ALUMINUM	308.20	0	0.0163	0	0	0
ANTIMONY	206.80	0	-0.00310	0	-0.00350	0
ARSENIC	189.00	0	0.00120	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	-0.00190	0	0	0
CADMIUM	228.80	0	0.0000320	0	-0.000770	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0.000360	0	0	0	0
COBALT	228.60	0	-0.00200	0	0.000100	0
COPPER	224.70	0	0.00160	0	-0.0123	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	-0.00210	0	0.000110	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	-0.00290	-0.0230	0	0	0
MANGANESE	257.60	0	0.0000300	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0.00710	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0.000600	0.000580	0	0	0
SILICON	212.40	0	0.0187	0	0	0
SILVER	328.00	0	-0.0000430	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0.00100	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000153	0	0	0
VANADIUM	292.40	-0.000200	-0.00830	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4823916
Report generated: 06/27/2016 10:56

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060823 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	PB	SB	SE	SI	SN
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0	0	0	-0.0220
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0.00440	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060823 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	SR	TI	TL	V	ZN
ALUMINUM	308.20	0	0	0	0.0950	0
ANTIMONY	206.80	0	0.00110	0	-0.00360	0
ARSENIC	189.00	0	0	0	0.000107	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	-0.00000700	0	0.000990	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0.000102	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000550	0	0	0
COBALT	228.60	0	0.00210	0	0.0000200	0
COPPER	224.70	0	0.000269	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	-0.000126	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	-0.00290	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	-0.000110	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	-0.00100	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000720	0	-0.000260	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.000800	0	-0.00490	0
TIN	189.90	0	-0.00190	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0.000820	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4823916
Report generated: 06/27/2016 10:56

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16060823 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	ZR
ALUMINUM	308.20	0
ANTIMONY	206.80	0
ARSENIC	189.00	0
BARIUM	455.40	0
BERYLLIUM	313.10	0
BORON	249.60	0
CADMIUM	228.80	0
CALCIUM	422.60	0
CHROMIUM	267.70	0
COBALT	228.60	0
COPPER	224.70	0
IRON	261.10	0
LEAD	220.30	0
LITHIUM	670.70	0
MAGNESIUM	279.00	0
MANGANESE	257.60	0
MOLYBDENUM	202.00	0
NICKEL	231.60	0
PHOSPHORUS	214.90	0
POTASSIUM	766.40	0
SELENIUM	196.00	0
SILICON	212.40	0
SILVER	328.00	0
SODIUM	589.50	0
STRONTIUM	407.70	0
THALLIUM	190.80	0
TIN	189.90	0
TITANIUM	337.20	0
VANADIUM	292.40	0
ZINC	206.20	0
ZIRCONIUM	339.10	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4823916
Report generated: 06/27/2016 10:56

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16060823 **Date:** 04/29/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	900.0
Antimony	20.00	45.0
Arsenic	10.00	45.0
Barium	10.00	45.0
Beryllium	10.00	1.8
Boron	20.00	45.0
Cadmium	20.00	4.5
Calcium	5.00	270.0
Chromium	20.00	36.0
Cobalt	20.00	45.0
Copper	20.00	180.0
Iron	5.00	720.0
Lead	20.00	225.0
Lithium	5.00	36.0
Magnesium	5.00	900.0
Manganese	10.00	36.0
Molybdenum	20.00	27.0
Nickel	20.00	90.0
Phosphorus	20.00	180.0
Potassium	5.00	450.0
Selenium	20.00	90.0
Silicon	20.00	36.0
Silver	10.00	9.0
Sodium	5.00	270.0
Strontium	5.00	9.0
Thallium	20.00	18.0
Tin	20.00	45.0
Titanium	5.00	36.0
Vanadium	20.00	27.0
Zinc	20.00	45.0
Zirconium	10.00	45.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4823915
Report generated: 06/27/2016 10:56

2.3.1.3 Raw Data

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000292	0.057216	0.000000	1.000000
Al 308.215 {109}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.001288	0.009253	0.000000	1.000000
As 189.042 {478}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000077	0.027152	0.000000	1.000000
B 249.678 {135}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.000040	0.025100	0.000000	1.000000
Ba 455.403 { 74}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.031526	2.349165	0.000000	1.000000
Be 313.107 {108}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.000934	1.055405	0.000000	1.000000
Ca 422.673 { 80}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.000283	0.049609	0.000000	1.000000
Cd 228.802 {447}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000142	0.651471	0.000000	1.000000
Co 228.616 {447}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000247	0.409702	0.000000	1.000000
Cr 267.716 {126}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.000367	0.066578	0.000000	1.000000
Cu 224.700 {450}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000343	0.142601	0.000000	1.000000
Fe 261.187 {129}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000490	0.025122	0.000000	1.000000
K 766.490 { 44}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.010609	0.069349	0.000000	1.000000
Li 670.784 { 50}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.011827	1.674850	0.000000	1.000000
Mg 279.079 {121}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000702	0.009699	0.000000	1.000000
Mn 257.610 {131}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000277	0.317266	0.000000	1.000000
Mo 202.030 {467}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.000054	0.203043	0.000000	1.000000
Na 589.592 { 57}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.064533	0.194326	0.000000	1.000000
Ni 231.604 {446}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000942	0.155561	0.000000	1.000000
P 214.914 {457}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000263	0.015029	0.000000	1.000000
Pb 220.353 {453}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000678	0.070221	0.000000	1.000000
Sb 206.833 {463}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.000010	0.034653	0.000000	1.000000
Se 196.090 {472}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000253	0.017694	0.000000	1.000000
Si 212.412 {459}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.002512	0.043862	0.000000	1.000000
Sn 189.989 {477}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.000061	0.078522	0.000000	1.000000
Sr 407.771 { 83}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.002450	3.941080	0.000000	1.000000
Ti 337.280 {100}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.003027	0.134433	0.000000	1.000000
Tl 190.856 {477}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.000414	0.032326	0.000000	1.000000
V 292.402 {115}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.000001	0.079042	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	0.000166	0.468267	0.000000	1.000000
Zr 339.198 { 99}	6/23/2016 16:48:46	6/23/2016 16:48:46	Linear	1/Conc	-0.019987	0.006947	0.000000	1.000000

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999400	0.000005	0.002814	0.009379	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999993	0.000002	0.011897	0.039658	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999595	0.000003	0.004016	0.013387	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999985	0.000001	0.003782	0.012607	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999987	0.000075	0.001344	0.004481	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999980	0.000002	0.000124	0.000413	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999968	0.000025	0.053022	0.176739	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999778	0.000005	0.000338	0.001128	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999932	0.000006	0.000516	0.001721	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999922	0.000003	0.001537	0.005123	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999931	0.000005	0.001747	0.005824	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999657	0.000017	0.028560	0.095199	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999984	0.000125	0.120772	0.402574	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999884	0.000250	0.004948	0.016494	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999996	0.000003	0.098587	0.328625	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999409	0.000035	0.003174	0.010580	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999985	0.000007	0.000553	0.001844	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999985	0.000335	0.039834	0.132780	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999721	0.000012	0.001443	0.004811	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999997	0.000002	0.009293	0.030977	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999947	0.000002	0.004623	0.015411	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999906	0.000004	0.005569	0.018563	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999993	0.000000	0.008923	0.029743	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999495	0.000044	0.003006	0.010020	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999929	0.000006	0.001139	0.003797	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999996	0.000074	0.000554	0.001846	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999177	0.000035	0.008833	0.029443	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999963	0.000001	0.003985	0.013284	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999980	0.000003	0.001255	0.004184	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999976	0.000021	0.000258	0.000861	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.347379	0.000119	0.361260	1.204198	OK.	1.000000	0.000000	1	0

Sample Name: S0 Acquired: 6/23/2016 16:29:39 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00029**	**.00129**	**-.00008**	**.00004**	**.03153**	**.00093**	**.00028**
Stddev	.00015	.00002	.00014	.00006	.00240	.00003	.00198
%RSD	52.623	1.3157	185.14	142.12	7.6014	3.6422	698.55
#1	-.00011	.00130	.00005	.00006	.03428	.00091	-.00196
#2	-.00038	.00127	-.00005	.00008	.03039	.00092	.00105
#3	-.00038	.00130	-.00023	-.00002	.02991	.00097	.00176

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00014**	**-.00025**	**.00037**	**-.00034**	**-.00049**	**-.01061**	**-.01182**
Stddev	.00021	.00007	.00007	.00028	.00069	.00571	.01080
%RSD	147.13	28.247	17.769	80.896	139.88	53.794	91.363
#1	-.00024	-.00033	.00043	-.00059	.00004	-.01711	-.01999
#2	.00010	-.00020	.00030	-.00004	-.00127	-.00832	.00042
#3	-.00029	-.00021	.00036	-.00039	-.00024	-.00641	-.01590

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00070**	**-.00028**	**.00005**	**-.06454**	**-.00094**	**-.00026**	**-.00068**
Stddev	.00069	.00044	.00010	.00127	.00021	.00003	.00023
%RSD	98.775	157.73	191.66	1.9745	22.162	11.455	33.344
#1	-.00130	.00016	-.00002	-.06443	-.00114	-.00027	-.00091
#2	-.00086	-.00028	.00017	-.06587	-.00072	-.00029	-.00046
#3	.00006	-.00072	.00001	-.06333	-.00096	-.00023	-.00067

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00001**	**-.00025**	**.00251**	**.00006**	**.00245**	**-.00303**	**-.00041**
Stddev	.00016	.00016	.00016	.00001	.00241	.00117	.00012
%RSD	1654.9	64.234	6.3986	13.348	98.630	38.681	28.019
#1	-.00002	-.00035	.00248	.00005	.00157	-.00260	-.00029
#2	-.00014	-.00034	.00237	.00007	.00059	-.00213	-.00042
#3	.00019	-.00007	.00269	.00006	.00518	-.00435	-.00053

Sample Name: S0 Acquired: 6/23/2016 16:29:39 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00000	.00017	-.01999
Stddev	.00010	.00005	.00203
%RSD	13188.	28.598	10.137
#1	.00004	.00021	-.01773
#2	-.00011	.00012	-.02164
#3	.00008	.00017	-.02061

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6699.4	41370.	2127.3
Stddev	40.4	297.	43.0
%RSD	.60365	.71762	2.0194
#1	6718.4	41699.	2078.6
#2	6726.8	41290.	2159.8
#3	6653.0	41122.	2143.5

Sample Name: S1 Acquired: 6/23/2016 16:33:38 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00002**	**.00207**	**.04860**	**.00138**	**.00433**	**.00022**	**.00042**
Stddev	.00014	.00009	.00373	.00005	.00188	.00012	.00011
%RSD	835.38	4.5773	7.6793	3.9714	43.525	57.028	26.394
#1	-.00012	.00203	.04518	.00133	.00557	.00008	.00054
#2	-.00007	.00218	.05258	.00138	.00216	.00025	.00040
#3	.00015	.00200	.04803	.00144	.00525	.00032	.00032

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00058**	**.00026**	**.00071**	**.01834**	**.00157**	**.00165**	**.02022**
Stddev	.00008	.00010	.00029	.00177	.00050	.00017	.00883
%RSD	13.891	39.383	40.273	9.6501	31.586	10.184	43.651
#1	.00049	.00020	.00042	.02032	.00204	.00159	.01736
#2	.00061	.00038	.00072	.01689	.00105	.00184	.01318
#3	.00064	.00021	.00099	.01782	.00163	.00152	.03013

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00007**	**.00087**	**-.00042**	**.00040**	**.00339**	**.00056**	**.03432**
Stddev	.00012	.00001	.00016	.00029	.00012	.00009	.00173
%RSD	168.70	1.1803	37.487	70.628	3.5276	16.358	5.0547
#1	-.00003	.00088	-.00031	.00019	.00333	.00066	.03349
#2	-.00020	.00086	-.00060	.00073	.00330	.00055	.03631
#3	.00002	.00087	-.00035	.00029	.00352	.00048	.03315

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00279**	**.00063**	**.00386**	**-.01703**
Stddev	.00101	.00006	.00004	.00240
%RSD	36.246	8.7705	.91033	14.105
#1	-.00167	.00068	.00390	-.01827
#2	-.00364	.00064	.00384	-.01856
#3	-.00305	.00057	.00384	-.01426

Sample Name: S1 Acquired: 6/23/2016 16:33:38 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6745.7**	**41805.**	**2129.8**
Stddev	22.3	250.	32.4
%RSD	.33088	.59789	1.5201
#1	6735.5	41617.	2128.0
#2	6730.4	42089.	2098.4
#3	6771.4	41710.	2163.1

Sample Name: S2 Acquired: 6/23/2016 16:37:37 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00004**	**.00279**	**.00016**	**.00026**	**.06973**	**.00179**	**.00735**
Stddev	.00008	.00007	.00007	.00002	.00127	.00005	.00035
%RSD	185.58	2.6503	44.732	8.8024	1.8178	2.7546	4.6908
#1	-.00013	.00287	.00008	.00023	.06878	.00184	.00697
#2	-.00000	.00273	.00022	.00027	.07117	.00174	.00747
#3	.00001	.00276	.00018	.00027	.06924	.00179	.00763

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00048**	**.00123**	**.00088**	**.00073**	**.00097**	**.04869**	**.00987**
Stddev	.00017	.00004	.00007	.00007	.00080	.01177	.00041
%RSD	36.245	2.8717	7.5775	10.086	82.497	24.183	4.1595
#1	.00028	.00126	.00081	.00081	.00163	.05564	.00947
#2	.00060	.00124	.00089	.00066	.00008	.03509	.01029
#3	.00056	.00119	.00095	.00072	.00119	.05534	.00985

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00079**	**.00313**	**.00327**	**.09617**	**.00018**	**.00208**	**-.00005**
Stddev	.00042	.00021	.00008	.00423	.00014	.00007	.00012
%RSD	53.033	6.7962	2.3656	4.4010	80.620	3.1401	235.98
#1	.00120	.00337	.00326	.09640	.00034	.00201	.00009
#2	.00080	.00296	.00319	.09182	.00013	.00215	-.00010
#3	.00036	.00306	.00335	.10028	.00006	.00208	-.00013

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00074**	**-.00014**	**.00523**	**.00123**	**.06780**	**-.00103**	**-.00017**
Stddev	.00018	.00007	.00014	.00004	.00229	.00100	.00009
%RSD	24.515	47.215	2.6523	3.3445	3.3781	97.203	54.232
#1	.00091	-.00021	.00538	.00120	.06958	-.00212	-.00021
#2	.00075	-.00013	.00511	.00121	.06861	-.00081	-.00007
#3	.00055	-.00008	.00519	.00127	.06522	-.00015	-.00025

Sample Name: S2 Acquired: 6/23/2016 16:37:37 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**.00124**	**.00773**	**-.01963**
Stddev	.00006	.00011	.00107
%RSD	4.9778	1.3726	5.4480
#1	.00125	.00769	-.01940
#2	.00117	.00765	-.01869
#3	.00129	.00785	-.02079
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6707.0**	**42016.**	**2132.5**
Stddev	31.7	150.	7.6
%RSD	.47214	.35787	.35792
#1	6673.0	41936.	2136.2
#2	6712.3	41922.	2137.6
#3	6735.6	42189.	2123.7

Sample Name: S3 Acquired: 6/23/2016 16:41:36 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.02256**	**.09496**	**.01071**	**.01256**	**2.3852**	**.05519**	**.49691**
Stddev	.00004	.00014	.00002	.00013	.0192	.00031	.00535
%RSD	.17307	.15212	.16075	1.0212	.80533	.56599	1.0768
#1	.02258	.09479	.01070	.01253	2.3633	.05545	.49075
#2	.02251	.09505	.01073	.01245	2.3992	.05484	.50038
#3	.02258	.09504	.01070	.01270	2.3931	.05527	.49960

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.03562**	**.08233**	**.03402**	**.07207**	**.09984**	**3.4482**	**1.6795**
Stddev	.00009	.00032	.00019	.00009	.00122	.0308	.0141
%RSD	.25272	.38620	.54823	.12427	1.2238	.89404	.83921
#1	.03572	.08197	.03404	.07201	.09875	3.4126	1.6633
#2	.03558	.08257	.03383	.07204	.09961	3.4653	1.6862
#3	.03556	.08245	.03420	.07218	.10116	3.4666	1.6890

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.09604**	**.15811**	**.20462**	**9.6297**	**.07778**	**.14758**	**.03484**
Stddev	.00184	.00180	.00109	.0816	.00017	.00014	.00035
%RSD	1.9192	1.1373	.53383	.84731	.21367	.09481	1.0023
#1	.09394	.15608	.20545	9.5375	.07784	.14750	.03445
#2	.09678	.15875	.20503	9.6927	.07791	.14775	.03512
#3	.09739	.15949	.20338	9.6588	.07759	.14751	.03495

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.04088**	**.00687**	**.22552**	**.07884**	**3.9495**	**.13075**	**.01457**
Stddev	.00018	.00008	.00024	.00017	.0426	.00233	.00002
%RSD	.43951	1.1502	.10703	.21290	1.0795	1.7820	.16844
#1	.04086	.00680	.22528	.07865	3.9016	.12806	.01460
#2	.04106	.00686	.22576	.07898	3.9835	.13221	.01455
#3	.04070	.00696	.22552	.07889	3.9633	.13197	.01456

Sample Name: S3 Acquired: 6/23/2016 16:41:36 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**.07955**	**.47276**	**-.01302**
Stddev	.00051	.00054	.00096
%RSD	.63790	.11390	7.4014
#1	.07969	.47336	-.01283
#2	.07898	.47259	-.01406
#3	.07996	.47232	-.01217
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6638.5**	**41219.**	**2121.0**
Stddev	46.3	234.	20.8
%RSD	.69679	.56802	.98295
#1	6589.4	41153.	2142.8
#2	6644.8	41479.	2101.2
#3	6681.3	41025.	2119.2

Sample Name: S4 Acquired: 6/23/2016 16:45:14 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.04536**	**.18763**	**.02145**	**.02504**	**4.7264**	**.10809**	**.99272**
Stddev	.00018	.00035	.00006	.00014	.0350	.00038	.00548
%RSD	.40723	.18482	.29786	.54138	.74034	.35140	.55236
#1	.04517	.18737	.02151	.02493	4.6879	.10794	.98645
#2	.04537	.18748	.02147	.02519	4.7563	.10781	.99661
#3	.04554	.18802	.02139	.02499	4.7351	.10852	.99512

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.07067**	**.16242**	**.06673**	**.14133**	**.20036**	**6.9280**	**3.3265**
Stddev	.00015	.00038	.00017	.00047	.00154	.0408	.0160
%RSD	.20929	.23179	.25203	.33195	.76659	.58859	.48243
#1	.07077	.16232	.06654	.14092	.19934	6.8881	3.3089
#2	.07075	.16283	.06687	.14184	.20213	6.9696	3.3403
#3	.07050	.16210	.06677	.14122	.19962	6.9263	3.3303

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.19280**	**.31594**	**.40461**	**19.378**	**.15355**	**.29587**	**.06972**
Stddev	.00166	.00297	.00142	.119	.00024	.00033	.00055
%RSD	.85870	.94051	.34987	.61191	.15345	.11299	.78837
#1	.19091	.31269	.40561	19.253	.15352	.29579	.06923
#2	.19352	.31659	.40524	19.489	.15380	.29623	.07032
#3	.19397	.31853	.40299	19.392	.15333	.29558	.06962

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.08150**	**.01388**	**.44160**	**.15662**	**7.8766**	**.26694**	**.02902**
Stddev	.00043	.00013	.00090	.00039	.0522	.00276	.00015
%RSD	.53112	.92390	.20356	.24938	.66265	1.0329	.50476
#1	.08128	.01397	.44144	.15669	7.8213	.26376	.02890
#2	.08200	.01394	.44257	.15697	7.9249	.26844	.02918
#3	.08123	.01374	.44079	.15620	7.8835	.26861	.02897

Sample Name: S4 Acquired: 6/23/2016 16:45:14 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**.15703**	**.93159**	**-.00927**
Stddev	.00036	.00158	.00064
%RSD	.22618	.16981	6.9563
#1	.15712	.93104	-.00858
#2	.15664	.93337	-.00938
#3	.15734	.93035	-.00985

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6531.9**	**40084.**	**2097.6**
Stddev	16.2	231.	6.3
%RSD	.24773	.57740	.30149
#1	6549.4	40239.	2103.9
#2	6517.6	40195.	2091.2
#3	6528.6	39818.	2097.7

Sample Name: ICV Acquired: 6/23/2016 16:48:51 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39953	10.024	.40138	.50599	1.0070	.05053	10.036
Stddev	.00339	.040	.00410	.00222	.0059	.00022	.101
%RSD	.84874	.40015	1.0204	.43801	.58442	.43218	1.0067
#1	.40015	10.065	.39887	.50853	1.0016	.05072	9.9340
#2	.39587	9.9844	.39916	.50451	1.0063	.05029	10.037
#3	.40256	10.022	.40610	.50491	1.0133	.05057	10.136
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05000	.20142	.50405	.50578	4.0103	50.167	1.0145
Stddev	.00018	.00074	.00219	.00236	.0323	.251	.0072
%RSD	.36119	.36866	.43440	.46709	.80429	.50069	.71348
#1	.04994	.20142	.50464	.50308	4.0274	49.888	1.0064
#2	.05021	.20217	.50162	.50746	3.9731	50.374	1.0203
#3	.04986	.20068	.50588	.50680	4.0305	50.241	1.0167
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.075	.50106	1.0146	50.102	.50246	9.9799	.50553
Stddev	.156	.00520	.0033	.232	.00089	.0190	.00257
%RSD	1.5448	1.0383	.32210	.46381	.17782	.18993	.50874
#1	9.9213	.49528	1.0136	49.851	.50217	9.9887	.50315
#2	10.071	.50252	1.0182	50.148	.50346	9.9928	.50825
#3	10.233	.50537	1.0119	50.309	.50174	9.9581	.50518
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: ICV Acquired: 6/23/2016 16:48:51 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2034**	**.39904**	**5.0662**	**1.0017**	**1.0068**	**.99368**	**.50263**
Stddev	.0053	.01223	.0118	.0027	.0059	.01682	.00169
%RSD	.44447	3.0652	.23394	.26994	.59001	1.6930	.33671
#1	1.2003	.41278	5.0644	1.0010	1.0005	.98203	.50067
#2	1.2095	.38936	5.0789	1.0047	1.0076	.98605	.50350
#3	1.2003	.39496	5.0554	.99945	1.0123	1.0130	.50370
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0106**	**1.0101**	F **.08377**
Stddev	.0013	.0017	.57243
%RSD	.13014	.17012	683.32
#1	1.0108	1.0096	.41336
#2	1.0092	1.0121	.41517
#3	1.0118	1.0088	-.57721
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-5.0000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6582.9**	**40798.**	**2104.4**
Stddev	57.1	288.	9.3
%RSD	.86719	.70695	.43973
#1	6642.0	40517.	2109.9
#2	6528.1	41093.	2109.6
#3	6578.7	40785.	2093.7

Sample Name: ICB Acquired: 6/23/2016 16:52:29 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00205	.00812	.00204	.00053	.00042	.00004	.08043	.00000
Stddev	.00123	.00380	.00409	.00171	.00048	.00007	.04843	.00019
%RSD	60.002	46.772	200.40	325.30	114.02	191.36	60.215	12542.
#1	.00117	.01182	.00568	-.00071	.00071	-.00005	.13570	.00020
#2	.00153	.00832	-.00239	.00248	.00068	.00009	.04544	-.00018
#3	.00346	.00423	.00283	-.00019	-.00013	.00007	.06015	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	-.00032	.00256	.01917	.26687	-.00090	-.01824	.00334
Stddev	.00068	.00118	.00062	.01550	.00597	.00344	.19098	.00120
%RSD	152.08	365.07	24.256	80.873	2.2373	382.34	1047.0	35.896
#1	.00109	.00091	.00301	.01950	.26758	.00158	-.16456	.00207
#2	-.00027	-.00043	.00283	.00350	.26057	.00055	-.08796	.00445
#3	.00052	-.00145	.00185	.03450	.27245	-.00483	.19780	.00349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00543	.02836	-.00115	.00608	-.00046	.00498	-.00449	-.00458
Stddev	.00101	.00804	.00072	.01165	.00093	.00238	.00576	.00313
%RSD	18.519	28.338	62.364	191.75	202.82	47.775	128.25	68.440
#1	.00443	.02219	-.00190	-.00553	.00045	.00510	-.01053	-.00111
#2	.00542	.03745	-.00110	.00598	-.00041	.00730	-.00387	-.00541
#3	.00644	.02544	-.00046	.01778	-.00141	.00254	.00094	-.00721
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: ICB Acquired: 6/23/2016 16:52:29 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.00059	-.00321	-.00285	-.00021	.00049	-.01967
Stddev	.00049	.00058	.00271	.00281	.00126	.00023	.30758
%RSD	1987.7	98.883	84.402	98.601	601.40	48.028	1563.4
#1	.00048	.00125	-.00307	-.00514	.00122	.00050	-.07765
#2	-.00050	.00018	-.00600	.00028	-.00069	.00072	.31277
#3	.00010	.00032	-.00058	-.00369	-.00116	.00025	-.29414
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6667.4	41423.	2115.8
Stddev	41.6	269.	6.3
%RSD	.62409	.64899	.29744
#1	6626.3	41592.	2109.7
#2	6666.3	41563.	2115.3
#3	6709.5	41113.	2122.3

Sample Name: LLICV Acquired: 6/23/2016 16:56:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00827	.16210	.00867	.07876	.00792	.00155	.45064	.00085
Stddev	.00069	.00016	.00152	.00325	.00022	.00012	.03526	.00030
%RSD	8.3443	.10048	17.555	4.1248	2.8338	7.9064	7.8234	35.681
#1	.00876	.16217	.00804	.07520	.00817	.00167	.42049	.00097
#2	.00858	.16223	.00757	.07953	.00782	.00155	.48940	.00050
#3	.00748	.16192	.01041	.08156	.00775	.00143	.44202	.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00411	.00286	.00483	.07579	.81519	.07605	.43031	.01159
Stddev	.00051	.00122	.00183	.02010	.08172	.00054	.07836	.00240
%RSD	12.383	42.665	37.852	26.521	10.025	.70809	18.211	20.716
#1	.00446	.00209	.00311	.08314	.72240	.07546	.51973	.01210
#2	.00353	.00427	.00463	.05305	.87645	.07652	.37359	.01370
#3	.00433	.00223	.00676	.09119	.84672	.07616	.39761	.00898
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00886	.44734	.01615	.77513	.00676	.08645	.01136	.83408
Stddev	.00038	.03636	.00114	.01025	.00094	.00237	.00475	.00045
%RSD	4.3027	8.1283	7.0552	1.3217	13.970	2.7462	41.818	.05401
#1	.00863	.41320	.01707	.76914	.00779	.08743	.00922	.83393
#2	.00866	.44325	.01488	.78696	.00652	.08374	.01680	.83373
#3	.00930	.48558	.01652	.76928	.00595	.08818	.00805	.83459
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: LLICV Acquired: 6/23/2016 16:56:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39937**	**.04063**	**.02339**	**.14972**	**.00726**	**.01640**	**20.158**
Stddev	.00149	.00022	.00849	.00368	.00013	.00008	.057
%RSD	.37294	.54009	36.301	2.4588	1.7938	.47839	.28459
#1	.40039	.04052	.01395	.15061	.00733	.01635	20.157
#2	.40005	.04089	.02583	.15288	.00711	.01649	20.101
#3	.39766	.04050	.03040	.14568	.00735	.01636	20.216
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6699.9**	**41507.**	**2122.8**
Stddev	10.7	321.	33.0
%RSD	.15908	.77425	1.5534
#1	6695.4	41349.	2085.0
#2	6692.2	41295.	2145.6
#3	6712.1	41877.	2137.8

Sample Name: LLICV Acquired: 6/23/2016 17:00:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01949	.39961	.01957	.19216	.01939	.00378	1.0069
Stddev	.00131	.00492	.00179	.00362	.00127	.00002	.0595
%RSD	6.7128	1.2306	9.1680	1.8843	6.5460	.43946	5.9133
#1	.02095	.40406	.02038	.19600	.02017	.00376	.96045
#2	.01841	.40043	.01752	.18881	.01792	.00378	.98624
#3	.01913	.39433	.02082	.19166	.02007	.00379	1.0740
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00195	.01011	.00920	.01111	.21788	2.0711	.19482
Stddev	.00022	.00045	.00124	.00158	.02611	.1150	.00581
%RSD	11.156	4.4276	13.477	14.191	11.985	5.5533	2.9817
#1	.00196	.01037	.01057	.01272	.21124	2.1436	.18839
#2	.00173	.01037	.00885	.00957	.19573	2.1311	.19636
#3	.00216	.00960	.00817	.01104	.24667	1.9385	.19970
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0302	.01992	.01953	.99004	.04110	1.9033	.01787
Stddev	.1225	.00176	.00044	.02149	.00123	.0089	.00330
%RSD	11.893	8.8312	2.2495	2.1708	2.9826	.46494	18.472
#1	.89819	.01975	.02003	.96810	.03968	1.8971	.02156
#2	1.0522	.01825	.01927	1.0110	.04177	1.9135	.01518
#3	1.1403	.02176	.01928	.99098	.04184	1.8995	.01689
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: LLICV Acquired: 6/23/2016 17:00:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20779	.03211	2.0518	.97692	.09846	.05795	.36369
Stddev	.00270	.00309	.0013	.00240	.00149	.00439	.00103
%RSD	1.2971	9.6240	.06110	.24594	1.5132	7.5738	.28252
#1	.21089	.03387	2.0505	.97555	.09739	.05293	.36373
#2	.20647	.02854	2.0530	.97969	.09783	.06107	.36264
#3	.20602	.03392	2.0519	.97551	.10016	.05984	.36469
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.01983	.04054	F 52.666
Stddev	.00096	.00030	.271
%RSD	4.8538	.74967	.51545
#1	.01995	.04039	52.957
#2	.01882	.04089	52.622
#3	.02073	.04034	52.420
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6722.9	41992.	2132.9
Stddev	4.6	356.	26.2
%RSD	.06888	.84767	1.2278
#1	6727.0	42116.	2114.2
#2	6723.9	42269.	2162.8
#3	6717.8	41590.	2121.7

Sample Name: ICSA Acquired: 6/23/2016 17:04:08 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00149	266.38	-.00372	.01062	.00153	.00000	253.32
Stddev	.00133	.59	.00223	.00385	.00251	.00008	1.14
%RSD	89.471	.22308	59.913	36.253	163.63	4300.4	.45010
#1	-.00003	267.06	-.00307	.00628	.00113	-.00004	252.01
#2	.00202	266.01	-.00189	.01196	-.00075	-.00004	253.84
#3	.00246	266.05	-.00620	.01362	.00422	.00009	254.10
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	-.00114	-.00174	.00303	99.707	.16334	.00688
Stddev	.00038	.00002	.00038	.00035	.605	.10414	.00241
%RSD	79.353	1.7935	21.793	11.497	.60634	63.757	34.985
#1	.00088	-.00115	-.00217	.00298	99.093	.28269	.00955
#2	.00015	-.00116	-.00144	.00340	99.728	.09096	.00486
#3	.00039	-.00112	-.00162	.00271	100.30	.11636	.00625
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	252.57	.00029	.00006	.04525	-.00141	.04327	-.00195
Stddev	.76	.00143	.00058	.00703	.00150	.00827	.00429
%RSD	.29957	489.02	1021.2	15.529	106.39	19.108	220.24
#1	251.84	.00193	-.00061	.05054	-.00123	.05059	-.00454
#2	252.51	-.00031	.00047	.04793	-.00001	.04493	.00300
#3	253.35	-.00074	.00031	.03728	-.00299	.03430	-.00431
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: ICSA Acquired: 6/23/2016 17:04:08 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00596**	**-.00219**	**-.00062**	**.00088**	**.00057**	**-.00643**	**.00061**
Stddev	.00409	.01112	.00241	.00133	.00012	.00454	.00641
%RSD	68.491	508.56	387.55	152.27	20.327	70.638	1044.9
#1	-.01030	-.01132	.00215	.00215	.00049	-.00321	.00778
#2	-.00542	-.00543	-.00218	-.00050	.00052	-.00446	-.00133
#3	-.00218	.01019	-.00184	.00098	.00071	-.01163	-.00460
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00692**	**-.00188**	F **-.35802**
Stddev	.00157	.00029	.22129
%RSD	22.711	15.411	61.810
#1	-.00512	-.00157	-.10687
#2	-.00763	-.00196	-.44284
#3	-.00802	-.00213	-.52437
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02000
Low Limit			-.02000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6250.1**	**37849.**	**2031.8**
Stddev	54.8	56.	7.8
%RSD	.87682	.14906	.38488
#1	6190.3	37786.	2027.2
#2	6297.9	37868.	2027.4
#3	6262.0	37894.	2040.9

Sample Name: ICSAB Acquired: 6/23/2016 17:08:01 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52882	265.17	.25293	.00992	.25484	.24777	252.21
Stddev	.00098	.76	.00285	.00453	.00061	.00074	1.18
%RSD	.18558	.28502	1.1258	45.657	.23964	.29732	.46623
#1	.52981	264.89	.25009	.01062	.25418	.24751	252.99
#2	.52881	266.03	.25579	.00508	.25539	.24861	250.86
#3	.52785	264.59	.25291	.01406	.25495	.24721	252.79
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50186	.24161	.25459	.25471	97.424	5.2402	.00666
Stddev	.00151	.00122	.00264	.00209	.509	.0634	.00798
%RSD	.30055	.50701	1.0371	.81915	.52250	1.2106	119.82
#1	.50037	.24023	.25660	.25353	97.770	5.2868	.00639
#2	.50338	.24256	.25160	.25711	96.840	5.1680	.01477
#3	.50184	.24204	.25558	.25347	97.663	5.2658	-.00118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	247.66	.24890	-.00112	5.3746	.48553	.04636	.50217
Stddev	1.37	.00098	.00019	.0121	.00314	.00695	.00280
%RSD	.55427	.39569	17.374	.22614	.64678	14.982	.55722
#1	248.16	.24818	-.00127	5.3707	.48197	.04411	.50327
#2	246.11	.25002	-.00118	5.3648	.48669	.04082	.50425
#3	248.71	.24850	-.00090	5.3882	.48792	.05415	.49899
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: ICSAB Acquired: 6/23/2016 17:08:01 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50735	.24194	-.00758	-.00008	.00043	-.00758	.46915
Stddev	.00346	.00285	.00236	.00064	.00025	.00399	.00306
%RSD	.68179	1.1790	31.189	795.11	59.086	52.651	.65264
#1	.51111	.24253	-.00918	-.00025	.00026	-.00923	.46976
#2	.50431	.23884	-.00486	.00062	.00031	-.00303	.46582
#3	.50662	.24445	-.00869	-.00061	.00072	-.01049	.47185
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.25055	.48484	F -.54156
Stddev	.00015	.00117	.36388
%RSD	.05947	.24090	67.191
#1	.25062	.48352	-.86893
#2	.25038	.48574	-.14978
#3	.25065	.48526	-.60595
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.02500
Low Limit			-.02500

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6244.9	38520.	2058.8
Stddev	46.1	338.	32.6
%RSD	.73809	.87856	1.5823
#1	6288.3	38547.	2028.4
#2	6196.5	38169.	2093.1
#3	6249.8	38844.	2054.9

Sample Name: CCV Acquired: 6/23/2016 17:11:45 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39852	10.052	.40263	.49843	1.0023	.05021	10.092
Stddev	.00333	.028	.00314	.00166	.0006	.00016	.057
%RSD	.83575	.27814	.78076	.33361	.06012	.31593	.56540
#1	.39689	10.041	.39901	.49807	1.0017	.05007	10.131
#2	.40235	10.030	.40421	.49698	1.0029	.05018	10.027
#3	.39632	10.083	.40467	.50024	1.0023	.05038	10.118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04999	.20043	.50163	.50411	4.0601	50.005	1.0189
Stddev	.00015	.00042	.00302	.00115	.0027	.046	.0052
%RSD	.29315	.20823	.60186	.22714	.06779	.09107	.50520
#1	.05012	.20084	.49900	.50511	4.0627	50.032	1.0215
#2	.04983	.20000	.50096	.50286	4.0604	49.953	1.0130
#3	.05001	.20044	.50492	.50436	4.0572	50.031	1.0222
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.212	.49892	1.0009	49.902	.50256	9.9305	.50524
Stddev	.091	.00599	.0036	.189	.00114	.0123	.00430
%RSD	.88794	1.1999	.36370	.37915	.22664	.12410	.85170
#1	10.107	.49738	1.0047	49.717	.50312	9.9163	.50068
#2	10.266	.49386	1.0004	50.095	.50125	9.9365	.50580
#3	10.263	.50553	.99747	49.894	.50331	9.9386	.50923
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: CCV Acquired: 6/23/2016 17:11:45 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1976**	**.39739**	**5.0461**	**.99886**	**.99946**	**1.0004**	**.50205**
Stddev	.0044	.00576	.0095	.00286	.00488	.0097	.00380
%RSD	.36569	1.4500	.18873	.28629	.48793	.96796	.75754
#1	1.2025	.39818	5.0436	1.0005	.99383	.99232	.49767
#2	1.1964	.39127	5.0380	1.0005	1.0021	.99772	.50399
#3	1.1940	.40272	5.0566	.99556	1.0025	1.0111	.50449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0051**	**1.0042**	F **.84890**
Stddev	.0013	.0014	.43937
%RSD	.13211	.13734	51.758
#1	1.0042	1.0051	.99034
#2	1.0045	1.0026	.35623
#3	1.0066	1.0048	1.2001
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6596.3**	**41288.**	**2118.4**
Stddev	44.5	204.	20.3
%RSD	.67419	.49375	.95799
#1	6545.1	41449.	2095.9
#2	6618.2	41357.	2123.7
#3	6625.5	41059.	2135.5

Sample Name: CCB Acquired: 6/23/2016 17:15:23 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00313**	**.01723**	**.00317**	**.00223**	**-.00086**	**.00005**	**.05209**
Stddev	.00122	.00350	.00117	.00121	.00076	.00008	.06012
%RSD	38.963	20.296	36.752	54.255	88.561	155.39	115.43
#1	.00430	.02036	.00417	.00084	-.00098	.00005	.05688
#2	.00322	.01787	.00345	.00279	-.00004	.00013	.10967
#3	.00186	.01346	.00189	.00306	-.00155	-.00003	-.01029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**.00041**	**.00080**	**.00088**	**.00933**	**.12101**	**-.00019**
Stddev	.00009	.00032	.00113	.00031	.02938	.20550	.00178
%RSD	112.14	77.747	141.29	34.787	314.94	169.82	929.52
#1	-.00002	.00017	.00160	.00098	.03104	-.04316	-.00153
#2	.00015	.00030	.00129	.00054	-.02411	.35147	-.00087
#3	.00013	.00078	-.00049	.00114	.02106	.05472	.00183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.08095**	**.00318**	**.00354**	**.07516**	**-.00052**	**.00211**	**-.00169**
Stddev	.03617	.00076	.00074	.03642	.00171	.00399	.00228
%RSD	44.681	24.034	20.829	48.460	332.21	188.88	134.38
#1	.11808	.00257	.00275	.11180	-.00209	.00394	.00084
#2	.04583	.00292	.00421	.07473	-.00077	-.00247	-.00235
#3	.07893	.00403	.00365	.03896	.00131	.00486	-.00357
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: CCB Acquired: 6/23/2016 17:15:23 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00292**	**.00064**	**-.00112**	**.00037**	**.00055**	**.00009**	**-.00222**
Stddev	.00495	.00211	.00181	.00085	.00039	.00846	.00125
%RSD	169.66	329.79	161.50	228.24	71.494	9095.7	56.323
#1	.00726	.00025	-.00053	.00012	.00049	.00531	-.00357
#2	.00396	.00292	-.00315	.00131	.00097	-.00967	-.00109
#3	-.00247	-.00125	.00032	-.00032	.00019	.00464	-.00201
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00045**	**.00017**	F **-.31880**
Stddev	.00139	.00012	.06794
%RSD	311.50	72.605	21.311
#1	-.00109	.00003	-.30839
#2	.00115	.00026	-.39134
#3	-.00140	.00021	-.25666
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6671.9**	**41329.**	**2107.9**
Stddev	60.0	164.	15.1
%RSD	.89934	.39564	.71641
#1	6603.0	41427.	2098.9
#2	6712.5	41420.	2099.5
#3	6700.3	41140.	2125.4

Sample Name: PBW LJ Acquired: 6/23/2016 17:19:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00080**	**.01261**	**.00190**	**.00491**	**-.00092**	**-.00002**	**.05100**	**.00023**
Stddev	.00084	.00763	.00125	.00212	.00119	.00006	.03078	.00026
%RSD	103.96	60.561	65.725	43.302	129.08	259.98	60.367	110.85
#1	.00134	.02138	.00270	.00692	-.00108	-.00003	.01560	.00021
#2	-.00016	.00898	.00254	.00512	.00034	.00004	.07152	-.00001
#3	.00123	.00746	.00046	.00268	-.00203	-.00008	.06587	.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00037**	**-.00004**	**.00109**	**.01291**	**.08713**	**-.00094**	**.00517**	**.00144**
Stddev	.00024	.00123	.00204	.01662	.13771	.00409	.05412	.00202
%RSD	65.746	3083.5	187.27	128.71	158.06	434.61	1047.5	139.96
#1	.00019	-.00005	-.00097	-.00552	-.06256	.00328	.06512	-.00079
#2	.00064	-.00127	.00113	.02675	.20845	-.00488	-.00956	.00312
#3	.00026	.00119	.00311	.01750	.11550	-.00122	-.04006	.00199
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00095**	**.04152**	**-.00019**	**-.00390**	**-.00371**	**.00030**	**.00094**	**-.01516**
Stddev	.00059	.04832	.00205	.00634	.00397	.00313	.00086	.00318
%RSD	62.354	116.37	1063.0	162.76	106.95	1035.6	91.391	20.967
#1	.00033	.01830	-.00241	-.00387	-.00717	.00089	.00151	-.01165
#2	.00102	.00919	.00019	.00243	.00062	.00310	.00135	-.01599
#3	.00151	.09706	.00164	-.01025	-.00458	-.00308	-.00005	-.01784
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: PBW LJ Acquired: 6/23/2016 17:19:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00033**	**.00039**	**-.00004**	**-.00270**	**-.00095**	**.00140**	**.41056**
Stddev	.00027	.00036	.00305	.00089	.00074	.00017	.24431
%RSD	82.432	92.835	6840.9	33.104	77.766	12.399	59.505
#1	-.00063	.00081	-.00312	-.00373	-.00092	.00123	.69212
#2	-.00012	.00013	.00297	-.00211	-.00022	.00158	.28489
#3	-.00024	.00024	.00002	-.00226	-.00170	.00139	.25468
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6640.4**	**41625.**	**2128.5**
Stddev	17.6	211.	40.6
%RSD	.26566	.50582	1.9066
#1	6652.6	41596.	2081.7
#2	6648.4	41848.	2149.1
#3	6620.1	41430.	2154.5

Sample Name: LCSW LJ Acquired: 6/23/2016 17:23:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20319	5.0131	.20150	.99773	.51668	.02479	5.2442	.02487
Stddev	.00169	.0087	.00325	.00753	.00370	.00010	.0451	.00015
%RSD	.82977	.17310	1.6126	.75506	.71666	.41148	.86061	.60213
#1	.20357	5.0214	.19782	.99002	.52094	.02487	5.2832	.02481
#2	.20466	5.0041	.20272	1.0051	.51488	.02467	5.2546	.02476
#3	.20135	5.0138	.20397	.99808	.51422	.02483	5.1948	.02504
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10159	.25137	.25763	2.1220	25.452	.52645	5.1614	.25904
Stddev	.00032	.00052	.00140	.0264	.157	.00783	.0562	.00289
%RSD	.31802	.20500	.54330	1.2440	.61733	1.4875	1.0892	1.1168
#1	.10195	.25197	.25859	2.1525	25.633	.53504	5.1502	.26071
#2	.10149	.25109	.25602	2.1081	25.375	.52462	5.1116	.26070
#3	.10132	.25106	.25826	2.1055	25.349	.51970	5.2224	.25570
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51626	25.724	.25483	4.8485	.25110	.61184	.19096	2.6019
Stddev	.00266	.216	.00018	.0108	.00443	.00393	.01056	.0098
%RSD	.51446	.83901	.07257	.22239	1.7625	.64191	5.5294	.37803
#1	.51860	25.969	.25482	4.8553	.24906	.61631	.19143	2.6112
#2	.51337	25.641	.25502	4.8360	.24806	.60893	.18017	2.5916
#3	.51679	25.562	.25465	4.8540	.25618	.61029	.20127	2.6028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: LCSW LJ Acquired: 6/23/2016 17:23:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50721	.52436	.50961	.25007	.50364	.50657	.76573
Stddev	.00162	.00527	.01502	.00251	.00102	.00126	.62483
%RSD	.31955	1.0056	2.9465	1.0024	.20335	.24816	81.599
#1	.50743	.53024	.51039	.24815	.50410	.50766	1.3558
#2	.50550	.52279	.52423	.25290	.50247	.50519	.11116
#3	.50872	.52005	.49423	.24914	.50436	.50685	.83021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6575.8	41413.	2125.8
Stddev	38.0	254.	15.3
%RSD	.57733	.61440	.72050
#1	6590.8	41169.	2116.8
#2	6532.6	41394.	2117.1
#3	6603.9	41677.	2143.4

Sample Name: L1606076404 Acquired: 6/23/2016 17:27:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00032**	**.03451**	**.00124**	**.00949**	**.00772**	**.00001**	**37.580**	**.00027**
Stddev	.00100	.00434	.00233	.00396	.00016	.00008	.209	.00010
%RSD	315.71	12.583	187.37	41.736	2.0214	559.86	.55655	38.752
#1	-.00025	.02981	-.00143	.01269	.00789	-.00008	37.790	.00037
#2	.00065	.03535	.00232	.00506	.00758	.00004	37.371	.00027
#3	-.00135	.03837	.00283	.01072	.00769	.00008	37.578	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00036**	**.01239**	**.00232**	**.45824**	**5.1190**	**.00322**	**14.570**	**.10315**
Stddev	.00021	.00017	.00134	.02324	.0359	.00604	.145	.00332
%RSD	57.485	1.3945	57.779	5.0714	.70061	187.38	.99354	3.2187
#1	.00054	.01232	.00335	.43843	5.0785	.00539	14.664	.10664
#2	.00040	.01226	.00280	.48382	5.1320	-.00360	14.403	.10004
#3	.00014	.01258	.00080	.45248	5.1466	.00788	14.643	.10276
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00112**	**35.286**	**.00502**	**.02785**	**.00193**	**.00400**	**.00017**	**4.2205**
Stddev	.00017	.168	.00085	.00292	.00187	.00379	.00613	.0101
%RSD	15.273	.47690	16.934	10.483	97.237	94.733	3643.4	.24042
#1	.00102	35.461	.00444	.02992	.00018	.00832	-.00425	4.2311
#2	.00102	35.126	.00463	.02451	.00170	.00241	-.00240	4.2196
#3	.00131	35.269	.00600	.02912	.00390	.00126	.00716	4.2109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606076404 Acquired: 6/23/2016 17:27:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**.19838**	**-.00352**	**-.00316**	**-.00056**	**.00304**	**.05702**
Stddev	.00048	.00082	.00439	.00352	.00018	.00003	.32731
%RSD	532.68	.41544	124.63	111.42	32.096	1.0103	574.06
#1	-.00061	.19924	-.00146	-.00663	-.00039	.00305	.43214
#2	-.00001	.19830	-.00054	.00041	-.00055	.00306	-.17051
#3	.00035	.19760	-.00855	-.00325	-.00075	.00300	-.09057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6659.9**	**41441.**	**2148.1**
Stddev	17.8	39.	34.6
%RSD	.26678	.09458	1.6087
#1	6640.6	41401.	2109.0
#2	6663.2	41442.	2174.8
#3	6675.7	41479.	2160.4

Sample Name: L1606076405S Acquired: 6/23/2016 17:30:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20092	5.0385	.20312	.99798	.52837	.02495	44.005	.02497
Stddev	.00159	.0071	.00090	.00399	.00863	.00018	.536	.00030
%RSD	.78894	.14165	.44224	.39989	1.6338	.73761	1.2192	1.2169
#1	.20053	5.0320	.20215	1.0021	.53714	.02516	44.468	.02467
#2	.20266	5.0374	.20392	.99408	.52809	.02480	44.130	.02527
#3	.19957	5.0461	.20329	.99779	.51988	.02489	43.417	.02498
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10016	.26480	.25157	2.5877	30.715	.52688	20.416	.36208
Stddev	.00067	.00097	.00149	.0124	.632	.01078	.244	.00320
%RSD	.66866	.36563	.59363	.47820	2.0592	2.0459	1.1951	.88399
#1	.09940	.26587	.24988	2.6017	31.379	.53733	20.633	.36533
#2	.10067	.26457	.25208	2.5782	30.645	.52751	20.464	.36196
#3	.10042	.26397	.25273	2.5832	30.120	.51580	20.152	.35894
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52071	62.572	.25549	5.0021	.25301	.61345	.19142	7.0690
Stddev	.00097	.840	.00144	.0110	.00528	.00259	.00718	.0143
%RSD	.18659	1.3422	.56532	.21968	2.0876	.42179	3.7518	.20212
#1	.52096	63.421	.25626	4.9894	.25249	.61450	.18326	7.0650
#2	.52153	62.553	.25639	5.0088	.25853	.61534	.19422	7.0849
#3	.51964	61.741	.25383	5.0081	.24801	.61050	.19677	7.0571
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606076405S Acquired: 6/23/2016 17:30:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50671**	**.73344**	**.51400**	**.25052**	**.50766**	**.50196**	**.71683**
Stddev	.00049	.00764	.00562	.00109	.00170	.00107	.08607
%RSD	.09604	1.0422	1.0940	.43503	.33403	.21255	12.007
#1	.50635	.74103	.51985	.25089	.50822	.50082	.65957
#2	.50651	.73352	.50864	.24929	.50576	.50294	.81581
#3	.50726	.72575	.51349	.25138	.50901	.50210	.67512
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6617.0**	**40888.**	**2108.3**
Stddev	36.3	229.	43.4
%RSD	.54907	.56042	2.0607
#1	6597.9	40710.	2065.4
#2	6594.1	40808.	2107.2
#3	6658.9	41146.	2152.3

Sample Name: L1606076406SD Acquired: 6/23/2016 17:34:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20158	5.0081	.20119	.99289	.52520	.02487	44.269	.02478
Stddev	.00322	.0181	.00119	.00601	.00285	.00008	.382	.00037
%RSD	1.5962	.36106	.59360	.60498	.54186	.31907	.86303	1.4919
#1	.20051	5.0088	.20213	.99898	.52769	.02491	44.667	.02436
#2	.19904	5.0258	.20161	.99270	.52581	.02493	44.234	.02503
#3	.20520	4.9897	.19985	.98697	.52210	.02478	43.905	.02496
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09994	.26339	.24953	2.5877	30.662	.52181	20.366	.36158
Stddev	.00059	.00143	.00256	.0611	.222	.00474	.372	.00451
%RSD	.59271	.54249	1.0252	2.3607	.72504	.90810	1.8250	1.2464
#1	.09927	.26187	.24744	2.6536	30.906	.52560	20.793	.36652
#2	.10013	.26359	.24876	2.5330	30.471	.52334	20.120	.35770
#3	.10041	.26470	.25238	2.5764	30.609	.51650	20.184	.36051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51522	62.707	.25233	4.9723	.25332	.61176	.19301	7.0733
Stddev	.00118	.507	.00147	.0132	.00160	.00273	.00266	.0075
%RSD	.22851	.80791	.58315	.26561	.63178	.44609	1.3764	.10575
#1	.51652	63.283	.25117	4.9632	.25248	.61207	.19130	7.0646
#2	.51490	62.510	.25184	4.9664	.25231	.61431	.19166	7.0774
#3	.51423	62.328	.25399	4.9875	.25516	.60888	.19607	7.0778
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606076406SD Acquired: 6/23/2016 17:34:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50236	.73208	.50989	.24941	.50289	.49718	.41726
Stddev	.00239	.00589	.01162	.00247	.00231	.00067	.67397
%RSD	.47662	.80444	2.2794	.99175	.45970	.13482	161.52
#1	.49978	.73852	.52268	.24842	.50555	.49665	-.07543
#2	.50451	.73075	.49998	.25223	.50134	.49794	.14190
#3	.50280	.72697	.50700	.24759	.50179	.49697	1.1853
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6608.7	41166.	2120.3
Stddev	11.1	137.	19.6
%RSD	.16723	.33193	.92378
#1	6603.0	41323.	2097.8
#2	6621.5	41090.	2129.6
#3	6601.7	41083.	2133.5

Sample Name: L1606109801 Acquired: 6/23/2016 17:38:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00129**	**.01287**	**-.00287**	**.00614**	**-.00048**	**-.00003**	**.08304**	**.00009**
Stddev	.00159	.00811	.00192	.00213	.00074	.00007	.01337	.00013
%RSD	122.92	63.032	67.055	34.715	154.39	222.73	16.095	139.40
#1	.00212	.02216	-.00081	.00626	-.00008	-.00010	.09008	.00010
#2	.00231	.00925	-.00462	.00395	-.00134	.00003	.09142	-.00004
#3	-.00054	.00720	-.00317	.00821	-.00003	-.00001	.06763	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.00114**	**.00130**	**.02096**	**.10896**	**-.00006**	**-.03305**	**.00197**
Stddev	.00044	.00113	.00181	.01243	.08516	.00372	.07886	.00311
%RSD	453.08	99.110	139.52	59.304	78.156	6481.1	238.62	158.05
#1	-.00053	.00170	.00306	.02326	.19673	-.00420	-.07467	-.00106
#2	.00034	-.00016	-.00055	.03207	.02667	.00104	-.08238	.00515
#3	-.00009	.00187	.00138	.00754	.10349	.00299	.05790	.00182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00066**	**.45527**	**.00049**	**-.00366**	**.00153**	**.00122**	**.00971**	**-.00748**
Stddev	.00030	.03584	.00013	.00895	.00348	.00363	.01502	.00042
%RSD	45.839	7.8733	25.556	244.66	227.48	297.89	154.66	5.5803
#1	.00053	.41497	.00054	-.01374	.00021	.00522	.02568	-.00782
#2	.00044	.46723	.00035	-.00059	-.00110	-.00186	-.00414	-.00701
#3	.00100	.48360	.00058	.00335	.00548	.00030	.00761	-.00761
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606109801 Acquired: 6/23/2016 17:38:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.00480**	**-.00167**	**-.00415**	**-.00006**	**.00240**	**.05406**
Stddev	.00008	.00020	.00916	.00353	.00083	.00017	.09676
%RSD	178.62	4.1888	547.73	84.853	1386.4	7.2187	179.01
#1	-.00014	.00474	.00699	-.00318	.00001	.00255	.07032
#2	-.00003	.00462	-.01126	-.00807	-.00092	.00221	-.04981
#3	.00002	.00502	-.00075	-.00122	.00073	.00245	.14165
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6705.4**	**41704.**	**2110.9**
Stddev	33.1	203.	3.8
%RSD	.49393	.48693	.18234
#1	6717.5	41536.	2115.0
#2	6668.0	41646.	2110.1
#3	6730.8	41930.	2107.4

Sample Name: L1606109802 Acquired: 6/23/2016 17:42:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00131	.04120	.00085	.00475	.00003	.00006	.12679	.00004
Stddev	.00226	.00310	.00173	.00253	.00122	.00003	.01985	.00014
%RSD	172.44	7.5124	203.60	53.268	4293.6	44.669	15.655	354.39
#1	-.00391	.03975	.00123	.00360	.00116	.00006	.11393	-.00006
#2	-.00005	.04475	-.00104	.00766	.00019	.00008	.11680	.00020
#3	.00004	.03909	.00235	.00301	-.00126	.00003	.14965	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00021	.00349	.00237	.18011	.09946	-.00236	.07943	.00699
Stddev	.00033	.00204	.00114	.02015	.07387	.00179	.02978	.00080
%RSD	156.99	58.571	48.052	11.185	74.275	75.957	37.492	11.493
#1	.00015	.00129	.00134	.19792	.08997	-.00029	.05468	.00760
#2	-.00027	.00385	.00359	.18417	.17761	-.00335	.11249	.00608
#3	-.00051	.00533	.00218	.15825	.03079	-.00344	.07113	.00730
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00657	.08383	.00108	-.00632	.00042	.00155	-.00209	-.00610
Stddev	.00027	.01857	.00084	.00291	.00245	.00366	.00646	.00130
%RSD	4.0493	22.151	77.513	46.079	588.34	235.09	308.97	21.310
#1	.00687	.08551	.00034	-.00968	.00101	-.00057	-.00876	-.00625
#2	.00646	.10150	.00091	-.00476	.00251	.00578	.00414	-.00474
#3	.00637	.06448	.00199	-.00452	-.00227	-.00054	-.00165	-.00733
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606109802 Acquired: 6/23/2016 17:42:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00054**	**.00097**	**.00153**	**-.00310**	**-.00091**	**.00301**	**.27773**
Stddev	.00104	.00057	.00430	.00238	.00037	.00011	.05024
%RSD	194.32	58.620	280.21	76.638	40.878	3.7408	18.089
#1	-.00046	.00112	.00644	-.00519	-.00093	.00307	.33422
#2	.00046	.00144	-.00158	-.00051	-.00052	.00288	.23804
#3	-.00161	.00034	-.00025	-.00360	-.00127	.00309	.26094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6708.6**	**41920.**	**2143.4**
Stddev	42.4	304.	28.2
%RSD	.63177	.72485	1.3166
#1	6687.7	42255.	2139.9
#2	6680.7	41839.	2117.2
#3	6757.4	41664.	2173.3

Sample Name: L1606109802PS Acquired: 6/23/2016 17:46:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573952-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20295	4.9978	.19604	.97111	.51605	.02475	5.3316	.02478
Stddev	.00344	.0037	.00197	.00223	.00051	.00014	.0490	.00015
%RSD	1.6972	.07436	1.0027	.22973	.09917	.56068	.91841	.59158
#1	.19936	4.9935	.19463	.96974	.51663	.02489	5.2786	.02492
#2	.20326	5.0002	.19520	.96990	.51565	.02462	5.3752	.02463
#3	.20622	4.9996	.19828	.97368	.51588	.02474	5.3410	.02480
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10156	.25473	.25812	2.2174	25.577	.52251	5.2379	.25866
Stddev	.00037	.00076	.00168	.0428	.016	.00141	.1063	.00557
%RSD	.36206	.29734	.65016	1.9294	.06131	.27078	2.0291	2.1526
#1	.10143	.25529	.25897	2.1982	25.585	.52373	5.2689	.26416
#2	.10128	.25504	.25619	2.2664	25.559	.52096	5.3253	.25303
#3	.10198	.25387	.25920	2.1875	25.587	.52284	5.1196	.25880
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51904	25.731	.25472	4.8394	.25146	.60443	.18808	2.5389
Stddev	.00078	.051	.00178	.0161	.00652	.00703	.00446	.0097
%RSD	.15079	.19825	.69859	.33289	2.5939	1.1635	2.3736	.38131
#1	.51985	25.790	.25678	4.8266	.24420	.60484	.18767	2.5333
#2	.51829	25.701	.25365	4.8340	.25681	.59720	.18383	2.5332
#3	.51899	25.702	.25373	4.8575	.25338	.61125	.19273	2.5500
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606109802PS Acquired: 6/23/2016 17:46:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573952-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50319	.52125	.51263	.24941	.49856	.50658	.41681
Stddev	.00067	.00121	.00461	.00337	.00102	.00107	.18065
%RSD	.13272	.23307	.89973	1.3499	.20406	.21178	43.340
#1	.50331	.52232	.50810	.25329	.49739	.50643	.22345
#2	.50379	.52148	.51246	.24723	.49912	.50559	.44572
#3	.50247	.51993	.51732	.24772	.49918	.50772	.58125
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6634.2	41367.	2120.2
Stddev	45.5	136.	31.3
%RSD	.68551	.32832	1.4752
#1	6675.0	41309.	2085.8
#2	6642.5	41522.	2147.0
#3	6585.2	41269.	2127.8

Sample Name: L1606109802SDL Acquired: 6/23/2016 17:49:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573952-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00136	.01502	.00308	.00439	-.00102	.00008	.05957	.00033
Stddev	.00139	.00670	.00298	.00095	.00092	.00003	.03476	.00004
%RSD	102.34	44.577	96.746	21.522	90.289	33.805	58.357	13.382
#1	.00126	.01153	.00023	.00498	-.00197	.00010	.02372	.00038
#2	.00281	.01080	.00283	.00489	-.00093	.00009	.06187	.00030
#3	.00002	.02274	.00619	.00330	-.00015	.00005	.09313	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	-.00017	.00113	.04078	.05810	.00210	.06165	.00226
Stddev	.00020	.00084	.00062	.00773	.11892	.00364	.08929	.00317
%RSD	251.06	498.56	54.543	18.955	204.67	172.87	144.83	140.01
#1	-.00031	.00011	.00044	.04552	-.07722	.00243	-.01365	-.00138
#2	.00002	.00049	.00161	.03186	.14597	-.00169	.03832	.00380
#3	.00006	-.00111	.00136	.04496	.10555	.00557	.16029	.00437
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00155	.03886	.00061	.00728	.00025	-.00084	-.00741	-.00785
Stddev	.00019	.02607	.00103	.00300	.00248	.00463	.00531	.00300
%RSD	12.485	67.084	170.41	41.143	1006.5	550.34	71.645	38.154
#1	.00155	.03807	-.00057	.00580	-.00067	-.00286	-.00354	-.01115
#2	.00174	.01319	.00103	.00532	.00306	.00445	-.01346	-.00530
#3	.00136	.06531	.00136	.01073	-.00164	-.00411	-.00522	-.00710
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606109802SDL Acquired: 6/23/2016 17:49:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573952-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00088**	**.00057**	**.00094**	**-.00409**	**.00019**	**.00149**	**.45954**
Stddev	.00075	.00043	.01378	.00250	.00054	.00013	.21882
%RSD	85.215	74.163	1462.5	61.137	279.61	9.0143	47.616
#1	-.00150	.00022	-.00662	-.00460	.00077	.00151	.33705
#2	-.00005	.00045	.01685	-.00138	-.00029	.00135	.71218
#3	-.00110	.00105	-.00740	-.00631	.00009	.00162	.32941
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6959.1**	**43239.**	**2203.0**
Stddev	42.9	568.	21.3
%RSD	.61702	1.3134	.96538
#1	6931.5	42983.	2192.4
#2	7008.6	43890.	2227.5
#3	6937.3	42844.	2189.1

Sample Name: L1606109802SDL Acquired: 6/23/2016 17:53:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573952-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00025**	**-.00848**	**.00213**	**-.00007**	**-.00079**	**-.00002**	**.00503**
Stddev	.00182	.00079	.00051	.00320	.00067	.00006	.00717
%RSD	715.84	9.3659	23.973	4723.2	84.264	337.91	142.65
#1	.00063	-.00798	.00169	-.00266	-.00014	-.00004	.01305
#2	.00185	-.00807	.00200	-.00107	-.00147	-.00006	.00280
#3	-.00172	-.00940	.00269	.00352	-.00077	.00005	-.00077
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	**.00018**	**.00059**	**-.00006**	**-.00347**	**.12523**	**.00146**
Stddev	.00022	.00029	.00107	.00164	.02019	.11611	.00742
%RSD	115.68	162.83	180.16	2901.7	582.00	92.721	507.00
#1	-.00042	.00014	.00077	.00098	.00022	-.00797	-.00642
#2	-.00018	.00048	-.00055	.00080	-.02525	.20510	.00830
#3	.00002	-.00009	.00157	-.00195	.01463	.17855	.00251
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04612**	**.00275**	**-.00011**	**.02502**	**-.00021**	**.01583**	**.00003**
Stddev	.09471	.00202	.00043	.02748	.00019	.00290	.00282
%RSD	205.33	73.453	401.99	109.83	87.851	18.294	10124.
#1	.13667	.00063	.00029	.00253	-.00023	.01917	-.00119
#2	-.05226	.00465	-.00004	.01688	-.00002	.01426	.00325
#3	.05396	.00298	-.00056	.05566	-.00039	.01406	-.00198
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: L1606109802SDL Acquired: 6/23/2016 17:53:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573952-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00091**	F **-.01196**	**-.01108**	**-.00050**	**.00003**	**-.00725**	**-.00124**
Stddev	.00148	.00527	.00232	.00100	.00102	.00296	.00502
%RSD	162.61	44.027	20.977	201.11	3086.6	40.796	405.85
#1	-.00253	-.00590	-.01377	-.00126	-.00114	-.00905	-.00509
#2	.00038	-.01454	-.00977	-.00086	.00061	-.00384	-.00306
#3	-.00058	-.01544	-.00971	.00063	.00062	-.00886	.00444
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		90.000					
Low Limit		-.01000					

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00077**	**.00084**	**.22312**
Stddev	.00068	.00020	.30532
%RSD	88.979	23.810	136.84
#1	-.00155	.00083	.52434
#2	-.00032	.00104	-.08613
#3	-.00043	.00064	.23116
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6981.3**	**43420.**	**2189.5**
Stddev	46.4	74.	50.4
%RSD	.66474	.17141	2.3033
#1	6946.3	43470.	2150.2
#2	7033.9	43456.	2171.9
#3	6963.6	43335.	2246.4

Sample Name: CCV Acquired: 6/23/2016 17:57:55 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39465	9.8592	.39426	.49051	.99575	.04951	9.9296
Stddev	.00130	.0543	.00077	.00725	.01287	.00025	.0980
%RSD	.33011	.55085	.19471	1.4789	1.2926	.50940	.98742
#1	.39334	9.8260	.39515	.49135	.98121	.04933	9.8278
#2	.39467	9.9219	.39384	.49731	1.0057	.04980	9.9378
#3	.39594	9.8298	.39380	.48287	1.0003	.04940	10.023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04931	.19809	.49689	.49699	3.9877	49.594	1.0016
Stddev	.00035	.00039	.00097	.00140	.0463	.339	.0098
%RSD	.69996	.19569	.19580	.28221	1.1620	.68359	.97475
#1	.04892	.19768	.49580	.49756	3.9856	49.220	.99073
#2	.04957	.19845	.49718	.49801	3.9424	49.882	1.0096
#3	.04943	.19814	.49768	.49539	4.0350	49.679	1.0045
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.8713	.49596	.98783	49.518	.49712	9.8043	.49873
Stddev	.0582	.00613	.00477	.522	.00109	.0177	.00163
%RSD	.58979	1.2355	.48297	1.0550	.21900	.18012	.32630
#1	9.8044	.48970	.99184	48.919	.49799	9.7884	.49800
#2	9.9106	.50194	.98911	49.882	.49748	9.8233	.49759
#3	9.8989	.49623	.98255	49.751	.49590	9.8012	.50059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: CCV Acquired: 6/23/2016 17:57:55 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1826**	**.39764**	**4.9717**	**.98502**	**.99375**	**.98233**	**.49603**
Stddev	.0050	.01088	.0089	.00253	.01310	.00868	.00327
%RSD	.42000	2.7362	.17868	.25689	1.3184	.88336	.65997
#1	1.1879	.39017	4.9692	.98339	.97877	.98140	.49964
#2	1.1780	.41013	4.9816	.98794	1.0031	.99143	.49324
#3	1.1820	.39263	4.9643	.98374	.99940	.97415	.49523
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.99379**	**.99204**	F **.18789**
Stddev	.00563	.00149	.09910
%RSD	.56658	.15028	52.747
#1	.98993	.99220	.30141
#2	1.0003	.99344	.11863
#3	.99118	.99047	.14362
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6631.8**	**40728.**	**2099.0**
Stddev	45.9	503.	16.5
%RSD	.69181	1.2341	.78530
#1	6611.3	41075.	2107.2
#2	6599.8	40151.	2080.0
#3	6684.4	40956.	2109.8

Sample Name: CCB Acquired: 6/23/2016 18:01:33 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.01129	.00078	.00451	-.00045	.00008	-.00465
Stddev	.00148	.00039	.00155	.00327	.00048	.00013	.02449
%RSD	411.84	3.4907	199.15	72.530	105.95	171.62	526.45
#1	-.00053	.01164	.00012	.00090	.00005	.00000	-.02544
#2	.00207	.01087	.00255	.00727	-.00049	-.00000	.02235
#3	-.00046	.01137	-.00034	.00537	-.00091	.00022	-.01087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.00018	.00054	.00011	-.01088	.09874	.00114
Stddev	.00029	.00030	.00119	.00044	.03748	.07317	.00332
%RSD	246.95	168.18	220.68	381.54	344.38	74.101	290.12
#1	.00045	.00022	-.00081	.00062	.01794	.03451	-.00267
#2	.00000	.00046	.00100	-.00013	-.05325	.08332	.00343
#3	-.00010	-.00014	.00143	-.00015	.00266	.17839	.00267
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00689	.00204	.00366	.02542	-.00029	.00140	-.00069
Stddev	.06132	.00361	.00131	.02117	.00182	.00788	.00343
%RSD	889.59	177.04	35.712	83.279	629.54	563.60	498.72
#1	.06069	-.00150	.00240	.01760	.00160	.00084	.00259
#2	-.02239	.00571	.00357	.00928	-.00043	.00955	-.00039
#3	-.05898	.00190	.00501	.04939	-.00204	-.00619	-.00426
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: CCB Acquired: 6/23/2016 18:01:33 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00612**	**-.00027**	**.00319**	**.00025**	**.00023**	**-.00325**	**-.00471**
Stddev	.00153	.00342	.00271	.00103	.00038	.00279	.00086
%RSD	25.064	1269.5	84.974	412.62	169.30	85.836	18.269
#1	.00449	-.00355	.00269	-.00074	-.00018	-.00174	-.00566
#2	.00753	-.00053	.00612	.00132	.00028	-.00154	-.00398
#3	.00634	.00327	.00077	.00017	.00058	-.00647	-.00449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00008**	**.00027**	F **.24105**
Stddev	.00092	.00012	.41150
%RSD	1209.9	46.847	170.71
#1	-.00098	.00021	.54842
#2	.00054	.00018	.40117
#3	.00067	.00041	-.22644
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6672.3**	**41768.**	**2119.7**
Stddev	57.6	262.	32.6
%RSD	.86323	.62780	1.5373
#1	6705.6	42016.	2128.0
#2	6705.5	41794.	2083.8
#3	6605.8	41493.	2147.4

Sample Name: L1606109803 Acquired: 6/23/2016 18:05:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00032**	**.03085**	**-.00127**	**.00183**	**-.00146**	**.00004**	**.19954**	**.00007**
Stddev	.00236	.01045	.00348	.00087	.00085	.00007	.02976	.00016
%RSD	746.66	33.859	274.17	47.779	57.997	158.69	14.912	230.00
#1	.00241	.03757	-.00520	.00147	-.00081	.00010	.20422	-.00011
#2	-.00171	.03617	.00140	.00283	-.00242	.00007	.22668	.00018
#3	-.00165	.01882	-.00001	.00120	-.00116	-.00003	.16772	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.00568**	**.00388**	**.39187**	**.10478**	**.00034**	**.12477**	**.01117**
Stddev	.00033	.00040	.00075	.05326	.14846	.00690	.09992	.00202
%RSD	1223.9	7.0496	19.420	13.590	141.68	2058.5	80.089	18.078
#1	-.00037	.00598	.00367	.36606	.20874	.00375	.01013	.01079
#2	.00028	.00523	.00472	.45311	.17085	.00486	.17078	.00937
#3	.00001	.00584	.00326	.35643	-.06524	-.00761	.19339	.01336
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01433**	**.14788**	**.00239**	**-.00401**	**-.00121**	**-.00112**	**-.00779**	**.00373**
Stddev	.00040	.04259	.00040	.00288	.00159	.00565	.00213	.00124
%RSD	2.7886	28.802	16.639	71.900	130.64	504.39	27.319	33.311
#1	.01390	.18295	.00247	-.00583	-.00301	.00539	-.01003	.00233
#2	.01440	.16021	.00274	-.00069	-.00001	-.00484	-.00757	.00419
#3	.01469	.10048	.00196	-.00551	-.00062	-.00391	-.00579	.00468
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606109803 Acquired: 6/23/2016 18:05:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.00160	.00432	-.00693	-.00031	.00470	.05902
Stddev	.00059	.00022	.00543	.00465	.00124	.00007	.04433
%RSD	337.40	13.821	125.73	67.076	399.03	1.4400	75.109
#1	.00054	.00138	-.00146	-.01029	-.00033	.00477	.10269
#2	-.00050	.00182	.00932	-.00163	.00094	.00464	.06031
#3	.00048	.00160	.00510	-.00886	-.00154	.00469	.01406
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6701.9	41737.	2133.3
Stddev	17.7	223.	23.6
%RSD	.26482	.53370	1.1066
#1	6684.0	41936.	2107.7
#2	6702.4	41778.	2138.2
#3	6719.4	41496.	2154.1

Sample Name: L1606109804 Acquired: 6/23/2016 18:09:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.00550	.00148	.00398	.00014	-.00000	.05639	.00011
Stddev	.00219	.00612	.00302	.00090	.00066	.00014	.02441	.00010
%RSD	8054.2	111.32	204.56	22.756	478.27	12248.	43.295	91.576
#1	.00205	-.00072	.00110	.00492	.00048	.00000	.08169	.00011
#2	.00034	.00570	.00467	.00389	-.00062	-.00014	.05452	.00020
#3	-.00231	.01151	-.00134	.00312	.00056	.00014	.03297	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	-.00048	.00039	.00509	.07226	-.00432	.08860	-.00098
Stddev	.00047	.00177	.00047	.00413	.11460	.00188	.02282	.00192
%RSD	981.46	369.62	120.47	81.176	158.60	43.602	25.750	195.61
#1	.00046	-.00226	.00002	.00662	.11487	-.00448	.08077	-.00230
#2	.00015	.00128	.00093	.00041	-.05755	-.00612	.11430	.00122
#3	-.00046	-.00045	.00024	.00823	.15944	-.00236	.07074	-.00186
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	.28447	-.00051	-.01137	-.00379	.00134	-.00025	-.01961
Stddev	.00030	.03222	.00045	.00801	.00241	.00677	.00472	.00119
%RSD	78.960	11.326	89.242	70.503	63.646	504.08	1916.6	6.0610
#1	.00007	.28282	-.00042	-.00434	-.00635	.00646	.00471	-.01950
#2	.00041	.31748	-.00099	-.02009	-.00156	-.00633	-.00469	-.01848
#3	.00066	.25310	-.00010	-.00967	-.00346	.00390	-.00076	-.02085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606109804 Acquired: 6/23/2016 18:09:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**.00727**	**-.00271**	**-.00425**	**.00021**	**.00148**	**-.01678**
Stddev	.00012	.00034	.00158	.00185	.00078	.00021	.29091
%RSD	149.43	4.6162	58.348	43.577	374.98	14.359	1733.8
#1	.00006	.00757	-.00433	-.00448	.00104	.00139	.18184
#2	-.00016	.00734	-.00263	-.00229	.00011	.00173	.11852
#3	-.00014	.00691	-.00117	-.00598	-.00052	.00134	-.35070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6688.2**	**41655.**	**2109.0**
Stddev	56.4	133.	18.7
%RSD	.84272	.31956	.88651
#1	6659.9	41774.	2087.4
#2	6753.1	41679.	2119.9
#3	6651.7	41511.	2119.7

Sample Name: L1606076401 Acquired: 6/23/2016 18:13:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00245	.67019	.00010	.00833	.01433	.00003	37.313	.00009
Stddev	.00064	.00585	.00478	.00400	.00127	.00014	.132	.00011
%RSD	26.141	.87236	4915.8	47.991	8.8257	429.53	.35301	115.20
#1	.00243	.67675	-.00530	.00372	.01377	.00008	37.462	.00013
#2	.00182	.66553	.00380	.01082	.01578	.00015	37.267	-.00003
#3	.00310	.66828	.00179	.01046	.01345	-.00013	37.211	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00177	.13494	.00493	2.1093	3.5116	.00538	12.516	.47690
Stddev	.00027	.00081	.00173	.0368	.1337	.00492	.251	.00425
%RSD	15.254	.60366	35.121	1.7452	3.8081	91.565	2.0071	.89198
#1	.00146	.13588	.00619	2.1427	3.6345	.01007	12.781	.48122
#2	.00191	.13437	.00564	2.0698	3.5309	.00580	12.487	.47677
#3	.00195	.13459	.00296	2.1153	3.3692	.00026	12.281	.47272
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00239	7.1134	.06661	.12519	.00353	.00172	.00189	5.8796
Stddev	.00028	.0421	.00053	.00389	.00278	.00471	.00179	.0247
%RSD	11.781	.59130	.79827	3.1089	78.703	273.59	94.695	.41985
#1	.00270	7.1321	.06712	.12451	.00584	-.00218	-.00008	5.8957
#2	.00230	7.0652	.06666	.12938	.00431	.00694	.00342	5.8512
#3	.00216	7.1429	.06605	.12168	.00045	.00040	.00234	5.8918
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606076401 Acquired: 6/23/2016 18:13:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.21848	.02711	-.00526	.00152	.01133	.29378
Stddev	.00053	.00139	.00262	.00115	.00075	.00027	.28967
%RSD	4257.4	.63577	9.6647	21.837	49.639	2.3502	98.600
#1	.00059	.22007	.03006	-.00608	.00213	.01140	.10070
#2	-.00044	.21748	.02623	-.00576	.00176	.01103	.15379
#3	-.00012	.21789	.02504	-.00395	.00068	.01155	.62685
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6666.0	41778.	2147.7
Stddev	21.7	229.	44.3
%RSD	.32537	.54913	2.0641
#1	6658.2	41696.	2121.5
#2	6690.5	41600.	2122.8
#3	6649.4	42037.	2198.9

Sample Name: L1606076402 Acquired: 6/23/2016 18:17:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00113	.17691	.00122	.01438	.01126	-.00007	47.643	.00046
Stddev	.00008	.00451	.00550	.00105	.00043	.00007	.152	.00035
%RSD	6.6984	2.5493	451.48	7.3081	3.8067	88.547	.31914	77.689
#1	-.00121	.17594	.00265	.01351	.01094	-.00002	47.529	.00010
#2	-.00113	.18183	-.00485	.01554	.01110	-.00005	47.816	.00045
#3	-.00106	.17297	.00586	.01408	.01175	-.00015	47.585	.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	.00770	.00173	.25827	3.3547	.00082	13.331	.01953
Stddev	.00066	.00082	.00180	.01292	.0490	.00546	.106	.00183
%RSD	140.89	10.586	103.87	5.0018	1.4609	664.19	.79675	9.3761
#1	-.00028	.00820	-.00034	.25716	3.3133	.00131	13.289	.02164
#2	.00073	.00815	.00288	.24595	3.4088	.00602	13.252	.01835
#3	.00096	.00676	.00265	.27171	3.3420	-.00487	13.451	.01861
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	85.841	.00393	.01987	.00031	.00407	-.00554	4.9290
Stddev	.00036	.284	.00086	.00461	.00230	.00232	.00977	.0097
%RSD	74.124	.33036	21.834	23.192	751.95	56.913	176.51	.19731
#1	.00064	85.671	.00313	.02519	-.00217	.00145	-.01667	4.9400
#2	.00074	85.684	.00381	.01712	.00238	.00583	.00165	4.9218
#3	.00007	86.169	.00484	.01729	.00072	.00495	-.00160	4.9251
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606076402 Acquired: 6/23/2016 18:17:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00172	.17262	-.00265	-.00410	-.00007	.00471	.40901
Stddev	.00082	.00082	.00405	.00250	.00091	.00010	.33393
%RSD	47.322	.47585	153.10	60.989	1359.2	2.0262	81.643
#1	.00252	.17344	-.00309	-.00186	-.00069	.00470	.53676
#2	.00089	.17264	.00161	-.00680	.00097	.00462	.03007
#3	.00176	.17180	-.00646	-.00364	-.00048	.00481	.66021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6546.5	40659.	2108.5
Stddev	28.1	201.	15.3
%RSD	.42958	.49347	.72557
#1	6561.7	40449.	2124.6
#2	6514.1	40849.	2106.9
#3	6563.7	40679.	2094.1

Sample Name: L1606076403 Acquired: 6/23/2016 18:21:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00137	.15342	.00118	.01561	.01121	.00003	46.708	.00034
Stddev	.00144	.01220	.00354	.00156	.00114	.00007	.333	.00016
%RSD	104.86	7.9497	299.98	10.017	10.172	207.11	.71252	47.105
#1	.00276	.15228	.00523	.01638	.01119	.00004	47.070	.00019
#2	.00148	.16615	-.00041	.01663	.01236	.00010	46.637	.00033
#3	-.00012	.14184	-.00128	.01381	.01008	-.00004	46.416	.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	.00847	.00160	.25037	3.2322	-.00343	13.109	.01732
Stddev	.00048	.00215	.00051	.01608	.1197	.00219	.140	.00025
%RSD	105.62	25.328	31.641	6.4231	3.7025	63.908	1.0676	1.4475
#1	.00099	.01061	.00135	.24721	3.1397	-.00591	13.252	.01732
#2	.00010	.00848	.00126	.26779	3.1895	-.00259	13.105	.01706
#3	.00026	.00632	.00218	.23609	3.3674	-.00178	12.972	.01756
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	83.906	.00432	.01477	.00450	.00054	-.00630	4.8394
Stddev	.00021	.704	.00062	.00496	.00594	.00823	.00533	.0108
%RSD	145.51	.83873	14.339	33.621	132.00	1523.4	84.657	.22390
#1	.00024	84.668	.00370	.00922	.00040	-.00564	-.00982	4.8447
#2	.00028	83.772	.00494	.01629	.01131	.00989	-.00890	4.8466
#3	-.00010	83.280	.00432	.01879	.00179	-.00263	-.00016	4.8270
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606076403 Acquired: 6/23/2016 18:21:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00189	.16928	-.00280	-.00350	-.00037	.00427	.33488
Stddev	.00087	.00110	.00261	.00165	.00108	.00027	.28811
%RSD	46.182	.64857	93.235	47.233	289.03	6.2712	86.033
#1	.00253	.17053	-.00577	-.00531	-.00161	.00439	.48732
#2	.00090	.16886	-.00085	-.00207	.00037	.00397	.00258
#3	.00224	.16845	-.00178	-.00311	.00012	.00447	.51476
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6581.0	40913.	2128.6
Stddev	5.4	301.	32.8
%RSD	.08278	.73656	1.5394
#1	6574.8	40952.	2106.9
#2	6584.5	40594.	2112.5
#3	6583.9	41193.	2166.3

Sample Name: L1606095701 Acquired: 6/23/2016 18:25:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.46956	.00251	.02030	.04833	.00003	49.298	.00021
Stddev	.00116	.00247	.00083	.00483	.00100	.00005	.380	.00019
%RSD	283.11	.52507	32.898	23.794	2.0760	143.19	.77063	90.357
#1	.00160	.46729	.00340	.01479	.04946	-.00001	49.398	.00006
#2	-.00072	.47218	.00235	.02380	.04755	.00003	49.618	.00041
#3	.00036	.46920	.00178	.02230	.04798	.00008	48.878	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.00117	.00294	.90286	1.5234	.00299	12.797	.07921
Stddev	.00016	.00017	.00150	.02505	.1258	.00416	.204	.00280
%RSD	34.195	14.848	50.801	2.7744	8.2581	138.79	1.5973	3.5404
#1	.00039	.00098	.00204	.92120	1.4450	-.00175	12.561	.07627
#2	.00038	.00131	.00212	.91306	1.4566	.00596	12.905	.08186
#3	.00067	.00123	.00467	.87432	1.6685	.00477	12.925	.07952
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	3.8733	.00033	.04837	.00336	-.00283	.00062	4.1822
Stddev	.00048	.0248	.00057	.00397	.00588	.00529	.00509	.0038
%RSD	106.40	.63975	174.89	8.1973	175.22	186.90	821.76	.09190
#1	.00063	3.9009	.00047	.05197	.00822	.00326	-.00493	4.1833
#2	-.00009	3.8529	.00082	.04903	-.00318	-.00552	.00170	4.1779
#3	.00081	3.8662	-.00030	.04412	.00504	-.00623	.00508	4.1853
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606095701 Acquired: 6/23/2016 18:25:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.26575	-.00460	-.00190	.00016	.00477	.18671
Stddev	.00076	.00141	.00397	.00470	.00026	.00014	.25228
%RSD	1127.9	.53205	86.124	248.06	165.00	2.9160	135.12
#1	.00070	.26627	-.00436	-.00420	.00020	.00486	-.03830
#2	-.00009	.26684	-.00077	.00352	.00040	.00485	.13898
#3	-.00081	.26416	-.00869	-.00501	-.00012	.00461	.45944
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6633.8	41376.	2099.5
Stddev	37.1	291.	7.1
%RSD	.55940	.70297	.33861
#1	6661.1	41062.	2100.6
#2	6648.8	41636.	2091.9
#3	6591.5	41431.	2106.0

Sample Name: L1606095702 Acquired: 6/23/2016 18:29:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.02149	-.00029	.01798	.04394	-.00005	48.548	.00016
Stddev	.00120	.00717	.00363	.00283	.00013	.00009	.113	.00020
%RSD	338.55	33.343	1265.1	15.710	.28482	186.99	.23191	128.29
#1	.00155	.02937	-.00024	.01478	.04391	-.00003	48.543	-.00006
#2	.00038	.01536	-.00394	.01905	.04383	.00003	48.664	.00019
#3	-.00086	.01975	.00332	.02012	.04408	-.00015	48.439	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	.00018	.00270	.01333	1.4334	.00181	12.360	.04977
Stddev	.00029	.00074	.00104	.00520	.0107	.00516	.188	.00147
%RSD	124.55	409.37	38.421	39.005	.74428	284.70	1.5241	2.9581
#1	.00010	-.00042	.00376	.01807	1.4222	-.00050	12.567	.04817
#2	-.00039	.00100	.00266	.00777	1.4347	.00772	12.199	.05008
#3	-.00041	-.00004	.00169	.01416	1.4434	-.00179	12.314	.05107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	3.8295	.00047	.00890	-.00152	.00413	-.00556	3.5646
Stddev	.00041	.0622	.00056	.00959	.00091	.00142	.00430	.0105
%RSD	89.215	1.6239	120.78	107.82	59.749	34.322	77.442	.29519
#1	.00025	3.8845	.00007	.00556	-.00178	.00386	-.00914	3.5766
#2	.00020	3.7620	.00111	.00142	-.00226	.00566	-.00674	3.5599
#3	.00094	3.8419	.00022	.01971	-.00051	.00286	-.00079	3.5572
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606095702 Acquired: 6/23/2016 18:29:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.25718	-.01617	-.00292	-.00158	.00276	.25728
Stddev	.00011	.00214	.00935	.00156	.00059	.00016	.40159
%RSD	34.052	.83289	57.848	53.296	37.039	5.8090	156.09
#1	.00022	.25955	-.02691	-.00442	-.00103	.00282	-.15534
#2	.00044	.25539	-.00976	-.00131	-.00219	.00288	.64684
#3	.00029	.25660	-.01185	-.00303	-.00152	.00258	.28035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6634.1	41520.	2136.4
Stddev	35.2	131.	44.7
%RSD	.53089	.31504	2.0909
#1	6598.3	41376.	2086.8
#2	6635.3	41551.	2148.8
#3	6668.7	41632.	2173.6

Sample Name: CCV Acquired: 6/23/2016 18:33:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.37892	9.4387	.37738	.47256	.94946	.04758	9.5075
Stddev	.00148	.0146	.00259	.00305	.00322	.00017	.0685
%RSD	.39011	.15488	.68700	.64544	.33864	.35065	.72027
#1	.38009	9.4240	.38032	.47530	.94608	.04771	9.4676
#2	.37942	9.4533	.37541	.46928	.94982	.04765	9.4684
#3	.37726	9.4389	.37641	.47312	.95247	.04739	9.5866
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04694	.19097	.47642	.48024	3.7454	47.589	.96391
Stddev	.00038	.00060	.00177	.00172	.0267	.209	.00531
%RSD	.81436	.31192	.37218	.35728	.71307	.43924	.55081
#1	.04714	.19166	.47496	.48079	3.7624	47.380	.95931
#2	.04717	.19062	.47589	.48161	3.7146	47.589	.96972
#3	.04649	.19064	.47839	.47831	3.7591	47.798	.96271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.5330	.47716	.95180	47.369	.47779	9.4288	.47264
Stddev	.1380	.00452	.00445	.136	.00101	.0198	.00044
%RSD	1.4480	.94690	.46703	.28759	.21184	.20944	.09281
#1	9.3868	.47739	.95630	47.213	.47768	9.4450	.47285
#2	9.6611	.47253	.95168	47.430	.47683	9.4068	.47292
#3	9.5511	.48156	.94742	47.463	.47885	9.4347	.47213
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: CCV Acquired: 6/23/2016 18:33:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1353**	**.38157**	**4.7878**	**.94812**	**.94630**	**.94801**	**.48121**
Stddev	.0015	.00111	.0073	.00312	.00312	.01023	.00217
%RSD	.12990	.29010	.15352	.32951	.33000	1.0787	.45189
#1	1.1366	.38222	4.7963	.95070	.94271	.93631	.48083
#2	1.1337	.38220	4.7828	.94465	.94841	.95529	.47925
#3	1.1356	.38030	4.7843	.94900	.94778	.95241	.48355
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.95198**	**.95325**	F **.09466**
Stddev	.00202	.00225	.27239
%RSD	.21241	.23553	287.76
#1	.95399	.95580	.19384
#2	.95199	.95239	-.21343
#3	.94995	.95157	.30356
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6829.4**	**42429.**	**2191.9**
Stddev	12.0	491.	25.5
%RSD	.17610	1.1575	1.1649
#1	6837.9	42290.	2175.1
#2	6834.7	42022.	2221.3
#3	6815.6	42975.	2179.4

Sample Name: CCB Acquired: 6/23/2016 18:36:49 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00322**	**.00107**	**-.00054**	**.00322**	**.00006**	**.00009**	**.02193**
Stddev	.00043	.00584	.00138	.00071	.00147	.00001	.03302
%RSD	13.435	544.37	257.70	22.014	2255.3	10.149	150.58
#1	.00309	.00723	.00106	.00367	-.00132	.00008	.01644
#2	.00371	.00039	-.00144	.00240	.00160	.00009	-.00800
#3	.00287	-.00440	-.00123	.00358	-.00009	.00010	.05735
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**.00018**	**-.00042**	**.00126**	**.02179**	**.11279**	**-.00067**
Stddev	.00014	.00038	.00167	.00134	.02326	.08636	.00587
%RSD	182.22	210.03	399.06	106.42	106.75	76.563	872.21
#1	.00024	.00056	-.00036	.00176	.03802	.20919	-.00743
#2	.00004	-.00020	.00122	-.00026	-.00486	.08667	.00222
#3	-.00004	.00019	-.00212	.00226	.03219	.04251	.00319
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02601**	**.00041**	**.00309**	**.08611**	**-.00017**	**.00201**	**-.00231**
Stddev	.00787	.00462	.00037	.06126	.00074	.00369	.00149
%RSD	30.276	1132.0	12.029	71.145	441.11	183.39	64.604
#1	.02246	-.00052	.00267	.06682	.00059	-.00054	-.00062
#2	.02053	.00542	.00337	.03682	-.00020	.00033	-.00285
#3	.03503	-.00368	.00324	.15470	-.00090	.00625	-.00346
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: CCB Acquired: 6/23/2016 18:36:49 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00178**	**.00235**	**.00300**	**.00030**	**.00073**	**-.00027**	**-.00344**
Stddev	.00352	.00736	.00017	.00075	.00010	.00192	.00271
%RSD	198.25	313.53	5.6604	253.34	13.143	700.32	78.666
#1	-.00221	.00539	.00284	.00092	.00062	-.00182	-.00634
#2	.00305	-.00605	.00318	-.00054	.00077	.00188	-.00302
#3	.00448	.00771	.00299	.00050	.00080	-.00088	-.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00023**	**.00017**	F **.30996**
Stddev	.00082	.00026	.44738
%RSD	353.90	152.67	144.34
#1	-.00013	.00031	.51733
#2	.00118	-.00013	-.20349
#3	-.00035	.00032	.61602
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6847.7**	**42764.**	**2190.8**
Stddev	18.6	212.	5.5
%RSD	.27202	.49617	.24955
#1	6838.4	42826.	2184.7
#2	6869.1	42938.	2192.8
#3	6835.5	42527.	2195.1

Sample Name: L1606095703 Acquired: 6/23/2016 18:40:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00157	.59442	.00345	.01544	.05978	.00002	36.179	.00021
Stddev	.00140	.00140	.00372	.00226	.00166	.00008	.233	.00017
%RSD	89.489	.23471	107.82	14.612	2.7840	315.39	.64331	79.288
#1	.00259	.59283	.00035	.01648	.06092	.00011	36.405	.00023
#2	.00214	.59501	.00758	.01285	.06056	-.00003	36.192	.00038
#3	-.00003	.59543	.00243	.01699	.05787	-.00000	35.940	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	.00171	.00235	.99066	1.0189	.00306	4.2466	.34135
Stddev	.00029	.00065	.00116	.00191	.1477	.00520	.1543	.00578
%RSD	57.273	38.095	49.421	.19284	14.493	170.05	3.6338	1.6936
#1	.00018	.00100	.00118	.99000	.97647	.00895	4.1429	.34787
#2	.00074	.00184	.00237	.98917	1.1832	.00113	4.4240	.33684
#3	.00059	.00229	.00350	.99281	.89714	-.00090	4.1730	.33935
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00158	9.9139	.00125	.06880	.00203	.00079	-.00517	4.4030
Stddev	.00038	.0706	.00076	.00768	.00168	.00577	.00107	.0083
%RSD	24.292	.71237	60.961	11.168	82.575	735.03	20.696	.18913
#1	.00191	9.9842	.00113	.06853	.00010	.00362	-.00400	4.4025
#2	.00167	9.8430	.00208	.07661	.00292	.00459	-.00539	4.3950
#3	.00116	9.9146	.00056	.06125	.00308	-.00586	-.00611	4.4116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606095703 Acquired: 6/23/2016 18:40:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.13708	.00451	-.00202	.00078	.00490	.22494
Stddev	.00088	.00079	.01428	.00267	.00035	.00024	.11125
%RSD	513.50	.57511	316.39	132.43	44.919	4.8544	49.458
#1	.00022	.13772	-.01170	-.00500	.00067	.00502	.12100
#2	.00102	.13733	.01523	-.00120	.00118	.00506	.21152
#3	-.00073	.13620	.01000	.00015	.00050	.00463	.34229
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6641.1	41542.	2110.2
Stddev	47.0	387.	42.7
%RSD	.70732	.93262	2.0250
#1	6610.2	41137.	2074.7
#2	6618.0	41909.	2098.4
#3	6695.1	41580.	2157.7

Sample Name: L1606095704 Acquired: 6/23/2016 18:44:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00171	.01427	-.00254	.01401	.04366	.00001	35.183	.00015
Stddev	.00187	.00827	.00245	.00145	.00176	.00007	.524	.00017
%RSD	109.40	57.926	96.490	10.332	4.0281	938.95	1.4883	116.97
#1	.00375	.01991	-.00531	.01561	.04341	-.00008	35.381	.00027
#2	.00007	.00478	-.00065	.01361	.04552	.00004	35.579	-.00005
#3	.00132	.01813	-.00167	.01280	.04203	.00006	34.589	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	.00023	.00314	.00854	.90554	-.00053	4.1738	.13131
Stddev	.00017	.00027	.00209	.01235	.04311	.00195	.0469	.00168
%RSD	61.984	120.89	66.548	144.50	4.7611	368.87	1.1239	1.2783
#1	-.00041	.00004	.00554	-.00223	.92277	.00023	4.1196	.13296
#2	-.00032	.00054	.00170	.02202	.93737	.00093	4.2002	.13137
#3	-.00008	.00010	.00219	.00585	.85648	-.00275	4.2015	.12960
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00146	9.9224	.00122	.02546	.00187	.00274	-.00609	3.6801
Stddev	.00034	.2004	.00114	.01084	.00327	.00376	.00550	.0062
%RSD	23.395	2.0192	93.082	42.580	174.85	137.20	90.310	.16848
#1	.00107	10.130	.00251	.01415	.00529	.00275	-.00747	3.6873
#2	.00171	9.9074	.00082	.02646	.00154	-.00102	-.01077	3.6761
#3	.00161	9.7299	.00034	.03577	-.00122	.00649	-.00003	3.6770
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606095704 Acquired: 6/23/2016 18:44:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00044**	**.13398**	**-.00259**	**-.00487**	**-.00042**	**.00404**	**.39599**
Stddev	.00030	.00097	.00767	.00290	.00014	.00020	.04470
%RSD	68.069	.72204	296.19	59.450	32.889	5.0229	11.288
#1	-.00031	.13510	.00380	-.00161	-.00033	.00423	.39112
#2	-.00079	.13343	-.00047	-.00585	-.00058	.00406	.35393
#3	-.00024	.13342	-.01109	-.00716	-.00035	.00383	.44293
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6691.6**	**41683.**	**2130.5**
Stddev	16.3	188.	44.8
%RSD	.24349	.45009	2.1019
#1	6674.7	41874.	2106.4
#2	6707.2	41499.	2102.9
#3	6692.9	41675.	2182.2

Sample Name: L1606095705 Acquired: 6/23/2016 18:48:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	.18137	.00132	.01393	.05227	.00000	47.576	-.00017
Stddev	.00022	.00236	.00336	.00262	.00068	.00006	.406	.00016
%RSD	27.412	1.3014	254.59	18.802	1.2936	1545.4	.85245	98.177
#1	.00055	.17984	-.00165	.01122	.05295	.00007	47.676	-.00014
#2	.00093	.18018	.00064	.01413	.05226	-.00001	47.129	-.00002
#3	.00093	.18409	.00497	.01644	.05160	-.00005	47.922	-.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.00081	.00165	.24818	.66421	-.00237	5.8917	.04016
Stddev	.00049	.00111	.00028	.02329	.15036	.00580	.1105	.00146
%RSD	327.66	136.79	16.738	9.3859	22.638	244.94	1.8758	3.6247
#1	.00050	.00005	.00195	.26948	.57304	-.00408	6.0110	.04145
#2	.00036	.00030	.00162	.22331	.58183	.00409	5.7928	.04046
#3	-.00041	.00208	.00140	.25176	.83776	-.00711	5.8714	.03858
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	4.2444	.00044	.02145	-.00147	.00210	-.00161	3.9144
Stddev	.00037	.0382	.00138	.00960	.00364	.00064	.00655	.0080
%RSD	69.362	.90092	314.47	44.765	248.05	30.375	406.75	.20417
#1	.00089	4.2867	-.00079	.03237	-.00565	.00257	-.00833	3.9237
#2	.00058	4.2341	.00193	.01434	.00101	.00137	-.00126	3.9100
#3	.00015	4.2123	.00017	.01764	.00024	.00235	.00476	3.9097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606095705 Acquired: 6/23/2016 18:48:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00124**	**.16651**	**-.01359**	**-.00521**	**.00084**	**.00210**	**.15995**
Stddev	.00099	.00174	.00564	.00062	.00055	.00006	.33370
%RSD	79.444	1.0457	41.504	11.980	65.519	2.7028	208.63
#1	-.00013	.16843	-.01365	-.00569	.00109	.00214	.50631
#2	-.00159	.16606	-.00792	-.00450	.00021	.00203	.13299
#3	-.00201	.16504	-.01920	-.00543	.00123	.00212	-.15945
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6676.1**	**41561.**	**2103.6**
Stddev	12.6	161.	24.0
%RSD	.18881	.38711	1.1405
#1	6690.1	41742.	2107.2
#2	6672.8	41433.	2125.6
#3	6665.6	41508.	2078.0

Sample Name: L1606096101 Acquired: 6/23/2016 18:52:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00082	.01430	.00369	.01759	.00065	-.00004	.04649	-.00016
Stddev	.00101	.00586	.00264	.00153	.00060	.00005	.04475	.00011
%RSD	122.72	40.990	71.487	8.6840	91.837	113.85	96.246	67.330
#1	-.00034	.00813	.00410	.01814	.00134	-.00010	.05237	-.00005
#2	.00136	.01498	.00087	.01587	.00033	.00000	.08801	-.00016
#3	.00144	.01979	.00609	.01877	.00028	-.00003	-.00090	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.00024	.01766	.09903	.10656	.00252	-.01866	.00398
Stddev	.00056	.00013	.00069	.02628	.09276	.00342	.06339	.00246
%RSD	164.44	55.453	3.9062	26.535	87.051	136.01	339.78	61.709
#1	.00024	.00020	.01732	.09611	.01800	.00645	-.08612	.00647
#2	-.00016	.00038	.01845	.12665	.09866	.00026	.03967	.00155
#3	.00095	.00013	.01720	.07434	.20302	.00083	-.00952	.00393
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	107.16	-.00002	.03665	.00304	.00296	-.00309	5.9627
Stddev	.00055	1.21	.00170	.00369	.00053	.00129	.00524	.0081
%RSD	1743.4	1.1249	7247.6	10.064	17.513	43.498	169.55	.13655
#1	.00064	108.50	.00194	.03929	.00277	.00155	-.00074	5.9648
#2	-.00012	106.16	-.00110	.03243	.00269	.00407	.00057	5.9537
#3	-.00042	106.82	-.00091	.03823	.00365	.00327	-.00910	5.9696
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606096101 Acquired: 6/23/2016 18:52:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00123**	**.00009**	**-.00012**	**-.00673**	**-.00085**	**.00397**	**.21821**
Stddev	.00042	.00025	.00564	.00413	.00089	.00018	.04757
%RSD	34.134	265.03	4817.0	61.413	103.95	4.5901	21.800
#1	.00144	-.00013	-.00483	-.00336	-.00072	.00394	.16868
#2	.00075	.00004	.00613	-.01134	-.00180	.00381	.26354
#3	.00150	.00037	-.00165	-.00548	-.00004	.00417	.22241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6592.8**	**41252.**	**2103.4**
Stddev	17.0	291.	47.5
%RSD	.25725	.70443	2.2575
#1	6595.4	40916.	2058.8
#2	6574.6	41415.	2153.3
#3	6608.2	41424.	2098.1

Sample Name: L1606096102 Acquired: 6/23/2016 18:56:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00079**	**.03478**	**.00589**	**.01533**	**.02658**	**-.00009**	**27.946**	**-.00005**
Stddev	.00186	.00579	.00137	.00335	.00018	.00004	.659	.00022
%RSD	235.75	16.640	23.210	21.834	.65976	40.468	2.3584	471.56
#1	.00069	.02830	.00447	.01574	.02649	-.00010	28.691	-.00000
#2	-.00287	.03661	.00719	.01180	.02646	-.00005	27.440	-.00029
#3	-.00019	.03942	.00601	.01846	.02678	-.00013	27.706	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**.00057**	**.00211**	**.07517**	**.95068**	**-.00017**	**4.4154**	**.12814**
Stddev	.00012	.00116	.00118	.01917	.12455	.00106	.0966	.00422
%RSD	122.50	204.26	55.846	25.503	13.101	623.39	2.1883	3.2924
#1	.00017	.00092	.00222	.09509	.80692	-.00137	4.5065	.13251
#2	.00017	.00152	.00323	.05686	1.0194	.00064	4.3140	.12782
#3	-.00004	-.00073	.00088	.07355	1.0258	.00022	4.4257	.12409
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00077**	**2.8960**	**.00155**	**.00675**	**-.00147**	**-.00079**	**-.00450**	**1.9147**
Stddev	.00018	.0986	.00062	.00402	.00109	.00203	.00538	.0058
%RSD	22.925	3.4051	39.619	59.594	74.555	256.57	119.66	.30207
#1	.00069	2.9809	.00179	.00220	-.00127	.00048	-.01064	1.9214
#2	.00097	2.7878	.00202	.00820	-.00048	-.00314	-.00059	1.9118
#3	.00065	2.9192	.00086	.00985	-.00264	.00028	-.00227	1.9110
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606096102 Acquired: 6/23/2016 18:56:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00047**	**.09203**	**-.00699**	**-.00581**	**.00001**	**.00122**	**.19167**
Stddev	.00152	.00238	.00325	.00218	.00060	.00015	.39664
%RSD	319.98	2.5851	46.457	37.509	4349.6	12.672	206.94
#1	.00001	.09410	-.00457	-.00773	.00065	.00107	.60420
#2	-.00217	.08943	-.01068	-.00344	-.00006	.00121	.15771
#3	.00074	.09257	-.00572	-.00625	-.00055	.00138	-.18689
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6690.9**	**41659.**	**2159.3**
Stddev	15.4	166.	23.9
%RSD	.22972	.39942	1.1048
#1	6679.1	41827.	2132.7
#2	6708.3	41655.	2166.7
#3	6685.3	41494.	2178.6

Sample Name: L1606099102 Acquired: 6/23/2016 19:00:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.18278	.01279	.07089	.02678	.00003	1.1753
Stddev	.00017	.00874	.00230	.00310	.00094	.00004	.0130
%RSD	197.98	4.7790	18.004	4.3721	3.5015	169.52	1.1019
#1	.00028	.18746	.01165	.06786	.02601	.00006	1.1606
#2	.00005	.18819	.01543	.07075	.02651	-.00002	1.1806
#3	-.00007	.17271	.01127	.07405	.02782	.00005	1.1848
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00374	.00173	.10547	.01142	.70686	2.4306	.00285
Stddev	.00031	.00017	.00069	.00091	.00672	.2276	.00410
%RSD	8.3801	9.8737	.65029	7.9351	.95134	9.3634	143.93
#1	.00362	.00160	.10540	.01211	.70453	2.2038	.00005
#2	.00409	.00192	.10482	.01039	.71445	2.4290	.00095
#3	.00349	.00167	.10619	.01174	.70162	2.6590	.00756
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.81483	.00610	.00617	F 411.44	.00858	.68987	.01663
Stddev	.08854	.00159	.00023	1.75	.00104	.00877	.00140
%RSD	10.866	26.091	3.7232	.42582	12.171	1.2720	8.4229
#1	.87256	.00435	.00592	410.10	.00774	.68564	.01502
#2	.71289	.00651	.00637	410.79	.00975	.69996	.01728
#3	.85904	.00745	.00621	413.42	.00825	.68401	.01758
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Sample Name: L1606099102 Acquired: 6/23/2016 19:00:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00429	-.00276	2.6532	.01212	.18283	.14118	-.00012
Stddev	.00146	.00633	.0058	.00057	.00067	.01057	.00163
%RSD	33.919	229.47	.21752	4.7117	.36652	7.4900	1330.7
#1	.00526	-.00115	2.6467	.01254	.18210	.13107	.00136
#2	.00500	.00261	2.6548	.01147	.18294	.14030	-.00187
#3	.00262	-.00973	2.6579	.01236	.18343	.15217	.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.02620	.14570	6.4213
Stddev	.00048	.00024	.3214
%RSD	1.8484	.16660	5.0053
#1	.02567	.14542	6.6480
#2	.02632	.14589	6.0535
#3	.02662	.14577	6.5624
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6798.1	41761.	2199.9
Stddev	24.0	167.	13.3
%RSD	.35371	.40060	.60321
#1	6803.8	41578.	2190.0
#2	6771.7	41906.	2194.6
#3	6818.8	41798.	2214.9

Sample Name: L1606099501 Acquired: 6/23/2016 19:04:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	.03319	.00198	4.2612	22.007	.00013	F 2231.4
Stddev	.00073	.00812	.00497	.0108	.140	.00007	10.9
%RSD	111.66	24.468	250.83	.25328	.63583	52.114	.49013
#1	.00010	.02381	.00383	4.2649	22.169	.00005	2238.3
#2	.00039	.03790	-.00365	4.2491	21.924	.00018	2218.8
#3	.00149	.03786	.00577	4.2697	21.929	.00017	2237.2
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00230	.00542	.00437	.00761	16.049	77.831	15.290
Stddev	.00066	.00043	.00087	.00268	.109	.457	.102
%RSD	28.682	8.0139	19.948	35.207	.68074	.58771	.66563
#1	.00204	.00521	.00375	.01070	16.175	78.291	15.407
#2	.00305	.00592	.00537	.00603	15.989	77.376	15.216
#3	.00181	.00514	.00400	.00609	15.983	77.827	15.248
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	289.46	2.5248	-.00161	F 5161.1	-.00605	-.04671	-.00084
Stddev	1.34	.0130	.00040	91.9	.00062	.01060	.00404
%RSD	.46449	.51604	24.821	1.7808	10.259	22.695	480.02
#1	290.80	2.5348	-.00118	5246.4	-.00638	-.03903	-.00094
#2	288.11	2.5101	-.00167	5063.8	-.00533	-.05880	.00324
#3	289.46	2.5296	-.00197	5173.3	-.00644	-.04229	-.00483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Sample Name: L1606099501 Acquired: 6/23/2016 19:04:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**.00060**	**1.7140**	**-.00270**	F **293.43**	F **-.23021**	**-.00582**
Stddev	.00390	.00430	.0091	.00145	3.55	.00343	.00281
%RSD	37587.	722.43	.53043	53.583	1.2096	1.4919	48.318
#1	.00450	-.00436	1.7206	-.00436	292.37	-.23049	-.00302
#2	-.00251	.00275	1.7036	-.00173	297.39	-.22665	-.00864
#3	-.00196	.00340	1.7177	-.00201	290.53	-.23350	-.00579
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Pass
High Limit					9.0000	36.000	
Low Limit					-.01000	-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00391**	**.46449**	F **-.84964**
Stddev	.00112	.00152	.26917
%RSD	28.498	.32684	31.680
#1	-.00485	.46570	-1.1604
#2	-.00421	.46278	-.69319
#3	-.00268	.46498	-.69528
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**5043.9**	**30664.**	**1834.7**
Stddev	16.9	150.	7.6
%RSD	.33492	.48802	.41407
#1	5024.6	30608.	1826.5
#2	5056.0	30834.	1836.3
#3	5051.1	30550.	1841.4

Sample Name: L1606099502 Acquired: 6/23/2016 19:08:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00345**	**.02306**	**-.00311**	**4.2770**	**21.493**	**.00016**	F **2199.4**
Stddev	.00099	.01662	.00473	.0112	.107	.00010	10.2
%RSD	28.739	72.096	152.37	.26279	.49855	65.563	.46331
#1	-.00260	.03568	.00094	4.2665	21.584	.00005	2207.7
#2	-.00454	.00422	-.00194	4.2758	21.375	.00025	2202.6
#3	-.00321	.02928	-.00831	4.2888	21.521	.00017	2188.0
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00258**	**.00505**	**.00245**	**.01034**	**14.967**	**76.431**	**15.054**
Stddev	.00018	.00018	.00130	.00137	.073	.482	.075
%RSD	6.8313	3.5760	52.982	13.296	.48454	.63040	.50059
#1	.00238	.00511	.00191	.00878	14.985	76.519	15.096
#2	.00271	.00519	.00151	.01138	14.888	75.911	14.967
#3	.00265	.00485	.00393	.01085	15.029	76.862	15.100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**285.71**	**2.4897**	**-.00104**	F **4892.3**	**-.00500**	**-.05393**	**.00746**
Stddev	1.59	.0149	.00055	124.5	.00081	.00583	.00104
%RSD	.55735	.59915	52.735	2.5451	16.181	10.801	13.884
#1	287.47	2.5069	-.00064	4942.1	-.00421	-.06066	.00665
#2	284.37	2.4802	-.00081	4984.2	-.00495	-.05038	.00710
#3	285.29	2.4820	-.00167	4750.6	-.00582	-.05076	.00863
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Sample Name: L1606099502 Acquired: 6/23/2016 19:08:29 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00124**	**.00073**	**1.5901**	**-.00205**	F **282.05**	F **-.22951**	**-.00301**
Stddev	.00214	.00258	.0105	.00077	1.08	.01217	.00231
%RSD	172.21	351.60	.66137	37.499	.38242	5.3030	76.703
#1	.00091	.00117	1.5782	-.00289	282.22	-.24190	-.00355
#2	-.00128	.00306	1.5942	-.00138	283.02	-.21757	-.00499
#3	-.00337	-.00204	1.5980	-.00189	280.89	-.22904	-.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Pass
High Limit					9.0000	36.000	
Low Limit					-.01000	-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00411**	**.45318**	F **-.64740**
Stddev	.00129	.00131	.07796
%RSD	31.297	.28971	12.042
#1	-.00333	.45167	-.58664
#2	-.00340	.45405	-.73530
#3	-.00559	.45381	-.62026
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**5048.8**	**30332.**	**1858.4**
Stddev	3.9	253.	17.7
%RSD	.07715	.83404	.95240
#1	5053.2	30378.	1844.8
#2	5046.9	30059.	1852.1
#3	5046.2	30558.	1878.4

Sample Name: L1606106401 Acquired: 6/23/2016 19:12:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00137	.93109	.00053	.03729	.05113	.00000	28.407	.00020
Stddev	.00252	.00902	.00338	.00153	.00202	.00011	.262	.00043
%RSD	183.56	.96930	639.15	4.0949	3.9481	2244.2	.92307	214.59
#1	-.00121	.93101	.00099	.03594	.05319	.00011	28.651	.00015
#2	.00151	.94015	.00365	.03894	.05104	.00001	28.439	-.00020
#3	.00382	.92210	-.00306	.03698	.04915	-.00011	28.129	.00066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00058	.00021	.00488	1.1389	1.0564	-.00108	2.9741	.01385
Stddev	.00032	.00086	.00142	.0345	.0930	.00288	.1109	.00248
%RSD	56.184	402.03	29.165	3.0303	8.7985	268.17	3.7294	17.924
#1	.00057	.00116	.00392	1.1770	1.0142	.00149	3.1007	.01663
#2	.00025	-.00002	.00421	1.1096	.99211	-.00052	2.9273	.01185
#3	.00090	-.00050	.00652	1.1303	1.1630	-.00420	2.8942	.01308
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00103	3.1622	.00158	.08777	.00276	.00045	-.00572	4.3193
Stddev	.00012	.1302	.00086	.00354	.00085	.00135	.01212	.0046
%RSD	11.727	4.1165	54.479	4.0300	30.606	297.83	212.07	.10550
#1	.00117	3.2928	.00230	.08694	.00254	-.00043	.00769	4.3152
#2	.00097	3.1615	.00063	.08472	.00205	.00201	-.01591	4.3242
#3	.00095	3.0324	.00181	.09165	.00370	-.00022	-.00892	4.3184
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606106401 Acquired: 6/23/2016 19:12:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	.09591	.01130	-.00267	.00099	.00793	.56831
Stddev	.00047	.00237	.00917	.00175	.00090	.00003	.52710
%RSD	78.603	2.4713	81.158	65.518	91.033	.34720	92.749
#1	.00074	.09837	.00228	-.00301	.00008	.00796	.23401
#2	.00098	.09572	.01099	-.00422	.00188	.00791	.29499
#3	.00007	.09364	.02061	-.00077	.00100	.00793	1.1759
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6738.4	41869.	2132.0
Stddev	11.1	208.	5.4
%RSD	.16498	.49610	.25526
#1	6728.6	41753.	2129.0
#2	6736.2	41746.	2138.3
#3	6750.5	42109.	2128.7

Sample Name: CCV Acquired: 6/23/2016 19:16:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.37919	9.4539	.37838	.47741	.95410	.04762	9.5636
Stddev	.00221	.0169	.00039	.00245	.00513	.00013	.0372
%RSD	.58374	.17847	.10355	.51410	.53813	.27668	.38859
#1	.38055	9.4678	.37878	.47468	.94817	.04774	9.5214
#2	.38039	9.4588	.37835	.47943	.95695	.04748	9.5914
#3	.37664	9.4351	.37800	.47812	.95718	.04762	9.5780
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04743	.19073	.47732	.47745	3.7981	47.840	.97103
Stddev	.00050	.00017	.00127	.00151	.0352	.199	.00699
%RSD	1.0527	.08963	.26621	.31598	.92728	.41493	.71955
#1	.04779	.19083	.47845	.47601	3.7576	47.614	.96329
#2	.04763	.19053	.47595	.47902	3.8152	47.921	.97687
#3	.04686	.19083	.47757	.47730	3.8215	47.986	.97295
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.5182	.47503	.95370	48.127	.47728	9.3799	.47857
Stddev	.1107	.00550	.00396	.203	.00099	.0039	.00307
%RSD	1.1627	1.1583	.41501	.42134	.20780	.04109	.64155
#1	9.6428	.46909	.95745	47.914	.47781	9.3770	.47874
#2	9.4313	.47605	.95408	48.150	.47790	9.3843	.48155
#3	9.4805	.47995	.94956	48.317	.47614	9.3784	.47541
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: CCV Acquired: 6/23/2016 19:16:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1355**	**.37785**	**4.7735**	**.94584**	**.95950**	**.94974**	**.48314**
Stddev	.0014	.00604	.0057	.00205	.00431	.00481	.00202
%RSD	.12258	1.5984	.11925	.21676	.44891	.50688	.41802
#1	1.1369	.38109	4.7670	.94374	.95466	.94648	.48517
#2	1.1341	.38158	4.7762	.94595	.96094	.95527	.48113
#3	1.1355	.37088	4.7773	.94784	.96291	.94747	.48313
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.95446**	**.95114**	F **.47272**
Stddev	.00286	.00014	.27938
%RSD	.29988	.01520	59.100
#1	.95768	.95118	.66932
#2	.95222	.95127	.15292
#3	.95348	.95099	.59591
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6901.5**	**42860.**	**2195.1**
Stddev	41.4	316.	16.1
%RSD	.60057	.73673	.73557
#1	6924.3	42538.	2183.7
#2	6853.6	42875.	2188.1
#3	6926.5	43169.	2213.6

Sample Name: CCB Acquired: 6/23/2016 19:20:08 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00238**	**-.01466**	**.00143**	**.00483**	**-.00003**	**.00001**	**.07786**
Stddev	.00049	.00200	.00149	.00453	.00214	.00009	.06354
%RSD	20.427	13.611	104.06	93.858	6527.4	940.84	81.613
#1	.00284	-.01261	.00199	.00972	.00118	.00006	.15097
#2	.00187	-.01659	-.00026	.00400	.00122	.00006	.03598
#3	.00244	-.01478	.00255	.00077	-.00250	-.00009	.04662
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**-.00031**	**.00022**	**.00039**	**.00442**	**.00595**	**.00280**
Stddev	.00007	.00052	.00124	.00132	.02693	.06585	.00064
%RSD	37.292	170.19	563.67	338.25	609.56	1107.4	22.926
#1	.00023	-.00057	.00004	-.00106	.01159	.04036	.00265
#2	.00011	-.00065	-.00092	.00069	-.02537	-.06998	.00350
#3	.00023	.00030	.00154	.00154	.02703	.04745	.00224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03600**	**.00167**	**.00345**	**.42320**	**-.00024**	**.00139**	F **-.00578**
Stddev	.09635	.00312	.00061	.03957	.00049	.00443	.00184
%RSD	267.61	187.01	17.568	9.3512	202.30	317.35	31.895
#1	.01890	-.00154	.00285	.45813	-.00079	.00606	-.00650
#2	.13975	.00185	.00406	.43125	.00015	.00087	-.00715
#3	-.05065	.00469	.00345	.38022	-.00009	-.00274	-.00368
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							.00500
Low Limit							-.00500

Sample Name: CCB Acquired: 6/23/2016 19:20:08 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00539**	**-.00364**	**.00090**	**-.00057**	**.00373**	**-.00314**	**.00032**
Stddev	.00515	.00131	.00038	.00067	.00020	.00469	.00190
%RSD	95.593	36.045	42.719	116.62	5.2758	149.60	585.89
#1	.01074	-.00478	.00116	-.00075	.00392	.00167	.00249
#2	.00495	-.00221	.00108	.00016	.00352	-.00771	-.00042
#3	.00047	-.00394	.00046	-.00113	.00373	-.00337	-.00110
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00043**	**.00005**	F **.04542**
Stddev	.00072	.00012	.34069
%RSD	169.53	237.68	750.04
#1	-.00008	-.00001	.43855
#2	-.00125	.00019	-.16363
#3	.00006	-.00003	-.13865
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6967.5**	**43395.**	**2190.0**
Stddev	41.4	704.	41.3
%RSD	.59409	1.6225	1.8846
#1	6953.3	43361.	2223.7
#2	6935.1	44115.	2144.0
#3	7014.1	42708.	2202.3

Sample Name: PBW MC Acquired: 6/23/2016 19:24:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	.01182	-.00092	.00493	-.00012	-.00010	.03899	.00002
Stddev	.00163	.00860	.00408	.00276	.00157	.00005	.01101	.00042
%RSD	702.25	72.769	445.47	56.096	1293.5	54.721	28.229	1843.4
#1	.00065	.00253	-.00537	.00388	.00151	-.00014	.04722	.00048
#2	.00161	.01951	.00264	.00806	-.00023	-.00011	.02649	-.00036
#3	-.00157	.01343	-.00001	.00284	-.00164	-.00004	.04326	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.00049	.00204	.00432	.17133	-.00238	.06048	.00264
Stddev	.00029	.00050	.00040	.03628	.08746	.00474	.03409	.00131
%RSD	168.82	101.29	19.724	840.04	51.052	199.46	56.354	49.484
#1	-.00010	.00067	.00239	-.02516	.27127	.00176	.03814	.00248
#2	-.00049	.00088	.00214	-.00672	.10876	-.00754	.09972	.00142
#3	.00007	-.00007	.00160	.04484	.13394	-.00135	.04360	.00402
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00096	.32980	.00109	-.00655	-.00048	.00411	-.00330	-.02137
Stddev	.00036	.05000	.00076	.00347	.00344	.00130	.00992	.00312
%RSD	37.319	15.161	69.359	52.886	720.16	31.721	300.60	14.588
#1	.00079	.36140	.00194	-.01016	-.00415	.00417	-.01302	-.02373
#2	.00072	.35584	.00049	-.00325	.00266	.00538	.00681	-.02254
#3	.00137	.27215	.00084	-.00625	.00005	.00278	-.00369	-.01784
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: PBW MC Acquired: 6/23/2016 19:24:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00040**	**.00085**	**-.00321**	**-.00159**	**.00013**	**.00182**	**-.03501**
Stddev	.00061	.00058	.00748	.00275	.00086	.00009	.26030
%RSD	153.26	68.513	233.36	172.78	656.72	4.7398	743.52
#1	.00056	.00034	.00354	.00057	-.00054	.00177	-.32167
#2	.00090	.00149	-.01126	-.00468	-.00016	.00177	.03005
#3	-.00028	.00073	-.00190	-.00066	.00110	.00192	.18659
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6713.5**	**41826.**	**2105.1**
Stddev	54.0	279.	25.0
%RSD	.80485	.66739	1.1867
#1	6727.2	41946.	2094.7
#2	6654.0	42025.	2087.1
#3	6759.4	41507.	2133.7

Sample Name: LCSW MC Acquired: 6/23/2016 19:28:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20350	4.9935	.19725	.98212	.51929	.02489	5.3105	.02494
Stddev	.00278	.0008	.00175	.00061	.00709	.00006	.0323	.00007
%RSD	1.3668	.01694	.88835	.06228	1.3650	.26082	.60923	.28776
#1	.20050	4.9929	.19553	.98183	.52566	.02483	5.3424	.02500
#2	.20403	4.9931	.19903	.98282	.52055	.02488	5.3113	.02486
#3	.20598	4.9945	.19719	.98170	.51165	.02496	5.2777	.02497
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10152	.25256	.25516	2.0797	25.740	.52639	5.1902	.25850
Stddev	.00055	.00072	.00042	.0675	.264	.00403	.0928	.00472
%RSD	.53818	.28671	.16566	3.2456	1.0251	.76543	1.7881	1.8242
#1	.10140	.25339	.25549	2.1412	25.923	.53020	5.2421	.26354
#2	.10211	.25215	.25468	2.0904	25.858	.52680	5.2454	.25420
#3	.10104	.25212	.25531	2.0075	25.437	.52218	5.0831	.25775
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51567	25.901	.25435	4.8264	.25513	.60348	.19064	2.5576
Stddev	.00163	.329	.00155	.0089	.00174	.00417	.00132	.0042
%RSD	.31684	1.2719	.61000	.18425	.68292	.69074	.69080	.16255
#1	.51692	26.132	.25556	4.8337	.25335	.60561	.19063	2.5545
#2	.51627	26.047	.25489	4.8291	.25683	.60615	.18933	2.5560
#3	.51382	25.523	.25260	4.8165	.25520	.59868	.19196	2.5623
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: LCSW MC Acquired: 6/23/2016 19:28:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50423	.52568	.51791	.25225	.50435	.50645	.50871
Stddev	.00241	.00482	.00534	.00263	.00086	.00034	.12302
%RSD	.47730	.91755	1.0320	1.0435	.16959	.06729	24.183
#1	.50649	.52965	.52307	.24922	.50405	.50684	.42537
#2	.50170	.52708	.51825	.25391	.50532	.50620	.65001
#3	.50450	.52032	.51240	.25363	.50369	.50631	.45076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6675.8	41467.	2105.7
Stddev	24.4	77.	45.0
%RSD	.36501	.18473	2.1351
#1	6674.7	41472.	2065.5
#2	6652.0	41541.	2097.5
#3	6700.7	41388.	2154.3

Sample Name: F BLANK Acquired: 6/23/2016 19:31:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573025-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00035**	**.01697**	**.00017**	**.00823**	**.00030**	**-.00002**	**.01424**	**.00010**
Stddev	.00143	.00343	.00368	.00159	.00073	.00006	.02636	.00016
%RSD	406.65	20.219	2149.5	19.295	245.04	366.35	185.13	161.49
#1	-.00146	.01939	.00373	.00699	-.00054	.00002	.03225	-.00007
#2	-.00084	.01848	.00040	.00767	.00069	.00002	.02649	.00012
#3	.00126	.01304	-.00362	.01002	.00075	-.00008	-.01602	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**.00071**	**.00022**	**-.00250**	**.21680**	**-.00037**	**.04710**	**.00203**
Stddev	.00058	.00084	.00113	.01048	.06228	.00321	.02108	.00203
%RSD	395.96	117.23	505.81	419.76	28.728	858.57	44.755	100.05
#1	-.00038	.00061	.00120	.00643	.26535	.00293	.05892	.00057
#2	.00005	-.00007	.00049	.00011	.14658	-.00348	.02276	.00117
#3	.00076	.00160	-.00102	-.01403	.23847	-.00057	.05962	.00435
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00063**	**146.49**	**.00027**	**.00148**	**-.00007**	**-.00070**	**-.00157**	**-.01682**
Stddev	.00016	.16	.00052	.00584	.00253	.00452	.00481	.00103
%RSD	25.353	.10971	193.88	395.20	3668.9	645.60	306.24	6.1510
#1	.00048	146.42	-.00030	-.00517	.00173	.00230	.00206	-.01801
#2	.00061	146.38	.00070	.00384	-.00296	.00151	-.00702	-.01610
#3	.00079	146.68	.00040	.00577	.00102	-.00590	.00025	-.01635
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: F BLANK Acquired: 6/23/2016 19:31:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573025-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00050**	**.00113**	**.00420**	**-.00413**	**.00010**	**.00416**	**.06618**
Stddev	.00105	.00030	.00358	.00325	.00062	.00033	.30902
%RSD	208.81	26.175	85.339	78.560	609.38	7.9682	466.95
#1	.00054	.00092	.00586	-.00501	.00082	.00444	.36201
#2	.00153	.00147	.00009	-.00685	-.00027	.00424	.09104
#3	-.00056	.00099	.00664	-.00054	-.00025	.00379	-.25452
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6739.3**	**41425.**	**2117.9**
Stddev	34.7	212.	17.6
%RSD	.51557	.51131	.83142
#1	6776.6	41379.	2104.1
#2	6733.4	41656.	2137.7
#3	6707.8	41240.	2111.8

Sample Name: L1606077902 Acquired: 6/23/2016 19:35:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00041	.10466	.00285	.06045	.05584	-.00002	6.2174	.00046
Stddev	.00116	.00710	.00203	.00084	.00161	.00004	.0446	.00027
%RSD	281.92	6.7835	71.407	1.3870	2.8912	266.76	.71767	58.204
#1	-.00169	.09707	.00256	.05995	.05497	-.00004	6.2605	.00076
#2	-.00009	.10577	.00097	.05998	.05770	-.00005	6.2202	.00025
#3	.00055	.11114	.00501	.06142	.05485	.00003	6.1714	.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	.00071	.00269	.06613	.83231	.00096	1.9162	.03669
Stddev	.00019	.00047	.00085	.02858	.05178	.00081	.1367	.00368
%RSD	41.445	66.440	31.592	43.213	6.2217	84.544	7.1320	10.038
#1	.00040	.00124	.00202	.09508	.77901	.00190	2.0666	.03505
#2	.00066	.00054	.00241	.03794	.88243	.00048	1.8822	.04090
#3	.00030	.00035	.00365	.06539	.83549	.00050	1.7997	.03410
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	146.89	.00039	.00511	.00718	-.00047	-.00261	.31279
Stddev	.00029	.83	.00077	.00679	.00094	.00278	.00523	.00191
%RSD	125.89	.56640	197.90	132.70	13.092	597.43	200.57	.60978
#1	.00003	147.12	.00125	.00567	.00825	-.00357	.00205	.31442
#2	.00057	147.59	-.00024	-.00193	.00647	.00180	-.00827	.31325
#3	.00010	145.97	.00016	.01160	.00682	.00038	-.00160	.31069
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606077902 Acquired: 6/23/2016 19:35:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00094**	**.03050**	**.00108**	**-.00165**	**-.00052**	**.01606**	**.48222**
Stddev	.00106	.00016	.00532	.00346	.00115	.00010	.08551
%RSD	113.09	.52207	493.59	209.68	220.39	.59709	17.733
#1	.00063	.03034	.00420	.00102	-.00167	.01612	.45722
#2	.00006	.03050	-.00506	-.00556	.00063	.01595	.57745
#3	.00212	.03066	.00410	-.00041	-.00053	.01610	.41199
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6708.2**	**41665.**	**2172.2**
Stddev	31.1	139.	27.0
%RSD	.46322	.33365	1.2422
#1	6681.0	41585.	2158.5
#2	6701.6	41584.	2154.7
#3	6742.1	41825.	2203.2

Sample Name: L1606077905S Acquired: 6/23/2016 19:39:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20228	5.2112	.20044	1.0337	.55827	.02485	9.6912	.02500
Stddev	.00166	.0132	.00213	.0032	.00578	.00010	.1284	.00041
%RSD	.82305	.25409	1.0603	.31079	1.0349	.40858	1.3248	1.6502
#1	.20387	5.2188	.19844	1.0331	.56463	.02478	9.8330	.02530
#2	.20055	5.1959	.20020	1.0371	.55682	.02480	9.6578	.02517
#3	.20241	5.2189	.20267	1.0308	.55335	.02497	9.5828	.02453
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09974	.24950	.25228	2.2679	26.280	.52442	6.0599	.27187
Stddev	.00013	.00041	.00146	.0210	.482	.00917	.1252	.00132
%RSD	.12865	.16628	.57688	.92528	1.8346	1.7485	2.0662	.48482
#1	.09988	.24904	.25061	2.2895	26.785	.53322	5.9629	.27277
#2	.09972	.24962	.25292	2.2477	26.232	.52510	6.2012	.27249
#3	.09962	.24984	.25330	2.2665	25.824	.51492	6.0156	.27036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51461	175.16	.24930	4.8996	.25282	.59906	.19939	3.1901
Stddev	.00031	1.57	.00247	.0075	.00056	.00386	.00642	.0017
%RSD	.06092	.89896	.99271	.15227	.22003	.64505	3.2200	.05219
#1	.51467	176.79	.25185	4.8930	.25302	.59517	.19207	3.1907
#2	.51427	175.03	.24915	4.9077	.25325	.60289	.20408	3.1882
#3	.51489	173.65	.24691	4.8982	.25219	.59912	.20203	3.1913
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606077905S Acquired: 6/23/2016 19:39:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50008	.54325	.51187	.24743	.50223	.51373	.44679
Stddev	.00071	.00377	.00743	.00180	.00201	.00029	.30975
%RSD	.14141	.69391	1.4524	.72816	.40098	.05697	69.327
#1	.49932	.54729	.51807	.24579	.50124	.51369	.24650
#2	.50021	.54262	.51392	.24714	.50091	.51403	.29031
#3	.50072	.53983	.50363	.24936	.50455	.51345	.80356
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6683.1	41005.	2151.4
Stddev	6.8	305.	41.0
%RSD	.10241	.74481	1.9080
#1	6678.0	40809.	2104.3
#2	6690.9	41357.	2179.3
#3	6680.4	40849.	2170.6

Sample Name: L1606077908SD Acquired: 6/23/2016 19:43:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20288	5.1811	.19942	1.0150	.55237	.02488	9.4634	.02476
Stddev	.00176	.0005	.00235	.0035	.00196	.00014	.0234	.00044
%RSD	.86650	.00922	1.1808	.34043	.35412	.56384	.24707	1.7705
#1	.20137	5.1816	.19728	1.0163	.55459	.02505	9.4654	.02526
#2	.20245	5.1810	.20195	1.0110	.55090	.02479	9.4391	.02451
#3	.20481	5.1807	.19904	1.0175	.55161	.02482	9.4857	.02450
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10026	.24869	.25215	2.1544	26.013	.51658	6.1704	.26979
Stddev	.00032	.00041	.00151	.0430	.062	.00117	.0894	.00386
%RSD	.31797	.16528	.59908	1.9976	.23856	.22630	1.4482	1.4295
#1	.10042	.24885	.25049	2.2010	26.026	.51657	6.2344	.26873
#2	.10048	.24900	.25345	2.1162	25.946	.51776	6.2085	.27407
#3	.09990	.24822	.25251	2.1458	26.068	.51542	6.0683	.26657
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51646	167.22	.25037	4.9060	.24566	.60333	.19310	3.1314
Stddev	.00260	.31	.00182	.0167	.00482	.00537	.00965	.0091
%RSD	.50438	.18479	.72893	.34087	1.9619	.89072	4.9996	.29092
#1	.51697	167.57	.24950	4.9167	.24626	.60535	.20424	3.1326
#2	.51877	167.00	.25246	4.9146	.25015	.60741	.18713	3.1398
#3	.51363	167.09	.24914	4.8868	.24056	.59724	.18793	3.1217
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606077908SD Acquired: 6/23/2016 19:43:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49955**	**.54302**	**.51966**	**.24675**	**.50221**	**.51185**	**.71645**
Stddev	.00029	.00244	.00212	.00186	.00227	.00193	.20134
%RSD	.05847	.45013	.40726	.75321	.45223	.37767	28.103
#1	.49934	.54570	.52008	.24714	.50300	.51112	.72584
#2	.49989	.54245	.52153	.24839	.49965	.51404	.51058
#3	.49944	.54091	.51736	.24473	.50398	.51039	.91294
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6680.0**	**41465.**	**2146.4**
Stddev	27.3	183.	22.0
%RSD	.40866	.44237	1.0253
#1	6690.0	41465.	2121.9
#2	6649.1	41648.	2153.0
#3	6700.8	41281.	2164.4

Sample Name: L1606077911 Acquired: 6/23/2016 19:47:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00061**	**.17290**	**.00164**	**.05825**	**.04624**	**.00003**	**4.2798**
Stddev	.00118	.00586	.00116	.00187	.00146	.00004	.0673
%RSD	194.32	3.3883	71.027	3.2055	3.1581	127.98	1.5735
#1	-.00071	.17964	.00069	.05609	.04622	.00002	4.3575
#2	.00096	.16999	.00128	.05931	.04771	.00007	4.2378
#3	.00156	.16906	.00294	.05934	.04479	-.00001	4.2442
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00024**	**.00029**	**-.00045**	**.00174**	**.09875**	**.44424**	**.00053**
Stddev	.00014	.00027	.00192	.00071	.01625	.12676	.00083
%RSD	58.518	92.659	422.78	40.567	16.451	28.534	157.87
#1	.00014	.00059	.00168	.00219	.10612	.58035	.00098
#2	.00017	.00020	-.00202	.00093	.11000	.42278	-.00043
#3	.00040	.00008	-.00103	.00212	.08013	.32958	.00104
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.72600**	**.00518**	**.00043**	**142.06**	**.00228**	**.00480**	**-.00087**
Stddev	.03723	.00162	.00026	.88	.00064	.00070	.00109
%RSD	5.1278	31.190	61.921	.61608	28.046	14.500	124.44
#1	.71844	.00688	.00028	143.07	.00166	.00434	.00015
#2	.76644	.00366	.00073	141.60	.00293	.00560	-.00076
#3	.69314	.00502	.00026	141.51	.00224	.00446	-.00201
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: L1606077911 Acquired: 6/23/2016 19:47:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00404**	**-.00935**	**.37687**	**.00027**	**.01793**	**.00337**	**-.00570**
Stddev	.00215	.00588	.00275	.00092	.00024	.00451	.00216
%RSD	53.318	62.841	.73023	343.85	1.3281	134.02	37.974
#1	.00159	-.01397	.37384	-.00077	.01800	-.00085	-.00756
#2	.00487	-.00274	.37757	.00097	.01812	.00283	-.00332
#3	.00566	-.01135	.37921	.00060	.01766	.00813	-.00622
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00079**	**.00664**	F **-.09970**
Stddev	.00084	.00026	.16681
%RSD	107.32	3.9795	167.31
#1	-.00163	.00690	-.09910
#2	.00005	.00665	.06681
#3	-.00078	.00638	-.26680
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6697.8**	**41398.**	**2131.1**
Stddev	24.2	144.	21.0
%RSD	.36115	.34894	.98383
#1	6693.3	41435.	2107.1
#2	6723.9	41521.	2140.2
#3	6676.1	41239.	2145.9

Sample Name: L1606077911PS Acquired: 6/23/2016 19:50:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573973-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20166	5.1361	.19947	1.0226	.54909	.02495	8.9751	.02473
Stddev	.00114	.0195	.00083	.0025	.00185	.00016	.0498	.00035
%RSD	.56716	.37888	.41683	.24775	.33639	.63847	.55502	1.4285
#1	.20230	5.1582	.20042	1.0247	.55108	.02513	8.9915	.02440
#2	.20234	5.1215	.19889	1.0198	.54877	.02481	9.0146	.02510
#3	.20034	5.1285	.19910	1.0233	.54742	.02492	8.9192	.02469
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10039	.24897	.25158	2.1225	25.565	.51154	5.6600	.25879
Stddev	.00018	.00163	.00180	.0342	.089	.00200	.0479	.00217
%RSD	.17967	.65380	.71732	1.6127	.34620	.39088	.84555	.83680
#1	.10051	.24824	.25076	2.1608	25.630	.51077	5.6851	.25647
#2	.10018	.24783	.25365	2.0948	25.465	.51005	5.6902	.26076
#3	.10047	.25083	.25032	2.1119	25.602	.51382	5.6048	.25913
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51470	153.34	.25033	4.8965	.24793	.59559	.19243	2.8850
Stddev	.00123	.64	.00055	.0032	.00147	.00310	.01290	.0015
%RSD	.23864	.41616	.22124	.06430	.59145	.52110	6.7059	.05201
#1	.51611	153.87	.25059	4.8983	.24682	.59605	.19308	2.8838
#2	.51410	153.52	.25070	4.8929	.24959	.59844	.17922	2.8846
#3	.51388	152.63	.24969	4.8984	.24737	.59228	.20500	2.8867
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606077911PS Acquired: 6/23/2016 19:50:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573973-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50192	.53133	.51057	.24460	.50225	.50838	.44531
Stddev	.00111	.00315	.01429	.00114	.00111	.00054	.18642
%RSD	.22110	.59328	2.7983	.46703	.22030	.10637	41.862
#1	.50147	.53348	.52543	.24579	.50343	.50865	.55546
#2	.50112	.53279	.49693	.24352	.50209	.50873	.55041
#3	.50319	.52771	.50934	.24448	.50123	.50775	.23008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6651.9	41058.	2146.9
Stddev	34.9	202.	7.0
%RSD	.52428	.49305	.32439
#1	6618.2	41118.	2148.4
#2	6649.8	40833.	2139.3
#3	6687.9	41224.	2153.0

Sample Name: L1606077911SDL Acquired: 6/23/2016 19:54:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573973-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00006**	**.03191**	**.00319**	**.01017**	**.00812**	**.00002**	**.79168**
Stddev	.00337	.01356	.00266	.00277	.00094	.00006	.04789
%RSD	5775.7	42.477	83.503	27.198	11.538	281.43	6.0487
#1	.00377	.04752	.00625	.01189	.00906	.00005	.74079
#2	-.00077	.02310	.00144	.01163	.00718	-.00005	.83586
#3	-.00282	.02511	.00188	.00698	.00812	.00006	.79839
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**.00020**	**-.00102**	**.00161**	**.02774**	**.12243**	**.00086**
Stddev	.00008	.00022	.00131	.00175	.00237	.07914	.00524
%RSD	112.15	111.56	128.35	108.58	8.5304	64.641	611.10
#1	.00015	-.00005	-.00253	-.00029	.02829	.21145	-.00473
#2	-.00001	.00027	-.00015	.00315	.02514	.09584	.00164
#3	.00009	.00038	-.00039	.00199	.02978	.06001	.00566
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05770**	**.00304**	**.00047**	**25.965**	**-.00008**	**.01273**	**.00119**
Stddev	.09190	.00232	.00015	.345	.00131	.01585	.00647
%RSD	159.28	76.323	31.599	1.3295	1579.4	124.52	542.72
#1	.15485	.00380	.00035	25.792	-.00140	.01160	.00004
#2	.04609	.00044	.00064	25.741	-.00007	.02911	-.00462
#3	-.02785	.00489	.00043	26.363	.00122	-.00253	.00817
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: L1606077911SDL Acquired: 6/23/2016 19:54:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573973-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00030**	**-.00465**	**.06796**	**.00020**	**.00397**	**-.00466**	**-.00173**
Stddev	.00330	.00198	.00111	.00072	.00038	.00590	.00388
%RSD	1090.6	42.606	1.6393	364.61	9.6242	126.80	224.33
#1	.00173	-.00263	.06819	.00039	.00374	-.01146	-.00420
#2	.00148	-.00660	.06894	-.00060	.00441	-.00094	-.00374
#3	-.00411	-.00472	.06675	.00080	.00377	-.00157	.00274
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00000**	**.00179**	F **-.14942**
Stddev	.00024	.00022	.27065
%RSD	17591.	12.069	181.14
#1	-.00010	.00175	-.05629
#2	-.00017	.00203	-.45434
#3	.00028	.00160	.06237
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6956.7**	**42908.**	**2182.4**
Stddev	24.4	138.	8.1
%RSD	.35082	.32162	.37002
#1	6945.3	43022.	2184.2
#2	6984.7	42948.	2173.6
#3	6940.1	42755.	2189.5

Sample Name: L1606077911SDL Acquired: 6/23/2016 19:58:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573973-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00091**	**.00551**	**-.00163**	**.00298**	**.00016**	**-.00004**	**.14622**	**-.00004**
Stddev	.00035	.00230	.00441	.00295	.00019	.00009	.00718	.00022
%RSD	37.880	41.654	270.73	98.999	121.74	255.43	4.9086	633.58
#1	-.00082	.00812	-.00328	.00338	.00020	.00005	.14190	-.00029
#2	-.00130	.00463	.00337	-.00015	.00033	-.00003	.14227	.00014
#3	-.00062	.00379	-.00498	.00571	-.00005	-.00013	.15451	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**-.00012**	**.00129**	**.01297**	**.07882**	**-.00139**	**.02445**	**.00297**
Stddev	.00029	.00066	.00139	.04085	.05847	.00356	.09577	.00349
%RSD	220.77	550.63	108.07	315.10	74.183	257.22	391.63	117.45
#1	-.00041	-.00064	.00208	-.02649	.01827	-.00070	-.02314	-.00101
#2	.00018	-.00034	.00210	.01030	.08323	.00179	-.03820	.00442
#3	-.00016	.00062	-.00032	.05509	.13495	-.00524	.13470	.00550
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**4.6601**	**.00016**	**.01099**	**-.00374**	**-.00006**	**-.00666**	**-.00121**
Stddev	.00064	.0487	.00101	.00932	.00214	.00271	.00377	.00406
%RSD	1145.3	1.0448	617.86	84.814	57.083	4166.1	56.580	334.61
#1	-.00077	4.6317	.00117	.02130	-.00354	.00054	-.01063	.00307
#2	.00017	4.7163	-.00086	.00316	-.00172	-.00302	-.00622	-.00502
#3	.00043	4.6322	.00019	.00850	-.00597	.00229	-.00313	-.00169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606077911SDL Acquired: 6/23/2016 19:58:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573973-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**.00016**	**.00324**	**-.00190**	**.00015**	**.00102**	**.45592**
Stddev	.00090	.00024	.00774	.00281	.00036	.00011	.15548
%RSD	242.24	152.87	238.78	147.46	242.78	10.924	34.103
#1	-.00010	-.00008	-.00569	-.00173	-.00002	.00104	.63162
#2	.00036	.00041	.00759	.00081	.00057	.00089	.33613
#3	-.00138	.00014	.00782	-.00479	-.00009	.00111	.40000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7002.1**	**43421.**	**2180.6**
Stddev	12.5	150.	18.1
%RSD	.17813	.34564	.82992
#1	7007.5	43338.	2178.3
#2	6987.9	43594.	2163.7
#3	7011.0	43331.	2199.7

Sample Name: CCV Acquired: 6/23/2016 20:02:38 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.38352	9.5676	.38149	.48360	.95868	.04827	9.5943
Stddev	.00322	.0401	.00429	.00105	.00492	.00022	.0294
%RSD	.83982	.41946	1.1243	.21691	.51367	.46090	.30624
#1	.38657	9.6123	.37703	.48417	.95340	.04832	9.5754
#2	.38382	9.5347	.38559	.48239	.95948	.04803	9.6282
#3	.38015	9.5558	.38184	.48424	.96315	.04846	9.5794
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04762	.19248	.48389	.48328	3.8584	48.266	.97868
Stddev	.00015	.00028	.00059	.00212	.0428	.089	.00720
%RSD	.31413	.14541	.12117	.43944	1.1080	.18417	.73546
#1	.04779	.19230	.48370	.48346	3.8177	48.266	.97363
#2	.04758	.19280	.48342	.48107	3.8546	48.177	.97549
#3	.04750	.19234	.48455	.48530	3.9029	48.355	.98692
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.6513	.48380	.96301	47.927	.48135	9.5102	.48331
Stddev	.2636	.00656	.00332	.072	.00114	.0199	.00231
%RSD	2.7313	1.3558	.34426	.15061	.23638	.20964	.47887
#1	9.3550	.47806	.96658	47.845	.48232	9.5216	.48282
#2	9.8597	.48238	.96243	47.981	.48165	9.4872	.48129
#3	9.7393	.49095	.96003	47.956	.48010	9.5218	.48584
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: CCV Acquired: 6/23/2016 20:02:38 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1479**	**.38358**	**4.8260**	**.95697**	**.96108**	**.96615**	**.48705**
Stddev	.0066	.01108	.0032	.00258	.00341	.00961	.00179
%RSD	.57598	2.8894	.06586	.26977	.35526	.99472	.36795
#1	1.1549	.37665	4.8269	.95791	.95718	.95798	.48502
#2	1.1417	.39636	4.8286	.95405	.96254	.96374	.48839
#3	1.1472	.37773	4.8224	.95895	.96352	.97674	.48775
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.96626**	**.96309**	F **.37739**
Stddev	.00265	.00068	.17080
%RSD	.27390	.07033	45.257
#1	.96486	.96244	.28567
#2	.96461	.96302	.27206
#3	.96931	.96379	.57445
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6922.0**	**42512.**	**2201.6**
Stddev	21.1	353.	11.3
%RSD	.30486	.83050	.51529
#1	6934.6	42346.	2213.8
#2	6933.8	42273.	2199.8
#3	6897.7	42918.	2191.3

Sample Name: CCB Acquired: 6/23/2016 20:06:16 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	-.00041	.00090	.00065	-.00017	-.00009	.03364	-.00010
Stddev	.00250	.00080	.00202	.00197	.00087	.00003	.02458	.00030
%RSD	1325.3	193.76	223.31	305.36	513.01	38.963	73.061	282.77
#1	-.00159	-.00083	-.00002	.00192	-.00117	-.00006	.00559	-.00032
#2	.00304	.00051	-.00049	.00164	.00038	-.00008	.04390	.00023
#3	-.00089	-.00092	.00322	-.00163	.00029	-.00012	.05142	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	.00089	.00107	.02622	.14403	.00140	.16533	.00084
Stddev	.00031	.00098	.00055	.02571	.09143	.00408	.10839	.00123
%RSD	276.41	109.41	51.427	98.056	63.481	291.75	65.560	147.25
#1	.00047	.00000	.00094	-.00236	.13572	.00290	.28604	.00006
#2	-.00006	.00194	.00060	.03356	.05704	.00451	.07632	.00226
#3	-.00008	.00074	.00168	.04747	.23934	-.00322	.13363	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00296	.11509	-.00013	.00085	.00094	.00629	-.00145	.00187
Stddev	.00021	.03731	.00042	.00219	.00279	.00604	.00094	.00124
%RSD	7.1713	32.413	339.72	257.22	298.65	96.053	64.718	66.434
#1	.00285	.13809	-.00049	.00212	.00095	.00557	-.00045	.00293
#2	.00321	.07205	.00034	.00212	.00372	.01265	-.00231	.00218
#3	.00283	.13514	-.00022	-.00168	-.00186	.00064	-.00160	.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB Acquired: 6/23/2016 20:06:16 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**-.00022**	**-.00145**	**-.00171**	**-.00068**	**.00008**	**.01839**
Stddev	.00140	.00022	.01047	.00376	.00047	.00019	.18176
%RSD	1871.4	101.49	723.55	219.98	69.299	243.52	988.14
#1	-.00163	-.00007	.01060	.00231	-.00016	.00013	.02617
#2	.00109	-.00047	-.00838	-.00514	-.00082	.00023	.19614
#3	.00032	-.00011	-.00656	-.00229	-.00108	-.00013	-.16713
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6970.0**	**43262.**	**2192.2**
Stddev	74.7	174.	9.5
%RSD	1.0710	.40250	.43124
#1	7003.8	43124.	2200.3
#2	7021.8	43458.	2194.3
#3	6884.5	43203.	2181.8

Sample Name: L1606077914 Acquired: 6/23/2016 20:10:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00149	.10628	.00096	.02840	.05288	-.00005	7.4368	.00027
Stddev	.00097	.00356	.00214	.00184	.00085	.00008	.1298	.00005
%RSD	64.971	3.3536	223.67	6.4703	1.6095	158.12	1.7453	17.347
#1	.00054	.10724	-.00146	.02628	.05351	-.00006	7.5825	.00032
#2	.00248	.10234	.00174	.02939	.05191	-.00012	7.3941	.00025
#3	.00145	.10927	.00259	.02952	.05322	.00003	7.3337	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00039	.00052	.00185	.08486	.70361	-.00341	1.3249	.01531
Stddev	.00024	.00198	.00037	.02791	.04945	.00257	.0384	.00314
%RSD	62.961	378.91	20.059	32.893	7.0277	75.397	2.8943	20.533
#1	.00050	.00276	.00177	.06380	.69565	-.00073	1.3540	.01542
#2	.00055	-.00104	.00226	.11652	.75656	-.00364	1.3392	.01211
#3	.00011	-.00015	.00153	.07425	.65863	-.00587	1.2814	.01840
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	136.97	.00087	.00420	.00004	.00045	-.00208	.33477
Stddev	.00023	.63	.00055	.00550	.00261	.00047	.00600	.00123
%RSD	39.437	.45874	63.261	131.00	7265.2	105.14	288.25	.36659
#1	.00032	137.68	.00147	.00987	-.00284	.00003	.00096	.33486
#2	.00071	136.77	.00073	.00385	.00070	.00095	.00179	.33594
#3	.00074	136.47	.00040	-.00112	.00225	.00036	-.00900	.33350
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606077914 Acquired: 6/23/2016 20:10:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.03351	-.00005	-.00700	-.00055	.00972	.13105
Stddev	.00062	.00057	.01222	.00229	.00057	.00011	.18984
%RSD	177.30	1.6905	24453.	32.742	102.06	1.1714	144.86
#1	-.00033	.03393	.00766	-.00548	.00007	.00981	.20911
#2	.00048	.03373	-.01414	-.00589	-.00071	.00959	.26943
#3	.00090	.03286	.00633	-.00964	-.00102	.00975	-.08538
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6756.2	41698.	2168.9
Stddev	15.0	223.	10.5
%RSD	.22178	.53392	.48265
#1	6768.0	41441.	2173.7
#2	6739.3	41816.	2176.1
#3	6761.2	41837.	2156.9

Sample Name: L1606080801 Acquired: 6/23/2016 20:14:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.00981	.00166	.02700	.00536	-.00004	53.221	.00023
Stddev	.00132	.00387	.00350	.00355	.00074	.00005	.458	.00031
%RSD	223.52	39.428	210.37	13.162	13.862	133.64	.86119	137.26
#1	-.00079	.01246	.00412	.02618	.00458	.00002	53.750	-.00010
#2	.00184	.00537	-.00234	.03090	.00606	-.00008	52.944	.00025
#3	.00072	.01160	.00322	.02393	.00543	-.00006	52.968	.00052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	-.00019	.00217	.26849	1.4108	-.00252	15.011	.12291
Stddev	.00031	.00023	.00068	.03341	.0586	.00219	.184	.00135
%RSD	424.72	122.66	31.151	12.444	4.1556	86.964	1.2259	1.0966
#1	-.00007	-.00003	.00235	.24539	1.3436	-.00503	15.179	.12150
#2	-.00038	-.00008	.00142	.25327	1.4510	-.00152	15.040	.12419
#3	.00023	-.00045	.00273	.30679	1.4380	-.00101	14.814	.12302
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	15.947	.00061	.00603	.00298	.00330	-.00384	5.1133
Stddev	.00030	.171	.00079	.00285	.00319	.00406	.01618	.0046
%RSD	57.821	1.0703	128.91	47.356	107.05	123.06	420.92	.09015
#1	.00017	16.102	-.00004	.00833	.00524	-.00067	-.02178	5.1184
#2	.00071	15.975	.00148	.00284	.00438	.00312	.00059	5.1096
#3	.00066	15.764	.00039	.00691	-.00067	.00744	.00965	5.1119
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606080801 Acquired: 6/23/2016 20:14:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00027**	**.17284**	**-.01553**	**-.00411**	**-.00044**	**.00368**	**.21621**
Stddev	.00054	.00134	.00554	.00196	.00032	.00035	.15335
%RSD	203.08	.77573	35.693	47.631	72.739	9.4159	70.926
#1	-.00035	.17423	-.01858	-.00259	-.00007	.00340	.36753
#2	.00031	.17155	-.00913	-.00632	-.00067	.00406	.22018
#3	-.00077	.17274	-.01887	-.00342	-.00059	.00356	.06091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6663.3**	**41709.**	**2149.6**
Stddev	10.8	204.	16.5
%RSD	.16157	.48945	.76736
#1	6671.1	41908.	2131.3
#2	6667.7	41719.	2154.5
#3	6651.0	41500.	2163.2

Sample Name: L1606080803S Acquired: 6/23/2016 20:18:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20531	4.9958	.20276	1.0092	.51435	.02483	57.046	.02496
Stddev	.00292	.0043	.00269	.0024	.00665	.00006	.768	.00030
%RSD	1.4202	.08567	1.3273	.24307	1.2934	.23022	1.3467	1.1942
#1	.20859	4.9909	.20264	1.0074	.52180	.02478	57.925	.02528
#2	.20436	4.9977	.20014	1.0120	.50900	.02489	56.503	.02470
#3	.20300	4.9987	.20552	1.0083	.51225	.02482	56.709	.02490
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09967	.25096	.25022	2.3265	26.678	.52152	20.005	.37815
Stddev	.00055	.00036	.00033	.0587	.264	.00877	.198	.00476
%RSD	.55302	.14274	.13074	2.5243	.98845	1.6818	.98772	1.2593
#1	.10016	.25128	.25042	2.3809	26.980	.53116	20.035	.38218
#2	.09976	.25104	.24984	2.2643	26.497	.51402	19.794	.37290
#3	.09907	.25057	.25040	2.3343	26.556	.51939	20.186	.37938
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52098	41.169	.25038	4.9597	.24975	.60811	.19088	7.6345
Stddev	.00121	.394	.00120	.0047	.00531	.00285	.00510	.0102
%RSD	.23295	.95680	.47973	.09548	2.1271	.46887	2.6703	.13352
#1	.52204	41.621	.25177	4.9644	.24365	.60722	.18517	7.6439
#2	.51965	40.900	.24967	4.9597	.25336	.61129	.19249	7.6237
#3	.52125	40.985	.24970	4.9549	.25223	.60580	.19497	7.6359
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606080803S Acquired: 6/23/2016 20:18:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50663	.69353	.50821	.24979	.50502	.50112	.56844
Stddev	.00206	.00495	.00984	.00132	.00161	.00059	.24983
%RSD	.40682	.71328	1.9372	.52651	.31873	.11783	43.949
#1	.50895	.69918	.50790	.24829	.50330	.50110	.76022
#2	.50591	.69001	.49852	.25075	.50528	.50054	.28593
#3	.50502	.69139	.51821	.25034	.50649	.50172	.65917
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6625.1	41184.	2141.2
Stddev	43.1	220.	34.4
%RSD	.65093	.53421	1.6047
#1	6575.6	40948.	2101.5
#2	6654.8	41222.	2162.6
#3	6644.9	41383.	2159.3

Sample Name: L1606080804SD Acquired: 6/23/2016 20:21:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20417	5.0253	.20216	1.0213	.52389	.02512	58.507	.02515
Stddev	.00061	.0013	.00476	.0019	.00456	.00016	.379	.00007
%RSD	.29699	.02608	2.3559	.18158	.87021	.62066	.64724	.26301
#1	.20348	5.0268	.19939	1.0192	.52806	.02496	58.865	.02518
#2	.20461	5.0245	.20766	1.0224	.52461	.02527	58.546	.02507
#3	.20443	5.0246	.19943	1.0224	.51902	.02514	58.111	.02519
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10013	.25277	.25192	2.3449	27.111	.52740	20.302	.37943
Stddev	.00006	.00076	.00111	.0178	.231	.00552	.216	.00380
%RSD	.06407	.29922	.44124	.75833	.85294	1.0468	1.0620	1.0007
#1	.10006	.25267	.25295	2.3582	27.342	.53203	20.543	.38169
#2	.10018	.25357	.25074	2.3247	27.111	.52888	20.233	.38156
#3	.10015	.25207	.25208	2.3517	26.880	.52129	20.129	.37505
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52376	41.862	.25037	4.9891	.25282	.61284	.19379	7.7402
Stddev	.00119	.339	.00131	.0038	.00458	.00414	.01024	.0102
%RSD	.22762	.81017	.52333	.07550	1.8112	.67508	5.2847	.13142
#1	.52513	42.192	.25099	4.9856	.25772	.61266	.19670	7.7511
#2	.52310	41.879	.25125	4.9931	.24866	.60879	.20226	7.7310
#3	.52304	41.514	.24886	4.9887	.25208	.61705	.18241	7.7384
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606080804SD Acquired: 6/23/2016 20:21:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50881**	**.70095**	**.50511**	**.25346**	**.50822**	**.50328**	**.36568**
Stddev	.00118	.00336	.00758	.00055	.00107	.00052	.09051
%RSD	.23262	.47943	1.5010	.21780	.21111	.10273	24.750
#1	.50993	.70351	.51202	.25388	.50727	.50277	.45775
#2	.50891	.70221	.50631	.25366	.50938	.50380	.36245
#3	.50757	.69715	.49700	.25283	.50801	.50326	.27683
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6648.3**	**41256.**	**2167.1**
Stddev	37.5	212.	35.6
%RSD	.56386	.51441	1.6437
#1	6687.1	41426.	2128.5
#2	6645.3	41018.	2174.1
#3	6612.3	41324.	2198.7

Sample Name: L1606082202 Acquired: 6/23/2016 20:25:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00152	.02026	-.00003	.10248	.15200	.00003	6.5973	.00005
Stddev	.00174	.00884	.00264	.00097	.00250	.00003	.1001	.00016
%RSD	114.35	43.656	8042.8	.94662	1.6469	112.93	1.5178	320.68
#1	-.00041	.02197	.00037	.10136	.15374	.00007	6.6625	.00019
#2	.00200	.02813	-.00285	.10296	.15311	.00001	6.6474	.00008
#3	.00298	.01069	.00238	.10312	.14913	.00001	6.4820	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	-.00052	.00142	2.2172	1.7251	.02347	4.6721	.08008
Stddev	.00019	.00160	.00145	.0203	.1370	.00447	.1537	.00373
%RSD	39.028	307.12	102.30	.91315	7.9439	19.041	3.2904	4.6534
#1	.00065	-.00214	.00215	2.1938	1.8809	.02224	4.7545	.08412
#2	.00052	.00105	-.00025	2.2287	1.6712	.01975	4.7670	.07933
#3	.00028	-.00047	.00236	2.2290	1.6232	.02843	4.4947	.07679
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00084	87.069	.00079	.09610	.00066	.00367	-.00338	12.803
Stddev	.00076	.850	.00109	.00417	.00060	.00400	.00476	.010
%RSD	90.058	.97655	138.31	4.3415	91.329	109.21	141.00	.07526
#1	-.00000	87.844	-.00046	.09129	-.00003	.00288	-.00767	12.795
#2	.00146	87.204	.00156	.09839	.00108	.00011	.00175	12.801
#3	.00107	86.159	.00126	.09864	.00092	.00800	-.00421	12.814
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606082202 Acquired: 6/23/2016 20:25:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00121	.22077	-.00522	-.00363	.00085	.00236	.22639
Stddev	.00050	.00200	.00719	.00112	.00069	.00021	.20548
%RSD	41.542	.90585	137.85	30.833	80.735	8.9617	90.766
#1	-.00156	.22257	-.00824	-.00440	.00009	.00222	.33820
#2	-.00063	.22113	-.01041	-.00235	.00143	.00261	.35171
#3	-.00143	.21862	.00299	-.00415	.00104	.00226	-.01076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6664.8	41248.	2126.9
Stddev	26.9	323.	26.2
%RSD	.40377	.78403	1.2328
#1	6695.8	40876.	2101.3
#2	6647.4	41460.	2125.7
#3	6651.2	41408.	2153.7

Sample Name: L1606082203 Acquired: 6/23/2016 20:29:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00153	.05110	.00192	.03595	.79888	.00004	32.443	.00019
Stddev	.00257	.00394	.00088	.00096	.00490	.00006	.223	.00012
%RSD	168.19	7.7097	45.736	2.6764	.61347	156.15	.68852	63.266
#1	.00450	.04867	.00097	.03585	.80394	.00006	32.700	.00006
#2	.00008	.05565	.00210	.03696	.79416	-.00003	32.293	.00030
#3	.00001	.04899	.00269	.03505	.79852	.00008	32.336	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00307	.00707	.00126	5.3792	51.825	.10776	15.276	.18167
Stddev	.00032	.00094	.00080	.0419	.270	.00194	.142	.00297
%RSD	10.345	13.245	64.108	.77858	.52117	1.8035	.92803	1.6345
#1	.00299	.00617	.00218	5.4159	52.078	.10909	15.426	.17840
#2	.00280	.00804	.00087	5.3881	51.541	.10866	15.144	.18240
#3	.00342	.00701	.00071	5.3336	51.857	.10553	15.259	.18420
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	93.634	.00315	-.00252	.00643	.00340	-.00637	11.872
Stddev	.00025	.401	.00140	.00666	.00138	.00643	.00382	.014
%RSD	298.72	.42875	44.327	264.34	21.428	189.23	59.894	.11647
#1	-.00020	94.085	.00392	-.00701	.00774	.00248	-.00439	11.857
#2	.00021	93.316	.00154	.00513	.00656	.01023	-.00396	11.885
#3	.00024	93.502	.00400	-.00568	.00499	-.00252	-.01077	11.874
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606082203 Acquired: 6/23/2016 20:29:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.82666**	**-.00447**	**-.00598**	**-.00056**	**.00596**	**.27009**
Stddev	.00125	.01637	.00340	.00085	.00033	.00013	.03306
%RSD	751.65	1.9807	76.005	14.225	59.976	2.2544	12.242
#1	.00127	.84555	-.00552	-.00599	-.00043	.00586	.28137
#2	-.00101	.81782	-.00722	-.00682	-.00030	.00611	.29603
#3	-.00076	.81660	-.00067	-.00512	-.00093	.00591	.23286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6576.7**	**40904.**	**2132.1**
Stddev	24.6	214.	16.8
%RSD	.37432	.52260	.78563
#1	6552.2	40790.	2112.8
#2	6576.5	40771.	2141.0
#3	6601.4	41150.	2142.6

Sample Name: L1606082302 Acquired: 6/23/2016 20:33:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00184	.02080	.00098	.02231	7.8783	.00017	255.75
Stddev	.00203	.01187	.00435	.00335	.0432	.00007	1.49
%RSD	110.13	57.087	445.14	15.024	.54831	41.236	.58087
#1	-.00150	.00710	.00584	.02555	7.9220	.00012	256.99
#2	-.00401	.02815	-.00256	.01885	7.8356	.00014	254.11
#3	-.00000	.02715	-.00034	.02253	7.8772	.00025	256.16
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.05342	.00242	.00486	4.7469	3.4904	.13833
Stddev	.00052	.00070	.00059	.00069	.0046	.0030	.00615
%RSD	55.632	1.3175	24.430	14.175	.09644	.08679	4.4491
#1	.00040	.05380	.00272	.00415	4.7522	3.4870	.14015
#2	.00098	.05261	.00174	.00553	4.7443	3.4928	.13147
#3	.00144	.05385	.00281	.00490	4.7442	3.4915	.14336
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	198.54	.84118	-.00019	F 709.80	.01731	.04470	.00329
Stddev	1.62	.00623	.00016	4.09	.00125	.01000	.00583
%RSD	.81609	.74094	85.381	.57589	7.2164	22.367	177.43
#1	200.41	.84837	-.00014	712.90	.01830	.03650	.00825
#2	197.48	.83796	-.00006	705.16	.01772	.04176	.00474
#3	197.74	.83722	-.00036	711.32	.01590	.05584	-.00313
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Sample Name: L1606082302 Acquired: 6/23/2016 20:33:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00699**	**-.00211**	**18.432**	**-.00053**	**5.9869**	F **-.04100**	**-.00343**
Stddev	.00326	.00362	.021	.00131	.0347	.00868	.00076
%RSD	46.731	171.57	.11640	247.46	.57940	21.163	22.234
#1	.00892	.00180	18.414	-.00131	6.0214	-.04734	-.00288
#2	.00882	-.00536	18.426	-.00125	5.9520	-.03111	-.00311
#3	.00322	-.00277	18.456	.00098	5.9872	-.04457	-.00430
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00262**	**.00921**	F **-.07344**
Stddev	.00140	.00009	.18020
%RSD	53.460	.99471	245.36
#1	-.00401	.00912	.10768
#2	-.00261	.00930	-.07530
#3	-.00122	.00920	-.25270
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6211.9**	**37943.**	**2065.9**
Stddev	10.7	171.	36.3
%RSD	.17281	.45038	1.7553
#1	6203.2	38131.	2024.8
#2	6223.9	37902.	2079.8
#3	6208.6	37796.	2093.2

Sample Name: L1606082303 Acquired: 6/23/2016 20:37:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	.09100	.00296	.01304	4.1939	-.00007	203.18
Stddev	.00140	.00531	.00327	.00376	.0297	.00006	1.67
%RSD	388.51	5.8358	110.60	28.801	.70801	88.134	.82056
#1	-.00165	.09683	.00075	.00892	4.2189	-.00004	204.69
#2	.00112	.08975	.00671	.01627	4.1611	-.00014	201.39
#3	-.00055	.08643	.00141	.01393	4.2018	-.00002	203.46
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00062	.00605	.00148	.00325	.50161	1.7415	.06042
Stddev	.00049	.00063	.00113	.00080	.03478	.1908	.00296
%RSD	79.462	10.371	76.602	24.650	6.9332	10.958	4.9058
#1	.00115	.00647	.00038	.00343	.46408	1.6330	.05783
#2	.00054	.00533	.00142	.00237	.53275	1.6297	.06365
#3	.00017	.00634	.00265	.00394	.50800	1.9619	.05979
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	118.15	2.3989	.00023	F 640.12	.00507	.01016	.00289
Stddev	.81	.0242	.00018	10.00	.00123	.00431	.00149
%RSD	.68254	1.0089	76.880	1.5615	24.328	42.407	51.612
#1	118.94	2.4148	.00038	650.69	.00487	.00561	.00152
#2	117.33	2.3711	.00027	630.82	.00639	.01069	.00267
#3	118.17	2.4110	.00003	638.86	.00395	.01418	.00448
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Sample Name: L1606082303 Acquired: 6/23/2016 20:37:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00012**	**-.00944**	**13.225**	**-.00084**	**3.8421**	F **-.03122**	**-.00075**
Stddev	.00335	.00541	.023	.00156	.0312	.00884	.00263
%RSD	2724.2	57.378	.17522	185.97	.81266	28.325	351.62
#1	.00362	-.00548	13.247	.00011	3.8716	-.02289	.00226
#2	-.00306	-.00723	13.225	-.00264	3.8094	-.04050	-.00263
#3	-.00019	-.01560	13.201	.00001	3.8453	-.03028	-.00187
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00215**	**.00570**	**.39111**
Stddev	.00161	.00012	.18787
%RSD	74.559	2.0758	48.034
#1	-.00169	.00568	.30759
#2	-.00394	.00583	.60626
#3	-.00083	.00559	.25948
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6278.4**	**38565.**	**2078.5**
Stddev	22.0	175.	41.0
%RSD	.35101	.45432	1.9726
#1	6265.3	38533.	2033.9
#2	6266.0	38754.	2114.5
#3	6303.8	38408.	2087.2

Sample Name: L1606082304 Acquired: 6/23/2016 20:41:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**.00982**	**.00065**	**.03078**	**1.3316**	**-.00001**	**46.431**
Stddev	.00324	.01473	.00404	.00488	.0087	.00012	.330
%RSD	781.99	150.01	619.18	15.855	.65651	2204.3	.71076
#1	.00226	.02597	.00499	.03065	1.3415	-.00014	46.804
#2	.00231	.00636	-.00301	.03572	1.3252	.00009	46.176
#3	-.00333	-.00287	-.00002	.02596	1.3280	.00003	46.315
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00066**	**-.00016**	F **-.00347**	**.00119**	**84.345**	**3.2107**	**.04191**
Stddev	.00021	.00040	.00039	.00149	.339	.1063	.00251
%RSD	31.873	248.01	11.380	125.50	.40248	3.3107	5.9779
#1	.00060	-.00031	-.00306	.00290	84.661	3.3331	.04445
#2	.00048	-.00046	-.00385	.00044	84.387	3.1411	.03944
#3	.00089	.00029	-.00349	.00022	83.986	3.1580	.04185
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-.00300				

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**29.094**	**1.4706**	**-.00067**	**141.52**	**.00104**	**.07644**	**.00312**
Stddev	.106	.0113	.00040	1.02	.00036	.00458	.00219
%RSD	.36352	.76758	59.671	.72353	34.222	5.9922	69.972
#1	29.216	1.4831	-.00079	142.69	.00136	.08096	.00145
#2	29.030	1.4675	-.00100	141.08	.00110	.07654	.00233
#3	29.037	1.4612	-.00023	140.78	.00066	.07180	.00560
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: L1606082304 Acquired: 6/23/2016 20:41:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**-.00444**	**16.946**	**-.00016**	**1.0594**	**.01618**	**-.00009**
Stddev	.00138	.00283	.014	.00045	.0066	.00613	.00273
%RSD	1084.7	63.725	.08315	282.51	.62739	37.902	3068.2
#1	-.00159	-.00414	16.934	.00035	1.0669	.01325	.00044
#2	.00005	-.00741	16.943	-.00032	1.0545	.02323	.00234
#3	.00116	-.00177	16.961	-.00051	1.0567	.01207	-.00305
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00431**	**.01323**	F **-.28757**
Stddev	.00070	.00016	.06453
%RSD	16.230	1.2047	22.439
#1	-.00354	.01326	-.33446
#2	-.00489	.01337	-.31427
#3	-.00452	.01306	-.21398
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6548.1**	**40764.**	**2104.8**
Stddev	18.7	118.	30.0
%RSD	.28493	.28837	1.4234
#1	6562.8	40898.	2079.6
#2	6554.4	40678.	2096.8
#3	6527.1	40717.	2137.9

Sample Name: L1606088302 Acquired: 6/23/2016 20:45:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00335	.84495	.01492	.13705	.35776	-.00016	61.342	.00073
Stddev	.00192	.00536	.00123	.00168	.00649	.00001	.914	.00037
%RSD	57.476	.63420	8.2502	1.2235	1.8144	6.0991	1.4894	50.484
#1	.00126	.85090	.01399	.13791	.36483	-.00016	62.379	.00100
#2	.00372	.84051	.01632	.13512	.35638	-.00017	60.987	.00089
#3	.00506	.84344	.01445	.13813	.35207	-.00015	60.658	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00790	.00132	.00561	5.6286	11.735	.00962	26.311	2.7437
Stddev	.00012	.00055	.00131	.0909	.087	.00112	.394	.0396
%RSD	1.4821	41.328	23.360	1.6145	.74143	11.624	1.4976	1.4443
#1	.00790	.00105	.00615	5.6698	11.835	.00907	26.689	2.7892
#2	.00779	.00096	.00657	5.6916	11.681	.00887	26.343	2.7252
#3	.00802	.00195	.00412	5.5244	11.688	.01090	25.902	2.7167
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01337	55.014	.02594	.07391	.01768	.00363	-.00148	7.7740
Stddev	.00021	.737	.00058	.00987	.00156	.00456	.00201	.0095
%RSD	1.5352	1.3397	2.2195	13.356	8.8413	125.65	135.81	.12214
#1	.01329	55.834	.02652	.06415	.01943	.00884	.00061	7.7638
#2	.01322	54.801	.02594	.08389	.01641	.00164	-.00340	7.7755
#3	.01361	54.406	.02537	.07370	.01720	.00040	-.00164	7.7826
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606088302 Acquired: 6/23/2016 20:45:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00090	.36986	.01540	-.00118	.00118	.12530	1.4316
Stddev	.00025	.00460	.01415	.00177	.00035	.00030	.3050
%RSD	27.990	1.2450	91.875	150.26	29.961	.24276	21.302
#1	.00061	.37482	.00658	-.00313	.00110	.12559	1.0819
#2	.00104	.36904	.00789	.00033	.00156	.12533	1.6421
#3	.00105	.36572	.03171	-.00073	.00087	.12498	1.5707
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	7921.9	49318.	2693.6
Stddev	12.3	123.	25.0
%RSD	.15529	.24979	.92714
#1	7908.5	49427.	2667.6
#2	7924.8	49342.	2717.4
#3	7932.6	49184.	2695.7

Sample Name: CCV Acquired: 6/23/2016 20:49:10 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39590	9.9110	.39526	.48909	.98565	.04996	9.8451
Stddev	.00120	.0339	.00042	.00457	.02803	.00042	.3357
%RSD	.30353	.34216	.10738	.93432	2.8436	.84013	3.4103
#1	.39483	9.8747	.39503	.48786	.95368	.04993	9.4641
#2	.39720	9.9418	.39501	.48526	.99729	.04955	9.9733
#3	.39566	9.9167	.39575	.49415	1.0060	.05039	10.098
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05017	.20113	.49806	.50390	3.9193	49.281	.99930
Stddev	.00013	.00026	.00295	.00102	.1281	1.426	.02793
%RSD	.24979	.12923	.59274	.20262	3.2691	2.8935	2.7947
#1	.05003	.20121	.49990	.50316	3.7715	47.645	.96745
#2	.05025	.20083	.49465	.50347	3.9883	49.937	1.0109
#3	.05024	.20133	.49963	.50506	3.9981	50.261	1.0196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.8643	.49902	1.0085	49.184	.49977	9.8773	.49959
Stddev	.3185	.01772	.0043	1.350	.00010	.0178	.00372
%RSD	3.2291	3.5503	.42423	2.7456	.01960	.18066	.74560
#1	9.4975	.47954	1.0116	47.634	.49976	9.8611	.50047
#2	10.025	.50333	1.0103	49.812	.49987	9.8744	.49550
#3	10.071	.51418	1.0036	50.106	.49968	9.8964	.50280
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: CCV Acquired: 6/23/2016 20:49:10 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2048**	**.40490**	**5.0297**	**1.0004**	**.98725**	**.99313**	**.50297**
Stddev	.0042	.00796	.0039	.0034	.02832	.03209	.00363
%RSD	.34965	1.9650	.07741	.34428	2.8681	3.2307	.72121
#1	1.2087	.41298	5.0259	.99890	.95492	.95803	.50669
#2	1.2003	.40465	5.0296	.99795	.99923	1.0004	.49944
#3	1.2055	.39708	5.0337	1.0043	1.0076	1.0209	.50278
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.99558**	**1.0009**	F **.02289**
Stddev	.00580	.0022	.25371
%RSD	.58246	.21707	1108.2
#1	.99450	.99842	.14548
#2	.99040	1.0017	-.26883
#3	1.0018	1.0025	.19203
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6660.9**	**41801.**	**2169.0**
Stddev	32.3	28.	115.6
%RSD	.48534	.06597	5.3274
#1	6698.0	41774.	2302.5
#2	6639.4	41798.	2102.0
#3	6645.2	41829.	2102.6

Sample Name: CCB Acquired: 6/23/2016 20:52:47 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00186	-.00093	.00316	.00230	.00074	.00006	.02069
Stddev	.00123	.00851	.00342	.00122	.00124	.00008	.05541
%RSD	66.210	911.24	108.19	52.892	166.55	142.19	267.79
#1	.00059	-.01042	.00649	.00167	.00054	-.00003	-.00744
#2	.00195	.00160	.00333	.00153	-.00038	.00006	-.01500
#3	.00305	.00602	-.00034	.00370	.00206	.00014	.08452
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.00039	.00115	.00076	-.01535	.06062	-.00386
Stddev	.00025	.00015	.00083	.00156	.01904	.09913	.00805
%RSD	1273.3	38.748	71.888	205.02	124.01	163.52	208.55
#1	.00015	.00037	.00104	.00077	-.03627	-.05039	.00540
#2	-.00027	.00056	.00039	.00232	.00098	.09196	-.00780
#3	.00017	.00026	.00203	-.00080	-.01077	.14030	-.00918
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01451	-.00216	.00311	.14026	-.00019	.00962	.00081
Stddev	.08285	.00307	.00109	.02230	.00100	.00497	.00347
%RSD	570.85	141.96	34.905	15.899	521.75	51.686	430.66
#1	-.05222	-.00061	.00206	.16585	-.00076	.01507	.00163
#2	.10725	-.00570	.00305	.12497	-.00078	.00533	-.00300
#3	-.01149	-.00018	.00423	.12997	.00096	.00846	.00380
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: CCB Acquired: 6/23/2016 20:52:47 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00098**	**-.00415**	**.00357**	**.00020**	**.00045**	**-.00310**	**-.00314**
Stddev	.00119	.00276	.00144	.00034	.00013	.00169	.00399
%RSD	121.00	66.464	40.393	168.69	30.219	54.451	127.02
#1	-.00049	-.00098	.00477	.00034	.00060	-.00134	-.00058
#2	-.00234	-.00542	.00396	-.00019	.00034	-.00325	-.00773
#3	-.00012	-.00603	.00197	.00045	.00040	-.00471	-.00111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00114**	**.00020**	F **.30264**
Stddev	.00114	.00013	.32767
%RSD	99.237	64.632	108.27
#1	-.00245	.00019	.39170
#2	-.00061	.00033	-.06036
#3	-.00037	.00008	.57657
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6711.0**	**41762.**	**2107.6**
Stddev	39.0	171.	14.5
%RSD	.58138	.41024	.68723
#1	6710.2	41729.	2123.6
#2	6672.4	41947.	2095.3
#3	6750.5	41609.	2103.9

Sample Name: L1606088401 Acquired: 6/23/2016 20:56:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00138**	**.01701**	**.00493**	**.04852**	**.00618**	**-.00007**	**12.628**	**.00247**
Stddev	.00005	.00414	.00116	.00188	.00077	.00012	.147	.00032
%RSD	3.9151	24.333	23.511	3.8697	12.414	161.67	1.1647	12.874
#1	-.00141	.01981	.00570	.04698	.00662	.00006	12.792	.00280
#2	-.00141	.01895	.00549	.04798	.00529	-.00016	12.508	.00217
#3	-.00131	.01225	.00360	.05061	.00662	-.00013	12.584	.00245
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.33204**	**-.00005**	**.12713**	**.00004**	**.29521**	**1.5328**	**3.2466**	**.01448**
Stddev	.00034	.00102	.00048	.01339	.06956	.0143	.1805	.00109
%RSD	.10335	2250.3	.37814	32463.	23.564	.93016	5.5601	7.5480
#1	.33185	.00032	.12750	.00310	.34102	1.5490	3.4388	.01457
#2	.33183	.00074	.12659	-.01461	.32944	1.5271	3.0806	.01335
#3	.33243	-.00120	.12731	.01164	.21517	1.5222	3.2204	.01553
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00093**	**152.98**	**10.187**	**.09320**	**-.00036**	**-.00902**	**-.00316**	**.51224**
Stddev	.00032	1.78	.001	.01280	.00229	.00381	.00857	.00180
%RSD	34.564	1.1612	.01164	13.735	636.44	42.238	271.43	.35176
#1	.00071	155.02	10.189	.07854	-.00010	-.00788	-.00504	.51429
#2	.00079	151.86	10.188	.09884	-.00276	-.00591	.00620	.51148
#3	.00130	152.04	10.186	.10221	.00179	-.01327	-.01063	.51094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606088401 Acquired: 6/23/2016 20:56:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	.06978	-.00044	-.00366	-.00050	.00520	.35447
Stddev	.00021	.00053	.00665	.00240	.00048	.00018	.13127
%RSD	37.225	.76020	1503.3	65.540	95.032	3.3899	37.033
#1	.00077	.07037	-.00450	-.00503	-.00086	.00501	.20475
#2	.00053	.06936	-.00405	-.00089	-.00069	.00524	.40886
#3	.00036	.06960	.00723	-.00506	.00004	.00536	.44980
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6642.8	41062.	2131.9
Stddev	24.2	57.	30.4
%RSD	.36471	.13951	1.4260
#1	6639.2	41009.	2097.0
#2	6620.6	41122.	2152.2
#3	6668.6	41053.	2146.6

Sample Name: L1606089601 Acquired: 6/23/2016 21:00:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00276	.06592	.00541	.02208	.05123	-.00005	4.5311	.00038
Stddev	.00137	.00695	.00371	.00073	.00110	.00012	.0222	.00020
%RSD	49.858	10.542	68.509	3.3035	2.1551	257.77	.49075	51.621
#1	.00357	.06862	.00418	.02271	.05250	.00006	4.5567	.00056
#2	.00353	.05803	.00958	.02226	.05063	-.00017	4.5198	.00017
#3	.00117	.07112	.00247	.02128	.05055	-.00003	4.5168	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.06787	-.00161	.00146	42.996	.90153	-.00084	5.1151	6.0536
Stddev	.00044	.00070	.00153	.463	.08378	.00102	.1337	.0524
%RSD	.64651	43.319	104.57	1.0779	9.2930	121.94	2.6141	.86472
#1	.06763	-.00220	.00017	43.521	.97406	.00034	5.2374	6.1132
#2	.06761	-.00084	.00314	42.825	.80982	-.00134	4.9723	6.0323
#3	.06838	-.00179	.00107	42.642	.92069	-.00151	5.1355	6.0152
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	19.350	.00357	-.00356	.00111	.00096	-.00499	4.5346
Stddev	.00020	.125	.00141	.00838	.00156	.00212	.00300	.0153
%RSD	55.732	.64532	39.385	235.57	139.61	221.63	60.052	.33782
#1	-.00054	19.492	.00220	-.01302	-.00064	.00306	-.00344	4.5188
#2	-.00040	19.300	.00350	.00291	.00231	-.00118	-.00845	4.5355
#3	-.00014	19.259	.00500	-.00056	.00168	.00099	-.00309	4.5494
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606089601 Acquired: 6/23/2016 21:00:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00060**	**.03780**	**.00811**	**-.00381**	**-.00115**	**.00560**	**.10083**
Stddev	.00066	.00049	.00739	.00382	.00028	.00007	.23956
%RSD	110.76	1.2963	91.111	100.26	24.644	1.2642	237.60
#1	.00016	.03802	.00291	-.00026	-.00147	.00553	-.17268
#2	-.00087	.03815	.00485	-.00331	-.00104	.00559	.20174
#3	-.00109	.03724	.01658	-.00784	-.00094	.00567	.27342
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6699.7**	**41605.**	**2147.2**
Stddev	6.0	395.	20.8
%RSD	.08901	.94822	.96897
#1	6705.8	41196.	2129.6
#2	6699.3	41634.	2141.8
#3	6693.9	41984.	2170.2

Sample Name: L1606089602 Acquired: 6/23/2016 21:04:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00115	.04083	.00060	.00715	.00811	-.00006	.41120	.00010
Stddev	.00092	.00909	.00372	.00237	.00130	.00006	.07420	.00010
%RSD	79.895	22.273	617.42	33.111	16.069	103.37	18.045	95.174
#1	.00172	.03036	-.00348	.00464	.00961	-.00013	.44439	.00004
#2	.00163	.04672	.00380	.00935	.00726	-.00004	.46300	.00021
#3	.00009	.04541	.00149	.00745	.00746	-.00001	.32619	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	.00085	.00131	.07554	1.8076	-.00047	.25019	.00154
Stddev	.00047	.00183	.00071	.02271	.0472	.00199	.07424	.00073
%RSD	2125.6	214.06	54.320	30.062	2.6112	424.18	29.673	47.627
#1	-.00052	.00002	.00060	.10056	1.7705	.00136	.32911	.00152
#2	.00004	.00295	.00130	.05624	1.7915	-.00018	.18174	.00229
#3	.00042	-.00040	.00202	.06981	1.8607	-.00259	.23972	.00082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	8.3070	.00081	-.00279	.00077	-.00363	-.00191	9.3341
Stddev	.00042	.0355	.00152	.00730	.00368	.00212	.00752	.0120
%RSD	4219.9	.42734	186.83	261.51	478.27	58.376	393.78	.12811
#1	-.00026	8.3438	.00114	-.00340	.00064	-.00604	.00678	9.3471
#2	.00047	8.2730	-.00084	.00479	-.00284	-.00208	-.00623	9.3318
#3	-.00024	8.3042	.00214	-.00976	.00451	-.00276	-.00628	9.3235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606089602 Acquired: 6/23/2016 21:04:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00104**	**.00271**	**.00141**	**-.00441**	**.00055**	**.00294**	**.09481**
Stddev	.00076	.00065	.00707	.00096	.00059	.00032	.12117
%RSD	73.387	23.817	499.85	21.749	106.89	10.896	127.81
#1	-.00017	.00268	.00405	-.00333	.00004	.00305	.13413
#2	-.00159	.00337	.00678	-.00473	.00120	.00257	-.04114
#3	-.00135	.00208	-.00659	-.00517	.00043	.00318	.19143
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6686.8**	**41808.**	**2134.5**
Stddev	18.1	213.	20.0
%RSD	.27005	.50969	.93843
#1	6699.2	41631.	2111.6
#2	6666.1	41748.	2148.9
#3	6695.1	42044.	2142.9

Sample Name: L1606089603 Acquired: 6/23/2016 21:08:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00102	.11801	.00474	.00963	.06515	.00009	2.8598	-.00002
Stddev	.00304	.00302	.00162	.00102	.00099	.00007	.0117	.00049
%RSD	298.48	2.5577	34.279	10.645	1.5207	83.968	.40938	2310.2
#1	.00427	.12112	.00606	.01075	.06530	.00010	2.8502	-.00015
#2	.00053	.11781	.00292	.00939	.06607	.00015	2.8729	-.00043
#3	-.00175	.11509	.00524	.00874	.06410	.00001	2.8564	.00052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00155	-.00024	.00127	2.7358	3.5730	.00040	1.7276	.02916
Stddev	.00022	.00132	.00125	.0173	.1870	.00308	.0541	.00143
%RSD	13.914	551.57	98.352	.63220	5.2335	762.16	3.1323	4.9029
#1	.00170	-.00168	.00263	2.7557	3.7847	.00309	1.6947	.02869
#2	.00164	.00005	.00099	2.7247	3.4302	-.00295	1.7900	.03077
#3	.00130	.00091	.00018	2.7268	3.5042	.00107	1.6980	.02803
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00031	7.6284	.00235	.00047	-.00082	.00245	-.00905	5.4943
Stddev	.00032	.0301	.00079	.01031	.00433	.00306	.00148	.0133
%RSD	102.08	.39457	33.547	2191.2	526.63	125.12	16.371	.24152
#1	-.00063	7.6521	.00324	.00549	-.00579	.00459	-.00977	5.4890
#2	-.00033	7.6386	.00175	-.01139	.00215	-.00106	-.01004	5.4845
#3	.00001	7.5946	.00205	.00731	.00118	.00382	-.00735	5.5094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606089603 Acquired: 6/23/2016 21:08:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.02218	.00164	-.00426	-.00004	.00835	.14767
Stddev	.00040	.00013	.00288	.00161	.00009	.00018	.44819
%RSD	344.86	.60531	175.60	37.721	191.36	2.1138	303.52
#1	.00047	.02205	-.00008	-.00574	-.00012	.00836	-.32337
#2	-.00031	.02232	.00496	-.00255	.00005	.00853	.19752
#3	.00019	.02218	.00004	-.00448	-.00006	.00817	.56885
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6682.9	41728.	2128.8
Stddev	17.5	288.	26.5
%RSD	.26233	.68938	1.2452
#1	6675.1	41447.	2098.3
#2	6670.6	42022.	2146.0
#3	6703.0	41715.	2142.2

Sample Name: L1606089604 Acquired: 6/23/2016 21:12:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00189**	**.07787**	**.00274**	**.02534**	**.04671**	**-.00007**	**4.6127**
Stddev	.00185	.01361	.00115	.00174	.00203	.00009	.0084
%RSD	97.576	17.475	41.979	6.8483	4.3441	132.30	.18280
#1	.00394	.07337	.00237	.02334	.04637	.00002	4.6224
#2	.00037	.09315	.00403	.02650	.04487	-.00016	4.6067
#3	.00136	.06707	.00182	.02616	.04888	-.00006	4.6091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00046**	**.07375**	**-.00139**	**.00045**	**44.265**	**.94195**	**-.00388**
Stddev	.00010	.00022	.00095	.00149	.255	.04262	.00409
%RSD	21.656	.29660	68.674	332.55	.57666	4.5243	105.62
#1	.00034	.07398	-.00166	-.00009	44.524	.94561	-.00857
#2	.00051	.07354	-.00218	-.00070	44.257	.89762	-.00204
#3	.00052	.07372	-.00033	.00214	44.014	.98262	-.00102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**6.3790**	**6.1215**	**-.00097**	**19.253**	**.00495**	**-.00232**	**.00060**
Stddev	.0237	.0305	.00040	.056	.00026	.00993	.00262
%RSD	.37160	.49866	40.991	.29188	5.2685	429.04	440.43
#1	6.3989	6.1509	-.00053	19.318	.00524	-.00316	-.00241
#2	6.3528	6.1237	-.00131	19.216	.00473	-.01180	.00179
#3	6.3853	6.0899	-.00108	19.227	.00489	.00801	.00241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: L1606089604 Acquired: 6/23/2016 21:12:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00465**	**-.00637**	**4.5161**	**-.00039**	**.04033**	**.00878**	**-.00291**
Stddev	.00319	.00325	.0073	.00021	.00012	.01173	.00069
%RSD	68.469	51.078	.16173	52.620	.29003	133.62	23.851
#1	.00106	-.00941	4.5223	-.00056	.04037	.01678	-.00220
#2	.00578	-.00675	4.5081	-.00016	.04019	.01426	-.00359
#3	.00712	-.00294	4.5179	-.00046	.04041	-.00469	-.00294
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00260**	**.00552**	F **-.09796**
Stddev	.00057	.00025	.21094
%RSD	21.873	4.5503	215.32
#1	-.00325	.00580	.14398
#2	-.00238	.00531	-.24325
#3	-.00218	.00544	-.19462
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6689.8**	**41666.**	**2101.2**
Stddev	9.9	402.	24.3
%RSD	.14842	.96487	1.1576
#1	6695.2	41372.	2073.4
#2	6678.4	42124.	2111.3
#3	6695.9	41503.	2118.8

Sample Name: L1606089605 Acquired: 6/23/2016 21:16:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.04830	-.00145	.00590	.06272	.00007	2.6789	.00041
Stddev	.00176	.01001	.00427	.00202	.00179	.00010	.0329	.00039
%RSD	2993.4	20.730	295.15	34.254	2.8603	144.40	1.2294	96.299
#1	-.00190	.05947	.00328	.00605	.06424	-.00005	2.7135	.00011
#2	.00153	.04527	-.00502	.00784	.06318	.00013	2.6479	.00085
#3	.00055	.04014	-.00260	.00381	.06074	.00012	2.6754	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00157	-.00035	.00184	.89250	3.4230	-.00452	1.6804	.01911
Stddev	.00028	.00023	.00080	.02843	.0162	.00117	.0608	.00353
%RSD	17.515	67.269	43.308	3.1854	.47175	25.991	3.6163	18.451
#1	.00131	-.00060	.00162	.86545	3.4125	-.00336	1.6187	.02198
#2	.00155	-.00014	.00273	.92213	3.4148	-.00448	1.7402	.01517
#3	.00186	-.00031	.00117	.88990	3.4416	-.00571	1.6824	.02016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00024	7.0650	.00185	-.00101	-.00247	.00326	-.00672	5.2164
Stddev	.00018	.0411	.00050	.00181	.00243	.00063	.00650	.0100
%RSD	75.478	.58180	27.196	179.64	98.576	19.406	96.645	.19223
#1	-.00033	7.1107	.00239	-.00299	-.00232	.00293	.00077	5.2089
#2	-.00037	7.0530	.00139	.00057	-.00497	.00286	-.01006	5.2125
#3	-.00003	7.0312	.00176	-.00061	-.00011	.00399	-.01087	5.2278
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606089605 Acquired: 6/23/2016 21:16:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00041	.02070	-.00116	-.00495	-.00050	.00647	.22434
Stddev	.00061	.00025	.00062	.00270	.00039	.00006	.14133
%RSD	147.06	1.2106	53.841	54.602	79.342	1.0037	62.996
#1	-.00061	.02054	-.00094	-.00697	-.00093	.00640	.33918
#2	.00027	.02099	-.00186	-.00188	-.00039	.00649	.26733
#3	-.00089	.02057	-.00067	-.00601	-.00017	.00652	.06651
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6679.9	41653.	2126.5
Stddev	8.5	193.	24.2
%RSD	.12769	.46319	1.1397
#1	6686.1	41709.	2098.6
#2	6670.2	41811.	2142.5
#3	6683.5	41438.	2138.4

Sample Name: L1606089607 Acquired: 6/23/2016 21:20:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**.00633**	**.00159**	**.00141**	**-.00044**	**-.00001**	**.07933**
Stddev	.00195	.00666	.00483	.00232	.00080	.00015	.08022
%RSD	1049.3	105.18	304.39	163.83	179.45	1810.1	101.12
#1	-.00175	.01203	-.00042	.00047	-.00070	-.00018	.13178
#2	.00017	.00795	.00710	-.00028	-.00108	.00005	-.01301
#3	.00214	-.00099	-.00192	.00405	.00045	.00010	.11922
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00011**	**.00023**	**.00018**	**.00261**	**-.00047**	**.03391**	**-.00323**
Stddev	.00029	.00036	.00083	.00135	.02031	.06552	.00128
%RSD	269.77	155.32	469.03	51.632	4346.1	193.24	39.606
#1	-.00002	.00060	-.00019	.00137	-.00573	.10021	-.00211
#2	-.00010	-.00011	.00113	.00242	.02196	-.03081	-.00295
#3	.00044	.00020	-.00041	.00405	-.01763	.03232	-.00462
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.02721**	**.00109**	**-.00056**	**.23253**	**.00049**	**-.00816**	**-.00015**
Stddev	.04069	.00341	.00026	.02524	.00107	.00624	.00442
%RSD	149.52	313.70	46.647	10.856	219.38	76.495	2897.5
#1	.01942	-.00058	-.00035	.24925	-.00074	-.01380	.00125
#2	-.05550	-.00117	-.00047	.20349	.00124	-.00145	-.00510
#3	-.04556	.00501	-.00085	.24484	.00096	-.00923	.00339
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: L1606089607 Acquired: 6/23/2016 21:20:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00194**	F **-.01015**	**.08416**	**.00022**	**-.00011**	**-.00212**	**-.00416**
Stddev	.00173	.00222	.00063	.00064	.00006	.01168	.00343
%RSD	89.180	21.886	.74271	295.50	49.832	550.35	82.554
#1	-.00101	-.00764	.08452	-.00003	-.00011	-.01340	-.00177
#2	-.00087	-.01186	.08451	-.00027	-.00006	.00993	-.00262
#3	-.00393	-.01095	.08344	.00095	-.00017	-.00289	-.00809
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		90.000					
Low Limit		-.01000					

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00083**	**.00158**	**.28593**
Stddev	.00029	.00007	.07024
%RSD	34.545	4.6737	24.566
#1	-.00055	.00150	.21816
#2	-.00081	.00165	.28123
#3	-.00112	.00159	.35840
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6700.8**	**41736.**	**2133.1**
Stddev	34.6	206.	28.2
%RSD	.51651	.49285	1.3235
#1	6660.9	41521.	2103.9
#2	6723.0	41931.	2160.2
#3	6718.5	41757.	2135.2

Sample Name: L1606082202 Acquired: 6/23/2016 21:24:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00194**	**-.00446**	**.00305**	**.00265**	**.00700**	**.00002**	**.35406**
Stddev	.00134	.00435	.00421	.00519	.00205	.00001	.05184
%RSD	68.787	97.453	137.81	196.12	29.341	37.190	14.641
#1	.00075	-.00690	-.00162	.00667	.00636	.00002	.30481
#2	.00338	.00056	.00423	-.00321	.00930	.00002	.40815
#3	.00169	-.00704	.00655	.00448	.00534	.00003	.34922
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**.00043**	**-.00077**	**.00285**	**.14848**	**-.04278**	**.00212**
Stddev	.00027	.00044	.00098	.00102	.00792	.02901	.00038
%RSD	394.25	102.19	127.46	35.949	5.3356	67.810	17.947
#1	-.00009	.00000	-.00184	.00239	.15626	-.06821	.00218
#2	.00038	.00041	.00008	.00403	.14874	-.04895	.00171
#3	-.00008	.00089	-.00054	.00214	.14043	-.01118	.00246
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.28223**	**.00480**	**-.00038**	**4.3287**	**-.00014**	**.01612**	**.00046**
Stddev	.10559	.00363	.00060	.1420	.00015	.00579	.00219
%RSD	37.411	75.632	157.86	3.2805	107.54	35.905	474.81
#1	.24611	.00764	-.00099	4.3698	-.00016	.01856	-.00192
#2	.19945	.00071	.00020	4.4456	-.00027	.02028	.00239
#3	.40114	.00605	-.00035	4.1706	.00002	.00951	.00092
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: L1606082202 Acquired: 6/23/2016 21:24:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**-.00096**	**.60016**	**-.00066**	**.01034**	**-.00345**	**-.00121**
Stddev	.00119	.00324	.00463	.00053	.00056	.00260	.00164
%RSD	9663.9	335.88	.77167	79.904	5.4479	75.303	135.44
#1	-.00094	.00170	.59620	-.00020	.00979	-.00115	-.00170
#2	.00134	-.00002	.59904	-.00124	.01092	-.00293	.00062
#3	-.00037	-.00457	.60525	-.00055	.01031	-.00627	-.00255
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00034**	**.00082**	F **-.14423**
Stddev	.00011	.00006	.30331
%RSD	33.594	7.1986	210.30
#1	.00036	.00078	-.38581
#2	.00045	.00089	-.24305
#3	.00022	.00079	.19617
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6775.7**	**42604.**	**2060.5**
Stddev	51.6	45.	84.1
%RSD	.76190	.10471	4.0814
#1	6799.5	42589.	2047.0
#2	6811.2	42654.	1984.0
#3	6716.5	42568.	2150.6

Sample Name: L1606082203 Acquired: 6/23/2016 21:28:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00145	.00184	.00074	-.00019	.03852	.00003	1.5262	.00007
Stddev	.00122	.00469	.00175	.00116	.00077	.00012	.0464	.00017
%RSD	84.264	255.24	237.52	615.42	2.0040	388.98	3.0406	258.31
#1	.00264	-.00346	.00229	-.00083	.03875	.00010	1.5782	-.00003
#2	.00020	.00352	.00109	-.00089	.03915	.00011	1.4889	-.00004
#3	.00151	.00546	-.00116	.00115	.03766	-.00011	1.5116	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.00018	.00108	.25045	2.4536	.00344	.67766	.01002
Stddev	.00037	.00129	.00050	.01436	.0243	.00221	.03143	.00186
%RSD	100.70	701.59	46.418	5.7329	.98953	64.075	4.6384	18.607
#1	.00035	.00006	.00058	.23440	2.4813	.00332	.65654	.01217
#2	.00075	.00153	.00159	.26208	2.4433	.00571	.71379	.00880
#3	.00001	-.00104	.00108	.25488	2.4361	.00130	.66266	.00909
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00035	4.5035	-.00023	.01290	-.00147	.00479	-.00584	.55304
Stddev	.00012	.0716	.00036	.00146	.00189	.00145	.00099	.00147
%RSD	35.728	1.5904	157.06	11.351	128.61	30.358	16.944	.26494
#1	-.00047	4.5590	.00019	.01295	-.00040	.00482	-.00623	.55146
#2	-.00035	4.5290	-.00045	.01141	-.00366	.00623	-.00472	.55435
#3	-.00023	4.4227	-.00042	.01433	-.00036	.00332	-.00658	.55332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606082203 Acquired: 6/23/2016 21:28:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.03922	-.00354	-.00320	-.00104	.00103	-.02734
Stddev	.00093	.00042	.00540	.00176	.00049	.00021	.22820
%RSD	4945.8	1.0630	152.76	54.899	47.016	20.853	834.62
#1	.00001	.03970	-.00944	-.00516	-.00118	.00102	.23169
#2	.00095	.03900	.00116	-.00265	-.00144	.00082	-.19873
#3	-.00091	.03895	-.00233	-.00178	-.00049	.00125	-.11499
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6687.3	41441.	2081.5
Stddev	25.3	113.	22.3
%RSD	.37870	.27264	1.0699
#1	6658.6	41368.	2073.0
#2	6706.4	41384.	2064.8
#3	6696.9	41571.	2106.8

Sample Name: L1606082302 Acquired: 6/23/2016 21:32:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	.00297	.00273	.00225	.36313	-.00000	11.836
Stddev	.00174	.00449	.00180	.00282	.00235	.00016	.075
%RSD	415.32	151.16	65.994	125.04	.64751	6744.5	.63384
#1	-.00148	.00121	.00168	.00506	.36408	.00008	11.919
#2	.00080	.00807	.00170	.00226	.36486	-.00018	11.773
#3	.00194	-.00038	.00482	-.00057	.36045	.00010	11.815
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	.00291	.00028	.00150	.22899	.13342	.00323
Stddev	.00018	.00030	.00095	.00047	.02084	.11756	.00252
%RSD	113.97	10.305	343.96	31.522	9.1002	88.111	78.086
#1	-.00018	.00302	-.00007	.00192	.21561	.24582	.00054
#2	.00003	.00257	-.00045	.00158	.21836	.01130	.00554
#3	-.00032	.00314	.00135	.00099	.25300	.14315	.00359
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.3954	.04077	-.00002	33.177	.00094	.00875	-.00140
Stddev	.0055	.00391	.00017	.158	.00081	.00388	.00293
%RSD	.05884	9.5814	818.90	.47682	86.099	44.289	209.14
#1	9.3987	.04528	.00014	33.360	.00025	.00895	-.00476
#2	9.3986	.03829	-.00000	33.085	.00074	.00478	.00055
#3	9.3891	.03876	-.00020	33.087	.00184	.01252	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: L1606082302 Acquired: 6/23/2016 21:32:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00211	F -.01027	.87158	-.00061	.28366	-.00294	-.00367
Stddev	.00335	.00460	.01165	.00033	.00032	.00246	.00356
%RSD	158.22	44.796	1.3368	53.749	.11189	83.646	96.934
#1	.00240	-.01556	.85944	-.00095	.28358	-.00225	-.00028
#2	.00531	-.00804	.87263	-.00029	.28401	-.00568	-.00738
#3	-.00136	-.00721	.88268	-.00060	.28339	-.00091	-.00335
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		90.000					
Low Limit		-.01000					

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00036	.00115	.04430
Stddev	.00028	.00013	.31486
%RSD	77.980	11.657	710.78
#1	-.00058	.00122	.37480
#2	-.00005	.00100	.01024
#3	-.00044	.00124	-.25215
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6666.9	40963.	2080.0
Stddev	54.9	248.	35.1
%RSD	.82321	.60425	1.6856
#1	6605.2	41025.	2039.5
#2	6685.2	40690.	2100.5
#3	6710.3	41173.	2100.0

Sample Name: CCV Acquired: 6/23/2016 21:36:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.37886	9.4008	.36977	.46580	.94543	.04748	9.4956
Stddev	.00192	.0240	.00492	.00165	.00279	.00009	.0298
%RSD	.50559	.25544	1.3304	.35366	.29493	.18359	.31411
#1	.37848	9.4279	.37519	.46422	.94745	.04749	9.4832
#2	.38093	9.3822	.36851	.46567	.94658	.04756	9.4739
#3	.37716	9.3923	.36560	.46751	.94225	.04739	9.5296
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04722	.18900	.47404	.47679	3.8147	47.440	.96725
Stddev	.00010	.00048	.00128	.00128	.0064	.112	.00455
%RSD	.21398	.25239	.26979	.26927	.16823	.23504	.47080
#1	.04722	.18886	.47544	.47536	3.8073	47.493	.96637
#2	.04711	.18861	.47292	.47785	3.8188	47.516	.97218
#3	.04731	.18953	.47377	.47715	3.8179	47.312	.96320
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.5275	.47798	.95150	47.323	.47305	9.3519	.47463
Stddev	.0772	.00629	.00356	.158	.00089	.0108	.00368
%RSD	.81075	1.3163	.37366	.33377	.18727	.11544	.77586
#1	9.5741	.48274	.95557	47.363	.47379	9.3402	.47038
#2	9.4383	.47085	.94902	47.457	.47331	9.3538	.47650
#3	9.5701	.48036	.94991	47.149	.47207	9.3616	.47699
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: CCV Acquired: 6/23/2016 21:36:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1248**	**.37983**	**4.7469**	**.94195**	**.94936**	**.95013**	**.47646**
Stddev	.0071	.00577	.0107	.00244	.00345	.00861	.00052
%RSD	.63160	1.5193	.22491	.25903	.36313	.90637	.10952
#1	1.1176	.38628	4.7372	.93943	.94930	.94189	.47702
#2	1.1251	.37515	4.7451	.94210	.95284	.94943	.47599
#3	1.1318	.37806	4.7583	.94431	.94595	.95907	.47637
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.94937**	**.94698**	F **.53390**
Stddev	.00172	.00064	.57416
%RSD	.18154	.06770	107.54
#1	.95103	.94624	-.12311
#2	.94951	.94740	.93934
#3	.94759	.94730	.78547
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6847.6**	**42330.**	**2179.9**
Stddev	26.3	36.	23.0
%RSD	.38348	.08457	1.0562
#1	6817.2	42321.	2206.4
#2	6862.7	42299.	2165.2
#3	6862.8	42369.	2168.0

Sample Name: CCB Acquired: 6/23/2016 21:39:49 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00034**	**-.00840**	**.00142**	**.00310**	**-.00097**	**-.00004**	**.04289**
Stddev	.00215	.00740	.00154	.00403	.00114	.00009	.02517
%RSD	634.22	88.117	107.88	130.11	117.13	211.10	58.687
#1	.00114	-.00019	.00313	.00134	-.00178	-.00003	.05755
#2	.00065	-.01045	.00097	.00025	-.00148	.00004	.01383
#3	-.00280	-.01457	.00016	.00772	.00033	-.00014	.05730
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**.00024**	**-.00021**	**.00099**	**.00681**	**.02724**	**.00474**
Stddev	.00017	.00030	.00131	.00197	.01403	.13786	.00231
%RSD	120.69	124.53	625.16	199.14	206.17	506.05	48.675
#1	-.00003	.00049	-.00143	.00036	-.00450	-.09799	.00738
#2	.00014	.00033	-.00037	.00320	.02251	.00476	.00369
#3	.00030	-.00009	.00117	-.00059	.00241	.17496	.00314
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.01627**	**.00349**	**.00316**	**.05656**	**.00129**	**.00259**	**.00220**
Stddev	.06560	.00061	.00054	.03460	.00090	.00126	.00512
%RSD	403.12	17.500	17.006	61.166	69.213	48.482	232.87
#1	.04308	.00418	.00337	.06648	.00145	.00133	.00302
#2	-.00519	.00302	.00356	.01809	.00033	.00384	-.00328
#3	-.08670	.00326	.00255	.08512	.00210	.00261	.00686
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: CCB Acquired: 6/23/2016 21:39:49 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00210**	**.00060**	**-.00131**	**-.00025**	**.00045**	**.00101**	**-.00537**
Stddev	.00282	.00202	.00149	.00144	.00024	.00715	.00270
%RSD	134.10	334.37	113.55	585.99	53.933	705.65	50.282
#1	.00467	-.00103	-.00073	-.00138	.00029	-.00721	-.00765
#2	-.00091	.00286	-.00300	-.00074	.00033	.00583	-.00608
#3	.00255	-.00002	-.00020	.00138	.00073	.00442	-.00239
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00036**	**.00019**	F **.41711**
Stddev	.00059	.00027	.26410
%RSD	164.24	139.43	63.317
#1	-.00011	-.00011	.71541
#2	.00007	.00039	.21306
#3	-.00103	.00030	.32286
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6996.3**	**43082.**	**2193.8**
Stddev	20.8	164.	36.3
%RSD	.29721	.37998	1.6551
#1	6972.3	42895.	2225.5
#2	7007.7	43194.	2201.8
#3	7008.9	43159.	2154.2

Sample Name: L1606082303 Acquired: 6/23/2016 21:43:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.00528	-.00158	.00205	.19615	.00000	9.5412	-.00005
Stddev	.00172	.00389	.00374	.00056	.00167	.00004	.0635	.00015
%RSD	531.26	73.680	236.25	27.382	.84980	2856.4	.66503	295.12
#1	.00039	.00192	-.00320	.00177	.19699	.00004	9.6087	.00011
#2	.00201	.00955	-.00424	.00168	.19423	-.00003	9.4828	-.00019
#3	-.00143	.00438	.00269	.00269	.19724	-.00001	9.5322	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	-.00003	.00137	.01816	.07360	-.00201	5.7035	.11460
Stddev	.00028	.00217	.00077	.02760	.04149	.00162	.1926	.00292
%RSD	57.802	7719.6	56.083	151.98	56.373	80.472	3.3772	2.5499
#1	.00048	-.00239	.00048	.04879	.11308	-.00147	5.9188	.11188
#2	.00020	.00186	.00178	-.00477	.07737	-.00383	5.5474	.11423
#3	.00076	.00045	.00184	.01046	.03036	-.00073	5.6443	.11769
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	30.457	.00028	.01105	.00022	.00112	-.00912	.60825
Stddev	.00054	.348	.00034	.00162	.00227	.00456	.00372	.00164
%RSD	210.59	1.1437	122.90	14.679	1048.7	408.61	40.764	.26908
#1	-.00033	30.637	-.00010	.01036	-.00046	-.00379	-.00828	.60645
#2	.00038	30.056	.00057	.01291	.00274	.00192	-.00590	.60965
#3	.00071	30.679	.00036	.00990	-.00164	.00522	-.01319	.60865
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606082303 Acquired: 6/23/2016 21:43:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00070**	**.18364**	**-.00297**	**-.00161**	**.00010**	**.00105**	**.18385**
Stddev	.00086	.00144	.00537	.00137	.00034	.00025	.28076
%RSD	122.13	.78353	180.76	84.915	342.41	23.814	152.71
#1	-.00168	.18402	-.00642	-.00247	-.00015	.00082	-.00761
#2	-.00010	.18205	.00322	-.00003	-.00005	.00103	.50616
#3	-.00032	.18485	-.00570	-.00232	.00050	.00132	.05301
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6737.6**	**41321.**	**2154.5**
Stddev	10.1	398.	10.5
%RSD	.15056	.96263	.48515
#1	6747.5	41745.	2162.1
#2	6727.2	41262.	2142.5
#3	6738.0	40956.	2158.7

Sample Name: L1606082304 Acquired: 6/23/2016 21:47:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00107	.00763	.00205	.00128	.06210	-.00005	2.2162	-.00002
Stddev	.00070	.00357	.00361	.00281	.00225	.00003	.0545	.00005
%RSD	65.790	46.743	175.75	220.17	3.6308	56.826	2.4590	342.73
#1	.00064	.01174	.00606	-.00197	.06015	-.00004	2.1625	-.00007
#2	.00188	.00577	-.00095	.00288	.06159	-.00009	2.2715	.00004
#3	.00068	.00537	.00106	.00292	.06457	-.00003	2.2145	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	-.00139	.00241	4.0573	.28730	.00089	1.4304	.07372
Stddev	.00015	.00065	.00132	.0516	.13779	.00299	.0553	.00403
%RSD	30.727	46.428	54.848	1.2708	47.960	334.26	3.8623	5.4701
#1	.00066	-.00136	.00091	4.0586	.13895	.00365	1.4701	.07443
#2	.00040	-.00206	.00293	4.0051	.41127	.00130	1.4537	.07736
#3	.00040	-.00076	.00340	4.1081	.31169	-.00228	1.3673	.06938
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	6.7673	.00003	.01064	-.00183	.00117	-.00224	.82027
Stddev	.00026	.0658	.00066	.00541	.00174	.00605	.00594	.00641
%RSD	1414.1	.97251	2005.0	50.852	95.153	515.39	265.01	.78184
#1	-.00017	6.7130	.00068	.01686	-.00367	.00122	-.00440	.81299
#2	-.00008	6.7484	.00006	.00808	-.00161	-.00490	-.00681	.82274
#3	.00031	6.8405	-.00064	.00698	-.00021	.00720	.00448	.82508
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606082304 Acquired: 6/23/2016 21:47:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00062**	**.05041**	**.00372**	**-.00162**	**-.00102**	**.00139**	**.02709**
Stddev	.00054	.00053	.00900	.00223	.00128	.00033	.20037
%RSD	86.087	1.0604	241.81	137.59	125.65	23.588	739.53
#1	-.00016	.04984	-.00362	-.00387	-.00076	.00168	-.08640
#2	-.00121	.05049	.01377	-.00158	-.00240	.00104	.25845
#3	-.00050	.05090	.00102	.00059	.00011	.00145	-.09076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6801.0**	**42034.**	**2119.8**
Stddev	49.8	142.	31.5
%RSD	.73210	.33806	1.4863
#1	6763.5	42178.	2123.4
#2	6782.1	42032.	2149.4
#3	6857.5	41894.	2086.7

Sample Name: L1606088302 Acquired: 6/23/2016 21:51:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.03900	.00448	.00430	.01505	-.00001	2.8996	-.00001
Stddev	.00124	.00075	.00243	.00233	.00060	.00004	.0350	.00023
%RSD	153.65	1.9305	54.189	54.088	3.9770	332.40	1.2074	2343.8
#1	-.00027	.03833	.00184	.00580	.01560	.00003	2.9325	.00014
#2	.00216	.03982	.00662	.00548	.01441	-.00003	2.8628	.00010
#3	.00053	.03886	.00496	.00162	.01514	-.00004	2.9035	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00051	-.00093	.00225	.26018	.53798	-.00133	1.2540	.13015
Stddev	.00005	.00064	.00096	.01052	.04447	.00237	.1006	.00182
%RSD	10.629	68.468	42.462	4.0434	8.2670	177.47	8.0229	1.3964
#1	.00052	-.00155	.00287	.26853	.50853	-.00040	1.3655	.12853
#2	.00056	-.00028	.00273	.26365	.51627	-.00403	1.2265	.12979
#3	.00045	-.00096	.00115	.24836	.58914	.00042	1.1700	.13212
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	2.6639	.00090	.01608	.00052	.00237	-.00249	.36519
Stddev	.00017	.0233	.00047	.00836	.00171	.00049	.00862	.00186
%RSD	72.830	.87410	52.415	51.991	330.96	20.707	346.32	.51020
#1	.00029	2.6639	.00099	.02573	.00209	.00189	.00736	.36326
#2	.00036	2.6406	.00039	.01116	.00078	.00287	-.00614	.36532
#3	.00004	2.6871	.00132	.01135	-.00131	.00234	-.00868	.36698
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606088302 Acquired: 6/23/2016 21:51:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00006**	**.01730**	**.00326**	**-.00074**	**-.00020**	**.00699**	**.35536**
Stddev	.00047	.00025	.00678	.00023	.00043	.00024	.51910
%RSD	826.36	1.4568	208.35	30.989	219.10	3.4850	146.08
#1	.00036	.01713	.00871	-.00090	-.00020	.00693	-.23473
#2	-.00056	.01718	-.00434	-.00084	-.00062	.00678	.74156
#3	.00004	.01759	.00541	-.00048	.00024	.00726	.55925
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7019.0**	**43469.**	**2272.3**
Stddev	25.4	199.	24.4
%RSD	.36132	.45762	1.0740
#1	7020.2	43542.	2267.1
#2	6993.1	43621.	2298.9
#3	7043.7	43244.	2250.9

Sample Name: L1606089601 Acquired: 6/23/2016 21:55:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00420**	**.00523**	**.00334**	**.00237**	**.00219**	**.00008**	**.19980**
Stddev	.00278	.00696	.00261	.00237	.00063	.00004	.02591
%RSD	66.297	133.09	78.109	99.957	28.753	51.900	12.967
#1	.00741	.00603	.00348	.00033	.00147	.00009	.18026
#2	.00260	.01174	.00066	.00182	.00265	.00012	.22918
#3	.00258	-.00210	.00587	.00496	.00244	.00003	.18994
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00015**	**.00302**	**.00023**	**.00052**	**2.0027**	**-.01208**	**-.00040**
Stddev	.00012	.00024	.00052	.00149	.0311	.05532	.00593
%RSD	79.007	7.8027	222.58	284.84	1.5506	458.05	1480.9
#1	-.00011	.00287	.00040	.00177	1.9805	.05152	-.00717
#2	-.00005	.00329	-.00035	-.00112	1.9893	-.03870	.00382
#3	-.00028	.00290	.00064	.00091	2.0382	-.04905	.00215
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.24211**	**.28328**	**-.00023**	**.95184**	**.00021**	**.00495**	**-.00083**
Stddev	.13780	.01030	.00015	.04331	.00103	.00358	.00274
%RSD	56.917	3.6352	65.757	4.5498	490.79	72.184	329.16
#1	.26334	.27250	-.00010	.90187	.00062	.00759	.00169
#2	.09492	.28431	-.00019	.97855	.00097	.00088	-.00043
#3	.36806	.29302	-.00040	.97509	-.00096	.00638	-.00376
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: L1606089601 Acquired: 6/23/2016 21:55:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00174**	**-.00552**	**.20894**	**-.00089**	**.00183**	**.00041**	**-.00355**
Stddev	.00455	.00357	.00152	.00075	.00028	.00397	.00196
%RSD	261.01	64.670	.72600	84.586	15.398	961.73	55.133
#1	-.00696	-.00337	.20831	-.00159	.00215	.00126	-.00263
#2	.00141	-.00964	.20784	-.00009	.00174	.00389	-.00222
#3	.00032	-.00355	.21067	-.00099	.00161	-.00391	-.00580
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00023**	**.00107**	F **-.16350**
Stddev	.00118	.00009	.38488
%RSD	512.00	8.7488	235.40
#1	-.00072	.00105	.00228
#2	-.00109	.00099	.11071
#3	.00111	.00117	-.60348
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6828.9**	**41943.**	**2135.6**
Stddev	63.3	286.	20.3
%RSD	.92751	.68281	.94968
#1	6763.6	42271.	2138.9
#2	6833.1	41741.	2154.0
#3	6890.1	41817.	2113.9

Sample Name: L1606089602 Acquired: 6/23/2016 21:59:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00116	.00173	.00317	.00184	-.00011	.00003	.00624	-.00003
Stddev	.00285	.00778	.00249	.00329	.00125	.00006	.05063	.00023
%RSD	245.09	449.18	78.692	179.21	1183.1	208.66	811.35	713.72
#1	-.00055	.01019	.00053	.00389	-.00026	-.00003	-.04528	.00022
#2	.00445	-.00512	.00349	.00357	-.00127	.00009	.05593	-.00023
#3	-.00041	.00012	.00549	-.00196	.00122	.00003	.00807	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.00046	.00165	-.00531	.07219	-.00031	.05667	.00209
Stddev	.00028	.00102	.00160	.03109	.09458	.00388	.05878	.00182
%RSD	116.13	222.95	97.271	585.63	131.01	1232.5	103.73	87.087
#1	.00001	.00001	.00226	.02472	.15298	-.00298	.09347	.00378
#2	.00016	-.00027	-.00017	-.00328	.09542	.00413	.08765	.00016
#3	.00055	.00163	.00285	-.03736	-.03184	-.00209	-.01113	.00234
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00056	.39833	-.00077	.00469	.00112	.00031	-.00922	.46168
Stddev	.00006	.02012	.00058	.00167	.00277	.00100	.00659	.00725
%RSD	11.375	5.0505	75.062	35.563	245.83	319.68	71.432	1.5707
#1	-.00061	.37822	-.00128	.00414	.00250	-.00075	-.01634	.45603
#2	-.00049	.39832	-.00088	.00656	-.00206	.00124	-.00799	.45917
#3	-.00057	.41846	-.00014	.00336	.00293	.00045	-.00334	.46986
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606089602 Acquired: 6/23/2016 21:59:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00058**	**.00007**	**-.00373**	**-.00407**	**-.00032**	**.00100**	**-.02035**
Stddev	.00028	.00019	.00957	.00088	.00078	.00036	.45457
%RSD	48.712	259.28	256.71	21.746	243.98	36.577	2234.1
#1	-.00053	.00018	.00727	-.00462	.00006	.00142	-.06540
#2	-.00033	.00018	-.00832	-.00454	.00020	.00080	.45507
#3	-.00089	-.00014	-.01012	-.00305	-.00121	.00077	-.45071
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6764.1**	**42193.**	**2152.3**
Stddev	51.5	150.	58.2
%RSD	.76176	.35597	2.7055
#1	6724.7	42019.	2097.0
#2	6745.2	42282.	2213.0
#3	6822.4	42277.	2146.9

Sample Name: L1606089603 Acquired: 6/23/2016 22:03:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00264**	**.00052**	**.00129**	**.00105**	**.00283**	**.00007**	**.13087**	**-.00015**
Stddev	.00174	.01588	.00262	.00317	.00277	.00004	.02295	.00021
%RSD	65.852	3062.5	203.49	301.32	97.964	60.620	17.533	135.33
#1	.00093	.01257	-.00138	.00463	.00302	.00005	.14125	.00004
#2	.00440	.00646	.00387	-.00005	.00549	.00004	.10457	-.00037
#3	.00259	-.01748	.00137	-.00142	-.00004	.00011	.14679	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00048**	**.00024**	**.00128**	**.12772**	**.20105**	**-.00470**	**.12553**	**.00043**
Stddev	.00031	.00150	.00216	.02497	.11408	.00639	.06203	.00287
%RSD	63.789	616.72	168.54	19.548	56.742	136.10	49.418	664.80
#1	.00045	.00194	-.00101	.11916	.09190	.00173	.17340	-.00027
#2	.00019	-.00030	.00156	.10815	.19176	-.00476	.14774	-.00202
#3	.00080	-.00091	.00330	.15584	.31949	-.01106	.05545	.00359
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.39363**	**-.00055**	**.01390**	**-.00151**	**.00183**	**-.00632**	**.24727**
Stddev	.00045	.04518	.00102	.00707	.00255	.00239	.00219	.00127
%RSD	1327.8	11.477	186.18	50.889	169.36	131.03	34.571	.51246
#1	-.00019	.43317	-.00107	.01491	-.00330	.00328	-.00397	.24716
#2	.00047	.34439	.00063	.02042	.00142	-.00094	-.00828	.24858
#3	-.00038	.40334	-.00121	.00638	-.00264	.00314	-.00672	.24606
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606089603 Acquired: 6/23/2016 22:03:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00047**	**.00125**	**-.01273**	**-.00400**	**-.00003**	**.00095**	**.10691**
Stddev	.00077	.00042	.00925	.00266	.00030	.00011	.21605
%RSD	161.90	33.664	72.615	66.501	1119.1	11.082	202.08
#1	-.00019	.00148	-.00295	-.00574	-.00008	.00101	-.14101
#2	-.00134	.00076	-.01391	-.00094	.00030	.00102	.20680
#3	.00011	.00150	-.02133	-.00533	-.00030	.00083	.25493
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6778.0**	**41534.**	**2155.4**
Stddev	33.3	392.	34.0
%RSD	.49153	.94350	1.5766
#1	6804.2	41394.	2116.9
#2	6740.5	41232.	2181.3
#3	6789.2	41977.	2167.8

Sample Name: L1606089604 Acquired: 6/23/2016 22:07:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00159	.01026	.00044	.00222	.00123	.00002	.21290	.00018
Stddev	.00043	.01032	.00191	.00166	.00091	.00006	.03422	.00024
%RSD	27.269	100.60	437.55	74.707	74.454	271.36	16.075	135.58
#1	.00148	.01567	.00246	.00277	.00044	.00008	.21883	-.00010
#2	.00207	.01676	-.00133	.00035	.00223	.00002	.24377	.00035
#3	.00122	-.00164	.00018	.00353	.00102	-.00004	.17610	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00372	-.00098	.00204	1.9871	.04803	-.00029	.27775	.28079
Stddev	.00019	.00146	.00258	.0500	.09028	.00333	.05841	.00512
%RSD	4.9815	148.68	126.42	2.5186	187.98	1134.6	21.028	1.8227
#1	.00391	-.00254	-.00094	1.9637	-.03733	-.00218	.34159	.28507
#2	.00373	.00037	.00345	1.9529	.03888	.00355	.22701	.27512
#3	.00354	-.00079	.00362	2.0445	.14254	-.00224	.26465	.28217
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	.88820	.00047	.00405	-.00241	-.00066	-.00911	.20760
Stddev	.00009	.05397	.00049	.00324	.00083	.00328	.00427	.00263
%RSD	33.170	6.0764	104.78	80.127	34.563	498.25	46.914	1.2688
#1	-.00017	.85983	.00038	.00127	-.00145	.00099	-.00982	.20605
#2	-.00027	.85432	.00100	.00326	-.00287	.00147	-.00453	.20610
#3	-.00035	.95043	.00003	.00761	-.00292	-.00443	-.01299	.21064
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606089604 Acquired: 6/23/2016 22:07:36 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.00180**	**.00146**	**-.00008**	**.00002**	**.00083**	**.01606**
Stddev	.00033	.00028	.00448	.00273	.00107	.00008	.15859
%RSD	645.35	15.485	305.81	3306.5	5321.6	9.5646	987.51
#1	-.00043	.00167	.00571	-.00323	-.00007	.00090	-.04948
#2	.00011	.00212	.00190	.00129	-.00100	.00085	-.09926
#3	.00017	.00161	-.00322	.00169	.00113	.00074	.19692
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6852.5**	**41879.**	**2133.3**
Stddev	55.4	422.	31.4
%RSD	.80848	1.0073	1.4729
#1	6793.1	41503.	2112.7
#2	6861.8	42335.	2169.5
#3	6902.7	41799.	2117.7

Sample Name: L1606089605 Acquired: 6/23/2016 22:11:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00325**	**-.00813**	**.00321**	**.00103**	**.00232**	**.00007**	**.13232**
Stddev	.00086	.00834	.00166	.00270	.00015	.00005	.04505
%RSD	26.517	102.62	51.687	262.17	6.5199	65.910	34.048
#1	.00357	-.00015	.00448	.00315	.00234	.00011	.13419
#2	.00227	-.00744	.00133	-.00201	.00246	.00002	.08636
#3	.00390	-.01679	.00380	.00194	.00216	.00008	.17641
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**.00019**	**-.00021**	**-.00051**	**.02399**	**.13993**	**-.00272**
Stddev	.00013	.00048	.00060	.00074	.02883	.04909	.00167
%RSD	59.092	248.65	278.22	144.43	120.17	35.082	61.414
#1	-.00034	.00000	-.00032	-.00045	-.00884	.19045	-.00464
#2	-.00023	.00074	.00043	-.00128	.04519	.13693	-.00190
#3	-.00008	-.00016	-.00075	.00019	.03563	.09241	-.00161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.13116**	**-.00087**	**-.00017**	**.35584**	**.00083**	**.00721**	**.00009**
Stddev	.12028	.00028	.00012	.03175	.00083	.00389	.00231
%RSD	91.707	32.079	72.680	8.9233	100.69	53.875	2586.3
#1	.15231	-.00055	-.00032	.37833	.00083	.00320	-.00213
#2	.23946	-.00098	-.00010	.31952	-.00001	.01096	.00248
#3	.00170	-.00108	-.00010	.36967	.00166	.00747	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: L1606089605 Acquired: 6/23/2016 22:11:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00575**	**.00189**	**.24045**	**-.00028**	**.00101**	**-.00455**	**-.00361**
Stddev	.00192	.00588	.00568	.00092	.00006	.01057	.00467
%RSD	33.402	311.30	2.3620	328.38	6.1198	232.48	129.52
#1	.00788	.00697	.23736	-.00119	.00106	-.01626	-.00722
#2	.00521	.00325	.23698	.00066	.00103	-.00167	-.00528
#3	.00416	-.00455	.24700	-.00032	.00094	.00429	.00167
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00106**	**.00104**	F **-.05759**
Stddev	.00074	.00009	.21862
%RSD	69.542	8.5436	379.61
#1	-.00181	.00101	.17219
#2	-.00033	.00097	-.26300
#3	-.00105	.00114	-.08197
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6837.2**	**42004.**	**2152.4**
Stddev	16.0	173.	9.0
%RSD	.23440	.41281	.41704
#1	6853.2	42014.	2142.1
#2	6821.1	41826.	2156.7
#3	6837.2	42172.	2158.4

Sample Name: L1606089607 Acquired: 6/23/2016 22:15:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00124**	**-.00686**	**.00409**	**.00130**	**-.00066**	**-.00005**	**.03206**	**-.00002**
Stddev	.00132	.01058	.00305	.00213	.00072	.00007	.01681	.00018
%RSD	105.94	154.08	74.558	163.59	109.05	125.85	52.443	856.76
#1	-.00264	-.01401	.00622	.00259	-.00111	-.00005	.04548	-.00001
#2	-.00105	-.01187	.00546	.00246	-.00105	.00001	.01320	.00015
#3	-.00003	.00529	.00060	-.00115	.00017	-.00012	.03751	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00031**	**.00074**	**.00061**	**-.00910**	**-.00529**	**-.00407**	**.02444**	**.00176**
Stddev	.00024	.00180	.00036	.03159	.06755	.00591	.05716	.00378
%RSD	78.629	244.31	60.097	347.19	1277.4	145.34	233.90	215.59
#1	.00037	.00281	.00094	.01641	.06833	-.00447	-.04095	.00014
#2	.00051	-.00035	.00022	-.04443	-.01978	-.00977	.04932	-.00095
#3	.00004	-.00025	.00066	.00073	-.06441	.00203	.06494	.00608
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00073**	**.00595**	**.00025**	**.00693**	**-.00226**	**-.00313**	**-.00892**	**-.00746**
Stddev	.00042	.03243	.00102	.00571	.00047	.00121	.00509	.00076
%RSD	57.397	545.12	410.30	82.361	20.886	38.630	57.024	10.142
#1	-.00072	.04302	.00024	.00636	-.00177	-.00362	-.00954	-.00789
#2	-.00116	-.01720	-.00077	.01291	-.00271	-.00175	-.01368	-.00792
#3	-.00032	-.00797	.00128	.00153	-.00229	-.00401	-.00356	-.00659
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606089607 Acquired: 6/23/2016 22:15:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00050**	**.00006**	**-.00267**	**-.00165**	**-.00070**	**.00059**	**.18991**
Stddev	.00084	.00062	.00845	.00365	.00135	.00010	.03400
%RSD	167.93	1027.2	316.03	221.52	192.73	16.308	17.901
#1	-.00037	-.00011	.00072	-.00580	.00084	.00058	.15066
#2	-.00140	.00075	-.01229	-.00022	-.00169	.00050	.20942
#3	.00027	-.00046	.00355	.00107	-.00126	.00069	.20967
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6854.9**	**42369.**	**2139.0**
Stddev	37.2	282.	6.9
%RSD	.54331	.66600	.32457
#1	6813.1	42056.	2146.4
#2	6867.1	42446.	2132.6
#3	6884.6	42604.	2138.0

Sample Name: CCV Acquired: 6/23/2016 22:19:31 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.37294	9.2890	.37002	.46325	.93343	.04671	9.3219
Stddev	.00058	.0248	.00029	.00298	.00858	.00002	.0885
%RSD	.15646	.26680	.07810	.64298	.91954	.04347	.94918
#1	.37306	9.3173	.36998	.46028	.92385	.04673	9.2510
#2	.37230	9.2715	.36976	.46623	.94043	.04670	9.2937
#3	.37345	9.2781	.37033	.46323	.93599	.04670	9.4210
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04629	.18580	.46699	.46774	3.7375	46.911	.95278
Stddev	.00023	.00060	.00144	.00134	.0018	.467	.00684
%RSD	.48818	.32069	.30929	.28620	.04690	.99443	.71816
#1	.04654	.18545	.46662	.46619	3.7368	46.377	.94493
#2	.04624	.18649	.46859	.46843	3.7395	47.239	.95591
#3	.04609	.18546	.46577	.46859	3.7362	47.116	.95750
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.2808	.46805	.93442	46.553	.46467	9.1850	.46445
Stddev	.1781	.00201	.00336	.432	.00229	.0141	.00099
%RSD	1.9192	.42908	.36011	.92728	.49257	.15361	.21367
#1	9.0878	.46660	.93610	46.055	.46543	9.1763	.46458
#2	9.4388	.47034	.93661	46.821	.46649	9.2013	.46537
#3	9.3158	.46721	.93054	46.783	.46210	9.1774	.46340
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: CCV Acquired: 6/23/2016 22:19:31 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1058**	**.37399**	**4.6590**	**.92793**	**.93602**	**.93884**	**.47136**
Stddev	.0068	.00623	.0143	.00333	.00809	.01829	.00375
%RSD	.61331	1.6668	.30694	.35899	.86439	1.9481	.79529
#1	1.1040	.37143	4.6586	.92611	.92682	.91846	.46721
#2	1.1133	.38110	4.6734	.93177	.94202	.94427	.47237
#3	1.1001	.36945	4.6448	.92590	.93921	.95381	.47450
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.93328**	**.93064**	F **.30272**
Stddev	.00145	.00126	.34844
%RSD	.15486	.13568	115.11
#1	.93249	.92922	.70352
#2	.93240	.93165	.07184
#3	.93495	.93106	.13279
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6994.5**	**42945.**	**2201.9**
Stddev	26.0	472.	17.5
%RSD	.37198	1.0980	.79423
#1	7017.9	42835.	2192.4
#2	6966.5	42539.	2222.1
#3	6999.0	43462.	2191.2

Sample Name: CCB Acquired: 6/23/2016 22:23:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00075**	**-.01234**	**.00307**	**.00387**	**-.00152**	**.00003**	**.02196**
Stddev	.00074	.00351	.00195	.00329	.00037	.00010	.03751
%RSD	98.761	28.475	63.502	85.024	24.368	329.31	170.81
#1	.00146	-.01497	.00353	.00757	-.00195	-.00000	.04383
#2	.00082	-.00835	.00475	.00124	-.00126	.00014	.04339
#3	-.00002	-.01370	.00093	.00281	-.00136	-.00005	-.02135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.00029**	**-.00074**	**.00053**	**-.01044**	**.06034**	**-.00158**
Stddev	.00023	.00031	.00153	.00009	.01838	.08449	.00205
%RSD	314.24	106.88	205.57	16.843	176.11	140.03	130.11
#1	-.00010	-.00004	-.00241	.00043	-.01522	.02142	-.00392
#2	-.00029	.00057	-.00042	.00060	.00986	.15728	-.00009
#3	.00017	.00033	.00060	.00054	-.02595	.00232	-.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.02604**	**-.00075**	**.00305**	**.06420**	**.00000**	**.00651**	**-.00362**
Stddev	.05654	.00328	.00069	.00709	.00080	.00504	.00339
%RSD	217.15	436.24	22.462	11.042	53218.	77.432	93.854
#1	.03584	-.00047	.00226	.06569	.00068	.00969	-.00632
#2	-.07502	.00238	.00342	.07043	-.00088	.00913	-.00473
#3	-.03894	-.00416	.00347	.05649	.00021	.00070	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: CCB Acquired: 6/23/2016 22:23:10 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00325	-.00859	-.00081	-.00049	.00016	.00095	-.00269
Stddev	.00288	.00100	.00106	.00098	.00044	.00395	.00131
%RSD	88.832	11.667	130.17	199.49	265.70	416.04	48.575
#1	.00425	-.00769	-.00116	-.00120	.00053	-.00220	-.00394
#2	-.00001	-.00968	.00037	.00062	.00028	-.00034	-.00133
#3	.00549	-.00841	-.00166	-.00089	-.00032	.00538	-.00281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00046	.00011	F .20521
Stddev	.00084	.00022	.40407
%RSD	184.00	201.71	196.91
#1	.00051	-.00006	.57360
#2	-.00094	.00036	-.22696
#3	-.00095	.00003	.26899
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6996.7	43446.	2222.8
Stddev	42.9	110.	21.9
%RSD	.61271	.25379	.98413
#1	6948.6	43485.	2197.6
#2	7030.8	43322.	2237.5
#3	7010.7	43532.	2233.2

Sample Name: LLCCV Acquired: 6/23/2016 22:27:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00907	.13685	.00722	.07327	.00636	.00136	.38737	.00083
Stddev	.00127	.00548	.00269	.00354	.00121	.00002	.02958	.00013
%RSD	14.057	4.0063	37.324	4.8356	18.957	1.6251	7.6350	15.322
#1	.00768	.13064	.00454	.06952	.00698	.00135	.41482	.00073
#2	.01019	.13890	.00718	.07656	.00497	.00135	.39124	.00078
#3	.00934	.14102	.00993	.07374	.00713	.00139	.35605	.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00356	.00351	.00643	.06036	.74512	.07304	.35518	.00670
Stddev	.00034	.00083	.00051	.03616	.18336	.00520	.11515	.00028
%RSD	9.6921	23.706	7.9731	59.906	24.608	7.1243	32.420	4.2320
#1	.00383	.00446	.00589	.02265	.76354	.06708	.45336	.00638
#2	.00367	.00316	.00691	.06369	.91857	.07668	.38374	.00683
#3	.00317	.00291	.00648	.09475	.55324	.07536	.22844	.00690
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00743	.43578	.01531	.74167	.00827	.07927	.00569	.77935
Stddev	.00037	.04956	.00080	.00526	.00366	.00493	.00102	.00095
%RSD	5.0056	11.373	5.2515	.70948	44.188	6.2194	17.916	.12251
#1	.00704	.38130	.01503	.74257	.01154	.08395	.00451	.78008
#2	.00779	.47820	.01469	.73602	.00432	.07413	.00628	.77827
#3	.00745	.44783	.01622	.74642	.00896	.07973	.00628	.77970
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: LLCCV Acquired: 6/23/2016 22:27:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.37348	.03865	.02465	.14094	.00676	.01578	19.333
Stddev	.00058	.00060	.00437	.00098	.00113	.00019	.577
%RSD	.15634	1.5628	17.713	.69785	16.700	1.2102	2.9862
#1	.37294	.03795	.02415	.14073	.00773	.01557	19.532
#2	.37410	.03901	.02924	.14008	.00552	.01583	19.783
#3	.37339	.03899	.02055	.14202	.00705	.01594	18.682
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6996.1	43552.	2208.7
Stddev	29.5	407.	29.7
%RSD	.42198	.93392	1.3436
#1	6976.9	43985.	2211.3
#2	7030.1	43494.	2236.9
#3	6981.2	43178.	2177.8

Sample Name: LLCCV Acquired: 6/23/2016 22:31:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02091	.36245	.02162	.18354	.01867	.00356	.98086
Stddev	.00237	.00484	.00558	.00414	.00095	.00018	.04469
%RSD	11.351	1.3361	25.792	2.2543	5.0969	5.1755	4.5561
#1	.01879	.36503	.01522	.18805	.01837	.00338	.94866
#2	.02045	.35687	.02541	.17992	.01791	.00356	.96204
#3	.02347	.36547	.02424	.18267	.01974	.00374	1.0319
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00183	.00959	.00895	.01155	.18702	1.8760	.19064
Stddev	.00040	.00066	.00025	.00083	.02563	.0398	.00709
%RSD	21.803	6.8545	2.7509	7.2203	13.702	2.1189	3.7192
#1	.00229	.01035	.00908	.01200	.20673	1.9212	.19761
#2	.00159	.00922	.00866	.01059	.15805	1.8607	.18344
#3	.00161	.00920	.00910	.01205	.19628	1.8463	.19086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.90135	.02189	.01808	1.0102	.03771	1.7925	.01852
Stddev	.03529	.00047	.00019	.0359	.00135	.0154	.00112
%RSD	3.9156	2.1507	1.0770	3.5580	3.5742	.86119	6.0288
#1	.87617	.02240	.01801	.97340	.03783	1.7983	.01932
#2	.88620	.02181	.01830	1.0119	.03900	1.8043	.01725
#3	.94169	.02146	.01794	1.0452	.03631	1.7750	.01900
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: LLCCV Acquired: 6/23/2016 22:31:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19437**	**.03462**	**1.8270**	**.92649**	**.09469**	**.05843**	**.34726**
Stddev	.00460	.00283	.0121	.00858	.00060	.00582	.00417
%RSD	2.3690	8.1675	.66332	.92568	.63058	9.9521	1.1997
#1	.19959	.03615	1.8304	.92739	.09439	.06509	.34780
#2	.19266	.03636	1.8370	.93459	.09431	.05586	.35113
#3	.19087	.03136	1.8135	.91750	.09538	.05435	.34285
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.01800**	**.03876**	F **49.426**
Stddev	.00023	.00022	.593
%RSD	1.2842	.57319	1.2005
#1	.01823	.03881	50.072
#2	.01777	.03895	48.906
#3	.01800	.03851	49.300
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**7011.3**	**43477.**	**2210.1**
Stddev	20.4	40.	14.4
%RSD	.29146	.09218	.65240
#1	7004.2	43507.	2200.5
#2	6995.4	43491.	2226.7
#3	7034.3	43431.	2203.1

Sample Name: PBW 11 Acquired: 6/23/2016 22:35:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573562-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00032**	**.00826**	**.00073**	**.00097**	**-.00161**	**.00009**	**.02504**
Stddev	.00435	.00626	.00116	.00380	.00132	.00015	.01704
%RSD	1361.2	75.725	158.33	393.95	82.078	159.17	68.056
#1	-.00441	.01091	-.00035	.00280	-.00305	.00000	.03508
#2	.00122	.01276	.00059	.00350	-.00132	.00026	.03466
#3	.00414	.00112	.00196	-.00341	-.00045	.00001	.00536
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**-.00009**	**.00011**	**.00179**	**-.00443**	**.01747**	**-.00078**
Stddev	.00037	.00030	.00107	.00110	.02744	.11206	.00643
%RSD	372.56	345.12	981.79	61.211	619.83	641.53	826.74
#1	.00053	-.00038	.00079	.00288	.01410	-.01578	-.00199
#2	-.00009	.00021	-.00112	.00069	-.03595	.14238	.00617
#3	-.00014	-.00009	.00066	.00181	.00857	-.07420	-.00651
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.12116**	**.00145**	**-.00010**	**-.00638**	**-.00006**	**-.00844**	**-.00156**
Stddev	.07020	.00190	.00047	.05241	.00004	.00883	.00308
%RSD	57.940	131.08	475.47	821.85	65.273	104.67	197.22
#1	.10625	-.00074	-.00051	-.02102	-.00009	.00126	.00107
#2	.19761	.00240	-.00019	.05180	-.00002	-.01056	-.00495
#3	.05961	.00268	.00041	-.04991	-.00007	-.01601	-.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: PBW 11 Acquired: 6/23/2016 22:35:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573562-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00235**	F **-.01321**	**-.01211**	**.00005**	**.00012**	**-.01090**	**-.00481**
Stddev	.00434	.00615	.00423	.00130	.00022	.00717	.00224
%RSD	184.96	46.568	34.938	2403.9	182.36	65.767	46.622
#1	-.00650	-.00846	-.00872	-.00069	-.00007	-.00262	-.00253
#2	.00215	-.02016	-.01076	-.00070	.00007	-.01519	-.00488
#3	-.00268	-.01101	-.01685	.00155	.00036	-.01489	-.00701
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit		90.000					
Low Limit		-.01000					

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00056**	**.00115**	F **-.06214**
Stddev	.00033	.00011	.40590
%RSD	58.758	9.4676	653.23
#1	-.00093	.00115	.04499
#2	-.00040	.00127	.27945
#3	-.00033	.00105	-.51085
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6526.0**	**40939.**	**2061.7**
Stddev	35.4	294.	34.1
%RSD	.54178	.71898	1.6547
#1	6541.9	40985.	2026.5
#2	6550.5	40624.	2063.9
#3	6485.4	41207.	2094.6

Sample Name: LCSW 11 Acquired: 6/23/2016 22:38:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573562-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20572	5.1016	.20434	.99099	.52273	.02551	5.4134	.02557
Stddev	.00209	.0119	.00205	.00539	.00783	.00018	.0860	.00030
%RSD	1.0158	.23413	1.0041	.54353	1.4983	.70326	1.5893	1.1859
#1	.20812	5.1093	.20580	.99664	.52935	.02536	5.5127	.02591
#2	.20432	5.1075	.20521	.99043	.52477	.02571	5.3662	.02536
#3	.20472	5.0878	.20199	.98591	.51409	.02545	5.3613	.02542
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10385	.25890	.26189	2.1195	25.823	.53451	5.3645	.26403
Stddev	.00010	.00080	.00098	.0266	.322	.00518	.0615	.00364
%RSD	.09428	.30942	.37489	1.2540	1.2452	.96918	1.1457	1.3773
#1	.10374	.25918	.26254	2.1199	26.125	.53986	5.3994	.26710
#2	.10385	.25953	.26237	2.1460	25.858	.53416	5.2935	.26002
#3	.10394	.25800	.26076	2.0928	25.485	.52952	5.4005	.26498
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.53004	25.957	.26029	4.9232	.25825	.61920	.19466	2.6294
Stddev	.00026	.317	.00111	.0037	.00566	.00409	.00541	.0065
%RSD	.04851	1.2227	.42516	.07504	2.1932	.66079	2.7789	.24514
#1	.53022	26.268	.26156	4.9218	.25403	.62385	.18855	2.6314
#2	.53016	25.970	.25951	4.9204	.25605	.61617	.19656	2.6346
#3	.52975	25.634	.25981	4.9274	.26469	.61757	.19886	2.6222
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: LCSW 11 Acquired: 6/23/2016 22:38:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573562-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51706**	**.53317**	**.52168**	**.25600**	**.51571**	**.51503**	**1.3110**
Stddev	.00229	.00553	.01335	.00456	.00094	.00046	.2154
%RSD	.44200	1.0369	2.5594	1.7813	.18322	.08969	16.426
#1	.51564	.53801	.52874	.25386	.51673	.51503	1.4161
#2	.51585	.53436	.53002	.26124	.51555	.51550	1.4536
#3	.51970	.52714	.50628	.25291	.51486	.51457	1.0633
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6527.2**	**40455.**	**2087.1**
Stddev	31.3	163.	12.5
%RSD	.47880	.40351	.59802
#1	6563.2	40283.	2074.8
#2	6508.4	40474.	2086.8
#3	6509.8	40608.	2099.8

Sample Name: F BLANK Acquired: 6/23/2016 22:42:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573353-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00101	.01349	.00278	.00644	-.00048	.00013	.02829	-.00023
Stddev	.00147	.00646	.00238	.00275	.00027	.00015	.01012	.00024
%RSD	145.82	47.931	85.631	42.748	55.833	119.23	35.758	102.61
#1	-.00010	.00837	.00376	.00945	-.00079	.00030	.03838	-.00026
#2	.00267	.02075	.00451	.00583	-.00040	.00003	.02835	-.00045
#3	.00045	.01134	.00007	.00405	-.00027	.00005	.01815	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	-.00021	.00115	.01618	-.02636	.00022	-.03112	.00301
Stddev	.00025	.00041	.00050	.01401	.02024	.00227	.10093	.00056
%RSD	146.69	193.40	43.311	86.581	76.800	1041.8	324.28	18.733
#1	.00022	.00012	.00058	.01388	-.01342	.00194	.07257	.00362
#2	.00039	-.00067	.00140	.00346	-.01597	.00107	-.03691	.00250
#3	-.00010	-.00008	.00148	.03119	-.04969	-.00236	-.12903	.00293
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00043	131.96	-.00024	-.00817	-.00215	.00148	-.00969	-.00282
Stddev	.00010	.85	.00144	.01034	.00162	.00392	.00917	.00327
%RSD	22.241	.64765	607.00	126.51	75.376	266.02	94.572	115.83
#1	.00044	132.92	.00143	.00262	-.00398	.00318	-.01589	.00093
#2	.00053	131.28	-.00110	-.01799	-.00092	.00426	.00084	-.00431
#3	.00034	131.69	-.00104	-.00915	-.00154	-.00301	-.01402	-.00509
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: F BLANK Acquired: 6/23/2016 22:42:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573353-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**.00010**	**-.00200**	**-.00314**	**.00056**	**.00410**	**.11736**
Stddev	.00046	.00052	.00261	.00021	.00036	.00009	.48090
%RSD	288.96	535.97	130.24	6.7340	64.659	2.2677	409.76
#1	-.00023	.00063	-.00290	-.00292	.00037	.00404	.00662
#2	.00004	.00007	-.00404	-.00316	.00033	.00421	-.29851
#3	.00067	-.00041	.00094	-.00334	.00097	.00406	.64398
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6547.2**	**40321.**	**2096.8**
Stddev	27.3	101.	33.4
%RSD	.41693	.25042	1.5916
#1	6550.7	40326.	2062.9
#2	6572.6	40217.	2129.6
#3	6518.3	40419.	2098.0

Sample Name: F BLANK Acquired: 6/23/2016 22:46:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573353-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00205**	**.01458**	**.00104**	**.00093**	**-.00012**	**-.00011**	**.03413**	**.00007**
Stddev	.00257	.00695	.00149	.00158	.00097	.00015	.06625	.00024
%RSD	125.57	47.660	142.55	168.73	807.82	139.24	194.10	358.50
#1	.00306	.01748	.00276	.00220	-.00059	.00003	.00736	.00006
#2	.00395	.00665	.00032	-.00083	-.00077	-.00008	-.01455	-.00017
#3	-.00087	.01960	.00006	.00144	.00099	-.00027	.10958	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**-.00025**	**.00229**	**.01454**	**.10361**	**-.00161**	**-.00074**	**.00159**
Stddev	.00020	.00099	.00086	.02039	.12854	.00327	.04972	.00150
%RSD	270.27	392.29	37.466	140.25	124.05	203.19	6704.2	94.513
#1	-.00016	-.00139	.00199	-.00883	.15515	.00182	-.05789	.00331
#2	.00020	.00021	.00326	.02371	.19839	-.00196	.02308	.00082
#3	.00019	.00042	.00163	.02874	-.04269	-.00469	.03259	.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.08993**	**.00021**	**-.00044**	**.00171**	**.00115**	**-.00478**	**-.01618**
Stddev	.00021	.02749	.00122	.00310	.00251	.00690	.00614	.00197
%RSD	158.62	30.569	571.20	708.88	146.77	601.02	128.46	12.198
#1	.00007	.10546	-.00067	.00234	-.00022	.00773	-.00669	-.01496
#2	.00036	.10614	-.00029	.00012	.00081	.00175	.00209	-.01845
#3	-.00004	.05819	.00160	-.00377	.00454	-.00604	-.00974	-.01512
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: F BLANK Acquired: 6/23/2016 22:46:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573353-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.00000	-.00849	-.00355	.00002	.00375	.18786
Stddev	.00024	.00006	.00318	.00112	.00121	.00009	.14076
%RSD	171.57	4326.9	37.397	31.641	7603.4	2.4757	74.927
#1	.00012	.00006	-.01213	-.00271	-.00043	.00385	.34927
#2	.00039	-.00000	-.00626	-.00312	-.00090	.00367	.12376
#3	-.00009	-.00006	-.00708	-.00483	.00138	.00373	.09057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6645.1	41415.	2118.1
Stddev	51.0	148.	9.8
%RSD	.76790	.35755	.46386
#1	6671.8	41525.	2108.0
#2	6677.3	41246.	2127.6
#3	6586.3	41473.	2118.7

Sample Name: L1606097401 Acquired: 6/23/2016 22:50:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573562-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00187**	**.11141**	**.00185**	**.13976**	**.13124**	**.00006**	**11.923**	**.00025**
Stddev	.00099	.00961	.00433	.00304	.00120	.00013	.085	.00026
%RSD	52.908	8.6272	234.23	2.1718	.91402	206.81	.71186	103.09
#1	-.00300	.11755	.00322	.14250	.13178	.00021	12.021	.00001
#2	-.00137	.11635	-.00300	.14028	.13207	-.00003	11.884	.00021
#3	-.00123	.10033	.00533	.13649	.12986	.00001	11.865	.00052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00325**	**.00082**	**.00243**	**1.0194**	**3.4016**	**.00412**	**14.829**	**.47953**
Stddev	.00065	.00120	.00106	.0300	.0185	.00138	.053	.00284
%RSD	19.954	146.37	43.821	2.9431	.54459	33.491	.35710	.59200
#1	.00322	-.00007	.00334	.98836	3.3804	.00531	14.788	.47741
#2	.00262	.00219	.00268	1.0217	3.4096	.00444	14.889	.48276
#3	.00391	.00035	.00126	1.0482	3.4148	.00261	14.810	.47842
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**14.029**	**.00345**	**-.00115**	**.00096**	**.00344**	**.00640**	**6.1973**
Stddev	.00012	.046	.00111	.00836	.00159	.00074	.00619	.0079
%RSD	73.635	.32793	32.058	726.14	165.09	21.404	96.675	.12766
#1	-.00003	14.048	.00367	-.00743	.00071	.00392	.01206	6.2055
#2	-.00020	14.062	.00443	-.00436	-.00049	.00379	-.00020	6.1968
#3	-.00025	13.976	.00225	.00834	.00266	.00259	.00734	6.1897
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606097401 Acquired: 6/23/2016 22:50:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573562-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.15663	-.00490	-.00350	-.00004	.00381	.27764
Stddev	.00040	.00118	.00403	.00013	.00036	.00005	.25173
%RSD	389.62	.75413	82.244	3.6390	976.32	1.2951	90.667
#1	-.00036	.15760	-.00950	-.00338	-.00044	.00385	.40246
#2	.00031	.15698	-.00318	-.00349	.00013	.00382	.44257
#3	.00036	.15532	-.00201	-.00363	.00021	.00375	-.01211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6619.1	40945.	2109.7
Stddev	10.2	451.	19.0
%RSD	.15337	1.1019	.89902
#1	6615.2	40453.	2097.8
#2	6611.5	41044.	2131.5
#3	6630.6	41339.	2099.6

Sample Name: L1606097409S Acquired: 6/23/2016 22:54:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573562-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20627	5.0015	.19707	1.0840	.63830	.02511	15.216	.02489
Stddev	.00439	.0470	.00646	.0138	.00496	.00023	.159	.00037
%RSD	2.1297	.93911	3.2784	1.2764	.77719	.91601	1.0457	1.4914
#1	.20993	5.0515	.18974	1.0963	.64340	.02535	15.397	.02529
#2	.20140	4.9583	.19954	1.0690	.63801	.02510	15.151	.02456
#3	.20748	4.9946	.20193	1.0866	.63349	.02489	15.099	.02483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10388	.25321	.25314	2.5849	28.688	.52179	17.865	.68847
Stddev	.00035	.00232	.00112	.0115	.394	.00543	.201	.00731
%RSD	.33918	.91513	.44229	.44279	1.3724	1.0405	1.1266	1.0613
#1	.10359	.25588	.25333	2.5862	29.131	.52794	18.088	.69576
#2	.10427	.25175	.25416	2.5957	28.557	.51978	17.697	.68851
#3	.10377	.25199	.25194	2.5729	28.377	.51766	17.810	.68114
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.51876	38.405	.25390	4.8710	.24934	.59995	.18589	8.2835
Stddev	.00146	.259	.00011	.0108	.00345	.00191	.00207	.0089
%RSD	.28048	.67387	.04392	.22193	1.3854	.31868	1.1116	.10799
#1	.51718	38.681	.25401	4.8591	.24740	.60185	.18570	8.2732
#2	.51906	38.367	.25379	4.8738	.25333	.59803	.18393	8.2891
#3	.52005	38.168	.25392	4.8802	.24730	.59997	.18804	8.2882
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606097409S Acquired: 6/23/2016 22:54:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573562-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50349	.65950	.51762	.24758	.50743	.50246	.81618
Stddev	.00174	.00452	.01522	.00062	.00357	.00056	.23521
%RSD	.34477	.68510	2.9397	.25174	.70344	.11237	28.818
#1	.50344	.66471	.52198	.24830	.51109	.50181	.58167
#2	.50178	.65703	.53018	.24729	.50396	.50287	.81481
#3	.50525	.65675	.50070	.24716	.50723	.50268	1.0521
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6571.1	40649.	2099.3
Stddev	19.5	291.	11.1
%RSD	.29604	.71659	.53063
#1	6548.6	40317.	2086.9
#2	6582.6	40767.	2102.9
#3	6582.0	40862.	2108.3

Sample Name: L1606097411SD Acquired: 6/23/2016 22:58:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573562-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20301	5.0935	.20254	1.1135	.64720	.02513	17.005	.02529
Stddev	.00131	.0093	.00255	.0073	.00193	.00014	.125	.00014
%RSD	.64434	.18208	1.2591	.65223	.29801	.54856	.73583	.55871
#1	.20180	5.0830	.20062	1.1056	.64841	.02524	16.944	.02527
#2	.20284	5.0968	.20544	1.1153	.64821	.02498	17.149	.02543
#3	.20440	5.1006	.20156	1.1198	.64498	.02518	16.923	.02515
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10473	.25680	.25656	3.0216	28.787	.52889	19.740	.73225
Stddev	.00029	.00169	.00156	.0240	.291	.00510	.166	.00214
%RSD	.27243	.65998	.60790	.79299	1.0111	.96496	.83971	.29254
#1	.10453	.25746	.25836	3.0492	28.796	.52755	19.834	.73428
#2	.10462	.25806	.25556	3.0077	29.074	.53453	19.837	.73246
#3	.10506	.25487	.25576	3.0078	28.492	.52458	19.548	.73001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52618	39.581	.25576	4.8994	.25448	.60988	.19462	8.7250
Stddev	.00060	.184	.00118	.0146	.00431	.00152	.00488	.0127
%RSD	.11470	.46575	.46133	.29829	1.6939	.24983	2.5089	.14588
#1	.52623	39.585	.25707	4.8974	.25909	.60949	.19392	8.7122
#2	.52676	39.763	.25543	4.9148	.25381	.60859	.19982	8.7250
#3	.52555	39.395	.25478	4.8858	.25055	.61156	.19013	8.7376
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606097411SD Acquired: 6/23/2016 22:58:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573562-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50655	.68066	.51426	.25122	.50847	.50678	.50917
Stddev	.00036	.00376	.00731	.00121	.00054	.00037	.18705
%RSD	.07012	.55173	1.4206	.48320	.10539	.07293	36.736
#1	.50668	.67977	.51313	.25144	.50835	.50698	.47043
#2	.50615	.68478	.52206	.25231	.50800	.50700	.34452
#3	.50682	.67742	.50758	.24991	.50905	.50635	.71255
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6599.6	40879.	2125.2
Stddev	36.5	163.	36.7
%RSD	.55319	.39917	1.7271
#1	6558.7	40764.	2124.1
#2	6628.9	40808.	2089.1
#3	6611.1	41066.	2162.5

Sample Name: L1606090301 Acquired: 6/23/2016 23:01:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00171	.01564	.00294	.01850	.00898	-.00004	46.441	.00022
Stddev	.00082	.01258	.00166	.00390	.00087	.00003	.145	.00037
%RSD	47.964	80.448	56.393	21.081	9.6500	63.411	.31216	167.83
#1	.00264	.02660	.00383	.02298	.00987	-.00008	46.595	-.00020
#2	.00144	.01843	.00103	.01664	.00813	-.00002	46.423	.00039
#3	.00106	.00190	.00395	.01587	.00895	-.00004	46.307	.00049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	.00043	.00251	.04392	.36940	-.00187	6.4848	.00401
Stddev	.00055	.00082	.00124	.02745	.02893	.00702	.0718	.00293
%RSD	143.61	190.56	49.243	62.491	7.8320	374.64	1.1071	73.244
#1	.00082	-.00015	.00183	.02878	.35514	-.00147	6.5673	.00719
#2	.00055	.00137	.00394	.07561	.35036	.00493	6.4364	.00342
#3	-.00023	.00007	.00177	.02738	.40269	-.00908	6.4507	.00141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00124	2.3912	.00015	-.00111	.00175	-.00069	-.00611	2.4464
Stddev	.00019	.0146	.00065	.00585	.00193	.00258	.00753	.0043
%RSD	15.055	.61183	443.31	524.60	110.31	375.66	123.28	.17481
#1	.00123	2.3744	.00089	-.00577	.00397	.00193	-.00911	2.4476
#2	.00106	2.4012	-.00016	.00545	.00055	-.00077	.00246	2.4417
#3	.00143	2.3980	-.00029	-.00303	.00072	-.00322	-.01167	2.4500
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606090301 Acquired: 6/23/2016 23:01:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00033	.05094	-.00942	-.00137	.00033	.00855	.12749
Stddev	.00120	.00036	.00450	.00125	.00064	.00008	.22777
%RSD	359.04	.70893	47.793	91.344	191.76	.98957	178.66
#1	-.00095	.05113	-.01374	-.00053	.00015	.00845	.36891
#2	.00142	.05116	-.00475	-.00281	-.00019	.00858	.09713
#3	.00053	.05052	-.00978	-.00077	.00105	.00861	-.08358
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6624.9	41305.	2113.7
Stddev	28.0	611.	12.8
%RSD	.42196	1.4799	.60649
#1	6599.0	41779.	2107.8
#2	6654.5	40615.	2128.4
#3	6621.1	41521.	2104.9

Sample Name: L1606090301PS Acquired: 6/23/2016 23:05:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573749-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20315	5.0351	.19933	.98509	.51723	.02533	46.108	.02517
Stddev	.00237	.0141	.00064	.00471	.00225	.00014	.292	.00010
%RSD	1.1667	.28092	.32345	.47796	.43513	.56006	.63289	.38937
#1	.20113	5.0207	.19918	.98035	.51851	.02535	46.344	.02507
#2	.20576	5.0490	.19878	.98516	.51463	.02547	45.781	.02527
#3	.20255	5.0357	.20004	.98977	.51856	.02518	46.198	.02516
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.10028	.25408	.25247	2.0837	25.422	.52185	10.797	.26020
Stddev	.00048	.00013	.00281	.0115	.145	.00302	.049	.00165
%RSD	.47862	.05151	1.1142	.55075	.56995	.57813	.44947	.63512
#1	.10024	.25422	.24943	2.0968	25.589	.52416	10.827	.25832
#2	.10077	.25406	.25499	2.0788	25.328	.51844	10.822	.26141
#3	.09982	.25396	.25300	2.0754	25.349	.52296	10.741	.26088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.52036	27.383	.25017	4.9546	.25694	.60707	.19089	4.8076
Stddev	.00073	.158	.00061	.0081	.00347	.00719	.00485	.0007
%RSD	.13971	.57670	.24497	.16395	1.3493	1.1850	2.5386	.01435
#1	.52119	27.447	.24958	4.9632	.25410	.61287	.18545	4.8079
#2	.51984	27.204	.25012	4.9471	.25592	.60931	.19246	4.8068
#3	.52004	27.500	.25080	4.9535	.26081	.59902	.19476	4.8080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606090301PS Acquired: 6/23/2016 23:05:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573749-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50644	.56158	.50038	.25206	.50977	.50584	.50366
Stddev	.00169	.00120	.00839	.00343	.00237	.00060	.30226
%RSD	.33432	.21309	1.6764	1.3594	.46441	.11817	60.013
#1	.50760	.56240	.50354	.25552	.50926	.50626	.73300
#2	.50722	.56020	.49087	.24866	.51235	.50516	.61683
#3	.50450	.56212	.50672	.25200	.50770	.50611	.16114
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6634.2	40772.	2114.5
Stddev	22.4	92.	10.2
%RSD	.33771	.22603	.48307
#1	6611.3	40856.	2104.9
#2	6656.0	40786.	2113.4
#3	6635.2	40673.	2125.2

Sample Name: L1606090301SDL Acquired: 6/23/2016 23:09:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573749-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00125**	**-.00211**	**.00104**	**.00614**	**.00089**	**-.00005**	**8.6724**	**-.00005**
Stddev	.00276	.00609	.00315	.00512	.00101	.00009	.0375	.00023
%RSD	221.14	289.17	302.21	83.373	113.85	164.72	.43247	430.30
#1	.00165	-.00654	-.00255	.00543	.00189	-.00005	8.6376	.00022
#2	.00379	.00484	.00330	.01158	.00093	-.00014	8.6675	-.00019
#3	-.00169	-.00462	.00238	.00141	-.00014	.00003	8.7121	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00007**	**-.00015**	**.00151**	**.01774**	**.05719**	**-.00032**	**1.2928**	**.00199**
Stddev	.00032	.00036	.00174	.01658	.07315	.00592	.1368	.00072
%RSD	433.89	237.55	115.25	93.432	127.89	1849.8	10.583	36.311
#1	-.00025	-.00023	.00291	.03261	.10693	.00122	1.1631	.00203
#2	.00038	-.00046	-.00044	-.00013	-.02679	.00468	1.4358	.00125
#3	.00008	.00024	.00207	.02075	.09145	-.00685	1.2797	.00269
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00062**	**.50288**	**.00020**	**.00422**	**-.00347**	**-.00009**	**-.00488**	**.45851**
Stddev	.00015	.01796	.00107	.00310	.00056	.00216	.00737	.00307
%RSD	24.656	3.5717	530.84	73.548	16.155	2299.3	151.12	.67016
#1	.00074	.48937	-.00102	.00065	-.00411	-.00250	-.01008	.45511
#2	.00045	.49600	.00097	.00624	-.00312	.00057	.00356	.46107
#3	.00067	.52326	.00066	.00577	-.00317	.00165	-.00811	.45936
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606090301SDL Acquired: 6/23/2016 23:09:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573749-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00043**	**.00975**	**-.00339**	**.00072**	**-.00071**	**.00182**	**.28982**
Stddev	.00076	.00047	.00412	.00137	.00059	.00016	.40983
%RSD	176.59	4.8404	121.60	190.63	83.639	8.7152	141.41
#1	.00038	.00960	.00073	.00044	-.00028	.00190	.42557
#2	-.00111	.01028	-.00752	.00221	-.00047	.00164	.61455
#3	-.00055	.00937	-.00339	-.00049	-.00139	.00193	-.17066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6811.4**	**42010.**	**2145.9**
Stddev	35.6	211.	19.5
%RSD	.52290	.50301	.90902
#1	6804.9	42193.	2150.1
#2	6779.4	42057.	2163.0
#3	6849.8	41779.	2124.7

Sample Name: CCV Acquired: 6/23/2016 23:13:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41326**	**10.290**	**.40933**	**.51318**	**1.0406**	**.05196**	**10.449**
Stddev	.00367	.031	.00303	.00454	.0017	.00056	.073
%RSD	.88729	.29649	.74071	.88463	.16560	1.0752	.70056
#1	.41222	10.266	.40583	.51598	1.0426	.05202	10.433
#2	.41023	10.281	.41097	.50794	1.0395	.05138	10.384
#3	.41734	10.325	.41118	.51561	1.0396	.05249	10.528
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05188**	**.20751**	**.51860**	**.52298**	**4.1404**	**51.810**	**1.0557**
Stddev	.00032	.00026	.00373	.00169	.0293	.081	.0044
%RSD	.62111	.12412	.72010	.32358	.70759	.15585	.41608
#1	.05162	.20739	.51967	.52267	4.1341	51.858	1.0535
#2	.05178	.20781	.51444	.52146	4.1148	51.717	1.0529
#3	.05224	.20734	.52168	.52480	4.1724	51.855	1.0608
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.434**	**.52450**	**1.0396**	**51.672**	**.51702**	**10.257**	**.51943**
Stddev	.147	.00403	.0017	.210	.00153	.061	.00236
%RSD	1.4125	.76876	.16574	.40642	.29546	.59705	.45451
#1	10.599	.52887	1.0415	51.851	.51530	10.207	.52009
#2	10.315	.52369	1.0381	51.441	.51819	10.240	.51680
#3	10.387	.52093	1.0392	51.724	.51759	10.325	.52138
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: CCV Acquired: 6/23/2016 23:13:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2432**	**.40702**	**5.1978**	**1.0337**	**1.0394**	**1.0354**	**.52041**
Stddev	.0039	.00046	.0143	.0031	.0042	.0035	.00214
%RSD	.31258	.11246	.27417	.30049	.40463	.33586	.41209
#1	1.2391	.40753	5.1883	1.0302	1.0436	1.0350	.52283
#2	1.2437	.40689	5.1909	1.0348	1.0352	1.0322	.51875
#3	1.2468	.40665	5.2142	1.0361	1.0396	1.0391	.51965
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0351**	**1.0403**	F **.25266**
Stddev	.0070	.0016	.10822
%RSD	.68141	.15403	42.834
#1	1.0383	1.0386	.34911
#2	1.0270	1.0404	.13562
#3	1.0400	1.0418	.27323
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6474.0**	**39804.**	**2056.5**
Stddev	41.9	151.	9.5
%RSD	.64647	.37833	.46144
#1	6447.9	39827.	2053.8
#2	6522.3	39942.	2048.6
#3	6451.9	39644.	2067.0

Sample Name: CCB Acquired: 6/23/2016 23:17:05 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00053**	**.01688**	**.00315**	**.00457**	**-.00011**	**.00013**	**.01891**	**.00020**
Stddev	.00350	.01032	.00748	.00212	.00110	.00006	.06314	.00005
%RSD	664.12	61.108	237.21	46.535	973.24	44.359	333.92	24.066
#1	-.00268	.02858	-.00372	.00470	.00043	.00018	.03807	.00024
#2	-.00001	.00908	.00206	.00662	.00061	.00007	-.05159	.00021
#3	.00427	.01299	.01112	.00238	-.00138	.00016	.07025	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**.00073**	**.00146**	**.01871**	**.09919**	**.00074**	**.03193**	**.00172**
Stddev	.00032	.00177	.00126	.01232	.12450	.00566	.07256	.00242
%RSD	651.38	241.69	86.427	65.838	125.51	769.76	227.22	140.80
#1	.00042	-.00122	.00034	.00498	-.03300	-.00467	.10382	.00139
#2	-.00019	.00221	.00282	.02879	.11637	.00026	-.04127	-.00052
#3	-.00008	.00121	.00121	.02235	.21421	.00662	.03325	.00429
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00396**	**.05479**	**-.00105**	**.00648**	**-.00101**	**.00564**	**-.00498**	**.00630**
Stddev	.00092	.03837	.00180	.00453	.00307	.00402	.00631	.00043
%RSD	23.350	70.024	171.44	69.981	304.27	71.194	126.78	6.8811
#1	.00290	.07487	.00083	.01030	.00189	.00526	-.01221	.00676
#2	.00456	.01055	-.00276	.00766	-.00422	.00984	-.00057	.00622
#3	.00443	.07894	-.00122	.00147	-.00069	.00183	-.00216	.00591
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB Acquired: 6/23/2016 23:17:05 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00055**	**-.00002**	**.00408**	**-.00193**	**.00037**	**.00005**	**.02228**
Stddev	.00023	.00019	.00879	.00186	.00041	.00007	.40623
%RSD	41.382	1063.2	215.26	96.532	110.70	135.03	1823.1
#1	.00069	-.00023	-.00341	-.00071	-.00006	-.00002	-.40274
#2	.00029	.00004	.01375	-.00101	.00043	.00013	.06292
#3	.00066	.00013	.00190	-.00407	.00076	.00005	.40667
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6464.5**	**39816.**	**2046.0**
Stddev	26.9	481.	41.8
%RSD	.41677	1.2077	2.0425
#1	6458.5	39261.	2010.7
#2	6441.1	40106.	2035.2
#3	6493.9	40080.	2092.2

Sample Name: L1606090302 Acquired: 6/23/2016 23:21:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00800	.00182	.01230	.01036	-.00005	47.673	.00026
Stddev	.00085	.00343	.00363	.00358	.00124	.00007	.280	.00015
%RSD	272.61	42.881	200.18	29.113	11.960	128.20	.58740	57.099
#1	.00031	.00879	-.00237	.00886	.01157	-.00001	47.890	.00037
#2	-.00053	.01096	.00415	.01601	.00909	-.00001	47.772	.00032
#3	.00116	.00424	.00367	.01205	.01042	-.00013	47.357	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00005	.00015	.00261	.09179	.46952	-.00272	6.7874	.01530
Stddev	.00029	.00088	.00094	.00788	.11796	.00383	.0475	.00163
%RSD	527.39	592.21	36.175	8.5807	25.123	140.65	.69987	10.685
#1	-.00038	.00116	.00159	.08468	.47413	-.00254	6.7436	.01564
#2	.00012	-.00040	.00278	.09044	.34932	.00101	6.7806	.01352
#3	.00010	-.00032	.00345	.10026	.58509	-.00664	6.8379	.01673
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00092	2.5218	-.00025	.00306	.00002	-.00071	-.00373	2.5222
Stddev	.00063	.0302	.00136	.00470	.00238	.00277	.00475	.0109
%RSD	68.779	1.1957	538.26	153.23	11843.	388.81	127.31	.43311
#1	.00032	2.5566	.00100	-.00086	.00039	.00133	.00175	2.5345
#2	.00086	2.5031	-.00169	.00178	.00219	.00040	-.00620	2.5136
#3	.00157	2.5056	-.00007	.00827	-.00252	-.00386	-.00675	2.5186
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606090302 Acquired: 6/23/2016 23:21:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**.05280**	**-.00935**	**-.00377**	**-.00005**	**.00235**	**.11164**
Stddev	.00108	.00027	.00453	.00048	.00146	.00015	.26019
%RSD	392.25	.51917	48.460	12.830	2892.9	6.5370	233.05
#1	-.00049	.05310	-.00574	-.00424	.00086	.00248	.33955
#2	.00090	.05256	-.01444	-.00328	.00072	.00218	-.17184
#3	-.00123	.05274	-.00787	-.00379	-.00173	.00238	.16722
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6545.6**	**41303.**	**2131.1**
Stddev	23.7	132.	13.6
%RSD	.36137	.32048	.63580
#1	6530.1	41250.	2117.0
#2	6572.8	41206.	2132.3
#3	6534.0	41454.	2144.0

Sample Name: L1606090303 Acquired: 6/23/2016 23:25:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00263	.00774	.00563	.00796	.00854	-.00002	45.954	.00013
Stddev	.00328	.00668	.00265	.00318	.00150	.00012	.228	.00034
%RSD	124.84	86.299	47.034	39.934	17.503	682.86	.49687	267.94
#1	.00506	.01059	.00367	.00860	.00804	-.00005	45.886	.00049
#2	-.00111	.01253	.00457	.01077	.01022	.00012	46.208	.00008
#3	.00394	.00011	.00864	.00451	.00737	-.00012	45.767	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	-.00004	.00264	.21996	.44485	.00448	6.7971	.02189
Stddev	.00017	.00063	.00127	.02132	.06435	.00051	.0747	.00331
%RSD	77.701	1729.3	48.231	9.6943	14.465	11.277	1.0984	15.131
#1	.00007	.00062	.00404	.23944	.50211	.00394	6.7547	.01807
#2	.00019	-.00009	.00157	.19718	.45723	.00494	6.8833	.02378
#3	.00041	-.00064	.00230	.22325	.37521	.00457	6.7534	.02384
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00090	2.4891	-.00031	.00226	-.00318	.00121	-.00101	2.4462
Stddev	.00023	.0385	.00053	.00868	.00252	.00105	.00896	.0110
%RSD	25.268	1.5452	169.73	384.84	79.079	87.283	885.01	.44916
#1	.00089	2.4503	-.00059	-.00015	-.00309	-.00001	-.00785	2.4500
#2	.00067	2.4900	.00030	.01188	-.00575	.00184	-.00433	2.4549
#3	.00113	2.5272	-.00064	-.00497	-.00072	.00180	.00914	2.4339
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606090303 Acquired: 6/23/2016 23:25:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.05042	-.00867	-.00405	-.00058	.00293	.21469
Stddev	.00068	.00039	.00321	.00395	.00086	.00012	.24147
%RSD	116.53	.76868	37.044	97.556	147.98	4.1433	112.48
#1	.00096	.05045	-.00617	-.00495	-.00048	.00287	.22391
#2	.00100	.05080	-.01229	-.00746	-.00148	.00307	.45141
#3	-.00020	.05002	-.00756	.00027	.00022	.00286	-.03127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6557.1	40614.	2090.8
Stddev	3.1	286.	4.7
%RSD	.04661	.70434	.22607
#1	6559.9	40616.	2093.3
#2	6553.9	40327.	2085.3
#3	6557.7	40899.	2093.7

Sample Name: L1606090304 Acquired: 6/23/2016 23:28:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00249	.01012	.00464	.01066	.00806	-.00002	46.697	.00023
Stddev	.00091	.01191	.00138	.00192	.00037	.00002	.216	.00013
%RSD	36.530	117.71	29.729	17.988	4.5683	108.87	.46335	55.814
#1	.00283	-.00243	.00466	.01137	.00780	-.00002	46.940	.00033
#2	.00319	.01152	.00601	.00849	.00791	.00000	46.527	.00026
#3	.00146	.02127	.00325	.01212	.00849	-.00003	46.623	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00033	.00062	.00100	.51001	.64738	.00217	6.6353	.05303
Stddev	.00037	.00064	.00122	.03061	.09484	.00222	.1713	.00028
%RSD	109.48	103.02	122.22	6.0022	14.650	102.21	2.5823	.52039
#1	-.00001	.00028	.00000	.50309	.73158	.00219	6.5308	.05285
#2	-.00026	.00023	.00063	.48345	.66592	.00439	6.8331	.05291
#3	-.00073	.00136	.00236	.54349	.54463	-.00006	6.5421	.05335
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	2.5222	.00010	.00174	.00050	.00128	-.00532	2.7225
Stddev	.00078	.0513	.00045	.01103	.00453	.00439	.00901	.0008
%RSD	156.95	2.0349	434.03	634.47	913.70	343.72	169.31	.03118
#1	-.00033	2.5754	.00043	-.00461	.00243	-.00315	-.01182	2.7217
#2	.00121	2.4730	-.00041	.01448	.00374	.00135	-.00910	2.7234
#3	.00061	2.5183	.00029	-.00465	-.00468	.00562	.00496	2.7225
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606090304 Acquired: 6/23/2016 23:28:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00081**	**.04960**	**-.00329**	**-.00196**	**-.00058**	**.00257**	**.19345**
Stddev	.00125	.00047	.00925	.00100	.00022	.00015	.14173
%RSD	153.83	.94383	281.36	50.890	37.305	5.7376	73.263
#1	-.00194	.04918	-.00253	-.00307	-.00034	.00241	.33632
#2	.00053	.04951	.00556	-.00167	-.00074	.00270	.19114
#3	-.00102	.05011	-.01289	-.00114	-.00067	.00259	.05289
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6594.2**	**40470.**	**2074.5**
Stddev	30.7	142.	46.3
%RSD	.46503	.35187	2.2319
#1	6626.4	40634.	2027.0
#2	6565.3	40392.	2077.0
#3	6590.8	40384.	2119.5

Sample Name: L1606090305 Acquired: 6/23/2016 23:32:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00213	.01717	-.00084	.01089	.00981	.00002	48.923	.00033
Stddev	.00269	.00400	.00320	.00082	.00051	.00009	.164	.00010
%RSD	126.20	23.278	380.73	7.5221	5.1474	403.64	.33444	29.068
#1	-.00080	.01450	.00248	.01170	.01029	.00012	49.107	.00031
#2	.00271	.02176	-.00390	.01090	.00928	.00001	48.795	.00044
#3	.00448	.01524	-.00110	.01007	.00986	-.00006	48.866	.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	-.00068	.00177	1.5788	.44150	.00018	6.7726	.08864
Stddev	.00038	.00111	.00108	.0172	.06024	.00100	.1054	.00177
%RSD	191.06	162.17	60.718	1.0921	13.644	545.86	1.5565	1.9982
#1	-.00014	-.00131	.00085	1.5835	.49954	.00095	6.8808	.08930
#2	.00013	.00060	.00296	1.5597	.37928	.00054	6.7668	.08663
#3	.00060	-.00134	.00152	1.5932	.44569	-.00095	6.6702	.08998
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	2.4907	.00039	.00113	.00257	.00234	-.00366	3.0530
Stddev	.00062	.0095	.00077	.00213	.00167	.00385	.01135	.0045
%RSD	175.61	.38135	200.05	188.45	64.988	164.32	310.04	.14641
#1	-.00035	2.4923	-.00007	.00130	.00338	.00574	-.00469	3.0528
#2	.00078	2.4993	.00128	-.00108	.00370	-.00184	-.01446	3.0486
#3	.00062	2.4805	-.00005	.00317	.00065	.00313	.00817	3.0576
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: L1606090305 Acquired: 6/23/2016 23:32:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00063**	**.05089**	**-.00933**	**-.00366**	**-.00080**	**.01192**	**.09534**
Stddev	.00059	.00042	.00867	.00169	.00053	.00018	.35498
%RSD	93.514	.82669	92.914	46.068	66.583	1.5108	372.34
#1	-.00036	.05120	-.01547	-.00172	-.00063	.01174	-.06523
#2	-.00022	.05105	.00059	-.00451	-.00139	.01210	.50224
#3	-.00130	.05041	-.01311	-.00475	-.00037	.01192	-.15099
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6602.9**	**40942.**	**2135.9**
Stddev	6.9	324.	25.7
%RSD	.10425	.79054	1.2024
#1	6597.6	40623.	2114.4
#2	6610.7	41270.	2164.3
#3	6600.5	40933.	2129.0

Sample Name: L1606092401 Acquired: 6/23/2016 23:36:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00265	.03744	.60307	2.0253	.01194	.00006	59.280
Stddev	.00277	.00788	.00343	.0045	.00047	.00007	.270
%RSD	104.56	21.060	.56883	.22109	3.9165	122.30	.45465
#1	.00477	.04143	.60414	2.0202	.01227	.00013	59.521
#2	-.00048	.02835	.59924	2.0278	.01216	-.00002	58.989
#3	.00365	.04252	.60585	2.0280	.01141	.00007	59.330
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.00169	.04543	.00223	.02086	20.304	.12271
Stddev	.00012	.00069	.00181	.00172	.03477	.327	.00387
%RSD	33.446	40.936	3.9734	76.929	166.67	1.6108	3.1576
#1	.00045	.00112	.04573	.00336	.05783	20.550	.12442
#2	.00044	.00245	.04349	.00026	.01592	20.429	.12545
#3	.00023	.00148	.04706	.00308	-.01117	19.933	.11828
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.44128	.00138	.09389	F 925.96	-.00083	.00321	-.00198
Stddev	.02883	.00107	.00073	20.38	.00037	.00049	.00073
%RSD	6.5329	77.799	.77502	2.2006	45.088	15.416	37.027
#1	.47443	.00015	.09321	948.64	-.00126	.00268	-.00137
#2	.42732	.00186	.09382	909.19	-.00057	.00328	-.00178
#3	.42208	.00212	.09466	920.06	-.00066	.00367	-.00280
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Sample Name: L1606092401 Acquired: 6/23/2016 23:36:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02428**	**.03016**	**5.4351**	**-.00127**	**.13763**	**-.01760**	**-.00342**
Stddev	.00750	.01129	.0055	.00172	.00098	.00201	.00308
%RSD	30.891	37.425	.10042	135.11	.71182	11.421	90.086
#1	.02439	.02726	5.4392	.00004	.13847	-.01734	-.00405
#2	.03173	.04262	5.4371	-.00064	.13656	-.01973	-.00008
#3	.01673	.02061	5.4289	-.00322	.13787	-.01573	-.00615
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00453**	**.02225**	F **-.12201**
Stddev	.00050	.00015	.18874
%RSD	11.054	.67831	154.69
#1	.00443	.02208	-.21896
#2	.00408	.02238	-.24258
#3	.00507	.02228	.09550
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6296.4**	**38355.**	**2086.6**
Stddev	9.5	124.	22.4
%RSD	.15057	.32201	1.0746
#1	6287.1	38290.	2062.1
#2	6296.1	38498.	2106.2
#3	6306.0	38278.	2091.5

Sample Name: DI7 Acquired: 6/23/2016 23:40:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00122	-.00305	.00325	.01342	.00511	-.00003	.63457	.00006
Stddev	.00070	.00725	.00183	.00147	.00092	.00006	.03174	.00026
%RSD	57.204	237.69	56.132	10.964	18.001	169.74	5.0023	454.53
#1	.00129	-.01124	.00390	.01220	.00527	-.00006	.66854	.00019
#2	.00049	.00254	.00119	.01301	.00412	-.00007	.60566	-.00024
#3	.00189	-.00045	.00467	.01505	.00594	.00003	.62951	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	-.00105	.00137	.04887	.17552	-.00411	.67989	.02289
Stddev	.00029	.00066	.00135	.03758	.14542	.00295	.10949	.00017
%RSD	86.943	62.496	98.260	76.910	82.851	71.791	16.104	.73432
#1	.00007	-.00034	.00163	.08822	.25845	-.00273	.72653	.02297
#2	.00065	-.00118	.00257	.01334	.00761	-.00210	.75834	.02270
#3	.00029	-.00164	-.00009	.04504	.26051	-.00749	.55480	.02300
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00034	.88120	.00036	.00359	-.00382	-.00015	.00024	.27765
Stddev	.00027	.03865	.00120	.00516	.00377	.00137	.00372	.00507
%RSD	80.796	4.3866	328.28	143.80	98.655	910.66	1547.5	1.8265
#1	-.00036	.92576	.00056	.00038	-.00770	-.00061	-.00359	.27282
#2	-.00006	.85668	-.00092	.00954	-.00358	.00139	.00047	.27719
#3	-.00060	.86116	.00145	.00084	-.00017	-.00123	.00384	.28294
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: DI7 Acquired: 6/23/2016 23:40:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.00711**	**-.00708**	**-.00329**	**-.00065**	**.00225**	**.10588**
Stddev	.00142	.00039	.01416	.00145	.00012	.00019	.39638
%RSD	991.52	5.5260	199.93	44.028	18.378	8.2791	374.37
#1	-.00086	.00703	-.01555	-.00371	-.00072	.00228	.22011
#2	.00150	.00677	.00926	-.00449	-.00071	.00242	-.33508
#3	-.00107	.00754	-.01496	-.00168	-.00051	.00205	.43261
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6937.5**	**42404.**	**2145.0**
Stddev	31.4	540.	24.8
%RSD	.45241	1.2743	1.1557
#1	6923.1	42362.	2162.5
#2	6915.9	42964.	2155.8
#3	6973.5	41886.	2116.6

Sample Name: DI8 Acquired: 6/23/2016 23:44:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01092	.24637	.01430	.05175	.02804	.00125	.70558	.00137
Stddev	.00255	.00988	.00240	.00085	.00181	.00008	.05906	.00031
%RSD	23.343	4.0097	16.798	1.6422	6.4611	6.1453	8.3704	22.665
#1	.01275	.23892	.01336	.05090	.02859	.00117	.73476	.00163
#2	.01199	.25758	.01250	.05173	.02602	.00133	.63761	.00146
#3	.00801	.24262	.01702	.05260	.02952	.00124	.74437	.00102
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00507	.01122	.01287	.11447	1.4023	.02306	.83494	.03245
Stddev	.00024	.00067	.00189	.02802	.1110	.00136	.03948	.00268
%RSD	4.7987	6.0062	14.707	24.480	7.9171	5.8811	4.7291	8.2701
#1	.00493	.01046	.01351	.14674	1.4178	.02155	.80587	.03520
#2	.00493	.01147	.01074	.10042	1.2843	.02345	.81905	.03233
#3	.00535	.01173	.01436	.09625	1.5047	.02418	.87989	.02983
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02127	1.8562	.01215	.23280	.01067	.03011	.00922	.37328
Stddev	.00053	.0342	.00120	.00909	.00269	.00363	.00276	.00458
%RSD	2.4934	1.8408	9.8651	3.9061	25.214	12.073	29.987	1.2271
#1	.02172	1.8278	.01327	.24205	.00898	.03426	.00781	.37038
#2	.02141	1.8468	.01231	.22387	.01377	.02752	.01240	.37091
#3	.02069	1.8941	.01088	.23248	.00925	.02853	.00745	.37856
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: DI8 Acquired: 6/23/2016 23:44:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02095**	**.02967**	**.01993**	**.00726**	**.02346**	**.02475**	**.30772**
Stddev	.00032	.00011	.00361	.00564	.00093	.00004	.15766
%RSD	1.5278	.37363	18.102	77.691	3.9489	.16512	51.234
#1	.02080	.02956	.01706	.01372	.02253	.02472	.37227
#2	.02072	.02978	.02398	.00329	.02439	.02479	.42286
#3	.02131	.02968	.01875	.00477	.02345	.02473	.12803
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6883.6**	**42542.**	**2132.1**
Stddev	35.9	81.	32.8
%RSD	.52157	.19075	1.5391
#1	6873.8	42453.	2096.2
#2	6923.4	42611.	2160.5
#3	6853.7	42564.	2139.6

Sample Name: DI9 Acquired: 6/23/2016 23:48:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01172**	**.24362**	**.00993**	**.05401**	**.02815**	**.00127**	**.79730**
Stddev	.00152	.00569	.00166	.00158	.00083	.00011	.02246
%RSD	12.924	2.3335	16.753	2.9338	2.9467	8.5602	2.8175
#1	.01069	.24626	.01067	.05290	.02910	.00116	.79850
#2	.01102	.23710	.01110	.05583	.02755	.00137	.81914
#3	.01346	.24751	.00803	.05330	.02780	.00127	.77426
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00129**	**.00488**	**.01079**	**.01208**	**.12723**	**1.2786**	**.02511**
Stddev	.00009	.00006	.00031	.00168	.01475	.0943	.00185
%RSD	6.9948	1.2164	2.8343	13.930	11.594	7.3784	7.3599
#1	.00122	.00481	.01066	.01339	.14076	1.1744	.02529
#2	.00139	.00493	.01057	.01268	.11150	1.3582	.02686
#3	.00125	.00489	.01114	.01018	.12944	1.3031	.02318
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.89576**	**.03366**	**.02131**	**1.9045**	**.01104**	**.23277**	**.01075**
Stddev	.05721	.00137	.00010	.0400	.00057	.00507	.00231
%RSD	6.3863	4.0674	.47440	2.0992	5.1553	2.1800	21.454
#1	.95963	.03212	.02142	1.8638	.01067	.23321	.01329
#2	.84922	.03409	.02122	1.9059	.01170	.22750	.00878
#3	.87844	.03476	.02130	1.9437	.01076	.23762	.01018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: DI9 Acquired: 6/23/2016 23:48:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03181**	**.00568**	**.38831**	**.02056**	**.03131**	**.02182**	**.01037**
Stddev	.00137	.01144	.00136	.00010	.00017	.00825	.00275
%RSD	4.3124	201.38	.34995	.48690	.53387	37.784	26.554
#1	.03338	.01685	.38970	.02064	.03120	.02474	.00719
#2	.03087	-.00602	.38824	.02045	.03123	.02822	.01188
#3	.03117	.00622	.38698	.02060	.03150	.01252	.01204
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.02300**	**.02452**	F **-.17091**
Stddev	.00069	.00018	.04679
%RSD	2.9886	.74679	27.377
#1	.02312	.02467	-.13285
#2	.02363	.02457	-.15673
#3	.02227	.02431	-.22315
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6863.0**	**42455.**	**2140.2**
Stddev	39.9	478.	31.6
%RSD	.58151	1.1260	1.4765
#1	6898.2	41962.	2103.8
#2	6819.6	42485.	2156.2
#3	6871.2	42917.	2160.6

Sample Name: CCV Acquired: 6/23/2016 23:52:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41335	10.421	.41508	.51836	1.0496	.05256	10.492
Stddev	.00039	.045	.00377	.00553	.0024	.00034	.011
%RSD	.09500	.43207	.90936	1.0674	.22730	.64627	.10764
#1	.41368	10.369	.41539	.51316	1.0470	.05217	10.480
#2	.41292	10.443	.41116	.51776	1.0502	.05276	10.503
#3	.41347	10.451	.41869	.52417	1.0517	.05276	10.494
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05201	.20974	.52865	.52594	4.2034	52.520	1.0760
Stddev	.00016	.00127	.00164	.00103	.0566	.261	.0077
%RSD	.30575	.60470	.30961	.19638	1.3473	.49635	.71934
#1	.05219	.20874	.52729	.52653	4.2121	52.227	1.0702
#2	.05189	.20932	.52820	.52475	4.1429	52.726	1.0848
#3	.05194	.21117	.53047	.52654	4.2552	52.606	1.0729
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.516	.52754	1.0503	52.353	.52349	10.349	.52208
Stddev	.065	.00345	.0031	.035	.00255	.035	.00042
%RSD	.61612	.65474	.29626	.06645	.48722	.33829	.08130
#1	10.587	.52445	1.0535	52.313	.52122	10.327	.52177
#2	10.461	.53127	1.0472	52.379	.52299	10.332	.52191
#3	10.500	.52692	1.0503	52.366	.52625	10.390	.52256
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: CCV Acquired: 6/23/2016 23:52:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2512**	**.41632**	**5.2448**	**1.0458**	**1.0501**	**1.0483**	**.52498**
Stddev	.0079	.00080	.0298	.0049	.0030	.0126	.00266
%RSD	.62850	.19294	.56895	.46593	.28810	1.2026	.50623
#1	1.2568	.41583	5.2243	1.0406	1.0479	1.0390	.52296
#2	1.2422	.41589	5.2311	1.0465	1.0488	1.0433	.52399
#3	1.2546	.41725	5.2791	1.0503	1.0535	1.0626	.52799
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0496**	**1.0495**	F **.09970**
Stddev	.0053	.0039	.10577
%RSD	.50966	.36953	106.08
#1	1.0434	1.0481	.19784
#2	1.0529	1.0466	.11360
#3	1.0524	1.0539	-.01233
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6372.6**	**39443.**	**2025.2**
Stddev	36.3	113.	32.7
%RSD	.56912	.28682	1.6135
#1	6379.4	39570.	1991.0
#2	6404.9	39404.	2028.4
#3	6333.4	39354.	2056.1

Sample Name: CCB Acquired: 6/23/2016 23:56:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00038**	**.01156**	**.00056**	**.00234**	**.00056**	**.00010**	**.03716**
Stddev	.00349	.01000	.00359	.00308	.00040	.00012	.04368
%RSD	913.43	86.498	638.46	132.02	72.010	128.40	117.56
#1	.00278	.00590	.00379	.00161	.00011	-.00003	.06293
#2	.00200	.02311	.00120	.00572	.00089	.00010	-.01328
#3	-.00362	.00567	-.00330	-.00032	.00068	.00022	.06182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00024**	**.00016**	**.00067**	**.00127**	**.01578**	**.03402**	**-.00346**
Stddev	.00007	.00014	.00147	.00047	.02063	.10839	.00477
%RSD	29.479	83.436	221.45	36.697	130.75	318.63	137.81
#1	.00027	.00008	-.00033	.00181	.00506	.08712	-.00283
#2	.00029	.00009	-.00003	.00096	.00272	-.09068	-.00851
#3	.00016	.00032	.00236	.00106	.03957	.10561	.00096
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00827**	**.00236**	**.00382**	**.04976**	**.00076**	**.00558**	**-.00126**
Stddev	.03186	.00300	.00012	.02808	.00054	.00951	.00325
%RSD	385.40	127.33	3.0647	56.434	70.960	170.62	257.97
#1	-.01385	.00576	.00377	.02300	.00097	.01389	-.00238
#2	-.00614	.00008	.00395	.07899	.00015	-.00480	.00240
#3	.04479	.00123	.00373	.04728	.00116	.00763	-.00379
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: CCB Acquired: 6/23/2016 23:56:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00469**	**-.00110**	**.00540**	**-.00045**	**.00020**	**-.00579**	**-.00171**
Stddev	.00519	.00566	.00080	.00082	.00023	.00790	.00277
%RSD	110.60	514.68	14.743	182.74	110.97	136.58	162.08
#1	.00345	.00405	.00520	.00050	.00023	-.00735	-.00373
#2	.01039	-.00018	.00628	-.00094	.00042	-.01279	.00145
#3	.00024	-.00717	.00473	-.00090	-.00003	.00278	-.00284
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00035**	**.00012**	F **-.30075**
Stddev	.00143	.00011	.38164
%RSD	413.19	92.936	126.90
#1	.00023	.00022	-.11902
#2	.00071	-.00000	-.73929
#3	-.00198	.00015	-.04394
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			.04000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6443.5**	**39921.**	**2022.5**
Stddev	30.3	559.	26.8
%RSD	.46979	1.3996	1.3238
#1	6467.0	40295.	2021.5
#2	6409.3	40190.	1996.3
#3	6454.1	39279.	2049.8

Sample Name: ICSA Acquired: 6/24/2016 0:00:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	s -.00181	^F *****	k .00039	s .01077	F -16.124	s .00066
Stddev	.00405	-----	.00084	.01107	27.933	.00100
%RSD	224.07	-----	217.80	102.72	173.24	151.08
#1	s .00084	s .38723	k .00033	s .00228	-48.378	s -.00024
#2	s .00021	s 13.731	k .00125	s .00675	.0154	s .00048
#3	s -.00648	^ -----	k -.00043	s .02329	-.0093	s .00173
Check ?	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit		300.00			.00400	
Low Limit		200.00			-.00400	

Elem	Ca4226	Cd2288	Co2286	Cr2677	Cu2247	Fe2611
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -17.795	kF -.00145	k .00006	s .00397	kF .00900	kF 13.080
Stddev	30.964	.00234	.00025	.00687	.00196	22.623
%RSD	174.00	161.85	431.98	173.11	21.777	172.95
#1	-53.549	k -.00415	k .00030	s -.00220	k .00711	k 39.203
#2	.1724	k .00000	k .00007	s .00273	k .00885	k .00481
#3	-.0087	k -.00020	k -.00020	s .01137	k .01102	k .03331
Check ?	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Fail	Chk Fail
High Limit	300.00	.00080			.00400	120.00
Low Limit	200.00	-.00080			-.00400	80.000

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 303.15	F 17.009	kF 144.99	kF -2.2313	k .00055	F 349.42
Stddev	524.72	29.469	251.19	3.8674	.00057	605.42
%RSD	173.09	173.26	173.25	173.32	104.51	173.26
#1	909.05	51.038	k 435.03	k -6.6970	k -.00009	1048.5
#2	.2954	-.01212	k -.0973	k .00125	k .00102	-.464
#3	.1091	.00231	k .0233	k .00181	k .00071	.231
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Fail
High Limit	.40000	.08000	300.00	.00400		.25000
Low Limit	-.40000	-.08000	200.00	-.00400		-.25000

Sample Name: ICSA Acquired: 6/24/2016 0:00:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k **.00287**	k **.00325**	kF **.01305**	k **.00093**	k **-.00095**	k **-.02524**
Stddev	.00051	.00655	.00114	.00346	.00637	.00077
%RSD	17.929	201.56	8.7344	372.00	672.86	3.0546
#1	k .00291	k .00302	k .01321	k .00198	k -.00342	k -.02442
#2	k .00336	k .00992	k .01183	k .00374	k .00629	k -.02594
#3	k .00234	k -.00319	k .01409	k -.00293	k -.00571	k -.02536
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit			.00400			
Low Limit			-.00400			

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k **-.00038**	F **-.53580**	kF **27.418**	k **.00263**	s **-.00151**	k **.00080**
Stddev	.00064	.93031	47.540	.00108	.00198	.00005
%RSD	165.52	173.63	173.39	41.177	131.41	6.5158
#1	k -.00073	-1.6100	k 82.313	k .00161	s .00053	k .00074
#2	k -.00077	.00282	k -.07422	k .00377	s -.00163	k .00084
#3	k .00035	-.00020	k .01560	k .00250	s -.00343	k .00082
Check ?	Chk Pass	Chk Fail	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit		.00800	.02400			
Low Limit		-.00800	-.02400			

Elem	Zr3391
Units	ppm
Avg	kF **2038.2**
Stddev	3532.4
%RSD	173.31
#1	k 6117.0
#2	k -4.501
#3	k 2.059
Check ?	Chk Fail
High Limit	.02000
Low Limit	-.02000

Sample Name: ICSA Acquired: 6/24/2016 0:00:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9727.2**	^ *****	**2367.9**
Stddev	176.1	-----	3403.9
%RSD	1.8108	-----	143.75
#1	9699.2	^ -----	-.533
#2	9915.7	^ -----	835.60
#3	9566.8	^ -----	6268.6

Sample Name: ICSAB Acquired: 6/24/2016 0:04:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	sF .03510	^F *****	kF .02243	s -.00104	F -17.624	sF .01622
Stddev	.03890	-----	.00215	.00199	39.067	.01920
%RSD	110.83	-----	9.5662	190.62	221.67	118.34
#1	s .00126	s -.05314	k .01995	s -.00051	-62.399	s -.00008
#2	s .02644	^ -----	k .02376	s .00063	9.5264	s .01137
#3	s .07761	s 36.789	k .02358	s -.00324	-.0004	s .03738
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Fail	Chk Fail
High Limit	.60000	300.00	.30000		.30000	.30000
Low Limit	.40000	200.00	.20000		.20000	.20000

Elem	Ca4226	Cd2288	Co2286	Cr2677	Cu2247	Fe2611
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -41.394	kF .04368	kF .02300	sF .01591	kF .03181	kF -23.435
Stddev	80.483	.00655	.00163	.02148	.00204	29.861
%RSD	194.43	14.997	7.0968	135.04	6.3986	127.42
#1	-134.15	k .03613	k .02112	s -.00134	k .02989	k -57.047
#2	9.956	k .04777	k .02379	s .00909	k .03394	k -13.288
#3	.012	k .04715	k .02408	s .03996	k .03158	k .0307
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
High Limit	300.00	.60000	.30000	.30000	.30000	120.00
Low Limit	200.00	.40000	.20000	.20000	.20000	80.000

Elem	K_7664	Li6707	Mg2790	Mn2576	Mo2020	Na5895
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 64.851	F 12.009	kF -20.121	kF 2.2589	k .00017	F 379.32
Stddev	297.64	30.686	17.446	6.5094	.00008	850.62
%RSD	458.96	255.52	86.705	288.17	49.010	224.25
#1	389.61	46.885	k -30.037	k 9.5964	k .00008	1353.6
#2	-194.93	-10.851	k -30.348	k -2.8212	k .00024	-215.77
#3	-.126	-.0058	k .0229	k .00136	k .00019	.137
Check ?	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Fail
High Limit	6.0000	.10000	300.00	.30000		6.0000
Low Limit	4.0000	-.10000	200.00	.20000		4.0000

Sample Name: ICSAB Acquired: 6/24/2016 0:04:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	kF **.04829**	k **-.00766**	kF **.05850**	kF **.04638**	kF **.02738**	k **-.02638**
Stddev	.00365	.00766	.00306	.00425	.00303	.00499
%RSD	7.5565	99.904	5.2255	9.1610	11.057	18.931
#1	k .04412	k -.00318	k .05693	k .04159	k .03052	k -.02995
#2	k .05085	k -.00330	k .05656	k .04971	k .02448	k -.02852
#3	k .04991	k -.01650	k .06203	k .04783	k .02714	k -.02067
Check ?	Chk Fail	Chk Pass	Chk Fail	Chk Fail	Chk Fail	Chk Pass
High Limit	.60000		.60000	.60000	.30000	
Low Limit	.40000		.40000	.40000	.20000	

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062
Units	ppm	ppm	ppm	ppm	ppm	ppm
Avg	k **-.00052**	F **.44241**	kF **29.066**	kF **.04366**	sF **.01717**	kF **.04537**
Stddev	.00035	.38366	66.439	.00317	.02029	.00340
%RSD	66.984	86.721	228.58	7.2485	118.19	7.4898
#1	k -.00035	.66466	k 105.09	k .04023	s -.00018	k .04144
#2	k -.00091	.66318	k -17.882	k .04647	s .01220	k .04733
#3	k -.00029	-.00061	k -.0063	k .04429	s .03948	k .04732
Check ?	Chk Pass	Chk Fail	Chk Fail	Chk Fail	Chk Fail	Chk Fail
High Limit		.01000	.03000	.60000	.30000	.60000
Low Limit		-.01000	-.03000	.40000	.20000	.40000

Elem	Zr3391
Units	ppm
Avg	kF **4441.9**
Stddev	9705.7
%RSD	218.50
#1	k 15574.
#2	k -2248.1
#3	k .15
Check ?	Chk Fail
High Limit	.02500
Low Limit	-.02500

Sample Name: ICSAB Acquired: 6/24/2016 0:04:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9862.8	^ *****	713.41
Stddev	938.9	-----	1233.6
%RSD	9.5192	-----	172.91
#1	10665.	^ -----	-.471
#2	10093.	^ -----	2.867
#3	8830.2	^ -----	2137.8

Sample Name: CCV Acquired: 6/24/2016 0:08:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40571**	**10.252**	**.40176**	**.50352**	**1.0259**	**.05216**	**10.249**
Stddev	.00299	.036	.00436	.00116	.0046	.00015	.046
%RSD	.73722	.35335	1.0850	.22983	.44349	.28067	.44972
#1	.40902	10.294	.39676	.50219	1.0215	.05229	10.217
#2	.40321	10.228	.40475	.50401	1.0306	.05200	10.229
#3	.40489	10.234	.40377	.50434	1.0255	.05219	10.302
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05061**	**.20363**	**.51898**	**.51228**	**4.1370**	**50.997**	**1.0462**
Stddev	.00046	.00031	.00258	.00236	.0140	.262	.0028
%RSD	.90962	.15400	.49724	.46108	.33750	.51330	.27175
#1	.05077	.20360	.52152	.50960	4.1210	50.850	1.0429
#2	.05096	.20396	.51636	.51314	4.1438	51.299	1.0477
#3	.05008	.20334	.51907	.51408	4.1463	50.841	1.0479
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**10.348**	**.51498**	**1.0223**	**50.946**	**.51068**	**10.026**	**.51362**
Stddev	.113	.00344	.0028	.211	.00210	.018	.00135
%RSD	1.0914	.66705	.27479	.41321	.41141	.17759	.26270
#1	10.350	.51110	1.0252	50.805	.51092	10.041	.51220
#2	10.460	.51621	1.0220	51.188	.50847	10.031	.51488
#3	10.234	.51763	1.0196	50.845	.51265	10.006	.51378
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Sample Name: CCV Acquired: 6/24/2016 0:08:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2074**	**.40666**	**5.0928**	**1.0152**	**1.0270**	**1.0159**	**.51326**
Stddev	.0053	.00225	.0089	.0020	.0057	.0060	.00130
%RSD	.43925	.55339	.17475	.20078	.55230	.59351	.25324
#1	1.2134	.40912	5.0829	1.0130	1.0205	1.0208	.51297
#2	1.2053	.40614	5.1001	1.0158	1.0309	1.0178	.51469
#3	1.2034	.40471	5.0956	1.0169	1.0297	1.0092	.51214
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0354**	**1.0194**	F **.15885**
Stddev	.0015	.0011	.28455
%RSD	.14387	.10553	179.12
#1	1.0371	1.0182	.48730
#2	1.0345	1.0199	-.01296
#3	1.0347	1.0202	.00222
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			-10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6365.1**	**39110.**	**2005.2**
Stddev	24.8	486.	19.1
%RSD	.39033	1.2423	.95151
#1	6367.8	38552.	2019.3
#2	6388.5	39438.	1983.5
#3	6339.0	39340.	2012.9

Sample Name: CCB Acquired: 6/24/2016 0:12:00 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00050**	**.01206**	**.00160**	**.00292**	**-.00076**	**.00002**	**.02662**	**.00027**
Stddev	.00084	.00666	.00259	.00138	.00101	.00006	.04195	.00026
%RSD	168.40	55.161	162.13	47.221	133.70	271.30	157.60	96.736
#1	-.00086	.01566	-.00084	.00208	-.00074	.00001	-.00269	.00055
#2	-.00111	.01615	.00432	.00217	.00024	.00009	.07467	.00003
#3	.00046	.00439	.00131	.00451	-.00178	-.00003	.00787	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00031**	**-.00012**	**.00191**	**.00930**	**-.00712**	**-.00214**	**.08690**	**.00263**
Stddev	.00007	.00094	.00113	.01540	.09612	.00388	.02902	.00322
%RSD	21.273	789.62	59.288	165.71	1349.4	181.57	33.396	122.26
#1	.00025	.00095	.00248	.00841	-.09353	-.00318	.11978	.00265
#2	.00039	-.00048	.00263	-.00565	-.02424	.00216	.06485	.00584
#3	.00031	-.00083	.00060	.02512	.09640	-.00539	.07607	-.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00355**	**.02859**	**-.00197**	**.00635**	**-.00184**	**.00648**	**-.00780**	**.00562**
Stddev	.00019	.02702	.00094	.00761	.00466	.00302	.00403	.00110
%RSD	5.3403	94.506	47.726	119.74	253.74	46.674	51.730	19.667
#1	.00349	.02662	-.00294	-.00235	-.00211	.00986	-.01231	.00668
#2	.00339	.00261	-.00192	.01175	-.00636	.00555	-.00455	.00447
#3	.00376	.05655	-.00106	.00967	.00296	.00403	-.00652	.00571
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: CCB Acquired: 6/24/2016 0:12:00 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00037	-.00205	-.00398	-.00052	.00005	-.03486
Stddev	.00199	.00049	.00712	.00235	.00010	.00013	.29949
%RSD	737.85	134.70	347.62	58.933	18.924	280.33	859.07
#1	.00244	-.00019	-.00912	-.00572	-.00063	.00006	.11572
#2	-.00149	.00054	.00512	-.00493	-.00049	-.00009	.15945
#3	-.00013	.00074	-.00215	-.00131	-.00044	.00017	-.37976
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	6385.3	39685.	2013.6
Stddev	13.4	625.	15.5
%RSD	.20981	1.5744	.76988
#1	6370.9	40406.	2004.4
#2	6397.5	39350.	2031.5
#3	6387.5	39298.	2004.9

Sample Name: LLCCV Acquired: 6/24/2016 0:16:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00692	.17280	.00777	.08023	.00816	.00159	.47649	.00097
Stddev	.00020	.00275	.00190	.00358	.00068	.00009	.02580	.00026
%RSD	2.8583	1.5889	24.477	4.4629	8.3509	5.9617	5.4139	26.520
#1	.00710	.16995	.00825	.08038	.00802	.00170	.44675	.00126
#2	.00671	.17543	.00940	.08374	.00756	.00154	.48987	.00076
#3	.00694	.17303	.00568	.07658	.00890	.00153	.49285	.00090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00419	.00395	.00595	.08433	.74272	.08170	.43560	.00898
Stddev	.00055	.00077	.00059	.03278	.15549	.00079	.02792	.00231
%RSD	13.081	19.592	9.9605	38.876	20.936	.96348	6.4091	25.784
#1	.00481	.00337	.00657	.12211	.85231	.08123	.41810	.00714
#2	.00397	.00365	.00539	.06743	.81110	.08127	.46780	.01158
#3	.00379	.00483	.00590	.06344	.56476	.08261	.42090	.00822
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00841	.43808	.01603	.80173	.00604	.08746	.00868	.86554
Stddev	.00048	.03267	.00038	.00808	.00286	.00565	.00374	.00329
%RSD	5.6889	7.4567	2.3907	1.0073	47.406	6.4564	43.147	.37989
#1	.00807	.47434	.01600	.80832	.00935	.08147	.01238	.86709
#2	.00820	.41094	.01567	.80416	.00429	.08820	.00489	.86176
#3	.00895	.42897	.01643	.79272	.00448	.09269	.00877	.86777
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Sample Name: LLCCV Acquired: 6/24/2016 0:16:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41147**	**.04220**	**.01937**	**.15204**	**.00784**	**.01708**	**20.869**
Stddev	.00081	.00045	.00562	.00340	.00117	.00020	.318
%RSD	.19753	1.0715	29.021	2.2390	14.946	1.1523	1.5231
#1	.41153	.04213	.02561	.15455	.00880	.01720	21.227
#2	.41224	.04269	.01469	.15340	.00817	.01718	20.618
#3	.41062	.04179	.01783	.14816	.00653	.01685	20.762
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6476.0**	**40121.**	**2010.8**
Stddev	41.9	341.	10.1
%RSD	.64677	.85050	.50105
#1	6439.6	40107.	2010.7
#2	6521.8	39788.	2020.9
#3	6466.6	40470.	2000.7

Sample Name: LLCCV Acquired: 6/24/2016 0:19:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02136	.41629	.02112	.19510	.02080	.00407	1.0587
Stddev	.00041	.00284	.00410	.00052	.00091	.00010	.0154
%RSD	1.9202	.68293	19.397	.26774	4.3671	2.4437	1.4499
#1	.02183	.41875	.01725	.19543	.02070	.00418	1.0490
#2	.02111	.41695	.02541	.19450	.02176	.00402	1.0764
#3	.02114	.41318	.02071	.19539	.01995	.00401	1.0506
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00191	.01019	.00970	.01209	.22512	2.0312	.20560
Stddev	.00008	.00029	.00094	.00032	.02751	.1478	.00292
%RSD	3.9464	2.8921	9.6498	2.6079	12.219	7.2758	1.4184
#1	.00189	.00987	.00862	.01175	.23193	1.9599	.20462
#2	.00184	.01046	.01027	.01237	.19484	2.2011	.20331
#3	.00199	.01022	.01020	.01214	.24858	1.9325	.20889
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0419	.02143	.01974	1.0634	.04092	1.9580	.02354
Stddev	.1407	.00617	.00054	.0338	.00119	.0082	.00145
%RSD	13.508	28.783	2.7554	3.1802	2.8968	.41842	6.1627
#1	1.1704	.01821	.01917	1.0842	.04126	1.9586	.02462
#2	1.0638	.01754	.01982	1.0815	.03960	1.9658	.02189
#3	.89149	.02854	.02024	1.0243	.04189	1.9495	.02411
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Sample Name: LLCCV Acquired: 6/24/2016 0:19:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v969) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.21053**	**.03539**	**2.1191**	**1.0135**	**.10298**	**.05480**	**.37888**
Stddev	.00225	.00798	.0028	.0011	.00044	.01048	.00446
%RSD	1.0680	22.551	.13372	.10864	.43012	19.119	1.1784
#1	.21009	.02618	2.1179	1.0144	.10249	.04402	.38327
#2	.21296	.04014	2.1223	1.0138	.10312	.05543	.37434
#3	.20853	.03987	2.1170	1.0123	.10334	.06494	.37903
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.01937**	**.04203**	F **55.206**
Stddev	.00081	.00024	.600
%RSD	4.1646	.56559	1.0870
#1	.02030	.04231	55.899
#2	.01893	.04187	54.851
#3	.01888	.04193	54.868
Check ?	Chk Pass	Chk Pass	Chk Fail
High Limit			36.000
Low Limit			-.04000

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**6500.2**	**40568.**	**2033.1**
Stddev	36.1	206.	33.6
%RSD	.55595	.50832	1.6527
#1	6459.1	40580.	1998.8
#2	6514.4	40767.	2065.9
#3	6527.1	40355.	2034.6

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000236	0.051213	0.000000	1.000000
Al 308.215 {109}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000796	0.008044	0.000000	1.000000
As 189.042 {478}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000007	0.025071	0.000000	1.000000
B 249.678 {135}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000040	0.023963	0.000000	1.000000
Ba 455.403 { 74}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.044484	2.168568	0.000000	1.000000
Be 313.107 {108}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000479	0.930119	0.000000	1.000000
Ca 422.673 { 80}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.002874	0.045862	0.000000	1.000000
Cd 228.802 {447}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000038	0.570455	0.000000	1.000000
Co 228.616 {447}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000129	0.339574	0.000000	1.000000
Cr 267.716 {126}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000254	0.058743	0.000000	1.000000
Cu 224.700 {450}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000063	0.129645	0.000000	1.000000
Fe 261.187 {129}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000714	0.024119	0.000000	1.000000
K 766.490 { 44}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.006604	0.061274	0.000000	1.000000
Li 670.784 { 50}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.009415	1.520559	0.000000	1.000000
Mg 279.079 {121}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000260	0.008000	0.000000	1.000000
Mn 257.610 {131}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000470	0.289814	0.000000	1.000000
Mo 202.030 {467}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000054	0.182736	0.000000	1.000000
Na 589.592 { 57}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.047777	0.184477	0.000000	1.000000
Ni 231.604 {446}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000734	0.138990	0.000000	1.000000
P 214.914 {457}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000172	0.014319	0.000000	1.000000
Pb 220.353 {453}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.001186	0.065283	0.000000	1.000000
Sb 206.833 {463}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000368	0.031084	0.000000	1.000000
Se 196.090 {472}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000508	0.017412	0.000000	1.000000
Si 212.412 {459}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.001467	0.039573	0.000000	1.000000
Sn 189.989 {477}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000022	0.066307	0.000000	1.000000
Sr 407.771 { 83}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.001060	3.591964	0.000000	1.000000
Ti 337.280 {100}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.002630	0.122957	0.000000	1.000000
Tl 190.856 {477}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000329	0.028655	0.000000	1.000000
V 292.402 {115}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.000071	0.067328	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	0.000142	0.437417	0.000000	1.000000
Zr 339.198 { 99}	6/25/2016 13:11:09	6/25/2016 12:40:05	Linear	1/Conc	-0.007106	1.219765	0.000000	1.000000

Approved: June 27, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999680	0.000003	0.002344	0.007814	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999950	0.000005	0.010188	0.033959	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999909	0.000001	0.003189	0.010630	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999961	0.000001	0.002963	0.009878	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999951	0.000136	0.001119	0.003729	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999766	0.000007	0.000105	0.000348	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.999890	0.000043	0.043792	0.145974	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999970	0.000002	0.000282	0.000940	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999977	0.000003	0.000454	0.001514	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999978	0.000001	0.001307	0.004355	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999889	0.000006	0.001405	0.004682	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.999330	0.000022	0.023003	0.076675	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999988	0.000096	0.104199	0.347330	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999977	0.000100	0.004201	0.014002	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999990	0.000003	0.092396	0.307987	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999236	0.000036	0.002652	0.008839	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999956	0.000011	0.000450	0.001500	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999990	0.000264	0.032289	0.107629	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999932	0.000005	0.001180	0.003935	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999990	0.000004	0.007138	0.023792	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.999383	0.000007	0.003667	0.012223	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999854	0.000004	0.004516	0.015054	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999238	0.000003	0.006704	0.022346	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999594	0.000036	0.002443	0.008145	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999980	0.000003	0.000986	0.003287	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999952	0.000224	0.000467	0.001557	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.999579	0.000023	0.007453	0.024845	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999831	0.000002	0.003284	0.010945	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999969	0.000003	0.001095	0.003650	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999941	0.000030	0.000202	0.000675	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.596446	0.010414	0.001594	0.005312	OK.	1.000000	0.000000	1	0

Approved: June 27, 2016

Sample Name: S0 Acquired: 6/25/2016 12:21:04 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00024**	**.00080**	**-.00001**	**.00004**	**.04448**	**.00048**	**.00288**
Stddev	.00008	.00004	.00007	.00002	.00170	.00005	.00169
%RSD	35.712	4.5527	977.99	54.959	3.8148	10.198	58.629
#1	-.00024	.00076	-.00006	.00003	.04635	.00042	.00096
#2	-.00015	.00081	.00007	.00006	.04405	.00050	.00353
#3	-.00032	.00083	-.00004	.00003	.04304	.00052	.00414

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00004**	**-.00013**	**.00025**	**-.00006**	**-.00071**	**-.00661**	**-.00941**
Stddev	.00006	.00005	.00003	.00023	.00026	.00355	.00965
%RSD	153.97	36.064	10.924	367.85	35.978	53.724	102.48
#1	-.00002	-.00016	.00028	-.00022	-.00093	-.00948	-.01508
#2	-.00010	-.00015	.00025	.00020	-.00043	-.00769	.00173
#3	.00001	-.00008	.00023	-.00018	-.00078	-.00264	-.01488

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00026**	**.00047**	**.00005**	**-.04778**	**-.00073**	**-.00017**	**-.00119**
Stddev	.00066	.00061	.00004	.00421	.00008	.00002	.00008
%RSD	255.00	128.77	78.942	8.8105	11.011	13.180	6.4052
#1	.00045	-.00015	.00007	-.05263	-.00065	-.00015	-.00110
#2	-.00086	.00049	.00001	-.04509	-.00082	-.00019	-.00123
#3	-.00037	.00107	.00009	-.04563	-.00073	-.00017	-.00123

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00037**	**-.00051**	**.00147**	**.00002**	**.00106**	**-.00263**	**-.00033**
Stddev	.00001	.00007	.00009	.00003	.00137	.00025	.00002
%RSD	3.7153	13.815	6.2921	126.34	130.24	9.4020	7.1687
#1	.00035	-.00043	.00157	.00002	.00203	-.00235	-.00030
#2	.00038	-.00057	.00145	-.00000	.00165	-.00283	-.00033
#3	.00037	-.00052	.00138	.00005	-.00052	-.00270	-.00035

Approved: June 27, 2016

Sample Name: S0 Acquired: 6/25/2016 12:21:04 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	-.00007	.00014	-.00710
Stddev	.00004	.00005	.00324
%RSD	58.279	35.146	45.700
#1	-.00004	.00009	-.00457
#2	-.00005	.00016	-.01076
#3	-.00012	.00018	-.00597
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9736.8	58329.	2962.8
Stddev	24.6	275.	12.4
%RSD	.25315	.47180	.41783
#1	9719.4	58177.	2949.0
#2	9725.9	58162.	2966.1
#3	9765.0	58646.	2973.1

Approved: June 27, 2016

Sample Name: S1 Acquired: 6/25/2016 12:25:02 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00000**	**.00148**	**.06336**	**.00097**	**.00582**	**.00018**	**.00038**
Stddev	.00004	.00005	.00419	.00009	.00234	.00011	.00006
%RSD	838.91	3.6655	6.6080	8.8478	40.284	60.110	16.615
#1	.00001	.00145	.05987	.00105	.00569	.00026	.00043
#2	-.00004	.00145	.06800	.00097	.00822	.00006	.00031
#3	.00004	.00155	.06221	.00088	.00354	.00023	.00041

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00050**	**.00053**	**.00033**	**.01950**	**.00077**	**.00143**	**.02669**
Stddev	.00003	.00011	.00021	.00355	.00009	.00011	.00332
%RSD	5.5692	20.305	62.737	18.223	11.862	7.4791	12.449
#1	.00049	.00060	.00053	.01550	.00083	.00145	.02356
#2	.00048	.00041	.00012	.02070	.00066	.00152	.03018
#3	.00053	.00058	.00034	.02230	.00081	.00131	.02634

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00018**	**.00100**	**-.00086**	**.00059**	**.00297**	**.00055**	**.03302**
Stddev	.00009	.00012	.00030	.00014	.00005	.00006	.00089
%RSD	52.159	12.366	34.406	23.539	1.7045	10.953	2.6942
#1	-.00010	.00113	-.00102	.00051	.00294	.00050	.03225
#2	-.00028	.00098	-.00052	.00075	.00302	.00062	.03399
#3	-.00016	.00088	-.00105	.00050	.00293	.00055	.03280

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00218**	**.00050**	**.00363**	**-.00591**
Stddev	.00071	.00003	.00003	.00134
%RSD	32.781	5.1557	.77751	22.659
#1	-.00139	.00050	.00365	-.00576
#2	-.00277	.00048	.00360	-.00465
#3	-.00237	.00053	.00364	-.00732

Approved: June 27, 2016

Sample Name: S1 Acquired: 6/25/2016 12:25:02 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9839.2**	**59021.**	**2974.6**
Stddev	35.8	140.	1.9
%RSD	.36397	.23691	.06440
#1	9811.4	58880.	2976.5
#2	9826.5	59023.	2972.7
#3	9879.6	59160.	2974.8

Approved: June 27, 2016

Sample Name: S2 Acquired: 6/25/2016 12:29:00 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00011**	**.00220**	**.00018**	**.00025**	**.08112**	**.00139**	**.00931**
Stddev	.00003	.00006	.00005	.00002	.00125	.00003	.00047
%RSD	29.658	2.5782	25.201	8.0082	1.5417	1.8740	5.0396
#1	.00012	.00221	.00013	.00026	.08191	.00140	.00905
#2	.00012	.00214	.00022	.00027	.08177	.00136	.00985
#3	.00007	.00225	.00019	.00023	.07968	.00140	.00903

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00041**	**.00102**	**.00072**	**.00104**	**.00148**	**.04190**	**.01415**
Stddev	.00007	.00003	.00001	.00014	.00030	.00236	.00012
%RSD	16.350	3.0292	1.5873	13.319	20.240	5.6312	.86545
#1	.00045	.00101	.00072	.00109	.00137	.04369	.01405
#2	.00033	.00099	.00073	.00088	.00125	.03923	.01429
#3	.00045	.00105	.00071	.00115	.00182	.04279	.01411

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00109**	**.00274**	**.00298**	**.10797**	**.00048**	**.00211**	**-.00045**
Stddev	.00041	.00057	.00005	.00406	.00013	.00008	.00017
%RSD	37.607	20.931	1.7509	3.7561	26.749	3.7519	39.075
#1	.00144	.00213	.00304	.11260	.00057	.00211	-.00064
#2	.00064	.00283	.00295	.10501	.00033	.00203	-.00031
#3	.00120	.00327	.00295	.10631	.00054	.00219	-.00039

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00105**	**-.00034**	**.00448**	**.00108**	**.06082**	**-.00047**	**-.00014**
Stddev	.00006	.00004	.00009	.00004	.00131	.00089	.00005
%RSD	6.0784	12.562	2.0565	3.6593	2.1502	187.41	36.276
#1	.00109	-.00029	.00447	.00110	.05950	-.00104	-.00016
#2	.00107	-.00037	.00458	.00110	.06212	-.00093	-.00008
#3	.00097	-.00035	.00440	.00103	.06083	.00055	-.00017

Approved: June 27, 2016

Sample Name: S2 Acquired: 6/25/2016 12:29:00 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00105	.00728	-.00437
Stddev	.00006	.00006	.00132
%RSD	5.7588	.85058	30.251
#1	.00102	.00735	-.00588
#2	.00112	.00727	-.00376
#3	.00101	.00722	-.00345
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9827.0	59373.	3004.6
Stddev	11.4	114.	4.0
%RSD	.11574	.19273	.13472
#1	9814.0	59255.	3000.6
#2	9832.7	59484.	3008.7
#3	9834.5	59381.	3004.6

Approved: June 27, 2016

Sample Name: S3 Acquired: 6/25/2016 12:32:56 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.02035	.08278	.00992	.01198	2.2359	.04820	.46599	.03126
Stddev	.00007	.00029	.00007	.00002	.0069	.00016	.00236	.00006
%RSD	.36344	.34990	.73624	.13878	.30693	.33862	.50730	.19965
#1	.02029	.08301	.00987	.01198	2.2433	.04825	.46861	.03126
#2	.02044	.08286	.01000	.01199	2.2346	.04833	.46401	.03132
#3	.02033	.08245	.00988	.01196	2.2297	.04802	.46536	.03119

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.06810	.02991	.06581	.09648	3.0722	1.5250	.07962	.14725
Stddev	.00012	.00021	.00002	.00063	.0027	.0048	.00098	.00051
%RSD	.17879	.70022	.03611	.65013	.08880	.31624	1.2353	.34909
#1	.06804	.03009	.06584	.09719	3.0745	1.5268	.07965	.14783
#2	.06801	.02997	.06579	.09600	3.0692	1.5288	.07861	.14685
#3	.06824	.02968	.06581	.09626	3.0730	1.5196	.08058	.14706

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.18510	9.1987	.06966	.14157	.03222	.03693	.00649	.20808
Stddev	.00068	.0276	.00008	.00029	.00023	.00011	.00003	.00004
%RSD	.36712	.29975	.11504	.20555	.70478	.30304	.43769	.01830
#1	.18567	9.2297	.06963	.14170	.03236	.03694	.00648	.20811
#2	.18529	9.1894	.06975	.14177	.03196	.03703	.00652	.20808
#3	.18435	9.1769	.06959	.14123	.03234	.03681	.00647	.20804

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.06680	3.6291	.12115	.01313	.06767	.44396	3.5474
Stddev	.00012	.0161	.00039	.00012	.00004	.00054	.0233
%RSD	.17282	.44347	.32200	.91385	.05243	.12075	.65596
#1	.06677	3.6476	.12157	.01325	.06770	.44451	3.5656
#2	.06671	3.6220	.12107	.01301	.06768	.44393	3.5554
#3	.06693	3.6179	.12080	.01311	.06763	.44344	3.5212

Approved: June 27, 2016

Sample Name: S3 Acquired: 6/25/2016 12:32:56 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9929.1	59890.	3083.9
Stddev	18.0	90.	16.7
%RSD	.18173	.14986	.54188
#1	9944.3	59787.	3069.2
#2	9933.7	59947.	3080.5
#3	9909.1	59936.	3102.1

Approved: June 27, 2016

Sample Name: S4 Acquired: 6/25/2016 12:36:34 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.04037	.16212	.01994	.02391	4.3553	.09476	.91725	.06225
Stddev	.00010	.00009	.00010	.00008	.0282	.00010	.00714	.00008
%RSD	.26004	.05310	.51424	.32854	.64632	.10278	.77855	.12431
#1	.04040	.16220	.02005	.02399	4.3445	.09472	.91430	.06220
#2	.04046	.16203	.01991	.02383	4.3342	.09469	.91205	.06220
#3	.04026	.16211	.01985	.02390	4.3873	.09487	.92539	.06233

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13502	.05877	.12834	.19056	6.1046	3.0186	.15914	.28946
Stddev	.00023	.00007	.00015	.00161	.0456	.0309	.00223	.00202
%RSD	.17276	.12518	.11394	.84544	.74756	1.0253	1.3995	.69732
#1	.13475	.05870	.12846	.19050	6.0869	3.0140	.15736	.28818
#2	.13515	.05878	.12838	.18897	6.0705	2.9902	.15842	.28841
#3	.13517	.05884	.12818	.19219	6.1564	3.0516	.16164	.29179

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.36324	18.368	.13725	.28094	.06365	.07367	.01336	.39092
Stddev	.00176	.146	.00020	.00054	.00019	.00012	.00006	.00048
%RSD	.48547	.79728	.14492	.19364	.30628	.15884	.42128	.12331
#1	.36486	18.303	.13728	.28153	.06355	.07380	.01339	.39147
#2	.36349	18.266	.13744	.28083	.06388	.07365	.01329	.39059
#3	.36136	18.536	.13705	.28046	.06354	.07357	.01339	.39071

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13179	7.1439	.24230	.02560	.13357	.86773	.12255
Stddev	.00029	.0568	.00280	.00005	.00025	.00172	.00222
%RSD	.21785	.79476	1.1551	.20145	.18401	.19856	1.8114
#1	.13210	7.1181	.24103	.02555	.13357	.86947	.12020
#2	.13172	7.1045	.24036	.02563	.13332	.86769	.12285
#3	.13154	7.2090	.24551	.02564	.13382	.86603	.12461

Approved: June 27, 2016

Sample Name: S4 Acquired: 6/25/2016 12:36:34 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9795.6**	**59125.**	**3064.9**
Stddev	6.6	26.	19.7
%RSD	.06757	.04412	.64222
#1	9799.1	59120.	3071.1
#2	9799.7	59153.	3080.8
#3	9787.9	59102.	3042.9

Approved: June 27, 2016

Sample Name: ICV Acquired: 6/25/2016 12:40:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40482	10.096	.40189	.50535	1.0085	.05038	10.096
Stddev	.00169	.009	.00320	.00259	.0096	.00007	.103
%RSD	.41792	.09100	.79651	.51179	.95284	.13225	1.0175
#1	.40318	10.095	.40558	.50259	.99972	.05037	10.065
#2	.40656	10.106	.40020	.50771	1.0070	.05032	10.013
#3	.40473	10.088	.39988	.50575	1.0188	.05045	10.211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05022	.20172	.50610	.50772	4.0459	50.287	1.0069
Stddev	.00031	.00057	.00078	.00110	.0398	.526	.0059
%RSD	.61395	.28458	.15454	.21701	.98466	1.0464	.58082
#1	.05048	.20224	.50644	.50864	4.0020	49.775	1.0012
#2	.05030	.20181	.50521	.50650	4.0559	50.260	1.0067
#3	.04988	.20110	.50666	.50803	4.0798	50.827	1.0128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.117	.50795	1.0200	50.068	.50832	10.053	.50460
Stddev	.152	.00312	.0050	.377	.00054	.029	.00016
%RSD	1.5029	.61369	.49437	.75311	.10596	.28628	.03077
#1	9.9425	.50440	1.0241	49.665	.50829	10.073	.50452
#2	10.219	.50922	1.0214	50.126	.50888	10.066	.50449
#3	10.191	.51024	1.0144	50.412	.50780	10.020	.50477
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: ICV Acquired: 6/25/2016 12:40:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2132**	**.39981**	**5.2115**	**1.0100**	**1.0094**	**1.0076**	**.50967**
Stddev	.0090	.00367	.0220	.0047	.0093	.0117	.00340
%RSD	.74499	.91900	.42193	.46646	.92212	1.1612	.66719
#1	1.2228	.39652	5.1880	1.0139	.99976	.99418	.50608
#2	1.2117	.40378	5.2316	1.0112	1.0100	1.0128	.51284
#3	1.2049	.39915	5.2149	1.0048	1.0183	1.0157	.51010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0117**	**1.0154**	F **2.9010**
Stddev	.0015	.0015	.0057
%RSD	.14666	.14385	.19619
#1	1.0111	1.0164	2.9026
#2	1.0134	1.0160	2.8946
#3	1.0106	1.0137	2.9057
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			5.0000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9887.2**	**59604.**	**3090.1**
Stddev	2.6	87.	8.3
%RSD	.02633	.14631	.26858
#1	9888.5	59705.	3098.3
#2	9884.2	59557.	3090.3
#3	9888.9	59551.	3081.7

Approved: June 27, 2016

Sample Name: ICB Acquired: 6/25/2016 12:43:48 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00131	-.00019	.00035	.00523	.00097	.00005	-.00769	-.00024
Stddev	.00204	.00299	.00150	.00175	.00089	.00006	.00734	.00011
%RSD	155.46	1561.3	426.44	33.377	91.849	115.36	95.505	46.996
#1	.00317	-.00362	.00181	.00349	.00060	.00012	-.01556	-.00036
#2	-.00088	.00114	-.00118	.00522	.00198	.00002	-.00104	-.00017
#3	.00165	.00191	.00042	.00699	.00032	.00001	-.00646	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00000	.00019	.00069	.02190	.04427	.00252	.00787	.00050
Stddev	.00033	.00096	.00130	.00895	.02254	.00192	.08048	.00146
%RSD	40694.	494.95	189.51	40.889	50.920	76.061	1022.8	292.29
#1	-.00026	-.00067	-.00034	.02348	.04464	.00424	-.08504	-.00108
#2	-.00012	.00002	.00215	.01226	.06662	.00045	.05249	.00079
#3	.00038	.00123	.00025	.02996	.02154	.00288	.05615	.00179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00437	.07087	.00070	.00285	.00118	.00678	.00870	.00121
Stddev	.00041	.01151	.00054	.00868	.00197	.00381	.00450	.00189
%RSD	9.2912	16.248	77.044	304.78	167.53	56.206	51.723	156.22
#1	.00395	.08310	.00020	-.00283	.00108	.00337	.00854	.00310
#2	.00476	.06927	.00064	-.00147	.00320	.00608	.00428	.00120
#3	.00442	.06023	.00127	.01284	-.00074	.01090	.01328	-.00068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: ICB Acquired: 6/25/2016 12:43:48 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00063**	**.00059**	**.00116**	**.00143**	**.00111**	**.00117**	**.00345**
Stddev	.00049	.00006	.00559	.00387	.00033	.00016	.00039
%RSD	77.601	9.5579	481.47	269.75	29.521	13.916	11.209
#1	.00050	.00059	.00521	.00260	.00135	.00105	.00361
#2	.00117	.00064	.00349	-.00288	.00074	.00111	.00300
#3	.00022	.00053	-.00522	.00459	.00124	.00135	.00372
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9709.0**	**58834.**	**2997.3**
Stddev	13.6	105.	11.0
%RSD	.13963	.17854	.36570
#1	9693.7	58895.	2985.3
#2	9713.8	58895.	3006.9
#3	9719.5	58713.	2999.6

Approved: June 27, 2016

Sample Name: LLICV Acquired: 6/25/2016 12:47:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00947**	**.16517**	**.00750**	**.08209**	**.00794**	**.00166**	**.41368**	**.00078**
Stddev	.00234	.00914	.00427	.00134	.00096	.00002	.01542	.00015
%RSD	24.742	5.5361	56.913	1.6344	12.112	1.4530	3.7271	18.963
#1	.01038	.17315	.00639	.08214	.00810	.00169	.40911	.00061
#2	.01123	.15519	.01222	.08341	.00690	.00166	.40107	.00083
#3	.00681	.16717	.00390	.08073	.00880	.00164	.43087	.00089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00435**	**.00476**	**.00462**	**.09393**	**.88733**	**.08419**	**.44121**	**.00701**
Stddev	.00017	.00091	.00136	.00523	.14622	.00363	.12107	.00237
%RSD	3.8803	19.165	29.360	5.5689	16.479	4.3143	27.441	33.765
#1	.00455	.00411	.00608	.08852	.75945	.08105	.39471	.00889
#2	.00425	.00438	.00436	.09433	.85580	.08335	.57864	.00779
#3	.00425	.00581	.00341	.09896	1.0467	.08816	.35028	.00435
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00866**	**.44156**	**.01715**	**.79893**	**.00705**	**.08442**	**.02038**	**.79310**
Stddev	.00052	.01049	.00062	.00929	.00266	.00215	.00191	.00106
%RSD	5.9984	2.3750	3.6174	1.1626	37.766	2.5524	9.3696	.13338
#1	.00809	.45038	.01661	.80194	.00796	.08678	.01818	.79326
#2	.00879	.42997	.01783	.80634	.00405	.08394	.02136	.79407
#3	.00910	.44434	.01701	.78851	.00913	.08255	.02160	.79197
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LLICV Acquired: 6/25/2016 12:47:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41130**	**.04174**	**.02562**	**.15269**	**.00881**	**.01717**	**.13277**
Stddev	.00223	.00064	.00303	.00060	.00064	.00024	.00310
%RSD	.54293	1.5249	11.843	.39147	7.2679	1.3907	2.3338
#1	.41347	.04173	.02710	.15201	.00926	.01741	.13005
#2	.41142	.04111	.02213	.15292	.00808	.01715	.13211
#3	.40901	.04238	.02764	.15314	.00909	.01694	.13614
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9760.6**	**59445.**	**3032.4**
Stddev	2.7	49.	16.0
%RSD	.02790	.08308	.52659
#1	9758.1	59502.	3050.3
#2	9763.5	59418.	3027.2
#3	9760.2	59415.	3019.7

Approved: June 27, 2016

Sample Name: LLICV Acquired: 6/25/2016 12:51:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02232	.40482	.02105	.19795	.01981	.00414	.94713	.00209
Stddev	.00322	.01572	.00276	.00137	.00013	.00016	.01328	.00025
%RSD	14.431	3.8838	13.088	.69255	.67950	3.8114	1.4024	12.129
#1	.02018	.38785	.01788	.19912	.01996	.00396	.94307	.00218
#2	.02076	.40770	.02252	.19644	.01971	.00427	.93634	.00229
#3	.02603	.41890	.02277	.19828	.01975	.00419	.96196	.00181
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00992	.00950	.01082	.20111	1.9275	.20201	.97307	.01841
Stddev	.00043	.00028	.00021	.02025	.1498	.00564	.04542	.00186
%RSD	4.3042	2.9103	1.9731	10.069	7.7699	2.7925	4.6682	10.079
#1	.01005	.00935	.01089	.20826	1.8000	.20412	1.0187	.02052
#2	.00945	.00934	.01100	.21682	1.8900	.19562	.97274	.01702
#3	.01028	.00982	.01059	.17825	2.0924	.20630	.92781	.01771
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01972	1.0340	.04153	1.9482	.02271	.20123	.04411	1.9392
Stddev	.00048	.0096	.00031	.0042	.00204	.00295	.00361	.0022
%RSD	2.4591	.93077	.75288	.21380	8.9612	1.4657	8.1900	.11326
#1	.01969	1.0240	.04132	1.9520	.02496	.20436	.04094	1.9404
#2	.01925	1.0432	.04139	1.9437	.02217	.20085	.04804	1.9406
#3	.02022	1.0348	.04189	1.9488	.02100	.19850	.04333	1.9367
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LLICV Acquired: 6/25/2016 12:51:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0099**	**.10045**	**.06134**	**.37714**	**.02003**	**.04134**	**.29456**
Stddev	.0057	.00069	.00459	.00090	.00046	.00030	.00329
%RSD	.56948	.68667	7.4856	.23976	2.2900	.72946	1.1169
#1	1.0145	.09991	.06229	.37809	.02052	.04128	.29317
#2	1.0117	.10021	.05634	.37629	.01997	.04166	.29219
#3	1.0035	.10123	.06538	.37705	.01961	.04107	.29832
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9725.0**	**59145.**	**3053.0**
Stddev	6.0	91.	15.9
%RSD	.06216	.15348	.52133
#1	9731.9	59116.	3042.4
#2	9721.3	59247.	3071.3
#3	9721.7	59072.	3045.2

Approved: June 27, 2016

Sample Name: ICSA Acquired: 6/25/2016 12:55:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00027**	**265.97**	**.00161**	**-.00823**	**.00056**	**.00011**	**243.96**	**-.00018**
Stddev	.00121	.27	.00172	.00296	.00012	.00009	1.89	.00042
%RSD	450.36	.10204	106.61	35.970	21.237	81.140	.77435	230.52
#1	-.00046	265.69	.00220	-.01033	.00047	.00017	241.81	-.00048
#2	.00103	265.97	-.00032	-.00484	.00069	.00014	245.35	.00030
#3	-.00137	266.24	.00295	-.00951	.00051	.00001	244.72	-.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00099**	**-.00100**	**-.00098**	**96.848**	**.05329**	**.01035**	**248.71**	**-.00176**
Stddev	.00039	.00071	.00330	.692	.06120	.00255	1.99	.00096
%RSD	39.651	70.751	335.23	.71414	114.86	24.670	.80129	54.809
#1	-.00142	-.00119	.00263	96.056	.12150	.01230	246.41	-.00274
#2	-.00085	-.00160	-.00175	97.332	.03517	.00746	249.90	-.00082
#3	-.00068	-.00022	-.00383	97.155	.00318	.01129	249.83	-.00171
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00066**	**.04038**	**-.00089**	**.02257**	**.00214**	**-.00550**	**-.00224**	**.00879**
Stddev	.00023	.00410	.00050	.00580	.00444	.00318	.00753	.00258
%RSD	34.448	10.162	56.288	25.707	206.94	57.856	337.10	29.379
#1	-.00088	.04493	-.00121	.01613	.00721	-.00186	.00631	.00581
#2	-.00043	.03696	-.00115	.02418	.00024	-.00776	-.00511	.01037
#3	-.00066	.03925	-.00031	.02740	-.00103	-.00688	-.00791	.01019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: ICSA Acquired: 6/25/2016 12:55:29 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00053**	**.00100**	**-.00403**	**-.00373**	**-.00305**	**-.00596**	**-.01388**
Stddev	.00149	.00018	.00805	.00252	.00022	.00010	.00081
%RSD	284.28	18.415	199.81	67.478	7.0947	1.6059	5.8325
#1	.00144	.00117	.00514	-.00549	-.00300	-.00603	-.01379
#2	.00134	.00081	-.00728	-.00085	-.00329	-.00601	-.01311
#3	-.00120	.00101	-.00995	-.00485	-.00287	-.00585	-.01473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9184.9**	**55126.**	**2960.9**
Stddev	19.5	129.	17.9
%RSD	.21199	.23455	.60311
#1	9165.3	55274.	2981.6
#2	9185.3	55069.	2950.7
#3	9204.2	55035.	2950.6

Approved: June 27, 2016

Sample Name: ICSAB Acquired: 6/25/2016 12:59:21 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51819**	**267.93**	**.25992**	**-.00749**	**.25012**	**.24499**	**247.43**	**.48653**
Stddev	.00274	.82	.00577	.00323	.00127	.00111	.96	.00069
%RSD	.52949	.30727	2.2185	43.201	.50926	.45301	.38893	.14255
#1	.51744	268.20	.26633	-.00904	.25065	.24547	247.63	.48716
#2	.52123	268.59	.25826	-.00965	.24866	.24578	246.38	.48579
#3	.51590	267.01	.25516	-.00377	.25104	.24372	248.28	.48665
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.24114**	**.25272**	**.25219**	**96.482**	**5.1931**	**.01181**	**249.25**	**.24440**
Stddev	.00029	.00219	.00111	.527	.0571	.00427	1.99	.00318
%RSD	.11831	.86807	.44033	.54597	1.0995	36.192	.80021	1.3017
#1	.24081	.25379	.25307	96.524	5.1297	.01134	249.32	.24432
#2	.24135	.25418	.25256	95.936	5.2405	.00779	247.22	.24763
#3	.24125	.25020	.25095	96.987	5.2091	.01630	251.20	.24127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00056**	**5.3241**	**.48364**	**.08508**	**.49426**	**.50665**	**.24857**	**.00554**
Stddev	.00038	.0216	.00155	.00195	.00579	.00649	.00790	.00251
%RSD	68.178	.40548	.32037	2.2888	1.1716	1.2807	3.1773	45.410
#1	-.00097	5.3151	.48290	.08463	.49996	.50736	.25719	.00434
#2	-.00022	5.3084	.48260	.08721	.48838	.49984	.24167	.00842
#3	-.00048	5.3487	.48542	.08340	.49443	.51276	.24687	.00384
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: ICSAB Acquired: 6/25/2016 12:59:21 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00018**	**.00065**	**-.00404**	**.46188**	**.25332**	**.48100**	**-.01374**
Stddev	.00129	.00010	.00503	.00318	.00107	.00194	.00218
%RSD	732.71	15.906	124.53	.68769	.42266	.40303	15.888
#1	.00146	.00072	-.00979	.45913	.25376	.48104	-.01122
#2	-.00112	.00053	-.00192	.46116	.25410	.48293	-.01498
#3	.00019	.00071	-.00042	.46536	.25210	.47905	-.01502
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9278.3**	**55833.**	**2985.5**
Stddev	15.8	186.	18.9
%RSD	.17001	.33320	.63177
#1	9263.8	55869.	2984.2
#2	9295.1	55632.	3004.9
#3	9275.9	55999.	2967.3

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 13:03:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39792**	**10.019**	**.39868**	**.49351**	**.99429**	**.04982**	**9.9377**
Stddev	.00072	.017	.00144	.00412	.00753	.00017	.0996
%RSD	.18044	.17228	.36151	.83518	.75700	.33966	1.0022
#1	.39861	10.034	.39833	.49827	.98705	.04987	9.8876
#2	.39796	10.022	.40027	.49123	1.0021	.04997	10.052
#3	.39718	10.000	.39745	.49104	.99375	.04964	9.8731
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04945**	**.20002**	**.50114**	**.50617**	**3.9950**	**49.191**	**.99914**
Stddev	.00013	.00034	.00115	.00138	.0385	.327	.00262
%RSD	.25449	.17079	.22943	.27257	.96478	.66521	.26204
#1	.04957	.20034	.49991	.50465	3.9625	48.889	.99615
#2	.04946	.20007	.50219	.50735	4.0376	49.538	1.0010
#3	.04932	.19966	.50132	.50650	3.9848	49.146	1.0003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.9162**	**.49766**	**1.0071**	**49.316**	**.50460**	**9.9534**	**.50217**
Stddev	.1345	.00161	.0027	.281	.00141	.0056	.00090
%RSD	1.3564	.32258	.27182	.56936	.27993	.05661	.17861
#1	9.8004	.49634	1.0102	49.069	.50585	9.9507	.50282
#2	10.064	.49945	1.0061	49.622	.50307	9.9496	.50115
#3	9.8846	.49718	1.0051	49.257	.50488	9.9599	.50255
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 13:03:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1997**	**.40476**	**5.1642**	**1.0026**	**.99432**	**.99050**	**.50900**
Stddev	.0011	.00080	.0031	.0008	.00541	.00261	.00166
%RSD	.09538	.19644	.06047	.08057	.54374	.26324	.32573
#1	1.2008	.40408	5.1631	1.0035	.99081	.99348	.51044
#2	1.1985	.40563	5.1678	1.0020	1.0005	.98942	.50718
#3	1.1997	.40457	5.1618	1.0022	.99161	.98862	.50937
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0019**	**1.0053**	F **2.8691**
Stddev	.0036	.0009	.0111
%RSD	.35558	.09150	.38634
#1	.99784	1.0055	2.8628
#2	1.0045	1.0043	2.8819
#3	1.0033	1.0060	2.8625
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9877.8**	**59691.**	**3097.9**
Stddev	6.1	104.	11.8
%RSD	.06196	.17495	.38081
#1	9880.1	59766.	3105.5
#2	9870.8	59572.	3084.3
#3	9882.4	59736.	3103.8

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 13:06:41 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00082	.00013	.00057	.00151	.00063	.00002	-.01871	-.00022
Stddev	.00151	.00746	.00362	.00174	.00068	.00003	.02739	.00016
%RSD	185.23	5748.5	636.07	114.92	108.39	116.80	146.42	72.359
#1	.00201	.00304	-.00315	-.00049	.00141	.00001	-.04795	-.00036
#2	-.00088	-.00835	.00078	.00262	.00031	.00006	.00637	-.00027
#3	.00132	.00570	.00408	.00241	.00017	.00001	-.01455	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	.00054	.00076	.03608	.09214	-.00181	-.01859	-.00071
Stddev	.00025	.00025	.00080	.01975	.18930	.00302	.07756	.00052
%RSD	1039.3	46.422	105.73	54.731	205.46	166.60	417.27	72.248
#1	.00013	.00063	.00047	.01630	-.12492	-.00468	-.09449	-.00012
#2	.00011	.00026	.00167	.05580	.17827	.00135	-.02180	-.00101
#3	-.00032	.00073	.00014	.03615	.22306	-.00212	.06053	-.00101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00274	.04401	-.00040	.00332	.00144	-.00005	.00482	-.00649
Stddev	.00039	.03341	.00024	.00918	.00111	.00350	.00394	.00014
%RSD	14.320	75.897	59.933	276.22	77.091	6590.6	81.757	2.1187
#1	.00273	.08068	-.00054	-.00157	.00018	-.00177	.00919	-.00633
#2	.00236	.03606	-.00012	.01392	.00189	-.00236	.00153	-.00657
#3	.00314	.01530	-.00055	-.00237	.00225	.00397	.00375	-.00656
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 13:06:41 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v974) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00049**	**.00039**	**.00186**	**-.00089**	**-.00002**	**.00003**	**.00447**
Stddev	.00029	.00029	.00050	.00195	.00109	.00004	.00129
%RSD	58.864	74.770	26.876	218.22	5660.3	163.33	28.933
#1	.00018	.00056	.00153	-.00246	.00118	.00003	.00395
#2	.00076	.00054	.00162	-.00151	-.00095	.00007	.00352
#3	.00054	.00005	.00244	.00129	-.00029	-.00002	.00594
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9714.8**	**59220.**	**3006.6**
Stddev	20.8	167.	18.8
%RSD	.21426	.28151	.62581
#1	9691.7	59319.	2985.4
#2	9732.2	59028.	3021.3
#3	9720.4	59314.	3013.1

Approved: June 27, 2016

Sample Name: PBW MC Acquired: 6/25/2016 13:18:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.00511**	**.00086**	**-.00212**	**.00115**	**.00002**	**-.06747**	**.00005**
Stddev	.00209	.01093	.00117	.00067	.00097	.00011	.03960	.00035
%RSD	552.93	213.69	135.59	31.434	84.150	461.31	58.695	692.60
#1	-.00263	-.00536	-.00048	-.00211	.00011	.00001	-.09775	.00040
#2	.00149	.00426	.00140	-.00146	.00202	-.00008	-.02265	-.00029
#3	.00000	.01644	.00166	-.00279	.00133	.00014	-.08201	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**-.00006**	**.00212**	**.02866**	**-.06431**	**.00509**	**.02259**	**-.00086**
Stddev	.00040	.00091	.00173	.01678	.07316	.00381	.05174	.00149
%RSD	400.23	1393.8	81.515	58.547	113.75	74.903	229.03	173.59
#1	.00052	-.00104	.00296	.02246	-.13473	.00394	-.01043	-.00102
#2	.00004	.00075	.00325	.01586	-.06951	.00199	-.00402	.00071
#3	-.00026	.00010	.00013	.04766	.01130	.00934	.08222	-.00227
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00087**	**-.00687**	**.00001**	**-.00017**	**.00005**	**-.00551**	**.00627**	**.00390**
Stddev	.00030	.03350	.00031	.00833	.00114	.00506	.00234	.00374
%RSD	34.257	487.68	3374.4	4899.3	2181.8	91.834	37.291	95.869
#1	.00091	.01218	.00037	.00506	.00058	-.00133	.00544	.00713
#2	.00056	-.04555	-.00014	-.00978	.00083	-.01113	.00446	-.00020
#3	.00115	.01276	-.00019	.00420	-.00126	-.00406	.00891	.00477
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: PBW MC Acquired: 6/25/2016 13:18:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00012**	**-.00022**	**-.00094**	**-.00120**	**.00059**	**.00019**	**.00136**
Stddev	.00090	.00014	.01001	.00401	.00016	.00009	.00212
%RSD	728.27	61.668	1066.1	333.15	27.157	48.058	155.52
#1	-.00022	-.00007	.00771	-.00405	.00041	.00016	-.00108
#2	.00115	-.00034	-.01190	.00338	.00070	.00012	.00241
#3	-.00056	-.00026	.00137	-.00294	.00066	.00029	.00275
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9802.9**	**59937.**	**3028.8**
Stddev	9.7	136.	16.1
%RSD	.09849	.22735	.53011
#1	9794.7	59785.	3046.3
#2	9813.5	59979.	3014.8
#3	9800.5	60047.	3025.3

Approved: June 27, 2016

Sample Name: LCSW MC Acquired: 6/25/2016 13:22:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19140**	**4.8040**	**.19266**	**.92897**	**.49049**	**.02396**	**4.9270**	**.02412**
Stddev	.00110	.0096	.00124	.00283	.00119	.00006	.0588	.00019
%RSD	.57611	.19942	.64179	.30493	.24273	.25817	1.1941	.78757
#1	.19253	4.7978	.19184	.92575	.49050	.02398	4.9121	.02430
#2	.19133	4.7992	.19408	.93105	.49168	.02402	4.8771	.02392
#3	.19033	4.8151	.19206	.93012	.48929	.02390	4.9919	.02415
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09725**	**.24390**	**.24732**	**1.9838**	**23.909**	**.49943**	**4.9211**	**.24209**
Stddev	.00025	.00056	.00120	.0346	.055	.00048	.0513	.00093
%RSD	.26181	.22973	.48504	1.7424	.23189	.09613	1.0429	.38463
#1	.09749	.24389	.24597	1.9470	23.904	.49915	4.9459	.24237
#2	.09699	.24447	.24774	1.9888	23.968	.49916	4.8621	.24284
#3	.09727	.24335	.24825	2.0156	23.857	.49999	4.9553	.24105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49737**	**24.381**	**.24620**	**4.6982**	**.24508**	**.58185**	**.18662**	**2.4109**
Stddev	.00101	.058	.00194	.0026	.00506	.00206	.00438	.0033
%RSD	.20378	.23960	.78649	.05522	2.0646	.35379	2.3449	.13777
#1	.49803	24.349	.24767	4.6983	.25078	.58403	.18417	2.4135
#2	.49787	24.449	.24692	4.7007	.24112	.57994	.18402	2.4071
#3	.49620	24.346	.24401	4.6956	.24334	.58158	.19167	2.4120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LCSW MC Acquired: 6/25/2016 13:22:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48537**	**.49494**	**.49102**	**.24360**	**.48594**	**.48236**	**.01763**
Stddev	.00248	.00157	.00916	.00175	.00116	.00127	.00304
%RSD	.51037	.31733	1.8663	.71814	.23927	.26228	17.214
#1	.48605	.49357	.49562	.24211	.48702	.48137	.01600
#2	.48744	.49666	.49698	.24315	.48610	.48194	.01576
#3	.48263	.49460	.48047	.24553	.48471	.48379	.02113
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9802.2**	**59979.**	**3063.3**
Stddev	16.1	75.	6.7
%RSD	.16429	.12520	.21884
#1	9786.8	59978.	3070.3
#2	9800.7	59904.	3056.9
#3	9818.9	60054.	3062.8

Approved: June 27, 2016

Sample Name: L1606080801 Acquired: 6/25/2016 13:25:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00120	-.00080	-.00163	.02599	.00717	.00000	50.564	.00016
Stddev	.00152	.00397	.00290	.00206	.00115	.00005	.112	.00037
%RSD	125.91	493.45	178.32	7.9153	16.060	1214.4	.22137	235.03
#1	.00226	.00203	-.00429	.02577	.00588	.00002	50.480	.00003
#2	-.00053	.00090	.00147	.02405	.00757	.00004	50.521	-.00014
#3	.00188	-.00534	-.00207	.02815	.00807	-.00005	50.691	.00058
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.00083	.00107	.26409	1.2826	.00250	14.201	.11783
Stddev	.00018	.00044	.00061	.01139	.1290	.00132	.067	.00387
%RSD	127.01	53.307	57.172	4.3115	10.056	52.928	.47527	3.2872
#1	.00035	.00131	.00089	.27352	1.4315	.00167	14.162	.12070
#2	.00008	.00073	.00057	.25144	1.2130	.00180	14.162	.11343
#3	.00000	.00044	.00175	.26731	1.2035	.00402	14.279	.11937
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	15.281	.00045	.01127	-.00029	-.00250	-.00036	4.8502
Stddev	.00031	.048	.00109	.00496	.00257	.00086	.00870	.0263
%RSD	48.719	.31261	245.14	44.009	886.73	34.260	2404.6	.54311
#1	.00028	15.230	.00169	.00618	-.00269	-.00223	.00526	4.8717
#2	.00080	15.325	-.00034	.01609	.00243	-.00181	.00404	4.8581
#3	.00082	15.288	-.00001	.01154	-.00061	-.00346	-.01039	4.8208
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606080801 Acquired: 6/25/2016 13:25:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.16531	-.00520	-.00297	.00071	.00304	.00248
Stddev	.00021	.00042	.00147	.00169	.00080	.00019	.00016
%RSD	26.039	.25638	28.334	56.894	114.04	6.1375	6.5372
#1	.00100	.16514	-.00627	-.00112	.00132	.00299	.00242
#2	.00058	.16499	-.00352	-.00336	-.00020	.00288	.00235
#3	.00084	.16579	-.00581	-.00443	.00100	.00324	.00266
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9767.4	60311.	3068.7
Stddev	25.3	182.	4.5
%RSD	.25865	.30239	.14809
#1	9787.8	60238.	3069.0
#2	9775.3	60177.	3064.1
#3	9739.2	60519.	3073.1

Approved: June 27, 2016

Sample Name: L1606080803S Acquired: 6/25/2016 13:29:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19425**	**4.8313**	**.19559**	**.97188**	**.49949**	**.02391**	**55.138**	**.02433**
Stddev	.00175	.0086	.00291	.00386	.00064	.00006	.286	.00001
%RSD	.89899	.17760	1.4870	.39759	.12859	.26078	.51899	.03982
#1	.19471	4.8260	.19892	.97122	.49908	.02384	54.823	.02434
#2	.19571	4.8412	.19357	.96839	.49916	.02394	55.383	.02434
#3	.19231	4.8266	.19428	.97603	.50023	.02395	55.206	.02432
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09623**	**.24025**	**.24291**	**2.2142**	**25.706**	**.49995**	**18.850**	**.36055**
Stddev	.00052	.00032	.00081	.0203	.056	.00310	.060	.00310
%RSD	.54129	.13263	.33315	.91450	.21668	.61973	.31584	.86069
#1	.09635	.23989	.24328	2.2335	25.718	.49651	18.866	.35746
#2	.09668	.24035	.24198	2.2161	25.755	.50082	18.784	.36367
#3	.09566	.24050	.24346	2.1931	25.645	.50252	18.899	.36052
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50273**	**39.946**	**.24148**	**4.8211**	**.24377**	**.58841**	**.19283**	**7.2475**
Stddev	.00069	.089	.00226	.0078	.00185	.00329	.00168	.0253
%RSD	.13674	.22372	.93733	.16218	.76094	.55837	.87085	.34834
#1	.50346	39.846	.24394	4.8298	.24591	.59218	.19095	7.2767
#2	.50266	40.018	.24099	4.8187	.24276	.58614	.19336	7.2326
#3	.50209	39.974	.23950	4.8148	.24264	.58690	.19419	7.2333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606080803S Acquired: 6/25/2016 13:29:50 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48600**	**.66572**	**.49120**	**.24058**	**.48625**	**.48121**	**.00549**
Stddev	.00062	.00113	.00488	.00183	.00111	.00310	.00062
%RSD	.12721	.16988	.99375	.75886	.22783	.64511	11.331
#1	.48664	.66443	.49684	.23968	.48515	.48355	.00538
#2	.48596	.66654	.48839	.24268	.48622	.48240	.00493
#3	.48540	.66619	.48838	.23938	.48737	.47769	.00616
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9640.1**	**59155.**	**3051.9**
Stddev	28.9	91.	4.4
%RSD	.29949	.15374	.14285
#1	9607.9	59063.	3056.9
#2	9648.6	59158.	3049.0
#3	9663.8	59244.	3049.8

Approved: June 27, 2016

Sample Name: L1606080804SD Acquired: 6/25/2016 13:33:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19367	4.8696	.19395	.97468	.50079	.02428	55.592	.02458
Stddev	.00103	.0189	.00351	.00126	.00119	.00004	.087	.00002
%RSD	.53221	.38806	1.8082	.12977	.23838	.15828	.15705	.06402
#1	.19313	4.8871	.19259	.97422	.49995	.02427	55.687	.02459
#2	.19486	4.8723	.19133	.97371	.50216	.02425	55.574	.02456
#3	.19302	4.8496	.19794	.97611	.50027	.02433	55.515	.02458
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09687	.24382	.24330	2.1942	25.602	.50391	18.927	.35670
Stddev	.00034	.00139	.00044	.0216	.187	.00317	.145	.00440
%RSD	.35450	.56820	.18086	.98630	.73073	.62836	.76565	1.2346
#1	.09649	.24542	.24364	2.2182	25.415	.50090	18.778	.36166
#2	.09698	.24295	.24347	2.1881	25.600	.50721	19.067	.35519
#3	.09715	.24309	.24280	2.1762	25.789	.50361	18.935	.35325
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.50687	40.011	.24239	4.8324	.24609	.59184	.19199	7.3269
Stddev	.00174	.019	.00180	.0039	.00113	.00410	.00494	.0108
%RSD	.34421	.04769	.74422	.07995	.45954	.69206	2.5730	.14791
#1	.50863	40.009	.24329	4.8354	.24728	.59240	.18629	7.3276
#2	.50684	40.031	.24358	4.8338	.24503	.59563	.19457	7.3373
#3	.50514	39.993	.24032	4.8281	.24594	.58749	.19509	7.3157
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606080804SD Acquired: 6/25/2016 13:33:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573190-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48884	.66564	.48806	.24641	.49385	.48167	.00481
Stddev	.00243	.00060	.00210	.00100	.00262	.00319	.00105
%RSD	.49731	.09007	.43005	.40687	.53028	.66320	21.781
#1	.48902	.66631	.48604	.24752	.49576	.48059	.00363
#2	.49118	.66515	.49023	.24612	.49493	.48526	.00518
#3	.48633	.66545	.48792	.24558	.49086	.47916	.00563
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9643.8	58961.	3032.4
Stddev	19.6	179.	14.4
%RSD	.20367	.30279	.47352
#1	9664.0	58941.	3022.3
#2	9624.8	58793.	3026.2
#3	9642.5	59149.	3048.8

Approved: June 27, 2016

Sample Name: L1606082203 Acquired: 6/25/2016 13:37:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	.03250	.00108	.03413	.76881	.00001	31.323	.00009
Stddev	.00326	.00113	.00298	.00231	.00291	.00007	.069	.00003
%RSD	461.08	3.4738	274.98	6.7818	.37861	986.76	.21967	35.456
#1	-.00056	.03174	-.00033	.03677	.76753	-.00000	31.323	.00006
#2	.00440	.03379	-.00093	.03317	.76676	.00008	31.255	.00011
#3	-.00173	.03195	.00451	.03246	.77215	-.00006	31.393	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00298	.00799	.00175	5.1531	49.440	.10315	14.307	.17132
Stddev	.00036	.00030	.00156	.0220	.158	.00201	.082	.00563
%RSD	12.200	3.7657	89.202	.42624	.31871	1.9519	.57045	3.2873
#1	.00316	.00823	.00355	5.1330	49.302	.10173	14.214	.17528
#2	.00323	.00810	.00078	5.1498	49.405	.10227	14.338	.17381
#3	.00256	.00765	.00092	5.1766	49.612	.10546	14.368	.16487
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	90.168	.00369	.00788	-.00122	.00230	.00147	11.287
Stddev	.00023	.210	.00039	.00442	.00289	.00119	.00467	.027
%RSD	50.114	.23246	10.480	56.105	237.50	51.496	317.01	.23968
#1	.00031	90.009	.00403	.01267	.00108	.00337	.00397	11.318
#2	.00033	90.090	.00327	.00394	-.00447	.00102	-.00391	11.275
#3	.00071	90.405	.00377	.00704	-.00027	.00252	.00436	11.268
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606082203 Acquired: 6/25/2016 13:37:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.79119**	**.00045**	**-.00075**	**.00043**	**.00534**	**-.00006**
Stddev	.00030	.00071	.00315	.00229	.00033	.00006	.00108
%RSD	437.99	.09029	691.72	303.10	75.619	1.1956	1667.5
#1	-.00035	.79036	-.00147	.00135	.00018	.00529	-.00108
#2	-.00009	.79165	-.00125	-.00319	.00032	.00542	.00108
#3	.00024	.79155	.00408	-.00042	.00080	.00532	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9649.6**	**58766.**	**3005.5**
Stddev	29.5	106.	1.2
%RSD	.30621	.18076	.04053
#1	9617.1	58644.	3006.7
#2	9657.0	58831.	3005.5
#3	9674.8	58825.	3004.3

Approved: June 27, 2016

Sample Name: L1606082202 Acquired: 6/25/2016 13:40:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573973-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00163**	**.00700**	**-.00255**	**.09063**	**.14584**	**.00010**	**6.2202**	**-.00011**
Stddev	.00068	.00493	.00215	.00172	.00146	.00002	.0817	.00004
%RSD	41.927	70.458	84.324	1.8967	.99792	21.043	1.3126	39.110
#1	.00225	.01016	-.00441	.09032	.14618	.00008	6.1515	-.00007
#2	.00090	.00132	-.00302	.08908	.14425	.00013	6.1986	-.00016
#3	.00175	.00952	-.00020	.09248	.14710	.00010	6.3104	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.00096**	**.00077**	**2.0756**	**1.5049**	**.02492**	**4.3992**	**.07622**
Stddev	.00041	.00002	.00085	.0056	.1629	.00329	.1257	.00201
%RSD	1133.0	2.0322	110.52	.26897	10.822	13.197	2.8567	2.6344
#1	-.00024	.00097	.00165	2.0692	1.6925	.02131	4.4123	.07724
#2	.00043	.00097	.00070	2.0781	1.3995	.02572	4.2675	.07752
#3	-.00030	.00094	-.00004	2.0795	1.4227	.02774	4.5178	.07391
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**83.246**	**.00061**	**.10079**	**.00421**	**-.00520**	**.00452**	**12.135**
Stddev	.00009	.263	.00086	.00636	.00131	.00271	.00174	.029
%RSD	36.387	.31568	140.09	6.3065	31.208	52.125	38.464	.24257
#1	-.00033	83.275	.00060	.10060	.00298	-.00301	.00254	12.154
#2	-.00015	82.970	.00147	.10724	.00559	-.00823	.00579	12.151
#3	-.00025	83.493	-.00024	.09454	.00404	-.00437	.00523	12.101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606082202 Acquired: 6/25/2016 13:40:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573973-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	.21054	.00087	-.00133	-.00012	.00182	.00052
Stddev	.00041	.00091	.00263	.00076	.00048	.00007	.00152
%RSD	145.47	.43126	300.38	57.105	397.63	3.7016	294.24
#1	.00007	.21002	.00237	-.00045	.00028	.00184	-.00094
#2	.00003	.21002	.00241	-.00174	.00001	.00175	.00210
#3	.00076	.21159	-.00216	-.00179	-.00065	.00188	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9729.1	59376.	3030.4
Stddev	8.6	260.	19.9
%RSD	.08835	.43738	.65516
#1	9720.3	59079.	3018.5
#2	9729.3	59490.	3053.3
#3	9737.5	59559.	3019.5

Approved: June 27, 2016

Sample Name: L1606082202PS Acquired: 6/25/2016 13:44:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573973-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19375**	**4.8752**	**.19613**	**1.0291**	**.62833**	**.02428**	**10.648**	**.02477**
Stddev	.00051	.0099	.00160	.0019	.00588	.00006	.170	.00011
%RSD	.26273	.20232	.81334	.18131	.93614	.24036	1.5959	.45206
#1	.19417	4.8642	.19702	1.0298	.63084	.02431	10.660	.02468
#2	.19391	4.8782	.19429	1.0305	.63254	.02431	10.812	.02489
#3	.19319	4.8832	.19709	1.0270	.62161	.02421	10.473	.02473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09829**	**.24324**	**.24855**	**3.8486**	**25.821**	**.52335**	**8.7582**	**.31225**
Stddev	.00082	.00053	.00056	.0314	.285	.00671	.0434	.00355
%RSD	.83225	.21842	.22566	.81716	1.1038	1.2812	.49530	1.1380
#1	.09742	.24374	.24849	3.8714	25.861	.52361	8.7634	.31338
#2	.09905	.24330	.24914	3.8618	26.083	.52993	8.7125	.31510
#3	.09841	.24268	.24802	3.8128	25.517	.51653	8.7988	.30827
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50486**	**99.997**	**.24562**	**4.8721**	**.24648**	**.59017**	**.19243**	**13.471**
Stddev	.00060	.660	.00153	.0054	.00424	.00393	.00054	.013
%RSD	.11858	.66045	.62190	.11137	1.7208	.66559	.28037	.09301
#1	.50422	100.35	.24553	4.8783	.24168	.58648	.19181	13.458
#2	.50541	100.41	.24414	4.8682	.24971	.59430	.19267	13.471
#3	.50494	99.235	.24719	4.8698	.24807	.58975	.19281	13.483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606082202PS Acquired: 6/25/2016 13:44:52 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573973-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48807**	**.68216**	**.50019**	**.24323**	**.49372**	**.48957**	**.00258**
Stddev	.00205	.00533	.01089	.00117	.00097	.00018	.00106
%RSD	.41999	.78112	2.1777	.48173	.19621	.03662	41.003
#1	.49029	.68537	.51266	.24188	.49454	.48951	.00281
#2	.48770	.68509	.49539	.24396	.49265	.48978	.00349
#3	.48624	.67601	.49252	.24385	.49397	.48943	.00142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9652.9**	**58738.**	**3022.5**
Stddev	16.4	44.	32.4
%RSD	.17031	.07498	1.0716
#1	9668.7	58757.	3005.1
#2	9654.1	58688.	3002.5
#3	9635.9	58769.	3059.8

Approved: June 27, 2016

Sample Name: L1606082202SDL Acquired: 6/25/2016 13:48:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573973-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00041	-.00874	.00232	.01966	.02846	.00012	1.1981	-.00020
Stddev	.00102	.00520	.00129	.00166	.00164	.00003	.0364	.00029
%RSD	249.96	59.552	55.713	8.4558	5.7787	28.080	3.0406	145.60
#1	-.00049	-.00387	.00244	.02114	.03034	.00013	1.2234	-.00054
#2	.00065	-.00812	.00098	.01996	.02778	.00008	1.1564	-.00008
#3	-.00139	-.01423	.00356	.01786	.02727	.00014	1.2146	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	.00097	.00049	.42314	.31666	.00414	.84994	.01478
Stddev	.00036	.00092	.00031	.02269	.03395	.00078	.10125	.00159
%RSD	202.36	94.832	64.039	5.3615	10.720	18.849	11.912	10.770
#1	-.00059	-.00007	.00031	.40193	.27970	.00483	.89447	.01388
#2	-.00002	.00128	.00031	.42043	.32384	.00429	.92129	.01385
#3	.00008	.00169	.00086	.44706	.34645	.00330	.73406	.01662
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	16.797	-.00010	.02573	.00379	-.00654	-.00062	2.4606
Stddev	.00016	.116	.00075	.00347	.00211	.00206	.00121	.0014
%RSD	105.18	.68795	766.63	13.470	55.760	31.494	195.90	.05654
#1	-.00025	16.870	-.00048	.02714	.00159	-.00786	-.00167	2.4590
#2	-.00024	16.856	-.00058	.02827	.00580	-.00417	-.00090	2.4616
#3	.00003	16.663	.00077	.02178	.00399	-.00761	.00071	2.4611
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606082202SDL Acquired: 6/25/2016 13:48:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573973-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00034**	**.04233**	**.00225**	**-.00298**	**.00005**	**.00069**	**.00014**
Stddev	.00035	.00076	.00380	.00312	.00068	.00008	.00023
%RSD	102.54	1.7878	169.10	104.78	1298.3	11.967	160.88
#1	-.00033	.04309	.00306	.00056	-.00034	.00074	-.00011
#2	.00000	.04232	.00558	-.00534	-.00035	.00059	.00032
#3	-.00071	.04157	-.00189	-.00415	.00084	.00073	.00022
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10112.**	**61959.**	**3102.5**
Stddev	25.	335.	21.2
%RSD	.24804	.54051	.68302
#1	10140.	62322.	3081.9
#2	10091.	61890.	3101.4
#3	10107.	61663.	3124.2

Approved: June 27, 2016

Sample Name: L1606082202SDL Acquired: 6/25/2016 13:52:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573973-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**-.00201**	**.00162**	**.00506**	**.00674**	**.00009**	**.22194**	**.00006**
Stddev	.00098	.00612	.00099	.00223	.00036	.00007	.03121	.00010
%RSD	701.06	303.84	61.332	44.136	5.3564	71.933	14.062	159.17
#1	-.00091	-.00825	.00149	.00575	.00715	.00008	.25227	.00003
#2	-.00048	-.00177	.00268	.00256	.00663	.00004	.22363	-.00001
#3	.00097	.00398	.00070	.00686	.00645	.00017	.18992	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00007**	**.00003**	**.00093**	**.10294**	**.07211**	**-.00053**	**.11677**	**.00303**
Stddev	.00044	.00176	.00026	.00844	.06933	.00190	.04489	.00266
%RSD	660.12	5191.6	27.598	8.2017	96.144	360.65	38.441	87.562
#1	-.00052	.00076	.00092	.11264	.12436	-.00025	.12873	.00344
#2	.00037	-.00197	.00068	.09726	-.00654	-.00255	.06712	.00020
#3	-.00005	.00131	.00120	.09891	.09851	.00122	.15447	.00546
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00046**	**3.4626**	**-.00095**	**.01102**	**.00309**	**-.00448**	**.00254**	**.52285**
Stddev	.00009	.0579	.00053	.00740	.00233	.00663	.00646	.00911
%RSD	18.881	1.6714	55.686	67.190	75.440	147.88	254.92	1.7427
#1	-.00041	3.4180	-.00056	.01783	.00042	-.00172	-.00323	.51493
#2	-.00042	3.4418	-.00074	.01207	.00473	-.01205	.00952	.52082
#3	-.00056	3.5280	-.00155	.00314	.00412	.00032	.00131	.53281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606082202SDL Acquired: 6/25/2016 13:52:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573973-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00039**	**.00876**	**-.00160**	**-.00170**	**.00064**	**.00048**	**.00025**
Stddev	.00024	.00020	.00243	.00072	.00151	.00001	.00052
%RSD	61.212	2.3382	151.62	42.632	234.58	1.6034	205.72
#1	-.00036	.00876	-.00015	-.00219	-.00097	.00048	.00032
#2	-.00064	.00897	-.00025	-.00087	.00088	.00049	-.00030
#3	-.00017	.00856	-.00441	-.00204	.00202	.00048	.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10010.**	**61091.**	**3050.7**
Stddev	14.	94.	16.7
%RSD	.14368	.15455	.54708
#1	9999.9	61099.	3067.0
#2	10027.	60993.	3033.7
#3	10004.	61182.	3051.5

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 13:56:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39703	9.8823	.39208	.48360	.99649	.04877	9.9442
Stddev	.00097	.0185	.00108	.00155	.00485	.00012	.0391
%RSD	.24464	.18766	.27635	.32015	.48698	.23806	.39293
#1	.39651	9.9033	.39094	.48432	.99107	.04885	9.8991
#2	.39815	9.8682	.39222	.48182	1.0004	.04883	9.9670
#3	.39642	9.8754	.39309	.48466	.99796	.04864	9.9665
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04952	.19590	.48861	.49872	3.9553	49.086	.99832
Stddev	.00026	.00028	.00039	.00131	.0110	.181	.00236
%RSD	.52554	.14170	.07934	.26171	.27922	.36920	.23624
#1	.04970	.19602	.48888	.50017	3.9554	48.878	.99571
#2	.04922	.19610	.48816	.49764	3.9662	49.210	1.0003
#3	.04964	.19559	.48877	.49836	3.9441	49.170	.99895
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.6989	.49966	.99513	49.378	.49577	9.7713	.49937
Stddev	.0286	.00128	.00487	.189	.00112	.0077	.00125
%RSD	.29470	.25687	.48908	.38358	.22653	.07875	.25024
#1	9.6936	.49933	.99926	49.226	.49626	9.7672	.49899
#2	9.6733	.50107	.99636	49.590	.49656	9.7802	.50076
#3	9.7297	.49857	.98976	49.317	.49448	9.7665	.49835
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 13:56:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.1744	.39516	5.0749	.97934	.99997	.99747	.49995
Stddev	.0050	.00337	.0045	.00061	.00261	.00842	.00315
%RSD	.42778	.85272	.08873	.06267	.26098	.84451	.63052
#1	1.1693	.39868	5.0732	.98005	.99777	.99280	.50104
#2	1.1793	.39197	5.0800	.97900	1.0028	1.0072	.49639
#3	1.1748	.39484	5.0715	.97897	.99928	.99242	.50240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.98727	.98962	F 2.8790
Stddev	.00224	.00122	.0125
%RSD	.22699	.12332	.43408
#1	.98696	.98924	2.8649
#2	.98519	.99098	2.8888
#3	.98965	.98864	2.8834
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9881.8	60025.	3051.6
Stddev	7.5	117.	13.0
%RSD	.07613	.19437	.42745
#1	9874.3	60038.	3066.6
#2	9889.3	60134.	3043.0
#3	9881.9	59902.	3045.3

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 14:00:01 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00037	.00384	.00171	.00288	.00164	.00016	-.02160	-.00002
Stddev	.00056	.00607	.00179	.00157	.00101	.00008	.03268	.00008
%RSD	153.00	158.06	104.81	54.496	61.686	49.488	151.32	357.31
#1	-.00082	.00133	.00363	.00341	.00099	.00008	-.05876	.00002
#2	-.00054	.01077	.00142	.00412	.00280	.00016	-.00868	-.00011
#3	.00026	-.00057	.00008	.00112	.00111	.00023	.00265	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.00089	.00145	.02539	.05830	-.00178	-.00516	-.00289
Stddev	.00025	.00059	.00085	.02878	.16368	.00331	.04118	.00267
%RSD	184.36	65.782	58.421	113.33	280.73	185.62	797.74	92.366
#1	-.00007	.00150	.00078	.04856	-.06991	-.00470	-.03370	-.00034
#2	.00042	.00086	.00240	.03444	.24267	-.00246	.04205	-.00265
#3	.00006	.00033	.00117	-.00682	.00216	.00181	-.02383	-.00566
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00312	.01750	-.00036	.00463	.00110	.00408	.00171	-.00349
Stddev	.00035	.01788	.00074	.00054	.00119	.00430	.00409	.00216
%RSD	11.208	102.15	207.33	11.581	107.78	105.36	238.51	61.802
#1	.00276	.00856	.00044	.00497	-.00027	-.00057	.00622	-.00129
#2	.00346	.03809	-.00047	.00401	.00175	.00791	-.00177	-.00560
#3	.00314	.00586	-.00104	.00491	.00181	.00489	.00070	-.00357
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 14:00:01 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.00055	-.00034	-.00341	.00088	.00013	.00321
Stddev	.00088	.00013	.00661	.00148	.00029	.00021	.00123
%RSD	577.33	24.369	1964.7	43.438	32.521	159.30	38.279
#1	-.00076	.00044	.00453	-.00437	.00106	-.00009	.00194
#2	.00100	.00070	.00232	-.00416	.00055	.00032	.00329
#3	.00022	.00052	-.00786	-.00171	.00104	.00016	.00439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9674.1	59179.	2989.6
Stddev	10.8	80.	18.0
%RSD	.11204	.13474	.60268
#1	9680.4	59116.	2972.7
#2	9661.6	59269.	3008.6
#3	9680.2	59153.	2987.4

Approved: June 27, 2016

Sample Name: L1606082302 Acquired: 6/25/2016 14:03:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.01235**	**.00398**	**.02065**	**7.6114**	**.00014**	**242.99**
Stddev	.00016	.00738	.00092	.00248	.0086	.00009	.50
%RSD	156.01	59.723	23.024	12.009	.11234	64.318	.20416
#1	-.00023	.01740	.00411	.01789	7.6202	.00016	242.85
#2	-.00014	.01576	.00483	.02137	7.6109	.00023	243.54
#3	.00007	.00389	.00301	.02270	7.6032	.00004	242.58
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00045**	**.05380**	**.00122**	**.00261**	**4.4999**	**3.4068**	**.13022**
Stddev	.00043	.00087	.00035	.00011	.0119	.0234	.00431
%RSD	95.240	1.6084	28.402	4.2649	.26410	.68699	3.3105
#1	-.00003	.05465	.00142	.00253	4.4869	3.3837	.13493
#2	.00060	.05384	.00143	.00274	4.5026	3.4062	.12925
#3	.00078	.05292	.00082	.00256	4.5101	3.4305	.12648
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**186.55**	**.80417**	**.00043**	F **676.67**	**.01798**	**.04840**	**.00356**
Stddev	.43	.00344	.00029	5.78	.00081	.00767	.00232
%RSD	.22901	.42830	67.402	.85481	4.4962	15.839	65.024
#1	186.94	.80321	.00050	676.18	.01876	.05723	.00107
#2	186.09	.80800	.00067	682.68	.01714	.04349	.00566
#3	186.63	.80131	.00011	671.15	.01803	.04447	.00396
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 27, 2016

Sample Name: L1606082302 Acquired: 6/25/2016 14:03:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00329**	**-.00499**	**17.541**	**.00002**	**5.8024**	F **-.03279**	**-.00373**
Stddev	.00417	.00266	.115	.00016	.0077	.00249	.00217
%RSD	126.77	53.331	.65409	771.83	.13255	7.6037	58.233
#1	-.00765	-.00207	17.622	-.00016	5.8086	-.03219	-.00297
#2	-.00289	-.00563	17.591	.00008	5.8048	-.03065	-.00619
#3	.00066	-.00727	17.409	.00014	5.7938	-.03553	-.00205
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00105**	**.00822**	**.00588**
Stddev	.00081	.00012	.00100
%RSD	77.437	1.5051	16.931
#1	-.00020	.00826	.00695
#2	-.00112	.00832	.00498
#3	-.00182	.00808	.00571
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9001.2**	**54623.**	**2943.0**
Stddev	12.7	293.	11.3
%RSD	.14121	.53595	.38250
#1	8986.8	54359.	2937.9
#2	9010.8	54574.	2935.3
#3	9006.1	54938.	2955.9

Approved: June 27, 2016

Sample Name: L1606082303 Acquired: 6/25/2016 14:07:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00097**	**.07689**	**.00082**	**.01317**	**4.0611**	**.00008**	**194.35**
Stddev	.00087	.00794	.00214	.00140	.0013	.00002	.19
%RSD	89.857	10.324	259.83	10.655	.03277	29.564	.09947
#1	.00177	.08422	.00140	.01160	4.0625	.00007	194.28
#2	.00005	.07798	.00261	.01363	4.0599	.00006	194.19
#3	.00109	.06846	-.00155	.01429	4.0610	.00010	194.56
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**.00720**	**.00128**	**.00172**	**.48254**	**1.5553**	**.05921**
Stddev	.00016	.00037	.00008	.00037	.03011	.0518	.00214
%RSD	37.982	5.1555	6.4501	21.255	6.2390	3.3303	3.6194
#1	.00025	.00709	.00125	.00159	.48289	1.5549	.05878
#2	.00056	.00690	.00137	.00144	.45226	1.5037	.05732
#3	.00044	.00762	.00121	.00214	.51247	1.6073	.06154
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**110.52**	**2.3053**	**-.00008**	F **614.40**	**.00312**	**.00621**	**.00333**
Stddev	.38	.0070	.00038	4.80	.00050	.00738	.00101
%RSD	.34277	.30352	457.85	.78181	15.943	118.75	30.264
#1	110.96	2.3090	-.00052	609.47	.00307	-.00184	.00218
#2	110.30	2.2972	.00010	614.65	.00363	.01264	.00406
#3	110.30	2.3096	.00018	619.07	.00264	.00783	.00375
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 27, 2016

Sample Name: L1606082303 Acquired: 6/25/2016 14:07:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00131	-.00398	12.572	-.00061	3.7282	-.02186	-.00195
Stddev	.00101	.00138	.069	.00058	.0049	.00737	.00114
%RSD	77.475	34.690	.54565	95.484	.12996	33.713	58.500
#1	-.00178	-.00242	12.599	.00005	3.7247	-.01374	-.00282
#2	-.00014	-.00503	12.623	-.00084	3.7262	-.02372	-.00066
#3	-.00200	-.00451	12.494	-.00105	3.7337	-.02812	-.00237
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00017	.00519	.00587
Stddev	.00034	.00017	.00146
%RSD	196.61	3.3392	24.813
#1	.00020	.00538	.00454
#2	-.00026	.00515	.00565
#3	-.00046	.00504	.00743
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9113.2	55170.	2962.5
Stddev	17.2	284.	10.8
%RSD	.18895	.51491	.36572
#1	9120.9	54953.	2952.0
#2	9093.5	55065.	2973.6
#3	9125.3	55492.	2961.9

Approved: June 27, 2016

Sample Name: L1606082304 Acquired: 6/25/2016 14:12:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00108**	**.00282**	**.00375**	**.01195**	**1.2873**	**.00004**	**44.812**	**-.00032**
Stddev	.00081	.00175	.00233	.00191	.0068	.00003	.140	.00033
%RSD	75.442	62.066	62.147	15.958	.52861	68.482	.31190	102.13
#1	-.00032	.00374	.00333	.01352	1.2889	.00004	44.884	-.00060
#2	-.00194	.00392	.00166	.00983	1.2799	.00001	44.651	.00004
#3	-.00098	.00080	.00626	.01250	1.2932	.00007	44.900	-.00039
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00062**	**-.00235**	**.00403**	**80.696**	**3.0351**	**.04425**	**27.190**	**1.4212**
Stddev	.00024	.00090	.00186	.288	.0674	.00194	.251	.0124
%RSD	38.213	38.227	46.192	.35704	2.2197	4.3802	.92249	.86964
#1	.00059	-.00132	.00534	80.883	2.9579	.04406	26.967	1.4224
#2	.00088	-.00276	.00485	80.364	3.0650	.04628	27.141	1.4083
#3	.00040	-.00297	.00190	80.840	3.0823	.04242	27.462	1.4329
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00083**	**136.40**	**.00117**	**.05473**	**.00702**	**-.00148**	**-.00406**	**16.093**
Stddev	.00029	.62	.00056	.00919	.00288	.00326	.00473	.052
%RSD	35.125	.45656	47.701	16.792	41.072	220.80	116.61	.32014
#1	-.00064	136.42	.00054	.06475	.00887	-.00465	-.00925	16.145
#2	-.00116	135.77	.00135	.05277	.00848	.00187	.00003	16.091
#3	-.00068	137.01	.00161	.04668	.00370	-.00165	-.00296	16.042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606082304 Acquired: 6/25/2016 14:12:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00141**	**1.0265**	**.02088**	**-.00129**	**-.00025**	**.01157**	**-.01042**
Stddev	.00052	.0054	.00601	.00283	.00173	.00020	.00036
%RSD	36.987	.52659	28.762	219.55	704.92	1.7611	3.4676
#1	.00201	1.0281	.02616	-.00374	-.00225	.01176	-.01080
#2	.00117	1.0205	.01435	.00181	.00074	.01159	-.01039
#3	.00105	1.0309	.02213	-.00193	.00077	.01136	-.01008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9584.5**	**58328.**	**2992.4**
Stddev	11.8	87.	5.0
%RSD	.12317	.14881	.16820
#1	9573.1	58228.	2986.6
#2	9583.6	58387.	2995.2
#3	9596.7	58368.	2995.4

Approved: June 27, 2016

Sample Name: L1606114801 Acquired: 6/25/2016 14:15:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00263	.73135	.00385	.12210	.08262	.00020	27.646	.00018
Stddev	.00073	.00428	.00128	.00118	.00156	.00004	.096	.00015
%RSD	27.764	.58467	33.324	.96789	1.8866	19.880	.34678	80.450
#1	.00220	.73627	.00263	.12346	.08403	.00016	27.689	.00009
#2	.00223	.72927	.00372	.12147	.08287	.00024	27.713	.00035
#3	.00348	.72851	.00519	.12136	.08095	.00020	27.536	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00054	.00138	.00319	.50952	4.5430	.00820	13.834	.02681
Stddev	.00058	.00089	.00080	.00314	.0592	.00406	.158	.00190
%RSD	107.78	64.361	25.113	.61565	1.3042	49.473	1.1398	7.0691
#1	-.00010	.00066	.00412	.50590	4.4785	.00685	13.879	.02807
#2	.00067	.00110	.00265	.51133	4.5951	.01276	13.964	.02463
#3	.00103	.00237	.00282	.51133	4.5554	.00499	13.658	.02774
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00124	65.018	.00157	.05465	.00287	-.00148	.00632	4.3760
Stddev	.00020	.232	.00022	.00221	.00233	.00288	.00218	.0207
%RSD	16.215	.35629	13.957	4.0445	81.267	194.34	34.507	.47244
#1	.00141	65.009	.00133	.05367	.00373	-.00288	.00878	4.3946
#2	.00130	65.254	.00176	.05719	.00465	-.00339	.00555	4.3795
#3	.00102	64.791	.00160	.05310	.00023	.00183	.00463	4.3537
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606114801 Acquired: 6/25/2016 14:15:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	.26681	.01202	-.00269	.00480	.00516	.00567
Stddev	.00125	.00125	.00081	.00070	.00038	.00011	.00071
%RSD	227.21	.46986	6.7372	25.927	7.9446	2.0641	12.451
#1	-.00072	.26656	.01275	-.00259	.00452	.00521	.00488
#2	.00178	.26818	.01115	-.00205	.00524	.00504	.00622
#3	.00058	.26571	.01216	-.00344	.00465	.00524	.00592
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9685.5	59237.	3013.9
Stddev	15.3	70.	21.8
%RSD	.15804	.11840	.72168
#1	9667.9	59212.	3004.6
#2	9692.8	59182.	2998.3
#3	9695.8	59316.	3038.7

Approved: June 27, 2016

Sample Name: L1606114802 Acquired: 6/25/2016 14:19:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00086	.02576	.00392	.13054	.14235	.00004	53.032	.00013
Stddev	.00161	.00264	.00128	.00304	.00093	.00006	.088	.00011
%RSD	186.85	10.249	32.777	2.3320	.65273	165.85	.16643	81.772
#1	-.00048	.02479	.00505	.13055	.14272	-.00002	52.942	.00017
#2	.00053	.02374	.00418	.13357	.14130	.00011	53.037	.00022
#3	-.00263	.02875	.00252	.12748	.14305	.00003	53.119	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.00416	.00255	.05069	2.7172	.00979	45.232	.00619
Stddev	.00057	.00090	.00135	.00895	.0969	.00331	.213	.00128
%RSD	70.201	21.666	53.148	17.648	3.5679	33.803	.47142	20.757
#1	.00109	.00488	.00157	.05068	2.6091	.01132	44.992	.00715
#2	.00016	.00315	.00198	.05964	2.7964	.01206	45.307	.00668
#3	.00119	.00444	.00409	.04175	2.7463	.00599	45.398	.00473
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	113.30	.00198	.03363	.00397	-.00032	.00108	5.7426
Stddev	.00005	.15	.00097	.00220	.00496	.00242	.00246	.0270
%RSD	9.2544	.13423	48.767	6.5321	124.89	765.53	227.39	.46957
#1	.00062	113.13	.00098	.03204	.00115	-.00095	-.00128	5.7131
#2	.00062	113.39	.00206	.03614	.00107	.00236	.00363	5.7660
#3	.00052	113.39	.00290	.03272	.00971	-.00236	.00090	5.7486
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606114802 Acquired: 6/25/2016 14:19:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**.36906**	**-.00370**	**-.00072**	**.00779**	**.00692**	**.00331**
Stddev	.00028	.00064	.00411	.00265	.00075	.00021	.00138
%RSD	191.03	.17400	110.98	366.07	9.6620	3.0569	41.716
#1	-.00017	.36882	.00101	-.00049	.00853	.00671	.00489
#2	.00034	.36857	-.00557	.00180	.00703	.00713	.00270
#3	.00027	.36978	-.00654	-.00348	.00781	.00694	.00235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9627.8**	**58951.**	**3062.4**
Stddev	26.1	26.	1.9
%RSD	.27151	.04447	.06237
#1	9657.6	58927.	3060.7
#2	9617.0	58947.	3062.0
#3	9608.7	58979.	3064.5

Approved: June 27, 2016

Sample Name: L1606115001 Acquired: 6/25/2016 14:23:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00134	.94860	.00623	.13672	.10593	.00014	35.066	.00002
Stddev	.00163	.01243	.00298	.00233	.00120	.00009	.208	.00013
%RSD	122.05	1.3105	47.819	1.7071	1.1370	65.235	.59262	741.62
#1	-.00020	.96246	.00332	.13853	.10456	.00018	34.826	.00011
#2	.00116	.93843	.00928	.13754	.10682	.00004	35.168	-.00013
#3	.00306	.94490	.00609	.13408	.10640	.00021	35.202	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00095	.00115	.00402	.75423	2.6231	.00517	21.361	.05361
Stddev	.00038	.00077	.00076	.00983	.0329	.00134	.091	.00159
%RSD	39.586	67.102	19.015	1.3028	1.2541	25.927	.42723	2.9705
#1	.00055	.00114	.00333	.74497	2.6490	.00636	21.310	.05382
#2	.00102	.00192	.00389	.75319	2.6342	.00372	21.307	.05192
#3	.00129	.00038	.00484	.76454	2.5861	.00543	21.467	.05508
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00320	114.16	.00202	.11444	.00566	-.00032	.00352	5.0408
Stddev	.00062	.45	.00043	.00615	.00453	.00176	.00035	.0084
%RSD	19.542	.39163	21.028	5.3725	80.076	549.83	10.037	.16741
#1	.00290	113.69	.00211	.12072	.00935	.00043	.00314	5.0497
#2	.00278	114.20	.00240	.11417	.00060	.00094	.00356	5.0330
#3	.00392	114.58	.00156	.10843	.00702	-.00233	.00385	5.0397
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115001 Acquired: 6/25/2016 14:23:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**.24066**	**.01417**	**-.00245**	**.00766**	**.00892**	**.00404**
Stddev	.00021	.00154	.00348	.00225	.00065	.00011	.00127
%RSD	805.05	.63820	24.568	91.853	8.5297	1.1926	31.485
#1	.00024	.23889	.01059	-.00116	.00840	.00901	.00275
#2	.00001	.24171	.01754	-.00114	.00737	.00895	.00530
#3	-.00018	.24137	.01438	-.00504	.00719	.00880	.00407
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9688.5**	**58932.**	**3057.0**
Stddev	25.8	93.	13.7
%RSD	.26652	.15746	.44955
#1	9698.0	58835.	3047.2
#2	9708.3	59020.	3072.7
#3	9659.3	58940.	3051.0

Approved: June 27, 2016

Sample Name: L1606115002 Acquired: 6/25/2016 14:27:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00203	.48878	.00167	.06520	.04585	.00006	17.152	.00001
Stddev	.00268	.01554	.00141	.00090	.00204	.00009	.173	.00009
%RSD	131.70	3.1791	84.852	1.3869	4.4598	167.56	1.0064	934.85
#1	.00187	.50660	.00286	.06544	.04801	.00015	17.256	-.00009
#2	-.00056	.47801	.00204	.06596	.04394	-.00004	16.953	.00007
#3	.00479	.48175	.00010	.06420	.04559	.00005	17.247	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00168	.00243	.39846	4.7446	.00319	5.4375	.01729
Stddev	.00031	.00066	.00184	.00667	.1185	.00289	.0385	.00153
%RSD	100.89	39.152	75.822	1.6749	2.4966	90.823	.70870	8.8325
#1	.00065	.00096	.00122	.39954	4.7392	.00001	5.4553	.01884
#2	.00006	.00183	.00151	.39131	4.6289	.00567	5.3932	.01727
#3	.00020	.00224	.00454	.40452	4.8657	.00387	5.4638	.01578
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	38.880	.00010	.07228	.00433	-.00020	.00027	1.5503
Stddev	.00033	.402	.00056	.00820	.00375	.00324	.00590	.0251
%RSD	119.49	1.0347	568.40	11.341	86.648	1601.4	2189.5	1.6195
#1	-.00010	39.210	-.00001	.06867	.00198	.00127	.00262	1.5658
#2	.00053	38.432	.00070	.06650	.00235	-.00392	-.00644	1.5637
#3	.00040	38.999	-.00040	.08166	.00865	.00205	.00464	1.5213
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115002 Acquired: 6/25/2016 14:27:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.09712	.00701	-.00122	.00599	.00508	.00239
Stddev	.00062	.00057	.00249	.00352	.00080	.00018	.00169
%RSD	1544.5	.58817	35.547	288.53	13.353	3.5369	70.760
#1	.00058	.09776	.00445	-.00524	.00624	.00503	.00322
#2	-.00064	.09666	.00715	.00026	.00510	.00528	.00044
#3	.00018	.09693	.00942	.00132	.00664	.00493	.00349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9845.3	59884.	3057.5
Stddev	61.7	141.	28.2
%RSD	.62651	.23463	.92251
#1	9792.5	59732.	3034.3
#2	9830.2	60008.	3088.9
#3	9913.1	59914.	3049.2

Approved: June 27, 2016

Sample Name: L1606115102 Acquired: 6/25/2016 14:31:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00159	.14924	.00211	.10945	.07344	.00012	35.265	.00011
Stddev	.00084	.00304	.00150	.00214	.00141	.00005	.199	.00019
%RSD	53.011	2.0340	71.147	1.9507	1.9218	40.963	.56552	183.34
#1	.00069	.14626	.00205	.10856	.07211	.00007	35.174	.00027
#2	.00171	.15233	.00364	.10790	.07329	.00017	35.493	-.00011
#3	.00236	.14912	.00064	.11188	.07492	.00013	35.127	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00052	.00053	.00363	.24070	2.2004	.00754	18.847	.05800
Stddev	.00037	.00064	.00076	.00439	.0134	.00192	.227	.00368
%RSD	71.691	119.20	20.837	1.8247	.61086	25.451	1.2033	6.3535
#1	.00009	-.00001	.00323	.23564	2.1949	.00870	18.615	.05962
#2	.00071	.00038	.00450	.24286	2.2158	.00532	19.068	.05378
#3	.00075	.00124	.00316	.24359	2.1907	.00860	18.858	.06059
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00267	93.416	.00066	.05411	.00356	-.00299	.00235	4.9794
Stddev	.00025	.232	.00043	.00846	.00271	.00266	.00452	.0235
%RSD	9.2843	.24821	65.257	15.640	76.210	88.939	192.50	.47215
#1	.00239	93.189	.00082	.06384	.00043	-.00008	-.00245	4.9968
#2	.00274	93.652	.00099	.04849	.00522	-.00529	.00653	4.9888
#3	.00288	93.408	.00017	.05000	.00501	-.00360	.00296	4.9527
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115102 Acquired: 6/25/2016 14:31:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.22720	-.00049	-.00434	.00477	.01199	.00282
Stddev	.00094	.00191	.00341	.00316	.00052	.00018	.00083
%RSD	624.90	.83946	689.70	72.807	10.840	1.4772	29.345
#1	.00091	.22526	.00103	-.00351	.00496	.01201	.00271
#2	-.00090	.22907	-.00440	-.00783	.00516	.01216	.00370
#3	.00043	.22727	.00189	-.00168	.00418	.01181	.00206
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9596.9	58682.	3041.4
Stddev	35.1	192.	10.5
%RSD	.36599	.32727	.34598
#1	9558.5	58834.	3032.3
#2	9605.0	58747.	3039.1
#3	9627.4	58466.	3052.9

Approved: June 27, 2016

Sample Name: L1606115105 Acquired: 6/25/2016 14:35:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	.08611	.00385	.13923	.09101	.00009	44.089	.00002
Stddev	.00149	.00500	.00146	.00310	.00028	.00009	.047	.00004
%RSD	320.61	5.8036	37.928	2.2254	.30236	102.05	.10587	146.93
#1	-.00016	.08678	.00262	.14146	.09069	.00015	44.139	.00006
#2	-.00061	.09074	.00347	.13569	.09114	.00014	44.082	.00002
#3	.00216	.08081	.00547	.14055	.09119	-.00002	44.046	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.00077	.00300	.22257	1.9197	.00784	24.665	.07651
Stddev	.00017	.00044	.00144	.01624	.0794	.00414	.178	.00017
%RSD	34.605	57.594	48.079	7.2986	4.1341	52.815	.72144	.22200
#1	.00066	.00116	.00292	.22095	1.8333	.01224	24.592	.07669
#2	.00046	.00029	.00448	.23956	1.9894	.00402	24.534	.07635
#3	.00033	.00086	.00160	.20719	1.9365	.00726	24.867	.07649
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00251	121.52	.00039	.04724	.00176	-.00202	.00114	5.9103
Stddev	.00040	.42	.00024	.00471	.00159	.00145	.00478	.0521
%RSD	16.119	.34732	62.165	9.9710	90.693	71.551	420.31	.88218
#1	.00228	121.85	.00064	.05267	.00005	-.00053	.00361	5.8778
#2	.00297	121.67	.00016	.04481	.00202	-.00342	.00418	5.9704
#3	.00227	121.04	.00037	.04425	.00320	-.00211	-.00437	5.8826
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115105 Acquired: 6/25/2016 14:35:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00058	.28912	-.00001	-.00113	.00539	.00821	.00159
Stddev	.00104	.00030	.00390	.00110	.00033	.00010	.00078
%RSD	180.18	.10436	27479.	97.280	6.0662	1.2671	48.813
#1	.00169	.28878	.00322	.00014	.00577	.00817	.00171
#2	.00041	.28919	.00108	-.00182	.00517	.00833	.00230
#3	-.00037	.28937	-.00434	-.00172	.00524	.00813	.00076
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9591.1	58078.	3001.7
Stddev	50.0	111.	7.0
%RSD	.52084	.19101	.23475
#1	9648.1	57963.	2993.9
#2	9554.9	58185.	3007.6
#3	9570.3	58085.	3003.7

Approved: June 27, 2016

Sample Name: L1606115401 Acquired: 6/25/2016 14:39:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**.06369**	**.00211**	**1.6713**	**.01926**	**.00010**	F **452.03**
Stddev	.00322	.00656	.00351	.0005	.00118	.00010	.89
%RSD	1157.9	10.295	166.24	.02810	6.1016	104.76	.19751
#1	.00114	.06870	-.00193	1.6717	.01795	.00008	451.94
#2	.00198	.05626	.00441	1.6715	.02023	.00000	452.97
#3	-.00396	.06610	.00386	1.6708	.01959	.00021	451.19
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**.00175**	**.00336**	**.00358**	**.08657**	**4.0470**	**.10636**
Stddev	.00024	.00006	.00098	.00171	.01546	.0608	.00217
%RSD	56.333	3.4162	29.186	47.723	17.854	1.5017	2.0382
#1	.00015	.00180	.00230	.00410	.09591	4.0001	.10764
#2	.00053	.00168	.00424	.00167	.09508	4.1156	.10386
#3	.00059	.00177	.00354	.00498	.06873	4.0251	.10759
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**104.45**	**.25861**	**.02316**	F **889.97**	**.00046**	**.03619**	**.00320**
Stddev	.32	.00175	.00063	8.94	.00094	.00407	.00206
%RSD	.30573	.67823	2.7369	1.0045	203.65	11.246	64.428
#1	104.40	.26014	.02389	897.40	-.00019	.03795	.00082
#2	104.79	.25898	.02276	892.47	.00155	.03153	.00442
#3	104.16	.25670	.02283	880.05	.00003	.03907	.00435
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 27, 2016

Sample Name: L1606115401 Acquired: 6/25/2016 14:39:13 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.04556**	**5.0652**	**-.00092**	**8.3910**	F **-.05563**	**-.00220**
Stddev	.00340	.00461	.0400	.00030	.0291	.00259	.00257
%RSD	2618.0	10.119	.78890	32.506	.34723	4.6498	116.61
#1	-.00398	.04208	5.1054	-.00114	8.4061	-.05807	-.00507
#2	.00246	.05079	5.0645	-.00058	8.4095	-.05590	-.00010
#3	.00113	.04380	5.0255	-.00104	8.3574	-.05292	-.00145
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.01649**	**.00488**	**.00303**
Stddev	.00056	.00014	.00088
%RSD	3.4018	2.9544	29.046
#1	.01604	.00505	.00374
#2	.01712	.00480	.00205
#3	.01632	.00480	.00329
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8680.3**	**53198.**	**2985.6**
Stddev	180.6	1315.	22.8
%RSD	2.0805	2.4712	.76305
#1	8472.3	54211.	3004.6
#2	8770.9	53671.	2960.4
#3	8797.6	51712.	2991.9

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 14:43:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41555	10.459	.41251	.50877	1.0374	.05191	10.456
Stddev	.00198	.038	.00049	.00412	.0216	.00011	.214
%RSD	.47730	.36575	.11809	.80911	2.0778	.21811	2.0454
#1	.41688	10.435	.41304	.50472	1.0594	.05178	10.677
#2	.41327	10.438	.41238	.51295	1.0163	.05199	10.250
#3	.41650	10.503	.41210	.50863	1.0364	.05195	10.439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05257	.20726	.51590	.53004	4.1313	50.651	1.0395
Stddev	.00009	.00077	.00185	.00200	.0874	1.016	.0162
%RSD	.16567	.37212	.35803	.37798	2.1147	2.0061	1.5578
#1	.05256	.20724	.51397	.52980	4.1823	51.735	1.0578
#2	.05249	.20650	.51606	.52817	4.0304	49.720	1.0270
#3	.05266	.20804	.51766	.53216	4.1811	50.499	1.0337
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	10.150	.52278	1.0570	51.369	.52494	10.305	.52104
Stddev	.208	.00621	.0043	.990	.00089	.023	.00138
%RSD	2.0459	1.1888	.41022	1.9281	.16882	.22613	.26480
#1	10.382	.52905	1.0620	52.419	.52481	10.311	.51949
#2	10.083	.51662	1.0546	50.452	.52412	10.279	.52151
#3	9.9835	.52267	1.0544	51.234	.52588	10.325	.52213
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 14:43:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2435**	**.41340**	**5.3297**	**1.0365**	**1.0404**	**1.0490**	**.52867**
Stddev	.0031	.00239	.0078	.0027	.0194	.0184	.00366
%RSD	.25127	.57838	.14640	.26182	1.8676	1.7498	.69286
#1	1.2461	.41607	5.3340	1.0379	1.0597	1.0678	.52786
#2	1.2400	.41146	5.3207	1.0334	1.0208	1.0311	.53267
#3	1.2443	.41266	5.3345	1.0383	1.0408	1.0483	.52548
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0507**	**1.0444**	F **3.0477**
Stddev	.0007	.0005	.0535
%RSD	.06848	.05207	1.7552
#1	1.0503	1.0446	3.1080
#2	1.0502	1.0438	3.0059
#3	1.0515	1.0449	3.0292
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9539.3**	**57751.**	**2940.1**
Stddev	31.6	140.	48.7
%RSD	.33120	.24295	1.6549
#1	9524.0	57816.	2886.9
#2	9575.6	57847.	2982.3
#3	9518.3	57590.	2951.2

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 14:46:39 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00165**	**.00284**	**.00176**	**.00388**	**.00113**	**.00012**	**-.05362**	**.00014**
Stddev	.00125	.01178	.00236	.00154	.00084	.00005	.04538	.00017
%RSD	75.692	415.29	134.23	39.663	74.227	41.354	84.617	118.22
#1	.00309	-.01077	.00340	.00450	.00053	.00007	-.00140	.00006
#2	.00089	.00942	.00281	.00212	.00078	.00011	-.07612	.00034
#3	.00097	.00986	-.00094	.00500	.00209	.00017	-.08336	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00024**	**.00081**	**-.00057**	**.03333**	**.05011**	**.00030**	**.06903**	**-.00046**
Stddev	.00028	.00137	.00241	.00857	.04565	.00118	.08939	.00080
%RSD	113.95	168.04	420.16	25.719	91.103	392.02	129.50	172.20
#1	.00053	-.00076	.00045	.02973	.09790	.00058	.12386	.00033
#2	.00023	.00164	-.00333	.02715	.04546	-.00100	-.03412	-.00045
#3	-.00003	.00157	.00116	.04312	.00696	.00132	.11734	-.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00329**	**.09636**	**-.00015**	**.00820**	**-.00027**	**.00540**	**.00512**	**-.00542**
Stddev	.00036	.02670	.00052	.00425	.00262	.00178	.00316	.00074
%RSD	10.874	27.706	348.06	51.818	968.89	32.864	61.650	13.619
#1	.00316	.11195	.00032	.01302	.00232	.00377	.00634	-.00562
#2	.00301	.11159	-.00071	.00662	-.00021	.00729	.00749	-.00604
#3	.00369	.06553	-.00007	.00498	-.00292	.00514	.00154	-.00460
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 14:46:39 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.00084	-.00314	-.00152	.00124	-.00002	.00422
Stddev	.00043	.00035	.00315	.00163	.00162	.00008	.00071
%RSD	142.14	41.948	100.51	107.27	131.28	387.02	16.743
#1	.00054	.00124	-.00369	-.00248	.00007	.00002	.00481
#2	.00057	.00059	.00026	.00036	.00055	-.00012	.00343
#3	-.00019	.00069	-.00597	-.00244	.00309	.00004	.00441
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9509.0	57769.	2936.8
Stddev	19.9	100.	17.6
%RSD	.20940	.17266	.59912
#1	9496.2	57883.	2947.5
#2	9532.0	57728.	2946.4
#3	9498.9	57697.	2916.5

Approved: June 27, 2016

Sample Name: L1606115402S Acquired: 6/25/2016 14:50:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20060**	**4.9650**	**.19517**	**2.5768**	**.50183**	**.02406**	F **444.38**
Stddev	.00064	.0130	.00068	.0061	.00191	.00013	.71
%RSD	.32075	.26173	.35003	.23805	.38088	.54060	.15891
#1	.20131	4.9565	.19473	2.5781	.50380	.02409	444.63
#2	.20005	4.9586	.19596	2.5701	.50170	.02392	443.58
#3	.20045	4.9800	.19484	2.5821	.49998	.02418	444.92
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02442**	**.09295**	**.23551**	**.23263**	**1.9191**	**28.985**	**.61166**
Stddev	.00012	.00006	.00093	.00115	.0123	.093	.00400
%RSD	.49172	.06109	.39479	.49604	.64319	.32038	.65326
#1	.02431	.09291	.23631	.23296	1.9231	29.086	.60738
#2	.02455	.09302	.23573	.23359	1.9290	28.966	.61529
#3	.02440	.09293	.23449	.23135	1.9053	28.904	.61230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**105.95**	**.47454**	**.51043**	F **884.75**	**.22811**	**4.9353**	**.22750**
Stddev	.25	.00567	.00309	9.80	.00122	.0272	.00524
%RSD	.23467	1.1953	.60519	1.1073	.53281	.55168	2.3044
#1	105.68	.47627	.51271	882.43	.22677	4.9309	.23221
#2	106.17	.47914	.51168	876.32	.22915	4.9645	.22843
#3	105.99	.46820	.50692	895.49	.22841	4.9105	.22185
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 27, 2016

Sample Name: L1606115402S Acquired: 6/25/2016 14:50:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-07

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.58292**	**.23516**	**7.5230**	**.45764**	**8.4638**	**.43138**	**.22024**
Stddev	.00661	.00590	.0386	.00329	.0240	.00658	.00196
%RSD	1.1347	2.5090	.51250	.71986	.28403	1.5254	.88967
#1	.58964	.23313	7.5444	.46024	8.4871	.43835	.22044
#2	.58270	.23054	7.5461	.45874	8.4651	.43053	.22209
#3	.57642	.24181	7.4785	.45394	8.4391	.42527	.21819
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.50974**	**.45745**	**.02017**
Stddev	.00182	.00152	.00279
%RSD	.35750	.33182	13.807
#1	.50798	.45815	.01724
#2	.50964	.45849	.02049
#3	.51162	.45571	.02279
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8784.0**	**53813.**	**2939.5**
Stddev	58.9	564.	26.0
%RSD	.67031	1.0483	.88591
#1	8819.5	54202.	2951.8
#2	8816.5	54070.	2957.2
#3	8716.1	53166.	2909.6

Approved: June 27, 2016

Sample Name: L1606115403SD Acquired: 6/25/2016 14:54:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19884**	**5.0097**	**.20311**	**2.5960**	**.50146**	**.02443**	F **447.43**
Stddev	.00024	.0049	.00234	.0007	.00093	.00023	1.15
%RSD	.12160	.09827	1.1515	.02603	.18621	.94697	.25628
#1	.19893	5.0097	.20547	2.5958	.50254	.02464	447.39
#2	.19857	5.0047	.20308	2.5967	.50101	.02419	446.31
#3	.19903	5.0146	.20079	2.5954	.50084	.02448	448.60
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail
High Limit							270.00
Low Limit							-.10000

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02483**	**.09451**	**.23821**	**.23915**	**1.9535**	**28.902**	**.60873**
Stddev	.00032	.00036	.00123	.00189	.0137	.108	.00282
%RSD	1.3026	.38369	.51502	.78901	.69899	.37351	.46252
#1	.02509	.09492	.23941	.23914	1.9479	29.020	.60854
#2	.02447	.09421	.23696	.23726	1.9691	28.808	.61163
#3	.02493	.09441	.23826	.24103	1.9435	28.877	.60601
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**106.60**	**.48110**	**.52231**	F **881.76**	**.23168**	**5.0586**	**.22685**
Stddev	.66	.00483	.00325	3.70	.00136	.0426	.00410
%RSD	.61507	1.0048	.62269	.41950	.58652	.84170	1.8079
#1	107.35	.47570	.52433	877.70	.23164	5.0964	.23130
#2	106.14	.48502	.51856	884.94	.23034	5.0125	.22604
#3	106.32	.48257	.52404	882.64	.23305	5.0670	.22322
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 27, 2016

Sample Name: L1606115403SD Acquired: 6/25/2016 14:54:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573707-08

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.59871**	**.24615**	**7.5687**	**.46699**	**8.5686**	**.42893**	**.22250**
Stddev	.00609	.00268	.0516	.00318	.0150	.00524	.00079
%RSD	1.0180	1.0870	.68153	.68125	.17550	1.2224	.35602
#1	.60575	.24920	7.6059	.46994	8.5810	.42717	.22334
#2	.59510	.24505	7.5098	.46362	8.5519	.42478	.22177
#3	.59529	.24419	7.5903	.46740	8.5730	.43482	.22237
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.51554**	**.46791**	**.00590**
Stddev	.00333	.00294	.00185
%RSD	.64552	.62860	31.408
#1	.51938	.47002	.00382
#2	.51356	.46455	.00651
#3	.51367	.46915	.00737
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**8900.3**	**52138.**	**2849.7**
Stddev	61.9	226.	11.1
%RSD	.69538	.43440	.38823
#1	8858.0	51879.	2838.3
#2	8971.3	52295.	2860.4
#3	8871.6	52242.	2850.4

Approved: June 27, 2016

Sample Name: L1606115404 Acquired: 6/25/2016 14:58:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.00639	-.00036	.01270	.00241	.00013	.28017	.00009
Stddev	.00146	.00656	.00244	.00114	.00043	.00008	.03044	.00010
%RSD	248.07	102.69	686.61	9.0101	18.005	61.828	10.864	104.11
#1	.00089	-.00046	-.00313	.01156	.00227	.00022	.24651	.00012
#2	.00188	.01261	.00061	.01385	.00206	.00012	.28824	-.00001
#3	-.00100	.00700	.00146	.01270	.00289	.00005	.30576	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.01305	.00240	.07792	.04064	-.00228	.12469	.00253
Stddev	.00039	.00070	.00120	.00694	.09353	.00295	.18212	.00145
%RSD	747.32	5.3526	50.113	8.9064	230.14	129.38	146.06	57.512
#1	.00045	.01376	.00301	.08066	.00523	-.00157	.14106	.00090
#2	-.00033	.01305	.00317	.08306	.14671	-.00552	.29807	.00300
#3	.00004	.01236	.00101	.07002	-.03002	.00025	-.06507	.00369
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00228	.75291	.00807	.00690	.00300	-.00255	.00146	.13135
Stddev	.00024	.01638	.00065	.00315	.00148	.00424	.00328	.00151
%RSD	10.641	2.1753	8.1061	45.563	49.471	166.69	225.01	1.1485
#1	.00245	.73694	.00868	.00525	.00160	-.00242	-.00127	.13296
#2	.00238	.75210	.00738	.01053	.00455	-.00685	.00055	.13112
#3	.00200	.76967	.00814	.00493	.00285	.00163	.00509	.12997
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115404 Acquired: 6/25/2016 14:58:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00160	.00282	.00431	-.00324	.00105	.00371	.00033
Stddev	.00036	.00041	.00156	.00193	.00089	.00012	.00066
%RSD	22.302	14.434	36.136	59.618	84.281	3.3596	201.18
#1	.00136	.00295	.00420	-.00210	.00202	.00385	-.00028
#2	.00201	.00236	.00592	-.00547	.00085	.00361	.00023
#3	.00143	.00314	.00281	-.00214	.00028	.00369	.00104
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9713.7	59908.	3002.7
Stddev	32.6	164.	34.0
%RSD	.33561	.27353	1.1337
#1	9740.1	60011.	2965.4
#2	9677.2	59995.	3032.2
#3	9723.7	59719.	3010.3

Approved: June 27, 2016

Sample Name: L1606115501 Acquired: 6/25/2016 15:02:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00226	.00780	.00401	.26646	.17918	.00000	45.474	-.00004
Stddev	.00287	.00301	.00103	.00133	.00076	.00004	.222	.00008
%RSD	126.68	38.602	25.778	.50014	.42327	919.30	.48843	228.57
#1	.00509	.01128	.00462	.26750	.17974	.00002	45.718	.00006
#2	.00233	.00600	.00459	.26694	.17949	-.00004	45.422	-.00008
#3	-.00064	.00613	.00281	.26496	.17832	.00004	45.283	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.00088	.00134	.05774	1.5654	.00884	27.038	1.6699
Stddev	.00027	.00028	.00194	.01943	.1007	.00205	.083	.0027
%RSD	44.880	31.682	144.85	33.650	6.4312	23.214	.30796	.16065
#1	.00083	.00056	-.00088	.03531	1.4495	.00687	26.967	1.6730
#2	.00063	.00109	.00219	.06938	1.6158	.01096	27.130	1.6684
#3	.00031	.00099	.00272	.06852	1.6309	.00869	27.018	1.6684
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00414	74.521	.00232	.02280	.00145	-.00333	.00418	6.9589
Stddev	.00012	.362	.00063	.00622	.00648	.00099	.00335	.0172
%RSD	2.8693	.48589	27.089	27.292	447.38	29.598	80.140	.24675
#1	.00419	74.939	.00163	.02521	-.00229	-.00322	.00046	6.9755
#2	.00400	74.314	.00245	.02746	-.00229	-.00437	.00510	6.9601
#3	.00421	74.311	.00286	.01573	.00893	-.00240	.00696	6.9412
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115501 Acquired: 6/25/2016 15:02:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00017**	**.31080**	**-.00408**	**-.00246**	**.00074**	**.00517**	**.00097**
Stddev	.00101	.00127	.01220	.00176	.00032	.00009	.00026
%RSD	589.50	.40720	299.39	71.557	43.195	1.7947	26.599
#1	.00067	.31223	.00838	-.00158	.00040	.00528	.00122
#2	-.00129	.30982	-.01601	-.00449	.00079	.00510	.00071
#3	.00011	.31036	-.00459	-.00131	.00103	.00514	.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9554.2**	**58064.**	**2987.7**
Stddev	24.6	152.	17.9
%RSD	.25722	.26211	.59940
#1	9527.5	57892.	2971.4
#2	9576.0	58182.	2984.9
#3	9559.0	58118.	3006.9

Approved: June 27, 2016

Sample Name: L1606115502 Acquired: 6/25/2016 15:05:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00077	.00104	.00250	.19417	.33327	.00001	49.969	.00011
Stddev	.00225	.00260	.00021	.00180	.00208	.00007	.144	.00004
%RSD	293.51	250.20	8.2634	.92950	.62356	535.11	.28842	36.458
#1	.00053	-.00100	.00271	.19484	.33088	.00006	50.109	.00015
#2	-.00336	.00396	.00251	.19555	.33470	.00004	49.821	.00012
#3	.00053	.00015	.00229	.19213	.33422	-.00007	49.978	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00029	.00039	.00161	4.4932	.30074	.00699	33.094	.46968
Stddev	.00024	.00046	.00055	.0210	.07361	.00374	.139	.00201
%RSD	82.593	118.92	34.456	.46819	24.475	53.562	.42105	.42764
#1	.00002	-.00012	.00218	4.4716	.35097	.00318	33.254	.46985
#2	.00046	.00051	.00108	4.5136	.21625	.00712	33.021	.47160
#3	.00039	.00078	.00156	4.4944	.33501	.01067	33.006	.46759
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00134	56.528	.00048	.02851	.00540	-.00461	.00421	7.9465
Stddev	.00013	.068	.00114	.00462	.00195	.00412	.00583	.0128
%RSD	9.8009	.11946	234.80	16.220	36.120	89.402	138.37	.16106
#1	.00123	56.559	.00179	.03249	.00375	-.00852	-.00246	7.9518
#2	.00130	56.451	-.00006	.02962	.00489	-.00500	.00681	7.9559
#3	.00149	56.575	-.00027	.02344	.00755	-.00031	.00829	7.9320
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115502 Acquired: 6/25/2016 15:05:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00013**	**.41936**	**-.00337**	**-.00247**	**.00035**	**.00337**	**.00091**
Stddev	.00022	.00050	.00295	.00045	.00041	.00006	.00160
%RSD	168.21	.11997	87.675	18.352	119.11	1.8649	175.07
#1	.00016	.41971	-.00131	-.00286	-.00012	.00341	-.00093
#2	.00033	.41958	-.00675	-.00259	.00050	.00330	.00173
#3	-.00010	.41878	-.00204	-.00197	.00066	.00341	.00194
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9627.3**	**58565.**	**2988.6**
Stddev	17.2	39.	5.1
%RSD	.17881	.06667	.17070
#1	9625.0	58521.	2993.1
#2	9645.6	58579.	2989.5
#3	9611.4	58596.	2983.0

Approved: June 27, 2016

Sample Name: L1606115503 Acquired: 6/25/2016 15:09:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00133	.01981	.00070	.15980	.12508	.00001	47.416	.00012
Stddev	.00149	.00690	.00351	.00313	.00043	.00010	.201	.00026
%RSD	112.43	34.815	504.28	1.9589	.34619	838.85	.42403	214.19
#1	.00108	.02777	-.00104	.15681	.12534	.00005	47.373	.00032
#2	-.00003	.01583	-.00161	.16306	.12532	.00009	47.635	.00022
#3	.00292	.01581	.00474	.15953	.12458	-.00010	47.240	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	.00032	.00351	1.3413	.87483	.00900	17.381	.47700
Stddev	.00046	.00045	.00082	.0140	.08308	.00172	.089	.00081
%RSD	429.81	139.46	23.247	1.0398	9.4971	19.124	.51021	.16934
#1	.00045	.00052	.00286	1.3297	.89461	.00799	17.319	.47725
#2	-.00041	.00065	.00443	1.3568	.78364	.01099	17.483	.47609
#3	.00028	-.00019	.00325	1.3373	.94624	.00803	17.342	.47764
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	48.369	.00082	.10919	.00167	-.00062	.00179	5.8799
Stddev	.00025	.203	.00140	.00660	.00170	.00395	.00827	.0280
%RSD	97.415	.41932	171.45	6.0459	101.94	641.48	462.74	.47549
#1	-.00003	48.343	.00233	.10833	.00101	-.00514	.00952	5.8933
#2	-.00053	48.584	.00055	.10306	.00039	.00119	.00277	5.8478
#3	-.00022	48.181	-.00043	.11618	.00360	.00211	-.00693	5.8986
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115503 Acquired: 6/25/2016 15:09:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**.26600**	**-.00537**	**-.00338**	**.00017**	**.00914**	**.00020**
Stddev	.00067	.00095	.00241	.00310	.00116	.00022	.00114
%RSD	345.33	.35889	44.987	91.459	671.24	2.4286	566.35
#1	-.00057	.26556	-.00315	-.00551	-.00106	.00889	.00099
#2	.00050	.26710	-.00794	.00017	.00033	.00931	-.00111
#3	.00065	.26535	-.00501	-.00481	.00125	.00922	.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9587.2**	**58263.**	**2972.1**
Stddev	19.6	279.	4.9
%RSD	.20409	.47925	.16604
#1	9598.2	58004.	2969.9
#2	9598.7	58226.	2968.6
#3	9564.6	58559.	2977.8

Approved: June 27, 2016

Sample Name: L1606117801 Acquired: 6/25/2016 15:13:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00123	.01562	.00788	.04060	.02600	.00012	2.4592	.00007
Stddev	.00244	.00616	.00118	.00330	.00129	.00005	.0606	.00006
%RSD	197.99	39.461	15.044	8.1358	4.9545	44.901	2.4620	79.703
#1	.00387	.02096	.00725	.04075	.02646	.00010	2.5149	.00002
#2	-.00097	.00887	.00713	.04382	.02700	.00008	2.4680	.00013
#3	.00081	.01703	.00924	.03722	.02455	.00018	2.3948	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.00074	.00609	.02685	.43656	.00432	.57708	-.00111
Stddev	.00033	.00144	.00018	.01358	.05030	.00166	.05180	.00137
%RSD	1012.2	194.14	2.9070	50.575	11.522	38.411	8.9754	123.48
#1	-.00025	.00070	.00629	.04250	.40355	.00528	.52291	-.00216
#2	.00039	.00219	.00602	.01809	.49445	.00241	.62611	-.00159
#3	-.00004	-.00068	.00595	.01997	.41167	.00528	.58223	.00044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00299	95.163	-.00070	.01050	.00222	-.00635	.00641	3.4783
Stddev	.00029	.186	.00058	.00517	.00074	.00345	.00307	.0048
%RSD	9.6245	.19542	82.717	49.206	33.276	54.334	47.947	.13892
#1	.00325	95.230	-.00082	.01297	.00142	-.01032	.00356	3.4792
#2	.00268	95.306	-.00121	.00456	.00236	-.00408	.00600	3.4827
#3	.00303	94.953	-.00007	.01396	.00287	-.00464	.00966	3.4731
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606117801 Acquired: 6/25/2016 15:13:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.11699	.00044	-.00188	.00105	.00210	.00054
Stddev	.00103	.00010	.00531	.00109	.00009	.00007	.00166
%RSD	275.08	.08958	1212.8	57.943	8.6567	3.2366	310.87
#1	.00154	.11703	-.00019	-.00063	.00114	.00212	-.00081
#2	-.00042	.11707	-.00453	-.00235	.00105	.00215	.00002
#3	-.00000	.11687	.00604	-.00264	.00096	.00202	.00240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9648.4	58829.	2994.3
Stddev	5.2	37.	6.7
%RSD	.05359	.06360	.22320
#1	9653.7	58809.	2992.7
#2	9643.3	58806.	2988.6
#3	9648.3	58873.	3001.7

Approved: June 27, 2016

Sample Name: L1606122701 Acquired: 6/25/2016 15:17:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00116	.09783	-.00055	.00242	.01519	.00006	7.7326	-.00002
Stddev	.00092	.00377	.00239	.00147	.00198	.00002	.1171	.00010
%RSD	79.355	3.8537	437.80	60.740	13.003	38.615	1.5138	459.39
#1	-.00047	.10163	-.00294	.00351	.01401	.00007	7.7569	.00006
#2	-.00220	.09409	.00184	.00075	.01747	.00007	7.8356	-.00013
#3	-.00081	.09776	-.00054	.00300	.01410	.00003	7.6053	.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00227	.00167	.03463	.33602	-.00038	-.01109	-.00127
Stddev	.00016	.00059	.00051	.00142	.06178	.00154	.10836	.00134
%RSD	58.524	25.933	30.520	4.0976	18.384	404.83	977.09	105.32
#1	.00014	.00159	.00133	.03617	.30512	-.00005	-.09610	-.00256
#2	.00023	.00261	.00225	.03337	.29580	-.00206	.11092	-.00136
#3	.00045	.00260	.00142	.03436	.40715	.00097	-.04809	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	2.3350	.00044	.00731	.00430	-.00426	.00383	1.1328
Stddev	.00020	.0307	.00076	.00233	.00100	.00159	.00576	.0032
%RSD	132.69	1.3153	170.74	31.908	23.273	37.398	150.44	.27905
#1	.00005	2.3000	.00116	.00516	.00531	-.00538	.00306	1.1309
#2	-.00036	2.3574	.00052	.00700	.00430	-.00496	-.00151	1.1310
#3	-.00016	2.3476	-.00035	.00979	.00330	-.00244	.00992	1.1364
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606122701 Acquired: 6/25/2016 15:17:43 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.25125	.00414	.00180	.00364	.00056	.00136
Stddev	.00018	.00103	.01324	.00145	.00074	.00007	.00130
%RSD	364.81	.41002	320.05	80.159	20.271	13.218	96.223
#1	.00011	.25131	-.01092	.00207	.00450	.00061	.00115
#2	.00019	.25224	.00936	.00024	.00328	.00047	.00016
#3	-.00016	.25018	.01397	.00310	.00316	.00058	.00275
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9969.0	60494.	3048.9
Stddev	15.1	129.	13.3
%RSD	.15159	.21283	.43564
#1	9969.3	60641.	3055.8
#2	9983.9	60438.	3033.6
#3	9953.7	60402.	3057.3

Approved: June 27, 2016

Sample Name: L1606122706 Acquired: 6/25/2016 15:21:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00063**	**.00567**	**.00083**	**.00123**	**.02806**	**.00015**	**13.472**	**-.00038**
Stddev	.00250	.00554	.00101	.00202	.00007	.00007	.038	.00019
%RSD	395.00	97.673	121.57	163.43	.25882	47.682	.28032	49.732
#1	.00247	-.00071	.00042	-.00047	.02810	.00007	13.487	-.00023
#2	.00165	.00924	.00199	.00346	.02810	.00021	13.429	-.00032
#3	-.00222	.00849	.00010	.00072	.02797	.00018	13.501	-.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00101**	**.00061**	**.00157**	**.10367**	**.20316**	**.00472**	**8.1185**	**.10636**
Stddev	.00008	.00062	.00064	.01594	.00836	.00156	.1274	.00158
%RSD	8.0012	102.28	40.873	15.374	4.1155	32.981	1.5689	1.4897
#1	.00092	-.00009	.00190	.11049	.21157	.00610	7.9808	.10550
#2	.00107	.00111	.00198	.11507	.19485	.00503	8.2322	.10539
#3	.00104	.00079	.00083	.08546	.20306	.00303	8.1425	.10819
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00044**	**33.974**	**.00004**	**.00429**	**-.00079**	**-.00333**	**.00187**	**.74797**
Stddev	.00043	.239	.00011	.00671	.00165	.00196	.00470	.01610
%RSD	97.916	.70374	251.40	156.52	208.37	58.883	251.58	2.1527
#1	-.00064	33.727	-.00007	.01191	-.00018	-.00196	-.00208	.73053
#2	-.00073	33.993	.00015	-.00074	.00047	-.00558	.00061	.75112
#3	.00005	34.204	.00006	.00169	-.00266	-.00246	.00707	.76226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606122706 Acquired: 6/25/2016 15:21:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.30857**	**.00233**	**-.00259**	**.00019**	**.00158**	**.00089**
Stddev	.00012	.00270	.00311	.00390	.00060	.00013	.00062
%RSD	87.894	.87470	133.51	150.50	319.58	8.2216	69.559
#1	-.00001	.30602	.00364	-.00319	-.00046	.00143	.00122
#2	-.00015	.30828	-.00122	.00157	.00073	.00163	.00127
#3	-.00026	.31139	.00457	-.00615	.00030	.00167	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9924.8**	**59991.**	**2995.5**
Stddev	18.6	172.	10.6
%RSD	.18782	.28732	.35313
#1	9924.0	59808.	2993.5
#2	9943.8	60150.	3007.0
#3	9906.6	60016.	2986.1

Approved: June 27, 2016

Sample Name: L1606127902 Acquired: 6/25/2016 15:25:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573994-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00298**	**.77289**	**.00033**	**.00803**	**.01053**	**.00016**	**9.3649**	**-.00023**
Stddev	.00188	.01227	.00104	.00267	.00091	.00007	.0910	.00007
%RSD	63.015	1.5872	311.80	33.213	8.6722	42.111	.97197	32.230
#1	.00105	.75975	.00114	.01109	.01057	.00009	9.3786	-.00026
#2	.00309	.78404	.00069	.00619	.01142	.00023	9.4483	-.00028
#3	.00480	.77489	-.00084	.00682	.00960	.00016	9.2678	-.00014
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00067**	**.00209**	**.00225**	**1.1046**	**.20587**	**.00183**	**3.8329**	**.12468**
Stddev	.00025	.00124	.00151	.0075	.05413	.00323	.0374	.00185
%RSD	36.537	59.143	66.907	.67811	26.294	176.78	.97568	1.4875
#1	.00057	.00084	.00284	1.1048	.18555	.00515	3.8178	.12286
#2	.00096	.00331	.00337	1.1121	.26722	.00166	3.8755	.12657
#3	.00050	.00212	.00054	1.0971	.16483	-.00131	3.8054	.12461
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00011**	**.91553**	**.00104**	**.04284**	**.00087**	**-.00434**	**.00416**	**1.4218**
Stddev	.00049	.02558	.00097	.00374	.00128	.00145	.00383	.0304
%RSD	448.71	2.7944	92.896	8.7405	147.22	33.355	92.023	2.1368
#1	.00043	.88763	.00204	.04714	.00040	-.00289	.00799	1.3901
#2	-.00054	.92105	.00011	.04033	-.00011	-.00435	.00416	1.4246
#3	-.00022	.93790	.00097	.04105	.00232	-.00579	.00033	1.4507
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127902 Acquired: 6/25/2016 15:25:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573994-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**.04596**	**.00940**	**.00124**	**.00257**	**.00907**	**.00122**
Stddev	.00038	.00038	.00559	.00152	.00046	.00027	.00089
%RSD	147.88	.81748	59.487	122.54	17.946	3.0009	73.195
#1	.00017	.04588	.00305	-.00019	.00219	.00893	.00224
#2	-.00038	.04637	.01155	.00284	.00243	.00890	.00056
#3	-.00056	.04564	.01360	.00108	.00308	.00938	.00087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10039.**	**61079.**	**3063.3**
Stddev	16.	87.	16.8
%RSD	.15707	.14311	.54820
#1	10022.	60979.	3046.2
#2	10041.	61122.	3064.0
#3	10054.	61137.	3079.8

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 15:29:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41474	10.480	.41122	.51129	1.0445	.05223	10.384
Stddev	.00157	.008	.00187	.00319	.0019	.00016	.024
%RSD	.37799	.07401	.45408	.62455	.18188	.31144	.22798
#1	.41325	10.484	.41182	.51035	1.0465	.05219	10.387
#2	.41461	10.484	.41272	.50866	1.0441	.05241	10.359
#3	.41637	10.471	.40913	.51484	1.0428	.05209	10.407
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05244	.20643	.51777	.52807	4.1528	50.626	1.0452
Stddev	.00019	.00026	.00163	.00025	.0357	.257	.0080
%RSD	.36313	.12673	.31564	.04665	.85968	.50669	.76446
#1	.05244	.20669	.51592	.52825	4.1190	50.704	1.0431
#2	.05226	.20644	.51838	.52817	4.1901	50.835	1.0540
#3	.05264	.20617	.51902	.52779	4.1492	50.340	1.0385
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.9629	.52245	1.0531	51.247	.52506	10.312	.52216
Stddev	.0274	.00433	.0047	.134	.00127	.013	.00461
%RSD	.27495	.82847	.44799	.26095	.24264	.12919	.88203
#1	9.9944	.51946	1.0578	51.179	.52653	10.320	.51773
#2	9.9492	.52742	1.0532	51.401	.52432	10.296	.52692
#3	9.9451	.52049	1.0484	51.161	.52433	10.319	.52182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 15:29:11 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2356**	**.41239**	**5.3381**	**1.0346**	**1.0460**	**1.0497**	**.53160**
Stddev	.0017	.00642	.0057	.0013	.0038	.0052	.00142
%RSD	.13528	1.5556	.10675	.12483	.36598	.49394	.26637
#1	1.2362	.41861	5.3408	1.0357	1.0443	1.0445	.53322
#2	1.2337	.40580	5.3420	1.0349	1.0504	1.0497	.53096
#3	1.2369	.41277	5.3316	1.0332	1.0433	1.0549	.53062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0558**	**1.0420**	F **3.0350**
Stddev	.0013	.0007	.0090
%RSD	.12612	.06683	.29605
#1	1.0548	1.0423	3.0277
#2	1.0553	1.0412	3.0451
#3	1.0573	1.0426	3.0323
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9586.8**	**58077.**	**2975.5**
Stddev	6.0	176.	6.3
%RSD	.06238	.30386	.21060
#1	9587.3	57874.	2969.1
#2	9592.5	58193.	2975.6
#3	9580.6	58165.	2981.7

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 15:32:48 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00000**	**.00002**	**-.00010**	**.00491**	**.00210**	**.00011**	**.00565**	**-.00003**
Stddev	.00087	.00719	.00078	.00229	.00030	.00005	.00049	.00029
%RSD	26249.	33697.	808.92	46.626	14.233	46.346	8.5911	909.94
#1	.00025	.00801	-.00086	.00753	.00176	.00017	.00542	-.00000
#2	.00073	-.00593	.00069	.00390	.00223	.00007	.00533	-.00034
#3	-.00097	-.00201	-.00012	.00330	.00231	.00010	.00621	.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00020**	**.00011**	**.00064**	**.03500**	**.03424**	**-.00179**	**.02594**	**-.00052**
Stddev	.00009	.00046	.00051	.01471	.03973	.00240	.07741	.00156
%RSD	43.655	413.87	80.028	42.019	116.03	134.20	298.41	302.41
#1	.00012	-.00018	.00036	.01804	-.01111	-.00218	.05944	-.00155
#2	.00020	.00064	.00123	.04417	.05092	-.00397	.08095	.00128
#3	.00029	-.00013	.00033	.04280	.06290	.00078	-.06257	-.00128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00316**	**.04507**	**.00037**	**.00106**	**.00080**	**.00374**	**.00412**	**.00990**
Stddev	.00041	.02068	.00057	.00881	.00149	.00197	.00171	.00085
%RSD	13.022	45.885	154.95	828.64	185.93	52.502	41.416	8.5529
#1	.00281	.06772	-.00005	.00994	-.00040	.00294	.00217	.01067
#2	.00361	.02718	.00102	.00092	.00033	.00230	.00488	.01002
#3	.00306	.04031	.00014	-.00767	.00246	.00598	.00532	.00899
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 15:32:48 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00048**	**.00057**	**.00333**	**-.00225**	**.00169**	**-.00006**	**.00439**
Stddev	.00073	.00051	.00753	.00264	.00040	.00020	.00135
%RSD	152.10	89.662	226.48	117.22	23.766	306.69	30.851
#1	.00129	.00079	-.00329	-.00367	.00165	-.00017	.00283
#2	-.00014	-.00001	.01153	-.00387	.00130	-.00018	.00508
#3	.00029	.00092	.00174	.00079	.00210	.00016	.00526
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9759.3**	**59359.**	**3013.9**
Stddev	2.3	121.	1.6
%RSD	.02366	.20394	.05186
#1	9761.6	59292.	3015.4
#2	9759.3	59287.	3013.9
#3	9756.9	59499.	3012.3

Approved: June 27, 2016

Sample Name: L1606127903S Acquired: 6/25/2016 15:36:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573994-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01197	1.1036	.01087	.05712	.03304	.00134	9.9729	.00124
Stddev	.00119	.0059	.00187	.00108	.00116	.00008	.0996	.00005
%RSD	9.9297	.53710	17.218	1.8903	3.5218	6.1377	.99838	3.7414
#1	.01115	1.1017	.01246	.05619	.03414	.00126	10.019	.00125
#2	.01142	1.1103	.00881	.05688	.03182	.00135	9.8587	.00119
#3	.01333	1.0989	.01134	.05830	.03317	.00142	10.041	.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00560	.01397	.01462	1.0767	1.4208	.02780	4.2261	.14457
Stddev	.00014	.00108	.00214	.0241	.1192	.00407	.0440	.00290
%RSD	2.4102	7.7598	14.602	2.2369	8.3867	14.648	1.0401	2.0070
#1	.00574	.01498	.01254	1.0620	1.3125	.02932	4.2372	.14280
#2	.00559	.01283	.01680	1.0635	1.4014	.02319	4.1777	.14299
#3	.00547	.01411	.01453	1.1045	1.5484	.03090	4.2635	.14792
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02152	2.1329	.01322	.29583	.01584	.02588	.00942	1.7458
Stddev	.00098	.0418	.00158	.00727	.00355	.00244	.00136	.0125
%RSD	4.5315	1.9579	11.965	2.4574	22.390	9.4200	14.478	.71438
#1	.02231	2.1343	.01139	.30417	.01767	.02397	.01094	1.7523
#2	.02182	2.0905	.01413	.29245	.01809	.02862	.00829	1.7537
#3	.02043	2.1740	.01413	.29086	.01175	.02503	.00905	1.7314
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127903S Acquired: 6/25/2016 15:36:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573994-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02137**	**.07160**	**.03468**	**.01383**	**.02654**	**.02985**	**.00242**
Stddev	.00036	.00081	.00438	.00291	.00046	.00010	.00158
%RSD	1.6937	1.1317	12.615	21.070	1.7354	.32151	65.388
#1	.02178	.07099	.02963	.01549	.02613	.02986	.00141
#2	.02110	.07130	.03735	.01047	.02704	.02975	.00424
#3	.02123	.07252	.03706	.01554	.02644	.02994	.00160
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9975.1**	**60274.**	**3041.7**
Stddev	49.0	118.	22.7
%RSD	.49139	.19506	.74582
#1	9940.1	60350.	3061.9
#2	9954.2	60332.	3046.1
#3	10031.	60138.	3017.2

Approved: June 27, 2016

Sample Name: L1606127904SD Acquired: 6/25/2016 15:40:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573994-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01103**	**1.1028**	**.01203**	**.05464**	**.03364**	**.00143**	**9.8642**	**.00121**
Stddev	.00186	.0090	.00180	.00231	.00086	.00004	.1305	.00006
%RSD	16.883	.81742	14.963	4.2286	2.5577	2.6326	1.3231	5.3301
#1	.00912	1.0960	.01267	.05217	.03303	.00146	9.7151	.00122
#2	.01113	1.1130	.00999	.05675	.03463	.00143	9.9198	.00114
#3	.01284	1.0994	.01342	.05499	.03327	.00139	9.9577	.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00590**	**.01420**	**.01484**	**1.0576**	**1.4598**	**.02493**	**4.2188**	**.14616**
Stddev	.00020	.00048	.00068	.0082	.1286	.00072	.1177	.00241
%RSD	3.3297	3.4140	4.5711	.77893	8.8104	2.9051	2.7895	1.6455
#1	.00602	.01364	.01562	1.0663	1.6059	.02466	4.0843	.14411
#2	.00567	.01444	.01454	1.0499	1.4099	.02439	4.2697	.14557
#3	.00601	.01451	.01437	1.0566	1.3636	.02576	4.3025	.14881
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02217**	**2.1040**	**.01418**	**.30006**	**.01556**	**.02408**	**.01453**	**1.7577**
Stddev	.00072	.0376	.00057	.00408	.00448	.00503	.00712	.0151
%RSD	3.2386	1.7891	4.0074	1.3597	28.796	20.896	49.023	.85907
#1	.02294	2.0606	.01353	.29698	.01280	.02854	.02252	1.7414
#2	.02203	2.1275	.01453	.30469	.02073	.02509	.00885	1.7604
#3	.02153	2.1239	.01449	.29851	.01315	.01862	.01221	1.7712
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127904SD Acquired: 6/25/2016 15:40:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573994-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02276**	**.07116**	**.03577**	**.01268**	**.02759**	**.03003**	**.00230**
Stddev	.00014	.00090	.00737	.00234	.00032	.00029	.00174
%RSD	.61715	1.2587	20.620	18.483	1.1623	.96154	75.576
#1	.02272	.07054	.03703	.01291	.02794	.02969	.00432
#2	.02292	.07076	.02784	.01490	.02752	.03021	.00132
#3	.02264	.07219	.04242	.01023	.02731	.03018	.00128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10006.**	**60810.**	**3063.3**
Stddev	5.	192.	18.4
%RSD	.04992	.31626	.60150
#1	10009.	61010.	3082.6
#2	10009.	60627.	3061.4
#3	10000.	60793.	3045.9

Approved: June 27, 2016

Sample Name: L1606128901 Acquired: 6/25/2016 15:44:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00215	.00687	.00324	.00036	.25940	.00003	8.5369	.00005
Stddev	.00051	.01020	.00141	.00225	.00475	.00006	.1296	.00011
%RSD	23.677	148.57	43.630	628.60	1.8323	170.08	1.5176	227.30
#1	.00216	.01614	.00358	-.00039	.25471	.00001	8.3890	.00017
#2	.00265	.00852	.00169	.00289	.26421	.00010	8.6303	-.00003
#3	.00163	-.00406	.00445	-.00143	.25928	-.00000	8.5913	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00259	.00588	.00175	.08631	.04218	.00151	6.5072	.07542
Stddev	.00040	.00134	.00073	.02244	.04887	.00193	.2142	.00074
%RSD	15.316	22.711	41.571	26.002	115.87	127.81	3.2912	.97595
#1	.00214	.00436	.00096	.06469	.09555	-.00070	6.2873	.07459
#2	.00279	.00683	.00239	.10949	-.00039	.00286	6.5191	.07570
#3	.00285	.00647	.00190	.08474	.03137	.00237	6.7151	.07598
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	23.216	.03092	.00614	.00300	-.00111	.00640	.97050
Stddev	.00039	.461	.00078	.00363	.00087	.00404	.00265	.00247
%RSD	280.63	1.9852	2.5231	59.153	29.021	362.80	41.403	.25451
#1	-.00028	22.689	.03110	.00526	.00208	-.00358	.00616	.97332
#2	.00048	23.539	.03160	.01013	.00311	-.00330	.00916	.96949
#3	.00022	23.422	.03007	.00303	.00381	.00355	.00387	.96870
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606128901 Acquired: 6/25/2016 15:44:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00051**	**.16522**	**-.00360**	**-.00090**	**.00125**	**.00115**	**.00088**
Stddev	.00057	.00251	.00574	.00300	.00085	.00009	.00100
%RSD	111.15	1.5196	159.60	334.58	68.243	8.1341	114.01
#1	-.00005	.16233	-.01006	-.00433	.00031	.00125	.00060
#2	.00108	.16651	.00089	.00117	.00197	.00107	.00199
#3	.00050	.16682	-.00162	.00047	.00148	.00112	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9940.0**	**60088.**	**3038.6**
Stddev	4.2	150.	44.1
%RSD	.04218	.24912	1.4500
#1	9935.3	60256.	3084.8
#2	9941.7	60040.	2997.0
#3	9943.1	59969.	3034.2

Approved: June 27, 2016

Sample Name: L1606112901 Acquired: 6/25/2016 15:48:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00126	-.00046	-.00005	-.00065	.00318	.00006	4.1415	-.00016
Stddev	.00197	.00573	.00201	.00160	.00151	.00005	.0124	.00023
%RSD	156.91	1238.2	4274.9	245.00	47.612	81.871	.30015	142.20
#1	.00341	-.00015	-.00215	-.00141	.00362	.00006	4.1534	-.00032
#2	-.00045	.00511	.00185	.00118	.00150	.00012	4.1425	.00010
#3	.00081	-.00635	.00016	-.00173	.00443	.00001	4.1286	-.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.00058	.00066	.05376	.10451	-.00223	.92501	.00486
Stddev	.00022	.00057	.00151	.01103	.06065	.00348	.08081	.00144
%RSD	3258.5	98.481	227.65	20.514	58.030	156.17	8.7365	29.653
#1	-.00025	.00121	.00094	.05934	.12513	.00172	.91232	.00510
#2	.00010	.00039	-.00097	.04105	.03624	-.00357	1.0114	.00331
#3	.00016	.00012	.00201	.06088	.15216	-.00484	.85130	.00616
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	3.0376	-.00008	.00578	.00044	-.00230	.00144	.21434
Stddev	.00025	.0744	.00053	.00529	.00227	.00178	.00420	.00577
%RSD	93.741	2.4506	639.89	91.432	509.94	77.275	291.44	2.6916
#1	-.00011	2.9794	.00051	.00238	.00289	-.00166	.00573	.20865
#2	-.00014	3.0119	-.00050	.00310	-.00159	-.00431	-.00267	.21418
#3	-.00056	3.1215	-.00026	.01187	.00003	-.00093	.00126	.22019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606112901 Acquired: 6/25/2016 15:48:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00020**	**.01265**	**.00270**	**.00064**	**.00099**	**.00067**	**.00092**
Stddev	.00055	.00035	.00371	.00238	.00052	.00018	.00051
%RSD	272.21	2.7272	137.50	373.62	52.293	26.328	55.163
#1	-.00083	.01259	.00376	-.00183	.00159	.00059	.00050
#2	.00008	.01234	-.00143	.00082	.00070	.00087	.00077
#3	.00015	.01303	.00576	.00292	.00069	.00054	.00148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9969.3**	**60775.**	**3044.6**
Stddev	21.9	129.	15.2
%RSD	.22015	.21273	.49841
#1	9984.3	60920.	3056.8
#2	9944.1	60732.	3049.4
#3	9979.5	60672.	3027.6

Approved: June 27, 2016

Sample Name: L1606112902 Acquired: 6/25/2016 15:52:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00026	.00804	.00035	-.00128	.00288	.00010	2.9594	-.00006
Stddev	.00058	.00641	.00226	.00137	.00187	.00003	.0055	.00010
%RSD	221.07	79.747	653.27	107.46	64.882	33.893	.18419	164.92
#1	.00004	.00818	.00185	.00031	.00398	.00007	2.9654	.00000
#2	.00011	.00156	.00144	-.00200	.00072	.00009	2.9582	-.00001
#3	-.00094	.01439	-.00226	-.00213	.00394	.00014	2.9547	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	.00045	.00076	.08667	.10793	.00221	.95476	.02200
Stddev	.00021	.00074	.00096	.00189	.05164	.00058	.08086	.00168
%RSD	3252.3	165.35	125.16	2.1842	47.845	26.260	8.4687	7.6363
#1	.00009	.00055	.00166	.08573	.06794	.00282	.86999	.02017
#2	-.00024	-.00034	.00088	.08885	.16623	.00215	.96327	.02346
#3	.00016	.00114	-.00024	.08543	.08961	.00166	1.0310	.02238
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00025	1.4239	.00014	.00542	.00025	-.00059	.00178	.20161
Stddev	.00013	.0489	.00086	.00331	.00120	.00643	.00247	.00182
%RSD	52.086	3.4352	596.95	60.989	470.84	1086.5	138.88	.90303
#1	-.00010	1.4077	-.00013	.00438	-.00113	.00173	.00080	.20089
#2	-.00031	1.4789	-.00055	.00913	.00091	-.00786	-.00005	.20368
#3	-.00033	1.3852	.00110	.00276	.00098	.00435	.00459	.20026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606112902 Acquired: 6/25/2016 15:52:22 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00083	.01066	.00349	-.00281	.00049	.00074	-.00046
Stddev	.00025	.00027	.00348	.00166	.00046	.00011	.00023
%RSD	30.685	2.4916	99.744	59.148	94.747	14.382	50.877
#1	.00087	.01070	.00643	-.00461	.00075	.00069	-.00046
#2	.00056	.01090	.00439	-.00132	-.00005	.00087	-.00023
#3	.00106	.01038	-.00035	-.00252	.00076	.00067	-.00070
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9989.3	60825.	3066.0
Stddev	18.4	89.	4.0
%RSD	.18402	.14693	.13203
#1	10008.	60870.	3065.9
#2	9971.8	60722.	3062.0
#3	9987.6	60883.	3070.1

Approved: June 27, 2016

Sample Name: L1606112903 Acquired: 6/25/2016 15:56:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00034**	**-.00746**	**.00009**	**.00007**	**.00214**	**.00016**	**4.2282**	**-.00031**
Stddev	.00178	.00543	.00185	.00098	.00088	.00001	.1021	.00011
%RSD	518.14	72.757	1962.2	1427.6	41.098	3.6332	2.4147	36.326
#1	-.00212	-.00132	-.00121	.00003	.00116	.00017	4.2310	-.00019
#2	.00143	-.00942	.00221	-.00089	.00287	.00016	4.3288	-.00035
#3	-.00034	-.01164	-.00072	.00107	.00238	.00015	4.1247	-.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00027**	**-.00057**	**-.00029**	**.07902**	**-.03881**	**.00121**	**1.0358**	**.00397**
Stddev	.00063	.00094	.00019	.01076	.01948	.00237	.1206	.00030
%RSD	236.86	166.12	66.025	13.622	50.186	195.96	11.648	7.4974
#1	-.00020	-.00113	-.00052	.06755	-.06059	-.00026	.93657	.00379
#2	.00099	.00052	-.00021	.08890	-.02305	-.00005	1.1701	.00431
#3	.00002	-.00109	-.00016	.08063	-.03281	.00395	1.0007	.00380
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00055**	**2.1503**	**-.00065**	**.00144**	**.00315**	**-.00171**	**-.00059**	**.27406**
Stddev	.00026	.0349	.00083	.00721	.00266	.00193	.00290	.00085
%RSD	47.062	1.6229	127.58	500.84	84.421	112.70	495.02	.31027
#1	-.00082	2.1700	-.00132	-.00288	.00271	.00020	-.00182	.27322
#2	-.00053	2.1710	.00028	-.00257	.00074	-.00366	.00273	.27492
#3	-.00030	2.1101	-.00091	.00976	.00599	-.00168	-.00267	.27403
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606112903 Acquired: 6/25/2016 15:56:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.01267	.00761	-.00035	.00044	.00047	.00034
Stddev	.00036	.00010	.00488	.00192	.00076	.00017	.00099
%RSD	75.051	.78508	64.089	556.65	172.53	36.380	290.00
#1	.00045	.01256	.01172	-.00046	-.00009	.00039	-.00046
#2	.00086	.01267	.00891	.00163	.00010	.00066	.00145
#3	.00013	.01276	.00222	-.00221	.00131	.00034	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9986.0	60665.	3026.9
Stddev	20.7	145.	17.8
%RSD	.20708	.23844	.58822
#1	10007.	60770.	3014.6
#2	9984.8	60726.	3018.9
#3	9966.0	60500.	3047.3

Approved: June 27, 2016

Sample Name: L1606112904 Acquired: 6/25/2016 16:00:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00143	.00782	.00014	-.00105	.00318	.00018	2.9065	-.00009
Stddev	.00049	.00478	.00214	.00233	.00102	.00003	.0438	.00019
%RSD	34.335	61.153	1520.7	221.14	32.071	15.659	1.5085	207.21
#1	.00199	.01026	-.00194	.00103	.00202	.00019	2.8571	-.00015
#2	.00122	.00231	.00002	-.00063	.00358	.00019	2.9407	.00012
#3	.00108	.01088	.00233	-.00357	.00394	.00014	2.9218	-.00024
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	.00045	.00112	.05226	.04902	.00077	.91311	.02436
Stddev	.00068	.00160	.00112	.00414	.07439	.00531	.01971	.00311
%RSD	135.32	357.44	99.972	7.9272	151.77	691.64	2.1590	12.769
#1	.00007	.00219	.00019	.05089	.09310	-.00511	.93142	.02095
#2	.00129	.00012	.00080	.04898	.09083	.00221	.91566	.02510
#3	.00015	-.00096	.00236	.05692	-.03687	.00521	.89224	.02704
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00023	1.3676	-.00081	.00778	.00502	-.00289	.00478	.20680
Stddev	.00041	.0202	.00063	.00381	.00153	.00221	.00206	.00531
%RSD	176.12	1.4731	77.366	49.002	30.478	76.529	43.075	2.5661
#1	-.00056	1.3492	-.00140	.01136	.00503	-.00266	.00633	.20082
#2	-.00037	1.3644	-.00015	.00819	.00655	-.00520	.00556	.20859
#3	.00023	1.3891	-.00088	.00377	.00348	-.00080	.00244	.21097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606112904 Acquired: 6/25/2016 16:00:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.01047	.00111	-.00019	.00078	.00080	-.00006
Stddev	.00022	.00018	.00665	.00270	.00041	.00022	.00073
%RSD	116.67	1.7478	597.28	1390.3	52.913	27.125	1123.9
#1	.00044	.01026	.00785	.00028	.00121	.00056	.00012
#2	.00008	.01056	.00093	.00224	.00075	.00085	.00055
#3	.00005	.01059	-.00544	-.00310	.00038	.00099	-.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9957.7	60557.	3030.1
Stddev	15.8	177.	8.6
%RSD	.15901	.29213	.28426
#1	9975.9	60586.	3020.4
#2	9949.3	60718.	3033.0
#3	9947.7	60368.	3036.9

Approved: June 27, 2016

Sample Name: L1606127201 Acquired: 6/25/2016 16:04:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	-.00887	-.00183	.00197	.00056	.00010	.95406	-.00003
Stddev	.00091	.01117	.00052	.00188	.00043	.00011	.05017	.00010
%RSD	325.46	125.87	28.528	95.488	77.565	107.58	5.2586	289.02
#1	.00022	-.02176	-.00218	.00027	.00085	.00010	.90480	.00002
#2	.00122	-.00213	-.00123	.00398	.00076	-.00001	.95228	.00003
#3	-.00060	-.00272	-.00207	.00165	.00006	.00021	1.0051	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	-.00128	.00046	.02799	-.07233	.00197	.21481	.00019
Stddev	.00061	.00045	.00022	.01180	.06961	.00022	.12156	.00200
%RSD	1838.2	35.569	48.564	42.171	96.239	11.394	56.590	1042.3
#1	-.00013	-.00080	.00028	.03989	-.13804	.00212	.34118	.00130
#2	-.00048	-.00170	.00071	.01628	.00061	.00171	.09871	-.00212
#3	.00071	-.00133	.00040	.02780	-.07955	.00208	.20454	.00139
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00067	6.5927	-.00041	.00599	.00226	-.00187	.00139	.23314
Stddev	.00039	.0563	.00074	.00538	.00192	.00575	.00169	.00199
%RSD	58.032	.85407	180.55	89.733	84.902	308.02	122.23	.85400
#1	-.00069	6.5318	-.00010	.00974	.00276	.00008	.00216	.23308
#2	-.00105	6.6428	-.00125	-.00017	.00014	-.00834	-.00056	.23517
#3	-.00027	6.6034	.00012	.00842	.00389	.00266	.00255	.23118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127201 Acquired: 6/25/2016 16:04:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**.00331**	**.00248**	**.00096**	**.00107**	**.00085**	**.00133**
Stddev	.00044	.00056	.00254	.00297	.00078	.00012	.00063
%RSD	192.52	16.945	102.26	309.29	73.373	14.693	47.329
#1	.00017	.00395	.00360	.00246	.00196	.00094	.00062
#2	-.00070	.00291	.00428	.00288	.00074	.00089	.00180
#3	-.00016	.00306	-.00042	-.00246	.00050	.00071	.00159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9972.6**	**60217.**	**3037.7**
Stddev	14.0	83.	14.1
%RSD	.14049	.13799	.46569
#1	9988.5	60309.	3026.4
#2	9967.3	60146.	3033.1
#3	9962.1	60196.	3053.5

Approved: June 27, 2016

Sample Name: L1606127202 Acquired: 6/25/2016 16:08:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**.01060**	**.00084**	**.01591**	**.00482**	**.00013**	**4.8874**	**.00012**
Stddev	.00147	.00116	.00295	.00196	.00045	.00002	.0512	.00031
%RSD	570.05	10.898	350.53	12.303	9.3008	12.581	1.0477	272.03
#1	-.00187	.01061	.00261	.01812	.00447	.00014	4.8299	.00013
#2	.00100	.00945	-.00256	.01523	.00533	.00015	4.9279	.00042
#3	.00009	.01176	.00248	.01439	.00467	.00011	4.9046	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**-.00046**	**.00025**	**.03059**	**.03395**	**.00208**	**2.7028**	**-.00061**
Stddev	.00015	.00087	.00083	.01638	.06594	.00230	.1335	.00149
%RSD	81.112	189.49	337.36	53.558	194.25	110.69	4.9393	243.32
#1	.00003	-.00146	.00109	.04846	-.00968	-.00038	2.8372	-.00173
#2	.00034	.00002	-.00057	.01628	.00172	.00418	2.5702	.00108
#3	.00021	.00006	.00022	.02703	.10981	.00243	2.7010	-.00120
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00026**	**13.742**	**-.00085**	**.00227**	**.00279**	**-.00269**	**-.00193**	**.47645**
Stddev	.00056	.155	.00030	.00745	.00217	.00177	.00170	.00665
%RSD	217.74	1.1297	35.156	328.49	77.588	65.958	88.159	1.3954
#1	-.00002	13.587	-.00065	-.00435	.00526	-.00088	-.00382	.46927
#2	-.00089	13.898	-.00120	.00082	.00118	-.00276	-.00050	.47768
#3	.00014	13.742	-.00071	.01033	.00194	-.00443	-.00148	.48240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127202 Acquired: 6/25/2016 16:08:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00018**	**.05092**	**.00177**	**.00024**	**.00137**	**.00071**	**.00162**
Stddev	.00083	.00100	.00998	.00193	.00052	.00009	.00084
%RSD	474.40	1.9658	565.04	789.52	37.663	12.612	51.686
#1	-.00049	.05003	.00781	-.00019	.00196	.00074	.00252
#2	-.00081	.05200	-.00975	.00235	.00120	.00078	.00148
#3	.00077	.05072	.00724	-.00143	.00097	.00061	.00086
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9920.3**	**59957.**	**3053.1**
Stddev	9.3	97.	28.1
%RSD	.09367	.16197	.92019
#1	9910.9	59874.	3056.5
#2	9929.5	60064.	3023.5
#3	9920.6	59932.	3079.4

Approved: June 27, 2016

Sample Name: L1606127901 Acquired: 6/25/2016 16:12:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00079	.23343	-.00035	.00697	.01048	.00010	5.5956	-.00004
Stddev	.00151	.00808	.00093	.00046	.00038	.00003	.0897	.00007
%RSD	191.07	3.4604	268.33	6.6127	3.6255	27.106	1.6038	155.88
#1	-.00012	.24183	.00073	.00738	.01041	.00014	5.5127	-.00007
#2	.00027	.23274	-.00087	.00647	.01090	.00009	5.5834	-.00010
#3	-.00251	.22572	-.00090	.00704	.01015	.00009	5.6909	.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.00040	.00104	.37949	.02999	.00120	2.2214	.04375
Stddev	.00022	.00063	.00117	.02000	.03448	.00297	.1047	.00042
%RSD	72.888	155.32	112.12	5.2704	114.98	248.44	4.7142	.95613
#1	.00020	.00102	-.00030	.35646	.01685	.00172	2.1668	.04335
#2	.00015	-.00023	.00181	.39248	.06911	.00387	2.1552	.04372
#3	.00056	.00042	.00162	.38953	.00401	-.00200	2.3421	.04419
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	.40372	.00002	.01800	.00182	-.00229	.00534	.76285
Stddev	.00016	.02832	.00029	.00724	.00294	.00133	.00501	.02556
%RSD	124.97	7.0152	1295.9	40.230	161.43	58.036	93.812	3.3508
#1	-.00031	.38955	.00035	.01067	.00373	-.00090	.01054	.73582
#2	-.00001	.38528	-.00008	.01820	-.00157	-.00355	.00492	.76609
#3	-.00007	.43633	-.00020	.02515	.00330	-.00243	.00055	.78664
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127901 Acquired: 6/25/2016 16:12:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00000**	**.02802**	**.00639**	**-.00424**	**.00104**	**.00686**	**-.00053**
Stddev	.00059	.00084	.00088	.00033	.00039	.00027	.00162
%RSD	12664.	3.0023	13.821	7.8780	37.381	4.0081	307.76
#1	.00044	.02706	.00703	-.00390	.00138	.00661	.00100
#2	.00022	.02835	.00538	-.00425	.00062	.00681	-.00222
#3	-.00068	.02864	.00675	-.00456	.00114	.00715	-.00036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9995.1**	**60569.**	**3072.5**
Stddev	18.8	83.	17.9
%RSD	.18798	.13702	.58354
#1	10017.	60498.	3093.1
#2	9983.0	60660.	3060.2
#3	9985.6	60548.	3064.2

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 16:16:03 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41279**	**10.433**	**.40298**	**.50323**	**1.0184**	**.05236**	**10.146**
Stddev	.00062	.023	.00491	.00242	.0037	.00006	.030
%RSD	.14995	.22399	1.2186	.48043	.36729	.12018	.29415
#1	.41231	10.415	.40384	.50055	1.0220	.05229	10.131
#2	.41349	10.459	.39769	.50390	1.0146	.05241	10.126
#3	.41257	10.425	.40740	.50524	1.0186	.05238	10.180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05206**	**.20294**	**.51645**	**.52099**	**4.0952**	**49.051**	**1.0295**
Stddev	.00043	.00065	.00457	.00121	.0025	.142	.0088
%RSD	.83054	.31937	.88415	.23159	.06120	.28862	.85476
#1	.05248	.20360	.51186	.52157	4.0943	49.074	1.0305
#2	.05210	.20291	.52099	.52180	4.0933	48.900	1.0203
#3	.05161	.20230	.51649	.51960	4.0980	49.180	1.0378
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.7277**	**.51414**	**1.0402**	**49.935**	**.51586**	**10.134**	**.51189**
Stddev	.0462	.00321	.0047	.095	.00165	.031	.00166
%RSD	.47447	.62359	.45388	.19063	.31918	.30495	.32486
#1	9.7465	.51782	1.0451	50.021	.51766	10.168	.51381
#2	9.6751	.51192	1.0398	49.833	.51549	10.123	.51086
#3	9.7615	.51270	1.0357	49.951	.51442	10.109	.51101
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 16:16:03 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2153**	**.40661**	**5.2188**	**1.0211**	**1.0187**	**1.0271**	**.52415**
Stddev	.0058	.00386	.0120	.0013	.0031	.0069	.00046
%RSD	.47598	.95000	.22957	.12690	.30817	.67428	.08834
#1	1.2162	.40345	5.2255	1.0218	1.0207	1.0286	.52363
#2	1.2206	.41091	5.2258	1.0219	1.0150	1.0195	.52433
#3	1.2091	.40546	5.2049	1.0196	1.0203	1.0331	.52450
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0611**	**1.0269**	F **2.9985**
Stddev	.0021	.0010	.0124
%RSD	.19830	.09638	.41405
#1	1.0631	1.0270	3.0047
#2	1.0614	1.0279	2.9842
#3	1.0589	1.0259	3.0065
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9559.6**	**57599.**	**2986.8**
Stddev	4.9	130.	10.5
%RSD	.05148	.22635	.35191
#1	9564.0	57612.	2977.9
#2	9560.6	57462.	2998.4
#3	9554.3	57722.	2984.0

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 16:19:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00185	.00626	-.00023	.00044	.00278	.00005	-.04464	.00001
Stddev	.00025	.00998	.00075	.00197	.00045	.00006	.01589	.00008
%RSD	13.751	159.28	328.05	451.88	16.156	122.09	35.589	834.92
#1	.00158	.01229	-.00019	.00230	.00236	.00010	-.04122	-.00004
#2	.00190	-.00525	.00050	.00063	.00326	-.00002	-.03074	-.00004
#3	.00208	.01176	-.00099	-.00162	.00274	.00006	-.06195	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00039	.00030	.00108	.01891	-.08883	.00028	.04170	-.00007
Stddev	.00014	.00149	.00123	.02463	.04133	.00158	.04172	.00069
%RSD	37.231	490.44	114.38	130.22	46.533	569.52	100.03	937.33
#1	-.00023	.00135	.00225	.04102	-.10527	-.00061	.02819	.00053
#2	-.00043	.00096	-.00021	.02335	-.11941	.00210	.00842	.00008
#3	-.00050	-.00140	.00119	-.00763	-.04180	-.00066	.08850	-.00082
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00343	.00251	-.00012	.00363	.00401	.00489	.00879	-.00487
Stddev	.00038	.01645	.00050	.00608	.00167	.00193	.00298	.00028
%RSD	11.063	654.49	431.61	167.28	41.713	39.486	33.953	5.7618
#1	.00299	.00408	-.00004	.00277	.00588	.00378	.00970	-.00459
#2	.00370	-.01467	-.00065	-.00196	.00352	.00712	.01122	-.00515
#3	.00359	.01813	.00034	.01010	.00264	.00378	.00546	-.00487
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 16:19:40 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00028**	**.00057**	**.00214**	**-.00157**	**.00060**	**-.00006**	**.00421**
Stddev	.00055	.00026	.00424	.00416	.00034	.00004	.00038
%RSD	193.42	45.468	198.11	264.68	55.851	78.634	9.1291
#1	-.00056	.00032	.00612	.00235	.00061	-.00008	.00456
#2	-.00063	.00083	-.00232	-.00593	.00093	-.00001	.00426
#3	.00035	.00056	.00262	-.00114	.00026	-.00008	.00380
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9751.1**	**59011.**	**2998.0**
Stddev	16.0	92.	16.9
%RSD	.16409	.15669	.56327
#1	9735.8	59057.	2997.7
#2	9767.8	59072.	2981.2
#3	9749.7	58905.	3015.0

Approved: June 27, 2016

Sample Name: L1606127905 Acquired: 6/25/2016 16:23:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00112	.42892	.00254	.00885	.00931	.00014	4.1101	-.00014
Stddev	.00085	.00960	.00110	.00026	.00054	.00008	.0226	.00009
%RSD	76.091	2.2373	43.205	2.9736	5.7541	61.416	.54879	60.631
#1	.00187	.41894	.00336	.00888	.00991	.00015	4.0848	-.00017
#2	.00019	.43809	.00129	.00858	.00890	.00022	4.1178	-.00005
#3	.00131	.42973	.00298	.00910	.00911	.00005	4.1279	-.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	.00072	.00093	.46806	-.04215	.00375	2.3175	.01534
Stddev	.00025	.00122	.00082	.01630	.03381	.00237	.0180	.00171
%RSD	38.393	169.05	88.133	3.4825	80.210	63.236	.77530	11.156
#1	.00092	.00051	.00011	.45372	-.08111	.00533	2.3322	.01684
#2	.00057	-.00038	.00092	.46467	-.02046	.00102	2.2974	.01572
#3	.00044	.00203	.00175	.48579	-.02489	.00491	2.3228	.01348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00042	.79830	.00036	.03423	.00164	-.00327	.00568	1.0453
Stddev	.00055	.00874	.00054	.00334	.00066	.00436	.00399	.0205
%RSD	130.46	1.0949	148.73	9.7489	39.962	133.66	70.190	1.9601
#1	-.00012	.80324	-.00001	.03061	.00234	-.00815	.00802	1.0252
#2	.00040	.78821	.00099	.03719	.00155	-.00191	.00794	1.0445
#3	.00099	.80344	.00012	.03489	.00104	.00026	.00108	1.0662
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606127905 Acquired: 6/25/2016 16:23:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.01799	.00482	-.00230	.00189	.01109	.00007
Stddev	.00065	.00037	.00226	.00232	.00074	.00029	.00211
%RSD	715.49	2.0334	47.005	100.92	39.126	2.6113	3180.6
#1	-.00003	.01830	.00310	.00003	.00148	.01082	.00082
#2	.00080	.01809	.00396	-.00232	.00274	.01107	-.00231
#3	-.00049	.01759	.00738	-.00462	.00144	.01140	.00169
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9972.5	60381.	3064.6
Stddev	33.3	69.	2.8
%RSD	.33435	.11363	.09242
#1	10010.	60351.	3061.5
#2	9961.5	60333.	3067.1
#3	9946.1	60460.	3065.2

Approved: June 27, 2016

Sample Name: L1606114801 Acquired: 6/25/2016 16:27:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.03462	.00065	.00821	.00587	.00014	1.4096	-.00013
Stddev	.00034	.00628	.00229	.00098	.00178	.00003	.0346	.00033
%RSD	57.407	18.141	351.58	11.960	30.235	19.203	2.4561	248.47
#1	.00054	.03990	-.00071	.00924	.00790	.00011	1.3926	.00011
#2	.00095	.02767	-.00063	.00729	.00463	.00014	1.4495	-.00000
#3	.00028	.03630	.00329	.00809	.00508	.00016	1.3868	-.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00001	.00030	.04215	.21418	.00024	.69121	.00161
Stddev	.00012	.00038	.00134	.02269	.07335	.00510	.07378	.00189
%RSD	127.75	2953.4	439.05	53.849	34.250	2116.0	10.674	117.34
#1	.00006	.00044	.00117	.03668	.16871	.00256	.67687	-.00053
#2	-.00001	-.00026	.00097	.06707	.29880	.00377	.77111	.00305
#3	.00022	-.00014	-.00123	.02268	.17502	-.00561	.62565	.00230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00000	3.4091	-.00039	.01019	-.00019	-.00195	.00226	.25600
Stddev	.00027	.0299	.00017	.00142	.00263	.00116	.00241	.00788
%RSD	8569.8	.87827	42.602	13.923	1405.5	59.228	106.91	3.0774
#1	.00029	3.3757	-.00048	.01168	-.00018	-.00094	.00166	.24819
#2	-.00005	3.4183	-.00020	.01005	.00244	-.00171	.00492	.25587
#3	-.00025	3.4335	-.00049	.00885	-.00282	-.00321	.00020	.26394
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606114801 Acquired: 6/25/2016 16:27:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00043**	**.01395**	**.00070**	**-.00087**	**.00132**	**.00137**	**.00142**
Stddev	.00051	.00044	.00486	.00154	.00026	.00005	.00170
%RSD	118.61	3.1779	695.33	177.20	19.933	3.3203	119.70
#1	-.00063	.01431	.00581	-.00155	.00155	.00135	.00002
#2	.00015	.01345	.00013	-.00194	.00103	.00135	.00093
#3	-.00082	.01408	-.00385	.00089	.00136	.00143	.00331
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9913.2**	**60132.**	**3023.4**
Stddev	14.6	83.	23.3
%RSD	.14679	.13818	.77035
#1	9929.6	60151.	3030.8
#2	9901.6	60041.	2997.3
#3	9908.5	60204.	3042.1

Approved: June 27, 2016

Sample Name: L1606114802 Acquired: 6/25/2016 16:31:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00158	-.00408	.00026	.00633	.00904	.00015	2.7703	-.00011
Stddev	.00108	.00521	.00166	.00204	.00121	.00009	.0227	.00014
%RSD	68.438	127.59	628.67	32.297	13.379	59.313	.82092	123.10
#1	.00072	-.00923	-.00155	.00429	.00969	.00008	2.7476	-.00002
#2	.00123	.00119	.00169	.00631	.00978	.00025	2.7930	-.00027
#3	.00279	-.00421	.00065	.00838	.00764	.00012	2.7703	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.00002	.00060	.02383	.06717	.00040	2.3757	.00083
Stddev	.00028	.00081	.00057	.01240	.09428	.00275	.0633	.00197
%RSD	81.635	5221.9	93.832	52.028	140.36	693.38	2.6650	237.49
#1	.00044	-.00078	.00046	.02298	.16159	-.00259	2.3743	.00224
#2	.00003	-.00000	.00012	.01188	-.02697	.00095	2.4397	.00167
#3	.00055	.00084	.00122	.03663	.06688	.00283	2.3131	-.00142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00011	6.0259	-.00040	.00438	.00227	-.00140	.00185	.32995
Stddev	.00024	.0927	.00045	.00883	.00074	.00370	.00550	.00769
%RSD	208.31	1.5391	111.52	201.54	32.728	264.56	298.09	2.3316
#1	.00039	5.9438	-.00070	.01456	.00143	-.00567	.00483	.32126
#2	-.00003	6.1265	.00011	-.00011	.00282	.00058	.00521	.33270
#3	-.00002	6.0074	-.00061	-.00130	.00258	.00089	-.00450	.33589
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606114802 Acquired: 6/25/2016 16:31:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00030	.01996	.00356	-.00001	.00116	.00095	-.00024
Stddev	.00040	.00029	.00718	.00102	.00055	.00026	.00029
%RSD	136.64	1.4402	201.93	7537.5	47.304	27.165	121.82
#1	-.00006	.02008	.00861	-.00117	.00177	.00075	-.00049
#2	.00022	.02016	-.00466	.00037	.00099	.00086	-.00028
#3	.00074	.01963	.00672	.00076	.00071	.00124	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9925.6	60099.	3031.8
Stddev	7.7	64.	18.1
%RSD	.07799	.10696	.59652
#1	9922.2	60109.	3022.9
#2	9920.2	60157.	3019.9
#3	9934.5	60030.	3052.6

Approved: June 27, 2016

Sample Name: L1606115001 Acquired: 6/25/2016 16:35:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00166	.05641	.00050	.00663	.00676	.00016	1.7818	.00015
Stddev	.00049	.00787	.00304	.00311	.00055	.00011	.0479	.00031
%RSD	29.631	13.947	601.42	46.927	8.1582	71.613	2.6886	203.48
#1	.00200	.06510	-.00294	.00991	.00739	.00005	1.7526	.00038
#2	.00109	.05435	.00166	.00372	.00635	.00014	1.8371	-.00020
#3	.00188	.04978	.00279	.00626	.00655	.00027	1.7557	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.00048	.00100	.04970	.00137	.00112	1.1341	.00143
Stddev	.00049	.00051	.00115	.01548	.09645	.00218	.0897	.00096
%RSD	745.24	106.17	114.47	31.142	7038.5	195.00	7.9106	67.253
#1	-.00002	.00105	.00223	.06756	-.03266	.00315	1.0361	.00043
#2	-.00057	.00034	.00081	.04145	.11022	-.00118	1.2123	.00235
#3	.00040	.00005	-.00004	.04010	-.07346	.00137	1.1537	.00152
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	5.9717	-.00015	.00950	-.00176	-.00302	.00622	.28058
Stddev	.00014	.0718	.00043	.00093	.00081	.00221	.00277	.00537
%RSD	53.804	1.2031	276.46	9.7789	45.909	73.167	44.558	1.9140
#1	-.00010	5.9074	-.00014	.01003	-.00249	-.00320	.00355	.27441
#2	-.00036	6.0493	-.00058	.01005	-.00089	-.00072	.00603	.28316
#3	-.00034	5.9584	.00027	.00843	-.00189	-.00513	.00908	.28418
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115001 Acquired: 6/25/2016 16:35:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.01287	.00136	-.00194	.00110	.00114	.00062
Stddev	.00058	.00017	.00295	.00426	.00072	.00013	.00087
%RSD	762.02	1.3177	217.51	219.83	65.867	11.722	140.33
#1	.00015	.01301	.00162	-.00450	.00182	.00119	.00034
#2	-.00054	.01292	.00417	-.00429	.00110	.00099	-.00008
#3	.00061	.01268	-.00172	.00298	.00038	.00124	.00159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9919.3	60059.	3016.8
Stddev	34.5	56.	13.7
%RSD	.34767	.09285	.45386
#1	9942.2	60062.	3013.8
#2	9936.0	60114.	3004.8
#3	9879.6	60002.	3031.7

Approved: June 27, 2016

Sample Name: L1606115102 Acquired: 6/25/2016 16:39:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00105	.00214	.00018	.00362	.00526	.00013	1.7820	.00006
Stddev	.00166	.00346	.00084	.00176	.00021	.00005	.0144	.00011
%RSD	158.53	161.68	476.67	48.690	4.0116	41.814	.80931	182.53
#1	.00213	.00451	-.00003	.00223	.00549	.00009	1.7780	.00003
#2	-.00086	-.00183	-.00054	.00560	.00521	.00010	1.7700	-.00003
#3	.00188	.00375	.00110	.00302	.00507	.00019	1.7980	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.00030	.00081	.02568	-.04054	.00233	1.0068	.00278
Stddev	.00009	.00056	.00053	.02210	.04687	.00374	.0618	.00296
%RSD	39.196	184.13	65.165	86.089	115.61	160.62	6.1428	106.56
#1	.00032	.00005	.00046	.05079	-.00224	.00526	1.0696	.00587
#2	.00013	-.00008	.00055	.00916	-.02657	.00361	.94591	-.00003
#3	.00026	.00094	.00141	.01708	-.09281	-.00188	1.0048	.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00000	4.8272	.00042	.00764	.00031	-.00602	.00252	.26699
Stddev	.00027	.0498	.00058	.00427	.00107	.00140	.00418	.00420
%RSD	7088.8	1.0326	136.65	55.913	346.71	23.202	166.24	1.5735
#1	-.00018	4.7713	.00031	.01044	.00076	-.00742	-.00226	.26233
#2	-.00015	4.8672	-.00009	.00272	.00108	-.00462	.00551	.26815
#3	.00031	4.8430	.00105	.00974	-.00091	-.00602	.00431	.27049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115102 Acquired: 6/25/2016 16:39:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	.01171	-.00105	-.00167	.00048	.00111	-.00010
Stddev	.00036	.00032	.00211	.00218	.00034	.00004	.00053
%RSD	98.761	2.7498	200.92	130.51	71.305	3.3481	503.34
#1	-.00064	.01138	-.00295	-.00411	.00028	.00107	-.00046
#2	-.00048	.01174	.00122	-.00099	.00029	.00113	.00050
#3	.00004	.01202	-.00143	.00009	.00088	.00113	-.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9924.7	60209.	3035.9
Stddev	21.0	164.	13.4
%RSD	.21110	.27319	.44278
#1	9945.2	60212.	3050.8
#2	9925.5	60043.	3024.7
#3	9903.3	60372.	3032.1

Approved: June 27, 2016

Sample Name: L1606115105 Acquired: 6/25/2016 16:43:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00211**	**.00219**	**.00055**	**.00586**	**.00711**	**.00018**	**2.2105**	**.00001**
Stddev	.00101	.00795	.00092	.00071	.00025	.00010	.0174	.00025
%RSD	47.839	363.29	167.06	12.119	3.4464	53.942	.78551	4197.7
#1	.00096	-.00697	.00162	.00634	.00685	.00013	2.1935	-.00020
#2	.00251	.00621	-.00001	.00619	.00715	.00012	2.2282	.00029
#3	.00286	.00732	.00005	.00504	.00733	.00030	2.2098	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00003**	**-.00001**	**.00002**	**.02737**	**.01189**	**.00109**	**1.3118**	**.00125**
Stddev	.00029	.00051	.00146	.02301	.05921	.00366	.0639	.00239
%RSD	827.06	7244.7	6104.0	84.080	497.84	335.35	4.8727	191.19
#1	.00035	.00040	.00134	.00788	.02968	-.00236	1.3142	.00227
#2	-.00003	.00015	.00027	.02147	.06017	.00070	1.3745	.00297
#3	-.00022	-.00058	-.00154	.05276	-.05417	.00493	1.2467	-.00148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00023**	**6.1621**	**.00034**	**.00603**	**.00215**	**-.00121**	**.00114**	**.31741**
Stddev	.00059	.0852	.00146	.00590	.00148	.00098	.00444	.00674
%RSD	252.32	1.3824	433.95	97.933	68.608	80.696	390.40	2.1227
#1	-.00086	6.0786	-.00133	.00455	.00384	-.00161	.00564	.31056
#2	-.00015	6.2489	.00098	.00101	.00153	-.00010	.00100	.31765
#3	.00031	6.1588	.00136	.01253	.00108	-.00192	-.00323	.32403
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115105 Acquired: 6/25/2016 16:43:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.01487**	**-.00053**	**-.00166**	**.00081**	**.00090**	**.00078**
Stddev	.00083	.00056	.00515	.00250	.00073	.00004	.00134
%RSD	533.32	3.7472	973.66	150.50	89.693	4.1812	172.14
#1	-.00110	.01433	.00470	-.00448	.00103	.00087	.00219
#2	.00015	.01545	-.00069	-.00074	.00000	.00094	.00064
#3	.00048	.01482	-.00560	.00025	.00141	.00089	-.00049
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9886.5**	**59788.**	**3007.6**
Stddev	13.0	185.	33.5
%RSD	.13157	.30931	1.1137
#1	9901.4	60001.	3037.0
#2	9880.8	59677.	2971.1
#3	9877.4	59685.	3014.8

Approved: June 27, 2016

Sample Name: L1606115401 Acquired: 6/25/2016 16:47:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573707-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	.00056	-.00040	.08474	.00202	.00013	25.077	-.00002
Stddev	.00048	.01146	.00100	.00137	.00093	.00006	.183	.00004
%RSD	125.93	2038.5	249.32	1.6179	46.237	47.434	.73077	179.25
#1	-.00014	.00766	-.00156	.08632	.00308	.00006	25.288	-.00005
#2	.00079	.00669	.00017	.08409	.00131	.00017	24.966	-.00003
#3	.00048	-.01266	.00019	.08382	.00167	.00016	24.976	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	-.00049	.00090	.03824	.13932	.00586	5.7156	.01284
Stddev	.00012	.00049	.00033	.01141	.04539	.00340	.0899	.00260
%RSD	49.754	99.993	36.739	29.841	32.583	57.965	1.5726	20.218
#1	.00011	-.00085	.00123	.04902	.09367	.00206	5.7030	.01056
#2	.00028	-.00069	.00089	.02629	.18446	.00861	5.6327	.01230
#3	.00036	.00007	.00057	.03940	.13984	.00691	5.8112	.01567
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	48.626	-.00075	.01117	.00114	-.00491	.00349	.27480
Stddev	.00026	.111	.00066	.00745	.00133	.00248	.00272	.00312
%RSD	52.573	.22800	87.964	66.704	116.26	50.491	77.811	1.1358
#1	.00024	48.499	-.00062	.01513	.00176	-.00250	.00652	.27222
#2	.00075	48.707	-.00147	.01582	.00206	-.00745	.00269	.27392
#3	.00048	48.670	-.00016	.00258	-.00038	-.00478	.00127	.27827
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115401 Acquired: 6/25/2016 16:47:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573707-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.45176	-.00366	.00143	.00149	.00078	.00089
Stddev	.00028	.00268	.00362	.00047	.00058	.00004	.00106
%RSD	304.19	.59263	98.732	33.094	39.124	5.2122	119.26
#1	.00040	.44867	-.00000	.00088	.00209	.00083	-.00013
#2	-.00012	.45326	-.00375	.00168	.00093	.00076	.00081
#3	-.00001	.45335	-.00723	.00172	.00145	.00075	.00200
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9797.1	59243.	3012.9
Stddev	17.5	107.	17.7
%RSD	.17826	.18036	.58631
#1	9776.9	59361.	2997.1
#2	9806.9	59214.	3009.7
#3	9807.4	59153.	3032.0

Approved: June 27, 2016

Sample Name: L1606115402S Acquired: 6/25/2016 16:51:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: ~~WG573994-~~04 WG573707-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01309**	**.25824**	**.01110**	**.13590**	**.02825**	**.00141**	**24.615**	**.00126**
Stddev	.00068	.00760	.00152	.00169	.00035	.00008	.204	.00013
%RSD	5.1924	2.9441	13.682	1.2425	1.2428	5.6800	.82995	10.655
#1	.01329	.24951	.01277	.13422	.02816	.00148	24.549	.00132
#2	.01365	.26341	.01072	.13589	.02864	.00133	24.844	.00111
#3	.01234	.26179	.00981	.13760	.02795	.00143	24.452	.00136
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00516**	**.01347**	**.01556**	**.12663**	**1.3534**	**.03179**	**5.7750**	**.02544**
Stddev	.00029	.00054	.00043	.02761	.0228	.00410	.0699	.00285
%RSD	5.6307	4.0382	2.7758	21.808	1.6862	12.889	1.2101	11.189
#1	.00539	.01407	.01514	.12414	1.3303	.03536	5.8428	.02774
#2	.00525	.01301	.01552	.15541	1.3541	.02732	5.7789	.02226
#3	.00483	.01334	.01600	.10034	1.3759	.03267	5.7032	.02633
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02479**	**48.072**	**.01332**	**.27819**	**.01575**	**.03066**	**.01661**	**.41681**
Stddev	.00011	.553	.00070	.01153	.00513	.00307	.00921	.00803
%RSD	.43243	1.1513	5.2238	4.1456	32.553	10.027	55.466	1.9271
#1	.02491	47.545	.01404	.27355	.01630	.02789	.02173	.40846
#2	.02475	48.649	.01266	.26969	.02058	.03397	.02212	.41747
#3	.02470	48.023	.01326	.29132	.01037	.03013	.00597	.42449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115402S Acquired: 6/25/2016 16:51:01 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: ~~WG573994-04~~ WG573707-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02366**	**.45706**	**.02085**	**.01353**	**.02750**	**.02826**	**.00274**
Stddev	.00062	.00423	.00301	.00109	.00044	.00035	.00077
%RSD	2.6070	.92537	14.446	8.0746	1.5967	1.2498	28.151
#1	.02338	.45248	.01904	.01478	.02755	.02786	.00198
#2	.02436	.46082	.01917	.01306	.02704	.02846	.00352
#3	.02323	.45789	.02432	.01275	.02792	.02848	.00271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9814.2**	**59172.**	**3008.6**
Stddev	14.0	133.	22.5
%RSD	.14277	.22528	.74717
#1	9829.8	59323.	3030.6
#2	9810.3	59073.	2985.6
#3	9802.6	59119.	3009.6

Approved: June 27, 2016

Sample Name: L1606115403SD Acquired: 6/25/2016 16:54:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: ~~WG573994-05~~ WG573707-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01239	.28748	.01145	.14150	.02764	.00148	24.958	.00130
Stddev	.00114	.00888	.00065	.00093	.00147	.00009	.077	.00038
%RSD	9.2124	3.0872	5.6507	.65421	5.3298	6.1781	.30772	29.306
#1	.01125	.28330	.01179	.14053	.02888	.00144	25.006	.00087
#2	.01353	.28146	.01070	.14159	.02802	.00141	24.999	.00161
#3	.01238	.29767	.01185	.14238	.02601	.00158	24.870	.00142
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00611	.01431	.01527	.13086	1.3857	.03280	5.7817	.02287
Stddev	.00054	.00136	.00145	.01260	.0370	.00239	.0561	.00299
%RSD	8.8509	9.4861	9.4751	9.6283	2.6697	7.2716	.97114	13.075
#1	.00671	.01585	.01436	.14435	1.3780	.03556	5.7473	.02433
#2	.00566	.01329	.01452	.11939	1.4259	.03138	5.8465	.01943
#3	.00597	.01379	.01694	.12885	1.3532	.03147	5.7513	.02484
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02737	48.881	.01504	.29126	.01658	.02795	.01955	.43672
Stddev	.00021	.600	.00152	.00741	.00249	.00243	.00943	.00693
%RSD	.75532	1.2279	10.076	2.5426	15.013	8.6768	48.242	1.5861
#1	.02720	48.195	.01331	.29382	.01763	.03060	.01049	.42891
#2	.02732	49.311	.01567	.29705	.01373	.02742	.02931	.43914
#3	.02760	49.136	.01613	.28292	.01836	.02584	.01885	.44211
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115403SD Acquired: 6/25/2016 16:54:54 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: ~~WG573994-05~~ WG573707-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02590**	**.47018**	**.02569**	**.01379**	**.02893**	**.02996**	**.00113**
Stddev	.00080	.00475	.00439	.00029	.00110	.00076	.00027
%RSD	3.0868	1.0106	17.097	2.0910	3.8168	2.5433	23.745
#1	.02499	.46471	.02819	.01349	.02776	.02918	.00138
#2	.02647	.47252	.02061	.01406	.02908	.03000	.00115
#3	.02625	.47331	.02825	.01382	.02996	.03071	.00085
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9727.4**	**58906.**	**3022.7**
Stddev	40.6	23.	25.7
%RSD	.41767	.03969	.84864
#1	9765.9	58911.	3039.9
#2	9731.2	58926.	2993.2
#3	9685.0	58880.	3035.0

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 16:58:48 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41361**	**10.445**	**.40516**	**.50612**	**1.0259**	**.05224**	**10.203**
Stddev	.00260	.021	.00144	.00287	.0033	.00020	.046
%RSD	.62922	.20256	.35469	.56757	.31739	.38953	.44884
#1	.41655	10.462	.40524	.50908	1.0271	.05242	10.224
#2	.41159	10.421	.40656	.50592	1.0284	.05202	10.235
#3	.41269	10.451	.40369	.50335	1.0222	.05229	10.150
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05215**	**.20471**	**.51698**	**.52477**	**4.0648**	**49.423**	**1.0320**
Stddev	.00013	.00021	.00148	.00103	.0369	.189	.0006
%RSD	.23994	.10391	.28587	.19687	.90838	.38306	.06170
#1	.05201	.20470	.51640	.52461	4.1007	49.428	1.0316
#2	.05218	.20450	.51865	.52588	4.0269	49.610	1.0327
#3	.05226	.20492	.51587	.52383	4.0668	49.231	1.0316
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.8590**	**.51551**	**1.0404**	**50.331**	**.51945**	**10.229**	**.51430**
Stddev	.0965	.00144	.0039	.173	.00106	.010	.00570
%RSD	.97927	.27876	.37864	.34422	.20472	.09385	1.1081
#1	9.9705	.51433	1.0396	50.428	.51822	10.232	.51032
#2	9.8060	.51711	1.0369	50.435	.52013	10.218	.51175
#3	9.8006	.51508	1.0447	50.131	.51999	10.236	.52083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 16:58:48 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2288	.41352	5.2624	1.0315	1.0269	1.0279	.53017
Stddev	.0104	.00168	.0015	.0026	.0016	.0023	.00514
%RSD	.84208	.40618	.02811	.25583	.15527	.22255	.96993
#1	1.2288	.41198	5.2628	1.0285	1.0283	1.0298	.53564
#2	1.2391	.41326	5.2608	1.0336	1.0273	1.0286	.52543
#3	1.2184	.41531	5.2637	1.0323	1.0252	1.0254	.52943
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	1.0564	1.0308	F 3.0180
Stddev	.0015	.0001	.0119
%RSD	.14240	.01349	.39369
#1	1.0580	1.0307	3.0121
#2	1.0561	1.0310	3.0317
#3	1.0550	1.0308	3.0102
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9528.1	57486.	2960.8
Stddev	9.3	201.	17.3
%RSD	.09776	.34979	.58425
#1	9517.6	57273.	2962.9
#2	9535.3	57514.	2942.6
#3	9531.5	57672.	2977.0

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 17:02:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00045**	**.00226**	**.00067**	**.00055**	**.00185**	**.00013**	**-.07167**	**-.00014**
Stddev	.00085	.00279	.00119	.00264	.00042	.00005	.02175	.00033
%RSD	189.88	123.24	177.00	483.17	22.573	35.869	30.346	234.73
#1	.00019	-.00053	.00152	-.00019	.00233	.00018	-.09322	-.00050
#2	-.00141	.00505	-.00069	-.00165	.00153	.00012	-.04973	.00014
#3	-.00012	.00226	.00119	.00348	.00171	.00009	-.07206	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00002**	**.00057**	**.00076**	**.03056**	**-.09613**	**.00228**	**-.13259**	**.00051**
Stddev	.00039	.00056	.00130	.01338	.02053	.00471	.02062	.00136
%RSD	1720.9	98.019	170.60	43.800	21.361	206.77	15.553	268.18
#1	.00020	.00017	-.00074	.01806	-.09726	-.00131	-.14855	-.00092
#2	.00020	.00121	.00148	.02892	-.07505	.00054	-.10931	.00179
#3	-.00047	.00034	.00155	.04468	-.11607	.00761	-.13993	.00066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00325**	**.04047**	**-.00081**	**.00150**	**.00148**	**.00530**	**.00256**	**-.00673**
Stddev	.00022	.01175	.00096	.00183	.00289	.00260	.00237	.00167
%RSD	6.7467	29.033	119.00	121.89	195.62	48.929	92.639	24.783
#1	.00325	.05342	-.00016	.00278	.00470	.00570	.00309	-.00596
#2	.00303	.03049	-.00036	.00231	.00063	.00768	-.00003	-.00558
#3	.00347	.03751	-.00192	-.00059	-.00090	.00253	.00461	-.00864
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 17:02:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**.00044**	**.00426**	**-.00209**	**.00094**	**.00001**	**.00353**
Stddev	.00052	.00045	.00463	.00321	.00096	.00021	.00070
%RSD	128.76	102.93	108.80	153.83	102.68	1611.6	19.702
#1	.00048	.00069	.00959	-.00418	.00024	-.00012	.00320
#2	.00089	.00071	.00120	.00161	.00204	-.00009	.00306
#3	-.00015	-.00008	.00198	-.00369	.00053	.00025	.00433
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9729.2**	**58924.**	**2982.2**
Stddev	14.1	124.	20.8
%RSD	.14444	.21107	.69802
#1	9725.0	58912.	2962.2
#2	9744.9	58806.	3003.8
#3	9717.8	59054.	2980.7

Approved: June 27, 2016

Sample Name: L1606115501 Acquired: 6/25/2016 17:06:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00033**	**.00180**	**.00125**	**.01161**	**.01032**	**.00011**	**2.3136**	**-.00007**
Stddev	.00230	.00043	.00160	.00137	.00099	.00007	.0269	.00019
%RSD	694.54	23.757	128.16	11.776	9.5715	61.393	1.1630	281.96
#1	.00225	.00218	.00194	.01272	.00925	.00003	2.3397	.00009
#2	-.00214	.00134	.00239	.01008	.01120	.00016	2.2860	-.00001
#3	-.00111	.00188	-.00058	.01203	.01051	.00015	2.3151	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.00014**	**-.00018**	**.02935**	**.09569**	**-.00047**	**1.4383**	**.08572**
Stddev	.00040	.00048	.00052	.00252	.08702	.00314	.0635	.00277
%RSD	831.42	341.03	289.17	8.5796	90.931	664.03	4.4136	3.2299
#1	.00005	.00069	-.00054	.02667	.18563	.00276	1.4626	.08626
#2	.00029	-.00017	.00042	.03166	.01192	-.00066	1.4861	.08273
#3	-.00048	-.00010	-.00042	.02972	.08953	-.00352	1.3663	.08818
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00023**	**3.8750**	**.00064**	**.00454**	**.00264**	**-.00168**	**.00429**	**.37174**
Stddev	.00028	.0249	.00026	.00324	.00293	.00204	.00272	.00091
%RSD	124.52	.64140	39.830	71.430	111.04	121.37	63.452	.24386
#1	-.00008	3.8959	.00063	.00081	.00037	-.00400	.00736	.37278
#2	.00028	3.8475	.00040	.00665	.00594	-.00087	.00338	.37129
#3	.00048	3.8816	.00091	.00616	.00160	-.00017	.00214	.37115
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115501 Acquired: 6/25/2016 17:06:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.01613**	**.00436**	**.00049**	**-.00004**	**.00087**	**.00142**
Stddev	.00092	.00051	.00120	.00199	.00066	.00012	.00191
%RSD	2230.2	3.1791	27.456	410.68	1766.6	13.339	134.89
#1	.00087	.01607	.00571	.00178	-.00027	.00083	.00247
#2	-.00002	.01565	.00341	-.00181	.00071	.00100	-.00079
#3	-.00097	.01667	.00397	.00149	-.00055	.00078	.00257
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9938.9**	**60110.**	**3041.6**
Stddev	14.3	99.	8.4
%RSD	.14384	.16440	.27454
#1	9922.4	60057.	3050.1
#2	9946.9	60224.	3033.5
#3	9947.4	60049.	3041.2

Approved: June 27, 2016

Sample Name: L1606115502 Acquired: 6/25/2016 17:10:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	-.00453	-.00033	.00989	.01794	.00013	2.4889	.00011
Stddev	.00144	.01600	.00099	.00264	.00078	.00009	.0280	.00014
%RSD	216.56	353.18	295.78	26.673	4.3403	71.235	1.1261	129.84
#1	.00231	.00655	-.00001	.00702	.01871	.00024	2.4937	.00027
#2	.00001	-.02287	-.00144	.01220	.01715	.00010	2.5143	-.00000
#3	-.00033	.00273	.00045	.01047	.01798	.00006	2.4588	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	-.00044	.00104	.24605	-.07520	-.00217	1.6643	.02363
Stddev	.00022	.00012	.00019	.01179	.12175	.00286	.0624	.00224
%RSD	272.66	27.286	18.718	4.7938	161.89	131.42	3.7522	9.4751
#1	.00027	-.00041	.00090	.23638	.00559	-.00035	1.5996	.02553
#2	.00015	-.00033	.00126	.24256	-.01597	-.00070	1.6689	.02116
#3	-.00017	-.00057	.00095	.25919	-.21524	-.00546	1.7243	.02420
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00021	2.8989	.00016	.00365	.00260	-.00217	.00870	.42450
Stddev	.00065	.0101	.00120	.00396	.00147	.00150	.00507	.00601
%RSD	314.77	.35003	759.93	108.45	56.477	68.876	58.304	1.4160
#1	-.00082	2.8946	-.00099	.00772	.00422	-.00382	.01102	.41775
#2	-.00027	2.9105	.00140	-.00019	.00221	-.00091	.01219	.42650
#3	.00047	2.8917	.00006	.00342	.00137	-.00178	.00288	.42926
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115502 Acquired: 6/25/2016 17:10:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00038**	**.02139**	**.00454**	**-.00050**	**.00021**	**.00050**	**.00118**
Stddev	.00016	.00022	.00843	.00114	.00027	.00017	.00137
%RSD	41.986	1.0329	185.67	229.51	129.67	34.277	116.06
#1	.00030	.02116	.00016	.00076	.00041	.00055	-.00040
#2	.00027	.02139	.01426	-.00146	.00031	.00031	.00208
#3	.00056	.02161	-.00080	-.00078	-.00010	.00064	.00187
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9945.8**	**60248.**	**3055.3**
Stddev	9.2	94.	11.4
%RSD	.09217	.15541	.37444
#1	9945.9	60314.	3061.2
#2	9954.9	60289.	3042.1
#3	9936.5	60141.	3062.6

Approved: June 27, 2016

Sample Name: L1606115503 Acquired: 6/25/2016 17:14:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00200	-.00135	-.00104	.00757	.00737	.00014	2.3997	-.00010
Stddev	.00192	.00661	.00046	.00116	.00061	.00003	.0309	.00022
%RSD	96.141	489.89	44.488	15.290	8.2167	21.217	1.2897	218.06
#1	.00406	-.00575	-.00051	.00624	.00716	.00012	2.3659	-.00020
#2	.00025	-.00456	-.00131	.00835	.00689	.00017	2.4268	-.00025
#3	.00170	.00625	-.00131	.00813	.00805	.00012	2.4063	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	-.00044	-.00019	.10432	-.04481	.00004	.91519	.02191
Stddev	.00035	.00082	.00101	.01415	.09851	.00279	.09371	.00121
%RSD	3296.1	188.98	541.26	13.565	219.83	6329.0	10.240	5.5295
#1	-.00033	.00027	.00027	.10406	-.13456	.00163	.99135	.02326
#2	-.00007	-.00023	-.00134	.09030	-.06048	.00168	.94369	.02093
#3	.00037	-.00134	.00052	.11860	.06059	-.00317	.81054	.02153
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	2.4900	.00017	.00956	.00115	-.00111	.00305	.32330
Stddev	.00005	.0408	.00057	.00296	.00162	.00041	.00349	.00479
%RSD	56.574	1.6398	345.24	30.912	140.85	37.279	114.64	1.4819
#1	-.00011	2.4429	.00078	.00752	.00187	-.00066	-.00055	.31801
#2	-.00013	2.5161	.00008	.00822	-.00070	-.00119	.00642	.32454
#3	-.00003	2.5109	-.00036	.01295	.00229	-.00148	.00327	.32735
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606115503 Acquired: 6/25/2016 17:14:07 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00009**	**.01387**	**.00305**	**-.00065**	**.00052**	**.00084**	**.00071**
Stddev	.00081	.00016	.00789	.00174	.00073	.00004	.00140
%RSD	953.07	1.1448	258.94	265.86	139.13	5.0666	198.28
#1	-.00013	.01403	.00198	-.00023	.00032	.00082	.00133
#2	-.00088	.01386	-.00426	.00083	-.00008	.00082	.00169
#3	.00075	.01371	.01142	-.00257	.00133	.00089	-.00090
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9910.7**	**60184.**	**3019.4**
Stddev	10.3	175.	9.0
%RSD	.10381	.29035	.29953
#1	9910.7	60334.	3026.1
#2	9921.0	60225.	3023.1
#3	9900.4	59992.	3009.1

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 17:18:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41531**	**10.447**	**.40916**	**.50533**	**1.0238**	**.05217**	**10.225**
Stddev	.00091	.032	.00132	.00054	.0034	.00011	.030
%RSD	.21998	.31066	.32348	.10618	.32870	.20293	.29201
#1	.41613	10.474	.41061	.50566	1.0229	.05229	10.191
#2	.41432	10.411	.40886	.50561	1.0276	.05213	10.247
#3	.41546	10.455	.40801	.50471	1.0211	.05209	10.235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05225**	**.20370**	**.51712**	**.52549**	**4.0444**	**49.392**	**1.0301**
Stddev	.00031	.00034	.00175	.00197	.0184	.117	.0048
%RSD	.59442	.16603	.33927	.37570	.45604	.23752	.46659
#1	.05229	.20396	.51906	.52418	4.0394	49.465	1.0330
#2	.05254	.20382	.51666	.52776	4.0648	49.455	1.0327
#3	.05192	.20332	.51564	.52452	4.0290	49.257	1.0245
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.7951**	**.51327**	**1.0423**	**50.236**	**.51912**	**10.208**	**.51997**
Stddev	.0472	.00504	.0084	.169	.00170	.017	.00372
%RSD	.48165	.98200	.80990	.33677	.32826	.16636	.71476
#1	9.7523	.51223	1.0511	50.262	.52046	10.219	.52035
#2	9.7875	.51875	1.0343	50.391	.51968	10.189	.51607
#3	9.8457	.50883	1.0415	50.056	.51720	10.217	.52348
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 17:18:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2238**	**.40709**	**5.2468**	**1.0260**	**1.0230**	**1.0304**	**.52875**
Stddev	.0084	.00511	.0098	.0012	.0023	.0127	.00327
%RSD	.68659	1.2545	.18586	.11540	.22459	1.2311	.61859
#1	1.2260	.40344	5.2580	1.0271	1.0231	1.0165	.53252
#2	1.2308	.40491	5.2428	1.0262	1.0252	1.0415	.52673
#3	1.2145	.41292	5.2398	1.0248	1.0206	1.0331	.52699
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0570**	**1.0310**	F **3.0075**
Stddev	.0056	.0001	.0207
%RSD	.53103	.00939	.68856
#1	1.0633	1.0311	3.0004
#2	1.0553	1.0309	3.0308
#3	1.0525	1.0310	2.9913
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9557.2**	**57623.**	**2979.5**
Stddev	9.7	193.	16.3
%RSD	.10109	.33465	.54600
#1	9546.7	57405.	2979.8
#2	9565.7	57771.	2963.0
#3	9559.4	57693.	2995.6

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 17:21:42 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**-.00563**	**.00200**	**-.00100**	**.00189**	**.00009**	**-.01127**	**-.00004**
Stddev	.00104	.00334	.00233	.00184	.00120	.00004	.03123	.00010
%RSD	1246.5	59.297	116.54	184.11	63.245	40.940	277.20	226.69
#1	-.00074	-.00335	.00466	-.00138	.00302	.00011	-.03377	.00004
#2	-.00027	-.00407	.00108	-.00263	.00202	.00005	.02439	-.00015
#3	.00126	-.00946	.00027	.00100	.00064	.00010	-.02442	-.00003
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**.00048**	**.00089**	**.00955**	**-.03243**	**.00071**	**-.01124**	**-.00013**
Stddev	.00017	.00075	.00043	.01226	.03763	.00268	.07316	.00129
%RSD	103.61	157.05	48.720	128.38	116.03	378.57	650.98	975.30
#1	.00002	.00095	.00059	-.00410	-.06003	-.00175	-.02665	-.00039
#2	.00035	.00087	.00069	.01962	.01043	.00031	-.07547	-.00128
#3	.00012	-.00039	.00138	.01314	-.04771	.00356	.06840	.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00323**	**.02898**	**-.00046**	**.00432**	**.00328**	**.00454**	**.00410**	**-.00425**
Stddev	.00029	.02008	.00095	.00359	.00221	.00123	.00133	.00064
%RSD	9.1168	69.292	208.78	82.910	67.490	26.995	32.528	15.135
#1	.00298	.02490	-.00038	.00845	.00352	.00323	.00275	-.00470
#2	.00356	.01126	-.00144	.00261	.00095	.00566	.00541	-.00351
#3	.00316	.05079	.00046	.00192	.00536	.00474	.00413	-.00454
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 17:21:42 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00068	.00021	.00375	-.00110	.00108	-.00009	.00393
Stddev	.00059	.00011	.00446	.00333	.00027	.00003	.00087
%RSD	86.694	51.296	119.05	302.86	25.045	36.058	22.188
#1	.00135	.00012	.00567	.00135	.00136	-.00006	.00491
#2	.00024	.00018	-.00135	.00024	.00107	-.00012	.00363
#3	.00044	.00033	.00692	-.00489	.00082	-.00008	.00324
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9706.7	59138.	3007.6
Stddev	9.6	122.	14.5
%RSD	.09901	.20648	.48341
#1	9697.1	58997.	2992.2
#2	9716.3	59217.	3009.4
#3	9706.6	59200.	3021.1

Approved: June 27, 2016

Sample Name: LLCCV Acquired: 6/25/2016 17:25:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00682	.16326	.00787	.08110	.01015	.00172	.37504	.00080
Stddev	.00230	.01176	.00393	.00058	.00060	.00002	.03274	.00014
%RSD	33.789	7.2031	49.909	.72089	5.8834	1.2548	8.7301	17.457
#1	.00456	.16635	.01239	.08173	.01084	.00173	.33805	.00070
#2	.00916	.17317	.00587	.08058	.00985	.00173	.40031	.00075
#3	.00674	.15026	.00534	.08099	.00976	.00169	.38675	.00096
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00446	.00390	.00484	.09497	.71355	.08241	.33888	.00741
Stddev	.00036	.00087	.00066	.01610	.00812	.00379	.00870	.00176
%RSD	8.1660	22.291	13.622	16.951	1.1379	4.5949	2.5673	23.707
#1	.00488	.00490	.00494	.08463	.70937	.08497	.33660	.00920
#2	.00426	.00332	.00413	.08675	.70838	.08419	.34850	.00734
#3	.00424	.00348	.00544	.11352	.72291	.07806	.33155	.00569
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00855	.40833	.01678	.78916	.01199	.08269	.02089	.77549
Stddev	.00007	.02661	.00076	.00972	.00016	.00111	.00270	.00482
%RSD	.82014	6.5175	4.5074	1.2317	1.3733	1.3390	12.938	.62171
#1	.00856	.42291	.01686	.80033	.01215	.08397	.01985	.78057
#2	.00847	.42447	.01749	.78261	.01182	.08216	.01886	.77494
#3	.00861	.37762	.01598	.78454	.01200	.08195	.02396	.77097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LLCCV Acquired: 6/25/2016 17:25:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40481**	**.04214**	**.02257**	**.15413**	**.00994**	**.01699**	**.13476**
Stddev	.00262	.00003	.00404	.00144	.00108	.00007	.00396
%RSD	.64734	.07891	17.895	.93373	10.832	.40613	2.9378
#1	.40763	.04217	.02259	.15502	.01117	.01705	.13268
#2	.40435	.04210	.02661	.15491	.00942	.01692	.13226
#3	.40245	.04214	.01853	.15247	.00922	.01700	.13932
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9757.6**	**59331.**	**3007.6**
Stddev	3.7	156.	34.2
%RSD	.03744	.26375	1.1357
#1	9754.3	59400.	3008.1
#2	9757.0	59152.	3041.5
#3	9761.5	59441.	2973.2

Approved: June 27, 2016

Sample Name: PBW Y5 Acquired: 6/25/2016 17:29:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00185**	**.00116**	**-.00112**	**-.00084**	**.00120**	**.00011**	**-.01961**	**-.00006**
Stddev	.00045	.01041	.00198	.00240	.00080	.00010	.05200	.00016
%RSD	24.231	897.41	176.31	284.10	67.234	89.198	265.17	288.76
#1	.00153	-.00604	-.00020	.00070	.00046	.00020	.01383	-.00024
#2	.00236	-.00358	.00023	-.00360	.00107	.00014	-.07952	.00007
#3	.00166	.01310	-.00339	.00037	.00206	.00000	.00686	.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00010**	**-.00018**	**.00105**	**.03412**	**-.07407**	**.00236**	**.02694**	**.00162**
Stddev	.00024	.00064	.00070	.02542	.08098	.00211	.02742	.00224
%RSD	248.33	362.92	67.168	74.514	109.32	89.477	101.81	137.94
#1	.00030	-.00083	.00024	.00498	-.16192	.00417	.01237	.00092
#2	.00016	-.00014	.00146	.05181	-.05788	.00285	.00987	.00413
#3	-.00017	.00044	.00145	.04557	-.00242	.00004	.05857	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**.01025**	**-.00077**	**.00507**	**.00386**	**-.00192**	**-.00109**	**.00437**
Stddev	.00004	.01479	.00185	.00580	.00053	.00084	.00245	.00068
%RSD	28.058	144.27	239.74	114.27	13.817	43.798	224.68	15.497
#1	-.00010	.02026	-.00256	.00797	.00348	-.00273	.00112	.00408
#2	-.00015	-.00674	.00113	.00885	.00447	-.00198	-.00067	.00389
#3	-.00017	.01724	-.00088	-.00160	.00363	-.00105	-.00372	.00515
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: PBW Y5 Acquired: 6/25/2016 17:29:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00077	.00044	.00538	-.00184	.00071	.00062	.00198
Stddev	.00057	.00040	.00350	.00250	.00039	.00016	.00115
%RSD	73.146	89.773	65.128	135.94	54.397	26.345	58.223
#1	.00143	.00035	.00942	-.00427	.00062	.00079	.00279
#2	.00040	.00088	.00331	.00073	.00114	.00048	.00066
#3	.00049	.00010	.00340	-.00198	.00038	.00058	.00249
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9880.3	60109.	3027.1
Stddev	31.5	73.	6.6
%RSD	.31885	.12179	.21761
#1	9847.3	60149.	3030.6
#2	9910.1	60154.	3019.5
#3	9883.5	60025.	3031.2

Approved: June 27, 2016

Sample Name: LCSW Y5 Acquired: 6/25/2016 17:33:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.18967	4.7620	.18828	.90013	.47555	.02395	4.7950	.02373
Stddev	.00250	.0081	.00104	.00471	.00273	.00006	.0213	.00018
%RSD	1.3192	.17078	.55148	.52284	.57347	.24848	.44480	.74408
#1	.18907	4.7578	.18718	.89893	.47827	.02388	4.7819	.02392
#2	.19242	4.7714	.18841	.90532	.47282	.02399	4.8196	.02370
#3	.18753	4.7569	.18924	.89614	.47557	.02397	4.7835	.02357
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09489	.23803	.24292	1.9123	22.817	.48875	4.5669	.24181
Stddev	.00039	.00120	.00156	.0298	.036	.00284	.0465	.00007
%RSD	.41346	.50457	.64104	1.5597	.15629	.58110	1.0173	.02751
#1	.09520	.23794	.24291	1.9317	22.780	.48603	4.5750	.24188
#2	.09501	.23927	.24447	1.8779	22.852	.49170	4.5170	.24174
#3	.09445	.23687	.24136	1.9272	22.818	.48851	4.6088	.24180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49027	23.490	.24091	4.5553	.24063	.56646	.18382	2.3525
Stddev	.00145	.113	.00040	.0084	.00352	.00190	.00239	.0014
%RSD	.29550	.48187	.16805	.18553	1.4632	.33509	1.2995	.06062
#1	.48963	23.608	.24065	4.5528	.24014	.56531	.18109	2.3541
#2	.49193	23.382	.24137	4.5647	.24437	.56542	.18555	2.3519
#3	.48925	23.480	.24069	4.5484	.23738	.56865	.18482	2.3515
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LCSW Y5 Acquired: 6/25/2016 17:33:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47085**	**.48454**	**.47923**	**.24546**	**.48968**	**.47202**	**.01198**
Stddev	.00082	.00070	.00116	.00117	.00078	.00042	.00247
%RSD	.17390	.14504	.24256	.47677	.15993	.08855	20.639
#1	.47170	.48509	.47789	.24652	.48877	.47178	.00945
#2	.47079	.48375	.47984	.24421	.49011	.47251	.01208
#3	.47006	.48479	.47995	.24566	.49015	.47178	.01439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9888.6**	**60001.**	**3090.1**
Stddev	19.1	149.	26.5
%RSD	.19299	.24892	.85667
#1	9894.9	60052.	3063.1
#2	9867.1	59834.	3091.3
#3	9903.7	60119.	3116.0

Approved: June 27, 2016

Sample Name: F BLANK Acquired: 6/25/2016 17:37:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00166	-.00148	.00090	.00227	.00163	.00011	-.00468	.00008
Stddev	.00130	.00490	.00188	.00068	.00037	.00003	.02546	.00022
%RSD	78.305	330.55	208.29	29.974	22.968	25.204	544.18	269.24
#1	.00033	-.00239	.00275	.00286	.00197	.00009	-.03398	.00015
#2	.00173	.00381	-.00100	.00243	.00123	.00014	.01206	.00026
#3	.00293	-.00586	.00096	.00153	.00167	.00010	.00788	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.00058	.00129	.04476	.01060	-.00161	-.05710	.00063
Stddev	.00029	.00122	.00029	.02153	.02075	.00622	.06303	.00318
%RSD	276.09	211.55	22.793	48.099	195.81	387.03	110.39	502.59
#1	-.00039	.00184	.00121	.03412	-.00619	.00062	-.09553	.00029
#2	.00018	-.00059	.00161	.06953	.03381	.00319	-.09140	.00397
#3	-.00010	.00048	.00104	.03061	.00418	-.00863	.01564	-.00236
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.05677	-.00011	.00316	.00576	-.00381	.00560	-.00010
Stddev	.00040	.03222	.00050	.00162	.00079	.00329	.00231	.00141
%RSD	72.047	56.761	453.37	51.247	13.705	86.399	41.256	1388.8
#1	.00085	.07680	-.00069	.00292	.00611	-.00013	.00434	-.00092
#2	.00073	.01960	.00014	.00168	.00631	-.00483	.00420	-.00091
#3	.00010	.07391	.00021	.00489	.00485	-.00647	.00827	.00153
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: F BLANK Acquired: 6/25/2016 17:37:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.00021	-.00396	-.00081	.00112	.00164	.00166
Stddev	.00084	.00011	.00377	.00288	.00053	.00013	.00011
%RSD	1212.1	52.839	95.183	357.63	47.087	8.1028	6.9152
#1	-.00082	.00025	-.00813	-.00413	.00144	.00151	.00159
#2	.00085	.00029	-.00300	.00065	.00141	.00165	.00179
#3	.00018	.00008	-.00077	.00106	.00051	.00177	.00159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10015.	61314.	3090.8
Stddev	16.	177.	23.0
%RSD	.15522	.28891	.74279
#1	10012.	61143.	3064.6
#2	10032.	61303.	3107.1
#3	10001.	61497.	3100.8

Approved: June 27, 2016

Sample Name: L1606098602 Acquired: 6/25/2016 17:41:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	-.00042	-.00040	.09099	.02315	.00010	31.081	-.00006
Stddev	.00141	.00402	.00168	.00026	.00060	.00002	.292	.00002
%RSD	160.55	951.46	416.45	.28845	2.5949	20.817	.93935	37.551
#1	.00197	.00339	-.00222	.09093	.02306	.00008	31.173	-.00006
#2	-.00072	-.00463	.00109	.09127	.02259	.00012	30.754	-.00004
#3	.00139	-.00003	-.00008	.09076	.02379	.00010	31.315	-.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00024	.00059	.00094	.04555	.98402	.01199	5.7014	.03480
Stddev	.00048	.00016	.00041	.01573	.08850	.00357	.0718	.00212
%RSD	197.55	26.299	43.232	34.544	8.9935	29.756	1.2595	6.0810
#1	.00072	.00042	.00054	.02747	.88485	.01459	5.6202	.03718
#2	-.00024	.00064	.00135	.05303	1.0122	.01345	5.7566	.03314
#3	.00026	.00072	.00092	.05614	1.0550	.00792	5.7274	.03406
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00142	119.95	.00080	.00488	.00205	-.00278	-.00166	3.2347
Stddev	.00007	.78	.00132	.00386	.00179	.00227	.00673	.0109
%RSD	4.5853	.65032	165.26	79.044	87.096	81.844	406.14	.33815
#1	.00137	120.20	.00201	.00062	.00137	-.00037	-.00009	3.2461
#2	.00149	119.07	.00100	.00813	.00409	-.00489	.00415	3.2336
#3	.00140	120.57	-.00061	.00590	.00071	-.00307	-.00903	3.2243
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098602 Acquired: 6/25/2016 17:41:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00169	.54147	-.00161	-.00445	.00062	.00187	.00166
Stddev	.00060	.00457	.00418	.00188	.00027	.00011	.00091
%RSD	35.360	.84355	259.35	42.200	43.191	5.8148	54.635
#1	.00106	.54395	-.00040	-.00269	.00035	.00198	.00205
#2	.00225	.53620	.00182	-.00642	.00063	.00186	.00062
#3	.00175	.54425	-.00626	-.00422	.00089	.00176	.00230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9793.0	59457.	3063.6
Stddev	12.2	310.	25.9
%RSD	.12488	.52191	.84399
#1	9783.4	59142.	3057.4
#2	9788.8	59467.	3092.0
#3	9806.7	59762.	3041.4

Approved: June 27, 2016

Sample Name: L1606098604 Acquired: 6/25/2016 17:45:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00188**	**.00192**	**.00240**	**.01933**	**.01606**	**.00017**	**258.27**
Stddev	.00168	.00663	.00025	.00142	.00064	.00002	.74
%RSD	89.608	344.23	10.527	7.3208	4.0034	12.550	.28551
#1	.00265	-.00052	.00267	.01828	.01569	.00019	258.08
#2	.00303	-.00313	.00217	.01877	.01568	.00016	257.65
#3	-.00005	.00943	.00237	.02094	.01680	.00015	259.09
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00045**	**.00038**	**.00085**	**.01097**	**.02808**	**1.7243**	**.01739**
Stddev	.00023	.00042	.00027	.00107	.01426	.0758	.00077
%RSD	50.915	110.30	31.401	9.7605	50.795	4.3949	4.4280
#1	.00057	.00083	.00065	.01199	.02723	1.7078	.01656
#2	.00019	.00033	.00115	.00986	.01426	1.6581	.01808
#3	.00061	-.00001	.00075	.01107	.04275	1.8069	.01753
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**67.436**	**1.3917**	**.00099**	**14.380**	**.00387**	**.00116**	**.00177**
Stddev	.211	.0043	.00004	.031	.00051	.00485	.00143
%RSD	.31235	.30797	4.3492	.21337	13.178	419.65	80.619
#1	67.195	1.3899	.00099	14.411	.00414	.00253	.00287
#2	67.533	1.3886	.00103	14.350	.00328	-.00423	.00229
#3	67.581	1.3966	.00095	14.377	.00419	.00517	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 27, 2016

Sample Name: L1606098604 Acquired: 6/25/2016 17:45:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00130**	**.00146**	**3.7576**	**.00044**	**1.2471**	F **-.03982**	**-.00203**
Stddev	.00495	.00434	.0110	.00062	.0034	.00406	.00082
%RSD	381.66	297.39	.29276	142.20	.26857	10.186	40.503
#1	-.00325	.00313	3.7635	.00113	1.2483	-.04298	-.00122
#2	.00433	.00472	3.7644	.00025	1.2433	-.03524	-.00200
#3	-.00498	-.00347	3.7449	-.00007	1.2496	-.04122	-.00286
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00050**	**.03051**	**.00151**
Stddev	.00029	.00016	.00074
%RSD	57.554	.53953	48.929
#1	-.00084	.03044	.00164
#2	-.00033	.03070	.00216
#3	-.00034	.03040	.00071
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9610.5**	**58897.**	**3044.6**
Stddev	3.8	97.	5.6
%RSD	.03917	.16551	.18408
#1	9614.6	58944.	3043.4
#2	9607.2	58961.	3050.7
#3	9609.7	58785.	3039.7

Approved: June 27, 2016

Sample Name: L1606098606 Acquired: 6/25/2016 17:48:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00223	.00972	-.00038	.01373	.06613	.00026	77.440	.00018
Stddev	.00105	.00309	.00132	.00205	.00021	.00009	.075	.00021
%RSD	47.129	31.833	346.72	14.955	.32162	33.087	.09643	116.74
#1	.00235	.00691	-.00086	.01602	.06623	.00027	77.417	.00042
#2	.00112	.00920	-.00139	.01205	.06589	.00034	77.379	.00001
#3	.00321	.01303	.00111	.01311	.06628	.00017	77.523	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00039	.00108	.01311	.03469	1.0666	.00528	22.814	.00226
Stddev	.00015	.00032	.00053	.01962	.0266	.00092	.288	.00095
%RSD	37.987	29.419	4.0055	56.546	2.4929	17.478	1.2638	41.753
#1	.00056	.00082	.01330	.03776	1.0701	.00541	22.650	.00309
#2	.00027	.00143	.01252	.05259	1.0384	.00430	22.645	.00123
#3	.00036	.00097	.01352	.01372	1.0912	.00613	23.147	.00247
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	16.230	.00086	.01073	.00099	-.00405	.00160	2.3863
Stddev	.00023	.056	.00046	.00069	.00181	.00317	.00143	.0169
%RSD	59.834	.34372	53.276	6.4188	182.38	78.406	89.367	.70593
#1	.00032	16.197	.00073	.01029	.00246	-.00129	-.00004	2.4028
#2	.00063	16.198	.00137	.01153	-.00103	-.00752	.00258	2.3871
#3	.00019	16.294	.00048	.01038	.00155	-.00333	.00227	2.3691
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098606 Acquired: 6/25/2016 17:48:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.39726	-.00928	-.00135	-.00044	.03812	.00202
Stddev	.00081	.00077	.00327	.00251	.00044	.00033	.00118
%RSD	1967.6	.19375	35.277	185.96	101.24	.85896	58.324
#1	.00088	.39645	-.00551	-.00111	-.00048	.03844	.00108
#2	-.00002	.39799	-.01103	.00103	.00002	.03814	.00334
#3	-.00074	.39735	-.01131	-.00397	-.00086	.03779	.00164
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9875.4	60112.	3085.9
Stddev	17.7	60.	4.4
%RSD	.17969	.09972	.14239
#1	9863.6	60084.	3084.9
#2	9866.7	60181.	3090.7
#3	9895.8	60072.	3082.1

Approved: June 27, 2016

Sample Name: L1606098608 Acquired: 6/25/2016 17:52:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.00115	.00027	.01585	.03262	.00011	84.217	.00013
Stddev	.00235	.00513	.00111	.00136	.00141	.00004	.314	.00017
%RSD	2475.5	446.86	409.02	8.5842	4.3250	37.715	.37277	125.68
#1	-.00262	.00404	-.00099	.01740	.03376	.00010	84.484	.00019
#2	.00142	-.00477	.00110	.01531	.03104	.00016	84.297	.00026
#3	.00149	.00417	.00071	.01485	.03305	.00008	83.871	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	.00177	.00567	.03434	1.2401	.01415	23.228	.02727
Stddev	.00046	.00068	.00058	.01787	.0425	.00095	.227	.00106
%RSD	299.90	38.444	10.195	52.028	3.4256	6.6956	.97712	3.8827
#1	-.00049	.00241	.00506	.05413	1.2665	.01352	23.122	.02850
#2	.00037	.00184	.00573	.01939	1.1911	.01369	23.489	.02663
#3	-.00034	.00105	.00621	.02950	1.2628	.01524	23.073	.02669
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	12.660	.00033	.00413	.00179	-.00334	-.00002	3.4869
Stddev	.00017	.055	.00044	.00392	.00093	.00378	.00639	.0225
%RSD	23.632	.43231	134.67	94.801	51.837	113.14	36088.	.64396
#1	.00093	12.716	.00084	.00852	.00134	-.00400	-.00400	3.4968
#2	.00069	12.657	.00002	.00099	.00117	-.00675	-.00341	3.5027
#3	.00059	12.607	.00013	.00288	.00285	.00073	.00736	3.4612
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098608 Acquired: 6/25/2016 17:52:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00019**	**.83876**	**-.00998**	**-.00331**	**.00001**	**.01681**	**.00058**
Stddev	.00022	.00442	.00442	.00242	.00077	.00018	.00259
%RSD	112.09	.52651	44.282	73.168	6824.2	1.0650	446.63
#1	-.00039	.84240	-.01091	-.00183	-.00011	.01673	-.00103
#2	-.00022	.84004	-.00517	-.00610	-.00069	.01701	.00357
#3	.00004	.83385	-.01387	-.00199	.00083	.01668	-.00080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9863.7**	**59966.**	**3069.4**
Stddev	33.8	107.	16.4
%RSD	.34299	.17793	.53396
#1	9879.3	59844.	3052.8
#2	9824.9	60042.	3069.7
#3	9886.9	60012.	3085.6

Approved: June 27, 2016

Sample Name: L1606098608PS Acquired: 6/25/2016 17:56:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574216-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19012	4.7962	.18985	.92761	.50579	.02416	80.589	.02376
Stddev	.00115	.0181	.00324	.00188	.00153	.00010	.509	.00031
%RSD	.60416	.37710	1.7085	.20237	.30247	.42369	.63122	1.3080
#1	.18881	4.7997	.18690	.92863	.50534	.02415	80.494	.02389
#2	.19096	4.8123	.19332	.92876	.50750	.02427	81.138	.02341
#3	.19058	4.7766	.18933	.92544	.50454	.02406	80.134	.02399
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09205	.23624	.24131	1.9065	24.291	.50517	25.434	.26103
Stddev	.00018	.00146	.00130	.0143	.039	.00496	.150	.00626
%RSD	.19260	.61641	.53797	.74911	.16017	.98165	.59175	2.3977
#1	.09210	.23659	.24071	1.9177	24.287	.49968	25.563	.26590
#2	.09186	.23464	.24280	1.9113	24.254	.50647	25.268	.26320
#3	.09221	.23749	.24041	1.8904	24.332	.50934	25.470	.25397
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49345	34.822	.23345	4.6884	.23609	.56850	.18268	5.5114
Stddev	.00019	.169	.00142	.0142	.00258	.00539	.00604	.0369
%RSD	.03860	.48533	.60979	.30359	1.0940	.94754	3.3047	.66920
#1	.49323	34.790	.23475	4.6782	.23789	.57472	.18356	5.4689
#2	.49357	35.005	.23367	4.6823	.23725	.56528	.18824	5.5341
#3	.49354	34.671	.23193	4.7047	.23313	.56551	.17626	5.5313
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098608PS Acquired: 6/25/2016 17:56:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574216-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47094**	**1.2232**	**.47334**	**.23988**	**.49331**	**.47631**	**.00522**
Stddev	.00189	.0075	.00962	.00117	.00125	.00347	.00156
%RSD	.40190	.61543	2.0323	.48785	.25347	.72879	29.825
#1	.47068	1.2227	.46319	.24082	.49476	.47230	.00351
#2	.47295	1.2310	.48233	.23857	.49254	.47818	.00558
#3	.46920	1.2160	.47451	.24025	.49265	.47845	.00657
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9831.9**	**59526.**	**3075.8**
Stddev	15.2	194.	19.0
%RSD	.15421	.32611	.61679
#1	9829.8	59604.	3066.0
#2	9817.9	59305.	3063.8
#3	9848.0	59669.	3097.7

Approved: June 27, 2016

Sample Name: L1606098608SDL Acquired: 6/25/2016 18:00:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574216-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00260**	**-.00514**	**.00187**	**.00508**	**.00868**	**.00012**	**17.605**	**-.00015**
Stddev	.00156	.01146	.00424	.00200	.00063	.00008	.142	.00010
%RSD	60.035	222.87	226.36	39.430	7.2120	66.284	.80739	66.159
#1	.00437	.00780	.00118	.00739	.00923	.00013	17.451	-.00025
#2	.00143	-.00924	.00642	.00396	.00881	.00020	17.731	-.00007
#3	.00199	-.01399	-.00198	.00389	.00800	.00004	17.633	-.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00018**	**.00006**	**.00193**	**.02399**	**.21059**	**-.00038**	**4.9921**	**.00509**
Stddev	.00017	.00044	.00078	.00583	.02318	.00216	.0797	.00111
%RSD	97.856	772.57	40.443	24.318	11.008	572.98	1.5970	21.792
#1	-.00004	-.00041	.00282	.01859	.23319	.00193	5.0036	.00623
#2	-.00037	.00046	.00138	.03017	.18686	-.00072	4.9072	.00402
#3	-.00011	.00012	.00158	.02319	.21171	-.00234	5.0654	.00500
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00034**	**2.6677**	**-.00071**	**.00513**	**.00009**	**-.00286**	**-.00058**	**.72991**
Stddev	.00017	.0114	.00035	.00552	.00151	.00279	.00302	.00273
%RSD	51.097	.42653	49.400	107.62	1685.9	97.489	522.92	.37384
#1	.00017	2.6710	-.00044	.00122	.00180	.00001	.00149	.72939
#2	.00033	2.6550	-.00058	.01144	-.00102	-.00304	-.00405	.73285
#3	.00051	2.6770	-.00110	.00273	-.00051	-.00555	.00083	.72747
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098608SDL Acquired: 6/25/2016 18:00:25 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574216-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00006	.17684	.00226	.00019	.00052	.00413	.00011
Stddev	.00027	.00102	.00232	.00368	.00057	.00014	.00068
%RSD	464.39	.57572	102.44	1951.0	110.67	3.3962	623.50
#1	-.00013	.17748	.00403	.00128	.00008	.00397	.00059
#2	.00024	.17567	-.00036	.00320	.00031	.00420	.00041
#3	-.00028	.17737	.00312	-.00392	.00117	.00423	-.00067
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9896.0	60261.	3042.3
Stddev	25.0	81.	28.3
%RSD	.25242	.13391	.92921
#1	9907.7	60289.	3040.8
#2	9913.0	60324.	3071.3
#3	9867.3	60170.	3014.9

Approved: June 27, 2016

Sample Name: L1606098608SDL Acquired: 6/25/2016 18:04:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574216-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00175	-.00807	-.00063	-.00078	.00182	.00014	3.3399	-.00019
Stddev	.00147	.00382	.00127	.00273	.00016	.00003	.0946	.00023
%RSD	83.969	47.279	200.74	348.35	8.5330	23.588	2.8330	121.57
#1	.00097	-.00874	.00010	.00038	.00196	.00018	3.2721	-.00045
#2	.00084	-.00396	.00010	.00117	.00166	.00011	3.4480	-.00012
#3	.00344	-.01151	-.00210	-.00390	.00185	.00014	3.2995	-.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	-.00037	.00107	.01769	-.08284	.00119	.94569	.00052
Stddev	.00047	.00133	.00130	.01702	.09737	.00358	.05932	.00055
%RSD	1445.4	360.33	120.72	96.212	117.53	302.26	6.2728	105.20
#1	.00035	-.00086	.00167	-.00174	-.18470	.00532	.88043	.00057
#2	-.00050	-.00138	-.00041	.02995	-.07314	-.00085	.96028	.00105
#3	.00025	.00113	.00196	.02486	.00931	-.00092	.99635	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00012	.49987	-.00021	.00755	.00303	-.00541	.00850	.13812
Stddev	.00032	.04592	.00020	.00386	.00188	.00314	.00116	.00966
%RSD	265.16	9.1856	96.762	51.054	62.049	58.070	13.660	6.9939
#1	.00001	.44687	-.00020	.01173	.00086	-.00531	.00838	.12921
#2	-.00049	.52761	-.00041	.00680	.00410	-.00232	.00740	.13676
#3	.00011	.52513	-.00001	.00413	.00413	-.00859	.00972	.14839
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098608SDL Acquired: 6/25/2016 18:04:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574216-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00039**	**.03350**	**.00349**	**.00073**	**.00046**	**.00106**	**.00161**
Stddev	.00032	.00105	.00672	.00069	.00093	.00001	.00112
%RSD	80.289	3.1425	192.33	93.894	202.19	.93440	69.701
#1	.00063	.03282	.00553	-.00006	-.00031	.00105	.00058
#2	.00051	.03471	.00896	.00114	.00020	.00107	.00146
#3	.00004	.03296	-.00401	.00113	.00149	.00107	.00281
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10400.**	**61068.**	**3085.8**
Stddev	302.	416.	38.3
%RSD	2.9005	.68044	1.2414
#1	10744.	61402.	3085.7
#2	10277.	61200.	3047.5
#3	10180.	60603.	3124.1

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 18:08:15 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40600	10.196	.39897	.49353	1.0097	.05111	10.072
Stddev	.00134	.005	.00384	.00145	.0055	.00016	.108
%RSD	.32964	.04609	.96241	.29468	.54041	.30777	1.0683
#1	.40454	10.197	.40224	.49289	1.0058	.05115	10.014
#2	.40717	10.200	.39474	.49519	1.0073	.05125	10.006
#3	.40630	10.191	.39992	.49250	1.0159	.05094	10.196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05085	.19930	.50343	.51248	4.0210	48.769	1.0170
Stddev	.00016	.00069	.00173	.00042	.0444	.141	.0095
%RSD	.31221	.34558	.34304	.08145	1.1049	.29004	.93218
#1	.05072	.20005	.50491	.51259	3.9923	48.842	1.0084
#2	.05079	.19915	.50386	.51282	3.9985	48.605	1.0154
#3	.05103	.19869	.50153	.51201	4.0722	48.858	1.0271
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.6470	.50568	1.0217	49.589	.50657	9.9463	.50897
Stddev	.0505	.00379	.0050	.266	.00174	.0145	.00224
%RSD	.52402	.74931	.49273	.53683	.34444	.14541	.44016
#1	9.7040	.50521	1.0275	49.574	.50855	9.9602	.50639
#2	9.6294	.50215	1.0196	49.330	.50589	9.9313	.51042
#3	9.6076	.50969	1.0181	49.862	.50527	9.9474	.51010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 18:08:15 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1949**	**.39405**	**5.1402**	**1.0022**	**1.0107**	**.99866**	**.51518**
Stddev	.0031	.00179	.0100	.0005	.0053	.01659	.00058
%RSD	.25554	.45308	.19427	.05270	.52786	1.6608	.11222
#1	1.1981	.39492	5.1482	1.0028	1.0100	1.0024	.51475
#2	1.1944	.39525	5.1290	1.0020	1.0058	.98052	.51584
#3	1.1920	.39200	5.1434	1.0018	1.0164	1.0131	.51497
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0309**	**1.0070**	F **2.9451**
Stddev	.0008	.0014	.0223
%RSD	.08066	.13880	.75803
#1	1.0316	1.0084	2.9555
#2	1.0300	1.0069	2.9195
#3	1.0311	1.0056	2.9603
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9649.2**	**58096.**	**2982.6**
Stddev	5.7	114.	17.5
%RSD	.05915	.19560	.58802
#1	9648.4	58223.	2978.9
#2	9644.0	58003.	3001.7
#3	9655.3	58062.	2967.2

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 18:11:52 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00062**	**.00113**	**.00060**	**-.00134**	**.00269**	**.00016**	**-.00509**	**-.00011**
Stddev	.00447	.01287	.00139	.00141	.00058	.00006	.00999	.00008
%RSD	723.56	1142.0	234.30	105.23	21.456	39.000	196.19	75.399
#1	-.00262	.00580	.00212	.00028	.00233	.00022	-.01646	-.00020
#2	.00450	-.01343	-.00061	-.00230	.00238	.00017	.00228	-.00009
#3	-.00373	.01101	.00028	-.00199	.00335	.00009	-.00109	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.00031**	**.00131**	**.01880**	**-.14052**	**-.00173**	**.03086**	**-.00243**
Stddev	.00043	.00144	.00103	.01556	.08453	.00290	.07623	.00189
%RSD	438.61	470.86	78.889	82.745	60.152	168.14	247.00	77.536
#1	.00038	.00014	.00051	.03667	-.04368	.00153	-.05463	-.00186
#2	-.00045	-.00104	.00248	.01148	-.17839	-.00266	.09175	-.00090
#3	-.00022	.00182	.00094	.00826	-.19949	-.00404	.05546	-.00454
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00375**	**-.00702**	**.00000**	**.00544**	**-.00002**	**.00180**	**.00158**	**.03715**
Stddev	.00019	.01848	.00030	.00537	.00129	.00320	.00255	.00232
%RSD	5.0585	263.40	8008.1	98.759	6600.5	177.29	161.59	6.2433
#1	.00382	-.02711	-.00030	.01149	.00142	.00145	-.00134	.03895
#2	.00354	-.00319	.00002	.00357	-.00108	.00516	.00266	.03453
#3	.00390	.00925	.00029	.00125	-.00040	-.00120	.00341	.03795
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 18:11:52 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	.00036	-.00017	-.00186	.00075	.00012	.00425
Stddev	.00040	.00044	.01020	.00315	.00028	.00007	.00095
%RSD	153.60	122.95	5879.7	169.59	36.989	59.021	22.345
#1	.00000	.00086	.00219	-.00527	.00044	.00006	.00508
#2	.00073	.00017	.00864	-.00126	.00081	.00010	.00321
#3	.00006	.00004	-.01135	.00095	.00098	.00019	.00446
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9372.1	56632.	2874.9
Stddev	24.8	50.	14.1
%RSD	.26420	.08878	.48885
#1	9350.8	56589.	2886.0
#2	9366.2	56619.	2859.1
#3	9399.3	56687.	2879.7

Approved: June 27, 2016

Sample Name: L1606098610 Acquired: 6/25/2016 18:15:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00168	.00613	.00026	.00622	.01341	.00005	115.37	.00029
Stddev	.00132	.00327	.00219	.00120	.00108	.00003	.56	.00010
%RSD	78.702	53.342	840.89	19.355	8.0675	55.551	.48696	35.866
#1	.00017	.00551	-.00222	.00662	.01310	.00009	115.81	.00019
#2	.00222	.00322	.00107	.00487	.01252	.00003	114.73	.00040
#3	.00265	.00967	.00193	.00717	.01462	.00004	115.55	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	.00098	.00166	.06083	.38326	.00831	27.726	.01242
Stddev	.00045	.00011	.00061	.01132	.08932	.00154	.200	.00158
%RSD	1035.7	11.515	36.634	18.614	23.306	18.467	.72137	12.708
#1	-.00034	.00088	.00210	.06356	.35599	.00912	27.699	.01068
#2	-.00027	.00110	.00191	.04839	.48304	.00927	27.542	.01377
#3	.00048	.00096	.00096	.07054	.31076	.00654	27.939	.01280
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00076	14.397	.00169	.00670	.00176	-.00418	.00480	3.9389
Stddev	.00003	.096	.00045	.00675	.00408	.00345	.00343	.0208
%RSD	3.3704	.66673	26.485	100.67	231.83	82.446	71.530	.52736
#1	.00075	14.373	.00205	.00909	-.00024	-.00395	.00094	3.9592
#2	.00074	14.315	.00119	.01193	.00646	-.00774	.00595	3.9398
#3	.00079	14.503	.00185	-.00091	-.00093	-.00086	.00752	3.9176
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098610 Acquired: 6/25/2016 18:15:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00034**	**.52737**	**-.01662**	**-.00476**	**.00053**	**.01128**	**.00653**
Stddev	.00061	.00238	.00515	.00157	.00069	.00008	.00193
%RSD	181.06	.45087	31.015	32.913	130.43	.73884	29.481
#1	-.00078	.52702	-.01240	-.00297	.00012	.01121	.00451
#2	.00036	.52519	-.01509	-.00547	.00132	.01137	.00674
#3	-.00059	.52991	-.02236	-.00585	.00014	.01126	.00835
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9795.7**	**59337.**	**3075.9**
Stddev	21.1	178.	25.1
%RSD	.21493	.29915	.81568
#1	9771.4	59262.	3048.2
#2	9807.4	59210.	3082.7
#3	9808.3	59540.	3097.0

Approved: June 27, 2016

Sample Name: L1606098612 Acquired: 6/25/2016 18:19:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00237	.00267	-.00060	.08716	.06662	.00041	142.66	.00007
Stddev	.00073	.00275	.00337	.00141	.00149	.00002	1.19	.00021
%RSD	30.688	102.87	562.71	1.6192	2.2393	3.9782	.83233	319.26
#1	.00315	.00518	-.00334	.08576	.06575	.00041	141.33	.00027
#2	.00225	-.00027	-.00161	.08858	.06577	.00039	143.01	.00007
#3	.00171	.00310	.00316	.08713	.06835	.00042	143.63	-.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00010	.00135	.04528	.02649	1.6602	.01963	40.720	.03253
Stddev	.00034	.00053	.00134	.03733	.1018	.00353	.262	.00324
%RSD	339.50	39.036	2.9680	140.93	6.1325	17.994	.64244	9.9559
#1	.00034	.00170	.04668	.04343	1.6128	.02218	40.440	.02879
#2	-.00029	.00162	.04400	-.01631	1.5907	.02112	40.763	.03448
#3	.00024	.00075	.04516	.05234	1.7770	.01560	40.958	.03432
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00115	26.540	.00106	.02312	.00172	-.00084	.00204	2.4275
Stddev	.00029	.172	.00094	.00593	.00284	.00147	.00269	.0046
%RSD	25.080	.64693	88.979	25.661	164.80	174.96	131.78	.18880
#1	.00089	26.345	.00153	.02349	.00164	-.00125	.00490	2.4289
#2	.00110	26.607	.00167	.01701	.00461	-.00205	-.00043	2.4311
#3	.00146	26.668	-.00003	.02886	-.00107	.00079	.00165	2.4223
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098612 Acquired: 6/25/2016 18:19:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**1.7410**	**-.01626**	**-.00241**	**.00038**	**.05602**	**.00415**
Stddev	.00061	.0138	.00313	.00137	.00051	.00009	.00053
%RSD	273.86	.79166	19.237	56.738	134.14	.16489	12.835
#1	-.00019	1.7255	-.01265	-.00306	.00050	.05591	.00443
#2	.00092	1.7457	-.01795	-.00084	.00081	.05608	.00354
#3	-.00006	1.7519	-.01818	-.00334	-.00018	.05607	.00449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9747.5**	**58989.**	**3047.5**
Stddev	4.1	78.	13.8
%RSD	.04198	.13200	.45213
#1	9749.1	58936.	3063.4
#2	9750.6	59079.	3039.1
#3	9742.9	58952.	3040.0

Approved: June 27, 2016

Sample Name: L1606098614 Acquired: 6/25/2016 18:23:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00279	.01008	-.00066	.03390	.03124	.00010	196.20	.00021
Stddev	.00112	.00383	.00147	.00206	.00013	.00007	.85	.00008
%RSD	40.043	38.038	221.13	6.0906	.42986	73.782	.43251	39.178
#1	.00183	.00766	.00090	.03506	.03108	.00016	195.71	.00030
#2	.00402	.00807	-.00201	.03513	.03132	.00002	195.70	.00014
#3	.00253	.01449	-.00089	.03152	.03131	.00013	197.18	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.00088	.00840	.02428	2.9211	.02334	75.647	.04008
Stddev	.00023	.00045	.00064	.00605	.0291	.00193	.677	.00318
%RSD	446.71	50.770	7.6701	24.929	.99693	8.2676	.89445	7.9254
#1	-.00007	.00063	.00780	.03006	2.8958	.02251	74.950	.04023
#2	.00031	.00062	.00908	.02477	2.9529	.02197	75.691	.03683
#3	-.00009	.00140	.00832	.01799	2.9145	.02555	76.301	.04318
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	22.556	.00040	.01184	.00385	-.00016	.00418	3.4833
Stddev	.00033	.097	.00156	.00464	.00193	.00051	.00681	.0215
%RSD	46.348	.43032	390.32	39.236	50.052	315.18	162.82	.61768
#1	.00068	22.526	-.00110	.00655	.00167	-.00006	.01171	3.5066
#2	.00040	22.478	.00029	.01372	.00533	-.00072	-.00154	3.4792
#3	.00106	22.665	.00201	.01524	.00455	.00029	.00237	3.4641
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098614 Acquired: 6/25/2016 18:23:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**2.3670**	**-.02425**	**-.00232**	**-.00024**	**.02160**	**.00232**
Stddev	.00092	.0076	.00398	.00117	.00100	.00003	.00161
%RSD	715.81	.32195	16.401	50.456	415.47	.12320	69.325
#1	.00091	2.3659	-.02580	-.00236	.00091	.02157	.00413
#2	-.00082	2.3599	-.02722	-.00113	-.00075	.02159	.00107
#3	-.00048	2.3751	-.01973	-.00348	-.00089	.02163	.00175
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9640.5**	**58425.**	**3058.6**
Stddev	20.6	100.	4.7
%RSD	.21337	.17110	.15390
#1	9631.4	58473.	3059.7
#2	9664.1	58492.	3062.6
#3	9626.1	58310.	3053.4

Approved: June 27, 2016

Sample Name: L1606098616 Acquired: 6/25/2016 18:27:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00115	.03265	.00256	.11861	.01251	.00029	229.75	.00020
Stddev	.00195	.00899	.00533	.00161	.00061	.00014	.36	.00016
%RSD	169.27	27.532	208.27	1.3580	4.8819	47.504	.15530	78.536
#1	.00069	.04218	-.00197	.11885	.01280	.00014	229.65	.00038
#2	-.00053	.02433	.00844	.12008	.01292	.00030	229.45	.00006
#3	.00329	.03143	.00122	.11689	.01181	.00042	230.15	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00062	.00178	.06744	.03108	3.2126	.03682	84.360	.29574
Stddev	.00023	.00069	.00047	.01537	.1307	.00386	.426	.00133
%RSD	37.410	38.666	.69994	49.454	4.0677	10.480	.50488	.44809
#1	.00042	.00192	.06781	.02007	3.0741	.03526	83.896	.29633
#2	.00087	.00239	.06691	.04863	3.2299	.03400	84.450	.29422
#3	.00056	.00104	.06760	.02452	3.3338	.04122	84.734	.29667
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00072	71.143	.00123	.03078	.00375	-.00200	.00018	5.1619
Stddev	.00027	.049	.00055	.00199	.00114	.00238	.00481	.0107
%RSD	37.642	.06818	44.575	6.4658	30.424	119.08	2715.0	.20775
#1	.00061	71.192	.00158	.03108	.00244	-.00009	.00517	5.1511
#2	.00102	71.095	.00060	.02865	.00425	-.00467	-.00442	5.1621
#3	.00051	71.141	.00151	.03260	.00456	-.00125	-.00023	5.1725
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098616 Acquired: 6/25/2016 18:27:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	6.5212	-.02963	-.00177	-.00109	.08946	.00332
Stddev	.00060	.0079	.00654	.00230	.00079	.00019	.00190
%RSD	161.30	.12151	22.085	130.49	72.258	.21177	57.202
#1	.00105	6.5204	-.02657	.00051	-.00123	.08936	.00540
#2	.00018	6.5138	-.02518	-.00171	-.00179	.08968	.00287
#3	-.00011	6.5296	-.03715	-.00409	-.00024	.08933	.00168
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9566.8	58078.	3050.1
Stddev	16.9	52.	19.7
%RSD	.17631	.08955	.64584
#1	9563.8	58018.	3068.4
#2	9585.0	58111.	3029.2
#3	9551.7	58106.	3052.7

Approved: June 27, 2016

Sample Name: L1606098618 Acquired: 6/25/2016 18:31:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00155	-.00096	.00289	.04251	.02915	.00005	62.293	-.00011
Stddev	.00038	.00238	.00029	.00109	.00082	.00008	.092	.00019
%RSD	24.410	246.77	9.9664	2.5737	2.7985	149.80	.14819	166.73
#1	.00113	.00168	.00257	.04189	.03009	-.00003	62.335	-.00017
#2	.00185	-.00164	.00314	.04186	.02874	.00005	62.357	.00010
#3	.00168	-.00294	.00296	.04377	.02862	.00013	62.187	-.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00031	.00347	.01624	1.9071	.02198	20.259	.01093
Stddev	.00021	.00046	.00016	.00938	.1214	.00171	.067	.00376
%RSD	243.30	146.24	4.6588	57.772	6.3644	7.7782	.33311	34.347
#1	.00028	.00083	.00329	.00573	1.8306	.02394	20.336	.01303
#2	.00011	.00015	.00350	.01922	2.0470	.02118	20.230	.00660
#3	-.00013	-.00004	.00361	.02377	1.8435	.02082	20.211	.01318
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00102	25.999	-.00042	.00444	.00244	-.00359	.00392	3.1846
Stddev	.00023	.100	.00069	.00545	.00095	.00188	.00301	.0187
%RSD	22.864	.38558	161.73	122.87	39.121	52.433	76.809	.58628
#1	.00106	26.085	-.00101	-.00067	.00273	-.00311	.00526	3.2018
#2	.00123	26.024	.00033	.00381	.00321	-.00199	.00047	3.1874
#3	.00077	25.889	-.00059	.01018	.00137	-.00566	.00602	3.1647
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098618 Acquired: 6/25/2016 18:31:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	1.4545	-.00154	-.00233	.00037	.00832	.00208
Stddev	.00132	.0032	.00357	.00066	.00141	.00007	.00021
%RSD	228.95	.22347	232.21	28.221	386.86	.88012	10.206
#1	.00206	1.4546	-.00325	-.00241	-.00025	.00825	.00199
#2	-.00043	1.4577	-.00393	-.00294	-.00063	.00831	.00233
#3	.00009	1.4512	.00257	-.00163	.00198	.00839	.00193
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9841.2	59299.	3061.4
Stddev	105.5	272.	4.9
%RSD	1.0718	.45797	.16152
#1	9746.5	58986.	3061.4
#2	9822.2	59458.	3056.4
#3	9954.9	59454.	3066.3

Approved: June 27, 2016

Sample Name: L1606098620 Acquired: 6/25/2016 18:35:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00004	.03312	.00066	.07608	.03474	.00017	4.5650	.00010
Stddev	.00141	.00304	.00168	.00356	.00133	.00010	.0156	.00016
%RSD	3777.7	9.1736	255.45	4.6823	3.8419	59.446	.34129	166.50
#1	-.00004	.03663	-.00075	.08018	.03521	.00029	4.5712	.00011
#2	.00149	.03142	.00252	.07372	.03577	.00014	4.5766	.00025
#3	-.00133	.03132	.00020	.07433	.03323	.00009	4.5473	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00112	.00060	.00299	.05475	.56414	.00988	1.7714	.01450
Stddev	.00021	.00082	.00143	.01752	.07965	.00243	.0462	.00322
%RSD	18.384	137.46	47.864	31.992	14.119	24.596	2.6071	22.223
#1	.00132	.00110	.00244	.06300	.59505	.00894	1.8247	.01687
#2	.00115	.00105	.00462	.03463	.62370	.00806	1.7436	.01579
#3	.00091	-.00035	.00192	.06662	.47367	.01264	1.7459	.01083
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00137	251.01	-.00057	.03777	.00214	-.00589	.00108	2.0603
Stddev	.00029	.75	.00178	.00427	.00057	.00380	.00694	.0083
%RSD	21.156	.29997	313.28	11.296	26.364	64.542	640.75	.40056
#1	.00125	251.39	-.00025	.04217	.00279	-.00381	-.00651	2.0621
#2	.00170	251.50	-.00248	.03365	.00178	-.01028	.00710	2.0676
#3	.00115	250.15	.00103	.03749	.00186	-.00358	.00266	2.0514
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098620 Acquired: 6/25/2016 18:35:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00101**	**.14703**	**.00470**	**-.00231**	**.00100**	**.00923**	**.00423**
Stddev	.00046	.00057	.00299	.00179	.00041	.00019	.00094
%RSD	44.993	.38637	63.686	77.674	41.001	2.0938	22.219
#1	.00049	.14737	.00735	-.00044	.00130	.00917	.00391
#2	.00129	.14734	.00531	-.00246	.00116	.00906	.00349
#3	.00126	.14637	.00145	-.00402	.00053	.00944	.00529
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9725.3**	**58367.**	**3028.8**
Stddev	17.5	120.	15.3
%RSD	.18040	.20576	.50451
#1	9742.7	58420.	3020.7
#2	9707.6	58451.	3019.2
#3	9725.6	58230.	3046.4

Approved: June 27, 2016

Sample Name: L1606098622 Acquired: 6/25/2016 18:39:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	-.00596	.00037	.05747	.02764	.00023	127.72	.00011
Stddev	.00093	.00925	.00122	.00204	.00088	.00005	1.04	.00012
%RSD	79.226	155.22	327.64	3.5486	3.1759	23.660	.81279	108.09
#1	.00125	-.01464	.00026	.05716	.02813	.00022	127.35	.00021
#2	.00205	-.00701	-.00078	.05560	.02662	.00018	126.92	.00013
#3	.00020	.00377	.00164	.05965	.02815	.00028	128.89	-.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00090	.01009	.02031	2.5853	.01995	32.558	.04793
Stddev	.00056	.00109	.00042	.00894	.0945	.00518	.278	.00190
%RSD	208.67	121.92	4.1494	44.026	3.6562	25.950	.85453	3.9665
#1	.00085	.00146	.01042	.02811	2.6682	.02326	32.522	.05007
#2	.00021	-.00036	.01022	.02229	2.4824	.01399	32.299	.04730
#3	-.00026	.00160	.00962	.01055	2.6053	.02261	32.852	.04643
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00038	46.975	.00038	.00992	.00378	-.00381	.00198	3.5382
Stddev	.00001	.389	.00033	.00514	.00270	.00385	.00283	.0119
%RSD	1.5146	.82774	87.053	51.791	71.542	100.88	142.89	.33659
#1	.00038	46.842	.00000	.00464	.00569	-.00293	.00001	3.5245
#2	.00039	46.670	.00061	.01491	.00068	-.00048	.00522	3.5450
#3	.00039	47.413	.00052	.01022	.00497	-.00802	.00070	3.5451
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098622 Acquired: 6/25/2016 18:39:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	1.7827	-.01653	-.00317	-.00057	.00858	.00262
Stddev	.00056	.0144	.00634	.00502	.00088	.00017	.00024
%RSD	326.45	.80805	38.350	158.35	154.19	1.9458	9.0067
#1	-.00048	1.7747	-.02093	-.00538	-.00155	.00859	.00236
#2	.00051	1.7740	-.00927	.00258	.00014	.00841	.00281
#3	.00049	1.7993	-.01940	-.00671	-.00029	.00875	.00270
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9602.2	57749.	2959.9
Stddev	40.4	252.	26.3
%RSD	.42032	.43708	.88902
#1	9555.9	57561.	2977.4
#2	9630.3	57650.	2972.6
#3	9620.3	58036.	2929.6

Approved: June 27, 2016

Sample Name: L1606098624 Acquired: 6/25/2016 18:42:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00037**	**.00561**	**.00154**	**.40348**	**.02348**	**.00039**	**237.24**
Stddev	.00142	.00394	.00506	.00070	.00039	.00006	.43
%RSD	386.92	70.246	327.66	.17357	1.6661	16.452	.18001
#1	.00014	.00128	.00004	.40369	.02381	.00037	237.56
#2	-.00093	.00658	-.00259	.40270	.02305	.00046	237.41
#3	.00189	.00898	.00718	.40405	.02358	.00034	236.75
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**-.00007**	**.00152**	**.02649**	**.02448**	**5.9223**	**.01174**
Stddev	.00017	.00052	.00056	.00200	.00699	.0587	.00396
%RSD	362.68	725.31	36.507	7.5377	28.540	.99123	33.722
#1	-.00014	.00052	.00185	.02553	.03123	5.8563	.01398
#2	-.00015	-.00040	.00183	.02879	.02493	5.9416	.00717
#3	.00015	-.00034	.00088	.02516	.01728	5.9689	.01408
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**66.698**	**.32515**	**.00019**	**63.762**	**.00021**	**.01502**	**.00144**
Stddev	.426	.00095	.00039	.087	.00030	.00323	.00065
%RSD	.63897	.29073	207.41	.13653	145.82	21.500	44.732
#1	66.222	.32513	-.00023	63.794	-.00012	.01765	.00108
#2	67.045	.32421	.00055	63.829	.00049	.01601	.00219
#3	66.826	.32610	.00024	63.663	.00025	.01142	.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 27, 2016

Sample Name: L1606098624 Acquired: 6/25/2016 18:42:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00149**	**.00522**	**3.3709**	**-.00072**	**1.6690**	F **-.03355**	**-.00155**
Stddev	.00099	.00177	.0249	.00122	.0015	.00264	.00229
%RSD	66.177	33.876	.73770	169.83	.08806	7.8818	147.53
#1	-.00080	.00419	3.3514	-.00109	1.6686	-.03207	.00107
#2	-.00262	.00726	3.3989	-.00171	1.6706	-.03199	-.00316
#3	-.00106	.00421	3.3624	.00064	1.6678	-.03661	-.00256
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00040**	**.00877**	**.00210**
Stddev	.00049	.00015	.00054
%RSD	123.14	1.7509	25.986
#1	-.00082	.00894	.00208
#2	.00014	.00865	.00156
#3	-.00050	.00870	.00265
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9491.7**	**57630.**	**3009.2**
Stddev	78.4	156.	15.6
%RSD	.82592	.27138	.51996
#1	9550.0	57451.	2991.3
#2	9402.6	57694.	3015.7
#3	9522.6	57743.	3020.5

Approved: June 27, 2016

Sample Name: L1606098626 Acquired: 6/25/2016 18:46:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00327	.00679	.00038	.03972	.02631	.00014	117.32	.00023
Stddev	.00072	.00538	.00107	.00258	.00068	.00005	.34	.00019
%RSD	22.022	79.326	284.61	6.5079	2.6006	35.377	.28683	83.944
#1	.00409	.00166	-.00067	.03695	.02674	.00014	117.70	.00003
#2	.00295	.01240	.00033	.04014	.02552	.00019	117.19	.00023
#3	.00276	.00630	.00147	.04206	.02666	.00009	117.07	.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.00126	.00604	.03025	1.5600	.01598	35.418	-.00162
Stddev	.00014	.00104	.00157	.00896	.0430	.00117	.155	.00177
%RSD	71.567	82.474	25.938	29.612	2.7589	7.3145	.43775	108.92
#1	.00004	.00238	.00775	.03493	1.5696	.01501	35.426	-.00126
#2	.00029	.00033	.00573	.01992	1.5974	.01567	35.569	-.00006
#3	.00026	.00107	.00466	.03588	1.5130	.01728	35.259	-.00354
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00045	17.994	-.00024	.00950	.00273	-.00253	.00429	2.8578
Stddev	.00029	.066	.00113	.00146	.00267	.00313	.00183	.0046
%RSD	65.363	.36928	461.23	15.318	98.010	123.57	42.598	.16060
#1	.00011	18.060	.00031	.00854	.00072	.00062	.00280	2.8530
#2	.00057	17.927	.00050	.00879	.00170	-.00564	.00374	2.8621
#3	.00066	17.996	-.00154	.01118	.00576	-.00258	.00633	2.8583
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098626 Acquired: 6/25/2016 18:46:49 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	.95352	-.01676	-.00181	.00025	.00656	.00282
Stddev	.00004	.00361	.00400	.00055	.00086	.00005	.00124
%RSD	36.480	.37812	23.874	30.252	341.08	.79230	44.156
#1	.00017	.95765	-.01632	-.00120	.00116	.00654	.00348
#2	.00013	.95102	-.02097	-.00198	-.00055	.00661	.00138
#3	.00008	.95189	-.01300	-.00225	.00014	.00651	.00358
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9709.6	59301.	3058.5
Stddev	45.7	137.	18.4
%RSD	.47038	.23115	.60138
#1	9758.2	59149.	3039.9
#2	9703.1	59336.	3058.7
#3	9667.6	59417.	3076.7

Approved: June 27, 2016

Sample Name: L1606098628 Acquired: 6/25/2016 18:50:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00127**	**.00062**	**.00226**	**.03408**	**.02631**	**.00011**	**202.60**
Stddev	.00142	.00505	.00320	.00146	.00145	.00006	1.09
%RSD	111.97	810.26	141.74	4.2925	5.4989	52.470	.53642
#1	.00192	-.00172	.00570	.03364	.02795	.00015	202.20
#2	.00225	-.00283	-.00063	.03289	.02521	.00012	201.76
#3	-.00036	.00642	.00171	.03571	.02576	.00005	203.83
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**-.00018**	**.00230**	**.00706**	**.02884**	**3.1108**	**.02231**
Stddev	.00015	.00008	.00109	.00066	.02764	.1253	.00468
%RSD	173.92	43.590	47.288	9.3696	95.862	4.0286	20.962
#1	.00015	-.00019	.00355	.00741	.06027	3.2199	.01700
#2	-.00008	-.00010	.00186	.00630	.00830	2.9739	.02412
#3	.00019	-.00026	.00151	.00747	.01794	3.1385	.02581
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**77.982**	**.03186**	**.00054**	**22.893**	**.00124**	**.00646**	**.00417**
Stddev	.421	.00093	.00029	.135	.00089	.00201	.00077
%RSD	.53979	2.9039	53.423	.59091	71.804	31.048	18.563
#1	77.763	.03137	.00064	22.869	.00109	.00439	.00500
#2	77.715	.03128	.00078	22.771	.00220	.00660	.00405
#3	78.467	.03292	.00022	23.039	.00044	.00839	.00347
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 27, 2016

Sample Name: L1606098628 Acquired: 6/25/2016 18:50:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00202**	**.00107**	**3.6233**	**.00060**	**2.4441**	F **-.03051**	**-.00323**
Stddev	.00386	.00287	.0015	.00175	.0120	.00406	.00089
%RSD	190.96	268.98	.04080	291.82	.49257	13.319	27.545
#1	.00200	.00365	3.6232	-.00046	2.4407	-.03513	-.00322
#2	-.00236	-.00203	3.6248	-.00036	2.4341	-.02890	-.00413
#3	-.00571	.00158	3.6218	.00262	2.4575	-.02750	-.00235
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00057**	**.01373**	**.00279**
Stddev	.00055	.00005	.00121
%RSD	96.088	.39414	43.503
#1	-.00086	.01376	.00139
#2	-.00092	.01376	.00355
#3	.00006	.01367	.00343
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9549.4**	**58061.**	**2994.7**
Stddev	10.8	342.	16.3
%RSD	.11322	.58988	.54589
#1	9556.3	57786.	2984.2
#2	9554.9	57953.	3013.5
#3	9536.9	58445.	2986.3

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 18:54:37 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.36142	9.0966	F .35164	F .43504	F .88841	.04556	F 8.8985
Stddev	.00063	.0241	.00214	.00359	.00668	.00015	.0636
%RSD	.17458	.26527	.60772	.82605	.75211	.32062	.71530
#1	.36081	9.1069	.35253	.43880	.88074	.04567	8.8250
#2	.36138	9.0691	.35318	.43467	.89150	.04539	8.9365
#3	.36207	9.1139	.34920	.43164	.89299	.04562	8.9341
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Fail	Chk Fail	Chk Pass	Chk Fail
Value			.40000	.50000	1.0000		10.000
Range			-10.000%	-10.000%	-10.000%		-10.000%

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04504	F .17683	F .44843	.45584	F 3.5682	F 43.223	.90012
Stddev	.00036	.00059	.00210	.00028	.0180	.402	.00642
%RSD	.79578	.33417	.46848	.06078	.50416	.93081	.71346
#1	.04493	.17615	.45006	.45571	3.5475	42.758	.89283
#2	.04475	.17711	.44916	.45565	3.5796	43.446	.90262
#3	.04544	.17723	.44606	.45616	3.5775	43.464	.90492
Check ?	Chk Pass	Chk Fail	Chk Fail	Chk Pass	Chk Fail	Chk Fail	Chk Pass
Value		.20000	.50000		4.0000	50.000	
Range		-10.000%	-10.000%		-10.000%	-10.000%	

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 8.4568	F .44683	.90610	F 43.837	.45006	F 8.8106	F .44997
Stddev	.1941	.00153	.00307	.290	.00031	.0184	.00285
%RSD	2.2957	.34349	.33891	.66256	.06941	.20845	.63417
#1	8.2816	.44509	.90942	43.504	.44975	8.7897	.44790
#2	8.6655	.44738	.90552	43.973	.45037	8.8181	.44879
#3	8.4231	.44801	.90336	44.035	.45007	8.8241	.45322
Check ?	Chk Fail	Chk Fail	Chk Pass	Chk Fail	Chk Pass	Chk Fail	Chk Fail
Value	10.000	.50000		50.000		10.000	.50000
Range	-10.000%	-10.000%		-10.000%		-10.000%	-10.000%

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 18:54:37 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F 1.0511	F .35868	4.5430	F .88663	F .88982	F .89732	.46317
Stddev	.0038	.00393	.0064	.00114	.00700	.00126	.00115
%RSD	.35733	1.0963	.14052	.12909	.78679	.14039	.24883
#1	1.0514	.35522	4.5358	.88537	.88186	.89705	.46442
#2	1.0547	.35787	4.5453	.88691	.89256	.89622	.46295
#3	1.0472	.36295	4.5480	.88760	.89503	.89870	.46215
Check ?	Chk Fail	Chk Fail	Chk Pass	Chk Fail	Chk Fail	Chk Fail	Chk Pass
Value	1.2000	.40000		1.0000	1.0000	1.0000	
Range	-10.000%	-10.000%		-10.000%	-10.000%	-10.000%	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.92451	F .89326	F 2.6142
Stddev	.00239	.00079	.0303
%RSD	.25806	.08826	1.1591
#1	.92697	.89416	2.5794
#2	.92435	.89291	2.6285
#3	.92221	.89270	2.6347
Check ?	Chk Pass	Chk Fail	Chk Fail
Value		1.0000	1.0000
Range		-10.000%	10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10436.	62603.	3229.6
Stddev	7.	58.	39.3
%RSD	.06851	.09259	1.2179
#1	10435.	62597.	3274.8
#2	10443.	62548.	3203.4
#3	10429.	62663.	3210.5

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 18:58:15 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00102	-.00634	.00315	-.00143	.00123	.00009	-.03120	-.00001
Stddev	.00036	.00615	.00146	.00223	.00014	.00007	.03757	.00022
%RSD	35.623	96.910	46.271	156.16	11.328	79.889	120.40	3000.5
#1	.00142	-.00623	.00470	-.00112	.00129	.00016	.01024	.00017
#2	.00091	-.01255	.00293	-.00379	.00133	.00004	-.06303	-.00025
#3	.00072	-.00026	.00181	.00063	.00107	.00005	-.04081	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00001	-.00012	.00040	.00652	.00729	-.00094	.01960	-.00009
Stddev	.00003	.00070	.00057	.00448	.10732	.00258	.12813	.00039
%RSD	340.66	581.54	142.03	68.614	1471.3	275.05	653.72	408.22
#1	-.00000	.00019	-.00025	.00247	.06763	-.00204	-.01079	.00011
#2	.00004	-.00093	.00068	.01133	.07087	.00201	.16019	-.00054
#3	-.00001	.00037	.00077	.00577	-.11662	-.00279	-.09060	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00312	.01765	-.00021	.00497	.00440	.00279	.00542	.03094
Stddev	.00023	.01443	.00123	.00520	.00590	.00458	.00181	.00198
%RSD	7.4573	81.775	586.87	104.64	134.12	164.15	33.357	6.4039
#1	.00298	.03423	-.00101	.00374	.00273	.00293	.00481	.03016
#2	.00339	.00793	-.00083	.01067	.01095	-.00186	.00399	.03319
#3	.00300	.01078	.00121	.00049	-.00049	.00730	.00745	.02947
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 18:58:15 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00029**	**.00057**	**.00328**	**-.00363**	**.00052**	**.00010**	**.00222**
Stddev	.00020	.00050	.00575	.00205	.00106	.00011	.00064
%RSD	66.832	88.088	175.09	56.396	206.25	116.18	28.891
#1	.00017	.00114	-.00137	-.00544	-.00047	.00019	.00164
#2	.00052	.00028	.00971	-.00141	.00038	-.00003	.00291
#3	.00019	.00027	.00151	-.00405	.00164	.00012	.00210
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10029.**	**60890.**	**3064.8**
Stddev	14.	97.	13.9
%RSD	.13680	.15850	.45397
#1	10045.	60780.	3055.3
#2	10022.	60930.	3080.8
#3	10020.	60960.	3058.3

Approved: June 27, 2016

Sample Name: L1606098630 Acquired: 6/25/2016 19:02:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00160**	**.04734**	**-.00156**	**.13569**	**.01871**	**.00015**	**238.04**
Stddev	.00181	.00348	.00404	.00135	.00123	.00008	.85
%RSD	113.48	7.3553	258.52	.99665	6.5967	52.824	.35679
#1	.00017	.04905	-.00155	.13421	.01822	.00022	239.01
#2	.00364	.04964	.00247	.13685	.01779	.00007	237.71
#3	.00098	.04333	-.00561	.13603	.02011	.00014	237.41
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00026**	**.00032**	**.00251**	**.01182**	**.03060**	**3.4183**	**.04090**
Stddev	.00010	.00018	.00081	.00072	.01332	.0462	.00200
%RSD	39.577	56.009	32.204	6.0677	43.540	1.3506	4.8796
#1	.00014	.00047	.00287	.01260	.01963	3.3856	.03874
#2	.00034	.00036	.00308	.01119	.04543	3.4711	.04128
#3	.00028	.00012	.00159	.01167	.02674	3.3981	.04268
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**90.439**	**.21655**	**.00156**	**78.879**	**.00140**	**.01756**	**.00033**
Stddev	.173	.00121	.00013	.416	.00068	.00677	.00046
%RSD	.19086	.55720	8.0204	.52709	48.349	38.536	138.30
#1	90.626	.21726	.00143	79.353	.00191	.01647	.00076
#2	90.405	.21515	.00168	78.710	.00063	.02480	-.00016
#3	90.286	.21722	.00157	78.574	.00166	.01140	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 27, 2016

Sample Name: L1606098630 Acquired: 6/25/2016 19:02:11 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00294**	**-.00177**	**5.6111**	**-.00017**	**7.0275**	F **-.03316**	**-.00254**
Stddev	.00229	.00087	.0076	.00038	.0379	.00293	.00099
%RSD	77.743	49.294	.13521	227.38	.53946	8.8247	38.798
#1	-.00354	-.00250	5.6121	-.00026	7.0707	-.03043	-.00171
#2	-.00042	-.00199	5.6030	-.00050	7.0124	-.03625	-.00363
#3	-.00488	-.00081	5.6181	.00025	6.9995	-.03280	-.00229
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00065**	**.02003**	**.00667**
Stddev	.00064	.00007	.00116
%RSD	98.374	.34297	17.407
#1	-.00116	.01996	.00557
#2	-.00088	.02003	.00654
#3	.00007	.02010	.00788
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9361.9**	**56594.**	**2990.6**
Stddev	23.4	147.	20.1
%RSD	.24995	.25968	.67365
#1	9379.7	56762.	2967.6
#2	9370.7	56528.	3005.2
#3	9335.4	56491.	2998.9

Approved: June 27, 2016

Sample Name: L1606098632S Acquired: 6/25/2016 19:06:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18902**	**4.8212**	**.19116**	**.97374**	**.50077**	**.02402**	**134.52**	**.02388**
Stddev	.00088	.0081	.00239	.00462	.00118	.00003	.34	.00017
%RSD	.46488	.16867	1.2481	.47438	.23617	.14314	.25228	.70472
#1	.18980	4.8271	.19377	.97198	.50123	.02406	134.68	.02373
#2	.18919	4.8246	.18910	.97898	.49943	.02400	134.13	.02406
#3	.18807	4.8119	.19060	.97026	.50165	.02400	134.75	.02386
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09189**	**.23665**	**.24218**	**1.8859**	**25.617**	**.51395**	**37.596**	**.28166**
Stddev	.00021	.00120	.00028	.0089	.037	.00043	.192	.00203
%RSD	.23170	.50673	.11712	.47202	.14467	.08375	.50984	.71945
#1	.09190	.23534	.24190	1.8828	25.580	.51444	37.585	.28070
#2	.09167	.23691	.24247	1.8960	25.619	.51376	37.792	.28399
#3	.09210	.23769	.24219	1.8790	25.654	.51365	37.409	.28029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49448**	**71.230**	**.23175**	**4.7310**	**.23416**	**.56777**	**.18400**	**6.1097**
Stddev	.00088	.164	.00128	.0060	.00191	.00602	.00319	.0038
%RSD	.17884	.22978	.55101	.12688	.81554	1.0604	1.7354	.06148
#1	.49529	71.252	.23067	4.7327	.23616	.57278	.18033	6.1129
#2	.49354	71.056	.23316	4.7244	.23394	.56944	.18613	6.1108
#3	.49461	71.382	.23142	4.7360	.23236	.56109	.18555	6.1056
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098632S Acquired: 6/25/2016 19:06:04 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.46869	2.2839	.45630	.23531	.49366	.46774	.01477
Stddev	.00224	.0055	.00571	.00163	.00079	.00046	.00310
%RSD	.47718	.23955	1.2515	.69229	.16011	.09871	21.022
#1	.47047	2.2847	.45118	.23550	.49390	.46819	.01151
#2	.46942	2.2781	.45528	.23360	.49431	.46777	.01510
#3	.46618	2.2889	.46246	.23684	.49278	.46726	.01769
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9505.1	57443.	2995.1
Stddev	12.6	181.	7.9
%RSD	.13263	.31567	.26290
#1	9490.9	57238.	2989.7
#2	9509.8	57583.	3004.2
#3	9514.8	57507.	2991.6

Approved: June 27, 2016

Sample Name: L1606098634S Acquired: 6/25/2016 19:09:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19165**	**4.8639**	**.19259**	**.98224**	**.50433**	**.02434**	**136.41**	**.02397**
Stddev	.00283	.0058	.00215	.00673	.00181	.00002	.41	.00039
%RSD	1.4742	.11932	1.1143	.68564	.35885	.08391	.29851	1.6453
#1	.19474	4.8576	.19410	.97512	.50399	.02434	136.06	.02438
#2	.19099	4.8690	.19014	.98851	.50272	.02431	136.30	.02394
#3	.18921	4.8651	.19354	.98310	.50629	.02435	136.86	.02359
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09370**	**.23944**	**.24457**	**1.9014**	**25.851**	**.51838**	**38.336**	**.27292**
Stddev	.00027	.00087	.00143	.0128	.044	.00156	.167	.00356
%RSD	.28910	.36336	.58497	.67456	.17178	.30011	.43499	1.3028
#1	.09395	.23880	.24603	1.9045	25.902	.51991	38.172	.27676
#2	.09341	.23909	.24449	1.9124	25.822	.51842	38.330	.27226
#3	.09373	.24043	.24318	1.8873	25.829	.51680	38.505	.26974
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49947**	**74.848**	**.23412**	**4.7760**	**.23373**	**.57493**	**.18272**	**6.1711**
Stddev	.00101	.224	.00114	.0149	.00097	.00427	.00635	.0140
%RSD	.20163	.29965	.48754	.31111	.41349	.74220	3.4752	.22725
#1	.50053	74.661	.23450	4.7820	.23289	.57819	.18571	6.1610
#2	.49852	74.786	.23283	4.7591	.23352	.57010	.18702	6.1652
#3	.49936	75.096	.23502	4.7869	.23478	.57650	.17542	6.1871
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098634S Acquired: 6/25/2016 19:09:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47482**	**2.3307**	**.45927**	**.23900**	**.49848**	**.47191**	**.00533**
Stddev	.00086	.0091	.01368	.00122	.00164	.00108	.00076
%RSD	.18068	.39132	2.9792	.51192	.32871	.22881	14.237
#1	.47581	2.3242	.47279	.23871	.49842	.47284	.00492
#2	.47440	2.3268	.44543	.23794	.50015	.47073	.00620
#3	.47425	2.3411	.45961	.24034	.49687	.47217	.00485
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9464.2**	**57182.**	**2975.2**
Stddev	11.1	55.	14.2
%RSD	.11755	.09672	.47580
#1	9463.1	57128.	2991.6
#2	9475.9	57180.	2967.1
#3	9453.7	57239.	2967.1

Approved: June 27, 2016

Sample Name: L1606098636SD Acquired: 6/25/2016 19:13:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19162**	**4.8756**	**.19532**	**1.3252**	**.50705**	**.02431**	**243.19**	**.02436**
Stddev	.00178	.0135	.00259	.0039	.00540	.00016	2.22	.00014
%RSD	.92905	.27765	1.3247	.29569	1.0646	.65896	.91281	.56637
#1	.19240	4.8805	.19500	1.3207	.51326	.02435	245.71	.02449
#2	.18958	4.8859	.19805	1.3282	.50441	.02444	242.33	.02421
#3	.19287	4.8603	.19291	1.3265	.50349	.02413	241.52	.02439
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09290**	**.23671**	**.29685**	**1.9145**	**29.596**	**.51587**	**71.839**	**.60737**
Stddev	.00022	.00172	.00059	.0369	.191	.00194	.252	.00417
%RSD	.23161	.72762	.19867	1.9280	.64372	.37694	.35080	.68663
#1	.09280	.23499	.29694	1.9564	29.779	.51781	72.039	.61218
#2	.09315	.23843	.29739	1.9005	29.610	.51588	71.921	.60495
#3	.09276	.23672	.29622	1.8867	29.399	.51393	71.556	.60497
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49958**	**89.482**	**.23320**	**4.8335**	**.23655**	**.57885**	**.18210**	**6.3388**
Stddev	.00153	.784	.00050	.0076	.00169	.00511	.00473	.0094
%RSD	.30585	.87569	.21296	.15803	.71424	.88252	2.5997	.14817
#1	.49951	90.366	.23335	4.8331	.23580	.57825	.18575	6.3355
#2	.50114	89.209	.23361	4.8414	.23849	.57407	.18379	6.3494
#3	.49809	88.872	.23265	4.8261	.23537	.58424	.17675	6.3314
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098636SD Acquired: 6/25/2016 19:13:21 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47318**	**2.1504**	**.45196**	**.23380**	**.49243**	**.47726**	**.00396**
Stddev	.00235	.0203	.01296	.00229	.00254	.00239	.00140
%RSD	.49768	.94209	2.8683	.97909	.51630	.50171	35.414
#1	.47220	2.1736	.45301	.23117	.49302	.48002	.00408
#2	.47587	2.1417	.46436	.23534	.49462	.47583	.00530
#3	.47148	2.1359	.43850	.23489	.48964	.47592	.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9466.5**	**57687.**	**3000.7**
Stddev	28.5	42.	21.4
%RSD	.30105	.07212	.71153
#1	9499.3	57706.	2976.5
#2	9448.1	57639.	3017.0
#3	9452.0	57716.	3008.4

Approved: June 27, 2016

Sample Name: L1606098638SD Acquired: 6/25/2016 19:16:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-09

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19635**	**5.0111**	**.19662**	**1.3658**	**.50590**	**.02455**	**238.74**	**.02470**
Stddev	.00189	.0495	.00202	.0129	.00507	.00013	2.44	.00046
%RSD	.96164	.98714	1.0288	.94297	1.0027	.51871	1.0237	1.8632
#1	.19421	4.9540	.19875	1.3513	.50004	.02440	236.05	.02465
#2	.19777	5.0396	.19638	1.3761	.50894	.02464	240.82	.02518
#3	.19706	5.0398	.19472	1.3699	.50872	.02461	239.35	.02426
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09456**	**.24315**	**.24888**	**1.9280**	**29.506**	**.51676**	**69.466**	**.60260**
Stddev	.00054	.00286	.00145	.0328	.362	.00473	.757	.00806
%RSD	.56749	1.1744	.58163	1.6990	1.2271	.91552	1.0898	1.3377
#1	.09518	.24020	.24797	1.8914	29.119	.51186	68.628	.59529
#2	.09432	.24590	.25055	1.9547	29.837	.52131	70.101	.61124
#3	.09419	.24336	.24812	1.9378	29.562	.51712	69.668	.60126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50828**	**86.839**	**.23731**	**4.9079**	**.23796**	**.58722**	**.18727**	**6.3571**
Stddev	.00153	.812	.00040	.0105	.00122	.00763	.00717	.0147
%RSD	.30188	.93521	.16702	.21476	.51147	1.2987	3.8265	.23138
#1	.50998	85.938	.23758	4.9185	.23889	.59365	.18466	6.3682
#2	.50784	87.516	.23685	4.9076	.23841	.58922	.19537	6.3627
#3	.50701	87.061	.23748	4.8975	.23659	.57879	.18177	6.3405
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098638SD Acquired: 6/25/2016 19:16:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573530-09

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48230**	**2.1413**	**.45206**	**.24148**	**.50819**	**.47197**	**.00465**
Stddev	.00016	.0221	.00841	.00203	.00480	.00162	.00175
%RSD	.03337	1.0323	1.8614	.84256	.94539	.34380	37.692
#1	.48228	2.1164	.44367	.23931	.50264	.47335	.00633
#2	.48215	2.1586	.45201	.24177	.51108	.47237	.00283
#3	.48247	2.1488	.46050	.24334	.51084	.47018	.00481
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9367.1**	**56617.**	**3005.4**
Stddev	24.2	279.	8.9
%RSD	.25886	.49353	.29743
#1	9345.0	56900.	3015.6
#2	9363.2	56609.	2998.7
#3	9393.0	56341.	3002.0

Approved: June 27, 2016

Sample Name: L1606098640 Acquired: 6/25/2016 19:20:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00070	.00014	.00047	.01204	.00394	.00013	2.2418	.00009
Stddev	.00052	.00246	.00354	.00206	.00041	.00015	.0448	.00026
%RSD	75.327	1722.8	753.06	17.114	10.437	111.96	1.9977	298.05
#1	-.00120	.00298	.00434	.01328	.00360	.00001	2.2906	-.00017
#2	-.00073	-.00107	-.00032	.00966	.00384	.00009	2.2025	.00008
#3	-.00016	-.00148	-.00261	.01318	.00440	.00029	2.2324	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00011	-.00023	.00162	.03197	.19488	-.00199	.70657	-.00157
Stddev	.00020	.00043	.00063	.03003	.05117	.00159	.10487	.00034
%RSD	172.28	188.43	38.822	93.912	26.255	79.698	14.843	21.723
#1	-.00014	.00024	.00129	.06510	.20250	-.00219	.77648	-.00118
#2	.00010	-.00061	.00122	.00654	.14033	-.00346	.58598	-.00170
#3	-.00030	-.00032	.00234	.02429	.24180	-.00031	.75725	-.00182
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	1.3245	-.00000	-.00132	.00155	-.00034	.00103	1.8661
Stddev	.00043	.0047	.00128	.00539	.00283	.00334	.00522	.0030
%RSD	69.622	.35334	42382.	408.47	183.18	979.63	508.03	.16155
#1	.00110	1.3264	-.00135	.00378	-.00057	-.00417	-.00062	1.8696
#2	.00029	1.3279	.00121	-.00695	.00477	.00193	.00687	1.8648
#3	.00045	1.3192	.00013	-.00078	.00045	.00122	-.00317	1.8641
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098640 Acquired: 6/25/2016 19:20:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00060	.02890	-.00018	-.00245	.00125	.00316	.00092
Stddev	.00104	.00022	.00313	.00122	.00036	.00008	.00187
%RSD	172.87	.75581	1755.3	49.848	28.928	2.5446	202.44
#1	-.00053	.02865	.00335	-.00105	.00165	.00322	-.00102
#2	.00152	.02900	-.00128	-.00328	.00095	.00320	.00271
#3	.00082	.02905	-.00260	-.00302	.00115	.00307	.00108
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9902.6	60698.	3047.4
Stddev	11.3	88.	21.1
%RSD	.11376	.14441	.69149
#1	9915.6	60659.	3066.8
#2	9895.9	60798.	3025.0
#3	9896.3	60636.	3050.3

Approved: June 27, 2016

Sample Name: L1606098642 Acquired: 6/25/2016 19:24:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00084	-.00125	.00012	.00714	.00291	.00014	2.2957	-.00008
Stddev	.00151	.00416	.00315	.00149	.00136	.00010	.0287	.00011
%RSD	179.62	331.72	2535.0	20.853	46.790	76.580	1.2503	140.66
#1	.00086	.00295	-.00350	.00543	.00443	.00023	2.2645	-.00020
#2	-.00134	-.00134	.00221	.00806	.00180	.00015	2.3210	.00001
#3	-.00204	-.00537	.00167	.00794	.00250	.00002	2.3016	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	.00054	.00126	.01879	.13459	.00101	.70251	-.00031
Stddev	.00021	.00073	.00033	.01779	.06299	.00139	.04015	.00188
%RSD	76.216	135.58	26.342	94.669	46.805	137.70	5.7150	613.21
#1	.00043	.00109	.00162	.03687	.13442	.00244	.65916	.00151
#2	.00035	-.00029	.00096	.01820	.19766	.00092	.73842	-.00224
#3	.00004	.00081	.00121	.00130	.07167	-.00034	.70994	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	1.3914	-.00012	.00599	-.00050	-.00197	.00192	1.9147
Stddev	.00031	.0274	.00128	.00446	.00248	.00478	.00405	.0013
%RSD	265.01	1.9704	1039.6	74.477	491.66	243.04	211.10	.06740
#1	-.00017	1.4067	.00078	.00869	.00158	.00334	.00542	1.9141
#2	.00008	1.4078	.00044	.00843	.00015	-.00331	-.00251	1.9137
#3	.00044	1.3598	-.00159	.00084	-.00325	-.00593	.00284	1.9161
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098642 Acquired: 6/25/2016 19:24:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.02978**	**.00659**	**-.00224**	**.00021**	**.00288**	**.00046**
Stddev	.00041	.00031	.00898	.00218	.00024	.00011	.00203
%RSD	319.77	1.0309	136.22	97.103	115.48	3.6974	442.65
#1	.00034	.02969	.01094	-.00308	.00030	.00286	-.00018
#2	-.00043	.03012	.01258	.00023	.00040	.00300	.00273
#3	-.00030	.02953	-.00373	-.00388	-.00006	.00279	-.00117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9910.0**	**60405.**	**3027.1**
Stddev	8.6	109.	25.1
%RSD	.08719	.18086	.83024
#1	9909.0	60400.	3001.0
#2	9919.1	60298.	3029.3
#3	9901.9	60516.	3051.1

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 19:28:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.38218	9.6308	.37557	.46431	.95962	.04828	9.5695
Stddev	.00218	.0178	.00127	.00116	.00217	.00012	.0717
%RSD	.57165	.18471	.33835	.24921	.22635	.23895	.74942
#1	.37992	9.6388	.37606	.46299	.96032	.04841	9.5557
#2	.38232	9.6104	.37652	.46516	.96137	.04820	9.6471
#3	.38429	9.6432	.37413	.46479	.95719	.04823	9.5057
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.04801	.18801	.47395	.48473	3.7689	46.355	.97311
Stddev	.00014	.00020	.00045	.00153	.0264	.220	.00378
%RSD	.29427	.10445	.09483	.31643	.70136	.47512	.38849
#1	.04785	.18823	.47438	.48634	3.7952	46.500	.97746
#2	.04812	.18785	.47399	.48328	3.7693	46.464	.97068
#3	.04806	.18795	.47348	.48458	3.7423	46.102	.97118
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.0717	.47590	.96524	47.107	.47852	9.3733	.47882
Stddev	.0608	.00396	.00399	.173	.00072	.0111	.00296
%RSD	.67059	.83199	.41378	.36832	.15104	.11884	.61810
#1	9.0038	.47335	.96959	47.188	.47773	9.3765	.47551
#2	9.1213	.48046	.96440	47.226	.47916	9.3609	.48123
#3	9.0900	.47388	.96173	46.908	.47866	9.3825	.47971
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 19:28:27 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1223**	**.37795**	**4.8400**	**.94463**	**.95969**	**.96684**	**.48966**
Stddev	.0016	.00541	.0100	.00151	.00470	.01176	.00307
%RSD	.14404	1.4313	.20631	.15941	.49016	1.2167	.62598
#1	1.1238	.37410	4.8492	.94636	.96229	.96908	.48613
#2	1.1206	.37562	4.8414	.94360	.96253	.97732	.49169
#3	1.1224	.38414	4.8294	.94394	.95426	.95412	.49116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.97958**	**.95235**	F **2.8246**
Stddev	.00154	.00042	.0035
%RSD	.15724	.04377	.12384
#1	.97882	.95263	2.8278
#2	.97857	.95254	2.8252
#3	.98136	.95187	2.8208
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10132.**	**61264.**	**3100.4**
Stddev	.	134.	6.9
%RSD	.00202	.21941	.22117
#1	10132.	61202.	3092.6
#2	10132.	61418.	3103.3
#3	10132.	61171.	3105.3

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 19:32:05 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00027**	**-.00034**	**.00165**	**-.00065**	**.00143**	**.00014**	**-.04509**	**-.00015**
Stddev	.00053	.00835	.00116	.00135	.00075	.00012	.04632	.00018
%RSD	198.69	2437.1	70.395	208.11	52.425	84.191	102.74	120.05
#1	.00081	.00499	.00229	-.00108	.00058	.00001	-.09453	-.00022
#2	.00023	-.00997	.00235	-.00174	.00173	.00020	-.03804	.00005
#3	-.00025	.00395	.00031	.00087	.00199	.00023	-.00270	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00008**	**-.00017**	**.00065**	**.02423**	**-.06433**	**-.00295**	**-.01903**	**-.00066**
Stddev	.00013	.00077	.00059	.01555	.07126	.00237	.08401	.00260
%RSD	162.10	456.13	90.441	64.178	110.77	80.373	441.41	395.33
#1	-.00022	-.00087	-.00002	.03897	.01654	-.00026	-.10302	.00036
#2	-.00006	.00066	.00091	.02575	-.09166	-.00387	.06499	-.00361
#3	.00004	-.00030	.00106	.00798	-.11789	-.00472	-.01907	.00127
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00313**	**.02145**	**.00120**	**.00197**	**.00164**	**.00212**	**.00101**	**.04112**
Stddev	.00013	.00743	.00050	.00366	.00312	.00166	.00069	.00272
%RSD	4.1237	34.660	41.579	185.66	190.04	78.472	68.223	6.6255
#1	.00318	.03002	.00170	.00620	.00310	.00128	.00172	.03946
#2	.00323	.01754	.00070	-.00004	.00377	.00104	.00035	.04426
#3	.00298	.01678	.00121	-.00024	-.00194	.00404	.00097	.03964
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 19:32:05 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00072**	**.00051**	**-.00006**	**-.00149**	**-.00026**	**.00006**	**.00316**
Stddev	.00004	.00041	.00466	.00123	.00016	.00032	.00144
%RSD	4.9365	80.523	8195.1	82.501	61.089	521.42	45.405
#1	.00073	.00010	.00498	-.00182	-.00044	-.00016	.00318
#2	.00068	.00091	-.00094	-.00252	-.00020	.00042	.00172
#3	.00075	.00050	-.00421	-.00013	-.00014	-.00008	.00459
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9625.9**	**58446.**	**2947.7**
Stddev	17.4	102.	8.2
%RSD	.18036	.17465	.27941
#1	9605.9	58491.	2954.6
#2	9635.9	58518.	2950.0
#3	9636.0	58329.	2938.6

Approved: June 27, 2016

Sample Name: PBW LH Acquired: 6/25/2016 19:36:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	-.00480	.00297	-.00088	.00071	.00016	-.03609	-.00030
Stddev	.00096	.00538	.00061	.00047	.00081	.00006	.00576	.00022
%RSD	436.54	112.05	20.402	53.250	112.94	41.040	15.975	74.291
#1	-.00063	-.00271	.00258	-.00071	.00057	.00010	-.04014	-.00038
#2	.00002	-.00078	.00267	-.00141	-.00001	.00022	-.03863	-.00005
#3	.00126	-.01092	.00367	-.00052	.00158	.00014	-.02949	-.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.00027	.00021	.03551	.02057	.00058	-.03422	.00199
Stddev	.00019	.00046	.00040	.00062	.11033	.00127	.05831	.00213
%RSD	211.66	173.58	192.44	1.7348	536.36	218.26	170.39	107.33
#1	.00009	.00043	-.00014	.03559	.14793	.00205	.01703	.00051
#2	-.00029	.00063	.00065	.03485	-.04548	-.00019	-.09766	.00101
#3	-.00007	-.00025	.00012	.03607	-.04075	-.00011	-.02203	.00443
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00027	.01920	-.00013	.00015	.00308	-.00169	.00218	.00530
Stddev	.00020	.01381	.00043	.00436	.00410	.00157	.00344	.00135
%RSD	72.649	71.919	323.98	2952.6	133.25	92.573	157.59	25.417
#1	-.00050	.00540	-.00047	-.00185	.00268	-.00008	.00514	.00605
#2	-.00014	.01919	.00035	-.00286	.00737	-.00321	.00301	.00374
#3	-.00017	.03301	-.00027	.00515	-.00081	-.00179	-.00160	.00610
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: PBW LH Acquired: 6/25/2016 19:36:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.00001**	**.00007**	**-.00205**	**.00056**	**-.00012**	**.00138**
Stddev	.00105	.00006	.00526	.00274	.00041	.00008	.00122
%RSD	278.35	503.89	7708.4	133.89	73.183	68.172	88.458
#1	.00057	-.00005	.00045	-.00401	.00011	-.00018	.00093
#2	-.00020	.00002	-.00537	-.00321	.00065	-.00003	.00045
#3	-.00151	.00007	.00513	.00108	.00091	-.00016	.00276
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10355.**	**62690.**	**3143.1**
Stddev	14.	21.	40.1
%RSD	.13810	.03356	1.2743
#1	10371.	62711.	3176.8
#2	10343.	62669.	3098.8
#3	10351.	62689.	3153.6

Approved: June 27, 2016

Sample Name: LCSW LH Acquired: 6/25/2016 19:39:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19366**	**4.9137**	**.19220**	**.93203**	**.49068**	**.02467**	**4.9632**	**.02443**
Stddev	.00070	.0138	.00341	.00396	.00423	.00007	.0538	.00016
%RSD	.36335	.28142	1.7740	.42472	.86189	.28277	1.0835	.64799
#1	.19288	4.8983	.19002	.92766	.48616	.02461	4.9413	.02459
#2	.19385	4.9180	.19044	.93305	.49453	.02465	5.0244	.02441
#3	.19425	4.9249	.19613	.93537	.49136	.02474	4.9238	.02428
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09715**	**.24544**	**.24999**	**1.9443**	**23.472**	**.50293**	**4.6813**	**.24132**
Stddev	.00066	.00263	.00041	.0106	.182	.00291	.0938	.00318
%RSD	.68088	1.0726	.16565	.54556	.77586	.57762	2.0038	1.3188
#1	.09680	.24301	.25039	1.9373	23.301	.50365	4.6704	.23802
#2	.09792	.24824	.24956	1.9391	23.664	.50540	4.7800	.24157
#3	.09674	.24506	.25002	1.9565	23.450	.49973	4.5934	.24437
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50304**	**24.148**	**.24571**	**4.6828**	**.24554**	**.57884**	**.18202**	**2.4064**
Stddev	.00049	.122	.00061	.0125	.00123	.00461	.00367	.0046
%RSD	.09743	.50324	.24625	.26789	.50266	.79649	2.0171	.19316
#1	.50339	24.028	.24640	4.6758	.24587	.57352	.17868	2.4078
#2	.50325	24.271	.24545	4.6973	.24658	.58167	.18595	2.4102
#3	.50248	24.145	.24528	4.6753	.24418	.58132	.18143	2.4012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LCSW LH Acquired: 6/25/2016 19:39:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48493**	**.49684**	**.48674**	**.24907**	**.50464**	**.48284**	**.01676**
Stddev	.00108	.00397	.00310	.00041	.00236	.00325	.00211
%RSD	.22287	.79928	.63744	.16637	.46686	.67256	12.564
#1	.48462	.49378	.48665	.24947	.50200	.48055	.01435
#2	.48613	.50133	.48369	.24909	.50538	.48656	.01775
#3	.48404	.49542	.48989	.24864	.50653	.48141	.01820
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9761.3**	**59171.**	**3026.9**
Stddev	5.3	58.	23.7
%RSD	.05400	.09751	.78195
#1	9766.4	59236.	3050.7
#2	9755.9	59148.	3003.3
#3	9761.7	59127.	3026.7

Approved: June 27, 2016

Sample Name: L1606090723 Acquired: 6/25/2016 19:43:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	.01800	.14333	.20159	.04322	.00011	82.135	.00062
Stddev	.00074	.00440	.00262	.00108	.00176	.00009	.153	.00002
%RSD	81.113	24.457	1.8284	.53531	4.0750	85.790	.18660	3.6806
#1	.00039	.02274	.14560	.20094	.04396	.00020	82.043	.00061
#2	.00058	.01723	.14046	.20283	.04121	.00011	82.051	.00064
#3	.00176	.01403	.14393	.20099	.04450	.00001	82.312	.00060
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00085	.00186	.00181	3.0759	4.3146	.03826	51.383	.03252
Stddev	.00009	.00076	.00070	.0448	.0921	.00398	.083	.00353
%RSD	10.346	41.113	38.683	1.4576	2.1337	10.401	.16137	10.870
#1	.00081	.00098	.00242	3.0253	4.2316	.04144	51.475	.03488
#2	.00094	.00223	.00197	3.0916	4.4136	.03380	51.362	.02845
#3	.00078	.00237	.00105	3.1108	4.2984	.03956	51.313	.03422
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00258	133.73	-.00015	.01191	.00179	-.00228	.00665	8.0891
Stddev	.00008	.12	.00113	.00694	.00129	.00283	.00532	.0280
%RSD	3.2153	.09189	747.26	58.268	71.933	124.12	79.994	.34670
#1	.00264	133.81	-.00126	.01916	.00318	-.00553	.01195	8.1130
#2	.00249	133.59	.00099	.00533	.00159	-.00033	.00671	8.0582
#3	.00262	133.80	-.00018	.01123	.00062	-.00099	.00131	8.0960
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606090723 Acquired: 6/25/2016 19:43:38 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00001**	**2.6416**	**-.00732**	**-.00182**	**-.00046**	**.00542**	**.00128**
Stddev	.00038	.0023	.00771	.00082	.00062	.00021	.00019
%RSD	7616.2	.08543	105.44	45.025	136.48	3.8805	14.578
#1	.00020	2.6400	-.01112	-.00260	-.00073	.00544	.00120
#2	.00025	2.6406	.00156	-.00189	.00026	.00563	.00115
#3	-.00044	2.6441	-.01239	-.00097	-.00089	.00521	.00149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9566.3**	**57706.**	**3016.3**
Stddev	21.2	40.	8.6
%RSD	.22170	.06981	.28561
#1	9583.7	57737.	3006.9
#2	9572.5	57660.	3023.9
#3	9542.7	57721.	3018.2

Approved: June 27, 2016

Sample Name: L1606098601 Acquired: 6/25/2016 19:47:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00061	.63226	.00101	.09520	.04126	.00012	31.325	.00014
Stddev	.00183	.00734	.00119	.00196	.00050	.00007	.135	.00021
%RSD	298.65	1.1612	118.08	2.0630	1.2197	57.984	.43030	153.25
#1	.00185	.62395	-.00028	.09744	.04176	.00005	31.451	-.00001
#2	-.00149	.63786	.00207	.09436	.04076	.00018	31.183	.00005
#3	.00148	.63498	.00124	.09379	.04125	.00013	31.342	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	.00251	.00378	1.4621	1.2075	.01677	5.9028	.04892
Stddev	.00024	.00020	.00199	.0362	.0294	.00358	.0605	.00066
%RSD	20.175	7.8011	52.767	2.4785	2.4351	21.330	1.0243	1.3538
#1	.00129	.00246	.00338	1.4981	1.1821	.01735	5.9016	.04861
#2	.00090	.00272	.00594	1.4256	1.2008	.02003	5.8430	.04848
#3	.00133	.00234	.00201	1.4624	1.2397	.01294	5.9639	.04969
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00119	122.45	.00122	.03952	.00058	-.00189	.00677	4.0503
Stddev	.00024	.35	.00124	.00581	.00157	.00112	.00463	.0371
%RSD	19.925	.28250	101.52	14.694	270.52	59.209	68.294	.91471
#1	.00135	122.68	.00181	.04077	.00200	-.00256	.00933	4.0789
#2	.00131	122.05	-.00020	.04460	-.00110	-.00252	.00956	4.0634
#3	.00092	122.62	.00206	.03319	.00084	-.00060	.00143	4.0084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098601 Acquired: 6/25/2016 19:47:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.54428**	**.01566**	**-.00252**	**.00147**	**.03503**	**.00138**
Stddev	.00052	.00100	.00262	.00158	.00115	.00040	.00180
%RSD	330.58	.18426	16.757	62.766	78.497	1.1335	130.15
#1	-.00032	.54517	.01814	-.00107	.00112	.03533	.00331
#2	-.00057	.54319	.01592	-.00228	.00275	.03517	-.00024
#3	.00042	.54448	.01291	-.00422	.00053	.03458	.00107
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9674.1**	**58435.**	**3018.4**
Stddev	45.2	129.	18.2
%RSD	.46720	.22152	.60258
#1	9673.0	58340.	2997.4
#2	9719.9	58382.	3028.7
#3	9629.5	58582.	3029.1

Approved: June 27, 2016

Sample Name: L1606098603 Acquired: 6/25/2016 19:51:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00113**	**.08091**	**.00257**	**.02612**	**.02343**	**.00026**	**258.72**
Stddev	.00364	.00403	.00338	.00065	.00023	.00010	.22
%RSD	322.73	4.9793	131.60	2.5002	.99712	37.911	.08495
#1	-.00201	.07953	.00151	.02617	.02317	.00019	258.95
#2	.00512	.08545	-.00015	.02675	.02363	.00037	258.52
#3	.00028	.07776	.00635	.02545	.02348	.00021	258.68
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00056**	**.00486**	**.00101**	**.01760**	**1.6277**	**1.7887**	**.01926**
Stddev	.00018	.00049	.00101	.00048	.0214	.0748	.00269
%RSD	32.935	10.099	100.65	2.7241	1.3157	4.1799	13.963
#1	.00053	.00446	.00070	.01814	1.6519	1.7719	.02232
#2	.00040	.00472	.00018	.01725	1.6198	1.8705	.01729
#3	.00076	.00541	.00214	.01740	1.6113	1.7238	.01816
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**67.571**	**3.7591**	**.00091**	**16.176**	**.00450**	**.03792**	**.00200**
Stddev	.265	.0091	.00013	.042	.00050	.00459	.00102
%RSD	.39176	.24313	14.640	.25963	11.081	12.099	51.049
#1	67.875	3.7689	.00083	16.148	.00428	.03292	.00317
#2	67.391	3.7508	.00083	16.224	.00415	.03891	.00158
#3	67.448	3.7575	.00106	16.157	.00507	.04193	.00126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 27, 2016

Sample Name: L1606098603 Acquired: 6/25/2016 19:51:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00201**	**-.00717**	**3.9929**	**.00071**	**1.4034**	F **-.03512**	**-.00302**
Stddev	.00033	.00269	.0187	.00006	.0013	.00376	.00159
%RSD	16.650	37.521	.46951	8.6416	.08919	10.706	52.853
#1	-.00201	-.00583	3.9724	.00069	1.4035	-.03701	-.00329
#2	-.00234	-.01026	3.9969	.00078	1.4046	-.03756	-.00130
#3	-.00167	-.00541	4.0093	.00066	1.4021	-.03079	-.00446
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						36.000	
Low Limit						-.03000	

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.00011**	**.03959**	**.00096**
Stddev	.00028	.00012	.00361
%RSD	248.38	.29182	376.14
#1	.00034	.03947	.00158
#2	-.00020	.03969	.00421
#3	.00020	.03962	-.00292
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9451.5**	**57637.**	**3009.6**
Stddev	22.8	186.	22.0
%RSD	.24088	.32311	.72999
#1	9477.8	57852.	2986.4
#2	9439.3	57520.	3012.4
#3	9437.5	57540.	3030.0

Approved: June 27, 2016

Sample Name: L1606098605 Acquired: 6/25/2016 19:55:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00137	.11904	-.00057	.01716	.07339	.00069	79.533	.00007
Stddev	.00111	.00237	.00183	.00141	.00107	.00010	.468	.00014
%RSD	81.063	1.9908	322.69	8.2448	1.4582	14.460	.58849	215.58
#1	-.00160	.12158	.00130	.01581	.07215	.00080	78.994	-.00002
#2	-.00016	.11865	-.00237	.01703	.07401	.00066	79.770	-.00001
#3	-.00235	.11689	-.00063	.01863	.07401	.00061	79.836	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00197	.03453	.22031	1.0996	.00600	23.636	.02412
Stddev	.00010	.00062	.00164	.01719	.0321	.00378	.124	.00114
%RSD	58.539	31.534	4.7611	7.8016	2.9198	62.984	.52590	4.7055
#1	.00028	.00148	.03642	.22738	1.1284	.00174	23.677	.02484
#2	.00008	.00176	.03343	.23283	1.0650	.00731	23.734	.02281
#3	.00016	.00266	.03374	.20072	1.1054	.00895	23.496	.02471
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	16.543	.00139	.02145	.00230	-.00291	.00287	2.5906
Stddev	.00010	.077	.00029	.00514	.00167	.00113	.00378	.0043
%RSD	11.067	.46265	20.622	23.950	72.689	38.933	132.03	.16499
#1	.00094	16.521	.00147	.02583	.00422	-.00367	.00465	2.5950
#2	.00093	16.628	.00163	.02271	.00152	-.00161	-.00148	2.5865
#3	.00076	16.480	.00107	.01580	.00116	-.00345	.00543	2.5902
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098605 Acquired: 6/25/2016 19:55:15 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00022**	**.41216**	**-.00457**	**-.00401**	**.00095**	**.08292**	**.00137**
Stddev	.00045	.00253	.00113	.00092	.00095	.00025	.00112
%RSD	198.91	.61368	24.692	22.922	99.932	.30169	82.337
#1	.00020	.40988	-.00328	-.00486	-.00009	.08312	.00008
#2	.00068	.41488	-.00504	-.00303	.00116	.08301	.00218
#3	-.00021	.41173	-.00539	-.00414	.00177	.08264	.00183
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9691.4**	**59019.**	**3013.1**
Stddev	15.7	113.	12.9
%RSD	.16185	.19156	.42939
#1	9673.9	58889.	3028.0
#2	9704.2	59073.	3004.1
#3	9696.2	59095.	3007.4

Approved: June 27, 2016

Sample Name: L1606098607 Acquired: 6/25/2016 19:59:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00078	.03854	.00139	.01595	.03639	.00021	86.351	.00013
Stddev	.00196	.00438	.00171	.00299	.00069	.00005	.183	.00018
%RSD	252.38	11.356	122.54	18.743	1.8946	25.559	.21179	130.52
#1	-.00064	.04027	.00252	.01429	.03564	.00026	86.561	.00033
#2	-.00004	.03356	-.00057	.01941	.03654	.00022	86.226	.00007
#3	.00302	.04179	.00223	.01417	.03700	.00015	86.267	-.00000
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	.00096	.00901	.09595	1.3588	.01896	23.947	.13765
Stddev	.00012	.00155	.00054	.00336	.0905	.00285	.152	.00156
%RSD	14.271	161.05	6.0176	3.5057	6.6619	15.032	.63449	1.1314
#1	.00074	.00257	.00840	.09606	1.2544	.01772	23.782	.13585
#2	.00084	-.00052	.00942	.09926	1.4148	.02223	24.081	.13859
#3	.00099	.00083	.00922	.09254	1.4072	.01695	23.978	.13851
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	12.868	.00006	.00776	.00294	-.00141	.00160	3.6487
Stddev	.00036	.033	.00069	.00647	.00245	.00292	.00413	.0140
%RSD	74.294	.25857	1239.7	83.320	83.569	207.44	258.10	.38292
#1	.00008	12.905	-.00031	.01172	.00013	.00158	.00626	3.6621
#2	.00078	12.859	.00085	.01126	.00466	-.00154	-.00162	3.6496
#3	.00059	12.840	-.00038	.00030	.00403	-.00426	.00017	3.6342
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098607 Acquired: 6/25/2016 19:59:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.85925**	**-.01297**	**-.00261**	**.00027**	**.01872**	**-.00023**
Stddev	.00058	.00368	.00482	.00118	.00049	.00005	.00100
%RSD	1135.5	.42821	37.150	45.319	182.28	.27976	440.95
#1	.00028	.86236	-.00802	-.00398	-.00019	.01878	.00007
#2	-.00072	.86019	-.01323	-.00183	.00021	.01871	.00059
#3	.00028	.85519	-.01765	-.00203	.00079	.01868	-.00134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9667.2**	**58651.**	**3007.8**
Stddev	38.0	90.	17.4
%RSD	.39269	.15372	.57760
#1	9636.2	58610.	2989.6
#2	9655.8	58589.	3009.4
#3	9709.5	58755.	3024.3

Approved: June 27, 2016

Sample Name: L1606098607PS Acquired: 6/25/2016 20:03:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574215-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19549**	**4.9683**	**.19699**	**.95431**	**.52192**	**.02489**	**83.384**	**.02448**
Stddev	.00145	.0012	.00037	.00069	.00335	.00004	.351	.00015
%RSD	.74419	.02324	.18968	.07193	.64144	.17436	.42141	.59448
#1	.19431	4.9671	.19669	.95367	.51889	.02485	83.062	.02455
#2	.19712	4.9693	.19740	.95504	.52551	.02494	83.759	.02458
#3	.19505	4.9687	.19686	.95422	.52137	.02490	83.330	.02431
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09612**	**.24445**	**.24901**	**2.0095**	**25.021**	**.52274**	**26.551**	**.36466**
Stddev	.00060	.00204	.00132	.0079	.209	.00262	.211	.00375
%RSD	.62715	.83504	.52860	.39401	.83514	.50106	.79467	1.0287
#1	.09620	.24322	.24870	2.0100	24.845	.52124	26.458	.36188
#2	.09668	.24681	.25046	2.0172	25.252	.52577	26.792	.36317
#3	.09548	.24332	.24788	2.0014	24.965	.52123	26.403	.36893
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50539**	**35.868**	**.24056**	**4.8300**	**.24330**	**.58213**	**.19141**	**5.6770**
Stddev	.00256	.121	.00174	.0165	.00225	.00117	.00102	.0113
%RSD	.50685	.33731	.72421	.34266	.92572	.20086	.53487	.19978
#1	.50625	35.730	.24173	4.8368	.24292	.58281	.19254	5.6837
#2	.50742	35.956	.24138	4.8421	.24572	.58078	.19056	5.6833
#3	.50251	35.919	.23856	4.8112	.24127	.58280	.19112	5.6639
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098607PS Acquired: 6/25/2016 20:03:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574215-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48483**	**1.2623**	**.48068**	**.24615**	**.50488**	**.48944**	**.00427**
Stddev	.00147	.0060	.00508	.00275	.00238	.00115	.00064
%RSD	.30392	.47569	1.0573	1.1154	.47121	.23489	15.068
#1	.48451	1.2555	.47807	.24920	.50216	.48999	.00389
#2	.48644	1.2668	.48654	.24388	.50587	.49021	.00501
#3	.48354	1.2646	.47744	.24537	.50660	.48812	.00390
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9610.5**	**58019.**	**3004.1**
Stddev	20.4	180.	8.2
%RSD	.21278	.31055	.27313
#1	9607.7	58202.	3005.9
#2	9591.6	58012.	2995.2
#3	9632.2	57842.	3011.3

Approved: June 27, 2016

Sample Name: L1606098607SDL Acquired: 6/25/2016 20:06:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574215-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	.00334	.00170	.00445	.00847	.00009	17.139	.00008
Stddev	.00049	.00730	.00411	.00207	.00008	.00007	.249	.00023
%RSD	88.649	218.69	241.70	46.624	.94243	75.660	1.4519	290.72
#1	.00089	.00593	.00612	.00219	.00843	.00006	17.426	.00034
#2	-.00001	.00899	-.00200	.00488	.00843	.00004	17.001	-.00003
#3	.00078	-.00490	.00098	.00627	.00857	.00017	16.989	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.00037	.00191	.01894	.32539	.00400	4.9234	.02615
Stddev	.00005	.00023	.00083	.00475	.10069	.00194	.1236	.00303
%RSD	9.1063	60.795	43.755	25.087	30.943	48.604	2.5107	11.568
#1	.00062	.00059	.00284	.02402	.21108	.00176	4.9976	.02622
#2	.00053	.00038	.00165	.01821	.40094	.00496	4.9918	.02914
#3	.00053	.00014	.00123	.01460	.36416	.00527	4.7807	.02309
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	2.5977	.00028	.00852	.00297	.00160	.00156	.72149
Stddev	.00021	.0380	.00123	.00414	.00293	.00068	.00366	.00246
%RSD	66.333	1.4636	438.92	48.637	98.645	42.261	235.25	.34147
#1	.00008	2.6376	-.00081	.01268	-.00028	.00113	-.00104	.72244
#2	.00048	2.5938	.00004	.00439	.00377	.00130	.00574	.71869
#3	.00037	2.5619	.00161	.00849	.00542	.00238	-.00003	.72333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098607SDL Acquired: 6/25/2016 20:06:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574215-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.17255**	**.00033**	**-.00095**	**.00100**	**.00419**	**.00060**
Stddev	.00072	.00063	.00618	.00123	.00055	.00013	.00060
%RSD	1344.6	.36773	1857.8	129.31	55.083	2.9985	99.890
#1	-.00060	.17322	-.00395	-.00224	.00116	.00417	-.00009
#2	.00076	.17246	-.00247	-.00083	.00039	.00432	.00094
#3	-.00032	.17196	.00742	.00021	.00145	.00407	.00094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10100.**	**61152.**	**3087.7**
Stddev	17.	221.	3.3
%RSD	.16887	.36180	.10673
#1	10112.	61407.	3088.4
#2	10080.	61005.	3090.6
#3	10107.	61046.	3084.1

Approved: June 27, 2016

Sample Name: L1606098607SDL Acquired: 6/25/2016 20:10:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574215-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**-.00220**	**-.00032**	**-.00063**	**.00197**	**.00015**	**3.3784**	**-.00009**
Stddev	.00281	.00599	.00141	.00122	.00070	.00004	.0403	.00029
%RSD	1738.4	271.64	438.98	193.96	35.714	23.124	1.1918	310.09
#1	.00289	-.00340	.00101	-.00187	.00220	.00018	3.3321	-.00013
#2	-.00273	.00429	-.00181	-.00058	.00253	.00017	3.3977	-.00037
#3	.00033	-.00751	-.00017	.00056	.00118	.00011	3.4054	.00021
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**-.00057**	**.00039**	**.03496**	**.02799**	**.00189**	**.96584**	**.00502**
Stddev	.00041	.00109	.00122	.02559	.02173	.00316	.06365	.00248
%RSD	5673.0	191.57	314.78	73.189	77.636	167.39	6.5899	49.517
#1	.00017	-.00161	.00178	.00957	.03029	.00425	1.0133	.00340
#2	.00028	-.00067	-.00011	.06074	.04847	.00313	.99069	.00377
#3	-.00047	.00057	-.00050	.03458	.00520	-.00171	.89352	.00788
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**.48659**	**-.00001**	**.00389**	**.00194**	**-.00589**	**.00123**	**.14706**
Stddev	.00019	.02107	.00027	.00257	.00032	.00198	.00158	.00411
%RSD	50.403	4.3293	3257.2	66.021	16.675	33.653	128.28	2.7928
#1	-.00035	.50181	-.00003	.00472	.00177	-.00726	-.00048	.14268
#2	-.00056	.46255	.00027	.00101	.00173	-.00680	.00263	.15082
#3	-.00019	.49542	-.00027	.00595	.00231	-.00362	.00154	.14770
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098607SDL Acquired: 6/25/2016 20:10:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574215-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**.03404**	**-.00096**	**.00109**	**.00053**	**.00095**	**-.00050**
Stddev	.00021	.00026	.00497	.00270	.00028	.00007	.00147
%RSD	93.819	.76060	519.10	248.53	53.226	6.9237	292.99
#1	-.00042	.03414	.00415	-.00145	.00059	.00088	.00090
#2	-.00001	.03374	-.00578	.00079	.00078	.00097	-.00204
#3	-.00022	.03423	-.00124	.00392	.00022	.00101	-.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10132.**	**61150.**	**3069.8**
Stddev	20.	142.	13.8
%RSD	.19324	.23287	.44985
#1	10144.	61269.	3085.6
#2	10109.	61188.	3063.7
#3	10143.	60992.	3060.0

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 20:14:26 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39742**	**10.037**	**.39212**	**.48448**	**.99926**	**.05007**	**9.9665**
Stddev	.00078	.015	.00234	.00170	.00686	.00012	.0639
%RSD	.19741	.14886	.59686	.35046	.68696	.24571	.64080
#1	.39794	10.020	.39189	.48304	1.0007	.05009	10.032
#2	.39780	10.040	.39457	.48635	.99181	.05018	9.9043
#3	.39651	10.049	.38991	.48406	1.0053	.04994	9.9633
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.04995**	**.19662**	**.49719**	**.50408**	**3.9345**	**48.425**	**1.0056**
Stddev	.00017	.00028	.00293	.00085	.0512	.336	.0066
%RSD	.33202	.14096	.58868	.16772	1.3013	.69474	.65876
#1	.05012	.19642	.49505	.50367	3.9195	48.601	1.0066
#2	.04993	.19694	.50053	.50505	3.8924	48.037	.99858
#3	.04979	.19651	.49600	.50351	3.9915	48.637	1.0117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.6539**	**.49874**	**1.0057**	**49.161**	**.50061**	**9.8144**	**.49889**
Stddev	.1152	.00402	.0014	.263	.00048	.0158	.00214
%RSD	1.1928	.80691	.13850	.53437	.09607	.16108	.42961
#1	9.7007	.49641	1.0053	49.311	.50117	9.7964	.49662
#2	9.5228	.49643	1.0072	48.858	.50038	9.8207	.49919
#3	9.7383	.50339	1.0045	49.316	.50029	9.8261	.50087
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 20:14:26 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1787**	**.38972**	**5.0552**	**.98705**	**.99934**	**.99527**	**.50770**
Stddev	.0014	.00525	.0102	.00133	.00573	.00628	.00313
%RSD	.12146	1.3477	.20130	.13498	.57306	.63102	.61635
#1	1.1790	.38370	5.0434	.98688	1.0013	.99951	.50582
#2	1.1772	.39212	5.0610	.98581	.99288	.98805	.50598
#3	1.1800	.39334	5.0611	.98846	1.0038	.99824	.51132
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0147**	**.99253**	F **2.9496**
Stddev	.0017	.00087	.0127
%RSD	.16286	.08813	.43029
#1	1.0131	.99259	2.9390
#2	1.0147	.99336	2.9462
#3	1.0164	.99162	2.9637
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9868.5**	**58806.**	**2964.6**
Stddev	19.7	151.	1.8
%RSD	.19965	.25680	.06126
#1	9885.2	58672.	2966.0
#2	9873.5	58776.	2965.4
#3	9846.8	58969.	2962.6

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 20:18:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00132**	**-.00340**	**-.00049**	**.00031**	**.00192**	**.00008**	**-.02002**	**-.00008**
Stddev	.00216	.00700	.00114	.00069	.00099	.00015	.01568	.00025
%RSD	163.88	205.77	232.07	221.43	51.768	179.89	78.343	317.94
#1	.00112	.00138	-.00179	.00077	.00240	-.00004	-.03265	.00011
#2	.00357	-.00014	-.00002	.00066	.00258	.00004	-.00247	-.00036
#3	-.00074	-.01144	.00034	-.00049	.00078	.00025	-.02493	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00074**	**.00038**	**.00063**	**.02332**	**-.07555**	**-.00123**	**.02786**	**-.00147**
Stddev	.00036	.00095	.00188	.02448	.09270	.00682	.09570	.00329
%RSD	47.976	247.76	298.28	104.94	122.70	553.52	343.47	223.66
#1	.00080	.00146	-.00061	.04476	-.06611	.00634	-.06528	.00195
#2	.00036	.00002	.00279	-.00335	-.17262	-.00687	.02294	-.00462
#3	.00107	-.00033	-.00029	.02856	.01207	-.00317	.12594	-.00174
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00377**	**.03770**	**.00015**	**.00241**	**-.00006**	**.00325**	**.00675**	**.03903**
Stddev	.00019	.01915	.00084	.00431	.00100	.00269	.00806	.00132
%RSD	5.0202	50.799	576.30	178.78	1573.6	82.788	119.45	3.3700
#1	.00388	.01718	.00046	.00371	.00063	.00040	.01512	.04015
#2	.00389	.04082	.00078	-.00240	-.00121	.00574	.00608	.03936
#3	.00355	.05510	-.00080	.00592	.00039	.00360	-.00096	.03758
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 20:18:03 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.00027**	**.00088**	**-.00106**	**.00004**	**-.00003**	**.00449**
Stddev	.00046	.00064	.00516	.00225	.00089	.00028	.00124
%RSD	6827.2	239.61	583.41	212.27	2439.5	892.40	27.555
#1	.00053	-.00043	-.00417	-.00308	-.00098	.00021	.00367
#2	-.00031	.00040	.00068	.00137	.00041	.00004	.00389
#3	-.00023	.00082	.00615	-.00147	.00068	-.00034	.00592
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9631.9**	**58363.**	**2969.7**
Stddev	4.5	93.	16.5
%RSD	.04685	.16010	.55454
#1	9627.4	58461.	2965.8
#2	9636.4	58275.	2987.8
#3	9631.8	58353.	2955.6

Approved: June 27, 2016

Sample Name: L1606098609 Acquired: 6/25/2016 20:22:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.68625	.00096	.00637	.02063	.00019	116.68	.00011
Stddev	.00130	.00243	.00203	.00124	.00115	.00006	.34	.00020
%RSD	161.33	.35410	210.74	19.489	5.5807	30.863	.28955	179.93
#1	.00013	.68352	.00323	.00768	.02147	.00021	116.54	.00014
#2	.00231	.68708	-.00070	.00521	.01932	.00023	116.43	-.00010
#3	-.00002	.68816	.00037	.00620	.02109	.00012	117.06	.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	.00251	.00589	.80058	.71511	.00736	28.613	.02306
Stddev	.00014	.00088	.00100	.02799	.18771	.00368	.079	.00071
%RSD	23.262	34.910	17.057	3.4966	26.250	49.956	.27754	3.0949
#1	.00051	.00150	.00680	.80914	.91494	.01159	28.526	.02382
#2	.00075	.00293	.00481	.76931	.68792	.00556	28.632	.02293
#3	.00052	.00310	.00605	.82330	.54247	.00492	28.681	.02241
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00074	14.713	.00303	.03333	.00106	-.00272	.00365	4.8889
Stddev	.00024	.075	.00054	.00378	.00114	.00271	.00111	.0101
%RSD	32.746	.50774	17.920	11.335	108.20	99.808	30.510	.20564
#1	.00047	14.684	.00299	.03128	.00107	-.00577	.00444	4.8999
#2	.00095	14.656	.00359	.03769	-.00009	-.00056	.00238	4.8868
#3	.00081	14.797	.00251	.03102	.00220	-.00183	.00413	4.8801
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098609 Acquired: 6/25/2016 20:22:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00003	.51888	.00260	-.00246	.00196	.03426	.00729
Stddev	.00032	.00275	.00453	.00099	.00037	.00011	.00028
%RSD	1222.6	.53076	174.15	40.180	18.856	.31556	3.8509
#1	.00009	.51844	-.00256	-.00245	.00220	.03417	.00723
#2	-.00032	.51637	.00591	-.00346	.00153	.03438	.00705
#3	.00031	.52183	.00446	-.00148	.00215	.03423	.00760
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9797.7	59515.	3093.6
Stddev	11.0	17.	11.2
%RSD	.11267	.02773	.36079
#1	9791.0	59496.	3083.8
#2	9810.4	59520.	3105.7
#3	9791.6	59528.	3091.1

Approved: June 27, 2016

Sample Name: L1606098611 Acquired: 6/25/2016 20:25:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00025	.67808	-.00318	.08715	.06918	.00114	148.14	.00017
Stddev	.00037	.00569	.00382	.00198	.00070	.00012	.69	.00021
%RSD	151.84	.83972	120.10	2.2728	1.0151	10.946	.46623	125.05
#1	-.00014	.67215	-.00172	.08491	.06933	.00099	148.49	.00006
#2	.00061	.68350	-.00031	.08867	.06980	.00119	147.34	.00003
#3	.00027	.67861	-.00751	.08788	.06842	.00123	148.59	.00041
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00363	.00334	.07531	1.1555	1.9378	.02263	43.443	.16489
Stddev	.00025	.00064	.00057	.0192	.0114	.00045	.331	.00288
%RSD	6.9167	19.099	.75123	1.6613	.58882	1.9873	.76282	1.7487
#1	.00388	.00297	.07511	1.1584	1.9507	.02262	43.610	.16408
#2	.00338	.00297	.07595	1.1731	1.9292	.02219	43.061	.16250
#3	.00362	.00407	.07487	1.1351	1.9335	.02309	43.657	.16809
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00248	25.675	.00454	.04285	.00455	-.00035	-.00286	3.7826
Stddev	.00024	.125	.00067	.00695	.00113	.00106	.00555	.0053
%RSD	9.7863	.48812	14.843	16.217	24.766	306.62	194.07	.13999
#1	.00260	25.775	.00423	.04366	.00585	.00053	-.00927	3.7791
#2	.00220	25.535	.00409	.03554	.00387	-.00004	.00020	3.7887
#3	.00264	25.716	.00532	.04936	.00394	-.00153	.00049	3.7799
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098611 Acquired: 6/25/2016 20:25:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	2.0876	-.00638	-.00280	.00142	.06566	.00394
Stddev	.00055	.0096	.00925	.00066	.00022	.00017	.00141
%RSD	713.59	.45905	144.86	23.607	15.199	.25178	35.771
#1	-.00017	2.0923	-.00754	-.00222	.00163	.06585	.00254
#2	-.00031	2.0765	-.01500	-.00266	.00143	.06556	.00536
#3	.00071	2.0939	.00339	-.00351	.00120	.06556	.00393
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9695.5	58902.	3054.3
Stddev	10.1	156.	10.7
%RSD	.10398	.26470	.35100
#1	9691.1	59006.	3048.2
#2	9688.3	58978.	3066.6
#3	9707.0	58723.	3048.0

Approved: June 27, 2016

Sample Name: L1606098613 Acquired: 6/25/2016 20:29:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00174	5.5730	.00432	.03801	.11035	.00130	203.09	-.00001
Stddev	.00149	.0359	.00264	.00141	.00031	.00003	.17	.00016
%RSD	85.559	.64338	61.135	3.7127	.27868	2.0129	.08522	1090.1
#1	.00010	5.6007	.00735	.03819	.11034	.00128	203.27	.00012
#2	.00211	5.5858	.00310	.03932	.11006	.00133	203.05	.00003
#3	.00302	5.5325	.00251	.03651	.11067	.00131	202.93	-.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00373	.00967	.08024	7.4517	4.1196	.03087	79.593	.34313
Stddev	.00008	.00046	.00072	.0194	.0319	.00148	.239	.00219
%RSD	2.0959	4.7129	.90070	.26051	.77317	4.7986	.30050	.63957
#1	.00364	.00917	.07941	7.4293	4.0890	.03222	79.370	.34059
#2	.00377	.01007	.08072	7.4635	4.1171	.03112	79.565	.34436
#3	.00379	.00978	.08059	7.4624	4.1526	.02929	79.846	.34443
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00182	24.658	.00975	.17618	.00825	.00008	.00248	10.141
Stddev	.00040	.019	.00024	.00598	.00295	.00311	.00271	.073
%RSD	21.744	.07518	2.5015	3.3961	35.754	3886.1	109.35	.72041
#1	.00146	24.670	.00990	.17816	.00502	.00353	.00373	10.058
#2	.00175	24.669	.00947	.16946	.00891	-.00250	.00433	10.169
#3	.00224	24.637	.00989	.18093	.01080	-.00079	-.00063	10.196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098613 Acquired: 6/25/2016 20:29:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00066	2.4743	.05397	-.00080	.01073	.41856	.00624
Stddev	.00027	.0052	.00665	.00236	.00131	.00229	.00115
%RSD	39.960	.21077	12.313	294.11	12.169	.54671	18.419
#1	.00089	2.4751	.05254	-.00353	.01217	.41596	.00756
#2	.00073	2.4791	.04816	.00063	.00962	.42027	.00548
#3	.00037	2.4687	.06122	.00049	.01040	.41945	.00567
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9619.4	58503.	3058.9
Stddev	38.3	135.	15.7
%RSD	.39844	.23102	.51315
#1	9576.0	58658.	3041.4
#2	9633.7	58414.	3071.7
#3	9648.5	58435.	3063.7

Approved: June 27, 2016

Sample Name: L1606098615 Acquired: 6/25/2016 20:33:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00201	.53689	.00109	.12769	.02932	.00091	261.33	.00014
Stddev	.00048	.01300	.00276	.00142	.00104	.00011	1.37	.00008
%RSD	23.740	2.4215	252.93	1.1120	3.5600	12.063	.52322	55.108
#1	.00148	.54532	.00299	.12707	.02978	.00081	261.04	.00021
#2	.00215	.54344	.00237	.12931	.03005	.00088	262.83	.00006
#3	.00240	.52192	-.00208	.12669	.02812	.00103	260.14	.00015
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	.00167	.04808	1.7755	3.9837	.04482	96.121	.35461
Stddev	.00009	.00172	.00105	.0329	.0639	.00305	.330	.00305
%RSD	12.352	103.13	2.1885	1.8532	1.6044	6.8091	.34352	.86008
#1	.00068	.00125	.04714	1.8121	3.9806	.04242	96.172	.35269
#2	.00071	.00356	.04922	1.7483	4.0491	.04379	96.422	.35813
#3	.00085	.00020	.04788	1.7662	3.9214	.04825	95.768	.35302
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00080	71.586	.00152	.06528	.00543	-.00023	-.00042	6.3830
Stddev	.00049	.359	.00083	.00282	.00224	.00292	.00309	.0073
%RSD	60.493	.50193	55.060	4.3183	41.272	1275.7	729.65	.11354
#1	.00036	71.588	.00097	.06827	.00795	-.00316	.00167	6.3913
#2	.00132	71.945	.00248	.06488	.00468	-.00019	.00103	6.3782
#3	.00072	71.227	.00110	.06267	.00366	.00267	-.00398	6.3795
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098615 Acquired: 6/25/2016 20:33:32 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00066**	**6.9477**	**-.01868**	**-.00208**	**-.00036**	**.07416**	**.00363**
Stddev	.00094	.0407	.00365	.00070	.00044	.00028	.00062
%RSD	142.12	.58617	19.553	33.577	122.09	.37861	17.066
#1	.00171	6.9428	-.02024	-.00215	-.00034	.07441	.00412
#2	.00039	6.9907	-.01451	-.00134	-.00081	.07386	.00293
#3	-.00011	6.9097	-.02130	-.00273	.00007	.07420	.00382
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9482.1**	**57521.**	**3041.1**
Stddev	15.4	119.	13.0
%RSD	.16231	.20772	.42869
#1	9472.3	57649.	3053.5
#2	9499.8	57500.	3027.5
#3	9474.1	57412.	3042.2

Approved: June 27, 2016

Sample Name: L1606098617 Acquired: 6/25/2016 20:37:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00154	.20547	.00214	.04863	.05628	.00015	62.798	.00005
Stddev	.00260	.00707	.00399	.00222	.00076	.00003	.506	.00026
%RSD	168.84	3.4433	186.39	4.5608	1.3548	21.842	.80652	579.39
#1	.00162	.19836	-.00117	.04752	.05710	.00015	63.380	-.00016
#2	.00410	.20553	.00657	.05118	.05613	.00018	62.459	.00034
#3	-.00110	.21251	.00102	.04718	.05560	.00012	62.555	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00034	.00139	.00754	.49751	2.0420	.02056	20.601	.01571
Stddev	.00024	.00096	.00096	.02565	.1117	.00244	.034	.00089
%RSD	70.093	68.878	12.744	5.1552	5.4689	11.879	.16418	5.6341
#1	.00059	.00246	.00739	.47113	2.0254	.02185	20.628	.01672
#2	.00012	.00112	.00857	.52236	1.9395	.01774	20.613	.01507
#3	.00031	.00060	.00666	.49904	2.1610	.02209	20.563	.01535
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00090	26.598	.00080	.00703	.00246	-.00325	.00131	3.4906
Stddev	.00064	.178	.00058	.00500	.00246	.00605	.00554	.0173
%RSD	70.655	.66988	72.589	71.163	99.983	186.20	421.53	.49585
#1	.00155	26.804	.00039	.00280	.00327	-.00237	-.00267	3.5042
#2	.00088	26.495	.00146	.00574	-.00030	-.00969	.00764	3.4966
#3	.00027	26.495	.00054	.01256	.00441	.00231	-.00103	3.4711
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098617 Acquired: 6/25/2016 20:37:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	1.5150	-.00311	-.00236	-.00015	.01447	.00341
Stddev	.00072	.0088	.00641	.00068	.00005	.00011	.00060
%RSD	226.25	.58268	206.23	28.717	34.447	.73139	17.615
#1	.00066	1.5251	-.00263	-.00291	-.00009	.01435	.00287
#2	.00080	1.5088	.00305	-.00160	-.00015	.01454	.00406
#3	-.00051	1.5111	-.00975	-.00256	-.00020	.01452	.00331
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9830.7	59822.	3082.9
Stddev	15.5	147.	23.6
%RSD	.15717	.24641	.76693
#1	9813.6	59963.	3057.5
#2	9843.5	59835.	3104.4
#3	9835.1	59669.	3086.7

Approved: June 27, 2016

Sample Name: L1606098619 Acquired: 6/25/2016 20:41:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00113	.27749	.00069	.06930	.05323	.00039	10.214	.00034
Stddev	.00263	.00318	.00178	.00081	.00134	.00007	.065	.00038
%RSD	232.09	1.1459	258.13	1.1649	2.5186	17.965	.63738	111.28
#1	.00355	.27762	.00105	.06852	.05477	.00042	10.240	.00066
#2	-.00167	.28061	.00227	.06924	.05251	.00044	10.140	.00044
#3	.00153	.27425	-.00125	.07014	.05240	.00031	10.262	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00108	.00071	.02585	.24748	1.2811	.01465	4.6162	.00999
Stddev	.00051	.00114	.00067	.00474	.0573	.00378	.0318	.00359
%RSD	46.988	159.40	2.5887	1.9167	4.4759	25.817	.68816	35.904
#1	.00062	.00202	.02645	.25048	1.2371	.01153	4.5886	.01278
#2	.00162	-.00003	.02513	.24201	1.3460	.01356	4.6509	.01123
#3	.00099	.00015	.02599	.24994	1.2604	.01885	4.6090	.00594
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00123	228.52	.00044	.07963	.00371	-.00207	.00619	2.5103
Stddev	.00028	1.82	.00063	.00808	.00266	.00077	.00393	.0173
%RSD	22.669	.79720	141.35	10.151	71.562	37.379	63.490	.68709
#1	.00153	229.52	.00003	.07034	.00201	-.00126	.00175	2.5018
#2	.00118	226.42	.00013	.08504	.00235	-.00280	.00758	2.4989
#3	.00097	229.62	.00117	.08351	.00677	-.00216	.00924	2.5301
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098619 Acquired: 6/25/2016 20:41:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00007	.22967	.00683	-.00264	.00219	.02256	.00408
Stddev	.00091	.00074	.00628	.00047	.00030	.00021	.00266
%RSD	1371.8	.32350	91.943	17.727	13.766	.92425	65.101
#1	-.00024	.23041	.00516	-.00255	.00222	.02259	.00112
#2	-.00065	.22892	.00155	-.00314	.00188	.02235	.00625
#3	.00109	.22967	.01377	-.00222	.00248	.02276	.00487
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9702.8	58480.	3067.3
Stddev	45.7	28.	15.6
%RSD	.47062	.04775	.50880
#1	9725.9	58510.	3053.5
#2	9732.4	58474.	3084.2
#3	9650.3	58455.	3064.3

Approved: June 27, 2016

Sample Name: L1606098621 Acquired: 6/25/2016 20:45:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00057	.00121	.00179	.05746	.02986	.00029	128.59	-.00000
Stddev	.00056	.00275	.00384	.00358	.00132	.00008	.53	.00025
%RSD	97.573	226.34	214.60	6.2318	4.4201	27.216	.41011	6271.6
#1	.00040	-.00100	.00602	.06157	.03100	.00034	129.12	-.00029
#2	.00120	.00036	-.00148	.05576	.03017	.00020	128.07	.00019
#3	.00012	.00429	.00083	.05504	.02841	.00032	128.57	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.00173	.01434	.05981	2.5098	.02550	33.269	.15420
Stddev	.00017	.00097	.00185	.00891	.0950	.00146	.060	.00170
%RSD	92.832	55.806	12.905	14.892	3.7837	5.7272	.18077	1.1012
#1	.00010	.00269	.01260	.05052	2.5555	.02390	33.334	.15465
#2	.00007	.00177	.01629	.06064	2.4007	.02586	33.216	.15563
#3	.00038	.00075	.01412	.06828	2.5733	.02675	33.257	.15232
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	47.893	-.00000	.01004	.00162	-.00276	-.00417	3.5790
Stddev	.00060	.257	.00189	.00801	.00056	.00235	.00172	.0047
%RSD	106.13	.53712	269880.	79.763	34.469	85.173	41.117	.13102
#1	.00071	48.149	.00182	.00080	.00218	-.00406	-.00514	3.5827
#2	-.00009	47.634	.00013	.01426	.00163	-.00417	-.00519	3.5737
#3	.00107	47.897	-.00195	.01505	.00106	-.00005	-.00219	3.5806
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098621 Acquired: 6/25/2016 20:45:10 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00024**	**1.8050**	**-.02231**	**-.00291**	**.00001**	**.01004**	**.00207**
Stddev	.00095	.0120	.00564	.00294	.00125	.00002	.00101
%RSD	393.73	.66689	25.288	100.88	21161.	.16952	48.549
#1	.00057	1.8173	-.02371	-.00622	-.00119	.01005	.00218
#2	-.00128	1.7932	-.02711	-.00189	.00130	.01004	.00102
#3	-.00001	1.8046	-.01610	-.00062	-.00009	.01002	.00302
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9662.5**	**58180.**	**3042.4**
Stddev	14.0	47.	7.3
%RSD	.14521	.08141	.24078
#1	9658.0	58146.	3035.1
#2	9678.2	58161.	3042.4
#3	9651.2	58234.	3049.8

Approved: June 27, 2016

Sample Name: L1606098623 Acquired: 6/25/2016 20:49:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00139	.10705	.00198	.41392	.02623	.00027	243.17	.00017
Stddev	.00218	.00541	.00096	.00428	.00052	.00003	1.41	.00011
%RSD	157.63	5.0515	48.506	1.0332	1.9773	12.148	.58072	65.505
#1	.00177	.11044	.00295	.41225	.02682	.00026	243.56	.00005
#2	.00336	.10081	.00102	.41878	.02603	.00030	244.34	.00020
#3	-.00096	.10989	.00198	.41074	.02584	.00024	241.60	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00008	.00125	.02256	.13395	6.1008	.01177	68.965	.45308
Stddev	.00021	.00090	.00053	.00942	.0335	.00473	.254	.00553
%RSD	267.67	72.031	2.3661	7.0298	.54942	40.196	.36871	1.2196
#1	-.00012	.00056	.02318	.12309	6.1028	.01598	68.820	.44996
#2	.00031	.00093	.02221	.13890	6.0663	.00665	69.259	.45946
#3	.00005	.00227	.02231	.13986	6.1333	.01267	68.816	.44983
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00044	66.667	.00075	.01360	.00015	-.00234	.00238	3.6345
Stddev	.00039	.343	.00118	.00476	.00283	.00395	.00376	.0082
%RSD	88.357	.51401	157.96	35.012	1938.3	168.93	158.02	.22548
#1	.00001	66.765	.00108	.01427	-.00296	-.00415	.00669	3.6345
#2	.00056	66.950	-.00056	.00853	.00082	.00219	.00057	3.6426
#3	.00076	66.286	.00172	.01798	.00259	-.00506	-.00014	3.6263
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098623 Acquired: 6/25/2016 20:49:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	1.6999	-.02956	-.00156	.00030	.00857	.00329
Stddev	.00028	.0081	.00507	.00230	.00048	.00011	.00135
%RSD	598.12	.47536	17.163	147.79	160.42	1.3327	41.067
#1	.00005	1.7017	-.03255	.00072	-.00015	.00844	.00173
#2	.00033	1.7069	-.02370	-.00388	.00023	.00859	.00400
#3	-.00023	1.6911	-.03242	-.00151	.00081	.00866	.00415
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9416.4	57429.	3035.8
Stddev	48.0	130.	25.1
%RSD	.51009	.22575	.82551
#1	9467.2	57482.	3016.2
#2	9410.3	57282.	3027.1
#3	9371.8	57525.	3064.1

Approved: June 27, 2016

Sample Name: L1606098625 Acquired: 6/25/2016 20:52:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00225	2.3612	.00034	.04147	.11975	.00023	121.59	.00037
Stddev	.00036	.0069	.00441	.00209	.00117	.00012	.33	.00010
%RSD	15.843	.29306	1297.6	5.0487	.97876	50.808	.26806	27.630
#1	.00211	2.3674	.00539	.03961	.11950	.00036	121.76	.00028
#2	.00199	2.3537	-.00273	.04106	.11872	.00014	121.21	.00033
#3	.00266	2.3625	-.00164	.04374	.12102	.00019	121.79	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00161	.00414	.00666	2.3953	2.5999	.01491	37.526	1.0679
Stddev	.00025	.00072	.00102	.0202	.0477	.00333	.332	.0124
%RSD	15.696	17.478	15.382	.84513	1.8346	22.308	.88561	1.1598
#1	.00188	.00385	.00549	2.3789	2.6109	.01808	37.493	1.0637
#2	.00138	.00496	.00714	2.4179	2.5476	.01145	37.212	1.0581
#3	.00156	.00361	.00736	2.3890	2.6411	.01519	37.874	1.0818
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00064	18.226	.00269	.05391	.00651	-.00190	.00505	5.9129
Stddev	.00020	.052	.00077	.00146	.00208	.00291	.00127	.0400
%RSD	30.881	.28797	28.786	2.7065	31.918	152.94	25.077	.67624
#1	.00067	18.245	.00228	.05412	.00658	-.00209	.00366	5.9121
#2	.00082	18.167	.00221	.05526	.00440	.00110	.00533	5.9533
#3	.00043	18.267	.00358	.05236	.00855	-.00472	.00614	5.8733
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098625 Acquired: 6/25/2016 20:52:55 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00035**	**.99462**	**.03044**	**-.00185**	**.00457**	**.15726**	**.00437**
Stddev	.00053	.00442	.00913	.00019	.00047	.00042	.00072
%RSD	150.91	.44485	29.990	10.187	10.282	.27017	16.565
#1	.00010	.99601	.03923	-.00207	.00503	.15763	.00393
#2	-.00093	.98967	.02100	-.00171	.00410	.15735	.00520
#3	-.00022	.99819	.03111	-.00178	.00457	.15680	.00397
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9574.3**	**58285.**	**3022.7**
Stddev	18.0	80.	21.3
%RSD	.18820	.13801	.70548
#1	9553.8	58363.	3008.3
#2	9581.8	58202.	3047.2
#3	9587.4	58291.	3012.6

Approved: June 27, 2016

Sample Name: L1606098627 Acquired: 6/25/2016 20:56:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00254	4.6384	.00407	.03588	.08487	.00132	200.73	.00005
Stddev	.00192	.0173	.00097	.00149	.00032	.00011	.32	.00023
%RSD	75.499	.37394	23.741	4.1641	.37451	8.4866	.15998	422.09
#1	.00186	4.6215	.00464	.03631	.08521	.00120	200.37	.00006
#2	.00106	4.6377	.00461	.03711	.08483	.00141	200.85	-.00018
#3	.00471	4.6561	.00295	.03422	.08457	.00136	200.98	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00295	.00847	.07661	6.3761	4.0467	.02688	78.393	.28594
Stddev	.00029	.00096	.00098	.0153	.0946	.00177	.290	.00214
%RSD	9.9470	11.337	1.2842	.24023	2.3374	6.5906	.37011	.74836
#1	.00263	.00958	.07761	6.3586	3.9534	.02860	78.140	.28832
#2	.00299	.00791	.07658	6.3825	4.0443	.02506	78.709	.28419
#3	.00322	.00791	.07564	6.3872	4.1425	.02698	78.329	.28530
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00106	25.068	.00713	.15173	.00678	-.00194	.00054	8.9965
Stddev	.00058	.104	.00038	.00131	.00344	.00137	.00531	.0286
%RSD	55.068	.41293	5.2660	.86550	50.818	70.752	976.81	.31838
#1	.00130	24.949	.00680	.15078	.01021	-.00340	-.00348	9.0111
#2	.00040	25.140	.00754	.15323	.00679	-.00068	-.00144	9.0150
#3	.00149	25.114	.00704	.15117	.00333	-.00174	.00656	8.9635
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098627 Acquired: 6/25/2016 20:56:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	2.4772	.04490	-.00127	.00901	.16031	.00422
Stddev	.00154	.0067	.00796	.00182	.00061	.00117	.00055
%RSD	173.10	.26965	17.717	142.95	6.7328	.72957	12.944
#1	.00142	2.4695	.04447	-.00241	.00911	.16067	.00359
#2	.00210	2.4809	.03717	.00082	.00836	.16126	.00459
#3	-.00085	2.4812	.05306	-.00223	.00956	.15900	.00448
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9465.6	57841.	2995.1
Stddev	68.7	160.	17.6
%RSD	.72586	.27642	.58883
#1	9445.1	57701.	3013.7
#2	9409.5	58015.	2978.6
#3	9542.2	57807.	2993.1

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 21:00:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40235	10.185	.39842	.49195	1.0203	.05034	10.153
Stddev	.00325	.028	.00193	.00194	.0055	.00031	.030
%RSD	.80675	.27855	.48505	.39452	.53912	.62290	.29151
#1	.39985	10.214	.39899	.49235	1.0140	.05068	10.126
#2	.40602	10.183	.40000	.49365	1.0227	.05026	10.185
#3	.40118	10.157	.39627	.48984	1.0242	.05007	10.150
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05123	.19988	.50288	.51330	4.0070	49.596	1.0284
Stddev	.00026	.00047	.00335	.00193	.0033	.230	.0041
%RSD	.51360	.23712	.66679	.37527	.08271	.46359	.40302
#1	.05102	.20030	.50672	.51551	4.0072	49.649	1.0258
#2	.05153	.19997	.50051	.51234	4.0102	49.344	1.0261
#3	.05115	.19937	.50141	.51204	4.0036	49.795	1.0332
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.5669	.50781	1.0249	50.362	.50842	9.9814	.50557
Stddev	.0485	.00742	.0065	.234	.00100	.0181	.00207
%RSD	.50657	1.4609	.62973	.46520	.19680	.18135	.40980
#1	9.6226	.50131	1.0311	50.266	.50877	9.9736	.50596
#2	9.5340	.50622	1.0255	50.191	.50920	10.002	.50742
#3	9.5442	.51589	1.0183	50.629	.50729	9.9685	.50333
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 21:00:36 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2045**	**.39202**	**5.1444**	**1.0010**	**1.0190**	**1.0190**	**.51206**
Stddev	.0033	.00153	.0072	.0031	.0045	.0084	.00251
%RSD	.27464	.38961	.14055	.30711	.44063	.82168	.49020
#1	1.2010	.39059	5.1361	1.0039	1.0167	1.0152	.51490
#2	1.2047	.39363	5.1492	1.0015	1.0162	1.0132	.51015
#3	1.2076	.39184	5.1479	.99778	1.0242	1.0286	.51112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0223**	**1.0141**	F **2.9929**
Stddev	.0031	.0001	.0241
%RSD	.30006	.01208	.80650
#1	1.0229	1.0141	3.0133
#2	1.0190	1.0142	2.9663
#3	1.0251	1.0139	2.9992
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9649.2**	**58649.**	**2955.6**
Stddev	2.7	54.	16.9
%RSD	.02842	.09258	.57071
#1	9646.1	58667.	2944.4
#2	9650.3	58588.	2975.0
#3	9651.2	58692.	2947.5

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 21:04:14 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00098**	**-.00081**	**.00091**	**.00315**	**.00292**	**.00009**	**-.03474**	**.00002**
Stddev	.00124	.00864	.00092	.00201	.00133	.00005	.02919	.00008
%RSD	125.96	1064.0	100.48	64.019	45.548	52.705	84.022	417.72
#1	.00043	-.00670	.00067	.00330	.00336	.00005	-.02620	.00002
#2	-.00151	.00910	.00014	.00508	.00142	.00009	-.01077	-.00006
#3	-.00188	-.00483	.00193	.00106	.00397	.00014	-.06724	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.00125**	**.00083**	**.02088**	**-.14334**	**.00212**	**-.02955**	**.00114**
Stddev	.00066	.00051	.00122	.01391	.04593	.00105	.09306	.00075
%RSD	1530.9	41.168	147.43	66.595	32.046	49.608	314.87	66.235
#1	.00067	.00069	.00144	.03293	-.09030	.00098	-.05631	.00047
#2	-.00016	.00170	-.00058	.02406	-.17011	.00232	-.10630	.00196
#3	-.00064	.00135	.00162	.00566	-.16960	.00305	.07395	.00100
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00323**	**.05080**	**-.00020**	**.00483**	**.00058**	**.00191**	**.00111**	**.03921**
Stddev	.00021	.02575	.00089	.00353	.00235	.00387	.00242	.00153
%RSD	6.4882	50.676	441.28	73.104	406.34	202.21	216.78	3.9059
#1	.00300	.07783	.00045	.00259	-.00201	.00626	-.00135	.03746
#2	.00339	.02657	-.00122	.00300	.00257	.00062	.00121	.03991
#3	.00331	.04802	.00016	.00889	.00117	-.00114	.00348	.04027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 21:04:14 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.00029	-.00007	-.00513	.00041	-.00001	.00470
Stddev	.00027	.00000	.00626	.00369	.00015	.00012	.00055
%RSD	55.343	1.4693	8856.4	71.949	37.134	916.05	11.589
#1	.00081	.00028	.00338	-.00666	.00031	.00010	.00427
#2	.00033	.00029	-.00730	-.00092	.00059	.00000	.00453
#3	.00034	.00028	.00370	-.00780	.00035	-.00014	.00531
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9506.6	58497.	2929.7
Stddev	22.3	113.	12.0
%RSD	.23433	.19372	.40841
#1	9532.3	58628.	2919.5
#2	9494.8	58435.	2926.6
#3	9492.6	58429.	2942.8

Approved: June 27, 2016

Sample Name: L1606098629 Acquired: 6/25/2016 21:08:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00070	1.3154	-.00179	.12516	.05800	.00081	247.18	.00018
Stddev	.00097	.0064	.00105	.00195	.00108	.00003	.31	.00008
%RSD	137.44	.48564	58.530	1.5550	1.8687	3.6829	.12350	43.911
#1	.00160	1.3100	-.00292	.12302	.05810	.00083	246.92	.00018
#2	.00082	1.3224	-.00085	.12682	.05904	.00078	247.52	.00010
#3	-.00032	1.3138	-.00160	.12563	.05687	.00083	247.09	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00119	.00401	.04528	2.4364	3.9714	.04409	89.669	.34274
Stddev	.00048	.00063	.00072	.0178	.1152	.00255	.458	.00095
%RSD	40.012	15.569	1.5917	.73079	2.9014	5.7752	.51098	.27642
#1	.00152	.00449	.04490	2.4275	3.9851	.04702	90.007	.34368
#2	.00141	.00424	.04612	2.4569	4.0792	.04281	89.852	.34276
#3	.00065	.00331	.04484	2.4248	3.8500	.04243	89.147	.34178
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00084	72.159	.00306	.12842	.00472	-.00245	-.00232	7.1068
Stddev	.00019	.103	.00116	.00307	.00202	.00283	.00582	.0122
%RSD	22.591	.14315	38.091	2.3898	42.715	115.64	250.20	.17182
#1	.00062	72.124	.00297	.12975	.00386	-.00541	-.00257	7.1178
#2	.00090	72.275	.00194	.13059	.00327	-.00216	-.00801	7.1089
#3	.00099	72.077	.00426	.12491	.00702	.00023	.00361	7.0937
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098629 Acquired: 6/25/2016 21:08:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00063**	**6.8039**	**.00261**	**-.00311**	**.00203**	**.14656**	**.00713**
Stddev	.00109	.0140	.00201	.00153	.00039	.00030	.00139
%RSD	174.70	.20570	77.238	49.135	18.962	.20399	19.505
#1	.00026	6.7979	.00196	-.00298	.00228	.14634	.00715
#2	-.00024	6.8199	.00487	-.00165	.00159	.14690	.00573
#3	.00185	6.7939	.00100	-.00469	.00223	.14643	.00851
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9470.9**	**57988.**	**3007.5**
Stddev	19.0	71.	5.1
%RSD	.20079	.12320	.16890
#1	9472.3	57910.	3001.8
#2	9451.2	58005.	3011.5
#3	9489.2	58049.	3009.1

Approved: June 27, 2016

Sample Name: L1606098631S Acquired: 6/25/2016 21:12:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.18827	4.8059	.19457	.97775	.51082	.02368	136.28	.02401
Stddev	.00146	.0060	.00214	.00486	.00158	.00008	.55	.00011
%RSD	.77669	.12402	1.0980	.49690	.30853	.31910	.40245	.44044
#1	.18949	4.8104	.19700	.98276	.50954	.02372	135.66	.02402
#2	.18665	4.7991	.19298	.97305	.51258	.02359	136.67	.02389
#3	.18867	4.8083	.19374	.97744	.51033	.02373	136.53	.02410
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09298	.23341	.25035	1.9823	26.282	.52091	38.371	.48555
Stddev	.00063	.00083	.00168	.0210	.198	.00132	.105	.00060
%RSD	.67753	.35580	.67127	1.0601	.75241	.25420	.27268	.12393
#1	.09358	.23411	.25193	1.9586	26.065	.52066	38.253	.48489
#2	.09232	.23249	.25054	1.9895	26.453	.52234	38.408	.48570
#3	.09303	.23364	.24858	1.9987	26.329	.51972	38.452	.48607
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49539	77.049	.23394	4.7766	.23491	.57914	.18644	6.1257
Stddev	.00233	.345	.00087	.0076	.00312	.00333	.00623	.0072
%RSD	.47123	.44745	.37273	.15954	1.3288	.57493	3.3395	.11822
#1	.49753	76.664	.23461	4.7848	.23800	.57665	.18760	6.1339
#2	.49574	77.327	.23426	4.7754	.23176	.57786	.17971	6.1201
#3	.49290	77.158	.23296	4.7697	.23495	.58292	.19200	6.1230
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098631S Acquired: 6/25/2016 21:12:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47308**	**2.3488**	**.46537**	**.23713**	**.48550**	**.47406**	**.01603**
Stddev	.00180	.0057	.00826	.00130	.00209	.00072	.00324
%RSD	.38025	.24432	1.7741	.54866	.42967	.15151	20.234
#1	.47478	2.3426	.46034	.23744	.48500	.47482	.01233
#2	.47325	2.3539	.46086	.23825	.48371	.47397	.01737
#3	.47120	2.3498	.47490	.23571	.48779	.47340	.01839
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9509.0**	**58216.**	**3011.6**
Stddev	7.0	203.	15.7
%RSD	.07407	.34863	.52135
#1	9501.0	58067.	3028.6
#2	9511.6	58447.	2997.6
#3	9514.3	58134.	3008.7

Approved: June 27, 2016

Sample Name: L1606098633SD Acquired: 6/25/2016 21:15:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19322**	**4.9340**	**.19821**	**1.0094**	**.52302**	**.02438**	**139.13**	**.02459**
Stddev	.00378	.0145	.00351	.0014	.00226	.00009	.67	.00034
%RSD	1.9571	.29336	1.7708	.13572	.43296	.36107	.48341	1.3705
#1	.18918	4.9313	.20201	1.0102	.52283	.02442	139.33	.02427
#2	.19667	4.9211	.19752	1.0078	.52537	.02443	139.68	.02494
#3	.19382	4.9497	.19509	1.0102	.52086	.02428	138.38	.02455
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09514**	**.23910**	**.25336**	**2.0284**	**26.984**	**.53592**	**39.198**	**.43704**
Stddev	.00042	.00077	.00150	.0114	.096	.00060	.184	.00451
%RSD	.44105	.32091	.59054	.56072	.35526	.11184	.46916	1.0308
#1	.09541	.23859	.25475	2.0343	27.015	.53581	38.996	.43232
#2	.09535	.23873	.25356	2.0357	27.059	.53539	39.242	.44129
#3	.09465	.23999	.25178	2.0153	26.876	.53657	39.356	.43751
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50931**	**78.441**	**.23759**	**4.8949**	**.24046**	**.58794**	**.19015**	**6.2655**
Stddev	.00186	.336	.00142	.0178	.00324	.00596	.00110	.0092
%RSD	.36520	.42898	.59954	.36432	1.3470	1.0133	.57938	.14668
#1	.51115	78.549	.23885	4.9125	.24157	.58732	.19136	6.2719
#2	.50933	78.710	.23604	4.8953	.23682	.59419	.18990	6.2695
#3	.50743	78.063	.23787	4.8768	.24301	.58232	.18920	6.2549
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098633SD Acquired: 6/25/2016 21:15:41 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48269**	**2.3976**	**.47749**	**.23961**	**.50144**	**.48370**	**.00655**
Stddev	.00278	.0083	.00742	.00256	.00242	.00154	.00139
%RSD	.57608	.34786	1.5549	1.0679	.48318	.31822	21.270
#1	.48505	2.3997	.47422	.24207	.50191	.48531	.00572
#2	.48340	2.4047	.47226	.23981	.49882	.48355	.00816
#3	.47963	2.3884	.48599	.23696	.50360	.48224	.00577
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9541.3**	**57975.**	**3017.9**
Stddev	6.7	58.	25.7
%RSD	.06977	.09979	.85022
#1	9537.4	57946.	3002.1
#2	9549.0	58042.	3004.1
#3	9537.6	57938.	3047.5

Approved: June 27, 2016

Sample Name: L1606098635S Acquired: 6/25/2016 21:19:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-07

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19277	4.9885	.19579	1.3512	.50932	.02402	246.59	.02462
Stddev	.00213	.0073	.00137	.0073	.00284	.00001	1.33	.00040
%RSD	1.1047	.14711	.70076	.54069	.55753	.03190	.53842	1.6295
#1	.19260	4.9802	.19687	1.3428	.50650	.02402	245.12	.02488
#2	.19498	4.9915	.19425	1.3565	.50929	.02401	246.97	.02416
#3	.19074	4.9939	.19626	1.3542	.51218	.02403	247.69	.02483
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09311	.23510	.26651	1.9710	30.025	.51865	72.396	.67936
Stddev	.00111	.00066	.00283	.0124	.152	.00282	.624	.00361
%RSD	1.1973	.28134	1.0623	.63080	.50639	.54413	.86161	.53080
#1	.09375	.23474	.26754	1.9611	29.892	.51908	71.843	.67568
#2	.09182	.23470	.26331	1.9669	29.993	.51564	72.272	.67951
#3	.09375	.23586	.26869	1.9849	30.191	.52123	73.072	.68289
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49951	91.017	.23206	4.8553	.23760	.58301	.18517	6.5213
Stddev	.00475	.491	.00241	.0437	.00246	.00711	.00329	.0728
%RSD	.95179	.53976	1.0367	.89938	1.0354	1.2190	1.7758	1.1160
#1	.50253	90.509	.23402	4.8765	.23815	.58650	.18639	6.5577
#2	.49403	91.051	.22938	4.8051	.23491	.57483	.18144	6.4375
#3	.50197	91.490	.23278	4.8843	.23974	.58769	.18767	6.5687
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098635S Acquired: 6/25/2016 21:19:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-07

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47340**	**2.1822**	**.45682**	**.23569**	**.48957**	**.47212**	**.00440**
Stddev	.00586	.0116	.00441	.00472	.00317	.00386	.00078
%RSD	1.2388	.53009	.96525	2.0030	.64754	.81664	17.679
#1	.47626	2.1692	.45177	.23827	.48595	.47646	.00457
#2	.46666	2.1856	.45986	.23024	.49090	.46909	.00508
#3	.47729	2.1916	.45885	.23856	.49186	.47080	.00355
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9474.0**	**57681.**	**2990.6**
Stddev	86.2	193.	10.0
%RSD	.90991	.33483	.33371
#1	9421.7	57902.	3000.6
#2	9573.5	57545.	2990.5
#3	9426.8	57595.	2980.6

Approved: June 27, 2016

Sample Name: L1606098637SD Acquired: 6/25/2016 21:22:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-08

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18854**	**4.9112**	**.19745**	**1.3462**	**.50578**	**.02318**	**246.84**	**.02457**
Stddev	.00237	.0122	.00114	.0020	.00229	.00008	1.01	.00037
%RSD	1.2581	.24857	.57516	.14562	.45291	.33396	.40736	1.5133
#1	.18824	4.9085	.19618	1.3456	.50836	.02311	247.86	.02498
#2	.18633	4.9245	.19780	1.3447	.50496	.02326	245.85	.02445
#3	.19105	4.9006	.19837	1.3484	.50401	.02315	246.80	.02427
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09368**	**.23124**	**.24645**	**1.9652**	**29.866**	**.51243**	**71.961**	**.67062**
Stddev	.00032	.00174	.00162	.0103	.162	.00260	.245	.00120
%RSD	.34157	.75435	.65887	.52496	.54204	.50740	.33982	.17871
#1	.09405	.23044	.24793	1.9540	30.010	.51110	72.114	.67080
#2	.09349	.23325	.24471	1.9744	29.691	.51543	71.679	.66935
#3	.09350	.23005	.24671	1.9671	29.897	.51077	72.089	.67172
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50362**	**90.574**	**.23429**	**4.8998**	**.23803**	**.58838**	**.19013**	**6.6122**
Stddev	.00184	.311	.00137	.0310	.00392	.00166	.00571	.0196
%RSD	.36548	.34377	.58644	.63360	1.6481	.28131	3.0018	.29638
#1	.50535	90.891	.23522	4.9314	.24008	.58995	.18521	6.6237
#2	.50169	90.269	.23272	4.8693	.24051	.58666	.19639	6.5896
#3	.50382	90.562	.23494	4.8987	.23351	.58854	.18878	6.6233
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098637SD Acquired: 6/25/2016 21:22:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573544-08

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47518**	**2.1930**	**.45556**	**.23535**	**.47970**	**.47047**	**.00421**
Stddev	.00224	.0050	.00619	.00164	.00083	.00231	.00126
%RSD	.47229	.22774	1.3595	.69822	.17220	.49043	29.868
#1	.47661	2.1987	.46015	.23423	.48048	.47206	.00301
#2	.47259	2.1891	.45801	.23458	.47883	.46782	.00552
#3	.47634	2.1914	.44851	.23723	.47980	.47152	.00409
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9517.7**	**58425.**	**3034.0**
Stddev	30.6	371.	4.3
%RSD	.32191	.63434	.14141
#1	9523.8	58332.	3029.9
#2	9544.8	58110.	3038.5
#3	9484.5	58834.	3033.6

Approved: June 27, 2016

Sample Name: L1606098639 Acquired: 6/25/2016 21:26:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00004	.00422	.00040	.00975	.00108	.00009	.14419	-.00005
Stddev	.00042	.00758	.00073	.00126	.00087	.00008	.01744	.00009
%RSD	1118.0	179.89	181.74	12.897	80.476	90.859	12.096	178.96
#1	.00028	.01060	-.00028	.01106	.00209	.00013	.16280	-.00014
#2	.00012	-.00417	.00116	.00964	.00057	-.00000	.14155	-.00004
#3	-.00051	.00622	.00032	.00856	.00059	.00013	.12822	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00044	.00035	.00305	.04079	-.00706	.00203	-.02733	-.00024
Stddev	.00042	.00030	.00090	.02484	.04162	.00092	.03833	.00264
%RSD	93.882	85.053	29.494	60.907	589.18	45.533	140.24	1117.6
#1	.00013	.00037	.00205	.05000	-.05467	.00295	-.00835	-.00277
#2	.00091	.00004	.00332	.05971	.01106	.00204	-.00220	-.00044
#3	.00028	.00063	.00378	.01266	.02242	.00110	-.07145	.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00046	.23384	.00002	.00301	.00223	-.00336	.00424	.10834
Stddev	.00025	.02078	.00057	.00488	.00185	.00118	.00213	.00216
%RSD	54.203	8.8874	3135.0	161.94	83.035	35.176	50.129	1.9925
#1	.00023	.25768	.00001	-.00120	.00258	-.00441	.00208	.11078
#2	.00073	.22428	.00059	.00188	.00389	-.00208	.00633	.10755
#3	.00043	.21955	-.00055	.00835	.00023	-.00360	.00432	.10668
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098639 Acquired: 6/25/2016 21:26:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.00188	.00201	-.00117	.00072	.00941	.00130
Stddev	.00073	.00051	.00315	.00081	.00019	.00001	.00060
%RSD	203.49	27.359	156.60	69.426	26.854	.12705	46.035
#1	.00061	.00146	.00564	-.00068	.00081	.00940	.00116
#2	.00093	.00173	.00038	-.00211	.00085	.00941	.00078
#3	-.00047	.00245	.00001	-.00072	.00050	.00942	.00196
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9979.7	61621.	3102.9
Stddev	10.2	118.	6.8
%RSD	.10173	.19116	.21926
#1	9983.1	61738.	3101.0
#2	9987.7	61621.	3110.5
#3	9968.3	61503.	3097.3

Approved: June 27, 2016

Sample Name: L1606098641 Acquired: 6/25/2016 21:30:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00155	.00228	-.00074	.00681	.00240	.00007	2.3285	.00015
Stddev	.00195	.00437	.00132	.00259	.00010	.00002	.0225	.00014
%RSD	125.93	191.41	178.17	38.016	4.0011	29.007	.96410	94.650
#1	.00016	.00624	-.00146	.00963	.00251	.00005	2.3542	.00003
#2	.00071	.00302	-.00156	.00453	.00235	.00009	2.3184	.00011
#3	.00378	-.00241	.00078	.00628	.00234	.00008	2.3128	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00014	.00163	.03413	.24665	.00092	.81266	-.00079
Stddev	.00068	.00062	.00075	.01156	.02854	.00423	.01745	.00318
%RSD	1106.1	456.64	45.829	33.860	11.573	458.16	2.1475	404.35
#1	-.00033	.00085	.00092	.03095	.24915	.00580	.81529	.00231
#2	.00085	-.00023	.00241	.02450	.27386	-.00166	.79404	-.00404
#3	-.00034	-.00022	.00156	.04694	.21693	-.00138	.82864	-.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	1.5234	-.00034	.00759	.00193	-.00110	-.00056	1.9225
Stddev	.00028	.0181	.00053	.00504	.00328	.00190	.00524	.0055
%RSD	316.47	1.1895	155.07	66.429	170.02	173.25	938.70	.28386
#1	-.00021	1.5412	-.00096	.00263	.00004	-.00329	-.00638	1.9218
#2	.00035	1.5240	.00002	.00743	.00571	-.00014	.00092	1.9283
#3	.00013	1.5050	-.00009	.01271	.00003	.00014	.00379	1.9175
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606098641 Acquired: 6/25/2016 21:30:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00003**	**.02979**	**.00925**	**-.00425**	**.00079**	**.00575**	**.00161**
Stddev	.00070	.00033	.00260	.00161	.00118	.00006	.00128
%RSD	2613.1	1.1094	28.082	37.920	148.25	1.0430	79.495
#1	-.00014	.02957	.00917	-.00541	.00147	.00579	.00219
#2	.00072	.03017	.01188	-.00492	.00148	.00578	.00014
#3	-.00067	.02963	.00669	-.00241	-.00057	.00568	.00250
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9984.0**	**61505.**	**3103.5**
Stddev	25.4	97.	8.6
%RSD	.25425	.15693	.27670
#1	10013.	61422.	3093.7
#2	9966.4	61611.	3106.9
#3	9972.6	61483.	3109.8

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 21:34:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.40382	10.228	.39903	.49252	1.0184	.05057	10.132
Stddev	.00317	.045	.00339	.00303	.0029	.00010	.084
%RSD	.78510	.44126	.84879	.61522	.28786	.20129	.82686
#1	.40329	10.193	.40176	.48985	1.0165	.05045	10.103
#2	.40723	10.279	.39524	.49189	1.0170	.05064	10.066
#3	.40095	10.211	.40009	.49581	1.0218	.05061	10.226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05109	.20032	.50425	.51389	3.9993	49.456	1.0271
Stddev	.00034	.00030	.00243	.00134	.0288	.230	.0087
%RSD	.66912	.15054	.48104	.26170	.72080	.46581	.84751
#1	.05096	.20027	.50150	.51248	3.9697	49.237	1.0193
#2	.05148	.20064	.50519	.51515	4.0273	49.435	1.0365
#3	.05084	.20004	.50607	.51404	4.0011	49.697	1.0255
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.5965	.50354	1.0171	50.205	.50852	9.9839	.50630
Stddev	.0605	.00125	.0104	.188	.00105	.0190	.00443
%RSD	.63000	.24843	1.0188	.37433	.20655	.18977	.87552
#1	9.5498	.50228	1.0149	50.026	.50872	9.9714	.50177
#2	9.5748	.50478	1.0283	50.189	.50945	10.006	.51063
#3	9.6648	.50354	1.0080	50.400	.50738	9.9747	.50650
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 21:34:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2057**	**.39535**	**5.1622**	**1.0068**	**1.0152**	**1.0163**	**.51868**
Stddev	.0009	.00724	.0066	.0035	.0056	.0047	.00189
%RSD	.07645	1.8317	.12822	.34938	.55282	.46463	.36343
#1	1.2067	.40045	5.1563	1.0056	1.0088	1.0109	.51803
#2	1.2055	.39854	5.1610	1.0107	1.0174	1.0194	.51721
#3	1.2048	.38706	5.1694	1.0040	1.0193	1.0187	.52081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0297**	**1.0108**	F **2.9654**
Stddev	.0010	.0013	.0124
%RSD	.09618	.12981	.41944
#1	1.0297	1.0109	2.9530
#2	1.0307	1.0120	2.9654
#3	1.0287	1.0094	2.9779
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9765.3**	**59222.**	**3028.4**
Stddev	12.6	103.	19.9
%RSD	.12950	.17379	.65564
#1	9777.2	59331.	3048.9
#2	9752.0	59127.	3027.1
#3	9766.5	59207.	3009.2

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 21:38:07 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00048**	**-.00056**	**.00159**	**.00238**	**.00173**	**.00014**	**-.05704**	**-.00011**
Stddev	.00089	.00372	.00374	.00230	.00036	.00002	.05178	.00017
%RSD	185.89	660.56	234.30	96.559	20.708	14.400	90.783	156.11
#1	-.00133	.00080	.00118	.00024	.00195	.00012	-.11682	-.00027
#2	-.00055	-.00477	-.00192	.00481	.00132	.00016	-.02846	-.00014
#3	.00045	.00228	.00552	.00209	.00192	.00015	-.02584	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00017**	**.00048**	**.00001**	**.01554**	**-.08094**	**.00031**	**-.00960**	**.00059**
Stddev	.00009	.00037	.00173	.01679	.11260	.00565	.05873	.00171
%RSD	56.610	77.335	20230.	108.07	139.11	1853.2	611.58	288.38
#1	.00024	.00066	.00194	-.00104	.01136	.00158	-.02063	.00007
#2	.00020	.00072	-.00054	.03254	-.20639	-.00588	.05386	.00251
#3	.00006	.00005	-.00138	.01511	-.04780	.00521	-.06203	-.00080
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00336**	**.02885**	**-.00050**	**.00712**	**.00213**	**.00602**	**-.00054**	**.04214**
Stddev	.00024	.02974	.00074	.00312	.00180	.00158	.00069	.00013
%RSD	7.0582	103.10	148.29	43.907	84.214	26.247	127.12	.29697
#1	.00323	-.00548	.00008	.00759	.00359	.00782	.00008	.04201
#2	.00321	.04496	-.00024	.00998	.00013	.00485	-.00042	.04226
#3	.00363	.04705	-.00133	.00378	.00268	.00540	-.00129	.04215
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 21:38:07 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00047	.00065	-.00177	-.00021	.00113	.00005	.00375
Stddev	.00100	.00044	.00221	.00418	.00029	.00020	.00087
%RSD	212.41	68.047	125.42	1958.4	25.944	435.57	23.135
#1	.00160	.00080	.00075	-.00080	.00139	-.00005	.00437
#2	-.00031	.00015	-.00341	-.00407	.00081	.00028	.00276
#3	.00012	.00100	-.00264	.00422	.00119	-.00009	.00413
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9540.4	58573.	2934.4
Stddev	6.2	75.	17.1
%RSD	.06498	.12729	.58178
#1	9533.2	58646.	2919.8
#2	9543.3	58575.	2953.2
#3	9544.6	58497.	2930.3

Approved: June 27, 2016

Sample Name: PBW 9A Acquired: 6/25/2016 21:42:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.00614**	**.00175**	**.00056**	**.00231**	**.00012**	**-.04646**	**-.00007**
Stddev	.00171	.00204	.00393	.00252	.00071	.00020	.04124	.00026
%RSD	1283.4	33.141	224.26	449.74	30.683	160.24	88.765	365.50
#1	.00182	.00611	.00626	-.00197	.00237	.00018	-.00258	-.00036
#2	-.00137	.00820	-.00088	.00057	.00157	.00029	-.08442	.00014
#3	-.00085	.00413	-.00013	.00307	.00298	-.00010	-.05240	.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00037**	**.00010**	**.00080**	**.02407**	**-.12665**	**.00141**	**-.00997**	**-.00231**
Stddev	.00033	.00034	.00081	.01192	.12266	.00378	.02213	.00072
%RSD	90.436	329.64	101.91	49.545	96.850	267.21	222.01	31.042
#1	-.00000	-.00017	-.00014	.03113	-.25310	.00322	.01487	-.00193
#2	-.00045	.00048	.00118	.03078	-.11869	.00395	-.02759	-.00185
#3	-.00065	-.00000	.00135	.01030	-.00816	-.00293	-.01718	-.00313
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00037**	**.03613**	**.00006**	**.00672**	**.00326**	**-.00431**	**-.00184**	**.00566**
Stddev	.00007	.03275	.00077	.00152	.00253	.00485	.00591	.00059
%RSD	18.235	90.627	1212.2	22.673	77.664	112.59	322.28	10.478
#1	.00035	.07347	.00060	.00612	.00546	-.00044	-.00125	.00618
#2	.00032	.02263	-.00082	.00846	.00049	-.00975	.00376	.00501
#3	.00045	.01230	.00041	.00559	.00385	-.00274	-.00802	.00578
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: PBW 9A Acquired: 6/25/2016 21:42:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00063**	**.00033**	**-.00143**	**-.00317**	**.00125**	**.00161**	**.00218**
Stddev	.00053	.00015	.00130	.00329	.00039	.00011	.00081
%RSD	84.270	46.594	90.758	103.97	30.982	7.0758	37.192
#1	.00094	.00050	-.00075	-.00532	.00080	.00148	.00195
#2	.00002	.00020	-.00062	-.00481	.00145	.00171	.00150
#3	.00092	.00028	-.00293	.00062	.00150	.00162	.00308
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9585.8**	**59115.**	**2963.7**
Stddev	26.3	98.	6.0
%RSD	.27487	.16506	.20388
#1	9574.9	59148.	2962.9
#2	9615.8	59005.	2958.2
#3	9566.6	59192.	2970.2

Approved: June 27, 2016

Sample Name: LCSW 9A Acquired: 6/25/2016 21:45:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19278**	**4.8645**	**.19357**	**.92620**	**.49567**	**.02388**	**4.9744**	**.02438**
Stddev	.00059	.0150	.00172	.00296	.00123	.00001	.0131	.00027
%RSD	.30529	.30879	.88618	.31973	.24905	.05168	.26315	1.0959
#1	.19266	4.8773	.19194	.92961	.49521	.02387	4.9745	.02469
#2	.19342	4.8480	.19536	.92439	.49707	.02389	4.9613	.02424
#3	.19226	4.8682	.19339	.92458	.49473	.02389	4.9875	.02421
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09756**	**.24011**	**.24908**	**1.9287**	**23.845**	**.50347**	**4.7458**	**.24452**
Stddev	.00018	.00063	.00057	.0379	.076	.00304	.1100	.00304
%RSD	.18802	.26044	.22811	1.9678	.32025	.60437	2.3184	1.2446
#1	.09771	.24070	.24970	1.9204	23.902	.50653	4.7834	.24200
#2	.09761	.23946	.24858	1.9701	23.875	.50343	4.6218	.24790
#3	.09735	.24018	.24895	1.8956	23.758	.50044	4.8320	.24367
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50361**	**24.550**	**.24652**	**4.6792**	**.24585**	**.57643**	**.18945**	**2.4007**
Stddev	.00079	.045	.00091	.0152	.00374	.00321	.00289	.0038
%RSD	.15600	.18503	.37091	.32489	1.5220	.55613	1.5253	.15739
#1	.50355	24.561	.24748	4.6824	.24789	.57981	.19277	2.4049
#2	.50442	24.588	.24565	4.6926	.24153	.57604	.18748	2.3993
#3	.50285	24.500	.24642	4.6627	.24812	.57343	.18811	2.3978
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LCSW 9A Acquired: 6/25/2016 21:45:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48346**	**.50078**	**.49876**	**.24644**	**.49280**	**.48316**	**.01652**
Stddev	.00157	.00182	.00430	.00290	.00093	.00040	.00416
%RSD	.32431	.36335	.86149	1.1750	.18883	.08190	25.157
#1	.48465	.50112	.49719	.24479	.49339	.48270	.01275
#2	.48404	.50241	.49547	.24978	.49173	.48334	.01583
#3	.48168	.49882	.50362	.24474	.49328	.48342	.02097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9876.1**	**60275.**	**3070.8**
Stddev	6.3	180.	12.0
%RSD	.06355	.29822	.39033
#1	9874.5	60221.	3071.7
#2	9883.0	60476.	3058.4
#3	9870.8	60129.	3082.3

Approved: June 27, 2016

Sample Name: F BLANK Acquired: 6/25/2016 21:49:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00055	-.00126	-.00015	.00486	.00128	.00012	-.00459	.00000
Stddev	.00056	.00100	.00110	.00023	.00095	.00001	.02969	.00020
%RSD	100.53	79.131	736.67	4.6731	74.371	6.7718	646.26	7554.0
#1	.00064	-.00237	-.00130	.00509	.00028	.00012	.02032	.00019
#2	.00106	-.00043	-.00004	.00484	.00217	.00011	-.03745	-.00020
#3	-.00004	-.00099	.00090	.00463	.00139	.00012	.00335	.00002
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00037	.00026	.00088	.03134	-.11502	-.00026	.03535	-.00044
Stddev	.00018	.00121	.00068	.00659	.05233	.00265	.10514	.00096
%RSD	49.613	468.36	76.871	21.019	45.492	1017.6	297.45	218.87
#1	.00058	.00075	.00159	.02374	-.13830	.00130	-.07629	.00060
#2	.00024	.00114	.00082	.03485	-.15168	.00124	.13249	-.00129
#3	.00028	-.00112	.00024	.03543	-.05510	-.00331	.04985	-.00062
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00056	.07370	.00132	.00313	.00117	-.00091	.00077	-.00309
Stddev	.00026	.00588	.00035	.00217	.00118	.00090	.00482	.00173
%RSD	45.817	7.9801	26.636	69.209	100.20	98.397	629.48	56.034
#1	.00085	.06695	.00170	.00515	.00095	-.00029	-.00041	-.00378
#2	.00042	.07645	.00125	.00084	.00245	-.00194	-.00336	-.00438
#3	.00040	.07770	.00101	.00340	.00013	-.00050	.00606	-.00112
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: F BLANK Acquired: 6/25/2016 21:49:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00033**	**.00302**	**-.00048**	**-.00333**	**.00002**	**.00245**	**.00132**
Stddev	.00077	.00023	.00928	.00236	.00016	.00009	.00057
%RSD	230.12	7.5634	1914.7	70.982	654.43	3.7966	42.974
#1	.00023	.00325	-.01051	-.00146	-.00016	.00251	.00071
#2	.00115	.00279	.00127	-.00253	.00008	.00234	.00183
#3	-.00038	.00303	.00779	-.00598	.00016	.00250	.00143
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9948.0**	**61128.**	**3082.2**
Stddev	8.3	35.	19.2
%RSD	.08376	.05747	.62310
#1	9943.7	61136.	3060.8
#2	9942.7	61089.	3097.9
#3	9957.6	61158.	3087.8

Approved: June 27, 2016

Sample Name: L1606078709 Acquired: 6/25/2016 21:53:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00106	.32067	.00199	.03822	.08666	.00012	52.298	.00025
Stddev	.00033	.00225	.00178	.00083	.00065	.00013	.384	.00005
%RSD	31.425	.70249	89.821	2.1841	.74667	104.78	.73398	21.021
#1	.00100	.32316	.00023	.03790	.08700	-.00002	52.414	.00024
#2	.00077	.32010	.00380	.03760	.08707	.00018	51.870	.00021
#3	.00143	.31876	.00193	.03917	.08592	.00021	52.611	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00014	.00232	.00233	.31407	.84091	.00625	16.422	.01281
Stddev	.00025	.00123	.00162	.01381	.09733	.00295	.087	.00086
%RSD	177.99	52.851	69.798	4.3981	11.574	47.203	.53048	6.7172
#1	-.00001	.00331	.00164	.32378	.73706	.00531	16.422	.01228
#2	.00000	.00271	.00116	.32018	.93004	.00389	16.510	.01236
#3	.00043	.00095	.00418	.29826	.85562	.00956	16.336	.01381
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00023	3.5331	.00030	.18004	.00409	-.00180	.00164	8.5479
Stddev	.00032	.0286	.00045	.00328	.00158	.00258	.00446	.0078
%RSD	137.02	.80985	147.61	1.8192	38.579	143.43	271.62	.09172
#1	-.00011	3.5554	-.00012	.17874	.00498	-.00359	.00673	8.5558
#2	.00052	3.5008	.00077	.17762	.00503	-.00297	-.00020	8.5477
#3	.00028	3.5432	.00026	.18377	.00227	.00116	-.00161	8.5401
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078709 Acquired: 6/25/2016 21:53:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.13816	-.00281	-.00107	.00371	.00875	.00154
Stddev	.00042	.00078	.00681	.00141	.00081	.00007	.00044
%RSD	132.89	.56285	242.62	131.61	21.926	.80395	28.630
#1	-.00012	.13842	.00500	-.00130	.00416	.00881	.00162
#2	.00035	.13728	-.00586	-.00235	.00277	.00878	.00193
#3	.00072	.13877	-.00757	.00044	.00421	.00867	.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9876.5	60888.	3069.7
Stddev	11.3	192.	3.6
%RSD	.11437	.31559	.11816
#1	9889.0	60702.	3066.7
#2	9866.9	60874.	3073.8
#3	9873.6	61086.	3068.7

Approved: June 27, 2016

Sample Name: L1606078711S Acquired: 6/25/2016 21:57:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19226**	**5.2769**	**.19700**	**.97637**	**.57407**	**.02377**	**55.412**	**.02464**
Stddev	.00232	.0172	.00210	.00695	.00123	.00006	.275	.00018
%RSD	1.2075	.32678	1.0663	.71175	.21357	.23547	.49636	.71677
#1	.19492	5.2928	.19484	.98432	.57271	.02383	55.376	.02446
#2	.19066	5.2586	.19711	.97142	.57439	.02373	55.156	.02465
#3	.19119	5.2792	.19903	.97337	.57510	.02375	55.703	.02481
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09590**	**.23900**	**.24525**	**2.2503**	**24.873**	**.51320**	**20.375**	**.25171**
Stddev	.00047	.00136	.00161	.0156	.173	.01009	.023	.00267
%RSD	.48644	.56990	.65491	.69491	.69517	1.9665	.11329	1.0594
#1	.09633	.24013	.24639	2.2591	25.016	.52369	20.389	.25241
#2	.09595	.23749	.24595	2.2322	24.681	.50356	20.349	.25396
#3	.09541	.23938	.24342	2.2595	24.921	.51234	20.388	.24877
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50427**	**27.841**	**.24087**	**4.9542**	**.24449**	**.58622**	**.18341**	**11.076**
Stddev	.00227	.102	.00131	.0062	.00416	.00262	.00666	.019
%RSD	.45102	.36806	.54487	.12407	1.6996	.44696	3.6299	.17466
#1	.50494	27.874	.24041	4.9608	.24621	.58442	.18291	11.063
#2	.50614	27.726	.24235	4.9486	.23975	.58502	.19031	11.099
#3	.50174	27.923	.23985	4.9531	.24750	.58923	.17702	11.068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078711S Acquired: 6/25/2016 21:57:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48537**	**.63044**	**.49547**	**.24660**	**.49048**	**.48728**	**.00709**
Stddev	.00041	.00808	.00649	.00259	.00192	.00292	.00024
%RSD	.08494	1.2823	1.3100	1.0500	.39154	.59943	3.4352
#1	.48528	.63362	.48907	.24492	.49247	.49009	.00732
#2	.48501	.63645	.50205	.24958	.48864	.48426	.00711
#3	.48582	.62125	.49531	.24529	.49034	.48750	.00684
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9767.2**	**59939.**	**3081.9**
Stddev	8.4	151.	2.2
%RSD	.08617	.25130	.07156
#1	9776.8	59826.	3083.9
#2	9761.1	60110.	3082.2
#3	9763.8	59880.	3079.5

Approved: June 27, 2016

Sample Name: L1606078712SD Acquired: 6/25/2016 22:01:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19422**	**6.5547**	**.19616**	**.97909**	**.58447**	**.02412**	**57.272**	**.02449**
Stddev	.00043	.0174	.00206	.00320	.00356	.00008	.255	.00025
%RSD	.22056	.26500	1.0502	.32643	.60985	.31860	.44461	1.0216
#1	.19468	6.5722	.19401	.98024	.58211	.02413	57.018	.02471
#2	.19383	6.5546	.19811	.97548	.58857	.02404	57.527	.02422
#3	.19415	6.5375	.19636	.98156	.58273	.02419	57.272	.02454
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09680**	**.24221**	**.24688**	**3.2519**	**25.085**	**.51256**	**21.272**	**.29044**
Stddev	.00024	.00084	.00160	.0305	.123	.00182	.123	.00255
%RSD	.25204	.34673	.64632	.93681	.48984	.35468	.57596	.87927
#1	.09682	.24178	.24538	3.2175	24.965	.51125	21.131	.28769
#2	.09704	.24318	.24856	3.2756	25.081	.51179	21.342	.29274
#3	.09655	.24168	.24672	3.2624	25.210	.51464	21.344	.29089
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50646**	**28.018**	**.24386**	**4.9818**	**.24358**	**.58240**	**.18769**	**13.764**
Stddev	.00076	.167	.00147	.0053	.00228	.00382	.00425	.008
%RSD	.15029	.59670	.60238	.10534	.93711	.65545	2.2629	.06131
#1	.50691	27.825	.24251	4.9763	.24111	.57903	.18298	13.756
#2	.50690	28.112	.24543	4.9823	.24561	.58163	.18886	13.772
#3	.50558	28.117	.24364	4.9868	.24402	.58655	.19123	13.765
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078712SD Acquired: 6/25/2016 22:01:06 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573102-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48752**	**.63979**	**.50344**	**.24632**	**.49636**	**.48329**	**.00682**
Stddev	.00123	.00383	.00416	.00077	.00180	.00044	.00097
%RSD	.25232	.59818	.82653	.31336	.36344	.09176	14.263
#1	.48785	.63646	.50591	.24591	.49538	.48373	.00713
#2	.48616	.64397	.49864	.24584	.49525	.48329	.00761
#3	.48856	.63895	.50578	.24721	.49844	.48284	.00573
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9745.6**	**59867.**	**3081.8**
Stddev	9.9	91.	26.0
%RSD	.10194	.15198	.84468
#1	9734.5	59851.	3110.8
#2	9753.6	59965.	3060.5
#3	9748.6	59785.	3074.0

Approved: June 27, 2016

Sample Name: L1606078701 Acquired: 6/25/2016 22:04:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00206	-.00089	-.00017	.00563	.00151	.00011	.08615	.00015
Stddev	.00234	.00167	.00131	.00160	.00060	.00001	.02054	.00021
%RSD	113.42	187.14	751.31	28.470	39.897	9.3705	23.846	140.35
#1	.00316	-.00269	.00118	.00529	.00196	.00012	.07852	-.00008
#2	-.00062	-.00061	-.00144	.00737	.00083	.00010	.07052	.00033
#3	.00364	.00062	-.00027	.00422	.00173	.00012	.10942	.00019
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00013	.00093	.00322	.06115	.01246	.00241	.02800	.00003
Stddev	.00003	.00076	.00095	.00519	.08806	.00216	.01589	.00083
%RSD	20.822	82.163	29.586	8.4819	706.92	89.891	56.731	2625.4
#1	.00011	.00029	.00408	.06573	-.03307	.00026	.04634	-.00085
#2	.00017	.00177	.00219	.05552	.11396	.00458	.01831	.00015
#3	.00013	.00071	.00338	.06220	-.04352	.00238	.01936	.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00040	.44862	.00009	.00157	.00319	-.00012	.00644	.10535
Stddev	.00015	.01169	.00041	.00200	.00252	.00436	.00247	.00160
%RSD	36.378	2.6064	429.23	127.80	78.785	3632.8	38.299	1.5199
#1	.00041	.45408	.00056	-.00069	.00238	-.00321	.00918	.10450
#2	.00025	.45659	-.00021	.00226	.00118	.00487	.00438	.10720
#3	.00054	.43520	-.00006	.00313	.00602	-.00202	.00577	.10436
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078701 Acquired: 6/25/2016 22:04:44 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00114	.00134	.00464	-.00236	.00126	.00852	.00204
Stddev	.00023	.00031	.01117	.00170	.00022	.00013	.00133
%RSD	19.939	23.344	240.52	72.025	17.171	1.4749	64.993
#1	.00100	.00168	-.00728	-.00407	.00147	.00841	.00183
#2	.00140	.00106	.01487	-.00232	.00127	.00866	.00083
#3	.00102	.00128	.00634	-.00068	.00104	.00851	.00346
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9978.6	61725.	3108.7
Stddev	25.8	52.	12.8
%RSD	.25894	.08436	.41157
#1	9949.5	61751.	3109.2
#2	9998.7	61759.	3121.3
#3	9987.8	61665.	3095.7

Approved: June 27, 2016

Sample Name: L1606078701PS Acquired: 6/25/2016 22:08:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573561-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19562**	**4.8670**	**.19417**	**.93274**	**.49617**	**.02396**	**5.0466**	**.02449**
Stddev	.00101	.0014	.00206	.00077	.00126	.00015	.0443	.00024
%RSD	.51610	.02767	1.0615	.08264	.25431	.60837	.87718	.96002
#1	.19561	4.8655	.19531	.93216	.49577	.02379	5.0119	.02471
#2	.19461	4.8672	.19179	.93245	.49515	.02407	5.0964	.02451
#3	.19663	4.8682	.19541	.93362	.49758	.02401	5.0313	.02424
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09815**	**.24178**	**.25186**	**1.9475**	**23.902**	**.50912**	**4.6690**	**.24615**
Stddev	.00038	.00032	.00085	.0476	.079	.00280	.1745	.00176
%RSD	.38848	.13325	.33570	2.4417	.33116	.54926	3.7379	.71493
#1	.09847	.24215	.25095	2.0020	23.984	.51180	4.5199	.24606
#2	.09825	.24158	.25263	1.9144	23.825	.50622	4.6262	.24443
#3	.09773	.24160	.25200	1.9261	23.897	.50934	4.8609	.24795
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.50547**	**24.979**	**.24871**	**4.7191**	**.25003**	**.58513**	**.18331**	**2.5397**
Stddev	.00148	.047	.00145	.0045	.00153	.00133	.00963	.0085
%RSD	.29370	.18695	.58415	.09482	.61173	.22744	5.2541	.33396
#1	.50679	24.962	.24995	4.7237	.24937	.58423	.17385	2.5470
#2	.50576	24.943	.24906	4.7186	.24895	.58665	.18298	2.5417
#3	.50387	25.032	.24711	4.7148	.25178	.58449	.19310	2.5304
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078701PS Acquired: 6/25/2016 22:08:42 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573561-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48806	.50437	.49939	.24983	.48939	.48880	.00250
Stddev	.00273	.00349	.00591	.00248	.00296	.00032	.00045
%RSD	.55970	.69122	1.1836	.99157	.60527	.06447	18.096
#1	.48918	.50154	.50066	.25202	.49256	.48872	.00242
#2	.49005	.50331	.49295	.25032	.48893	.48914	.00298
#3	.48494	.50827	.50457	.24714	.48669	.48853	.00209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9876.1	60662.	3087.6
Stddev	12.0	38.	4.3
%RSD	.12163	.06253	.13975
#1	9869.1	60619.	3083.6
#2	9869.3	60677.	3092.2
#3	9890.0	60690.	3087.1

Approved: June 27, 2016

Sample Name: L1606078701SDL Acquired: 6/25/2016 22:12:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573561-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00226	-.00962	.00257	.00372	.00008	.00010	-.05467	-.00005
Stddev	.00390	.01062	.00091	.00131	.00131	.00006	.03854	.00004
%RSD	172.35	110.37	35.549	35.155	1747.1	57.750	70.491	84.699
#1	.00675	-.01272	.00350	.00225	-.00089	.00014	-.04307	-.00000
#2	.00027	-.01835	.00254	.00475	.00157	.00012	-.09767	-.00007
#3	-.00023	.00220	.00167	.00417	-.00046	.00003	-.02326	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00015	.00076	.00146	.02792	-.10756	-.00176	-.01577	.00085
Stddev	.00022	.00111	.00071	.01781	.06853	.00352	.01010	.00145
%RSD	144.06	146.16	48.411	63.806	63.714	199.76	64.076	169.31
#1	.00010	.00182	.00216	.04804	-.06727	-.00153	-.01532	-.00005
#2	-.00026	-.00038	.00146	.01416	-.18668	.00163	-.02609	.00009
#3	-.00029	.00083	.00075	.02156	-.06871	-.00539	-.00589	.00252
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.12025	-.00037	.00742	.00388	-.00036	.00693	.02501
Stddev	.00028	.02622	.00009	.00699	.00334	.00491	.00079	.00132
%RSD	80.313	21.803	23.237	94.157	86.143	1346.9	11.341	5.2920
#1	.00057	.14797	-.00041	.00450	.00651	.00107	.00746	.02626
#2	.00045	.09585	-.00027	.01539	.00501	-.00584	.00603	.02362
#3	.00003	.11693	-.00042	.00237	.00012	.00367	.00731	.02515
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078701SDL Acquired: 6/25/2016 22:12:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG573561-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00036	.00027	.00391	-.00239	.00091	.00198	.00117
Stddev	.00062	.00058	.00259	.00083	.00057	.00021	.00105
%RSD	170.80	217.03	66.210	34.804	62.977	10.839	89.133
#1	.00032	-.00015	.00203	-.00335	.00041	.00217	.00108
#2	-.00024	.00003	.00686	-.00188	.00153	.00175	.00018
#3	.00100	.00093	.00284	-.00194	.00079	.00202	.00227
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10481.	64804.	3221.0
Stddev	25.	98.	4.2
%RSD	.23393	.15113	.13029
#1	10501.	64916.	3225.8
#2	10489.	64737.	3219.2
#3	10454.	64758.	3217.9

Approved: June 27, 2016

Sample Name: L1606078701SDL Acquired: 6/25/2016 22:16:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573561-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00050**	**-.01671**	**.00066**	**.00174**	**.00117**	**.00007**	**-.03873**	**-.00006**
Stddev	.00055	.00595	.00077	.00373	.00047	.00003	.02526	.00023
%RSD	110.50	35.627	115.52	214.66	39.929	36.665	65.224	418.10
#1	.00087	-.01063	-.00016	.00037	.00065	.00010	-.06018	.00018
#2	-.00014	-.02253	.00136	-.00111	.00156	.00005	-.01089	-.00029
#3	.00077	-.01699	.00080	.00596	.00129	.00006	-.04513	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00020**	**-.00027**	**.00015**	**.01537**	**-.08473**	**-.00313**	**-.04452**	**.00037**
Stddev	.00041	.00031	.00072	.00667	.12317	.00148	.02793	.00217
%RSD	208.97	115.52	489.41	43.427	145.37	47.326	62.733	580.66
#1	.00051	-.00025	-.00010	.01465	-.11440	-.00155	-.01300	-.00212
#2	-.00027	-.00059	-.00042	.02238	.05057	-.00335	-.06618	.00176
#3	.00035	.00003	.00096	.00908	-.19035	-.00448	-.05440	.00148
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00052**	**.04068**	**-.00002**	**.00630**	**.00223**	**-.00439**	**.00789**	**.00775**
Stddev	.00014	.01560	.00098	.00605	.00105	.00119	.00333	.00034
%RSD	26.596	38.347	4828.5	96.010	47.199	27.128	42.126	4.3419
#1	-.00068	.05533	-.00110	-.00065	.00121	-.00319	.01093	.00736
#2	-.00042	.02428	.00080	.00920	.00218	-.00557	.00434	.00794
#3	-.00046	.04243	.00023	.01036	.00331	-.00443	.00841	.00794
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078701SDL Acquired: 6/25/2016 22:16:16 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG573561-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00078**	**.00049**	**.00611**	**-.00169**	**-.00019**	**.00076**	**.00104**
Stddev	.00047	.00028	.00364	.00121	.00086	.00008	.00084
%RSD	59.598	55.989	59.553	71.357	443.84	10.636	80.846
#1	-.00025	.00020	.00285	-.00078	-.00105	.00067	.00138
#2	-.00100	.00075	.00545	-.00306	-.00021	.00078	.00165
#3	-.00110	.00052	.01004	-.00123	.00067	.00082	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10473.**	**64343.**	**3185.8**
Stddev	11.	88.	33.4
%RSD	.10369	.13736	1.0486
#1	10479.	64432.	3210.0
#2	10479.	64255.	3199.9
#3	10461.	64342.	3147.7

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 22:20:12 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.39676**	**10.011**	**.39200**	**.48774**	**1.0072**	**.04931**	**9.9627**
Stddev	.00166	.042	.00060	.00247	.0020	.00016	.0336
%RSD	.41961	.41526	.15324	.50705	.19487	.32345	.33737
#1	.39852	10.036	.39268	.48499	1.0052	.04934	9.9285
#2	.39656	10.035	.39180	.48843	1.0074	.04945	9.9639
#3	.39521	9.9633	.39153	.48979	1.0091	.04914	9.9956
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05046**	**.19748**	**.49159**	**.50549**	**3.9250**	**48.860**	**1.0117**
Stddev	.00033	.00063	.00167	.00263	.0491	.051	.0023
%RSD	.66275	.32062	.34000	.52017	1.2522	.10387	.22425
#1	.05068	.19812	.49231	.50540	3.8948	48.907	1.0140
#2	.05064	.19745	.49279	.50817	3.9817	48.806	1.0118
#3	.05008	.19686	.48968	.50291	3.8986	48.867	1.0095
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.4449**	**.49486**	**1.0080**	**49.891**	**.50156**	**9.8436**	**.50078**
Stddev	.0163	.00095	.0079	.070	.00172	.0350	.00128
%RSD	.17297	.19183	.78730	.13958	.34250	.35531	.25500
#1	9.4275	.49541	1.0170	49.848	.50286	9.8791	.50070
#2	9.4600	.49376	1.0019	49.971	.50221	9.8426	.49954
#3	9.4471	.49540	1.0052	49.853	.49961	9.8092	.50209
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 22:20:12 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1892**	**.38968**	**5.0794**	**.99180**	**1.0052**	**1.0145**	**.50829**
Stddev	.0070	.00637	.0139	.00335	.0009	.0065	.00390
%RSD	.58775	1.6349	.27365	.33789	.09319	.64413	.76634
#1	1.1970	.39094	5.0928	.99452	1.0044	1.0072	.50887
#2	1.1869	.38277	5.0804	.99283	1.0062	1.0197	.51187
#3	1.1836	.39532	5.0651	.98805	1.0048	1.0166	.50414
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0022**	**.99700**	F **2.9158**
Stddev	.0042	.00301	.0038
%RSD	.42153	.30191	.13010
#1	1.0066	.99806	2.9128
#2	1.0017	.99934	2.9201
#3	.99824	.99361	2.9145
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9930.6**	**60612.**	**3086.3**
Stddev	10.1	73.	9.8
%RSD	.10207	.12111	.31687
#1	9941.9	60647.	3097.4
#2	9922.1	60528.	3082.4
#3	9927.9	60661.	3079.1

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 22:23:49 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00100**	**-.00695**	**.00023**	**.00246**	**.00203**	**.00014**	**-.01220**	**.00014**
Stddev	.00181	.00287	.00117	.00195	.00133	.00002	.03027	.00029
%RSD	181.13	41.303	500.29	79.096	65.555	16.180	248.16	212.80
#1	-.00109	-.00504	-.00098	.00360	.00305	.00017	-.03745	.00025
#2	.00205	-.00555	.00136	.00021	.00053	.00014	.02136	-.00019
#3	.00203	-.01025	.00032	.00357	.00251	.00013	-.02050	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00014**	**-.00000**	**.00097**	**.02954**	**-.02965**	**-.00129**	**.00088**	**.00163**
Stddev	.00011	.00082	.00136	.00883	.01713	.00234	.03199	.00271
%RSD	74.595	562770.	140.78	29.900	57.784	181.57	3634.1	165.69
#1	.00008	.00083	.00213	.03726	-.04191	-.00397	.03754	.00233
#2	.00008	-.00001	.00130	.01991	-.03697	-.00018	-.01355	.00393
#3	.00027	-.00081	-.00053	.03145	-.01007	.00029	-.02135	-.00135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00354**	**.01474**	**-.00023**	**.00359**	**.00237**	**.00219**	**.00418**	**.03627**
Stddev	.00058	.04847	.00031	.00245	.00060	.00526	.00484	.00058
%RSD	16.314	328.86	136.11	68.357	25.126	240.59	115.86	1.6055
#1	.00288	-.00030	-.00040	.00322	.00284	.00365	.00822	.03616
#2	.00384	.06894	.00013	.00134	.00170	.00656	.00551	.03575
#3	.00391	-.02443	-.00042	.00620	.00257	-.00365	-.00119	.03690
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 22:23:49 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**.00039**	**.00181**	**-.00370**	**.00020**	**.00004**	**.00435**
Stddev	.00110	.00025	.00867	.00085	.00051	.00012	.00191
%RSD	689.85	64.301	479.78	22.978	253.56	271.57	43.946
#1	-.00106	.00012	.00915	-.00439	-.00031	.00014	.00375
#2	.00108	.00042	.00404	-.00397	.00020	.00008	.00281
#3	.00046	.00061	-.00776	-.00275	.00071	-.00009	.00649
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9799.0**	**60424.**	**3020.0**
Stddev	11.5	135.	11.0
%RSD	.11760	.22419	.36496
#1	9789.9	60445.	3025.5
#2	9795.1	60547.	3027.2
#3	9812.0	60279.	3007.3

Approved: June 27, 2016

Sample Name: L1606078710 Acquired: 6/25/2016 22:27:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.22720	.00214	.03806	.08552	.00012	52.208	.00022
Stddev	.00078	.00436	.00063	.00014	.00079	.00005	.232	.00016
%RSD	450.39	1.9170	29.562	.37345	.92041	43.173	.44436	71.173
#1	.00025	.22486	.00206	.03796	.08534	.00008	52.380	.00034
#2	.00030	.22452	.00280	.03822	.08638	.00018	52.301	.00028
#3	-.00108	.23223	.00155	.03799	.08484	.00010	51.944	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00002	.00186	.00266	.23670	.85794	.00848	16.196	.00759
Stddev	.00014	.00018	.00107	.03451	.05555	.00209	.053	.00200
%RSD	849.17	9.9559	40.055	14.580	6.4743	24.705	.32764	26.366
#1	-.00011	.00187	.00273	.22408	.80379	.01054	16.251	.00990
#2	.00017	.00167	.00156	.27574	.91479	.00636	16.192	.00643
#3	-.00001	.00204	.00369	.21027	.85526	.00853	16.145	.00644
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00109	3.4758	.00069	.17816	.00790	-.00197	-.00080	8.3609
Stddev	.00043	.0348	.00145	.00114	.00265	.00100	.00335	.0283
%RSD	39.553	1.0002	208.84	.63768	33.519	50.807	416.39	.33868
#1	.00115	3.5101	.00211	.17685	.00777	-.00150	.00187	8.3874
#2	.00149	3.4766	.00076	.17877	.00531	-.00312	.00028	8.3643
#3	.00063	3.4406	-.00079	.17886	.01060	-.00129	-.00456	8.3311
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078710 Acquired: 6/25/2016 22:27:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00106	.13692	-.00198	-.00343	.00351	.00457	.00538
Stddev	.00037	.00076	.00399	.00152	.00135	.00005	.00158
%RSD	34.945	.55142	201.79	44.378	38.390	1.0573	29.298
#1	.00117	.13773	-.00276	-.00427	.00288	.00452	.00538
#2	.00136	.13624	.00235	-.00167	.00505	.00462	.00381
#3	.00065	.13680	-.00552	-.00433	.00259	.00458	.00696
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9837.0	60854.	3075.5
Stddev	21.0	87.	13.2
%RSD	.21328	.14286	.42972
#1	9813.4	60881.	3070.1
#2	9853.7	60757.	3065.8
#3	9843.8	60924.	3090.5

Approved: June 27, 2016

Sample Name: L1606078718 Acquired: 6/25/2016 22:31:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00018	1.2702	.00086	.07193	.15344	.00016	53.535	.00010
Stddev	.00088	.0133	.00129	.00289	.00068	.00006	.315	.00014
%RSD	504.87	1.0437	151.37	4.0242	.44552	39.145	.58814	143.56
#1	.00078	1.2717	-.00017	.07191	.15299	.00023	53.705	-.00002
#2	-.00096	1.2563	.00043	.07484	.15310	.00014	53.172	.00025
#3	-.00034	1.2827	.00231	.06905	.15423	.00011	53.729	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00093	.00320	.00404	1.3343	1.2661	.00990	20.655	.10718
Stddev	.00038	.00017	.00073	.0192	.0597	.00249	.173	.00269
%RSD	40.455	5.3029	17.991	1.4379	4.7192	25.172	.83716	2.5057
#1	.00050	.00331	.00423	1.3126	1.1986	.01278	20.828	.10559
#2	.00122	.00328	.00465	1.3416	1.2875	.00842	20.482	.11029
#3	.00107	.00300	.00324	1.3489	1.3123	.00851	20.655	.10568
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00197	9.5571	.00271	.15727	.00713	-.00001	-.00213	9.2004
Stddev	.00025	.0745	.00060	.00312	.00099	.00396	.00180	.0136
%RSD	12.754	.77965	22.028	1.9854	13.840	44119.	84.428	.14793
#1	.00222	9.6099	.00232	.16018	.00745	-.00238	-.00366	9.2098
#2	.00198	9.4719	.00242	.15397	.00602	-.00222	-.00015	9.2066
#3	.00172	9.5895	.00340	.15765	.00792	.00457	-.00260	9.1848
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078718 Acquired: 6/25/2016 22:31:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.21832	.00935	-.00138	.00550	.00807	.00587
Stddev	.00077	.00070	.00368	.00189	.00037	.00008	.00139
%RSD	1050.3	.31961	39.319	137.43	6.8010	.96236	23.773
#1	.00067	.21839	.00655	-.00216	.00508	.00811	.00494
#2	-.00003	.21758	.00798	.00078	.00561	.00812	.00519
#3	-.00086	.21897	.01351	-.00275	.00580	.00798	.00747
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9846.3	60728.	3091.9
Stddev	3.6	208.	32.5
%RSD	.03671	.34247	1.0518
#1	9850.4	60702.	3069.6
#2	9844.9	60535.	3129.2
#3	9843.6	60948.	3076.8

Approved: June 27, 2016

Sample Name: L1606078719 Acquired: 6/25/2016 22:35:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00022**	**-.00125**	**.00081**	**-.00052**	**.00163**	**.00015**	**.05700**	**.00032**
Stddev	.00275	.01314	.00222	.00254	.00035	.00003	.05177	.00012
%RSD	1222.4	1048.7	273.08	489.15	21.203	21.890	90.827	38.965
#1	-.00200	-.00415	-.00134	.00209	.00158	.00017	.05365	.00040
#2	.00294	.01310	.00068	-.00066	.00200	.00012	.00698	.00018
#3	-.00162	-.01271	.00310	-.00298	.00131	.00018	.11035	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00006**	**.00052**	**.00450**	**.02391**	**-.05991**	**-.00020**	**.04697**	**-.00036**
Stddev	.00016	.00162	.00035	.01615	.07304	.00309	.12538	.00213
%RSD	276.80	313.97	7.6965	67.537	121.91	1526.0	266.94	591.72
#1	.00015	.00207	.00475	.04225	-.11673	.00336	-.03849	-.00282
#2	-.00012	.00065	.00464	.01187	-.08546	-.00225	-.01151	.00086
#3	.00015	-.00117	.00410	.01759	.02247	-.00171	.19090	.00088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00030**	**.25593**	**-.00012**	**.00090**	**.00315**	**-.00362**	**.00327**	**.05573**
Stddev	.00023	.02584	.00048	.00460	.00186	.00138	.00112	.00365
%RSD	74.483	10.098	393.31	510.33	59.051	38.233	34.210	6.5471
#1	.00052	.27908	.00017	.00590	.00100	-.00516	.00452	.05848
#2	.00007	.22805	.00014	-.00005	.00421	-.00248	.00234	.05711
#3	.00032	.26066	-.00068	-.00315	.00425	-.00323	.00296	.05159
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078719 Acquired: 6/25/2016 22:35:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00098**	**.00207**	**-.00026**	**-.00547**	**.00052**	**.00525**	**.00241**
Stddev	.00027	.00008	.00293	.00052	.00032	.00008	.00097
%RSD	27.115	4.0421	1136.5	9.5358	61.869	1.5786	40.264
#1	.00096	.00217	-.00025	-.00546	.00057	.00519	.00232
#2	.00073	.00203	-.00319	-.00495	.00081	.00521	.00342
#3	.00126	.00203	.00267	-.00599	.00017	.00534	.00149
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9914.0**	**61492.**	**3065.3**
Stddev	9.7	119.	10.3
%RSD	.09735	.19352	.33672
#1	9905.1	61523.	3061.5
#2	9924.3	61360.	3057.3
#3	9912.7	61592.	3076.9

Approved: June 27, 2016

Sample Name: L1606078709 Acquired: 6/25/2016 22:39:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573102-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	.01725	.00020	.00148	.00412	.00007	2.5193	.00009
Stddev	.00160	.00300	.00146	.00122	.00055	.00007	.0273	.00025
%RSD	256.33	17.406	733.70	82.744	13.249	105.70	1.0828	269.34
#1	-.00115	.01430	.00189	.00205	.00368	.00003	2.5430	-.00015
#2	.00106	.02030	-.00065	.00007	.00396	.00002	2.4895	.00008
#3	.00197	.01716	-.00064	.00231	.00474	.00015	2.5253	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.00087	.00073	.04349	.03288	.00266	.76988	-.00075
Stddev	.00037	.00063	.00114	.01165	.16835	.00415	.07900	.00106
%RSD	107.35	72.316	156.53	26.779	512.03	155.84	10.261	141.15
#1	.00070	.00029	.00142	.03927	-.06801	.00606	.83027	.00043
#2	-.00004	.00153	.00135	.03454	-.06058	.00390	.79891	-.00163
#3	.00039	.00078	-.00059	.05665	.22723	-.00196	.68048	-.00106
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	.20336	.00039	.01881	.00195	-.00218	-.00099	.41497
Stddev	.00052	.02965	.00044	.00286	.00086	.00256	.00440	.00248
%RSD	323.08	14.579	115.44	15.203	44.305	117.44	445.87	.59653
#1	-.00058	.19785	-.00012	.01994	.00207	-.00390	.00409	.41320
#2	.00043	.23538	.00054	.02093	.00103	-.00339	-.00379	.41391
#3	-.00033	.17686	.00073	.01556	.00275	.00076	-.00326	.41779
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078709 Acquired: 6/25/2016 22:39:31 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573102-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**.00684**	**.01005**	**.00002**	**.00088**	**.00094**	**.00070**
Stddev	.00032	.00012	.00959	.00200	.00079	.00012	.00147
%RSD	375.67	1.7762	95.434	11093.	88.946	12.687	210.40
#1	.00028	.00687	.01212	-.00222	.00129	.00101	.00212
#2	.00025	.00693	-.00041	.00064	.00138	.00101	.00079
#3	-.00028	.00670	.01844	.00163	-.00002	.00080	-.00081
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10438.**	**64428.**	**3210.2**
Stddev	16.	116.	22.5
%RSD	.15594	.18047	.70191
#1	10456.	64522.	3184.5
#2	10433.	64464.	3226.3
#3	10424.	64298.	3219.8

Approved: June 27, 2016

Sample Name: L1606078711S Acquired: 6/25/2016 22:43:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573102-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00901	.25091	.00908	.04716	.02857	.00129	2.7206	.00112
Stddev	.00226	.00893	.00272	.00090	.00098	.00003	.0190	.00018
%RSD	25.135	3.5576	29.953	1.9149	3.4212	2.0076	.69811	15.952
#1	.00654	.24156	.01090	.04731	.02948	.00128	2.7394	.00096
#2	.00949	.25183	.00595	.04798	.02754	.00132	2.7210	.00131
#3	.01099	.25934	.01039	.04620	.02870	.00128	2.7014	.00109
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00484	.01138	.01241	.12881	1.1056	.02562	.95895	.01155
Stddev	.00047	.00095	.00054	.02178	.0733	.00325	.08330	.00186
%RSD	9.6843	8.3365	4.3248	16.912	6.6280	12.671	8.6861	16.074
#1	.00430	.01246	.01288	.12748	1.1086	.02193	.86824	.01328
#2	.00510	.01069	.01253	.10772	1.1774	.02802	1.0320	.00959
#3	.00513	.01099	.01183	.15123	1.0309	.02692	.97661	.01179
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02077	1.4247	.01204	.24038	.01720	.02493	.01091	.53474
Stddev	.00067	.0371	.00126	.00484	.00256	.00194	.00301	.00121
%RSD	3.2317	2.6069	10.481	2.0127	14.893	7.7710	27.534	.22565
#1	.02144	1.3934	.01127	.24412	.01465	.02673	.00768	.53472
#2	.02075	1.4149	.01350	.23492	.01719	.02518	.01362	.53595
#3	.02010	1.4657	.01136	.24211	.01977	.02288	.01143	.53354
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078711S Acquired: 6/25/2016 22:43:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573102-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02007**	**.03079**	**.02489**	**.01057**	**.02372**	**.02477**	**.00180**
Stddev	.00062	.00022	.00917	.00037	.00088	.00015	.00112
%RSD	3.0692	.70951	36.838	3.4629	3.6971	.59147	62.402
#1	.02076	.03087	.02809	.01029	.02425	.02492	.00062
#2	.01959	.03097	.01455	.01045	.02271	.02462	.00193
#3	.01984	.03055	.03204	.01098	.02420	.02478	.00285
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10426.**	**64070.**	**3185.9**
Stddev	11.	72.	10.0
%RSD	.10672	.11272	.31382
#1	10417.	64076.	3184.7
#2	10423.	64138.	3176.5
#3	10439.	63994.	3196.4

Approved: June 27, 2016

Sample Name: L1606078712SD Acquired: 6/25/2016 22:47:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573102-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00985	.31033	.01141	.04692	.02793	.00122	2.7514	.00123
Stddev	.00217	.01120	.00035	.00183	.00030	.00009	.0322	.00017
%RSD	21.999	3.6078	3.0998	3.8902	1.0783	7.5455	1.1711	13.538
#1	.00744	.30133	.01139	.04489	.02771	.00131	2.7147	.00104
#2	.01165	.32286	.01106	.04746	.02780	.00124	2.7644	.00130
#3	.01046	.30678	.01177	.04842	.02827	.00112	2.7751	.00135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00442	.01187	.01326	.16770	1.1233	.02635	1.0271	.01377
Stddev	.00036	.00059	.00082	.01226	.1089	.00034	.0701	.00235
%RSD	8.1823	4.9929	6.1530	7.3088	9.6965	1.2889	6.8269	17.054
#1	.00413	.01121	.01277	.16233	1.0153	.02615	1.0429	.01385
#2	.00482	.01235	.01421	.15905	1.2332	.02617	1.0881	.01607
#3	.00430	.01207	.01281	.18173	1.1215	.02675	.95049	.01138
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.02146	1.3700	.01235	.24640	.01637	.02615	.01276	.67342
Stddev	.00028	.0367	.00082	.00464	.00030	.00374	.00186	.00470
%RSD	1.2904	2.6782	6.6457	1.8816	1.8039	14.304	14.555	.69838
#1	.02172	1.3476	.01220	.24696	.01603	.02416	.01223	.67004
#2	.02148	1.3500	.01162	.25073	.01656	.02383	.01483	.67143
#3	.02117	1.4123	.01324	.24151	.01651	.03046	.01123	.67879
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606078712SD Acquired: 6/25/2016 22:47:19 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment: WG573102-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.02141**	**.03084**	**.02074**	**.01089**	**.02357**	**.02510**	**.00112**
Stddev	.00030	.00031	.00329	.00303	.00061	.00018	.00144
%RSD	1.3990	1.0105	15.854	27.843	2.5684	.72342	128.59
#1	.02165	.03055	.02352	.00739	.02416	.02497	-.00034
#2	.02107	.03117	.01711	.01260	.02359	.02501	.00117
#3	.02151	.03078	.02157	.01268	.02295	.02530	.00254
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10421.**	**63887.**	**3174.5**
Stddev	13.	153.	11.8
%RSD	.12017	.23969	.37110
#1	10421.	64063.	3186.8
#2	10434.	63786.	3163.4
#3	10409.	63811.	3173.3

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 22:51:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39829	10.014	.39328	.48763	1.0098	.04913	9.9981
Stddev	.00170	.014	.00352	.00156	.0114	.00024	.0222
%RSD	.42599	.13477	.89524	.31896	1.1283	.49183	.22224
#1	.39634	10.025	.39615	.48872	1.0228	.04926	10.024
#2	.39905	9.9992	.38935	.48585	1.0049	.04885	9.9823
#3	.39946	10.019	.39433	.48833	1.0016	.04927	9.9886
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05040	.19854	.49076	.50671	3.9457	49.325	1.0128
Stddev	.00023	.00052	.00245	.00059	.0608	.368	.0109
%RSD	.45580	.25959	.49941	.11597	1.5404	.74655	1.0755
#1	.05026	.19800	.48916	.50736	4.0058	49.743	1.0249
#2	.05027	.19858	.48954	.50622	3.9470	49.185	1.0101
#3	.05066	.19903	.49358	.50654	3.8842	49.047	1.0036
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.4894	.49712	1.0151	50.056	.50217	9.8694	.50095
Stddev	.2168	.00232	.0035	.479	.00145	.0113	.00387
%RSD	2.2847	.46695	.34803	.95643	.28811	.11418	.77216
#1	9.7395	.49968	1.0186	50.588	.50383	9.8565	.50471
#2	9.3739	.49655	1.0152	49.919	.50140	9.8745	.49698
#3	9.3548	.49515	1.0115	49.660	.50126	9.8772	.50116
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 22:51:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.1957**	**.39554**	**5.0959**	**.99417**	**1.0077**	**1.0177**	**.50994**
Stddev	.0055	.00372	.0051	.00169	.0107	.0101	.00264
%RSD	.46066	.94108	.09932	.17029	1.0641	.98980	.51770
#1	1.1919	.39655	5.0908	.99223	1.0196	1.0259	.51299
#2	1.2020	.39866	5.0958	.99500	1.0048	1.0064	.50861
#3	1.1932	.39142	5.1010	.99530	.99871	1.0207	.50824
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**.99906**	**1.0000**	F **2.9202**
Stddev	.00128	.0004	.0305
%RSD	.12818	.03891	1.0450
#1	1.0005	1.0005	2.9552
#2	.99795	.99972	2.9065
#3	.99877	.99993	2.8990
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9918.3**	**60256.**	**3072.6**
Stddev	6.2	156.	34.9
%RSD	.06223	.25822	1.1374
#1	9919.7	60085.	3032.6
#2	9923.7	60388.	3088.2
#3	9911.6	60295.	3097.1

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 22:54:51 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.00017**	**.00165**	**.00199**	**.00201**	**.00011**	**-.05290**	**-.00006**
Stddev	.00211	.00653	.00321	.00079	.00009	.00008	.03288	.00016
%RSD	1282.1	3936.0	193.87	39.670	4.4194	70.107	62.164	240.48
#1	-.00117	.00347	.00046	.00135	.00191	.00015	-.05612	-.00004
#2	.00226	-.00735	.00528	.00288	.00202	.00015	-.08405	.00008
#3	-.00158	.00438	-.00078	.00176	.00209	.00002	-.01852	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**.00100**	**.00120**	**.03069**	**-.03948**	**.00003**	**-.00536**	**.00015**
Stddev	.00013	.00044	.00061	.00550	.07927	.00292	.09167	.00308
%RSD	995.60	43.627	50.884	17.919	200.80	8764.3	1709.0	2010.9
#1	-.00014	.00145	.00060	.03538	.05200	-.00061	-.10767	.00091
#2	.00000	.00096	.00116	.03205	-.08238	-.00251	.06932	.00278
#3	.00011	.00058	.00182	.02464	-.08805	.00322	.02226	-.00324
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00351**	**.02455**	**-.00057**	**.00388**	**.00014**	**.00562**	**.00087**	**.03540**
Stddev	.00076	.01905	.00055	.00530	.00438	.00343	.00632	.00172
%RSD	21.717	77.584	95.045	136.67	3025.0	61.032	726.47	4.8534
#1	.00266	.03539	-.00120	-.00182	.00487	.00872	.00338	.03589
#2	.00374	.03571	-.00017	.00867	-.00067	.00193	.00554	.03683
#3	.00413	.00256	-.00036	.00480	-.00377	.00622	-.00632	.03349
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 22:54:51 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00099**	**.00045**	**.00606**	**-.00120**	**.00030**	**-.00008**	**.00363**
Stddev	.00065	.00027	.00156	.00179	.00040	.00006	.00038
%RSD	65.956	60.056	25.746	148.69	132.31	80.432	10.554
#1	.00115	.00019	.00786	-.00316	.00076	-.00006	.00364
#2	.00155	.00073	.00529	-.00079	.00014	-.00015	.00325
#3	.00027	.00044	.00504	.00034	.00001	-.00003	.00401
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9678.8**	**59649.**	**2985.7**
Stddev	6.9	105.	9.5
%RSD	.07084	.17603	.31957
#1	9671.2	59575.	2994.0
#2	9681.0	59769.	2975.3
#3	9684.3	59604.	2987.7

Approved: June 27, 2016

Sample Name: PBW LJ Acquired: 6/25/2016 22:58:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00058**	**-.00592**	**.00193**	**-.00086**	**.00070**	**.00018**	**-.07344**	**-.00023**
Stddev	.00178	.00410	.00330	.00167	.00093	.00007	.04096	.00010
%RSD	307.62	69.294	170.45	194.42	133.02	36.643	55.774	43.143
#1	-.00092	-.00625	.00300	-.00003	-.00002	.00015	-.02635	-.00025
#2	-.00217	-.00166	.00456	.00023	.00174	.00026	-.10082	-.00033
#3	.00135	-.00985	-.00176	-.00279	.00036	.00013	-.09313	-.00013
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00016**	**.00069**	**.00074**	**.03692**	**-.07694**	**.00146**	**.06376**	**.00092**
Stddev	.00002	.00038	.00020	.01230	.06836	.00025	.04368	.00067
%RSD	10.723	54.599	26.935	33.312	88.851	16.877	68.506	72.982
#1	-.00017	.00098	.00051	.02894	-.09438	.00132	.11194	.00086
#2	-.00017	.00026	.00082	.03073	-.13489	.00174	.05264	.00161
#3	-.00014	.00084	.00088	.05108	-.00155	.00131	.02672	.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00019**	**.03492**	**.00034**	**.00729**	**.00159**	**-.00194**	**.00113**	**.00052**
Stddev	.00031	.01196	.00046	.00336	.00147	.00263	.00402	.00268
%RSD	159.07	34.258	134.06	46.125	92.547	135.75	357.58	520.37
#1	.00038	.02883	.00039	.00624	.00208	.00024	-.00125	.00071
#2	.00036	.04870	-.00014	.00458	.00275	-.00120	-.00114	.00309
#3	-.00016	.02722	.00078	.01105	-.00006	-.00487	.00577	-.00226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: PBW LJ Acquired: 6/25/2016 22:58:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00001**	**-.00008**	**.00508**	**-.00273**	**.00114**	**.00044**	**.00066**
Stddev	.00164	.00051	.01008	.00394	.00109	.00015	.00112
%RSD	14590.	648.58	198.46	144.23	96.326	34.462	168.97
#1	.00174	.00051	.01609	.00176	.00157	.00053	.00180
#2	-.00150	-.00033	-.00371	-.00561	-.00011	.00026	-.00044
#3	-.00028	-.00041	.00287	-.00433	.00195	.00052	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10135.**	**62589.**	**3095.8**
Stddev	24.	186.	5.7
%RSD	.23247	.29671	.18319
#1	10143.	62746.	3101.4
#2	10152.	62637.	3095.9
#3	10108.	62384.	3090.1

Approved: June 27, 2016

Sample Name: LCSW LJ Acquired: 6/25/2016 23:02:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19432**	**4.8961**	**.19607**	**.95390**	**.50477**	**.02378**	**5.0869**	**.02467**
Stddev	.00176	.0169	.00036	.00515	.00157	.00015	.0469	.00006
%RSD	.90778	.34589	.18422	.54033	.31152	.61673	.92299	.23915
#1	.19242	4.8827	.19640	.95171	.50641	.02365	5.1361	.02462
#2	.19591	4.9152	.19569	.95978	.50463	.02394	5.0425	.02466
#3	.19461	4.8905	.19612	.95020	.50328	.02375	5.0822	.02474
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09889**	**.24063**	**.25385**	**1.9878**	**24.436**	**.51652**	**4.7044**	**.24710**
Stddev	.00023	.00063	.00116	.0095	.067	.00203	.0278	.00275
%RSD	.23212	.26116	.45751	.47691	.27355	.39333	.59179	1.1124
#1	.09867	.24099	.25369	1.9863	24.386	.51588	4.7289	.24429
#2	.09913	.24100	.25509	1.9791	24.512	.51880	4.6741	.24978
#3	.09888	.23991	.25278	1.9979	24.411	.51489	4.7100	.24724
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51030**	**25.148**	**.24989**	**4.7689**	**.24945**	**.59139**	**.18766**	**2.4779**
Stddev	.00067	.056	.00070	.0091	.00347	.00400	.01211	.0014
%RSD	.13092	.22440	.27941	.19073	1.3920	.67662	6.4536	.05441
#1	.50970	25.212	.24981	4.7624	.25341	.58680	.17389	2.4770
#2	.51102	25.108	.25063	4.7793	.24803	.59411	.19668	2.4795
#3	.51019	25.124	.24924	4.7649	.24691	.59326	.19239	2.4773
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LCSW LJ Acquired: 6/25/2016 23:02:46 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49047**	**.51082**	**.50961**	**.24925**	**.49196**	**.48864**	**.01928**
Stddev	.00103	.00205	.00391	.00102	.00174	.00019	.00329
%RSD	.20978	.40119	.76774	.40835	.35306	.03834	17.088
#1	.49156	.51042	.51051	.24964	.49257	.48859	.01592
#2	.49032	.50900	.50533	.25000	.49331	.48848	.01940
#3	.48952	.51304	.51300	.24809	.49000	.48885	.02251
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9771.5**	**60209.**	**3050.2**
Stddev	3.0	103.	25.9
%RSD	.03108	.17103	.84982
#1	9769.0	60280.	3044.5
#2	9774.9	60091.	3027.6
#3	9770.6	60258.	3078.5

Approved: June 27, 2016

Sample Name: L1606076404 Acquired: 6/25/2016 23:06:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00050	.02745	.00034	.00861	.00996	.00009	36.605	.00012
Stddev	.00060	.00628	.00209	.00113	.00041	.00005	.105	.00023
%RSD	119.14	22.865	609.72	13.086	4.1637	53.570	.28645	187.24
#1	.00015	.03394	.00014	.00762	.01044	.00014	36.606	.00007
#2	.00016	.02699	-.00164	.00984	.00971	.00010	36.500	.00038
#3	.00120	.02142	.00253	.00837	.00974	.00004	36.710	-.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00009	.01147	.00175	.46715	4.7234	.00625	13.388	.09951
Stddev	.00015	.00054	.00191	.01948	.0341	.00248	.058	.00203
%RSD	171.91	4.6728	109.26	4.1703	.72246	39.751	.43505	2.0444
#1	.00001	.01158	-.00043	.45694	4.6849	.00912	13.373	.10058
#2	-.00027	.01194	.00254	.48961	4.7498	.00477	13.339	.09716
#3	-.00001	.01088	.00314	.45489	4.7356	.00486	13.453	.10078
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00119	34.643	.00396	.03562	.00752	.00339	.00429	4.0453
Stddev	.00028	.078	.00076	.00870	.00150	.00394	.00341	.0166
%RSD	23.933	.22458	19.114	24.436	19.891	116.11	79.423	.40956
#1	.00087	34.732	.00311	.02910	.00894	.00791	.00692	4.0642
#2	.00131	34.587	.00454	.03225	.00766	.00162	.00551	4.0386
#3	.00140	34.610	.00424	.04550	.00596	.00065	.00044	4.0331
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606076404 Acquired: 6/25/2016 23:06:24 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	.19364	.00117	-.00333	.00101	.00286	.00160
Stddev	.00025	.00044	.00456	.00363	.00019	.00020	.00097
%RSD	28.325	.22814	391.45	108.96	18.806	7.1675	60.613
#1	.00083	.19387	-.00007	-.00660	.00107	.00306	.00048
#2	.00116	.19313	.00622	-.00396	.00116	.00265	.00224
#3	.00066	.19392	-.00265	.00057	.00080	.00286	.00207
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9727.8	59976.	3053.1
Stddev	23.9	148.	4.4
%RSD	.24547	.24636	.14325
#1	9700.3	60146.	3049.4
#2	9741.5	59877.	3057.9
#3	9741.8	59905.	3052.0

Approved: June 27, 2016

Sample Name: L1606076405S Acquired: 6/25/2016 23:10:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19582**	**4.9527**	**.19879**	**.95673**	**.51438**	**.02432**	**42.805**	**.02505**
Stddev	.00335	.0137	.00128	.00425	.00065	.00003	.112	.00030
%RSD	1.7110	.27715	.64557	.44412	.12542	.14170	.26049	1.1988
#1	.19856	4.9529	.19764	.95186	.51480	.02435	42.707	.02530
#2	.19683	4.9664	.19856	.95967	.51471	.02433	42.926	.02513
#3	.19208	4.9389	.20017	.95866	.51364	.02429	42.781	.02472
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09757**	**.25598**	**.24917**	**2.4354**	**29.536**	**.52338**	**18.805**	**.34995**
Stddev	.00078	.00042	.00127	.0181	.040	.00393	.025	.00506
%RSD	.79936	.16278	.51136	.74393	.13605	.74997	.13071	1.4469
#1	.09813	.25630	.25060	2.4222	29.582	.51885	18.805	.34467
#2	.09790	.25551	.24817	2.4278	29.516	.52547	18.830	.35476
#3	.09668	.25612	.24874	2.4560	29.509	.52582	18.780	.35044
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51541**	**61.224**	**.25128**	**4.8968**	**.24942**	**.59855**	**.19087**	**6.6449**
Stddev	.00129	.228	.00073	.0088	.00234	.00299	.00293	.0075
%RSD	.25084	.37164	.28907	.17909	.93699	.50010	1.5365	.11257
#1	.51663	61.311	.25055	4.9006	.24863	.59583	.18976	6.6461
#2	.51554	61.394	.25129	4.9031	.24758	.60176	.19420	6.6517
#3	.51406	60.965	.25200	4.8868	.25205	.59805	.18866	6.6369
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606076405S Acquired: 6/25/2016 23:10:17 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.49233**	**.70070**	**.50542**	**.24860**	**.50000**	**.48511**	**.00505**
Stddev	.00086	.00402	.00572	.00107	.00163	.00066	.00072
%RSD	.17371	.57387	1.1319	.43103	.32683	.13619	14.263
#1	.49184	.70101	.51171	.24742	.49924	.48572	.00441
#2	.49332	.70456	.50403	.24884	.49889	.48521	.00491
#3	.49184	.69653	.50053	.24953	.50188	.48441	.00583
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9652.6**	**59187.**	**3022.5**
Stddev	17.6	118.	14.2
%RSD	.18215	.19875	.46825
#1	9645.4	59224.	3018.6
#2	9639.7	59281.	3010.7
#3	9672.6	59055.	3038.2

Approved: June 27, 2016

Sample Name: L1606076406SD Acquired: 6/25/2016 23:13:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-05

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.19161**	**4.9186**	**.19913**	**.95429**	**.51211**	**.02396**	**42.977**	**.02467**
Stddev	.00161	.0125	.00343	.00448	.00436	.00009	.276	.00017
%RSD	.83957	.25322	1.7203	.46971	.85098	.36242	.64279	.68812
#1	.19148	4.9258	.19753	.95898	.51664	.02396	43.237	.02475
#2	.19328	4.9042	.19680	.95004	.51174	.02387	43.008	.02479
#3	.19007	4.9258	.20306	.95385	.50794	.02404	42.687	.02448
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09706**	**.25178**	**.24789**	**2.4233**	**29.585**	**.51807**	**18.712**	**.35011**
Stddev	.00057	.00068	.00034	.0356	.112	.00327	.182	.00396
%RSD	.58951	.26961	.13796	1.4688	.37990	.63166	.97051	1.1325
#1	.09772	.25103	.24806	2.4608	29.711	.51534	18.898	.35283
#2	.09684	.25235	.24811	2.4189	29.497	.52170	18.704	.34556
#3	.09664	.25196	.24749	2.3900	29.545	.51719	18.535	.35193
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51262**	**61.425**	**.24874**	**4.8787**	**.24757**	**.59558**	**.18865**	**6.6917**
Stddev	.00159	.310	.00133	.0141	.00184	.00348	.00465	.0131
%RSD	.30991	.50524	.53301	.28958	.74220	.58390	2.4654	.19574
#1	.51304	61.773	.24994	4.8746	.24617	.59720	.19309	6.6816
#2	.51396	61.322	.24897	4.8944	.24965	.59795	.18905	6.7065
#3	.51087	61.178	.24732	4.8670	.24689	.59159	.18381	6.6870
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606076406SD Acquired: 6/25/2016 23:13:56 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573484-05

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48585**	**.69992**	**.50428**	**.08491**	**.49039**	**.49499**	**.00464**
Stddev	.00076	.00443	.00835	.00108	.00225	.00372	.00157
%RSD	.15628	.63319	1.6562	1.2751	.45854	.75207	33.818
#1	.48649	.70500	.51389	.08368	.49168	.49197	.00317
#2	.48606	.69789	.49873	.08571	.48779	.49386	.00446
#3	.48501	.69687	.50023	.08535	.49169	.49915	.00630
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9674.4**	**59675.**	**3057.4**
Stddev	5.6	128.	11.6
%RSD	.05826	.21445	.38044
#1	9670.2	59575.	3048.3
#2	9680.8	59819.	3053.4
#3	9672.1	59630.	3070.5

Approved: June 27, 2016

Sample Name: L1606099102 Acquired: 6/25/2016 23:17:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00035	.08527	.00559	.04109	.01538	.00019	.57467	.00159
Stddev	.00233	.00869	.00189	.00114	.00133	.00004	.01094	.00013
%RSD	663.84	10.192	33.720	2.7694	8.6207	22.830	1.9043	7.9131
#1	.00210	.09496	.00628	.04240	.01605	.00016	.56261	.00167
#2	-.00061	.08272	.00346	.04040	.01386	.00017	.57746	.00145
#3	-.00255	.07815	.00704	.04046	.01624	.00024	.58395	.00167
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00096	.05412	.00582	.38755	1.2527	.00289	.47003	.00071
Stddev	.00015	.00024	.00026	.01093	.0635	.00116	.03189	.00162
%RSD	15.476	.43524	4.4250	2.8204	5.0656	40.155	6.7852	226.02
#1	.00113	.05437	.00590	.40001	1.1922	.00164	.49884	-.00098
#2	.00091	.05406	.00602	.38303	1.3188	.00308	.43576	.00089
#3	.00085	.05391	.00553	.37960	1.2473	.00394	.47550	.00224
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00360	218.01	.00389	.36041	.01046	-.00372	.00482	1.3728
Stddev	.00017	.12	.00068	.00488	.00162	.00083	.00193	.0038
%RSD	4.7149	.05666	17.447	1.3551	15.457	22.416	40.114	.27490
#1	.00375	218.03	.00311	.35572	.01225	-.00460	.00284	1.3685
#2	.00365	218.13	.00423	.36547	.01003	-.00293	.00492	1.3754
#3	.00341	217.88	.00434	.36004	.00911	-.00364	.00670	1.3745
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606099102 Acquired: 6/25/2016 23:17:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00632**	**.09765**	**.07700**	**-.00067**	**.01524**	**.07845**	**.01879**
Stddev	.00056	.00044	.00219	.00203	.00068	.00014	.00089
%RSD	8.9139	.45291	2.8381	300.30	4.4598	.18118	4.7496
#1	.00609	.09718	.07562	.00166	.01602	.07833	.01918
#2	.00590	.09770	.07952	-.00172	.01485	.07841	.01777
#3	.00696	.09806	.07586	-.00197	.01484	.07861	.01943
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10241.**	**62264.**	**3185.5**
Stddev	15.	196.	4.7
%RSD	.14516	.31405	.14616
#1	10253.	62395.	3189.9
#2	10245.	62357.	3185.8
#3	10224.	62039.	3180.6

Approved: June 27, 2016

Sample Name: L1606099102PS Acquired: 6/25/2016 23:21:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG573952-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20426**	**5.2585**	**.21569**	**1.0545**	**.53374**	**.02552**	**5.8510**	**.02789**
Stddev	.00128	.0258	.00476	.0057	.01070	.00022	.0799	.00005
%RSD	.62816	.49053	2.2048	.54061	2.0041	.85107	1.3656	.17945
#1	.20288	5.2399	.21984	1.0489	.54587	.02533	5.9343	.02786
#2	.20446	5.2478	.21673	1.0543	.52973	.02547	5.7750	.02786
#3	.20543	5.2880	.21050	1.0603	.52563	.02576	5.8438	.02795
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.10258**	**.30280**	**.26705**	**2.4069**	**27.035**	**.52853**	**5.3059**	**.25725**
Stddev	.00041	.00101	.00181	.0614	.546	.00889	.1709	.00709
%RSD	.40425	.33448	.67841	2.5526	2.0183	1.6821	3.2205	2.7577
#1	.10253	.30184	.26742	2.4708	27.658	.53822	5.4655	.26479
#2	.10301	.30272	.26864	2.4018	26.642	.52076	5.1256	.25071
#3	.10219	.30386	.26508	2.3482	26.805	.52661	5.3266	.25626
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52291**	**252.79**	**.26034**	**5.5827**	**.26863**	**.62508**	**.20920**	**4.0596**
Stddev	.00363	5.13	.00069	.0240	.00232	.00165	.00657	.0117
%RSD	.69330	2.0298	.26564	.43012	.86233	.26363	3.1385	.28905
#1	.52662	258.69	.26066	5.6009	.26650	.62318	.21182	4.0655
#2	.52272	250.27	.26082	5.5917	.26829	.62599	.21406	4.0673
#3	.51938	249.40	.25955	5.5555	.27109	.62608	.20173	4.0461
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606099102PS Acquired: 6/25/2016 23:21:26 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 10 Custom ID2: Custom ID3:
Comment: WG573952-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.51599**	**.62613**	**.61043**	**.25381**	**.52664**	**.60277**	**.02286**
Stddev	.00198	.01306	.01573	.00527	.00286	.00158	.00057
%RSD	.38295	2.0851	2.5770	2.0756	.54391	.26285	2.4777
#1	.51752	.64119	.62824	.25887	.52456	.60412	.02234
#2	.51668	.61903	.59844	.25420	.52545	.60318	.02277
#3	.51376	.61815	.60462	.24835	.52991	.60103	.02347
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9624.7**	**58159.**	**2980.0**
Stddev	48.4	89.	45.7
%RSD	.50312	.15320	1.5350
#1	9582.5	58170.	2928.1
#2	9614.0	58242.	2997.3
#3	9677.6	58064.	3014.5

Approved: June 27, 2016

Sample Name: L1606099102SDL Acquired: 6/25/2016 23:25:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 50 Custom ID2: Custom ID3:
Comment: WG573952-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00117	.01283	.00236	.01119	.00550	.00018	.08026	.00026
Stddev	.00047	.00301	.00204	.00193	.00071	.00008	.03574	.00006
%RSD	40.405	23.474	86.372	17.221	12.910	46.045	44.534	24.105
#1	.00083	.01247	.00021	.01333	.00520	.00027	.04235	.00026
#2	.00098	.01601	.00261	.01064	.00630	.00011	.11335	.00020
#3	.00172	.01002	.00427	.00960	.00498	.00015	.08510	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.01258	.00098	.10105	.18990	-.00151	.06238	.00028
Stddev	.00006	.00091	.00048	.00767	.08103	.00626	.02555	.00271
%RSD	25.732	7.2135	49.236	7.5891	42.670	413.92	40.953	970.07
#1	.00026	.01275	.00118	.09700	.21903	.00544	.04558	.00279
#2	.00015	.01339	.00043	.10990	.09833	-.00328	.04979	.00064
#3	.00024	.01160	.00132	.09626	.25235	-.00669	.09179	-.00259
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00205	47.703	.00017	.08239	.00525	-.00365	.00219	.31315
Stddev	.00019	.192	.00051	.00485	.00385	.00400	.00870	.00335
%RSD	9.3003	.40144	294.11	5.8889	73.348	109.43	397.40	1.0688
#1	.00183	47.834	.00076	.07694	.00083	-.00754	.00399	.31041
#2	.00217	47.483	-.00009	.08400	.00786	-.00387	-.00727	.31216
#3	.00215	47.792	-.00015	.08624	.00708	.00045	.00985	.31688
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606099102SDL Acquired: 6/25/2016 23:25:03 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 50 Custom ID2: Custom ID3:
Comment: WG573952-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00128**	**.02176**	**.02063**	**.00132**	**.00408**	**.01800**	**.00415**
Stddev	.00053	.00039	.00638	.00109	.00052	.00037	.00045
%RSD	41.627	1.7773	30.936	82.221	12.786	2.0724	10.786
#1	.00158	.02176	.02171	.00142	.00446	.01762	.00425
#2	.00067	.02138	.02640	.00236	.00348	.01802	.00454
#3	.00160	.02215	.01377	.00019	.00429	.01836	.00366
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9804.5**	**59680.**	**2983.6**
Stddev	22.5	103.	15.3
%RSD	.22901	.17203	.51306
#1	9824.1	59682.	2991.0
#2	9809.6	59782.	2993.9
#3	9780.0	59577.	2966.0

Approved: June 27, 2016

Sample Name: L1606099501 Acquired: 6/25/2016 23:29:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00086	.00231	.00190	.02254	.12371	.00015	15.528	-.00008
Stddev	.00014	.00712	.00142	.00137	.00163	.00003	.200	.00022
%RSD	16.093	308.09	74.696	6.0976	1.3212	21.126	1.2862	282.14
#1	.00100	.01032	.00271	.02232	.12196	.00014	15.307	.00002
#2	.00072	-.00013	.00272	.02129	.12520	.00012	15.695	.00008
#3	.00085	-.00326	.00026	.02401	.12396	.00018	15.583	-.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00031	.00027	.00136	.08102	.36083	.08036	1.7207	.01281
Stddev	.00017	.00026	.00081	.01723	.08162	.00488	.0426	.00381
%RSD	55.449	94.239	59.356	21.269	22.620	6.0696	2.4776	29.711
#1	.00018	.00004	.00043	.07010	.45158	.07724	1.7124	.01021
#2	.00026	.00024	.00186	.07209	.29342	.07785	1.6828	.01718
#3	.00051	.00055	.00179	.10089	.33750	.08598	1.7669	.01103
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	40.169	.00020	.00739	.00147	-.00261	.00048	.01475
Stddev	.00007	.358	.00037	.00186	.00129	.00197	.00359	.00082
%RSD	116.52	.89035	187.93	25.143	87.719	75.441	741.63	5.5637
#1	.00010	39.803	.00022	.00902	.00206	-.00263	-.00044	.01382
#2	.00008	40.518	.00056	.00537	.00236	-.00063	-.00256	.01539
#3	-.00002	40.186	-.00019	.00779	-.00001	-.00456	.00445	.01503
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606099501 Acquired: 6/25/2016 23:29:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00059**	**2.0444**	**.00152**	**-.00059**	**-.00017**	**.00315**	**.00110**
Stddev	.00034	.0207	.00598	.00278	.00059	.00019	.00107
%RSD	58.480	1.0109	393.49	469.74	343.26	6.1207	97.322
#1	.00020	2.0228	.00742	-.00167	.00024	.00305	.00162
#2	.00070	2.0639	.00167	-.00267	-.00085	.00303	-.00013
#3	.00086	2.0465	-.00453	.00256	.00009	.00337	.00180
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9773.4**	**59741.**	**3000.7**
Stddev	10.5	113.	31.9
%RSD	.10719	.18996	1.0628
#1	9785.4	59856.	3037.0
#2	9766.5	59737.	2977.2
#3	9768.1	59629.	2987.9

Approved: June 27, 2016

Sample Name: L1606099502 Acquired: 6/25/2016 23:32:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00001	-.00479	-.00049	.02240	.12357	.00014	15.278	-.00007
Stddev	.00142	.00423	.00253	.00505	.00148	.00006	.144	.00014
%RSD	22192.	88.307	518.91	22.533	1.1984	44.965	.94397	206.25
#1	.00014	-.00965	-.00218	.02478	.12272	.00011	15.115	-.00014
#2	.00133	-.00281	-.00170	.02581	.12271	.00021	15.329	.00010
#3	-.00149	-.00191	.00242	.01660	.12528	.00010	15.390	-.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.00065	.00042	.06837	.37746	.07803	1.6184	.01419
Stddev	.00041	.00112	.00027	.00656	.03147	.00401	.0513	.00310
%RSD	83.614	171.25	62.991	9.6001	8.3371	5.1380	3.1674	21.849
#1	.00050	-.00064	.00063	.07323	.35510	.08210	1.6690	.01383
#2	.00090	.00123	.00012	.06091	.36384	.07791	1.6197	.01745
#3	.00007	.00137	.00052	.07098	.41345	.07408	1.5665	.01128
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00036	39.920	-.00037	.00510	.00199	-.00064	.00335	.01167
Stddev	.00036	.366	.00054	.01025	.00130	.00317	.00244	.00126
%RSD	102.18	.91613	144.37	200.85	65.670	494.36	72.931	10.832
#1	-.00077	39.520	-.00039	.00961	.00071	-.00417	.00384	.01302
#2	-.00018	40.239	-.00090	.01233	.00193	.00029	.00550	.01150
#3	-.00011	40.000	.00017	-.00663	.00331	.00196	.00070	.01051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: L1606099502 Acquired: 6/25/2016 23:32:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 1000 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00055**	**2.0217**	**-.00337**	**-.00055**	**.00074**	**.00315**	**.00087**
Stddev	.00116	.0191	.00559	.00170	.00084	.00020	.00103
%RSD	210.74	.94683	165.64	307.06	114.28	6.4714	118.16
#1	-.00142	2.0010	.00194	-.00241	.00129	.00330	.00185
#2	.00077	2.0388	-.00920	-.00018	-.00023	.00292	.00097
#3	-.00100	2.0253	-.00287	.00093	.00117	.00324	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9730.5**	**59619.**	**2989.3**
Stddev	18.2	229.	29.6
%RSD	.18733	.38360	.99126
#1	9750.6	59882.	3021.9
#2	9715.1	59468.	2964.1
#3	9725.8	59506.	2981.9

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 23:36:47 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40930**	**10.238**	**.40819**	**.50228**	**1.0459**	**.04973**	**10.404**
Stddev	.00043	.021	.00043	.00341	.0044	.00005	.020
%RSD	.10460	.20815	.10461	.67892	.41689	.09834	.19571
#1	.40883	10.251	.40851	.50622	1.0496	.04974	10.381
#2	.40944	10.250	.40771	.50027	1.0411	.04968	10.418
#3	.40965	10.214	.40835	.50036	1.0470	.04978	10.414
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.05210**	**.20379**	**.49816**	**.52303**	**4.0622**	**51.067**	**1.0469**
Stddev	.00019	.00042	.00279	.00142	.0372	.160	.0078
%RSD	.35747	.20724	.56062	.27079	.91500	.31299	.74725
#1	.05231	.20342	.50024	.52229	4.1047	51.143	1.0555
#2	.05194	.20371	.49926	.52467	4.0462	50.883	1.0402
#3	.05207	.20425	.49499	.52215	4.0357	51.175	1.0449
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**9.7214**	**.51746**	**1.0407**	**52.052**	**.51652**	**10.202**	**.51928**
Stddev	.0660	.00152	.0096	.278	.00085	.015	.00145
%RSD	.67863	.29343	.92144	.53407	.16386	.14443	.27838
#1	9.7320	.51900	1.0479	52.343	.51582	10.200	.51894
#2	9.7814	.51597	1.0444	51.789	.51627	10.218	.52086
#3	9.6508	.51742	1.0298	52.022	.51746	10.189	.51803
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 23:36:47 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2277**	**.40544**	**5.2555**	**1.0220**	**1.0464**	**1.0514**	**.52265**
Stddev	.0051	.00303	.0032	.0024	.0054	.0078	.00372
%RSD	.41461	.74796	.06070	.23053	.51974	.73901	.71099
#1	1.2332	.40616	5.2590	1.0221	1.0521	1.0443	.52536
#2	1.2232	.40805	5.2526	1.0196	1.0413	1.0597	.52418
#3	1.2265	.40211	5.2550	1.0243	1.0458	1.0502	.51841
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0117**	**1.0320**	F **2.9933**
Stddev	.0025	.0009	.0109
%RSD	.24458	.08681	.36389
#1	1.0144	1.0330	3.0053
#2	1.0111	1.0312	2.9841
#3	1.0096	1.0318	2.9905
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9691.0**	**59432.**	**3012.0**
Stddev	5.1	44.	12.8
%RSD	.05245	.07397	.42554
#1	9696.2	59404.	2998.2
#2	9686.1	59410.	3023.6
#3	9690.7	59483.	3014.1

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 23:40:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00145**	**-.00660**	**-.00143**	**.00292**	**.00177**	**.00016**	**-.01784**	**.00008**
Stddev	.00180	.00657	.00282	.00130	.00082	.00003	.03649	.00007
%RSD	124.44	99.487	197.72	44.383	46.493	20.281	204.59	79.919
#1	.00061	-.01208	-.00468	.00217	.00185	.00015	-.05680	.00016
#2	-.00276	-.00840	.00028	.00442	.00255	.00019	-.01224	.00005
#3	-.00219	.00068	.00012	.00218	.00091	.00013	.01553	.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00005**	**.00038**	**.00052**	**.02154**	**-.09198**	**-.00110**	**-.01322**	**.00018**
Stddev	.00024	.00088	.00138	.01483	.10535	.00141	.06861	.00246
%RSD	523.34	234.01	265.29	68.833	114.54	127.62	519.13	1371.8
#1	-.00015	.00090	-.00012	.01936	.02327	-.00076	.06137	-.00117
#2	-.00022	-.00064	-.00042	.03733	-.18333	-.00265	-.02738	.00302
#3	.00023	.00086	.00210	.00792	-.11589	.00010	-.07365	-.00132
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00348**	**.04821**	**.00016**	**.00585**	**.00443**	**.00314**	**.00156**	**.03553**
Stddev	.00065	.02773	.00095	.00367	.00371	.00275	.00114	.00188
%RSD	18.560	57.517	582.95	62.725	83.852	87.739	73.200	5.2906
#1	.00289	.07448	.00125	.00268	.00440	.00563	.00189	.03713
#2	.00338	.05093	-.00027	.00499	.00073	.00018	.00029	.03346
#3	.00417	.01922	-.00050	.00987	.00816	.00360	.00249	.03599
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 23:40:25 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00025**	**.00051**	**.00604**	**-.00528**	**.00062**	**.00012**	**.00482**
Stddev	.00070	.00006	.00458	.00163	.00029	.00008	.00094
%RSD	280.85	11.978	75.793	30.927	46.562	68.537	19.510
#1	.00047	.00050	.00150	-.00357	.00036	.00006	.00376
#2	.00081	.00057	.01066	-.00682	.00057	.00008	.00556
#3	-.00053	.00045	.00597	-.00546	.00093	.00021	.00513
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9759.5**	**60265.**	**3013.5**
Stddev	10.8	85.	17.4
%RSD	.11040	.14047	.57599
#1	9754.6	60307.	3032.0
#2	9771.9	60320.	2997.5
#3	9752.1	60167.	3011.1

Approved: June 27, 2016

Sample Name: ICSA Acquired: 6/25/2016 23:44:20 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -.00562	263.10	.00178	-.00976	.00140	.00014	248.10
Stddev	.00117	.16	.00383	.00309	.00113	.00004	.61
%RSD	20.823	.06041	215.50	31.614	80.449	26.067	.24782
#1	-.00542	263.25	-.00154	-.01064	.00266	.00012	248.67
#2	-.00456	262.94	.00597	-.00633	.00047	.00013	247.45
#3	-.00688	263.13	.00090	-.01231	.00109	.00019	248.17
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	.00400						
Low Limit	-.00400						

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	-.00060	-.00056	F .01039	95.630	-.04599	.01242
Stddev	.00016	.00022	.00039	.00101	.248	.03226	.00307
%RSD	92.869	36.608	70.420	9.7281	.25928	70.136	24.681
#1	-.00031	-.00080	-.00098	.00928	95.904	-.06101	.01295
#2	-.00020	-.00063	-.00021	.01127	95.420	-.06800	.01519
#3	.00000	-.00037	-.00048	.01062	95.566	-.00896	.00913
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				.00400			
Low Limit				-.00400			

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	236.10	.00050	-.00055	.08182	-.00122	.03425	.00395
Stddev	.41	.00175	.00028	.01035	.00129	.00383	.00558
%RSD	.17524	347.68	51.671	12.652	105.94	11.172	141.13
#1	236.13	.00226	-.00079	.09323	-.00097	.03151	-.00194
#2	235.67	.00051	-.00062	.07920	-.00262	.03262	.00465
#3	236.50	-.00125	-.00024	.07303	-.00007	.03862	.00916
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 27, 2016

Sample Name: ICSA Acquired: 6/25/2016 23:44:20 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00072	-.00782	.00827	.00013	.00094	-.00929	-.00404
Stddev	.00319	.00204	.00198	.00005	.00018	.00784	.00342
%RSD	442.40	26.134	23.931	35.338	18.766	84.463	84.650
#1	.00212	-.01015	.01018	.00009	.00088	-.00188	-.00347
#2	-.00417	-.00696	.00842	.00012	.00080	-.01750	-.00771
#3	-.00012	-.00634	.00622	.00018	.00114	-.00848	-.00094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00163	-.00560	-.01351
Stddev	.00058	.00018	.00078
%RSD	35.475	3.3032	5.7782
#1	-.00221	-.00565	-.01421
#2	-.00162	-.00574	-.01366
#3	-.00105	-.00539	-.01267
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9256.6	56705.	2976.7
Stddev	13.6	91.	12.8
%RSD	.14727	.16098	.43054
#1	9241.1	56650.	2963.0
#2	9266.9	56811.	2988.4
#3	9261.8	56655.	2978.7

Approved: June 27, 2016

Sample Name: ICSAB Acquired: 6/25/2016 23:48:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.52011**	**271.09**	**.26014**	**-.01193**	**.26131**	**.24391**	**254.06**	**.49893**
Stddev	.00309	.31	.00108	.00072	.00207	.00022	1.57	.00035
%RSD	.59470	.11617	.41599	6.0451	.79127	.08930	.61634	.06930
#1	.51910	271.29	.26138	-.01172	.26259	.24374	255.54	.49856
#2	.51765	270.73	.25938	-.01274	.26241	.24383	254.23	.49898
#3	.52358	271.26	.25965	-.01134	.25892	.24415	252.42	.49925
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.24094**	**.25041**	**.26416**	**96.077**	**5.2095**	**.01124**	**238.55**	**.24627**
Stddev	.00056	.00142	.00058	.420	.1352	.00179	1.07	.00329
%RSD	.23299	.56520	.21819	.43687	2.5957	15.928	.44935	1.3378
#1	.24046	.25065	.26387	96.381	5.3478	.01132	239.59	.24346
#2	.24081	.24889	.26378	96.252	5.2032	.00941	238.63	.24545
#3	.24156	.25169	.26482	95.598	5.0776	.01299	237.45	.24990
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00041**	**5.4959**	**.48742**	**.09841**	**.49766**	**.51195**	**.23776**	**.00256**
Stddev	.00052	.0364	.00161	.00635	.00144	.00162	.00501	.00193
%RSD	128.92	.66237	.33105	6.4479	.28893	.31661	2.1076	75.415
#1	-.00068	5.5313	.48557	.09364	.49656	.51344	.24335	.00339
#2	-.00073	5.4979	.48847	.09597	.49929	.51023	.23366	.00393
#3	.00020	5.4586	.48823	.10561	.49712	.51219	.23626	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: ICSAB Acquired: 6/25/2016 23:48:09 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00140**	**.00103**	**-.00323**	**.47273**	**.25455**	**.48271**	**-.01305**
Stddev	.00059	.00027	.00250	.00229	.00097	.00045	.00046
%RSD	41.750	26.302	77.431	.48347	.38190	.09250	3.5206
#1	.00144	.00120	-.00356	.47420	.25352	.48220	-.01343
#2	.00197	.00072	-.00058	.47010	.25467	.48293	-.01317
#3	.00080	.00116	-.00555	.47390	.25546	.48302	-.01254
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9240.5**	**56174.**	**2955.7**
Stddev	9.6	118.	17.7
%RSD	.10383	.20921	.59797
#1	9251.6	56039.	2946.0
#2	9234.1	56253.	2944.9
#3	9235.9	56229.	2976.1

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 23:51:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.41108	10.316	.40843	.50327	1.0436	.05024	10.459
Stddev	.00161	.013	.00298	.00077	.0011	.00011	.030
%RSD	.39215	.12124	.73007	.15382	.10203	.22382	.28694
#1	.41119	10.324	.40804	.50264	1.0446	.05015	10.464
#2	.41263	10.302	.40566	.50304	1.0438	.05037	10.487
#3	.40941	10.323	.41158	.50413	1.0425	.05022	10.428
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.05234	.20485	.50201	.52446	4.0759	51.088	1.0484
Stddev	.00020	.00025	.00165	.00123	.0669	.060	.0059
%RSD	.38699	.12298	.32889	.23505	1.6409	.11683	.55819
#1	.05251	.20498	.50023	.52357	4.1126	51.031	1.0491
#2	.05240	.20456	.50349	.52586	3.9987	51.083	1.0423
#3	.05212	.20501	.50230	.52393	4.1164	51.150	1.0539
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	9.8126	.50786	1.0468	51.847	.51713	10.210	.51778
Stddev	.0274	.00264	.0020	.030	.00045	.013	.00098
%RSD	.27960	.52030	.19073	.05848	.08757	.13121	.18906
#1	9.8005	.51090	1.0485	51.876	.51722	10.201	.51858
#2	9.7933	.50648	1.0474	51.816	.51663	10.204	.51807
#3	9.8440	.50619	1.0446	51.848	.51752	10.226	.51669
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Approved: June 27, 2016

Sample Name: CCV Acquired: 6/25/2016 23:51:52 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.2406**	**.41201**	**5.2627**	**1.0255**	**1.0428**	**1.0401**	**.52263**
Stddev	.0022	.00564	.0065	.0018	.0016	.0094	.00276
%RSD	.17501	1.3693	.12412	.17227	.15774	.90409	.52737
#1	1.2431	.41191	5.2553	1.0271	1.0421	1.0459	.52461
#2	1.2392	.40642	5.2651	1.0236	1.0417	1.0292	.52380
#3	1.2396	.41770	5.2677	1.0258	1.0447	1.0451	.51948
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**1.0216**	**1.0330**	F **3.0271**
Stddev	.0027	.0013	.0163
%RSD	.26838	.12831	.53748
#1	1.0227	1.0315	3.0446
#2	1.0236	1.0335	3.0125
#3	1.0185	1.0340	3.0242
Check ?	Chk Pass	Chk Pass	Chk Fail
Value			1.0000
Range			10.000%

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9680.4**	**59250.**	**3000.1**
Stddev	28.5	27.	16.9
%RSD	.29390	.04497	.56388
#1	9711.9	59280.	2982.6
#2	9672.8	59242.	3016.3
#3	9656.6	59229.	3001.5

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 23:55:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00125	.00182	.00085	.00036	.00255	.00017	-.02838	-.00012
Stddev	.00082	.00761	.00304	.00225	.00150	.00005	.02296	.00019
%RSD	65.454	418.99	358.52	623.67	58.837	28.075	80.890	157.58
#1	.00189	-.00688	.00358	-.00006	.00362	.00012	-.00325	-.00021
#2	.00153	.00513	.00139	-.00165	.00321	.00020	-.04827	-.00024
#3	.00033	.00720	-.00242	.00279	.00083	.00021	-.03363	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	.00075	.00113	.02762	-.02056	.00086	-.01380	-.00101
Stddev	.00025	.00070	.00060	.00527	.01321	.00185	.01535	.00114
%RSD	279.31	93.710	52.614	19.071	64.270	216.68	111.21	112.81
#1	-.00016	.00013	.00054	.02156	-.02746	-.00001	-.01846	.00029
#2	.00010	.00151	.00112	.03019	-.02889	-.00040	-.02627	-.00181
#3	.00033	.00061	.00173	.03110	-.00532	.00298	.00334	-.00151
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00326	.05197	-.00006	.00537	-.00040	.00432	.00298	.03440
Stddev	.00030	.03661	.00066	.00611	.00131	.00120	.00482	.00043
%RSD	9.1019	70.433	1169.2	113.80	328.70	27.704	161.98	1.2407
#1	.00299	.03235	.00066	.00591	.00062	.00425	-.00005	.03422
#2	.00322	.09421	-.00018	.01119	-.00187	.00556	.00044	.03489
#3	.00358	.02936	-.00065	-.00099	.00005	.00317	.00854	.03409
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: CCB Acquired: 6/25/2016 23:55:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00008**	**.00044**	**.00562**	**-.00278**	**.00100**	**.00010**	**.00427**
Stddev	.00044	.00041	.00677	.00064	.00081	.00020	.00057
%RSD	558.27	93.814	120.49	22.928	80.799	205.25	13.474
#1	.00052	-.00002	.00467	-.00264	.00112	.00024	.00360
#2	.00007	.00078	.01282	-.00348	.00014	-.00013	.00461
#3	-.00036	.00055	-.00063	-.00223	.00174	.00017	.00459
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9746.4**	**60216.**	**3006.7**
Stddev	3.8	76.	7.9
%RSD	.03876	.12554	.26429
#1	9742.9	60301.	3002.9
#2	9746.0	60157.	3001.3
#3	9750.4	60189.	3015.8

Approved: June 27, 2016

Sample Name: LLCCV Acquired: 6/25/2016 23:59:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00916	.16469	.00814	.08024	.01010	.00165	.38196	.00067
Stddev	.00085	.00884	.00209	.00058	.00103	.00003	.03578	.00008
%RSD	9.3027	5.3671	25.632	.71975	10.222	1.6058	9.3673	12.378
#1	.00982	.16059	.01037	.08090	.01024	.00166	.39925	.00061
#2	.00944	.15864	.00624	.07981	.01105	.00162	.40581	.00076
#3	.00820	.17483	.00780	.08002	.00900	.00168	.34082	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00411	.00454	.00520	.10552	.68660	.08825	.42307	.00800
Stddev	.00033	.00070	.00174	.01827	.09614	.00099	.09575	.00252
%RSD	7.9024	15.364	33.422	17.313	14.002	1.1218	22.633	31.490
#1	.00383	.00377	.00720	.10444	.59286	.08799	.31358	.00534
#2	.00447	.00514	.00437	.12431	.68197	.08934	.49110	.01035
#3	.00404	.00471	.00403	.08782	.78497	.08741	.46454	.00831
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00870	.45736	.01598	.79373	.00972	.08303	.01581	.78238
Stddev	.00060	.01151	.00062	.00779	.00188	.00162	.00507	.00288
%RSD	6.8723	2.5158	3.9084	.98133	19.382	1.9461	32.090	.36823
#1	.00805	.45897	.01600	.80272	.00902	.08401	.02162	.78192
#2	.00924	.44514	.01534	.78909	.01186	.08117	.01226	.78546
#3	.00881	.46798	.01659	.78938	.00829	.08392	.01355	.77975
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 27, 2016

Sample Name: LLCCV Acquired: 6/25/2016 23:59:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v975) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40813**	**.04261**	**.02883**	**.15405**	**.00896**	**.01738**	**.13453**
Stddev	.00156	.00009	.00723	.00166	.00036	.00005	.00136
%RSD	.38342	.20072	25.085	1.0771	4.0551	.28767	1.0139
#1	.40866	.04260	.02755	.15254	.00855	.01741	.13450
#2	.40935	.04253	.02233	.15583	.00907	.01742	.13318
#3	.40636	.04270	.03662	.15377	.00925	.01733	.13591
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9793.5**	**60446.**	**3011.5**
Stddev	14.7	195.	8.9
%RSD	.15029	.32191	.29401
#1	9810.3	60377.	3006.1
#2	9783.4	60295.	3006.7
#3	9786.6	60666.	3021.7

Approved: June 27, 2016

2.3.2 Metals ICP-MS Data

2.3.2.1 Summary Data

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	126F-061416	**Prep Method:**	3015	**Prep Date:**	06/27/2016 08:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/28/2016 13:15
Workgroup #:	WG574570	**Analyst:**	BKT	**Run Date:**	06/28/2016 20:48
Collect Date:	06/14/2016 11:10	**Dilution:**	1	**File ID:**	NI.062816.204859
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.0147		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00231	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.0656		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00314	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0313		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.000584	J	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0168	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	126F-061416	**Prep Method:**	3015	**Prep Date:**	06/27/2016 08:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/29/2016 11:35
Workgroup #:	WG574570	**Analyst:**	BKT	**Run Date:**	06/29/2016 12:28
Collect Date:	06/14/2016 11:10	**Dilution:**	50	**File ID:**	NI.062916.122812
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	9.33		0.300	0.150	0.0750
Manganese, Total	7439-96-5	1.07		0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	C08-061416	**Prep Method:**	3015	**Prep Date:**	06/27/2016 08:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/28/2016 13:15
Workgroup #:	WG574570	**Analyst:**	BKT	**Run Date:**	06/28/2016 20:52
Collect Date:	06/14/2016 13:10	**Dilution:**	1	**File ID:**	NI.062816.205210
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00829		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000385	J	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00247	J	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.00683		0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00295	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.0138		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00101	J	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-03	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	C08-061416	**Prep Method:**	3015	**Prep Date:**	06/27/2016 08:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/29/2016 11:35
Workgroup #:	WG574570	**Analyst:**	BKT	**Run Date:**	06/29/2016 12:31
Collect Date:	06/14/2016 13:10	**Dilution:**	50	**File ID:**	NI.062916.123124
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	5.12		0.300	0.150	0.0750
Manganese, Total	7439-96-5	3.15		0.200	0.100	0.0500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	C03-061416	**Prep Method:**	3015	**Prep Date:**	06/27/2016 08:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/28/2016 13:15
Workgroup #:	WG574570	**Analyst:**	BKT	**Run Date:**	06/28/2016 20:55
Collect Date:	06/14/2016 14:15	**Dilution:**	1	**File ID:**	NI.062816.205522
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00684		0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00200	U	0.00400	0.00200	0.00100
Cobalt, Total	7440-48-4	0.000578	J	0.00200	0.00100	0.000500
Copper, Total	7440-50-8	0.00200	U	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Nickel, Total	7440-02-0	0.00400	U	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00100	U	0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0153	J	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	C03-061416	**Prep Method:**	3015	**Prep Date:**	06/27/2016 08:30
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/29/2016 11:35
Workgroup #:	WG574570	**Analyst:**	BKT	**Run Date:**	06/29/2016 12:34
Collect Date:	06/14/2016 14:15	**Dilution:**	50	**File ID:**	NI.062916.123435
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	1.56		0.300	0.150	0.0750
Manganese, Total	7439-96-5	1.85		0.200	0.100	0.0500

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer NexION 300X

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	100
Vi = Initial volume	40
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/L)	0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	200
Vi = Initial volume	0.5
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/kg)	40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	40
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	50

50 ug/kg = 0.050 mg/kg

Perkin Elmer NexION ICP/MS

STANDARDS KEY

QC Std 1 - ICV
QC Std 2 - ICB
QC Std 3 - LLICV
QC Std 4 - ICSA
QC Std 5 - ICSAB
QC Std 6 - CCV
QC Std 7 - CCB
QC Std 8 - LLCCV

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.00005	0.05	0.1
Sb	10	0	0.00005	0.05	0.1
As	10	0	0.00005	0.05	0.1
Ba	10	0	0.00005	0.05	0.1
Be	10	0	0.00005	0.05	0.1
Ca	1000	0	0.005	5	10
Cd	10	0	0.0005	0.05	0.1
Cr	10	0	0.0005	0.05	0.1
Co	10	0	0.0005	0.05	0.1
Cu	10	0	0.0005	0.05	0.1
Fe	1000	0	0.005	5	10
Pb	10	0	0.00005	0.05	0.1
Mg	1000	0	0.005	5	10
Mn	10	0	0.00005	0.05	0.1
Ni	10	0	0.00005	0.05	0.1
K	1000	0	0.005	5	10
Se	10	0	0.00005	0.05	0.1
Ag	10	0	0.00005	0.05	0.1
Na	1000	0	0.005	5	10
Tl	10	0	0.00005	0.05	0.1
V	10	0	0.00005	0.05	0.1
U	1000	0	0.00005	0.05	0.1
Zn	10	0	0.00005	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG574242
Analyst: VC
Spike Analyst: VC
Run Date: 06/27/2016 08:30
Method: 3015
Balance: BAL016
Instrument: MW-3
Instrument Start: 06/27/2016 08:39

SOP: ME407 Revison 19
Spike Solution: STD75998
Spike Witness: ERP
HNO3 Lot #: COA18905
40 & 50 ML. DIGESTION TU COA18987
MS Filters- fisher-Lot#R RGT35621

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG574242-02	BLANK	1	20 mL	50 mL	182.814 g	182.793 g		
2	WG574242-03	LCS	1	20 mL	50 mL	183.56 g	183.549 g	.25 mL	
3	L16060794-01	SAMP	1	20 mL	50 mL	184.361 g	184.346 g		06/24/16
4	L16060794-02	SAMP	1	20 mL	50 mL	183.398 g	183.379 g		06/24/16
5	L16060794-03	SAMP	1	20 mL	50 mL	184.044 g	184.009 g		06/24/16
6	L16060794-04	SAMP	1	20 mL	50 mL	182.433 g	182.424 g		06/24/16
7	L16060822-02	SAMP	1	20 mL	50 mL	182.575 g	182.563 g		06/24/16
8	L16060822-03	SAMP	1	20 mL	50 mL	182.733 g	182.696 g		06/24/16
9	L16060823-02	SAMP	1	20 mL	50 mL	184.331 g	184.334 g		06/24/16
10	L16060823-03	SAMP	1	20 mL	50 mL	181.954 g	181.917 g		06/24/16
11	L16060823-04	SAMP	1	20 mL	50 mL	184.816 g	184.809 g		06/24/16
12	WG574242-01	REF	2	20 mL	50 mL	183.706 g	183.7 g		
13	L16060839-01	SAMP	2	20 mL	50 mL	183.706 g	183.7 g		06/22/16
14	L16060843-01	SAMP	2	20 mL	50 mL	179.215 g	179.196 g		06/22/16
15	L16060843-02	SAMP	2	20 mL	50 mL	181.896 g	181.872 g		06/22/16
16	L16061410-01	SAMP	1	20 mL	50 mL	181.139 g	181.127 g		07/01/16
17	L16061412-01	SAMP	1	20 mL	50 mL	181.093 g	181.089 g		07/01/16
18	L16061412-02	SAMP	1	20 mL	50 mL	184.474 g	184.466 g		07/01/16
19	L16061413-01	SAMP	1	20 mL	50 mL	181.294 g	181.262 g		07/01/16
20	L16061416-01	SAMP	1	20 mL	50 mL	183.477 g	183.459 g		07/01/16
21	L16061416-02	SAMP	1	20 mL	50 mL	179.518 g	178.772 g		07/01/16
22	L16061421-01	SAMP	1	20 mL	50 mL	183.973 g	183.93 g		07/01/16
23	WG574242-04	DUP	1	20 mL	50 mL	183.873 g	183.86 g		
24	WG574242-05	MS	1	20 mL	50 mL	181.12 g	181.111 g	.25 mL	
25	WG574242-06	MSD	1	20 mL	50 mL	183.984 g	183.969 g	.25 mL	

Analyst: Vicki Collins

Reviewer: Erin Potter

MW_DIG - Modified 09/30/2009
PDF ID: 4825465
Report generated: 06/27/2016 09:45

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062816A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 572184,573475,574522,574570,574571,574573

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.062816.130257	Blank	Blank		1		06/28/16 13:02
2	NI.062816.130609	WG574537-01	Calibration Point		1		06/28/16 13:06
3	NI.062816.130921	WG574537-02	Calibration Point		1		06/28/16 13:09
4	NI.062816.131232	WG574537-03	Calibration Point		1		06/28/16 13:12
5	NI.062816.131544	WG574537-04	Calibration Point		1		06/28/16 13:15
6	NI.062816.131857	WG574537-05	Initial Calibration Verification		1		06/28/16 13:18
7	NI.062816.132210	WG574537-06	Initial Calib Blank		1		06/28/16 13:22
8	NI.062816.132523	WG574537-07	Low Level Initial Calibration V		1		06/28/16 13:25
9	NI.062816.132834	WG574537-08	Interference Check		1		06/28/16 13:28
10	NI.062816.133145	WG574537-09	Interference Check		1		06/28/16 13:31
11	NI.062816.133459	WG574537-10	CCV		1		06/28/16 13:34
12	NI.062816.133810	WG574537-11	CCB		1		06/28/16 13:38
13	NI.062816.134122	L16060362-03	6060227-03		10		06/28/16 13:41
14	NI.062816.134434	L16060362-04	6060227-04		1		06/28/16 13:44
15	NI.062816.134903	L16060362-03	6060227-03	20/50	10		06/28/16 13:49
16	NI.062816.135218	L16060362-04	6060227-04	20/50	1		06/28/16 13:52
17	NI.062816.135925	L16060362-05	6060227-05	20/50	1		06/28/16 13:59
18	NI.062816.140236	L16060362-06	6060227-06	20/50	1		06/28/16 14:02
19	NI.062816.140602	L16060362-07	6060227-07	20/50	1		06/28/16 14:06
20	NI.062816.140914	L16060362-08	6060227-08	20/50	1		06/28/16 14:09
21	NI.062816.141225	L16060362-09	6060227-09	20/50	1		06/28/16 14:12
22	NI.062816.141537	L16060362-10	6060227-10	20/50	1		06/28/16 14:15
23	NI.062816.141850	WG574537-12	CCV		1		06/28/16 14:18
24	NI.062816.142201	WG574537-13	CCB		1		06/28/16 14:22
25	NI.062816.142514	L16060362-11	6060227-11	20/50	1		06/28/16 14:25
26	NI.062816.142825	L16060362-12	6060227-12	20/50	1		06/28/16 14:28
27	NI.062816.143138	WG574537-14	CCV		1		06/28/16 14:31
28	NI.062816.143450	WG574537-15	CCB		1		06/28/16 14:34
29	NI.062816.143803	WG573333-03	Method/Prep Blank	.25/100	1		06/28/16 14:38
30	NI.062816.144114	WG573333-04	Laboratory Control S	.25/100	1		06/28/16 14:41
31	NI.062816.144426	WG573333-02	Reference Sample		1	L16061053-01	06/28/16 14:44
32	NI.062816.144737	WG573333-07	Matrix Spike	.253/100	1	L16061053-01	06/28/16 14:47
33	NI.062816.145049	WG573333-08	Matrix Spike Duplica	.252/100	1	L16061053-01	06/28/16 14:50
34	NI.062816.145400	L16061048-01	TR0062	.252/100	5		06/28/16 14:54

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Kim H. Rhoden

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062816A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 572184,573475,574522,574570,574571,574573

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.062816.145711	WG573475-03	Post Digestion Spike		5	L16061048-01	06/28/16 14:57
36	NI.062816.150023	WG573475-04	Serial Dilution		25	L16061048-01	06/28/16 15:00
37	NI.062816.150336	WG574537-16	Interference Check		1		06/28/16 15:03
38	NI.062816.150647	WG574537-17	Interference Check		1		06/28/16 15:06
39	NI.062816.151001	WG574537-18	CCV		1		06/28/16 15:10
40	NI.062816.151312	WG574537-19	CCB		1		06/28/16 15:13
41	NI.062816.151629	WG574537-20	Low Level Continuing Calibra		1		06/28/16 15:16
42	NI.062816.152424	WG573333-01	Reference Sample		10	L16060787-03	06/28/16 15:24
43	NI.062816.152735	WG573333-05	Matrix Spike	.256/100	10	L16060787-03	06/28/16 15:27
44	NI.062816.153046	WG573333-06	Matrix Spike Duplica	.253/100	10	L16060787-03	06/28/16 15:30
45	NI.062816.153358	L16060787-06	U517SS00512A	.256/100	10		06/28/16 15:33
46	NI.062816.153709	L16060787-08	U517SS00612A	.254/100	10		06/28/16 15:37
47	NI.062816.154021	L16060787-13	U517SS00708A	.252/100	10		06/28/16 15:40
48	NI.062816.154332	L16060787-15	U517SS00808A	.257/100	10		06/28/16 15:43
49	NI.062816.154644	L16060787-16	U517SS00808C	.255/100	10		06/28/16 15:46
50	NI.062816.154955	L16060787-17	U517SS00810A	.259/100	10		06/28/16 15:49
51	NI.062816.155308	WG574537-21	CCV		1		06/28/16 15:53
52	NI.062816.155620	WG574537-22	CCB		1		06/28/16 15:56
53	NI.062816.155933	WG573751-04	Method/Prep Blank	20/50	1		06/28/16 15:59
54	NI.062816.160244	WG573751-05	Laboratory Control S	20/50	1		06/28/16 16:02
55	NI.062816.160556	WG573751-02	Reference Sample		1	L16061151-01	06/28/16 16:05
56	NI.062816.160907	WG573751-07	Matrix Spike	20/50	1	L16061151-01	06/28/16 16:09
57	NI.062816.161219	WG573751-08	Matrix Spike Duplica	20/50	1	L16061151-01	06/28/16 16:12
58	NI.062816.161530	WG573751-01	Reference Sample		1	L16060916-02	06/28/16 16:15
59	NI.062816.161841	WG573751-06	Duplicate	20/50	1	L16060916-02	06/28/16 16:18
60	NI.062816.162153	L16060916-01	PHL 1 FRESHWATER IMPO	20/50	1		06/28/16 16:21
61	NI.062816.162504	WG574522-01	Post Digestion Spike		1	L16060916-01	06/28/16 16:25
62	NI.062816.162816	WG574522-02	Serial Dilution		5	L16060916-01	06/28/16 16:28
63	NI.062816.163129	WG574537-23	CCV		1		06/28/16 16:31
64	NI.062816.163441	WG574537-24	CCB		1		06/28/16 16:34
65	NI.062816.163754	WG574522-02	Serial Dilution		25	L16060916-01	06/28/16 16:37
66	NI.062816.164105	L16061142-01	18WW20-062016	20/50	1		06/28/16 16:41
67	NI.062816.164417	L16061142-03	18WW19F-062016	20/50	1		06/28/16 16:44
68	NI.062816.164728	L16061142-05	18WW19FFD-062016	20/50	1		06/28/16 16:47

Page: 2 Approved: June 29, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062816A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 572184,573475,574522,574570,574571,574573

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.062816.165039	L16061151-02	LF003SW0311-007 DUP	20/50	1		06/28/16 16:50
70	NI.062816.165351	L16061151-05	LF003SW0312-007	20/50	1		06/28/16 16:53
71	NI.062816.165702	WG573751-03	Reference Sample		1	L16061154-01	06/28/16 16:57
72	NI.062816.170014	WG573751-09	Matrix Spike	20/50	1	L16061154-01	06/28/16 17:00
73	NI.062816.170325	WG573751-10	Matrix Spike Duplica	20/50	1	L16061154-01	06/28/16 17:03
74	NI.062816.170637	L16061154-04	FQC-RB06201601-CB	20/50	1		06/28/16 17:06
75	NI.062816.170950	WG574537-25	CCV		1		06/28/16 17:09
76	NI.062816.171301	WG574537-26	CCB		1		06/28/16 17:13
77	NI.062816.171614	L16061155-01	ST008MW0812-007	20/50	1		06/28/16 17:16
78	NI.062816.171926	L16061155-02	ST008MW0809-007	20/50	1		06/28/16 17:19
79	NI.062816.172237	L16061155-03	ST008MW0816-007	20/50	1		06/28/16 17:22
80	NI.062816.172550	WG574537-27	CCV		1		06/28/16 17:25
81	NI.062816.172902	WG574537-28	CCB		1		06/28/16 17:29
82	NI.062816.184632	L16061142-01	18WW20-062016	20/50	10		06/28/16 18:46
83	NI.062816.184946	WG574537-29	CCV		1		06/28/16 18:49
84	NI.062816.185257	WG574537-30	CCB		1		06/28/16 18:52
85	NI.062816.185610	WG574537-31	Low Level Continuing Calibra		1		06/28/16 18:56
86	NI.062816.195129	WG574242-02	Method/Prep Blank	20/50	1		06/28/16 19:51
87	NI.062816.195440	WG574242-03	Laboratory Control S	20/50	1		06/28/16 19:54
88	NI.062816.195752	WG574242-01	Reference Sample		1	L16060839-01	06/28/16 19:57
89	NI.062816.200103	WG574242-04	Duplicate	20/50	1	L16060839-01	06/28/16 20:01
90	NI.062816.200414	WG574242-05	Matrix Spike	20/50	1	L16060839-01	06/28/16 20:04
91	NI.062816.200726	WG574242-06	Matrix Spike Duplica	20/50	1	L16060839-01	06/28/16 20:07
92	NI.062816.201037	L16060843-01	6060966-01	20/50	1		06/28/16 20:10
93	NI.062816.201349	WG574570-01	Post Digestion Spike		1	L16060843-01	06/28/16 20:13
94	NI.062816.201700	WG574570-02	Serial Dilution		5	L16060843-01	06/28/16 20:17
95	NI.062816.202012	WG574570-02	Serial Dilution		25	L16060843-01	06/28/16 20:20
96	NI.062816.202325	WG574537-32	CCV		1		06/28/16 20:23
97	NI.062816.202637	WG574537-33	CCB		1		06/28/16 20:26
98	NI.062816.202950	L16060794-01	A08-MW06-Y1S2	20/50	1		06/28/16 20:29
99	NI.062816.203301	L16060794-02	A08-MW09-Y1S2	20/50	1		06/28/16 20:33
100	NI.062816.203613	L16060794-03	A09-MW02-Y1S2	20/50	1		06/28/16 20:36
101	NI.062816.203924	L16060794-04	A09-MW07-Y1S2	20/50	1		06/28/16 20:39
102	NI.062816.204236	L16060822-02	18WW03F-061416	20/50	1		06/28/16 20:42

Page: 3 Approved: June 29, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062816A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 572184,573475,574522,574570,574571,574573

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.062816.204547	L16060822-03	18CPTMW04SW-061416	20/50	1		06/28/16 20:45
104	NI.062816.204859	L16060823-02	126F-061416	20/50	1		06/28/16 20:48
105	NI.062816.205210	L16060823-03	C08-061416	20/50	1		06/28/16 20:52
106	NI.062816.205522	L16060823-04	C03-061416	20/50	1		06/28/16 20:55
107	NI.062816.205833	L16060843-02	6060966-02	20/50	1		06/28/16 20:58
108	NI.062816.210146	WG574537-34	CCV		1		06/28/16 21:01
109	NI.062816.210457	WG574537-35	CCB		1		06/28/16 21:04
110	NI.062816.210810	L16061410-01	SS007MW0704-007	20/50	1		06/28/16 21:08
111	NI.062816.211122	L16061412-01	SS007MW0B05-007	20/50	1		06/28/16 21:11
112	NI.062816.211433	L16061412-02	SS007MW0B02-007	20/50	1		06/28/16 21:14
113	NI.062816.211745	L16061413-01	DP005MW0504-007	20/50	1		06/28/16 21:17
114	NI.062816.212056	L16061416-01	DP005MW0509-007	20/50	1		06/28/16 21:20
115	NI.062816.212408	L16061416-02	DP005MW0518-007	20/50	1		06/28/16 21:24
116	NI.062816.212719	L16061421-01	LF003MW03	20/50	1		06/28/16 21:27
117	NI.062816.213032	WG574537-36	CCV		1		06/28/16 21:30
118	NI.062816.213343	WG574537-37	CCB		1		06/28/16 21:33
119	NI.062816.213655	WG574205-02	Method/Prep Blank	20/50	1		06/28/16 21:36
120	NI.062816.214007	WG574205-03	Laboratory Control S	20/50	1		06/28/16 21:40
121	NI.062816.214318	WG574205-01	Reference Sample		1	L16061343-01	06/28/16 21:43
122	NI.062816.214630	WG574205-04	Duplicate	20/50	1	L16061343-01	06/28/16 21:46
123	NI.062816.214941	WG574205-05	Matrix Spike	20/50	1	L16061343-01	06/28/16 21:49
124	NI.062816.215253	WG574205-06	Matrix Spike Duplica	20/50	1	L16061343-01	06/28/16 21:52
125	NI.062816.215604	L16060732-01	LH18/24-SP650-6371-GRAB	20/50	1		06/28/16 21:56
126	NI.062816.215915	WG574571-01	Post Digestion Spike		1	L16060732-01	06/28/16 21:59
127	NI.062816.220227	WG574571-02	Serial Dilution		5	L16060732-01	06/28/16 22:02
128	NI.062816.220538	WG574571-02	Serial Dilution		25	L16060732-01	06/28/16 22:05
129	NI.062816.220851	WG574537-38	CCV		1		06/28/16 22:08
130	NI.062816.221202	WG574537-39	CCB		1		06/28/16 22:12
131	NI.062816.221514	L16060732-02	LH18/24-SP650-6371-COMP	20/50	1		06/28/16 22:15
132	NI.062816.221825	L16060762-01	MW-24-001	20/50	1		06/28/16 22:18
133	NI.062816.222137	L16061380-01	XU936TW003A	20/50	1		06/28/16 22:21
134	NI.062816.222448	L16061380-02	XU936TW003C	20/50	1		06/28/16 22:24
135	NI.062816.222800	L16061381-06	EB02	20/50	1		06/28/16 22:28
136	NI.062816.223111	L16061393-01	S6F0627-01	20/50	1		06/28/16 22:31

Page: 4 Approved: June 29, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062816A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 572184,573475,574522,574570,574571,574573

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	NI.062816.223423	L16061393-02	S6F0627-02	20/50	1		06/28/16 22:34
138	NI.062816.223734	L16061393-03	S6F0627-03	20/50	1		06/28/16 22:37
139	NI.062816.224046	L16061393-04	S6F0627-04	20/50	1		06/28/16 22:40
140	NI.062816.224357	L16061393-05	S6F0627-05	20/50	1		06/28/16 22:43
141	NI.062816.224710	WG574537-40	CCV		1		06/28/16 22:47
142	NI.062816.225022	WG574537-41	CCB		1		06/28/16 22:50
143	NI.062816.225335	L16061393-06	S6F0627-06	20/50	1		06/28/16 22:53
144	NI.062816.225646	L16061393-07	S6F0627-07	20/50	1		06/28/16 22:56
145	NI.062816.225958	L16061401-01	DP005MW0501-007	20/50	1		06/28/16 22:59
146	NI.062816.230309	L16061402-01	SS007MW0715-007	20/50	1		06/28/16 23:03
147	NI.062816.230621	L16061404-01	DP005MW0503-007	20/50	1		06/28/16 23:06
148	NI.062816.230932	L16061408-01	DP005MW0508-007	20/50	1		06/28/16 23:09
149	NI.062816.231244	L16061409-01	ST008MW0818-007	20/50	1		06/28/16 23:12
150	NI.062816.231556	WG574537-42	CCV		1		06/28/16 23:15
151	NI.062816.231908	WG574537-43	CCB		1		06/28/16 23:19
152	NI.062816.232221	WG574537-44	Low Level Continuing Calibra		1		06/28/16 23:22
153	NI.062816.232534	WG574306-02	Method/Prep Blank	.25/100	1		06/28/16 23:25
154	NI.062816.232845	WG574306-03	Laboratory Control S	.25/100	1		06/28/16 23:28
155	NI.062816.233157	L16061297-07	XU936DS01700A		1	WG574306-01	06/28/16 23:31
156	NI.062816.233508	L16061297-08	XU936DS01700MS	.253/100	1	WG574306-04	06/28/16 23:35
157	NI.062816.233819	L16061297-09	XU936DS01700MSD	.255/100	1	WG574306-05	06/28/16 23:38
158	NI.062816.234131	L16061443-01	GS042QACF035SB062416-E	.256/100	1		06/28/16 23:41
159	NI.062816.234442	L16061443-02	GS042QACF035SB062416-E	.256/100	1		06/28/16 23:44
160	NI.062816.234754	WG574573-01	Post Digestion Spike		1	L16061443-02	06/28/16 23:47
161	NI.062816.235105	WG574573-02	Serial Dilution		5	L16061443-02	06/28/16 23:51
162	NI.062816.235417	WG574573-02	Serial Dilution		25	L16061443-02	06/28/16 23:54
163	NI.062816.235730	WG574537-45	CCV		1		06/28/16 23:57
164	NI.062916.000041	WG574537-46	CCB		1		06/29/16 00:00

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Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062916A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573722,574570,574572,573717,574688,574690,573790

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.062916.112234	Blank	Blank		1		06/29/16 11:22
2	NI.062916.112545	WG574676-01	Calibration Point		1		06/29/16 11:25
3	NI.062916.112857	WG574676-02	Calibration Point		1		06/29/16 11:28
4	NI.062916.113208	WG574676-03	Calibration Point		1		06/29/16 11:32
5	NI.062916.113520	WG574676-04	Calibration Point		1		06/29/16 11:35
6	NI.062916.113833	WG574676-05	Initial Calibration Verification		1		06/29/16 11:38
7	NI.062916.114146	WG574676-06	Initial Calib Blank		1		06/29/16 11:41
8	NI.062916.114653	WG574676-07	Low Level Initial Calibration V		1		06/29/16 11:46
9	NI.062916.115053	WG574676-08	Interference Check		1		06/29/16 11:50
10	NI.062916.115447	WG574676-09	Interference Check		1		06/29/16 11:54
11	NI.062916.120010	WG574676-10	CCV		1		06/29/16 12:00
12	NI.062916.120734	WG574676-11	CCB		1		06/29/16 12:07
13	NI.062916.121215	L16060661-06	US23SS02502A	.253/100	1		06/29/16 12:12
14	NI.062916.121526	L16060661-07	US23SS02505A	.257/100	1		06/29/16 12:15
15	NI.062916.121838	L16060661-08	US23SS02602A	.257/100	1		06/29/16 12:18
16	NI.062916.122149	L16060661-09	US23SS02605A	.25/100	1		06/29/16 12:21
17	NI.062916.122501	L16060822-03	18CPTMW04SW-061416	20/50	10		06/29/16 12:25
18	NI.062916.122812	L16060823-02	126F-061416	20/50	50		06/29/16 12:28
19	NI.062916.123124	L16060823-03	C08-061416	20/50	50		06/29/16 12:31
20	NI.062916.123435	L16060823-04	C03-061416	20/50	50		06/29/16 12:34
21	NI.062916.123748	WG574676-12	CCV		1		06/29/16 12:37
22	NI.062916.124059	WG574676-13	CCB		1		06/29/16 12:40
23	NI.062916.124412	WG574676-14	Low Level Continuing Calibra		1		06/29/16 12:44
24	NI.062916.125354	WG573548-02	Method/Prep Blank	20/50	1		06/29/16 12:53
25	NI.062916.125705	WG573548-03	Laboratory Control S	20/50	1		06/29/16 12:57
26	NI.062916.130017	WG573548-01	Reference Sample		1	L16060986-23	06/29/16 13:00
27	NI.062916.130328	WG573548-04	Matrix Spike	20/50	1	L16060986-23	06/29/16 13:03
28	NI.062916.130639	WG573548-05	Matrix Spike Duplica	20/50	1	L16060986-23	06/29/16 13:06
29	NI.062916.130951	L16060986-01	MW-07-04	20/50	1		06/29/16 13:09
30	NI.062916.131302	L16060986-03	MW-01-10	20/50	1		06/29/16 13:13
31	NI.062916.131614	WG574572-01	Post Digestion Spike		1	L16060986-03	06/29/16 13:16
32	NI.062916.131925	WG574572-02	Serial Dilution		5	L16060986-03	06/29/16 13:19
33	NI.062916.132237	WG574572-02	Serial Dilution		25	L16060986-03	06/29/16 13:22
34	NI.062916.132550	WG574676-15	CCV		1		06/29/16 13:25

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062916A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573722,574570,574572,573717,574688,574690,573790

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.062916.132901	WG574676-16	CCB		1		06/29/16 13:29
36	NI.062916.133214	L16060986-05	MW-03-12	20/50	1		06/29/16 13:32
37	NI.062916.133526	L16060986-07	MW-01-07	20/50	1		06/29/16 13:35
38	NI.062916.133837	L16060986-09	MW-03-11	20/50	1		06/29/16 13:38
39	NI.062916.134150	L16060986-11	MW-01-01	20/50	1		06/29/16 13:41
40	NI.062916.134502	L16060986-13	MW-03-09	20/50	1		06/29/16 13:45
41	NI.062916.134813	L16060986-15	MW-01-08	20/50	1		06/29/16 13:48
42	NI.062916.135125	L16060986-17	MW-03-06	20/50	1		06/29/16 13:51
43	NI.062916.135436	L16060986-19	MW-03-05	20/50	1		06/29/16 13:54
44	NI.062916.135748	L16060986-25	MW-01-02	20/50	1		06/29/16 13:57
45	NI.062916.140059	L16060986-27	DUP 1	20/50	1		06/29/16 14:00
46	NI.062916.140412	WG574676-17	CCV		1		06/29/16 14:04
47	NI.062916.140723	WG574676-18	CCB		1		06/29/16 14:07
48	NI.062916.141036	L16060986-29	DUP 2	20/50	1		06/29/16 14:10
49	NI.062916.141347	L16060986-39	EQUIP BLANK 1	20/50	1		06/29/16 14:13
50	NI.062916.141659	L16060986-41	EQUIP BLANK 2	20/50	1		06/29/16 14:16
51	NI.062916.145120	L16061026-02	18WW16F-061616	20/50	1		06/29/16 14:51
52	NI.062916.145431	L16061026-04	129-061616	20/50	1		06/29/16 14:54
53	NI.062916.145742	L16061026-06	120F-061616	20/50	1		06/29/16 14:57
54	NI.062916.150054	L16061026-07	123-061616	20/50	1		06/29/16 15:00
55	NI.062916.150407	WG574676-19	CCV		1		06/29/16 15:04
56	NI.062916.150718	WG574676-20	CCB		1		06/29/16 15:07
57	NI.062916.151032	WG573099-02	Method/Prep Blank	.25/100	1		06/29/16 15:10
58	NI.062916.151343	WG573099-03	Laboratory Control S	.25/100	1		06/29/16 15:13
59	NI.062916.151655	WG573099-01	Reference Sample		10	L16060888-03	06/29/16 15:16
60	NI.062916.152006	WG573099-04	Matrix Spike	.255/100	10	L16060888-03	06/29/16 15:20
61	NI.062916.152318	WG573099-05	Matrix Spike Duplica	.254/100	10	L16060888-03	06/29/16 15:23
62	NI.062916.152629	L16060883-01	WC01	.252/100	1		06/29/16 15:26
63	NI.062916.152941	L16060912-01	WH8011	.25/100	1		06/29/16 15:29
64	NI.062916.153252	WG573717-03	Post Digestion Spike		1	L16060912-01	06/29/16 15:32
65	NI.062916.153604	WG573717-04	Serial Dilution		5	L16060912-01	06/29/16 15:36
66	NI.062916.153915	WG573717-04	Serial Dilution		25	L16060912-01	06/29/16 15:39
67	NI.062916.154228	WG574676-21	CCV		1		06/29/16 15:42
68	NI.062916.154540	WG574676-22	CCB		1		06/29/16 15:45

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062916A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573722,574570,574572,573717,574688,574690,573790

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.062916.154853	WG574001-04	Method/Prep Blank	20/50	1		06/29/16 15:48
70	NI.062916.155204	WG574001-05	Laboratory Control S	20/50	1		06/29/16 15:52
71	NI.062916.155516	WG574001-01	Reference Sample		1	L16061247-02	06/29/16 15:55
72	NI.062916.155827	WG574001-06	Duplicate	20/50	1	L16061247-02	06/29/16 15:58
73	NI.062916.160139	WG574001-02	Reference Sample		1	L16061265-01	06/29/16 16:01
74	NI.062916.160450	WG574001-07	Matrix Spike	20/50	1	L16061265-01	06/29/16 16:04
75	NI.062916.160802	WG574001-08	Matrix Spike Duplica	20/50	1	L16061265-01	06/29/16 16:08
76	NI.062916.161113	L16061247-01	WMB09	20/50	1		06/29/16 16:11
77	NI.062916.161425	WG574688-01	Post Digestion Spike		1	L16061247-01	06/29/16 16:14
78	NI.062916.161736	WG574688-02	Serial Dilution		5	L16061247-01	06/29/16 16:17
79	NI.062916.162049	WG574676-23	CCV		1		06/29/16 16:20
80	NI.062916.162401	WG574676-24	CCB		1		06/29/16 16:24
81	NI.062916.162713	WG574688-02	Serial Dilution		25	L16061247-01	06/29/16 16:27
82	NI.062916.163025	L16061265-04	SS007MWOB16-007	20/50	1		06/29/16 16:30
83	NI.062916.163336	L16061265-05	SS007MWOB21-007	20/50	1		06/29/16 16:33
84	NI.062916.163648	L16061265-06	FQC-RB06211601-CC	20/50	1		06/29/16 16:36
85	NI.062916.163959	L16061266-01	ST008MW0805-007	20/50	1		06/29/16 16:39
86	NI.062916.164310	L16061269-01	FT002MW0204-007	20/50	1		06/29/16 16:43
87	NI.062916.164622	L16061272-01	SS007MW0B18-007	20/50	1		06/29/16 16:46
88	NI.062916.164933	L16061272-02	SS007MWN752-007	20/50	1		06/29/16 16:49
89	NI.062916.165245	L16061279-01	XU936TW007A	20/50	1		06/29/16 16:52
90	NI.062916.165556	L16061279-01	XU936TW007A	20/50	50		06/29/16 16:55
91	NI.062916.165909	WG574676-25	CCV		1		06/29/16 16:59
92	NI.062916.170220	WG574676-26	CCB		1		06/29/16 17:02
93	NI.062916.170533	WG574001-03	Reference Sample		1	L16061279-02	06/29/16 17:05
94	NI.062916.170845	WG574001-03	Reference Sample		50	L16061279-02	06/29/16 17:08
95	NI.062916.171156	WG574001-09	Matrix Spike	20/50	1	L16061279-02	06/29/16 17:11
96	NI.062916.171508	WG574001-09	Matrix Spike	20/50	50	L16061279-02	06/29/16 17:15
97	NI.062916.171819	WG574001-10	Matrix Spike Duplica	20/50	1	L16061279-02	06/29/16 17:18
98	NI.062916.172131	WG574001-10	Matrix Spike Duplica	20/50	50	L16061279-02	06/29/16 17:21
99	NI.062916.172442	L16061279-05	XU936TW019A	20/50	1		06/29/16 17:24
100	NI.062916.172754	L16061279-05	XU936TW019A	20/50	50		06/29/16 17:27
101	NI.062916.173105	L16061281-01	J6F0803-01	20/50	1		06/29/16 17:31
102	NI.062916.173419	WG574676-27	CCV		1		06/29/16 17:34

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062916A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573722,574570,574572,573717,574688,574690,573790

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.062916.173730	WG574676-28	CCB		1		06/29/16 17:37
104	NI.062916.174043	L16061294-03	EB01	20/50	1		06/29/16 17:40
105	NI.062916.174355	L16061294-03	EB01	20/50	50		06/29/16 17:43
106	NI.062916.174706	L16061296-01	OUTFALL 002/COMP	20/50	1		06/29/16 17:47
107	NI.062916.175019	WG574676-29	Interference Check		1		06/29/16 17:50
108	NI.062916.175331	WG574676-30	Interference Check		1		06/29/16 17:53
109	NI.062916.175644	WG574676-31	CCV		1		06/29/16 17:56
110	NI.062916.175955	WG574676-32	CCB		1		06/29/16 17:59
111	NI.062916.180308	WG574676-33	Low Level Continuing Calibra		1		06/29/16 18:03
112	NI.062916.180621	WG574192-02	Method/Prep Blank	.25/100	1		06/29/16 18:06
113	NI.062916.180932	WG574192-03	Laboratory Control S	.25/100	1		06/29/16 18:09
114	NI.062916.181244	WG574192-01	Reference Sample		1	L16061206-01	06/29/16 18:12
115	NI.062916.181555	L16061206-02	LF003SD0311-007 DUP	.251/100	1		06/29/16 18:15
116	NI.062916.181907	WG574192-04	Matrix Spike	.25/100	1	L16061206-01	06/29/16 18:19
117	NI.062916.182218	WG574192-05	Matrix Spike Duplica	.253/100	1	L16061206-01	06/29/16 18:22
118	NI.062916.182530	L16061206-05	LF003SD0312-007	.25/100	1		06/29/16 18:25
119	NI.062916.182841	WG574690-01	Post Digestion Spike		1	L16061206-05	06/29/16 18:28
120	NI.062916.183153	WG574690-02	Serial Dilution		5	L16061206-05	06/29/16 18:31
121	NI.062916.183504	WG574690-02	Serial Dilution		25	L16061206-05	06/29/16 18:35
122	NI.062916.183818	WG574676-34	CCV		1		06/29/16 18:38
123	NI.062916.184129	WG574676-35	CCB		1		06/29/16 18:41
124	NI.062916.184442	L16061207-01	SS007SD0709-007	.251/100	1		06/29/16 18:44
125	NI.062916.184754	L16061207-02	SS007SD0710-007	.25/100	1		06/29/16 18:47
126	NI.062916.185105	L16061208-01	DP005SD0513-007	.252/100	1		06/29/16 18:51
127	NI.062916.185417	L16061208-02	DP005SD0514-007	.251/100	1		06/29/16 18:54
128	NI.062916.185728	L16061291-01	V6F0270-01	.253/100	1		06/29/16 18:57
129	NI.062916.190040	L16061381-01	XU936DS00500A	.254/100	1		06/29/16 19:00
130	NI.062916.190351	L16061381-01	XU936DS00500A	.254/100	50		06/29/16 19:03
131	NI.062916.190703	L16061381-02	XU936DS00505A	.258/100	1		06/29/16 19:07
132	NI.062916.191014	L16061381-02	XU936DS00505A	.258/100	50		06/29/16 19:10
133	NI.062916.191327	WG574676-36	CCV		1		06/29/16 19:13
134	NI.062916.191639	WG574676-37	CCB		1		06/29/16 19:16
135	NI.062916.191952	L16061381-03	XU936DS00300A	.252/100	1		06/29/16 19:19
136	NI.062916.192303	L16061381-03	XU936DS00300A	.252/100	50		06/29/16 19:23

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062916A.REP

Analyst1: BKT Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705

ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607

CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345

Stannous : Hydroxylamine :

Workgroups: 573722,574570,574572,573717,574688,574690,573790

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	NI.062916.192615	L16061381-04	XU936DS00305A	.25/100	1		06/29/16 19:26
138	NI.062916.192926	L16061381-04	XU936DS00305A	.25/100	50		06/29/16 19:29
139	NI.062916.193237	L16061381-05	XU936DS00305C	.253/100	1		06/29/16 19:32
140	NI.062916.193550	L16061381-05	XU936DS00305C	.253/100	50		06/29/16 19:35
141	NI.062916.193901	L16061381-07	XU936DS00400A	.252/100	1		06/29/16 19:39
142	NI.062916.194213	L16061381-07	XU936DS00400A	.252/100	50		06/29/16 19:42
143	NI.062916.194524	L16061384-02	BFB-16-019	.253/100	1		06/29/16 19:45
144	NI.062916.194835	L16061384-04	BFB-16-020	.253/100	1		06/29/16 19:48
145	NI.062916.195149	WG574676-38	CCV		1		06/29/16 19:51
146	NI.062916.195500	WG574676-39	CCB		1		06/29/16 19:55
147	NI.062916.195813	L16061384-06	BFB-16-021	.253/100	1		06/29/16 19:58
148	NI.062916.200124	L16061384-08	BFB-16-022	.251/100	1		06/29/16 20:01
149	NI.062916.200436	L16061384-10	BFB-16-023	.254/100	1		06/29/16 20:04
150	NI.062916.200747	L16061384-12	BFB-16-024	.254/100	1		06/29/16 20:07
151	NI.062916.201101	WG574676-40	CCV		1		06/29/16 20:11
152	NI.062916.201412	WG574676-41	CCB		1		06/29/16 20:14
153	NI.062916.201726	WG573291-03	Method/Prep Blank	20/50	1		06/29/16 20:17
154	NI.062916.202037	WG573291-04	Laboratory Control S	20/50	1		06/29/16 20:20
155	NI.062916.202348	WG573291-01	Reference Sample		1	L16060974-01	06/29/16 20:23
156	NI.062916.202700	WG573291-05	Matrix Spike	20/50	1	L16060974-01	06/29/16 20:27
157	NI.062916.203011	WG573291-06	Matrix Spike Duplica	20/50	1	L16060974-01	06/29/16 20:30
158	NI.062916.203323	WG573790-03	Post Digestion Spike		1	L16060974-01	06/29/16 20:33
159	NI.062916.203634	WG573790-04	Serial Dilution		5	L16060974-01	06/29/16 20:36
160	NI.062916.203946	WG573790-04	Serial Dilution		25	L16060974-01	06/29/16 20:39
161	NI.062916.204259	WG574676-42	CCV		1		06/29/16 20:42
162	NI.062916.204611	WG574676-43	CCB		1		06/29/16 20:46

Page: 5 Approved: July 05, 2016

Microbac Laboratories Inc.

Data Checklist

Date: 28-JUN-2016
Analyst: BKT
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 574537
Runlog ID: 75986
Analytical Workgroups: 572184,573475,574522,574570,574571,574573

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	762,1380,1381
Level 4	732,787,822,823,1048,1142,1151,1154
Level 4	1155,1401,1402,1404,1408,1409,1410
Level 4	1412,1413,1416,1421,1443
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BKT
Secondary Reviewer	KHR
Comments	

Primary Reviewer:
29-JUN-2016

Secondary Reviewer:
29-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-29-2016 15:32:08

Microbac Laboratories Inc.

Data Checklist

Date: 29-JUN-2016
Analyst: BKT
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 574676
Runlog ID: 76013
Analytical Workgroups: 573722,574570,574572,573717,574688,574690,573790

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1279,1294,1381,1384
Level 4	661,822,823,883,912,974,986,1026
Level 4	1206,1207,1208,1265,1266,1269,1272
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BKT
Secondary Reviewer	JYH
Comments	

Primary Reviewer:
04-JUL-2016

Secondary Reviewer:
05-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-05-2016 12:36:33

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG574570

Login Number: L16060823

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
126F-061416	02	06/14/16					06/27/2016	12.9	180		06/29/16	15.1	180	
126F-061416	02	06/14/16					06/27/2016	12.9	180		06/28/16	14.4	180	
C08-061416	03	06/14/16					06/27/2016	12.8	180		06/28/16	14.3	180	
C08-061416	03	06/14/16					06/27/2016	12.8	180		06/29/16	15	180	
C03-061416	04	06/14/16					06/27/2016	12.8	180		06/28/16	14.3	180	
C03-061416	04	06/14/16					06/27/2016	12.8	180		06/29/16	14.9	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4829709
Report generated 06/30/2016 09:23

METHOD BLANK SUMMARY

Login Number: L16060823
Blank File ID: NI.062816.195129
Prep Date: 06/27/16 08:30
Analyzed Date: 06/28/16 19:51
Analyst: BKT

Work Group: WG574570
Blank Sample ID: WG574242-02
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG574242-03	NI.062816.195440	06/28/16 19:54	01
DUP	WG574242-04	NI.062816.200103	06/28/16 20:01	01
126F-061416	L16060823-02	NI.062816.204859	06/28/16 20:48	02
C08-061416	L16060823-03	NI.062816.205210	06/28/16 20:52	02
C03-061416	L16060823-04	NI.062816.205522	06/28/16 20:55	02
126F-061416	L16060823-02	NI.062916.122812	06/29/16 12:28	DL01
C08-061416	L16060823-03	NI.062916.123124	06/29/16 12:31	DL01
C03-061416	L16060823-04	NI.062916.123435	06/29/16 12:34	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4829710
Report generated 06/30/2016 09:24

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060823 Prep Date: 06/27/16 08:30 Sample ID: WG574242-02
Instrument ID: ICP-MS2 Run Date: 06/28/16 19:51 Prep Method: 3015
File ID: NI.062816.195129 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG574570 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-28-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Antimony, Total	0.000500	0.00200	0.000500	1	U
Arsenic, Total	0.000500	0.00200	0.000500	1	U
Barium, Total	0.00150	0.00600	0.00150	1	U
Cadmium, Total	0.000300	0.00120	0.000300	1	U
Chromium, Total	0.00100	0.00400	0.00100	1	U
Cobalt, Total	0.000500	0.00200	0.000500	1	U
Copper, Total	0.00100	0.00400	0.00100	1	U
Lead, Total	0.000500	0.00200	0.000500	1	U
Manganese, Total	0.00100	0.00400	0.00100	1	U
Nickel, Total	0.00200	0.00800	0.00200	1	U
Silver, Total	0.000500	0.00200	0.000500	1	U
Thallium, Total	0.000100	0.000400	0.000100	1	U
Vanadium, Total	0.000500	0.00200	0.000500	1	U
Zinc, Total	0.0125	0.0500	0.0125	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4829711
29-JUN-2016 08:34

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060823 Run Date: 06/28/2016 Sample ID: WG574242-03
Instrument ID: ICP-MS2 Run Time: 19:54 Prep Method: 3015
File ID: NI.062816.195440 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG574570 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD75998 Cal ID: ICP-MS-28-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Antimony, Total	0.125	0.120	96.4	80 - 120	
Arsenic, Total	0.125	0.124	99.0	80 - 120	
Barium, Total	0.125	0.121	96.5	80 - 120	
Cadmium, Total	0.125	0.120	95.7	80 - 120	
Chromium, Total	0.125	0.125	100	80 - 120	
Cobalt, Total	0.125	0.122	97.6	80 - 120	
Copper, Total	0.125	0.127	102	80 - 120	
Lead, Total	0.125	0.125	99.8	80 - 120	
Manganese, Total	0.125	0.128	103	80 - 120	
Nickel, Total	0.125	0.126	100	80 - 120	
Silver, Total	0.125	0.123	98.2	80 - 120	
Thallium, Total	0.125	0.122	97.3	80 - 120	
Vanadium, Total	0.125	0.123	98.1	80 - 120	
Zinc, Total	0.125	0.129	103	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4829712
Report generated: 06/29/2016 08:34

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060823 Cal ID: ICP-MS2- Worknum: WG574570
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG574242-01 File ID: NI.062816.195752 Dil: 1 Matrix: WATER
Sample ID: WG574242-05 MS File ID: NI.062816.200414 Dil: 1 Units: mg/L
Sample ID: WG574242-06 MSD File ID: NI.062816.200726 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Antimony	0.000998	0.125	0.123	97.9	0.125	0.120	95.5	2.49	80 - 120	20	
Arsenic	0.00141	0.125	0.127	101	0.125	0.126	99.9	0.561	80 - 120	20	
Barium	0.0414	0.125	0.160	95.3	0.125	0.156	92.0	2.54	80 - 120	20	
Cadmium	ND	0.125	0.121	97.2	0.125	0.118	94.0	3.31	80 - 120	20	
Chromium	ND	0.125	0.121	96.6	0.125	0.124	99.2	2.65	80 - 120	20	
Cobalt	ND	0.125	0.121	97.2	0.125	0.120	96.3	0.931	80 - 120	20	
Copper	0.00439	0.125	0.124	95.7	0.125	0.125	96.4	0.655	80 - 120	20	
Lead	0.00115	0.125	0.126	100	0.125	0.124	98.6	1.64	80 - 120	20	
Manganese	0.00611	0.125	0.129	98.4	0.125	0.129	98.3	0.106	80 - 120	20	
Nickel	0.00410	0.125	0.123	95.0	0.125	0.125	96.9	1.96	80 - 120	20	
Silver	ND	0.125	0.122	97.6	0.125	0.118	94.3	3.46	80 - 120	20	
Thallium	ND	0.125	0.123	98.5	0.125	0.121	97.0	1.54	80 - 120	20	
Vanadium	0.00107	0.125	0.124	98.5	0.125	0.123	97.8	0.621	80 - 120	20	
Zinc	0.0337	0.125	0.154	96.2	0.125	0.156	97.7	1.20	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4829713
Report generated 06/29/2016 08:34

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16060823 **Worknum:** WG574570
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG574570-02 **File ID:** NI.062816.201700 **Dil:** 5 **Units:** ug/L
Sample: L16060843-01 **File ID:** NI.062816.201037 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	0.382	F	2.24	F	486.00	
Arsenic	ND	U	ND	U		
Barium	29.9	X	30.7	X	2.82	
Cadmium	0.151	F	ND	U		
Chromium	ND	U	ND	U		
Cobalt	7.40	X	7.21	X	2.48	
Copper	0.509	F	ND	U		
Lead	ND	U	ND	U		
Manganese	716		689		3.69	
Nickel	17.5	X	17.0	X	2.69	
Silver	ND	U	ND	U		
Thallium	ND	U	ND	U		
Vanadium	ND	U	ND	U		
Zinc	55.5	X	55.3	F	0.51	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4829707
06/29/2016 08:34

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060823 **Worknum:** WG574570
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG574570-01 **File ID:** NI.062816.201349 **Dil:** 1 **Units:** ug/L
Sample ID: L16060843-01 **File ID:** NI.062816.201037 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	49.7		0.382	F	50	98.7	75 - 125	
ARSENIC	51.2		0	U	50	102.5	75 - 125	
BARIUM	78.1		29.9		50	96.4	75 - 125	
CADMIUM	49.2		0.151	F	50	98.1	75 - 125	
CHROMIUM	50.1		0	U	50	100.1	75 - 125	
COBALT	59.3		7.40		50	103.7	75 - 125	
COPPER	50.9		0.509	F	50	100.8	75 - 125	
LEAD	52.4		0	U	50	104.7	75 - 125	
MANGANESE	748		716		50	63.6	75 - 125	N
NICKEL	66.6		17.5		50	98.2	75 - 125	
SILVER	48.6		0	U	50	97.3	75 - 125	
THALLIUM	50.9		0	U	50	101.8	75 - 125	
VANADIUM	50.8		0	U	50	101.7	75 - 125	
ZINC	115		55.5		50	119.5	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4829708
Report generated: 06/29/2016 08:34

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16060823	Workgroup (AAB#):	WG574570
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG574537	Initial Calibration Date:	28-JUN-2016 13:15

	WG574537-01		WG574537-02		WG574537-03		WG574537-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	47.7	.4	303	50	245000	100	482000	.999953	
ARSENIC	0	-33.8	.4	11.1	50	59300	100	117000	.999972	
BARIUM	0	33.7	.4	159	50	107000	100	212000	.999991	
CADMIUM	0	3.30	.4	116	50	110000	100	219000	.999985	
CHROMIUM	0	7410	.4	8070	50	376000	100	727000	.999989	
COBALT	0	227	.4	599	50	370000	100	731000	.999947	
COPPER	0	135	.4	280	50	102000	100	195000	.999984	
LEAD	0	933	.4	2130	50	978000	100	1950000	.999942	
MANGANESE	0	835	.4	1350	50	340000	100	679000	.99986	
NICKEL	0	183	.4	306	50	100000	100	194000	1	
SILVER	0	79.0	.4	455	50	352000	100	679000	.999803	
THALLIUM	0	5.30	.4	473	50	438000	100	866000	.999971	
VANADIUM	0	1490	.4	1870	50	370000	100	719000	.999996	
ZINC	0	520	.4	1010	50	59300	100	114000	.999999	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4829716
Report generated: 30-JUN-2016 09:24

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16060823	Workgroup (AAB#):	WG574570
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG574676	Initial Calibration Date:	29-JUN-2016 11:35

	WG574676-01		WG574676-02		WG574676-03		WG574676-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	28.2	.4	255	50	227000	100	448000	.999981	
ARSENIC	0	-40.0	.4	-10.4	50	57000	100	110000	.999904	
BARIUM	0	25.3	.4	136	50	99600	100	196000	.999974	
CADMIUM	0	1.30	.4	122	50	102000	100	200000	.999946	
CHROMIUM	0	7540	.4	7930	50	379000	100	748000	.999997	
COBALT	0	239	.4	575	50	337000	100	648000	.99988	
COPPER	0	103	.4	285	50	94300	100	184000	.999979	
LEAD	0	873	.4	2280	50	926000	100	1830000	.999949	
MANGANESE	0	784	.4	1380	50	355000	100	686000	.999925	
NICKEL	0	221	.4	324	50	94600	100	186000	.999991	
SILVER	0	86.3	.4	412	50	318000	100	624000	.999961	
THALLIUM	0	1.70	.4	417	50	406000	100	804000	.999963	
VANADIUM	0	1430	.4	1850	50	385000	100	745000	.999935	
ZINC	0	365	.4	549	50	56000	100	108000	.999932	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4829716
Report generated: 30-JUN-2016 09:24

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060823
Instrument ID: ICP-MS2
File ID: NI.062816.132210
Workgroup (AAB#): WG574570
Matrix: WATER

Run Date: 06/28/2016
Run Time: 13:22
Analyst: BKT
Cal ID: ICP-MS2 - 28-JUN-16

Sample ID: WG574537-06
Method: 6020A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
COPPER	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.405	*
THALLIUM	.04	.16	.04	U
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4829718
Report generated 06/30/2016 09:24

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060823
Run Date: 06/29/2016
Sample ID: WG574676-06
Instrument ID: ICP-MS2
Run Time: 11:41
Method: 6020A
File ID: NI.062916.114146
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574570
Cal ID: ICP-MS2 - 29-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
COPPER	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.335	F
THALLIUM	.04	.16	.04	U
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4829718
Report generated 06/30/2016 09:24

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/28/2016
Sample ID: WG574537-11
Instrument ID: ICP-MS2
Run Time: 13:38
Method: 6020A
File ID: NI.062816.133810
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.259	F
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4829721
Report generated 06/30/2016 09:24

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/28/2016
Sample ID: WG574537-15
Instrument ID: ICP-MS2
Run Time: 14:34
Method: 6020A
File ID: NI.062816.143450
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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PDF File ID: 4829721
Report generated 06/30/2016 09:24

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/28/2016
Sample ID: WG574537-19
Instrument ID: ICP-MS2
Run Time: 15:13
Method: 6020A
File ID: NI.062816.151312
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.263	F
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/28/2016
Sample ID: WG574537-30
Instrument ID: ICP-MS2
Run Time: 18:52
Method: 6020A
File ID: NI.062816.185257
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
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Report generated 06/30/2016 09:24

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/28/2016
Sample ID: WG574537-33
Instrument ID: ICP-MS2
Run Time: 20:26
Method: 6020A
File ID: NI.062816.202637
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Report generated 06/30/2016 09:24

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/28/2016
Sample ID: WG574537-35
Instrument ID: ICP-MS2
Run Time: 21:04
Method: 6020A
File ID: NI.062816.210457
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Report generated 06/30/2016 09:24

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/29/2016
Sample ID: WG574676-11
Instrument ID: ICP-MS2
Run Time: 12:07
Method: 6020A
File ID: NI.062916.120734
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Report generated 06/30/2016 09:24

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/29/2016
Sample ID: WG574676-13
Instrument ID: ICP-MS2
Run Time: 12:40
Method: 6020A
File ID: NI.062916.124059
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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PDF File ID: 4829721
Report generated 06/30/2016 09:24

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060823
Run Date: 06/29/2016
Sample ID: WG574676-05
Instrument ID: ICP-MS2
Run Time: 11:38
Method: 6020A
File ID: NI.062916.113833
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 29-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	49.8	99.7	90 - 110	
Arsenic		50	50.9	102	90 - 110	
Barium		50	49.9	99.9	90 - 110	
Cadmium		50	50.3	101	90 - 110	
Chromium		50	50.0	100	90 - 110	
Cobalt		50	50.4	101	90 - 110	
Copper		50	50.8	102	90 - 110	
Lead		50	51.0	102	90 - 110	
Manganese		50	51.9	104	90 - 110	
Nickel		50	50.6	101	90 - 110	
Silver		50	50.9	102	90 - 110	
Thallium		50	50.7	101	90 - 110	
Vanadium		50	51.2	102	90 - 110	
Zinc		50	52.1	104	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4829717
Report generated 06/30/2016 09:24

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060823 Run Date: 06/28/2016 Sample ID: WG574537-05
Instrument ID: ICP-MS2 Run Time: 13:18 Method: 6020A
File ID: NI.062816.131857 Analyst: BKT Units: ug/L
Workgroup (AAB#): WG574570 Cal ID: ICP-MS - 28-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	48.3	96.6	90 - 110	
Arsenic		50	50.3	101	90 - 110	
Barium		50	48.2	96.4	90 - 110	
Cadmium		50	49.0	98.0	90 - 110	
Chromium		50	50.0	100	90 - 110	
Cobalt		50	50.2	100	90 - 110	
Copper		50	50.1	100	90 - 110	
Lead		50	48.9	97.7	90 - 110	
Manganese		50	50.2	100	90 - 110	
Nickel		50	49.7	99.4	90 - 110	
Silver		50	49.3	98.6	90 - 110	
Thallium		50	49.1	98.2	90 - 110	
Vanadium		50	49.7	99.5	90 - 110	
Zinc		50	50.7	101	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4829717
Report generated 06/30/2016 09:24

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/28/2016
Sample ID: WG574537-10
Instrument ID: ICP-MS2
Run Time: 13:34
Method: 6020A
File ID: NI.062816.133459
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0492	mg/L	98.4	90 - 110		
Arsenic		0.0500	0.0495	mg/L	99.0	90 - 110		
Barium		0.0500	0.0487	mg/L	97.5	90 - 110		
Cadmium		0.0500	0.0487	mg/L	97.4	90 - 110		
Chromium		0.0500	0.0494	mg/L	98.8	90 - 110		
Cobalt		0.0500	0.0512	mg/L	102	90 - 110		
Copper		0.0500	0.0496	mg/L	99.2	90 - 110		
Lead		0.0500	0.0496	mg/L	99.3	90 - 110		
Manganese		0.0500	0.0497	mg/L	99.5	90 - 110		
Nickel		0.0500	0.0495	mg/L	98.9	90 - 110		
Silver		0.0500	0.0487	mg/L	97.3	90 - 110		
Thallium		0.0500	0.0489	mg/L	97.7	90 - 110		
Vanadium		0.0500	0.0499	mg/L	99.8	90 - 110		
Zinc		0.0500	0.0495	mg/L	99.0	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4829720
Report generated 06/30/2016 09:24

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/28/2016
Sample ID: WG574537-14
Instrument ID: ICP-MS2
Run Time: 14:31
Method: 6020A
File ID: NI.062816.143138
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0480	mg/L	96.1	90 - 110		
Arsenic		0.0500	0.0501	mg/L	100	90 - 110		
Barium		0.0500	0.0474	mg/L	94.9	90 - 110		
Cadmium		0.0500	0.0480	mg/L	96.1	90 - 110		
Chromium		0.0500	0.0496	mg/L	99.1	90 - 110		
Cobalt		0.0500	0.0531	mg/L	106	90 - 110		
Copper		0.0500	0.0499	mg/L	99.7	90 - 110		
Lead		0.0500	0.0506	mg/L	101	90 - 110		
Manganese		0.0500	0.0492	mg/L	98.5	90 - 110		
Nickel		0.0500	0.0495	mg/L	99.0	90 - 110		
Silver		0.0500	0.0484	mg/L	96.8	90 - 110		
Thallium		0.0500	0.0490	mg/L	98.1	90 - 110		
Vanadium		0.0500	0.0508	mg/L	102	90 - 110		
Zinc		0.0500	0.0501	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4829720
Report generated 06/30/2016 09:24

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/28/2016
Sample ID: WG574537-18
Instrument ID: ICP-MS2
Run Time: 15:10
Method: 6020A
File ID: NI.062816.151001
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0504	mg/L	101	90 - 110		
Arsenic		0.0500	0.0499	mg/L	99.7	90 - 110		
Barium		0.0500	0.0485	mg/L	96.9	90 - 110		
Cadmium		0.0500	0.0487	mg/L	97.5	90 - 110		
Chromium		0.0500	0.0489	mg/L	97.9	90 - 110		
Cobalt		0.0500	0.0517	mg/L	103	90 - 110		
Copper		0.0500	0.0490	mg/L	97.9	90 - 110		
Lead		0.0500	0.0514	mg/L	103	90 - 110		
Manganese		0.0500	0.0487	mg/L	97.5	90 - 110		
Nickel		0.0500	0.0484	mg/L	96.8	90 - 110		
Silver		0.0500	0.0495	mg/L	98.9	90 - 110		
Thallium		0.0500	0.0506	mg/L	101	90 - 110		
Vanadium		0.0500	0.0498	mg/L	99.6	90 - 110		
Zinc		0.0500	0.0494	mg/L	98.9	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4829720
Report generated 06/30/2016 09:24

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823 Run Date: 06/28/2016 Sample ID: WG574537-29
Instrument ID: ICP-MS2 Run Time: 18:49 Method: 6020A
File ID: NI.062816.184946 Analyst: BKT QC Key: DOD4
Workgroup (AAB#): WG574570 Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0481	mg/L	96.2	90 - 110		
Arsenic		0.0500	0.0471	mg/L	94.1	90 - 110		
Barium		0.0500	0.0464	mg/L	92.9	90 - 110		
Cadmium		0.0500	0.0463	mg/L	92.7	90 - 110		
Chromium		0.0500	0.0469	mg/L	93.8	90 - 110		
Cobalt		0.0500	0.0469	mg/L	93.8	90 - 110		
Copper		0.0500	0.0475	mg/L	94.9	90 - 110		
Lead		0.0500	0.0484	mg/L	96.7	90 - 110		
Manganese		0.0500	0.0473	mg/L	94.6	90 - 110		
Nickel		0.0500	0.0476	mg/L	95.1	90 - 110		
Silver		0.0500	0.0474	mg/L	94.8	90 - 110		
Thallium		0.0500	0.0474	mg/L	94.8	90 - 110		
Vanadium		0.0500	0.0472	mg/L	94.5	90 - 110		
Zinc		0.0500	0.0472	mg/L	94.5	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4829720
Report generated 06/30/2016 09:24

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823 | Run Date: 06/28/2016 | Sample ID: WG574537-32
Instrument ID: ICP-MS2 | Run Time: 20:23 | Method: 6020A
File ID: NI.062816.202325 | Analyst: BKT | QC Key: DOD4
Workgroup (AAB#): WG574570 | Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0502	mg/L	100	90 - 110		
Arsenic		0.0500	0.0499	mg/L	99.8	90 - 110		
Barium		0.0500	0.0488	mg/L	97.7	90 - 110		
Cadmium		0.0500	0.0494	mg/L	98.8	90 - 110		
Chromium		0.0500	0.0508	mg/L	102	90 - 110		
Cobalt		0.0500	0.0517	mg/L	103	90 - 110		
Copper		0.0500	0.0507	mg/L	101	90 - 110		
Lead		0.0500	0.0515	mg/L	103	90 - 110		
Manganese		0.0500	0.0509	mg/L	102	90 - 110		
Nickel		0.0500	0.0501	mg/L	100	90 - 110		
Silver		0.0500	0.0500	mg/L	99.9	90 - 110		
Thallium		0.0500	0.0504	mg/L	101	90 - 110		
Vanadium		0.0500	0.0505	mg/L	101	90 - 110		
Zinc		0.0500	0.0506	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4829720
Report generated 06/30/2016 09:24

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823 Run Date: 06/28/2016 Sample ID: WG574537-34
Instrument ID: ICP-MS2 Run Time: 21:01 Method: 6020A
File ID: NI.062816.210146 Analyst: BKT QC Key: DOD4
Workgroup (AAB#): WG574570 Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0494	mg/L	98.8	90 - 110		
Arsenic		0.0500	0.0505	mg/L	101	90 - 110		
Barium		0.0500	0.0490	mg/L	98.1	90 - 110		
Cadmium		0.0500	0.0492	mg/L	98.4	90 - 110		
Chromium		0.0500	0.0506	mg/L	101	90 - 110		
Cobalt		0.0500	0.0511	mg/L	102	90 - 110		
Copper		0.0500	0.0509	mg/L	102	90 - 110		
Lead		0.0500	0.0534	mg/L	107	90 - 110		
Manganese		0.0500	0.0526	mg/L	105	90 - 110		
Nickel		0.0500	0.0509	mg/L	102	90 - 110		
Silver		0.0500	0.0485	mg/L	96.9	90 - 110		
Thallium		0.0500	0.0506	mg/L	101	90 - 110		
Vanadium		0.0500	0.0505	mg/L	101	90 - 110		
Zinc		0.0500	0.0506	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4829720
Report generated 06/30/2016 09:24

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/29/2016
Sample ID: WG574676-10
Instrument ID: ICP-MS2
Run Time: 12:00
Method: 6020A
File ID: NI.062916.120010
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0508	mg/L	102	90 - 110		
Arsenic		0.0500	0.0514	mg/L	103	90 - 110		
Barium		0.0500	0.0505	mg/L	101	90 - 110		
Cadmium		0.0500	0.0516	mg/L	103	90 - 110		
Chromium		0.0500	0.0504	mg/L	101	90 - 110		
Cobalt		0.0500	0.0538	mg/L	108	90 - 110		
Copper		0.0500	0.0507	mg/L	101	90 - 110		
Lead		0.0500	0.0529	mg/L	106	90 - 110		
Manganese		0.0500	0.0534	mg/L	107	90 - 110		
Nickel		0.0500	0.0502	mg/L	100	90 - 110		
Silver		0.0500	0.0508	mg/L	102	90 - 110		
Thallium		0.0500	0.0519	mg/L	104	90 - 110		
Vanadium		0.0500	0.0516	mg/L	103	90 - 110		
Zinc		0.0500	0.0510	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4829720
Report generated 06/30/2016 09:24

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/29/2016
Sample ID: WG574676-12
Instrument ID: ICP-MS2
Run Time: 12:37
Method: 6020A
File ID: NI.062916.123748
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0505	mg/L	101	90 - 110		
Arsenic		0.0500	0.0498	mg/L	99.6	90 - 110		
Barium		0.0500	0.0499	mg/L	99.8	90 - 110		
Cadmium		0.0500	0.0506	mg/L	101	90 - 110		
Chromium		0.0500	0.0489	mg/L	97.8	90 - 110		
Cobalt		0.0500	0.0506	mg/L	101	90 - 110		
Copper		0.0500	0.0500	mg/L	99.9	90 - 110		
Lead		0.0500	0.0499	mg/L	99.7	90 - 110		
Manganese		0.0500	0.0500	mg/L	99.9	90 - 110		
Nickel		0.0500	0.0491	mg/L	98.2	90 - 110		
Silver		0.0500	0.0505	mg/L	101	90 - 110		
Thallium		0.0500	0.0497	mg/L	99.4	90 - 110		
Vanadium		0.0500	0.0503	mg/L	101	90 - 110		
Zinc		0.0500	0.0498	mg/L	99.7	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4829720
Report generated 06/30/2016 09:24

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060823
Run Date: 06/28/2016
Sample ID: WG574537-07
Instrument ID: ICP-MS2
Run Time: 13:25
Method: 6020A
File ID: NI.062816.132523
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.414	ug/L	104	70 - 130		
Arsenic		0.400	0.419	ug/L	105	70 - 130		
Barium		0.750	0.681	ug/L	90.8	70 - 130		
Cadmium		0.240	0.234	ug/L	97.7	70 - 130		
Chromium		0.800	0.628	ug/L	78.5	70 - 130		
Cobalt		0.400	0.384	ug/L	96.1	70 - 130		
Copper		0.800	0.759	ug/L	94.9	70 - 130		
Lead		0.200	0.183	ug/L	91.6	70 - 130		
Manganese		0.500	0.437	ug/L	87.4	70 - 130		
Nickel		1.60	1.53	ug/L	95.5	70 - 130		
Silver		0.400	0.372	ug/L	92.9	70 - 130		
Thallium		0.0800	0.0768	ug/L	96.0	70 - 130		
Vanadium		0.400	0.332	ug/L	83.0	70 - 130		
Zinc		6.25	6.14	ug/L	98.3	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4829722
Report generated 06/30/2016 09:24

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060823
Run Date: 06/28/2016
Sample ID: WG574537-20
Instrument ID: ICP-MS2
Run Time: 15:16
Method: 6020A
File ID: NI.062816.151629
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.429	ug/L	107	70 - 130		
Arsenic		0.400	0.377	ug/L	94.2	70 - 130		
Barium		0.750	0.677	ug/L	90.2	70 - 130		
Cadmium		0.240	0.235	ug/L	98.1	70 - 130		
Chromium		0.800	0.595	ug/L	74.4	70 - 130		
Cobalt		0.400	0.388	ug/L	97.1	70 - 130		
Copper		0.800	0.739	ug/L	92.4	70 - 130		
Lead		0.200	0.192	ug/L	96.0	70 - 130		
Manganese		0.500	0.408	ug/L	81.6	70 - 130		
Nickel		1.60	1.48	ug/L	92.6	70 - 130		
Silver		0.400	0.384	ug/L	96.0	70 - 130		
Thallium		0.0800	0.0804	ug/L	101	70 - 130		
Vanadium		0.400	0.327	ug/L	81.9	70 - 130		
Zinc		6.25	6.24	ug/L	99.9	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4829722
Report generated 06/30/2016 09:24

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060823
Run Date: 06/28/2016
Sample ID: WG574537-31
Instrument ID: ICP-MS2
Run Time: 18:56
Method: 6020A
File ID: NI.062816.185610
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.386	ug/L	96.6	70 - 130		
Arsenic		0.400	0.381	ug/L	95.2	70 - 130		
Barium		0.750	0.671	ug/L	89.5	70 - 130		
Cadmium		0.240	0.217	ug/L	90.2	70 - 130		
Chromium		0.800	0.581	ug/L	72.7	70 - 130		
Cobalt		0.400	0.365	ug/L	91.2	70 - 130		
Copper		0.800	0.726	ug/L	90.7	70 - 130		
Lead		0.200	0.188	ug/L	93.9	70 - 130		
Manganese		0.500	0.396	ug/L	79.2	70 - 130		
Nickel		1.60	1.44	ug/L	89.7	70 - 130		
Silver		0.400	0.365	ug/L	91.2	70 - 130		
Thallium		0.0800	0.0752	ug/L	94.0	70 - 130		
Vanadium		0.400	0.309	ug/L	77.3	70 - 130		
Zinc		6.25	5.67	ug/L	90.8	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4829722
Report generated 06/30/2016 09:24

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060823
Run Date: 06/28/2016
Sample ID: WG574537-44
Instrument ID: ICP-MS2
Run Time: 23:22
Method: 6020A
File ID: NI.062816.232221
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 28-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.384	ug/L	96.1	70 - 130		
Arsenic		0.400	0.418	ug/L	105	70 - 130		
Barium		0.750	0.696	ug/L	92.8	70 - 130		
Cadmium		0.240	0.223	ug/L	92.9	70 - 130		
Chromium		0.800	0.654	ug/L	81.8	70 - 130		
Cobalt		0.400	0.379	ug/L	94.6	70 - 130		
Copper		0.800	0.746	ug/L	93.2	70 - 130		
Lead		0.200	0.200	ug/L	100	70 - 130		
Manganese		0.500	0.444	ug/L	88.8	70 - 130		
Nickel		1.60	1.53	ug/L	95.6	70 - 130		
Silver		0.400	0.372	ug/L	93.0	70 - 130		
Thallium		0.0800	0.0774	ug/L	96.8	70 - 130		
Vanadium		0.400	0.335	ug/L	83.8	70 - 130		
Zinc		6.25	5.99	ug/L	95.8	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4829722
Report generated 06/30/2016 09:24

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060823
Run Date: 06/29/2016
Sample ID: WG574676-07
Instrument ID: ICP-MS2
Run Time: 11:46
Method: 6020A
File ID: NI.062916.114653
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.456	ug/L	114	70 - 130		
Arsenic		0.400	0.429	ug/L	107	70 - 130		
Barium		0.750	0.733	ug/L	97.8	70 - 130		
Cadmium		0.240	0.237	ug/L	98.5	70 - 130		
Chromium		0.800	0.739	ug/L	92.4	70 - 130		
Cobalt		0.400	0.414	ug/L	103	70 - 130		
Copper		0.800	0.768	ug/L	96.0	70 - 130		
Lead		0.200	0.181	ug/L	90.3	70 - 130		
Manganese		0.500	0.468	ug/L	93.6	70 - 130		
Nickel		1.60	1.56	ug/L	97.7	70 - 130		
Silver		0.400	0.390	ug/L	97.5	70 - 130		
Thallium		0.0800	0.0871	ug/L	109	70 - 130		
Vanadium		0.400	0.382	ug/L	95.5	70 - 130		
Zinc		6.25	6.64	ug/L	106	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4829722
Report generated 06/30/2016 09:24

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16060823
Run Date: 06/29/2016
Sample ID: WG574676-14
Instrument ID: ICP-MS2
Run Time: 12:44
Method: 6020A
File ID: NI.062916.124412
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574570
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.401	ug/L	100	70 - 130		
Arsenic		0.400	0.394	ug/L	98.6	70 - 130		
Barium		0.750	0.718	ug/L	95.7	70 - 130		
Cadmium		0.240	0.227	ug/L	94.7	70 - 130		
Chromium		0.800	0.768	ug/L	96.0	70 - 130		
Cobalt		0.400	0.405	ug/L	101	70 - 130		
Copper		0.800	0.751	ug/L	93.9	70 - 130		
Lead		0.200	0.179	ug/L	89.4	70 - 130		
Manganese		0.500	0.469	ug/L	93.8	70 - 130		
Nickel		1.60	1.53	ug/L	95.6	70 - 130		
Silver		0.400	0.383	ug/L	95.7	70 - 130		
Thallium		0.0800	0.0809	ug/L	101	70 - 130		
Vanadium		0.400	0.370	ug/L	92.4	70 - 130		
Zinc		6.25	6.89	ug/L	110	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4829722
Report generated 06/30/2016 09:24

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060823
Instrument ID: ICP-MS2
Sol. A : WG574537-08 **File ID:** NI.062816.132834
Sol. AB : WG574537-09 **File ID:** NI.062816.133145

Workgroup (AAB#): WG574570
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.0836	NS	100	94.7	94.7	
Arsenic	NS	-0.0118	NS	100	98.9	98.9	
Barium	NS	0.266	NS	100	94.5	94.5	
Cadmium	NS	-0.106	NS	100	95.6	95.6	
Chromium	NS	-0.0468	NS	100	96.5	96.5	
Cobalt	NS	0.0276	NS	100	97.7	97.7	
Copper	NS	0.231	NS	100	96.5	96.5	
Lead	NS	0.0352	NS	100	98.2	98.2	
Manganese	NS	0.0680	NS	100	97.7	97.7	
Nickel	NS	0.332	NS	100	96.0	96.0	
Silver	NS	0.0254	NS	100	89.5	89.5	
Thallium	NS	0.0257	NS	100	96.4	96.4	
Vanadium	NS	-0.0466	NS	100	96.5	96.5	
Zinc	NS	0.903	NS	100	101	101	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4829719
Report generated 06/30/2016 09:24

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060823
Instrument ID: ICP-MS2
Sol. A : WG574537-16 **File ID:** NI.062816.150336
Sol. AB : WG574537-17 **File ID:** NI.062816.150647

Workgroup (AAB#): WG574570
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.126	NS	100	101	101	
Arsenic	NS	-0.0170	NS	100	102	102	
Barium	NS	0.271	NS	100	98.3	98.3	
Cadmium	NS	-0.0956	NS	100	99.8	99.8	
Chromium	NS	-0.00590	NS	100	97.3	97.3	
Cobalt	NS	0.0242	NS	100	102	102	
Copper	NS	0.234	NS	100	97.4	97.4	
Lead	NS	0.0422	NS	100	102	102	
Manganese	NS	0.0683	NS	100	97.7	97.7	
Nickel	NS	0.343	NS	100	95.9	95.9	
Silver	NS	0.0228	NS	100	91.0	91.0	
Thallium	NS	0.0182	NS	100	99.2	99.2	
Vanadium	NS	-0.0922	NS	100	100	100	
Zinc	NS	0.968	NS	100	103	103	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4829719
Report generated 06/30/2016 09:24

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16060823
Instrument ID: ICP-MS2
Sol. A : WG574676-08 **File ID:** NI.062916.115053
Sol. AB : WG574676-09 **File ID:** NI.062916.115447

Workgroup (AAB#): WG574570
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.0658	NS	100	100	100	
Arsenic	NS	0.0161	NS	100	105	105	
Barium	NS	0.303	NS	100	98.4	98.4	
Cadmium	NS	-0.103	NS	100	101	101	
Chromium	NS	0.0680	NS	100	101	101	
Cobalt	NS	0.0292	NS	100	105	105	
Copper	NS	0.245	NS	100	100	100	
Lead	NS	0.0174	NS	100	102	102	
Manganese	NS	0.0629	NS	100	105	105	
Nickel	NS	0.331	NS	100	100	100	
Silver	NS	0.0271	NS	100	95.3	95.3	
Thallium	NS	0.0271	NS	100	100	100	
Vanadium	NS	0.0706	NS	100	103	103	
Zinc	NS	1.14	NS	100	104	104	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4829719
Report generated 06/30/2016 09:24

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060823 **Analytical Method:** 6020
Analytical Workgroup: WG574570 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 28-JUN-2016 13:06

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060823-02	SAMP	28-JUN-2016 20:48	92.896	101.808	97.319
L16060823-03	SAMP	28-JUN-2016 20:52	93.551	101.87	99.333
L16060823-04	SAMP	28-JUN-2016 20:55	93.637	99.094	97.786
WG574242-02	BLANK	28-JUN-2016 19:51	99.476	99.537	97.857
WG574242-03	LCS	28-JUN-2016 19:54	99.956	99.501	98.669
WG574537-05	ICV	28-JUN-2016 13:18	106.21	104.263	104.758
WG574537-06	ICB	28-JUN-2016 13:22	103.902	104.951	103.59
WG574537-07	LLICV	28-JUN-2016 13:25	104.131	100.167	102.925
WG574537-08	ICS	28-JUN-2016 13:28	105.453	105.812	102.55
WG574537-09	ICS	28-JUN-2016 13:31	104.707	103.975	104.833
WG574537-10	CCV	28-JUN-2016 13:34	105.977	103.288	105.534
WG574537-11	CCB	28-JUN-2016 13:38	102.403	102.67	102.767
WG574537-14	CCV	28-JUN-2016 14:31	103.407	95.988	101.793
WG574537-15	CCB	28-JUN-2016 14:34	104.225	98.805	100.724
WG574537-16	ICS	28-JUN-2016 15:03	99.952	99.435	100.043
WG574537-17	ICS	28-JUN-2016 15:06	101.575	99.874	97.332
WG574537-18	CCV	28-JUN-2016 15:10	100.244	98.973	99.201
WG574537-19	CCB	28-JUN-2016 15:13	103.776	99.505	101.81
WG574537-20	LLCCV	28-JUN-2016 15:16	99.051	96.111	96.093
WG574537-29	CCV	28-JUN-2016 18:49	100.019	101.137	98.931
WG574537-30	CCB	28-JUN-2016 18:52	100.148	99.202	100.624
WG574537-31	LLCCV	28-JUN-2016 18:56	95.839	97.87	93.931
WG574537-32	CCV	28-JUN-2016 20:23	102.351	100.903	101.064
WG574537-33	CCB	28-JUN-2016 20:26	99.219	96.376	100.773
WG574537-34	CCV	28-JUN-2016 21:01	96.559	99.919	99.677
WG574537-35	CCB	28-JUN-2016 21:04	100.258	102.056	98.569
WG574537-44	LLCCV	28-JUN-2016 23:22	91.439	93.342	91.269
WG574570-01	PSPK	28-JUN-2016 20:13	100.708	100.256	100.218
WG574570-02	SERIAL	28-JUN-2016 20:17	103.535	103.697	101.2

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4829715
Report generated: 06/30/2016 09:24

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060823 **Analytical Method:** 6020
Analytical Workgroup: WG574570 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 29-JUN-2016 11:25

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060823-02	SAMP	29-JUN-2016 12:28	99.08	100.775	98.792
L16060823-03	SAMP	29-JUN-2016 12:31	99.415	102.35	99.462
L16060823-04	SAMP	29-JUN-2016 12:34	102.162	101.008	100.275
WG574676-05	ICV	29-JUN-2016 11:38	98.257	100.661	96.465
WG574676-06	ICB	29-JUN-2016 11:41	98.914	99.091	98.14
WG574676-07	LLICV	29-JUN-2016 11:46	95.79	95.394	93.877
WG574676-08	ICS	29-JUN-2016 11:50	98.596	98.274	96.165
WG574676-09	ICS	29-JUN-2016 11:54	97.891	98.362	95.991
WG574676-10	CCV	29-JUN-2016 12:00	96.559	97.448	96.281
WG574676-11	CCB	29-JUN-2016 12:07	98.969	97.431	96.855
WG574676-12	CCV	29-JUN-2016 12:37	99.303	102.045	96.376
WG574676-13	CCB	29-JUN-2016 12:40	100.991	102.01	98.548
WG574676-14	LLCCV	29-JUN-2016 12:44	96.535	95.69	95.451

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4829715
Report generated: 06/30/2016 09:24

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16060823 **Analytical Method:** 6020
Analytical Workgroup: WG574570 **Matrix:** 2
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 28-JUN-2016 13:06

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060843-01	SAMP	28-JUN-2016 20:10	97.785	95.068	99.061

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4829715
Report generated: 06/30/2016 09:24

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16060823 **Date:** 04/19/2016
Insturment ID: ICP-MS2 **Method:** 6020A

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Uranium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4829714
Report generated: 06/29/2016 08:34

2.3.2.3 Raw Data

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Tuesday, June 28, 2016 12:45:36

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	7.025	1331	2024	0.706	
Mg	23.985	24.025	4508	2020	0.701	
Co	58.933	58.925	11686	2022	0.701	
In	114.904	114.875	22861	2028	0.696	
U	238.050	238.025	47455	2043	0.688	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	5.573
5.575	2.596
5.625	3.076
5.675	2.368
5.725	2.568
5.775	3.011
5.825	2.517
5.875	2.694
5.925	1.595
5.975	3.373
6.025	3.068
6.075	2.439
6.125	2.845
6.175	3.293
6.225	6.959
6.275	54.149
6.325	79.756
6.375	69.722
6.425	99.103
6.475	35.972
6.525	19.569
6.575	4.348
6.625	4.647
6.675	4.116
6.725	2.239
6.775	2.849
6.825	1.600

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6.875	3.248
6.925	2.794
6.975	1.665
7.025	2.844
7.075	2.994
7.125	3.503
7.175	2.980
7.225	3.713
7.275	5.087
7.325	35.264
7.375	93.541
7.425	136.931
7.475	82.402
7.525	71.261
7.575	39.123
7.625	180.662
7.675	64.358
7.725	47.507
7.775	71.261
7.825	70.711
7.875	52.705
7.925	46.481
7.975	63.888
8.025	74.689
8.075	64.359
8.125	63.888
8.175	34.401
8.225	46.481
8.275	49.793
8.325	81.441
8.375	60.858
8.425	67.420
8.475	108.653
22.525	223.607
22.575	90.014
22.625	44.605
22.675	65.617
22.725	58.975
22.775	40.945
22.825	35.460
22.875	18.054
22.925	42.061
22.975	53.715
23.025	19.357
23.075	24.491
23.125	8.438
23.175	12.837

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23.225	30.858
23.275	24.845
23.325	45.141
23.375	26.438
23.425	14.816
23.475	14.263
23.525	12.137
23.575	3.832
23.625	2.363
23.675	1.595
23.725	2.170
23.775	2.317
23.825	1.497
23.875	1.501
23.925	1.731
23.975	0.863
24.025	2.634
24.075	2.734
24.125	2.053
24.175	2.398
24.225	2.993
24.275	2.883
24.325	7.686
24.375	28.384
24.425	36.617
24.475	12.141
24.525	3.189
24.575	0.926
24.625	1.585
24.675	1.547
24.725	2.051
24.775	1.408
24.825	2.678
24.875	1.711
24.925	1.949
24.975	2.595
25.025	3.005
25.075	2.962
25.125	2.366
25.175	2.463
25.225	2.722
25.275	9.971
25.325	31.599
25.375	47.140
25.425	64.885
25.475	6.734
57.525	8.866

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57.575	5.291
57.625	3.440
57.675	3.697
57.725	3.076
57.775	2.567
57.825	2.416
57.875	1.794
57.925	2.766
57.975	2.199
58.025	1.926
58.075	2.254
58.125	1.436
58.175	1.390
58.225	3.504
58.275	5.534
58.325	34.267
58.375	33.055
58.425	20.772
58.475	14.356
58.525	5.854
58.575	3.115
58.625	4.057
58.675	2.315
58.725	2.604
58.775	2.171
58.825	1.290
58.875	1.298
58.925	2.935
58.975	1.929
59.025	1.078
59.075	1.921
59.125	2.163
59.175	2.388
59.225	3.289
59.275	8.929
59.325	38.030
59.375	58.736
59.425	28.284
59.475	17.563
59.525	12.128
59.575	6.526
59.625	2.279
59.675	2.377
59.725	6.247
59.775	4.326
59.825	2.635
59.875	3.246

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59.925	1.954
59.975	3.753
60.025	5.882
60.075	3.380
60.125	2.788
60.175	3.075
60.225	4.430
60.275	18.947
60.325	43.241
60.375	22.017
60.425	79.756
60.475	50.461
113.525	7.111
113.575	1.614
113.625	3.295
113.675	3.378
113.725	2.143
113.775	2.366
113.825	3.191
113.875	4.581
113.925	1.498
113.975	2.463
114.025	3.675
114.075	2.767
114.125	4.064
114.175	2.276
114.225	6.994
114.275	28.008
114.325	41.691
114.375	17.526
114.425	9.127
114.475	6.547
114.525	3.985
114.575	2.757
114.625	3.785
114.675	2.945
114.725	3.014
114.775	2.252
114.825	1.319
114.875	1.984
114.925	1.415
114.975	0.577
115.025	0.422
115.075	1.851
115.125	0.695
115.175	3.426
115.225	3.732

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115.275	9.818
115.325	57.810
115.375	52.705
115.425	23.458
115.475	18.657
115.525	4.767
115.575	6.521
115.625	4.984
115.675	3.649
115.725	7.463
115.775	7.302
115.825	2.294
115.875	3.587
115.925	2.925
115.975	3.587
116.025	4.548
116.075	6.187
116.125	2.246
116.175	11.560
116.225	3.389
116.275	17.538
116.325	51.618
116.375	52.705
116.425	42.127
116.475	34.312
236.525	
236.575	28.853
236.625	56.165
236.675	51.701
236.725	11.620
236.775	50.775
236.825	27.217
236.875	33.431
236.925	29.881
236.975	45.955
237.025	46.771
237.075	7.402
237.125	30.162
237.175	24.686
237.225	34.297
237.275	16.110
237.325	20.328
237.375	28.770
237.425	26.702
237.475	18.887
237.525	24.816
237.575	6.725

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237.625	8.740
237.675	3.668
237.725	2.023
237.775	1.587
237.825	3.110
237.875	1.530
237.925	2.794
237.975	3.068
238.025	2.967
238.075	2.352
238.125	2.652
238.175	2.474
238.225	2.129
238.275	1.500
238.325	2.197
238.375	3.421
238.425	3.111
238.475	6.669
238.525	16.077
238.575	17.557
238.625	21.969
238.675	32.775
238.725	22.232
238.775	26.146
238.825	21.694
238.875	19.088
238.925	8.384
238.975	17.180
239.025	59.843
239.075	31.485
239.125	33.497
239.175	31.181
239.225	27.834
239.275	28.743
239.325	26.503
239.375	17.174
239.425	9.195
239.475	35.446

Approved: June 29, 2016

SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 6/28/2016 12:50:43 PM
End Time: 6/28/2016 12:52:55 PM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 5221.30
        Obtained Intensity (Mg 23.985): 136183.87
        Obtained Intensity (In 114.904): 66441.11
        Obtained Intensity (U 238.05): 147068.09
        Obtained Intensity (Bkgd 220): 0.20
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.018 (=3731.53 / 205818.69)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.004 (=890.23 / 205818.69)
```

Report Date/Time: Tuesday, June 28, 2016 12:52:56
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SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 6/28/2016 12:50:43 PM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 5221.30
                Obtained Intensity (Mg 23.985): 136183.87
                Obtained Intensity (In 114.904): 66441.11
                Obtained Intensity (U 238.05): 147068.09
                Obtained Intensity (Bkgd 220): 0.20
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.018 (=3731.53 / 205818.69)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.004 (=890.23 / 205818.69)
[Passed]  Optimum value(s): N/A

End Time: 6/28/2016 12:52:55 PM
```


Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Tuesday, June 28, 2016 13:02:57
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	81760.1	2.0				ug/L		Standard
	Be	9	16.7	75.5				ug/L		Standard
	Al	27	1410.1	2.3				ug/L		Standard
	Sc	45	39543.2	2.7				ug/L		Standard
	Ti	47	39.0	9.2				ug/L		Standard
	V	51	1415.2	6.8				ug/L		Standard
	Cr	52	6946.3	1.7				ug/L		Standard
	Cr	53	328.3	14.1				ug/L		Standard
	Mn	55	823.0	8.8				ug/L		Standard
	Co	59	251.7	9.6				ug/L		Standard
	Ni	60	192.0	8.0				ug/L		Standard
	Cu	65	140.7	5.3				ug/L		Standard
	Zn	66	490.7	3.4				ug/L		Standard
>	Ge	72	515086.9	1.2				ug/L		Standard
	As	75	19.8	169.9				ug/L		Standard
	Se	82	15.3	19.8				ug/L		Standard
	Se-1	77	48.0	15.7				ug/L		Standard
>	Ga	71	90.0	5.6				mg/L		Standard
	Rb	85	23.3	68.9				ug/L		Standard
	Y	89	448509.9	0.5				ug/L		Standard
>	Rh	103	15.0	66.7				ug/L		Standard
	Mo	98	10.9	19.2				ug/L		Standard
	Ag	107	134.0	44.7				ug/L		Standard
	Cd	111	6.6	57.0				mg/L		Standard
	Cd	114	16.1	68.4				ug/L		Standard
>	In	115	611116.5	1.9				ug/L		Standard
	Sn	118	518.3	7.2				ug/L		Standard
	Sb	123	126.7	13.8				ug/L		Standard
	Ba	135	45.3	39.8				ug/L		Standard
	Ce	140	298.3	72.3				ug/L		Standard
>	Tb	159	977942.3	1.0				ug/L		Standard
	Ho	165	11.7	24.7				ug/L		Standard
	Tl	203	30.7	114.0				ug/L		Standard
	Tl	205	20.0	152.1				ug/L		Standard
	Pb	206	285.7	7.2				ug/L		Standard
	Pb	207	257.0	5.7				ug/L		Standard
	Pb	208	955.7	3.9				ug/L		Standard
	U	238	17.0	67.8				ug/L		Standard
>	Bi	209	557080.4	0.4				ug/L		Standard

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	Na	23	0.0		mg/L	Standard
	Mg	24	31.7	36.5	mg/L	Standard
	K	39	30.0	57.7	mg/L	Standard
	Ca	43	48.3	43.1	mg/L	Standard
	Fe	54	159.3	19.3	mg/L	Standard
	Fe	57	195.0	11.2	mg/L	Standard
>	**Sc-1**	45	39543.2	2.7	mg/L	Standard
	Cl	35	27641.9	2.8	ug/L	Standard
	Kr	83	2.0	50.0	ug/L	Standard
	Br	81	1646.8	11.1	ug/L	Standard
	P	31	15231.0	1.6	ug/L	Standard
	S	34	1845.1	7.5	ug/L	Standard
	Sr	88	70.0	12.4	ug/L	Standard
	C	12	113.3	28.4	mg/L	Standard
	N	14	0.0		mg/L	Standard
	Hg	202	0.0		mg/L	Standard
	Dy	164	12.4	122.2	mg/L	Standard
	Ho-1	165	11.7	24.7	mg/L	Standard
	Er	166	20.0	50.0	mg/L	Standard
	I	127	1161.7	12.0	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Blank
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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Tuesday, June 28, 2016 13:06:09
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83638.6	0.9				ug/L	81760	Standard
	Be	9	11.7	49.5				ug/L	17	Standard
	Al	27	1445.1	4.5				ug/L	1410	Standard
	Sc	45	40184.9	2.0				ug/L	39543	Standard
	Ti	47	38.3	12.0				ug/L	39	Standard
	V	51	1492.6	2.6				ug/L	1415	Standard
	Cr	52	7409.5	2.1				ug/L	6946	Standard
	Cr	53	321.7	15.3				ug/L	328	Standard
	Mn	55	835.0	1.8				ug/L	823	Standard
	Co	59	226.7	11.0				ug/L	252	Standard
	Ni	60	182.7	5.1				ug/L	192	Standard
	Cu	65	134.7	15.9				ug/L	141	Standard
	Zn	66	519.7	4.6				ug/L	491	Standard
>	**Ge**	72	517782.5	2.4				ug/L	515087	Standard
	As	75	-33.8	72.0				ug/L	20	Standard
	Se	82	16.9	27.2				ug/L	15	Standard
	Se-1	77	48.7	14.9				ug/L	48	Standard
>	**Ga**	71	95.0	19.0				mg/L	90	Standard
	Rb	85	33.3	82.6				ug/L	23	Standard
	Y	89	456301.2	1.1				ug/L	448510	Standard
>	**Rh**	103	21.7	58.1				ug/L	15	Standard
	Mo	98	8.3	58.9				ug/L	11	Standard
	Ag	107	79.0	9.1				ug/L	134	Standard
	Cd	111	3.3	17.5				mg/L	7	Standard
	Cd	114	6.2	12.1				ug/L	16	Standard
>	**In**	115	624714.7	2.4				ug/L	611117	Standard
	Sn	118	515.0	5.4				ug/L	518	Standard
	Sb	123	47.7	15.0				ug/L	127	Standard
	Ba	135	33.7	27.6				ug/L	45	Standard
	Ce	140	86.7	24.0				ug/L	298	Standard
>	**Tb**	159	1001347.1	1.8				ug/L	977942	Standard
	Ho	165	6.7	43.3				ug/L	12	Standard
	Tl	203	5.3	60.3				ug/L	31	Standard
	Tl	205	3.3	86.6				ug/L	20	Standard
	Pb	206	276.7	3.7				ug/L	286	Standard
	Pb	207	213.3	7.3				ug/L	257	Standard
	Pb	208	933.0	3.4				ug/L	956	Standard
	U	238	4.7	12.4				ug/L	17	Standard
>	**Bi**	209	562888.8	0.9				ug/L	557080	Standard

Sample ID: Standard 1
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	Na	23	0.0		mg/L	0	Standard
	Mg	24	36.7	7.9	mg/L	32	Standard
	K	39	28.3	44.4	mg/L	30	Standard
	Ca	43	36.7	28.4	mg/L	48	Standard
	Fe	54	172.5	32.0	mg/L	159	Standard
	Fe	57	211.7	34.4	mg/L	195	Standard
>	**Sc-1**	45	40184.9	2.0	mg/L	39543	Standard
	Cl	35	29114.6	1.1	ug/L	27642	Standard
	Kr	83	3.3	96.4	ug/L	2	Standard
	Br	81	1676.8	6.8	ug/L	1647	Standard
	P	31	15918.4	1.2	ug/L	15231	Standard
	S	34	1885.1	11.3	ug/L	1845	Standard
	Sr	88	58.3	21.6	ug/L	70	Standard
	C	12	116.7	24.7	mg/L	113	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	0.0		mg/L	0	Standard
	Dy	164	16.2	93.4	mg/L	12	Standard
	Ho-1	165	6.7	43.3	mg/L	12	Standard
	Er	166	10.0	100.0	mg/L	20	Standard
	I	127	1170.0	16.3	mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⎣	Rb	85
⎡	Y	89
⎣>	Rh	103
⎡	Mo	98
⎢	Ag	107
⎢	Cd	111
⎢	Cd	114
⎢>	In	115
⎢	Sn	118
⎢	Sb	123
⎣	Ba	135
⎡	Ce	140
⎣>	Tb	159
⎡	Ho	165
⎢	Tl	203
⎢	Tl	205
⎢	Pb	206
⎢	Pb	207
⎢	Pb	208
⎢	U	238
⎣>	Bi	209
⎡	Na	23
⎢	Mg	24
⎢	K	39
⎢	Ca	43
⎢	Fe	54
⎢	Fe	57
⎣>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Tuesday, June 28, 2016 13:09:21
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82626.5	2.9				ug/L	81760	Standard
	Be	9	60.0	14.4				ug/L	17	Standard
	Al	27	10023.3	4.0				ug/L	1410	Standard
	Sc	45	41007.1	1.4				ug/L	39543	Standard
	Ti	47	69.0	5.8				ug/L	39	Standard
	V	51	1868.4	2.4				ug/L	1415	Standard
	Cr	52	8071.5	1.1				ug/L	6946	Standard
	Cr	53	360.0	4.2				ug/L	328	Standard
	Mn	55	1347.7	1.9				ug/L	823	Standard
	Co	59	599.0	5.9				ug/L	252	Standard
	Ni	60	305.7	5.8				ug/L	192	Standard
	Cu	65	280.3	2.3				ug/L	141	Standard
	Zn	66	1008.0	4.7				ug/L	491	Standard
>	**Ge**	72	539572.1	1.8				ug/L	515087	Standard
	As	75	11.1	230.1				ug/L	20	Standard
	Se	82	20.4	17.1				ug/L	15	Standard
	Se-1	77	60.7	1.9				ug/L	48	Standard
>	**Ga**	71	83.3	19.3				mg/L	90	Standard
	Rb	85	31.7	48.2				ug/L	23	Standard
	Y	89	463986.2	1.2				ug/L	448510	Standard
>	**Rh**	103	13.3	57.3				ug/L	15	Standard
	Mo	98	329.5	2.8				ug/L	11	Standard
	Ag	107	455.0	1.5				ug/L	134	Standard
	Cd	111	115.7	6.5				mg/L	7	Standard
	Cd	114	292.0	6.0				ug/L	16	Standard
>	**In**	115	625608.8	0.7				ug/L	611117	Standard
	Sn	118	920.0	9.2				ug/L	518	Standard
	Sb	123	303.4	7.6				ug/L	127	Standard
	Ba	135	158.7	8.0				ug/L	45	Standard
	Ce	140	88.3	42.5				ug/L	298	Standard
>	**Tb**	159	1002874.0	1.4				ug/L	977942	Standard
	Ho	165	11.7	24.7				ug/L	12	Standard
	Tl	203	472.7	2.0				ug/L	31	Standard
	Tl	205	391.7	11.0				ug/L	20	Standard
	Pb	206	628.7	5.7				ug/L	286	Standard
	Pb	207	539.3	6.7				ug/L	257	Standard
	Pb	208	2133.7	2.7				ug/L	956	Standard
	U	238	388.7	5.1				ug/L	17	Standard
>	**Bi**	209	570508.1	0.4				ug/L	557080	Standard

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	Na	23	0.0		mg/L	0	Standard
	Mg	24	48.3	26.0	mg/L	32	Standard
	K	39	45.0	19.2	mg/L	30	Standard
	Ca	43	36.7	43.8	mg/L	48	Standard
	Fe	54	162.5	17.6	mg/L	159	Standard
	Fe	57	193.3	3.0	mg/L	195	Standard
>	**Sc-1**	45	41007.1	1.4	mg/L	39543	Standard
	Cl	35	29715.1	0.6	ug/L	27642	Standard
	Kr	83	3.0	33.3	ug/L	2	Standard
	Br	81	1836.8	4.6	ug/L	1647	Standard
	P	31	16030.1	3.1	ug/L	15231	Standard
	S	34	1895.1	1.4	ug/L	1845	Standard
	Sr	88	61.7	9.4	ug/L	70	Standard
	C	12	143.3	21.3	mg/L	113	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	0.0		mg/L	0	Standard
	Dy	164	19.5	50.0	mg/L	12	Standard
	Ho-1	165	11.7	24.7	mg/L	12	Standard
	Er	166	10.0	100.0	mg/L	20	Standard
	I	127	1208.4	23.1	mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Tuesday, June 28, 2016 13:12:32
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83151.0	2.6				ug/L	81760	Standard
	Be	9	50594.4	3.3	**50.0000**	0.655	1.3	ug/L	17	Standard
	Al	27	7832644.8	2.3	**50.0000**	1.818	3.6	ug/L	1410	Standard
	Sc	45	42972.5	0.7				ug/L	39543	Standard
	Ti	47	26044.7	0.2	**100.0000**	1.044	1.0	ug/L	39	Standard
	V	51	369925.9	1.5	**50.0000**	0.431	0.9	ug/L	1415	Standard
	Cr	52	376035.2	0.6	**50.0000**	0.381	0.8	ug/L	6946	Standard
	Cr	53	47201.8	2.5	**50.0000**	1.648	3.3	ug/L	328	Standard
	Mn	55	339840.1	0.9	**50.0000**	0.028	0.1	ug/L	823	Standard
	Co	59	369835.8	1.4	**50.0000**	0.329	0.7	ug/L	252	Standard
	Ni	60	100390.8	0.3	**50.0000**	0.410	0.8	ug/L	192	Standard
	Cu	65	101743.1	0.9	**50.0000**	0.203	0.4	ug/L	141	Standard
	Zn	66	59304.5	0.9	**50.0000**	0.371	0.7	ug/L	491	Standard
>	**Ge**	72	547553.1	0.8				ug/L	515087	Standard
	As	75	59263.2	0.8	**50.0000**	0.205	0.4	ug/L	20	Standard
	Se	82	6019.0	1.0	**50.0000**	0.596	1.2	ug/L	15	Standard
	Se-1	77	4068.9	1.3	**50.0000**	0.434	0.9	ug/L	48	Standard
>	**Ga**	71	120.0	22.0				mg/L	90	Standard
	Rb	85	803.4	2.6				ug/L	23	Standard
	Y	89	462085.4	0.0				ug/L	448510	Standard
>	**Rh**	103	33.3	52.7				ug/L	15	Standard
	Mo	98	278482.4	0.5	**100.0000**	0.941	0.9	ug/L	11	Standard
	Ag	107	351728.0	0.3	**50.0000**	0.642	1.3	ug/L	134	Standard
	Cd	111	110396.3	1.4	**50.0000**	0.556	1.1	mg/L	7	Standard
	Cd	114	267604.2	1.4	**50.0000**	0.663	1.3	ug/L	16	Standard
>	**In**	115	627830.2	1.2				ug/L	611117	Standard
	Sn	118	304675.0	1.7	**50.0000**	0.618	1.2	ug/L	518	Standard
	Sb	123	244739.5	0.4	**50.0000**	0.675	1.4	ug/L	127	Standard
	Ba	135	106555.1	1.0	**50.0000**	0.097	0.2	ug/L	45	Standard
	Ce	140	116.7	9.9				ug/L	298	Standard
>	**Tb**	159	1018565.7	2.1				ug/L	977942	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	438004.0	1.2	**50.0000**	0.427	0.9	ug/L	31	Standard
	Tl	205	379940.6	1.7	**50.0000**	0.597	1.2	ug/L	20	Standard
	Pb	206	284208.1	0.3	**50.0000**	0.335	0.7	ug/L	286	Standard
	Pb	207	256392.2	0.5	**50.0000**	0.374	0.7	ug/L	257	Standard
	Pb	208	978425.0	1.4	**50.0000**	0.588	1.2	ug/L	956	Standard
	U	238	371095.6	0.5	**50.0000**	0.490	1.0	ug/L	17	Standard
>	**Bi**	209	583572.7	0.6				ug/L	557080	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	4002.2	2.2	**5.0000**	0.144	2.9	mg/L	32	Standard
K	39	1640.1	4.4	**5.0000**	0.220	4.4	mg/L	30	Standard
Ca	43	73.3	27.6	**5.0000**	2.832	56.6	mg/L	48	Standard
Fe	54	6006.1	1.4	**5.0000**	0.034	0.7	mg/L	159	Standard
Fe	57	1818.4	10.7	**5.0000**	0.606	12.1	mg/L	195	Standard
Sc-1	45	42972.5	0.7				mg/L	39543	Standard
Cl	35	31584.9	0.4				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1736.8	12.0				ug/L	1647	Standard
P	31	18696.5	1.2				ug/L	15231	Standard
S	34	2423.5	4.1				ug/L	1845	Standard
Sr	88	71.7	21.3				ug/L	70	Standard
C	12	110.0	39.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	18.6	110.3				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	30.0	33.3				mg/L	20	Standard
I	127	1405.1	8.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Tuesday, June 28, 2016 13:15:44
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81919.2	1.8				ug/L	81760	Standard
	Be	9	99366.8	4.2	**99.8402**	3.215	3.2	ug/L	17	Standard
	Al	27	15456145.8	2.8	**100.0514**	1.254	1.3	ug/L	1410	Standard
	Sc	45	41889.5	2.4				ug/L	39543	Standard
	Ti	47	52065.7	3.9	**203.2707**	7.861	3.9	ug/L	39	Standard
	V	51	718696.0	1.3	**100.2818**	2.594	2.6	ug/L	1415	Standard
	Cr	52	727396.2	2.7	**100.4747**	2.418	2.4	ug/L	6946	Standard
	Cr	53	90202.9	3.4	**99.4979**	3.023	3.0	ug/L	328	Standard
	Mn	55	679268.3	1.6	**101.6708**	2.363	2.3	ug/L	823	Standard
	Co	59	730686.9	1.6	**101.0312**	2.535	2.5	ug/L	252	Standard
	Ni	60	193870.4	2.0	**99.9159**	1.756	1.8	ug/L	192	Standard
	Cu	65	194619.8	1.4	**99.4389**	1.906	1.9	ug/L	141	Standard
	Zn	66	113576.2	1.7	**99.8564**	1.521	1.5	ug/L	491	Standard
>	**Ge**	72	530148.8	1.5				ug/L	515087	Standard
	As	75	116520.9	0.8	**100.7477**	1.604	1.6	ug/L	20	Standard
	Se	82	12083.5	1.4	**101.8724**	2.244	2.2	ug/L	15	Standard
	Se-1	77	7795.3	2.5	**99.8242**	2.540	2.5	ug/L	48	Standard
>	**Ga**	71	125.0	22.3				mg/L	90	Standard
	Rb	85	1618.4	10.1				ug/L	23	Standard
	Y	89	461192.2	0.4				ug/L	448510	Standard
>	**Rh**	103	56.7	20.4				ug/L	15	Standard
	Mo	98	556218.8	1.0	**199.4538**	3.118	1.6	ug/L	11	Standard
	Ag	107	678834.5	1.8	**98.0160**	2.327	2.4	ug/L	134	Standard
	Cd	111	219330.5	1.3	**99.4613**	1.808	1.8	mg/L	7	Standard
	Cd	114	534582.7	2.1	**99.7362**	2.615	2.6	ug/L	16	Standard
>	**In**	115	630478.6	0.6				ug/L	611117	Standard
	Sn	118	609964.7	1.0	**99.8933**	1.520	1.5	ug/L	518	Standard
	Sb	123	482106.0	1.2	**99.0353**	1.710	1.7	ug/L	127	Standard
	Ba	135	212119.9	0.9	**99.5711**	1.444	1.4	ug/L	45	Standard
	Ce	140	165.0	42.7				ug/L	298	Standard
>	**Tb**	159	1009801.9	0.4				ug/L	977942	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	865813.4	1.1	**100.7605**	1.348	1.3	ug/L	31	Standard
	Tl	205	752692.6	1.1	**100.8681**	0.657	0.7	ug/L	20	Standard
	Pb	206	549987.8	0.2	**99.7256**	0.843	0.8	ug/L	286	Standard
	Pb	207	495989.2	0.5	**99.7047**	0.496	0.5	ug/L	257	Standard
	Pb	208	1945321.0	0.5	**101.0779**	0.484	0.5	ug/L	956	Standard
	U	238	738847.3	0.4	**101.1182**	1.306	1.3	ug/L	17	Standard
>	**Bi**	209	568134.9	1.0				ug/L	557080	Standard

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Na	23	3.3	86.6	**19.9850**	17.308	86.6	mg/L	0	Standard
Mg	24	8245.6	0.3	**10.3081**	0.247	2.4	mg/L	32	Standard
K	39	3202.0	9.6	**10.0847**	1.159	11.5	mg/L	30	Standard
Ca	43	108.3	26.2	**10.2160**	4.199	41.1	mg/L	48	Standard
Fe	54	12180.7	3.3	**10.2708**	0.331	3.2	mg/L	159	Standard
Fe	57	3313.7	6.4	**9.9500**	0.928	9.3	mg/L	195	Standard
Sc-1	45	41889.5	2.4				mg/L	39543	Standard
Cl	35	30969.0	3.8				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1773.4	7.0				ug/L	1647	Standard
P	31	19072.0	2.1				ug/L	15231	Standard
S	34	2495.2	5.2				ug/L	1845	Standard
Sr	88	56.7	5.1				ug/L	70	Standard
C	12	143.3	29.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	13.0	113.4				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	6.7	173.2				mg/L	20	Standard
I	127	1551.7	12.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Tuesday, June 28, 2016 13:18:57
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81910.8	1.2				ug/L	81760	Standard
	Be	9	50188.0	2.5	**50.4285**	0.671	1.3	ug/L	17	Standard
	Al	27	7919939.7	1.3	**51.2716**	0.184	0.4	ug/L	1410	Standard
	Sc	45	42151.9	1.0				ug/L	39543	Standard
	Ti	47	26799.3	0.9	**103.2216**	1.931	1.9	ug/L	39	Standard
	V	51	362002.1	2.3	**49.7477**	0.555	1.1	ug/L	1415	Standard
	Cr	52	370323.8	0.7	**49.9789**	0.741	1.5	ug/L	6946	Standard
	Cr	53	45478.3	5.4	**49.3268**	1.623	3.3	ug/L	328	Standard
	Mn	55	340081.6	0.1	**50.1792**	1.001	2.0	ug/L	823	Standard
	Co	59	367567.5	0.6	**50.1558**	0.780	1.6	ug/L	252	Standard
	Ni	60	97767.5	1.8	**49.6873**	0.150	0.3	ug/L	192	Standard
	Cu	65	99441.7	2.0	**50.1064**	0.391	0.8	ug/L	141	Standard
	Zn	66	58882.6	2.1	**50.6983**	0.019	0.0	ug/L	491	Standard
>	**Ge**	72	537043.0	2.1				ug/L	515087	Standard
	As	75	58926.0	1.4	**50.3136**	0.381	0.8	ug/L	20	Standard
	Se	82	6003.9	1.4	**49.9034**	0.396	0.8	ug/L	15	Standard
	Se-1	77	4037.5	1.3	**50.7056**	1.619	3.2	ug/L	48	Standard
>	**Ga**	71	113.3	22.2				mg/L	90	Standard
	Rb	85	626.7	7.4				ug/L	23	Standard
	Y	89	465817.4	0.7				ug/L	448510	Standard
>	**Rh**	103	43.3	24.0				ug/L	15	Standard
	Mo	98	284447.8	1.6	**100.4857**	3.626	3.6	ug/L	11	Standard
	Ag	107	346501.9	1.0	**49.2778**	1.406	2.9	ug/L	134	Standard
	Cd	111	109630.9	1.1	**48.9766**	1.535	3.1	mg/L	7	Standard
	Cd	114	266600.1	1.2	**48.9905**	1.146	2.3	ug/L	16	Standard
>	**In**	115	640190.8	2.0				ug/L	611117	Standard
	Sn	118	332613.3	1.3	**53.6148**	1.570	2.9	ug/L	518	Standard
	Sb	123	238639.0	2.2	**48.2943**	2.007	4.2	ug/L	127	Standard
	Ba	135	104330.0	1.0	**48.2232**	0.702	1.5	ug/L	45	Standard
	Ce	140	120.0	15.0				ug/L	298	Standard
>	**Tb**	159	1038346.1	1.3				ug/L	977942	Standard
	Ho	165	16.7	34.6				ug/L	12	Standard
	Tl	203	439433.3	1.3	**49.1017**	0.655	1.3	ug/L	31	Standard
	Tl	205	379171.3	1.2	**48.7970**	1.107	2.3	ug/L	20	Standard
	Pb	206	282861.9	1.4	**49.2211**	1.133	2.3	ug/L	286	Standard
	Pb	207	247275.0	1.2	**47.7052**	1.056	2.2	ug/L	257	Standard
	Pb	208	979823.4	0.2	**48.8569**	0.617	1.3	ug/L	956	Standard
	U	238	361651.7	0.7	**47.5263**	0.839	1.8	ug/L	17	Standard
>	**Bi**	209	591677.6	1.0				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.0435**	17.387	173.1	mg/L	0	Standard
Mg	24	4277.3	3.5	**5.2835**	0.147	2.8	mg/L	32	Standard
K	39	1651.8	3.6	**5.0931**	0.136	2.7	mg/L	30	Standard
Ca	43	81.7	30.2	**6.2885**	3.508	55.8	mg/L	48	Standard
Fe	54	5996.6	1.6	**4.9548**	0.129	2.6	mg/L	159	Standard
Fe	57	1723.4	6.4	**4.8356**	0.391	8.1	mg/L	195	Standard
Sc-1	45	42151.9	1.0				mg/L	39543	Standard
Cl	35	29861.4	1.9				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1713.4	14.2				ug/L	1647	Standard
P	31	18880.1	1.3				ug/L	15231	Standard
S	34	2316.8	4.8				ug/L	1845	Standard
Sr	88	70.0	35.7				ug/L	70	Standard
C	12	156.7	32.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	46.2	33.1				mg/L	12	Standard
Ho-1	165	16.7	34.6				mg/L	12	Standard
Er	166	10.0					mg/L	20	Standard
I	127	1246.7	11.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	100.857		
Al	27	102.543		
Sc	45			
Ti	47	103.222		
V	51	99.495		
Cr	52	99.958		
Cr	53			
Mn	55	100.358		
Co	59	100.312		
Ni	60	99.375		
Cu	65	100.213		
Zn	66	101.397		
Ge	72		104.263	
As	75	100.627		
Se	82	99.807		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	100.486		
Ag	107	98.556		
Cd	111	97.953		
Cd	114			
In	115		104.758	
Sn	118	107.230		
Sb	123	96.589		
Ba	135	96.446		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.203		
Tl	205			
Pb	206	98.442		
Pb	207	95.410		
Pb	208	97.714		
U	238	95.053		
Bi	209		106.210	
Na	23	200.869		
Mg	24	105.670		
K	39	101.861		
Ca	43	125.771		
Fe	54	99.097		
Fe	57	96.711		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Tuesday, June 28, 2016 13:22:10
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81098.1	0.9				ug/L	81760	Standard
	Be	9	35.0	14.3	**0.0258**	0.005	18.6	ug/L	17	Standard
	Al	27	2568.6	16.6	**0.0024**	0.003	117.4	ug/L	1410	Standard
	Sc	45	40706.3	0.9				ug/L	39543	Standard
	Ti	47	40.7	7.5	**-0.0093**	0.010	110.5	ug/L	39	Standard
	V	51	1184.2	4.7	**-0.0443**	0.005	11.8	ug/L	1415	Standard
	Cr	52	6261.3	1.2	**-0.1999**	0.018	9.1	ug/L	6946	Standard
	Cr	53	338.3	3.7	**0.0258**	0.014	55.9	ug/L	328	Standard
	Mn	55	842.4	4.2	**-0.0247**	0.005	18.3	ug/L	823	Standard
	Co	59	286.0	9.3	**0.0074**	0.003	40.3	ug/L	252	Standard
	Ni	60	199.7	6.5	**-0.0040**	0.005	124.9	ug/L	192	Standard
	Cu	65	142.3	4.7	**-0.0195**	0.003	13.5	ug/L	141	Standard
	Zn	66	529.7	2.7	**-0.3672**	0.009	2.6	ug/L	491	Standard
>	**Ge**	72	540586.6	1.6				ug/L	515087	Standard
	As	75	16.4	99.5	**0.0543**	0.014	25.8	ug/L	20	Standard
	Se	82	18.7	7.6	**0.0353**	0.014	40.6	ug/L	15	Standard
	Se-1	77	50.3	10.9	**-0.0819**	0.075	91.1	ug/L	48	Standard
>	**Ga**	71	86.7	18.5				mg/L	90	Standard
	Rb	85	13.3	78.1				ug/L	23	Standard
	Y	89	464568.8	2.3				ug/L	448510	Standard
>	**Rh**	103	18.3	15.7				ug/L	15	Standard
	Mo	98	439.4	21.7	**0.1377**	0.033	23.9	ug/L	11	Standard
	Ag	107	149.7	25.4	**0.0053**	0.005	102.3	ug/L	134	Standard
	Cd	111	15.2	39.6	**0.0040**	0.003	67.9	mg/L	7	Standard
	Cd	114	45.8	32.1	**0.0036**	0.003	74.9	ug/L	16	Standard
>	**In**	115	633054.7	0.7				ug/L	611117	Standard
	Sn	118	1025.0	34.7	**0.0655**	0.058	89.1	ug/L	518	Standard
	Sb	123	2042.3	25.6	**0.4053**	0.108	26.7	ug/L	127	Standard
	Ba	135	49.7	4.2	**-0.0019**	0.001	60.7	ug/L	45	Standard
	Ce	140	36.7	20.8				ug/L	298	Standard
>	**Tb**	159	1001668.5	0.7				ug/L	977942	Standard
	Ho	165	10.0					ug/L	12	Standard
	Tl	203	78.0	41.6	**0.0041**	0.004	88.8	ug/L	31	Standard
	Tl	205	58.3	47.2	**0.0054**	0.004	66.7	ug/L	20	Standard
	Pb	206	315.3	11.1	**-0.0075**	0.006	81.9	ug/L	286	Standard
	Pb	207	291.3	4.8	**-0.0005**	0.003	477.4	ug/L	257	Standard
	Pb	208	1079.0	5.9	**-0.0054**	0.003	55.4	ug/L	956	Standard
	U	238	63.3	42.9	**0.0055**	0.004	65.2	ug/L	17	Standard
>	**Bi**	209	578819.3	0.5				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	25.0	40.0	**-0.0249**	0.013	50.9	mg/L	32	Standard
K	39	31.7	9.1	**-0.0375**	0.009	24.5	mg/L	30	Standard
Ca	43	41.7	36.7	**0.7901**	2.216	280.5	mg/L	48	Standard
Fe	54	146.0	8.6	**-0.0087**	0.010	113.7	mg/L	159	Standard
Fe	57	195.0	25.3	**0.0139**	0.156	1122.4	mg/L	195	Standard
Sc-1	45	40706.3	0.9				mg/L	39543	Standard
Cl	35	29554.8	2.8				ug/L	27642	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	1693.4	6.8				ug/L	1647	Standard
P	31	17536.8	2.2				ug/L	15231	Standard
S	34	2233.5	3.0				ug/L	1845	Standard
Sr	88	66.7	15.6				ug/L	70	Standard
C	12	96.7	33.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.7	49.8				mg/L	12	Standard
Ho-1	165	10.0					mg/L	12	Standard
Er	166	13.3	86.6				mg/L	20	Standard
I	127	1260.1	15.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		104.951	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.590
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.902
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Tuesday, June 28, 2016 13:25:23
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79486.3	1.5				ug/L	81760	Standard
	Be	9	236.7	23.6	**0.2350**	0.054	23.1	ug/L	17	Standard
	Al	27	1635.1	14.9	**-0.0035**	0.001	42.0	ug/L	1410	Standard
	Sc	45	39860.7	2.7				ug/L	39543	Standard
	Ti	47	39.7	2.9	**-0.0059**	0.005	91.5	ug/L	39	Standard
	V	51	3750.6	3.6	**0.3321**	0.019	5.7	ug/L	1415	Standard
	Cr	52	11750.6	2.2	**0.6283**	0.044	7.0	ug/L	6946	Standard
	Cr	53	1020.0	3.7	**0.8185**	0.038	4.7	ug/L	328	Standard
	Mn	55	3800.5	0.2	**0.4368**	0.004	0.8	ug/L	823	Standard
	Co	59	2925.3	4.6	**0.3843**	0.020	5.3	ug/L	252	Standard
	Ni	60	3080.3	1.6	**1.5280**	0.033	2.2	ug/L	192	Standard
	Cu	65	1617.4	2.7	**0.7591**	0.027	3.5	ug/L	141	Standard
	Zn	66	7652.9	2.4	**6.1434**	0.191	3.1	ug/L	491	Standard
>	**Ge**	72	515947.7	0.4				ug/L	515087	Standard
	As	75	426.1	10.9	**0.4186**	0.040	9.6	ug/L	20	Standard
	Se	82	65.5	20.2	**0.4487**	0.114	25.5	ug/L	15	Standard
	Se-1	77	77.0	13.5	**0.3017**	0.140	46.4	ug/L	48	Standard
>	**Ga**	71	75.0	29.1				mg/L	90	Standard
	Rb	85	11.7	49.5				ug/L	23	Standard
	Y	89	454544.4	2.9				ug/L	448510	Standard
>	**Rh**	103	11.7	65.5				ug/L	15	Standard
	Mo	98	144.3	6.8	**0.0328**	0.004	11.5	ug/L	11	Standard
	Ag	107	2677.9	4.8	**0.3715**	0.022	5.8	ug/L	134	Standard
	Cd	111	522.1	8.6	**0.2344**	0.020	8.5	mg/L	7	Standard
	Cd	114	1313.6	1.7	**0.2408**	0.006	2.4	ug/L	16	Standard
>	**In**	115	628989.1	0.7				ug/L	611117	Standard
	Sn	118	611.7	1.9	**-0.0014**	0.001	96.1	ug/L	518	Standard
	Sb	123	2074.6	8.0	**0.4143**	0.033	7.9	ug/L	127	Standard
	Ba	135	1500.7	4.3	**0.6813**	0.036	5.2	ug/L	45	Standard
	Ce	140	23.3	24.7				ug/L	298	Standard
>	**Tb**	159	1002704.6	1.0				ug/L	977942	Standard
	Ho	165	21.7	35.3				ug/L	12	Standard
	Tl	203	715.4	2.1	**0.0768**	0.002	2.1	ug/L	31	Standard
	Tl	205	653.3	9.4	**0.0835**	0.008	10.1	ug/L	20	Standard
	Pb	206	1358.4	2.4	**0.1778**	0.007	3.8	ug/L	286	Standard
	Pb	207	1172.0	3.3	**0.1729**	0.010	5.8	ug/L	257	Standard
	Pb	208	4784.3	0.9	**0.1832**	0.004	2.4	ug/L	956	Standard
	U	238	2840.3	2.6	**0.3778**	0.014	3.6	ug/L	17	Standard
>	**Bi**	209	580093.5	1.0				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	33.3	22.9	**-0.0129**	0.011	85.9	mg/L	32	Standard
K	39	38.3	45.8	**-0.0130**	0.059	454.3	mg/L	30	Standard
Ca	43	38.3	41.9	**0.4748**	2.540	535.0	mg/L	48	Standard
Fe	54	103.9	16.3	**-0.0436**	0.016	37.7	mg/L	159	Standard
Fe	57	210.0	19.5	**0.0806**	0.150	185.6	mg/L	195	Standard
> **Sc-1**	45	39860.7	2.7				mg/L	39543	Standard
Cl	35	28271.0	1.2				ug/L	27642	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	1630.1	3.7				ug/L	1647	Standard
P	31	12470.1	4.9				ug/L	15231	Standard
S	34	2090.1	6.4				ug/L	1845	Standard
Sr	88	61.7	72.7				ug/L	70	Standard
C	12	146.7	7.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	26.0	116.4				mg/L	12	Standard
Ho-1	165	21.7	35.3				mg/L	12	Standard
Er	166	13.3	43.3				mg/L	20	Standard
I	127	1031.7	25.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	117.475		
Al	27	-0.351		
Sc	45			
Ti	47			
V	51	83.021		
Cr	52	78.533		
Cr	53			
Mn	55	87.355		
Co	59	96.082		
Ni	60	95.499		
Cu	65	94.881		
Zn	66	98.294		
> Ge	72		100.167	
As	75	104.644		
Se	82	112.180		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	92.871		
Cd	111	97.662		
Cd	114			
> In	115			102.925
Sn	118			
Sb	123	103.570		
Ba	135	90.845		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	95.941		
Tl	205			
Pb	206			
Pb	207			
Pb	208	91.584		
U	238	94.451		
> Bi	209			104.131
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

Sample ID: QC Std 3
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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Tuesday, June 28, 2016 13:28:34
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85379.9	0.7				ug/L	81760	Standard
	Be	9	28.3	44.4	**0.0176**	0.012	68.3	ug/L	17	Standard
	Al	27	7582301.1	0.5	**47.0918**	0.449	1.0	ug/L	1410	Standard
	Sc	45	42481.1	0.8				ug/L	39543	Standard
	Ti	47	26924.2	1.2	**102.1971**	2.644	2.6	ug/L	39	Standard
	V	51	1177.2	11.7	**-0.0466**	0.017	37.5	ug/L	1415	Standard
	Cr	52	7440.5	1.6	**-0.0468**	0.011	24.4	ug/L	6946	Standard
	Cr	53	2938.6	8.1	**2.8263**	0.310	11.0	ug/L	328	Standard
	Mn	55	1484.1	0.5	**0.0680**	0.007	9.9	ug/L	823	Standard
	Co	59	438.3	7.6	**0.0276**	0.004	13.4	ug/L	252	Standard
	Ni	60	870.4	2.5	**0.3318**	0.004	1.2	ug/L	192	Standard
	Cu	65	647.0	5.3	**0.2309**	0.010	4.5	ug/L	141	Standard
	Zn	66	2006.5	1.8	**0.9027**	0.019	2.1	ug/L	491	Standard
>	**Ge**	72	545025.5	2.5				ug/L	515087	Standard
	As	75	-62.2	34.4	**-0.0118**	0.017	144.3	ug/L	20	Standard
	Se	82	23.6	6.2	**0.0746**	0.009	12.7	ug/L	15	Standard
	Se-1	77	231.7	5.9	**2.1902**	0.222	10.1	ug/L	48	Standard
>	**Ga**	71	171.7	17.1				mg/L	90	Standard
	Rb	85	1090.0	4.4				ug/L	23	Standard
	Y	89	452797.1	1.4				ug/L	448510	Standard
>	**Rh**	103	10.0	100.0				ug/L	15	Standard
	Mo	98	263118.9	1.1	**94.9055**	0.578	0.6	ug/L	11	Standard
	Ag	107	286.7	3.7	**0.0254**	0.002	6.6	ug/L	134	Standard
	Cd	111	-226.3	7.3	**-0.1062**	0.009	8.1	mg/L	7	Standard
	Cd	114	466.4	13.0	**0.0826**	0.011	12.8	ug/L	16	Standard
>	**In**	115	626700.1	1.0				ug/L	611117	Standard
	Sn	118	941.7	5.7	**0.0533**	0.007	13.8	ug/L	518	Standard
	Sb	123	466.3	29.2	**0.0836**	0.028	33.8	ug/L	127	Standard
	Ba	135	616.7	6.0	**0.2662**	0.017	6.2	ug/L	45	Standard
	Ce	140	233.3	17.2				ug/L	298	Standard
>	**Tb**	159	1019781.5	0.4				ug/L	977942	Standard
	Ho	165	28.3	27.0				ug/L	12	Standard
	Tl	203	270.7	14.6	**0.0257**	0.004	17.2	ug/L	31	Standard
	Tl	205	205.0	17.1	**0.0243**	0.005	18.8	ug/L	20	Standard
	Pb	206	568.7	4.5	**0.0362**	0.004	12.0	ug/L	286	Standard
	Pb	207	508.0	2.4	**0.0408**	0.002	5.7	ug/L	257	Standard
	Pb	208	1902.0	8.6	**0.0352**	0.008	23.2	ug/L	956	Standard
	U	238	71.7	54.2	**0.0065**	0.005	78.6	ug/L	17	Standard
>	**Bi**	209	587460.1	0.4				ug/L	557080	Standard

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Na	23	5.0	100.0	**29.8288**	29.665	99.5	mg/L	0	Standard
Mg	24	10050.0	1.2	**12.3961**	0.163	1.3	mg/L	32	Standard
K	39	1535.1	9.7	**4.6887**	0.503	10.7	mg/L	30	Standard
Ca	43	211.7	14.4	**24.5987**	4.529	18.4	mg/L	48	Standard
Fe	54	14184.2	1.5	**11.8132**	0.271	2.3	mg/L	159	Standard
Fe	57	3883.8	1.7	**11.5795**	0.109	0.9	mg/L	195	Standard
Sc-1	45	42481.1	0.8				mg/L	39543	Standard
Cl	35	27442.8	1.7				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1816.8	6.7				ug/L	1647	Standard
P	31	16744.2	0.2				ug/L	15231	Standard
S	34	1956.8	7.4				ug/L	1845	Standard
Sr	88	48.3	53.1				ug/L	70	Standard
C	12	220.0	25.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	27.0				mg/L	0	Standard
Dy	164	24.9	47.6				mg/L	12	Standard
Ho-1	165	28.3	27.0				mg/L	12	Standard
Er	166	36.7	56.8				mg/L	20	Standard
I	127	1896.8	6.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27	0.942		
Sc	45			
Ti	47	102.197		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		105.812	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	94.905		
Ag	107			
Cd	111			
Cd	114			
In	115			102.550
Sn	118			
Sb	123			
Ba	135			
Ce	140			
Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
Bi	209			105.453
Na	23	238.631		
Mg	24	247.921		
K	39	93.774		
Ca	43	163.991		
Fe	54	94.506		
Fe	57	92.636		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	

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QC Std 4	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Tuesday, June 28, 2016 13:31:45
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	87031.0	2.2				ug/L	81760	Standard
	Be	9	104600.0	3.1	**98.9445**	2.636	2.7	ug/L	17	Standard
	Al	27	8235764.9	2.8	**50.1881**	1.494	3.0	ug/L	1410	Standard
	Sc	45	40814.9	1.3				ug/L	39543	Standard
	Ti	47	28557.9	2.6	**110.3128**	3.806	3.5	ug/L	39	Standard
	V	51	698774.9	0.6	**96.5097**	2.203	2.3	ug/L	1415	Standard
	Cr	52	706026.0	2.3	**96.5109**	2.799	2.9	ug/L	6946	Standard
	Cr	53	91691.9	3.7	**100.1429**	4.249	4.2	ug/L	328	Standard
	Mn	55	659133.1	0.8	**97.6603**	2.181	2.2	ug/L	823	Standard
	Co	59	714164.5	1.5	**97.7493**	2.387	2.4	ug/L	252	Standard
	Ni	60	188241.9	2.2	**96.0473**	2.835	3.0	ug/L	192	Standard
	Cu	65	190773.3	1.3	**96.4911**	2.052	2.1	ug/L	141	Standard
	Zn	66	115799.2	0.5	**100.8065**	2.067	2.1	ug/L	491	Standard
>	**Ge**	72	535562.3	1.7				ug/L	515087	Standard
	As	75	115513.0	0.8	**98.8727**	1.879	1.9	ug/L	20	Standard
	Se	82	11807.8	0.8	**98.5471**	2.365	2.4	ug/L	15	Standard
	Se-1	77	7973.8	0.6	**101.0979**	1.926	1.9	ug/L	48	Standard
>	**Ga**	71	195.0	2.6				mg/L	90	Standard
	Rb	85	900.0	5.1				ug/L	23	Standard
	Y	89	467512.1	1.1				ug/L	448510	Standard
>	**Rh**	103	41.7	61.6				ug/L	15	Standard
	Mo	98	278616.6	1.0	**98.3192**	1.671	1.7	ug/L	11	Standard
	Ag	107	629653.8	2.5	**89.4581**	1.609	1.8	ug/L	134	Standard
	Cd	111	214179.9	0.7	**95.5849**	1.082	1.1	mg/L	7	Standard
	Cd	114	513207.5	0.9	**94.2229**	0.578	0.6	ug/L	16	Standard
>	**In**	115	640649.3	1.3				ug/L	611117	Standard
	Sn	118	1085.0	2.4	**0.0732**	0.006	8.8	ug/L	518	Standard
	Sb	123	468645.5	2.2	**94.7292**	1.132	1.2	ug/L	127	Standard
	Ba	135	204538.3	1.7	**94.4814**	1.088	1.2	ug/L	45	Standard
	Ce	140	98.3	7.8				ug/L	298	Standard
>	**Tb**	159	1030592.0	2.2				ug/L	977942	Standard
	Ho	165	16.7	45.8				ug/L	12	Standard
	Tl	203	850272.7	1.9	**96.3847**	2.377	2.5	ug/L	31	Standard
	Tl	205	753805.3	1.5	**98.4067**	2.429	2.5	ug/L	20	Standard
	Pb	206	560444.8	0.3	**98.9799**	0.961	1.0	ug/L	286	Standard
	Pb	207	485626.8	0.4	**95.0861**	1.259	1.3	ug/L	257	Standard
	Pb	208	1940003.2	1.2	**98.1909**	2.155	2.2	ug/L	956	Standard
	U	238	731621.6	1.7	**97.5330**	2.488	2.6	ug/L	17	Standard
>	**Bi**	209	583301.0	1.0				ug/L	557080	Standard

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Na	23	5.0	100.0	**30.9951**	30.718	99.1	mg/L	0	Standard
Mg	24	10642.1	4.7	**13.6704**	0.697	5.1	mg/L	32	Standard
K	39	1555.1	3.7	**4.9498**	0.207	4.2	mg/L	30	Standard
Ca	43	191.7	19.9	**22.8900**	5.801	25.3	mg/L	48	Standard
Fe	54	15478.2	1.2	**13.4350**	0.150	1.1	mg/L	159	Standard
Fe	57	4137.2	0.8	**12.9082**	0.151	1.2	mg/L	195	Standard
> **Sc-1**	45	40814.9	1.3				mg/L	39543	Standard
Cl	35	27689.3	2.5				ug/L	27642	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	1876.8	10.9				ug/L	1647	Standard
P	31	15799.9	3.3				ug/L	15231	Standard
S	34	1943.5	5.2				ug/L	1845	Standard
Sr	88	65.0	27.7				ug/L	70	Standard
C	12	256.7	13.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	15.9	127.8				mg/L	12	Standard
Ho-1	165	16.7	45.8				mg/L	12	Standard
Er	166	16.7	69.3				mg/L	20	Standard
I	127	1231.7	9.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	98.944		
Al	27	1.004		
Sc	45			
Ti	47	110.313		
V	51	96.510		
Cr	52	96.511		
Cr	53			
Mn	55	97.660		
Co	59	97.749		
Ni	60	96.047		
Cu	65	96.491		
Zn	66	100.807		
> Ge	72		103.975	
As	75	98.873		
Se	82	98.547		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	98.319		
Ag	107	89.458		
Cd	111	95.585		
Cd	114			
In	115		104.833	
Sn	118			
Sb	123	94.729		
Ba	135	94.481		
Ce	140			
Tb	159			
Ho	165			
Tl	203	96.385		
Tl	205			
Pb	206			
Pb	207			
Pb	208	98.191		
U	238	97.533		
Bi	209		104.707	
Na	23	247.961		
Mg	24	273.408		
K	39	98.997		
Ca	43	152.600		
Fe	54	107.480		
Fe	57	103.265		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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QC Std 5	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 13:34:59
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85572.8	3.1				ug/L	81760	Standard
	Be	9	51348.6	3.0	**49.4131**	1.801	3.6	ug/L	17	Standard
	Al	27	7869928.8	0.7	**48.7904**	1.162	2.4	ug/L	1410	Standard
	Sc	45	41500.1	1.3				ug/L	39543	Standard
	Ti	47	25257.0	1.4	**98.1904**	2.232	2.3	ug/L	39	Standard
	V	51	359717.6	0.9	**49.9155**	1.252	2.5	ug/L	1415	Standard
	Cr	52	362752.3	1.0	**49.4079**	0.954	1.9	ug/L	6946	Standard
	Cr	53	45483.2	1.3	**49.8439**	1.589	3.2	ug/L	328	Standard
	Mn	55	333977.4	0.1	**49.7416**	1.012	2.0	ug/L	823	Standard
	Co	59	371364.3	0.2	**51.1559**	1.087	2.1	ug/L	252	Standard
	Ni	60	96391.0	0.8	**49.4567**	0.760	1.5	ug/L	192	Standard
	Cu	65	97494.7	0.8	**49.5943**	0.620	1.2	ug/L	141	Standard
	Zn	66	56948.5	0.8	**49.4853**	0.762	1.5	ug/L	491	Standard
>	**Ge**	72	532023.1	2.0				ug/L	515087	Standard
	As	75	57437.4	0.6	**49.5161**	1.180	2.4	ug/L	20	Standard
	Se	82	5946.0	0.9	**49.9013**	1.415	2.8	ug/L	15	Standard
	Se-1	77	4004.5	1.6	**50.7471**	0.199	0.4	ug/L	48	Standard
>	**Ga**	71	93.3	16.4				mg/L	90	Standard
	Rb	85	881.7	8.3				ug/L	23	Standard
	Y	89	456900.1	0.4				ug/L	448510	Standard
>	**Rh**	103	26.7	60.3				ug/L	15	Standard
	Mo	98	274645.7	0.6	**96.2670**	1.141	1.2	ug/L	11	Standard
	Ag	107	344865.6	0.2	**48.6675**	0.302	0.6	ug/L	134	Standard
	Cd	111	109918.0	0.6	**48.7237**	0.167	0.3	mg/L	7	Standard
	Cd	114	266820.9	0.9	**48.6598**	0.652	1.3	ug/L	16	Standard
>	**In**	115	644937.8	0.8				ug/L	611117	Standard
	Sn	118	304766.5	1.2	**48.7367**	0.172	0.4	ug/L	518	Standard
	Sb	123	245072.6	0.1	**49.2072**	0.383	0.8	ug/L	127	Standard
	Ba	135	106223.8	1.1	**48.7299**	0.483	1.0	ug/L	45	Standard
	Ce	140	76.7	21.0				ug/L	298	Standard
>	**Tb**	159	1040424.8	0.9				ug/L	977942	Standard
	Ho	165	11.7	89.2				ug/L	12	Standard
	Tl	203	436254.3	0.9	**48.8621**	1.048	2.1	ug/L	31	Standard
	Tl	205	382952.9	1.1	**49.3898**	0.698	1.4	ug/L	20	Standard
	Pb	206	278752.3	0.9	**48.6168**	1.163	2.4	ug/L	286	Standard
	Pb	207	252906.4	1.0	**48.9055**	1.215	2.5	ug/L	257	Standard
	Pb	208	993060.2	1.0	**49.6339**	1.159	2.3	ug/L	956	Standard
	U	238	369537.8	0.4	**48.6731**	0.911	1.9	ug/L	17	Standard
>	**Bi**	209	590375.8	1.5				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4017.2	5.2	**5.0405**	0.318	6.3	mg/L	32	Standard
K	39	1600.1	5.0	**5.0128**	0.329	6.6	mg/L	30	Standard
Ca	43	98.3	19.3	**8.9105**	2.944	33.0	mg/L	48	Standard
Fe	54	5965.0	1.0	**5.0068**	0.016	0.3	mg/L	159	Standard
Fe	57	1785.1	5.1	**5.1208**	0.370	7.2	mg/L	195	Standard
> **Sc-1**	45	41500.1	1.3				mg/L	39543	Standard
Cl	35	29160.0	1.9				ug/L	27642	Standard
Kr	83	3.3	45.8				ug/L	2	Standard
Br	81	1670.1	8.2				ug/L	1647	Standard
P	31	17116.3	2.7				ug/L	15231	Standard
S	34	2186.8	7.3				ug/L	1845	Standard
Sr	88	41.7	34.6				ug/L	70	Standard
C	12	130.0	42.8				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	23.3	24.7				mg/L	12	Standard
Ho-1	165	11.7	89.2				mg/L	12	Standard
Er	166	0.0					mg/L	20	Standard
I	127	1351.7	14.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	98.826		
Al	27	97.581		
Sc	45			
Ti	47	98.190		
V	51	99.831		
Cr	52	98.816		
Cr	53			
Mn	55	99.483		
Co	59	102.312		
Ni	60	98.913		
Cu	65	99.189		
Zn	66	98.971		
> Ge	72		103.288	
As	75	99.032		
Se	82	99.803		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	96.267		
Ag	107	97.335		
Cd	111	97.447		
Cd	114			
In	115			105.534
Sn	118	97.473		
Sb	123	98.414		
Ba	135	97.460		
Ce	140			
Tb	159			
Ho	165			
Tl	203	97.724		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.268		
U	238	97.346		
Bi	209			105.977
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 13:38:10
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82763.8	0.7				ug/L	81760	Standard
	Be	9	40.0	57.3	**0.0300**	0.023	75.9	ug/L	17	Standard
	Al	27	4257.4	63.2	**0.0129**	0.017	134.4	ug/L	1410	Standard
	Sc	45	40355.3	1.7				ug/L	39543	Standard
	Ti	47	44.3	23.5	**0.0085**	0.041	476.8	ug/L	39	Standard
	V	51	1283.7	14.1	**-0.0268**	0.025	92.2	ug/L	1415	Standard
	Cr	52	6366.3	1.6	**-0.1663**	0.013	7.9	ug/L	6946	Standard
	Cr	53	461.7	3.5	**0.1707**	0.014	8.3	ug/L	328	Standard
	Mn	55	939.4	15.6	**-0.0074**	0.022	294.6	ug/L	823	Standard
	Co	59	428.3	39.2	**0.0280**	0.023	82.9	ug/L	252	Standard
	Ni	60	218.7	25.5	**0.0081**	0.029	354.3	ug/L	192	Standard
	Cu	65	184.3	18.2	**0.0036**	0.017	469.2	ug/L	141	Standard
	Zn	66	515.3	2.3	**-0.3696**	0.014	3.7	ug/L	491	Standard
>	**Ge**	72	528838.2	0.8				ug/L	515087	Standard
	As	75	8.3	324.4	**0.0475**	0.023	49.1	ug/L	20	Standard
	Se	82	19.9	12.2	**0.0491**	0.021	43.7	ug/L	15	Standard
	Se-1	77	55.0	4.8	**-0.0079**	0.029	369.8	ug/L	48	Standard
>	**Ga**	71	56.7	39.8				mg/L	90	Standard
	Rb	85	10.0					ug/L	23	Standard
	Y	89	469796.8	1.6				ug/L	448510	Standard
>	**Rh**	103	20.0	25.0				ug/L	15	Standard
	Mo	98	452.3	25.3	**0.1439**	0.042	29.5	ug/L	11	Standard
	Ag	107	307.7	67.7	**0.0286**	0.031	108.2	ug/L	134	Standard
	Cd	111	45.2	95.8	**0.0178**	0.020	112.8	mg/L	7	Standard
	Cd	114	114.8	113.1	**0.0168**	0.025	147.3	ug/L	16	Standard
>	**In**	115	628024.0	1.4				ug/L	611117	Standard
	Sn	118	940.0	23.7	**0.0531**	0.039	73.1	ug/L	518	Standard
	Sb	123	1312.1	39.0	**0.2588**	0.110	42.3	ug/L	127	Standard
	Ba	135	79.3	75.1	**0.0125**	0.029	229.7	ug/L	45	Standard
	Ce	140	28.3	36.7				ug/L	298	Standard
>	**Tb**	159	1003248.8	1.6				ug/L	977942	Standard
	Ho	165	15.0	88.2				ug/L	12	Standard
	Tl	203	265.0	107.1	**0.0261**	0.033	127.7	ug/L	31	Standard
	Tl	205	163.3	84.5	**0.0196**	0.019	95.5	ug/L	20	Standard
	Pb	206	421.0	42.3	**0.0127**	0.033	261.4	ug/L	286	Standard
	Pb	207	362.0	44.3	**0.0147**	0.033	224.6	ug/L	257	Standard
	Pb	208	1358.7	30.8	**0.0100**	0.022	223.6	ug/L	956	Standard
	U	238	139.0	84.9	**0.0161**	0.016	101.8	ug/L	17	Standard
>	**Bi**	209	570467.7	1.7				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.3221**	17.870	173.1	mg/L	0	Standard
Mg	24	30.0	28.9	**-0.0179**	0.012	67.0	mg/L	32	Standard
K	39	31.7	24.1	**-0.0367**	0.024	65.4	mg/L	30	Standard
Ca	43	38.3	15.1	**0.3686**	0.952	258.2	mg/L	48	Standard
Fe	54	115.7	16.2	**-0.0344**	0.017	49.5	mg/L	159	Standard
Fe	57	198.3	8.1	**0.0320**	0.061	191.3	mg/L	195	Standard
> **Sc-1**	45	40355.3	1.7				mg/L	39543	Standard
Cl	35	29509.4	2.2				ug/L	27642	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	1783.4	4.3				ug/L	1647	Standard
P	31	17421.7	1.2				ug/L	15231	Standard
S	34	2170.2	3.8				ug/L	1845	Standard
Sr	88	55.0	15.7				ug/L	70	Standard
C	12	93.3	40.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	8.9	120.7				mg/L	12	Standard
Ho-1	165	15.0	88.2				mg/L	12	Standard
Er	166	23.3	65.5				mg/L	20	Standard
I	127	1233.4	14.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.670	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	102.767
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.403
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606036203
Sample Date/Time: Tuesday, June 28, 2016 13:41:22
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83400.5	10.2				ug/L	81760	Standard
	Be	9	11.7	65.5	**0.0015**	0.006	425.0	ug/L	17	Standard
	Al	27	3017.0	39.5	**0.0053**	0.009	165.2	ug/L	1410	Standard
	Sc	45	40218.8	12.0				ug/L	39543	Standard
	Ti	47	37.0	23.6	**-0.0163**	0.022	135.1	ug/L	39	Standard
	V	51	613.8	4.6	**-0.1167**	0.012	10.1	ug/L	1415	Standard
	Cr	52	3481.1	12.6	**-0.5531**	0.019	3.4	ug/L	6946	Standard
	Cr	53	250.0	27.5	**-0.0570**	0.057	99.8	ug/L	328	Standard
	Mn	55	1041.4	26.2	**0.0117**	0.027	231.5	ug/L	823	Standard
	Co	59	254.7	5.9	**0.0055**	0.004	71.3	ug/L	252	Standard
	Ni	60	206.3	13.3	**0.0056**	0.009	153.1	ug/L	192	Standard
	Cu	65	131.7	19.5	**-0.0206**	0.013	65.4	ug/L	141	Standard
	Zn	66	531.7	22.4	**-0.3419**	0.069	20.1	ug/L	491	Standard
>	**Ge**	72	510441.4	10.5				ug/L	515087	Standard
	As	75	44.6	25.0	**0.0799**	0.006	7.8	ug/L	20	Standard
	Se	82	38.3	36.8	**0.2107**	0.093	44.1	ug/L	15	Standard
	Se-1	77	32.0	11.3	**-0.2872**	0.062	21.6	ug/L	48	Standard
>	**Ga**	71	61.7	4.7				mg/L	90	Standard
	Rb	85	33.3	37.7				ug/L	23	Standard
	Y	89	399549.3	20.8				ug/L	448510	Standard
>	**Rh**	103	11.7	65.5				ug/L	15	Standard
	Mo	98	155.9	22.2	**0.0482**	0.023	47.8	ug/L	11	Standard
	Ag	107	121.0	24.4	**0.0044**	0.005	118.2	ug/L	134	Standard
	Cd	111	13.4	45.5	**0.0046**	0.004	96.5	mg/L	7	Standard
	Cd	114	43.9	10.7	**0.0047**	0.001	14.6	ug/L	16	Standard
>	**In**	115	541793.5	15.9				ug/L	611117	Standard
	Sn	118	351.7	31.7	**-0.0361**	0.012	32.5	ug/L	518	Standard
	Sb	123	283.1	30.2	**0.0538**	0.012	21.7	ug/L	127	Standard
	Ba	135	37.0	32.8	**-0.0052**	0.004	82.4	ug/L	45	Standard
	Ce	140	30.0	28.9				ug/L	298	Standard
>	**Tb**	159	879683.0	16.9				ug/L	977942	Standard
	Ho	165	8.3	34.6				ug/L	12	Standard
	Tl	203	99.7	75.1	**0.0097**	0.013	137.9	ug/L	31	Standard
	Tl	205	85.0	86.7	**0.0121**	0.015	120.6	ug/L	20	Standard
	Pb	206	313.0	1.9	**0.0011**	0.012	1036.8	ug/L	286	Standard
	Pb	207	266.0	5.5	**0.0034**	0.015	442.4	ug/L	257	Standard
	Pb	208	1233.7	12.3	**0.0133**	0.020	150.4	ug/L	956	Standard
	U	238	39.3	36.7	**0.0031**	0.002	60.3	ug/L	17	Standard
>	**Bi**	209	508733.8	16.9				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	21.7	13.3	**-0.0282**	0.008	27.2	mg/L	32	Standard
K	39	25.0	34.6	**-0.0591**	0.022	36.5	mg/L	30	Standard
Ca	43	40.0	12.5	**0.7483**	1.524	203.6	mg/L	48	Standard
Fe	54	113.2	25.1	**-0.0334**	0.039	117.8	mg/L	159	Standard
Fe	57	238.3	14.7	**0.1717**	0.127	73.7	mg/L	195	Standard
> **Sc-1**	45	40218.8	12.0				mg/L	39543	Standard
Cl	35	13831.7	10.0				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	810.0	8.9				ug/L	1647	Standard
P	31	10527.1	24.9				ug/L	15231	Standard
S	34	970.0	6.2				ug/L	1845	Standard
Sr	88	66.7	11.5				ug/L	70	Standard
C	12	110.0	9.1				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.4	124.8				mg/L	12	Standard
Ho-1	165	8.3	34.6				mg/L	12	Standard
Er	166	20.0	50.0				mg/L	20	Standard
I	127	523.3	19.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.006	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.098	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		88.656
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.321
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 52 Lower	Cr	52	

Sample ID: L1606036203
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Method 6020 - Summary Report

Sample ID: L1606036204
Sample Date/Time: Tuesday, June 28, 2016 13:44:34
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83225.5	7.5				ug/L	81760	Standard
	Be	9	31228.6	61.6	**31.9371**	21.971	68.8	ug/L	17	Standard
	Al	27	8471.1	48.6	**0.0411**	0.031	75.9	ug/L	1410	Standard
	Sc	45	40830.0	2.2				ug/L	39543	Standard
	Ti	47	34.3	11.8	**-0.0297**	0.018	59.1	ug/L	39	Standard
	V	51	224078.9	58.8	**31.3360**	18.302	58.4	ug/L	1415	Standard
	Cr	52	238015.8	57.7	**32.3999**	19.040	58.8	ug/L	6946	Standard
	Cr	53	29690.7	58.7	**32.7502**	19.168	58.5	ug/L	328	Standard
	Mn	55	213724.7	56.8	**32.1044**	18.055	56.2	ug/L	823	Standard
	Co	59	222487.2	58.7	**30.9454**	17.938	58.0	ug/L	252	Standard
	Ni	60	62090.3	57.3	**32.1492**	18.240	56.7	ug/L	192	Standard
	Cu	65	63757.0	57.0	**32.7355**	18.436	56.3	ug/L	141	Standard
	Zn	66	38227.9	57.9	**33.2873**	19.476	58.5	ug/L	491	Standard
>	**Ge**	72	525473.2	1.2				ug/L	515087	Standard
	As	75	36453.5	56.6	**31.7527**	17.695	55.7	ug/L	20	Standard
	Se	82	3780.3	55.0	**31.9968**	17.401	54.4	ug/L	15	Standard
	Se-1	77	2538.3	56.6	**32.2335**	18.366	57.0	ug/L	48	Standard
>	**Ga**	71	76.7	26.4				mg/L	90	Standard
	Rb	85	43.3	17.6				ug/L	23	Standard
	Y	89	474726.4	7.6				ug/L	448510	Standard
>	**Rh**	103	26.7	21.7				ug/L	15	Standard
	Mo	98	564.0	40.4	**0.1823**	0.089	49.0	ug/L	11	Standard
	Ag	107	212096.4	59.4	**30.6350**	19.274	62.9	ug/L	134	Standard
	Cd	111	68030.3	54.2	**30.8198**	17.865	58.0	mg/L	7	Standard
	Cd	114	165078.2	56.3	**30.7839**	18.487	60.1	ug/L	16	Standard
>	**In**	115	641067.2	4.2				ug/L	611117	Standard
	Sn	118	550.0	28.6	**-0.0125**	0.029	234.3	ug/L	518	Standard
	Sb	123	143570.7	60.9	**29.5172**	18.974	64.3	ug/L	127	Standard
	Ba	135	66133.4	54.2	**31.0035**	17.964	57.9	ug/L	45	Standard
	Ce	140	83.3	81.7				ug/L	298	Standard
>	**Tb**	159	1026938.7	4.8				ug/L	977942	Standard
	Ho	165	11.7	65.5				ug/L	12	Standard
	Tl	203	274073.1	56.4	**30.7538**	17.663	57.4	ug/L	31	Standard
	Tl	205	243234.0	54.4	**31.4411**	17.425	55.4	ug/L	20	Standard
	Pb	206	180330.9	55.5	**31.4753**	17.798	56.5	ug/L	286	Standard
	Pb	207	158009.7	55.1	**30.5868**	17.206	56.3	ug/L	257	Standard
	Pb	208	646417.5	54.5	**32.3514**	17.977	55.6	ug/L	956	Standard
	U	238	234720.5	55.2	**30.9733**	17.414	56.2	ug/L	17	Standard
>	**Bi**	209	588853.8	4.4				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.1717**	17.609	173.1	mg/L	0	Standard
Mg	24	26.7	10.8	**-0.0228**	0.004	16.0	mg/L	32	Standard
K	39	36.7	43.8	**-0.0214**	0.052	244.2	mg/L	30	Standard
Ca	43	30.0	66.7	**-0.9172**	2.942	320.7	mg/L	48	Standard
Fe	54	107.6	36.8	**-0.0427**	0.035	81.3	mg/L	159	Standard
Fe	57	220.0	9.9	**0.0952**	0.078	81.4	mg/L	195	Standard
> **Sc-1**	45	40830.0	2.2				mg/L	39543	Standard
Cl	35	20640.2	29.5				ug/L	27642	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	1230.1	37.8				ug/L	1647	Standard
P	31	11926.4	10.7				ug/L	15231	Standard
S	34	1536.7	28.4				ug/L	1845	Standard
Sr	88	66.7	11.5				ug/L	70	Standard
C	12	146.7	27.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	5.9	100.8				mg/L	12	Standard
Ho-1	165	11.7	65.5				mg/L	12	Standard
Er	166	16.7	34.6				mg/L	20	Standard
I	127	785.0	24.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.792	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.016	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.901
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.704
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606036203
Sample Date/Time: Tuesday, June 28, 2016 13:49:03
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90942.6	5.2				ug/L	81760	Standard
	Be	9	53.3	85.1	**0.0399**	0.045	111.9	ug/L	17	Standard
	Al	27	693137.8	2.1	**4.0335**	0.159	3.9	ug/L	1410	Standard
	Sc	45	39909.2	1.1				ug/L	39543	Standard
	Ti	47	362.3	4.5	**1.2955**	0.068	5.3	ug/L	39	Standard
	V	51	2278.9	9.8	**0.1220**	0.031	25.8	ug/L	1415	Standard
	Cr	52	6909.6	1.4	**-0.0622**	0.012	19.7	ug/L	6946	Standard
	Cr	53	1090.0	12.5	**0.9032**	0.155	17.1	ug/L	328	Standard
	Mn	55	5526773.3	1.7	**854.3657**	14.322	1.7	ug/L	823	Standard
	Co	59	9370.2	5.6	**1.3053**	0.073	5.6	ug/L	252	Standard
	Ni	60	2122.5	1.2	**1.0247**	0.015	1.4	ug/L	192	Standard
	Cu	65	2498.9	0.1	**1.2274**	0.002	0.2	ug/L	141	Standard
	Zn	66	6516.4	0.8	**5.1316**	0.039	0.8	ug/L	491	Standard
>	**Ge**	72	513880.5	0.2				ug/L	515087	Standard
	As	75	3228.7	3.4	**2.9189**	0.105	3.6	ug/L	20	Standard
	Se	82	922.2	2.2	**7.9103**	0.196	2.5	ug/L	15	Standard
	Se-1	77	155.0	10.7	**1.3431**	0.217	16.2	ug/L	48	Standard
>	**Ga**	71	388.3	17.5				mg/L	90	Standard
	Rb	85	68372.4	3.2				ug/L	23	Standard
	Y	89	447009.0	1.5				ug/L	448510	Standard
>	**Rh**	103	111.7	20.2				ug/L	15	Standard
	Mo	98	1200247.1	0.8	**451.3790**	8.919	2.0	ug/L	11	Standard
	Ag	107	153.3	18.9	**0.0070**	0.004	61.8	ug/L	134	Standard
	Cd	111	-1054.6	0.6	**-0.5044**	0.004	0.7	mg/L	7	Standard
	Cd	114	1800.6	2.5	**0.3474**	0.013	3.8	ug/L	16	Standard
>	**In**	115	601262.2	1.3				ug/L	611117	Standard
	Sn	118	788.4	4.6	**0.0336**	0.006	17.8	ug/L	518	Standard
	Sb	123	1882.7	34.8	**0.3916**	0.136	34.8	ug/L	127	Standard
	Ba	135	4520.7	1.0	**2.2009**	0.051	2.3	ug/L	45	Standard
	Ce	140	6458.0	2.1				ug/L	298	Standard
>	**Tb**	159	1000527.6	0.4				ug/L	977942	Standard
	Ho	165	130.0	21.4				ug/L	12	Standard
	Tl	203	285.7	2.5	**0.0299**	0.000	1.6	ug/L	31	Standard
	Tl	205	403.3	76.1	**0.0543**	0.043	79.9	ug/L	20	Standard
	Pb	206	899.7	2.3	**0.1068**	0.005	4.7	ug/L	286	Standard
	Pb	207	732.0	4.6	**0.0957**	0.009	9.0	ug/L	257	Standard
	Pb	208	3524.8	26.8	**0.1310**	0.052	40.0	ug/L	956	Standard
	U	238	352.3	76.1	**0.0475**	0.039	81.4	ug/L	17	Standard
>	**Bi**	209	544253.0	1.1				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.4757**	18.136	173.1	mg/L	0	Standard
Mg	24	122834.3	0.9	**161.9583**	0.885	0.5	mg/L	32	Standard
K	39	4865.8	5.3	**16.1536**	1.001	6.2	mg/L	30	Standard
Ca	43	186.7	17.4	**22.7843**	5.205	22.8	mg/L	48	Standard
Fe	54	927.7	8.4	**0.6952**	0.076	10.9	mg/L	159	Standard
Fe	57	461.7	8.7	**0.9208**	0.151	16.4	mg/L	195	Standard
> **Sc-1**	45	39909.2	1.1				mg/L	39543	Standard
Cl	35	47371.9	1.0				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	196320.5	1.2				ug/L	1647	Standard
P	31	16525.7	2.7				ug/L	15231	Standard
S	34	2001.8	3.8				ug/L	1845	Standard
Sr	88	358.3	4.3				ug/L	70	Standard
C	12	246.7	19.2				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	211.1	26.7				mg/L	12	Standard
Ho-1	165	130.0	21.4				mg/L	12	Standard
Er	166	116.7	51.7				mg/L	20	Standard
I	127	1244078.5	12.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.231	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.766	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.387
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.697
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

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Method 6020 - Summary Report

Sample ID: L1606036204
Sample Date/Time: Tuesday, June 28, 2016 13:52:18
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	103725.5	0.9				ug/L	81760	Standard
	Be	9	18.3	41.7	**0.0048**	0.006	125.1	ug/L	17	Standard
	Al	27	23803073.4	2.1	**121.7007**	1.863	1.5	ug/L	1410	Standard
	Sc	45	41989.8	2.5				ug/L	39543	Standard
	Ti	47	198.3	8.2	**0.6152**	0.056	9.1	ug/L	39	Standard
	V	51	2022.8	10.2	**0.0784**	0.030	38.8	ug/L	1415	Standard
	Cr	52	8025.5	3.2	**0.0718**	0.049	68.1	ug/L	6946	Standard
	Cr	53	1725.1	14.9	**1.5845**	0.307	19.4	ug/L	328	Standard
	Mn	55	8347.3	4.1	**1.1117**	0.038	3.4	ug/L	823	Standard
	Co	59	1991.1	1.1	**0.2461**	0.003	1.1	ug/L	252	Standard
	Ni	60	2784.9	2.6	**1.3428**	0.049	3.7	ug/L	192	Standard
	Cu	65	1676.4	9.2	**0.7724**	0.072	9.4	ug/L	141	Standard
	Zn	66	3951.5	5.5	**2.7003**	0.153	5.7	ug/L	491	Standard
>	**Ge**	72	526193.8	1.1				ug/L	515087	Standard
	As	75	658.8	2.1	**0.6140**	0.018	3.0	ug/L	20	Standard
	Se	82	229.7	4.0	**1.8340**	0.092	5.0	ug/L	15	Standard
	Se-1	77	153.0	9.2	**1.2707**	0.204	16.0	ug/L	48	Standard
>	**Ga**	71	148.3	16.6				mg/L	90	Standard
	Rb	85	683.3	4.9				ug/L	23	Standard
	Y	89	453248.0	2.1				ug/L	448510	Standard
>	**Rh**	103	91.7	27.5				ug/L	15	Standard
	Mo	98	5026.0	6.3	**1.8280**	0.098	5.4	ug/L	11	Standard
	Ag	107	95.3	7.7	**-0.0021**	0.001	57.5	ug/L	134	Standard
	Cd	111	8.0	39.8	**0.0008**	0.001	178.0	mg/L	7	Standard
	Cd	114	50.5	30.0	**0.0047**	0.003	60.8	ug/L	16	Standard
>	**In**	115	615030.5	1.6				ug/L	611117	Standard
	Sn	118	1100.0	6.8	**0.0830**	0.014	16.4	ug/L	518	Standard
	Sb	123	686.5	31.6	**0.1319**	0.046	34.9	ug/L	127	Standard
	Ba	135	22769.8	0.9	**10.9347**	0.080	0.7	ug/L	45	Standard
	Ce	140	320.0	14.9				ug/L	298	Standard
>	**Tb**	159	1016190.3	1.0				ug/L	977942	Standard
	Ho	165	48.3	15.8				ug/L	12	Standard
	Tl	203	156.0	5.7	**0.0132**	0.001	7.6	ug/L	31	Standard
	Tl	205	153.3	14.7	**0.0181**	0.003	17.2	ug/L	20	Standard
	Pb	206	466.3	6.0	**0.0202**	0.005	24.4	ug/L	286	Standard
	Pb	207	405.3	5.2	**0.0227**	0.004	15.6	ug/L	257	Standard
	Pb	208	1478.0	2.2	**0.0157**	0.002	13.7	ug/L	956	Standard
	U	238	1957.8	2.0	**0.2625**	0.004	1.4	ug/L	17	Standard
>	**Bi**	209	573383.4	0.9				ug/L	557080	Standard

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Na	23	8.3	34.6	**50.1179**	16.456	32.8	mg/L	0	Standard
Mg	24	58420.8	1.2	**73.2244**	2.756	3.8	mg/L	32	Standard
K	39	723.4	8.7	**2.1601**	0.187	8.7	mg/L	30	Standard
Ca	43	463.3	11.9	**60.9213**	7.520	12.3	mg/L	48	Standard
Fe	54	191.2	7.7	**0.0260**	0.014	55.5	mg/L	159	Standard
Fe	57	531.7	2.7	**1.0656**	0.010	0.9	mg/L	195	Standard
> **Sc-1**	45	41989.8	2.5				mg/L	39543	Standard
Cl	35	37603.3	1.8				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	30841.4	4.4				ug/L	1647	Standard
P	31	21757.3	1.3				ug/L	15231	Standard
S	34	1778.4	1.5				ug/L	1845	Standard
Sr	88	246.7	9.1				ug/L	70	Standard
C	12	216.7	7.1				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	60.8	24.7				mg/L	12	Standard
Ho-1	165	48.3	15.8				mg/L	12	Standard
Er	166	53.3	10.8				mg/L	20	Standard
I	127	78536.8	23.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		126.866	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.156	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.640
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.927
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606036205
Sample Date/Time: Tuesday, June 28, 2016 13:59:25
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	103215.4	0.9				ug/L	81760	Standard
	Be	9	20.0	50.0	**0.0063**	0.008	129.0	ug/L	17	Standard
	Al	27	14439258.9	3.3	**74.2049**	3.024	4.1	ug/L	1410	Standard
	Sc	45	39693.6	2.3				ug/L	39543	Standard
	Ti	47	140.0	4.0	**0.4180**	0.020	4.8	ug/L	39	Standard
	V	51	3604.7	5.2	**0.3305**	0.025	7.7	ug/L	1415	Standard
	Cr	52	7555.2	2.8	**0.0671**	0.025	36.8	ug/L	6946	Standard
	Cr	53	1441.7	2.8	**1.3602**	0.060	4.4	ug/L	328	Standard
	Mn	55	692335.2	1.4	**110.4896**	2.247	2.0	ug/L	823	Standard
	Co	59	1760.4	3.6	**0.2283**	0.011	4.9	ug/L	252	Standard
	Ni	60	2996.0	4.5	**1.5433**	0.085	5.5	ug/L	192	Standard
	Cu	65	1684.1	4.6	**0.8273**	0.040	4.8	ug/L	141	Standard
	Zn	66	2371.2	1.2	**1.4134**	0.020	1.4	ug/L	491	Standard
>	**Ge**	72	497232.9	0.8				ug/L	515087	Standard
	As	75	475.6	6.3	**0.4785**	0.029	6.0	ug/L	20	Standard
	Se	82	111.0	8.1	**0.8794**	0.084	9.6	ug/L	15	Standard
	Se-1	77	118.0	5.1	**0.9042**	0.095	10.5	ug/L	48	Standard
>	**Ga**	71	108.3	35.3				mg/L	90	Standard
	Rb	85	57350.0	0.9				ug/L	23	Standard
	Y	89	457066.8	2.1				ug/L	448510	Standard
>	**Rh**	103	28.3	44.4				ug/L	15	Standard
	Mo	98	255967.1	1.2	**93.6404**	2.667	2.8	ug/L	11	Standard
	Ag	107	89.3	9.3	**-0.0031**	0.001	44.5	ug/L	134	Standard
	Cd	111	-197.3	3.0	**-0.0942**	0.001	1.4	mg/L	7	Standard
	Cd	114	425.0	6.1	**0.0760**	0.006	8.0	ug/L	16	Standard
>	**In**	115	618093.1	1.7				ug/L	611117	Standard
	Sn	118	871.7	7.6	**0.0437**	0.009	20.3	ug/L	518	Standard
	Sb	123	474.5	27.0	**0.0866**	0.026	30.6	ug/L	127	Standard
	Ba	135	13314.9	2.5	**6.3544**	0.263	4.1	ug/L	45	Standard
	Ce	140	228.3	6.3				ug/L	298	Standard
>	**Tb**	159	1010942.5	1.3				ug/L	977942	Standard
	Ho	165	25.0	72.1				ug/L	12	Standard
	Tl	203	239.7	6.5	**0.0241**	0.002	9.5	ug/L	31	Standard
	Tl	205	181.7	22.1	**0.0230**	0.006	26.1	ug/L	20	Standard
	Pb	206	319.7	6.3	**-0.0035**	0.004	108.4	ug/L	286	Standard
	Pb	207	282.7	2.0	**0.0009**	0.002	252.3	ug/L	257	Standard
	Pb	208	1120.3	3.0	**-0.0001**	0.003	3300.1	ug/L	956	Standard
	U	238	733.7	3.0	**0.1011**	0.005	4.9	ug/L	17	Standard
>	**Bi**	209	548318.3	1.8				ug/L	557080	Standard

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Na	23	3.3	173.2	**21.6860**	37.553	173.2	mg/L	0	Standard
Mg	24	97569.9	1.9	**129.3694**	3.560	2.8	mg/L	32	Standard
K	39	4389.0	6.2	**14.6373**	1.001	6.8	mg/L	30	Standard
Ca	43	378.3	2.8	**51.9377**	2.720	5.2	mg/L	48	Standard
Fe	54	155.8	7.4	**0.0035**	0.012	336.9	mg/L	159	Standard
Fe	57	446.7	11.3	**0.8756**	0.135	15.4	mg/L	195	Standard
> **Sc-1**	45	39693.6	2.3				mg/L	39543	Standard
Cl	35	45044.9	1.9				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	18554.7	4.8				ug/L	1647	Standard
P	31	20283.6	3.2				ug/L	15231	Standard
S	34	1950.1	2.9				ug/L	1845	Standard
Sr	88	140.0	14.3				ug/L	70	Standard
C	12	253.3	26.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	47.4	35.9				mg/L	12	Standard
Ho-1	165	25.0	72.1				mg/L	12	Standard
Er	166	53.3	21.7				mg/L	20	Standard
I	127	81681.7	5.6				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		126.242	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.534	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.142	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.427	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606036206
Sample Date/Time: Tuesday, June 28, 2016 14:02:36
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	108188.3	1.9				ug/L	81760	Standard
	Be	9	25.0	69.3	**0.0094**	0.014	144.0	ug/L	17	Standard
	Al	27	23235387.8	1.2	**113.9176**	1.672	1.5	ug/L	1410	Standard
	Sc	45	42060.0	3.5				ug/L	39543	Standard
	Ti	47	152.7	7.7	**0.4364**	0.055	12.6	ug/L	39	Standard
	V	51	2674.6	4.0	**0.1700**	0.012	6.8	ug/L	1415	Standard
	Cr	52	8527.1	1.1	**0.1424**	0.031	21.5	ug/L	6946	Standard
	Cr	53	1513.4	3.0	**1.3470**	0.073	5.5	ug/L	328	Standard
	Mn	55	17845.5	5.4	**2.5461**	0.135	5.3	ug/L	823	Standard
	Co	59	1119.4	15.5	**0.1245**	0.023	18.8	ug/L	252	Standard
	Ni	60	2702.9	1.5	**1.3004**	0.041	3.1	ug/L	192	Standard
	Cu	65	753.4	4.7	**0.2972**	0.013	4.4	ug/L	141	Standard
	Zn	66	1481.1	2.0	**0.4954**	0.035	7.0	ug/L	491	Standard
>	**Ge**	72	526170.8	1.4				ug/L	515087	Standard
	As	75	291.6	5.2	**0.2943**	0.014	4.7	ug/L	20	Standard
	Se	82	87.6	19.6	**0.6269**	0.155	24.7	ug/L	15	Standard
	Se-1	77	124.0	13.8	**0.8941**	0.239	26.7	ug/L	48	Standard
>	**Ga**	71	93.3	13.5				mg/L	90	Standard
	Rb	85	1890.1	1.5				ug/L	23	Standard
	Y	89	457488.4	1.5				ug/L	448510	Standard
>	**Rh**	103	41.7	45.4				ug/L	15	Standard
	Mo	98	1289.7	27.8	**0.4294**	0.125	29.1	ug/L	11	Standard
	Ag	107	132.0	62.6	**0.0022**	0.011	517.7	ug/L	134	Standard
	Cd	111	14.8	9.0	**0.0036**	0.001	18.2	mg/L	7	Standard
	Cd	114	35.3	64.8	**0.0015**	0.004	279.2	ug/L	16	Standard
>	**In**	115	650440.2	1.2				ug/L	611117	Standard
	Sn	118	795.0	5.8	**0.0244**	0.006	26.1	ug/L	518	Standard
	Sb	123	299.9	40.5	**0.0467**	0.023	50.3	ug/L	127	Standard
	Ba	135	16583.1	1.2	**7.5223**	0.109	1.5	ug/L	45	Standard
	Ce	140	573.3	12.7				ug/L	298	Standard
>	**Tb**	159	1070413.0	0.5				ug/L	977942	Standard
	Ho	165	35.0	14.3				ug/L	12	Standard
	Tl	203	143.0	68.4	**0.0109**	0.011	100.1	ug/L	31	Standard
	Tl	205	173.3	55.8	**0.0194**	0.012	61.7	ug/L	20	Standard
	Pb	206	407.0	5.8	**0.0055**	0.005	85.2	ug/L	286	Standard
	Pb	207	361.0	20.9	**0.0099**	0.014	143.4	ug/L	257	Standard
	Pb	208	1551.4	24.3	**0.0150**	0.018	119.8	ug/L	956	Standard
	U	238	2137.8	4.4	**0.2708**	0.011	4.2	ug/L	17	Standard
>	**Bi**	209	607194.4	1.0				ug/L	557080	Standard

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Na	23	15.0	57.7	**91.7381**	54.279	59.2	mg/L	0	Standard
Mg	24	7570.2	0.6	**9.4255**	0.372	3.9	mg/L	32	Standard
K	39	228.3	12.1	**0.5833**	0.074	12.7	mg/L	30	Standard
Ca	43	403.3	9.3	**52.3767**	6.757	12.9	mg/L	48	Standard
Fe	54	189.4	6.8	**0.0240**	0.007	29.2	mg/L	159	Standard
Fe	57	486.7	15.4	**0.9208**	0.241	26.2	mg/L	195	Standard
> **Sc-1**	45	42060.0	3.5				mg/L	39543	Standard
Cl	35	35390.6	1.2				ug/L	27642	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	8392.3	5.9				ug/L	1647	Standard
P	31	21440.2	3.3				ug/L	15231	Standard
S	34	2026.8	8.3				ug/L	1845	Standard
Sr	88	143.3	29.0				ug/L	70	Standard
C	12	223.3	9.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	47.9	21.4				mg/L	12	Standard
Ho-1	165	35.0	14.3				mg/L	12	Standard
Er	166	43.3	35.3				mg/L	20	Standard
I	127	10155.1	10.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.324	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.152	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	106.435
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	108.996
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606036207
Sample Date/Time: Tuesday, June 28, 2016 14:06:02
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	107639.4	1.9				ug/L	81760	Standard
	Be	9	20.0	0.0	**0.0056**	0.000	5.4	ug/L	17	Standard
	Al	27	3476504.2	1.7	**17.1173**	0.043	0.3	ug/L	1410	Standard
	Sc	45	39367.8	2.7				ug/L	39543	Standard
	Ti	47	100.3	3.5	**0.2518**	0.007	3.0	ug/L	39	Standard
	V	51	5441.1	3.8	**0.6024**	0.020	3.4	ug/L	1415	Standard
	Cr	52	7747.6	3.6	**0.0931**	0.026	27.8	ug/L	6946	Standard
	Cr	53	1961.8	9.7	**1.9650**	0.153	7.8	ug/L	328	Standard
	Mn	55	12138.9	1.5	**1.7871**	0.034	1.9	ug/L	823	Standard
	Co	59	2054.5	1.6	**0.2711**	0.013	4.9	ug/L	252	Standard
	Ni	60	1564.4	4.1	**0.7535**	0.028	3.7	ug/L	192	Standard
	Cu	65	3547.1	3.0	**1.8404**	0.110	6.0	ug/L	141	Standard
	Zn	66	3174.7	2.0	**2.1684**	0.146	6.7	ug/L	491	Standard
>	**Ge**	72	498440.9	3.0				ug/L	515087	Standard
	As	75	2063.4	4.9	**1.9397**	0.147	7.6	ug/L	20	Standard
	Se	82	279.9	8.8	**2.3986**	0.288	12.0	ug/L	15	Standard
	Se-1	77	196.7	12.4	**1.9867**	0.408	20.5	ug/L	48	Standard
>	**Ga**	71	203.3	22.3				mg/L	90	Standard
	Rb	85	4590.7	1.6				ug/L	23	Standard
	Y	89	429873.2	1.1				ug/L	448510	Standard
>	**Rh**	103	36.7	15.7				ug/L	15	Standard
	Mo	98	411573.4	1.6	**157.7590**	2.905	1.8	ug/L	11	Standard
	Ag	107	97.0	12.7	**-0.0013**	0.002	144.7	ug/L	134	Standard
	Cd	111	-313.3	8.5	**-0.1547**	0.012	7.7	mg/L	7	Standard
	Cd	114	654.0	5.6	**0.1255**	0.007	5.6	ug/L	16	Standard
>	**In**	115	589803.8	0.9				ug/L	611117	Standard
	Sn	118	783.4	15.3	**0.0353**	0.020	57.5	ug/L	518	Standard
	Sb	123	727.4	9.3	**0.1468**	0.014	9.3	ug/L	127	Standard
	Ba	135	15565.3	1.0	**7.7872**	0.095	1.2	ug/L	45	Standard
	Ce	140	646.7	2.7				ug/L	298	Standard
>	**Tb**	159	991896.0	2.4				ug/L	977942	Standard
	Ho	165	86.7	18.5				ug/L	12	Standard
	Tl	203	276.7	3.3	**0.0282**	0.002	5.4	ug/L	31	Standard
	Tl	205	283.3	3.7	**0.0365**	0.002	4.5	ug/L	20	Standard
	Pb	206	399.0	5.4	**0.0104**	0.005	44.3	ug/L	286	Standard
	Pb	207	325.3	5.9	**0.0089**	0.004	45.8	ug/L	257	Standard
	Pb	208	1296.0	0.3	**0.0084**	0.001	12.8	ug/L	956	Standard
	U	238	1382.7	4.5	**0.1905**	0.008	4.1	ug/L	17	Standard
>	**Bi**	209	555677.7	1.4				ug/L	557080	Standard

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Na	23	3.3	86.6	**21.6985**	18.802	86.6	mg/L	0	Standard
Mg	24	201508.1	2.0	**269.4503**	5.984	2.2	mg/L	32	Standard
K	39	1843.4	2.4	**6.1200**	0.302	4.9	mg/L	30	Standard
Ca	43	86.7	16.7	**7.9004**	2.376	30.1	mg/L	48	Standard
Fe	54	134.1	6.8	**-0.0152**	0.007	45.6	mg/L	159	Standard
Fe	57	218.3	31.3	**0.1119**	0.215	192.0	mg/L	195	Standard
> **Sc-1**	45	39367.8	2.7				mg/L	39543	Standard
Cl	35	57177.0	0.5				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	35885.9	6.7				ug/L	1647	Standard
P	31	17845.5	1.4				ug/L	15231	Standard
S	34	1995.1	3.9				ug/L	1845	Standard
Sr	88	96.7	26.5				ug/L	70	Standard
C	12	250.0	28.0				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	68.0	19.9				mg/L	12	Standard
Ho-1	165	86.7	18.5				mg/L	12	Standard
Er	166	180.0	33.3				mg/L	20	Standard
I	127	352295.0	10.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		131.653	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.768	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.512
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.748
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

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Method 6020 - Summary Report

Sample ID: L1606036208
Sample Date/Time: Tuesday, June 28, 2016 14:09:14
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	113878.0	0.7				ug/L	81760	Standard
	Be	9	15.0	33.3	**0.0011**	0.004	325.9	ug/L	17	Standard
	Al	27	36051659.4	1.3	**167.9026**	1.365	0.8	ug/L	1410	Standard
	Sc	45	40123.1	2.7				ug/L	39543	Standard
	Ti	47	157.7	1.6	**0.4795**	0.006	1.3	ug/L	39	Standard
	V	51	2374.4	7.5	**0.1409**	0.028	20.1	ug/L	1415	Standard
	Cr	52	8200.6	0.9	**0.1408**	0.017	11.9	ug/L	6946	Standard
	Cr	53	1531.7	7.2	**1.4329**	0.130	9.1	ug/L	328	Standard
	Mn	55	2760.9	2.4	**0.2845**	0.009	3.3	ug/L	823	Standard
	Co	59	1114.0	4.4	**0.1299**	0.007	5.8	ug/L	252	Standard
	Ni	60	3861.2	1.0	**1.9798**	0.033	1.7	ug/L	192	Standard
	Cu	65	1286.1	5.6	**0.5974**	0.039	6.5	ug/L	141	Standard
	Zn	66	2133.2	3.4	**1.1513**	0.069	6.0	ug/L	491	Standard
>	**Ge**	72	506573.0	0.6				ug/L	515087	Standard
	As	75	124.6	44.5	**0.1528**	0.050	32.6	ug/L	20	Standard
	Se	82	87.7	7.6	**0.6552**	0.055	8.5	ug/L	15	Standard
	Se-1	77	126.7	6.6	**0.9909**	0.116	11.7	ug/L	48	Standard
>	**Ga**	71	56.7	45.3				mg/L	90	Standard
	Rb	85	275.0	18.5				ug/L	23	Standard
	Y	89	450902.0	1.5				ug/L	448510	Standard
>	**Rh**	103	46.7	32.7				ug/L	15	Standard
	Mo	98	3181.2	4.8	**1.1379**	0.054	4.7	ug/L	11	Standard
	Ag	107	86.0	6.5	**-0.0036**	0.001	24.6	ug/L	134	Standard
	Cd	111	11.8	23.2	**0.0025**	0.001	50.9	mg/L	7	Standard
	Cd	114	54.8	27.0	**0.0054**	0.003	50.7	ug/L	16	Standard
>	**In**	115	621612.8	0.6				ug/L	611117	Standard
	Sn	118	878.4	13.7	**0.0442**	0.021	46.4	ug/L	518	Standard
	Sb	123	218.7	21.6	**0.0327**	0.010	30.0	ug/L	127	Standard
	Ba	135	24511.5	2.2	**11.6480**	0.297	2.5	ug/L	45	Standard
	Ce	140	126.7	17.8				ug/L	298	Standard
>	**Tb**	159	1020349.4	1.6				ug/L	977942	Standard
	Ho	165	38.3	41.9				ug/L	12	Standard
	Tl	203	70.7	5.4	**0.0034**	0.000	14.1	ug/L	31	Standard
	Tl	205	50.0	36.1	**0.0044**	0.002	54.4	ug/L	20	Standard
	Pb	206	339.3	6.0	**-0.0025**	0.003	133.5	ug/L	286	Standard
	Pb	207	287.3	3.0	**-0.0007**	0.002	279.9	ug/L	257	Standard
	Pb	208	1133.4	0.9	**-0.0020**	0.001	40.2	ug/L	956	Standard
	U	238	2248.5	2.1	**0.3023**	0.005	1.6	ug/L	17	Standard
>	**Bi**	209	572724.5	0.5				ug/L	557080	Standard

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Na	23	11.7	65.5	**74.1428**	49.752	67.1	mg/L	0	Standard
Mg	24	18449.6	1.2	**24.1624**	0.882	3.7	mg/L	32	Standard
K	39	318.3	12.8	**0.9203**	0.151	16.4	mg/L	30	Standard
Ca	43	671.7	8.0	**95.1609**	6.901	7.3	mg/L	48	Standard
Fe	54	172.3	21.8	**0.0165**	0.033	197.4	mg/L	159	Standard
Fe	57	548.3	9.0	**1.2014**	0.184	15.3	mg/L	195	Standard
> **Sc-1**	45	40123.1	2.7				mg/L	39543	Standard
Cl	35	45031.5	1.7				ug/L	27642	Standard
Kr	83	2.3	89.2				ug/L	2	Standard
Br	81	9216.1	3.8				ug/L	1647	Standard
P	31	22331.4	1.4				ug/L	15231	Standard
S	34	2088.5	6.2				ug/L	1845	Standard
Sr	88	246.7	15.5				ug/L	70	Standard
C	12	346.7	6.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	37.4	4.1				mg/L	12	Standard
Ho-1	165	38.3	41.9				mg/L	12	Standard
Er	166	53.3	60.3				mg/L	20	Standard
I	127	16496.5	38.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		139.283	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.347	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.718
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.808
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606036209
Sample Date/Time: Tuesday, June 28, 2016 14:12:25
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	107575.7	2.1				ug/L	81760	Standard
	Be	9	15.0	33.3	**0.0018**	0.004	223.3	ug/L	17	Standard
	Al	27	24368759.8	1.3	**120.1696**	2.653	2.2	ug/L	1410	Standard
	Sc	45	40144.8	3.7				ug/L	39543	Standard
	Ti	47	175.7	9.7	**0.5394**	0.064	11.9	ug/L	39	Standard
	V	51	1717.1	6.1	**0.0398**	0.013	33.2	ug/L	1415	Standard
	Cr	52	8804.6	0.4	**0.2048**	0.007	3.4	ug/L	6946	Standard
	Cr	53	1576.7	7.9	**1.4512**	0.154	10.6	ug/L	328	Standard
	Mn	55	1083613.1	0.9	**166.6059**	0.333	0.2	ug/L	823	Standard
	Co	59	2591.6	2.6	**0.3366**	0.007	2.1	ug/L	252	Standard
	Ni	60	4161.2	1.9	**2.0993**	0.030	1.4	ug/L	192	Standard
	Cu	65	1088.7	1.4	**0.4808**	0.011	2.3	ug/L	141	Standard
	Zn	66	3226.7	2.3	**2.1094**	0.068	3.2	ug/L	491	Standard
>	**Ge**	72	516304.1	0.8				ug/L	515087	Standard
	As	75	854.1	2.3	**0.7983**	0.019	2.4	ug/L	20	Standard
	Se	82	52.5	11.5	**0.3355**	0.056	16.6	ug/L	15	Standard
	Se-1	77	105.7	6.3	**0.6809**	0.097	14.3	ug/L	48	Standard
>	**Ga**	71	153.3	30.3				mg/L	90	Standard
	Rb	85	15286.0	2.4				ug/L	23	Standard
	Y	89	449805.6	1.9				ug/L	448510	Standard
>	**Rh**	103	36.7	43.8				ug/L	15	Standard
	Mo	98	1903.1	2.7	**0.6696**	0.018	2.6	ug/L	11	Standard
	Ag	107	88.0	6.3	**-0.0034**	0.001	30.6	ug/L	134	Standard
	Cd	111	24.4	20.6	**0.0083**	0.002	29.8	mg/L	7	Standard
	Cd	114	75.3	47.3	**0.0092**	0.007	71.3	ug/L	16	Standard
>	**In**	115	624865.1	1.8				ug/L	611117	Standard
	Sn	118	858.4	10.9	**0.0403**	0.018	44.8	ug/L	518	Standard
	Sb	123	598.6	8.7	**0.1114**	0.013	11.4	ug/L	127	Standard
	Ba	135	79235.0	1.1	**37.5150**	0.511	1.4	ug/L	45	Standard
	Ce	140	1043.4	5.0				ug/L	298	Standard
>	**Tb**	159	1006271.6	1.0				ug/L	977942	Standard
	Ho	165	31.7	55.5				ug/L	12	Standard
	Tl	203	94.7	10.4	**0.0060**	0.001	17.2	ug/L	31	Standard
	Tl	205	103.3	26.6	**0.0113**	0.003	31.1	ug/L	20	Standard
	Pb	206	1317.1	2.4	**0.1704**	0.008	4.5	ug/L	286	Standard
	Pb	207	1098.7	2.3	**0.1583**	0.006	3.8	ug/L	257	Standard
	Pb	208	4505.3	1.8	**0.1689**	0.006	3.3	ug/L	956	Standard
	U	238	1688.4	2.2	**0.2232**	0.003	1.5	ug/L	17	Standard
>	**Bi**	209	580367.6	0.9				ug/L	557080	Standard

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Na	23	5.0	100.0	**32.4402**	32.912	101.5	mg/L	0	Standard
Mg	24	8242.2	2.3	**10.7549**	0.236	2.2	mg/L	32	Standard
K	39	375.0	23.7	**1.1102**	0.318	28.6	mg/L	30	Standard
Ca	43	428.3	18.6	**58.5393**	9.751	16.7	mg/L	48	Standard
Fe	54	1288.6	9.8	**1.0145**	0.141	13.9	mg/L	159	Standard
Fe	57	713.4	8.9	**1.7461**	0.160	9.2	mg/L	195	Standard
> **Sc-1**	45	40144.8	3.7				mg/L	39543	Standard
Cl	35	37853.9	1.3				ug/L	27642	Standard
Kr	83	2.3	173.2				ug/L	2	Standard
Br	81	8949.3	3.3				ug/L	1647	Standard
P	31	22830.5	2.4				ug/L	15231	Standard
S	34	2348.5	6.0				ug/L	1845	Standard
Sr	88	131.7	18.7				ug/L	70	Standard
C	12	320.0	23.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	57.1	19.2				mg/L	12	Standard
Ho-1	165	31.7	55.5				mg/L	12	Standard
Er	166	60.0	44.1				mg/L	20	Standard
I	127	12798.7	0.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		131.575	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.236	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	102.250
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	104.180
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606036210
Sample Date/Time: Tuesday, June 28, 2016 14:15:37
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	112279.5	1.4				ug/L	81760	Standard
	Be	9	23.3	32.7	**0.0074**	0.006	75.4	ug/L	17	Standard
	Al	27	11519588.8	0.5	**54.4098**	0.542	1.0	ug/L	1410	Standard
	Sc	45	38345.1	1.2				ug/L	39543	Standard
	Ti	47	94.7	7.9	**0.2480**	0.026	10.6	ug/L	39	Standard
	V	51	2217.7	3.9	**0.1400**	0.014	10.3	ug/L	1415	Standard
	Cr	52	7580.6	0.1	**0.1258**	0.020	16.0	ug/L	6946	Standard
	Cr	53	2436.9	5.1	**2.6754**	0.201	7.5	ug/L	328	Standard
	Mn	55	75388.8	2.2	**12.4826**	0.333	2.7	ug/L	823	Standard
	Co	59	4144.2	3.9	**0.6094**	0.028	4.6	ug/L	252	Standard
	Ni	60	4832.4	1.6	**2.6820**	0.049	1.8	ug/L	192	Standard
	Cu	65	4625.4	2.6	**2.5532**	0.075	2.9	ug/L	141	Standard
	Zn	66	4203.9	2.1	**3.3383**	0.098	2.9	ug/L	491	Standard
>	**Ge**	72	474293.4	1.6				ug/L	515087	Standard
	As	75	1073.0	2.0	**1.0772**	0.038	3.5	ug/L	20	Standard
	Se	82	351.4	3.1	**3.1960**	0.130	4.1	ug/L	15	Standard
	Se-1	77	210.7	7.1	**2.3175**	0.198	8.5	ug/L	48	Standard
>	**Ga**	71	73.3	33.6				mg/L	90	Standard
	Rb	85	56526.9	1.1				ug/L	23	Standard
	Y	89	421082.0	1.6				ug/L	448510	Standard
>	**Rh**	103	96.7	14.9				ug/L	15	Standard
	Mo	98	257904.5	1.0	**100.5156**	1.205	1.2	ug/L	11	Standard
	Ag	107	79.7	12.8	**-0.0037**	0.002	45.1	ug/L	134	Standard
	Cd	111	-189.4	16.3	**-0.0962**	0.015	15.7	mg/L	7	Standard
	Cd	114	358.5	16.9	**0.0677**	0.012	17.5	ug/L	16	Standard
>	**In**	115	580013.8	0.6				ug/L	611117	Standard
	Sn	118	865.0	5.3	**0.0522**	0.009	16.9	ug/L	518	Standard
	Sb	123	234.3	5.5	**0.0395**	0.003	7.3	ug/L	127	Standard
	Ba	135	12298.0	0.4	**6.2513**	0.035	0.6	ug/L	45	Standard
	Ce	140	386.7	8.8				ug/L	298	Standard
>	**Tb**	159	979000.4	0.2				ug/L	977942	Standard
	Ho	165	86.7	26.6				ug/L	12	Standard
	Tl	203	556.3	8.3	**0.0635**	0.006	10.1	ug/L	31	Standard
	Tl	205	491.7	8.6	**0.0672**	0.007	10.1	ug/L	20	Standard
	Pb	206	339.7	4.4	**0.0013**	0.002	176.0	ug/L	286	Standard
	Pb	207	303.3	2.7	**0.0062**	0.001	17.9	ug/L	257	Standard
	Pb	208	1090.3	1.9	**-0.0007**	0.002	299.6	ug/L	956	Standard
	U	238	117.3	12.8	**0.0140**	0.002	17.0	ug/L	17	Standard
>	**Bi**	209	539461.3	1.8				ug/L	557080	Standard

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Na	23	8.3	34.6	**55.0323**	18.599	33.8	mg/L	0	Standard
Mg	24	255159.1	1.2	**350.2417**	6.027	1.7	mg/L	32	Standard
K	39	5237.6	3.5	**18.1047**	0.448	2.5	mg/L	30	Standard
Ca	43	815.0	11.2	**122.4307**	15.864	13.0	mg/L	48	Standard
Fe	54	150.7	21.1	**0.0038**	0.031	813.1	mg/L	159	Standard
Fe	57	818.4	11.3	**2.2227**	0.299	13.5	mg/L	195	Standard
> **Sc-1**	45	38345.1	1.2				mg/L	39543	Standard
Cl	35	84049.9	1.6				ug/L	27642	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	57144.3	3.2				ug/L	1647	Standard
P	31	18494.6	4.2				ug/L	15231	Standard
S	34	1918.5	8.3				ug/L	1845	Standard
Sr	88	445.0	8.9				ug/L	70	Standard
C	12	253.3	16.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	64.7	80.3				mg/L	12	Standard
Ho-1	165	86.7	26.6				mg/L	12	Standard
Er	166	110.0	9.1				mg/L	20	Standard
I	127	999438.0	9.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		137.328	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.080	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.911
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.837
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 14:18:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	108145.2	5.1				ug/L	81760	Standard
	Be	9	64242.8	4.5	**48.9113**	0.992	2.0	ug/L	17	Standard
	Al	27	8304059.2	3.3	**40.7429**	1.039	2.5	ug/L	1410	Standard
	Sc	45	37765.4	4.0				ug/L	39543	Standard
	Ti	47	23471.8	2.0	**97.1021**	1.269	1.3	ug/L	39	Standard
	V	51	349107.5	0.6	**51.5604**	0.772	1.5	ug/L	1415	Standard
	Cr	52	335198.9	1.2	**48.5745**	0.974	2.0	ug/L	6946	Standard
	Cr	53	41869.4	1.3	**48.8267**	1.454	3.0	ug/L	328	Standard
	Mn	55	314993.6	1.3	**49.9295**	0.954	1.9	ug/L	823	Standard
	Co	59	375345.6	0.1	**55.0339**	1.228	2.2	ug/L	252	Standard
	Ni	60	88766.6	0.5	**48.4746**	0.838	1.7	ug/L	192	Standard
	Cu	65	90675.9	1.2	**49.0916**	0.682	1.4	ug/L	141	Standard
	Zn	66	53067.8	0.6	**49.0759**	0.955	1.9	ug/L	491	Standard
>	Ge	72	499870.2	2.1				ug/L	515087	Standard
	As	75	55072.1	0.8	**50.5344**	1.449	2.9	ug/L	20	Standard
	Se	82	6022.1	1.2	**53.7900**	0.803	1.5	ug/L	15	Standard
	Se-1	77	3835.5	2.7	**51.7480**	1.296	2.5	ug/L	48	Standard
>	Ga	71	68.3	34.6				mg/L	90	Standard
	Rb	85	878.4	4.0				ug/L	23	Standard
	Y	89	444195.9	1.0				ug/L	448510	Standard
>	Rh	103	36.7	7.9				ug/L	15	Standard
	Mo	98	271765.3	0.4	**101.0586**	1.139	1.1	ug/L	11	Standard
	Ag	107	335937.1	0.8	**50.2935**	0.228	0.5	ug/L	134	Standard
	Cd	111	104881.4	1.9	**49.3201**	0.733	1.5	mg/L	7	Standard
	Cd	114	258223.7	2.1	**49.9610**	1.276	2.6	ug/L	16	Standard
>	In	115	607920.9	0.8				ug/L	611117	Standard
	Sn	118	297159.7	1.8	**50.4160**	0.583	1.2	ug/L	518	Standard
	Sb	123	233566.6	0.5	**49.7525**	0.427	0.9	ug/L	127	Standard
	Ba	135	100029.2	1.5	**48.6806**	0.509	1.0	ug/L	45	Standard
	Ce	140	56.7	27.0				ug/L	298	Standard
>	Tb	159	990459.3	1.9				ug/L	977942	Standard
	Ho	165	13.3	21.7				ug/L	12	Standard
	Tl	203	438180.8	0.9	**49.9571**	0.368	0.7	ug/L	31	Standard
	Tl	205	400912.4	1.6	**52.6337**	0.214	0.4	ug/L	20	Standard
	Pb	206	285968.6	0.8	**50.7733**	0.808	1.6	ug/L	286	Standard
	Pb	207	258378.5	0.4	**50.8616**	0.645	1.3	ug/L	257	Standard
	Pb	208	1010283.1	0.5	**51.4021**	0.498	1.0	ug/L	956	Standard
	U	238	389330.8	1.6	**52.1963**	0.349	0.7	ug/L	17	Standard
>	Bi	209	579902.5	1.4				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4220.6	3.3	**5.8326**	0.328	5.6	mg/L	32	Standard
K	39	1343.4	3.1	**4.6154**	0.216	4.7	mg/L	30	Standard
Ca	43	66.7	37.7	**5.1699**	3.623	70.1	mg/L	48	Standard
Fe	54	5699.2	5.0	**5.2644**	0.205	3.9	mg/L	159	Standard
Fe	57	1620.1	3.2	**5.1052**	0.186	3.6	mg/L	195	Standard
> **Sc-1**	45	37765.4	4.0				mg/L	39543	Standard
Cl	35	31900.9	3.3				ug/L	27642	Standard
Kr	83	2.3	89.2				ug/L	2	Standard
Br	81	2500.2	16.5				ug/L	1647	Standard
P	31	18272.7	3.1				ug/L	15231	Standard
S	34	2018.5	1.5				ug/L	1845	Standard
Sr	88	43.3	24.0				ug/L	70	Standard
C	12	196.7	21.2				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	12.4	50.3				mg/L	12	Standard
Ho-1	165	13.3	21.7				mg/L	12	Standard
Er	166	20.0	86.6				mg/L	20	Standard
I	127	32500.9	63.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	97.823		
Al	27	81.486		
Sc	45			
Ti	47	97.102		
V	51	103.121		
Cr	52	97.149		
Cr	53			
Mn	55	99.859		
Co	59	110.068		
Ni	60	96.949		
Cu	65	98.183		
Zn	66	98.152		
> Ge	72		97.046	
As	75	101.069		
Se	82	107.580		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.059		
Ag	107	100.587		
Cd	111	98.640		
Cd	114			
In	115		99.477	
Sn	118	100.832		
Sb	123	99.505		
Ba	135	97.361		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.914		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.804		
U	238	104.393		
Bi	209		104.097	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	
QC Std 6	Co	59	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 14:22:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	101364.8	2.9				ug/L	81760	Standard
	Be	9	38.3	49.4	**0.0216**	0.016	74.7	ug/L	17	Standard
	Al	27	15489.3	94.8	**0.0675**	0.079	117.4	ug/L	1410	Standard
	Sc	45	38064.4	0.9				ug/L	39543	Standard
	Ti	47	37.3	29.4	**-0.0111**	0.045	403.8	ug/L	39	Standard
	V	51	1161.3	1.6	**-0.0351**	0.002	6.4	ug/L	1415	Standard
	Cr	52	5982.8	2.5	**-0.1747**	0.020	11.4	ug/L	6946	Standard
	Cr	53	318.3	7.1	**0.0308**	0.025	81.8	ug/L	328	Standard
	Mn	55	894.7	9.5	**-0.0068**	0.013	197.2	ug/L	823	Standard
	Co	59	241.0	14.9	**0.0039**	0.005	138.8	ug/L	252	Standard
	Ni	60	266.0	10.4	**0.0400**	0.015	37.4	ug/L	192	Standard
	Cu	65	200.0	8.9	**0.0172**	0.009	54.5	ug/L	141	Standard
	Zn	66	430.0	7.9	**-0.4249**	0.030	7.1	ug/L	491	Standard
>	**Ge**	72	501700.0	0.4				ug/L	515087	Standard
	As	75	1.5	1379.3	**0.0417**	0.019	44.5	ug/L	20	Standard
	Se	82	27.3	19.7	**0.1242**	0.049	39.3	ug/L	15	Standard
	Se-1	77	54.3	18.4	**0.0219**	0.139	635.7	ug/L	48	Standard
>	**Ga**	71	63.3	9.1				mg/L	90	Standard
	Rb	85	26.7	28.6				ug/L	23	Standard
	Y	89	434979.7	1.5				ug/L	448510	Standard
>	**Rh**	103	11.7	89.2				ug/L	15	Standard
	Mo	98	412.1	20.1	**0.1325**	0.026	19.5	ug/L	11	Standard
	Ag	107	133.7	24.7	**0.0036**	0.005	131.9	ug/L	134	Standard
	Cd	111	17.6	36.9	**0.0053**	0.003	55.6	mg/L	7	Standard
	Cd	114	37.0	22.5	**0.0022**	0.002	81.0	ug/L	16	Standard
>	**In**	115	612643.0	3.0				ug/L	611117	Standard
	Sn	118	796.7	19.5	**0.0328**	0.028	85.4	ug/L	518	Standard
	Sb	123	465.9	23.7	**0.0860**	0.025	29.2	ug/L	127	Standard
	Ba	135	55.7	25.4	**0.0018**	0.007	380.6	ug/L	45	Standard
	Ce	140	23.3	53.9				ug/L	298	Standard
>	**Tb**	159	991657.2	2.1				ug/L	977942	Standard
	Ho	165	6.7	114.6				ug/L	12	Standard
	Tl	203	81.3	30.4	**0.0043**	0.003	63.5	ug/L	31	Standard
	Tl	205	65.0	13.3	**0.0061**	0.001	17.5	ug/L	20	Standard
	Pb	206	313.0	2.4	**-0.0091**	0.002	17.1	ug/L	286	Standard
	Pb	207	268.3	2.3	**-0.0063**	0.001	16.7	ug/L	257	Standard
	Pb	208	1057.3	6.3	**-0.0078**	0.003	38.5	ug/L	956	Standard
	U	238	61.3	40.7	**0.0051**	0.003	63.9	ug/L	17	Standard
>	**Bi**	209	592397.8	0.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	95.0	63.8	**0.0743**	0.084	112.6	mg/L	32	Standard
K	39	16.7	17.3	**-0.0829**	0.011	12.9	mg/L	30	Standard
Ca	43	31.7	36.5	**-0.3389**	1.874	552.9	mg/L	48	Standard
Fe	54	110.8	32.6	**-0.0331**	0.033	100.8	mg/L	159	Standard
Fe	57	168.3	28.5	**-0.0341**	0.169	494.5	mg/L	195	Standard
> **Sc-1**	45	38064.4	0.9				mg/L	39543	Standard
Cl	35	31593.6	0.5				ug/L	27642	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	1856.8	9.2				ug/L	1647	Standard
P	31	17672.0	1.1				ug/L	15231	Standard
S	34	2055.1	6.3				ug/L	1845	Standard
Sr	88	56.7	18.4				ug/L	70	Standard
C	12	170.0	20.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.3	173.2				mg/L	12	Standard
Ho-1	165	6.7	114.6				mg/L	12	Standard
Er	166	6.7	173.2				mg/L	20	Standard
I	127	7793.7	20.7				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.401	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.250
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.340
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606036211
Sample Date/Time: Tuesday, June 28, 2016 14:25:14
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	100807.6	1.2				ug/L	81760	Standard
	Be	9	76.7	13.6	**0.0528**	0.008	15.0	ug/L	17	Standard
	Al	27	23829161.3	1.5	**125.3655**	0.841	0.7	ug/L	1410	Standard
	Sc	45	39760.5	3.7				ug/L	39543	Standard
	Ti	47	180.7	0.8	**0.5860**	0.014	2.4	ug/L	39	Standard
	V	51	2583.8	5.2	**0.1775**	0.016	9.1	ug/L	1415	Standard
	Cr	52	8684.5	0.7	**0.2325**	0.005	2.3	ug/L	6946	Standard
	Cr	53	1498.4	3.7	**1.4227**	0.048	3.4	ug/L	328	Standard
	Mn	55	44479.2	1.1	**6.9441**	0.116	1.7	ug/L	823	Standard
	Co	59	1598.1	1.9	**0.2038**	0.006	2.9	ug/L	252	Standard
	Ni	60	3161.3	2.5	**1.6303**	0.047	2.9	ug/L	192	Standard
	Cu	65	697.7	3.7	**0.2888**	0.018	6.1	ug/L	141	Standard
	Zn	66	2205.8	4.6	**1.2527**	0.096	7.7	ug/L	491	Standard
>	**Ge**	72	498311.0	1.0				ug/L	515087	Standard
	As	75	175.3	10.2	**0.2014**	0.015	7.3	ug/L	20	Standard
	Se	82	90.2	6.0	**0.6901**	0.041	6.0	ug/L	15	Standard
	Se-1	77	104.3	15.6	**0.7141**	0.236	33.0	ug/L	48	Standard
>	**Ga**	71	91.7	19.2				mg/L	90	Standard
	Rb	85	3617.1	1.0				ug/L	23	Standard
	Y	89	438807.3	1.1				ug/L	448510	Standard
>	**Rh**	103	23.3	24.7				ug/L	15	Standard
	Mo	98	5340.3	1.5	**1.9620**	0.035	1.8	ug/L	11	Standard
	Ag	107	313.7	8.5	**0.0307**	0.004	14.3	ug/L	134	Standard
	Cd	111	102.5	10.0	**0.0451**	0.004	9.9	mg/L	7	Standard
	Cd	114	269.5	9.6	**0.0471**	0.005	11.0	ug/L	16	Standard
>	**In**	115	609490.3	1.0				ug/L	611117	Standard
	Sn	118	888.4	6.3	**0.0488**	0.011	22.0	ug/L	518	Standard
	Sb	123	739.4	5.4	**0.1443**	0.009	6.4	ug/L	127	Standard
	Ba	135	23651.8	1.3	**11.4620**	0.117	1.0	ug/L	45	Standard
	Ce	140	2515.2	8.7				ug/L	298	Standard
>	**Tb**	159	994391.3	1.1				ug/L	977942	Standard
	Ho	165	61.7	16.9				ug/L	12	Standard
	Tl	203	495.7	2.3	**0.0524**	0.001	2.2	ug/L	31	Standard
	Tl	205	451.7	6.1	**0.0577**	0.003	5.9	ug/L	20	Standard
	Pb	206	782.0	4.2	**0.0770**	0.005	7.0	ug/L	286	Standard
	Pb	207	638.7	5.2	**0.0693**	0.006	8.1	ug/L	257	Standard
	Pb	208	2612.4	2.6	**0.0742**	0.003	3.5	ug/L	956	Standard
	U	238	3078.0	1.8	**0.4146**	0.006	1.5	ug/L	17	Standard
>	**Bi**	209	573149.3	0.8				ug/L	557080	Standard

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Na	23	10.0	50.0	**63.1287**	29.742	47.1	mg/L	0	Standard
Mg	24	8182.2	4.0	**10.7839**	0.556	5.2	mg/L	32	Standard
K	39	235.0	11.8	**0.6477**	0.082	12.7	mg/L	30	Standard
Ca	43	488.3	8.8	**68.4110**	5.631	8.2	mg/L	48	Standard
Fe	54	190.4	22.3	**0.0341**	0.036	104.7	mg/L	159	Standard
Fe	57	451.7	3.2	**0.8921**	0.019	2.1	mg/L	195	Standard
> **Sc-1**	45	39760.5	3.7				mg/L	39543	Standard
Cl	35	36572.1	2.1				ug/L	27642	Standard
Kr	83	2.0	0.0				ug/L	2	Standard
Br	81	15501.3	5.9				ug/L	1647	Standard
P	31	22299.7	2.1				ug/L	15231	Standard
S	34	2183.5	4.1				ug/L	1845	Standard
Sr	88	141.7	11.3				ug/L	70	Standard
C	12	286.7	23.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	128.1	22.2				mg/L	12	Standard
Ho-1	165	61.7	16.9				mg/L	12	Standard
Er	166	110.0	63.6				mg/L	20	Standard
I	127	9539.7	2.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		123.297	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.743	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.734
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.884
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606036212
Sample Date/Time: Tuesday, June 28, 2016 14:28:25
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	101556.0	2.3				ug/L	81760	Standard
	Be	9	16.7	34.6	**0.0037**	0.005	121.7	ug/L	17	Standard
	Al	27	17765744.4	2.3	**92.8094**	3.109	3.3	ug/L	1410	Standard
	Sc	45	39087.0	2.2				ug/L	39543	Standard
	Ti	47	247.0	6.3	**0.8686**	0.057	6.6	ug/L	39	Standard
	V	51	2382.1	6.3	**0.1501**	0.021	13.9	ug/L	1415	Standard
	Cr	52	8300.6	1.1	**0.1842**	0.008	4.2	ug/L	6946	Standard
	Cr	53	1501.7	3.0	**1.4394**	0.046	3.2	ug/L	328	Standard
	Mn	55	1258376.0	0.7	**201.9190**	0.817	0.4	ug/L	823	Standard
	Co	59	3356.7	1.5	**0.4660**	0.012	2.5	ug/L	252	Standard
	Ni	60	3550.4	0.9	**1.8576**	0.023	1.3	ug/L	192	Standard
	Cu	65	1089.7	4.5	**0.5061**	0.022	4.4	ug/L	141	Standard
	Zn	66	2532.2	4.9	**1.5769**	0.099	6.3	ug/L	491	Standard
>	**Ge**	72	494799.1	0.8				ug/L	515087	Standard
	As	75	371.2	4.5	**0.3840**	0.014	3.7	ug/L	20	Standard
	Se	82	96.6	14.9	**0.7542**	0.127	16.9	ug/L	15	Standard
	Se-1	77	117.3	12.8	**0.9020**	0.200	22.2	ug/L	48	Standard
>	**Ga**	71	161.7	20.6				mg/L	90	Standard
	Rb	85	5996.2	5.2				ug/L	23	Standard
	Y	89	446186.9	1.4				ug/L	448510	Standard
>	**Rh**	103	35.0	37.8				ug/L	15	Standard
	Mo	98	1982.4	1.7	**0.7175**	0.021	3.0	ug/L	11	Standard
	Ag	107	87.7	6.7	**-0.0031**	0.001	30.7	ug/L	134	Standard
	Cd	111	81.3	17.6	**0.0353**	0.007	20.5	mg/L	7	Standard
	Cd	114	230.7	12.0	**0.0397**	0.006	14.9	ug/L	16	Standard
>	**In**	115	608659.5	1.3				ug/L	611117	Standard
	Sn	118	906.7	3.5	**0.0521**	0.007	12.9	ug/L	518	Standard
	Sb	123	394.5	7.6	**0.0711**	0.006	8.6	ug/L	127	Standard
	Ba	135	51224.8	1.3	**24.8890**	0.366	1.5	ug/L	45	Standard
	Ce	140	3013.6	4.4				ug/L	298	Standard
>	**Tb**	159	974496.5	1.8				ug/L	977942	Standard
	Ho	165	80.0	16.5				ug/L	12	Standard
	Tl	203	128.3	8.3	**0.0104**	0.001	10.4	ug/L	31	Standard
	Tl	205	91.7	22.0	**0.0102**	0.003	28.0	ug/L	20	Standard
	Pb	206	755.4	5.1	**0.0757**	0.008	10.8	ug/L	286	Standard
	Pb	207	644.0	3.0	**0.0736**	0.005	7.3	ug/L	257	Standard
	Pb	208	2468.4	2.8	**0.0700**	0.005	7.5	ug/L	956	Standard
	U	238	1502.1	3.5	**0.2059**	0.006	2.8	ug/L	17	Standard
>	**Bi**	209	559159.1	1.2				ug/L	557080	Standard

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Na	23	5.0	0.0	**32.4897**	0.713	2.2	mg/L	0	Standard
Mg	24	34367.3	2.9	**46.2225**	0.714	1.5	mg/L	32	Standard
K	39	518.3	10.6	**1.6321**	0.206	12.7	mg/L	30	Standard
Ca	43	333.3	3.5	**45.8704**	1.237	2.7	mg/L	48	Standard
Fe	54	313.8	12.6	**0.1508**	0.042	28.0	mg/L	159	Standard
Fe	57	493.3	3.3	**1.0616**	0.089	8.4	mg/L	195	Standard
> **Sc-1**	45	39087.0	2.2				mg/L	39543	Standard
Cl	35	40128.4	3.1				ug/L	27642	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	13105.7	7.2				ug/L	1647	Standard
P	31	21068.0	1.2				ug/L	15231	Standard
S	34	2031.8	3.8				ug/L	1845	Standard
Sr	88	195.0	14.3				ug/L	70	Standard
C	12	220.0	19.8				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	113.5	27.0				mg/L	12	Standard
Ho-1	165	80.0	16.5				mg/L	12	Standard
Er	166	66.7	48.2				mg/L	20	Standard
I	127	14735.5	4.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.212	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.061	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.598
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.373
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 14:31:38
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	96993.2	4.5				ug/L	81760	Standard
	Be	9	59018.4	6.5	**50.0965**	2.769	5.5	ug/L	17	Standard
	Al	27	7977258.4	4.2	**43.6214**	1.029	2.4	ug/L	1410	Standard
	Sc	45	38238.2	1.6				ug/L	39543	Standard
	Ti	47	23612.4	4.0	**98.7594**	3.955	4.0	ug/L	39	Standard
	V	51	340072.0	1.7	**50.7725**	1.247	2.5	ug/L	1415	Standard
	Cr	52	338200.8	3.5	**49.5590**	1.660	3.3	ug/L	6946	Standard
	Cr	53	42016.5	3.2	**49.5286**	1.703	3.4	ug/L	328	Standard
	Mn	55	307360.3	1.5	**49.2454**	0.735	1.5	ug/L	823	Standard
	Co	59	358545.3	2.7	**53.1356**	1.497	2.8	ug/L	252	Standard
	Ni	60	89705.8	2.1	**49.5206**	1.132	2.3	ug/L	192	Standard
	Cu	65	91128.3	2.1	**49.8745**	1.003	2.0	ug/L	141	Standard
	Zn	66	53559.8	1.4	**50.0843**	0.931	1.9	ug/L	491	Standard
>	Ge	72	494423.7	1.0				ug/L	515087	Standard
	As	75	53994.0	0.9	**50.0733**	0.496	1.0	ug/L	20	Standard
	Se	82	5715.9	0.2	**51.6065**	0.476	0.9	ug/L	15	Standard
	Se-1	77	3736.8	1.4	**50.9602**	0.952	1.9	ug/L	48	Standard
>	Ga	71	70.0	28.6				mg/L	90	Standard
	Rb	85	770.0	3.6				ug/L	23	Standard
	Y	89	445528.9	0.6				ug/L	448510	Standard
>	Rh	103	23.3	44.6				ug/L	15	Standard
	Mo	98	264652.3	1.1	**96.1672**	0.791	0.8	ug/L	11	Standard
	Ag	107	331013.3	2.8	**48.4244**	1.155	2.4	ug/L	134	Standard
	Cd	111	104542.0	2.3	**48.0434**	1.120	2.3	mg/L	7	Standard
	Cd	114	255433.5	4.1	**48.2912**	1.921	4.0	ug/L	16	Standard
>	In	115	622075.2	0.5				ug/L	611117	Standard
	Sn	118	295472.2	1.9	**48.9864**	0.743	1.5	ug/L	518	Standard
	Sb	123	230757.9	1.7	**48.0319**	0.618	1.3	ug/L	127	Standard
	Ba	135	99769.8	2.2	**47.4498**	0.988	2.1	ug/L	45	Standard
	Ce	140	73.3	7.9				ug/L	298	Standard
>	Tb	159	1000112.3	1.5				ug/L	977942	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	427237.6	2.4	**49.0359**	1.247	2.5	ug/L	31	Standard
	Tl	205	388094.9	2.7	**51.3011**	1.717	3.3	ug/L	20	Standard
	Pb	206	274003.7	2.0	**48.9721**	1.261	2.6	ug/L	286	Standard
	Pb	207	249924.4	1.5	**49.5263**	1.133	2.3	ug/L	257	Standard
	Pb	208	988217.1	0.7	**50.6156**	0.799	1.6	ug/L	956	Standard
	U	238	380024.3	2.2	**51.3005**	1.621	3.2	ug/L	17	Standard
>	Bi	209	576058.0	1.3				ug/L	557080	Standard

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Na	23	5.0	100.0	**33.2699**	32.995	99.2	mg/L	0	Standard
Mg	24	4203.9	5.4	**5.7315**	0.340	5.9	mg/L	32	Standard
K	39	1220.0	6.7	**4.1203**	0.250	6.1	mg/L	30	Standard
Ca	43	103.3	14.8	**10.9126**	2.675	24.5	mg/L	48	Standard
Fe	54	5915.4	3.1	**5.3996**	0.173	3.2	mg/L	159	Standard
Fe	57	1661.8	2.4	**5.1766**	0.085	1.6	mg/L	195	Standard
> **Sc-1**	45	38238.2	1.6				mg/L	39543	Standard
Cl	35	33728.9	2.6				ug/L	27642	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	1893.5	8.5				ug/L	1647	Standard
P	31	18936.8	1.0				ug/L	15231	Standard
S	34	2451.9	4.7				ug/L	1845	Standard
Sr	88	73.3	14.2				ug/L	70	Standard
C	12	160.0	43.3				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.2	6.0				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	16.7	69.3				mg/L	20	Standard
I	127	3007.0	16.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	100.193		
Al	27	87.243		
Sc	45			
Ti	47	98.759		
V	51	101.545		
Cr	52	99.118		
Cr	53			
Mn	55	98.491		
Co	59	106.271		
Ni	60	99.041		
Cu	65	99.749		
Zn	66	100.169		
> Ge	72		95.988	
As	75	100.147		
Se	82	103.213		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	96.167		
Ag	107	96.849		
Cd	111	96.087		
Cd	114			
In	115			101.793
Sn	118	97.973		
Sb	123	96.064		
Ba	135	94.900		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.072		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.231		
U	238	102.601		
Bi	209			103.407
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 14:34:50
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92870.5	2.0				ug/L	81760	Standard
	Be	9	15.0	66.7	**0.0036**	0.009	245.7	ug/L	17	Standard
	Al	27	2743.6	21.7	**0.0013**	0.004	284.3	ug/L	1410	Standard
	Sc	45	38460.4	1.3				ug/L	39543	Standard
	Ti	47	30.7	8.2	**-0.0403**	0.010	23.8	ug/L	39	Standard
	V	51	1134.9	2.6	**-0.0414**	0.005	11.0	ug/L	1415	Standard
	Cr	52	5878.1	2.2	**-0.2023**	0.026	12.8	ug/L	6946	Standard
	Cr	53	310.0	1.6	**0.0160**	0.005	29.1	ug/L	328	Standard
	Mn	55	709.4	9.1	**-0.0377**	0.010	26.9	ug/L	823	Standard
	Co	59	233.7	1.1	**0.0023**	0.001	24.5	ug/L	252	Standard
	Ni	60	211.0	9.6	**0.0084**	0.011	126.5	ug/L	192	Standard
	Cu	65	155.3	8.6	**-0.0081**	0.008	96.4	ug/L	141	Standard
	Zn	66	394.0	4.1	**-0.4638**	0.014	3.1	ug/L	491	Standard
>	**Ge**	72	508932.6	0.9				ug/L	515087	Standard
	As	75	-34.1	13.4	**0.0096**	0.004	45.1	ug/L	20	Standard
	Se	82	19.4	20.9	**0.0515**	0.036	69.8	ug/L	15	Standard
	Se-1	77	46.7	12.2	**-0.0918**	0.077	84.0	ug/L	48	Standard
>	**Ga**	71	66.7	8.7				mg/L	90	Standard
	Rb	85	15.0	33.3				ug/L	23	Standard
	Y	89	445570.9	1.5				ug/L	448510	Standard
>	**Rh**	103	15.0	88.2				ug/L	15	Standard
	Mo	98	287.3	16.9	**0.0864**	0.017	20.0	ug/L	11	Standard
	Ag	107	124.0	22.6	**0.0021**	0.004	200.7	ug/L	134	Standard
	Cd	111	14.8	9.5	**0.0040**	0.001	16.6	mg/L	7	Standard
	Cd	114	48.0	37.7	**0.0043**	0.004	82.8	ug/L	16	Standard
>	**In**	115	615541.5	0.9				ug/L	611117	Standard
	Sn	118	883.4	22.9	**0.0465**	0.035	74.9	ug/L	518	Standard
	Sb	123	479.5	25.7	**0.0882**	0.027	30.1	ug/L	127	Standard
	Ba	135	35.7	10.6	**-0.0080**	0.002	22.2	ug/L	45	Standard
	Ce	140	21.7	48.0				ug/L	298	Standard
>	**Tb**	159	980265.4	0.4				ug/L	977942	Standard
	Ho	165	16.7	45.8				ug/L	12	Standard
	Tl	203	63.0	23.1	**0.0024**	0.002	67.2	ug/L	31	Standard
	Tl	205	63.3	31.9	**0.0060**	0.003	42.7	ug/L	20	Standard
	Pb	206	313.3	5.4	**-0.0080**	0.003	36.6	ug/L	286	Standard
	Pb	207	273.0	6.7	**-0.0043**	0.004	87.0	ug/L	257	Standard
	Pb	208	1087.7	7.3	**-0.0051**	0.004	85.3	ug/L	956	Standard
	U	238	49.0	30.5	**0.0036**	0.002	56.1	ug/L	17	Standard
>	**Bi**	209	580619.2	1.2				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	35.0	28.6	**-0.0091**	0.014	156.5	mg/L	32	Standard
K	39	36.7	28.4	**-0.0142**	0.035	248.1	mg/L	30	Standard
Ca	43	26.7	57.3	**-1.1996**	2.339	195.0	mg/L	48	Standard
Fe	54	140.8	15.9	**-0.0061**	0.021	341.9	mg/L	159	Standard
Fe	57	151.7	6.9	**-0.0978**	0.042	43.3	mg/L	195	Standard
> **Sc-1**	45	38460.4	1.3				mg/L	39543	Standard
Cl	35	32500.2	3.2				ug/L	27642	Standard
Kr	83	3.0	0.0				ug/L	2	Standard
Br	81	1736.8	3.3				ug/L	1647	Standard
P	31	17698.7	3.2				ug/L	15231	Standard
S	34	2320.2	10.5				ug/L	1845	Standard
Sr	88	73.3	21.9				ug/L	70	Standard
C	12	133.3	15.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.0	113.3				mg/L	12	Standard
Ho-1	165	16.7	45.8				mg/L	12	Standard
Er	166	20.0	50.0				mg/L	20	Standard
I	127	2206.8	20.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.805	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.724
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.225
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBS M7 WG573333-03
Sample Date/Time: Tuesday, June 28, 2016 14:38:03
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	95050.7	3.1				ug/L	81760	Standard
	Be	9	18.3	87.7	**0.0062**	0.014	223.6	ug/L	17	Standard
	Al	27	17488.4	2.4	**0.0832**	0.003	3.2	ug/L	1410	Standard
	Sc	45	39132.2	2.7				ug/L	39543	Standard
	Ti	47	49.7	51.3	**0.0353**	0.101	286.1	ug/L	39	Standard
	V	51	1251.1	3.7	**-0.0255**	0.008	31.0	ug/L	1415	Standard
	Cr	52	8706.2	0.9	**0.2013**	0.013	6.2	ug/L	6946	Standard
	Cr	53	700.0	11.0	**0.4613**	0.093	20.2	ug/L	328	Standard
	Mn	55	1542.7	1.5	**0.0910**	0.006	6.6	ug/L	823	Standard
	Co	59	278.7	9.1	**0.0085**	0.003	38.3	ug/L	252	Standard
	Ni	60	602.0	5.9	**0.2166**	0.018	8.1	ug/L	192	Standard
	Cu	65	210.7	10.6	**0.0207**	0.012	58.0	ug/L	141	Standard
	Zn	66	1817.8	2.7	**0.8408**	0.028	3.4	ug/L	491	Standard
>	**Ge**	72	511962.6	1.0				ug/L	515087	Standard
	As	75	-35.9	60.1	**0.0082**	0.019	234.7	ug/L	20	Standard
	Se	82	20.1	18.9	**0.0563**	0.034	59.9	ug/L	15	Standard
	Se-1	77	44.7	10.1	**-0.1225**	0.058	47.0	ug/L	48	Standard
>	**Ga**	71	48.3	15.8				mg/L	90	Standard
	Rb	85	66.7	31.2				ug/L	23	Standard
	Y	89	442200.8	1.3				ug/L	448510	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	193.0	16.8	**0.0509**	0.011	21.8	ug/L	11	Standard
	Ag	107	97.0	17.0	**-0.0021**	0.002	110.1	ug/L	134	Standard
	Cd	111	7.4	64.2	**0.0005**	0.002	466.2	mg/L	7	Standard
	Cd	114	31.4	28.6	**0.0010**	0.002	163.8	ug/L	16	Standard
>	**In**	115	622890.2	1.7				ug/L	611117	Standard
	Sn	118	691.7	5.6	**0.0128**	0.005	38.1	ug/L	518	Standard
	Sb	123	212.1	15.5	**0.0312**	0.006	20.3	ug/L	127	Standard
	Ba	135	298.3	2.4	**0.1167**	0.001	1.2	ug/L	45	Standard
	Ce	140	113.3	24.3				ug/L	298	Standard
>	**Tb**	159	998579.7	1.5				ug/L	977942	Standard
	Ho	165	16.7	17.3				ug/L	12	Standard
	Tl	203	39.0	48.9	**-0.0004**	0.002	526.4	ug/L	31	Standard
	Tl	205	20.0	50.0	**0.0003**	0.001	421.9	ug/L	20	Standard
	Pb	206	313.7	9.3	**-0.0086**	0.005	56.5	ug/L	286	Standard
	Pb	207	273.0	2.4	**-0.0050**	0.001	28.4	ug/L	257	Standard
	Pb	208	1093.3	1.9	**-0.0055**	0.001	16.3	ug/L	956	Standard
	U	238	24.3	55.2	**0.0002**	0.002	711.6	ug/L	17	Standard
>	**Bi**	209	587793.8	0.5				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	36.7	7.9	**-0.0078**	0.003	35.7	mg/L	32	Standard
K	39	35.0	51.5	**-0.0208**	0.064	309.0	mg/L	30	Standard
Ca	43	25.0	34.6	**-1.5082**	1.327	88.0	mg/L	48	Standard
Fe	54	165.5	15.5	**0.0140**	0.019	138.8	mg/L	159	Standard
Fe	57	203.3	9.9	**0.0704**	0.084	119.9	mg/L	195	Standard
> **Sc-1**	45	39132.2	2.7				mg/L	39543	Standard
Cl	35	33734.8	0.7				ug/L	27642	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	1786.8	3.4				ug/L	1647	Standard
P	31	17722.0	1.9				ug/L	15231	Standard
S	34	2341.8	1.1				ug/L	1845	Standard
Sr	88	65.0	27.7				ug/L	70	Standard
C	12	180.0	47.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	18.7	93.3				mg/L	12	Standard
Ho-1	165	16.7	17.3				mg/L	12	Standard
Er	166	26.7	21.7				mg/L	20	Standard
I	127	1696.8	8.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.256	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.393	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.927
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.513
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSS M7 WG573333-04
Sample Date/Time: Tuesday, June 28, 2016 14:41:14
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92927.6	3.1				ug/L	81760	Standard
	Be	9	30111.6	3.7	**26.7031**	1.769	6.6	ug/L	17	Standard
	Al	27	18035.9	13.5	**0.0888**	0.016	18.2	ug/L	1410	Standard
	Sc	45	39361.1	1.9				ug/L	39543	Standard
	Ti	47	37.0	28.2	**-0.0130**	0.042	322.2	ug/L	39	Standard
	V	51	182372.3	3.8	**26.6531**	1.518	5.7	ug/L	1415	Standard
	Cr	52	189442.3	3.6	**26.8012**	1.501	5.6	ug/L	6946	Standard
	Cr	53	22922.3	1.8	**26.3866**	1.122	4.3	ug/L	328	Standard
	Mn	55	169435.1	3.2	**26.6017**	1.285	4.8	ug/L	823	Standard
	Co	59	193981.0	3.8	**28.2331**	1.651	5.8	ug/L	252	Standard
	Ni	60	48862.7	3.3	**26.4525**	1.352	5.1	ug/L	192	Standard
	Cu	65	49743.6	2.7	**26.7036**	1.173	4.4	ug/L	141	Standard
	Zn	66	30362.1	3.5	**27.5261**	1.455	5.3	ug/L	491	Standard
>	**Ge**	72	503563.1	2.3				ug/L	515087	Standard
	As	75	29155.1	3.3	**26.5827**	1.325	5.0	ug/L	20	Standard
	Se	82	3055.7	1.7	**27.0468**	1.107	4.1	ug/L	15	Standard
	Se-1	77	2068.5	3.5	**27.3757**	1.137	4.2	ug/L	48	Standard
>	**Ga**	71	53.3	14.3				mg/L	90	Standard
	Rb	85	78.3	16.1				ug/L	23	Standard
	Y	89	444634.7	2.0				ug/L	448510	Standard
>	**Rh**	103	18.3	41.7				ug/L	15	Standard
	Mo	98	104.5	23.9	**0.0190**	0.010	51.3	ug/L	11	Standard
	Ag	107	179344.1	3.7	**26.2092**	1.706	6.5	ug/L	134	Standard
	Cd	111	55845.5	2.3	**25.6355**	1.334	5.2	mg/L	7	Standard
	Cd	114	136877.4	2.6	**25.8483**	1.371	5.3	ug/L	16	Standard
>	**In**	115	623373.0	3.0				ug/L	611117	Standard
	Sn	118	755.0	11.3	**0.0235**	0.016	68.2	ug/L	518	Standard
	Sb	123	124890.1	3.5	**25.9676**	1.618	6.2	ug/L	127	Standard
	Ba	135	53944.6	3.3	**25.6212**	1.575	6.1	ug/L	45	Standard
	Ce	140	106.7	9.8				ug/L	298	Standard
>	**Tb**	159	976375.9	3.3				ug/L	977942	Standard
	Ho	165	15.0	57.7				ug/L	12	Standard
	Tl	203	229696.9	2.8	**26.5184**	1.549	5.8	ug/L	31	Standard
	Tl	205	205993.8	3.8	**27.3937**	1.852	6.8	ug/L	20	Standard
	Pb	206	150555.8	3.2	**27.0395**	1.637	6.1	ug/L	286	Standard
	Pb	207	130667.9	3.7	**26.0217**	1.699	6.5	ug/L	257	Standard
	Pb	208	532429.0	3.5	**27.4071**	1.756	6.4	ug/L	956	Standard
	U	238	197217.2	3.4	**26.7798**	1.720	6.4	ug/L	17	Standard
>	**Bi**	209	573273.6	3.1				ug/L	557080	Standard

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Na	23	3.3	86.6	**21.2655**	18.412	86.6	mg/L	0	Standard
Mg	24	50.0	43.6	**0.0096**	0.028	296.2	mg/L	32	Standard
K	39	30.0	100.0	**-0.0395**	0.101	254.9	mg/L	30	Standard
Ca	43	25.0	40.0	**-1.5307**	1.509	98.6	mg/L	48	Standard
Fe	54	141.7	2.7	**-0.0082**	0.003	33.7	mg/L	159	Standard
Fe	57	226.7	9.9	**0.1435**	0.065	45.0	mg/L	195	Standard
> **Sc-1**	45	39361.1	1.9				mg/L	39543	Standard
Cl	35	35061.2	2.7				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1886.8	4.9				ug/L	1647	Standard
P	31	18956.9	6.3				ug/L	15231	Standard
S	34	2375.2	1.6				ug/L	1845	Standard
Sr	88	65.0	30.8				ug/L	70	Standard
C	12	170.0	38.6				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	12.7	49.8				mg/L	12	Standard
Ho-1	165	15.0	57.7				mg/L	12	Standard
Er	166	13.3	86.6				mg/L	20	Standard
I	127	1553.4	15.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.659	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.763	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.006
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.907
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606105301 WG573333-02
Sample Date/Time: Tuesday, June 28, 2016 14:44:26
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92504.9	1.8				ug/L	81760	Standard
	Be	9	211.7	3.6	**0.1787**	0.009	5.2	ug/L	17	Standard
	Al	27	476632.7	0.6	**2.7192**	0.058	2.1	ug/L	1410	Standard
	Sc	45	39899.1	1.7				ug/L	39543	Standard
	Ti	47	7508.9	2.4	**29.9625**	0.867	2.9	ug/L	39	Standard
	V	51	54226.8	0.3	**7.5775**	0.105	1.4	ug/L	1415	Standard
	Cr	52	35510.9	0.6	**4.0327**	0.059	1.5	ug/L	6946	Standard
	Cr	53	3988.9	7.5	**4.1910**	0.323	7.7	ug/L	328	Standard
	Mn	55	226862.1	2.5	**34.7724**	1.274	3.7	ug/L	823	Standard
	Co	59	8803.9	0.2	**1.2188**	0.017	1.4	ug/L	252	Standard
	Ni	60	5989.2	1.6	**3.0677**	0.039	1.3	ug/L	192	Standard
	Cu	65	4442.7	0.7	**2.2418**	0.014	0.6	ug/L	141	Standard
	Zn	66	19698.8	1.0	**17.1048**	0.367	2.1	ug/L	491	Standard
>	**Ge**	72	516312.9	1.2				ug/L	515087	Standard
	As	75	2960.6	0.8	**2.6677**	0.048	1.8	ug/L	20	Standard
	Se	82	53.9	7.9	**0.3477**	0.042	12.1	ug/L	15	Standard
	Se-1	77	82.0	6.8	**0.3676**	0.085	23.1	ug/L	48	Standard
>	**Ga**	71	5075.9	3.2				mg/L	90	Standard
	Rb	85	19981.5	3.8				ug/L	23	Standard
	Y	89	472017.4	2.4				ug/L	448510	Standard
>	**Rh**	103	21.7	26.6				ug/L	15	Standard
	Mo	98	6655.2	1.4	**2.4116**	0.043	1.8	ug/L	11	Standard
	Ag	107	178.7	11.3	**0.0101**	0.003	29.0	ug/L	134	Standard
	Cd	111	244.9	9.1	**0.1102**	0.010	9.1	mg/L	7	Standard
	Cd	114	621.2	5.8	**0.1131**	0.007	6.2	ug/L	16	Standard
>	**In**	115	619055.2	0.3				ug/L	611117	Standard
	Sn	118	640.0	5.5	**0.0049**	0.006	124.7	ug/L	518	Standard
	Sb	123	463.5	5.3	**0.0841**	0.005	6.4	ug/L	127	Standard
	Ba	135	41539.5	1.0	**19.8378**	0.203	1.0	ug/L	45	Standard
	Ce	140	324520.8	1.6				ug/L	298	Standard
>	**Tb**	159	988287.6	1.4				ug/L	977942	Standard
	Ho	165	2263.5	6.3				ug/L	12	Standard
	Tl	203	550.3	1.1	**0.0581**	0.001	1.2	ug/L	31	Standard
	Tl	205	506.7	1.1	**0.0644**	0.001	1.1	ug/L	20	Standard
	Pb	206	143402.5	0.9	**25.4978**	0.319	1.3	ug/L	286	Standard
	Pb	207	120708.6	0.6	**23.7943**	0.166	0.7	ug/L	257	Standard
	Pb	208	491539.2	1.4	**25.0461**	0.389	1.6	ug/L	956	Standard
	U	238	1919.1	2.3	**0.2551**	0.006	2.5	ug/L	17	Standard
>	**Bi**	209	578289.7	0.5				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.6918**	18.510	173.1	mg/L	0	Standard
Mg	24	41.7	30.2	**-0.0023**	0.016	678.2	mg/L	32	Standard
K	39	48.3	15.8	**0.0204**	0.026	126.1	mg/L	30	Standard
Ca	43	38.3	27.2	**0.4078**	1.458	357.4	mg/L	48	Standard
Fe	54	3682.2	3.4	**3.1665**	0.134	4.2	mg/L	159	Standard
Fe	57	1100.0	9.6	**3.0601**	0.408	13.3	mg/L	195	Standard
> **Sc-1**	45	39899.1	1.7				mg/L	39543	Standard
Cl	35	32895.7	2.7				ug/L	27642	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	2153.5	9.2				ug/L	1647	Standard
P	31	17883.9	3.0				ug/L	15231	Standard
S	34	2195.2	9.1				ug/L	1845	Standard
Sr	88	71.7	4.0				ug/L	70	Standard
C	12	220.0	19.8				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	40.0	25.0				mg/L	0	Standard
Dy	164	4107.1	8.5				mg/L	12	Standard
Ho-1	165	2263.5	6.3				mg/L	12	Standard
Er	166	2160.2	2.1				mg/L	20	Standard
I	127	7528.5	2.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.142	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.238	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.299
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.807
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606105302S WG573333-07
Sample Date/Time: Tuesday, June 28, 2016 14:47:37
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	91483.8	2.5				ug/L	81760	Standard
	Be	9	28575.3	3.7	**25.7021**	0.502	2.0	ug/L	17	Standard
	Al	27	472647.5	0.9	**2.7267**	0.044	1.6	ug/L	1410	Standard
	Sc	45	40355.4	2.6				ug/L	39543	Standard
	Ti	47	8788.9	2.8	**34.8074**	0.551	1.6	ug/L	39	Standard
	V	51	216754.8	1.8	**30.6603**	0.748	2.4	ug/L	1415	Standard
	Cr	52	202224.9	0.6	**27.6955**	0.221	0.8	ug/L	6946	Standard
	Cr	53	25461.4	2.5	**28.3619**	0.467	1.6	ug/L	328	Standard
	Mn	55	374661.4	3.0	**57.0462**	1.611	2.8	ug/L	823	Standard
	Co	59	185021.8	2.1	**26.0317**	0.592	2.3	ug/L	252	Standard
	Ni	60	51684.0	1.6	**27.0535**	0.107	0.4	ug/L	192	Standard
	Cu	65	52133.2	1.4	**27.0623**	0.171	0.6	ug/L	141	Standard
	Zn	66	46187.6	0.8	**40.8778**	0.267	0.7	ug/L	491	Standard
>	**Ge**	72	520472.6	1.2				ug/L	515087	Standard
	As	75	27327.3	2.3	**24.0946**	0.465	1.9	ug/L	20	Standard
	Se	82	2628.8	2.4	**22.4788**	0.502	2.2	ug/L	15	Standard
	Se-1	77	1784.1	1.0	**22.7201**	0.347	1.5	ug/L	48	Standard
>	**Ga**	71	5215.9	5.7				mg/L	90	Standard
	Rb	85	16937.8	2.3				ug/L	23	Standard
	Y	89	458647.4	1.3				ug/L	448510	Standard
>	**Rh**	103	30.0	44.1				ug/L	15	Standard
	Mo	98	18905.8	1.4	**6.8731**	0.106	1.5	ug/L	11	Standard
	Ag	107	155307.6	0.6	**22.7819**	0.123	0.5	ug/L	134	Standard
	Cd	111	52492.7	0.7	**24.1959**	0.317	1.3	mg/L	7	Standard
	Cd	114	128079.2	0.4	**24.2856**	0.076	0.3	ug/L	16	Standard
>	**In**	115	620204.7	0.6				ug/L	611117	Standard
	Sn	118	685.0	20.9	**0.0121**	0.023	191.0	ug/L	518	Standard
	Sb	123	65087.0	0.8	**13.5800**	0.099	0.7	ug/L	127	Standard
	Ba	135	93846.7	0.6	**44.7672**	0.375	0.8	ug/L	45	Standard
	Ce	140	331961.2	1.7				ug/L	298	Standard
>	**Tb**	159	981697.8	0.7				ug/L	977942	Standard
	Ho	165	1903.5	2.0				ug/L	12	Standard
	Tl	203	213525.6	1.3	**24.5875**	0.365	1.5	ug/L	31	Standard
	Tl	205	191177.1	1.7	**25.3529**	0.481	1.9	ug/L	20	Standard
	Pb	206	446032.3	1.2	**80.0233**	1.190	1.5	ug/L	286	Standard
	Pb	207	376762.1	1.5	**74.9381**	1.277	1.7	ug/L	257	Standard
	Pb	208	1506170.9	0.7	**77.4336**	0.690	0.9	ug/L	956	Standard
	U	238	183525.9	0.8	**24.8532**	0.261	1.1	ug/L	17	Standard
>	**Bi**	209	574082.0	0.2				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	51.7	22.3	**0.0106**	0.017	161.8	mg/L	32	Standard
K	39	33.3	8.7	**-0.0312**	0.007	21.8	mg/L	30	Standard
Ca	43	38.3	15.1	**0.3768**	1.024	271.7	mg/L	48	Standard
Fe	54	2984.3	5.7	**2.5132**	0.224	8.9	mg/L	159	Standard
Fe	57	1001.7	4.5	**2.6914**	0.198	7.3	mg/L	195	Standard
> **Sc-1**	45	40355.4	2.6				mg/L	39543	Standard
Cl	35	31360.4	1.4				ug/L	27642	Standard
Kr	83	1.0	173.2				ug/L	2	Standard
Br	81	2753.6	4.6				ug/L	1647	Standard
P	31	16745.9	1.5				ug/L	15231	Standard
S	34	2118.5	5.5				ug/L	1845	Standard
Sr	88	78.3	9.8				ug/L	70	Standard
C	12	286.7	29.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	56.7	100.3				mg/L	0	Standard
Dy	164	3434.6	3.8				mg/L	12	Standard
Ho-1	165	1903.5	2.0				mg/L	12	Standard
Er	166	1860.1	3.3				mg/L	20	Standard
I	127	5512.7	1.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.893	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.046	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.487
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.052
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606105303SD WG573333-08
Sample Date/Time: Tuesday, June 28, 2016 14:50:49
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90707.5	2.1				ug/L	81760	Standard
	Be	9	28490.1	1.5	**25.8507**	0.239	0.9	ug/L	17	Standard
	Al	27	517242.7	0.8	**3.0108**	0.045	1.5	ug/L	1410	Standard
	Sc	45	41104.0	1.1				ug/L	39543	Standard
	Ti	47	9706.8	1.9	**39.3684**	1.018	2.6	ug/L	39	Standard
	V	51	220560.4	0.1	**31.9323**	0.545	1.7	ug/L	1415	Standard
	Cr	52	204805.0	1.1	**28.7389**	0.342	1.2	ug/L	6946	Standard
	Cr	53	25147.5	3.9	**28.6674**	1.000	3.5	ug/L	328	Standard
	Mn	55	371807.0	1.2	**57.9433**	1.578	2.7	ug/L	823	Standard
	Co	59	187737.3	0.6	**27.0316**	0.558	2.1	ug/L	252	Standard
	Ni	60	52302.5	0.6	**28.0202**	0.336	1.2	ug/L	192	Standard
	Cu	65	51530.8	0.8	**27.3738**	0.234	0.9	ug/L	141	Standard
	Zn	66	58955.2	1.6	**53.6399**	0.321	0.6	ug/L	491	Standard
>	**Ge**	72	508670.0	1.6				ug/L	515087	Standard
	As	75	26613.2	0.3	**24.0128**	0.310	1.3	ug/L	20	Standard
	Se	82	2643.5	1.0	**23.1344**	0.377	1.6	ug/L	15	Standard
	Se-1	77	1782.1	1.4	**23.2396**	0.549	2.4	ug/L	48	Standard
>	**Ga**	71	5607.7	2.4				mg/L	90	Standard
	Rb	85	19120.4	0.8				ug/L	23	Standard
	Y	89	464944.5	0.8				ug/L	448510	Standard
>	**Rh**	103	20.0	66.1				ug/L	15	Standard
	Mo	98	6589.1	2.9	**2.3569**	0.065	2.7	ug/L	11	Standard
	Ag	107	161248.5	0.9	**23.3982**	0.239	1.0	ug/L	134	Standard
	Cd	111	52808.4	0.9	**24.0772**	0.233	1.0	mg/L	7	Standard
	Cd	114	128062.2	0.6	**24.0198**	0.192	0.8	ug/L	16	Standard
>	**In**	115	626980.9	0.2				ug/L	611117	Standard
	Sn	118	691.7	6.1	**0.0121**	0.007	57.7	ug/L	518	Standard
	Sb	123	64415.1	1.9	**13.2945**	0.276	2.1	ug/L	127	Standard
	Ba	135	100181.1	0.9	**47.2728**	0.453	1.0	ug/L	45	Standard
	Ce	140	306983.9	0.9				ug/L	298	Standard
>	**Tb**	159	992773.6	1.4				ug/L	977942	Standard
	Ho	165	1925.1	2.4				ug/L	12	Standard
	Tl	203	213931.4	0.2	**24.2345**	0.027	0.1	ug/L	31	Standard
	Tl	205	188875.1	1.2	**24.6411**	0.299	1.2	ug/L	20	Standard
	Pb	206	399455.5	0.3	**70.4964**	0.248	0.4	ug/L	286	Standard
	Pb	207	335397.3	0.3	**65.6206**	0.221	0.3	ug/L	257	Standard
	Pb	208	1377394.4	0.8	**69.6587**	0.536	0.8	ug/L	956	Standard
	U	238	183479.9	0.5	**24.4438**	0.133	0.5	ug/L	17	Standard
>	**Bi**	209	583538.4	0.1				ug/L	557080	Standard

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	Na	23	0.0		**0.0050**			mg/L	0	Standard
	Mg	24	45.0	11.1	**0.0005**	0.006	1275.5	mg/L	32	Standard
	K	39	46.7	12.4	**0.0102**	0.018	179.3	mg/L	30	Standard
	Ca	43	46.7	40.6	**1.4697**	2.764	188.0	mg/L	48	Standard
	Fe	54	3552.4	2.1	**2.9565**	0.098	3.3	mg/L	159	Standard
	Fe	57	1123.4	10.8	**3.0231**	0.384	12.7	mg/L	195	Standard
>	**Sc-1**	45	41104.0	1.1				mg/L	39543	Standard
	Cl	35	31493.4	1.6				ug/L	27642	Standard
	Kr	83	1.7	69.3				ug/L	2	Standard
	Br	81	2126.8	11.6				ug/L	1647	Standard
	P	31	16392.2	2.4				ug/L	15231	Standard
	S	34	1988.5	3.7				ug/L	1845	Standard
	Sr	88	56.7	20.4				ug/L	70	Standard
	C	12	256.7	29.2				mg/L	113	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	73.3	34.3				mg/L	0	Standard
	Dy	164	3598.5	4.6				mg/L	12	Standard
	Ho-1	165	1925.1	2.4				mg/L	12	Standard
	Er	166	1710.1	5.6				mg/L	20	Standard
	I	127	5772.8	6.4				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		110.943	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.754	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.596
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.749
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606104801
Sample Date/Time: Tuesday, June 28, 2016 14:54:00
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	87619.5	3.9				ug/L	81760	Standard
	Be	9	323.3	11.2	**0.2951**	0.044	15.0	ug/L	17	Standard
	Al	27	1546436.6	2.8	**9.3502**	0.142	1.5	ug/L	1410	Standard
	Sc	45	40666.2	2.1				ug/L	39543	Standard
	Ti	47	348.0	4.5	**1.2425**	0.055	4.4	ug/L	39	Standard
	V	51	27678.8	0.4	**3.7995**	0.033	0.9	ug/L	1415	Standard
	Cr	52	26992.7	1.5	**2.8437**	0.051	1.8	ug/L	6946	Standard
	Cr	53	2932.0	5.7	**3.0177**	0.170	5.6	ug/L	328	Standard
	Mn	55	139361.0	0.9	**21.4761**	0.101	0.5	ug/L	823	Standard
	Co	59	8883.9	1.8	**1.2405**	0.015	1.2	ug/L	252	Standard
	Ni	60	10083.0	1.9	**5.2809**	0.102	1.9	ug/L	192	Standard
	Cu	65	17655.3	1.5	**9.2565**	0.148	1.6	ug/L	141	Standard
	Zn	66	24172.6	2.4	**21.3574**	0.493	2.3	ug/L	491	Standard
>	**Ge**	72	512038.2	0.7				ug/L	515087	Standard
	As	75	255.5	6.8	**0.2688**	0.014	5.3	ug/L	20	Standard
	Se	82	53.2	11.2	**0.3458**	0.053	15.2	ug/L	15	Standard
	Se-1	77	80.3	12.8	**0.3545**	0.144	40.6	ug/L	48	Standard
>	**Ga**	71	3018.6	3.1				mg/L	90	Standard
	Rb	85	16969.5	1.9				ug/L	23	Standard
	Y	89	529226.2	0.9				ug/L	448510	Standard
>	**Rh**	103	10.0					ug/L	15	Standard
	Mo	98	313.0	4.7	**0.0960**	0.005	5.5	ug/L	11	Standard
	Ag	107	442.0	1.6	**0.0492**	0.001	1.7	ug/L	134	Standard
	Cd	111	534.5	3.9	**0.2456**	0.011	4.4	mg/L	7	Standard
	Cd	114	1438.1	5.6	**0.2703**	0.019	7.1	ug/L	16	Standard
>	**In**	115	614980.8	1.4				ug/L	611117	Standard
	Sn	118	1005.0	9.0	**0.0670**	0.016	23.2	ug/L	518	Standard
	Sb	123	831.9	19.2	**0.1627**	0.036	21.9	ug/L	127	Standard
	Ba	135	51902.4	2.2	**24.9562**	0.305	1.2	ug/L	45	Standard
	Ce	140	320029.2	2.5				ug/L	298	Standard
>	**Tb**	159	977861.1	0.7				ug/L	977942	Standard
	Ho	165	6373.0	4.5				ug/L	12	Standard
	Tl	203	276.7	7.5	**0.0277**	0.002	8.0	ug/L	31	Standard
	Tl	205	265.0	17.0	**0.0335**	0.006	17.4	ug/L	20	Standard
	Pb	206	33506.0	0.9	**6.0646**	0.072	1.2	ug/L	286	Standard
	Pb	207	27548.0	1.0	**5.5276**	0.068	1.2	ug/L	257	Standard
	Pb	208	115638.2	1.3	**6.0000**	0.078	1.3	ug/L	956	Standard
	U	238	6967.9	1.8	**0.9584**	0.022	2.3	ug/L	17	Standard
>	**Bi**	209	563593.3	0.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	48.3	36.3	**0.0057**	0.024	420.3	mg/L	32	Standard
K	39	71.7	21.3	**0.0944**	0.052	54.8	mg/L	30	Standard
Ca	43	58.3	17.8	**3.2603**	1.450	44.5	mg/L	48	Standard
Fe	54	2389.6	6.6	**1.9680**	0.178	9.0	mg/L	159	Standard
Fe	57	746.7	5.6	**1.8289**	0.182	10.0	mg/L	195	Standard
Sc-1	45	40666.2	2.1				mg/L	39543	Standard
Cl	35	32405.3	1.2				ug/L	27642	Standard
Kr	83	4.0	43.3				ug/L	2	Standard
Br	81	2003.5	7.8				ug/L	1647	Standard
P	31	17084.6	3.9				ug/L	15231	Standard
S	34	2108.5	4.8				ug/L	1845	Standard
Sr	88	73.3	30.7				ug/L	70	Standard
C	12	240.0	38.2				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	20.0				mg/L	0	Standard
Dy	164	9760.8	1.5				mg/L	12	Standard
Ho-1	165	6373.0	4.5				mg/L	12	Standard
Er	166	5897.8	8.3				mg/L	20	Standard
I	127	2141.8	10.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		107.167	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.408	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		100.632
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		101.169
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606104801PS WG573475-03
Sample Date/Time: Tuesday, June 28, 2016 14:57:11
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90811.3	0.7				ug/L	81760	Standard
	Be	9	56498.5	1.8	**51.2132**	1.080	2.1	ug/L	17	Standard
	Al	27	1545775.3	0.6	**9.0143**	0.017	0.2	ug/L	1410	Standard
	Sc	45	41961.4	1.6				ug/L	39543	Standard
	Ti	47	342.0	11.2	**1.1864**	0.157	13.2	ug/L	39	Standard
	V	51	392129.2	0.5	**55.2170**	0.488	0.9	ug/L	1415	Standard
	Cr	52	384433.3	0.4	**53.1980**	0.445	0.8	ug/L	6946	Standard
	Cr	53	48853.7	2.8	**54.3367**	1.767	3.3	ug/L	328	Standard
	Mn	55	478138.1	0.8	**72.3045**	0.492	0.7	ug/L	823	Standard
	Co	59	389747.9	0.3	**54.4630**	0.290	0.5	ug/L	252	Standard
	Ni	60	106262.0	0.3	**55.3242**	0.400	0.7	ug/L	192	Standard
	Cu	65	114943.7	0.4	**59.3369**	0.368	0.6	ug/L	141	Standard
	Zn	66	80976.1	0.1	**71.7501**	0.396	0.6	ug/L	491	Standard
>	**Ge**	72	524333.4	0.5				ug/L	515087	Standard
	As	75	59243.0	1.9	**51.8077**	1.242	2.4	ug/L	20	Standard
	Se	82	6211.1	2.1	**52.8798**	1.213	2.3	ug/L	15	Standard
	Se-1	77	4085.6	1.2	**52.5558**	0.559	1.1	ug/L	48	Standard
>	**Ga**	71	3287.0	1.8				mg/L	90	Standard
	Rb	85	16744.3	3.7				ug/L	23	Standard
	Y	89	522998.5	1.8				ug/L	448510	Standard
>	**Rh**	103	28.3	36.7				ug/L	15	Standard
	Mo	98	332.0	9.1	**0.1017**	0.011	11.1	ug/L	11	Standard
	Ag	107	350941.4	1.0	**51.3750**	0.335	0.7	ug/L	134	Standard
	Cd	111	110107.7	1.0	**50.6313**	0.348	0.7	mg/L	7	Standard
	Cd	114	268982.1	1.5	**50.8849**	0.677	1.3	ug/L	16	Standard
>	**In**	115	621693.0	0.4				ug/L	611117	Standard
	Sn	118	1258.4	5.6	**0.1073**	0.012	10.9	ug/L	518	Standard
	Sb	123	241746.4	1.3	**50.3512**	0.498	1.0	ug/L	127	Standard
	Ba	135	155747.4	0.9	**74.1325**	0.655	0.9	ug/L	45	Standard
	Ce	140	312396.1	0.8				ug/L	298	Standard
>	**Tb**	159	997317.5	1.6				ug/L	977942	Standard
	Ho	165	6548.1	1.9				ug/L	12	Standard
	Tl	203	447292.7	0.3	**50.4657**	0.615	1.2	ug/L	31	Standard
	Tl	205	398193.6	1.5	**51.7351**	0.805	1.6	ug/L	20	Standard
	Pb	206	325033.3	0.1	**57.1116**	0.488	0.9	ug/L	286	Standard
	Pb	207	282464.7	0.8	**55.0228**	0.100	0.2	ug/L	257	Standard
	Pb	208	1144735.7	1.0	**57.6431**	0.938	1.6	ug/L	956	Standard
	U	238	386201.4	1.1	**51.2415**	0.797	1.6	ug/L	17	Standard
>	**Bi**	209	586004.9	0.9				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	48.3	41.8	**0.0038**	0.026	698.9	mg/L	32	Standard
K	39	65.0	20.4	**0.0660**	0.045	68.1	mg/L	30	Standard
Ca	43	46.7	27.0	**1.3158**	1.694	128.8	mg/L	48	Standard
Fe	54	2337.7	11.4	**1.8584**	0.246	13.3	mg/L	159	Standard
Fe	57	760.0	13.2	**1.7916**	0.300	16.7	mg/L	195	Standard
> **Sc-1**	45	41961.4	1.6				mg/L	39543	Standard
Cl	35	32737.3	1.7				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	2180.2	6.6				ug/L	1647	Standard
P	31	17061.3	3.2				ug/L	15231	Standard
S	34	2245.2	3.3				ug/L	1845	Standard
Sr	88	81.7	12.7				ug/L	70	Standard
C	12	226.7	6.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	32.7				mg/L	0	Standard
Dy	164	10105.0	3.1				mg/L	12	Standard
Ho-1	165	6548.1	1.9				mg/L	12	Standard
Er	166	5884.5	3.8				mg/L	20	Standard
I	127	2158.5	15.1				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		111.071	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.795	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606104801PS WG573475-03
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.731
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.192
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606104801SDL WG573475-04
Sample Date/Time: Tuesday, June 28, 2016 15:00:23
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89188.5	2.4				ug/L	81760	Standard
	Be	9	71.7	4.0	**0.0564**	0.001	2.3	ug/L	17	Standard
	Al	27	302683.6	0.7	**1.7866**	0.056	3.1	ug/L	1410	Standard
	Sc	45	41125.8	3.4				ug/L	39543	Standard
	Ti	47	82.7	6.2	**0.1644**	0.030	18.2	ug/L	39	Standard
	V	51	6527.8	1.5	**0.7233**	0.030	4.1	ug/L	1415	Standard
	Cr	52	10512.6	0.6	**0.4384**	0.054	12.4	ug/L	6946	Standard
	Cr	53	805.0	22.0	**0.5666**	0.199	35.2	ug/L	328	Standard
	Mn	55	27749.4	1.2	**4.0892**	0.112	2.7	ug/L	823	Standard
	Co	59	1936.1	6.5	**0.2412**	0.012	4.8	ug/L	252	Standard
	Ni	60	2147.2	1.2	**1.0241**	0.047	4.6	ug/L	192	Standard
	Cu	65	3398.4	1.3	**1.6803**	0.070	4.1	ug/L	141	Standard
	Zn	66	7011.6	1.2	**5.5054**	0.150	2.7	ug/L	491	Standard
>	**Ge**	72	520536.2	3.0				ug/L	515087	Standard
	As	75	60.9	66.9	**0.0932**	0.035	37.4	ug/L	20	Standard
	Se	82	24.2	49.2	**0.0869**	0.099	113.8	ug/L	15	Standard
	Se-1	77	55.3	11.8	**0.0096**	0.103	1081.5	ug/L	48	Standard
>	**Ga**	71	663.3	7.6				mg/L	90	Standard
	Rb	85	3270.4	5.2				ug/L	23	Standard
	Y	89	464717.5	1.9				ug/L	448510	Standard
>	**Rh**	103	16.7	121.2				ug/L	15	Standard
	Mo	98	80.8	3.1	**0.0096**	0.001	7.0	ug/L	11	Standard
	Ag	107	180.0	20.5	**0.0094**	0.005	54.7	ug/L	134	Standard
	Cd	111	113.9	5.5	**0.0481**	0.003	5.7	mg/L	7	Standard
	Cd	114	303.5	12.8	**0.0510**	0.007	13.8	ug/L	16	Standard
>	**In**	115	638226.3	1.3				ug/L	611117	Standard
	Sn	118	801.7	13.2	**0.0279**	0.017	59.8	ug/L	518	Standard
	Sb	123	2112.7	26.2	**0.4158**	0.111	26.6	ug/L	127	Standard
	Ba	135	10186.4	1.4	**4.7001**	0.102	2.2	ug/L	45	Standard
	Ce	140	62112.1	0.6				ug/L	298	Standard
>	**Tb**	159	1019737.0	1.0				ug/L	977942	Standard
	Ho	165	1263.4	4.0				ug/L	12	Standard
	Tl	203	113.0	16.9	**0.0078**	0.002	24.0	ug/L	31	Standard
	Tl	205	118.3	30.6	**0.0128**	0.004	33.6	ug/L	20	Standard
	Pb	206	6901.2	1.0	**1.1348**	0.029	2.6	ug/L	286	Standard
	Pb	207	5663.1	0.8	**1.0321**	0.019	1.9	ug/L	257	Standard
	Pb	208	22745.7	0.6	**1.0713**	0.025	2.3	ug/L	956	Standard
	U	238	1347.1	2.4	**0.1734**	0.003	1.5	ug/L	17	Standard
>	**Bi**	209	593755.8	1.9				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	45.0	40.1	**0.0009**	0.025	2626.8	mg/L	32	Standard
K	39	30.0	28.9	**-0.0443**	0.026	58.3	mg/L	30	Standard
Ca	43	28.3	20.4	**-1.2169**	0.752	61.8	mg/L	48	Standard
Fe	54	584.0	13.3	**0.3714**	0.068	18.2	mg/L	159	Standard
Fe	57	295.0	14.5	**0.3314**	0.118	35.5	mg/L	195	Standard
> **Sc-1**	45	41125.8	3.4				mg/L	39543	Standard
Cl	35	31826.1	1.1				ug/L	27642	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	1903.5	3.4				ug/L	1647	Standard
P	31	16692.5	3.1				ug/L	15231	Standard
S	34	2128.5	4.6				ug/L	1845	Standard
Sr	88	68.3	36.1				ug/L	70	Standard
C	12	176.7	42.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	1953.3	7.3				mg/L	12	Standard
Ho-1	165	1263.4	4.0				mg/L	12	Standard
Er	166	1116.7	6.8				mg/L	20	Standard
I	127	1450.1	11.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.086	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.058	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.436
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.584
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Tuesday, June 28, 2016 15:03:36
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	89282.3	1.4				ug/L	81760	Standard
	Be	9	15.0	33.3	**0.0041**	0.005	114.8	ug/L	17	Standard
	Al	27	7897505.8	1.4	**46.9037**	0.018	0.0	ug/L	1410	Standard
	Sc	45	39757.1	3.6				ug/L	39543	Standard
	Ti	47	27232.5	2.5	**109.9775**	3.234	2.9	ug/L	39	Standard
	V	51	789.3	35.9	**-0.0922**	0.042	45.6	ug/L	1415	Standard
	Cr	52	7275.7	2.2	**-0.0059**	0.028	478.1	ug/L	6946	Standard
	Cr	53	6823.2	10.4	**7.4758**	0.819	11.0	ug/L	328	Standard
	Mn	55	1397.7	2.4	**0.0683**	0.004	5.9	ug/L	823	Standard
	Co	59	388.0	3.6	**0.0242**	0.002	7.5	ug/L	252	Standard
	Ni	60	839.0	6.3	**0.3431**	0.028	8.3	ug/L	192	Standard
	Cu	65	614.0	0.9	**0.2341**	0.001	0.3	ug/L	141	Standard
	Zn	66	1957.1	1.8	**0.9682**	0.037	3.8	ug/L	491	Standard
>	Ge	72	512179.1	1.0				ug/L	515087	Standard
	As	75	-64.0	70.1	**-0.0170**	0.040	237.0	ug/L	20	Standard
	Se	82	21.9	13.2	**0.0720**	0.027	37.3	ug/L	15	Standard
	Se-1	77	397.7	7.2	**4.5923**	0.428	9.3	ug/L	48	Standard
>	Ga	71	168.3	7.5				mg/L	90	Standard
	Rb	85	1135.0	8.9				ug/L	23	Standard
	Y	89	442720.4	1.1				ug/L	448510	Standard
>	Rh	103	10.0	50.0				ug/L	15	Standard
	Mo	98	272741.3	0.7	**100.8481**	1.185	1.2	ug/L	11	Standard
	Ag	107	262.0	2.0	**0.0228**	0.001	4.1	ug/L	134	Standard
	Cd	111	-198.2	9.3	**-0.0956**	0.008	8.7	mg/L	7	Standard
	Cd	114	465.1	17.4	**0.0845**	0.015	17.7	ug/L	16	Standard
>	In	115	611378.2	0.9				ug/L	611117	Standard
	Sn	118	743.4	13.4	**0.0238**	0.017	73.3	ug/L	518	Standard
	Sb	123	656.7	25.2	**0.1264**	0.036	28.5	ug/L	127	Standard
	Ba	135	610.7	6.5	**0.2705**	0.017	6.2	ug/L	45	Standard
	Ce	140	266.7	9.2				ug/L	298	Standard
>	Tb	159	977869.4	2.5				ug/L	977942	Standard
	Ho	165	16.7	17.3				ug/L	12	Standard
	Tl	203	193.3	8.8	**0.0182**	0.002	10.2	ug/L	31	Standard
	Tl	205	168.3	10.4	**0.0207**	0.002	10.8	ug/L	20	Standard
	Pb	206	552.7	5.7	**0.0387**	0.005	12.2	ug/L	286	Standard
	Pb	207	474.0	2.6	**0.0392**	0.001	3.3	ug/L	257	Standard
	Pb	208	1934.7	0.9	**0.0422**	0.002	5.1	ug/L	956	Standard
	U	238	35.3	29.7	**0.0020**	0.001	71.8	ug/L	17	Standard
>	Bi	209	556811.8	1.3				ug/L	557080	Standard

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Na	23	3.3	173.2	**20.5038**	35.505	173.2	mg/L	0	Standard
Mg	24	10406.9	1.4	**13.7318**	0.472	3.4	mg/L	32	Standard
K	39	1353.4	4.9	**4.4093**	0.243	5.5	mg/L	30	Standard
Ca	43	183.3	3.1	**22.3899**	1.779	7.9	mg/L	48	Standard
Fe	54	14710.0	1.7	**13.1205**	0.693	5.3	mg/L	159	Standard
Fe	57	4182.2	3.4	**13.4196**	0.181	1.3	mg/L	195	Standard
> **Sc-1**	45	39757.1	3.6				mg/L	39543	Standard
Cl	35	33087.4	2.4				ug/L	27642	Standard
Kr	83	1.3	173.2				ug/L	2	Standard
Br	81	1766.8	6.4				ug/L	1647	Standard
P	31	17728.7	3.7				ug/L	15231	Standard
S	34	2340.2	3.3				ug/L	1845	Standard
Sr	88	45.0	0.0				ug/L	70	Standard
C	12	306.7	6.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	93.3	12.4				mg/L	0	Standard
Dy	164	15.1	45.8				mg/L	12	Standard
Ho-1	165	16.7	17.3				mg/L	12	Standard
Er	166	33.3	75.5				mg/L	20	Standard
I	127	1891.8	6.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27	0.938		
Sc	45			
Ti	47	109.978		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.435	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	100.848		
Ag	107			
Cd	111			
Cd	114			
In	115			100.043
Sn	118			
Sb	123			
Ba	135			
Ce	140			
Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
Bi	209			99.952
Na	23	164.030		
Mg	24	274.635		
K	39	88.187		
Ca	43	149.266		
Fe	54	104.964		
Fe	57	107.357		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	

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QC Std 4	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Tuesday, June 28, 2016 15:06:47
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	87968.0	1.5				ug/L	81760	Standard
	Be	9	111223.4	1.1	**104.1090**	2.678	2.6	ug/L	17	Standard
	Al	27	8303576.6	1.0	**50.0632**	1.083	2.2	ug/L	1410	Standard
	Sc	45	38970.1	2.5				ug/L	39543	Standard
	Ti	47	28030.6	1.5	**112.6949**	1.093	1.0	ug/L	39	Standard
	V	51	696349.8	1.4	**100.1131**	1.784	1.8	ug/L	1415	Standard
	Cr	52	683707.3	0.8	**97.2904**	0.687	0.7	ug/L	6946	Standard
	Cr	53	91713.5	1.8	**104.2725**	1.761	1.7	ug/L	328	Standard
	Mn	55	633248.9	0.6	**97.6578**	0.701	0.7	ug/L	823	Standard
	Co	59	716430.9	0.3	**102.0719**	1.125	1.1	ug/L	252	Standard
	Ni	60	180604.4	0.8	**95.9232**	1.625	1.7	ug/L	192	Standard
	Cu	65	185052.2	0.7	**97.4326**	1.562	1.6	ug/L	141	Standard
	Zn	66	113502.2	0.3	**102.8618**	0.650	0.6	ug/L	491	Standard
>	Ge	72	514438.0	0.9				ug/L	515087	Standard
	As	75	114188.1	0.3	**101.7361**	0.865	0.8	ug/L	20	Standard
	Se	82	11752.5	0.4	**102.0988**	1.402	1.4	ug/L	15	Standard
	Se-1	77	8079.2	0.7	**106.6610**	0.727	0.7	ug/L	48	Standard
>	Ga	71	190.0	7.0				mg/L	90	Standard
	Rb	85	893.4	6.0				ug/L	23	Standard
	Y	89	434662.6	1.6				ug/L	448510	Standard
>	Rh	103	38.3	52.7				ug/L	15	Standard
	Mo	98	282406.5	1.5	**107.3339**	1.537	1.4	ug/L	11	Standard
	Ag	107	594345.7	0.8	**90.9666**	1.393	1.5	ug/L	134	Standard
	Cd	111	207638.0	0.2	**99.8149**	1.587	1.6	mg/L	7	Standard
	Cd	114	499764.2	0.7	**98.8323**	1.071	1.1	ug/L	16	Standard
>	In	115	594810.8	1.6				ug/L	611117	Standard
	Sn	118	1138.4	7.8	**0.0959**	0.015	15.6	ug/L	518	Standard
	Sb	123	463528.1	1.1	**100.9493**	2.612	2.6	ug/L	127	Standard
	Ba	135	197524.5	0.1	**98.2892**	1.431	1.5	ug/L	45	Standard
	Ce	140	85.0	21.2				ug/L	298	Standard
>	Tb	159	967938.8	1.8				ug/L	977942	Standard
	Ho	165	8.3	69.3				ug/L	12	Standard
	Tl	203	848553.4	0.8	**99.1555**	1.255	1.3	ug/L	31	Standard
	Tl	205	762572.5	0.3	**102.6175**	1.400	1.4	ug/L	20	Standard
	Pb	206	559247.5	0.6	**101.8213**	1.258	1.2	ug/L	286	Standard
	Pb	207	488004.9	0.6	**98.5027**	1.226	1.2	ug/L	257	Standard
	Pb	208	1955600.4	0.4	**102.0354**	1.641	1.6	ug/L	956	Standard
	U	238	737824.6	0.7	**101.3974**	2.083	2.1	ug/L	17	Standard
>	Bi	209	565855.3	1.5				ug/L	557080	Standard

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Na	23	3.3	86.6	**21.8863**	18.964	86.6	mg/L	0	Standard
Mg	24	10742.1	1.4	**14.4601**	0.490	3.4	mg/L	32	Standard
K	39	1261.7	7.3	**4.1815**	0.232	5.5	mg/L	30	Standard
Ca	43	183.3	29.9	**22.9918**	8.781	38.2	mg/L	48	Standard
Fe	54	15164.6	1.1	**13.7950**	0.409	3.0	mg/L	159	Standard
Fe	57	4003.9	4.1	**13.0952**	0.606	4.6	mg/L	195	Standard
Sc-1	45	38970.1	2.5				mg/L	39543	Standard
Cl	35	31476.7	2.0				ug/L	27642	Standard
Kr	83	3.3	75.5				ug/L	2	Standard
Br	81	1726.8	7.1				ug/L	1647	Standard
P	31	16804.3	1.0				ug/L	15231	Standard
S	34	2221.8	2.4				ug/L	1845	Standard
Sr	88	46.7	22.3				ug/L	70	Standard
C	12	280.0	21.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	25.2	45.9				mg/L	12	Standard
Ho-1	165	8.3	69.3				mg/L	12	Standard
Er	166	30.0	66.7				mg/L	20	Standard
I	127	1238.4	19.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	104.109		
Al	27	1.001		
Sc	45			
Ti	47	112.695		
V	51	100.113		
Cr	52	97.290		
Cr	53			
Mn	55	97.658		
Co	59	102.072		
Ni	60	95.923		
Cu	65	97.433		
Zn	66	102.862		
> Ge	72		99.874	
As	75	101.736		
Se	82	102.099		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	107.334		
Ag	107	90.967		
Cd	111	99.815		
Cd	114			
In	115		97.332	
Sn	118			
Sb	123	100.949		
Ba	135	98.289		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.155		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.035		
U	238	101.397		
Bi	209		101.575	
Na	23	175.090		
Mg	24	289.203		
K	39	83.630		
Ca	43	153.278		
Fe	54	110.360		
Fe	57	104.761		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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QC Std 5	Ca	43

Sample ID: QC Std 5
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 15:10:01
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85172.2	3.3				ug/L	81760	Standard
	Be	9	53236.8	4.1	**51.4767**	2.435	4.7	ug/L	17	Standard
	Al	27	7628795.8	0.6	**47.5256**	1.416	3.0	ug/L	1410	Standard
	Sc	45	37696.8	2.0				ug/L	39543	Standard
	Ti	47	24164.9	0.9	**98.0401**	2.312	2.4	ug/L	39	Standard
	V	51	343835.2	0.1	**49.7831**	0.751	1.5	ug/L	1415	Standard
	Cr	52	344282.1	1.0	**48.9253**	1.054	2.2	ug/L	6946	Standard
	Cr	53	43472.3	1.9	**49.7131**	1.693	3.4	ug/L	328	Standard
	Mn	55	313567.9	1.4	**48.7360**	1.405	2.9	ug/L	823	Standard
	Co	59	359786.6	1.1	**51.7171**	1.082	2.1	ug/L	252	Standard
	Ni	60	90351.3	0.3	**48.3759**	0.827	1.7	ug/L	192	Standard
	Cu	65	92251.0	0.7	**48.9699**	0.708	1.4	ug/L	141	Standard
	Zn	66	54515.2	1.1	**49.4372**	1.191	2.4	ug/L	491	Standard
>	**Ge**	72	509796.1	1.5				ug/L	515087	Standard
	As	75	55417.4	0.8	**49.8530**	1.118	2.2	ug/L	20	Standard
	Se	82	5885.8	2.0	**51.5527**	1.791	3.5	ug/L	15	Standard
	Se-1	77	3913.8	2.3	**51.7920**	1.979	3.8	ug/L	48	Standard
>	**Ga**	71	60.0	14.4				mg/L	90	Standard
	Rb	85	760.0	3.9				ug/L	23	Standard
	Y	89	437496.8	1.0				ug/L	448510	Standard
>	**Rh**	103	35.0	28.6				ug/L	15	Standard
	Mo	98	271668.8	0.6	**101.2993**	0.747	0.7	ug/L	11	Standard
	Ag	107	329448.9	0.2	**49.4598**	0.339	0.7	ug/L	134	Standard
	Cd	111	103364.2	1.7	**48.7409**	0.531	1.1	mg/L	7	Standard
	Cd	114	251263.5	1.7	**48.7432**	0.553	1.1	ug/L	16	Standard
>	**In**	115	606236.0	0.6				ug/L	611117	Standard
	Sn	118	288784.4	0.3	**49.1320**	0.341	0.7	ug/L	518	Standard
	Sb	123	235993.4	0.4	**50.4089**	0.456	0.9	ug/L	127	Standard
	Ba	135	99324.5	0.4	**48.4735**	0.237	0.5	ug/L	45	Standard
	Ce	140	126.7	35.6				ug/L	298	Standard
>	**Tb**	159	959991.8	0.1				ug/L	977942	Standard
	Ho	165	8.3	34.6				ug/L	12	Standard
	Tl	203	427212.2	0.6	**50.5774**	0.492	1.0	ug/L	31	Standard
	Tl	205	380951.0	2.1	**51.9422**	1.422	2.7	ug/L	20	Standard
	Pb	206	273119.7	0.4	**50.3511**	0.572	1.1	ug/L	286	Standard
	Pb	207	248886.2	0.4	**50.8720**	0.472	0.9	ug/L	257	Standard
	Pb	208	972505.1	1.3	**51.3811**	0.993	1.9	ug/L	956	Standard
	U	238	367751.0	1.4	**51.2030**	1.055	2.1	ug/L	17	Standard
>	**Bi**	209	558440.3	0.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4133.9	5.5	**5.7164**	0.326	5.7	mg/L	32	Standard
K	39	1253.4	8.2	**4.3011**	0.352	8.2	mg/L	30	Standard
Ca	43	70.0	37.8	**5.7557**	4.052	70.4	mg/L	48	Standard
Fe	54	5742.0	2.6	**5.3173**	0.253	4.8	mg/L	159	Standard
Fe	57	1578.4	3.1	**4.9652**	0.143	2.9	mg/L	195	Standard
> **Sc-1**	45	37696.8	2.0				mg/L	39543	Standard
Cl	35	31580.2	0.9				ug/L	27642	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	1660.1	9.6				ug/L	1647	Standard
P	31	16826.0	2.3				ug/L	15231	Standard
S	34	2313.5	5.0				ug/L	1845	Standard
Sr	88	61.7	26.1				ug/L	70	Standard
C	12	133.3	18.9				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	13.3	114.6				mg/L	12	Standard
Ho-1	165	8.3	34.6				mg/L	12	Standard
Er	166	0.0					mg/L	20	Standard
I	127	1290.1	24.6				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	102.953		
	Al	27	95.051		
	Sc	45			
	Ti	47	98.040		
	V	51	99.566		
	Cr	52	97.851		
	Cr	53			
	Mn	55	97.472		
	Co	59	103.434		
	Ni	60	96.752		
	Cu	65	97.940		
	Zn	66	98.874		
>	Ge	72		98.973	
	As	75	99.706		
	Se	82	103.105		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	101.299		
Ag	107	98.920		
Cd	111	97.482		
Cd	114			
> In	115			99.201
Sn	118	98.264		
Sb	123	100.818		
Ba	135	96.947		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.155		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.762		
U	238	102.406		
> Bi	209			100.244
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 15:13:12
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	88670.5	2.8				ug/L	81760	Standard
	Be	9	51.7	24.4	**0.0381**	0.010	27.4	ug/L	17	Standard
	Al	27	5021.0	57.4	**0.0153**	0.016	105.4	ug/L	1410	Standard
	Sc	45	39924.2	3.2				ug/L	39543	Standard
	Ti	47	36.7	33.9	**-0.0173**	0.048	276.4	ug/L	39	Standard
	V	51	1293.4	14.6	**-0.0198**	0.025	126.5	ug/L	1415	Standard
	Cr	52	6153.2	0.9	**-0.1686**	0.020	12.1	ug/L	6946	Standard
	Cr	53	480.0	7.9	**0.2078**	0.038	18.2	ug/L	328	Standard
	Mn	55	818.0	20.7	**-0.0219**	0.025	112.7	ug/L	823	Standard
	Co	59	362.0	35.7	**0.0203**	0.018	87.2	ug/L	252	Standard
	Ni	60	216.7	22.5	**0.0105**	0.024	233.6	ug/L	192	Standard
	Cu	65	206.0	48.8	**0.0177**	0.051	290.8	ug/L	141	Standard
	Zn	66	512.3	23.8	**-0.3586**	0.106	29.6	ug/L	491	Standard
>	Ge	72	512537.5	1.6				ug/L	515087	Standard
	As	75	16.6	529.1	**0.0544**	0.078	142.5	ug/L	20	Standard
	Se	82	20.8	66.0	**0.0610**	0.117	191.3	ug/L	15	Standard
	Se-1	77	56.0	20.1	**0.0270**	0.140	518.0	ug/L	48	Standard
>	Ga	71	48.3	15.8				mg/L	90	Standard
	Rb	85	23.3	32.7				ug/L	23	Standard
	Y	89	442158.0	1.4				ug/L	448510	Standard
>	Rh	103	8.3	69.3				ug/L	15	Standard
	Mo	98	390.5	34.5	**0.1230**	0.050	40.8	ug/L	11	Standard
	Ag	107	293.7	71.4	**0.0269**	0.031	115.5	ug/L	134	Standard
	Cd	111	93.5	118.9	**0.0403**	0.052	128.0	mg/L	7	Standard
	Cd	114	191.9	127.3	**0.0316**	0.047	147.6	ug/L	16	Standard
>	In	115	622178.9	0.7				ug/L	611117	Standard
	Sn	118	798.4	19.1	**0.0306**	0.025	81.3	ug/L	518	Standard
	Sb	123	1327.2	22.5	**0.2633**	0.061	23.3	ug/L	127	Standard
	Ba	135	121.3	95.4	**0.0329**	0.056	169.3	ug/L	45	Standard
	Ce	140	156.7	109.9				ug/L	298	Standard
>	Tb	159	979098.8	1.1				ug/L	977942	Standard
	Ho	165	8.3	124.9				ug/L	12	Standard
	Tl	203	319.0	100.9	**0.0316**	0.036	115.5	ug/L	31	Standard
	Tl	205	186.7	86.1	**0.0222**	0.021	94.2	ug/L	20	Standard
	Pb	206	461.3	35.4	**0.0186**	0.029	153.9	ug/L	286	Standard
	Pb	207	392.3	40.1	**0.0194**	0.031	157.4	ug/L	257	Standard
	Pb	208	1505.0	29.2	**0.0164**	0.022	134.2	ug/L	956	Standard
	U	238	157.3	69.9	**0.0181**	0.015	80.5	ug/L	17	Standard
>	Bi	209	578116.8	1.4				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	31.7	18.2	**-0.0152**	0.009	57.6	mg/L	32	Standard
K	39	23.3	49.5	**-0.0625**	0.040	64.6	mg/L	30	Standard
Ca	43	25.0	40.0	**-1.6032**	1.411	88.0	mg/L	48	Standard
Fe	54	127.6	20.0	**-0.0223**	0.025	111.2	mg/L	159	Standard
Fe	57	173.3	7.3	**-0.0450**	0.038	85.1	mg/L	195	Standard
Sc-1	45	39924.2	3.2				mg/L	39543	Standard
Cl	35	32496.1	0.6				ug/L	27642	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	1573.4	6.5				ug/L	1647	Standard
P	31	17568.5	2.8				ug/L	15231	Standard
S	34	2373.5	3.0				ug/L	1845	Standard
Sr	88	50.0	26.5				ug/L	70	Standard
C	12	106.7	19.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.5	38.4				mg/L	12	Standard
Ho-1	165	8.3	124.9				mg/L	12	Standard
Er	166	16.7	124.9				mg/L	20	Standard
I	127	1251.7	20.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.505	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.810
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.776
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Tuesday, June 28, 2016 15:16:29
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81011.1	2.2				ug/L	81760	Standard
	Be	9	195.0	20.5	**0.1880**	0.037	19.7	ug/L	17	Standard
	Al	27	1493.4	21.7	**-0.0047**	0.002	41.0	ug/L	1410	Standard
	Sc	45	36542.4	1.6				ug/L	39543	Standard
	Ti	47	30.7	9.4	**-0.0369**	0.011	30.3	ug/L	39	Standard
	V	51	3567.1	2.8	**0.3274**	0.017	5.3	ug/L	1415	Standard
	Cr	52	11052.7	0.9	**0.5951**	0.027	4.6	ug/L	6946	Standard
	Cr	53	1095.0	4.8	**0.9563**	0.056	5.9	ug/L	328	Standard
	Mn	55	3466.7	0.6	**0.4079**	0.007	1.6	ug/L	823	Standard
	Co	59	2834.6	2.1	**0.3884**	0.006	1.6	ug/L	252	Standard
	Ni	60	2871.9	0.5	**1.4818**	0.019	1.3	ug/L	192	Standard
	Cu	65	1515.4	2.2	**0.7391**	0.023	3.1	ug/L	141	Standard
	Zn	66	7448.8	1.9	**6.2435**	0.137	2.2	ug/L	491	Standard
>	**Ge**	72	495055.6	0.7				ug/L	515087	Standard
	As	75	363.8	8.2	**0.3769**	0.025	6.6	ug/L	20	Standard
	Se	82	58.7	3.6	**0.4109**	0.015	3.7	ug/L	15	Standard
	Se-1	77	71.3	17.1	**0.2665**	0.171	64.2	ug/L	48	Standard
>	**Ga**	71	38.3	19.9				mg/L	90	Standard
	Rb	85	26.7	28.6				ug/L	23	Standard
	Y	89	415588.9	2.9				ug/L	448510	Standard
>	**Rh**	103	6.7	43.3				ug/L	15	Standard
	Mo	98	101.2	14.2	**0.0199**	0.005	26.4	ug/L	11	Standard
	Ag	107	2581.2	2.0	**0.3840**	0.010	2.6	ug/L	134	Standard
	Cd	111	489.5	5.9	**0.2354**	0.013	5.3	mg/L	7	Standard
	Cd	114	1118.1	7.7	**0.2189**	0.015	6.9	ug/L	16	Standard
>	**In**	115	587241.6	1.2				ug/L	611117	Standard
	Sn	118	508.3	8.2	**-0.0124**	0.008	65.2	ug/L	518	Standard
	Sb	123	2001.1	5.7	**0.4288**	0.031	7.2	ug/L	127	Standard
	Ba	135	1392.4	6.1	**0.6767**	0.039	5.8	ug/L	45	Standard
	Ce	140	30.0	44.1				ug/L	298	Standard
>	**Tb**	159	929212.6	0.4				ug/L	977942	Standard
	Ho	165	13.3	57.3				ug/L	12	Standard
	Tl	203	711.0	4.8	**0.0804**	0.004	5.1	ug/L	31	Standard
	Tl	205	656.7	5.8	**0.0883**	0.005	5.1	ug/L	20	Standard
	Pb	206	1347.1	1.6	**0.1880**	0.004	2.0	ug/L	286	Standard
	Pb	207	1117.4	2.9	**0.1733**	0.005	3.1	ug/L	257	Standard
	Pb	208	4713.3	2.2	**0.1919**	0.007	3.7	ug/L	956	Standard
	U	238	2843.3	0.8	**0.3977**	0.005	1.3	ug/L	17	Standard
>	**Bi**	209	551791.7	0.8				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	26.7	39.0	**-0.0189**	0.015	77.3	mg/L	32	Standard
K	39	20.0	25.0	**-0.0684**	0.018	25.7	mg/L	30	Standard
Ca	43	25.0	40.0	**-1.2235**	1.703	139.2	mg/L	48	Standard
Fe	54	112.3	6.9	**-0.0270**	0.008	31.0	mg/L	159	Standard
Fe	57	200.0	28.8	**0.1050**	0.205	195.5	mg/L	195	Standard
Sc-1	45	36542.4	1.6				mg/L	39543	Standard
Cl	35	31755.9	1.1				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1523.4	8.9				ug/L	1647	Standard
P	31	12263.3	0.6				ug/L	15231	Standard
S	34	2283.5	2.6				ug/L	1845	Standard
Sr	88	63.3	25.4				ug/L	70	Standard
C	12	146.7	38.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	15.9	37.5				mg/L	12	Standard
Ho-1	165	13.3	57.3				mg/L	12	Standard
Er	166	16.7	91.7				mg/L	20	Standard
I	127	1103.4	23.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	94.012		
Al	27			
Sc	45			
Ti	47			
V	51	81.855		
Cr	52	74.385		
Cr	53			
Mn	55	81.586		
Co	59	97.096		
Ni	60	92.611		
Cu	65	92.383		
Zn	66	99.896		
Ge	72		96.111	
As	75	94.213		
Se	82	102.730		
Se-1	77			
Ga	71			

Sample ID: QC Std 8
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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	96.001		
Cd	111	98.068		
Cd	114			
> In	115			96.093
Sn	118			
Sb	123	107.193		
Ba	135	90.223		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.519		
Tl	205			
Pb	206			
Pb	207			
Pb	208	95.932		
U	238	99.422		
> Bi	209			99.051
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
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Method 6020 - Summary Report

Sample ID: L1606078703 WG573333-01
Sample Date/Time: Tuesday, June 28, 2016 15:24:24
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77973.6	3.5				ug/L	81760	Standard
	Be	9	93.3	32.7	**0.0882**	0.029	33.1	ug/L	17	Standard
	Al	27	522182.4	1.6	**3.5410**	0.149	4.2	ug/L	1410	Standard
	Sc	45	36268.4	3.8				ug/L	39543	Standard
	Ti	47	171.7	14.8	**0.5849**	0.118	20.2	ug/L	39	Standard
	V	51	8345.2	3.6	**1.0965**	0.041	3.8	ug/L	1415	Standard
	Cr	52	9135.4	1.3	**0.3675**	0.032	8.6	ug/L	6946	Standard
	Cr	53	715.0	6.0	**0.5424**	0.045	8.2	ug/L	328	Standard
	Mn	55	230272.3	2.4	**38.4029**	0.677	1.8	ug/L	823	Standard
	Co	59	4116.2	4.4	**0.6044**	0.024	3.9	ug/L	252	Standard
	Ni	60	2251.2	4.1	**1.1925**	0.054	4.6	ug/L	192	Standard
	Cu	65	1784.1	4.6	**0.9285**	0.051	5.5	ug/L	141	Standard
	Zn	66	3508.4	21.7	**2.6509**	0.786	29.6	ug/L	491	Standard
>	**Ge**	72	474556.6	0.9				ug/L	515087	Standard
	As	75	172.3	13.5	**0.2068**	0.024	11.5	ug/L	20	Standard
	Se	82	19.4	8.6	**0.0638**	0.017	27.3	ug/L	15	Standard
	Se-1	77	47.7	3.2	**-0.0320**	0.028	88.4	ug/L	48	Standard
>	**Ga**	71	883.4	11.6				mg/L	90	Standard
	Rb	85	7710.3	5.5				ug/L	23	Standard
	Y	89	442484.5	1.8				ug/L	448510	Standard
>	**Rh**	103	20.0	25.0				ug/L	15	Standard
	Mo	98	50.0	20.9	**0.0005**	0.004	864.7	ug/L	11	Standard
	Ag	107	103.7	35.8	**0.0001**	0.006	5294.7	ug/L	134	Standard
	Cd	111	33.9	43.4	**0.0139**	0.007	52.6	mg/L	7	Standard
	Cd	114	75.2	57.1	**0.0104**	0.009	84.2	ug/L	16	Standard
>	**In**	115	577946.8	0.2				ug/L	611117	Standard
	Sn	118	366.7	11.4	**-0.0364**	0.008	20.8	ug/L	518	Standard
	Sb	123	219.5	27.2	**0.0364**	0.013	37.0	ug/L	127	Standard
	Ba	135	15089.5	2.8	**7.7036**	0.230	3.0	ug/L	45	Standard
	Ce	140	101663.3	0.5				ug/L	298	Standard
>	**Tb**	159	912358.4	0.5				ug/L	977942	Standard
	Ho	165	1823.4	12.2				ug/L	12	Standard
	Tl	203	96.3	39.3	**0.0070**	0.005	65.1	ug/L	31	Standard
	Tl	205	60.0	22.0	**0.0062**	0.002	29.8	ug/L	20	Standard
	Pb	206	5271.9	0.9	**0.9471**	0.013	1.4	ug/L	286	Standard
	Pb	207	4329.0	2.2	**0.8620**	0.023	2.7	ug/L	257	Standard
	Pb	208	18126.6	1.5	**0.9354**	0.019	2.1	ug/L	956	Standard
	U	238	313.3	4.9	**0.0423**	0.002	4.7	ug/L	17	Standard
>	**Bi**	209	537668.4	0.5				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	30.0	60.1	**-0.0138**	0.025	183.5	mg/L	32	Standard
K	39	53.3	37.9	**0.0534**	0.067	124.6	mg/L	30	Standard
Ca	43	48.3	6.0	**2.6636**	0.532	20.0	mg/L	48	Standard
Fe	54	632.5	2.4	**0.4873**	0.016	3.2	mg/L	159	Standard
Fe	57	343.3	3.0	**0.6393**	0.010	1.6	mg/L	195	Standard
> **Sc-1**	45	36268.4	3.8				mg/L	39543	Standard
Cl	35	30788.6	1.3				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1480.1	1.8				ug/L	1647	Standard
P	31	7060.0	1.2				ug/L	15231	Standard
S	34	2285.2	6.0				ug/L	1845	Standard
Sr	88	48.3	21.5				ug/L	70	Standard
C	12	146.7	76.6				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	3101.1	5.7				mg/L	12	Standard
Ho-1	165	1823.4	12.2				mg/L	12	Standard
Er	166	1723.4	3.7				mg/L	20	Standard
I	127	1973.5	19.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.369	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.131	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.572
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.515
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606078704S WG573333-05
Sample Date/Time: Tuesday, June 28, 2016 15:27:35
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77117.5	2.8				ug/L	81760	Standard
	Be	9	2866.9	4.2	**3.0501**	0.044	1.4	ug/L	17	Standard
	Al	27	530634.0	2.5	**3.6356**	0.032	0.9	ug/L	1410	Standard
	Sc	45	36769.6	1.1				ug/L	39543	Standard
	Ti	47	373.0	7.6	**1.4053**	0.111	7.9	ug/L	39	Standard
	V	51	27357.6	1.0	**3.9153**	0.028	0.7	ug/L	1415	Standard
	Cr	52	27754.1	2.5	**3.1178**	0.072	2.3	ug/L	6946	Standard
	Cr	53	3205.3	2.9	**3.4822**	0.093	2.7	ug/L	328	Standard
	Mn	55	199454.4	1.6	**32.0700**	0.433	1.4	ug/L	823	Standard
	Co	59	21527.3	1.4	**3.1772**	0.038	1.2	ug/L	252	Standard
	Ni	60	6879.6	1.3	**3.7203**	0.017	0.5	ug/L	192	Standard
	Cu	65	6482.7	2.3	**3.4817**	0.050	1.4	ug/L	141	Standard
	Zn	66	6297.6	0.7	**5.1896**	0.074	1.4	ug/L	491	Standard
>	**Ge**	72	491870.4	0.9				ug/L	515087	Standard
	As	75	2731.5	2.2	**2.5846**	0.063	2.4	ug/L	20	Standard
	Se	82	265.3	2.1	**2.2945**	0.068	3.0	ug/L	15	Standard
	Se-1	77	206.7	1.5	**2.1542**	0.060	2.8	ug/L	48	Standard
>	**Ga**	71	993.4	9.7				mg/L	90	Standard
	Rb	85	7418.5	3.4				ug/L	23	Standard
	Y	89	432036.7	0.9				ug/L	448510	Standard
>	**Rh**	103	6.7	86.6				ug/L	15	Standard
	Mo	98	97.6	12.4	**0.0190**	0.004	23.4	ug/L	11	Standard
	Ag	107	16692.5	1.2	**2.6046**	0.053	2.0	ug/L	134	Standard
	Cd	111	5558.2	2.0	**2.7376**	0.075	2.7	mg/L	7	Standard
	Cd	114	13660.0	0.7	**2.7659**	0.042	1.5	ug/L	16	Standard
>	**In**	115	579914.2	0.8				ug/L	611117	Standard
	Sn	118	355.0	9.2	**-0.0387**	0.005	13.8	ug/L	518	Standard
	Sb	123	2408.5	2.5	**0.5252**	0.017	3.2	ug/L	127	Standard
	Ba	135	18788.0	0.3	**9.5654**	0.079	0.8	ug/L	45	Standard
	Ce	140	97333.3	0.8				ug/L	298	Standard
>	**Tb**	159	916801.1	0.1				ug/L	977942	Standard
	Ho	165	2003.5	4.3				ug/L	12	Standard
	Tl	203	21211.2	1.5	**2.5655**	0.023	0.9	ug/L	31	Standard
	Tl	205	18352.8	1.2	**2.5587**	0.022	0.9	ug/L	20	Standard
	Pb	206	18796.3	1.3	**3.4874**	0.034	1.0	ug/L	286	Standard
	Pb	207	16054.8	0.9	**3.3044**	0.015	0.5	ug/L	257	Standard
	Pb	208	66020.8	0.7	**3.5136**	0.008	0.2	ug/L	956	Standard
	U	238	18577.7	1.3	**2.6444**	0.019	0.7	ug/L	17	Standard
>	**Bi**	209	545605.1	0.6				ug/L	557080	Standard

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Na	23	3.3	86.6	**23.0608**	19.970	86.6	mg/L	0	Standard
Mg	24	33.3	17.3	**-0.0095**	0.008	83.3	mg/L	32	Standard
K	39	50.0	30.0	**0.0407**	0.057	139.0	mg/L	30	Standard
Ca	43	23.3	86.6	**-1.5565**	3.262	209.6	mg/L	48	Standard
Fe	54	789.3	5.9	**0.6315**	0.054	8.6	mg/L	159	Standard
Fe	57	388.3	19.5	**0.7873**	0.291	37.0	mg/L	195	Standard
> **Sc-1**	45	36769.6	1.1				mg/L	39543	Standard
Cl	35	31616.3	0.3				ug/L	27642	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	1516.7	10.3				ug/L	1647	Standard
P	31	7133.3	2.5				ug/L	15231	Standard
S	34	2288.5	0.7				ug/L	1845	Standard
Sr	88	63.3	12.1				ug/L	70	Standard
C	12	90.0	50.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	3099.8	4.3				mg/L	12	Standard
Ho-1	165	2003.5	4.3				mg/L	12	Standard
Er	166	1750.1	2.1				mg/L	20	Standard
I	127	2031.8	18.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.322	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.493	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.894
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.940
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606078705SD WG573333-06
Sample Date/Time: Tuesday, June 28, 2016 15:30:46
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74501.2	2.9				ug/L	81760	Standard
	Be	9	2816.9	5.3	**3.1033**	0.143	4.6	ug/L	17	Standard
	Al	27	652490.2	1.4	**4.6325**	0.073	1.6	ug/L	1410	Standard
	Sc	45	35373.0	4.0				ug/L	39543	Standard
	Ti	47	288.0	4.5	**1.0503**	0.068	6.5	ug/L	39	Standard
	V	51	27556.1	4.5	**3.9507**	0.115	2.9	ug/L	1415	Standard
	Cr	52	29741.5	2.7	**3.4242**	0.036	1.1	ug/L	6946	Standard
	Cr	53	3408.7	4.0	**3.7308**	0.095	2.5	ug/L	328	Standard
	Mn	55	239390.4	1.7	**38.5872**	0.363	0.9	ug/L	823	Standard
	Co	59	21175.8	2.9	**3.1300**	0.064	2.1	ug/L	252	Standard
	Ni	60	7152.0	2.5	**3.8782**	0.013	0.3	ug/L	192	Standard
	Cu	65	6817.5	3.4	**3.6719**	0.046	1.3	ug/L	141	Standard
	Zn	66	6491.4	2.6	**5.3843**	0.067	1.2	ug/L	491	Standard
>	**Ge**	72	491074.4	2.2				ug/L	515087	Standard
	As	75	2669.0	1.7	**2.5305**	0.018	0.7	ug/L	20	Standard
	Se	82	259.6	0.9	**2.2467**	0.073	3.2	ug/L	15	Standard
	Se-1	77	214.7	9.1	**2.2690**	0.247	10.9	ug/L	48	Standard
>	**Ga**	71	1028.4	8.9				mg/L	90	Standard
	Rb	85	7220.1	2.0				ug/L	23	Standard
	Y	89	434100.4	1.8				ug/L	448510	Standard
>	**Rh**	103	11.7	24.7				ug/L	15	Standard
	Mo	98	220.7	3.6	**0.0685**	0.004	5.3	ug/L	11	Standard
	Ag	107	16241.0	2.2	**2.5784**	0.042	1.6	ug/L	134	Standard
	Cd	111	5563.7	4.0	**2.7880**	0.091	3.3	mg/L	7	Standard
	Cd	114	13468.2	1.0	**2.7750**	0.021	0.8	ug/L	16	Standard
>	**In**	115	569849.5	0.7				ug/L	611117	Standard
	Sn	118	353.3	16.1	**-0.0379**	0.010	26.3	ug/L	518	Standard
	Sb	123	2719.7	5.6	**0.6052**	0.030	5.0	ug/L	127	Standard
	Ba	135	20622.4	3.5	**10.6862**	0.314	2.9	ug/L	45	Standard
	Ce	140	98046.3	2.6				ug/L	298	Standard
>	**Tb**	159	907491.8	2.5				ug/L	977942	Standard
	Ho	165	2030.1	2.1				ug/L	12	Standard
	Tl	203	20792.6	2.1	**2.5412**	0.024	1.0	ug/L	31	Standard
	Tl	205	18564.7	0.9	**2.6157**	0.018	0.7	ug/L	20	Standard
	Pb	206	19134.8	4.2	**3.5891**	0.137	3.8	ug/L	286	Standard
	Pb	207	16318.5	3.9	**3.3949**	0.097	2.9	ug/L	257	Standard
	Pb	208	68373.0	0.9	**3.6800**	0.027	0.7	ug/L	956	Standard
	U	238	18425.5	1.4	**2.6505**	0.039	1.5	ug/L	17	Standard
>	**Bi**	209	539937.0	1.4				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	30.0	44.1	**-0.0120**	0.022	182.1	mg/L	32	Standard
K	39	43.3	29.0	**0.0214**	0.044	203.2	mg/L	30	Standard
Ca	43	31.7	50.8	**-0.0240**	2.524	10500.7	mg/L	48	Standard
Fe	54	837.2	3.3	**0.7115**	0.061	8.6	mg/L	159	Standard
Fe	57	390.0	5.9	**0.8507**	0.142	16.6	mg/L	195	Standard
Sc-1	45	35373.0	4.0				mg/L	39543	Standard
Cl	35	30539.4	1.3				ug/L	27642	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	1456.7	10.3				ug/L	1647	Standard
P	31	7050.0	3.7				ug/L	15231	Standard
S	34	2141.8	2.3				ug/L	1845	Standard
Sr	88	61.7	12.4				ug/L	70	Standard
C	12	110.0	32.8				mg/L	113	Standard
N	14	6.7	86.6				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	3163.0	6.4				mg/L	12	Standard
Ho-1	165	2030.1	2.1				mg/L	12	Standard
Er	166	1753.4	8.6				mg/L	20	Standard
I	127	1965.1	14.8				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		91.122	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.338	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606078705SD WG573333-06
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.247
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.923
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606078706
Sample Date/Time: Tuesday, June 28, 2016 15:33:58
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76028.8	3.5				ug/L	81760	Standard
	Be	9	38.3	19.9	**0.0318**	0.009	27.2	ug/L	17	Standard
	Al	27	238262.4	1.5	**1.6489**	0.050	3.0	ug/L	1410	Standard
	Sc	45	37198.9	1.1				ug/L	39543	Standard
	Ti	47	135.7	11.8	**0.3914**	0.065	16.6	ug/L	39	Standard
	V	51	5276.5	1.4	**0.5679**	0.012	2.1	ug/L	1415	Standard
	Cr	52	6498.4	1.5	**-0.1047**	0.015	14.1	ug/L	6946	Standard
	Cr	53	391.7	9.7	**0.1138**	0.045	39.3	ug/L	328	Standard
	Mn	55	119285.7	3.0	**18.6233**	0.543	2.9	ug/L	823	Standard
	Co	59	1493.7	2.3	**0.1855**	0.005	2.9	ug/L	252	Standard
	Ni	60	894.4	1.7	**0.3795**	0.008	2.0	ug/L	192	Standard
	Cu	65	697.3	2.0	**0.2836**	0.007	2.5	ug/L	141	Standard
	Zn	66	2625.6	1.0	**1.6163**	0.028	1.8	ug/L	491	Standard
>	**Ge**	72	504872.7	0.1				ug/L	515087	Standard
	As	75	131.9	5.5	**0.1599**	0.007	4.3	ug/L	20	Standard
	Se	82	16.6	26.9	**0.0277**	0.040	143.8	ug/L	15	Standard
	Se-1	77	42.3	11.2	**-0.1455**	0.065	44.4	ug/L	48	Standard
>	**Ga**	71	331.7	11.3				mg/L	90	Standard
	Rb	85	2800.3	5.6				ug/L	23	Standard
	Y	89	425969.9	0.3				ug/L	448510	Standard
>	**Rh**	103	21.7	96.1				ug/L	15	Standard
	Mo	98	33.2	18.6	**-0.0062**	0.003	40.5	ug/L	11	Standard
	Ag	107	87.7	13.4	**-0.0025**	0.002	77.6	ug/L	134	Standard
	Cd	111	11.3	20.5	**0.0026**	0.001	43.1	mg/L	7	Standard
	Cd	114	30.9	19.2	**0.0013**	0.001	87.3	ug/L	16	Standard
>	**In**	115	583702.0	1.1				ug/L	611117	Standard
	Sn	118	278.3	22.7	**-0.0527**	0.011	20.3	ug/L	518	Standard
	Sb	123	103.7	16.2	**0.0102**	0.004	35.3	ug/L	127	Standard
	Ba	135	9187.1	1.4	**4.6338**	0.016	0.3	ug/L	45	Standard
	Ce	140	45456.4	1.3				ug/L	298	Standard
>	**Tb**	159	930779.6	1.7				ug/L	977942	Standard
	Ho	165	850.0	2.4				ug/L	12	Standard
	Tl	203	23.3	23.6	**-0.0020**	0.001	31.7	ug/L	31	Standard
	Tl	205	35.0	37.8	**0.0025**	0.002	71.7	ug/L	20	Standard
	Pb	206	2536.5	1.2	**0.4062**	0.009	2.2	ug/L	286	Standard
	Pb	207	2050.5	1.7	**0.3630**	0.010	2.7	ug/L	257	Standard
	Pb	208	8421.9	1.7	**0.3865**	0.010	2.6	ug/L	956	Standard
	U	238	103.3	13.1	**0.0115**	0.002	17.1	ug/L	17	Standard
>	**Bi**	209	556617.5	0.8				ug/L	557080	Standard

Sample ID: L1606078706
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Na	23	1.7	173.2	**11.3116**	19.584	173.1	mg/L	0	Standard
Mg	24	31.7	9.1	**-0.0123**	0.005	37.6	mg/L	32	Standard
K	39	50.0	10.0	**0.0383**	0.020	51.6	mg/L	30	Standard
Ca	43	18.3	103.3	**-2.3989**	3.033	126.4	mg/L	48	Standard
Fe	54	317.8	14.7	**0.1684**	0.043	25.3	mg/L	159	Standard
Fe	57	280.0	19.3	**0.3807**	0.196	51.6	mg/L	195	Standard
> **Sc-1**	45	37198.9	1.1				mg/L	39543	Standard
Cl	35	30150.0	0.9				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1330.1	6.0				ug/L	1647	Standard
P	31	7115.0	3.6				ug/L	15231	Standard
S	34	2203.5	6.4				ug/L	1845	Standard
Sr	88	73.3	23.9				ug/L	70	Standard
C	12	136.7	33.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	1461.3	2.6				mg/L	12	Standard
Ho-1	165	850.0	2.4				mg/L	12	Standard
Er	166	740.0	2.3				mg/L	20	Standard
I	127	1331.7	15.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.990	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.017	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.514
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.917
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606078708
Sample Date/Time: Tuesday, June 28, 2016 15:37:09
Number of Replicates: 3
Autosampler Position: 227
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75812.6	2.8				ug/L	81760	Standard
	Be	9	48.3	21.5	**0.0428**	0.011	26.6	ug/L	17	Standard
	Al	27	1071474.1	1.0	**7.4874**	0.284	3.8	ug/L	1410	Standard
	Sc	45	37513.1	2.1				ug/L	39543	Standard
	Ti	47	158.0	12.8	**0.5014**	0.093	18.5	ug/L	39	Standard
	V	51	6689.1	0.4	**0.8020**	0.010	1.2	ug/L	1415	Standard
	Cr	52	7515.2	0.4	**0.0743**	0.008	10.8	ug/L	6946	Standard
	Cr	53	588.3	8.1	**0.3608**	0.056	15.4	ug/L	328	Standard
	Mn	55	205213.7	2.8	**33.0324**	1.280	3.9	ug/L	823	Standard
	Co	59	2212.5	3.2	**0.2987**	0.013	4.3	ug/L	252	Standard
	Ni	60	1404.4	3.4	**0.6767**	0.035	5.1	ug/L	192	Standard
	Cu	65	1102.0	3.5	**0.5169**	0.018	3.4	ug/L	141	Standard
	Zn	66	2607.9	0.9	**1.6660**	0.041	2.5	ug/L	491	Standard
>	**Ge**	72	491532.3	1.1				ug/L	515087	Standard
	As	75	127.5	11.1	**0.1592**	0.014	8.7	ug/L	20	Standard
	Se	82	17.3	29.3	**0.0385**	0.047	123.2	ug/L	15	Standard
	Se-1	77	43.3	11.6	**-0.1157**	0.075	64.9	ug/L	48	Standard
>	**Ga**	71	450.0	13.5				mg/L	90	Standard
	Rb	85	3788.8	1.3				ug/L	23	Standard
	Y	89	433725.3	2.1				ug/L	448510	Standard
>	**Rh**	103	18.3	31.5				ug/L	15	Standard
	Mo	98	38.5	4.2	**-0.0045**	0.000	10.9	ug/L	11	Standard
	Ag	107	93.3	12.0	**-0.0020**	0.002	78.2	ug/L	134	Standard
	Cd	111	23.9	23.2	**0.0085**	0.003	31.3	mg/L	7	Standard
	Cd	114	45.7	16.0	**0.0041**	0.001	34.3	ug/L	16	Standard
>	**In**	115	598611.3	0.9				ug/L	611117	Standard
	Sn	118	346.7	46.9	**-0.0421**	0.028	66.0	ug/L	518	Standard
	Sb	123	86.1	26.8	**0.0058**	0.005	89.2	ug/L	127	Standard
	Ba	135	10124.4	4.3	**4.9826**	0.248	5.0	ug/L	45	Standard
	Ce	140	56269.4	3.6				ug/L	298	Standard
>	**Tb**	159	935742.2	1.5				ug/L	977942	Standard
	Ho	165	1033.4	8.1				ug/L	12	Standard
	Tl	203	29.7	5.1	**-0.0013**	0.000	18.3	ug/L	31	Standard
	Tl	205	31.7	18.2	**0.0020**	0.001	35.8	ug/L	20	Standard
	Pb	206	3055.6	2.0	**0.5003**	0.022	4.4	ug/L	286	Standard
	Pb	207	2503.2	3.8	**0.4542**	0.030	6.6	ug/L	257	Standard
	Pb	208	10181.4	1.0	**0.4779**	0.016	3.3	ug/L	956	Standard
	U	238	166.3	6.9	**0.0202**	0.002	9.9	ug/L	17	Standard
>	**Bi**	209	558847.5	2.0				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	26.7	28.6	**-0.0198**	0.010	52.5	mg/L	32	Standard
K	39	46.7	22.3	**0.0253**	0.040	158.3	mg/L	30	Standard
Ca	43	46.7	43.3	**2.1703**	3.421	157.6	mg/L	48	Standard
Fe	54	430.9	12.9	**0.2746**	0.059	21.6	mg/L	159	Standard
Fe	57	336.7	7.3	**0.5728**	0.068	12.0	mg/L	195	Standard
Sc-1	45	37513.1	2.1				mg/L	39543	Standard
Cl	35	31262.2	0.8				ug/L	27642	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	1390.1	8.3				ug/L	1647	Standard
P	31	7195.0	0.6				ug/L	15231	Standard
S	34	2350.2	4.3				ug/L	1845	Standard
Sr	88	86.7	13.3				ug/L	70	Standard
C	12	130.0	15.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	1824.8	9.6				mg/L	12	Standard
Ho-1	165	1033.4	8.1				mg/L	12	Standard
Er	166	946.7	6.2				mg/L	20	Standard
I	127	1363.4	17.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.726	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.427	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	97.954	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.317	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078713
Sample Date/Time: Tuesday, June 28, 2016 15:40:21
Number of Replicates: 3
Autosampler Position: 228
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75663.5	2.7				ug/L	81760	Standard
	Be	9	81.7	30.2	**0.0793**	0.028	34.9	ug/L	17	Standard
	Al	27	416574.6	1.3	**2.9066**	0.048	1.7	ug/L	1410	Standard
	Sc	45	36378.7	3.4				ug/L	39543	Standard
	Ti	47	126.3	10.5	**0.3773**	0.057	15.2	ug/L	39	Standard
	V	51	8315.3	0.5	**1.0708**	0.007	0.7	ug/L	1415	Standard
	Cr	52	8765.5	1.6	**0.2875**	0.022	7.8	ug/L	6946	Standard
	Cr	53	728.4	7.9	**0.5445**	0.070	12.8	ug/L	328	Standard
	Mn	55	93455.4	1.8	**15.2441**	0.287	1.9	ug/L	823	Standard
	Co	59	3649.1	3.3	**0.5232**	0.019	3.5	ug/L	252	Standard
	Ni	60	1651.1	5.4	**0.8312**	0.052	6.2	ug/L	192	Standard
	Cu	65	1200.0	2.8	**0.5835**	0.019	3.3	ug/L	141	Standard
	Zn	66	2593.9	1.4	**1.6993**	0.037	2.2	ug/L	491	Standard
>	**Ge**	72	482399.4	0.1				ug/L	515087	Standard
	As	75	167.0	21.6	**0.1989**	0.034	17.3	ug/L	20	Standard
	Se	82	15.9	30.3	**0.0282**	0.045	158.8	ug/L	15	Standard
	Se-1	77	52.3	6.7	**0.0228**	0.050	216.8	ug/L	48	Standard
>	**Ga**	71	573.3	13.4				mg/L	90	Standard
	Rb	85	5119.2	1.4				ug/L	23	Standard
	Y	89	439888.1	1.2				ug/L	448510	Standard
>	**Rh**	103	13.3	78.1				ug/L	15	Standard
	Mo	98	43.4	10.8	**-0.0024**	0.002	79.1	ug/L	11	Standard
	Ag	107	106.7	10.0	**0.0002**	0.002	826.8	ug/L	134	Standard
	Cd	111	22.9	46.1	**0.0082**	0.005	63.6	mg/L	7	Standard
	Cd	114	51.2	44.0	**0.0052**	0.004	84.1	ug/L	16	Standard
>	**In**	115	591171.7	0.9				ug/L	611117	Standard
	Sn	118	328.3	8.7	**-0.0445**	0.005	12.1	ug/L	518	Standard
	Sb	123	88.5	32.5	**0.0066**	0.006	98.7	ug/L	127	Standard
	Ba	135	15979.8	0.8	**7.9763**	0.029	0.4	ug/L	45	Standard
	Ce	140	70630.9	0.7				ug/L	298	Standard
>	**Tb**	159	919155.3	2.1				ug/L	977942	Standard
	Ho	165	1308.4	8.9				ug/L	12	Standard
	Tl	203	43.3	33.8	**0.0005**	0.002	355.9	ug/L	31	Standard
	Tl	205	45.0	58.8	**0.0041**	0.004	93.0	ug/L	20	Standard
	Pb	206	4127.6	1.0	**0.7213**	0.011	1.5	ug/L	286	Standard
	Pb	207	3419.4	2.4	**0.6628**	0.016	2.5	ug/L	257	Standard
	Pb	208	14423.4	1.0	**0.7255**	0.013	1.8	ug/L	956	Standard
	U	238	157.3	5.4	**0.0196**	0.001	6.2	ug/L	17	Standard
>	**Bi**	209	542054.4	0.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	38.3	7.5	**-0.0016**	0.005	296.7	mg/L	32	Standard
K	39	31.7	55.5	**-0.0245**	0.065	264.7	mg/L	30	Standard
Ca	43	18.3	56.8	**-2.3425**	1.620	69.1	mg/L	48	Standard
Fe	54	638.8	9.9	**0.4927**	0.076	15.4	mg/L	159	Standard
Fe	57	368.3	10.9	**0.7248**	0.101	14.0	mg/L	195	Standard
> **Sc-1**	45	36378.7	3.4				mg/L	39543	Standard
Cl	35	31640.3	1.2				ug/L	27642	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	1476.7	9.6				ug/L	1647	Standard
P	31	7046.6	3.0				ug/L	15231	Standard
S	34	2278.5	11.1				ug/L	1845	Standard
Sr	88	80.0	28.6				ug/L	70	Standard
C	12	116.7	26.2				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2168.9	5.7				mg/L	12	Standard
Ho-1	165	1308.4	8.9				mg/L	12	Standard
Er	166	1140.0	7.8				mg/L	20	Standard
I	127	1385.1	16.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.543	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.654	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.736
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.303
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606078715
Sample Date/Time: Tuesday, June 28, 2016 15:43:32
Number of Replicates: 3
Autosampler Position: 229
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72672.4	3.8				ug/L	81760	Standard
	Be	9	136.7	16.5	**0.1453**	0.027	18.6	ug/L	17	Standard
	Al	27	1143496.8	3.3	**8.3341**	0.197	2.4	ug/L	1410	Standard
	Sc	45	36597.5	3.0				ug/L	39543	Standard
	Ti	47	230.0	1.3	**0.8041**	0.017	2.1	ug/L	39	Standard
	V	51	11413.9	1.0	**1.5144**	0.038	2.5	ug/L	1415	Standard
	Cr	52	15036.8	0.3	**1.2067**	0.029	2.4	ug/L	6946	Standard
	Cr	53	1373.4	5.7	**1.2975**	0.078	6.0	ug/L	328	Standard
	Mn	55	293360.4	0.3	**47.2738**	0.683	1.4	ug/L	823	Standard
	Co	59	6852.2	0.9	**0.9907**	0.018	1.8	ug/L	252	Standard
	Ni	60	4182.9	0.4	**2.2225**	0.021	0.9	ug/L	192	Standard
	Cu	65	2749.2	1.6	**1.4253**	0.010	0.7	ug/L	141	Standard
	Zn	66	5934.8	0.5	**4.8465**	0.046	1.0	ug/L	491	Standard
>	**Ge**	72	491565.9	1.3				ug/L	515087	Standard
	As	75	281.2	9.9	**0.3023**	0.024	7.9	ug/L	20	Standard
	Se	82	16.6	41.5	**0.0313**	0.062	197.6	ug/L	15	Standard
	Se-1	77	52.7	11.4	**0.0136**	0.082	602.5	ug/L	48	Standard
>	**Ga**	71	1726.8	3.8				mg/L	90	Standard
	Rb	85	17453.4	2.4				ug/L	23	Standard
	Y	89	433246.4	2.7				ug/L	448510	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	40.4	18.8	**-0.0027**	0.003	116.5	ug/L	11	Standard
	Ag	107	118.3	7.6	**0.0030**	0.002	54.7	ug/L	134	Standard
	Cd	111	36.9	12.4	**0.0159**	0.002	13.6	mg/L	7	Standard
	Cd	114	100.1	28.9	**0.0161**	0.006	36.4	ug/L	16	Standard
>	**In**	115	559969.6	1.0				ug/L	611117	Standard
	Sn	118	245.0	14.3	**-0.0567**	0.006	11.1	ug/L	518	Standard
	Sb	123	73.5	14.6	**0.0042**	0.003	63.0	ug/L	127	Standard
	Ba	135	26697.5	0.7	**14.0890**	0.209	1.5	ug/L	45	Standard
	Ce	140	126090.9	1.2				ug/L	298	Standard
>	**Tb**	159	888471.0	0.2				ug/L	977942	Standard
	Ho	165	2013.5	3.3				ug/L	12	Standard
	Tl	203	105.3	16.7	**0.0083**	0.002	26.4	ug/L	31	Standard
	Tl	205	98.3	26.1	**0.0118**	0.004	31.7	ug/L	20	Standard
	Pb	206	7239.7	1.0	**1.3394**	0.022	1.6	ug/L	286	Standard
	Pb	207	5907.2	0.7	**1.2110**	0.009	0.7	ug/L	257	Standard
	Pb	208	24779.9	1.0	**1.3155**	0.008	0.6	ug/L	956	Standard
	U	238	285.0	3.3	**0.0387**	0.001	3.3	ug/L	17	Standard
>	**Bi**	209	531928.0	0.6				ug/L	557080	Standard

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Na	23	1.7	173.2	**11.1992**	19.389	173.1	mg/L	0	Standard
Mg	24	35.0	0.0	**-0.0068**	0.002	22.3	mg/L	32	Standard
K	39	70.0	24.7	**0.1145**	0.065	56.7	mg/L	30	Standard
Ca	43	41.7	48.5	**1.5107**	3.417	226.2	mg/L	48	Standard
Fe	54	1498.6	2.3	**1.3298**	0.075	5.6	mg/L	159	Standard
Fe	57	515.0	3.5	**1.2558**	0.109	8.7	mg/L	195	Standard
> **Sc-1**	45	36597.5	3.0				mg/L	39543	Standard
Cl	35	30785.2	1.5				ug/L	27642	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	1506.7	9.5				ug/L	1647	Standard
P	31	6974.9	2.8				ug/L	15231	Standard
S	34	2301.8	4.8				ug/L	1845	Standard
Sr	88	70.0	28.6				ug/L	70	Standard
C	12	113.3	31.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	3365.6	4.6				mg/L	12	Standard
Ho-1	165	2013.5	3.3				mg/L	12	Standard
Er	166	1770.1	9.2				mg/L	20	Standard
I	127	1690.1	9.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.885	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.434	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.631
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.485
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606078716
Sample Date/Time: Tuesday, June 28, 2016 15:46:44
Number of Replicates: 3
Autosampler Position: 230
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72657.2	3.0				ug/L	81760	Standard
	Be	9	110.0	13.6	**0.1151**	0.019	16.6	ug/L	17	Standard
	Al	27	964168.3	0.2	**7.0283**	0.202	2.9	ug/L	1410	Standard
	Sc	45	36550.7	1.7				ug/L	39543	Standard
	Ti	47	122.3	2.9	**0.3511**	0.018	5.2	ug/L	39	Standard
	V	51	5582.1	3.3	**0.6361**	0.029	4.5	ug/L	1415	Standard
	Cr	52	12113.5	1.9	**0.7686**	0.019	2.4	ug/L	6946	Standard
	Cr	53	1075.0	5.2	**0.9442**	0.085	9.0	ug/L	328	Standard
	Mn	55	296391.3	0.6	**47.8289**	1.096	2.3	ug/L	823	Standard
	Co	59	5108.9	2.5	**0.7319**	0.032	4.3	ug/L	252	Standard
	Ni	60	3102.7	1.4	**1.6241**	0.056	3.4	ug/L	192	Standard
	Cu	65	3067.6	0.7	**1.6034**	0.043	2.7	ug/L	141	Standard
	Zn	66	5597.7	1.7	**4.5323**	0.178	3.9	ug/L	491	Standard
>	**Ge**	72	490975.8	1.9				ug/L	515087	Standard
	As	75	34.9	42.7	**0.0731**	0.015	20.1	ug/L	20	Standard
	Se	82	17.1	13.6	**0.0368**	0.020	54.2	ug/L	15	Standard
	Se-1	77	53.7	6.0	**0.0281**	0.032	114.8	ug/L	48	Standard
>	**Ga**	71	1235.1	6.5				mg/L	90	Standard
	Rb	85	7633.6	0.9				ug/L	23	Standard
	Y	89	431776.8	2.6				ug/L	448510	Standard
>	**Rh**	103	15.0	66.7				ug/L	15	Standard
	Mo	98	19.3	30.7	**-0.0115**	0.002	20.4	ug/L	11	Standard
	Ag	107	114.7	7.5	**0.0018**	0.001	48.3	ug/L	134	Standard
	Cd	111	65.3	10.2	**0.0294**	0.003	8.8	mg/L	7	Standard
	Cd	114	154.6	13.1	**0.0266**	0.003	12.9	ug/L	16	Standard
>	**In**	115	577281.8	2.6				ug/L	611117	Standard
	Sn	118	261.7	10.5	**-0.0551**	0.004	6.8	ug/L	518	Standard
	Sb	123	70.5	12.0	**0.0029**	0.001	50.3	ug/L	127	Standard
	Ba	135	31515.4	1.1	**16.1422**	0.456	2.8	ug/L	45	Standard
	Ce	140	108483.7	1.5				ug/L	298	Standard
>	**Tb**	159	919053.3	0.1				ug/L	977942	Standard
	Ho	165	2146.8	3.5				ug/L	12	Standard
	Tl	203	55.7	15.3	**0.0020**	0.001	51.1	ug/L	31	Standard
	Tl	205	56.7	10.2	**0.0057**	0.001	13.8	ug/L	20	Standard
	Pb	206	8383.7	0.8	**1.5358**	0.026	1.7	ug/L	286	Standard
	Pb	207	6950.9	2.1	**1.4122**	0.046	3.3	ug/L	257	Standard
	Pb	208	28623.6	0.6	**1.5044**	0.028	1.9	ug/L	956	Standard
	U	238	278.7	6.7	**0.0371**	0.002	6.0	ug/L	17	Standard
>	**Bi**	209	540360.9	1.3				ug/L	557080	Standard

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Na	23	3.3	86.6	**23.0232**	19.940	86.6	mg/L	0	Standard
Mg	24	31.7	36.5	**-0.0117**	0.016	134.2	mg/L	32	Standard
K	39	40.0	57.3	**0.0042**	0.082	1950.6	mg/L	30	Standard
Ca	43	45.0	19.2	**2.0338**	1.285	63.2	mg/L	48	Standard
Fe	54	558.7	3.5	**0.4103**	0.028	6.8	mg/L	159	Standard
Fe	57	366.7	19.3	**0.7123**	0.240	33.7	mg/L	195	Standard
Sc-1	45	36550.7	1.7				mg/L	39543	Standard
Cl	35	30424.5	0.4				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	1540.1	8.3				ug/L	1647	Standard
P	31	6878.2	1.3				ug/L	15231	Standard
S	34	2278.5	4.6				ug/L	1845	Standard
Sr	88	71.7	29.0				ug/L	70	Standard
C	12	150.0	33.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	0	Standard
Dy	164	3587.7	5.2				mg/L	12	Standard
Ho-1	165	2146.8	3.5				mg/L	12	Standard
Er	166	1936.8	10.5				mg/L	20	Standard
I	127	1943.5	8.8				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		88.866	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.319	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.463
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.999
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606078717
Sample Date/Time: Tuesday, June 28, 2016 15:49:55
Number of Replicates: 3
Autosampler Position: 231
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72923.4	1.2				ug/L	81760	Standard
	Be	9	50.0	43.6	**0.0466**	0.024	52.0	ug/L	17	Standard
	Al	27	245816.4	0.3	**1.7738**	0.027	1.5	ug/L	1410	Standard
	Sc	45	37411.1	1.3				ug/L	39543	Standard
	Ti	47	150.7	7.6	**0.4619**	0.045	9.8	ug/L	39	Standard
	V	51	5992.6	2.2	**0.6857**	0.015	2.1	ug/L	1415	Standard
	Cr	52	7687.3	1.9	**0.0860**	0.027	31.9	ug/L	6946	Standard
	Cr	53	518.3	10.1	**0.2697**	0.061	22.7	ug/L	328	Standard
	Mn	55	119301.5	0.3	**18.8992**	0.085	0.4	ug/L	823	Standard
	Co	59	2188.2	2.9	**0.2910**	0.008	2.8	ug/L	252	Standard
	Ni	60	1191.7	0.5	**0.5500**	0.007	1.2	ug/L	192	Standard
	Cu	65	843.0	2.1	**0.3684**	0.010	2.8	ug/L	141	Standard
	Zn	66	2526.9	1.6	**1.5588**	0.051	3.2	ug/L	491	Standard
>	**Ge**	72	497647.3	0.6				ug/L	515087	Standard
	As	75	96.2	13.8	**0.1289**	0.013	9.7	ug/L	20	Standard
	Se	82	10.6	36.2	**-0.0241**	0.035	144.8	ug/L	15	Standard
	Se-1	77	46.0	14.3	**-0.0871**	0.088	100.8	ug/L	48	Standard
>	**Ga**	71	388.3	9.7				mg/L	90	Standard
	Rb	85	3552.1	4.5				ug/L	23	Standard
	Y	89	408184.3	3.4				ug/L	448510	Standard
>	**Rh**	103	16.7	17.3				ug/L	15	Standard
	Mo	98	62.0	6.5	**0.0053**	0.001	22.5	ug/L	11	Standard
	Ag	107	95.7	11.7	**-0.0010**	0.002	195.1	ug/L	134	Standard
	Cd	111	10.9	9.2	**0.0025**	0.001	23.6	mg/L	7	Standard
	Cd	114	23.2	24.4	**-0.0002**	0.001	811.4	ug/L	16	Standard
>	**In**	115	574185.6	1.8				ug/L	611117	Standard
	Sn	118	255.0	18.7	**-0.0561**	0.008	14.6	ug/L	518	Standard
	Sb	123	68.2	5.6	**0.0025**	0.001	35.8	ug/L	127	Standard
	Ba	135	10138.1	0.2	**5.2024**	0.085	1.6	ug/L	45	Standard
	Ce	140	49457.3	0.9				ug/L	298	Standard
>	**Tb**	159	906877.5	2.2				ug/L	977942	Standard
	Ho	165	853.4	7.8				ug/L	12	Standard
	Tl	203	26.0	16.8	**-0.0016**	0.001	32.4	ug/L	31	Standard
	Tl	205	21.7	26.6	**0.0008**	0.001	106.7	ug/L	20	Standard
	Pb	206	2799.3	1.6	**0.4682**	0.011	2.3	ug/L	286	Standard
	Pb	207	2286.8	2.0	**0.4236**	0.011	2.7	ug/L	257	Standard
	Pb	208	9380.8	1.4	**0.4502**	0.009	2.0	ug/L	956	Standard
	U	238	106.7	2.9	**0.0123**	0.000	3.6	ug/L	17	Standard
>	**Bi**	209	542636.2	0.5				ug/L	557080	Standard

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Na	23	3.3	86.6	**22.4620**	19.449	86.6	mg/L	0	Standard
Mg	24	26.7	21.7	**-0.0196**	0.008	42.2	mg/L	32	Standard
K	39	36.7	7.9	**-0.0105**	0.010	94.8	mg/L	30	Standard
Ca	43	36.7	56.8	**0.5265**	3.309	628.5	mg/L	48	Standard
Fe	54	389.3	2.1	**0.2354**	0.013	5.4	mg/L	159	Standard
Fe	57	280.0	3.1	**0.3744**	0.024	6.3	mg/L	195	Standard
> **Sc-1**	45	37411.1	1.3				mg/L	39543	Standard
Cl	35	30529.4	0.4				ug/L	27642	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1530.1	5.4				ug/L	1647	Standard
P	31	7263.4	2.6				ug/L	15231	Standard
S	34	2140.2	5.9				ug/L	1845	Standard
Sr	88	53.3	23.6				ug/L	70	Standard
C	12	100.0	75.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	1448.1	5.9				mg/L	12	Standard
Ho-1	165	853.4	7.8				mg/L	12	Standard
Er	166	736.7	15.9				mg/L	20	Standard
I	127	6059.5	4.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.192	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.614	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.957
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.407
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 15:53:08
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80037.6	2.2				ug/L	81760	Standard
	Be	9	50415.4	0.4	**51.8632**	1.062	2.0	ug/L	17	Standard
	Al	27	7611642.9	1.2	**50.4371**	0.677	1.3	ug/L	1410	Standard
	Sc	45	41097.3	0.2				ug/L	39543	Standard
	Ti	47	25369.9	1.7	**101.8781**	2.068	2.0	ug/L	39	Standard
	V	51	351293.9	2.1	**50.3394**	0.543	1.1	ug/L	1415	Standard
	Cr	52	361193.1	2.4	**50.8341**	0.636	1.3	ug/L	6946	Standard
	Cr	53	45189.0	2.1	**51.1421**	0.625	1.2	ug/L	328	Standard
	Mn	55	322540.4	1.4	**49.6098**	0.122	0.2	ug/L	823	Standard
	Co	59	356756.8	0.9	**50.7536**	0.285	0.6	ug/L	252	Standard
	Ni	60	97064.3	2.1	**51.4369**	0.357	0.7	ug/L	192	Standard
	Cu	65	97360.2	2.2	**51.1525**	0.591	1.2	ug/L	141	Standard
	Zn	66	56918.1	2.1	**51.1056**	0.446	0.9	ug/L	491	Standard
>	**Ge**	72	515026.5	1.4				ug/L	515087	Standard
	As	75	56903.6	1.1	**50.6598**	0.179	0.4	ug/L	20	Standard
	Se	82	5856.2	1.8	**50.7515**	0.222	0.4	ug/L	15	Standard
	Se-1	77	3927.8	0.7	**51.4293**	0.511	1.0	ug/L	48	Standard
>	**Ga**	71	66.7	30.3				mg/L	90	Standard
	Rb	85	760.0	4.6				ug/L	23	Standard
	Y	89	447852.9	1.0				ug/L	448510	Standard
>	**Rh**	103	25.0	34.6				ug/L	15	Standard
	Mo	98	271272.3	0.9	**98.6404**	1.710	1.7	ug/L	11	Standard
	Ag	107	339950.6	2.5	**49.7752**	1.742	3.5	ug/L	134	Standard
	Cd	111	107240.7	1.0	**49.3177**	0.985	2.0	mg/L	7	Standard
	Cd	114	262943.6	0.6	**49.7461**	0.816	1.6	ug/L	16	Standard
>	**In**	115	621725.8	1.1				ug/L	611117	Standard
	Sn	118	299388.1	2.0	**49.6643**	0.590	1.2	ug/L	518	Standard
	Sb	123	239448.5	1.8	**49.8807**	1.390	2.8	ug/L	127	Standard
	Ba	135	102748.9	0.7	**48.8974**	0.441	0.9	ug/L	45	Standard
	Ce	140	90.0	5.6				ug/L	298	Standard
>	**Tb**	159	985013.6	1.3				ug/L	977942	Standard
	Ho	165	16.7	45.8				ug/L	12	Standard
	Tl	203	430595.1	1.2	**49.9408**	0.227	0.5	ug/L	31	Standard
	Tl	205	380549.9	0.8	**50.8302**	0.446	0.9	ug/L	20	Standard
	Pb	206	272066.9	1.5	**49.1343**	0.429	0.9	ug/L	286	Standard
	Pb	207	246215.9	1.8	**49.3013**	0.781	1.6	ug/L	257	Standard
	Pb	208	985827.4	0.9	**51.0241**	0.323	0.6	ug/L	956	Standard
	U	238	363383.0	0.6	**49.5660**	0.508	1.0	ug/L	17	Standard
>	**Bi**	209	570034.9	1.5				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.2894**	17.813	173.1	mg/L	0	Standard
Mg	24	3815.5	2.6	**4.8299**	0.134	2.8	mg/L	32	Standard
K	39	1281.7	1.9	**4.0254**	0.078	1.9	mg/L	30	Standard
Ca	43	63.3	19.9	**3.9099**	1.840	47.1	mg/L	48	Standard
Fe	54	5945.2	1.8	**5.0400**	0.102	2.0	mg/L	159	Standard
Fe	57	1733.4	4.2	**5.0061**	0.238	4.8	mg/L	195	Standard
> **Sc-1**	45	41097.3	0.2				mg/L	39543	Standard
Cl	35	35020.4	1.1				ug/L	27642	Standard
Kr	83	3.0	57.7				ug/L	2	Standard
Br	81	1666.8	6.4				ug/L	1647	Standard
P	31	18748.3	2.5				ug/L	15231	Standard
S	34	2583.6	5.3				ug/L	1845	Standard
Sr	88	53.3	28.6				ug/L	70	Standard
C	12	110.0	24.1				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.4	101.7				mg/L	12	Standard
Ho-1	165	16.7	45.8				mg/L	12	Standard
Er	166	13.3	86.6				mg/L	20	Standard
I	127	1388.4	22.1				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	103.726		
	Al	27	100.874		
	Sc	45			
	Ti	47	101.878		
	V	51	100.679		
	Cr	52	101.668		
	Cr	53			
	Mn	55	99.220		
	Co	59	101.507		
	Ni	60	102.874		
	Cu	65	102.305		
	Zn	66	102.211		
>	Ge	72		99.988	
	As	75	101.320		
	Se	82	101.503		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	98.640		
Ag	107	99.550		
Cd	111	98.635		
Cd	114			
In	115			101.736
Sn	118	99.329		
Sb	123	99.761		
Ba	135	97.795		
Ce	140			
Tb	159			
Ho	165			
Tl	203	99.882		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.048		
U	238	99.132		
Bi	209			102.325
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 15:56:20
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79843.2	1.6				ug/L	81760	Standard
	Be	9	23.3	75.3	**0.0144**	0.018	125.7	ug/L	17	Standard
	Al	27	2505.2	18.4	**0.0022**	0.003	136.7	ug/L	1410	Standard
	Sc	45	39966.0	1.7				ug/L	39543	Standard
	Ti	47	35.3	11.4	**-0.0209**	0.017	83.6	ug/L	39	Standard
	V	51	1133.0	9.8	**-0.0412**	0.016	39.7	ug/L	1415	Standard
	Cr	52	6206.9	2.0	**-0.1524**	0.017	11.1	ug/L	6946	Standard
	Cr	53	315.0	2.7	**0.0227**	0.013	56.9	ug/L	328	Standard
	Mn	55	686.0	7.5	**-0.0412**	0.007	17.6	ug/L	823	Standard
	Co	59	254.3	2.2	**0.0054**	0.001	12.6	ug/L	252	Standard
	Ni	60	171.3	1.2	**-0.0127**	0.001	8.3	ug/L	192	Standard
	Cu	65	123.3	12.6	**-0.0250**	0.008	31.0	ug/L	141	Standard
	Zn	66	449.3	3.1	**-0.4117**	0.013	3.2	ug/L	491	Standard
>	**Ge**	72	507665.8	0.8				ug/L	515087	Standard
	As	75	-25.2	101.2	**0.0174**	0.023	132.3	ug/L	20	Standard
	Se	82	17.2	13.7	**0.0322**	0.020	60.6	ug/L	15	Standard
	Se-1	77	51.3	10.7	**-0.0277**	0.072	260.3	ug/L	48	Standard
>	**Ga**	71	48.3	15.8				mg/L	90	Standard
	Rb	85	30.0	44.1				ug/L	23	Standard
	Y	89	444982.9	1.9				ug/L	448510	Standard
>	**Rh**	103	16.7	34.6				ug/L	15	Standard
	Mo	98	252.7	24.3	**0.0725**	0.022	30.7	ug/L	11	Standard
	Ag	107	129.7	3.6	**0.0027**	0.001	26.2	ug/L	134	Standard
	Cd	111	17.2	9.0	**0.0050**	0.001	14.0	mg/L	7	Standard
	Cd	114	47.7	10.5	**0.0041**	0.001	23.1	ug/L	16	Standard
>	**In**	115	623883.8	0.1				ug/L	611117	Standard
	Sn	118	770.0	14.1	**0.0256**	0.018	70.0	ug/L	518	Standard
	Sb	123	507.4	30.1	**0.0925**	0.032	34.2	ug/L	127	Standard
	Ba	135	38.7	5.4	**-0.0068**	0.001	14.6	ug/L	45	Standard
	Ce	140	40.0	21.7				ug/L	298	Standard
>	**Tb**	159	974680.3	0.5				ug/L	977942	Standard
	Ho	165	13.3	78.1				ug/L	12	Standard
	Tl	203	68.0	6.7	**0.0032**	0.001	15.5	ug/L	31	Standard
	Tl	205	66.7	11.5	**0.0068**	0.001	14.7	ug/L	20	Standard
	Pb	206	289.3	1.4	**-0.0104**	0.001	6.9	ug/L	286	Standard
	Pb	207	250.7	7.8	**-0.0070**	0.004	55.4	ug/L	257	Standard
	Pb	208	1099.7	2.8	**-0.0025**	0.002	60.9	ug/L	956	Standard
	U	238	62.3	42.5	**0.0057**	0.004	64.1	ug/L	17	Standard
>	**Bi**	209	560756.1	0.5				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	33.3	45.8	**-0.0130**	0.021	161.7	mg/L	32	Standard
K	39	33.3	17.3	**-0.0301**	0.018	60.0	mg/L	30	Standard
Ca	43	38.3	27.2	**0.4086**	1.513	370.3	mg/L	48	Standard
Fe	54	141.0	17.0	**-0.0107**	0.022	208.8	mg/L	159	Standard
Fe	57	213.3	13.7	**0.0887**	0.105	118.5	mg/L	195	Standard
> **Sc-1**	45	39966.0	1.7				mg/L	39543	Standard
Cl	35	34581.4	2.4				ug/L	27642	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	1706.8	4.2				ug/L	1647	Standard
P	31	18139.2	2.9				ug/L	15231	Standard
S	34	2418.5	8.0				ug/L	1845	Standard
Sr	88	68.3	11.2				ug/L	70	Standard
C	12	130.0	53.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.8	101.7				mg/L	12	Standard
Ho-1	165	13.3	78.1				mg/L	12	Standard
Er	166	3.3	173.2				mg/L	20	Standard
I	127	1121.7	18.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.559	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.089
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.660
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW 45 WG573751-04
Sample Date/Time: Tuesday, June 28, 2016 15:59:33
Number of Replicates: 3
Autosampler Position: 232
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80427.9	0.7				ug/L	81760	Standard
	Be	9	20.0	43.3	**0.0107**	0.009	82.0	ug/L	17	Standard
	Al	27	16896.1	3.6	**0.0970**	0.004	4.0	ug/L	1410	Standard
	Sc	45	39630.1	2.3				ug/L	39543	Standard
	Ti	47	34.3	28.0	**-0.0290**	0.037	127.4	ug/L	39	Standard
	V	51	1241.7	7.6	**-0.0303**	0.012	39.4	ug/L	1415	Standard
	Cr	52	8808.2	2.5	**0.1923**	0.015	7.8	ug/L	6946	Standard
	Cr	53	705.0	11.9	**0.4526**	0.107	23.5	ug/L	328	Standard
	Mn	55	5471.7	0.3	**0.6851**	0.014	2.1	ug/L	823	Standard
	Co	59	272.7	7.3	**0.0070**	0.003	48.0	ug/L	252	Standard
	Ni	60	321.0	11.4	**0.0633**	0.019	30.2	ug/L	192	Standard
	Cu	65	232.7	11.6	**0.0301**	0.014	46.8	ug/L	141	Standard
	Zn	66	2018.1	1.4	**0.9905**	0.004	0.4	ug/L	491	Standard
>	**Ge**	72	521638.1	1.4				ug/L	515087	Standard
	As	75	-54.9	36.7	**-0.0079**	0.017	218.9	ug/L	20	Standard
	Se	82	10.0	20.3	**-0.0338**	0.018	54.1	ug/L	15	Standard
	Se-1	77	48.0	14.4	**-0.0888**	0.100	112.7	ug/L	48	Standard
>	**Ga**	71	53.3	28.6				mg/L	90	Standard
	Rb	85	156.7	21.7				ug/L	23	Standard
	Y	89	436462.5	0.8				ug/L	448510	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	82.2	21.1	**0.0108**	0.006	59.5	ug/L	11	Standard
	Ag	107	93.7	16.2	**-0.0025**	0.002	87.2	ug/L	134	Standard
	Cd	111	11.9	25.2	**0.0025**	0.001	54.5	mg/L	7	Standard
	Cd	114	46.6	47.9	**0.0039**	0.004	108.7	ug/L	16	Standard
>	**In**	115	622987.2	0.5				ug/L	611117	Standard
	Sn	118	873.4	7.7	**0.0429**	0.010	24.2	ug/L	518	Standard
	Sb	123	225.0	36.0	**0.0339**	0.017	49.6	ug/L	127	Standard
	Ba	135	668.7	0.9	**0.2926**	0.004	1.5	ug/L	45	Standard
	Ce	140	103.3	7.4				ug/L	298	Standard
>	**Tb**	159	980754.1	0.6				ug/L	977942	Standard
	Ho	165	13.3	78.1				ug/L	12	Standard
	Tl	203	31.7	30.7	**-0.0012**	0.001	94.5	ug/L	31	Standard
	Tl	205	30.0	86.6	**0.0017**	0.003	203.8	ug/L	20	Standard
	Pb	206	380.3	5.4	**0.0044**	0.003	72.4	ug/L	286	Standard
	Pb	207	331.3	8.5	**0.0076**	0.005	67.3	ug/L	257	Standard
	Pb	208	1302.7	2.5	**0.0063**	0.001	19.3	ug/L	956	Standard
	U	238	25.3	53.6	**0.0004**	0.002	408.2	ug/L	17	Standard
>	**Bi**	209	576453.2	0.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	33.3	8.7	**-0.0129**	0.003	22.5	mg/L	32	Standard
K	39	48.3	15.8	**0.0218**	0.028	129.2	mg/L	30	Standard
Ca	43	18.3	78.7	**-2.5918**	2.118	81.7	mg/L	48	Standard
Fe	54	122.7	28.9	**-0.0266**	0.030	114.3	mg/L	159	Standard
Fe	57	223.3	24.1	**0.1269**	0.176	138.7	mg/L	195	Standard
Sc-1	45	39630.1	2.3				mg/L	39543	Standard
Cl	35	33807.0	1.7				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1633.4	2.0				ug/L	1647	Standard
P	31	17535.1	2.2				ug/L	15231	Standard
S	34	2338.5	7.5				ug/L	1845	Standard
Sr	88	75.0	30.6				ug/L	70	Standard
C	12	106.7	19.5				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.4	3.0				mg/L	12	Standard
Ho-1	165	13.3	78.1				mg/L	12	Standard
Er	166	13.3	43.3				mg/L	20	Standard
I	127	955.0	19.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		98.371	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.272	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.942
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.478
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: LCSW 45 WG573451-05
Sample Date/Time: Tuesday, June 28, 2016 16:02:44
Number of Replicates: 3
Autosampler Position: 233
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81285.8	1.4				ug/L	81760	Standard
	Be	9	49444.0	4.0	**50.0648**	1.744	3.5	ug/L	17	Standard
	Al	27	14440.2	1.6	**0.0798**	0.002	2.1	ug/L	1410	Standard
	Sc	45	40522.5	4.2				ug/L	39543	Standard
	Ti	47	35.7	14.1	**-0.0217**	0.021	96.5	ug/L	39	Standard
	V	51	343445.8	1.5	**49.2175**	1.714	3.5	ug/L	1415	Standard
	Cr	52	355835.3	1.6	**50.0593**	1.026	2.0	ug/L	6946	Standard
	Cr	53	43403.8	4.1	**49.0831**	1.336	2.7	ug/L	328	Standard
	Mn	55	327263.1	1.9	**50.3439**	1.847	3.7	ug/L	823	Standard
	Co	59	357909.9	1.9	**50.9146**	1.589	3.1	ug/L	252	Standard
	Ni	60	94484.4	2.0	**50.0595**	0.992	2.0	ug/L	192	Standard
	Cu	65	95887.5	1.7	**50.3702**	0.997	2.0	ug/L	141	Standard
	Zn	66	56697.9	0.9	**50.8990**	0.801	1.6	ug/L	491	Standard
>	**Ge**	72	515232.3	2.4				ug/L	515087	Standard
	As	75	56137.8	1.3	**49.9742**	1.270	2.5	ug/L	20	Standard
	Se	82	5754.2	0.4	**49.8676**	1.316	2.6	ug/L	15	Standard
	Se-1	77	3847.2	2.4	**50.3547**	1.829	3.6	ug/L	48	Standard
>	**Ga**	71	80.0	38.0				mg/L	90	Standard
	Rb	85	45.0	58.8				ug/L	23	Standard
	Y	89	449389.0	2.2				ug/L	448510	Standard
>	**Rh**	103	28.3	66.8				ug/L	15	Standard
	Mo	98	72.0	12.6	**0.0070**	0.003	48.7	ug/L	11	Standard
	Ag	107	332360.6	2.0	**48.5009**	1.256	2.6	ug/L	134	Standard
	Cd	111	105950.1	2.1	**48.5677**	1.420	2.9	mg/L	7	Standard
	Cd	114	259244.9	2.6	**48.8950**	1.818	3.7	ug/L	16	Standard
>	**In**	115	623755.7	1.2				ug/L	611117	Standard
	Sn	118	950.0	6.3	**0.0554**	0.008	14.9	ug/L	518	Standard
	Sb	123	235787.4	1.4	**48.9583**	1.261	2.6	ug/L	127	Standard
	Ba	135	101234.2	2.5	**48.0272**	1.604	3.3	ug/L	45	Standard
	Ce	140	53.3	5.4				ug/L	298	Standard
>	**Tb**	159	962831.7	2.3				ug/L	977942	Standard
	Ho	165	6.7	114.6				ug/L	12	Standard
	Tl	203	424492.3	2.2	**49.7361**	1.545	3.1	ug/L	31	Standard
	Tl	205	378457.4	1.6	**51.0672**	1.520	3.0	ug/L	20	Standard
	Pb	206	276584.3	1.3	**50.4636**	1.380	2.7	ug/L	286	Standard
	Pb	207	241372.6	1.3	**48.8258**	1.366	2.8	ug/L	257	Standard
	Pb	208	990155.6	1.9	**51.7752**	1.712	3.3	ug/L	956	Standard
	U	238	358184.2	2.6	**49.3578**	1.903	3.9	ug/L	17	Standard
>	**Bi**	209	564381.2	1.4				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.8762**	18.829	173.1	mg/L	0	Standard
Mg	24	28.3	71.3	**-0.0199**	0.028	139.9	mg/L	32	Standard
K	39	45.0	40.1	**0.0061**	0.057	941.7	mg/L	30	Standard
Ca	43	25.0	60.0	**-1.6629**	2.211	133.0	mg/L	48	Standard
Fe	54	141.6	12.0	**-0.0123**	0.010	79.8	mg/L	159	Standard
Fe	57	180.0	5.6	**-0.0319**	0.009	26.7	mg/L	195	Standard
Sc-1	45	40522.5	4.2				mg/L	39543	Standard
Cl	35	33285.9	3.1				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	5364.3	7.6				ug/L	1647	Standard
P	31	17471.7	4.0				ug/L	15231	Standard
S	34	2361.9	6.4				ug/L	1845	Standard
Sr	88	63.3	24.1				ug/L	70	Standard
C	12	126.7	43.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	15.9	34.8				mg/L	12	Standard
Ho-1	165	6.7	114.6				mg/L	12	Standard
Er	166	16.7	69.3				mg/L	20	Standard
I	127	856.7	31.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.420	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.028	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: LCSW 45 WG573451-05
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.068
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.311
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 45 WG573451-05
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Method 6020 - Summary Report

Sample ID: L1606115101 WG573751-02
Sample Date/Time: Tuesday, June 28, 2016 16:05:56
Number of Replicates: 3
Autosampler Position: 234
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77671.9	1.4				ug/L	81760	Standard
	Be	9	26.7	39.0	**0.0185**	0.011	58.4	ug/L	17	Standard
	Al	27	13955917.4	1.2	**95.3134**	2.493	2.6	ug/L	1410	Standard
	Sc	45	39321.0	0.9				ug/L	39543	Standard
	Ti	47	301.7	10.7	**1.0707**	0.148	13.8	ug/L	39	Standard
	V	51	16198.5	2.2	**2.1650**	0.025	1.2	ug/L	1415	Standard
	Cr	52	10911.9	4.6	**0.5376**	0.044	8.1	ug/L	6946	Standard
	Cr	53	3267.0	16.4	**3.4384**	0.551	16.0	ug/L	328	Standard
	Mn	55	181411.8	1.7	**28.3397**	0.987	3.5	ug/L	823	Standard
	Co	59	976.7	3.3	**0.1102**	0.006	5.4	ug/L	252	Standard
	Ni	60	1471.7	0.7	**0.6905**	0.022	3.2	ug/L	192	Standard
	Cu	65	1872.1	2.6	**0.9119**	0.023	2.5	ug/L	141	Standard
	Zn	66	6550.4	2.0	**5.2541**	0.063	1.2	ug/L	491	Standard
>	**Ge**	72	506178.8	2.0				ug/L	515087	Standard
	As	75	931.2	4.4	**0.8837**	0.051	5.8	ug/L	20	Standard
	Se	82	231.2	4.1	**1.9256**	0.108	5.6	ug/L	15	Standard
	Se-1	77	230.7	3.7	**2.3974**	0.119	5.0	ug/L	48	Standard
>	**Ga**	71	195.0	5.1				mg/L	90	Standard
	Rb	85	19537.6	1.2				ug/L	23	Standard
	Y	89	432314.6	1.1				ug/L	448510	Standard
>	**Rh**	103	61.7	12.4				ug/L	15	Standard
	Mo	98	3291.8	1.3	**1.2330**	0.013	1.0	ug/L	11	Standard
	Ag	107	150.7	8.2	**0.0069**	0.002	29.9	ug/L	134	Standard
	Cd	111	62.2	4.0	**0.0270**	0.001	5.4	mg/L	7	Standard
	Cd	114	153.0	45.9	**0.0254**	0.014	55.2	ug/L	16	Standard
>	**In**	115	594394.0	1.1				ug/L	611117	Standard
	Sn	118	883.4	9.5	**0.0516**	0.013	25.0	ug/L	518	Standard
	Sb	123	639.6	8.2	**0.1265**	0.011	8.6	ug/L	127	Standard
	Ba	135	68518.2	0.3	**34.1005**	0.460	1.3	ug/L	45	Standard
	Ce	140	2645.2	17.9				ug/L	298	Standard
>	**Tb**	159	950271.0	0.7				ug/L	977942	Standard
	Ho	165	53.3	10.8				ug/L	12	Standard
	Tl	203	411.7	14.6	**0.0459**	0.008	17.1	ug/L	31	Standard
	Tl	205	376.7	19.3	**0.0511**	0.011	20.8	ug/L	20	Standard
	Pb	206	1679.8	1.4	**0.2582**	0.003	1.3	ug/L	286	Standard
	Pb	207	1366.4	3.8	**0.2322**	0.009	3.7	ug/L	257	Standard
	Pb	208	5841.1	1.9	**0.2602**	0.004	1.4	ug/L	956	Standard
	U	238	9731.1	2.1	**1.4034**	0.022	1.5	ug/L	17	Standard
>	**Bi**	209	537950.1	0.8				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	34736.4	1.4	**46.4420**	0.278	0.6	mg/L	32	Standard
K	39	261.7	6.7	**0.7474**	0.052	7.0	mg/L	30	Standard
Ca	43	178.3	24.5	**21.8549**	6.453	29.5	mg/L	48	Standard
Fe	54	262.3	8.0	**0.1018**	0.020	19.8	mg/L	159	Standard
Fe	57	341.7	2.2	**0.5353**	0.023	4.3	mg/L	195	Standard
> **Sc-1**	45	39321.0	0.9				mg/L	39543	Standard
Cl	35	35275.1	3.8				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	35124.1	4.7				ug/L	1647	Standard
P	31	18164.2	1.2				ug/L	15231	Standard
S	34	2260.2	2.8				ug/L	1845	Standard
Sr	88	231.7	13.9				ug/L	70	Standard
C	12	256.7	41.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	63.6	33.9				mg/L	12	Standard
Ho-1	165	53.3	10.8				mg/L	12	Standard
Er	166	63.3	36.5				mg/L	20	Standard
I	127	311901.7	7.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.000	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.271	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.264
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.566
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606115103S WG573751-07
Sample Date/Time: Tuesday, June 28, 2016 16:09:07
Number of Replicates: 3
Autosampler Position: 235
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82738.6	0.2				ug/L	81760	Standard
	Be	9	50932.1	1.3	**50.6700**	0.765	1.5	ug/L	17	Standard
	Al	27	14256616.7	2.2	**91.3792**	1.822	2.0	ug/L	1410	Standard
	Sc	45	41140.8	1.3				ug/L	39543	Standard
	Ti	47	371.0	4.6	**1.3119**	0.075	5.7	ug/L	39	Standard
	V	51	355266.5	2.0	**50.3881**	1.016	2.0	ug/L	1415	Standard
	Cr	52	348734.5	0.9	**48.5348**	0.604	1.2	ug/L	6946	Standard
	Cr	53	45906.1	1.2	**51.4332**	1.330	2.6	ug/L	328	Standard
	Mn	55	484874.0	0.4	**73.8916**	1.228	1.7	ug/L	823	Standard
	Co	59	330526.6	1.2	**46.5427**	1.213	2.6	ug/L	252	Standard
	Ni	60	91208.4	1.4	**47.8307**	0.262	0.5	ug/L	192	Standard
	Cu	65	93139.1	0.3	**48.4331**	0.711	1.5	ug/L	141	Standard
	Zn	66	61775.3	0.7	**54.9696**	1.209	2.2	ug/L	491	Standard
>	**Ge**	72	520412.6	1.6				ug/L	515087	Standard
	As	75	57188.6	0.5	**50.3925**	0.724	1.4	ug/L	20	Standard
	Se	82	5643.2	0.1	**48.4036**	0.791	1.6	ug/L	15	Standard
	Se-1	77	3992.2	4.4	**51.7398**	2.452	4.7	ug/L	48	Standard
>	**Ga**	71	230.0	28.3				mg/L	90	Standard
	Rb	85	19777.9	1.1				ug/L	23	Standard
	Y	89	433897.5	1.4				ug/L	448510	Standard
>	**Rh**	103	81.7	39.4				ug/L	15	Standard
	Mo	98	3301.1	2.4	**1.2202**	0.040	3.3	ug/L	11	Standard
	Ag	107	315385.8	0.9	**47.6558**	0.862	1.8	ug/L	134	Standard
	Cd	111	99498.3	0.6	**47.2265**	0.833	1.8	mg/L	7	Standard
	Cd	114	242671.7	0.4	**47.3834**	0.530	1.1	ug/L	16	Standard
>	**In**	115	602380.0	1.2				ug/L	611117	Standard
	Sn	118	866.7	11.7	**0.0467**	0.016	33.5	ug/L	518	Standard
	Sb	123	233832.7	0.4	**50.2714**	0.769	1.5	ug/L	127	Standard
	Ba	135	168472.5	0.5	**82.7716**	1.205	1.5	ug/L	45	Standard
	Ce	140	3190.3	1.8				ug/L	298	Standard
>	**Tb**	159	975538.4	0.7				ug/L	977942	Standard
	Ho	165	55.0	50.6				ug/L	12	Standard
	Tl	203	405391.8	0.6	**48.6809**	0.381	0.8	ug/L	31	Standard
	Tl	205	349844.8	1.2	**48.3796**	0.623	1.3	ug/L	20	Standard
	Pb	206	268733.3	0.7	**50.2550**	0.909	1.8	ug/L	286	Standard
	Pb	207	232854.8	1.2	**48.2799**	1.141	2.4	ug/L	257	Standard
	Pb	208	923192.2	0.6	**49.4693**	0.366	0.7	ug/L	956	Standard
	U	238	355626.8	0.4	**50.2227**	0.621	1.2	ug/L	17	Standard
>	**Bi**	209	550570.6	1.2				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	35867.4	1.9	**45.8327**	0.548	1.2	mg/L	32	Standard
K	39	318.3	2.4	**0.8927**	0.038	4.2	mg/L	30	Standard
Ca	43	141.7	5.4	**15.3452**	1.333	8.7	mg/L	48	Standard
Fe	54	233.9	13.6	**0.0666**	0.029	43.8	mg/L	159	Standard
Fe	57	373.3	5.1	**0.5873**	0.073	12.3	mg/L	195	Standard
> **Sc-1**	45	41140.8	1.3				mg/L	39543	Standard
Cl	35	36665.0	1.2				ug/L	27642	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	38074.5	2.7				ug/L	1647	Standard
P	31	19512.6	0.4				ug/L	15231	Standard
S	34	2426.9	4.9				ug/L	1845	Standard
Sr	88	241.7	11.4				ug/L	70	Standard
C	12	183.3	31.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	66.3	40.2				mg/L	12	Standard
Ho-1	165	55.0	50.6				mg/L	12	Standard
Er	166	76.7	15.1				mg/L	20	Standard
I	127	311628.4	3.8				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		101.197	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.034	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: L1606115103S WG573751-07
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.570
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.831
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606115304SD WG573751-08
Sample Date/Time: Tuesday, June 28, 2016 16:12:19
Number of Replicates: 3
Autosampler Position: 236
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82914.6	1.7				ug/L	81760	Standard
	Be	9	51258.3	2.2	**50.8925**	1.250	2.5	ug/L	17	Standard
	Al	27	15399778.5	0.9	**98.5192**	1.923	2.0	ug/L	1410	Standard
	Sc	45	40084.7	2.9				ug/L	39543	Standard
	Ti	47	640.0	9.7	**2.4715**	0.230	9.3	ug/L	39	Standard
	V	51	358753.7	1.2	**52.7008**	0.680	1.3	ug/L	1415	Standard
	Cr	52	354784.4	1.1	**51.1849**	0.073	0.1	ug/L	6946	Standard
	Cr	53	47661.6	3.5	**55.3029**	1.433	2.6	ug/L	328	Standard
	Mn	55	529314.6	1.5	**83.5469**	1.579	1.9	ug/L	823	Standard
	Co	59	345503.9	1.1	**50.3773**	0.891	1.8	ug/L	252	Standard
	Ni	60	92308.7	1.0	**50.1355**	0.426	0.9	ug/L	192	Standard
	Cu	65	93613.0	1.4	**50.4100**	0.723	1.4	ug/L	141	Standard
	Zn	66	64567.0	0.6	**59.5553**	0.411	0.7	ug/L	491	Standard
>	**Ge**	72	502524.4	1.0				ug/L	515087	Standard
	As	75	56933.1	0.7	**51.9453**	0.162	0.3	ug/L	20	Standard
	Se	82	5947.1	1.7	**52.8275**	0.666	1.3	ug/L	15	Standard
	Se-1	77	3965.5	2.7	**53.2435**	1.801	3.4	ug/L	48	Standard
>	**Ga**	71	291.7	11.2				mg/L	90	Standard
	Rb	85	22576.8	1.0				ug/L	23	Standard
	Y	89	439067.8	2.2				ug/L	448510	Standard
>	**Rh**	103	73.3	7.9				ug/L	15	Standard
	Mo	98	3536.7	2.2	**1.2876**	0.021	1.6	ug/L	11	Standard
	Ag	107	318639.0	0.2	**47.3947**	0.683	1.4	ug/L	134	Standard
	Cd	111	102545.7	0.7	**47.9082**	0.269	0.6	mg/L	7	Standard
	Cd	114	249882.8	0.5	**48.0284**	0.370	0.8	ug/L	16	Standard
>	**In**	115	611940.4	1.2				ug/L	611117	Standard
	Sn	118	1045.0	4.1	**0.0745**	0.005	6.8	ug/L	518	Standard
	Sb	123	235512.7	0.7	**49.8406**	0.693	1.4	ug/L	127	Standard
	Ba	135	174610.3	1.9	**84.4342**	0.545	0.6	ug/L	45	Standard
	Ce	140	5954.5	2.4				ug/L	298	Standard
>	**Tb**	159	973344.6	0.2				ug/L	977942	Standard
	Ho	165	121.7	6.3				ug/L	12	Standard
	Tl	203	413217.7	0.6	**49.7797**	0.456	0.9	ug/L	31	Standard
	Tl	205	363310.0	1.7	**50.4036**	0.986	2.0	ug/L	20	Standard
	Pb	206	270026.6	0.5	**50.6539**	0.212	0.4	ug/L	286	Standard
	Pb	207	235774.0	0.4	**49.0358**	0.293	0.6	ug/L	257	Standard
	Pb	208	947837.4	0.9	**50.9548**	0.634	1.2	ug/L	956	Standard
	U	238	363550.4	1.8	**51.5051**	1.028	2.0	ug/L	17	Standard
>	**Bi**	209	548791.6	0.3				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.4900**	18.160	173.1	mg/L	0	Standard
Mg	24	38714.4	0.7	**50.8180**	1.880	3.7	mg/L	32	Standard
K	39	343.3	15.2	**1.0066**	0.203	20.2	mg/L	30	Standard
Ca	43	156.7	1.8	**18.1495**	1.124	6.2	mg/L	48	Standard
Fe	54	374.0	6.7	**0.1967**	0.015	7.7	mg/L	159	Standard
Fe	57	400.0	0.0	**0.7083**	0.040	5.6	mg/L	195	Standard
> **Sc-1**	45	40084.7	2.9				mg/L	39543	Standard
Cl	35	38416.6	0.8				ug/L	27642	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	40474.1	6.0				ug/L	1647	Standard
P	31	20383.7	1.9				ug/L	15231	Standard
S	34	2388.5	6.8				ug/L	1845	Standard
Sr	88	235.0	8.5				ug/L	70	Standard
C	12	253.3	25.1				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	175.2	19.1				mg/L	12	Standard
Ho-1	165	121.7	6.3				mg/L	12	Standard
Er	166	100.0	26.5				mg/L	20	Standard
I	127	354555.7	8.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.412	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.561	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606115304SD WG573751-08
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.135
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.512
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606091602 WG573751-01
Sample Date/Time: Tuesday, June 28, 2016 16:15:30
Number of Replicates: 3
Autosampler Position: 237
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83752.6	2.6				ug/L	81760	Standard
	Be	9	50.0	26.5	**0.0395**	0.014	34.7	ug/L	17	Standard
	Al	27	2701508.7	2.5	**17.0954**	0.130	0.8	ug/L	1410	Standard
	Sc	45	39755.5	3.1				ug/L	39543	Standard
	Ti	47	56.0	11.2	**0.0633**	0.027	42.8	ug/L	39	Standard
	V	51	1924.8	3.9	**0.0741**	0.009	12.6	ug/L	1415	Standard
	Cr	52	10285.8	1.8	**0.4408**	0.012	2.7	ug/L	6946	Standard
	Cr	53	1156.7	1.7	**0.9947**	0.041	4.2	ug/L	328	Standard
	Mn	55	253930.8	1.4	**39.5649**	0.851	2.1	ug/L	823	Standard
	Co	59	1951.8	2.9	**0.2502**	0.004	1.8	ug/L	252	Standard
	Ni	60	1859.1	3.7	**0.8956**	0.027	3.0	ug/L	192	Standard
	Cu	65	1000.0	2.6	**0.4428**	0.017	3.9	ug/L	141	Standard
	Zn	66	2280.8	1.9	**1.2819**	0.026	2.1	ug/L	491	Standard
>	**Ge**	72	508105.2	1.4				ug/L	515087	Standard
	As	75	151.5	17.1	**0.1768**	0.022	12.7	ug/L	20	Standard
	Se	82	39.2	12.0	**0.2256**	0.041	18.4	ug/L	15	Standard
	Se-1	77	70.3	2.2	**0.2277**	0.025	11.1	ug/L	48	Standard
>	**Ga**	71	73.3	3.9				mg/L	90	Standard
	Rb	85	9319.5	3.0				ug/L	23	Standard
	Y	89	446629.7	1.4				ug/L	448510	Standard
>	**Rh**	103	35.0	37.8				ug/L	15	Standard
	Mo	98	255.3	4.6	**0.0742**	0.003	4.3	ug/L	11	Standard
	Ag	107	140.0	17.3	**0.0044**	0.004	86.0	ug/L	134	Standard
	Cd	111	34.5	15.3	**0.0130**	0.002	17.2	mg/L	7	Standard
	Cd	114	78.1	40.8	**0.0099**	0.006	59.3	ug/L	16	Standard
>	**In**	115	618896.7	1.2				ug/L	611117	Standard
	Sn	118	878.4	9.4	**0.0447**	0.013	28.2	ug/L	518	Standard
	Sb	123	309.3	20.5	**0.0520**	0.014	26.9	ug/L	127	Standard
	Ba	135	35857.7	1.5	**17.1253**	0.158	0.9	ug/L	45	Standard
	Ce	140	1368.4	3.3				ug/L	298	Standard
>	**Tb**	159	968292.7	1.7				ug/L	977942	Standard
	Ho	165	100.0	15.0				ug/L	12	Standard
	Tl	203	175.7	13.5	**0.0159**	0.003	15.9	ug/L	31	Standard
	Tl	205	158.3	30.0	**0.0192**	0.006	31.5	ug/L	20	Standard
	Pb	206	469.3	2.7	**0.0227**	0.001	2.5	ug/L	286	Standard
	Pb	207	387.3	8.4	**0.0210**	0.006	30.5	ug/L	257	Standard
	Pb	208	1635.4	0.6	**0.0258**	0.001	5.1	ug/L	956	Standard
	U	238	220.3	6.6	**0.0276**	0.001	5.0	ug/L	17	Standard
>	**Bi**	209	560335.5	2.1				ug/L	557080	Standard

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Na	23	3.3	173.2	**20.5537**	35.591	173.2	mg/L	0	Standard
Mg	24	3380.4	0.3	**4.4213**	0.131	3.0	mg/L	32	Standard
K	39	168.3	9.1	**0.4237**	0.034	8.1	mg/L	30	Standard
Ca	43	108.3	14.8	**11.0098**	2.304	20.9	mg/L	48	Standard
Fe	54	282.4	10.4	**0.1178**	0.034	28.5	mg/L	159	Standard
Fe	57	291.7	21.2	**0.3561**	0.217	61.0	mg/L	195	Standard
> **Sc-1**	45	39755.5	3.1				mg/L	39543	Standard
Cl	35	40081.0	2.5				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	4644.1	13.8				ug/L	1647	Standard
P	31	18102.5	2.7				ug/L	15231	Standard
S	34	2331.8	2.8				ug/L	1845	Standard
Sr	88	118.3	8.8				ug/L	70	Standard
C	12	123.3	9.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	117.9	56.1				mg/L	12	Standard
Ho-1	165	100.0	15.0				mg/L	12	Standard
Er	166	43.3	48.0				mg/L	20	Standard
I	127	21574.4	25.8				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.437	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.645	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.273
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.584
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606091602DP WG573751-06
Sample Date/Time: Tuesday, June 28, 2016 16:18:41
Number of Replicates: 3
Autosampler Position: 238
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81912.6	2.5				ug/L	81760	Standard
	Be	9	38.3	32.8	**0.0286**	0.012	41.1	ug/L	17	Standard
	Al	27	2661315.3	2.5	**17.2245**	0.558	3.2	ug/L	1410	Standard
	Sc	45	39553.2	2.2				ug/L	39543	Standard
	Ti	47	60.3	10.8	**0.0810**	0.030	36.5	ug/L	39	Standard
	V	51	1771.3	1.7	**0.0516**	0.003	5.3	ug/L	1415	Standard
	Cr	52	10216.4	1.4	**0.4303**	0.018	4.2	ug/L	6946	Standard
	Cr	53	1328.4	4.4	**1.1923**	0.072	6.1	ug/L	328	Standard
	Mn	55	248102.9	0.7	**38.6399**	0.746	1.9	ug/L	823	Standard
	Co	59	1844.8	1.4	**0.2347**	0.001	0.3	ug/L	252	Standard
	Ni	60	1828.1	4.4	**0.8792**	0.056	6.4	ug/L	192	Standard
	Cu	65	995.0	2.4	**0.4399**	0.012	2.7	ug/L	141	Standard
	Zn	66	2165.5	0.6	**1.1746**	0.022	1.8	ug/L	491	Standard
>	**Ge**	72	508291.1	1.3				ug/L	515087	Standard
	As	75	90.4	12.4	**0.1217**	0.009	7.5	ug/L	20	Standard
	Se	82	34.1	11.8	**0.1803**	0.032	17.6	ug/L	15	Standard
	Se-1	77	74.3	14.5	**0.2819**	0.154	54.5	ug/L	48	Standard
>	**Ga**	71	68.3	30.5				mg/L	90	Standard
	Rb	85	9142.8	6.3				ug/L	23	Standard
	Y	89	450226.3	2.8				ug/L	448510	Standard
>	**Rh**	103	21.7	58.1				ug/L	15	Standard
	Mo	98	245.2	4.8	**0.0704**	0.005	7.4	ug/L	11	Standard
	Ag	107	87.7	6.3	**-0.0033**	0.001	21.6	ug/L	134	Standard
	Cd	111	23.2	17.5	**0.0078**	0.002	23.8	mg/L	7	Standard
	Cd	114	58.3	13.8	**0.0061**	0.001	23.6	ug/L	16	Standard
>	**In**	115	619551.5	1.3				ug/L	611117	Standard
	Sn	118	933.4	2.4	**0.0538**	0.006	10.7	ug/L	518	Standard
	Sb	123	201.2	19.7	**0.0293**	0.009	30.0	ug/L	127	Standard
	Ba	135	34661.9	0.9	**16.5369**	0.177	1.1	ug/L	45	Standard
	Ce	140	1260.1	4.6				ug/L	298	Standard
>	**Tb**	159	963340.8	1.2				ug/L	977942	Standard
	Ho	165	88.3	18.2				ug/L	12	Standard
	Tl	203	85.3	6.5	**0.0054**	0.001	13.0	ug/L	31	Standard
	Tl	205	83.3	17.3	**0.0091**	0.002	21.1	ug/L	20	Standard
	Pb	206	415.0	2.1	**0.0134**	0.001	8.9	ug/L	286	Standard
	Pb	207	359.0	2.4	**0.0158**	0.001	8.8	ug/L	257	Standard
	Pb	208	1485.0	2.9	**0.0185**	0.003	14.1	ug/L	956	Standard
	U	238	164.0	3.4	**0.0200**	0.001	3.7	ug/L	17	Standard
>	**Bi**	209	555403.6	0.6				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	3443.7	5.9	**4.5314**	0.377	8.3	mg/L	32	Standard
K	39	158.3	7.9	**0.3934**	0.041	10.4	mg/L	30	Standard
Ca	43	93.3	12.4	**8.8061**	1.479	16.8	mg/L	48	Standard
Fe	54	304.0	6.5	**0.1380**	0.017	12.0	mg/L	159	Standard
Fe	57	313.3	6.4	**0.4340**	0.087	20.1	mg/L	195	Standard
> **Sc-1**	45	39553.2	2.2				mg/L	39543	Standard
Cl	35	40893.8	1.8				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	3857.2	4.5				ug/L	1647	Standard
P	31	18868.4	1.0				ug/L	15231	Standard
S	34	2383.5	7.0				ug/L	1845	Standard
Sr	88	95.0	13.9				ug/L	70	Standard
C	12	200.0	17.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	96.2	30.5				mg/L	12	Standard
Ho-1	165	88.3	18.2				mg/L	12	Standard
Er	166	80.0	37.5				mg/L	20	Standard
I	127	15653.1	0.7				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		100.187	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		98.681	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.380	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.699	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606091601
Sample Date/Time: Tuesday, June 28, 2016 16:21:53
Number of Replicates: 3
Autosampler Position: 239
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81664.5	1.8				ug/L	81760	Standard
	Be	9	26.7	28.6	**0.0172**	0.008	47.1	ug/L	17	Standard
	Al	27	4275643.4	2.5	**27.7561**	0.463	1.7	ug/L	1410	Standard
	Sc	45	38087.8	3.0				ug/L	39543	Standard
	Ti	47	54.7	26.0	**0.0548**	0.059	108.3	ug/L	39	Standard
	V	51	1697.6	8.1	**0.0374**	0.021	56.8	ug/L	1415	Standard
	Cr	52	10296.2	0.8	**0.4201**	0.020	4.7	ug/L	6946	Standard
	Cr	53	1460.1	7.5	**1.3201**	0.135	10.2	ug/L	328	Standard
	Mn	55	64493.4	3.0	**9.7887**	0.389	4.0	ug/L	823	Standard
	Co	59	427.0	5.1	**0.0294**	0.004	12.3	ug/L	252	Standard
	Ni	60	847.0	2.5	**0.3443**	0.016	4.7	ug/L	192	Standard
	Cu	65	826.7	6.2	**0.3435**	0.022	6.5	ug/L	141	Standard
	Zn	66	9487.6	0.7	**7.8171**	0.052	0.7	ug/L	491	Standard
>	**Ge**	72	515789.8	1.2				ug/L	515087	Standard
	As	75	95.2	47.1	**0.1249**	0.040	32.1	ug/L	20	Standard
	Se	82	32.5	28.2	**0.1620**	0.079	48.7	ug/L	15	Standard
	Se-1	77	78.3	8.3	**0.3202**	0.098	30.6	ug/L	48	Standard
>	**Ga**	71	58.3	50.2				mg/L	90	Standard
	Rb	85	8367.3	1.9				ug/L	23	Standard
	Y	89	424791.4	2.4				ug/L	448510	Standard
>	**Rh**	103	81.7	19.7				ug/L	15	Standard
	Mo	98	367.2	2.9	**0.1192**	0.004	3.5	ug/L	11	Standard
	Ag	107	119.3	48.0	**0.0019**	0.009	460.3	ug/L	134	Standard
	Cd	111	50.7	68.6	**0.0212**	0.017	78.0	mg/L	7	Standard
	Cd	114	102.4	71.8	**0.0151**	0.014	95.2	ug/L	16	Standard
>	**In**	115	600349.6	1.0				ug/L	611117	Standard
	Sn	118	1276.7	2.5	**0.1178**	0.004	3.0	ug/L	518	Standard
	Sb	123	200.9	15.6	**0.0306**	0.007	23.5	ug/L	127	Standard
	Ba	135	168683.5	0.8	**83.1505**	0.843	1.0	ug/L	45	Standard
	Ce	140	160.0	17.4				ug/L	298	Standard
>	**Tb**	159	943339.1	0.8				ug/L	977942	Standard
	Ho	165	5.0	100.0				ug/L	12	Standard
	Tl	203	103.7	83.0	**0.0076**	0.010	135.3	ug/L	31	Standard
	Tl	205	65.0	38.5	**0.0066**	0.003	51.6	ug/L	20	Standard
	Pb	206	449.7	4.5	**0.0200**	0.004	18.4	ug/L	286	Standard
	Pb	207	373.7	5.2	**0.0190**	0.004	20.9	ug/L	257	Standard
	Pb	208	1469.0	1.7	**0.0178**	0.001	8.0	ug/L	956	Standard
	U	238	195.0	9.9	**0.0244**	0.003	11.1	ug/L	17	Standard
>	**Bi**	209	554105.5	0.2				ug/L	557080	Standard

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Na	23	1.7	173.2	**11.2769**	19.523	173.1	mg/L	0	Standard
Mg	24	4872.5	3.1	**6.6831**	0.365	5.5	mg/L	32	Standard
K	39	180.0	11.1	**0.4891**	0.054	11.0	mg/L	30	Standard
Ca	43	71.7	49.5	**5.8566**	5.217	89.1	mg/L	48	Standard
Fe	54	187.0	32.7	**0.0391**	0.060	153.5	mg/L	159	Standard
Fe	57	275.0	13.7	**0.3422**	0.158	46.1	mg/L	195	Standard
> **Sc-1**	45	38087.8	3.0				mg/L	39543	Standard
Cl	35	39985.4	2.3				ug/L	27642	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	5007.5	9.4				ug/L	1647	Standard
P	31	18170.9	2.8				ug/L	15231	Standard
S	34	2413.5	5.6				ug/L	1845	Standard
Sr	88	318.3	14.3				ug/L	70	Standard
C	12	223.3	5.2				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	59.7	16.8				mg/L	12	Standard
Ho-1	165	5.0	100.0				mg/L	12	Standard
Er	166	6.7	86.6				mg/L	20	Standard
I	127	27700.4	6.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.883	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.136	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.238
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.466
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606091601PS WG574522-01
Sample Date/Time: Tuesday, June 28, 2016 16:25:04
Number of Replicates: 3
Autosampler Position: 240
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84128.0	1.7				ug/L	81760	Standard
	Be	9	52619.6	0.9	**51.4982**	1.298	2.5	ug/L	17	Standard
	Al	27	4326633.2	0.4	**27.2707**	0.550	2.0	ug/L	1410	Standard
	Sc	45	39650.1	0.7				ug/L	39543	Standard
	Ti	47	62.3	14.0	**0.0872**	0.038	43.9	ug/L	39	Standard
	V	51	353435.0	1.4	**50.9243**	0.391	0.8	ug/L	1415	Standard
	Cr	52	362779.9	0.9	**51.3507**	0.534	1.0	ug/L	6946	Standard
	Cr	53	45635.3	3.2	**51.9244**	0.938	1.8	ug/L	328	Standard
	Mn	55	384138.6	0.3	**59.4407**	0.957	1.6	ug/L	823	Standard
	Co	59	352427.3	0.4	**50.4121**	0.778	1.5	ug/L	252	Standard
	Ni	60	95802.0	1.3	**51.0471**	0.630	1.2	ug/L	192	Standard
	Cu	65	98413.6	0.9	**51.9931**	0.640	1.2	ug/L	141	Standard
	Zn	66	63162.1	1.4	**57.1168**	0.348	0.6	ug/L	491	Standard
>	**Ge**	72	512293.3	1.9				ug/L	515087	Standard
	As	75	56566.0	1.5	**50.6330**	0.812	1.6	ug/L	20	Standard
	Se	82	5805.6	1.0	**50.5901**	0.677	1.3	ug/L	15	Standard
	Se-1	77	3921.2	1.4	**51.6223**	0.909	1.8	ug/L	48	Standard
>	**Ga**	71	60.0	50.7				mg/L	90	Standard
	Rb	85	8215.6	0.6				ug/L	23	Standard
	Y	89	438501.2	1.8				ug/L	448510	Standard
>	**Rh**	103	71.7	28.2				ug/L	15	Standard
	Mo	98	368.8	5.9	**0.1169**	0.008	6.7	ug/L	11	Standard
	Ag	107	334626.2	0.5	**49.6506**	0.360	0.7	ug/L	134	Standard
	Cd	111	105047.6	0.7	**48.9601**	0.529	1.1	mg/L	7	Standard
	Cd	114	254060.7	2.8	**48.7162**	1.522	3.1	ug/L	16	Standard
>	**In**	115	613389.4	0.3				ug/L	611117	Standard
	Sn	118	1936.8	37.5	**0.2241**	0.121	54.0	ug/L	518	Standard
	Sb	123	237358.9	1.9	**50.1080**	0.980	2.0	ug/L	127	Standard
	Ba	135	267735.0	1.3	**129.1838**	2.081	1.6	ug/L	45	Standard
	Ce	140	231.7	21.3				ug/L	298	Standard
>	**Tb**	159	964479.2	1.1				ug/L	977942	Standard
	Ho	165	18.3	56.8				ug/L	12	Standard
	Tl	203	432424.0	0.5	**50.0145**	0.262	0.5	ug/L	31	Standard
	Tl	205	382714.9	0.3	**50.9759**	0.183	0.4	ug/L	20	Standard
	Pb	206	282966.8	1.1	**50.9646**	0.635	1.2	ug/L	286	Standard
	Pb	207	246387.7	1.3	**49.1992**	0.690	1.4	ug/L	257	Standard
	Pb	208	985942.4	0.8	**50.8876**	0.399	0.8	ug/L	956	Standard
	U	238	365334.3	1.0	**49.6910**	0.475	1.0	ug/L	17	Standard
>	**Bi**	209	571593.5	0.1				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4890.8	3.1	**6.4355**	0.187	2.9	mg/L	32	Standard
K	39	161.7	23.2	**0.4031**	0.125	30.9	mg/L	30	Standard
Ca	43	113.3	24.3	**11.8087**	4.086	34.6	mg/L	48	Standard
Fe	54	177.2	7.7	**0.0228**	0.011	49.5	mg/L	159	Standard
Fe	57	255.0	15.6	**0.2338**	0.132	56.3	mg/L	195	Standard
> **Sc-1**	45	39650.1	0.7				mg/L	39543	Standard
Cl	35	40732.7	2.1				ug/L	27642	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	4914.1	11.2				ug/L	1647	Standard
P	31	18529.7	1.8				ug/L	15231	Standard
S	34	2476.9	6.8				ug/L	1845	Standard
Sr	88	310.0	4.8				ug/L	70	Standard
C	12	160.0	18.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	12.7	117.1				mg/L	12	Standard
Ho-1	165	18.3	56.8				mg/L	12	Standard
Er	166	13.3	86.6				mg/L	20	Standard
I	127	27421.5	4.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.896	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.458	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.372
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.605
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606091601SDL WG574522-02
Sample Date/Time: Tuesday, June 28, 2016 16:28:16
Number of Replicates: 3
Autosampler Position: 241
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82723.6	2.3				ug/L	81760	Standard
	Be	9	23.3	12.4	**0.0135**	0.003	18.7	ug/L	17	Standard
	Al	27	900313.9	2.1	**5.7596**	0.136	2.4	ug/L	1410	Standard
	Sc	45	39763.8	0.8				ug/L	39543	Standard
	Ti	47	29.7	9.7	**-0.0430**	0.012	28.1	ug/L	39	Standard
	V	51	1735.9	7.6	**0.0491**	0.020	40.6	ug/L	1415	Standard
	Cr	52	8352.3	2.2	**0.1715**	0.035	20.7	ug/L	6946	Standard
	Cr	53	645.0	2.8	**0.4109**	0.024	5.9	ug/L	328	Standard
	Mn	55	14377.5	0.8	**2.1221**	0.018	0.8	ug/L	823	Standard
	Co	59	301.0	11.3	**0.0125**	0.005	41.5	ug/L	252	Standard
	Ni	60	410.7	1.2	**0.1183**	0.004	3.1	ug/L	192	Standard
	Cu	65	611.3	5.6	**0.2385**	0.017	7.2	ug/L	141	Standard
	Zn	66	7975.8	0.8	**6.6226**	0.085	1.3	ug/L	491	Standard
>	**Ge**	72	503109.1	0.7				ug/L	515087	Standard
	As	75	19.7	109.3	**0.0582**	0.020	33.7	ug/L	20	Standard
	Se	82	17.8	58.3	**0.0388**	0.092	237.9	ug/L	15	Standard
	Se-1	77	57.7	14.7	**0.0653**	0.120	183.5	ug/L	48	Standard
>	**Ga**	71	58.3	44.0				mg/L	90	Standard
	Rb	85	1753.4	3.2				ug/L	23	Standard
	Y	89	444634.9	0.6				ug/L	448510	Standard
>	**Rh**	103	21.7	48.0				ug/L	15	Standard
	Mo	98	88.5	3.1	**0.0131**	0.001	5.4	ug/L	11	Standard
	Ag	107	142.0	4.2	**0.0046**	0.001	16.3	ug/L	134	Standard
	Cd	111	23.2	23.8	**0.0077**	0.002	31.6	mg/L	7	Standard
	Cd	114	28.0	34.6	**0.0004**	0.002	477.3	ug/L	16	Standard
>	**In**	115	620921.1	1.0				ug/L	611117	Standard
	Sn	118	821.7	5.2	**0.0348**	0.006	16.8	ug/L	518	Standard
	Sb	123	2051.2	21.4	**0.4156**	0.096	23.0	ug/L	127	Standard
	Ba	135	34796.2	0.2	**16.5640**	0.119	0.7	ug/L	45	Standard
	Ce	140	63.3	12.1				ug/L	298	Standard
>	**Tb**	159	973024.2	1.8				ug/L	977942	Standard
	Ho	165	8.3	124.9				ug/L	12	Standard
	Tl	203	97.0	5.7	**0.0066**	0.000	6.5	ug/L	31	Standard
	Tl	205	68.3	44.1	**0.0070**	0.004	57.1	ug/L	20	Standard
	Pb	206	360.7	11.0	**0.0024**	0.006	236.3	ug/L	286	Standard
	Pb	207	322.3	9.7	**0.0075**	0.006	86.2	ug/L	257	Standard
	Pb	208	1339.4	1.1	**0.0099**	0.001	10.7	ug/L	956	Standard
	U	238	86.3	6.6	**0.0090**	0.001	5.9	ug/L	17	Standard
>	**Bi**	209	562189.7	2.5				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	991.7	7.3	**1.2554**	0.092	7.3	mg/L	32	Standard
K	39	51.7	11.2	**0.0323**	0.021	64.1	mg/L	30	Standard
Ca	43	40.0	45.1	**0.6884**	2.694	391.4	mg/L	48	Standard
Fe	54	140.9	19.7	**-0.0104**	0.024	229.0	mg/L	159	Standard
Fe	57	241.7	4.8	**0.1865**	0.032	17.2	mg/L	195	Standard
> **Sc-1**	45	39763.8	0.8				mg/L	39543	Standard
Cl	35	40635.1	0.7				ug/L	27642	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	2310.2	7.5				ug/L	1647	Standard
P	31	19332.3	4.6				ug/L	15231	Standard
S	34	2451.9	6.9				ug/L	1845	Standard
Sr	88	125.0	21.2				ug/L	70	Standard
C	12	163.3	25.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	19.5	88.8				mg/L	12	Standard
Ho-1	165	8.3	124.9				mg/L	12	Standard
Er	166	10.0	100.0				mg/L	20	Standard
I	127	7598.6	6.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.179	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.675	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.604
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.917
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 16:31:29
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79881.8	2.3				ug/L	81760	Standard
	Be	9	50840.2	1.3	**52.4015**	1.145	2.2	ug/L	17	Standard
	Al	27	7585830.9	1.9	**50.3677**	1.194	2.4	ug/L	1410	Standard
	Sc	45	39128.8	0.6				ug/L	39543	Standard
	Ti	47	24998.6	0.9	**102.1788**	1.762	1.7	ug/L	39	Standard
	V	51	348429.9	1.4	**50.8229**	0.271	0.5	ug/L	1415	Standard
	Cr	52	355416.3	0.4	**50.9232**	0.579	1.1	ug/L	6946	Standard
	Cr	53	44443.4	1.1	**51.2031**	0.906	1.8	ug/L	328	Standard
	Mn	55	315927.2	0.8	**49.4624**	0.575	1.2	ug/L	823	Standard
	Co	59	353189.3	0.9	**51.1457**	0.854	1.7	ug/L	252	Standard
	Ni	60	94600.8	0.9	**51.0293**	0.136	0.3	ug/L	192	Standard
	Cu	65	95833.5	0.4	**51.2541**	0.406	0.8	ug/L	141	Standard
	Zn	66	56109.7	0.5	**51.2906**	0.852	1.7	ug/L	491	Standard
>	Ge	72	505999.1	1.2				ug/L	515087	Standard
	As	75	55945.5	0.4	**50.6968**	0.402	0.8	ug/L	20	Standard
	Se	82	5756.3	0.8	**50.7852**	1.001	2.0	ug/L	15	Standard
	Se-1	77	3889.8	1.1	**51.8484**	1.021	2.0	ug/L	48	Standard
>	Ga	71	51.7	20.1				mg/L	90	Standard
	Rb	85	811.7	9.0				ug/L	23	Standard
	Y	89	426423.1	2.5				ug/L	448510	Standard
>	Rh	103	31.7	24.1				ug/L	15	Standard
	Mo	98	265386.1	0.2	**99.3199**	0.619	0.6	ug/L	11	Standard
	Ag	107	333927.0	1.2	**50.3137**	0.313	0.6	ug/L	134	Standard
	Cd	111	105484.6	1.1	**49.9277**	0.764	1.5	mg/L	7	Standard
	Cd	114	258596.4	2.6	**50.3494**	1.108	2.2	ug/L	16	Standard
>	In	115	604027.1	0.8				ug/L	611117	Standard
	Sn	118	295796.4	1.2	**50.5150**	0.923	1.8	ug/L	518	Standard
	Sb	123	237014.9	1.1	**50.8107**	0.333	0.7	ug/L	127	Standard
	Ba	135	100914.0	1.4	**49.4318**	0.852	1.7	ug/L	45	Standard
	Ce	140	80.0	0.0				ug/L	298	Standard
>	Tb	159	968181.4	1.1				ug/L	977942	Standard
	Ho	165	8.3	69.3				ug/L	12	Standard
	Tl	203	430250.2	1.2	**50.7804**	1.115	2.2	ug/L	31	Standard
	Tl	205	381434.8	2.3	**51.8414**	1.366	2.6	ug/L	20	Standard
	Pb	206	273103.8	0.8	**50.1867**	0.395	0.8	ug/L	286	Standard
	Pb	207	246704.6	0.5	**50.2667**	0.621	1.2	ug/L	257	Standard
	Pb	208	974193.4	0.6	**51.3084**	0.901	1.8	ug/L	956	Standard
	U	238	366221.1	0.4	**50.8280**	0.746	1.5	ug/L	17	Standard
>	Bi	209	560252.8	1.6				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	3943.8	5.4	**5.2490**	0.301	5.7	mg/L	32	Standard
K	39	1356.7	5.3	**4.4904**	0.223	5.0	mg/L	30	Standard
Ca	43	83.3	18.3	**7.4389**	2.295	30.8	mg/L	48	Standard
Fe	54	5957.3	2.0	**5.3112**	0.093	1.8	mg/L	159	Standard
Fe	57	1600.1	10.0	**4.8365**	0.580	12.0	mg/L	195	Standard
> **Sc-1**	45	39128.8	0.6				mg/L	39543	Standard
Cl	35	37049.3	3.3				ug/L	27642	Standard
Kr	83	2.0	132.3				ug/L	2	Standard
Br	81	1520.1	14.1				ug/L	1647	Standard
P	31	19898.1	2.1				ug/L	15231	Standard
S	34	2718.6	2.9				ug/L	1845	Standard
Sr	88	73.3	20.8				ug/L	70	Standard
C	12	120.0	43.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.0	113.3				mg/L	12	Standard
Ho-1	165	8.3	69.3				mg/L	12	Standard
Er	166	20.0	50.0				mg/L	20	Standard
I	127	2098.5	16.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	104.803		
Al	27	100.735		
Sc	45			
Ti	47	102.179		
V	51	101.646		
Cr	52	101.846		
Cr	53			
Mn	55	98.925		
Co	59	102.291		
Ni	60	102.059		
Cu	65	102.508		
Zn	66	102.581		
> Ge	72		98.236	
As	75	101.394		
Se	82	101.570		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	99.320		
Ag	107	100.627		
Cd	111	99.855		
Cd	114			
> In	115			98.840
Sn	118	101.030		
Sb	123	101.621		
Ba	135	98.864		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.561		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.617		
U	238	101.656		
> Bi	209			100.569
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 16:34:41
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77653.6	3.2				ug/L	81760	Standard
	Be	9	28.3	27.0	**0.0205**	0.009	43.8	ug/L	17	Standard
	Al	27	2033.5	6.8	**-0.0005**	0.001	113.9	ug/L	1410	Standard
	Sc	45	38149.6	0.7				ug/L	39543	Standard
	Ti	47	33.0	16.0	**-0.0290**	0.023	78.1	ug/L	39	Standard
	V	51	1124.7	5.5	**-0.0407**	0.010	23.8	ug/L	1415	Standard
	Cr	52	6085.9	0.6	**-0.1604**	0.016	10.1	ug/L	6946	Standard
	Cr	53	345.0	11.5	**0.0612**	0.041	67.1	ug/L	328	Standard
	Mn	55	652.0	2.2	**-0.0453**	0.002	5.1	ug/L	823	Standard
	Co	59	236.0	7.4	**0.0031**	0.003	92.5	ug/L	252	Standard
	Ni	60	163.3	9.5	**-0.0160**	0.008	51.9	ug/L	192	Standard
	Cu	65	132.3	11.7	**-0.0193**	0.009	47.2	ug/L	141	Standard
	Zn	66	446.3	5.3	**-0.4102**	0.017	4.3	ug/L	491	Standard
>	**Ge**	72	502289.8	1.3				ug/L	515087	Standard
	As	75	-42.3	118.5	**0.0014**	0.046	3304.8	ug/L	20	Standard
	Se	82	15.3	48.7	**0.0168**	0.064	382.8	ug/L	15	Standard
	Se-1	77	51.0	21.6	**-0.0257**	0.142	551.0	ug/L	48	Standard
>	**Ga**	71	38.3	27.2				mg/L	90	Standard
	Rb	85	10.0	86.6				ug/L	23	Standard
	Y	89	438316.4	0.6				ug/L	448510	Standard
>	**Rh**	103	15.0	0.0				ug/L	15	Standard
	Mo	98	228.3	18.4	**0.0667**	0.015	22.0	ug/L	11	Standard
	Ag	107	123.7	9.2	**0.0025**	0.002	72.5	ug/L	134	Standard
	Cd	111	11.3	56.7	**0.0024**	0.003	123.9	mg/L	7	Standard
	Cd	114	32.3	39.0	**0.0014**	0.003	178.7	ug/L	16	Standard
>	**In**	115	601315.6	1.3				ug/L	611117	Standard
	Sn	118	783.4	33.2	**0.0331**	0.047	140.5	ug/L	518	Standard
	Sb	123	646.2	31.1	**0.1267**	0.045	35.7	ug/L	127	Standard
	Ba	135	40.3	7.6	**-0.0052**	0.002	33.4	ug/L	45	Standard
	Ce	140	38.3	19.9				ug/L	298	Standard
>	**Tb**	159	937082.2	1.4				ug/L	977942	Standard
	Ho	165	5.0	100.0				ug/L	12	Standard
	Tl	203	49.7	12.9	**0.0012**	0.001	66.7	ug/L	31	Standard
	Tl	205	40.0	57.3	**0.0033**	0.003	97.6	ug/L	20	Standard
	Pb	206	275.3	5.0	**-0.0116**	0.003	25.8	ug/L	286	Standard
	Pb	207	258.0	7.0	**-0.0041**	0.003	84.6	ug/L	257	Standard
	Pb	208	1051.3	3.4	**-0.0036**	0.002	41.9	ug/L	956	Standard
	U	238	50.3	16.2	**0.0042**	0.001	28.1	ug/L	17	Standard
>	**Bi**	209	546028.7	0.7				ug/L	557080	Standard

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Na	23	3.3	86.6	**22.1550**	19.184	86.6	mg/L	0	Standard
Mg	24	31.7	50.8	**-0.0134**	0.022	167.6	mg/L	32	Standard
K	39	30.0	28.9	**-0.0362**	0.031	85.5	mg/L	30	Standard
Ca	43	30.0	66.7	**-0.6084**	3.177	522.1	mg/L	48	Standard
Fe	54	168.0	24.0	**0.0206**	0.039	187.8	mg/L	159	Standard
Fe	57	143.3	24.5	**-0.1229**	0.124	101.2	mg/L	195	Standard
Sc-1	45	38149.6	0.7				mg/L	39543	Standard
Cl	35	36673.0	2.0				ug/L	27642	Standard
Kr	83	1.0	173.2				ug/L	2	Standard
Br	81	1570.1	7.0				ug/L	1647	Standard
P	31	19050.3	3.5				ug/L	15231	Standard
S	34	2736.9	0.8				ug/L	1845	Standard
Sr	88	48.3	15.8				ug/L	70	Standard
C	12	133.3	4.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	5.7	217.0				mg/L	12	Standard
Ho-1	165	5.0	100.0				mg/L	12	Standard
Er	166	20.0	100.0				mg/L	20	Standard
I	127	1683.4	18.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.516	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.396
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.016
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606091601SDL WG574522-02
Sample Date/Time: Tuesday, June 28, 2016 16:37:54
Number of Replicates: 3
Autosampler Position: 242
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80481.5	1.5				ug/L	81760	Standard
	Be	9	31.7	9.1	**0.0226**	0.003	11.9	ug/L	17	Standard
	Al	27	181010.0	1.7	**1.1789**	0.039	3.3	ug/L	1410	Standard
	Sc	45	40285.2	2.7				ug/L	39543	Standard
	Ti	47	30.3	10.1	**-0.0420**	0.014	34.3	ug/L	39	Standard
	V	51	1262.3	9.3	**-0.0236**	0.014	61.0	ug/L	1415	Standard
	Cr	52	6637.8	2.8	**-0.0958**	0.014	14.1	ug/L	6946	Standard
	Cr	53	403.3	17.4	**0.1211**	0.074	61.5	ug/L	328	Standard
	Mn	55	3292.4	3.2	**0.3636**	0.014	3.8	ug/L	823	Standard
	Co	59	275.7	13.5	**0.0082**	0.005	64.5	ug/L	252	Standard
	Ni	60	218.7	22.1	**0.0120**	0.025	207.8	ug/L	192	Standard
	Cu	65	189.7	2.7	**0.0098**	0.003	33.4	ug/L	141	Standard
	Zn	66	2022.1	5.3	**1.0328**	0.100	9.7	ug/L	491	Standard
>	**Ge**	72	510876.9	1.9				ug/L	515087	Standard
	As	75	-16.1	411.9	**0.0255**	0.059	233.0	ug/L	20	Standard
	Se	82	17.9	79.1	**0.0373**	0.123	328.7	ug/L	15	Standard
	Se-1	77	53.0	5.0	**-0.0093**	0.040	429.4	ug/L	48	Standard
>	**Ga**	71	26.7	10.8				mg/L	90	Standard
	Rb	85	385.0	11.5				ug/L	23	Standard
	Y	89	434970.9	1.3				ug/L	448510	Standard
>	**Rh**	103	13.3	57.3				ug/L	15	Standard
	Mo	98	105.1	23.0	**0.0193**	0.009	45.6	ug/L	11	Standard
	Ag	107	160.3	33.6	**0.0074**	0.008	107.2	ug/L	134	Standard
	Cd	111	27.8	77.7	**0.0099**	0.010	100.3	mg/L	7	Standard
	Cd	114	89.4	76.6	**0.0121**	0.013	107.6	ug/L	16	Standard
>	**In**	115	618555.8	0.1				ug/L	611117	Standard
	Sn	118	705.0	14.2	**0.0159**	0.017	105.2	ug/L	518	Standard
	Sb	123	323.1	28.2	**0.0548**	0.019	34.7	ug/L	127	Standard
	Ba	135	6967.6	1.3	**3.3092**	0.040	1.2	ug/L	45	Standard
	Ce	140	23.3	65.5				ug/L	298	Standard
>	**Tb**	159	976647.8	1.4				ug/L	977942	Standard
	Ho	165	15.0	57.7				ug/L	12	Standard
	Tl	203	112.7	67.1	**0.0081**	0.009	105.4	ug/L	31	Standard
	Tl	205	90.0	29.4	**0.0096**	0.003	35.2	ug/L	20	Standard
	Pb	206	345.7	14.3	**-0.0019**	0.008	437.8	ug/L	286	Standard
	Pb	207	297.3	11.3	**0.0008**	0.006	736.1	ug/L	257	Standard
	Pb	208	1206.4	8.6	**0.0013**	0.005	370.6	ug/L	956	Standard
	U	238	79.3	55.4	**0.0077**	0.006	75.6	ug/L	17	Standard
>	**Bi**	209	576852.7	1.1				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	251.7	21.2	**0.2729**	0.077	28.4	mg/L	32	Standard
K	39	35.0	75.6	**-0.0238**	0.089	375.8	mg/L	30	Standard
Ca	43	41.7	66.1	**0.8623**	4.157	482.1	mg/L	48	Standard
Fe	54	139.7	6.2	**-0.0128**	0.010	79.6	mg/L	159	Standard
Fe	57	215.0	8.1	**0.0878**	0.054	61.5	mg/L	195	Standard
> **Sc-1**	45	40285.2	2.7				mg/L	39543	Standard
Cl	35	36209.9	2.0				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1783.4	3.4				ug/L	1647	Standard
P	31	18659.8	1.9				ug/L	15231	Standard
S	34	2565.2	1.9				ug/L	1845	Standard
Sr	88	76.7	26.4				ug/L	70	Standard
C	12	126.7	24.1				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	19.2	52.1				mg/L	12	Standard
Ho-1	165	15.0	57.7				mg/L	12	Standard
Er	166	16.7	34.6				mg/L	20	Standard
I	127	2670.2	2.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.436	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.183	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.217
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.549
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606114201
Sample Date/Time: Tuesday, June 28, 2016 16:41:05
Number of Replicates: 3
Autosampler Position: 243
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80520.1	1.9				ug/L	81760	Standard
	Be	9	30.0	16.7	**0.0209**	0.005	21.7	ug/L	17	Standard
	Al	27	1224587.7	1.8	**8.0560**	0.286	3.6	ug/L	1410	Standard
	Sc	45	42140.2	1.9				ug/L	39543	Standard
	Ti	47	397.3	21.3	**1.4906**	0.359	24.1	ug/L	39	Standard
	V	51	2122.9	0.3	**0.1097**	0.002	1.5	ug/L	1415	Standard
	Cr	52	14472.9	1.3	**1.0963**	0.024	2.2	ug/L	6946	Standard
	Cr	53	2878.6	1.5	**3.0550**	0.050	1.6	ug/L	328	Standard
	Mn	55	698464.2	0.4	**111.4396**	0.282	0.3	ug/L	823	Standard
	Co	59	22132.5	0.4	**3.2312**	0.012	0.4	ug/L	252	Standard
	Ni	60	7435.8	1.3	**3.9843**	0.043	1.1	ug/L	192	Standard
	Cu	65	724.4	2.6	**0.3040**	0.008	2.7	ug/L	141	Standard
	Zn	66	6121.2	1.0	**4.9565**	0.034	0.7	ug/L	491	Standard
>	**Ge**	72	497323.9	0.5				ug/L	515087	Standard
	As	75	171.3	19.9	**0.1980**	0.031	15.4	ug/L	20	Standard
	Se	82	64.0	10.3	**0.4560**	0.056	12.4	ug/L	15	Standard
	Se-1	77	106.7	7.0	**0.7479**	0.110	14.7	ug/L	48	Standard
>	**Ga**	71	88.3	6.5				mg/L	90	Standard
	Rb	85	4614.0	1.5				ug/L	23	Standard
	Y	89	442742.2	2.0				ug/L	448510	Standard
>	**Rh**	103	21.7	35.3				ug/L	15	Standard
	Mo	98	335.3	5.4	**0.1033**	0.008	7.8	ug/L	11	Standard
	Ag	107	92.0	14.2	**-0.0027**	0.002	71.5	ug/L	134	Standard
	Cd	111	86.4	7.6	**0.0370**	0.004	9.6	mg/L	7	Standard
	Cd	114	204.2	9.6	**0.0339**	0.004	12.0	ug/L	16	Standard
>	**In**	115	619678.1	1.4				ug/L	611117	Standard
	Sn	118	898.4	6.0	**0.0480**	0.011	22.7	ug/L	518	Standard
	Sb	123	324.0	26.0	**0.0551**	0.019	33.6	ug/L	127	Standard
	Ba	135	76873.5	0.9	**36.7017**	0.677	1.8	ug/L	45	Standard
	Ce	140	3832.2	0.5				ug/L	298	Standard
>	**Tb**	159	963958.5	1.3				ug/L	977942	Standard
	Ho	165	96.7	23.3				ug/L	12	Standard
	Tl	203	122.3	9.5	**0.0098**	0.001	14.0	ug/L	31	Standard
	Tl	205	126.7	13.9	**0.0151**	0.002	14.9	ug/L	20	Standard
	Pb	206	564.7	2.8	**0.0417**	0.003	6.6	ug/L	286	Standard
	Pb	207	477.0	3.5	**0.0406**	0.003	8.6	ug/L	257	Standard
	Pb	208	2018.4	2.1	**0.0474**	0.002	3.2	ug/L	956	Standard
	U	238	92.7	4.5	**0.0101**	0.001	6.9	ug/L	17	Standard
>	**Bi**	209	552929.6	1.0				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.1351**	17.546	173.1	mg/L	0	Standard
Mg	24	7430.2	1.6	**9.2261**	0.222	2.4	mg/L	32	Standard
K	39	131.7	22.3	**0.2750**	0.084	30.6	mg/L	30	Standard
Ca	43	50.0	10.0	**1.7747**	0.605	34.1	mg/L	48	Standard
Fe	54	2749.1	1.6	**2.1977**	0.008	0.4	mg/L	159	Standard
Fe	57	918.4	0.8	**2.2851**	0.038	1.7	mg/L	195	Standard
> **Sc-1**	45	42140.2	1.9				mg/L	39543	Standard
Cl	35	36101.6	0.8				ug/L	27642	Standard
Kr	83	3.3	75.5				ug/L	2	Standard
Br	81	12138.2	7.4				ug/L	1647	Standard
P	31	25736.8	1.2				ug/L	15231	Standard
S	34	2443.5	6.8				ug/L	1845	Standard
Sr	88	88.3	31.2				ug/L	70	Standard
C	12	360.0	10.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	87.0	21.3				mg/L	12	Standard
Ho-1	165	96.7	23.3				mg/L	12	Standard
Er	166	63.3	48.2				mg/L	20	Standard
I	127	223077.6	8.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.483	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.551	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.401	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.255	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606114203
Sample Date/Time: Tuesday, June 28, 2016 16:44:17
Number of Replicates: 3
Autosampler Position: 244
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81992.9	1.1				ug/L	81760	Standard
	Be	9	28.3	27.0	**0.0187**	0.008	41.6	ug/L	17	Standard
	Al	27	794059.8	1.7	**5.1234**	0.139	2.7	ug/L	1410	Standard
	Sc	45	39785.5	1.2				ug/L	39543	Standard
	Ti	47	377.0	7.0	**1.3367**	0.105	7.9	ug/L	39	Standard
	V	51	6234.1	1.0	**0.6819**	0.005	0.8	ug/L	1415	Standard
	Cr	52	12611.2	0.3	**0.7377**	0.006	0.8	ug/L	6946	Standard
	Cr	53	1423.4	7.9	**1.2652**	0.132	10.4	ug/L	328	Standard
	Mn	55	579693.3	1.0	**88.4369**	1.228	1.4	ug/L	823	Standard
	Co	59	3503.7	1.5	**0.4627**	0.007	1.6	ug/L	252	Standard
	Ni	60	3465.4	2.9	**1.7179**	0.054	3.1	ug/L	192	Standard
	Cu	65	1070.0	1.6	**0.4670**	0.008	1.6	ug/L	141	Standard
	Zn	66	3004.0	2.3	**1.8876**	0.071	3.8	ug/L	491	Standard
>	**Ge**	72	519952.2	0.4				ug/L	515087	Standard
	As	75	346.7	9.3	**0.3458**	0.028	8.2	ug/L	20	Standard
	Se	82	27.6	23.7	**0.1179**	0.056	47.6	ug/L	15	Standard
	Se-1	77	61.3	6.2	**0.0875**	0.047	53.2	ug/L	48	Standard
>	**Ga**	71	168.3	22.5				mg/L	90	Standard
	Rb	85	8202.2	4.2				ug/L	23	Standard
	Y	89	450084.2	2.9				ug/L	448510	Standard
>	**Rh**	103	20.0	50.0				ug/L	15	Standard
	Mo	98	804.4	3.7	**0.2777**	0.016	5.8	ug/L	11	Standard
	Ag	107	104.7	4.0	**-0.0007**	0.001	91.7	ug/L	134	Standard
	Cd	111	177.3	6.3	**0.0797**	0.005	6.4	mg/L	7	Standard
	Cd	114	412.5	12.7	**0.0743**	0.011	14.2	ug/L	16	Standard
>	**In**	115	613204.5	2.4				ug/L	611117	Standard
	Sn	118	838.4	3.1	**0.0394**	0.004	11.4	ug/L	518	Standard
	Sb	123	255.2	2.7	**0.0411**	0.003	6.6	ug/L	127	Standard
	Ba	135	46232.8	2.2	**22.2974**	0.510	2.3	ug/L	45	Standard
	Ce	140	10413.6	4.0				ug/L	298	Standard
>	**Tb**	159	959024.8	2.1				ug/L	977942	Standard
	Ho	165	235.0	14.0				ug/L	12	Standard
	Tl	203	65.0	35.5	**0.0028**	0.003	94.5	ug/L	31	Standard
	Tl	205	33.3	45.8	**0.0022**	0.002	93.6	ug/L	20	Standard
	Pb	206	995.4	6.0	**0.1186**	0.010	8.6	ug/L	286	Standard
	Pb	207	825.7	1.1	**0.1096**	0.003	2.3	ug/L	257	Standard
	Pb	208	3331.5	0.8	**0.1144**	0.002	1.9	ug/L	956	Standard
	U	238	237.0	6.0	**0.0298**	0.002	6.6	ug/L	17	Standard
>	**Bi**	209	562917.3	0.4				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	1456.7	5.2	**1.8709**	0.119	6.4	mg/L	32	Standard
K	39	195.0	2.6	**0.5136**	0.022	4.3	mg/L	30	Standard
Ca	43	66.7	37.7	**4.7333**	3.876	81.9	mg/L	48	Standard
Fe	54	1995.7	3.8	**1.6587**	0.089	5.4	mg/L	159	Standard
Fe	57	716.7	4.0	**1.7796**	0.068	3.8	mg/L	195	Standard
> **Sc-1**	45	39785.5	1.2				mg/L	39543	Standard
Cl	35	34494.6	2.9				ug/L	27642	Standard
Kr	83	1.3	173.2				ug/L	2	Standard
Br	81	3500.4	9.9				ug/L	1647	Standard
P	31	20160.1	3.5				ug/L	15231	Standard
S	34	2286.8	4.4				ug/L	1845	Standard
Sr	88	110.0	28.4				ug/L	70	Standard
C	12	216.7	25.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	341.7	16.9				mg/L	12	Standard
Ho-1	165	235.0	14.0				mg/L	12	Standard
Er	166	243.3	11.9				mg/L	20	Standard
I	127	25506.6	11.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.285	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.945	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.342
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.048
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606114205
Sample Date/Time: Tuesday, June 28, 2016 16:47:28
Number of Replicates: 3
Autosampler Position: 245
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82787.3	1.4				ug/L	81760	Standard
	Be	9	48.3	23.9	**0.0383**	0.011	29.1	ug/L	17	Standard
	Al	27	819185.4	1.5	**5.2350**	0.125	2.4	ug/L	1410	Standard
	Sc	45	40940.2	1.5				ug/L	39543	Standard
	Ti	47	480.0	5.9	**1.6939**	0.112	6.6	ug/L	39	Standard
	V	51	6800.6	1.0	**0.7356**	0.007	0.9	ug/L	1415	Standard
	Cr	52	13980.4	1.6	**0.8771**	0.035	4.0	ug/L	6946	Standard
	Cr	53	1753.4	3.0	**1.5823**	0.062	3.9	ug/L	328	Standard
	Mn	55	596277.6	1.3	**88.4306**	1.209	1.4	ug/L	823	Standard
	Co	59	3687.4	0.3	**0.4741**	0.004	0.7	ug/L	252	Standard
	Ni	60	3717.1	1.3	**1.7958**	0.025	1.4	ug/L	192	Standard
	Cu	65	1213.0	2.2	**0.5240**	0.015	2.9	ug/L	141	Standard
	Zn	66	2977.6	2.2	**1.7886**	0.052	2.9	ug/L	491	Standard
>	**Ge**	72	534849.8	0.4				ug/L	515087	Standard
	As	75	377.9	7.0	**0.3640**	0.023	6.2	ug/L	20	Standard
	Se	82	30.4	15.6	**0.1347**	0.040	29.6	ug/L	15	Standard
	Se-1	77	66.7	7.4	**0.1333**	0.063	47.3	ug/L	48	Standard
>	**Ga**	71	223.3	16.2				mg/L	90	Standard
	Rb	85	9057.7	1.9				ug/L	23	Standard
	Y	89	448330.1	1.0				ug/L	448510	Standard
>	**Rh**	103	13.3	21.7				ug/L	15	Standard
	Mo	98	830.0	4.5	**0.2872**	0.016	5.5	ug/L	11	Standard
	Ag	107	122.7	18.8	**0.0020**	0.004	175.3	ug/L	134	Standard
	Cd	111	156.2	7.4	**0.0700**	0.006	8.4	mg/L	7	Standard
	Cd	114	373.1	12.2	**0.0667**	0.009	13.8	ug/L	16	Standard
>	**In**	115	612810.6	0.7				ug/L	611117	Standard
	Sn	118	755.0	9.6	**0.0254**	0.012	48.6	ug/L	518	Standard
	Sb	123	285.8	9.7	**0.0476**	0.006	12.8	ug/L	127	Standard
	Ba	135	48731.6	0.5	**23.5144**	0.057	0.2	ug/L	45	Standard
	Ce	140	12518.5	3.0				ug/L	298	Standard
>	**Tb**	159	979236.7	1.3				ug/L	977942	Standard
	Ho	165	273.3	12.2				ug/L	12	Standard
	Tl	203	95.3	25.1	**0.0062**	0.003	47.7	ug/L	31	Standard
	Tl	205	61.7	4.7	**0.0059**	0.000	5.9	ug/L	20	Standard
	Pb	206	1176.7	3.8	**0.1481**	0.011	7.4	ug/L	286	Standard
	Pb	207	985.7	2.0	**0.1385**	0.005	4.0	ug/L	257	Standard
	Pb	208	4033.5	3.6	**0.1475**	0.011	7.5	ug/L	956	Standard
	U	238	279.0	8.7	**0.0349**	0.004	10.9	ug/L	17	Standard
>	**Bi**	209	573358.0	1.7				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.1692**	17.605	173.1	mg/L	0	Standard
Mg	24	1471.7	7.4	**1.8343**	0.119	6.5	mg/L	32	Standard
K	39	181.7	21.4	**0.4516**	0.129	28.5	mg/L	30	Standard
Ca	43	60.0	36.3	**3.4344**	3.118	90.8	mg/L	48	Standard
Fe	54	2300.2	8.7	**1.8724**	0.148	7.9	mg/L	159	Standard
Fe	57	716.7	8.3	**1.7108**	0.158	9.3	mg/L	195	Standard
> **Sc-1**	45	40940.2	1.5				mg/L	39543	Standard
Cl	35	34657.6	1.8				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	3160.3	4.1				ug/L	1647	Standard
P	31	20585.6	2.1				ug/L	15231	Standard
S	34	2273.5	1.5				ug/L	1845	Standard
Sr	88	120.0	11.0				ug/L	70	Standard
C	12	246.7	23.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	334.1	26.2				mg/L	12	Standard
Ho-1	165	273.3	12.2				mg/L	12	Standard
Er	166	263.3	24.4				mg/L	20	Standard
I	127	21154.8	6.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.256	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.837	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.277
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.922
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606115102
Sample Date/Time: Tuesday, June 28, 2016 16:50:39
Number of Replicates: 3
Autosampler Position: 246
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83962.1	2.2				ug/L	81760	Standard
	Be	9	23.3	32.7	**0.0132**	0.008	57.7	ug/L	17	Standard
	Al	27	14475219.3	2.2	**91.4576**	2.716	3.0	ug/L	1410	Standard
	Sc	45	40821.6	0.4				ug/L	39543	Standard
	Ti	47	413.3	6.2	**1.5180**	0.138	9.1	ug/L	39	Standard
	V	51	16629.8	2.6	**2.2151**	0.113	5.1	ug/L	1415	Standard
	Cr	52	10947.0	2.1	**0.5345**	0.067	12.6	ug/L	6946	Standard
	Cr	53	3965.5	4.7	**4.2265**	0.126	3.0	ug/L	328	Standard
	Mn	55	185468.7	3.9	**28.8128**	1.697	5.9	ug/L	823	Standard
	Co	59	997.7	2.0	**0.1124**	0.006	4.9	ug/L	252	Standard
	Ni	60	1478.4	4.6	**0.6898**	0.053	7.7	ug/L	192	Standard
	Cu	65	1958.8	1.9	**0.9525**	0.040	4.2	ug/L	141	Standard
	Zn	66	8106.5	2.8	**6.6572**	0.319	4.8	ug/L	491	Standard
>	**Ge**	72	509236.4	2.2				ug/L	515087	Standard
	As	75	962.9	2.3	**0.9070**	0.035	3.9	ug/L	20	Standard
	Se	82	228.1	4.7	**1.8861**	0.120	6.4	ug/L	15	Standard
	Se-1	77	223.7	5.0	**2.2872**	0.212	9.3	ug/L	48	Standard
>	**Ga**	71	265.0	37.9				mg/L	90	Standard
	Rb	85	21039.6	2.1				ug/L	23	Standard
	Y	89	444144.2	0.6				ug/L	448510	Standard
>	**Rh**	103	50.0	20.0				ug/L	15	Standard
	Mo	98	3394.4	4.1	**1.2339**	0.051	4.2	ug/L	11	Standard
	Ag	107	107.3	13.1	**-0.0003**	0.002	751.8	ug/L	134	Standard
	Cd	111	62.6	4.9	**0.0263**	0.001	5.7	mg/L	7	Standard
	Cd	114	195.9	21.1	**0.0327**	0.008	24.5	ug/L	16	Standard
>	**In**	115	612517.0	0.3				ug/L	611117	Standard
	Sn	118	836.7	5.7	**0.0392**	0.008	20.1	ug/L	518	Standard
	Sb	123	547.1	4.7	**0.1028**	0.005	5.0	ug/L	127	Standard
	Ba	135	71666.8	2.3	**34.6081**	0.699	2.0	ug/L	45	Standard
	Ce	140	3362.0	2.6				ug/L	298	Standard
>	**Tb**	159	988372.6	0.5				ug/L	977942	Standard
	Ho	165	63.3	75.9				ug/L	12	Standard
	Tl	203	105.7	10.4	**0.0078**	0.001	16.0	ug/L	31	Standard
	Tl	205	108.3	39.8	**0.0125**	0.006	45.9	ug/L	20	Standard
	Pb	206	1800.1	2.5	**0.2697**	0.008	3.1	ug/L	286	Standard
	Pb	207	1518.4	2.6	**0.2536**	0.007	2.9	ug/L	257	Standard
	Pb	208	6212.5	1.8	**0.2692**	0.011	4.0	ug/L	956	Standard
	U	238	10075.0	2.3	**1.4043**	0.047	3.4	ug/L	17	Standard
>	**Bi**	209	556782.3	1.6				ug/L	557080	Standard

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Na	23	3.3	86.6	**20.7586**	17.973	86.6	mg/L	0	Standard
Mg	24	36599.2	3.6	**47.1388**	1.781	3.8	mg/L	32	Standard
K	39	311.7	20.3	**0.8782**	0.204	23.2	mg/L	30	Standard
Ca	43	200.0	10.0	**24.0730**	2.845	11.8	mg/L	48	Standard
Fe	54	272.4	27.9	**0.1018**	0.067	65.8	mg/L	159	Standard
Fe	57	400.0	17.2	**0.6830**	0.221	32.3	mg/L	195	Standard
Sc-1	45	40821.6	0.4				mg/L	39543	Standard
Cl	35	37764.4	4.8				ug/L	27642	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	41179.3	5.9				ug/L	1647	Standard
P	31	20392.0	1.6				ug/L	15231	Standard
S	34	2350.2	4.9				ug/L	1845	Standard
Sr	88	246.7	3.1				ug/L	70	Standard
C	12	240.0	16.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	93.2	27.3				mg/L	12	Standard
Ho-1	165	63.3	75.9				mg/L	12	Standard
Er	166	73.3	7.9				mg/L	20	Standard
I	127	267945.4	8.8				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		102.693	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.864	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.229
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.946
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606115105
Sample Date/Time: Tuesday, June 28, 2016 16:53:51
Number of Replicates: 3
Autosampler Position: 247
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81681.4	3.1				ug/L	81760	Standard
	Be	9	16.7	45.8	**0.0069**	0.007	104.2	ug/L	17	Standard
	Al	27	18070414.8	1.1	**117.3803**	2.444	2.1	ug/L	1410	Standard
	Sc	45	40721.3	2.6				ug/L	39543	Standard
	Ti	47	244.7	8.0	**0.8457**	0.069	8.1	ug/L	39	Standard
	V	51	17618.4	3.0	**2.3985**	0.046	1.9	ug/L	1415	Standard
	Cr	52	10888.2	1.3	**0.5506**	0.002	0.4	ug/L	6946	Standard
	Cr	53	4290.6	7.0	**4.6855**	0.402	8.6	ug/L	328	Standard
	Mn	55	234137.7	1.0	**36.9743**	0.056	0.2	ug/L	823	Standard
	Co	59	907.0	1.1	**0.1013**	0.001	0.9	ug/L	252	Standard
	Ni	60	1595.4	2.1	**0.7658**	0.017	2.3	ug/L	192	Standard
	Cu	65	1678.8	2.6	**0.8172**	0.017	2.1	ug/L	141	Standard
	Zn	66	5525.3	1.2	**4.3540**	0.048	1.1	ug/L	491	Standard
>	**Ge**	72	501124.8	1.2				ug/L	515087	Standard
	As	75	1072.7	4.1	**1.0212**	0.046	4.5	ug/L	20	Standard
	Se	82	264.0	5.9	**2.2378**	0.139	6.2	ug/L	15	Standard
	Se-1	77	284.0	16.7	**3.1586**	0.667	21.1	ug/L	48	Standard
>	**Ga**	71	116.7	13.8				mg/L	90	Standard
	Rb	85	15923.4	4.0				ug/L	23	Standard
	Y	89	444308.5	1.8				ug/L	448510	Standard
>	**Rh**	103	68.3	40.3				ug/L	15	Standard
	Mo	98	3823.6	1.7	**1.4182**	0.006	0.4	ug/L	11	Standard
	Ag	107	76.3	4.0	**-0.0047**	0.001	10.8	ug/L	134	Standard
	Cd	111	40.8	13.4	**0.0165**	0.003	15.5	mg/L	7	Standard
	Cd	114	111.3	16.3	**0.0169**	0.004	22.4	ug/L	16	Standard
>	**In**	115	601437.2	1.6				ug/L	611117	Standard
	Sn	118	1256.7	47.3	**0.1130**	0.098	86.7	ug/L	518	Standard
	Sb	123	502.0	6.8	**0.0953**	0.009	9.3	ug/L	127	Standard
	Ba	135	85456.0	1.5	**42.0358**	0.440	1.0	ug/L	45	Standard
	Ce	140	1221.7	20.4				ug/L	298	Standard
>	**Tb**	159	951914.7	0.8				ug/L	977942	Standard
	Ho	165	38.3	39.8				ug/L	12	Standard
	Tl	203	109.0	4.0	**0.0087**	0.001	7.8	ug/L	31	Standard
	Tl	205	100.0	13.2	**0.0120**	0.002	15.9	ug/L	20	Standard
	Pb	206	942.7	3.4	**0.1187**	0.004	3.7	ug/L	286	Standard
	Pb	207	751.4	3.5	**0.1031**	0.007	7.3	ug/L	257	Standard
	Pb	208	3320.1	1.9	**0.1235**	0.005	4.4	ug/L	956	Standard
	U	238	12716.0	1.7	**1.8521**	0.048	2.6	ug/L	17	Standard
>	**Bi**	209	533061.4	1.1				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.4978**	18.174	173.1	mg/L	0	Standard
Mg	24	45127.2	3.7	**58.2718**	1.297	2.2	mg/L	32	Standard
K	39	268.3	17.6	**0.7391**	0.156	21.1	mg/L	30	Standard
Ca	43	230.0	5.8	**28.6229**	2.753	9.6	mg/L	48	Standard
Fe	54	227.2	16.5	**0.0631**	0.037	58.2	mg/L	159	Standard
Fe	57	321.7	8.6	**0.4294**	0.079	18.3	mg/L	195	Standard
> **Sc-1**	45	40721.3	2.6				mg/L	39543	Standard
Cl	35	40535.5	2.1				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	42472.8	3.2				ug/L	1647	Standard
P	31	21144.7	2.2				ug/L	15231	Standard
S	34	2520.2	4.3				ug/L	1845	Standard
Sr	88	268.3	23.3				ug/L	70	Standard
C	12	270.0	30.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	48.6	21.1				mg/L	12	Standard
Ho-1	165	38.3	39.8				mg/L	12	Standard
Er	166	30.0	33.3				mg/L	20	Standard
I	127	357293.3	4.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.904	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.289	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.416
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.688
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606115401 WG573751-03
Sample Date/Time: Tuesday, June 28, 2016 16:57:02
Number of Replicates: 3
Autosampler Position: 248
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	100430.3	2.8				ug/L	81760	Standard
	Be	9	28.3	56.7	**0.0134**	0.013	96.3	ug/L	17	Standard
	Al	27	81335563.7	1.7	**429.6767**	8.046	1.9	ug/L	1410	Standard
	Sc	45	36054.5	1.3				ug/L	39543	Standard
	Ti	47	276.7	4.4	**1.0861**	0.041	3.8	ug/L	39	Standard
	V	51	56034.7	2.7	**8.8625**	0.243	2.7	ug/L	1415	Standard
	Cr	52	12377.7	0.7	**0.9433**	0.019	2.0	ug/L	6946	Standard
	Cr	53	23940.6	3.3	**30.3443**	1.215	4.0	ug/L	328	Standard
	Mn	55	741944.6	0.9	**128.6152**	2.806	2.2	ug/L	823	Standard
	Co	59	3502.1	2.3	**0.5295**	0.021	4.0	ug/L	252	Standard
	Ni	60	10135.4	1.6	**5.9492**	0.102	1.7	ug/L	192	Standard
	Cu	65	4993.5	1.7	**2.8661**	0.085	3.0	ug/L	141	Standard
	Zn	66	5821.5	1.7	**5.1486**	0.184	3.6	ug/L	491	Standard
>	**Ge**	72	457910.9	1.5				ug/L	515087	Standard
	As	75	1957.2	6.1	**1.9997**	0.145	7.2	ug/L	20	Standard
	Se	82	3071.1	3.5	**29.9014**	1.486	5.0	ug/L	15	Standard
	Se-1	77	4244.3	1.8	**62.6742**	2.070	3.3	ug/L	48	Standard
>	**Ga**	71	138.3	10.4				mg/L	90	Standard
	Rb	85	9993.3	0.6				ug/L	23	Standard
	Y	89	397349.5	0.4				ug/L	448510	Standard
>	**Rh**	103	1400.1	6.9				ug/L	15	Standard
	Mo	98	28731.5	0.6	**12.2349**	0.110	0.9	ug/L	11	Standard
	Ag	107	395.7	2.6	**0.0517**	0.002	4.3	ug/L	134	Standard
	Cd	111	92.0	15.6	**0.0467**	0.008	17.2	mg/L	7	Standard
	Cd	114	319.4	5.6	**0.0659**	0.004	5.6	ug/L	16	Standard
>	**In**	115	530125.1	0.7				ug/L	611117	Standard
	Sn	118	1140.0	5.3	**0.1203**	0.011	8.8	ug/L	518	Standard
	Sb	123	532.5	6.0	**0.1172**	0.007	5.9	ug/L	127	Standard
	Ba	135	16736.6	1.8	**9.3206**	0.182	2.0	ug/L	45	Standard
	Ce	140	1620.1	9.0				ug/L	298	Standard
>	**Tb**	159	890828.2	2.0				ug/L	977942	Standard
	Ho	165	38.3	27.2				ug/L	12	Standard
	Tl	203	267.7	7.7	**0.0327**	0.003	10.1	ug/L	31	Standard
	Tl	205	231.7	6.6	**0.0350**	0.002	6.9	ug/L	20	Standard
	Pb	206	883.7	4.8	**0.1290**	0.007	5.4	ug/L	286	Standard
	Pb	207	738.7	4.5	**0.1206**	0.010	8.0	ug/L	257	Standard
	Pb	208	2811.4	0.6	**0.1152**	0.004	3.5	ug/L	956	Standard
	U	238	63722.1	1.7	**10.4767**	0.095	0.9	ug/L	17	Standard
>	**Bi**	209	472777.8	1.7				ug/L	557080	Standard

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Na	23	15.0	33.3	**105.9031**	36.283	34.3	mg/L	0	Standard
Mg	24	356514.1	0.8	**520.5310**	10.800	2.1	mg/L	32	Standard
K	39	430.0	2.3	**1.4525**	0.056	3.9	mg/L	30	Standard
Ca	43	1840.1	5.6	**301.0738**	13.488	4.5	mg/L	48	Standard
Fe	54	188.6	12.1	**0.0500**	0.021	41.8	mg/L	159	Standard
Fe	57	1585.1	2.5	**5.2457**	0.200	3.8	mg/L	195	Standard
> **Sc-1**	45	36054.5	1.3				mg/L	39543	Standard
Cl	35	90598.1	1.3				ug/L	27642	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	42312.4	3.9				ug/L	1647	Standard
P	31	19347.4	2.8				ug/L	15231	Standard
S	34	2421.9	2.4				ug/L	1845	Standard
Sr	88	6231.3	0.9				ug/L	70	Standard
C	12	243.3	12.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	37.9	25.6				mg/L	12	Standard
Ho-1	165	38.3	27.2				mg/L	12	Standard
Er	166	43.3	96.1				mg/L	20	Standard
I	127	118064.4	6.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		122.835	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		88.900	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	86.747
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	84.867
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606115402S WG573751-09
Sample Date/Time: Tuesday, June 28, 2016 17:00:14
Number of Replicates: 3
Autosampler Position: 249
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	111794.4	2.2				ug/L	81760	Standard
	Be	9	61074.6	3.8	**44.9573**	0.853	1.9	ug/L	17	Standard
	Al	27	84589452.8	4.6	**401.1886**	9.792	2.4	ug/L	1410	Standard
	Sc	45	39148.9	4.1				ug/L	39543	Standard
	Ti	47	272.0	24.8	**0.9934**	0.318	32.0	ug/L	39	Standard
	V	51	406216.4	3.4	**61.4172**	0.609	1.0	ug/L	1415	Standard
	Cr	52	347340.1	3.9	**51.5532**	0.830	1.6	ug/L	6946	Standard
	Cr	53	63548.0	2.3	**76.0057**	0.198	0.3	ug/L	328	Standard
	Mn	55	986761.6	2.9	**160.3601**	1.162	0.7	ug/L	823	Standard
	Co	59	344414.5	2.6	**51.6648**	0.567	1.1	ug/L	252	Standard
	Ni	60	96461.7	3.6	**53.9005**	0.670	1.2	ug/L	192	Standard
	Cu	65	88941.7	2.7	**49.2712**	0.171	0.3	ug/L	141	Standard
	Zn	66	55366.0	3.1	**52.4384**	0.443	0.8	ug/L	491	Standard
>	**Ge**	72	488431.6	2.5				ug/L	515087	Standard
	As	75	59145.7	4.0	**55.5035**	0.877	1.6	ug/L	20	Standard
	Se	82	9257.9	4.7	**84.6512**	1.891	2.2	ug/L	15	Standard
	Se-1	77	8241.9	2.0	**114.6628**	0.599	0.5	ug/L	48	Standard
>	**Ga**	71	135.0	3.7				mg/L	90	Standard
	Rb	85	11232.5	8.2				ug/L	23	Standard
	Y	89	424780.5	4.2				ug/L	448510	Standard
>	**Rh**	103	1410.1	5.3				ug/L	15	Standard
	Mo	98	28554.4	4.0	**11.2353**	0.049	0.4	ug/L	11	Standard
	Ag	107	298500.0	4.4	**47.3531**	0.325	0.7	ug/L	134	Standard
	Cd	111	96838.7	4.3	**48.2572**	0.264	0.5	mg/L	7	Standard
	Cd	114	236461.6	3.9	**48.4818**	0.307	0.6	ug/L	16	Standard
>	**In**	115	573601.2	3.7				ug/L	611117	Standard
	Sn	118	926.7	16.3	**0.0649**	0.025	39.2	ug/L	518	Standard
	Sb	123	232072.7	4.2	**52.3852**	0.509	1.0	ug/L	127	Standard
	Ba	135	113861.5	4.7	**58.7202**	0.562	1.0	ug/L	45	Standard
	Ce	140	1120.0	4.0				ug/L	298	Standard
>	**Tb**	159	960238.4	4.5				ug/L	977942	Standard
	Ho	165	33.3	75.5				ug/L	12	Standard
	Tl	203	395828.3	3.1	**51.4711**	0.762	1.5	ug/L	31	Standard
	Tl	205	346560.1	3.5	**51.8878**	0.159	0.3	ug/L	20	Standard
	Pb	206	263890.3	2.7	**53.4438**	0.979	1.8	ug/L	286	Standard
	Pb	207	230261.5	2.5	**51.7030**	0.928	1.8	ug/L	257	Standard
	Pb	208	887552.6	2.9	**51.5030**	0.554	1.1	ug/L	956	Standard
	U	238	419873.0	2.9	**64.2072**	0.642	1.0	ug/L	17	Standard
>	**Bi**	209	508536.8	3.8				ug/L	557080	Standard

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Na	23	21.7	35.3	**139.6053**	45.304	32.5	mg/L	0	Standard
Mg	24	357824.7	2.8	**481.2852**	10.577	2.2	mg/L	32	Standard
K	39	491.7	6.5	**1.5399**	0.155	10.1	mg/L	30	Standard
Ca	43	1775.1	1.7	**267.3999**	15.688	5.9	mg/L	48	Standard
Fe	54	171.9	15.3	**0.0199**	0.020	102.8	mg/L	159	Standard
Fe	57	1550.1	0.6	**4.6666**	0.208	4.5	mg/L	195	Standard
Sc-1	45	39148.9	4.1				mg/L	39543	Standard
Cl	35	91435.3	3.5				ug/L	27642	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	45418.1	6.1				ug/L	1647	Standard
P	31	20330.3	5.5				ug/L	15231	Standard
S	34	2288.5	3.3				ug/L	1845	Standard
Sr	88	6416.4	6.4				ug/L	70	Standard
C	12	206.7	37.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	21.9	50.9				mg/L	12	Standard
Ho-1	165	33.3	75.5				mg/L	12	Standard
Er	166	30.0	57.7				mg/L	20	Standard
I	127	49499.1	2.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		136.735	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.825	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	93.861
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	91.286
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Se-1 77 Upper, S, EEE	Se-1	77

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Method 6020 - Summary Report

Sample ID: L1606115403SD WG573751-10
Sample Date/Time: Tuesday, June 28, 2016 17:03:25
Number of Replicates: 3
Autosampler Position: 250
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	118994.0	2.6				ug/L	81760	Standard
	Be	9	64654.3	0.9	**44.7357**	0.820	1.8	ug/L	17	Standard
	Al	27	87741403.7	3.4	**391.0655**	6.582	1.7	ug/L	1410	Standard
	Sc	45	41172.5	1.6				ug/L	39543	Standard
	Ti	47	259.3	3.7	**0.9238**	0.057	6.2	ug/L	39	Standard
	V	51	425385.5	3.2	**63.6566**	1.295	2.0	ug/L	1415	Standard
	Cr	52	362069.3	1.9	**53.2267**	0.604	1.1	ug/L	6946	Standard
	Cr	53	64441.8	2.0	**76.2717**	0.872	1.1	ug/L	328	Standard
	Mn	55	1073606.3	3.1	**172.6721**	4.096	2.4	ug/L	823	Standard
	Co	59	369825.3	3.2	**54.8942**	1.128	2.1	ug/L	252	Standard
	Ni	60	100548.2	1.5	**55.6131**	0.149	0.3	ug/L	192	Standard
	Cu	65	92359.0	1.3	**50.6385**	0.319	0.6	ug/L	141	Standard
	Zn	66	57865.3	2.6	**54.2651**	0.864	1.6	ug/L	491	Standard
>	**Ge**	72	493572.0	1.8				ug/L	515087	Standard
	As	75	61885.0	3.3	**57.4777**	1.381	2.4	ug/L	20	Standard
	Se	82	9664.4	3.7	**87.4717**	2.250	2.6	ug/L	15	Standard
	Se-1	77	8366.3	3.5	**115.1653**	2.897	2.5	ug/L	48	Standard
>	**Ga**	71	118.3	21.7				mg/L	90	Standard
	Rb	85	11170.8	6.4				ug/L	23	Standard
	Y	89	447220.0	3.1				ug/L	448510	Standard
>	**Rh**	103	1640.1	8.8				ug/L	15	Standard
	Mo	98	29726.0	4.1	**11.0857**	0.160	1.4	ug/L	11	Standard
	Ag	107	312572.9	2.2	**47.0220**	0.762	1.6	ug/L	134	Standard
	Cd	111	102356.1	3.3	**48.3584**	0.794	1.6	mg/L	7	Standard
	Cd	114	246212.9	4.6	**47.8408**	0.884	1.8	ug/L	16	Standard
>	**In**	115	605206.5	3.7				ug/L	611117	Standard
	Sn	118	1233.4	10.6	**0.1085**	0.018	16.3	ug/L	518	Standard
	Sb	123	240651.4	1.9	**51.5127**	0.935	1.8	ug/L	127	Standard
	Ba	135	117995.0	3.4	**57.6913**	0.169	0.3	ug/L	45	Standard
	Ce	140	1415.1	2.3				ug/L	298	Standard
>	**Tb**	159	994298.0	3.0				ug/L	977942	Standard
	Ho	165	46.7	12.4				ug/L	12	Standard
	Tl	203	412661.0	1.3	**51.8933**	0.197	0.4	ug/L	31	Standard
	Tl	205	366877.2	3.6	**53.1179**	1.107	2.1	ug/L	20	Standard
	Pb	206	275320.1	2.3	**53.9118**	0.413	0.8	ug/L	286	Standard
	Pb	207	238830.1	2.6	**51.8469**	0.552	1.1	ug/L	257	Standard
	Pb	208	936516.1	2.9	**52.5472**	0.756	1.4	ug/L	956	Standard
	U	238	442147.9	3.9	**65.3698**	1.598	2.4	ug/L	17	Standard
>	**Bi**	209	525736.2	1.5				ug/L	557080	Standard

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Na	23	31.7	48.2	**194.7966**	93.559	48.0	mg/L	0	Standard
Mg	24	381865.2	2.0	**488.2175**	12.226	2.5	mg/L	32	Standard
K	39	475.0	11.9	**1.3985**	0.159	11.4	mg/L	30	Standard
Ca	43	1828.4	7.5	**261.2707**	17.620	6.7	mg/L	48	Standard
Fe	54	210.4	5.2	**0.0459**	0.012	26.9	mg/L	159	Standard
Fe	57	1693.4	5.0	**4.8640**	0.189	3.9	mg/L	195	Standard
> **Sc-1**	45	41172.5	1.6				mg/L	39543	Standard
Cl	35	96785.1	3.5				ug/L	27642	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	48665.0	7.0				ug/L	1647	Standard
P	31	21074.7	3.4				ug/L	15231	Standard
S	34	2411.9	0.6				ug/L	1845	Standard
Sr	88	7001.6	9.4				ug/L	70	Standard
C	12	253.3	28.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	54.1	45.2				mg/L	12	Standard
Ho-1	165	46.7	12.4				mg/L	12	Standard
Er	166	53.3	28.6				mg/L	20	Standard
I	127	96813.1	12.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		145.540	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.823	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	99.033
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	94.373
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Se-1 77 Upper, S, EEE	Se-1	77

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Method 6020 - Summary Report

Sample ID: L1606115404
Sample Date/Time: Tuesday, June 28, 2016 17:06:37
Number of Replicates: 3
Autosampler Position: 251
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	100804.3	1.4				ug/L	81760	Standard
	Be	9	43.3	6.7	**0.0257**	0.002	9.1	ug/L	17	Standard
	Al	27	95134.9	5.2	**0.4862**	0.026	5.4	ug/L	1410	Standard
	Sc	45	38767.9	2.5				ug/L	39543	Standard
	Ti	47	56.0	17.6	**0.0568**	0.042	74.0	ug/L	39	Standard
	V	51	2653.2	7.2	**0.1688**	0.023	13.6	ug/L	1415	Standard
	Cr	52	16846.0	0.3	**1.3242**	0.040	3.0	ug/L	6946	Standard
	Cr	53	2448.5	10.3	**2.4055**	0.318	13.2	ug/L	328	Standard
	Mn	55	6416.4	0.3	**0.8254**	0.012	1.5	ug/L	823	Standard
	Co	59	385.0	5.1	**0.0226**	0.003	13.2	ug/L	252	Standard
	Ni	60	1595.4	9.2	**0.7282**	0.071	9.8	ug/L	192	Standard
	Cu	65	1383.7	5.1	**0.6260**	0.046	7.3	ug/L	141	Standard
	Zn	66	3329.0	1.8	**2.1614**	0.092	4.3	ug/L	491	Standard
>	**Ge**	72	523540.2	1.3				ug/L	515087	Standard
	As	75	21.6	288.4	**0.0594**	0.054	91.4	ug/L	20	Standard
	Se	82	48.4	30.2	**0.2956**	0.131	44.3	ug/L	15	Standard
	Se-1	77	118.7	6.2	**0.8319**	0.117	14.0	ug/L	48	Standard
>	**Ga**	71	35.0	51.5				mg/L	90	Standard
	Rb	85	285.0	10.7				ug/L	23	Standard
	Y	89	449294.4	0.5				ug/L	448510	Standard
>	**Rh**	103	35.0	14.3				ug/L	15	Standard
	Mo	98	461.6	2.9	**0.1485**	0.005	3.0	ug/L	11	Standard
	Ag	107	143.3	7.2	**0.0047**	0.002	32.8	ug/L	134	Standard
	Cd	111	43.9	7.3	**0.0172**	0.002	8.8	mg/L	7	Standard
	Cd	114	151.5	5.9	**0.0237**	0.002	7.4	ug/L	16	Standard
>	**In**	115	622732.4	0.3				ug/L	611117	Standard
	Sn	118	3920.5	2.1	**0.5488**	0.015	2.8	ug/L	518	Standard
	Sb	123	270.3	27.2	**0.0434**	0.015	35.5	ug/L	127	Standard
	Ba	135	1327.1	1.7	**0.6057**	0.011	1.9	ug/L	45	Standard
	Ce	140	168.3	16.4				ug/L	298	Standard
>	**Tb**	159	980536.6	0.9				ug/L	977942	Standard
	Ho	165	21.7	13.3				ug/L	12	Standard
	Tl	203	266.3	8.1	**0.0259**	0.003	10.5	ug/L	31	Standard
	Tl	205	201.7	5.7	**0.0244**	0.001	5.0	ug/L	20	Standard
	Pb	206	459.0	5.5	**0.0188**	0.005	29.2	ug/L	286	Standard
	Pb	207	389.7	6.3	**0.0195**	0.006	29.5	ug/L	257	Standard
	Pb	208	1625.7	6.2	**0.0231**	0.006	26.8	ug/L	956	Standard
	U	238	121.7	7.4	**0.0135**	0.001	9.9	ug/L	17	Standard
>	**Bi**	209	574701.5	1.2				ug/L	557080	Standard

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Na	23	5.0	100.0	**32.7163**	32.227	98.5	mg/L	0	Standard
Mg	24	330.0	22.9	**0.3898**	0.094	24.2	mg/L	32	Standard
K	39	33.3	43.3	**-0.0268**	0.048	179.7	mg/L	30	Standard
Ca	43	33.3	43.3	**-0.2011**	2.146	1067.4	mg/L	48	Standard
Fe	54	141.8	17.1	**-0.0059**	0.025	416.6	mg/L	159	Standard
Fe	57	216.7	23.3	**0.1207**	0.166	137.9	mg/L	195	Standard
> **Sc-1**	45	38767.9	2.5				mg/L	39543	Standard
Cl	35	43132.0	0.5				ug/L	27642	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	3107.0	8.7				ug/L	1647	Standard
P	31	17094.6	3.8				ug/L	15231	Standard
S	34	2171.8	4.7				ug/L	1845	Standard
Sr	88	71.7	31.5				ug/L	70	Standard
C	12	180.0	44.1				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	6.3	86.6				mg/L	12	Standard
Ho-1	165	21.7	13.3				mg/L	12	Standard
Er	166	6.7	86.6				mg/L	20	Standard
I	127	6683.3	38.1				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		123.293	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		101.641	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	101.901
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.163
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 17:09:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	98106.9	3.9				ug/L	81760	Standard
	Be	9	60781.9	5.8	**50.9762**	1.224	2.4	ug/L	17	Standard
	Al	27	8271215.1	2.8	**44.7180**	0.568	1.3	ug/L	1410	Standard
	Sc	45	39052.0	5.6				ug/L	39543	Standard
	Ti	47	24646.4	4.4	**101.4481**	2.619	2.6	ug/L	39	Standard
	V	51	347970.7	1.4	**51.1411**	0.534	1.0	ug/L	1415	Standard
	Cr	52	354198.6	3.4	**51.1178**	0.779	1.5	ug/L	6946	Standard
	Cr	53	44595.6	4.3	**51.7475**	1.396	2.7	ug/L	328	Standard
	Mn	55	315347.9	1.9	**49.7410**	0.694	1.4	ug/L	823	Standard
	Co	59	365725.5	2.3	**53.3530**	0.828	1.6	ug/L	252	Standard
	Ni	60	93315.9	2.3	**50.7083**	0.301	0.6	ug/L	192	Standard
	Cu	65	94072.6	2.8	**50.6778**	0.428	0.8	ug/L	141	Standard
	Zn	66	55586.5	1.6	**51.1865**	0.432	0.8	ug/L	491	Standard
>	Ge	72	502280.1	2.3				ug/L	515087	Standard
	As	75	55868.4	1.2	**51.0087**	0.746	1.5	ug/L	20	Standard
	Se	82	5921.1	2.6	**52.6309**	1.371	2.6	ug/L	15	Standard
	Se-1	77	3936.2	0.2	**52.8821**	1.332	2.5	ug/L	48	Standard
>	Ga	71	43.3	6.7				mg/L	90	Standard
	Rb	85	853.4	12.0				ug/L	23	Standard
	Y	89	445806.9	0.5				ug/L	448510	Standard
>	Rh	103	45.0	61.9				ug/L	15	Standard
	Mo	98	273081.8	2.1	**98.9265**	1.774	1.8	ug/L	11	Standard
	Ag	107	339843.9	2.2	**49.5651**	0.762	1.5	ug/L	134	Standard
	Cd	111	106758.1	1.3	**48.9107**	0.367	0.7	mg/L	7	Standard
	Cd	114	258025.9	1.5	**48.6321**	0.403	0.8	ug/L	16	Standard
>	In	115	623979.7	0.7				ug/L	611117	Standard
	Sn	118	298451.0	1.1	**49.3312**	0.224	0.5	ug/L	518	Standard
	Sb	123	238781.4	2.0	**49.5506**	0.796	1.6	ug/L	127	Standard
	Ba	135	101752.9	1.4	**48.2444**	0.388	0.8	ug/L	45	Standard
	Ce	140	83.3	6.9				ug/L	298	Standard
>	Tb	159	999812.3	3.7				ug/L	977942	Standard
	Ho	165	18.3	56.8				ug/L	12	Standard
	Tl	203	438487.8	2.0	**50.5214**	0.372	0.7	ug/L	31	Standard
	Tl	205	396911.7	0.7	**52.6785**	1.200	2.3	ug/L	20	Standard
	Pb	206	278860.8	1.5	**50.0350**	0.542	1.1	ug/L	286	Standard
	Pb	207	252734.9	2.4	**50.2714**	0.461	0.9	ug/L	257	Standard
	Pb	208	1008405.1	1.0	**51.8566**	0.775	1.5	ug/L	956	Standard
	U	238	385967.4	0.9	**52.3060**	0.849	1.6	ug/L	17	Standard
>	Bi	209	573840.1	2.4				ug/L	557080	Standard

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Na	23	6.7	43.3	**42.7715**	15.957	37.3	mg/L	0	Standard
Mg	24	4330.6	4.7	**5.7850**	0.241	4.2	mg/L	32	Standard
K	39	1310.1	5.5	**4.3410**	0.087	2.0	mg/L	30	Standard
Ca	43	75.0	17.6	**6.2533**	2.500	40.0	mg/L	48	Standard
Fe	54	6082.2	3.3	**5.4477**	0.350	6.4	mg/L	159	Standard
Fe	57	1690.1	5.8	**5.1531**	0.140	2.7	mg/L	195	Standard
Sc-1	45	39052.0	5.6				mg/L	39543	Standard
Cl	35	36312.2	3.9				ug/L	27642	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	2130.1	3.3				ug/L	1647	Standard
P	31	18776.6	1.2				ug/L	15231	Standard
S	34	2388.5	6.0				ug/L	1845	Standard
Sr	88	65.0	13.3				ug/L	70	Standard
C	12	133.3	33.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	12.7	43.5				mg/L	12	Standard
Ho-1	165	18.3	56.8				mg/L	12	Standard
Er	166	13.3	86.6				mg/L	20	Standard
I	127	2708.6	18.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	101.952		
Al	27	89.436		
Sc	45			
Ti	47	101.448		
V	51	102.282		
Cr	52	102.236		
Cr	53			
Mn	55	99.482		
Co	59	106.706		
Ni	60	101.417		
Cu	65	101.356		
Zn	66	102.373		
Ge	72		97.514	
As	75	102.017		
Se	82	105.262		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	98.926		
Ag	107	99.130		
Cd	111	97.821		
Cd	114			
In	115		102.105	
Sn	118	98.662		
Sb	123	99.101		
Ba	135	96.489		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.043		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.713		
U	238	104.612		
Bi	209		103.008	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 17:13:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92565.4	2.9				ug/L	81760	Standard
	Be	9	53.3	124.8	**0.0389**	0.062	158.6	ug/L	17	Standard
	Al	27	40870.6	146.9	**0.2266**	0.357	157.4	ug/L	1410	Standard
	Sc	45	37247.5	4.3				ug/L	39543	Standard
	Ti	47	28.7	28.0	**-0.0471**	0.033	70.8	ug/L	39	Standard
	V	51	1306.5	27.0	**-0.0143**	0.053	368.2	ug/L	1415	Standard
	Cr	52	6317.0	3.9	**-0.1289**	0.039	29.9	ug/L	6946	Standard
	Cr	53	723.4	11.4	**0.5015**	0.098	19.5	ug/L	328	Standard
	Mn	55	1084.7	54.0	**0.0228**	0.093	407.7	ug/L	823	Standard
	Co	59	338.3	37.8	**0.0179**	0.019	104.7	ug/L	252	Standard
	Ni	60	322.7	24.3	**0.0703**	0.043	61.2	ug/L	192	Standard
	Cu	65	237.7	21.2	**0.0371**	0.027	74.0	ug/L	141	Standard
	Zn	66	487.7	9.0	**-0.3725**	0.041	11.1	ug/L	491	Standard
>	**Ge**	72	503592.6	0.3				ug/L	515087	Standard
	As	75	-19.3	188.6	**0.0227**	0.033	146.0	ug/L	20	Standard
	Se	82	22.8	34.7	**0.0835**	0.070	83.8	ug/L	15	Standard
	Se-1	77	71.3	3.2	**0.2496**	0.032	12.8	ug/L	48	Standard
>	**Ga**	71	43.3	46.6				mg/L	90	Standard
	Rb	85	33.3	37.7				ug/L	23	Standard
	Y	89	434857.2	0.6				ug/L	448510	Standard
>	**Rh**	103	13.3	43.3				ug/L	15	Standard
	Mo	98	288.2	19.1	**0.0890**	0.021	23.1	ug/L	11	Standard
	Ag	107	295.0	92.5	**0.0287**	0.042	146.5	ug/L	134	Standard
	Cd	111	58.8	115.8	**0.0253**	0.033	130.1	mg/L	7	Standard
	Cd	114	179.7	150.5	**0.0306**	0.054	175.0	ug/L	16	Standard
>	**In**	115	602649.0	1.7				ug/L	611117	Standard
	Sn	118	880.0	23.1	**0.0494**	0.037	75.1	ug/L	518	Standard
	Sb	123	564.4	53.6	**0.1091**	0.067	61.4	ug/L	127	Standard
	Ba	135	113.7	104.6	**0.0312**	0.059	190.7	ug/L	45	Standard
	Ce	140	26.7	21.7				ug/L	298	Standard
>	**Tb**	159	956287.2	0.6				ug/L	977942	Standard
	Ho	165	6.7	173.2				ug/L	12	Standard
	Tl	203	302.3	107.0	**0.0307**	0.038	123.1	ug/L	31	Standard
	Tl	205	353.3	119.4	**0.0454**	0.057	124.8	ug/L	20	Standard
	Pb	206	425.3	47.1	**0.0143**	0.036	251.9	ug/L	286	Standard
	Pb	207	353.0	32.9	**0.0137**	0.023	168.1	ug/L	257	Standard
	Pb	208	1674.0	55.6	**0.0274**	0.048	175.9	ug/L	956	Standard
	U	238	298.0	132.6	**0.0381**	0.054	142.5	ug/L	17	Standard
>	**Bi**	209	561401.5	0.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	206.7	141.8	**0.2403**	0.424	176.4	mg/L	32	Standard
K	39	28.3	71.3	**-0.0379**	0.076	200.2	mg/L	30	Standard
Ca	43	35.0	24.7	**0.2817**	1.299	461.1	mg/L	48	Standard
Fe	54	147.7	17.2	**0.0057**	0.030	525.6	mg/L	159	Standard
Fe	57	195.0	14.3	**0.0744**	0.099	133.6	mg/L	195	Standard
> **Sc-1**	45	37247.5	4.3				mg/L	39543	Standard
Cl	35	35032.5	2.2				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1893.5	11.2				ug/L	1647	Standard
P	31	18479.6	2.3				ug/L	15231	Standard
S	34	2273.5	3.9				ug/L	1845	Standard
Sr	88	81.7	3.5				ug/L	70	Standard
C	12	186.7	15.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	9.5	186.3				mg/L	12	Standard
Ho-1	165	6.7	173.2				mg/L	12	Standard
Er	166	10.0	100.0				mg/L	20	Standard
I	127	2043.5	19.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.768	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.614
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.776
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606115501
Sample Date/Time: Tuesday, June 28, 2016 17:16:14
Number of Replicates: 3
Autosampler Position: 252
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92590.4	1.6				ug/L	81760	Standard
	Be	9	26.7	47.2	**0.0141**	0.012	82.4	ug/L	17	Standard
	Al	27	22123057.0	1.6	**126.7281**	1.652	1.3	ug/L	1410	Standard
	Sc	45	39028.5	1.1				ug/L	39543	Standard
	Ti	47	160.7	8.5	**0.5119**	0.051	9.9	ug/L	39	Standard
	V	51	4388.8	2.7	**0.4554**	0.016	3.5	ug/L	1415	Standard
	Cr	52	10159.7	1.1	**0.4737**	0.053	11.2	ug/L	6946	Standard
	Cr	53	1711.8	8.9	**1.7064**	0.233	13.7	ug/L	328	Standard
	Mn	55	4816073.5	0.9	**779.0277**	27.654	3.5	ug/L	823	Standard
	Co	59	2714.6	0.9	**0.3738**	0.009	2.5	ug/L	252	Standard
	Ni	60	3772.1	1.1	**1.9951**	0.039	2.0	ug/L	192	Standard
	Cu	65	754.7	3.1	**0.3255**	0.008	2.4	ug/L	141	Standard
	Zn	66	4017.9	2.4	**3.0152**	0.057	1.9	ug/L	491	Standard
>	**Ge**	72	491414.0	2.7				ug/L	515087	Standard
	As	75	1051.2	2.3	**1.0210**	0.045	4.4	ug/L	20	Standard
	Se	82	143.6	4.5	**1.1879**	0.030	2.5	ug/L	15	Standard
	Se-1	77	105.7	15.2	**0.7547**	0.249	32.9	ug/L	48	Standard
>	**Ga**	71	188.3	17.7				mg/L	90	Standard
	Rb	85	950.0	0.9				ug/L	23	Standard
	Y	89	424439.8	0.9				ug/L	448510	Standard
>	**Rh**	103	96.7	7.9				ug/L	15	Standard
	Mo	98	5849.5	0.5	**2.2126**	0.029	1.3	ug/L	11	Standard
	Ag	107	89.7	21.1	**-0.0024**	0.003	128.8	ug/L	134	Standard
	Cd	111	11.8	58.9	**0.0028**	0.003	121.4	mg/L	7	Standard
	Cd	114	46.1	44.3	**0.0042**	0.004	96.2	ug/L	16	Standard
>	**In**	115	592706.9	1.7				ug/L	611117	Standard
	Sn	118	891.7	9.5	**0.0535**	0.013	23.6	ug/L	518	Standard
	Sb	123	236.5	14.9	**0.0388**	0.007	18.8	ug/L	127	Standard
	Ba	135	171509.6	0.5	**85.6510**	1.837	2.1	ug/L	45	Standard
	Ce	140	703.3	3.9				ug/L	298	Standard
>	**Tb**	159	954495.6	1.0				ug/L	977942	Standard
	Ho	165	26.7	60.3				ug/L	12	Standard
	Tl	203	128.7	6.5	**0.0108**	0.001	9.4	ug/L	31	Standard
	Tl	205	116.7	2.5	**0.0140**	0.000	2.9	ug/L	20	Standard
	Pb	206	518.0	5.9	**0.0341**	0.006	17.0	ug/L	286	Standard
	Pb	207	434.7	5.8	**0.0328**	0.005	16.1	ug/L	257	Standard
	Pb	208	1843.7	3.4	**0.0392**	0.003	8.9	ug/L	956	Standard
	U	238	11694.2	0.7	**1.6602**	0.012	0.7	ug/L	17	Standard
>	**Bi**	209	546693.4	0.1				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.9680**	18.988	173.1	mg/L	0	Standard
Mg	24	30276.9	1.0	**40.7793**	0.477	1.2	mg/L	32	Standard
K	39	240.0	12.5	**0.6798**	0.099	14.5	mg/L	30	Standard
Ca	43	255.0	15.3	**33.9356**	6.415	18.9	mg/L	48	Standard
Fe	54	184.3	20.5	**0.0318**	0.034	107.2	mg/L	159	Standard
Fe	57	341.7	3.0	**0.5441**	0.035	6.5	mg/L	195	Standard
> **Sc-1**	45	39028.5	1.1				mg/L	39543	Standard
Cl	35	37440.9	1.2				ug/L	27642	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	32190.8	1.7				ug/L	1647	Standard
P	31	22541.8	0.7				ug/L	15231	Standard
S	34	2386.9	3.2				ug/L	1845	Standard
Sr	88	303.3	20.6				ug/L	70	Standard
C	12	480.0	6.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	27.6	75.9				mg/L	12	Standard
Ho-1	165	26.7	60.3				mg/L	12	Standard
Er	166	50.0	40.0				mg/L	20	Standard
I	127	1264643.9	6.0				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		113.247	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.404	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.988
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.135
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606115502
Sample Date/Time: Tuesday, June 28, 2016 17:19:26
Number of Replicates: 3
Autosampler Position: 253
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	94157.1	4.7				ug/L	81760	Standard
	Be	9	20.0	50.0	**0.0078**	0.009	115.3	ug/L	17	Standard
	Al	27	28931934.4	4.0	**163.0048**	1.392	0.9	ug/L	1410	Standard
	Sc	45	40320.3	3.5				ug/L	39543	Standard
	Ti	47	168.3	17.1	**0.5232**	0.117	22.4	ug/L	39	Standard
	V	51	1551.4	10.5	**0.0205**	0.027	130.5	ug/L	1415	Standard
	Cr	52	10328.9	2.0	**0.4515**	0.024	5.3	ug/L	6946	Standard
	Cr	53	2665.2	7.9	**2.7435**	0.199	7.2	ug/L	328	Standard
	Mn	55	1534029.1	1.0	**240.4438**	3.129	1.3	ug/L	823	Standard
	Co	59	1102.0	2.8	**0.1281**	0.004	3.4	ug/L	252	Standard
	Ni	60	1786.8	2.8	**0.8597**	0.029	3.3	ug/L	192	Standard
	Cu	65	955.7	1.4	**0.4206**	0.012	3.0	ug/L	141	Standard
	Zn	66	3611.4	2.8	**2.5229**	0.115	4.5	ug/L	491	Standard
>	**Ge**	72	506659.2	1.8				ug/L	515087	Standard
	As	75	1883.3	1.6	**1.7433**	0.024	1.4	ug/L	20	Standard
	Se	82	155.4	0.8	**1.2536**	0.030	2.4	ug/L	15	Standard
	Se-1	77	168.7	6.6	**1.5590**	0.181	11.6	ug/L	48	Standard
>	**Ga**	71	140.0	15.6				mg/L	90	Standard
	Rb	85	1435.1	8.2				ug/L	23	Standard
	Y	89	449200.8	1.5				ug/L	448510	Standard
>	**Rh**	103	93.3	16.4				ug/L	15	Standard
	Mo	98	2699.1	0.6	**0.9667**	0.027	2.8	ug/L	11	Standard
	Ag	107	94.7	12.7	**-0.0023**	0.002	96.2	ug/L	134	Standard
	Cd	111	15.7	16.0	**0.0044**	0.001	31.4	mg/L	7	Standard
	Cd	114	28.9	55.3	**0.0006**	0.003	513.8	ug/L	16	Standard
>	**In**	115	619397.8	3.1				ug/L	611117	Standard
	Sn	118	1035.0	8.9	**0.0707**	0.012	17.4	ug/L	518	Standard
	Sb	123	177.5	18.8	**0.0244**	0.008	32.9	ug/L	127	Standard
	Ba	135	342505.9	1.5	**163.7121**	2.675	1.6	ug/L	45	Standard
	Ce	140	470.0	1.8				ug/L	298	Standard
>	**Tb**	159	978535.3	2.3				ug/L	977942	Standard
	Ho	165	33.3	17.3				ug/L	12	Standard
	Tl	203	95.7	2.4	**0.0067**	0.000	2.7	ug/L	31	Standard
	Tl	205	98.3	7.8	**0.0112**	0.001	8.1	ug/L	20	Standard
	Pb	206	616.7	3.3	**0.0513**	0.003	5.5	ug/L	286	Standard
	Pb	207	520.0	3.8	**0.0494**	0.003	5.9	ug/L	257	Standard
	Pb	208	2224.4	1.1	**0.0583**	0.001	1.4	ug/L	956	Standard
	U	238	39.7	29.5	**0.0026**	0.002	61.0	ug/L	17	Standard
>	**Bi**	209	553220.4	1.1				ug/L	557080	Standard

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Na	23	5.0	0.0	**31.5109**	1.087	3.4	mg/L	0	Standard
Mg	24	25140.9	3.4	**32.7721**	0.865	2.6	mg/L	32	Standard
K	39	73.3	23.9	**0.1023**	0.063	61.8	mg/L	30	Standard
Ca	43	243.3	6.6	**30.9203**	2.535	8.2	mg/L	48	Standard
Fe	54	2629.1	2.7	**2.1972**	0.059	2.7	mg/L	159	Standard
Fe	57	1076.7	7.2	**2.9489**	0.380	12.9	mg/L	195	Standard
> **Sc-1**	45	40320.3	3.5				mg/L	39543	Standard
Cl	35	39998.8	2.6				ug/L	27642	Standard
Kr	83	2.7	43.3				ug/L	2	Standard
Br	81	32989.2	3.3				ug/L	1647	Standard
P	31	24089.1	1.8				ug/L	15231	Standard
S	34	2583.6	5.0				ug/L	1845	Standard
Sr	88	433.3	4.7				ug/L	70	Standard
C	12	350.0	5.7				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	25.7	20.9				mg/L	12	Standard
Ho-1	165	33.3	17.3				mg/L	12	Standard
Er	166	20.0	50.0				mg/L	20	Standard
I	127	377170.1	0.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.163	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.364	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	101.355
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.307
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606115502
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Method 6020 - Summary Report

Sample ID: L1606115503
Sample Date/Time: Tuesday, June 28, 2016 17:22:37
Number of Replicates: 3
Autosampler Position: 254
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	93460.7	0.5				ug/L	81760	Standard
	Be	9	35.0	14.3	**0.0211**	0.004	21.2	ug/L	17	Standard
	Al	27	14187081.3	1.7	**80.5012**	1.275	1.6	ug/L	1410	Standard
	Sc	45	39556.6	4.7				ug/L	39543	Standard
	Ti	47	229.0	18.7	**0.7435**	0.168	22.5	ug/L	39	Standard
	V	51	2172.0	8.1	**0.1016**	0.022	21.3	ug/L	1415	Standard
	Cr	52	10167.4	1.5	**0.3846**	0.034	8.8	ug/L	6946	Standard
	Cr	53	1090.0	15.2	**0.8840**	0.185	20.9	ug/L	328	Standard
	Mn	55	1432250.3	1.3	**217.9180**	5.450	2.5	ug/L	823	Standard
	Co	59	795.7	6.2	**0.0804**	0.008	9.7	ug/L	252	Standard
	Ni	60	1574.1	4.4	**0.7198**	0.033	4.6	ug/L	192	Standard
	Cu	65	1999.1	3.4	**0.9475**	0.036	3.8	ug/L	141	Standard
	Zn	66	5797.8	1.6	**4.3927**	0.080	1.8	ug/L	491	Standard
>	**Ge**	72	521945.3	1.2				ug/L	515087	Standard
	As	75	168.7	6.2	**0.1883**	0.009	4.6	ug/L	20	Standard
	Se	82	81.0	7.2	**0.5749**	0.055	9.6	ug/L	15	Standard
	Se-1	77	72.3	14.9	**0.2276**	0.131	57.6	ug/L	48	Standard
>	**Ga**	71	155.0	23.3				mg/L	90	Standard
	Rb	85	10031.7	2.6				ug/L	23	Standard
	Y	89	435099.7	2.5				ug/L	448510	Standard
>	**Rh**	103	70.0	28.6				ug/L	15	Standard
	Mo	98	145.2	5.2	**0.0354**	0.003	8.7	ug/L	11	Standard
	Ag	107	85.3	8.5	**-0.0033**	0.001	30.7	ug/L	134	Standard
	Cd	111	76.7	2.3	**0.0335**	0.001	2.5	mg/L	7	Standard
	Cd	114	203.1	19.3	**0.0347**	0.008	22.4	ug/L	16	Standard
>	**In**	115	602973.5	0.6				ug/L	611117	Standard
	Sn	118	941.7	4.9	**0.0595**	0.009	14.6	ug/L	518	Standard
	Sb	123	323.8	6.4	**0.0567**	0.004	7.5	ug/L	127	Standard
	Ba	135	119338.2	0.9	**58.5639**	0.899	1.5	ug/L	45	Standard
	Ce	140	855.0	10.9				ug/L	298	Standard
>	**Tb**	159	952983.8	1.5				ug/L	977942	Standard
	Ho	165	36.7	41.7				ug/L	12	Standard
	Tl	203	88.7	6.9	**0.0057**	0.001	14.0	ug/L	31	Standard
	Tl	205	55.0	27.3	**0.0052**	0.002	38.2	ug/L	20	Standard
	Pb	206	861.0	5.9	**0.0956**	0.010	10.1	ug/L	286	Standard
	Pb	207	708.7	5.0	**0.0873**	0.008	9.7	ug/L	257	Standard
	Pb	208	2964.1	2.3	**0.0967**	0.005	5.3	ug/L	956	Standard
	U	238	696.7	2.0	**0.0942**	0.003	2.9	ug/L	17	Standard
>	**Bi**	209	557355.1	1.0				ug/L	557080	Standard

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Na	23	6.7	43.3	**42.2849**	16.098	38.1	mg/L	0	Standard
Mg	24	19544.3	4.8	**25.9961**	1.909	7.3	mg/L	32	Standard
K	39	113.3	15.5	**0.2405**	0.047	19.5	mg/L	30	Standard
Ca	43	286.7	25.9	**38.5627**	12.897	33.4	mg/L	48	Standard
Fe	54	997.4	5.8	**0.7664**	0.064	8.4	mg/L	159	Standard
Fe	57	530.0	13.9	**1.1674**	0.275	23.5	mg/L	195	Standard
Sc-1	45	39556.6	4.7				mg/L	39543	Standard
Cl	35	38409.3	3.3				ug/L	27642	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	17249.8	6.1				ug/L	1647	Standard
P	31	22414.9	3.0				ug/L	15231	Standard
S	34	2625.2	3.4				ug/L	1845	Standard
Sr	88	228.3	6.7				ug/L	70	Standard
C	12	260.0	15.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	21.4	67.1				mg/L	12	Standard
Ho-1	165	36.7	41.7				mg/L	12	Standard
Er	166	40.0	75.0				mg/L	20	Standard
I	127	663837.8	8.8				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		114.311	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.332	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.668
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.049
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 17:25:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	91554.4	4.0				ug/L	81760	Standard
	Be	9	59302.5	0.5	**53.3655**	1.843	3.5	ug/L	17	Standard
	Al	27	8323459.6	1.6	**48.2773**	2.634	5.5	ug/L	1410	Standard
	Sc	45	40460.6	1.5				ug/L	39543	Standard
	Ti	47	25609.3	2.1	**100.1533**	1.793	1.8	ug/L	39	Standard
	V	51	364470.3	1.4	**50.8781**	0.853	1.7	ug/L	1415	Standard
	Cr	52	366105.1	1.7	**50.1771**	0.675	1.3	ug/L	6946	Standard
	Cr	53	45260.8	0.4	**49.8893**	0.509	1.0	ug/L	328	Standard
	Mn	55	332731.4	2.3	**49.8507**	1.205	2.4	ug/L	823	Standard
	Co	59	382266.4	2.9	**52.9683**	1.437	2.7	ug/L	252	Standard
	Ni	60	97387.3	1.2	**50.2694**	0.545	1.1	ug/L	192	Standard
	Cu	65	98831.3	1.3	**50.5786**	0.557	1.1	ug/L	141	Standard
	Zn	66	57834.9	1.6	**50.5762**	0.877	1.7	ug/L	491	Standard
>	Ge	72	528768.9	1.2				ug/L	515087	Standard
	As	75	58724.5	1.2	**50.9203**	0.224	0.4	ug/L	20	Standard
	Se	82	6151.0	1.0	**51.9261**	0.245	0.5	ug/L	15	Standard
	Se-1	77	4089.2	2.2	**52.1522**	0.563	1.1	ug/L	48	Standard
>	Ga	71	85.0	21.2				mg/L	90	Standard
	Rb	85	851.7	6.5				ug/L	23	Standard
	Y	89	456324.8	0.4				ug/L	448510	Standard
>	Rh	103	36.7	39.4				ug/L	15	Standard
	Mo	98	284202.4	1.9	**102.0947**	3.648	3.6	ug/L	11	Standard
	Ag	107	351396.4	1.1	**50.8197**	1.435	2.8	ug/L	134	Standard
	Cd	111	110732.8	1.5	**50.3025**	1.470	2.9	mg/L	7	Standard
	Cd	114	271688.9	2.3	**50.7793**	1.915	3.8	ug/L	16	Standard
>	In	115	629514.4	1.7				ug/L	611117	Standard
	Sn	118	310739.2	0.7	**50.9245**	0.924	1.8	ug/L	518	Standard
	Sb	123	246166.6	1.6	**50.6553**	1.659	3.3	ug/L	127	Standard
	Ba	135	104825.0	0.9	**49.2805**	1.265	2.6	ug/L	45	Standard
	Ce	140	70.0	55.8				ug/L	298	Standard
>	Tb	159	987475.2	1.7				ug/L	977942	Standard
	Ho	165	5.0	100.0				ug/L	12	Standard
	Tl	203	444397.7	1.4	**50.9180**	1.232	2.4	ug/L	31	Standard
	Tl	205	396866.3	1.6	**52.3722**	1.695	3.2	ug/L	20	Standard
	Pb	206	284750.7	1.1	**50.8069**	1.281	2.5	ug/L	286	Standard
	Pb	207	259280.5	1.3	**51.2940**	1.414	2.8	ug/L	257	Standard
	Pb	208	1040337.0	1.7	**53.1998**	1.656	3.1	ug/L	956	Standard
	U	238	390662.1	1.3	**52.6405**	1.349	2.6	ug/L	17	Standard
>	Bi	209	577126.2	1.6				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4445.7	6.0	**5.7289**	0.397	6.9	mg/L	32	Standard
K	39	1320.1	5.5	**4.2194**	0.276	6.5	mg/L	30	Standard
Ca	43	81.7	24.7	**6.7579**	2.904	43.0	mg/L	48	Standard
Fe	54	5927.1	5.8	**5.1036**	0.243	4.8	mg/L	159	Standard
Fe	57	1661.8	3.7	**4.8569**	0.121	2.5	mg/L	195	Standard
Sc-1	45	40460.6	1.5				mg/L	39543	Standard
Cl	35	38764.2	1.7				ug/L	27642	Standard
Kr	83	2.3	107.9				ug/L	2	Standard
Br	81	2123.5	9.4				ug/L	1647	Standard
P	31	21915.8	3.2				ug/L	15231	Standard
S	34	2866.9	6.9				ug/L	1845	Standard
Sr	88	56.7	10.2				ug/L	70	Standard
C	12	170.0	44.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	173.2				mg/L	0	Standard
Dy	164	9.7	103.3				mg/L	12	Standard
Ho-1	165	5.0	100.0				mg/L	12	Standard
Er	166	6.7	86.6				mg/L	20	Standard
I	127	21360.9	50.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	106.731		
Al	27	96.555		
Sc	45			
Ti	47	100.153		
V	51	101.756		
Cr	52	100.354		
Cr	53			
Mn	55	99.701		
Co	59	105.937		
Ni	60	100.539		
Cu	65	101.157		
Zn	66	101.152		
Ge	72		102.656	
As	75	101.841		
Se	82	103.852		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	102.095		
Ag	107	101.639		
Cd	111	100.605		
Cd	114			
> In	115			103.011
Sn	118	101.849		
Sb	123	101.311		
Ba	135	98.561		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.836		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.400		
U	238	105.281		
> Bi	209			103.598
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 17:29:02
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89289.0	1.1				ug/L	81760	Standard
	Be	9	35.0	51.5	**0.0225**	0.017	74.1	ug/L	17	Standard
	Al	27	14272.5	142.7	**0.0706**	0.122	172.0	ug/L	1410	Standard
	Sc	45	39427.9	1.8				ug/L	39543	Standard
	Ti	47	28.0	28.3	**-0.0534**	0.032	59.3	ug/L	39	Standard
	V	51	1205.0	11.4	**-0.0346**	0.020	56.4	ug/L	1415	Standard
	Cr	52	6173.6	1.1	**-0.1773**	0.009	5.0	ug/L	6946	Standard
	Cr	53	500.0	6.0	**0.2236**	0.034	15.3	ug/L	328	Standard
	Mn	55	1435.1	83.0	**0.0711**	0.182	256.2	ug/L	823	Standard
	Co	59	252.7	26.0	**0.0043**	0.009	214.7	ug/L	252	Standard
	Ni	60	265.7	8.4	**0.0350**	0.012	33.5	ug/L	192	Standard
	Cu	65	144.0	13.3	**-0.0157**	0.010	63.6	ug/L	141	Standard
	Zn	66	428.7	4.3	**-0.4396**	0.017	3.8	ug/L	491	Standard
>	**Ge**	72	519199.6	0.1				ug/L	515087	Standard
	As	75	-13.2	109.3	**0.0287**	0.013	44.2	ug/L	20	Standard
	Se	82	24.7	35.1	**0.0933**	0.075	79.8	ug/L	15	Standard
	Se-1	77	53.0	16.4	**-0.0209**	0.115	551.4	ug/L	48	Standard
>	**Ga**	71	56.7	41.7				mg/L	90	Standard
	Rb	85	13.3	78.1				ug/L	23	Standard
	Y	89	435848.4	0.6				ug/L	448510	Standard
>	**Rh**	103	16.7	45.8				ug/L	15	Standard
	Mo	98	252.5	21.9	**0.0755**	0.022	29.1	ug/L	11	Standard
	Ag	107	123.0	3.3	**0.0023**	0.000	14.7	ug/L	134	Standard
	Cd	111	11.8	114.0	**0.0027**	0.006	236.7	mg/L	7	Standard
	Cd	114	47.6	83.9	**0.0044**	0.008	178.8	ug/L	16	Standard
>	**In**	115	604937.7	1.9				ug/L	611117	Standard
	Sn	118	835.0	26.8	**0.0403**	0.035	87.6	ug/L	518	Standard
	Sb	123	438.3	28.1	**0.0807**	0.025	30.6	ug/L	127	Standard
	Ba	135	40.7	30.0	**-0.0052**	0.006	117.6	ug/L	45	Standard
	Ce	140	35.0	37.8				ug/L	298	Standard
>	**Tb**	159	968167.7	1.8				ug/L	977942	Standard
	Ho	165	8.3	124.9				ug/L	12	Standard
	Tl	203	65.7	40.9	**0.0028**	0.003	111.1	ug/L	31	Standard
	Tl	205	198.3	119.2	**0.0243**	0.032	131.1	ug/L	20	Standard
	Pb	206	312.0	4.9	**-0.0071**	0.003	48.0	ug/L	286	Standard
	Pb	207	265.7	2.9	**-0.0047**	0.002	47.8	ug/L	257	Standard
	Pb	208	1274.7	38.3	**0.0057**	0.026	450.9	ug/L	956	Standard
	U	238	172.3	130.6	**0.0207**	0.031	149.9	ug/L	17	Standard
>	**Bi**	209	569803.2	1.6				ug/L	557080	Standard

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Na	23	3.3	86.6	**21.6890**	18.779	86.6	mg/L	0	Standard
Mg	24	61.7	47.5	**0.0256**	0.040	158.0	mg/L	32	Standard
K	39	26.7	10.8	**-0.0510**	0.010	20.5	mg/L	30	Standard
Ca	43	21.7	48.0	**-2.0553**	1.552	75.5	mg/L	48	Standard
Fe	54	129.4	21.4	**-0.0198**	0.024	119.8	mg/L	159	Standard
Fe	57	196.7	34.5	**0.0395**	0.221	559.0	mg/L	195	Standard
Sc-1	45	39427.9	1.8				mg/L	39543	Standard
Cl	35	37196.3	1.0				ug/L	27642	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	1853.4	7.9				ug/L	1647	Standard
P	31	20680.8	2.7				ug/L	15231	Standard
S	34	2700.2	3.5				ug/L	1845	Standard
Sr	88	68.3	23.5				ug/L	70	Standard
C	12	133.3	38.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.5	107.6				mg/L	12	Standard
Ho-1	165	8.3	124.9				mg/L	12	Standard
Er	166	10.0	100.0				mg/L	20	Standard
I	127	7115.0	15.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.798	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.989
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.284
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606114201
Sample Date/Time: Tuesday, June 28, 2016 18:46:32
Number of Replicates: 3
Autosampler Position: 255
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78164.5	2.4				ug/L	81760	Standard
	Be	9	18.3	41.7	**0.0097**	0.008	86.8	ug/L	17	Standard
	Al	27	121659.9	1.7	**0.8116**	0.028	3.5	ug/L	1410	Standard
	Sc	45	40555.9	2.8				ug/L	39543	Standard
	Ti	47	55.7	15.0	**0.0583**	0.036	61.2	ug/L	39	Standard
	V	51	1460.1	6.7	**0.0028**	0.012	438.4	ug/L	1415	Standard
	Cr	52	7975.8	0.8	**0.0855**	0.018	21.3	ug/L	6946	Standard
	Cr	53	690.0	12.1	**0.4421**	0.091	20.5	ug/L	328	Standard
	Mn	55	73452.6	0.4	**11.1499**	0.088	0.8	ug/L	823	Standard
	Co	59	2365.9	3.2	**0.3044**	0.010	3.2	ug/L	252	Standard
	Ni	60	956.0	2.8	**0.4012**	0.010	2.4	ug/L	192	Standard
	Cu	65	203.7	5.3	**0.0160**	0.005	33.1	ug/L	141	Standard
	Zn	66	1994.1	0.1	**0.9866**	0.018	1.8	ug/L	491	Standard
>	**Ge**	72	516559.4	1.0				ug/L	515087	Standard
	As	75	-28.9	32.9	**0.0147**	0.008	56.4	ug/L	20	Standard
	Se	82	19.3	15.0	**0.0479**	0.026	53.5	ug/L	15	Standard
	Se-1	77	59.0	13.2	**0.0614**	0.097	157.2	ug/L	48	Standard
>	**Ga**	71	36.7	51.6				mg/L	90	Standard
	Rb	85	463.3	2.5				ug/L	23	Standard
	Y	89	448462.9	2.6				ug/L	448510	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	65.9	7.4	**0.0053**	0.002	42.6	ug/L	11	Standard
	Ag	107	82.7	4.2	**-0.0039**	0.001	16.6	ug/L	134	Standard
	Cd	111	8.9	29.8	**0.0012**	0.001	94.7	mg/L	7	Standard
	Cd	114	20.4	73.3	**-0.0010**	0.003	278.6	ug/L	16	Standard
>	**In**	115	611220.6	1.9				ug/L	611117	Standard
	Sn	118	670.0	14.0	**0.0115**	0.017	148.1	ug/L	518	Standard
	Sb	123	214.2	30.6	**0.0326**	0.014	43.4	ug/L	127	Standard
	Ba	135	7677.9	3.5	**3.6947**	0.165	4.5	ug/L	45	Standard
	Ce	140	396.7	10.7				ug/L	298	Standard
>	**Tb**	159	963569.5	0.7				ug/L	977942	Standard
	Ho	165	16.7	45.8				ug/L	12	Standard
	Tl	203	21.7	17.5	**-0.0022**	0.000	19.5	ug/L	31	Standard
	Tl	205	13.3	21.7	**-0.0005**	0.000	79.8	ug/L	20	Standard
	Pb	206	368.7	4.6	**0.0040**	0.003	86.3	ug/L	286	Standard
	Pb	207	283.0	4.1	**-0.0005**	0.002	459.4	ug/L	257	Standard
	Pb	208	1139.7	3.0	**-0.0006**	0.002	246.5	ug/L	956	Standard
	U	238	10.3	39.1	**-0.0015**	0.001	36.3	ug/L	17	Standard
>	**Bi**	209	562456.7	0.5				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	763.4	13.7	**0.9351**	0.146	15.6	mg/L	32	Standard
K	39	31.7	39.7	**-0.0363**	0.045	123.6	mg/L	30	Standard
Ca	43	18.3	31.5	**-2.6404**	0.796	30.1	mg/L	48	Standard
Fe	54	359.1	17.1	**0.1792**	0.047	26.3	mg/L	159	Standard
Fe	57	273.3	13.7	**0.2778**	0.149	53.6	mg/L	195	Standard
> **Sc-1**	45	40555.9	2.8				mg/L	39543	Standard
Cl	35	37427.5	0.7				ug/L	27642	Standard
Kr	83	0.0					ug/L	2	Standard
Br	81	2536.9	6.5				ug/L	1647	Standard
P	31	19003.6	0.9				ug/L	15231	Standard
S	34	2375.2	4.8				ug/L	1845	Standard
Sr	88	91.7	13.7				ug/L	70	Standard
C	12	86.7	29.0				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	29.2	34.3				mg/L	12	Standard
Ho-1	165	16.7	45.8				mg/L	12	Standard
Er	166	16.7	34.6				mg/L	20	Standard
I	127	22815.7	12.2				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		95.602	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.286	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.017
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.965
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 18:49:46
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77476.0	3.1				ug/L	81760	Standard
	Be	9	45015.2	3.8	**47.8878**	3.193	6.7	ug/L	17	Standard
	Al	27	6953697.9	2.2	**47.6359**	2.288	4.8	ug/L	1410	Standard
	Sc	45	38896.5	2.1				ug/L	39543	Standard
	Ti	47	23530.3	2.9	**93.4171**	3.639	3.9	ug/L	39	Standard
	V	51	333406.5	0.5	**47.2267**	0.631	1.3	ug/L	1415	Standard
	Cr	52	337441.2	2.6	**46.8861**	1.719	3.7	ug/L	6946	Standard
	Cr	53	42128.5	3.1	**47.1231**	1.874	4.0	ug/L	328	Standard
	Mn	55	311025.1	1.6	**47.2965**	1.233	2.6	ug/L	823	Standard
	Co	59	333541.6	0.3	**46.9106**	0.523	1.1	ug/L	252	Standard
	Ni	60	90766.5	2.7	**47.5598**	1.737	3.7	ug/L	192	Standard
	Cu	65	91363.1	2.5	**47.4629**	1.646	3.5	ug/L	141	Standard
	Zn	66	53283.5	1.9	**47.2487**	1.367	2.9	ug/L	491	Standard
>	Ge	72	520941.4	1.0				ug/L	515087	Standard
	As	75	53453.8	0.5	**47.0530**	0.571	1.2	ug/L	20	Standard
	Se	82	5409.0	0.9	**46.3406**	0.883	1.9	ug/L	15	Standard
	Se-1	77	3695.1	1.5	**47.7773**	0.360	0.8	ug/L	48	Standard
>	Ga	71	58.3	27.6				mg/L	90	Standard
	Rb	85	731.7	6.2				ug/L	23	Standard
	Y	89	433135.5	0.5				ug/L	448510	Standard
>	Rh	103	21.7	13.3				ug/L	15	Standard
	Mo	98	251705.5	0.6	**94.1208**	1.331	1.4	ug/L	11	Standard
	Ag	107	314845.2	1.8	**47.3955**	0.605	1.3	ug/L	134	Standard
	Cd	111	98007.4	2.2	**46.3425**	0.750	1.6	mg/L	7	Standard
	Cd	114	239351.7	3.2	**46.5659**	1.544	3.3	ug/L	16	Standard
>	In	115	604583.1	1.4				ug/L	611117	Standard
	Sn	118	276455.2	2.3	**47.1543**	0.498	1.1	ug/L	518	Standard
	Sb	123	224560.9	2.5	**48.0923**	0.641	1.3	ug/L	127	Standard
	Ba	135	94923.9	3.0	**46.4488**	1.094	2.4	ug/L	45	Standard
	Ce	140	80.0	22.5				ug/L	298	Standard
>	Tb	159	958457.8	2.2				ug/L	977942	Standard
	Ho	165	13.3	21.7				ug/L	12	Standard
	Tl	203	399564.4	2.5	**47.4112**	1.332	2.8	ug/L	31	Standard
	Tl	205	347775.3	2.0	**47.5216**	1.083	2.3	ug/L	20	Standard
	Pb	206	259967.8	1.3	**48.0301**	0.722	1.5	ug/L	286	Standard
	Pb	207	236539.5	0.9	**48.4530**	0.488	1.0	ug/L	257	Standard
	Pb	208	913309.7	2.1	**48.3569**	1.176	2.4	ug/L	956	Standard
	U	238	337839.3	1.6	**47.1413**	0.910	1.9	ug/L	17	Standard
>	Bi	209	557186.5	0.3				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	3633.8	7.1	**4.8666**	0.455	9.3	mg/L	32	Standard
K	39	1313.4	12.2	**4.3752**	0.599	13.7	mg/L	30	Standard
Ca	43	51.7	20.1	**2.6371**	1.625	61.6	mg/L	48	Standard
Fe	54	5289.1	7.8	**4.7357**	0.483	10.2	mg/L	159	Standard
Fe	57	1531.7	10.1	**4.6389**	0.613	13.2	mg/L	195	Standard
> **Sc-1**	45	38896.5	2.1				mg/L	39543	Standard
Cl	35	35022.4	1.4				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	1490.1	8.7				ug/L	1647	Standard
P	31	19075.3	3.9				ug/L	15231	Standard
S	34	2581.9	1.6				ug/L	1845	Standard
Sr	88	70.0	18.9				ug/L	70	Standard
C	12	143.3	33.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	6.0	193.9				mg/L	12	Standard
Ho-1	165	13.3	21.7				mg/L	12	Standard
Er	166	13.3	43.3				mg/L	20	Standard
I	127	2193.5	28.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	95.776		
Al	27	95.272		
Sc	45			
Ti	47	93.417		
V	51	94.453		
Cr	52	93.772		
Cr	53			
Mn	55	94.593		
Co	59	93.821		
Ni	60	95.120		
Cu	65	94.926		
Zn	66	94.497		
> Ge	72		101.137	
As	75	94.106		
Se	82	92.681		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	94.121		
Ag	107	94.791		
Cd	111	92.685		
Cd	114			
> In	115			98.931
Sn	118	94.309		
Sb	123	96.185		
Ba	135	92.898		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	94.822		
Tl	205			
Pb	206			
Pb	207			
Pb	208	96.714		
U	238	94.283		
> Bi	209			100.019
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 18:52:57
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75264.9	3.1				ug/L	81760	Standard
	Be	9	28.3	44.4	**0.0211**	0.013	62.2	ug/L	17	Standard
	Al	27	1848.4	7.3	**-0.0014**	0.001	57.2	ug/L	1410	Standard
	Sc	45	39733.8	3.9				ug/L	39543	Standard
	Ti	47	30.7	21.2	**-0.0408**	0.026	64.0	ug/L	39	Standard
	V	51	1157.9	3.5	**-0.0386**	0.007	18.1	ug/L	1415	Standard
	Cr	52	6209.6	2.0	**-0.1578**	0.015	9.7	ug/L	6946	Standard
	Cr	53	373.3	6.7	**0.0873**	0.028	32.1	ug/L	328	Standard
	Mn	55	647.3	1.5	**-0.0478**	0.002	4.7	ug/L	823	Standard
	Co	59	232.0	9.1	**0.0019**	0.003	163.0	ug/L	252	Standard
	Ni	60	166.3	9.0	**-0.0160**	0.007	44.1	ug/L	192	Standard
	Cu	65	124.7	14.0	**-0.0248**	0.008	34.1	ug/L	141	Standard
	Zn	66	405.0	8.1	**-0.4552**	0.029	6.3	ug/L	491	Standard
>	**Ge**	72	510975.0	1.4				ug/L	515087	Standard
	As	75	-43.1	41.4	**0.0017**	0.016	900.9	ug/L	20	Standard
	Se	82	19.6	25.0	**0.0525**	0.045	86.4	ug/L	15	Standard
	Se-1	77	59.7	5.9	**0.0797**	0.050	62.7	ug/L	48	Standard
>	**Ga**	71	36.7	39.4				mg/L	90	Standard
	Rb	85	23.3	32.7				ug/L	23	Standard
	Y	89	435979.5	2.5				ug/L	448510	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	250.3	25.6	**0.0730**	0.024	32.3	ug/L	11	Standard
	Ag	107	100.0	11.8	**-0.0014**	0.002	125.8	ug/L	134	Standard
	Cd	111	11.9	34.0	**0.0026**	0.002	71.6	mg/L	7	Standard
	Cd	114	45.3	6.7	**0.0038**	0.000	13.0	ug/L	16	Standard
>	**In**	115	614932.8	1.3				ug/L	611117	Standard
	Sn	118	795.0	23.6	**0.0316**	0.031	97.7	ug/L	518	Standard
	Sb	123	431.0	25.7	**0.0779**	0.023	29.6	ug/L	127	Standard
	Ba	135	30.3	24.3	**-0.0105**	0.003	32.1	ug/L	45	Standard
	Ce	140	20.0	66.1				ug/L	298	Standard
>	**Tb**	159	946813.4	1.4				ug/L	977942	Standard
	Ho	165	11.7	89.2				ug/L	12	Standard
	Tl	203	48.3	29.0	**0.0009**	0.002	172.8	ug/L	31	Standard
	Tl	205	35.0	86.9	**0.0025**	0.004	165.9	ug/L	20	Standard
	Pb	206	284.0	5.8	**-0.0111**	0.003	26.2	ug/L	286	Standard
	Pb	207	257.7	11.7	**-0.0053**	0.006	110.9	ug/L	257	Standard
	Pb	208	990.3	3.8	**-0.0080**	0.002	20.6	ug/L	956	Standard
	U	238	43.0	24.2	**0.0030**	0.001	48.0	ug/L	17	Standard
>	**Bi**	209	557905.1	0.6				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	31.7	18.2	**-0.0149**	0.009	60.8	mg/L	32	Standard
K	39	20.0	50.0	**-0.0742**	0.034	46.2	mg/L	30	Standard
Ca	43	35.0	62.3	**-0.0114**	3.447	30330.8	mg/L	48	Standard
Fe	54	144.1	21.6	**-0.0065**	0.032	498.8	mg/L	159	Standard
Fe	57	238.3	3.2	**0.1775**	0.054	30.7	mg/L	195	Standard
Sc-1	45	39733.8	3.9				mg/L	39543	Standard
Cl	35	35783.5	1.7				ug/L	27642	Standard
Kr	83	3.3	45.8				ug/L	2	Standard
Br	81	1466.7	6.9				ug/L	1647	Standard
P	31	19612.7	1.4				ug/L	15231	Standard
S	34	2756.9	2.6				ug/L	1845	Standard
Sr	88	66.7	37.0				ug/L	70	Standard
C	12	86.7	6.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	32.7	47.4				mg/L	12	Standard
Ho-1	165	11.7	89.2				mg/L	12	Standard
Er	166	13.3	43.3				mg/L	20	Standard
I	127	1593.4	21.8				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.202	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.624
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.148
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Tuesday, June 28, 2016 18:56:10
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71096.5	2.9				ug/L	81760	Standard
	Be	9	180.0	15.5	**0.1982**	0.026	13.3	ug/L	17	Standard
	Al	27	1130.0	11.5	**-0.0060**	0.001	12.9	ug/L	1410	Standard
	Sc	45	37422.8	0.9				ug/L	39543	Standard
	Ti	47	25.0	10.6	**-0.0625**	0.010	16.0	ug/L	39	Standard
	V	51	3508.6	1.4	**0.3092**	0.005	1.6	ug/L	1415	Standard
	Cr	52	11162.1	1.4	**0.5814**	0.031	5.3	ug/L	6946	Standard
	Cr	53	975.0	4.9	**0.7938**	0.066	8.3	ug/L	328	Standard
	Mn	55	3454.1	1.9	**0.3960**	0.015	3.8	ug/L	823	Standard
	Co	59	2721.9	4.1	**0.3646**	0.019	5.1	ug/L	252	Standard
	Ni	60	2839.3	1.0	**1.4356**	0.026	1.8	ug/L	192	Standard
	Cu	65	1518.4	2.5	**0.7258**	0.025	3.5	ug/L	141	Standard
	Zn	66	6972.6	1.8	**5.6720**	0.065	1.1	ug/L	491	Standard
>	**Ge**	72	504116.3	0.9				ug/L	515087	Standard
	As	75	374.9	9.7	**0.3808**	0.031	8.0	ug/L	20	Standard
	Se	82	63.0	8.6	**0.4404**	0.052	11.9	ug/L	15	Standard
	Se-1	77	80.7	10.3	**0.3758**	0.122	32.5	ug/L	48	Standard
>	**Ga**	71	33.3	52.7				mg/L	90	Standard
	Rb	85	16.7	96.4				ug/L	23	Standard
	Y	89	427965.8	1.5				ug/L	448510	Standard
>	**Rh**	103	20.0	25.0				ug/L	15	Standard
	Mo	98	72.3	5.2	**0.0094**	0.001	12.5	ug/L	11	Standard
	Ag	107	2402.2	4.6	**0.3647**	0.015	4.1	ug/L	134	Standard
	Cd	111	440.5	3.4	**0.2165**	0.007	3.2	mg/L	7	Standard
	Cd	114	1158.4	0.8	**0.2324**	0.001	0.2	ug/L	16	Standard
>	**In**	115	574029.4	1.1				ug/L	611117	Standard
	Sn	118	496.7	16.4	**-0.0124**	0.016	125.3	ug/L	518	Standard
	Sb	123	1769.4	0.8	**0.3864**	0.003	0.7	ug/L	127	Standard
	Ba	135	1350.1	0.7	**0.6712**	0.012	1.8	ug/L	45	Standard
	Ce	140	15.0	0.0				ug/L	298	Standard
>	**Tb**	159	914394.0	1.1				ug/L	977942	Standard
	Ho	165	6.7	43.3				ug/L	12	Standard
	Tl	203	645.7	4.5	**0.0752**	0.004	4.8	ug/L	31	Standard
	Tl	205	546.7	2.9	**0.0757**	0.002	3.3	ug/L	20	Standard
	Pb	206	1234.7	1.4	**0.1748**	0.002	1.1	ug/L	286	Standard
	Pb	207	1077.0	1.2	**0.1725**	0.004	2.3	ug/L	257	Standard
	Pb	208	4484.6	3.2	**0.1877**	0.008	4.4	ug/L	956	Standard
	U	238	2602.6	1.7	**0.3761**	0.010	2.6	ug/L	17	Standard
>	**Bi**	209	533901.6	0.9				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	26.7	10.8	**-0.0196**	0.004	19.0	mg/L	32	Standard
K	39	28.3	10.2	**-0.0403**	0.010	24.0	mg/L	30	Standard
Ca	43	38.3	7.5	**0.8090**	0.513	63.4	mg/L	48	Standard
Fe	54	99.0	17.7	**-0.0423**	0.018	41.4	mg/L	159	Standard
Fe	57	198.3	16.4	**0.0831**	0.119	142.8	mg/L	195	Standard
Sc-1	45	37422.8	0.9				mg/L	39543	Standard
Cl	35	34311.5	2.9				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1263.4	4.0				ug/L	1647	Standard
P	31	12998.9	1.6				ug/L	15231	Standard
S	34	2533.5	5.7				ug/L	1845	Standard
Sr	88	71.7	29.0				ug/L	70	Standard
C	12	70.0	24.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	5.9	100.8				mg/L	12	Standard
Ho-1	165	6.7	43.3				mg/L	12	Standard
Er	166	16.7	34.6				mg/L	20	Standard
I	127	1311.7	25.8				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	99.121		
Al	27			
Sc	45			
Ti	47			
V	51	77.290		
Cr	52	72.680		
Cr	53			
Mn	55	79.198		
Co	59	91.138		
Ni	60	89.723		
Cu	65	90.724		
Zn	66	90.752		
Ge	72		97.870	
As	75	95.209		
Se	82	110.096		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	91.178		
Cd	111	90.212		
Cd	114			
> In	115			93.931
Sn	118			
Sb	123	96.601		
Ba	135	89.490		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	93.978		
Tl	205			
Pb	206			
Pb	207			
Pb	208	93.825		
U	238	94.023		
> Bi	209			95.839
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW A9 WG572242-02
Sample Date/Time: Tuesday, June 28, 2016 19:51:29
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73456.0	1.1				ug/L	81760	Standard
	Be	9	13.3	21.7	**0.0052**	0.003	59.5	ug/L	17	Standard
	Al	27	9322.9	1.9	**0.0529**	0.001	1.2	ug/L	1410	Standard
	Sc	45	38756.2	2.9				ug/L	39543	Standard
	Ti	47	33.7	15.2	**-0.0290**	0.022	74.1	ug/L	39	Standard
	V	51	1394.3	5.5	**-0.0051**	0.010	198.0	ug/L	1415	Standard
	Cr	52	7883.4	0.8	**0.0807**	0.013	16.5	ug/L	6946	Standard
	Cr	53	506.7	16.0	**0.2387**	0.095	39.9	ug/L	328	Standard
	Mn	55	1210.0	2.0	**0.0390**	0.005	11.7	ug/L	823	Standard
	Co	59	188.0	6.5	**-0.0045**	0.002	42.5	ug/L	252	Standard
	Ni	60	230.3	1.3	**0.0179**	0.002	10.0	ug/L	192	Standard
	Cu	65	157.0	8.9	**-0.0078**	0.008	102.0	ug/L	141	Standard
	Zn	66	1546.4	2.1	**0.5897**	0.023	3.8	ug/L	491	Standard
>	**Ge**	72	512703.5	0.7				ug/L	515087	Standard
	As	75	-32.6	48.2	**0.0111**	0.014	127.3	ug/L	20	Standard
	Se	82	19.2	20.1	**0.0486**	0.034	70.8	ug/L	15	Standard
	Se-1	77	50.0	10.6	**-0.0518**	0.075	145.3	ug/L	48	Standard
>	**Ga**	71	33.3	34.6				mg/L	90	Standard
	Rb	85	33.3	31.2				ug/L	23	Standard
	Y	89	438886.4	1.2				ug/L	448510	Standard
>	**Rh**	103	13.3	43.3				ug/L	15	Standard
	Mo	98	27.2	14.3	**-0.0088**	0.001	17.0	ug/L	11	Standard
	Ag	107	75.7	8.8	**-0.0047**	0.001	18.4	ug/L	134	Standard
	Cd	111	4.3	48.7	**-0.0009**	0.001	113.9	mg/L	7	Standard
	Cd	114	21.5	41.2	**-0.0007**	0.002	246.6	ug/L	16	Standard
>	**In**	115	598021.6	1.3				ug/L	611117	Standard
	Sn	118	688.3	6.3	**0.0170**	0.007	40.8	ug/L	518	Standard
	Sb	123	162.8	37.0	**0.0223**	0.013	56.3	ug/L	127	Standard
	Ba	135	50.0	12.0	**-0.0003**	0.003	1000.2	ug/L	45	Standard
	Ce	140	36.7	78.7				ug/L	298	Standard
>	**Tb**	159	940667.7	2.2				ug/L	977942	Standard
	Ho	165	18.3	56.8				ug/L	12	Standard
	Tl	203	9.0	22.2	**-0.0037**	0.000	6.2	ug/L	31	Standard
	Tl	205	5.0	0.0	**-0.0016**	0.000	0.7	ug/L	20	Standard
	Pb	206	302.0	8.3	**-0.0074**	0.006	75.2	ug/L	286	Standard
	Pb	207	237.7	5.4	**-0.0090**	0.003	32.3	ug/L	257	Standard
	Pb	208	966.3	1.0	**-0.0090**	0.001	6.5	ug/L	956	Standard
	U	238	4.3	48.0	**-0.0024**	0.000	12.3	ug/L	17	Standard
>	**Bi**	209	554162.6	1.6				ug/L	557080	Standard

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	Na	23	0.0		**0.0050**			mg/L	0	Standard
	Mg	24	41.7	18.3	**-0.0005**	0.010	2017.0	mg/L	32	Standard
	K	39	30.0	33.3	**-0.0385**	0.033	84.7	mg/L	30	Standard
	Ca	43	16.7	91.7	**-2.7218**	2.434	89.4	mg/L	48	Standard
	Fe	54	121.1	16.6	**-0.0249**	0.021	84.8	mg/L	159	Standard
	Fe	57	230.0	15.2	**0.1658**	0.100	60.0	mg/L	195	Standard
>	**Sc-1**	45	38756.2	2.9				mg/L	39543	Standard
	Cl	35	36900.9	1.9				ug/L	27642	Standard
	Kr	83	1.3	43.3				ug/L	2	Standard
	Br	81	1656.8	8.0				ug/L	1647	Standard
	P	31	17782.1	2.2				ug/L	15231	Standard
	S	34	2408.5	10.1				ug/L	1845	Standard
	Sr	88	75.0	29.1				ug/L	70	Standard
	C	12	50.0	52.9				mg/L	113	Standard
	N	14	0.0					mg/L	0	Standard
	Hg	202	3.3	173.2				mg/L	0	Standard
	Dy	164	9.5	105.0				mg/L	12	Standard
	Ho-1	165	18.3	56.8				mg/L	12	Standard
	Er	166	10.0					mg/L	20	Standard
	I	127	1248.4	23.8				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		89.843	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.537	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.857
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.476
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW A9 WG572242-03
Sample Date/Time: Tuesday, June 28, 2016 19:54:40
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74125.9	0.7				ug/L	81760	Standard
	Be	9	45613.6	2.5	**50.6567**	1.536	3.0	ug/L	17	Standard
	Al	27	52265.0	2.7	**0.3596**	0.008	2.3	ug/L	1410	Standard
	Sc	45	39738.7	2.1				ug/L	39543	Standard
	Ti	47	34.0	10.6	**-0.0277**	0.015	52.7	ug/L	39	Standard
	V	51	340531.5	1.6	**49.0319**	0.683	1.4	ug/L	1415	Standard
	Cr	52	354579.7	0.6	**50.1386**	0.494	1.0	ug/L	6946	Standard
	Cr	53	44436.8	3.3	**50.5389**	1.845	3.7	ug/L	328	Standard
	Mn	55	331885.6	0.6	**51.3034**	0.483	0.9	ug/L	823	Standard
	Co	59	341252.7	1.0	**48.7823**	0.497	1.0	ug/L	252	Standard
	Ni	60	94292.8	0.4	**50.2138**	0.089	0.2	ug/L	192	Standard
	Cu	65	96497.7	0.5	**50.9494**	0.130	0.3	ug/L	141	Standard
	Zn	66	57251.0	0.4	**51.6689**	0.417	0.8	ug/L	491	Standard
>	**Ge**	72	512516.5	0.4				ug/L	515087	Standard
	As	75	55356.1	0.6	**49.5225**	0.094	0.2	ug/L	20	Standard
	Se	82	5489.9	0.8	**47.8062**	0.574	1.2	ug/L	15	Standard
	Se-1	77	3699.5	2.3	**48.6318**	0.978	2.0	ug/L	48	Standard
>	**Ga**	71	51.7	29.6				mg/L	90	Standard
	Rb	85	58.3	27.6				ug/L	23	Standard
	Y	89	427399.3	0.3				ug/L	448510	Standard
>	**Rh**	103	20.0	66.1				ug/L	15	Standard
	Mo	98	50.9	5.4	**0.0000**	0.001	4406.4	ug/L	11	Standard
	Ag	107	325451.5	0.2	**49.1242**	0.412	0.8	ug/L	134	Standard
	Cd	111	100950.5	1.5	**47.8617**	0.611	1.3	mg/L	7	Standard
	Cd	114	243935.8	0.5	**47.5806**	0.389	0.8	ug/L	16	Standard
>	**In**	115	602979.8	0.8				ug/L	611117	Standard
	Sn	118	653.3	9.2	**0.0100**	0.010	97.1	ug/L	518	Standard
	Sb	123	224336.4	0.4	**48.1778**	0.461	1.0	ug/L	127	Standard
	Ba	135	98286.4	0.2	**48.2270**	0.385	0.8	ug/L	45	Standard
	Ce	140	205.0	19.4				ug/L	298	Standard
>	**Tb**	159	962904.7	0.9				ug/L	977942	Standard
	Ho	165	11.7	49.5				ug/L	12	Standard
	Tl	203	409811.5	0.9	**48.6592**	0.503	1.0	ug/L	31	Standard
	Tl	205	358097.5	0.9	**48.9662**	0.679	1.4	ug/L	20	Standard
	Pb	206	272798.6	0.1	**50.4414**	0.712	1.4	ug/L	286	Standard
	Pb	207	236678.2	0.4	**48.5210**	0.945	1.9	ug/L	257	Standard
	Pb	208	941837.1	1.1	**49.9011**	0.393	0.8	ug/L	956	Standard
	U	238	343975.4	0.3	**48.0328**	0.703	1.5	ug/L	17	Standard
>	**Bi**	209	556837.1	1.5				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.3983**	18.002	173.1	mg/L	0	Standard
Mg	24	58.3	27.6	**0.0205**	0.023	110.8	mg/L	32	Standard
K	39	16.7	45.8	**-0.0851**	0.027	31.2	mg/L	30	Standard
Ca	43	23.3	32.7	**-1.8206**	1.160	63.7	mg/L	48	Standard
Fe	54	118.7	10.7	**-0.0303**	0.010	31.4	mg/L	159	Standard
Fe	57	200.0	10.0	**0.0482**	0.079	163.5	mg/L	195	Standard
Sc-1	45	39738.7	2.1				mg/L	39543	Standard
Cl	35	36016.8	1.9				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	3627.1	7.0				ug/L	1647	Standard
P	31	18584.7	0.6				ug/L	15231	Standard
S	34	2266.8	5.1				ug/L	1845	Standard
Sr	88	53.3	23.6				ug/L	70	Standard
C	12	126.7	32.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	9.0	105.3				mg/L	12	Standard
Ho-1	165	11.7	49.5				mg/L	12	Standard
Er	166	20.0	50.0				mg/L	20	Standard
I	127	1253.4	17.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.663	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.501	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.669
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.956
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606083901 WG574242-01
Sample Date/Time: Tuesday, June 28, 2016 19:57:52
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73849.6	1.9				ug/L	81760	Standard
	Be	9	25.0	0.0	**0.0181**	0.001	2.9	ug/L	17	Standard
	Al	27	15521751.4	1.0	**111.4854**	1.467	1.3	ug/L	1410	Standard
	Sc	45	39103.8	3.8				ug/L	39543	Standard
	Ti	47	591.7	5.1	**2.3246**	0.153	6.6	ug/L	39	Standard
	V	51	4219.1	3.4	**0.4282**	0.015	3.5	ug/L	1415	Standard
	Cr	52	8895.6	2.0	**0.2798**	0.040	14.2	ug/L	6946	Standard
	Cr	53	3360.4	10.4	**3.6642**	0.437	11.9	ug/L	328	Standard
	Mn	55	16077.2	1.4	**2.4454**	0.007	0.3	ug/L	823	Standard
	Co	59	1032.0	3.9	**0.1223**	0.006	4.9	ug/L	252	Standard
	Ni	60	3143.3	2.0	**1.6407**	0.018	1.1	ug/L	192	Standard
	Cu	65	3355.0	2.0	**1.7559**	0.016	0.9	ug/L	141	Standard
	Zn	66	14991.7	0.7	**13.4797**	0.137	1.0	ug/L	491	Standard
>	**Ge**	72	492452.2	1.1				ug/L	515087	Standard
	As	75	562.8	15.9	**0.5640**	0.084	14.9	ug/L	20	Standard
	Se	82	67.0	15.0	**0.4895**	0.090	18.3	ug/L	15	Standard
	Se-1	77	207.3	11.8	**2.1604**	0.344	15.9	ug/L	48	Standard
>	**Ga**	71	103.3	23.9				mg/L	90	Standard
	Rb	85	20340.3	1.9				ug/L	23	Standard
	Y	89	439150.3	1.0				ug/L	448510	Standard
>	**Rh**	103	18.3	15.7				ug/L	15	Standard
	Mo	98	1185.2	3.1	**0.4267**	0.016	3.7	ug/L	11	Standard
	Ag	107	124.0	3.2	**0.0026**	0.001	26.5	ug/L	134	Standard
	Cd	111	35.9	29.2	**0.0141**	0.005	34.6	mg/L	7	Standard
	Cd	114	96.0	6.6	**0.0139**	0.001	9.0	ug/L	16	Standard
>	**In**	115	601194.2	0.6				ug/L	611117	Standard
	Sn	118	770.0	3.2	**0.0304**	0.004	13.3	ug/L	518	Standard
	Sb	123	1910.7	20.7	**0.3992**	0.088	22.0	ug/L	127	Standard
	Ba	135	33674.7	0.4	**16.5556**	0.054	0.3	ug/L	45	Standard
	Ce	140	1643.4	3.5				ug/L	298	Standard
>	**Tb**	159	946228.9	1.7				ug/L	977942	Standard
	Ho	165	41.7	36.7				ug/L	12	Standard
	Tl	203	211.3	8.6	**0.0215**	0.002	11.4	ug/L	31	Standard
	Tl	205	188.3	11.1	**0.0247**	0.003	12.3	ug/L	20	Standard
	Pb	206	2721.9	1.8	**0.4638**	0.014	3.1	ug/L	286	Standard
	Pb	207	2208.8	1.5	**0.4164**	0.010	2.4	ug/L	257	Standard
	Pb	208	9386.5	1.8	**0.4607**	0.014	3.1	ug/L	956	Standard
	U	238	2364.2	1.6	**0.3425**	0.008	2.2	ug/L	17	Standard
>	**Bi**	209	532104.5	1.0				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.9240**	18.912	173.1	mg/L	0	Standard
Mg	24	14932.4	1.8	**20.0717**	1.109	5.5	mg/L	32	Standard
K	39	851.7	12.5	**2.7753**	0.419	15.1	mg/L	30	Standard
Ca	43	323.3	7.9	**44.3168**	3.500	7.9	mg/L	48	Standard
Fe	54	180.7	15.7	**0.0282**	0.024	84.5	mg/L	159	Standard
Fe	57	355.0	6.1	**0.5869**	0.046	7.9	mg/L	195	Standard
> **Sc-1**	45	39103.8	3.8				mg/L	39543	Standard
Cl	35	38446.7	1.8				ug/L	27642	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	10497.0	5.2				ug/L	1647	Standard
P	31	21567.0	1.7				ug/L	15231	Standard
S	34	2493.5	2.8				ug/L	1845	Standard
Sr	88	151.7	7.6				ug/L	70	Standard
C	12	210.0	39.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	67.9	17.5				mg/L	12	Standard
Ho-1	165	41.7	36.7				mg/L	12	Standard
Er	166	43.3	93.3				mg/L	20	Standard
I	127	29340.1	3.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.325	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.606	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.376
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.517
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606083901DP WG574242-04
Sample Date/Time: Tuesday, June 28, 2016 20:01:03
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74496.0	1.1				ug/L	81760	Standard
	Be	9	20.0	25.0	**0.0124**	0.006	45.8	ug/L	17	Standard
	Al	27	15458448.5	1.4	**110.0484**	0.587	0.5	ug/L	1410	Standard
	Sc	45	38253.3	3.4				ug/L	39543	Standard
	Ti	47	558.7	5.4	**2.1548**	0.155	7.2	ug/L	39	Standard
	V	51	4067.8	2.6	**0.3973**	0.009	2.2	ug/L	1415	Standard
	Cr	52	9024.7	1.6	**0.2811**	0.031	11.1	ug/L	6946	Standard
	Cr	53	3592.1	3.4	**3.8809**	0.090	2.3	ug/L	328	Standard
	Mn	55	13517.4	2.1	**2.0039**	0.068	3.4	ug/L	823	Standard
	Co	59	1022.7	3.5	**0.1189**	0.006	5.0	ug/L	252	Standard
	Ni	60	3054.6	1.9	**1.5691**	0.041	2.6	ug/L	192	Standard
	Cu	65	3452.1	3.2	**1.7838**	0.034	1.9	ug/L	141	Standard
	Zn	66	14844.3	0.5	**13.1506**	0.169	1.3	ug/L	491	Standard
>	**Ge**	72	499109.4	1.4				ug/L	515087	Standard
	As	75	584.5	8.0	**0.5768**	0.041	7.2	ug/L	20	Standard
	Se	82	58.0	10.0	**0.3998**	0.046	11.4	ug/L	15	Standard
	Se-1	77	200.7	10.2	**2.0328**	0.318	15.6	ug/L	48	Standard
>	**Ga**	71	100.0	13.2				mg/L	90	Standard
	Rb	85	19739.5	1.7				ug/L	23	Standard
	Y	89	436250.9	1.8				ug/L	448510	Standard
>	**Rh**	103	38.3	7.5				ug/L	15	Standard
	Mo	98	1219.4	1.0	**0.4525**	0.003	0.7	ug/L	11	Standard
	Ag	107	99.7	5.7	**-0.0007**	0.001	125.7	ug/L	134	Standard
	Cd	111	32.6	12.4	**0.0130**	0.002	14.9	mg/L	7	Standard
	Cd	114	81.5	18.5	**0.0115**	0.003	24.6	ug/L	16	Standard
>	**In**	115	584572.0	1.4				ug/L	611117	Standard
	Sn	118	751.7	6.1	**0.0310**	0.009	27.5	ug/L	518	Standard
	Sb	123	786.1	12.1	**0.1616**	0.023	14.4	ug/L	127	Standard
	Ba	135	32184.1	0.9	**16.2729**	0.095	0.6	ug/L	45	Standard
	Ce	140	490.0	7.4				ug/L	298	Standard
>	**Tb**	159	929479.8	0.3				ug/L	977942	Standard
	Ho	165	31.7	24.1				ug/L	12	Standard
	Tl	203	152.7	10.6	**0.0145**	0.002	14.7	ug/L	31	Standard
	Tl	205	146.7	17.2	**0.0191**	0.004	18.8	ug/L	20	Standard
	Pb	206	2610.2	1.4	**0.4511**	0.005	1.2	ug/L	286	Standard
	Pb	207	2110.5	2.5	**0.4033**	0.013	3.2	ug/L	257	Standard
	Pb	208	8866.0	0.9	**0.4405**	0.006	1.4	ug/L	956	Standard
	U	238	2335.8	3.1	**0.3444**	0.010	2.9	ug/L	17	Standard
>	**Bi**	209	522741.7	0.4				ug/L	557080	Standard

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Na	23	1.7	173.2	**11.1196**	19.251	173.1	mg/L	0	Standard
Mg	24	14720.5	1.4	**20.2196**	0.936	4.6	mg/L	32	Standard
K	39	903.4	10.8	**3.0129**	0.317	10.5	mg/L	30	Standard
Ca	43	308.3	1.9	**43.1033**	1.939	4.5	mg/L	48	Standard
Fe	54	132.3	23.0	**-0.0139**	0.024	174.3	mg/L	159	Standard
Fe	57	371.7	11.8	**0.6755**	0.185	27.4	mg/L	195	Standard
> **Sc-1**	45	38253.3	3.4				mg/L	39543	Standard
Cl	35	39853.0	2.0				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	7995.4	3.8				ug/L	1647	Standard
P	31	20689.1	2.4				ug/L	15231	Standard
S	34	2350.2	5.7				ug/L	1845	Standard
Sr	88	115.0	7.5				ug/L	70	Standard
C	12	266.7	11.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	41.7	57.7				mg/L	12	Standard
Ho-1	165	31.7	24.1				mg/L	12	Standard
Er	166	33.3	75.5				mg/L	20	Standard
I	127	28308.1	3.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.115	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.898	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.656
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.836
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606083901S WG574242-05
Sample Date/Time: Tuesday, June 28, 2016 20:04:14
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77052.1	1.2				ug/L	81760	Standard
	Be	9	48365.4	1.4	**51.6767**	1.282	2.5	ug/L	17	Standard
	Al	27	15205678.0	0.8	**104.6750**	1.999	1.9	ug/L	1410	Standard
	Sc	45	39767.1	2.3				ug/L	39543	Standard
	Ti	47	566.0	2.6	**2.1182**	0.041	1.9	ug/L	39	Standard
	V	51	345428.5	0.5	**49.6572**	0.625	1.3	ug/L	1415	Standard
	Cr	52	342558.9	0.4	**48.3219**	0.886	1.8	ug/L	6946	Standard
	Cr	53	45610.2	2.6	**51.7999**	1.901	3.7	ug/L	328	Standard
	Mn	55	334844.2	1.7	**51.6671**	0.130	0.3	ug/L	823	Standard
	Co	59	340587.2	2.1	**48.5963**	0.256	0.5	ug/L	252	Standard
	Ni	60	92425.4	0.6	**49.1352**	0.675	1.4	ug/L	192	Standard
	Cu	65	94140.2	0.6	**49.6217**	0.865	1.7	ug/L	141	Standard
	Zn	66	68169.3	0.4	**61.5791**	1.173	1.9	ug/L	491	Standard
>	**Ge**	72	513441.7	1.6				ug/L	515087	Standard
	As	75	56899.2	0.6	**50.8164**	0.583	1.1	ug/L	20	Standard
	Se	82	5653.4	1.3	**49.1454**	0.462	0.9	ug/L	15	Standard
	Se-1	77	3932.8	1.5	**51.6632**	1.250	2.4	ug/L	48	Standard
>	**Ga**	71	93.3	35.7				mg/L	90	Standard
	Rb	85	19300.6	2.7				ug/L	23	Standard
	Y	89	425453.4	2.7				ug/L	448510	Standard
>	**Rh**	103	45.0	19.2				ug/L	15	Standard
	Mo	98	1218.6	0.9	**0.4503**	0.008	1.7	ug/L	11	Standard
	Ag	107	314898.7	0.6	**48.8175**	0.102	0.2	ug/L	134	Standard
	Cd	111	99777.7	0.5	**48.5906**	0.622	1.3	mg/L	7	Standard
	Cd	114	243059.8	0.9	**48.6969**	0.795	1.6	ug/L	16	Standard
>	**In**	115	587073.7	0.8				ug/L	611117	Standard
	Sn	118	733.4	7.3	**0.0272**	0.010	36.7	ug/L	518	Standard
	Sb	123	223776.0	1.4	**49.3561**	0.290	0.6	ug/L	127	Standard
	Ba	135	127336.9	0.7	**64.1810**	0.344	0.5	ug/L	45	Standard
	Ce	140	335.0	9.1				ug/L	298	Standard
>	**Tb**	159	937062.8	1.0				ug/L	977942	Standard
	Ho	165	41.7	79.9				ug/L	12	Standard
	Tl	203	401801.7	0.6	**49.2378**	0.579	1.2	ug/L	31	Standard
	Tl	205	351031.6	0.7	**49.5383**	0.691	1.4	ug/L	20	Standard
	Pb	206	267916.7	0.7	**51.1246**	0.591	1.2	ug/L	286	Standard
	Pb	207	234005.3	0.9	**49.5047**	0.372	0.8	ug/L	257	Standard
	Pb	208	924903.3	0.8	**50.5781**	0.765	1.5	ug/L	956	Standard
	U	238	349197.5	0.5	**50.3229**	0.614	1.2	ug/L	17	Standard
>	**Bi**	209	539520.7	0.7				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.8832**	18.842	173.1	mg/L	0	Standard
Mg	24	14542.0	3.3	**19.1893**	0.286	1.5	mg/L	32	Standard
K	39	753.4	10.6	**2.3925**	0.305	12.7	mg/L	30	Standard
Ca	43	295.0	12.2	**39.3051**	6.421	16.3	mg/L	48	Standard
Fe	54	140.6	16.7	**-0.0107**	0.020	183.5	mg/L	159	Standard
Fe	57	348.3	9.1	**0.5437**	0.082	15.1	mg/L	195	Standard
> **Sc-1**	45	39767.1	2.3				mg/L	39543	Standard
Cl	35	39860.4	1.2				ug/L	27642	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	7565.2	10.7				ug/L	1647	Standard
P	31	21044.6	3.8				ug/L	15231	Standard
S	34	2540.2	5.7				ug/L	1845	Standard
Sr	88	145.0	22.6				ug/L	70	Standard
C	12	196.7	11.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	48.4	54.7				mg/L	12	Standard
Ho-1	165	41.7	79.9				mg/L	12	Standard
Er	166	33.3	45.8				mg/L	20	Standard
I	127	26943.9	1.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.242	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.681	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.066
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.848
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606083901SD WG574242-06
Sample Date/Time: Tuesday, June 28, 2016 20:07:26
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77184.4	1.1				ug/L	81760	Standard
	Be	9	48315.3	1.2	**51.5258**	0.436	0.8	ug/L	17	Standard
	Al	27	15387465.4	1.3	**105.7299**	0.773	0.7	ug/L	1410	Standard
	Sc	45	40039.5	2.3				ug/L	39543	Standard
	Ti	47	554.0	4.1	**2.1409**	0.093	4.3	ug/L	39	Standard
	V	51	332776.2	1.5	**49.3498**	0.268	0.5	ug/L	1415	Standard
	Cr	52	340776.8	0.8	**49.6175**	0.095	0.2	ug/L	6946	Standard
	Cr	53	45466.5	0.7	**53.2763**	0.775	1.5	ug/L	328	Standard
	Mn	55	324192.4	1.4	**51.6123**	0.258	0.5	ug/L	823	Standard
	Co	59	327045.3	2.1	**48.1461**	0.569	1.2	ug/L	252	Standard
	Ni	60	91364.7	1.1	**50.1099**	0.072	0.1	ug/L	192	Standard
	Cu	65	91854.3	0.9	**49.9479**	0.081	0.2	ug/L	141	Standard
	Zn	66	66866.6	0.8	**62.3204**	0.118	0.2	ug/L	491	Standard
>	**Ge**	72	497622.9	1.0				ug/L	515087	Standard
	As	75	54845.8	1.7	**50.5323**	0.480	1.0	ug/L	20	Standard
	Se	82	5429.5	1.2	**48.6954**	0.265	0.5	ug/L	15	Standard
	Se-1	77	3850.8	1.9	**52.1872**	0.544	1.0	ug/L	48	Standard
>	**Ga**	71	85.0	11.8				mg/L	90	Standard
	Rb	85	19015.3	1.2				ug/L	23	Standard
	Y	89	421533.6	0.8				ug/L	448510	Standard
>	**Rh**	103	55.0	15.7				ug/L	15	Standard
	Mo	98	1205.1	2.4	**0.4408**	0.012	2.7	ug/L	11	Standard
	Ag	107	307002.5	0.8	**47.1551**	0.386	0.8	ug/L	134	Standard
	Cd	111	97425.8	0.9	**47.0062**	0.430	0.9	mg/L	7	Standard
	Cd	114	239795.9	0.5	**47.5975**	0.300	0.6	ug/L	16	Standard
>	**In**	115	592518.8	0.1				ug/L	611117	Standard
	Sn	118	761.7	9.1	**0.0309**	0.012	38.7	ug/L	518	Standard
	Sb	123	220298.1	1.2	**48.1440**	0.631	1.3	ug/L	127	Standard
	Ba	135	125301.0	0.6	**62.5732**	0.412	0.7	ug/L	45	Standard
	Ce	140	340.0	1.5				ug/L	298	Standard
>	**Tb**	159	948091.3	1.9				ug/L	977942	Standard
	Ho	165	23.3	65.5				ug/L	12	Standard
	Tl	203	394026.8	0.4	**48.4831**	0.151	0.3	ug/L	31	Standard
	Tl	205	348699.1	1.4	**49.4146**	1.048	2.1	ug/L	20	Standard
	Pb	206	261711.9	1.4	**50.1430**	0.483	1.0	ug/L	286	Standard
	Pb	207	228078.7	1.5	**48.4479**	0.479	1.0	ug/L	257	Standard
	Pb	208	906176.6	0.5	**49.7571**	0.517	1.0	ug/L	956	Standard
	U	238	340376.9	0.5	**49.2541**	0.514	1.0	ug/L	17	Standard
>	**Bi**	209	537295.6	0.7				ug/L	557080	Standard

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Na	23	3.3	86.6	**20.8666**	18.067	86.6	mg/L	0	Standard
Mg	24	14582.0	2.3	**19.1163**	0.419	2.2	mg/L	32	Standard
K	39	795.0	3.8	**2.5139**	0.164	6.5	mg/L	30	Standard
Ca	43	345.0	2.9	**46.4459**	2.697	5.8	mg/L	48	Standard
Fe	54	142.5	14.7	**-0.0097**	0.018	187.3	mg/L	159	Standard
Fe	57	408.3	2.5	**0.7378**	0.065	8.9	mg/L	195	Standard
> **Sc-1**	45	40039.5	2.3				mg/L	39543	Standard
Cl	35	39300.2	1.1				ug/L	27642	Standard
Kr	83	1.7	173.2				ug/L	2	Standard
Br	81	7651.9	3.5				ug/L	1647	Standard
P	31	20634.0	3.2				ug/L	15231	Standard
S	34	2398.5	2.0				ug/L	1845	Standard
Sr	88	180.0	15.5				ug/L	70	Standard
C	12	226.7	27.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	27.4	58.7				mg/L	12	Standard
Ho-1	165	23.3	65.5				mg/L	12	Standard
Er	166	53.3	108.3				mg/L	20	Standard
I	127	27065.8	3.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.404	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.610	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.957
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.448
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606084301
Sample Date/Time: Tuesday, June 28, 2016 20:10:37
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80372.6	1.6				ug/L	81760	Standard
	Be	9	41.7	45.4	**0.0330**	0.020	59.2	ug/L	17	Standard
	Al	27	7042054.5	1.4	**46.4726**	1.334	2.9	ug/L	1410	Standard
	Sc	45	38211.6	5.6				ug/L	39543	Standard
	Ti	47	149.3	19.8	**0.4676**	0.133	28.4	ug/L	39	Standard
	V	51	1769.8	3.9	**0.0612**	0.007	10.9	ug/L	1415	Standard
	Cr	52	8360.6	4.6	**0.2060**	0.044	21.1	ug/L	6946	Standard
	Cr	53	938.4	5.4	**0.7826**	0.048	6.1	ug/L	328	Standard
	Mn	55	4412856.2	0.9	**715.8990**	5.361	0.7	ug/L	823	Standard
	Co	59	49628.8	1.9	**7.3983**	0.034	0.5	ug/L	252	Standard
	Ni	60	31518.1	1.1	**17.4994**	0.073	0.4	ug/L	192	Standard
	Cu	65	1083.7	2.3	**0.5092**	0.018	3.5	ug/L	141	Standard
	Zn	66	58737.0	1.3	**55.5464**	0.787	1.4	ug/L	491	Standard
>	**Ge**	72	489683.3	1.5				ug/L	515087	Standard
	As	75	118.1	28.8	**0.1508**	0.032	21.2	ug/L	20	Standard
	Se	82	133.7	3.3	**1.1023**	0.049	4.4	ug/L	15	Standard
	Se-1	77	146.3	10.3	**1.3266**	0.239	18.0	ug/L	48	Standard
>	**Ga**	71	230.0	39.9				mg/L	90	Standard
	Rb	85	13262.5	1.5				ug/L	23	Standard
	Y	89	437622.3	1.3				ug/L	448510	Standard
>	**Rh**	103	40.0	43.3				ug/L	15	Standard
	Mo	98	84.3	2.5	**0.0124**	0.001	5.4	ug/L	11	Standard
	Ag	107	135.7	14.4	**0.0042**	0.003	69.6	ug/L	134	Standard
	Cd	111	325.5	6.3	**0.1508**	0.009	6.1	mg/L	7	Standard
	Cd	114	800.8	5.2	**0.1507**	0.008	5.1	ug/L	16	Standard
>	**In**	115	605376.8	0.3				ug/L	611117	Standard
	Sn	118	716.7	15.8	**0.0204**	0.019	93.4	ug/L	518	Standard
	Sb	123	1846.5	24.8	**0.3824**	0.099	25.9	ug/L	127	Standard
	Ba	135	61196.0	0.7	**29.8977**	0.107	0.4	ug/L	45	Standard
	Ce	140	4327.3	3.4				ug/L	298	Standard
>	**Tb**	159	946751.9	1.1				ug/L	977942	Standard
	Ho	165	113.3	17.8				ug/L	12	Standard
	Tl	203	274.7	6.5	**0.0286**	0.002	7.3	ug/L	31	Standard
	Tl	205	308.3	53.1	**0.0408**	0.023	55.8	ug/L	20	Standard
	Pb	206	584.3	5.1	**0.0470**	0.006	11.8	ug/L	286	Standard
	Pb	207	484.3	1.7	**0.0436**	0.002	3.9	ug/L	257	Standard
	Pb	208	2242.1	13.2	**0.0611**	0.016	25.8	ug/L	956	Standard
	U	238	167.0	68.8	**0.0208**	0.016	78.4	ug/L	17	Standard
>	**Bi**	209	544741.6	0.3				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	6142.9	1.9	**8.4190**	0.399	4.7	mg/L	32	Standard
K	39	320.0	19.2	**0.9720**	0.149	15.3	mg/L	30	Standard
Ca	43	193.3	18.7	**25.2140**	6.755	26.8	mg/L	48	Standard
Fe	54	272.9	8.2	**0.1197**	0.034	28.2	mg/L	159	Standard
Fe	57	298.3	20.0	**0.4171**	0.202	48.3	mg/L	195	Standard
> **Sc-1**	45	38211.6	5.6				mg/L	39543	Standard
Cl	35	43040.4	2.1				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	3493.7	8.6				ug/L	1647	Standard
P	31	19535.9	3.1				ug/L	15231	Standard
S	34	2298.5	3.2				ug/L	1845	Standard
Sr	88	191.7	4.0				ug/L	70	Standard
C	12	103.3	24.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	171.7	2.4				mg/L	12	Standard
Ho-1	165	113.3	17.8				mg/L	12	Standard
Er	166	103.3	43.6				mg/L	20	Standard
I	127	15184.3	1.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.303	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.068	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.061
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.785
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606084301PS WG574570-01
Sample Date/Time: Tuesday, June 28, 2016 20:13:49
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84132.9	0.3				ug/L	81760	Standard
	Be	9	53800.4	2.5	**52.6389**	1.459	2.8	ug/L	17	Standard
	Al	27	7286262.3	0.5	**45.9217**	0.095	0.2	ug/L	1410	Standard
	Sc	45	39187.3	1.8				ug/L	39543	Standard
	Ti	47	167.0	8.4	**0.5053**	0.064	12.8	ug/L	39	Standard
	V	51	355576.0	1.4	**50.8299**	0.802	1.6	ug/L	1415	Standard
	Cr	52	356673.6	1.0	**50.0684**	1.233	2.5	ug/L	6946	Standard
	Cr	53	44503.6	1.2	**50.2498**	1.575	3.1	ug/L	328	Standard
	Mn	55	4859292.5	1.8	**747.6759**	17.580	2.4	ug/L	823	Standard
	Co	59	417615.7	1.3	**59.2660**	0.892	1.5	ug/L	252	Standard
	Ni	60	125871.4	1.4	**66.5870**	2.033	3.1	ug/L	192	Standard
	Cu	65	97106.5	1.0	**50.8947**	0.717	1.4	ug/L	141	Standard
	Zn	66	127581.2	0.7	**115.3025**	1.913	1.7	ug/L	491	Standard
>	**Ge**	72	516403.0	2.2				ug/L	515087	Standard
	As	75	57691.6	2.0	**51.2302**	0.986	1.9	ug/L	20	Standard
	Se	82	6053.8	2.8	**52.3316**	1.116	2.1	ug/L	15	Standard
	Se-1	77	3949.2	3.8	**51.5591**	1.119	2.2	ug/L	48	Standard
>	**Ga**	71	251.7	10.0				mg/L	90	Standard
	Rb	85	13841.3	3.1				ug/L	23	Standard
	Y	89	444794.9	3.0				ug/L	448510	Standard
>	**Rh**	103	78.3	24.2				ug/L	15	Standard
	Mo	98	86.4	4.3	**0.0128**	0.001	7.7	ug/L	11	Standard
	Ag	107	327259.4	2.3	**48.6313**	0.643	1.3	ug/L	134	Standard
	Cd	111	105349.6	1.3	**49.1793**	0.322	0.7	mg/L	7	Standard
	Cd	114	257271.1	1.0	**49.4173**	1.101	2.2	ug/L	16	Standard
>	**In**	115	612449.2	2.0				ug/L	611117	Standard
	Sn	118	941.7	3.9	**0.0570**	0.004	7.5	ug/L	518	Standard
	Sb	123	235069.6	1.3	**49.7050**	0.359	0.7	ug/L	127	Standard
	Ba	135	161643.1	1.4	**78.1070**	0.551	0.7	ug/L	45	Standard
	Ce	140	4429.0	1.8				ug/L	298	Standard
>	**Tb**	159	958659.2	2.3				ug/L	977942	Standard
	Ho	165	101.7	15.0				ug/L	12	Standard
	Tl	203	432017.4	2.0	**50.9163**	0.725	1.4	ug/L	31	Standard
	Tl	205	384793.0	2.1	**52.2411**	1.764	3.4	ug/L	20	Standard
	Pb	206	286141.9	1.8	**52.5195**	0.925	1.8	ug/L	286	Standard
	Pb	207	249240.4	1.8	**50.7143**	0.544	1.1	ug/L	257	Standard
	Pb	208	995726.4	2.1	**52.3723**	1.044	2.0	ug/L	956	Standard
	U	238	370701.4	1.5	**51.3906**	1.394	2.7	ug/L	17	Standard
>	**Bi**	209	561025.3	2.5				ug/L	557080	Standard

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Na	23	5.0	0.0	**32.4034**	0.594	1.8	mg/L	0	Standard
Mg	24	6414.7	1.1	**8.5623**	0.246	2.9	mg/L	32	Standard
K	39	321.7	9.1	**0.9561**	0.110	11.5	mg/L	30	Standard
Ca	43	185.0	8.1	**22.9936**	1.940	8.4	mg/L	48	Standard
Fe	54	250.2	14.1	**0.0912**	0.029	32.3	mg/L	159	Standard
Fe	57	306.7	15.8	**0.4183**	0.145	34.7	mg/L	195	Standard
> **Sc-1**	45	39187.3	1.8				mg/L	39543	Standard
Cl	35	43079.8	1.6				ug/L	27642	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	3410.4	11.2				ug/L	1647	Standard
P	31	19879.7	4.3				ug/L	15231	Standard
S	34	2313.5	2.6				ug/L	1845	Standard
Sr	88	201.7	5.2				ug/L	70	Standard
C	12	140.0	32.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	196.2	20.7				mg/L	12	Standard
Ho-1	165	101.7	15.0				mg/L	12	Standard
Er	166	80.0	76.0				mg/L	20	Standard
I	127	16267.1	4.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.902	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.256	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.218
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.708
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1606084301SDL WG574570-02
Sample Date/Time: Tuesday, June 28, 2016 20:17:00
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84610.6	1.2				ug/L	81760	Standard
	Be	9	31.7	24.1	**0.0210**	0.007	33.6	ug/L	17	Standard
	Al	27	1535529.0	0.5	**9.6123**	0.084	0.9	ug/L	1410	Standard
	Sc	45	40586.0	2.0				ug/L	39543	Standard
	Ti	47	54.0	14.5	**0.0442**	0.029	66.4	ug/L	39	Standard
	V	51	1510.6	4.6	**0.0030**	0.011	356.0	ug/L	1415	Standard
	Cr	52	7700.6	1.7	**0.0097**	0.022	221.3	ug/L	6946	Standard
	Cr	53	548.3	6.2	**0.2609**	0.037	14.0	ug/L	328	Standard
	Mn	55	927997.3	1.4	**137.8897**	1.374	1.0	ug/L	823	Standard
	Co	59	10741.5	3.1	**1.4429**	0.042	2.9	ug/L	252	Standard
	Ni	60	6856.2	1.9	**3.4057**	0.060	1.7	ug/L	192	Standard
	Cu	65	384.3	5.5	**0.1042**	0.011	10.3	ug/L	141	Standard
	Zn	66	13504.0	1.8	**11.0531**	0.162	1.5	ug/L	491	Standard
>	**Ge**	72	534132.0	0.6				ug/L	515087	Standard
	As	75	-8.2	426.8	**0.0333**	0.030	90.7	ug/L	20	Standard
	Se	82	34.3	14.2	**0.1678**	0.041	24.5	ug/L	15	Standard
	Se-1	77	77.7	7.3	**0.2756**	0.079	28.6	ug/L	48	Standard
>	**Ga**	71	133.3	12.1				mg/L	90	Standard
	Rb	85	2885.3	6.5				ug/L	23	Standard
	Y	89	438369.8	1.0				ug/L	448510	Standard
>	**Rh**	103	21.7	13.3				ug/L	15	Standard
	Mo	98	33.0	37.7	**-0.0070**	0.005	64.6	ug/L	11	Standard
	Ag	107	108.0	7.3	**-0.0003**	0.002	523.1	ug/L	134	Standard
	Cd	111	82.3	4.3	**0.0351**	0.001	2.2	mg/L	7	Standard
	Cd	114	247.3	23.3	**0.0421**	0.011	25.9	ug/L	16	Standard
>	**In**	115	618448.1	2.5				ug/L	611117	Standard
	Sn	118	536.7	11.9	**-0.0124**	0.008	66.9	ug/L	518	Standard
	Sb	123	2208.8	28.0	**0.4480**	0.119	26.5	ug/L	127	Standard
	Ba	135	12894.8	1.5	**6.1480**	0.082	1.3	ug/L	45	Standard
	Ce	140	871.7	9.1				ug/L	298	Standard
>	**Tb**	159	974992.3	2.7				ug/L	977942	Standard
	Ho	165	33.3	48.2				ug/L	12	Standard
	Tl	203	98.0	7.7	**0.0064**	0.001	11.0	ug/L	31	Standard
	Tl	205	90.0	24.2	**0.0096**	0.003	27.9	ug/L	20	Standard
	Pb	206	392.7	2.7	**0.0066**	0.003	42.8	ug/L	286	Standard
	Pb	207	318.0	2.7	**0.0050**	0.001	23.7	ug/L	257	Standard
	Pb	208	1352.7	4.0	**0.0088**	0.002	18.5	ug/L	956	Standard
	U	238	56.0	29.8	**0.0046**	0.002	47.0	ug/L	17	Standard
>	**Bi**	209	576774.8	1.6				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.6259**	18.396	173.1	mg/L	0	Standard
Mg	24	1335.1	0.6	**1.6748**	0.038	2.2	mg/L	32	Standard
K	39	83.3	27.1	**0.1320**	0.069	52.2	mg/L	30	Standard
Ca	43	66.7	4.3	**4.5227**	0.490	10.8	mg/L	48	Standard
Fe	54	158.9	15.8	**0.0030**	0.021	715.4	mg/L	159	Standard
Fe	57	226.7	20.8	**0.1225**	0.167	136.7	mg/L	195	Standard
> **Sc-1**	45	40586.0	2.0				mg/L	39543	Standard
Cl	35	41629.1	0.8				ug/L	27642	Standard
Kr	83	4.7	24.7				ug/L	2	Standard
Br	81	2016.8	5.8				ug/L	1647	Standard
P	31	19454.2	1.7				ug/L	15231	Standard
S	34	2286.8	4.6				ug/L	1845	Standard
Sr	88	108.3	9.6				ug/L	70	Standard
C	12	106.7	39.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	58.6	31.0				mg/L	12	Standard
Ho-1	165	33.3	48.2				mg/L	12	Standard
Er	166	30.0	57.7				mg/L	20	Standard
I	127	4460.7	6.1				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		103.486	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		103.697	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.200
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.535
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606084301SDL WG574570-02
Sample Date/Time: Tuesday, June 28, 2016 20:20:12
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84917.5	3.2				ug/L	81760	Standard
	Be	9	15.0	66.7	**0.0050**	0.010	200.3	ug/L	17	Standard
	Al	27	312447.8	1.9	**1.9378**	0.034	1.7	ug/L	1410	Standard
	Sc	45	41284.5	3.3				ug/L	39543	Standard
	Ti	47	45.7	48.8	**0.0117**	0.082	700.7	ug/L	39	Standard
	V	51	1463.2	5.6	**-0.0026**	0.007	263.9	ug/L	1415	Standard
	Cr	52	7659.3	1.8	**0.0098**	0.004	44.8	ug/L	6946	Standard
	Cr	53	423.3	16.3	**0.1274**	0.086	67.2	ug/L	328	Standard
	Mn	55	187375.9	0.8	**27.8813**	0.482	1.7	ug/L	823	Standard
	Co	59	2308.5	0.8	**0.2873**	0.008	2.8	ug/L	252	Standard
	Ni	60	1540.7	3.0	**0.6883**	0.022	3.2	ug/L	192	Standard
	Cu	65	216.7	7.3	**0.0197**	0.006	31.0	ug/L	141	Standard
	Zn	66	4319.6	1.9	**2.9936**	0.025	0.8	ug/L	491	Standard
>	**Ge**	72	531260.9	2.2				ug/L	515087	Standard
	As	75	-47.8	76.7	**-0.0014**	0.032	2343.8	ug/L	20	Standard
	Se	82	17.0	17.8	**0.0237**	0.023	96.9	ug/L	15	Standard
	Se-1	77	59.0	6.1	**0.0400**	0.030	74.0	ug/L	48	Standard
>	**Ga**	71	86.7	31.8				mg/L	90	Standard
	Rb	85	596.7	10.5				ug/L	23	Standard
	Y	89	453907.4	1.0				ug/L	448510	Standard
>	**Rh**	103	8.3	34.6				ug/L	15	Standard
	Mo	98	28.3	9.0	**-0.0090**	0.001	10.4	ug/L	11	Standard
	Ag	107	92.0	2.2	**-0.0030**	0.000	8.2	ug/L	134	Standard
	Cd	111	15.3	15.1	**0.0040**	0.001	27.2	mg/L	7	Standard
	Cd	114	38.2	13.4	**0.0022**	0.001	41.3	ug/L	16	Standard
>	**In**	115	632674.4	0.8				ug/L	611117	Standard
	Sn	118	625.0	9.7	**0.0002**	0.010	5977.1	ug/L	518	Standard
	Sb	123	614.9	31.7	**0.1128**	0.039	34.5	ug/L	127	Standard
	Ba	135	2594.2	0.9	**1.1887**	0.008	0.6	ug/L	45	Standard
	Ce	140	198.3	20.2				ug/L	298	Standard
>	**Tb**	159	988615.6	0.9				ug/L	977942	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	26.7	16.9	**-0.0018**	0.000	28.3	ug/L	31	Standard
	Tl	205	16.7	75.5	**-0.0001**	0.002	1448.6	ug/L	20	Standard
	Pb	206	345.0	3.1	**-0.0028**	0.002	58.3	ug/L	286	Standard
	Pb	207	303.3	7.6	**0.0012**	0.004	352.8	ug/L	257	Standard
	Pb	208	1152.7	2.7	**-0.0023**	0.002	71.0	ug/L	956	Standard
	U	238	16.0	21.7	**-0.0008**	0.000	54.8	ug/L	17	Standard
>	**Bi**	209	585233.9	0.6				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	291.7	12.4	**0.3140**	0.035	11.1	mg/L	32	Standard
K	39	48.3	6.0	**0.0153**	0.013	86.9	mg/L	30	Standard
Ca	43	35.0	28.6	**-0.2811**	1.306	464.6	mg/L	48	Standard
Fe	54	153.8	34.6	**-0.0038**	0.045	1180.2	mg/L	159	Standard
Fe	57	170.0	8.8	**-0.0754**	0.036	48.4	mg/L	195	Standard
Sc-1	45	41284.5	3.3				mg/L	39543	Standard
Cl	35	41099.7	0.8				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1820.1	5.7				ug/L	1647	Standard
P	31	19375.7	1.6				ug/L	15231	Standard
S	34	2545.2	4.1				ug/L	1845	Standard
Sr	88	58.3	27.6				ug/L	70	Standard
C	12	110.0	39.6				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	28.2	93.4				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	36.7	15.7				mg/L	20	Standard
I	127	1790.1	13.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.862	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.140	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.528
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.054
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 20:23:25
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	82271.2	2.6				ug/L	81760	Standard
	Be	9	51878.7	2.6	**51.9060**	0.474	0.9	ug/L	17	Standard
	Al	27	7912369.8	3.4	**50.9914**	0.481	0.9	ug/L	1410	Standard
	Sc	45	40149.8	1.3				ug/L	39543	Standard
	Ti	47	25445.3	0.9	**101.2486**	0.646	0.6	ug/L	39	Standard
	V	51	355257.7	1.2	**50.4501**	0.253	0.5	ug/L	1415	Standard
	Cr	52	364176.4	2.0	**50.7897**	0.304	0.6	ug/L	6946	Standard
	Cr	53	45239.1	0.4	**50.7395**	0.592	1.2	ug/L	328	Standard
	Mn	55	333791.7	0.4	**50.8845**	0.584	1.1	ug/L	823	Standard
	Co	59	367088.8	1.7	**51.7480**	0.425	0.8	ug/L	252	Standard
	Ni	60	95399.1	1.8	**50.0959**	0.391	0.8	ug/L	192	Standard
	Cu	65	97309.2	2.1	**50.6606**	0.365	0.7	ug/L	141	Standard
	Zn	66	56912.4	2.6	**50.6269**	0.602	1.2	ug/L	491	Standard
>	Ge	72	519736.7	1.5				ug/L	515087	Standard
	As	75	56554.6	1.5	**49.8917**	0.034	0.1	ug/L	20	Standard
	Se	82	5843.7	2.8	**50.1784**	0.757	1.5	ug/L	15	Standard
	Se-1	77	3965.5	1.4	**51.4490**	0.315	0.6	ug/L	48	Standard
>	Ga	71	118.3	13.6				mg/L	90	Standard
	Rb	85	848.4	6.2				ug/L	23	Standard
	Y	89	451425.6	1.6				ug/L	448510	Standard
>	Rh	103	31.7	71.2				ug/L	15	Standard
	Mo	98	272060.7	0.6	**99.5752**	0.551	0.6	ug/L	11	Standard
	Ag	107	339081.9	1.7	**49.9711**	1.119	2.2	ug/L	134	Standard
	Cd	111	106686.1	0.8	**49.3843**	0.588	1.2	mg/L	7	Standard
	Cd	114	259655.5	1.7	**49.4494**	1.121	2.3	ug/L	16	Standard
>	In	115	617617.8	0.6				ug/L	611117	Standard
	Sn	118	302897.0	2.2	**50.5905**	1.415	2.8	ug/L	518	Standard
	Sb	123	239436.4	1.3	**50.2037**	0.916	1.8	ug/L	127	Standard
	Ba	135	101930.1	0.6	**48.8299**	0.530	1.1	ug/L	45	Standard
	Ce	140	63.3	9.1				ug/L	298	Standard
>	Tb	159	978625.5	0.9				ug/L	977942	Standard
	Ho	165	8.3	69.3				ug/L	12	Standard
	Tl	203	434700.2	0.8	**50.4033**	0.455	0.9	ug/L	31	Standard
	Tl	205	381183.1	1.9	**50.8972**	0.874	1.7	ug/L	20	Standard
	Pb	206	277544.1	1.7	**50.1113**	0.892	1.8	ug/L	286	Standard
	Pb	207	250965.9	2.0	**50.2393**	1.021	2.0	ug/L	257	Standard
	Pb	208	994830.3	0.3	**51.4752**	0.269	0.5	ug/L	956	Standard
	U	238	372750.7	1.1	**50.8268**	0.592	1.2	ug/L	17	Standard
>	Bi	209	570174.9	0.2				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4207.3	2.1	**5.4598**	0.160	2.9	mg/L	32	Standard
K	39	1353.4	1.9	**4.3620**	0.034	0.8	mg/L	30	Standard
Ca	43	68.3	23.5	**4.8558**	2.284	47.0	mg/L	48	Standard
Fe	54	6096.4	4.5	**5.2968**	0.235	4.4	mg/L	159	Standard
Fe	57	1726.8	6.1	**5.1204**	0.425	8.3	mg/L	195	Standard
Sc-1	45	40149.8	1.3				mg/L	39543	Standard
Cl	35	38223.5	2.9				ug/L	27642	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	1710.1	6.5				ug/L	1647	Standard
P	31	20984.5	3.6				ug/L	15231	Standard
S	34	2836.9	3.0				ug/L	1845	Standard
Sr	88	73.3	32.2				ug/L	70	Standard
C	12	176.7	8.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	26.3	80.0				mg/L	12	Standard
Ho-1	165	8.3	69.3				mg/L	12	Standard
Er	166	6.7	86.6				mg/L	20	Standard
I	127	1388.4	24.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	103.812		
Al	27	101.983		
Sc	45			
Ti	47	101.249		
V	51	100.900		
Cr	52	101.579		
Cr	53			
Mn	55	101.769		
Co	59	103.496		
Ni	60	100.192		
Cu	65	101.321		
Zn	66	101.254		
Ge	72		100.903	
As	75	99.783		
Se	82	100.357		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	99.575		
Ag	107	99.942		
Cd	111	98.769		
Cd	114			
In	115			101.064
Sn	118	101.181		
Sb	123	100.407		
Ba	135	97.660		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.807		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.950		
U	238	101.654		
Bi	209			102.351
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 20:26:37
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77291.7	2.7				ug/L	81760	Standard
	Be	9	25.0	40.0	**0.0170**	0.011	63.1	ug/L	17	Standard
	Al	27	2576.9	24.9	**0.0032**	0.004	126.1	ug/L	1410	Standard
	Sc	45	39050.3	1.7				ug/L	39543	Standard
	Ti	47	33.7	13.4	**-0.0246**	0.019	78.0	ug/L	39	Standard
	V	51	1167.6	8.0	**-0.0323**	0.013	41.5	ug/L	1415	Standard
	Cr	52	6011.5	1.2	**-0.1610**	0.012	7.3	ug/L	6946	Standard
	Cr	53	398.3	5.1	**0.1293**	0.022	17.0	ug/L	328	Standard
	Mn	55	883.7	9.4	**-0.0071**	0.013	183.2	ug/L	823	Standard
	Co	59	243.0	13.8	**0.0045**	0.005	107.7	ug/L	252	Standard
	Ni	60	165.0	10.4	**-0.0141**	0.009	65.1	ug/L	192	Standard
	Cu	65	129.3	4.3	**-0.0202**	0.003	14.1	ug/L	141	Standard
	Zn	66	451.0	1.9	**-0.4007**	0.009	2.3	ug/L	491	Standard
>	**Ge**	72	496420.0	0.5				ug/L	515087	Standard
	As	75	-52.8	22.7	**-0.0085**	0.011	133.2	ug/L	20	Standard
	Se	82	7.8	31.0	**-0.0491**	0.022	44.9	ug/L	15	Standard
	Se-1	77	52.0	3.8	**-0.0027**	0.026	948.5	ug/L	48	Standard
>	**Ga**	71	61.7	18.7				mg/L	90	Standard
	Rb	85	18.3	103.3				ug/L	23	Standard
	Y	89	442161.2	1.2				ug/L	448510	Standard
>	**Rh**	103	6.7	43.3				ug/L	15	Standard
	Mo	98	281.8	35.5	**0.0839**	0.034	41.1	ug/L	11	Standard
	Ag	107	122.3	22.2	**0.0018**	0.004	200.6	ug/L	134	Standard
	Cd	111	14.5	44.1	**0.0038**	0.003	74.5	mg/L	7	Standard
	Cd	114	43.1	30.3	**0.0033**	0.002	70.6	ug/L	16	Standard
>	**In**	115	615841.7	2.0				ug/L	611117	Standard
	Sn	118	753.4	17.4	**0.0248**	0.024	98.6	ug/L	518	Standard
	Sb	123	596.8	25.3	**0.1131**	0.034	30.2	ug/L	127	Standard
	Ba	135	38.0	16.0	**-0.0069**	0.003	39.0	ug/L	45	Standard
	Ce	140	8.3	91.7				ug/L	298	Standard
>	**Tb**	159	956084.4	3.2				ug/L	977942	Standard
	Ho	165	5.0	100.0				ug/L	12	Standard
	Tl	203	73.0	30.8	**0.0039**	0.003	64.7	ug/L	31	Standard
	Tl	205	60.0	44.1	**0.0059**	0.003	58.6	ug/L	20	Standard
	Pb	206	307.3	5.4	**-0.0063**	0.002	32.6	ug/L	286	Standard
	Pb	207	254.3	1.8	**-0.0055**	0.000	8.7	ug/L	257	Standard
	Pb	208	1093.3	8.1	**-0.0021**	0.004	180.6	ug/L	956	Standard
	U	238	62.0	42.0	**0.0057**	0.004	62.4	ug/L	17	Standard
>	**Bi**	209	552726.9	1.8				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.8094**	18.714	173.1	mg/L	0	Standard
Mg	24	20.0	100.0	**-0.0300**	0.027	91.7	mg/L	32	Standard
K	39	31.7	50.8	**-0.0336**	0.053	157.9	mg/L	30	Standard
Ca	43	16.7	17.3	**-2.7773**	0.490	17.6	mg/L	48	Standard
Fe	54	136.0	26.0	**-0.0122**	0.034	282.8	mg/L	159	Standard
Fe	57	233.3	19.3	**0.1724**	0.147	85.5	mg/L	195	Standard
> **Sc-1**	45	39050.3	1.7				mg/L	39543	Standard
Cl	35	37106.7	0.9				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	1596.8	5.3				ug/L	1647	Standard
P	31	19597.7	1.6				ug/L	15231	Standard
S	34	2643.6	3.6				ug/L	1845	Standard
Sr	88	53.3	61.0				ug/L	70	Standard
C	12	110.0	32.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	9.4	104.3				mg/L	12	Standard
Ho-1	165	5.0	100.0				mg/L	12	Standard
Er	166	13.3	43.3				mg/L	20	Standard
I	127	1173.4	25.6				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.376	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 7
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.773
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.219
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606079401
Sample Date/Time: Tuesday, June 28, 2016 20:29:50
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76244.9	4.1				ug/L	81760	Standard
	Be	9	31.7	63.8	**0.0239**	0.020	83.5	ug/L	17	Standard
	Al	27	4859544.3	1.6	**33.8379**	1.720	5.1	ug/L	1410	Standard
	Sc	45	41316.3	3.1				ug/L	39543	Standard
	Ti	47	1613.1	8.6	**6.3222**	0.521	8.2	ug/L	39	Standard
	V	51	5296.6	3.8	**0.5556**	0.022	4.0	ug/L	1415	Standard
	Cr	52	9948.6	1.0	**0.3727**	0.012	3.3	ug/L	6946	Standard
	Cr	53	1300.1	3.5	**1.1398**	0.032	2.8	ug/L	328	Standard
	Mn	55	10830112.5	0.4	**1671.2513**	23.447	1.4	ug/L	823	Standard
	Co	59	98900.4	0.9	**14.0508**	0.072	0.5	ug/L	252	Standard
	Ni	60	5918.2	0.8	**3.0389**	0.039	1.3	ug/L	192	Standard
	Cu	65	1492.7	4.1	**0.6949**	0.022	3.2	ug/L	141	Standard
	Zn	66	3606.1	2.5	**2.4634**	0.043	1.7	ug/L	491	Standard
>	**Ge**	72	514893.7	1.4				ug/L	515087	Standard
	As	75	2838.5	0.7	**2.5661**	0.029	1.1	ug/L	20	Standard
	Se	82	67.5	5.6	**0.4677**	0.041	8.7	ug/L	15	Standard
	Se-1	77	72.7	2.9	**0.2462**	0.031	12.7	ug/L	48	Standard
>	**Ga**	71	795.0	2.5				mg/L	90	Standard
	Rb	85	32504.8	2.3				ug/L	23	Standard
	Y	89	435925.3	2.8				ug/L	448510	Standard
>	**Rh**	103	93.3	3.1				ug/L	15	Standard
	Mo	98	343.6	1.5	**0.1114**	0.005	4.3	ug/L	11	Standard
	Ag	107	117.7	11.3	**0.0018**	0.002	118.8	ug/L	134	Standard
	Cd	111	40.7	19.8	**0.0166**	0.004	21.3	mg/L	7	Standard
	Cd	114	97.5	38.9	**0.0145**	0.008	54.8	ug/L	16	Standard
>	**In**	115	595657.1	2.2				ug/L	611117	Standard
	Sn	118	961.7	5.9	**0.0649**	0.008	12.2	ug/L	518	Standard
	Sb	123	345.9	22.0	**0.0622**	0.015	24.5	ug/L	127	Standard
	Ba	135	208994.2	0.7	**103.8626**	2.069	2.0	ug/L	45	Standard
	Ce	140	33943.0	0.8				ug/L	298	Standard
>	**Tb**	159	940708.8	1.0				ug/L	977942	Standard
	Ho	165	610.0	7.0				ug/L	12	Standard
	Tl	203	714.0	4.8	**0.0811**	0.003	4.2	ug/L	31	Standard
	Tl	205	651.7	8.6	**0.0881**	0.009	9.8	ug/L	20	Standard
	Pb	206	1354.7	2.2	**0.1905**	0.003	1.6	ug/L	286	Standard
	Pb	207	1119.4	1.4	**0.1747**	0.005	2.8	ug/L	257	Standard
	Pb	208	4748.3	2.1	**0.1947**	0.004	1.9	ug/L	956	Standard
	U	238	416.3	2.3	**0.0559**	0.002	3.0	ug/L	17	Standard
>	**Bi**	209	549596.9	1.2				ug/L	557080	Standard

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Na	23	6.7	114.6	**41.1239**	47.883	116.4	mg/L	0	Standard
Mg	24	3483.7	2.6	**4.3856**	0.231	5.3	mg/L	32	Standard
K	39	496.7	14.5	**1.4639**	0.222	15.1	mg/L	30	Standard
Ca	43	190.0	16.0	**22.2436**	4.083	18.4	mg/L	48	Standard
Fe	54	7377.0	1.5	**6.2559**	0.190	3.0	mg/L	159	Standard
Fe	57	2103.5	3.2	**6.1801**	0.414	6.7	mg/L	195	Standard
> **Sc-1**	45	41316.3	3.1				mg/L	39543	Standard
Cl	35	35106.6	2.5				ug/L	27642	Standard
Kr	83	2.3	107.9				ug/L	2	Standard
Br	81	13476.0	5.7				ug/L	1647	Standard
P	31	22598.5	5.8				ug/L	15231	Standard
S	34	2571.9	2.2				ug/L	1845	Standard
Sr	88	433.3	9.8				ug/L	70	Standard
C	12	150.0	35.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	882.4	15.5				mg/L	12	Standard
Ho-1	165	610.0	7.0				mg/L	12	Standard
Er	166	576.7	6.6				mg/L	20	Standard
I	127	50022.6	4.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.254	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.963	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.470
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.657
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606079402
Sample Date/Time: Tuesday, June 28, 2016 20:33:01
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75678.5	1.2				ug/L	81760	Standard
	Be	9	111.7	13.7	**0.1118**	0.017	15.0	ug/L	17	Standard
	Al	27	1429595.1	1.1	**10.0072**	0.228	2.3	ug/L	1410	Standard
	Sc	45	39138.8	1.6				ug/L	39543	Standard
	Ti	47	278.3	21.3	**0.9895**	0.212	21.4	ug/L	39	Standard
	V	51	1557.1	6.8	**0.0252**	0.009	34.9	ug/L	1415	Standard
	Cr	52	8352.6	6.5	**0.1848**	0.041	22.0	ug/L	6946	Standard
	Cr	53	1770.1	12.2	**1.7430**	0.191	11.0	ug/L	328	Standard
	Mn	55	34175.5	2.4	**5.3156**	0.224	4.2	ug/L	823	Standard
	Co	59	3266.0	5.1	**0.4499**	0.010	2.1	ug/L	252	Standard
	Ni	60	1953.8	3.9	**0.9695**	0.017	1.8	ug/L	192	Standard
	Cu	65	1358.7	2.9	**0.6499**	0.011	1.6	ug/L	141	Standard
	Zn	66	4870.4	2.4	**3.7758**	0.058	1.5	ug/L	491	Standard
>	**Ge**	72	497312.9	3.3				ug/L	515087	Standard
	As	75	54.7	94.2	**0.0915**	0.049	53.2	ug/L	20	Standard
	Se	82	40.7	27.3	**0.2488**	0.112	45.1	ug/L	15	Standard
	Se-1	77	77.0	9.4	**0.3389**	0.077	22.7	ug/L	48	Standard
>	**Ga**	71	155.0	28.1				mg/L	90	Standard
	Rb	85	30158.3	1.3				ug/L	23	Standard
	Y	89	432228.9	1.1				ug/L	448510	Standard
>	**Rh**	103	11.7	49.5				ug/L	15	Standard
	Mo	98	72.4	21.3	**0.0082**	0.006	70.5	ug/L	11	Standard
	Ag	107	118.3	24.0	**0.0017**	0.004	249.1	ug/L	134	Standard
	Cd	111	44.6	10.6	**0.0183**	0.002	12.1	mg/L	7	Standard
	Cd	114	123.7	31.0	**0.0193**	0.007	38.8	ug/L	16	Standard
>	**In**	115	600554.1	0.2				ug/L	611117	Standard
	Sn	118	733.4	8.7	**0.0243**	0.011	44.6	ug/L	518	Standard
	Sb	123	231.2	28.1	**0.0370**	0.014	37.8	ug/L	127	Standard
	Ba	135	65483.6	1.3	**32.2516**	0.425	1.3	ug/L	45	Standard
	Ce	140	2745.2	3.0				ug/L	298	Standard
>	**Tb**	159	936903.6	1.4				ug/L	977942	Standard
	Ho	165	75.0	17.6				ug/L	12	Standard
	Tl	203	221.3	13.5	**0.0222**	0.003	15.7	ug/L	31	Standard
	Tl	205	186.7	13.2	**0.0239**	0.003	14.3	ug/L	20	Standard
	Pb	206	523.0	7.4	**0.0358**	0.006	17.6	ug/L	286	Standard
	Pb	207	464.7	6.5	**0.0400**	0.008	19.0	ug/L	257	Standard
	Pb	208	1837.7	5.9	**0.0397**	0.005	13.6	ug/L	956	Standard
	U	238	125.7	23.1	**0.0151**	0.004	27.1	ug/L	17	Standard
>	**Bi**	209	541937.8	1.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	2726.9	0.4	**3.6111**	0.076	2.1	mg/L	32	Standard
K	39	506.7	5.1	**1.5885**	0.091	5.7	mg/L	30	Standard
Ca	43	36.7	15.7	**0.2847**	0.917	322.3	mg/L	48	Standard
Fe	54	182.6	18.3	**0.0302**	0.033	110.1	mg/L	159	Standard
Fe	57	203.3	25.6	**0.0706**	0.187	264.3	mg/L	195	Standard
> **Sc-1**	45	39138.8	1.6				mg/L	39543	Standard
Cl	35	34567.4	3.2				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	6558.1	13.2				ug/L	1647	Standard
P	31	21156.4	3.6				ug/L	15231	Standard
S	34	2326.8	9.7				ug/L	1845	Standard
Sr	88	76.7	13.6				ug/L	70	Standard
C	12	236.7	44.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	150.6	9.6				mg/L	12	Standard
Ho-1	165	75.0	17.6				mg/L	12	Standard
Er	166	56.7	40.8				mg/L	20	Standard
I	127	9424.6	4.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.562	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.549	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.272
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.282
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606079403
Sample Date/Time: Tuesday, June 28, 2016 20:36:13
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76753.9	0.3				ug/L	81760	Standard
	Be	9	53.3	32.9	**0.0475**	0.019	39.7	ug/L	17	Standard
	Al	27	2019995.9	2.1	**13.9455**	0.321	2.3	ug/L	1410	Standard
	Sc	45	39648.5	2.7				ug/L	39543	Standard
	Ti	47	884.4	21.1	**3.3748**	0.755	22.4	ug/L	39	Standard
	V	51	4216.0	3.5	**0.3970**	0.022	5.5	ug/L	1415	Standard
	Cr	52	11350.6	1.0	**0.5656**	0.020	3.6	ug/L	6946	Standard
	Cr	53	3082.0	1.2	**3.1525**	0.043	1.4	ug/L	328	Standard
	Mn	55	1462715.3	1.2	**224.3814**	2.702	1.2	ug/L	823	Standard
	Co	59	3343.0	3.0	**0.4421**	0.013	2.9	ug/L	252	Standard
	Ni	60	3343.7	2.8	**1.6618**	0.047	2.8	ug/L	192	Standard
	Cu	65	1050.7	3.0	**0.4594**	0.015	3.2	ug/L	141	Standard
	Zn	66	4988.5	1.4	**3.7017**	0.077	2.1	ug/L	491	Standard
>	**Ge**	72	517603.4	0.3				ug/L	515087	Standard
	As	75	193.9	14.0	**0.2119**	0.024	11.1	ug/L	20	Standard
	Se	82	57.1	5.5	**0.3743**	0.026	6.9	ug/L	15	Standard
	Se-1	77	124.7	7.3	**0.9281**	0.125	13.4	ug/L	48	Standard
>	**Ga**	71	286.7	21.7				mg/L	90	Standard
	Rb	85	31280.6	0.6				ug/L	23	Standard
	Y	89	445698.9	0.7				ug/L	448510	Standard
>	**Rh**	103	16.7	45.8				ug/L	15	Standard
	Mo	98	229.5	3.6	**0.0662**	0.004	6.0	ug/L	11	Standard
	Ag	107	129.3	14.3	**0.0031**	0.003	91.8	ug/L	134	Standard
	Cd	111	79.6	15.3	**0.0346**	0.006	17.8	mg/L	7	Standard
	Cd	114	219.2	32.9	**0.0375**	0.014	38.3	ug/L	16	Standard
>	**In**	115	608521.7	1.3				ug/L	611117	Standard
	Sn	118	713.4	5.3	**0.0192**	0.007	34.1	ug/L	518	Standard
	Sb	123	215.5	21.1	**0.0330**	0.009	27.4	ug/L	127	Standard
	Ba	135	73971.5	1.1	**35.9586**	0.191	0.5	ug/L	45	Standard
	Ce	140	14728.8	3.9				ug/L	298	Standard
>	**Tb**	159	956871.9	1.4				ug/L	977942	Standard
	Ho	165	336.7	6.7				ug/L	12	Standard
	Tl	203	279.3	8.0	**0.0283**	0.003	10.3	ug/L	31	Standard
	Tl	205	295.0	11.9	**0.0379**	0.004	11.8	ug/L	20	Standard
	Pb	206	724.7	2.0	**0.0702**	0.002	2.4	ug/L	286	Standard
	Pb	207	605.7	5.7	**0.0660**	0.008	12.2	ug/L	257	Standard
	Pb	208	2584.1	3.2	**0.0763**	0.006	7.3	ug/L	956	Standard
	U	238	605.0	8.8	**0.0814**	0.008	10.1	ug/L	17	Standard
>	**Bi**	209	558048.4	1.1				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	4734.1	2.7	**6.2297**	0.190	3.1	mg/L	32	Standard
K	39	378.3	13.8	**1.1326**	0.165	14.5	mg/L	30	Standard
Ca	43	55.0	18.2	**3.0097**	1.672	55.5	mg/L	48	Standard
Fe	54	512.5	3.2	**0.3260**	0.027	8.3	mg/L	159	Standard
Fe	57	288.3	19.9	**0.3473**	0.203	58.5	mg/L	195	Standard
> **Sc-1**	45	39648.5	2.7				mg/L	39543	Standard
Cl	35	35720.7	1.2				ug/L	27642	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	10650.4	4.7				ug/L	1647	Standard
P	31	21555.3	1.7				ug/L	15231	Standard
S	34	2313.5	4.4				ug/L	1845	Standard
Sr	88	90.0	14.7				ug/L	70	Standard
C	12	206.7	17.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	611.8	5.5				mg/L	12	Standard
Ho-1	165	336.7	6.7				mg/L	12	Standard
Er	166	310.0	11.6				mg/L	20	Standard
I	127	51010.9	6.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.877	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.489	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.575	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.174	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606079404
Sample Date/Time: Tuesday, June 28, 2016 20:39:24
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77373.8	1.6				ug/L	81760	Standard
	Be	9	33.3	45.8	**0.0257**	0.016	61.7	ug/L	17	Standard
	Al	27	6530294.9	1.7	**44.7685**	1.484	3.3	ug/L	1410	Standard
	Sc	45	40462.3	2.9				ug/L	39543	Standard
	Ti	47	1753.8	22.2	**6.9932**	1.564	22.4	ug/L	39	Standard
	V	51	4913.4	4.4	**0.5113**	0.026	5.2	ug/L	1415	Standard
	Cr	52	10044.0	5.5	**0.4080**	0.064	15.7	ug/L	6946	Standard
	Cr	53	2381.9	7.8	**2.4159**	0.236	9.8	ug/L	328	Standard
	Mn	55	8647420.3	0.2	**1354.8198**	14.536	1.1	ug/L	823	Standard
	Co	59	169235.6	0.5	**24.4356**	0.161	0.7	ug/L	252	Standard
	Ni	60	12361.0	0.9	**6.5619**	0.023	0.4	ug/L	192	Standard
	Cu	65	806.0	0.9	**0.3401**	0.009	2.5	ug/L	141	Standard
	Zn	66	7577.2	1.7	**6.1942**	0.082	1.3	ug/L	491	Standard
>	**Ge**	72	507111.0	1.2				ug/L	515087	Standard
	As	75	265.8	16.5	**0.2802**	0.037	13.2	ug/L	20	Standard
	Se	82	64.6	10.0	**0.4504**	0.053	11.9	ug/L	15	Standard
	Se-1	77	107.0	10.8	**0.7228**	0.140	19.4	ug/L	48	Standard
>	**Ga**	71	598.3	9.8				mg/L	90	Standard
	Rb	85	32554.9	1.8				ug/L	23	Standard
	Y	89	447221.5	3.0				ug/L	448510	Standard
>	**Rh**	103	20.0	50.0				ug/L	15	Standard
	Mo	98	99.0	16.4	**0.0174**	0.006	35.0	ug/L	11	Standard
	Ag	107	155.7	70.8	**0.0069**	0.016	237.9	ug/L	134	Standard
	Cd	111	107.8	50.7	**0.0474**	0.026	54.2	mg/L	7	Standard
	Cd	114	265.0	52.4	**0.0460**	0.027	58.4	ug/L	16	Standard
>	**In**	115	613219.8	0.3				ug/L	611117	Standard
	Sn	118	870.0	6.6	**0.0447**	0.010	22.4	ug/L	518	Standard
	Sb	123	214.6	24.5	**0.0325**	0.011	34.6	ug/L	127	Standard
	Ba	135	118463.0	0.8	**57.1584**	0.254	0.4	ug/L	45	Standard
	Ce	140	43559.2	3.6				ug/L	298	Standard
>	**Tb**	159	953430.3	1.1				ug/L	977942	Standard
	Ho	165	631.7	5.3				ug/L	12	Standard
	Tl	203	508.0	24.8	**0.0560**	0.015	27.1	ug/L	31	Standard
	Tl	205	431.7	17.4	**0.0571**	0.010	17.4	ug/L	20	Standard
	Pb	206	1022.0	12.5	**0.1271**	0.024	19.0	ug/L	286	Standard
	Pb	207	848.0	9.6	**0.1173**	0.017	14.2	ug/L	257	Standard
	Pb	208	3317.1	5.1	**0.1168**	0.009	7.7	ug/L	956	Standard
	U	238	210.3	17.6	**0.0266**	0.005	19.3	ug/L	17	Standard
>	**Bi**	209	552632.4	0.7				ug/L	557080	Standard

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Na	23	3.3	86.6	**20.7118**	17.947	86.6	mg/L	0	Standard
Mg	24	5764.4	1.5	**7.4467**	0.270	3.6	mg/L	32	Standard
K	39	563.3	10.2	**1.7170**	0.152	8.8	mg/L	30	Standard
Ca	43	75.0	17.6	**5.8105**	2.161	37.2	mg/L	48	Standard
Fe	54	999.2	5.7	**0.7481**	0.074	9.9	mg/L	159	Standard
Fe	57	490.0	3.5	**0.9936**	0.094	9.5	mg/L	195	Standard
Sc-1	45	40462.3	2.9				mg/L	39543	Standard
Cl	35	35374.6	1.6				ug/L	27642	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	12395.1	8.6				ug/L	1647	Standard
P	31	20597.3	1.4				ug/L	15231	Standard
S	34	2416.9	2.7				ug/L	1845	Standard
Sr	88	128.3	19.6				ug/L	70	Standard
C	12	236.7	2.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	1138.1	44.8				mg/L	12	Standard
Ho-1	165	631.7	5.3				mg/L	12	Standard
Er	166	596.7	6.3				mg/L	20	Standard
I	127	203787.2	10.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.635	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.452	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.344
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.202
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606082202
Sample Date/Time: Tuesday, June 28, 2016 20:42:36
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79831.5	1.5				ug/L	81760	Standard
	Be	9	18.3	63.0	**0.0091**	0.012	129.5	ug/L	17	Standard
	Al	27	3326140.8	2.2	**22.0876**	0.529	2.4	ug/L	1410	Standard
	Sc	45	40903.5	2.4				ug/L	39543	Standard
	Ti	47	258.3	7.7	**0.8950**	0.111	12.4	ug/L	39	Standard
	V	51	1427.8	26.8	**0.0038**	0.061	1620.7	ug/L	1415	Standard
	Cr	52	8606.8	1.2	**0.2025**	0.023	11.3	ug/L	6946	Standard
	Cr	53	7031.6	3.4	**7.8173**	0.215	2.7	ug/L	328	Standard
	Mn	55	245282.9	2.4	**38.3872**	0.371	1.0	ug/L	823	Standard
	Co	59	360.0	5.7	**0.0208**	0.001	6.7	ug/L	252	Standard
	Ni	60	675.7	7.1	**0.2607**	0.030	11.7	ug/L	192	Standard
	Cu	65	319.3	4.0	**0.0805**	0.011	13.1	ug/L	141	Standard
	Zn	66	1777.8	5.5	**0.8236**	0.060	7.3	ug/L	491	Standard
>	**Ge**	72	505790.0	3.0				ug/L	515087	Standard
	As	75	361.2	27.3	**0.3676**	0.091	24.7	ug/L	20	Standard
	Se	82	151.2	10.8	**1.2184**	0.141	11.6	ug/L	15	Standard
	Se-1	77	286.7	5.2	**3.1548**	0.107	3.4	ug/L	48	Standard
>	**Ga**	71	148.3	15.6				mg/L	90	Standard
	Rb	85	12600.2	4.8				ug/L	23	Standard
	Y	89	440998.1	2.4				ug/L	448510	Standard
>	**Rh**	103	48.3	6.0				ug/L	15	Standard
	Mo	98	329.5	7.2	**0.1031**	0.007	6.5	ug/L	11	Standard
	Ag	107	82.7	3.0	**-0.0039**	0.000	4.5	ug/L	134	Standard
	Cd	111	39.1	14.9	**0.0154**	0.002	16.0	mg/L	7	Standard
	Cd	114	93.5	42.9	**0.0131**	0.008	57.9	ug/L	16	Standard
>	**In**	115	609428.7	1.7				ug/L	611117	Standard
	Sn	118	616.7	6.1	**0.0027**	0.008	296.4	ug/L	518	Standard
	Sb	123	172.8	22.7	**0.0238**	0.008	32.2	ug/L	127	Standard
	Ba	135	142178.1	1.8	**69.0335**	0.137	0.2	ug/L	45	Standard
	Ce	140	378.3	16.5				ug/L	298	Standard
>	**Tb**	159	949587.4	3.3				ug/L	977942	Standard
	Ho	165	25.0	20.0				ug/L	12	Standard
	Tl	203	147.7	1.7	**0.0134**	0.001	4.1	ug/L	31	Standard
	Tl	205	166.7	29.1	**0.0214**	0.007	33.5	ug/L	20	Standard
	Pb	206	309.7	2.3	**-0.0043**	0.001	31.8	ug/L	286	Standard
	Pb	207	262.7	4.1	**-0.0022**	0.002	83.4	ug/L	257	Standard
	Pb	208	1080.7	3.0	**-0.0011**	0.001	98.3	ug/L	956	Standard
	U	238	30.0	28.9	**0.0014**	0.001	94.3	ug/L	17	Standard
>	**Bi**	209	537934.0	1.4				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.6139**	18.375	173.1	mg/L	0	Standard
Mg	24	32371.2	3.9	**41.6322**	2.388	5.7	mg/L	32	Standard
K	39	260.0	20.1	**0.7087**	0.176	24.8	mg/L	30	Standard
Ca	43	58.3	19.8	**3.1978**	1.533	48.0	mg/L	48	Standard
Fe	54	1294.3	5.1	**0.9965**	0.083	8.3	mg/L	159	Standard
Fe	57	445.0	8.5	**0.8270**	0.105	12.6	mg/L	195	Standard
Sc-1	45	40903.5	2.4				mg/L	39543	Standard
Cl	35	36431.1	1.6				ug/L	27642	Standard
Kr	83	0.3	173.2				ug/L	2	Standard
Br	81	35805.7	4.9				ug/L	1647	Standard
P	31	25079.1	3.1				ug/L	15231	Standard
S	34	2408.5	3.8				ug/L	1845	Standard
Sr	88	206.7	19.6				ug/L	70	Standard
C	12	176.7	45.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	28.1	3.0				mg/L	12	Standard
Ho-1	165	25.0	20.0				mg/L	12	Standard
Er	166	40.0	43.3				mg/L	20	Standard
I	127	201681.5	7.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		97.641	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.195	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.724
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.563
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606082203
Sample Date/Time: Tuesday, June 28, 2016 20:45:47
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90191.0	1.0				ug/L	81760	Standard
	Be	9	23.3	68.9	**0.0116**	0.015	127.2	ug/L	17	Standard
	Al	27	11365406.0	0.9	**66.8332**	1.185	1.8	ug/L	1410	Standard
	Sc	45	43861.8	3.4				ug/L	39543	Standard
	Ti	47	293.7	8.7	**0.9575**	0.101	10.6	ug/L	39	Standard
	V	51	2061.8	11.0	**0.0753**	0.031	41.0	ug/L	1415	Standard
	Cr	52	35560.4	1.1	**3.7982**	0.065	1.7	ug/L	6946	Standard
	Cr	53	13979.8	6.4	**14.7966**	1.011	6.8	ug/L	328	Standard
	Mn	55	581441.7	2.8	**85.0974**	2.668	3.1	ug/L	823	Standard
	Co	59	11104.7	2.7	**1.4708**	0.043	3.0	ug/L	252	Standard
	Ni	60	4756.1	1.3	**2.2951**	0.027	1.2	ug/L	192	Standard
	Cu	65	585.0	3.7	**0.2018**	0.012	5.9	ug/L	141	Standard
	Zn	66	4219.9	2.2	**2.8317**	0.093	3.3	ug/L	491	Standard
>	**Ge**	72	541965.4	0.4				ug/L	515087	Standard
	As	75	1879.3	4.8	**1.6291**	0.081	5.0	ug/L	20	Standard
	Se	82	403.3	6.2	**3.2102**	0.210	6.5	ug/L	15	Standard
	Se-1	77	499.0	5.4	**5.5758**	0.322	5.8	ug/L	48	Standard
>	**Ga**	71	170.0	12.8				mg/L	90	Standard
	Rb	85	898318.0	1.7				ug/L	23	Standard
	Y	89	454033.5	1.6				ug/L	448510	Standard
>	**Rh**	103	158.3	15.6				ug/L	15	Standard
	Mo	98	390.2	3.3	**0.1238**	0.006	4.6	ug/L	11	Standard
	Ag	107	91.7	18.8	**-0.0027**	0.003	94.7	ug/L	134	Standard
	Cd	111	57.3	18.5	**0.0236**	0.005	19.9	mg/L	7	Standard
	Cd	114	162.3	23.5	**0.0261**	0.008	29.2	ug/L	16	Standard
>	**In**	115	617377.1	1.4				ug/L	611117	Standard
	Sn	118	971.7	10.6	**0.0609**	0.019	30.8	ug/L	518	Standard
	Sb	123	275.2	12.0	**0.0450**	0.008	16.8	ug/L	127	Standard
	Ba	135	754414.8	1.4	**361.7131**	4.988	1.4	ug/L	45	Standard
	Ce	140	4038.9	3.4				ug/L	298	Standard
>	**Tb**	159	972701.2	1.2				ug/L	977942	Standard
	Ho	165	60.0					ug/L	12	Standard
	Tl	203	156.0	13.2	**0.0138**	0.002	16.1	ug/L	31	Standard
	Tl	205	116.7	13.1	**0.0137**	0.002	15.9	ug/L	20	Standard
	Pb	206	526.0	2.4	**0.0341**	0.004	10.3	ug/L	286	Standard
	Pb	207	425.7	3.6	**0.0296**	0.004	13.9	ug/L	257	Standard
	Pb	208	1793.4	1.5	**0.0349**	0.002	5.6	ug/L	956	Standard
	U	238	113.7	2.7	**0.0130**	0.001	4.0	ug/L	17	Standard
>	**Bi**	209	555248.6	1.3				ug/L	557080	Standard

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Na	23	1.7	173.2	**9.3851**	16.247	173.1	mg/L	0	Standard
Mg	24	35620.2	1.5	**42.7261**	1.684	3.9	mg/L	32	Standard
K	39	6901.6	2.1	**20.9070**	1.156	5.5	mg/L	30	Standard
Ca	43	215.0	12.3	**24.1234**	3.813	15.8	mg/L	48	Standard
Fe	54	3077.7	3.9	**2.3743**	0.067	2.8	mg/L	159	Standard
Fe	57	1036.7	11.9	**2.5246**	0.275	10.9	mg/L	195	Standard
> **Sc-1**	45	43861.8	3.4				mg/L	39543	Standard
Cl	35	37418.9	4.6				ug/L	27642	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	90214.6	3.4				ug/L	1647	Standard
P	31	25815.3	2.7				ug/L	15231	Standard
S	34	2615.2	3.8				ug/L	1845	Standard
Sr	88	703.3	5.7				ug/L	70	Standard
C	12	206.7	5.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	96.0	27.7				mg/L	12	Standard
Ho-1	165	60.0					mg/L	12	Standard
Er	166	83.3	6.9				mg/L	20	Standard
I	127	135411.8	5.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.312	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.218	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.024	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.671	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606082302
Sample Date/Time: Tuesday, June 28, 2016 20:48:59
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	108277.4	2.9				ug/L	81760	Standard
	Be	9	45.0	44.4	**0.0244**	0.015	61.4	ug/L	17	Standard
	Al	27	155300534.6	2.6	**761.2127**	30.613	4.0	ug/L	1410	Standard
	Sc	45	45277.6	3.5				ug/L	39543	Standard
	Ti	47	403.3	5.8	**1.4273**	0.064	4.5	ug/L	39	Standard
	V	51	3112.6	16.0	**0.2334**	0.070	30.2	ug/L	1415	Standard
	Cr	52	14043.2	7.2	**0.9232**	0.105	11.4	ug/L	6946	Standard
	Cr	53	48930.1	15.5	**54.3111**	7.500	13.8	ug/L	328	Standard
	Mn	55	2748271.5	3.9	**416.1426**	7.847	1.9	ug/L	823	Standard
	Co	59	187853.6	1.8	**26.2312**	0.060	0.2	ug/L	252	Standard
	Ni	60	24191.7	7.1	**12.5042**	0.665	5.3	ug/L	192	Standard
	Cu	65	2608.9	7.7	**1.2568**	0.078	6.2	ug/L	141	Standard
	Zn	66	8434.7	3.5	**6.7297**	0.123	1.8	ug/L	491	Standard
>	**Ge**	72	524401.5	2.0				ug/L	515087	Standard
	As	75	6667.1	7.6	**5.8608**	0.340	5.8	ug/L	20	Standard
	Se	82	2463.0	3.4	**20.8902**	0.307	1.5	ug/L	15	Standard
	Se-1	77	5803.1	9.1	**74.8730**	5.475	7.3	ug/L	48	Standard
>	**Ga**	71	283.3	11.5				mg/L	90	Standard
	Rb	85	14086.5	1.8				ug/L	23	Standard
	Y	89	450377.0	4.3				ug/L	448510	Standard
>	**Rh**	103	1153.4	2.0				ug/L	15	Standard
	Mo	98	228.3	2.1	**0.0678**	0.002	2.3	ug/L	11	Standard
	Ag	107	100.7	7.3	**-0.0008**	0.001	114.3	ug/L	134	Standard
	Cd	111	85.9	11.5	**0.0385**	0.005	14.0	mg/L	7	Standard
	Cd	114	207.5	20.1	**0.0360**	0.007	20.1	ug/L	16	Standard
>	**In**	115	594734.3	2.8				ug/L	611117	Standard
	Sn	118	838.4	7.1	**0.0436**	0.007	15.0	ug/L	518	Standard
	Sb	123	341.7	13.9	**0.0614**	0.008	13.7	ug/L	127	Standard
	Ba	135	7531184.6	2.9	**3748.3398**	4.365	0.1	ug/L	45	Standard
	Ce	140	2656.9	7.0				ug/L	298	Standard
>	**Tb**	159	994456.1	1.2				ug/L	977942	Standard
	Ho	165	153.3	5.0				ug/L	12	Standard
	Tl	203	149.0	11.0	**0.0143**	0.002	16.0	ug/L	31	Standard
	Tl	205	131.7	44.0	**0.0171**	0.008	49.5	ug/L	20	Standard
	Pb	206	558.3	2.7	**0.0476**	0.002	3.6	ug/L	286	Standard
	Pb	207	480.7	4.4	**0.0481**	0.004	8.4	ug/L	257	Standard
	Pb	208	1800.4	1.7	**0.0423**	0.001	2.5	ug/L	956	Standard
	U	238	2848.6	3.5	**0.4250**	0.011	2.7	ug/L	17	Standard
>	**Bi**	209	517504.0	1.7				ug/L	557080	Standard

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Na	23	15.0	33.3	**83.8040**	26.058	31.1	mg/L	0	Standard
Mg	24	304856.8	3.2	**354.4066**	5.599	1.6	mg/L	32	Standard
K	39	523.3	14.8	**1.3989**	0.174	12.4	mg/L	30	Standard
Ca	43	1175.0	5.2	**150.6324**	9.407	6.2	mg/L	48	Standard
Fe	54	2706.9	4.6	**2.0025**	0.071	3.5	mg/L	159	Standard
Fe	57	1593.4	6.7	**4.0698**	0.154	3.8	mg/L	195	Standard
Sc-1	45	45277.6	3.5				mg/L	39543	Standard
Cl	35	40644.4	1.3				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	610984.3	3.4				ug/L	1647	Standard
P	31	30180.0	2.7				ug/L	15231	Standard
S	34	2781.9	5.2				ug/L	1845	Standard
Sr	88	4374.0	2.8				ug/L	70	Standard
C	12	443.3	22.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	166.1	26.6				mg/L	12	Standard
Ho-1	165	153.3	5.0				mg/L	12	Standard
Er	166	220.0	28.4				mg/L	20	Standard
I	127	589063.3	13.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.433	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.808	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.319
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	92.896
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606082303
Sample Date/Time: Tuesday, June 28, 2016 20:52:10
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	93244.4	1.1				ug/L	81760	Standard
	Be	9	28.3	10.2	**0.0153**	0.003	16.9	ug/L	17	Standard
	Al	27	94744933.1	0.6	**538.9798**	6.462	1.2	ug/L	1410	Standard
	Sc	45	47113.2	4.5				ug/L	39543	Standard
	Ti	47	553.7	11.7	**2.0175**	0.206	10.2	ug/L	39	Standard
	V	51	4328.2	13.5	**0.4057**	0.092	22.6	ug/L	1415	Standard
	Cr	52	14490.9	2.4	**0.9864**	0.018	1.8	ug/L	6946	Standard
	Cr	53	43709.7	3.6	**48.5418**	1.565	3.2	ug/L	328	Standard
	Mn	55	8319616.3	2.0	**1259.6840**	13.722	1.1	ug/L	823	Standard
	Co	59	19767.9	2.2	**2.7309**	0.056	2.1	ug/L	252	Standard
	Ni	60	10810.2	4.4	**5.5279**	0.127	2.3	ug/L	192	Standard
	Cu	65	2456.2	2.4	**1.1782**	0.021	1.8	ug/L	141	Standard
	Zn	66	5426.0	2.4	**4.0320**	0.062	1.5	ug/L	491	Standard
>	**Ge**	72	524719.7	2.2				ug/L	515087	Standard
	As	75	3752.6	7.8	**3.3171**	0.255	7.7	ug/L	20	Standard
	Se	82	1738.6	3.2	**14.7077**	0.502	3.4	ug/L	15	Standard
	Se-1	77	4761.1	4.1	**61.3297**	2.628	4.3	ug/L	48	Standard
>	**Ga**	71	408.3	8.7				mg/L	90	Standard
	Rb	85	9714.8	3.7				ug/L	23	Standard
	Y	89	460620.0	3.3				ug/L	448510	Standard
>	**Rh**	103	891.7	10.4				ug/L	15	Standard
	Mo	98	389.5	4.4	**0.1260**	0.003	2.4	ug/L	11	Standard
	Ag	107	110.7	7.4	**0.0004**	0.001	272.1	ug/L	134	Standard
	Cd	111	332.6	3.0	**0.1538**	0.007	4.3	mg/L	7	Standard
	Cd	114	853.2	3.8	**0.1605**	0.008	5.1	ug/L	16	Standard
>	**In**	115	607039.3	2.6				ug/L	611117	Standard
	Sn	118	751.7	13.7	**0.0260**	0.016	61.8	ug/L	518	Standard
	Sb	123	376.4	10.5	**0.0674**	0.007	10.4	ug/L	127	Standard
	Ba	135	4357695.0	1.8	**2125.2206**	17.296	0.8	ug/L	45	Standard
	Ce	140	11329.2	2.7				ug/L	298	Standard
>	**Tb**	159	992575.1	2.0				ug/L	977942	Standard
	Ho	165	278.3	9.0				ug/L	12	Standard
	Tl	203	135.0	5.8	**0.0123**	0.001	6.8	ug/L	31	Standard
	Tl	205	110.0	27.6	**0.0138**	0.004	31.4	ug/L	20	Standard
	Pb	206	907.4	3.0	**0.1159**	0.005	4.7	ug/L	286	Standard
	Pb	207	750.0	6.5	**0.1064**	0.009	8.4	ug/L	257	Standard
	Pb	208	3103.1	4.1	**0.1154**	0.005	4.4	ug/L	956	Standard
	U	238	44356.2	2.2	**6.6145**	0.107	1.6	ug/L	17	Standard
>	**Bi**	209	521151.7	1.4				ug/L	557080	Standard

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Na	23	10.0	86.6	**54.6526**	47.439	86.8	mg/L	0	Standard
Mg	24	287663.3	3.0	**321.5385**	8.440	2.6	mg/L	32	Standard
K	39	226.7	14.2	**0.5032**	0.104	20.6	mg/L	30	Standard
Ca	43	1070.0	2.9	**131.3674**	10.299	7.8	mg/L	48	Standard
Fe	54	476.6	5.9	**0.2261**	0.038	16.9	mg/L	159	Standard
Fe	57	1008.4	3.2	**2.2367**	0.165	7.4	mg/L	195	Standard
> **Sc-1**	45	47113.2	4.5				mg/L	39543	Standard
Cl	35	40790.8	0.7				ug/L	27642	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	436089.5	3.9				ug/L	1647	Standard
P	31	27271.2	4.0				ug/L	15231	Standard
S	34	2836.9	4.2				ug/L	1845	Standard
Sr	88	2816.9	2.8				ug/L	70	Standard
C	12	376.7	12.5				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	0	Standard
Dy	164	345.0	17.3				mg/L	12	Standard
Ho-1	165	278.3	9.0				mg/L	12	Standard
Er	166	243.3	18.5				mg/L	20	Standard
I	127	900084.0	10.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.046	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.870	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.333
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.551
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606082304
Sample Date/Time: Tuesday, June 28, 2016 20:55:22
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74476.1	3.3				ug/L	81760	Standard
	Be	9	15.0	115.5	**0.0072**	0.020	276.2	ug/L	17	Standard
	Al	27	20080706.8	2.9	**143.0136**	1.080	0.8	ug/L	1410	Standard
	Sc	45	42894.0	3.7				ug/L	39543	Standard
	Ti	47	325.7	10.6	**1.1562**	0.137	11.8	ug/L	39	Standard
	V	51	1429.9	29.9	**0.0011**	0.063	5474.1	ug/L	1415	Standard
	Cr	52	7720.6	1.3	**0.0621**	0.011	18.4	ug/L	6946	Standard
	Cr	53	9723.1	6.1	**10.8363**	0.676	6.2	ug/L	328	Standard
	Mn	55	4663144.1	0.8	**725.7255**	4.778	0.7	ug/L	823	Standard
	Co	59	1828.4	1.1	**0.2313**	0.003	1.3	ug/L	252	Standard
	Ni	60	1442.4	3.3	**0.6679**	0.026	3.9	ug/L	192	Standard
	Cu	65	719.0	5.1	**0.2910**	0.019	6.5	ug/L	141	Standard
	Zn	66	7525.5	1.3	**6.1013**	0.101	1.7	ug/L	491	Standard
>	**Ge**	72	510419.4	0.4				ug/L	515087	Standard
	As	75	3004.5	4.7	**2.7368**	0.118	4.3	ug/L	20	Standard
	Se	82	527.6	3.3	**4.5049**	0.149	3.3	ug/L	15	Standard
	Se-1	77	877.0	5.5	**11.0280**	0.616	5.6	ug/L	48	Standard
>	**Ga**	71	135.0	44.9				mg/L	90	Standard
	Rb	85	21460.2	1.4				ug/L	23	Standard
	Y	89	449502.6	1.2				ug/L	448510	Standard
>	**Rh**	103	240.0	18.2				ug/L	15	Standard
	Mo	98	71.6	8.8	**0.0080**	0.002	28.5	ug/L	11	Standard
	Ag	107	77.3	9.2	**-0.0044**	0.001	24.3	ug/L	134	Standard
	Cd	111	102.2	7.3	**0.0460**	0.004	8.2	mg/L	7	Standard
	Cd	114	276.1	15.2	**0.0494**	0.008	16.6	ug/L	16	Standard
>	**In**	115	597587.3	0.9				ug/L	611117	Standard
	Sn	118	641.7	5.5	**0.0090**	0.005	57.4	ug/L	518	Standard
	Sb	123	117.8	11.7	**0.0127**	0.003	24.6	ug/L	127	Standard
	Ba	135	1219381.1	1.8	**603.9591**	5.851	1.0	ug/L	45	Standard
	Ce	140	360.0	14.7				ug/L	298	Standard
>	**Tb**	159	948906.4	1.3				ug/L	977942	Standard
	Ho	165	16.7	17.3				ug/L	12	Standard
	Tl	203	82.3	3.1	**0.0057**	0.000	3.2	ug/L	31	Standard
	Tl	205	61.7	24.8	**0.0067**	0.002	33.3	ug/L	20	Standard
	Pb	206	418.0	3.1	**0.0190**	0.003	17.6	ug/L	286	Standard
	Pb	207	378.0	5.3	**0.0247**	0.003	13.2	ug/L	257	Standard
	Pb	208	1532.7	1.1	**0.0263**	0.002	6.1	ug/L	956	Standard
	U	238	34.3	24.8	**0.0022**	0.001	61.6	ug/L	17	Standard
>	**Bi**	209	521633.3	1.5				ug/L	557080	Standard

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Na	23	3.3	173.2	**19.9869**	34.610	173.2	mg/L	0	Standard
Mg	24	52154.6	2.1	**63.9697**	1.039	1.6	mg/L	32	Standard
K	39	548.3	16.2	**1.5625**	0.223	14.3	mg/L	30	Standard
Ca	43	246.7	5.1	**29.2175**	2.054	7.0	mg/L	48	Standard
Fe	54	45285.0	1.2	**37.6782**	1.468	3.9	mg/L	159	Standard
Fe	57	11722.9	3.7	**35.8594**	0.146	0.4	mg/L	195	Standard
> **Sc-1**	45	42894.0	3.7				mg/L	39543	Standard
Cl	35	35015.1	2.5				ug/L	27642	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	123689.6	1.5				ug/L	1647	Standard
P	31	28713.9	1.8				ug/L	15231	Standard
S	34	2633.6	10.4				ug/L	1845	Standard
Sr	88	703.3	3.4				ug/L	70	Standard
C	12	210.0	12.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	32.1	16.4				mg/L	12	Standard
Ho-1	165	16.7	17.3				mg/L	12	Standard
Er	166	26.7	57.3				mg/L	20	Standard
I	127	194264.8	2.9				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		91.091	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.094	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	97.786	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	93.637	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606082304
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Method 6020 - Summary Report

Sample ID: L1606084302
Sample Date/Time: Tuesday, June 28, 2016 20:58:33
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77271.6	2.1				ug/L	81760	Standard
	Be	9	30.0	44.1	**0.0221**	0.014	61.6	ug/L	17	Standard
	Al	27	13023291.9	1.0	**89.3957**	1.109	1.2	ug/L	1410	Standard
	Sc	45	41354.7	3.2				ug/L	39543	Standard
	Ti	47	172.3	20.3	**0.4975**	0.149	29.9	ug/L	39	Standard
	V	51	1869.8	10.2	**0.0496**	0.023	45.4	ug/L	1415	Standard
	Cr	52	9029.4	5.3	**0.1789**	0.049	27.5	ug/L	6946	Standard
	Cr	53	1933.5	16.3	**1.7631**	0.385	21.8	ug/L	328	Standard
	Mn	55	2010517.0	2.2	**295.6150**	12.044	4.1	ug/L	823	Standard
	Co	59	28381.9	0.9	**3.8204**	0.101	2.6	ug/L	252	Standard
	Ni	60	51973.3	1.5	**26.2049**	0.504	1.9	ug/L	192	Standard
	Cu	65	2375.5	2.3	**1.1012**	0.038	3.5	ug/L	141	Standard
	Zn	66	19572.0	0.3	**16.1981**	0.371	2.3	ug/L	491	Standard
>	**Ge**	72	540385.6	2.0				ug/L	515087	Standard
	As	75	349.5	8.0	**0.3364**	0.018	5.2	ug/L	20	Standard
	Se	82	126.5	4.8	**0.9278**	0.047	5.1	ug/L	15	Standard
	Se-1	77	166.7	13.3	**1.3933**	0.317	22.7	ug/L	48	Standard
>	**Ga**	71	106.7	22.2				mg/L	90	Standard
	Rb	85	40220.0	0.6				ug/L	23	Standard
	Y	89	449597.2	1.4				ug/L	448510	Standard
>	**Rh**	103	146.7	12.0				ug/L	15	Standard
	Mo	98	594.8	3.0	**0.2021**	0.008	3.8	ug/L	11	Standard
	Ag	107	92.7	31.3	**-0.0024**	0.004	183.9	ug/L	134	Standard
	Cd	111	161.3	7.4	**0.0729**	0.005	7.5	mg/L	7	Standard
	Cd	114	441.9	5.3	**0.0806**	0.004	5.2	ug/L	16	Standard
>	**In**	115	608035.7	0.5				ug/L	611117	Standard
	Sn	118	676.7	9.6	**0.0131**	0.012	88.5	ug/L	518	Standard
	Sb	123	188.3	22.2	**0.0273**	0.009	32.4	ug/L	127	Standard
	Ba	135	24154.9	0.6	**11.7345**	0.088	0.8	ug/L	45	Standard
	Ce	140	2120.1	7.8				ug/L	298	Standard
>	**Tb**	159	946861.5	2.0				ug/L	977942	Standard
	Ho	165	63.3	29.9				ug/L	12	Standard
	Tl	203	1826.8	0.7	**0.2203**	0.002	1.1	ug/L	31	Standard
	Tl	205	1685.1	3.3	**0.2367**	0.005	2.2	ug/L	20	Standard
	Pb	206	439.0	7.7	**0.0207**	0.006	26.8	ug/L	286	Standard
	Pb	207	381.0	5.7	**0.0231**	0.004	17.6	ug/L	257	Standard
	Pb	208	1509.0	1.3	**0.0226**	0.000	0.8	ug/L	956	Standard
	U	238	1189.4	4.4	**0.1693**	0.007	4.4	ug/L	17	Standard
>	**Bi**	209	536700.0	1.2				ug/L	557080	Standard

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Na	23	5.0	100.0	**30.9676**	31.632	102.1	mg/L	0	Standard
Mg	24	21311.6	1.7	**27.0900**	1.076	4.0	mg/L	32	Standard
K	39	978.4	4.6	**3.0186**	0.057	1.9	mg/L	30	Standard
Ca	43	386.7	7.5	**50.8608**	4.765	9.4	mg/L	48	Standard
Fe	54	204.3	23.4	**0.0400**	0.042	106.1	mg/L	159	Standard
Fe	57	446.7	11.3	**0.8216**	0.208	25.3	mg/L	195	Standard
> **Sc-1**	45	41354.7	3.2				mg/L	39543	Standard
Cl	35	48993.8	3.0				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	7075.0	5.6				ug/L	1647	Standard
P	31	18566.4	1.9				ug/L	15231	Standard
S	34	2263.5	0.1				ug/L	1845	Standard
Sr	88	423.3	3.6				ug/L	70	Standard
C	12	123.3	40.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	104.0	29.5				mg/L	12	Standard
Ho-1	165	63.3	29.9				mg/L	12	Standard
Er	166	56.7	27.0				mg/L	20	Standard
I	127	48509.5	7.5				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.510	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.912	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.496
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.342
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 21:01:46
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77410.6	1.1				ug/L	81760	Standard
	Be	9	48694.9	4.0	**51.7876**	2.330	4.5	ug/L	17	Standard
	Al	27	7498260.2	2.7	**51.3685**	1.536	3.0	ug/L	1410	Standard
	Sc	45	39994.4	1.6				ug/L	39543	Standard
	Ti	47	24919.8	1.5	**100.1235**	0.955	1.0	ug/L	39	Standard
	V	51	352037.7	1.5	**50.4818**	0.410	0.8	ug/L	1415	Standard
	Cr	52	359056.3	3.2	**50.5608**	1.258	2.5	ug/L	6946	Standard
	Cr	53	45264.2	3.2	**51.2590**	1.232	2.4	ug/L	328	Standard
	Mn	55	341978.2	1.6	**52.6439**	0.559	1.1	ug/L	823	Standard
	Co	59	358967.4	0.9	**51.1022**	0.460	0.9	ug/L	252	Standard
	Ni	60	95904.1	3.3	**50.8527**	1.284	2.5	ug/L	192	Standard
	Cu	65	96846.7	3.1	**50.9133**	1.132	2.2	ug/L	141	Standard
	Zn	66	56366.4	2.4	**50.6359**	0.804	1.6	ug/L	491	Standard
>	**Ge**	72	514670.0	0.9				ug/L	515087	Standard
	As	75	56653.0	2.7	**50.4646**	0.946	1.9	ug/L	20	Standard
	Se	82	5738.6	2.7	**49.7611**	0.957	1.9	ug/L	15	Standard
	Se-1	77	3922.2	4.5	**51.3791**	2.097	4.1	ug/L	48	Standard
>	**Ga**	71	78.3	3.7				mg/L	90	Standard
	Rb	85	913.4	7.9				ug/L	23	Standard
	Y	89	449629.1	4.0				ug/L	448510	Standard
>	**Rh**	103	26.7	60.3				ug/L	15	Standard
	Mo	98	269192.0	0.5	**99.9193**	1.745	1.7	ug/L	11	Standard
	Ag	107	324356.7	1.6	**48.4664**	0.560	1.2	ug/L	134	Standard
	Cd	111	104800.0	2.8	**49.1868**	1.080	2.2	mg/L	7	Standard
	Cd	114	253765.7	3.7	**48.9997**	1.658	3.4	ug/L	16	Standard
>	**In**	115	609141.6	2.1				ug/L	611117	Standard
	Sn	118	292076.9	3.3	**49.4485**	0.824	1.7	ug/L	518	Standard
	Sb	123	232366.9	1.6	**49.3998**	0.394	0.8	ug/L	127	Standard
	Ba	135	100964.1	2.8	**49.0412**	1.097	2.2	ug/L	45	Standard
	Ce	140	81.7	25.5				ug/L	298	Standard
>	**Tb**	159	939122.1	2.3				ug/L	977942	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	411985.1	1.5	**50.6376**	0.301	0.6	ug/L	31	Standard
	Tl	205	371737.4	2.9	**52.6085**	0.609	1.2	ug/L	20	Standard
	Pb	206	267607.7	0.9	**51.2233**	0.555	1.1	ug/L	286	Standard
	Pb	207	243032.3	0.6	**51.5800**	0.780	1.5	ug/L	257	Standard
	Pb	208	974203.2	1.1	**53.4395**	0.502	0.9	ug/L	956	Standard
	U	238	359093.2	2.3	**51.8989**	0.179	0.3	ug/L	17	Standard
>	**Bi**	209	537912.3	2.0				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	3960.5	5.8	**5.1535**	0.239	4.6	mg/L	32	Standard
K	39	1450.1	5.1	**4.7011**	0.180	3.8	mg/L	30	Standard
Ca	43	56.7	22.2	**3.1676**	1.896	59.9	mg/L	48	Standard
Fe	54	5602.2	1.3	**4.8773**	0.145	3.0	mg/L	159	Standard
Fe	57	1671.8	3.1	**4.9554**	0.149	3.0	mg/L	195	Standard
Sc-1	45	39994.4	1.6				mg/L	39543	Standard
Cl	35	34924.3	5.3				ug/L	27642	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	3010.3	3.5				ug/L	1647	Standard
P	31	18342.8	3.8				ug/L	15231	Standard
S	34	2438.5	4.7				ug/L	1845	Standard
Sr	88	55.0	47.2				ug/L	70	Standard
C	12	96.7	23.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	23.2	100.3				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	3.3	173.2				mg/L	20	Standard
I	127	10668.8	10.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	103.575		
Al	27	102.737		
Sc	45			
Ti	47	100.123		
V	51	100.964		
Cr	52	101.122		
Cr	53			
Mn	55	105.288		
Co	59	102.204		
Ni	60	101.705		
Cu	65	101.827		
Zn	66	101.272		
Ge	72		99.919	
As	75	100.929		
Se	82	99.522		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	99.919		
Ag	107	96.933		
Cd	111	98.374		
Cd	114			
> In	115			99.677
Sn	118	98.897		
Sb	123	98.800		
Ba	135	98.082		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.275		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.879		
U	238	103.798		
> Bi	209			96.559
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 21:04:57
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76325.1	1.4				ug/L	81760	Standard
	Be	9	36.7	47.9	**0.0297**	0.018	61.9	ug/L	17	Standard
	Al	27	7433.8	52.1	**0.0370**	0.026	70.5	ug/L	1410	Standard
	Sc	45	39083.7	0.3				ug/L	39543	Standard
	Ti	47	29.0	21.5	**-0.0509**	0.024	47.8	ug/L	39	Standard
	V	51	1130.0	4.7	**-0.0473**	0.008	16.3	ug/L	1415	Standard
	Cr	52	6124.9	1.6	**-0.1950**	0.012	6.3	ug/L	6946	Standard
	Cr	53	786.7	2.0	**0.5367**	0.019	3.5	ug/L	328	Standard
	Mn	55	1151.0	22.6	**0.0255**	0.040	155.2	ug/L	823	Standard
	Co	59	234.7	8.8	**0.0014**	0.003	211.9	ug/L	252	Standard
	Ni	60	158.3	5.7	**-0.0226**	0.005	21.5	ug/L	192	Standard
	Cu	65	164.3	12.7	**-0.0061**	0.011	179.5	ug/L	141	Standard
	Zn	66	470.3	2.4	**-0.4072**	0.010	2.5	ug/L	491	Standard
>	**Ge**	72	525676.3	0.2				ug/L	515087	Standard
	As	75	-22.3	21.6	**0.0209**	0.004	19.9	ug/L	20	Standard
	Se	82	22.8	31.8	**0.0747**	0.062	82.4	ug/L	15	Standard
	Se-1	77	66.0	18.9	**0.1398**	0.164	117.4	ug/L	48	Standard
>	**Ga**	71	56.7	10.2				mg/L	90	Standard
	Rb	85	51.7	11.2				ug/L	23	Standard
	Y	89	445574.4	3.2				ug/L	448510	Standard
>	**Rh**	103	28.3	36.7				ug/L	15	Standard
	Mo	98	286.8	35.9	**0.0884**	0.038	42.5	ug/L	11	Standard
	Ag	107	119.3	19.2	**0.0018**	0.003	188.2	ug/L	134	Standard
	Cd	111	12.1	17.7	**0.0028**	0.001	35.0	mg/L	7	Standard
	Cd	114	42.6	30.2	**0.0034**	0.003	75.4	ug/L	16	Standard
>	**In**	115	602370.1	0.9				ug/L	611117	Standard
	Sn	118	773.4	17.1	**0.0309**	0.024	76.6	ug/L	518	Standard
	Sb	123	433.3	25.4	**0.0805**	0.024	30.2	ug/L	127	Standard
	Ba	135	290.7	43.2	**0.1174**	0.060	51.4	ug/L	45	Standard
	Ce	140	18.3	56.8				ug/L	298	Standard
>	**Tb**	159	950012.1	0.7				ug/L	977942	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	71.7	40.5	**0.0037**	0.004	95.1	ug/L	31	Standard
	Tl	205	85.0	56.1	**0.0094**	0.007	71.5	ug/L	20	Standard
	Pb	206	271.0	4.2	**-0.0136**	0.003	20.1	ug/L	286	Standard
	Pb	207	260.3	8.3	**-0.0047**	0.005	107.3	ug/L	257	Standard
	Pb	208	1029.7	7.7	**-0.0060**	0.005	82.3	ug/L	956	Standard
	U	238	47.7	42.8	**0.0037**	0.003	79.6	ug/L	17	Standard
>	**Bi**	209	558519.2	1.3				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	48.3	11.9	**0.0079**	0.008	95.2	mg/L	32	Standard
K	39	18.3	56.8	**-0.0788**	0.036	45.2	mg/L	30	Standard
Ca	43	31.7	24.1	**-0.4803**	1.172	244.0	mg/L	48	Standard
Fe	54	125.9	16.2	**-0.0218**	0.019	87.4	mg/L	159	Standard
Fe	57	238.3	12.6	**0.1894**	0.102	54.0	mg/L	195	Standard
> **Sc-1**	45	39083.7	0.3				mg/L	39543	Standard
Cl	35	33723.5	2.9				ug/L	27642	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	2386.9	5.5				ug/L	1647	Standard
P	31	18112.5	4.7				ug/L	15231	Standard
S	34	2391.9	4.0				ug/L	1845	Standard
Sr	88	68.3	29.6				ug/L	70	Standard
C	12	100.0	36.1				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	18.9	54.4				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	23.3	65.5				mg/L	20	Standard
I	127	7351.8	8.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.056	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.569	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.258	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606141001
Sample Date/Time: Tuesday, June 28, 2016 21:08:10
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79030.6	2.3				ug/L	81760	Standard
	Be	9	11.7	89.2	**0.0026**	0.011	425.8	ug/L	17	Standard
	Al	27	44776805.2	0.7	**300.5948**	6.187	2.1	ug/L	1410	Standard
	Sc	45	43343.6	2.1				ug/L	39543	Standard
	Ti	47	192.3	8.0	**0.6107**	0.056	9.2	ug/L	39	Standard
	V	51	4772.2	4.6	**0.4823**	0.029	6.1	ug/L	1415	Standard
	Cr	52	9840.2	0.5	**0.3614**	0.015	4.2	ug/L	6946	Standard
	Cr	53	1230.1	5.5	**1.0645**	0.072	6.7	ug/L	328	Standard
	Mn	55	4769620.0	0.5	**738.1503**	9.110	1.2	ug/L	823	Standard
	Co	59	9207.1	1.6	**1.2837**	0.028	2.2	ug/L	252	Standard
	Ni	60	5238.9	2.1	**2.6865**	0.062	2.3	ug/L	192	Standard
	Cu	65	718.7	4.1	**0.2886**	0.013	4.4	ug/L	141	Standard
	Zn	66	2924.3	0.9	**1.8496**	0.029	1.6	ug/L	491	Standard
>	**Ge**	72	513321.3	0.8				ug/L	515087	Standard
	As	75	4203.4	1.1	**3.7919**	0.050	1.3	ug/L	20	Standard
	Se	82	127.5	8.3	**0.9927**	0.098	9.9	ug/L	15	Standard
	Se-1	77	88.3	31.6	**0.4581**	0.375	81.9	ug/L	48	Standard
>	**Ga**	71	145.0	24.1				mg/L	90	Standard
	Rb	85	2930.3	3.3				ug/L	23	Standard
	Y	89	443412.2	1.4				ug/L	448510	Standard
>	**Rh**	103	140.0	15.6				ug/L	15	Standard
	Mo	98	1185.9	4.8	**0.4170**	0.022	5.4	ug/L	11	Standard
	Ag	107	98.0	15.7	**-0.0017**	0.002	128.2	ug/L	134	Standard
	Cd	111	19.9	13.4	**0.0063**	0.001	18.0	mg/L	7	Standard
	Cd	114	87.1	38.1	**0.0117**	0.006	53.6	ug/L	16	Standard
>	**In**	115	614969.4	1.2				ug/L	611117	Standard
	Sn	118	790.0	17.2	**0.0309**	0.023	75.8	ug/L	518	Standard
	Sb	123	280.0	20.4	**0.0462**	0.012	26.5	ug/L	127	Standard
	Ba	135	192282.6	1.4	**92.5375**	1.689	1.8	ug/L	45	Standard
	Ce	140	2006.8	4.1				ug/L	298	Standard
>	**Tb**	159	961897.3	2.5				ug/L	977942	Standard
	Ho	165	81.7	52.8				ug/L	12	Standard
	Tl	203	119.7	8.5	**0.0099**	0.002	15.4	ug/L	31	Standard
	Tl	205	98.3	15.5	**0.0116**	0.002	19.8	ug/L	20	Standard
	Pb	206	482.7	4.9	**0.0287**	0.002	8.4	ug/L	286	Standard
	Pb	207	424.0	4.8	**0.0319**	0.005	14.5	ug/L	257	Standard
	Pb	208	1694.0	1.8	**0.0325**	0.004	11.5	ug/L	956	Standard
	U	238	15563.7	1.1	**2.2446**	0.071	3.2	ug/L	17	Standard
>	**Bi**	209	538649.3	2.3				ug/L	557080	Standard

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Na	23	16.7	75.5	**98.5166**	75.230	76.4	mg/L	0	Standard
Mg	24	9014.3	3.2	**10.8981**	0.573	5.3	mg/L	32	Standard
K	39	116.7	19.3	**0.2184**	0.072	32.8	mg/L	30	Standard
Ca	43	525.0	6.7	**67.4527**	5.707	8.5	mg/L	48	Standard
Fe	54	1820.8	2.9	**1.3668**	0.058	4.2	mg/L	159	Standard
Fe	57	973.4	7.5	**2.3749**	0.248	10.4	mg/L	195	Standard
> **Sc-1**	45	43343.6	2.1				mg/L	39543	Standard
Cl	35	38331.8	2.6				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	27825.5	3.4				ug/L	1647	Standard
P	31	23363.0	0.7				ug/L	15231	Standard
S	34	2495.2	2.5				ug/L	1845	Standard
Sr	88	533.3	5.7				ug/L	70	Standard
C	12	353.3	5.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	83.6	23.1				mg/L	12	Standard
Ho-1	165	81.7	52.8				mg/L	12	Standard
Er	166	63.3	50.8				mg/L	20	Standard
I	127	532195.8	11.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		96.662	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.657	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.630
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.691
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606141201
Sample Date/Time: Tuesday, June 28, 2016 21:11:22
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79318.7	0.7				ug/L	81760	Standard
	Be	9	16.7	45.8	**0.0076**	0.008	106.2	ug/L	17	Standard
	Al	27	14913651.7	1.4	**99.7256**	2.143	2.1	ug/L	1410	Standard
	Sc	45	40395.5	2.6				ug/L	39543	Standard
	Ti	47	500.3	4.7	**1.8979**	0.055	2.9	ug/L	39	Standard
	V	51	36055.9	2.6	**5.1139**	0.040	0.8	ug/L	1415	Standard
	Cr	52	13456.3	2.4	**0.9269**	0.086	9.3	ug/L	6946	Standard
	Cr	53	9844.9	11.5	**11.1480**	1.101	9.9	ug/L	328	Standard
	Mn	55	27340.3	1.0	**4.1779**	0.048	1.1	ug/L	823	Standard
	Co	59	924.7	1.8	**0.1037**	0.005	4.9	ug/L	252	Standard
	Ni	60	2165.5	2.9	**1.0744**	0.025	2.4	ug/L	192	Standard
	Cu	65	1308.7	4.1	**0.6156**	0.023	3.7	ug/L	141	Standard
	Zn	66	7243.7	2.3	**5.9517**	0.120	2.0	ug/L	491	Standard
>	**Ge**	72	502171.0	2.0				ug/L	515087	Standard
	As	75	1256.7	3.1	**1.1867**	0.017	1.5	ug/L	20	Standard
	Se	82	736.7	2.2	**6.4443**	0.037	0.6	ug/L	15	Standard
	Se-1	77	926.0	3.3	**11.8887**	0.285	2.4	ug/L	48	Standard
>	**Ga**	71	176.7	6.5				mg/L	90	Standard
	Rb	85	2561.9	8.5				ug/L	23	Standard
	Y	89	439495.0	0.9				ug/L	448510	Standard
>	**Rh**	103	90.0	38.9				ug/L	15	Standard
	Mo	98	758.7	2.1	**0.2744**	0.005	1.7	ug/L	11	Standard
	Ag	107	112.7	8.8	**0.0013**	0.001	110.1	ug/L	134	Standard
	Cd	111	18.4	13.8	**0.0061**	0.001	20.0	mg/L	7	Standard
	Cd	114	55.1	29.0	**0.0062**	0.003	52.0	ug/L	16	Standard
>	**In**	115	584464.7	0.6				ug/L	611117	Standard
	Sn	118	741.7	7.5	**0.0292**	0.010	34.2	ug/L	518	Standard
	Sb	123	322.5	19.3	**0.0586**	0.014	23.6	ug/L	127	Standard
	Ba	135	23648.1	1.5	**11.9524**	0.216	1.8	ug/L	45	Standard
	Ce	140	4514.0	4.6				ug/L	298	Standard
>	**Tb**	159	922323.8	0.6				ug/L	977942	Standard
	Ho	165	91.7	12.6				ug/L	12	Standard
	Tl	203	130.7	10.2	**0.0124**	0.002	15.2	ug/L	31	Standard
	Tl	205	113.3	46.8	**0.0149**	0.008	53.9	ug/L	20	Standard
	Pb	206	585.3	3.6	**0.0562**	0.004	7.1	ug/L	286	Standard
	Pb	207	533.0	4.2	**0.0629**	0.005	7.8	ug/L	257	Standard
	Pb	208	2107.4	5.4	**0.0632**	0.008	12.1	ug/L	956	Standard
	U	238	32845.9	1.3	**5.0682**	0.050	1.0	ug/L	17	Standard
>	**Bi**	209	503585.9	0.8				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	118021.2	0.8	**153.7808**	2.811	1.8	mg/L	32	Standard
K	39	101.7	17.3	**0.1948**	0.058	29.7	mg/L	30	Standard
Ca	43	335.0	15.7	**44.3505**	6.519	14.7	mg/L	48	Standard
Fe	54	237.2	9.3	**0.0729**	0.016	22.5	mg/L	159	Standard
Fe	57	498.3	12.0	**1.0226**	0.198	19.4	mg/L	195	Standard
> **Sc-1**	45	40395.5	2.6				mg/L	39543	Standard
Cl	35	43781.2	1.0				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	58978.2	6.0				ug/L	1647	Standard
P	31	22017.7	1.7				ug/L	15231	Standard
S	34	2351.8	1.8				ug/L	1845	Standard
Sr	88	240.0	11.0				ug/L	70	Standard
C	12	356.7	26.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	169.3	7.0				mg/L	12	Standard
Ho-1	165	91.7	12.6				mg/L	12	Standard
Er	166	83.3	13.9				mg/L	20	Standard
I	127	31387.7	30.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.014	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.492	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.639
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.397
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606141202
Sample Date/Time: Tuesday, June 28, 2016 21:14:33
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83650.3	1.0				ug/L	81760	Standard
	Be	9	21.7	53.3	**0.0115**	0.011	97.0	ug/L	17	Standard
	Al	27	38632215.5	2.3	**244.9578**	5.868	2.4	ug/L	1410	Standard
	Sc	45	43420.5	1.6				ug/L	39543	Standard
	Ti	47	186.0	10.8	**0.5354**	0.077	14.4	ug/L	39	Standard
	V	51	26880.1	4.2	**3.4128**	0.061	1.8	ug/L	1415	Standard
	Cr	52	10918.6	2.1	**0.4115**	0.017	4.1	ug/L	6946	Standard
	Cr	53	7481.8	4.1	**7.6462**	0.526	6.9	ug/L	328	Standard
	Mn	55	33664.4	1.6	**4.7149**	0.144	3.1	ug/L	823	Standard
	Co	59	762.7	5.1	**0.0704**	0.007	10.1	ug/L	252	Standard
	Ni	60	2375.2	1.6	**1.0759**	0.011	1.0	ug/L	192	Standard
	Cu	65	711.7	7.3	**0.2600**	0.027	10.4	ug/L	141	Standard
	Zn	66	3134.0	1.7	**1.8510**	0.112	6.1	ug/L	491	Standard
>	**Ge**	72	550214.2	2.6				ug/L	515087	Standard
	As	75	794.1	8.2	**0.7027**	0.072	10.2	ug/L	20	Standard
	Se	82	234.2	3.9	**1.7863**	0.091	5.1	ug/L	15	Standard
	Se-1	77	482.0	4.4	**5.2700**	0.176	3.3	ug/L	48	Standard
>	**Ga**	71	80.0	16.5				mg/L	90	Standard
	Rb	85	1268.4	2.0				ug/L	23	Standard
	Y	89	467702.3	2.0				ug/L	448510	Standard
>	**Rh**	103	125.0	4.0				ug/L	15	Standard
	Mo	98	395.0	8.4	**0.1254**	0.010	8.1	ug/L	11	Standard
	Ag	107	91.7	6.0	**-0.0027**	0.001	31.4	ug/L	134	Standard
	Cd	111	17.7	18.1	**0.0053**	0.002	30.5	mg/L	7	Standard
	Cd	114	70.4	32.3	**0.0084**	0.004	47.5	ug/L	16	Standard
>	**In**	115	618005.7	2.3				ug/L	611117	Standard
	Sn	118	668.3	14.3	**0.0101**	0.018	180.4	ug/L	518	Standard
	Sb	123	172.5	13.4	**0.0233**	0.005	22.3	ug/L	127	Standard
	Ba	135	80657.5	2.0	**38.6136**	0.662	1.7	ug/L	45	Standard
	Ce	140	231.7	23.7				ug/L	298	Standard
>	**Tb**	159	976289.5	2.7				ug/L	977942	Standard
	Ho	165	20.0	50.0				ug/L	12	Standard
	Tl	203	130.7	0.4	**0.0112**	0.000	4.3	ug/L	31	Standard
	Tl	205	103.3	15.6	**0.0123**	0.003	20.6	ug/L	20	Standard
	Pb	206	343.3	3.7	**0.0019**	0.004	206.6	ug/L	286	Standard
	Pb	207	309.0	3.8	**0.0073**	0.004	55.0	ug/L	257	Standard
	Pb	208	1267.4	6.3	**0.0088**	0.006	66.3	ug/L	956	Standard
	U	238	23437.4	1.1	**3.3661**	0.068	2.0	ug/L	17	Standard
>	**Bi**	209	541066.6	2.7				ug/L	557080	Standard

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Na	23	10.0	100.0	**57.8886**	57.492	99.3	mg/L	0	Standard
Mg	24	42571.4	0.8	**51.5637**	1.207	2.3	mg/L	32	Standard
K	39	90.0	30.9	**0.1357**	0.087	64.2	mg/L	30	Standard
Ca	43	438.3	26.2	**55.1842**	15.190	27.5	mg/L	48	Standard
Fe	54	177.1	8.1	**0.0090**	0.012	139.0	mg/L	159	Standard
Fe	57	461.7	5.0	**0.7949**	0.071	8.9	mg/L	195	Standard
Sc-1	45	43420.5	1.6				mg/L	39543	Standard
Cl	35	42170.0	2.1				ug/L	27642	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	34382.4	5.6				ug/L	1647	Standard
P	31	23767.0	4.2				ug/L	15231	Standard
S	34	2608.6	3.1				ug/L	1845	Standard
Sr	88	431.7	5.4				ug/L	70	Standard
C	12	273.3	10.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	32.2	46.2				mg/L	12	Standard
Ho-1	165	20.0	50.0				mg/L	12	Standard
Er	166	23.3	89.2				mg/L	20	Standard
I	127	35633.6	4.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		102.312	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.820	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	101.127	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	97.125	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606141301
Sample Date/Time: Tuesday, June 28, 2016 21:17:45
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79916.9	1.5				ug/L	81760	Standard
	Be	9	28.3	27.0	**0.0194**	0.007	38.6	ug/L	17	Standard
	Al	27	38023288.5	2.1	**252.3385**	1.857	0.7	ug/L	1410	Standard
	Sc	45	42571.5	4.4				ug/L	39543	Standard
	Ti	47	396.7	7.8	**1.4239**	0.097	6.8	ug/L	39	Standard
	V	51	6119.0	6.6	**0.6719**	0.073	10.9	ug/L	1415	Standard
	Cr	52	11441.3	0.3	**0.5818**	0.031	5.4	ug/L	6946	Standard
	Cr	53	9654.8	11.4	**10.6403**	1.449	13.6	ug/L	328	Standard
	Mn	55	1634887.0	2.2	**251.2478**	2.194	0.9	ug/L	823	Standard
	Co	59	3215.3	1.8	**0.4249**	0.007	1.5	ug/L	252	Standard
	Ni	60	4170.9	0.8	**2.1033**	0.039	1.9	ug/L	192	Standard
	Cu	65	1200.4	3.8	**0.5391**	0.026	4.9	ug/L	141	Standard
	Zn	66	3234.7	1.4	**2.1147**	0.035	1.7	ug/L	491	Standard
>	**Ge**	72	516685.2	1.8				ug/L	515087	Standard
	As	75	16545.6	0.8	**14.7132**	0.205	1.4	ug/L	20	Standard
	Se	82	192.8	5.0	**1.5497**	0.062	4.0	ug/L	15	Standard
	Se-1	77	648.0	6.7	**7.8638**	0.716	9.1	ug/L	48	Standard
>	**Ga**	71	125.0	18.3				mg/L	90	Standard
	Rb	85	1723.4	7.4				ug/L	23	Standard
	Y	89	425819.3	3.1				ug/L	448510	Standard
>	**Rh**	103	118.3	17.1				ug/L	15	Standard
	Mo	98	4050.2	1.8	**1.5330**	0.030	2.0	ug/L	11	Standard
	Ag	107	94.7	12.2	**-0.0016**	0.002	127.1	ug/L	134	Standard
	Cd	111	117.7	9.5	**0.0542**	0.007	12.3	mg/L	7	Standard
	Cd	114	297.9	4.3	**0.0546**	0.005	8.5	ug/L	16	Standard
>	**In**	115	590223.7	3.4				ug/L	611117	Standard
	Sn	118	1010.0	10.9	**0.0746**	0.013	17.7	ug/L	518	Standard
	Sb	123	1963.6	1.5	**0.4183**	0.013	3.0	ug/L	127	Standard
	Ba	135	194231.1	1.1	**97.4394**	2.308	2.4	ug/L	45	Standard
	Ce	140	3857.2	6.5				ug/L	298	Standard
>	**Tb**	159	963155.2	4.7				ug/L	977942	Standard
	Ho	165	81.7	25.5				ug/L	12	Standard
	Tl	203	50.3	12.9	**0.0015**	0.001	66.6	ug/L	31	Standard
	Tl	205	46.7	32.7	**0.0044**	0.002	52.1	ug/L	20	Standard
	Pb	206	2455.5	1.0	**0.4110**	0.018	4.4	ug/L	286	Standard
	Pb	207	2061.1	1.1	**0.3836**	0.016	4.1	ug/L	257	Standard
	Pb	208	8494.6	1.5	**0.4098**	0.011	2.7	ug/L	956	Standard
	U	238	9671.1	1.3	**1.4065**	0.038	2.7	ug/L	17	Standard
>	**Bi**	209	533828.4	3.8				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	104970.9	3.0	**129.8006**	2.883	2.2	mg/L	32	Standard
K	39	241.7	3.2	**0.6187**	0.058	9.4	mg/L	30	Standard
Ca	43	386.7	15.6	**49.0389**	6.282	12.8	mg/L	48	Standard
Fe	54	7303.8	3.7	**6.0094**	0.321	5.3	mg/L	159	Standard
Fe	57	2221.8	6.0	**6.3400**	0.172	2.7	mg/L	195	Standard
> **Sc-1**	45	42571.5	4.4				mg/L	39543	Standard
Cl	35	37833.2	3.5				ug/L	27642	Standard
Kr	83	4.7	44.6				ug/L	2	Standard
Br	81	42533.0	4.1				ug/L	1647	Standard
P	31	23852.1	1.0				ug/L	15231	Standard
S	34	2610.2	4.2				ug/L	1845	Standard
Sr	88	403.3	5.0				ug/L	70	Standard
C	12	1170.0	10.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	0	Standard
Dy	164	115.7	9.7				mg/L	12	Standard
Ho-1	165	81.7	25.5				mg/L	12	Standard
Er	166	90.0	29.4				mg/L	20	Standard
I	127	137002.4	10.0				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		97.746	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		100.310	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.581
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.826
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606141601
Sample Date/Time: Tuesday, June 28, 2016 21:20:56
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92372.4	1.4				ug/L	81760	Standard
	Be	9	16.7	45.8	**0.0051**	0.007	132.4	ug/L	17	Standard
	Al	27	74980741.0	2.1	**430.5985**	11.194	2.6	ug/L	1410	Standard
	Sc	45	42273.9	1.4				ug/L	39543	Standard
	Ti	47	206.0	5.5	**0.6860**	0.049	7.2	ug/L	39	Standard
	V	51	76665.0	2.1	**11.1242**	0.138	1.2	ug/L	1415	Standard
	Cr	52	20589.0	2.5	**1.9813**	0.052	2.6	ug/L	6946	Standard
	Cr	53	16427.3	7.3	**18.8858**	1.445	7.7	ug/L	328	Standard
	Mn	55	4403.6	9.9	**0.5498**	0.075	13.7	ug/L	823	Standard
	Co	59	1375.4	0.7	**0.1698**	0.002	1.0	ug/L	252	Standard
	Ni	60	4849.1	3.4	**2.5400**	0.080	3.2	ug/L	192	Standard
	Cu	65	2467.2	2.0	**1.2432**	0.032	2.6	ug/L	141	Standard
	Zn	66	3268.7	3.6	**2.2359**	0.099	4.4	ug/L	491	Standard
>	**Ge**	72	501391.0	1.2				ug/L	515087	Standard
	As	75	1723.8	1.9	**1.6153**	0.015	1.0	ug/L	20	Standard
	Se	82	1818.6	2.0	**16.1069**	0.131	0.8	ug/L	15	Standard
	Se-1	77	2238.8	2.0	**29.8099**	0.421	1.4	ug/L	48	Standard
>	**Ga**	71	70.0	35.7				mg/L	90	Standard
	Rb	85	6024.5	1.3				ug/L	23	Standard
	Y	89	451516.3	2.4				ug/L	448510	Standard
>	**Rh**	103	580.0	3.0				ug/L	15	Standard
	Mo	98	4894.1	3.5	**1.7784**	0.027	1.5	ug/L	11	Standard
	Ag	107	107.3	12.0	**-0.0004**	0.002	428.3	ug/L	134	Standard
	Cd	111	61.6	14.8	**0.0258**	0.005	19.6	mg/L	7	Standard
	Cd	114	169.0	6.0	**0.0274**	0.002	5.8	ug/L	16	Standard
>	**In**	115	615602.8	3.1				ug/L	611117	Standard
	Sn	118	783.4	1.3	**0.0296**	0.003	11.3	ug/L	518	Standard
	Sb	123	203.3	3.5	**0.0299**	0.001	4.8	ug/L	127	Standard
	Ba	135	8199.6	0.5	**3.9202**	0.126	3.2	ug/L	45	Standard
	Ce	140	360.0	9.7				ug/L	298	Standard
>	**Tb**	159	979932.9	1.3				ug/L	977942	Standard
	Ho	165	28.3	20.4				ug/L	12	Standard
	Tl	203	89.3	17.1	**0.0065**	0.002	28.6	ug/L	31	Standard
	Tl	205	80.0	25.0	**0.0093**	0.003	29.8	ug/L	20	Standard
	Pb	206	345.7	2.0	**0.0043**	0.002	47.1	ug/L	286	Standard
	Pb	207	309.7	5.2	**0.0094**	0.004	39.7	ug/L	257	Standard
	Pb	208	1290.0	0.3	**0.0121**	0.001	10.3	ug/L	956	Standard
	U	238	27903.3	2.3	**4.1288**	0.057	1.4	ug/L	17	Standard
>	**Bi**	209	525055.5	1.5				ug/L	557080	Standard

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Na	23	21.7	48.0	**130.4724**	63.085	48.4	mg/L	0	Standard
Mg	24	101248.9	2.2	**126.0185**	2.508	2.0	mg/L	32	Standard
K	39	313.3	18.1	**0.8505**	0.192	22.6	mg/L	30	Standard
Ca	43	933.4	7.3	**127.1886**	7.858	6.2	mg/L	48	Standard
Fe	54	133.4	13.8	**-0.0242**	0.015	63.9	mg/L	159	Standard
Fe	57	858.4	5.3	**2.0873**	0.173	8.3	mg/L	195	Standard
> **Sc-1**	45	42273.9	1.4				mg/L	39543	Standard
Cl	35	65275.0	2.4				ug/L	27642	Standard
Kr	83	0.7	86.6				ug/L	2	Standard
Br	81	32608.5	7.2				ug/L	1647	Standard
P	31	23807.1	4.7				ug/L	15231	Standard
S	34	2403.5	5.0				ug/L	1845	Standard
Sr	88	2410.2	4.8				ug/L	70	Standard
C	12	193.3	34.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	0	Standard
Dy	164	21.1	69.3				mg/L	12	Standard
Ho-1	165	28.3	20.4				mg/L	12	Standard
Er	166	46.7	53.9				mg/L	20	Standard
I	127	42467.9	5.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.980	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.341	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.734
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.251
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606141602
Sample Date/Time: Tuesday, June 28, 2016 21:24:08
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88434.1	2.2				ug/L	81760	Standard
	Be	9	13.3	57.3	**0.0028**	0.007	262.6	ug/L	17	Standard
	Al	27	52144460.9	0.4	**312.8622**	8.112	2.6	ug/L	1410	Standard
	Sc	45	37740.3	1.5				ug/L	39543	Standard
	Ti	47	227.7	10.0	**0.8076**	0.101	12.5	ug/L	39	Standard
	V	51	38489.9	1.8	**5.6761**	0.140	2.5	ug/L	1415	Standard
	Cr	52	19640.1	1.0	**1.9398**	0.010	0.5	ug/L	6946	Standard
	Cr	53	17715.4	1.9	**21.0942**	0.301	1.4	ug/L	328	Standard
	Mn	55	4373.0	6.9	**0.5679**	0.048	8.4	ug/L	823	Standard
	Co	59	870.4	1.6	**0.1002**	0.001	1.2	ug/L	252	Standard
	Ni	60	2666.6	2.1	**1.3989**	0.023	1.6	ug/L	192	Standard
	Cu	65	1074.7	4.8	**0.5100**	0.030	5.9	ug/L	141	Standard
	Zn	66	2890.6	2.0	**1.9736**	0.048	2.4	ug/L	491	Standard
>	**Ge**	72	484924.7	0.7				ug/L	515087	Standard
	As	75	2458.8	5.8	**2.3632**	0.133	5.6	ug/L	20	Standard
	Se	82	892.7	6.7	**8.1181**	0.571	7.0	ug/L	15	Standard
	Se-1	77	1757.1	0.5	**24.0557**	0.109	0.5	ug/L	48	Standard
>	**Ga**	71	76.7	13.6				mg/L	90	Standard
	Rb	85	4900.8	2.1				ug/L	23	Standard
	Y	89	417881.5	5.4				ug/L	448510	Standard
>	**Rh**	103	255.0	18.7				ug/L	15	Standard
	Mo	98	772.2	2.1	**0.2950**	0.006	2.2	ug/L	11	Standard
	Ag	107	68.7	21.6	**-0.0049**	0.003	53.5	ug/L	134	Standard
	Cd	111	15.0	33.1	**0.0048**	0.003	56.9	mg/L	7	Standard
	Cd	114	24.6	131.5	**0.0004**	0.007	1725.2	ug/L	16	Standard
>	**In**	115	555990.7	3.0				ug/L	611117	Standard
	Sn	118	696.7	10.1	**0.0278**	0.015	54.6	ug/L	518	Standard
	Sb	123	106.5	16.8	**0.0120**	0.005	38.5	ug/L	127	Standard
	Ba	135	12524.8	3.0	**6.6489**	0.344	5.2	ug/L	45	Standard
	Ce	140	808.4	5.3				ug/L	298	Standard
>	**Tb**	159	897664.5	1.7				ug/L	977942	Standard
	Ho	165	23.3	68.9				ug/L	12	Standard
	Tl	203	89.0	17.6	**0.0071**	0.002	31.3	ug/L	31	Standard
	Tl	205	90.0	0.0	**0.0115**	0.000	1.5	ug/L	20	Standard
	Pb	206	365.7	4.1	**0.0124**	0.004	32.4	ug/L	286	Standard
	Pb	207	325.3	1.4	**0.0169**	0.000	0.6	ug/L	257	Standard
	Pb	208	1289.4	1.1	**0.0163**	0.000	2.7	ug/L	956	Standard
	U	238	25222.0	1.6	**3.9519**	0.013	0.3	ug/L	17	Standard
>	**Bi**	209	495840.1	1.2				ug/L	557080	Standard

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Na	23	3.3	86.6	**22.3577**	19.364	86.6	mg/L	0	Standard
Mg	24	65916.4	2.1	**91.8901**	2.205	2.4	mg/L	32	Standard
K	39	221.7	4.7	**0.6432**	0.031	4.9	mg/L	30	Standard
Ca	43	530.0	9.4	**79.0853**	9.116	11.5	mg/L	48	Standard
Fe	54	138.0	10.0	**-0.0062**	0.012	195.9	mg/L	159	Standard
Fe	57	510.0	5.1	**1.1793**	0.086	7.3	mg/L	195	Standard
> **Sc-1**	45	37740.3	1.5				mg/L	39543	Standard
Cl	35	44130.9	1.6				ug/L	27642	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	28483.4	4.0				ug/L	1647	Standard
P	31	20263.6	4.9				ug/L	15231	Standard
S	34	2148.5	1.6				ug/L	1845	Standard
Sr	88	1128.4	6.6				ug/L	70	Standard
C	12	163.3	25.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	36.0	33.6				mg/L	12	Standard
Ho-1	165	23.3	68.9				mg/L	12	Standard
Er	166	13.3	114.6				mg/L	20	Standard
I	127	19656.1	3.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.163	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.144	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.979
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		89.007
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606142101
Sample Date/Time: Tuesday, June 28, 2016 21:27:19
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86072.2	1.7				ug/L	81760	Standard
	Be	9	31.7	65.7	**0.0204**	0.019	95.2	ug/L	17	Standard
	Al	27	37149346.8	0.4	**228.9677**	4.521	2.0	ug/L	1410	Standard
	Sc	45	40693.0	3.6				ug/L	39543	Standard
	Ti	47	211.7	4.5	**0.7055**	0.031	4.4	ug/L	39	Standard
	V	51	19470.4	0.9	**2.6593**	0.027	1.0	ug/L	1415	Standard
	Cr	52	9577.4	0.5	**0.3506**	0.020	5.8	ug/L	6946	Standard
	Cr	53	13504.4	2.9	**15.3965**	0.370	2.4	ug/L	328	Standard
	Mn	55	2482687.2	1.9	**391.6677**	8.445	2.2	ug/L	823	Standard
	Co	59	1010.4	4.1	**0.1158**	0.006	5.6	ug/L	252	Standard
	Ni	60	2375.2	1.3	**1.1855**	0.029	2.4	ug/L	192	Standard
	Cu	65	1289.7	5.2	**0.6034**	0.030	5.0	ug/L	141	Standard
	Zn	66	3124.3	3.5	**2.0882**	0.083	4.0	ug/L	491	Standard
>	**Ge**	72	503476.5	0.9				ug/L	515087	Standard
	As	75	9860.1	0.9	**9.0129**	0.111	1.2	ug/L	20	Standard
	Se	82	502.3	2.2	**4.3447**	0.140	3.2	ug/L	15	Standard
	Se-1	77	853.4	2.0	**10.8689**	0.134	1.2	ug/L	48	Standard
>	**Ga**	71	115.0	32.8				mg/L	90	Standard
	Rb	85	655.0	2.3				ug/L	23	Standard
	Y	89	413248.4	1.0				ug/L	448510	Standard
>	**Rh**	103	123.3	18.3				ug/L	15	Standard
	Mo	98	77.7	17.1	**0.0125**	0.006	46.7	ug/L	11	Standard
	Ag	107	81.3	4.3	**-0.0029**	0.001	26.3	ug/L	134	Standard
	Cd	111	15.2	10.0	**0.0049**	0.001	14.6	mg/L	7	Standard
	Cd	114	38.3	10.8	**0.0032**	0.001	30.4	ug/L	16	Standard
>	**In**	115	557968.8	1.5				ug/L	611117	Standard
	Sn	118	745.0	12.3	**0.0359**	0.015	41.7	ug/L	518	Standard
	Sb	123	991.0	1.5	**0.2172**	0.002	1.1	ug/L	127	Standard
	Ba	135	220850.7	1.1	**117.1448**	0.521	0.4	ug/L	45	Standard
	Ce	140	1566.7	2.4				ug/L	298	Standard
>	**Tb**	159	920767.6	2.2				ug/L	977942	Standard
	Ho	165	58.3	38.7				ug/L	12	Standard
	Tl	203	55.7	23.2	**0.0023**	0.002	74.7	ug/L	31	Standard
	Tl	205	45.0	38.5	**0.0043**	0.003	60.7	ug/L	20	Standard
	Pb	206	169197.9	0.8	**33.4745**	0.521	1.6	ug/L	286	Standard
	Pb	207	142071.0	0.5	**31.1598**	0.218	0.7	ug/L	257	Standard
	Pb	208	579992.3	2.5	**32.8772**	0.549	1.7	ug/L	956	Standard
	U	238	648.7	2.7	**0.0940**	0.004	4.0	ug/L	17	Standard
>	**Bi**	209	520066.6	1.1				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.0185**	17.344	173.1	mg/L	0	Standard
Mg	24	83474.3	1.3	**108.0258**	4.532	4.2	mg/L	32	Standard
K	39	53.3	28.6	**0.0335**	0.050	147.9	mg/L	30	Standard
Ca	43	435.0	11.3	**58.7409**	4.908	8.4	mg/L	48	Standard
Fe	54	1115.5	8.0	**0.8464**	0.111	13.2	mg/L	159	Standard
Fe	57	721.7	4.0	**1.7451**	0.132	7.5	mg/L	195	Standard
> **Sc-1**	45	40693.0	3.6				mg/L	39543	Standard
Cl	35	37196.3	1.1				ug/L	27642	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	117004.1	4.8				ug/L	1647	Standard
P	31	21849.1	2.8				ug/L	15231	Standard
S	34	2463.5	4.3				ug/L	1845	Standard
Sr	88	470.0	11.8				ug/L	70	Standard
C	12	400.0	4.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	47.0	20.8				mg/L	12	Standard
Ho-1	165	58.3	38.7				mg/L	12	Standard
Er	166	63.3	9.1				mg/L	20	Standard
I	127	290371.1	9.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.274	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.746	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.303
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.356
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 21:30:32
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	80064.5	3.2				ug/L	81760	Standard
	Be	9	49945.6	4.7	**51.3339**	1.054	2.1	ug/L	17	Standard
	Al	27	7446953.3	1.3	**49.3416**	1.021	2.1	ug/L	1410	Standard
	Sc	45	39994.4	3.1				ug/L	39543	Standard
	Ti	47	24563.6	1.8	**103.4611**	0.538	0.5	ug/L	39	Standard
	V	51	332459.7	1.4	**49.9760**	0.258	0.5	ug/L	1415	Standard
	Cr	52	346732.4	1.5	**51.2013**	0.219	0.4	ug/L	6946	Standard
	Cr	53	44092.4	3.1	**52.3486**	0.902	1.7	ug/L	328	Standard
	Mn	55	316773.7	1.0	**51.1225**	0.963	1.9	ug/L	823	Standard
	Co	59	338255.6	0.9	**50.4803**	0.452	0.9	ug/L	252	Standard
	Ni	60	91110.2	2.0	**50.6466**	0.186	0.4	ug/L	192	Standard
	Cu	65	91902.3	2.1	**50.6488**	0.160	0.3	ug/L	141	Standard
	Zn	66	53757.9	1.1	**50.6325**	0.663	1.3	ug/L	491	Standard
>	Ge	72	490984.9	1.8				ug/L	515087	Standard
	As	75	53512.8	1.1	**49.9767**	0.363	0.7	ug/L	20	Standard
	Se	82	5576.6	0.4	**50.7061**	0.891	1.8	ug/L	15	Standard
	Se-1	77	3693.5	2.8	**50.7124**	1.021	2.0	ug/L	48	Standard
>	Ga	71	63.3	29.9				mg/L	90	Standard
	Rb	85	831.7	5.0				ug/L	23	Standard
	Y	89	421530.5	1.2				ug/L	448510	Standard
>	Rh	103	28.3	44.4				ug/L	15	Standard
	Mo	98	254944.7	0.2	**97.5527**	0.365	0.4	ug/L	11	Standard
	Ag	107	312741.7	1.2	**48.1812**	0.687	1.4	ug/L	134	Standard
	Cd	111	100992.4	1.1	**48.8720**	0.473	1.0	mg/L	7	Standard
	Cd	114	246539.5	0.8	**49.0819**	0.317	0.6	ug/L	16	Standard
>	In	115	590755.4	0.3				ug/L	611117	Standard
	Sn	118	285297.8	0.9	**49.8102**	0.309	0.6	ug/L	518	Standard
	Sb	123	223087.7	1.5	**48.8998**	0.798	1.6	ug/L	127	Standard
	Ba	135	97286.0	1.5	**48.7240**	0.868	1.8	ug/L	45	Standard
	Ce	140	78.3	36.9				ug/L	298	Standard
>	Tb	159	940662.6	1.7				ug/L	977942	Standard
	Ho	165	20.0	25.0				ug/L	12	Standard
	Tl	203	402817.7	0.9	**49.5894**	0.553	1.1	ug/L	31	Standard
	Tl	205	361515.5	0.7	**51.2534**	0.688	1.3	ug/L	20	Standard
	Pb	206	256836.7	1.0	**49.2334**	0.527	1.1	ug/L	286	Standard
	Pb	207	233772.2	1.4	**49.6819**	0.304	0.6	ug/L	257	Standard
	Pb	208	939106.3	0.8	**51.5898**	0.228	0.4	ug/L	956	Standard
	U	238	351652.3	0.3	**50.9098**	0.427	0.8	ug/L	17	Standard
>	Bi	209	537054.5	1.2				ug/L	557080	Standard

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Na	23	5.0	173.2	**32.8471**	56.884	173.2	mg/L	0	Standard
Mg	24	4075.5	3.9	**5.3128**	0.340	6.4	mg/L	32	Standard
K	39	1373.4	2.2	**4.4475**	0.053	1.2	mg/L	30	Standard
Ca	43	71.7	22.4	**5.4062**	2.324	43.0	mg/L	48	Standard
Fe	54	5589.4	3.1	**4.8672**	0.205	4.2	mg/L	159	Standard
Fe	57	1635.1	4.9	**4.8331**	0.203	4.2	mg/L	195	Standard
Sc-1	45	39994.4	3.1				mg/L	39543	Standard
Cl	35	35754.8	4.0				ug/L	27642	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	3610.5	34.2				ug/L	1647	Standard
P	31	19324.0	4.2				ug/L	15231	Standard
S	34	2706.9	5.1				ug/L	1845	Standard
Sr	88	63.3	27.7				ug/L	70	Standard
C	12	143.3	42.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	5.9	100.8				mg/L	12	Standard
Ho-1	165	20.0	25.0				mg/L	12	Standard
Er	166	16.7	34.6				mg/L	20	Standard
I	127	9711.8	44.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.668		
Al	27	98.683		
Sc	45			
Ti	47	103.461		
V	51	99.952		
Cr	52	102.403		
Cr	53			
Mn	55	102.245		
Co	59	100.961		
Ni	60	101.293		
Cu	65	101.298		
Zn	66	101.265		
Ge	72		95.321	
As	75	99.953		
Se	82	101.412		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	97.553		
Ag	107	96.362		
Cd	111	97.744		
Cd	114			
> In	115			96.668
Sn	118	99.620		
Sb	123	97.800		
Ba	135	97.448		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.179		
Tl	205			
Pb	206			
Pb	207			
Pb	208	103.180		
U	238	101.820		
> Bi	209			96.405
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 21:33:43
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77306.8	2.0				ug/L	81760	Standard
	Be	9	21.7	26.6	**0.0134**	0.006	48.3	ug/L	17	Standard
	Al	27	7303.5	27.4	**0.0355**	0.013	36.3	ug/L	1410	Standard
	Sc	45	38198.1	0.8				ug/L	39543	Standard
	Ti	47	25.7	25.3	**-0.0566**	0.027	47.6	ug/L	39	Standard
	V	51	1109.0	7.8	**-0.0386**	0.015	38.5	ug/L	1415	Standard
	Cr	52	6097.9	0.7	**-0.1350**	0.015	10.8	ug/L	6946	Standard
	Cr	53	763.4	6.1	**0.5733**	0.039	6.9	ug/L	328	Standard
	Mn	55	836.4	10.1	**-0.0128**	0.011	87.4	ug/L	823	Standard
	Co	59	230.3	21.5	**0.0031**	0.007	222.1	ug/L	252	Standard
	Ni	60	176.3	3.3	**-0.0064**	0.005	75.2	ug/L	192	Standard
	Cu	65	147.3	9.8	**-0.0093**	0.007	71.2	ug/L	141	Standard
	Zn	66	414.7	6.5	**-0.4297**	0.019	4.3	ug/L	491	Standard
>	**Ge**	72	489415.0	1.8				ug/L	515087	Standard
	As	75	-13.4	315.6	**0.0274**	0.040	146.9	ug/L	20	Standard
	Se	82	21.4	39.0	**0.0756**	0.076	100.0	ug/L	15	Standard
	Se-1	77	62.3	3.3	**0.1522**	0.035	23.1	ug/L	48	Standard
>	**Ga**	71	55.0	41.7				mg/L	90	Standard
	Rb	85	21.7	26.6				ug/L	23	Standard
	Y	89	425437.4	1.2				ug/L	448510	Standard
>	**Rh**	103	15.0	33.3				ug/L	15	Standard
	Mo	98	273.7	29.6	**0.0854**	0.031	36.3	ug/L	11	Standard
	Ag	107	107.7	30.0	**0.0003**	0.005	1550.1	ug/L	134	Standard
	Cd	111	12.2	52.2	**0.0030**	0.003	103.1	mg/L	7	Standard
	Cd	114	23.6	69.2	**-0.0002**	0.003	1385.1	ug/L	16	Standard
>	**In**	115	592746.5	0.3				ug/L	611117	Standard
	Sn	118	735.0	15.8	**0.0262**	0.020	76.7	ug/L	518	Standard
	Sb	123	418.9	32.2	**0.0787**	0.029	37.2	ug/L	127	Standard
	Ba	135	58.7	27.6	**0.0042**	0.008	193.4	ug/L	45	Standard
	Ce	140	16.7	34.6				ug/L	298	Standard
>	**Tb**	159	928666.7	1.6				ug/L	977942	Standard
	Ho	165	11.7	89.2				ug/L	12	Standard
	Tl	203	77.0	34.1	**0.0046**	0.003	68.4	ug/L	31	Standard
	Tl	205	76.7	35.9	**0.0085**	0.004	45.8	ug/L	20	Standard
	Pb	206	287.0	11.8	**-0.0088**	0.007	78.2	ug/L	286	Standard
	Pb	207	252.0	6.9	**-0.0047**	0.004	83.8	ug/L	257	Standard
	Pb	208	1038.7	6.8	**-0.0037**	0.004	102.1	ug/L	956	Standard
	U	238	52.3	19.6	**0.0046**	0.001	32.5	ug/L	17	Standard
>	**Bi**	209	540535.6	1.1				ug/L	557080	Standard

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Na	23	1.7	173.2	**11.1254**	19.261	173.1	mg/L	0	Standard
Mg	24	41.7	25.0	**0.0002**	0.014	5858.2	mg/L	32	Standard
K	39	25.0	20.0	**-0.0539**	0.018	33.4	mg/L	30	Standard
Ca	43	40.0	25.0	**0.9508**	1.613	169.6	mg/L	48	Standard
Fe	54	117.8	25.5	**-0.0268**	0.028	102.8	mg/L	159	Standard
Fe	57	235.0	7.7	**0.1964**	0.057	28.8	mg/L	195	Standard
Sc-1	45	38198.1	0.8				mg/L	39543	Standard
Cl	35	35245.6	1.5				ug/L	27642	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	2320.2	7.7				ug/L	1647	Standard
P	31	18950.2	2.2				ug/L	15231	Standard
S	34	2475.2	4.2				ug/L	1845	Standard
Sr	88	68.3	27.7				ug/L	70	Standard
C	12	103.3	5.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	0	Standard
Dy	164	8.9	118.0				mg/L	12	Standard
Ho-1	165	11.7	89.2				mg/L	12	Standard
Er	166	23.3	49.5				mg/L	20	Standard
I	127	4469.0	13.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.016	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.994
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.030
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW 82 WG574205-02
Sample Date/Time: Tuesday, June 28, 2016 21:36:55
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77750.7	1.6				ug/L	81760	Standard
	Be	9	23.3	24.7	**0.0149**	0.006	38.5	ug/L	17	Standard
	Al	27	11095.9	27.0	**0.0614**	0.021	33.8	ug/L	1410	Standard
	Sc	45	39309.3	3.2				ug/L	39543	Standard
	Ti	47	35.7	19.9	**-0.0160**	0.027	171.9	ug/L	39	Standard
	V	51	1269.4	3.8	**-0.0162**	0.012	71.1	ug/L	1415	Standard
	Cr	52	7452.2	2.1	**0.0582**	0.015	26.3	ug/L	6946	Standard
	Cr	53	805.0	4.3	**0.6140**	0.043	7.0	ug/L	328	Standard
	Mn	55	3268.0	4.0	**0.3772**	0.034	9.1	ug/L	823	Standard
	Co	59	296.7	4.7	**0.0126**	0.001	9.3	ug/L	252	Standard
	Ni	60	300.3	5.8	**0.0613**	0.013	21.5	ug/L	192	Standard
	Cu	65	252.7	4.2	**0.0478**	0.009	19.3	ug/L	141	Standard
	Zn	66	1868.1	1.9	**0.9480**	0.028	3.0	ug/L	491	Standard
>	**Ge**	72	494530.1	2.9				ug/L	515087	Standard
	As	75	-37.6	66.7	**0.0055**	0.023	429.2	ug/L	20	Standard
	Se	82	15.9	27.5	**0.0238**	0.038	158.5	ug/L	15	Standard
	Se-1	77	56.7	8.0	**0.0642**	0.051	79.2	ug/L	48	Standard
>	**Ga**	71	51.7	31.1				mg/L	90	Standard
	Rb	85	45.0	48.4				ug/L	23	Standard
	Y	89	413936.1	2.9				ug/L	448510	Standard
>	**Rh**	103	23.3	32.7				ug/L	15	Standard
	Mo	98	83.2	8.2	**0.0127**	0.003	23.0	ug/L	11	Standard
	Ag	107	95.3	10.0	**-0.0016**	0.002	102.9	ug/L	134	Standard
	Cd	111	39.5	14.4	**0.0162**	0.003	18.5	mg/L	7	Standard
	Cd	114	83.7	13.3	**0.0117**	0.002	21.2	ug/L	16	Standard
>	**In**	115	592344.0	1.8				ug/L	611117	Standard
	Sn	118	795.0	11.2	**0.0369**	0.017	47.0	ug/L	518	Standard
	Sb	123	176.9	20.5	**0.0258**	0.007	28.3	ug/L	127	Standard
	Ba	135	88.3	8.2	**0.0191**	0.004	22.5	ug/L	45	Standard
	Ce	140	48.3	15.8				ug/L	298	Standard
>	**Tb**	159	936174.2	1.5				ug/L	977942	Standard
	Ho	165	6.7	114.6				ug/L	12	Standard
	Tl	203	128.0	4.9	**0.0106**	0.001	7.1	ug/L	31	Standard
	Tl	205	116.7	44.6	**0.0139**	0.007	52.1	ug/L	20	Standard
	Pb	206	358.0	3.9	**0.0036**	0.003	73.1	ug/L	286	Standard
	Pb	207	341.0	6.5	**0.0129**	0.005	36.4	ug/L	257	Standard
	Pb	208	1292.4	1.6	**0.0090**	0.001	13.2	ug/L	956	Standard
	U	238	93.7	24.0	**0.0103**	0.003	31.1	ug/L	17	Standard
>	**Bi**	209	549438.7	0.1				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.5912**	18.336	173.1	mg/L	0	Standard
Mg	24	55.0	47.2	**0.0170**	0.036	211.2	mg/L	32	Standard
K	39	38.3	52.7	**-0.0104**	0.070	678.8	mg/L	30	Standard
Ca	43	46.7	16.4	**1.7858**	1.139	63.8	mg/L	48	Standard
Fe	54	125.7	11.9	**-0.0224**	0.015	66.3	mg/L	159	Standard
Fe	57	226.7	12.1	**0.1455**	0.093	63.6	mg/L	195	Standard
> **Sc-1**	45	39309.3	3.2				mg/L	39543	Standard
Cl	35	34398.3	0.8				ug/L	27642	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	1940.1	5.9				ug/L	1647	Standard
P	31	18074.1	0.8				ug/L	15231	Standard
S	34	2498.5	3.0				ug/L	1845	Standard
Sr	88	61.7	46.1				ug/L	70	Standard
C	12	113.3	13.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	9.2	3.0				mg/L	12	Standard
Ho-1	165	6.7	114.6				mg/L	12	Standard
Er	166	16.7	34.6				mg/L	20	Standard
I	127	3242.0	12.4				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		95.096	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.009	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.928
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.628
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: LCSW 82 WG574205-03
Sample Date/Time: Tuesday, June 28, 2016 21:40:07
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77370.5	2.5				ug/L	81760	Standard
	Be	9	47069.7	3.6	**50.0685**	0.762	1.5	ug/L	17	Standard
	Al	27	8339.0	0.8	**0.0428**	0.001	2.3	ug/L	1410	Standard
	Sc	45	38442.1	2.3				ug/L	39543	Standard
	Ti	47	32.3	15.3	**-0.0274**	0.023	83.9	ug/L	39	Standard
	V	51	328373.9	1.3	**49.7728**	1.098	2.2	ug/L	1415	Standard
	Cr	52	340284.0	1.1	**50.6522**	0.528	1.0	ug/L	6946	Standard
	Cr	53	43268.4	1.2	**51.8066**	1.337	2.6	ug/L	328	Standard
	Mn	55	314954.5	0.2	**51.2439**	0.720	1.4	ug/L	823	Standard
	Co	59	331722.8	0.6	**49.9116**	0.628	1.3	ug/L	252	Standard
	Ni	60	91188.9	0.7	**51.1120**	0.365	0.7	ug/L	192	Standard
	Cu	65	91760.4	1.1	**50.9900**	0.227	0.4	ug/L	141	Standard
	Zn	66	54150.6	1.3	**51.4287**	0.106	0.2	ug/L	491	Standard
>	**Ge**	72	486985.3	1.4				ug/L	515087	Standard
	As	75	52577.5	0.5	**49.5070**	0.430	0.9	ug/L	20	Standard
	Se	82	5439.8	1.4	**49.8572**	0.058	0.1	ug/L	15	Standard
	Se-1	77	3674.8	1.0	**50.8806**	0.838	1.6	ug/L	48	Standard
>	**Ga**	71	70.0	21.4				mg/L	90	Standard
	Rb	85	35.0	37.8				ug/L	23	Standard
	Y	89	431830.9	0.7				ug/L	448510	Standard
>	**Rh**	103	38.3	15.1				ug/L	15	Standard
	Mo	98	69.3	10.5	**0.0074**	0.003	42.1	ug/L	11	Standard
	Ag	107	312423.9	0.2	**48.0443**	1.285	2.7	ug/L	134	Standard
	Cd	111	99250.2	0.2	**47.9394**	1.102	2.3	mg/L	7	Standard
	Cd	114	241436.3	0.5	**47.9735**	0.947	2.0	ug/L	16	Standard
>	**In**	115	592091.2	2.5				ug/L	611117	Standard
	Sn	118	838.4	9.3	**0.0444**	0.014	30.4	ug/L	518	Standard
	Sb	123	213126.5	0.4	**46.6279**	1.103	2.4	ug/L	127	Standard
	Ba	135	94941.2	1.6	**47.4531**	1.010	2.1	ug/L	45	Standard
	Ce	140	68.3	22.4				ug/L	298	Standard
>	**Tb**	159	920874.0	1.0				ug/L	977942	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	395784.4	0.5	**49.2144**	0.506	1.0	ug/L	31	Standard
	Tl	205	352148.8	0.9	**50.4246**	0.261	0.5	ug/L	20	Standard
	Pb	206	261292.0	1.2	**50.5931**	0.633	1.3	ug/L	286	Standard
	Pb	207	229140.8	1.1	**49.1895**	0.516	1.0	ug/L	257	Standard
	Pb	208	939702.2	0.3	**52.1447**	0.484	0.9	ug/L	956	Standard
	U	238	338970.6	0.7	**49.5659**	0.166	0.3	ug/L	17	Standard
>	**Bi**	209	531689.3	0.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	35.0	0.0	**-0.0092**	0.001	12.0	mg/L	32	Standard
K	39	35.0	42.9	**-0.0195**	0.052	268.3	mg/L	30	Standard
Ca	43	38.3	32.8	**0.6220**	1.885	303.1	mg/L	48	Standard
Fe	54	132.7	8.8	**-0.0133**	0.014	103.8	mg/L	159	Standard
Fe	57	226.7	10.4	**0.1628**	0.084	51.6	mg/L	195	Standard
> **Sc-1**	45	38442.1	2.3				mg/L	39543	Standard
Cl	35	35188.8	3.0				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1823.4	6.0				ug/L	1647	Standard
P	31	17611.9	0.6				ug/L	15231	Standard
S	34	2310.2	2.3				ug/L	1845	Standard
Sr	88	75.0	17.6				ug/L	70	Standard
C	12	96.7	46.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	5.9	194.5				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	16.7	34.6				mg/L	20	Standard
I	127	2716.9	12.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.631	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.544	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.887
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.442
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 82 WG574205-03
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Method 6020 - Summary Report

Sample ID: L1606134301 WG574205-01
Sample Date/Time: Tuesday, June 28, 2016 21:43:18
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74323.5	0.8				ug/L	81760	Standard
	Be	9	31.7	36.5	**0.0253**	0.013	49.8	ug/L	17	Standard
	Al	27	2998278.2	0.6	**21.3833**	0.050	0.2	ug/L	1410	Standard
	Sc	45	38510.6	3.3				ug/L	39543	Standard
	Ti	47	232.7	4.1	**0.8126**	0.032	3.9	ug/L	39	Standard
	V	51	1652.5	23.4	**0.0414**	0.055	131.6	ug/L	1415	Standard
	Cr	52	135321.3	0.7	**19.2638**	0.330	1.7	ug/L	6946	Standard
	Cr	53	19187.1	1.5	**22.5044**	0.281	1.2	ug/L	328	Standard
	Mn	55	3959.9	4.4	**0.4904**	0.040	8.1	ug/L	823	Standard
	Co	59	833.7	4.3	**0.0927**	0.008	8.3	ug/L	252	Standard
	Ni	60	44655.7	0.7	**24.6837**	0.632	2.6	ug/L	192	Standard
	Cu	65	31746.9	0.7	**17.3740**	0.276	1.6	ug/L	141	Standard
	Zn	66	57137.2	0.4	**53.6669**	1.121	2.1	ug/L	491	Standard
>	**Ge**	72	492860.3	1.9				ug/L	515087	Standard
	As	75	122.8	20.0	**0.1545**	0.023	14.7	ug/L	20	Standard
	Se	82	36.2	8.8	**0.2097**	0.035	16.8	ug/L	15	Standard
	Se-1	77	205.3	7.5	**2.1323**	0.253	11.9	ug/L	48	Standard
>	**Ga**	71	501.7	15.2				mg/L	90	Standard
	Rb	85	10964.0	0.9				ug/L	23	Standard
	Y	89	418533.1	1.8				ug/L	448510	Standard
>	**Rh**	103	56.7	31.0				ug/L	15	Standard
	Mo	98	2829.4	1.2	**1.1053**	0.009	0.8	ug/L	11	Standard
	Ag	107	25274.7	1.2	**4.0283**	0.033	0.8	ug/L	134	Standard
	Cd	111	119.1	9.1	**0.0569**	0.005	9.6	mg/L	7	Standard
	Cd	114	490.9	6.4	**0.0966**	0.006	6.7	ug/L	16	Standard
>	**In**	115	568910.2	0.4				ug/L	611117	Standard
	Sn	118	49674.7	2.3	**8.9227**	0.228	2.6	ug/L	518	Standard
	Sb	123	2415.2	17.6	**0.5368**	0.095	17.6	ug/L	127	Standard
	Ba	135	20410.1	0.9	**10.5946**	0.091	0.9	ug/L	45	Standard
	Ce	140	566.7	11.5				ug/L	298	Standard
>	**Tb**	159	895351.1	0.7				ug/L	977942	Standard
	Ho	165	20.0	25.0				ug/L	12	Standard
	Tl	203	216.3	14.7	**0.0231**	0.004	18.6	ug/L	31	Standard
	Tl	205	211.7	17.7	**0.0291**	0.005	18.1	ug/L	20	Standard
	Pb	206	14582.7	1.0	**2.8682**	0.053	1.8	ug/L	286	Standard
	Pb	207	11703.2	0.8	**2.5502**	0.014	0.5	ug/L	257	Standard
	Pb	208	49274.0	0.6	**2.7782**	0.042	1.5	ug/L	956	Standard
	U	238	116.0	23.9	**0.0146**	0.004	29.7	ug/L	17	Standard
>	**Bi**	209	512746.8	0.9				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	23663.5	1.4	**32.3162**	1.385	4.3	mg/L	32	Standard
K	39	683.3	9.3	**2.2286**	0.197	8.8	mg/L	30	Standard
Ca	43	95.0	32.9	**9.3774**	4.330	46.2	mg/L	48	Standard
Fe	54	183.2	7.6	**0.0331**	0.009	27.1	mg/L	159	Standard
Fe	57	263.3	14.4	**0.2873**	0.119	41.4	mg/L	195	Standard
> **Sc-1**	45	38510.6	3.3				mg/L	39543	Standard
Cl	35	35170.8	1.9				ug/L	27642	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	3347.0	4.4				ug/L	1647	Standard
P	31	18034.1	2.9				ug/L	15231	Standard
S	34	2231.8	5.1				ug/L	1845	Standard
Sr	88	143.3	22.7				ug/L	70	Standard
C	12	123.3	47.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	12.4	90.1				mg/L	12	Standard
Ho-1	165	20.0	25.0				mg/L	12	Standard
Er	166	20.0	86.6				mg/L	20	Standard
I	127	33806.0	2.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.904	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.685	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.094
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.042
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606134301DP WG574205-04
Sample Date/Time: Tuesday, June 28, 2016 21:46:30
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75650.1	1.3				ug/L	81760	Standard
	Be	9	38.3	7.5	**0.0320**	0.004	11.5	ug/L	17	Standard
	Al	27	3034197.2	1.7	**21.2640**	0.568	2.7	ug/L	1410	Standard
	Sc	45	38358.5	1.6				ug/L	39543	Standard
	Ti	47	242.3	3.4	**0.8481**	0.030	3.6	ug/L	39	Standard
	V	51	2921.5	21.4	**0.2301**	0.091	39.7	ug/L	1415	Standard
	Cr	52	132102.7	0.7	**18.6755**	0.034	0.2	ug/L	6946	Standard
	Cr	53	19672.8	2.2	**22.9627**	0.596	2.6	ug/L	328	Standard
	Mn	55	13082.6	2.2	**1.9497**	0.036	1.8	ug/L	823	Standard
	Co	59	922.0	4.8	**0.1051**	0.006	5.6	ug/L	252	Standard
	Ni	60	44071.0	1.0	**24.2264**	0.187	0.8	ug/L	192	Standard
	Cu	65	31222.8	1.1	**16.9947**	0.096	0.6	ug/L	141	Standard
	Zn	66	55768.5	0.9	**52.0764**	0.197	0.4	ug/L	491	Standard
>	**Ge**	72	495382.5	0.5				ug/L	515087	Standard
	As	75	105.3	17.2	**0.1377**	0.017	12.5	ug/L	20	Standard
	Se	82	31.4	9.3	**0.1642**	0.025	15.2	ug/L	15	Standard
	Se-1	77	224.7	3.6	**2.3824**	0.126	5.3	ug/L	48	Standard
>	**Ga**	71	485.0	9.9				mg/L	90	Standard
	Rb	85	10640.4	0.2				ug/L	23	Standard
	Y	89	407749.6	1.6				ug/L	448510	Standard
>	**Rh**	103	56.7	27.0				ug/L	15	Standard
	Mo	98	2759.9	2.4	**1.0902**	0.013	1.1	ug/L	11	Standard
	Ag	107	24718.5	0.6	**3.9851**	0.067	1.7	ug/L	134	Standard
	Cd	111	119.1	7.2	**0.0577**	0.005	8.8	mg/L	7	Standard
	Cd	114	389.6	30.3	**0.0764**	0.024	30.9	ug/L	16	Standard
>	**In**	115	562489.2	1.2				ug/L	611117	Standard
	Sn	118	48104.7	5.2	**8.7400**	0.532	6.1	ug/L	518	Standard
	Sb	123	1085.9	11.8	**0.2370**	0.026	11.2	ug/L	127	Standard
	Ba	135	21279.9	0.9	**11.1745**	0.156	1.4	ug/L	45	Standard
	Ce	140	1446.7	1.7				ug/L	298	Standard
>	**Tb**	159	899809.7	0.9				ug/L	977942	Standard
	Ho	165	38.3	37.7				ug/L	12	Standard
	Tl	203	211.3	8.9	**0.0223**	0.003	11.4	ug/L	31	Standard
	Tl	205	171.7	14.4	**0.0230**	0.004	16.6	ug/L	20	Standard
	Pb	206	14329.4	1.7	**2.7934**	0.069	2.5	ug/L	286	Standard
	Pb	207	11471.7	1.5	**2.4775**	0.050	2.0	ug/L	257	Standard
	Pb	208	48196.5	1.3	**2.6929**	0.035	1.3	ug/L	956	Standard
	U	238	162.0	9.3	**0.0214**	0.002	11.2	ug/L	17	Standard
>	**Bi**	209	517046.0	0.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	23364.7	1.2	**32.0144**	0.886	2.8	mg/L	32	Standard
K	39	620.0	6.9	**2.0197**	0.176	8.7	mg/L	30	Standard
Ca	43	98.3	39.5	**10.0220**	6.022	60.1	mg/L	48	Standard
Fe	54	175.4	14.5	**0.0269**	0.026	96.7	mg/L	159	Standard
Fe	57	298.3	7.6	**0.4146**	0.094	22.7	mg/L	195	Standard
> **Sc-1**	45	38358.5	1.6				mg/L	39543	Standard
Cl	35	35843.0	1.2				ug/L	27642	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	4177.2	4.7				ug/L	1647	Standard
P	31	18070.8	1.2				ug/L	15231	Standard
S	34	2273.5	5.8				ug/L	1845	Standard
Sr	88	125.0	20.0				ug/L	70	Standard
C	12	143.3	21.3				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	0	Standard
Dy	164	45.4	50.3				mg/L	12	Standard
Ho-1	165	38.3	37.7				mg/L	12	Standard
Er	166	26.7	21.7				mg/L	20	Standard
I	127	32309.4	0.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.527	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.175	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		92.043
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.814
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606134301S WG574205-05
Sample Date/Time: Tuesday, June 28, 2016 21:49:41
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	76159.4	2.8				ug/L	81760	Standard
	Be	9	48450.7	1.7	**52.3785**	0.949	1.8	ug/L	17	Standard
	Al	27	2895043.9	1.0	**20.1618**	0.737	3.7	ug/L	1410	Standard
	Sc	45	38742.8	1.9				ug/L	39543	Standard
	Ti	47	240.0	7.2	**0.8720**	0.082	9.4	ug/L	39	Standard
	V	51	323841.2	0.8	**49.8512**	0.902	1.8	ug/L	1415	Standard
	Cr	52	453207.8	1.4	**68.8842**	0.591	0.9	ug/L	6946	Standard
	Cr	53	60472.1	1.8	**73.6607**	0.780	1.1	ug/L	328	Standard
	Mn	55	309167.0	1.2	**51.0846**	0.705	1.4	ug/L	823	Standard
	Co	59	322466.2	0.8	**49.2767**	0.754	1.5	ug/L	252	Standard
	Ni	60	129806.7	1.0	**73.9391**	0.553	0.7	ug/L	192	Standard
	Cu	65	118360.2	1.2	**66.8253**	0.317	0.5	ug/L	141	Standard
	Zn	66	105137.5	0.6	**102.2235**	1.030	1.0	ug/L	491	Standard
>	Ge	72	479488.8	1.1				ug/L	515087	Standard
	As	75	53941.4	1.7	**51.5891**	1.400	2.7	ug/L	20	Standard
	Se	82	5350.1	0.9	**49.8082**	0.982	2.0	ug/L	15	Standard
	Se-1	77	3727.1	2.1	**52.4361**	1.513	2.9	ug/L	48	Standard
>	Ga	71	476.7	2.2				mg/L	90	Standard
	Rb	85	10533.7	3.9				ug/L	23	Standard
	Y	89	417307.7	1.3				ug/L	448510	Standard
>	Rh	103	73.3	25.8				ug/L	15	Standard
	Mo	98	2762.6	0.6	**1.0591**	0.012	1.2	ug/L	11	Standard
	Ag	107	321242.3	0.9	**50.4672**	0.741	1.5	ug/L	134	Standard
	Cd	111	96845.5	0.4	**47.7898**	0.498	1.0	mg/L	7	Standard
	Cd	114	233334.7	1.1	**47.3688**	0.646	1.4	ug/L	16	Standard
>	In	115	579360.0	0.8				ug/L	611117	Standard
	Sn	118	55146.4	13.8	**9.7304**	1.292	13.3	ug/L	518	Standard
	Sb	123	221114.9	0.1	**49.4220**	0.385	0.8	ug/L	127	Standard
	Ba	135	112895.7	0.5	**57.6594**	0.626	1.1	ug/L	45	Standard
	Ce	140	313.3	11.5				ug/L	298	Standard
>	Tb	159	912553.5	0.8				ug/L	977942	Standard
	Ho	165	15.0	66.7				ug/L	12	Standard
	Tl	203	384933.8	0.5	**49.0255**	0.608	1.2	ug/L	31	Standard
	Tl	205	344367.9	0.4	**50.5097**	0.783	1.5	ug/L	20	Standard
	Pb	206	266968.5	0.3	**52.9500**	0.690	1.3	ug/L	286	Standard
	Pb	207	232893.3	0.6	**51.2096**	0.463	0.9	ug/L	257	Standard
	Pb	208	948808.9	1.4	**53.9303**	1.097	2.0	ug/L	956	Standard
	U	238	335133.4	0.9	**50.1950**	0.747	1.5	ug/L	17	Standard
>	Bi	209	519140.8	1.4				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	23122.6	1.5	**31.3670**	0.821	2.6	mg/L	32	Standard
K	39	550.0	13.4	**1.7528**	0.224	12.8	mg/L	30	Standard
Ca	43	93.3	3.1	**9.1209**	0.222	2.4	mg/L	48	Standard
Fe	54	147.8	38.5	**0.0002**	0.055	34709.4	mg/L	159	Standard
Fe	57	261.7	11.7	**0.2782**	0.120	43.1	mg/L	195	Standard
> **Sc-1**	45	38742.8	1.9				mg/L	39543	Standard
Cl	35	35887.1	0.6				ug/L	27642	Standard
Kr	83	2.3	89.2				ug/L	2	Standard
Br	81	3013.6	4.3				ug/L	1647	Standard
P	31	18511.3	3.1				ug/L	15231	Standard
S	34	2173.5	7.9				ug/L	1845	Standard
Sr	88	115.0	4.3				ug/L	70	Standard
C	12	143.3	35.1				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	12.7	50.0				mg/L	12	Standard
Ho-1	165	15.0	66.7				mg/L	12	Standard
Er	166	13.3	114.6				mg/L	20	Standard
I	127	29318.3	1.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.150	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.089	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.804
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.190
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1606134301SD WG574205-06
Sample Date/Time: Tuesday, June 28, 2016 21:52:53
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74233.3	4.4				ug/L	81760	Standard
	Be	9	46944.3	0.7	**52.1161**	2.208	4.2	ug/L	17	Standard
	Al	27	2867977.1	1.8	**20.5130**	1.211	5.9	ug/L	1410	Standard
	Sc	45	37107.1	4.7				ug/L	39543	Standard
	Ti	47	208.3	2.4	**0.7439**	0.023	3.1	ug/L	39	Standard
	V	51	314357.5	0.7	**48.8632**	0.269	0.5	ug/L	1415	Standard
	Cr	52	443013.9	1.2	**67.9920**	0.699	1.0	ug/L	6946	Standard
	Cr	53	57726.4	1.5	**71.0049**	0.771	1.1	ug/L	328	Standard
	Mn	55	299003.6	1.5	**49.8899**	0.541	1.1	ug/L	823	Standard
	Co	59	310607.5	1.9	**47.9296**	0.658	1.4	ug/L	252	Standard
	Ni	60	125816.0	1.4	**72.3742**	0.740	1.0	ug/L	192	Standard
	Cu	65	116930.9	2.0	**66.6728**	1.005	1.5	ug/L	141	Standard
	Zn	66	105389.9	0.9	**103.4925**	0.359	0.3	ug/L	491	Standard
>	**Ge**	72	474757.8	0.5				ug/L	515087	Standard
	As	75	52320.0	1.0	**50.5276**	0.214	0.4	ug/L	20	Standard
	Se	82	5199.8	1.3	**48.8839**	0.776	1.6	ug/L	15	Standard
	Se-1	77	3645.4	2.7	**51.7794**	1.336	2.6	ug/L	48	Standard
>	**Ga**	71	471.7	1.2				mg/L	90	Standard
	Rb	85	10923.9	0.7				ug/L	23	Standard
	Y	89	414912.1	1.8				ug/L	448510	Standard
>	**Rh**	103	51.7	22.3				ug/L	15	Standard
	Mo	98	2810.6	3.1	**1.1098**	0.050	4.5	ug/L	11	Standard
	Ag	107	309794.3	1.1	**50.0964**	1.925	3.8	ug/L	134	Standard
	Cd	111	92939.1	0.1	**47.2004**	1.405	3.0	mg/L	7	Standard
	Cd	114	227712.2	0.8	**47.5835**	1.757	3.7	ug/L	16	Standard
>	**In**	115	563239.5	3.0				ug/L	611117	Standard
	Sn	118	48800.3	6.0	**8.8657**	0.749	8.5	ug/L	518	Standard
	Sb	123	213681.9	0.5	**49.1574**	1.598	3.3	ug/L	127	Standard
	Ba	135	108173.8	0.8	**56.8630**	1.899	3.3	ug/L	45	Standard
	Ce	140	258.3	11.8				ug/L	298	Standard
>	**Tb**	159	874543.1	3.3				ug/L	977942	Standard
	Ho	165	16.7	62.4				ug/L	12	Standard
	Tl	203	370949.6	0.9	**49.2226**	1.185	2.4	ug/L	31	Standard
	Tl	205	332170.0	0.6	**50.7579**	1.084	2.1	ug/L	20	Standard
	Pb	206	260124.0	0.8	**53.7518**	1.191	2.2	ug/L	286	Standard
	Pb	207	226333.8	1.1	**51.8538**	1.336	2.6	ug/L	257	Standard
	Pb	208	924176.8	1.2	**54.7310**	1.509	2.8	ug/L	956	Standard
	U	238	327055.2	1.2	**51.0349**	1.235	2.4	ug/L	17	Standard
>	**Bi**	209	498348.0	1.6				ug/L	557080	Standard

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Na	23	5.0	173.2	**33.3751**	57.799	173.2	mg/L	0	Standard
Mg	24	22616.9	1.7	**32.0867**	1.983	6.2	mg/L	32	Standard
K	39	585.0	8.2	**1.9630**	0.088	4.5	mg/L	30	Standard
Ca	43	106.7	21.1	**11.9418**	3.627	30.4	mg/L	48	Standard
Fe	54	143.6	9.6	**0.0016**	0.013	810.1	mg/L	159	Standard
Fe	57	260.0	25.0	**0.3188**	0.279	87.4	mg/L	195	Standard
> **Sc-1**	45	37107.1	4.7				mg/L	39543	Standard
Cl	35	35012.4	2.2				ug/L	27642	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	3463.7	1.0				ug/L	1647	Standard
P	31	17954.0	1.9				ug/L	15231	Standard
S	34	2235.2	3.1				ug/L	1845	Standard
Sr	88	115.0	27.2				ug/L	70	Standard
C	12	173.3	16.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	0	Standard
Dy	164	16.2	97.3				mg/L	12	Standard
Ho-1	165	16.7	62.4				mg/L	12	Standard
Er	166	10.0	100.0				mg/L	20	Standard
I	127	29468.6	2.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.794	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.170	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		92.166
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		89.457
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1606073201
Sample Date/Time: Tuesday, June 28, 2016 21:56:04
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79995.7	1.9				ug/L	81760	Standard
	Be	9	111.7	43.0	**0.1055**	0.050	47.4	ug/L	17	Standard
	Al	27	26418031.8	2.7	**175.1861**	5.381	3.1	ug/L	1410	Standard
	Sc	45	39758.8	3.3				ug/L	39543	Standard
	Ti	47	586.7	3.3	**2.3079**	0.104	4.5	ug/L	39	Standard
	V	51	2345.3	13.2	**0.1468**	0.044	29.9	ug/L	1415	Standard
	Cr	52	26092.8	3.1	**2.8709**	0.089	3.1	ug/L	6946	Standard
	Cr	53	22536.8	6.4	**26.5559**	1.479	5.6	ug/L	328	Standard
	Mn	55	128770.6	1.1	**20.6681**	0.068	0.3	ug/L	823	Standard
	Co	59	4370.6	1.2	**0.6206**	0.009	1.4	ug/L	252	Standard
	Ni	60	4217.9	1.8	**2.2421**	0.029	1.3	ug/L	192	Standard
	Cu	65	1551.7	2.2	**0.7650**	0.010	1.3	ug/L	141	Standard
	Zn	66	53557.8	1.5	**50.3807**	0.333	0.7	ug/L	491	Standard
>	**Ge**	72	491490.5	1.0				ug/L	515087	Standard
	As	75	918.5	14.0	**0.8957**	0.112	12.5	ug/L	20	Standard
	Se	82	316.6	5.4	**2.7619**	0.129	4.7	ug/L	15	Standard
	Se-1	77	1234.4	4.8	**16.4500**	0.704	4.3	ug/L	48	Standard
>	**Ga**	71	80.0	6.3				mg/L	90	Standard
	Rb	85	7720.3	1.4				ug/L	23	Standard
	Y	89	403861.7	0.4				ug/L	448510	Standard
>	**Rh**	103	80.0	50.0				ug/L	15	Standard
	Mo	98	355.0	5.6	**0.1283**	0.008	5.9	ug/L	11	Standard
	Ag	107	141.3	9.2	**0.0074**	0.002	31.2	ug/L	134	Standard
	Cd	111	202.7	10.3	**0.1036**	0.012	11.2	mg/L	7	Standard
	Cd	114	507.6	13.6	**0.1047**	0.015	13.9	ug/L	16	Standard
>	**In**	115	544497.8	0.6				ug/L	611117	Standard
	Sn	118	1023.4	24.9	**0.0925**	0.050	53.7	ug/L	518	Standard
	Sb	123	669.1	12.6	**0.1463**	0.019	13.2	ug/L	127	Standard
	Ba	135	206763.5	2.5	**112.3722**	2.187	1.9	ug/L	45	Standard
	Ce	140	411.7	6.1				ug/L	298	Standard
>	**Tb**	159	889575.8	1.3				ug/L	977942	Standard
	Ho	165	35.0	37.8				ug/L	12	Standard
	Tl	203	749.0	2.3	**0.0953**	0.003	3.6	ug/L	31	Standard
	Tl	205	685.0	13.9	**0.1029**	0.013	12.2	ug/L	20	Standard
	Pb	206	776.0	1.1	**0.0981**	0.006	5.8	ug/L	286	Standard
	Pb	207	670.3	1.0	**0.0968**	0.005	4.8	ug/L	257	Standard
	Pb	208	2692.4	0.9	**0.1003**	0.005	4.6	ug/L	956	Standard
	U	238	1446.7	3.3	**0.2244**	0.006	2.7	ug/L	17	Standard
>	**Bi**	209	494871.3	2.5				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.6945**	18.515	173.1	mg/L	0	Standard
Mg	24	122893.2	2.3	**162.6797**	1.668	1.0	mg/L	32	Standard
K	39	163.3	4.7	**0.4080**	0.035	8.6	mg/L	30	Standard
Ca	43	160.0	24.8	**18.8525**	6.186	32.8	mg/L	48	Standard
Fe	54	210.9	15.7	**0.0529**	0.031	58.0	mg/L	159	Standard
Fe	57	311.7	8.2	**0.4207**	0.052	12.3	mg/L	195	Standard
> **Sc-1**	45	39758.8	3.3				mg/L	39543	Standard
Cl	35	36983.1	0.7				ug/L	27642	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	75233.3	4.9				ug/L	1647	Standard
P	31	24466.4	2.9				ug/L	15231	Standard
S	34	2258.5	3.0				ug/L	1845	Standard
Sr	88	378.3	24.5				ug/L	70	Standard
C	12	350.0	10.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	120.9	45.9				mg/L	12	Standard
Ho-1	165	35.0	37.8				mg/L	12	Standard
Er	166	50.0	20.0				mg/L	20	Standard
I	127	539973.2	10.6				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		97.842	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		95.419	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.099
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		88.833
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606073201PS WG574571-01
Sample Date/Time: Tuesday, June 28, 2016 21:59:15
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83254.8	1.5				ug/L	81760	Standard
	Be	9	50562.6	1.1	**49.9976**	0.969	1.9	ug/L	17	Standard
	Al	27	27107676.6	2.1	**172.7073**	3.970	2.3	ug/L	1410	Standard
	Sc	45	41809.3	4.0				ug/L	39543	Standard
	Ti	47	632.7	1.1	**2.4753**	0.055	2.2	ug/L	39	Standard
	V	51	341856.0	1.3	**50.8320**	0.708	1.4	ug/L	1415	Standard
	Cr	52	363663.1	1.5	**53.1642**	1.402	2.6	ug/L	6946	Standard
	Cr	53	65238.5	1.6	**76.7756**	0.750	1.0	ug/L	328	Standard
	Mn	55	438903.0	0.5	**70.1258**	2.130	3.0	ug/L	823	Standard
	Co	59	331676.0	1.2	**48.9632**	1.267	2.6	ug/L	252	Standard
	Ni	60	91787.9	1.2	**50.4717**	0.832	1.6	ug/L	192	Standard
	Cu	65	90254.4	2.3	**49.1926**	0.475	1.0	ug/L	141	Standard
	Zn	66	107316.4	1.1	**100.7774**	1.488	1.5	ug/L	491	Standard
>	**Ge**	72	496483.6	2.5				ug/L	515087	Standard
	As	75	55410.9	1.5	**51.1805**	0.552	1.1	ug/L	20	Standard
	Se	82	5728.8	0.9	**51.5315**	1.616	3.1	ug/L	15	Standard
	Se-1	77	4873.5	1.7	**66.4041**	0.559	0.8	ug/L	48	Standard
>	**Ga**	71	86.7	34.8				mg/L	90	Standard
	Rb	85	8242.2	2.9				ug/L	23	Standard
	Y	89	419418.3	1.5				ug/L	448510	Standard
>	**Rh**	103	96.7	18.2				ug/L	15	Standard
	Mo	98	373.5	3.6	**0.1304**	0.006	4.5	ug/L	11	Standard
	Ag	107	276030.5	2.3	**44.4706**	1.418	3.2	ug/L	134	Standard
	Cd	111	97190.1	1.0	**49.1769**	0.174	0.4	mg/L	7	Standard
	Cd	114	234963.3	0.8	**48.9150**	0.797	1.6	ug/L	16	Standard
>	**In**	115	564991.8	0.9				ug/L	611117	Standard
	Sn	118	1183.4	5.3	**0.1145**	0.011	9.2	ug/L	518	Standard
	Sb	123	221298.1	1.9	**50.7268**	1.390	2.7	ug/L	127	Standard
	Ba	135	302634.3	0.9	**158.5372**	1.746	1.1	ug/L	45	Standard
	Ce	140	460.0	11.5				ug/L	298	Standard
>	**Tb**	159	913205.8	1.2				ug/L	977942	Standard
	Ho	165	30.0	16.7				ug/L	12	Standard
	Tl	203	392737.2	0.1	**50.5926**	0.297	0.6	ug/L	31	Standard
	Tl	205	346685.2	1.3	**51.4296**	0.576	1.1	ug/L	20	Standard
	Pb	206	257242.2	1.9	**51.6050**	1.169	2.3	ug/L	286	Standard
	Pb	207	223447.5	1.6	**49.6960**	0.910	1.8	ug/L	257	Standard
	Pb	208	904356.3	0.4	**51.9882**	0.250	0.5	ug/L	956	Standard
	U	238	346838.0	0.8	**52.5438**	0.601	1.1	ug/L	17	Standard
>	**Bi**	209	513215.0	0.6				ug/L	557080	Standard

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Na	23	1.7	173.2	**9.7143**	16.817	173.1	mg/L	0	Standard
Mg	24	126816.9	1.1	**159.8003**	7.491	4.7	mg/L	32	Standard
K	39	205.0	11.2	**0.5135**	0.066	12.9	mg/L	30	Standard
Ca	43	170.0	5.9	**19.0779**	1.160	6.1	mg/L	48	Standard
Fe	54	195.8	12.4	**0.0303**	0.016	52.3	mg/L	159	Standard
Fe	57	350.0	26.8	**0.4863**	0.252	51.8	mg/L	195	Standard
> **Sc-1**	45	41809.3	4.0				mg/L	39543	Standard
Cl	35	38499.5	1.5				ug/L	27642	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	75812.6	2.8				ug/L	1647	Standard
P	31	25067.4	2.7				ug/L	15231	Standard
S	34	2465.2	4.5				ug/L	1845	Standard
Sr	88	373.3	2.8				ug/L	70	Standard
C	12	380.0	17.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	29.2	88.7				mg/L	12	Standard
Ho-1	165	30.0	16.7				mg/L	12	Standard
Er	166	16.7	69.3				mg/L	20	Standard
I	127	574284.0	7.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.828	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.388	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	92.452
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	92.126
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606073202SDL WG574571-02
Sample Date/Time: Tuesday, June 28, 2016 22:02:27
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80721.2	1.7				ug/L	81760	Standard
	Be	9	38.3	19.9	**0.0293**	0.007	25.3	ug/L	17	Standard
	Al	27	5438081.5	1.8	**35.7222**	0.611	1.7	ug/L	1410	Standard
	Sc	45	40838.3	2.8				ug/L	39543	Standard
	Ti	47	147.3	1.4	**0.4611**	0.014	3.1	ug/L	39	Standard
	V	51	1818.8	6.0	**0.0702**	0.022	30.8	ug/L	1415	Standard
	Cr	52	11457.0	0.2	**0.6827**	0.037	5.5	ug/L	6946	Standard
	Cr	53	6112.9	0.7	**7.0202**	0.190	2.7	ug/L	328	Standard
	Mn	55	27400.4	0.7	**4.3193**	0.101	2.3	ug/L	823	Standard
	Co	59	1102.0	5.1	**0.1343**	0.005	3.9	ug/L	252	Standard
	Ni	60	1029.7	4.0	**0.4727**	0.014	2.9	ug/L	192	Standard
	Cu	65	552.3	3.6	**0.2164**	0.013	6.0	ug/L	141	Standard
	Zn	66	17277.2	1.2	**15.8333**	0.273	1.7	ug/L	491	Standard
>	**Ge**	72	487411.0	2.0				ug/L	515087	Standard
	As	75	241.2	19.0	**0.2666**	0.040	15.0	ug/L	20	Standard
	Se	82	96.0	8.9	**0.7616**	0.066	8.7	ug/L	15	Standard
	Se-1	77	318.7	3.3	**3.7527**	0.181	4.8	ug/L	48	Standard
>	**Ga**	71	61.7	24.8				mg/L	90	Standard
	Rb	85	1698.4	2.7				ug/L	23	Standard
	Y	89	428587.6	1.1				ug/L	448510	Standard
>	**Rh**	103	33.3	37.7				ug/L	15	Standard
	Mo	98	99.2	5.5	**0.0185**	0.002	11.0	ug/L	11	Standard
	Ag	107	280.0	31.3	**0.0265**	0.013	49.6	ug/L	134	Standard
	Cd	111	57.2	23.8	**0.0245**	0.006	26.0	mg/L	7	Standard
	Cd	114	159.7	10.5	**0.0266**	0.003	11.9	ug/L	16	Standard
>	**In**	115	596430.5	0.6				ug/L	611117	Standard
	Sn	118	631.7	19.2	**0.0076**	0.022	282.9	ug/L	518	Standard
	Sb	123	2037.7	21.9	**0.4301**	0.100	23.2	ug/L	127	Standard
	Ba	135	42595.5	1.1	**21.1150**	0.168	0.8	ug/L	45	Standard
	Ce	140	145.0	24.9				ug/L	298	Standard
>	**Tb**	159	930009.8	1.5				ug/L	977942	Standard
	Ho	165	10.0					ug/L	12	Standard
	Tl	203	287.0	3.9	**0.0311**	0.001	3.3	ug/L	31	Standard
	Tl	205	238.3	17.8	**0.0321**	0.006	20.0	ug/L	20	Standard
	Pb	206	467.7	4.1	**0.0276**	0.003	10.6	ug/L	286	Standard
	Pb	207	403.3	2.0	**0.0292**	0.001	2.3	ug/L	257	Standard
	Pb	208	1685.7	2.5	**0.0338**	0.002	5.7	ug/L	956	Standard
	U	238	344.0	11.7	**0.0476**	0.005	11.0	ug/L	17	Standard
>	**Bi**	209	528241.9	1.3				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	25095.8	1.4	**32.3042**	0.912	2.8	mg/L	32	Standard
K	39	53.3	28.6	**0.0336**	0.053	158.1	mg/L	30	Standard
Ca	43	51.7	14.8	**2.2359**	0.907	40.5	mg/L	48	Standard
Fe	54	140.6	10.4	**-0.0136**	0.016	114.2	mg/L	159	Standard
Fe	57	253.3	13.1	**0.2033**	0.104	51.3	mg/L	195	Standard
> **Sc-1**	45	40838.3	2.8				mg/L	39543	Standard
Cl	35	38490.2	0.9				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	17116.3	3.1				ug/L	1647	Standard
P	31	18993.6	2.2				ug/L	15231	Standard
S	34	2316.8	7.4				ug/L	1845	Standard
Sr	88	121.7	17.1				ug/L	70	Standard
C	12	150.0	13.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	5.2	126.3				mg/L	12	Standard
Ho-1	165	10.0					mg/L	12	Standard
Er	166	30.0	57.7				mg/L	20	Standard
I	127	133767.9	0.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.729	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.627	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.597
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.823
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606073202SDL WG574571-02
Sample Date/Time: Tuesday, June 28, 2016 22:05:38
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76053.8	2.7				ug/L	81760	Standard
	Be	9	25.0	34.6	**0.0174**	0.009	54.5	ug/L	17	Standard
	Al	27	1128796.7	0.4	**7.8615**	0.198	2.5	ug/L	1410	Standard
	Sc	45	38686.0	0.8				ug/L	39543	Standard
	Ti	47	55.3	34.5	**0.0617**	0.078	127.2	ug/L	39	Standard
	V	51	1638.9	5.5	**0.0337**	0.013	38.4	ug/L	1415	Standard
	Cr	52	8717.5	0.5	**0.2193**	0.011	4.9	ug/L	6946	Standard
	Cr	53	2070.1	6.6	**2.0621**	0.160	7.7	ug/L	328	Standard
	Mn	55	6629.8	1.0	**0.8938**	0.008	0.9	ug/L	823	Standard
	Co	59	385.0	3.7	**0.0245**	0.002	8.1	ug/L	252	Standard
	Ni	60	384.7	1.7	**0.1032**	0.003	2.7	ug/L	192	Standard
	Cu	65	339.7	2.9	**0.0913**	0.005	5.2	ug/L	141	Standard
	Zn	66	9883.2	1.3	**8.3627**	0.143	1.7	ug/L	491	Standard
>	**Ge**	72	505388.6	0.3				ug/L	515087	Standard
	As	75	-13.0	254.9	**0.0286**	0.030	104.7	ug/L	20	Standard
	Se	82	27.4	29.7	**0.1233**	0.072	58.7	ug/L	15	Standard
	Se-1	77	108.0	8.5	**0.7425**	0.129	17.3	ug/L	48	Standard
>	**Ga**	71	48.3	46.6				mg/L	90	Standard
	Rb	85	370.0	8.2				ug/L	23	Standard
	Y	89	428119.2	2.9				ug/L	448510	Standard
>	**Rh**	103	23.3	44.6				ug/L	15	Standard
	Mo	98	45.2	4.1	**-0.0015**	0.001	60.8	ug/L	11	Standard
	Ag	107	113.3	16.4	**0.0016**	0.003	172.3	ug/L	134	Standard
	Cd	111	14.3	24.6	**0.0041**	0.002	39.1	mg/L	7	Standard
	Cd	114	49.9	58.5	**0.0052**	0.006	113.8	ug/L	16	Standard
>	**In**	115	579695.7	1.7				ug/L	611117	Standard
	Sn	118	626.7	2.3	**0.0098**	0.004	44.1	ug/L	518	Standard
	Sb	123	500.2	33.4	**0.0994**	0.039	39.6	ug/L	127	Standard
	Ba	135	8786.5	0.8	**4.4621**	0.051	1.1	ug/L	45	Standard
	Ce	140	53.3	19.5				ug/L	298	Standard
>	**Tb**	159	899038.1	0.5				ug/L	977942	Standard
	Ho	165	3.3	86.6				ug/L	12	Standard
	Tl	203	124.3	3.7	**0.0110**	0.001	5.1	ug/L	31	Standard
	Tl	205	108.3	13.3	**0.0136**	0.002	15.1	ug/L	20	Standard
	Pb	206	338.3	5.2	**0.0034**	0.004	109.0	ug/L	286	Standard
	Pb	207	309.3	7.0	**0.0098**	0.005	45.9	ug/L	257	Standard
	Pb	208	1266.0	2.0	**0.0114**	0.001	11.9	ug/L	956	Standard
	U	238	68.0	9.6	**0.0072**	0.001	13.2	ug/L	17	Standard
>	**Bi**	209	520681.9	0.4				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	5104.2	1.7	**6.8887**	0.170	2.5	mg/L	32	Standard
K	39	40.0	37.5	**-0.0032**	0.052	1630.6	mg/L	30	Standard
Ca	43	30.0	57.7	**-0.6841**	2.704	395.3	mg/L	48	Standard
Fe	54	149.1	25.4	**0.0007**	0.034	4947.2	mg/L	159	Standard
Fe	57	220.0	14.9	**0.1340**	0.108	80.4	mg/L	195	Standard
Sc-1	45	38686.0	0.8				mg/L	39543	Standard
Cl	35	39148.5	1.2				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	4957.5	4.0				ug/L	1647	Standard
P	31	18357.8	2.1				ug/L	15231	Standard
S	34	2318.5	4.4				ug/L	1845	Standard
Sr	88	78.3	18.4				ug/L	70	Standard
C	12	130.0	27.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.2	116.5				mg/L	12	Standard
Ho-1	165	3.3	86.6				mg/L	12	Standard
Er	166	16.7	91.7				mg/L	20	Standard
I	127	32523.3	5.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.021	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.117	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.858
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		93.466
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 22:08:51
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74027.2	2.8				ug/L	81760	Standard
	Be	9	46885.8	2.2	**52.1458**	1.090	2.1	ug/L	17	Standard
	Al	27	7258519.9	1.3	**52.0333**	2.108	4.1	ug/L	1410	Standard
	Sc	45	37711.9	1.9				ug/L	39543	Standard
	Ti	47	24276.8	0.9	**101.7561**	0.915	0.9	ug/L	39	Standard
	V	51	338117.2	0.9	**50.5811**	0.467	0.9	ug/L	1415	Standard
	Cr	52	344759.2	1.1	**50.6515**	0.612	1.2	ug/L	6946	Standard
	Cr	53	43998.8	1.8	**51.9886**	0.950	1.8	ug/L	328	Standard
	Mn	55	319756.8	1.7	**51.3453**	0.844	1.6	ug/L	823	Standard
	Co	59	342187.7	2.1	**50.8146**	1.023	2.0	ug/L	252	Standard
	Ni	60	91463.9	0.8	**50.5986**	0.401	0.8	ug/L	192	Standard
	Cu	65	92539.7	0.2	**50.7558**	0.132	0.3	ug/L	141	Standard
	Zn	66	54475.1	1.3	**51.0616**	0.732	1.4	ug/L	491	Standard
>	**Ge**	72	493368.3	0.1				ug/L	515087	Standard
	As	75	54361.0	0.4	**50.5191**	0.195	0.4	ug/L	20	Standard
	Se	82	5570.4	0.7	**50.3948**	0.327	0.6	ug/L	15	Standard
	Se-1	77	3889.2	2.7	**53.1789**	1.513	2.8	ug/L	48	Standard
>	**Ga**	71	56.7	13.5				mg/L	90	Standard
	Rb	85	710.0	9.2				ug/L	23	Standard
	Y	89	427120.1	2.2				ug/L	448510	Standard
>	**Rh**	103	20.0	50.0				ug/L	15	Standard
	Mo	98	255476.4	1.0	**100.3761**	0.479	0.5	ug/L	11	Standard
	Ag	107	311158.3	0.6	**49.2259**	0.757	1.5	ug/L	134	Standard
	Cd	111	98620.7	1.2	**49.0052**	0.618	1.3	mg/L	7	Standard
	Cd	114	238558.2	0.5	**48.7672**	0.251	0.5	ug/L	16	Standard
>	**In**	115	575337.5	0.9				ug/L	611117	Standard
	Sn	118	277257.2	0.9	**49.7064**	0.586	1.2	ug/L	518	Standard
	Sb	123	223054.4	0.8	**50.2070**	0.812	1.6	ug/L	127	Standard
	Ba	135	94954.3	0.7	**48.8337**	0.782	1.6	ug/L	45	Standard
	Ce	140	61.7	16.9				ug/L	298	Standard
>	**Tb**	159	913449.5	0.5				ug/L	977942	Standard
	Ho	165	10.0	86.6				ug/L	12	Standard
	Tl	203	397249.4	0.6	**50.3639**	0.352	0.7	ug/L	31	Standard
	Tl	205	354959.8	0.3	**51.8245**	0.065	0.1	ug/L	20	Standard
	Pb	206	256290.8	0.6	**50.5971**	0.273	0.5	ug/L	286	Standard
	Pb	207	233188.9	1.2	**51.0418**	0.565	1.1	ug/L	257	Standard
	Pb	208	935979.9	1.1	**52.9561**	0.623	1.2	ug/L	956	Standard
	U	238	344850.7	0.5	**51.4151**	0.322	0.6	ug/L	17	Standard
>	**Bi**	209	521458.9	0.2				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	3802.1	3.0	**5.2525**	0.237	4.5	mg/L	32	Standard
K	39	1311.7	9.2	**4.5102**	0.493	10.9	mg/L	30	Standard
Ca	43	78.3	7.4	**7.1225**	0.723	10.1	mg/L	48	Standard
Fe	54	5407.8	4.5	**4.9980**	0.312	6.2	mg/L	159	Standard
Fe	57	1643.4	4.4	**5.1911**	0.156	3.0	mg/L	195	Standard
> **Sc-1**	45	37711.9	1.9				mg/L	39543	Standard
Cl	35	36184.5	2.9				ug/L	27642	Standard
Kr	83	3.0	66.7				ug/L	2	Standard
Br	81	1690.1	2.4				ug/L	1647	Standard
P	31	19537.6	2.2				ug/L	15231	Standard
S	34	2665.2	5.3				ug/L	1845	Standard
Sr	88	80.0	12.5				ug/L	70	Standard
C	12	116.7	9.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	9.4	109.4				mg/L	12	Standard
Ho-1	165	10.0	86.6				mg/L	12	Standard
Er	166	13.3	43.3				mg/L	20	Standard
I	127	5821.1	15.1				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	104.292		
	Al	27	104.067		
	Sc	45			
	Ti	47	101.756		
	V	51	101.162		
	Cr	52	101.303		
	Cr	53			
	Mn	55	102.691		
	Co	59	101.629		
	Ni	60	101.197		
	Cu	65	101.512		
	Zn	66	102.123		
>	Ge	72		95.784	
	As	75	101.038		
	Se	82	100.790		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	100.376		
Ag	107	98.452		
Cd	111	98.010		
Cd	114			
> In	115			94.145
Sn	118	99.413		
Sb	123	100.414		
Ba	135	97.667		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.728		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.912		
U	238	102.830		
> Bi	209			93.606
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 22:12:02
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72720.8	1.4				ug/L	81760	Standard
	Be	9	31.7	9.1	**0.0261**	0.003	13.4	ug/L	17	Standard
	Al	27	3567.1	29.0	**0.0117**	0.008	67.2	ug/L	1410	Standard
	Sc	45	39132.1	1.1				ug/L	39543	Standard
	Ti	47	37.0	21.5	**-0.0116**	0.034	290.1	ug/L	39	Standard
	V	51	1125.9	7.5	**-0.0395**	0.013	33.1	ug/L	1415	Standard
	Cr	52	6280.0	4.7	**-0.1269**	0.043	33.9	ug/L	6946	Standard
	Cr	53	665.0	3.8	**0.4397**	0.027	6.1	ug/L	328	Standard
	Mn	55	716.0	7.9	**-0.0346**	0.009	26.9	ug/L	823	Standard
	Co	59	261.7	5.4	**0.0070**	0.002	26.9	ug/L	252	Standard
	Ni	60	220.7	25.5	**0.0158**	0.031	194.2	ug/L	192	Standard
	Cu	65	175.7	31.3	**0.0045**	0.030	664.0	ug/L	141	Standard
	Zn	66	494.7	12.2	**-0.3623**	0.056	15.6	ug/L	491	Standard
>	**Ge**	72	499522.9	0.5				ug/L	515087	Standard
	As	75	-22.4	199.4	**0.0197**	0.041	208.7	ug/L	20	Standard
	Se	82	18.1	44.1	**0.0430**	0.071	165.8	ug/L	15	Standard
	Se-1	77	56.7	13.4	**0.0566**	0.102	180.9	ug/L	48	Standard
>	**Ga**	71	45.0	38.5				mg/L	90	Standard
	Rb	85	31.7	45.6				ug/L	23	Standard
	Y	89	417360.5	0.9				ug/L	448510	Standard
>	**Rh**	103	6.7	114.6				ug/L	15	Standard
	Mo	98	287.6	23.9	**0.0927**	0.026	27.9	ug/L	11	Standard
	Ag	107	190.3	4.8	**0.0136**	0.002	11.9	ug/L	134	Standard
	Cd	111	25.8	62.0	**0.0098**	0.008	81.4	mg/L	7	Standard
	Cd	114	75.5	64.7	**0.0104**	0.010	96.5	ug/L	16	Standard
>	**In**	115	581386.0	1.0				ug/L	611117	Standard
	Sn	118	788.4	29.5	**0.0382**	0.041	108.2	ug/L	518	Standard
	Sb	123	553.2	30.8	**0.1105**	0.038	34.6	ug/L	127	Standard
	Ba	135	104.3	62.1	**0.0282**	0.034	119.2	ug/L	45	Standard
	Ce	140	15.0	88.2				ug/L	298	Standard
>	**Tb**	159	916886.1	2.0				ug/L	977942	Standard
	Ho	165	6.7	43.3				ug/L	12	Standard
	Tl	203	96.0	40.0	**0.0072**	0.005	66.3	ug/L	31	Standard
	Tl	205	80.0	25.0	**0.0092**	0.003	29.7	ug/L	20	Standard
	Pb	206	283.3	0.7	**-0.0085**	0.001	14.2	ug/L	286	Standard
	Pb	207	242.3	7.5	**-0.0058**	0.004	64.9	ug/L	257	Standard
	Pb	208	1066.3	4.7	**-0.0011**	0.002	176.0	ug/L	956	Standard
	U	238	68.3	24.9	**0.0070**	0.002	33.1	ug/L	17	Standard
>	**Bi**	209	530213.7	1.5				ug/L	557080	Standard

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Na	23	5.0	100.0	**32.2313**	32.195	99.9	mg/L	0	Standard
Mg	24	43.3	46.6	**0.0012**	0.027	2331.0	mg/L	32	Standard
K	39	38.3	41.9	**-0.0103**	0.056	538.4	mg/L	30	Standard
Ca	43	25.0	20.0	**-1.5137**	0.732	48.3	mg/L	48	Standard
Fe	54	136.0	18.8	**-0.0125**	0.025	197.8	mg/L	159	Standard
Fe	57	235.0	17.0	**0.1764**	0.130	73.9	mg/L	195	Standard
Sc-1	45	39132.1	1.1				mg/L	39543	Standard
Cl	35	35003.7	1.3				ug/L	27642	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1530.1	14.2				ug/L	1647	Standard
P	31	18486.3	1.6				ug/L	15231	Standard
S	34	2496.9	3.2				ug/L	1845	Standard
Sr	88	51.7	31.1				ug/L	70	Standard
C	12	86.7	52.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.5	5.0				mg/L	12	Standard
Ho-1	165	6.7	43.3				mg/L	12	Standard
Er	166	10.0	100.0				mg/L	20	Standard
I	127	4170.6	14.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.978	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.135
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.177
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606073202
Sample Date/Time: Tuesday, June 28, 2016 22:15:14
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76318.4	2.0				ug/L	81760	Standard
	Be	9	40.0	69.6	**0.0330**	0.029	88.9	ug/L	17	Standard
	Al	27	23571551.0	1.4	**163.8296**	2.147	1.3	ug/L	1410	Standard
	Sc	45	39020.2	3.0				ug/L	39543	Standard
	Ti	47	595.0	5.6	**2.3771**	0.145	6.1	ug/L	39	Standard
	V	51	1578.4	25.4	**0.0346**	0.061	176.4	ug/L	1415	Standard
	Cr	52	21713.5	1.1	**2.2571**	0.032	1.4	ug/L	6946	Standard
	Cr	53	25227.7	4.6	**30.1930**	1.400	4.6	ug/L	328	Standard
	Mn	55	113835.4	1.3	**18.5078**	0.247	1.3	ug/L	823	Standard
	Co	59	3991.2	2.2	**0.5722**	0.015	2.6	ug/L	252	Standard
	Ni	60	3905.8	1.2	**2.0985**	0.020	1.0	ug/L	192	Standard
	Cu	65	1542.7	2.9	**0.7718**	0.023	3.0	ug/L	141	Standard
	Zn	66	25635.3	1.1	**24.0224**	0.322	1.3	ug/L	491	Standard
>	**Ge**	72	484802.3	0.3				ug/L	515087	Standard
	As	75	911.4	10.9	**0.9016**	0.094	10.4	ug/L	20	Standard
	Se	82	285.6	1.4	**2.5161**	0.032	1.3	ug/L	15	Standard
	Se-1	77	1182.4	4.2	**15.9563**	0.701	4.4	ug/L	48	Standard
>	**Ga**	71	88.3	32.7				mg/L	90	Standard
	Rb	85	8777.5	4.2				ug/L	23	Standard
	Y	89	401864.9	0.9				ug/L	448510	Standard
>	**Rh**	103	95.0	19.0				ug/L	15	Standard
	Mo	98	789.3	4.8	**0.3176**	0.018	5.8	ug/L	11	Standard
	Ag	107	101.3	14.3	**0.0012**	0.002	197.6	ug/L	134	Standard
	Cd	111	81.6	8.8	**0.0411**	0.003	8.4	mg/L	7	Standard
	Cd	114	236.0	13.0	**0.0475**	0.007	15.0	ug/L	16	Standard
>	**In**	115	530144.7	1.0				ug/L	611117	Standard
	Sn	118	770.0	10.1	**0.0481**	0.014	28.6	ug/L	518	Standard
	Sb	123	728.9	13.4	**0.1651**	0.022	13.6	ug/L	127	Standard
	Ba	135	185424.0	0.3	**103.5140**	0.966	0.9	ug/L	45	Standard
	Ce	140	496.7	18.3				ug/L	298	Standard
>	**Tb**	159	867434.9	1.9				ug/L	977942	Standard
	Ho	165	20.0	0.0				ug/L	12	Standard
	Tl	203	239.3	4.0	**0.0278**	0.001	4.3	ug/L	31	Standard
	Tl	205	225.0	20.4	**0.0330**	0.007	22.5	ug/L	20	Standard
	Pb	206	582.0	1.5	**0.0598**	0.001	1.4	ug/L	286	Standard
	Pb	207	480.3	3.9	**0.0549**	0.005	9.4	ug/L	257	Standard
	Pb	208	1935.7	1.6	**0.0572**	0.003	4.8	ug/L	956	Standard
	U	238	1057.0	6.3	**0.1661**	0.010	5.7	ug/L	17	Standard
>	**Bi**	209	486031.1	0.8				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	123145.1	1.2	**166.1283**	3.309	2.0	mg/L	32	Standard
K	39	193.3	27.9	**0.5225**	0.193	37.0	mg/L	30	Standard
Ca	43	155.0	19.6	**18.5842**	5.220	28.1	mg/L	48	Standard
Fe	54	201.4	15.9	**0.0482**	0.034	70.8	mg/L	159	Standard
Fe	57	301.7	7.8	**0.4095**	0.108	26.4	mg/L	195	Standard
> **Sc-1**	45	39020.2	3.0				mg/L	39543	Standard
Cl	35	36882.8	1.2				ug/L	27642	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	66321.6	2.9				ug/L	1647	Standard
P	31	23950.6	0.8				ug/L	15231	Standard
S	34	2285.2	3.2				ug/L	1845	Standard
Sr	88	326.7	6.4				ug/L	70	Standard
C	12	383.3	11.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	24.1	87.6				mg/L	12	Standard
Ho-1	165	20.0	0.0				mg/L	12	Standard
Er	166	53.3	28.6				mg/L	20	Standard
I	127	490270.4	8.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.344	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.121	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	86.750
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	87.246
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606076201
Sample Date/Time: Tuesday, June 28, 2016 22:18:25
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74725.5	1.6				ug/L	81760	Standard
	Be	9	33.3	56.8	**0.0272**	0.022	79.2	ug/L	17	Standard
	Al	27	1272215.4	1.6	**9.0180**	0.230	2.5	ug/L	1410	Standard
	Sc	45	40079.6	0.9				ug/L	39543	Standard
	Ti	47	73.0	21.4	**0.1312**	0.065	49.6	ug/L	39	Standard
	V	51	1912.1	11.7	**0.0708**	0.033	46.3	ug/L	1415	Standard
	Cr	52	9243.8	1.7	**0.2820**	0.015	5.4	ug/L	6946	Standard
	Cr	53	1550.1	16.6	**1.4381**	0.284	19.7	ug/L	328	Standard
	Mn	55	4050.6	51.7	**0.4818**	0.327	67.8	ug/L	823	Standard
	Co	59	576.0	42.1	**0.0513**	0.035	68.0	ug/L	252	Standard
	Ni	60	659.3	6.6	**0.2481**	0.023	9.5	ug/L	192	Standard
	Cu	65	493.7	5.0	**0.1712**	0.013	7.5	ug/L	141	Standard
	Zn	66	2294.8	5.3	**1.2839**	0.114	8.9	ug/L	491	Standard
>	**Ge**	72	510757.4	0.7				ug/L	515087	Standard
	As	75	-15.4	127.0	**0.0265**	0.018	66.6	ug/L	20	Standard
	Se	82	23.9	38.0	**0.0895**	0.079	87.8	ug/L	15	Standard
	Se-1	77	93.7	16.1	**0.5342**	0.193	36.2	ug/L	48	Standard
>	**Ga**	71	58.3	17.8				mg/L	90	Standard
	Rb	85	1476.7	6.6				ug/L	23	Standard
	Y	89	432514.2	1.7				ug/L	448510	Standard
>	**Rh**	103	26.7	39.0				ug/L	15	Standard
	Mo	98	146.0	48.2	**0.0371**	0.027	72.5	ug/L	11	Standard
	Ag	107	112.7	13.4	**0.0013**	0.002	181.1	ug/L	134	Standard
	Cd	111	43.2	14.9	**0.0182**	0.003	18.1	mg/L	7	Standard
	Cd	114	109.3	34.7	**0.0170**	0.007	43.8	ug/L	16	Standard
>	**In**	115	586396.8	0.9				ug/L	611117	Standard
	Sn	118	771.7	15.6	**0.0341**	0.022	63.3	ug/L	518	Standard
	Sb	123	236.4	15.7	**0.0394**	0.008	21.0	ug/L	127	Standard
	Ba	135	3173.0	2.9	**1.5769**	0.056	3.5	ug/L	45	Standard
	Ce	140	2270.2	3.3				ug/L	298	Standard
>	**Tb**	159	916697.6	0.7				ug/L	977942	Standard
	Ho	165	490.0	12.4				ug/L	12	Standard
	Tl	203	130.7	10.3	**0.0114**	0.002	13.6	ug/L	31	Standard
	Tl	205	215.0	77.4	**0.0282**	0.023	82.9	ug/L	20	Standard
	Pb	206	395.3	3.6	**0.0126**	0.003	22.5	ug/L	286	Standard
	Pb	207	368.7	19.2	**0.0207**	0.015	70.3	ug/L	257	Standard
	Pb	208	1630.7	27.1	**0.0295**	0.024	80.4	ug/L	956	Standard
	U	238	158.7	69.5	**0.0200**	0.016	79.0	ug/L	17	Standard
>	**Bi**	209	534609.1	0.7				ug/L	557080	Standard

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Na	23	5.0	100.0	**31.5470**	31.355	99.4	mg/L	0	Standard
Mg	24	598.3	11.5	**0.7287**	0.091	12.5	mg/L	32	Standard
K	39	176.7	18.2	**0.4475**	0.107	24.0	mg/L	30	Standard
Ca	43	93.3	48.6	**8.6233**	6.782	78.6	mg/L	48	Standard
Fe	54	114.2	15.8	**-0.0351**	0.016	46.3	mg/L	159	Standard
Fe	57	271.7	7.4	**0.2806**	0.074	26.3	mg/L	195	Standard
> **Sc-1**	45	40079.6	0.9				mg/L	39543	Standard
Cl	35	37059.3	1.9				ug/L	27642	Standard
Kr	83	2.0	86.6				ug/L	2	Standard
Br	81	3193.7	9.3				ug/L	1647	Standard
P	31	19133.7	1.0				ug/L	15231	Standard
S	34	2435.2	3.0				ug/L	1845	Standard
Sr	88	116.7	19.8				ug/L	70	Standard
C	12	110.0	24.1				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	699.7	7.7				mg/L	12	Standard
Ho-1	165	490.0	12.4				mg/L	12	Standard
Er	166	563.3	4.5				mg/L	20	Standard
I	127	24296.3	37.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.396	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.159	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.955
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.966
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606138001
Sample Date/Time: Tuesday, June 28, 2016 22:21:37
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79317.1	2.1				ug/L	81760	Standard
	Be	9	923.4	3.6	**0.9491**	0.046	4.8	ug/L	17	Standard
	Al	27	22322355.7	1.2	**149.2842**	1.816	1.2	ug/L	1410	Standard
	Sc	45	50147.9	2.6				ug/L	39543	Standard
	Ti	47	26223.7	0.7	**107.9697**	0.846	0.8	ug/L	39	Standard
	V	51	127306.3	1.5	**18.5751**	0.291	1.6	ug/L	1415	Standard
	Cr	52	100654.9	1.1	**13.7705**	0.145	1.1	ug/L	6946	Standard
	Cr	53	12865.5	4.5	**14.6884**	0.707	4.8	ug/L	328	Standard
	Mn	55	4304305.9	0.4	**680.6871**	4.381	0.6	ug/L	823	Standard
	Co	59	49359.3	0.1	**7.1725**	0.024	0.3	ug/L	252	Standard
	Ni	60	30538.1	1.5	**16.5228**	0.280	1.7	ug/L	192	Standard
	Cu	65	24616.6	0.6	**13.1942**	0.101	0.8	ug/L	141	Standard
	Zn	66	126791.0	1.1	**117.7932**	1.321	1.1	ug/L	491	Standard
>	**Ge**	72	502314.8	0.3				ug/L	515087	Standard
	As	75	6358.7	2.6	**5.8397**	0.152	2.6	ug/L	20	Standard
	Se	82	52.0	15.4	**0.3436**	0.072	20.9	ug/L	15	Standard
	Se-1	77	111.0	6.5	**0.7919**	0.097	12.2	ug/L	48	Standard
>	**Ga**	71	15155.9	0.2				mg/L	90	Standard
	Rb	85	244761.5	1.6				ug/L	23	Standard
	Y	89	581808.2	2.1				ug/L	448510	Standard
>	**Rh**	103	81.7	28.3				ug/L	15	Standard
	Mo	98	7400.1	1.4	**2.8571**	0.099	3.5	ug/L	11	Standard
	Ag	107	359.7	8.1	**0.0401**	0.005	12.7	ug/L	134	Standard
	Cd	111	226.0	4.7	**0.1082**	0.006	6.0	mg/L	7	Standard
	Cd	114	572.5	10.7	**0.1110**	0.014	12.9	ug/L	16	Standard
>	**In**	115	581977.2	2.1				ug/L	611117	Standard
	Sn	118	1150.0	8.4	**0.1021**	0.013	12.6	ug/L	518	Standard
	Sb	123	1041.4	3.0	**0.2191**	0.011	5.1	ug/L	127	Standard
	Ba	135	264934.9	0.4	**134.7601**	2.267	1.7	ug/L	45	Standard
	Ce	140	872470.7	0.6				ug/L	298	Standard
>	**Tb**	159	944063.2	1.7				ug/L	977942	Standard
	Ho	165	13182.4	3.3				ug/L	12	Standard
	Tl	203	1500.7	3.5	**0.1808**	0.008	4.2	ug/L	31	Standard
	Tl	205	1268.4	3.4	**0.1783**	0.007	4.2	ug/L	20	Standard
	Pb	206	85066.5	1.3	**16.3322**	0.328	2.0	ug/L	286	Standard
	Pb	207	70090.8	1.2	**14.9184**	0.287	1.9	ug/L	257	Standard
	Pb	208	293052.1	0.7	**16.1237**	0.113	0.7	ug/L	956	Standard
	U	238	6791.5	1.5	**0.9844**	0.021	2.1	ug/L	17	Standard
>	**Bi**	209	534845.3	0.8				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	2491.9	2.3	**2.5590**	0.057	2.2	mg/L	32	Standard
K	39	860.0	5.6	**2.1528**	0.183	8.5	mg/L	30	Standard
Ca	43	481.7	3.2	**52.3892**	3.048	5.8	mg/L	48	Standard
Fe	54	14060.9	4.3	**9.8944**	0.202	2.0	mg/L	159	Standard
Fe	57	4057.2	4.0	**10.1835**	0.599	5.9	mg/L	195	Standard
> **Sc-1**	45	50147.9	2.6				mg/L	39543	Standard
Cl	35	34061.6	1.3				ug/L	27642	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	3443.7	4.1				ug/L	1647	Standard
P	31	33871.2	1.5				ug/L	15231	Standard
S	34	2461.9	2.1				ug/L	1845	Standard
Sr	88	305.0	8.2				ug/L	70	Standard
C	12	206.7	29.6				mg/L	113	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	40.0	50.0				mg/L	0	Standard
Dy	164	22121.1	1.8				mg/L	12	Standard
Ho-1	165	13182.4	3.3				mg/L	12	Standard
Er	166	12021.4	0.9				mg/L	20	Standard
I	127	158658.4	11.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.012	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.520	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.232
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.009
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Ti 47 Upper, S, EEE	Ti	47	
Mn 55 Upper, S, EEE	Mn	55	

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Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606138002
Sample Date/Time: Tuesday, June 28, 2016 22:24:48
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80508.4	1.6				ug/L	81760	Standard
	Be	9	865.0	8.5	**0.8749**	0.075	8.6	ug/L	17	Standard
	Al	27	22868958.8	1.7	**150.6704**	2.885	1.9	ug/L	1410	Standard
	Sc	45	49400.4	2.8				ug/L	39543	Standard
	Ti	47	23164.7	1.4	**96.5938**	1.528	1.6	ug/L	39	Standard
	V	51	124883.8	1.8	**18.4559**	0.304	1.6	ug/L	1415	Standard
	Cr	52	103466.8	1.3	**14.3825**	0.239	1.7	ug/L	6946	Standard
	Cr	53	12758.7	1.5	**14.7559**	0.244	1.7	ug/L	328	Standard
	Mn	55	4407919.2	0.3	**706.0993**	3.755	0.5	ug/L	823	Standard
	Co	59	51228.1	1.3	**7.5421**	0.111	1.5	ug/L	252	Standard
	Ni	60	30969.0	1.2	**16.9756**	0.235	1.4	ug/L	192	Standard
	Cu	65	25034.7	0.7	**13.5947**	0.118	0.9	ug/L	141	Standard
	Zn	66	152662.0	1.2	**143.8470**	1.906	1.3	ug/L	491	Standard
>	**Ge**	72	495895.8	0.2				ug/L	515087	Standard
	As	75	6401.6	1.0	**5.9544**	0.051	0.9	ug/L	20	Standard
	Se	82	65.6	3.6	**0.4728**	0.020	4.3	ug/L	15	Standard
	Se-1	77	120.3	12.9	**0.9403**	0.215	22.9	ug/L	48	Standard
>	**Ga**	71	15282.7	1.5				mg/L	90	Standard
	Rb	85	248664.6	2.3				ug/L	23	Standard
	Y	89	598252.6	1.6				ug/L	448510	Standard
>	**Rh**	103	61.7	4.7				ug/L	15	Standard
	Mo	98	8173.4	1.7	**3.0442**	0.032	1.1	ug/L	11	Standard
	Ag	107	334.0	5.8	**0.0342**	0.003	8.9	ug/L	134	Standard
	Cd	111	175.2	4.5	**0.0802**	0.004	5.0	mg/L	7	Standard
	Cd	114	424.7	8.5	**0.0779**	0.007	8.4	ug/L	16	Standard
>	**In**	115	603234.5	0.7				ug/L	611117	Standard
	Sn	118	1006.7	2.2	**0.0706**	0.004	6.0	ug/L	518	Standard
	Sb	123	981.2	4.8	**0.1979**	0.011	5.8	ug/L	127	Standard
	Ba	135	265403.3	0.1	**130.2141**	0.915	0.7	ug/L	45	Standard
	Ce	140	904460.6	1.2				ug/L	298	Standard
>	**Tb**	159	953156.2	1.3				ug/L	977942	Standard
	Ho	165	13287.5	2.7				ug/L	12	Standard
	Tl	203	1338.1	1.2	**0.1623**	0.004	2.2	ug/L	31	Standard
	Tl	205	1380.1	21.0	**0.1966**	0.045	23.0	ug/L	20	Standard
	Pb	206	85143.9	1.2	**16.5139**	0.424	2.6	ug/L	286	Standard
	Pb	207	70337.2	0.8	**15.1235**	0.335	2.2	ug/L	257	Standard
	Pb	208	299122.5	0.5	**16.6275**	0.345	2.1	ug/L	956	Standard
	U	238	7037.6	3.1	**1.0308**	0.048	4.7	ug/L	17	Standard
>	**Bi**	209	529543.6	1.6				ug/L	557080	Standard

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Na	23	5.0	0.0	**25.7128**	0.720	2.8	mg/L	0	Standard
Mg	24	2751.9	1.6	**2.8760**	0.054	1.9	mg/L	32	Standard
K	39	820.0	12.4	**2.0772**	0.274	13.2	mg/L	30	Standard
Ca	43	460.0	15.1	**50.7618**	10.089	19.9	mg/L	48	Standard
Fe	54	14800.2	1.5	**10.5924**	0.445	4.2	mg/L	159	Standard
Fe	57	4213.9	2.7	**10.7740**	0.623	5.8	mg/L	195	Standard
Sc-1	45	49400.4	2.8				mg/L	39543	Standard
Cl	35	34900.8	0.4				ug/L	27642	Standard
Kr	83	3.0	0.0				ug/L	2	Standard
Br	81	3303.7	3.6				ug/L	1647	Standard
P	31	33101.1	2.4				ug/L	15231	Standard
S	34	2478.5	3.3				ug/L	1845	Standard
Sr	88	288.3	13.9				ug/L	70	Standard
C	12	206.7	17.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	53.3	65.8				mg/L	0	Standard
Dy	164	23538.0	3.9				mg/L	12	Standard
Ho-1	165	13287.5	2.7				mg/L	12	Standard
Er	166	12271.6	4.5				mg/L	20	Standard
I	127	174817.7	8.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.469	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.274	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.710
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.057
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606138106
Sample Date/Time: Tuesday, June 28, 2016 22:28:00
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75884.6	2.0				ug/L	81760	Standard
	Be	9	26.7	10.8	**0.0192**	0.003	17.5	ug/L	17	Standard
	Al	27	26057.5	7.4	**0.1676**	0.010	6.0	ug/L	1410	Standard
	Sc	45	39473.0	0.8				ug/L	39543	Standard
	Ti	47	39.3	21.6	**-0.0051**	0.035	681.9	ug/L	39	Standard
	V	51	1622.1	7.1	**0.0295**	0.017	56.8	ug/L	1415	Standard
	Cr	52	8616.4	0.2	**0.1952**	0.003	1.5	ug/L	6946	Standard
	Cr	53	775.0	5.7	**0.5518**	0.051	9.2	ug/L	328	Standard
	Mn	55	5073.2	5.2	**0.6432**	0.042	6.5	ug/L	823	Standard
	Co	59	305.3	2.9	**0.0126**	0.001	10.1	ug/L	252	Standard
	Ni	60	336.7	8.9	**0.0759**	0.016	21.2	ug/L	192	Standard
	Cu	65	1953.8	0.6	**0.9495**	0.006	0.6	ug/L	141	Standard
	Zn	66	2327.2	0.6	**1.3204**	0.013	1.0	ug/L	491	Standard
>	**Ge**	72	509122.8	0.0				ug/L	515087	Standard
	As	75	-29.7	15.9	**0.0136**	0.004	31.1	ug/L	20	Standard
	Se	82	19.1	15.2	**0.0489**	0.026	52.3	ug/L	15	Standard
	Se-1	77	54.3	12.9	**0.0108**	0.094	874.4	ug/L	48	Standard
>	**Ga**	71	61.7	23.4				mg/L	90	Standard
	Rb	85	193.3	9.8				ug/L	23	Standard
	Y	89	438080.9	2.7				ug/L	448510	Standard
>	**Rh**	103	13.3	94.4				ug/L	15	Standard
	Mo	98	1348.1	2.9	**0.4917**	0.018	3.6	ug/L	11	Standard
	Ag	107	96.0	6.3	**-0.0016**	0.001	59.2	ug/L	134	Standard
	Cd	111	29.0	10.6	**0.0110**	0.001	13.2	mg/L	7	Standard
	Cd	114	62.4	58.3	**0.0074**	0.007	97.2	ug/L	16	Standard
>	**In**	115	596825.6	0.5				ug/L	611117	Standard
	Sn	118	1153.4	11.3	**0.0978**	0.023	23.4	ug/L	518	Standard
	Sb	123	161.5	18.7	**0.0222**	0.007	29.7	ug/L	127	Standard
	Ba	135	505.0	6.7	**0.2253**	0.016	7.0	ug/L	45	Standard
	Ce	140	233.3	21.5				ug/L	298	Standard
>	**Tb**	159	918727.2	0.8				ug/L	977942	Standard
	Ho	165	6.7	43.3				ug/L	12	Standard
	Tl	203	77.0	15.3	**0.0048**	0.001	30.3	ug/L	31	Standard
	Tl	205	70.0	7.1	**0.0078**	0.001	10.7	ug/L	20	Standard
	Pb	206	353.0	8.2	**0.0052**	0.006	124.2	ug/L	286	Standard
	Pb	207	316.0	5.0	**0.0102**	0.004	41.5	ug/L	257	Standard
	Pb	208	1279.0	2.9	**0.0109**	0.002	20.1	ug/L	956	Standard
	U	238	66.0	9.1	**0.0067**	0.001	13.4	ug/L	17	Standard
>	**Bi**	209	529518.6	1.3				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.6931**	18.512	173.1	mg/L	0	Standard
Mg	24	105.0	31.2	**0.0830**	0.044	52.9	mg/L	32	Standard
K	39	31.7	9.1	**-0.0342**	0.011	31.1	mg/L	30	Standard
Ca	43	30.0	66.7	**-0.7662**	3.081	402.2	mg/L	48	Standard
Fe	54	132.0	13.9	**-0.0174**	0.016	93.3	mg/L	159	Standard
Fe	57	243.3	16.5	**0.1990**	0.142	71.4	mg/L	195	Standard
Sc-1	45	39473.0	0.8				mg/L	39543	Standard
Cl	35	35269.0	1.4				ug/L	27642	Standard
Kr	83	2.3	107.9				ug/L	2	Standard
Br	81	2306.8	8.4				ug/L	1647	Standard
P	31	16594.1	0.5				ug/L	15231	Standard
S	34	2131.8	6.4				ug/L	1845	Standard
Sr	88	88.3	36.8				ug/L	70	Standard
C	12	163.3	23.2				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	0	Standard
Dy	164	9.0	110.6				mg/L	12	Standard
Ho-1	165	6.7	43.3				mg/L	12	Standard
Er	166	20.0	0.0				mg/L	20	Standard
I	127	8462.7	47.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		92.814	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.842	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.661
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.052
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606139301
Sample Date/Time: Tuesday, June 28, 2016 22:31:11
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75653.4	0.9				ug/L	81760	Standard
	Be	9	36.7	15.7	**0.0301**	0.006	19.8	ug/L	17	Standard
	Al	27	730309.3	1.1	**5.1065**	0.100	1.9	ug/L	1410	Standard
	Sc	45	40455.6	1.8				ug/L	39543	Standard
	Ti	47	3049.6	0.8	**12.0214**	0.208	1.7	ug/L	39	Standard
	V	51	20044.5	0.4	**2.6590**	0.030	1.1	ug/L	1415	Standard
	Cr	52	14783.9	1.2	**1.0533**	0.031	2.9	ug/L	6946	Standard
	Cr	53	1555.1	3.4	**1.4185**	0.043	3.0	ug/L	328	Standard
	Mn	55	57374.1	1.8	**8.6446**	0.070	0.8	ug/L	823	Standard
	Co	59	1706.1	0.5	**0.2099**	0.002	1.1	ug/L	252	Standard
	Ni	60	1958.1	2.2	**0.9282**	0.028	3.1	ug/L	192	Standard
	Cu	65	11994.7	1.9	**6.1812**	0.063	1.0	ug/L	141	Standard
	Zn	66	20161.1	0.6	**17.4500**	0.168	1.0	ug/L	491	Standard
>	**Ge**	72	518413.1	1.4				ug/L	515087	Standard
	As	75	157.8	25.1	**0.1801**	0.037	20.6	ug/L	20	Standard
	Se	82	23.1	48.8	**0.0801**	0.098	121.9	ug/L	15	Standard
	Se-1	77	63.3	7.3	**0.1169**	0.069	59.2	ug/L	48	Standard
>	**Ga**	71	505.0	4.5				mg/L	90	Standard
	Rb	85	7842.0	2.0				ug/L	23	Standard
	Y	89	431479.5	0.9				ug/L	448510	Standard
>	**Rh**	103	15.0	100.0				ug/L	15	Standard
	Mo	98	468.3	2.4	**0.1592**	0.005	3.4	ug/L	11	Standard
	Ag	107	177.3	7.3	**0.0110**	0.002	18.6	ug/L	134	Standard
	Cd	111	203.8	5.3	**0.0952**	0.005	5.7	mg/L	7	Standard
	Cd	114	524.4	13.4	**0.0989**	0.013	13.5	ug/L	16	Standard
>	**In**	115	593880.8	0.6				ug/L	611117	Standard
	Sn	118	2320.2	4.6	**0.3018**	0.016	5.3	ug/L	518	Standard
	Sb	123	1520.6	3.7	**0.3188**	0.011	3.4	ug/L	127	Standard
	Ba	135	21231.5	1.4	**10.5571**	0.086	0.8	ug/L	45	Standard
	Ce	140	21453.5	1.1				ug/L	298	Standard
>	**Tb**	159	941666.6	1.6				ug/L	977942	Standard
	Ho	165	511.7	11.3				ug/L	12	Standard
	Tl	203	106.0	9.9	**0.0082**	0.001	16.0	ug/L	31	Standard
	Tl	205	85.0	31.1	**0.0097**	0.004	38.6	ug/L	20	Standard
	Pb	206	17358.9	1.4	**3.2466**	0.044	1.3	ug/L	286	Standard
	Pb	207	14395.2	1.0	**2.9852**	0.035	1.2	ug/L	257	Standard
	Pb	208	59327.6	0.5	**3.1814**	0.019	0.6	ug/L	956	Standard
	U	238	205.3	8.1	**0.0266**	0.002	9.0	ug/L	17	Standard
>	**Bi**	209	540531.5	0.2				ug/L	557080	Standard

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Na	23	3.3	173.2	**21.0062**	36.375	173.2	mg/L	0	Standard
Mg	24	250.0	13.1	**0.2677**	0.037	13.9	mg/L	32	Standard
K	39	110.0	28.4	**0.2220**	0.104	47.1	mg/L	30	Standard
Ca	43	51.7	20.1	**2.3448**	1.674	71.4	mg/L	48	Standard
Fe	54	595.3	12.6	**0.3888**	0.057	14.6	mg/L	159	Standard
Fe	57	388.3	11.5	**0.6585**	0.168	25.5	mg/L	195	Standard
> **Sc-1**	45	40455.6	1.8				mg/L	39543	Standard
Cl	35	34669.0	0.4				ug/L	27642	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	3693.8	7.2				ug/L	1647	Standard
P	31	17358.3	1.4				ug/L	15231	Standard
S	34	2180.2	7.0				ug/L	1845	Standard
Sr	88	80.0	38.0				ug/L	70	Standard
C	12	186.7	21.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	0	Standard
Dy	164	723.1	8.6				mg/L	12	Standard
Ho-1	165	511.7	11.3				mg/L	12	Standard
Er	166	493.3	12.2				mg/L	20	Standard
I	127	46309.3	8.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		92.531	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.646	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.180
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.029
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606139302
Sample Date/Time: Tuesday, June 28, 2016 22:34:23
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76487.6	0.6				ug/L	81760	Standard
	Be	9	26.7	57.3	**0.0190**	0.016	86.6	ug/L	17	Standard
	Al	27	422387.9	1.8	**2.9148**	0.060	2.0	ug/L	1410	Standard
	Sc	45	40846.7	1.8				ug/L	39543	Standard
	Ti	47	1809.8	2.0	**7.1474**	0.208	2.9	ug/L	39	Standard
	V	51	13250.7	0.8	**1.7088**	0.032	1.8	ug/L	1415	Standard
	Cr	52	14384.8	1.8	**1.0188**	0.008	0.8	ug/L	6946	Standard
	Cr	53	1510.1	5.3	**1.3859**	0.061	4.4	ug/L	328	Standard
	Mn	55	44577.2	1.1	**6.7600**	0.108	1.6	ug/L	823	Standard
	Co	59	1155.0	3.6	**0.1339**	0.008	5.8	ug/L	252	Standard
	Ni	60	2034.1	3.4	**0.9799**	0.027	2.8	ug/L	192	Standard
	Cu	65	13331.2	1.6	**6.9601**	0.242	3.5	ug/L	141	Standard
	Zn	66	18863.7	1.1	**16.4635**	0.229	1.4	ug/L	491	Standard
>	**Ge**	72	512762.7	2.0				ug/L	515087	Standard
	As	75	120.3	20.8	**0.1481**	0.025	16.6	ug/L	20	Standard
	Se	82	22.7	50.1	**0.0800**	0.103	128.5	ug/L	15	Standard
	Se-1	77	66.7	3.8	**0.1706**	0.046	27.2	ug/L	48	Standard
>	**Ga**	71	313.3	7.5				mg/L	90	Standard
	Rb	85	9062.7	6.6				ug/L	23	Standard
	Y	89	438095.5	1.1				ug/L	448510	Standard
>	**Rh**	103	11.7	65.5				ug/L	15	Standard
	Mo	98	749.7	5.2	**0.2622**	0.015	5.9	ug/L	11	Standard
	Ag	107	250.0	4.9	**0.0215**	0.002	9.3	ug/L	134	Standard
	Cd	111	268.7	5.4	**0.1246**	0.007	5.7	mg/L	7	Standard
	Cd	114	686.3	8.9	**0.1290**	0.012	9.4	ug/L	16	Standard
>	**In**	115	602735.5	0.4				ug/L	611117	Standard
	Sn	118	2001.8	9.6	**0.2412**	0.032	13.1	ug/L	518	Standard
	Sb	123	1551.7	1.3	**0.3206**	0.005	1.5	ug/L	127	Standard
	Ba	135	10171.4	0.7	**4.9702**	0.026	0.5	ug/L	45	Standard
	Ce	140	10203.4	3.4				ug/L	298	Standard
>	**Tb**	159	943711.5	1.3				ug/L	977942	Standard
	Ho	165	201.7	2.9				ug/L	12	Standard
	Tl	203	136.7	14.9	**0.0117**	0.003	21.7	ug/L	31	Standard
	Tl	205	126.7	4.6	**0.0153**	0.001	5.0	ug/L	20	Standard
	Pb	206	13666.8	0.5	**2.5119**	0.014	0.6	ug/L	286	Standard
	Pb	207	11351.3	1.7	**2.3133**	0.023	1.0	ug/L	257	Standard
	Pb	208	47777.6	0.4	**2.5197**	0.028	1.1	ug/L	956	Standard
	U	238	179.7	5.5	**0.0226**	0.001	5.2	ug/L	17	Standard
>	**Bi**	209	546981.3	0.8				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	296.7	10.2	**0.3250**	0.036	11.0	mg/L	32	Standard
K	39	131.7	25.3	**0.2905**	0.116	40.0	mg/L	30	Standard
Ca	43	28.3	44.4	**-1.1569**	1.919	165.9	mg/L	48	Standard
Fe	54	412.0	10.8	**0.2238**	0.038	16.8	mg/L	159	Standard
Fe	57	300.0	5.8	**0.3560**	0.058	16.2	mg/L	195	Standard
> **Sc-1**	45	40846.7	1.8				mg/L	39543	Standard
Cl	35	35351.2	2.0				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	2080.1	6.1				ug/L	1647	Standard
P	31	17501.8	0.9				ug/L	15231	Standard
S	34	2256.8	4.2				ug/L	1845	Standard
Sr	88	83.3	24.2				ug/L	70	Standard
C	12	216.7	41.9				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	66.7				mg/L	0	Standard
Dy	164	374.4	8.4				mg/L	12	Standard
Ho-1	165	201.7	2.9				mg/L	12	Standard
Er	166	186.7	17.2				mg/L	20	Standard
I	127	9588.0	8.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		93.551	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.549	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606139302
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.629
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.187
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606139303
Sample Date/Time: Tuesday, June 28, 2016 22:37:34
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75224.7	2.8				ug/L	81760	Standard
	Be	9	26.7	47.2	**0.0195**	0.014	72.7	ug/L	17	Standard
	Al	27	335427.7	1.4	**2.3514**	0.039	1.7	ug/L	1410	Standard
	Sc	45	40873.4	3.2				ug/L	39543	Standard
	Ti	47	1306.7	3.3	**5.2014**	0.227	4.4	ug/L	39	Standard
	V	51	16739.3	1.3	**2.2527**	0.061	2.7	ug/L	1415	Standard
	Cr	52	12212.3	0.6	**0.7342**	0.019	2.6	ug/L	6946	Standard
	Cr	53	1208.4	9.2	**1.0637**	0.123	11.6	ug/L	328	Standard
	Mn	55	30356.4	1.8	**4.6331**	0.125	2.7	ug/L	823	Standard
	Co	59	971.0	0.7	**0.1098**	0.003	2.3	ug/L	252	Standard
	Ni	60	1423.4	2.9	**0.6666**	0.013	2.0	ug/L	192	Standard
	Cu	65	8494.4	2.1	**4.4744**	0.140	3.1	ug/L	141	Standard
	Zn	66	12099.5	0.6	**10.4446**	0.200	1.9	ug/L	491	Standard
>	**Ge**	72	504506.4	1.3				ug/L	515087	Standard
	As	75	95.4	18.1	**0.1269**	0.016	12.6	ug/L	20	Standard
	Se	82	22.1	16.3	**0.0773**	0.034	44.4	ug/L	15	Standard
	Se-1	77	59.3	9.3	**0.0847**	0.065	76.5	ug/L	48	Standard
>	**Ga**	71	286.7	13.3				mg/L	90	Standard
	Rb	85	4860.8	3.1				ug/L	23	Standard
	Y	89	447487.9	1.5				ug/L	448510	Standard
>	**Rh**	103	10.0	50.0				ug/L	15	Standard
	Mo	98	335.7	2.2	**0.1056**	0.003	3.1	ug/L	11	Standard
	Ag	107	149.3	7.8	**0.0061**	0.002	27.6	ug/L	134	Standard
	Cd	111	92.8	5.9	**0.0407**	0.003	6.7	mg/L	7	Standard
	Cd	114	275.4	18.0	**0.0483**	0.009	19.4	ug/L	16	Standard
>	**In**	115	608945.1	0.4				ug/L	611117	Standard
	Sn	118	2160.2	6.9	**0.2646**	0.024	9.0	ug/L	518	Standard
	Sb	123	1475.9	3.1	**0.3011**	0.011	3.5	ug/L	127	Standard
	Ba	135	7298.8	1.0	**3.5230**	0.049	1.4	ug/L	45	Standard
	Ce	140	7186.7	3.0				ug/L	298	Standard
>	**Tb**	159	941207.0	0.6				ug/L	977942	Standard
	Ho	165	175.0	29.8				ug/L	12	Standard
	Tl	203	127.3	10.7	**0.0108**	0.002	16.0	ug/L	31	Standard
	Tl	205	91.7	22.0	**0.0106**	0.003	26.7	ug/L	20	Standard
	Pb	206	10382.9	0.6	**1.9175**	0.012	0.6	ug/L	286	Standard
	Pb	207	8724.8	0.9	**1.7876**	0.028	1.6	ug/L	257	Standard
	Pb	208	36599.7	1.1	**1.9407**	0.035	1.8	ug/L	956	Standard
	U	238	138.7	9.6	**0.0170**	0.002	11.7	ug/L	17	Standard
>	**Bi**	209	540229.2	0.6				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	201.7	23.0	**0.2027**	0.061	30.0	mg/L	32	Standard
K	39	85.0	15.6	**0.1365**	0.043	31.8	mg/L	30	Standard
Ca	43	46.7	34.4	**1.4659**	2.107	143.8	mg/L	48	Standard
Fe	54	348.6	7.5	**0.1680**	0.018	11.0	mg/L	159	Standard
Fe	57	325.0	9.4	**0.4364**	0.086	19.7	mg/L	195	Standard
> **Sc-1**	45	40873.4	3.2				mg/L	39543	Standard
Cl	35	35045.8	0.8				ug/L	27642	Standard
Kr	83	2.3	107.9				ug/L	2	Standard
Br	81	1873.4	9.4				ug/L	1647	Standard
P	31	17319.9	1.5				ug/L	15231	Standard
S	34	2126.8	6.5				ug/L	1845	Standard
Sr	88	78.3	28.8				ug/L	70	Standard
C	12	160.0	25.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	78.1				mg/L	0	Standard
Dy	164	223.9	25.3				mg/L	12	Standard
Ho-1	165	175.0	29.8				mg/L	12	Standard
Er	166	126.7	25.4				mg/L	20	Standard
I	127	7363.5	5.1				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		92.007	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.946	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85	
⌈	Y	89	
⌊>	Rh	103	
⌈	Mo	98	
|	Ag	107	
|	Cd	111	
|	Cd	114	
|>	In	115	99.645
|	Sn	118	
|	Sb	123	
⌊	Ba	135	
⌈	Ce	140	
⌊>	Tb	159	
⌈	Ho	165	
|	Tl	203	
|	Tl	205	
|	Pb	206	
|	Pb	207	
|	Pb	208	
|	U	238	
⌊>	Bi	209	96.975
⌈	Na	23	
|	Mg	24	
|	K	39	
|	Ca	43	
|	Fe	54	
|	Fe	57	
⌊>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606139304
Sample Date/Time: Tuesday, June 28, 2016 22:40:46
Number of Replicates: 3
Autosampler Position: 346
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74628.4	2.8				ug/L	81760	Standard
	Be	9	20.0	25.0	**0.0122**	0.005	40.5	ug/L	17	Standard
	Al	27	327323.4	5.6	**2.3109**	0.073	3.1	ug/L	1410	Standard
	Sc	45	39232.4	1.5				ug/L	39543	Standard
	Ti	47	1081.7	2.8	**4.2827**	0.197	4.6	ug/L	39	Standard
	V	51	17364.8	3.6	**2.3462**	0.053	2.3	ug/L	1415	Standard
	Cr	52	11969.4	3.2	**0.6998**	0.018	2.6	ug/L	6946	Standard
	Cr	53	1151.7	1.8	**0.9999**	0.045	4.5	ug/L	328	Standard
	Mn	55	27710.7	5.0	**4.2196**	0.194	4.6	ug/L	823	Standard
	Co	59	805.7	4.4	**0.0858**	0.004	4.6	ug/L	252	Standard
	Ni	60	1156.4	2.7	**0.5226**	0.014	2.7	ug/L	192	Standard
	Cu	65	7318.8	3.6	**3.8448**	0.072	1.9	ug/L	141	Standard
	Zn	66	9717.1	4.5	**8.2301**	0.259	3.2	ug/L	491	Standard
>	**Ge**	72	504100.5	3.0				ug/L	515087	Standard
	As	75	86.2	19.2	**0.1185**	0.013	11.2	ug/L	20	Standard
	Se	82	21.0	26.2	**0.0675**	0.052	77.2	ug/L	15	Standard
	Se-1	77	57.7	9.6	**0.0648**	0.094	144.5	ug/L	48	Standard
>	**Ga**	71	233.3	13.9				mg/L	90	Standard
	Rb	85	3882.2	6.3				ug/L	23	Standard
	Y	89	430223.1	5.6				ug/L	448510	Standard
>	**Rh**	103	8.3	124.9				ug/L	15	Standard
	Mo	98	801.5	6.3	**0.2860**	0.012	4.3	ug/L	11	Standard
	Ag	107	120.7	5.8	**0.0023**	0.000	18.3	ug/L	134	Standard
	Cd	111	92.6	9.2	**0.0417**	0.004	9.3	mg/L	7	Standard
	Cd	114	241.3	24.7	**0.0431**	0.013	29.2	ug/L	16	Standard
>	**In**	115	593856.9	3.7				ug/L	611117	Standard
	Sn	118	1755.1	4.0	**0.2036**	0.011	5.3	ug/L	518	Standard
	Sb	123	1169.8	3.7	**0.2423**	0.004	1.7	ug/L	127	Standard
	Ba	135	5956.2	4.1	**2.9440**	0.065	2.2	ug/L	45	Standard
	Ce	140	5319.3	7.3				ug/L	298	Standard
>	**Tb**	159	910819.3	2.0				ug/L	977942	Standard
	Ho	165	128.3	12.5				ug/L	12	Standard
	Tl	203	88.0	5.7	**0.0062**	0.001	12.2	ug/L	31	Standard
	Tl	205	70.0	25.8	**0.0077**	0.003	33.5	ug/L	20	Standard
	Pb	206	8718.5	3.6	**1.6271**	0.072	4.4	ug/L	286	Standard
	Pb	207	7163.0	4.3	**1.4818**	0.072	4.9	ug/L	257	Standard
	Pb	208	29853.9	4.1	**1.5981**	0.065	4.1	ug/L	956	Standard
	U	238	115.3	2.6	**0.0139**	0.000	1.6	ug/L	17	Standard
>	**Bi**	209	531672.0	1.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	220.0	2.3	**0.2381**	0.006	2.4	mg/L	32	Standard
K	39	73.3	3.9	**0.1083**	0.007	6.4	mg/L	30	Standard
Ca	43	31.7	24.1	**-0.5049**	1.115	220.9	mg/L	48	Standard
Fe	54	263.9	12.4	**0.1035**	0.028	27.1	mg/L	159	Standard
Fe	57	248.3	16.1	**0.2213**	0.145	65.6	mg/L	195	Standard
> **Sc-1**	45	39232.4	1.5				mg/L	39543	Standard
Cl	35	34033.6	5.9				ug/L	27642	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	1946.8	12.8				ug/L	1647	Standard
P	31	16857.7	2.7				ug/L	15231	Standard
S	34	2100.1	4.5				ug/L	1845	Standard
Sr	88	66.7	28.4				ug/L	70	Standard
C	12	176.7	23.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	0	Standard
Dy	164	134.9	39.4				mg/L	12	Standard
Ho-1	165	128.3	12.5				mg/L	12	Standard
Er	166	106.7	10.8				mg/L	20	Standard
I	127	6791.5	2.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.277	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.867	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.176
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.439
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: L1606139305
Sample Date/Time: Tuesday, June 28, 2016 22:43:57
Number of Replicates: 3
Autosampler Position: 347
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74899.7	0.9				ug/L	81760	Standard
	Be	9	18.3	15.7	**0.0104**	0.003	29.0	ug/L	17	Standard
	Al	27	328437.1	1.5	**2.3115**	0.035	1.5	ug/L	1410	Standard
	Sc	45	40647.8	2.1				ug/L	39543	Standard
	Ti	47	1117.7	1.6	**4.2600**	0.050	1.2	ug/L	39	Standard
	V	51	13332.6	0.8	**1.6821**	0.023	1.4	ug/L	1415	Standard
	Cr	52	11640.1	0.5	**0.5893**	0.015	2.6	ug/L	6946	Standard
	Cr	53	1158.4	10.6	**0.9575**	0.132	13.8	ug/L	328	Standard
	Mn	55	25508.1	0.7	**3.7255**	0.023	0.6	ug/L	823	Standard
	Co	59	795.0	2.3	**0.0800**	0.002	2.0	ug/L	252	Standard
	Ni	60	1111.4	4.5	**0.4759**	0.022	4.7	ug/L	192	Standard
	Cu	65	7781.0	2.0	**3.9419**	0.127	3.2	ug/L	141	Standard
	Zn	66	11686.8	2.5	**9.6690**	0.148	1.5	ug/L	491	Standard
>	**Ge**	72	523177.1	1.2				ug/L	515087	Standard
	As	75	150.7	20.5	**0.1724**	0.029	16.5	ug/L	20	Standard
	Se	82	42.9	7.7	**0.2478**	0.029	11.9	ug/L	15	Standard
	Se-1	77	60.7	2.5	**0.0739**	0.016	21.3	ug/L	48	Standard
>	**Ga**	71	226.7	1.3				mg/L	90	Standard
	Rb	85	5315.9	7.9				ug/L	23	Standard
	Y	89	431953.8	1.9				ug/L	448510	Standard
>	**Rh**	103	15.0	66.7				ug/L	15	Standard
	Mo	98	276.3	6.3	**0.0857**	0.006	6.9	ug/L	11	Standard
	Ag	107	169.0	7.2	**0.0096**	0.002	19.7	ug/L	134	Standard
	Cd	111	162.4	6.5	**0.0750**	0.005	6.0	mg/L	7	Standard
	Cd	114	335.5	8.9	**0.0613**	0.005	8.9	ug/L	16	Standard
>	**In**	115	595959.3	0.7				ug/L	611117	Standard
	Sn	118	1471.7	5.0	**0.1534**	0.014	9.4	ug/L	518	Standard
	Sb	123	1173.4	5.5	**0.2422**	0.014	5.7	ug/L	127	Standard
	Ba	135	5837.1	3.3	**2.8740**	0.084	2.9	ug/L	45	Standard
	Ce	140	5496.0	2.0				ug/L	298	Standard
>	**Tb**	159	937149.5	1.0				ug/L	977942	Standard
	Ho	165	138.3	7.5				ug/L	12	Standard
	Tl	203	94.3	16.1	**0.0066**	0.002	26.5	ug/L	31	Standard
	Tl	205	66.7	26.3	**0.0070**	0.002	32.8	ug/L	20	Standard
	Pb	206	8082.5	0.7	**1.4592**	0.036	2.4	ug/L	286	Standard
	Pb	207	6688.5	1.5	**1.3390**	0.041	3.1	ug/L	257	Standard
	Pb	208	27392.7	1.4	**1.4181**	0.004	0.2	ug/L	956	Standard
	U	238	108.7	8.4	**0.0125**	0.002	12.3	ug/L	17	Standard
>	**Bi**	209	547233.0	1.6				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.3347**	17.892	173.1	mg/L	0	Standard
Mg	24	221.7	15.4	**0.2295**	0.039	17.1	mg/L	32	Standard
K	39	100.0	17.3	**0.1871**	0.055	29.3	mg/L	30	Standard
Ca	43	26.7	60.3	**-1.4304**	2.300	160.8	mg/L	48	Standard
Fe	54	289.4	9.6	**0.1178**	0.025	21.2	mg/L	159	Standard
Fe	57	271.7	9.3	**0.2686**	0.097	36.1	mg/L	195	Standard
Sc-1	45	40647.8	2.1				mg/L	39543	Standard
Cl	35	33690.1	1.5				ug/L	27642	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	7261.7	1.9				ug/L	1647	Standard
P	31	16325.5	0.4				ug/L	15231	Standard
S	34	1950.1	10.4				ug/L	1845	Standard
Sr	88	81.7	9.4				ug/L	70	Standard
C	12	186.7	18.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	222.3	16.3				mg/L	12	Standard
Ho-1	165	138.3	7.5				mg/L	12	Standard
Er	166	160.0	6.3				mg/L	20	Standard
I	127	6493.1	4.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.609	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.571	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606139305
Report Date/Time: Tuesday, June 28, 2016 22:46:14
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.520
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.232
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 22:47:10
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71793.2	3.7				ug/L	81760	Standard
	Be	9	44618.9	1.2	**51.1958**	1.696	3.3	ug/L	17	Standard
	Al	27	6865175.8	2.0	**50.7482**	1.963	3.9	ug/L	1410	Standard
	Sc	45	39468.0	3.1				ug/L	39543	Standard
	Ti	47	23906.5	1.3	**96.7870**	2.402	2.5	ug/L	39	Standard
	V	51	334011.6	0.6	**48.2557**	0.941	2.0	ug/L	1415	Standard
	Cr	52	340377.2	0.5	**48.2561**	1.001	2.1	ug/L	6946	Standard
	Cr	53	42902.3	1.0	**48.9484**	1.164	2.4	ug/L	328	Standard
	Mn	55	309303.1	1.2	**47.9606**	0.591	1.2	ug/L	823	Standard
	Co	59	332037.9	0.8	**47.6215**	0.384	0.8	ug/L	252	Standard
	Ni	60	90431.4	0.3	**48.3175**	0.794	1.6	ug/L	192	Standard
	Cu	65	91394.5	0.3	**48.4155**	0.851	1.8	ug/L	141	Standard
	Zn	66	53482.9	1.3	**48.3851**	1.341	2.8	ug/L	491	Standard
>	**Ge**	72	510859.4	1.5				ug/L	515087	Standard
	As	75	54007.5	0.9	**48.4846**	1.105	2.3	ug/L	20	Standard
	Se	82	5360.1	0.8	**46.8280**	0.601	1.3	ug/L	15	Standard
	Se-1	77	3686.4	1.7	**48.6230**	0.812	1.7	ug/L	48	Standard
>	**Ga**	71	56.7	18.4				mg/L	90	Standard
	Rb	85	810.0	4.5				ug/L	23	Standard
	Y	89	431931.2	2.6				ug/L	448510	Standard
>	**Rh**	103	26.7	43.3				ug/L	15	Standard
	Mo	98	251225.1	0.7	**96.8468**	1.378	1.4	ug/L	11	Standard
	Ag	107	304440.8	0.4	**47.2505**	0.474	1.0	ug/L	134	Standard
	Cd	111	96060.5	0.9	**46.8341**	0.834	1.8	mg/L	7	Standard
	Cd	114	238889.8	1.2	**47.9103**	0.301	0.6	ug/L	16	Standard
>	**In**	115	586435.3	1.3				ug/L	611117	Standard
	Sn	118	269259.0	2.4	**47.3660**	1.700	3.6	ug/L	518	Standard
	Sb	123	219432.6	0.9	**48.4541**	0.360	0.7	ug/L	127	Standard
	Ba	135	92563.9	0.7	**46.7027**	0.660	1.4	ug/L	45	Standard
	Ce	140	88.3	61.1				ug/L	298	Standard
>	**Tb**	159	918919.9	0.8				ug/L	977942	Standard
	Ho	165	13.3	21.7				ug/L	12	Standard
	Tl	203	386832.4	0.9	**48.5637**	0.777	1.6	ug/L	31	Standard
	Tl	205	343277.1	1.0	**49.6247**	0.132	0.3	ug/L	20	Standard
	Pb	206	249448.7	0.4	**48.7606**	0.291	0.6	ug/L	286	Standard
	Pb	207	228146.2	0.6	**49.4471**	0.531	1.1	ug/L	257	Standard
	Pb	208	902842.6	0.2	**50.5774**	0.397	0.8	ug/L	956	Standard
	U	238	333363.3	0.9	**49.2162**	0.753	1.5	ug/L	17	Standard
>	**Bi**	209	526646.5	0.9				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.4874**	18.156	173.1	mg/L	0	Standard
Mg	24	3567.1	3.5	**4.7067**	0.317	6.7	mg/L	32	Standard
K	39	1421.7	5.7	**4.6773**	0.373	8.0	mg/L	30	Standard
Ca	43	60.0	8.3	**3.7779**	0.573	15.2	mg/L	48	Standard
Fe	54	5303.1	4.9	**4.6695**	0.087	1.9	mg/L	159	Standard
Fe	57	1570.1	3.9	**4.6916**	0.328	7.0	mg/L	195	Standard
> **Sc-1**	45	39468.0	3.1				mg/L	39543	Standard
Cl	35	34178.5	1.9				ug/L	27642	Standard
Kr	83	1.7	124.9				ug/L	2	Standard
Br	81	1696.8	1.5				ug/L	1647	Standard
P	31	17313.2	2.3				ug/L	15231	Standard
S	34	2535.2	5.3				ug/L	1845	Standard
Sr	88	81.7	40.8				ug/L	70	Standard
C	12	120.0	14.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	8.9	11.2				mg/L	12	Standard
Ho-1	165	13.3	21.7				mg/L	12	Standard
Er	166	23.3	89.2				mg/L	20	Standard
I	127	2468.5	18.6				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	102.392		
	Al	27	101.496		
	Sc	45			
	Ti	47	96.787		
	V	51	96.511		
	Cr	52	96.512		
	Cr	53			
	Mn	55	95.921		
	Co	59	95.243		
	Ni	60	96.635		
	Cu	65	96.831		
	Zn	66	96.770		
>	Ge	72		99.179	
	As	75	96.969		
	Se	82	93.656		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	96.847		
Ag	107	94.501		
Cd	111	93.668		
Cd	114			
> In	115			95.961
Sn	118	94.732		
Sb	123	96.908		
Ba	135	93.405		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	97.127		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.155		
U	238	98.432		
> Bi	209			94.537
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 22:50:22
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72519.8	1.9				ug/L	81760	Standard
	Be	9	21.7	113.8	**0.0146**	0.027	188.1	ug/L	17	Standard
	Al	27	2256.8	25.0	**0.0021**	0.004	187.1	ug/L	1410	Standard
	Sc	45	39016.8	1.3				ug/L	39543	Standard
	Ti	47	28.7	19.2	**-0.0470**	0.020	43.5	ug/L	39	Standard
	V	51	1194.9	2.1	**-0.0301**	0.006	21.3	ug/L	1415	Standard
	Cr	52	6354.0	0.6	**-0.1199**	0.015	12.7	ug/L	6946	Standard
	Cr	53	495.0	4.6	**0.2373**	0.020	8.3	ug/L	328	Standard
	Mn	55	724.7	7.6	**-0.0338**	0.007	19.6	ug/L	823	Standard
	Co	59	253.7	9.1	**0.0057**	0.003	47.4	ug/L	252	Standard
	Ni	60	174.7	5.0	**-0.0098**	0.003	33.3	ug/L	192	Standard
	Cu	65	124.0	10.1	**-0.0239**	0.006	23.4	ug/L	141	Standard
	Zn	66	416.7	1.4	**-0.4373**	0.011	2.5	ug/L	491	Standard
>	**Ge**	72	501758.9	1.8				ug/L	515087	Standard
	As	75	-30.1	127.3	**0.0123**	0.035	285.9	ug/L	20	Standard
	Se	82	17.1	40.3	**0.0328**	0.058	178.2	ug/L	15	Standard
	Se-1	77	51.3	18.1	**-0.0207**	0.113	545.7	ug/L	48	Standard
>	**Ga**	71	38.3	27.2				mg/L	90	Standard
	Rb	85	28.3	36.7				ug/L	23	Standard
	Y	89	432168.4	0.3				ug/L	448510	Standard
>	**Rh**	103	15.0	66.7				ug/L	15	Standard
	Mo	98	274.3	30.4	**0.0862**	0.033	37.9	ug/L	11	Standard
	Ag	107	126.3	11.5	**0.0033**	0.002	71.2	ug/L	134	Standard
	Cd	111	15.5	45.6	**0.0046**	0.003	75.0	mg/L	7	Standard
	Cd	114	32.8	69.1	**0.0016**	0.005	280.8	ug/L	16	Standard
>	**In**	115	589750.3	1.0				ug/L	611117	Standard
	Sn	118	705.0	18.1	**0.0215**	0.021	98.3	ug/L	518	Standard
	Sb	123	430.7	24.1	**0.0816**	0.022	27.0	ug/L	127	Standard
	Ba	135	35.7	21.2	**-0.0072**	0.004	55.2	ug/L	45	Standard
	Ce	140	38.3	41.9				ug/L	298	Standard
>	**Tb**	159	920829.0	0.8				ug/L	977942	Standard
	Ho	165	5.0	100.0				ug/L	12	Standard
	Tl	203	59.7	35.8	**0.0027**	0.003	98.6	ug/L	31	Standard
	Tl	205	48.3	29.9	**0.0047**	0.002	43.8	ug/L	20	Standard
	Pb	206	270.0	6.9	**-0.0110**	0.004	33.8	ug/L	286	Standard
	Pb	207	257.3	3.4	**-0.0024**	0.002	65.9	ug/L	257	Standard
	Pb	208	1000.7	8.0	**-0.0046**	0.004	92.2	ug/L	956	Standard
	U	238	61.0	23.2	**0.0060**	0.002	34.0	ug/L	17	Standard
>	**Bi**	209	528739.4	0.7				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	23.3	86.6	**-0.0259**	0.027	103.6	mg/L	32	Standard
K	39	31.7	48.2	**-0.0333**	0.052	155.8	mg/L	30	Standard
Ca	43	30.0	72.6	**-0.7014**	3.391	483.5	mg/L	48	Standard
Fe	54	129.4	20.1	**-0.0182**	0.025	139.3	mg/L	159	Standard
Fe	57	250.0	16.4	**0.2316**	0.148	64.1	mg/L	195	Standard
> **Sc-1**	45	39016.8	1.3				mg/L	39543	Standard
Cl	35	33625.3	1.5				ug/L	27642	Standard
Kr	83	3.3	124.9				ug/L	2	Standard
Br	81	1580.1	13.5				ug/L	1647	Standard
P	31	17735.4	1.8				ug/L	15231	Standard
S	34	2481.9	5.6				ug/L	1845	Standard
Sr	88	73.3	14.2				ug/L	70	Standard
C	12	113.3	41.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	0	Standard
Dy	164	9.4	5.9				mg/L	12	Standard
Ho-1	165	5.0	100.0				mg/L	12	Standard
Er	166	13.3	86.6				mg/L	20	Standard
I	127	1860.1	15.9				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		97.412	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.504
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.913
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606139306
Sample Date/Time: Tuesday, June 28, 2016 22:53:35
Number of Replicates: 3
Autosampler Position: 348
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70220.8	3.4				ug/L	81760	Standard
	Be	9	21.7	48.0	**0.0156**	0.012	75.7	ug/L	17	Standard
	Al	27	339019.6	1.3	**2.5478**	0.066	2.6	ug/L	1410	Standard
	Sc	45	39077.0	1.3				ug/L	39543	Standard
	Ti	47	1359.1	3.4	**5.3458**	0.211	3.9	ug/L	39	Standard
	V	51	13893.8	2.6	**1.8093**	0.072	4.0	ug/L	1415	Standard
	Cr	52	10697.1	2.4	**0.4928**	0.058	11.9	ug/L	6946	Standard
	Cr	53	1106.7	6.2	**0.9306**	0.098	10.5	ug/L	328	Standard
	Mn	55	27827.9	2.7	**4.1809**	0.179	4.3	ug/L	823	Standard
	Co	59	887.0	0.6	**0.0960**	0.003	2.8	ug/L	252	Standard
	Ni	60	1041.0	6.1	**0.4528**	0.043	9.5	ug/L	192	Standard
	Cu	65	6718.2	2.4	**3.4752**	0.137	3.9	ug/L	141	Standard
	Zn	66	10492.3	2.9	**8.8264**	0.376	4.3	ug/L	491	Standard
>	**Ge**	72	510902.9	1.6				ug/L	515087	Standard
	As	75	95.4	28.2	**0.1256**	0.023	18.4	ug/L	20	Standard
	Se	82	17.2	18.1	**0.0307**	0.025	82.4	ug/L	15	Standard
	Se-1	77	52.3	18.1	**-0.0171**	0.139	811.5	ug/L	48	Standard
>	**Ga**	71	256.7	6.0				mg/L	90	Standard
	Rb	85	4037.2	4.0				ug/L	23	Standard
	Y	89	441838.7	1.2				ug/L	448510	Standard
>	**Rh**	103	13.3	43.3				ug/L	15	Standard
	Mo	98	321.3	2.1	**0.1057**	0.004	4.2	ug/L	11	Standard
	Ag	107	134.7	13.7	**0.0048**	0.003	55.1	ug/L	134	Standard
	Cd	111	94.4	13.5	**0.0434**	0.006	14.4	mg/L	7	Standard
	Cd	114	184.5	30.3	**0.0322**	0.011	33.4	ug/L	16	Standard
>	**In**	115	582517.6	1.6				ug/L	611117	Standard
	Sn	118	1633.4	8.5	**0.1881**	0.027	14.5	ug/L	518	Standard
	Sb	123	1202.8	2.0	**0.2547**	0.009	3.5	ug/L	127	Standard
	Ba	135	5625.0	0.7	**2.8338**	0.047	1.7	ug/L	45	Standard
	Ce	140	7943.7	1.7				ug/L	298	Standard
>	**Tb**	159	895525.5	0.4				ug/L	977942	Standard
	Ho	165	181.7	15.7				ug/L	12	Standard
	Tl	203	104.3	12.5	**0.0084**	0.002	20.6	ug/L	31	Standard
	Tl	205	91.7	22.0	**0.0111**	0.003	27.4	ug/L	20	Standard
	Pb	206	6727.8	0.5	**1.2603**	0.018	1.4	ug/L	286	Standard
	Pb	207	5614.0	0.6	**1.1666**	0.017	1.4	ug/L	257	Standard
	Pb	208	23664.6	2.1	**1.2740**	0.038	3.0	ug/L	956	Standard
	U	238	141.7	17.4	**0.0181**	0.004	20.7	ug/L	17	Standard
>	**Bi**	209	523874.2	0.9				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	196.7	25.5	**0.2078**	0.067	32.2	mg/L	32	Standard
K	39	58.3	32.5	**0.0586**	0.068	115.6	mg/L	30	Standard
Ca	43	33.3	48.2	**-0.2427**	2.425	998.9	mg/L	48	Standard
Fe	54	342.2	5.9	**0.1765**	0.023	12.8	mg/L	159	Standard
Fe	57	293.3	7.1	**0.3778**	0.076	20.2	mg/L	195	Standard
Sc-1	45	39077.0	1.3				mg/L	39543	Standard
Cl	35	33443.5	2.1				ug/L	27642	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	1690.1	11.7				ug/L	1647	Standard
P	31	17176.4	4.2				ug/L	15231	Standard
S	34	2306.8	4.6				ug/L	1845	Standard
Sr	88	88.3	31.2				ug/L	70	Standard
C	12	143.3	10.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	0	Standard
Dy	164	280.6	4.7				mg/L	12	Standard
Ho-1	165	181.7	15.7				mg/L	12	Standard
Er	166	196.7	36.8				mg/L	20	Standard
I	127	4592.4	1.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		85.886	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.188	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.320
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.039
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606139307
Sample Date/Time: Tuesday, June 28, 2016 22:56:46
Number of Replicates: 3
Autosampler Position: 349
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72494.7	0.8				ug/L	81760	Standard
	Be	9	18.3	15.7	**0.0111**	0.003	30.5	ug/L	17	Standard
	Al	27	342418.0	1.1	**2.4911**	0.036	1.4	ug/L	1410	Standard
	Sc	45	40101.3	1.0				ug/L	39543	Standard
	Ti	47	932.7	2.7	**3.5634**	0.149	4.2	ug/L	39	Standard
	V	51	14612.8	2.1	**1.8826**	0.024	1.3	ug/L	1415	Standard
	Cr	52	11386.6	1.0	**0.5692**	0.057	10.1	ug/L	6946	Standard
	Cr	53	1260.1	6.9	**1.0869**	0.132	12.1	ug/L	328	Standard
	Mn	55	23640.1	1.0	**3.4768**	0.122	3.5	ug/L	823	Standard
	Co	59	741.4	0.2	**0.0735**	0.003	3.5	ug/L	252	Standard
	Ni	60	1110.0	3.0	**0.4811**	0.030	6.3	ug/L	192	Standard
	Cu	65	7534.9	0.8	**3.8515**	0.130	3.4	ug/L	141	Standard
	Zn	66	11297.5	1.4	**9.4161**	0.135	1.4	ug/L	491	Standard
>	**Ge**	72	518404.2	2.6				ug/L	515087	Standard
	As	75	185.7	13.2	**0.2041**	0.018	8.6	ug/L	20	Standard
	Se	82	58.4	11.2	**0.3845**	0.051	13.1	ug/L	15	Standard
	Se-1	77	57.0	12.3	**0.0333**	0.095	284.1	ug/L	48	Standard
>	**Ga**	71	201.7	7.6				mg/L	90	Standard
	Rb	85	5255.9	2.3				ug/L	23	Standard
	Y	89	429044.9	0.4				ug/L	448510	Standard
>	**Rh**	103	18.3	68.6				ug/L	15	Standard
	Mo	98	299.7	1.8	**0.0961**	0.002	1.9	ug/L	11	Standard
	Ag	107	153.3	22.0	**0.0075**	0.005	67.1	ug/L	134	Standard
	Cd	111	143.0	17.2	**0.0665**	0.011	16.8	mg/L	7	Standard
	Cd	114	356.8	31.1	**0.0663**	0.022	32.5	ug/L	16	Standard
>	**In**	115	588246.1	1.2				ug/L	611117	Standard
	Sn	118	1550.1	10.3	**0.1702**	0.025	14.7	ug/L	518	Standard
	Sb	123	1125.9	6.3	**0.2350**	0.013	5.6	ug/L	127	Standard
	Ba	135	5627.4	4.0	**2.8066**	0.107	3.8	ug/L	45	Standard
	Ce	140	5279.3	1.4				ug/L	298	Standard
>	**Tb**	159	929768.7	1.5				ug/L	977942	Standard
	Ho	165	90.0	24.2				ug/L	12	Standard
	Tl	203	125.7	60.8	**0.0104**	0.009	86.4	ug/L	31	Standard
	Tl	205	76.7	65.3	**0.0084**	0.007	82.2	ug/L	20	Standard
	Pb	206	9321.2	0.6	**1.7003**	0.038	2.2	ug/L	286	Standard
	Pb	207	7700.6	1.2	**1.5576**	0.043	2.8	ug/L	257	Standard
	Pb	208	32126.4	0.5	**1.6815**	0.027	1.6	ug/L	956	Standard
	U	238	95.0	19.2	**0.0106**	0.002	23.3	ug/L	17	Standard
>	**Bi**	209	544815.4	1.6				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	241.7	8.4	**0.2600**	0.024	9.1	mg/L	32	Standard
K	39	93.3	13.5	**0.1697**	0.044	25.8	mg/L	30	Standard
Ca	43	48.3	11.9	**1.8938**	0.874	46.1	mg/L	48	Standard
Fe	54	296.6	3.5	**0.1277**	0.009	7.4	mg/L	159	Standard
Fe	57	275.0	13.7	**0.2917**	0.134	46.0	mg/L	195	Standard
> **Sc-1**	45	40101.3	1.0				mg/L	39543	Standard
Cl	35	33371.4	1.5				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	12191.6	6.9				ug/L	1647	Standard
P	31	16642.5	2.2				ug/L	15231	Standard
S	34	2221.8	1.3				ug/L	1845	Standard
Sr	88	81.7	3.5				ug/L	70	Standard
C	12	180.0	14.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	78.1				mg/L	0	Standard
Dy	164	179.2	25.7				mg/L	12	Standard
Ho-1	165	90.0	24.2				mg/L	12	Standard
Er	166	86.7	26.6				mg/L	20	Standard
I	127	5902.8	5.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.668	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.644	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.258
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.798
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606140101
Sample Date/Time: Tuesday, June 28, 2016 22:59:58
Number of Replicates: 3
Autosampler Position: 350
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81815.4	2.6				ug/L	81760	Standard
	Be	9	21.7	13.3	**0.0121**	0.003	22.9	ug/L	17	Standard
	Al	27	45785308.7	4.2	**296.7336**	5.244	1.8	ug/L	1410	Standard
	Sc	45	41065.6	3.8				ug/L	39543	Standard
	Ti	47	178.0	12.2	**0.5887**	0.089	15.1	ug/L	39	Standard
	V	51	35448.4	4.1	**5.1643**	0.153	3.0	ug/L	1415	Standard
	Cr	52	9787.8	5.7	**0.4235**	0.068	16.1	ug/L	6946	Standard
	Cr	53	17411.8	14.2	**20.5297**	2.734	13.3	ug/L	328	Standard
	Mn	55	165972.1	5.7	**26.8086**	1.220	4.6	ug/L	823	Standard
	Co	59	1056.4	5.8	**0.1270**	0.007	5.7	ug/L	252	Standard
	Ni	60	3143.3	7.3	**1.6522**	0.109	6.6	ug/L	192	Standard
	Cu	65	2057.8	4.7	**1.0496**	0.040	3.9	ug/L	141	Standard
	Zn	66	6024.5	5.7	**4.9599**	0.261	5.3	ug/L	491	Standard
>	**Ge**	72	489001.5	1.3				ug/L	515087	Standard
	As	75	1112.2	8.9	**1.0817**	0.080	7.4	ug/L	20	Standard
	Se	82	302.7	9.2	**2.6482**	0.222	8.4	ug/L	15	Standard
	Se-1	77	1245.1	18.8	**16.6637**	3.078	18.5	ug/L	48	Standard
>	**Ga**	71	58.3	55.1				mg/L	90	Standard
	Rb	85	2691.9	5.7				ug/L	23	Standard
	Y	89	432812.2	6.0				ug/L	448510	Standard
>	**Rh**	103	128.3	14.8				ug/L	15	Standard
	Mo	98	642.1	7.2	**0.2310**	0.011	4.8	ug/L	11	Standard
	Ag	107	89.7	20.6	**-0.0021**	0.003	162.7	ug/L	134	Standard
	Cd	111	183.2	13.1	**0.0876**	0.014	15.6	mg/L	7	Standard
	Cd	114	423.4	6.2	**0.0810**	0.006	6.9	ug/L	16	Standard
>	**In**	115	580206.4	3.0				ug/L	611117	Standard
	Sn	118	1115.0	4.7	**0.0968**	0.010	9.8	ug/L	518	Standard
	Sb	123	200.7	10.2	**0.0319**	0.003	10.9	ug/L	127	Standard
	Ba	135	44440.1	3.3	**22.6462**	0.082	0.4	ug/L	45	Standard
	Ce	140	446.7	12.1				ug/L	298	Standard
>	**Tb**	159	929235.2	2.2				ug/L	977942	Standard
	Ho	165	38.3	7.5				ug/L	12	Standard
	Tl	203	126.0	16.1	**0.0119**	0.003	21.7	ug/L	31	Standard
	Tl	205	103.3	17.0	**0.0135**	0.003	21.8	ug/L	20	Standard
	Pb	206	396.7	5.3	**0.0183**	0.002	11.9	ug/L	286	Standard
	Pb	207	341.7	4.5	**0.0202**	0.002	8.5	ug/L	257	Standard
	Pb	208	1505.0	2.0	**0.0286**	0.002	5.8	ug/L	956	Standard
	U	238	10687.1	4.8	**1.6615**	0.054	3.3	ug/L	17	Standard
>	**Bi**	209	499114.9	2.7				ug/L	557080	Standard

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Na	23	8.3	91.7	**52.4138**	47.655	90.9	mg/L	0	Standard
Mg	24	165387.3	4.5	**211.9511**	6.406	3.0	mg/L	32	Standard
K	39	600.0	13.6	**1.8174**	0.318	17.5	mg/L	30	Standard
Ca	43	581.7	9.4	**79.6243**	5.149	6.5	mg/L	48	Standard
Fe	54	126.1	20.1	**-0.0269**	0.024	89.8	mg/L	159	Standard
Fe	57	591.7	6.9	**1.2999**	0.139	10.7	mg/L	195	Standard
> **Sc-1**	45	41065.6	3.8				mg/L	39543	Standard
Cl	35	47499.7	3.6				ug/L	27642	Standard
Kr	83	0.7	173.2				ug/L	2	Standard
Br	81	60832.3	7.6				ug/L	1647	Standard
P	31	21663.8	6.1				ug/L	15231	Standard
S	34	2320.2	3.1				ug/L	1845	Standard
Sr	88	470.0	1.1				ug/L	70	Standard
C	12	286.7	5.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	31.1	36.4				mg/L	12	Standard
Ho-1	165	38.3	7.5				mg/L	12	Standard
Er	166	46.7	44.6				mg/L	20	Standard
I	127	79897.5	13.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.068	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		94.936	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.942
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		89.595
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606140201
Sample Date/Time: Tuesday, June 28, 2016 23:03:09
Number of Replicates: 3
Autosampler Position: 351
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76605.0	3.1				ug/L	81760	Standard
	Be	9	21.7	13.3	**0.0135**	0.003	20.6	ug/L	17	Standard
	Al	27	26105502.1	1.1	**180.8194**	3.801	2.1	ug/L	1410	Standard
	Sc	45	39097.0	0.2				ug/L	39543	Standard
	Ti	47	562.0	2.4	**2.2655**	0.057	2.5	ug/L	39	Standard
	V	51	4742.4	3.6	**0.5271**	0.022	4.2	ug/L	1415	Standard
	Cr	52	10082.4	1.2	**0.5007**	0.019	3.8	ug/L	6946	Standard
	Cr	53	12313.3	5.4	**14.7485**	0.907	6.2	ug/L	328	Standard
	Mn	55	1295871.4	1.2	**214.8489**	3.945	1.8	ug/L	823	Standard
	Co	59	1407.4	1.1	**0.1841**	0.002	1.1	ug/L	252	Standard
	Ni	60	4305.3	1.8	**2.3535**	0.034	1.4	ug/L	192	Standard
	Cu	65	1020.0	5.2	**0.4867**	0.034	6.9	ug/L	141	Standard
	Zn	66	18219.9	0.4	**17.0511**	0.173	1.0	ug/L	491	Standard
>	**Ge**	72	478933.9	0.7				ug/L	515087	Standard
	As	75	17040.6	2.0	**16.3399**	0.219	1.3	ug/L	20	Standard
	Se	82	892.6	3.4	**8.2180**	0.229	2.8	ug/L	15	Standard
	Se-1	77	753.4	7.3	**10.0390**	0.842	8.4	ug/L	48	Standard
>	**Ga**	71	218.3	6.6				mg/L	90	Standard
	Rb	85	3558.8	1.6				ug/L	23	Standard
	Y	89	416573.3	1.7				ug/L	448510	Standard
>	**Rh**	103	118.3	21.3				ug/L	15	Standard
	Mo	98	260.0	1.1	**0.0877**	0.004	4.4	ug/L	11	Standard
	Ag	107	80.3	26.9	**-0.0029**	0.004	134.9	ug/L	134	Standard
	Cd	111	40.9	26.1	**0.0184**	0.006	33.2	mg/L	7	Standard
	Cd	114	102.6	27.3	**0.0171**	0.006	37.8	ug/L	16	Standard
>	**In**	115	551143.5	2.5				ug/L	611117	Standard
	Sn	118	835.0	12.0	**0.0548**	0.020	37.1	ug/L	518	Standard
	Sb	123	829.1	3.5	**0.1820**	0.004	2.4	ug/L	127	Standard
	Ba	135	332622.5	0.7	**178.6804**	3.714	2.1	ug/L	45	Standard
	Ce	140	6094.6	2.7				ug/L	298	Standard
>	**Tb**	159	884304.9	2.4				ug/L	977942	Standard
	Ho	165	73.3	20.8				ug/L	12	Standard
	Tl	203	115.3	18.9	**0.0110**	0.003	28.4	ug/L	31	Standard
	Tl	205	95.0	13.9	**0.0127**	0.002	15.2	ug/L	20	Standard
	Pb	206	48021.0	1.3	**10.1649**	0.107	1.1	ug/L	286	Standard
	Pb	207	40222.3	0.8	**9.4401**	0.093	1.0	ug/L	257	Standard
	Pb	208	168471.0	1.1	**10.2223**	0.060	0.6	ug/L	956	Standard
	U	238	714.0	7.4	**0.1118**	0.009	8.4	ug/L	17	Standard
>	**Bi**	209	483931.7	1.1				ug/L	557080	Standard

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Na	23	8.3	34.6	**54.1394**	18.829	34.8	mg/L	0	Standard
Mg	24	106065.1	2.2	**142.7401**	3.063	2.1	mg/L	32	Standard
K	39	148.3	8.5	**0.3655**	0.044	12.0	mg/L	30	Standard
Ca	43	363.3	11.2	**50.4710**	6.294	12.5	mg/L	48	Standard
Fe	54	1618.9	1.4	**1.3448**	0.023	1.7	mg/L	159	Standard
Fe	57	835.0	5.7	**2.2263**	0.157	7.1	mg/L	195	Standard
Sc-1	45	39097.0	0.2				mg/L	39543	Standard
Cl	35	36261.3	1.4				ug/L	27642	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	214333.6	4.1				ug/L	1647	Standard
P	31	21892.5	1.8				ug/L	15231	Standard
S	34	2305.2	3.8				ug/L	1845	Standard
Sr	88	363.3	12.3				ug/L	70	Standard
C	12	390.0	0.0				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	133.0	23.5				mg/L	12	Standard
Ho-1	165	73.3	20.8				mg/L	12	Standard
Er	166	76.7	66.9				mg/L	20	Standard
I	127	398539.7	6.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		93.695	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		92.981	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		90.186
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		86.869
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606140201
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Method 6020 - Summary Report

Sample ID: L1606140401
Sample Date/Time: Tuesday, June 28, 2016 23:06:21
Number of Replicates: 3
Autosampler Position: 352
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74993.5	0.5				ug/L	81760	Standard
	Be	9	21.7	13.3	**0.0141**	0.003	22.5	ug/L	17	Standard
	Al	27	30278310.9	1.4	**214.1402**	2.917	1.4	ug/L	1410	Standard
	Sc	45	39486.4	2.9				ug/L	39543	Standard
	Ti	47	193.3	4.5	**0.6334**	0.048	7.5	ug/L	39	Standard
	V	51	22966.6	2.4	**3.1851**	0.035	1.1	ug/L	1415	Standard
	Cr	52	11319.6	0.7	**0.6125**	0.031	5.1	ug/L	6946	Standard
	Cr	53	1811.8	4.8	**1.7776**	0.107	6.0	ug/L	328	Standard
	Mn	55	8657.1	1.2	**1.2226**	0.034	2.8	ug/L	823	Standard
	Co	59	565.7	7.8	**0.0513**	0.007	13.0	ug/L	252	Standard
	Ni	60	1945.8	2.7	**0.9557**	0.026	2.7	ug/L	192	Standard
	Cu	65	60353.0	0.9	**32.5191**	0.515	1.6	ug/L	141	Standard
	Zn	66	48175.8	1.3	**44.3004**	1.008	2.3	ug/L	491	Standard
>	**Ge**	72	501772.7	1.4				ug/L	515087	Standard
	As	75	367.9	8.8	**0.3760**	0.025	6.7	ug/L	20	Standard
	Se	82	110.4	13.6	**0.8639**	0.120	13.9	ug/L	15	Standard
	Se-1	77	129.0	8.1	**1.0381**	0.123	11.8	ug/L	48	Standard
>	**Ga**	71	68.3	27.7				mg/L	90	Standard
	Rb	85	1198.4	2.3				ug/L	23	Standard
	Y	89	417957.0	1.4				ug/L	448510	Standard
>	**Rh**	103	78.3	35.2				ug/L	15	Standard
	Mo	98	388.3	6.2	**0.1355**	0.009	6.9	ug/L	11	Standard
	Ag	107	94.3	4.8	**-0.0011**	0.001	61.6	ug/L	134	Standard
	Cd	111	42.7	19.5	**0.0186**	0.004	22.3	mg/L	7	Standard
	Cd	114	106.8	24.4	**0.0172**	0.005	31.6	ug/L	16	Standard
>	**In**	115	568064.8	0.3				ug/L	611117	Standard
	Sn	118	741.7	8.4	**0.0330**	0.012	35.5	ug/L	518	Standard
	Sb	123	163.0	3.3	**0.0243**	0.001	4.6	ug/L	127	Standard
	Ba	135	87619.3	0.7	**45.6318**	0.199	0.4	ug/L	45	Standard
	Ce	140	530.0	5.7				ug/L	298	Standard
>	**Tb**	159	902463.1	0.6				ug/L	977942	Standard
	Ho	165	31.7	24.1				ug/L	12	Standard
	Tl	203	89.3	3.6	**0.0068**	0.000	7.0	ug/L	31	Standard
	Tl	205	80.0	18.8	**0.0096**	0.002	23.2	ug/L	20	Standard
	Pb	206	4637.4	0.5	**0.8697**	0.009	1.0	ug/L	286	Standard
	Pb	207	3892.8	1.5	**0.8106**	0.017	2.1	ug/L	257	Standard
	Pb	208	15697.9	1.6	**0.8448**	0.009	1.1	ug/L	956	Standard
	U	238	6211.6	0.5	**0.9400**	0.010	1.1	ug/L	17	Standard
>	**Bi**	209	512163.0	0.7				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.8762**	18.829	173.1	mg/L	0	Standard
Mg	24	25888.8	0.8	**34.4779**	1.238	3.6	mg/L	32	Standard
K	39	206.7	17.0	**0.5565**	0.104	18.6	mg/L	30	Standard
Ca	43	238.3	20.2	**30.9565**	7.726	25.0	mg/L	48	Standard
Fe	54	118.7	26.0	**-0.0297**	0.026	88.1	mg/L	159	Standard
Fe	57	376.7	12.0	**0.6523**	0.186	28.5	mg/L	195	Standard
> **Sc-1**	45	39486.4	2.9				mg/L	39543	Standard
Cl	35	38202.8	1.2				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	11808.0	7.7				ug/L	1647	Standard
P	31	21151.4	0.3				ug/L	15231	Standard
S	34	2466.9	2.1				ug/L	1845	Standard
Sr	88	291.7	10.5				ug/L	70	Standard
C	12	196.7	43.2				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	28.2	2.0				mg/L	12	Standard
Ho-1	165	31.7	24.1				mg/L	12	Standard
Er	166	36.7	31.5				mg/L	20	Standard
I	127	34317.5	11.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.724	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.415	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		92.955
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		91.937
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606140801
Sample Date/Time: Tuesday, June 28, 2016 23:09:32
Number of Replicates: 3
Autosampler Position: 353
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78174.6	2.2				ug/L	81760	Standard
	Be	9	35.0	24.7	**0.0270**	0.008	30.6	ug/L	17	Standard
	Al	27	18286645.8	1.2	**124.0948**	2.663	2.1	ug/L	1410	Standard
	Sc	45	40988.7	1.5				ug/L	39543	Standard
	Ti	47	225.3	13.4	**0.7985**	0.121	15.1	ug/L	39	Standard
	V	51	51258.6	3.2	**7.6390**	0.153	2.0	ug/L	1415	Standard
	Cr	52	11486.4	2.6	**0.6992**	0.069	9.9	ug/L	6946	Standard
	Cr	53	8145.5	5.8	**9.5287**	0.474	5.0	ug/L	328	Standard
	Mn	55	98520.0	1.7	**16.0208**	0.120	0.7	ug/L	823	Standard
	Co	59	769.4	2.9	**0.0851**	0.002	2.7	ug/L	252	Standard
	Ni	60	1615.4	2.4	**0.8080**	0.032	4.0	ug/L	192	Standard
	Cu	65	1131.0	3.0	**0.5425**	0.014	2.7	ug/L	141	Standard
	Zn	66	4403.0	3.4	**3.4460**	0.103	3.0	ug/L	491	Standard
>	**Ge**	72	484103.1	1.4				ug/L	515087	Standard
	As	75	1970.8	6.0	**1.9047**	0.087	4.5	ug/L	20	Standard
	Se	82	191.5	8.8	**1.6489**	0.132	8.0	ug/L	15	Standard
	Se-1	77	529.7	10.7	**6.7555**	0.697	10.3	ug/L	48	Standard
>	**Ga**	71	85.0	31.1				mg/L	90	Standard
	Rb	85	2531.9	3.1				ug/L	23	Standard
	Y	89	421592.5	4.0				ug/L	448510	Standard
>	**Rh**	103	66.7	30.3				ug/L	15	Standard
	Mo	98	353.3	5.0	**0.1209**	0.007	5.4	ug/L	11	Standard
	Ag	107	105.0	57.1	**0.0006**	0.010	1741.0	ug/L	134	Standard
	Cd	111	58.7	7.1	**0.0265**	0.001	5.4	mg/L	7	Standard
	Cd	114	139.6	12.3	**0.0238**	0.003	13.4	ug/L	16	Standard
>	**In**	115	570844.6	2.8				ug/L	611117	Standard
	Sn	118	760.0	5.7	**0.0358**	0.009	25.3	ug/L	518	Standard
	Sb	123	136.8	41.6	**0.0182**	0.013	71.7	ug/L	127	Standard
	Ba	135	27343.0	2.9	**14.1534**	0.097	0.7	ug/L	45	Standard
	Ce	140	1776.8	2.1				ug/L	298	Standard
>	**Tb**	159	907261.5	0.9				ug/L	977942	Standard
	Ho	165	38.3	32.8				ug/L	12	Standard
	Tl	203	160.7	51.8	**0.0162**	0.011	66.8	ug/L	31	Standard
	Tl	205	123.3	9.4	**0.0162**	0.002	11.0	ug/L	20	Standard
	Pb	206	469.0	16.1	**0.0318**	0.015	47.2	ug/L	286	Standard
	Pb	207	405.3	12.5	**0.0333**	0.011	33.4	ug/L	257	Standard
	Pb	208	1576.7	3.7	**0.0314**	0.003	10.7	ug/L	956	Standard
	U	238	14465.9	3.7	**2.2164**	0.080	3.6	ug/L	17	Standard
>	**Bi**	209	506765.8	0.4				ug/L	557080	Standard

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Na	23	3.3	86.6	**20.4816**	17.733	86.6	mg/L	0	Standard
Mg	24	76429.0	2.1	**98.0879**	0.872	0.9	mg/L	32	Standard
K	39	103.3	20.1	**0.1958**	0.071	36.2	mg/L	30	Standard
Ca	43	268.3	18.7	**34.0467**	7.923	23.3	mg/L	48	Standard
Fe	54	210.5	5.9	**0.0466**	0.009	18.4	mg/L	159	Standard
Fe	57	346.7	13.1	**0.5032**	0.132	26.3	mg/L	195	Standard
Sc-1	45	40988.7	1.5				mg/L	39543	Standard
Cl	35	41040.2	0.8				ug/L	27642	Standard
Kr	83	2.0	173.2				ug/L	2	Standard
Br	81	20580.7	5.3				ug/L	1647	Standard
P	31	21832.4	1.0				ug/L	15231	Standard
S	34	2461.9	6.1				ug/L	1845	Standard
Sr	88	228.3	13.2				ug/L	70	Standard
C	12	196.7	34.6				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	38.1	77.6				mg/L	12	Standard
Ho-1	165	38.3	32.8				mg/L	12	Standard
Er	166	40.0	90.1				mg/L	20	Standard
I	127	105209.9	5.9				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		95.615	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.985	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.410
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		90.968
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606140901
Sample Date/Time: Tuesday, June 28, 2016 23:12:44
Number of Replicates: 3
Autosampler Position: 354
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78595.1	3.1				ug/L	81760	Standard
	Be	9	26.7	57.3	**0.0179**	0.015	85.3	ug/L	17	Standard
	Al	27	20167615.6	1.1	**136.1889**	4.854	3.6	ug/L	1410	Standard
	Sc	45	39818.9	1.9				ug/L	39543	Standard
	Ti	47	311.7	10.4	**1.1846**	0.135	11.4	ug/L	39	Standard
	V	51	55787.4	0.6	**8.4391**	0.018	0.2	ug/L	1415	Standard
	Cr	52	16179.6	1.9	**1.4466**	0.047	3.2	ug/L	6946	Standard
	Cr	53	12833.8	2.8	**15.4070**	0.434	2.8	ug/L	328	Standard
	Mn	55	13187.4	1.1	**2.0427**	0.028	1.4	ug/L	823	Standard
	Co	59	670.0	4.7	**0.0714**	0.005	7.2	ug/L	252	Standard
	Ni	60	2540.2	2.3	**1.3479**	0.032	2.4	ug/L	192	Standard
	Cu	65	810.4	1.3	**0.3686**	0.005	1.5	ug/L	141	Standard
	Zn	66	2808.3	3.3	**1.9320**	0.083	4.3	ug/L	491	Standard
>	**Ge**	72	478186.0	0.4				ug/L	515087	Standard
	As	75	1572.1	0.9	**1.5465**	0.010	0.6	ug/L	20	Standard
	Se	82	338.5	3.3	**3.0475**	0.114	3.7	ug/L	15	Standard
	Se-1	77	792.0	6.7	**10.6055**	0.757	7.1	ug/L	48	Standard
>	**Ga**	71	71.7	10.7				mg/L	90	Standard
	Rb	85	3450.4	2.1				ug/L	23	Standard
	Y	89	421286.0	4.0				ug/L	448510	Standard
>	**Rh**	103	76.7	10.0				ug/L	15	Standard
	Mo	98	1179.3	2.2	**0.4594**	0.016	3.6	ug/L	11	Standard
	Ag	107	70.0	6.5	**-0.0048**	0.001	13.6	ug/L	134	Standard
	Cd	111	26.3	13.5	**0.0106**	0.002	18.0	mg/L	7	Standard
	Cd	114	71.5	14.0	**0.0102**	0.002	20.9	ug/L	16	Standard
>	**In**	115	557486.7	1.6				ug/L	611117	Standard
	Sn	118	753.4	2.1	**0.0377**	0.003	7.4	ug/L	518	Standard
	Sb	123	140.1	13.9	**0.0197**	0.005	23.1	ug/L	127	Standard
	Ba	135	30044.1	2.0	**15.9271**	0.116	0.7	ug/L	45	Standard
	Ce	140	1501.7	8.9				ug/L	298	Standard
>	**Tb**	159	887600.8	1.1				ug/L	977942	Standard
	Ho	165	38.3	27.2				ug/L	12	Standard
	Tl	203	136.3	15.5	**0.0135**	0.003	21.6	ug/L	31	Standard
	Tl	205	116.7	8.9	**0.0158**	0.002	10.2	ug/L	20	Standard
	Pb	206	477.7	6.1	**0.0364**	0.006	16.6	ug/L	286	Standard
	Pb	207	398.0	3.8	**0.0344**	0.003	8.7	ug/L	257	Standard
	Pb	208	1707.0	2.5	**0.0420**	0.002	4.6	ug/L	956	Standard
	U	238	23354.0	0.6	**3.6864**	0.026	0.7	ug/L	17	Standard
>	**Bi**	209	492176.6	0.6				ug/L	557080	Standard

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Na	23	8.3	124.9	**53.9308**	68.028	126.1	mg/L	0	Standard
Mg	24	78221.4	0.2	**103.3688**	1.796	1.7	mg/L	32	Standard
K	39	181.7	9.7	**0.4684**	0.061	12.9	mg/L	30	Standard
Ca	43	295.0	5.9	**39.1939**	3.495	8.9	mg/L	48	Standard
Fe	54	173.9	5.6	**0.0192**	0.007	35.0	mg/L	159	Standard
Fe	57	403.3	17.1	**0.7302**	0.251	34.4	mg/L	195	Standard
Sc-1	45	39818.9	1.9				mg/L	39543	Standard
Cl	35	38063.1	1.8				ug/L	27642	Standard
Kr	83	1.3	173.2				ug/L	2	Standard
Br	81	39401.2	2.9				ug/L	1647	Standard
P	31	23753.6	2.5				ug/L	15231	Standard
S	34	2233.5	3.9				ug/L	1845	Standard
Sr	88	295.0	6.1				ug/L	70	Standard
C	12	220.0	31.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	222.1	127.8				mg/L	12	Standard
Ho-1	165	38.3	27.2				mg/L	12	Standard
Er	166	26.7	78.1				mg/L	20	Standard
I	127	56189.0	1.6				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		96.129	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		92.836	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		91.224
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		88.349
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 23:15:56
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73471.1	1.2				ug/L	81760	Standard
	Be	9	47618.1	3.0	**53.3659**	2.229	4.2	ug/L	17	Standard
	Al	27	7287296.4	1.0	**52.5966**	0.249	0.5	ug/L	1410	Standard
	Sc	45	40183.2	3.0				ug/L	39543	Standard
	Ti	47	24656.7	0.7	**99.9368**	1.445	1.4	ug/L	39	Standard
	V	51	342959.6	1.5	**49.6067**	0.741	1.5	ug/L	1415	Standard
	Cr	52	350575.7	1.6	**49.7880**	0.923	1.9	ug/L	6946	Standard
	Cr	53	44859.7	1.2	**51.2482**	0.358	0.7	ug/L	328	Standard
	Mn	55	313688.7	1.9	**48.6980**	0.765	1.6	ug/L	823	Standard
	Co	59	336351.1	1.2	**48.2963**	0.507	1.1	ug/L	252	Standard
	Ni	60	92893.3	2.1	**49.6893**	0.993	2.0	ug/L	192	Standard
	Cu	65	92858.0	0.8	**49.2454**	0.445	0.9	ug/L	141	Standard
	Zn	66	54854.1	1.5	**49.6985**	0.961	1.9	ug/L	491	Standard
>	Ge	72	510232.1	0.7				ug/L	515087	Standard
	As	75	53972.2	1.6	**48.5043**	0.935	1.9	ug/L	20	Standard
	Se	82	5467.9	0.8	**47.8296**	0.724	1.5	ug/L	15	Standard
	Se-1	77	3829.5	1.2	**50.5966**	0.465	0.9	ug/L	48	Standard
>	Ga	71	55.0	32.8				mg/L	90	Standard
	Rb	85	740.0	22.2				ug/L	23	Standard
	Y	89	417471.8	0.9				ug/L	448510	Standard
>	Rh	103	28.3	40.8				ug/L	15	Standard
	Mo	98	255774.9	1.1	**100.4324**	1.068	1.1	ug/L	11	Standard
	Ag	107	314263.4	0.6	**49.6826**	0.310	0.6	ug/L	134	Standard
	Cd	111	99244.0	2.0	**49.2800**	0.642	1.3	mg/L	7	Standard
	Cd	114	244609.6	0.7	**49.9721**	0.117	0.2	ug/L	16	Standard
>	In	115	575695.1	0.7				ug/L	611117	Standard
	Sn	118	277518.7	1.2	**49.7196**	0.393	0.8	ug/L	518	Standard
	Sb	123	223405.3	1.0	**50.2498**	0.315	0.6	ug/L	127	Standard
	Ba	135	95362.2	0.9	**49.0082**	0.194	0.4	ug/L	45	Standard
	Ce	140	66.7	18.9				ug/L	298	Standard
>	Tb	159	900469.8	1.2				ug/L	977942	Standard
	Ho	165	0.0					ug/L	12	Standard
	Tl	203	399704.8	0.8	**50.1537**	0.324	0.6	ug/L	31	Standard
	Tl	205	354566.9	2.1	**51.2307**	0.689	1.3	ug/L	20	Standard
	Pb	206	258134.8	1.1	**50.4360**	0.346	0.7	ug/L	286	Standard
	Pb	207	234508.0	1.0	**50.8014**	0.140	0.3	ug/L	257	Standard
	Pb	208	934488.0	0.8	**52.3272**	0.390	0.7	ug/L	956	Standard
	U	238	348175.4	0.3	**51.3787**	0.514	1.0	ug/L	17	Standard
>	Bi	209	526902.0	1.3				ug/L	557080	Standard

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Na	23	5.0	100.0	**32.0442**	31.868	99.5	mg/L	0	Standard
Mg	24	3947.2	3.3	**5.1157**	0.206	4.0	mg/L	32	Standard
K	39	1291.7	6.0	**4.1569**	0.313	7.5	mg/L	30	Standard
Ca	43	78.3	13.3	**6.3383**	1.191	18.8	mg/L	48	Standard
Fe	54	5567.6	3.6	**4.8270**	0.308	6.4	mg/L	159	Standard
Fe	57	1653.4	2.1	**4.8734**	0.265	5.4	mg/L	195	Standard
Sc-1	45	40183.2	3.0				mg/L	39543	Standard
Cl	35	36099.6	2.2				ug/L	27642	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	2486.9	19.4				ug/L	1647	Standard
P	31	18199.3	2.9				ug/L	15231	Standard
S	34	2558.5	2.4				ug/L	1845	Standard
Sr	88	88.3	13.1				ug/L	70	Standard
C	12	123.3	18.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	0	Standard
Dy	164	2.5	205.9				mg/L	12	Standard
Ho-1	165	0.0					mg/L	12	Standard
Er	166	16.7	69.3				mg/L	20	Standard
I	127	3410.4	24.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	106.732		
Al	27	105.193		
Sc	45			
Ti	47	99.937		
V	51	99.213		
Cr	52	99.576		
Cr	53			
Mn	55	97.396		
Co	59	96.593		
Ni	60	99.379		
Cu	65	98.491		
Zn	66	99.397		
Ge	72		99.057	
As	75	97.009		
Se	82	95.659		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	100.432		
Ag	107	99.365		
Cd	111	98.560		
Cd	114			
> In	115			94.204
Sn	118	99.439		
Sb	123	100.500		
Ba	135	98.016		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.307		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.654		
U	238	102.757		
> Bi	209			94.583
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, June 28, 2016 23:19:08
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74688.6	0.5				ug/L	81760	Standard
	Be	9	23.3	68.9	**0.0159**	0.018	110.7	ug/L	17	Standard
	Al	27	6963.5	51.4	**0.0350**	0.025	72.0	ug/L	1410	Standard
	Sc	45	39526.5	2.8				ug/L	39543	Standard
	Ti	47	29.3	2.0	**-0.0430**	0.003	6.9	ug/L	39	Standard
	V	51	1022.6	3.0	**-0.0543**	0.006	11.1	ug/L	1415	Standard
	Cr	52	6275.6	1.6	**-0.1243**	0.005	4.1	ug/L	6946	Standard
	Cr	53	655.0	2.0	**0.4308**	0.021	5.0	ug/L	328	Standard
	Mn	55	708.0	10.7	**-0.0355**	0.011	31.8	ug/L	823	Standard
	Co	59	254.0	9.4	**0.0060**	0.003	53.0	ug/L	252	Standard
	Ni	60	190.7	1.6	**-0.0002**	0.001	475.8	ug/L	192	Standard
	Cu	65	144.3	16.1	**-0.0123**	0.012	100.6	ug/L	141	Standard
	Zn	66	441.0	4.3	**-0.4114**	0.015	3.7	ug/L	491	Standard
>	**Ge**	72	497792.7	1.0				ug/L	515087	Standard
	As	75	-15.2	258.6	**0.0262**	0.036	138.8	ug/L	20	Standard
	Se	82	23.5	16.0	**0.0916**	0.033	35.7	ug/L	15	Standard
	Se-1	77	63.7	3.3	**0.1558**	0.037	23.6	ug/L	48	Standard
>	**Ga**	71	50.0	34.6				mg/L	90	Standard
	Rb	85	33.3	56.8				ug/L	23	Standard
	Y	89	425942.8	1.0				ug/L	448510	Standard
>	**Rh**	103	6.7	43.3				ug/L	15	Standard
	Mo	98	281.0	37.4	**0.0876**	0.040	45.9	ug/L	11	Standard
	Ag	107	137.7	21.7	**0.0048**	0.005	95.8	ug/L	134	Standard
	Cd	111	15.2	29.8	**0.0044**	0.002	50.1	mg/L	7	Standard
	Cd	114	43.1	89.6	**0.0036**	0.008	212.7	ug/L	16	Standard
>	**In**	115	595727.8	0.7				ug/L	611117	Standard
	Sn	118	753.4	17.4	**0.0287**	0.023	78.8	ug/L	518	Standard
	Sb	123	441.8	17.1	**0.0832**	0.016	19.8	ug/L	127	Standard
	Ba	135	56.0	54.4	**0.0027**	0.015	556.5	ug/L	45	Standard
	Ce	140	23.3	12.4				ug/L	298	Standard
>	**Tb**	159	931120.0	0.7				ug/L	977942	Standard
	Ho	165	10.0	86.6				ug/L	12	Standard
	Tl	203	88.3	51.6	**0.0060**	0.006	92.0	ug/L	31	Standard
	Tl	205	63.3	63.8	**0.0066**	0.006	85.2	ug/L	20	Standard
	Pb	206	308.0	15.6	**-0.0049**	0.009	177.6	ug/L	286	Standard
	Pb	207	259.7	11.6	**-0.0032**	0.006	187.4	ug/L	257	Standard
	Pb	208	1046.3	7.8	**-0.0033**	0.004	126.3	ug/L	956	Standard
	U	238	64.3	43.1	**0.0063**	0.004	62.8	ug/L	17	Standard
>	**Bi**	209	540861.2	0.7				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.5148**	18.203	173.1	mg/L	0	Standard
Mg	24	55.0	41.7	**0.0162**	0.030	187.5	mg/L	32	Standard
K	39	25.0	20.0	**-0.0566**	0.019	34.0	mg/L	30	Standard
Ca	43	33.3	34.6	**-0.2594**	1.827	704.2	mg/L	48	Standard
Fe	54	134.2	10.1	**-0.0157**	0.009	57.1	mg/L	159	Standard
Fe	57	241.7	9.3	**0.1932**	0.098	50.6	mg/L	195	Standard
Sc-1	45	39526.5	2.8				mg/L	39543	Standard
Cl	35	35813.0	1.8				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1830.1	10.1				ug/L	1647	Standard
P	31	18830.0	1.9				ug/L	15231	Standard
S	34	2625.2	3.0				ug/L	1845	Standard
Sr	88	65.0	33.5				ug/L	70	Standard
C	12	80.0	21.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	19.2	93.8				mg/L	12	Standard
Ho-1	165	10.0	86.6				mg/L	12	Standard
Er	166	16.7	91.7				mg/L	20	Standard
I	127	2391.9	12.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.642	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.482
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.089
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Tuesday, June 28, 2016 23:22:21
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70209.0	1.7				ug/L	81760	Standard
	Be	9	180.0	16.9	**0.2017**	0.039	19.3	ug/L	17	Standard
	Al	27	5133.2	109.4	**0.0240**	0.041	173.1	ug/L	1410	Standard
	Sc	45	36931.6	2.6				ug/L	39543	Standard
	Ti	47	20.7	36.3	**-0.0758**	0.033	44.0	ug/L	39	Standard
	V	51	3515.4	3.3	**0.3352**	0.014	4.2	ug/L	1415	Standard
	Cr	52	11116.7	0.6	**0.6541**	0.028	4.2	ug/L	6946	Standard
	Cr	53	1220.0	4.0	**1.1474**	0.049	4.3	ug/L	328	Standard
	Mn	55	3585.8	2.9	**0.4442**	0.023	5.1	ug/L	823	Standard
	Co	59	2687.2	1.7	**0.3785**	0.013	3.3	ug/L	252	Standard
	Ni	60	2873.6	1.1	**1.5299**	0.031	2.0	ug/L	192	Standard
	Cu	65	1483.4	2.9	**0.7455**	0.015	2.0	ug/L	141	Standard
	Zn	66	6969.9	1.2	**5.9869**	0.185	3.1	ug/L	491	Standard
>	**Ge**	72	480794.8	1.6				ug/L	515087	Standard
	As	75	396.5	4.3	**0.4183**	0.021	5.0	ug/L	20	Standard
	Se	82	61.9	5.1	**0.4561**	0.020	4.4	ug/L	15	Standard
	Se-1	77	78.3	14.0	**0.3969**	0.172	43.4	ug/L	48	Standard
>	**Ga**	71	46.7	32.7				mg/L	90	Standard
	Rb	85	21.7	13.3				ug/L	23	Standard
	Y	89	400775.4	1.5				ug/L	448510	Standard
>	**Rh**	103	13.3	21.7				ug/L	15	Standard
	Mo	98	70.5	1.1	**0.0095**	0.000	1.9	ug/L	11	Standard
	Ag	107	2377.2	2.1	**0.3719**	0.012	3.3	ug/L	134	Standard
	Cd	111	440.9	3.8	**0.2230**	0.005	2.1	mg/L	7	Standard
	Cd	114	1065.8	11.0	**0.2200**	0.026	11.9	ug/L	16	Standard
>	**In**	115	557761.4	1.6				ug/L	611117	Standard
	Sn	118	468.3	18.8	**-0.0150**	0.017	116.5	ug/L	518	Standard
	Sb	123	1709.9	1.5	**0.3843**	0.009	2.4	ug/L	127	Standard
	Ba	135	1358.4	3.9	**0.6957**	0.022	3.2	ug/L	45	Standard
	Ce	140	15.0	33.3				ug/L	298	Standard
>	**Tb**	159	873882.2	1.3				ug/L	977942	Standard
	Ho	165	8.3	124.9				ug/L	12	Standard
	Tl	203	633.3	2.0	**0.0774**	0.002	2.5	ug/L	31	Standard
	Tl	205	590.0	17.7	**0.0858**	0.015	17.2	ug/L	20	Standard
	Pb	206	1230.0	0.6	**0.1853**	0.002	0.8	ug/L	286	Standard
	Pb	207	1060.4	4.9	**0.1798**	0.012	6.4	ug/L	257	Standard
	Pb	208	4496.6	3.9	**0.2002**	0.009	4.3	ug/L	956	Standard
	U	238	2637.6	2.9	**0.3996**	0.008	2.0	ug/L	17	Standard
>	**Bi**	209	509391.4	0.9				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	38.3	30.1	**-0.0027**	0.016	586.9	mg/L	32	Standard
K	39	28.3	44.4	**-0.0396**	0.043	109.0	mg/L	30	Standard
Ca	43	26.7	43.3	**-1.0379**	1.747	168.3	mg/L	48	Standard
Fe	54	112.3	22.9	**-0.0284**	0.024	85.0	mg/L	159	Standard
Fe	57	253.3	17.2	**0.2902**	0.150	51.8	mg/L	195	Standard
> **Sc-1**	45	36931.6	2.6				mg/L	39543	Standard
Cl	35	34628.2	2.2				ug/L	27642	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1663.4	2.8				ug/L	1647	Standard
P	31	13167.4	6.3				ug/L	15231	Standard
S	34	2550.2	3.7				ug/L	1845	Standard
Sr	88	81.7	12.7				ug/L	70	Standard
C	12	96.7	15.8				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	22.7	104.3				mg/L	12	Standard
Ho-1	165	8.3	124.9				mg/L	12	Standard
Er	166	13.3	173.2				mg/L	20	Standard
I	127	1815.1	19.4				mg/L	1162	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	100.854		
	Al	27			
	Sc	45			
	Ti	47			
	V	51	83.798		
	Cr	52	81.760		
	Cr	53			
	Mn	55	88.848		
	Co	59	94.629		
	Ni	60	95.622		
	Cu	65	93.183		
	Zn	66	95.791		
>	Ge	72		93.342	
	As	75	104.574		
	Se	82	114.027		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	92.977		
Cd	111	92.929		
Cd	114			
> In	115			91.269
Sn	118			
Sb	123	96.075		
Ba	135	92.766		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	96.789		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.122		
U	238	99.892		
> Bi	209			91.439
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
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Method 6020 - Summary Report

Sample ID: PBS M4 WG574306-02
Sample Date/Time: Tuesday, June 28, 2016 23:25:34
Number of Replicates: 3
Autosampler Position: 401
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73219.9	2.0				ug/L	81760	Standard
	Be	9	21.7	13.3	**0.0146**	0.003	19.0	ug/L	17	Standard
	Al	27	8870.9	1.6	**0.0499**	0.001	2.1	ug/L	1410	Standard
	Sc	45	39242.4	3.0				ug/L	39543	Standard
	Ti	47	26.0	21.4	**-0.0565**	0.021	37.8	ug/L	39	Standard
	V	51	1183.1	4.4	**-0.0293**	0.008	27.7	ug/L	1415	Standard
	Cr	52	7819.4	0.5	**0.1132**	0.035	31.1	ug/L	6946	Standard
	Cr	53	706.7	5.7	**0.4968**	0.043	8.6	ug/L	328	Standard
	Mn	55	910.4	1.2	**-0.0022**	0.005	247.3	ug/L	823	Standard
	Co	59	210.7	7.4	**-0.0001**	0.003	2281.1	ug/L	252	Standard
	Ni	60	270.7	10.1	**0.0449**	0.018	40.4	ug/L	192	Standard
	Cu	65	197.3	7.2	**0.0174**	0.009	50.7	ug/L	141	Standard
	Zn	66	1637.4	3.9	**0.7282**	0.056	7.7	ug/L	491	Standard
>	**Ge**	72	494675.2	2.7				ug/L	515087	Standard
	As	75	-22.9	72.5	**0.0188**	0.016	85.6	ug/L	20	Standard
	Se	82	19.6	24.9	**0.0572**	0.041	70.8	ug/L	15	Standard
	Se-1	77	57.0	14.0	**0.0674**	0.090	134.0	ug/L	48	Standard
>	**Ga**	71	43.3	17.6				mg/L	90	Standard
	Rb	85	43.3	35.3				ug/L	23	Standard
	Y	89	424600.8	0.9				ug/L	448510	Standard
>	**Rh**	103	15.0	66.7				ug/L	15	Standard
	Mo	98	68.5	24.2	**0.0070**	0.006	90.8	ug/L	11	Standard
	Ag	107	79.3	10.7	**-0.0041**	0.001	32.3	ug/L	134	Standard
	Cd	111	8.5	44.3	**0.0012**	0.002	151.3	mg/L	7	Standard
	Cd	114	29.3	97.6	**0.0009**	0.006	647.6	ug/L	16	Standard
>	**In**	115	594639.0	0.2				ug/L	611117	Standard
	Sn	118	648.3	4.2	**0.0107**	0.005	42.7	ug/L	518	Standard
	Sb	123	146.0	12.4	**0.0190**	0.004	20.5	ug/L	127	Standard
	Ba	135	94.3	2.4	**0.0219**	0.001	5.5	ug/L	45	Standard
	Ce	140	41.7	27.7				ug/L	298	Standard
>	**Tb**	159	926166.4	1.8				ug/L	977942	Standard
	Ho	165	11.7	24.7				ug/L	12	Standard
	Tl	203	20.7	43.9	**-0.0022**	0.001	49.4	ug/L	31	Standard
	Tl	205	15.0	33.3	**-0.0001**	0.001	484.0	ug/L	20	Standard
	Pb	206	313.0	7.9	**-0.0032**	0.004	138.6	ug/L	286	Standard
	Pb	207	286.3	1.1	**0.0033**	0.001	36.5	ug/L	257	Standard
	Pb	208	1144.7	1.9	**0.0029**	0.001	51.3	ug/L	956	Standard
	U	238	10.7	32.9	**-0.0014**	0.001	35.7	ug/L	17	Standard
>	**Bi**	209	533593.4	0.9				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	31.7	39.7	**-0.0149**	0.016	104.8	mg/L	32	Standard
K	39	41.7	69.3	**0.0013**	0.101	7981.1	mg/L	30	Standard
Ca	43	18.3	15.7	**-2.5418**	0.422	16.6	mg/L	48	Standard
Fe	54	144.2	9.3	**-0.0052**	0.016	301.7	mg/L	159	Standard
Fe	57	226.7	13.5	**0.1451**	0.083	57.3	mg/L	195	Standard
Sc-1	45	39242.4	3.0				mg/L	39543	Standard
Cl	35	36295.4	2.3				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	2233.5	3.2				ug/L	1647	Standard
P	31	18441.2	3.0				ug/L	15231	Standard
S	34	2560.2	3.7				ug/L	1845	Standard
Sr	88	61.7	26.1				ug/L	70	Standard
C	12	130.0	20.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	22.9	112.2				mg/L	12	Standard
Ho-1	165	11.7	24.7				mg/L	12	Standard
Er	166	10.0	100.0				mg/L	20	Standard
I	127	1601.8	24.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.555	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.037	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.304
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.784
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSS M4 WG574306-03
Sample Date/Time: Tuesday, June 28, 2016 23:28:45
Number of Replicates: 3
Autosampler Position: 402
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72376.0	3.8				ug/L	81760	Standard
	Be	9	23423.1	1.4	**26.6532**	0.807	3.0	ug/L	17	Standard
	Al	27	9074.4	3.8	**0.0521**	0.003	4.9	ug/L	1410	Standard
	Sc	45	39197.3	2.4				ug/L	39543	Standard
	Ti	47	29.3	7.1	**-0.0442**	0.007	16.8	ug/L	39	Standard
	V	51	169885.7	0.8	**24.8594**	0.272	1.1	ug/L	1415	Standard
	Cr	52	181506.5	1.2	**25.6821**	0.081	0.3	ug/L	6946	Standard
	Cr	53	22394.9	2.0	**25.8190**	0.261	1.0	ug/L	328	Standard
	Mn	55	162938.5	1.1	**25.6253**	0.137	0.5	ug/L	823	Standard
	Co	59	171171.6	1.4	**24.9527**	0.363	1.5	ug/L	252	Standard
	Ni	60	47214.1	1.2	**25.6031**	0.067	0.3	ug/L	192	Standard
	Cu	65	47011.2	0.9	**25.2811**	0.042	0.2	ug/L	141	Standard
	Zn	66	28788.3	1.3	**26.1066**	0.165	0.6	ug/L	491	Standard
>	**Ge**	72	502290.9	1.0				ug/L	515087	Standard
	As	75	27387.3	0.6	**25.0208**	0.130	0.5	ug/L	20	Standard
	Se	82	2754.4	0.7	**24.4154**	0.147	0.6	ug/L	15	Standard
	Se-1	77	1916.1	0.9	**25.3637**	0.129	0.5	ug/L	48	Standard
>	**Ga**	71	55.0	18.2				mg/L	90	Standard
	Rb	85	31.7	18.2				ug/L	23	Standard
	Y	89	439399.0	0.9				ug/L	448510	Standard
>	**Rh**	103	31.7	24.1				ug/L	15	Standard
	Mo	98	98.7	7.7	**0.0186**	0.002	12.0	ug/L	11	Standard
	Ag	107	158446.9	0.8	**24.3265**	0.298	1.2	ug/L	134	Standard
	Cd	111	51639.0	0.8	**24.9106**	0.321	1.3	mg/L	7	Standard
	Cd	114	123238.5	0.9	**24.4562**	0.275	1.1	ug/L	16	Standard
>	**In**	115	592677.3	1.9				ug/L	611117	Standard
	Sn	118	653.3	6.2	**0.0119**	0.005	41.0	ug/L	518	Standard
	Sb	123	110361.6	0.7	**24.1094**	0.310	1.3	ug/L	127	Standard
	Ba	135	48745.3	0.9	**24.3246**	0.340	1.4	ug/L	45	Standard
	Ce	140	51.7	39.1				ug/L	298	Standard
>	**Tb**	159	905963.3	1.2				ug/L	977942	Standard
	Ho	165	11.7	65.5				ug/L	12	Standard
	Tl	203	202415.8	0.8	**25.4126**	0.129	0.5	ug/L	31	Standard
	Tl	205	180512.3	0.1	**26.1008**	0.236	0.9	ug/L	20	Standard
	Pb	206	132596.7	0.6	**25.8949**	0.268	1.0	ug/L	286	Standard
	Pb	207	115831.1	1.1	**25.0809**	0.349	1.4	ug/L	257	Standard
	Pb	208	485807.7	1.5	**27.1937**	0.548	2.0	ug/L	956	Standard
	U	238	174705.5	0.6	**25.7950**	0.133	0.5	ug/L	17	Standard
>	**Bi**	209	526543.8	0.9				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	28.3	53.9	**-0.0192**	0.020	104.0	mg/L	32	Standard
K	39	18.3	78.7	**-0.0794**	0.048	60.3	mg/L	30	Standard
Ca	43	26.7	21.7	**-1.2726**	0.799	62.8	mg/L	48	Standard
Fe	54	143.6	13.2	**-0.0059**	0.017	289.5	mg/L	159	Standard
Fe	57	241.7	12.5	**0.2002**	0.121	60.5	mg/L	195	Standard
> **Sc-1**	45	39197.3	2.4				mg/L	39543	Standard
Cl	35	35988.7	2.8				ug/L	27642	Standard
Kr	83	3.3	17.3				ug/L	2	Standard
Br	81	1690.1	11.1				ug/L	1647	Standard
P	31	17910.6	1.0				ug/L	15231	Standard
S	34	2548.5	6.5				ug/L	1845	Standard
Sr	88	75.0	24.0				ug/L	70	Standard
C	12	120.0	16.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	16.5	68.3				mg/L	12	Standard
Ho-1	165	11.7	65.5				mg/L	12	Standard
Er	166	3.3	173.2				mg/L	20	Standard
I	127	1618.4	15.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		88.522	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.516	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.983
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.518
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129707 WG574306-01
Sample Date/Time: Tuesday, June 28, 2016 23:31:57
Number of Replicates: 3
Autosampler Position: 403
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73039.0	1.3				ug/L	81760	Standard
	Be	9	626.7	10.9	**0.6973**	0.086	12.3	ug/L	17	Standard
	Al	27	6016122.3	2.0	**43.6794**	0.992	2.3	ug/L	1410	Standard
	Sc	45	43592.6	1.8				ug/L	39543	Standard
	Ti	47	1645.1	1.5	**6.4955**	0.085	1.3	ug/L	39	Standard
	V	51	103833.7	2.4	**14.8338**	0.288	1.9	ug/L	1415	Standard
	Cr	52	59851.7	1.4	**7.6005**	0.153	2.0	ug/L	6946	Standard
	Cr	53	7268.4	3.1	**7.9966**	0.305	3.8	ug/L	328	Standard
	Mn	55	3268160.2	1.2	**507.4707**	9.760	1.9	ug/L	823	Standard
	Co	59	39533.2	0.9	**5.6343**	0.098	1.7	ug/L	252	Standard
	Ni	60	18874.4	2.7	**9.9863**	0.299	3.0	ug/L	192	Standard
	Cu	65	69246.2	1.1	**36.6021**	0.305	0.8	ug/L	141	Standard
	Zn	66	86637.7	0.8	**78.7605**	0.745	0.9	ug/L	491	Standard
>	**Ge**	72	511586.4	0.8				ug/L	515087	Standard
	As	75	4823.9	1.5	**4.3600**	0.029	0.7	ug/L	20	Standard
	Se	82	100.3	6.0	**0.7578**	0.047	6.2	ug/L	15	Standard
	Se-1	77	133.3	1.1	**1.0631**	0.006	0.6	ug/L	48	Standard
>	**Ga**	71	7216.7	0.8				mg/L	90	Standard
	Rb	85	77067.2	0.1				ug/L	23	Standard
	Y	89	607493.8	2.8				ug/L	448510	Standard
>	**Rh**	103	25.0	34.6				ug/L	15	Standard
	Mo	98	512.0	2.8	**0.1759**	0.005	2.9	ug/L	11	Standard
	Ag	107	750.4	6.7	**0.0988**	0.008	7.8	ug/L	134	Standard
	Cd	111	815.5	1.0	**0.3898**	0.005	1.3	mg/L	7	Standard
	Cd	114	2038.2	2.1	**0.3989**	0.010	2.4	ug/L	16	Standard
>	**In**	115	593721.9	0.4				ug/L	611117	Standard
	Sn	118	941.7	10.4	**0.0620**	0.016	26.6	ug/L	518	Standard
	Sb	123	1005.8	16.4	**0.2066**	0.037	17.7	ug/L	127	Standard
	Ba	135	393236.3	1.1	**196.0335**	2.433	1.2	ug/L	45	Standard
	Ce	140	857283.3	2.5				ug/L	298	Standard
>	**Tb**	159	944884.3	0.7				ug/L	977942	Standard
	Ho	165	15139.2	2.1				ug/L	12	Standard
	Tl	203	479.0	10.1	**0.0546**	0.006	10.6	ug/L	31	Standard
	Tl	205	396.7	12.4	**0.0544**	0.008	14.1	ug/L	20	Standard
	Pb	206	209606.6	0.8	**40.4302**	0.428	1.1	ug/L	286	Standard
	Pb	207	173972.5	0.8	**37.2011**	0.310	0.8	ug/L	257	Standard
	Pb	208	734775.6	0.6	**40.6204**	0.824	2.0	ug/L	956	Standard
	U	238	3055.0	2.6	**0.4423**	0.014	3.2	ug/L	17	Standard
>	**Bi**	209	533598.4	1.5				ug/L	557080	Standard

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Na	23	3.3	173.2	**19.2926**	33.407	173.2	mg/L	0	Standard
Mg	24	75.0	26.7	**0.0334**	0.024	70.8	mg/L	32	Standard
K	39	210.0	4.8	**0.5021**	0.023	4.7	mg/L	30	Standard
Ca	43	75.0	29.1	**4.9537**	2.848	57.5	mg/L	48	Standard
Fe	54	6552.0	2.8	**5.2441**	0.230	4.4	mg/L	159	Standard
Fe	57	1841.8	2.3	**5.0156**	0.091	1.8	mg/L	195	Standard
> **Sc-1**	45	43592.6	1.8				mg/L	39543	Standard
Cl	35	34528.0	1.5				ug/L	27642	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	3080.3	6.6				ug/L	1647	Standard
P	31	18262.7	4.8				ug/L	15231	Standard
S	34	2550.2	4.9				ug/L	1845	Standard
Sr	88	106.7	7.2				ug/L	70	Standard
C	12	370.0	20.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	40.0				mg/L	0	Standard
Dy	164	25551.2	3.2				mg/L	12	Standard
Ho-1	165	15139.2	2.1				mg/L	12	Standard
Er	166	14156.6	1.1				mg/L	20	Standard
I	127	14104.9	1.1				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.333	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.320	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.154
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.785
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129708S WG574306-04
Sample Date/Time: Tuesday, June 28, 2016 23:35:08
Number of Replicates: 3
Autosampler Position: 404
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77425.7	0.5				ug/L	81760	Standard
	Be	9	24978.9	2.1	**26.5514**	0.597	2.2	ug/L	17	Standard
	Al	27	20723622.4	0.1	**141.9584**	0.685	0.5	ug/L	1410	Standard
	Sc	45	47225.2	3.2				ug/L	39543	Standard
	Ti	47	4499.3	2.9	**18.2724**	0.558	3.1	ug/L	39	Standard
	V	51	344846.0	0.3	**50.3538**	0.699	1.4	ug/L	1415	Standard
	Cr	52	312957.5	0.8	**44.7646**	1.096	2.4	ug/L	6946	Standard
	Cr	53	39581.6	1.4	**45.6150**	1.229	2.7	ug/L	328	Standard
	Mn	55	5573425.5	1.4	**875.8629**	6.350	0.7	ug/L	823	Standard
	Co	59	254404.2	1.0	**36.8653**	0.333	0.9	ug/L	252	Standard
	Ni	60	98601.5	0.1	**53.2500**	0.840	1.6	ug/L	192	Standard
	Cu	65	83052.3	0.8	**44.4536**	0.827	1.9	ug/L	141	Standard
	Zn	66	91760.7	0.8	**84.4843**	0.972	1.2	ug/L	491	Standard
>	**Ge**	72	505521.9	1.6				ug/L	515087	Standard
	As	75	29384.3	0.4	**26.6737**	0.341	1.3	ug/L	20	Standard
	Se	82	1902.3	1.0	**16.7176**	0.177	1.1	ug/L	15	Standard
	Se-1	77	1368.1	4.0	**17.7813**	0.553	3.1	ug/L	48	Standard
>	**Ga**	71	22081.1	1.8				mg/L	90	Standard
	Rb	85	217862.7	3.0				ug/L	23	Standard
	Y	89	681158.2	0.5				ug/L	448510	Standard
>	**Rh**	103	41.7	13.9				ug/L	15	Standard
	Mo	98	502.0	0.9	**0.1763**	0.003	1.6	ug/L	11	Standard
	Ag	107	151390.6	0.2	**23.7106**	0.326	1.4	ug/L	134	Standard
	Cd	111	50168.4	0.1	**24.6878**	0.285	1.2	mg/L	7	Standard
	Cd	114	122073.8	0.4	**24.7133**	0.372	1.5	ug/L	16	Standard
>	**In**	115	580961.0	1.3				ug/L	611117	Standard
	Sn	118	790.0	7.7	**0.0385**	0.009	23.5	ug/L	518	Standard
	Sb	123	3165.4	5.9	**0.6928**	0.037	5.4	ug/L	127	Standard
	Ba	135	532338.7	0.4	**271.2464**	4.110	1.5	ug/L	45	Standard
	Ce	140	1309534.5	1.1				ug/L	298	Standard
>	**Tb**	159	945803.3	0.3				ug/L	977942	Standard
	Ho	165	21665.5	2.8				ug/L	12	Standard
	Tl	203	195988.5	0.7	**24.3661**	0.181	0.7	ug/L	31	Standard
	Tl	205	172319.6	2.0	**24.6721**	0.452	1.8	ug/L	20	Standard
	Pb	206	254741.0	0.7	**49.3204**	0.423	0.9	ug/L	286	Standard
	Pb	207	216152.1	1.4	**46.3962**	0.722	1.6	ug/L	257	Standard
	Pb	208	888930.7	0.3	**49.3200**	0.099	0.2	ug/L	956	Standard
	U	238	171966.4	0.9	**25.1430**	0.188	0.7	ug/L	17	Standard
>	**Bi**	209	531711.1	0.2				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	125.0	34.9	**0.0812**	0.045	55.3	mg/L	32	Standard
K	39	518.3	8.6	**1.3288**	0.177	13.3	mg/L	30	Standard
Ca	43	238.3	9.5	**24.9959**	3.131	12.5	mg/L	48	Standard
Fe	54	18930.5	0.8	**14.2167**	0.407	2.9	mg/L	159	Standard
Fe	57	5154.2	3.0	**13.9467**	0.213	1.5	mg/L	195	Standard
> **Sc-1**	45	47225.2	3.2				mg/L	39543	Standard
Cl	35	33388.1	1.2				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2326.8	4.2				ug/L	1647	Standard
P	31	19087.0	1.5				ug/L	15231	Standard
S	34	2648.6	1.1				ug/L	1845	Standard
Sr	88	121.7	17.1				ug/L	70	Standard
C	12	206.7	36.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	56.8				mg/L	0	Standard
Dy	164	35480.3	0.5				mg/L	12	Standard
Ho-1	165	21665.5	2.8				mg/L	12	Standard
Er	166	19556.0	2.5				mg/L	20	Standard
I	127	13694.5	2.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.699	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.143	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.065
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.446
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606129709SD WG574306-05
Sample Date/Time: Tuesday, June 28, 2016 23:38:19
Number of Replicates: 3
Autosampler Position: 405
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74161.1	1.1				ug/L	81760	Standard
	Be	9	23705.2	3.8	**26.3039**	0.872	3.3	ug/L	17	Standard
	Al	27	6111125.0	1.3	**43.6951**	0.516	1.2	ug/L	1410	Standard
	Sc	45	44620.6	1.2				ug/L	39543	Standard
	Ti	47	2932.6	3.4	**11.8635**	0.492	4.1	ug/L	39	Standard
	V	51	246865.2	0.2	**36.0158**	0.450	1.2	ug/L	1415	Standard
	Cr	52	213059.8	1.6	**30.1549**	0.173	0.6	ug/L	6946	Standard
	Cr	53	26094.1	1.0	**29.9771**	0.650	2.2	ug/L	328	Standard
	Mn	55	1521366.7	1.6	**239.1613**	2.815	1.2	ug/L	823	Standard
	Co	59	194513.2	1.8	**28.2005**	0.410	1.5	ug/L	252	Standard
	Ni	60	61728.2	1.1	**33.3195**	0.163	0.5	ug/L	192	Standard
	Cu	65	74436.8	1.3	**39.8619**	0.705	1.8	ug/L	141	Standard
	Zn	66	58904.3	0.8	**53.9789**	0.545	1.0	ug/L	491	Standard
>	Ge	72	505111.3	1.2				ug/L	515087	Standard
	As	75	31837.0	1.5	**28.9187**	0.503	1.7	ug/L	20	Standard
	Se	82	2328.1	1.1	**20.5054**	0.470	2.3	ug/L	15	Standard
	Se-1	77	1619.4	1.4	**21.2042**	0.440	2.1	ug/L	48	Standard
>	Ga	71	6334.7	3.0				mg/L	90	Standard
	Rb	85	74980.1	1.6				ug/L	23	Standard
	Y	89	605551.0	0.9				ug/L	448510	Standard
>	Rh	103	31.7	39.7				ug/L	15	Standard
	Mo	98	404.4	5.7	**0.1335**	0.008	5.8	ug/L	11	Standard
	Ag	107	149725.6	1.6	**22.7377**	0.610	2.7	ug/L	134	Standard
	Cd	111	49979.3	1.2	**23.8462**	0.386	1.6	mg/L	7	Standard
	Cd	114	121386.1	1.5	**23.8269**	0.554	2.3	ug/L	16	Standard
>	In	115	599198.2	1.3				ug/L	611117	Standard
	Sn	118	811.7	7.5	**0.0382**	0.012	32.5	ug/L	518	Standard
	Sb	123	19138.7	1.5	**4.1252**	0.117	2.8	ug/L	127	Standard
	Ba	135	258930.8	0.8	**127.9040**	1.896	1.5	ug/L	45	Standard
	Ce	140	760518.7	0.8				ug/L	298	Standard
>	Tb	159	951283.8	0.9				ug/L	977942	Standard
	Ho	165	14106.6	0.1				ug/L	12	Standard
	Tl	203	188730.2	0.5	**23.1187**	0.087	0.4	ug/L	31	Standard
	Tl	205	170134.9	1.0	**24.0027**	0.337	1.4	ug/L	20	Standard
	Pb	206	208981.3	1.7	**39.8515**	0.361	0.9	ug/L	286	Standard
	Pb	207	178505.4	0.4	**37.7421**	0.330	0.9	ug/L	257	Standard
	Pb	208	755416.1	1.2	**41.2868**	0.479	1.2	ug/L	956	Standard
	U	238	170025.1	1.0	**24.4935**	0.095	0.4	ug/L	17	Standard
>	Bi	209	539649.3	0.9				ug/L	557080	Standard

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Na	23	3.3	86.6	**19.0051**	16.458	86.6	mg/L	0	Standard
Mg	24	83.3	27.7	**0.0410**	0.026	64.1	mg/L	32	Standard
K	39	181.7	7.9	**0.4027**	0.045	11.2	mg/L	30	Standard
Ca	43	75.0	26.7	**4.7351**	2.622	55.4	mg/L	48	Standard
Fe	54	5650.5	3.5	**4.3963**	0.211	4.8	mg/L	159	Standard
Fe	57	1623.4	7.9	**4.2316**	0.365	8.6	mg/L	195	Standard
> **Sc-1**	45	44620.6	1.2				mg/L	39543	Standard
Cl	35	32136.0	1.3				ug/L	27642	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1900.1	7.1				ug/L	1647	Standard
P	31	17840.5	2.2				ug/L	15231	Standard
S	34	2363.5	5.1				ug/L	1845	Standard
Sr	88	98.3	20.5				ug/L	70	Standard
C	12	150.0	37.1				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	20.0				mg/L	0	Standard
Dy	164	23948.7	0.5				mg/L	12	Standard
Ho-1	165	14106.6	0.1				mg/L	12	Standard
Er	166	12898.8	4.1				mg/L	20	Standard
I	127	5567.7	3.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.706	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.063	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.050
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.871
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144301
Sample Date/Time: Tuesday, June 28, 2016 23:41:31
Number of Replicates: 3
Autosampler Position: 406
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72988.8	2.0				ug/L	81760	Standard
	Be	9	916.7	4.9	**1.0251**	0.070	6.9	ug/L	17	Standard
	Al	27	29327581.2	1.7	**213.1994**	7.066	3.3	ug/L	1410	Standard
	Sc	45	42180.3	1.1				ug/L	39543	Standard
	Ti	47	15217.0	2.1	**62.4530**	1.008	1.6	ug/L	39	Standard
	V	51	58550.8	0.3	**8.4144**	0.093	1.1	ug/L	1415	Standard
	Cr	52	50375.3	2.1	**6.3484**	0.119	1.9	ug/L	6946	Standard
	Cr	53	5892.8	2.4	**6.5282**	0.148	2.3	ug/L	328	Standard
	Mn	55	1501608.8	1.0	**236.8837**	1.387	0.6	ug/L	823	Standard
	Co	59	11082.4	1.1	**1.5829**	0.023	1.4	ug/L	252	Standard
	Ni	60	9938.9	1.0	**5.2962**	0.105	2.0	ug/L	192	Standard
	Cu	65	12880.8	1.6	**6.8461**	0.032	0.5	ug/L	141	Standard
	Zn	66	52551.7	1.1	**48.2375**	0.337	0.7	ug/L	491	Standard
>	**Ge**	72	503346.2	1.1				ug/L	515087	Standard
	As	75	9638.5	1.8	**8.8128**	0.107	1.2	ug/L	20	Standard
	Se	82	89.1	11.5	**0.6728**	0.088	13.1	ug/L	15	Standard
	Se-1	77	112.0	20.6	**0.8047**	0.328	40.8	ug/L	48	Standard
>	**Ga**	71	5402.6	1.6				mg/L	90	Standard
	Rb	85	27092.5	2.9				ug/L	23	Standard
	Y	89	512619.4	0.7				ug/L	448510	Standard
>	**Rh**	103	40.0	45.1				ug/L	15	Standard
	Mo	98	2129.4	2.5	**0.7922**	0.032	4.0	ug/L	11	Standard
	Ag	107	397.3	28.5	**0.0446**	0.016	36.8	ug/L	134	Standard
	Cd	111	847.6	0.8	**0.4054**	0.009	2.1	mg/L	7	Standard
	Cd	114	2047.7	3.4	**0.4008**	0.011	2.7	ug/L	16	Standard
>	**In**	115	593663.8	1.5				ug/L	611117	Standard
	Sn	118	1955.1	5.4	**0.2386**	0.021	8.9	ug/L	518	Standard
	Sb	123	857.9	5.2	**0.1744**	0.012	7.0	ug/L	127	Standard
	Ba	135	91007.2	1.4	**45.3648**	1.263	2.8	ug/L	45	Standard
	Ce	140	427372.5	1.2				ug/L	298	Standard
>	**Tb**	159	914890.2	3.3				ug/L	977942	Standard
	Ho	165	5369.3	2.3				ug/L	12	Standard
	Tl	203	3260.4	2.3	**0.4133**	0.015	3.6	ug/L	31	Standard
	Tl	205	2856.9	4.2	**0.4193**	0.011	2.7	ug/L	20	Standard
	Pb	206	241551.6	0.7	**48.2276**	1.641	3.4	ug/L	286	Standard
	Pb	207	199984.5	0.7	**44.2621**	1.381	3.1	ug/L	257	Standard
	Pb	208	845904.8	0.5	**48.3946**	1.395	2.9	ug/L	956	Standard
	U	238	4244.6	0.7	**0.6370**	0.016	2.5	ug/L	17	Standard
>	**Bi**	209	515907.9	2.8				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.1607**	17.590	173.1	mg/L	0	Standard
Mg	24	176.7	13.4	**0.1635**	0.031	19.2	mg/L	32	Standard
K	39	111.7	29.8	**0.2126**	0.107	50.1	mg/L	30	Standard
Ca	43	486.7	20.1	**63.9109**	13.520	21.2	mg/L	48	Standard
Fe	54	4570.1	3.9	**3.7396**	0.111	3.0	mg/L	159	Standard
Fe	57	1611.8	3.6	**4.4774**	0.217	4.9	mg/L	195	Standard
Sc-1	45	42180.3	1.1				mg/L	39543	Standard
Cl	35	34952.3	0.5				ug/L	27642	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	2820.3	6.2				ug/L	1647	Standard
P	31	18733.3	7.5				ug/L	15231	Standard
S	34	2421.9	7.6				ug/L	1845	Standard
Sr	88	105.0	16.5				ug/L	70	Standard
C	12	266.7	9.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	83.3	60.4				mg/L	0	Standard
Dy	164	8334.8	4.4				mg/L	12	Standard
Ho-1	165	5369.3	2.3				mg/L	12	Standard
Er	166	5100.9	4.8				mg/L	20	Standard
I	127	10480.3	8.4				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.272	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.721	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.144
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.609
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606144302
Sample Date/Time: Tuesday, June 28, 2016 23:44:42
Number of Replicates: 3
Autosampler Position: 407
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71243.8	1.4				ug/L	81760	Standard
	Be	9	1080.0	8.5	**1.2377**	0.094	7.6	ug/L	17	Standard
	Al	27	5504266.2	2.7	**40.9647**	0.928	2.3	ug/L	1410	Standard
	Sc	45	42188.7	3.4				ug/L	39543	Standard
	Ti	47	15737.8	0.6	**62.0152**	0.652	1.1	ug/L	39	Standard
	V	51	45512.4	1.5	**6.2276**	0.158	2.5	ug/L	1415	Standard
	Cr	52	44821.9	1.8	**5.2702**	0.176	3.3	ug/L	6946	Standard
	Cr	53	5345.9	2.2	**5.6430**	0.187	3.3	ug/L	328	Standard
	Mn	55	1510551.7	1.4	**228.8078**	5.482	2.4	ug/L	823	Standard
	Co	59	8314.6	0.3	**1.1314**	0.011	1.0	ug/L	252	Standard
	Ni	60	7372.1	1.0	**3.7410**	0.046	1.2	ug/L	192	Standard
	Cu	65	13129.7	1.4	**6.6988**	0.146	2.2	ug/L	141	Standard
	Zn	66	50712.1	0.8	**44.6331**	0.723	1.6	ug/L	491	Standard
>	**Ge**	72	524277.6	1.0				ug/L	515087	Standard
	As	75	7848.1	0.4	**6.8989**	0.093	1.3	ug/L	20	Standard
	Se	82	94.2	13.2	**0.6849**	0.109	15.9	ug/L	15	Standard
	Se-1	77	110.0	9.5	**0.7149**	0.123	17.2	ug/L	48	Standard
>	**Ga**	71	4740.7	7.0				mg/L	90	Standard
	Rb	85	22735.4	3.5				ug/L	23	Standard
	Y	89	510942.2	1.8				ug/L	448510	Standard
>	**Rh**	103	18.3	110.2				ug/L	15	Standard
	Mo	98	3616.2	2.9	**1.3869**	0.053	3.8	ug/L	11	Standard
	Ag	107	415.3	27.2	**0.0487**	0.017	35.1	ug/L	134	Standard
	Cd	111	879.6	1.3	**0.4294**	0.003	0.8	mg/L	7	Standard
	Cd	114	2156.4	4.6	**0.4311**	0.017	3.9	ug/L	16	Standard
>	**In**	115	581659.3	1.0				ug/L	611117	Standard
	Sn	118	1941.8	8.1	**0.2429**	0.025	10.2	ug/L	518	Standard
	Sb	123	795.2	3.5	**0.1642**	0.005	3.1	ug/L	127	Standard
	Ba	135	105670.2	0.5	**53.7566**	0.798	1.5	ug/L	45	Standard
	Ce	140	489350.3	0.7				ug/L	298	Standard
>	**Tb**	159	914906.3	0.9				ug/L	977942	Standard
	Ho	165	5852.8	3.2				ug/L	12	Standard
	Tl	203	2193.8	7.0	**0.2695**	0.018	6.5	ug/L	31	Standard
	Tl	205	1858.4	8.2	**0.2655**	0.024	8.9	ug/L	20	Standard
	Pb	206	250441.6	1.0	**48.7728**	1.107	2.3	ug/L	286	Standard
	Pb	207	208820.1	0.2	**45.0828**	0.807	1.8	ug/L	257	Standard
	Pb	208	871187.9	1.2	**48.6248**	1.437	3.0	ug/L	956	Standard
	U	238	4748.1	0.9	**0.6954**	0.016	2.3	ug/L	17	Standard
>	**Bi**	209	528719.9	1.7				ug/L	557080	Standard

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Na	23	6.7	43.3	**39.8641**	16.152	40.5	mg/L	0	Standard
Mg	24	568.3	2.7	**0.6523**	0.023	3.6	mg/L	32	Standard
K	39	88.3	11.8	**0.1385**	0.034	24.4	mg/L	30	Standard
Ca	43	236.7	18.2	**28.4335**	6.608	23.2	mg/L	48	Standard
Fe	54	3607.3	1.4	**2.9257**	0.132	4.5	mg/L	159	Standard
Fe	57	1208.4	3.1	**3.2044**	0.245	7.6	mg/L	195	Standard
> **Sc-1**	45	42188.7	3.4				mg/L	39543	Standard
Cl	35	33795.0	1.6				ug/L	27642	Standard
Kr	83	3.3	75.5				ug/L	2	Standard
Br	81	2200.2	4.1				ug/L	1647	Standard
P	31	17892.2	3.9				ug/L	15231	Standard
S	34	2398.5	0.8				ug/L	1845	Standard
Sr	88	86.7	23.3				ug/L	70	Standard
C	12	246.7	15.3				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	76.7	30.1				mg/L	0	Standard
Dy	164	8934.1	5.5				mg/L	12	Standard
Ho-1	165	5852.8	3.2				mg/L	12	Standard
Er	166	5817.8	2.9				mg/L	20	Standard
I	127	10927.3	3.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		87.138	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.784	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.180
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.909
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606144302PS WG574573-01
Sample Date/Time: Tuesday, June 28, 2016 23:47:54
Number of Replicates: 3
Autosampler Position: 408
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74517.8	1.0				ug/L	81760	Standard
	Be	9	49025.9	0.9	**54.1590**	0.839	1.5	ug/L	17	Standard
	Al	27	5488864.5	1.0	**39.0606**	0.777	2.0	ug/L	1410	Standard
	Sc	45	43992.1	1.6				ug/L	39543	Standard
	Ti	47	15590.7	1.3	**62.0794**	2.775	4.5	ug/L	39	Standard
	V	51	384779.8	0.6	**54.7401**	1.764	3.2	ug/L	1415	Standard
	Cr	52	400124.0	1.3	**56.0091**	2.445	4.4	ug/L	6946	Standard
	Cr	53	50664.6	1.6	**56.9262**	0.956	1.7	ug/L	328	Standard
	Mn	55	1785071.4	0.4	**273.1709**	9.729	3.6	ug/L	823	Standard
	Co	59	343226.4	0.5	**48.4551**	1.560	3.2	ug/L	252	Standard
	Ni	60	101539.8	1.7	**53.4214**	2.390	4.5	ug/L	192	Standard
	Cu	65	107630.3	0.5	**56.1285**	1.666	3.0	ug/L	141	Standard
	Zn	66	105446.7	0.4	**94.6554**	2.823	3.0	ug/L	491	Standard
>	**Ge**	72	519316.9	3.3				ug/L	515087	Standard
	As	75	63635.8	1.4	**56.2203**	2.024	3.6	ug/L	20	Standard
	Se	82	5672.0	2.3	**48.8026**	2.645	5.4	ug/L	15	Standard
	Se-1	77	3855.8	0.1	**50.0819**	1.642	3.3	ug/L	48	Standard
>	**Ga**	71	4749.1	6.7				mg/L	90	Standard
	Rb	85	22398.2	1.3				ug/L	23	Standard
	Y	89	511504.7	2.1				ug/L	448510	Standard
>	**Rh**	103	58.3	34.6				ug/L	15	Standard
	Mo	98	3550.9	0.5	**1.3279**	0.015	1.1	ug/L	11	Standard
	Ag	107	317741.2	0.8	**48.5166**	0.462	1.0	ug/L	134	Standard
	Cd	111	103027.6	1.2	**49.4156**	0.686	1.4	mg/L	7	Standard
	Cd	114	250223.1	1.7	**49.3820**	1.399	2.8	ug/L	16	Standard
>	**In**	115	596094.6	1.6				ug/L	611117	Standard
	Sn	118	2016.8	5.9	**0.2476**	0.017	6.7	ug/L	518	Standard
	Sb	123	226110.3	0.9	**49.1269**	0.970	2.0	ug/L	127	Standard
	Ba	135	199376.6	0.4	**98.9961**	1.356	1.4	ug/L	45	Standard
	Ce	140	473631.7	1.6				ug/L	298	Standard
>	**Tb**	159	946510.9	0.6				ug/L	977942	Standard
	Ho	165	5706.1	1.8				ug/L	12	Standard
	Tl	203	404565.2	1.6	**49.2192**	0.432	0.9	ug/L	31	Standard
	Tl	205	358549.4	2.4	**50.2279**	0.323	0.6	ug/L	20	Standard
	Pb	206	506766.3	0.6	**96.0764**	1.688	1.8	ug/L	286	Standard
	Pb	207	430425.5	0.4	**90.4686**	1.648	1.8	ug/L	257	Standard
	Pb	208	1789019.3	1.0	**97.1851**	0.775	0.8	ug/L	956	Standard
	U	238	348425.0	0.3	**49.8561**	0.765	1.5	ug/L	17	Standard
>	**Bi**	209	543434.9	1.8				ug/L	557080	Standard

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Na	23	3.3	86.6	**19.2423**	16.666	86.6	mg/L	0	Standard
Mg	24	530.0	3.8	**0.5773**	0.030	5.2	mg/L	32	Standard
K	39	95.0	5.3	**0.1471**	0.014	9.3	mg/L	30	Standard
Ca	43	235.0	26.6	**26.8058**	8.969	33.5	mg/L	48	Standard
Fe	54	3632.6	2.6	**2.8189**	0.112	4.0	mg/L	159	Standard
Fe	57	1290.1	7.8	**3.2920**	0.337	10.2	mg/L	195	Standard
> **Sc-1**	45	43992.1	1.6				mg/L	39543	Standard
Cl	35	33127.5	1.3				ug/L	27642	Standard
Kr	83	2.0	100.0				ug/L	2	Standard
Br	81	2050.1	2.6				ug/L	1647	Standard
P	31	18372.8	5.1				ug/L	15231	Standard
S	34	2410.2	0.9				ug/L	1845	Standard
Sr	88	108.3	17.5				ug/L	70	Standard
C	12	236.7	47.5				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	86.7	70.5				mg/L	0	Standard
Dy	164	8282.4	2.8				mg/L	12	Standard
Ho-1	165	5706.1	1.8				mg/L	12	Standard
Er	166	5427.6	1.3				mg/L	20	Standard
I	127	10600.4	5.7				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.142	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.821	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.542
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.551
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606144302SDL WG574573-02
Sample Date/Time: Tuesday, June 28, 2016 23:51:05
Number of Replicates: 3
Autosampler Position: 409
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73539.7	0.5				ug/L	81760	Standard
	Be	9	228.3	17.7	**0.2458**	0.045	18.1	ug/L	17	Standard
	Al	27	1128305.0	2.6	**8.1231**	0.173	2.1	ug/L	1410	Standard
	Sc	45	40995.4	3.1				ug/L	39543	Standard
	Ti	47	3133.3	3.6	**12.6953**	0.331	2.6	ug/L	39	Standard
	V	51	9700.8	3.1	**1.2183**	0.050	4.1	ug/L	1415	Standard
	Cr	52	13743.6	3.1	**0.9582**	0.044	4.6	ug/L	6946	Standard
	Cr	53	1285.1	5.5	**1.1537**	0.099	8.6	ug/L	328	Standard
	Mn	55	302649.7	2.2	**47.5055**	0.538	1.1	ug/L	823	Standard
	Co	59	1856.8	5.3	**0.2384**	0.012	4.9	ug/L	252	Standard
	Ni	60	1619.8	3.4	**0.7729**	0.024	3.1	ug/L	192	Standard
	Cu	65	2766.6	1.1	**1.3956**	0.008	0.6	ug/L	141	Standard
	Zn	66	11859.0	1.8	**10.2169**	0.056	0.5	ug/L	491	Standard
>	**Ge**	72	504593.5	1.7				ug/L	515087	Standard
	As	75	1530.8	2.0	**1.4307**	0.048	3.3	ug/L	20	Standard
	Se	82	33.4	31.2	**0.1774**	0.094	53.0	ug/L	15	Standard
	Se-1	77	64.7	12.6	**0.1577**	0.113	71.7	ug/L	48	Standard
>	**Ga**	71	975.0	10.5				mg/L	90	Standard
	Rb	85	4577.4	4.1				ug/L	23	Standard
	Y	89	452862.0	1.2				ug/L	448510	Standard
>	**Rh**	103	23.3	32.7				ug/L	15	Standard
	Mo	98	722.3	4.5	**0.2491**	0.011	4.3	ug/L	11	Standard
	Ag	107	159.0	11.1	**0.0076**	0.003	35.4	ug/L	134	Standard
	Cd	111	175.3	14.8	**0.0794**	0.012	14.8	mg/L	7	Standard
	Cd	114	462.3	4.9	**0.0844**	0.004	4.5	ug/L	16	Standard
>	**In**	115	608749.5	0.7				ug/L	611117	Standard
	Sn	118	845.0	9.9	**0.0416**	0.014	34.5	ug/L	518	Standard
	Sb	123	2112.7	19.6	**0.4370**	0.091	20.8	ug/L	127	Standard
	Ba	135	21046.6	3.7	**10.2079**	0.317	3.1	ug/L	45	Standard
	Ce	140	96335.3	1.6				ug/L	298	Standard
>	**Tb**	159	932545.8	1.3				ug/L	977942	Standard
	Ho	165	1166.7	10.3				ug/L	12	Standard
	Tl	203	511.3	6.9	**0.0588**	0.004	6.8	ug/L	31	Standard
	Tl	205	456.7	14.9	**0.0631**	0.009	14.8	ug/L	20	Standard
	Pb	206	50001.0	0.8	**9.6268**	0.026	0.3	ug/L	286	Standard
	Pb	207	41687.9	1.1	**8.8985**	0.042	0.5	ug/L	257	Standard
	Pb	208	175842.9	0.5	**9.7051**	0.030	0.3	ug/L	956	Standard
	U	238	977.7	3.5	**0.1400**	0.006	4.1	ug/L	17	Standard
>	**Bi**	209	531859.1	0.7				ug/L	557080	Standard

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Na	23	3.3	86.6	**20.9199**	18.126	86.6	mg/L	0	Standard
Mg	24	148.3	20.6	**0.1326**	0.034	25.5	mg/L	32	Standard
K	39	35.0	24.7	**-0.0267**	0.032	120.4	mg/L	30	Standard
Ca	43	75.0	20.0	**5.6602**	2.270	40.1	mg/L	48	Standard
Fe	54	775.4	6.3	**0.5410**	0.062	11.5	mg/L	159	Standard
Fe	57	435.0	3.0	**0.7919**	0.003	0.4	mg/L	195	Standard
> **Sc-1**	45	40995.4	3.1				mg/L	39543	Standard
Cl	35	32746.0	2.5				ug/L	27642	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1743.4	12.5				ug/L	1647	Standard
P	31	17056.3	1.5				ug/L	15231	Standard
S	34	2336.8	6.2				ug/L	1845	Standard
Sr	88	78.3	20.5				ug/L	70	Standard
C	12	126.7	27.7				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	89.2				mg/L	0	Standard
Dy	164	1870.0	3.5				mg/L	12	Standard
Ho-1	165	1166.7	10.3				mg/L	12	Standard
Er	166	1116.7	18.2				mg/L	20	Standard
I	127	3388.7	11.3				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		89.946	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.963	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.613
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.473
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606144302SDL WG574573-02
Sample Date/Time: Tuesday, June 28, 2016 23:54:17
Number of Replicates: 3
Autosampler Position: 410
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70935.7	2.2				ug/L	81760	Standard
	Be	9	55.0	15.7	**0.0540**	0.009	16.0	ug/L	17	Standard
	Al	27	218570.5	1.6	**1.6201**	0.011	0.7	ug/L	1410	Standard
	Sc	45	39984.4	1.2				ug/L	39543	Standard
	Ti	47	627.7	4.3	**2.4198**	0.114	4.7	ug/L	39	Standard
	V	51	2847.0	3.0	**0.2129**	0.013	6.1	ug/L	1415	Standard
	Cr	52	7618.6	1.2	**0.0637**	0.011	17.1	ug/L	6946	Standard
	Cr	53	580.0	9.6	**0.3354**	0.068	20.2	ug/L	328	Standard
	Mn	55	61547.4	1.3	**9.5745**	0.188	2.0	ug/L	823	Standard
	Co	59	523.0	3.3	**0.0449**	0.003	6.0	ug/L	252	Standard
	Ni	60	493.7	5.6	**0.1635**	0.016	10.1	ug/L	192	Standard
	Cu	65	675.0	3.2	**0.2729**	0.010	3.6	ug/L	141	Standard
	Zn	66	4565.4	1.3	**3.4380**	0.075	2.2	ug/L	491	Standard
>	**Ge**	72	502988.1	0.7				ug/L	515087	Standard
	As	75	269.2	10.7	**0.2856**	0.028	9.7	ug/L	20	Standard
	Se	82	20.7	22.3	**0.0646**	0.042	64.7	ug/L	15	Standard
	Se-1	77	45.7	15.4	**-0.0984**	0.093	94.5	ug/L	48	Standard
>	**Ga**	71	186.7	12.1				mg/L	90	Standard
	Rb	85	835.0	12.4				ug/L	23	Standard
	Y	89	441201.2	2.7				ug/L	448510	Standard
>	**Rh**	103	13.3	94.4				ug/L	15	Standard
	Mo	98	189.0	7.0	**0.0532**	0.006	12.0	ug/L	11	Standard
	Ag	107	91.3	11.0	**-0.0021**	0.002	87.0	ug/L	134	Standard
	Cd	111	37.0	12.7	**0.0150**	0.002	15.9	mg/L	7	Standard
	Cd	114	85.9	30.8	**0.0122**	0.005	43.3	ug/L	16	Standard
>	**In**	115	591854.8	2.3				ug/L	611117	Standard
	Sn	118	648.3	6.3	**0.0113**	0.007	65.4	ug/L	518	Standard
	Sb	123	522.8	33.2	**0.1022**	0.041	39.7	ug/L	127	Standard
	Ba	135	4107.2	1.3	**2.0294**	0.025	1.2	ug/L	45	Standard
	Ce	140	18988.6	1.0				ug/L	298	Standard
>	**Tb**	159	914076.3	1.3				ug/L	977942	Standard
	Ho	165	253.3	13.1				ug/L	12	Standard
	Tl	203	112.3	10.6	**0.0094**	0.002	17.3	ug/L	31	Standard
	Tl	205	90.0	29.4	**0.0108**	0.004	36.1	ug/L	20	Standard
	Pb	206	10230.5	2.1	**1.9438**	0.049	2.5	ug/L	286	Standard
	Pb	207	8531.4	1.5	**1.7976**	0.010	0.6	ug/L	257	Standard
	Pb	208	36086.5	0.6	**1.9686**	0.029	1.5	ug/L	956	Standard
	U	238	209.0	10.0	**0.0280**	0.003	11.9	ug/L	17	Standard
>	**Bi**	209	525348.3	0.9				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	68.3	18.4	**0.0329**	0.017	52.2	mg/L	32	Standard
K	39	41.7	42.1	**-0.0025**	0.057	2323.2	mg/L	30	Standard
Ca	43	35.0	49.5	**-0.0873**	2.606	2984.1	mg/L	48	Standard
Fe	54	276.1	10.3	**0.1102**	0.028	25.1	mg/L	159	Standard
Fe	57	273.3	14.9	**0.2889**	0.146	50.5	mg/L	195	Standard
> **Sc-1**	45	39984.4	1.2				mg/L	39543	Standard
Cl	35	32328.5	1.4				ug/L	27642	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1603.4	8.8				ug/L	1647	Standard
P	31	16148.6	1.7				ug/L	15231	Standard
S	34	2251.8	6.8				ug/L	1845	Standard
Sr	88	76.7	35.9				ug/L	70	Standard
C	12	146.7	10.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	330.4	18.3				mg/L	12	Standard
Ho-1	165	253.3	13.1				mg/L	12	Standard
Er	166	270.0	22.5				mg/L	20	Standard
I	127	1720.1	18.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		86.761	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.651	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.848
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.304
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, June 28, 2016 23:57:30
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72062.8	4.4				ug/L	81760	Standard
	Be	9	45152.2	3.9	**51.5939**	1.461	2.8	ug/L	17	Standard
	Al	27	7383002.3	3.7	**54.3407**	0.756	1.4	ug/L	1410	Standard
	Sc	45	39518.2	3.2				ug/L	39543	Standard
	Ti	47	24690.4	0.9	**102.0722**	0.550	0.5	ug/L	39	Standard
	V	51	333814.0	1.2	**49.2501**	0.769	1.6	ug/L	1415	Standard
	Cr	52	345665.5	1.2	**50.0774**	0.577	1.2	ug/L	6946	Standard
	Cr	53	43291.8	1.9	**50.4406**	0.792	1.6	ug/L	328	Standard
	Mn	55	319563.2	0.6	**50.6110**	0.452	0.9	ug/L	823	Standard
	Co	59	337944.7	0.8	**49.4985**	0.535	1.1	ug/L	252	Standard
	Ni	60	91064.9	0.9	**49.6861**	0.418	0.8	ug/L	192	Standard
	Cu	65	92447.5	0.3	**50.0106**	0.369	0.7	ug/L	141	Standard
	Zn	66	53973.0	1.5	**49.8813**	0.957	1.9	ug/L	491	Standard
>	Ge	72	500217.2	0.4				ug/L	515087	Standard
	As	75	53742.2	1.5	**49.2630**	0.862	1.7	ug/L	20	Standard
	Se	82	5467.6	1.7	**48.7858**	1.017	2.1	ug/L	15	Standard
	Se-1	77	3788.8	1.0	**51.0702**	0.720	1.4	ug/L	48	Standard
>	Ga	71	51.7	5.6				mg/L	90	Standard
	Rb	85	820.0	10.6				ug/L	23	Standard
	Y	89	441206.7	0.2				ug/L	448510	Standard
>	Rh	103	33.3	8.7				ug/L	15	Standard
	Mo	98	251795.6	1.0	**94.4274**	1.474	1.6	ug/L	11	Standard
	Ag	107	307525.6	0.6	**46.4306**	0.349	0.8	ug/L	134	Standard
	Cd	111	100206.1	1.3	**47.5308**	1.177	2.5	mg/L	7	Standard
	Cd	114	244073.0	1.7	**47.6209**	0.821	1.7	ug/L	16	Standard
>	In	115	602825.2	1.4				ug/L	611117	Standard
	Sn	118	281047.8	1.1	**48.0844**	0.236	0.5	ug/L	518	Standard
	Sb	123	222239.4	0.2	**47.7427**	0.588	1.2	ug/L	127	Standard
	Ba	135	96470.5	0.6	**47.3499**	0.512	1.1	ug/L	45	Standard
	Ce	140	125.0	48.0				ug/L	298	Standard
>	Tb	159	921870.8	1.1				ug/L	977942	Standard
	Ho	165	11.7	65.5				ug/L	12	Standard
	Tl	203	392459.6	0.5	**49.4989**	0.479	1.0	ug/L	31	Standard
	Tl	205	352339.7	0.4	**51.1783**	0.770	1.5	ug/L	20	Standard
	Pb	206	250499.8	0.3	**49.1963**	0.428	0.9	ug/L	286	Standard
	Pb	207	226961.6	0.5	**49.4195**	0.337	0.7	ug/L	257	Standard
	Pb	208	926488.8	0.6	**52.1497**	0.850	1.6	ug/L	956	Standard
	U	238	343296.3	1.3	**50.9156**	0.444	0.9	ug/L	17	Standard
>	Bi	209	524204.3	1.1				ug/L	557080	Standard

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Na	23	1.7	173.2	**10.4692**	18.124	173.1	mg/L	0	Standard
Mg	24	3737.1	0.3	**4.9245**	0.180	3.7	mg/L	32	Standard
K	39	1403.4	10.2	**4.6088**	0.536	11.6	mg/L	30	Standard
Ca	43	78.3	16.1	**6.5318**	1.619	24.8	mg/L	48	Standard
Fe	54	5604.3	1.6	**4.9425**	0.217	4.4	mg/L	159	Standard
Fe	57	1713.4	2.9	**5.1658**	0.187	3.6	mg/L	195	Standard
Sc-1	45	39518.2	3.2				mg/L	39543	Standard
Cl	35	33439.5	0.8				ug/L	27642	Standard
Kr	83	2.7	57.3				ug/L	2	Standard
Br	81	1523.4	5.0				ug/L	1647	Standard
P	31	18217.6	1.7				ug/L	15231	Standard
S	34	2641.9	8.4				ug/L	1845	Standard
Sr	88	48.3	11.9				ug/L	70	Standard
C	12	93.3	12.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	0	Standard
Dy	164	9.4	104.5				mg/L	12	Standard
Ho-1	165	11.7	65.5				mg/L	12	Standard
Er	166	13.3	114.6				mg/L	20	Standard
I	127	1510.1	17.2				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	103.188		
Al	27	108.681		
Sc	45			
Ti	47	102.072		
V	51	98.500		
Cr	52	100.155		
Cr	53			
Mn	55	101.222		
Co	59	98.997		
Ni	60	99.372		
Cu	65	100.021		
Zn	66	99.763		
Ge	72		97.113	
As	75	98.526		
Se	82	97.572		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	94.427		
Ag	107	92.861		
Cd	111	95.062		
Cd	114			
> In	115			98.643
Sn	118	96.169		
Sb	123	95.485		
Ba	135	94.700		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.998		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.299		
U	238	101.831		
> Bi	209			94.098
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: June 29, 2016

Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 00:00:41
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70070.0	1.8				ug/L	81760	Standard
	Be	9	30.0	16.7	**0.0256**	0.006	25.2	ug/L	17	Standard
	Al	27	3812.2	30.7	**0.0144**	0.008	57.9	ug/L	1410	Standard
	Sc	45	40014.5	4.3				ug/L	39543	Standard
	Ti	47	26.7	12.1	**-0.0568**	0.013	23.6	ug/L	39	Standard
	V	51	1145.1	6.3	**-0.0403**	0.010	25.4	ug/L	1415	Standard
	Cr	52	6171.9	1.7	**-0.1619**	0.014	8.6	ug/L	6946	Standard
	Cr	53	411.7	3.9	**0.1320**	0.019	14.5	ug/L	328	Standard
	Mn	55	924.7	19.7	**-0.0044**	0.029	653.9	ug/L	823	Standard
	Co	59	261.3	12.2	**0.0062**	0.005	75.0	ug/L	252	Standard
	Ni	60	171.3	8.8	**-0.0131**	0.008	64.0	ug/L	192	Standard
	Cu	65	132.0	5.3	**-0.0207**	0.004	18.6	ug/L	141	Standard
	Zn	66	427.3	9.5	**-0.4339**	0.039	8.9	ug/L	491	Standard
>	**Ge**	72	510161.6	0.4				ug/L	515087	Standard
	As	75	-21.8	127.1	**0.0207**	0.025	120.4	ug/L	20	Standard
	Se	82	17.0	25.9	**0.0293**	0.038	129.6	ug/L	15	Standard
	Se-1	77	53.7	12.0	**0.0005**	0.088	17869.4	ug/L	48	Standard
>	**Ga**	71	35.0	28.6				mg/L	90	Standard
	Rb	85	33.3	60.6				ug/L	23	Standard
	Y	89	437929.1	1.0				ug/L	448510	Standard
>	**Rh**	103	6.7	43.3				ug/L	15	Standard
	Mo	98	269.2	32.9	**0.0838**	0.033	39.3	ug/L	11	Standard
	Ag	107	120.7	16.7	**0.0024**	0.003	124.0	ug/L	134	Standard
	Cd	111	21.8	34.3	**0.0077**	0.004	48.1	mg/L	7	Standard
	Cd	114	36.7	62.4	**0.0024**	0.005	190.6	ug/L	16	Standard
>	**In**	115	590666.4	0.9				ug/L	611117	Standard
	Sn	118	743.4	12.2	**0.0282**	0.017	60.4	ug/L	518	Standard
	Sb	123	532.5	22.4	**0.1040**	0.027	25.7	ug/L	127	Standard
	Ba	135	71.0	29.1	**0.0104**	0.010	96.8	ug/L	45	Standard
	Ce	140	91.7	65.8				ug/L	298	Standard
>	**Tb**	159	911246.7	0.8				ug/L	977942	Standard
	Ho	165	10.0	50.0				ug/L	12	Standard
	Tl	203	81.7	41.2	**0.0055**	0.004	77.1	ug/L	31	Standard
	Tl	205	68.3	66.0	**0.0076**	0.007	85.7	ug/L	20	Standard
	Pb	206	297.7	10.9	**-0.0054**	0.007	123.4	ug/L	286	Standard
	Pb	207	283.7	16.0	**0.0035**	0.010	283.6	ug/L	257	Standard
	Pb	208	1155.4	11.3	**0.0043**	0.008	176.0	ug/L	956	Standard
	U	238	70.3	39.4	**0.0074**	0.004	55.5	ug/L	17	Standard
>	**Bi**	209	527005.8	1.2				ug/L	557080	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	25.0	20.0	**-0.0244**	0.005	21.9	mg/L	32	Standard
K	39	18.3	31.5	**-0.0799**	0.021	26.0	mg/L	30	Standard
Ca	43	16.7	17.3	**-2.8535**	0.318	11.1	mg/L	48	Standard
Fe	54	122.6	39.6	**-0.0261**	0.047	179.6	mg/L	159	Standard
Fe	57	230.0	17.0	**0.1451**	0.148	101.7	mg/L	195	Standard
> **Sc-1**	45	40014.5	4.3				mg/L	39543	Standard
Cl	35	33255.8	1.4				ug/L	27642	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	1523.4	4.7				ug/L	1647	Standard
P	31	17488.4	2.6				ug/L	15231	Standard
S	34	2358.5	3.1				ug/L	1845	Standard
Sr	88	70.0	25.8				ug/L	70	Standard
C	12	73.3	39.4				mg/L	113	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	0	Standard
Dy	164	9.5	100.0				mg/L	12	Standard
Ho-1	165	10.0	50.0				mg/L	12	Standard
Er	166	10.0	100.0				mg/L	20	Standard
I	127	1368.4	18.0				mg/L	1162	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.044	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.654
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		94.601
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Wednesday, June 29, 2016 09:50:03

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	6.975	1323	2024	0.699	
Mg	23.985	23.975	4506	2020	0.705	
Co	58.933	58.975	11694	2022	0.697	
In	114.904	114.925	22865	2028	0.690	
U	238.050	238.025	47450	2043	0.688	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	9.254
5.575	1.459
5.625	2.417
5.675	3.442
5.725	2.231
5.775	2.296
5.825	3.784
5.875	3.197
5.925	2.400
5.975	1.087
6.025	1.670
6.075	3.521
6.125	2.277
6.175	2.559
6.225	20.588
6.275	74.689
6.325	108.327
6.375	83.853
6.425	69.722
6.475	32.808
6.525	10.642
6.575	8.985
6.625	1.429
6.675	0.941
6.725	0.857
6.775	3.333
6.825	0.822

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6.875	1.277
6.925	1.899
6.975	1.561
7.025	1.195
7.075	1.059
7.125	1.545
7.175	1.743
7.225	3.248
7.275	8.142
7.325	57.701
7.375	91.287
7.425	51.602
7.475	55.902
7.525	100.000
7.575	69.869
7.625	81.441
7.675	81.441
7.725	70.711
7.775	55.902
7.825	59.266
7.875	49.793
7.925	104.583
7.975	98.543
8.025	94.786
8.075	223.607
8.125	81.441
8.175	84.265
8.225	61.237
8.275	81.312
8.325	81.441
8.375	91.287
8.425	82.402
8.475	22.822
22.525	149.071
22.575	52.705
22.625	46.771
22.675	48.627
22.725	39.087
22.775	18.109
22.825	22.048
22.875	36.422
22.925	32.723
22.975	82.685
23.025	39.239
23.075	25.529
23.125	43.064
23.175	21.317

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23.225	22.232
23.275	15.408
23.325	42.127
23.375	37.172
23.425	24.296
23.475	14.668
23.525	3.807
23.575	1.593
23.625	2.258
23.675	1.180
23.725	1.542
23.775	1.943
23.825	1.185
23.875	1.595
23.925	1.324
23.975	1.055
24.025	1.809
24.075	1.103
24.125	1.249
24.175	0.652
24.225	1.203
24.275	3.614
24.325	39.316
24.375	52.355
24.425	20.738
24.475	5.001
24.525	5.067
24.575	0.930
24.625	1.241
24.675	0.972
24.725	1.552
24.775	0.581
24.825	0.736
24.875	1.684
24.925	0.952
24.975	1.395
25.025	0.762
25.075	1.498
25.125	1.418
25.175	1.145
25.225	6.288
25.275	44.605
25.325	50.990
25.375	73.823
25.425	57.334
25.475	7.010
57.525	8.193

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57.575	3.609
57.625	2.367
57.675	3.747
57.725	3.869
57.775	3.226
57.825	1.406
57.875	2.220
57.925	2.049
57.975	2.397
58.025	3.045
58.075	0.897
58.125	1.397
58.175	1.608
58.225	1.481
58.275	5.244
58.325	6.996
58.375	14.816
58.425	39.994
58.475	18.390
58.525	7.862
58.575	1.876
58.625	1.684
58.675	0.757
58.725	2.431
58.775	2.139
58.825	2.293
58.875	1.987
58.925	2.134
58.975	1.760
59.025	2.893
59.075	1.855
59.125	4.126
59.175	3.545
59.225	2.980
59.275	6.918
59.325	57.198
59.375	79.057
59.425	39.123
59.475	32.983
59.525	7.337
59.575	10.704
59.625	4.888
59.675	5.230
59.725	3.575
59.775	2.279
59.825	3.495
59.875	0.859

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59.925	2.164
59.975	4.187
60.025	3.749
60.075	1.767
60.125	4.373
60.175	1.581
60.225	1.647
60.275	29.768
60.325	42.377
60.375	71.261
60.425	71.261
60.475	69.722
113.525	10.800
113.575	6.260
113.625	1.672
113.675	1.646
113.725	1.420
113.775	2.281
113.825	1.446
113.875	0.820
113.925	1.607
113.975	1.407
114.025	1.046
114.075	2.403
114.125	2.090
114.175	3.331
114.225	5.316
114.275	12.354
114.325	37.872
114.375	26.082
114.425	15.800
114.475	3.831
114.525	4.062
114.575	1.808
114.625	2.980
114.675	3.272
114.725	2.895
114.775	1.904
114.825	1.941
114.875	1.809
114.925	0.906
114.975	0.414
115.025	2.617
115.075	0.808
115.125	1.618
115.175	2.428
115.225	3.339

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115.275	5.459
115.325	14.203
115.375	69.869
115.425	66.254
115.475	26.966
115.525	18.235
115.575	7.589
115.625	3.788
115.675	2.661
115.725	3.661
115.775	2.867
115.825	3.952
115.875	6.794
115.925	4.558
115.975	5.421
116.025	1.319
116.075	4.928
116.125	7.259
116.175	4.689
116.225	9.289
116.275	22.491
116.325	26.307
116.375	26.146
116.425	67.711
116.475	40.825
236.525	
236.575	13.258
236.625	39.219
236.675	66.333
236.725	37.815
236.775	20.039
236.825	39.510
236.875	22.934
236.925	27.407
236.975	8.537
237.025	28.853
237.075	45.928
237.125	41.937
237.175	36.377
237.225	26.058
237.275	27.285
237.325	43.196
237.375	45.018
237.425	23.111
237.475	20.908
237.525	26.413
237.575	10.671

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237.625	6.558
237.675	4.584
237.725	2.707
237.775	1.019
237.825	0.867
237.875	0.837
237.925	1.315
237.975	0.556
238.025	1.099
238.075	0.473
238.125	0.980
238.175	0.943
238.225	1.564
238.275	1.714
238.325	1.785
238.375	2.057
238.425	2.571
238.475	6.163
238.525	10.798
238.575	23.407
238.625	35.493
238.675	33.171
238.725	15.721
238.775	9.421
238.825	23.516
238.875	27.721
238.925	14.417
238.975	30.010
239.025	24.993
239.075	29.933
239.125	17.678
239.175	38.433
239.225	46.981
239.275	15.215
239.325	48.601
239.375	50.659
239.425	23.570
239.475	38.955

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SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 6/29/2016 10:01:57 AM
End Time: 6/29/2016 10:04:08 AM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 4651.78
        Obtained Intensity (Mg 23.985): 162439.88
        Obtained Intensity (In 114.904): 66202.13
        Obtained Intensity (U 238.05): 140216.56
        Obtained Intensity (Bkgd 220): 0.33
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.018 (=3640.50 / 205153.73)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.004 (=909.89 / 205153.73)
```

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SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 6/29/2016 10:01:57 AM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 4651.78
                Obtained Intensity (Mg 23.985): 162439.88
                Obtained Intensity (In 114.904): 66202.13
                Obtained Intensity (U 238.05): 140216.56
                Obtained Intensity (Bkgd 220): 0.33
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.018 (=3640.50 / 205153.73)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.004 (=909.89 / 205153.73)
[Passed]  Optimum value(s): N/A

End Time: 6/29/2016 10:04:08 AM
```


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Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Wednesday, June 29, 2016 11:22:34
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74698.8	3.1				ug/L		Standard
	Be	9	8.3	124.9				ug/L		Standard
	Al	27	1493.4	9.1				ug/L		Standard
	Sc	45	61029.4	2.9				ug/L		Standard
	Ti	47	35.0	12.5				ug/L		Standard
	V	51	1434.8	4.3				ug/L		Standard
	Cr	52	7634.6	2.5				ug/L		Standard
	Cr	53	363.3	0.8				ug/L		Standard
	Mn	55	747.0	1.6				ug/L		Standard
	Co	59	233.7	7.1				ug/L		Standard
	Ni	60	214.7	3.5				ug/L		Standard
	Cu	65	104.0	12.0				ug/L		Standard
	Zn	66	363.0	3.8				ug/L		Standard
>	Ge	72	495142.3	1.3				ug/L		Standard
	As	75	-49.8	7.8				ug/L		Standard
	Se	82	13.7	23.9				ug/L		Standard
	Se-1	77	42.3	9.8				ug/L		Standard
>	Ga	71	41.7	25.0				mg/L		Standard
	Rb	85	16.7	91.7				ug/L		Standard
	Y	89	417098.4	0.9				ug/L		Standard
>	Rh	103	13.3	86.6				ug/L		Standard
	Mo	98	10.7	10.9				ug/L		Standard
	Ag	107	68.0	6.4				ug/L		Standard
	Cd	111	2.3	24.9				mg/L		Standard
	Cd	114	11.7	106.5				ug/L		Standard
>	In	115	587441.1	0.5				ug/L		Standard
	Sn	118	496.7	9.7				ug/L		Standard
	Sb	123	77.7	34.7				ug/L		Standard
	Ba	135	24.3	19.4				ug/L		Standard
	Ce	140	25.0	20.0				ug/L		Standard
>	Tb	159	939701.0	1.8				ug/L		Standard
	Ho	165	10.0	50.0				ug/L		Standard
	Tl	203	4.0	25.0				ug/L		Standard
	Tl	205	1.7	173.2				ug/L		Standard
	Pb	206	239.7	3.6				ug/L		Standard
	Pb	207	197.7	3.9				ug/L		Standard
	Pb	208	883.3	3.3				ug/L		Standard
	U	238	3.3	17.3				ug/L		Standard
>	Bi	209	523984.5	1.3				ug/L		Standard

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	Na	23	0.0		mg/L	Standard
	Mg	24	36.7	55.1	mg/L	Standard
	K	39	38.3	52.7	mg/L	Standard
	Ca	43	10.0	50.0	mg/L	Standard
	Fe	54	179.1	14.9	mg/L	Standard
	Fe	57	335.0	10.3	mg/L	Standard
>	**Sc-1**	45	61029.4	2.9	mg/L	Standard
	Cl	35	20194.8	0.8	ug/L	Standard
	Kr	83	4.3	70.5	ug/L	Standard
	Br	81	1546.7	2.4	ug/L	Standard
	P	31	15286.0	3.7	ug/L	Standard
	S	34	1571.7	2.7	ug/L	Standard
	Sr	88	73.3	3.9	ug/L	Standard
	C	12	63.3	24.1	mg/L	Standard
	N	14	0.0		mg/L	Standard
	Hg	202	3.3	173.2	mg/L	Standard
	Dy	164	6.0	187.1	mg/L	Standard
	Ho-1	165	10.0	50.0	mg/L	Standard
	Er	166	13.3	86.6	mg/L	Standard
	I	127	1391.7	17.5	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Blank
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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Wednesday, June 29, 2016 11:25:45
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75658.5	2.0				ug/L	74699	Standard
	Be	9	1.7	173.2				ug/L	8	Standard
	Al	27	1555.1	3.1				ug/L	1493	Standard
	Sc	45	60145.9	2.9				ug/L	61029	Standard
	Ti	47	32.7	4.7				ug/L	35	Standard
	V	51	1434.9	4.0				ug/L	1435	Standard
	Cr	52	7544.5	2.5				ug/L	7635	Standard
	Cr	53	365.0	18.0				ug/L	363	Standard
	Mn	55	783.7	0.8				ug/L	747	Standard
	Co	59	239.0	2.9				ug/L	234	Standard
	Ni	60	220.7	1.8				ug/L	215	Standard
	Cu	65	103.0	8.3				ug/L	104	Standard
	Zn	66	365.0	4.1				ug/L	363	Standard
>	**Ge**	72	495351.7	2.1				ug/L	495142	Standard
	As	75	-40.0	8.7				ug/L	-50	Standard
	Se	82	19.1	38.4				ug/L	14	Standard
	Se-1	77	47.3	15.6				ug/L	42	Standard
>	**Ga**	71	53.3	47.2				mg/L	42	Standard
	Rb	85	15.0	88.2				ug/L	17	Standard
	Y	89	427717.4	1.6				ug/L	417098	Standard
>	**Rh**	103	8.3	34.6				ug/L	13	Standard
	Mo	98	11.1	31.8				ug/L	11	Standard
	Ag	107	86.3	19.8				ug/L	68	Standard
	Cd	111	1.3	43.8				mg/L	2	Standard
	Cd	114	3.6	152.7				ug/L	12	Standard
>	**In**	115	599155.0	1.0				ug/L	587441	Standard
	Sn	118	486.7	3.3				ug/L	497	Standard
	Sb	123	28.2	25.8				ug/L	78	Standard
	Ba	135	25.3	13.9				ug/L	24	Standard
	Ce	140	31.7	59.8				ug/L	25	Standard
>	**Tb**	159	985563.2	0.5				ug/L	939701	Standard
	Ho	165	6.7	86.6				ug/L	10	Standard
	Tl	203	1.7	91.7				ug/L	4	Standard
	Tl	205	0.0					ug/L	2	Standard
	Pb	206	249.7	4.0				ug/L	240	Standard
	Pb	207	216.0	2.0				ug/L	198	Standard
	Pb	208	873.0	4.1				ug/L	883	Standard
	U	238	3.3	34.6				ug/L	3	Standard
>	**Bi**	209	535312.9	0.6				ug/L	523984	Standard

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Na	23	3.3	173.2	mg/L	0	Standard
Mg	24	31.7	18.2	mg/L	37	Standard
K	39	26.7	28.6	mg/L	38	Standard
Ca	43	35.0	24.7	mg/L	10	Standard
Fe	54	130.8	15.0	mg/L	179	Standard
Fe	57	305.0	2.8	mg/L	335	Standard
Sc-1	45	60145.9	2.9	mg/L	61029	Standard
Cl	35	20341.6	1.8	ug/L	20195	Standard
Kr	83	3.0	33.3	ug/L	4	Standard
Br	81	1546.7	10.4	ug/L	1547	Standard
P	31	15145.9	1.8	ug/L	15286	Standard
S	34	1610.1	6.1	ug/L	1572	Standard
Sr	88	86.7	14.5	ug/L	73	Standard
C	12	60.0	28.9	mg/L	63	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	0.0		mg/L	3	Standard
Dy	164	5.7	108.5	mg/L	6	Standard
Ho-1	165	6.7	86.6	mg/L	10	Standard
Er	166	20.0	50.0	mg/L	13	Standard
I	127	1368.4	7.8	mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 1
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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Wednesday, June 29, 2016 11:28:57
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73081.0	3.5				ug/L	74699	Standard
	Be	9	36.7	56.8				ug/L	8	Standard
	Al	27	9102.7	2.7				ug/L	1493	Standard
	Sc	45	58226.8	3.4				ug/L	61029	Standard
	Ti	47	79.0	2.2				ug/L	35	Standard
	V	51	1848.7	2.3				ug/L	1435	Standard
	Cr	52	7933.1	1.4				ug/L	7635	Standard
	Cr	53	350.0	15.1				ug/L	363	Standard
	Mn	55	1375.4	4.6				ug/L	747	Standard
	Co	59	574.7	5.8				ug/L	234	Standard
	Ni	60	324.3	7.6				ug/L	215	Standard
	Cu	65	285.0	4.9				ug/L	104	Standard
	Zn	66	549.3	0.4				ug/L	363	Standard
>	**Ge**	72	493663.5	1.5				ug/L	495142	Standard
	As	75	-10.4	282.1				ug/L	-50	Standard
	Se	82	20.6	18.5				ug/L	14	Standard
	Se-1	77	49.0	19.5				ug/L	42	Standard
>	**Ga**	71	58.3	27.6				mg/L	42	Standard
	Rb	85	25.0	60.0				ug/L	17	Standard
	Y	89	437555.0	0.8				ug/L	417098	Standard
>	**Rh**	103	25.0	34.6				ug/L	13	Standard
	Mo	98	283.4	4.8				ug/L	11	Standard
	Ag	107	412.3	3.2				ug/L	68	Standard
	Cd	111	121.8	9.1				mg/L	2	Standard
	Cd	114	268.9	5.0				ug/L	12	Standard
>	**In**	115	590951.3	0.9				ug/L	587441	Standard
	Sn	118	850.0	6.4				ug/L	497	Standard
	Sb	123	254.5	2.7				ug/L	78	Standard
	Ba	135	136.0	15.7				ug/L	24	Standard
	Ce	140	18.3	56.8				ug/L	25	Standard
>	**Tb**	159	941723.8	1.9				ug/L	939701	Standard
	Ho	165	3.3	86.6				ug/L	10	Standard
	Tl	203	417.3	5.5				ug/L	4	Standard
	Tl	205	348.3	7.4				ug/L	2	Standard
	Pb	206	633.0	0.8				ug/L	240	Standard
	Pb	207	557.0	2.2				ug/L	198	Standard
	Pb	208	2275.4	1.7				ug/L	883	Standard
	U	238	366.3	0.7				ug/L	3	Standard
>	**Bi**	209	512414.5	1.5				ug/L	523984	Standard

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	Na	23	0.0		mg/L	0	Standard
	Mg	24	51.7	24.4	mg/L	37	Standard
	K	39	51.7	24.4	mg/L	38	Standard
	Ca	43	38.3	19.9	mg/L	10	Standard
	Fe	54	160.9	17.5	mg/L	179	Standard
	Fe	57	303.3	9.1	mg/L	335	Standard
>	**Sc-1**	45	58226.8	3.4	mg/L	61029	Standard
	Cl	35	20887.7	1.1	ug/L	20195	Standard
	Kr	83	2.3	107.9	ug/L	4	Standard
	Br	81	1533.4	9.8	ug/L	1547	Standard
	P	31	14952.4	2.3	ug/L	15286	Standard
	S	34	1701.8	4.5	ug/L	1572	Standard
	Sr	88	66.7	31.2	ug/L	73	Standard
	C	12	46.7	65.5	mg/L	63	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	0.0		mg/L	3	Standard
	Dy	164	12.7	89.9	mg/L	6	Standard
	Ho-1	165	3.3	86.6	mg/L	10	Standard
	Er	166	13.3	43.3	mg/L	13	Standard
	I	127	1343.4	21.4	mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Wednesday, June 29, 2016 11:32:08
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70836.9	0.7				ug/L	74699	Standard
	Be	9	41495.2	4.9	**50.0000**	2.291	4.6	ug/L	8	Standard
	Al	27	6913642.3	1.4	**50.0000**	0.333	0.7	ug/L	1493	Standard
	Sc	45	58109.6	1.6				ug/L	61029	Standard
	Ti	47	38024.7	0.9	**100.0000**	1.896	1.9	ug/L	35	Standard
	V	51	385028.2	1.3	**50.0000**	1.023	2.0	ug/L	1435	Standard
	Cr	52	378864.5	0.8	**50.0000**	0.813	1.6	ug/L	7635	Standard
	Cr	53	46780.4	0.7	**50.0000**	0.853	1.7	ug/L	363	Standard
	Mn	55	354877.0	1.3	**50.0000**	1.137	2.3	ug/L	747	Standard
	Co	59	336932.8	1.2	**50.0000**	1.027	2.1	ug/L	234	Standard
	Ni	60	94633.6	0.8	**50.0000**	0.638	1.3	ug/L	215	Standard
	Cu	65	94252.3	1.0	**50.0000**	0.913	1.8	ug/L	104	Standard
	Zn	66	55983.3	1.5	**50.0000**	1.110	2.2	ug/L	363	Standard
>	**Ge**	72	497274.4	1.0				ug/L	495142	Standard
	As	75	56952.3	0.9	**50.0000**	0.907	1.8	ug/L	-50	Standard
	Se	82	5614.6	2.5	**50.0000**	1.630	3.3	ug/L	14	Standard
	Se-1	77	3760.8	2.5	**50.0000**	1.757	3.5	ug/L	42	Standard
>	**Ga**	71	60.0	22.0				mg/L	42	Standard
	Rb	85	735.0	7.4				ug/L	17	Standard
	Y	89	413691.0	2.8				ug/L	417098	Standard
>	**Rh**	103	28.3	27.0				ug/L	13	Standard
	Mo	98	261684.0	1.3	**100.0000**	1.411	1.4	ug/L	11	Standard
	Ag	107	317580.7	1.1	**50.0000**	0.030	0.1	ug/L	68	Standard
	Cd	111	102024.7	1.3	**50.0000**	0.465	0.9	mg/L	2	Standard
	Cd	114	251691.0	1.5	**50.0000**	1.089	2.2	ug/L	12	Standard
>	**In**	115	567339.3	1.1				ug/L	587441	Standard
	Sn	118	284919.2	1.1	**50.0000**	0.694	1.4	ug/L	497	Standard
	Sb	123	226852.6	0.2	**50.0000**	0.610	1.2	ug/L	78	Standard
	Ba	135	99575.8	0.1	**50.0000**	0.595	1.2	ug/L	24	Standard
	Ce	140	83.3	34.6				ug/L	25	Standard
>	**Tb**	159	932165.5	0.9				ug/L	939701	Standard
	Ho	165	13.3	21.7				ug/L	10	Standard
	Tl	203	405993.6	0.4	**50.0000**	0.749	1.5	ug/L	4	Standard
	Tl	205	349857.0	1.5	**50.0000**	0.282	0.6	ug/L	2	Standard
	Pb	206	265201.9	0.6	**50.0000**	0.817	1.6	ug/L	240	Standard
	Pb	207	235754.7	0.6	**50.0000**	0.829	1.7	ug/L	198	Standard
	Pb	208	926203.5	0.6	**50.0000**	0.626	1.3	ug/L	883	Standard
	U	238	337413.2	1.0	**50.0000**	0.543	1.1	ug/L	3	Standard
>	**Bi**	209	511781.8	1.3				ug/L	523984	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	3782.1	6.2	**5.0000**	0.388	7.8	mg/L	37	Standard
K	39	2271.8	5.5	**5.0000**	0.254	5.1	mg/L	38	Standard
Ca	43	120.0	23.2	**5.0000**	1.671	33.4	mg/L	10	Standard
Fe	54	5877.0	6.9	**5.0000**	0.418	8.4	mg/L	179	Standard
Fe	57	1703.4	4.4	**5.0000**	0.228	4.6	mg/L	335	Standard
> **Sc-1**	45	58109.6	1.6				mg/L	61029	Standard
Cl	35	22061.4	1.9				ug/L	20195	Standard
Kr	83	2.7	94.4				ug/L	4	Standard
Br	81	1433.4	2.5				ug/L	1547	Standard
P	31	17349.9	2.8				ug/L	15286	Standard
S	34	2026.8	6.8				ug/L	1572	Standard
Sr	88	76.7	26.4				ug/L	73	Standard
C	12	43.3	48.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	33.0	63.6				mg/L	6	Standard
Ho-1	165	13.3	21.7				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	1500.1	14.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Wednesday, June 29, 2016 11:35:20
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	70562.3	0.6				ug/L	74699	Standard
	Be	9	83650.3	2.2	**100.5872**	1.689	1.7	ug/L	8	Standard
	Al	27	13996690.0	1.6	**100.8115**	1.548	1.5	ug/L	1493	Standard
	Sc	45	58977.9	1.4				ug/L	61029	Standard
	Ti	47	75710.7	1.4	**200.4046**	3.310	1.7	ug/L	35	Standard
	V	51	745374.0	1.7	**98.8583**	0.465	0.5	ug/L	1435	Standard
	Cr	52	747654.3	1.6	**100.2327**	0.593	0.6	ug/L	7635	Standard
	Cr	53	92243.3	0.8	**99.8509**	0.489	0.5	ug/L	363	Standard
	Mn	55	686210.3	1.7	**98.7774**	1.044	1.1	ug/L	747	Standard
	Co	59	647972.6	0.9	**98.4550**	0.479	0.5	ug/L	234	Standard
	Ni	60	186003.6	1.6	**99.5867**	0.367	0.4	ug/L	215	Standard
	Cu	65	184421.8	1.6	**99.3502**	0.739	0.7	ug/L	104	Standard
	Zn	66	108058.7	1.7	**98.8348**	0.723	0.7	ug/L	363	Standard
>	Ge	72	493312.7	1.3				ug/L	495142	Standard
	As	75	109996.7	2.4	**98.6160**	1.152	1.2	ug/L	-50	Standard
	Se	82	10772.1	0.2	**98.3851**	1.295	1.3	ug/L	14	Standard
	Se-1	77	7226.7	2.3	**98.6814**	1.085	1.1	ug/L	42	Standard
>	Ga	71	88.3	19.9				mg/L	42	Standard
	Rb	85	1528.4	8.2				ug/L	17	Standard
	Y	89	411133.1	2.0				ug/L	417098	Standard
>	Rh	103	50.0	20.0				ug/L	13	Standard
	Mo	98	506691.6	2.0	**196.6866**	6.239	3.2	ug/L	11	Standard
	Ag	107	624459.9	0.9	**99.1146**	1.822	1.8	ug/L	68	Standard
	Cd	111	200021.3	0.6	**98.9639**	1.657	1.7	mg/L	2	Standard
	Cd	114	487602.9	1.3	**98.3617**	2.136	2.2	ug/L	12	Standard
>	In	115	567890.6	1.1				ug/L	587441	Standard
	Sn	118	560558.1	0.7	**99.1782**	1.388	1.4	ug/L	497	Standard
	Sb	123	448476.6	1.3	**99.3779**	2.340	2.4	ug/L	78	Standard
	Ba	135	196432.8	0.6	**99.2744**	1.775	1.8	ug/L	24	Standard
	Ce	140	161.7	46.3				ug/L	25	Standard
>	Tb	159	938936.1	1.2				ug/L	939701	Standard
	Ho	165	10.0					ug/L	10	Standard
	Tl	203	803908.2	0.6	**99.1382**	1.002	1.0	ug/L	4	Standard
	Tl	205	702848.2	0.9	**99.8673**	1.348	1.3	ug/L	2	Standard
	Pb	206	517801.9	1.0	**98.4705**	1.644	1.7	ug/L	240	Standard
	Pb	207	459764.9	1.8	**98.4124**	2.372	2.4	ug/L	198	Standard
	Pb	208	1827348.6	0.4	**98.9940**	0.966	1.0	ug/L	883	Standard
	U	238	674609.9	0.9	**99.6270**	1.321	1.3	ug/L	3	Standard
>	Bi	209	515462.4	0.6				ug/L	523984	Standard

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Na	23	1.7	173.2	**19.9850**	34.606	173.2	mg/L	0	Standard
Mg	24	7435.2	2.2	**9.8676**	0.257	2.6	mg/L	37	Standard
K	39	4282.3	4.3	**9.6823**	0.481	5.0	mg/L	38	Standard
Ca	43	178.3	18.2	**9.1297**	2.109	23.1	mg/L	10	Standard
Fe	54	11328.6	1.8	**9.8033**	0.307	3.1	mg/L	179	Standard
Fe	57	3145.3	5.1	**9.9880**	0.532	5.3	mg/L	335	Standard
Sc-1	45	58977.9	1.4				mg/L	61029	Standard
Cl	35	21244.2	2.5				ug/L	20195	Standard
Kr	83	1.7	34.6				ug/L	4	Standard
Br	81	1583.4	3.9				ug/L	1547	Standard
P	31	17550.2	2.6				ug/L	15286	Standard
S	34	2090.1	3.5				ug/L	1572	Standard
Sr	88	83.3	42.6				ug/L	73	Standard
C	12	56.7	62.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	22.9	66.8				mg/L	6	Standard
Ho-1	165	10.0					mg/L	10	Standard
Er	166	10.0					mg/L	13	Standard
I	127	1638.4	19.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998
Corr. Coef.	Ca	43	Correlation coefficient < 0.998

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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Wednesday, June 29, 2016 11:38:33
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	69383.6	2.2				ug/L	74699	Standard
	Be	9	41665.5	1.0	**50.9761**	1.262	2.5	ug/L	8	Standard
	Al	27	7007266.1	0.7	**51.3351**	1.064	2.1	ug/L	1493	Standard
	Sc	45	57040.5	0.5				ug/L	61029	Standard
	Ti	47	39782.2	0.5	**104.1738**	1.427	1.4	ug/L	35	Standard
	V	51	390724.1	1.4	**51.2089**	1.334	2.6	ug/L	1435	Standard
	Cr	52	380689.4	0.9	**50.0149**	1.033	2.1	ug/L	7635	Standard
	Cr	53	46596.6	2.0	**49.7615**	1.193	2.4	ug/L	363	Standard
	Mn	55	364452.5	1.9	**51.8606**	1.232	2.4	ug/L	747	Standard
	Co	59	335357.4	2.0	**50.4145**	0.943	1.9	ug/L	234	Standard
	Ni	60	95528.2	0.6	**50.5685**	0.768	1.5	ug/L	215	Standard
	Cu	65	95355.8	0.8	**50.7995**	0.891	1.8	ug/L	104	Standard
	Zn	66	57795.4	0.9	**52.1095**	0.303	0.6	ug/L	363	Standard
>	Ge	72	498415.5	1.2				ug/L	495142	Standard
	As	75	57290.2	0.4	**50.8755**	0.674	1.3	ug/L	-50	Standard
	Se	82	5486.5	1.1	**49.5278**	0.838	1.7	ug/L	14	Standard
	Se-1	77	3797.8	2.0	**51.0456**	1.569	3.1	ug/L	42	Standard
>	Ga	71	88.3	43.2				mg/L	42	Standard
	Rb	85	576.7	2.8				ug/L	17	Standard
	Y	89	413113.3	1.2				ug/L	417098	Standard
>	Rh	103	26.7	92.5				ug/L	13	Standard
	Mo	98	275236.9	1.8	**107.0386**	1.474	1.4	ug/L	11	Standard
	Ag	107	320241.4	0.9	**50.9276**	0.747	1.5	ug/L	68	Standard
	Cd	111	101502.5	0.4	**50.3185**	0.332	0.7	mg/L	2	Standard
	Cd	114	248344.9	2.5	**50.2016**	1.511	3.0	ug/L	12	Standard
>	In	115	566676.1	0.5				ug/L	587441	Standard
	Sn	118	310270.4	1.9	**54.9671**	1.097	2.0	ug/L	497	Standard
	Sb	123	224427.6	0.4	**49.8273**	0.118	0.2	ug/L	78	Standard
	Ba	135	98607.5	0.6	**49.9289**	0.574	1.1	ug/L	24	Standard
	Ce	140	138.3	11.0				ug/L	25	Standard
>	Tb	159	931841.4	1.3				ug/L	939701	Standard
	Ho	165	10.0	86.6				ug/L	10	Standard
	Tl	203	410286.1	0.9	**50.6578**	0.710	1.4	ug/L	4	Standard
	Tl	205	350970.1	0.3	**49.9294**	0.473	0.9	ug/L	2	Standard
	Pb	206	272426.4	0.6	**51.8371**	0.812	1.6	ug/L	240	Standard
	Pb	207	234103.7	0.5	**50.1331**	0.525	1.0	ug/L	198	Standard
	Pb	208	940824.8	0.3	**50.9948**	0.649	1.3	ug/L	883	Standard
	U	238	333596.8	0.3	**49.3228**	0.442	0.9	ug/L	3	Standard
>	Bi	209	514849.0	1.0				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3822.1	2.3	**5.2142**	0.148	2.8	mg/L	37	Standard
K	39	2126.8	6.1	**4.9163**	0.328	6.7	mg/L	38	Standard
Ca	43	118.3	24.4	**5.4681**	1.919	35.1	mg/L	10	Standard
Fe	54	5948.1	0.7	**5.2575**	0.061	1.2	mg/L	179	Standard
Fe	57	1791.8	1.9	**5.4420**	0.142	2.6	mg/L	335	Standard
> **Sc-1**	45	57040.5	0.5				mg/L	61029	Standard
Cl	35	20895.1	0.7				ug/L	20195	Standard
Kr	83	2.7	57.3				ug/L	4	Standard
Br	81	1520.1	6.3				ug/L	1547	Standard
P	31	17665.3	1.6				ug/L	15286	Standard
S	34	2033.5	1.7				ug/L	1572	Standard
Sr	88	80.0	10.8				ug/L	73	Standard
C	12	70.0	24.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	23.0	24.5				mg/L	6	Standard
Ho-1	165	10.0	86.6				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	1353.4	28.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	101.952		
Al	27	102.670		
Sc	45			
Ti	47	104.174		
V	51	102.418		
Cr	52	100.030		
Cr	53			
Mn	55	103.721		
Co	59	100.829		
Ni	60	101.137		
Cu	65	101.599		
Zn	66	104.219		
> Ge	72		100.661	
As	75	101.751		
Se	82	99.056		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	107.039		
Ag	107	101.855		
Cd	111	100.637		
Cd	114			
> In	115		96.465	
Sn	118	109.934		
Sb	123	99.655		
Ba	135	99.858		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.316		
Tl	205			
Pb	206	103.674		
Pb	207	100.266		
Pb	208	101.990		
U	238	98.646		
> Bi	209		98.257	
Na	23	0.100		
Mg	24	104.283		
K	39	98.326		
Ca	43	109.361		
Fe	54	105.151		
Fe	57	108.840		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Wednesday, June 29, 2016 11:41:46
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70378.1	2.5				ug/L	74699	Standard
	Be	9	20.0	25.0	**0.0316**	0.005	17.2	ug/L	8	Standard
	Al	27	2221.8	11.1	**0.0027**	0.002	62.7	ug/L	1493	Standard
	Sc	45	58138.1	3.2				ug/L	61029	Standard
	Ti	47	47.0	20.3	**0.0161**	0.026	158.4	ug/L	35	Standard
	V	51	1216.9	5.3	**-0.0330**	0.008	24.4	ug/L	1435	Standard
	Cr	52	6478.4	1.5	**-0.1416**	0.009	6.0	ug/L	7635	Standard
	Cr	53	358.3	10.7	**0.0617**	0.046	74.0	ug/L	363	Standard
	Mn	55	785.0	2.1	**-0.0343**	0.003	7.5	ug/L	747	Standard
	Co	59	292.7	8.2	**0.0075**	0.004	50.2	ug/L	234	Standard
	Ni	60	209.7	4.3	**-0.0109**	0.006	51.3	ug/L	215	Standard
	Cu	65	121.0	5.8	**-0.0381**	0.003	8.4	ug/L	104	Standard
	Zn	66	398.3	6.4	**-0.0865**	0.023	26.3	ug/L	363	Standard
>	**Ge**	72	490643.1	1.0				ug/L	495142	Standard
	As	75	-2.3	851.2	**0.0577**	0.017	30.2	ug/L	-50	Standard
	Se	82	15.9	39.8	**0.0087**	0.059	680.3	ug/L	14	Standard
	Se-1	77	51.3	11.1	**0.0869**	0.077	88.1	ug/L	42	Standard
>	**Ga**	71	46.7	16.4				mg/L	42	Standard
	Rb	85	33.3	45.8				ug/L	17	Standard
	Y	89	424498.7	1.6				ug/L	417098	Standard
>	**Rh**	103	10.0	50.0				ug/L	13	Standard
	Mo	98	405.0	23.6	**0.1487**	0.033	22.3	ug/L	11	Standard
	Ag	107	128.3	5.2	**0.0071**	0.001	8.6	ug/L	68	Standard
	Cd	111	15.0	38.7	**-0.0006**	0.003	474.1	mg/L	2	Standard
	Cd	114	47.2	8.1	**0.0073**	0.001	11.6	ug/L	12	Standard
>	**In**	115	576512.9	2.1				ug/L	587441	Standard
	Sn	118	851.7	19.9	**0.0543**	0.032	58.8	ug/L	497	Standard
	Sb	123	1550.0	28.1	**0.3352**	0.100	29.7	ug/L	78	Standard
	Ba	135	36.7	23.2	**0.0022**	0.004	189.8	ug/L	24	Standard
	Ce	140	21.7	93.3				ug/L	25	Standard
>	**Tb**	159	924023.3	3.2				ug/L	939701	Standard
	Ho	165	10.0	100.0				ug/L	10	Standard
	Tl	203	60.7	18.1	**0.0057**	0.001	22.9	ug/L	4	Standard
	Tl	205	61.7	61.4	**0.0089**	0.005	59.3	ug/L	2	Standard
	Pb	206	271.3	7.0	**-0.0198**	0.004	19.8	ug/L	240	Standard
	Pb	207	237.3	7.1	**-0.0194**	0.004	21.0	ug/L	198	Standard
	Pb	208	1028.3	6.0	**-0.0187**	0.003	15.4	ug/L	883	Standard
	U	238	47.7	28.5	**0.0026**	0.002	78.0	ug/L	3	Standard
>	**Bi**	209	518292.4	0.9				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	35.0	42.9	**-0.0179**	0.019	107.8	mg/L	37	Standard
K	39	36.7	39.4	**-0.0284**	0.035	124.9	mg/L	38	Standard
Ca	43	25.0	40.0	**-0.8569**	0.683	79.6	mg/L	10	Standard
Fe	54	125.6	8.4	**-0.0262**	0.013	49.1	mg/L	179	Standard
Fe	57	296.7	4.9	**-0.0150**	0.061	408.2	mg/L	335	Standard
> **Sc-1**	45	58138.1	3.2				mg/L	61029	Standard
Cl	35	20966.5	2.9				ug/L	20195	Standard
Kr	83	2.3	89.2				ug/L	4	Standard
Br	81	1540.1	1.7				ug/L	1547	Standard
P	31	17027.9	2.4				ug/L	15286	Standard
S	34	1976.8	0.6				ug/L	1572	Standard
Sr	88	85.0	5.9				ug/L	73	Standard
C	12	30.0	33.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	6.3	86.9				mg/L	6	Standard
Ho-1	165	10.0	100.0				mg/L	10	Standard
Er	166	6.7	173.2				mg/L	13	Standard
I	127	1458.4	25.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.091	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.140
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.914
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Wednesday, June 29, 2016 11:46:53
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66549.2	2.6				ug/L	74699	Standard
	Be	9	181.7	3.2	**0.2393**	0.009	3.6	ug/L	8	Standard
	Al	27	1430.1	59.0	**-0.0024**	0.007	267.2	ug/L	1493	Standard
	Sc	45	54693.6	2.6				ug/L	61029	Standard
	Ti	47	40.3	11.5	**0.0025**	0.013	506.9	ug/L	35	Standard
	V	51	4161.2	3.6	**0.3819**	0.016	4.1	ug/L	1435	Standard
	Cr	52	12463.1	1.9	**0.7390**	0.018	2.5	ug/L	7635	Standard
	Cr	53	996.7	1.0	**0.8006**	0.013	1.6	ug/L	363	Standard
	Mn	55	4091.6	2.3	**0.4679**	0.008	1.8	ug/L	747	Standard
	Co	59	2840.6	1.4	**0.4137**	0.010	2.4	ug/L	234	Standard
	Ni	60	3014.0	1.2	**1.5638**	0.035	2.2	ug/L	215	Standard
	Cu	65	1546.7	1.4	**0.7676**	0.020	2.7	ug/L	104	Standard
	Zn	66	7394.5	0.3	**6.6420**	0.044	0.7	ug/L	363	Standard
>	**Ge**	72	472336.8	0.9				ug/L	495142	Standard
	As	75	394.7	6.3	**0.4290**	0.024	5.7	ug/L	-50	Standard
	Se	82	54.4	27.0	**0.3818**	0.143	37.5	ug/L	14	Standard
	Se-1	77	75.3	14.2	**0.4599**	0.162	35.3	ug/L	42	Standard
>	**Ga**	71	58.3	44.0				mg/L	42	Standard
	Rb	85	8.3	34.6				ug/L	17	Standard
	Y	89	402582.8	1.9				ug/L	417098	Standard
>	**Rh**	103	5.0	100.0				ug/L	13	Standard
	Mo	98	114.4	34.0	**0.0400**	0.016	39.3	ug/L	11	Standard
	Ag	107	2464.9	1.7	**0.3900**	0.008	2.1	ug/L	68	Standard
	Cd	111	479.8	5.6	**0.2365**	0.013	5.7	mg/L	2	Standard
	Cd	114	1217.0	2.5	**0.2507**	0.007	2.6	ug/L	12	Standard
>	**In**	115	551471.6	0.4				ug/L	587441	Standard
	Sn	118	548.3	23.3	**0.0053**	0.024	443.1	ug/L	497	Standard
	Sb	123	2017.6	6.1	**0.4562**	0.029	6.4	ug/L	78	Standard
	Ba	135	1439.7	3.7	**0.7333**	0.029	4.0	ug/L	24	Standard
	Ce	140	11.7	49.5				ug/L	25	Standard
>	**Tb**	159	887425.9	1.8				ug/L	939701	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	701.7	6.6	**0.0871**	0.005	5.3	ug/L	4	Standard
	Tl	205	588.3	14.1	**0.0861**	0.013	15.2	ug/L	2	Standard
	Pb	206	1333.4	2.9	**0.1894**	0.006	3.1	ug/L	240	Standard
	Pb	207	1083.0	1.4	**0.1683**	0.005	3.1	ug/L	198	Standard
	Pb	208	4575.3	2.2	**0.1806**	0.004	2.0	ug/L	883	Standard
	U	238	2677.9	3.2	**0.4017**	0.012	2.9	ug/L	3	Standard
>	**Bi**	209	501924.0	1.5				ug/L	523984	Standard

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Na	23	1.7	173.2	**21.9523**	38.014	173.2	mg/L	0	Standard
Mg	24	43.3	29.0	**-0.0023**	0.020	841.8	mg/L	37	Standard
K	39	33.3	37.7	**-0.0317**	0.032	101.1	mg/L	38	Standard
Ca	43	46.7	12.4	**0.7738**	0.482	62.2	mg/L	10	Standard
Fe	54	100.7	18.6	**-0.0432**	0.016	36.6	mg/L	179	Standard
Fe	57	325.0	8.1	**0.1578**	0.085	53.5	mg/L	335	Standard
> **Sc-1**	45	54693.6	2.6				mg/L	61029	Standard
Cl	35	21199.5	1.6				ug/L	20195	Standard
Kr	83	3.3	17.3				ug/L	4	Standard
Br	81	1403.4	5.3				ug/L	1547	Standard
P	31	11833.0	1.6				ug/L	15286	Standard
S	34	2000.1	8.0				ug/L	1572	Standard
Sr	88	93.3	20.3				ug/L	73	Standard
C	12	56.7	10.2				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	13.0	89.8				mg/L	6	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	1430.1	34.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	119.656		
Al	27	-0.244		
Sc	45			
Ti	47			
V	51	95.473		
Cr	52	92.381		
Cr	53			
Mn	55	93.583		
Co	59	103.429		
Ni	60	97.737		
Cu	65	95.951		
Zn	66	106.273		
> Ge	72		95.394	
As	75	107.259		
Se	82	95.456		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	97.496		
Cd	111	98.556		
Cd	114			
> In	115			93.877
Sn	118			
Sb	123	114.045		
Ba	135	97.779		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	108.827		
Tl	205			
Pb	206			
Pb	207			
Pb	208	90.316		
U	238	100.429		
> Bi	209			95.790
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Wednesday, June 29, 2016 11:50:53
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	71628.9	1.8				ug/L	74699	Standard
	Be	9	13.3	43.3	**0.0235**	0.007	30.3	ug/L	8	Standard
	Al	27	7079214.4	1.4	**50.2405**	1.571	3.1	ug/L	1493	Standard
	Sc	45	57092.4	1.6				ug/L	61029	Standard
	Ti	47	41841.7	1.2	**112.2257**	1.296	1.2	ug/L	35	Standard
	V	51	1975.7	11.7	**0.0706**	0.031	44.3	ug/L	1435	Standard
	Cr	52	7951.4	1.4	**0.0680**	0.015	21.7	ug/L	7635	Standard
	Cr	53	3292.0	3.5	**3.2946**	0.126	3.8	ug/L	363	Standard
	Mn	55	1443.4	4.1	**0.0629**	0.009	13.6	ug/L	747	Standard
	Co	59	431.3	5.1	**0.0292**	0.003	11.6	ug/L	234	Standard
	Ni	60	837.4	1.6	**0.3312**	0.007	2.2	ug/L	215	Standard
	Cu	65	638.0	4.2	**0.2451**	0.015	6.0	ug/L	104	Standard
	Zn	66	1716.8	2.4	**1.1448**	0.039	3.4	ug/L	363	Standard
>	Ge	72	486594.7	0.0				ug/L	495142	Standard
	As	75	-47.8	111.3	**0.0161**	0.048	300.1	ug/L	-50	Standard
	Se	82	12.5	17.3	**-0.0221**	0.020	90.2	ug/L	14	Standard
	Se-1	77	285.3	3.8	**3.3530**	0.150	4.5	ug/L	42	Standard
>	Ga	71	146.7	5.2				mg/L	42	Standard
	Rb	85	1056.7	1.8				ug/L	17	Standard
	Y	89	409909.2	0.2				ug/L	417098	Standard
>	Rh	103	11.7	99.0				ug/L	13	Standard
	Mo	98	258876.2	1.4	**101.0110**	2.466	2.4	ug/L	11	Standard
	Ag	107	250.7	8.2	**0.0271**	0.004	13.5	ug/L	68	Standard
	Cd	111	-191.4	6.3	**-0.1031**	0.005	5.1	mg/L	2	Standard
	Cd	114	476.2	9.0	**0.0945**	0.009	9.4	ug/L	12	Standard
>	In	115	564912.9	1.1				ug/L	587441	Standard
	Sn	118	765.0	2.0	**0.0415**	0.002	5.8	ug/L	497	Standard
	Sb	123	314.8	31.7	**0.0658**	0.022	32.8	ug/L	78	Standard
	Ba	135	628.0	0.0	**0.3031**	0.004	1.2	ug/L	24	Standard
	Ce	140	243.3	10.5				ug/L	25	Standard
>	Tb	159	934364.8	1.3				ug/L	939701	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	234.7	3.6	**0.0271**	0.001	3.8	ug/L	4	Standard
	Tl	205	175.0	22.3	**0.0250**	0.006	22.8	ug/L	2	Standard
	Pb	206	514.7	3.8	**0.0265**	0.004	16.6	ug/L	240	Standard
	Pb	207	427.7	5.6	**0.0214**	0.005	22.5	ug/L	198	Standard
	Pb	208	1691.4	2.8	**0.0174**	0.002	11.4	ug/L	883	Standard
	U	238	20.7	10.1	**-0.0014**	0.000	22.7	ug/L	3	Standard
>	Bi	209	516629.8	0.9				ug/L	523984	Standard

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Na	23	8.3	34.6	**102.8074**	36.030	35.0	mg/L	0	Standard
Mg	24	9604.7	1.9	**13.1909**	0.366	2.8	mg/L	37	Standard
K	39	2033.5	6.6	**4.6893**	0.286	6.1	mg/L	38	Standard
Ca	43	250.0	4.0	**14.3615**	0.772	5.4	mg/L	10	Standard
Fe	54	14441.1	1.7	**12.9538**	0.416	3.2	mg/L	179	Standard
Fe	57	3845.5	3.6	**12.9047**	0.714	5.5	mg/L	335	Standard
> **Sc-1**	45	57092.4	1.6				mg/L	61029	Standard
Cl	35	20428.4	2.1				ug/L	20195	Standard
Kr	83	3.0	57.7				ug/L	4	Standard
Br	81	1493.4	8.7				ug/L	1547	Standard
P	31	15903.3	2.0				ug/L	15286	Standard
S	34	1818.4	8.5				ug/L	1572	Standard
Sr	88	70.0	35.7				ug/L	73	Standard
C	12	136.7	22.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	86.6				mg/L	3	Standard
Dy	164	12.2	93.4				mg/L	6	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	23.3	24.7				mg/L	13	Standard
I	127	2226.8	19.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27	1.005		
Sc	45			
Ti	47	112.226		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.274	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	101.011		
Ag	107			
Cd	111			
Cd	114			
> In	115		96.165	
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209		98.596	
Na	23	822.459		
Mg	24	263.819		
K	39	93.787		
Ca	43	95.743		
Fe	54	103.630		
Fe	57	103.238		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	

Sample ID: QC Std 4
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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Wednesday, June 29, 2016 11:54:47
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72764.4	2.4				ug/L	74699	Standard
	Be	9	86093.9	0.6	**100.4334**	2.352	2.3	ug/L	8	Standard
	Al	27	7577089.0	1.5	**52.9410**	1.751	3.3	ug/L	1493	Standard
	Sc	45	54926.1	3.1				ug/L	61029	Standard
	Ti	47	43156.4	1.1	**115.6496**	0.651	0.6	ug/L	35	Standard
	V	51	767037.5	0.7	**103.0563**	0.476	0.5	ug/L	1435	Standard
	Cr	52	743370.8	0.7	**100.9527**	0.091	0.1	ug/L	7635	Standard
	Cr	53	95736.5	0.4	**104.9834**	0.488	0.5	ug/L	363	Standard
	Mn	55	719673.0	1.2	**104.9487**	1.961	1.9	ug/L	747	Standard
	Co	59	684381.8	1.6	**105.3392**	2.464	2.3	ug/L	234	Standard
	Ni	60	184775.9	0.8	**100.2112**	0.878	0.9	ug/L	215	Standard
	Cu	65	183945.6	0.7	**100.3790**	1.285	1.3	ug/L	104	Standard
	Zn	66	111716.4	0.5	**103.5231**	0.465	0.4	ug/L	363	Standard
>	Ge	72	487033.1	0.8				ug/L	495142	Standard
	As	75	115123.8	0.6	**104.5507**	0.234	0.2	ug/L	-50	Standard
	Se	82	11162.3	1.3	**103.2681**	1.937	1.9	ug/L	14	Standard
	Se-1	77	7790.3	1.4	**107.8133**	0.940	0.9	ug/L	42	Standard
>	Ga	71	155.0	24.4				mg/L	42	Standard
	Rb	85	853.4	12.0				ug/L	17	Standard
	Y	89	414937.1	1.1				ug/L	417098	Standard
>	Rh	103	48.3	21.5				ug/L	13	Standard
	Mo	98	271334.5	0.2	**106.0489**	0.711	0.7	ug/L	11	Standard
	Ag	107	596492.9	1.3	**95.3413**	1.752	1.8	ug/L	68	Standard
	Cd	111	202245.3	1.2	**100.7713**	1.934	1.9	mg/L	2	Standard
	Cd	114	489634.1	0.4	**99.4602**	0.649	0.7	ug/L	12	Standard
>	In	115	563893.1	0.8				ug/L	587441	Standard
	Sn	118	898.4	12.5	**0.0654**	0.019	28.7	ug/L	497	Standard
	Sb	123	448934.9	1.4	**100.1777**	2.039	2.0	ug/L	78	Standard
	Ba	135	193320.5	0.8	**98.3885**	1.494	1.5	ug/L	24	Standard
	Ce	140	68.3	16.9				ug/L	25	Standard
>	Tb	159	922182.5	1.6				ug/L	939701	Standard
	Ho	165	15.0	57.7				ug/L	10	Standard
	Tl	203	808287.0	0.7	**100.1763**	1.478	1.5	ug/L	4	Standard
	Tl	205	710155.2	1.4	**101.4182**	2.560	2.5	ug/L	2	Standard
	Pb	206	542765.1	0.5	**103.7300**	0.986	1.0	ug/L	240	Standard
	Pb	207	466015.8	1.0	**100.2432**	1.559	1.6	ug/L	198	Standard
	Pb	208	1879754.6	0.3	**102.3429**	1.262	1.2	ug/L	883	Standard
	U	238	673426.3	1.1	**99.9548**	2.202	2.2	ug/L	3	Standard
>	Bi	209	512933.6	1.2				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	10138.4	1.8	**14.4874**	0.596	4.1	mg/L	37	Standard
K	39	2125.1	3.3	**5.1060**	0.147	2.9	mg/L	38	Standard
Ca	43	265.0	8.2	**16.1201**	2.142	13.3	mg/L	10	Standard
Fe	54	14876.0	0.8	**13.8828**	0.353	2.5	mg/L	179	Standard
Fe	57	3958.9	4.0	**13.8986**	1.069	7.7	mg/L	335	Standard
Sc-1	45	54926.1	3.1				mg/L	61029	Standard
Cl	35	20351.0	1.2				ug/L	20195	Standard
Kr	83	1.7	91.7				ug/L	4	Standard
Br	81	1600.1	9.2				ug/L	1547	Standard
P	31	14895.7	0.4				ug/L	15286	Standard
S	34	1618.4	8.3				ug/L	1572	Standard
Sr	88	85.0	10.2				ug/L	73	Standard
C	12	116.7	71.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	16.2	38.3				mg/L	6	Standard
Ho-1	165	15.0	57.7				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	1496.7	25.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	100.433		
Al	27	1.059		
Sc	45			
Ti	47	115.650		
V	51	103.056		
Cr	52	100.953		
Cr	53			
Mn	55	104.949		
Co	59	105.339		
Ni	60	100.211		
Cu	65	100.379		
Zn	66	103.523		
Ge	72		98.362	
As	75	104.551		
Se	82	103.268		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	106.049		
Ag	107	95.341		
Cd	111	100.771		
Cd	114			
> In	115		95.991	
Sn	118			
Sb	123	100.178		
Ba	135	98.389		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.176		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.343		
U	238	99.955		
> Bi	209		97.891	
Na	23	0.040		
Mg	24	289.748		
K	39	102.121		
Ca	43	107.468		
Fe	54	111.063		
Fe	57	111.189		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

Sample ID: QC Std 5
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 12:00:10
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74127.8	4.1				ug/L	74699	Standard
	Be	9	44057.3	2.0	**50.4723**	1.532	3.0	ug/L	8	Standard
	Al	27	7182862.5	0.8	**49.2846**	1.691	3.4	ug/L	1493	Standard
	Sc	45	54972.9	1.9				ug/L	61029	Standard
	Ti	47	37035.5	1.0	**100.2235**	3.375	3.4	ug/L	35	Standard
	V	51	380987.7	1.2	**51.6037**	1.920	3.7	ug/L	1435	Standard
	Cr	52	371095.9	0.5	**50.3905**	1.647	3.3	ug/L	7635	Standard
	Cr	53	45648.7	0.9	**50.3715**	0.927	1.8	ug/L	363	Standard
	Mn	55	362758.6	1.1	**53.3556**	2.033	3.8	ug/L	747	Standard
	Co	59	346170.1	1.6	**53.7955**	2.203	4.1	ug/L	234	Standard
	Ni	60	91822.1	1.5	**50.2407**	2.119	4.2	ug/L	215	Standard
	Cu	65	92043.5	2.0	**50.6873**	2.359	4.7	ug/L	104	Standard
	Zn	66	54708.9	1.1	**50.9762**	1.937	3.8	ug/L	363	Standard
>	Ge	72	482505.9	2.7				ug/L	495142	Standard
	As	75	56019.2	1.2	**51.4117**	1.775	3.5	ug/L	-50	Standard
	Se	82	5615.5	1.4	**52.4035**	2.100	4.0	ug/L	14	Standard
	Se-1	77	3787.5	1.5	**52.6293**	2.112	4.0	ug/L	42	Standard
>	Ga	71	63.3	9.1				mg/L	42	Standard
	Rb	85	771.7	5.9				ug/L	17	Standard
	Y	89	419939.4	2.7				ug/L	417098	Standard
>	Rh	103	31.7	9.1				ug/L	13	Standard
	Mo	98	262674.3	2.0	**102.5093**	6.034	5.9	ug/L	11	Standard
	Ag	107	318557.4	0.8	**50.8058**	2.007	4.0	ug/L	68	Standard
	Cd	111	103808.6	0.6	**51.6156**	2.157	4.2	mg/L	2	Standard
	Cd	114	253134.5	2.1	**51.2889**	1.034	2.0	ug/L	12	Standard
>	In	115	565595.5	4.0				ug/L	587441	Standard
	Sn	118	290084.1	1.0	**51.5381**	2.174	4.2	ug/L	497	Standard
	Sb	123	228198.9	1.3	**50.8307**	2.651	5.2	ug/L	78	Standard
	Ba	135	99366.1	0.6	**50.4579**	1.943	3.9	ug/L	24	Standard
	Ce	140	78.3	13.3				ug/L	25	Standard
>	Tb	159	913248.6	2.6				ug/L	939701	Standard
	Ho	165	3.3	86.6				ug/L	10	Standard
	Tl	203	413066.5	1.0	**51.9084**	1.016	2.0	ug/L	4	Standard
	Tl	205	363184.8	0.9	**52.5982**	1.678	3.2	ug/L	2	Standard
	Pb	206	268800.2	0.8	**52.0649**	1.553	3.0	ug/L	240	Standard
	Pb	207	239468.7	1.2	**52.2107**	1.790	3.4	ug/L	198	Standard
	Pb	208	958802.6	0.9	**52.9068**	1.662	3.1	ug/L	883	Standard
	U	238	349772.5	0.2	**52.6413**	1.317	2.5	ug/L	3	Standard
>	Bi	209	505954.2	2.3				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3805.5	5.3	**5.3881**	0.260	4.8	mg/L	37	Standard
K	39	2106.8	1.9	**5.0574**	0.179	3.5	mg/L	38	Standard
Ca	43	101.7	5.7	**4.6110**	0.501	10.9	mg/L	10	Standard
Fe	54	5879.5	1.7	**5.3975**	0.172	3.2	mg/L	179	Standard
Fe	57	1785.1	7.3	**5.6694**	0.625	11.0	mg/L	335	Standard
> **Sc-1**	45	54972.9	1.9				mg/L	61029	Standard
Cl	35	21821.7	0.9				ug/L	20195	Standard
Kr	83	2.0	0.0				ug/L	4	Standard
Br	81	1470.1	4.5				ug/L	1547	Standard
P	31	16677.5	6.0				ug/L	15286	Standard
S	34	1955.1	4.5				ug/L	1572	Standard
Sr	88	73.3	14.2				ug/L	73	Standard
C	12	80.0	66.1				mg/L	63	Standard
N	14	6.7	86.6				mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	15.9	32.3				mg/L	6	Standard
Ho-1	165	3.3	86.6				mg/L	10	Standard
Er	166	16.7	124.9				mg/L	13	Standard
I	127	1668.4	28.6				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	100.945		
	Al	27	98.569		
	Sc	45			
	Ti	47	100.224		
	V	51	103.207		
	Cr	52	100.781		
	Cr	53			
	Mn	55	106.711		
	Co	59	107.591		
	Ni	60	100.481		
	Cu	65	101.375		
	Zn	66	101.952		
>	Ge	72		97.448	
	As	75	102.823		
	Se	82	104.807		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	102.509		
Ag	107	101.612		
Cd	111	103.231		
Cd	114			
In	115			96.281
Sn	118	103.076		
Sb	123	101.661		
Ba	135	100.916		
Ce	140			
Tb	159			
Ho	165			
Tl	203	103.817		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.814		
U	238	105.283		
Bi	209			96.559
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 12:07:34
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74348.6	1.0				ug/L	74699	Standard
	Be	9	21.7	26.6	**0.0324**	0.007	20.7	ug/L	8	Standard
	Al	27	1840.1	21.7	**-0.0008**	0.003	358.1	ug/L	1493	Standard
	Sc	45	56396.5	2.8				ug/L	61029	Standard
	Ti	47	36.7	15.0	**-0.0098**	0.014	147.0	ug/L	35	Standard
	V	51	1326.6	5.0	**-0.0153**	0.008	51.0	ug/L	1435	Standard
	Cr	52	6702.5	2.0	**-0.0955**	0.015	16.1	ug/L	7635	Standard
	Cr	53	393.3	15.3	**0.1070**	0.067	63.0	ug/L	363	Standard
	Mn	55	742.7	5.5	**-0.0386**	0.005	13.8	ug/L	747	Standard
	Co	59	250.3	1.5	**0.0016**	0.000	18.8	ug/L	234	Standard
	Ni	60	195.0	9.2	**-0.0170**	0.010	58.7	ug/L	215	Standard
	Cu	65	108.7	1.4	**-0.0438**	0.000	1.1	ug/L	104	Standard
	Zn	66	377.3	7.3	**-0.1000**	0.024	24.2	ug/L	363	Standard
>	**Ge**	72	482419.6	0.7				ug/L	495142	Standard
	As	75	-16.3	122.1	**0.0447**	0.018	40.8	ug/L	-50	Standard
	Se	82	12.2	10.1	**-0.0240**	0.012	49.4	ug/L	14	Standard
	Se-1	77	52.7	12.2	**0.1177**	0.089	75.6	ug/L	42	Standard
>	**Ga**	71	61.7	33.8				mg/L	42	Standard
	Rb	85	30.0	50.0				ug/L	17	Standard
	Y	89	414790.7	2.9				ug/L	417098	Standard
>	**Rh**	103	1.7	173.2				ug/L	13	Standard
	Mo	98	135.9	9.5	**0.0469**	0.005	10.2	ug/L	11	Standard
	Ag	107	96.3	7.3	**0.0024**	0.001	45.2	ug/L	68	Standard
	Cd	111	7.4	43.0	**-0.0042**	0.002	37.1	mg/L	2	Standard
	Cd	114	24.8	51.6	**0.0029**	0.003	88.9	ug/L	12	Standard
>	**In**	115	568967.0	0.5				ug/L	587441	Standard
	Sn	118	628.3	16.1	**0.0164**	0.018	110.8	ug/L	497	Standard
	Sb	123	617.2	40.6	**0.1324**	0.056	42.3	ug/L	78	Standard
	Ba	135	30.7	16.1	**-0.0005**	0.003	469.7	ug/L	24	Standard
	Ce	140	23.3	68.9				ug/L	25	Standard
>	**Tb**	159	918183.5	1.2				ug/L	939701	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	30.3	14.9	**0.0020**	0.001	31.1	ug/L	4	Standard
	Tl	205	23.3	24.7	**0.0035**	0.001	22.2	ug/L	2	Standard
	Pb	206	259.3	0.6	**-0.0221**	0.001	4.2	ug/L	240	Standard
	Pb	207	198.7	1.6	**-0.0277**	0.001	4.0	ug/L	198	Standard
	Pb	208	894.0	2.8	**-0.0259**	0.002	7.7	ug/L	883	Standard
	U	238	15.0	35.3	**-0.0022**	0.001	35.0	ug/L	3	Standard
>	**Bi**	209	518580.7	1.8				ug/L	523984	Standard

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Na	23	1.7	173.2	**20.6253**	35.715	173.2	mg/L	0	Standard
Mg	24	31.7	32.9	**-0.0207**	0.015	73.7	mg/L	37	Standard
K	39	51.7	24.4	**0.0090**	0.027	299.1	mg/L	38	Standard
Ca	43	33.3	31.2	**-0.2319**	0.781	336.6	mg/L	10	Standard
Fe	54	140.8	7.6	**-0.0093**	0.006	67.4	mg/L	179	Standard
Fe	57	256.7	18.9	**-0.1295**	0.180	138.6	mg/L	335	Standard
> **Sc-1**	45	56396.5	2.8				mg/L	61029	Standard
Cl	35	21372.4	1.3				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	1540.1	8.8				ug/L	1547	Standard
P	31	15931.7	0.9				ug/L	15286	Standard
S	34	1863.4	1.4				ug/L	1572	Standard
Sr	88	58.3	17.8				ug/L	73	Standard
C	12	56.7	27.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	6.2	186.6				mg/L	6	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	10.0					mg/L	13	Standard
I	127	1518.4	26.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.431	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.855
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.969
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606066106
Sample Date/Time: Wednesday, June 29, 2016 12:12:15
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78301.9	3.0				ug/L	74699	Standard
	Be	9	591.7	15.8	**0.6482**	0.094	14.5	ug/L	8	Standard
	Al	27	14033022.6	1.2	**91.1117**	1.566	1.7	ug/L	1493	Standard
	Sc	45	64031.7	1.2				ug/L	61029	Standard
	Ti	47	6936.9	1.2	**18.7002**	0.397	2.1	ug/L	35	Standard
	V	51	136379.5	0.6	**18.3618**	0.342	1.9	ug/L	1435	Standard
	Cr	52	135090.6	0.2	**17.7119**	0.504	2.8	ug/L	7635	Standard
	Cr	53	16100.2	3.4	**17.5840**	1.043	5.9	ug/L	363	Standard
	Mn	55	2727656.7	0.9	**402.5207**	10.967	2.7	ug/L	747	Standard
	Co	59	46530.0	0.2	**7.2050**	0.195	2.7	ug/L	234	Standard
	Ni	60	31243.2	1.0	**17.0295**	0.585	3.4	ug/L	215	Standard
	Cu	65	40278.5	0.5	**22.1396**	0.604	2.7	ug/L	104	Standard
	Zn	66	62615.1	0.3	**58.4626**	1.558	2.7	ug/L	363	Standard
>	**Ge**	72	481946.2	2.4				ug/L	495142	Standard
	As	75	4644.7	1.4	**4.3222**	0.154	3.6	ug/L	-50	Standard
	Se	82	54.0	14.6	**0.3688**	0.086	23.4	ug/L	14	Standard
	Se-1	77	96.0	5.2	**0.7275**	0.040	5.5	ug/L	42	Standard
>	**Ga**	71	12810.4	4.6				mg/L	42	Standard
	Rb	85	116256.0	0.7				ug/L	17	Standard
	Y	89	585719.0	1.0				ug/L	417098	Standard
>	**Rh**	103	45.0	33.3				ug/L	13	Standard
	Mo	98	935.2	3.6	**0.3550**	0.010	2.8	ug/L	11	Standard
	Ag	107	931.4	1.2	**0.1340**	0.001	0.5	ug/L	68	Standard
	Cd	111	782.7	0.6	**0.3771**	0.007	1.8	mg/L	2	Standard
	Cd	114	1959.7	7.4	**0.3906**	0.025	6.5	ug/L	12	Standard
>	**In**	115	571359.2	1.2				ug/L	587441	Standard
	Sn	118	1011.7	7.7	**0.0833**	0.012	14.7	ug/L	497	Standard
	Sb	123	336.5	28.9	**0.0698**	0.021	29.4	ug/L	78	Standard
	Ba	135	394959.7	1.6	**198.3814**	1.476	0.7	ug/L	24	Standard
	Ce	140	893729.8	1.7				ug/L	25	Standard
>	**Tb**	159	948738.0	1.3				ug/L	939701	Standard
	Ho	165	15724.8	2.6				ug/L	10	Standard
	Tl	203	658.0	2.7	**0.0791**	0.002	2.2	ug/L	4	Standard
	Tl	205	583.3	11.6	**0.0828**	0.010	12.2	ug/L	2	Standard
	Pb	206	370590.1	1.2	**70.2116**	0.816	1.2	ug/L	240	Standard
	Pb	207	304396.4	0.8	**64.9093**	0.988	1.5	ug/L	198	Standard
	Pb	208	1254498.7	1.7	**67.7133**	1.716	2.5	ug/L	883	Standard
	U	238	3382.4	2.2	**0.4935**	0.016	3.3	ug/L	3	Standard
>	**Bi**	209	517229.2	1.1				ug/L	523984	Standard

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Na	23	3.3	173.2	**36.6019**	63.388	173.2	mg/L	0	Standard
Mg	24	128.3	15.7	**0.0927**	0.024	25.5	mg/L	37	Standard
K	39	566.7	14.3	**1.0807**	0.180	16.7	mg/L	38	Standard
Ca	43	418.3	12.7	**22.6893**	3.491	15.4	mg/L	10	Standard
Fe	54	12793.3	3.0	**10.1983**	0.198	1.9	mg/L	179	Standard
Fe	57	3678.8	1.9	**10.8461**	0.363	3.4	mg/L	335	Standard
Sc-1	45	64031.7	1.2				mg/L	61029	Standard
Cl	35	22050.7	1.1				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	2173.5	11.7				ug/L	1547	Standard
P	31	16252.1	5.4				ug/L	15286	Standard
S	34	2065.1	4.4				ug/L	1572	Standard
Sr	88	140.0	9.4				ug/L	73	Standard
C	12	143.3	22.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	203.3	10.2				mg/L	3	Standard
Dy	164	25060.4	3.8				mg/L	6	Standard
Ho-1	165	15724.8	2.6				mg/L	10	Standard
Er	166	13529.4	4.1				mg/L	13	Standard
I	127	8297.3	2.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		104.824	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.335	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.262
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.711
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606066107
Sample Date/Time: Wednesday, June 29, 2016 12:15:26
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79855.0	3.3				ug/L	74699	Standard
	Be	9	765.0	6.8	**0.8219**	0.077	9.4	ug/L	8	Standard
	Al	27	26230756.6	0.7	**167.0452**	4.333	2.6	ug/L	1493	Standard
	Sc	45	64585.8	4.1				ug/L	61029	Standard
	Ti	47	7966.1	1.8	**21.8574**	0.352	1.6	ug/L	35	Standard
	V	51	155637.7	1.4	**21.3440**	0.459	2.1	ug/L	1435	Standard
	Cr	52	137713.7	0.8	**18.3989**	0.313	1.7	ug/L	7635	Standard
	Cr	53	16806.0	3.9	**18.6780**	0.841	4.5	ug/L	363	Standard
	Mn	55	4726467.2	1.1	**709.3402**	2.876	0.4	ug/L	747	Standard
	Co	59	64550.2	0.1	**10.1794**	0.081	0.8	ug/L	234	Standard
	Ni	60	42709.8	0.1	**23.7183**	0.226	1.0	ug/L	215	Standard
	Cu	65	23683.8	1.0	**13.1970**	0.251	1.9	ug/L	104	Standard
	Zn	66	44795.8	1.0	**42.4101**	0.817	1.9	ug/L	363	Standard
>	**Ge**	72	473762.9	0.9				ug/L	495142	Standard
	As	75	7180.0	1.6	**6.7588**	0.066	1.0	ug/L	-50	Standard
	Se	82	142.2	5.2	**1.2157**	0.067	5.5	ug/L	14	Standard
	Se-1	77	110.3	7.6	**0.9569**	0.126	13.2	ug/L	42	Standard
>	**Ga**	71	17858.9	0.4				mg/L	42	Standard
	Rb	85	152815.2	1.7				ug/L	17	Standard
	Y	89	630725.5	1.5				ug/L	417098	Standard
>	**Rh**	103	41.7	25.0				ug/L	13	Standard
	Mo	98	1176.0	1.0	**0.4476**	0.010	2.2	ug/L	11	Standard
	Ag	107	471.0	1.7	**0.0613**	0.002	3.5	ug/L	68	Standard
	Cd	111	231.8	9.8	**0.1061**	0.013	12.1	mg/L	2	Standard
	Cd	114	548.2	12.6	**0.1078**	0.015	13.9	ug/L	12	Standard
>	**In**	115	571871.5	1.5				ug/L	587441	Standard
	Sn	118	1063.4	7.5	**0.0923**	0.015	16.1	ug/L	497	Standard
	Sb	123	198.5	41.2	**0.0396**	0.018	46.2	ug/L	78	Standard
	Ba	135	410562.2	0.2	**206.0643**	2.723	1.3	ug/L	24	Standard
	Ce	140	1020863.3	0.8				ug/L	25	Standard
>	**Tb**	159	935971.5	1.4				ug/L	939701	Standard
	Ho	165	18616.4	1.9				ug/L	10	Standard
	Tl	203	969.7	3.1	**0.1217**	0.006	4.6	ug/L	4	Standard
	Tl	205	781.7	5.1	**0.1148**	0.005	4.1	ug/L	2	Standard
	Pb	206	74583.8	0.8	**14.5751**	0.129	0.9	ug/L	240	Standard
	Pb	207	60293.4	1.5	**13.2552**	0.050	0.4	ug/L	198	Standard
	Pb	208	253434.0	0.7	**14.1059**	0.309	2.2	ug/L	883	Standard
	U	238	4763.7	0.8	**0.7216**	0.012	1.7	ug/L	3	Standard
>	**Bi**	209	499544.2	1.5				ug/L	523984	Standard

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Na	23	8.3	34.6	**90.1824**	29.248	32.4	mg/L	0	Standard
Mg	24	323.3	10.9	**0.3294**	0.041	12.6	mg/L	37	Standard
K	39	788.4	10.3	**1.5298**	0.110	7.2	mg/L	38	Standard
Ca	43	663.3	6.3	**37.0621**	1.711	4.6	mg/L	10	Standard
Fe	54	18630.5	1.2	**14.8018**	0.561	3.8	mg/L	179	Standard
Fe	57	5110.9	3.8	**15.3724**	1.217	7.9	mg/L	335	Standard
Sc-1	45	64585.8	4.1				mg/L	61029	Standard
Cl	35	22235.6	2.9				ug/L	20195	Standard
Kr	83	0.7	173.2				ug/L	4	Standard
Br	81	23104.3	4.2				ug/L	1547	Standard
P	31	15829.9	2.1				ug/L	15286	Standard
S	34	2033.5	3.2				ug/L	1572	Standard
Sr	88	161.7	12.5				ug/L	73	Standard
C	12	96.7	41.8				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	31177.2	1.6				mg/L	6	Standard
Ho-1	165	18616.4	1.9				mg/L	10	Standard
Er	166	16976.2	1.7				mg/L	13	Standard
I	127	9242.8	4.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		106.903	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.682	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.350
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.336
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606066108
Sample Date/Time: Wednesday, June 29, 2016 12:18:38
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77986.9	1.5				ug/L	74699	Standard
	Be	9	848.4	8.3	**0.9313**	0.087	9.4	ug/L	8	Standard
	Al	27	17300686.4	1.1	**112.7510**	0.475	0.4	ug/L	1493	Standard
	Sc	45	64965.7	2.0				ug/L	61029	Standard
	Ti	47	6993.9	0.6	**18.3803**	0.198	1.1	ug/L	35	Standard
	V	51	170039.3	0.3	**22.3624**	0.095	0.4	ug/L	1435	Standard
	Cr	52	135852.7	1.1	**17.3429**	0.173	1.0	ug/L	7635	Standard
	Cr	53	16400.5	1.1	**17.4496**	0.150	0.9	ug/L	363	Standard
	Mn	55	3732645.2	0.8	**537.0232**	5.661	1.1	ug/L	747	Standard
	Co	59	59499.9	1.1	**8.9910**	0.146	1.6	ug/L	234	Standard
	Ni	60	38977.4	1.0	**20.7345**	0.185	0.9	ug/L	215	Standard
	Cu	65	32324.4	0.5	**17.2976**	0.098	0.6	ug/L	104	Standard
	Zn	66	55484.7	0.8	**50.4392**	0.445	0.9	ug/L	363	Standard
>	**Ge**	72	494184.7	0.5				ug/L	495142	Standard
	As	75	5935.1	0.6	**5.3688**	0.057	1.1	ug/L	-50	Standard
	Se	82	56.5	10.0	**0.3782**	0.052	13.7	ug/L	14	Standard
	Se-1	77	118.0	0.8	**0.9965**	0.019	1.9	ug/L	42	Standard
>	**Ga**	71	16687.5	1.9				mg/L	42	Standard
	Rb	85	157851.4	1.2				ug/L	17	Standard
	Y	89	635672.9	1.6				ug/L	417098	Standard
>	**Rh**	103	68.3	27.7				ug/L	13	Standard
	Mo	98	1214.1	0.7	**0.4777**	0.002	0.4	ug/L	11	Standard
	Ag	107	767.0	3.0	**0.1120**	0.004	3.7	ug/L	68	Standard
	Cd	111	562.6	3.0	**0.2776**	0.008	3.0	mg/L	2	Standard
	Cd	114	1264.6	12.4	**0.2596**	0.032	12.4	ug/L	12	Standard
>	**In**	115	553515.9	0.3				ug/L	587441	Standard
	Sn	118	763.4	11.0	**0.0440**	0.015	34.7	ug/L	497	Standard
	Sb	123	242.9	15.0	**0.0510**	0.008	16.4	ug/L	78	Standard
	Ba	135	429181.6	1.6	**222.5293**	3.912	1.8	ug/L	24	Standard
	Ce	140	1102655.1	2.3				ug/L	25	Standard
>	**Tb**	159	923824.1	1.4				ug/L	939701	Standard
	Ho	165	18663.2	2.9				ug/L	10	Standard
	Tl	203	782.7	3.6	**0.0981**	0.005	5.3	ug/L	4	Standard
	Tl	205	701.7	8.6	**0.1034**	0.010	10.1	ug/L	2	Standard
	Pb	206	213507.8	0.5	**41.9534**	0.898	2.1	ug/L	240	Standard
	Pb	207	175202.2	0.5	**38.7416**	0.683	1.8	ug/L	198	Standard
	Pb	208	727362.3	0.6	**40.7140**	1.033	2.5	ug/L	883	Standard
	U	238	4175.6	1.0	**0.6335**	0.018	2.9	ug/L	3	Standard
>	**Bi**	209	498479.4	1.9				ug/L	523984	Standard

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Na	23	1.7	173.2	**18.0364**	31.231	173.2	mg/L	0	Standard
Mg	24	140.0	21.7	**0.1047**	0.037	35.2	mg/L	37	Standard
K	39	708.4	12.8	**1.3550**	0.168	12.4	mg/L	38	Standard
Ca	43	508.3	5.0	**27.6291**	0.895	3.2	mg/L	10	Standard
Fe	54	15324.4	1.1	**12.0707**	0.309	2.6	mg/L	179	Standard
Fe	57	4262.3	3.3	**12.5338**	0.279	2.2	mg/L	335	Standard
> **Sc-1**	45	64965.7	2.0				mg/L	61029	Standard
Cl	35	21927.9	1.6				ug/L	20195	Standard
Kr	83	2.7	78.1				ug/L	4	Standard
Br	81	2823.6	3.3				ug/L	1547	Standard
P	31	16612.4	1.0				ug/L	15286	Standard
S	34	2085.1	7.7				ug/L	1572	Standard
Sr	88	245.0	14.1				ug/L	73	Standard
C	12	116.7	27.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	93.3	49.5				mg/L	3	Standard
Dy	164	30954.0	1.2				mg/L	6	Standard
Ho-1	165	18663.2	2.9				mg/L	10	Standard
Er	166	16615.8	2.6				mg/L	13	Standard
I	127	11766.2	5.8				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		104.402	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.807	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	94.225	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	95.132	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606066109
Sample Date/Time: Wednesday, June 29, 2016 12:21:49
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77037.0	1.5				ug/L	74699	Standard
	Be	9	378.3	6.2	**0.4242**	0.022	5.2	ug/L	8	Standard
	Al	27	13254869.5	1.3	**87.4672**	2.449	2.8	ug/L	1493	Standard
	Sc	45	63133.0	3.0				ug/L	61029	Standard
	Ti	47	8144.2	1.7	**21.2616**	0.854	4.0	ug/L	35	Standard
	V	51	109381.5	1.5	**14.2029**	0.301	2.1	ug/L	1435	Standard
	Cr	52	127693.7	2.3	**16.1132**	0.755	4.7	ug/L	7635	Standard
	Cr	53	15149.2	3.9	**15.9774**	1.000	6.3	ug/L	363	Standard
	Mn	55	3010101.1	0.9	**429.7771**	13.412	3.1	ug/L	747	Standard
	Co	59	32158.1	0.7	**4.8045**	0.098	2.0	ug/L	234	Standard
	Ni	60	23283.5	0.8	**12.2424**	0.383	3.1	ug/L	215	Standard
	Cu	65	9940.9	0.4	**5.2071**	0.131	2.5	ug/L	104	Standard
	Zn	66	24785.3	0.2	**22.1054**	0.470	2.1	ug/L	363	Standard
>	**Ge**	72	498160.0	2.3				ug/L	495142	Standard
	As	75	2943.4	0.7	**2.6727**	0.077	2.9	ug/L	-50	Standard
	Se	82	39.1	13.2	**0.2170**	0.054	24.7	ug/L	14	Standard
	Se-1	77	75.7	11.2	**0.4068**	0.103	25.3	ug/L	42	Standard
>	**Ga**	71	9034.4	2.0				mg/L	42	Standard
	Rb	85	68682.0	2.5				ug/L	17	Standard
	Y	89	539979.1	1.9				ug/L	417098	Standard
>	**Rh**	103	11.7	24.7				ug/L	13	Standard
	Mo	98	3058.1	1.5	**1.1809**	0.018	1.5	ug/L	11	Standard
	Ag	107	334.3	34.2	**0.0400**	0.017	43.3	ug/L	68	Standard
	Cd	111	137.9	39.4	**0.0601**	0.026	43.1	mg/L	2	Standard
	Cd	114	340.6	39.5	**0.0664**	0.026	39.4	ug/L	12	Standard
>	**In**	115	568023.6	1.3				ug/L	587441	Standard
	Sn	118	973.4	3.3	**0.0776**	0.003	4.4	ug/L	497	Standard
	Sb	123	217.2	33.7	**0.0438**	0.016	35.6	ug/L	78	Standard
	Ba	135	138215.3	1.3	**69.8220**	0.106	0.2	ug/L	24	Standard
	Ce	140	545871.5	1.0				ug/L	25	Standard
>	**Tb**	159	946980.1	0.3				ug/L	939701	Standard
	Ho	165	11547.7	1.8				ug/L	10	Standard
	Tl	203	458.7	30.8	**0.0539**	0.017	31.9	ug/L	4	Standard
	Tl	205	360.0	14.1	**0.0505**	0.007	14.1	ug/L	2	Standard
	Pb	206	30575.5	1.0	**5.6549**	0.063	1.1	ug/L	240	Standard
	Pb	207	24590.3	1.3	**5.1132**	0.071	1.4	ug/L	198	Standard
	Pb	208	101567.1	0.7	**5.3447**	0.038	0.7	ug/L	883	Standard
	U	238	5591.0	1.3	**0.8082**	0.011	1.4	ug/L	3	Standard
>	**Bi**	209	523773.4	0.1				ug/L	523984	Standard

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Na	23	1.7	173.2	**19.1528**	33.165	173.2	mg/L	0	Standard
Mg	24	88.3	26.1	**0.0447**	0.026	57.5	mg/L	37	Standard
K	39	410.0	24.0	**0.7638**	0.217	28.4	mg/L	38	Standard
Ca	43	368.3	13.4	**20.0310**	3.643	18.2	mg/L	10	Standard
Fe	54	11096.4	1.9	**8.9581**	0.101	1.1	mg/L	179	Standard
Fe	57	2985.3	3.6	**8.7334**	0.110	1.3	mg/L	335	Standard
Sc-1	45	63133.0	3.0				mg/L	61029	Standard
Cl	35	21859.8	1.0				ug/L	20195	Standard
Kr	83	1.0	0.0				ug/L	4	Standard
Br	81	1696.8	5.1				ug/L	1547	Standard
P	31	15684.8	2.6				ug/L	15286	Standard
S	34	1883.5	4.2				ug/L	1572	Standard
Sr	88	116.7	19.3				ug/L	73	Standard
C	12	100.0	26.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	18768.7	3.5				mg/L	6	Standard
Ho-1	165	11547.7	1.8				mg/L	10	Standard
Er	166	10790.5	1.6				mg/L	13	Standard
I	127	6703.2	5.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		103.130	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		100.609	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.695
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.960
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606082203
Sample Date/Time: Wednesday, June 29, 2016 12:25:01
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75246.5	2.8				ug/L	74699	Standard
	Be	9	6.7	114.6	**0.0150**	0.008	55.4	ug/L	8	Standard
	Al	27	1140453.8	1.3	**7.6935**	0.186	2.4	ug/L	1493	Standard
	Sc	45	58880.9	1.2				ug/L	61029	Standard
	Ti	47	77.7	5.2	**0.0982**	0.010	10.0	ug/L	35	Standard
	V	51	1502.7	7.0	**0.0058**	0.017	290.5	ug/L	1435	Standard
	Cr	52	10404.9	0.3	**0.3964**	0.023	5.7	ug/L	7635	Standard
	Cr	53	878.4	11.3	**0.6323**	0.120	19.0	ug/L	363	Standard
	Mn	55	64288.8	1.0	**9.1920**	0.174	1.9	ug/L	747	Standard
	Co	59	1249.1	3.1	**0.1540**	0.006	4.1	ug/L	234	Standard
	Ni	60	673.3	4.1	**0.2398**	0.011	4.6	ug/L	215	Standard
	Cu	65	229.7	8.0	**0.0211**	0.010	48.0	ug/L	104	Standard
	Zn	66	2146.2	1.5	**1.5328**	0.038	2.5	ug/L	363	Standard
>	**Ge**	72	489582.8	1.5				ug/L	495142	Standard
	As	75	99.3	9.7	**0.1492**	0.008	5.6	ug/L	-50	Standard
	Se	82	43.5	22.3	**0.2617**	0.085	32.3	ug/L	14	Standard
	Se-1	77	67.7	6.2	**0.3148**	0.059	18.8	ug/L	42	Standard
>	**Ga**	71	61.7	40.8				mg/L	42	Standard
	Rb	85	88606.7	2.0				ug/L	17	Standard
	Y	89	430024.7	1.6				ug/L	417098	Standard
>	**Rh**	103	28.3	50.9				ug/L	13	Standard
	Mo	98	81.5	16.2	**0.0249**	0.005	20.1	ug/L	11	Standard
	Ag	107	97.7	18.1	**0.0021**	0.003	124.3	ug/L	68	Standard
	Cd	111	13.9	57.3	**-0.0013**	0.004	291.1	mg/L	2	Standard
	Cd	114	23.0	35.9	**0.0024**	0.002	67.9	ug/L	12	Standard
>	**In**	115	586341.4	0.7				ug/L	587441	Standard
	Sn	118	508.3	13.9	**-0.0076**	0.011	151.7	ug/L	497	Standard
	Sb	123	156.7	24.2	**0.0294**	0.008	27.7	ug/L	78	Standard
	Ba	135	76489.9	1.2	**37.4252**	0.302	0.8	ug/L	24	Standard
	Ce	140	665.0	13.3				ug/L	25	Standard
>	**Tb**	159	934158.4	1.1				ug/L	939701	Standard
	Ho	165	15.0	66.7				ug/L	10	Standard
	Tl	203	113.7	11.3	**0.0121**	0.002	13.7	ug/L	4	Standard
	Tl	205	93.3	44.6	**0.0133**	0.006	44.3	ug/L	2	Standard
	Pb	206	362.0	5.5	**-0.0029**	0.004	131.1	ug/L	240	Standard
	Pb	207	281.3	6.6	**-0.0103**	0.004	38.7	ug/L	198	Standard
	Pb	208	1197.0	7.1	**-0.0098**	0.005	49.2	ug/L	883	Standard
	U	238	25.0	34.9	**-0.0008**	0.001	168.5	ug/L	3	Standard
>	**Bi**	209	520173.1	0.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3547.1	5.1	**4.6793**	0.186	4.0	mg/L	37	Standard
K	39	1096.7	1.1	**2.3987**	0.055	2.3	mg/L	38	Standard
Ca	43	51.7	27.9	**0.8562**	0.931	108.7	mg/L	10	Standard
Fe	54	433.8	1.2	**0.2430**	0.009	3.5	mg/L	179	Standard
Fe	57	376.7	13.8	**0.2532**	0.189	74.5	mg/L	335	Standard
> **Sc-1**	45	58880.9	1.2				mg/L	61029	Standard
Cl	35	22906.6	0.4				ug/L	20195	Standard
Kr	83	2.3	65.5				ug/L	4	Standard
Br	81	9496.3	3.0				ug/L	1547	Standard
P	31	16589.1	2.9				ug/L	15286	Standard
S	34	2071.8	1.6				ug/L	1572	Standard
Sr	88	118.3	17.1				ug/L	73	Standard
C	12	53.3	10.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	19.0	47.5				mg/L	6	Standard
Ho-1	165	15.0	66.7				mg/L	10	Standard
Er	166	20.0	100.0				mg/L	13	Standard
I	127	14315.1	5.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.733	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.877	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.813
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.273
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606082302
Sample Date/Time: Wednesday, June 29, 2016 12:28:12
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75794.1	0.6				ug/L	74699	Standard
	Be	9	13.3	21.7	**0.0225**	0.003	14.2	ug/L	8	Standard
	Al	27	2805598.0	0.7	**18.8025**	0.242	1.3	ug/L	1493	Standard
	Sc	45	59848.0	1.2				ug/L	61029	Standard
	Ti	47	42.3	20.1	**0.0017**	0.021	1272.3	ug/L	35	Standard
	V	51	1764.1	8.5	**0.0361**	0.018	49.9	ug/L	1435	Standard
	Cr	52	8282.9	3.5	**0.0853**	0.037	43.4	ug/L	7635	Standard
	Cr	53	906.7	14.2	**0.6437**	0.138	21.5	ug/L	363	Standard
	Mn	55	61274.7	1.5	**8.5848**	0.068	0.8	ug/L	747	Standard
	Co	59	3907.8	2.1	**0.5500**	0.015	2.7	ug/L	234	Standard
	Ni	60	654.7	3.9	**0.2231**	0.012	5.6	ug/L	215	Standard
	Cu	65	222.3	1.8	**0.0148**	0.001	8.1	ug/L	104	Standard
	Zn	66	2204.5	3.0	**1.5481**	0.054	3.5	ug/L	363	Standard
>	**Ge**	72	498979.3	0.8				ug/L	495142	Standard
	As	75	72.7	46.8	**0.1239**	0.030	24.0	ug/L	-50	Standard
	Se	82	52.0	6.1	**0.3317**	0.029	8.6	ug/L	14	Standard
	Se-1	77	105.0	8.3	**0.8037**	0.108	13.5	ug/L	42	Standard
>	**Ga**	71	56.7	13.5				mg/L	42	Standard
	Rb	85	343.3	5.1				ug/L	17	Standard
	Y	89	428520.0	1.9				ug/L	417098	Standard
>	**Rh**	103	38.3	27.2				ug/L	13	Standard
	Mo	98	38.4	23.3	**0.0089**	0.004	39.5	ug/L	11	Standard
	Ag	107	77.7	2.7	**-0.0008**	0.000	47.2	ug/L	68	Standard
	Cd	111	5.6	57.3	**-0.0052**	0.002	30.1	mg/L	2	Standard
	Cd	114	18.7	97.5	**0.0016**	0.004	227.0	ug/L	12	Standard
>	**In**	115	580343.3	0.7				ug/L	587441	Standard
	Sn	118	485.0	23.2	**-0.0106**	0.020	190.8	ug/L	497	Standard
	Sb	123	114.5	31.8	**0.0207**	0.008	39.1	ug/L	78	Standard
	Ba	135	150889.3	1.2	**74.6061**	0.512	0.7	ug/L	24	Standard
	Ce	140	123.3	15.3				ug/L	25	Standard
>	**Tb**	159	936316.1	1.2				ug/L	939701	Standard
	Ho	165	18.3	31.5				ug/L	10	Standard
	Tl	203	189.0	9.5	**0.0214**	0.002	8.8	ug/L	4	Standard
	Tl	205	161.7	6.4	**0.0230**	0.002	7.6	ug/L	2	Standard
	Pb	206	327.3	6.0	**-0.0093**	0.004	47.2	ug/L	240	Standard
	Pb	207	269.3	8.1	**-0.0127**	0.005	36.6	ug/L	198	Standard
	Pb	208	1102.3	4.7	**-0.0147**	0.003	21.5	ug/L	883	Standard
	U	238	62.7	10.4	**0.0048**	0.001	17.9	ug/L	3	Standard
>	**Bi**	209	519166.0	1.5				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	5325.9	0.2	**6.9463**	0.099	1.4	mg/L	37	Standard
K	39	75.0	37.1	**0.0544**	0.061	111.8	mg/L	38	Standard
Ca	43	86.7	3.3	**3.0583**	0.130	4.3	mg/L	10	Standard
Fe	54	170.8	11.8	**0.0094**	0.018	186.9	mg/L	179	Standard
Fe	57	311.7	10.3	**0.0068**	0.121	1775.6	mg/L	335	Standard
> **Sc-1**	45	59848.0	1.2				mg/L	61029	Standard
Cl	35	23747.3	1.3				ug/L	20195	Standard
Kr	83	2.7	78.1				ug/L	4	Standard
Br	81	11654.5	4.8				ug/L	1547	Standard
P	31	16051.8	4.0				ug/L	15286	Standard
S	34	1918.5	1.8				ug/L	1572	Standard
Sr	88	140.0	9.4				ug/L	73	Standard
C	12	53.3	39.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	12.2	186.8				mg/L	6	Standard
Ho-1	165	18.3	31.5				mg/L	10	Standard
Er	166	23.3	24.7				mg/L	13	Standard
I	127	13899.7	5.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.466	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.775	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.792
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.080
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606082303
Sample Date/Time: Wednesday, June 29, 2016 12:31:24
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76244.7	1.6				ug/L	74699	Standard
	Be	9	10.0	50.0	**0.0187**	0.005	28.8	ug/L	8	Standard
	Al	27	1789441.8	2.2	**11.9153**	0.077	0.6	ug/L	1493	Standard
	Sc	45	61370.7	1.9				ug/L	61029	Standard
	Ti	47	59.7	11.8	**0.0448**	0.018	40.0	ug/L	35	Standard
	V	51	1976.3	1.1	**0.0601**	0.005	8.2	ug/L	1435	Standard
	Cr	52	8828.6	1.1	**0.1403**	0.016	11.5	ug/L	7635	Standard
	Cr	53	945.0	0.5	**0.6692**	0.006	1.0	ug/L	363	Standard
	Mn	55	180374.5	2.7	**25.1617**	0.439	1.7	ug/L	747	Standard
	Co	59	619.0	3.1	**0.0543**	0.004	7.0	ug/L	234	Standard
	Ni	60	405.7	6.0	**0.0878**	0.011	12.8	ug/L	215	Standard
	Cu	65	208.0	10.3	**0.0056**	0.012	222.0	ug/L	104	Standard
	Zn	66	6989.3	1.3	**5.7979**	0.130	2.2	ug/L	363	Standard
>	**Ge**	72	506777.4	1.1				ug/L	495142	Standard
	As	75	17.4	166.6	**0.0747**	0.025	33.6	ug/L	-50	Standard
	Se	82	43.0	5.9	**0.2447**	0.022	8.9	ug/L	14	Standard
	Se-1	77	89.0	9.0	**0.5677**	0.097	17.0	ug/L	42	Standard
>	**Ga**	71	55.0	18.2				mg/L	42	Standard
	Rb	85	226.7	20.8				ug/L	17	Standard
	Y	89	430230.4	1.6				ug/L	417098	Standard
>	**Rh**	103	23.3	12.4				ug/L	13	Standard
	Mo	98	43.4	8.2	**0.0107**	0.002	14.5	ug/L	11	Standard
	Ag	107	80.3	9.2	**-0.0005**	0.001	248.5	ug/L	68	Standard
	Cd	111	11.9	16.8	**-0.0022**	0.001	43.2	mg/L	2	Standard
	Cd	114	28.1	50.1	**0.0034**	0.003	82.8	ug/L	12	Standard
>	**In**	115	584282.7	1.3				ug/L	587441	Standard
	Sn	118	445.0	7.0	**-0.0181**	0.005	24.8	ug/L	497	Standard
	Sb	123	113.1	24.2	**0.0201**	0.006	28.5	ug/L	78	Standard
	Ba	135	83408.3	1.0	**40.9596**	0.601	1.5	ug/L	24	Standard
	Ce	140	301.7	22.6				ug/L	25	Standard
>	**Tb**	159	946714.8	0.6				ug/L	939701	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	182.7	3.3	**0.0205**	0.001	3.9	ug/L	4	Standard
	Tl	205	160.0	30.8	**0.0227**	0.007	30.9	ug/L	2	Standard
	Pb	206	288.0	1.3	**-0.0170**	0.001	5.3	ug/L	240	Standard
	Pb	207	270.7	6.0	**-0.0126**	0.003	25.4	ug/L	198	Standard
	Pb	208	1097.0	10.5	**-0.0153**	0.006	38.6	ug/L	883	Standard
	U	238	866.7	1.0	**0.1222**	0.001	0.8	ug/L	3	Standard
>	**Bi**	209	520921.7	0.5				ug/L	523984	Standard

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Na	23	1.7	173.2	**19.3655**	33.533	173.2	mg/L	0	Standard
Mg	24	4915.8	1.0	**6.2466**	0.131	2.1	mg/L	37	Standard
K	39	50.0	20.0	**-0.0042**	0.023	541.6	mg/L	38	Standard
Ca	43	65.0	0.0	**1.5606**	0.079	5.0	mg/L	10	Standard
Fe	54	160.0	11.0	**-0.0035**	0.013	359.3	mg/L	179	Standard
Fe	57	281.7	9.1	**-0.1230**	0.068	55.3	mg/L	335	Standard
> **Sc-1**	45	61370.7	1.9				mg/L	61029	Standard
Cl	35	23872.8	0.3				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	8675.8	8.1				ug/L	1547	Standard
P	31	16263.7	3.0				ug/L	15286	Standard
S	34	1945.1	6.6				ug/L	1572	Standard
Sr	88	130.0	24.0				ug/L	73	Standard
C	12	46.7	44.6				mg/L	63	Standard
N	14	6.7	86.6				mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	19.0	57.5				mg/L	6	Standard
Ho-1	165	8.3	34.6				mg/L	10	Standard
Er	166	20.0	100.0				mg/L	13	Standard
I	127	19577.6	2.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.070	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.350	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.462
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.415
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606082304
Sample Date/Time: Wednesday, June 29, 2016 12:34:35
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76966.7	2.1				ug/L	74699	Standard
	Be	9	8.3	91.7	**0.0169**	0.009	50.5	ug/L	8	Standard
	Al	27	441491.6	0.4	**2.9030**	0.060	2.1	ug/L	1493	Standard
	Sc	45	60155.9	2.7				ug/L	61029	Standard
	Ti	47	44.0	12.0	**0.0058**	0.013	219.4	ug/L	35	Standard
	V	51	1675.2	9.7	**0.0239**	0.019	79.8	ug/L	1435	Standard
	Cr	52	8137.2	4.7	**0.0630**	0.039	62.0	ug/L	7635	Standard
	Cr	53	611.7	11.7	**0.3248**	0.069	21.3	ug/L	363	Standard
	Mn	55	105254.7	1.8	**14.8182**	0.156	1.1	ug/L	747	Standard
	Co	59	259.7	5.8	**0.0017**	0.003	156.1	ug/L	234	Standard
	Ni	60	230.0	4.9	**-0.0022**	0.007	321.8	ug/L	215	Standard
	Cu	65	165.3	1.5	**-0.0157**	0.002	12.9	ug/L	104	Standard
	Zn	66	2212.5	1.5	**1.5507**	0.010	0.6	ug/L	363	Standard
>	**Ge**	72	500132.0	1.1				ug/L	495142	Standard
	As	75	21.8	38.4	**0.0789**	0.008	9.6	ug/L	-50	Standard
	Se	82	26.9	8.6	**0.1047**	0.023	22.2	ug/L	14	Standard
	Se-1	77	64.0	26.1	**0.2460**	0.230	93.4	ug/L	42	Standard
>	**Ga**	71	55.0	41.7				mg/L	42	Standard
	Rb	85	421.7	18.5				ug/L	17	Standard
	Y	89	429897.2	1.0				ug/L	417098	Standard
>	**Rh**	103	6.7	43.3				ug/L	13	Standard
	Mo	98	29.2	13.0	**0.0052**	0.001	25.4	ug/L	11	Standard
	Ag	107	87.7	6.3	**0.0005**	0.001	182.2	ug/L	68	Standard
	Cd	111	7.0	28.7	**-0.0046**	0.001	19.4	mg/L	2	Standard
	Cd	114	21.6	74.7	**0.0021**	0.003	150.8	ug/L	12	Standard
>	**In**	115	589054.0	1.8				ug/L	587441	Standard
	Sn	118	438.3	5.7	**-0.0199**	0.003	16.6	ug/L	497	Standard
	Sb	123	106.2	8.9	**0.0185**	0.002	12.5	ug/L	78	Standard
	Ba	135	25689.8	1.2	**12.5057**	0.379	3.0	ug/L	24	Standard
	Ce	140	65.0	26.6				ug/L	25	Standard
>	**Tb**	159	953435.2	1.7				ug/L	939701	Standard
	Ho	165	13.3	43.3				ug/L	10	Standard
	Tl	203	91.7	10.9	**0.0091**	0.001	12.8	ug/L	4	Standard
	Tl	205	101.7	11.4	**0.0141**	0.002	11.0	ug/L	2	Standard
	Pb	206	281.0	2.2	**-0.0197**	0.001	5.9	ug/L	240	Standard
	Pb	207	219.0	9.1	**-0.0248**	0.004	16.3	ug/L	198	Standard
	Pb	208	999.0	3.0	**-0.0219**	0.001	6.3	ug/L	883	Standard
	U	238	2.7	21.7	**-0.0040**	0.000	2.0	ug/L	3	Standard
>	**Bi**	209	535313.4	0.3				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	1101.7	8.8	**1.3766**	0.099	7.2	mg/L	37	Standard
K	39	50.0	26.5	**-0.0017**	0.031	1783.7	mg/L	38	Standard
Ca	43	43.3	17.6	**0.2622**	0.555	211.4	mg/L	10	Standard
Fe	54	1079.1	4.5	**0.7903**	0.045	5.7	mg/L	179	Standard
Fe	57	550.0	4.8	**0.8245**	0.134	16.2	mg/L	335	Standard
> **Sc-1**	45	60155.9	2.7				mg/L	61029	Standard
Cl	35	23751.9	0.9				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	3913.8	0.4				ug/L	1547	Standard
P	31	16552.4	4.0				ug/L	15286	Standard
S	34	1948.5	5.9				ug/L	1572	Standard
Sr	88	68.3	30.5				ug/L	73	Standard
C	12	63.3	36.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	19.7	135.8				mg/L	6	Standard
Ho-1	165	13.3	43.3				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	5207.6	8.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.036	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.008	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.275
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.162
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 12:37:48
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72653.8	1.6				ug/L	74699	Standard
	Be	9	42693.4	2.4	**49.8778**	1.581	3.2	ug/L	8	Standard
	Al	27	7018269.3	1.5	**49.0877**	0.211	0.4	ug/L	1493	Standard
	Sc	45	58700.2	1.7				ug/L	61029	Standard
	Ti	47	37360.7	1.5	**96.4941**	1.122	1.2	ug/L	35	Standard
	V	51	389361.0	0.6	**50.3345**	0.950	1.9	ug/L	1435	Standard
	Cr	52	377308.6	0.5	**48.8761**	0.835	1.7	ug/L	7635	Standard
	Cr	53	46063.3	3.3	**48.5325**	2.229	4.6	ug/L	363	Standard
	Mn	55	355991.7	2.4	**49.9570**	0.746	1.5	ug/L	747	Standard
	Co	59	341523.2	1.7	**50.6452**	0.528	1.0	ug/L	234	Standard
	Ni	60	94080.5	0.6	**49.1230**	0.490	1.0	ug/L	215	Standard
	Cu	65	95078.4	0.9	**49.9689**	1.178	2.4	ug/L	104	Standard
	Zn	66	56040.5	0.8	**49.8274**	0.722	1.4	ug/L	363	Standard
>	**Ge**	72	505267.2	1.6				ug/L	495142	Standard
	As	75	56871.7	1.3	**49.8175**	0.372	0.7	ug/L	-50	Standard
	Se	82	5593.2	2.1	**49.8004**	0.347	0.7	ug/L	14	Standard
	Se-1	77	3775.1	1.7	**50.0311**	0.568	1.1	ug/L	42	Standard
>	**Ga**	71	75.0	13.3				mg/L	42	Standard
	Rb	85	800.0	10.3				ug/L	17	Standard
	Y	89	408700.7	0.8				ug/L	417098	Standard
>	**Rh**	103	18.3	41.7				ug/L	13	Standard
	Mo	98	257910.1	1.9	**100.4657**	4.126	4.1	ug/L	11	Standard
	Ag	107	316989.6	1.3	**50.4692**	0.906	1.8	ug/L	68	Standard
	Cd	111	101914.0	1.0	**50.5948**	1.545	3.1	mg/L	2	Standard
	Cd	114	242699.9	2.4	**49.1311**	2.013	4.1	ug/L	12	Standard
>	**In**	115	566154.7	2.7				ug/L	587441	Standard
	Sn	118	281464.1	1.7	**49.9153**	1.113	2.2	ug/L	497	Standard
	Sb	123	227316.6	0.8	**50.5420**	1.534	3.0	ug/L	78	Standard
	Ba	135	98379.4	0.9	**49.8785**	1.233	2.5	ug/L	24	Standard
	Ce	140	113.3	20.8				ug/L	25	Standard
>	**Tb**	159	932106.1	1.1				ug/L	939701	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	406761.4	0.1	**49.7003**	0.911	1.8	ug/L	4	Standard
	Tl	205	354916.5	2.0	**49.9771**	1.877	3.8	ug/L	2	Standard
	Pb	206	263562.6	0.6	**49.6234**	0.874	1.8	ug/L	240	Standard
	Pb	207	235278.4	0.8	**49.8612**	1.016	2.0	ug/L	198	Standard
	Pb	208	929662.3	0.8	**49.8673**	1.247	2.5	ug/L	883	Standard
	U	238	336021.4	1.5	**49.1730**	1.579	3.2	ug/L	3	Standard
>	**Bi**	209	520331.8	1.7				ug/L	523984	Standard

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Na	23	1.7	173.2	**19.5945**	33.930	173.2	mg/L	0	Standard
Mg	24	3858.8	4.6	**5.1144**	0.246	4.8	mg/L	37	Standard
K	39	2055.1	3.6	**4.6098**	0.203	4.4	mg/L	38	Standard
Ca	43	130.0	23.4	**5.9979**	1.898	31.6	mg/L	10	Standard
Fe	54	5737.9	3.9	**4.9227**	0.278	5.7	mg/L	179	Standard
Fe	57	1583.4	3.8	**4.5245**	0.301	6.7	mg/L	335	Standard
Sc-1	45	58700.2	1.7				mg/L	61029	Standard
Cl	35	23099.6	1.9				ug/L	20195	Standard
Kr	83	2.3	65.5				ug/L	4	Standard
Br	81	1760.1	10.8				ug/L	1547	Standard
P	31	17002.9	0.9				ug/L	15286	Standard
S	34	2305.2	8.6				ug/L	1572	Standard
Sr	88	76.7	10.0				ug/L	73	Standard
C	12	60.0	33.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	9.0	191.6				mg/L	6	Standard
Ho-1	165	8.3	91.7				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	2030.1	31.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	99.756		
Al	27	98.175		
Sc	45			
Ti	47	96.494		
V	51	100.669		
Cr	52	97.752		
Cr	53			
Mn	55	99.914		
Co	59	101.290		
Ni	60	98.246		
Cu	65	99.938		
Zn	66	99.655		
Ge	72		102.045	
As	75	99.635		
Se	82	99.601		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	100.466		
Ag	107	100.938		
Cd	111	101.190		
Cd	114			
> In	115			96.376
Sn	118	99.831		
Sb	123	101.084		
Ba	135	99.757		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.401		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.735		
U	238	98.346		
> Bi	209			99.303
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 12:40:59
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73745.7	1.0				ug/L	74699	Standard
	Be	9	45.0	86.8	**0.0596**	0.045	76.2	ug/L	8	Standard
	Al	27	10763.7	138.2	**0.0612**	0.103	168.8	ug/L	1493	Standard
	Sc	45	59794.4	0.5				ug/L	61029	Standard
	Ti	47	63.7	40.2	**0.0565**	0.070	123.9	ug/L	35	Standard
	V	51	1309.0	5.1	**-0.0256**	0.009	36.2	ug/L	1435	Standard
	Cr	52	7144.0	4.7	**-0.0780**	0.064	81.5	ug/L	7635	Standard
	Cr	53	391.7	5.2	**0.0859**	0.030	34.5	ug/L	363	Standard
	Mn	55	2203.3	114.3	**0.1667**	0.364	218.6	ug/L	747	Standard
	Co	59	375.0	36.8	**0.0187**	0.022	116.6	ug/L	234	Standard
	Ni	60	226.7	25.3	**-0.0048**	0.033	679.9	ug/L	215	Standard
	Cu	65	137.7	45.7	**-0.0307**	0.035	113.4	ug/L	104	Standard
	Zn	66	391.7	8.9	**-0.1025**	0.038	37.5	ug/L	363	Standard
>	**Ge**	72	505094.9	1.9				ug/L	495142	Standard
	As	75	-30.0	135.0	**0.0336**	0.035	105.0	ug/L	-50	Standard
	Se	82	18.1	21.6	**0.0240**	0.035	145.0	ug/L	14	Standard
	Se-1	77	51.7	16.7	**0.0700**	0.104	148.9	ug/L	42	Standard
>	**Ga**	71	55.0	27.3				mg/L	42	Standard
	Rb	85	30.0	72.6				ug/L	17	Standard
	Y	89	416389.1	0.5				ug/L	417098	Standard
>	**Rh**	103	18.3	56.8				ug/L	13	Standard
	Mo	98	292.6	24.5	**0.1060**	0.029	27.7	ug/L	11	Standard
	Ag	107	123.7	36.8	**0.0063**	0.007	108.0	ug/L	68	Standard
	Cd	111	19.1	60.5	**0.0013**	0.005	411.5	mg/L	2	Standard
	Cd	114	51.4	75.2	**0.0080**	0.007	93.3	ug/L	12	Standard
>	**In**	115	578912.4	1.7				ug/L	587441	Standard
	Sn	118	756.7	23.6	**0.0364**	0.029	79.3	ug/L	497	Standard
	Sb	123	391.4	30.7	**0.0806**	0.025	30.9	ug/L	78	Standard
	Ba	135	64.3	74.2	**0.0157**	0.023	147.1	ug/L	24	Standard
	Ce	140	98.3	142.4				ug/L	25	Standard
>	**Tb**	159	938659.9	2.1				ug/L	939701	Standard
	Ho	165	16.7	45.8				ug/L	10	Standard
	Tl	203	80.3	33.4	**0.0079**	0.003	39.1	ug/L	4	Standard
	Tl	205	263.3	142.0	**0.0362**	0.051	140.6	ug/L	2	Standard
	Pb	206	290.0	20.9	**-0.0175**	0.011	60.1	ug/L	240	Standard
	Pb	207	255.0	4.1	**-0.0168**	0.002	14.3	ug/L	198	Standard
	Pb	208	1806.4	80.0	**0.0207**	0.074	360.4	ug/L	883	Standard
	U	238	234.3	149.2	**0.0289**	0.049	171.5	ug/L	3	Standard
>	**Bi**	209	529175.1	1.6				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	48.3	47.8	**-0.0014**	0.030	2108.5	mg/L	37	Standard
K	39	68.3	15.2	**0.0400**	0.023	56.9	mg/L	38	Standard
Ca	43	21.7	74.2	**-1.1227**	1.047	93.2	mg/L	10	Standard
Fe	54	169.2	23.1	**0.0081**	0.034	414.8	mg/L	179	Standard
Fe	57	310.0	16.4	**0.0019**	0.182	9789.6	mg/L	335	Standard
Sc-1	45	59794.4	0.5				mg/L	61029	Standard
Cl	35	23378.7	0.4				ug/L	20195	Standard
Kr	83	4.3	58.1				ug/L	4	Standard
Br	81	1630.1	3.1				ug/L	1547	Standard
P	31	16767.6	2.6				ug/L	15286	Standard
S	34	2153.5	8.8				ug/L	1572	Standard
Sr	88	65.0	27.7				ug/L	73	Standard
C	12	66.7	17.3				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	9.4	186.5				mg/L	6	Standard
Ho-1	165	16.7	45.8				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	1680.1	29.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.010	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.548	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.991	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Wednesday, June 29, 2016 12:44:12
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	71218.7	0.8				ug/L	74699	Standard
	Be	9	178.3	13.3	**0.2201**	0.029	13.2	ug/L	8	Standard
	Al	27	1766.8	29.5	**-0.0008**	0.004	458.8	ug/L	1493	Standard
	Sc	45	56025.1	1.1				ug/L	61029	Standard
	Ti	47	28.0	7.1	**-0.0318**	0.007	20.5	ug/L	35	Standard
	V	51	4079.9	5.1	**0.3696**	0.041	11.2	ug/L	1435	Standard
	Cr	52	12699.0	0.7	**0.7676**	0.041	5.4	ug/L	7635	Standard
	Cr	53	1050.0	6.6	**0.8579**	0.085	9.9	ug/L	363	Standard
	Mn	55	4110.2	0.9	**0.4692**	0.021	4.5	ug/L	747	Standard
	Co	59	2790.3	0.6	**0.4045**	0.014	3.5	ug/L	234	Standard
	Ni	60	2962.3	1.6	**1.5299**	0.023	1.5	ug/L	215	Standard
	Cu	65	1521.1	1.5	**0.7509**	0.034	4.5	ug/L	104	Standard
	Zn	66	7672.3	2.1	**6.8861**	0.035	0.5	ug/L	363	Standard
>	Ge	72	473802.8	2.6				ug/L	495142	Standard
	As	75	358.5	4.9	**0.3943**	0.021	5.3	ug/L	-50	Standard
	Se	82	48.3	16.1	**0.3230**	0.086	26.5	ug/L	14	Standard
	Se-1	77	78.0	9.0	**0.4927**	0.075	15.2	ug/L	42	Standard
>	Ga	71	35.0	24.7				mg/L	42	Standard
	Rb	85	21.7	35.3				ug/L	17	Standard
	Y	89	406616.3	2.6				ug/L	417098	Standard
>	Rh	103	13.3	43.3				ug/L	13	Standard
	Mo	98	80.8	10.7	**0.0260**	0.003	11.1	ug/L	11	Standard
	Ag	107	2461.5	2.7	**0.3827**	0.004	1.0	ug/L	68	Standard
	Cd	111	469.2	3.6	**0.2272**	0.006	2.5	mg/L	2	Standard
	Cd	114	1121.7	10.1	**0.2273**	0.026	11.5	ug/L	12	Standard
>	In	115	560717.1	1.7				ug/L	587441	Standard
	Sn	118	496.7	12.6	**-0.0055**	0.012	217.4	ug/L	497	Standard
	Sb	123	1804.7	2.2	**0.4010**	0.016	3.9	ug/L	78	Standard
	Ba	135	1433.1	2.6	**0.7176**	0.020	2.8	ug/L	24	Standard
	Ce	140	53.3	43.3				ug/L	25	Standard
>	Tb	159	901191.9	2.3				ug/L	939701	Standard
	Ho	165	5.0	0.0				ug/L	10	Standard
	Tl	203	658.3	6.7	**0.0809**	0.005	6.0	ug/L	4	Standard
	Tl	205	580.0	6.7	**0.0841**	0.005	5.7	ug/L	2	Standard
	Pb	206	1314.1	4.2	**0.1836**	0.008	4.1	ug/L	240	Standard
	Pb	207	1090.4	5.0	**0.1679**	0.009	5.1	ug/L	198	Standard
	Pb	208	4577.3	1.3	**0.1788**	0.005	3.0	ug/L	883	Standard
	U	238	2625.2	2.7	**0.3906**	0.007	1.9	ug/L	3	Standard
>	Bi	209	505831.0	1.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	40.0	12.5	**-0.0088**	0.007	78.9	mg/L	37	Standard
K	39	38.3	19.9	**-0.0218**	0.018	84.6	mg/L	38	Standard
Ca	43	36.7	75.1	**-0.0119**	1.877	15817.5	mg/L	10	Standard
Fe	54	97.1	24.3	**-0.0484**	0.023	47.3	mg/L	179	Standard
Fe	57	295.0	11.9	**0.0175**	0.123	699.1	mg/L	335	Standard
Sc-1	45	56025.1	1.1				mg/L	61029	Standard
Cl	35	22767.8	1.3				ug/L	20195	Standard
Kr	83	2.7	57.3				ug/L	4	Standard
Br	81	1303.4	5.0				ug/L	1547	Standard
P	31	11956.4	1.3				ug/L	15286	Standard
S	34	2061.8	6.1				ug/L	1572	Standard
Sr	88	80.0	22.5				ug/L	73	Standard
C	12	80.0	33.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	0.0					mg/L	6	Standard
Ho-1	165	5.0	0.0				mg/L	10	Standard
Er	166	0.0					mg/L	13	Standard
I	127	1360.1	35.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	110.075		
Al	27			
Sc	45			
Ti	47			
V	51	92.400		
Cr	52	95.955		
Cr	53			
Mn	55	93.844		
Co	59	101.134		
Ni	60	95.616		
Cu	65	93.867		
Zn	66	110.178		
Ge	72		95.690	
As	75	98.586		
Se	82	80.738		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	95.685		
Cd	111	94.646		
Cd	114			
> In	115			95.451
Sn	118			
Sb	123	100.239		
Ba	135	95.683		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.186		
Tl	205			
Pb	206			
Pb	207			
Pb	208	89.410		
U	238	97.655		
> Bi	209			96.535
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
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Method 6020 - Summary Report

Sample ID: PBW 7 WG573548-02
Sample Date/Time: Wednesday, June 29, 2016 12:53:54
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74857.8	1.6				ug/L	74699	Standard
	Be	9	16.7	75.5	**0.0264**	0.014	53.3	ug/L	8	Standard
	Al	27	80794.9	2.0	**0.5353**	0.014	2.5	ug/L	1493	Standard
	Sc	45	58461.0	3.0				ug/L	61029	Standard
	Ti	47	78.0	5.9	**0.0921**	0.013	14.5	ug/L	35	Standard
	V	51	1804.8	0.8	**0.0380**	0.004	11.0	ug/L	1435	Standard
	Cr	52	9792.5	0.9	**0.2676**	0.021	7.7	ug/L	7635	Standard
	Cr	53	633.3	5.7	**0.3397**	0.038	11.1	ug/L	363	Standard
	Mn	55	7868.0	0.9	**0.9563**	0.019	2.0	ug/L	747	Standard
	Co	59	389.7	6.7	**0.0204**	0.003	16.2	ug/L	234	Standard
	Ni	60	396.3	4.2	**0.0829**	0.008	9.4	ug/L	215	Standard
	Cu	65	182.0	8.2	**-0.0081**	0.009	109.2	ug/L	104	Standard
	Zn	66	1432.4	5.9	**0.8274**	0.087	10.5	ug/L	363	Standard
>	**Ge**	72	506709.7	1.0				ug/L	495142	Standard
	As	75	61.7	54.0	**0.1136**	0.029	25.8	ug/L	-50	Standard
	Se	82	57.7	7.0	**0.3762**	0.040	10.6	ug/L	14	Standard
	Se-1	77	48.3	5.2	**0.0243**	0.031	128.3	ug/L	42	Standard
>	**Ga**	71	106.7	35.5				mg/L	42	Standard
	Rb	85	413.3	4.9				ug/L	17	Standard
	Y	89	414741.4	0.4				ug/L	417098	Standard
>	**Rh**	103	15.0	100.0				ug/L	13	Standard
	Mo	98	46.5	23.9	**0.0125**	0.004	33.5	ug/L	11	Standard
	Ag	107	1549.7	3.3	**0.2354**	0.012	5.1	ug/L	68	Standard
	Cd	111	17.2	8.9	**0.0007**	0.001	113.7	mg/L	2	Standard
	Cd	114	63.6	36.2	**0.0109**	0.005	44.4	ug/L	12	Standard
>	**In**	115	562869.1	1.7				ug/L	587441	Standard
	Sn	118	736.7	11.6	**0.0370**	0.017	44.6	ug/L	497	Standard
	Sb	123	216.9	10.9	**0.0443**	0.006	12.6	ug/L	78	Standard
	Ba	135	906.0	5.8	**0.4461**	0.030	6.6	ug/L	24	Standard
	Ce	140	1735.1	5.3				ug/L	25	Standard
>	**Tb**	159	918530.3	1.8				ug/L	939701	Standard
	Ho	165	31.7	32.9				ug/L	10	Standard
	Tl	203	89.3	15.5	**0.0092**	0.002	18.3	ug/L	4	Standard
	Tl	205	86.7	13.3	**0.0124**	0.002	13.0	ug/L	2	Standard
	Pb	206	378.0	4.1	**0.0001**	0.003	2503.4	ug/L	240	Standard
	Pb	207	310.7	3.7	**-0.0040**	0.002	56.8	ug/L	198	Standard
	Pb	208	1268.7	1.9	**-0.0059**	0.001	22.1	ug/L	883	Standard
	U	238	52.0	18.9	**0.0032**	0.001	44.2	ug/L	3	Standard
>	**Bi**	209	520017.2	0.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	98.3	32.7	**0.0678**	0.045	67.0	mg/L	37	Standard
K	39	61.7	9.4	**0.0281**	0.012	42.4	mg/L	38	Standard
Ca	43	31.7	55.5	**-0.4154**	1.202	289.4	mg/L	10	Standard
Fe	54	153.7	8.4	**-0.0024**	0.007	308.5	mg/L	179	Standard
Fe	57	316.7	15.8	**0.0490**	0.173	353.8	mg/L	335	Standard
> **Sc-1**	45	58461.0	3.0				mg/L	61029	Standard
Cl	35	22819.8	1.0				ug/L	20195	Standard
Kr	83	3.7	31.5				ug/L	4	Standard
Br	81	12281.6	4.1				ug/L	1547	Standard
P	31	15094.2	2.5				ug/L	15286	Standard
S	34	1958.5	7.0				ug/L	1572	Standard
Sr	88	78.3	19.5				ug/L	73	Standard
C	12	96.7	21.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	48.1	42.1				mg/L	6	Standard
Ho-1	165	31.7	32.9				mg/L	10	Standard
Er	166	40.0	25.0				mg/L	13	Standard
I	127	2060.1	27.3				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		100.213	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		102.336	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.817
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.243
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBW 7 WG573548-02
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Method 6020 - Summary Report

Sample ID: LCSW 7 WG573548-03
Sample Date/Time: Wednesday, June 29, 2016 12:57:05
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75779.1	1.4				ug/L	74699	Standard
	Be	9	44266.3	2.0	**49.5806**	1.413	2.8	ug/L	8	Standard
	Al	27	95277.1	2.2	**0.6259**	0.022	3.5	ug/L	1493	Standard
	Sc	45	60008.6	1.7				ug/L	61029	Standard
	Ti	47	61.3	19.5	**0.0533**	0.033	61.1	ug/L	35	Standard
	V	51	383994.5	1.5	**50.7641**	0.334	0.7	ug/L	1435	Standard
	Cr	52	391642.5	1.8	**51.9470**	0.996	1.9	ug/L	7635	Standard
	Cr	53	48176.5	1.3	**51.9174**	0.408	0.8	ug/L	363	Standard
	Mn	55	379234.4	0.1	**54.4505**	0.406	0.7	ug/L	747	Standard
	Co	59	337441.4	0.9	**51.1841**	0.650	1.3	ug/L	234	Standard
	Ni	60	96944.2	1.6	**51.7745**	0.652	1.3	ug/L	215	Standard
	Cu	65	97447.4	0.9	**52.3759**	0.338	0.6	ug/L	104	Standard
	Zn	66	58710.9	1.4	**53.4195**	0.683	1.3	ug/L	363	Standard
>	**Ge**	72	493989.7	0.8				ug/L	495142	Standard
	As	75	54420.0	2.0	**48.7560**	0.745	1.5	ug/L	-50	Standard
	Se	82	5499.8	2.1	**50.0913**	1.110	2.2	ug/L	14	Standard
	Se-1	77	3757.5	2.3	**50.9460**	1.277	2.5	ug/L	42	Standard
>	**Ga**	71	331.7	6.3				mg/L	42	Standard
	Rb	85	1905.1	7.7				ug/L	17	Standard
	Y	89	430193.5	2.2				ug/L	417098	Standard
>	**Rh**	103	21.7	13.3				ug/L	13	Standard
	Mo	98	200.3	5.0	**0.0686**	0.004	5.6	ug/L	11	Standard
	Ag	107	325181.2	0.5	**49.3255**	0.456	0.9	ug/L	68	Standard
	Cd	111	102382.7	0.7	**48.4138**	0.589	1.2	mg/L	2	Standard
	Cd	114	246010.3	1.2	**47.4297**	0.453	1.0	ug/L	12	Standard
>	**In**	115	594099.2	0.9				ug/L	587441	Standard
	Sn	118	733.4	7.5	**0.0295**	0.010	35.4	ug/L	497	Standard
	Sb	123	222790.7	0.6	**47.1842**	0.681	1.4	ug/L	78	Standard
	Ba	135	100456.3	0.7	**48.5175**	0.574	1.2	ug/L	24	Standard
	Ce	140	3297.0	2.9				ug/L	25	Standard
>	**Tb**	159	953975.0	2.3				ug/L	939701	Standard
	Ho	165	81.7	3.5				ug/L	10	Standard
	Tl	203	411383.7	1.0	**49.0691**	0.983	2.0	ug/L	4	Standard
	Tl	205	358822.0	2.1	**49.3118**	1.192	2.4	ug/L	2	Standard
	Pb	206	272876.4	0.6	**50.1549**	0.805	1.6	ug/L	240	Standard
	Pb	207	232281.8	1.2	**48.0517**	0.976	2.0	ug/L	198	Standard
	Pb	208	938885.2	1.2	**49.1601**	1.120	2.3	ug/L	883	Standard
	U	238	337957.9	0.3	**48.2703**	0.691	1.4	ug/L	3	Standard
>	**Bi**	209	532979.3	1.2				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	40.0	12.5	**-0.0126**	0.007	52.7	mg/L	37	Standard
K	39	58.3	21.6	**0.0173**	0.030	174.9	mg/L	38	Standard
Ca	43	60.0	16.7	**1.3313**	0.636	47.7	mg/L	10	Standard
Fe	54	427.3	5.7	**0.2300**	0.018	7.6	mg/L	179	Standard
Fe	57	393.3	4.8	**0.2864**	0.089	31.1	mg/L	335	Standard
> **Sc-1**	45	60008.6	1.7				mg/L	61029	Standard
Cl	35	22904.0	1.4				ug/L	20195	Standard
Kr	83	0.7	86.6				ug/L	4	Standard
Br	81	1933.5	11.4				ug/L	1547	Standard
P	31	15693.1	2.0				ug/L	15286	Standard
S	34	1913.5	5.4				ug/L	1572	Standard
Sr	88	85.0	21.2				ug/L	73	Standard
C	12	106.7	37.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	149.3	43.4				mg/L	6	Standard
Ho-1	165	81.7	3.5				mg/L	10	Standard
Er	166	83.3	45.4				mg/L	13	Standard
I	127	1690.1	32.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.446	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.767	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.133
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.717
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606098623 WG573548-01
Sample Date/Time: Wednesday, June 29, 2016 13:00:17
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85536.1	4.6				ug/L	74699	Standard
	Be	9	131.7	4.4	**0.1385**	0.009	6.7	ug/L	8	Standard
	Al	27	51229429.5	1.9	**304.6734**	8.454	2.8	ug/L	1493	Standard
	Sc	45	58156.4	0.7				ug/L	61029	Standard
	Ti	47	291.7	4.0	**0.6976**	0.027	3.9	ug/L	35	Standard
	V	51	2731.2	8.5	**0.1837**	0.035	19.3	ug/L	1435	Standard
	Cr	52	11798.6	2.2	**0.6453**	0.034	5.3	ug/L	7635	Standard
	Cr	53	1541.7	10.7	**1.4199**	0.200	14.1	ug/L	363	Standard
	Mn	55	1519614.4	1.3	**228.6645**	1.850	0.8	ug/L	747	Standard
	Co	59	1958.8	0.9	**0.2737**	0.000	0.1	ug/L	234	Standard
	Ni	60	5664.7	1.6	**3.0483**	0.071	2.3	ug/L	215	Standard
	Cu	65	19925.4	0.1	**11.1201**	0.082	0.7	ug/L	104	Standard
	Zn	66	6263.0	2.6	**5.5559**	0.126	2.3	ug/L	363	Standard
>	**Ge**	72	472304.7	0.8				ug/L	495142	Standard
	As	75	721.9	3.2	**0.7353**	0.022	3.1	ug/L	-50	Standard
	Se	82	400.4	3.0	**3.6870**	0.142	3.9	ug/L	14	Standard
	Se-1	77	187.0	7.2	**2.0610**	0.173	8.4	ug/L	42	Standard
>	**Ga**	71	100.0	8.7				mg/L	42	Standard
	Rb	85	5192.6	2.9				ug/L	17	Standard
	Y	89	424150.6	2.5				ug/L	417098	Standard
>	**Rh**	103	291.7	21.8				ug/L	13	Standard
	Mo	98	1037.1	3.0	**0.3904**	0.016	4.1	ug/L	11	Standard
	Ag	107	150.3	11.8	**0.0106**	0.003	25.5	ug/L	68	Standard
	Cd	111	86.5	9.0	**0.0342**	0.004	11.5	mg/L	2	Standard
	Cd	114	235.1	23.0	**0.0445**	0.010	23.2	ug/L	12	Standard
>	**In**	115	577173.5	1.1				ug/L	587441	Standard
	Sn	118	1115.0	2.8	**0.0996**	0.004	4.3	ug/L	497	Standard
	Sb	123	1725.9	23.2	**0.3715**	0.084	22.5	ug/L	78	Standard
	Ba	135	22344.1	0.8	**11.0965**	0.201	1.8	ug/L	24	Standard
	Ce	140	1543.4	4.9				ug/L	25	Standard
>	**Tb**	159	936227.5	1.2				ug/L	939701	Standard
	Ho	165	78.3	35.2				ug/L	10	Standard
	Tl	203	240.0	4.8	**0.0287**	0.001	5.1	ug/L	4	Standard
	Tl	205	171.7	9.4	**0.0253**	0.002	9.3	ug/L	2	Standard
	Pb	206	666.7	6.9	**0.0592**	0.009	15.2	ug/L	240	Standard
	Pb	207	558.7	0.1	**0.0529**	0.000	0.3	ug/L	198	Standard
	Pb	208	2267.7	0.3	**0.0522**	0.000	0.9	ug/L	883	Standard
	U	238	28225.3	0.9	**4.2785**	0.042	1.0	ug/L	3	Standard
>	**Bi**	209	501665.1	0.1				ug/L	523984	Standard

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Na	23	13.3	43.3	**161.5718**	71.131	44.0	mg/L	0	Standard
Mg	24	24900.4	1.1	**33.6647**	0.149	0.4	mg/L	37	Standard
K	39	1233.4	1.4	**2.7469**	0.062	2.2	mg/L	38	Standard
Ca	43	1560.1	5.5	**100.8648**	4.911	4.9	mg/L	10	Standard
Fe	54	167.1	25.8	**0.0105**	0.039	372.7	mg/L	179	Standard
Fe	57	958.4	6.3	**2.3440**	0.212	9.0	mg/L	335	Standard
Sc-1	45	58156.4	0.7				mg/L	61029	Standard
Cl	35	40465.3	2.5				ug/L	20195	Standard
Kr	83	2.7	57.3				ug/L	4	Standard
Br	81	58241.9	4.1				ug/L	1547	Standard
P	31	17453.4	1.6				ug/L	15286	Standard
S	34	1810.1	8.9				ug/L	1572	Standard
Sr	88	1313.4	8.1				ug/L	73	Standard
C	12	273.3	15.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	3	Standard
Dy	164	89.3	16.3				mg/L	6	Standard
Ho-1	165	78.3	35.2				mg/L	10	Standard
Er	166	83.3	18.3				mg/L	13	Standard
I	127	135078.2	7.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		114.508	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.388	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.252
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.740
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606098635S WG573548-04
Sample Date/Time: Wednesday, June 29, 2016 13:03:28
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	96645.6	0.2				ug/L	74699	Standard
	Be	9	56332.9	2.6	**49.4619**	1.222	2.5	ug/L	8	Standard
	Al	27	56565131.5	1.0	**297.4859**	3.609	1.2	ug/L	1493	Standard
	Sc	45	58999.8	4.0				ug/L	61029	Standard
	Ti	47	369.0	11.5	**0.8968**	0.108	12.0	ug/L	35	Standard
	V	51	390242.6	0.5	**53.2266**	0.984	1.8	ug/L	1435	Standard
	Cr	52	371857.5	2.1	**50.8419**	0.408	0.8	ug/L	7635	Standard
	Cr	53	46974.4	2.3	**52.2114**	1.040	2.0	ug/L	363	Standard
	Mn	55	1851169.7	0.3	**274.7367**	3.654	1.3	ug/L	747	Standard
	Co	59	350457.1	0.5	**54.8326**	0.988	1.8	ug/L	234	Standard
	Ni	60	94372.4	2.0	**51.9777**	0.274	0.5	ug/L	215	Standard
	Cu	65	115580.4	2.6	**64.0828**	0.734	1.1	ug/L	104	Standard
	Zn	66	61118.4	0.5	**57.3902**	0.612	1.1	ug/L	363	Standard
>	**Ge**	72	478993.7	1.6				ug/L	495142	Standard
	As	75	59122.1	0.8	**54.6260**	0.454	0.8	ug/L	-50	Standard
	Se	82	6294.5	0.9	**59.1515**	0.578	1.0	ug/L	14	Standard
	Se-1	77	4101.2	2.7	**57.4162**	0.662	1.2	ug/L	42	Standard
>	**Ga**	71	100.0	18.0				mg/L	42	Standard
	Rb	85	5364.3	1.3				ug/L	17	Standard
	Y	89	423648.2	2.3				ug/L	417098	Standard
>	**Rh**	103	290.0	15.8				ug/L	13	Standard
	Mo	98	1231.1	6.2	**0.4537**	0.027	5.8	ug/L	11	Standard
	Ag	107	140053.7	1.3	**21.3673**	0.341	1.6	ug/L	68	Standard
	Cd	111	101619.5	1.1	**48.3438**	0.154	0.3	mg/L	2	Standard
	Cd	114	248812.6	0.3	**48.2667**	0.577	1.2	ug/L	12	Standard
>	**In**	115	590497.7	1.3				ug/L	587441	Standard
	Sn	118	1276.7	2.9	**0.1227**	0.007	5.6	ug/L	497	Standard
	Sb	123	230648.9	1.4	**49.1452**	0.703	1.4	ug/L	78	Standard
	Ba	135	121100.4	1.0	**58.8551**	1.255	2.1	ug/L	24	Standard
	Ce	140	1580.1	12.1				ug/L	25	Standard
>	**Tb**	159	967679.2	1.8				ug/L	939701	Standard
	Ho	165	70.0	12.4				ug/L	10	Standard
	Tl	203	411213.8	0.9	**50.0486**	0.144	0.3	ug/L	4	Standard
	Tl	205	371375.3	1.6	**52.0881**	1.342	2.6	ug/L	2	Standard
	Pb	206	271184.0	0.3	**50.8655**	0.565	1.1	ug/L	240	Standard
	Pb	207	230172.1	0.3	**48.5918**	0.740	1.5	ug/L	198	Standard
	Pb	208	934549.0	0.8	**49.9358**	0.874	1.8	ug/L	883	Standard
	U	238	386476.6	1.1	**56.3336**	1.024	1.8	ug/L	3	Standard
>	**Bi**	209	522269.6	1.2				ug/L	523984	Standard

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Na	23	8.3	91.7	**99.7813**	89.869	90.1	mg/L	0	Standard
Mg	24	26446.4	1.6	**35.2703**	0.863	2.4	mg/L	37	Standard
K	39	1201.7	4.6	**2.6333**	0.063	2.4	mg/L	38	Standard
Ca	43	1648.4	4.4	**105.1755**	1.490	1.4	mg/L	10	Standard
Fe	54	207.2	35.2	**0.0431**	0.061	140.9	mg/L	179	Standard
Fe	57	976.7	6.7	**2.3580**	0.131	5.6	mg/L	335	Standard
> **Sc-1**	45	58999.8	4.0				mg/L	61029	Standard
Cl	35	42664.0	0.9				ug/L	20195	Standard
Kr	83	3.0	33.3				ug/L	4	Standard
Br	81	62512.1	2.5				ug/L	1547	Standard
P	31	18094.1	2.0				ug/L	15286	Standard
S	34	1855.1	3.1				ug/L	1572	Standard
Sr	88	1376.7	4.2				ug/L	73	Standard
C	12	206.7	24.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	73.5	28.0				mg/L	6	Standard
Ho-1	165	70.0	12.4				mg/L	10	Standard
Er	166	66.7	34.6				mg/L	13	Standard
I	127	146421.6	4.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.380	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.739	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.520
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.673
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606098637SD WG573548-05
Sample Date/Time: Wednesday, June 29, 2016 13:06:39
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	99478.9	1.8				ug/L	74699	Standard
	Be	9	55809.3	1.7	**47.6121**	0.679	1.4	ug/L	8	Standard
	Al	27	57079276.5	2.7	**291.6498**	6.801	2.3	ug/L	1493	Standard
	Sc	45	56220.8	1.7				ug/L	61029	Standard
	Ti	47	357.7	29.4	**0.8728**	0.310	35.5	ug/L	35	Standard
	V	51	392795.1	0.3	**53.7087**	1.385	2.6	ug/L	1435	Standard
	Cr	52	364211.2	1.2	**49.9063**	1.054	2.1	ug/L	7635	Standard
	Cr	53	45092.0	2.6	**50.2220**	0.967	1.9	ug/L	363	Standard
	Mn	55	1864825.2	1.1	**277.4410**	6.534	2.4	ug/L	747	Standard
	Co	59	357216.6	1.3	**56.0166**	0.665	1.2	ug/L	234	Standard
	Ni	60	94064.4	0.7	**51.9434**	1.099	2.1	ug/L	215	Standard
	Cu	65	96872.1	1.3	**53.8290**	0.581	1.1	ug/L	104	Standard
	Zn	66	56756.1	1.1	**53.3877**	0.715	1.3	ug/L	363	Standard
>	**Ge**	72	477920.9	2.4				ug/L	495142	Standard
	As	75	58834.8	0.8	**54.4924**	0.918	1.7	ug/L	-50	Standard
	Se	82	6411.7	0.6	**60.4029**	1.057	1.7	ug/L	14	Standard
	Se-1	77	4156.6	3.0	**58.3446**	1.540	2.6	ug/L	42	Standard
>	**Ga**	71	126.7	16.4				mg/L	42	Standard
	Rb	85	5344.3	1.7				ug/L	17	Standard
	Y	89	425761.1	0.9				ug/L	417098	Standard
>	**Rh**	103	338.3	14.4				ug/L	13	Standard
	Mo	98	943.7	3.1	**0.3564**	0.013	3.7	ug/L	11	Standard
	Ag	107	126054.2	0.9	**19.7696**	0.296	1.5	ug/L	68	Standard
	Cd	111	100507.1	1.6	**49.1528**	0.361	0.7	mg/L	2	Standard
	Cd	114	240725.5	3.1	**47.9933**	0.862	1.8	ug/L	12	Standard
>	**In**	115	574417.4	1.5				ug/L	587441	Standard
	Sn	118	1058.4	4.2	**0.0905**	0.005	5.8	ug/L	497	Standard
	Sb	123	229849.5	0.5	**50.3475**	0.456	0.9	ug/L	78	Standard
	Ba	135	119199.1	0.7	**59.5474**	0.534	0.9	ug/L	24	Standard
	Ce	140	1411.7	10.5				ug/L	25	Standard
>	**Tb**	159	946510.5	1.0				ug/L	939701	Standard
	Ho	165	61.7	32.8				ug/L	10	Standard
	Tl	203	404314.5	1.0	**50.2968**	0.720	1.4	ug/L	4	Standard
	Tl	205	368989.1	0.6	**52.8952**	1.157	2.2	ug/L	2	Standard
	Pb	206	274418.5	1.5	**52.6043**	0.331	0.6	ug/L	240	Standard
	Pb	207	233408.5	1.0	**50.3596**	0.394	0.8	ug/L	198	Standard
	Pb	208	945417.2	0.6	**51.6312**	0.704	1.4	ug/L	883	Standard
	U	238	390395.6	1.2	**58.1569**	0.854	1.5	ug/L	3	Standard
>	**Bi**	209	511024.4	1.7				ug/L	523984	Standard

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Na	23	13.3	21.7	**167.0389**	37.375	22.4	mg/L	0	Standard
Mg	24	26820.4	2.0	**37.5161**	0.222	0.6	mg/L	37	Standard
K	39	1165.0	5.8	**2.6799**	0.118	4.4	mg/L	38	Standard
Ca	43	1491.7	10.9	**99.7885**	11.256	11.3	mg/L	10	Standard
Fe	54	157.1	11.5	**0.0062**	0.015	238.1	mg/L	179	Standard
Fe	57	1011.7	5.7	**2.6573**	0.164	6.2	mg/L	335	Standard
> **Sc-1**	45	56220.8	1.7				mg/L	61029	Standard
Cl	35	42892.6	1.5				ug/L	20195	Standard
Kr	83	2.7	43.3				ug/L	4	Standard
Br	81	62984.0	1.3				ug/L	1547	Standard
P	31	17081.3	3.0				ug/L	15286	Standard
S	34	1805.1	2.7				ug/L	1572	Standard
Sr	88	1383.4	10.5				ug/L	73	Standard
C	12	180.0	14.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	124.6	33.0				mg/L	6	Standard
Ho-1	165	61.7	32.8				mg/L	10	Standard
Er	166	43.3	35.3				mg/L	13	Standard
I	127	140810.4	4.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		133.173	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.522	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.783
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.527
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606098601
Sample Date/Time: Wednesday, June 29, 2016 13:09:51
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	102324.4	1.8				ug/L	74699	Standard
	Be	9	88.3	32.2	**0.0810**	0.024	30.0	ug/L	8	Standard
	Al	27	5114148.7	1.9	**25.3952**	0.605	2.4	ug/L	1493	Standard
	Sc	45	60191.0	1.9				ug/L	61029	Standard
	Ti	47	2779.9	0.6	**7.0936**	0.108	1.5	ug/L	35	Standard
	V	51	5111.4	5.6	**0.4688**	0.033	7.0	ug/L	1435	Standard
	Cr	52	13420.3	3.5	**0.7542**	0.051	6.8	ug/L	7635	Standard
	Cr	53	1458.4	3.3	**1.2196**	0.051	4.2	ug/L	363	Standard
	Mn	55	181173.8	0.3	**25.4046**	0.180	0.7	ug/L	747	Standard
	Co	59	2348.5	2.0	**0.3119**	0.007	2.1	ug/L	234	Standard
	Ni	60	2310.5	3.1	**1.0878**	0.031	2.9	ug/L	215	Standard
	Cu	65	2308.5	3.6	**1.1141**	0.034	3.0	ug/L	104	Standard
	Zn	66	22662.3	0.5	**19.9177**	0.090	0.4	ug/L	363	Standard
>	**Ge**	72	504254.4	0.9				ug/L	495142	Standard
	As	75	859.1	5.1	**0.8126**	0.036	4.5	ug/L	-50	Standard
	Se	82	56.8	14.9	**0.3708**	0.079	21.2	ug/L	14	Standard
	Se-1	77	87.3	17.2	**0.5507**	0.190	34.5	ug/L	42	Standard
>	**Ga**	71	526.7	8.3				mg/L	42	Standard
	Rb	85	16517.3	5.3				ug/L	17	Standard
	Y	89	430302.4	1.6				ug/L	417098	Standard
>	**Rh**	103	86.7	33.8				ug/L	13	Standard
	Mo	98	1898.6	1.4	**0.7136**	0.022	3.1	ug/L	11	Standard
	Ag	107	115.3	8.0	**0.0050**	0.001	29.0	ug/L	68	Standard
	Cd	111	60.8	33.2	**0.0215**	0.010	47.6	mg/L	2	Standard
	Cd	114	128.6	20.8	**0.0232**	0.005	20.9	ug/L	12	Standard
>	**In**	115	581907.5	1.7				ug/L	587441	Standard
	Sn	118	1231.7	10.8	**0.1183**	0.024	20.7	ug/L	497	Standard
	Sb	123	520.8	14.7	**0.1084**	0.016	15.1	ug/L	78	Standard
	Ba	135	41346.0	0.9	**20.3791**	0.217	1.1	ug/L	24	Standard
	Ce	140	23020.8	2.4				ug/L	25	Standard
>	**Tb**	159	964144.3	1.8				ug/L	939701	Standard
	Ho	165	513.3	9.3				ug/L	10	Standard
	Tl	203	211.3	12.7	**0.0234**	0.003	14.7	ug/L	4	Standard
	Tl	205	253.3	62.3	**0.0350**	0.022	63.0	ug/L	2	Standard
	Pb	206	1500.1	2.6	**0.2039**	0.008	4.0	ug/L	240	Standard
	Pb	207	1190.0	4.0	**0.1756**	0.010	5.7	ug/L	198	Standard
	Pb	208	4936.0	2.0	**0.1838**	0.008	4.3	ug/L	883	Standard
	U	238	2034.5	10.8	**0.2852**	0.034	11.8	ug/L	3	Standard
>	**Bi**	209	535012.0	1.1				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	50263.2	0.4	**65.7389**	1.477	2.2	mg/L	37	Standard
K	39	250.0	7.2	**0.4466**	0.047	10.5	mg/L	38	Standard
Ca	43	233.3	8.9	**12.4104**	1.127	9.1	mg/L	10	Standard
Fe	54	825.5	3.8	**0.5718**	0.038	6.7	mg/L	179	Standard
Fe	57	516.7	4.4	**0.7058**	0.045	6.4	mg/L	335	Standard
> **Sc-1**	45	60191.0	1.9				mg/L	61029	Standard
Cl	35	28383.9	2.7				ug/L	20195	Standard
Kr	83	2.0	0.0				ug/L	4	Standard
Br	81	8439.0	2.4				ug/L	1547	Standard
P	31	17857.2	2.8				ug/L	15286	Standard
S	34	1791.8	4.6				ug/L	1572	Standard
Sr	88	506.7	4.7				ug/L	73	Standard
C	12	153.3	22.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	893.4	9.1				mg/L	6	Standard
Ho-1	165	513.3	9.3				mg/L	10	Standard
Er	166	416.7	13.2				mg/L	13	Standard
I	127	18778.3	7.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		136.983	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.840	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.058	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	102.105	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606098603
Sample Date/Time: Wednesday, June 29, 2016 13:13:02
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	106961.3	1.6				ug/L	74699	Standard
	Be	9	178.3	7.1	**0.1492**	0.012	8.2	ug/L	8	Standard
	Al	27	64490531.4	4.4	**306.3886**	9.864	3.2	ug/L	1493	Standard
	Sc	45	59811.2	2.1				ug/L	61029	Standard
	Ti	47	416.0	0.2	**0.9910**	0.025	2.5	ug/L	35	Standard
	V	51	3004.3	2.1	**0.2029**	0.003	1.2	ug/L	1435	Standard
	Cr	52	11901.7	1.5	**0.5854**	0.019	3.3	ug/L	7635	Standard
	Cr	53	991.7	2.3	**0.7459**	0.050	6.7	ug/L	363	Standard
	Mn	55	12370472.2	4.2	**1779.3602**	31.656	1.8	ug/L	747	Standard
	Co	59	18875.4	5.7	**2.8249**	0.100	3.5	ug/L	234	Standard
	Ni	60	12202.3	4.0	**6.4037**	0.114	1.8	ug/L	215	Standard
	Cu	65	16836.0	2.8	**8.9582**	0.039	0.4	ug/L	104	Standard
	Zn	66	24869.4	2.3	**22.3549**	0.039	0.2	ug/L	363	Standard
>	**Ge**	72	494237.2	2.4				ug/L	495142	Standard
	As	75	1554.4	6.7	**1.4489**	0.061	4.2	ug/L	-50	Standard
	Se	82	71.5	7.7	**0.5142**	0.037	7.1	ug/L	14	Standard
	Se-1	77	63.0	12.4	**0.2431**	0.119	49.1	ug/L	42	Standard
>	**Ga**	71	356.7	10.3				mg/L	42	Standard
	Rb	85	9309.5	2.8				ug/L	17	Standard
	Y	89	460268.8	4.1				ug/L	417098	Standard
>	**Rh**	103	310.0	9.7				ug/L	13	Standard
	Mo	98	1407.8	3.5	**0.5012**	0.005	1.0	ug/L	11	Standard
	Ag	107	101.3	22.9	**0.0020**	0.003	151.7	ug/L	68	Standard
	Cd	111	246.3	7.9	**0.1051**	0.008	7.2	mg/L	2	Standard
	Cd	114	605.6	11.0	**0.1111**	0.009	8.4	ug/L	12	Standard
>	**In**	115	612194.6	4.4				ug/L	587441	Standard
	Sn	118	1470.1	15.0	**0.1461**	0.027	18.7	ug/L	497	Standard
	Sb	123	727.1	5.4	**0.1452**	0.003	2.2	ug/L	78	Standard
	Ba	135	24533.2	4.5	**11.4855**	0.055	0.5	ug/L	24	Standard
	Ce	140	44839.6	2.7				ug/L	25	Standard
>	**Tb**	159	1002318.5	3.7				ug/L	939701	Standard
	Ho	165	778.4	7.8				ug/L	10	Standard
	Tl	203	123.7	14.4	**0.0129**	0.002	13.5	ug/L	4	Standard
	Tl	205	116.7	9.9	**0.0161**	0.001	9.2	ug/L	2	Standard
	Pb	206	819.0	5.9	**0.0785**	0.008	10.4	ug/L	240	Standard
	Pb	207	658.0	2.8	**0.0655**	0.007	10.9	ug/L	198	Standard
	Pb	208	2733.4	3.4	**0.0682**	0.002	2.2	ug/L	883	Standard
	U	238	29463.0	4.0	**4.1728**	0.071	1.7	ug/L	3	Standard
>	**Bi**	209	536825.9	2.9				ug/L	523984	Standard

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Na	23	18.3	31.5	**216.6166**	73.255	33.8	mg/L	0	Standard
Mg	24	7246.7	2.5	**9.4794**	0.084	0.9	mg/L	37	Standard
K	39	393.3	11.0	**0.7727**	0.091	11.8	mg/L	38	Standard
Ca	43	1938.5	3.9	**122.4130**	4.002	3.3	mg/L	10	Standard
Fe	54	1213.7	6.6	**0.9123**	0.078	8.6	mg/L	179	Standard
Fe	57	1360.1	3.5	**3.6434**	0.167	4.6	mg/L	335	Standard
> **Sc-1**	45	59811.2	2.1				mg/L	61029	Standard
Cl	35	41831.0	3.4				ug/L	20195	Standard
Kr	83	1.7	91.7				ug/L	4	Standard
Br	81	8062.1	5.5				ug/L	1547	Standard
P	31	19340.7	4.7				ug/L	15286	Standard
S	34	2026.8	7.6				ug/L	1572	Standard
Sr	88	1283.4	13.4				ug/L	73	Standard
C	12	153.3	19.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	1258.4	10.3				mg/L	6	Standard
Ho-1	165	778.4	7.8				mg/L	10	Standard
Er	166	800.0	9.9				mg/L	13	Standard
I	127	76815.4	9.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		143.190	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.817	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.214
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.451
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606098603
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Method 6020 - Summary Report

Sample ID: L1606098603PS WG574572-01
Sample Date/Time: Wednesday, June 29, 2016 13:16:14
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	107768.6	1.4				ug/L	74699	Standard
	Be	9	63154.7	2.1	**49.7293**	0.735	1.5	ug/L	8	Standard
	Al	27	62883924.9	0.4	**296.6156**	4.197	1.4	ug/L	1493	Standard
	Sc	45	60669.6	1.7				ug/L	61029	Standard
	Ti	47	431.3	11.1	**1.0313**	0.120	11.7	ug/L	35	Standard
	V	51	423481.5	0.7	**56.0150**	0.782	1.4	ug/L	1435	Standard
	Cr	52	394353.4	1.0	**52.3183**	0.613	1.2	ug/L	7635	Standard
	Cr	53	48385.5	1.4	**52.1545**	1.086	2.1	ug/L	363	Standard
	Mn	55	12676353.0	0.9	**1825.0939**	28.984	1.6	ug/L	747	Standard
	Co	59	406698.1	0.5	**61.7025**	0.702	1.1	ug/L	234	Standard
	Ni	60	105609.8	0.7	**56.4229**	0.793	1.4	ug/L	215	Standard
	Cu	65	109624.8	0.4	**58.9403**	0.355	0.6	ug/L	104	Standard
	Zn	66	80974.1	1.0	**73.8592**	1.163	1.6	ug/L	363	Standard
>	Ge	72	493944.8	0.7				ug/L	495142	Standard
	As	75	62963.2	0.4	**56.4099**	0.584	1.0	ug/L	-50	Standard
	Se	82	6528.2	1.4	**59.4919**	1.250	2.1	ug/L	14	Standard
	Se-1	77	4208.9	2.0	**57.1456**	1.224	2.1	ug/L	42	Standard
>	Ga	71	341.7	3.7				mg/L	42	Standard
	Rb	85	9437.9	2.3				ug/L	17	Standard
	Y	89	453637.5	2.0				ug/L	417098	Standard
>	Rh	103	333.3	4.8				ug/L	13	Standard
	Mo	98	1406.8	1.9	**0.5023**	0.008	1.6	ug/L	11	Standard
	Ag	107	336751.7	1.1	**49.7241**	0.838	1.7	ug/L	68	Standard
	Cd	111	110645.7	0.7	**50.9305**	0.669	1.3	mg/L	2	Standard
	Cd	114	268194.0	0.5	**50.3333**	0.438	0.9	ug/L	12	Standard
>	In	115	610323.2	0.7				ug/L	587441	Standard
	Sn	118	1538.4	2.3	**0.1588**	0.006	3.5	ug/L	497	Standard
	Sb	123	241381.6	1.1	**49.7617**	0.807	1.6	ug/L	78	Standard
	Ba	135	126394.4	1.4	**59.4274**	1.193	2.0	ug/L	24	Standard
	Ce	140	44334.8	0.8				ug/L	25	Standard
>	Tb	159	999714.8	1.0				ug/L	939701	Standard
	Ho	165	786.7	10.3				ug/L	10	Standard
	Tl	203	445077.8	1.6	**52.3048**	0.918	1.8	ug/L	4	Standard
	Tl	205	409895.5	2.2	**55.5017**	1.265	2.3	ug/L	2	Standard
	Pb	206	293321.0	0.4	**53.1218**	0.228	0.4	ug/L	240	Standard
	Pb	207	252054.7	0.9	**51.3779**	0.617	1.2	ug/L	198	Standard
	Pb	208	1026149.4	0.5	**52.9396**	0.195	0.4	ug/L	883	Standard
	U	238	420484.7	1.6	**59.1737**	0.984	1.7	ug/L	3	Standard
>	Bi	209	540895.8	0.3				ug/L	523984	Standard

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Na	23	16.7	45.8	**192.4294**	85.849	44.6	mg/L	0	Standard
Mg	24	7256.7	2.5	**9.3609**	0.349	3.7	mg/L	37	Standard
K	39	406.7	8.6	**0.7894**	0.064	8.1	mg/L	38	Standard
Ca	43	1853.4	4.6	**115.2974**	6.640	5.8	mg/L	10	Standard
Fe	54	1091.3	5.4	**0.7921**	0.036	4.5	mg/L	179	Standard
Fe	57	1315.1	6.5	**3.4198**	0.224	6.6	mg/L	335	Standard
> **Sc-1**	45	60669.6	1.7				mg/L	61029	Standard
Cl	35	43150.7	2.4				ug/L	20195	Standard
Kr	83	2.3	49.5				ug/L	4	Standard
Br	81	7932.1	5.6				ug/L	1547	Standard
P	31	18981.9	3.1				ug/L	15286	Standard
S	34	1910.1	1.6				ug/L	1572	Standard
Sr	88	1396.7	9.1				ug/L	73	Standard
C	12	166.7	22.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	1221.7	7.2				mg/L	6	Standard
Ho-1	165	786.7	10.3				mg/L	10	Standard
Er	166	800.0	7.6				mg/L	13	Standard
I	127	76722.5	5.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		144.271	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.758	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.895
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.227
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606098603SDL WG574572-02
Sample Date/Time: Wednesday, June 29, 2016 13:19:25
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	109627.0	2.2				ug/L	74699	Standard
	Be	9	55.0	32.8	**0.0501**	0.014	27.0	ug/L	8	Standard
	Al	27	13052757.9	2.1	**60.5215**	1.604	2.7	ug/L	1493	Standard
	Sc	45	62358.1	1.0				ug/L	61029	Standard
	Ti	47	123.0	14.7	**0.1926**	0.050	25.7	ug/L	35	Standard
	V	51	2451.6	1.0	**0.1057**	0.008	7.9	ug/L	1435	Standard
	Cr	52	10290.8	1.8	**0.2648**	0.008	2.8	ug/L	7635	Standard
	Cr	53	588.3	10.7	**0.2610**	0.063	24.3	ug/L	363	Standard
	Mn	55	2629853.6	1.6	**350.4744**	10.232	2.9	ug/L	747	Standard
	Co	59	4233.3	3.1	**0.5577**	0.018	3.3	ug/L	234	Standard
	Ni	60	2886.6	1.8	**1.3071**	0.037	2.8	ug/L	215	Standard
	Cu	65	3859.5	1.6	**1.8207**	0.021	1.2	ug/L	104	Standard
	Zn	66	7087.3	1.2	**5.5680**	0.153	2.7	ug/L	363	Standard
>	**Ge**	72	533577.2	1.8				ug/L	495142	Standard
	As	75	314.5	3.2	**0.3203**	0.010	3.2	ug/L	-50	Standard
	Se	82	28.2	16.0	**0.1004**	0.037	37.2	ug/L	14	Standard
	Se-1	77	51.7	9.9	**0.0349**	0.075	214.8	ug/L	42	Standard
>	**Ga**	71	153.3	21.0				mg/L	42	Standard
	Rb	85	1916.8	2.5				ug/L	17	Standard
	Y	89	457911.1	1.7				ug/L	417098	Standard
>	**Rh**	103	73.3	17.2				ug/L	13	Standard
	Mo	98	334.8	7.8	**0.1120**	0.009	8.5	ug/L	11	Standard
	Ag	107	142.0	14.1	**0.0075**	0.003	37.0	ug/L	68	Standard
	Cd	111	78.8	16.1	**0.0274**	0.006	20.4	mg/L	2	Standard
	Cd	114	171.7	29.4	**0.0293**	0.009	31.0	ug/L	12	Standard
>	**In**	115	626915.6	0.6				ug/L	587441	Standard
	Sn	118	618.3	15.8	**0.0044**	0.015	338.7	ug/L	497	Standard
	Sb	123	2031.6	21.7	**0.4032**	0.086	21.3	ug/L	78	Standard
	Ba	135	5054.8	0.4	**2.2983**	0.024	1.0	ug/L	24	Standard
	Ce	140	9302.9	0.9				ug/L	25	Standard
>	**Tb**	159	1014481.9	2.3				ug/L	939701	Standard
	Ho	165	175.0	2.9				ug/L	10	Standard
	Tl	203	125.0	17.4	**0.0120**	0.002	18.4	ug/L	4	Standard
	Tl	205	85.0	15.6	**0.0110**	0.002	15.7	ug/L	2	Standard
	Pb	206	501.3	9.2	**0.0141**	0.008	53.2	ug/L	240	Standard
	Pb	207	392.0	5.3	**0.0051**	0.005	98.5	ug/L	198	Standard
	Pb	208	1534.0	5.0	**0.0003**	0.005	1457.8	ug/L	883	Standard
	U	238	6033.2	1.4	**0.7925**	0.020	2.5	ug/L	3	Standard
>	**Bi**	209	576425.9	1.5				ug/L	523984	Standard

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Na	23	3.3	173.2	**37.9583**	65.737	173.2	mg/L	0	Standard
Mg	24	1580.1	4.3	**1.9318**	0.105	5.4	mg/L	37	Standard
K	39	138.3	24.1	**0.1853**	0.073	39.3	mg/L	38	Standard
Ca	43	413.3	5.7	**23.0292**	1.446	6.3	mg/L	10	Standard
Fe	54	367.9	5.4	**0.1671**	0.019	11.4	mg/L	179	Standard
Fe	57	475.0	7.9	**0.5062**	0.132	26.1	mg/L	335	Standard
Sc-1	45	62358.1	1.0				mg/L	61029	Standard
Cl	35	34619.5	1.5				ug/L	20195	Standard
Kr	83	1.3	86.6				ug/L	4	Standard
Br	81	3197.0	3.6				ug/L	1547	Standard
P	31	18749.9	1.5				ug/L	15286	Standard
S	34	2010.1	3.0				ug/L	1572	Standard
Sr	88	305.0	20.5				ug/L	73	Standard
C	12	113.3	31.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	348.8	17.3				mg/L	6	Standard
Ho-1	165	175.0	2.9				mg/L	10	Standard
Er	166	163.3	52.8				mg/L	13	Standard
I	127	19115.4	2.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		146.759	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		107.762	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.720
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.008
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606098603SDL WG574572-02
Sample Date/Time: Wednesday, June 29, 2016 13:22:37
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	107882.7	0.8				ug/L	74699	Standard
	Be	9	30.0	44.1	**0.0312**	0.010	32.7	ug/L	8	Standard
	Al	27	2675117.5	0.8	**12.5917**	0.213	1.7	ug/L	1493	Standard
	Sc	45	65760.7	1.1				ug/L	61029	Standard
	Ti	47	48.3	10.6	**0.0072**	0.012	160.2	ug/L	35	Standard
	V	51	2266.6	5.1	**0.0781**	0.015	19.5	ug/L	1435	Standard
	Cr	52	10143.4	2.6	**0.2243**	0.020	8.9	ug/L	7635	Standard
	Cr	53	413.3	17.1	**0.0775**	0.065	83.8	ug/L	363	Standard
	Mn	55	539662.1	1.4	**70.5366**	0.569	0.8	ug/L	747	Standard
	Co	59	1015.0	2.6	**0.1030**	0.006	5.9	ug/L	234	Standard
	Ni	60	769.4	2.6	**0.2509**	0.010	4.1	ug/L	215	Standard
	Cu	65	948.0	4.2	**0.3607**	0.016	4.4	ug/L	104	Standard
	Zn	66	2642.9	1.7	**1.7518**	0.018	1.1	ug/L	363	Standard
>	**Ge**	72	543000.4	1.8				ug/L	495142	Standard
	As	75	12.5	225.4	**0.0698**	0.023	32.5	ug/L	-50	Standard
	Se	82	15.8	49.7	**-0.0063**	0.066	1051.8	ug/L	14	Standard
	Se-1	77	45.3	17.1	**-0.0563**	0.096	170.3	ug/L	42	Standard
>	**Ga**	71	85.0	15.6				mg/L	42	Standard
	Rb	85	428.3	11.2				ug/L	17	Standard
	Y	89	460200.9	1.8				ug/L	417098	Standard
>	**Rh**	103	35.0	24.7				ug/L	13	Standard
	Mo	98	83.6	11.1	**0.0226**	0.003	14.3	ug/L	11	Standard
	Ag	107	112.7	14.2	**0.0027**	0.002	80.0	ug/L	68	Standard
	Cd	111	20.9	22.0	**0.0011**	0.002	176.9	mg/L	2	Standard
	Cd	114	53.5	39.5	**0.0073**	0.004	50.6	ug/L	12	Standard
>	**In**	115	649578.1	0.2				ug/L	587441	Standard
	Sn	118	553.3	9.5	**-0.0090**	0.008	92.4	ug/L	497	Standard
	Sb	123	558.9	31.9	**0.1041**	0.035	33.4	ug/L	78	Standard
	Ba	135	1064.4	0.7	**0.4543**	0.003	0.7	ug/L	24	Standard
	Ce	140	1928.5	4.3				ug/L	25	Standard
>	**Tb**	159	1049822.6	1.3				ug/L	939701	Standard
	Ho	165	40.0	33.1				ug/L	10	Standard
	Tl	203	40.7	35.8	**0.0026**	0.002	59.7	ug/L	4	Standard
	Tl	205	45.0	38.5	**0.0057**	0.002	36.9	ug/L	2	Standard
	Pb	206	372.0	6.6	**-0.0102**	0.004	38.7	ug/L	240	Standard
	Pb	207	294.7	6.9	**-0.0156**	0.004	25.6	ug/L	198	Standard
	Pb	208	1159.4	2.3	**-0.0199**	0.001	7.3	ug/L	883	Standard
	U	238	1206.0	0.9	**0.1490**	0.002	1.2	ug/L	3	Standard
>	**Bi**	209	598311.7	0.5				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.6400**	30.545	173.2	mg/L	0	Standard
Mg	24	363.3	29.0	**0.3711**	0.131	35.3	mg/L	37	Standard
K	39	63.3	27.7	**0.0157**	0.035	226.7	mg/L	38	Standard
Ca	43	110.0	12.0	**3.9202**	0.707	18.0	mg/L	10	Standard
Fe	54	190.5	10.6	**0.0117**	0.017	142.3	mg/L	179	Standard
Fe	57	268.3	12.0	**-0.2271**	0.110	48.6	mg/L	335	Standard
> **Sc-1**	45	65760.7	1.1				mg/L	61029	Standard
Cl	35	34122.4	1.0				ug/L	20195	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	2286.8	8.5				ug/L	1547	Standard
P	31	19529.2	1.3				ug/L	15286	Standard
S	34	2301.8	4.6				ug/L	1572	Standard
Sr	88	130.0	32.9				ug/L	73	Standard
C	12	83.3	6.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	60.8	35.4				mg/L	6	Standard
Ho-1	165	40.0	33.1				mg/L	10	Standard
Er	166	53.3	28.6				mg/L	13	Standard
I	127	5874.5	8.0				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		144.424	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		109.666	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.578
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		114.185
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 13:25:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	96295.4	4.3				ug/L	74699	Standard
	Be	9	56739.5	4.7	**50.0144**	1.617	3.2	ug/L	8	Standard
	Al	27	8198811.7	1.9	**43.2979**	1.271	2.9	ug/L	1493	Standard
	Sc	45	60020.3	2.0				ug/L	61029	Standard
	Ti	47	38068.4	0.4	**97.0435**	0.523	0.5	ug/L	35	Standard
	V	51	407671.2	1.0	**52.0137**	0.145	0.3	ug/L	1435	Standard
	Cr	52	382711.8	0.9	**48.9253**	0.135	0.3	ug/L	7635	Standard
	Cr	53	47653.2	2.5	**49.5394**	1.027	2.1	ug/L	363	Standard
	Mn	55	366963.7	3.6	**50.8236**	1.362	2.7	ug/L	747	Standard
	Co	59	380449.1	2.9	**55.6813**	1.097	2.0	ug/L	234	Standard
	Ni	60	94585.7	1.1	**48.7401**	0.435	0.9	ug/L	215	Standard
	Cu	65	94763.8	1.5	**49.1432**	0.553	1.1	ug/L	104	Standard
	Zn	66	56752.8	2.3	**49.7949**	0.707	1.4	ug/L	363	Standard
>	Ge	72	511914.0	0.9				ug/L	495142	Standard
	As	75	57985.2	1.9	**50.1285**	0.568	1.1	ug/L	-50	Standard
	Se	82	5989.4	2.5	**52.6418**	0.964	1.8	ug/L	14	Standard
	Se-1	77	3921.2	2.5	**51.3010**	0.802	1.6	ug/L	42	Standard
>	Ga	71	220.0	19.4				mg/L	42	Standard
	Rb	85	765.0	2.0				ug/L	17	Standard
	Y	89	446724.4	3.3				ug/L	417098	Standard
>	Rh	103	20.0	43.3				ug/L	13	Standard
	Mo	98	280984.3	2.1	**102.0498**	2.098	2.1	ug/L	11	Standard
	Ag	107	335763.8	0.9	**49.8677**	1.010	2.0	ug/L	68	Standard
	Cd	111	105816.2	1.8	**48.9835**	0.569	1.2	mg/L	2	Standard
	Cd	114	257781.1	1.6	**48.6563**	0.589	1.2	ug/L	12	Standard
>	In	115	606960.1	2.8				ug/L	587441	Standard
	Sn	118	295693.2	2.0	**48.9061**	0.749	1.5	ug/L	497	Standard
	Sb	123	236523.1	0.9	**49.0438**	0.901	1.8	ug/L	78	Standard
	Ba	135	99992.2	1.5	**47.2781**	0.609	1.3	ug/L	24	Standard
	Ce	140	91.7	6.3				ug/L	25	Standard
>	Tb	159	985978.7	1.6				ug/L	939701	Standard
	Ho	165	11.7	89.2				ug/L	10	Standard
	Tl	203	433708.5	1.0	**49.3829**	0.257	0.5	ug/L	4	Standard
	Tl	205	391770.8	1.1	**51.3967**	0.163	0.3	ug/L	2	Standard
	Pb	206	284957.7	0.7	**50.0002**	0.477	1.0	ug/L	240	Standard
	Pb	207	255175.6	1.7	**50.3910**	0.211	0.4	ug/L	198	Standard
	Pb	208	1010912.5	1.9	**50.5251**	0.466	0.9	ug/L	883	Standard
	U	238	378758.8	0.6	**51.6451**	0.416	0.8	ug/L	3	Standard
>	Bi	209	558275.4	1.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4168.9	2.3	**5.4065**	0.021	0.4	mg/L	37	Standard
K	39	1983.5	2.5	**4.3432**	0.044	1.0	mg/L	38	Standard
Ca	43	106.7	26.7	**4.3258**	1.829	42.3	mg/L	10	Standard
Fe	54	6165.0	5.0	**5.1771**	0.265	5.1	mg/L	179	Standard
Fe	57	1720.1	9.9	**4.8644**	0.466	9.6	mg/L	335	Standard
> **Sc-1**	45	60020.3	2.0				mg/L	61029	Standard
Cl	35	28213.0	5.7				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	1853.5	23.0				ug/L	1547	Standard
P	31	20223.5	3.5				ug/L	15286	Standard
S	34	2575.2	6.1				ug/L	1572	Standard
Sr	88	78.3	26.6				ug/L	73	Standard
C	12	100.0	34.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	9.2	116.5				mg/L	6	Standard
Ho-1	165	11.7	89.2				mg/L	10	Standard
Er	166	16.7	91.7				mg/L	13	Standard
I	127	2436.9	25.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	100.029		
Al	27	86.596		
Sc	45			
Ti	47	97.044		
V	51	104.027		
Cr	52	97.851		
Cr	53			
Mn	55	101.647		
Co	59	111.363		
Ni	60	97.480		
Cu	65	98.286		
Zn	66	99.590		
> Ge	72		103.387	
As	75	100.257		
Se	82	105.284		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	102.050		
Ag	107	99.735		
Cd	111	97.967		
Cd	114			
In	115		103.323	
Sn	118	97.812		
Sb	123	98.088		
Ba	135	94.556		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.766		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.050		
U	238	103.290		
Bi	209		106.544	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	
QC Std 6	Co	59	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 13:29:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	94691.7	1.8				ug/L	74699	Standard
	Be	9	76.7	106.2	**0.0755**	0.071	94.2	ug/L	8	Standard
	Al	27	36843.1	136.1	**0.1814**	0.263	145.0	ug/L	1493	Standard
	Sc	45	60632.8	2.3				ug/L	61029	Standard
	Ti	47	43.0	36.1	**-0.0010**	0.038	3637.8	ug/L	35	Standard
	V	51	1519.7	11.1	**-0.0035**	0.019	532.9	ug/L	1435	Standard
	Cr	52	7045.6	5.2	**-0.1157**	0.044	37.8	ug/L	7635	Standard
	Cr	53	391.7	11.6	**0.0747**	0.044	59.2	ug/L	363	Standard
	Mn	55	7226.9	125.7	**0.8342**	1.228	147.2	ug/L	747	Standard
	Co	59	517.7	90.4	**0.0371**	0.066	179.1	ug/L	234	Standard
	Ni	60	246.3	39.3	**0.0014**	0.048	3317.1	ug/L	215	Standard
	Cu	65	191.7	56.6	**-0.0057**	0.054	949.5	ug/L	104	Standard
	Zn	66	417.3	10.8	**-0.0898**	0.036	40.1	ug/L	363	Standard
>	**Ge**	72	518398.0	1.4				ug/L	495142	Standard
	As	75	-30.5	76.0	**0.0334**	0.020	59.9	ug/L	-50	Standard
	Se	82	13.4	12.4	**-0.0212**	0.016	76.0	ug/L	14	Standard
	Se-1	77	53.3	15.9	**0.0746**	0.106	141.7	ug/L	42	Standard
>	**Ga**	71	155.0	18.0				mg/L	42	Standard
	Rb	85	21.7	93.3				ug/L	17	Standard
	Y	89	436745.4	0.7				ug/L	417098	Standard
>	**Rh**	103	15.0	33.3				ug/L	13	Standard
	Mo	98	315.2	32.1	**0.1069**	0.036	33.6	ug/L	11	Standard
	Ag	107	222.7	75.6	**0.0196**	0.025	125.0	ug/L	68	Standard
	Cd	111	57.8	114.5	**0.0184**	0.030	163.6	mg/L	2	Standard
	Cd	114	159.0	130.1	**0.0274**	0.038	140.1	ug/L	12	Standard
>	**In**	115	616374.3	0.2				ug/L	587441	Standard
	Sn	118	845.0	17.1	**0.0432**	0.024	55.2	ug/L	497	Standard
	Sb	123	593.6	13.2	**0.1170**	0.016	13.9	ug/L	78	Standard
	Ba	135	102.7	102.4	**0.0317**	0.049	153.8	ug/L	24	Standard
	Ce	140	58.3	55.8				ug/L	25	Standard
>	**Tb**	159	995160.6	1.6				ug/L	939701	Standard
	Ho	165	15.0	100.0				ug/L	10	Standard
	Tl	203	219.0	114.2	**0.0226**	0.028	122.3	ug/L	4	Standard
	Tl	205	381.7	141.6	**0.0491**	0.069	140.6	ug/L	2	Standard
	Pb	206	388.0	38.6	**-0.0042**	0.025	597.1	ug/L	240	Standard
	Pb	207	336.0	35.9	**-0.0047**	0.023	485.4	ug/L	198	Standard
	Pb	208	2012.1	79.6	**0.0246**	0.078	315.7	ug/L	883	Standard
	U	238	395.3	145.1	**0.0482**	0.076	157.9	ug/L	3	Standard
>	**Bi**	209	567355.9	1.2				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	58.3	34.6	**0.0111**	0.028	248.5	mg/L	37	Standard
K	39	40.0	12.5	**-0.0251**	0.012	46.0	mg/L	38	Standard
Ca	43	31.7	9.1	**-0.5078**	0.213	41.9	mg/L	10	Standard
Fe	54	155.5	6.6	**-0.0056**	0.009	155.5	mg/L	179	Standard
Fe	57	230.0	7.8	**-0.2862**	0.078	27.3	mg/L	335	Standard
> **Sc-1**	45	60632.8	2.3				mg/L	61029	Standard
Cl	35	27178.4	0.6				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	1736.8	2.2				ug/L	1547	Standard
P	31	19502.5	1.8				ug/L	15286	Standard
S	34	2301.8	3.7				ug/L	1572	Standard
Sr	88	75.0	26.7				ug/L	73	Standard
C	12	86.7	17.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	12.7	93.2				mg/L	6	Standard
Ho-1	165	15.0	100.0				mg/L	10	Standard
Er	166	13.3	86.6				mg/L	13	Standard
I	127	1935.1	25.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		104.697	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.925
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.277
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Mn	55	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606098605
Sample Date/Time: Wednesday, June 29, 2016 13:32:14
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	93251.1	1.7				ug/L	74699	Standard
	Be	9	326.7	10.4	**0.3052**	0.035	11.6	ug/L	8	Standard
	Al	27	19740200.2	0.7	**107.5996**	1.185	1.1	ug/L	1493	Standard
	Sc	45	60365.1	2.3				ug/L	61029	Standard
	Ti	47	450.3	3.0	**1.0603**	0.030	2.8	ug/L	35	Standard
	V	51	4644.9	8.0	**0.4097**	0.047	11.5	ug/L	1435	Standard
	Cr	52	12104.2	0.3	**0.5838**	0.010	1.7	ug/L	7635	Standard
	Cr	53	928.4	3.1	**0.6586**	0.026	3.9	ug/L	363	Standard
	Mn	55	98559.3	4.8	**13.7841**	0.650	4.7	ug/L	747	Standard
	Co	59	3296.0	4.6	**0.4539**	0.021	4.7	ug/L	234	Standard
	Ni	60	3163.0	1.8	**1.5389**	0.038	2.4	ug/L	215	Standard
	Cu	65	32310.7	0.8	**16.9827**	0.169	1.0	ug/L	104	Standard
	Zn	66	47105.4	0.5	**41.9893**	0.365	0.9	ug/L	363	Standard
>	**Ge**	72	503086.3	0.5				ug/L	495142	Standard
	As	75	294.8	15.7	**0.3186**	0.040	12.5	ug/L	-50	Standard
	Se	82	52.3	21.7	**0.3309**	0.101	30.6	ug/L	14	Standard
	Se-1	77	70.7	11.4	**0.3303**	0.114	34.4	ug/L	42	Standard
>	**Ga**	71	295.0	9.0				mg/L	42	Standard
	Rb	85	9109.4	3.7				ug/L	17	Standard
	Y	89	448266.6	2.2				ug/L	417098	Standard
>	**Rh**	103	83.3	28.4				ug/L	13	Standard
	Mo	98	1843.0	5.2	**0.6500**	0.034	5.3	ug/L	11	Standard
	Ag	107	226.3	74.5	**0.0200**	0.024	121.9	ug/L	68	Standard
	Cd	111	104.1	84.7	**0.0392**	0.040	101.3	mg/L	2	Standard
	Cd	114	254.7	74.3	**0.0449**	0.035	77.3	ug/L	12	Standard
>	**In**	115	619535.9	1.6				ug/L	587441	Standard
	Sn	118	1750.1	13.2	**0.1895**	0.038	20.1	ug/L	497	Standard
	Sb	123	790.9	17.9	**0.1564**	0.028	18.0	ug/L	78	Standard
	Ba	135	72683.9	1.3	**33.6664**	0.969	2.9	ug/L	24	Standard
	Ce	140	5139.2	3.4				ug/L	25	Standard
>	**Tb**	159	985815.7	2.2				ug/L	939701	Standard
	Ho	165	223.3	9.3				ug/L	10	Standard
	Tl	203	317.0	96.7	**0.0353**	0.035	100.6	ug/L	4	Standard
	Tl	205	193.3	47.9	**0.0263**	0.012	46.4	ug/L	2	Standard
	Pb	206	1382.4	8.3	**0.1795**	0.018	10.0	ug/L	240	Standard
	Pb	207	1152.7	10.0	**0.1653**	0.022	13.1	ug/L	198	Standard
	Pb	208	4722.3	7.7	**0.1699**	0.018	10.3	ug/L	883	Standard
	U	238	9861.9	3.5	**1.3841**	0.043	3.1	ug/L	3	Standard
>	**Bi**	209	540670.7	1.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	6986.6	1.5	**9.0573**	0.310	3.4	mg/L	37	Standard
K	39	308.3	17.9	**0.5733**	0.109	19.0	mg/L	38	Standard
Ca	43	606.7	4.1	**36.2577**	2.485	6.9	mg/L	10	Standard
Fe	54	348.6	15.4	**0.1605**	0.045	28.3	mg/L	179	Standard
Fe	57	585.0	8.4	**0.9378**	0.194	20.7	mg/L	335	Standard
> **Sc-1**	45	60365.1	2.3				mg/L	61029	Standard
Cl	35	31561.5	3.4				ug/L	20195	Standard
Kr	83	0.7	173.2				ug/L	4	Standard
Br	81	4964.2	11.3				ug/L	1547	Standard
P	31	20053.3	1.8				ug/L	15286	Standard
S	34	2155.2	4.8				ug/L	1572	Standard
Sr	88	343.3	18.3				ug/L	73	Standard
C	12	163.3	34.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	294.3	16.7				mg/L	6	Standard
Ho-1	165	223.3	9.3				mg/L	10	Standard
Er	166	120.0	16.7				mg/L	13	Standard
I	127	9371.2	3.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.836	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.604	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		105.463
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.184
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606098607
Sample Date/Time: Wednesday, June 29, 2016 13:35:26
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	96566.8	1.9				ug/L	74699	Standard
	Be	9	85.0	29.4	**0.0821**	0.021	25.7	ug/L	8	Standard
	Al	27	20333697.9	3.0	**107.0230**	2.931	2.7	ug/L	1493	Standard
	Sc	45	62230.9	2.2				ug/L	61029	Standard
	Ti	47	287.7	7.2	**0.6119**	0.056	9.2	ug/L	35	Standard
	V	51	3941.3	2.6	**0.3001**	0.017	5.7	ug/L	1435	Standard
	Cr	52	11512.0	2.6	**0.4518**	0.053	11.8	ug/L	7635	Standard
	Cr	53	838.4	4.6	**0.5317**	0.044	8.4	ug/L	363	Standard
	Mn	55	502202.8	0.8	**68.3542**	0.721	1.1	ug/L	747	Standard
	Co	59	4570.7	1.4	**0.6201**	0.010	1.6	ug/L	234	Standard
	Ni	60	3293.0	0.7	**1.5464**	0.014	0.9	ug/L	215	Standard
	Cu	65	6694.1	1.0	**3.3123**	0.070	2.1	ug/L	104	Standard
	Zn	66	11579.4	0.2	**9.6129**	0.092	1.0	ug/L	363	Standard
>	**Ge**	72	521399.1	1.0				ug/L	495142	Standard
	As	75	65.2	31.2	**0.1148**	0.017	14.9	ug/L	-50	Standard
	Se	82	28.9	16.0	**0.1117**	0.041	36.5	ug/L	14	Standard
	Se-1	77	63.7	8.1	**0.2056**	0.068	33.2	ug/L	42	Standard
>	**Ga**	71	136.7	35.5				mg/L	42	Standard
	Rb	85	5054.2	2.4				ug/L	17	Standard
	Y	89	452894.0	2.8				ug/L	417098	Standard
>	**Rh**	103	165.0	28.9				ug/L	13	Standard
	Mo	98	1211.0	1.7	**0.4303**	0.008	1.9	ug/L	11	Standard
	Ag	107	106.3	11.0	**0.0028**	0.002	64.6	ug/L	68	Standard
	Cd	111	72.3	5.5	**0.0253**	0.002	7.2	mg/L	2	Standard
	Cd	114	189.4	18.5	**0.0333**	0.006	19.3	ug/L	12	Standard
>	**In**	115	612132.4	0.4				ug/L	587441	Standard
	Sn	118	1080.0	6.7	**0.0827**	0.012	15.0	ug/L	497	Standard
	Sb	123	567.1	13.2	**0.1124**	0.015	13.5	ug/L	78	Standard
	Ba	135	35457.1	0.1	**16.6089**	0.050	0.3	ug/L	24	Standard
	Ce	140	1880.1	4.7				ug/L	25	Standard
>	**Tb**	159	996852.4	0.7				ug/L	939701	Standard
	Ho	165	58.3	17.8				ug/L	10	Standard
	Tl	203	60.0	16.9	**0.0051**	0.001	23.4	ug/L	4	Standard
	Tl	205	60.0	16.7	**0.0081**	0.001	15.8	ug/L	2	Standard
	Pb	206	636.0	0.7	**0.0415**	0.001	3.4	ug/L	240	Standard
	Pb	207	529.0	3.2	**0.0355**	0.003	9.7	ug/L	198	Standard
	Pb	208	2291.4	2.0	**0.0416**	0.003	7.7	ug/L	883	Standard
	U	238	20180.8	2.1	**2.7702**	0.079	2.9	ug/L	3	Standard
>	**Bi**	209	553749.9	0.8				ug/L	523984	Standard

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Na	23	5.0	100.0	**57.0696**	57.922	101.5	mg/L	0	Standard
Mg	24	5551.0	3.6	**6.9630**	0.244	3.5	mg/L	37	Standard
K	39	316.7	11.2	**0.5727**	0.081	14.1	mg/L	38	Standard
Ca	43	636.7	7.9	**36.9594**	3.698	10.0	mg/L	10	Standard
Fe	54	176.9	14.5	**0.0085**	0.018	212.8	mg/L	179	Standard
Fe	57	531.7	3.6	**0.6989**	0.084	12.0	mg/L	335	Standard
> **Sc-1**	45	62230.9	2.2				mg/L	61029	Standard
Cl	35	31386.5	1.7				ug/L	20195	Standard
Kr	83	2.3	89.2				ug/L	4	Standard
Br	81	3093.6	2.6				ug/L	1547	Standard
P	31	20912.8	5.9				ug/L	15286	Standard
S	34	2228.5	4.5				ug/L	1572	Standard
Sr	88	703.3	5.1				ug/L	73	Standard
C	12	126.7	40.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	102.2	30.1				mg/L	6	Standard
Ho-1	165	58.3	17.8				mg/L	10	Standard
Er	166	93.3	6.2				mg/L	13	Standard
I	127	29892.9	5.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.275	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.303	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.203
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.681
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606098609
Sample Date/Time: Wednesday, June 29, 2016 13:38:37
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	96550.0	0.2				ug/L	74699	Standard
	Be	9	53.3	14.3	**0.0545**	0.007	12.5	ug/L	8	Standard
	Al	27	22878376.4	1.6	**120.4307**	1.945	1.6	ug/L	1493	Standard
	Sc	45	62031.7	0.8				ug/L	61029	Standard
	Ti	47	1850.4	1.6	**4.6226**	0.192	4.2	ug/L	35	Standard
	V	51	5461.8	0.6	**0.5052**	0.022	4.3	ug/L	1435	Standard
	Cr	52	13396.9	1.2	**0.7280**	0.058	8.0	ug/L	7635	Standard
	Cr	53	1881.8	4.3	**1.6444**	0.138	8.4	ug/L	363	Standard
	Mn	55	79733.3	1.7	**10.9451**	0.135	1.2	ug/L	747	Standard
	Co	59	2496.2	2.4	**0.3289**	0.007	2.0	ug/L	234	Standard
	Ni	60	4821.8	0.8	**2.3714**	0.068	2.9	ug/L	215	Standard
	Cu	65	4208.3	2.7	**2.0873**	0.088	4.2	ug/L	104	Standard
	Zn	66	20900.1	0.5	**18.0858**	0.567	3.1	ug/L	363	Standard
>	**Ge**	72	511251.4	2.6				ug/L	495142	Standard
	As	75	201.6	14.3	**0.2338**	0.023	9.7	ug/L	-50	Standard
	Se	82	54.1	5.4	**0.3394**	0.016	4.7	ug/L	14	Standard
	Se-1	77	103.0	11.2	**0.7418**	0.124	16.8	ug/L	42	Standard
>	**Ga**	71	510.0	8.0				mg/L	42	Standard
	Rb	85	13392.6	2.9				ug/L	17	Standard
	Y	89	437578.5	1.9				ug/L	417098	Standard
>	**Rh**	103	115.0	21.7				ug/L	13	Standard
	Mo	98	379.6	2.6	**0.1321**	0.004	2.9	ug/L	11	Standard
	Ag	107	107.7	0.5	**0.0031**	0.000	8.0	ug/L	68	Standard
	Cd	111	160.7	1.3	**0.0664**	0.001	1.0	mg/L	2	Standard
	Cd	114	395.9	2.3	**0.0726**	0.002	3.0	ug/L	12	Standard
>	**In**	115	607119.7	1.0				ug/L	587441	Standard
	Sn	118	1270.1	2.5	**0.1157**	0.007	5.8	ug/L	497	Standard
	Sb	123	941.4	6.3	**0.1909**	0.012	6.2	ug/L	78	Standard
	Ba	135	18081.1	0.3	**8.5321**	0.064	0.8	ug/L	24	Standard
	Ce	140	9564.7	2.3				ug/L	25	Standard
>	**Tb**	159	994932.9	1.3				ug/L	939701	Standard
	Ho	165	368.3	5.1				ug/L	10	Standard
	Tl	203	147.3	4.5	**0.0153**	0.001	4.3	ug/L	4	Standard
	Tl	205	150.0	15.3	**0.0202**	0.003	16.2	ug/L	2	Standard
	Pb	206	1807.1	1.2	**0.2512**	0.001	0.3	ug/L	240	Standard
	Pb	207	1489.4	1.7	**0.2291**	0.005	2.2	ug/L	198	Standard
	Pb	208	6035.1	2.4	**0.2326**	0.004	1.7	ug/L	883	Standard
	U	238	2872.6	2.3	**0.3933**	0.005	1.2	ug/L	3	Standard
>	**Bi**	209	549776.1	1.1				ug/L	523984	Standard

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Na	23	6.7	114.6	**75.5001**	86.744	114.9	mg/L	0	Standard
Mg	24	5847.8	3.3	**7.3629**	0.301	4.1	mg/L	37	Standard
K	39	155.0	19.6	**0.2229**	0.066	29.5	mg/L	38	Standard
Ca	43	803.4	3.4	**47.4095**	2.024	4.3	mg/L	10	Standard
Fe	54	459.0	5.6	**0.2447**	0.024	9.9	mg/L	179	Standard
Fe	57	691.7	11.1	**1.2400**	0.273	22.0	mg/L	335	Standard
> **Sc-1**	45	62031.7	0.8				mg/L	61029	Standard
Cl	35	35055.2	1.5				ug/L	20195	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	8335.6	0.3				ug/L	1547	Standard
P	31	19207.2	4.0				ug/L	15286	Standard
S	34	2091.8	7.3				ug/L	1572	Standard
Sr	88	440.0	15.9				ug/L	73	Standard
C	12	146.7	7.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	580.9	19.4				mg/L	6	Standard
Ho-1	165	368.3	5.1				mg/L	10	Standard
Er	166	330.0	13.9				mg/L	13	Standard
I	127	13649.5	1.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.252	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.253	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.350
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.922
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606098611
Sample Date/Time: Wednesday, June 29, 2016 13:41:50
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	94928.2	1.7				ug/L	74699	Standard
	Be	9	611.7	2.1	**0.5543**	0.002	0.4	ug/L	8	Standard
	Al	27	35531075.2	1.8	**190.3104**	6.477	3.4	ug/L	1493	Standard
	Sc	45	58926.0	1.1				ug/L	61029	Standard
	Ti	47	1221.7	3.3	**3.0767**	0.071	2.3	ug/L	35	Standard
	V	51	7317.6	1.4	**0.7622**	0.017	2.2	ug/L	1435	Standard
	Cr	52	16086.9	1.7	**1.1219**	0.012	1.1	ug/L	7635	Standard
	Cr	53	9996.6	2.0	**10.3612**	0.096	0.9	ug/L	363	Standard
	Mn	55	583301.8	0.5	**82.6724**	0.812	1.0	ug/L	747	Standard
	Co	59	14960.7	0.8	**2.2024**	0.031	1.4	ug/L	234	Standard
	Ni	60	6882.6	4.3	**3.5089**	0.114	3.2	ug/L	215	Standard
	Cu	65	67223.1	1.5	**35.5977**	0.129	0.4	ug/L	104	Standard
	Zn	66	37202.6	1.0	**33.2122**	0.242	0.7	ug/L	363	Standard
>	**Ge**	72	500908.0	1.1				ug/L	495142	Standard
	As	75	1307.8	5.6	**1.2134**	0.054	4.4	ug/L	-50	Standard
	Se	82	362.7	2.0	**3.1282**	0.043	1.4	ug/L	14	Standard
	Se-1	77	555.0	5.1	**6.8873**	0.307	4.5	ug/L	42	Standard
>	**Ga**	71	435.0	11.9				mg/L	42	Standard
	Rb	85	18344.4	2.4				ug/L	17	Standard
	Y	89	436166.7	1.7				ug/L	417098	Standard
>	**Rh**	103	445.0	7.4				ug/L	13	Standard
	Mo	98	3054.9	0.8	**1.1522**	0.023	2.0	ug/L	11	Standard
	Ag	107	121.7	12.3	**0.0060**	0.002	41.3	ug/L	68	Standard
	Cd	111	41.7	14.4	**0.0123**	0.003	24.8	mg/L	2	Standard
	Cd	114	142.6	14.6	**0.0260**	0.004	14.4	ug/L	12	Standard
>	**In**	115	581588.5	1.2				ug/L	587441	Standard
	Sn	118	2201.8	2.3	**0.2861**	0.011	3.9	ug/L	497	Standard
	Sb	123	1347.5	5.7	**0.2874**	0.019	6.6	ug/L	78	Standard
	Ba	135	63997.2	1.5	**31.5730**	0.849	2.7	ug/L	24	Standard
	Ce	140	22939.0	3.1				ug/L	25	Standard
>	**Tb**	159	946929.2	0.6				ug/L	939701	Standard
	Ho	165	348.3	12.2				ug/L	10	Standard
	Tl	203	270.7	7.5	**0.0312**	0.002	6.9	ug/L	4	Standard
	Tl	205	231.7	2.5	**0.0327**	0.001	2.0	ug/L	2	Standard
	Pb	206	3400.0	1.8	**0.5672**	0.008	1.4	ug/L	240	Standard
	Pb	207	2794.6	0.7	**0.5207**	0.008	1.5	ug/L	198	Standard
	Pb	208	11397.0	1.2	**0.5356**	0.008	1.6	ug/L	883	Standard
	U	238	7265.4	1.1	**1.0543**	0.007	0.7	ug/L	3	Standard
>	**Bi**	209	522379.2	0.9				ug/L	523984	Standard

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Na	23	10.0	50.0	**119.8009**	60.997	50.9	mg/L	0	Standard
Mg	24	10421.9	2.0	**13.8711**	0.425	3.1	mg/L	37	Standard
K	39	453.3	5.1	**0.9237**	0.053	5.7	mg/L	38	Standard
Ca	43	1046.7	6.1	**65.9862**	4.937	7.5	mg/L	10	Standard
Fe	54	728.6	2.4	**0.5015**	0.016	3.2	mg/L	179	Standard
Fe	57	860.0	12.2	**1.9559**	0.399	20.4	mg/L	335	Standard
> **Sc-1**	45	58926.0	1.1				mg/L	61029	Standard
Cl	35	32129.4	1.2				ug/L	20195	Standard
Kr	83	1.0	0.0				ug/L	4	Standard
Br	81	75514.4	2.1				ug/L	1547	Standard
P	31	20090.0	4.4				ug/L	15286	Standard
S	34	2098.5	7.9				ug/L	1572	Standard
Sr	88	1583.4	4.7				ug/L	73	Standard
C	12	130.0	7.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	561.0	7.3				mg/L	6	Standard
Ho-1	165	348.3	12.2				mg/L	10	Standard
Er	166	256.7	6.0				mg/L	13	Standard
I	127	84570.2	9.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		127.081	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.164	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.004
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.694
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606098613
Sample Date/Time: Wednesday, June 29, 2016 13:45:02
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	101811.1	2.5				ug/L	74699	Standard
	Be	9	780.0	6.8	**0.6573**	0.030	4.5	ug/L	8	Standard
	Al	27	69460342.3	2.9	**346.7492**	1.873	0.5	ug/L	1493	Standard
	Sc	45	66852.2	1.8				ug/L	61029	Standard
	Ti	47	16395.2	2.4	**40.4139**	0.750	1.9	ug/L	35	Standard
	V	51	44929.4	0.9	**5.3782**	0.102	1.9	ug/L	1435	Standard
	Cr	52	38038.0	1.4	**3.7847**	0.045	1.2	ug/L	7635	Standard
	Cr	53	5357.6	0.6	**5.1013**	0.082	1.6	ug/L	363	Standard
	Mn	55	1205027.8	2.1	**162.0424**	5.610	3.5	ug/L	747	Standard
	Co	59	15267.0	2.9	**2.1291**	0.080	3.8	ug/L	234	Standard
	Ni	60	13379.6	2.6	**6.5697**	0.065	1.0	ug/L	215	Standard
	Cu	65	74766.0	1.3	**37.5331**	0.708	1.9	ug/L	104	Standard
	Zn	66	182914.0	1.7	**156.4214**	2.327	1.5	ug/L	363	Standard
>	**Ge**	72	528583.9	2.0				ug/L	495142	Standard
	As	75	2539.4	2.2	**2.1832**	0.013	0.6	ug/L	-50	Standard
	Se	82	108.7	5.6	**0.7905**	0.071	9.0	ug/L	14	Standard
	Se-1	77	150.3	9.2	**1.3050**	0.161	12.3	ug/L	42	Standard
>	**Ga**	71	5017.5	0.9				mg/L	42	Standard
	Rb	85	95755.1	2.6				ug/L	17	Standard
	Y	89	484844.4	1.2				ug/L	417098	Standard
>	**Rh**	103	451.7	17.2				ug/L	13	Standard
	Mo	98	2711.0	1.7	**0.9675**	0.010	1.1	ug/L	11	Standard
	Ag	107	547.0	8.0	**0.0673**	0.005	7.7	ug/L	68	Standard
	Cd	111	100.9	10.4	**0.0383**	0.005	14.0	mg/L	2	Standard
	Cd	114	263.2	6.1	**0.0470**	0.003	5.8	ug/L	12	Standard
>	**In**	115	613966.8	2.2				ug/L	587441	Standard
	Sn	118	1991.8	3.6	**0.2317**	0.015	6.6	ug/L	497	Standard
	Sb	123	971.4	9.0	**0.1947**	0.014	7.1	ug/L	78	Standard
	Ba	135	97214.2	0.8	**45.4386**	0.665	1.5	ug/L	24	Standard
	Ce	140	163522.7	0.6				ug/L	25	Standard
>	**Tb**	159	1011575.1	2.5				ug/L	939701	Standard
	Ho	165	4682.4	4.2				ug/L	10	Standard
	Tl	203	573.7	3.0	**0.0642**	0.003	4.6	ug/L	4	Standard
	Tl	205	525.0	7.2	**0.0698**	0.005	7.8	ug/L	2	Standard
	Pb	206	15938.7	1.8	**2.7562**	0.018	0.6	ug/L	240	Standard
	Pb	207	13053.6	0.6	**2.5367**	0.043	1.7	ug/L	198	Standard
	Pb	208	53401.0	1.9	**2.6245**	0.013	0.5	ug/L	883	Standard
	U	238	38818.0	2.5	**5.3391**	0.057	1.1	ug/L	3	Standard
>	**Bi**	209	553002.2	2.3				ug/L	523984	Standard

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Na	23	8.3	34.6	**88.0394**	31.556	35.8	mg/L	0	Standard
Mg	24	10193.4	4.3	**11.9448**	0.378	3.2	mg/L	37	Standard
K	39	798.4	2.0	**1.4974**	0.060	4.0	mg/L	38	Standard
Ca	43	1498.4	4.4	**83.9112**	4.508	5.4	mg/L	10	Standard
Fe	54	4251.3	3.0	**3.1535**	0.141	4.5	mg/L	179	Standard
Fe	57	1956.8	0.6	**4.9983**	0.081	1.6	mg/L	335	Standard
Sc-1	45	66852.2	1.8				mg/L	61029	Standard
Cl	35	38555.7	1.3				ug/L	20195	Standard
Kr	83	2.7	78.1				ug/L	4	Standard
Br	81	16405.6	4.1				ug/L	1547	Standard
P	31	22243.0	1.3				ug/L	15286	Standard
S	34	1961.8	3.3				ug/L	1572	Standard
Sr	88	2096.8	8.9				ug/L	73	Standard
C	12	170.0	21.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	107.9				mg/L	3	Standard
Dy	164	7687.7	5.1				mg/L	6	Standard
Ho-1	165	4682.4	4.2				mg/L	10	Standard
Er	166	4197.2	1.1				mg/L	13	Standard
I	127	34873.4	0.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		136.295	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		106.754	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.515
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.538
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Zn 66 Upper, S, EEE	Zn	66

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Method 6020 - Summary Report

Sample ID: L1606098615
Sample Date/Time: Wednesday, June 29, 2016 13:48:13
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	104439.3	4.8				ug/L	74699	Standard
	Be	9	536.7	12.4	**0.4427**	0.037	8.4	ug/L	8	Standard
	Al	27	77862989.2	8.3	**378.5121**	14.291	3.8	ug/L	1493	Standard
	Sc	45	58982.2	11.3				ug/L	61029	Standard
	Ti	47	2461.2	11.7	**6.5990**	0.434	6.6	ug/L	35	Standard
	V	51	4945.2	8.0	**0.4817**	0.017	3.5	ug/L	1435	Standard
	Cr	52	13134.4	7.3	**0.8107**	0.065	8.0	ug/L	7635	Standard
	Cr	53	1810.1	8.3	**1.6977**	0.117	6.9	ug/L	363	Standard
	Mn	55	1145096.1	8.2	**169.9719**	4.564	2.7	ug/L	747	Standard
	Co	59	4019.2	11.3	**0.5913**	0.032	5.4	ug/L	234	Standard
	Ni	60	7177.1	13.9	**3.8310**	0.314	8.2	ug/L	215	Standard
	Cu	65	41403.8	8.7	**22.8999**	0.588	2.6	ug/L	104	Standard
	Zn	66	43831.2	7.7	**41.0562**	0.750	1.8	ug/L	363	Standard
>	**Ge**	72	478398.7	6.6				ug/L	495142	Standard
	As	75	638.2	9.5	**0.6495**	0.045	6.9	ug/L	-50	Standard
	Se	82	102.9	17.3	**0.8353**	0.172	20.6	ug/L	14	Standard
	Se-1	77	94.0	19.4	**0.7027**	0.185	26.4	ug/L	42	Standard
>	**Ga**	71	463.3	11.0				mg/L	42	Standard
	Rb	85	23055.9	7.7				ug/L	17	Standard
	Y	89	432649.5	7.6				ug/L	417098	Standard
>	**Rh**	103	1188.4	10.3				ug/L	13	Standard
	Mo	98	1350.9	6.9	**0.5044**	0.013	2.5	ug/L	11	Standard
	Ag	107	139.0	6.4	**0.0086**	0.002	19.3	ug/L	68	Standard
	Cd	111	44.6	6.8	**0.0137**	0.002	16.4	mg/L	2	Standard
	Cd	114	129.2	31.8	**0.0237**	0.010	43.4	ug/L	12	Standard
>	**In**	115	583863.5	7.1				ug/L	587441	Standard
	Sn	118	2513.5	5.1	**0.3387**	0.012	3.5	ug/L	497	Standard
	Sb	123	705.1	6.8	**0.1478**	0.002	1.6	ug/L	78	Standard
	Ba	135	26452.2	7.2	**12.9866**	0.138	1.1	ug/L	24	Standard
	Ce	140	27398.2	9.1				ug/L	25	Standard
>	**Tb**	159	958605.6	6.1				ug/L	939701	Standard
	Ho	165	645.0	4.0				ug/L	10	Standard
	Tl	203	134.0	9.5	**0.0146**	0.001	7.1	ug/L	4	Standard
	Tl	205	118.3	6.5	**0.0169**	0.002	13.2	ug/L	2	Standard
	Pb	206	2508.9	7.1	**0.4009**	0.002	0.4	ug/L	240	Standard
	Pb	207	1976.5	6.7	**0.3487**	0.007	2.0	ug/L	198	Standard
	Pb	208	8160.9	6.7	**0.3634**	0.004	1.2	ug/L	883	Standard
	U	238	17292.6	7.2	**2.5205**	0.006	0.2	ug/L	3	Standard
>	**Bi**	209	521380.1	7.3				ug/L	523984	Standard

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Na	23	15.0	57.7	**176.9361**	92.757	52.4	mg/L	0	Standard
Mg	24	28440.1	8.6	**38.0068**	1.323	3.5	mg/L	37	Standard
K	39	673.3	1.9	**1.4418**	0.213	14.8	mg/L	38	Standard
Ca	43	1596.8	5.0	**102.4296**	8.312	8.1	mg/L	10	Standard
Fe	54	1077.2	5.0	**0.8118**	0.070	8.7	mg/L	179	Standard
Fe	57	1203.4	10.1	**3.1714**	0.327	10.3	mg/L	335	Standard
> **Sc-1**	45	58982.2	11.3				mg/L	61029	Standard
Cl	35	41482.2	7.1				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	15648.1	7.3				ug/L	1547	Standard
P	31	20014.9	6.8				ug/L	15286	Standard
S	34	1913.5	9.5				ug/L	1572	Standard
Sr	88	5429.3	11.3				ug/L	73	Standard
C	12	203.3	27.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	3	Standard
Dy	164	1127.2	20.3				mg/L	6	Standard
Ho-1	165	645.0	4.0				mg/L	10	Standard
Er	166	546.7	6.4				mg/L	13	Standard
I	127	112969.0	6.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		139.814	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.618	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.391
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.503
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606098617
Sample Date/Time: Wednesday, June 29, 2016 13:51:25
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	95101.0	2.9				ug/L	74699	Standard
	Be	9	61.7	9.4	**0.0626**	0.004	5.8	ug/L	8	Standard
	Al	27	16761639.5	0.8	**89.6118**	1.975	2.2	ug/L	1493	Standard
	Sc	45	53828.8	0.6				ug/L	61029	Standard
	Ti	47	756.4	12.3	**2.0144**	0.253	12.6	ug/L	35	Standard
	V	51	3040.4	3.6	**0.2328**	0.013	5.5	ug/L	1435	Standard
	Cr	52	11892.0	0.9	**0.6842**	0.022	3.3	ug/L	7635	Standard
	Cr	53	1066.7	2.7	**0.8986**	0.036	4.1	ug/L	363	Standard
	Mn	55	57447.7	1.9	**8.6332**	0.089	1.0	ug/L	747	Standard
	Co	59	1276.7	2.2	**0.1685**	0.005	2.7	ug/L	234	Standard
	Ni	60	2114.5	5.4	**1.0778**	0.056	5.2	ug/L	215	Standard
	Cu	65	5578.0	1.5	**3.0859**	0.022	0.7	ug/L	104	Standard
	Zn	66	8715.8	0.2	**8.0380**	0.061	0.8	ug/L	363	Standard
>	**Ge**	72	465226.7	0.9				ug/L	495142	Standard
	As	75	386.7	5.7	**0.4269**	0.018	4.2	ug/L	-50	Standard
	Se	82	42.7	8.0	**0.2761**	0.036	13.2	ug/L	14	Standard
	Se-1	77	67.0	16.1	**0.3532**	0.150	42.5	ug/L	42	Standard
>	**Ga**	71	183.3	18.2				mg/L	42	Standard
	Rb	85	8882.6	2.7				ug/L	17	Standard
	Y	89	409246.0	2.8				ug/L	417098	Standard
>	**Rh**	103	295.0	13.6				ug/L	13	Standard
	Mo	98	1514.9	3.6	**0.5995**	0.027	4.5	ug/L	11	Standard
	Ag	107	86.3	3.5	**0.0012**	0.001	48.9	ug/L	68	Standard
	Cd	111	45.4	6.6	**0.0152**	0.002	11.0	mg/L	2	Standard
	Cd	114	119.3	31.2	**0.0227**	0.008	33.9	ug/L	12	Standard
>	**In**	115	551838.0	2.1				ug/L	587441	Standard
	Sn	118	896.7	9.3	**0.0688**	0.017	24.4	ug/L	497	Standard
	Sb	123	476.3	5.5	**0.1045**	0.008	7.8	ug/L	78	Standard
	Ba	135	51101.0	1.7	**26.5634**	0.162	0.6	ug/L	24	Standard
	Ce	140	4162.2	9.3				ug/L	25	Standard
>	**Tb**	159	892953.9	1.2				ug/L	939701	Standard
	Ho	165	111.7	20.2				ug/L	10	Standard
	Tl	203	71.0	9.8	**0.0072**	0.001	12.5	ug/L	4	Standard
	Tl	205	50.0	10.0	**0.0075**	0.001	10.0	ug/L	2	Standard
	Pb	206	834.7	3.9	**0.0918**	0.006	7.0	ug/L	240	Standard
	Pb	207	668.0	3.0	**0.0768**	0.004	5.0	ug/L	198	Standard
	Pb	208	2813.8	1.3	**0.0825**	0.002	2.7	ug/L	883	Standard
	U	238	2276.2	2.7	**0.3405**	0.008	2.4	ug/L	3	Standard
>	**Bi**	209	502274.9	0.4				ug/L	523984	Standard

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Na	23	1.7	173.2	**21.6273**	37.451	173.2	mg/L	0	Standard
Mg	24	11037.4	4.7	**16.0863**	0.689	4.3	mg/L	37	Standard
K	39	470.0	10.1	**1.0642**	0.126	11.9	mg/L	38	Standard
Ca	43	383.3	8.5	**24.9281**	2.309	9.3	mg/L	10	Standard
Fe	54	307.3	17.1	**0.1571**	0.051	32.4	mg/L	179	Standard
Fe	57	490.0	5.4	**0.8143**	0.108	13.3	mg/L	335	Standard
> **Sc-1**	45	53828.8	0.6				mg/L	61029	Standard
Cl	35	29673.0	1.2				ug/L	20195	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	4564.0	9.2				ug/L	1547	Standard
P	31	17653.6	5.5				ug/L	15286	Standard
S	34	1876.8	5.1				ug/L	1572	Standard
Sr	88	1206.7	6.6				ug/L	73	Standard
C	12	186.7	18.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	3	Standard
Dy	164	173.0	22.9				mg/L	6	Standard
Ho-1	165	111.7	20.2				mg/L	10	Standard
Er	166	76.7	30.1				mg/L	13	Standard
I	127	8810.9	16.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		127.313	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.958	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.939
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.857
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606098619
Sample Date/Time: Wednesday, June 29, 2016 13:54:36
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	96013.3	1.6				ug/L	74699	Standard
	Be	9	225.0	13.5	**0.2062**	0.024	11.6	ug/L	8	Standard
	Al	27	3833929.3	1.4	**20.2847**	0.231	1.1	ug/L	1493	Standard
	Sc	45	56757.9	4.8				ug/L	61029	Standard
	Ti	47	657.0	3.0	**1.6551**	0.023	1.4	ug/L	35	Standard
	V	51	6468.0	2.1	**0.6763**	0.022	3.3	ug/L	1435	Standard
	Cr	52	12143.2	0.5	**0.6446**	0.043	6.7	ug/L	7635	Standard
	Cr	53	1533.4	8.3	**1.3595**	0.147	10.8	ug/L	363	Standard
	Mn	55	41319.9	1.1	**5.8936**	0.094	1.6	ug/L	747	Standard
	Co	59	1041.4	1.4	**0.1233**	0.005	3.8	ug/L	234	Standard
	Ni	60	1381.7	2.6	**0.6272**	0.001	0.2	ug/L	215	Standard
	Cu	65	22006.0	2.1	**11.9309**	0.100	0.8	ug/L	104	Standard
	Zn	66	12936.5	1.8	**11.6003**	0.101	0.9	ug/L	363	Standard
>	**Ge**	72	486496.6	2.4				ug/L	495142	Standard
	As	75	1429.3	4.7	**1.3578**	0.030	2.2	ug/L	-50	Standard
	Se	82	368.2	2.0	**3.2780**	0.104	3.2	ug/L	14	Standard
	Se-1	77	166.3	2.4	**1.6971**	0.106	6.2	ug/L	42	Standard
>	**Ga**	71	256.7	8.8				mg/L	42	Standard
	Rb	85	6678.1	5.5				ug/L	17	Standard
	Y	89	411615.1	2.5				ug/L	417098	Standard
>	**Rh**	103	45.0	40.1				ug/L	13	Standard
	Mo	98	2416.6	3.5	**0.9418**	0.055	5.8	ug/L	11	Standard
	Ag	107	106.0	14.6	**0.0040**	0.002	49.0	ug/L	68	Standard
	Cd	111	306.3	1.8	**0.1451**	0.002	1.4	mg/L	2	Standard
	Cd	114	658.6	9.3	**0.1319**	0.011	8.6	ug/L	12	Standard
>	**In**	115	562685.3	3.0				ug/L	587441	Standard
	Sn	118	1296.7	5.8	**0.1370**	0.009	6.5	ug/L	497	Standard
	Sb	123	1866.5	3.1	**0.4132**	0.007	1.8	ug/L	78	Standard
	Ba	135	49124.5	1.8	**25.0474**	0.324	1.3	ug/L	24	Standard
	Ce	140	4487.3	4.7				ug/L	25	Standard
>	**Tb**	159	930596.3	3.6				ug/L	939701	Standard
	Ho	165	203.3	14.2				ug/L	10	Standard
	Tl	203	145.3	15.0	**0.0163**	0.002	14.2	ug/L	4	Standard
	Tl	205	131.7	4.4	**0.0191**	0.000	1.8	ug/L	2	Standard
	Pb	206	1800.8	1.2	**0.2755**	0.007	2.5	ug/L	240	Standard
	Pb	207	1451.7	2.6	**0.2445**	0.002	0.8	ug/L	198	Standard
	Pb	208	5832.1	0.4	**0.2459**	0.009	3.7	ug/L	883	Standard
	U	238	34205.2	1.0	**5.1077**	0.154	3.0	ug/L	3	Standard
>	**Bi**	209	509656.0	3.1				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	92209.8	1.7	**128.1856**	8.381	6.5	mg/L	37	Standard
K	39	298.3	3.5	**0.5957**	0.033	5.6	mg/L	38	Standard
Ca	43	80.0	6.3	**2.9252**	0.551	18.8	mg/L	10	Standard
Fe	54	254.0	14.7	**0.0930**	0.030	32.4	mg/L	179	Standard
Fe	57	333.3	5.3	**0.1453**	0.073	50.0	mg/L	335	Standard
> **Sc-1**	45	56757.9	4.8				mg/L	61029	Standard
Cl	35	31152.7	1.5				ug/L	20195	Standard
Kr	83	0.7	86.6				ug/L	4	Standard
Br	81	53109.7	4.4				ug/L	1547	Standard
P	31	17403.3	2.0				ug/L	15286	Standard
S	34	1883.5	7.3				ug/L	1572	Standard
Sr	88	213.3	3.6				ug/L	73	Standard
C	12	256.7	12.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	288.4	16.8				mg/L	6	Standard
Ho-1	165	203.3	14.2				mg/L	10	Standard
Er	166	173.3	23.3				mg/L	13	Standard
I	127	470221.1	5.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.534	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.254	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.786
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.265
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606098625
Sample Date/Time: Wednesday, June 29, 2016 13:57:48
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	102613.0	0.8				ug/L	74699	Standard
	Be	9	78.3	9.8	**0.0724**	0.006	8.8	ug/L	8	Standard
	Al	27	33905192.3	1.5	**167.9500**	3.413	2.0	ug/L	1493	Standard
	Sc	45	63494.4	0.7				ug/L	61029	Standard
	Ti	47	6149.2	2.1	**15.7581**	0.447	2.8	ug/L	35	Standard
	V	51	12969.6	1.6	**1.4837**	0.027	1.8	ug/L	1435	Standard
	Cr	52	17892.2	0.6	**1.3372**	0.031	2.3	ug/L	7635	Standard
	Cr	53	3548.7	0.7	**3.4248**	0.009	0.3	ug/L	363	Standard
	Mn	55	3105877.1	1.7	**436.1197**	10.576	2.4	ug/L	747	Standard
	Co	59	6022.9	2.6	**0.8547**	0.030	3.5	ug/L	234	Standard
	Ni	60	6318.7	1.1	**3.1764**	0.053	1.7	ug/L	215	Standard
	Cu	65	5119.5	1.0	**2.5860**	0.011	0.4	ug/L	104	Standard
	Zn	66	19836.6	0.9	**17.3044**	0.276	1.6	ug/L	363	Standard
>	**Ge**	72	506357.7	0.8				ug/L	495142	Standard
	As	75	1090.3	6.9	**1.0117**	0.071	7.0	ug/L	-50	Standard
	Se	82	334.6	3.6	**2.8439**	0.125	4.4	ug/L	14	Standard
	Se-1	77	270.0	7.0	**2.9935**	0.272	9.1	ug/L	42	Standard
>	**Ga**	71	1363.4	8.0				mg/L	42	Standard
	Rb	85	42725.2	0.9				ug/L	17	Standard
	Y	89	453938.8	1.4				ug/L	417098	Standard
>	**Rh**	103	198.3	19.1				ug/L	13	Standard
	Mo	98	1348.4	1.8	**0.4789**	0.005	1.1	ug/L	11	Standard
	Ag	107	259.3	4.5	**0.0252**	0.002	7.6	ug/L	68	Standard
	Cd	111	351.0	2.3	**0.1529**	0.002	1.6	mg/L	2	Standard
	Cd	114	808.7	5.9	**0.1490**	0.010	6.6	ug/L	12	Standard
>	**In**	115	613191.6	0.9				ug/L	587441	Standard
	Sn	118	795.0	1.9	**0.0357**	0.003	9.4	ug/L	497	Standard
	Sb	123	319.9	2.9	**0.0614**	0.002	3.0	ug/L	78	Standard
	Ba	135	112678.5	1.7	**52.7237**	0.702	1.3	ug/L	24	Standard
	Ce	140	37260.8	2.0				ug/L	25	Standard
>	**Tb**	159	1001354.7	0.4				ug/L	939701	Standard
	Ho	165	1051.7	3.8				ug/L	10	Standard
	Tl	203	322.7	6.7	**0.0353**	0.003	7.6	ug/L	4	Standard
	Tl	205	283.3	17.7	**0.0376**	0.006	16.6	ug/L	2	Standard
	Pb	206	8100.8	1.1	**1.3649**	0.025	1.8	ug/L	240	Standard
	Pb	207	6526.4	1.1	**1.2323**	0.027	2.2	ug/L	198	Standard
	Pb	208	27115.2	0.7	**1.2953**	0.018	1.4	ug/L	883	Standard
	U	238	26591.0	2.4	**3.6542**	0.116	3.2	ug/L	3	Standard
>	**Bi**	209	553363.8	1.0				ug/L	523984	Standard

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Na	23	5.0	100.0	**55.1859**	55.233	100.1	mg/L	0	Standard
Mg	24	8027.1	0.4	**9.8947**	0.087	0.9	mg/L	37	Standard
K	39	523.3	14.3	**0.9970**	0.152	15.2	mg/L	38	Standard
Ca	43	861.7	11.2	**49.8050**	6.018	12.1	mg/L	10	Standard
Fe	54	1108.4	4.4	**0.7648**	0.035	4.5	mg/L	179	Standard
Fe	57	975.0	10.7	**2.1112**	0.341	16.2	mg/L	335	Standard
> **Sc-1**	45	63494.4	0.7				mg/L	61029	Standard
Cl	35	33805.7	1.3				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	35418.0	3.4				ug/L	1547	Standard
P	31	20113.3	1.1				ug/L	15286	Standard
S	34	2053.5	4.6				ug/L	1572	Standard
Sr	88	896.7	5.2				ug/L	73	Standard
C	12	130.0	35.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	1595.5	8.0				mg/L	6	Standard
Ho-1	165	1051.7	3.8				mg/L	10	Standard
Er	166	1000.0	4.0				mg/L	13	Standard
I	127	43091.5	8.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		137.369	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.265	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.384
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	105.607
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606098627
Sample Date/Time: Wednesday, June 29, 2016 14:00:59
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	98891.7	1.0				ug/L	74699	Standard
	Be	9	638.3	5.3	**0.5552**	0.024	4.3	ug/L	8	Standard
	Al	27	63228292.3	2.4	**324.9422**	4.583	1.4	ug/L	1493	Standard
	Sc	45	59185.4	3.1				ug/L	61029	Standard
	Ti	47	12099.8	1.5	**31.9570**	0.495	1.6	ug/L	35	Standard
	V	51	31610.6	0.8	**4.0089**	0.089	2.2	ug/L	1435	Standard
	Cr	52	29501.7	2.0	**2.9745**	0.066	2.2	ug/L	7635	Standard
	Cr	53	4110.6	4.5	**4.1359**	0.142	3.4	ug/L	363	Standard
	Mn	55	939161.3	0.8	**135.3408**	0.783	0.6	ug/L	747	Standard
	Co	59	11927.7	1.5	**1.7769**	0.013	0.7	ug/L	234	Standard
	Ni	60	10174.7	1.2	**5.3344**	0.025	0.5	ug/L	215	Standard
	Cu	65	63138.6	0.6	**33.9717**	0.415	1.2	ug/L	104	Standard
	Zn	66	96624.1	0.5	**88.3979**	1.021	1.2	ug/L	363	Standard
>	**Ge**	72	492984.7	1.4				ug/L	495142	Standard
	As	75	1814.9	1.7	**1.6870**	0.014	0.9	ug/L	-50	Standard
	Se	82	95.5	0.5	**0.7363**	0.016	2.2	ug/L	14	Standard
	Se-1	77	118.3	17.1	**1.0027**	0.256	25.5	ug/L	42	Standard
>	**Ga**	71	3340.4	1.3				mg/L	42	Standard
	Rb	85	72434.4	1.9				ug/L	17	Standard
	Y	89	474043.5	0.9				ug/L	417098	Standard
>	**Rh**	103	386.7	16.4				ug/L	13	Standard
	Mo	98	2396.5	0.7	**0.9091**	0.018	1.9	ug/L	11	Standard
	Ag	107	338.3	4.7	**0.0399**	0.003	6.7	ug/L	68	Standard
	Cd	111	101.2	9.9	**0.0414**	0.005	12.6	mg/L	2	Standard
	Cd	114	230.2	21.2	**0.0435**	0.009	20.9	ug/L	12	Standard
>	**In**	115	577417.6	1.2				ug/L	587441	Standard
	Sn	118	1793.4	6.6	**0.2178**	0.023	10.5	ug/L	497	Standard
	Sb	123	600.3	4.8	**0.1267**	0.008	6.1	ug/L	78	Standard
	Ba	135	70114.5	1.5	**34.8357**	0.414	1.2	ug/L	24	Standard
	Ce	140	125576.7	1.8				ug/L	25	Standard
>	**Tb**	159	953741.7	1.0				ug/L	939701	Standard
	Ho	165	3755.5	3.8				ug/L	10	Standard
	Tl	203	452.7	12.3	**0.0539**	0.006	11.6	ug/L	4	Standard
	Tl	205	385.0	10.1	**0.0548**	0.005	9.0	ug/L	2	Standard
	Pb	206	12183.9	0.5	**2.2443**	0.020	0.9	ug/L	240	Standard
	Pb	207	9920.2	0.8	**2.0519**	0.018	0.9	ug/L	198	Standard
	Pb	208	42107.7	1.6	**2.2055**	0.026	1.2	ug/L	883	Standard
	U	238	36138.4	1.7	**5.3249**	0.032	0.6	ug/L	3	Standard
>	**Bi**	209	516181.2	1.2				ug/L	523984	Standard

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Na	23	8.3	91.7	**99.8498**	90.493	90.6	mg/L	0	Standard
Mg	24	9524.7	1.9	**12.6179**	0.315	2.5	mg/L	37	Standard
K	39	723.4	10.8	**1.5367**	0.198	12.9	mg/L	38	Standard
Ca	43	1308.4	8.3	**82.6186**	4.814	5.8	mg/L	10	Standard
Fe	54	3102.8	2.2	**2.5749**	0.034	1.3	mg/L	179	Standard
Fe	57	1665.1	3.0	**4.7616**	0.022	0.5	mg/L	335	Standard
Sc-1	45	59185.4	3.1				mg/L	61029	Standard
Cl	35	38114.5	0.9				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	13185.7	5.6				ug/L	1547	Standard
P	31	20465.5	3.4				ug/L	15286	Standard
S	34	1960.1	7.7				ug/L	1572	Standard
Sr	88	1940.1	7.4				ug/L	73	Standard
C	12	216.7	23.7				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	3	Standard
Dy	164	5933.6	2.4				mg/L	6	Standard
Ho-1	165	3755.5	3.8				mg/L	10	Standard
Er	166	3430.4	0.6				mg/L	13	Standard
I	127	31850.1	1.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.387	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.564	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.294
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.511
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606098627
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 14:04:12
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	95022.8	6.4				ug/L	74699	Standard
	Be	9	57413.6	2.5	**51.3575**	1.980	3.9	ug/L	8	Standard
	Al	27	7949888.2	1.3	**42.6051**	2.208	5.2	ug/L	1493	Standard
	Sc	45	58088.0	4.8				ug/L	61029	Standard
	Ti	47	37651.4	1.9	**100.2698**	3.249	3.2	ug/L	35	Standard
	V	51	404346.6	1.8	**53.8882**	0.844	1.6	ug/L	1435	Standard
	Cr	52	381698.1	1.1	**51.0223**	1.642	3.2	ug/L	7635	Standard
	Cr	53	47042.9	0.3	**51.1128**	1.842	3.6	ug/L	363	Standard
	Mn	55	357326.2	3.2	**51.6830**	0.417	0.8	ug/L	747	Standard
	Co	59	371699.6	2.5	**56.8155**	0.522	0.9	ug/L	234	Standard
	Ni	60	94541.7	1.4	**50.9011**	1.597	3.1	ug/L	215	Standard
	Cu	65	94983.8	1.5	**51.4773**	2.133	4.1	ug/L	104	Standard
	Zn	66	56900.0	0.7	**52.1829**	1.541	3.0	ug/L	363	Standard
>	Ge	72	490310.3	3.4				ug/L	495142	Standard
	As	75	57867.9	1.8	**52.2509**	0.921	1.8	ug/L	-50	Standard
	Se	82	5817.8	2.4	**53.4067**	0.847	1.6	ug/L	14	Standard
	Se-1	77	4012.5	1.4	**54.8814**	1.095	2.0	ug/L	42	Standard
>	Ga	71	80.0	6.3				mg/L	42	Standard
	Rb	85	831.7	8.5				ug/L	17	Standard
	Y	89	423000.5	2.4				ug/L	417098	Standard
>	Rh	103	26.7	57.3				ug/L	13	Standard
	Mo	98	279510.1	1.2	**103.0732**	1.481	1.4	ug/L	11	Standard
	Ag	107	337025.9	0.7	**50.8187**	0.653	1.3	ug/L	68	Standard
	Cd	111	104719.9	1.6	**49.2197**	0.492	1.0	mg/L	2	Standard
	Cd	114	254484.5	1.8	**48.7789**	1.357	2.8	ug/L	12	Standard
>	In	115	597695.8	1.6				ug/L	587441	Standard
	Sn	118	297589.5	3.3	**49.9660**	0.932	1.9	ug/L	497	Standard
	Sb	123	237800.4	0.6	**50.0611**	0.480	1.0	ug/L	78	Standard
	Ba	135	98785.4	1.3	**47.4247**	0.676	1.4	ug/L	24	Standard
	Ce	140	118.3	6.5				ug/L	25	Standard
>	Tb	159	962162.8	1.8				ug/L	939701	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	431721.7	1.4	**50.5906**	0.299	0.6	ug/L	4	Standard
	Tl	205	386667.7	1.8	**52.2055**	0.331	0.6	ug/L	2	Standard
	Pb	206	286495.7	0.6	**51.7458**	1.032	2.0	ug/L	240	Standard
	Pb	207	254256.8	1.2	**51.6830**	0.707	1.4	ug/L	198	Standard
	Pb	208	993731.8	1.4	**51.1193**	0.294	0.6	ug/L	883	Standard
	U	238	371822.3	1.0	**52.1805**	0.682	1.3	ug/L	3	Standard
>	Bi	209	542470.6	1.9				ug/L	523984	Standard

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Na	23	1.7	173.2	**20.6892**	35.826	173.2	mg/L	0	Standard
Mg	24	4115.6	5.8	**5.5148**	0.066	1.2	mg/L	37	Standard
K	39	1971.8	1.5	**4.4711**	0.214	4.8	mg/L	38	Standard
Ca	43	71.7	16.1	**2.2502**	0.891	39.6	mg/L	10	Standard
Fe	54	5897.1	1.5	**5.1229**	0.272	5.3	mg/L	179	Standard
Fe	57	1798.4	2.6	**5.3592**	0.387	7.2	mg/L	335	Standard
Sc-1	45	58088.0	4.8				mg/L	61029	Standard
Cl	35	26443.8	4.7				ug/L	20195	Standard
Kr	83	1.0	0.0				ug/L	4	Standard
Br	81	1943.5	9.9				ug/L	1547	Standard
P	31	18503.0	1.3				ug/L	15286	Standard
S	34	2213.5	3.2				ug/L	1572	Standard
Sr	88	76.7	10.0				ug/L	73	Standard
C	12	120.0	43.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	2.9	217.0				mg/L	6	Standard
Ho-1	165	8.3	34.6				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	3483.8	25.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.715		
Al	27	85.210		
Sc	45			
Ti	47	100.270		
V	51	107.776		
Cr	52	102.045		
Cr	53			
Mn	55	103.366		
Co	59	113.631		
Ni	60	101.802		
Cu	65	102.955		
Zn	66	104.366		
Ge	72		99.024	
As	75	104.502		
Se	82	106.813		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	103.073		
Ag	107	101.637		
Cd	111	98.439		
Cd	114			
In	115		101.746	
Sn	118	99.932		
Sb	123	100.122		
Ba	135	94.849		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.181		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.239		
U	238	104.361		
Bi	209		103.528	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	
QC Std 6	Co	59	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 14:07:23
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	87483.9	4.7				ug/L	74699	Standard
	Be	9	21.7	96.1	**0.0292**	0.021	73.0	ug/L	8	Standard
	Al	27	18230.8	94.8	**0.0950**	0.107	112.2	ug/L	1493	Standard
	Sc	45	56471.8	3.5				ug/L	61029	Standard
	Ti	47	36.0	46.7	**-0.0098**	0.050	510.8	ug/L	35	Standard
	V	51	1334.8	2.3	**-0.0125**	0.010	80.4	ug/L	1435	Standard
	Cr	52	6684.1	1.9	**-0.0897**	0.031	35.0	ug/L	7635	Standard
	Cr	53	393.3	6.4	**0.1115**	0.043	38.6	ug/L	363	Standard
	Mn	55	1346.4	57.0	**0.0546**	0.123	224.6	ug/L	747	Standard
	Co	59	278.3	17.3	**0.0065**	0.009	139.3	ug/L	234	Standard
	Ni	60	177.0	5.9	**-0.0261**	0.004	17.0	ug/L	215	Standard
	Cu	65	145.0	10.8	**-0.0230**	0.009	41.3	ug/L	104	Standard
	Zn	66	399.3	2.4	**-0.0757**	0.021	28.0	ug/L	363	Standard
>	**Ge**	72	478426.6	3.3				ug/L	495142	Standard
	As	75	-39.3	49.9	**0.0231**	0.019	81.6	ug/L	-50	Standard
	Se	82	16.5	11.7	**0.0181**	0.023	124.9	ug/L	14	Standard
	Se-1	77	38.7	26.9	**-0.0773**	0.131	170.1	ug/L	42	Standard
>	**Ga**	71	66.7	15.6				mg/L	42	Standard
	Rb	85	18.3	41.7				ug/L	17	Standard
	Y	89	416242.9	2.8				ug/L	417098	Standard
>	**Rh**	103	15.0	57.7				ug/L	13	Standard
	Mo	98	272.1	23.3	**0.0976**	0.024	24.4	ug/L	11	Standard
	Ag	107	106.0	6.8	**0.0036**	0.001	28.2	ug/L	68	Standard
	Cd	111	10.2	22.2	**-0.0030**	0.001	37.6	mg/L	2	Standard
	Cd	114	31.6	53.8	**0.0041**	0.003	80.7	ug/L	12	Standard
>	**In**	115	580179.3	0.7				ug/L	587441	Standard
	Sn	118	746.7	16.1	**0.0348**	0.022	62.5	ug/L	497	Standard
	Sb	123	368.4	24.4	**0.0758**	0.020	26.4	ug/L	78	Standard
	Ba	135	41.0	10.6	**0.0043**	0.002	51.4	ug/L	24	Standard
	Ce	140	38.3	61.6				ug/L	25	Standard
>	**Tb**	159	945404.9	0.5				ug/L	939701	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	65.7	8.7	**0.0061**	0.001	8.8	ug/L	4	Standard
	Tl	205	95.0	45.9	**0.0133**	0.006	45.0	ug/L	2	Standard
	Pb	206	276.0	7.9	**-0.0202**	0.003	15.8	ug/L	240	Standard
	Pb	207	258.0	12.6	**-0.0163**	0.006	36.3	ug/L	198	Standard
	Pb	208	1134.3	12.6	**-0.0143**	0.008	56.7	ug/L	883	Standard
	U	238	91.0	75.8	**0.0087**	0.010	115.9	ug/L	3	Standard
>	**Bi**	209	530301.2	1.8				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	46.7	81.1	**0.0007**	0.054	7923.6	mg/L	37	Standard
K	39	40.0	45.1	**-0.0194**	0.039	202.6	mg/L	38	Standard
Ca	43	28.3	20.4	**-0.5841**	0.427	73.1	mg/L	10	Standard
Fe	54	129.2	39.5	**-0.0191**	0.049	258.2	mg/L	179	Standard
Fe	57	241.7	27.6	**-0.1803**	0.270	149.7	mg/L	335	Standard
> **Sc-1**	45	56471.8	3.5				mg/L	61029	Standard
Cl	35	26027.0	1.3				ug/L	20195	Standard
Kr	83	3.0	57.7				ug/L	4	Standard
Br	81	1783.4	6.5				ug/L	1547	Standard
P	31	18152.5	2.7				ug/L	15286	Standard
S	34	2168.5	1.2				ug/L	1572	Standard
Sr	88	56.7	27.0				ug/L	73	Standard
C	12	93.3	24.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	6.5	86.7				mg/L	6	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	2606.9	21.7				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.624	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.764	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	101.206	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606098629
Sample Date/Time: Wednesday, June 29, 2016 14:10:36
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	98303.0	2.6				ug/L	74699	Standard
	Be	9	480.0	19.8	**0.4216**	0.078	18.5	ug/L	8	Standard
	Al	27	74581592.0	2.0	**385.7852**	11.899	3.1	ug/L	1493	Standard
	Sc	45	57877.0	1.4				ug/L	61029	Standard
	Ti	47	6572.4	2.9	**18.4374**	0.321	1.7	ug/L	35	Standard
	V	51	8784.7	0.2	**1.0487**	0.019	1.8	ug/L	1435	Standard
	Cr	52	16164.0	1.7	**1.3092**	0.018	1.4	ug/L	7635	Standard
	Cr	53	2105.1	0.9	**2.1070**	0.052	2.5	ug/L	363	Standard
	Mn	55	1145494.2	1.1	**175.8506**	2.171	1.2	ug/L	747	Standard
	Co	59	6198.3	3.2	**0.9668**	0.035	3.6	ug/L	234	Standard
	Ni	60	8328.3	2.3	**4.6339**	0.069	1.5	ug/L	215	Standard
	Cu	65	39558.9	1.3	**22.6316**	0.139	0.6	ug/L	104	Standard
	Zn	66	37507.0	2.0	**36.2726**	0.401	1.1	ug/L	363	Standard
>	**Ge**	72	462898.1	1.3				ug/L	495142	Standard
	As	75	729.1	4.9	**0.7559**	0.035	4.6	ug/L	-50	Standard
	Se	82	97.9	9.3	**0.8168**	0.100	12.2	ug/L	14	Standard
	Se-1	77	92.7	14.7	**0.7365**	0.213	29.0	ug/L	42	Standard
>	**Ga**	71	1238.4	2.6				mg/L	42	Standard
	Rb	85	36981.8	1.6				ug/L	17	Standard
	Y	89	423750.9	0.9				ug/L	417098	Standard
>	**Rh**	103	1170.0	7.1				ug/L	13	Standard
	Mo	98	1333.1	1.3	**0.5111**	0.005	0.9	ug/L	11	Standard
	Ag	107	159.7	2.8	**0.0124**	0.001	8.3	ug/L	68	Standard
	Cd	111	50.7	12.0	**0.0171**	0.003	15.0	mg/L	2	Standard
	Cd	114	154.3	14.1	**0.0289**	0.004	13.0	ug/L	12	Standard
>	**In**	115	568573.6	2.1				ug/L	587441	Standard
	Sn	118	2385.2	8.8	**0.3269**	0.032	9.8	ug/L	497	Standard
	Sb	123	701.5	2.0	**0.1511**	0.004	2.9	ug/L	78	Standard
	Ba	135	49620.1	0.4	**25.0380**	0.447	1.8	ug/L	24	Standard
	Ce	140	69524.2	1.7				ug/L	25	Standard
>	**Tb**	159	941672.2	2.5				ug/L	939701	Standard
	Ho	165	1511.7	2.5				ug/L	10	Standard
	Tl	203	215.3	8.2	**0.0254**	0.002	6.7	ug/L	4	Standard
	Tl	205	171.7	4.4	**0.0251**	0.001	2.6	ug/L	2	Standard
	Pb	206	5244.6	2.1	**0.9485**	0.002	0.2	ug/L	240	Standard
	Pb	207	4168.9	1.9	**0.8423**	0.008	0.9	ug/L	198	Standard
	Pb	208	17565.0	0.7	**0.8990**	0.013	1.4	ug/L	883	Standard
	U	238	17410.3	1.3	**2.6228**	0.019	0.7	ug/L	3	Standard
>	**Bi**	209	504494.7	1.9				ug/L	523984	Standard

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Na	23	13.3	78.1	**161.6266**	126.012	78.0	mg/L	0	Standard
Mg	24	27959.1	0.6	**37.9939**	0.282	0.7	mg/L	37	Standard
K	39	733.4	5.5	**1.5946**	0.079	5.0	mg/L	38	Standard
Ca	43	1693.4	2.8	**110.2950**	4.030	3.7	mg/L	10	Standard
Fe	54	1507.3	3.7	**1.2090**	0.035	2.9	mg/L	179	Standard
Fe	57	1286.7	5.0	**3.5362**	0.177	5.0	mg/L	335	Standard
Sc-1	45	57877.0	1.4				mg/L	61029	Standard
Cl	35	39812.2	0.7				ug/L	20195	Standard
Kr	83	2.3	24.7				ug/L	4	Standard
Br	81	15855.0	0.8				ug/L	1547	Standard
P	31	19874.7	1.1				ug/L	15286	Standard
S	34	1861.8	8.3				ug/L	1572	Standard
Sr	88	5489.3	0.8				ug/L	73	Standard
C	12	143.3	29.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	2426.6	8.1				mg/L	6	Standard
Ho-1	165	1511.7	2.5				mg/L	10	Standard
Er	166	1466.7	15.1				mg/L	13	Standard
I	127	114010.2	6.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		131.599	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		93.488	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.788
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.280
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606098629
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Method 6020 - Summary Report

Sample ID: L1606098639
Sample Date/Time: Wednesday, June 29, 2016 14:13:47
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	95709.8	2.9				ug/L	74699	Standard
	Be	9	26.7	92.5	**0.0314**	0.022	70.9	ug/L	8	Standard
	Al	27	47777.1	19.3	**0.2396**	0.041	17.2	ug/L	1493	Standard
	Sc	45	57199.5	2.6				ug/L	61029	Standard
	Ti	47	140.3	60.7	**0.2633**	0.227	86.2	ug/L	35	Standard
	V	51	2113.6	5.5	**0.0856**	0.015	17.8	ug/L	1435	Standard
	Cr	52	11519.7	1.7	**0.5382**	0.024	4.4	ug/L	7635	Standard
	Cr	53	731.7	8.2	**0.4658**	0.068	14.5	ug/L	363	Standard
	Mn	55	10046.3	0.4	**1.3019**	0.003	0.2	ug/L	747	Standard
	Co	59	277.3	4.9	**0.0049**	0.002	38.1	ug/L	234	Standard
	Ni	60	403.7	2.5	**0.0928**	0.006	6.6	ug/L	215	Standard
	Cu	65	2594.2	1.0	**1.2969**	0.011	0.8	ug/L	104	Standard
	Zn	66	5488.0	1.5	**4.5940**	0.065	1.4	ug/L	363	Standard
>	**Ge**	72	492746.6	0.5				ug/L	495142	Standard
	As	75	-23.9	159.7	**0.0381**	0.034	90.0	ug/L	-50	Standard
	Se	82	16.9	42.3	**0.0162**	0.065	398.3	ug/L	14	Standard
	Se-1	77	44.7	15.2	**-0.0080**	0.091	1136.4	ug/L	42	Standard
>	**Ga**	71	35.0	24.7				mg/L	42	Standard
	Rb	85	228.3	6.7				ug/L	17	Standard
	Y	89	426313.2	2.4				ug/L	417098	Standard
>	**Rh**	103	20.0	66.1				ug/L	13	Standard
	Mo	98	146.2	8.6	**0.0487**	0.005	10.8	ug/L	11	Standard
	Ag	107	84.7	10.6	**-0.0000**	0.001	3427.7	ug/L	68	Standard
	Cd	111	14.4	26.2	**-0.0011**	0.002	163.5	mg/L	2	Standard
	Cd	114	36.0	7.5	**0.0048**	0.001	11.2	ug/L	12	Standard
>	**In**	115	592771.3	1.1				ug/L	587441	Standard
	Sn	118	1206.7	2.0	**0.1101**	0.007	6.0	ug/L	497	Standard
	Sb	123	2747.6	2.7	**0.5790**	0.016	2.8	ug/L	78	Standard
	Ba	135	327.7	1.8	**0.1426**	0.002	1.3	ug/L	24	Standard
	Ce	140	215.0	46.7				ug/L	25	Standard
>	**Tb**	159	942434.8	1.8				ug/L	939701	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	30.7	28.5	**0.0019**	0.001	54.2	ug/L	4	Standard
	Tl	205	31.7	59.8	**0.0045**	0.003	57.0	ug/L	2	Standard
	Pb	206	347.7	8.5	**-0.0077**	0.005	63.4	ug/L	240	Standard
	Pb	207	296.0	3.8	**-0.0091**	0.002	22.4	ug/L	198	Standard
	Pb	208	1207.0	5.0	**-0.0113**	0.003	23.3	ug/L	883	Standard
	U	238	16.7	21.1	**-0.0021**	0.000	23.4	ug/L	3	Standard
>	**Bi**	209	536687.4	0.8				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	78.3	9.8	**0.0427**	0.008	19.8	mg/L	37	Standard
K	39	33.3	56.8	**-0.0347**	0.047	136.1	mg/L	38	Standard
Ca	43	38.3	27.2	**0.0551**	0.672	1218.0	mg/L	10	Standard
Fe	54	152.5	13.6	**-0.0001**	0.021	24429.9	mg/L	179	Standard
Fe	57	270.0	10.3	**-0.0961**	0.083	86.0	mg/L	335	Standard
Sc-1	45	57199.5	2.6				mg/L	61029	Standard
Cl	35	30633.6	0.6				ug/L	20195	Standard
Kr	83	2.7	78.1				ug/L	4	Standard
Br	81	2093.5	12.2				ug/L	1547	Standard
P	31	17446.7	2.4				ug/L	15286	Standard
S	34	1971.8	2.9				ug/L	1572	Standard
Sr	88	48.3	26.0				ug/L	73	Standard
C	12	116.7	34.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	9.0	108.0				mg/L	6	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	4304.0	50.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		128.128	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		99.516	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.907
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.424
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606098641
Sample Date/Time: Wednesday, June 29, 2016 14:16:59
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	87267.4	3.2				ug/L	74699	Standard
	Be	9	11.7	49.5	**0.0189**	0.005	28.8	ug/L	8	Standard
	Al	27	605511.0	1.7	**3.5149**	0.083	2.4	ug/L	1493	Standard
	Sc	45	54390.8	2.9				ug/L	61029	Standard
	Ti	47	93.0	12.4	**0.1442**	0.032	22.4	ug/L	35	Standard
	V	51	1794.1	5.9	**0.0496**	0.015	30.2	ug/L	1435	Standard
	Cr	52	10365.2	1.5	**0.4195**	0.024	5.7	ug/L	7635	Standard
	Cr	53	613.3	8.2	**0.3551**	0.058	16.5	ug/L	363	Standard
	Mn	55	4513.0	1.6	**0.5208**	0.012	2.3	ug/L	747	Standard
	Co	59	310.3	5.3	**0.0112**	0.002	21.0	ug/L	234	Standard
	Ni	60	490.0	6.7	**0.1461**	0.017	11.6	ug/L	215	Standard
	Cu	65	1018.0	2.6	**0.4608**	0.017	3.7	ug/L	104	Standard
	Zn	66	3968.5	2.5	**3.2944**	0.091	2.8	ug/L	363	Standard
>	**Ge**	72	479837.7	0.4				ug/L	495142	Standard
	As	75	-18.8	39.3	**0.0423**	0.007	15.9	ug/L	-50	Standard
	Se	82	16.1	20.6	**0.0139**	0.032	229.1	ug/L	14	Standard
	Se-1	77	51.0	14.8	**0.0980**	0.104	105.7	ug/L	42	Standard
>	**Ga**	71	46.7	22.3				mg/L	42	Standard
	Rb	85	2146.8	6.0				ug/L	17	Standard
	Y	89	405082.7	1.5				ug/L	417098	Standard
>	**Rh**	103	10.0	86.6				ug/L	13	Standard
	Mo	98	183.9	8.1	**0.0672**	0.006	9.5	ug/L	11	Standard
	Ag	107	85.0	8.5	**0.0009**	0.001	123.2	ug/L	68	Standard
	Cd	111	58.3	9.8	**0.0215**	0.003	12.3	mg/L	2	Standard
	Cd	114	162.0	10.0	**0.0312**	0.003	9.6	ug/L	12	Standard
>	**In**	115	556306.9	1.6				ug/L	587441	Standard
	Sn	118	983.4	6.5	**0.0831**	0.013	16.0	ug/L	497	Standard
	Sb	123	290.8	14.6	**0.0617**	0.011	17.2	ug/L	78	Standard
	Ba	135	1301.4	2.0	**0.6554**	0.007	1.1	ug/L	24	Standard
	Ce	140	1251.7	2.7				ug/L	25	Standard
>	**Tb**	159	894371.7	2.0				ug/L	939701	Standard
	Ho	165	23.3	61.9				ug/L	10	Standard
	Tl	203	26.7	21.3	**0.0015**	0.001	46.3	ug/L	4	Standard
	Tl	205	18.3	68.6	**0.0028**	0.002	63.1	ug/L	2	Standard
	Pb	206	368.7	5.0	**-0.0008**	0.004	496.5	ug/L	240	Standard
	Pb	207	301.3	5.5	**-0.0052**	0.004	82.3	ug/L	198	Standard
	Pb	208	1198.4	1.5	**-0.0089**	0.002	20.6	ug/L	883	Standard
	U	238	7.7	32.8	**-0.0033**	0.000	11.3	ug/L	3	Standard
>	**Bi**	209	513924.4	1.5				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	638.3	13.6	**0.8624**	0.151	17.5	mg/L	37	Standard
K	39	86.7	3.3	**0.1010**	0.012	12.3	mg/L	38	Standard
Ca	43	31.7	48.2	**-0.2871**	1.074	374.0	mg/L	10	Standard
Fe	54	129.1	21.5	**-0.0150**	0.029	192.4	mg/L	179	Standard
Fe	57	250.0	12.2	**-0.1181**	0.141	119.7	mg/L	335	Standard
Sc-1	45	54390.8	2.9				mg/L	61029	Standard
Cl	35	28123.4	3.1				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	1706.8	4.2				ug/L	1547	Standard
P	31	17456.7	1.2				ug/L	15286	Standard
S	34	1960.1	4.3				ug/L	1572	Standard
Sr	88	86.7	3.3				ug/L	73	Standard
C	12	86.7	35.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	22.9	67.6				mg/L	6	Standard
Ho-1	165	23.3	61.9				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	6631.5	5.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		116.826	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.909	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.700
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.080
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606102602
Sample Date/Time: Wednesday, June 29, 2016 14:51:20
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	98959.1	4.1				ug/L	74699	Standard
	Be	9	893.4	7.1	**0.7730**	0.024	3.1	ug/L	8	Standard
	Al	27	86838575.1	3.0	**446.1622**	5.675	1.3	ug/L	1493	Standard
	Sc	45	59841.3	1.2				ug/L	61029	Standard
	Ti	47	724.7	2.7	**1.9675**	0.086	4.4	ug/L	35	Standard
	V	51	-99401.9	27.0	**-14.4927**	3.863	26.7	ug/L	1435	Standard
	Cr	52	14286817.6	0.7	**2092.1702**	38.595	1.8	ug/L	7635	Standard
	Cr	53	1819264.9	1.0	**2136.8631**	30.527	1.4	ug/L	363	Standard
	Mn	55	9369393.8	2.3	**1460.7209**	18.166	1.2	ug/L	747	Standard
	Co	59	953653.0	0.8	**156.7618**	2.325	1.5	ug/L	234	Standard
	Ni	60	10094931.6	0.5	**5854.0954**	89.919	1.5	ug/L	215	Standard
	Cu	65	555284.9	0.4	**323.8508**	6.370	2.0	ug/L	104	Standard
	Zn	66	64094.6	1.0	**63.2545**	1.058	1.7	ug/L	363	Standard
>	**Ge**	72	456115.5	1.9				ug/L	495142	Standard
	As	75	3627.2	1.9	**3.5767**	0.135	3.8	ug/L	-50	Standard
	Se	82	1754.2	3.0	**17.2111**	0.289	1.7	ug/L	14	Standard
	Se-1	77	3450.1	4.6	**50.7001**	3.400	6.7	ug/L	42	Standard
>	**Ga**	71	493.3	9.8				mg/L	42	Standard
	Rb	85	15579.7	1.3				ug/L	17	Standard
	Y	89	510259.3	1.5				ug/L	417098	Standard
>	**Rh**	103	536.7	10.8				ug/L	13	Standard
	Mo	98	52406.3	2.2	**22.0721**	0.200	0.9	ug/L	11	Standard
	Ag	107	797.7	2.2	**0.1246**	0.004	3.1	ug/L	68	Standard
	Cd	111	4820.0	1.8	**2.5808**	0.025	1.0	mg/L	2	Standard
	Cd	114	11654.3	2.8	**2.5494**	0.039	1.5	ug/L	12	Standard
>	**In**	115	523117.8	1.3				ug/L	587441	Standard
	Sn	118	2368.5	5.4	**0.3606**	0.023	6.4	ug/L	497	Standard
	Sb	123	2240.5	1.3	**0.5347**	0.001	0.2	ug/L	78	Standard
	Ba	135	135783.1	0.9	**74.4848**	0.361	0.5	ug/L	24	Standard
	Ce	140	104687.1	1.1				ug/L	25	Standard
>	**Tb**	159	898543.7	0.7				ug/L	939701	Standard
	Ho	165	6684.8	2.2				ug/L	10	Standard
	Tl	203	178.0	4.1	**0.0225**	0.001	5.6	ug/L	4	Standard
	Tl	205	203.3	37.2	**0.0321**	0.012	38.4	ug/L	2	Standard
	Pb	206	1304.4	5.0	**0.2026**	0.016	8.1	ug/L	240	Standard
	Pb	207	1055.7	2.5	**0.1793**	0.004	2.5	ug/L	198	Standard
	Pb	208	4341.2	2.0	**0.1854**	0.004	2.0	ug/L	883	Standard
	U	238	4585.0	0.8	**0.7423**	0.007	0.9	ug/L	3	Standard
>	**Bi**	209	467454.5	1.3				ug/L	523984	Standard

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Na	23	5.0	0.0	**58.7812**	0.729	1.2	mg/L	0	Standard
Mg	24	188890.8	2.9	**248.6881**	10.353	4.2	mg/L	37	Standard
K	39	2185.2	4.4	**4.8106**	0.175	3.6	mg/L	38	Standard
Ca	43	1135.0	6.5	**70.5642**	3.873	5.5	mg/L	10	Standard
Fe	54	9878.2	4.8	**8.4031**	0.399	4.8	mg/L	179	Standard
Fe	57	3267.0	5.5	**10.2558**	0.748	7.3	mg/L	335	Standard
> **Sc-1**	45	59841.3	1.2				mg/L	61029	Standard
Cl	35	28240.3	1.1				ug/L	20195	Standard
Kr	83	2.7	142.0				ug/L	4	Standard
Br	81	339155.5	2.6				ug/L	1547	Standard
P	31	29607.2	0.7				ug/L	15286	Standard
S	34	2378.5	1.9				ug/L	1572	Standard
Sr	88	1895.1	7.4				ug/L	73	Standard
C	12	120.0	28.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	86.7	35.3				mg/L	3	Standard
Dy	164	9299.8	2.7				mg/L	6	Standard
Ho-1	165	6684.8	2.2				mg/L	10	Standard
Er	166	6331.3	1.7				mg/L	13	Standard
I	127	153619.9	12.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.478	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.118	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	89.050
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	89.212
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
V 51 Lower	V	51	

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Cr 52 Upper, S, EEE	Cr	52
Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Co 59 Upper, S, EEE	Co	59
Ni 60 Upper, S, EEE	Ni	60
Cu 65 Upper, S, EEE	Cu	65

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606102604
Sample Date/Time: Wednesday, June 29, 2016 14:54:31
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82386.8	1.6				ug/L	74699	Standard
	Be	9	41.7	50.0	**0.0505**	0.021	41.9	ug/L	8	Standard
	Al	27	6418180.7	1.0	**39.5946**	1.017	2.6	ug/L	1493	Standard
	Sc	45	68191.6	3.4				ug/L	61029	Standard
	Ti	47	2431.5	5.8	**6.2763**	0.263	4.2	ug/L	35	Standard
	V	51	8932.1	2.8	**0.9822**	0.034	3.4	ug/L	1435	Standard
	Cr	52	19971.2	5.8	**1.6585**	0.113	6.8	ug/L	7635	Standard
	Cr	53	16018.5	1.2	**16.9336**	0.479	2.8	ug/L	363	Standard
	Mn	55	134583.1	0.5	**19.1035**	0.326	1.7	ug/L	747	Standard
	Co	59	5374.0	2.6	**0.7730**	0.008	1.1	ug/L	234	Standard
	Ni	60	7430.2	8.6	**3.8249**	0.274	7.2	ug/L	215	Standard
	Cu	65	1488.1	5.9	**0.6921**	0.035	5.0	ug/L	104	Standard
	Zn	66	5451.0	0.8	**4.5156**	0.102	2.3	ug/L	363	Standard
>	**Ge**	72	497254.0	1.7				ug/L	495142	Standard
	As	75	427.8	16.4	**0.4399**	0.063	14.3	ug/L	-50	Standard
	Se	82	161.6	5.9	**1.3278**	0.065	4.9	ug/L	14	Standard
	Se-1	77	695.3	4.1	**8.8552**	0.225	2.5	ug/L	42	Standard
>	**Ga**	71	420.0	2.4				mg/L	42	Standard
	Rb	85	8292.3	2.6				ug/L	17	Standard
	Y	89	430205.9	2.4				ug/L	417098	Standard
>	**Rh**	103	40.0	12.5				ug/L	13	Standard
	Mo	98	177.9	8.2	**0.0624**	0.005	8.3	ug/L	11	Standard
	Ag	107	97.3	5.7	**0.0023**	0.001	38.0	ug/L	68	Standard
	Cd	111	330.0	5.3	**0.1533**	0.008	5.4	mg/L	2	Standard
	Cd	114	777.4	4.0	**0.1527**	0.007	4.3	ug/L	12	Standard
>	**In**	115	575297.3	2.0				ug/L	587441	Standard
	Sn	118	1836.8	3.5	**0.2263**	0.005	2.3	ug/L	497	Standard
	Sb	123	541.3	2.5	**0.1143**	0.005	4.2	ug/L	78	Standard
	Ba	135	259403.2	1.0	**129.4148**	1.250	1.0	ug/L	24	Standard
	Ce	140	48153.1	1.6				ug/L	25	Standard
>	**Tb**	159	953820.3	0.6				ug/L	939701	Standard
	Ho	165	763.4	3.9				ug/L	10	Standard
	Tl	203	147.7	11.5	**0.0162**	0.002	12.5	ug/L	4	Standard
	Tl	205	135.0	25.9	**0.0192**	0.005	26.2	ug/L	2	Standard
	Pb	206	2333.8	1.6	**0.3679**	0.004	1.0	ug/L	240	Standard
	Pb	207	1897.5	1.5	**0.3318**	0.006	1.8	ug/L	198	Standard
	Pb	208	7911.8	1.2	**0.3500**	0.006	1.7	ug/L	883	Standard
	U	238	272.0	3.5	**0.0353**	0.002	4.3	ug/L	3	Standard
>	**Bi**	209	521315.2	0.9				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	45454.8	3.6	**52.4459**	0.539	1.0	mg/L	37	Standard
K	39	88.3	3.3	**0.0609**	0.011	18.4	mg/L	38	Standard
Ca	43	100.0	8.7	**3.1440**	0.659	21.0	mg/L	10	Standard
Fe	54	556.2	7.6	**0.2841**	0.037	12.9	mg/L	179	Standard
Fe	57	410.0	16.9	**0.1734**	0.212	122.1	mg/L	335	Standard
> **Sc-1**	45	68191.6	3.4				mg/L	61029	Standard
Cl	35	26725.6	1.1				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	35244.3	3.6				ug/L	1547	Standard
P	31	35015.4	1.7				ug/L	15286	Standard
S	34	2091.8	5.9				ug/L	1572	Standard
Sr	88	225.0	20.0				ug/L	73	Standard
C	12	103.3	39.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	93.3	12.4				mg/L	3	Standard
Dy	164	1034.1	12.7				mg/L	6	Standard
Ho-1	165	763.4	3.9				mg/L	10	Standard
Er	166	680.0	15.4				mg/L	13	Standard
I	127	80476.5	1.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.292	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.426	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.933
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.491
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606102606
Sample Date/Time: Wednesday, June 29, 2016 14:57:42
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	93356.7	0.9				ug/L	74699	Standard
	Be	9	136.7	43.6	**0.1318**	0.054	40.9	ug/L	8	Standard
	Al	27	4727947.0	2.8	**25.7324**	0.870	3.4	ug/L	1493	Standard
	Sc	45	71265.6	1.4				ug/L	61029	Standard
	Ti	47	7167.7	1.1	**18.5395**	0.116	0.6	ug/L	35	Standard
	V	51	33631.6	0.4	**4.1963**	0.093	2.2	ug/L	1435	Standard
	Cr	52	43684.3	3.9	**4.7878**	0.170	3.6	ug/L	7635	Standard
	Cr	53	18915.1	0.4	**19.8540**	0.330	1.7	ug/L	363	Standard
	Mn	55	527300.2	1.1	**74.5358**	0.480	0.6	ug/L	747	Standard
	Co	59	47125.2	1.5	**6.9996**	0.016	0.2	ug/L	234	Standard
	Ni	60	57578.9	1.0	**30.2025**	0.274	0.9	ug/L	215	Standard
	Cu	65	3787.5	1.8	**1.9028**	0.007	0.4	ug/L	104	Standard
	Zn	66	29686.7	1.5	**26.3448**	0.262	1.0	ug/L	363	Standard
>	**Ge**	72	502153.4	1.7				ug/L	495142	Standard
	As	75	1552.5	5.8	**1.4257**	0.058	4.0	ug/L	-50	Standard
	Se	82	328.6	4.9	**2.8136**	0.101	3.6	ug/L	14	Standard
	Se-1	77	866.0	3.6	**11.0672**	0.235	2.1	ug/L	42	Standard
>	**Ga**	71	2006.8	3.5				mg/L	42	Standard
	Rb	85	28431.7	2.8				ug/L	17	Standard
	Y	89	467809.8	1.5				ug/L	417098	Standard
>	**Rh**	103	28.3	36.7				ug/L	13	Standard
	Mo	98	2788.7	2.4	**1.0189**	0.018	1.8	ug/L	11	Standard
	Ag	107	187.0	8.5	**0.0152**	0.002	14.7	ug/L	68	Standard
	Cd	111	184.5	8.6	**0.0785**	0.007	8.5	mg/L	2	Standard
	Cd	114	502.9	12.6	**0.0940**	0.013	13.9	ug/L	12	Standard
>	**In**	115	599816.0	1.2				ug/L	587441	Standard
	Sn	118	1385.1	2.5	**0.1375**	0.003	2.2	ug/L	497	Standard
	Sb	123	315.5	7.5	**0.0620**	0.005	7.5	ug/L	78	Standard
	Ba	135	37805.8	2.1	**18.0728**	0.162	0.9	ug/L	24	Standard
	Ce	140	83749.2	1.1				ug/L	25	Standard
>	**Tb**	159	971524.4	1.2				ug/L	939701	Standard
	Ho	165	1393.4	2.1				ug/L	10	Standard
	Tl	203	289.7	7.1	**0.0339**	0.002	6.5	ug/L	4	Standard
	Tl	205	258.3	11.0	**0.0368**	0.004	11.7	ug/L	2	Standard
	Pb	206	3853.2	1.2	**0.6604**	0.004	0.6	ug/L	240	Standard
	Pb	207	3010.0	1.5	**0.5732**	0.009	1.6	ug/L	198	Standard
	Pb	208	13337.3	2.3	**0.6473**	0.013	1.9	ug/L	883	Standard
	U	238	859.0	4.4	**0.1221**	0.005	4.0	ug/L	3	Standard
>	**Bi**	209	516635.2	0.9				ug/L	523984	Standard

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Na	23	1.7	173.2	**16.3563**	28.321	173.2	mg/L	0	Standard
Mg	24	103702.1	2.0	**114.5988**	3.552	3.1	mg/L	37	Standard
K	39	251.7	12.0	**0.3627**	0.062	17.2	mg/L	38	Standard
Ca	43	61.7	26.1	**0.8208**	0.922	112.4	mg/L	10	Standard
Fe	54	1412.4	2.3	**0.8871**	0.015	1.7	mg/L	179	Standard
Fe	57	645.0	2.8	**0.8030**	0.026	3.3	mg/L	335	Standard
> **Sc-1**	45	71265.6	1.4				mg/L	61029	Standard
Cl	35	28407.3	0.4				ug/L	20195	Standard
Kr	83	1.7	34.6				ug/L	4	Standard
Br	81	49253.3	3.6				ug/L	1547	Standard
P	31	41409.9	2.5				ug/L	15286	Standard
S	34	2068.5	4.4				ug/L	1572	Standard
Sr	88	155.0	22.6				ug/L	73	Standard
C	12	133.3	34.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	57.3				mg/L	3	Standard
Dy	164	2353.9	2.8				mg/L	6	Standard
Ho-1	165	1393.4	2.1				mg/L	10	Standard
Er	166	1453.4	9.2				mg/L	13	Standard
I	127	3067238.7	11.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.978	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.416	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.107	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.597	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606102607
Sample Date/Time: Wednesday, June 29, 2016 15:00:54
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86025.2	1.8				ug/L	74699	Standard
	Be	9	83.3	29.6	**0.0901**	0.026	28.3	ug/L	8	Standard
	Al	27	3430436.9	1.2	**20.2582**	0.272	1.3	ug/L	1493	Standard
	Sc	45	67818.2	2.7				ug/L	61029	Standard
	Ti	47	2650.2	2.1	**6.1960**	0.095	1.5	ug/L	35	Standard
	V	51	9706.1	1.4	**0.9634**	0.025	2.6	ug/L	1435	Standard
	Cr	52	14237.0	2.0	**0.7086**	0.035	4.9	ug/L	7635	Standard
	Cr	53	2521.9	11.8	**2.1295**	0.275	12.9	ug/L	363	Standard
	Mn	55	50752.2	3.1	**6.4246**	0.167	2.6	ug/L	747	Standard
	Co	59	8541.7	4.1	**1.1290**	0.040	3.6	ug/L	234	Standard
	Ni	60	2905.6	5.8	**1.2753**	0.074	5.8	ug/L	215	Standard
	Cu	65	1384.7	3.1	**0.5672**	0.017	3.0	ug/L	104	Standard
	Zn	66	5145.2	1.6	**3.7928**	0.039	1.0	ug/L	363	Standard
>	**Ge**	72	549096.7	0.7				ug/L	495142	Standard
	As	75	307.3	24.2	**0.3069**	0.059	19.1	ug/L	-50	Standard
	Se	82	131.2	8.7	**0.9395**	0.088	9.3	ug/L	14	Standard
	Se-1	77	177.7	11.5	**1.5705**	0.241	15.4	ug/L	42	Standard
>	**Ga**	71	765.0	18.4				mg/L	42	Standard
	Rb	85	11574.4	1.2				ug/L	17	Standard
	Y	89	476523.2	1.2				ug/L	417098	Standard
>	**Rh**	103	40.0	54.5				ug/L	13	Standard
	Mo	98	552.0	3.2	**0.1876**	0.008	4.1	ug/L	11	Standard
	Ag	107	103.3	5.6	**0.0019**	0.001	51.8	ug/L	68	Standard
	Cd	111	131.7	9.5	**0.0509**	0.006	12.0	mg/L	2	Standard
	Cd	114	303.7	9.9	**0.0531**	0.005	10.1	ug/L	12	Standard
>	**In**	115	629575.3	1.6				ug/L	587441	Standard
	Sn	118	1851.8	1.5	**0.2011**	0.002	0.9	ug/L	497	Standard
	Sb	123	475.2	2.5	**0.0908**	0.004	4.2	ug/L	78	Standard
	Ba	135	119108.2	2.3	**54.2912**	1.481	2.7	ug/L	24	Standard
	Ce	140	65755.7	1.8				ug/L	25	Standard
>	**Tb**	159	1004571.7	2.5				ug/L	939701	Standard
	Ho	165	1471.7	8.7				ug/L	10	Standard
	Tl	203	123.3	5.2	**0.0121**	0.001	4.7	ug/L	4	Standard
	Tl	205	98.3	10.6	**0.0129**	0.002	11.8	ug/L	2	Standard
	Pb	206	2854.9	1.5	**0.4229**	0.014	3.4	ug/L	240	Standard
	Pb	207	2325.8	2.5	**0.3831**	0.018	4.6	ug/L	198	Standard
	Pb	208	9906.6	0.9	**0.4144**	0.011	2.7	ug/L	883	Standard
	U	238	660.3	1.2	**0.0843**	0.002	2.3	ug/L	3	Standard
>	**Bi**	209	566874.3	1.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	9059.4	5.1	**10.4668**	0.674	6.4	mg/L	37	Standard
K	39	175.0	7.6	**0.2337**	0.017	7.4	mg/L	38	Standard
Ca	43	76.7	10.0	**1.8315**	0.359	19.6	mg/L	10	Standard
Fe	54	778.8	6.8	**0.4564**	0.046	10.1	mg/L	179	Standard
Fe	57	450.0	7.8	**0.3039**	0.129	42.4	mg/L	335	Standard
> **Sc-1**	45	67818.2	2.7				mg/L	61029	Standard
Cl	35	27265.2	1.0				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	4797.4	2.1				ug/L	1547	Standard
P	31	22328.1	2.9				ug/L	15286	Standard
S	34	1868.4	11.0				ug/L	1572	Standard
Sr	88	170.0	23.0				ug/L	73	Standard
C	12	116.7	4.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	2276.8	3.2				mg/L	6	Standard
Ho-1	165	1471.7	8.7				mg/L	10	Standard
Er	166	1323.4	4.9				mg/L	13	Standard
I	127	142556.3	31.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.163	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.897	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.172
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.185
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 15:04:07
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83434.4	4.1				ug/L	74699	Standard
	Be	9	52151.3	1.6	**53.0799**	1.438	2.7	ug/L	8	Standard
	Al	27	8001829.5	1.2	**48.7762**	1.563	3.2	ug/L	1493	Standard
	Sc	45	63472.7	2.1				ug/L	61029	Standard
	Ti	47	41544.5	0.5	**100.8598**	1.507	1.5	ug/L	35	Standard
	V	51	430823.0	0.6	**52.3478**	0.567	1.1	ug/L	1435	Standard
	Cr	52	414183.8	1.0	**50.4520**	0.020	0.0	ug/L	7635	Standard
	Cr	53	51435.5	2.1	**50.9262**	0.597	1.2	ug/L	363	Standard
	Mn	55	402509.0	2.2	**53.1108**	1.647	3.1	ug/L	747	Standard
	Co	59	395807.1	0.7	**55.1753**	0.902	1.6	ug/L	234	Standard
	Ni	60	102515.7	1.1	**50.3079**	0.215	0.4	ug/L	215	Standard
	Cu	65	102297.5	1.1	**50.5232**	0.685	1.4	ug/L	104	Standard
	Zn	66	61288.7	1.4	**51.2272**	0.860	1.7	ug/L	363	Standard
>	Ge	72	537577.7	1.0				ug/L	495142	Standard
	As	75	61234.0	0.5	**50.4168**	0.738	1.5	ug/L	-50	Standard
	Se	82	6132.0	1.1	**51.3300**	1.089	2.1	ug/L	14	Standard
	Se-1	77	4299.6	0.9	**53.6055**	0.977	1.8	ug/L	42	Standard
>	Ga	71	78.3	42.5				mg/L	42	Standard
	Rb	85	866.7	7.4				ug/L	17	Standard
	Y	89	460058.1	1.7				ug/L	417098	Standard
>	Rh	103	33.3	31.2				ug/L	13	Standard
	Mo	98	295506.5	0.5	**103.9241**	2.114	2.0	ug/L	11	Standard
	Ag	107	348188.0	0.5	**50.0657**	0.748	1.5	ug/L	68	Standard
	Cd	111	111062.0	1.3	**49.7777**	0.346	0.7	mg/L	2	Standard
	Cd	114	271614.5	0.9	**49.6432**	0.990	2.0	ug/L	12	Standard
>	In	115	626816.0	1.9				ug/L	587441	Standard
	Sn	118	313548.1	1.3	**50.2246**	1.384	2.8	ug/L	497	Standard
	Sb	123	246409.0	0.1	**49.4692**	0.867	1.8	ug/L	78	Standard
	Ba	135	105775.6	0.8	**48.4328**	1.255	2.6	ug/L	24	Standard
	Ce	140	66.7	48.8				ug/L	25	Standard
>	Tb	159	996778.4	1.8				ug/L	939701	Standard
	Ho	165	16.7	34.6				ug/L	10	Standard
	Tl	203	442598.6	0.7	**50.9461**	0.764	1.5	ug/L	4	Standard
	Tl	205	402531.2	1.7	**53.3816**	0.705	1.3	ug/L	2	Standard
	Pb	206	287928.0	0.2	**51.0713**	0.393	0.8	ug/L	240	Standard
	Pb	207	257921.1	0.2	**51.4941**	0.566	1.1	ug/L	198	Standard
	Pb	208	1040092.9	0.4	**52.5571**	0.545	1.0	ug/L	883	Standard
	U	238	381264.5	1.2	**52.5495**	0.479	0.9	ug/L	3	Standard
>	Bi	209	552262.9	0.9				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4305.6	5.5	**5.2771**	0.213	4.0	mg/L	37	Standard
K	39	2275.2	2.4	**4.7239**	0.217	4.6	mg/L	38	Standard
Ca	43	126.7	42.6	**5.1579**	3.228	62.6	mg/L	10	Standard
Fe	54	6415.2	4.5	**5.0956**	0.328	6.4	mg/L	179	Standard
Fe	57	1851.8	4.1	**4.9827**	0.373	7.5	mg/L	335	Standard
> **Sc-1**	45	63472.7	2.1				mg/L	61029	Standard
Cl	35	28119.4	1.3				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	2310.2	13.5				ug/L	1547	Standard
P	31	19991.5	1.1				ug/L	15286	Standard
S	34	2273.5	5.1				ug/L	1572	Standard
Sr	88	71.7	10.7				ug/L	73	Standard
C	12	66.7	8.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	8.6	116.8				mg/L	6	Standard
Ho-1	165	16.7	34.6				mg/L	10	Standard
Er	166	30.0	0.0				mg/L	13	Standard
I	127	25116.6	23.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	106.160		
Al	27	97.552		
Sc	45			
Ti	47	100.860		
V	51	104.696		
Cr	52	100.904		
Cr	53			
Mn	55	106.222		
Co	59	110.351		
Ni	60	100.616		
Cu	65	101.046		
Zn	66	102.454		
> Ge	72		108.570	
As	75	100.834		
Se	82	102.660		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	103.924		
Ag	107	100.131		
Cd	111	99.555		
Cd	114			
In	115			106.703
Sn	118	100.449		
Sb	123	98.938		
Ba	135	96.866		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.892		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.114		
U	238	105.099		
Bi	209			105.397
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Co	59	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 15:07:18
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	85012.9	2.0				ug/L	74699	Standard
	Be	9	28.3	27.0	**0.0359**	0.008	21.1	ug/L	8	Standard
	Al	27	3885.6	39.7	**0.0100**	0.010	97.9	ug/L	1493	Standard
	Sc	45	66216.1	1.0				ug/L	61029	Standard
	Ti	47	42.3	11.2	**-0.0066**	0.011	167.9	ug/L	35	Standard
	V	51	1610.8	4.5	**0.0001**	0.010	18188.0	ug/L	1435	Standard
	Cr	52	7733.0	4.2	**-0.0667**	0.042	62.7	ug/L	7635	Standard
	Cr	53	656.7	7.6	**0.3218**	0.049	15.4	ug/L	363	Standard
	Mn	55	934.4	2.8	**-0.0250**	0.004	15.9	ug/L	747	Standard
	Co	59	270.3	16.3	**0.0003**	0.006	2278.1	ug/L	234	Standard
	Ni	60	353.0	46.0	**0.0492**	0.080	162.9	ug/L	215	Standard
	Cu	65	160.7	5.6	**-0.0245**	0.004	18.2	ug/L	104	Standard
	Zn	66	427.3	1.4	**-0.0957**	0.006	6.2	ug/L	363	Standard
>	Ge	72	539852.0	0.5				ug/L	495142	Standard
	As	75	-35.2	72.3	**0.0308**	0.021	67.1	ug/L	-50	Standard
	Se	82	23.4	13.4	**0.0577**	0.027	47.1	ug/L	14	Standard
	Se-1	77	65.0	15.6	**0.1944**	0.131	67.4	ug/L	42	Standard
>	Ga	71	48.3	15.8				mg/L	42	Standard
	Rb	85	13.3	21.7				ug/L	17	Standard
	Y	89	460334.1	1.4				ug/L	417098	Standard
>	Rh	103	15.0	57.7				ug/L	13	Standard
	Mo	98	325.6	30.7	**0.1063**	0.035	33.0	ug/L	11	Standard
	Ag	107	121.0	14.9	**0.0041**	0.003	62.9	ug/L	68	Standard
	Cd	111	13.2	31.2	**-0.0021**	0.002	85.0	mg/L	2	Standard
	Cd	114	51.9	43.2	**0.0072**	0.004	56.5	ug/L	12	Standard
>	In	115	641477.2	0.6				ug/L	587441	Standard
	Sn	118	860.0	23.5	**0.0400**	0.031	77.0	ug/L	497	Standard
	Sb	123	396.3	20.9	**0.0735**	0.016	21.4	ug/L	78	Standard
	Ba	135	45.3	20.4	**0.0043**	0.004	99.1	ug/L	24	Standard
	Ce	140	36.7	15.7				ug/L	25	Standard
>	Tb	159	1015779.3	0.6				ug/L	939701	Standard
	Ho	165	5.0	100.0				ug/L	10	Standard
	Tl	203	76.0	35.5	**0.0066**	0.003	43.8	ug/L	4	Standard
	Tl	205	63.3	18.2	**0.0082**	0.001	17.5	ug/L	2	Standard
	Pb	206	309.7	4.7	**-0.0185**	0.002	12.2	ug/L	240	Standard
	Pb	207	263.0	6.6	**-0.0197**	0.003	14.7	ug/L	198	Standard
	Pb	208	1081.0	8.8	**-0.0217**	0.004	19.1	ug/L	883	Standard
	U	238	55.3	39.0	**0.0029**	0.003	97.3	ug/L	3	Standard
>	Bi	209	576716.4	0.8				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.8612**	30.928	173.2	mg/L	0	Standard
Mg	24	48.3	39.2	**-0.0075**	0.023	309.1	mg/L	37	Standard
K	39	65.0	38.5	**0.0181**	0.050	275.9	mg/L	38	Standard
Ca	43	31.7	9.1	**-0.6795**	0.172	25.4	mg/L	10	Standard
Fe	54	165.7	15.0	**-0.0089**	0.019	210.6	mg/L	179	Standard
Fe	57	258.3	12.9	**-0.2654**	0.099	37.5	mg/L	335	Standard
Sc-1	45	66216.1	1.0				mg/L	61029	Standard
Cl	35	27856.9	0.3				ug/L	20195	Standard
Kr	83	4.0	43.3				ug/L	4	Standard
Br	81	1983.5	3.1				ug/L	1547	Standard
P	31	20308.6	3.1				ug/L	15286	Standard
S	34	2271.8	3.7				ug/L	1572	Standard
Sr	88	51.7	22.3				ug/L	73	Standard
C	12	73.3	34.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	20.0	86.6				mg/L	6	Standard
Ho-1	165	5.0	100.0				mg/L	10	Standard
Er	166	0.0					mg/L	13	Standard
I	127	13137.4	11.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		109.030	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.199
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.064
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBS M5 WG573099-02
Sample Date/Time: Wednesday, June 29, 2016 15:10:32
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82837.5	1.4				ug/L	74699	Standard
	Be	9	20.0	75.0	**0.0280**	0.015	53.9	ug/L	8	Standard
	Al	27	15988.5	12.5	**0.0848**	0.014	16.0	ug/L	1493	Standard
	Sc	45	64671.1	2.4				ug/L	61029	Standard
	Ti	47	45.0	20.0	**-0.0015**	0.023	1562.0	ug/L	35	Standard
	V	51	1647.0	1.8	**0.0017**	0.004	236.7	ug/L	1435	Standard
	Cr	52	11218.5	4.3	**0.3456**	0.052	15.0	ug/L	7635	Standard
	Cr	53	1063.4	5.0	**0.7116**	0.068	9.6	ug/L	363	Standard
	Mn	55	1756.1	5.1	**0.0801**	0.011	14.2	ug/L	747	Standard
	Co	59	312.3	6.3	**0.0055**	0.003	48.1	ug/L	234	Standard
	Ni	60	1377.4	15.3	**0.5415**	0.099	18.4	ug/L	215	Standard
	Cu	65	261.7	8.1	**0.0235**	0.011	45.2	ug/L	104	Standard
	Zn	66	1613.1	3.7	**0.8814**	0.040	4.6	ug/L	363	Standard
>	**Ge**	72	547319.5	1.5				ug/L	495142	Standard
	As	75	-42.5	100.6	**0.0255**	0.034	133.0	ug/L	-50	Standard
	Se	82	18.0	18.7	**0.0100**	0.027	272.2	ug/L	14	Standard
	Se-1	77	65.0	16.6	**0.1841**	0.145	78.6	ug/L	42	Standard
>	**Ga**	71	66.7	22.9				mg/L	42	Standard
	Rb	85	36.7	56.8				ug/L	17	Standard
	Y	89	450480.7	0.9				ug/L	417098	Standard
>	**Rh**	103	26.7	10.8				ug/L	13	Standard
	Mo	98	139.4	1.7	**0.0435**	0.001	2.2	ug/L	11	Standard
	Ag	107	102.7	18.1	**0.0019**	0.003	140.0	ug/L	68	Standard
	Cd	111	13.1	71.9	**-0.0020**	0.004	209.6	mg/L	2	Standard
	Cd	114	24.5	136.0	**0.0024**	0.006	256.9	ug/L	12	Standard
>	**In**	115	624818.4	0.5				ug/L	587441	Standard
	Sn	118	765.0	2.8	**0.0284**	0.003	12.0	ug/L	497	Standard
	Sb	123	189.1	20.4	**0.0339**	0.008	23.4	ug/L	78	Standard
	Ba	135	83.0	7.9	**0.0221**	0.003	14.0	ug/L	24	Standard
	Ce	140	301.7	18.8				ug/L	25	Standard
>	**Tb**	159	992078.8	0.6				ug/L	939701	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	40.0	57.5	**0.0027**	0.003	94.2	ug/L	4	Standard
	Tl	205	43.3	29.0	**0.0058**	0.002	28.5	ug/L	2	Standard
	Pb	206	319.7	11.1	**-0.0160**	0.006	36.6	ug/L	240	Standard
	Pb	207	262.0	4.6	**-0.0191**	0.002	12.7	ug/L	198	Standard
	Pb	208	1094.7	2.8	**-0.0202**	0.002	8.1	ug/L	883	Standard
	U	238	22.0	58.0	**-0.0015**	0.002	114.9	ug/L	3	Standard
>	**Bi**	209	568214.1	0.6				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	43.3	17.6	**-0.0124**	0.008	67.7	mg/L	37	Standard
K	39	35.0	51.5	**-0.0416**	0.036	86.5	mg/L	38	Standard
Ca	43	30.0	28.9	**-0.7286**	0.543	74.5	mg/L	10	Standard
Fe	54	174.1	18.8	**0.0014**	0.029	2030.6	mg/L	179	Standard
Fe	57	266.7	22.0	**-0.2161**	0.204	94.4	mg/L	335	Standard
> **Sc-1**	45	64671.1	2.4				mg/L	61029	Standard
Cl	35	28617.0	1.0				ug/L	20195	Standard
Kr	83	2.0	100.0				ug/L	4	Standard
Br	81	1953.5	6.4				ug/L	1547	Standard
P	31	19132.1	3.4				ug/L	15286	Standard
S	34	2278.5	6.0				ug/L	1572	Standard
Sr	88	68.3	29.6				ug/L	73	Standard
C	12	83.3	13.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	15.5	39.0				mg/L	6	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	23.3	49.5				mg/L	13	Standard
I	127	8569.1	14.4				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		110.895	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		110.538	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.363
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.441
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBS M5 WG573099-02
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Method 6020 - Summary Report

Sample ID: LCSS M5 WG573099-03
Sample Date/Time: Wednesday, June 29, 2016 15:13:43
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83551.5	2.3				ug/L	74699	Standard
	Be	9	25751.9	2.9	**26.1593**	0.514	2.0	ug/L	8	Standard
	Al	27	17496.8	6.9	**0.0930**	0.006	6.2	ug/L	1493	Standard
	Sc	45	66115.6	1.8				ug/L	61029	Standard
	Ti	47	52.7	14.3	**0.0175**	0.016	92.6	ug/L	35	Standard
	V	51	220707.2	1.1	**26.4464**	0.390	1.5	ug/L	1435	Standard
	Cr	52	221818.0	0.7	**26.2660**	0.546	2.1	ug/L	7635	Standard
	Cr	53	27359.7	0.9	**26.6591**	0.406	1.5	ug/L	363	Standard
	Mn	55	204818.9	1.5	**26.6717**	0.451	1.7	ug/L	747	Standard
	Co	59	196776.0	1.4	**27.1279**	0.304	1.1	ug/L	234	Standard
	Ni	60	55651.4	0.4	**26.9765**	0.492	1.8	ug/L	215	Standard
	Cu	65	54836.4	0.8	**26.7594**	0.556	2.1	ug/L	104	Standard
	Zn	66	32934.1	1.1	**27.0387**	0.809	3.0	ug/L	363	Standard
>	**Ge**	72	543210.6	2.2				ug/L	495142	Standard
	As	75	31720.5	1.5	**25.8765**	0.351	1.4	ug/L	-50	Standard
	Se	82	3103.9	1.9	**25.6428**	0.383	1.5	ug/L	14	Standard
	Se-1	77	2231.2	2.7	**27.2211**	0.278	1.0	ug/L	42	Standard
>	**Ga**	71	55.0	47.2				mg/L	42	Standard
	Rb	85	35.0	42.9				ug/L	17	Standard
	Y	89	467716.3	0.8				ug/L	417098	Standard
>	**Rh**	103	13.3	43.3				ug/L	13	Standard
	Mo	98	194.8	10.9	**0.0603**	0.008	12.8	ug/L	11	Standard
	Ag	107	10349.2	1.8	**1.4201**	0.038	2.7	ug/L	68	Standard
	Cd	111	56717.0	1.5	**24.4699**	0.504	2.1	mg/L	2	Standard
	Cd	114	136634.8	1.7	**24.0382**	0.506	2.1	ug/L	12	Standard
>	**In**	115	651063.9	0.8				ug/L	587441	Standard
	Sn	118	761.7	5.5	**0.0229**	0.007	28.6	ug/L	497	Standard
	Sb	123	128047.0	1.0	**24.7441**	0.436	1.8	ug/L	78	Standard
	Ba	135	54350.3	0.9	**23.9455**	0.395	1.6	ug/L	24	Standard
	Ce	140	61.7	26.1				ug/L	25	Standard
>	**Tb**	159	1033159.0	0.5				ug/L	939701	Standard
	Ho	165	16.7	17.3				ug/L	10	Standard
	Tl	203	227266.1	0.5	**24.7175**	0.218	0.9	ug/L	4	Standard
	Tl	205	203485.9	1.6	**25.5015**	0.511	2.0	ug/L	2	Standard
	Pb	206	152382.5	0.6	**25.5050**	0.255	1.0	ug/L	240	Standard
	Pb	207	130131.8	0.7	**24.5130**	0.243	1.0	ug/L	198	Standard
	Pb	208	530327.1	0.9	**25.2835**	0.262	1.0	ug/L	883	Standard
	U	238	189200.1	1.2	**24.6397**	0.334	1.4	ug/L	3	Standard
>	**Bi**	209	584433.1	0.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	41.7	36.7	**-0.0156**	0.017	112.1	mg/L	37	Standard
K	39	38.3	52.7	**-0.0354**	0.042	119.1	mg/L	38	Standard
Ca	43	25.0	52.9	**-1.0705**	0.758	70.8	mg/L	10	Standard
Fe	54	141.4	21.3	**-0.0274**	0.025	92.5	mg/L	179	Standard
Fe	57	241.7	15.7	**-0.3151**	0.126	40.1	mg/L	335	Standard
Sc-1	45	66115.6	1.8				mg/L	61029	Standard
Cl	35	28385.2	0.6				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	2056.8	1.5				ug/L	1547	Standard
P	31	18911.8	2.1				ug/L	15286	Standard
S	34	2256.8	4.9				ug/L	1572	Standard
Sr	88	70.0	39.8				ug/L	73	Standard
C	12	60.0	66.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	9.5	5.0				mg/L	6	Standard
Ho-1	165	16.7	17.3				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	6019.5	14.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		111.851	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		109.708	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.831
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		111.536
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606088803 WG573099-01
Sample Date/Time: Wednesday, June 29, 2016 15:16:55
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	87864.2	2.8				ug/L	74699	Standard
	Be	9	1871.8	7.3	**1.8142**	0.100	5.5	ug/L	8	Standard
	Al	27	17464438.5	2.2	**101.0382**	1.686	1.7	ug/L	1493	Standard
	Sc	45	88916.8	1.0				ug/L	61029	Standard
	Ti	47	8105.2	1.6	**20.2503**	0.364	1.8	ug/L	35	Standard
	V	51	266665.9	0.8	**33.4185**	0.188	0.6	ug/L	1435	Standard
	Cr	52	308197.4	0.8	**38.5684**	0.415	1.1	ug/L	7635	Standard
	Cr	53	37658.4	2.2	**38.4602**	0.742	1.9	ug/L	363	Standard
	Mn	55	19789542.3	0.8	**2705.9402**	31.717	1.2	ug/L	747	Standard
	Co	59	276278.5	0.6	**39.7944**	0.401	1.0	ug/L	234	Standard
	Ni	60	160372.4	1.4	**81.4241**	1.275	1.6	ug/L	215	Standard
	Cu	65	107769.0	1.4	**55.0229**	0.902	1.6	ug/L	104	Standard
	Zn	66	213527.8	0.7	**185.6475**	1.406	0.8	ug/L	363	Standard
>	**Ge**	72	520092.2	0.4				ug/L	495142	Standard
	As	75	6170.4	1.0	**5.3042**	0.070	1.3	ug/L	-50	Standard
	Se	82	90.8	2.7	**0.6494**	0.023	3.5	ug/L	14	Standard
	Se-1	77	157.7	4.9	**1.4330**	0.106	7.4	ug/L	42	Standard
>	**Ga**	71	47343.9	1.1				mg/L	42	Standard
	Rb	85	380728.2	1.5				ug/L	17	Standard
	Y	89	1106618.3	0.2				ug/L	417098	Standard
>	**Rh**	103	63.3	24.1				ug/L	13	Standard
	Mo	98	980.4	3.2	**0.3366**	0.010	3.0	ug/L	11	Standard
	Ag	107	955.0	6.8	**0.1236**	0.011	9.1	ug/L	68	Standard
	Cd	111	2225.7	2.0	**0.9829**	0.017	1.8	mg/L	2	Standard
	Cd	114	5479.9	1.8	**0.9924**	0.001	0.1	ug/L	12	Standard
>	**In**	115	631161.9	1.7				ug/L	587441	Standard
	Sn	118	413.3	14.8	**-0.0289**	0.009	31.0	ug/L	497	Standard
	Sb	123	370.7	34.4	**0.0695**	0.025	35.4	ug/L	78	Standard
	Ba	135	385428.4	1.0	**175.2729**	2.367	1.4	ug/L	24	Standard
	Ce	140	2007459.4	3.6				ug/L	25	Standard
>	**Tb**	159	1048778.2	1.5				ug/L	939701	Standard
	Ho	165	53168.1	1.9				ug/L	10	Standard
	Tl	203	2332.8	1.5	**0.2668**	0.007	2.6	ug/L	4	Standard
	Tl	205	2056.8	1.1	**0.2730**	0.001	0.5	ug/L	2	Standard
	Pb	206	102474.4	0.3	**18.1326**	0.189	1.0	ug/L	240	Standard
	Pb	207	82544.6	1.5	**16.4326**	0.141	0.9	ug/L	198	Standard
	Pb	208	353310.3	0.4	**17.8060**	0.180	1.0	ug/L	883	Standard
	U	238	9355.9	0.7	**1.2854**	0.017	1.3	ug/L	3	Standard
>	**Bi**	209	552227.6	1.4				ug/L	523984	Standard

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Na	23	1.7	173.2	**13.3403**	23.097	173.1	mg/L	0	Standard
Mg	24	320.0	5.6	**0.2185**	0.016	7.5	mg/L	37	Standard
K	39	1080.0	10.5	**1.5233**	0.156	10.2	mg/L	38	Standard
Ca	43	916.7	12.0	**37.2112**	4.625	12.4	mg/L	10	Standard
Fe	54	75887.5	2.1	**44.0256**	1.050	2.4	mg/L	179	Standard
Fe	57	19502.5	1.2	**44.4256**	0.652	1.5	mg/L	335	Standard
> **Sc-1**	45	88916.8	1.0				mg/L	61029	Standard
Cl	35	27513.6	0.5				ug/L	20195	Standard
Kr	83	0.3	173.2				ug/L	4	Standard
Br	81	3467.1	2.9				ug/L	1547	Standard
P	31	21865.8	2.4				ug/L	15286	Standard
S	34	2631.9	4.0				ug/L	1572	Standard
Sr	88	220.0	6.0				ug/L	73	Standard
C	12	66.7	37.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	15.7				mg/L	3	Standard
Dy	164	86599.4	2.5				mg/L	6	Standard
Ho-1	165	53168.1	1.9				mg/L	10	Standard
Er	166	47260.3	0.7				mg/L	13	Standard
I	127	6809.9	9.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.625	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.039	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.443
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.390
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606088803S WG573099-04
Sample Date/Time: Wednesday, June 29, 2016 15:20:06
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	88784.5	2.9				ug/L	74699	Standard
	Be	9	27508.3	0.4	**26.3080**	0.631	2.4	ug/L	8	Standard
	Al	27	20794150.5	3.6	**119.0173**	0.902	0.8	ug/L	1493	Standard
	Sc	45	96992.9	2.3				ug/L	61029	Standard
	Ti	47	11606.4	2.4	**28.2553**	0.997	3.5	ug/L	35	Standard
	V	51	594819.7	3.2	**72.7593**	3.186	4.4	ug/L	1435	Standard
	Cr	52	602098.1	1.8	**74.2282**	2.325	3.1	ug/L	7635	Standard
	Cr	53	74295.1	1.5	**74.1206**	1.783	2.4	ug/L	363	Standard
	Mn	55	28090211.5	1.2	**3736.5671**	85.696	2.3	ug/L	747	Standard
	Co	59	552502.8	1.4	**77.4533**	1.929	2.5	ug/L	234	Standard
	Ni	60	270132.5	1.6	**133.5117**	3.898	2.9	ug/L	215	Standard
	Cu	65	201432.2	2.2	**100.1412**	3.335	3.3	ug/L	104	Standard
	Zn	66	320182.0	2.8	**271.0655**	11.001	4.1	ug/L	363	Standard
>	Ge	72	534719.5	1.4				ug/L	495142	Standard
	As	75	41934.7	2.3	**34.7370**	1.197	3.4	ug/L	-50	Standard
	Se	82	2480.2	1.5	**20.7934**	0.607	2.9	ug/L	14	Standard
	Se-1	77	1799.1	2.3	**22.1951**	0.836	3.8	ug/L	42	Standard
>	Ga	71	63861.1	4.0				mg/L	42	Standard
	Rb	85	554637.9	1.8				ug/L	17	Standard
	Y	89	1250941.0	3.4				ug/L	417098	Standard
>	Rh	103	88.3	8.6				ug/L	13	Standard
	Mo	98	1454.1	4.8	**0.5217**	0.033	6.4	ug/L	11	Standard
	Ag	107	4814.4	4.1	**0.7006**	0.018	2.6	ug/L	68	Standard
	Cd	111	56224.0	1.3	**25.9728**	0.111	0.4	mg/L	2	Standard
	Cd	114	138439.7	3.6	**26.0717**	0.493	1.9	ug/L	12	Standard
>	In	115	608045.3	1.7				ug/L	587441	Standard
	Sn	118	518.3	2.0	**-0.0090**	0.001	16.4	ug/L	497	Standard
	Sb	123	2325.7	1.7	**0.4771**	0.008	1.7	ug/L	78	Standard
	Ba	135	587827.7	1.5	**277.4602**	0.795	0.3	ug/L	24	Standard
	Ce	140	2927642.8	0.6				ug/L	25	Standard
>	Tb	159	1033681.4	2.7				ug/L	939701	Standard
	Ho	165	68191.4	0.6				ug/L	10	Standard
	Tl	203	212892.3	0.8	**25.4932**	0.083	0.3	ug/L	4	Standard
	Tl	205	191048.7	1.2	**26.3598**	0.091	0.3	ug/L	2	Standard
	Pb	206	260602.6	2.5	**48.0843**	0.971	2.0	ug/L	240	Standard
	Pb	207	216580.3	1.8	**44.9759**	0.652	1.4	ug/L	198	Standard
	Pb	208	918219.8	1.2	**48.2652**	0.290	0.6	ug/L	883	Standard
	U	238	196774.7	2.4	**28.2131**	0.460	1.6	ug/L	3	Standard
>	Bi	209	530811.0	1.1				ug/L	523984	Standard

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Na	23	1.7	173.2	**12.2205**	21.158	173.1	mg/L	0	Standard
Mg	24	365.0	3.6	**0.2314**	0.007	3.2	mg/L	37	Standard
K	39	1516.7	5.6	**1.9963**	0.137	6.9	mg/L	38	Standard
Ca	43	726.7	5.8	**26.3770**	1.992	7.6	mg/L	10	Standard
Fe	54	108682.6	3.2	**57.8341**	0.799	1.4	mg/L	179	Standard
Fe	57	27718.7	1.4	**58.2169**	0.892	1.5	mg/L	335	Standard
Sc-1	45	96992.9	2.3				mg/L	61029	Standard
Cl	35	26216.7	4.4				ug/L	20195	Standard
Kr	83	3.0	33.3				ug/L	4	Standard
Br	81	4344.0	8.1				ug/L	1547	Standard
P	31	22273.0	3.2				ug/L	15286	Standard
S	34	2523.5	5.1				ug/L	1572	Standard
Sr	88	263.3	11.4				ug/L	73	Standard
C	12	56.7	10.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	52.9				mg/L	3	Standard
Dy	164	111985.6	3.7				mg/L	6	Standard
Ho-1	165	68191.4	0.6				mg/L	10	Standard
Er	166	57569.3	4.1				mg/L	13	Standard
I	127	6513.1	8.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.857	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.993	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.507
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.303
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	

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Cu 65 Upper, S, EEE	Cu	65
Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606088803SD WG573099-05
Sample Date/Time: Wednesday, June 29, 2016 15:23:18
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86779.6	2.9				ug/L	74699	Standard
	Be	9	26783.7	4.5	**26.1889**	0.607	2.3	ug/L	8	Standard
	Al	27	17495490.1	2.1	**102.4852**	1.702	1.7	ug/L	1493	Standard
	Sc	45	84971.1	3.4				ug/L	61029	Standard
	Ti	47	11032.7	2.5	**25.6633**	0.769	3.0	ug/L	35	Standard
	V	51	492228.0	0.7	**57.5050**	0.764	1.3	ug/L	1435	Standard
	Cr	52	556079.4	1.4	**65.4064**	1.154	1.8	ug/L	7635	Standard
	Cr	53	67044.7	1.2	**63.8916**	0.827	1.3	ug/L	363	Standard
	Mn	55	16288704.5	1.7	**2071.2097**	47.470	2.3	ug/L	747	Standard
	Co	59	487642.9	2.1	**65.3439**	1.764	2.7	ug/L	234	Standard
	Ni	60	230286.3	2.0	**108.7653**	2.155	2.0	ug/L	215	Standard
	Cu	65	186555.0	1.4	**88.6352**	1.512	1.7	ug/L	104	Standard
	Zn	66	269449.8	1.5	**217.9309**	3.745	1.7	ug/L	363	Standard
>	**Ge**	72	559301.6	0.7				ug/L	495142	Standard
	As	75	32569.4	2.0	**25.8033**	0.648	2.5	ug/L	-50	Standard
	Se	82	2764.3	2.2	**22.1623**	0.630	2.8	ug/L	14	Standard
	Se-1	77	1950.8	4.1	**23.0256**	1.042	4.5	ug/L	42	Standard
>	**Ga**	71	55862.8	2.2				mg/L	42	Standard
	Rb	85	472783.4	2.1				ug/L	17	Standard
	Y	89	931018.8	1.5				ug/L	417098	Standard
>	**Rh**	103	36.7	47.9				ug/L	13	Standard
	Mo	98	833.5	3.5	**0.3003**	0.015	5.0	ug/L	11	Standard
	Ag	107	3972.2	0.3	**0.5833**	0.011	1.9	ug/L	68	Standard
	Cd	111	54996.2	0.6	**25.7204**	0.316	1.2	mg/L	2	Standard
	Cd	114	133681.6	2.4	**25.4888**	0.206	0.8	ug/L	12	Standard
>	**In**	115	600647.8	1.6				ug/L	587441	Standard
	Sn	118	466.7	16.3	**-0.0167**	0.012	70.0	ug/L	497	Standard
	Sb	123	3387.1	2.7	**0.7053**	0.008	1.2	ug/L	78	Standard
	Ba	135	467382.4	1.0	**223.3343**	2.175	1.0	ug/L	24	Standard
	Ce	140	1516729.6	1.2				ug/L	25	Standard
>	**Tb**	159	1007426.2	2.1				ug/L	939701	Standard
	Ho	165	39640.1	1.9				ug/L	10	Standard
	Tl	203	211811.1	1.3	**24.5598**	0.357	1.5	ug/L	4	Standard
	Tl	205	187359.9	1.8	**25.0339**	0.597	2.4	ug/L	2	Standard
	Pb	206	219015.7	1.1	**39.1225**	0.790	2.0	ug/L	240	Standard
	Pb	207	182856.8	0.5	**36.7608**	0.679	1.8	ug/L	198	Standard
	Pb	208	768036.7	1.8	**39.0813**	0.960	2.5	ug/L	883	Standard
	U	238	187429.9	1.2	**26.0258**	0.546	2.1	ug/L	3	Standard
>	**Bi**	209	548237.3	1.8				ug/L	523984	Standard

Sample ID: L1606088803SD WG573099-05
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Na	23	6.7	43.3	**55.5842**	25.460	45.8	mg/L	0	Standard
Mg	24	348.3	15.5	**0.2571**	0.039	15.2	mg/L	37	Standard
K	39	1421.7	3.5	**2.1441**	0.098	4.5	mg/L	38	Standard
Ca	43	383.3	17.4	**14.9477**	3.560	23.8	mg/L	10	Standard
Fe	54	86673.1	2.4	**52.6645**	1.510	2.9	mg/L	179	Standard
Fe	57	21795.7	3.1	**52.2085**	3.369	6.5	mg/L	335	Standard
> **Sc-1**	45	84971.1	3.4				mg/L	61029	Standard
Cl	35	24892.4	3.3				ug/L	20195	Standard
Kr	83	2.3	65.5				ug/L	4	Standard
Br	81	3257.0	4.5				ug/L	1547	Standard
P	31	20836.0	2.5				ug/L	15286	Standard
S	34	2406.9	4.4				ug/L	1572	Standard
Sr	88	191.7	46.0				ug/L	73	Standard
C	12	76.7	15.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	20.0				mg/L	3	Standard
Dy	164	63526.1	1.7				mg/L	6	Standard
Ho-1	165	39640.1	1.9				mg/L	10	Standard
Er	166	35224.2	2.0				mg/L	13	Standard
I	127	5139.2	9.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.173	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		112.958	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.248
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.629
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	

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Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606088301
Sample Date/Time: Wednesday, June 29, 2016 15:26:29
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84384.4	1.7				ug/L	74699	Standard
	Be	9	1073.4	1.5	**1.0872**	0.032	3.0	ug/L	8	Standard
	Al	27	11940771.9	2.8	**71.9363**	2.792	3.9	ug/L	1493	Standard
	Sc	45	76626.6	1.2				ug/L	61029	Standard
	Ti	47	4374.3	2.0	**10.2834**	0.247	2.4	ug/L	35	Standard
	V	51	162703.8	1.0	**19.2014**	0.098	0.5	ug/L	1435	Standard
	Cr	52	132016.8	1.7	**15.0167**	0.347	2.3	ug/L	7635	Standard
	Cr	53	16153.6	0.8	**15.4073**	0.063	0.4	ug/L	363	Standard
	Mn	55	3262876.5	0.6	**421.8414**	5.005	1.2	ug/L	747	Standard
	Co	59	67832.8	0.7	**9.2120**	0.089	1.0	ug/L	234	Standard
	Ni	60	42623.2	1.3	**20.3743**	0.274	1.3	ug/L	215	Standard
	Cu	65	31205.8	0.3	**14.9935**	0.149	1.0	ug/L	104	Standard
	Zn	66	53134.7	1.9	**43.3429**	0.711	1.6	ug/L	363	Standard
>	**Ge**	72	549915.9	0.8				ug/L	495142	Standard
	As	75	3335.6	3.0	**2.7409**	0.080	2.9	ug/L	-50	Standard
	Se	82	46.6	19.0	**0.2449**	0.076	30.9	ug/L	14	Standard
	Se-1	77	111.7	5.1	**0.7542**	0.066	8.8	ug/L	42	Standard
>	**Ga**	71	17852.2	2.1				mg/L	42	Standard
	Rb	85	173572.1	2.0				ug/L	17	Standard
	Y	89	703667.4	2.2				ug/L	417098	Standard
>	**Rh**	103	33.3	34.6				ug/L	13	Standard
	Mo	98	357.4	3.8	**0.1158**	0.007	6.2	ug/L	11	Standard
	Ag	107	550.0	6.6	**0.0636**	0.007	11.1	ug/L	68	Standard
	Cd	111	273.3	3.2	**0.1105**	0.006	5.2	mg/L	2	Standard
	Cd	114	617.1	4.0	**0.1069**	0.006	5.7	ug/L	12	Standard
>	**In**	115	648944.8	3.3				ug/L	587441	Standard
	Sn	118	606.7	6.6	**-0.0008**	0.003	418.3	ug/L	497	Standard
	Sb	123	137.4	14.1	**0.0224**	0.003	13.8	ug/L	78	Standard
	Ba	135	318337.1	2.2	**140.8176**	2.386	1.7	ug/L	24	Standard
	Ce	140	1211648.5	1.9				ug/L	25	Standard
>	**Tb**	159	1041543.0	2.5				ug/L	939701	Standard
	Ho	165	19666.1	3.2				ug/L	10	Standard
	Tl	203	1035.0	3.0	**0.1143**	0.004	3.7	ug/L	4	Standard
	Tl	205	953.4	8.0	**0.1233**	0.009	7.5	ug/L	2	Standard
	Pb	206	127279.7	1.1	**21.9443**	0.442	2.0	ug/L	240	Standard
	Pb	207	103046.6	1.5	**19.9907**	0.426	2.1	ug/L	198	Standard
	Pb	208	441148.5	1.4	**21.6612**	0.196	0.9	ug/L	883	Standard
	U	238	5034.2	0.5	**0.6713**	0.005	0.8	ug/L	3	Standard
>	**Bi**	209	567168.2	1.1				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	340.0	3.9	**0.2844**	0.011	3.7	mg/L	37	Standard
K	39	688.3	2.3	**1.0975**	0.019	1.8	mg/L	38	Standard
Ca	43	145.0	15.8	**4.7718**	1.160	24.3	mg/L	10	Standard
Fe	54	17324.9	3.4	**11.5598**	0.337	2.9	mg/L	179	Standard
Fe	57	4550.7	3.6	**11.2444**	0.399	3.5	mg/L	335	Standard
Sc-1	45	76626.6	1.2				mg/L	61029	Standard
Cl	35	25558.2	1.3				ug/L	20195	Standard
Kr	83	0.7	173.2				ug/L	4	Standard
Br	81	2263.5	8.1				ug/L	1547	Standard
P	31	20323.6	0.9				ug/L	15286	Standard
S	34	2258.5	1.1				ug/L	1572	Standard
Sr	88	101.7	10.2				ug/L	73	Standard
C	12	116.7	13.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	49.5				mg/L	3	Standard
Dy	164	32996.6	2.0				mg/L	6	Standard
Ho-1	165	19666.1	3.2				mg/L	10	Standard
Er	166	17349.9	3.1				mg/L	13	Standard
I	127	11507.7	1.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		112.966	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		111.062	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	110.470
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	108.241
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606091201
Sample Date/Time: Wednesday, June 29, 2016 15:29:41
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84277.1	1.0				ug/L	74699	Standard
	Be	9	1593.4	6.0	**1.6114**	0.083	5.1	ug/L	8	Standard
	Al	27	15243679.1	1.9	**91.9299**	1.967	2.1	ug/L	1493	Standard
	Sc	45	83538.1	3.1				ug/L	61029	Standard
	Ti	47	10307.8	1.1	**23.4331**	0.360	1.5	ug/L	35	Standard
	V	51	410563.1	0.8	**46.8597**	0.438	0.9	ug/L	1435	Standard
	Cr	52	261972.4	0.3	**29.5747**	0.180	0.6	ug/L	7635	Standard
	Cr	53	32057.2	1.7	**29.6933**	0.417	1.4	ug/L	363	Standard
	Mn	55	12908980.1	3.2	**1604.9549**	58.354	3.6	ug/L	747	Standard
	Co	59	181241.6	3.1	**23.7226**	0.846	3.6	ug/L	234	Standard
	Ni	60	66685.8	0.9	**30.7063**	0.259	0.8	ug/L	215	Standard
	Cu	65	73374.2	0.7	**34.0220**	0.398	1.2	ug/L	104	Standard
	Zn	66	143517.2	0.9	**113.2755**	1.322	1.2	ug/L	363	Standard
>	**Ge**	72	572023.7	0.5				ug/L	495142	Standard
	As	75	16668.5	2.4	**12.9416**	0.353	2.7	ug/L	-50	Standard
	Se	82	187.7	6.4	**1.3421**	0.095	7.1	ug/L	14	Standard
	Se-1	77	232.0	7.5	**2.1278**	0.217	10.2	ug/L	42	Standard
>	**Ga**	71	37605.0	3.4				mg/L	42	Standard
	Rb	85	431124.7	1.0				ug/L	17	Standard
	Y	89	907846.1	0.7				ug/L	417098	Standard
>	**Rh**	103	28.3	27.0				ug/L	13	Standard
	Mo	98	1317.8	2.4	**0.4515**	0.009	1.9	ug/L	11	Standard
	Ag	107	1338.4	1.8	**0.1770**	0.004	2.5	ug/L	68	Standard
	Cd	111	803.3	6.8	**0.3473**	0.022	6.2	mg/L	2	Standard
	Cd	114	1888.8	7.2	**0.3384**	0.023	6.7	ug/L	12	Standard
>	**In**	115	635240.6	1.1				ug/L	587441	Standard
	Sn	118	608.3	2.5	**0.0016**	0.002	109.2	ug/L	497	Standard
	Sb	123	242.0	3.6	**0.0438**	0.002	4.9	ug/L	78	Standard
	Ba	135	645480.7	0.7	**291.6323**	1.817	0.6	ug/L	24	Standard
	Ce	140	2459220.7	0.8				ug/L	25	Standard
>	**Tb**	159	1043691.8	1.6				ug/L	939701	Standard
	Ho	165	34592.8	2.2				ug/L	10	Standard
	Tl	203	3164.7	1.5	**0.3540**	0.007	2.0	ug/L	4	Standard
	Tl	205	2843.6	5.4	**0.3684**	0.020	5.4	ug/L	2	Standard
	Pb	206	325793.2	0.7	**56.4391**	0.926	1.6	ug/L	240	Standard
	Pb	207	262124.0	0.3	**51.1005**	0.344	0.7	ug/L	198	Standard
	Pb	208	1122453.0	1.2	**55.3927**	1.161	2.1	ug/L	883	Standard
	U	238	18503.6	0.6	**2.4863**	0.037	1.5	ug/L	3	Standard
>	**Bi**	209	565563.6	0.9				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	148.3	19.2	**0.0751**	0.029	38.8	mg/L	37	Standard
K	39	1071.7	2.8	**1.6167**	0.038	2.4	mg/L	38	Standard
Ca	43	301.7	16.4	**11.4520**	2.661	23.2	mg/L	10	Standard
Fe	54	45977.7	1.1	**28.3556**	0.839	3.0	mg/L	179	Standard
Fe	57	11742.9	4.0	**28.0839**	0.746	2.7	mg/L	335	Standard
Sc-1	45	83538.1	3.1				mg/L	61029	Standard
Cl	35	25586.9	0.8				ug/L	20195	Standard
Kr	83	2.3	65.5				ug/L	4	Standard
Br	81	3940.5	1.8				ug/L	1547	Standard
P	31	20170.1	2.1				ug/L	15286	Standard
S	34	2405.2	3.2				ug/L	1572	Standard
Sr	88	111.7	6.8				ug/L	73	Standard
C	12	316.7	15.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	146.7	35.0				mg/L	3	Standard
Dy	164	57194.9	2.2				mg/L	6	Standard
Ho-1	165	34592.8	2.2				mg/L	10	Standard
Er	166	32892.3	1.1				mg/L	13	Standard
I	127	48256.8	4.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		112.823	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		115.527	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	108.137
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	107.935
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606091201
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Method 6020 - Summary Report

Sample ID: L1606091201PS WG573717-03
Sample Date/Time: Wednesday, June 29, 2016 15:32:52
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	84925.7	1.3				ug/L	74699	Standard
	Be	9	54409.2	0.5	**54.3741**	0.919	1.7	ug/L	8	Standard
	Al	27	15619580.7	1.4	**93.4869**	2.147	2.3	ug/L	1493	Standard
	Sc	45	84914.0	2.3				ug/L	61029	Standard
	Ti	47	10489.6	2.4	**24.7035**	0.475	1.9	ug/L	35	Standard
	V	51	847646.1	0.7	**100.4344**	1.074	1.1	ug/L	1435	Standard
	Cr	52	696222.3	1.3	**83.2031**	0.580	0.7	ug/L	7635	Standard
	Cr	53	86425.9	2.6	**83.5032**	1.546	1.9	ug/L	363	Standard
	Mn	55	12964778.0	1.1	**1669.4256**	16.996	1.0	ug/L	747	Standard
	Co	59	568224.0	0.4	**77.1151**	0.744	1.0	ug/L	234	Standard
	Ni	60	176707.0	1.9	**84.4902**	0.918	1.1	ug/L	215	Standard
	Cu	65	181984.3	1.8	**87.5571**	0.864	1.0	ug/L	104	Standard
	Zn	66	208968.8	1.8	**171.0579**	1.957	1.1	ug/L	363	Standard
>	Ge	72	552256.5	0.8				ug/L	495142	Standard
	As	75	82371.4	1.6	**65.9929**	0.953	1.4	ug/L	-50	Standard
	Se	82	6597.3	1.6	**53.7542**	0.590	1.1	ug/L	14	Standard
	Se-1	77	4584.4	1.6	**55.6563**	1.034	1.9	ug/L	42	Standard
>	Ga	71	37593.3	1.5				mg/L	42	Standard
	Rb	85	428376.8	2.4				ug/L	17	Standard
	Y	89	890825.8	0.7				ug/L	417098	Standard
>	Rh	103	50.0	10.0				ug/L	13	Standard
	Mo	98	1335.6	2.9	**0.4503**	0.014	3.2	ug/L	11	Standard
	Ag	107	364007.1	1.3	**50.8126**	0.330	0.6	ug/L	68	Standard
	Cd	111	115695.5	1.2	**50.3468**	0.384	0.8	mg/L	2	Standard
	Cd	114	280904.1	1.9	**49.8365**	0.143	0.3	ug/L	12	Standard
>	In	115	645589.3	1.8				ug/L	587441	Standard
	Sn	118	755.0	4.3	**0.0229**	0.003	13.2	ug/L	497	Standard
	Sb	123	254065.1	1.3	**49.5173**	0.623	1.3	ug/L	78	Standard
	Ba	135	752068.0	1.2	**334.3566**	2.055	0.6	ug/L	24	Standard
	Ce	140	2468196.2	1.3				ug/L	25	Standard
>	Tb	159	1069312.5	1.3				ug/L	939701	Standard
	Ho	165	35102.3	1.1				ug/L	10	Standard
	Tl	203	458369.6	1.1	**50.4504**	0.349	0.7	ug/L	4	Standard
	Tl	205	409805.1	0.9	**51.9806**	1.259	2.4	ug/L	2	Standard
	Pb	206	619020.9	0.8	**105.0729**	1.076	1.0	ug/L	240	Standard
	Pb	207	511972.0	0.6	**97.8107**	1.381	1.4	ug/L	198	Standard
	Pb	208	2150459.1	0.4	**103.9876**	1.211	1.2	ug/L	883	Standard
	U	238	395808.0	0.4	**52.1735**	0.789	1.5	ug/L	3	Standard
>	Bi	209	577539.6	1.5				ug/L	523984	Standard

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Na	23	6.7	43.3	**54.9152**	22.487	40.9	mg/L	0	Standard
Mg	24	118.3	17.1	**0.0444**	0.016	36.3	mg/L	37	Standard
K	39	1026.7	7.6	**1.5167**	0.116	7.6	mg/L	38	Standard
Ca	43	296.7	14.3	**10.9789**	2.237	20.4	mg/L	10	Standard
Fe	54	45524.1	0.4	**27.6104**	0.565	2.0	mg/L	179	Standard
Fe	57	12291.7	1.9	**28.9717**	1.259	4.3	mg/L	335	Standard
> **Sc-1**	45	84914.0	2.3				mg/L	61029	Standard
Cl	35	25819.3	0.8				ug/L	20195	Standard
Kr	83	2.0	0.0				ug/L	4	Standard
Br	81	3963.9	6.7				ug/L	1547	Standard
P	31	20629.0	3.4				ug/L	15286	Standard
S	34	2280.2	5.7				ug/L	1572	Standard
Sr	88	103.3	12.2				ug/L	73	Standard
C	12	333.3	17.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	140.0	7.1				mg/L	3	Standard
Dy	164	56592.8	3.3				mg/L	6	Standard
Ho-1	165	35102.3	1.1				mg/L	10	Standard
Er	166	32397.9	1.1				mg/L	13	Standard
I	127	48815.3	4.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.691	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.535	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.899
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.221
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Upper, S, EEE	V	51	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135
Pb 206 Upper, S, EEE	Pb	206
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1606091201SDL WG573717-04
Sample Date/Time: Wednesday, June 29, 2016 15:36:04
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83450.9	2.1				ug/L	74699	Standard
	Be	9	378.3	16.7	**0.3916**	0.058	14.9	ug/L	8	Standard
	Al	27	3082760.3	2.5	**18.7625**	0.099	0.5	ug/L	1493	Standard
	Sc	45	72303.8	2.1				ug/L	61029	Standard
	Ti	47	2033.1	4.6	**4.7237**	0.243	5.1	ug/L	35	Standard
	V	51	79797.1	0.9	**9.3216**	0.052	0.6	ug/L	1435	Standard
	Cr	52	57744.9	2.6	**5.9945**	0.158	2.6	ug/L	7635	Standard
	Cr	53	6483.1	2.8	**5.9884**	0.155	2.6	ug/L	363	Standard
	Mn	55	2512242.8	1.3	**324.8710**	1.825	0.6	ug/L	747	Standard
	Co	59	34712.7	2.2	**4.6975**	0.071	1.5	ug/L	234	Standard
	Ni	60	13460.0	2.9	**6.3513**	0.158	2.5	ug/L	215	Standard
	Cu	65	15009.4	2.6	**7.1598**	0.141	2.0	ug/L	104	Standard
	Zn	66	29256.2	2.4	**23.6692**	0.389	1.6	ug/L	363	Standard
>	**Ge**	72	549686.2	0.8				ug/L	495142	Standard
	As	75	3156.6	2.0	**2.5979**	0.033	1.3	ug/L	-50	Standard
	Se	82	47.1	17.6	**0.2490**	0.070	28.2	ug/L	14	Standard
	Se-1	77	77.0	11.9	**0.3268**	0.106	32.4	ug/L	42	Standard
>	**Ga**	71	7136.7	1.1				mg/L	42	Standard
	Rb	85	84221.8	1.7				ug/L	17	Standard
	Y	89	569587.4	0.8				ug/L	417098	Standard
>	**Rh**	103	25.0	91.7				ug/L	13	Standard
	Mo	98	271.1	6.9	**0.0847**	0.006	6.6	ug/L	11	Standard
	Ag	107	378.0	10.8	**0.0387**	0.005	13.9	ug/L	68	Standard
	Cd	111	185.8	10.3	**0.0712**	0.009	12.3	mg/L	2	Standard
	Cd	114	406.5	6.5	**0.0684**	0.004	6.4	ug/L	12	Standard
>	**In**	115	660230.6	1.0				ug/L	587441	Standard
	Sn	118	501.7	8.5	**-0.0183**	0.006	32.3	ug/L	497	Standard
	Sb	123	1797.9	20.8	**0.3384**	0.070	20.8	ug/L	78	Standard
	Ba	135	129725.4	1.6	**56.3802**	0.972	1.7	ug/L	24	Standard
	Ce	140	480517.5	2.7				ug/L	25	Standard
>	**Tb**	159	1042248.3	0.8				ug/L	939701	Standard
	Ho	165	6823.2	4.6				ug/L	10	Standard
	Tl	203	727.7	7.7	**0.0794**	0.006	7.1	ug/L	4	Standard
	Tl	205	616.7	4.2	**0.0795**	0.002	2.4	ug/L	2	Standard
	Pb	206	64359.4	2.2	**11.0114**	0.128	1.2	ug/L	240	Standard
	Pb	207	51665.3	2.6	**9.9429**	0.134	1.3	ug/L	198	Standard
	Pb	208	222946.4	0.6	**10.8660**	0.247	2.3	ug/L	883	Standard
	U	238	3701.1	2.3	**0.4902**	0.006	1.1	ug/L	3	Standard
>	**Bi**	209	569638.6	2.0				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	61.7	28.5	**0.0019**	0.018	942.5	mg/L	37	Standard
K	39	203.3	18.5	**0.2649**	0.067	25.4	mg/L	38	Standard
Ca	43	75.0	26.7	**1.4632**	0.987	67.5	mg/L	10	Standard
Fe	54	9325.9	3.5	**6.5358**	0.204	3.1	mg/L	179	Standard
Fe	57	2630.2	2.1	**6.4718**	0.055	0.8	mg/L	335	Standard
> **Sc-1**	45	72303.8	2.1				mg/L	61029	Standard
Cl	35	24972.6	0.9				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	2286.8	8.4				ug/L	1547	Standard
P	31	19043.6	4.4				ug/L	15286	Standard
S	34	2180.2	1.2				ug/L	1572	Standard
Sr	88	81.7	35.9				ug/L	73	Standard
C	12	93.3	22.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	57.3				mg/L	3	Standard
Dy	164	11677.0	2.4				mg/L	6	Standard
Ho-1	165	6823.2	4.6				mg/L	10	Standard
Er	166	6424.7	2.9				mg/L	13	Standard
I	127	12089.8	7.2				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		111.717	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		111.016	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.391
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.713
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606091201SDL WG573717-04
Sample Date/Time: Wednesday, June 29, 2016 15:39:15
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80082.8	1.5				ug/L	74699	Standard
	Be	9	80.0	10.8	**0.0924**	0.009	10.2	ug/L	8	Standard
	Al	27	638793.5	0.9	**4.0416**	0.057	1.4	ug/L	1493	Standard
	Sc	45	66977.8	2.5				ug/L	61029	Standard
	Ti	47	422.3	5.3	**0.8899**	0.044	4.9	ug/L	35	Standard
	V	51	17807.2	0.8	**1.9190**	0.038	2.0	ug/L	1435	Standard
	Cr	52	18051.7	1.5	**1.1605**	0.015	1.3	ug/L	7635	Standard
	Cr	53	1846.8	4.0	**1.4619**	0.067	4.6	ug/L	363	Standard
	Mn	55	540671.4	1.9	**69.4959**	1.549	2.2	ug/L	747	Standard
	Co	59	7520.2	3.3	**0.9841**	0.038	3.8	ug/L	234	Standard
	Ni	60	2912.3	1.6	**1.2710**	0.019	1.5	ug/L	215	Standard
	Cu	65	3203.0	1.2	**1.4395**	0.003	0.2	ug/L	104	Standard
	Zn	66	8550.1	1.3	**6.5648**	0.083	1.3	ug/L	363	Standard
>	**Ge**	72	552153.4	1.0				ug/L	495142	Standard
	As	75	624.0	5.3	**0.5591**	0.024	4.4	ug/L	-50	Standard
	Se	82	21.8	25.1	**0.0396**	0.043	108.7	ug/L	14	Standard
	Se-1	77	57.0	8.0	**0.0772**	0.050	64.2	ug/L	42	Standard
>	**Ga**	71	1470.1	2.9				mg/L	42	Standard
	Rb	85	17425.0	3.8				ug/L	17	Standard
	Y	89	497203.9	1.3				ug/L	417098	Standard
>	**Rh**	103	10.0	50.0				ug/L	13	Standard
	Mo	98	65.7	10.1	**0.0165**	0.003	15.8	ug/L	11	Standard
	Ag	107	156.7	8.7	**0.0087**	0.002	18.0	ug/L	68	Standard
	Cd	111	38.9	11.8	**0.0089**	0.002	23.3	mg/L	2	Standard
	Cd	114	108.8	14.4	**0.0170**	0.003	15.1	ug/L	12	Standard
>	**In**	115	651862.8	1.7				ug/L	587441	Standard
	Sn	118	480.0	4.2	**-0.0206**	0.003	16.7	ug/L	497	Standard
	Sb	123	490.3	31.4	**0.0908**	0.031	34.3	ug/L	78	Standard
	Ba	135	26415.7	0.1	**11.6170**	0.204	1.8	ug/L	24	Standard
	Ce	140	98329.7	0.4				ug/L	25	Standard
>	**Tb**	159	1007324.2	1.5				ug/L	939701	Standard
	Ho	165	1405.1	5.7				ug/L	10	Standard
	Tl	203	169.0	1.6	**0.0177**	0.000	0.8	ug/L	4	Standard
	Tl	205	175.0	8.6	**0.0234**	0.002	8.3	ug/L	2	Standard
	Pb	206	13505.0	1.4	**2.3274**	0.057	2.5	ug/L	240	Standard
	Pb	207	10900.6	1.3	**2.1089**	0.044	2.1	ug/L	198	Standard
	Pb	208	47029.6	1.3	**2.3051**	0.014	0.6	ug/L	883	Standard
	U	238	743.4	3.4	**0.0980**	0.002	2.1	ug/L	3	Standard
>	**Bi**	209	552389.3	1.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	33.3	17.3	**-0.0260**	0.006	22.5	mg/L	37	Standard
K	39	50.0	36.1	**-0.0133**	0.037	281.6	mg/L	38	Standard
Ca	43	41.7	48.5	**-0.1354**	1.146	846.9	mg/L	10	Standard
Fe	54	2020.3	1.1	**1.4233**	0.051	3.6	mg/L	179	Standard
Fe	57	728.4	10.0	**1.1787**	0.168	14.2	mg/L	335	Standard
> **Sc-1**	45	66977.8	2.5				mg/L	61029	Standard
Cl	35	24720.8	1.1				ug/L	20195	Standard
Kr	83	2.7	43.3				ug/L	4	Standard
Br	81	1860.1	4.8				ug/L	1547	Standard
P	31	18349.4	1.0				ug/L	15286	Standard
S	34	1845.1	4.4				ug/L	1572	Standard
Sr	88	65.0	27.7				ug/L	73	Standard
C	12	66.7	31.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	2304.6	5.8				mg/L	6	Standard
Ho-1	165	1405.1	5.7				mg/L	10	Standard
Er	166	1370.1	4.1				mg/L	13	Standard
I	127	4489.0	15.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.208	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.514	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.966
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.421
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 15:42:28
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79858.3	1.9				ug/L	74699	Standard
	Be	9	50198.1	2.5	**53.3484**	1.401	2.6	ug/L	8	Standard
	Al	27	8066966.3	0.3	**51.3427**	0.865	1.7	ug/L	1493	Standard
	Sc	45	68357.2	2.3				ug/L	61029	Standard
	Ti	47	43587.6	0.3	**105.7066**	1.724	1.6	ug/L	35	Standard
	V	51	433103.8	0.8	**52.5653**	0.576	1.1	ug/L	1435	Standard
	Cr	52	431112.3	0.9	**52.4990**	0.789	1.5	ug/L	7635	Standard
	Cr	53	52653.0	1.0	**52.0862**	0.689	1.3	ug/L	363	Standard
	Mn	55	405815.5	1.7	**53.4827**	1.214	2.3	ug/L	747	Standard
	Co	59	390955.7	1.0	**54.4418**	1.354	2.5	ug/L	234	Standard
	Ni	60	105213.1	1.7	**51.5742**	0.488	0.9	ug/L	215	Standard
	Cu	65	104377.6	0.2	**51.4980**	0.905	1.8	ug/L	104	Standard
	Zn	66	61654.9	0.7	**51.4853**	1.289	2.5	ug/L	363	Standard
>	**Ge**	72	538231.7	1.8				ug/L	495142	Standard
	As	75	61802.6	0.2	**50.8282**	0.881	1.7	ug/L	-50	Standard
	Se	82	6211.6	1.2	**51.9313**	0.364	0.7	ug/L	14	Standard
	Se-1	77	4323.6	2.0	**53.8508**	1.659	3.1	ug/L	42	Standard
>	**Ga**	71	60.0	28.9				mg/L	42	Standard
	Rb	85	955.0	5.2				ug/L	17	Standard
	Y	89	475770.1	1.3				ug/L	417098	Standard
>	**Rh**	103	25.0	34.6				ug/L	13	Standard
	Mo	98	290643.5	0.8	**97.6712**	0.653	0.7	ug/L	11	Standard
	Ag	107	354998.2	1.8	**48.7852**	1.288	2.6	ug/L	68	Standard
	Cd	111	115105.3	1.2	**49.3038**	0.151	0.3	mg/L	2	Standard
	Cd	114	278592.4	1.8	**48.6531**	0.360	0.7	ug/L	12	Standard
>	**In**	115	655825.0	1.0				ug/L	587441	Standard
	Sn	118	319548.2	1.2	**48.9035**	0.256	0.5	ug/L	497	Standard
	Sb	123	249456.0	1.2	**47.8604**	0.919	1.9	ug/L	78	Standard
	Ba	135	108215.4	0.8	**47.3455**	0.546	1.2	ug/L	24	Standard
	Ce	140	256.7	76.3				ug/L	25	Standard
>	**Tb**	159	1025574.2	1.9				ug/L	939701	Standard
	Ho	165	15.0	0.0				ug/L	10	Standard
	Tl	203	443897.9	1.2	**50.1327**	1.058	2.1	ug/L	4	Standard
	Tl	205	398087.0	0.7	**51.8003**	0.814	1.6	ug/L	2	Standard
	Pb	206	280554.3	0.5	**48.8226**	0.728	1.5	ug/L	240	Standard
	Pb	207	249585.9	0.6	**48.8846**	0.533	1.1	ug/L	198	Standard
	Pb	208	1026713.8	0.6	**50.9050**	1.131	2.2	ug/L	883	Standard
	U	238	372550.1	0.8	**50.3866**	1.127	2.2	ug/L	3	Standard
>	**Bi**	209	562933.7	1.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4292.3	1.6	**4.8821**	0.035	0.7	mg/L	37	Standard
K	39	2345.2	3.1	**4.5133**	0.080	1.8	mg/L	38	Standard
Ca	43	103.3	10.1	**3.3018**	0.528	16.0	mg/L	10	Standard
Fe	54	6681.2	2.2	**4.9206**	0.153	3.1	mg/L	179	Standard
Fe	57	1928.5	4.0	**4.7824**	0.344	7.2	mg/L	335	Standard
Sc-1	45	68357.2	2.3				mg/L	61029	Standard
Cl	35	26753.6	0.7				ug/L	20195	Standard
Kr	83	3.3	45.8				ug/L	4	Standard
Br	81	1833.4	8.1				ug/L	1547	Standard
P	31	20395.4	2.2				ug/L	15286	Standard
S	34	2408.5	8.3				ug/L	1572	Standard
Sr	88	85.0	25.6				ug/L	73	Standard
C	12	53.3	28.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	15.2	35.5				mg/L	6	Standard
Ho-1	165	15.0	0.0				mg/L	10	Standard
Er	166	30.0	57.7				mg/L	13	Standard
I	127	2536.9	16.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	106.697		
Al	27	102.685		
Sc	45			
Ti	47	105.707		
V	51	105.131		
Cr	52	104.998		
Cr	53			
Mn	55	106.965		
Co	59	108.884		
Ni	60	103.148		
Cu	65	102.996		
Zn	66	102.971		
Ge	72		108.702	
As	75	101.656		
Se	82	103.863		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	97.671		
Ag	107	97.570		
Cd	111	98.608		
Cd	114			
In	115			111.641
Sn	118	97.807		
Sb	123	95.721		
Ba	135	94.691		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.265		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.810		
U	238	100.773		
Bi	209			107.433
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 15:45:40
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76618.3	2.3				ug/L	74699	Standard
	Be	9	25.0	40.0	**0.0352**	0.010	29.8	ug/L	8	Standard
	Al	27	2451.9	23.9	**0.0029**	0.004	131.5	ug/L	1493	Standard
	Sc	45	64234.2	1.5				ug/L	61029	Standard
	Ti	47	38.0	9.5	**-0.0165**	0.010	60.4	ug/L	35	Standard
	V	51	1363.5	4.5	**-0.0292**	0.006	19.9	ug/L	1435	Standard
	Cr	52	7102.3	0.4	**-0.1401**	0.016	11.4	ug/L	7635	Standard
	Cr	53	373.3	16.1	**0.0429**	0.063	148.1	ug/L	363	Standard
	Mn	55	1097.0	20.0	**-0.0025**	0.031	1279.7	ug/L	747	Standard
	Co	59	247.3	6.4	**-0.0027**	0.003	101.3	ug/L	234	Standard
	Ni	60	180.3	4.0	**-0.0351**	0.003	7.6	ug/L	215	Standard
	Cu	65	132.0	9.2	**-0.0382**	0.007	18.6	ug/L	104	Standard
	Zn	66	415.3	4.4	**-0.1038**	0.019	18.2	ug/L	363	Standard
>	**Ge**	72	537099.7	1.7				ug/L	495142	Standard
	As	75	-44.5	23.9	**0.0230**	0.008	35.8	ug/L	-50	Standard
	Se	82	14.3	4.3	**-0.0180**	0.004	23.6	ug/L	14	Standard
	Se-1	77	59.7	7.9	**0.1303**	0.047	35.8	ug/L	42	Standard
>	**Ga**	71	51.7	29.6				mg/L	42	Standard
	Rb	85	35.0	0.0				ug/L	17	Standard
	Y	89	479758.9	0.4				ug/L	417098	Standard
>	**Rh**	103	8.3	34.6				ug/L	13	Standard
	Mo	98	277.2	29.2	**0.0885**	0.026	29.3	ug/L	11	Standard
	Ag	107	131.7	17.8	**0.0055**	0.003	58.6	ug/L	68	Standard
	Cd	111	17.2	29.5	**-0.0005**	0.002	465.0	mg/L	2	Standard
	Cd	114	40.7	69.7	**0.0051**	0.005	98.6	ug/L	12	Standard
>	**In**	115	646048.6	1.6				ug/L	587441	Standard
	Sn	118	843.4	4.5	**0.0366**	0.007	19.0	ug/L	497	Standard
	Sb	123	501.9	29.2	**0.0939**	0.030	32.1	ug/L	78	Standard
	Ba	135	52.0	15.0	**0.0071**	0.003	45.6	ug/L	24	Standard
	Ce	140	70.0	58.5				ug/L	25	Standard
>	**Tb**	159	979678.9	1.9				ug/L	939701	Standard
	Ho	165	13.3	114.6				ug/L	10	Standard
	Tl	203	68.0	38.6	**0.0062**	0.003	47.0	ug/L	4	Standard
	Tl	205	56.7	27.0	**0.0078**	0.002	25.4	ug/L	2	Standard
	Pb	206	311.7	5.0	**-0.0149**	0.002	16.8	ug/L	240	Standard
	Pb	207	257.0	6.3	**-0.0177**	0.002	12.3	ug/L	198	Standard
	Pb	208	1140.4	10.1	**-0.0154**	0.005	31.9	ug/L	883	Standard
	U	238	55.7	48.1	**0.0033**	0.004	107.8	ug/L	3	Standard
>	**Bi**	209	542619.7	2.4				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.9504**	31.082	173.2	mg/L	0	Standard
Mg	24	40.0	54.5	**-0.0162**	0.026	161.8	mg/L	37	Standard
K	39	53.3	59.5	**-0.0020**	0.067	3445.3	mg/L	38	Standard
Ca	43	18.3	103.3	**-1.4157**	1.156	81.6	mg/L	10	Standard
Fe	54	130.7	11.8	**-0.0329**	0.014	41.5	mg/L	179	Standard
Fe	57	301.7	9.1	**-0.1005**	0.081	80.3	mg/L	335	Standard
> **Sc-1**	45	64234.2	1.5				mg/L	61029	Standard
Cl	35	26295.5	2.8				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	1633.4	7.7				ug/L	1547	Standard
P	31	19669.4	2.1				ug/L	15286	Standard
S	34	2230.2	5.1				ug/L	1572	Standard
Sr	88	70.0	21.4				ug/L	73	Standard
C	12	46.7	61.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	12.2	49.4				mg/L	6	Standard
Ho-1	165	13.3	114.6				mg/L	10	Standard
Er	166	23.3	107.9				mg/L	13	Standard
I	127	1980.1	22.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.474	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.977
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.556
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW 60 WG574001-04
Sample Date/Time: Wednesday, June 29, 2016 15:48:53
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79282.0	2.9				ug/L	74699	Standard
	Be	9	31.7	134.3	**0.0407**	0.044	108.3	ug/L	8	Standard
	Al	27	19345.2	59.5	**0.1093**	0.069	63.4	ug/L	1493	Standard
	Sc	45	67500.3	4.8				ug/L	61029	Standard
	Ti	47	51.7	27.5	**0.0181**	0.032	177.8	ug/L	35	Standard
	V	51	1877.4	33.1	**0.0362**	0.072	198.6	ug/L	1435	Standard
	Cr	52	9295.2	4.7	**0.1500**	0.032	21.3	ug/L	7635	Standard
	Cr	53	908.4	6.4	**0.5905**	0.063	10.7	ug/L	363	Standard
	Mn	55	10971.3	111.8	**1.3060**	1.603	122.8	ug/L	747	Standard
	Co	59	555.3	78.4	**0.0407**	0.060	146.5	ug/L	234	Standard
	Ni	60	485.3	47.2	**0.1173**	0.109	92.6	ug/L	215	Standard
	Cu	65	307.3	25.1	**0.0504**	0.035	70.1	ug/L	104	Standard
	Zn	66	1901.5	5.5	**1.1744**	0.056	4.8	ug/L	363	Standard
>	**Ge**	72	528898.5	2.0				ug/L	495142	Standard
	As	75	-0.1	63053.1	**0.0590**	0.043	73.0	ug/L	-50	Standard
	Se	82	20.7	41.6	**0.0373**	0.070	187.2	ug/L	14	Standard
	Se-1	77	69.7	5.4	**0.2713**	0.061	22.4	ug/L	42	Standard
>	**Ga**	71	70.0	75.3				mg/L	42	Standard
	Rb	85	391.7	126.9				ug/L	17	Standard
	Y	89	488721.1	2.3				ug/L	417098	Standard
>	**Rh**	103	16.7	105.4				ug/L	13	Standard
	Mo	98	140.7	71.4	**0.0402**	0.032	80.6	ug/L	11	Standard
	Ag	107	241.3	88.8	**0.0193**	0.028	147.0	ug/L	68	Standard
	Cd	111	97.4	139.8	**0.0324**	0.056	173.4	mg/L	2	Standard
	Cd	114	250.4	134.1	**0.0402**	0.057	140.7	ug/L	12	Standard
>	**In**	115	673056.2	1.0				ug/L	587441	Standard
	Sn	118	918.4	10.7	**0.0424**	0.014	32.3	ug/L	497	Standard
	Sb	123	377.5	33.3	**0.0663**	0.023	34.5	ug/L	78	Standard
	Ba	135	710.7	130.6	**0.2849**	0.392	137.5	ug/L	24	Standard
	Ce	140	2190.4	144.6				ug/L	25	Standard
>	**Tb**	159	1033072.6	2.9				ug/L	939701	Standard
	Ho	165	46.7	118.0				ug/L	10	Standard
	Tl	203	354.0	129.7	**0.0375**	0.050	134.0	ug/L	4	Standard
	Tl	205	175.0	119.3	**0.0226**	0.026	116.3	ug/L	2	Standard
	Pb	206	584.7	65.9	**0.0302**	0.064	211.0	ug/L	240	Standard
	Pb	207	508.0	67.6	**0.0291**	0.064	219.9	ug/L	198	Standard
	Pb	208	1976.7	53.7	**0.0238**	0.049	207.9	ug/L	883	Standard
	U	238	147.7	117.1	**0.0152**	0.023	148.4	ug/L	3	Standard
>	**Bi**	209	558931.4	2.9				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	38.3	32.8	**-0.0206**	0.014	67.5	mg/L	37	Standard
K	39	46.7	37.6	**-0.0214**	0.032	149.6	mg/L	38	Standard
Ca	43	20.0	0.0	**-1.3794**	0.055	4.0	mg/L	10	Standard
Fe	54	191.0	21.0	**0.0073**	0.024	325.9	mg/L	179	Standard
Fe	57	261.7	19.2	**-0.2718**	0.132	48.6	mg/L	335	Standard
> **Sc-1**	45	67500.3	4.8				mg/L	61029	Standard
Cl	35	25962.2	2.0				ug/L	20195	Standard
Kr	83	3.0	33.3				ug/L	4	Standard
Br	81	2216.8	6.9				ug/L	1547	Standard
P	31	19524.2	2.3				ug/L	15286	Standard
S	34	2248.5	4.1				ug/L	1572	Standard
Sr	88	73.3	27.6				ug/L	73	Standard
C	12	46.7	44.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	67.1	124.3				mg/L	6	Standard
Ho-1	165	46.7	118.0				mg/L	10	Standard
Er	166	60.0	130.2				mg/L	13	Standard
I	127	1978.5	35.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.136	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.817	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.574
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.669
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 60 WG574001-05
Sample Date/Time: Wednesday, June 29, 2016 15:52:04
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	78008.7	2.7				ug/L	74699	Standard
	Be	9	49798.4	3.1	**54.1693**	0.583	1.1	ug/L	8	Standard
	Al	27	8265.6	3.2	**0.0405**	0.001	2.7	ug/L	1493	Standard
	Sc	45	64878.8	4.3				ug/L	61029	Standard
	Ti	47	43.0	16.3	**-0.0042**	0.019	444.7	ug/L	35	Standard
	V	51	424123.5	0.9	**51.5862**	0.653	1.3	ug/L	1435	Standard
	Cr	52	430096.1	0.4	**52.4970**	1.185	2.3	ug/L	7635	Standard
	Cr	53	53307.0	1.3	**52.8599**	1.230	2.3	ug/L	363	Standard
	Mn	55	405428.0	0.3	**53.5518**	1.000	1.9	ug/L	747	Standard
	Co	59	387903.4	0.1	**54.1349**	1.154	2.1	ug/L	234	Standard
	Ni	60	106395.6	1.4	**52.2826**	1.359	2.6	ug/L	215	Standard
	Cu	65	107418.5	1.1	**53.1215**	1.283	2.4	ug/L	104	Standard
	Zn	66	63602.2	0.4	**53.2433**	1.221	2.3	ug/L	363	Standard
>	Ge	72	537059.3	2.0				ug/L	495142	Standard
	As	75	62286.8	1.3	**51.3419**	1.295	2.5	ug/L	-50	Standard
	Se	82	6132.0	1.6	**51.3807**	0.931	1.8	ug/L	14	Standard
	Se-1	77	4215.6	1.2	**52.6015**	0.951	1.8	ug/L	42	Standard
>	Ga	71	76.7	32.8				mg/L	42	Standard
	Rb	85	50.0	36.1				ug/L	17	Standard
	Y	89	473307.8	1.1				ug/L	417098	Standard
>	Rh	103	23.3	75.3				ug/L	13	Standard
	Mo	98	59.9	20.8	**0.0148**	0.004	26.5	ug/L	11	Standard
	Ag	107	358191.0	0.9	**50.3679**	1.706	3.4	ug/L	68	Standard
	Cd	111	112882.0	2.3	**49.4684**	1.332	2.7	mg/L	2	Standard
	Cd	114	273909.8	1.0	**48.9526**	1.484	3.0	ug/L	12	Standard
>	In	115	641215.1	2.7				ug/L	587441	Standard
	Sn	118	785.0	7.1	**0.0286**	0.011	37.9	ug/L	497	Standard
	Sb	123	249794.4	1.0	**49.0383**	1.564	3.2	ug/L	78	Standard
	Ba	135	107708.9	1.4	**48.2176**	1.451	3.0	ug/L	24	Standard
	Ce	140	101.7	27.1				ug/L	25	Standard
>	Tb	159	990038.9	2.7				ug/L	939701	Standard
	Ho	165	11.7	99.0				ug/L	10	Standard
	Tl	203	439976.8	0.4	**51.4932**	0.969	1.9	ug/L	4	Standard
	Tl	205	398605.3	0.6	**53.7491**	0.791	1.5	ug/L	2	Standard
	Pb	206	290681.6	0.4	**52.4241**	0.636	1.2	ug/L	240	Standard
	Pb	207	247225.7	0.4	**50.1841**	0.852	1.7	ug/L	198	Standard
	Pb	208	1030904.4	0.6	**52.9701**	1.178	2.2	ug/L	883	Standard
	U	238	368133.3	0.5	**51.5924**	0.851	1.6	ug/L	3	Standard
>	Bi	209	543222.2	1.6				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	35.0	28.6	**-0.0227**	0.012	52.0	mg/L	37	Standard
K	39	28.3	50.9	**-0.0559**	0.027	48.5	mg/L	38	Standard
Ca	43	35.0	28.6	**-0.4579**	0.506	110.5	mg/L	10	Standard
Fe	54	138.7	22.6	**-0.0277**	0.025	88.8	mg/L	179	Standard
Fe	57	243.3	16.6	**-0.2916**	0.161	55.3	mg/L	335	Standard
> **Sc-1**	45	64878.8	4.3				mg/L	61029	Standard
Cl	35	24949.9	2.3				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	1880.1	6.1				ug/L	1547	Standard
P	31	18362.8	1.6				ug/L	15286	Standard
S	34	2046.8	4.1				ug/L	1572	Standard
Sr	88	70.0	18.9				ug/L	73	Standard
C	12	56.7	56.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	2.2	249.0				mg/L	6	Standard
Ho-1	165	11.7	99.0				mg/L	10	Standard
Er	166	23.3	49.5				mg/L	13	Standard
I	127	1781.8	25.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.431	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.466	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.154
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.671
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606124702 WG574001-01
Sample Date/Time: Wednesday, June 29, 2016 15:55:16
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	134635.3	6.0				ug/L	74699	Standard
	Be	9	80.0	18.8	**0.0585**	0.013	21.4	ug/L	8	Standard
	Al	27	38117257.0	1.5	**144.1796**	7.359	5.1	ug/L	1493	Standard
	Sc	45	57575.9	1.8				ug/L	61029	Standard
	Ti	47	164.0	8.6	**0.3117**	0.039	12.5	ug/L	35	Standard
	V	51	2694.7	7.4	**0.1512**	0.027	17.7	ug/L	1435	Standard
	Cr	52	13340.2	1.7	**0.7256**	0.017	2.4	ug/L	7635	Standard
	Cr	53	1556.7	8.2	**1.3078**	0.145	11.1	ug/L	363	Standard
	Mn	55	855520.0	4.5	**119.2592**	4.647	3.9	ug/L	747	Standard
	Co	59	4433.3	4.9	**0.6151**	0.027	4.4	ug/L	234	Standard
	Ni	60	11360.3	1.4	**5.7737**	0.123	2.1	ug/L	215	Standard
	Cu	65	4582.0	1.3	**2.2889**	0.015	0.7	ug/L	104	Standard
	Zn	66	3866.8	1.4	**2.9861**	0.052	1.7	ug/L	363	Standard
>	**Ge**	72	509457.0	0.7				ug/L	495142	Standard
	As	75	332.4	10.8	**0.3479**	0.030	8.6	ug/L	-50	Standard
	Se	82	161.9	7.9	**1.2952**	0.108	8.4	ug/L	14	Standard
	Se-1	77	102.3	14.4	**0.7391**	0.192	26.0	ug/L	42	Standard
>	**Ga**	71	95.0	18.2				mg/L	42	Standard
	Rb	85	141592.2	2.6				ug/L	17	Standard
	Y	89	417616.8	3.6				ug/L	417098	Standard
>	**Rh**	103	198.3	13.9				ug/L	13	Standard
	Mo	98	173.0	3.6	**0.0623**	0.003	5.6	ug/L	11	Standard
	Ag	107	339.3	7.8	**0.0417**	0.005	13.0	ug/L	68	Standard
	Cd	111	139.7	8.2	**0.0622**	0.007	10.5	mg/L	2	Standard
	Cd	114	358.4	9.8	**0.0712**	0.009	12.2	ug/L	12	Standard
>	**In**	115	560534.9	2.1				ug/L	587441	Standard
	Sn	118	620.0	5.6	**0.0166**	0.008	49.6	ug/L	497	Standard
	Sb	123	641.7	15.5	**0.1401**	0.024	17.2	ug/L	78	Standard
	Ba	135	5098.9	2.7	**2.5958**	0.100	3.9	ug/L	24	Standard
	Ce	140	815.0	33.2				ug/L	25	Standard
>	**Tb**	159	928792.3	1.3				ug/L	939701	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	1143.7	8.4	**0.1440**	0.014	9.4	ug/L	4	Standard
	Tl	205	1088.4	7.4	**0.1600**	0.012	7.4	ug/L	2	Standard
	Pb	206	578.7	9.2	**0.0425**	0.010	23.1	ug/L	240	Standard
	Pb	207	493.0	9.5	**0.0393**	0.012	31.8	ug/L	198	Standard
	Pb	208	1938.4	3.0	**0.0345**	0.004	12.8	ug/L	883	Standard
	U	238	1219.0	4.3	**0.1816**	0.009	5.1	ug/L	3	Standard
>	**Bi**	209	499083.1	3.3				ug/L	523984	Standard

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Na	23	20.0	43.3	**245.3647**	110.079	44.9	mg/L	0	Standard
Mg	24	80086.1	0.7	**109.5385**	2.239	2.0	mg/L	37	Standard
K	39	1376.7	6.5	**3.1098**	0.163	5.2	mg/L	38	Standard
Ca	43	2828.6	6.5	**186.7611**	8.963	4.8	mg/L	10	Standard
Fe	54	188.7	25.7	**0.0318**	0.047	146.5	mg/L	179	Standard
Fe	57	1751.8	4.9	**5.2348**	0.203	3.9	mg/L	335	Standard
> **Sc-1**	45	57575.9	1.8				mg/L	61029	Standard
Cl	35	65110.3	1.2				ug/L	20195	Standard
Kr	83	3.7	68.6				ug/L	4	Standard
Br	81	22346.5	6.5				ug/L	1547	Standard
P	31	17116.3	3.4				ug/L	15286	Standard
S	34	2223.5	6.9				ug/L	1572	Standard
Sr	88	836.7	13.9				ug/L	73	Standard
C	12	76.7	74.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	52.1	77.4				mg/L	6	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	26.7	57.3				mg/L	13	Standard
I	127	41219.6	7.8				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		180.238	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		102.891	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.420
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.248
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606124702DP WG574001-06
Sample Date/Time: Wednesday, June 29, 2016 15:58:27
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	151702.5	2.0				ug/L	74699	Standard
	Be	9	51.7	59.1	**0.0368**	0.018	48.5	ug/L	8	Standard
	Al	27	41839885.7	0.1	**140.2128**	2.854	2.0	ug/L	1493	Standard
	Sc	45	56811.4	3.1				ug/L	61029	Standard
	Ti	47	131.7	6.1	**0.2545**	0.026	10.2	ug/L	35	Standard
	V	51	2376.3	9.9	**0.1332**	0.026	19.9	ug/L	1435	Standard
	Cr	52	12951.9	1.5	**0.8048**	0.052	6.4	ug/L	7635	Standard
	Cr	53	1565.1	1.7	**1.4417**	0.042	2.9	ug/L	363	Standard
	Mn	55	867683.1	1.0	**130.2493**	3.502	2.7	ug/L	747	Standard
	Co	59	4344.6	3.7	**0.6509**	0.022	3.4	ug/L	234	Standard
	Ni	60	12342.7	0.7	**6.7729**	0.126	1.9	ug/L	215	Standard
	Cu	65	4552.0	1.4	**2.4548**	0.036	1.5	ug/L	104	Standard
	Zn	66	4125.6	2.3	**3.4960**	0.055	1.6	ug/L	363	Standard
>	**Ge**	72	473381.7	2.0				ug/L	495142	Standard
	As	75	389.2	1.9	**0.4231**	0.002	0.6	ug/L	-50	Standard
	Se	82	181.1	4.2	**1.5888**	0.099	6.2	ug/L	14	Standard
	Se-1	77	106.3	18.0	**0.8981**	0.248	27.6	ug/L	42	Standard
>	**Ga**	71	78.3	22.4				mg/L	42	Standard
	Rb	85	147149.5	0.7				ug/L	17	Standard
	Y	89	405581.1	1.8				ug/L	417098	Standard
>	**Rh**	103	178.3	29.5				ug/L	13	Standard
	Mo	98	220.6	12.3	**0.0817**	0.013	15.7	ug/L	11	Standard
	Ag	107	177.0	68.0	**0.0160**	0.020	127.1	ug/L	68	Standard
	Cd	111	65.9	51.9	**0.0256**	0.018	71.0	mg/L	2	Standard
	Cd	114	151.1	49.7	**0.0291**	0.016	55.4	ug/L	12	Standard
>	**In**	115	557347.0	2.4				ug/L	587441	Standard
	Sn	118	766.7	0.4	**0.0437**	0.004	8.6	ug/L	497	Standard
	Sb	123	305.8	17.0	**0.0650**	0.013	20.6	ug/L	78	Standard
	Ba	135	5047.2	3.4	**2.5853**	0.149	5.7	ug/L	24	Standard
	Ce	140	491.7	100.3				ug/L	25	Standard
>	**Tb**	159	935324.5	2.7				ug/L	939701	Standard
	Ho	165	18.3	103.3				ug/L	10	Standard
	Tl	203	947.0	9.8	**0.1179**	0.014	11.5	ug/L	4	Standard
	Tl	205	846.7	27.0	**0.1237**	0.035	28.6	ug/L	2	Standard
	Pb	206	418.3	37.6	**0.0106**	0.032	302.9	ug/L	240	Standard
	Pb	207	351.7	32.0	**0.0074**	0.026	354.3	ug/L	198	Standard
	Pb	208	1404.0	30.0	**0.0041**	0.025	608.6	ug/L	883	Standard
	U	238	972.4	9.3	**0.1427**	0.016	11.1	ug/L	3	Standard
>	**Bi**	209	503603.8	1.5				ug/L	523984	Standard

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Na	23	25.0	34.6	**311.2656**	112.939	36.3	mg/L	0	Standard
Mg	24	85343.0	0.9	**118.3682**	4.384	3.7	mg/L	37	Standard
K	39	1298.4	2.9	**2.9712**	0.147	4.9	mg/L	38	Standard
Ca	43	2830.3	7.5	**189.4839**	12.043	6.4	mg/L	10	Standard
Fe	54	146.6	14.0	**-0.0044**	0.021	483.2	mg/L	179	Standard
Fe	57	1698.4	7.8	**5.1376**	0.623	12.1	mg/L	335	Standard
> **Sc-1**	45	56811.4	3.1				mg/L	61029	Standard
Cl	35	65999.5	1.4				ug/L	20195	Standard
Kr	83	1.3	114.6				ug/L	4	Standard
Br	81	22520.1	6.6				ug/L	1547	Standard
P	31	16799.3	3.7				ug/L	15286	Standard
S	34	2040.1	3.0				ug/L	1572	Standard
Sr	88	920.0	8.9				ug/L	73	Standard
C	12	83.3	25.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	3	Standard
Dy	164	32.1	98.6				mg/L	6	Standard
Ho-1	165	18.3	103.3				mg/L	10	Standard
Er	166	26.7	43.3				mg/L	13	Standard
I	127	45859.6	7.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		203.086	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.605	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.877
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.110
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606126501 WG574001-02
Sample Date/Time: Wednesday, June 29, 2016 16:01:39
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	112017.9	3.5				ug/L	74699	Standard
	Be	9	21.7	35.3	**0.0242**	0.006	26.3	ug/L	8	Standard
	Al	27	58851331.1	1.0	**267.2037**	7.701	2.9	ug/L	1493	Standard
	Sc	45	63265.2	2.1				ug/L	61029	Standard
	Ti	47	314.3	6.0	**0.7250**	0.050	6.9	ug/L	35	Standard
	V	51	84379.6	0.6	**11.0401**	0.098	0.9	ug/L	1435	Standard
	Cr	52	25344.2	1.7	**2.4155**	0.065	2.7	ug/L	7635	Standard
	Cr	53	30644.3	3.7	**33.0161**	1.295	3.9	ug/L	363	Standard
	Mn	55	3058.3	0.3	**0.2937**	0.003	0.9	ug/L	747	Standard
	Co	59	981.4	1.2	**0.1122**	0.002	1.4	ug/L	234	Standard
	Ni	60	4598.7	1.8	**2.3463**	0.051	2.2	ug/L	215	Standard
	Cu	65	1226.7	2.1	**0.5592**	0.015	2.8	ug/L	104	Standard
	Zn	66	2978.0	3.2	**2.2873**	0.091	4.0	ug/L	363	Standard
>	**Ge**	72	492356.2	0.3				ug/L	495142	Standard
	As	75	3467.1	5.3	**3.1728**	0.175	5.5	ug/L	-50	Standard
	Se	82	1561.8	3.2	**14.1732**	0.483	3.4	ug/L	14	Standard
	Se-1	77	3085.3	7.4	**41.8633**	3.228	7.7	ug/L	42	Standard
>	**Ga**	71	63.3	27.7				mg/L	42	Standard
	Rb	85	9206.1	3.0				ug/L	17	Standard
	Y	89	442169.1	3.5				ug/L	417098	Standard
>	**Rh**	103	255.0	11.9				ug/L	13	Standard
	Mo	98	5205.2	3.3	**1.8993**	0.033	1.7	ug/L	11	Standard
	Ag	107	803.7	5.3	**0.1074**	0.005	4.8	ug/L	68	Standard
	Cd	111	45.0	9.2	**0.0131**	0.002	16.6	mg/L	2	Standard
	Cd	114	163.3	22.8	**0.0289**	0.007	22.9	ug/L	12	Standard
>	**In**	115	602229.8	3.0				ug/L	587441	Standard
	Sn	118	683.3	9.8	**0.0193**	0.009	45.4	ug/L	497	Standard
	Sb	123	210.7	19.8	**0.0397**	0.008	19.9	ug/L	78	Standard
	Ba	135	21407.4	0.7	**10.1914**	0.253	2.5	ug/L	24	Standard
	Ce	140	328.3	10.1				ug/L	25	Standard
>	**Tb**	159	984916.0	0.2				ug/L	939701	Standard
	Ho	165	35.0	24.7				ug/L	10	Standard
	Tl	203	94.3	9.0	**0.0098**	0.001	12.0	ug/L	4	Standard
	Tl	205	65.0	40.7	**0.0094**	0.004	40.6	ug/L	2	Standard
	Pb	206	401.3	3.0	**0.0049**	0.001	28.2	ug/L	240	Standard
	Pb	207	354.0	5.2	**0.0056**	0.003	55.2	ug/L	198	Standard
	Pb	208	1436.0	3.5	**0.0035**	0.003	74.9	ug/L	883	Standard
	U	238	31993.4	1.5	**4.7067**	0.092	1.9	ug/L	3	Standard
>	**Bi**	209	517006.9	1.2				ug/L	523984	Standard

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Na	23	5.0	100.0	**55.9813**	56.756	101.4	mg/L	0	Standard
Mg	24	180057.1	1.6	**224.1644**	1.858	0.8	mg/L	37	Standard
K	39	641.7	5.8	**1.2549**	0.096	7.6	mg/L	38	Standard
Ca	43	708.3	7.0	**40.6474**	3.060	7.5	mg/L	10	Standard
Fe	54	157.9	5.8	**-0.0091**	0.008	86.4	mg/L	179	Standard
Fe	57	550.0	17.3	**0.7314**	0.333	45.5	mg/L	335	Standard
> **Sc-1**	45	63265.2	2.1				mg/L	61029	Standard
Cl	35	33676.1	1.7				ug/L	20195	Standard
Kr	83	0.3	173.2				ug/L	4	Standard
Br	81	48808.6	5.5				ug/L	1547	Standard
P	31	23084.3	3.5				ug/L	15286	Standard
S	34	2106.8	4.3				ug/L	1572	Standard
Sr	88	1195.0	6.7				ug/L	73	Standard
C	12	130.0	40.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	9.0	113.3				mg/L	6	Standard
Ho-1	165	35.0	24.7				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	49504.2	3.9				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		149.959	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.437	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.517	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.668	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606126502S WG574001-07
Sample Date/Time: Wednesday, June 29, 2016 16:04:50
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	109865.8	4.5				ug/L	74699	Standard
	Be	9	61395.8	1.0	**47.4912**	2.348	4.9	ug/L	8	Standard
	Al	27	61297739.1	1.7	**284.0961**	17.361	6.1	ug/L	1493	Standard
	Sc	45	64222.6	2.9				ug/L	61029	Standard
	Ti	47	334.7	6.1	**0.7462**	0.065	8.7	ug/L	35	Standard
	V	51	514269.3	0.9	**65.7128**	0.488	0.7	ug/L	1435	Standard
	Cr	52	414721.1	1.2	**53.1400**	0.316	0.6	ug/L	7635	Standard
	Cr	53	79122.8	2.2	**82.5246**	0.802	1.0	ug/L	363	Standard
	Mn	55	379075.2	0.4	**52.5566**	0.801	1.5	ug/L	747	Standard
	Co	59	375122.1	1.7	**54.9533**	1.379	2.5	ug/L	234	Standard
	Ni	60	98886.4	1.8	**50.9941**	0.435	0.9	ug/L	215	Standard
	Cu	65	94781.9	0.9	**49.1885**	0.428	0.9	ug/L	104	Standard
	Zn	66	59708.1	1.0	**52.4531**	0.349	0.7	ug/L	363	Standard
>	Ge	72	511580.8	1.5				ug/L	495142	Standard
	As	75	64226.1	0.6	**55.5617**	0.582	1.0	ug/L	-50	Standard
	Se	82	7637.7	1.0	**67.2251**	1.117	1.7	ug/L	14	Standard
	Se-1	77	7177.4	2.9	**94.4764**	1.329	1.4	ug/L	42	Standard
>	Ga	71	96.7	7.9				mg/L	42	Standard
	Rb	85	9571.4	0.6				ug/L	17	Standard
	Y	89	459795.2	1.7				ug/L	417098	Standard
>	Rh	103	293.3	12.0				ug/L	13	Standard
	Mo	98	5421.1	3.7	**1.9704**	0.066	3.4	ug/L	11	Standard
	Ag	107	318338.0	1.0	**47.4485**	0.356	0.8	ug/L	68	Standard
	Cd	111	104991.2	1.0	**48.7852**	0.464	1.0	mg/L	2	Standard
	Cd	114	250399.7	1.5	**47.4405**	0.760	1.6	ug/L	12	Standard
>	In	115	604563.1	0.3				ug/L	587441	Standard
	Sn	118	798.4	4.4	**0.0381**	0.006	16.0	ug/L	497	Standard
	Sb	123	240747.3	1.0	**50.1002**	0.397	0.8	ug/L	78	Standard
	Ba	135	122571.5	0.3	**58.1746**	0.379	0.7	ug/L	24	Standard
	Ce	140	328.3	0.9				ug/L	25	Standard
>	Tb	159	981221.4	1.4				ug/L	939701	Standard
	Ho	165	28.3	44.4				ug/L	10	Standard
	Tl	203	414235.7	0.7	**51.0974**	0.645	1.3	ug/L	4	Standard
	Tl	205	378219.2	0.6	**53.7534**	0.090	0.2	ug/L	2	Standard
	Pb	206	277784.6	0.1	**52.8053**	0.305	0.6	ug/L	240	Standard
	Pb	207	237018.9	0.5	**50.7105**	0.514	1.0	ug/L	198	Standard
	Pb	208	965977.0	0.4	**52.3096**	0.506	1.0	ug/L	883	Standard
	U	238	407586.9	0.7	**60.2072**	0.700	1.2	ug/L	3	Standard
>	Bi	209	515321.0	0.6				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.6720**	30.600	173.2	mg/L	0	Standard
Mg	24	189285.1	1.3	**232.3057**	9.548	4.1	mg/L	37	Standard
K	39	641.7	6.1	**1.2328**	0.045	3.6	mg/L	38	Standard
Ca	43	760.0	12.3	**43.0240**	4.391	10.2	mg/L	10	Standard
Fe	54	185.4	16.8	**0.0114**	0.028	245.2	mg/L	179	Standard
Fe	57	630.0	4.2	**0.9612**	0.087	9.0	mg/L	335	Standard
> **Sc-1**	45	64222.6	2.9				mg/L	61029	Standard
Cl	35	34933.6	1.5				ug/L	20195	Standard
Kr	83	2.7	114.6				ug/L	4	Standard
Br	81	53306.9	1.0				ug/L	1547	Standard
P	31	23740.3	1.4				ug/L	15286	Standard
S	34	2118.5	3.3				ug/L	1572	Standard
Sr	88	1145.0	3.3				ug/L	73	Standard
C	12	140.0	21.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	28.6	38.4				mg/L	6	Standard
Ho-1	165	28.3	44.4				mg/L	10	Standard
Er	166	30.0	66.7				mg/L	13	Standard
I	127	81496.0	7.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		147.078	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.320	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.915	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.347	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606126503SD WG574001-08
Sample Date/Time: Wednesday, June 29, 2016 16:08:02
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	108017.3	3.5				ug/L	74699	Standard
	Be	9	61104.9	5.2	**47.9870**	0.846	1.8	ug/L	8	Standard
	Al	27	60436124.3	2.1	**284.5445**	9.073	3.2	ug/L	1493	Standard
	Sc	45	65195.1	3.6				ug/L	61029	Standard
	Ti	47	321.3	5.9	**0.6738**	0.054	8.0	ug/L	35	Standard
	V	51	521782.6	1.8	**63.5667**	1.206	1.9	ug/L	1435	Standard
	Cr	52	431117.5	0.3	**52.6702**	0.983	1.9	ug/L	7635	Standard
	Cr	53	81998.0	1.1	**81.5509**	0.729	0.9	ug/L	363	Standard
	Mn	55	379421.8	1.7	**50.1647**	1.838	3.7	ug/L	747	Standard
	Co	59	378746.6	2.0	**52.9167**	2.098	4.0	ug/L	234	Standard
	Ni	60	101643.5	0.7	**49.9872**	1.144	2.3	ug/L	215	Standard
	Cu	65	96036.4	1.2	**47.5169**	0.455	1.0	ug/L	104	Standard
	Zn	66	60629.4	1.5	**50.7689**	0.479	0.9	ug/L	363	Standard
>	Ge	72	536566.5	1.9				ug/L	495142	Standard
	As	75	65668.7	0.7	**54.1701**	0.796	1.5	ug/L	-50	Standard
	Se	82	7769.6	1.1	**65.2136**	1.970	3.0	ug/L	14	Standard
	Se-1	77	7316.4	1.6	**91.8340**	1.824	2.0	ug/L	42	Standard
>	Ga	71	56.7	22.2				mg/L	42	Standard
	Rb	85	9684.8	3.9				ug/L	17	Standard
	Y	89	458590.9	3.1				ug/L	417098	Standard
>	Rh	103	275.0	12.6				ug/L	13	Standard
	Mo	98	5397.9	1.9	**1.9792**	0.040	2.0	ug/L	11	Standard
	Ag	107	315299.7	0.9	**47.4082**	1.008	2.1	ug/L	68	Standard
	Cd	111	105649.0	0.5	**49.5183**	0.751	1.5	mg/L	2	Standard
	Cd	114	256574.5	1.5	**49.0334**	1.028	2.1	ug/L	12	Standard
>	In	115	599465.1	2.0				ug/L	587441	Standard
	Sn	118	820.0	11.4	**0.0428**	0.015	34.4	ug/L	497	Standard
	Sb	123	245153.5	0.2	**51.4644**	0.950	1.8	ug/L	78	Standard
	Ba	135	122768.4	0.8	**58.7829**	1.524	2.6	ug/L	24	Standard
	Ce	140	333.3	10.5				ug/L	25	Standard
>	Tb	159	983758.7	0.8				ug/L	939701	Standard
	Ho	165	18.3	41.7				ug/L	10	Standard
	Tl	203	416470.0	0.7	**50.8907**	0.470	0.9	ug/L	4	Standard
	Tl	205	377588.7	0.1	**53.1619**	0.172	0.3	ug/L	2	Standard
	Pb	206	279930.3	0.5	**52.7144**	0.351	0.7	ug/L	240	Standard
	Pb	207	238634.3	0.7	**50.5762**	0.275	0.5	ug/L	198	Standard
	Pb	208	958199.8	1.0	**51.4011**	0.688	1.3	ug/L	883	Standard
	U	238	405052.0	0.8	**59.2716**	0.671	1.1	ug/L	3	Standard
>	Bi	209	520189.0	0.3				ug/L	523984	Standard

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Na	23	5.0	173.2	**51.9909**	90.042	173.2	mg/L	0	Standard
Mg	24	184795.4	2.1	**223.5320**	12.550	5.6	mg/L	37	Standard
K	39	668.3	13.7	**1.2668**	0.164	13.0	mg/L	38	Standard
Ca	43	725.0	7.3	**40.3567**	2.975	7.4	mg/L	10	Standard
Fe	54	151.4	21.3	**-0.0183**	0.024	132.3	mg/L	179	Standard
Fe	57	623.3	16.5	**0.9045**	0.268	29.6	mg/L	335	Standard
> **Sc-1**	45	65195.1	3.6				mg/L	61029	Standard
Cl	35	33686.7	1.5				ug/L	20195	Standard
Kr	83	1.7	91.7				ug/L	4	Standard
Br	81	51370.3	3.2				ug/L	1547	Standard
P	31	23124.3	1.4				ug/L	15286	Standard
S	34	2101.8	2.3				ug/L	1572	Standard
Sr	88	1251.7	9.6				ug/L	73	Standard
C	12	163.3	19.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	9.4	104.3				mg/L	6	Standard
Ho-1	165	18.3	41.7				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	90519.1	8.2				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		144.604	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		108.366	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	102.047
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.276
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606124701
Sample Date/Time: Wednesday, June 29, 2016 16:11:13
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	160464.4	3.8				ug/L	74699	Standard
	Be	9	12485.1	1.8	**6.6126**	0.132	2.0	ug/L	8	Standard
	Al	27	129371635.5	1.7	**410.0067**	8.683	2.1	ug/L	1493	Standard
	Sc	45	97873.5	2.0				ug/L	61029	Standard
	Ti	47	12940.2	2.9	**32.4229**	1.439	4.4	ug/L	35	Standard
	V	51	62587.9	0.8	**7.6988**	0.173	2.3	ug/L	1435	Standard
	Cr	52	130472.4	1.2	**15.7449**	0.176	1.1	ug/L	7635	Standard
	Cr	53	17299.9	2.8	**17.4949**	0.102	0.6	ug/L	363	Standard
	Mn	55	53885293.3	1.0	**7372.4056**	142.217	1.9	ug/L	747	Standard
	Co	59	1486809.2	2.0	**214.4609**	6.754	3.1	ug/L	234	Standard
	Ni	60	953927.1	1.9	**485.1518**	7.673	1.6	ug/L	215	Standard
	Cu	65	14021.8	2.7	**7.0705**	0.048	0.7	ug/L	104	Standard
	Zn	66	1250022.8	1.4	**1089.5042**	11.046	1.0	ug/L	363	Standard
>	**Ge**	72	519921.5	2.2				ug/L	495142	Standard
	As	75	2369.9	1.5	**2.0748**	0.031	1.5	ug/L	-50	Standard
	Se	82	334.2	2.8	**2.7639**	0.140	5.1	ug/L	14	Standard
	Se-1	77	477.7	9.4	**5.6016**	0.492	8.8	ug/L	42	Standard
>	**Ga**	71	3503.7	1.4				mg/L	42	Standard
	Rb	85	155749.9	1.6				ug/L	17	Standard
	Y	89	3051185.4	0.7				ug/L	417098	Standard
>	**Rh**	103	200.0	9.0				ug/L	13	Standard
	Mo	98	648.1	0.8	**0.2277**	0.002	1.0	ug/L	11	Standard
	Ag	107	406.3	10.5	**0.0469**	0.006	13.8	ug/L	68	Standard
	Cd	111	4037.2	2.2	**1.8458**	0.056	3.0	mg/L	2	Standard
	Cd	114	10321.7	4.5	**1.9292**	0.065	3.4	ug/L	12	Standard
>	**In**	115	612067.4	1.8				ug/L	587441	Standard
	Sn	118	936.7	6.3	**0.0593**	0.012	20.5	ug/L	497	Standard
	Sb	123	674.3	5.8	**0.1344**	0.006	4.1	ug/L	78	Standard
	Ba	135	15717.8	1.3	**7.3556**	0.136	1.8	ug/L	24	Standard
	Ce	140	2639736.8	0.7				ug/L	25	Standard
>	**Tb**	159	1213429.7	1.8				ug/L	939701	Standard
	Ho	165	212831.1	0.7				ug/L	10	Standard
	Tl	203	2423.5	3.4	**0.2853**	0.011	3.9	ug/L	4	Standard
	Tl	205	2225.2	6.3	**0.3038**	0.017	5.8	ug/L	2	Standard
	Pb	206	7086.3	0.1	**1.2240**	0.010	0.8	ug/L	240	Standard
	Pb	207	5547.0	2.2	**1.0710**	0.022	2.1	ug/L	198	Standard
	Pb	208	23218.6	1.0	**1.1348**	0.005	0.5	ug/L	883	Standard
	U	238	25740.2	1.8	**3.6463**	0.044	1.2	ug/L	3	Standard
>	**Bi**	209	536711.9	0.7				ug/L	523984	Standard

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Na	23	40.0	57.3	**285.3574**	160.270	56.2	mg/L	0	Standard
Mg	24	87773.6	1.9	**70.5914**	1.090	1.5	mg/L	37	Standard
K	39	1211.7	2.8	**1.5562**	0.053	3.4	mg/L	38	Standard
Ca	43	3308.7	4.2	**127.7939**	4.640	3.6	mg/L	10	Standard
Fe	54	180981.2	2.7	**95.5321**	0.892	0.9	mg/L	179	Standard
Fe	57	48873.8	3.4	**102.4969**	2.098	2.0	mg/L	335	Standard
Sc-1	45	97873.5	2.0				mg/L	61029	Standard
Cl	35	64420.7	1.3				ug/L	20195	Standard
Kr	83	1.3	86.6				ug/L	4	Standard
Br	81	26873.8	3.7				ug/L	1547	Standard
P	31	52208.1	1.4				ug/L	15286	Standard
S	34	1956.8	2.0				ug/L	1572	Standard
Sr	88	1171.7	10.6				ug/L	73	Standard
C	12	126.7	46.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	329920.1	1.3				mg/L	6	Standard
Ho-1	165	212831.1	0.7				mg/L	10	Standard
Er	166	185158.1	1.8				mg/L	13	Standard
I	127	88143.1	6.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		214.815	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		105.004	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.192
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.429
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Co 59 Upper, S, EEE	Co	59
Ni 60 Upper, S, EEE	Ni	60
Zn 66 Upper, S, EEE	Zn	66

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Method 6020 - Summary Report

Sample ID: L1606124701PS WG574688-01
Sample Date/Time: Wednesday, June 29, 2016 16:14:25
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	166369.0	3.1				ug/L	74699	Standard
	Be	9	78228.1	1.5	**39.9183**	0.744	1.9	ug/L	8	Standard
	Al	27	127858501.0	1.9	**390.7420**	6.863	1.8	ug/L	1493	Standard
	Sc	45	95075.8	2.0				ug/L	61029	Standard
	Ti	47	12076.5	3.4	**30.6847**	0.840	2.7	ug/L	35	Standard
	V	51	487373.4	0.7	**62.1823**	0.880	1.4	ug/L	1435	Standard
	Cr	52	506749.0	0.5	**65.0704**	0.602	0.9	ug/L	7635	Standard
	Cr	53	63546.3	1.7	**66.1298**	1.201	1.8	ug/L	363	Standard
	Mn	55	53730576.4	0.3	**7459.5309**	74.503	1.0	ug/L	747	Standard
	Co	59	1866113.9	0.2	**273.1251**	3.396	1.2	ug/L	234	Standard
	Ni	60	1009610.1	0.8	**521.0961**	4.502	0.9	ug/L	215	Standard
	Cu	65	102190.2	1.2	**52.9646**	0.037	0.1	ug/L	104	Standard
	Zn	66	1265218.7	0.3	**1119.1475**	11.121	1.0	ug/L	363	Standard
>	**Ge**	72	512284.2	1.2				ug/L	495142	Standard
	As	75	65072.9	0.3	**56.2148**	0.511	0.9	ug/L	-50	Standard
	Se	82	7179.2	1.0	**63.0878**	0.484	0.8	ug/L	14	Standard
	Se-1	77	4836.8	0.7	**63.3901**	0.749	1.2	ug/L	42	Standard
>	**Ga**	71	3398.7	7.2				mg/L	42	Standard
	Rb	85	158551.9	0.5				ug/L	17	Standard
	Y	89	3079691.2	1.3				ug/L	417098	Standard
>	**Rh**	103	243.3	6.3				ug/L	13	Standard
	Mo	98	610.5	4.6	**0.2160**	0.008	3.7	ug/L	11	Standard
	Ag	107	329069.5	0.6	**48.8691**	0.577	1.2	ug/L	68	Standard
	Cd	111	109320.3	0.2	**50.6101**	0.459	0.9	mg/L	2	Standard
	Cd	114	265491.9	0.4	**50.1152**	0.608	1.2	ug/L	12	Standard
>	**In**	115	606831.5	1.0				ug/L	587441	Standard
	Sn	118	1098.4	5.9	**0.0874**	0.012	14.0	ug/L	497	Standard
	Sb	123	240923.7	1.8	**49.9558**	1.171	2.3	ug/L	78	Standard
	Ba	135	113288.6	0.8	**53.5705**	0.782	1.5	ug/L	24	Standard
	Ce	140	2588807.2	1.1				ug/L	25	Standard
>	**Tb**	159	1203377.0	1.6				ug/L	939701	Standard
	Ho	165	210409.6	1.8				ug/L	10	Standard
	Tl	203	437720.2	1.4	**52.3305**	0.744	1.4	ug/L	4	Standard
	Tl	205	404409.4	0.6	**55.7069**	0.222	0.4	ug/L	2	Standard
	Pb	206	295264.9	0.3	**54.4023**	0.212	0.4	ug/L	240	Standard
	Pb	207	250626.5	0.1	**51.9726**	0.335	0.6	ug/L	198	Standard
	Pb	208	1033784.3	0.4	**54.2614**	0.547	1.0	ug/L	883	Standard
	U	238	423217.8	0.6	**60.5919**	0.666	1.1	ug/L	3	Standard
>	**Bi**	209	531687.2	0.6				ug/L	523984	Standard

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Na	23	31.7	32.9	**235.3667**	80.946	34.4	mg/L	0	Standard
Mg	24	88559.7	0.9	**73.3333**	1.498	2.0	mg/L	37	Standard
K	39	1311.7	6.5	**1.7460**	0.092	5.3	mg/L	38	Standard
Ca	43	3437.1	1.4	**136.8797**	3.742	2.7	mg/L	10	Standard
Fe	54	183063.9	0.7	**99.5077**	1.370	1.4	mg/L	179	Standard
Fe	57	49900.4	2.7	**107.8438**	4.358	4.0	mg/L	335	Standard
Sc-1	45	95075.8	2.0				mg/L	61029	Standard
Cl	35	63889.8	1.2				ug/L	20195	Standard
Kr	83	1.7	34.6				ug/L	4	Standard
Br	81	26186.0	7.9				ug/L	1547	Standard
P	31	52633.0	2.3				ug/L	15286	Standard
S	34	1903.5	2.7				ug/L	1572	Standard
Sr	88	1258.4	8.1				ug/L	73	Standard
C	12	153.3	16.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	3	Standard
Dy	164	329580.7	1.9				mg/L	6	Standard
Ho-1	165	210409.6	1.8				mg/L	10	Standard
Er	166	182077.6	1.3				mg/L	13	Standard
I	127	87547.6	5.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		222.720	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.462	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.301
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.470
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Co 59 Upper, S, EEE	Co	59
Ni 60 Upper, S, EEE	Ni	60
Zn 66 Upper, S, EEE	Zn	66

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606124701SDL WG574688-02
Sample Date/Time: Wednesday, June 29, 2016 16:17:36
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	115043.6	2.7				ug/L	74699	Standard
	Be	9	2510.2	6.0	**1.8579**	0.064	3.4	ug/L	8	Standard
	Al	27	26603666.2	1.3	**117.5773**	3.118	2.7	ug/L	1493	Standard
	Sc	45	70520.4	2.0				ug/L	61029	Standard
	Ti	47	2655.2	2.4	**6.2496**	0.159	2.5	ug/L	35	Standard
	V	51	13651.6	1.3	**1.4451**	0.028	2.0	ug/L	1435	Standard
	Cr	52	32029.5	0.6	**2.9000**	0.113	3.9	ug/L	7635	Standard
	Cr	53	4062.2	6.0	**3.6565**	0.147	4.0	ug/L	363	Standard
	Mn	55	11326454.5	1.3	**1476.9710**	52.700	3.6	ug/L	747	Standard
	Co	59	315829.2	0.8	**43.3845**	1.293	3.0	ug/L	234	Standard
	Ni	60	206220.6	0.5	**99.8677**	2.554	2.6	ug/L	215	Standard
	Cu	65	3227.7	3.3	**1.4714**	0.087	5.9	ug/L	104	Standard
	Zn	66	276031.8	0.8	**228.9686**	6.765	3.0	ug/L	363	Standard
>	**Ge**	72	545622.5	2.3				ug/L	495142	Standard
	As	75	529.0	5.1	**0.4886**	0.031	6.3	ug/L	-50	Standard
	Se	82	109.8	7.8	**0.7692**	0.061	7.9	ug/L	14	Standard
	Se-1	77	127.7	10.6	**0.9669**	0.203	21.0	ug/L	42	Standard
>	**Ga**	71	896.7	4.3				mg/L	42	Standard
	Rb	85	33246.4	0.8				ug/L	17	Standard
	Y	89	1035711.2	2.7				ug/L	417098	Standard
>	**Rh**	103	68.3	33.0				ug/L	13	Standard
	Mo	98	137.2	4.4	**0.0416**	0.001	3.0	ug/L	11	Standard
	Ag	107	193.7	13.0	**0.0144**	0.003	20.5	ug/L	68	Standard
	Cd	111	922.1	1.5	**0.3978**	0.011	2.7	mg/L	2	Standard
	Cd	114	2202.4	8.0	**0.3929**	0.032	8.2	ug/L	12	Standard
>	**In**	115	638835.9	2.4				ug/L	587441	Standard
	Sn	118	601.7	4.7	**-0.0000**	0.004	76937.0	ug/L	497	Standard
	Sb	123	1960.6	22.3	**0.3834**	0.095	24.7	ug/L	78	Standard
	Ba	135	3410.7	1.0	**1.5171**	0.049	3.2	ug/L	24	Standard
	Ce	140	553030.9	1.0				ug/L	25	Standard
>	**Tb**	159	1064988.1	1.7				ug/L	939701	Standard
	Ho	165	44299.7	1.5				ug/L	10	Standard
	Tl	203	596.3	8.1	**0.0662**	0.006	8.4	ug/L	4	Standard
	Tl	205	613.3	10.1	**0.0808**	0.008	10.1	ug/L	2	Standard
	Pb	206	1759.1	0.5	**0.2383**	0.002	0.8	ug/L	240	Standard
	Pb	207	1407.7	5.3	**0.2088**	0.015	7.2	ug/L	198	Standard
	Pb	208	5898.4	2.6	**0.2216**	0.008	3.7	ug/L	883	Standard
	U	238	5357.3	1.2	**0.7271**	0.010	1.3	ug/L	3	Standard
>	**Bi**	209	557502.4	0.2				ug/L	523984	Standard

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Na	23	11.7	89.2	**117.5100**	105.501	89.8	mg/L	0	Standard
Mg	24	18105.8	1.6	**20.1624**	0.144	0.7	mg/L	37	Standard
K	39	321.7	3.6	**0.5016**	0.035	6.9	mg/L	38	Standard
Ca	43	733.4	8.9	**37.5359**	2.964	7.9	mg/L	10	Standard
Fe	54	38163.2	2.6	**27.8607**	0.186	0.7	mg/L	179	Standard
Fe	57	10221.8	1.3	**28.9959**	0.316	1.1	mg/L	335	Standard
> **Sc-1**	45	70520.4	2.0				mg/L	61029	Standard
Cl	35	31180.1	1.1				ug/L	20195	Standard
Kr	83	2.3	89.2				ug/L	4	Standard
Br	81	7325.1	3.6				ug/L	1547	Standard
P	31	24873.7	0.5				ug/L	15286	Standard
S	34	1646.8	8.5				ug/L	1572	Standard
Sr	88	296.7	11.0				ug/L	73	Standard
C	12	96.7	53.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	69181.7	2.0				mg/L	6	Standard
Ho-1	165	44299.7	1.5				mg/L	10	Standard
Er	166	39063.6	1.3				mg/L	13	Standard
I	127	21375.1	3.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		154.010	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.195	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.749
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.397
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Zn 66 Upper, S, EEE	Zn	66

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 16:20:49
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	104492.8	3.9				ug/L	74699	Standard
	Be	9	63869.3	1.0	**51.9084**	1.516	2.9	ug/L	8	Standard
	Al	27	9148865.9	2.6	**44.5067**	0.724	1.6	ug/L	1493	Standard
	Sc	45	68447.7	3.2				ug/L	61029	Standard
	Ti	47	43923.6	1.6	**106.2047**	1.334	1.3	ug/L	35	Standard
	V	51	454775.2	0.5	**55.0469**	0.468	0.8	ug/L	1435	Standard
	Cr	52	431898.3	0.6	**52.4410**	0.316	0.6	ug/L	7635	Standard
	Cr	53	53343.8	2.8	**52.6203**	1.459	2.8	ug/L	363	Standard
	Mn	55	427711.0	4.2	**56.2006**	1.985	3.5	ug/L	747	Standard
	Co	59	425402.4	1.1	**59.0619**	0.614	1.0	ug/L	234	Standard
	Ni	60	106741.4	0.9	**52.1773**	0.185	0.4	ug/L	215	Standard
	Cu	65	106457.4	0.4	**52.3703**	0.176	0.3	ug/L	104	Standard
	Zn	66	63607.9	0.7	**52.9682**	0.530	1.0	ug/L	363	Standard
>	**Ge**	72	539725.1	0.7				ug/L	495142	Standard
	As	75	63945.9	1.5	**52.4378**	1.123	2.1	ug/L	-50	Standard
	Se	82	6584.0	0.6	**54.8988**	0.684	1.2	ug/L	14	Standard
	Se-1	77	4386.3	1.4	**54.4772**	1.111	2.0	ug/L	42	Standard
>	**Ga**	71	80.0	16.5				mg/L	42	Standard
	Rb	85	970.0	8.8				ug/L	17	Standard
	Y	89	494238.2	2.5				ug/L	417098	Standard
>	**Rh**	103	45.0	11.1				ug/L	13	Standard
	Mo	98	317512.9	0.8	**102.4795**	1.834	1.8	ug/L	11	Standard
	Ag	107	378789.7	0.9	**49.9860**	0.591	1.2	ug/L	68	Standard
	Cd	111	119686.6	0.4	**49.2403**	0.865	1.8	mg/L	2	Standard
	Cd	114	291890.5	1.4	**48.9669**	1.322	2.7	ug/L	12	Standard
>	**In**	115	682927.0	1.5				ug/L	587441	Standard
	Sn	118	338721.1	0.8	**49.7884**	0.723	1.5	ug/L	497	Standard
	Sb	123	263759.6	1.2	**48.5931**	0.331	0.7	ug/L	78	Standard
	Ba	135	111614.3	0.7	**46.9010**	0.972	2.1	ug/L	24	Standard
	Ce	140	1265.1	98.5				ug/L	25	Standard
>	**Tb**	159	1064058.1	1.0				ug/L	939701	Standard
	Ho	165	88.3	85.2				ug/L	10	Standard
	Tl	203	475263.7	0.7	**51.4258**	1.211	2.4	ug/L	4	Standard
	Tl	205	438160.3	0.4	**54.6297**	1.400	2.6	ug/L	2	Standard
	Pb	206	306629.0	0.6	**51.1326**	1.396	2.7	ug/L	240	Standard
	Pb	207	272793.9	0.3	**51.2040**	1.495	2.9	ug/L	198	Standard
	Pb	208	1100211.2	0.6	**52.2716**	1.709	3.3	ug/L	883	Standard
	U	238	414469.5	0.5	**53.7134**	1.693	3.2	ug/L	3	Standard
>	**Bi**	209	587705.0	2.9				ug/L	523984	Standard

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Na	23	3.3	173.2	**35.5299**	61.531	173.2	mg/L	0	Standard
Mg	24	4809.1	8.0	**5.4678**	0.353	6.5	mg/L	37	Standard
K	39	2090.1	1.6	**4.0082**	0.167	4.2	mg/L	38	Standard
Ca	43	111.7	10.3	**3.7837**	0.862	22.8	mg/L	10	Standard
Fe	54	7082.4	2.6	**5.2191**	0.217	4.1	mg/L	179	Standard
Fe	57	2040.1	4.3	**5.1108**	0.267	5.2	mg/L	335	Standard
Sc-1	45	68447.7	3.2				mg/L	61029	Standard
Cl	35	25830.7	1.4				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	2190.2	6.5				ug/L	1547	Standard
P	31	18406.2	0.9				ug/L	15286	Standard
S	34	1965.1	6.7				ug/L	1572	Standard
Sr	88	71.7	21.3				ug/L	73	Standard
C	12	103.3	29.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	152.5	102.6				mg/L	6	Standard
Ho-1	165	88.3	85.2				mg/L	10	Standard
Er	166	86.7	74.2				mg/L	13	Standard
I	127	2766.9	21.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	103.817		
Al	27	89.013		
Sc	45			
Ti	47	106.205		
V	51	110.094		
Cr	52	104.882		
Cr	53			
Mn	55	112.401		
Co	59	118.124		
Ni	60	104.355		
Cu	65	104.741		
Zn	66	105.936		
Ge	72		109.004	
As	75	104.876		
Se	82	109.798		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	102.479		
Ag	107	99.972		
Cd	111	98.481		
Cd	114			
In	115		116.255	
Sn	118	99.577		
Sb	123	97.186		
Ba	135	93.802		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.852		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.543		
U	238	107.427		
Bi	209		112.161	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	
QC Std 6	V	51	
QC Std 6	Mn	55	

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QC Std 6	Co	59

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 16:24:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	100067.7	1.3				ug/L	74699	Standard
	Be	9	36.7	7.9	**0.0387**	0.002	5.2	ug/L	8	Standard
	Al	27	10153.6	30.4	**0.0381**	0.015	39.5	ug/L	1493	Standard
	Sc	45	67434.8	2.7				ug/L	61029	Standard
	Ti	47	38.3	21.7	**-0.0212**	0.020	92.7	ug/L	35	Standard
	V	51	1502.7	1.2	**-0.0231**	0.006	25.9	ug/L	1435	Standard
	Cr	52	7451.2	2.4	**-0.1523**	0.012	7.6	ug/L	7635	Standard
	Cr	53	503.3	11.6	**0.1429**	0.063	44.4	ug/L	363	Standard
	Mn	55	3693.5	26.8	**0.3137**	0.134	42.8	ug/L	747	Standard
	Co	59	358.3	10.7	**0.0099**	0.006	62.4	ug/L	234	Standard
	Ni	60	209.7	4.9	**-0.0268**	0.006	22.7	ug/L	215	Standard
	Cu	65	198.7	7.2	**-0.0110**	0.009	80.7	ug/L	104	Standard
	Zn	66	532.3	5.7	**-0.0316**	0.034	106.3	ug/L	363	Standard
>	**Ge**	72	571298.3	2.3				ug/L	495142	Standard
	As	75	-12.4	42.9	**0.0499**	0.004	8.8	ug/L	-50	Standard
	Se	82	23.5	9.9	**0.0476**	0.021	43.8	ug/L	14	Standard
	Se-1	77	58.7	7.7	**0.0749**	0.069	91.8	ug/L	42	Standard
>	**Ga**	71	75.0	26.7				mg/L	42	Standard
	Rb	85	36.7	55.1				ug/L	17	Standard
	Y	89	500557.3	2.5				ug/L	417098	Standard
>	**Rh**	103	30.0	44.1				ug/L	13	Standard
	Mo	98	301.0	26.9	**0.0924**	0.026	27.9	ug/L	11	Standard
	Ag	107	165.0	21.0	**0.0091**	0.004	49.2	ug/L	68	Standard
	Cd	111	19.8	28.3	**0.0003**	0.002	699.6	mg/L	2	Standard
	Cd	114	46.5	85.8	**0.0058**	0.007	116.4	ug/L	12	Standard
>	**In**	115	675355.4	0.8				ug/L	587441	Standard
	Sn	118	876.7	18.6	**0.0359**	0.025	69.7	ug/L	497	Standard
	Sb	123	599.5	22.8	**0.1076**	0.026	24.3	ug/L	78	Standard
	Ba	135	42.7	23.9	**0.0021**	0.004	201.6	ug/L	24	Standard
	Ce	140	140.0	34.4				ug/L	25	Standard
>	**Tb**	159	1044716.9	1.2				ug/L	939701	Standard
	Ho	165	20.0	50.0				ug/L	10	Standard
	Tl	203	103.0	21.9	**0.0094**	0.003	27.0	ug/L	4	Standard
	Tl	205	70.0	58.5	**0.0089**	0.005	57.1	ug/L	2	Standard
	Pb	206	338.7	4.4	**-0.0148**	0.002	16.0	ug/L	240	Standard
	Pb	207	277.7	9.1	**-0.0179**	0.005	28.1	ug/L	198	Standard
	Pb	208	1213.0	9.6	**-0.0165**	0.006	36.1	ug/L	883	Standard
	U	238	62.0	33.9	**0.0036**	0.003	76.1	ug/L	3	Standard
>	**Bi**	209	588682.5	1.2				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.0278**	29.484	173.2	mg/L	0	Standard
Mg	24	56.7	20.4	**0.0014**	0.015	1120.4	mg/L	37	Standard
K	39	36.7	28.4	**-0.0407**	0.021	51.2	mg/L	38	Standard
Ca	43	26.7	28.6	**-1.0029**	0.415	41.4	mg/L	10	Standard
Fe	54	187.4	12.0	**0.0055**	0.017	304.1	mg/L	179	Standard
Fe	57	261.7	6.1	**-0.2681**	0.071	26.5	mg/L	335	Standard
Sc-1	45	67434.8	2.7				mg/L	61029	Standard
Cl	35	26219.3	0.7				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	2243.5	3.0				ug/L	1547	Standard
P	31	19277.3	3.9				ug/L	15286	Standard
S	34	2016.8	11.3				ug/L	1572	Standard
Sr	88	70.0	35.7				ug/L	73	Standard
C	12	120.0	25.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	49.4	87.7				mg/L	6	Standard
Ho-1	165	20.0	50.0				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	2125.2	22.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		115.381	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.966
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		112.347
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606124701SDL WG574688-02
Sample Date/Time: Wednesday, June 29, 2016 16:27:13
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	105717.5	0.5				ug/L	74699	Standard
	Be	9	553.3	1.4	**0.4517**	0.004	0.8	ug/L	8	Standard
	Al	27	5662006.5	2.5	**27.2120**	0.787	2.9	ug/L	1493	Standard
	Sc	45	72131.5	3.8				ug/L	61029	Standard
	Ti	47	604.0	7.1	**1.2783**	0.109	8.5	ug/L	35	Standard
	V	51	3941.0	1.4	**0.2585**	0.002	0.9	ug/L	1435	Standard
	Cr	52	12715.3	2.3	**0.4691**	0.023	4.9	ug/L	7635	Standard
	Cr	53	1340.1	9.1	**0.9313**	0.103	11.1	ug/L	363	Standard
	Mn	55	2452895.1	0.8	**306.4368**	3.099	1.0	ug/L	747	Standard
	Co	59	67057.1	0.2	**8.7998**	0.112	1.3	ug/L	234	Standard
	Ni	60	46732.3	0.4	**21.5970**	0.233	1.1	ug/L	215	Standard
	Cu	65	904.0	6.3	**0.3188**	0.021	6.7	ug/L	104	Standard
	Zn	66	62660.6	1.1	**49.4618**	0.122	0.2	ug/L	363	Standard
>	**Ge**	72	569030.6	1.4				ug/L	495142	Standard
	As	75	59.1	19.2	**0.1055**	0.009	8.4	ug/L	-50	Standard
	Se	82	34.4	3.8	**0.1350**	0.014	10.1	ug/L	14	Standard
	Se-1	77	82.7	11.5	**0.3621**	0.106	29.4	ug/L	42	Standard
>	**Ga**	71	288.3	19.2				mg/L	42	Standard
	Rb	85	7325.1	4.9				ug/L	17	Standard
	Y	89	616528.9	0.8				ug/L	417098	Standard
>	**Rh**	103	13.3	78.1				ug/L	13	Standard
	Mo	98	112.4	8.7	**0.0298**	0.003	9.5	ug/L	11	Standard
	Ag	107	122.3	20.4	**0.0029**	0.003	108.6	ug/L	68	Standard
	Cd	111	198.8	14.6	**0.0723**	0.012	16.2	mg/L	2	Standard
	Cd	114	516.3	5.9	**0.0829**	0.006	6.9	ug/L	12	Standard
>	**In**	115	696026.2	0.9				ug/L	587441	Standard
	Sn	118	760.0	4.7	**0.0151**	0.006	37.2	ug/L	497	Standard
	Sb	123	350.2	21.1	**0.0592**	0.014	23.4	ug/L	78	Standard
	Ba	135	775.0	6.3	**0.3035**	0.019	6.3	ug/L	24	Standard
	Ce	140	119180.2	0.3				ug/L	25	Standard
>	**Tb**	159	1103880.2	1.1				ug/L	939701	Standard
	Ho	165	9261.2	2.5				ug/L	10	Standard
	Tl	203	155.7	9.5	**0.0145**	0.001	9.9	ug/L	4	Standard
	Tl	205	156.7	24.4	**0.0191**	0.005	23.7	ug/L	2	Standard
	Pb	206	668.3	5.9	**0.0368**	0.005	14.8	ug/L	240	Standard
	Pb	207	530.0	3.8	**0.0264**	0.004	13.6	ug/L	198	Standard
	Pb	208	2281.7	2.6	**0.0309**	0.002	6.9	ug/L	883	Standard
	U	238	1160.7	2.8	**0.1411**	0.004	2.6	ug/L	3	Standard
>	**Bi**	209	607087.1	0.9				ug/L	523984	Standard

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Na	23	1.7	173.2	**16.5008**	28.572	173.2	mg/L	0	Standard
Mg	24	3728.8	3.6	**4.0090**	0.135	3.4	mg/L	37	Standard
K	39	85.0	42.4	**0.0464**	0.073	156.7	mg/L	38	Standard
Ca	43	183.3	11.4	**7.2814**	1.162	16.0	mg/L	10	Standard
Fe	54	8713.3	2.8	**6.1146**	0.148	2.4	mg/L	179	Standard
Fe	57	2506.9	1.7	**6.1424**	0.321	5.2	mg/L	335	Standard
> **Sc-1**	45	72131.5	3.8				mg/L	61029	Standard
Cl	35	26208.6	1.1				ug/L	20195	Standard
Kr	83	2.7	21.7				ug/L	4	Standard
Br	81	3227.0	4.8				ug/L	1547	Standard
P	31	20363.7	0.5				ug/L	15286	Standard
S	34	1863.4	4.5				ug/L	1572	Standard
Sr	88	105.0	21.8				ug/L	73	Standard
C	12	56.7	36.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	14855.4	4.1				mg/L	6	Standard
Ho-1	165	9261.2	2.5				mg/L	10	Standard
Er	166	8048.8	4.7				mg/L	13	Standard
I	127	5796.1	1.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		141.525	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.923	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	118.484
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	115.860
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606124701SDL WG574688-02
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Method 6020 - Summary Report

Sample ID: L1606126504
Sample Date/Time: Wednesday, June 29, 2016 16:30:25
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	101552.6	1.9				ug/L	74699	Standard
	Be	9	25.0	72.1	**0.0287**	0.016	54.3	ug/L	8	Standard
	Al	27	16250197.0	1.8	**81.3578**	2.887	3.5	ug/L	1493	Standard
	Sc	45	67044.7	1.9				ug/L	61029	Standard
	Ti	47	394.3	10.9	**0.8437**	0.094	11.2	ug/L	35	Standard
	V	51	39093.2	1.3	**4.5488**	0.169	3.7	ug/L	1435	Standard
	Cr	52	19068.3	2.3	**1.3348**	0.101	7.6	ug/L	7635	Standard
	Cr	53	5326.0	20.8	**4.9620**	1.165	23.5	ug/L	363	Standard
	Mn	55	6239.0	2.5	**0.6731**	0.027	4.0	ug/L	747	Standard
	Co	59	851.0	2.5	**0.0808**	0.004	4.5	ug/L	234	Standard
	Ni	60	1951.8	2.1	**0.8314**	0.029	3.5	ug/L	215	Standard
	Cu	65	1321.1	4.3	**0.5464**	0.014	2.5	ug/L	104	Standard
	Zn	66	5985.8	0.6	**4.5673**	0.118	2.6	ug/L	363	Standard
>	**Ge**	72	540512.2	2.5				ug/L	495142	Standard
	As	75	1446.2	5.5	**1.2419**	0.041	3.3	ug/L	-50	Standard
	Se	82	841.6	2.6	**6.8893**	0.246	3.6	ug/L	14	Standard
	Se-1	77	609.0	15.5	**7.0254**	1.243	17.7	ug/L	42	Standard
>	**Ga**	71	105.0	12.6				mg/L	42	Standard
	Rb	85	1541.7	7.2				ug/L	17	Standard
	Y	89	489017.5	2.4				ug/L	417098	Standard
>	**Rh**	103	70.0	18.9				ug/L	13	Standard
	Mo	98	501.8	4.3	**0.1636**	0.005	2.9	ug/L	11	Standard
	Ag	107	97.0	7.4	**0.0005**	0.001	200.8	ug/L	68	Standard
	Cd	111	26.4	23.0	**0.0035**	0.003	79.3	mg/L	2	Standard
	Cd	114	74.1	18.4	**0.0109**	0.002	21.9	ug/L	12	Standard
>	**In**	115	652860.7	1.6				ug/L	587441	Standard
	Sn	118	840.0	9.7	**0.0347**	0.012	35.4	ug/L	497	Standard
	Sb	123	289.8	10.9	**0.0517**	0.007	12.7	ug/L	78	Standard
	Ba	135	17710.3	0.6	**7.7715**	0.161	2.1	ug/L	24	Standard
	Ce	140	1525.1	0.6				ug/L	25	Standard
>	**Tb**	159	1031518.0	1.9				ug/L	939701	Standard
	Ho	165	43.3	24.0				ug/L	10	Standard
	Tl	203	163.3	10.6	**0.0174**	0.002	9.6	ug/L	4	Standard
	Tl	205	133.3	16.9	**0.0182**	0.003	18.7	ug/L	2	Standard
	Pb	206	441.3	2.3	**0.0087**	0.001	8.9	ug/L	240	Standard
	Pb	207	362.0	4.8	**0.0037**	0.003	70.2	ug/L	198	Standard
	Pb	208	1549.4	2.6	**0.0058**	0.001	11.8	ug/L	883	Standard
	U	238	23538.3	0.9	**3.3015**	0.086	2.6	ug/L	3	Standard
>	**Bi**	209	542188.4	2.1				ug/L	523984	Standard

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Na	23	3.3	173.2	**35.7447**	61.903	173.2	mg/L	0	Standard
Mg	24	119069.4	0.9	**139.8814**	3.117	2.2	mg/L	37	Standard
K	39	143.3	11.2	**0.1739**	0.028	15.9	mg/L	38	Standard
Ca	43	463.3	1.6	**24.1242**	0.657	2.7	mg/L	10	Standard
Fe	54	197.6	4.4	**0.0142**	0.006	45.1	mg/L	179	Standard
Fe	57	435.0	13.1	**0.2738**	0.196	71.7	mg/L	335	Standard
> **Sc-1**	45	67044.7	1.9				mg/L	61029	Standard
Cl	35	31470.7	2.7				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	73323.9	4.5				ug/L	1547	Standard
P	31	23608.4	2.5				ug/L	15286	Standard
S	34	1800.1	6.6				ug/L	1572	Standard
Sr	88	293.3	6.9				ug/L	73	Standard
C	12	193.3	41.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	86.5	19.9				mg/L	6	Standard
Ho-1	165	43.3	24.0				mg/L	10	Standard
Er	166	73.3	34.3				mg/L	13	Standard
I	127	54762.3	5.8				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		135.949	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		109.163	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.136
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.474
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606126505
Sample Date/Time: Wednesday, June 29, 2016 16:33:36
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	99450.4	1.4				ug/L	74699	Standard
	Be	9	58.3	30.1	**0.0575**	0.016	27.1	ug/L	8	Standard
	Al	27	32118811.5	1.4	**164.1461**	0.108	0.1	ug/L	1493	Standard
	Sc	45	70749.8	1.3				ug/L	61029	Standard
	Ti	47	642.0	2.2	**1.4252**	0.030	2.1	ug/L	35	Standard
	V	51	8228.7	11.8	**0.7915**	0.119	15.1	ug/L	1435	Standard
	Cr	52	11308.2	2.8	**0.3584**	0.044	12.4	ug/L	7635	Standard
	Cr	53	3712.1	10.4	**3.3091**	0.391	11.8	ug/L	363	Standard
	Mn	55	3368829.0	1.1	**438.1329**	6.772	1.5	ug/L	747	Standard
	Co	59	3400.7	28.1	**0.4294**	0.132	30.8	ug/L	234	Standard
	Ni	60	4538.7	3.1	**2.0720**	0.077	3.7	ug/L	215	Standard
	Cu	65	1589.1	4.3	**0.6697**	0.036	5.3	ug/L	104	Standard
	Zn	66	6182.6	5.7	**4.6729**	0.311	6.7	ug/L	363	Standard
>	**Ge**	72	546665.5	0.5				ug/L	495142	Standard
	As	75	6156.5	0.5	**5.0379**	0.006	0.1	ug/L	-50	Standard
	Se	82	164.0	1.8	**1.2151**	0.026	2.2	ug/L	14	Standard
	Se-1	77	258.7	9.7	**2.5862**	0.322	12.5	ug/L	42	Standard
>	**Ga**	71	188.3	13.1				mg/L	42	Standard
	Rb	85	1378.4	10.6				ug/L	17	Standard
	Y	89	484009.6	2.1				ug/L	417098	Standard
>	**Rh**	103	118.3	6.5				ug/L	13	Standard
	Mo	98	286.3	31.1	**0.0925**	0.030	32.6	ug/L	11	Standard
	Ag	107	183.3	43.5	**0.0128**	0.011	86.7	ug/L	68	Standard
	Cd	111	248.2	17.8	**0.1006**	0.018	18.1	mg/L	2	Standard
	Cd	114	590.9	17.2	**0.1032**	0.017	16.3	ug/L	12	Standard
>	**In**	115	642069.8	1.9				ug/L	587441	Standard
	Sn	118	836.7	5.6	**0.0365**	0.010	26.8	ug/L	497	Standard
	Sb	123	288.3	29.8	**0.0524**	0.017	32.5	ug/L	78	Standard
	Ba	135	131296.8	1.0	**58.6819**	0.595	1.0	ug/L	24	Standard
	Ce	140	6513.1	10.5				ug/L	25	Standard
>	**Tb**	159	1012113.9	1.4				ug/L	939701	Standard
	Ho	165	216.7	7.1				ug/L	10	Standard
	Tl	203	185.3	61.4	**0.0202**	0.013	66.8	ug/L	4	Standard
	Tl	205	276.7	88.2	**0.0379**	0.033	87.8	ug/L	2	Standard
	Pb	206	891.4	31.8	**0.0916**	0.052	56.6	ug/L	240	Standard
	Pb	207	748.7	30.8	**0.0839**	0.048	56.6	ug/L	198	Standard
	Pb	208	3050.1	30.7	**0.0846**	0.049	57.6	ug/L	883	Standard
	U	238	21997.6	2.6	**3.1135**	0.091	2.9	ug/L	3	Standard
>	**Bi**	209	537104.2	0.4				ug/L	523984	Standard

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Na	23	13.3	57.3	**132.8617**	77.017	58.0	mg/L	0	Standard
Mg	24	104917.1	1.8	**116.7540**	0.597	0.5	mg/L	37	Standard
K	39	116.7	8.9	**0.1082**	0.018	16.4	mg/L	38	Standard
Ca	43	916.7	6.0	**47.4532**	3.610	7.6	mg/L	10	Standard
Fe	54	3013.9	2.4	**2.0666**	0.083	4.0	mg/L	179	Standard
Fe	57	1381.7	4.1	**2.9770**	0.162	5.4	mg/L	335	Standard
> **Sc-1**	45	70749.8	1.3				mg/L	61029	Standard
Cl	35	30215.4	1.0				ug/L	20195	Standard
Kr	83	1.3	114.6				ug/L	4	Standard
Br	81	35768.9	2.6				ug/L	1547	Standard
P	31	25429.7	2.5				ug/L	15286	Standard
S	34	2313.5	0.3				ug/L	1572	Standard
Sr	88	551.7	8.2				ug/L	73	Standard
C	12	433.3	25.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	3	Standard
Dy	164	279.9	12.3				mg/L	6	Standard
Ho-1	165	216.7	7.1				mg/L	10	Standard
Er	166	280.0	18.9				mg/L	13	Standard
I	127	794211.5	6.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		133.135	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.406	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	109.299
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.504
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606126506
Sample Date/Time: Wednesday, June 29, 2016 16:36:48
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	100252.3	1.1				ug/L	74699	Standard
	Be	9	26.7	39.0	**0.0303**	0.009	29.8	ug/L	8	Standard
	Al	27	69444.0	4.9	**0.3387**	0.017	5.1	ug/L	1493	Standard
	Sc	45	71205.3	1.8				ug/L	61029	Standard
	Ti	47	113.0	20.9	**0.1414**	0.055	38.5	ug/L	35	Standard
	V	51	2901.2	2.9	**0.1267**	0.013	10.0	ug/L	1435	Standard
	Cr	52	23756.9	1.1	**1.6651**	0.003	0.2	ug/L	7635	Standard
	Cr	53	2710.2	4.1	**2.1308**	0.127	5.9	ug/L	363	Standard
	Mn	55	7460.8	10.3	**0.7511**	0.098	13.0	ug/L	747	Standard
	Co	59	456.0	8.6	**0.0207**	0.006	26.8	ug/L	234	Standard
	Ni	60	2497.2	2.2	**0.9949**	0.023	2.3	ug/L	215	Standard
	Cu	65	984.0	1.2	**0.3398**	0.007	2.0	ug/L	104	Standard
	Zn	66	8303.3	0.9	**5.9218**	0.058	1.0	ug/L	363	Standard
>	**Ge**	72	590298.4	1.1				ug/L	495142	Standard
	As	75	7.9	237.8	**0.0655**	0.014	21.6	ug/L	-50	Standard
	Se	82	27.7	14.2	**0.0742**	0.032	43.2	ug/L	14	Standard
	Se-1	77	72.3	15.2	**0.2091**	0.134	63.9	ug/L	42	Standard
>	**Ga**	71	91.7	20.7				mg/L	42	Standard
	Rb	85	308.3	4.1				ug/L	17	Standard
	Y	89	498995.2	1.7				ug/L	417098	Standard
>	**Rh**	103	21.7	48.0				ug/L	13	Standard
	Mo	98	716.7	9.5	**0.2259**	0.023	10.1	ug/L	11	Standard
	Ag	107	155.3	16.4	**0.0076**	0.003	44.6	ug/L	68	Standard
	Cd	111	44.4	12.9	**0.0104**	0.002	21.8	mg/L	2	Standard
	Cd	114	117.5	18.7	**0.0177**	0.004	21.5	ug/L	12	Standard
>	**In**	115	682064.0	0.6				ug/L	587441	Standard
	Sn	118	4689.1	2.4	**0.5966**	0.013	2.3	ug/L	497	Standard
	Sb	123	228.7	11.3	**0.0380**	0.005	12.5	ug/L	78	Standard
	Ba	135	1034.0	4.7	**0.4191**	0.020	4.8	ug/L	24	Standard
	Ce	140	486.7	14.8				ug/L	25	Standard
>	**Tb**	159	1056147.0	0.9				ug/L	939701	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	43.7	26.0	**0.0029**	0.001	43.8	ug/L	4	Standard
	Tl	205	50.0	26.5	**0.0063**	0.002	26.5	ug/L	2	Standard
	Pb	206	665.7	3.1	**0.0376**	0.003	7.4	ug/L	240	Standard
	Pb	207	542.7	5.2	**0.0299**	0.006	20.6	ug/L	198	Standard
	Pb	208	2227.4	4.5	**0.0297**	0.006	20.4	ug/L	883	Standard
	U	238	38.7	20.9	**0.0005**	0.001	221.1	ug/L	3	Standard
>	**Bi**	209	599996.8	1.5				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	216.7	5.8	**0.1745**	0.010	5.5	mg/L	37	Standard
K	39	46.7	49.5	**-0.0257**	0.044	170.8	mg/L	38	Standard
Ca	43	30.0	16.7	**-0.8971**	0.290	32.3	mg/L	10	Standard
Fe	54	200.7	16.8	**0.0076**	0.025	326.7	mg/L	179	Standard
Fe	57	248.3	11.1	**-0.3516**	0.067	19.2	mg/L	335	Standard
> **Sc-1**	45	71205.3	1.8				mg/L	61029	Standard
Cl	35	31458.6	1.1				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	3110.3	10.8				ug/L	1547	Standard
P	31	21037.9	1.6				ug/L	15286	Standard
S	34	2263.5	3.0				ug/L	1572	Standard
Sr	88	58.3	27.6				ug/L	73	Standard
C	12	113.3	13.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	38.9	27.0				mg/L	6	Standard
Ho-1	165	8.3	69.3				mg/L	10	Standard
Er	166	23.3	65.5				mg/L	13	Standard
I	127	20210.2	61.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		134.209	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		119.218	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		116.108
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		114.507
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606126601
Sample Date/Time: Wednesday, June 29, 2016 16:39:59
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	101321.2	3.1				ug/L	74699	Standard
	Be	9	18.3	56.8	**0.0228**	0.008	36.0	ug/L	8	Standard
	Al	27	44431569.1	0.7	**222.9926**	5.415	2.4	ug/L	1493	Standard
	Sc	45	71310.8	2.2				ug/L	61029	Standard
	Ti	47	275.3	6.3	**0.5272**	0.047	8.9	ug/L	35	Standard
	V	51	27907.2	1.9	**3.0387**	0.030	1.0	ug/L	1435	Standard
	Cr	52	13580.1	0.8	**0.5803**	0.015	2.6	ug/L	7635	Standard
	Cr	53	2821.9	2.8	**2.3430**	0.081	3.4	ug/L	363	Standard
	Mn	55	153037.1	1.2	**19.0926**	0.078	0.4	ug/L	747	Standard
	Co	59	1012.0	1.5	**0.0969**	0.001	1.5	ug/L	234	Standard
	Ni	60	4370.3	2.4	**1.9194**	0.048	2.5	ug/L	215	Standard
	Cu	65	751.7	5.3	**0.2499**	0.020	8.0	ug/L	104	Standard
	Zn	66	3518.1	1.4	**2.3650**	0.050	2.1	ug/L	363	Standard
>	**Ge**	72	565652.8	1.1				ug/L	495142	Standard
	As	75	1269.0	4.3	**1.0512**	0.035	3.4	ug/L	-50	Standard
	Se	82	382.5	3.3	**2.9130**	0.125	4.3	ug/L	14	Standard
	Se-1	77	193.3	14.8	**1.6975**	0.369	21.7	ug/L	42	Standard
>	**Ga**	71	66.7	18.9				mg/L	42	Standard
	Rb	85	2323.5	7.7				ug/L	17	Standard
	Y	89	480038.2	1.2				ug/L	417098	Standard
>	**Rh**	103	150.0	3.3				ug/L	13	Standard
	Mo	98	638.7	4.4	**0.2084**	0.010	5.0	ug/L	11	Standard
	Ag	107	92.0	14.1	**-0.0003**	0.002	569.4	ug/L	68	Standard
	Cd	111	195.2	3.6	**0.0755**	0.003	3.5	mg/L	2	Standard
	Cd	114	469.8	19.5	**0.0797**	0.016	19.7	ug/L	12	Standard
>	**In**	115	657497.5	0.6				ug/L	587441	Standard
	Sn	118	753.4	8.5	**0.0205**	0.010	48.9	ug/L	497	Standard
	Sb	123	222.8	13.6	**0.0384**	0.006	15.3	ug/L	78	Standard
	Ba	135	100054.6	0.7	**43.6617**	0.503	1.2	ug/L	24	Standard
	Ce	140	173.3	6.0				ug/L	25	Standard
>	**Tb**	159	1045560.4	1.5				ug/L	939701	Standard
	Ho	165	40.0	25.0				ug/L	10	Standard
	Tl	203	129.3	1.6	**0.0127**	0.000	3.7	ug/L	4	Standard
	Tl	205	133.3	20.7	**0.0174**	0.003	20.0	ug/L	2	Standard
	Pb	206	412.3	3.7	**0.0001**	0.002	2456.7	ug/L	240	Standard
	Pb	207	343.7	8.9	**-0.0032**	0.005	165.7	ug/L	198	Standard
	Pb	208	1432.7	1.3	**-0.0035**	0.002	56.3	ug/L	883	Standard
	U	238	43636.7	0.7	**5.8505**	0.120	2.1	ug/L	3	Standard
>	**Bi**	209	567479.2	1.8				ug/L	523984	Standard

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Na	23	5.0	100.0	**48.6438**	48.507	99.7	mg/L	0	Standard
Mg	24	35550.0	1.9	**39.2140**	0.699	1.8	mg/L	37	Standard
K	39	165.0	24.1	**0.1975**	0.071	36.0	mg/L	38	Standard
Ca	43	596.7	5.4	**29.7553**	2.186	7.3	mg/L	10	Standard
Fe	54	190.1	10.6	**-0.0004**	0.014	3403.7	mg/L	179	Standard
Fe	57	555.0	7.7	**0.5391**	0.093	17.2	mg/L	335	Standard
> **Sc-1**	45	71310.8	2.2				mg/L	61029	Standard
Cl	35	33374.1	0.9				ug/L	20195	Standard
Kr	83	2.0	132.3				ug/L	4	Standard
Br	81	77209.6	1.2				ug/L	1547	Standard
P	31	24828.7	1.5				ug/L	15286	Standard
S	34	2263.5	4.7				ug/L	1572	Standard
Sr	88	591.7	14.4				ug/L	73	Standard
C	12	253.3	22.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	25.0				mg/L	3	Standard
Dy	164	40.1	59.8				mg/L	6	Standard
Ho-1	165	40.0	25.0				mg/L	10	Standard
Er	166	66.7	37.7				mg/L	13	Standard
I	127	2058609.0	7.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		135.640	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.240	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.926
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.301
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606126901
Sample Date/Time: Wednesday, June 29, 2016 16:43:10
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	97179.0	1.2				ug/L	74699	Standard
	Be	9	23.3	44.6	**0.0281**	0.009	33.4	ug/L	8	Standard
	Al	27	25054309.4	1.7	**131.0332**	1.604	1.2	ug/L	1493	Standard
	Sc	45	69363.5	2.7				ug/L	61029	Standard
	Ti	47	323.3	2.8	**0.6992**	0.021	2.9	ug/L	35	Standard
	V	51	12024.0	2.6	**1.3128**	0.037	2.9	ug/L	1435	Standard
	Cr	52	11840.6	1.6	**0.4900**	0.025	5.0	ug/L	7635	Standard
	Cr	53	2901.9	3.9	**2.6451**	0.119	4.5	ug/L	363	Standard
	Mn	55	490032.6	0.8	**66.5395**	0.816	1.2	ug/L	747	Standard
	Co	59	931.7	2.1	**0.0964**	0.003	3.3	ug/L	234	Standard
	Ni	60	2217.5	3.2	**0.9981**	0.030	3.0	ug/L	215	Standard
	Cu	65	599.0	3.0	**0.2013**	0.011	5.4	ug/L	104	Standard
	Zn	66	4806.1	1.2	**3.7141**	0.039	1.0	ug/L	363	Standard
>	**Ge**	72	522601.4	0.6				ug/L	495142	Standard
	As	75	2361.3	3.3	**2.0571**	0.073	3.5	ug/L	-50	Standard
	Se	82	593.9	4.2	**4.9896**	0.230	4.6	ug/L	14	Standard
	Se-1	77	179.7	2.8	**1.7086**	0.076	4.5	ug/L	42	Standard
>	**Ga**	71	105.0	9.5				mg/L	42	Standard
	Rb	85	2805.3	2.5				ug/L	17	Standard
	Y	89	474068.5	3.1				ug/L	417098	Standard
>	**Rh**	103	81.7	12.7				ug/L	13	Standard
	Mo	98	305.2	1.9	**0.0985**	0.004	4.4	ug/L	11	Standard
	Ag	107	99.7	12.7	**0.0010**	0.002	153.4	ug/L	68	Standard
	Cd	111	19.2	16.0	**0.0004**	0.001	278.0	mg/L	2	Standard
	Cd	114	49.5	42.7	**0.0067**	0.004	59.0	ug/L	12	Standard
>	**In**	115	645532.6	2.3				ug/L	587441	Standard
	Sn	118	888.4	9.9	**0.0435**	0.010	24.0	ug/L	497	Standard
	Sb	123	240.8	4.4	**0.0427**	0.002	4.3	ug/L	78	Standard
	Ba	135	155622.1	0.5	**69.2020**	1.756	2.5	ug/L	24	Standard
	Ce	140	928.4	7.9				ug/L	25	Standard
>	**Tb**	159	1004174.2	1.0				ug/L	939701	Standard
	Ho	165	23.3	32.7				ug/L	10	Standard
	Tl	203	115.7	10.5	**0.0121**	0.001	11.5	ug/L	4	Standard
	Tl	205	128.3	22.2	**0.0179**	0.004	22.0	ug/L	2	Standard
	Pb	206	395.0	0.9	**0.0016**	0.001	57.1	ug/L	240	Standard
	Pb	207	323.3	6.0	**-0.0029**	0.004	138.0	ug/L	198	Standard
	Pb	208	1415.7	2.0	**0.0002**	0.001	432.7	ug/L	883	Standard
	U	238	7265.7	2.0	**1.0348**	0.023	2.2	ug/L	3	Standard
>	**Bi**	209	532226.3	0.6				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.4177**	30.160	173.2	mg/L	0	Standard
Mg	24	119202.1	1.4	**135.3768**	3.695	2.7	mg/L	37	Standard
K	39	220.0	8.2	**0.3143**	0.042	13.4	mg/L	38	Standard
Ca	43	398.3	4.4	**19.6130**	0.698	3.6	mg/L	10	Standard
Fe	54	252.1	18.1	**0.0493**	0.029	59.6	mg/L	179	Standard
Fe	57	418.3	9.7	**0.1785**	0.138	77.4	mg/L	335	Standard
Sc-1	45	69363.5	2.7				mg/L	61029	Standard
Cl	35	32454.7	1.8				ug/L	20195	Standard
Kr	83	1.0	173.2				ug/L	4	Standard
Br	81	137582.4	3.7				ug/L	1547	Standard
P	31	24828.7	1.5				ug/L	15286	Standard
S	34	2306.8	3.7				ug/L	1572	Standard
Sr	88	291.7	6.0				ug/L	73	Standard
C	12	323.3	19.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	15.2	73.1				mg/L	6	Standard
Ho-1	165	23.3	32.7				mg/L	10	Standard
Er	166	30.0	33.3				mg/L	13	Standard
I	127	310633.7	2.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		130.094	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		105.546	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.889
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.573
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606127201
Sample Date/Time: Wednesday, June 29, 2016 16:46:22
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	94337.9	2.3				ug/L	74699	Standard
	Be	9	23.3	53.9	**0.0288**	0.012	40.8	ug/L	8	Standard
	Al	27	2978340.1	2.2	**16.0395**	0.522	3.3	ug/L	1493	Standard
	Sc	45	67137.0	4.7				ug/L	61029	Standard
	Ti	47	236.7	18.3	**0.4520**	0.099	21.9	ug/L	35	Standard
	V	51	33734.3	0.8	**3.8201**	0.030	0.8	ug/L	1435	Standard
	Cr	52	13200.4	3.0	**0.5779**	0.062	10.7	ug/L	7635	Standard
	Cr	53	1396.7	5.5	**1.0289**	0.077	7.5	ug/L	363	Standard
	Mn	55	5810.0	55.0	**0.6034**	0.416	68.9	ug/L	747	Standard
	Co	59	597.0	23.2	**0.0441**	0.019	43.4	ug/L	234	Standard
	Ni	60	839.7	12.2	**0.2798**	0.055	19.7	ug/L	215	Standard
	Cu	65	499.7	4.1	**0.1378**	0.013	9.3	ug/L	104	Standard
	Zn	66	1881.8	10.3	**1.0958**	0.181	16.5	ug/L	363	Standard
>	**Ge**	72	550779.1	1.5				ug/L	495142	Standard
	As	75	823.5	3.7	**0.7205**	0.021	2.9	ug/L	-50	Standard
	Se	82	534.3	3.8	**4.2403**	0.211	5.0	ug/L	14	Standard
	Se-1	77	394.7	5.2	**4.2338**	0.183	4.3	ug/L	42	Standard
>	**Ga**	71	76.7	13.6				mg/L	42	Standard
	Rb	85	1120.0	6.4				ug/L	17	Standard
	Y	89	478775.5	2.0				ug/L	417098	Standard
>	**Rh**	103	33.3	52.7				ug/L	13	Standard
	Mo	98	1510.8	4.0	**0.5152**	0.028	5.4	ug/L	11	Standard
	Ag	107	155.0	42.6	**0.0091**	0.010	106.9	ug/L	68	Standard
	Cd	111	66.6	64.6	**0.0216**	0.019	89.7	mg/L	2	Standard
	Cd	114	188.5	50.4	**0.0319**	0.018	55.0	ug/L	12	Standard
>	**In**	115	639482.4	2.0				ug/L	587441	Standard
	Sn	118	738.4	13.9	**0.0215**	0.017	79.5	ug/L	497	Standard
	Sb	123	301.8	22.4	**0.0554**	0.014	26.0	ug/L	78	Standard
	Ba	135	10964.6	1.7	**4.9054**	0.035	0.7	ug/L	24	Standard
	Ce	140	728.4	65.5				ug/L	25	Standard
>	**Tb**	159	995838.4	2.1				ug/L	939701	Standard
	Ho	165	55.0	78.7				ug/L	10	Standard
	Tl	203	165.3	64.1	**0.0175**	0.012	69.7	ug/L	4	Standard
	Tl	205	88.3	34.1	**0.0121**	0.004	34.3	ug/L	2	Standard
	Pb	206	371.3	17.5	**-0.0043**	0.012	275.3	ug/L	240	Standard
	Pb	207	297.3	13.9	**-0.0098**	0.008	82.9	ug/L	198	Standard
	Pb	208	1253.7	10.6	**-0.0098**	0.007	68.1	ug/L	883	Standard
	U	238	7715.3	1.4	**1.0741**	0.027	2.5	ug/L	3	Standard
>	**Bi**	209	544657.1	1.1				ug/L	523984	Standard

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Na	23	8.3	34.6	**87.3928**	30.523	34.9	mg/L	0	Standard
Mg	24	56818.0	2.0	**66.6625**	1.829	2.7	mg/L	37	Standard
K	39	118.3	28.8	**0.1220**	0.059	48.6	mg/L	38	Standard
Ca	43	173.3	14.2	**7.4463**	1.537	20.6	mg/L	10	Standard
Fe	54	200.1	8.9	**0.0164**	0.019	116.3	mg/L	179	Standard
Fe	57	341.7	12.8	**-0.0156**	0.156	997.8	mg/L	335	Standard
> **Sc-1**	45	67137.0	4.7				mg/L	61029	Standard
Cl	35	31870.8	2.6				ug/L	20195	Standard
Kr	83	0.7	173.2				ug/L	4	Standard
Br	81	13232.4	3.4				ug/L	1547	Standard
P	31	22137.8	2.1				ug/L	15286	Standard
S	34	2160.2	8.0				ug/L	1572	Standard
Sr	88	146.7	24.2				ug/L	73	Standard
C	12	170.0	10.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	64.3	100.4				mg/L	6	Standard
Ho-1	165	55.0	78.7				mg/L	10	Standard
Er	166	50.0	60.0				mg/L	13	Standard
I	127	62898.8	4.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		126.291	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.237	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.859
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.945
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606127202
Sample Date/Time: Wednesday, June 29, 2016 16:49:33
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	98788.0	4.1				ug/L	74699	Standard
	Be	9	13.3	57.3	**0.0192**	0.007	36.1	ug/L	8	Standard
	Al	27	43121483.9	2.2	**221.9923**	5.444	2.5	ug/L	1493	Standard
	Sc	45	66930.9	3.1				ug/L	61029	Standard
	Ti	47	1039.7	26.4	**2.4141**	0.661	27.4	ug/L	35	Standard
	V	51	49957.2	0.9	**5.8910**	0.067	1.1	ug/L	1435	Standard
	Cr	52	18344.1	1.8	**1.2538**	0.038	3.0	ug/L	7635	Standard
	Cr	53	24960.6	4.5	**24.5202**	1.080	4.4	ug/L	363	Standard
	Mn	55	17873.9	4.1	**2.2143**	0.103	4.7	ug/L	747	Standard
	Co	59	1405.4	6.7	**0.1586**	0.013	8.4	ug/L	234	Standard
	Ni	60	3876.2	1.9	**1.7810**	0.032	1.8	ug/L	215	Standard
	Cu	65	1407.4	2.7	**0.5921**	0.020	3.4	ug/L	104	Standard
	Zn	66	4623.4	0.6	**3.4401**	0.014	0.4	ug/L	363	Standard
>	**Ge**	72	538103.3	0.3				ug/L	495142	Standard
	As	75	2665.5	0.4	**2.2493**	0.008	0.3	ug/L	-50	Standard
	Se	82	859.9	5.4	**7.0717**	0.401	5.7	ug/L	14	Standard
	Se-1	77	1900.1	5.6	**23.3152**	1.302	5.6	ug/L	42	Standard
>	**Ga**	71	205.0	14.8				mg/L	42	Standard
	Rb	85	12111.5	1.9				ug/L	17	Standard
	Y	89	447538.5	3.5				ug/L	417098	Standard
>	**Rh**	103	186.7	5.6				ug/L	13	Standard
	Mo	98	4087.3	1.0	**1.4942**	0.026	1.7	ug/L	11	Standard
	Ag	107	258.7	10.6	**0.0259**	0.004	14.5	ug/L	68	Standard
	Cd	111	70.2	15.3	**0.0250**	0.005	21.6	mg/L	2	Standard
	Cd	114	224.5	9.2	**0.0407**	0.004	8.7	ug/L	12	Standard
>	**In**	115	600654.0	1.1				ug/L	587441	Standard
	Sn	118	765.0	14.6	**0.0335**	0.020	60.1	ug/L	497	Standard
	Sb	123	166.1	4.9	**0.0306**	0.002	5.1	ug/L	78	Standard
	Ba	135	52090.1	1.0	**24.8744**	0.038	0.2	ug/L	24	Standard
	Ce	140	4474.0	3.6				ug/L	25	Standard
>	**Tb**	159	974974.5	0.9				ug/L	939701	Standard
	Ho	165	80.0	27.2				ug/L	10	Standard
	Tl	203	82.0	10.0	**0.0082**	0.001	13.1	ug/L	4	Standard
	Tl	205	63.3	43.5	**0.0090**	0.004	42.2	ug/L	2	Standard
	Pb	206	1123.7	3.1	**0.1383**	0.006	4.7	ug/L	240	Standard
	Pb	207	914.0	2.3	**0.1218**	0.004	3.1	ug/L	198	Standard
	Pb	208	3779.9	2.5	**0.1267**	0.006	5.0	ug/L	883	Standard
	U	238	23648.8	1.1	**3.4170**	0.057	1.7	ug/L	3	Standard
>	**Bi**	209	526202.0	0.7				ug/L	523984	Standard

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Na	23	5.0	100.0	**53.6294**	53.947	100.6	mg/L	0	Standard
Mg	24	113104.0	1.5	**133.1465**	4.642	3.5	mg/L	37	Standard
K	39	478.3	11.2	**0.8485**	0.082	9.7	mg/L	38	Standard
Ca	43	695.0	6.9	**37.5535**	3.460	9.2	mg/L	10	Standard
Fe	54	250.5	4.6	**0.0553**	0.004	6.4	mg/L	179	Standard
Fe	57	631.7	3.6	**0.8833**	0.015	1.7	mg/L	335	Standard
> **Sc-1**	45	66930.9	3.1				mg/L	61029	Standard
Cl	35	32927.1	2.7				ug/L	20195	Standard
Kr	83	2.7	57.3				ug/L	4	Standard
Br	81	41968.1	3.2				ug/L	1547	Standard
P	31	23413.1	2.8				ug/L	15286	Standard
S	34	2041.8	4.5				ug/L	1572	Standard
Sr	88	750.0	13.9				ug/L	73	Standard
C	12	126.7	19.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	103.6	24.2				mg/L	6	Standard
Ho-1	165	80.0	27.2				mg/L	10	Standard
Er	166	63.3	32.9				mg/L	13	Standard
I	127	36619.2	2.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.248	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.676	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.249
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.423
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606127901
Sample Date/Time: Wednesday, June 29, 2016 16:52:45
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	94669.8	0.8				ug/L	74699	Standard
	Be	9	153.3	14.7	**0.1451**	0.021	14.4	ug/L	8	Standard
	Al	27	36828943.8	1.6	**197.7220**	2.539	1.3	ug/L	1493	Standard
	Sc	45	72494.8	2.9				ug/L	61029	Standard
	Ti	47	9823.2	1.5	**22.6070**	0.583	2.6	ug/L	35	Standard
	V	51	40160.9	1.2	**4.4642**	0.016	0.4	ug/L	1435	Standard
	Cr	52	82051.3	1.3	**8.6794**	0.190	2.2	ug/L	7635	Standard
	Cr	53	10588.7	4.0	**9.7108**	0.425	4.4	ug/L	363	Standard
	Mn	55	3156665.4	1.9	**397.2480**	11.605	2.9	ug/L	747	Standard
	Co	59	13202.1	1.7	**1.7150**	0.048	2.8	ug/L	234	Standard
	Ni	60	14584.3	1.0	**6.7029**	0.116	1.7	ug/L	215	Standard
	Cu	65	6796.9	2.1	**3.0972**	0.099	3.2	ug/L	104	Standard
	Zn	66	29601.9	0.7	**23.2962**	0.407	1.7	ug/L	363	Standard
>	**Ge**	72	565029.1	1.1				ug/L	495142	Standard
	As	75	1169.4	2.0	**0.9746**	0.024	2.5	ug/L	-50	Standard
	Se	82	54.4	2.8	**0.2964**	0.014	4.6	ug/L	14	Standard
	Se-1	77	95.3	8.8	**0.5209**	0.088	16.8	ug/L	42	Standard
>	**Ga**	71	2745.3	10.7				mg/L	42	Standard
	Rb	85	40779.8	2.2				ug/L	17	Standard
	Y	89	501434.2	0.6				ug/L	417098	Standard
>	**Rh**	103	116.7	40.7				ug/L	13	Standard
	Mo	98	6510.4	0.7	**2.1843**	0.030	1.4	ug/L	11	Standard
	Ag	107	146.0	1.2	**0.0072**	0.000	3.6	ug/L	68	Standard
	Cd	111	54.1	19.4	**0.0153**	0.004	28.2	mg/L	2	Standard
	Cd	114	169.8	20.2	**0.0276**	0.006	22.4	ug/L	12	Standard
>	**In**	115	655252.5	1.2				ug/L	587441	Standard
	Sn	118	1435.1	4.4	**0.1255**	0.007	5.6	ug/L	497	Standard
	Sb	123	419.8	7.1	**0.0764**	0.005	6.8	ug/L	78	Standard
	Ba	135	167537.6	1.4	**73.3690**	0.619	0.8	ug/L	24	Standard
	Ce	140	144147.5	0.8				ug/L	25	Standard
>	**Tb**	159	1041877.9	1.3				ug/L	939701	Standard
	Ho	165	2731.9	2.9				ug/L	10	Standard
	Tl	203	237.3	5.5	**0.0244**	0.001	5.3	ug/L	4	Standard
	Tl	205	228.3	8.3	**0.0292**	0.002	8.4	ug/L	2	Standard
	Pb	206	7357.1	0.9	**1.1818**	0.018	1.5	ug/L	240	Standard
	Pb	207	5920.5	2.7	**1.0648**	0.026	2.5	ug/L	198	Standard
	Pb	208	25273.6	1.1	**1.1521**	0.016	1.4	ug/L	883	Standard
	U	238	16614.4	0.8	**2.1915**	0.022	1.0	ug/L	3	Standard
>	**Bi**	209	575969.2	0.6				ug/L	523984	Standard

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Na	23	3.3	86.6	**32.3968**	28.087	86.7	mg/L	0	Standard
Mg	24	3568.8	4.7	**3.8119**	0.091	2.4	mg/L	37	Standard
K	39	285.0	24.6	**0.4167**	0.132	31.6	mg/L	38	Standard
Ca	43	908.4	6.1	**45.7783**	2.516	5.5	mg/L	10	Standard
Fe	54	3605.6	1.3	**2.4364**	0.072	2.9	mg/L	179	Standard
Fe	57	1446.7	0.5	**3.0674**	0.109	3.5	mg/L	335	Standard
Sc-1	45	72494.8	2.9				mg/L	61029	Standard
Cl	35	31293.6	1.2				ug/L	20195	Standard
Kr	83	2.3	49.5				ug/L	4	Standard
Br	81	8015.5	4.3				ug/L	1547	Standard
P	31	26808.7	3.1				ug/L	15286	Standard
S	34	2353.5	0.9				ug/L	1572	Standard
Sr	88	506.7	5.4				ug/L	73	Standard
C	12	183.3	20.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	3	Standard
Dy	164	4522.3	4.2				mg/L	6	Standard
Ho-1	165	2731.9	2.9				mg/L	10	Standard
Er	166	2333.5	8.8				mg/L	13	Standard
I	127	38263.4	7.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		126.735	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		114.114	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.544
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.921
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606127901
Sample Date/Time: Wednesday, June 29, 2016 16:55:56
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	94757.1	0.6				ug/L	74699	Standard
	Be	9	16.7	34.6	**0.0226**	0.005	23.2	ug/L	8	Standard
	Al	27	809583.1	0.4	**4.3294**	0.010	0.2	ug/L	1493	Standard
	Sc	45	70063.3	2.2				ug/L	61029	Standard
	Ti	47	239.7	2.8	**0.4418**	0.016	3.7	ug/L	35	Standard
	V	51	2635.2	3.3	**0.1083**	0.010	9.6	ug/L	1435	Standard
	Cr	52	10594.0	0.1	**0.2214**	0.004	1.7	ug/L	7635	Standard
	Cr	53	1061.7	10.6	**0.6708**	0.107	16.0	ug/L	363	Standard
	Mn	55	69843.0	1.9	**8.5894**	0.152	1.8	ug/L	747	Standard
	Co	59	472.7	1.3	**0.0251**	0.001	3.3	ug/L	234	Standard
	Ni	60	497.3	0.6	**0.1075**	0.002	1.4	ug/L	215	Standard
	Cu	65	314.7	2.4	**0.0436**	0.003	7.6	ug/L	104	Standard
	Zn	66	3346.7	3.2	**2.2142**	0.089	4.0	ug/L	363	Standard
>	**Ge**	72	568460.2	0.3				ug/L	495142	Standard
	As	75	-20.7	45.1	**0.0435**	0.007	16.6	ug/L	-50	Standard
	Se	82	18.3	17.6	**0.0072**	0.025	350.3	ug/L	14	Standard
	Se-1	77	58.0	6.2	**0.0694**	0.043	62.2	ug/L	42	Standard
>	**Ga**	71	123.3	16.9				mg/L	42	Standard
	Rb	85	875.0	6.6				ug/L	17	Standard
	Y	89	490331.7	1.2				ug/L	417098	Standard
>	**Rh**	103	16.7	45.8				ug/L	13	Standard
	Mo	98	175.2	3.1	**0.0513**	0.001	2.5	ug/L	11	Standard
	Ag	107	187.0	5.8	**0.0120**	0.001	10.3	ug/L	68	Standard
	Cd	111	8.4	36.2	**-0.0044**	0.001	27.6	mg/L	2	Standard
	Cd	114	20.0	63.9	**0.0013**	0.002	167.4	ug/L	12	Standard
>	**In**	115	676596.2	0.9				ug/L	587441	Standard
	Sn	118	621.7	13.0	**-0.0023**	0.012	549.8	ug/L	497	Standard
	Sb	123	148.0	17.5	**0.0233**	0.005	19.5	ug/L	78	Standard
	Ba	135	3597.4	2.3	**1.5099**	0.025	1.6	ug/L	24	Standard
	Ce	140	3133.7	5.7				ug/L	25	Standard
>	**Tb**	159	1053037.0	0.7				ug/L	939701	Standard
	Ho	165	73.3	37.6				ug/L	10	Standard
	Tl	203	38.7	9.8	**0.0024**	0.000	14.0	ug/L	4	Standard
	Tl	205	30.0	57.7	**0.0039**	0.002	55.8	ug/L	2	Standard
	Pb	206	500.3	0.4	**0.0113**	0.001	11.7	ug/L	240	Standard
	Pb	207	394.7	10.5	**0.0033**	0.008	256.3	ug/L	198	Standard
	Pb	208	1728.4	3.9	**0.0071**	0.003	37.0	ug/L	883	Standard
	U	238	362.3	7.5	**0.0420**	0.004	8.9	ug/L	3	Standard
>	**Bi**	209	594905.3	1.7				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.1214**	29.647	173.2	mg/L	0	Standard
Mg	24	156.7	18.1	**0.1107**	0.028	25.7	mg/L	37	Standard
K	39	30.0	60.1	**-0.0567**	0.034	59.1	mg/L	38	Standard
Ca	43	53.3	5.4	**0.4139**	0.213	51.5	mg/L	10	Standard
Fe	54	254.1	20.9	**0.0493**	0.038	78.1	mg/L	179	Standard
Fe	57	286.7	7.0	**-0.2249**	0.071	31.4	mg/L	335	Standard
> **Sc-1**	45	70063.3	2.2				mg/L	61029	Standard
Cl	35	33357.3	0.7				ug/L	20195	Standard
Kr	83	2.3	89.2				ug/L	4	Standard
Br	81	2703.6	11.1				ug/L	1547	Standard
P	31	21573.7	6.4				ug/L	15286	Standard
S	34	2518.5	1.8				ug/L	1572	Standard
Sr	88	90.0	20.0				ug/L	73	Standard
C	12	76.7	7.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	3	Standard
Dy	164	206.2	21.0				mg/L	6	Standard
Ho-1	165	73.3	37.6				mg/L	10	Standard
Er	166	80.0	12.5				mg/L	13	Standard
I	127	6318.0	20.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		126.852	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.807	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		115.177
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		113.535
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 16:59:09
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92097.4	0.2				ug/L	74699	Standard
	Be	9	59332.7	2.3	**54.6708**	1.340	2.5	ug/L	8	Standard
	Al	27	8920018.4	1.0	**49.2175**	0.589	1.2	ug/L	1493	Standard
	Sc	45	68374.0	2.7				ug/L	61029	Standard
	Ti	47	44746.6	0.7	**103.2626**	1.432	1.4	ug/L	35	Standard
	V	51	467593.6	0.9	**54.0107**	0.396	0.7	ug/L	1435	Standard
	Cr	52	444978.1	1.4	**51.5506**	1.111	2.2	ug/L	7635	Standard
	Cr	53	54491.2	2.0	**51.2973**	1.411	2.7	ug/L	363	Standard
	Mn	55	420710.6	2.8	**52.7641**	1.799	3.4	ug/L	747	Standard
	Co	59	425350.8	2.7	**56.3649**	1.831	3.2	ug/L	234	Standard
	Ni	60	109363.3	1.2	**51.0215**	0.971	1.9	ug/L	215	Standard
	Cu	65	108714.3	1.3	**51.0413**	1.018	2.0	ug/L	104	Standard
	Zn	66	63872.0	1.2	**50.7455**	1.020	2.0	ug/L	363	Standard
>	**Ge**	72	565538.7	0.9				ug/L	495142	Standard
	As	75	65590.6	1.0	**51.3298**	0.623	1.2	ug/L	-50	Standard
	Se	82	6676.5	1.4	**53.1245**	0.865	1.6	ug/L	14	Standard
	Se-1	77	4570.7	2.8	**54.1793**	1.989	3.7	ug/L	42	Standard
>	**Ga**	71	90.0	25.5				mg/L	42	Standard
	Rb	85	980.0	1.8				ug/L	17	Standard
	Y	89	481101.3	1.3				ug/L	417098	Standard
>	**Rh**	103	36.7	20.8				ug/L	13	Standard
	Mo	98	317636.1	2.3	**106.0178**	2.920	2.8	ug/L	11	Standard
	Ag	107	377887.3	1.0	**51.5689**	0.593	1.2	ug/L	68	Standard
	Cd	111	119799.3	1.9	**50.9674**	1.189	2.3	mg/L	2	Standard
	Cd	114	291345.5	1.8	**50.5384**	1.150	2.3	ug/L	12	Standard
>	**In**	115	660345.6	0.5				ug/L	587441	Standard
	Sn	118	333887.3	1.0	**50.7546**	0.756	1.5	ug/L	497	Standard
	Sb	123	263770.3	1.5	**50.2579**	0.987	2.0	ug/L	78	Standard
	Ba	135	110751.0	1.4	**48.1238**	0.926	1.9	ug/L	24	Standard
	Ce	140	100.0	13.2				ug/L	25	Standard
>	**Tb**	159	1027328.3	1.0				ug/L	939701	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	469667.3	0.3	**51.2282**	0.784	1.5	ug/L	4	Standard
	Tl	205	432915.4	1.7	**54.4135**	1.621	3.0	ug/L	2	Standard
	Pb	206	304012.7	1.3	**51.1045**	1.311	2.6	ug/L	240	Standard
	Pb	207	269196.3	1.3	**50.9328**	1.301	2.6	ug/L	198	Standard
	Pb	208	1105976.1	1.5	**52.9652**	1.506	2.8	ug/L	883	Standard
	U	238	408284.4	0.8	**53.3305**	1.093	2.0	ug/L	3	Standard
>	**Bi**	209	582837.4	1.3				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4664.1	3.2	**5.3139**	0.299	5.6	mg/L	37	Standard
K	39	2066.8	2.7	**3.9658**	0.176	4.4	mg/L	38	Standard
Ca	43	83.3	3.5	**2.1752**	0.111	5.1	mg/L	10	Standard
Fe	54	7259.4	3.7	**5.3547**	0.102	1.9	mg/L	179	Standard
Fe	57	2016.8	2.5	**5.0496**	0.304	6.0	mg/L	335	Standard
Sc-1	45	68374.0	2.7				mg/L	61029	Standard
Cl	35	31290.3	2.5				ug/L	20195	Standard
Kr	83	2.3	65.5				ug/L	4	Standard
Br	81	2203.5	6.4				ug/L	1547	Standard
P	31	22518.4	0.7				ug/L	15286	Standard
S	34	2795.3	6.4				ug/L	1572	Standard
Sr	88	58.3	13.1				ug/L	73	Standard
C	12	70.0	37.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	25.1	45.0				mg/L	6	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	33.3	34.6				mg/L	13	Standard
I	127	4404.0	17.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	109.342		
Al	27	98.435		
Sc	45			
Ti	47	103.263		
V	51	108.021		
Cr	52	103.101		
Cr	53			
Mn	55	105.528		
Co	59	112.730		
Ni	60	102.043		
Cu	65	102.083		
Zn	66	101.491		
Ge	72		114.217	
As	75	102.660		
Se	82	106.249		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	106.018		
Ag	107	103.138		
Cd	111	101.935		
Cd	114			
In	115		112.411	
Sn	118	101.509		
Sb	123	100.516		
Ba	135	96.248		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.456		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.930		
U	238	106.661		
Bi	209		111.232	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Co	59	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 17:02:20
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92622.3	1.7				ug/L	74699	Standard
	Be	9	38.3	64.3	**0.0426**	0.023	52.8	ug/L	8	Standard
	Al	27	23370.4	151.2	**0.1159**	0.196	168.9	ug/L	1493	Standard
	Sc	45	68951.6	1.3				ug/L	61029	Standard
	Ti	47	40.3	21.1	**-0.0139**	0.019	138.6	ug/L	35	Standard
	V	51	1665.7	22.9	**0.0015**	0.044	2840.4	ug/L	1435	Standard
	Cr	52	7712.6	2.1	**-0.0923**	0.036	39.5	ug/L	7635	Standard
	Cr	53	583.3	10.9	**0.2339**	0.049	21.0	ug/L	363	Standard
	Mn	55	4624.3	138.3	**0.4433**	0.816	184.2	ug/L	747	Standard
	Co	59	398.3	65.9	**0.0165**	0.035	212.9	ug/L	234	Standard
	Ni	60	246.3	49.7	**-0.0062**	0.058	932.9	ug/L	215	Standard
	Cu	65	154.7	27.9	**-0.0294**	0.020	68.5	ug/L	104	Standard
	Zn	66	470.3	19.7	**-0.0693**	0.075	107.9	ug/L	363	Standard
>	**Ge**	72	553538.3	2.4				ug/L	495142	Standard
	As	75	-38.0	63.4	**0.0295**	0.019	62.8	ug/L	-50	Standard
	Se	82	20.6	12.7	**0.0307**	0.026	83.7	ug/L	14	Standard
	Se-1	77	63.0	12.0	**0.1490**	0.085	57.3	ug/L	42	Standard
>	**Ga**	71	71.7	14.5				mg/L	42	Standard
	Rb	85	25.0	0.0				ug/L	17	Standard
	Y	89	484828.2	0.4				ug/L	417098	Standard
>	**Rh**	103	11.7	65.5				ug/L	13	Standard
	Mo	98	326.7	26.1	**0.0989**	0.027	26.9	ug/L	11	Standard
	Ag	107	215.0	76.0	**0.0152**	0.021	139.6	ug/L	68	Standard
	Cd	111	16.1	49.4	**-0.0013**	0.003	242.1	mg/L	2	Standard
	Cd	114	45.0	78.6	**0.0054**	0.006	109.2	ug/L	12	Standard
>	**In**	115	687277.7	0.8				ug/L	587441	Standard
	Sn	118	931.7	18.6	**0.0418**	0.027	63.5	ug/L	497	Standard
	Sb	123	489.1	40.1	**0.0853**	0.036	41.8	ug/L	78	Standard
	Ba	135	52.0	47.0	**0.0057**	0.010	177.6	ug/L	24	Standard
	Ce	140	81.7	78.0				ug/L	25	Standard
>	**Tb**	159	1059717.9	1.6				ug/L	939701	Standard
	Ho	165	6.7	86.6				ug/L	10	Standard
	Tl	203	97.3	80.9	**0.0086**	0.008	97.3	ug/L	4	Standard
	Tl	205	126.7	77.5	**0.0158**	0.012	76.4	ug/L	2	Standard
	Pb	206	434.7	47.9	**0.0006**	0.034	5998.1	ug/L	240	Standard
	Pb	207	327.7	41.4	**-0.0091**	0.025	275.6	ug/L	198	Standard
	Pb	208	1259.4	26.8	**-0.0148**	0.016	107.4	ug/L	883	Standard
	U	238	94.7	104.8	**0.0077**	0.013	165.1	ug/L	3	Standard
>	**Bi**	209	593862.7	2.1				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	88.3	93.4	**0.0352**	0.093	262.9	mg/L	37	Standard
K	39	41.7	30.2	**-0.0325**	0.025	77.1	mg/L	38	Standard
Ca	43	21.7	58.1	**-1.3088**	0.708	54.1	mg/L	10	Standard
Fe	54	169.3	10.4	**-0.0113**	0.012	105.6	mg/L	179	Standard
Fe	57	255.0	7.1	**-0.3067**	0.061	20.0	mg/L	335	Standard
> **Sc-1**	45	68951.6	1.3				mg/L	61029	Standard
Cl	35	30862.1	1.0				ug/L	20195	Standard
Kr	83	3.7	31.5				ug/L	4	Standard
Br	81	2130.2	6.5				ug/L	1547	Standard
P	31	22533.4	1.3				ug/L	15286	Standard
S	34	2576.9	2.2				ug/L	1572	Standard
Sr	88	61.7	20.4				ug/L	73	Standard
C	12	70.0	62.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	15.1	95.9				mg/L	6	Standard
Ho-1	165	6.7	86.6				mg/L	10	Standard
Er	166	33.3	69.3				mg/L	13	Standard
I	127	3348.7	10.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.794	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		116.995
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		113.336
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Mn	55	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606127902 WG574001-03
Sample Date/Time: Wednesday, June 29, 2016 17:05:33
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	97844.9	1.2				ug/L	74699	Standard
	Be	9	628.3	5.4	**0.5525**	0.030	5.3	ug/L	8	Standard
	Al	27	67592650.7	0.8	**351.1766**	6.777	1.9	ug/L	1493	Standard
	Sc	45	76196.2	3.2				ug/L	61029	Standard
	Ti	47	35031.5	1.8	**85.4603**	1.454	1.7	ug/L	35	Standard
	V	51	127107.8	0.4	**15.3856**	0.087	0.6	ug/L	1435	Standard
	Cr	52	144594.0	0.9	**17.0395**	0.185	1.1	ug/L	7635	Standard
	Cr	53	17708.7	3.4	**17.4084**	0.576	3.3	ug/L	363	Standard
	Mn	55	9638149.6	0.5	**1281.4698**	6.113	0.5	ug/L	747	Standard
	Co	59	44221.4	1.1	**6.1626**	0.079	1.3	ug/L	234	Standard
	Ni	60	29440.2	0.7	**14.4336**	0.102	0.7	ug/L	215	Standard
	Cu	65	18715.2	1.1	**9.2058**	0.118	1.3	ug/L	104	Standard
	Zn	66	49911.7	1.0	**41.8483**	0.443	1.1	ug/L	363	Standard
>	**Ge**	72	534821.8	0.2				ug/L	495142	Standard
	As	75	5363.3	0.7	**4.4926**	0.039	0.9	ug/L	-50	Standard
	Se	82	81.7	4.2	**0.5509**	0.030	5.5	ug/L	14	Standard
	Se-1	77	90.0	5.1	**0.5184**	0.056	10.8	ug/L	42	Standard
>	**Ga**	71	10246.8	1.6				mg/L	42	Standard
	Rb	85	128176.6	1.2				ug/L	17	Standard
	Y	89	611826.2	1.2				ug/L	417098	Standard
>	**Rh**	103	203.3	5.1				ug/L	13	Standard
	Mo	98	8459.2	1.1	**2.8837**	0.063	2.2	ug/L	11	Standard
	Ag	107	335.7	32.7	**0.0339**	0.015	43.7	ug/L	68	Standard
	Cd	111	167.4	13.2	**0.0649**	0.009	13.6	mg/L	2	Standard
	Cd	114	471.4	29.4	**0.0814**	0.024	29.1	ug/L	12	Standard
>	**In**	115	645352.1	1.1				ug/L	587441	Standard
	Sn	118	2433.5	1.0	**0.2845**	0.006	2.0	ug/L	497	Standard
	Sb	123	747.2	5.1	**0.1415**	0.006	4.4	ug/L	78	Standard
	Ba	135	186708.8	1.1	**83.0208**	0.490	0.6	ug/L	24	Standard
	Ce	140	555105.9	0.4				ug/L	25	Standard
>	**Tb**	159	1017797.9	1.6				ug/L	939701	Standard
	Ho	165	10682.1	1.8				ug/L	10	Standard
	Tl	203	801.4	12.7	**0.0906**	0.011	12.4	ug/L	4	Standard
	Tl	205	726.7	5.1	**0.0967**	0.005	5.6	ug/L	2	Standard
	Pb	206	28687.5	0.5	**5.0315**	0.023	0.5	ug/L	240	Standard
	Pb	207	23046.8	1.0	**4.5438**	0.005	0.1	ug/L	198	Standard
	Pb	208	100519.8	0.6	**5.0199**	0.074	1.5	ug/L	883	Standard
	U	238	32058.9	0.6	**4.4211**	0.050	1.1	ug/L	3	Standard
>	**Bi**	209	551473.5	0.9				ug/L	523984	Standard

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Na	23	16.7	17.3	**153.4719**	22.118	14.4	mg/L	0	Standard
Mg	24	8050.5	4.4	**8.2571**	0.176	2.1	mg/L	37	Standard
K	39	990.0	1.3	**1.6393**	0.041	2.5	mg/L	38	Standard
Ca	43	1383.4	8.1	**67.3924**	3.470	5.1	mg/L	10	Standard
Fe	54	12019.5	0.9	**8.0301**	0.303	3.8	mg/L	179	Standard
Fe	57	3888.8	1.5	**9.5221**	0.470	4.9	mg/L	335	Standard
> **Sc-1**	45	76196.2	3.2				mg/L	61029	Standard
Cl	35	38282.3	2.8				ug/L	20195	Standard
Kr	83	1.7	124.9				ug/L	4	Standard
Br	81	9239.5	4.1				ug/L	1547	Standard
P	31	33428.5	3.8				ug/L	15286	Standard
S	34	2046.8	10.4				ug/L	1572	Standard
Sr	88	885.0	8.4				ug/L	73	Standard
C	12	223.3	22.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	3	Standard
Dy	164	18454.9	2.8				mg/L	6	Standard
Ho-1	165	10682.1	1.8				mg/L	10	Standard
Er	166	9956.6	4.7				mg/L	13	Standard
I	127	65381.5	9.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		130.986	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.014	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	109.858
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	105.246
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606127902 WG574001-03
Sample Date/Time: Wednesday, June 29, 2016 17:08:45
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	97333.3	1.1				ug/L	74699	Standard
	Be	9	23.3	32.7	**0.0279**	0.007	23.3	ug/L	8	Standard
	Al	27	1471688.9	2.0	**7.6717**	0.099	1.3	ug/L	1493	Standard
	Sc	45	68584.9	0.8				ug/L	61029	Standard
	Ti	47	736.0	3.1	**1.5714**	0.076	4.9	ug/L	35	Standard
	V	51	4360.2	2.0	**0.3040**	0.018	5.9	ug/L	1435	Standard
	Cr	52	10891.2	1.4	**0.2475**	0.011	4.5	ug/L	7635	Standard
	Cr	53	901.7	3.1	**0.5139**	0.018	3.4	ug/L	363	Standard
	Mn	55	209342.7	1.0	**25.8667**	0.657	2.5	ug/L	747	Standard
	Co	59	1184.0	8.5	**0.1180**	0.016	13.3	ug/L	234	Standard
	Ni	60	823.4	2.4	**0.2566**	0.015	5.7	ug/L	215	Standard
	Cu	65	604.0	5.8	**0.1771**	0.017	9.7	ug/L	104	Standard
	Zn	66	3536.4	2.1	**2.3459**	0.038	1.6	ug/L	363	Standard
>	**Ge**	72	572433.6	1.6				ug/L	495142	Standard
	As	75	56.5	19.8	**0.1032**	0.008	8.2	ug/L	-50	Standard
	Se	82	22.7	8.9	**0.0409**	0.015	36.5	ug/L	14	Standard
	Se-1	77	56.3	3.7	**0.0451**	0.032	71.6	ug/L	42	Standard
>	**Ga**	71	286.7	20.8				mg/L	42	Standard
	Rb	85	2816.9	8.1				ug/L	17	Standard
	Y	89	483993.7	0.1				ug/L	417098	Standard
>	**Rh**	103	11.7	65.5				ug/L	13	Standard
	Mo	98	255.8	9.6	**0.0784**	0.008	10.6	ug/L	11	Standard
	Ag	107	215.7	39.7	**0.0161**	0.012	72.2	ug/L	68	Standard
	Cd	111	33.2	125.7	**0.0061**	0.018	290.4	mg/L	2	Standard
	Cd	114	83.8	140.0	**0.0123**	0.020	164.2	ug/L	12	Standard
>	**In**	115	670122.5	0.4				ug/L	587441	Standard
	Sn	118	730.0	9.6	**0.0149**	0.011	73.4	ug/L	497	Standard
	Sb	123	198.5	22.7	**0.0331**	0.009	26.1	ug/L	78	Standard
	Ba	135	4104.6	4.5	**1.7422**	0.086	5.0	ug/L	24	Standard
	Ce	140	11919.7	3.4				ug/L	25	Standard
>	**Tb**	159	1040073.5	0.3				ug/L	939701	Standard
	Ho	165	248.3	25.2				ug/L	10	Standard
	Tl	203	119.3	122.5	**0.0111**	0.016	142.6	ug/L	4	Standard
	Tl	205	45.0	44.4	**0.0058**	0.003	43.8	ug/L	2	Standard
	Pb	206	1027.4	11.1	**0.0985**	0.020	20.7	ug/L	240	Standard
	Pb	207	828.0	1.8	**0.0839**	0.004	4.9	ug/L	198	Standard
	Pb	208	3389.1	2.4	**0.0853**	0.005	6.3	ug/L	883	Standard
	U	238	690.0	3.8	**0.0840**	0.004	4.3	ug/L	3	Standard
>	**Bi**	209	594228.5	1.0				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	215.0	6.2	**0.1819**	0.016	8.8	mg/L	37	Standard
K	39	53.3	14.3	**-0.0093**	0.014	153.2	mg/L	38	Standard
Ca	43	48.3	15.8	**0.1914**	0.411	214.9	mg/L	10	Standard
Fe	54	443.5	15.8	**0.1966**	0.055	28.1	mg/L	179	Standard
Fe	57	323.3	11.7	**-0.0960**	0.118	122.9	mg/L	335	Standard
> **Sc-1**	45	68584.9	0.8				mg/L	61029	Standard
Cl	35	29711.8	0.5				ug/L	20195	Standard
Kr	83	0.7	173.2				ug/L	4	Standard
Br	81	2166.8	7.4				ug/L	1547	Standard
P	31	19419.1	3.8				ug/L	15286	Standard
S	34	2206.8	3.0				ug/L	1572	Standard
Sr	88	96.7	19.6				ug/L	73	Standard
C	12	46.7	49.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	390.3	4.3				mg/L	6	Standard
Ho-1	165	248.3	25.2				mg/L	10	Standard
Er	166	203.3	36.3				mg/L	13	Standard
I	127	5617.8	25.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		130.301	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		115.610	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.075
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		113.406
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606127903S WG574001-09
Sample Date/Time: Wednesday, June 29, 2016 17:11:56
Number of Replicates: 3
Autosampler Position: 227
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	103734.0	1.8				ug/L	74699	Standard
	Be	9	62659.4	2.5	**51.2580**	0.858	1.7	ug/L	8	Standard
	Al	27	65559814.6	2.9	**321.3254**	12.360	3.8	ug/L	1493	Standard
	Sc	45	78765.9	1.8				ug/L	61029	Standard
	Ti	47	33652.0	1.4	**81.0287**	2.211	2.7	ug/L	35	Standard
	V	51	549023.7	0.9	**66.2300**	1.368	2.1	ug/L	1435	Standard
	Cr	52	510507.6	0.8	**61.9303**	1.817	2.9	ug/L	7635	Standard
	Cr	53	62490.3	1.3	**61.4602**	1.770	2.9	ug/L	363	Standard
	Mn	55	9311676.0	0.4	**1221.9970**	25.998	2.1	ug/L	747	Standard
	Co	59	420012.9	0.8	**58.0870**	1.492	2.6	ug/L	234	Standard
	Ni	60	121605.8	1.9	**59.2404**	2.250	3.8	ug/L	215	Standard
	Cu	65	110409.9	1.5	**54.1128**	1.822	3.4	ug/L	104	Standard
	Zn	66	101498.2	0.9	**84.4641**	2.491	2.9	ug/L	363	Standard
>	**Ge**	72	542031.1	2.4				ug/L	495142	Standard
	As	75	66455.1	1.4	**54.2648**	0.548	1.0	ug/L	-50	Standard
	Se	82	6239.8	1.8	**51.8120**	1.305	2.5	ug/L	14	Standard
	Se-1	77	4136.2	2.8	**51.1231**	1.591	3.1	ug/L	42	Standard
>	**Ga**	71	10863.9	0.3				mg/L	42	Standard
	Rb	85	119392.1	2.4				ug/L	17	Standard
	Y	89	586391.1	1.2				ug/L	417098	Standard
>	**Rh**	103	175.0	15.1				ug/L	13	Standard
	Mo	98	5740.7	2.3	**1.9719**	0.058	3.0	ug/L	11	Standard
	Ag	107	333249.6	2.0	**46.9378**	1.203	2.6	ug/L	68	Standard
	Cd	111	109090.4	0.8	**47.8987**	0.737	1.5	mg/L	2	Standard
	Cd	114	263561.8	0.5	**47.1881**	0.999	2.1	ug/L	12	Standard
>	**In**	115	639905.2	1.9				ug/L	587441	Standard
	Sn	118	1925.1	5.8	**0.2078**	0.017	8.3	ug/L	497	Standard
	Sb	123	124661.9	1.5	**24.5159**	0.713	2.9	ug/L	78	Standard
	Ba	135	268706.4	1.4	**120.5245**	2.161	1.8	ug/L	24	Standard
	Ce	140	538323.1	0.7				ug/L	25	Standard
>	**Tb**	159	1045169.0	2.0				ug/L	939701	Standard
	Ho	165	11317.6	5.4				ug/L	10	Standard
	Tl	203	438870.4	1.4	**49.1992**	0.166	0.3	ug/L	4	Standard
	Tl	205	398898.5	1.5	**51.5243**	0.281	0.5	ug/L	2	Standard
	Pb	206	314887.1	0.5	**54.4073**	0.494	0.9	ug/L	240	Standard
	Pb	207	267442.5	0.8	**52.0088**	0.664	1.3	ug/L	198	Standard
	Pb	208	1101699.4	1.8	**54.2208**	0.536	1.0	ug/L	883	Standard
	U	238	415059.0	1.7	**55.7208**	0.743	1.3	ug/L	3	Standard
>	**Bi**	209	566992.1	1.1				ug/L	523984	Standard

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Na	23	8.3	69.3	**74.8950**	52.957	70.7	mg/L	0	Standard
Mg	24	7490.2	5.9	**7.4319**	0.549	7.4	mg/L	37	Standard
K	39	995.0	6.5	**1.5912**	0.134	8.4	mg/L	38	Standard
Ca	43	1293.4	1.8	**60.7979**	1.957	3.2	mg/L	10	Standard
Fe	54	10550.1	1.1	**6.7940**	0.164	2.4	mg/L	179	Standard
Fe	57	3448.7	1.2	**8.0106**	0.227	2.8	mg/L	335	Standard
> **Sc-1**	45	78765.9	1.8				mg/L	61029	Standard
Cl	35	36168.5	1.3				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	7995.5	8.9				ug/L	1547	Standard
P	31	34405.7	2.4				ug/L	15286	Standard
S	34	1880.1	7.8				ug/L	1572	Standard
Sr	88	881.7	7.6				ug/L	73	Standard
C	12	140.0	46.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	3	Standard
Dy	164	18849.9	4.6				mg/L	6	Standard
Ho-1	165	11317.6	5.4				mg/L	10	Standard
Er	166	9863.2	2.6				mg/L	13	Standard
I	127	61177.5	10.8				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		138.870	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		109.470	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.931
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.208
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606127903S WG574001-09
Sample Date/Time: Wednesday, June 29, 2016 17:15:08
Number of Replicates: 3
Autosampler Position: 228
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	100014.2	2.8				ug/L	74699	Standard
	Be	9	1316.7	11.4	**1.1231**	0.100	8.9	ug/L	8	Standard
	Al	27	1420391.6	2.6	**7.2057**	0.041	0.6	ug/L	1493	Standard
	Sc	45	65355.8	3.5				ug/L	61029	Standard
	Ti	47	751.7	2.2	**1.7435**	0.043	2.4	ug/L	35	Standard
	V	51	12553.2	2.5	**1.3568**	0.030	2.2	ug/L	1435	Standard
	Cr	52	18458.6	1.1	**1.3028**	0.035	2.7	ug/L	7635	Standard
	Cr	53	1771.8	3.3	**1.4619**	0.098	6.7	ug/L	363	Standard
	Mn	55	203580.1	1.5	**27.1635**	0.320	1.2	ug/L	747	Standard
	Co	59	9135.1	1.0	**1.2550**	0.021	1.7	ug/L	234	Standard
	Ni	60	2779.3	1.4	**1.2628**	0.031	2.5	ug/L	215	Standard
	Cu	65	2563.2	1.7	**1.1828**	0.027	2.3	ug/L	104	Standard
	Zn	66	4447.0	0.1	**3.3488**	0.082	2.5	ug/L	363	Standard
>	**Ge**	72	530183.0	2.3				ug/L	495142	Standard
	As	75	1256.2	4.8	**1.1077**	0.065	5.9	ug/L	-50	Standard
	Se	82	144.5	11.0	**1.0936**	0.160	14.6	ug/L	14	Standard
	Se-1	77	149.3	5.6	**1.2873**	0.101	7.8	ug/L	42	Standard
>	**Ga**	71	291.7	12.0				mg/L	42	Standard
	Rb	85	2473.5	8.7				ug/L	17	Standard
	Y	89	480063.9	1.1				ug/L	417098	Standard
>	**Rh**	103	18.3	15.7				ug/L	13	Standard
	Mo	98	168.4	5.0	**0.0496**	0.003	5.9	ug/L	11	Standard
	Ag	107	7406.8	1.4	**0.9815**	0.012	1.2	ug/L	68	Standard
	Cd	111	2324.9	2.0	**0.9649**	0.013	1.3	mg/L	2	Standard
	Cd	114	5499.5	2.5	**0.9362**	0.028	2.9	ug/L	12	Standard
>	**In**	115	671407.0	1.0				ug/L	587441	Standard
	Sn	118	800.0	6.0	**0.0251**	0.007	29.1	ug/L	497	Standard
	Sb	123	3310.0	4.5	**0.6160**	0.025	4.0	ug/L	78	Standard
	Ba	135	5738.4	0.8	**2.4371**	0.009	0.4	ug/L	24	Standard
	Ce	140	11352.6	1.4				ug/L	25	Standard
>	**Tb**	159	1030086.3	0.3				ug/L	939701	Standard
	Ho	165	295.0	7.8				ug/L	10	Standard
	Tl	203	9225.5	0.2	**0.9995**	0.013	1.3	ug/L	4	Standard
	Tl	205	8459.0	5.0	**1.0575**	0.041	3.9	ug/L	2	Standard
	Pb	206	6958.9	0.8	**1.0943**	0.025	2.3	ug/L	240	Standard
	Pb	207	5899.8	0.2	**1.0421**	0.014	1.4	ug/L	198	Standard
	Pb	208	25022.5	1.7	**1.1197**	0.025	2.3	ug/L	883	Standard
	U	238	8748.9	2.2	**1.1326**	0.025	2.2	ug/L	3	Standard
>	**Bi**	209	585775.3	1.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	185.0	5.4	**0.1579**	0.009	5.9	mg/L	37	Standard
K	39	46.7	32.7	**-0.0170**	0.035	202.9	mg/L	38	Standard
Ca	43	53.3	5.4	**0.6286**	0.271	43.1	mg/L	10	Standard
Fe	54	400.2	11.9	**0.1796**	0.048	26.7	mg/L	179	Standard
Fe	57	335.0	9.8	**-0.0119**	0.080	674.7	mg/L	335	Standard
Sc-1	45	65355.8	3.5				mg/L	61029	Standard
Cl	35	29320.3	1.0				ug/L	20195	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	2030.1	9.5				ug/L	1547	Standard
P	31	19806.3	2.6				ug/L	15286	Standard
S	34	2145.2	0.2				ug/L	1572	Standard
Sr	88	86.7	23.3				ug/L	73	Standard
C	12	80.0	66.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	379.6	21.3				mg/L	6	Standard
Ho-1	165	295.0	7.8				mg/L	10	Standard
Er	166	216.7	11.6				mg/L	13	Standard
I	127	5157.6	28.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		133.890	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		107.077	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.294
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		111.792
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606127904SD WG574001-10
Sample Date/Time: Wednesday, June 29, 2016 17:18:19
Number of Replicates: 3
Autosampler Position: 229
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	100168.4	0.8				ug/L	74699	Standard
	Be	9	61913.0	2.3	**52.4502**	1.133	2.2	ug/L	8	Standard
	Al	27	66193036.9	1.4	**335.9039**	6.576	2.0	ug/L	1493	Standard
	Sc	45	75343.6	2.4				ug/L	61029	Standard
	Ti	47	40945.9	1.4	**103.9053**	1.926	1.9	ug/L	35	Standard
	V	51	552663.1	1.5	**70.2550**	1.056	1.5	ug/L	1435	Standard
	Cr	52	495290.7	1.7	**63.3235**	1.419	2.2	ug/L	7635	Standard
	Cr	53	60987.5	1.0	**63.2038**	0.948	1.5	ug/L	363	Standard
	Mn	55	9453870.8	1.1	**1307.2105**	20.907	1.6	ug/L	747	Standard
	Co	59	421300.3	0.1	**61.3867**	0.363	0.6	ug/L	234	Standard
	Ni	60	119269.8	2.5	**61.2106**	1.745	2.9	ug/L	215	Standard
	Cu	65	106997.2	1.7	**55.2474**	1.210	2.2	ug/L	104	Standard
	Zn	66	101243.5	1.4	**88.7847**	1.659	1.9	ug/L	363	Standard
>	**Ge**	72	514295.3	0.5				ug/L	495142	Standard
	As	75	64887.3	0.7	**55.8337**	0.652	1.2	ug/L	-50	Standard
	Se	82	6128.3	0.4	**53.6210**	0.432	0.8	ug/L	14	Standard
	Se-1	77	4025.2	1.7	**52.4403**	1.142	2.2	ug/L	42	Standard
>	**Ga**	71	13474.3	0.3				mg/L	42	Standard
	Rb	85	148814.4	3.2				ug/L	17	Standard
	Y	89	590511.6	1.2				ug/L	417098	Standard
>	**Rh**	103	170.0	19.3				ug/L	13	Standard
	Mo	98	5249.8	1.8	**1.8847**	0.047	2.5	ug/L	11	Standard
	Ag	107	319729.4	0.9	**47.0680**	0.306	0.7	ug/L	68	Standard
	Cd	111	105379.0	1.4	**48.3587**	0.323	0.7	mg/L	2	Standard
	Cd	114	254720.6	1.7	**47.6605**	0.543	1.1	ug/L	12	Standard
>	**In**	115	612131.8	1.0				ug/L	587441	Standard
	Sn	118	2201.8	4.9	**0.2670**	0.017	6.2	ug/L	497	Standard
	Sb	123	135513.9	0.7	**27.8528**	0.396	1.4	ug/L	78	Standard
	Ba	135	276700.5	0.9	**129.7213**	0.066	0.1	ug/L	24	Standard
	Ce	140	594096.9	1.6				ug/L	25	Standard
>	**Tb**	159	982831.9	0.9				ug/L	939701	Standard
	Ho	165	12233.3	1.6				ug/L	10	Standard
	Tl	203	424338.5	0.5	**50.3728**	0.553	1.1	ug/L	4	Standard
	Tl	205	393687.9	2.5	**53.8449**	1.302	2.4	ug/L	2	Standard
	Pb	206	310823.5	0.5	**56.8661**	0.171	0.3	ug/L	240	Standard
	Pb	207	265328.4	0.5	**54.6347**	0.327	0.6	ug/L	198	Standard
	Pb	208	1090751.7	0.6	**56.8486**	0.519	0.9	ug/L	883	Standard
	U	238	409441.4	1.4	**58.2033**	0.887	1.5	ug/L	3	Standard
>	**Bi**	209	535481.7	0.7				ug/L	523984	Standard

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Na	23	6.7	86.6	**61.5240**	53.288	86.6	mg/L	0	Standard
Mg	24	7358.5	1.6	**7.6312**	0.188	2.5	mg/L	37	Standard
K	39	1028.4	3.5	**1.7267**	0.031	1.8	mg/L	38	Standard
Ca	43	1340.1	2.9	**66.0398**	1.115	1.7	mg/L	10	Standard
Fe	54	11628.0	2.4	**7.8474**	0.058	0.7	mg/L	179	Standard
Fe	57	3898.8	5.2	**9.6559**	0.353	3.7	mg/L	335	Standard
Sc-1	45	75343.6	2.4				mg/L	61029	Standard
Cl	35	34624.2	2.4				ug/L	20195	Standard
Kr	83	1.7	34.6				ug/L	4	Standard
Br	81	10260.1	1.8				ug/L	1547	Standard
P	31	37270.8	0.5				ug/L	15286	Standard
S	34	1845.1	3.3				ug/L	1572	Standard
Sr	88	923.4	9.7				ug/L	73	Standard
C	12	203.3	29.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	3	Standard
Dy	164	20358.1	1.7				mg/L	6	Standard
Ho-1	165	12233.3	1.6				mg/L	10	Standard
Er	166	11334.2	2.0				mg/L	13	Standard
I	127	62766.8	7.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		134.096	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.868	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.203
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.194
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ti 47 Upper, S, EEE	Ti	47	

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Mn 55 Upper, S, EEE	Mn	55
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606127904SD WG574001-10
Sample Date/Time: Wednesday, June 29, 2016 17:21:31
Number of Replicates: 3
Autosampler Position: 230
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	96610.6	3.3				ug/L	74699	Standard
	Be	9	1288.4	4.7	**1.1394**	0.049	4.3	ug/L	8	Standard
	Al	27	1461113.0	0.9	**7.6780**	0.187	2.4	ug/L	1493	Standard
	Sc	45	62711.5	6.5				ug/L	61029	Standard
	Ti	47	920.7	1.4	**2.1467**	0.013	0.6	ug/L	35	Standard
	V	51	13378.9	3.6	**1.4502**	0.085	5.9	ug/L	1435	Standard
	Cr	52	18691.9	1.7	**1.3185**	0.044	3.3	ug/L	7635	Standard
	Cr	53	1716.8	3.7	**1.3959**	0.091	6.5	ug/L	363	Standard
	Mn	55	207917.4	1.7	**27.5865**	0.619	2.2	ug/L	747	Standard
	Co	59	9044.0	2.3	**1.2346**	0.031	2.5	ug/L	234	Standard
	Ni	60	2824.3	2.7	**1.2771**	0.044	3.5	ug/L	215	Standard
	Cu	65	2601.9	3.8	**1.1945**	0.050	4.2	ug/L	104	Standard
	Zn	66	4831.1	2.2	**3.6537**	0.142	3.9	ug/L	363	Standard
>	**Ge**	72	533228.6	1.6				ug/L	495142	Standard
	As	75	1337.8	3.9	**1.1692**	0.061	5.2	ug/L	-50	Standard
	Se	82	140.1	2.8	**1.0475**	0.027	2.6	ug/L	14	Standard
	Se-1	77	133.7	3.0	**1.0773**	0.056	5.2	ug/L	42	Standard
>	**Ga**	71	393.3	11.4				mg/L	42	Standard
	Rb	85	3227.0	1.4				ug/L	17	Standard
	Y	89	450037.4	1.9				ug/L	417098	Standard
>	**Rh**	103	18.3	87.7				ug/L	13	Standard
	Mo	98	147.9	13.7	**0.0463**	0.009	18.8	ug/L	11	Standard
	Ag	107	7379.1	1.6	**1.0451**	0.031	3.0	ug/L	68	Standard
	Cd	111	2296.2	2.5	**1.0190**	0.058	5.7	mg/L	2	Standard
	Cd	114	5492.1	3.4	**0.9981**	0.024	2.4	ug/L	12	Standard
>	**In**	115	629018.5	3.2				ug/L	587441	Standard
	Sn	118	580.0	12.2	**-0.0020**	0.010	499.8	ug/L	497	Standard
	Sb	123	3693.7	7.1	**0.7349**	0.053	7.2	ug/L	78	Standard
	Ba	135	5980.2	1.6	**2.7136**	0.046	1.7	ug/L	24	Standard
	Ce	140	12665.3	1.3				ug/L	25	Standard
>	**Tb**	159	1007879.7	3.3				ug/L	939701	Standard
	Ho	165	265.0	7.5				ug/L	10	Standard
	Tl	203	9323.2	2.1	**1.0256**	0.019	1.8	ug/L	4	Standard
	Tl	205	8567.4	1.0	**1.0883**	0.033	3.0	ug/L	2	Standard
	Pb	206	7313.4	2.1	**1.1727**	0.042	3.6	ug/L	240	Standard
	Pb	207	6050.9	2.1	**1.0885**	0.043	4.0	ug/L	198	Standard
	Pb	208	24824.3	2.0	**1.1284**	0.015	1.4	ug/L	883	Standard
	U	238	8436.0	2.0	**1.1088**	0.013	1.2	ug/L	3	Standard
>	**Bi**	209	577014.5	3.2				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	200.0	10.9	**0.1869**	0.033	17.5	mg/L	37	Standard
K	39	61.7	46.1	**0.0210**	0.066	315.1	mg/L	38	Standard
Ca	43	46.7	12.4	**0.3502**	0.375	107.1	mg/L	10	Standard
Fe	54	378.5	13.7	**0.1751**	0.049	28.1	mg/L	179	Standard
Fe	57	365.0	16.4	**0.1419**	0.250	175.9	mg/L	335	Standard
> **Sc-1**	45	62711.5	6.5				mg/L	61029	Standard
Cl	35	27760.1	3.1				ug/L	20195	Standard
Kr	83	3.3	45.8				ug/L	4	Standard
Br	81	2080.1	7.5				ug/L	1547	Standard
P	31	18322.7	2.7				ug/L	15286	Standard
S	34	1913.5	2.4				ug/L	1572	Standard
Sr	88	98.3	10.6				ug/L	73	Standard
C	12	103.3	31.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	615.8	1.7				mg/L	6	Standard
Ho-1	165	265.0	7.5				mg/L	10	Standard
Er	166	296.7	10.3				mg/L	13	Standard
I	127	5109.3	32.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.334	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.692	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.078
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.121
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606127905
Sample Date/Time: Wednesday, June 29, 2016 17:24:42
Number of Replicates: 3
Autosampler Position: 231
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	98923.6	1.9				ug/L	74699	Standard
	Be	9	425.0	5.1	**0.3722**	0.020	5.4	ug/L	8	Standard
	Al	27	40729181.9	0.9	**209.2967**	3.040	1.5	ug/L	1493	Standard
	Sc	45	74965.2	4.5				ug/L	61029	Standard
	Ti	47	31002.7	2.7	**78.7018**	1.731	2.2	ug/L	35	Standard
	V	51	100570.7	0.4	**12.6354**	0.094	0.7	ug/L	1435	Standard
	Cr	52	71317.5	0.6	**8.2486**	0.021	0.3	ug/L	7635	Standard
	Cr	53	8882.6	3.6	**8.9299**	0.295	3.3	ug/L	363	Standard
	Mn	55	1183907.3	1.1	**163.7014**	1.986	1.2	ug/L	747	Standard
	Co	59	16826.7	0.9	**2.4180**	0.026	1.1	ug/L	234	Standard
	Ni	60	14706.8	1.9	**7.4444**	0.110	1.5	ug/L	215	Standard
	Cu	65	7822.7	1.1	**3.9461**	0.031	0.8	ug/L	104	Standard
	Zn	66	28811.4	1.3	**24.9594**	0.201	0.8	ug/L	363	Standard
>	**Ge**	72	513872.0	0.5				ug/L	495142	Standard
	As	75	2302.8	2.2	**2.0406**	0.054	2.6	ug/L	-50	Standard
	Se	82	647.6	3.3	**5.5477**	0.199	3.6	ug/L	14	Standard
	Se-1	77	492.7	1.9	**5.8772**	0.106	1.8	ug/L	42	Standard
>	**Ga**	71	9201.1	2.2				mg/L	42	Standard
	Rb	85	118130.4	0.8				ug/L	17	Standard
	Y	89	544220.1	0.8				ug/L	417098	Standard
>	**Rh**	103	83.3	19.3				ug/L	13	Standard
	Mo	98	4972.1	0.8	**1.6995**	0.011	0.6	ug/L	11	Standard
	Ag	107	221.0	6.7	**0.0181**	0.002	11.5	ug/L	68	Standard
	Cd	111	99.4	11.4	**0.0355**	0.005	13.9	mg/L	2	Standard
	Cd	114	258.8	15.4	**0.0440**	0.007	16.4	ug/L	12	Standard
>	**In**	115	642627.7	0.7				ug/L	587441	Standard
	Sn	118	4954.1	4.3	**0.6806**	0.035	5.1	ug/L	497	Standard
	Sb	123	697.4	10.3	**0.1324**	0.015	11.0	ug/L	78	Standard
	Ba	135	175907.0	0.9	**78.5481**	0.493	0.6	ug/L	24	Standard
	Ce	140	308696.3	0.2				ug/L	25	Standard
>	**Tb**	159	1018138.8	1.9				ug/L	939701	Standard
	Ho	165	5902.8	0.8				ug/L	10	Standard
	Tl	203	694.0	1.8	**0.0782**	0.000	0.4	ug/L	4	Standard
	Tl	205	615.0	15.7	**0.0817**	0.011	14.1	ug/L	2	Standard
	Pb	206	15714.8	1.1	**2.7233**	0.017	0.6	ug/L	240	Standard
	Pb	207	12858.1	1.8	**2.5034**	0.026	1.0	ug/L	198	Standard
	Pb	208	54664.4	0.6	**2.6954**	0.031	1.2	ug/L	883	Standard
	U	238	8998.7	0.4	**1.2376**	0.021	1.7	ug/L	3	Standard
>	**Bi**	209	551643.9	1.7				ug/L	523984	Standard

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Na	23	5.0	100.0	**46.3980**	45.060	97.1	mg/L	0	Standard
Mg	24	7338.4	2.5	**7.6542**	0.303	4.0	mg/L	37	Standard
K	39	668.3	6.0	**1.0889**	0.064	5.9	mg/L	38	Standard
Ca	43	676.7	13.4	**32.4506**	6.121	18.9	mg/L	10	Standard
Fe	54	6512.7	2.4	**4.3601**	0.118	2.7	mg/L	179	Standard
Fe	57	2150.2	3.4	**4.8854**	0.383	7.8	mg/L	335	Standard
> **Sc-1**	45	74965.2	4.5				mg/L	61029	Standard
Cl	35	28544.2	1.7				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	11494.4	5.7				ug/L	1547	Standard
P	31	34679.6	1.6				ug/L	15286	Standard
S	34	2073.5	2.2				ug/L	1572	Standard
Sr	88	356.7	8.9				ug/L	73	Standard
C	12	163.3	55.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	3	Standard
Dy	164	9835.4	4.4				mg/L	6	Standard
Ho-1	165	5902.8	0.8				mg/L	10	Standard
Er	166	5037.5	9.2				mg/L	13	Standard
I	127	62917.2	4.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.430	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.783	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.394
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.279
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606127905
Sample Date/Time: Wednesday, June 29, 2016 17:27:54
Number of Replicates: 3
Autosampler Position: 232
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	95902.7	2.3				ug/L	74699	Standard
	Be	9	26.7	54.1	**0.0312**	0.013	41.0	ug/L	8	Standard
	Al	27	866639.8	0.6	**4.5819**	0.130	2.8	ug/L	1493	Standard
	Sc	45	64717.9	1.3				ug/L	61029	Standard
	Ti	47	665.3	5.2	**1.4927**	0.099	6.6	ug/L	35	Standard
	V	51	3898.6	6.9	**0.2752**	0.030	11.1	ug/L	1435	Standard
	Cr	52	9682.4	1.6	**0.1679**	0.023	13.9	ug/L	7635	Standard
	Cr	53	670.0	10.3	**0.3316**	0.072	21.7	ug/L	363	Standard
	Mn	55	29584.3	8.9	**3.7268**	0.331	8.9	ug/L	747	Standard
	Co	59	652.3	12.4	**0.0528**	0.011	20.6	ug/L	234	Standard
	Ni	60	547.0	3.7	**0.1426**	0.010	7.1	ug/L	215	Standard
	Cu	65	341.3	5.6	**0.0636**	0.011	17.0	ug/L	104	Standard
	Zn	66	2764.3	3.0	**1.8532**	0.047	2.5	ug/L	363	Standard
>	**Ge**	72	542890.6	1.0				ug/L	495142	Standard
	As	75	11.1	320.4	**0.0688**	0.029	42.5	ug/L	-50	Standard
	Se	82	31.5	11.6	**0.1237**	0.032	26.0	ug/L	14	Standard
	Se-1	77	57.7	24.7	**0.0971**	0.173	178.1	ug/L	42	Standard
>	**Ga**	71	253.3	16.8				mg/L	42	Standard
	Rb	85	2388.5	2.4				ug/L	17	Standard
	Y	89	480185.0	1.7				ug/L	417098	Standard
>	**Rh**	103	16.7	34.6				ug/L	13	Standard
	Mo	98	144.5	13.4	**0.0432**	0.007	17.2	ug/L	11	Standard
	Ag	107	273.0	44.6	**0.0250**	0.018	70.2	ug/L	68	Standard
	Cd	111	17.1	70.4	**-0.0005**	0.005	1058.7	mg/L	2	Standard
	Cd	114	57.8	101.1	**0.0081**	0.010	129.1	ug/L	12	Standard
>	**In**	115	652419.9	1.9				ug/L	587441	Standard
	Sn	118	705.0	11.1	**0.0141**	0.014	98.8	ug/L	497	Standard
	Sb	123	247.5	32.3	**0.0437**	0.016	37.3	ug/L	78	Standard
	Ba	135	3842.5	3.8	**1.6750**	0.079	4.7	ug/L	24	Standard
	Ce	140	6778.2	3.5				ug/L	25	Standard
>	**Tb**	159	1017174.6	0.9				ug/L	939701	Standard
	Ho	165	125.0	20.8				ug/L	10	Standard
	Tl	203	149.7	88.3	**0.0148**	0.015	98.5	ug/L	4	Standard
	Tl	205	133.3	80.1	**0.0172**	0.014	79.0	ug/L	2	Standard
	Pb	206	748.0	16.8	**0.0568**	0.021	37.3	ug/L	240	Standard
	Pb	207	613.7	10.2	**0.0482**	0.012	24.5	ug/L	198	Standard
	Pb	208	2588.8	11.0	**0.0521**	0.014	26.1	ug/L	883	Standard
	U	238	255.3	28.9	**0.0295**	0.010	33.0	ug/L	3	Standard
>	**Bi**	209	573070.1	0.3				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.8927**	30.982	173.2	mg/L	0	Standard
Mg	24	208.3	5.5	**0.1886**	0.017	8.9	mg/L	37	Standard
K	39	35.0	14.3	**-0.0411**	0.011	27.7	mg/L	38	Standard
Ca	43	31.7	18.2	**-0.6344**	0.363	57.2	mg/L	10	Standard
Fe	54	281.0	17.0	**0.0865**	0.040	45.9	mg/L	179	Standard
Fe	57	258.3	4.5	**-0.2461**	0.039	15.8	mg/L	335	Standard
> **Sc-1**	45	64717.9	1.3				mg/L	61029	Standard
Cl	35	29516.1	1.1				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	2206.8	1.5				ug/L	1547	Standard
P	31	18893.4	3.4				ug/L	15286	Standard
S	34	2140.2	7.5				ug/L	1572	Standard
Sr	88	85.0	23.5				ug/L	73	Standard
C	12	63.3	39.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	226.9	17.7				mg/L	6	Standard
Ho-1	165	125.0	20.8				mg/L	10	Standard
Er	166	133.3	38.5				mg/L	13	Standard
I	127	4113.9	27.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.386	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.643	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	111.061
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	109.368
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606128101
Sample Date/Time: Wednesday, June 29, 2016 17:31:05
Number of Replicates: 3
Autosampler Position: 233
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	95248.6	2.8				ug/L	74699	Standard
	Be	9	20.0	25.0	**0.0254**	0.004	15.8	ug/L	8	Standard
	Al	27	13040665.4	1.7	**69.5953**	1.139	1.6	ug/L	1493	Standard
	Sc	45	60164.2	2.0				ug/L	61029	Standard
	Ti	47	192.7	16.8	**0.4120**	0.087	21.1	ug/L	35	Standard
	V	51	8357.2	4.3	**0.9387**	0.048	5.1	ug/L	1435	Standard
	Cr	52	21860.8	2.2	**2.0003**	0.082	4.1	ug/L	7635	Standard
	Cr	53	28106.1	2.4	**30.8448**	0.828	2.7	ug/L	363	Standard
	Mn	55	35106.1	13.3	**5.0193**	0.674	13.4	ug/L	747	Standard
	Co	59	6553.8	6.0	**0.9799**	0.056	5.7	ug/L	234	Standard
	Ni	60	21271.9	1.7	**11.5228**	0.221	1.9	ug/L	215	Standard
	Cu	65	394730.4	1.5	**217.3087**	4.048	1.9	ug/L	104	Standard
	Zn	66	2800.3	3.3	**2.1735**	0.095	4.3	ug/L	363	Standard
>	**Ge**	72	483031.9	0.6				ug/L	495142	Standard
	As	75	2746.8	5.9	**2.5735**	0.152	5.9	ug/L	-50	Standard
	Se	82	892.7	0.7	**8.1998**	0.096	1.2	ug/L	14	Standard
	Se-1	77	2323.2	2.5	**31.9871**	0.998	3.1	ug/L	42	Standard
>	**Ga**	71	476.7	6.4				mg/L	42	Standard
	Rb	85	346107.5	1.7				ug/L	17	Standard
	Y	89	415017.7	1.3				ug/L	417098	Standard
>	**Rh**	103	195.0	26.0				ug/L	13	Standard
	Mo	98	2991.9	3.1	**1.1870**	0.038	3.2	ug/L	11	Standard
	Ag	107	283.3	10.3	**0.0333**	0.004	13.4	ug/L	68	Standard
	Cd	111	47.5	106.4	**0.0162**	0.025	157.7	mg/L	2	Standard
	Cd	114	106.7	47.6	**0.0200**	0.010	52.0	ug/L	12	Standard
>	**In**	115	552878.2	0.7				ug/L	587441	Standard
	Sn	118	3292.0	3.2	**0.5041**	0.021	4.2	ug/L	497	Standard
	Sb	123	2817.9	0.9	**0.6371**	0.010	1.5	ug/L	78	Standard
	Ba	135	115236.2	0.6	**59.8088**	0.708	1.2	ug/L	24	Standard
	Ce	140	265.0	80.7				ug/L	25	Standard
>	**Tb**	159	913633.5	1.5				ug/L	939701	Standard
	Ho	165	16.7	45.8				ug/L	10	Standard
	Tl	203	132.0	58.6	**0.0163**	0.011	65.5	ug/L	4	Standard
	Tl	205	136.7	39.5	**0.0217**	0.009	39.6	ug/L	2	Standard
	Pb	206	460.3	26.2	**0.0258**	0.026	100.0	ug/L	240	Standard
	Pb	207	366.3	38.5	**0.0169**	0.034	199.7	ug/L	198	Standard
	Pb	208	1427.4	18.1	**0.0116**	0.016	136.8	ug/L	883	Standard
	U	238	88.7	86.2	**0.0101**	0.013	124.4	ug/L	3	Standard
>	**Bi**	209	465790.3	0.8				ug/L	523984	Standard

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Na	23	8.3	69.3	**97.9562**	69.038	70.5	mg/L	0	Standard
Mg	24	359246.1	3.7	**470.2454**	9.358	2.0	mg/L	37	Standard
K	39	24917.1	2.4	**55.7677**	1.861	3.3	mg/L	38	Standard
Ca	43	1330.1	6.9	**82.7516**	6.716	8.1	mg/L	10	Standard
Fe	54	200.7	20.7	**0.0339**	0.032	94.4	mg/L	179	Standard
Fe	57	1015.0	10.0	**2.4309**	0.415	17.1	mg/L	335	Standard
> **Sc-1**	45	60164.2	2.0				mg/L	61029	Standard
Cl	35	38169.4	0.5				ug/L	20195	Standard
Kr	83	1.0	0.0				ug/L	4	Standard
Br	81	223802.3	3.7				ug/L	1547	Standard
P	31	18462.9	1.8				ug/L	15286	Standard
S	34	2156.8	3.7				ug/L	1572	Standard
Sr	88	483.3	16.2				ug/L	73	Standard
C	12	163.3	15.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	24.7				mg/L	3	Standard
Dy	164	32.2	122.0				mg/L	6	Standard
Ho-1	165	16.7	45.8				mg/L	10	Standard
Er	166	23.3	99.0				mg/L	13	Standard
I	127	949274.2	9.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		127.510	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.554	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.116
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		88.894
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 17:34:19
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	89879.3	3.0				ug/L	74699	Standard
	Be	9	54419.2	2.1	**51.4171**	2.152	4.2	ug/L	8	Standard
	Al	27	8256861.3	1.5	**46.7135**	1.756	3.8	ug/L	1493	Standard
	Sc	45	65086.2	2.0				ug/L	61029	Standard
	Ti	47	41554.9	1.2	**98.5544**	1.167	1.2	ug/L	35	Standard
	V	51	424002.3	1.3	**50.3253**	0.743	1.5	ug/L	1435	Standard
	Cr	52	412948.6	1.6	**49.1234**	1.130	2.3	ug/L	7635	Standard
	Cr	53	52872.1	1.4	**51.1473**	0.096	0.2	ug/L	363	Standard
	Mn	55	374015.3	1.0	**48.1957**	0.700	1.5	ug/L	747	Standard
	Co	59	377049.8	1.0	**51.3472**	0.802	1.6	ug/L	234	Standard
	Ni	60	101943.5	0.6	**48.8763**	0.675	1.4	ug/L	215	Standard
	Cu	65	101706.9	0.4	**49.0730**	0.490	1.0	ug/L	104	Standard
	Zn	66	60100.6	1.2	**49.0556**	0.165	0.3	ug/L	363	Standard
>	Ge	72	550256.1	1.3				ug/L	495142	Standard
	As	75	60702.3	2.0	**48.8234**	0.606	1.2	ug/L	-50	Standard
	Se	82	6059.9	1.5	**49.5453**	0.269	0.5	ug/L	14	Standard
	Se-1	77	4264.3	0.7	**51.9185**	0.539	1.0	ug/L	42	Standard
>	Ga	71	80.0	16.5				mg/L	42	Standard
	Rb	85	943.4	9.9				ug/L	17	Standard
	Y	89	456697.4	1.9				ug/L	417098	Standard
>	Rh	103	31.7	32.9				ug/L	13	Standard
	Mo	98	286840.3	1.0	**98.7855**	2.014	2.0	ug/L	11	Standard
	Ag	107	350242.5	1.1	**49.3132**	0.224	0.5	ug/L	68	Standard
	Cd	111	110565.3	0.7	**48.5306**	0.244	0.5	mg/L	2	Standard
	Cd	114	270182.5	3.7	**48.3546**	1.830	3.8	ug/L	12	Standard
>	In	115	640022.5	1.2				ug/L	587441	Standard
	Sn	118	309740.9	1.1	**48.5773**	0.779	1.6	ug/L	497	Standard
	Sb	123	247251.7	1.0	**48.6061**	0.525	1.1	ug/L	78	Standard
	Ba	135	103942.0	1.5	**46.5980**	0.695	1.5	ug/L	24	Standard
	Ce	140	81.7	18.7				ug/L	25	Standard
>	Tb	159	1011086.0	0.8				ug/L	939701	Standard
	Ho	165	13.3	94.4				ug/L	10	Standard
	Tl	203	438780.7	1.5	**49.1134**	0.474	1.0	ug/L	4	Standard
	Tl	205	398617.2	2.3	**51.4045**	0.522	1.0	ug/L	2	Standard
	Pb	206	284136.3	1.1	**49.0127**	0.824	1.7	ug/L	240	Standard
	Pb	207	252190.2	0.9	**48.9661**	0.976	2.0	ug/L	198	Standard
	Pb	208	1023481.0	1.1	**50.2926**	0.682	1.4	ug/L	883	Standard
	U	238	380510.7	2.1	**50.9985**	0.305	0.6	ug/L	3	Standard
>	Bi	209	567945.0	2.2				ug/L	523984	Standard

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Na	23	1.7	173.2	**18.3524**	31.779	173.2	mg/L	0	Standard
Mg	24	4450.7	2.4	**5.3249**	0.232	4.3	mg/L	37	Standard
K	39	2040.1	4.0	**4.1161**	0.223	5.4	mg/L	38	Standard
Ca	43	101.7	19.9	**3.5019**	1.219	34.8	mg/L	10	Standard
Fe	54	6522.9	1.9	**5.0481**	0.108	2.1	mg/L	179	Standard
Fe	57	1916.8	5.3	**5.0325**	0.229	4.6	mg/L	335	Standard
Sc-1	45	65086.2	2.0				mg/L	61029	Standard
Cl	35	28870.1	1.5				ug/L	20195	Standard
Kr	83	2.7	43.3				ug/L	4	Standard
Br	81	3490.4	22.1				ug/L	1547	Standard
P	31	20260.2	3.0				ug/L	15286	Standard
S	34	2420.2	2.6				ug/L	1572	Standard
Sr	88	90.0	19.2				ug/L	73	Standard
C	12	86.7	6.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	9.5	5.0				mg/L	6	Standard
Ho-1	165	13.3	94.4				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	23970.8	64.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.834		
Al	27	93.427		
Sc	45			
Ti	47	98.554		
V	51	100.651		
Cr	52	98.247		
Cr	53			
Mn	55	96.391		
Co	59	102.694		
Ni	60	97.753		
Cu	65	98.146		
Zn	66	98.111		
Ge	72		111.131	
As	75	97.647		
Se	82	99.091		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.786		
Ag	107	98.626		
Cd	111	97.061		
Cd	114			
> In	115			108.951
Sn	118	97.155		
Sb	123	97.212		
Ba	135	93.196		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.227		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.585		
U	238	101.997		
> Bi	209			108.390
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 17:37:30
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90192.8	3.2				ug/L	74699	Standard
	Be	9	55.0	102.4	**0.0584**	0.051	86.9	ug/L	8	Standard
	Al	27	41697.2	123.7	**0.2160**	0.280	129.5	ug/L	1493	Standard
	Sc	45	66865.6	0.3				ug/L	61029	Standard
	Ti	47	70.3	63.0	**0.0618**	0.107	173.0	ug/L	35	Standard
	V	51	1545.5	1.7	**-0.0068**	0.004	62.6	ug/L	1435	Standard
	Cr	52	7551.9	5.0	**-0.0837**	0.044	52.6	ug/L	7635	Standard
	Cr	53	1056.7	15.9	**0.7243**	0.162	22.4	ug/L	363	Standard
	Mn	55	2100.5	33.7	**0.1299**	0.092	71.2	ug/L	747	Standard
	Co	59	307.3	14.8	**0.0056**	0.006	108.6	ug/L	234	Standard
	Ni	60	288.7	41.6	**0.0182**	0.059	321.7	ug/L	215	Standard
	Cu	65	326.7	64.3	**0.0580**	0.103	178.3	ug/L	104	Standard
	Zn	66	465.0	14.2	**-0.0620**	0.054	86.6	ug/L	363	Standard
>	**Ge**	72	536712.4	0.6				ug/L	495142	Standard
	As	75	-14.2	293.5	**0.0478**	0.034	71.9	ug/L	-50	Standard
	Se	82	26.6	3.7	**0.0859**	0.008	9.9	ug/L	14	Standard
	Se-1	77	71.3	25.4	**0.2781**	0.225	81.0	ug/L	42	Standard
>	**Ga**	71	51.7	22.3				mg/L	42	Standard
	Rb	85	111.7	73.6				ug/L	17	Standard
	Y	89	476031.3	1.1				ug/L	417098	Standard
>	**Rh**	103	26.7	47.2				ug/L	13	Standard
	Mo	98	310.3	31.4	**0.0963**	0.033	33.9	ug/L	11	Standard
	Ag	107	196.3	41.5	**0.0135**	0.011	82.4	ug/L	68	Standard
	Cd	111	44.4	76.9	**0.0108**	0.014	134.5	mg/L	2	Standard
	Cd	114	106.2	73.2	**0.0161**	0.013	83.2	ug/L	12	Standard
>	**In**	115	671001.8	0.7				ug/L	587441	Standard
	Sn	118	950.0	11.1	**0.0476**	0.015	31.2	ug/L	497	Standard
	Sb	123	463.6	17.0	**0.0827**	0.014	17.2	ug/L	78	Standard
	Ba	135	113.3	53.3	**0.0326**	0.026	80.4	ug/L	24	Standard
	Ce	140	100.0	52.9				ug/L	25	Standard
>	**Tb**	159	1042844.6	0.4				ug/L	939701	Standard
	Ho	165	21.7	53.3				ug/L	10	Standard
	Tl	203	169.7	59.1	**0.0166**	0.011	64.7	ug/L	4	Standard
	Tl	205	136.7	25.7	**0.0173**	0.004	24.8	ug/L	2	Standard
	Pb	206	350.0	21.1	**-0.0125**	0.012	95.5	ug/L	240	Standard
	Pb	207	292.7	21.7	**-0.0148**	0.012	78.6	ug/L	198	Standard
	Pb	208	1272.0	10.4	**-0.0133**	0.006	44.8	ug/L	883	Standard
	U	238	124.3	70.3	**0.0117**	0.011	96.0	ug/L	3	Standard
>	**Bi**	209	584508.5	0.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	165.0	89.4	**0.1290**	0.173	134.2	mg/L	37	Standard
K	39	35.0	14.3	**-0.0435**	0.010	22.9	mg/L	38	Standard
Ca	43	33.3	22.9	**-0.6014**	0.442	73.5	mg/L	10	Standard
Fe	54	222.3	16.4	**0.0337**	0.028	82.1	mg/L	179	Standard
Fe	57	293.3	1.0	**-0.1642**	0.011	6.9	mg/L	335	Standard
> **Sc-1**	45	66865.6	0.3				mg/L	61029	Standard
Cl	35	28993.0	1.1				ug/L	20195	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	2536.9	15.9				ug/L	1547	Standard
P	31	21593.7	3.8				ug/L	15286	Standard
S	34	2441.9	4.5				ug/L	1572	Standard
Sr	88	71.7	39.7				ug/L	73	Standard
C	12	43.3	53.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	2.2	286.4				mg/L	6	Standard
Ho-1	165	21.7	53.3				mg/L	10	Standard
Er	166	23.3	65.5				mg/L	13	Standard
I	127	6326.4	22.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.396	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.225
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		111.551
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606129403
Sample Date/Time: Wednesday, June 29, 2016 17:40:43
Number of Replicates: 3
Autosampler Position: 234
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	91138.4	2.1				ug/L	74699	Standard
	Be	9	18.3	31.5	**0.0246**	0.005	20.1	ug/L	8	Standard
	Al	27	19782.9	2.5	**0.0970**	0.003	3.0	ug/L	1493	Standard
	Sc	45	69032.0	3.0				ug/L	61029	Standard
	Ti	47	54.0	3.2	**0.0194**	0.002	12.6	ug/L	35	Standard
	V	51	1966.3	6.5	**0.0390**	0.011	28.1	ug/L	1435	Standard
	Cr	52	10805.9	1.1	**0.2915**	0.043	14.7	ug/L	7635	Standard
	Cr	53	2143.5	1.8	**1.7623**	0.077	4.4	ug/L	363	Standard
	Mn	55	3844.5	2.2	**0.3500**	0.018	5.0	ug/L	747	Standard
	Co	59	327.3	8.7	**0.0074**	0.003	41.0	ug/L	234	Standard
	Ni	60	356.0	5.4	**0.0475**	0.008	16.5	ug/L	215	Standard
	Cu	65	696.0	2.6	**0.2337**	0.014	6.0	ug/L	104	Standard
	Zn	66	2205.8	3.0	**1.3661**	0.024	1.8	ug/L	363	Standard
>	**Ge**	72	549152.6	2.2				ug/L	495142	Standard
	As	75	-29.6	63.4	**0.0356**	0.015	42.9	ug/L	-50	Standard
	Se	82	23.9	20.2	**0.0586**	0.040	68.9	ug/L	14	Standard
	Se-1	77	94.7	7.0	**0.5478**	0.105	19.2	ug/L	42	Standard
>	**Ga**	71	51.7	14.8				mg/L	42	Standard
	Rb	85	138.3	25.6				ug/L	17	Standard
	Y	89	465979.4	3.6				ug/L	417098	Standard
>	**Rh**	103	13.3	21.7				ug/L	13	Standard
	Mo	98	5139.1	1.4	**1.7220**	0.056	3.3	ug/L	11	Standard
	Ag	107	110.0	6.9	**0.0022**	0.001	48.4	ug/L	68	Standard
	Cd	111	15.0	26.6	**-0.0015**	0.002	117.9	mg/L	2	Standard
	Cd	114	55.2	20.3	**0.0075**	0.002	25.2	ug/L	12	Standard
>	**In**	115	655841.8	1.8				ug/L	587441	Standard
	Sn	118	1048.4	10.6	**0.0659**	0.015	22.6	ug/L	497	Standard
	Sb	123	219.8	14.7	**0.0379**	0.005	14.5	ug/L	78	Standard
	Ba	135	307.7	5.8	**0.1187**	0.008	7.0	ug/L	24	Standard
	Ce	140	120.0	27.3				ug/L	25	Standard
>	**Tb**	159	1025647.2	2.3				ug/L	939701	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	102.7	26.3	**0.0095**	0.003	29.3	ug/L	4	Standard
	Tl	205	93.3	17.2	**0.0120**	0.002	17.6	ug/L	2	Standard
	Pb	206	348.0	5.5	**-0.0123**	0.003	25.6	ug/L	240	Standard
	Pb	207	291.0	7.0	**-0.0146**	0.003	21.1	ug/L	198	Standard
	Pb	208	1220.0	1.5	**-0.0152**	0.002	10.4	ug/L	883	Standard
	U	238	43.7	3.5	**0.0013**	0.000	20.2	ug/L	3	Standard
>	**Bi**	209	579311.4	1.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	70.0	14.3	**0.0151**	0.014	91.8	mg/L	37	Standard
K	39	41.7	36.7	**-0.0323**	0.032	98.5	mg/L	38	Standard
Ca	43	23.3	24.7	**-1.2220**	0.307	25.1	mg/L	10	Standard
Fe	54	180.7	18.1	**-0.0033**	0.021	642.1	mg/L	179	Standard
Fe	57	228.3	18.9	**-0.3899**	0.112	28.8	mg/L	335	Standard
Sc-1	45	69032.0	3.0				mg/L	61029	Standard
Cl	35	29393.1	0.1				ug/L	20195	Standard
Kr	83	3.7	41.7				ug/L	4	Standard
Br	81	2280.2	16.1				ug/L	1547	Standard
P	31	20889.4	5.8				ug/L	15286	Standard
S	34	2440.2	2.2				ug/L	1572	Standard
Sr	88	78.3	9.8				ug/L	73	Standard
C	12	90.0	19.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	5.2	126.6				mg/L	6	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	30.0	66.7				mg/L	13	Standard
I	127	4447.3	11.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		122.008	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		110.908	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.644
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.559
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606129403
Sample Date/Time: Wednesday, June 29, 2016 17:43:55
Number of Replicates: 3
Autosampler Position: 235
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89753.4	1.3				ug/L	74699	Standard
	Be	9	13.3	43.3	**0.0203**	0.006	27.7	ug/L	8	Standard
	Al	27	7761551.3	2.6	**43.9444**	1.176	2.7	ug/L	1493	Standard
	Sc	45	64855.2	1.4				ug/L	61029	Standard
	Ti	47	206.0	13.1	**0.3915**	0.063	16.1	ug/L	35	Standard
	V	51	6651.8	1.7	**0.6159**	0.016	2.5	ug/L	1435	Standard
	Cr	52	10534.3	3.3	**0.2860**	0.045	15.8	ug/L	7635	Standard
	Cr	53	2358.5	8.3	**2.0219**	0.206	10.2	ug/L	363	Standard
	Mn	55	48108.9	1.2	**6.2182**	0.039	0.6	ug/L	747	Standard
	Co	59	779.0	1.7	**0.0714**	0.002	2.2	ug/L	234	Standard
	Ni	60	2066.1	2.9	**0.8928**	0.027	3.0	ug/L	215	Standard
	Cu	65	1897.5	0.8	**0.8356**	0.011	1.4	ug/L	104	Standard
	Zn	66	4161.9	4.0	**3.0555**	0.122	4.0	ug/L	363	Standard
>	**Ge**	72	537411.3	0.6				ug/L	495142	Standard
	As	75	1930.1	2.9	**1.6472**	0.048	2.9	ug/L	-50	Standard
	Se	82	65.9	12.2	**0.4151**	0.071	17.1	ug/L	14	Standard
	Se-1	77	143.0	7.4	**1.1820**	0.141	12.0	ug/L	42	Standard
>	**Ga**	71	281.7	11.8				mg/L	42	Standard
	Rb	85	9322.9	0.6				ug/L	17	Standard
	Y	89	483828.6	0.3				ug/L	417098	Standard
>	**Rh**	103	65.0	35.3				ug/L	13	Standard
	Mo	98	2420.2	2.2	**0.8025**	0.008	1.0	ug/L	11	Standard
	Ag	107	86.7	9.0	**-0.0011**	0.001	98.3	ug/L	68	Standard
	Cd	111	21.1	19.4	**0.0011**	0.002	172.0	mg/L	2	Standard
	Cd	114	57.2	8.0	**0.0078**	0.001	8.8	ug/L	12	Standard
>	**In**	115	659947.0	1.4				ug/L	587441	Standard
	Sn	118	1036.7	2.5	**0.0632**	0.002	2.8	ug/L	497	Standard
	Sb	123	514.2	4.3	**0.0939**	0.005	5.0	ug/L	78	Standard
	Ba	135	42292.6	1.8	**18.3786**	0.354	1.9	ug/L	24	Standard
	Ce	140	906.7	5.0				ug/L	25	Standard
>	**Tb**	159	1004743.5	1.0				ug/L	939701	Standard
	Ho	165	30.0	33.3				ug/L	10	Standard
	Tl	203	321.7	3.2	**0.0348**	0.001	3.5	ug/L	4	Standard
	Tl	205	263.3	19.0	**0.0346**	0.006	17.3	ug/L	2	Standard
	Pb	206	528.0	6.8	**0.0212**	0.005	24.5	ug/L	240	Standard
	Pb	207	478.3	8.2	**0.0244**	0.009	35.8	ug/L	198	Standard
	Pb	208	1973.7	3.1	**0.0244**	0.005	18.6	ug/L	883	Standard
	U	238	903.7	2.1	**0.1184**	0.002	1.8	ug/L	3	Standard
>	**Bi**	209	560080.8	1.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	9985.0	3.9	**12.0618**	0.357	3.0	mg/L	37	Standard
K	39	420.0	7.4	**0.7593**	0.061	8.1	mg/L	38	Standard
Ca	43	263.3	2.9	**13.1350**	0.654	5.0	mg/L	10	Standard
Fe	54	210.7	11.6	**0.0297**	0.017	57.3	mg/L	179	Standard
Fe	57	393.3	9.5	**0.1838**	0.119	64.8	mg/L	335	Standard
> **Sc-1**	45	64855.2	1.4				mg/L	61029	Standard
Cl	35	32877.0	2.8				ug/L	20195	Standard
Kr	83	0.7	86.6				ug/L	4	Standard
Br	81	8902.6	4.1				ug/L	1547	Standard
P	31	19829.6	4.1				ug/L	15286	Standard
S	34	2240.2	4.2				ug/L	1572	Standard
Sr	88	221.7	14.7				ug/L	73	Standard
C	12	126.7	4.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	64.1	36.5				mg/L	6	Standard
Ho-1	165	30.0	33.3				mg/L	10	Standard
Er	166	53.3	21.7				mg/L	13	Standard
I	127	24610.0	6.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		120.154	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.537	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.343
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.889
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606129601
Sample Date/Time: Wednesday, June 29, 2016 17:47:06
Number of Replicates: 3
Autosampler Position: 236
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89414.7	0.8				ug/L	74699	Standard
	Be	9	18.3	41.7	**0.0250**	0.007	28.7	ug/L	8	Standard
	Al	27	159581.9	4.0	**0.8936**	0.029	3.3	ug/L	1493	Standard
	Sc	45	67088.2	1.1				ug/L	61029	Standard
	Ti	47	35.7	1.6	**-0.0268**	0.002	7.8	ug/L	35	Standard
	V	51	2172.9	6.2	**0.0559**	0.017	29.8	ug/L	1435	Standard
	Cr	52	9358.6	1.2	**0.0800**	0.026	32.1	ug/L	7635	Standard
	Cr	53	761.7	7.6	**0.3908**	0.063	16.2	ug/L	363	Standard
	Mn	55	2132.8	0.4	**0.1197**	0.005	4.4	ug/L	747	Standard
	Co	59	232.7	3.6	**-0.0065**	0.001	22.5	ug/L	234	Standard
	Ni	60	263.3	7.3	**-0.0009**	0.011	1213.2	ug/L	215	Standard
	Cu	65	215.7	8.8	**-0.0024**	0.009	395.1	ug/L	104	Standard
	Zn	66	2535.5	4.0	**1.5735**	0.060	3.8	ug/L	363	Standard
>	**Ge**	72	566628.0	1.5				ug/L	495142	Standard
	As	75	0.7	2838.5	**0.0602**	0.015	24.5	ug/L	-50	Standard
	Se	82	16.5	13.6	**-0.0062**	0.020	325.1	ug/L	14	Standard
	Se-1	77	57.7	30.4	**0.0671**	0.205	305.9	ug/L	42	Standard
>	**Ga**	71	65.0	35.3				mg/L	42	Standard
	Rb	85	218.3	8.7				ug/L	17	Standard
	Y	89	474347.0	1.6				ug/L	417098	Standard
>	**Rh**	103	16.7	45.8				ug/L	13	Standard
	Mo	98	108.8	9.6	**0.0309**	0.003	10.7	ug/L	11	Standard
	Ag	107	170.0	11.0	**0.0105**	0.003	26.1	ug/L	68	Standard
	Cd	111	6.5	32.0	**-0.0051**	0.001	17.0	mg/L	2	Standard
	Cd	114	10.6	76.1	**-0.0002**	0.001	576.3	ug/L	12	Standard
>	**In**	115	655393.1	1.0				ug/L	587441	Standard
	Sn	118	536.7	6.3	**-0.0123**	0.006	49.5	ug/L	497	Standard
	Sb	123	179.2	10.0	**0.0302**	0.004	12.2	ug/L	78	Standard
	Ba	135	901.0	1.9	**0.3786**	0.012	3.1	ug/L	24	Standard
	Ce	140	38.3	52.7				ug/L	25	Standard
>	**Tb**	159	1019773.4	1.2				ug/L	939701	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	34.7	13.6	**0.0021**	0.001	27.9	ug/L	4	Standard
	Tl	205	33.3	52.7	**0.0044**	0.002	51.3	ug/L	2	Standard
	Pb	206	333.0	5.0	**-0.0144**	0.003	23.5	ug/L	240	Standard
	Pb	207	282.3	6.2	**-0.0157**	0.004	25.6	ug/L	198	Standard
	Pb	208	1187.0	2.0	**-0.0164**	0.002	10.6	ug/L	883	Standard
	U	238	27.0	25.9	**-0.0009**	0.001	108.4	ug/L	3	Standard
>	**Bi**	209	574894.3	1.4				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.3542**	30.050	173.2	mg/L	0	Standard
Mg	24	255.0	18.0	**0.2345**	0.054	23.2	mg/L	37	Standard
K	39	41.7	36.7	**-0.0306**	0.030	98.0	mg/L	38	Standard
Ca	43	31.7	18.2	**-0.7022**	0.343	48.8	mg/L	10	Standard
Fe	54	182.6	4.3	**0.0025**	0.004	177.8	mg/L	179	Standard
Fe	57	238.3	19.9	**-0.3363**	0.155	46.0	mg/L	335	Standard
> **Sc-1**	45	67088.2	1.1				mg/L	61029	Standard
Cl	35	32679.2	0.8				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	2083.5	4.4				ug/L	1547	Standard
P	31	19699.5	2.2				ug/L	15286	Standard
S	34	2248.5	3.2				ug/L	1572	Standard
Sr	88	70.0	56.7				ug/L	73	Standard
C	12	60.0	76.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	42.4	37.5				mg/L	6	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	20.0	86.6				mg/L	13	Standard
I	127	3452.1	27.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.700	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.437	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.567
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.716
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Wednesday, June 29, 2016 17:50:19
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88962.1	0.9				ug/L	74699	Standard
	Be	9	13.3	43.3	**0.0204**	0.006	27.5	ug/L	8	Standard
	Al	27	8687475.6	2.0	**49.6312**	1.401	2.8	ug/L	1493	Standard
	Sc	45	67439.8	1.2				ug/L	61029	Standard
	Ti	47	49495.1	1.8	**118.6714**	2.776	2.3	ug/L	35	Standard
	V	51	2497.1	11.5	**0.1050**	0.033	31.3	ug/L	1435	Standard
	Cr	52	8893.6	0.7	**0.0677**	0.012	17.4	ug/L	7635	Standard
	Cr	53	8300.6	3.8	**7.8359**	0.175	2.2	ug/L	363	Standard
	Mn	55	1506.4	1.9	**0.0487**	0.003	6.1	ug/L	747	Standard
	Co	59	411.3	2.2	**0.0194**	0.002	11.4	ug/L	234	Standard
	Ni	60	986.0	7.4	**0.3548**	0.029	8.2	ug/L	215	Standard
	Cu	65	754.7	3.5	**0.2650**	0.009	3.4	ug/L	104	Standard
	Zn	66	1997.5	3.6	**1.2085**	0.053	4.4	ug/L	363	Standard
>	**Ge**	72	544457.7	1.7				ug/L	495142	Standard
	As	75	-43.8	164.6	**0.0238**	0.058	245.3	ug/L	-50	Standard
	Se	82	18.8	19.8	**0.0181**	0.034	186.0	ug/L	14	Standard
	Se-1	77	455.0	4.4	**5.0437**	0.245	4.9	ug/L	42	Standard
>	**Ga**	71	186.7	17.4				mg/L	42	Standard
	Rb	85	1130.0	9.7				ug/L	17	Standard
	Y	89	464215.3	1.7				ug/L	417098	Standard
>	**Rh**	103	10.0	100.0				ug/L	13	Standard
	Mo	98	300673.2	0.9	**102.5347**	1.457	1.4	ug/L	11	Standard
	Ag	107	252.3	6.3	**0.0223**	0.003	12.6	ug/L	68	Standard
	Cd	111	-194.8	14.0	**-0.0926**	0.012	12.9	mg/L	2	Standard
	Cd	114	577.1	3.2	**0.1002**	0.004	4.2	ug/L	12	Standard
>	**In**	115	646355.5	1.8				ug/L	587441	Standard
	Sn	118	791.7	5.4	**0.0285**	0.006	21.5	ug/L	497	Standard
	Sb	123	195.6	12.5	**0.0338**	0.004	11.9	ug/L	78	Standard
	Ba	135	712.0	4.0	**0.3001**	0.008	2.7	ug/L	24	Standard
	Ce	140	246.7	7.1				ug/L	25	Standard
>	**Tb**	159	1024202.6	1.1				ug/L	939701	Standard
	Ho	165	23.3	61.9				ug/L	10	Standard
	Tl	203	122.3	9.8	**0.0119**	0.001	11.8	ug/L	4	Standard
	Tl	205	90.0	11.1	**0.0118**	0.001	10.5	ug/L	2	Standard
	Pb	206	533.7	2.0	**0.0208**	0.002	10.5	ug/L	240	Standard
	Pb	207	414.7	3.2	**0.0105**	0.002	21.4	ug/L	198	Standard
	Pb	208	1800.4	3.2	**0.0144**	0.003	21.4	ug/L	883	Standard
	U	238	18.7	20.3	**-0.0019**	0.001	26.8	ug/L	3	Standard
>	**Bi**	209	568876.5	0.5				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	11507.7	5.3	**13.3841**	0.868	6.5	mg/L	37	Standard
K	39	2163.5	5.0	**4.2129**	0.203	4.8	mg/L	38	Standard
Ca	43	273.3	20.1	**13.1286**	3.349	25.5	mg/L	10	Standard
Fe	54	17120.6	2.5	**12.9991**	0.385	3.0	mg/L	179	Standard
Fe	57	4470.7	3.8	**12.6745**	0.387	3.1	mg/L	335	Standard
> **Sc-1**	45	67439.8	1.2				mg/L	61029	Standard
Cl	35	28777.3	2.0				ug/L	20195	Standard
Kr	83	1.7	91.7				ug/L	4	Standard
Br	81	2086.8	10.9				ug/L	1547	Standard
P	31	20233.5	1.2				ug/L	15286	Standard
S	34	2398.5	7.6				ug/L	1572	Standard
Sr	88	63.3	35.6				ug/L	73	Standard
C	12	173.3	8.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	80.0	69.6				mg/L	3	Standard
Dy	164	11.6	52.9				mg/L	6	Standard
Ho-1	165	23.3	61.9				mg/L	10	Standard
Er	166	36.7	56.8				mg/L	13	Standard
I	127	2830.3	21.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27	0.993		
Sc	45			
Ti	47	118.671		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.960	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	102.535		
Ag	107			
Cd	111			
Cd	114			
In	115			110.029
Sn	118			
Sb	123			
Ba	135			
Ce	140			
Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
Bi	209			108.567
Na	23	0.040		
Mg	24	267.683		
K	39	84.259		
Ca	43	87.524		
Fe	54	103.992		
Fe	57	101.396		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Wednesday, June 29, 2016 17:53:31
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	88668.7	1.6				ug/L	74699	Standard
	Be	9	115505.6	3.3	**110.5278**	2.817	2.5	ug/L	8	Standard
	Al	27	8938177.8	2.5	**51.2202**	0.471	0.9	ug/L	1493	Standard
	Sc	45	65087.9	3.1				ug/L	61029	Standard
	Ti	47	50197.4	1.2	**122.5394**	1.491	1.2	ug/L	35	Standard
	V	51	859522.7	1.3	**105.1949**	1.380	1.3	ug/L	1435	Standard
	Cr	52	831098.2	2.0	**102.8267**	1.943	1.9	ug/L	7635	Standard
	Cr	53	106911.0	2.3	**106.7884**	2.096	2.0	ug/L	363	Standard
	Mn	55	780341.4	1.6	**103.6433**	1.453	1.4	ug/L	747	Standard
	Co	59	785536.0	0.5	**110.1234**	0.547	0.5	ug/L	234	Standard
	Ni	60	203753.2	2.0	**100.6522**	1.808	1.8	ug/L	215	Standard
	Cu	65	201732.1	0.8	**100.2703**	0.833	0.8	ug/L	104	Standard
	Zn	66	122540.9	0.7	**103.4323**	0.376	0.4	ug/L	363	Standard
>	Ge	72	534677.6	0.4				ug/L	495142	Standard
	As	75	124456.8	0.2	**102.9556**	0.389	0.4	ug/L	-50	Standard
	Se	82	12596.7	0.4	**106.1488**	0.433	0.4	ug/L	14	Standard
	Se-1	77	8794.6	0.8	**110.8893**	1.382	1.2	ug/L	42	Standard
>	Ga	71	163.3	10.8				mg/L	42	Standard
	Rb	85	966.7	4.8				ug/L	17	Standard
	Y	89	476525.6	1.7				ug/L	417098	Standard
>	Rh	103	56.7	53.9				ug/L	13	Standard
	Mo	98	309227.9	0.6	**104.8818**	1.132	1.1	ug/L	11	Standard
	Ag	107	592523.9	2.1	**82.1821**	1.932	2.4	ug/L	68	Standard
	Cd	111	228625.7	1.0	**98.8467**	0.904	0.9	mg/L	2	Standard
	Cd	114	551600.1	1.5	**97.2335**	1.523	1.6	ug/L	12	Standard
>	In	115	649797.8	0.6				ug/L	587441	Standard
	Sn	118	1576.7	4.2	**0.1493**	0.011	7.5	ug/L	497	Standard
	Sb	123	495027.3	1.9	**95.8585**	2.358	2.5	ug/L	78	Standard
	Ba	135	210763.3	1.3	**93.0830**	1.687	1.8	ug/L	24	Standard
	Ce	140	70.0	24.7				ug/L	25	Standard
>	Tb	159	1005734.4	0.5				ug/L	939701	Standard
	Ho	165	11.7	49.5				ug/L	10	Standard
	Tl	203	893894.1	1.2	**101.2389**	0.317	0.3	ug/L	4	Standard
	Tl	205	815034.2	0.6	**106.3608**	0.654	0.6	ug/L	2	Standard
	Pb	206	583528.7	0.9	**101.9143**	0.243	0.2	ug/L	240	Standard
	Pb	207	499626.1	1.2	**98.2110**	0.372	0.4	ug/L	198	Standard
	Pb	208	2105185.2	0.8	**104.7451**	0.431	0.4	ug/L	883	Standard
	U	238	779429.7	1.7	**105.7078**	0.634	0.6	ug/L	3	Standard
>	Bi	209	561247.5	1.2				ug/L	523984	Standard

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Na	23	1.7	173.2	**18.1880**	31.494	173.2	mg/L	0	Standard
Mg	24	12009.8	3.1	**14.4710**	0.020	0.1	mg/L	37	Standard
K	39	2150.2	4.2	**4.3456**	0.256	5.9	mg/L	38	Standard
Ca	43	251.7	12.1	**12.4083**	2.087	16.8	mg/L	10	Standard
Fe	54	17836.2	2.6	**14.0504**	0.592	4.2	mg/L	179	Standard
Fe	57	4537.3	4.4	**13.3981**	0.845	6.3	mg/L	335	Standard
> **Sc-1**	45	65087.9	3.1				mg/L	61029	Standard
Cl	35	27559.7	2.9				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	1986.8	4.8				ug/L	1547	Standard
P	31	19052.0	2.9				ug/L	15286	Standard
S	34	2286.8	6.3				ug/L	1572	Standard
Sr	88	50.0	10.0				ug/L	73	Standard
C	12	120.0	54.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	3	Standard
Dy	164	6.0	200.7				mg/L	6	Standard
Ho-1	165	11.7	49.5				mg/L	10	Standard
Er	166	13.3	86.6				mg/L	13	Standard
I	127	2065.1	25.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	110.528		
Al	27	1.024		
Sc	45			
Ti	47	122.539		
V	51	105.195		
Cr	52	102.827		
Cr	53			
Mn	55	103.643		
Co	59	110.123		
Ni	60	100.652		
Cu	65	100.270		
Zn	66	103.432		
> Ge	72		107.985	
As	75	102.956		
Se	82	106.149		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	104.882		
Ag	107	82.182		
Cd	111	98.847		
Cd	114			
> In	115		110.615	
Sn	118			
Sb	123	95.858		
Ba	135	93.083		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.239		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.745		
U	238	105.708		
> Bi	209		107.111	
Na	23	145.504		
Mg	24	289.419		
K	39	86.911		
Ca	43	82.722		
Fe	54	112.403		
Fe	57	107.185		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Ti	47	
QC Std 5	Na	23	

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QC Std 5	Mg	24

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 17:56:44
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88001.7	3.8				ug/L	74699	Standard
	Be	9	58491.1	3.4	**56.4121**	0.807	1.4	ug/L	8	Standard
	Al	27	8741223.1	1.9	**50.5126**	1.685	3.3	ug/L	1493	Standard
	Sc	45	66566.0	2.9				ug/L	61029	Standard
	Ti	47	44065.3	0.6	**105.8464**	2.393	2.3	ug/L	35	Standard
	V	51	439728.9	0.9	**52.8674**	1.388	2.6	ug/L	1435	Standard
	Cr	52	434693.1	0.1	**52.4281**	0.919	1.8	ug/L	7635	Standard
	Cr	53	53735.1	1.4	**52.6541**	1.206	2.3	ug/L	363	Standard
	Mn	55	394255.2	1.0	**51.4522**	0.719	1.4	ug/L	747	Standard
	Co	59	403494.7	0.9	**55.6456**	1.136	2.0	ug/L	234	Standard
	Ni	60	106493.3	0.2	**51.7076**	0.770	1.5	ug/L	215	Standard
	Cu	65	105229.8	0.3	**51.4208**	1.011	2.0	ug/L	104	Standard
	Zn	66	61955.4	1.5	**51.2322**	1.156	2.3	ug/L	363	Standard
>	**Ge**	72	543443.2	1.7				ug/L	495142	Standard
	As	75	62757.8	1.3	**51.1208**	1.290	2.5	ug/L	-50	Standard
	Se	82	6411.0	0.6	**53.0945**	1.065	2.0	ug/L	14	Standard
	Se-1	77	4401.6	1.7	**54.2995**	1.443	2.7	ug/L	42	Standard
>	**Ga**	71	61.7	12.4				mg/L	42	Standard
	Rb	85	943.4	4.4				ug/L	17	Standard
	Y	89	472814.1	2.0				ug/L	417098	Standard
>	**Rh**	103	31.7	36.5				ug/L	13	Standard
	Mo	98	301859.8	0.5	**101.5547**	1.508	1.5	ug/L	11	Standard
	Ag	107	366041.5	1.2	**50.3642**	1.561	3.1	ug/L	68	Standard
	Cd	111	117544.4	1.3	**50.4048**	0.748	1.5	mg/L	2	Standard
	Cd	114	286950.2	2.0	**50.1688**	0.955	1.9	ug/L	12	Standard
>	**In**	115	655193.6	1.9				ug/L	587441	Standard
	Sn	118	333959.0	1.2	**51.1818**	1.510	3.0	ug/L	497	Standard
	Sb	123	261510.0	1.1	**50.2357**	1.515	3.0	ug/L	78	Standard
	Ba	135	110572.3	0.3	**48.4318**	0.852	1.8	ug/L	24	Standard
	Ce	140	81.7	46.0				ug/L	25	Standard
>	**Tb**	159	1009652.9	1.9				ug/L	939701	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	466012.5	0.6	**52.5145**	1.216	2.3	ug/L	4	Standard
	Tl	205	428260.1	0.9	**55.6109**	1.642	3.0	ug/L	2	Standard
	Pb	206	294247.5	0.8	**51.0977**	1.194	2.3	ug/L	240	Standard
	Pb	207	260542.8	0.7	**50.9223**	1.007	2.0	ug/L	198	Standard
	Pb	208	1081629.9	0.8	**53.5152**	1.532	2.9	ug/L	883	Standard
	U	238	403586.7	0.9	**54.4635**	1.402	2.6	ug/L	3	Standard
>	**Bi**	209	564239.9	2.1				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4549.0	2.0	**5.3196**	0.066	1.2	mg/L	37	Standard
K	39	2091.8	2.6	**4.1250**	0.021	0.5	mg/L	38	Standard
Ca	43	106.7	9.8	**3.6589**	0.645	17.6	mg/L	10	Standard
Fe	54	6853.2	4.1	**5.1952**	0.357	6.9	mg/L	179	Standard
Fe	57	1901.8	4.2	**4.8507**	0.081	1.7	mg/L	335	Standard
> **Sc-1**	45	66566.0	2.9				mg/L	61029	Standard
Cl	35	28481.4	2.6				ug/L	20195	Standard
Kr	83	3.3	75.5				ug/L	4	Standard
Br	81	1840.1	18.3				ug/L	1547	Standard
P	31	20427.1	5.4				ug/L	15286	Standard
S	34	2438.5	6.3				ug/L	1572	Standard
Sr	88	80.0	32.5				ug/L	73	Standard
C	12	76.7	7.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	3	Standard
Dy	164	6.5	86.7				mg/L	6	Standard
Ho-1	165	8.3	34.6				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	2150.2	26.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	112.824		
Al	27	101.025		
Sc	45			
Ti	47	105.846		
V	51	105.735		
Cr	52	104.856		
Cr	53			
Mn	55	102.904		
Co	59	111.291		
Ni	60	103.415		
Cu	65	102.842		
Zn	66	102.464		
> Ge	72		109.755	
As	75	102.242		
Se	82	106.189		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.555		
Ag	107	100.728		
Cd	111	100.810		
Cd	114			
In	115		111.533	
Sn	118	102.364		
Sb	123	100.471		
Ba	135	96.864		
Ce	140			
Tb	159			
Ho	165			
Tl	203	105.029		
Tl	205			
Pb	206			
Pb	207			
Pb	208	107.030		
U	238	108.927		
Bi	209		107.683	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Co	59	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 17:59:55
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86353.7	1.4				ug/L	74699	Standard
	Be	9	83.3	67.4	**0.0891**	0.054	60.5	ug/L	8	Standard
	Al	27	42873.5	92.7	**0.2376**	0.231	97.1	ug/L	1493	Standard
	Sc	45	65305.4	1.2				ug/L	61029	Standard
	Ti	47	79.7	51.6	**0.0788**	0.097	123.4	ug/L	35	Standard
	V	51	1461.2	4.4	**-0.0225**	0.008	34.9	ug/L	1435	Standard
	Cr	52	7626.9	6.9	**-0.1029**	0.066	64.1	ug/L	7635	Standard
	Cr	53	760.0	14.8	**0.4057**	0.109	26.8	ug/L	363	Standard
	Mn	55	4546.9	137.2	**0.4388**	0.807	183.9	ug/L	747	Standard
	Co	59	626.0	93.3	**0.0478**	0.080	167.0	ug/L	234	Standard
	Ni	60	409.0	51.9	**0.0715**	0.102	142.7	ug/L	215	Standard
	Cu	65	272.7	44.7	**0.0274**	0.059	215.3	ug/L	104	Standard
	Zn	66	514.0	23.7	**-0.0335**	0.100	300.2	ug/L	363	Standard
>	**Ge**	72	553485.6	1.3				ug/L	495142	Standard
	As	75	-6.7	474.8	**0.0545**	0.025	45.9	ug/L	-50	Standard
	Se	82	20.4	10.3	**0.0278**	0.015	55.0	ug/L	14	Standard
	Se-1	77	66.3	4.4	**0.1906**	0.046	24.0	ug/L	42	Standard
>	**Ga**	71	50.0	10.0				mg/L	42	Standard
	Rb	85	45.0	48.4				ug/L	17	Standard
	Y	89	474090.9	1.7				ug/L	417098	Standard
>	**Rh**	103	18.3	41.7				ug/L	13	Standard
	Mo	98	533.3	54.8	**0.1739**	0.097	56.0	ug/L	11	Standard
	Ag	107	205.7	25.6	**0.0154**	0.007	45.9	ug/L	68	Standard
	Cd	111	43.3	79.3	**0.0106**	0.015	137.7	mg/L	2	Standard
	Cd	114	160.8	66.0	**0.0260**	0.018	70.8	ug/L	12	Standard
>	**In**	115	653140.9	0.6				ug/L	587441	Standard
	Sn	118	840.0	19.7	**0.0347**	0.026	74.7	ug/L	497	Standard
	Sb	123	1054.2	24.1	**0.1991**	0.050	25.2	ug/L	78	Standard
	Ba	135	82.0	54.8	**0.0199**	0.020	97.9	ug/L	24	Standard
	Ce	140	78.3	62.0				ug/L	25	Standard
>	**Tb**	159	1021325.7	0.5				ug/L	939701	Standard
	Ho	165	20.0	66.1				ug/L	10	Standard
	Tl	203	163.0	50.8	**0.0163**	0.009	56.1	ug/L	4	Standard
	Tl	205	543.4	156.5	**0.0696**	0.109	156.0	ug/L	2	Standard
	Pb	206	336.7	16.7	**-0.0136**	0.010	70.5	ug/L	240	Standard
	Pb	207	309.7	12.8	**-0.0104**	0.008	73.2	ug/L	198	Standard
	Pb	208	2162.1	83.2	**0.0313**	0.088	280.1	ug/L	883	Standard
	U	238	524.4	153.4	**0.0652**	0.107	163.8	ug/L	3	Standard
>	**Bi**	209	573163.8	0.1				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.8448**	30.899	173.2	mg/L	0	Standard
Mg	24	123.3	127.6	**0.0829**	0.188	227.1	mg/L	37	Standard
K	39	30.0	66.7	**-0.0524**	0.041	77.8	mg/L	38	Standard
Ca	43	21.7	35.3	**-1.2409**	0.467	37.7	mg/L	10	Standard
Fe	54	185.6	27.6	**0.0086**	0.039	460.9	mg/L	179	Standard
Fe	57	268.3	10.3	**-0.2224**	0.079	35.7	mg/L	335	Standard
Sc-1	45	65305.4	1.2				mg/L	61029	Standard
Cl	35	28806.0	1.7				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	1900.1	3.3				ug/L	1547	Standard
P	31	20240.2	2.7				ug/L	15286	Standard
S	34	2435.2	7.1				ug/L	1572	Standard
Sr	88	65.0	20.4				ug/L	73	Standard
C	12	60.0					mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	25.5	84.0				mg/L	6	Standard
Ho-1	165	20.0	66.1				mg/L	10	Standard
Er	166	23.3	65.5				mg/L	13	Standard
I	127	1926.8	28.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		111.783	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.184
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.386
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Wednesday, June 29, 2016 18:03:08
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84590.6	2.3				ug/L	74699	Standard
	Be	9	260.0	12.0	**0.2687**	0.034	12.7	ug/L	8	Standard
	Al	27	3603.8	43.5	**0.0082**	0.009	110.1	ug/L	1493	Standard
	Sc	45	65034.3	0.9				ug/L	61029	Standard
	Ti	47	43.7	32.9	**-0.0008**	0.035	4199.9	ug/L	35	Standard
	V	51	4694.6	2.2	**0.3894**	0.008	2.0	ug/L	1435	Standard
	Cr	52	14076.2	0.6	**0.7639**	0.008	1.0	ug/L	7635	Standard
	Cr	53	1435.1	6.7	**1.1315**	0.098	8.6	ug/L	363	Standard
	Mn	55	4379.0	3.5	**0.4438**	0.017	3.9	ug/L	747	Standard
	Co	59	3208.0	4.2	**0.4198**	0.015	3.5	ug/L	234	Standard
	Ni	60	3464.1	1.9	**1.6175**	0.036	2.2	ug/L	215	Standard
	Cu	65	1802.1	7.0	**0.8073**	0.055	6.8	ug/L	104	Standard
	Zn	66	8137.9	1.9	**6.5566**	0.074	1.1	ug/L	363	Standard
>	**Ge**	72	526101.8	0.9				ug/L	495142	Standard
	As	75	520.8	10.5	**0.4970**	0.042	8.4	ug/L	-50	Standard
	Se	82	68.5	3.0	**0.4490**	0.013	3.0	ug/L	14	Standard
	Se-1	77	97.0	14.4	**0.6266**	0.169	26.9	ug/L	42	Standard
>	**Ga**	71	35.0	42.9				mg/L	42	Standard
	Rb	85	53.3	5.4				ug/L	17	Standard
	Y	89	462050.3	3.1				ug/L	417098	Standard
>	**Rh**	103	11.7	24.7				ug/L	13	Standard
	Mo	98	178.6	39.2	**0.0548**	0.024	44.0	ug/L	11	Standard
	Ag	107	2989.6	2.3	**0.4006**	0.011	2.7	ug/L	68	Standard
	Cd	111	543.3	9.6	**0.2264**	0.024	10.6	mg/L	2	Standard
	Cd	114	1493.6	11.4	**0.2605**	0.031	12.1	ug/L	12	Standard
>	**In**	115	651766.1	0.6				ug/L	587441	Standard
	Sn	118	551.7	10.5	**-0.0096**	0.009	97.6	ug/L	497	Standard
	Sb	123	2328.3	1.4	**0.4453**	0.009	1.9	ug/L	78	Standard
	Ba	135	1600.4	3.6	**0.6889**	0.030	4.3	ug/L	24	Standard
	Ce	140	6.7	86.6				ug/L	25	Standard
>	**Tb**	159	1010895.5	0.8				ug/L	939701	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	860.7	17.5	**0.0936**	0.016	16.7	ug/L	4	Standard
	Tl	205	718.4	10.6	**0.0918**	0.008	8.5	ug/L	2	Standard
	Pb	206	1533.1	9.5	**0.1909**	0.020	10.6	ug/L	240	Standard
	Pb	207	1247.1	5.1	**0.1700**	0.007	4.3	ug/L	198	Standard
	Pb	208	5357.0	3.3	**0.1870**	0.005	2.6	ug/L	883	Standard
	U	238	3040.0	2.0	**0.3994**	0.014	3.4	ug/L	3	Standard
>	**Bi**	209	573346.3	2.5				ug/L	523984	Standard

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Na	23	1.7	173.2	**18.2178**	31.546	173.2	mg/L	0	Standard
Mg	24	50.0	50.0	**-0.0044**	0.031	706.6	mg/L	37	Standard
K	39	35.0	24.7	**-0.0415**	0.018	44.0	mg/L	38	Standard
Ca	43	26.7	43.3	**-0.9446**	0.676	71.5	mg/L	10	Standard
Fe	54	105.0	32.5	**-0.0546**	0.028	51.3	mg/L	179	Standard
Fe	57	230.0	24.7	**-0.3395**	0.189	55.5	mg/L	335	Standard
> **Sc-1**	45	65034.3	0.9				mg/L	61029	Standard
Cl	35	27747.4	0.7				ug/L	20195	Standard
Kr	83	1.0	0.0				ug/L	4	Standard
Br	81	1776.8	9.7				ug/L	1547	Standard
P	31	14345.1	1.0				ug/L	15286	Standard
S	34	2316.8	2.0				ug/L	1572	Standard
Sr	88	78.3	41.5				ug/L	73	Standard
C	12	70.0	28.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	6.0	100.4				mg/L	6	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	1788.4	30.5				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	134.333		
	Al	27			
	Sc	45			
	Ti	47			
	V	51	97.347		
	Cr	52	95.485		
	Cr	53			
	Mn	55	88.762		
	Co	59	104.961		
	Ni	60	101.093		
	Cu	65	100.908		
	Zn	66	104.906		
>	Ge	72		106.253	
	As	75	124.241		
	Se	82	112.254		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	100.142		
Cd	111	94.325		
Cd	114			
> In	115			110.950
Sn	118			
Sb	123	111.327		
Ba	135	91.848		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	116.967		
Tl	205			
Pb	206			
Pb	207			
Pb	208	93.500		
U	238	99.844		
> Bi	209			109.420
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 8	Be	9	

Sample ID: QC Std 8
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Method 6020 - Summary Report

Sample ID: PBS M9 WG574192-02
Sample Date/Time: Wednesday, June 29, 2016 18:06:21
Number of Replicates: 3
Autosampler Position: 237
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84464.8	1.8				ug/L	74699	Standard
	Be	9	13.3	94.4	**0.0212**	0.013	60.4	ug/L	8	Standard
	Al	27	11484.4	1.6	**0.0557**	0.001	1.2	ug/L	1493	Standard
	Sc	45	65588.4	2.6				ug/L	61029	Standard
	Ti	47	51.3	20.8	**0.0150**	0.026	174.5	ug/L	35	Standard
	V	51	1499.5	1.3	**-0.0137**	0.003	18.5	ug/L	1435	Standard
	Cr	52	8909.3	1.2	**0.0773**	0.005	6.6	ug/L	7635	Standard
	Cr	53	853.4	5.0	**0.5155**	0.034	6.6	ug/L	363	Standard
	Mn	55	1324.4	4.8	**0.0262**	0.011	41.6	ug/L	747	Standard
	Co	59	237.0	9.4	**-0.0044**	0.004	80.7	ug/L	234	Standard
	Ni	60	317.3	8.0	**0.0315**	0.014	46.0	ug/L	215	Standard
	Cu	65	277.0	2.0	**0.0327**	0.005	14.4	ug/L	104	Standard
	Zn	66	2117.5	3.0	**1.3211**	0.055	4.2	ug/L	363	Standard
>	**Ge**	72	540634.9	1.6				ug/L	495142	Standard
	As	75	-19.3	191.5	**0.0441**	0.030	68.3	ug/L	-50	Standard
	Se	82	22.9	30.4	**0.0532**	0.060	113.4	ug/L	14	Standard
	Se-1	77	66.3	3.1	**0.2096**	0.028	13.1	ug/L	42	Standard
>	**Ga**	71	40.0	45.1				mg/L	42	Standard
	Rb	85	45.0	40.1				ug/L	17	Standard
	Y	89	495113.6	1.2				ug/L	417098	Standard
>	**Rh**	103	20.0	50.0				ug/L	13	Standard
	Mo	98	103.4	4.5	**0.0285**	0.002	7.3	ug/L	11	Standard
	Ag	107	105.3	22.1	**0.0013**	0.003	227.8	ug/L	68	Standard
	Cd	111	14.8	35.7	**-0.0017**	0.002	127.2	mg/L	2	Standard
	Cd	114	30.3	51.7	**0.0031**	0.003	86.4	ug/L	12	Standard
>	**In**	115	666604.9	1.7				ug/L	587441	Standard
	Sn	118	860.0	2.1	**0.0351**	0.004	11.7	ug/L	497	Standard
	Sb	123	400.3	27.4	**0.0716**	0.022	30.7	ug/L	78	Standard
	Ba	135	277.0	2.3	**0.1032**	0.001	0.8	ug/L	24	Standard
	Ce	140	75.0	20.0				ug/L	25	Standard
>	**Tb**	159	1002064.8	2.5				ug/L	939701	Standard
	Ho	165	13.3	21.7				ug/L	10	Standard
	Tl	203	23.7	14.8	**0.0009**	0.000	40.1	ug/L	4	Standard
	Tl	205	18.3	56.8	**0.0026**	0.001	51.0	ug/L	2	Standard
	Pb	206	383.3	7.2	**-0.0041**	0.004	93.5	ug/L	240	Standard
	Pb	207	304.7	4.5	**-0.0100**	0.002	23.2	ug/L	198	Standard
	Pb	208	1385.4	1.0	**-0.0050**	0.001	21.8	ug/L	883	Standard
	U	238	16.0	18.8	**-0.0023**	0.000	16.8	ug/L	3	Standard
>	**Bi**	209	560531.0	1.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	51.7	11.2	**-0.0029**	0.008	286.8	mg/L	37	Standard
K	39	28.3	27.0	**-0.0560**	0.015	26.7	mg/L	38	Standard
Ca	43	25.0	34.6	**-1.0611**	0.483	45.5	mg/L	10	Standard
Fe	54	209.4	8.6	**0.0268**	0.012	44.3	mg/L	179	Standard
Fe	57	206.7	9.2	**-0.4211**	0.048	11.4	mg/L	335	Standard
> **Sc-1**	45	65588.4	2.6				mg/L	61029	Standard
Cl	35	29295.6	1.0				ug/L	20195	Standard
Kr	83	1.7	91.7				ug/L	4	Standard
Br	81	3250.3	3.7				ug/L	1547	Standard
P	31	19926.4	1.7				ug/L	15286	Standard
S	34	2431.9	7.4				ug/L	1572	Standard
Sr	88	63.3	32.9				ug/L	73	Standard
C	12	60.0	16.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	23.2	64.8				mg/L	6	Standard
Ho-1	165	13.3	21.7				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	1665.1	25.5				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		113.074	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		109.188	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.476
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.975
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: PBS M9 WG574192-02
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Method 6020 - Summary Report

Sample ID: LCSS M9 WG574192-03
Sample Date/Time: Wednesday, June 29, 2016 18:09:32
Number of Replicates: 3
Autosampler Position: 238
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83350.4	2.2				ug/L	74699	Standard
	Be	9	28323.1	1.8	**28.8492**	0.865	3.0	ug/L	8	Standard
	Al	27	10196.8	1.6	**0.0488**	0.002	4.6	ug/L	1493	Standard
	Sc	45	65183.2	0.6				ug/L	61029	Standard
	Ti	47	95.7	13.6	**0.1113**	0.027	24.3	ug/L	35	Standard
	V	51	224256.1	0.6	**25.7588**	0.522	2.0	ug/L	1435	Standard
	Cr	52	224696.6	1.0	**25.4792**	0.636	2.5	ug/L	7635	Standard
	Cr	53	27321.3	1.7	**25.5112**	0.743	2.9	ug/L	363	Standard
	Mn	55	202745.7	1.5	**25.3082**	0.750	3.0	ug/L	747	Standard
	Co	59	203564.8	2.3	**26.9126**	1.011	3.8	ug/L	234	Standard
	Ni	60	54379.7	0.7	**25.2634**	0.489	1.9	ug/L	215	Standard
	Cu	65	53975.6	1.0	**25.2465**	0.617	2.4	ug/L	104	Standard
	Zn	66	33582.8	1.1	**26.4199**	0.666	2.5	ug/L	363	Standard
>	**Ge**	72	566570.7	1.5				ug/L	495142	Standard
	As	75	31915.6	1.0	**24.9643**	0.450	1.8	ug/L	-50	Standard
	Se	82	3210.1	2.6	**25.4315**	0.960	3.8	ug/L	14	Standard
	Se-1	77	2232.8	4.1	**26.1060**	1.397	5.4	ug/L	42	Standard
>	**Ga**	71	91.7	13.7				mg/L	42	Standard
	Rb	85	96.7	31.2				ug/L	17	Standard
	Y	89	463441.3	2.1				ug/L	417098	Standard
>	**Rh**	103	25.0	40.0				ug/L	13	Standard
	Mo	98	76.3	5.4	**0.0207**	0.001	6.1	ug/L	11	Standard
	Ag	107	186996.6	1.0	**26.4732**	0.339	1.3	ug/L	68	Standard
	Cd	111	58916.9	1.6	**26.0048**	0.541	2.1	mg/L	2	Standard
	Cd	114	141808.0	1.8	**25.5238**	0.616	2.4	ug/L	12	Standard
>	**In**	115	636399.6	0.6				ug/L	587441	Standard
	Sn	118	665.0	9.8	**0.0103**	0.010	94.1	ug/L	497	Standard
	Sb	123	127977.1	1.2	**25.3000**	0.453	1.8	ug/L	78	Standard
	Ba	135	55490.8	0.9	**25.0111**	0.350	1.4	ug/L	24	Standard
	Ce	140	61.7	36.6				ug/L	25	Standard
>	**Tb**	159	977939.2	1.1				ug/L	939701	Standard
	Ho	165	5.0	100.0				ug/L	10	Standard
	Tl	203	232757.9	0.8	**26.2994**	0.658	2.5	ug/L	4	Standard
	Tl	205	213539.2	0.1	**27.8001**	0.582	2.1	ug/L	2	Standard
	Pb	206	150898.4	0.7	**26.2407**	0.649	2.5	ug/L	240	Standard
	Pb	207	129115.2	1.2	**25.2720**	0.800	3.2	ug/L	198	Standard
	Pb	208	547777.7	0.6	**27.1359**	0.615	2.3	ug/L	883	Standard
	U	238	197609.3	0.3	**26.7341**	0.481	1.8	ug/L	3	Standard
>	**Bi**	209	562718.9	2.0				ug/L	523984	Standard

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Na	23	3.3	86.6	**35.9815**	31.158	86.6	mg/L	0	Standard
Mg	24	53.3	23.6	**-0.0007**	0.015	2138.9	mg/L	37	Standard
K	39	36.7	90.8	**-0.0380**	0.070	183.0	mg/L	38	Standard
Ca	43	26.7	28.6	**-0.9444**	0.462	48.9	mg/L	10	Standard
Fe	54	149.2	16.7	**-0.0198**	0.020	102.0	mg/L	179	Standard
Fe	57	258.3	10.7	**-0.2518**	0.092	36.6	mg/L	335	Standard
> **Sc-1**	45	65183.2	0.6				mg/L	61029	Standard
Cl	35	28068.6	2.1				ug/L	20195	Standard
Kr	83	2.0	0.0				ug/L	4	Standard
Br	81	1853.4	3.5				ug/L	1547	Standard
P	31	20221.8	1.7				ug/L	15286	Standard
S	34	2256.8	4.8				ug/L	1572	Standard
Sr	88	75.0	24.0				ug/L	73	Standard
C	12	113.3	53.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	2.9	203.0				mg/L	6	Standard
Ho-1	165	5.0	100.0				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	1621.8	26.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.582	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.426	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.334
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.392
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606120601 WG574192-01
Sample Date/Time: Wednesday, June 29, 2016 18:12:44
Number of Replicates: 3
Autosampler Position: 239
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89463.4	1.2				ug/L	74699	Standard
	Be	9	386.7	13.6	**0.3740**	0.046	12.2	ug/L	8	Standard
	Al	27	7605562.2	1.6	**43.1976**	0.340	0.8	ug/L	1493	Standard
	Sc	45	72243.5	1.6				ug/L	61029	Standard
	Ti	47	9362.6	0.8	**21.8169**	0.679	3.1	ug/L	35	Standard
	V	51	123334.5	1.4	**14.2946**	0.165	1.2	ug/L	1435	Standard
	Cr	52	107034.1	1.6	**11.7966**	0.478	4.1	ug/L	7635	Standard
	Cr	53	12683.6	2.9	**11.8556**	0.642	5.4	ug/L	363	Standard
	Mn	55	2726083.5	2.1	**347.2409**	2.026	0.6	ug/L	747	Standard
	Co	59	29531.4	3.0	**3.9299**	0.043	1.1	ug/L	234	Standard
	Ni	60	23196.4	0.4	**10.8725**	0.312	2.9	ug/L	215	Standard
	Cu	65	77156.3	0.7	**36.6848**	0.692	1.9	ug/L	104	Standard
	Zn	66	748003.6	1.6	**607.1548**	7.539	1.2	ug/L	363	Standard
>	**Ge**	72	558122.4	2.5				ug/L	495142	Standard
	As	75	3312.8	2.4	**2.6835**	0.016	0.6	ug/L	-50	Standard
	Se	82	112.5	6.7	**0.7726**	0.083	10.8	ug/L	14	Standard
	Se-1	77	130.7	4.7	**0.9656**	0.087	9.0	ug/L	42	Standard
>	**Ga**	71	7793.7	3.0				mg/L	42	Standard
	Rb	85	97459.1	1.1				ug/L	17	Standard
	Y	89	585281.5	2.1				ug/L	417098	Standard
>	**Rh**	103	56.7	13.5				ug/L	13	Standard
	Mo	98	1826.8	4.5	**0.5887**	0.034	5.8	ug/L	11	Standard
	Ag	107	1189.0	7.2	**0.1453**	0.012	8.4	ug/L	68	Standard
	Cd	111	5739.0	1.3	**2.3714**	0.004	0.2	mg/L	2	Standard
	Cd	114	13674.5	3.2	**2.3090**	0.056	2.4	ug/L	12	Standard
>	**In**	115	677670.9	1.2				ug/L	587441	Standard
	Sn	118	2238.5	6.9	**0.2377**	0.027	11.3	ug/L	497	Standard
	Sb	123	1060.8	22.9	**0.1924**	0.043	22.3	ug/L	78	Standard
	Ba	135	275486.3	0.7	**116.6679**	1.279	1.1	ug/L	24	Standard
	Ce	140	521396.3	0.5				ug/L	25	Standard
>	**Tb**	159	1067665.8	1.0				ug/L	939701	Standard
	Ho	165	8012.1	4.7				ug/L	10	Standard
	Tl	203	658.7	5.9	**0.0698**	0.004	5.8	ug/L	4	Standard
	Tl	205	588.3	7.1	**0.0738**	0.005	7.2	ug/L	2	Standard
	Pb	206	280687.1	0.1	**46.9821**	0.294	0.6	ug/L	240	Standard
	Pb	207	217657.6	0.6	**40.9978**	0.453	1.1	ug/L	198	Standard
	Pb	208	937818.9	1.0	**44.7144**	0.652	1.5	ug/L	883	Standard
	U	238	5450.3	0.5	**0.7046**	0.003	0.4	ug/L	3	Standard
>	**Bi**	209	585148.7	0.6				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	733.4	5.7	**0.7343**	0.035	4.8	mg/L	37	Standard
K	39	401.7	1.9	**0.6360**	0.019	3.0	mg/L	38	Standard
Ca	43	643.3	17.5	**31.7962**	5.845	18.4	mg/L	10	Standard
Fe	54	8818.1	2.4	**6.1777**	0.130	2.1	mg/L	179	Standard
Fe	57	2673.6	4.7	**6.5999**	0.243	3.7	mg/L	335	Standard
> **Sc-1**	45	72243.5	1.6				mg/L	61029	Standard
Cl	35	29798.6	1.4				ug/L	20195	Standard
Kr	83	0.7	86.6				ug/L	4	Standard
Br	81	3707.1	5.8				ug/L	1547	Standard
P	31	20168.4	2.0				ug/L	15286	Standard
S	34	2373.5	6.9				ug/L	1572	Standard
Sr	88	256.7	13.8				ug/L	73	Standard
C	12	350.0	7.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	130.0	53.3				mg/L	3	Standard
Dy	164	13278.3	0.5				mg/L	6	Standard
Ho-1	165	8012.1	4.7				mg/L	10	Standard
Er	166	7608.6	3.8				mg/L	13	Standard
I	127	89948.0	2.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.765	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		112.720	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		115.360
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		111.673
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606120602
Sample Date/Time: Wednesday, June 29, 2016 18:15:55
Number of Replicates: 3
Autosampler Position: 240
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88784.4	1.1				ug/L	74699	Standard
	Be	9	281.7	5.7	**0.2767**	0.013	4.7	ug/L	8	Standard
	Al	27	7005404.7	2.4	**40.0898**	0.625	1.6	ug/L	1493	Standard
	Sc	45	70594.2	3.3				ug/L	61029	Standard
	Ti	47	10155.7	1.6	**24.3492**	0.468	1.9	ug/L	35	Standard
	V	51	153110.0	0.2	**18.3086**	0.101	0.6	ug/L	1435	Standard
	Cr	52	102957.6	0.7	**11.6568**	0.092	0.8	ug/L	7635	Standard
	Cr	53	11732.9	3.0	**11.2567**	0.305	2.7	ug/L	363	Standard
	Mn	55	2052735.8	1.1	**268.9604**	2.146	0.8	ug/L	747	Standard
	Co	59	33492.3	1.4	**4.5921**	0.057	1.2	ug/L	234	Standard
	Ni	60	26642.1	0.7	**12.8642**	0.053	0.4	ug/L	215	Standard
	Cu	65	40463.3	0.7	**19.7403**	0.183	0.9	ug/L	104	Standard
	Zn	66	608360.3	0.1	**507.8962**	1.599	0.3	ug/L	363	Standard
>	**Ge**	72	542468.6	0.4				ug/L	495142	Standard
	As	75	4231.0	2.7	**3.5076**	0.102	2.9	ug/L	-50	Standard
	Se	82	256.2	4.5	**1.9932**	0.099	5.0	ug/L	14	Standard
	Se-1	77	208.7	7.7	**1.9860**	0.210	10.6	ug/L	42	Standard
>	**Ga**	71	5872.8	1.9				mg/L	42	Standard
	Rb	85	68412.5	1.5				ug/L	17	Standard
	Y	89	570393.2	0.3				ug/L	417098	Standard
>	**Rh**	103	206.7	25.4				ug/L	13	Standard
	Mo	98	11374.8	0.4	**3.8637**	0.075	1.9	ug/L	11	Standard
	Ag	107	1353.7	2.3	**0.1754**	0.001	0.8	ug/L	68	Standard
	Cd	111	5491.2	1.2	**2.3732**	0.046	1.9	mg/L	2	Standard
	Cd	114	13400.9	1.9	**2.3668**	0.045	1.9	ug/L	12	Standard
>	**In**	115	648040.3	1.6				ug/L	587441	Standard
	Sn	118	1990.1	9.0	**0.2145**	0.033	15.4	ug/L	497	Standard
	Sb	123	589.0	13.2	**0.1100**	0.013	12.1	ug/L	78	Standard
	Ba	135	226861.9	1.0	**100.4795**	2.067	2.1	ug/L	24	Standard
	Ce	140	495305.9	0.7				ug/L	25	Standard
>	**Tb**	159	1028084.3	0.7				ug/L	939701	Standard
	Ho	165	7586.9	1.7				ug/L	10	Standard
	Tl	203	574.7	1.8	**0.0640**	0.002	2.9	ug/L	4	Standard
	Tl	205	501.7	7.3	**0.0663**	0.004	6.1	ug/L	2	Standard
	Pb	206	2490204.6	1.0	**439.6443**	9.561	2.2	ug/L	240	Standard
	Pb	207	1941338.7	1.0	**385.7578**	8.533	2.2	ug/L	198	Standard
	Pb	208	8788859.7	0.3	**442.0013**	4.418	1.0	ug/L	883	Standard
	U	238	27264.2	0.8	**3.7315**	0.055	1.5	ug/L	3	Standard
>	**Bi**	209	555601.8	1.3				ug/L	523984	Standard

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Na	23	15.0	66.7	**151.5495**	103.438	68.3	mg/L	0	Standard
Mg	24	875.0	7.4	**0.9112**	0.062	6.8	mg/L	37	Standard
K	39	308.3	17.3	**0.4774**	0.118	24.7	mg/L	38	Standard
Ca	43	2528.5	1.9	**135.7080**	7.063	5.2	mg/L	10	Standard
Fe	54	8423.7	4.4	**6.0457**	0.457	7.6	mg/L	179	Standard
Fe	57	3312.0	6.3	**8.6682**	0.763	8.8	mg/L	335	Standard
Sc-1	45	70594.2	3.3				mg/L	61029	Standard
Cl	35	33743.5	0.4				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	4283.9	2.2				ug/L	1547	Standard
P	31	21890.8	1.3				ug/L	15286	Standard
S	34	2663.6	6.3				ug/L	1572	Standard
Sr	88	533.3	8.7				ug/L	73	Standard
C	12	600.0	5.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	100.0	26.5				mg/L	3	Standard
Dy	164	11590.5	1.3				mg/L	6	Standard
Ho-1	165	7586.9	1.7				mg/L	10	Standard
Er	166	6698.1	4.4				mg/L	13	Standard
I	127	108507.7	4.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		118.857	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		109.558	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	110.316
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	106.034
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1606120603S WG574192-04
Sample Date/Time: Wednesday, June 29, 2016 18:19:07
Number of Replicates: 3
Autosampler Position: 241
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86561.6	0.8				ug/L	74699	Standard
	Be	9	28455.1	4.4	**27.8947**	1.031	3.7	ug/L	8	Standard
	Al	27	11326081.2	0.4	**66.4980**	0.812	1.2	ug/L	1493	Standard
	Sc	45	74033.8	1.5				ug/L	61029	Standard
	Ti	47	13830.6	1.3	**31.7218**	0.771	2.4	ug/L	35	Standard
	V	51	404083.1	0.7	**46.4723**	0.823	1.8	ug/L	1435	Standard
	Cr	52	396378.6	0.5	**45.6257**	0.448	1.0	ug/L	7635	Standard
	Cr	53	48917.2	0.9	**45.8335**	0.539	1.2	ug/L	363	Standard
	Mn	55	3610519.8	1.3	**452.1326**	4.314	1.0	ug/L	747	Standard
	Co	59	243070.7	1.0	**32.0670**	0.356	1.1	ug/L	234	Standard
	Ni	60	87954.6	1.3	**40.8489**	0.598	1.5	ug/L	215	Standard
	Cu	65	138890.7	1.2	**64.9805**	0.614	0.9	ug/L	104	Standard
	Zn	66	982893.1	0.9	**784.3980**	13.633	1.7	ug/L	363	Standard
>	**Ge**	72	567734.3	1.2				ug/L	495142	Standard
	As	75	35264.6	1.3	**27.5210**	0.578	2.1	ug/L	-50	Standard
	Se	82	3103.1	1.8	**24.5237**	0.601	2.4	ug/L	14	Standard
	Se-1	77	2151.2	2.8	**25.0663**	0.745	3.0	ug/L	42	Standard
>	**Ga**	71	14508.6	3.6				mg/L	42	Standard
	Rb	85	180073.9	1.5				ug/L	17	Standard
	Y	89	616764.0	1.9				ug/L	417098	Standard
>	**Rh**	103	85.0	11.8				ug/L	13	Standard
	Mo	98	3441.4	2.1	**1.1615**	0.033	2.8	ug/L	11	Standard
	Ag	107	170180.4	0.7	**23.5897**	0.078	0.3	ug/L	68	Standard
	Cd	111	63817.8	1.8	**27.5852**	0.736	2.7	mg/L	2	Standard
	Cd	114	155790.6	2.3	**27.4604**	0.877	3.2	ug/L	12	Standard
>	**In**	115	649912.7	0.9				ug/L	587441	Standard
	Sn	118	2755.3	3.8	**0.3317**	0.018	5.5	ug/L	497	Standard
	Sb	123	11515.0	1.7	**2.2251**	0.028	1.3	ug/L	78	Standard
	Ba	135	420339.6	0.5	**185.6246**	2.179	1.2	ug/L	24	Standard
	Ce	140	771001.7	1.2				ug/L	25	Standard
>	**Tb**	159	1033151.8	0.5				ug/L	939701	Standard
	Ho	165	11344.2	1.5				ug/L	10	Standard
	Tl	203	220759.0	0.5	**24.6088**	0.113	0.5	ug/L	4	Standard
	Tl	205	203485.6	0.4	**26.1371**	0.140	0.5	ug/L	2	Standard
	Pb	206	518067.3	0.6	**89.0511**	0.447	0.5	ug/L	240	Standard
	Pb	207	415032.4	0.7	**80.2896**	0.537	0.7	ug/L	198	Standard
	Pb	208	1813547.0	1.2	**88.8061**	1.200	1.4	ug/L	883	Standard
	U	238	196913.8	1.4	**26.2850**	0.405	1.5	ug/L	3	Standard
>	**Bi**	209	570191.4	0.2				ug/L	523984	Standard

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Na	23	6.7	43.3	**63.0881**	26.284	41.7	mg/L	0	Standard
Mg	24	761.7	8.6	**0.7448**	0.057	7.6	mg/L	37	Standard
K	39	698.3	9.3	**1.1574**	0.103	8.9	mg/L	38	Standard
Ca	43	761.7	2.5	**37.1357**	0.619	1.7	mg/L	10	Standard
Fe	54	13661.1	2.3	**9.4129**	0.352	3.7	mg/L	179	Standard
Fe	57	3945.5	4.9	**9.9839**	0.617	6.2	mg/L	335	Standard
> **Sc-1**	45	74033.8	1.5				mg/L	61029	Standard
Cl	35	29672.4	3.3				ug/L	20195	Standard
Kr	83	0.7	86.6				ug/L	4	Standard
Br	81	5120.9	2.8				ug/L	1547	Standard
P	31	21184.8	2.3				ug/L	15286	Standard
S	34	2585.2	3.6				ug/L	1572	Standard
Sr	88	278.3	7.3				ug/L	73	Standard
C	12	453.3	23.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	180.0	28.9				mg/L	3	Standard
Dy	164	18295.9	3.4				mg/L	6	Standard
Ho-1	165	11344.2	1.5				mg/L	10	Standard
Er	166	10350.2	2.2				mg/L	13	Standard
I	127	155575.8	4.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.881	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.661	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	110.635
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	108.818
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606120604SD WG574192-05
Sample Date/Time: Wednesday, June 29, 2016 18:22:18
Number of Replicates: 3
Autosampler Position: 242
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88318.4	2.5				ug/L	74699	Standard
	Be	9	28910.9	0.8	**27.7911**	0.552	2.0	ug/L	8	Standard
	Al	27	11678142.6	0.8	**67.2186**	1.350	2.0	ug/L	1493	Standard
	Sc	45	75929.8	1.2				ug/L	61029	Standard
	Ti	47	15202.6	0.9	**34.3685**	0.367	1.1	ug/L	35	Standard
	V	51	408247.6	0.9	**46.2682**	0.632	1.4	ug/L	1435	Standard
	Cr	52	411599.1	1.0	**46.7151**	0.586	1.3	ug/L	7635	Standard
	Cr	53	50226.5	2.4	**46.3783**	0.843	1.8	ug/L	363	Standard
	Mn	55	4064951.2	0.1	**501.7134**	5.151	1.0	ug/L	747	Standard
	Co	59	242783.8	0.7	**31.5662**	0.473	1.5	ug/L	234	Standard
	Ni	60	92537.7	0.8	**42.3583**	0.203	0.5	ug/L	215	Standard
	Cu	65	135365.1	1.4	**62.4070**	0.241	0.4	ug/L	104	Standard
	Zn	66	1025151.4	1.0	**806.2133**	6.015	0.7	ug/L	363	Standard
>	**Ge**	72	576071.4	1.0				ug/L	495142	Standard
	As	75	35892.9	0.1	**27.6040**	0.298	1.1	ug/L	-50	Standard
	Se	82	2975.5	0.8	**23.1647**	0.155	0.7	ug/L	14	Standard
	Se-1	77	2118.1	0.7	**24.3051**	0.149	0.6	ug/L	42	Standard
>	**Ga**	71	16053.5	1.5				mg/L	42	Standard
	Rb	85	192660.5	0.7				ug/L	17	Standard
	Y	89	633758.5	0.9				ug/L	417098	Standard
>	**Rh**	103	91.7	22.7				ug/L	13	Standard
	Mo	98	2104.9	2.7	**0.6926**	0.023	3.3	ug/L	11	Standard
	Ag	107	176068.8	0.4	**23.8725**	0.248	1.0	ug/L	68	Standard
	Cd	111	64701.8	0.7	**27.3512**	0.177	0.6	mg/L	2	Standard
	Cd	114	157399.0	1.1	**27.1310**	0.176	0.6	ug/L	12	Standard
>	**In**	115	664480.0	1.2				ug/L	587441	Standard
	Sn	118	2676.9	2.8	**0.3105**	0.015	4.8	ug/L	497	Standard
	Sb	123	10363.1	2.2	**1.9584**	0.055	2.8	ug/L	78	Standard
	Ba	135	439420.6	0.3	**189.8023**	2.264	1.2	ug/L	24	Standard
	Ce	140	842883.5	1.0				ug/L	25	Standard
>	**Tb**	159	1049787.1	1.3				ug/L	939701	Standard
	Ho	165	12211.6	1.7				ug/L	10	Standard
	Tl	203	222058.4	0.3	**24.4396**	0.316	1.3	ug/L	4	Standard
	Tl	205	202828.8	1.6	**25.7185**	0.095	0.4	ug/L	2	Standard
	Pb	206	574235.7	0.3	**97.4667**	1.839	1.9	ug/L	240	Standard
	Pb	207	457211.7	0.6	**87.3408**	1.861	2.1	ug/L	198	Standard
	Pb	208	1979847.3	0.4	**95.7233**	1.171	1.2	ug/L	883	Standard
	U	238	197274.4	0.9	**26.0018**	0.641	2.5	ug/L	3	Standard
>	**Bi**	209	577596.9	1.6				ug/L	523984	Standard

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Na	23	5.0	0.0	**46.3267**	0.533	1.2	mg/L	0	Standard
Mg	24	961.7	5.5	**0.9325**	0.047	5.0	mg/L	37	Standard
K	39	738.4	15.4	**1.1991**	0.216	18.0	mg/L	38	Standard
Ca	43	858.4	11.4	**41.0973**	5.443	13.2	mg/L	10	Standard
Fe	54	16143.5	2.3	**10.8618**	0.122	1.1	mg/L	179	Standard
Fe	57	4519.0	2.4	**11.2744**	0.427	3.8	mg/L	335	Standard
> **Sc-1**	45	75929.8	1.2				mg/L	61029	Standard
Cl	35	29136.0	1.4				ug/L	20195	Standard
Kr	83	1.0	0.0				ug/L	4	Standard
Br	81	5384.3	8.1				ug/L	1547	Standard
P	31	20994.5	3.6				ug/L	15286	Standard
S	34	2526.9	1.1				ug/L	1572	Standard
Sr	88	265.0	8.2				ug/L	73	Standard
C	12	466.7	15.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	193.3	16.6				mg/L	3	Standard
Dy	164	19678.1	2.3				mg/L	6	Standard
Ho-1	165	12211.6	1.7				mg/L	10	Standard
Er	166	11454.3	2.8				mg/L	13	Standard
I	127	133210.9	5.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.233	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		116.345	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	113.114
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	110.232
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606120605
Sample Date/Time: Wednesday, June 29, 2016 18:25:30
Number of Replicates: 3
Autosampler Position: 243
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90694.1	2.2				ug/L	74699	Standard
	Be	9	526.7	6.5	**0.5004**	0.031	6.1	ug/L	8	Standard
	Al	27	8237088.6	1.8	**46.1607**	0.953	2.1	ug/L	1493	Standard
	Sc	45	76241.4	2.3				ug/L	61029	Standard
	Ti	47	9939.3	1.0	**23.0163**	0.554	2.4	ug/L	35	Standard
	V	51	146708.3	2.5	**16.9369**	0.672	4.0	ug/L	1435	Standard
	Cr	52	214286.2	1.5	**24.4749**	0.700	2.9	ug/L	7635	Standard
	Cr	53	25651.7	1.8	**24.1415**	0.427	1.8	ug/L	363	Standard
	Mn	55	2369893.5	2.4	**300.0787**	12.076	4.0	ug/L	747	Standard
	Co	59	42091.1	2.2	**5.5844**	0.210	3.8	ug/L	234	Standard
	Ni	60	29674.7	1.4	**13.8532**	0.382	2.8	ug/L	215	Standard
	Cu	65	80108.6	1.5	**37.8555**	1.188	3.1	ug/L	104	Standard
	Zn	66	402296.4	1.3	**324.3434**	9.485	2.9	ug/L	363	Standard
>	**Ge**	72	561626.1	1.7				ug/L	495142	Standard
	As	75	4613.8	0.6	**3.6915**	0.048	1.3	ug/L	-50	Standard
	Se	82	73.3	11.4	**0.4501**	0.057	12.7	ug/L	14	Standard
	Se-1	77	107.3	9.4	**0.6736**	0.125	18.5	ug/L	42	Standard
>	**Ga**	71	10595.4	4.5				mg/L	42	Standard
	Rb	85	117987.7	1.5				ug/L	17	Standard
	Y	89	650208.5	0.3				ug/L	417098	Standard
>	**Rh**	103	85.0	38.6				ug/L	13	Standard
	Mo	98	1074.4	2.1	**0.3404**	0.008	2.3	ug/L	11	Standard
	Ag	107	1521.7	2.8	**0.1876**	0.005	2.8	ug/L	68	Standard
	Cd	111	14943.9	2.9	**6.1278**	0.124	2.0	mg/L	2	Standard
	Cd	114	36335.4	1.3	**6.0807**	0.042	0.7	ug/L	12	Standard
>	**In**	115	684218.1	1.0				ug/L	587441	Standard
	Sn	118	4600.7	0.6	**0.5815**	0.007	1.3	ug/L	497	Standard
	Sb	123	346.8	6.2	**0.0596**	0.003	5.7	ug/L	78	Standard
	Ba	135	305952.3	0.8	**128.3272**	1.108	0.9	ug/L	24	Standard
	Ce	140	926252.0	0.8				ug/L	25	Standard
>	**Tb**	159	1067500.9	0.3				ug/L	939701	Standard
	Ho	165	12695.3	1.4				ug/L	10	Standard
	Tl	203	780.0	9.1	**0.0850**	0.009	10.5	ug/L	4	Standard
	Tl	205	700.0	0.7	**0.0898**	0.001	1.1	ug/L	2	Standard
	Pb	206	317389.9	0.7	**54.3657**	1.082	2.0	ug/L	240	Standard
	Pb	207	249270.6	1.1	**48.0507**	1.100	2.3	ug/L	198	Standard
	Pb	208	1104553.9	2.1	**53.8955**	1.488	2.8	ug/L	883	Standard
	U	238	5524.0	2.1	**0.7309**	0.022	3.0	ug/L	3	Standard
>	**Bi**	209	572007.3	1.4				ug/L	523984	Standard

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Na	23	8.3	34.6	**77.0658**	27.245	35.4	mg/L	0	Standard
Mg	24	545.0	4.9	**0.4986**	0.038	7.7	mg/L	37	Standard
K	39	528.3	15.8	**0.8195**	0.134	16.4	mg/L	38	Standard
Ca	43	966.7	6.0	**46.3930**	3.592	7.7	mg/L	10	Standard
Fe	54	12851.8	4.3	**8.5861**	0.399	4.6	mg/L	179	Standard
Fe	57	3822.2	7.3	**9.3402**	1.007	10.8	mg/L	335	Standard
Sc-1	45	76241.4	2.3				mg/L	61029	Standard
Cl	35	29717.8	2.2				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	3207.0	9.1				ug/L	1547	Standard
P	31	20467.1	0.8				ug/L	15286	Standard
S	34	2505.2	3.0				ug/L	1572	Standard
Sr	88	263.3	8.6				ug/L	73	Standard
C	12	196.7	5.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	123.3	46.8				mg/L	3	Standard
Dy	164	19864.2	0.8				mg/L	6	Standard
Ho-1	165	12695.3	1.4				mg/L	10	Standard
Er	166	11821.3	4.6				mg/L	13	Standard
I	127	41200.9	0.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		121.413	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		113.427	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		116.474
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.165
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606120605PS WG574690-01
Sample Date/Time: Wednesday, June 29, 2016 18:28:41
Number of Replicates: 3
Autosampler Position: 244
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85371.5	1.3				ug/L	74699	Standard
	Be	9	57838.5	0.7	**57.4989**	0.995	1.7	ug/L	8	Standard
	Al	27	8190235.3	0.9	**48.7593**	1.052	2.2	ug/L	1493	Standard
	Sc	45	74174.5	1.1				ug/L	61029	Standard
	Ti	47	9905.9	1.1	**22.7993**	0.140	0.6	ug/L	35	Standard
	V	51	615589.0	1.1	**71.2575**	1.604	2.3	ug/L	1435	Standard
	Cr	52	662720.1	2.0	**77.3523**	0.990	1.3	ug/L	7635	Standard
	Cr	53	81212.1	1.6	**76.6855**	0.228	0.3	ug/L	363	Standard
	Mn	55	2850355.8	1.2	**358.7372**	7.553	2.1	ug/L	747	Standard
	Co	59	453959.9	1.8	**60.2304**	1.747	2.9	ug/L	234	Standard
	Ni	60	139316.4	1.9	**65.0924**	0.607	0.9	ug/L	215	Standard
	Cu	65	189057.7	1.5	**88.9267**	0.405	0.5	ug/L	104	Standard
	Zn	66	476114.4	1.0	**381.6097**	5.307	1.4	ug/L	363	Standard
>	**Ge**	72	564919.1	1.3				ug/L	495142	Standard
	As	75	71672.0	0.5	**56.1469**	0.522	0.9	ug/L	-50	Standard
	Se	82	6681.0	0.4	**53.2203**	0.482	0.9	ug/L	14	Standard
	Se-1	77	4575.0	1.8	**54.2855**	1.161	2.1	ug/L	42	Standard
>	**Ga**	71	10925.6	2.3				mg/L	42	Standard
	Rb	85	119128.2	1.4				ug/L	17	Standard
	Y	89	658944.3	2.5				ug/L	417098	Standard
>	**Rh**	103	98.3	24.0				ug/L	13	Standard
	Mo	98	1073.3	2.3	**0.3534**	0.015	4.1	ug/L	11	Standard
	Ag	107	364831.9	0.7	**49.9049**	1.416	2.8	ug/L	68	Standard
	Cd	111	132655.1	1.4	**56.5569**	1.029	1.8	mg/L	2	Standard
	Cd	114	321468.3	0.7	**55.8946**	1.680	3.0	ug/L	12	Standard
>	**In**	115	659074.5	2.5				ug/L	587441	Standard
	Sn	118	1318.4	1.7	**0.1066**	0.008	7.5	ug/L	497	Standard
	Sb	123	258576.1	0.4	**49.3799**	1.200	2.4	ug/L	78	Standard
	Ba	135	409891.1	0.5	**178.5483**	4.068	2.3	ug/L	24	Standard
	Ce	140	929186.0	0.4				ug/L	25	Standard
>	**Tb**	159	1023915.1	1.8				ug/L	939701	Standard
	Ho	165	12935.5	3.1				ug/L	10	Standard
	Tl	203	455240.8	0.8	**52.4471**	0.837	1.6	ug/L	4	Standard
	Tl	205	420642.4	0.2	**55.8346**	0.392	0.7	ug/L	2	Standard
	Pb	206	614831.5	0.9	**109.2366**	1.843	1.7	ug/L	240	Standard
	Pb	207	503849.3	0.9	**100.7500**	1.617	1.6	ug/L	198	Standard
	Pb	208	2170185.0	1.2	**109.8441**	2.227	2.0	ug/L	883	Standard
	U	238	393858.5	1.0	**54.3381**	1.023	1.9	ug/L	3	Standard
>	**Bi**	209	551780.7	0.8				ug/L	523984	Standard

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Na	23	10.0	86.6	**95.2332**	83.153	87.3	mg/L	0	Standard
Mg	24	453.3	5.6	**0.4164**	0.027	6.4	mg/L	37	Standard
K	39	480.0	7.5	**0.7589**	0.067	8.8	mg/L	38	Standard
Ca	43	940.0	10.6	**46.3668**	5.650	12.2	mg/L	10	Standard
Fe	54	12349.5	1.2	**8.4763**	0.023	0.3	mg/L	179	Standard
Fe	57	3702.1	2.7	**9.2777**	0.167	1.8	mg/L	335	Standard
Sc-1	45	74174.5	1.1				mg/L	61029	Standard
Cl	35	30087.8	0.9				ug/L	20195	Standard
Kr	83	2.7	43.3				ug/L	4	Standard
Br	81	3260.4	2.1				ug/L	1547	Standard
P	31	20787.6	1.7				ug/L	15286	Standard
S	34	2500.2	2.8				ug/L	1572	Standard
Sr	88	245.0	12.4				ug/L	73	Standard
C	12	160.0	54.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	103.3	22.3				mg/L	3	Standard
Dy	164	20338.3	3.5				mg/L	6	Standard
Ho-1	165	12935.5	3.1				mg/L	10	Standard
Er	166	11817.9	3.9				mg/L	13	Standard
I	127	39775.5	3.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		114.288	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		114.092	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	112.194
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	105.305
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1606120605SDL WG574690-02
Sample Date/Time: Wednesday, June 29, 2016 18:31:53
Number of Replicates: 3
Autosampler Position: 245
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84476.5	1.1				ug/L	74699	Standard
	Be	9	178.3	18.7	**0.1869**	0.035	18.6	ug/L	8	Standard
	Al	27	1736036.7	3.1	**10.4319**	0.283	2.7	ug/L	1493	Standard
	Sc	45	72059.3	1.7				ug/L	61029	Standard
	Ti	47	2123.5	6.6	**4.6249**	0.308	6.7	ug/L	35	Standard
	V	51	32734.7	3.8	**3.4666**	0.135	3.9	ug/L	1435	Standard
	Cr	52	51911.1	1.7	**4.8949**	0.101	2.1	ug/L	7635	Standard
	Cr	53	5774.4	3.1	**4.9492**	0.156	3.2	ug/L	363	Standard
	Mn	55	492914.2	2.0	**59.6732**	1.219	2.0	ug/L	747	Standard
	Co	59	9193.8	6.0	**1.1391**	0.070	6.1	ug/L	234	Standard
	Ni	60	6665.5	3.0	**2.8840**	0.083	2.9	ug/L	215	Standard
	Cu	65	17774.1	0.7	**7.9654**	0.025	0.3	ug/L	104	Standard
	Zn	66	87339.7	0.8	**67.1049**	0.286	0.4	ug/L	363	Standard
>	**Ge**	72	585998.9	0.5				ug/L	495142	Standard
	As	75	970.2	5.1	**0.7914**	0.035	4.4	ug/L	-50	Standard
	Se	82	25.1	35.6	**0.0547**	0.068	124.2	ug/L	14	Standard
	Se-1	77	82.0	5.6	**0.3262**	0.050	15.4	ug/L	42	Standard
>	**Ga**	71	2373.5	5.4				mg/L	42	Standard
	Rb	85	23598.4	1.4				ug/L	17	Standard
	Y	89	515408.4	0.8				ug/L	417098	Standard
>	**Rh**	103	21.7	35.3				ug/L	13	Standard
	Mo	98	369.9	37.1	**0.1174**	0.046	39.0	ug/L	11	Standard
	Ag	107	699.0	38.5	**0.0822**	0.037	44.7	ug/L	68	Standard
	Cd	111	3080.1	3.0	**1.2985**	0.040	3.1	mg/L	2	Standard
	Cd	114	7389.1	5.7	**1.2756**	0.072	5.6	ug/L	12	Standard
>	**In**	115	662403.8	0.2				ug/L	587441	Standard
	Sn	118	660.0	13.5	**0.0055**	0.013	245.5	ug/L	497	Standard
	Sb	123	2141.2	12.8	**0.4025**	0.052	13.0	ug/L	78	Standard
	Ba	135	63716.0	0.4	**27.5914**	0.127	0.5	ug/L	24	Standard
	Ce	140	193219.3	1.3				ug/L	25	Standard
>	**Tb**	159	1027182.9	1.4				ug/L	939701	Standard
	Ho	165	2611.9	6.2				ug/L	10	Standard
	Tl	203	353.7	43.7	**0.0374**	0.017	46.4	ug/L	4	Standard
	Tl	205	421.7	67.1	**0.0541**	0.036	67.5	ug/L	2	Standard
	Pb	206	67035.7	2.8	**11.3788**	0.381	3.4	ug/L	240	Standard
	Pb	207	53097.6	2.6	**10.1377**	0.324	3.2	ug/L	198	Standard
	Pb	208	229986.8	1.7	**11.1165**	0.256	2.3	ug/L	883	Standard
	U	238	1351.4	18.8	**0.1748**	0.035	19.9	ug/L	3	Standard
>	**Bi**	209	574350.4	0.6				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	130.0	13.3	**0.0772**	0.020	26.0	mg/L	37	Standard
K	39	128.3	6.0	**0.1263**	0.018	14.2	mg/L	38	Standard
Ca	43	216.7	23.7	**9.0911**	2.889	31.8	mg/L	10	Standard
Fe	54	2661.6	0.9	**1.7733**	0.039	2.2	mg/L	179	Standard
Fe	57	965.0	5.3	**1.7027**	0.101	5.9	mg/L	335	Standard
> **Sc-1**	45	72059.3	1.7				mg/L	61029	Standard
Cl	35	30260.9	1.5				ug/L	20195	Standard
Kr	83	0.3	173.2				ug/L	4	Standard
Br	81	2210.2	10.2				ug/L	1547	Standard
P	31	20780.9	2.4				ug/L	15286	Standard
S	34	2430.2	2.3				ug/L	1572	Standard
Sr	88	83.3	13.9				ug/L	73	Standard
C	12	56.7	40.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	17.3				mg/L	3	Standard
Dy	164	4484.9	5.6				mg/L	6	Standard
Ho-1	165	2611.9	6.2				mg/L	10	Standard
Er	166	2556.9	13.6				mg/L	13	Standard
I	127	10483.6	6.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.090	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		118.350	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.761
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.612
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606120605SDL WG574690-02
Sample Date/Time: Wednesday, June 29, 2016 18:35:04
Number of Replicates: 3
Autosampler Position: 246
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83239.9	3.6				ug/L	74699	Standard
	Be	9	38.3	32.8	**0.0467**	0.013	27.9	ug/L	8	Standard
	Al	27	353337.7	1.0	**2.1460**	0.078	3.6	ug/L	1493	Standard
	Sc	45	70061.7	2.7				ug/L	61029	Standard
	Ti	47	444.3	5.4	**0.9019**	0.065	7.2	ug/L	35	Standard
	V	51	7638.3	1.2	**0.6761**	0.009	1.3	ug/L	1435	Standard
	Cr	52	17382.6	1.1	**0.9981**	0.034	3.5	ug/L	7635	Standard
	Cr	53	1533.4	2.6	**1.0999**	0.009	0.8	ug/L	363	Standard
	Mn	55	100723.4	1.5	**12.3208**	0.101	0.8	ug/L	747	Standard
	Co	59	1988.5	0.8	**0.2223**	0.008	3.5	ug/L	234	Standard
	Ni	60	1493.7	0.8	**0.5638**	0.012	2.1	ug/L	215	Standard
	Cu	65	3674.4	3.3	**1.5981**	0.060	3.8	ug/L	104	Standard
	Zn	66	19238.9	1.8	**14.7255**	0.173	1.2	ug/L	363	Standard
>	**Ge**	72	574541.2	2.2				ug/L	495142	Standard
	As	75	156.2	2.1	**0.1799**	0.005	2.7	ug/L	-50	Standard
	Se	82	23.9	29.5	**0.0491**	0.053	108.8	ug/L	14	Standard
	Se-1	77	58.0	21.2	**0.0603**	0.130	215.1	ug/L	42	Standard
>	**Ga**	71	518.3	4.3				mg/L	42	Standard
	Rb	85	4807.4	2.9				ug/L	17	Standard
	Y	89	501442.7	1.9				ug/L	417098	Standard
>	**Rh**	103	25.0	20.0				ug/L	13	Standard
	Mo	98	84.6	15.3	**0.0217**	0.004	18.8	ug/L	11	Standard
	Ag	107	254.3	9.6	**0.0208**	0.003	15.4	ug/L	68	Standard
	Cd	111	620.8	2.0	**0.2487**	0.004	1.5	mg/L	2	Standard
	Cd	114	1552.7	9.2	**0.2596**	0.025	9.8	ug/L	12	Standard
>	**In**	115	679737.8	0.5				ug/L	587441	Standard
	Sn	118	525.0	13.7	**-0.0171**	0.010	60.3	ug/L	497	Standard
	Sb	123	593.1	26.9	**0.1056**	0.030	28.3	ug/L	78	Standard
	Ba	135	12802.7	1.3	**5.3901**	0.099	1.8	ug/L	24	Standard
	Ce	140	39412.9	3.5				ug/L	25	Standard
>	**Tb**	159	1032176.9	1.0				ug/L	939701	Standard
	Ho	165	550.0	19.7				ug/L	10	Standard
	Tl	203	66.7	15.4	**0.0056**	0.001	20.8	ug/L	4	Standard
	Tl	205	78.3	41.0	**0.0102**	0.004	40.5	ug/L	2	Standard
	Pb	206	13522.4	0.6	**2.2309**	0.023	1.0	ug/L	240	Standard
	Pb	207	10801.2	2.0	**1.9994**	0.022	1.1	ug/L	198	Standard
	Pb	208	47468.1	0.8	**2.2283**	0.042	1.9	ug/L	883	Standard
	U	238	258.3	8.4	**0.0297**	0.002	8.2	ug/L	3	Standard
>	**Bi**	209	576211.7	1.3				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	46.7	16.4	**-0.0125**	0.009	74.1	mg/L	37	Standard
K	39	58.3	35.7	**-0.0022**	0.039	1787.9	mg/L	38	Standard
Ca	43	95.0	32.0	**2.7333**	1.777	65.0	mg/L	10	Standard
Fe	54	697.3	2.7	**0.3769**	0.020	5.3	mg/L	179	Standard
Fe	57	380.0	7.9	**0.0519**	0.104	201.0	mg/L	335	Standard
Sc-1	45	70061.7	2.7				mg/L	61029	Standard
Cl	35	30787.9	1.4				ug/L	20195	Standard
Kr	83	2.3	107.9				ug/L	4	Standard
Br	81	2130.1	1.6				ug/L	1547	Standard
P	31	20966.2	4.2				ug/L	15286	Standard
S	34	2485.2	3.8				ug/L	1572	Standard
Sr	88	90.0	33.3				ug/L	73	Standard
C	12	40.0	66.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	3	Standard
Dy	164	970.4	12.1				mg/L	6	Standard
Ho-1	165	550.0	19.7				mg/L	10	Standard
Er	166	480.0	14.6				mg/L	13	Standard
I	127	3620.4	13.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.434	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		116.036	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606120605SDL WG574690-02
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		115.712
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.967
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 18:38:18
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82768.9	2.2				ug/L	74699	Standard
	Be	9	55586.8	2.9	**56.9851**	0.437	0.8	ug/L	8	Standard
	Al	27	8619622.5	1.7	**52.9268**	0.666	1.3	ug/L	1493	Standard
	Sc	45	69535.9	1.6				ug/L	61029	Standard
	Ti	47	45959.0	2.5	**108.3957**	2.700	2.5	ug/L	35	Standard
	V	51	452339.2	1.9	**53.3985**	1.095	2.1	ug/L	1435	Standard
	Cr	52	452917.5	1.6	**53.6621**	0.813	1.5	ug/L	7635	Standard
	Cr	53	54972.9	2.4	**52.8966**	1.385	2.6	ug/L	363	Standard
	Mn	55	414134.0	1.2	**53.0785**	0.725	1.4	ug/L	747	Standard
	Co	59	411024.9	0.5	**55.6590**	0.257	0.5	ug/L	234	Standard
	Ni	60	111206.0	1.9	**53.0242**	0.984	1.9	ug/L	215	Standard
	Cu	65	110023.1	1.1	**52.7940**	0.716	1.4	ug/L	104	Standard
	Zn	66	64745.4	0.8	**52.5833**	0.259	0.5	ug/L	363	Standard
>	**Ge**	72	553341.4	0.3				ug/L	495142	Standard
	As	75	65551.1	0.4	**52.4265**	0.227	0.4	ug/L	-50	Standard
	Se	82	6664.4	1.0	**54.1963**	0.405	0.7	ug/L	14	Standard
	Se-1	77	4501.0	1.7	**54.5222**	0.959	1.8	ug/L	42	Standard
>	**Ga**	71	63.3	38.9				mg/L	42	Standard
	Rb	85	948.4	4.5				ug/L	17	Standard
	Y	89	490323.1	1.2				ug/L	417098	Standard
>	**Rh**	103	18.3	41.7				ug/L	13	Standard
	Mo	98	304786.5	0.3	**99.6729**	0.315	0.3	ug/L	11	Standard
	Ag	107	371315.6	1.3	**49.6520**	0.733	1.5	ug/L	68	Standard
	Cd	111	119443.2	1.0	**49.7891**	0.404	0.8	mg/L	2	Standard
	Cd	114	290803.0	0.5	**49.4253**	0.213	0.4	ug/L	12	Standard
>	**In**	115	673907.8	0.2				ug/L	587441	Standard
	Sn	118	339134.4	2.1	**50.5123**	1.079	2.1	ug/L	497	Standard
	Sb	123	262026.6	0.8	**48.9184**	0.455	0.9	ug/L	78	Standard
	Ba	135	111822.5	0.7	**47.6088**	0.434	0.9	ug/L	24	Standard
	Ce	140	206.7	14.6				ug/L	25	Standard
>	**Tb**	159	1024624.4	0.5				ug/L	939701	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	457896.5	0.3	**51.5737**	0.953	1.8	ug/L	4	Standard
	Tl	205	420019.2	1.0	**54.5041**	0.795	1.5	ug/L	2	Standard
	Pb	206	290158.6	1.2	**50.3552**	0.541	1.1	ug/L	240	Standard
	Pb	207	256755.7	1.2	**50.1530**	0.630	1.3	ug/L	198	Standard
	Pb	208	1071548.3	0.3	**52.9883**	1.261	2.4	ug/L	883	Standard
	U	238	389229.1	0.1	**52.5000**	1.135	2.2	ug/L	3	Standard
>	**Bi**	209	564495.9	2.1				ug/L	523984	Standard

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Na	23	1.7	173.2	**16.7614**	29.023	173.2	mg/L	0	Standard
Mg	24	4642.4	0.2	**5.1955**	0.100	1.9	mg/L	37	Standard
K	39	2168.5	2.0	**4.0939**	0.144	3.5	mg/L	38	Standard
Ca	43	86.7	35.3	**2.2659**	1.624	71.7	mg/L	10	Standard
Fe	54	7113.4	2.2	**5.1545**	0.030	0.6	mg/L	179	Standard
Fe	57	2041.8	2.3	**5.0193**	0.241	4.8	mg/L	335	Standard
Sc-1	45	69535.9	1.6				mg/L	61029	Standard
Cl	35	30041.8	1.0				ug/L	20195	Standard
Kr	83	1.3	86.6				ug/L	4	Standard
Br	81	1843.4	4.1				ug/L	1547	Standard
P	31	21683.8	2.5				ug/L	15286	Standard
S	34	2823.6	5.0				ug/L	1572	Standard
Sr	88	53.3	39.0				ug/L	73	Standard
C	12	53.3	78.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	12.9	179.7				mg/L	6	Standard
Ho-1	165	8.3	34.6				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	2093.5	24.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	113.970		
Al	27	105.854		
Sc	45			
Ti	47	108.396		
V	51	106.797		
Cr	52	107.324		
Cr	53			
Mn	55	106.157		
Co	59	111.318		
Ni	60	106.048		
Cu	65	105.588		
Zn	66	105.167		
Ge	72		111.754	
As	75	104.853		
Se	82	108.393		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	99.673		
Ag	107	99.304		
Cd	111	99.578		
Cd	114			
In	115		114.719	
Sn	118	101.025		
Sb	123	97.837		
Ba	135	95.218		
Ce	140			
Tb	159			
Ho	165			
Tl	203	103.147		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.977		
U	238	105.000		
Bi	209		107.731	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Co	59	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 18:41:29
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83048.8	2.8				ug/L	74699	Standard
	Be	9	23.3	68.9	**0.0313**	0.016	52.2	ug/L	8	Standard
	Al	27	3078.7	25.1	**0.0054**	0.004	78.6	ug/L	1493	Standard
	Sc	45	71367.7	1.6				ug/L	61029	Standard
	Ti	47	35.3	33.5	**-0.0277**	0.025	91.3	ug/L	35	Standard
	V	51	1419.9	5.2	**-0.0309**	0.006	18.5	ug/L	1435	Standard
	Cr	52	7844.0	0.2	**-0.0958**	0.021	21.7	ug/L	7635	Standard
	Cr	53	443.3	5.7	**0.0910**	0.034	37.3	ug/L	363	Standard
	Mn	55	990.7	12.0	**-0.0236**	0.012	50.6	ug/L	747	Standard
	Co	59	281.0	9.0	**-0.0000**	0.003	39793.0	ug/L	234	Standard
	Ni	60	196.7	7.3	**-0.0319**	0.005	14.4	ug/L	215	Standard
	Cu	65	145.3	12.4	**-0.0353**	0.007	21.2	ug/L	104	Standard
	Zn	66	464.0	9.4	**-0.0826**	0.026	32.0	ug/L	363	Standard
>	**Ge**	72	564975.6	2.4				ug/L	495142	Standard
	As	75	-39.3	63.0	**0.0286**	0.020	68.3	ug/L	-50	Standard
	Se	82	26.6	20.4	**0.0737**	0.038	51.8	ug/L	14	Standard
	Se-1	77	58.7	15.8	**0.0805**	0.100	124.7	ug/L	42	Standard
>	**Ga**	71	41.7	25.0				mg/L	42	Standard
	Rb	85	35.0	75.6				ug/L	17	Standard
	Y	89	486175.7	0.9				ug/L	417098	Standard
>	**Rh**	103	21.7	58.1				ug/L	13	Standard
	Mo	98	275.2	23.2	**0.0821**	0.020	24.6	ug/L	11	Standard
	Ag	107	144.3	16.7	**0.0059**	0.003	51.4	ug/L	68	Standard
	Cd	111	18.2	29.8	**-0.0005**	0.002	416.8	mg/L	2	Standard
	Cd	114	40.0	61.5	**0.0045**	0.004	89.7	ug/L	12	Standard
>	**In**	115	690622.1	0.6				ug/L	587441	Standard
	Sn	118	806.7	10.4	**0.0228**	0.013	56.6	ug/L	497	Standard
	Sb	123	553.4	29.9	**0.0967**	0.030	31.3	ug/L	78	Standard
	Ba	135	70.0	42.9	**0.0130**	0.012	94.6	ug/L	24	Standard
	Ce	140	61.7	54.0				ug/L	25	Standard
>	**Tb**	159	1047202.6	1.6				ug/L	939701	Standard
	Ho	165	16.7	34.6				ug/L	10	Standard
	Tl	203	75.3	48.5	**0.0063**	0.004	58.9	ug/L	4	Standard
	Tl	205	73.3	27.6	**0.0093**	0.002	26.3	ug/L	2	Standard
	Pb	206	333.0	14.3	**-0.0156**	0.007	42.7	ug/L	240	Standard
	Pb	207	293.0	14.2	**-0.0150**	0.006	43.1	ug/L	198	Standard
	Pb	208	1234.7	14.5	**-0.0154**	0.007	47.2	ug/L	883	Standard
	U	238	61.3	33.0	**0.0035**	0.002	69.2	ug/L	3	Standard
>	**Bi**	209	587080.9	2.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	38.3	15.1	**-0.0227**	0.007	30.4	mg/L	37	Standard
K	39	33.3	22.9	**-0.0512**	0.014	27.0	mg/L	38	Standard
Ca	43	28.3	50.9	**-0.9868**	0.802	81.3	mg/L	10	Standard
Fe	54	132.7	11.9	**-0.0421**	0.011	25.9	mg/L	179	Standard
Fe	57	280.0	10.7	**-0.2593**	0.100	38.4	mg/L	335	Standard
Sc-1	45	71367.7	1.6				mg/L	61029	Standard
Cl	35	29768.6	1.4				ug/L	20195	Standard
Kr	83	1.3	173.2				ug/L	4	Standard
Br	81	2106.8	7.7				ug/L	1547	Standard
P	31	21775.6	2.2				ug/L	15286	Standard
S	34	2523.5	3.0				ug/L	1572	Standard
Sr	88	70.0	49.5				ug/L	73	Standard
C	12	66.7	48.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	19.2	48.3				mg/L	6	Standard
Ho-1	165	16.7	34.6				mg/L	10	Standard
Er	166	16.7	91.7				mg/L	13	Standard
I	127	1905.1	33.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		114.104	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		117.564
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		112.042
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606120701
Sample Date/Time: Wednesday, June 29, 2016 18:44:42
Number of Replicates: 3
Autosampler Position: 247
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82529.2	0.7				ug/L	74699	Standard
	Be	9	748.4	11.5	**0.7773**	0.092	11.9	ug/L	8	Standard
	Al	27	5186124.5	1.1	**31.9282**	0.368	1.2	ug/L	1493	Standard
	Sc	45	73214.8	0.3				ug/L	61029	Standard
	Ti	47	12465.8	1.5	**28.7779**	0.271	0.9	ug/L	35	Standard
	V	51	254152.3	1.7	**29.3595**	0.344	1.2	ug/L	1435	Standard
	Cr	52	145419.2	1.0	**16.2106**	0.127	0.8	ug/L	7635	Standard
	Cr	53	17483.4	2.8	**16.2818**	0.208	1.3	ug/L	363	Standard
	Mn	55	3993207.5	1.0	**503.6001**	3.344	0.7	ug/L	747	Standard
	Co	59	68748.0	1.0	**9.1067**	0.083	0.9	ug/L	234	Standard
	Ni	60	27938.1	3.3	**12.9787**	0.214	1.6	ug/L	215	Standard
	Cu	65	24664.7	1.5	**11.5352**	0.050	0.4	ug/L	104	Standard
	Zn	66	148101.8	1.7	**118.6204**	0.288	0.2	ug/L	363	Standard
>	**Ge**	72	563786.2	1.7				ug/L	495142	Standard
	As	75	6453.5	1.8	**5.1196**	0.031	0.6	ug/L	-50	Standard
	Se	82	62.5	2.1	**0.3624**	0.012	3.2	ug/L	14	Standard
	Se-1	77	114.0	16.7	**0.7504**	0.247	32.9	ug/L	42	Standard
>	**Ga**	71	11409.3	2.4				mg/L	42	Standard
	Rb	85	132848.2	0.6				ug/L	17	Standard
	Y	89	719521.7	0.4				ug/L	417098	Standard
>	**Rh**	103	43.3	43.7				ug/L	13	Standard
	Mo	98	809.7	3.4	**0.2640**	0.011	4.2	ug/L	11	Standard
	Ag	107	5298.9	1.5	**0.7088**	0.004	0.5	ug/L	68	Standard
	Cd	111	3980.4	2.6	**1.6822**	0.055	3.3	mg/L	2	Standard
	Cd	114	9713.7	1.4	**1.6793**	0.030	1.8	ug/L	12	Standard
>	**In**	115	661793.4	1.1				ug/L	587441	Standard
	Sn	118	911.7	2.8	**0.0439**	0.005	10.9	ug/L	497	Standard
	Sb	123	350.1	17.1	**0.0624**	0.012	19.0	ug/L	78	Standard
	Ba	135	341983.5	0.6	**148.3035**	0.748	0.5	ug/L	24	Standard
	Ce	140	2710163.1	0.4				ug/L	25	Standard
>	**Tb**	159	1034801.7	0.1				ug/L	939701	Standard
	Ho	165	19319.0	1.7				ug/L	10	Standard
	Tl	203	872.7	2.5	**0.0967**	0.002	2.5	ug/L	4	Standard
	Tl	205	843.4	5.5	**0.1098**	0.006	5.6	ug/L	2	Standard
	Pb	206	283131.4	1.0	**49.2257**	0.472	1.0	ug/L	240	Standard
	Pb	207	230315.5	1.3	**45.0642**	0.519	1.2	ug/L	198	Standard
	Pb	208	999318.0	0.9	**49.4947**	0.507	1.0	ug/L	883	Standard
	U	238	4899.8	1.7	**0.6576**	0.010	1.6	ug/L	3	Standard
>	**Bi**	209	563366.5	0.2				ug/L	523984	Standard

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Na	23	5.0	0.0	**48.0405**	0.159	0.3	mg/L	0	Standard
Mg	24	875.0	7.7	**0.8766**	0.075	8.6	mg/L	37	Standard
K	39	536.7	5.1	**0.8747**	0.054	6.2	mg/L	38	Standard
Ca	43	571.7	16.7	**27.5670**	4.925	17.9	mg/L	10	Standard
Fe	54	14788.8	1.9	**10.3138**	0.228	2.2	mg/L	179	Standard
Fe	57	4073.9	8.9	**10.4697**	1.059	10.1	mg/L	335	Standard
> **Sc-1**	45	73214.8	0.3				mg/L	61029	Standard
Cl	35	28264.3	0.5				ug/L	20195	Standard
Kr	83	2.0	0.0				ug/L	4	Standard
Br	81	3023.6	7.8				ug/L	1547	Standard
P	31	20599.0	2.2				ug/L	15286	Standard
S	34	2595.2	1.7				ug/L	1572	Standard
Sr	88	203.3	16.4				ug/L	73	Standard
C	12	130.0	40.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	150.0	43.7				mg/L	3	Standard
Dy	164	31532.4	1.2				mg/L	6	Standard
Ho-1	165	19319.0	1.7				mg/L	10	Standard
Er	166	17720.4	2.1				mg/L	13	Standard
I	127	25842.0	0.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.483	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		113.863	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	112.657
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	107.516
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606120701
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Method 6020 - Summary Report

Sample ID: L1606120702
Sample Date/Time: Wednesday, June 29, 2016 18:47:54
Number of Replicates: 3
Autosampler Position: 248
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85381.8	3.5				ug/L	74699	Standard
	Be	9	623.3	3.3	**0.6272**	0.018	2.8	ug/L	8	Standard
	Al	27	4620203.8	1.9	**27.5041**	0.647	2.4	ug/L	1493	Standard
	Sc	45	75576.5	3.2				ug/L	61029	Standard
	Ti	47	6206.6	0.5	**14.3105**	0.192	1.3	ug/L	35	Standard
	V	51	134133.3	1.8	**15.4410**	0.153	1.0	ug/L	1435	Standard
	Cr	52	96500.3	0.7	**10.4416**	0.108	1.0	ug/L	7635	Standard
	Cr	53	11224.2	2.7	**10.3669**	0.448	4.3	ug/L	363	Standard
	Mn	55	3577332.4	1.7	**452.2740**	8.609	1.9	ug/L	747	Standard
	Co	59	47345.9	1.4	**6.2757**	0.086	1.4	ug/L	234	Standard
	Ni	60	24689.4	1.0	**11.4869**	0.101	0.9	ug/L	215	Standard
	Cu	65	29948.9	2.1	**14.0640**	0.244	1.7	ug/L	104	Standard
	Zn	66	164514.2	1.7	**132.1464**	1.033	0.8	ug/L	363	Standard
>	**Ge**	72	562390.3	1.6				ug/L	495142	Standard
	As	75	2776.0	3.7	**2.2412**	0.056	2.5	ug/L	-50	Standard
	Se	82	106.3	15.9	**0.7139**	0.124	17.3	ug/L	14	Standard
	Se-1	77	132.3	11.0	**0.9743**	0.190	19.5	ug/L	42	Standard
>	**Ga**	71	12940.5	1.1				mg/L	42	Standard
	Rb	85	250383.8	1.2				ug/L	17	Standard
	Y	89	695657.2	0.8				ug/L	417098	Standard
>	**Rh**	103	35.0	62.3				ug/L	13	Standard
	Mo	98	1645.8	3.3	**0.5188**	0.023	4.4	ug/L	11	Standard
	Ag	107	671.7	7.7	**0.0746**	0.007	9.4	ug/L	68	Standard
	Cd	111	2017.5	2.8	**0.8116**	0.028	3.5	mg/L	2	Standard
	Cd	114	4822.6	1.0	**0.7964**	0.005	0.7	ug/L	12	Standard
>	**In**	115	691832.3	1.1				ug/L	587441	Standard
	Sn	118	616.7	6.1	**-0.0050**	0.006	126.3	ug/L	497	Standard
	Sb	123	493.2	8.1	**0.0855**	0.008	9.1	ug/L	78	Standard
	Ba	135	281871.8	0.7	**116.9321**	1.732	1.5	ug/L	24	Standard
	Ce	140	1017603.0	1.2				ug/L	25	Standard
>	**Tb**	159	1062512.9	1.9				ug/L	939701	Standard
	Ho	165	14416.9	1.8				ug/L	10	Standard
	Tl	203	1059.0	3.0	**0.1166**	0.005	4.1	ug/L	4	Standard
	Tl	205	896.7	14.9	**0.1158**	0.019	16.8	ug/L	2	Standard
	Pb	206	100858.6	1.2	**17.3191**	0.532	3.1	ug/L	240	Standard
	Pb	207	81475.8	1.0	**15.7413**	0.458	2.9	ug/L	198	Standard
	Pb	208	356757.6	0.9	**17.4487**	0.446	2.6	ug/L	883	Standard
	U	238	6683.8	3.5	**0.8902**	0.048	5.4	ug/L	3	Standard
>	**Bi**	209	569106.4	1.9				ug/L	523984	Standard

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Na	23	3.3	86.6	**31.5301**	27.313	86.6	mg/L	0	Standard
Mg	24	745.0	7.0	**0.7121**	0.061	8.5	mg/L	37	Standard
K	39	773.4	6.0	**1.2683**	0.120	9.5	mg/L	38	Standard
Ca	43	171.7	3.4	**6.2441**	0.546	8.7	mg/L	10	Standard
Fe	54	10724.1	1.5	**7.2104**	0.318	4.4	mg/L	179	Standard
Fe	57	2831.9	1.0	**6.7023**	0.187	2.8	mg/L	335	Standard
> **Sc-1**	45	75576.5	3.2				mg/L	61029	Standard
Cl	35	27596.4	1.5				ug/L	20195	Standard
Kr	83	4.0	66.1				ug/L	4	Standard
Br	81	8432.3	2.7				ug/L	1547	Standard
P	31	20674.1	3.5				ug/L	15286	Standard
S	34	2360.2	7.8				ug/L	1572	Standard
Sr	88	120.0	18.2				ug/L	73	Standard
C	12	350.0	15.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	106.7	43.3				mg/L	3	Standard
Dy	164	23142.4	1.5				mg/L	6	Standard
Ho-1	165	14416.9	1.8				mg/L	10	Standard
Er	166	13422.6	4.3				mg/L	13	Standard
I	127	174464.7	3.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.301	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		113.582	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	117.770
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	108.611
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606120801
Sample Date/Time: Wednesday, June 29, 2016 18:51:05
Number of Replicates: 3
Autosampler Position: 249
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83030.4	3.3				ug/L	74699	Standard
	Be	9	1115.0	11.0	**1.1453**	0.091	8.0	ug/L	8	Standard
	Al	27	17314833.4	0.9	**106.0421**	2.666	2.5	ug/L	1493	Standard
	Sc	45	77183.1	5.1				ug/L	61029	Standard
	Ti	47	40548.2	1.5	**95.7436**	2.793	2.9	ug/L	35	Standard
	V	51	251782.0	1.4	**29.6946**	1.634	5.5	ug/L	1435	Standard
	Cr	52	243737.7	2.0	**28.4388**	0.710	2.5	ug/L	7635	Standard
	Cr	53	29872.8	2.3	**28.6239**	0.690	2.4	ug/L	363	Standard
	Mn	55	3685844.9	1.5	**474.5740**	27.736	5.8	ug/L	747	Standard
	Co	59	66271.6	1.6	**8.9620**	0.528	5.9	ug/L	234	Standard
	Ni	60	46026.2	2.6	**21.8948**	0.433	2.0	ug/L	215	Standard
	Cu	65	42002.8	1.5	**20.1164**	0.608	3.0	ug/L	104	Standard
	Zn	66	111824.0	2.6	**91.2379**	1.710	1.9	ug/L	363	Standard
>	**Ge**	72	553103.7	4.4				ug/L	495142	Standard
	As	75	5557.5	3.1	**4.5033**	0.093	2.1	ug/L	-50	Standard
	Se	82	102.2	5.1	**0.6977**	0.072	10.3	ug/L	14	Standard
	Se-1	77	134.3	12.1	**1.0314**	0.270	26.2	ug/L	42	Standard
>	**Ga**	71	24266.1	1.0				mg/L	42	Standard
	Rb	85	181545.0	2.7				ug/L	17	Standard
	Y	89	698995.8	3.0				ug/L	417098	Standard
>	**Rh**	103	88.3	6.5				ug/L	13	Standard
	Mo	98	2397.1	2.7	**0.8492**	0.049	5.8	ug/L	11	Standard
	Ag	107	1012.7	3.0	**0.1348**	0.009	6.5	ug/L	68	Standard
	Cd	111	911.2	3.1	**0.4060**	0.012	2.9	mg/L	2	Standard
	Cd	114	2080.2	4.3	**0.3830**	0.011	2.9	ug/L	12	Standard
>	**In**	115	618664.5	3.1				ug/L	587441	Standard
	Sn	118	1240.1	3.1	**0.1071**	0.013	12.0	ug/L	497	Standard
	Sb	123	1640.7	2.7	**0.3299**	0.019	5.8	ug/L	78	Standard
	Ba	135	534847.9	1.0	**248.3132**	9.882	4.0	ug/L	24	Standard
	Ce	140	1227932.9	1.4				ug/L	25	Standard
>	**Tb**	159	991058.9	3.3				ug/L	939701	Standard
	Ho	165	19152.1	0.5				ug/L	10	Standard
	Tl	203	1084.7	2.8	**0.1294**	0.004	2.8	ug/L	4	Standard
	Tl	205	976.7	6.4	**0.1361**	0.004	2.8	ug/L	2	Standard
	Pb	206	122644.8	1.6	**22.8364**	1.340	5.9	ug/L	240	Standard
	Pb	207	98294.5	1.0	**20.5914**	1.111	5.4	ug/L	198	Standard
	Pb	208	423360.3	0.4	**22.4444**	1.000	4.5	ug/L	883	Standard
	U	238	7556.2	1.8	**1.0902**	0.045	4.1	ug/L	3	Standard
>	**Bi**	209	526041.8	4.3				ug/L	523984	Standard

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Na	23	10.0	50.0	**92.8331**	50.540	54.4	mg/L	0	Standard
Mg	24	373.3	13.0	**0.3164**	0.050	15.9	mg/L	37	Standard
K	39	846.7	3.0	**1.3673**	0.064	4.7	mg/L	38	Standard
Ca	43	1881.8	8.7	**91.3781**	4.657	5.1	mg/L	10	Standard
Fe	54	16605.4	3.8	**11.0236**	0.942	8.5	mg/L	179	Standard
Fe	57	5247.6	6.9	**13.0290**	0.645	4.9	mg/L	335	Standard
> **Sc-1**	45	77183.1	5.1				mg/L	61029	Standard
Cl	35	28165.5	0.9				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	3540.4	14.7				ug/L	1547	Standard
P	31	23239.5	5.6				ug/L	15286	Standard
S	34	2426.9	3.5				ug/L	1572	Standard
Sr	88	415.0	11.5				ug/L	73	Standard
C	12	173.3	6.7				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	66.7	60.6				mg/L	3	Standard
Dy	164	30988.1	3.0				mg/L	6	Standard
Ho-1	165	19152.1	0.5				mg/L	10	Standard
Er	166	17717.0	2.5				mg/L	13	Standard
I	127	27493.3	1.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.154	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.706	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	105.315	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.393	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606120802
Sample Date/Time: Wednesday, June 29, 2016 18:54:17
Number of Replicates: 3
Autosampler Position: 250
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88923.6	2.8				ug/L	74699	Standard
	Be	9	661.7	11.4	**0.6387**	0.067	10.5	ug/L	8	Standard
	Al	27	15492795.6	1.0	**88.5762**	1.812	2.0	ug/L	1493	Standard
	Sc	45	80386.0	1.0				ug/L	61029	Standard
	Ti	47	20524.2	1.6	**45.7756**	1.470	3.2	ug/L	35	Standard
	V	51	220306.5	1.3	**24.5176**	0.534	2.2	ug/L	1435	Standard
	Cr	52	643370.5	1.6	**72.5457**	2.733	3.8	ug/L	7635	Standard
	Cr	53	78035.6	3.0	**71.2237**	3.200	4.5	ug/L	363	Standard
	Mn	55	3332205.3	1.0	**405.3306**	7.931	2.0	ug/L	747	Standard
	Co	59	49008.5	0.3	**6.2510**	0.159	2.5	ug/L	234	Standard
	Ni	60	36936.6	2.2	**16.5952**	0.689	4.2	ug/L	215	Standard
	Cu	65	48506.2	1.8	**21.9786**	0.680	3.1	ug/L	104	Standard
	Zn	66	431997.7	0.4	**334.6356**	8.273	2.5	ug/L	363	Standard
>	**Ge**	72	584593.6	2.3				ug/L	495142	Standard
	As	75	4706.8	0.7	**3.6196**	0.063	1.8	ug/L	-50	Standard
	Se	82	170.0	3.4	**1.1737**	0.017	1.5	ug/L	14	Standard
	Se-1	77	180.7	11.7	**1.4743**	0.259	17.6	ug/L	42	Standard
>	**Ga**	71	19881.4	1.3				mg/L	42	Standard
	Rb	85	200103.0	1.8				ug/L	17	Standard
	Y	89	657665.4	0.6				ug/L	417098	Standard
>	**Rh**	103	171.7	7.3				ug/L	13	Standard
	Mo	98	1216.9	1.5	**0.3934**	0.011	2.8	ug/L	11	Standard
	Ag	107	1006.0	3.7	**0.1221**	0.007	5.4	ug/L	68	Standard
	Cd	111	4519.9	2.1	**1.8818**	0.049	2.6	mg/L	2	Standard
	Cd	114	11256.2	1.6	**1.9163**	0.030	1.6	ug/L	12	Standard
>	**In**	115	672127.4	1.5				ug/L	587441	Standard
	Sn	118	1105.0	15.3	**0.0707**	0.026	36.7	ug/L	497	Standard
	Sb	123	229.1	10.3	**0.0387**	0.005	12.5	ug/L	78	Standard
	Ba	135	361495.2	1.1	**154.3886**	3.928	2.5	ug/L	24	Standard
	Ce	140	936346.8	0.9				ug/L	25	Standard
>	**Tb**	159	1070983.4	3.2				ug/L	939701	Standard
	Ho	165	13711.2	2.1				ug/L	10	Standard
	Tl	203	1023.7	3.8	**0.1103**	0.006	5.8	ug/L	4	Standard
	Tl	205	995.0	4.8	**0.1256**	0.007	5.2	ug/L	2	Standard
	Pb	206	1451242.4	0.5	**244.9779**	5.608	2.3	ug/L	240	Standard
	Pb	207	1189055.7	0.7	**225.9168**	5.756	2.5	ug/L	198	Standard
	Pb	208	5216722.9	1.2	**250.8847**	7.037	2.8	ug/L	883	Standard
	U	238	9013.7	1.2	**1.1768**	0.034	2.9	ug/L	3	Standard
>	**Bi**	209	581076.6	1.9				ug/L	523984	Standard

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Na	23	6.7	173.2	**57.8631**	100.213	173.2	mg/L	0	Standard
Mg	24	553.3	14.7	**0.4776**	0.083	17.4	mg/L	37	Standard
K	39	1005.0	9.9	**1.5724**	0.167	10.6	mg/L	38	Standard
Ca	43	1240.1	6.3	**56.9237**	3.160	5.6	mg/L	10	Standard
Fe	54	17498.7	0.5	**11.1262**	0.159	1.4	mg/L	179	Standard
Fe	57	5124.2	2.5	**12.1481**	0.285	2.3	mg/L	335	Standard
Sc-1	45	80386.0	1.0				mg/L	61029	Standard
Cl	35	28790.7	0.3				ug/L	20195	Standard
Kr	83	3.0	33.3				ug/L	4	Standard
Br	81	8875.9	6.3				ug/L	1547	Standard
P	31	20292.0	8.4				ug/L	15286	Standard
S	34	2478.5	4.1				ug/L	1572	Standard
Sr	88	438.3	2.4				ug/L	73	Standard
C	12	323.3	22.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	136.7	34.6				mg/L	3	Standard
Dy	164	22618.6	1.5				mg/L	6	Standard
Ho-1	165	13711.2	2.1				mg/L	10	Standard
Er	166	12578.6	1.5				mg/L	13	Standard
I	127	73652.8	8.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		119.043	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		118.066	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.416
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.896
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1606129101
Sample Date/Time: Wednesday, June 29, 2016 18:57:28
Number of Replicates: 3
Autosampler Position: 251
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89580.8	1.7				ug/L	74699	Standard
	Be	9	360.0	14.7	**0.3489**	0.053	15.3	ug/L	8	Standard
	Al	27	3187676.8	1.0	**18.0772**	0.341	1.9	ug/L	1493	Standard
	Sc	45	73445.9	1.6				ug/L	61029	Standard
	Ti	47	23807.7	6.7	**54.3513**	2.712	5.0	ug/L	35	Standard
	V	51	62405.7	2.9	**6.9715**	0.072	1.0	ug/L	1435	Standard
	Cr	52	100378.5	1.9	**10.7261**	0.052	0.5	ug/L	7635	Standard
	Cr	53	11571.1	3.7	**10.5314**	0.357	3.4	ug/L	363	Standard
	Mn	55	3995310.3	0.7	**497.7426**	6.886	1.4	ug/L	747	Standard
	Co	59	12689.3	1.5	**1.6298**	0.018	1.1	ug/L	234	Standard
	Ni	60	15702.5	1.8	**7.1516**	0.026	0.4	ug/L	215	Standard
	Cu	65	1030601.6	2.5	**480.2115**	2.610	0.5	ug/L	104	Standard
	Zn	66	647092.9	2.6	**513.3926**	3.363	0.7	ug/L	363	Standard
>	**Ge**	72	570780.0	2.0				ug/L	495142	Standard
	As	75	23305.2	1.3	**18.1104**	0.138	0.8	ug/L	-50	Standard
	Se	82	481.4	2.5	**3.6678**	0.121	3.3	ug/L	14	Standard
	Se-1	77	377.3	9.1	**3.8600**	0.402	10.4	ug/L	42	Standard
>	**Ga**	71	43582.7	4.5				mg/L	42	Standard
	Rb	85	26201.0	3.0				ug/L	17	Standard
	Y	89	551000.5	1.0				ug/L	417098	Standard
>	**Rh**	103	178.3	18.7				ug/L	13	Standard
	Mo	98	21134.4	1.3	**6.6476**	0.191	2.9	ug/L	11	Standard
	Ag	107	15204.6	2.3	**1.9441**	0.032	1.6	ug/L	68	Standard
	Cd	111	1466.1	5.3	**0.5801**	0.025	4.4	mg/L	2	Standard
	Cd	114	3712.7	3.5	**0.6050**	0.007	1.1	ug/L	12	Standard
>	**In**	115	700391.9	2.5				ug/L	587441	Standard
	Sn	118	18187.6	2.5	**2.5189**	0.131	5.2	ug/L	497	Standard
	Sb	123	7709.0	2.8	**1.3807**	0.022	1.6	ug/L	78	Standard
	Ba	135	971846.2	1.7	**398.2918**	4.112	1.0	ug/L	24	Standard
	Ce	140	138638.2	1.7				ug/L	25	Standard
>	**Tb**	159	1070571.9	3.6				ug/L	939701	Standard
	Ho	165	2720.2	8.8				ug/L	10	Standard
	Tl	203	657.3	30.6	**0.0422**	0.014	32.0	ug/L	4	Standard
	Tl	205	563.3	26.0	**0.0436**	0.011	26.1	ug/L	2	Standard
	Pb	206	89328.6	2.2	**9.1434**	0.147	1.6	ug/L	240	Standard
	Pb	207	72922.4	1.4	**8.3969**	0.107	1.3	ug/L	198	Standard
	Pb	208	316979.9	0.6	**9.2432**	0.217	2.4	ug/L	883	Standard
	U	238	78871.8	1.7	**6.3120**	0.222	3.5	ug/L	3	Standard
>	**Bi**	209	950965.0	2.0				ug/L	523984	Standard

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Na	23	5.0	173.2	**48.7719**	84.467	173.2	mg/L	0	Standard
Mg	24	613.3	9.8	**0.5934**	0.073	12.3	mg/L	37	Standard
K	39	323.3	7.3	**0.4798**	0.044	9.2	mg/L	38	Standard
Ca	43	198.3	14.8	**7.8949**	1.614	20.4	mg/L	10	Standard
Fe	54	8830.8	5.5	**6.0856**	0.392	6.4	mg/L	179	Standard
Fe	57	2530.2	2.9	**6.0730**	0.228	3.8	mg/L	335	Standard
Sc-1	45	73445.9	1.6				mg/L	61029	Standard
Cl	35	25952.9	0.3				ug/L	20195	Standard
Kr	83	2.0	100.0				ug/L	4	Standard
Br	81	8005.5	5.5				ug/L	1547	Standard
P	31	19060.3	1.8				ug/L	15286	Standard
S	34	1756.8	1.0				ug/L	1572	Standard
Sr	88	518.3	2.8				ug/L	73	Standard
C	12	1226.7	9.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1270.1	11.0				mg/L	3	Standard
Dy	164	4157.3	8.4				mg/L	6	Standard
Ho-1	165	2720.2	8.8				mg/L	10	Standard
Er	166	2643.6	8.4				mg/L	13	Standard
I	127	191520.8	4.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		119.923	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		115.276	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	119.228
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	181.487
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Cu 65 Upper, S, EEE	Cu	65	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135	
Bi 209 Int Std for sample	Bi	209	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606138101
Sample Date/Time: Wednesday, June 29, 2016 19:00:40
Number of Replicates: 3
Autosampler Position: 252
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	96098.8	1.2				ug/L	74699	Standard
	Be	9	1650.1	8.9	**1.4642**	0.124	8.5	ug/L	8	Standard
	Al	27	23502208.7	0.7	**124.3024**	1.056	0.8	ug/L	1493	Standard
	Sc	45	81510.4	1.4				ug/L	61029	Standard
	Ti	47	9357.2	0.5	**21.1737**	0.376	1.8	ug/L	35	Standard
	V	51	257600.4	1.3	**29.2098**	0.781	2.7	ug/L	1435	Standard
	Cr	52	224787.2	0.6	**25.1231**	0.400	1.6	ug/L	7635	Standard
	Cr	53	27600.1	3.0	**25.4059**	0.410	1.6	ug/L	363	Standard
	Mn	55	5543699.6	0.4	**686.2289**	8.924	1.3	ug/L	747	Standard
	Co	59	117640.6	0.9	**15.3216**	0.399	2.6	ug/L	234	Standard
	Ni	60	64249.3	0.8	**29.4562**	0.340	1.2	ug/L	215	Standard
	Cu	65	57365.7	1.4	**26.4629**	0.232	0.9	ug/L	104	Standard
	Zn	66	103406.0	1.2	**81.1457**	1.055	1.3	ug/L	363	Standard
>	**Ge**	72	574477.7	1.7				ug/L	495142	Standard
	As	75	12246.4	0.5	**9.4841**	0.110	1.2	ug/L	-50	Standard
	Se	82	125.1	3.5	**0.8446**	0.024	2.8	ug/L	14	Standard
	Se-1	77	164.3	2.5	**1.3176**	0.070	5.3	ug/L	42	Standard
>	**Ga**	71	29587.2	2.2				mg/L	42	Standard
	Rb	85	313937.1	2.6				ug/L	17	Standard
	Y	89	822636.0	0.8				ug/L	417098	Standard
>	**Rh**	103	38.3	49.4				ug/L	13	Standard
	Mo	98	757.2	4.8	**0.2454**	0.010	4.2	ug/L	11	Standard
	Ag	107	953.4	1.4	**0.1164**	0.003	2.3	ug/L	68	Standard
	Cd	111	1588.5	0.6	**0.6638**	0.009	1.4	mg/L	2	Standard
	Cd	114	3783.2	0.8	**0.6501**	0.009	1.4	ug/L	12	Standard
>	**In**	115	664448.0	1.0				ug/L	587441	Standard
	Sn	118	643.3	5.2	**0.0026**	0.004	152.2	ug/L	497	Standard
	Sb	123	269.8	13.5	**0.0469**	0.007	15.6	ug/L	78	Standard
	Ba	135	662128.9	0.5	**286.0118**	2.987	1.0	ug/L	24	Standard
	Ce	140	1687892.1	1.1				ug/L	25	Standard
>	**Tb**	159	1062435.8	0.8				ug/L	939701	Standard
	Ho	165	27182.7	2.2				ug/L	10	Standard
	Tl	203	1364.1	4.3	**0.1521**	0.007	4.3	ug/L	4	Standard
	Tl	205	1335.1	6.0	**0.1737**	0.010	5.7	ug/L	2	Standard
	Pb	206	284182.0	0.3	**49.3998**	0.214	0.4	ug/L	240	Standard
	Pb	207	234533.7	1.0	**45.8828**	0.448	1.0	ug/L	198	Standard
	Pb	208	1023299.4	0.1	**50.6751**	0.295	0.6	ug/L	883	Standard
	U	238	6312.3	2.1	**0.8483**	0.014	1.7	ug/L	3	Standard
>	**Bi**	209	563477.4	0.7				ug/L	523984	Standard

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Na	23	3.3	86.6	**28.8214**	24.963	86.6	mg/L	0	Standard
Mg	24	151.7	18.2	**0.0816**	0.027	33.5	mg/L	37	Standard
K	39	1206.7	9.1	**1.8839**	0.198	10.5	mg/L	38	Standard
Ca	43	230.0	38.1	**8.3188**	4.002	48.1	mg/L	10	Standard
Fe	54	27991.0	1.6	**17.6350**	0.523	3.0	mg/L	179	Standard
Fe	57	7366.8	1.7	**17.6771**	0.511	2.9	mg/L	335	Standard
Sc-1	45	81510.4	1.4				mg/L	61029	Standard
Cl	35	28359.2	2.3				ug/L	20195	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	4510.7	3.7				ug/L	1547	Standard
P	31	20567.3	1.1				ug/L	15286	Standard
S	34	2398.5	2.1				ug/L	1572	Standard
Sr	88	138.3	12.7				ug/L	73	Standard
C	12	220.0	4.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	113.3	35.7				mg/L	3	Standard
Dy	164	44981.5	2.0				mg/L	6	Standard
Ho-1	165	27182.7	2.2				mg/L	10	Standard
Er	166	24606.7	4.9				mg/L	13	Standard
I	127	24668.4	3.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		128.648	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		116.023	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.109
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.537
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606138101
Sample Date/Time: Wednesday, June 29, 2016 19:03:51
Number of Replicates: 3
Autosampler Position: 253
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89738.3	1.4				ug/L	74699	Standard
	Be	9	41.7	6.9	**0.0470**	0.003	6.5	ug/L	8	Standard
	Al	27	505536.2	3.8	**2.8498**	0.087	3.1	ug/L	1493	Standard
	Sc	45	72476.3	1.0				ug/L	61029	Standard
	Ti	47	238.7	3.3	**0.4178**	0.015	3.5	ug/L	35	Standard
	V	51	6994.4	2.1	**0.5793**	0.021	3.7	ug/L	1435	Standard
	Cr	52	13067.6	0.8	**0.4515**	0.011	2.5	ug/L	7635	Standard
	Cr	53	1060.0	5.3	**0.6298**	0.052	8.3	ug/L	363	Standard
	Mn	55	117506.1	2.5	**13.9721**	0.301	2.2	ug/L	747	Standard
	Co	59	2633.2	1.9	**0.2964**	0.006	2.1	ug/L	234	Standard
	Ni	60	1579.1	3.6	**0.5819**	0.030	5.1	ug/L	215	Standard
	Cu	65	1415.4	1.9	**0.5327**	0.017	3.2	ug/L	104	Standard
	Zn	66	4415.0	0.5	**2.9272**	0.025	0.9	ug/L	363	Standard
>	**Ge**	72	591804.3	0.7				ug/L	495142	Standard
	As	75	188.6	12.3	**0.2004**	0.017	8.4	ug/L	-50	Standard
	Se	82	17.7	38.3	**-0.0030**	0.051	1669.1	ug/L	14	Standard
	Se-1	77	53.3	24.5	**-0.0120**	0.145	1206.4	ug/L	42	Standard
>	**Ga**	71	651.7	3.8				mg/L	42	Standard
	Rb	85	6646.5	2.9				ug/L	17	Standard
	Y	89	496582.4	1.4				ug/L	417098	Standard
>	**Rh**	103	10.0	86.6				ug/L	13	Standard
	Mo	98	63.7	13.0	**0.0149**	0.003	17.4	ug/L	11	Standard
	Ag	107	138.0	7.0	**0.0054**	0.001	21.7	ug/L	68	Standard
	Cd	111	41.6	25.2	**0.0093**	0.004	47.8	mg/L	2	Standard
	Cd	114	78.4	6.5	**0.0111**	0.001	8.0	ug/L	12	Standard
>	**In**	115	680653.4	0.9				ug/L	587441	Standard
	Sn	118	558.3	7.0	**-0.0122**	0.005	43.2	ug/L	497	Standard
	Sb	123	143.1	16.8	**0.0222**	0.004	19.8	ug/L	78	Standard
	Ba	135	14129.9	0.6	**5.9423**	0.035	0.6	ug/L	24	Standard
	Ce	140	36747.8	1.4				ug/L	25	Standard
>	**Tb**	159	1046560.0	0.5				ug/L	939701	Standard
	Ho	165	620.0	6.6				ug/L	10	Standard
	Tl	203	40.7	9.9	**0.0027**	0.000	16.9	ug/L	4	Standard
	Tl	205	38.3	19.9	**0.0050**	0.001	18.8	ug/L	2	Standard
	Pb	206	6390.7	0.3	**1.0069**	0.002	0.2	ug/L	240	Standard
	Pb	207	5305.6	1.7	**0.9374**	0.017	1.8	ug/L	198	Standard
	Pb	208	22358.8	1.4	**1.0005**	0.020	2.0	ug/L	883	Standard
	U	238	147.3	10.0	**0.0149**	0.002	12.5	ug/L	3	Standard
>	**Bi**	209	581458.5	0.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	36.7	41.7	**-0.0251**	0.017	67.5	mg/L	37	Standard
K	39	73.3	27.6	**0.0225**	0.038	170.4	mg/L	38	Standard
Ca	43	25.0	40.0	**-1.1927**	0.538	45.1	mg/L	10	Standard
Fe	54	777.1	4.9	**0.4166**	0.030	7.2	mg/L	179	Standard
Fe	57	423.3	1.8	**0.1373**	0.012	9.1	mg/L	335	Standard
> **Sc-1**	45	72476.3	1.0				mg/L	61029	Standard
Cl	35	26907.2	2.4				ug/L	20195	Standard
Kr	83	1.7	124.9				ug/L	4	Standard
Br	81	2140.2	2.1				ug/L	1547	Standard
P	31	19854.7	4.5				ug/L	15286	Standard
S	34	2031.8	8.8				ug/L	1572	Standard
Sr	88	61.7	24.8				ug/L	73	Standard
C	12	66.7	82.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	1031.0	18.9				mg/L	6	Standard
Ho-1	165	620.0	6.6				mg/L	10	Standard
Er	166	536.7	12.4				mg/L	13	Standard
I	127	3175.3	27.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		120.134	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		119.522	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		115.868
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.969
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606138102
Sample Date/Time: Wednesday, June 29, 2016 19:07:03
Number of Replicates: 3
Autosampler Position: 254
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	93009.7	1.6				ug/L	74699	Standard
	Be	9	1248.4	3.0	**1.1470**	0.051	4.5	ug/L	8	Standard
	Al	27	40124336.3	0.4	**219.2936**	2.793	1.3	ug/L	1493	Standard
	Sc	45	83437.5	1.7				ug/L	61029	Standard
	Ti	47	9733.8	0.5	**22.4436**	0.290	1.3	ug/L	35	Standard
	V	51	219254.4	2.3	**25.2954**	0.490	1.9	ug/L	1435	Standard
	Cr	52	167385.2	0.7	**18.8093**	0.105	0.6	ug/L	7635	Standard
	Cr	53	20240.2	3.5	**18.8976**	0.529	2.8	ug/L	363	Standard
	Mn	55	6543259.4	1.4	**825.1579**	15.855	1.9	ug/L	747	Standard
	Co	59	86492.3	2.3	**11.4640**	0.252	2.2	ug/L	234	Standard
	Ni	60	58233.4	1.3	**27.1864**	0.121	0.4	ug/L	215	Standard
	Cu	65	35144.1	1.8	**16.4764**	0.210	1.3	ug/L	104	Standard
	Zn	66	61921.6	1.7	**49.3206**	0.509	1.0	ug/L	363	Standard
>	**Ge**	72	563884.1	0.9				ug/L	495142	Standard
	As	75	5876.5	0.9	**4.6669**	0.080	1.7	ug/L	-50	Standard
	Se	82	62.7	20.2	**0.3638**	0.101	27.7	ug/L	14	Standard
	Se-1	77	116.3	8.0	**0.7757**	0.099	12.7	ug/L	42	Standard
>	**Ga**	71	24224.4	1.6				mg/L	42	Standard
	Rb	85	231886.4	1.9				ug/L	17	Standard
	Y	89	788603.8	0.2				ug/L	417098	Standard
>	**Rh**	103	76.7	50.7				ug/L	13	Standard
	Mo	98	590.2	6.7	**0.1909**	0.011	6.0	ug/L	11	Standard
	Ag	107	590.3	14.1	**0.0675**	0.010	15.2	ug/L	68	Standard
	Cd	111	402.0	10.7	**0.1627**	0.016	9.9	mg/L	2	Standard
	Cd	114	896.6	5.0	**0.1531**	0.007	4.5	ug/L	12	Standard
>	**In**	115	661468.7	1.5				ug/L	587441	Standard
	Sn	118	563.3	17.0	**-0.0090**	0.016	173.2	ug/L	497	Standard
	Sb	123	168.4	11.6	**0.0279**	0.004	15.0	ug/L	78	Standard
	Ba	135	766980.0	0.9	**332.7995**	3.011	0.9	ug/L	24	Standard
	Ce	140	1513996.2	0.9				ug/L	25	Standard
>	**Tb**	159	1057537.7	1.8				ug/L	939701	Standard
	Ho	165	25513.1	1.6				ug/L	10	Standard
	Tl	203	1321.7	3.8	**0.1489**	0.005	3.2	ug/L	4	Standard
	Tl	205	1201.7	6.5	**0.1579**	0.009	5.7	ug/L	2	Standard
	Pb	206	69846.7	2.1	**12.2126**	0.140	1.1	ug/L	240	Standard
	Pb	207	56032.1	2.8	**11.0205**	0.188	1.7	ug/L	198	Standard
	Pb	208	243026.5	0.6	**12.1032**	0.059	0.5	ug/L	883	Standard
	U	238	7981.8	0.7	**1.0851**	0.004	0.3	ug/L	3	Standard
>	**Bi**	209	557709.9	1.1				ug/L	523984	Standard

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Na	23	6.7	86.6	**56.4197**	48.874	86.6	mg/L	0	Standard
Mg	24	238.3	32.7	**0.1607**	0.077	48.1	mg/L	37	Standard
K	39	688.3	8.8	**0.9980**	0.083	8.3	mg/L	38	Standard
Ca	43	911.7	12.3	**39.6249**	5.390	13.6	mg/L	10	Standard
Fe	54	20800.6	0.9	**12.7625**	0.173	1.4	mg/L	179	Standard
Fe	57	6012.9	2.1	**13.8749**	0.248	1.8	mg/L	335	Standard
> **Sc-1**	45	83437.5	1.7				mg/L	61029	Standard
Cl	35	29332.4	1.9				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	2603.6	11.5				ug/L	1547	Standard
P	31	21632.1	2.1				ug/L	15286	Standard
S	34	2746.9	3.7				ug/L	1572	Standard
Sr	88	253.3	10.9				ug/L	73	Standard
C	12	116.7	27.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	45.8				mg/L	3	Standard
Dy	164	42471.8	1.0				mg/L	6	Standard
Ho-1	165	25513.1	1.6				mg/L	10	Standard
Er	166	22212.9	0.4				mg/L	13	Standard
I	127	23259.5	0.8				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		124.513	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		113.883	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.602
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.436
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606138102
Sample Date/Time: Wednesday, June 29, 2016 19:10:14
Number of Replicates: 3
Autosampler Position: 255
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85837.5	1.0				ug/L	74699	Standard
	Be	9	38.3	19.9	**0.0455**	0.007	16.1	ug/L	8	Standard
	Al	27	829500.0	3.1	**4.8979**	0.105	2.1	ug/L	1493	Standard
	Sc	45	72806.2	1.9				ug/L	61029	Standard
	Ti	47	228.0	6.2	**0.3999**	0.033	8.1	ug/L	35	Standard
	V	51	5937.2	2.5	**0.4694**	0.017	3.6	ug/L	1435	Standard
	Cr	52	11356.6	1.4	**0.2725**	0.020	7.2	ug/L	7635	Standard
	Cr	53	790.0	13.9	**0.3928**	0.096	24.5	ug/L	363	Standard
	Mn	55	140399.5	1.1	**16.9108**	0.252	1.5	ug/L	747	Standard
	Co	59	1986.1	4.2	**0.2171**	0.011	4.8	ug/L	234	Standard
	Ni	60	1398.7	1.4	**0.5081**	0.009	1.8	ug/L	215	Standard
	Cu	65	887.4	6.1	**0.2997**	0.027	8.9	ug/L	104	Standard
	Zn	66	3530.4	0.8	**2.2796**	0.035	1.5	ug/L	363	Standard
>	**Ge**	72	585343.3	0.6				ug/L	495142	Standard
	As	75	60.2	40.7	**0.1052**	0.019	17.9	ug/L	-50	Standard
	Se	82	19.5	23.7	**0.0127**	0.037	290.2	ug/L	14	Standard
	Se-1	77	54.0	19.3	**0.0032**	0.122	3775.1	ug/L	42	Standard
>	**Ga**	71	611.7	10.2				mg/L	42	Standard
	Rb	85	4939.1	4.6				ug/L	17	Standard
	Y	89	509652.0	1.0				ug/L	417098	Standard
>	**Rh**	103	5.0	100.0				ug/L	13	Standard
	Mo	98	44.1	7.7	**0.0084**	0.001	14.8	ug/L	11	Standard
	Ag	107	136.0	8.3	**0.0049**	0.002	33.6	ug/L	68	Standard
	Cd	111	13.6	15.2	**-0.0024**	0.001	32.7	mg/L	2	Standard
	Cd	114	34.6	39.9	**0.0036**	0.002	62.3	ug/L	12	Standard
>	**In**	115	689569.5	1.2				ug/L	587441	Standard
	Sn	118	635.0	8.5	**-0.0021**	0.008	369.1	ug/L	497	Standard
	Sb	123	120.9	7.4	**0.0179**	0.002	10.7	ug/L	78	Standard
	Ba	135	16312.1	1.7	**6.7731**	0.043	0.6	ug/L	24	Standard
	Ce	140	31461.0	1.2				ug/L	25	Standard
>	**Tb**	159	1048084.0	0.7				ug/L	939701	Standard
	Ho	165	503.3	20.9				ug/L	10	Standard
	Tl	203	28.0	9.4	**0.0013**	0.000	21.0	ug/L	4	Standard
	Tl	205	13.3	21.7	**0.0019**	0.000	19.6	ug/L	2	Standard
	Pb	206	1789.4	1.9	**0.2333**	0.006	2.6	ug/L	240	Standard
	Pb	207	1416.1	2.7	**0.2012**	0.009	4.3	ug/L	198	Standard
	Pb	208	6428.2	1.8	**0.2375**	0.004	1.7	ug/L	883	Standard
	U	238	157.3	5.4	**0.0164**	0.001	7.5	ug/L	3	Standard
>	**Bi**	209	576421.5	0.5				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	65.0	13.3	**0.0052**	0.008	161.5	mg/L	37	Standard
K	39	56.7	10.2	**-0.0092**	0.009	98.8	mg/L	38	Standard
Ca	43	46.7	16.4	**-0.0469**	0.452	963.7	mg/L	10	Standard
Fe	54	615.5	5.2	**0.2993**	0.025	8.2	mg/L	179	Standard
Fe	57	410.0	10.0	**0.0928**	0.096	103.4	mg/L	335	Standard
Sc-1	45	72806.2	1.9				mg/L	61029	Standard
Cl	35	29355.1	3.4				ug/L	20195	Standard
Kr	83	2.3	24.7				ug/L	4	Standard
Br	81	1910.1	15.3				ug/L	1547	Standard
P	31	20493.9	2.3				ug/L	15286	Standard
S	34	2463.5	6.9				ug/L	1572	Standard
Sr	88	83.3	42.1				ug/L	73	Standard
C	12	50.0	34.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	991.0	1.5				mg/L	6	Standard
Ho-1	165	503.3	20.9				mg/L	10	Standard
Er	166	466.7	4.5				mg/L	13	Standard
I	127	2401.9	23.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.911	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		118.217	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		117.385
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.007
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 19:13:27
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83999.1	3.6				ug/L	74699	Standard
	Be	9	57157.7	3.6	**57.7443**	0.451	0.8	ug/L	8	Standard
	Al	27	8858742.4	2.0	**53.6133**	0.921	1.7	ug/L	1493	Standard
	Sc	45	70122.0	3.5				ug/L	61029	Standard
	Ti	47	47445.5	0.9	**109.3528**	3.353	3.1	ug/L	35	Standard
	V	51	471838.1	3.0	**54.4025**	0.466	0.9	ug/L	1435	Standard
	Cr	52	466548.5	1.7	**54.0130**	1.261	2.3	ug/L	7635	Standard
	Cr	53	57204.5	1.8	**53.7881**	1.637	3.0	ug/L	363	Standard
	Mn	55	422873.4	1.8	**52.9497**	1.131	2.1	ug/L	747	Standard
	Co	59	420575.5	1.8	**55.6399**	1.134	2.0	ug/L	234	Standard
	Ni	60	114954.2	1.8	**53.5507**	1.121	2.1	ug/L	215	Standard
	Cu	65	113826.7	2.0	**53.3592**	1.065	2.0	ug/L	104	Standard
	Zn	66	66150.5	1.8	**52.4882**	1.217	2.3	ug/L	363	Standard
>	Ge	72	566689.7	3.9				ug/L	495142	Standard
	As	75	66474.1	0.9	**51.9549**	1.668	3.2	ug/L	-50	Standard
	Se	82	6669.2	0.5	**53.0020**	1.808	3.4	ug/L	14	Standard
	Se-1	77	4569.4	1.3	**54.0883**	1.963	3.6	ug/L	42	Standard
>	Ga	71	60.0	25.0				mg/L	42	Standard
	Rb	85	973.4	4.9				ug/L	17	Standard
	Y	89	482055.4	0.8				ug/L	417098	Standard
>	Rh	103	21.7	35.3				ug/L	13	Standard
	Mo	98	311127.6	1.9	**101.8685**	1.475	1.4	ug/L	11	Standard
	Ag	107	381455.1	1.8	**51.0679**	0.625	1.2	ug/L	68	Standard
	Cd	111	122240.5	1.1	**51.0178**	0.254	0.5	mg/L	2	Standard
	Cd	114	297421.0	1.0	**50.6157**	0.803	1.6	ug/L	12	Standard
>	In	115	673075.7	0.6				ug/L	587441	Standard
	Sn	118	341770.5	1.5	**50.9666**	0.480	0.9	ug/L	497	Standard
	Sb	123	266115.5	1.9	**49.7407**	0.724	1.5	ug/L	78	Standard
	Ba	135	114468.8	0.7	**48.7952**	0.078	0.2	ug/L	24	Standard
	Ce	140	298.3	40.9				ug/L	25	Standard
>	Tb	159	1044481.4	1.5				ug/L	939701	Standard
	Ho	165	18.3	83.3				ug/L	10	Standard
	Tl	203	467319.7	1.5	**52.0663**	0.128	0.2	ug/L	4	Standard
	Tl	205	421316.6	1.5	**54.0865**	0.384	0.7	ug/L	2	Standard
	Pb	206	294059.2	2.1	**50.4836**	0.259	0.5	ug/L	240	Standard
	Pb	207	260305.8	2.4	**50.2976**	0.406	0.8	ug/L	198	Standard
	Pb	208	1086866.5	0.8	**53.1659**	0.550	1.0	ug/L	883	Standard
	U	238	395799.2	0.7	**52.8135**	0.760	1.4	ug/L	3	Standard
>	Bi	209	570529.8	1.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4777.4	3.9	**5.3091**	0.347	6.5	mg/L	37	Standard
K	39	2250.2	3.7	**4.2173**	0.198	4.7	mg/L	38	Standard
Ca	43	128.3	12.5	**4.5532**	1.080	23.7	mg/L	10	Standard
Fe	54	7377.7	1.8	**5.3086**	0.144	2.7	mg/L	179	Standard
Fe	57	2055.1	1.5	**5.0082**	0.127	2.5	mg/L	335	Standard
> **Sc-1**	45	70122.0	3.5				mg/L	61029	Standard
Cl	35	30001.0	0.9				ug/L	20195	Standard
Kr	83	1.7	91.7				ug/L	4	Standard
Br	81	2183.5	6.8				ug/L	1547	Standard
P	31	22995.8	1.5				ug/L	15286	Standard
S	34	2830.3	2.9				ug/L	1572	Standard
Sr	88	66.7	24.1				ug/L	73	Standard
C	12	80.0	50.0				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	9.0	108.0				mg/L	6	Standard
Ho-1	165	18.3	83.3				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	1968.5	24.7				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	115.489		
	Al	27	107.227		
	Sc	45			
	Ti	47	109.353		
	V	51	108.805		
	Cr	52	108.026		
	Cr	53			
	Mn	55	105.899		
	Co	59	111.280		
	Ni	60	107.101		
	Cu	65	106.718		
	Zn	66	104.976		
>	Ge	72		114.450	
	As	75	103.910		
	Se	82	106.004		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.868		
Ag	107	102.136		
Cd	111	102.036		
Cd	114			
In	115		114.578	
Sn	118	101.933		
Sb	123	99.481		
Ba	135	97.590		
Ce	140			
Tb	159			
Ho	165			
Tl	203	104.133		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.332		
U	238	105.627		
Bi	209		108.883	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Co	59	

Sample ID: QC Std 6
Report Date/Time: Wednesday, June 29, 2016 19:15:44
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 19:16:39
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83692.3	2.8				ug/L	74699	Standard
	Be	9	18.3	15.7	**0.0263**	0.003	12.9	ug/L	8	Standard
	Al	27	3213.7	25.4	**0.0061**	0.004	71.9	ug/L	1493	Standard
	Sc	45	70726.5	3.0				ug/L	61029	Standard
	Ti	47	41.0	12.2	**-0.0158**	0.012	73.1	ug/L	35	Standard
	V	51	1525.1	1.9	**-0.0214**	0.005	22.4	ug/L	1435	Standard
	Cr	52	7659.9	0.9	**-0.1324**	0.015	11.0	ug/L	7635	Standard
	Cr	53	410.0	16.0	**0.0526**	0.061	116.5	ug/L	363	Standard
	Mn	55	997.7	7.3	**-0.0244**	0.010	41.0	ug/L	747	Standard
	Co	59	260.3	1.6	**-0.0033**	0.000	10.0	ug/L	234	Standard
	Ni	60	195.0	3.6	**-0.0341**	0.004	11.2	ug/L	215	Standard
	Cu	65	140.7	10.7	**-0.0385**	0.007	19.0	ug/L	104	Standard
	Zn	66	386.7	3.7	**-0.1493**	0.008	5.7	ug/L	363	Standard
>	**Ge**	72	574185.4	0.9				ug/L	495142	Standard
	As	75	-49.3	11.6	**0.0216**	0.004	19.9	ug/L	-50	Standard
	Se	82	18.5	26.4	**0.0072**	0.039	544.3	ug/L	14	Standard
	Se-1	77	51.3	18.1	**-0.0155**	0.115	739.5	ug/L	42	Standard
>	**Ga**	71	41.7	30.2				mg/L	42	Standard
	Rb	85	33.3	22.9				ug/L	17	Standard
	Y	89	508899.9	2.4				ug/L	417098	Standard
>	**Rh**	103	10.0	50.0				ug/L	13	Standard
	Mo	98	287.2	24.5	**0.0857**	0.020	22.8	ug/L	11	Standard
	Ag	107	140.0	24.8	**0.0054**	0.004	76.0	ug/L	68	Standard
	Cd	111	18.8	30.5	**-0.0003**	0.002	828.9	mg/L	2	Standard
	Cd	114	42.6	5.3	**0.0050**	0.000	2.5	ug/L	12	Standard
>	**In**	115	688571.2	3.6				ug/L	587441	Standard
	Sn	118	896.7	13.9	**0.0365**	0.020	55.6	ug/L	497	Standard
	Sb	123	419.7	28.4	**0.0731**	0.025	33.8	ug/L	78	Standard
	Ba	135	58.0	33.3	**0.0081**	0.008	93.7	ug/L	24	Standard
	Ce	140	43.3	17.6				ug/L	25	Standard
>	**Tb**	159	1032903.3	2.1				ug/L	939701	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	69.3	37.1	**0.0059**	0.003	47.0	ug/L	4	Standard
	Tl	205	78.3	57.2	**0.0101**	0.006	55.2	ug/L	2	Standard
	Pb	206	303.3	6.2	**-0.0195**	0.003	14.1	ug/L	240	Standard
	Pb	207	260.7	8.9	**-0.0200**	0.005	24.1	ug/L	198	Standard
	Pb	208	1157.4	6.9	**-0.0179**	0.003	17.6	ug/L	883	Standard
	U	238	52.0	46.8	**0.0024**	0.003	129.1	ug/L	3	Standard
>	**Bi**	209	575232.2	1.3				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	36.7	28.4	**-0.0241**	0.012	50.4	mg/L	37	Standard
K	39	50.0	26.5	**-0.0190**	0.023	121.8	mg/L	38	Standard
Ca	43	26.7	39.0	**-1.0625**	0.584	55.0	mg/L	10	Standard
Fe	54	147.5	7.0	**-0.0305**	0.005	15.7	mg/L	179	Standard
Fe	57	216.7	8.1	**-0.4394**	0.033	7.6	mg/L	335	Standard
Sc-1	45	70726.5	3.0				mg/L	61029	Standard
Cl	35	29273.6	1.2				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	2073.5	10.2				ug/L	1547	Standard
P	31	23289.7	10.5				ug/L	15286	Standard
S	34	2535.2	3.8				ug/L	1572	Standard
Sr	88	68.3	37.5				ug/L	73	Standard
C	12	66.7	22.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	16.3	126.2				mg/L	6	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	1766.8	31.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		115.964	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		117.215
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.780
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606138103
Sample Date/Time: Wednesday, June 29, 2016 19:19:52
Number of Replicates: 3
Autosampler Position: 256
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88921.9	2.3				ug/L	74699	Standard
	Be	9	1191.7	0.9	**1.1451**	0.025	2.2	ug/L	8	Standard
	Al	27	19716870.1	2.2	**112.7701**	5.073	4.5	ug/L	1493	Standard
	Sc	45	82006.5	3.2				ug/L	61029	Standard
	Ti	47	8807.2	1.6	**20.0178**	0.269	1.3	ug/L	35	Standard
	V	51	208539.0	1.3	**23.7197**	0.153	0.6	ug/L	1435	Standard
	Cr	52	166877.0	1.1	**18.4795**	0.081	0.4	ug/L	7635	Standard
	Cr	53	19956.5	0.7	**18.3731**	0.126	0.7	ug/L	363	Standard
	Mn	55	4948296.7	1.6	**615.4227**	6.037	1.0	ug/L	747	Standard
	Co	59	82754.8	2.1	**10.8165**	0.154	1.4	ug/L	234	Standard
	Ni	60	51698.7	0.5	**23.7942**	0.298	1.3	ug/L	215	Standard
	Cu	65	48855.0	1.6	**22.6321**	0.340	1.5	ug/L	104	Standard
	Zn	66	105467.2	1.2	**83.1726**	0.384	0.5	ug/L	363	Standard
>	**Ge**	72	571655.8	0.7				ug/L	495142	Standard
	As	75	9636.9	0.9	**7.5116**	0.042	0.6	ug/L	-50	Standard
	Se	82	70.5	8.3	**0.4184**	0.042	10.1	ug/L	14	Standard
	Se-1	77	129.0	9.9	**0.9077**	0.153	16.9	ug/L	42	Standard
>	**Ga**	71	22341.5	2.4				mg/L	42	Standard
	Rb	85	210691.8	1.9				ug/L	17	Standard
	Y	89	776017.6	0.9				ug/L	417098	Standard
>	**Rh**	103	61.7	24.8				ug/L	13	Standard
	Mo	98	1324.4	9.6	**0.4208**	0.045	10.6	ug/L	11	Standard
	Ag	107	918.4	2.4	**0.1080**	0.004	3.7	ug/L	68	Standard
	Cd	111	891.1	4.2	**0.3578**	0.020	5.5	mg/L	2	Standard
	Cd	114	2180.6	6.0	**0.3625**	0.017	4.8	ug/L	12	Standard
>	**In**	115	684819.6	1.2				ug/L	587441	Standard
	Sn	118	1785.1	3.5	**0.1674**	0.006	3.8	ug/L	497	Standard
	Sb	123	354.4	3.1	**0.0609**	0.003	4.6	ug/L	78	Standard
	Ba	135	461342.5	1.4	**193.3434**	2.631	1.4	ug/L	24	Standard
	Ce	140	1368480.3	1.7				ug/L	25	Standard
>	**Tb**	159	1075718.6	2.2				ug/L	939701	Standard
	Ho	165	22026.0	1.7				ug/L	10	Standard
	Tl	203	1135.0	2.0	**0.1247**	0.001	0.6	ug/L	4	Standard
	Tl	205	1093.4	11.6	**0.1404**	0.014	10.2	ug/L	2	Standard
	Pb	206	147882.6	1.3	**25.3549**	0.415	1.6	ug/L	240	Standard
	Pb	207	119862.3	0.6	**23.1268**	0.424	1.8	ug/L	198	Standard
	Pb	208	520445.5	2.0	**25.4242**	0.898	3.5	ug/L	883	Standard
	U	238	4663.1	0.9	**0.6178**	0.006	0.9	ug/L	3	Standard
>	**Bi**	209	570570.9	1.5				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	126.7	27.7	**0.0563**	0.032	56.3	mg/L	37	Standard
K	39	878.4	3.1	**1.3326**	0.091	6.9	mg/L	38	Standard
Ca	43	426.7	4.7	**17.5293**	0.460	2.6	mg/L	10	Standard
Fe	54	21094.2	3.4	**13.1896**	0.865	6.6	mg/L	179	Standard
Fe	57	5826.1	1.4	**13.6721**	0.491	3.6	mg/L	335	Standard
> **Sc-1**	45	82006.5	3.2				mg/L	61029	Standard
Cl	35	28772.6	2.0				ug/L	20195	Standard
Kr	83	3.0	66.7				ug/L	4	Standard
Br	81	3580.4	3.6				ug/L	1547	Standard
P	31	21750.6	1.3				ug/L	15286	Standard
S	34	2703.6	0.6				ug/L	1572	Standard
Sr	88	178.3	13.8				ug/L	73	Standard
C	12	233.3	9.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	96.7	36.3				mg/L	3	Standard
Dy	164	37298.5	1.0				mg/L	6	Standard
Ho-1	165	22026.0	1.7				mg/L	10	Standard
Er	166	20383.7	1.3				mg/L	13	Standard
I	127	19701.1	3.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.041	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		115.453	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	116.577
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	108.891
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606138103
Sample Date/Time: Wednesday, June 29, 2016 19:23:03
Number of Replicates: 3
Autosampler Position: 257
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82351.7	3.3				ug/L	74699	Standard
	Be	9	43.3	24.0	**0.0523**	0.011	20.3	ug/L	8	Standard
	Al	27	430174.7	3.0	**2.6419**	0.016	0.6	ug/L	1493	Standard
	Sc	45	73040.6	1.2				ug/L	61029	Standard
	Ti	47	215.7	6.2	**0.3839**	0.033	8.6	ug/L	35	Standard
	V	51	5937.3	2.7	**0.4853**	0.017	3.5	ug/L	1435	Standard
	Cr	52	11052.0	1.3	**0.2679**	0.017	6.2	ug/L	7635	Standard
	Cr	53	723.4	5.6	**0.3480**	0.038	11.0	ug/L	363	Standard
	Mn	55	109527.8	0.6	**13.4774**	0.102	0.8	ug/L	747	Standard
	Co	59	1998.1	1.8	**0.2248**	0.006	2.5	ug/L	234	Standard
	Ni	60	1283.7	2.7	**0.4700**	0.016	3.4	ug/L	215	Standard
	Cu	65	1177.7	1.9	**0.4444**	0.009	2.1	ug/L	104	Standard
	Zn	66	4258.3	1.3	**2.9218**	0.029	1.0	ug/L	363	Standard
>	**Ge**	72	571680.5	0.6				ug/L	495142	Standard
	As	75	130.4	5.6	**0.1604**	0.006	3.7	ug/L	-50	Standard
	Se	82	14.1	16.1	**-0.0268**	0.018	65.5	ug/L	14	Standard
	Se-1	77	58.0	6.9	**0.0653**	0.044	66.8	ug/L	42	Standard
>	**Ga**	71	521.7	4.0				mg/L	42	Standard
	Rb	85	4554.0	2.0				ug/L	17	Standard
	Y	89	512515.9	2.6				ug/L	417098	Standard
>	**Rh**	103	11.7	24.7				ug/L	13	Standard
	Mo	98	90.4	4.4	**0.0229**	0.001	6.5	ug/L	11	Standard
	Ag	107	144.3	4.6	**0.0058**	0.001	16.1	ug/L	68	Standard
	Cd	111	21.8	34.6	**0.0009**	0.003	335.6	mg/L	2	Standard
	Cd	114	67.8	46.0	**0.0090**	0.005	55.6	ug/L	12	Standard
>	**In**	115	696556.9	1.5				ug/L	587441	Standard
	Sn	118	640.0	3.6	**-0.0023**	0.005	204.9	ug/L	497	Standard
	Sb	123	182.0	15.1	**0.0287**	0.006	19.2	ug/L	78	Standard
	Ba	135	9992.3	2.7	**4.1009**	0.069	1.7	ug/L	24	Standard
	Ce	140	29587.2	2.0				ug/L	25	Standard
>	**Tb**	159	1058949.6	2.5				ug/L	939701	Standard
	Ho	165	493.3	6.5				ug/L	10	Standard
	Tl	203	41.7	21.8	**0.0028**	0.001	37.1	ug/L	4	Standard
	Tl	205	43.3	54.5	**0.0057**	0.003	52.4	ug/L	2	Standard
	Pb	206	3583.8	1.2	**0.5358**	0.012	2.2	ug/L	240	Standard
	Pb	207	2855.9	1.4	**0.4744**	0.011	2.4	ug/L	198	Standard
	Pb	208	12510.0	0.4	**0.5295**	0.006	1.1	ug/L	883	Standard
	U	238	110.3	6.2	**0.0101**	0.001	8.0	ug/L	3	Standard
>	**Bi**	209	579224.4	1.1				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	51.7	29.6	**-0.0092**	0.017	184.4	mg/L	37	Standard
K	39	41.7	61.6	**-0.0375**	0.047	124.3	mg/L	38	Standard
Ca	43	26.7	10.8	**-1.1162**	0.146	13.1	mg/L	10	Standard
Fe	54	584.0	15.6	**0.2752**	0.062	22.7	mg/L	179	Standard
Fe	57	388.3	5.2	**0.0289**	0.063	219.5	mg/L	335	Standard
> **Sc-1**	45	73040.6	1.2				mg/L	61029	Standard
Cl	35	28933.6	1.8				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	2263.5	5.9				ug/L	1547	Standard
P	31	20116.7	3.4				ug/L	15286	Standard
S	34	2530.2	7.0				ug/L	1572	Standard
Sr	88	75.0	23.1				ug/L	73	Standard
C	12	66.7	56.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	963.7	4.1				mg/L	6	Standard
Ho-1	165	493.3	6.5				mg/L	10	Standard
Er	166	410.0	6.5				mg/L	13	Standard
I	127	2373.5	31.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.245	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		115.458	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		118.575
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.542
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606138104
Sample Date/Time: Wednesday, June 29, 2016 19:26:15
Number of Replicates: 3
Autosampler Position: 258
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85261.0	2.3				ug/L	74699	Standard
	Be	9	1065.0	16.2	**1.0661**	0.158	14.8	ug/L	8	Standard
	Al	27	15142099.3	1.2	**90.2750**	1.228	1.4	ug/L	1493	Standard
	Sc	45	77933.3	2.2				ug/L	61029	Standard
	Ti	47	7118.0	1.5	**16.2707**	0.118	0.7	ug/L	35	Standard
	V	51	161044.2	0.8	**18.4034**	0.196	1.1	ug/L	1435	Standard
	Cr	52	146045.2	0.2	**16.1669**	0.325	2.0	ug/L	7635	Standard
	Cr	53	17793.8	1.2	**16.4664**	0.462	2.8	ug/L	363	Standard
	Mn	55	4299510.8	1.0	**538.5113**	8.104	1.5	ug/L	747	Standard
	Co	59	67815.8	1.0	**8.9211**	0.182	2.0	ug/L	234	Standard
	Ni	60	46536.4	1.1	**21.5551**	0.152	0.7	ug/L	215	Standard
	Cu	65	28919.6	1.2	**13.4506**	0.294	2.2	ug/L	104	Standard
	Zn	66	52781.1	1.6	**41.6917**	0.739	1.8	ug/L	363	Standard
>	**Ge**	72	567729.5	1.7				ug/L	495142	Standard
	As	75	4550.5	2.3	**3.6043**	0.141	3.9	ug/L	-50	Standard
	Se	82	43.5	41.5	**0.2091**	0.148	70.8	ug/L	14	Standard
	Se-1	77	118.3	4.0	**0.7906**	0.045	5.7	ug/L	42	Standard
>	**Ga**	71	21335.0	2.6				mg/L	42	Standard
	Rb	85	199689.0	1.1				ug/L	17	Standard
	Y	89	717025.3	1.7				ug/L	417098	Standard
>	**Rh**	103	53.3	39.0				ug/L	13	Standard
	Mo	98	750.2	3.3	**0.2455**	0.003	1.3	ug/L	11	Standard
	Ag	107	572.7	8.1	**0.0655**	0.005	7.5	ug/L	68	Standard
	Cd	111	313.3	5.6	**0.1259**	0.007	5.6	mg/L	2	Standard
	Cd	114	729.6	4.4	**0.1250**	0.007	5.3	ug/L	12	Standard
>	**In**	115	657920.1	2.1				ug/L	587441	Standard
	Sn	118	513.3	6.6	**-0.0162**	0.005	32.2	ug/L	497	Standard
	Sb	123	156.7	10.3	**0.0258**	0.004	14.3	ug/L	78	Standard
	Ba	135	278778.0	0.4	**121.6374**	2.867	2.4	ug/L	24	Standard
	Ce	140	1205012.6	0.9				ug/L	25	Standard
>	**Tb**	159	1028655.6	1.0				ug/L	939701	Standard
	Ho	165	19245.5	0.5				ug/L	10	Standard
	Tl	203	1022.7	4.2	**0.1168**	0.004	3.6	ug/L	4	Standard
	Tl	205	930.0	6.2	**0.1244**	0.008	6.1	ug/L	2	Standard
	Pb	206	75172.7	1.1	**13.3810**	0.239	1.8	ug/L	240	Standard
	Pb	207	60753.2	0.6	**12.1662**	0.152	1.3	ug/L	198	Standard
	Pb	208	268421.8	0.9	**13.6089**	0.053	0.4	ug/L	883	Standard
	U	238	4956.8	1.6	**0.6840**	0.014	2.1	ug/L	3	Standard
>	**Bi**	209	548179.9	0.7				ug/L	523984	Standard

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Na	23	3.3	173.2	**29.7760**	51.565	173.2	mg/L	0	Standard
Mg	24	116.7	8.9	**0.0527**	0.008	15.2	mg/L	37	Standard
K	39	606.7	4.1	**0.9368**	0.065	7.0	mg/L	38	Standard
Ca	43	223.3	26.5	**8.5548**	3.074	35.9	mg/L	10	Standard
Fe	54	18758.0	3.4	**12.3136**	0.167	1.4	mg/L	179	Standard
Fe	57	5059.2	5.4	**12.3881**	0.534	4.3	mg/L	335	Standard
Sc-1	45	77933.3	2.2				mg/L	61029	Standard
Cl	35	27511.6	2.5				ug/L	20195	Standard
Kr	83	4.0	50.0				ug/L	4	Standard
Br	81	2450.2	6.4				ug/L	1547	Standard
P	31	19838.0	2.4				ug/L	15286	Standard
S	34	2438.5	4.0				ug/L	1572	Standard
Sr	88	130.0	10.2				ug/L	73	Standard
C	12	76.7	41.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	124.9				mg/L	3	Standard
Dy	164	31319.3	1.6				mg/L	6	Standard
Ho-1	165	19245.5	0.5				mg/L	10	Standard
Er	166	17009.5	2.0				mg/L	13	Standard
I	127	14255.0	0.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.140	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.660	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.998
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.618
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606138104
Sample Date/Time: Wednesday, June 29, 2016 19:29:26
Number of Replicates: 3
Autosampler Position: 259
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81019.4	0.7				ug/L	74699	Standard
	Be	9	41.7	18.3	**0.0512**	0.008	15.3	ug/L	8	Standard
	Al	27	329954.8	1.9	**2.0568**	0.044	2.2	ug/L	1493	Standard
	Sc	45	70853.8	4.4				ug/L	61029	Standard
	Ti	47	170.0	4.8	**0.2650**	0.022	8.2	ug/L	35	Standard
	V	51	4919.9	1.5	**0.3475**	0.009	2.6	ug/L	1435	Standard
	Cr	52	11144.8	0.5	**0.2299**	0.010	4.3	ug/L	7635	Standard
	Cr	53	798.4	9.1	**0.3907**	0.073	18.6	ug/L	363	Standard
	Mn	55	93006.7	2.2	**10.9903**	0.351	3.2	ug/L	747	Standard
	Co	59	1669.1	4.9	**0.1734**	0.010	5.5	ug/L	234	Standard
	Ni	60	1239.4	3.4	**0.4280**	0.019	4.5	ug/L	215	Standard
	Cu	65	783.4	0.7	**0.2472**	0.006	2.3	ug/L	104	Standard
	Zn	66	3223.7	4.0	**2.0065**	0.120	6.0	ug/L	363	Standard
>	**Ge**	72	593953.7	1.0				ug/L	495142	Standard
	As	75	25.6	116.2	**0.0786**	0.022	28.0	ug/L	-50	Standard
	Se	82	15.5	11.3	**-0.0201**	0.014	71.9	ug/L	14	Standard
	Se-1	77	55.7	3.7	**0.0130**	0.019	145.3	ug/L	42	Standard
>	**Ga**	71	496.7	9.6				mg/L	42	Standard
	Rb	85	4318.9	1.6				ug/L	17	Standard
	Y	89	493099.4	1.2				ug/L	417098	Standard
>	**Rh**	103	8.3	91.7				ug/L	13	Standard
	Mo	98	63.8	10.3	**0.0154**	0.002	13.8	ug/L	11	Standard
	Ag	107	130.3	15.7	**0.0047**	0.003	56.8	ug/L	68	Standard
	Cd	111	7.2	21.0	**-0.0049**	0.001	12.8	mg/L	2	Standard
	Cd	114	27.0	44.7	**0.0025**	0.002	80.8	ug/L	12	Standard
>	**In**	115	665068.2	0.5				ug/L	587441	Standard
	Sn	118	545.0	15.7	**-0.0123**	0.013	107.4	ug/L	497	Standard
	Sb	123	150.6	9.1	**0.0243**	0.003	11.0	ug/L	78	Standard
	Ba	135	6015.5	0.5	**2.5800**	0.016	0.6	ug/L	24	Standard
	Ce	140	25678.4	3.6				ug/L	25	Standard
>	**Tb**	159	1023204.1	0.9				ug/L	939701	Standard
	Ho	165	420.0	5.5				ug/L	10	Standard
	Tl	203	37.3	22.8	**0.0024**	0.001	40.1	ug/L	4	Standard
	Tl	205	30.0	50.0	**0.0040**	0.002	46.9	ug/L	2	Standard
	Pb	206	1995.8	4.0	**0.2734**	0.016	6.0	ug/L	240	Standard
	Pb	207	1576.4	5.4	**0.2364**	0.019	8.0	ug/L	198	Standard
	Pb	208	6805.9	1.7	**0.2606**	0.003	1.1	ug/L	883	Standard
	U	238	99.3	2.5	**0.0089**	0.000	2.4	ug/L	3	Standard
>	**Bi**	209	568219.3	0.9				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	30.0	66.7	**-0.0312**	0.023	74.2	mg/L	37	Standard
K	39	65.0	30.8	**0.0108**	0.043	395.4	mg/L	38	Standard
Ca	43	20.0	0.0	**-1.4338**	0.047	3.3	mg/L	10	Standard
Fe	54	499.3	4.0	**0.2265**	0.010	4.2	mg/L	179	Standard
Fe	57	346.7	6.8	**-0.0592**	0.056	94.8	mg/L	335	Standard
> **Sc-1**	45	70853.8	4.4				mg/L	61029	Standard
Cl	35	26917.9	3.4				ug/L	20195	Standard
Kr	83	2.0	0.0				ug/L	4	Standard
Br	81	1996.8	2.8				ug/L	1547	Standard
P	31	19530.9	2.5				ug/L	15286	Standard
S	34	2235.2	2.4				ug/L	1572	Standard
Sr	88	70.0	18.9				ug/L	73	Standard
C	12	83.3	38.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	818.0	9.1				mg/L	6	Standard
Ho-1	165	420.0	5.5				mg/L	10	Standard
Er	166	390.0	11.8				mg/L	13	Standard
I	127	1930.1	32.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.461	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		119.956	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.214
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.442
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606138105
Sample Date/Time: Wednesday, June 29, 2016 19:32:37
Number of Replicates: 3
Autosampler Position: 260
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86630.3	1.6				ug/L	74699	Standard
	Be	9	1345.1	15.8	**1.3230**	0.188	14.2	ug/L	8	Standard
	Al	27	25518871.0	0.5	**149.7364**	2.025	1.4	ug/L	1493	Standard
	Sc	45	82793.9	1.1				ug/L	61029	Standard
	Ti	47	9047.0	1.1	**21.0343**	0.216	1.0	ug/L	35	Standard
	V	51	241144.8	2.1	**28.0828**	0.136	0.5	ug/L	1435	Standard
	Cr	52	185820.6	3.2	**21.1812**	0.417	2.0	ug/L	7635	Standard
	Cr	53	22667.0	3.7	**21.3886**	0.515	2.4	ug/L	363	Standard
	Mn	55	5666490.2	1.7	**720.7034**	2.244	0.3	ug/L	747	Standard
	Co	59	89984.1	1.6	**12.0322**	0.097	0.8	ug/L	234	Standard
	Ni	60	57928.9	2.2	**27.2782**	0.178	0.7	ug/L	215	Standard
	Cu	65	41127.1	3.0	**19.4650**	0.281	1.4	ug/L	104	Standard
	Zn	66	70831.6	3.1	**56.9699**	0.880	1.5	ug/L	363	Standard
>	**Ge**	72	559032.2	1.6				ug/L	495142	Standard
	As	75	9088.7	3.2	**7.2452**	0.123	1.7	ug/L	-50	Standard
	Se	82	66.3	23.6	**0.3960**	0.117	29.7	ug/L	14	Standard
	Se-1	77	130.0	4.3	**0.9538**	0.045	4.7	ug/L	42	Standard
>	**Ga**	71	25715.1	2.4				mg/L	42	Standard
	Rb	85	243499.9	2.1				ug/L	17	Standard
	Y	89	766854.2	0.5				ug/L	417098	Standard
>	**Rh**	103	51.7	5.6				ug/L	13	Standard
	Mo	98	760.8	5.6	**0.2496**	0.019	7.7	ug/L	11	Standard
	Ag	107	727.0	8.3	**0.0869**	0.010	11.3	ug/L	68	Standard
	Cd	111	420.9	5.2	**0.1721**	0.013	7.6	mg/L	2	Standard
	Cd	114	1021.1	15.6	**0.1761**	0.030	17.3	ug/L	12	Standard
>	**In**	115	657583.1	2.2				ug/L	587441	Standard
	Sn	118	706.7	9.4	**0.0135**	0.012	91.4	ug/L	497	Standard
	Sb	123	160.0	3.9	**0.0265**	0.002	7.0	ug/L	78	Standard
	Ba	135	489546.4	1.0	**213.7510**	6.703	3.1	ug/L	24	Standard
	Ce	140	1473172.3	0.9				ug/L	25	Standard
>	**Tb**	159	1043758.3	1.4				ug/L	939701	Standard
	Ho	165	23187.7	0.9				ug/L	10	Standard
	Tl	203	1287.4	7.3	**0.1458**	0.012	8.5	ug/L	4	Standard
	Tl	205	1168.4	5.5	**0.1545**	0.010	6.8	ug/L	2	Standard
	Pb	206	110607.4	2.3	**19.4839**	0.695	3.6	ug/L	240	Standard
	Pb	207	89635.8	2.2	**17.7667**	0.631	3.6	ug/L	198	Standard
	Pb	208	392577.0	0.9	**19.6965**	0.434	2.2	ug/L	883	Standard
	U	238	8119.8	0.8	**1.1095**	0.020	1.8	ug/L	3	Standard
>	**Bi**	209	554986.0	1.4				ug/L	523984	Standard

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Na	23	5.0	100.0	**42.5482**	42.299	99.4	mg/L	0	Standard
Mg	24	165.0	16.0	**0.0921**	0.027	29.3	mg/L	37	Standard
K	39	870.0	2.5	**1.3032**	0.021	1.6	mg/L	38	Standard
Ca	43	623.3	6.5	**26.5121**	2.122	8.0	mg/L	10	Standard
Fe	54	24836.5	3.4	**15.3836**	0.500	3.3	mg/L	179	Standard
Fe	57	6766.5	3.6	**15.8771**	0.513	3.2	mg/L	335	Standard
Sc-1	45	82793.9	1.1				mg/L	61029	Standard
Cl	35	27591.1	0.8				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	2510.2	7.0				ug/L	1547	Standard
P	31	20592.3	2.0				ug/L	15286	Standard
S	34	2640.2	1.7				ug/L	1572	Standard
Sr	88	220.0	6.0				ug/L	73	Standard
C	12	86.7	24.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	44.6				mg/L	3	Standard
Dy	164	40115.6	1.1				mg/L	6	Standard
Ho-1	165	23187.7	0.9				mg/L	10	Standard
Er	166	21645.5	1.0				mg/L	13	Standard
I	127	13629.5	5.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.973	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		112.903	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.940
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.916
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606138105
Report Date/Time: Wednesday, June 29, 2016 19:34:54
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Method 6020 - Summary Report

Sample ID: L1606138105
Sample Date/Time: Wednesday, June 29, 2016 19:35:50
Number of Replicates: 3
Autosampler Position: 401
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81775.3	3.6				ug/L	74699	Standard
	Be	9	45.0	11.1	**0.0544**	0.006	11.5	ug/L	8	Standard
	Al	27	547945.2	2.8	**3.3933**	0.048	1.4	ug/L	1493	Standard
	Sc	45	73444.3	1.5				ug/L	61029	Standard
	Ti	47	212.7	8.9	**0.3795**	0.037	9.9	ug/L	35	Standard
	V	51	6482.3	2.1	**0.5523**	0.015	2.6	ug/L	1435	Standard
	Cr	52	11556.7	2.9	**0.3347**	0.014	4.0	ug/L	7635	Standard
	Cr	53	865.0	10.6	**0.4848**	0.072	14.9	ug/L	363	Standard
	Mn	55	123099.8	1.9	**15.2575**	0.218	1.4	ug/L	747	Standard
	Co	59	2101.5	1.5	**0.2401**	0.008	3.5	ug/L	234	Standard
	Ni	60	1463.7	4.5	**0.5572**	0.024	4.3	ug/L	215	Standard
	Cu	65	1004.0	2.5	**0.3664**	0.012	3.3	ug/L	104	Standard
	Zn	66	6132.9	2.2	**4.4370**	0.037	0.8	ug/L	363	Standard
>	**Ge**	72	568314.4	1.9				ug/L	495142	Standard
	As	75	135.4	21.1	**0.1651**	0.024	14.5	ug/L	-50	Standard
	Se	82	20.1	25.4	**0.0217**	0.043	197.6	ug/L	14	Standard
	Se-1	77	47.3	2.4	**-0.0575**	0.019	32.3	ug/L	42	Standard
>	**Ga**	71	615.0	5.6				mg/L	42	Standard
	Rb	85	5134.2	2.0				ug/L	17	Standard
	Y	89	506159.2	1.9				ug/L	417098	Standard
>	**Rh**	103	11.7	107.9				ug/L	13	Standard
	Mo	98	50.7	18.0	**0.0105**	0.003	28.3	ug/L	11	Standard
	Ag	107	125.7	10.6	**0.0035**	0.002	48.0	ug/L	68	Standard
	Cd	111	10.9	48.5	**-0.0035**	0.002	62.7	mg/L	2	Standard
	Cd	114	42.4	34.4	**0.0049**	0.002	48.6	ug/L	12	Standard
>	**In**	115	689821.8	0.4				ug/L	587441	Standard
	Sn	118	595.0	5.8	**-0.0080**	0.005	59.8	ug/L	497	Standard
	Sb	123	118.9	14.7	**0.0175**	0.003	18.8	ug/L	78	Standard
	Ba	135	10423.6	1.2	**4.3208**	0.035	0.8	ug/L	24	Standard
	Ce	140	31651.4	0.9				ug/L	25	Standard
>	**Tb**	159	1043112.5	1.4				ug/L	939701	Standard
	Ho	165	500.0	7.2				ug/L	10	Standard
	Tl	203	34.0	12.8	**0.0020**	0.000	23.2	ug/L	4	Standard
	Tl	205	20.0	66.1	**0.0027**	0.002	61.7	ug/L	2	Standard
	Pb	206	2645.2	1.4	**0.3784**	0.005	1.3	ug/L	240	Standard
	Pb	207	2160.5	2.6	**0.3433**	0.011	3.1	ug/L	198	Standard
	Pb	208	9496.8	0.4	**0.3858**	0.004	1.1	ug/L	883	Standard
	U	238	183.7	2.7	**0.0198**	0.001	4.5	ug/L	3	Standard
>	**Bi**	209	577076.9	1.0				ug/L	523984	Standard

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Na	23	1.7	173.2	**15.9398**	27.600	173.2	mg/L	0	Standard
Mg	24	31.7	39.7	**-0.0310**	0.014	45.0	mg/L	37	Standard
K	39	75.0	17.6	**0.0236**	0.024	101.0	mg/L	38	Standard
Ca	43	45.0	44.4	**-0.1502**	1.087	724.0	mg/L	10	Standard
Fe	54	679.1	0.8	**0.3402**	0.010	2.9	mg/L	179	Standard
Fe	57	390.0	9.7	**0.0271**	0.102	376.6	mg/L	335	Standard
Sc-1	45	73444.3	1.5				mg/L	61029	Standard
Cl	35	27695.3	0.4				ug/L	20195	Standard
Kr	83	1.3	114.6				ug/L	4	Standard
Br	81	2046.8	15.0				ug/L	1547	Standard
P	31	20195.1	3.7				ug/L	15286	Standard
S	34	2511.9	7.3				ug/L	1572	Standard
Sr	88	68.3	42.9				ug/L	73	Standard
C	12	50.0	40.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	3	Standard
Dy	164	1042.0	9.5				mg/L	6	Standard
Ho-1	165	500.0	7.2				mg/L	10	Standard
Er	166	446.7	15.2				mg/L	13	Standard
I	127	1841.8	32.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		109.473	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		114.778	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		117.428
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.132
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606138107
Sample Date/Time: Wednesday, June 29, 2016 19:39:01
Number of Replicates: 3
Autosampler Position: 402
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84183.2	0.7				ug/L	74699	Standard
	Be	9	1125.0	5.6	**1.1418**	0.071	6.2	ug/L	8	Standard
	Al	27	16362118.1	1.0	**98.7783**	0.357	0.4	ug/L	1493	Standard
	Sc	45	80079.5	2.6				ug/L	61029	Standard
	Ti	47	5684.7	1.2	**13.0248**	0.178	1.4	ug/L	35	Standard
	V	51	193164.5	0.6	**22.2022**	0.395	1.8	ug/L	1435	Standard
	Cr	52	144926.2	1.3	**16.0993**	0.107	0.7	ug/L	7635	Standard
	Cr	53	17089.6	2.1	**15.8598**	0.165	1.0	ug/L	363	Standard
	Mn	55	4945150.4	1.2	**621.8545**	12.591	2.0	ug/L	747	Standard
	Co	59	79442.1	0.4	**10.4972**	0.101	1.0	ug/L	234	Standard
	Ni	60	48759.0	0.6	**22.6802**	0.156	0.7	ug/L	215	Standard
	Cu	65	44548.4	1.0	**20.8546**	0.085	0.4	ug/L	104	Standard
	Zn	66	116987.3	1.0	**93.3289**	1.249	1.3	ug/L	363	Standard
>	**Ge**	72	565487.8	1.3				ug/L	495142	Standard
	As	75	12786.6	1.5	**10.0557**	0.155	1.5	ug/L	-50	Standard
	Se	82	93.9	6.5	**0.6112**	0.058	9.6	ug/L	14	Standard
	Se-1	77	134.7	12.3	**0.9941**	0.220	22.1	ug/L	42	Standard
>	**Ga**	71	20750.9	1.1				mg/L	42	Standard
	Rb	85	229576.4	1.2				ug/L	17	Standard
	Y	89	760564.3	0.9				ug/L	417098	Standard
>	**Rh**	103	26.7	39.0				ug/L	13	Standard
	Mo	98	714.7	6.9	**0.2279**	0.017	7.3	ug/L	11	Standard
	Ag	107	706.7	2.8	**0.0816**	0.003	4.3	ug/L	68	Standard
	Cd	111	991.8	3.3	**0.4053**	0.015	3.7	mg/L	2	Standard
	Cd	114	2256.1	2.3	**0.3810**	0.005	1.2	ug/L	12	Standard
>	**In**	115	674434.0	1.0				ug/L	587441	Standard
	Sn	118	836.7	10.4	**0.0300**	0.012	41.1	ug/L	497	Standard
	Sb	123	542.0	6.0	**0.0969**	0.005	5.6	ug/L	78	Standard
	Ba	135	363437.5	1.5	**154.6607**	2.916	1.9	ug/L	24	Standard
	Ce	140	1323769.8	0.4				ug/L	25	Standard
>	**Tb**	159	1046974.9	0.8				ug/L	939701	Standard
	Ho	165	21420.1	0.8				ug/L	10	Standard
	Tl	203	1015.7	4.2	**0.1138**	0.005	4.5	ug/L	4	Standard
	Tl	205	906.7	2.2	**0.1191**	0.002	2.0	ug/L	2	Standard
	Pb	206	225485.9	0.9	**39.5300**	0.272	0.7	ug/L	240	Standard
	Pb	207	184080.5	0.2	**36.3178**	0.069	0.2	ug/L	198	Standard
	Pb	208	811320.1	0.8	**40.5199**	0.434	1.1	ug/L	883	Standard
	U	238	5280.9	2.0	**0.7154**	0.017	2.3	ug/L	3	Standard
>	**Bi**	209	558508.9	0.3				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	105.0	49.7	**0.0390**	0.054	139.2	mg/L	37	Standard
K	39	875.0	3.0	**1.3597**	0.017	1.3	mg/L	38	Standard
Ca	43	123.3	10.2	**3.4107**	0.543	15.9	mg/L	10	Standard
Fe	54	18540.3	2.4	**11.8486**	0.489	4.1	mg/L	179	Standard
Fe	57	5050.8	2.1	**12.0198**	0.614	5.1	mg/L	335	Standard
> **Sc-1**	45	80079.5	2.6				mg/L	61029	Standard
Cl	35	26211.3	2.3				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	4010.5	1.9				ug/L	1547	Standard
P	31	18821.7	2.8				ug/L	15286	Standard
S	34	2180.2	5.1				ug/L	1572	Standard
Sr	88	100.0	25.0				ug/L	73	Standard
C	12	166.7	30.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	70.0	28.6				mg/L	3	Standard
Dy	164	35314.8	2.4				mg/L	6	Standard
Ho-1	165	21420.1	0.8				mg/L	10	Standard
Er	166	18965.2	4.5				mg/L	13	Standard
I	127	21211.5	3.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.697	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.207	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.809
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.589
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606138107
Sample Date/Time: Wednesday, June 29, 2016 19:42:13
Number of Replicates: 3
Autosampler Position: 403
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79962.1	1.1				ug/L	74699	Standard
	Be	9	35.0	37.8	**0.0449**	0.015	32.4	ug/L	8	Standard
	Al	27	348986.4	2.3	**2.2050**	0.043	1.9	ug/L	1493	Standard
	Sc	45	69050.4	2.1				ug/L	61029	Standard
	Ti	47	147.7	4.0	**0.2190**	0.009	4.2	ug/L	35	Standard
	V	51	5537.0	5.1	**0.4222**	0.040	9.5	ug/L	1435	Standard
	Cr	52	11219.2	0.9	**0.2513**	0.015	5.8	ug/L	7635	Standard
	Cr	53	801.7	3.8	**0.4006**	0.025	6.2	ug/L	363	Standard
	Mn	55	101661.8	3.0	**12.1540**	0.524	4.3	ug/L	747	Standard
	Co	59	1813.1	5.5	**0.1941**	0.015	7.9	ug/L	234	Standard
	Ni	60	1251.7	0.2	**0.4392**	0.009	2.1	ug/L	215	Standard
	Cu	65	1098.7	4.3	**0.3937**	0.026	6.7	ug/L	104	Standard
	Zn	66	4663.4	1.9	**3.1415**	0.081	2.6	ug/L	363	Standard
>	**Ge**	72	587910.1	1.4				ug/L	495142	Standard
	As	75	208.3	5.8	**0.2162**	0.008	3.9	ug/L	-50	Standard
	Se	82	14.6	52.1	**-0.0264**	0.056	213.9	ug/L	14	Standard
	Se-1	77	58.3	15.6	**0.0509**	0.111	217.0	ug/L	42	Standard
>	**Ga**	71	483.3	11.4				mg/L	42	Standard
	Rb	85	4672.4	3.2				ug/L	17	Standard
	Y	89	494582.5	2.5				ug/L	417098	Standard
>	**Rh**	103	10.0	50.0				ug/L	13	Standard
	Mo	98	50.9	2.1	**0.0113**	0.001	5.2	ug/L	11	Standard
	Ag	107	137.0	5.3	**0.0059**	0.001	14.4	ug/L	68	Standard
	Cd	111	22.2	22.2	**0.0016**	0.002	123.1	mg/L	2	Standard
	Cd	114	55.9	25.6	**0.0077**	0.003	34.0	ug/L	12	Standard
>	**In**	115	657881.3	1.7				ug/L	587441	Standard
	Sn	118	586.7	15.6	**-0.0052**	0.012	239.2	ug/L	497	Standard
	Sb	123	130.5	4.0	**0.0208**	0.001	5.8	ug/L	78	Standard
	Ba	135	7584.6	1.4	**3.2933**	0.054	1.6	ug/L	24	Standard
	Ce	140	27601.8	1.0				ug/L	25	Standard
>	**Tb**	159	1004279.0	0.4				ug/L	939701	Standard
	Ho	165	470.0	12.8				ug/L	10	Standard
	Tl	203	31.3	21.7	**0.0018**	0.001	42.5	ug/L	4	Standard
	Tl	205	38.3	39.8	**0.0052**	0.002	37.2	ug/L	2	Standard
	Pb	206	5039.5	2.9	**0.8074**	0.036	4.5	ug/L	240	Standard
	Pb	207	4082.6	3.5	**0.7312**	0.039	5.3	ug/L	198	Standard
	Pb	208	17367.6	1.6	**0.7884**	0.025	3.2	ug/L	883	Standard
	U	238	118.3	14.2	**0.0116**	0.002	21.2	ug/L	3	Standard
>	**Bi**	209	562827.5	1.3				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	41.7	6.9	**-0.0175**	0.004	24.7	mg/L	37	Standard
K	39	65.0	46.8	**0.0126**	0.058	464.1	mg/L	38	Standard
Ca	43	20.0	66.1	**-1.4118**	0.719	50.9	mg/L	10	Standard
Fe	54	548.6	17.9	**0.2728**	0.072	26.3	mg/L	179	Standard
Fe	57	318.3	8.7	**-0.1165**	0.103	88.6	mg/L	335	Standard
> **Sc-1**	45	69050.4	2.1				mg/L	61029	Standard
Cl	35	24683.4	2.1				ug/L	20195	Standard
Kr	83	3.0	33.3				ug/L	4	Standard
Br	81	2036.8	6.4				ug/L	1547	Standard
P	31	17868.9	0.9				ug/L	15286	Standard
S	34	1880.1	5.1				ug/L	1572	Standard
Sr	88	70.0	32.7				ug/L	73	Standard
C	12	63.3	32.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	851.3	21.1				mg/L	6	Standard
Ho-1	165	470.0	12.8				mg/L	10	Standard
Er	166	460.0	19.0				mg/L	13	Standard
I	127	2083.5	32.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.046	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		118.736	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.991
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.413
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606138402
Sample Date/Time: Wednesday, June 29, 2016 19:45:24
Number of Replicates: 3
Autosampler Position: 404
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78829.6	2.0				ug/L	74699	Standard
	Be	9	476.7	4.8	**0.5211**	0.034	6.6	ug/L	8	Standard
	Al	27	790696.4	0.9	**5.0858**	0.055	1.1	ug/L	1493	Standard
	Sc	45	79546.6	1.7				ug/L	61029	Standard
	Ti	47	5657.7	0.8	**12.8152**	0.349	2.7	ug/L	35	Standard
	V	51	106854.5	1.6	**12.0511**	0.193	1.6	ug/L	1435	Standard
	Cr	52	263051.4	1.4	**29.7045**	0.729	2.5	ug/L	7635	Standard
	Cr	53	32229.3	4.0	**29.8443**	0.696	2.3	ug/L	363	Standard
	Mn	55	1259215.6	0.6	**156.4341**	3.728	2.4	ug/L	747	Standard
	Co	59	45647.0	0.6	**5.9475**	0.157	2.6	ug/L	234	Standard
	Ni	60	134444.3	1.6	**62.0317**	0.857	1.4	ug/L	215	Standard
	Cu	65	50137.5	0.5	**23.2180**	0.523	2.3	ug/L	104	Standard
	Zn	66	191528.7	0.9	**151.3328**	2.746	1.8	ug/L	363	Standard
>	**Ge**	72	572152.6	2.7				ug/L	495142	Standard
	As	75	5700.3	1.6	**4.4645**	0.048	1.1	ug/L	-50	Standard
	Se	82	330.0	4.2	**2.4632**	0.049	2.0	ug/L	14	Standard
	Se-1	77	314.7	3.0	**3.1071**	0.115	3.7	ug/L	42	Standard
>	**Ga**	71	3685.4	1.6				mg/L	42	Standard
	Rb	85	41053.9	1.7				ug/L	17	Standard
	Y	89	1388727.0	1.6				ug/L	417098	Standard
>	**Rh**	103	25.0	0.0				ug/L	13	Standard
	Mo	98	3897.2	2.0	**1.2782**	0.019	1.5	ug/L	11	Standard
	Ag	107	551.3	5.8	**0.0614**	0.003	5.7	ug/L	68	Standard
	Cd	111	1240.5	0.7	**0.5131**	0.007	1.4	mg/L	2	Standard
	Cd	114	2915.5	4.4	**0.4970**	0.020	4.1	ug/L	12	Standard
>	**In**	115	669008.5	1.2				ug/L	587441	Standard
	Sn	118	676.7	8.2	**0.0070**	0.008	114.7	ug/L	497	Standard
	Sb	123	186.6	3.8	**0.0309**	0.001	3.8	ug/L	78	Standard
	Ba	135	221251.7	0.3	**94.9139**	1.345	1.4	ug/L	24	Standard
	Ce	140	471655.7	0.9				ug/L	25	Standard
>	**Tb**	159	1067869.0	0.9				ug/L	939701	Standard
	Ho	165	47698.3	1.5				ug/L	10	Standard
	Tl	203	1397.7	2.5	**0.1543**	0.005	3.4	ug/L	4	Standard
	Tl	205	1176.7	6.0	**0.1515**	0.008	5.0	ug/L	2	Standard
	Pb	206	21429.5	1.2	**3.6210**	0.069	1.9	ug/L	240	Standard
	Pb	207	15728.2	0.6	**2.9798**	0.021	0.7	ug/L	198	Standard
	Pb	208	70387.8	1.2	**3.3811**	0.084	2.5	ug/L	883	Standard
	U	238	18087.1	1.2	**2.4141**	0.054	2.2	ug/L	3	Standard
>	**Bi**	209	569388.1	1.3				ug/L	523984	Standard

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Na	23	5.0	173.2	**43.9188**	76.061	173.2	mg/L	0	Standard
Mg	24	210.0	6.3	**0.1429**	0.013	9.0	mg/L	37	Standard
K	39	275.0	8.3	**0.3521**	0.037	10.4	mg/L	38	Standard
Ca	43	148.3	19.8	**4.6742**	1.471	31.5	mg/L	10	Standard
Fe	54	12478.7	2.5	**7.9817**	0.313	3.9	mg/L	179	Standard
Fe	57	3430.4	4.1	**7.8688**	0.221	2.8	mg/L	335	Standard
> **Sc-1**	45	79546.6	1.7				mg/L	61029	Standard
Cl	35	26111.8	0.7				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	2043.5	3.5				ug/L	1547	Standard
P	31	19195.5	2.0				ug/L	15286	Standard
S	34	2368.5	5.4				ug/L	1572	Standard
Sr	88	153.3	13.2				ug/L	73	Standard
C	12	70.0	14.3				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	140.0	18.9				mg/L	3	Standard
Dy	164	65719.4	1.8				mg/L	6	Standard
Ho-1	165	47698.3	1.5				mg/L	10	Standard
Er	166	45979.7	1.2				mg/L	13	Standard
I	127	5242.6	1.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.530	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		115.553	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	113.885
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	108.665
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1606138404
Sample Date/Time: Wednesday, June 29, 2016 19:48:35
Number of Replicates: 3
Autosampler Position: 405
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80955.8	1.9				ug/L	74699	Standard
	Be	9	880.0	13.6	**0.9302**	0.126	13.6	ug/L	8	Standard
	Al	27	4591606.5	1.6	**28.8172**	0.235	0.8	ug/L	1493	Standard
	Sc	45	81773.4	1.2				ug/L	61029	Standard
	Ti	47	8450.7	1.8	**19.2499**	0.245	1.3	ug/L	35	Standard
	V	51	185955.1	1.6	**21.1827**	0.308	1.5	ug/L	1435	Standard
	Cr	52	431888.4	0.7	**49.5778**	0.407	0.8	ug/L	7635	Standard
	Cr	53	54036.2	1.9	**50.4433**	1.377	2.7	ug/L	363	Standard
	Mn	55	1979621.7	0.4	**246.7487**	3.142	1.3	ug/L	747	Standard
	Co	59	89211.3	2.3	**11.6929**	0.262	2.2	ug/L	234	Standard
	Ni	60	241828.7	1.1	**112.0223**	0.265	0.2	ug/L	215	Standard
	Cu	65	79842.9	1.5	**37.1424**	0.248	0.7	ug/L	104	Standard
	Zn	66	363879.1	1.7	**288.7674**	1.874	0.6	ug/L	363	Standard
>	**Ge**	72	570278.1	1.3				ug/L	495142	Standard
	As	75	11266.0	1.4	**8.7923**	0.037	0.4	ug/L	-50	Standard
	Se	82	562.8	1.7	**4.3149**	0.122	2.8	ug/L	14	Standard
	Se-1	77	468.7	10.3	**4.9506**	0.587	11.9	ug/L	42	Standard
>	**Ga**	71	6996.6	2.8				mg/L	42	Standard
	Rb	85	75201.3	3.4				ug/L	17	Standard
	Y	89	1637404.7	1.2				ug/L	417098	Standard
>	**Rh**	103	40.0	12.5				ug/L	13	Standard
	Mo	98	6065.7	2.4	**2.0076**	0.060	3.0	ug/L	11	Standard
	Ag	107	921.4	1.6	**0.1122**	0.003	2.7	ug/L	68	Standard
	Cd	111	1933.3	0.9	**0.8101**	0.015	1.9	mg/L	2	Standard
	Cd	114	4671.7	0.8	**0.8037**	0.006	0.7	ug/L	12	Standard
>	**In**	115	664089.4	1.0				ug/L	587441	Standard
	Sn	118	708.3	7.1	**0.0125**	0.007	53.2	ug/L	497	Standard
	Sb	123	171.2	9.0	**0.0282**	0.003	10.1	ug/L	78	Standard
	Ba	135	217409.8	1.0	**93.9488**	0.914	1.0	ug/L	24	Standard
	Ce	140	744689.2	0.9				ug/L	25	Standard
>	**Tb**	159	1077211.2	1.7				ug/L	939701	Standard
	Ho	165	62662.7	1.1				ug/L	10	Standard
	Tl	203	2865.3	1.3	**0.3204**	0.004	1.2	ug/L	4	Standard
	Tl	205	2535.2	5.2	**0.3286**	0.016	4.9	ug/L	2	Standard
	Pb	206	40598.7	0.9	**6.9743**	0.127	1.8	ug/L	240	Standard
	Pb	207	29975.3	2.2	**5.7854**	0.186	3.2	ug/L	198	Standard
	Pb	208	132785.8	0.6	**6.4904**	0.091	1.4	ug/L	883	Standard
	U	238	27584.4	0.2	**3.7106**	0.059	1.6	ug/L	3	Standard
>	**Bi**	209	565317.9	1.5				ug/L	523984	Standard

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Na	23	1.7	173.2	**14.1527**	24.505	173.1	mg/L	0	Standard
Mg	24	243.3	11.7	**0.1691**	0.025	14.5	mg/L	37	Standard
K	39	461.7	5.5	**0.6478**	0.049	7.5	mg/L	38	Standard
Ca	43	205.0	4.9	**7.1444**	0.559	7.8	mg/L	10	Standard
Fe	54	23854.6	1.3	**14.9557**	0.059	0.4	mg/L	179	Standard
Fe	57	6316.3	1.9	**14.9472**	0.123	0.8	mg/L	335	Standard
> **Sc-1**	45	81773.4	1.2				mg/L	61029	Standard
Cl	35	26395.0	1.0				ug/L	20195	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	8435.7	8.5				ug/L	1547	Standard
P	31	20819.3	1.9				ug/L	15286	Standard
S	34	2495.2	1.6				ug/L	1572	Standard
Sr	88	186.7	12.1				ug/L	73	Standard
C	12	26.7	21.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	520.0	8.4				mg/L	3	Standard
Dy	164	85733.4	1.4				mg/L	6	Standard
Ho-1	165	62662.7	1.1				mg/L	10	Standard
Er	166	61347.3	2.7				mg/L	13	Standard
I	127	12962.2	2.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.376	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		115.175	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.048
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.888
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 19:51:49
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79632.1	2.5				ug/L	74699	Standard
	Be	9	53037.7	1.9	**56.5448**	1.909	3.4	ug/L	8	Standard
	Al	27	8288547.2	1.5	**52.9043**	0.899	1.7	ug/L	1493	Standard
	Sc	45	68251.7	0.4				ug/L	61029	Standard
	Ti	47	44871.7	1.2	**102.9405**	2.024	2.0	ug/L	35	Standard
	V	51	450952.2	1.7	**51.7787**	1.350	2.6	ug/L	1435	Standard
	Cr	52	441674.6	0.8	**50.8503**	0.824	1.6	ug/L	7635	Standard
	Cr	53	54163.4	3.4	**50.6767**	1.716	3.4	ug/L	363	Standard
	Mn	55	408648.7	3.2	**50.9466**	2.025	4.0	ug/L	747	Standard
	Co	59	404996.9	2.1	**53.3495**	1.595	3.0	ug/L	234	Standard
	Ni	60	109209.9	1.2	**50.6487**	1.081	2.1	ug/L	215	Standard
	Cu	65	108068.7	1.0	**50.4372**	0.990	2.0	ug/L	104	Standard
	Zn	66	63914.2	1.2	**50.4711**	0.538	1.1	ug/L	363	Standard
>	Ge	72	568913.3	1.0				ug/L	495142	Standard
	As	75	64596.5	1.7	**50.2573**	1.198	2.4	ug/L	-50	Standard
	Se	82	6434.6	2.8	**50.8949**	1.678	3.3	ug/L	14	Standard
	Se-1	77	4404.6	0.9	**51.8699**	0.916	1.8	ug/L	42	Standard
>	Ga	71	81.7	19.7				mg/L	42	Standard
	Rb	85	868.4	8.5				ug/L	17	Standard
	Y	89	484608.1	0.7				ug/L	417098	Standard
>	Rh	103	25.0	40.0				ug/L	13	Standard
	Mo	98	300990.3	2.1	**101.3882**	1.976	1.9	ug/L	11	Standard
	Ag	107	359716.1	0.6	**49.5455**	0.289	0.6	ug/L	68	Standard
	Cd	111	115140.5	0.5	**49.4382**	0.205	0.4	mg/L	2	Standard
	Cd	114	277323.3	2.2	**48.5511**	1.074	2.2	ug/L	12	Standard
>	In	115	654244.8	0.1				ug/L	587441	Standard
	Sn	118	326410.3	0.9	**50.0768**	0.438	0.9	ug/L	497	Standard
	Sb	123	257734.5	0.6	**49.5626**	0.244	0.5	ug/L	78	Standard
	Ba	135	107937.1	0.2	**47.3350**	0.075	0.2	ug/L	24	Standard
	Ce	140	156.7	33.8				ug/L	25	Standard
>	Tb	159	993573.1	1.0				ug/L	939701	Standard
	Ho	165	18.3	41.7				ug/L	10	Standard
	Tl	203	442343.3	0.6	**51.3703**	0.497	1.0	ug/L	4	Standard
	Tl	205	397679.6	3.2	**53.2177**	1.929	3.6	ug/L	2	Standard
	Pb	206	282572.7	0.8	**50.5712**	0.781	1.5	ug/L	240	Standard
	Pb	207	252130.0	1.0	**50.7898**	0.969	1.9	ug/L	198	Standard
	Pb	208	1034503.8	1.3	**52.7468**	1.180	2.2	ug/L	883	Standard
	U	238	372072.1	1.5	**51.7486**	1.271	2.5	ug/L	3	Standard
>	Bi	209	547364.2	0.9				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.1101**	29.627	173.2	mg/L	0	Standard
Mg	24	4437.3	1.9	**5.0568**	0.105	2.1	mg/L	37	Standard
K	39	2166.8	4.9	**4.1677**	0.193	4.6	mg/L	38	Standard
Ca	43	105.0	40.7	**3.4097**	2.426	71.2	mg/L	10	Standard
Fe	54	6964.2	0.4	**5.1415**	0.037	0.7	mg/L	179	Standard
Fe	57	2053.5	5.5	**5.1659**	0.318	6.1	mg/L	335	Standard
> **Sc-1**	45	68251.7	0.4				mg/L	61029	Standard
Cl	35	27215.8	2.7				ug/L	20195	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	1920.1	6.9				ug/L	1547	Standard
P	31	20039.9	1.0				ug/L	15286	Standard
S	34	2546.9	7.4				ug/L	1572	Standard
Sr	88	71.7	29.0				ug/L	73	Standard
C	12	70.0	24.7				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	11.7	100.8				mg/L	6	Standard
Ho-1	165	18.3	41.7				mg/L	10	Standard
Er	166	33.3	34.6				mg/L	13	Standard
I	127	1696.8	22.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	113.090		
Al	27	105.809		
Sc	45			
Ti	47	102.941		
V	51	103.557		
Cr	52	101.701		
Cr	53			
Mn	55	101.893		
Co	59	106.699		
Ni	60	101.297		
Cu	65	100.874		
Zn	66	100.942		
> Ge	72		114.899	
As	75	100.515		
Se	82	101.790		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.388		
Ag	107	99.091		
Cd	111	98.876		
Cd	114			
In	115		111.372	
Sn	118	100.154		
Sb	123	99.125		
Ba	135	94.670		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.741		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.494		
U	238	103.497		
Bi	209		104.462	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 19:55:00
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	78377.2	0.9				ug/L	74699	Standard
	Be	9	16.7	17.3	**0.0256**	0.003	11.6	ug/L	8	Standard
	Al	27	3955.5	8.5	**0.0123**	0.002	16.7	ug/L	1493	Standard
	Sc	45	70123.6	2.1				ug/L	61029	Standard
	Ti	47	44.3	19.2	**-0.0067**	0.022	331.3	ug/L	35	Standard
	V	51	1494.9	5.1	**-0.0231**	0.005	19.5	ug/L	1435	Standard
	Cr	52	7869.7	1.7	**-0.0976**	0.038	39.0	ug/L	7635	Standard
	Cr	53	438.3	4.0	**0.0839**	0.027	31.8	ug/L	363	Standard
	Mn	55	1323.4	11.3	**0.0175**	0.017	96.4	ug/L	747	Standard
	Co	59	292.0	15.1	**0.0012**	0.005	416.2	ug/L	234	Standard
	Ni	60	231.7	5.0	**-0.0160**	0.006	40.4	ug/L	215	Standard
	Cu	65	142.7	7.1	**-0.0369**	0.003	9.0	ug/L	104	Standard
	Zn	66	477.7	7.4	**-0.0736**	0.020	26.8	ug/L	363	Standard
>	Ge	72	568079.4	2.5				ug/L	495142	Standard
	As	75	-36.3	34.6	**0.0313**	0.010	31.8	ug/L	-50	Standard
	Se	82	17.1	26.2	**-0.0026**	0.033	1282.0	ug/L	14	Standard
	Se-1	77	54.3	9.3	**0.0268**	0.068	253.5	ug/L	42	Standard
>	Ga	71	40.0	12.5				mg/L	42	Standard
	Rb	85	38.3	19.9				ug/L	17	Standard
	Y	89	483139.1	0.9				ug/L	417098	Standard
>	Rh	103	11.7	99.0				ug/L	13	Standard
	Mo	98	291.7	36.0	**0.0908**	0.037	40.3	ug/L	11	Standard
	Ag	107	161.3	21.3	**0.0089**	0.005	57.1	ug/L	68	Standard
	Cd	111	21.8	28.2	**0.0012**	0.002	201.3	mg/L	2	Standard
	Cd	114	48.0	10.4	**0.0061**	0.001	15.7	ug/L	12	Standard
>	In	115	669206.2	1.8				ug/L	587441	Standard
	Sn	118	881.7	18.2	**0.0375**	0.022	58.1	ug/L	497	Standard
	Sb	123	447.3	19.7	**0.0797**	0.015	18.9	ug/L	78	Standard
	Ba	135	111.0	14.0	**0.0316**	0.007	21.6	ug/L	24	Standard
	Ce	140	185.0	42.5				ug/L	25	Standard
>	Tb	159	1027080.2	0.9				ug/L	939701	Standard
	Ho	165	28.3	10.2				ug/L	10	Standard
	Tl	203	102.0	27.3	**0.0095**	0.003	32.1	ug/L	4	Standard
	Tl	205	76.7	13.6	**0.0100**	0.001	13.1	ug/L	2	Standard
	Pb	206	326.3	10.0	**-0.0155**	0.005	35.3	ug/L	240	Standard
	Pb	207	292.3	4.6	**-0.0139**	0.002	17.4	ug/L	198	Standard
	Pb	208	1226.7	4.7	**-0.0145**	0.003	18.0	ug/L	883	Standard
	U	238	78.7	31.6	**0.0060**	0.003	54.4	ug/L	3	Standard
>	Bi	209	574845.6	0.5				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	46.7	34.4	**-0.0124**	0.019	155.4	mg/L	37	Standard
K	39	46.7	44.6	**-0.0238**	0.042	178.2	mg/L	38	Standard
Ca	43	26.7	57.3	**-1.0457**	0.868	83.0	mg/L	10	Standard
Fe	54	161.1	25.9	**-0.0190**	0.033	173.6	mg/L	179	Standard
Fe	57	251.7	19.3	**-0.3314**	0.129	38.8	mg/L	335	Standard
Sc-1	45	70123.6	2.1				mg/L	61029	Standard
Cl	35	27868.9	0.6				ug/L	20195	Standard
Kr	83	0.7	86.6				ug/L	4	Standard
Br	81	2040.1	1.8				ug/L	1547	Standard
P	31	20417.1	4.9				ug/L	15286	Standard
S	34	2425.2	3.5				ug/L	1572	Standard
Sr	88	45.0	40.1				ug/L	73	Standard
C	12	50.0	52.9				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	11.9	129.9				mg/L	6	Standard
Ho-1	165	28.3	10.2				mg/L	10	Standard
Er	166	30.0	57.7				mg/L	13	Standard
I	127	1460.1	42.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		114.731	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.919
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.707
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606138406
Sample Date/Time: Wednesday, June 29, 2016 19:58:13
Number of Replicates: 3
Autosampler Position: 406
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77039.0	4.7				ug/L	74699	Standard
	Be	9	588.3	14.0	**0.6548**	0.074	11.3	ug/L	8	Standard
	Al	27	832772.7	0.7	**5.4883**	0.227	4.1	ug/L	1493	Standard
	Sc	45	75047.3	4.1				ug/L	61029	Standard
	Ti	47	6368.7	0.7	**14.6522**	0.311	2.1	ug/L	35	Standard
	V	51	122665.5	0.9	**14.0720**	0.287	2.0	ug/L	1435	Standard
	Cr	52	293324.5	0.5	**33.7422**	0.348	1.0	ug/L	7635	Standard
	Cr	53	35827.3	1.9	**33.7165**	0.271	0.8	ug/L	363	Standard
	Mn	55	1790039.2	2.5	**225.6481**	2.955	1.3	ug/L	747	Standard
	Co	59	59513.4	2.6	**7.8774**	0.097	1.2	ug/L	234	Standard
	Ni	60	162230.6	1.1	**75.9835**	0.734	1.0	ug/L	215	Standard
	Cu	65	58756.0	0.7	**27.6257**	0.286	1.0	ug/L	104	Standard
	Zn	66	213240.6	1.5	**171.0057**	1.221	0.7	ug/L	363	Standard
>	**Ge**	72	563753.3	1.5				ug/L	495142	Standard
	As	75	6354.9	1.3	**5.0439**	0.138	2.7	ug/L	-50	Standard
	Se	82	268.5	3.3	**2.0114**	0.102	5.1	ug/L	14	Standard
	Se-1	77	256.0	4.1	**2.4577**	0.168	6.8	ug/L	42	Standard
>	**Ga**	71	4010.5	2.8				mg/L	42	Standard
	Rb	85	39651.9	3.3				ug/L	17	Standard
	Y	89	1622063.0	2.1				ug/L	417098	Standard
>	**Rh**	103	33.3	8.7				ug/L	13	Standard
	Mo	98	4372.5	0.7	**1.4952**	0.034	2.3	ug/L	11	Standard
	Ag	107	608.3	2.2	**0.0725**	0.003	3.7	ug/L	68	Standard
	Cd	111	1369.4	3.4	**0.5916**	0.033	5.6	mg/L	2	Standard
	Cd	114	3220.4	7.1	**0.5731**	0.054	9.4	ug/L	12	Standard
>	**In**	115	642314.3	2.8				ug/L	587441	Standard
	Sn	118	866.7	3.3	**0.0411**	0.007	16.9	ug/L	497	Standard
	Sb	123	475.1	9.4	**0.0890**	0.010	11.7	ug/L	78	Standard
	Ba	135	210364.7	1.0	**94.0146**	1.722	1.8	ug/L	24	Standard
	Ce	140	620778.1	1.3				ug/L	25	Standard
>	**Tb**	159	1035282.0	2.1				ug/L	939701	Standard
	Ho	165	58499.4	0.8				ug/L	10	Standard
	Tl	203	1670.8	3.4	**0.1930**	0.007	3.5	ug/L	4	Standard
	Tl	205	1583.4	5.7	**0.2129**	0.013	6.3	ug/L	2	Standard
	Pb	206	23886.1	1.1	**4.2252**	0.039	0.9	ug/L	240	Standard
	Pb	207	17508.1	0.9	**3.4746**	0.041	1.2	ug/L	198	Standard
	Pb	208	79776.0	1.1	**4.0140**	0.064	1.6	ug/L	883	Standard
	U	238	22400.5	0.6	**3.1225**	0.026	0.8	ug/L	3	Standard
>	**Bi**	209	545342.1	0.8				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	190.0	5.3	**0.1344**	0.009	6.3	mg/L	37	Standard
K	39	241.7	12.5	**0.3203**	0.051	16.0	mg/L	38	Standard
Ca	43	168.3	3.4	**6.1267**	0.214	3.5	mg/L	10	Standard
Fe	54	12517.1	3.0	**8.4992**	0.364	4.3	mg/L	179	Standard
Fe	57	3428.7	4.4	**8.4118**	0.531	6.3	mg/L	335	Standard
> **Sc-1**	45	75047.3	4.1				mg/L	61029	Standard
Cl	35	26434.4	2.8				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	2270.2	3.9				ug/L	1547	Standard
P	31	19440.8	0.5				ug/L	15286	Standard
S	34	2256.8	6.7				ug/L	1572	Standard
Sr	88	170.0	33.4				ug/L	73	Standard
C	12	76.7	54.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	300.0	18.6				mg/L	3	Standard
Dy	164	81135.2	0.1				mg/L	6	Standard
Ho-1	165	58499.4	0.8				mg/L	10	Standard
Er	166	56983.6	0.5				mg/L	13	Standard
I	127	5462.7	4.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.133	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		113.857	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	109.341
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	104.076
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1606138408
Sample Date/Time: Wednesday, June 29, 2016 20:01:24
Number of Replicates: 3
Autosampler Position: 407
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79667.3	1.9				ug/L	74699	Standard
	Be	9	540.0	10.4	**0.5836**	0.070	11.9	ug/L	8	Standard
	Al	27	892686.6	1.0	**5.6842**	0.164	2.9	ug/L	1493	Standard
	Sc	45	78111.0	3.7				ug/L	61029	Standard
	Ti	47	6171.3	0.9	**13.8487**	0.141	1.0	ug/L	35	Standard
	V	51	131186.8	0.8	**14.6946**	0.149	1.0	ug/L	1435	Standard
	Cr	52	291322.4	2.4	**32.6724**	0.743	2.3	ug/L	7635	Standard
	Cr	53	35120.7	4.3	**32.2467**	1.471	4.6	ug/L	363	Standard
	Mn	55	2233691.8	2.2	**274.8758**	6.127	2.2	ug/L	747	Standard
	Co	59	65245.2	1.7	**8.4325**	0.147	1.7	ug/L	234	Standard
	Ni	60	190260.1	2.2	**86.9887**	2.023	2.3	ug/L	215	Standard
	Cu	65	66483.6	1.3	**30.5171**	0.399	1.3	ug/L	104	Standard
	Zn	66	187493.0	1.2	**146.6893**	2.307	1.6	ug/L	363	Standard
>	**Ge**	72	577612.7	0.6				ug/L	495142	Standard
	As	75	6445.8	1.9	**4.9929**	0.116	2.3	ug/L	-50	Standard
	Se	82	222.3	2.5	**1.5982**	0.037	2.3	ug/L	14	Standard
	Se-1	77	243.0	1.1	**2.2298**	0.039	1.8	ug/L	42	Standard
>	**Ga**	71	4360.6	1.0				mg/L	42	Standard
	Rb	85	41170.9	1.0				ug/L	17	Standard
	Y	89	1636669.5	0.9				ug/L	417098	Standard
>	**Rh**	103	33.3	22.9				ug/L	13	Standard
	Mo	98	4750.5	1.5	**1.5922**	0.009	0.6	ug/L	11	Standard
	Ag	107	651.7	5.1	**0.0767**	0.003	4.5	ug/L	68	Standard
	Cd	111	1476.5	1.8	**0.6252**	0.009	1.4	mg/L	2	Standard
	Cd	114	3537.9	6.1	**0.6161**	0.029	4.7	ug/L	12	Standard
>	**In**	115	655238.7	1.5				ug/L	587441	Standard
	Sn	118	965.0	3.4	**0.0534**	0.004	7.7	ug/L	497	Standard
	Sb	123	268.7	11.3	**0.0474**	0.005	10.8	ug/L	78	Standard
	Ba	135	196413.8	1.6	**86.0176**	0.137	0.2	ug/L	24	Standard
	Ce	140	596487.3	1.9				ug/L	25	Standard
>	**Tb**	159	1073225.5	1.0				ug/L	939701	Standard
	Ho	165	61178.3	1.7				ug/L	10	Standard
	Tl	203	2456.5	1.8	**0.2718**	0.001	0.3	ug/L	4	Standard
	Tl	205	2150.2	4.8	**0.2763**	0.017	6.1	ug/L	2	Standard
	Pb	206	24200.3	1.9	**4.0880**	0.010	0.3	ug/L	240	Standard
	Pb	207	17656.3	0.7	**3.3464**	0.078	2.3	ug/L	198	Standard
	Pb	208	79187.0	3.1	**3.8025**	0.046	1.2	ug/L	883	Standard
	U	238	22940.4	1.4	**3.0557**	0.038	1.2	ug/L	3	Standard
>	**Bi**	209	570736.3	2.0				ug/L	523984	Standard

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Na	23	3.3	173.2	**28.7877**	49.853	173.2	mg/L	0	Standard
Mg	24	161.7	15.3	**0.0975**	0.019	19.1	mg/L	37	Standard
K	39	273.3	12.8	**0.3583**	0.064	17.7	mg/L	38	Standard
Ca	43	191.7	9.9	**6.9329**	0.825	11.9	mg/L	10	Standard
Fe	54	12889.7	4.6	**8.4015**	0.298	3.5	mg/L	179	Standard
Fe	57	3420.4	5.7	**8.0292**	0.829	10.3	mg/L	335	Standard
> **Sc-1**	45	78111.0	3.7				mg/L	61029	Standard
Cl	35	25108.8	1.1				ug/L	20195	Standard
Kr	83	1.0	173.2				ug/L	4	Standard
Br	81	1990.1	4.1				ug/L	1547	Standard
P	31	18960.2	2.1				ug/L	15286	Standard
S	34	2216.8	7.1				ug/L	1572	Standard
Sr	88	153.3	28.5				ug/L	73	Standard
C	12	110.0	9.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	313.3	12.9				mg/L	3	Standard
Dy	164	83986.8	2.5				mg/L	6	Standard
Ho-1	165	61178.3	1.7				mg/L	10	Standard
Er	166	57776.6	0.9				mg/L	13	Standard
I	127	4875.8	1.4				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		106.651	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		116.656	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	111.541
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	108.922
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606138410
Sample Date/Time: Wednesday, June 29, 2016 20:04:36
Number of Replicates: 3
Autosampler Position: 408
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82222.6	2.1				ug/L	74699	Standard
	Be	9	466.7	0.6	**0.4893**	0.010	2.0	ug/L	8	Standard
	Al	27	798979.6	1.9	**4.9264**	0.080	1.6	ug/L	1493	Standard
	Sc	45	79640.5	1.7				ug/L	61029	Standard
	Ti	47	5792.4	2.5	**13.1770**	0.593	4.5	ug/L	35	Standard
	V	51	95139.7	1.4	**10.7518**	0.246	2.3	ug/L	1435	Standard
	Cr	52	279542.5	2.0	**31.7533**	0.664	2.1	ug/L	7635	Standard
	Cr	53	34038.2	1.3	**31.6794**	0.880	2.8	ug/L	363	Standard
	Mn	55	1053790.0	0.3	**131.3975**	3.080	2.3	ug/L	747	Standard
	Co	59	35027.1	0.6	**4.5723**	0.080	1.8	ug/L	234	Standard
	Ni	60	156240.8	1.2	**72.3985**	1.638	2.3	ug/L	215	Standard
	Cu	65	48550.0	0.3	**22.5657**	0.405	1.8	ug/L	104	Standard
	Zn	66	257712.2	0.3	**204.5897**	4.503	2.2	ug/L	363	Standard
>	**Ge**	72	569889.2	2.0				ug/L	495142	Standard
	As	75	6132.6	2.6	**4.8186**	0.190	4.0	ug/L	-50	Standard
	Se	82	361.1	9.2	**2.7244**	0.314	11.5	ug/L	14	Standard
	Se-1	77	331.7	7.4	**3.3212**	0.233	7.0	ug/L	42	Standard
>	**Ga**	71	4152.2	2.1				mg/L	42	Standard
	Rb	85	52623.0	3.5				ug/L	17	Standard
	Y	89	1425089.1	0.3				ug/L	417098	Standard
>	**Rh**	103	33.3	8.7				ug/L	13	Standard
	Mo	98	3927.9	0.3	**1.2648**	0.018	1.4	ug/L	11	Standard
	Ag	107	467.0	2.9	**0.0489**	0.003	5.2	ug/L	68	Standard
	Cd	111	1169.0	3.4	**0.4740**	0.011	2.3	mg/L	2	Standard
	Cd	114	2891.7	1.0	**0.4840**	0.007	1.5	ug/L	12	Standard
>	**In**	115	681463.1	1.2				ug/L	587441	Standard
	Sn	118	755.0	5.0	**0.0168**	0.007	41.1	ug/L	497	Standard
	Sb	123	219.3	13.0	**0.0363**	0.005	13.2	ug/L	78	Standard
	Ba	135	73803.3	1.7	**31.0670**	0.270	0.9	ug/L	24	Standard
	Ce	140	554709.1	1.1				ug/L	25	Standard
>	**Tb**	159	1094015.2	1.4				ug/L	939701	Standard
	Ho	165	50373.6	1.6				ug/L	10	Standard
	Tl	203	1120.7	1.3	**0.1214**	0.002	2.0	ug/L	4	Standard
	Tl	205	941.7	7.2	**0.1194**	0.008	6.7	ug/L	2	Standard
	Pb	206	24028.0	1.2	**4.0020**	0.045	1.1	ug/L	240	Standard
	Pb	207	17504.4	0.3	**3.2701**	0.054	1.6	ug/L	198	Standard
	Pb	208	78967.6	0.8	**3.7402**	0.091	2.4	ug/L	883	Standard
	U	238	25248.7	0.7	**3.3178**	0.077	2.3	ug/L	3	Standard
>	**Bi**	209	578682.9	1.6				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	188.3	33.0	**0.1211**	0.061	50.1	mg/L	37	Standard
K	39	248.3	3.1	**0.3067**	0.020	6.4	mg/L	38	Standard
Ca	43	173.3	7.3	**5.8747**	0.743	12.6	mg/L	10	Standard
Fe	54	14056.9	1.9	**8.9942**	0.034	0.4	mg/L	179	Standard
Fe	57	3822.2	6.9	**8.8892**	0.835	9.4	mg/L	335	Standard
> **Sc-1**	45	79640.5	1.7				mg/L	61029	Standard
Cl	35	25424.6	1.4				ug/L	20195	Standard
Kr	83	1.3	114.6				ug/L	4	Standard
Br	81	2053.5	6.1				ug/L	1547	Standard
P	31	20016.5	1.3				ug/L	15286	Standard
S	34	2301.8	5.1				ug/L	1572	Standard
Sr	88	141.7	32.0				ug/L	73	Standard
C	12	56.7	36.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	133.3	11.5				mg/L	3	Standard
Dy	164	72545.2	2.7				mg/L	6	Standard
Ho-1	165	50373.6	1.6				mg/L	10	Standard
Er	166	47160.0	0.9				mg/L	13	Standard
I	127	6799.9	2.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.072	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		115.096	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	116.005
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	110.439
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1606138412
Sample Date/Time: Wednesday, June 29, 2016 20:07:47
Number of Replicates: 3
Autosampler Position: 409
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81391.5	3.4				ug/L	74699	Standard
	Be	9	565.0	6.9	**0.5962**	0.020	3.4	ug/L	8	Standard
	Al	27	802320.4	2.6	**4.9984**	0.082	1.6	ug/L	1493	Standard
	Sc	45	77871.4	3.1				ug/L	61029	Standard
	Ti	47	8431.3	2.1	**19.3525**	0.252	1.3	ug/L	35	Standard
	V	51	136034.9	0.6	**15.5641**	0.178	1.1	ug/L	1435	Standard
	Cr	52	292890.6	0.7	**33.5584**	0.660	2.0	ug/L	7635	Standard
	Cr	53	35682.0	1.9	**33.4491**	0.599	1.8	ug/L	363	Standard
	Mn	55	2260782.0	0.5	**283.9966**	5.862	2.1	ug/L	747	Standard
	Co	59	82153.8	0.1	**10.8487**	0.184	1.7	ug/L	234	Standard
	Ni	60	172794.1	1.0	**80.6313**	1.536	1.9	ug/L	215	Standard
	Cu	65	63565.7	0.4	**29.7801**	0.432	1.5	ug/L	104	Standard
	Zn	66	251019.4	0.8	**200.6145**	2.591	1.3	ug/L	363	Standard
>	**Ge**	72	565970.9	1.7				ug/L	495142	Standard
	As	75	7636.9	2.3	**6.0250**	0.142	2.4	ug/L	-50	Standard
	Se	82	426.3	0.8	**3.2611**	0.084	2.6	ug/L	14	Standard
	Se-1	77	381.7	1.3	**3.9506**	0.115	2.9	ug/L	42	Standard
>	**Ga**	71	4992.5	2.6				mg/L	42	Standard
	Rb	85	46121.8	0.5				ug/L	17	Standard
	Y	89	1754842.6	1.7				ug/L	417098	Standard
>	**Rh**	103	43.3	35.3				ug/L	13	Standard
	Mo	98	5382.6	1.1	**1.7465**	0.044	2.5	ug/L	11	Standard
	Ag	107	637.3	4.9	**0.0719**	0.004	5.2	ug/L	68	Standard
	Cd	111	1430.5	6.2	**0.5853**	0.028	4.9	mg/L	2	Standard
	Cd	114	3407.8	7.3	**0.5746**	0.047	8.2	ug/L	12	Standard
>	**In**	115	677210.7	1.5				ug/L	587441	Standard
	Sn	118	780.0	4.5	**0.0212**	0.006	30.1	ug/L	497	Standard
	Sb	123	243.4	9.9	**0.0411**	0.005	12.6	ug/L	78	Standard
	Ba	135	199262.8	0.6	**84.4450**	1.189	1.4	ug/L	24	Standard
	Ce	140	678125.1	0.7				ug/L	25	Standard
>	**Tb**	159	1071624.9	1.1				ug/L	939701	Standard
	Ho	165	67051.4	0.5				ug/L	10	Standard
	Tl	203	1859.8	4.4	**0.2096**	0.007	3.5	ug/L	4	Standard
	Tl	205	1828.4	5.2	**0.2396**	0.011	4.7	ug/L	2	Standard
	Pb	206	33182.6	0.6	**5.7494**	0.057	1.0	ug/L	240	Standard
	Pb	207	24419.7	0.3	**4.7511**	0.035	0.7	ug/L	198	Standard
	Pb	208	111320.6	0.3	**5.4889**	0.050	0.9	ug/L	883	Standard
	U	238	25349.9	1.3	**3.4462**	0.014	0.4	ug/L	3	Standard
>	**Bi**	209	559224.1	1.0				ug/L	523984	Standard

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Na	23	3.3	86.6	**30.2574**	26.235	86.7	mg/L	0	Standard
Mg	24	168.3	9.1	**0.1052**	0.014	12.9	mg/L	37	Standard
K	39	280.0	6.4	**0.3709**	0.027	7.3	mg/L	38	Standard
Ca	43	176.7	27.2	**6.2736**	2.632	42.0	mg/L	10	Standard
Fe	54	15625.1	2.7	**10.2448**	0.046	0.4	mg/L	179	Standard
Fe	57	4357.3	3.7	**10.5343**	0.341	3.2	mg/L	335	Standard
> **Sc-1**	45	77871.4	3.1				mg/L	61029	Standard
Cl	35	26050.4	2.2				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	2310.2	5.7				ug/L	1547	Standard
P	31	19966.5	2.1				ug/L	15286	Standard
S	34	2301.8	1.2				ug/L	1572	Standard
Sr	88	181.7	8.4				ug/L	73	Standard
C	12	60.0	66.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	466.7	15.8				mg/L	3	Standard
Dy	164	94635.2	0.7				mg/L	6	Standard
Ho-1	165	67051.4	0.5				mg/L	10	Standard
Er	166	62943.8	1.5				mg/L	13	Standard
I	127	6689.8	6.1				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		108.960	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		114.305	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	115.281
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	106.725
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 20:11:01
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	78720.7	2.9				ug/L	74699	Standard
	Be	9	53925.8	1.9	**58.1477**	1.206	2.1	ug/L	8	Standard
	Al	27	8443805.5	1.2	**54.5410**	1.847	3.4	ug/L	1493	Standard
	Sc	45	68074.4	3.5				ug/L	61029	Standard
	Ti	47	45146.2	1.1	**105.2966**	1.372	1.3	ug/L	35	Standard
	V	51	452407.6	0.9	**52.8112**	0.533	1.0	ug/L	1435	Standard
	Cr	52	439865.6	0.2	**51.4989**	0.494	1.0	ug/L	7635	Standard
	Cr	53	55131.8	1.5	**52.4610**	1.191	2.3	ug/L	363	Standard
	Mn	55	411766.6	1.7	**52.1886**	1.083	2.1	ug/L	747	Standard
	Co	59	411137.6	1.8	**55.0576**	1.090	2.0	ug/L	234	Standard
	Ni	60	108563.6	1.0	**51.1869**	0.633	1.2	ug/L	215	Standard
	Cu	65	108514.2	0.8	**51.4879**	0.273	0.5	ug/L	104	Standard
	Zn	66	63813.1	1.5	**51.2390**	0.656	1.3	ug/L	363	Standard
>	Ge	72	559563.9	0.9				ug/L	495142	Standard
	As	75	65025.3	0.7	**51.4299**	0.351	0.7	ug/L	-50	Standard
	Se	82	6607.2	0.8	**53.1327**	0.267	0.5	ug/L	14	Standard
	Se-1	77	4509.3	0.5	**54.0117**	0.383	0.7	ug/L	42	Standard
>	Ga	71	68.3	11.2				mg/L	42	Standard
	Rb	85	971.7	11.9				ug/L	17	Standard
	Y	89	484276.8	2.3				ug/L	417098	Standard
>	Rh	103	33.3	52.7				ug/L	13	Standard
	Mo	98	305352.5	1.7	**102.8803**	2.601	2.5	ug/L	11	Standard
	Ag	107	366186.0	1.2	**50.4411**	0.533	1.1	ug/L	68	Standard
	Cd	111	118185.8	1.5	**50.7502**	0.681	1.3	mg/L	2	Standard
	Cd	114	288421.2	1.0	**50.5001**	0.711	1.4	ug/L	12	Standard
>	In	115	654225.0	1.4				ug/L	587441	Standard
	Sn	118	325668.1	1.2	**49.9654**	0.174	0.3	ug/L	497	Standard
	Sb	123	260726.4	2.1	**50.1401**	0.797	1.6	ug/L	78	Standard
	Ba	135	109583.9	1.3	**48.0616**	0.591	1.2	ug/L	24	Standard
	Ce	140	191.7	20.9				ug/L	25	Standard
>	Tb	159	983539.2	1.4				ug/L	939701	Standard
	Ho	165	21.7	13.3				ug/L	10	Standard
	Tl	203	449254.6	0.7	**52.6820**	0.493	0.9	ug/L	4	Standard
	Tl	205	410287.0	1.8	**55.4353**	1.032	1.9	ug/L	2	Standard
	Pb	206	287176.7	1.5	**51.8952**	0.724	1.4	ug/L	240	Standard
	Pb	207	254226.6	1.1	**51.7082**	0.492	1.0	ug/L	198	Standard
	Pb	208	1062593.6	0.7	**54.7051**	0.438	0.8	ug/L	883	Standard
	U	238	383746.1	0.8	**53.8863**	0.314	0.6	ug/L	3	Standard
>	Bi	209	542059.3	0.3				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.9421**	31.068	173.2	mg/L	0	Standard
Mg	24	4572.4	3.8	**5.2291**	0.219	4.2	mg/L	37	Standard
K	39	2235.2	5.1	**4.3138**	0.121	2.8	mg/L	38	Standard
Ca	43	108.3	35.8	**3.6601**	2.380	65.0	mg/L	10	Standard
Fe	54	7126.2	2.9	**5.2851**	0.313	5.9	mg/L	179	Standard
Fe	57	2081.8	4.0	**5.2741**	0.321	6.1	mg/L	335	Standard
Sc-1	45	68074.4	3.5				mg/L	61029	Standard
Cl	35	27726.7	0.9				ug/L	20195	Standard
Kr	83	0.7	86.6				ug/L	4	Standard
Br	81	1910.1	6.0				ug/L	1547	Standard
P	31	20502.2	2.0				ug/L	15286	Standard
S	34	2426.9	4.0				ug/L	1572	Standard
Sr	88	50.0	26.5				ug/L	73	Standard
C	12	73.3	20.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	15.9	37.3				mg/L	6	Standard
Ho-1	165	21.7	13.3				mg/L	10	Standard
Er	166	16.7	34.6				mg/L	13	Standard
I	127	1525.1	31.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	116.295		
Al	27	109.082		
Sc	45			
Ti	47	105.297		
V	51	105.622		
Cr	52	102.998		
Cr	53			
Mn	55	104.377		
Co	59	110.115		
Ni	60	102.374		
Cu	65	102.976		
Zn	66	102.478		
Ge	72		113.011	
As	75	102.860		
Se	82	106.265		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	102.880		
Ag	107	100.882		
Cd	111	101.500		
Cd	114			
In	115		111.369	
Sn	118	99.931		
Sb	123	100.280		
Ba	135	96.123		
Ce	140			
Tb	159			
Ho	165			
Tl	203	105.364		
Tl	205			
Pb	206			
Pb	207			
Pb	208	109.410		
U	238	107.773		
Bi	209		103.450	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Co	59	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 20:14:12
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79194.8	0.3				ug/L	74699	Standard
	Be	9	31.7	9.1	**0.0415**	0.003	7.4	ug/L	8	Standard
	Al	27	5331.0	39.7	**0.0208**	0.013	64.7	ug/L	1493	Standard
	Sc	45	70443.5	2.7				ug/L	61029	Standard
	Ti	47	45.0	15.6	**-0.0077**	0.016	206.1	ug/L	35	Standard
	V	51	1613.4	5.4	**-0.0133**	0.013	95.3	ug/L	1435	Standard
	Cr	52	7981.4	3.6	**-0.1047**	0.047	45.2	ug/L	7635	Standard
	Cr	53	418.3	25.3	**0.0570**	0.103	180.4	ug/L	363	Standard
	Mn	55	1741.1	30.3	**0.0658**	0.068	103.0	ug/L	747	Standard
	Co	59	378.7	17.0	**0.0117**	0.009	74.2	ug/L	234	Standard
	Ni	60	306.7	29.3	**0.0162**	0.043	265.9	ug/L	215	Standard
	Cu	65	193.0	22.7	**-0.0150**	0.021	143.0	ug/L	104	Standard
	Zn	66	576.0	19.1	**-0.0039**	0.093	2387.7	ug/L	363	Standard
>	**Ge**	72	580508.2	1.5				ug/L	495142	Standard
	As	75	-17.3	276.0	**0.0468**	0.036	77.6	ug/L	-50	Standard
	Se	82	19.7	47.6	**0.0162**	0.076	468.0	ug/L	14	Standard
	Se-1	77	62.3	8.8	**0.1062**	0.073	68.4	ug/L	42	Standard
>	**Ga**	71	43.3	24.0				mg/L	42	Standard
	Rb	85	53.3	27.1				ug/L	17	Standard
	Y	89	466004.6	0.7				ug/L	417098	Standard
>	**Rh**	103	18.3	41.7				ug/L	13	Standard
	Mo	98	326.5	17.1	**0.1045**	0.019	18.6	ug/L	11	Standard
	Ag	107	195.7	20.5	**0.0141**	0.005	38.2	ug/L	68	Standard
	Cd	111	49.8	49.3	**0.0134**	0.010	76.8	mg/L	2	Standard
	Cd	114	97.6	30.0	**0.0150**	0.005	33.6	ug/L	12	Standard
>	**In**	115	653349.0	0.9				ug/L	587441	Standard
	Sn	118	958.4	16.5	**0.0527**	0.023	43.7	ug/L	497	Standard
	Sb	123	468.2	24.3	**0.0858**	0.021	24.7	ug/L	78	Standard
	Ba	135	169.0	53.9	**0.0580**	0.039	67.5	ug/L	24	Standard
	Ce	140	383.3	72.7				ug/L	25	Standard
>	**Tb**	159	1008003.3	2.5				ug/L	939701	Standard
	Ho	165	33.3	56.8				ug/L	10	Standard
	Tl	203	138.0	27.1	**0.0136**	0.004	29.9	ug/L	4	Standard
	Tl	205	128.3	47.6	**0.0167**	0.008	47.6	ug/L	2	Standard
	Pb	206	364.7	12.5	**-0.0084**	0.008	93.5	ug/L	240	Standard
	Pb	207	321.7	11.0	**-0.0076**	0.006	84.7	ug/L	198	Standard
	Pb	208	1298.7	10.5	**-0.0103**	0.007	67.0	ug/L	883	Standard
	U	238	121.3	35.3	**0.0118**	0.006	48.9	ug/L	3	Standard
>	**Bi**	209	569222.6	0.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	31.7	50.8	**-0.0295**	0.019	63.3	mg/L	37	Standard
K	39	58.3	13.1	**-0.0021**	0.017	817.3	mg/L	38	Standard
Ca	43	26.7	28.6	**-1.0586**	0.442	41.7	mg/L	10	Standard
Fe	54	154.2	11.8	**-0.0252**	0.011	43.9	mg/L	179	Standard
Fe	57	258.3	4.9	**-0.3125**	0.056	18.0	mg/L	335	Standard
Sc-1	45	70443.5	2.7				mg/L	61029	Standard
Cl	35	27476.9	1.3				ug/L	20195	Standard
Kr	83	1.3	86.6				ug/L	4	Standard
Br	81	1946.8	3.9				ug/L	1547	Standard
P	31	20592.3	4.9				ug/L	15286	Standard
S	34	2348.5	2.8				ug/L	1572	Standard
Sr	88	75.0	46.7				ug/L	73	Standard
C	12	43.3	13.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	74.1	39.2				mg/L	6	Standard
Ho-1	165	33.3	56.8				mg/L	10	Standard
Er	166	53.3	71.0				mg/L	13	Standard
I	127	1293.4	30.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		117.241	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.219
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.633
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW 43 WG573291-03
Sample Date/Time: Wednesday, June 29, 2016 20:17:26
Number of Replicates: 3
Autosampler Position: 410
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78266.6	1.0				ug/L	74699	Standard
	Be	9	21.7	58.1	**0.0312**	0.014	44.4	ug/L	8	Standard
	Al	27	32901.2	14.4	**0.2003**	0.031	15.3	ug/L	1493	Standard
	Sc	45	68990.1	1.1				ug/L	61029	Standard
	Ti	47	59.7	25.6	**0.0271**	0.036	131.8	ug/L	35	Standard
	V	51	1740.6	13.9	**0.0036**	0.029	816.2	ug/L	1435	Standard
	Cr	52	10743.1	2.3	**0.2282**	0.033	14.5	ug/L	7635	Standard
	Cr	53	856.7	10.0	**0.4710**	0.086	18.2	ug/L	363	Standard
	Mn	55	4965.9	44.9	**0.4694**	0.280	59.7	ug/L	747	Standard
	Co	59	438.7	27.8	**0.0202**	0.016	81.0	ug/L	234	Standard
	Ni	60	464.7	17.9	**0.0906**	0.040	44.1	ug/L	215	Standard
	Cu	65	288.0	10.4	**0.0300**	0.015	49.7	ug/L	104	Standard
	Zn	66	2615.6	1.4	**1.6135**	0.041	2.5	ug/L	363	Standard
>	**Ge**	72	573366.1	0.8				ug/L	495142	Standard
	As	75	-37.9	81.3	**0.0303**	0.024	78.8	ug/L	-50	Standard
	Se	82	11.3	32.8	**-0.0488**	0.029	60.5	ug/L	14	Standard
	Se-1	77	61.0	9.1	**0.0990**	0.067	67.3	ug/L	42	Standard
>	**Ga**	71	31.7	9.1				mg/L	42	Standard
	Rb	85	100.0	26.5				ug/L	17	Standard
	Y	89	479627.1	2.2				ug/L	417098	Standard
>	**Rh**	103	1.7	173.2				ug/L	13	Standard
	Mo	98	155.9	47.8	**0.0477**	0.025	52.9	ug/L	11	Standard
	Ag	107	191.7	76.1	**0.0140**	0.020	145.7	ug/L	68	Standard
	Cd	111	21.5	58.8	**0.0014**	0.005	377.2	mg/L	2	Standard
	Cd	114	53.4	80.4	**0.0074**	0.008	102.3	ug/L	12	Standard
>	**In**	115	641242.2	1.6				ug/L	587441	Standard
	Sn	118	930.0	4.7	**0.0512**	0.008	15.1	ug/L	497	Standard
	Sb	123	286.5	19.6	**0.0520**	0.011	21.3	ug/L	78	Standard
	Ba	135	402.7	93.5	**0.1636**	0.167	102.4	ug/L	24	Standard
	Ce	140	951.7	120.0				ug/L	25	Standard
>	**Tb**	159	992014.1	1.0				ug/L	939701	Standard
	Ho	165	68.3	105.1				ug/L	10	Standard
	Tl	203	138.0	108.8	**0.0140**	0.017	122.9	ug/L	4	Standard
	Tl	205	136.7	67.7	**0.0182**	0.012	67.1	ug/L	2	Standard
	Pb	206	481.7	43.4	**0.0137**	0.037	272.5	ug/L	240	Standard
	Pb	207	395.0	43.8	**0.0084**	0.035	416.2	ug/L	198	Standard
	Pb	208	1692.0	26.2	**0.0108**	0.023	209.9	ug/L	883	Standard
	U	238	120.3	76.5	**0.0121**	0.013	104.7	ug/L	3	Standard
>	**Bi**	209	557465.1	0.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	46.7	43.3	**-0.0120**	0.023	188.7	mg/L	37	Standard
K	39	41.7	73.3	**-0.0331**	0.059	178.0	mg/L	38	Standard
Ca	43	16.7	45.8	**-1.5897**	0.437	27.5	mg/L	10	Standard
Fe	54	190.8	15.9	**0.0047**	0.022	466.7	mg/L	179	Standard
Fe	57	281.7	18.5	**-0.2277**	0.154	67.5	mg/L	335	Standard
Sc-1	45	68990.1	1.1				mg/L	61029	Standard
Cl	35	27241.8	2.0				ug/L	20195	Standard
Kr	83	3.3	34.6				ug/L	4	Standard
Br	81	1960.1	2.7				ug/L	1547	Standard
P	31	19042.0	2.0				ug/L	15286	Standard
S	34	2271.8	2.5				ug/L	1572	Standard
Sr	88	70.0	14.3				ug/L	73	Standard
C	12	93.3	12.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	57.4	72.5				mg/L	6	Standard
Ho-1	165	68.3	105.1				mg/L	10	Standard
Er	166	53.3	75.8				mg/L	13	Standard
I	127	1241.7	37.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		104.776	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		115.798	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.159
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.390
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 43 WG573291-04
Sample Date/Time: Wednesday, June 29, 2016 20:20:37
Number of Replicates: 3
Autosampler Position: 411
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79286.9	1.2				ug/L	74699	Standard
	Be	9	55518.2	1.7	**59.4178**	0.565	1.0	ug/L	8	Standard
	Al	27	18234.3	3.1	**0.1035**	0.005	4.4	ug/L	1493	Standard
	Sc	45	71925.5	3.7				ug/L	61029	Standard
	Ti	47	66.7	12.9	**0.0416**	0.023	54.2	ug/L	35	Standard
	V	51	464385.2	1.4	**52.3659**	1.151	2.2	ug/L	1435	Standard
	Cr	52	468709.1	0.6	**53.0500**	1.578	3.0	ug/L	7635	Standard
	Cr	53	57400.2	0.6	**52.7689**	1.471	2.8	ug/L	363	Standard
	Mn	55	425738.4	0.7	**52.1249**	1.035	2.0	ug/L	747	Standard
	Co	59	411335.9	1.2	**53.2163**	1.483	2.8	ug/L	234	Standard
	Ni	60	114540.7	1.0	**52.1842**	1.705	3.3	ug/L	215	Standard
	Cu	65	115424.0	0.4	**52.9151**	1.312	2.5	ug/L	104	Standard
	Zn	66	68318.0	0.2	**53.0163**	1.377	2.6	ug/L	363	Standard
>	**Ge**	72	579422.8	2.7				ug/L	495142	Standard
	As	75	63888.1	1.5	**48.8227**	1.412	2.9	ug/L	-50	Standard
	Se	82	6548.4	1.5	**50.8872**	2.152	4.2	ug/L	14	Standard
	Se-1	77	4570.0	2.1	**52.8570**	0.847	1.6	ug/L	42	Standard
>	**Ga**	71	68.3	27.7				mg/L	42	Standard
	Rb	85	96.7	7.9				ug/L	17	Standard
	Y	89	471340.1	1.5				ug/L	417098	Standard
>	**Rh**	103	33.3	52.7				ug/L	13	Standard
	Mo	98	1844.9	1.6	**0.6204**	0.021	3.4	ug/L	11	Standard
	Ag	107	386699.9	0.4	**53.6468**	1.108	2.1	ug/L	68	Standard
	Cd	111	120754.4	0.7	**52.2256**	1.320	2.5	mg/L	2	Standard
	Cd	114	290744.9	1.2	**51.2713**	1.454	2.8	ug/L	12	Standard
>	**In**	115	649724.4	1.8				ug/L	587441	Standard
	Sn	118	890.0	5.4	**0.0430**	0.007	15.1	ug/L	497	Standard
	Sb	123	259622.2	1.1	**50.2896**	1.419	2.8	ug/L	78	Standard
	Ba	135	113320.2	1.2	**50.0586**	1.415	2.8	ug/L	24	Standard
	Ce	140	216.7	24.0				ug/L	25	Standard
>	**Tb**	159	1024515.0	4.0				ug/L	939701	Standard
	Ho	165	13.3	57.3				ug/L	10	Standard
	Tl	203	467714.3	0.2	**50.8953**	1.428	2.8	ug/L	4	Standard
	Tl	205	419104.4	1.0	**52.5470**	1.541	2.9	ug/L	2	Standard
	Pb	206	302725.5	0.9	**50.7682**	1.716	3.4	ug/L	240	Standard
	Pb	207	257785.2	0.8	**48.6571**	1.672	3.4	ug/L	198	Standard
	Pb	208	1092150.5	0.9	**52.1642**	0.990	1.9	ug/L	883	Standard
	U	238	389261.3	0.3	**50.7252**	1.507	3.0	ug/L	3	Standard
>	**Bi**	209	584427.6	2.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	56.7	20.4	**-0.0027**	0.015	535.8	mg/L	37	Standard
K	39	35.0	42.9	**-0.0491**	0.026	52.4	mg/L	38	Standard
Ca	43	18.3	15.7	**-1.5405**	0.154	10.0	mg/L	10	Standard
Fe	54	173.6	39.1	**-0.0145**	0.044	301.9	mg/L	179	Standard
Fe	57	231.7	7.6	**-0.4064**	0.037	9.2	mg/L	335	Standard
Sc-1	45	71925.5	3.7				mg/L	61029	Standard
Cl	35	25598.9	2.5				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	1866.8	9.1				ug/L	1547	Standard
P	31	19263.9	1.4				ug/L	15286	Standard
S	34	2041.8	5.6				ug/L	1572	Standard
Sr	88	55.0	27.3				ug/L	73	Standard
C	12	76.7	37.7				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	3	Standard
Dy	164	19.2	93.9				mg/L	6	Standard
Ho-1	165	13.3	57.3				mg/L	10	Standard
Er	166	16.7	124.9				mg/L	13	Standard
I	127	1405.1	22.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		106.142	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		117.021	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.602
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		111.535
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: LCSW 43 WG573291-04
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Method 6020 - Summary Report

Sample ID: L1606097401 WG573291-01
Sample Date/Time: Wednesday, June 29, 2016 20:23:48
Number of Replicates: 3
Autosampler Position: 412
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81548.9	1.6				ug/L	74699	Standard
	Be	9	36.7	15.7	**0.0457**	0.006	12.1	ug/L	8	Standard
	Al	27	11596363.1	1.3	**72.2698**	0.564	0.8	ug/L	1493	Standard
	Sc	45	73884.7	1.3				ug/L	61029	Standard
	Ti	47	344.7	7.0	**0.7127**	0.059	8.2	ug/L	35	Standard
	V	51	2330.4	3.5	**0.0834**	0.015	17.8	ug/L	1435	Standard
	Cr	52	13306.8	2.8	**0.5995**	0.076	12.7	ug/L	7635	Standard
	Cr	53	1323.4	7.3	**0.9647**	0.110	11.4	ug/L	363	Standard
	Mn	55	1766896.9	0.7	**229.1909**	3.866	1.7	ug/L	747	Standard
	Co	59	11800.3	0.6	**1.5775**	0.021	1.4	ug/L	234	Standard
	Ni	60	3337.7	1.4	**1.4870**	0.026	1.7	ug/L	215	Standard
	Cu	65	729.0	2.5	**0.2502**	0.002	1.0	ug/L	104	Standard
	Zn	66	5843.1	1.1	**4.3791**	0.046	1.0	ug/L	363	Standard
>	**Ge**	72	548022.2	2.0				ug/L	495142	Standard
	As	75	368.2	8.1	**0.3569**	0.029	8.2	ug/L	-50	Standard
	Se	82	62.0	10.3	**0.3726**	0.060	16.1	ug/L	14	Standard
	Se-1	77	77.3	2.7	**0.3344**	0.023	6.7	ug/L	42	Standard
>	**Ga**	71	126.7	17.8				mg/L	42	Standard
	Rb	85	31524.4	1.4				ug/L	17	Standard
	Y	89	492847.4	3.2				ug/L	417098	Standard
>	**Rh**	103	60.0	14.4				ug/L	13	Standard
	Mo	98	169.7	8.5	**0.0488**	0.006	11.4	ug/L	11	Standard
	Ag	107	132.7	27.4	**0.0046**	0.005	112.7	ug/L	68	Standard
	Cd	111	39.0	30.5	**0.0081**	0.005	64.3	mg/L	2	Standard
	Cd	114	83.8	14.7	**0.0119**	0.002	19.5	ug/L	12	Standard
>	**In**	115	686408.4	2.0				ug/L	587441	Standard
	Sn	118	1350.1	6.2	**0.1033**	0.015	14.9	ug/L	497	Standard
	Sb	123	1853.5	25.3	**0.3348**	0.082	24.4	ug/L	78	Standard
	Ba	135	131659.9	0.9	**55.0560**	1.555	2.8	ug/L	24	Standard
	Ce	140	2260.2	0.8				ug/L	25	Standard
>	**Tb**	159	1046624.7	1.4				ug/L	939701	Standard
	Ho	165	75.0	29.1				ug/L	10	Standard
	Tl	203	216.3	9.4	**0.0226**	0.002	8.3	ug/L	4	Standard
	Tl	205	203.3	8.6	**0.0265**	0.002	7.2	ug/L	2	Standard
	Pb	206	535.3	4.4	**0.0217**	0.002	11.2	ug/L	240	Standard
	Pb	207	421.7	4.6	**0.0124**	0.003	25.0	ug/L	198	Standard
	Pb	208	1891.4	2.2	**0.0194**	0.001	4.1	ug/L	883	Standard
	U	238	92.7	15.8	**0.0080**	0.002	21.9	ug/L	3	Standard
>	**Bi**	209	565094.9	1.8				ug/L	523984	Standard

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Na	23	1.7	173.2	**16.0814**	27.845	173.2	mg/L	0	Standard
Mg	24	5874.5	4.9	**6.2016**	0.379	6.1	mg/L	37	Standard
K	39	696.7	5.3	**1.1574**	0.052	4.5	mg/L	38	Standard
Ca	43	108.3	19.2	**3.1206**	1.021	32.7	mg/L	10	Standard
Fe	54	752.2	10.4	**0.3885**	0.054	13.9	mg/L	179	Standard
Fe	57	410.0	11.6	**0.0774**	0.139	179.8	mg/L	335	Standard
Sc-1	45	73884.7	1.3				mg/L	61029	Standard
Cl	35	27603.8	2.8				ug/L	20195	Standard
Kr	83	3.0	66.7				ug/L	4	Standard
Br	81	11711.2	8.2				ug/L	1547	Standard
P	31	22032.7	3.4				ug/L	15286	Standard
S	34	2200.2	1.4				ug/L	1572	Standard
Sr	88	218.3	6.6				ug/L	73	Standard
C	12	103.3	43.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	96.2	10.7				mg/L	6	Standard
Ho-1	165	75.0	29.1				mg/L	10	Standard
Er	166	80.0	33.1				mg/L	13	Standard
I	127	173019.2	10.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		109.170	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		110.680	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		116.847
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.846
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606097409S WG573291-05
Sample Date/Time: Wednesday, June 29, 2016 20:27:00
Number of Replicates: 3
Autosampler Position: 413
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77620.1	3.1				ug/L	74699	Standard
	Be	9	53947.6	2.9	**58.9852**	0.884	1.5	ug/L	8	Standard
	Al	27	10156417.9	2.3	**66.5068**	0.592	0.9	ug/L	1493	Standard
	Sc	45	69663.2	3.3				ug/L	61029	Standard
	Ti	47	217.3	7.1	**0.4124**	0.032	7.7	ug/L	35	Standard
	V	51	458159.6	2.1	**55.0030**	1.779	3.2	ug/L	1435	Standard
	Cr	52	452840.8	0.8	**54.5717**	1.179	2.2	ug/L	7635	Standard
	Cr	53	56488.5	2.6	**55.2901**	2.221	4.0	ug/L	363	Standard
	Mn	55	2082250.4	1.8	**271.9842**	8.205	3.0	ug/L	747	Standard
	Co	59	416796.8	1.5	**57.3937**	1.632	2.8	ug/L	234	Standard
	Ni	60	112326.5	0.8	**54.4621**	1.176	2.2	ug/L	215	Standard
	Cu	65	110417.6	0.6	**53.8701**	0.759	1.4	ug/L	104	Standard
	Zn	66	70959.5	1.2	**58.6468**	1.068	1.8	ug/L	363	Standard
>	Ge	72	544304.5	1.4				ug/L	495142	Standard
	As	75	66583.4	2.1	**54.1492**	1.789	3.3	ug/L	-50	Standard
	Se	82	6605.0	1.3	**54.6200**	1.423	2.6	ug/L	14	Standard
	Se-1	77	4636.4	0.8	**57.1316**	0.988	1.7	ug/L	42	Standard
>	Ga	71	90.0	19.2				mg/L	42	Standard
	Rb	85	30654.3	2.7				ug/L	17	Standard
	Y	89	497057.5	2.9				ug/L	417098	Standard
>	Rh	103	38.3	52.7				ug/L	13	Standard
	Mo	98	163.0	7.4	**0.0487**	0.002	4.2	ug/L	11	Standard
	Ag	107	371099.4	2.0	**50.7567**	1.341	2.6	ug/L	68	Standard
	Cd	111	118377.9	2.8	**50.4636**	1.124	2.2	mg/L	2	Standard
	Cd	114	281427.9	1.4	**48.9324**	1.490	3.0	ug/L	12	Standard
>	In	115	659308.0	4.2				ug/L	587441	Standard
	Sn	118	1090.0	7.1	**0.0721**	0.019	25.7	ug/L	497	Standard
	Sb	123	259620.0	1.8	**49.5761**	1.212	2.4	ug/L	78	Standard
	Ba	135	232712.5	1.7	**101.3728**	3.182	3.1	ug/L	24	Standard
	Ce	140	941.7	8.0				ug/L	25	Standard
>	Tb	159	982549.7	3.5				ug/L	939701	Standard
	Ho	165	31.7	24.1				ug/L	10	Standard
	Tl	203	453507.3	1.5	**53.4353**	0.634	1.2	ug/L	4	Standard
	Tl	205	415041.8	2.5	**56.3402**	0.862	1.5	ug/L	2	Standard
	Pb	206	296774.5	1.1	**53.8916**	0.589	1.1	ug/L	240	Standard
	Pb	207	252251.9	1.7	**51.5506**	0.378	0.7	ug/L	198	Standard
	Pb	208	1071354.8	2.3	**55.4200**	1.065	1.9	ug/L	883	Standard
	U	238	381907.7	2.6	**53.8787**	0.717	1.3	ug/L	3	Standard
>	Bi	209	539522.1	2.0				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.4920**	30.288	173.2	mg/L	0	Standard
Mg	24	5339.3	3.4	**5.9734**	0.106	1.8	mg/L	37	Standard
K	39	681.7	10.6	**1.2038**	0.100	8.3	mg/L	38	Standard
Ca	43	128.3	25.3	**4.6217**	2.038	44.1	mg/L	10	Standard
Fe	54	542.4	5.6	**0.2649**	0.028	10.4	mg/L	179	Standard
Fe	57	371.7	15.7	**0.0334**	0.176	526.0	mg/L	335	Standard
Sc-1	45	69663.2	3.3				mg/L	61029	Standard
Cl	35	28661.1	2.0				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	10680.4	5.1				ug/L	1547	Standard
P	31	21703.9	3.0				ug/L	15286	Standard
S	34	2123.5	4.7				ug/L	1572	Standard
Sr	88	153.3	22.2				ug/L	73	Standard
C	12	123.3	28.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	57.6	48.4				mg/L	6	Standard
Ho-1	165	31.7	24.1				mg/L	10	Standard
Er	166	50.0	91.7				mg/L	13	Standard
I	127	154285.8	7.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.911	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.929	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.234
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.965
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606097411SD WG573291-06
Sample Date/Time: Wednesday, June 29, 2016 20:30:11
Number of Replicates: 3
Autosampler Position: 414
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77405.6	1.5				ug/L	74699	Standard
	Be	9	55655.4	2.7	**61.0164**	1.576	2.6	ug/L	8	Standard
	Al	27	12086433.4	1.6	**79.3694**	1.985	2.5	ug/L	1493	Standard
	Sc	45	69212.8	2.6				ug/L	61029	Standard
	Ti	47	325.0	3.5	**0.6412**	0.031	4.8	ug/L	35	Standard
	V	51	466207.8	0.7	**53.8111**	1.021	1.9	ug/L	1435	Standard
	Cr	52	460631.7	1.4	**53.3535**	1.026	1.9	ug/L	7635	Standard
	Cr	53	56936.8	2.6	**53.5625**	1.349	2.5	ug/L	363	Standard
	Mn	55	2273187.5	1.8	**285.5286**	8.405	2.9	ug/L	747	Standard
	Co	59	417957.8	1.5	**55.3411**	1.481	2.7	ug/L	234	Standard
	Ni	60	114539.0	0.3	**53.3968**	0.715	1.3	ug/L	215	Standard
	Cu	65	111050.1	0.5	**52.0971**	0.842	1.6	ug/L	104	Standard
	Zn	66	69817.2	1.2	**55.4674**	1.299	2.3	ug/L	363	Standard
>	**Ge**	72	566018.8	1.2				ug/L	495142	Standard
	As	75	67402.1	1.8	**52.7097**	1.486	2.8	ug/L	-50	Standard
	Se	82	6620.3	2.0	**52.6418**	1.659	3.2	ug/L	14	Standard
	Se-1	77	4557.0	3.8	**53.9777**	2.700	5.0	ug/L	42	Standard
>	**Ga**	71	128.3	43.8				mg/L	42	Standard
	Rb	85	32409.6	0.5				ug/L	17	Standard
	Y	89	470382.0	1.0				ug/L	417098	Standard
>	**Rh**	103	61.7	24.8				ug/L	13	Standard
	Mo	98	196.1	5.9	**0.0618**	0.004	5.9	ug/L	11	Standard
	Ag	107	374581.1	0.3	**52.7275**	0.291	0.6	ug/L	68	Standard
	Cd	111	118658.6	1.5	**52.0656**	0.397	0.8	mg/L	2	Standard
	Cd	114	286274.0	2.6	**51.2138**	0.959	1.9	ug/L	12	Standard
>	**In**	115	640194.5	0.7				ug/L	587441	Standard
	Sn	118	1251.7	9.2	**0.1018**	0.017	16.3	ug/L	497	Standard
	Sb	123	263336.7	0.4	**51.7531**	0.327	0.6	ug/L	78	Standard
	Ba	135	250997.3	0.8	**112.5129**	0.934	0.8	ug/L	24	Standard
	Ce	140	2000.1	6.5				ug/L	25	Standard
>	**Tb**	159	984120.1	1.6				ug/L	939701	Standard
	Ho	165	48.3	11.9				ug/L	10	Standard
	Tl	203	459854.1	0.1	**53.6772**	0.823	1.5	ug/L	4	Standard
	Tl	205	414544.5	0.5	**55.7557**	1.089	2.0	ug/L	2	Standard
	Pb	206	298100.5	1.1	**53.6266**	1.109	2.1	ug/L	240	Standard
	Pb	207	253941.0	0.3	**51.4145**	0.875	1.7	ug/L	198	Standard
	Pb	208	1061848.2	0.5	**54.4146**	0.782	1.4	ug/L	883	Standard
	U	238	385197.1	0.6	**53.8449**	1.070	2.0	ug/L	3	Standard
>	**Bi**	209	544631.3	1.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	5929.5	2.1	**6.6847**	0.075	1.1	mg/L	37	Standard
K	39	801.7	4.2	**1.4479**	0.027	1.8	mg/L	38	Standard
Ca	43	125.0	31.2	**4.4423**	2.177	49.0	mg/L	10	Standard
Fe	54	841.7	6.4	**0.4916**	0.050	10.2	mg/L	179	Standard
Fe	57	441.7	5.4	**0.2489**	0.040	15.9	mg/L	335	Standard
> **Sc-1**	45	69212.8	2.6				mg/L	61029	Standard
Cl	35	28869.5	0.9				ug/L	20195	Standard
Kr	83	3.7	56.8				ug/L	4	Standard
Br	81	12511.8	0.5				ug/L	1547	Standard
P	31	22511.8	6.4				ug/L	15286	Standard
S	34	2320.2	4.3				ug/L	1572	Standard
Sr	88	170.0	8.8				ug/L	73	Standard
C	12	80.0	25.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	3	Standard
Dy	164	93.8	22.7				mg/L	6	Standard
Ho-1	165	48.3	11.9				mg/L	10	Standard
Er	166	60.0	57.7				mg/L	13	Standard
I	127	186712.7	7.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.624	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.314	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	108.980
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.940
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606097411SD WG573291-06
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Method 6020 - Summary Report

Sample ID: L1606097401PS WG573790-03
Sample Date/Time: Wednesday, June 29, 2016 20:33:23
Number of Replicates: 3
Autosampler Position: 415
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	77767.4	1.4				ug/L	74699	Standard
	Be	9	54620.0	3.0	**59.5914**	1.002	1.7	ug/L	8	Standard
	Al	27	11452990.5	1.0	**74.8575**	1.594	2.1	ug/L	1493	Standard
	Sc	45	70666.1	1.7				ug/L	61029	Standard
	Ti	47	337.7	3.5	**0.6996**	0.031	4.4	ug/L	35	Standard
	V	51	448357.3	1.6	**53.6764**	0.056	0.1	ug/L	1435	Standard
	Cr	52	455460.2	1.4	**54.7521**	0.846	1.5	ug/L	7635	Standard
	Cr	53	57375.1	1.7	**56.0052**	0.200	0.4	ug/L	363	Standard
	Mn	55	2154709.7	0.5	**280.7294**	3.122	1.1	ug/L	747	Standard
	Co	59	404569.2	0.4	**55.5661**	0.653	1.2	ug/L	234	Standard
	Ni	60	112633.8	1.0	**54.4757**	0.921	1.7	ug/L	215	Standard
	Cu	65	109355.9	1.1	**53.2239**	1.011	1.9	ug/L	104	Standard
	Zn	66	70498.3	1.6	**58.1166**	0.789	1.4	ug/L	363	Standard
>	Ge	72	545627.2	1.6				ug/L	495142	Standard
	As	75	64850.8	0.9	**52.6029**	0.345	0.7	ug/L	-50	Standard
	Se	82	6485.5	1.8	**53.4847**	0.149	0.3	ug/L	14	Standard
	Se-1	77	4411.0	1.9	**54.1848**	0.787	1.5	ug/L	42	Standard
>	Ga	71	161.7	1.8				mg/L	42	Standard
	Rb	85	30524.1	1.7				ug/L	17	Standard
	Y	89	474875.4	0.7				ug/L	417098	Standard
>	Rh	103	60.0	16.7				ug/L	13	Standard
	Mo	98	163.5	8.5	**0.0491**	0.004	8.3	ug/L	11	Standard
	Ag	107	365805.1	1.5	**50.1795**	1.312	2.6	ug/L	68	Standard
	Cd	111	117534.8	0.9	**50.2525**	0.249	0.5	mg/L	2	Standard
	Cd	114	285376.1	1.5	**49.7475**	0.497	1.0	ug/L	12	Standard
>	In	115	657058.7	1.4				ug/L	587441	Standard
	Sn	118	1523.4	8.4	**0.1383**	0.017	12.1	ug/L	497	Standard
	Sb	123	259036.8	1.0	**49.6101**	1.139	2.3	ug/L	78	Standard
	Ba	135	239792.4	1.1	**104.7386**	1.629	1.6	ug/L	24	Standard
	Ce	140	2208.5	2.2				ug/L	25	Standard
>	Tb	159	1019758.9	1.4				ug/L	939701	Standard
	Ho	165	71.7	21.3				ug/L	10	Standard
	Tl	203	456925.9	1.0	**51.8248**	0.434	0.8	ug/L	4	Standard
	Tl	205	410087.8	1.3	**53.5969**	1.082	2.0	ug/L	2	Standard
	Pb	206	289464.5	1.3	**50.5998**	1.170	2.3	ug/L	240	Standard
	Pb	207	248071.4	0.9	**48.8073**	1.130	2.3	ug/L	198	Standard
	Pb	208	1050860.8	0.8	**52.3325**	1.144	2.2	ug/L	883	Standard
	U	238	380364.0	0.7	**51.6678**	1.019	2.0	ug/L	3	Standard
>	Bi	209	560465.1	1.6				ug/L	523984	Standard

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Na	23	1.7	173.2	**16.2901**	28.207	173.2	mg/L	0	Standard
Mg	24	5812.8	3.2	**6.4153**	0.191	3.0	mg/L	37	Standard
K	39	706.7	5.8	**1.2347**	0.072	5.8	mg/L	38	Standard
Ca	43	108.3	32.4	**3.3848**	1.922	56.8	mg/L	10	Standard
Fe	54	723.0	16.6	**0.3920**	0.096	24.5	mg/L	179	Standard
Fe	57	435.0	5.7	**0.2027**	0.073	35.8	mg/L	335	Standard
Sc-1	45	70666.1	1.7				mg/L	61029	Standard
Cl	35	28625.7	0.6				ug/L	20195	Standard
Kr	83	1.7	34.6				ug/L	4	Standard
Br	81	11964.7	4.0				ug/L	1547	Standard
P	31	22167.9	1.3				ug/L	15286	Standard
S	34	2268.5	2.8				ug/L	1572	Standard
Sr	88	201.7	11.5				ug/L	73	Standard
C	12	93.3	34.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	3	Standard
Dy	164	120.1	22.8				mg/L	6	Standard
Ho-1	165	71.7	21.3				mg/L	10	Standard
Er	166	66.7	60.6				mg/L	13	Standard
I	127	179600.9	7.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		104.108	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		110.196	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.851
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.962
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606097401SDL WG573790-04
Sample Date/Time: Wednesday, June 29, 2016 20:36:34
Number of Replicates: 3
Autosampler Position: 416
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77070.7	3.6				ug/L	74699	Standard
	Be	9	45.0	33.3	**0.0568**	0.015	26.1	ug/L	8	Standard
	Al	27	2260304.8	1.2	**14.9037**	0.448	3.0	ug/L	1493	Standard
	Sc	45	68278.6	3.1				ug/L	61029	Standard
	Ti	47	83.0	9.9	**0.0892**	0.019	21.8	ug/L	35	Standard
	V	51	2192.5	3.4	**0.0673**	0.008	12.3	ug/L	1435	Standard
	Cr	52	10144.1	1.9	**0.2156**	0.020	9.5	ug/L	7635	Standard
	Cr	53	686.7	4.8	**0.3429**	0.034	10.1	ug/L	363	Standard
	Mn	55	355711.8	1.3	**46.1130**	0.456	1.0	ug/L	747	Standard
	Co	59	2492.2	1.8	**0.3045**	0.007	2.2	ug/L	234	Standard
	Ni	60	828.7	2.9	**0.2769**	0.011	3.8	ug/L	215	Standard
	Cu	65	280.0	0.7	**0.0325**	0.001	2.6	ug/L	104	Standard
	Zn	66	2517.5	2.7	**1.6325**	0.059	3.6	ug/L	363	Standard
>	**Ge**	72	546825.8	0.3				ug/L	495142	Standard
	As	75	65.5	45.7	**0.1126**	0.024	21.6	ug/L	-50	Standard
	Se	82	28.6	15.9	**0.0977**	0.038	38.5	ug/L	14	Standard
	Se-1	77	61.3	12.0	**0.1380**	0.090	65.2	ug/L	42	Standard
>	**Ga**	71	98.3	5.9				mg/L	42	Standard
	Rb	85	6301.3	2.8				ug/L	17	Standard
	Y	89	489576.3	2.2				ug/L	417098	Standard
>	**Rh**	103	21.7	48.0				ug/L	13	Standard
	Mo	98	47.0	21.8	**0.0100**	0.004	35.1	ug/L	11	Standard
	Ag	107	179.0	15.1	**0.0115**	0.004	30.5	ug/L	68	Standard
	Cd	111	35.6	11.4	**0.0072**	0.002	22.2	mg/L	2	Standard
	Cd	114	102.0	28.8	**0.0155**	0.005	31.8	ug/L	12	Standard
>	**In**	115	661161.0	0.8				ug/L	587441	Standard
	Sn	118	795.0	15.7	**0.0261**	0.018	68.8	ug/L	497	Standard
	Sb	123	2322.3	23.7	**0.4382**	0.107	24.4	ug/L	78	Standard
	Ba	135	26230.7	1.3	**11.3705**	0.051	0.4	ug/L	24	Standard
	Ce	140	480.0	13.3				ug/L	25	Standard
>	**Tb**	159	1000122.3	1.4				ug/L	939701	Standard
	Ho	165	26.7	10.8				ug/L	10	Standard
	Tl	203	156.0	22.9	**0.0163**	0.004	24.4	ug/L	4	Standard
	Tl	205	150.0	15.3	**0.0202**	0.003	14.3	ug/L	2	Standard
	Pb	206	403.0	8.6	**0.0007**	0.006	871.4	ug/L	240	Standard
	Pb	207	342.3	5.9	**-0.0013**	0.004	288.2	ug/L	198	Standard
	Pb	208	1497.0	5.1	**0.0020**	0.004	181.5	ug/L	883	Standard
	U	238	114.0	13.2	**0.0113**	0.002	17.4	ug/L	3	Standard
>	**Bi**	209	549941.1	1.0				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	1213.4	3.4	**1.3365**	0.084	6.3	mg/L	37	Standard
K	39	180.0	11.1	**0.2425**	0.050	20.5	mg/L	38	Standard
Ca	43	46.7	22.3	**0.1064**	0.547	514.2	mg/L	10	Standard
Fe	54	286.0	10.0	**0.0782**	0.017	21.6	mg/L	179	Standard
Fe	57	306.7	10.9	**-0.1437**	0.079	55.0	mg/L	335	Standard
> **Sc-1**	45	68278.6	3.1				mg/L	61029	Standard
Cl	35	28506.1	0.3				ug/L	20195	Standard
Kr	83	1.7	34.6				ug/L	4	Standard
Br	81	3947.2	6.9				ug/L	1547	Standard
P	31	19479.2	3.3				ug/L	15286	Standard
S	34	2088.5	5.3				ug/L	1572	Standard
Sr	88	101.7	24.8				ug/L	73	Standard
C	12	60.0	60.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	52.5	9.9				mg/L	6	Standard
Ho-1	165	26.7	10.8				mg/L	10	Standard
Er	166	16.7	69.3				mg/L	13	Standard
I	127	39316.0	2.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.175	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.438	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.549
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.954
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606097401SDL WG573790-04
Sample Date/Time: Wednesday, June 29, 2016 20:39:46
Number of Replicates: 3
Autosampler Position: 417
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76547.9	2.1				ug/L	74699	Standard
	Be	9	28.3	27.0	**0.0389**	0.008	20.5	ug/L	8	Standard
	Al	27	465099.1	0.7	**3.0756**	0.044	1.4	ug/L	1493	Standard
	Sc	45	68169.7	0.9				ug/L	61029	Standard
	Ti	47	36.7	6.9	**-0.0243**	0.006	24.2	ug/L	35	Standard
	V	51	2063.3	3.2	**0.0438**	0.007	16.8	ug/L	1435	Standard
	Cr	52	9662.1	0.8	**0.1188**	0.007	6.3	ug/L	7635	Standard
	Cr	53	523.3	10.2	**0.1664**	0.051	30.7	ug/L	363	Standard
	Mn	55	72938.2	2.1	**9.0325**	0.175	1.9	ug/L	747	Standard
	Co	59	731.7	15.3	**0.0598**	0.015	24.7	ug/L	234	Standard
	Ni	60	309.0	4.2	**0.0207**	0.006	30.5	ug/L	215	Standard
	Cu	65	310.7	4.3	**0.0426**	0.006	14.7	ug/L	104	Standard
	Zn	66	2601.2	2.1	**1.6324**	0.044	2.7	ug/L	363	Standard
>	**Ge**	72	565002.4	0.2				ug/L	495142	Standard
	As	75	-33.8	92.8	**0.0331**	0.025	74.3	ug/L	-50	Standard
	Se	82	20.9	22.0	**0.0285**	0.036	128.0	ug/L	14	Standard
	Se-1	77	57.7	17.5	**0.0697**	0.122	174.5	ug/L	42	Standard
>	**Ga**	71	58.3	9.9				mg/L	42	Standard
	Rb	85	1335.1	7.2				ug/L	17	Standard
	Y	89	490772.8	1.5				ug/L	417098	Standard
>	**Rh**	103	15.0	57.7				ug/L	13	Standard
	Mo	98	24.2	10.4	**0.0025**	0.001	32.4	ug/L	11	Standard
	Ag	107	143.3	39.3	**0.0071**	0.008	112.3	ug/L	68	Standard
	Cd	111	11.6	65.7	**-0.0029**	0.003	116.5	mg/L	2	Standard
	Cd	114	25.4	61.7	**0.0024**	0.003	115.9	ug/L	12	Standard
>	**In**	115	647709.2	0.5				ug/L	587441	Standard
	Sn	118	543.3	5.3	**-0.0103**	0.004	42.8	ug/L	497	Standard
	Sb	123	784.5	24.6	**0.1481**	0.037	24.8	ug/L	78	Standard
	Ba	135	5327.9	0.7	**2.3449**	0.015	0.6	ug/L	24	Standard
	Ce	140	110.0	7.9				ug/L	25	Standard
>	**Tb**	159	986009.2	0.5				ug/L	939701	Standard
	Ho	165	10.0	100.0				ug/L	10	Standard
	Tl	203	50.7	34.9	**0.0041**	0.002	51.6	ug/L	4	Standard
	Tl	205	46.7	71.3	**0.0064**	0.005	70.3	ug/L	2	Standard
	Pb	206	376.3	19.7	**-0.0043**	0.014	323.1	ug/L	240	Standard
	Pb	207	290.7	20.1	**-0.0119**	0.012	103.4	ug/L	198	Standard
	Pb	208	1284.0	11.0	**-0.0091**	0.008	86.4	ug/L	883	Standard
	U	238	44.0	79.9	**0.0017**	0.005	294.8	ug/L	3	Standard
>	**Bi**	209	552760.9	1.2				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	246.7	9.1	**0.2201**	0.028	12.6	mg/L	37	Standard
K	39	50.0	40.0	**-0.0154**	0.039	250.4	mg/L	38	Standard
Ca	43	20.0	43.3	**-1.3952**	0.477	34.2	mg/L	10	Standard
Fe	54	182.5	25.5	**0.0004**	0.036	9653.1	mg/L	179	Standard
Fe	57	256.7	8.8	**-0.2933**	0.068	23.1	mg/L	335	Standard
Sc-1	45	68169.7	0.9				mg/L	61029	Standard
Cl	35	28987.0	1.4				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	2360.2	9.1				ug/L	1547	Standard
P	31	19090.4	2.0				ug/L	15286	Standard
S	34	2190.2	0.6				ug/L	1572	Standard
Sr	88	73.3	27.6				ug/L	73	Standard
C	12	46.7	44.6				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	22.7	102.4				mg/L	6	Standard
Ho-1	165	10.0	100.0				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	10453.6	7.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.475	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.109	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.259
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.492
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 20:42:59
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73968.6	3.7				ug/L	74699	Standard
	Be	9	51786.8	4.7	**59.3953**	0.618	1.0	ug/L	8	Standard
	Al	27	8138418.2	2.1	**55.9353**	1.016	1.8	ug/L	1493	Standard
	Sc	45	66422.0	2.7				ug/L	61029	Standard
	Ti	47	44367.5	1.4	**105.9251**	2.261	2.1	ug/L	35	Standard
	V	51	448161.7	0.9	**53.5504**	0.563	1.1	ug/L	1435	Standard
	Cr	52	438098.2	0.5	**52.5206**	0.674	1.3	ug/L	7635	Standard
	Cr	53	53648.2	1.8	**52.2574**	1.658	3.2	ug/L	363	Standard
	Mn	55	415062.2	0.8	**53.8560**	1.244	2.3	ug/L	747	Standard
	Co	59	407202.7	0.3	**55.8201**	1.033	1.9	ug/L	234	Standard
	Ni	60	107214.7	0.8	**51.7442**	0.748	1.4	ug/L	215	Standard
	Cu	65	106835.8	1.9	**51.8884**	1.090	2.1	ug/L	104	Standard
	Zn	66	63121.9	0.7	**51.8882**	0.831	1.6	ug/L	363	Standard
>	Ge	72	546729.2	1.7				ug/L	495142	Standard
	As	75	63950.8	1.3	**51.7792**	1.311	2.5	ug/L	-50	Standard
	Se	82	6522.2	2.4	**53.7001**	1.978	3.7	ug/L	14	Standard
	Se-1	77	4462.7	1.0	**54.7224**	0.944	1.7	ug/L	42	Standard
>	Ga	71	48.3	11.9				mg/L	42	Standard
	Rb	85	921.7	10.0				ug/L	17	Standard
	Y	89	469877.0	1.2				ug/L	417098	Standard
>	Rh	103	31.7	45.6				ug/L	13	Standard
	Mo	98	306064.1	0.6	**105.7488**	1.650	1.6	ug/L	11	Standard
	Ag	107	358011.4	0.7	**50.5757**	0.461	0.9	ug/L	68	Standard
	Cd	111	116953.2	1.0	**51.5035**	0.389	0.8	mg/L	2	Standard
	Cd	114	288128.0	0.1	**51.7395**	0.785	1.5	ug/L	12	Standard
>	In	115	637946.0	1.6				ug/L	587441	Standard
	Sn	118	327214.8	2.0	**51.4831**	0.238	0.5	ug/L	497	Standard
	Sb	123	254525.5	0.5	**50.2034**	0.722	1.4	ug/L	78	Standard
	Ba	135	108828.5	1.0	**48.9489**	0.332	0.7	ug/L	24	Standard
	Ce	140	90.0	29.4				ug/L	25	Standard
>	Tb	159	958314.6	1.8				ug/L	939701	Standard
	Ho	165	11.7	49.5				ug/L	10	Standard
	Tl	203	447416.0	0.6	**53.4811**	1.019	1.9	ug/L	4	Standard
	Tl	205	409322.9	1.6	**56.3810**	1.712	3.0	ug/L	2	Standard
	Pb	206	283417.6	0.7	**52.2045**	0.689	1.3	ug/L	240	Standard
	Pb	207	252263.1	0.7	**52.2984**	0.513	1.0	ug/L	198	Standard
	Pb	208	1062273.6	1.1	**55.7538**	1.546	2.8	ug/L	883	Standard
	U	238	385444.7	0.9	**55.1725**	1.082	2.0	ug/L	3	Standard
>	Bi	209	531871.1	1.6				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4377.3	2.2	**5.1285**	0.149	2.9	mg/L	37	Standard
K	39	2180.2	1.8	**4.3148**	0.109	2.5	mg/L	38	Standard
Ca	43	118.3	10.6	**4.3366**	0.588	13.6	mg/L	10	Standard
Fe	54	6990.5	4.3	**5.3088**	0.233	4.4	mg/L	179	Standard
Fe	57	2083.5	2.8	**5.4386**	0.352	6.5	mg/L	335	Standard
> **Sc-1**	45	66422.0	2.7				mg/L	61029	Standard
Cl	35	29309.7	0.2				ug/L	20195	Standard
Kr	83	2.3	24.7				ug/L	4	Standard
Br	81	2156.8	3.9				ug/L	1547	Standard
P	31	21223.2	2.6				ug/L	15286	Standard
S	34	2665.2	2.0				ug/L	1572	Standard
Sr	88	71.7	8.1				ug/L	73	Standard
C	12	56.7	40.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	19.8	1.4				mg/L	6	Standard
Ho-1	165	11.7	49.5				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	2623.6	23.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	118.791		
Al	27	111.871		
Sc	45			
Ti	47	105.925		
V	51	107.101		
Cr	52	105.041		
Cr	53			
Mn	55	107.712		
Co	59	111.640		
Ni	60	103.488		
Cu	65	103.777		
Zn	66	103.776		
> Ge	72		110.419	
As	75	103.558		
Se	82	107.400		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	105.749		
Ag	107	101.151		
Cd	111	103.007		
Cd	114			
> In	115		108.597	
Sn	118	102.966		
Sb	123	100.407		
Ba	135	97.898		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	106.962		
Tl	205			
Pb	206			
Pb	207			
Pb	208	111.508		
U	238	110.345		
> Bi	209		101.505	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	
QC Std 6	Co	59	

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QC Std 6	Pb	208
QC Std 6	U	238

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 20:46:11
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75383.8	1.3				ug/L	74699	Standard
	Be	9	28.3	20.4	**0.0395**	0.006	15.9	ug/L	8	Standard
	Al	27	2638.6	20.0	**0.0044**	0.003	78.6	ug/L	1493	Standard
	Sc	45	68713.9	3.5				ug/L	61029	Standard
	Ti	47	37.7	13.4	**-0.0232**	0.011	49.4	ug/L	35	Standard
	V	51	1533.2	3.6	**-0.0202**	0.008	41.3	ug/L	1435	Standard
	Cr	52	7879.4	2.2	**-0.1054**	0.029	27.9	ug/L	7635	Standard
	Cr	53	448.3	16.3	**0.0885**	0.063	71.1	ug/L	363	Standard
	Mn	55	901.4	5.8	**-0.0363**	0.007	18.9	ug/L	747	Standard
	Co	59	283.3	10.0	**-0.0002**	0.004	1542.3	ug/L	234	Standard
	Ni	60	186.3	2.6	**-0.0379**	0.003	8.3	ug/L	215	Standard
	Cu	65	132.7	3.4	**-0.0421**	0.001	3.4	ug/L	104	Standard
	Zn	66	415.3	5.4	**-0.1263**	0.014	10.9	ug/L	363	Standard
>	**Ge**	72	573402.3	1.2				ug/L	495142	Standard
	As	75	-34.2	13.3	**0.0332**	0.003	10.5	ug/L	-50	Standard
	Se	82	17.2	23.7	**-0.0025**	0.031	1279.2	ug/L	14	Standard
	Se-1	77	54.3	12.3	**0.0204**	0.082	402.5	ug/L	42	Standard
>	**Ga**	71	35.0	37.8				mg/L	42	Standard
	Rb	85	30.0	28.9				ug/L	17	Standard
	Y	89	465691.4	1.8				ug/L	417098	Standard
>	**Rh**	103	6.7	43.3				ug/L	13	Standard
	Mo	98	268.8	25.2	**0.0874**	0.025	29.0	ug/L	11	Standard
	Ag	107	132.7	5.0	**0.0058**	0.001	22.7	ug/L	68	Standard
	Cd	111	15.2	35.4	**-0.0012**	0.003	209.6	mg/L	2	Standard
	Cd	114	58.4	20.0	**0.0084**	0.002	23.7	ug/L	12	Standard
>	**In**	115	638175.3	2.2				ug/L	587441	Standard
	Sn	118	866.7	15.8	**0.0416**	0.019	45.6	ug/L	497	Standard
	Sb	123	616.5	30.1	**0.1169**	0.034	29.1	ug/L	78	Standard
	Ba	135	50.7	18.3	**0.0068**	0.005	67.0	ug/L	24	Standard
	Ce	140	28.3	27.0				ug/L	25	Standard
>	**Tb**	159	990005.2	3.0				ug/L	939701	Standard
	Ho	165	6.7	86.6				ug/L	10	Standard
	Tl	203	92.0	24.5	**0.0086**	0.003	32.5	ug/L	4	Standard
	Tl	205	76.7	43.4	**0.0102**	0.005	44.4	ug/L	2	Standard
	Pb	206	305.7	10.6	**-0.0179**	0.007	38.8	ug/L	240	Standard
	Pb	207	274.7	5.9	**-0.0162**	0.004	23.3	ug/L	198	Standard
	Pb	208	1058.7	7.3	**-0.0216**	0.005	23.5	ug/L	883	Standard
	U	238	60.3	25.7	**0.0037**	0.002	61.2	ug/L	3	Standard
>	**Bi**	209	564302.2	2.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	35.0	37.8	**-0.0253**	0.014	54.1	mg/L	37	Standard
K	39	45.0	19.2	**-0.0261**	0.014	54.4	mg/L	38	Standard
Ca	43	26.7	39.0	**-1.0220**	0.608	59.5	mg/L	10	Standard
Fe	54	162.5	17.8	**-0.0163**	0.018	110.8	mg/L	179	Standard
Fe	57	258.3	8.1	**-0.2948**	0.047	15.9	mg/L	335	Standard
Sc-1	45	68713.9	3.5				mg/L	61029	Standard
Cl	35	28935.6	0.2				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	1740.1	12.2				ug/L	1547	Standard
P	31	21446.8	2.8				ug/L	15286	Standard
S	34	2463.5	5.1				ug/L	1572	Standard
Sr	88	71.7	17.6				ug/L	73	Standard
C	12	43.3	13.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	12.9	115.2				mg/L	6	Standard
Ho-1	165	6.7	86.6				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	2023.5	28.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		115.806	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: QC Std 7
Report Date/Time: Wednesday, June 29, 2016 20:48:28
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.636
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.694
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Wednesday, June 29, 2016 20:48:28
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2.3.3 Metals CVAA Data (Mercury)

2.3.3.1 Summary Data

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-02	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	126F-061416	**Prep Method:**	7470A	**Prep Date:**	06/16/2016 07:27
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/26/2016 12:23
Workgroup #:	WG573236	**Analyst:**	AMA	**Run Date:**	06/26/2016 13:19
Collect Date:	06/14/2016 11:10	**Dilution:**	1	**File ID:**	M7.062616.131930
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-03	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	C08-061416	**Prep Method:**	7470A	**Prep Date:**	06/16/2016 07:27
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/26/2016 12:23
Workgroup #:	WG573236	**Analyst:**	AMA	**Run Date:**	06/26/2016 13:22
Collect Date:	06/14/2016 13:10	**Dilution:**	1	**File ID:**	M7.062616.132202
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060823-04	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	C03-061416	**Prep Method:**	7470A	**Prep Date:**	06/16/2016 07:27
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/26/2016 12:23
Workgroup #:	WG573236	**Analyst:**	AMA	**Run Date:**	06/26/2016 13:24
Collect Date:	06/14/2016 14:15	**Dilution:**	1	**File ID:**	M7.062616.132434
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060823
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.3.2 QC Summary

Example Cold Vapor Mercury Calculations
Hydra AA Mercury Analyzer / CETAC M-7600 Quick Trace Mercury Analyzer

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and five standards.

2.0 Calculating the concentration (C) of an element in water using data from run log and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to Volume (mL)	40
Vi = Aliquot Volume (mL)	40
D = Manual dilution factor, if required (10X = 10)	1
Cx = Concentration of element in ppb (ug/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Ws} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Diluted to volume (mL)	40
Ws = Aliquot weight (g)	0.6
D = Manual dilution factor	1
Cx = Concentration of element in ug/kg	6.67

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

1 Cx = Concentration calculated as received (wet basis)	6.67
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	8.33

8.33 ug/kg = 0.00833 mg/kg

Microbac Laboratories Inc.
Metals Digest Log

Workgroup: WG572915
Analyst: REK
Spike Analyst: REK
Method: 7470A
Run Date: 06/16/2016 07:27
Hotblock Start Temp: 95.2 @ 07:15
Hotblock End Temp: 95 @ 09:15
Instrument: HB7

SOP: ME404 Revison 17
Spike Solution: STD76639
Spike Witness: VC
H2SO4 Lot #: COA18359
40 & 50 ML. DIGESTION TU COA18772
HNO3 Lot #: COA18905
K2S2O8 1:1 Lot #: RGT37046
KMnO4 1:1 Lot #: RGT37082
Mercury Water ICV Lot #: STD76641
HG H2O STDS 10PPM Lot #: STD76647

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Spike Amount	Due Date
1	WG572915-02	BLANK	1	40 mL	40 mL		
2	WG572915-03	LCS	1	40 mL	40 mL	4 mL	
3	L16060764-01	SAMP	1	40 mL	40 mL		06/28/16
4	L16060764-02	SAMP	1	40 mL	40 mL		06/28/16
5	L16060764-03	SAMP	1	40 mL	40 mL		06/28/16
6	WG572915-01	REF	1	40 mL	40 mL		
7	L16060764-04	RS01	1	40 mL	40 mL		06/28/16
8	WG572915-04	MS	1	36 mL	40 mL	4 mL	
9	L16060764-05	MS01	1	36 mL	40 mL	4 mL	06/28/16
10	WG572915-05	MSD	1	36 mL	40 mL	4 mL	
11	L16060764-06	SD01	1	36 mL	40 mL	4 mL	06/28/16
12	L16060794-01	SAMP	1	40 mL	40 mL		06/24/16
13	L16060794-02	SAMP	1	40 mL	40 mL		06/24/16
14	L16060794-03	SAMP	1	40 mL	40 mL		06/24/16
15	L16060794-04	SAMP	1	40 mL	40 mL		06/24/16
16	L16060822-02	SAMP	1	40 mL	40 mL		06/24/16
17	L16060822-03	SAMP	1	40 mL	40 mL		06/24/16
18	L16060823-02	SAMP	1	40 mL	40 mL		06/24/16
19	L16060823-03	SAMP	1	40 mL	40 mL		06/24/16
20	L16060823-04	SAMP	1	40 mL	40 mL		06/24/16
21	L16060840-01	SAMP	1	40 mL	40 mL		06/29/16
22	L16060840-02	SAMP	1	40 mL	40 mL		06/29/16
23	L16060840-03	SAMP	1	40 mL	40 mL		06/29/16
24	L16060840-04	SAMP	1	40 mL	40 mL		06/29/16
25	L16060840-05	SAMP	1	40 mL	40 mL		06/29/16
26	L16060840-06	SAMP	1	40 mL	40 mL		06/29/16

Analyst: [signature]

Reviewer: [signature]

* All calibration and check standards are prepared and digested with sample batch following the procedures in section 7.0 of SOP ME404/ME405.

HB_DIG - Modified 07/26/2012
PDF ID: 4809801
Report generated: 06/16/2016 12:16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 062616A.CSV
Analyst1: AMA Analyst2: N/A
Method: 7470A/245.1 SOP: ME404 Rev: 17
Maintenance Log ID:

Calibration Std: STD76647 ICV Std: STD76641 Post Spike: STD76647
ICSA: N/A ICSAB: N/A Int. Std:
CCV: LLCCV: Tuning Sol :
Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 573236

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	M7.062616.121106	WG574322-01	Calibration Point		1		06/26/16 12:11
2	M7.062616.121337	WG574322-02	Calibration Point		1		06/26/16 12:13
3	M7.062616.121609	WG574322-03	Calibration Point		1		06/26/16 12:16
4	M7.062616.121841	WG574322-04	Calibration Point		1		06/26/16 12:18
5	M7.062616.122114	WG574322-05	Calibration Point		1		06/26/16 12:21
6	M7.062616.122348	WG574322-06	Calibration Point		1		06/26/16 12:23
7	M7.062616.122622	WG574322-07	Initial Calibration Verification		1		06/26/16 12:26
8	M7.062616.122853	WG574322-08	Initial Calib Blank		1		06/26/16 12:28
9	M7.062616.123125	WG574322-09	CCV		1		06/26/16 12:31
10	M7.062616.123356	WG574322-10	CCB		1		06/26/16 12:33
11	M7.062616.123627	WG572915-02	Method/Prep Blank	40/40	1		06/26/16 12:36
12	M7.062616.123858	WG572915-03	Laboratory Control S	40/40	1		06/26/16 12:38
13	M7.062616.124129	L16060764-01	MW-23-004	40/40	1		06/26/16 12:41
14	M7.062616.124401	WG573236-01	Post Digestion Spike		1	L16060764-01	06/26/16 12:44
15	M7.062616.124633	L16060764-02	MW-23-002		1		06/26/16 12:46
16	M7.062616.124905	L16060764-03	FD-061316		1		06/26/16 12:49
17	M7.062616.125137	WG572915-05	Matrix Spike Duplica	36/40	1	L16060764-04	06/26/16 12:51
18	M7.062616.125410	L16060764-04	MW-23-005		1	WG572915-01	06/26/16 12:54
19	M7.062616.125643	WG572915-04	Matrix Spike	36/40	1	L16060764-04	06/26/16 12:56
20	M7.062616.125916	L16060794-01	A08-MW06-Y1S2	40/40	1		06/26/16 12:59
21	M7.062616.130149	WG574322-11	CCV		1		06/26/16 13:01
22	M7.062616.130420	WG574322-12	CCB		1		06/26/16 13:04
23	M7.062616.130654	L16060794-02	A08-MW09-Y1S2	40/40	1		06/26/16 13:06
24	M7.062616.130927	L16060794-03	A09-MW02-Y1S2	40/40	1		06/26/16 13:09
25	M7.062616.131158	L16060794-04	A09-MW07-Y1S2	40/40	1		06/26/16 13:11
26	M7.062616.131428	L16060822-02	18WW03F-061416	40/40	1		06/26/16 13:14
27	M7.062616.131659	L16060822-03	18CPTMW04SW-061416	40/40	1		06/26/16 13:16
28	M7.062616.131930	L16060823-02	126F-061416	40/40	1		06/26/16 13:19
29	M7.062616.132202	L16060823-03	C08-061416	40/40	1		06/26/16 13:22
30	M7.062616.132434	L16060823-04	C03-061416	40/40	1		06/26/16 13:24
31	M7.062616.132706	L16060840-01	MW-24-004R	40/40	1		06/26/16 13:27
32	M7.062616.132938	L16060840-02	MW-24-003R	40/40	1		06/26/16 13:29
33	M7.062616.133211	WG574322-13	CCV		1		06/26/16 13:32
34	M7.062616.133441	WG574322-14	CCB		1		06/26/16 13:34

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: CVAA1 Dataset: 062616A.CSV

Analyst1: AMA Analyst2: N/A

Method: 7470A/245.1 SOP: ME404 Rev: 17

Maintenance Log ID:

Calibration Std: STD76647 ICV Std: STD76641 Post Spike: STD76647

ICSA: N/A ICSAB: N/A Int. Std:

CCV: LLCCV: Tuning Sol :

Stannous : RGT36627 Hydroxylamine : RGT36625

Workgroups: 573236

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	M7.062616.133714	L16060840-03	FR-061416-24	40/40	1		06/26/16 13:37
36	M7.062616.133947	L16060840-04	MW-24-002R	40/40	1		06/26/16 13:39
37	M7.062616.134220	L16060840-05	MW-24-005	40/40	1		06/26/16 13:42
38	M7.062616.134454	L16060840-06	EB-LOW FLOW TUBING	40/40	1		06/26/16 13:44
39	M7.062616.134726	WG574322-15	CCV		1		06/26/16 13:47
40	M7.062616.134957	WG574322-16	CCB		1		06/26/16 13:49

Page: 2 Approved: June 29, 2016

Microbac Laboratories Inc.

Data Checklist

Date: 26-JUN-2016
Analyst: AMA
Analyst: NA
Method: 7470A/245.1
Instrument: CVAA1
Curve Workgroup: 574322
Runlog ID: 75946
Analytical Workgroups: 573236

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	0794, 0822, 0823, 0840
Client Forms	X
Level X	
Level 3	0840
Level 4	0794, 0822, 0823
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	AMA
Secondary Reviewer	BKT
Comments	

Primary Reviewer:
28-JUN-2016
Alexandra M. Alfred

Secondary Reviewer:
29-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-29-2016 12:56:19

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 7470A

AAB#: WG573236

Login Number: L16060823

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
126F-061416	02	06/14/16					06/16/2016	1.8	28		06/26/16	12.1	28	
C08-061416	03	06/14/16					06/16/2016	1.8	28		06/26/16	12	28	
C03-061416	04	06/14/16					06/16/2016	1.7	28		06/26/16	12	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4828279
Report generated 06/28/2016 10:48

METHOD BLANK SUMMARY

Login Number: L16060823
Blank File ID: M7.062616.123627
Prep Date: 06/16/16 07:27
Analyzed Date: 06/26/16 12:36
Analyst: AMA

Work Group: WG573236
Blank Sample ID: WG572915-02
Instrument ID: CVAA1
Method: 7470A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG572915-03	M7.062616.123858	06/26/16 12:38	01
126F-061416	L16060823-02	M7.062616.131930	06/26/16 13:19	01
C08-061416	L16060823-03	M7.062616.132202	06/26/16 13:22	01
C03-061416	L16060823-04	M7.062616.132434	06/26/16 13:24	01

Report Name: BLANK_SUMMARY
PDF File ID: 4828280
Report generated 06/28/2016 10:48

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060823 Prep Date: 06/16/16 07:27 Sample ID: WG572915-02
Instrument ID: CVAA1 Run Date: 06/26/16 12:36 Prep Method: 7470A
File ID: M7.062616.123627 Analyst: AMA Method: 7470A
Workgroup (AAB#): WG573236 Matrix: Water Units: mg/L
Contract #: Cal ID: CVAA1-26-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Mercury	0.000100	0.000400	0.000100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4828281
28-JUN-2016 10:48

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060823 Run Date: 06/26/2016 Sample ID: WG572915-03
Instrument ID: CVAA1 Run Time: 12:38 Prep Method: 7470A
File ID: M7.062616.123858 Analyst: AMA Method: 7470A
Workgroup (AAB#): WG573236 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76639 Cal ID: CVAA1-26-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Mercury	0.00400	0.00421	105	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4828282
Report generated: 06/28/2016 10:48

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16060823 Cal ID: CVAA1 - Worknum: WG573236
Instrument ID: CVAA1 Contract #: Method: 7470A
Parent ID: WG572915-01 File ID: M7.062616.125410 Dil: 1 Matrix: WATER
Sample ID: WG572915-04 MS File ID: M7.062616.125643 Dil: 1 Units: mg/L
Sample ID: WG572915-05 MSD File ID: M7.062616.125137 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Mercury	ND	0.00444	0.00479	108	0.00444	0.00480	108	0.0463	80 - 120	20	

* FAILS %REC LIMIT

\# FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4828283
Report generated 06/28/2016 10:48

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16060823 **Worknum:** WG573236
Instrument ID: CVAA1 **Method:** 7470A
Post Spike ID: WG573236-01 **File ID:** M7.062616.124401 **Dil:** 1 **Units:** ug/L
Sample ID: L16060764-01 **File ID:** M7.062616.124129 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
MERCURY	1.07		0	U	1	107.1	85 - 115	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4828278
Report generated: 06/28/2016 10:48

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060823
Analytical Method: 7470A
ICAL Worknum: WG574322

Workgroup (AAB#): WG573236
Instrument ID: CVAA1
Initial Calibration Date: 06/26/2016 12:23

Analyte	WG574322-01		WG574322-02		WG574322-03		WG574322-04		WG574322-05		WG574322-06	
	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT	STD	INT
Mercury	0	57.64	0.200	2673	1.00	13280	2.00	26640	5.00	66160	10.0	128600

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4828284
Report generated 06/28/2016 10:48

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060823
Analytical Method: 7470A
ICAL Worknum: WG574322

Workgroup (AAB#): WG573236
Instrument ID: CVAA1
Initial Calibration Date: 06/26/2016 12:23

Analyte	R	Q
Mercury	1.000	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
* = Out of Compliance; R < 0.995

INT_CAL_HG_FU - Modified 03/06/2008
PDF File ID: 4828284
Report generated 06/28/2016 10:48

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16060823
Instrument ID: CVAA1
File ID: M7.062616.122853
Workgroup (AAB#): WG573236
Matrix: WATER

Run Date: 06/26/2016
Run Time: 12:28
Analyst: AMA
Cal ID: CVAA1 - 26-JUN-16

Sample ID: WG574322-08
Method: 7470A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
MERCURY	.1	.4	.1	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4828286
Report generated 06/28/2016 10:48

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/26/2016
Sample ID: WG574322-10
Instrument ID: CVAA1
Run Time: 12:33
Method: 7470A
File ID: M7.062616.123356
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG573236
Cal ID: CVAA1 - 26-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4828288
Report generated 06/28/2016 10:48

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/26/2016
Sample ID: WG574322-12
Instrument ID: CVAA1
Run Time: 13:04
Method: 7470A
File ID: M7.062616.130420
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG573236
Cal ID: CVAA1 - 26-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4828288
Report generated 06/28/2016 10:48

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060823
Run Date: 06/26/2016
Sample ID: WG574322-14
Instrument ID: CVAA1
Run Time: 13:34
Method: 7470A
File ID: M7.062616.133441
Analyst: AMA
Units: ug/L
Workgroup (AAB#): WG573236
Cal ID: CVAA1 - 26-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Mercury	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4828288
Report generated 06/28/2016 10:48

Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16060823 Run Date: 06/26/2016 Sample ID: WG574322-07
Instrument ID: CVAA1 Run Time: 12:26 Method: 7470A
File ID: M7.062616.122622 Analyst: AMA Units: ug/L
Workgroup (AAB#): WG573236 Cal ID: CVAA1 - 26-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Mercury		2	2.12	106	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4828285
Report generated 06/28/2016 10:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/26/2016
Sample ID: WG574322-09
Instrument ID: CVAA1
Run Time: 12:31
Method: 7470A
File ID: M7.062616.123125
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG573236
Cal ID: CVAA1 - 26-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00210	mg/L	105	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4828287
Report generated 06/28/2016 10:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/26/2016
Sample ID: WG574322-11
Instrument ID: CVAA1
Run Time: 13:01
Method: 7470A
File ID: M7.062616.130149
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG573236
Cal ID: CVAA1 - 26-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00219	mg/L	109	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4828287
Report generated 06/28/2016 10:48

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060823
Run Date: 06/26/2016
Sample ID: WG574322-13
Instrument ID: CVAA1
Run Time: 13:32
Method: 7470A
File ID: M7.062616.133211
Analyst: AMA
QC Key: DOD4
Workgroup (AAB#): WG573236
Cal ID: CVAA1 - 26-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Mercury, Total		0.00200	0.00223	mg/L	112	80 - 120		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4828287
Report generated 06/28/2016 10:48

2.3.3.3 Raw Data

PDM CVAA1 245.1/7470/7471

Report Generated By CETAC QuickTrace
Analyst: VOA
Worksheet file: C:\Program Files (x86)\QuickTrace\Worksheets\062616A.wsz
Date Started: 6/26/2016 11:26:47 AM
Comment:

Results

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
Standard #0					STD	06/26/16 12:11:06 pm	0.0000	58	36.36		1.00
Replicates	72.2	26.9	61.9	69.6							
Standard #1 (0.2 ug/L)					STD	06/26/16 12:13:37 pm	0.2000	2673	0.35		1.00
Replicates	2686.9	2668.0	2667.5	2669.0							
Standard #2 (1.0 ug/L)					STD	06/26/16 12:16:09 pm	1.0000	13283	0.12		1.00
Replicates	13271.5	13294.2	13266.7	13300.2							
Standard #3 (2.0 ug/L)					STD	06/26/16 12:18:41 pm	2.0000	26641	0.01		1.00
Replicates	26642.8	26641.1	26641.1	26638.4							
Standard #4 (5.0 ug/L)					STD	06/26/16 12:21:14 pm	5.0000	66159	0.11		1.00
Replicates	66221.6	66218.8	66109.5	66085.3							
Standard #5 (10.0 ug/L)					STD	06/26/16 12:23:48 pm	10.0000	128636	0.07		1.00
Replicates	128716.2	128712.3	128583.1	128533.8							

Calibration

Equation: A = 499.952 + 12881.860C
R2: 0.99980
SEE: 796.4388
Flags:

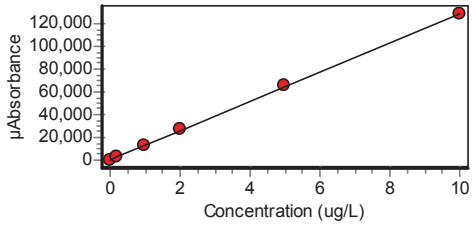

ICV					ICV	06/26/16 12:26:22 pm	2.1170	27772	0.16		1.00
Replicates	27815.3	27806.0	27744.4	27723.2							
% Recovery	105.86										

Approved: June 28, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
ICB					ICB	06/26/16 12:28:53 pm	-0.0379	11	291.32		1.00
Replicates	4.1	-22.5	57.6	6.8							
CCV					CCV	06/26/16 12:31:25 pm	2.0950	27485	0.16		1.00
Replicates	27434.8	27461.4	27527.1	27517.9							
% Recovery	104.74										
CCB					CCB	06/26/16 12:33:56 pm	-0.0387	1	964.00		1.00
Replicates	9.0	5.0	-0.8	-9.8							
WG572915-02					UNK	06/26/16 12:36:27 pm	-0.0350	50	39.52		1.00
Replicates	72.8	57.2	40.4	27.9							
WG572915-03					UNK	06/26/16 12:38:58 pm	4.2070	54690	0.15		1.00
Replicates	54575.2	54727.8	54702.1	54755.0							
L1606076401					UNK	06/26/16 12:41:29 pm	-0.0379	11	72.00		1.00
Replicates	8.4	14.3	21.3	1.9							
WG573236-01					SPK	06/26/16 12:44:01 pm	1.0710	14290	0.11		1.00
Replicates	14266.8	14293.4	14303.5	14296.9							
% Recovery	110.84										
L1606076402					UNK	06/26/16 12:46:33 pm	-0.0345	56	29.18		1.00
Replicates	46.7	78.1	41.1	58.6							
L1606076403					UNK	06/26/16 12:49:05 pm	-0.0307	104	20.90		1.00
Replicates	76.8	97.6	116.7	125.9							
WG572915-01					UNK	06/26/16 12:51:37 pm	4.3160	56092	0.13		1.00
Replicates	56018.1	56175.3	56135.9	56040.3							
L1606076405					MSK	06/26/16 12:54:10 pm	-0.0402	-17	79.85	N	1.00
Replicates	-11.0	-38.2	-11.2	-9.2							
% Recovery	-108.89										
L1606076406					MSDUP	06/26/16 12:56:43 pm	4.3140	56069	0.23	D	1.00
Replicates	55903.2	56042.6	56133.8	56194.6							
% Recovery	-0.05	RPD 203.76									

Approved: June 28, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1606079401					UNK	06/26/16 12:59:16 pm	-0.0393	-7	153.33		1.00
Replicates	-17.5	2.6	1.3	-12.4							
CCV					CCV	06/26/16 01:01:49 pm	2.1870	28674	0.28		1.00
Replicates	28565.4	28662.0	28726.3	28743.6							
% Recovery	109.36										
CCB					CCB	06/26/16 01:04:20 pm	-0.0400	-15	71.00		1.00
Replicates	-20.6	-24.4	-16.6	0.3							
L1606079402					UNK	06/26/16 01:06:54 pm	-0.0360	36	40.24		1.00
Replicates	40.1	23.8	25.1	54.5							
L1606079403					UNK	06/26/16 01:09:27 pm	0.0214	775	1.64		1.00
Replicates	766.0	779.2	763.7	791.0							
L1606079404					UNK	06/26/16 01:11:58 pm	-0.0321	87	18.96		1.00
Replicates	68.6	84.0	86.7	108.7							
L1606082202					UNK	06/26/16 01:14:28 pm	-0.0340	62	33.50		1.00
Replicates	78.3	50.1	79.4	38.2							
L1606082203					UNK	06/26/16 01:16:59 pm	-0.0350	49	26.85		1.00
Replicates	46.5	64.4	52.2	32.7							
L1606082302					UNK	06/26/16 01:19:30 pm	-0.0247	181	8.96		1.00
Replicates	178.7	199.1	187.1	160.4							
L1606082303					UNK	06/26/16 01:22:02 pm	-0.0283	135	14.85		1.00
Replicates	148.4	150.3	135.4	106.8							
L1606082304					UNK	06/26/16 01:24:34 pm	-0.0349	51	26.20		1.00
Replicates	38.5	67.5	41.8	55.0							
L1606084001					UNK	06/26/16 01:27:06 pm	-0.0336	67	31.06		1.00
Replicates	78.3	84.6	37.9	65.6							

Approved: June 28, 2016
Alexandra M. Alfred

Sample Name					Type	Date/Time	Conc (ug/L)	µAbs	%RSD	Flags	DF
L1606084002					UNK	06/26/16 01:29:38 pm	-0.0355	42	37.05		1.00
Replicates	37.5	51.9	22.2	56.9							
CCV					CCV	06/26/16 01:32:11 pm	2.2310	29245	0.47		1.00
Replicates	29065.4	29210.7	29333.0	29372.9							
% Recovery	111.57										
CCB					CCB	06/26/16 01:34:41 pm	-0.0387	1	222.94		1.00
Replicates	7.9	10.6	18.4	-34.1							
L1606084003					UNK	06/26/16 01:37:14 pm	-0.0343	58	10.23		1.00
Replicates	58.3	56.5	65.5	51.2							
L1606084004					UNK	06/26/16 01:39:47 pm	-0.0311	99	14.17		1.00
Replicates	85.9	113.0	88.0	109.0							
L1606084005					UNK	06/26/16 01:42:20 pm	-0.0347	53	38.40		1.00
Replicates	51.7	58.0	26.5	75.7							
L1606084006					UNK	06/26/16 01:44:54 pm	-0.0362	34	52.68		1.00
Replicates	39.2	7.6	40.3	47.5							
CCV					CCV	06/26/16 01:47:26 pm	2.2480	29454	0.57		1.00
Replicates	29236.8	29421.4	29529.4	29626.5							
% Recovery	112.38										
CCB					CCB	06/26/16 01:49:57 pm	-0.0385	4	182.59		1.00
Replicates	14.9	-3.5	0.5	5.6							

Approved: June 28, 2016
Alexandra M. Alfred

3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
July 8, 2016

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BNB - Brandi N. Bentley
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJQ - Cameron J. Quick
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
CV - Carl Volkman
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
EMW - ERIC M. WILKEN
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LJH - Lacey J. Hendershot
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
NPH - Natalie P. Hart
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
July 08, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
July 08, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Debra Richmann
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD	pH:	
Project Name/Location:	Longhorn		
Project Number:	60274185.0013BH 1824 MR10		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Total Metals	1,4 - DIOXANE					SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 18/24	126-061416			6/14/16	1110		✓	W	6	✓	✓		✓									
	126F-061416			6/14/16	1110		✓	W	1			✓										
	C08-061416			6/14/16	1310		✓	W	7	✓	✓	✓	✓									
	C03-061416			6/14/16	1415		✓	W	7	✓	✓	✓	✓									
	TRIP BLANK			6/14/16			✓	W	2	✓												

Comments: **STANDARD TAT**

	Date	Time	Received by: (Signature)	Received by: (Signature)	Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature) Scott Beesinger	6/14/16	1530					
Relinquished by: (Signature)	Date	Time	Rece (Sign			Time	Remarks:

Microbac OVD
Received: 06/15/2016 09:56
By: BRENDA GREGORY
221000087199

Brenda Gregory

*Homogenize all composite samples prior to analysis

ager, Pink QA/QC Manager

00714138

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060823
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 24-JUN-2016

Samplenum	Container ID	Products
L16060823-01	760859	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	15-JUN-2016 14:53	BRG		
2	ANALYZ	V1	ORG4	16-JUN-2016 08:15	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:15	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	15-JUN-2016 14:53	BRG		
2	ANALYZ	V1	ORG4	16-JUN-2016 08:15	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:15	CLS	JST	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	15-JUN-2016 14:53	BRG		
2	ANALYZ	V1	ORG4	16-JUN-2016 08:15	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:15	CLS	JST	

Samplenum	Container ID	Products
L16060823-01	760860	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:53	BRG		
2	PREP	W1	EXT	15-JUN-2016 17:32	CPD	AZH	
3	DISP	EXT	DISP	16-JUN-2016 15:22	BJO	BJO	
4	ANALYZ*	EXT	SEMI	20-JUN-2016 09:18	NPH	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:53	BRG		
2	STORE	W1	A1	24-JUN-2016 08:23	BRG	BRG	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060823
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 24-JUN-2016

Samplenum	Container ID	Products
L16060823-01	760861	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:53	BRG		
2	ANALYZ	W1	SEM	24-JUN-2016 12:12	JWR	BRG	
3	STORE	SEM	A1	29-JUN-2016 13:20	CLS	JWR	

Samplenum	Container ID	Products
L16060823-02	760862	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:53	BRG		
2	PREP	W1	DIG	15-JUN-2016 14:59	AC	CLS	
3	ANALYZ*	DIG	METALS	17-JUN-2016 14:30	CJQ	AC	
4	STORE	DIG	A1	17-JUN-2016 14:50	CLS	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060823-03	760863	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	15-JUN-2016 14:53	BRG		
2	ANALYZ	V1	ORG4	16-JUN-2016 08:15	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:15	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	15-JUN-2016 14:53	BRG		
2	ANALYZ	V1	ORG4	16-JUN-2016 08:16	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:15	CLS	JST	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	15-JUN-2016 14:53	BRG		
2	ANALYZ	V1	ORG4	16-JUN-2016 08:16	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:15	CLS	JST	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060823
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 24-JUN-2016

Samplenum	Container ID	Products
L16060823-03	760864	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:53	BRG		
2	PREP	W1	EXT	15-JUN-2016 17:32	CPD	AZH	
3	DISP	EXT	DISP	16-JUN-2016 15:22	BJO	BJO	
4	ANALYZ*	EXT	SEMI	20-JUN-2016 09:18	NPH	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:53	BRG		
2	STORE	W1	A1	24-JUN-2016 08:23	BRG	BRG	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060823-03	760865	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:53	BRG		
2	ANALYZ	W1	SEM	24-JUN-2016 12:12	JWR	BRG	
3	STORE	SEM	A1	29-JUN-2016 13:20	CLS	JWR	

Samplenum	Container ID	Products
L16060823-03	760866	HG K MG MN-MS NA NI-MS PB-MS SB-MS SE-AX TL-MS

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:53	BRG		
2	PREP	W1	DIG	15-JUN-2016 14:59	AC	CLS	
3	ANALYZ*	DIG	METALS	17-JUN-2016 14:30	CJQ	AC	
4	STORE	DIG	A1	17-JUN-2016 14:50	CLS	ERP	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060823
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 24-JUN-2016

Samplenum	Container ID	Products
L16060823-04	760867	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	15-JUN-2016 14:53	BRG		
2	ANALYZ	V1	ORG4	16-JUN-2016 08:15	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:15	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	15-JUN-2016 14:53	BRG		
2	ANALYZ	V1	ORG4	16-JUN-2016 08:15	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:15	CLS	JST	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	15-JUN-2016 14:53	BRG		
2	ANALYZ	V1	ORG4	16-JUN-2016 08:15	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:15	CLS	JST	

Samplenum	Container ID	Products
L16060823-04	760868	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:53	BRG		
2	PREP	W1	EXT	15-JUN-2016 17:32	CPD	AZH	
3	DISP	EXT	DISP	16-JUN-2016 15:23	BJO	BJO	
4	ANALYZ*	EXT	SEMI	20-JUN-2016 09:18	NPH	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:53	BRG		
2	STORE	W1	A1	24-JUN-2016 08:23	BRG	BRG	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060823
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 24-JUN-2016

Samplenum	Container ID	Products
L16060823-04	760869	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:53	BRG		
2	ANALYZ	W1	SEM	24-JUN-2016 12:12	JWR	BRG	
3	STORE	SEM	A1	29-JUN-2016 13:20	CLS	JWR	

Samplenum	Container ID	Products
L16060823-04	760870	AG-MS AL AS-MS BA-MS BE-AX CA CD-MS CO-MS CR-M

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	15-JUN-2016 14:53	BRG		
2	PREP	W1	DIG	15-JUN-2016 14:59	AC	CLS	
3	ANALYZ*	DIG	METALS	17-JUN-2016 14:30	CJQ	AC	
4	STORE	DIG	A1	17-JUN-2016 14:50	CLS	ERP	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060823-05	760871	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	15-JUN-2016 14:53	BRG		
2	ANALYZ	V1	ORG4	16-JUN-2016 08:15	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:15	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	15-JUN-2016 14:53	BRG		
2	ANALYZ	V1	ORG4	16-JUN-2016 08:15	AWE	CLS	
3	STORE	ORG4	A1	29-JUN-2016 12:15	CLS	JST	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16060927

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Michelle Taylor – Client Services Specialist
(740) 373-4071
Michelle.Taylor@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on July 06 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
0015011	H	6.0		J2317164993	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	NA
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18CPTMW23SW-061516	L16060927-01	06/15/2016 08:00	06/16/2016 10:10
18CPTMW23-061516	L16060927-02	06/15/2016 09:05	06/16/2016 10:10
18CPTMW19SW-061516	L16060927-03	06/15/2016 10:15	06/16/2016 10:10
18CPTMW19-061516	L16060927-04	06/15/2016 11:15	06/16/2016 10:10
TRIP BLANK	L16060927-05	06/15/2016 00:01	06/16/2016 10:10

Microbac REPORT L16060927
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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1.0 Summary Data

1.1 Narratives

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060927
Project Name:		**Method:**	8260
Prep Batch Number(s):	573645, 573771, 573991	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-07-06 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Franci Bolden	Franci Bolden	Analyst I	2016-07-06 17:10:40

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060927
Project Name:		**Method:**	8260
Prep Batch Number(s):	573645, 573771, 573991	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-07-06 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060927
Project Name:		**Method:**	8260
Prep Batch Number(s):	573645, 573771, 573991	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-07-06 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060927
Project Name:		**Method:**	8260
Prep Batch Number(s):	573645, 573771, 573991	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-07-06 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060927
Project Name:		**Method:**	8260
Prep Batch Number(s):	573645, 573771, 573991	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-07-06 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060927
Project Name:		**Method:**	8260
Prep Batch Number(s):	573645, 573771, 573991	**Reviewer Name:**	Franci Bolden
LRC Date:	2016-07-06 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1) Bromomethane was below the LCL and Carbon Tetrachloride, 2,2-Dichloropropane and Trichlorofluoromethane exceeded the UCL in CCV WG573770-02 analyzed 06/22/2016 on HPMS8.
2,2-Dichloropropane exceeded the UCL in CCV WG573990-02 analyzed 06/23/2016 on HPMS8.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060927
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573299	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-28 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-06-28 13:53:35

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060927
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573299	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-28 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?		X			1
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060927
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573299	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-28 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060927
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573299	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-28 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060927
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573299	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-28 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060927
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573299	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-28 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1. Sample 02 yielded a recovery for the surrogate that was above the acceptance criteria. This sample was run at a dilution and the surrogate result was within acceptance limits, indicating matrix interference.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060927
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574101	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Wade DeLong	Wade DeLong	Chemist I	2016-06-28 17:46:14

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060927
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574101	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060927
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574101	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060927
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574101	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060927
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574101	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16060927
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574101	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060927-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW23SW-061516	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573991	**Analyst:**	FJB	**Run Date:**	06/24/2016 00:24
Collect Date:	06/15/2016 08:00	**Dilution:**	1	**File ID:**	8M413199
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	9.67	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	111	85	115	
1,2-Dichloroethane-d4	116	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	101	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060927-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW23SW-061516	**Prep Method:**	3520C	**Prep Date:**	06/21/2016 17:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573853	**Analyst:**	MES	**Run Date:**	06/23/2016 15:30
Collect Date:	06/15/2016 08:00	**Dilution:**	1	**File ID:**	15M18514
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	32.4	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060927-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW23SW-061516	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 19:02
Collect Date:	06/15/2016 08:00	**Dilution:**	1	**File ID:**	1LM.LM35501
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.407		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16060927-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW23-061516	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573771	**Analyst:**	FJB	**Run Date:**	06/22/2016 18:40
Collect Date:	06/15/2016 09:05	**Dilution:**	1	**File ID:**	8M413169
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	1.59		1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	5.45		1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	1.06		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	214		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	10.1		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	232		1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	4.09		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.256	J	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	1.22		1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.858	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	5.89		1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	115	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	99.4	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060927-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW23-061516	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573991	**Analyst:**	FJB	**Run Date:**	06/23/2016 22:56
Collect Date:	06/15/2016 09:05	**Dilution:**	200	**File ID:**	8M413196
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Trichloroethene	79-01-6	3820		200	100	50.0

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	116	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	101	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060927-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW23-061516	**Prep Method:**	3520C	**Prep Date:**	06/21/2016 17:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573853	**Analyst:**	MES	**Run Date:**	06/23/2016 15:53
Collect Date:	06/15/2016 09:05	**Dilution:**	1	**File ID:**	15M18515
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	7.62	J	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	133	20	129	*

J	The reported result is an estimated value.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060927-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW23-061516	**Prep Method:**	3520C	**Prep Date:**	06/21/2016 17:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573853	**Analyst:**	MES	**Run Date:**	06/25/2016 12:46
Collect Date:	06/15/2016 09:05	**Dilution:**	10	**File ID:**	15M18553
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	8.02	J	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	109	20	129	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060927-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW23-061516	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 19:21
Collect Date:	06/15/2016 09:05	**Dilution:**	1000	**File ID:**	1LM.LM35502
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2310		400	200	100

Certificate of Analysis

Sample #:	L16060927-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW19SW-061516	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573991	**Analyst:**	FJB	**Run Date:**	06/24/2016 00:53
Collect Date:	06/15/2016 10:15	**Dilution:**	1	**File ID:**	8M413200
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.388	J	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	0.599	J	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.506	J	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.484	J	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	119	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	103	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060927-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW19SW-061516	**Prep Method:**	3520C	**Prep Date:**	06/21/2016 17:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573853	**Analyst:**	MES	**Run Date:**	06/23/2016 16:15
Collect Date:	06/15/2016 10:15	**Dilution:**	1	**File ID:**	15M18516
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	37.5	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060927-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW19SW-061516	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/24/2016 23:18
Collect Date:	06/15/2016 10:15	**Dilution:**	1	**File ID:**	1LM.LM35473
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1.25		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16060927-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW19-061516	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573645	**Analyst:**	FJB	**Run Date:**	06/22/2016 03:34
Collect Date:	06/15/2016 11:15	**Dilution:**	1	**File ID:**	8M413145
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	114	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	99.9	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060927-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW19-061516	**Prep Method:**	3520C	**Prep Date:**	06/21/2016 17:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573853	**Analyst:**	MES	**Run Date:**	06/23/2016 16:38
Collect Date:	06/15/2016 11:15	**Dilution:**	1	**File ID:**	15M18517
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	40.5	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060927-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW19-061516	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/24/2016 23:37
Collect Date:	06/15/2016 11:15	**Dilution:**	1	**File ID:**	1LM.LM35474
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	5.31		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16060927-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573645	**Analyst:**	FJB	**Run Date:**	06/21/2016 22:44
Collect Date:	06/15/2016 00:01	**Dilution:**	1	**File ID:**	8M413135
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	111	85	115	
1,2-Dichloroethane-d4	112	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	100	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060927-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW23SW-061516	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573991	**Analyst:**	FJB	**Run Date:**	06/24/2016 00:24
Collect Date:	06/15/2016 08:00	**Dilution:**	1	**File ID:**	8M413199
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	9.67	J	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	111	85	115	
1,2-Dichloroethane-d4	116	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	101	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060927-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW23-061516	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573771	**Analyst:**	FJB	**Run Date:**	06/22/2016 18:40
Collect Date:	06/15/2016 09:05	**Dilution:**	1	**File ID:**	8M413169
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	1.59		1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	Q	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	5.45		1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	1.06		1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	214		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	10.1		2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	232		1.00	0.500	0.250

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	4.09		1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.256	J	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	1.22		1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.858	J	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	Q	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	5.89		1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	115	70	120	
Toluene-d8	105	85	120	
4-Bromofluorobenzene	99.4	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060927-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW23-061516	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573991	**Analyst:**	FJB	**Run Date:**	06/23/2016 22:56
Collect Date:	06/15/2016 09:05	**Dilution:**	200	**File ID:**	8M413196
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Trichloroethene	79-01-6	3820		200	100	50.0

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	116	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	101	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060927-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW19SW-061516	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573991	**Analyst:**	FJB	**Run Date:**	06/24/2016 00:53
Collect Date:	06/15/2016 10:15	**Dilution:**	1	**File ID:**	8M413200
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.388	J	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	0.599	J	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	J	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.506	J	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

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Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	Q	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.484	J	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	113	85	115	
1,2-Dichloroethane-d4	119	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	103	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060927-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	18CPTMW19-061516	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573645	**Analyst:**	FJB	**Run Date:**	06/22/2016 03:34
Collect Date:	06/15/2016 11:15	**Dilution:**	1	**File ID:**	8M413145
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

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Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	112	85	115	
1,2-Dichloroethane-d4	114	70	120	
Toluene-d8	104	85	120	
4-Bromofluorobenzene	99.9	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060927-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS8
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 17:50
Workgroup #:	WG573645	**Analyst:**	FJB	**Run Date:**	06/21/2016 22:44
Collect Date:	06/15/2016 00:01	**Dilution:**	1	**File ID:**	8M413135
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	U	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

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Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	U	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	111	85	115	
1,2-Dichloroethane-d4	112	70	120	
Toluene-d8	103	85	120	
4-Bromofluorobenzene	100	75	120	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

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Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 051316
Analyst1: TMB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 624 SOP: MSV10 Rev: 14
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53752

Internal Standard: STD75899 Surrogate Standard: STD75899
CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG568561

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M412209	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 08:38
8M412210	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 08:57
8M412211	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 09:29
8M412212	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 09:56
8M412213	WG568561-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/13/16 10:19
8M412214	WG568561-02 50ug/L CCV STD 8260	NA	1	1	STD76127	05/13/16 10:51
8M412215	WG568565-01 100ug/L A9 CCV STD 8260	NA	1	1	STD76072	05/13/16 11:36
8M412216	BFB CHECK	NA	1	1	STD76034	05/13/16 12:04
8M412217	BFB CHECK	NA	1	1	STD76034	05/13/16 12:18
8M412218	WG568561-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 12:36
8M412219	RINSE	NA	1	1		05/13/16 13:00
8M412220	WG568561-02 0.3ug/L STD 8260	NA	1	1	STD76127	05/13/16 13:29
8M412221	WG568561-03 0.4ug/L STD 8260	NA	1	1	STD76127	05/13/16 13:58
8M412222	WG568561-04 1ug/L STD 8260	NA	1	1	STD76127	05/13/16 14:27
8M412223	WG568561-05 2ug/L STD 8260	NA	1	1	STD76127	05/13/16 14:56
8M412224	WG568561-06 5ug/L STD 8260	NA	1	1	STD76127	05/13/16 15:25
8M412225	WG568561-07 20ug/L STD 8260	NA	1	1	STD76127	05/13/16 15:54
8M412226	WG568561-08 50ug/L STD 8260	NA	1	1	STD76127	05/13/16 16:23
8M412227	WG568561-09 100ug/L STD 8260	NA	1	1	STD76127	05/13/16 16:52
8M412228	WG568561-10 200ug/L STD 8260	NA	1	1	STD76127	05/13/16 17:21
8M412229	WG568561-11 300ug/L STD 8260	NA	1	1	STD76127	05/13/16 17:50
8M412230	RINSE	NA	1	1		05/13/16 18:19
8M412231	RINSE	NA	1	1		05/13/16 18:49
8M412232	WG568561-12 50ug/L ALT SRC STD 8260	NA	1	1	STD76109	05/13/16 19:17
8M412233	RINSE	NA	1	1		05/13/16 19:46

Comments

Seq.	Rerun	Dil.	Reason	Analytes
5	X			
File ID: 8M412213				
	Several compounds were low, DNR.			
6				
File ID: 8M412214				

Approved: May 20, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument:	HPMS8	Dataset:	051316		
Analyst1:	TMB	Analyst2:	NA		
Method:	8260B	SOP:	MSV01	Rev:	23
Method:	624	SOP:	MSV10	Rev:	14
Method:	5030B/5030C/5035A	SOP:	PAT01	Rev:	18
Maintenance Log ID:	53752				

Internal Standard: STD75899 Surrogate Standard: STD75899

CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA

Workgroups: WG568561

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
			Two C compounds failed. DNR. Run a curve.	
7 File ID: 8M412215				
			DNR.	

Approved: May 20, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 062116
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53790

Internal Standard: STD75370 Surrogate Standard: STD76370
CCV: STD76578 LCS: STD76597 MS/MSD: STD76597

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG573645

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M413124	WG573644-01 BFB 50ng 8260	NA	1	1	STD76496	06/21/16 17:23
8M413125	WG573644-02 50ug/L CCV 8260	NA	1	1	STD76715	06/21/16 17:51
8M413126	WG573644-02 50ug/L CCV 8260	NA	1	1	STD76578	06/21/16 18:23
8M413127	WG573787-01 100ug/L CCV A9	NA	1	1	STDXXXXX	06/21/16 18:52
8M413128	WG573645-01 BLANK 8260	NA	1	1		06/21/16 19:21
8M413129	WG573645-02 20ug/L LCS 8260	NA	1	1	STD76744	06/21/16 19:50
8M413130	WG573645-03 20ug/L LCS2 8260	NA	1	1	STD76744	06/21/16 20:19
8M413131	L16060994-11 5X B 826-SPE D1	<2	1	5		06/21/16 20:48
8M413132	L16060724-01 5X B 8260 D1	<2	1	5		06/21/16 21:17
8M413133	L16061128-04 A 826-SPE1	5	1	1		06/21/16 21:46
8M413134	L16061128-05 A 826-SPE1	5	1	1		06/21/16 22:15
8M413135	L16060927-05 A 826-LOW	<2	1	1		06/21/16 22:44
8M413136	L16061016-01 A 826-SPE	<2	1	1		06/21/16 23:14
8M413137	L16061016-20 A 826-SPE	<2	1	1		06/21/16 23:43
8M413138	L16061016-21 A 826-SPE	<2	1	1		06/22/16 00:12
8M413139	L16060994-09 B 826-SPE	<2	1	1		06/22/16 00:41
8M413140	L16060998-01 5X B 826-SPE 00	<2	1	5		06/22/16 01:10
8M413141	L16061128-01 A 826-SPE1	7	1	1		06/22/16 01:38
8M413142	L16061128-02 A 826-SPE1	7	1	1		06/22/16 02:07
8M413143	L16061128-03 A 826-SPE1	7	1	1		06/22/16 02:35
8M413144	L16061001-01 A 826-SPE	<2	1	1		06/22/16 03:05
8M413145	L16060927-04 A 826-LOW	<2	1	1		06/22/16 03:34
8M413146	L16060927-01 A 826-LOW	<2	1	1		06/22/16 04:03
8M413147	L16060927-03 A 826-LOW	<2	1	1		06/22/16 04:32
8M413148	L16060927-02 20X A 826-LOW	<2	1	20		06/22/16 05:00
8M413149	WG573648-01 20ug/L LCS 624	NA	2	1	STD76744	06/22/16 05:30
8M413150	WG573648-02 20ug/L LCS2 624	NA	2	1	STD76744	06/22/16 05:59
8M413151	RINSE	NA	2	1		06/22/16 06:28
8M413152	WG573648-03 BLANK 624	NA	2	1		06/22/16 06:57
8M413153	L16061067-01 A 624-SPE	6	2	1		06/22/16 07:26
8M413154	L16061079-01 A 624-SPE5	6	2	1		06/22/16 07:55
8M413155	L16061134-02 A 624-SPE	8	2	1		06/22/16 08:23
8M413156	L16061135-02 A 624-SPE	7	2	1		06/22/16 08:52
8M413157	L16061170-06 A 624-SPE1	<2	2	1		06/22/16 09:22

Approved: June 30, 2016

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Instrument Run Log

Instrument: HPMS8 Dataset: 062116
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID: 53790

Internal Standard: STD75370 Surrogate Standard: STD76370
CCV: STD76578 LCS: STD76597 MS/MSD: STD76597

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG573645

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M413158	L16061132-01 50X A 624-SPE1	7	2	50		06/22/16 09:51
8M413159	L16061123-01 10X A 624-SPE	7	2	10		06/22/16 10:20
8M413160	L16061123-02 100X A 624-SPE	7	2	100		06/22/16 10:49

Comments

Seq.	Rerun	Dil.	Reason	Analytes
23	X	200	Over Calibration Range	tce
File ID: 8M413146				
L16060927-01 sample labelled incorrectly, was actually 02.				
24	X	1	Carry-over contamination	
File ID: 8M413147				
L16060927-03				
25	X	1	Analyzed too dilute	
File ID: 8M413148				
L16060927-02 vial labelled incorrectly, was actually sample 01				
30				
File ID: 8M413153				
L16061067-01 CT1 Cooler temp out				
35				
File ID: 8M413158				
L16061132-01 Reporting limits elevated due to foamy sample matrix. Attempt at 10X dilution with antifoam was aborted by instrument foam sensor.				

Approved: June 30, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 062216
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75370 Surrogate Standard: STD76370
CCV: STD76578 LCS: STD76744 MS/MSD: STD76744

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG573771

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M413161	WG573770-01 BFB 50ng 8260	NA	1	1	STD76496	06/22/16 14:38
8M413162	WG573770-02 50ug/L CCV 8260	NA	1	1	STD76578	06/22/16 15:06
8M413163	WG573770-02 50ug/L CCV 8260	NA	1	1	STD76578	06/22/16 15:41
8M413164	WGXXXXXX-01 100ug/L A9CCV 8260	NA	1	1	STDXXXXX	06/22/16 16:10
8M413165	WG573771-01 BLANK 8260	NA	1	1		06/22/16 16:39
8M413166	WG573771-02 20ug/L LCS 8260	NA	1	1	STD76744	06/22/16 17:13
8M413167	L16060829-02 10X 826-TC-SPE	NA	17	10		06/22/16 17:42
8M413168	L16060927-01 200X B 826-LOW	<2	1	200		06/22/16 18:11
8M413169	L16060927-02 B 826-LOW	<2	1	1		06/22/16 18:40
8M413170	L16060927-03 B 826-LOW	<2	1	1		06/22/16 19:09
8M413171	L16060896-06 TB A 826-SPE	<2	1	1		06/22/16 19:38
8M413172	L16060896-07 RB A 826-SPE	<2	1	1		06/22/16 20:07
8M413173	L16060930-04 TB A 826-SPE	<2	1	1		06/22/16 20:37
8M413174	L16060986-21 REF A 826-SPE	<2	1	1		06/22/16 21:06
8M413175	L16060986-31 MS A 826-SPE	<2	1	1	STD76744	06/22/16 21:35
8M413176	L16060986-33 MSD A 826-SPE	<2	1	1	STD76744	06/22/16 22:03
8M413177	L16060986-01 A 826-SPE	<2	1	1		06/22/16 22:32
8M413178	L16060986-03 A 826-SPE	<2	1	1		06/22/16 23:01
8M413179	L16060986-05 A 826-SPE	<2	1	1		06/22/16 23:30
8M413180	L16060896-01 A 826-SPE	<2	1	1		06/22/16 23:59
8M413181	L16060896-02 A 826-SPE	<2	1	1		06/23/16 00:27
8M413182	L16060896-03 A 826-SPE	<2	1	1		06/23/16 00:56
8M413183	L16060896-04 A 826-SPE	<2	1	1		06/23/16 01:25
8M413184	L16060896-05 A 826-SPE	<2	1	1		06/23/16 01:54
8M413185	L16060930-03 10X A 826-SPE	7	1	10		06/23/16 02:23
8M413186	CCV	NA	1	1		06/23/16 02:51
8M413187	RINSE	NA	1	1		06/23/16 03:21
8M413188	WG573023-01 10X FBLK	NA	17	10		06/23/16 03:50
8M413189	10X GROUNDWATER	NA	1	10		06/23/16 04:19

Comments

Seq.	Rerun	Dil.	Reason	Analytes
8	X	1	Analyzed too dilute	

Approved: June 27, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 062216
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: OVAP SOP: MSV01/PAT01 Rev: 0
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD75370 Surrogate Standard: STD76370
CCV: STD76578 LCS: STD76744 MS/MSD: STD76744

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG573771

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
File ID: 8M413168				
	L16060927-01		Samples 01 and 02 A and C vials labels had been switched. This caused B vials to be analyzed at incorrect dilutions.	
9	X	200	Over Calibration Range	tce
File ID: 8M413169				
	L16060927-02		Samples 01 and 02 A and C vials labels had been switched. This caused B vials to be analyzed at incorrect dilutions.	
10	X	1	Carry-over contamination	
File ID: 8M413170				
	L16060927-03			
11	X	1	Carry-over contamination	
File ID: 8M413171				
	L16060896-06			
12	X	1	Carry-over contamination	
File ID: 8M413172				
	L16060896-07			
25	X	1	Analyzed too dilute	
File ID: 8M413185				
	L16060930-03			

Approved: June 27, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 062316
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD76370 Surrogate Standard: STD76370
CCV: STD76715 LCS: STD76744 MS/MSD: STD76744

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG573991

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
8M413190	WG573990-01 BFB 50ng 8260	NA	1	1	STD76496	06/23/16 19:56
8M413191	WG573990-02 50ug/L CCV 8260	NA	1	1	STD76715	06/23/16 20:24
8M413192	WG573990-02 50ug/L CCV 8260	NA	1	1	STD76715	06/23/16 21:00
8M413193	WG573XXX-01 100ug/L CCV A9	NA	1	1	STDXXXXX	06/23/16 21:30
8M413194	WG573991-01 BLANK 8260	NA	1	1		06/23/16 21:59
8M413195	WG573991-02 20ug/L LCS 8260	NA	1	1	STD76744	06/23/16 22:28
8M413196	L16060927-02 200X C 826-LOW D1	<2	1	200		06/23/16 22:56
8M413197	L16060978-05 A 826-SPE	<2	1	1		06/23/16 23:26
8M413198	L16060992-01 A 826-SPE	<2	1	1		06/23/16 23:55
8M413199	L16060927-01 C 826-LOW	<2	1	1		06/24/16 00:24
8M413200	L16060927-03 C 826-LOW	<2	1	1		06/24/16 00:53
8M413201	L16060992-04 A 826-SPE	<2	1	1		06/24/16 01:22
8M413202	L16061095-12 A 826-SPE	<2	1	1		06/24/16 01:51
8M413203	L16061095-13 A 826-SPE	<2	1	1		06/24/16 02:20
8M413204	L16060896-06 B 826-SPE	<2	1	1		06/24/16 02:49
8M413205	L16060896-07 B 826-SPE	<2	1	1		06/24/16 03:18
8M413206	L16060930-03 B+C 826-SPE	7	1	1	SEDIMENT	06/24/16 03:47
8M413207	L16060730-03 B 826-LOW A1	<2	1	1		06/24/16 04:16
8M413208	L16060823-04 B 826-LOW A1	<2	1	1		06/24/16 04:46
8M413209	L16061068-01 REF 10X A 826-LOW	NA	1	10		06/24/16 05:15
8M413210	L16061068-02 MS 10X A 826-LOW	NA	1	10	STD76744	06/24/16 05:44
8M413211	L16061068-03 MSD 10X A 826-LOW	NA	1	10	STD76744	06/24/16 06:13
8M413212	L16060978-03 10X A 826-SPE	11	1	10		06/24/16 06:42
8M413213	L16060978-04 10X A 826-SPE	11	1	10		06/24/16 07:11
8M413214	L16061068-04 A 826-LOW	<2	1	1		06/24/16 07:40
8M413215	RINSE	NA	1	1		06/24/16 08:09
8M413216	RINSE	NA	1	1		06/24/16 08:38
8M413217	GROUNDWATER	NA	1	1		06/24/16 09:07

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2	X			
File ID: 8M413191				

Approved: June 29, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS8 Dataset: 062316
Analyst1: FJB Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 23
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18

Maintenance Log ID:

Internal Standard: STD76370 Surrogate Standard: STD76370
CCV: STD76715 LCS: STD76744 MS/MSD: STD76744

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG573991

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
DNR.				
4				
File ID: 8M413193				
	Not needed, DNR.			
23	X	100	Over Calibration Range	TOLUENE
File ID: 8M413212				
25			Carry-over contamination	
File ID: 8M413214				

Approved: June 29, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Data Checklist

Date: 13-MAY-2016
Analyst: TMB
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75126
Analytical Workgroups: WG568561

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	X
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	TMB
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	NA
Reruns	NA
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
17-MAY-2016
Tiffany Bailey

Secondary Reviewer:
20-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-20-2016 11:18:36

Microbac Laboratories Inc.

Data Checklist

Date: 21-JUN-2016
Analyst: FJB
Analyst: NA
Method: 8260B/624
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75920
Analytical Workgroups: WG573645, WG573648

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	NA
Samples	X
TCL Hits	X
Spectra of TCL Hits	TMB
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	FJB
Secondary Reviewer	WTD
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
30-JUN-2016

Secondary Reviewer:
30-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-30-2016 14:47:57

Microbac Laboratories Inc.

Data Checklist

Date: 22-JUN-2016
Analyst: FJB
Analyst: NA
Method: 8260B
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 75952
Analytical Workgroups: WG573771

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	WTD
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	FJB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
27-JUN-2016

Secondary Reviewer:
27-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-27-2016 16:24:53

Microbac Laboratories Inc.

Data Checklist

Date: 23-JUN-2016
Analyst: FJB
Analyst: NA
Method: 8260B
Instrument: HPMS8
Curve Workgroup: NA
Runlog ID: 76008
Analytical Workgroups: WG573991

System Performance Check	NA
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	WTD
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	TMB
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
29-JUN-2016
Tiffany Bailey

Secondary Reviewer:
29-JUN-2016
Sarah Vandenberg

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-29-2016 14:37:11

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG573645

Login Number: L16060927

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW19-061516	04	06/15/16					06/22/2016	6.7	14		06/22/16	6.7	14	
TRIP BLANK	05	06/15/16					06/21/2016	6.9	14		06/21/16	6.9	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4831243
Report generated 06/30/2016 15:02

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG573771

Login Number: L16060927

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW23-061516	02	06/15/16					06/22/2016	7.4	14		06/22/16	7.4	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4831243
Report generated 06/30/2016 15:02

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG573991

Login Number: L16060927

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW23SW-061516	01	06/15/16					06/24/2016	8.7	14		06/24/16	8.7	14	
18CPTMW23-061516	02	06/15/16					06/23/2016	8.6	14		06/23/16	8.6	14	
18CPTMW19SW-061516	03	06/15/16					06/24/2016	8.6	14		06/24/16	8.6	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4831243
Report generated 06/30/2016 15:02

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060927
Instrument Id: HPMS8
Workgroup (AAB#): WG573645

Method: 8260
CAL ID: HPMS8-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16060927-04	1.00	01	114	112	99.9	104
L16060927-05	1.00	01	112	111	100	103
WG573645-01	1.00	01	110	111	99.8	105
WG573645-02	1.00	01	109	107	98.0	103
WG573645-03	1.00	01	106	108	99.0	102

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4831249
Report generated: 06/30/2016 15:03

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060927
Instrument Id: HPMS8
Workgroup (AAB#): WG573991

Method: 8260
CAL ID: HPMS8-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16060927-01	1.00	01	116	111	101	104
L16060927-02	200	DL01	116	112	101	101
L16060927-03	1.00	01	119	113	103	104
WG573991-01	1.00	01	115	113	102	102
WG573991-02	1.00	01	113	110	98.9	103

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4831249
Report generated: 06/30/2016 15:03

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060927
Instrument Id: HPMS8
Workgroup (AAB#): WG573771

Method: 8260
CAL ID: HPMS8-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16060927-02	1.00	01	115	112	99.4	105
WG573771-01	1.00	01	111	107	98.4	104
WG573771-02	1.00	01	113	110	103	103

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4831249
Report generated: 06/30/2016 15:03

METHOD BLANK SUMMARY

Login Number: L16060927
Blank File ID: 8M413128
Prep Date: 06/21/16 19:21
Analyzed Date: 06/21/16 19:21
Analyst: FJB

Work Group: WG573645
Blank Sample ID: WG573645-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573645-02	8M413129	06/21/16 19:50	01
LCS2	WG573645-03	8M413130	06/21/16 20:19	01
TRIP BLANK	L16060927-05	8M413135	06/21/16 22:44	01
18CPTMW19-061516	L16060927-04	8M413145	06/22/16 03:34	01

Report Name: BLANK_SUMMARY
PDF File ID: 4833866
Report generated 06/30/2016 15:02

METHOD BLANK SUMMARY

Login Number: L16060927
Blank File ID: 8M413194
Prep Date: 06/23/16 21:59
Analyzed Date: 06/23/16 21:59
Analyst: FJB

Work Group: WG573991
Blank Sample ID: WG573991-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573991-02	8M413195	06/23/16 22:28	01
18CPTMW23-061516	L16060927-02	8M413196	06/23/16 22:56	DL01
18CPTMW23SW-061516	L16060927-01	8M413199	06/24/16 00:24	01
18CPTMW19SW-061516	L16060927-03	8M413200	06/24/16 00:53	01

Report Name: BLANK_SUMMARY
PDF File ID: 4833866
Report generated 06/30/2016 15:02

METHOD BLANK SUMMARY

Login Number: L16060927
Blank File ID: 8M413165
Prep Date: 06/22/16 16:39
Analyzed Date: 06/22/16 16:39
Analyst: FJB

Work Group: WG573771
Blank Sample ID: WG573771-01
Instrument ID: HPMS8
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573771-02	8M413166	06/22/16 17:13	01
18CPTMW23-061516	L16060927-02	8M413169	06/22/16 18:40	01

Report Name: BLANK_SUMMARY
PDF File ID: 4833866
Report generated 06/30/2016 15:02

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060927 Prep Date: 06/21/16 19:21 Sample ID: WG573645-01
Instrument ID: HPMS8 Run Date: 06/21/16 19:21 Prep Method: 5030B/5030C/503
File ID: 8M413128 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573645 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4831244
30-JUN-2016 15:02

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060927 Prep Date: 06/21/16 19:21 Sample ID: WG573645-01
Instrument ID: HPMS8 Run Date: 06/21/16 19:21 Prep Method: 5030B/5030C/503
File ID: 8M413128 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573645 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	111	85 - 115	PASS
1,2-Dichloroethane-d4	110	70 - 120	PASS
Toluene-d8	105	85 - 120	PASS
4-Bromofluorobenzene	99.8	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4831244
30-JUN-2016 15:02

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16060927 Prep Date: 06/22/16 16:39 Sample ID: WG573771-01
Instrument ID: HPMS8 Run Date: 06/22/16 16:39 Prep Method: 5030B/5030C/503
File ID: 8M413165 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573771 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 4831244
30-JUN-2016 15:02

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060927 Prep Date: 06/22/16 16:39 Sample ID: WG573771-01
Instrument ID: HPMS8 Run Date: 06/22/16 16:39 Prep Method: 5030B/5030C/503
File ID: 8M413165 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573771 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	107	85 - 115	PASS
1,2-Dichloroethane-d4	111	70 - 120	PASS
Toluene-d8	104	85 - 120	PASS
4-Bromofluorobenzene	98.4	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4831244
30-JUN-2016 15:02

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16060927 Prep Date: 06/23/16 21:59 Sample ID: WG573991-01
Instrument ID: HPMS8 Run Date: 06/23/16 21:59 Prep Method: 5030B/5030C/503
File ID: 8M413194 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573991 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name: BLANK
PDF ID: 4831244
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Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060927 Prep Date: 06/23/16 21:59 Sample ID: WG573991-01
Instrument ID: HPMS8 Run Date: 06/23/16 21:59 Prep Method: 5030B/5030C/503
File ID: 8M413194 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573991 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS8-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	113	85 - 115	PASS
1,2-Dichloroethane-d4	115	70 - 120	PASS
Toluene-d8	102	85 - 120	PASS
4-Bromofluorobenzene	102	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4831244
30-JUN-2016 15:02

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060927 | Run Date: 06/22/2016 | Sample ID: WG573771-02
Instrument ID: HPMS8 | Run Time: 17:13 | Prep Method: 5030B/5030C/503
File ID: 8M413166 | Analyst: FJB | Method: 8260B
Workgroup (AAB#): WG573771 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD76744 | Cal ID: HPMS8-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	22.3	111	40 - 140	
Benzene	20.0	22.4	112	80 - 120	
Bromobenzene	20.0	20.3	102	75 - 125	
Bromochloromethane	20.0	21.5	108	65 - 130	
Bromodichloromethane	20.0	23.6	118	75 - 120	
Bromoform	20.0	19.6	97.8	70 - 130	
Bromomethane	20.0	18.1	90.3	30 - 145	
2-Butanone	20.0	20.3	101	30 - 150	
n-Butylbenzene	20.0	19.7	98.5	70 - 135	
sec-Butylbenzene	20.0	20.9	104	70 - 125	
tert-Butylbenzene	20.0	20.4	102	70 - 130	
Carbon disulfide	20.0	21.9	109	35 - 160	
Carbon tetrachloride	20.0	24.5	123	65 - 140	
Chlorobenzene	20.0	20.6	103	80 - 120	
Chlorodibromomethane	20.0	20.4	102	60 - 135	
Chloroethane	20.0	24.5	122	60 - 135	
Chloroform	20.0	22.8	114	65 - 135	
Chloromethane	20.0	23.9	120	40 - 125	
2-Chlorotoluene	20.0	20.5	102	75 - 125	
4-Chlorotoluene	20.0	20.6	103	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	17.9	89.5	50 - 130	
1,2-Dibromoethane	20.0	20.0	100	80 - 120	
Dibromomethane	20.0	20.8	104	75 - 125	
1,2-Dichlorobenzene	20.0	20.6	103	70 - 120	
1,3-Dichlorobenzene	20.0	20.6	103	75 - 125	
1,4-Dichlorobenzene	20.0	20.5	102	75 - 125	
Dichlorodifluoromethane	20.0	30.6	153	30 - 155	
1,1-Dichloroethane	20.0	21.8	109	70 - 135	
1,2-Dichloroethane	20.0	24.7	123	70 - 130	
1,1-Dichloroethene	20.0	22.6	113	70 - 130	
cis-1,2-Dichloroethene	20.0	22.5	112	70 - 125	
trans-1,2-Dichloroethene	20.0	22.4	112	60 - 140	
1,2-Dichloropropane	20.0	21.7	109	75 - 125	
1,3-Dichloropropane	20.0	21.5	107	75 - 125	
2,2-Dichloropropane	20.0	26.5	133	70 - 135	
cis-1,3-Dichloropropene	20.0	24.8	124	70 - 130	
trans-1,3-Dichloropropene	20.0	21.6	108	55 - 140	
1,1-Dichloropropene	20.0	22.6	113	75 - 130	
Ethylbenzene	20.0	20.3	102	75 - 125	
2-Hexanone	20.0	16.8	84.1	55 - 130	
Hexachlorobutadiene	20.0	21.3	107	50 - 140	

LCS - Modified 03/06/2008
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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060927 Run Date: 06/22/2016 Sample ID: WG573771-02
Instrument ID: HPMS8 Run Time: 17:13 Prep Method: 5030B/5030C/503
File ID: 8M413166 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573771 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD76744 Cal ID: HPMS8-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	21.9	110	75 - 125	
p-Isopropyltoluene	20.0	20.6	103	75 - 130	
4-Methyl-2-pentanone	20.0	20.5	103	60 - 135	
Methylene chloride	20.0	21.6	108	55 - 140	
Naphthalene	20.0	16.4	81.9	55 - 140	
n-Propylbenzene	20.0	21.2	106	70 - 130	
Styrene	20.0	21.2	106	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	21.0	105	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	18.2	91.2	65 - 130	
Tetrachloroethene	20.0	21.5	108	45 - 150	
Toluene	20.0	20.6	103	75 - 120	
1,2,3-Trichlorobenzene	20.0	17.8	89.1	55 - 140	
1,2,4-Trichlorobenzene	20.0	19.3	96.3	65 - 135	
1,1,1-Trichloroethane	20.0	24.6	123	65 - 130	
1,1,2-Trichloroethane	20.0	19.9	99.5	75 - 125	
Trichlorofluoromethane	20.0	25.6	128	60 - 145	
1,2,3-Trichloropropane	20.0	19.5	97.6	75 - 125	
1,2,4-Trimethylbenzene	20.0	20.4	102	75 - 130	
1,3,5-Trimethylbenzene	20.0	21.3	106	75 - 130	
Vinyl chloride	20.0	28.6	143	50 - 145	
o-Xylene	20.0	21.0	105	80 - 120	
m-,p-Xylene	40.0	42.3	106	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	110	85 - 115	PASS
1,2-Dichloroethane-d4	113	70 - 120	PASS
Toluene-d8	103	85 - 120	PASS
4-Bromofluorobenzene	103	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060927 | Run Date: 06/23/2016 | Sample ID: WG573991-02
Instrument ID: HPMS8 | Run Time: 22:28 | Prep Method: 5030B/5030C/503
File ID: 8M413195 | Analyst: FJB | Method: 8260B
Workgroup (AAB#): WG573991 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD76744 | Cal ID: HPMS8-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	24.0	120	40 - 140	
Benzene	20.0	21.8	109	80 - 120	
Bromobenzene	20.0	19.4	97.1	75 - 125	
Bromochloromethane	20.0	21.6	108	65 - 130	
Bromodichloromethane	20.0	23.4	117	75 - 120	
Bromoform	20.0	19.1	95.6	70 - 130	
Bromomethane	20.0	17.2	86.1	30 - 145	
2-Butanone	20.0	21.2	106	30 - 150	
n-Butylbenzene	20.0	19.0	94.8	70 - 135	
sec-Butylbenzene	20.0	20.2	101	70 - 125	
tert-Butylbenzene	20.0	20.0	99.8	70 - 130	
Carbon disulfide	20.0	20.9	104	35 - 160	
Carbon tetrachloride	20.0	24.4	122	65 - 140	
Chlorobenzene	20.0	20.7	104	80 - 120	
Chlorodibromomethane	20.0	20.4	102	60 - 135	
Chloroethane	20.0	23.4	117	60 - 135	
Chloroform	20.0	22.7	114	65 - 135	
Chloromethane	20.0	23.0	115	40 - 125	
2-Chlorotoluene	20.0	18.4	92.0	75 - 125	
4-Chlorotoluene	20.0	22.2	111	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	17.1	85.6	50 - 130	
1,2-Dibromoethane	20.0	19.8	98.9	80 - 120	
Dibromomethane	20.0	20.7	104	75 - 125	
1,2-Dichlorobenzene	20.0	19.4	96.9	70 - 120	
1,3-Dichlorobenzene	20.0	20.2	101	75 - 125	
1,4-Dichlorobenzene	20.0	19.8	99.0	75 - 125	
Dichlorodifluoromethane	20.0	28.6	143	30 - 155	
1,1-Dichloroethane	20.0	21.4	107	70 - 135	
1,2-Dichloroethane	20.0	24.7	123	70 - 130	
1,1-Dichloroethene	20.0	22.4	112	70 - 130	
cis-1,2-Dichloroethene	20.0	22.0	110	70 - 125	
trans-1,2-Dichloroethene	20.0	22.1	111	60 - 140	
1,2-Dichloropropane	20.0	21.6	108	75 - 125	
1,3-Dichloropropane	20.0	21.4	107	75 - 125	
2,2-Dichloropropane	20.0	25.6	128	70 - 135	
cis-1,3-Dichloropropene	20.0	24.5	122	70 - 130	
trans-1,3-Dichloropropene	20.0	21.2	106	55 - 140	
1,1-Dichloropropene	20.0	21.8	109	75 - 130	
Ethylbenzene	20.0	20.1	100	75 - 125	
2-Hexanone	20.0	17.3	86.5	55 - 130	
Hexachlorobutadiene	20.0	20.7	103	50 - 140	

LCS - Modified 03/06/2008
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Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060927 Run Date: 06/23/2016 Sample ID: WG573991-02
Instrument ID: HPMS8 Run Time: 22:28 Prep Method: 5030B/5030C/503
File ID: 8M413195 Analyst: FJB Method: 8260B
Workgroup (AAB#): WG573991 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD76744 Cal ID: HPMS8-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	21.7	109	75 - 125	
p-Isopropyltoluene	20.0	19.8	98.9	75 - 130	
4-Methyl-2-pentanone	20.0	19.9	99.3	60 - 135	
Methylene chloride	20.0	21.3	107	55 - 140	
Naphthalene	20.0	15.2	76.1	55 - 140	
n-Propylbenzene	20.0	20.9	104	70 - 130	
Styrene	20.0	21.1	105	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	20.9	105	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	17.1	85.3	65 - 130	
Tetrachloroethene	20.0	20.9	105	45 - 150	
Toluene	20.0	20.6	103	75 - 120	
1,2,3-Trichlorobenzene	20.0	17.5	87.3	55 - 140	
1,2,4-Trichlorobenzene	20.0	18.5	92.5	65 - 135	
1,1,1-Trichloroethane	20.0	24.7	123	65 - 130	
1,1,2-Trichloroethane	20.0	19.2	95.9	75 - 125	
Trichloroethene	20.0	23.4	117	70 - 125	
Trichlorofluoromethane	20.0	24.5	123	60 - 145	
1,2,3-Trichloropropane	20.0	19.1	95.6	75 - 125	
1,2,4-Trimethylbenzene	20.0	19.9	99.5	75 - 130	
1,3,5-Trimethylbenzene	20.0	20.8	104	75 - 130	
Vinyl chloride	20.0	27.9	139	50 - 145	
o-Xylene	20.0	21.2	106	80 - 120	
m-,p-Xylene	40.0	42.0	105	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	110	85 - 115	PASS
1,2-Dichloroethane-d4	113	70 - 120	PASS
Toluene-d8	103	85 - 120	PASS
4-Bromofluorobenzene	98.9	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4831245
Report generated: 06/30/2016 15:02

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060927 Analyst: FJB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG573645 Units: ug/L
QC Key: DOD4 Lot #: STD76744

Sample ID: WG573645-02 LCS File ID: 8M413129 Run Date: 06/21/2016 19:50
Sample ID: WG573645-03 LCS2 File ID: 8M413130 Run Date: 06/21/2016 20:19

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,1,1,2-Tetrachloroethane	20.0	21.0	105	20.0	20.4	102	2.55	80 - 130	30	
1,1,1-Trichloroethane	20.0	23.5	118	20.0	23.3	117	0.919	65 - 130	30	
1,1,2,2-Tetrachloroethane	20.0	17.9	89.4	20.0	17.4	87.0	2.68	65 - 130	30	
1,1,2-Trichloroethane	20.0	20.2	101	20.0	19.3	96.3	4.89	75 - 125	30	
1,1-Dichloroethane	20.0	21.9	109	20.0	21.1	106	3.48	70 - 135	30	
1,1-Dichloroethene	20.0	22.3	111	20.0	22.0	110	1.36	70 - 130	30	
1,1-Dichloropropene	20.0	22.7	114	20.0	22.4	112	1.58	75 - 130	30	
1,2,3-Trichlorobenzene	20.0	18.7	93.4	20.0	18.5	92.4	0.993	55 - 140	30	
1,2,3-Trichloropropane	20.0	19.2	95.9	20.0	19.3	96.5	0.580	75 - 125	30	
1,2,4-Trichlorobenzene	20.0	19.7	98.4	20.0	19.2	95.8	2.71	65 - 135	30	
1,2,4-Trimethylbenzene	20.0	20.1	100	20.0	19.8	99.0	1.25	75 - 130	30	
1,2-Dibromo-3-chloropropane	20.0	17.8	88.8	20.0	17.7	88.5	0.377	50 - 130	30	
1,2-Dibromoethane	20.0	20.3	102	20.0	19.7	98.5	3.03	80 - 120	30	
1,2-Dichlorobenzene	20.0	19.9	99.6	20.0	19.5	97.3	2.40	70 - 120	30	
1,2-Dichloroethane	20.0	23.9	119	20.0	23.0	115	3.72	70 - 130	30	
1,2-Dichloropropane	20.0	22.0	110	20.0	21.9	109	0.534	75 - 125	30	
1,3,5-Trimethylbenzene	20.0	21.1	106	20.0	20.8	104	1.31	75 - 130	30	
1,3-Dichlorobenzene	20.0	20.4	102	20.0	20.3	102	0.603	75 - 125	30	
1,3-Dichloropropane	20.0	21.5	108	20.0	20.9	104	3.09	75 - 125	30	
1,4-Dichlorobenzene	20.0	20.4	102	20.0	20.2	101	0.886	75 - 125	30	
2,2-Dichloropropane	20.0	25.5	128	20.0	24.8	124	2.80	70 - 135	30	
2-Butanone	20.0	20.2	101	20.0	19.7	98.5	2.44	30 - 150	30	
2-Chlorotoluene	20.0	20.9	105	20.0	20.7	104	1.14	75 - 125	30	
2-Hexanone	20.0	17.1	85.6	20.0	18.2	90.8	5.87	55 - 130	30	
4-Chlorotoluene	20.0	20.6	103	20.0	19.9	99.7	3.22	75 - 130	30	
4-Methyl-2-pentanone	20.0	21.5	107	20.0	19.0	94.9	12.3	60 - 135	30	
Acetone	20.0	20.1	101	20.0	21.6	108	7.09	40 - 140	30	
Benzene	20.0	22.6	113	20.0	22.1	111	2.24	80 - 120	30	
Bromobenzene	20.0	20.0	99.9	20.0	19.8	99.0	0.968	75 - 125	30	
Bromochloromethane	20.0	22.3	112	20.0	21.3	107	4.47	65 - 130	30	
Bromodichloromethane	20.0	22.9	114	20.0	22.3	111	2.63	75 - 120	30	
Bromoform	20.0	20.1	100	20.0	19.2	96.0	4.39	70 - 130	30	
Bromomethane	20.0	19.0	94.8	20.0	18.4	92.1	2.85	30 - 145	30	
Carbon disulfide	20.0	21.8	109	20.0	21.2	106	3.01	35 - 160	30	
Carbon tetrachloride	20.0	23.8	119	20.0	23.0	115	3.50	65 - 140	30	
Chlorobenzene	20.0	21.3	107	20.0	20.5	103	3.62	80 - 120	30	
Chloroethane	20.0	24.4	122	20.0	23.6	118	3.50	60 - 135	30	
Chloroform	20.0	22.6	113	20.0	21.9	110	2.82	65 - 135	30	
Chloromethane	20.0	23.8	119	20.0	23.4	117	2.06	40 - 125	30	
cis-1,2-Dichloroethene	20.0	22.6	113	20.0	21.8	109	3.37	70 - 125	30	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4833867
Report generated: 06/30/2016 15:02

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060927 Analyst: FJB Prep Method: 5030B/5030C/503
Instrument ID: HPMS8 Matrix: Water Method: 8260B
Workgroup (AAB#): WG573645 Units: ug/L
QC Key: DOD4 Lot #: STD76744

Sample ID: WG573645-02 LCS File ID: 8M413129 Run Date: 06/21/2016 19:50
Sample ID: WG573645-03 LCS2 File ID: 8M413130 Run Date: 06/21/2016 20:19

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
cis-1,3-Dichloropropene	20.0	24.5	123	20.0	24.0	120	2.38	70 - 130	30	
Chlorodibromomethane	20.0	20.6	103	20.0	20.0	100	2.71	60 - 135	30	
Dibromomethane	20.0	20.1	100	20.0	19.9	99.3	1.03	75 - 125	30	
Dichlorodifluoromethane	20.0	28.3	142	20.0	28.0	140	1.27	30 - 155	30	
Ethylbenzene	20.0	20.0	100	20.0	19.8	99.0	1.03	75 - 125	30	
Hexachlorobutadiene	20.0	21.3	106	20.0	21.1	106	0.619	50 - 140	30	
Isopropylbenzene	20.0	22.1	111	20.0	21.9	109	1.21	75 - 125	30	
m-,p-Xylene	40.0	43.1	108	40.0	41.7	104	3.24	75 - 130	30	
Methylene chloride	20.0	21.8	109	20.0	21.3	107	2.40	55 - 140	30	
n-Butylbenzene	20.0	19.8	99.0	20.0	19.6	97.8	1.17	70 - 135	30	
n-Propylbenzene	20.0	21.2	106	20.0	20.9	105	1.09	70 - 130	30	
Naphthalene	20.0	16.1	80.4	20.0	16.5	82.3	2.32	55 - 140	30	
o-Xylene	20.0	21.4	107	20.0	21.1	106	1.42	80 - 120	30	
p-Isopropyltoluene	20.0	20.7	103	20.0	20.1	101	2.77	75 - 130	30	
sec-Butylbenzene	20.0	20.8	104	20.0	20.5	103	1.09	70 - 125	30	
Styrene	20.0	21.3	106	20.0	20.9	104	1.89	65 - 135	30	
tert-Butylbenzene	20.0	21.0	105	20.0	20.4	102	3.11	70 - 130	30	
Tetrachloroethene	20.0	21.6	108	20.0	21.5	108	0.381	45 - 150	30	
Toluene	20.0	21.0	105	20.0	20.7	104	1.65	75 - 120	30	
trans-1,2-Dichloroethene	20.0	22.7	113	20.0	22.2	111	1.86	60 - 140	30	
trans-1,3-Dichloropropene	20.0	21.5	107	20.0	20.5	103	4.66	55 - 140	30	
Trichloroethene	20.0	23.5	118	20.0	23.2	116	1.28	70 - 125	30	
Trichlorofluoromethane	20.0	24.5	122	20.0	23.4	117	4.35	60 - 145	30	
Vinyl chloride	20.0	27.3	137	20.0	27.0	135	1.13	50 - 145	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,2-Dichloroethane-d4	109	106	70 - 120	PASS
Dibromofluoromethane	107	108	85 - 115	PASS
4-Bromofluorobenzene	98.0	99.0	75 - 120	PASS
Toluene-d8	103	102	85 - 120	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4833867
Report generated: 06/30/2016 15:02

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060927
Instrument: HPMS8
Analyst: TMB
Workgroup: WG568561

Tune ID: WG568561-01
Run Date: 05/13/2016
Run Time: 12:36
File ID: 8M412218
Cal ID: HPMS8 -

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	16.7	6575	PASS
75.0	95.0	30.0	60.0	51.3	20171	PASS
95.0	95.0	100	100	100	39312	PASS
96.0	95.0	5.00	9.00	6.74	2649	PASS
173	174	0	2.00	0.363	122	PASS
174	95.0	50.0	100	85.5	33616	PASS
175	174	5.00	9.00	8.17	2746	PASS
176	174	95.0	101	99.2	33360	PASS
177	176	5.00	9.00	6.80	2267	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG568561-02	STD	01	05/13/2016 13:29	
WG568561-03	STD	01	05/13/2016 13:58	
WG568561-04	STD	01	05/13/2016 14:27	
WG568561-05	STD	01	05/13/2016 14:56	
WG568561-06	STD	01	05/13/2016 15:25	
WG568561-07	STD	01	05/13/2016 15:54	
WG568561-08	STD-CCV	01	05/13/2016 16:23	
WG568561-09	STD	01	05/13/2016 16:52	
WG568561-10	STD	01	05/13/2016 17:21	
WG568561-11	STD	01	05/13/2016 17:50	
WG568561-12	SSCV	01	05/13/2016 19:17	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4831247
Report generated 06/30/2016 15:02

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060927
Instrument: HPMS8
Analyst: FJB
Workgroup: WG573644

Tune ID: WG573644-01
Run Date: 06/21/2016
Run Time: 17:23
File ID: 8M413124
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	17.2	10071	PASS
75.0	95.0	30.0	60.0	53.8	31493	PASS
95.0	95.0	100	100	100	58490	PASS
96.0	95.0	5.00	9.00	6.51	3806	PASS
173	174	0	2.00	0.364	174	PASS
174	95.0	50.0	100	81.7	47778	PASS
175	174	5.00	9.00	7.65	3655	PASS
176	174	95.0	101	96.2	45946	PASS
177	176	5.00	9.00	6.54	3004	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573644-02	CCV	01	06/21/2016 18:23	
WG573787-01	CCV	01	06/21/2016 18:52	
WG573645-01	BLANK	01	06/21/2016 19:21	
WG573645-02	LCS	01	06/21/2016 19:50	
WG573645-03	LCS2	01	06/21/2016 20:19	
L16060927-05	TRIP BLANK	01	06/21/2016 22:44	
L16060927-04	18CPTMW19-061516	01	06/22/2016 03:34	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4831247
Report generated 06/30/2016 15:02

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060927
Instrument: HPMS8
Analyst: FJB
Workgroup: WG573770

Tune ID: WG573770-01
Run Date: 06/22/2016
Run Time: 14:38
File ID: 8M413161
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.6	8091	PASS
75.0	95.0	30.0	60.0	56.5	23343	PASS
95.0	95.0	100	100	100	41328	PASS
96.0	95.0	5.00	9.00	6.39	2639	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	77.4	31974	PASS
175	174	5.00	9.00	8.17	2612	PASS
176	174	95.0	101	95.1	30422	PASS
177	176	5.00	9.00	7.09	2156	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573770-02	CCV	01	06/22/2016 15:41	
WG573771-01	BLANK	01	06/22/2016 16:39	
WG573771-02	LCS	01	06/22/2016 17:13	
L16060927-02	18CPTMW23-061516	01	06/22/2016 18:40	
WG573023-01	FBLK1	DL01	06/23/2016 03:50	*

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4831247
Report generated 06/30/2016 15:02

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16060927
Instrument: HPMS8
Analyst: FJB
Workgroup: WG573990

Tune ID: WG573990-01
Run Date: 06/23/2016
Run Time: 19:56
File ID: 8M413190
Cal ID: HPMS8 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	19.0	10373	PASS
75.0	95.0	30.0	60.0	58.1	31797	PASS
95.0	95.0	100	100	100	54685	PASS
96.0	95.0	5.00	9.00	6.95	3803	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	76.1	41629	PASS
175	174	5.00	9.00	7.18	2991	PASS
176	174	95.0	101	95.9	39941	PASS
177	176	5.00	9.00	6.76	2702	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573990-02	CCV	01	06/23/2016 21:00	
WG573991-01	BLANK	01	06/23/2016 21:59	
WG573991-02	LCS	01	06/23/2016 22:28	
L16060927-02	18CPTMW23-061516	DL01	06/23/2016 22:56	
L16060927-01	18CPTMW23SW-061516	01	06/24/2016 00:24	
L16060927-03	18CPTMW19SW-061516	01	06/24/2016 00:53	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4831247
Report generated 06/30/2016 15:02

Calibration Table Report
Method: 8260WT.M
Title: Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Calibration: Sat May 14 18:08:06 2016
Curve: WG568561
Calibration Files

	Compound	0.3 8M412220.D	0.4 8M412221.D	1 8M412222.D	2 8M412223.D	5 8M412224.D	20 8M412225.D	50 8M412226.D	100 8M412227.D	200 8M412228.D	300 8M412229.D	Avg	%RSD	Linear	Quad
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane		0.427	0.390	0.397	0.364	0.468	0.439	0.452	0.427	0.408	0.419	7.751		
P	Chloromethane			0.264	0.257	0.223	0.253	0.240	0.240	0.239	0.241	0.245	5.336		
C	Vinyl Chloride		0.274	0.296	0.297	0.277	0.299	0.292	0.299	0.292	0.288	0.290	3.191		
T	1,3-Butadiene				0.218	0.208	0.242	0.251	0.277	0.254	0.254	0.243	9.644		
T	Bromomethane			0.129	0.133	0.127	0.162	0.167	0.187	0.205	0.212	0.165	20.449		1.000
T	Chloroethane		0.173	0.157	0.153	0.143	0.164	0.157	0.163	0.164	0.164	0.160	5.354		
T	Trichlorofluoromethane		0.544	0.538	0.559	0.506	0.570	0.538	0.551	0.531	0.525	0.540	3.520		
T	Diethyl ether			0.130	0.138	0.123	0.132	0.125	0.128		0.127	0.129	3.866		
T	Isoprene		0.335	0.351	0.334	0.293	0.334	0.320	0.334	0.322	0.329	0.328	4.867		
T	Acrolein				0.012	0.010	0.010	0.011	0.012		0.014	0.012	12.987		
T	1,1,2-Trichloro-1,2,2-Trifluoroethane			0.256	0.269	0.240	0.260	0.249	0.257	0.251	0.250	0.254	3.397		
T	Acetone					0.023	0.030	0.029	0.030	0.028	0.028	0.028	9.132		
C	1,1-Dichloroethene		0.424	0.407	0.406	0.387	0.416	0.398	0.409	0.400	0.393	0.404	2.830		
T	Tert-Butyl Alcohol				0.010	0.009	0.009	0.009	0.009		0.009	0.009	2.872		
T	Dimethyl Sulfide		0.133	0.142	0.152	0.137	0.145	0.142	0.151	0.147	0.151	0.145	4.534		
T	Iodomethane				0.019	0.024	0.066	0.101	0.129	0.135	0.131	0.087	58.244		0.998
T	Methyl acetate					0.075	0.076	0.074	0.078	0.076	0.078	0.076	2.221		
T	Methylene Chloride			0.274	0.265	0.244	0.263	0.250	0.255	0.254	0.252	0.257	3.686		
T	Carbon Disulfide			0.888	0.922	0.801	0.873	0.816	0.854	0.813	0.802	0.846	5.346		
T	Acrylonitrile			0.027	0.035	0.033	0.038	0.038	0.039		0.044	0.036	14.671		
T	Methyl Tert Butyl Ether			0.534	0.543	0.521	0.586	0.579	0.585	0.560	0.546	0.557	4.455		
T	trans-1,2-Dichloroethene		0.389	0.395	0.364	0.352	0.381	0.367	0.372	0.364	0.358	0.371	3.858		
T	n-Hexane					0.265	0.280	0.270	0.286	0.275	0.279	0.276	2.732		
T	Diisopropyl ether			0.600	0.607	0.548	0.588	0.572	0.571		0.567	0.579	3.559		
T	Vinyl Acetate				0.256	0.243	0.270	0.275	0.266	0.271	0.275	0.265	4.509		
P	1,1-Dichloroethane		0.441	0.463	0.486	0.434	0.488	0.464	0.470	0.459	0.447	0.461	4.012		
T	Ethyl-Tert-Butyl ether			0.616	0.645	0.590	0.641	0.628	0.619		0.603	0.620	3.188		
T	2-Butanone					0.035	0.042	0.043	0.045	0.041	0.043	0.041	8.268		
T	Propionitrile			0.010	0.012	0.012	0.013	0.012	0.013		0.013	0.012	8.354		
T	2,2-Dichloropropane		0.471	0.462	0.520	0.476	0.503	0.494	0.497	0.483	0.470	0.486	3.839		
T	cis-1,2-Dichloroethene		0.299	0.298	0.291	0.267	0.295	0.282	0.289	0.283	0.277	0.287	3.685		
C	Chloroform	0.563	0.567	0.581	0.536	0.509	0.566	0.543	0.546	0.529	0.506	0.545	4.619		
T	1-Bromopropane			0.034	0.040	0.040	0.043	0.041	0.043	0.043	0.044	0.041	7.649		
T	Bromochloromethane		0.131	0.164	0.147	0.137	0.154	0.148	0.151	0.148	0.145	0.147	6.598		
T	Tetrahydrofuran			0.034	0.028	0.025	0.026	0.026	0.026		0.026	0.027	11.724		
S	Dibromofluoromethane			0.249	0.261	0.257	0.280	0.271	0.284	0.271	0.275	0.269	4.465		
T	1,1,1-Trichloroethane		0.492	0.537	0.515	0.496	0.545	0.525	0.533	0.515	0.499	0.517	3.660		
T	Cyclohexane			0.373	0.369	0.335	0.359	0.344	0.366	0.356	0.364	0.358	3.619		
T	1,1-Dichloropropene			0.414	0.399	0.369	0.403	0.395	0.399	0.392	0.382	0.394	3.488		
T	Tert-Amyl-Methyl ether			0.567	0.587	0.534	0.576	0.568	0.561		0.549	0.563	3.077		
T	Carbon Tetrachloride		0.444	0.456	0.462	0.441	0.481	0.465	0.474	0.462	0.448	0.4594	2.92173		
S	1,2-Dichloroethane-d4			0.241	0.309	0.276	0.312	0.295	0.301	0.284	0.286	0.288	7.93644		
T	Heptane											0	0		
T	1,2-Dichloroethane		0.347	0.335	0.354	0.336	0.371	0.36	0.364	0.349	0.338	0.3505	3.65503		
T	Benzene		1.128	1.084	1.071	0.977	1.085	1.033	1.019	0.963	0.883	1.0269	7.39343		
T	Trichloroethene		0.285	0.275	0.276	0.251	0.283	0.273	0.279	0.273	0.27	0.2739	3.66126		
T	Methylcyclohexane					0.396	0.426	0.408	0.429	0.416	0.422	0.4161	2.94153		
C	1,2-Dichloropropane		0.239	0.222	0.233	0.207	0.238	0.226	0.233	0.231	0.229	0.2286	4.30096		
T	Bromodichloromethane		0.369	0.382	0.412	0.385	0.426	0.421	0.417	0.41	0.395	0.4018	4.93305		
T	1,4-Dioxane					0.001	0.001	0.001	0.001		0.001	0.0011	14.5817		
T	Dibromomethane		0.141	0.13	0.137	0.128	0.141	0.134	0.137	0.136	0.133	0.1353	3.26799		
T	2-Chloroethyl Vinyl Ether				0.1	0.084	0.103	0.104	0.103	0.095	0.098	0.0983	7.09792		
T	4-Methyl-2-Pentanone					0.033	0.042	0.042	0.043	0.04	0.041	0.0401	8.66859		
T	cis-1,3-Dichloropropene		0.391	0.393	0.386	0.398	0.431	0.428	0.428	0.42	0.405	0.409	4.41527		

T	Dimethyl Disulfide					0.182	0.218	0.221	0.23	0.229	0.23	0.2183	8.49419	
I	Chlorobenzene-d5	ISTD												
S	Toluene-d8			1.282	1.295	1.228	1.385	1.333	1.378	1.289	1.278	1.3084	4.07746	
C	Toluene		1.653	1.696	1.678	1.507	1.647	1.554	1.545	1.418	1.27	1.552	8.98325	
T	Ethyl Methacrylate			0.251	0.293	0.268	0.314	0.314	0.327	0.309	0.31	0.2981	8.76897	
T	Paraldehyde											0	0	
T	trans-1,3-Dichloropropene			0.472	0.51	0.466	0.561	0.552	0.553	0.533	0.515	0.5201	7.01006	
T	1,1,2-Trichloroethane		0.261	0.241	0.242	0.222	0.254	0.249	0.252	0.243	0.241	0.2449	4.54209	
T	2-Hexanone					0.042	0.053	0.053	0.056	0.051	0.053	0.0515	9.50479	
T	1,3-Dichloropropane		0.355	0.442	0.465	0.42	0.468	0.454	0.457	0.437	0.428	0.436	7.93348	
T	Tetrachloroethene		0.355	0.337	0.336	0.306	0.333	0.325	0.337	0.334	0.33	0.3325	3.83886	
T	Dibromochloromethane		0.349	0.336	0.338	0.328	0.373	0.372	0.383	0.373	0.367	0.3576	5.60043	
T	1,2-Dibromoethane		0.233	0.234	0.234	0.227	0.259	0.254	0.258	0.251	0.247	0.2441	5.04151	
T	1-Chlorohexane		0.532	0.584	0.505	0.502	0.54	0.52	0.547	0.521	0.516	0.5298	4.7826	
P	Chlorobenzene		1.029	1.173	1.09	1.007	1.099	1.037	1.043	1.002	0.939	1.0466	6.41465	
T	1,1,1,2-Tetrachloroethane		0.392	0.399	0.403	0.357	0.431	0.414	0.424	0.417	0.413	0.4055	5.39495	
C	Ethylbenzene		0.6	0.594	0.59	0.532	0.586	0.559	0.57	0.564	0.558	0.5726	3.7769	
T	m-,p-Xylene		0.744	0.696	0.691	0.643	0.713	0.67	0.673	0.634	0.581	0.6716	7.12586	
T	o-Xylene			0.691	0.651	0.614	0.692	0.658	0.667	0.65	0.63	0.6567	4.11758	
T	Styrene		1.05	1.06	1.096	1.043	1.159	1.124	1.12	1.061	0.98	1.077	4.96781	
P	Bromoform			0.177	0.21	0.181	0.226	0.221	0.232	0.227	0.223	0.2121	10.0546	
T	Isopropylbenzene		1.853	1.891	1.871	1.708	1.897	1.781	1.75	1.573	1.377	1.7444	9.92447	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.426	0.492	0.503	0.486	0.543	0.51	0.527	0.513	0.514	0.5018	6.60291	
S	p-Bromofluorobenzene				1.054	0.976	1.071	1.016	1.053	1.031	1.046	1.0352	3.05136	
T	1,2,3-Trichloropropane			0.119	0.158	0.161	0.162	0.155	0.162	0.16	0.158	0.1545	9.40789	
T	trans-1,4-Dichloro-2-Butene			0.085	0.118	0.12	0.149	0.151	0.16	0.159	0.161	0.1376	19.9543	1.000
T	n-Propylbenzene		4.139	4.239	4.243	4.051	4.241	3.953	3.882	3.419	2.935	3.9003	11.4439	
T	Bromobenzene	0.796	0.708	0.843	0.837	0.778	0.84	0.798	0.817	0.803	0.803	0.8022	4.93253	
T	1,3,5-Trimethylbenzene		2.941	2.93	2.941	2.839	3.053	2.882	2.871	2.689	2.423	2.8411	6.50391	
T	2-Chlorotoluene		2.917	2.935	2.929	2.712	2.861	2.795	2.682	2.533	2.145	2.7231	9.37022	
T	4-Chlorotoluene		2.681	2.596	2.581	2.474	2.625	2.326	2.447	2.286	2.121	2.4597	7.49558	
T	a-Methylstyrene					1.257	1.406	1.34	1.384	1.35	1.351	1.3479	3.77654	
T	tert-Butylbenzene			0.587	0.555	0.53	0.571	0.533	0.552	0.561	0.558	0.5558	3.34508	
T	1,2,4-Trimethylbenzene		2.955	3.168	3.127	2.936	3.12	2.914	2.937	2.709	2.427	2.9214	7.97314	
T	sec-Butylbenzene			3.701	3.536	3.487	3.607	3.34	3.332	3.045	2.69	3.3424	9.93324	
T	p-Isopropyltoluene			3.112	3.062	2.903	2.988	2.813	2.809	2.634	2.382	2.8379	8.45265	
T	1,3-Dichlorobenzene		1.484	1.617	1.627	1.53	1.605	1.531	1.549	1.51	1.45	1.5448	3.95774	
T	1,4-Dichlorobenzene	1.713	1.524	1.672	1.594	1.503	1.6	1.511	1.535	1.49	1.431	1.5574	5.56562	
T	n-Butylbenzene			3.143	2.96	2.895	3.002	2.791	2.792	2.571	2.292	2.8056	9.55812	
T	1,2-Dichlorobenzene	1.59	1.307	1.415	1.41	1.322	1.404	1.333	1.356	1.315	1.286	1.3739	6.4618	
T	1,2-Dibromo-3-Chloropropane				0.085	0.103	0.102	0.103	0.106	0.104	0.103	0.1007	6.86771	
T	1,2,4-Trichlorobenzene		1.074	1.01	1.028	0.982	1.069	1.013	1.036	1.029	1.002	1.0269	2.90829	
T	Hexachlorobutadiene		0.516	0.476	0.483	0.447	0.487	0.459	0.48	0.485	0.485	0.4798	4.00465	
T	Naphthalene		1.594	1.457	1.574	1.455	1.63	1.552	1.564	1.485	1.422	1.5258	4.75891	
T	1,2,3-Trichlorobenzene	0.913	0.934	0.905	0.862	0.805	0.877	0.824	0.862	0.846	0.835	0.8664	4.7474	

Tue May 17 11:49:41 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060927 Run Date: 05/13/2016 Sample ID: WG568561-12
Instrument ID: HPMS8 Run Time: 19:17 Method: 8260B
File ID: 8M412232 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG568561 Cal ID: HPMS8 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.1	ug/L	0.513	5.70	20	
1,1-Dichloroethene	CCC	50.0	46.0	ug/L	0.372	8.10	20	
1,2-Dichloropropane	CCC	50.0	51.0	ug/L	0.233	1.90	20	
Ethylbenzene	CCC	50.0	48.2	ug/L	0.552	3.60	20	
Toluene	CCC	50.0	49.1	ug/L	1.52	1.80	20	
Vinyl Chloride	CCC	50.0	52.4	ug/L	0.304	4.80	20	
Bromoform	SPCC	50.0	48.2	ug/L	0.205	3.60	20	
Chlorobenzene	SPCC	50.0	50.2	ug/L	1.05	0.400	20	
Chloromethane	SPCC	50.0	50.7	ug/L	0.248	1.40	20	
1,1-Dichloroethane	SPCC	50.0	46.7	ug/L	0.431	6.60	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	49.6	ug/L	0.498	0.800	20	
Acetone		50.0	57.5	ug/L	0.0324	15.1	20	
Benzene		50.0	48.5	ug/L	0.997	3.00	20	
Bromobenzene		50.0	49.5	ug/L	0.794	1.10	20	
Bromochloromethane		50.0	47.5	ug/L	0.140	4.90	20	
Bromodichloromethane		50.0	48.3	ug/L	0.388	3.40	20	
Bromomethane		50.0	46.4	ug/L	0.162	7.20	20	
2-Butanone		50.0	53.0	ug/L	0.0438	6.00	20	
n-Butylbenzene		50.0	49.7	ug/L	2.79	0.700	20	
sec-Butylbenzene		50.0	51.3	ug/L	3.43	2.70	20	
tert-Butylbenzene		50.0	50.9	ug/L	0.566	1.90	20	
Carbon Disulfide		50.0	42.3	ug/L	0.716	15.4	20	
Carbon Tetrachloride		50.0	46.2	ug/L	0.425	7.50	20	
Dibromochloromethane		50.0	49.7	ug/L	0.355	0.700	20	
Chloroethane		50.0	53.3	ug/L	0.170	6.70	20	
2-Chlorotoluene		50.0	51.6	ug/L	2.81	3.10	20	
4-Chlorotoluene		50.0	48.3	ug/L	2.37	3.50	20	
1,2-Dibromo-3-Chloropropane		50.0	48.5	ug/L	0.0977	3.00	20	
1,2-Dibromoethane		50.0	51.1	ug/L	0.250	2.20	20	
Dibromomethane		50.0	45.8	ug/L	0.124	8.40	20	
1,2-Dichlorobenzene		50.0	50.5	ug/L	1.39	1.00	20	
1,3-Dichlorobenzene		50.0	50.9	ug/L	1.57	1.80	20	
1,4-Dichlorobenzene		50.0	50.5	ug/L	1.57	0.900	20	
Dichlorodifluoromethane		50.0	54.2	ug/L	0.455	8.40	20	
1,2-Dichloroethane		50.0	49.0	ug/L	0.344	2.00	20	
cis-1,2-Dichloroethene		50.0	48.9	ug/L	0.281	2.20	20	
trans-1,2-Dichloroethene		50.0	48.1	ug/L	0.357	3.90	20	
1,3-Dichloropropane		50.0	53.7	ug/L	0.468	7.30	20	
2,2-Dichloropropane		50.0	47.9	ug/L	0.466	4.20	20	
cis-1,3-Dichloropropene		50.0	53.9	ug/L	0.441	7.80	20	
trans-1,3-Dichloropropene		50.0	50.7	ug/L	0.527	1.30	20	
1,1-Dichloropropene		50.0	47.5	ug/L	0.374	5.10	20	

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Version 1.5 PDF File ID: 4831246
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Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060927 Run Date: 05/13/2016 Sample ID: WG568561-12
Instrument ID: HPMS8 Run Time: 19:17 Method: 8260B
File ID: 8M412232 Analyst: TMB QC Key: DOD4
ICal Workgroup: WG568561 Cal ID: HPMS8 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	53.6	ug/L	0.0552	7.20	20	
Hexachlorobutadiene		50.0	52.1	ug/L	0.500	4.20	20	
Isopropylbenzene		50.0	51.1	ug/L	1.78	2.20	20	
p-Isopropyltoluene		50.0	50.1	ug/L	2.85	0.300	20	
4-Methyl-2-Pentanone		50.0	51.9	ug/L	0.0416	3.70	20	
Methylene Chloride		50.0	48.4	ug/L	0.249	3.10	20	
Naphthalene		50.0	45.8	ug/L	1.40	8.40	20	
n-Propylbenzene		50.0	51.9	ug/L	4.05	3.80	20	
Styrene		50.0	51.5	ug/L	1.11	3.00	20	
1,1,1,2-Tetrachloroethane		50.0	49.4	ug/L	0.400	1.20	20	
Tetrachloroethene		50.0	47.8	ug/L	0.318	4.40	20	
1,2,3-Trichlorobenzene		50.0	47.7	ug/L	0.827	4.50	20	
1,2,4-Trichlorobenzene		50.0	50.1	ug/L	1.03	0.200	20	
1,1,1-Trichloroethane		50.0	47.6	ug/L	0.492	4.80	20	
1,1,2-Trichloroethane		50.0	49.0	ug/L	0.240	1.90	20	
Trichloroethene		50.0	51.1	ug/L	0.280	2.10	20	
Trichlorofluoromethane		50.0	46.9	ug/L	0.507	6.10	20	
1,2,3-Trichloropropane		50.0	50.1	ug/L	0.155	0.200	20	
1,2,4-Trimethylbenzene		50.0	49.7	ug/L	2.90	0.700	20	
1,3,5-Trimethylbenzene		50.0	51.6	ug/L	2.93	3.30	20	
o-Xylene		50.0	50.6	ug/L	0.664	1.10	20	
m-,p-Xylene		100	101	ug/L	0.679	1.10	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4831246
Report generated 06/30/2016 15:02

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060927 Run Date: 06/21/2016 Sample ID: WG573644-02
Instrument ID: HPMS8 Run Time: 18:23 Method: 8260B
File ID: 8M413126 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG573645 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	53.3	ug/L	0.580	6.54	20	
1,1-Dichloroethene	CCC	50.0	53.5	ug/L	0.433	7.04	20	
1,2-Dichloropropane	CCC	50.0	50.3	ug/L	0.230	0.500	20	
Ethylbenzene	CCC	50.0	47.5	ug/L	0.544	4.94	20	
Toluene	CCC	50.0	48.5	ug/L	1.51	3.03	20	
Vinyl Chloride	CCC	50.0	54.4	ug/L	0.316	8.72	20	
Bromoform	SPCC	50.0	52.5	ug/L	0.223	5.01	20	
Chlorobenzene	SPCC	50.0	48.2	ug/L	1.01	3.50	20	
Chloromethane	SPCC	50.0	46.8	ug/L	0.229	6.35	20	
1,1-Dichloroethane	SPCC	50.0	53.0	ug/L	0.489	5.95	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	45.0	ug/L	0.452	10.0	20	
Xylenes		150	146	ug/L	0.644	2.96	20	
Acetone		50.0	57.7	ug/L	0.0325	15.4	20	
Benzene		50.0	51.8	ug/L	1.06	3.56	20	
Bromobenzene		50.0	48.5	ug/L	0.779	2.91	20	
Bromochloromethane		50.0	54.1	ug/L	0.159	8.24	20	
Bromodichloromethane		50.0	54.1	ug/L	0.435	8.14	20	
Bromomethane		50.0	40.5	ug/L	0.141	18.9	20	
2-Butanone		50.0	48.6	ug/L	0.0401	2.87	20	
n-Butylbenzene		50.0	47.3	ug/L	2.65	5.48	20	
sec-Butylbenzene		50.0	47.6	ug/L	3.18	4.85	20	
tert-Butylbenzene		50.0	47.5	ug/L	0.528	5.02	20	
Carbon Disulfide		50.0	53.3	ug/L	0.903	6.70	20	
Carbon Tetrachloride		50.0	56.0	ug/L	0.514	11.9	20	
Dibromochloromethane		50.0	50.2	ug/L	0.359	0.303	20	
Chloroethane		50.0	52.5	ug/L	0.168	5.06	20	
2-Chlorotoluene		50.0	48.3	ug/L	2.63	3.37	20	
4-Chlorotoluene		50.0	46.4	ug/L	2.28	7.20	20	
1,2-Dibromo-3-Chloropropane		50.0	45.5	ug/L	0.0916	9.09	20	
1,2-Dibromoethane		50.0	47.6	ug/L	0.233	4.74	20	
Dibromomethane		50.0	50.8	ug/L	0.137	1.57	20	
1,2-Dichlorobenzene		50.0	46.7	ug/L	1.28	6.54	20	
1,3-Dichlorobenzene		50.0	48.5	ug/L	1.50	2.95	20	
1,4-Dichlorobenzene		50.0	47.3	ug/L	1.47	5.34	20	
Dichlorodifluoromethane		50.0	50.1	ug/L	0.420	0.103	20	
1,2-Dichloroethane		50.0	54.9	ug/L	0.385	9.81	20	
cis-1,2-Dichloroethene		50.0	52.2	ug/L	0.300	4.49	20	
trans-1,2-Dichloroethene		50.0	52.6	ug/L	0.391	5.28	20	
1,3-Dichloropropane		50.0	48.2	ug/L	0.420	3.60	20	
2,2-Dichloropropane		50.0	59.0	ug/L	0.573	18.0	20	
cis-1,3-Dichloropropene		50.0	53.6	ug/L	0.438	7.12	20	
trans-1,3-Dichloropropene		50.0	50.7	ug/L	0.528	1.50	20	

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060927 Run Date: 06/21/2016 Sample ID: WG573644-02
Instrument ID: HPMS8 Run Time: 18:23 Method: 8260B
File ID: 8M413126 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG573645 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	53.6	ug/L	0.423	7.28	20	
2-Hexanone		50.0	46.4	ug/L	0.0478	7.10	20	
Hexachlorobutadiene		50.0	48.7	ug/L	0.467	2.62	20	
Isopropylbenzene		50.0	50.1	ug/L	1.75	0.245	20	
p-Isopropyltoluene		50.0	48.3	ug/L	2.74	3.38	20	
4-Methyl-2-Pentanone		50.0	49.6	ug/L	0.0398	0.795	20	
Methylene Chloride		50.0	50.9	ug/L	0.262	1.79	20	
Naphthalene		50.0	45.1	ug/L	1.38	9.72	20	
n-Propylbenzene		50.0	48.3	ug/L	3.77	3.36	20	
Styrene		50.0	49.6	ug/L	1.07	0.785	20	
1,1,1,2-Tetrachloroethane		50.0	49.9	ug/L	0.404	0.290	20	
Tetrachloroethene		50.0	52.0	ug/L	0.346	3.96	20	
1,2,3-Trichlorobenzene		50.0	46.5	ug/L	0.805	7.04	20	
1,2,4-Trichlorobenzene		50.0	49.1	ug/L	1.01	1.80	20	
1,1,1-Trichloroethane		50.0	55.7	ug/L	0.576	11.4	20	
1,1,2-Trichloroethane		50.0	47.4	ug/L	0.232	5.26	20	
Trichloroethene		50.0	53.9	ug/L	0.295	7.70	20	
Trichlorofluoromethane		50.0	55.5	ug/L	0.600	11.0	20	
1,2,3-Trichloropropane		50.0	46.8	ug/L	0.145	6.47	20	
1,2,4-Trimethylbenzene		50.0	48.0	ug/L	2.81	3.94	20	
1,3,5-Trimethylbenzene		50.0	48.7	ug/L	2.77	2.62	20	
o-Xylene		50.0	48.5	ug/L	0.637	3.01	20	
m-,p-Xylene		100	97.1	ug/L	0.652	2.93	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4831248
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Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060927 Run Date: 06/22/2016 Sample ID: WG573770-02
Instrument ID: HPMS8 Run Time: 15:41 Method: 8260B
File ID: 8M413163 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG573771 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	55.7	ug/L	0.607	11.5	20	
1,1-Dichloroethene	CCC	50.0	56.9	ug/L	0.460	13.7	20	
1,2-Dichloropropane	CCC	50.0	50.5	ug/L	0.231	0.966	20	
Ethylbenzene	CCC	50.0	49.7	ug/L	0.569	0.554	20	
Toluene	CCC	50.0	50.6	ug/L	1.57	1.21	20	
Vinyl Chloride	CCC	50.0	57.6	ug/L	0.334	15.1	20	
Bromoform	SPCC	50.0	53.4	ug/L	0.226	6.72	20	
Chlorobenzene	SPCC	50.0	50.0	ug/L	1.05	0.0460	20	
Chloromethane	SPCC	50.0	49.7	ug/L	0.243	0.692	20	
1,1-Dichloroethane	SPCC	50.0	55.2	ug/L	0.509	10.4	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	43.6	ug/L	0.438	12.8	20	
Xylenes		150	153	ug/L	0.679	2.23	20	
Acetone		50.0	58.5	ug/L	0.0329	17.1	20	
Benzene		50.0	53.3	ug/L	1.09	6.55	20	
Bromobenzene		50.0	48.3	ug/L	0.775	3.39	20	
Bromochloromethane		50.0	54.5	ug/L	0.160	8.95	20	
Bromodichloromethane		50.0	57.0	ug/L	0.458	13.9	20	
Bromomethane		50.0	36.7	ug/L	0.127	26.7	20	*
2-Butanone		50.0	48.2	ug/L	0.0399	3.53	20	
n-Butylbenzene		50.0	47.9	ug/L	2.69	4.27	20	
sec-Butylbenzene		50.0	48.0	ug/L	3.21	3.97	20	
tert-Butylbenzene		50.0	47.1	ug/L	0.524	5.78	20	
Carbon Disulfide		50.0	58.5	ug/L	0.990	17.0	20	
Carbon Tetrachloride		50.0	60.9	ug/L	0.560	21.8	20	*
Dibromochloromethane		50.0	52.0	ug/L	0.372	3.99	20	
Chloroethane		50.0	52.8	ug/L	0.169	5.64	20	
2-Chlorotoluene		50.0	49.6	ug/L	2.70	0.747	20	
4-Chlorotoluene		50.0	46.7	ug/L	2.30	6.56	20	
1,2-Dibromo-3-Chloropropane		50.0	45.0	ug/L	0.0907	9.95	20	
1,2-Dibromoethane		50.0	49.4	ug/L	0.241	1.19	20	
Dibromomethane		50.0	50.7	ug/L	0.137	1.43	20	
1,2-Dichlorobenzene		50.0	46.7	ug/L	1.28	6.56	20	
1,3-Dichlorobenzene		50.0	48.7	ug/L	1.50	2.60	20	
1,4-Dichlorobenzene		50.0	48.0	ug/L	1.49	4.08	20	
Dichlorodifluoromethane		50.0	53.9	ug/L	0.452	7.84	20	
1,2-Dichloroethane		50.0	58.1	ug/L	0.407	16.1	20	
cis-1,2-Dichloroethene		50.0	53.4	ug/L	0.306	6.71	20	
trans-1,2-Dichloroethene		50.0	54.3	ug/L	0.404	8.64	20	
1,3-Dichloropropane		50.0	48.3	ug/L	0.421	3.37	20	
2,2-Dichloropropane		50.0	63.7	ug/L	0.619	27.3	20	*
cis-1,3-Dichloropropene		50.0	55.8	ug/L	0.456	11.6	20	
trans-1,3-Dichloropropene		50.0	52.5	ug/L	0.546	5.05	20	

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060927 Run Date: 06/22/2016 Sample ID: WG573770-02
Instrument ID: HPMS8 Run Time: 15:41 Method: 8260B
File ID: 8M413163 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG573771 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	56.4	ug/L	0.445	12.8	20	
2-Hexanone		50.0	44.7	ug/L	0.0460	10.6	20	
Hexachlorobutadiene		50.0	48.0	ug/L	0.461	3.92	20	
Isopropylbenzene		50.0	52.2	ug/L	1.82	4.34	20	
p-Isopropyltoluene		50.0	48.7	ug/L	2.76	2.68	20	
4-Methyl-2-Pentanone		50.0	47.2	ug/L	0.0379	5.67	20	
Methylene Chloride		50.0	50.8	ug/L	0.261	1.57	20	
Naphthalene		50.0	43.2	ug/L	1.32	13.5	20	
n-Propylbenzene		50.0	48.6	ug/L	3.79	2.73	20	
Styrene		50.0	51.9	ug/L	1.12	3.79	20	
1,1,1,2-Tetrachloroethane		50.0	52.0	ug/L	0.421	3.93	20	
Tetrachloroethene		50.0	54.4	ug/L	0.362	8.81	20	
1,2,3-Trichlorobenzene		50.0	44.1	ug/L	0.765	11.7	20	
1,2,4-Trichlorobenzene		50.0	47.3	ug/L	0.971	5.49	20	
1,1,1-Trichloroethane		50.0	59.7	ug/L	0.618	19.4	20	
1,1,2-Trichloroethane		50.0	48.0	ug/L	0.235	4.02	20	
Trichlorofluoromethane		50.0	60.6	ug/L	0.655	21.2	20	*
1,2,3-Trichloropropane		50.0	45.8	ug/L	0.142	8.31	20	
1,2,4-Trimethylbenzene		50.0	48.9	ug/L	2.86	2.17	20	
1,3,5-Trimethylbenzene		50.0	49.8	ug/L	2.83	0.374	20	
o-Xylene		50.0	51.2	ug/L	0.673	2.41	20	
m-,p-Xylene		100	102	ug/L	0.686	2.14	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4831248
Report generated 06/30/2016 15:02

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060927 Run Date: 06/23/2016 Sample ID: WG573990-02
Instrument ID: HPMS8 Run Time: 21:00 Method: 8260B
File ID: 8M413192 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG573991 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	54.9	ug/L	0.598	9.72	20	
1,1-Dichloroethene	CCC	50.0	54.2	ug/L	0.439	8.49	20	
1,2-Dichloropropane	CCC	50.0	49.4	ug/L	0.226	1.11	20	
Ethylbenzene	CCC	50.0	46.8	ug/L	0.536	6.46	20	
Toluene	CCC	50.0	47.3	ug/L	1.47	5.48	20	
Vinyl Chloride	CCC	50.0	56.0	ug/L	0.325	12.0	20	
Bromoform	SPCC	50.0	50.5	ug/L	0.214	0.904	20	
Chlorobenzene	SPCC	50.0	47.1	ug/L	0.986	5.76	20	
Chloromethane	SPCC	50.0	47.4	ug/L	0.232	5.29	20	
1,1-Dichloroethane	SPCC	50.0	53.1	ug/L	0.490	6.25	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	43.2	ug/L	0.433	13.7	20	
Xylenes		150	143	ug/L	0.633	4.33	20	
Acetone		50.0	55.7	ug/L	0.0313	11.4	20	
Benzene		50.0	51.7	ug/L	1.06	3.36	20	
Bromobenzene		50.0	48.2	ug/L	0.773	3.63	20	
Bromochloromethane		50.0	53.3	ug/L	0.157	6.63	20	
Bromodichloromethane		50.0	56.3	ug/L	0.452	12.6	20	
Bromomethane		50.0	44.2	ug/L	0.154	11.6	20	
2-Butanone		50.0	47.8	ug/L	0.0395	4.39	20	
n-Butylbenzene		50.0	47.6	ug/L	2.67	4.73	20	
sec-Butylbenzene		50.0	48.0	ug/L	3.21	3.91	20	
tert-Butylbenzene		50.0	46.7	ug/L	0.520	6.51	20	
Carbon Disulfide		50.0	55.6	ug/L	0.940	11.2	20	
Carbon Tetrachloride		50.0	60.0	ug/L	0.551	19.9	20	
Dibromochloromethane		50.0	49.7	ug/L	0.356	0.505	20	
Chloroethane		50.0	49.8	ug/L	0.159	0.424	20	
2-Chlorotoluene		50.0	47.6	ug/L	2.59	4.80	20	
4-Chlorotoluene		50.0	47.6	ug/L	2.34	4.71	20	
1,2-Dibromo-3-Chloropropane		50.0	44.8	ug/L	0.0902	10.5	20	
1,2-Dibromoethane		50.0	47.7	ug/L	0.233	4.68	20	
Dibromomethane		50.0	50.5	ug/L	0.137	0.985	20	
1,2-Dichlorobenzene		50.0	46.5	ug/L	1.28	7.08	20	
1,3-Dichlorobenzene		50.0	48.2	ug/L	1.49	3.65	20	
1,4-Dichlorobenzene		50.0	47.0	ug/L	1.46	5.94	20	
Dichlorodifluoromethane		50.0	52.4	ug/L	0.439	4.74	20	
1,2-Dichloroethane		50.0	58.3	ug/L	0.409	16.6	20	
cis-1,2-Dichloroethene		50.0	52.0	ug/L	0.298	3.98	20	
trans-1,2-Dichloroethene		50.0	52.6	ug/L	0.391	5.23	20	
1,3-Dichloropropane		50.0	46.4	ug/L	0.405	7.22	20	
2,2-Dichloropropane		50.0	61.6	ug/L	0.599	23.3	20	*
cis-1,3-Dichloropropene		50.0	54.4	ug/L	0.445	8.81	20	
trans-1,3-Dichloropropene		50.0	49.5	ug/L	0.515	0.990	20	

CCV - Modified 03/05/2008
PDF File ID: 4831248
Report generated 06/30/2016 15:02

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060927 Run Date: 06/23/2016 Sample ID: WG573990-02
Instrument ID: HPMS8 Run Time: 21:00 Method: 8260B
File ID: 8M413192 Analyst: FJB QC Key: DOD4
Workgroup (AAB#): WG573991 Cal ID: HPMS8 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	54.7	ug/L	0.431	9.40	20	
2-Hexanone		50.0	42.6	ug/L	0.0438	14.9	20	
Hexachlorobutadiene		50.0	49.1	ug/L	0.471	1.81	20	
Isopropylbenzene		50.0	49.8	ug/L	1.74	0.478	20	
p-Isopropyltoluene		50.0	48.6	ug/L	2.76	2.77	20	
4-Methyl-2-Pentanone		50.0	48.0	ug/L	0.0386	3.95	20	
Methylene Chloride		50.0	50.2	ug/L	0.258	0.364	20	
Naphthalene		50.0	43.5	ug/L	1.33	13.1	20	
n-Propylbenzene		50.0	48.3	ug/L	3.77	3.46	20	
Styrene		50.0	48.6	ug/L	1.05	2.85	20	
1,1,1,2-Tetrachloroethane		50.0	49.6	ug/L	0.402	0.773	20	
Tetrachloroethene		50.0	49.7	ug/L	0.331	0.579	20	
1,2,3-Trichlorobenzene		50.0	43.5	ug/L	0.754	13.0	20	
1,2,4-Trichlorobenzene		50.0	46.2	ug/L	0.949	7.59	20	
1,1,1-Trichloroethane		50.0	58.9	ug/L	0.609	17.8	20	
1,1,2-Trichloroethane		50.0	45.7	ug/L	0.224	8.57	20	
Trichloroethene		50.0	54.4	ug/L	0.298	8.88	20	
Trichlorofluoromethane		50.0	58.4	ug/L	0.630	16.7	20	
1,2,3-Trichloropropane		50.0	44.8	ug/L	0.139	10.3	20	
1,2,4-Trimethylbenzene		50.0	48.5	ug/L	2.84	2.95	20	
1,3,5-Trimethylbenzene		50.0	49.0	ug/L	2.78	2.08	20	
o-Xylene		50.0	47.1	ug/L	0.619	5.74	20	
m-,p-Xylene		100	96.4	ug/L	0.647	3.63	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4831248
Report generated 06/30/2016 15:02

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060927
Instrument ID: HPMS8
Workgroup (AAB#): WG573645

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	288225	539116	778260
Upper Limit	NA	NA	576450	1078232	1556520
Lower Limit	NA	NA	144113	269558	389130
L16060927-04	1.00	01	289525	517764	676177
L16060927-05	1.00	01	324131	585008	753725
WG573645-01	1.00	01	336359	605610	793415
WG573645-02	1.00	01	338876	608259	813093
WG573645-03	1.00	01	337211	606723	801570

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4833868
Report generated 06/30/2016 15:03

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060927
Instrument ID: HPMS8
Workgroup (AAB#): WG573771

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	288225	539116	778260
Upper Limit	NA	NA	576450	1078232	1556520
Lower Limit	NA	NA	144113	269558	389130
L16060927-02	1.00	01	305295	540795	719947
WG573771-01	1.00	01	305326	554912	723354
WG573771-02	1.00	01	303556	551241	717279

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4833868
Report generated 06/30/2016 15:03

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060927
Instrument ID: HPMS8
Workgroup (AAB#): WG573991

ICAL CCV Number: WG568561-08
CAL ID: HPMS8-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	288225	539116	778260
Upper Limit	NA	NA	576450	1078232	1556520
Lower Limit	NA	NA	144113	269558	389130
L16060927-01	1.00	01	289917	516753	665575
L16060927-02	200	DL01	298222	542068	693727
L16060927-03	1.00	01	285769	514724	664173
WG573991-01	1.00	01	300577	547838	695599
WG573991-02	1.00	01	307359	541017	709070

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4833868
Report generated 06/30/2016 15:03

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060927
Instrument ID: HPMS8
Workgroup (AAB#): WG573645

ICAL CCV Number: WG568561-08
CAL ID: HPMS8-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	17.6	14.58	10.71
Upper Limit	NA	NA	18.1	15.08	11.21
Lower Limit	NA	NA	17.1	14.08	10.21
L16060927-04	1.00	01	17.6	14.57	10.71
L16060927-05	1.00	01	17.59	14.58	10.71
WG573645-01	1.00	01	17.6	14.57	10.71
WG573645-02	1.00	01	17.6	14.57	10.71
WG573645-03	1.00	01	17.6	14.57	10.71

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4833870
Report generated: 06/30/2016 15:03

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060927
Instrument ID: HPMS8
Workgroup (AAB#): WG573771

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	17.6	14.58	10.71
Upper Limit	NA	NA	18.1	15.08	11.21
Lower Limit	NA	NA	17.1	14.08	10.21
L16060927-02	1.00	01	17.6	14.57	10.71
WG573771-01	1.00	01	17.6	14.57	10.71
WG573771-02	1.00	01	17.6	14.57	10.71

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4833870
Report generated: 06/30/2016 15:03

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060927
Instrument ID: HPMS8
Workgroup (AAB#): WG573991

ICAL CCV Number: WG568561-08
CAL ID: HPMS8 - 13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568561-08	NA	NA	17.6	14.58	10.71
Upper Limit	NA	NA	18.1	15.08	11.21
Lower Limit	NA	NA	17.1	14.08	10.21
L16060927-01	1.00	01	17.6	14.58	10.71
L16060927-02	200	DL01	17.6	14.57	10.71
L16060927-03	1.00	01	17.6	14.57	10.71
WG573991-01	1.00	01	17.6	14.57	10.71
WG573991-02	1.00	01	17.6	14.57	10.71

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4833870
Report generated: 06/30/2016 15:03

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413199.D Vial: 10
Acq On : 24 Jun 2016 00:24 Operator: FJB
Sample : L16060927-01 C 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 24 00:46:08 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	665575	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	516753	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	289917	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	199022	27.8312 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.32%		
43) 1,2-Dichloroethane-d4	10.30	65	221801	28.9267 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 115.72%		
58) Toluene-d8	12.68	98	701354	25.9334 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.72%		
80) p-Bromofluorobenzene	16.07	95	301623	25.1256 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.52%		

Target Compounds					Qvalue
3) Chloromethane	3.62	50	1785	0.2740 ug/L	80
13) Acetone	6.25	43	7239	9.6670 ug/L	93
20) Carbon Disulfide	7.29	76	4782	0.2123 ug/L #	74
28) Ethyl-Tert-Butyl ether	8.61	59	5727	0.3468 ug/L #	45
29) 2-Butanone	8.89	43	210	0.1909 ug/L #	47

(#) = qualifier out of range (m) = manual integration
8M413199.D 8260WT.M Mon Jun 27 12:41:49 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413199.D Vial: 10
Acq On : 24 Jun 2016 00:24 Operator: FJB
Sample : L16060927-01 C 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 24 0:46 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

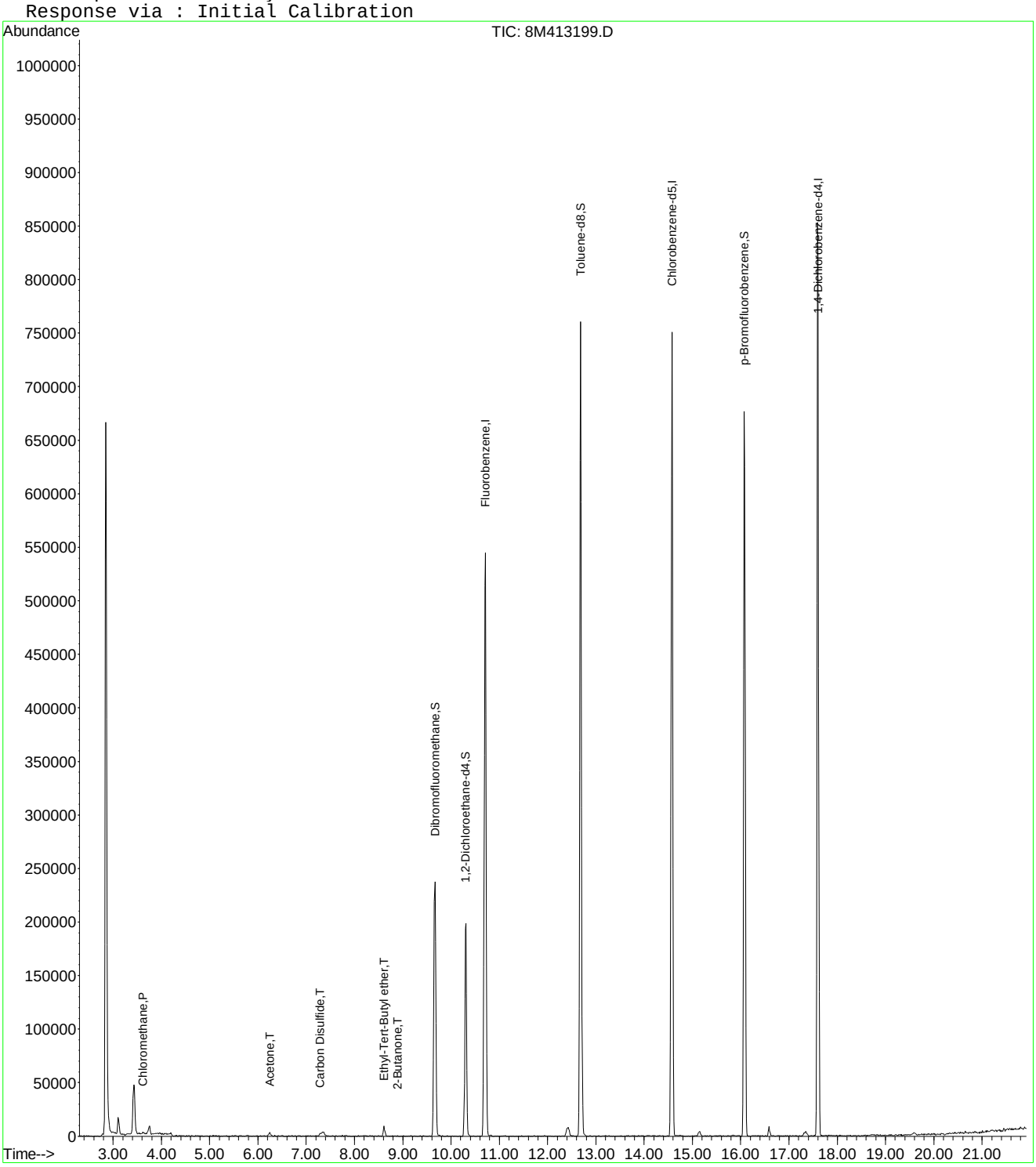

8M413199.D 8260WT.M Mon Jun 27 12:41:50 2016 Page 2

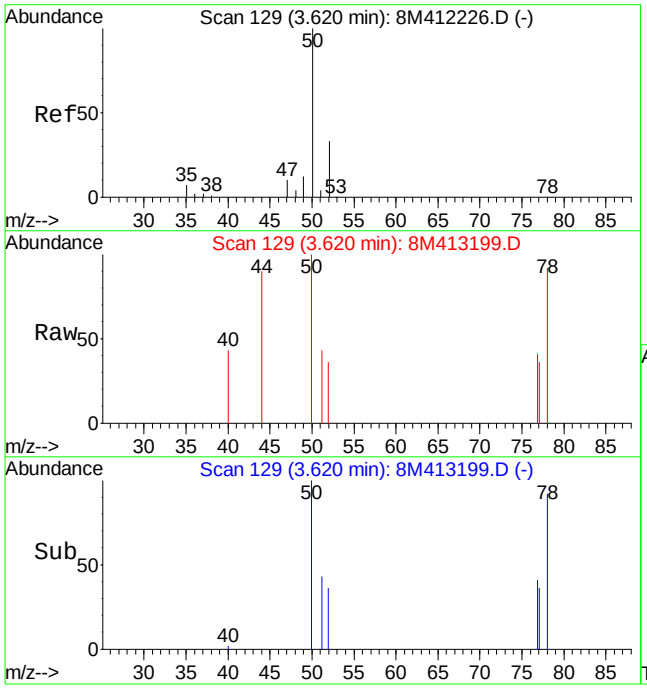

#3
Chloromethane
Concen: 0.27 ug/L
RT: 3.62 min Scan# 129
Delta R.T. 0.00 min
Lab File: 8M413199.D
Acq: 24 Jun 2016 00:24

Tgt Ion: 50 Resp: 1785

Ion	Ratio	Lower	Upper
50	100		
52	22.0	19.9	46.3

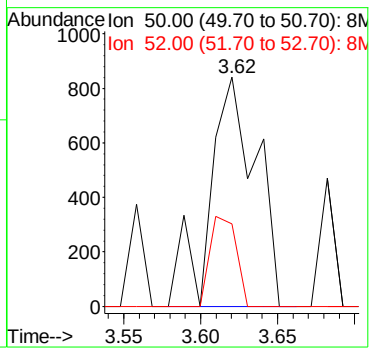

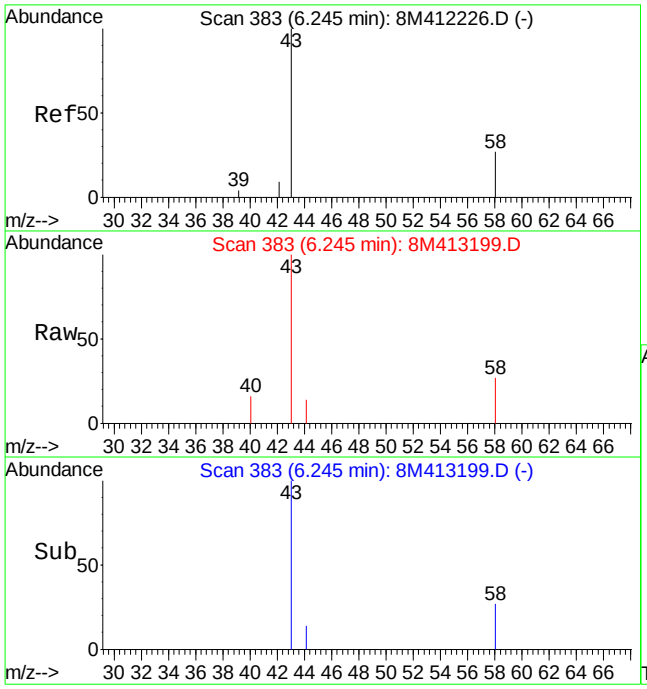

#13
Acetone
Concen: 9.67 ug/L
RT: 6.25 min Scan# 383
Delta R.T. 0.00 min
Lab File: 8M413199.D
Acq: 24 Jun 2016 00:24

Tgt Ion: 43 Resp: 7239

Ion	Ratio	Lower	Upper
43	100		
58	21.7	15.2	35.4

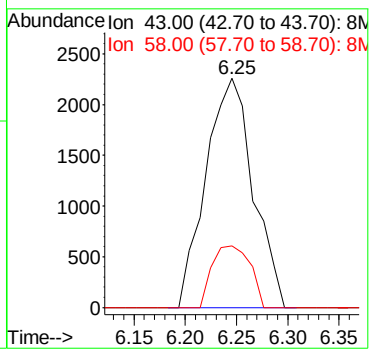

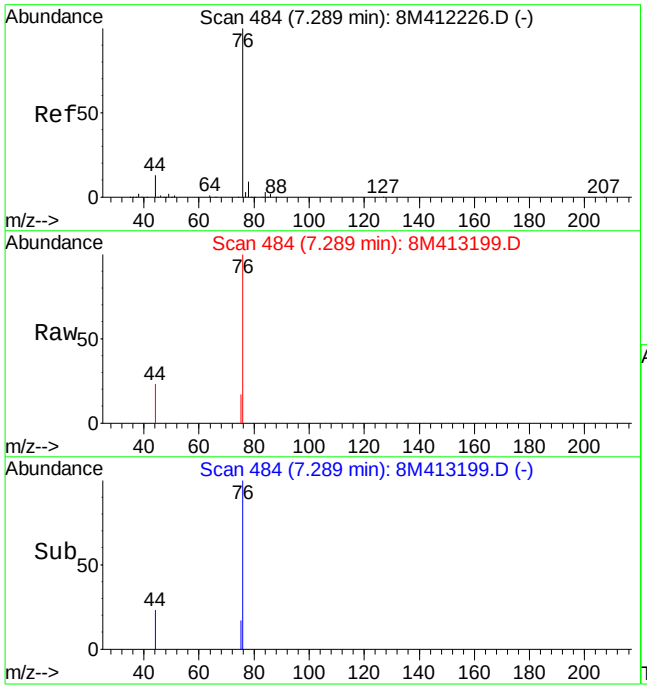

#20
Carbon Disulfide
Concen: 0.21 ug/L
RT: 7.29 min Scan# 484
Delta R.T. 0.00 min
Lab File: 8M413199.D
Acq: 24 Jun 2016 00:24

Tgt Ion: 76 Resp: 4782

Ion	Ratio	Lower	Upper
76	100		
78	0.0	5.6	13.0#

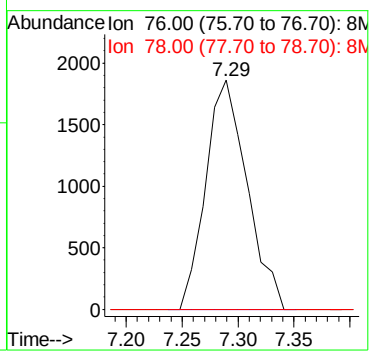

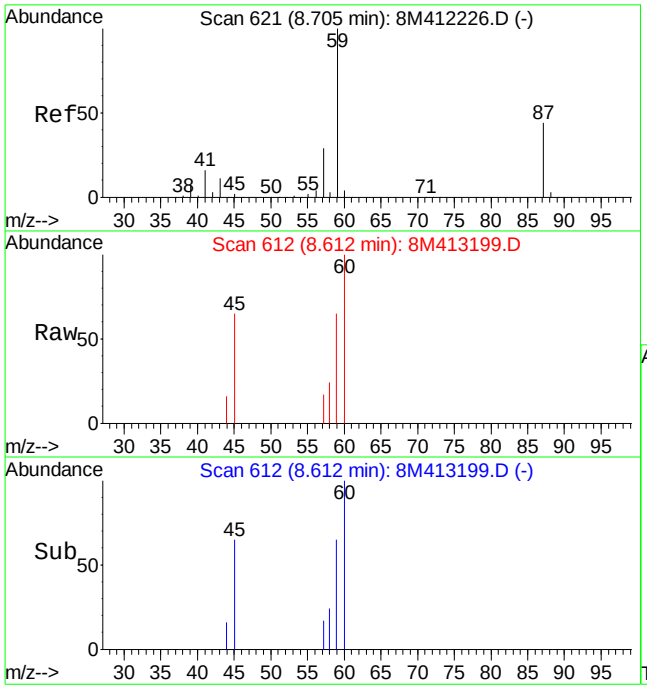

#28
Ethyl-Tert-Butyl ether
Concen: 0.35 ug/L
RT: 8.61 min Scan# 612
Delta R.T. -0.09 min
Lab File: 8M413199.D
Acq: 24 Jun 2016 00:24

Tgt Ion: 59 Resp: 5727

Ion	Ratio	Lower	Upper
59	100		
87	0.0	26.8	62.4#
57	10.1	17.4	40.6#

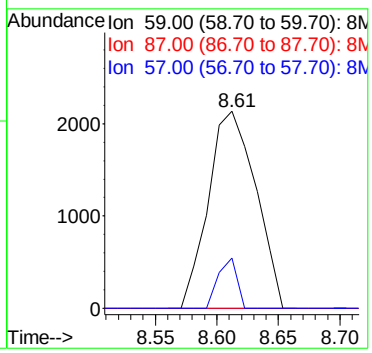

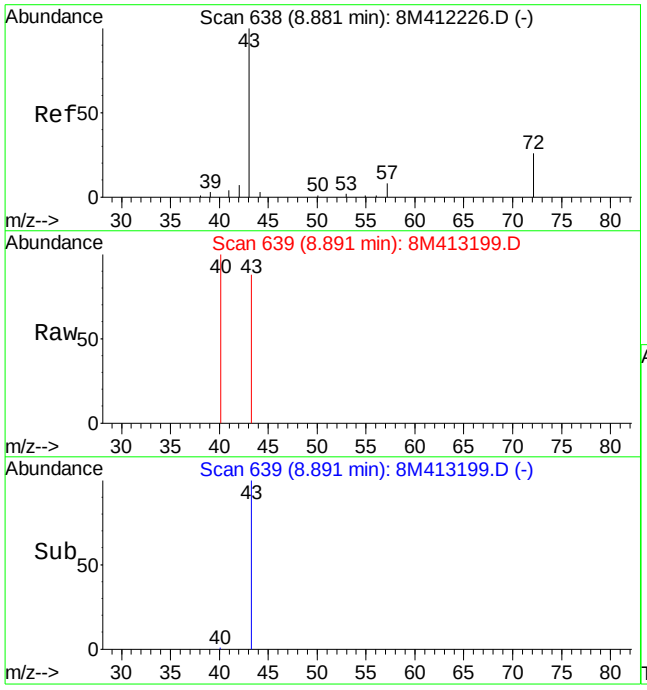

#29
2-Butanone
Concen: 0.19 ug/L
RT: 8.89 min Scan# 639
Delta R.T. 0.01 min
Lab File: 8M413199.D
Acq: 24 Jun 2016 00:24

Tgt Ion: 43 Resp: 210

Ion	Ratio	Lower	Upper
43	100		
72	0.0	16.4	38.4#

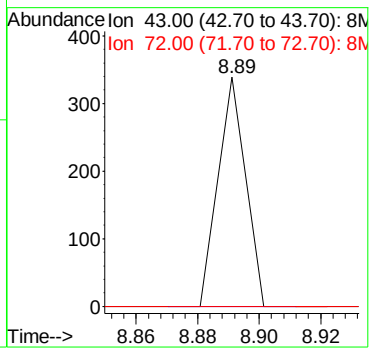

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062216\8M413169.D Vial: 9
Acq On : 22 Jun 2016 18:40 Operator: FJB
Sample : L16060927-02 B 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 22 19:02:37 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	719947	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	540795	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	305295	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	215671	27.8817 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.52%		
43) 1,2-Dichloroethane-d4	10.30	65	237782	28.6689 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 114.68%		
58) Toluene-d8	12.68	98	745228	26.3306 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.32%		
80) p-Bromofluorobenzene	16.08	95	314218	24.8563 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.44%		

Target Compounds					Qvalue
4) Vinyl Chloride	3.84	62	49252	5.8917 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	445801	60.9719 ug/L	96
13) Acetone	6.16	43	5498	6.7876 ug/L #	50
14) 1,1-Dichloroethene	6.47	61	117459	10.0895 ug/L	99
16) Dimethyl Sulfide	6.74	62	3777	0.9074 ug/L	92
19) Methylene Chloride	7.26	84	1895	0.2558 ug/L	88
20) Carbon Disulfide	7.30	76	3368	0.1382 ug/L #	74
23) trans-1,2-Dichloroethene	7.70	61	43691	4.0851 ug/L	95
27) 1,1-Dichloroethane	8.32	63	14036	1.0567 ug/L	94
32) cis-1,2-Dichloroethene	9.17	96	1920731	232.4198 ug/L	85
33) Chloroform	9.37	83	85451	5.4486 ug/L	99
36) Tetrahydrofuran	9.63	42	202	0.2577 ug/L #	24
39) Cyclohexane	9.94	56	1842	0.1786 ug/L #	76
45) 1,2-Dichloroethane	10.42	62	2158475	213.8341 ug/L	93
46) Benzene	10.47	78	47122	1.5934 ug/L #	1
47) Trichloroethene	11.21	130	16920395	2145.1934 ug/L	97
48) Methylcyclohexane	11.21	83	503714	42.0369 ug/L #	1
63) 1,1,2-Trichloroethane	13.18	97	4548	0.8585 ug/L	85
66) Tetrachloroethene	13.60	164	8783	1.2210 ug/L	97

(#) = qualifier out of range (m) = manual integration
8M413169.D 8260WT.M Mon Jun 27 12:40:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062216\8M413169.D Vial: 9
Acq On : 22 Jun 2016 18:40 Operator: FJB
Sample : L16060927-02 B 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 22 19:02 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

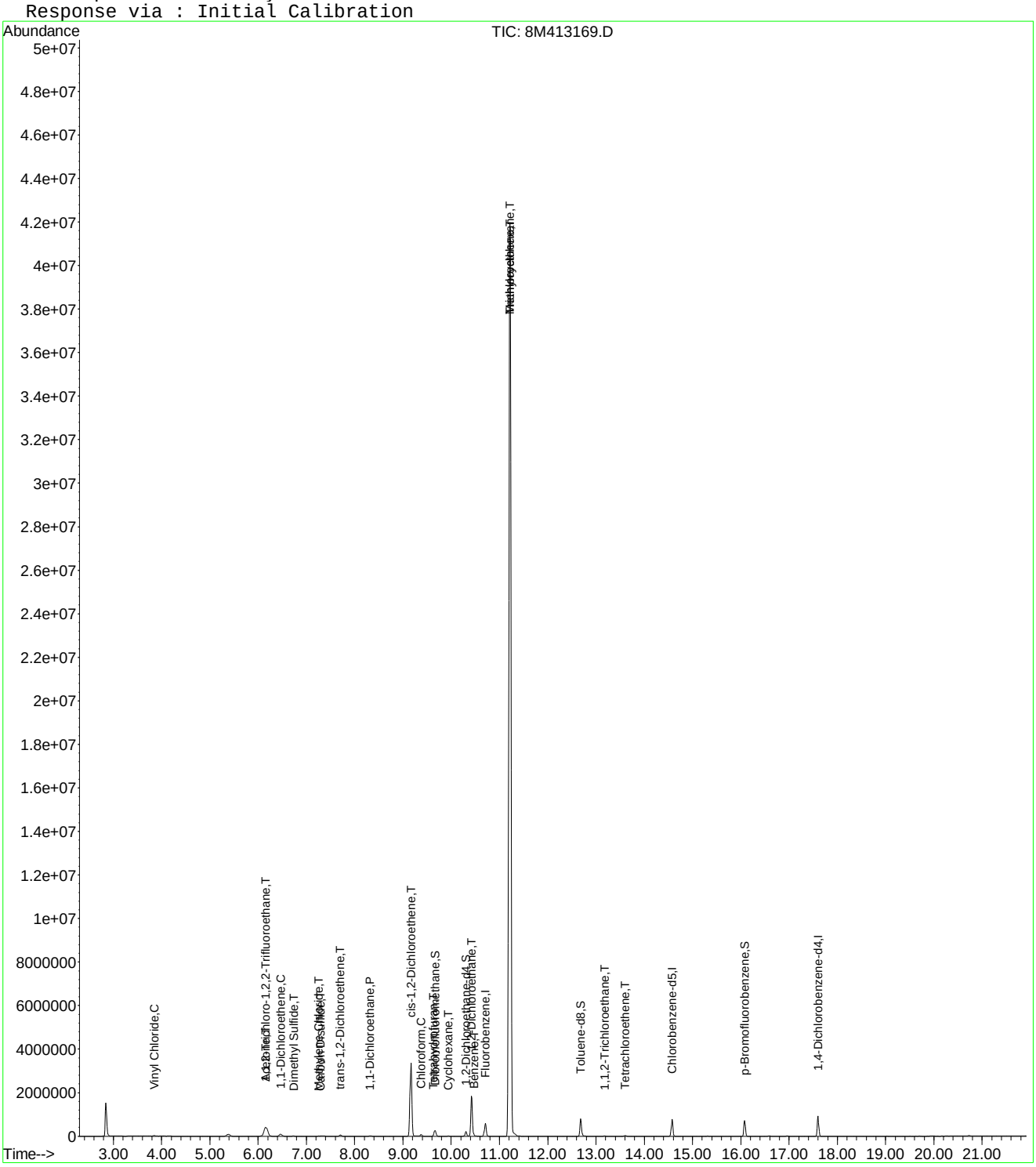

8M413169.D 8260WT.M Mon Jun 27 12:40:11 2016 Page 2

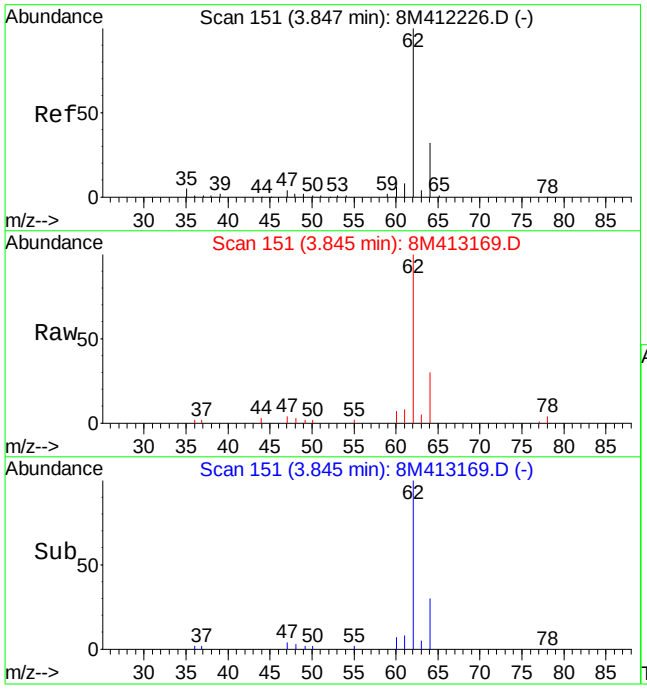

#4
Vinyl Chloride
Concen: 5.89 ug/L
RT: 3.84 min Scan# 151
Delta R.T. -0.00 min
Lab File: 8M413169.D
Acq: 22 Jun 2016 18:40

Tgt Ion: 62 Resp: 49252

Ion	Ratio	Lower	Upper
62	100		
64	31.9	19.3	45.1

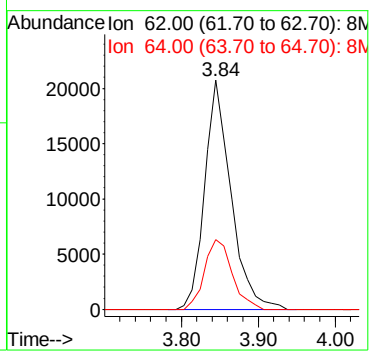

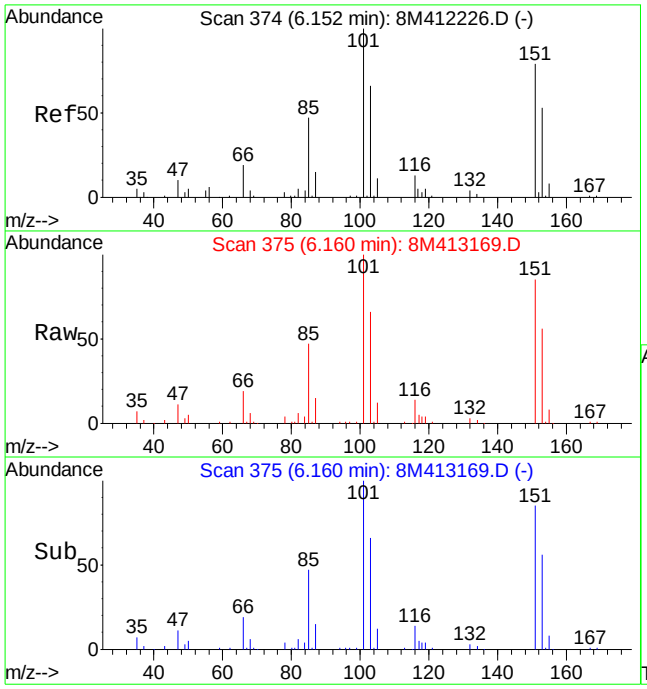

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 60.97 ug/L
RT: 6.16 min Scan# 375
Delta R.T. 0.01 min
Lab File: 8M413169.D
Acq: 22 Jun 2016 18:40

Tgt Ion:101 Resp: 445801

Ion	Ratio	Lower	Upper
101	100		
151	84.2	40.2	120.2

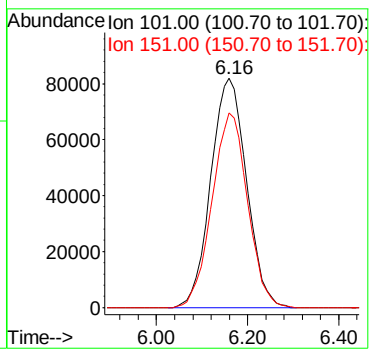

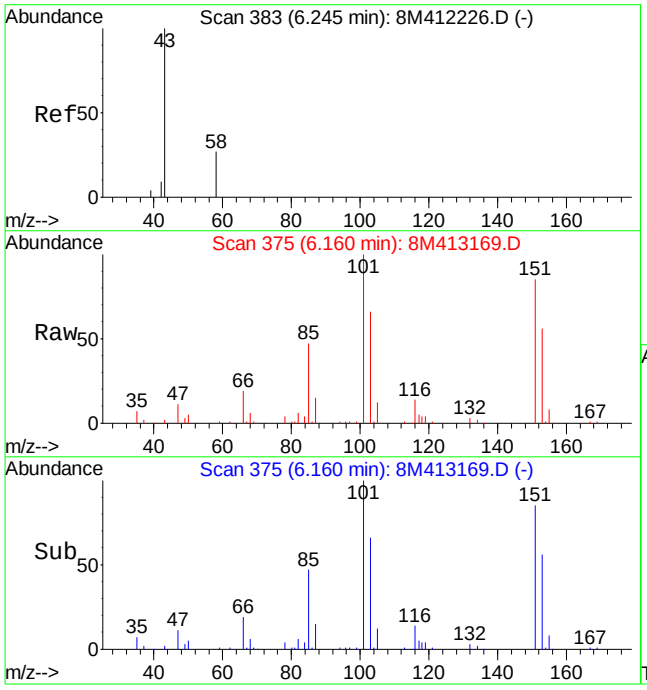

#13
Acetone
Concen: 6.79 ug/L
RT: 6.16 min Scan# 375
Delta R.T. -0.09 min
Lab File: 8M413169.D
Acq: 22 Jun 2016 18:40

Tgt Ion: 43 Resp: 5498

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.2	35.4#

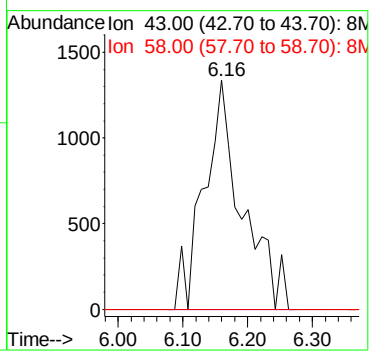

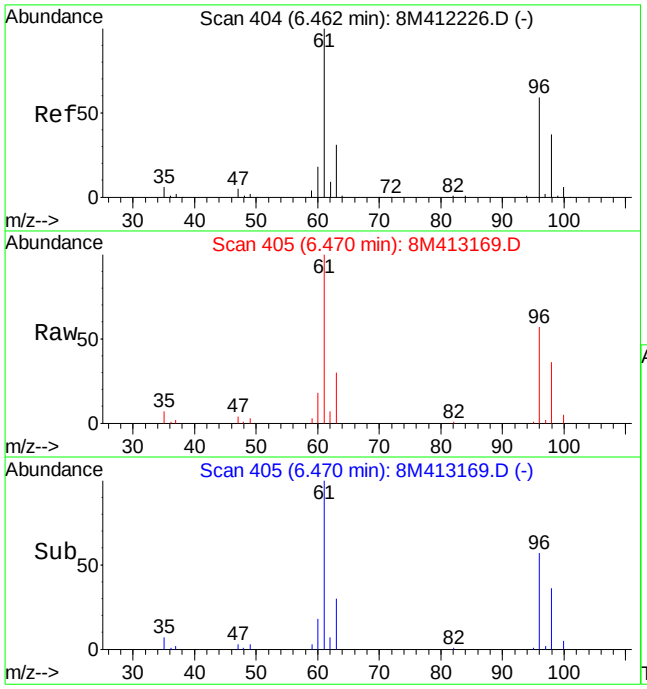

#14
1,1-Dichloroethene
Concen: 10.09 ug/L
RT: 6.47 min Scan# 405
Delta R.T. 0.01 min
Lab File: 8M413169.D
Acq: 22 Jun 2016 18:40

Tgt Ion: 61 Resp: 117459

Ion	Ratio	Lower	Upper
61	100		
96	58.4	34.6	80.8

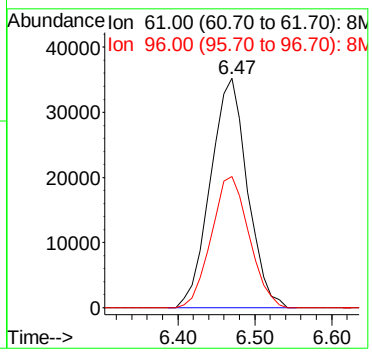

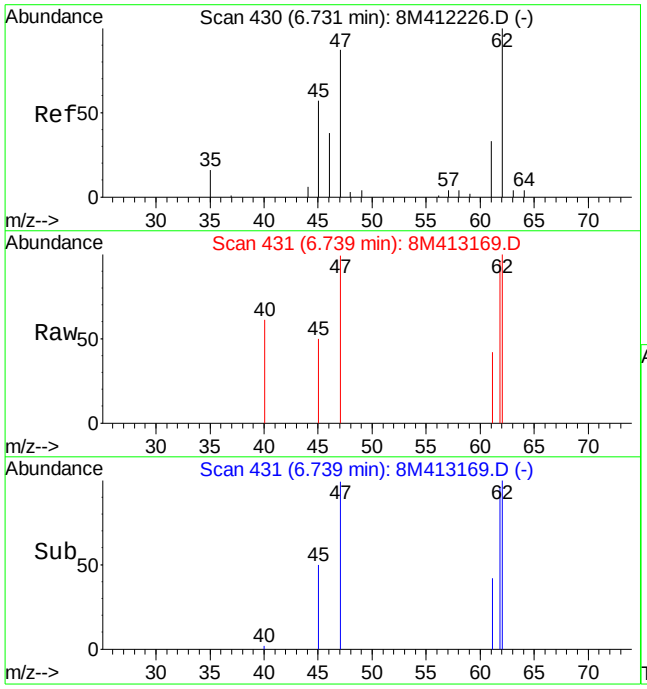

#16
Dimethyl Sulfide
Concen: 0.91 ug/L
RT: 6.74 min Scan# 431
Delta R.T. 0.01 min
Lab File: 8M413169.D
Acq: 22 Jun 2016 18:40

Tgt Ion: 62 Resp: 3777

Ion	Ratio	Lower	Upper
62	100		
47	81.0	53.2	124.0

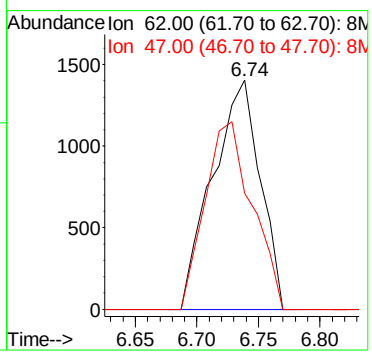

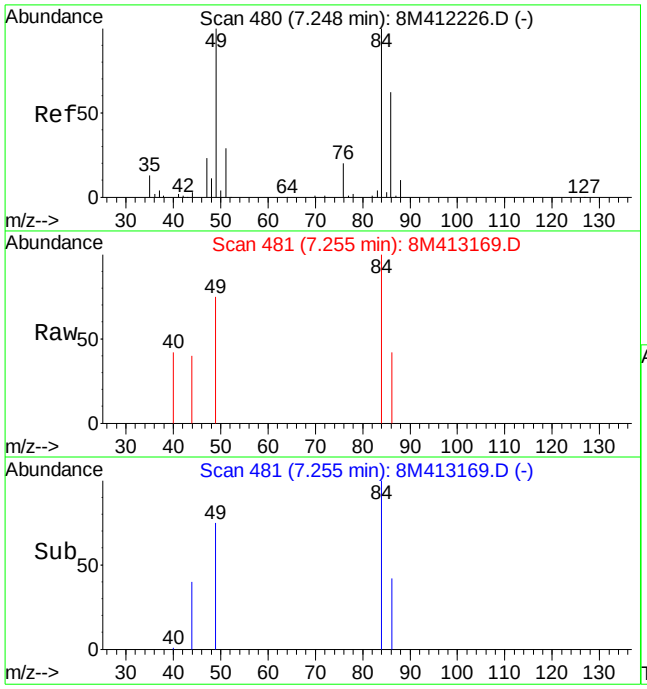

#19
Methylene Chloride
Concen: 0.26 ug/L
RT: 7.26 min Scan# 481
Delta R.T. 0.01 min
Lab File: 8M413169.D
Acq: 22 Jun 2016 18:40

Tgt Ion: 84 Resp: 1895

Ion	Ratio	Lower	Upper
84	100		
49	88.8	60.5	141.3

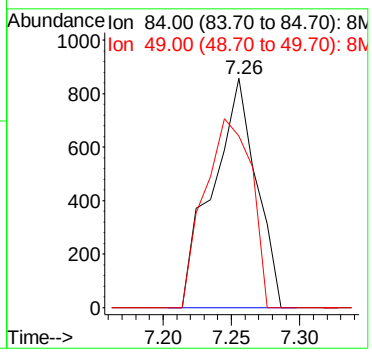

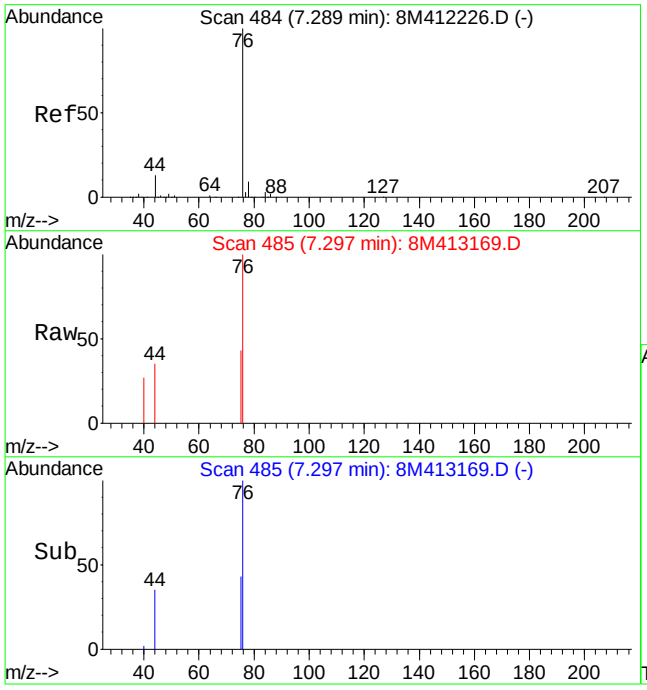

#20
Carbon Disulfide
Concen: 0.14 ug/L
RT: 7.30 min Scan# 485
Delta R.T. 0.01 min
Lab File: 8M413169.D
Acq: 22 Jun 2016 18:40

Tgt Ion: 76 Resp: 3368

Ion	Ratio	Lower	Upper
76	100		
78	0.0	5.6	13.0#

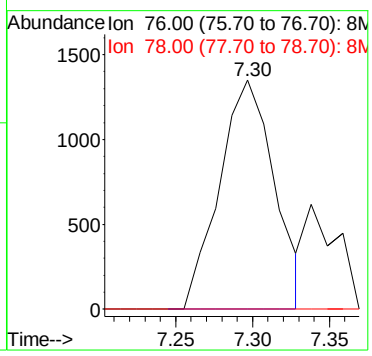

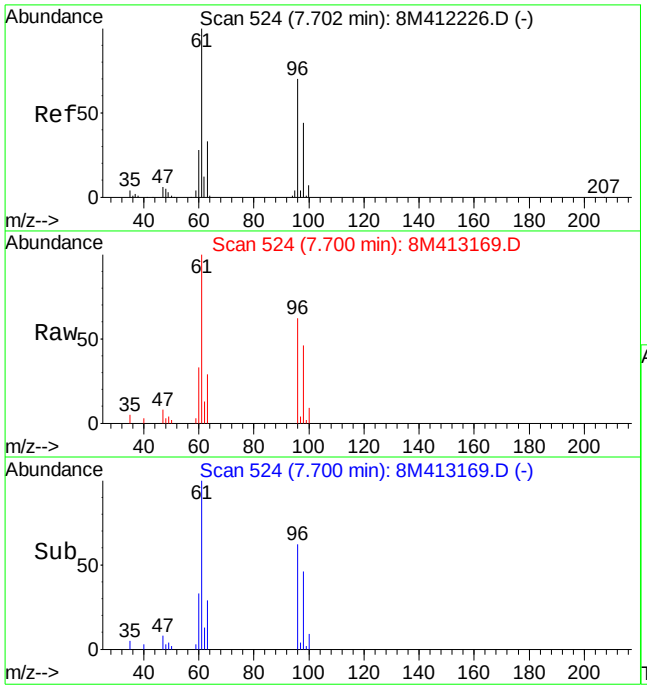

#23
trans-1,2-Dichloroethene
Concen: 4.09 ug/L
RT: 7.70 min Scan# 524
Delta R.T. -0.00 min
Lab File: 8M413169.D
Acq: 22 Jun 2016 18:40

Tgt Ion: 61 Resp: 43691

Ion	Ratio	Lower	Upper
61	100		
96	65.9	41.8	97.4

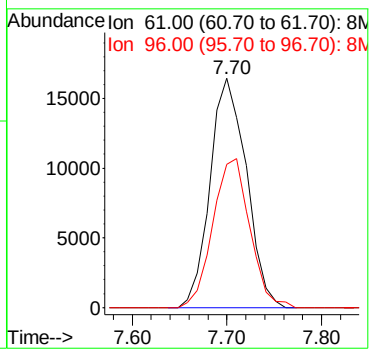

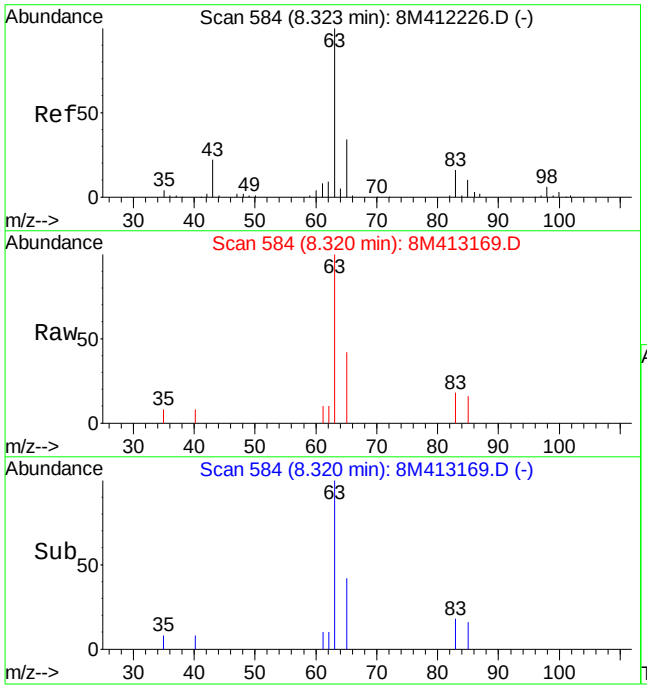

#27
1,1-Dichloroethane
Concen: 1.06 ug/L
RT: 8.32 min Scan# 584
Delta R.T. -0.00 min
Lab File: 8M413169.D
Acq: 22 Jun 2016 18:40

Tgt Ion: 63 Resp: 14036

Ion	Ratio	Lower	Upper
63	100		
65	29.7	20.2	47.0
83	13.2	9.1	21.1

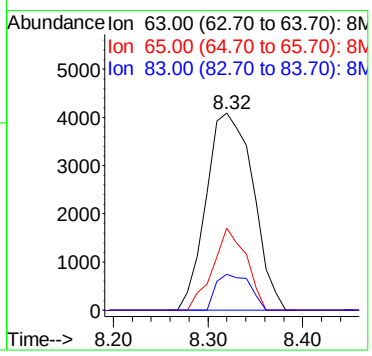

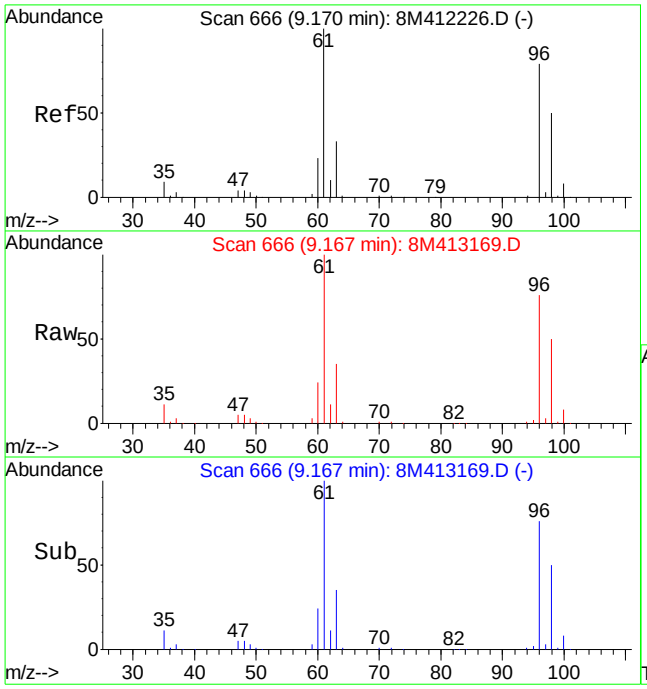

#32
cis-1,2-Dichloroethene
Concen: 232.42 ug/L
RT: 9.17 min Scan# 666
Delta R.T. -0.00 min
Lab File: 8M413169.D
Acq: 22 Jun 2016 18:40

Tgt Ion: 96 Resp: 1920731

Ion	Ratio	Lower	Upper
96	100		
61	132.6	91.5	213.5

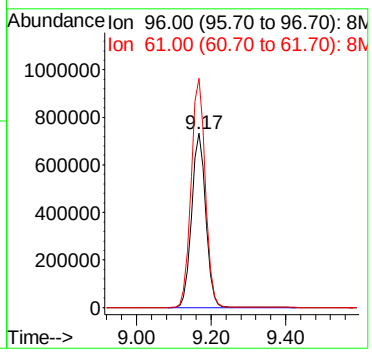

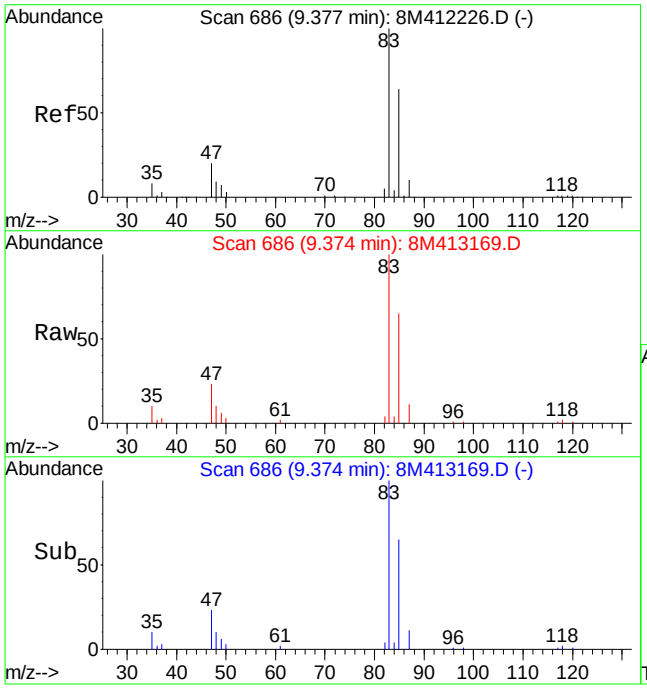

#33
Chloroform
Concen: 5.45 ug/L
RT: 9.37 min Scan# 686
Delta R.T. -0.00 min
Lab File: 8M413169.D
Acq: 22 Jun 2016 18:40

Tgt Ion: 83 Resp: 85451

Ion	Ratio	Lower	Upper
83	100		
85	63.6	37.5	87.5

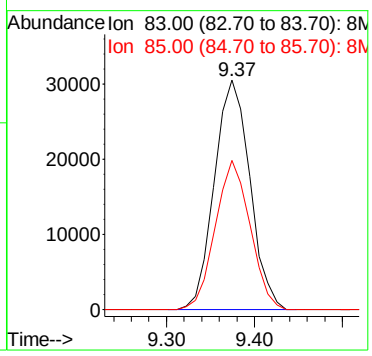

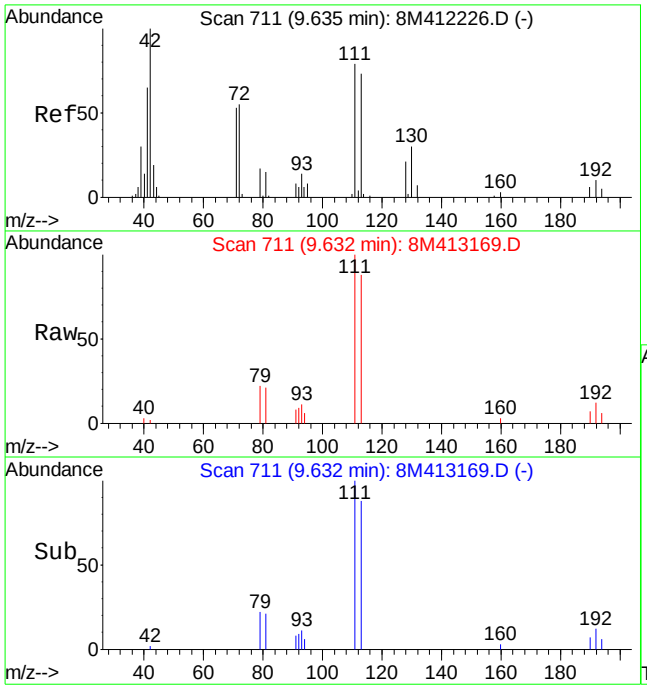

#36
Tetrahydrofuran
Concen: 0.26 ug/L
RT: 9.63 min Scan# 711
Delta R.T. -0.00 min
Lab File: 8M413169.D
Acq: 22 Jun 2016 18:40

Tgt Ion: 42 Resp: 202

Ion	Ratio	Lower	Upper
42	100		
72	0.0	33.8	78.8#
71	0.0	32.0	74.8#

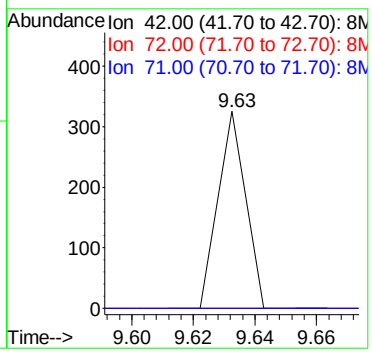

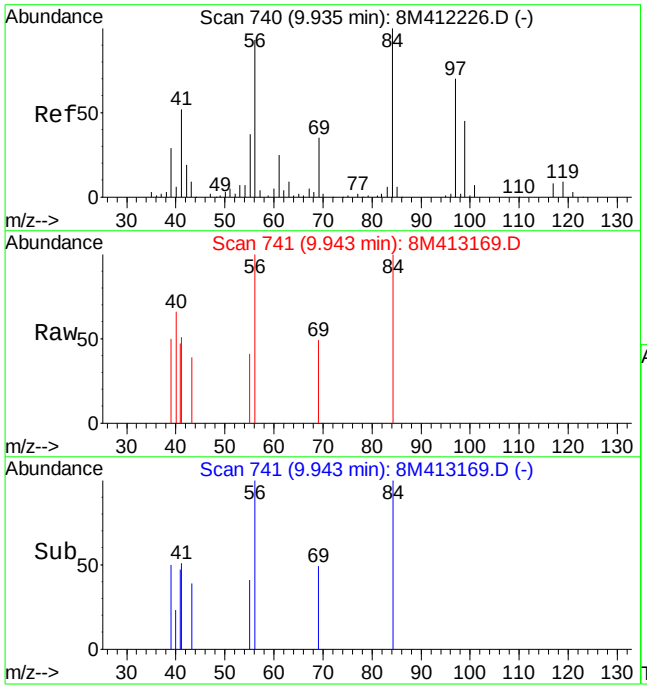

#39
Cyclohexane
Concen: 0.18 ug/L
RT: 9.94 min Scan# 741
Delta R.T. 0.01 min
Lab File: 8M413169.D
Acq: 22 Jun 2016 18:40

Tgt Ion: 56 Resp: 1842

Ion	Ratio	Lower	Upper
56	100		
84	88.3	64.5	150.5
69	13.0	22.0	51.4#

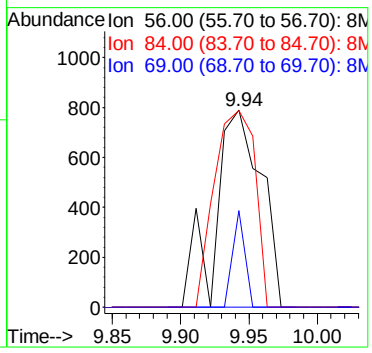

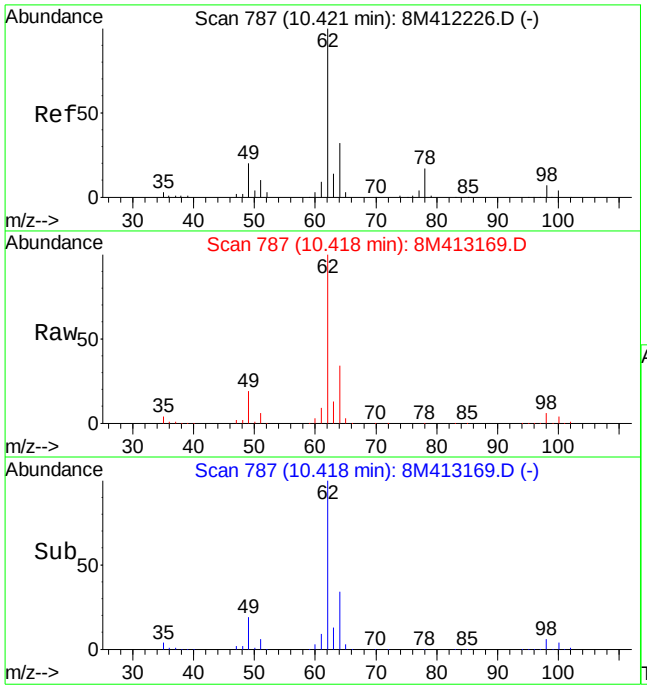

#45
1,2-Dichloroethane
Concen: 213.83 ug/L
RT: 10.42 min Scan# 787
Delta R.T. -0.00 min
Lab File: 8M413169.D
Acq: 22 Jun 2016 18:40

Tgt Ion: 62 Resp: 2158475

Ion	Ratio	Lower	Upper
62	100		
64	33.2	19.6	45.6
49	18.7	15.5	36.1

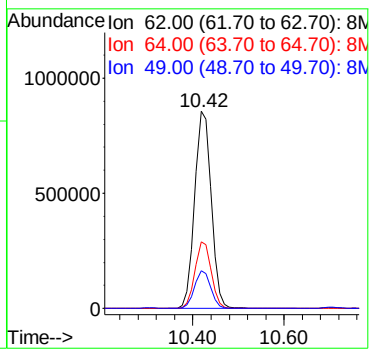

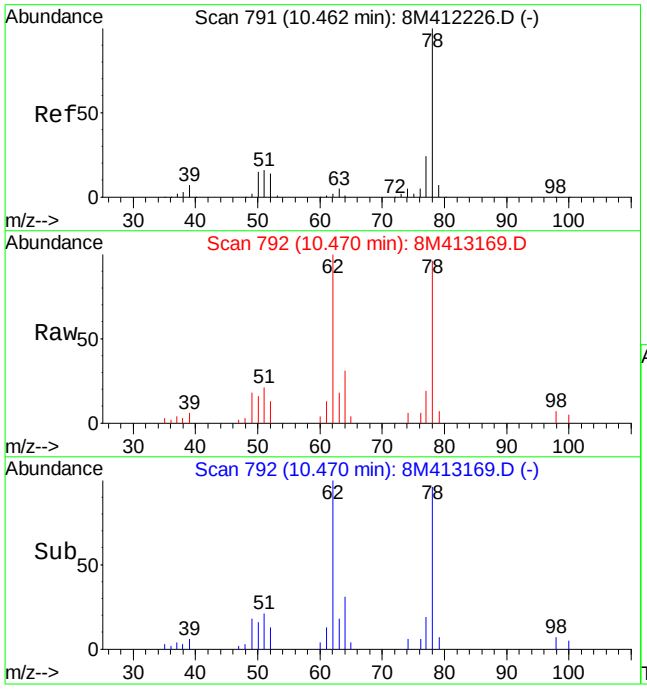

#46
Benzene
Concen: 1.59 ug/L
RT: 10.47 min Scan# 792
Delta R.T. 0.01 min
Lab File: 8M413169.D
Acq: 22 Jun 2016 18:40

Tgt Ion: 78 Resp: 47122

Ion	Ratio	Lower	Upper
78	100		
52	16.3	8.4	19.6
51	286.4	10.9	25.5#

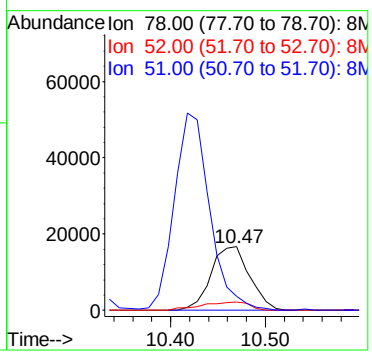

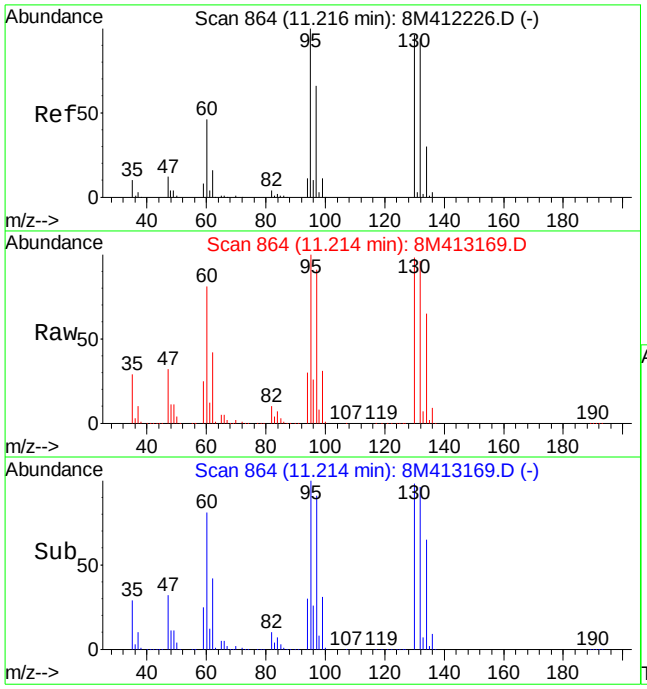

#47
Trichloroethene
Concen: 2145.19 ug/L
RT: 11.21 min Scan# 864
Delta R.T. -0.00 min
Lab File: 8M413169.D
Acq: 22 Jun 2016 18:40

Tgt Ion:130 Resp:16920395

Ion	Ratio	Lower	Upper
130	100		
132	98.2	58.0	135.2
95	103.0	64.9	151.5

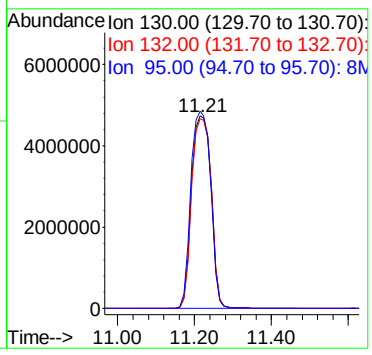

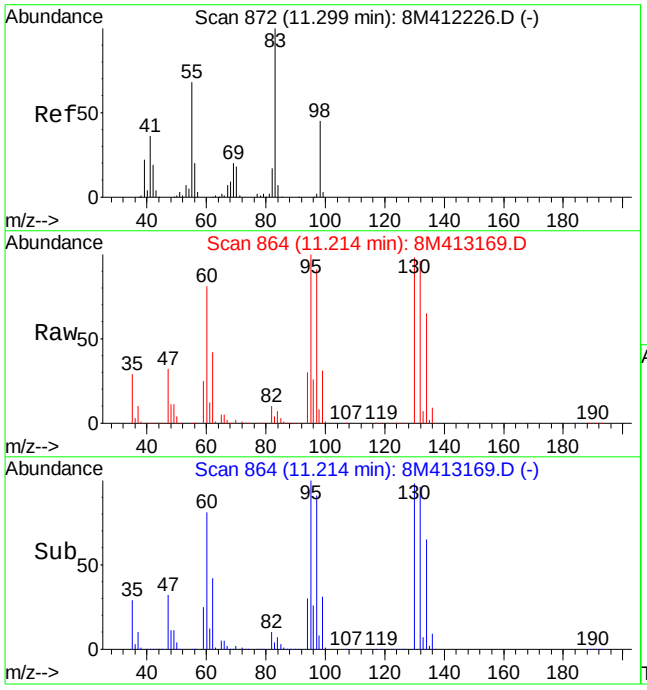

#48
Methylcyclohexane
Concen: 42.04 ug/L
RT: 11.21 min Scan# 864
Delta R.T. -0.09 min
Lab File: 8M413169.D
Acq: 22 Jun 2016 18:40

Tgt Ion: 83 Resp: 503714

Ion	Ratio	Lower	Upper
83	100		
55	0.1	40.9	95.3#
98	199.2	28.1	65.7#

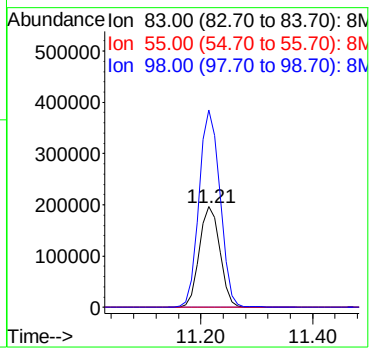

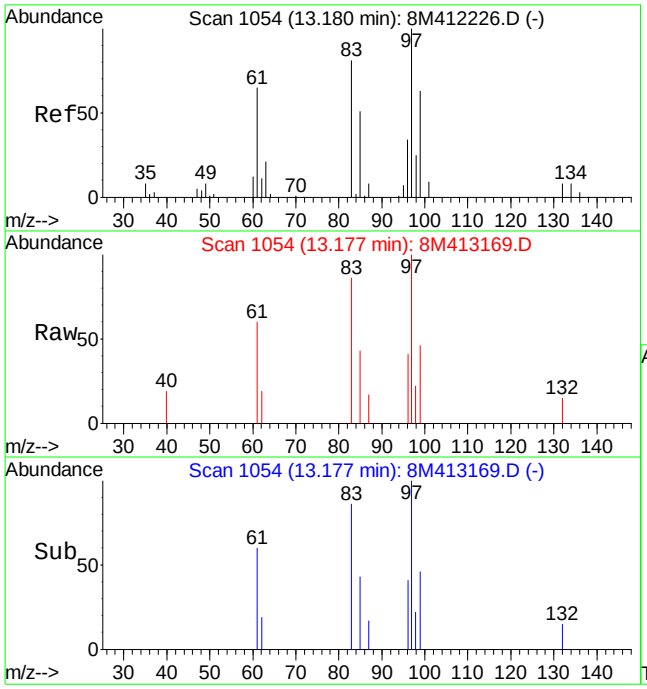

#63
1,1,2-Trichloroethane
Concen: 0.86 ug/L
RT: 13.18 min Scan# 1054
Delta R.T. -0.00 min
Lab File: 8M413169.D
Acq: 22 Jun 2016 18:40

Tgt Ion: 97 Resp: 4548

Ion	Ratio	Lower	Upper
97	100		
83	70.9	50.9	118.9

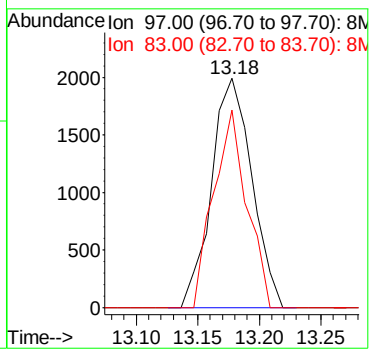

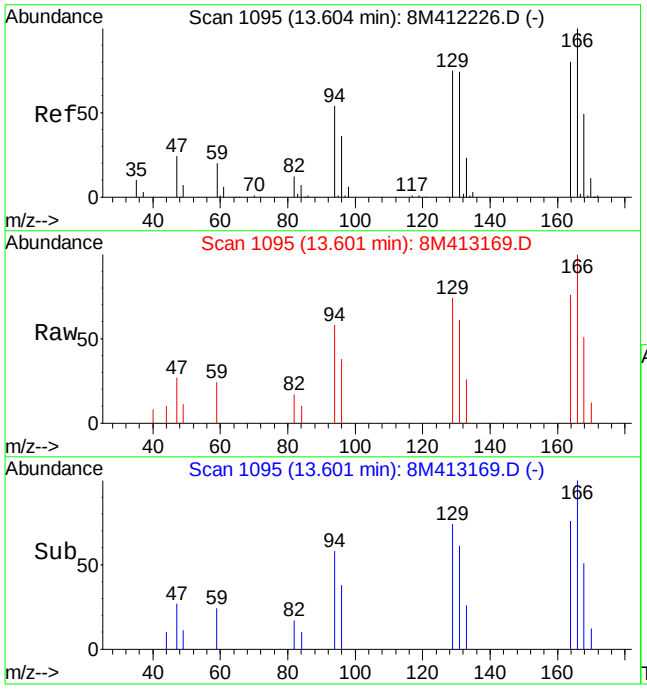

#66
Tetrachloroethene
Concen: 1.22 ug/L
RT: 13.60 min Scan# 1095
Delta R.T. -0.00 min
Lab File: 8M413169.D
Acq: 22 Jun 2016 18:40

Tgt Ion:164 Resp: 8783

Ion	Ratio	Lower	Upper
164	100		
129	98.0	56.6	132.2
94	70.5	40.7	95.1

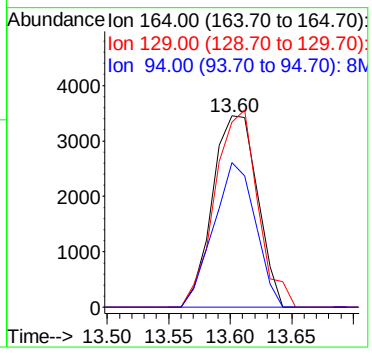

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413196.D Vial: 7
Acq On : 23 Jun 2016 22:56 Operator: FJB
Sample : L16060927-02 200X C 826-LOW D1 Inst : HPMS8
Misc : 1,200 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 23:18:55 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	693727	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	542068	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	298222	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	209484	28.1054 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 112.44%		
43) 1,2-Dichloroethane-d4	10.30	65	232136	29.0460 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 116.20%		
58) Toluene-d8	12.68	98	719106	25.3480 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.40%		
80) p-Bromofluorobenzene	16.07	95	310834	25.1718 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.68%		

Target Compounds

					Qvalue
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1124	0.1595 ug/L	69
19) Methylene Chloride	7.25	84	1850	0.2591 ug/L	94
20) Carbon Disulfide	7.29	76	13434	0.5723 ug/L #	80
32) cis-1,2-Dichloroethene	9.17	96	9050	1.1365 ug/L	83
45) 1,2-Dichloroethane	10.42	62	10312	1.0602 ug/L	91
47) Trichloroethene	11.22	130	145308	19.1187 ug/L	99
48) Methylcyclohexane	11.21	83	1919	0.1662 ug/L #	1
51) 1,4-Dioxane	11.70	88	888	27.8668 ug/L #	26
98) 1,2,4-Trichlorobenzene	20.28	180	1884	0.1538 ug/L #	76
100) Naphthalene	20.64	128	6385	0.3508 ug/L	99
101) 1,2,3-Trichlorobenzene	20.96	180	1289	0.1247 ug/L #	76

(#) = qualifier out of range (m) = manual integration
8M413196.D 8260WT.M Mon Jun 27 12:41:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413196.D Vial: 7
Acq On : 23 Jun 2016 22:56 Operator: FJB
Sample : L16060927-02 200X C 826-LOW D1 Inst : HPMS8
Misc : 1,200 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 23:18 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

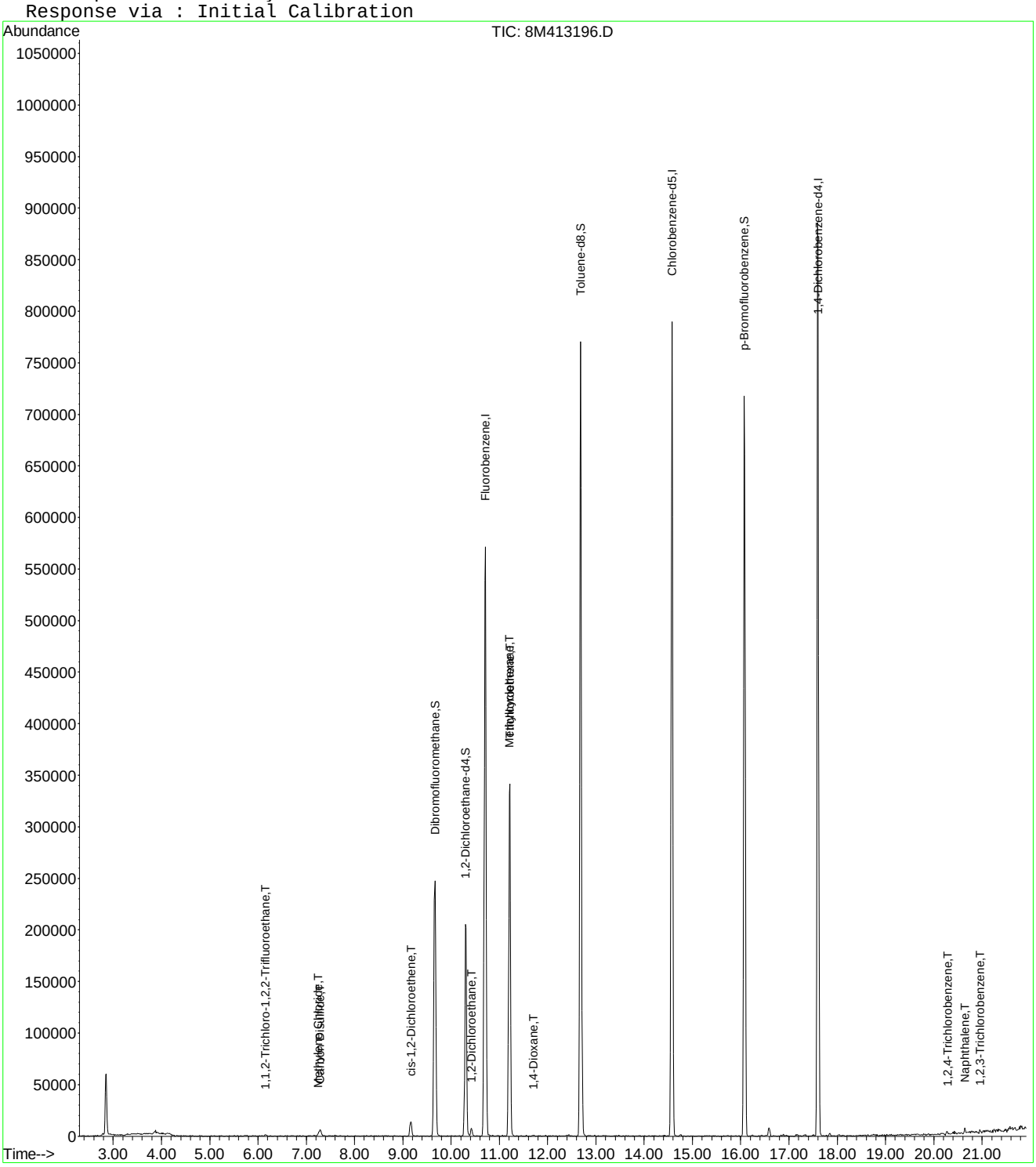

8M413196.D 8260WT.M Mon Jun 27 12:41:36 2016 Page 2

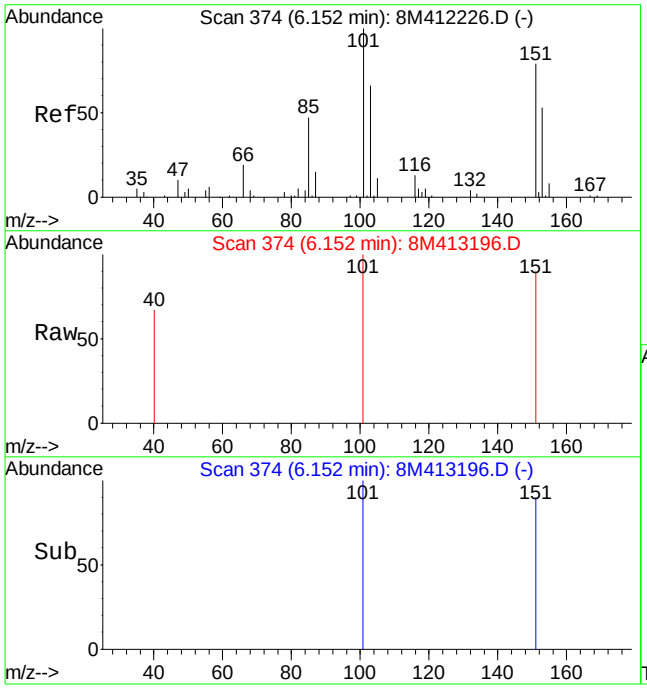

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 0.16 ug/L
RT: 6.15 min Scan# 374
Delta R.T. -0.00 min
Lab File: 8M413196.D
Acq: 23 Jun 2016 22:56

Tgt Ion:101 Resp: 1124

Ion	Ratio	Lower	Upper
101	100		
151	52.9	40.2	120.2

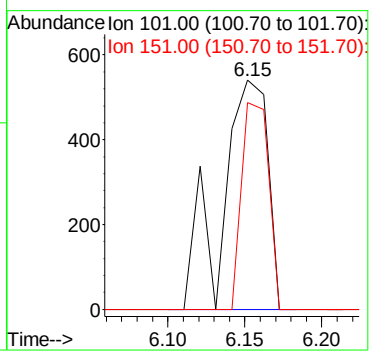

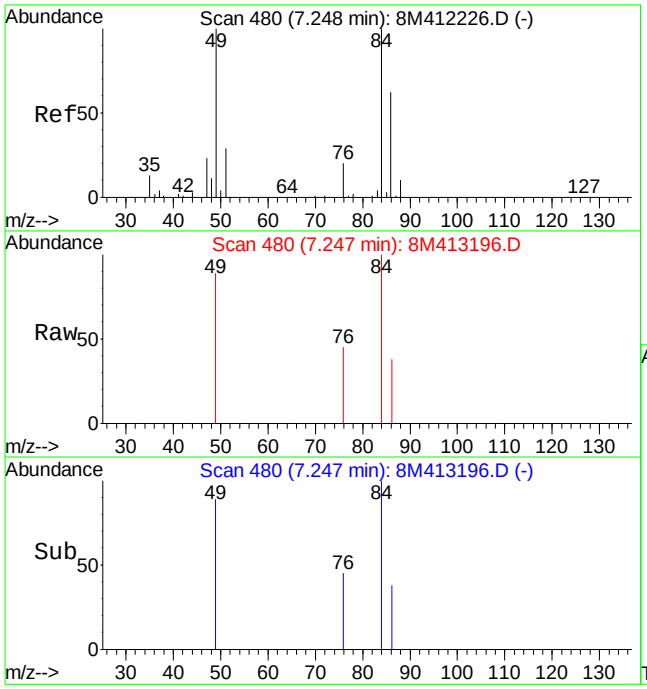

#19
Methylene Chloride
Concen: 0.26 ug/L
RT: 7.25 min Scan# 480
Delta R.T. -0.00 min
Lab File: 8M413196.D
Acq: 23 Jun 2016 22:56

Tgt Ion: 84 Resp: 1850

Ion	Ratio	Lower	Upper
84	100		
49	95.2	60.5	141.3

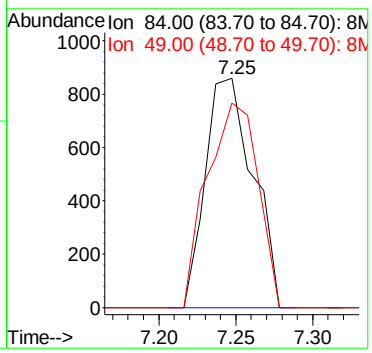

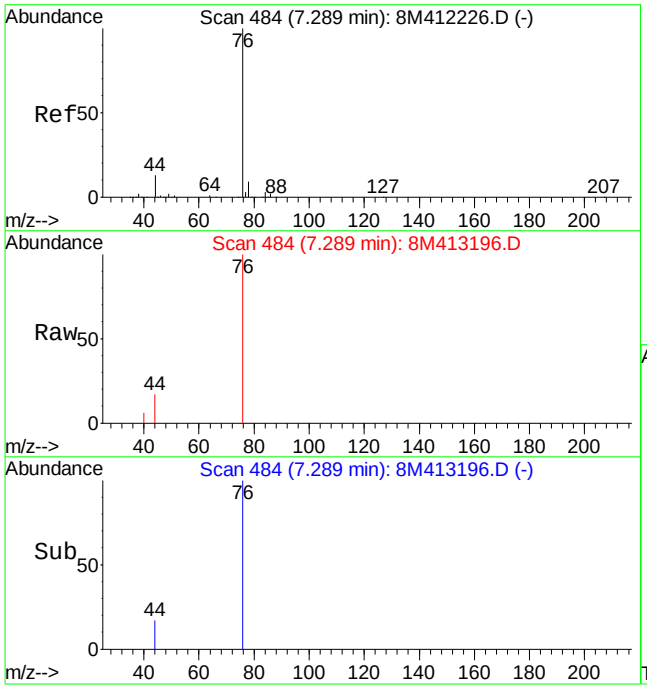

#20
Carbon Disulfide
Concen: 0.57 ug/L
RT: 7.29 min Scan# 484
Delta R.T. -0.00 min
Lab File: 8M413196.D
Acq: 23 Jun 2016 22:56

Tgt Ion: 76 Resp: 13434

Ion	Ratio	Lower	Upper
76	100		
78	1.9	5.6	13.0#

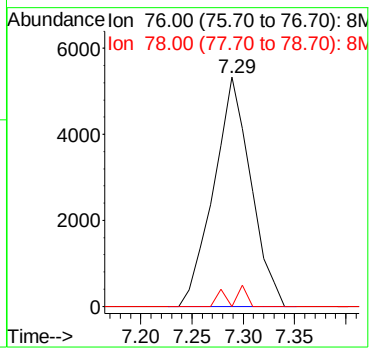

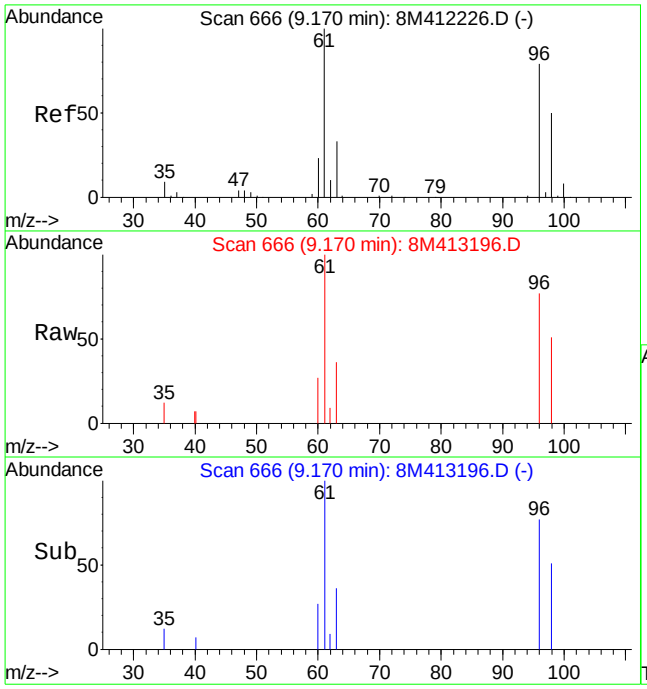

#32
cis-1,2-Dichloroethene
Concen: 1.14 ug/L
RT: 9.17 min Scan# 666
Delta R.T. -0.00 min
Lab File: 8M413196.D
Acq: 23 Jun 2016 22:56

Tgt Ion: 96 Resp: 9050

Ion	Ratio	Lower	Upper
96	100		
61	130.5	91.5	213.5

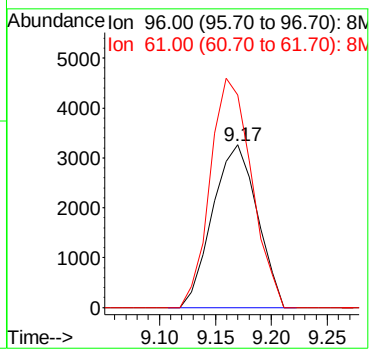

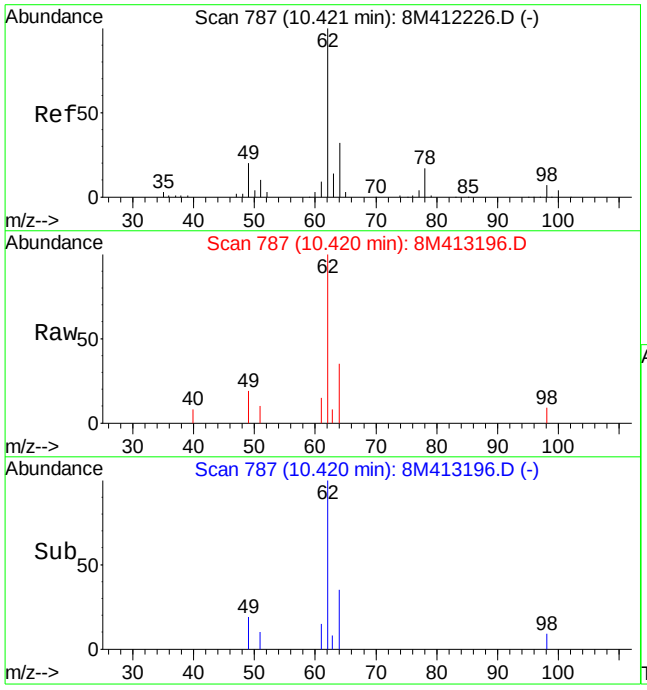

#45
1,2-Dichloroethane
Concen: 1.06 ug/L
RT: 10.42 min Scan# 787
Delta R.T. -0.00 min
Lab File: 8M413196.D
Acq: 23 Jun 2016 22:56

Tgt Ion: 62 Resp: 10312

Ion	Ratio	Lower	Upper
62	100		
64	31.6	19.6	45.6
49	16.4	15.5	36.1

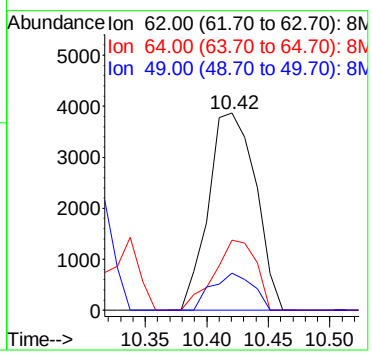

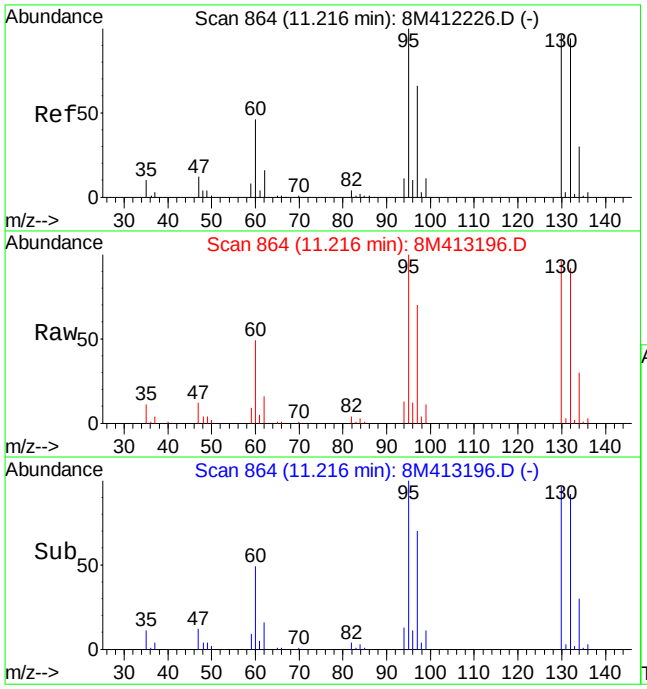

#47
Trichloroethene
Concen: 19.12 ug/L
RT: 11.22 min Scan# 864
Delta R.T. -0.00 min
Lab File: 8M413196.D
Acq: 23 Jun 2016 22:56

Tgt Ion:130 Resp: 145308

Ion	Ratio	Lower	Upper
130	100		
132	97.6	58.0	135.2
95	108.0	64.9	151.5

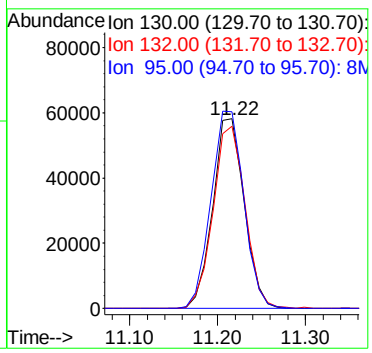

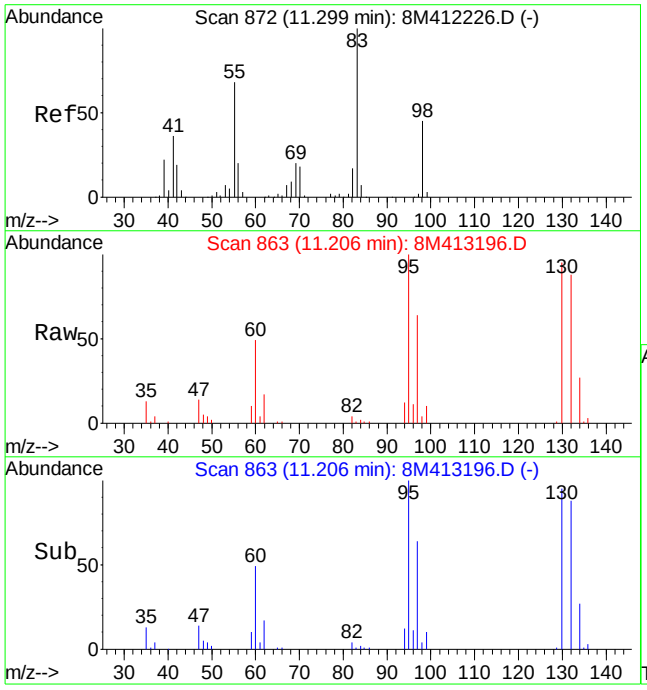

#48
Methylcyclohexane
Concen: 0.17 ug/L
RT: 11.21 min Scan# 863
Delta R.T. -0.09 min
Lab File: 8M413196.D
Acq: 23 Jun 2016 22:56

Tgt Ion: 83 Resp: 1919

Ion	Ratio	Lower	Upper
83	100		
55	0.0	40.9	95.3#
98	246.0	28.1	65.7#

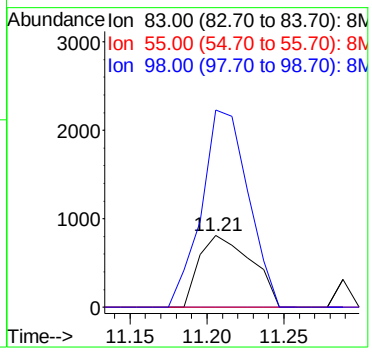

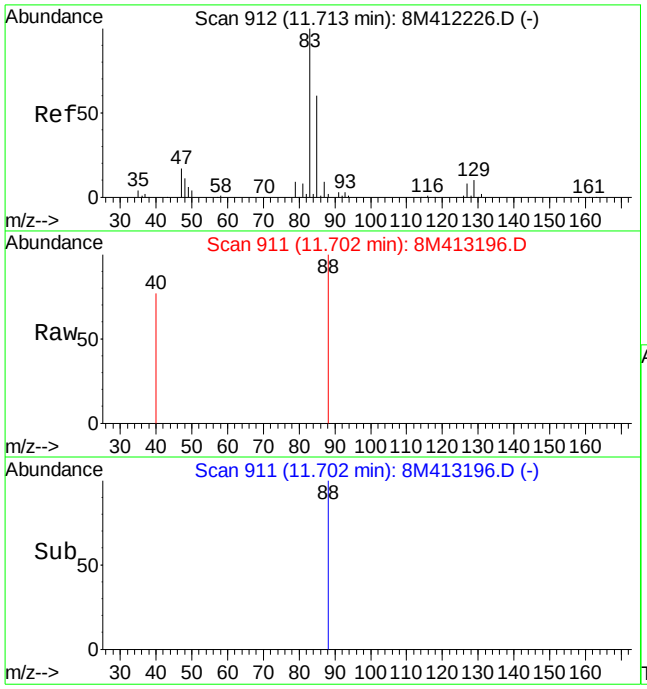

#51
1,4-Dioxane
Concen: 27.87 ug/L
RT: 11.70 min Scan# 911
Delta R.T. -0.01 min
Lab File: 8M413196.D
Acq: 23 Jun 2016 22:56

Tgt Ion: 88 Resp: 888

Ion	Ratio	Lower	Upper
88	100		
58	0.0	31.4	73.2#

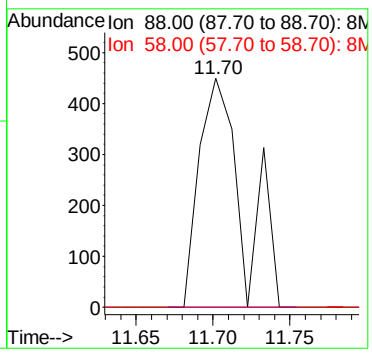

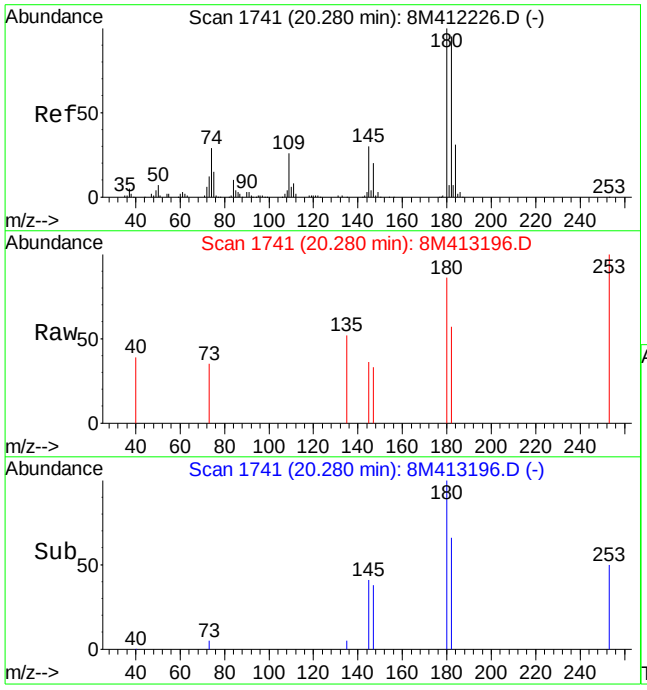

#98
1,2,4-Trichlorobenzene
Concen: 0.15 ug/L
RT: 20.28 min Scan# 1741
Delta R.T. -0.00 min
Lab File: 8M413196.D
Acq: 23 Jun 2016 22:56

Tgt Ion:180 Resp: 1884

Ion	Ratio	Lower	Upper
180	100		
182	74.8	56.8	132.4
145	11.2	18.4	42.8#

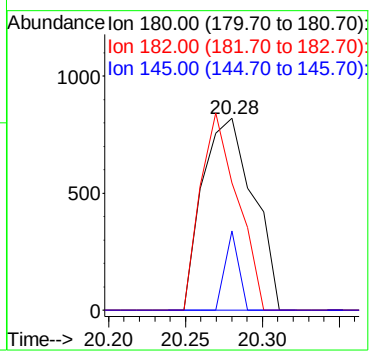

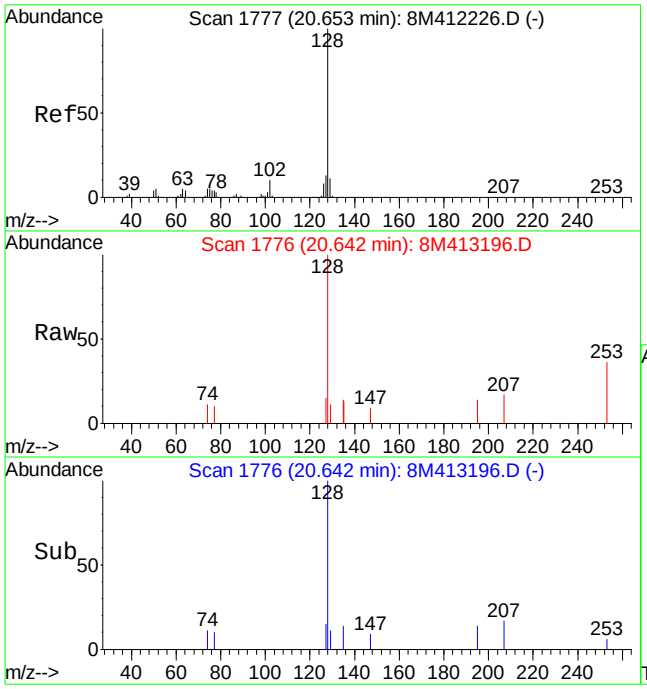

#100
Naphthalene
Concen: 0.35 ug/L
RT: 20.64 min Scan# 1776
Delta R.T. -0.01 min
Lab File: 8M413196.D
Acq: 23 Jun 2016 22:56

Tgt Ion:128 Resp: 6385

Ion	Ratio	Lower	Upper
128	100		
127	12.8	7.8	18.2

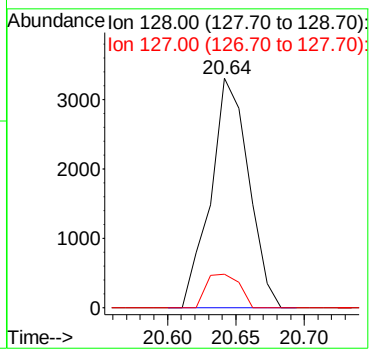

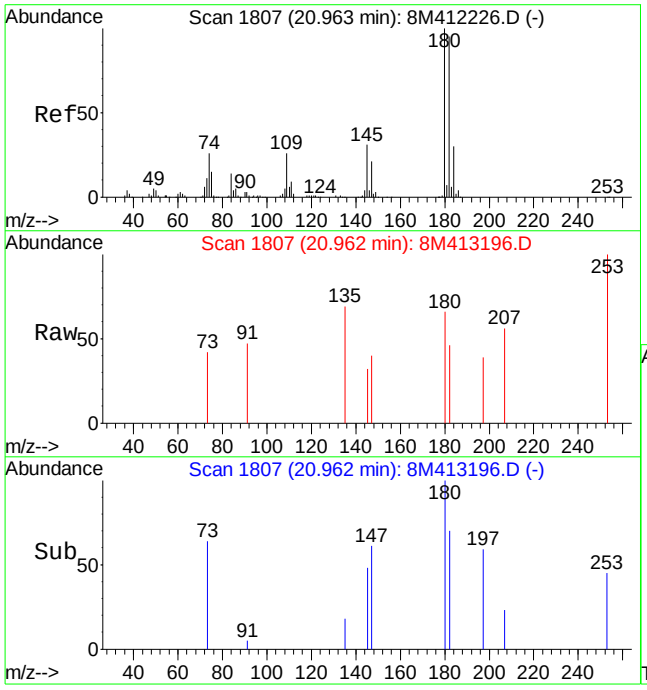

#101
1,2,3-Trichlorobenzene
Concen: 0.12 ug/L
RT: 20.96 min Scan# 1807
Delta R.T. -0.00 min
Lab File: 8M413196.D
Acq: 23 Jun 2016 22:56

Tgt Ion:180 Resp: 1289

Ion	Ratio	Lower	Upper
180	100		
182	84.8	57.8	135.0
145	0.0	20.1	46.9#

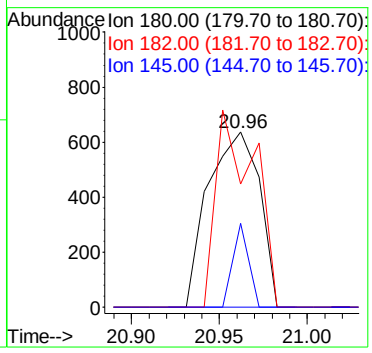

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413200.D Vial: 11
Acq On : 24 Jun 2016 00:53 Operator: FJB
Sample : L16060927-03 C 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 24 01:15:15 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	664173	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	514724	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	285769	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	201374	28.2196 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 112.88%		
43) 1,2-Dichloroethane-d4	10.31	65	228249	29.8305 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 119.32%		
58) Toluene-d8	12.68	98	698077	25.9140 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.64%		
80) p-Bromofluorobenzene	16.07	95	305251	25.7969 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 103.20%		

Target Compounds

					Qvalue
2) Dichlorodifluoromethane	3.08	85	165260	14.8408 ug/L	99
3) Chloromethane	3.61	50	1709	0.2629 ug/L	90
8) Trichlorofluoromethane	5.39	101	6942	0.4838 ug/L #	1
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	1575828	233.6238 ug/L	94
13) Acetone	6.16	43	19869	26.5893 ug/L #	70
20) Carbon Disulfide	7.29	76	13455	0.5987 ug/L	97
28) Ethyl-Tert-Butyl ether	8.62	59	5420	0.3289 ug/L #	47
33) Chloroform	9.39	83	3618	0.2501 ug/L	89
35) Bromochloromethane	9.60	130	1515	0.3875 ug/L	94
52) Dibromomethane	11.81	93	1819	0.5060 ug/L	84

(#) = qualifier out of range (m) = manual integration
8M413200.D 8260WT.M Mon Jun 27 12:41:53 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413200.D Vial: 11
Acq On : 24 Jun 2016 00:53 Operator: FJB
Sample : L16060927-03 C 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 24 1:15 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

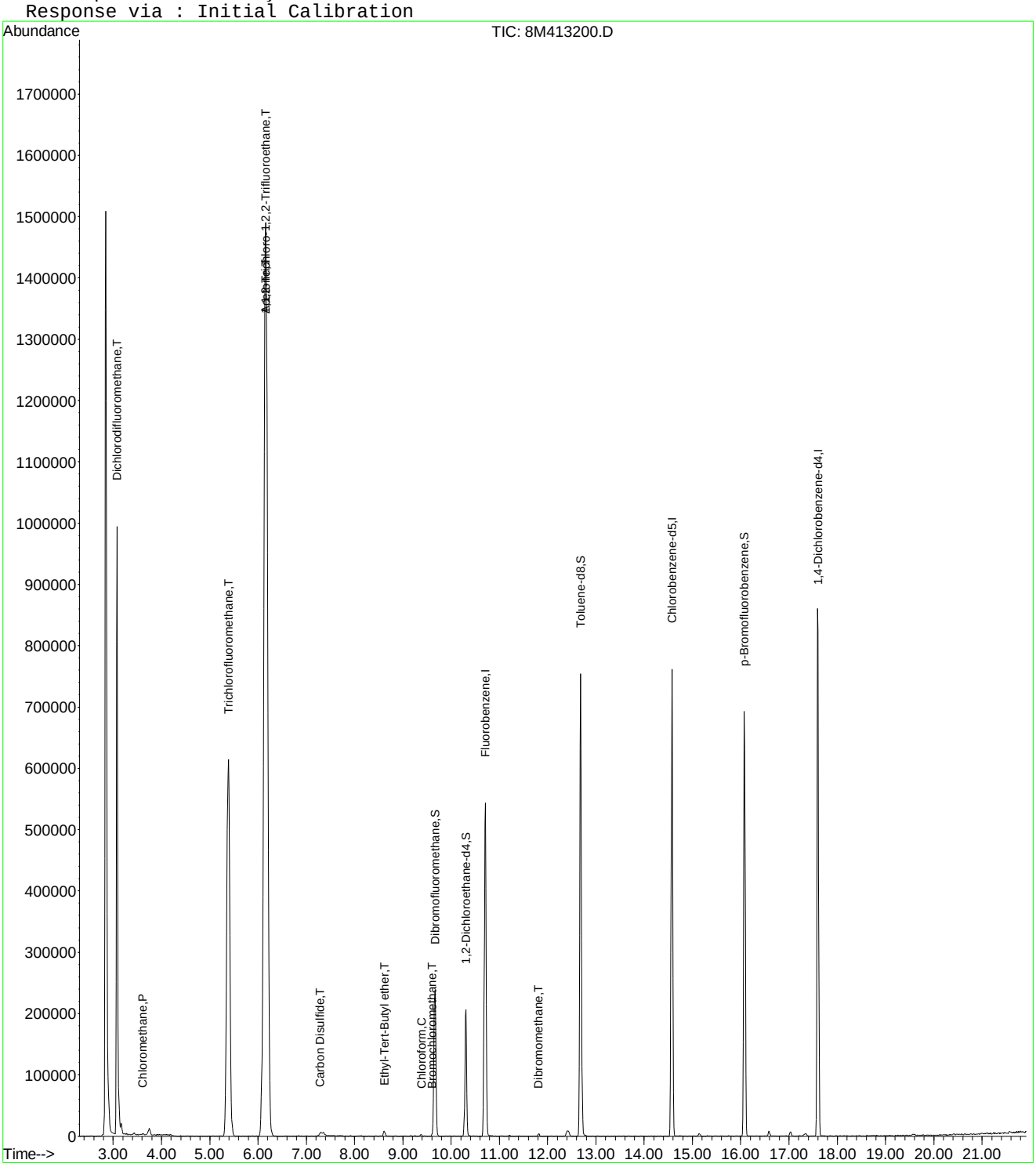

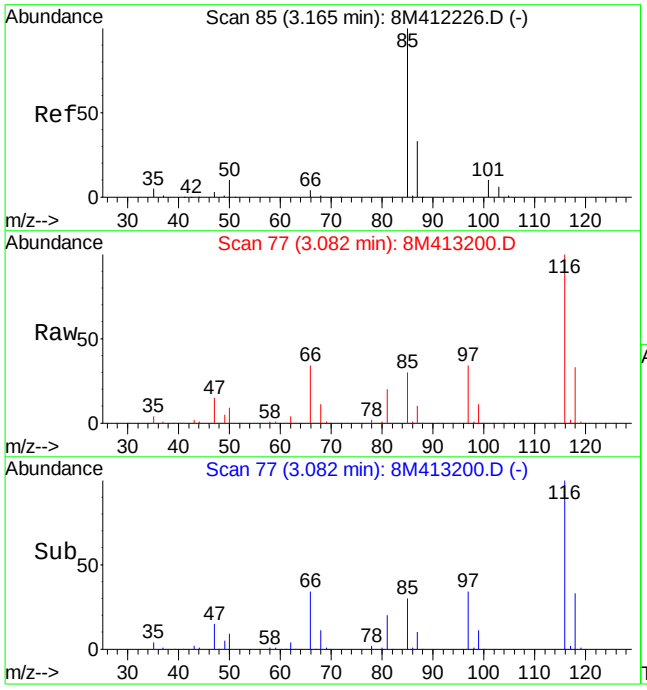

#2
Dichlorodifluoromethane
Concen: 14.84 ug/L
RT: 3.08 min Scan# 77
Delta R.T. -0.08 min
Lab File: 8M413200.D
Acq: 24 Jun 2016 00:53

Tgt Ion: 85 Resp: 165260

Ion	Ratio	Lower	Upper
85	100		
87	32.0	19.6	45.8

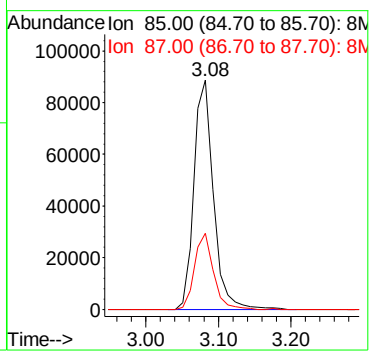

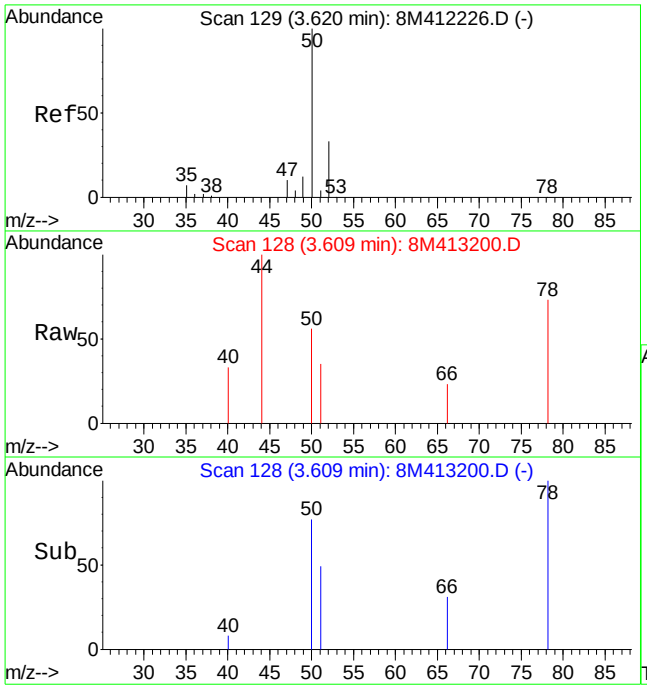

#3
Chloromethane
Concen: 0.26 ug/L
RT: 3.61 min Scan# 128
Delta R.T. -0.01 min
Lab File: 8M413200.D
Acq: 24 Jun 2016 00:53

Tgt Ion: 50 Resp: 1709

Ion	Ratio	Lower	Upper
50	100		
52	27.6	19.9	46.3

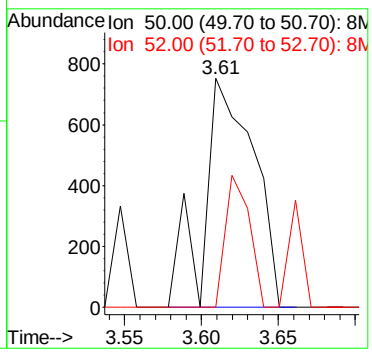

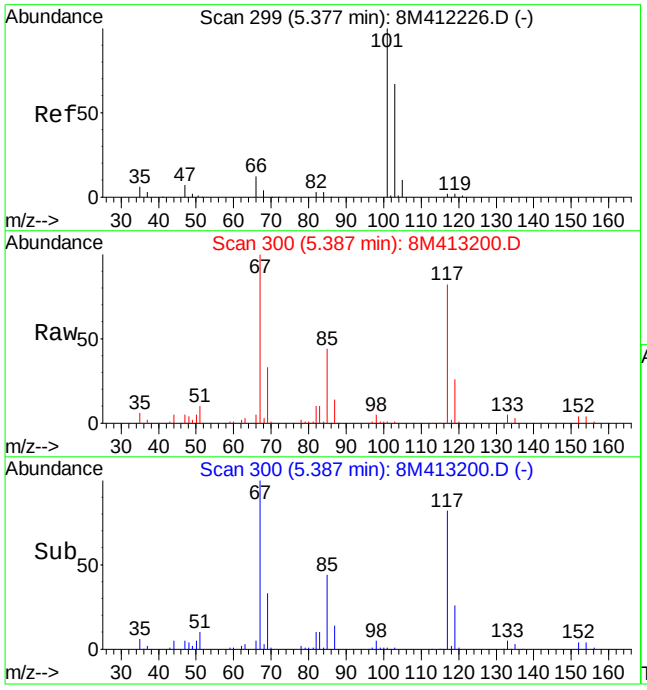

#8
Trichlorofluoromethane
Concen: 0.48 ug/L
RT: 5.39 min Scan# 300
Delta R.T. 0.01 min
Lab File: 8M413200.D
Acq: 24 Jun 2016 00:53

Tgt Ion:101 Resp: 6942

Ion	Ratio	Lower	Upper
101	100		
103	52.3	39.2	91.6
66	442.0	7.0	16.4#

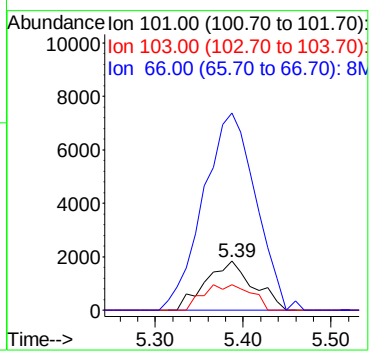

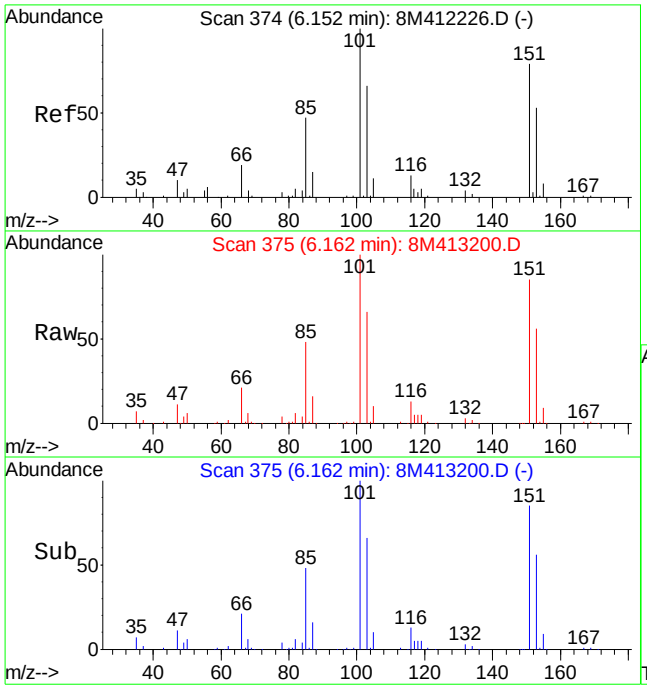

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 233.62 ug/L
RT: 6.16 min Scan# 375
Delta R.T. 0.01 min
Lab File: 8M413200.D
Acq: 24 Jun 2016 00:53

Tgt Ion:101 Resp: 1575828

Ion	Ratio	Lower	Upper
101	100		
151	85.1	40.2	120.2

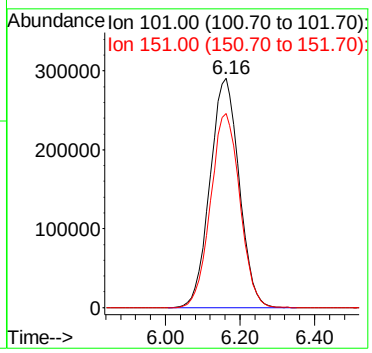

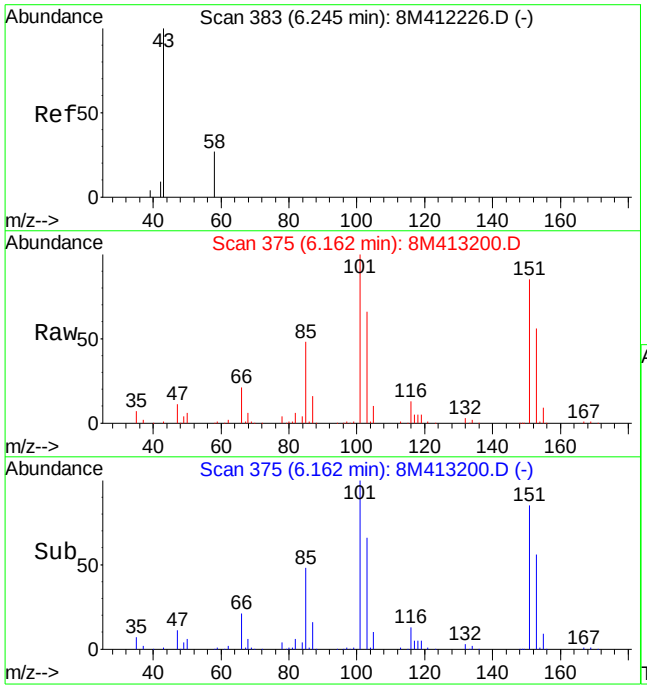

#13
Acetone
Concen: 26.59 ug/L
RT: 6.16 min Scan# 375
Delta R.T. -0.08 min
Lab File: 8M413200.D
Acq: 24 Jun 2016 00:53

Tgt Ion: 43 Resp: 19869

Ion	Ratio	Lower	Upper
43	100		
58	9.9	15.2	35.4#

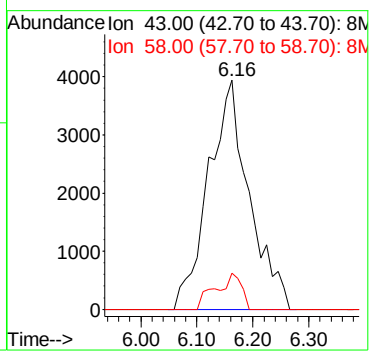

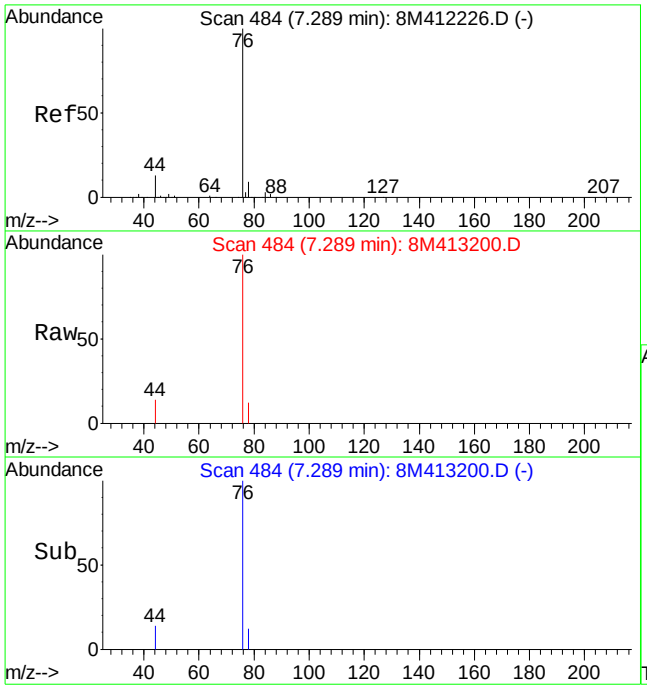

#20
Carbon Disulfide
Concen: 0.60 ug/L
RT: 7.29 min Scan# 484
Delta R.T. -0.00 min
Lab File: 8M413200.D
Acq: 24 Jun 2016 00:53

Tgt Ion: 76 Resp: 13455

Ion	Ratio	Lower	Upper
76	100		
78	8.3	5.6	13.0

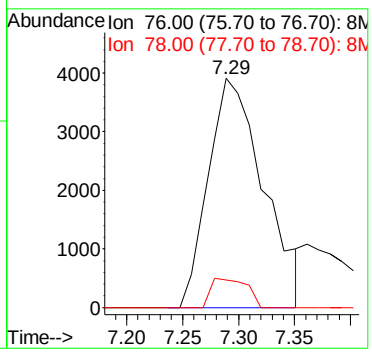

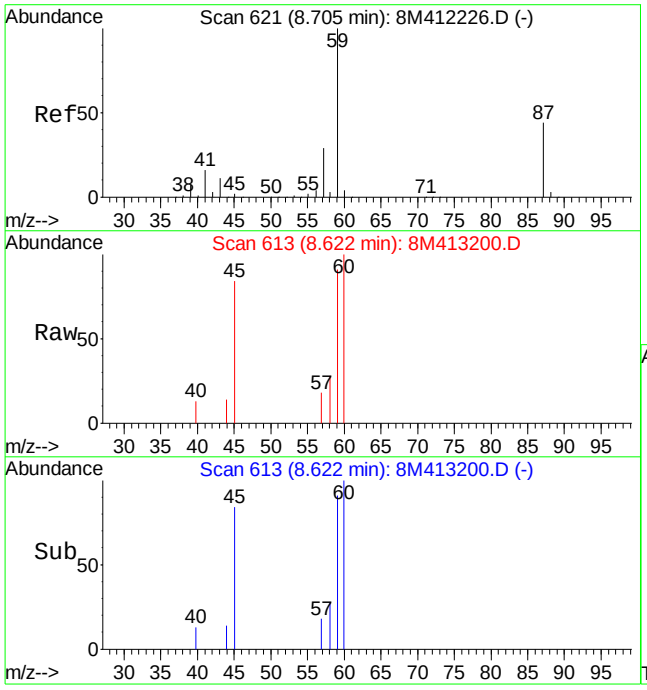

#28
Ethyl-Tert-Butyl ether
Concen: 0.33 ug/L
RT: 8.62 min Scan# 613
Delta R.T. -0.08 min
Lab File: 8M413200.D
Acq: 24 Jun 2016 00:53

Tgt Ion: 59 Resp: 5420

Ion	Ratio	Lower	Upper
59	100		
87	0.0	26.8	62.4#
57	13.9	17.4	40.6#

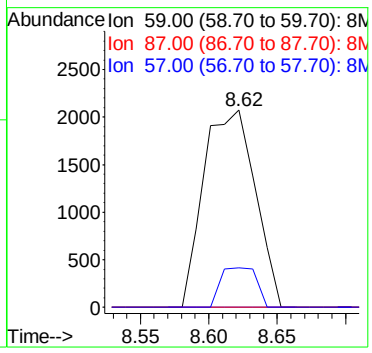

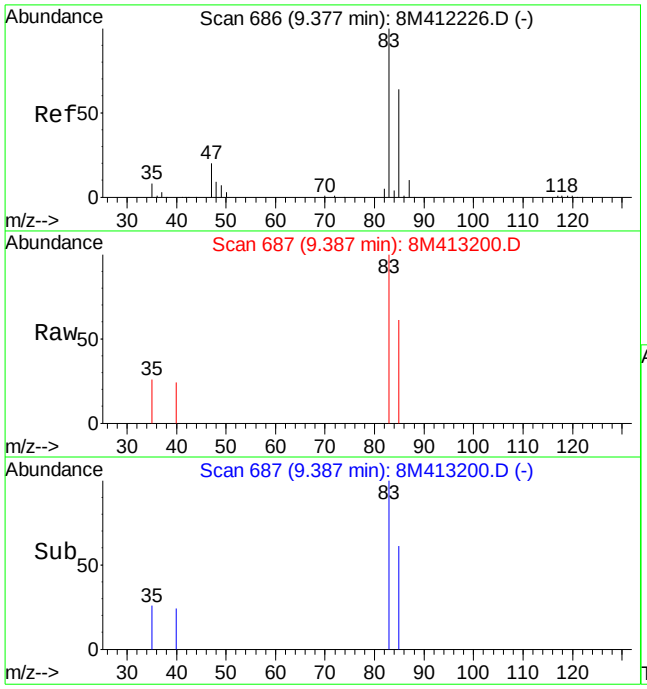

#33
Chloroform
Concen: 0.25 ug/L
RT: 9.39 min Scan# 687
Delta R.T. 0.01 min
Lab File: 8M413200.D
Acq: 24 Jun 2016 00:53

Tgt Ion: 83 Resp: 3618

Ion	Ratio	Lower	Upper
83	100		
85	54.3	37.5	87.5

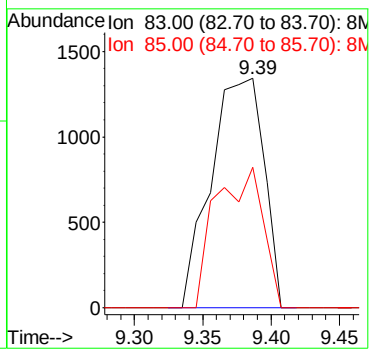

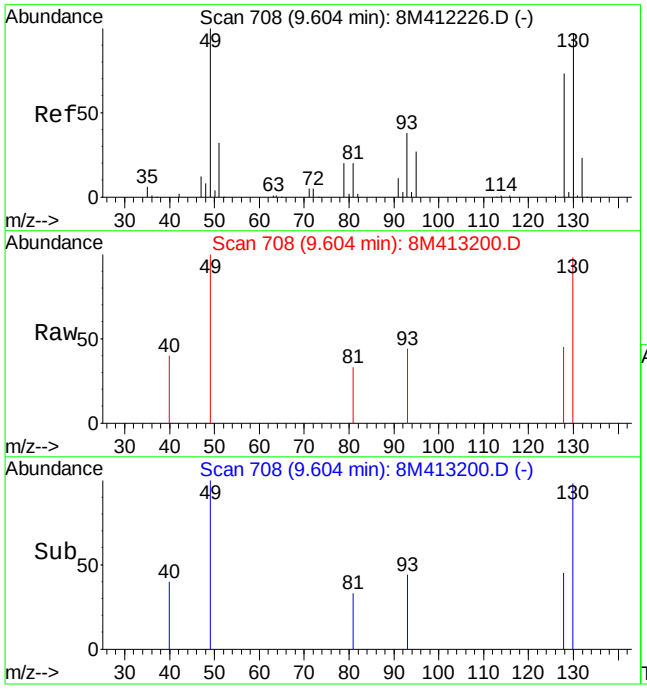

#35
Bromochloromethane
Concen: 0.39 ug/L
RT: 9.60 min Scan# 708
Delta R.T. -0.00 min
Lab File: 8M413200.D
Acq: 24 Jun 2016 00:53

Tgt Ion:130 Resp: 1515

Ion	Ratio	Lower	Upper
130	100		
128	72.5	46.1	107.5
49	97.8	63.3	147.7

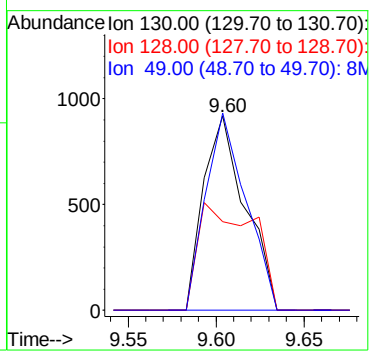

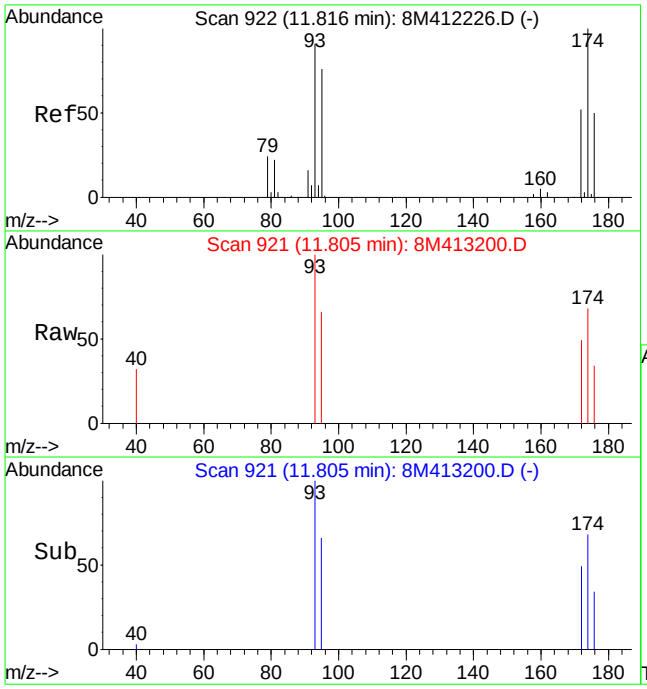

#52
Dibromomethane
Concen: 0.51 ug/L
RT: 11.81 min Scan# 921
Delta R.T. -0.01 min
Lab File: 8M413200.D
Acq: 24 Jun 2016 00:53

Tgt Ion: 93 Resp: 1819

Ion	Ratio	Lower	Upper
93	100		
95	78.0	49.7	116.1
174	78.7	62.3	145.3

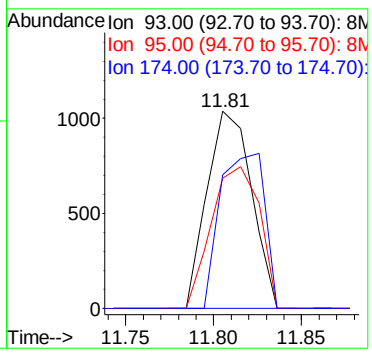

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062116\8M413145.D Vial: 22
Acq On : 22 Jun 2016 3:34 Operator: FJB
Sample : L16060927-04 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 22 03:56:14 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	676177	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	517764	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	289525	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	202889	27.9271 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.72%		
43) 1,2-Dichloroethane-d4	10.30	65	222170	28.5205 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 114.08%		
58) Toluene-d8	12.68	98	707274	26.1012 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.40%		
80) p-Bromofluorobenzene	16.08	95	299500	24.9825 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.92%		

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration
8M413145.D 8260WT.M Fri Jun 24 17:21:15 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062116\8M413145.D Vial: 22
Acq On : 22 Jun 2016 3:34 Operator: FJB
Sample : L16060927-04 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 22 3:56 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

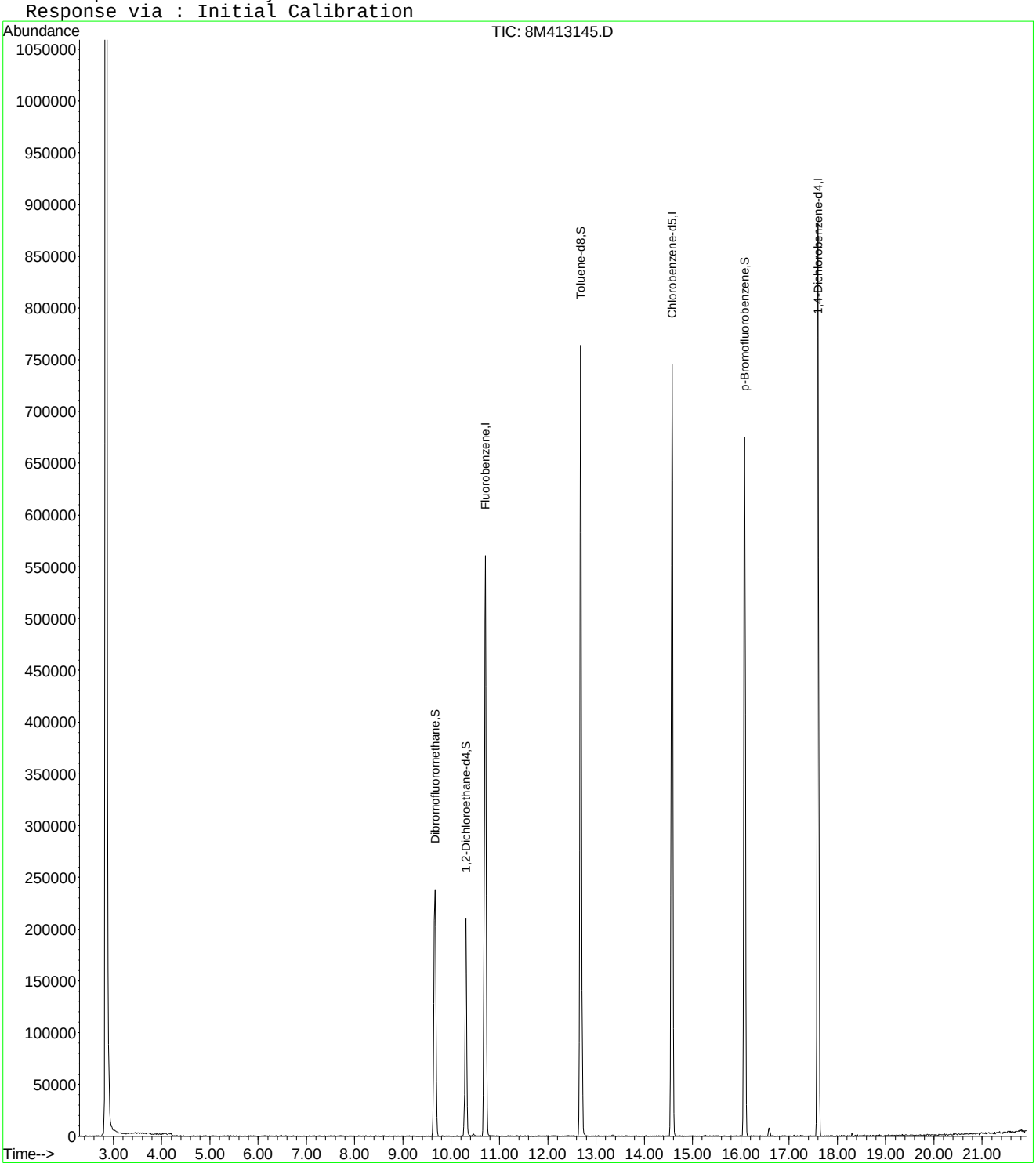

8M413145.D 8260WT.M Fri Jun 24 17:21:16 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062116\8M413135.D Vial: 12
Acq On : 21 Jun 2016 22:44 Operator: FJB
Sample : L16060927-05 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 21 23:06:49 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	753725	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	585008	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.59	152	324131	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	224626	27.7380 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.96%		
43) 1,2-Dichloroethane-d4	10.31	65	243766	28.0732 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.28%		
58) Toluene-d8	12.69	98	790206	25.8097 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.24%		
80) p-Bromofluorobenzene	16.07	95	337050	25.1130 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.44%		

Target Compounds					Qvalue
36) Tetrahydrofuran	9.63	42	1126	1.3722 ug/L #	52

(#) = qualifier out of range (m) = manual integration
8M413135.D 8260WT.M Fri Jun 24 17:20:31 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062116\8M413135.D Vial: 12
Acq On : 21 Jun 2016 22:44 Operator: FJB
Sample : L16060927-05 A 826-LOW Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 21 23:06 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

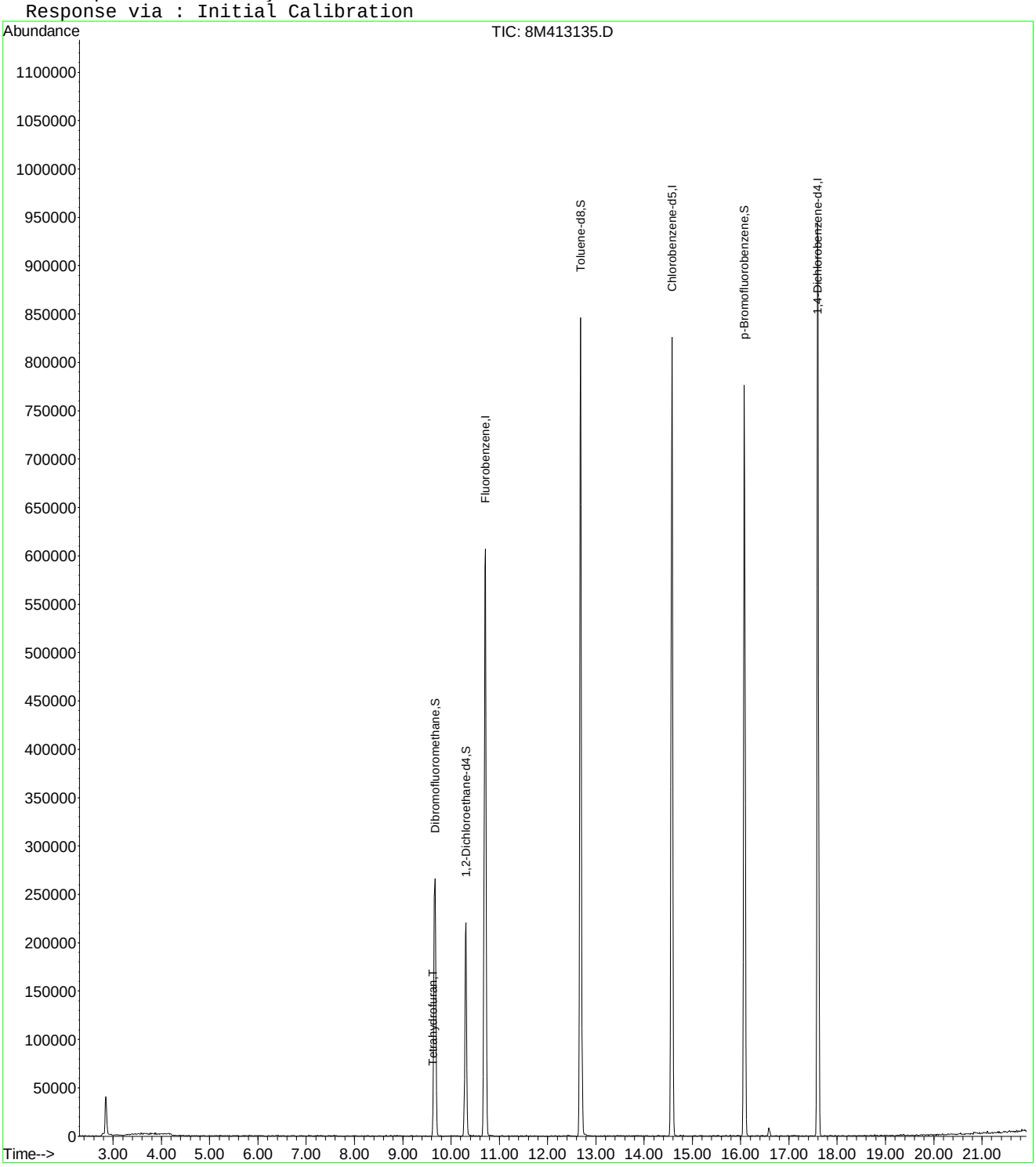

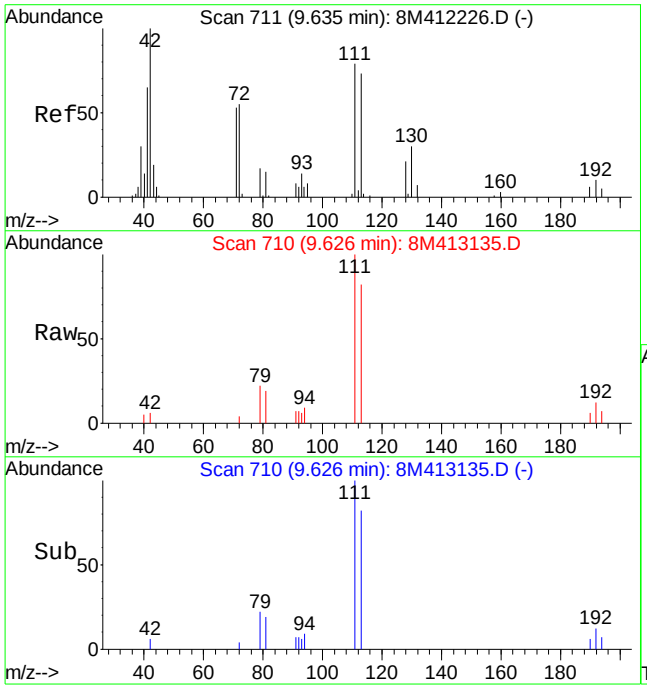

#36
Tetrahydrofuran
Concen: 1.37 ug/L
RT: 9.63 min Scan# 710
Delta R.T. -0.01 min
Lab File: 8M413135.D
Acq: 21 Jun 2016 22:44

Tgt Ion: 42 Resp: 1126

Ion	Ratio	Lower	Upper
42	100		
72	73.0	33.8	78.8
71	0.0	32.0	74.8#

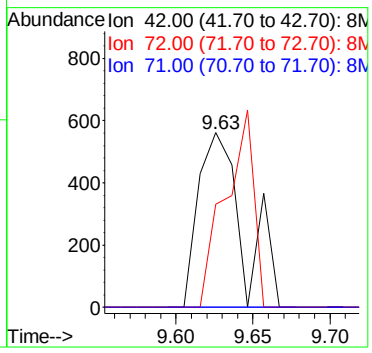

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:40:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	823748	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	571926	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	299321	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	12.68	98	567	0.0189 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.08%#	
80) p-Bromofluorobenzene	16.08	95	313	0.0253 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	3836	0.2778 ug/L	91
3) Chloromethane	3.62	50	3658	0.4537 ug/L	95
4) Vinyl Chloride	3.85	62	2516	0.2630 ug/L #	58
5) 1,3-Butadiene	3.91	54	2079	0.2592 ug/L	71
6) Bromomethane	4.73	94	1152	0.6530 ug/L #	55
7) Chloroethane	4.90	64	1112	0.2113 ug/L #	72
8) Trichlorofluoromethane	5.35	101	2706	0.1520 ug/L #	53
10) Isoprene	5.93	67	2147	0.1987 ug/L	85
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1746	0.2087 ug/L	97
14) 1,1-Dichloroethene	6.48	61	3332	0.2501 ug/L	75
16) Dimethyl Sulfide	6.73	62	1099	0.2308 ug/L	95
19) Methylene Chloride	7.26	84	3414	0.4028 ug/L	88
20) Carbon Disulfide	7.30	76	10739	0.3853 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	4927	0.2686 ug/L #	60
23) trans-1,2-Dichloroethene	7.70	61	3879	0.3170 ug/L	98
24) n-Hexane	7.78	57	2794	0.3075 ug/L	85
26) Vinyl Acetate	8.30	43	1973	0.2259 ug/L #	70
27) 1,1-Dichloroethane	8.33	63	4881	0.3212 ug/L #	88
31) 2,2-Dichloropropane	9.11	77	4966	0.3101 ug/L	89
32) cis-1,2-Dichloroethene	9.17	96	2958	0.3128 ug/L	87
33) Chloroform	9.37	83	5564	0.3101 ug/L	95
34) 1-Bromopropane	9.52	122	210	0.1551 ug/L #	1
35) Bromochloromethane	9.60	130	1386	0.2858 ug/L	76
36) Tetrahydrofuran	9.62	42	1849	2.0617 ug/L #	60
38) 1,1,1-Trichloroethane	9.91	97	4978	0.2921 ug/L	95
39) Cyclohexane	9.93	56	3120	0.2644 ug/L #	85
40) 1,1-Dichloropropene	10.11	75	3779	0.2909 ug/L	97
42) Carbon Tetrachloride	10.24	117	4835	0.3194 ug/L #	74
45) 1,2-Dichloroethane	10.43	62	3295	0.2853 ug/L #	81
46) Benzene	10.46	78	11279	0.3333 ug/L	93
47) Trichloroethene	11.20	130	2410	0.2670 ug/L	97
48) Methylcyclohexane	11.31	83	3936	0.2871 ug/L	84
49) 1,2-Dichloropropane	11.42	63	2136	0.2836 ug/L	88
50) Bromodichloromethane	11.73	83	3767	0.2845 ug/L #	91
52) Dibromomethane	11.82	93	700	0.1570 ug/L #	59
53) 2-Chloroethyl Vinyl Ether	12.02	63	847	0.2616 ug/L #	47
55) cis-1,3-Dichloropropene	12.36	75	4763	0.3535 ug/L	84
56) Dimethyl Disulfide	12.63	79	1647	0.2290 ug/L	82
59) Toluene	12.78	91	11513	0.3243 ug/L	92
60) Ethyl Methacrylate	12.89	69	1631	0.2392 ug/L #	64

(#) = qualifier out of range (m) = manual integration
8M412220.D 8260WT.M Tue May 17 11:40:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:40:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
62)	trans-1,3-Dichloropropene	12.96	75	3626	0.3047 ug/L		82
63)	1,1,2-Trichloroethane	13.18	97	1409	0.2515 ug/L		98
65)	1,3-Dichloropropane	13.49	76	2584	0.2590 ug/L		93
66)	Tetrachloroethene	13.61	164	2678	0.3520 ug/L	#	75
67)	Dibromochloromethane	13.87	129	2126	0.2599 ug/L		79
68)	1,2-Dibromoethane	14.12	107	1895	0.3394 ug/L		91
69)	1-Chlorohexane	14.21	91	3835	0.3164 ug/L		99
70)	Chlorobenzene	14.62	112	7968	0.3328 ug/L		88
71)	1,1,1,2-Tetrachloroethane	14.67	131	2872	0.3096 ug/L		87
72)	Ethylbenzene	14.64	106	3844	0.2934 ug/L		81
73)	m-,p-Xylene	14.75	106	10447	0.6799 ug/L		96
74)	o-Xylene	15.31	106	4577	0.3047 ug/L		97
75)	Styrene	15.35	104	7545	0.3062 ug/L		95
76)	Bromoform	15.84	173	1301	0.2681 ug/L	#	51
77)	Isopropylbenzene	15.74	105	13119	0.3287 ug/L		90
79)	1,1,2,2-Tetrachloroethane	15.96	83	1714	0.2853 ug/L	#	85
83)	n-Propylbenzene	16.24	91	15676	0.3357 ug/L		92
84)	Bromobenzene	16.38	156	2859	0.2977 ug/L		90
85)	1,3,5-Trimethylbenzene	16.43	105	10873	0.3196 ug/L		99
86)	2-Chlorotoluene	16.52	91	11133	0.3415 ug/L		96
87)	4-Chlorotoluene	16.56	91	10305	0.3499 ug/L		97
88)	a-Methylstyrene	16.83	118	4090	0.2534 ug/L		86
89)	tert-Butylbenzene	16.90	134	1734	0.2606 ug/L		72
90)	1,2,4-Trimethylbenzene	16.95	105	10734	0.3069 ug/L		89
91)	sec-Butylbenzene	17.16	105	13749	0.3436 ug/L		97
92)	p-Isopropyltoluene	17.32	119	10847	0.3192 ug/L		95
93)	1,3-Dichlorobenzene	17.52	146	6023	0.3257 ug/L		99
94)	1,4-Dichlorobenzene	17.65	146	6152	0.3299 ug/L	#	60
95)	n-Butylbenzene	17.85	91	11161	0.3323 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	5711	0.3472 ug/L		92
98)	1,2,4-Trichlorobenzene	20.29	180	4203	0.3418 ug/L		91
99)	Hexachlorobutadiene	20.43	225	1894	0.3297 ug/L		84
100)	Naphthalene	20.65	128	6039	0.3306 ug/L		91
101)	1,2,3-Trichlorobenzene	20.96	180	3279	0.3161 ug/L		86

(#) = qualifier out of range (m) = manual integration

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2778	0.0	100	0.00
3	P	Chloromethane	-1.0000	0.4537	0.0	100	0.00
4	C	Vinyl Chloride	-1.0000	0.2630	0.0	100	0.00
5	T	1,3-Butadiene	-1.0000	0.2592	0.0	100	0.03
6	T	Bromomethane	-1.0000	0.9911	0.0	100	0.00
7	T	Chloroethane	-1.0000	0.2113	0.0	100	0.00
8	T	Trichlorofluoromethane	-1.0000	0.1520	0.0	100	-0.02
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.90#
10	T	Isoprene	-1.0000	0.1987	0.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.13#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2087	0.0	100	0.00
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	-1.0000	0.2501	0.0	100	0.02
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.58#
16	T	Dimethyl Sulfide	-1.0000	0.2308	0.0	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.0000	0.0	0	-7.00#
19	T	Methylene Chloride	-1.0000	0.4028	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.3853	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.43#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2686	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	-1.0000	0.3170	0.0	100	0.00
24	T	n-Hexane	-1.0000	0.3075	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.2259	0.0	100	0.00
27	P	1,1-Dichloroethane	-1.0000	0.3212	0.0	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.98#
31	T	2,2-Dichloropropane	-1.0000	0.3101	0.0	100	0.00
32	T	cis-1,2-Dichloroethene	-1.0000	0.3128	0.0	100	0.00
33	C	Chloroform	0.3000	0.3101	-3.4	100	0.00
34		1-Bromopropane	-1.0000	0.1551	0.0	100	0.00
35	T	Bromochloromethane	-1.0000	0.2858	0.0	100	0.00
36	T	Tetrahydrofuran	-1.0000	2.0617	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	-1.0000	0.2921	0.0	100	0.00
39	T	Cyclohexane	-1.0000	0.2644	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.2909	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	-1.0000	0.3194	0.0	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	-1.0000	0.2853	0.0	100	0.00
46	T	Benzene	-1.0000	0.3333	0.0	100	0.00
47	T	Trichloroethene	-1.0000	0.2670	0.0	100	-0.01
48	T	Methylcyclohexane	-1.0000	0.2871	0.0	100	0.00
49	C	1,2-Dichloropropane	-1.0000	0.2836	0.0	100	0.00
50	T	Bromodichloromethane	-1.0000	0.2845	0.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	-1.0000	0.1570	0.0	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.2616	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.05#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412220.D Vial: 3
Acq On : 13 May 2016 13:29 Operator: TMB
Sample : WG568561-02 0.3ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	-1.0000	0.3535	0.0	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2290	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0189	0.0	100	0.00
59	C	Toluene	-1.0000	0.3243	0.0	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.2392	0.0	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3047	0.0	100	0.00
63	T	1,1,2-Trichloroethane	-1.0000	0.2515	0.0	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	-1.0000	0.2590	0.0	100	0.00
66	T	Tetrachloroethene	-1.0000	0.3520	0.0	100	0.00
67	T	Dibromochloromethane	-1.0000	0.2599	0.0	100	0.00
68	T	1,2-Dibromoethane	-1.0000	0.3394	0.0	100	0.00
69	T	1-Chlorohexane	-1.0000	0.3164	0.0	100	0.00
70	P	Chlorobenzene	-1.0000	0.3328	0.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	-1.0000	0.3096	0.0	100	0.00
72	C	Ethylbenzene	-1.0000	0.2934	0.0	100	-0.01
73	T	m-,p-Xylene	-1.0000	0.6799	0.0	100	0.00
74	T	o-Xylene	-1.0000	0.3047	0.0	100	0.00
75	T	Styrene	-1.0000	0.3062	0.0	100	0.00
76	P	Bromoform	-1.0000	0.2681	0.0	100	0.00
77	T	Isopropylbenzene	-1.0000	0.3287	0.0	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2853	0.0	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0253	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.1103	0.0	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	-1.0000	0.3357	0.0	100	0.00
84	T	Bromobenzene	0.3000	0.2977	0.8	100	0.00
85	T	1,3,5-Trimethylbenzene	-1.0000	0.3196	0.0	100	0.00
86	T	2-Chlorotoluene	-1.0000	0.3415	0.0	100	0.00
87	T	4-Chlorotoluene	-1.0000	0.3499	0.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.2534	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.2606	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	-1.0000	0.3069	0.0	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.3436	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.3192	0.0	100	0.00
93	T	1,3-Dichlorobenzene	-1.0000	0.3257	0.0	100	0.00
94	T	1,4-Dichlorobenzene	0.3000	0.3299	-10.0	100	0.00
95	T	n-Butylbenzene	-1.0000	0.3323	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.3000	0.3472	-15.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	-1.0000	0.3418	0.0	100	0.00
99	T	Hexachlorobutadiene	-1.0000	0.3297	0.0	100	0.00
100	T	Naphthalene	-1.0000	0.3306	0.0	100	0.00
101	T	1,2,3-Trichlorobenzene	0.3000	0.3161	-5.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412220.D 8260WT.M Sat May 14 18:03:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	801173	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	557498	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	293108	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery	= 0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery	= 0.00%#	
58) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery	= 0.00%#	
80) p-Bromofluorobenzene	16.08	95	343	0.0286 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery	= 0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	5478	0.3262 ug/L	79
3) Chloromethane	3.63	50	3930	0.2484 ug/L	85
4) Vinyl Chloride	3.84	62	3512	0.3288 ug/L	97
5) 1,3-Butadiene	3.90	54	2479	0.2375 ug/L #	75
6) Bromomethane	4.73	94	1343	0.9497 ug/L	85
7) Chloroethane	4.90	64	2219	0.3174 ug/L #	43
8) Trichlorofluoromethane	5.36	101	6974	0.3289 ug/L #	93
10) Isoprene	5.94	67	4288	0.3952 ug/L #	62
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	3168	0.3263 ug/L #	40
14) 1,1-Dichloroethene	6.47	61	5431	0.2882 ug/L	92
16) Dimethyl Sulfide	6.74	62	1708	0.2453 ug/L	64
19) Methylene Chloride	7.24	84	3785	0.4239 ug/L #	43
20) Carbon Disulfide	7.29	76	12437	0.4565 ug/L	97
22) Methyl Tert Butyl Ether	7.47	73	6580	0.3336 ug/L #	76
23) trans-1,2-Dichloroethene	7.71	61	4990	0.2928 ug/L	96
24) n-Hexane	7.79	57	3110	0.2011 ug/L	99
26) Vinyl Acetate	8.31	43	2753	0.1566 ug/L	100
27) 1,1-Dichloroethane	8.32	63	5655	0.2774 ug/L #	92
31) 2,2-Dichloropropane	9.10	77	6035	0.3360 ug/L	82
32) cis-1,2-Dichloroethene	9.16	96	3837	0.3762 ug/L	74
33) Chloroform	9.37	83	7267	0.3842 ug/L	100
34) 1-Bromopropane	9.50	122	234	0.1456 ug/L #	1
35) Bromochloromethane	9.60	130	1674	0.3137 ug/L	62
36) Tetrahydrofuran	9.62	42	447	0.2146 ug/L #	41
38) 1,1,1-Trichloroethane	9.91	97	6304	0.3305 ug/L	90
39) Cyclohexane	9.94	56	4658	0.2238 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	5172	0.3768 ug/L	80
42) Carbon Tetrachloride	10.25	117	5692	0.3172 ug/L	95
45) 1,2-Dichloroethane	10.43	62	4443	0.2796 ug/L #	63
46) Benzene	10.46	78	14456	0.4134 ug/L #	77
47) Trichloroethene	11.21	130	3659	0.3626 ug/L	98
48) Methylcyclohexane	11.29	83	5025	0.3562 ug/L	84
49) 1,2-Dichloropropane	11.42	63	3060	0.3007 ug/L	98
50) Bromodichloromethane	11.73	83	4734	0.3343 ug/L #	93
52) Dibromomethane	11.82	93	1805	0.3767 ug/L	84
55) cis-1,3-Dichloropropene	12.36	75	5008	0.3514 ug/L	90
56) Dimethyl Disulfide	12.63	79	1921	0.2573 ug/L	85
59) Toluene	12.78	91	14742	0.4416 ug/L	98
60) Ethyl Methacrylate	12.90	69	2062	0.3292 ug/L	66
62) trans-1,3-Dichloropropene	12.96	75	3693	0.3171 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
63)	1,1,2-Trichloroethane	13.18	97	2326	0.4391 ug/L		70
65)	1,3-Dichloropropane	13.49	76	3163	0.3219 ug/L		88
66)	Tetrachloroethene	13.61	164	3164	0.4185 ug/L		93
67)	Dibromochloromethane	13.87	129	3113	0.3727 ug/L		86
68)	1,2-Dibromoethane	14.12	107	2076	0.3760 ug/L		90
69)	1-Chlorohexane	14.21	91	4746	0.4174 ug/L		80
70)	Chlorobenzene	14.62	112	9180	0.3960 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.66	131	3501	0.3876 ug/L		95
72)	Ethylbenzene	14.65	106	5348	0.4066 ug/L		84
73)	m-,p-Xylene	14.75	106	13269	0.8757 ug/L		89
74)	o-Xylene	15.31	106	6019	0.3943 ug/L		97
75)	Styrene	15.35	104	9370	0.3849 ug/L		95
76)	Bromoform	15.83	173	1198	0.2500 ug/L	#	76
77)	Isopropylbenzene	15.73	105	16528	0.4270 ug/L		92
79)	1,1,2,2-Tetrachloroethane	15.96	83	1999	0.3419 ug/L	#	83
83)	n-Propylbenzene	16.25	91	19410	0.4297 ug/L		95
84)	Bromobenzene	16.37	156	3319	0.3524 ug/L		75
85)	1,3,5-Trimethylbenzene	16.42	105	13794	0.4127 ug/L		95
86)	2-Chlorotoluene	16.51	91	13678	0.4729 ug/L		90
87)	4-Chlorotoluene	16.56	91	12572	0.4219 ug/L		98
88)	a-Methylstyrene	16.84	118	5739	0.3485 ug/L		96
89)	tert-Butylbenzene	16.90	134	2254	0.3403 ug/L		55
90)	1,2,4-Trimethylbenzene	16.95	105	13859	0.4051 ug/L		90
91)	sec-Butylbenzene	17.17	105	17612	0.4382 ug/L		90
92)	p-Isopropyltoluene	17.32	119	13616	0.3968 ug/L		90
93)	1,3-Dichlorobenzene	17.52	146	6961	0.3724 ug/L		86
94)	1,4-Dichlorobenzene	17.64	146	7149	0.3832 ug/L	#	1
95)	n-Butylbenzene	17.85	91	15223	0.4664 ug/L		91
96)	1,2-Dichlorobenzene	18.14	146	6129	0.3742 ug/L		92
98)	1,2,4-Trichlorobenzene	20.28	180	5035	0.3969 ug/L		97
99)	Hexachlorobutadiene	20.44	225	2420	0.4122 ug/L		83
100)	Naphthalene	20.65	128	7474	0.3874 ug/L	#	84
101)	1,2,3-Trichlorobenzene	20.96	180	4378	0.4056 ug/L	#	78

(#) = qualifier out of range (m) = manual integration
8M412221.D 8260WT.M Fri May 13 14:20:39 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:20 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

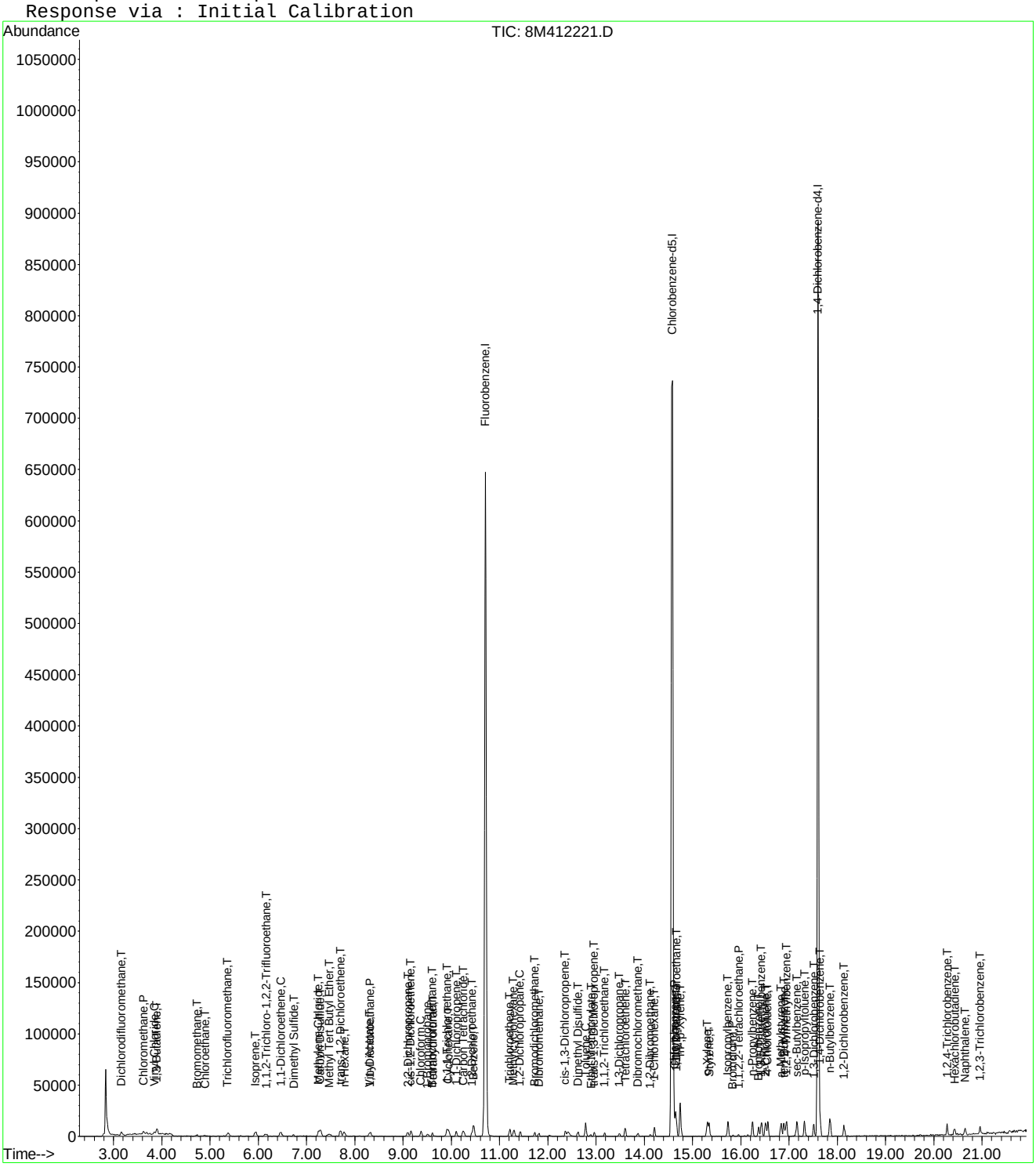

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	0.4000	0.4078	-2.0	100	0.00
3	P	Chloromethane	-1.0000	0.5012	0.0	100	0.00
4	C	Vinyl Chloride	0.4000	0.3775	5.6	100	0.00
5	T	1,3-Butadiene	-1.0000	0.3178	0.0	100	0.02
6	T	Bromomethane	-1.0000	1.0253	0.0	100	0.00
7	T	Chloroethane	0.4000	0.4335	-8.4	100	0.00
8	T	Trichlorofluoromethane	0.4000	0.4029	-0.7	100	-0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-5.90#
10	T	Isoprene	0.4000	0.4079	-2.0	100	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.13#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.3894	0.0	100	0.02
13	T	Acetone	-1.0000	0.0000	0.0	0	-6.25#
14	C	1,1-Dichloroethene	0.4000	0.4192	-4.8	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.58#
16	T	Dimethyl Sulfide	0.4000	0.3687	7.8	100	0.00
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.2179	0.0	100	0.00
19	T	Methylene Chloride	-1.0000	0.4591	0.0	100	0.00
20	T	Carbon Disulfide	-1.0000	0.4587	0.0	100	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.43#
22	T	Methyl Tert Butyl Ether	-1.0000	0.3688	0.0	100	0.00
23	T	trans-1,2-Dichloroethene	0.4000	0.4193	-4.8	100	0.00
24	T	n-Hexane	-1.0000	0.3519	0.0	100	0.00
25	T	Diisopropyl ether	-1.0000	0.0000	0.0	0	-8.13#
26	T	Vinyl Acetate	-1.0000	0.3241	0.0	100	0.02
27	P	1,1-Dichloroethane	0.4000	0.3826	4.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.71#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.88#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.98#
31	T	2,2-Dichloropropane	0.4000	0.3874	3.1	100	0.00
32	T	cis-1,2-Dichloroethene	0.4000	0.4172	-4.3	100	-0.01
33	C	Chloroform	0.4000	0.4164	-4.1	100	0.00
34		1-Bromopropane	-1.0000	0.1776	0.0	100	-0.01
35	T	Bromochloromethane	0.4000	0.3550	11.3	100	0.00
36	T	Tetrahydrofuran	-1.0000	0.5125	0.0	100	-0.01
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.67#
38	T	1,1,1-Trichloroethane	0.4000	0.3803	4.9	100	0.00
39	T	Cyclohexane	-1.0000	0.4058	0.0	100	0.00
40	T	1,1-Dichloropropene	-1.0000	0.4093	0.0	100	0.00
41	T	Tert-Amyl-Methyl ether	-1.0000	0.0000	0.0	0	-10.21#
42	T	Carbon Tetrachloride	0.4000	0.3867	3.3	100	0.00
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.31#
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	0.4000	0.3955	1.1	100	0.00
46	T	Benzene	0.4000	0.4393	-9.8	100	0.00
47	T	Trichloroethene	0.4000	0.4169	-4.2	100	0.00
48	T	Methylcyclohexane	-1.0000	0.3768	0.0	100	-0.01
49	C	1,2-Dichloropropane	0.4000	0.4177	-4.4	100	0.00
50	T	Bromodichloromethane	0.4000	0.3676	8.1	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	0.4000	0.4162	-4.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.1401	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-12.05#

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412221.D Vial: 4
Acq On : 13 May 2016 13:58 Operator: TMB
Sample : WG568561-03 0.4ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:03:01 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4000	0.3821	4.5	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.2746	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	-1.0000	0.0000	0.0	0	-12.68#
59	C	Toluene	0.4000	0.4259	-6.5	100	0.00
60	T	Ethyl Methacrylate	-1.0000	0.3102	0.0	100	0.02
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	-1.0000	0.3184	0.0	100	0.00
63	T	1,1,2-Trichloroethane	0.4000	0.4259	-6.5	100	0.00
64	T	2-Hexanone	-1.0000	0.0000	0.0	0	-13.12#
65	T	1,3-Dichloropropane	0.4000	0.3253	18.7	100	0.00
66	T	Tetrachloroethene	0.4000	0.4267	-6.7	100	0.00
67	T	Dibromochloromethane	0.4000	0.3904	2.4	100	0.00
68	T	1,2-Dibromoethane	0.4000	0.3814	4.6	100	0.00
69	T	1-Chlorohexane	0.4000	0.4017	-0.4	100	0.00
70	P	Chlorobenzene	0.4000	0.3933	1.7	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4000	0.3872	3.2	100	0.00
72	C	Ethylbenzene	0.4000	0.4188	-4.7	100	0.00
73	T	m-,p-Xylene	0.8000	0.8859	-10.7	100	0.00
74	T	o-Xylene	-1.0000	0.4110	0.0	100	0.00
75	T	Styrene	0.4000	0.3901	2.5	100	0.00
76	P	Bromoform	-1.0000	0.2533	0.0	100	0.00
77	T	Isopropylbenzene	0.4000	0.4249	-6.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	0.4000	0.3398	15.1	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.0283	0.0	100	0.00
81	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-16.14#
82	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-16.19#
83	T	n-Propylbenzene	0.4000	0.4245	-6.1	100	0.00
84	T	Bromobenzene	0.4000	0.3529	11.8	100	0.00
85	T	1,3,5-Trimethylbenzene	0.4000	0.4141	-3.5	100	0.00
86	T	2-Chlorotoluene	0.4000	0.4284	-7.1	100	0.00
87	T	4-Chlorotoluene	0.4000	0.4359	-9.0	100	0.00
88	T	a-Methylstyrene	-1.0000	0.3631	0.0	100	0.00
89	T	tert-Butylbenzene	-1.0000	0.3459	0.0	100	0.00
90	T	1,2,4-Trimethylbenzene	0.4000	0.4046	-1.2	100	0.00
91	T	sec-Butylbenzene	-1.0000	0.4494	0.0	100	0.00
92	T	p-Isopropyltoluene	-1.0000	0.4092	0.0	100	0.00
93	T	1,3-Dichlorobenzene	0.4000	0.3844	3.9	100	0.00
94	T	1,4-Dichlorobenzene	0.4000	0.3915	2.1	100	0.00
95	T	n-Butylbenzene	-1.0000	0.4628	0.0	100	0.00
96	T	1,2-Dichlorobenzene	0.4000	0.3805	4.9	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-19.13#
98	T	1,2,4-Trichlorobenzene	0.4000	0.4182	-4.5	100	0.00
99	T	Hexachlorobutadiene	0.4000	0.4302	-7.5	100	0.00
100	T	Naphthalene	0.4000	0.4178	-4.5	100	0.00
101	T	1,2,3-Trichlorobenzene	0.4000	0.4310	-7.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412221.D 8260WT.M Sat May 14 18:03:56 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	795577	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	547129	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	284579	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.65	111	3962	0.3966 ug/L	-0.02
Spiked Amount 25.000	Range 86 - 118		Recovery	= 1.60%#	
43) 1,2-Dichloroethane-d4	10.31	65	3835	0.3356 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery	= 1.36%#	
58) Toluene-d8	12.68	98	14023	0.4957 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery	= 2.00%#	
80) p-Bromofluorobenzene	16.08	95	6483	0.5565 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery	= 2.24%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	12402	0.7438 ug/L	97
3) Chloromethane	3.62	50	8415	0.5357 ug/L #	75
4) Vinyl Chloride	3.84	62	9412	0.8873 ug/L	89
5) 1,3-Butadiene	3.90	54	6974	0.6729 ug/L	81
6) Bromomethane	4.73	94	4114	1.3123 ug/L	92
7) Chloroethane	4.90	64	4983	0.7178 ug/L #	80
8) Trichlorofluoromethane	5.38	101	17133	0.8136 ug/L #	96
9) Diethyl ether	5.90	59	20707	3.2140 ug/L	84
10) Isoprene	5.94	67	11176	1.0373 ug/L	76
11) Acrolein	6.14	56	246	0.4300 ug/L #	15
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	8135	0.8438 ug/L	96
13) Acetone	6.24	43	413	0.2115 ug/L #	48
14) 1,1-Dichloroethene	6.46	61	12947	0.6919 ug/L	91
15) Tert-Butyl Alcohol	6.59	59	3316	7.3747 ug/L #	55
16) Dimethyl Sulfide	6.72	62	4505	0.6515 ug/L	79
18) Methyl acetate	7.00	43	2119	0.3630 ug/L #	66
19) Methylene Chloride	7.24	84	8723	0.9837 ug/L #	43
20) Carbon Disulfide	7.29	76	28246	1.0441 ug/L	100
21) Acrylonitrile	7.43	53	2164	0.8620 ug/L	76
22) Methyl Tert Butyl Ether	7.47	73	16998	0.8678 ug/L	84
23) trans-1,2-Dichloroethene	7.70	61	12571	0.7427 ug/L	100
24) n-Hexane	7.78	57	9382	0.6109 ug/L	82
25) Diisopropyl ether	8.12	45	95400	2.1939 ug/L #	91
26) Vinyl Acetate	8.30	43	6750	0.3867 ug/L #	89
27) 1,1-Dichloroethane	8.32	63	14721	0.7271 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	97972	3.2102 ug/L	88
29) 2-Butanone	8.88	43	380	0.1215 ug/L #	57
30) Propionitrile	8.99	54	1593	2.0138 ug/L #	56
31) 2,2-Dichloropropane	9.09	77	14691	0.8236 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	9482	0.9362 ug/L	72
33) Chloroform	9.37	83	18494	0.9845 ug/L	94
34) 1-Bromopropane	9.50	122	1092	0.6844 ug/L	80
35) Bromochloromethane	9.61	130	5234	0.9877 ug/L #	55
36) Tetrahydrofuran	9.63	42	5415	2.6185 ug/L #	68
38) 1,1,1-Trichloroethane	9.91	97	17074	0.9016 ug/L	92
39) Cyclohexane	9.94	56	11865	0.5740 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	13172	0.9663 ug/L	87
41) Tert-Amyl-Methyl ether	10.21	73	90255	4.6173 ug/L #	88
42) Carbon Tetrachloride	10.25	117	14515	0.8146 ug/L	95
45) 1,2-Dichloroethane	10.42	62	10675	0.6766 ug/L	85

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
46)	Benzene	10.47	78	34504	0.9938 ug/L		84
47)	Trichloroethene	11.21	130	8752	0.8735 ug/L		93
48)	Methylcyclohexane	11.30	83	13513	0.9646 ug/L		79
49)	1,2-Dichloropropane	11.43	63	7057	0.6982 ug/L	#	67
50)	Bromodichloromethane	11.73	83	12147	0.8638 ug/L		96
52)	Dibromomethane	11.81	93	4130	0.8681 ug/L		95
53)	2-Chloroethyl Vinyl Ether	12.03	63	2694	0.6366 ug/L		86
54)	4-Methyl-2-Pentanone	12.06	58	848	0.3671 ug/L	#	41
55)	cis-1,3-Dichloropropene	12.36	75	12521	0.8847 ug/L		97
56)	Dimethyl Disulfide	12.63	79	5799	0.7821 ug/L		96
59)	Toluene	12.79	91	37114	1.1328 ug/L		95
60)	Ethyl Methacrylate	12.88	69	5490	0.8930 ug/L		69
62)	trans-1,3-Dichloropropene	12.96	75	10328	0.9035 ug/L		92
63)	1,1,2-Trichloroethane	13.18	97	5274	1.0144 ug/L		93
64)	2-Hexanone	13.10	58	397	0.2127 ug/L	#	1
65)	1,3-Dichloropropane	13.49	76	9673	1.0032 ug/L		73
66)	Tetrachloroethene	13.61	164	7373	0.9937 ug/L		95
67)	Dibromochloromethane	13.87	129	7358	0.8977 ug/L		95
68)	1,2-Dibromoethane	14.13	107	5123	0.9454 ug/L		95
69)	1-Chlorohexane	14.21	91	12790	1.1461 ug/L		79
70)	Chlorobenzene	14.62	112	25662	1.1281 ug/L		89
71)	1,1,1,2-Tetrachloroethane	14.66	131	8722	0.9838 ug/L		94
72)	Ethylbenzene	14.65	106	13009	1.0078 ug/L		87
73)	m-,p-Xylene	14.75	106	30465	2.0486 ug/L		84
74)	o-Xylene	15.31	106	15133	1.0101 ug/L		84
75)	Styrene	15.35	104	23191	0.9707 ug/L		91
76)	Bromoform	15.84	173	3875	0.8240 ug/L		96
77)	Isopropylbenzene	15.74	105	41382	1.0895 ug/L		95
79)	1,1,2,2-Tetrachloroethane	15.95	83	5604	0.9873 ug/L	#	93
81)	1,2,3-Trichloropropane	16.15	110	1355	0.7428 ug/L	#	1
82)	trans-1,4-Dichloro-2-Buten	16.19	53	962	0.3479 ug/L	#	1
83)	n-Propylbenzene	16.25	91	48249	1.1002 ug/L		99
84)	Bromobenzene	16.37	156	9598	1.0497 ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	33355	1.0278 ug/L		96
86)	2-Chlorotoluene	16.51	91	33408	1.1895 ug/L		94
87)	4-Chlorotoluene	16.56	91	29548	1.0213 ug/L		95
88)	a-Methylstyrene	16.84	118	14414	0.9014 ug/L		91
89)	tert-Butylbenzene	16.89	134	6686	1.0398 ug/L		86
90)	1,2,4-Trimethylbenzene	16.95	105	36066	1.0857 ug/L		96
91)	sec-Butylbenzene	17.16	105	42128	1.0796 ug/L		96
92)	p-Isopropyltoluene	17.32	119	35424	1.0633 ug/L		94
93)	1,3-Dichlorobenzene	17.52	146	18409	1.0144 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	19031	1.0506 ug/L	#	62
95)	n-Butylbenzene	17.85	91	35772	1.1288 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	16104	1.0126 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.14	75	1262	1.0152 ug/L	#	53
98)	1,2,4-Trichlorobenzene	20.28	180	11494	0.9331 ug/L		98
99)	Hexachlorobutadiene	20.43	225	5421	0.9510 ug/L		98
100)	Naphthalene	20.65	128	16581	0.8853 ug/L		100
101)	1,2,3-Trichlorobenzene	20.96	180	10306	0.9835 ug/L		94

(#) = qualifier out of range (m) = manual integration
8M412222.D 8260WT.M Fri May 13 14:49:48 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 14:49 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

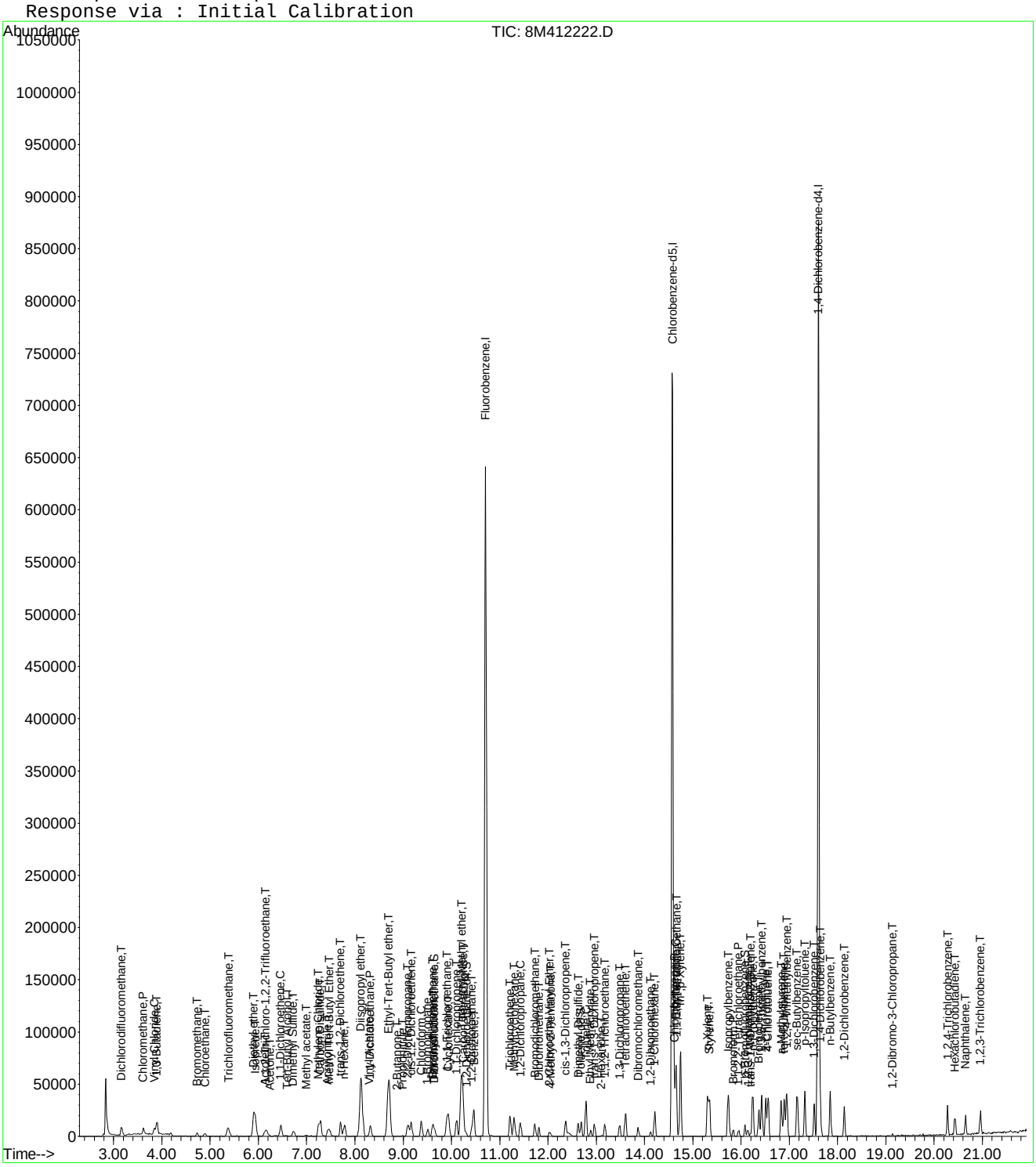

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:05:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.9298	7.0	100	0.00
3	P	Chloromethane	1.0000	1.0808	-8.1	100	0.00
4	C	Vinyl Chloride	1.0000	1.0189	-1.9	100	0.00
5	T	1,3-Butadiene	-1.0000	0.9002	0.0	100	0.02
6	T	Bromomethane	1.0000	1.2082	-20.8	100	0.00
7	T	Chloroethane	1.0000	0.9803	2.0	100	0.00
8	T	Trichlorofluoromethane	1.0000	0.9968	0.3	100	0.00
9	T	Diethyl ether	5.0000	5.0462	-0.9	100	0.00
10	T	Isoprene	1.0000	1.0707	-7.1	100	0.00
11	T	Acrolein	-1.0000	0.6696	0.0	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0069	-0.7	100	0.00
13	T	Acetone	-1.0000	0.4614	0.0	100	0.00
14	C	1,1-Dichloroethene	1.0000	1.0064	-0.6	100	0.00
15	T	Tert-Butyl Alcohol	-1.0000	11.5604	0.0	0	0.02
16	T	Dimethyl Sulfide	1.0000	0.9794	2.1	100	-0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-6.98#
18	T	Methyl acetate	-1.0000	0.8758	0.0	100	0.00
19	T	Methylene Chloride	1.0000	1.0655	-6.5	100	0.00
20	T	Carbon Disulfide	1.0000	1.0492	-4.9	100	0.00
21	T	Acrylonitrile	2.5000	1.8633	25.5#	100	0.00
22	T	Methyl Tert Butyl Ether	1.0000	0.9593	4.1	100	0.00
23	T	trans-1,2-Dichloroethene	1.0000	1.0636	-6.4	100	0.00
24	T	n-Hexane	-1.0000	1.0690	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	5.1784	-3.6	100	0.00
26	T	Vinyl Acetate	-1.0000	0.8002	0.0	100	0.00
27	P	1,1-Dichloroethane	1.0000	1.0029	-0.3	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.9635	0.7	100	0.00
29	T	2-Butanone	-1.0000	0.2889	0.0	100	0.00
30	T	Propionitrile	5.0000	4.1566	16.9	100	0.00
31	T	2,2-Dichloropropane	1.0000	0.9498	5.0	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	1.0383	-3.8	100	0.00
33	C	Chloroform	1.0000	1.0671	-6.7	100	0.00
34		1-Bromopropane	1.0000	0.8348	16.5	100	-0.01
35	T	Bromochloromethane	1.0000	1.1177	-11.8	100	0.00
36	T	Tetrahydrofuran	5.0000	6.2516	-25.0#	100	0.00
37	S	Dibromofluoromethane	0.5000	0.4635	7.3	100	-0.01
38	T	1,1,1-Trichloroethane	1.0000	1.0372	-3.7	100	0.00
39	T	Cyclohexane	1.0000	1.0411	-4.1	100	0.00
40	T	1,1-Dichloropropene	1.0000	1.0498	-5.0	100	0.00
41	T	Tert-Amyl-Methyl ether	5.0000	5.0344	-0.7	100	0.00
42	T	Carbon Tetrachloride	1.0000	0.9930	0.7	100	0.00
43	S	1,2-Dichloroethane-d4	0.5000	0.4184	16.3	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	1.0000	0.9570	4.3	100	0.00
46	T	Benzene	1.0000	1.0558	-5.6	100	0.00
47	T	Trichloroethene	1.0000	1.0041	-0.4	100	0.00
48	T	Methylcyclohexane	-1.0000	1.0205	0.0	100	0.00
49	C	1,2-Dichloropropane	1.0000	0.9700	3.0	100	0.00
50	T	Bromodichloromethane	1.0000	0.9500	5.0	100	0.00
51	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.71#
52	T	Dibromomethane	1.0000	0.9590	4.1	100	0.00
53	T	2-Chloroethyl Vinyl Ether	-1.0000	0.8616	0.0	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	0.6639	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412222.D Vial: 5
Acq On : 13 May 2016 14:27 Operator: TMB
Sample : WG568561-04 1ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:05:31 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	1.0000	0.9621	3.8	100	0.00
56	T	Dimethyl Disulfide	-1.0000	0.8348	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	0.5000	0.4897	2.1	100	0.00
59	C	Toluene	1.0000	1.0927	-9.3	100	0.00
60	T	Ethyl Methacrylate	1.0000	0.8416	15.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	1.0000	0.9073	9.3	100	0.00
63	T	1,1,2-Trichloroethane	1.0000	0.9840	1.6	100	0.00
64	T	2-Hexanone	-1.0000	0.3525	0.0	100	-0.01
65	T	1,3-Dichloropropane	1.0000	1.0137	-1.4	100	0.00
66	T	Tetrachloroethene	1.0000	1.0132	-1.3	100	0.00
67	T	Dibromochloromethane	1.0000	0.9402	6.0	100	0.00
68	T	1,2-Dibromoethane	1.0000	0.9590	4.1	100	0.00
69	T	1-Chlorohexane	1.0000	1.1031	-10.3	100	0.00
70	P	Chlorobenzene	1.0000	1.1204	-12.0	100	0.00
71	T	1,1,1,2-Tetrachloroethane	1.0000	0.9829	1.7	100	0.00
72	C	Ethylbenzene	1.0000	1.0381	-3.8	100	0.00
73	T	m-,p-Xylene	2.0000	2.0726	-3.6	100	0.00
74	T	o-Xylene	1.0000	1.0530	-5.3	100	0.00
75	T	Styrene	1.0000	0.9839	1.6	100	0.00
76	P	Bromoform	1.0000	0.8348	16.5	100	0.00
77	T	Isopropylbenzene	1.0000	1.0840	-8.4	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	1.0000	0.9810	1.9	100	0.00
80	S	p-Bromofluorobenzene	-1.0000	0.5502	0.0	100	0.00
81	T	1,2,3-Trichloropropane	1.0000	0.7703	23.0	100	0.02
82	T	trans-1,4-Dichloro-2-Butene	1.0000	1.1443	-14.4	100	0.00
83	T	n-Propylbenzene	1.0000	1.0868	-8.7	100	0.00
84	T	Bromobenzene	1.0000	1.0510	-5.1	100	0.00
85	T	1,3,5-Trimethylbenzene	1.0000	1.0314	-3.1	100	0.00
86	T	2-Chlorotoluene	1.0000	1.0778	-7.8	100	0.00
87	T	4-Chlorotoluene	1.0000	1.0553	-5.5	100	0.00
88	T	a-Methylstyrene	-1.0000	0.9394	0.0	100	0.00
89	T	tert-Butylbenzene	1.0000	1.0567	-5.7	100	0.00
90	T	1,2,4-Trimethylbenzene	1.0000	1.0845	-8.5	100	0.00
91	T	sec-Butylbenzene	1.0000	1.1073	-10.7	100	0.00
92	T	p-Isopropyltoluene	1.0000	1.0966	-9.7	100	0.00
93	T	1,3-Dichlorobenzene	1.0000	1.0469	-4.7	100	0.00
94	T	1,4-Dichlorobenzene	1.0000	1.0735	-7.3	100	0.00
95	T	n-Butylbenzene	1.0000	1.1201	-12.0	100	0.00
96	T	1,2-Dichlorobenzene	1.0000	1.0297	-3.0	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.1006	0.0	100	0.00
98	T	1,2,4-Trichlorobenzene	1.0000	0.9832	1.7	100	0.00
99	T	Hexachlorobutadiene	1.0000	0.9925	0.7	100	0.00
100	T	Naphthalene	1.0000	0.9547	4.5	100	0.00
101	T	1,2,3-Trichlorobenzene	1.0000	1.0450	-4.5	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Fluorobenzene	10.71	96	782460	25.00	ug/L	0.00
57) Chlorobenzene-d5	14.57	117	543252	25.00	ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	286450	25.00	ug/L	0.01

System Monitoring Compounds						
37) Dibromofluoromethane	9.66	111	8161	0.8307	ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.32%#		
43) 1,2-Dichloroethane-d4	10.30	65	9681	0.8613	ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.44%#		
58) Toluene-d8	12.68	98	28135	1.0016	ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	4.00%#		
80) p-Bromofluorobenzene	16.08	95	12079	1.0302	ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	4.12%#		

Target Compounds						Qvalue
2) Dichlorodifluoromethane	3.16	85	24870	1.5166	ug/L	98
3) Chloromethane	3.62	50	16106	1.0425	ug/L	93
4) Vinyl Chloride	3.85	62	18562	1.7792	ug/L	94
5) 1,3-Butadiene	3.90	54	13617	1.3360	ug/L	92
6) Bromomethane	4.73	94	8329	1.8804	ug/L	94
7) Chloroethane	4.90	64	9562	1.4006	ug/L	86
8) Trichlorofluoromethane	5.39	101	34970	1.6885	ug/L	97
9) Diethyl ether	5.90	59	107986	17.0420	ug/L	79
10) Isoprene	5.93	67	20936	1.9757	ug/L	73
11) Acrolein	6.14	56	4864	8.6444	ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.17	101	16832	1.7751	ug/L	99
13) Acetone	6.23	43	1519	0.7908	ug/L #	48
14) 1,1-Dichloroethene	6.47	61	25394	1.3798	ug/L	89
15) Tert-Butyl Alcohol	6.58	59	14891	33.6725	ug/L	85
16) Dimethyl Sulfide	6.73	62	9489	1.3953	ug/L	79
17) Iodomethane	6.98	142	1211	1.3472	ug/L #	60
18) Methyl acetate	7.01	43	5064	0.8821	ug/L #	79
19) Methylene Chloride	7.25	84	16579	1.9010	ug/L	52
20) Carbon Disulfide	7.29	76	57693	2.1683	ug/L	98
21) Acrylonitrile	7.43	53	13848	5.6089	ug/L	93
22) Methyl Tert Butyl Ether	7.47	73	33991	1.7644	ug/L	84
23) trans-1,2-Dichloroethene	7.70	61	22786	1.3688	ug/L	88
24) n-Hexane	7.79	57	18282	1.2105	ug/L	84
25) Diisopropyl ether	8.12	45	475271	11.1128	ug/L #	92
26) Vinyl Acetate	8.29	43	15998	0.9318	ug/L	93
27) 1,1-Dichloroethane	8.32	63	30419	1.5277	ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	505010	16.8250	ug/L	89
29) 2-Butanone	8.90	43	2250	0.7313	ug/L #	57
30) Propionitrile	8.99	54	9373	12.0479	ug/L	86
31) 2,2-Dichloropropane	9.10	77	32521	1.8538	ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	18238	1.8309	ug/L	91
33) Chloroform	9.37	83	33543	1.8156	ug/L	99
34) 1-Bromopropane	9.52	122	2513	1.6014	ug/L	88
35) Bromochloromethane	9.60	130	9189	1.7632	ug/L	67
36) Tetrahydrofuran	9.63	42	22074	10.8529	ug/L #	66
38) 1,1,1-Trichloroethane	9.90	97	32268	1.7324	ug/L	96
39) Cyclohexane	9.93	56	23097	1.1362	ug/L #	65
40) 1,1-Dichloropropene	10.10	75	24988	1.8639	ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	459535	23.9029	ug/L	87
42) Carbon Tetrachloride	10.24	117	28935	1.6512	ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412223.D 8260WT.M Fri May 13 15:18:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18:34 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.42	62	22142	1.4270 ug/L #	83
46)	Benzene	10.46	78	67028	1.9629 ug/L	83
47)	Trichloroethene	11.21	130	17287	1.7543 ug/L	96
48)	Methylcyclohexane	11.30	83	26050	1.8907 ug/L	84
49)	1,2-Dichloropropane	11.42	63	14582	1.4670 ug/L	77
50)	Bromodichloromethane	11.73	83	25794	1.8651 ug/L	93
51)	1,4-Dioxane	11.73	88	1282	32.3515 ug/L	74
52)	Dibromomethane	11.81	93	8575	1.8325 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.02	63	6234	1.4979 ug/L	100
54)	4-Methyl-2-Pentanone	12.06	58	2139	0.9416 ug/L	84
55)	cis-1,3-Dichloropropene	12.37	75	24153	1.7353 ug/L	98
56)	Dimethyl Disulfide	12.62	79	12288	1.6851 ug/L	99
59)	Toluene	12.79	91	72944	2.2423 ug/L	95
60)	Ethyl Methacrylate	12.88	69	12716	2.0832 ug/L	71
62)	trans-1,3-Dichloropropene	12.96	75	22163	1.9527 ug/L	100
63)	1,1,2-Trichloroethane	13.18	97	10537	2.0412 ug/L	99
64)	2-Hexanone	13.13	58	2200	1.1873 ug/L #	65
65)	1,3-Dichloropropane	13.49	76	20212	2.1112 ug/L	72
66)	Tetrachloroethene	13.60	164	14595	1.9811 ug/L	90
67)	Dibromochloromethane	13.87	129	14698	1.8061 ug/L	98
68)	1,2-Dibromoethane	14.12	107	10152	1.8869 ug/L	95
69)	1-Chlorohexane	14.21	91	21960	1.9818 ug/L	89
70)	Chlorobenzene	14.62	112	47376	2.0974 ug/L	81
71)	1,1,1,2-Tetrachloroethane	14.66	131	17526	1.9910 ug/L	97
72)	Ethylbenzene	14.66	106	25628	1.9996 ug/L	92
73)	m-,p-Xylene	14.74	106	60087	4.0693 ug/L	84
74)	o-Xylene	15.31	106	28289	1.9017 ug/L	79
75)	Styrene	15.35	104	47644	2.0086 ug/L	92
76)	Bromoform	15.84	173	9145	1.9585 ug/L	95
77)	Isopropylbenzene	15.73	105	81301	2.1557 ug/L	97
79)	1,1,2,2-Tetrachloroethane	15.95	83	11538	2.0194 ug/L	95
81)	1,2,3-Trichloropropane	16.13	110	3630	1.9770 ug/L	94
82)	trans-1,4-Dichloro-2-Buten	16.19	53	2699	0.9698 ug/L #	36
83)	n-Propylbenzene	16.24	91	97233	2.2026 ug/L	96
84)	Bromobenzene	16.37	156	19174	2.0834 ug/L	92
85)	1,3,5-Trimethylbenzene	16.42	105	67395	2.0631 ug/L	97
86)	2-Chlorotoluene	16.51	91	67110	2.3739 ug/L	94
87)	4-Chlorotoluene	16.56	91	59154	2.0313 ug/L	92
88)	a-Methylstyrene	16.84	118	29415	1.8275 ug/L	86
89)	tert-Butylbenzene	16.89	134	12716	1.9647 ug/L	67
90)	1,2,4-Trimethylbenzene	16.95	105	71669	2.1435 ug/L	94
91)	sec-Butylbenzene	17.17	105	81038	2.0632 ug/L	98
92)	p-Isopropyltoluene	17.32	119	70170	2.0924 ug/L	92
93)	1,3-Dichlorobenzene	17.52	146	37289	2.0413 ug/L	93
94)	1,4-Dichlorobenzene	17.64	146	36528	2.0034 ug/L #	73
95)	n-Butylbenzene	17.85	91	67823	2.1262 ug/L	96
96)	1,2-Dichlorobenzene	18.14	146	32322	2.0190 ug/L	92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	1955	1.5624 ug/L	94
98)	1,2,4-Trichlorobenzene	20.28	180	23558	1.9000 ug/L	98
99)	Hexachlorobutadiene	20.43	225	11066	1.9286 ug/L	99
100)	Naphthalene	20.65	128	36066	1.9130 ug/L	99
101)	1,2,3-Trichlorobenzene	20.96	180	19765	1.8738 ug/L	95

(#) = qualifier out of range (m) = manual integration
8M412223.D 8260WT.M Fri May 13 15:18:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:18 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

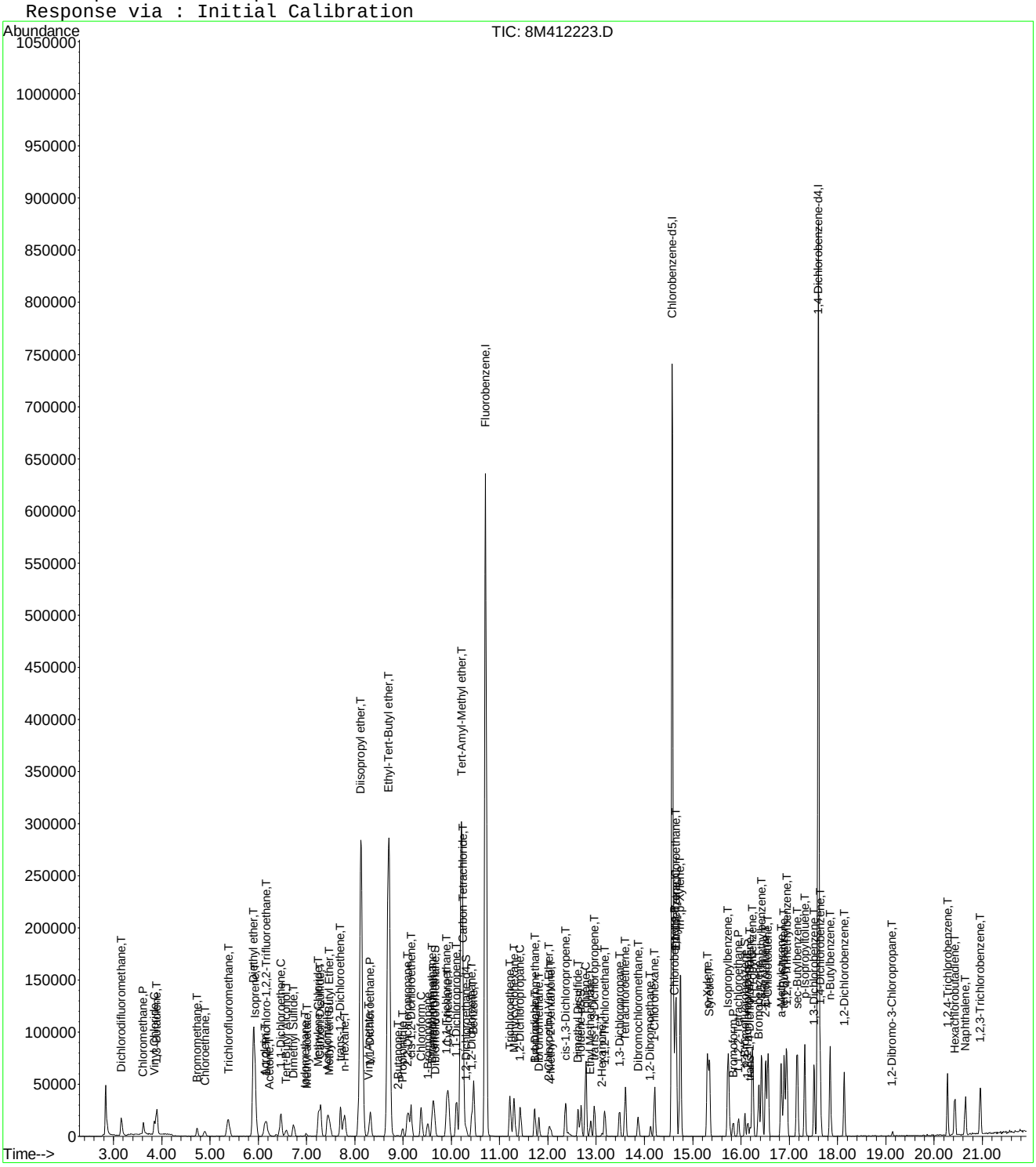

8M412223.D 8260WT.M Fri May 13 15:18:37 2016 Page 3

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.8958	5.2	100	0.00
3	P	Chloromethane	2.0000	2.1033	-5.2	100	0.00
4	C	Vinyl Chloride	2.0000	2.0431	-2.2	100	0.00
5	T	1,3-Butadiene	2.0000	1.7872	10.6	100	0.02
6	T	Bromomethane	2.0000	2.0126	-0.6	100	0.00
7	T	Chloroethane	2.0000	1.9127	4.4	100	0.00
8	T	Trichlorofluoromethane	2.0000	2.0686	-3.4	100	0.00
9	T	Diethyl ether	25.0000	26.7567	-7.0	100	0.00
10	T	Isoprene	2.0000	2.0394	-2.0	100	0.00
11	T	Acrolein	12.5000	13.4606	-7.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	2.1182	-5.9	100	0.02
13	T	Acetone	-1.0000	1.7255	0.0	100	-0.01
14	C	1,1-Dichloroethene	2.0000	2.0070	-0.4	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	52.7840	-5.6	100	0.00
16	T	Dimethyl Sulfide	2.0000	2.0975	-4.9	100	0.00
17	T	Iodomethane	2.0000	3.0680	-53.4#	100	0.00
18	T	Methyl acetate	-1.0000	2.1281	0.0	100	0.00
19	T	Methylene Chloride	2.0000	2.0590	-3.0	100	0.00
20	T	Carbon Disulfide	2.0000	2.1789	-8.9	100	0.00
21	T	Acrylonitrile	12.5000	12.1237	3.0	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.9505	2.5	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	1.9603	2.0	100	0.00
24	T	n-Hexane	-1.0000	2.1181	0.0	100	0.00
25	T	Diisopropyl ether	25.0000	26.2305	-4.9	100	0.00
26	T	Vinyl Acetate	2.0000	1.9284	3.6	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.1072	-5.4	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	26.0139	-4.1	100	0.00
29	T	2-Butanone	-1.0000	1.7396	0.0	100	0.02
30	T	Propionitrile	25.0000	24.8668	0.5	100	0.00
31	T	2,2-Dichloropropane	2.0000	2.1378	-6.9	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0306	-1.5	100	0.00
33	C	Chloroform	2.0000	1.9679	1.6	100	0.00
34		1-Bromopropane	2.0000	1.9533	2.3	100	0.00
35	T	Bromochloromethane	2.0000	1.9951	0.2	100	0.00
36	T	Tetrahydrofuran	25.0000	25.9117	-3.6	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9708	2.9	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	1.9930	0.3	100	0.00
39	T	Cyclohexane	2.0000	2.0605	-3.0	100	0.00
40	T	1,1-Dichloropropene	2.0000	2.0248	-1.2	100	0.00
41	T	Tert-Amyl-Methyl ether	25.0000	26.0627	-4.3	100	0.00
42	T	Carbon Tetrachloride	2.0000	2.0126	-0.6	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	1.0740	-7.4	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	2.0000	2.0183	-0.9	100	0.00
46	T	Benzene	2.0000	2.0854	-4.3	100	0.00
47	T	Trichloroethene	2.0000	2.0166	-0.8	100	0.00
48	T	Methylcyclohexane	-1.0000	2.0003	0.0	100	0.00
49	C	1,2-Dichloropropane	2.0000	2.0380	-1.9	100	0.00
50	T	Bromodichloromethane	2.0000	2.0511	-2.6	100	0.00
51	T	1,4-Dioxane	-1.0000	35.6688	0.0	100	0.02
52	T	Dibromomethane	2.0000	2.0246	-1.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	2.0000	2.0271	-1.4	100	0.00
54	T	4-Methyl-2-Pentanone	-1.0000	1.7027	0.0	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412223.D Vial: 6
Acq On : 13 May 2016 14:56 Operator: TMB
Sample : WG568561-05 2ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	2.0000	1.8869	5.7	100	0.00
56	T	Dimethyl Disulfide	-1.0000	1.7986	0.0	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	1.0000	0.9896	1.0	100	0.00
59	C	Toluene	2.0000	2.1628	-8.1	100	0.00
60	T	Ethyl Methacrylate	2.0000	1.9633	1.8	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	2.0000	1.9609	2.0	100	0.00
63	T	1,1,2-Trichloroethane	2.0000	1.9800	1.0	100	0.00
64	T	2-Hexanone	-1.0000	1.9672	0.0	100	0.00
65	T	1,3-Dichloropropane	2.0000	2.1332	-6.7	100	0.00
66	T	Tetrachloroethene	2.0000	2.0198	-1.0	100	0.00
67	T	Dibromochloromethane	2.0000	1.8915	5.4	100	0.00
68	T	1,2-Dibromoethane	2.0000	1.9141	4.3	100	0.00
69	T	1-Chlorohexane	2.0000	1.9075	4.6	100	0.00
70	P	Chlorobenzene	2.0000	2.0831	-4.2	100	0.00
71	T	1,1,1,2-Tetrachloroethane	2.0000	1.9892	0.5	100	0.00
72	C	Ethylbenzene	2.0000	2.0596	-3.0	100	0.00
73	T	m-,p-Xylene	4.0000	4.1170	-2.9	100	0.00
74	T	o-Xylene	2.0000	1.9825	0.9	100	0.00
75	T	Styrene	2.0000	2.0358	-1.8	100	0.00
76	P	Bromoform	2.0000	1.9841	0.8	100	0.00
77	T	Isopropylbenzene	2.0000	2.1448	-7.2	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	2.0000	2.0066	-0.3	100	0.00
80	S	p-Bromofluorobenzene	1.0000	1.0184	-1.8	100	0.00
81	T	1,2,3-Trichloropropane	2.0000	2.0501	-2.5	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	2.0000	2.0915	-4.6	100	0.00
83	T	n-Propylbenzene	2.0000	2.1757	-8.8	100	0.00
84	T	Bromobenzene	2.0000	2.0859	-4.3	100	0.00
85	T	1,3,5-Trimethylbenzene	2.0000	2.0703	-3.5	100	0.00
86	T	2-Chlorotoluene	2.0000	2.1509	-7.5	100	0.00
87	T	4-Chlorotoluene	2.0000	2.0989	-4.9	100	0.00
88	T	a-Methylstyrene	-1.0000	1.9045	0.0	100	0.00
89	T	tert-Butylbenzene	2.0000	1.9967	0.2	100	0.00
90	T	1,2,4-Trimethylbenzene	2.0000	2.1411	-7.1	100	0.00
91	T	sec-Butylbenzene	2.0000	2.1161	-5.8	100	0.00
92	T	p-Isopropyltoluene	2.0000	2.1579	-7.9	100	0.00
93	T	1,3-Dichlorobenzene	2.0000	2.1067	-5.3	100	0.00
94	T	1,4-Dichlorobenzene	2.0000	2.0470	-2.4	100	0.00
95	T	n-Butylbenzene	2.0000	2.1098	-5.5	100	0.00
96	T	1,2-Dichlorobenzene	2.0000	2.0532	-2.7	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	2.0000	1.6938	15.3	100	0.00
98	T	1,2,4-Trichlorobenzene	2.0000	2.0021	-0.1	100	0.00
99	T	Hexachlorobutadiene	2.0000	2.0128	-0.6	100	0.00
100	T	Naphthalene	2.0000	2.0630	-3.2	100	0.00
101	T	1,2,3-Trichlorobenzene	2.0000	1.9910	0.4	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	768397	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	534372	25.00 ug/L	0.01
78) 1,4-Dichlorobenzene-d4	17.60	152	274234	25.00 ug/L	0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	19775	2.0496 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	8.20%#	
43) 1,2-Dichloroethane-d4	10.30	65	21200	1.9207 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery =	7.68%#	
58) Toluene-d8	12.68	98	65647	2.3758 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery =	9.52%#	
80) p-Bromofluorobenzene	16.08	95	26759	2.3838 ug/L	0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	9.52%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	55961	3.4750 ug/L	99
3) Chloromethane	3.62	50	34194	2.2538 ug/L	100
4) Vinyl Chloride	3.84	62	42506	4.1488 ug/L	99
5) 1,3-Butadiene	3.89	54	32006	3.1976 ug/L	93
6) Bromomethane	4.72	94	19582	3.4204 ug/L	94
7) Chloroethane	4.90	64	22000	3.2814 ug/L	84
8) Trichlorofluoromethane	5.37	101	77715	3.8212 ug/L	96
9) Diethyl ether	5.90	59	188516	30.2955 ug/L	79
10) Isoprene	5.94	67	44975	4.3218 ug/L	78
11) Acrolein	6.15	56	7712	13.9568 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	36867	3.9591 ug/L	99
13) Acetone	6.24	43	3578	1.8967 ug/L	85
14) 1,1-Dichloroethene	6.47	61	59405	3.2870 ug/L	95
15) Tert-Butyl Alcohol	6.58	59	27833	64.0897 ug/L #	82
16) Dimethyl Sulfide	6.73	62	21102	3.1597 ug/L	77
17) Iodomethane	6.99	142	3667	1.8964 ug/L	95
18) Methyl acetate	7.00	43	11500	2.0398 ug/L #	86
19) Methylene Chloride	7.24	84	37533	4.3823 ug/L	52
20) Carbon Disulfide	7.29	76	123060	4.7097 ug/L	100
21) Acrylonitrile	7.43	53	25653	10.5804 ug/L	99
22) Methyl Tert Butyl Ether	7.47	73	80005	4.2289 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	54124	3.3108 ug/L	94
24) n-Hexane	7.78	57	40758	2.7480 ug/L	82
25) Diisopropyl ether	8.12	45	841400	20.0337 ug/L #	91
26) Vinyl Acetate	8.30	43	37284	2.2113 ug/L #	90
27) 1,1-Dichloroethane	8.32	63	66711	3.4116 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	907423	30.7852 ug/L	89
29) 2-Butanone	8.89	43	5359	1.7738 ug/L #	82
30) Propionitrile	8.99	54	17933	23.4726 ug/L	100
31) 2,2-Dichloropropane	9.10	77	73150	4.2462 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	41036	4.1950 ug/L	89
33) Chloroform	9.37	83	78227	4.3116 ug/L	99
34) 1-Bromopropane	9.52	122	6162	3.9986 ug/L	99
35) Bromochloromethane	9.60	130	20988	4.1009 ug/L #	62
36) Tetrahydrofuran	9.62	42	38098	19.0742 ug/L #	62
38) 1,1,1-Trichloroethane	9.91	97	76152	4.1633 ug/L	97
39) Cyclohexane	9.94	56	51439	2.5767 ug/L #	66
40) 1,1-Dichloropropene	10.11	75	56645	4.3027 ug/L	93
41) Tert-Amyl-Methyl ether	10.21	73	821180	43.4958 ug/L	87
42) Carbon Tetrachloride	10.25	117	67831	3.9416 ug/L	96

(#) = qualifier out of range (m) = manual integration
8M412224.D 8260WT.M Fri May 13 15:47:43 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	51708	3.3934 ug/L		85
46)	Benzene	10.46	78	150204	4.4792 ug/L		86
47)	Trichloroethene	11.21	130	38500	3.9784 ug/L		94
48)	Methylcyclohexane	11.30	83	60897	4.5008 ug/L		81
49)	1,2-Dichloropropane	11.43	63	31773	3.2549 ug/L		77
50)	Bromodichloromethane	11.73	83	59127	4.3535 ug/L		94
51)	1,4-Dioxane	11.71	88	2719	69.8702 ug/L	#	62
52)	Dibromomethane	11.81	93	19711	4.2894 ug/L		96
53)	2-Chloroethyl Vinyl Ether	12.03	63	12946	3.1676 ug/L		98
54)	4-Methyl-2-Pentanone	12.05	58	5129	2.2991 ug/L	#	78
55)	cis-1,3-Dichloropropene	12.36	75	61169	4.4752 ug/L		94
56)	Dimethyl Disulfide	12.62	79	27966	3.9053 ug/L		98
59)	Toluene	12.78	91	161007	5.0316 ug/L		97
60)	Ethyl Methacrylate	12.88	69	28595	4.7624 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	49791	4.4599 ug/L		97
63)	1,1,2-Trichloroethane	13.18	97	23678	4.6631 ug/L		99
64)	2-Hexanone	13.11	58	4499	2.4685 ug/L	#	97
65)	1,3-Dichloropropane	13.49	76	44838	4.7614 ug/L		73
66)	Tetrachloroethene	13.60	164	32715	4.5144 ug/L		97
67)	Dibromochloromethane	13.87	129	35009	4.3734 ug/L		98
68)	1,2-Dibromoethane	14.13	107	24247	4.5815 ug/L		99
69)	1-Chlorohexane	14.21	91	53599	4.9176 ug/L		84
70)	Chlorobenzene	14.62	112	107618	4.8437 ug/L		95
71)	1,1,1,2-Tetrachloroethane	14.65	131	38120	4.4025 ug/L		96
72)	Ethylbenzene	14.65	106	56905	4.5138 ug/L		91
73)	m-,p-Xylene	14.75	106	137390	9.4592 ug/L		86
74)	o-Xylene	15.31	106	65650	4.4866 ug/L		85
75)	Styrene	15.35	104	111433	4.7758 ug/L		91
76)	Bromoform	15.84	173	19346	4.2121 ug/L		97
77)	Isopropylbenzene	15.73	105	182523	4.9200 ug/L		96
79)	1,1,2,2-Tetrachloroethane	15.95	83	26655	4.8730 ug/L		99
81)	1,2,3-Trichloropropane	16.13	110	8840	5.0289 ug/L		81
82)	trans-1,4-Dichloro-2-Buten	16.19	53	6584	2.4712 ug/L	#	51
83)	n-Propylbenzene	16.24	91	222196	5.2576 ug/L		96
84)	Bromobenzene	16.37	156	42665	4.8423 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	155714	4.9790 ug/L		93
86)	2-Chlorotoluene	16.52	91	148764	5.4968 ug/L		94
87)	4-Chlorotoluene	16.56	91	135679	4.8666 ug/L		94
88)	a-Methylstyrene	16.84	118	68945	4.4743 ug/L		91
89)	tert-Butylbenzene	16.89	134	29069	4.6914 ug/L		77
90)	1,2,4-Trimethylbenzene	16.95	105	161016	5.0301 ug/L		94
91)	sec-Butylbenzene	17.17	105	191273	5.0866 ug/L		94
92)	p-Isopropyltoluene	17.32	119	159232	4.9597 ug/L		93
93)	1,3-Dichlorobenzene	17.52	146	83896	4.7972 ug/L		95
94)	1,4-Dichlorobenzene	17.64	146	82462	4.7242 ug/L		86
95)	n-Butylbenzene	17.85	91	158787	5.1996 ug/L		96
96)	1,2-Dichlorobenzene	18.14	146	72524	4.7321 ug/L		92
97)	1,2-Dibromo-3-Chloropropan	19.13	75	5629	4.6990 ug/L		76
98)	1,2,4-Trichlorobenzene	20.28	180	53855	4.5369 ug/L		98
99)	Hexachlorobutadiene	20.43	225	24504	4.4608 ug/L		93
100)	Naphthalene	20.65	128	79806	4.4217 ug/L		98
101)	1,2,3-Trichlorobenzene	20.96	180	44150	4.3720 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412224.D 8260WT.M Fri May 13 15:47:44 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 15:47 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Thu Apr 28 15:05:04 2016
Response via : Initial Calibration

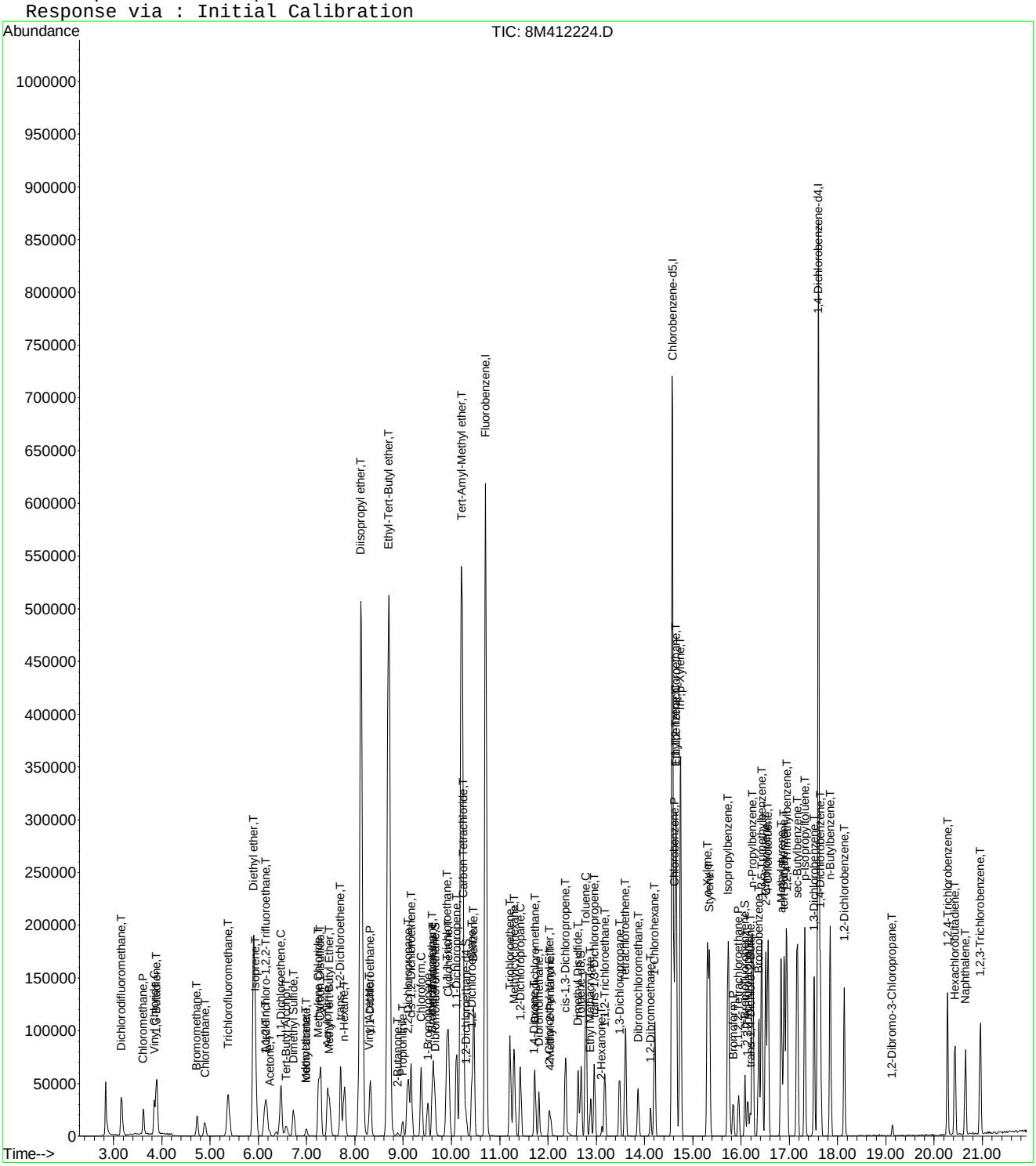

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.3438	13.1	100	0.00
3	P	Chloromethane	5.0000	4.5471	9.1	100	0.00
4	C	Vinyl Chloride	5.0000	4.7641	4.7	100	0.00
5	T	1,3-Butadiene	5.0000	4.2777	14.4	100	0.00
6	T	Bromomethane	5.0000	4.1880	16.2	100	-0.01
7	T	Chloroethane	5.0000	4.4813	10.4	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.6812	6.4	100	0.00
9	T	Diethyl ether	50.0000	47.5652	4.9	100	0.00
10	T	Isoprene	5.0000	4.4611	10.8	100	0.00
11	T	Acrolein	25.0000	21.7328	13.1	100	0.02
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.7244	5.5	100	0.00
13	T	Acetone	5.0000	4.1387	17.2	100	0.00
14	C	1,1-Dichloroethene	5.0000	4.7810	4.4	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	100.4650	-0.5	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.7499	5.0	100	0.00
17	T	Iodomethane	5.0000	3.7634	24.7	100	0.00
18	T	Methyl acetate	5.0000	4.9211	1.6	100	0.00
19	T	Methylene Chloride	5.0000	4.7467	5.1	100	0.00
20	T	Carbon Disulfide	5.0000	4.7328	5.3	100	0.00
21	T	Acrylonitrile	25.0000	22.8698	8.5	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.6750	6.5	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.7415	5.2	100	0.00
24	T	n-Hexane	5.0000	4.8084	3.8	100	0.00
25	T	Diisopropyl ether	50.0000	47.2872	5.4	100	0.00
26	T	Vinyl Acetate	5.0000	4.5766	8.5	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.7058	5.9	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	47.5984	4.8	100	0.00
29	T	2-Butanone	5.0000	4.2191	15.6	100	0.00
30	T	Propionitrile	50.0000	48.4475	3.1	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.8965	2.1	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.6525	7.0	100	0.00
33	C	Chloroform	5.0000	4.6735	6.5	100	0.00
34		1-Bromopropane	5.0000	4.8774	2.5	100	0.00
35	T	Bromochloromethane	5.0000	4.6403	7.2	100	0.00
36	T	Tetrahydrofuran	50.0000	45.5400	8.9	100	-0.01
37	S	Dibromofluoromethane	2.5000	2.3953	4.2	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.7896	4.2	100	0.00
39	T	Cyclohexane	5.0000	4.6730	6.5	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.6741	6.5	100	0.00
41	T	Tert-Amyl-Methyl ether	50.0000	47.6211	4.8	100	0.00
42	T	Carbon Tetrachloride	5.0000	4.8044	3.9	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.3949	4.2	100	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	5.0000	4.7996	4.0	100	0.00
46	T	Benzene	5.0000	4.7588	4.8	100	0.00
47	T	Trichloroethene	5.0000	4.5733	8.5	100	0.00
48	T	Methylcyclohexane	5.0000	4.7616	4.8	100	0.00
49	C	1,2-Dichloropropane	5.0000	4.5219	9.6	100	0.00
50	T	Bromodichloromethane	5.0000	4.7878	4.2	100	0.00
51	T	1,4-Dioxane	100.0000	77.0346	23.0	100	0.00
52	T	Dibromomethane	5.0000	4.7390	5.2	100	0.00
53	T	2-Chloroethyl Vinyl Ether	5.0000	4.2867	14.3	100	0.00
54	T	4-Methyl-2-Pentanone	5.0000	4.1576	16.8	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412224.D Vial: 7
Acq On : 13 May 2016 15:25 Operator: TMB
Sample : WG568561-06 5ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	5.0000	4.8662	2.7	100	0.00
56	T	Dimethyl Disulfide	5.0000	4.1683	16.6	100	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
58	S	Toluene-d8	2.5000	2.3473	6.1	100	0.00
59	C	Toluene	5.0000	4.8533	2.9	100	0.00
60	T	Ethyl Methacrylate	5.0000	4.4883	10.2	100	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	5.0000	4.4786	10.4	100	0.00
63	T	1,1,2-Trichloroethane	5.0000	4.5231	9.5	100	0.00
64	T	2-Hexanone	5.0000	4.0898	18.2	100	0.00
65	T	1,3-Dichloropropane	5.0000	4.8109	3.8	100	0.00
66	T	Tetrachloroethene	5.0000	4.6028	7.9	100	0.00
67	T	Dibromochloromethane	5.0000	4.5802	8.4	100	0.00
68	T	1,2-Dibromoethane	5.0000	4.6475	7.1	100	0.00
69	T	1-Chlorohexane	5.0000	4.7331	5.3	100	0.00
70	P	Chlorobenzene	5.0000	4.8107	3.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	5.0000	4.3984	12.0	100	0.00
72	C	Ethylbenzene	5.0000	4.6492	7.0	100	0.00
73	T	m-,p-Xylene	10.0000	9.5700	4.3	100	0.00
74	T	o-Xylene	5.0000	4.6773	6.5	100	0.00
75	T	Styrene	5.0000	4.8405	3.2	100	0.00
76	P	Bromoform	5.0000	4.2672	14.7	100	0.00
77	T	Isopropylbenzene	5.0000	4.8951	2.1	100	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
79	P	1,1,2,2-Tetrachloroethane	5.0000	4.8422	3.2	100	0.00
80	S	p-Bromofluorobenzene	2.5000	2.3565	5.7	100	0.00
81	T	1,2,3-Trichloropropane	5.0000	5.2150	-4.3	100	0.00
82	T	trans-1,4-Dichloro-2-Butene	5.0000	4.3781	12.4	100	0.00
83	T	n-Propylbenzene	5.0000	5.1935	-3.9	100	0.00
84	T	Bromobenzene	5.0000	4.8483	3.0	100	0.00
85	T	1,3,5-Trimethylbenzene	5.0000	4.9964	0.1	100	0.00
86	T	2-Chlorotoluene	5.0000	4.9803	0.4	100	0.00
87	T	4-Chlorotoluene	5.0000	5.0286	-0.6	100	0.00
88	T	a-Methylstyrene	5.0000	4.6629	6.7	100	0.00
89	T	tert-Butylbenzene	5.0000	4.7677	4.6	100	0.00
90	T	1,2,4-Trimethylbenzene	5.0000	5.0245	-0.5	100	0.00
91	T	sec-Butylbenzene	5.0000	5.2170	-4.3	100	0.00
92	T	p-Isopropyltoluene	5.0000	5.1150	-2.3	100	0.00
93	T	1,3-Dichlorobenzene	5.0000	4.9511	1.0	100	0.00
94	T	1,4-Dichlorobenzene	5.0000	4.8270	3.5	100	0.00
95	T	n-Butylbenzene	5.0000	5.1595	-3.2	100	0.00
96	T	1,2-Dichlorobenzene	5.0000	4.8122	3.8	100	0.00
97	T	1,2-Dibromo-3-Chloropropane	5.0000	5.0942	-1.9	100	0.00
98	T	1,2,4-Trichlorobenzene	5.0000	4.7808	4.4	100	0.00
99	T	Hexachlorobutadiene	5.0000	4.6555	6.9	100	0.00
100	T	Naphthalene	5.0000	4.7684	4.6	100	0.00
101	T	1,2,3-Trichlorobenzene	5.0000	4.6455	7.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412224.D 8260WT.M Sat May 14 18:08:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	770027	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	531490	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	283594	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	86295	10.9569 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 43.84%#		
43) 1,2-Dichloroethane-d4	10.30	65	96239	11.3450 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 45.36%#		
58) Toluene-d8	12.68	98	294491	10.9223 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 43.68%#		
80) p-Bromofluorobenzene	16.08	95	121459	10.5490 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 42.20%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	288235	23.7135 ug/L	99
3) Chloromethane	3.62	50	155712	20.3784 ug/L	98
4) Vinyl Chloride	3.84	62	184250	20.9368 ug/L	95
5) 1,3-Butadiene	3.89	54	149348	22.7750 ug/L	96
6) Bromomethane	4.73	94	100098	25.0143 ug/L	99
7) Chloroethane	4.89	64	100876	20.9404 ug/L	91
8) Trichlorofluoromethane	5.37	101	351299	21.2512 ug/L	98
9) Diethyl ether	5.90	59	324317	80.8265 ug/L	78
10) Isoprene	5.94	67	205842	20.3622 ug/L	77
11) Acrolein	6.14	56	12049	34.8201 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	159996	20.3859 ug/L	97
13) Acetone	6.25	43	18459	25.7405 ug/L	98
14) 1,1-Dichloroethene	6.47	61	256241	20.5065 ug/L	92
15) Tert-Butyl Alcohol	6.57	59	43922	153.5712 ug/L	93
16) Dimethyl Sulfide	6.73	62	89456	20.6087 ug/L	83
17) Iodomethane	6.99	142	40622	61.0474 ug/L	93
18) Methyl acetate	7.00	43	46598	20.2171 ug/L #	85
19) Methylene Chloride	7.25	84	161897	20.1338 ug/L	52
20) Carbon Disulfide	7.30	76	538090	20.0802 ug/L	98
21) Acrylonitrile	7.43	53	46305	46.9889 ug/L	100
22) Methyl Tert Butyl Ether	7.47	73	361116	22.0137 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	234754	20.3175 ug/L	90
24) n-Hexane	7.78	57	172498	21.1165 ug/L	84
25) Diisopropyl ether	8.12	45	1447822	80.3755 ug/L #	91
26) Vinyl Acetate	8.30	43	166501	21.7017 ug/L #	88
27) 1,1-Dichloroethane	8.33	63	300321	21.3849 ug/L	97
28) Ethyl-Tert-Butyl ether	8.70	59	1579265	83.0733 ug/L	89
29) 2-Butanone	8.88	43	25681	23.9099 ug/L	87
30) Propionitrile	8.98	54	30953	89.5673 ug/L	94
31) 2,2-Dichloropropane	9.10	77	309575	20.8527 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	181973	20.4488 ug/L	89
33) Chloroform	9.37	83	348925	20.5535 ug/L	96
34) 1-Bromopropane	9.52	122	26723	22.7206 ug/L	96
35) Bromochloromethane	9.61	130	94952	21.3181 ug/L	65
36) Tetrahydrofuran	9.63	42	63066	70.5772 ug/L #	57
38) 1,1,1-Trichloroethane	9.91	97	335486	21.3640 ug/L	99
39) Cyclohexane	9.94	56	221040	19.9984 ug/L #	64
40) 1,1-Dichloropropene	10.11	75	248373	20.4717 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1418183	81.7883 ug/L	88
42) Carbon Tetrachloride	10.25	117	296471	21.3449 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M412225.D 8260WT.M Fri May 13 16:16:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.43	62	228665	21.6403	ug/L		85
46)	Benzene	10.46	78	668449	20.3769	ug/L		86
47)	Trichloroethene	11.21	130	174107	20.7980	ug/L		96
48)	Methylcyclohexane	11.29	83	262275	21.4887	ug/L		82
49)	1,2-Dichloropropane	11.43	63	146868	21.1883	ug/L	#	72
50)	Bromodichloromethane	11.73	83	262192	21.9986	ug/L		98
51)	1,4-Dioxane	11.71	88	5351	196.3837	ug/L		76
52)	Dibromomethane	11.81	93	86951	21.0734	ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.03	63	63586	22.4600	ug/L		91
54)	4-Methyl-2-Pentanone	12.05	58	25754	25.0531	ug/L	#	73
55)	cis-1,3-Dichloropropene	12.36	75	265439	21.9841	ug/L		99
56)	Dimethyl Disulfide	12.63	79	134192	23.9412	ug/L		100
59)	Toluene	12.78	91	700473	20.1722	ug/L		99
60)	Ethyl Methacrylate	12.88	69	133361	23.2046	ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	238585	23.2548	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	107901	21.0216	ug/L		99
64)	2-Hexanone	13.11	58	22561	25.2093	ug/L	#	85
65)	1,3-Dichloropropane	13.49	76	198804	22.2491	ug/L		74
66)	Tetrachloroethene	13.60	164	141791	20.0055	ug/L		94
67)	Dibromochloromethane	13.87	129	158465	22.0695	ug/L		99
68)	1,2-Dibromoethane	14.13	107	110085	22.3366	ug/L		100
69)	1-Chlorohexane	14.21	91	229753	20.3591	ug/L		83
70)	Chlorobenzene	14.62	112	467492	20.4613	ug/L		97
71)	1,1,1,2-Tetrachloroethane	14.65	131	183079	22.2095	ug/L		96
72)	Ethylbenzene	14.65	106	249016	20.2289	ug/L		90
73)	m-,p-Xylene	14.75	106	606381	41.1308	ug/L		88
74)	o-Xylene	15.30	106	294106	21.2106	ug/L		90
75)	Styrene	15.35	104	492781	21.8207	ug/L		89
76)	Bromoform	15.83	173	95911	23.8070	ug/L		99
77)	Isopropylbenzene	15.73	105	806678	20.7280	ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	123253	22.7779	ug/L		95
81)	1,2,3-Trichloropropane	16.14	110	36712	22.1354	ug/L		94
82)	trans-1,4-Dichloro-2-Buten	16.18	53	33702	27.6513	ug/L	#	56
83)	n-Propylbenzene	16.24	91	962196	20.3511	ug/L		97
84)	Bromobenzene	16.37	156	190566	21.2033	ug/L		94
85)	1,3,5-Trimethylbenzene	16.43	105	692633	20.9615	ug/L		94
86)	2-Chlorotoluene	16.51	91	649077	19.9155	ug/L		96
87)	4-Chlorotoluene	16.56	91	595446	20.3225	ug/L		95
88)	a-Methylstyrene	16.83	118	318960	22.3680	ug/L		92
89)	tert-Butylbenzene	16.90	134	129440	20.4705	ug/L		83
90)	1,2,4-Trimethylbenzene	16.95	105	707749	20.4783	ug/L		94
91)	sec-Butylbenzene	17.17	105	818359	20.1802	ug/L		97
92)	p-Isopropyltoluene	17.32	119	677859	19.7492	ug/L		96
93)	1,3-Dichlorobenzene	17.52	146	364065	20.5126	ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	363066	19.9874	ug/L		92
95)	n-Butylbenzene	17.85	91	681055	20.0187	ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	318612	19.9358	ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	23070	21.6419	ug/L		93
98)	1,2,4-Trichlorobenzene	20.28	180	242455	20.8863	ug/L		98
99)	Hexachlorobutadiene	20.43	225	110384	20.2523	ug/L		96
100)	Naphthalene	20.65	128	369849	21.4526	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	198876	19.8356	ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412225.D Vial: 8
Acq On : 13 May 2016 15:54 Operator: TMB
Sample : WG568561-07 20ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:16 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration

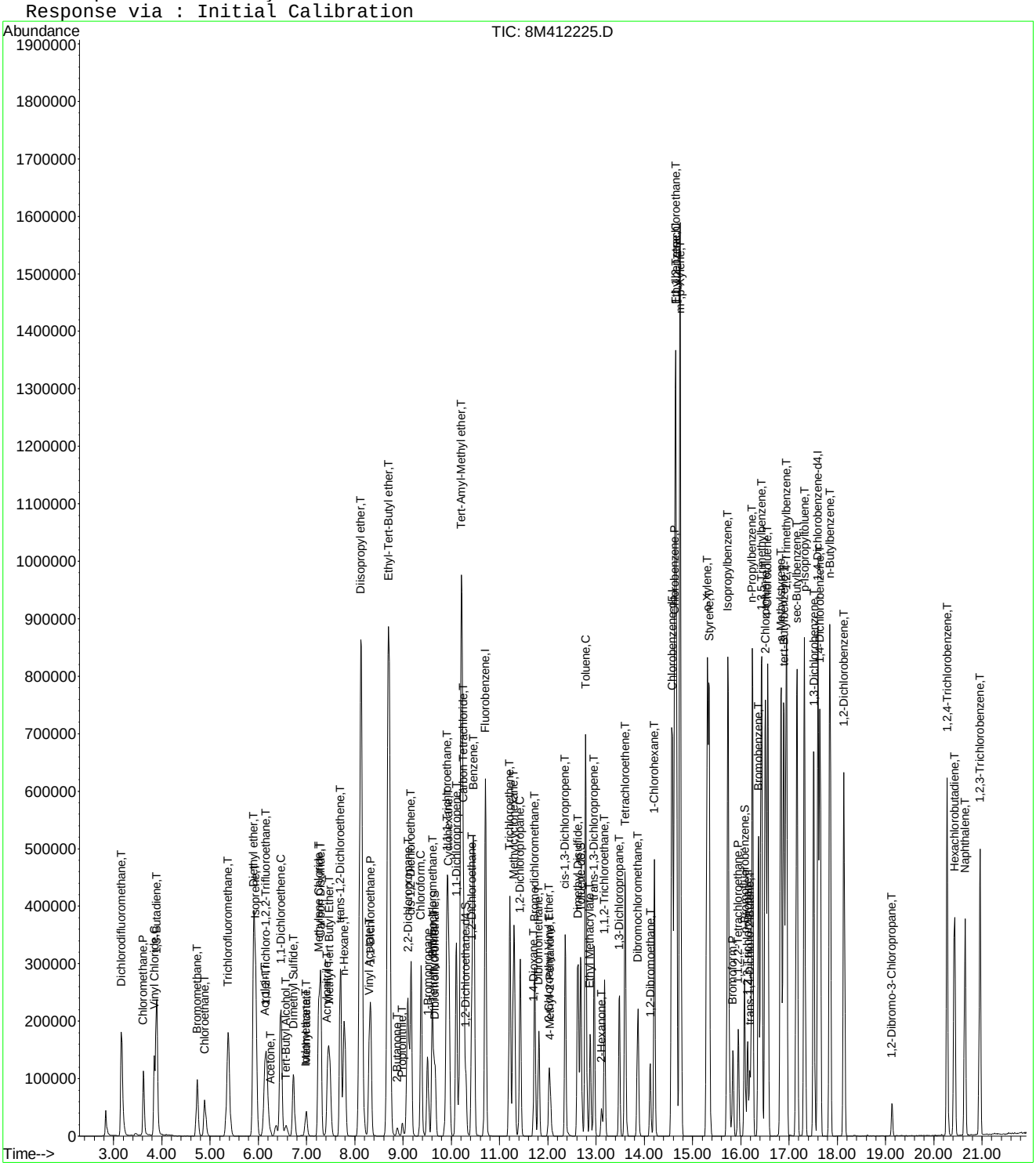

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45:30 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	778260	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	539116	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	288225	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.67	111	211053	26.5139 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.04%		
43) 1,2-Dichloroethane-d4	10.31	65	229348	26.7504 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 107.00%		
58) Toluene-d8	12.68	98	718491	26.2709 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.08%		
80) p-Bromofluorobenzene	16.07	95	292755	25.0180 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.08%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	682745	55.5761 ug/L	100
3) Chloromethane	3.62	50	372858	48.2806 ug/L	98
4) Vinyl Chloride	3.85	62	453905	51.0328 ug/L	96
5) 1,3-Butadiene	3.88	54	390501	58.9199 ug/L	99
6) Bromomethane	4.74	94	260493	64.4080 ug/L	97
7) Chloroethane	4.89	64	244336	50.1840 ug/L	91
8) Trichlorofluoromethane	5.38	101	837676	50.1376 ug/L	99
9) Diethyl ether	5.90	59	389327	96.0019 ug/L	79
10) Isoprene	5.94	67	498060	48.7477 ug/L	76
11) Acrolein	6.13	56	17644	50.4496 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	387643	48.8691 ug/L	97
13) Acetone	6.25	43	45901	63.3305 ug/L	97
14) 1,1-Dichloroethene	6.46	61	619744	49.0724 ug/L	94
15) Tert-Butyl Alcohol	6.58	59	53656	185.6211 ug/L	91
16) Dimethyl Sulfide	6.73	62	221107	50.3993 ug/L	82
17) Iodomethane	6.98	142	157872	234.7428 ug/L	94
18) Methyl acetate	7.00	43	114759	49.2629 ug/L #	81
19) Methylene Chloride	7.25	84	389653	47.9453 ug/L	52
20) Carbon Disulfide	7.29	76	1269941	46.8897 ug/L	99
21) Acrylonitrile	7.43	53	59882	60.1236 ug/L	97
22) Methyl Tert Butyl Ether	7.46	73	901668	54.3843 ug/L	86
23) trans-1,2-Dichloroethene	7.70	61	571507	48.9396 ug/L	93
24) n-Hexane	7.79	57	419656	50.8290 ug/L	83
25) Diisopropyl ether	8.13	45	1781012	97.8265 ug/L #	90
26) Vinyl Acetate	8.29	43	428708	55.2866 ug/L #	89
27) 1,1-Dichloroethane	8.32	63	722574	50.9078 ug/L	96
28) Ethyl-Tert-Butyl ether	8.71	59	1955100	101.7552 ug/L	89
29) 2-Butanone	8.88	43	66579	61.3316 ug/L #	82
30) Propionitrile	8.98	54	38235	109.4684 ug/L	95
31) 2,2-Dichloropropane	9.10	77	768496	51.2175 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	439590	48.8754 ug/L	91
33) Chloroform	9.38	83	844564	49.2230 ug/L	97
34) 1-Bromopropane	9.51	122	63442	53.3693 ug/L	99
35) Bromochloromethane	9.60	130	230119	51.1185 ug/L	66
36) Tetrahydrofuran	9.64	42	79437	87.9575 ug/L #	62
38) 1,1,1-Trichloroethane	9.90	97	817606	51.5150 ug/L	99
39) Cyclohexane	9.93	56	535882	47.9707 ug/L #	65
40) 1,1-Dichloropropene	10.10	75	615439	50.1899 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	1769381	100.9628 ug/L	88
42) Carbon Tetrachloride	10.24	117	724058	51.5782 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412226.D 8260WT.M Fri May 13 16:45:32 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45:30 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	561107	52.5401 ug/L		85
46)	Benzene	10.46	78	1607407	48.4816 ug/L		86
47)	Trichloroethene	11.22	130	424998	50.2312 ug/L		96
48)	Methylcyclohexane	11.30	83	635339	51.5040 ug/L		83
49)	1,2-Dichloropropane	11.42	63	351908	50.2320 ug/L	#	71
50)	Bromodichloromethane	11.72	83	654943	54.3701 ug/L		97
51)	1,4-Dioxane	11.71	88	7573	274.9918 ug/L		73
52)	Dibromomethane	11.82	93	209167	50.1574 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	162319	56.7281 ug/L		93
54)	4-Methyl-2-Pentanone	12.05	58	64928	62.4928 ug/L		80
55)	cis-1,3-Dichloropropene	12.36	75	666861	54.6463 ug/L		98
56)	Dimethyl Disulfide	12.62	79	343446	60.6260 ug/L		96
59)	Toluene	12.79	91	1676069	47.5846 ug/L		100
60)	Ethyl Methacrylate	12.88	69	338996	58.1503 ug/L		69
62)	trans-1,3-Dichloropropene	12.96	75	594749	57.1499 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	268432	51.5570 ug/L		98
64)	2-Hexanone	13.12	58	56859	62.6347 ug/L	#	83
65)	1,3-Dichloropropane	13.48	76	489226	53.9770 ug/L		75
66)	Tetrachloroethene	13.60	164	350332	48.7296 ug/L		95
67)	Dibromochloromethane	13.86	129	401149	55.0780 ug/L		100
68)	1,2-Dibromoethane	14.12	107	273580	54.7252 ug/L		99
69)	1-Chlorohexane	14.21	91	560883	48.9984 ug/L		82
70)	Chlorobenzene	14.63	112	1117812	48.2326 ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	446892	53.4462 ug/L		99
72)	Ethylbenzene	14.66	106	603074	48.2980 ug/L		91
73)	m-,p-Xylene	14.74	106	1443780	96.5463 ug/L		90
74)	o-Xylene	15.31	106	709244	50.4265 ug/L		90
75)	Styrene	15.34	104	1212099	52.9133 ug/L		91
76)	Bromoform	15.84	173	238354	58.3272 ug/L		100
77)	Isopropylbenzene	15.73	105	1919993	48.6372 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	294266	53.5083 ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	89279	52.9656 ug/L		93
82)	trans-1,4-Dichloro-2-Buten	16.19	53	86829	70.0956 ug/L	#	53
83)	n-Propylbenzene	16.24	91	2278994	47.4277 ug/L		98
84)	Bromobenzene	16.37	156	459959	50.3549 ug/L		93
85)	1,3,5-Trimethylbenzene	16.43	105	1661486	49.4745 ug/L		95
86)	2-Chlorotoluene	16.51	91	1611031	48.6367 ug/L		97
87)	4-Chlorotoluene	16.56	91	1341051	45.0344 ug/L		95
88)	a-Methylstyrene	16.83	118	772611	53.3111 ug/L		90
89)	tert-Butylbenzene	16.89	134	307503	47.8493 ug/L		81
90)	1,2,4-Trimethylbenzene	16.94	105	1679809	47.8234 ug/L		95
91)	sec-Butylbenzene	17.16	105	1925411	46.7166 ug/L		97
92)	p-Isopropyltoluene	17.32	119	1621383	46.4795 ug/L		95
93)	1,3-Dichlorobenzene	17.51	146	882656	48.9327 ug/L		93
94)	1,4-Dichlorobenzene	17.64	146	871210	47.1909 ug/L		92
95)	n-Butylbenzene	17.85	91	1608832	46.5296 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	768548	47.3159 ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	59586	54.9992 ug/L		86
98)	1,2,4-Trichlorobenzene	20.28	180	583880	49.4902 ug/L		100
99)	Hexachlorobutadiene	20.44	225	264699	47.7844 ug/L		98
100)	Naphthalene	20.65	128	894629	51.0579 ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	475246	46.6387 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M412226.D 8260WT.M Fri May 13 16:45:33 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412226.D Vial: 9
Acq On : 13 May 2016 16:23 Operator: TMB
Sample : WG568561-08 50ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 16:45 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 15:56:03 2016
Response via : Initial Calibration

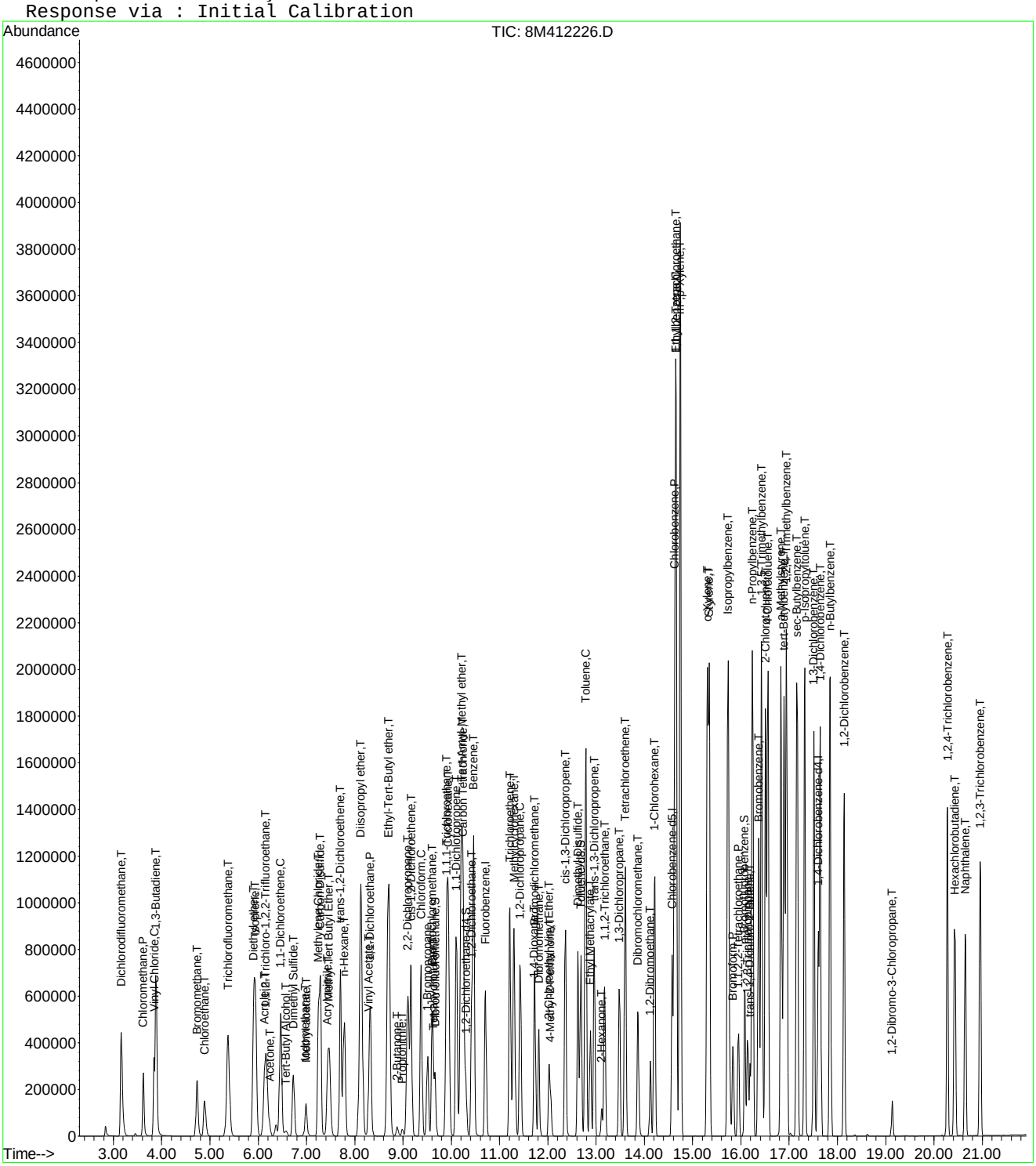

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	809533	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	559075	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	296193	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	460283	53.9056 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 215.64%#		
43) 1,2-Dichloroethane-d4	10.30	65	488116	52.5821 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 210.32%#		
58) Toluene-d8	12.68	98	1540572	52.8075 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 211.24%#		
80) p-Bromofluorobenzene	16.08	95	623735	51.1573 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 204.64%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	1463283	109.1068 ug/L	100
3) Chloromethane	3.62	50	778702	97.2380 ug/L	98
4) Vinyl Chloride	3.84	62	968312	103.4979 ug/L	95
5) 1,3-Butadiene	3.88	54	896569	120.4972 ug/L	95
6) Bromomethane	4.73	94	605228	129.8677 ug/L	99
7) Chloroethane	4.89	64	528153	103.4126 ug/L	90
8) Trichlorofluoromethane	5.37	101	1782726	101.4754 ug/L	99
9) Diethyl ether	5.90	59	828091	197.4770 ug/L	79
10) Isoprene	5.94	67	1080684	101.8037 ug/L	78
11) Acrolein	6.14	56	38655	109.5572 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	833546	101.0906 ug/L	97
13) Acetone	6.24	43	97515	109.1944 ug/L	100
14) 1,1-Dichloroethene	6.46	61	1323999	100.6729 ug/L	93
15) Tert-Butyl Alcohol	6.57	59	114220	387.5328 ug/L	91
16) Dimethyl Sulfide	6.73	62	489571	106.5996 ug/L	82
17) Iodomethane	6.99	142	416890	244.5557 ug/L	97
18) Methyl acetate	7.00	43	252444	104.3161 ug/L #	81
19) Methylene Chloride	7.24	84	827241	98.5346 ug/L	53
20) Carbon Disulfide	7.29	76	2766110	99.3432 ug/L	100
21) Acrylonitrile	7.43	53	126153	113.2272 ug/L	98
22) Methyl Tert Butyl Ether	7.46	73	1894494	105.8643 ug/L	87
23) trans-1,2-Dichloroethene	7.70	61	1203701	99.1822 ug/L	93
24) n-Hexane	7.78	57	926226	105.3097 ug/L	84
25) Diisopropyl ether	8.12	45	3699807	196.0386 ug/L #	90
26) Vinyl Acetate	8.29	43	860820	101.8643 ug/L #	88
27) 1,1-Dichloroethane	8.32	63	1521237	101.5567 ug/L	96
28) Ethyl-Tert-Butyl ether	8.70	59	4005676	198.2271 ug/L	89
29) 2-Butanone	8.88	43	145126	112.6698 ug/L #	81
30) Propionitrile	8.98	54	83038	219.1648 ug/L	97
31) 2,2-Dichloropropane	9.11	77	1610615	102.0557 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	935490	99.9944 ug/L	89
33) Chloroform	9.37	83	1766988	98.8341 ug/L	98
34) 1-Bromopropane	9.51	122	139657	108.5299 ug/L	100
35) Bromochloromethane	9.61	130	488678	102.8480 ug/L	66
36) Tetrahydrofuran	9.63	42	167812	187.5699 ug/L #	61
38) 1,1,1-Trichloroethane	9.91	97	1724504	102.7713 ug/L	100
39) Cyclohexane	9.94	56	1185537	102.8628 ug/L #	66
40) 1,1-Dichloropropene	10.11	75	1293224	100.8377 ug/L	96
41) Tert-Amyl-Methyl ether	10.21	73	3634806	198.1264 ug/L	88
42) Carbon Tetrachloride	10.25	117	1534696	103.3979 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412227.D 8260WT.M Fri May 13 17:14:33 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14:31 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	1177876	103.7352	ug/L		85
46)	Benzene	10.46	78	3298928	95.8405	ug/L		87
47)	Trichloroethene	11.21	130	903490	101.9036	ug/L		97
48)	Methylcyclohexane	11.30	83	1389528	104.6454	ug/L		83
49)	1,2-Dichloropropane	11.43	63	755128	102.5297	ug/L		73
50)	Bromodichloromethane	11.73	83	1351612	104.6036	ug/L		99
51)	1,4-Dioxane	11.72	88	16303	473.9624	ug/L		68
52)	Dibromomethane	11.81	93	445130	101.6543	ug/L		99
53)	2-Chloroethyl Vinyl Ether	12.02	63	333977	105.4228	ug/L		92
54)	4-Methyl-2-Pentanone	12.05	58	138980	110.1494	ug/L	#	77
55)	cis-1,3-Dichloropropene	12.36	75	1387475	105.9136	ug/L		100
56)	Dimethyl Disulfide	12.62	79	745504	111.3169	ug/L		97
59)	Toluene	12.78	91	3455614	95.2346	ug/L		99
60)	Ethyl Methacrylate	12.88	69	731009	113.5760	ug/L		70
62)	trans-1,3-Dichloropropene	12.96	75	1236182	107.9445	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	564076	103.0604	ug/L		99
64)	2-Hexanone	13.12	58	126268	114.5366	ug/L	#	79
65)	1,3-Dichloropropane	13.48	76	1021082	105.2672	ug/L		74
66)	Tetrachloroethene	13.60	164	752835	101.4023	ug/L		95
67)	Dibromochloromethane	13.87	129	856499	109.6525	ug/L		100
68)	1,2-Dibromoethane	14.12	107	577701	107.6426	ug/L		98
69)	1-Chlorohexane	14.21	91	1222720	103.0385	ug/L		82
70)	Chlorobenzene	14.62	112	2332247	97.2408	ug/L		96
71)	1,1,1,2-Tetrachloroethane	14.66	131	947925	106.1463	ug/L		99
72)	Ethylbenzene	14.66	106	1275519	98.8771	ug/L		97
73)	m-,p-Xylene	14.75	106	3009424	194.2602	ug/L		98
74)	o-Xylene	15.31	106	1490638	100.8068	ug/L		93
75)	Styrene	15.35	104	2503721	102.8373	ug/L		88
76)	Bromoform	15.83	173	517827	114.0520	ug/L		100
77)	Isopropylbenzene	15.73	105	3913141	95.4433	ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	624965	106.8610	ug/L		97
81)	1,2,3-Trichloropropane	16.14	110	192087	107.3268	ug/L		97
82)	trans-1,4-Dichloro-2-Buten	16.18	53	189214	128.4818	ug/L	#	59
83)	n-Propylbenzene	16.24	91	4599057	93.6644	ug/L		100
84)	Bromobenzene	16.37	156	968011	102.1426	ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	3401719	97.9556	ug/L		97
86)	2-Chlorotoluene	16.52	91	3177047	93.8267	ug/L		98
87)	4-Chlorotoluene	16.56	91	2899171	96.0712	ug/L		96
88)	a-Methylstyrene	16.84	118	1639166	103.6811	ug/L		90
89)	tert-Butylbenzene	16.90	134	654025	99.4199	ug/L		85
90)	1,2,4-Trimethylbenzene	16.95	105	3479295	96.7054	ug/L		97
91)	sec-Butylbenzene	17.17	105	3947832	94.2785	ug/L		98
92)	p-Isopropyltoluene	17.32	119	3328450	94.4148	ug/L		97
93)	1,3-Dichlorobenzene	17.52	146	1834740	98.9074	ug/L		92
94)	1,4-Dichlorobenzene	17.64	146	1818309	96.6271	ug/L		92
95)	n-Butylbenzene	17.85	91	3308330	94.4002	ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	1606254	97.0179	ug/L		91
97)	1,2-Dibromo-3-Chloropropan	19.13	75	125368	107.7020	ug/L		87
98)	1,2,4-Trichlorobenzene	20.28	180	1227926	100.7076	ug/L		99
99)	Hexachlorobutadiene	20.43	225	569213	100.5231	ug/L		97
100)	Naphthalene	20.65	128	1852486	101.2968	ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	1021163	98.5794	ug/L		100

(#) = qualifier out of range (m) = manual integration
8M412227.D 8260WT.M Fri May 13 17:14:34 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412227.D Vial: 10
Acq On : 13 May 2016 16:52 Operator: TMB
Sample : WG568561-09 100ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:14 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:12:43 2016
Response via : Initial Calibration

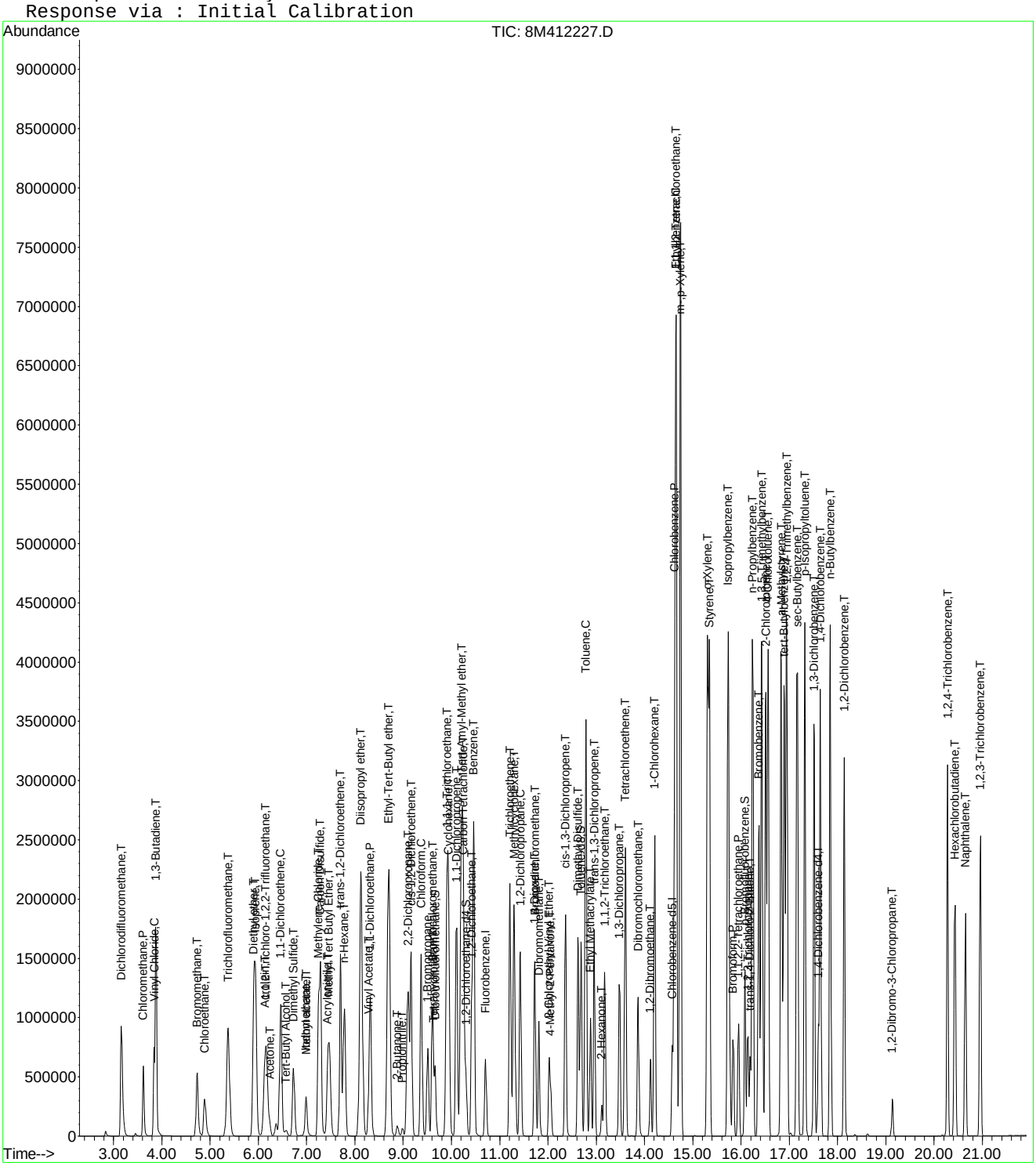

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	828540	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	578848	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	301401	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	898145	101.4517 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 405.80%#		
43) 1,2-Dichloroethane-d4	10.30	65	939848	98.0779 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 392.32%#		
58) Toluene-d8	12.68	98	2984162	97.8805 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 391.52%#		
80) p-Bromofluorobenzene	16.08	95	1242720	99.7023 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 398.80%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	2830517	203.5621 ug/L	98
3) Chloromethane	3.62	50	1586058	194.4056 ug/L	97
4) Vinyl Chloride	3.83	62	1935009	201.0738 ug/L	94
5) 1,3-Butadiene	3.88	54	1684964	212.5477 ug/L	94
6) Bromomethane	4.72	94	1358068	271.2231 ug/L	99
7) Chloroethane	4.89	64	1084803	206.5255 ug/L	90
8) Trichlorofluoromethane	5.37	101	3516760	195.1756 ug/L	99
10) Isoprene	5.94	67	2136665	196.1573 ug/L	78
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	1662142	196.5993 ug/L	95
13) Acetone	6.24	43	187748	200.7963 ug/L	97
14) 1,1-Dichloroethene	6.46	61	2649821	196.6732 ug/L	92
15) Tert-Butyl Alcohol	6.58	59	6024	20.0950 ug/L #	87
16) Dimethyl Sulfide	6.73	62	976862	205.8822 ug/L	82
17) Iodomethane	6.99	142	896947	398.7987 ug/L	100
18) Methyl acetate	7.00	43	504293	201.4324 ug/L #	81
19) Methylene Chloride	7.25	84	1684780	196.5546 ug/L	52
20) Carbon Disulfide	7.29	76	5386210	189.2120 ug/L	99
21) Acrylonitrile	7.45	53	30354	26.0447 ug/L #	32
22) Methyl Tert Butyl Ether	7.46	73	3711011	200.6529 ug/L	87
23) trans-1,2-Dichloroethene	7.70	61	2410498	194.2902 ug/L	92
24) n-Hexane	7.78	57	1821777	199.7288 ug/L	84
26) Vinyl Acetate	8.29	43	1796217	206.9060 ug/L #	88
27) 1,1-Dichloroethane	8.32	63	3042055	197.9863 ug/L	95
29) 2-Butanone	8.88	43	271767	199.8193 ug/L #	77
30) Propionitrile	8.90	54	208	0.5280 ug/L #	1
31) 2,2-Dichloropropane	9.11	77	3202633	197.6970 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	1875631	195.8883 ug/L	89
33) Chloroform	9.37	83	3506648	191.9199 ug/L	99
34) 1-Bromopropane	9.51	122	286158	214.2313 ug/L	99
35) Bromochloromethane	9.60	130	980373	200.7807 ug/L	66
36) Tetrahydrofuran	9.62	42	2381	2.6275 ug/L	87
38) 1,1,1-Trichloroethane	9.91	97	3410306	197.7909 ug/L	99
39) Cyclohexane	9.94	56	2357393	198.8974 ug/L #	66
40) 1,1-Dichloropropene	10.10	75	2601175	197.8946 ug/L	96
42) Carbon Tetrachloride	10.25	117	3062767	200.6417 ug/L	99
45) 1,2-Dichloroethane	10.42	62	2313662	198.0324 ug/L	85
46) Benzene	10.46	78	6379817	182.1771 ug/L	89
47) Trichloroethene	11.21	130	1810459	198.9741 ug/L	97
48) Methylcyclohexane	11.30	83	2755373	200.4193 ug/L	83
49) 1,2-Dichloropropane	11.43	63	1528407	202.0331 ug/L	74

(#) = qualifier out of range (m) = manual integration
8M412228.D 8260WT.M Fri May 13 17:43:34 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43:32 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
50)	Bromodichloromethane	11.73	83	2716764	204.0895 ug/L		99
51)	1,4-Dioxane	11.73	88	3865	104.9352 ug/L	#	18
52)	Dibromomethane	11.81	93	898971	200.1154 ug/L		98
53)	2-Chloroethyl Vinyl Ether	12.02	63	631656	192.7236 ug/L		90
54)	4-Methyl-2-Pentanone	12.05	58	262702	198.3957 ug/L	#	75
55)	cis-1,3-Dichloropropene	12.36	75	2784162	205.9153 ug/L		99
56)	Dimethyl Disulfide	12.62	79	1518705	215.4711 ug/L		95
59)	Toluene	12.78	91	6564353	175.9274 ug/L		96
60)	Ethyl Methacrylate	12.88	69	1429837	209.8161 ug/L		71
62)	trans-1,3-Dichloropropene	12.96	75	2468609	205.4771 ug/L		98
63)	1,1,2-Trichloroethane	13.18	97	1124672	197.6019 ug/L		100
64)	2-Hexanone	13.12	58	237678	200.9290 ug/L	#	81
65)	1,3-Dichloropropane	13.48	76	2023247	199.9545 ug/L		76
66)	Tetrachloroethene	13.60	164	1546618	200.8018 ug/L		97
67)	Dibromochloromethane	13.87	129	1726523	210.5823 ug/L		100
68)	1,2-Dibromoethane	14.12	107	1163160	207.0667 ug/L		99
69)	1-Chlorohexane	14.21	91	2414147	195.6413 ug/L		83
70)	Chlorobenzene	14.62	112	4641169	187.6386 ug/L		94
71)	1,1,1,2-Tetrachloroethane	14.66	131	1929251	206.8372 ug/L		99
72)	Ethylbenzene	14.66	106	2611321	195.8267 ug/L		88
73)	m-,p-Xylene	14.75	106	5876234	367.8657 ug/L		83
74)	o-Xylene	15.31	106	3012318	196.4899 ug/L		98
75)	Styrene	15.35	104	4913204	194.1235 ug/L		86
76)	Bromoform	15.83	173	1052629	218.7989 ug/L		100
77)	Isopropylbenzene	15.73	105	7284624	172.7305 ug/L		97
79)	1,1,2,2-Tetrachloroethane	15.95	83	1237171	205.8673 ug/L		98
81)	1,2,3-Trichloropropane	16.14	110	386738	209.7906 ug/L	#	54
82)	trans-1,4-Dichloro-2-Buten	16.19	53	382467	243.6526 ug/L		76
83)	n-Propylbenzene	16.24	91	8244387	166.5110 ug/L		93
84)	Bromobenzene	16.37	156	1935166	200.1305 ug/L		95
85)	1,3,5-Trimethylbenzene	16.43	105	6482975	183.9948 ug/L		98
86)	2-Chlorotoluene	16.52	91	6108308	178.8549 ug/L		99
87)	4-Chlorotoluene	16.56	91	5513221	180.5508 ug/L		99
88)	a-Methylstyrene	16.84	118	3255254	200.4995 ug/L		89
89)	tert-Butylbenzene	16.90	134	1351569	202.1005 ug/L		92
90)	1,2,4-Trimethylbenzene	16.95	105	6531416	179.2445 ug/L		97
91)	sec-Butylbenzene	17.17	105	7342730	173.9814 ug/L		97
92)	p-Isopropyltoluene	17.32	119	6352010	178.7315 ug/L		99
93)	1,3-Dichlorobenzene	17.52	146	3640547	193.1654 ug/L		90
94)	1,4-Dichlorobenzene	17.64	146	3593548	188.4603 ug/L		91
95)	n-Butylbenzene	17.85	91	6198060	175.4375 ug/L		97
96)	1,2-Dichlorobenzene	18.14	146	3171699	188.9651 ug/L		89
97)	1,2-Dibromo-3-Chloropropan	19.13	75	249646	207.5645 ug/L		88
98)	1,2,4-Trichlorobenzene	20.28	180	2480626	199.7296 ug/L		99
99)	Hexachlorobutadiene	20.43	225	1169411	202.7981 ug/L		98
100)	Naphthalene	20.65	128	3580198	192.0323 ug/L		97
101)	1,2,3-Trichlorobenzene	20.96	180	2040570	193.9298 ug/L		100

(#) = qualifier out of range (m) = manual integration
8M412228.D 8260WT.M Fri May 13 17:43:35 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412228.D Vial: 11
Acq On : 13 May 2016 17:21 Operator: TMB
Sample : WG568561-10 200ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 17:43 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration

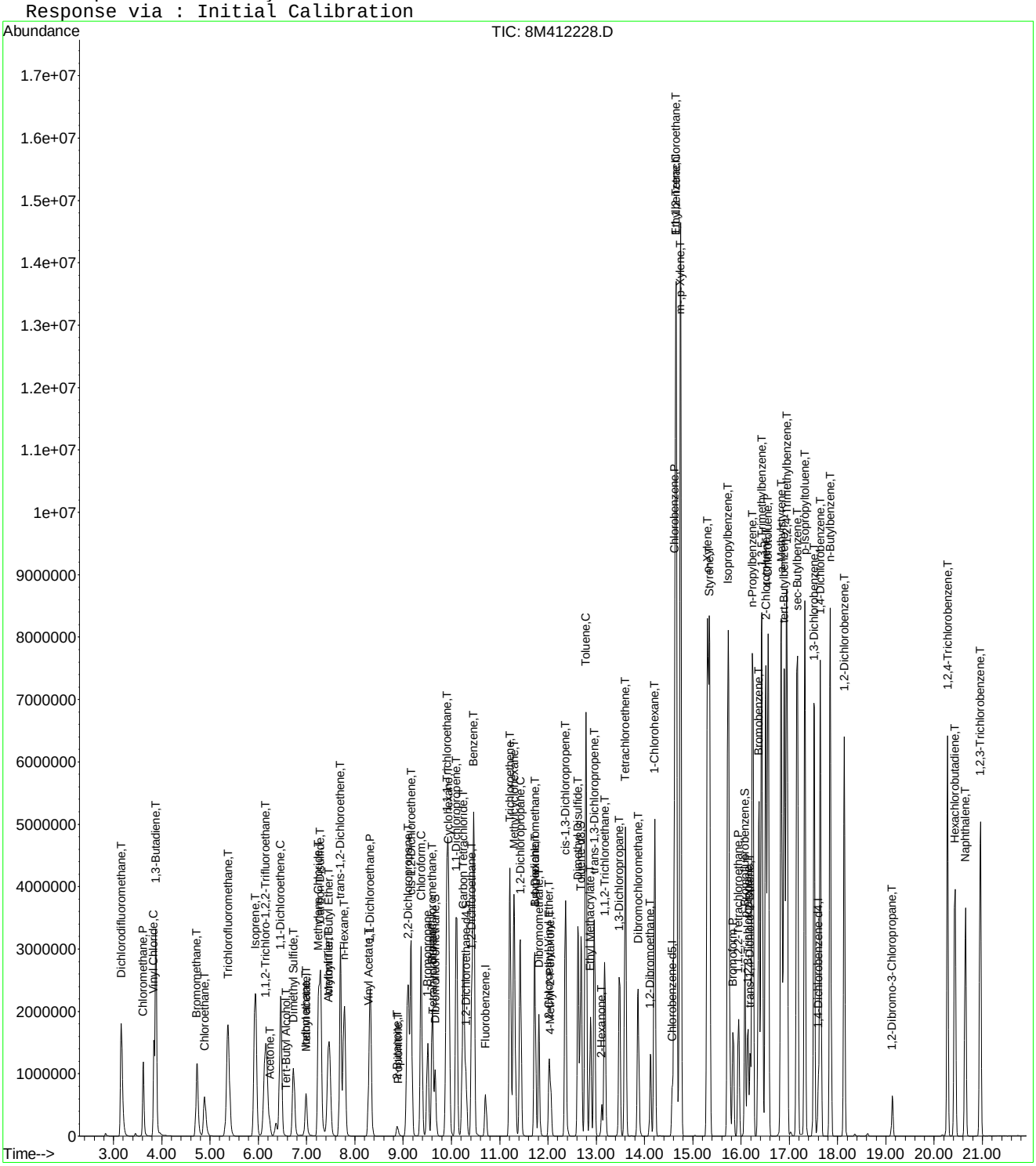

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	855409	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	599314	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	305726	25.00 ug/L	0.00

System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	1411837	154.4674 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 617.88%#		
43) 1,2-Dichloroethane-d4	10.30	65	1466019	148.1811 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 592.72%#		
58) Toluene-d8	12.69	98	4594713	145.5601 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 582.24%#		
80) p-Bromofluorobenzene	16.08	95	1918996	151.7813 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 607.12%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	4191932	292.0014 ug/L	97
3) Chloromethane	3.62	50	2474035	293.7212 ug/L	97
4) Vinyl Chloride	3.83	62	2956347	297.5552 ug/L	94
5) 1,3-Butadiene	3.87	54	2605506	318.3447 ug/L	94
6) Bromomethane	4.72	94	2177550	421.2239 ug/L	98
7) Chloroethane	4.89	64	1688005	311.2693 ug/L	90
8) Trichlorofluoromethane	5.37	101	5387662	289.6161 ug/L	99
9) Diethyl ether	5.90	59	1306432	295.4610 ug/L	80
10) Isoprene	5.93	67	3377164	300.3032 ug/L	78
11) Acrolein	6.14	56	70572	185.7401 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	2563878	293.7317 ug/L	94
13) Acetone	6.24	43	283185	293.3529 ug/L	90
14) 1,1-Dichloroethene	6.46	61	4031745	289.8421 ug/L	91
15) Tert-Butyl Alcohol	6.58	59	181796	587.3907 ug/L	90
16) Dimethyl Sulfide	6.73	62	1553493	317.1280 ug/L	81
17) Iodomethane	6.99	142	1347307	580.2206 ug/L	98
18) Methyl acetate	7.00	43	800046	309.5287 ug/L #	80
19) Methylene Chloride	7.24	84	2587731	292.4144 ug/L	52
20) Carbon Disulfide	7.29	76	8228181	279.9683 ug/L	98
21) Acrylonitrile	7.43	53	228227	189.6753 ug/L	94
22) Methyl Tert Butyl Ether	7.46	73	5605924	293.5892 ug/L	88
23) trans-1,2-Dichloroethene	7.70	61	3678699	287.1957 ug/L	92
24) n-Hexane	7.78	57	2863434	304.0691 ug/L	86
25) Diisopropyl ether	8.12	45	5819647	292.7898 ug/L #	89
26) Vinyl Acetate	8.30	43	2819503	314.5767 ug/L #	87
27) 1,1-Dichloroethane	8.32	63	4586531	289.1293 ug/L	94
28) Ethyl-Tert-Butyl ether	8.70	59	6190206	290.3321 ug/L	89
29) 2-Butanone	8.88	43	439359	312.8959 ug/L #	76
30) Propionitrile	8.99	54	133197	327.4673 ug/L	95
31) 2,2-Dichloropropane	9.10	77	4821388	288.2735 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	2847005	287.9976 ug/L	89
33) Chloroform	9.37	83	5197860	275.5447 ug/L	100
34) 1-Bromopropane	9.51	122	450012	326.3179 ug/L	100
35) Bromochloromethane	9.61	130	1490221	295.6112 ug/L	66
36) Tetrahydrofuran	9.63	42	271736	290.4491 ug/L #	62
38) 1,1,1-Trichloroethane	9.91	97	5126354	287.9792 ug/L	98
39) Cyclohexane	9.94	56	3733392	305.0987 ug/L #	67
40) 1,1-Dichloropropene	10.11	75	3923871	289.1471 ug/L	97
41) Tert-Amyl-Methyl ether	10.21	73	5639573	291.3713 ug/L	88
42) Carbon Tetrachloride	10.25	117	4598150	291.7629 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412229.D 8260WT.M Fri May 13 18:12:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.43	62	3468738	287.5726 ug/L	86
46)	Benzene	10.46	78	9065861	250.7462 ug/L	93
47)	Trichloroethene	11.21	130	2772282	295.1106 ug/L	97
48)	Methylcyclohexane	11.30	83	4327357	304.8748 ug/L	84
49)	1,2-Dichloropropane	11.43	63	2350729	300.9718 ug/L	74
50)	Bromodichloromethane	11.73	83	4051493	294.7973 ug/L	99
51)	1,4-Dioxane	11.72	88	26614	699.8767 ug/L	67
52)	Dibromomethane	11.81	93	1369945	295.3776 ug/L	97
53)	2-Chloroethyl Vinyl Ether	12.03	63	1006317	297.3917 ug/L	90
54)	4-Methyl-2-Pentanone	12.06	58	424684	310.6522 ug/L #	76
55)	cis-1,3-Dichloropropene	12.36	75	4156310	297.7431 ug/L	97
56)	Dimethyl Disulfide	12.63	79	2359825	324.2911 ug/L	94
59)	Toluene	12.78	91	9135213	236.4669 ug/L	90
60)	Ethyl Methacrylate	12.88	69	2228037	315.7801 ug/L	71
62)	trans-1,3-Dichloropropene	12.96	75	3700845	297.5240 ug/L	96
63)	1,1,2-Trichloroethane	13.18	97	1730199	293.6104 ug/L	100
64)	2-Hexanone	13.11	58	381967	311.8816 ug/L #	78
65)	1,3-Dichloropropane	13.49	76	3080177	294.0141 ug/L	76
66)	Tetrachloroethene	13.60	164	2374435	297.7522 ug/L	96
67)	Dibromochloromethane	13.87	129	2638145	310.7838 ug/L	100
68)	1,2-Dibromoethane	14.13	107	1778561	305.8085 ug/L	99
69)	1-Chlorohexane	14.21	91	3712592	290.5924 ug/L	84
70)	Chlorobenzene	14.63	112	6754240	263.7433 ug/L	90
71)	1,1,1,2-Tetrachloroethane	14.65	131	2967650	307.3001 ug/L	100
72)	Ethylbenzene	14.65	106	4014412	290.7661 ug/L	70
73)	m-,p-Xylene	14.75	106	8357822	505.3514 ug/L	70
74)	o-Xylene	15.31	106	4530840	285.4488 ug/L	88
75)	Styrene	15.35	104	7050702	269.0641 ug/L	82
76)	Bromoform	15.84	173	1602587	321.7373 ug/L	99
77)	Isopropylbenzene	15.73	105	9900817	226.7477 ug/L	90
79)	1,1,2,2-Tetrachloroethane	15.95	83	1885953	309.3861 ug/L	98
81)	1,2,3-Trichloropropane	16.14	110	581198	310.8176 ug/L	61
82)	trans-1,4-Dichloro-2-Buten	16.18	53	589705	370.3601 ug/L	82
83)	n-Propylbenzene	16.25	91	10768378	214.4110 ug/L	86
84)	Bromobenzene	16.37	156	2947671	300.5290 ug/L	99
85)	1,3,5-Trimethylbenzene	16.43	105	8890651	248.7580 ug/L	92
86)	2-Chlorotoluene	16.51	91	7868844	227.1449 ug/L	92
87)	4-Chlorotoluene	16.57	91	7782731	251.2687 ug/L	93
88)	a-Methylstyrene	16.84	118	4955768	300.9205 ug/L	86
89)	tert-Butylbenzene	16.90	134	2046401	301.6701 ug/L	95
90)	1,2,4-Trimethylbenzene	16.95	105	8903769	240.8932 ug/L	89
91)	sec-Butylbenzene	17.17	105	9867862	230.5051 ug/L	91
92)	p-Isopropyltoluene	17.32	119	8738927	242.4155 ug/L	94
93)	1,3-Dichlorobenzene	17.52	146	5319954	278.2806 ug/L	87
94)	1,4-Dichlorobenzene	17.64	146	5248511	271.3593 ug/L	88
95)	n-Butylbenzene	17.85	91	8408157	234.6279 ug/L	92
96)	1,2-Dichlorobenzene	18.14	146	4717385	277.0787 ug/L	87
97)	1,2-Dibromo-3-Chloropropan	19.13	75	377070	309.0741 ug/L	91
98)	1,2,4-Trichlorobenzene	20.28	180	3677657	291.9206 ug/L	98
99)	Hexachlorobutadiene	20.43	225	1780695	304.4378 ug/L	96
100)	Naphthalene	20.65	128	5216751	275.8542 ug/L	95
101)	1,2,3-Trichlorobenzene	20.96	180	3064908	287.1593 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M412229.D 8260WT.M Fri May 13 18:12:36 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDchem\2\data\051316\8M412229.D Vial: 12
Acq On : 13 May 2016 17:50 Operator: TMB
Sample : WG568561-11 300ug/L STD 8260 Inst : HPMS8
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 13 18:12 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Fri May 13 17:17:39 2016
Response via : Initial Calibration

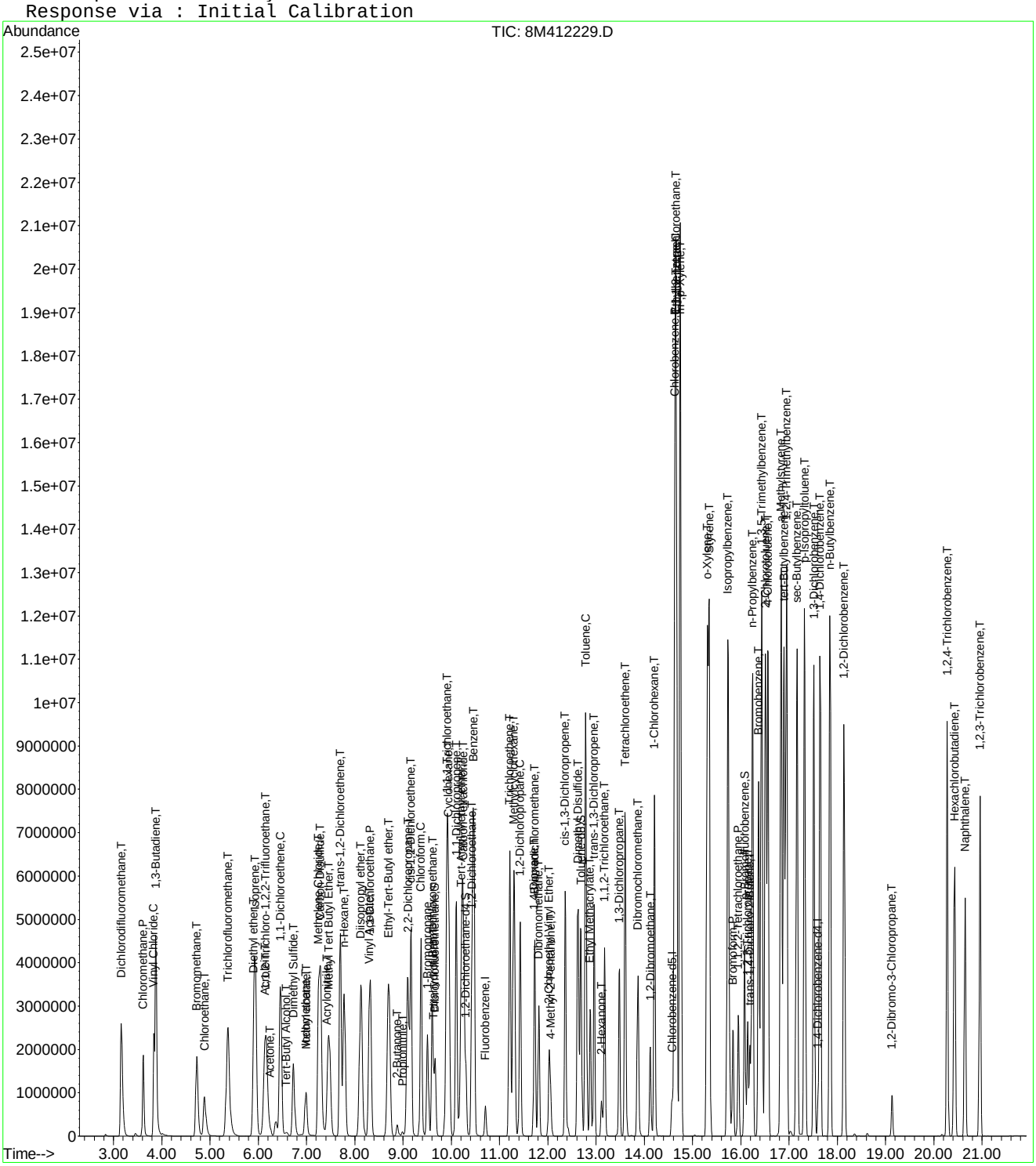

8M412229.D 8260WT.M Fri May 13 18:12:36 2016 Page 3

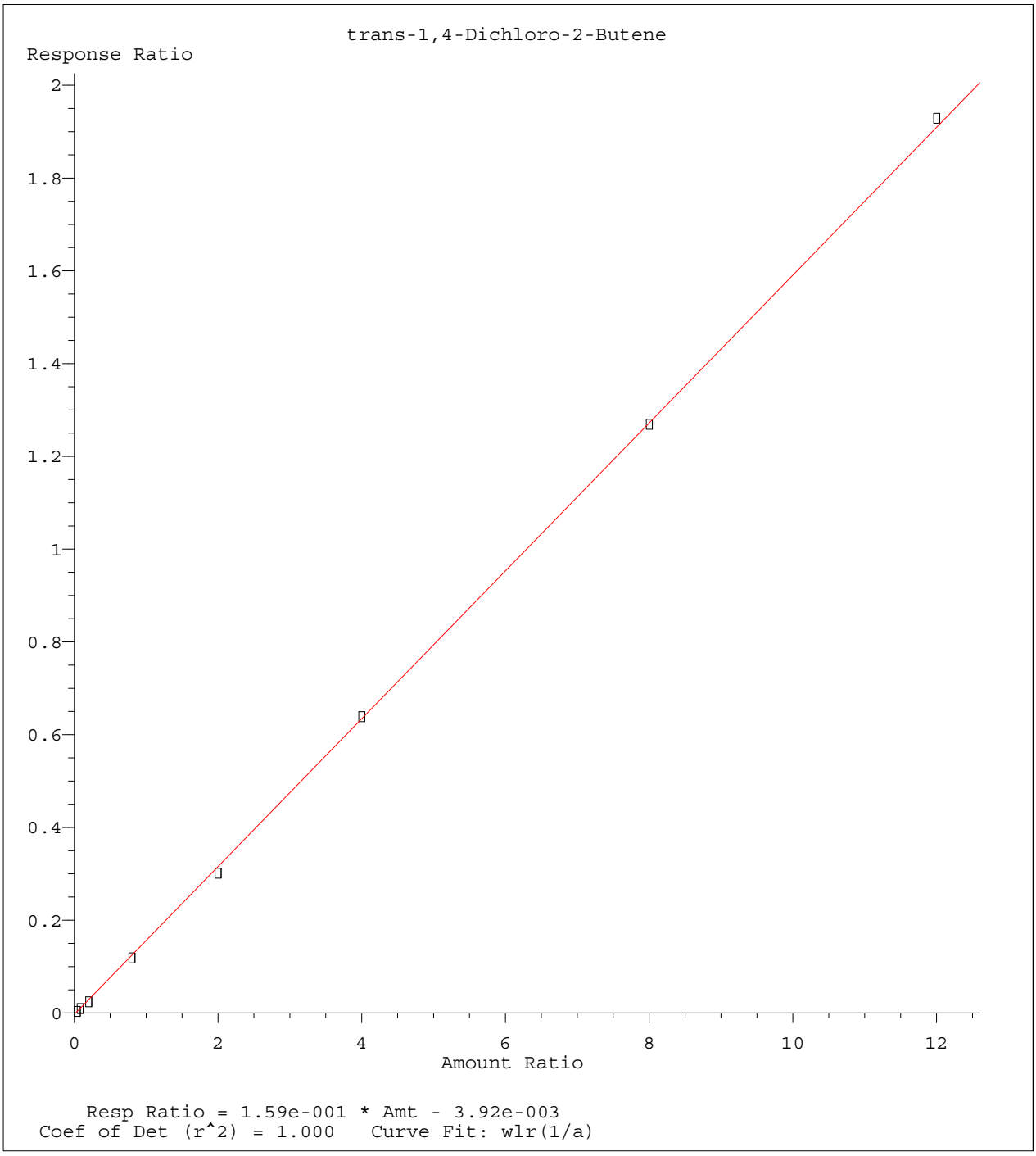

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

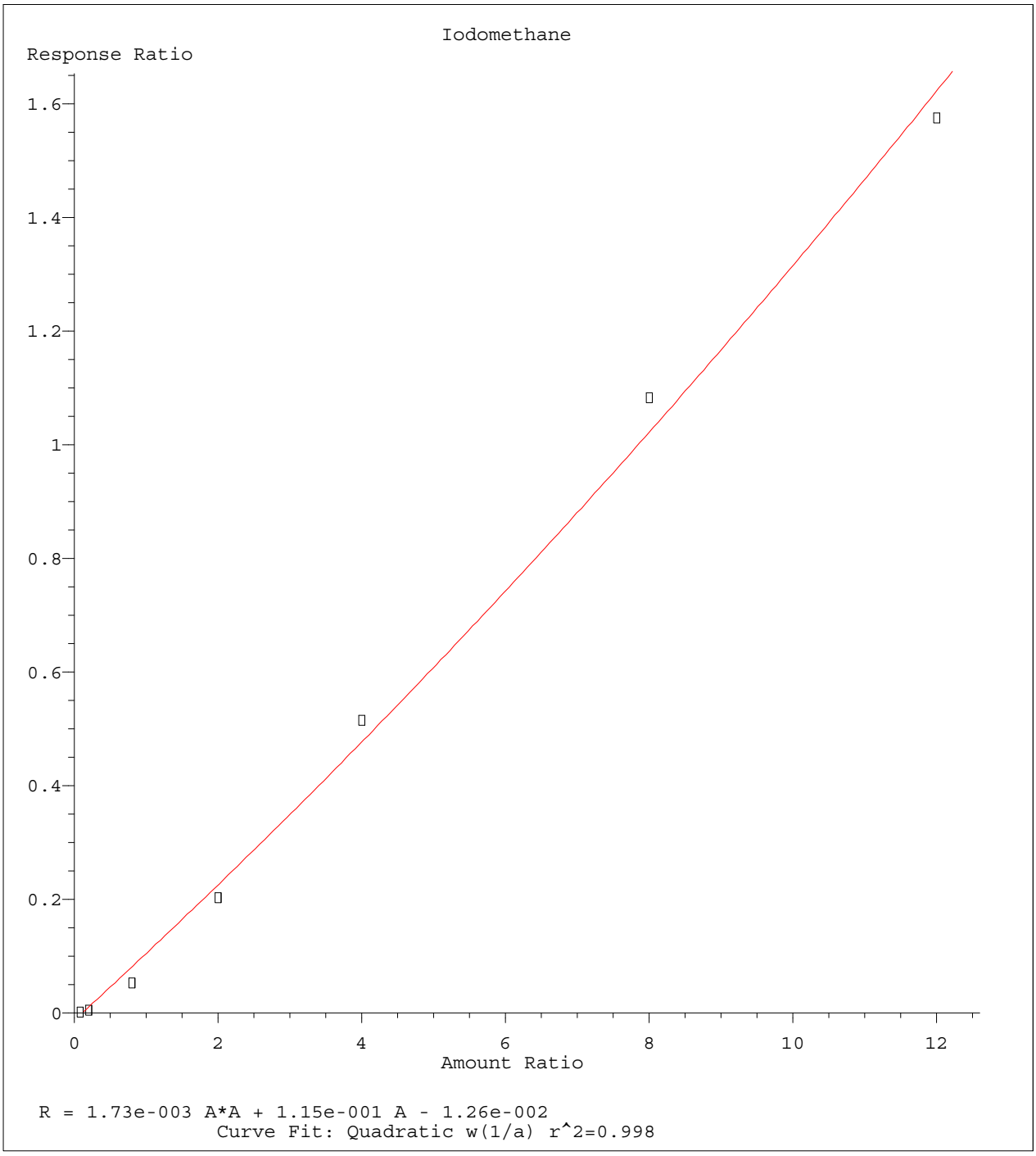

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

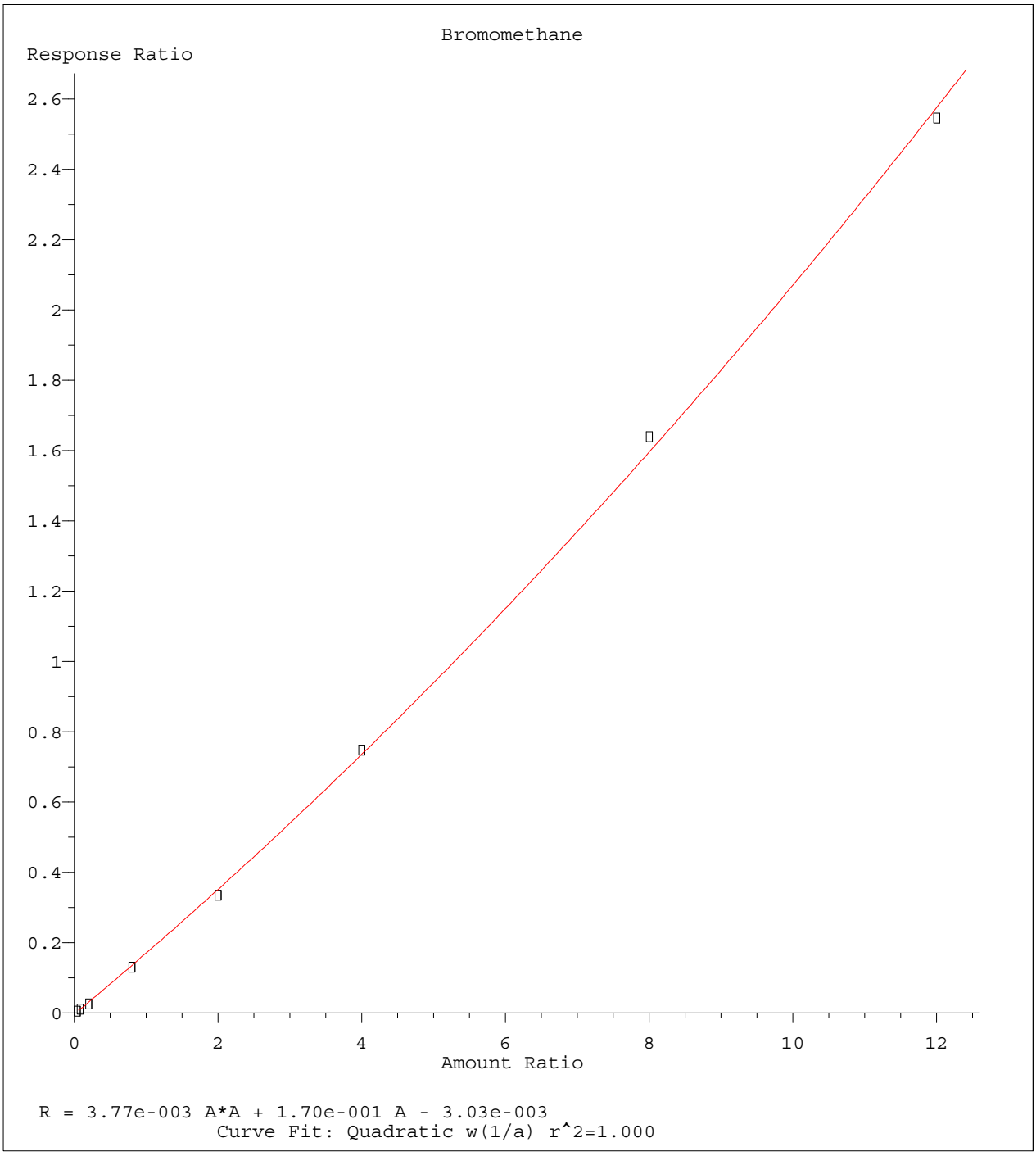

Method Name: K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:08:06 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: May 17 11:44:36 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Tue May 17 11:43:20 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	837879	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.58	117	574720	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	304324	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.67	111	229742	25.5204 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.08%		
43) 1,2-Dichloroethane-d4	10.31	65	238672	24.7259 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.92%		
58) Toluene-d8	12.68	98	776362	25.8115 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.24%		
80) p-Bromofluorobenzene	16.07	95	315683	25.0519 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 100.20%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.17	85	761591	54.2141 ug/L	99
3) Chloromethane	3.62	50	415589	50.6814 ug/L	100
4) Vinyl Chloride	3.84	62	509607	52.3810 ug/L	100
5) 1,3-Butadiene	3.88	54	347562	42.6002 ug/L	97
6) Bromomethane	4.73	94	272060	46.3924 ug/L	99
7) Chloroethane	4.88	64	285509	53.3336 ug/L	98
8) Trichlorofluoromethane	5.37	101	849580	46.9313 ug/L	100
9) Diethyl ether	5.90	59	451307	104.4282 ug/L	99
10) Isoprene	5.93	67	582863	53.0208 ug/L	99
11) Acrolein	6.13	56	38877	100.4722 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	419584	49.3091 ug/L	97
13) Acetone	6.23	43	54234	57.5310 ug/L	94
14) 1,1-Dichloroethene	6.46	61	622831	45.9700 ug/L	99
15) Tert-Butyl Alcohol	6.59	59	59797	197.9422 ug/L	97
16) Dimethyl Sulfide	6.73	62	351814	72.6234 ug/L	98
17) Iodomethane	6.99	142	92716	26.2832 ug/L	99
18) Methyl acetate	7.00	43	127540	50.0514 ug/L	98
19) Methylene Chloride	7.25	84	417642	48.4385 ug/L	99
20) Carbon Disulfide	7.29	76	1199899	42.3200 ug/L	100
21) Acrylonitrile	7.43	53	65324	53.4074 ug/L	93
22) Methyl Tert Butyl Ether	7.46	73	949572	50.8859 ug/L	97
23) trans-1,2-Dichloroethene	7.70	61	598296	48.0666 ug/L	99
24) n-Hexane	7.77	57	425106	45.9930 ug/L	99
25) Diisopropyl ether	8.13	45	2040382	105.1615 ug/L	98
26) Vinyl Acetate	8.29	43	415568	46.7802 ug/L	99
27) 1,1-Dichloroethane	8.32	63	721661	46.6846 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	2040020	98.1343 ug/L	99
29) 2-Butanone	8.88	43	73394	52.9905 ug/L	99
30) Propionitrile	8.98	54	42290	104.7756 ug/L	100
31) 2,2-Dichloropropane	9.10	77	780073	47.8861 ug/L	99
32) cis-1,2-Dichloroethene	9.16	96	470465	48.9162 ug/L	98
33) Chloroform	9.38	83	860252	47.1317 ug/L	100
34) 1-Bromopropane	9.51	122	98585	71.5615 ug/L	98
35) Bromochloromethane	9.60	130	234493	47.5456 ug/L	99
36) Tetrahydrofuran	9.62	42	86049	94.3281 ug/L	99
38) 1,1,1-Trichloroethane	9.90	97	825167	47.5949 ug/L	100
39) Cyclohexane	9.93	56	586721	48.8808 ug/L	97
40) 1,1-Dichloropropene	10.10	75	627217	47.4632 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1962875	103.9618 ug/L	99
42) Carbon Tetrachloride	10.24	117	711823	46.2363 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M412232.D 8260WT.M Tue May 17 11:44:38 2016 Page 1

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	108	0.00
2	T	Dichlorodifluoromethane	50.0000	54.2141	-8.4	112	0.00
3	P	Chloromethane	50.0000	50.6814	-1.4	111	0.00
4	C	Vinyl Chloride	50.0000	52.3811	-4.8	112	-0.01
5	T	1,3-Butadiene	50.0000	42.6002	14.8	89	0.00
6	T	Bromomethane	50.0000	46.3924	7.2	104	-0.01
7	T	Chloroethane	50.0000	53.3336	-6.7	117	-0.01
8	T	Trichlorofluoromethane	50.0000	46.9313	6.1	101	-0.01
9	T	Diethyl ether	100.0000	104.4282	-4.4	116	0.00
10	T	Isoprene	50.0000	53.0208	-6.0	117	0.00
11	T	Acrolein	50.0000	100.4722	-100.9#	220	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	49.3091	1.4	108	0.00
13	T	Acetone	50.0000	57.5310	-15.1	118	-0.01
14	C	1,1-Dichloroethene	50.0000	45.9700	8.1	100	0.00
15	T	Tert-Butyl Alcohol	200.0000	197.9423	1.0	108	0.01
16	T	Dimethyl Sulfide	50.0000	72.6234	-45.2#	159	0.00
17	T	Iodomethane	50.0000	26.2832	47.4#	59	0.01
18	T	Methyl acetate	50.0000	50.0514	-0.1	111	0.00
19	T	Methylene Chloride	50.0000	48.4385	3.1	107	0.00
20	T	Carbon Disulfide	50.0000	42.3200	15.4	94	0.00
21	T	Acrylonitrile	50.0000	53.4074	-6.8	109	0.00
22	T	Methyl Tert Butyl Ether	50.0000	50.8859	-1.8	105	0.00
23	T	trans-1,2-Dichloroethene	50.0000	48.0666	3.9	105	0.00
24	T	n-Hexane	50.0000	45.9930	8.0	101	-0.01
25	T	Diisopropyl ether	100.0000	105.1615	-5.2	115	0.00
26	T	Vinyl Acetate	50.0000	46.7802	6.4	97	0.00
27	P	1,1-Dichloroethane	50.0000	46.6846	6.6	100	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.1343	1.9	104	0.00
29	T	2-Butanone	50.0000	52.9905	-6.0	110	0.00
30	T	Propionitrile	100.0000	104.7756	-4.8	111	0.00
31	T	2,2-Dichloropropane	50.0000	47.8861	4.2	102	0.00
32	T	cis-1,2-Dichloroethene	50.0000	48.9162	2.2	107	-0.01
33	C	Chloroform	50.0000	47.1317	5.7	102	0.00
34		1-Bromopropane	50.0000	71.5615	-43.1#	155	0.00
35	T	Bromochloromethane	50.0000	47.5456	4.9	102	0.00
36	T	Tetrahydrofuran	100.0000	94.3281	5.7	108	-0.01
37	S	Dibromofluoromethane	25.0000	25.5204	-2.1	109	0.00
38	T	1,1,1-Trichloroethane	50.0000	47.5949	4.8	101	0.00
39	T	Cyclohexane	50.0000	48.8808	2.2	109	0.00
40	T	1,1-Dichloropropene	50.0000	47.4632	5.1	102	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	103.9618	-4.0	111	0.00
42	T	Carbon Tetrachloride	50.0000	46.2363	7.5	98	0.00
43	S	1,2-Dichloroethane-d4	25.0000	24.7259	1.1	104	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	49.0148	2.0	103	0.00
46	T	Benzene	50.0000	48.5232	3.0	104	0.00
47	T	Trichloroethene	50.0000	51.0658	-2.1	110	0.00
48	T	Methylcyclohexane	50.0000	49.8573	0.3	109	0.00
49	C	1,2-Dichloropropane	50.0000	50.9747	-1.9	111	0.00
50	T	Bromodichloromethane	50.0000	48.3053	3.4	99	0.00
51	T	1,4-Dioxane	200.0000	216.9538	-8.5	110	0.01
52	T	Dibromomethane	50.0000	45.8126	8.4	99	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	51.2623	-2.5	104	0.00
54	T	4-Methyl-2-Pentanone	50.0000	51.8715	-3.7	107	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\2\DATA\051316\8M412232.D Vial: 15
Acq On : 13 May 2016 19:17 Operator: TMB
Sample : WG568561-12 50ug/L ALT SRC STD 8260 Inst : HPMS8
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.8979	-7.8	111	0.00
56	T	Dimethyl Disulfide	50.0000	52.2714	-4.5	111	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	107	0.00
58	S	Toluene-d8	25.0000	25.8115	-3.2	108	0.00
59	C	Toluene	50.0000	49.0912	1.8	105	0.00
60	T	Ethyl Methacrylate	50.0000	55.9509	-11.9	113	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	50.6740	-1.3	102	0.00
63	T	1,1,2-Trichloroethane	50.0000	49.0377	1.9	103	0.00
64	T	2-Hexanone	50.0000	53.6057	-7.2	112	0.00
65	T	1,3-Dichloropropane	50.0000	53.6720	-7.3	110	0.00
66	T	Tetrachloroethene	50.0000	47.8053	4.4	104	0.00
67	T	Dibromochloromethane	50.0000	49.6585	0.7	102	0.00
68	T	1,2-Dibromoethane	50.0000	51.1121	-2.2	105	0.00
69	T	1-Chlorohexane	50.0000	51.0611	-2.1	111	0.00
70	P	Chlorobenzene	50.0000	50.1844	-0.4	108	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	49.3793	1.2	103	0.00
72	C	Ethylbenzene	50.0000	48.2013	3.6	105	0.00
73	T	m-,p-Xylene	100.0000	101.1341	-1.1	108	0.00
74	T	o-Xylene	50.0000	50.5675	-1.1	108	0.00
75	T	Styrene	50.0000	51.5086	-3.0	105	0.00
76	P	Bromoform	50.0000	48.2227	3.6	99	0.00
77	T	Isopropylbenzene	50.0000	51.1140	-2.2	107	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	106	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	49.6172	0.8	103	0.00
80	S	p-Bromofluorobenzene	25.0000	25.0519	-0.2	108	0.00
81	T	1,2,3-Trichloropropane	50.0000	50.0849	-0.2	106	0.01
82	T	trans-1,4-Dichloro-2-Butene	50.0000	39.2043	21.6	86	0.00
83	T	n-Propylbenzene	50.0000	51.9237	-3.8	108	0.00
84	T	Bromobenzene	50.0000	49.4648	1.1	105	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	51.6344	-3.3	107	0.00
86	T	2-Chlorotoluene	50.0000	51.5639	-3.1	106	0.00
87	T	4-Chlorotoluene	50.0000	48.2650	3.5	108	0.00
88	T	a-Methylstyrene	50.0000	56.4132	-12.8	120	0.00
89	T	tert-Butylbenzene	50.0000	50.9494	-1.9	112	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	49.6617	0.7	105	0.00
91	T	sec-Butylbenzene	50.0000	51.3386	-2.7	108	0.00
92	T	p-Isopropyltoluene	50.0000	50.1261	-0.3	107	0.00
93	T	1,3-Dichlorobenzene	50.0000	50.8943	-1.8	108	0.00
94	T	1,4-Dichlorobenzene	50.0000	50.4742	-0.9	110	0.00
95	T	n-Butylbenzene	50.0000	49.6520	0.7	105	0.00
96	T	1,2-Dichlorobenzene	50.0000	50.4907	-1.0	110	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	48.4851	3.0	100	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	50.1129	-0.2	107	0.00
99	T	Hexachlorobutadiene	50.0000	52.0919	-4.2	115	0.00
100	T	Naphthalene	50.0000	45.8047	8.4	95	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	47.7353	4.5	106	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M412232.D 8260WT.M Sat May 14 18:09:03 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062116\8M413126.D Vial: 3
Acq On : 21 Jun 2016 18:23 Operator: FJB
Sample : WG573644-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 21 18:45:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	842468	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	634272	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	348189	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	242647	26.8071 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.24%		
43) 1,2-Dichloroethane-d4	10.30	65	262534	27.0498 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 108.20%		
58) Toluene-d8	12.68	98	848655	25.5659 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.28%		
80) p-Bromofluorobenzene	16.08	95	365799	25.3719 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.48%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	706967	50.0516 ug/L	100
3) Chloromethane	3.62	50	386080	46.8263 ug/L	100
4) Vinyl Chloride	3.84	62	531769	54.3613 ug/L	100
5) 1,3-Butadiene	3.89	54	469338	57.2127 ug/L	96
6) Bromomethane	4.73	94	237465	40.5323 ug/L	99
7) Chloroethane	4.89	64	282748	52.5301 ug/L	98
8) Trichlorofluoromethane	5.37	101	1010155	55.4976 ug/L	100
9) Diethyl ether	5.90	59	465053	107.0227 ug/L	98
10) Isoprene	5.94	67	560373	50.6973 ug/L	99
11) Acrolein	6.14	56	17931	46.0877 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	460994	53.8805 ug/L	94
13) Acetone	6.24	43	54713	57.7230 ug/L	99
14) 1,1-Dichloroethene	6.47	61	729079	53.5188 ug/L	100
15) Tert-Butyl Alcohol	6.57	59	48518	159.7312 ug/L	97
16) Dimethyl Sulfide	6.73	62	239591	49.1883 ug/L	100
17) Iodomethane	6.99	142	129268	35.2171 ug/L	98
18) Methyl acetate	7.00	43	133943	52.2779 ug/L	99
19) Methylene Chloride	7.24	84	441231	50.8956 ug/L	99
20) Carbon Disulfide	7.29	76	1520883	53.3488 ug/L	100
21) Acrylonitrile	7.43	53	66221	53.8458 ug/L	97
22) Methyl Tert Butyl Ether	7.46	73	1012281	53.9509 ug/L	100
23) trans-1,2-Dichloroethene	7.70	61	658832	52.6417 ug/L	99
24) n-Hexane	7.78	57	525323	56.5261 ug/L	100
25) Diisopropyl ether	8.12	45	2046398	104.8971 ug/L	99
26) Vinyl Acetate	8.30	43	419641	46.9814 ug/L	99
27) 1,1-Dichloroethane	8.32	63	823421	52.9774 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	2274881	108.8361 ug/L	98
29) 2-Butanone	8.88	43	67631	48.5636 ug/L	93
30) Propionitrile	8.98	54	41084	101.2332 ug/L	94
31) 2,2-Dichloropropane	9.10	77	966004	58.9767 ug/L	99
32) cis-1,2-Dichloroethene	9.17	96	505239	52.2457 ug/L	100
33) Chloroform	9.37	83	977628	53.2708 ug/L	100
34) 1-Bromopropane	9.51	122	79927	57.7019 ug/L	99
35) Bromochloromethane	9.61	130	268391	54.1223 ug/L	95
36) Tetrahydrofuran	9.63	42	81203	88.5309 ug/L	93
38) 1,1,1-Trichloroethane	9.91	97	970703	55.6843 ug/L	100
39) Cyclohexane	9.94	56	642456	53.2326 ug/L	98
40) 1,1-Dichloropropene	10.11	75	712738	53.6410 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	2069642	109.0195 ug/L	99
42) Carbon Tetrachloride	10.25	117	866447	55.9733 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M413126.D 8260WT.M Fri Jun 24 17:14:31 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062116\8M413126.D Vial: 3
Acq On : 21 Jun 2016 18:23 Operator: FJB
Sample : WG573644-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 21 18:45:45 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	648513	54.9030 ug/L		100
46)	Benzene	10.46	78	1791975	51.7816 ug/L		100
47)	Trichloroethene	11.21	130	497052	53.8524 ug/L		98
48)	Methylcyclohexane	11.30	83	772305	55.0785 ug/L		98
49)	1,2-Dichloropropane	11.43	63	387114	50.2500 ug/L		96
50)	Bromodichloromethane	11.73	83	732132	54.0715 ug/L		99
51)	1,4-Dioxane	11.72	88	5489	141.8410 ug/L		84
52)	Dibromomethane	11.81	93	231585	50.7834 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.03	63	149076	45.0223 ug/L		96
54)	4-Methyl-2-Pentanone	12.06	58	67090	49.6023 ug/L		95
55)	cis-1,3-Dichloropropene	12.36	75	738187	53.5621 ug/L		99
56)	Dimethyl Disulfide	12.62	79	379506	51.5921 ug/L		100
59)	Toluene	12.78	91	1909258	48.4871 ug/L		100
60)	Ethyl Methacrylate	12.88	69	368867	48.7782 ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	669685	50.7497 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	294334	47.3701 ug/L		99
64)	2-Hexanone	13.12	58	60649	46.4489 ug/L	#	98
65)	1,3-Dichloropropane	13.48	76	533207	48.1994 ug/L		100
66)	Tetrachloroethene	13.60	164	438543	51.9821 ug/L		94
67)	Dibromochloromethane	13.87	129	454999	50.1513 ug/L		99
68)	1,2-Dibromoethane	14.13	107	294945	47.6288 ug/L		100
69)	1-Chlorohexane	14.21	91	667148	49.6341 ug/L		99
70)	Chlorobenzene	14.62	112	1281159	48.2494 ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.65	131	512855	49.8550 ug/L		99
72)	Ethylbenzene	14.65	106	690518	47.5308 ug/L		100
73)	m-,p-Xylene	14.75	106	1654045	97.0666 ug/L		100
74)	o-Xylene	15.31	106	807880	48.4927 ug/L		99
75)	Styrene	15.35	104	1355516	49.6076 ug/L		97
76)	Bromoform	15.83	173	282531	52.5027 ug/L		99
77)	Isopropylbenzene	15.73	105	2218306	50.1226 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	314446	44.9902 ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	100648	46.7642 ug/L		89
82)	trans-1,4-Dichloro-2-Buten	16.18	53	98274	44.8606 ug/L		88
83)	n-Propylbenzene	16.24	91	2624924	48.3222 ug/L		99
84)	Bromobenzene	16.37	156	542381	48.5427 ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	1926734	48.6921 ug/L		100
86)	2-Chlorotoluene	16.50	91	1832398	48.3152 ug/L		99
87)	4-Chlorotoluene	16.56	91	1589494	46.3979 ug/L		100
88)	a-Methylstyrene	16.83	118	856154	45.6045 ug/L		100
89)	tert-Butylbenzene	16.89	134	367638	47.4906 ug/L		98
90)	1,2,4-Trimethylbenzene	16.94	105	1954303	48.0312 ug/L		99
91)	sec-Butylbenzene	17.16	105	2214729	47.5764 ug/L		98
92)	p-Isopropyltoluene	17.32	119	1909463	48.3096 ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	1043963	48.5233 ug/L		98
94)	1,4-Dichlorobenzene	17.64	146	1026577	47.3283 ug/L		99
95)	n-Butylbenzene	17.85	91	1846719	47.2606 ug/L		98
96)	1,2-Dichlorobenzene	18.14	146	894170	46.7296 ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.13	75	63774	45.4568 ug/L		97
98)	1,2,4-Trichlorobenzene	20.28	180	702261	49.0994 ug/L		100
99)	Hexachlorobutadiene	20.43	225	325396	48.6913 ug/L		98
100)	Naphthalene	20.65	128	959183	45.1381 ug/L		99
101)	1,2,3-Trichlorobenzene	20.96	180	560837	46.4781 ug/L		98

(#) = qualifier out of range (m) = manual integration
8M413126.D 8260WT.M Fri Jun 24 17:14:32 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062116\8M413126.D Vial: 3
Acq On : 21 Jun 2016 18:23 Operator: FJB
Sample : WG573644-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 21 18:45 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

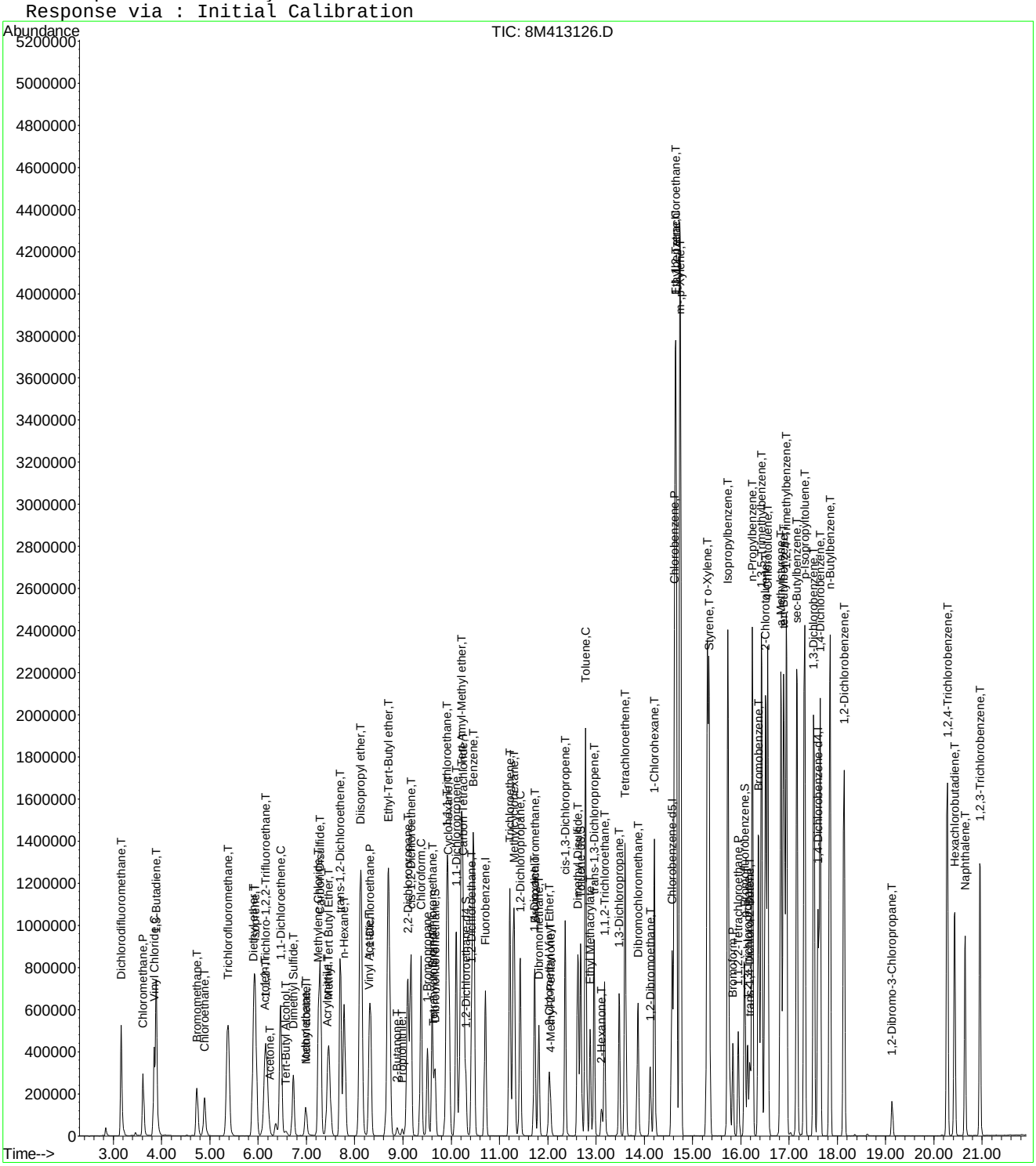

8M413126.D 8260WT.M Fri Jun 24 17:14:33 2016 Page 3

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062116\8M413126.D Vial: 3
Acq On : 21 Jun 2016 18:23 Operator: FJB
Sample : WG573644-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	108	0.00
2	T	Dichlorodifluoromethane	0.4192	0.4196	-0.1	104	0.00
3	P	Chloromethane	0.2447	0.2291	6.3	104	0.00
4	C	Vinyl Chloride	0.2903	0.3156	-8.7	117	0.00
5	T	1,3-Butadiene	0.2434	0.2786	-14.4	120	0.00
6	T	Bromomethane	0.1654	0.1409	14.8	91	0.00
7	T	Chloroethane	0.1597	0.1678	-5.1	116	0.00
8	T	Trichlorofluoromethane	0.5401	0.5995	-11.0	121	0.00
9	T	Diethyl ether	0.1290	0.1380	-7.0	119	0.00
10	T	Isoprene	0.3280	0.3326	-1.4	113	0.00
11	T	Acrolein	0.0116	0.0106	7.9	102	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2539	0.2736	-7.8	119	0.00
13	T	Acetone	0.0281	0.0325	-15.4	119	0.00
14	C	1,1-Dichloroethene	0.4043	0.4327	-7.0	118	0.00
15	T	Tert-Butyl Alcohol	0.0090	0.0072	20.1	87	0.00
16	T	Dimethyl Sulfide	0.1445	0.1422	1.6	108	0.00
17	T	Iodomethane	0.0866	0.0767	11.4	82	0.00
18	T	Methyl acetate	0.0760	0.0795	-4.6	117	0.00
19	T	Methylene Chloride	0.2573	0.2619	-1.8	113	0.00
20	T	Carbon Disulfide	0.8460	0.9026	-6.7	120	0.00
21	T	Acrylonitrile	0.0365	0.0393	-7.7	111	0.00
22	T	Methyl Tert Butyl Ether	0.5568	0.6008	-7.9	112	0.00
23	T	trans-1,2-Dichloroethene	0.3714	0.3910	-5.3	115	0.00
24	T	n-Hexane	0.2758	0.3118	-13.1	125	0.00
25	T	Diisopropyl ether	0.5789	0.6073	-4.9	115	0.00
26	T	Vinyl Acetate	0.2651	0.2490	6.0	98	0.00
27	P	1,1-Dichloroethane	0.4612	0.4887	-6.0	114	0.00
28	T	Ethyl-Tert-Butyl ether	0.6203	0.6751	-8.8	116	0.00
29	T	2-Butanone	0.0413	0.0401	2.9	102	0.00
30	T	Propionitrile	0.0120	0.0122	-1.2	107	0.00
31	T	2,2-Dichloropropane	0.4860	0.5733	-18.0	126	0.00
32	T	cis-1,2-Dichloroethene	0.2870	0.2999	-4.5	115	0.00
33	C	Chloroform	0.5446	0.5802	-6.5	116	0.00
34		1-Bromopropane	0.0411	0.0474	-15.4	126	0.00
35	T	Bromochloromethane	0.1472	0.1593	-8.2	117	0.00
36	T	Tetrahydrofuran	0.0272	0.0241	11.5	102	0.00
37	S	Dibromofluoromethane	0.2686	0.2880	-7.2	115	0.00
38	T	1,1,1-Trichloroethane	0.5173	0.5761	-11.4	119	0.00
39	T	Cyclohexane	0.3581	0.3813	-6.5	120	0.00
40	T	1,1-Dichloropropene	0.3943	0.4230	-7.3	116	0.00
41	T	Tert-Amyl-Methyl ether	0.5634	0.6142	-9.0	117	0.00
42	T	Carbon Tetrachloride	0.4593	0.5142	-11.9	120	0.00
43	S	1,2-Dichloroethane-d4	0.2880	0.3116	-8.2	114	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.3505	0.3849	-9.8	116	0.00
46	T	Benzene	1.0269	1.0635	-3.6	111	0.00
47	T	Trichloroethene	0.2739	0.2950	-7.7	117	0.00
48	T	Methylcyclohexane	0.4161	0.4584	-10.2	122	0.00
49	C	1,2-Dichloropropane	0.2286	0.2298	-0.5	110	0.00
50	T	Bromodichloromethane	0.4018	0.4345	-8.1	112	0.00
51	T	1,4-Dioxane	0.0012	0.0008	29.6#	72	0.00
52	T	Dibromomethane	0.1353	0.1374	-1.6	111	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0983	0.0885	10.0	92	0.00
54	T	4-Methyl-2-Pentanone	0.0401	0.0398	0.8	103	0.00

(#) = Out of Range

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062116\8M413126.D Vial: 3
Acq On : 21 Jun 2016 18:23 Operator: FJB
Sample : WG573644-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4090	0.4381	-7.1	111	0.00
56	T	Dimethyl Disulfide	0.2183	0.2252	-3.2	110	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	118	0.00
58	S	Toluene-d8	1.3084	1.3380	-2.3	118	0.00
59	C	Toluene	1.5520	1.5051	3.0	114	0.00
60	T	Ethyl Methacrylate	0.2981	0.2908	2.4	109	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.5201	0.5279	-1.5	113	0.00
63	T	1,1,2-Trichloroethane	0.2449	0.2320	5.3	110	0.00
64	T	2-Hexanone	0.0515	0.0478	7.1	107	0.00
65	T	1,3-Dichloropropane	0.4360	0.4203	3.6	109	0.00
66	T	Tetrachloroethene	0.3325	0.3457	-4.0	125	0.00
67	T	Dibromochloromethane	0.3576	0.3587	-0.3	113	0.00
68	T	1,2-Dibromoethane	0.2441	0.2325	4.7	108	0.00
69	T	1-Chlorohexane	0.5298	0.5259	0.7	119	0.00
70	P	Chlorobenzene	1.0466	1.0099	3.5	115	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4055	0.4043	0.3	115	0.00
72	C	Ethylbenzene	0.5726	0.5443	4.9	114	0.00
73	T	m-,p-Xylene	0.6716	0.6520	2.9	115	0.00
74	T	o-Xylene	0.6566	0.6369	3.0	114	0.00
75	T	Styrene	1.0770	1.0686	0.8	112	0.00
76	P	Bromoform	0.2121	0.2227	-5.0	119	0.00
77	T	Isopropylbenzene	1.7444	1.7487	-0.2	116	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	121	0.00
79	P	1,1,2,2-Tetrachloroethane	0.5018	0.4515	10.0	107	0.00
80	S	p-Bromofluorobenzene	1.0352	1.0506	-1.5	125	0.00
81	T	1,2,3-Trichloropropane	0.1545	0.1445	6.5	113	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1376	0.1411	-2.6	113	0.00
83	T	n-Propylbenzene	3.9003	3.7694	3.4	115	0.00
84	T	Bromobenzene	0.8022	0.7789	2.9	118	0.00
85	T	1,3,5-Trimethylbenzene	2.8411	2.7668	2.6	116	0.00
86	T	2-Chlorotoluene	2.7231	2.6313	3.4	114	0.00
87	T	4-Chlorotoluene	2.4597	2.2825	7.2	119	0.00
88	T	a-Methylstyrene	1.3479	1.2294	8.8	111	0.00
89	T	tert-Butylbenzene	0.5558	0.5279	5.0	120	0.00
90	T	1,2,4-Trimethylbenzene	2.9214	2.8064	3.9	116	0.00
91	T	sec-Butylbenzene	3.3424	3.1803	4.8	115	0.00
92	T	p-Isopropyltoluene	2.8379	2.7420	3.4	118	0.00
93	T	1,3-Dichlorobenzene	1.5448	1.4991	3.0	118	0.00
94	T	1,4-Dichlorobenzene	1.5574	1.4742	5.3	118	0.00
95	T	n-Butylbenzene	2.8056	2.6519	5.5	115	0.00
96	T	1,2-Dichlorobenzene	1.3739	1.2840	6.5	116	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1007	0.0916	9.1	107	0.00
98	T	1,2,4-Trichlorobenzene	1.0269	1.0085	1.8	120	0.00
99	T	Hexachlorobutadiene	0.4798	0.4673	2.6	123	0.00
100	T	Naphthalene	1.5257	1.3774	9.7	107	0.00
101	T	1,2,3-Trichlorobenzene	0.8664	0.8054	7.0	118	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062116\8M413126.D Vial: 3
Acq On : 21 Jun 2016 18:23 Operator: FJB
Sample : WG573644-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	108	0.00
2	T	Dichlorodifluoromethane	50.0000	50.0516	-0.1	104	0.00
3	P	Chloromethane	50.0000	46.8263	6.3	104	0.00
4	C	Vinyl Chloride	50.0000	54.3613	-8.7	117	0.00
5	T	1,3-Butadiene	50.0000	57.2127	-14.4	120	0.00
6	T	Bromomethane	50.0000	40.5323	18.9	91	0.00
7	T	Chloroethane	50.0000	52.5301	-5.1	116	0.00
8	T	Trichlorofluoromethane	50.0000	55.4976	-11.0	121	0.00
9	T	Diethyl ether	100.0000	107.0227	-7.0	119	0.00
10	T	Isoprene	50.0000	50.6973	-1.4	113	0.00
11	T	Acrolein	50.0000	46.0877	7.8	102	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	53.8805	-7.8	119	0.00
13	T	Acetone	50.0000	57.7230	-15.4	119	0.00
14	C	1,1-Dichloroethene	50.0000	53.5189	-7.0	118	0.00
15	T	Tert-Butyl Alcohol	200.0000	159.7312	20.1	87	0.00
16	T	Dimethyl Sulfide	50.0000	49.1883	1.6	108	0.00
17	T	Iodomethane	50.0000	35.2171	29.6#	82	0.00
18	T	Methyl acetate	50.0000	52.2779	-4.6	117	0.00
19	T	Methylene Chloride	50.0000	50.8956	-1.8	113	0.00
20	T	Carbon Disulfide	50.0000	53.3488	-6.7	120	0.00
21	T	Acrylonitrile	50.0000	53.8458	-7.7	111	0.00
22	T	Methyl Tert Butyl Ether	50.0000	53.9509	-7.9	112	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.6417	-5.3	115	0.00
24	T	n-Hexane	50.0000	56.5261	-13.1	125	0.00
25	T	Diisopropyl ether	100.0000	104.8971	-4.9	115	0.00
26	T	Vinyl Acetate	50.0000	46.9814	6.0	98	0.00
27	P	1,1-Dichloroethane	50.0000	52.9774	-6.0	114	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	108.8361	-8.8	116	0.00
29	T	2-Butanone	50.0000	48.5636	2.9	102	0.00
30	T	Propionitrile	100.0000	101.2332	-1.2	107	0.00
31	T	2,2-Dichloropropane	50.0000	58.9767	-18.0	126	0.00
32	T	cis-1,2-Dichloroethene	50.0000	52.2457	-4.5	115	0.00
33	C	Chloroform	50.0000	53.2708	-6.5	116	0.00
34		1-Bromopropane	50.0000	57.7019	-15.4	126	0.00
35	T	Bromochloromethane	50.0000	54.1223	-8.2	117	0.00
36	T	Tetrahydrofuran	100.0000	88.5309	11.5	102	0.00
37	S	Dibromofluoromethane	25.0000	26.8071	-7.2	115	0.00
38	T	1,1,1-Trichloroethane	50.0000	55.6843	-11.4	119	0.00
39	T	Cyclohexane	50.0000	53.2326	-6.5	120	0.00
40	T	1,1-Dichloropropene	50.0000	53.6410	-7.3	116	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	109.0195	-9.0	117	0.00
42	T	Carbon Tetrachloride	50.0000	55.9733	-11.9	120	0.00
43	S	1,2-Dichloroethane-d4	25.0000	27.0498	-8.2	114	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	54.9030	-9.8	116	0.00
46	T	Benzene	50.0000	51.7816	-3.6	111	0.00
47	T	Trichloroethene	50.0000	53.8524	-7.7	117	0.00
48	T	Methylcyclohexane	50.0000	55.0785	-10.2	122	0.00
49	C	1,2-Dichloropropane	50.0000	50.2500	-0.5	110	0.00
50	T	Bromodichloromethane	50.0000	54.0715	-8.1	112	0.00
51	T	1,4-Dioxane	200.0000	141.8410	29.1#	72	0.00
52	T	Dibromomethane	50.0000	50.7834	-1.6	111	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	45.0223	10.0	92	0.00
54	T	4-Methyl-2-Pentanone	50.0000	49.6023	0.8	103	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062116\8M413126.D Vial: 3
Acq On : 21 Jun 2016 18:23 Operator: FJB
Sample : WG573644-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	53.5621	-7.1	111	0.00
56	T	Dimethyl Disulfide	50.0000	51.5921	-3.2	110	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	118	0.00
58	S	Toluene-d8	25.0000	25.5659	-2.3	118	0.00
59	C	Toluene	50.0000	48.4871	3.0	114	0.00
60	T	Ethyl Methacrylate	50.0000	48.7782	2.4	109	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	50.7497	-1.5	113	0.00
63	T	1,1,2-Trichloroethane	50.0000	47.3701	5.3	110	0.00
64	T	2-Hexanone	50.0000	46.4489	7.1	107	0.00
65	T	1,3-Dichloropropane	50.0000	48.1994	3.6	109	0.00
66	T	Tetrachloroethene	50.0000	51.9821	-4.0	125	0.00
67	T	Dibromochloromethane	50.0000	50.1513	-0.3	113	0.00
68	T	1,2-Dibromoethane	50.0000	47.6288	4.7	108	0.00
69	T	1-Chlorohexane	50.0000	49.6341	0.7	119	0.00
70	P	Chlorobenzene	50.0000	48.2494	3.5	115	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	49.8550	0.3	115	0.00
72	C	Ethylbenzene	50.0000	47.5308	4.9	114	0.00
73	T	m-,p-Xylene	100.0000	97.0666	2.9	115	0.00
74	T	o-Xylene	50.0000	48.4927	3.0	114	0.00
75	T	Styrene	50.0000	49.6076	0.8	112	0.00
76	P	Bromoform	50.0000	52.5027	-5.0	119	0.00
77	T	Isopropylbenzene	50.0000	50.1226	-0.2	116	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	121	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	44.9902	10.0	107	0.00
80	S	p-Bromofluorobenzene	25.0000	25.3719	-1.5	125	0.00
81	T	1,2,3-Trichloropropane	50.0000	46.7642	6.5	113	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	44.8606	10.3	113	0.00
83	T	n-Propylbenzene	50.0000	48.3222	3.4	115	0.00
84	T	Bromobenzene	50.0000	48.5427	2.9	118	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	48.6921	2.6	116	0.00
86	T	2-Chlorotoluene	50.0000	48.3152	3.4	114	0.00
87	T	4-Chlorotoluene	50.0000	46.3979	7.2	119	0.00
88	T	a-Methylstyrene	50.0000	45.6045	8.8	111	0.00
89	T	tert-Butylbenzene	50.0000	47.4906	5.0	120	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	48.0312	3.9	116	0.00
91	T	sec-Butylbenzene	50.0000	47.5763	4.8	115	0.00
92	T	p-Isopropyltoluene	50.0000	48.3096	3.4	118	0.00
93	T	1,3-Dichlorobenzene	50.0000	48.5234	3.0	118	0.00
94	T	1,4-Dichlorobenzene	50.0000	47.3283	5.3	118	0.00
95	T	n-Butylbenzene	50.0000	47.2606	5.5	115	0.00
96	T	1,2-Dichlorobenzene	50.0000	46.7296	6.5	116	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	45.4568	9.1	107	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	49.0994	1.8	120	0.00
99	T	Hexachlorobutadiene	50.0000	48.6914	2.6	123	0.00
100	T	Naphthalene	50.0000	45.1381	9.7	107	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	46.4781	7.0	118	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413126.D 8260WT.M Fri Jun 24 17:18:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062216\8M413163.D Vial: 3
Acq On : 22 Jun 2016 15:41 Operator: FJB
Sample : WG573770-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 22 16:05:40 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	733044	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	548013	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	310940	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	213894	27.1579 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 108.64%		
43) 1,2-Dichloroethane-d4	10.30	65	238865	28.2849 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 113.12%		
58) Toluene-d8	12.68	98	756784	26.3867 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.56%		
80) p-Bromofluorobenzene	16.08	95	326001	25.3202 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.28%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	662713	53.9222 ug/L	100
3) Chloromethane	3.62	50	356220	49.6540 ug/L	100
4) Vinyl Chloride	3.84	62	489912	57.5583 ug/L	99
5) 1,3-Butadiene	3.89	54	474280	66.4454 ug/L	94
6) Bromomethane	4.73	94	186080	36.6673 ug/L	100
7) Chloroethane	4.89	64	247391	52.8222 ug/L	98
8) Trichlorofluoromethane	5.37	101	959949	60.6119 ug/L	100
9) Diethyl ether	5.90	59	374507	99.0505 ug/L	98
10) Isoprene	5.94	67	563283	58.5676 ug/L	97
11) Acrolein	6.14	56	12754	37.6748 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	409083	54.9504 ug/L	95
13) Acetone	6.23	43	48270	58.5273 ug/L	97
14) 1,1-Dichloroethene	6.46	61	674118	56.8711 ug/L	97
15) Tert-Butyl Alcohol	6.56	59	46245	174.9747 ug/L	99
16) Dimethyl Sulfide	6.73	62	213259	50.3179 ug/L	100
17) Iodomethane	6.99	142	144082	44.1276 ug/L	97
18) Methyl acetate	7.00	43	124376	55.7902 ug/L	98
19) Methylene Chloride	7.25	84	383069	50.7825 ug/L	100
20) Carbon Disulfide	7.29	76	1450754	58.4851 ug/L	99
21) Acrylonitrile	7.43	53	55427	51.7966 ug/L	99
22) Methyl Tert Butyl Ether	7.46	73	880555	53.9358 ug/L	100
23) trans-1,2-Dichloroethene	7.70	61	591515	54.3180 ug/L	100
24) n-Hexane	7.78	57	463490	57.3174 ug/L	99
25) Diisopropyl ether	8.12	45	1751539	103.1850 ug/L	96
26) Vinyl Acetate	8.30	43	337574	43.4350 ug/L	99
27) 1,1-Dichloroethane	8.32	63	746209	55.1763 ug/L	100
28) Ethyl-Tert-Butyl ether	8.70	59	1993570	109.6148 ug/L	99
29) 2-Butanone	8.88	43	58450	48.2362 ug/L	94
30) Propionitrile	8.99	54	33973	96.2072 ug/L	99
31) 2,2-Dichloropropane	9.10	77	907242	63.6573 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	448932	53.3528 ug/L	98
33) Chloroform	9.37	83	889950	55.7319 ug/L	100
34) 1-Bromopropane	9.51	122	76625	63.5756 ug/L	99
35) Bromochloromethane	9.60	130	235050	54.4744 ug/L	96
36) Tetrahydrofuran	9.63	42	72506	90.8490 ug/L	98
38) 1,1,1-Trichloroethane	9.91	97	905263	59.6822 ug/L	99
39) Cyclohexane	9.93	56	580560	55.2847 ug/L	97
40) 1,1-Dichloropropene	10.10	75	652272	56.4182 ug/L	100
41) Tert-Amyl-Methyl ether	10.21	73	1799715	108.9522 ug/L	100
42) Carbon Tetrachloride	10.25	117	820447	60.9134 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062216\8M413163.D Vial: 3
Acq On : 22 Jun 2016 15:41 Operator: FJB
Sample : WG573770-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 22 16:05:40 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.42	62	596728	58.0600 ug/L	98
46)	Benzene	10.46	78	1604181	53.2746 ug/L	99
47)	Trichloroethene	11.21	130	444764	55.3804 ug/L	99
48)	Methylcyclohexane	11.30	83	700951	57.4519 ug/L	98
49)	1,2-Dichloropropane	11.42	63	338396	50.4831 ug/L	89
50)	Bromodichloromethane	11.73	83	670981	56.9525 ug/L	100
51)	1,4-Dioxane	11.72	88	5139	152.6197 ug/L	86
52)	Dibromomethane	11.81	93	201226	50.7129 ug/L	96
53)	2-Chloroethyl Vinyl Ether	12.02	63	131607	45.6796 ug/L	98
54)	4-Methyl-2-Pentanone	12.05	58	55508	47.1653 ug/L	93
55)	cis-1,3-Dichloropropene	12.36	75	669136	55.7993 ug/L	100
56)	Dimethyl Disulfide	12.62	79	368346	57.5498 ug/L	98
59)	Toluene	12.78	91	1721616	50.6037 ug/L	100
60)	Ethyl Methacrylate	12.88	69	334116	51.1373 ug/L	96
62)	trans-1,3-Dichloropropene	12.96	75	598850	52.5249 ug/L	99
63)	1,1,2-Trichloroethane	13.18	97	257636	47.9905 ug/L	100
64)	2-Hexanone	13.12	58	50408	44.6823 ug/L #	96
65)	1,3-Dichloropropane	13.48	76	461776	48.3128 ug/L	98
66)	Tetrachloroethene	13.60	164	396562	54.4048 ug/L	96
67)	Dibromochloromethane	13.87	129	407562	51.9936 ug/L	100
68)	1,2-Dibromoethane	14.12	107	264335	49.4046 ug/L	100
69)	1-Chlorohexane	14.21	91	625960	53.9001 ug/L	98
70)	Chlorobenzene	14.62	112	1147614	50.0230 ug/L	99
71)	1,1,1,2-Tetrachloroethane	14.66	131	461856	51.9643 ug/L	98
72)	Ethylbenzene	14.66	106	624125	49.7229 ug/L	99
73)	m-,p-Xylene	14.75	106	1503763	102.1378 ug/L	99
74)	o-Xylene	15.31	106	737081	51.2070 ug/L	100
75)	Styrene	15.35	104	1225122	51.8929 ug/L	97
76)	Bromoform	15.83	173	248085	53.3581 ug/L	99
77)	Isopropylbenzene	15.73	105	1994935	52.1706 ug/L	99
79)	1,1,2,2-Tetrachloroethane	15.95	83	272075	43.5912 ug/L	99
81)	1,2,3-Trichloropropane	16.13	110	88111	45.8434 ug/L	85
82)	trans-1,4-Dichloro-2-Buten	16.18	53	93400	47.7038 ug/L	78
83)	n-Propylbenzene	16.24	91	2359407	48.6375 ug/L	99
84)	Bromobenzene	16.37	156	481990	48.3055 ug/L	97
85)	1,3,5-Trimethylbenzene	16.42	105	1760230	49.8132 ug/L	99
86)	2-Chlorotoluene	16.51	91	1680776	49.6264 ug/L	99
87)	4-Chlorotoluene	16.56	91	1429354	46.7216 ug/L	99
88)	a-Methylstyrene	16.83	118	848740	50.6254 ug/L	99
89)	tert-Butylbenzene	16.89	134	325684	47.1110 ug/L	98
90)	1,2,4-Trimethylbenzene	16.94	105	1777262	48.9126 ug/L	100
91)	sec-Butylbenzene	17.16	105	1996091	48.0164 ug/L	99
92)	p-Isopropyltoluene	17.32	119	1717647	48.6625 ug/L	99
93)	1,3-Dichlorobenzene	17.51	146	935639	48.6981 ug/L	98
94)	1,4-Dichlorobenzene	17.64	146	929018	47.9614 ug/L	97
95)	n-Butylbenzene	17.85	91	1670321	47.8670 ug/L	99
96)	1,2-Dichlorobenzene	18.14	146	798369	46.7212 ug/L	99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	56411	45.0254 ug/L	99
98)	1,2,4-Trichlorobenzene	20.28	180	603545	47.2526 ug/L	99
99)	Hexachlorobutadiene	20.43	225	286706	48.0413 ug/L	98
100)	Naphthalene	20.65	128	820336	43.2287 ug/L	99
101)	1,2,3-Trichlorobenzene	20.96	180	475605	44.1363 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413163.D 8260WT.M Mon Jun 27 12:27:21 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062216\8M413163.D Vial: 3
Acq On : 22 Jun 2016 15:41 Operator: FJB
Sample : WG573770-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 22 16:05 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

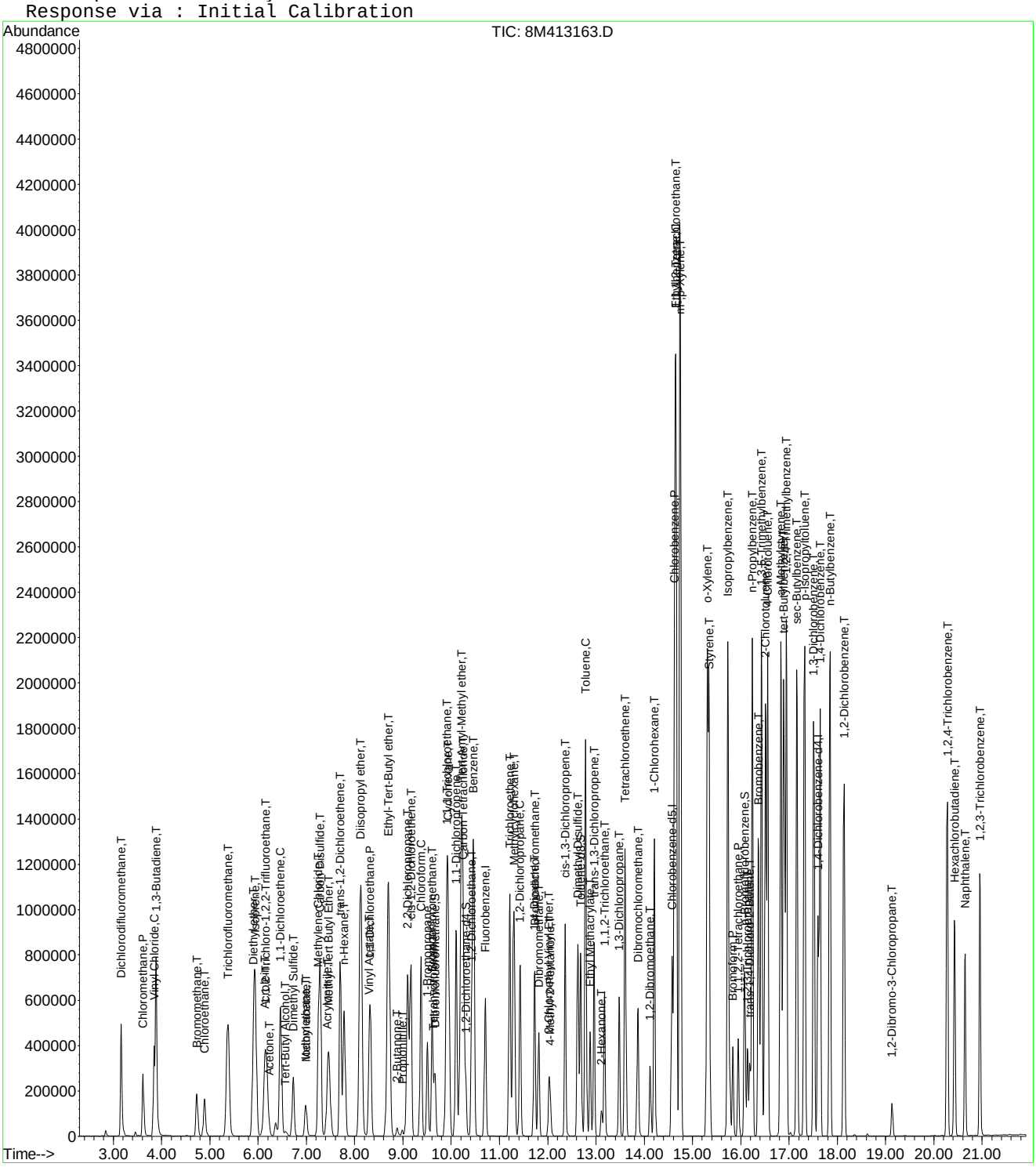

8M413163.D 8260WT.M Mon Jun 27 12:27:22 2016 Page 3

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062216\8M413163.D Vial: 3
Acq On : 22 Jun 2016 15:41 Operator: FJB
Sample : WG573770-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	94	0.00
2	T	Dichlorodifluoromethane	0.4192	0.4520	-7.8	97	0.00
3	P	Chloromethane	0.2447	0.2430	0.7	96	0.00
4	C	Vinyl Chloride	0.2903	0.3342	-15.1	108	0.00
5	T	1,3-Butadiene	0.2434	0.3235	-32.9#	121	0.00
6	T	Bromomethane	0.1654	0.1269	23.3	71	0.00
7	T	Chloroethane	0.1597	0.1687	-5.6	101	0.00
8	T	Trichlorofluoromethane	0.5401	0.6548	-21.2	115	0.00
9	T	Diethyl ether	0.1290	0.1277	1.0	96	0.00
10	T	Isoprene	0.3280	0.3842	-17.1	113	0.00
11	T	Acrolein	0.0116	0.0087	24.7	72	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2539	0.2790	-9.9	106	0.00
13	T	Acetone	0.0281	0.0329	-17.0	105	-0.01
14	C	1,1-Dichloroethene	0.4043	0.4598	-13.7	109	0.00
15	T	Tert-Butyl Alcohol	0.0090	0.0079	12.4	83	-0.01
16	T	Dimethyl Sulfide	0.1445	0.1455	-0.6	96	0.00
17	T	Iodomethane	0.0866	0.0983	-13.5	91	0.00
18	T	Methyl acetate	0.0760	0.0848	-11.6	108	0.00
19	T	Methylene Chloride	0.2573	0.2613	-1.6	98	0.00
20	T	Carbon Disulfide	0.8460	0.9895	-17.0	114	0.00
21	T	Acrylonitrile	0.0365	0.0378	-3.6	93	0.00
22	T	Methyl Tert Butyl Ether	0.5568	0.6006	-7.9	98	0.00
23	T	trans-1,2-Dichloroethene	0.3714	0.4035	-8.6	104	0.00
24	T	n-Hexane	0.2758	0.3161	-14.6	110	0.00
25	T	Diisopropyl ether	0.5789	0.5974	-3.2	98	0.00
26	T	Vinyl Acetate	0.2651	0.2303	13.1	79	0.00
27	P	1,1-Dichloroethane	0.4612	0.5090	-10.4	103	0.00
28	T	Ethyl-Tert-Butyl ether	0.6203	0.6799	-9.6	102	0.00
29	T	2-Butanone	0.0413	0.0399	3.5	88	0.00
30	T	Propionitrile	0.0120	0.0116	3.7	89	0.00
31	T	2,2-Dichloropropane	0.4860	0.6188	-27.3#	118	0.00
32	T	cis-1,2-Dichloroethene	0.2870	0.3062	-6.7	102	0.00
33	C	Chloroform	0.5446	0.6070	-11.5	105	0.00
34		1-Bromopropane	0.0411	0.0523	-27.2#	121	0.00
35	T	Bromochloromethane	0.1472	0.1603	-8.9	102	0.00
36	T	Tetrahydrofuran	0.0272	0.0247	9.1	91	0.00
37	S	Dibromofluoromethane	0.2686	0.2918	-8.6	101	0.00
38	T	1,1,1-Trichloroethane	0.5173	0.6175	-19.4	111	0.00
39	T	Cyclohexane	0.3581	0.3960	-10.6	108	0.00
40	T	1,1-Dichloropropene	0.3943	0.4449	-12.8	106	0.00
41	T	Tert-Amyl-Methyl ether	0.5634	0.6138	-9.0	102	0.00
42	T	Carbon Tetrachloride	0.4593	0.5596	-21.8	113	0.00
43	S	1,2-Dichloroethane-d4	0.2880	0.3258	-13.1	104	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.3505	0.4070	-16.1	106	0.00
46	T	Benzene	1.0269	1.0942	-6.5	100	0.00
47	T	Trichloroethene	0.2739	0.3034	-10.8	105	0.00
48	T	Methylcyclohexane	0.4161	0.4781	-14.9	110	0.00
49	C	1,2-Dichloropropane	0.2286	0.2308	-1.0	96	0.00
50	T	Bromodichloromethane	0.4018	0.4577	-13.9	102	0.00
51	T	1,4-Dioxane	0.0012	0.0009	23.5	68	0.00
52	T	Dibromomethane	0.1353	0.1373	-1.4	96	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0983	0.0898	8.6	81	0.00
54	T	4-Methyl-2-Pentanone	0.0401	0.0379	5.7	85	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062216\8M413163.D Vial: 3
Acq On : 22 Jun 2016 15:41 Operator: FJB
Sample : WG573770-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4090	0.4564	-11.6	100	0.00
56	T	Dimethyl Disulfide	0.2183	0.2512	-15.1	107	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	102	0.00
58	S	Toluene-d8	1.3084	1.3810	-5.5	105	0.00
59	C	Toluene	1.5520	1.5708	-1.2	103	0.00
60	T	Ethyl Methacrylate	0.2981	0.3048	-2.3	99	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.5201	0.5464	-5.0	101	0.00
63	T	1,1,2-Trichloroethane	0.2449	0.2351	4.0	96	0.00
64	T	2-Hexanone	0.0515	0.0460	10.6	89	0.00
65	T	1,3-Dichloropropane	0.4360	0.4213	3.4	94	0.00
66	T	Tetrachloroethene	0.3325	0.3618	-8.8	113	0.00
67	T	Dibromochloromethane	0.3576	0.3719	-4.0	102	0.00
68	T	1,2-Dibromoethane	0.2441	0.2412	1.2	97	0.00
69	T	1-Chlorohexane	0.5298	0.5711	-7.8	112	0.00
70	P	Chlorobenzene	1.0466	1.0471	-0.0	103	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4055	0.4214	-3.9	103	0.00
72	C	Ethylbenzene	0.5726	0.5694	0.6	103	0.00
73	T	m-,p-Xylene	0.6716	0.6860	-2.1	104	0.00
74	T	o-Xylene	0.6566	0.6725	-2.4	104	0.00
75	T	Styrene	1.0770	1.1178	-3.8	101	0.00
76	P	Bromoform	0.2121	0.2264	-6.7	104	0.00
77	T	Isopropylbenzene	1.7444	1.8201	-4.3	104	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	108	0.00
79	P	1,1,2,2-Tetrachloroethane	0.5018	0.4375	12.8	92	0.00
80	S	p-Bromofluorobenzene	1.0352	1.0484	-1.3	111	0.00
81	T	1,2,3-Trichloropropane	0.1545	0.1417	8.3	99	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1376	0.1502	-9.2	108	0.00
83	T	n-Propylbenzene	3.9003	3.7940	2.7	104	0.00
84	T	Bromobenzene	0.8022	0.7751	3.4	105	0.00
85	T	1,3,5-Trimethylbenzene	2.8411	2.8305	0.4	106	0.00
86	T	2-Chlorotoluene	2.7231	2.7027	0.7	104	0.00
87	T	4-Chlorotoluene	2.4597	2.2984	6.6	107	0.00
88	T	a-Methylstyrene	1.3479	1.3648	-1.3	110	0.00
89	T	tert-Butylbenzene	0.5558	0.5237	5.8	106	0.00
90	T	1,2,4-Trimethylbenzene	2.9214	2.8579	2.2	106	0.00
91	T	sec-Butylbenzene	3.3424	3.2098	4.0	104	0.00
92	T	p-Isopropyltoluene	2.8379	2.7620	2.7	106	0.00
93	T	1,3-Dichlorobenzene	1.5448	1.5045	2.6	106	0.00
94	T	1,4-Dichlorobenzene	1.5574	1.4939	4.1	107	0.00
95	T	n-Butylbenzene	2.8056	2.6859	4.3	104	0.00
96	T	1,2-Dichlorobenzene	1.3739	1.2838	6.6	104	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1007	0.0907	9.9	95	0.00
98	T	1,2,4-Trichlorobenzene	1.0269	0.9705	5.5	103	0.00
99	T	Hexachlorobutadiene	0.4798	0.4610	3.9	108	0.00
100	T	Naphthalene	1.5257	1.3191	13.5	92	0.00
101	T	1,2,3-Trichlorobenzene	0.8664	0.7648	11.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413163.D 8260WT.M Mon Jun 27 12:36:37 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062216\8M413163.D Vial: 3
Acq On : 22 Jun 2016 15:41 Operator: FJB
Sample : WG573770-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	94	0.00
2	T	Dichlorodifluoromethane	50.0000	53.9222	-7.8	97	0.00
3	P	Chloromethane	50.0000	49.6540	0.7	96	0.00
4	C	Vinyl Chloride	50.0000	57.5583	-15.1	108	0.00
5	T	1,3-Butadiene	50.0000	66.4454	-32.9#	121	0.00
6	T	Bromomethane	50.0000	36.6673	26.7#	71	0.00
7	T	Chloroethane	50.0000	52.8222	-5.6	101	0.00
8	T	Trichlorofluoromethane	50.0000	60.6119	-21.2	115	0.00
9	T	Diethyl ether	100.0000	99.0505	0.9	96	0.00
10	T	Isoprene	50.0000	58.5676	-17.1	113	0.00
11	T	Acrolein	50.0000	37.6748	24.7	72	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	54.9504	-9.9	106	0.00
13	T	Acetone	50.0000	58.5273	-17.1	105	-0.01
14	C	1,1-Dichloroethene	50.0000	56.8711	-13.7	109	0.00
15	T	Tert-Butyl Alcohol	200.0000	174.9747	12.5	83	-0.01
16	T	Dimethyl Sulfide	50.0000	50.3179	-0.6	96	0.00
17	T	Iodomethane	50.0000	44.1276	11.7	91	0.00
18	T	Methyl acetate	50.0000	55.7902	-11.6	108	0.00
19	T	Methylene Chloride	50.0000	50.7825	-1.6	98	0.00
20	T	Carbon Disulfide	50.0000	58.4851	-17.0	114	0.00
21	T	Acrylonitrile	50.0000	51.7966	-3.6	93	0.00
22	T	Methyl Tert Butyl Ether	50.0000	53.9358	-7.9	98	0.00
23	T	trans-1,2-Dichloroethene	50.0000	54.3180	-8.6	104	0.00
24	T	n-Hexane	50.0000	57.3174	-14.6	110	0.00
25	T	Diisopropyl ether	100.0000	103.1850	-3.2	98	0.00
26	T	Vinyl Acetate	50.0000	43.4350	13.1	79	0.00
27	P	1,1-Dichloroethane	50.0000	55.1763	-10.4	103	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	109.6148	-9.6	102	0.00
29	T	2-Butanone	50.0000	48.2362	3.5	88	0.00
30	T	Propionitrile	100.0000	96.2072	3.8	89	0.00
31	T	2,2-Dichloropropane	50.0000	63.6573	-27.3#	118	0.00
32	T	cis-1,2-Dichloroethene	50.0000	53.3528	-6.7	102	0.00
33	C	Chloroform	50.0000	55.7319	-11.5	105	0.00
34		1-Bromopropane	50.0000	63.5756	-27.2#	121	0.00
35	T	Bromochloromethane	50.0000	54.4744	-8.9	102	0.00
36	T	Tetrahydrofuran	100.0000	90.8490	9.2	91	0.00
37	S	Dibromofluoromethane	25.0000	27.1579	-8.6	101	0.00
38	T	1,1,1-Trichloroethane	50.0000	59.6822	-19.4	111	0.00
39	T	Cyclohexane	50.0000	55.2847	-10.6	108	0.00
40	T	1,1-Dichloropropene	50.0000	56.4182	-12.8	106	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	108.9522	-9.0	102	0.00
42	T	Carbon Tetrachloride	50.0000	60.9134	-21.8	113	0.00
43	S	1,2-Dichloroethane-d4	25.0000	28.2849	-13.1	104	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	58.0600	-16.1	106	0.00
46	T	Benzene	50.0000	53.2746	-6.5	100	0.00
47	T	Trichloroethene	50.0000	55.3804	-10.8	105	0.00
48	T	Methylcyclohexane	50.0000	57.4519	-14.9	110	0.00
49	C	1,2-Dichloropropane	50.0000	50.4831	-1.0	96	0.00
50	T	Bromodichloromethane	50.0000	56.9525	-13.9	102	0.00
51	T	1,4-Dioxane	200.0000	152.6197	23.7	68	0.00
52	T	Dibromomethane	50.0000	50.7129	-1.4	96	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	45.6796	8.6	81	0.00
54	T	4-Methyl-2-Pentanone	50.0000	47.1653	5.7	85	0.00

(#) = Out of Range
8M413163.D 8260WT.M Mon Jun 27 12:36:39 2016 Page 1

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062216\8M413163.D Vial: 3
Acq On : 22 Jun 2016 15:41 Operator: FJB
Sample : WG573770-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76578 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	55.7993	-11.6	100	0.00
56	T	Dimethyl Disulfide	50.0000	57.5498	-15.1	107	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	102	0.00
58	S	Toluene-d8	25.0000	26.3867	-5.5	105	0.00
59	C	Toluene	50.0000	50.6037	-1.2	103	0.00
60	T	Ethyl Methacrylate	50.0000	51.1373	-2.3	99	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	52.5249	-5.0	101	0.00
63	T	1,1,2-Trichloroethane	50.0000	47.9905	4.0	96	0.00
64	T	2-Hexanone	50.0000	44.6823	10.6	89	0.00
65	T	1,3-Dichloropropane	50.0000	48.3128	3.4	94	0.00
66	T	Tetrachloroethene	50.0000	54.4048	-8.8	113	0.00
67	T	Dibromochloromethane	50.0000	51.9936	-4.0	102	0.00
68	T	1,2-Dibromoethane	50.0000	49.4046	1.2	97	0.00
69	T	1-Chlorohexane	50.0000	53.9001	-7.8	112	0.00
70	P	Chlorobenzene	50.0000	50.0230	-0.0	103	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	51.9643	-3.9	103	0.00
72	C	Ethylbenzene	50.0000	49.7229	0.6	103	0.00
73	T	m-,p-Xylene	100.0000	102.1378	-2.1	104	0.00
74	T	o-Xylene	50.0000	51.2070	-2.4	104	0.00
75	T	Styrene	50.0000	51.8929	-3.8	101	0.00
76	P	Bromoform	50.0000	53.3581	-6.7	104	0.00
77	T	Isopropylbenzene	50.0000	52.1706	-4.3	104	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	108	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	43.5912	12.8	92	0.00
80	S	p-Bromofluorobenzene	25.0000	25.3202	-1.3	111	0.00
81	T	1,2,3-Trichloropropane	50.0000	45.8434	8.3	99	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	47.7038	4.6	108	0.00
83	T	n-Propylbenzene	50.0000	48.6375	2.7	104	0.00
84	T	Bromobenzene	50.0000	48.3055	3.4	105	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	49.8132	0.4	106	0.00
86	T	2-Chlorotoluene	50.0000	49.6264	0.7	104	0.00
87	T	4-Chlorotoluene	50.0000	46.7216	6.6	107	0.00
88	T	a-Methylstyrene	50.0000	50.6254	-1.3	110	0.00
89	T	tert-Butylbenzene	50.0000	47.1110	5.8	106	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	48.9126	2.2	106	0.00
91	T	sec-Butylbenzene	50.0000	48.0164	4.0	104	0.00
92	T	p-Isopropyltoluene	50.0000	48.6625	2.7	106	0.00
93	T	1,3-Dichlorobenzene	50.0000	48.6981	2.6	106	0.00
94	T	1,4-Dichlorobenzene	50.0000	47.9614	4.1	107	0.00
95	T	n-Butylbenzene	50.0000	47.8670	4.3	104	0.00
96	T	1,2-Dichlorobenzene	50.0000	46.7212	6.6	104	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	45.0254	9.9	95	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	47.2526	5.5	103	0.00
99	T	Hexachlorobutadiene	50.0000	48.0413	3.9	108	0.00
100	T	Naphthalene	50.0000	43.2287	13.5	92	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	44.1363	11.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413163.D 8260WT.M Mon Jun 27 12:36:40 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413192.D Vial: 3
Acq On : 23 Jun 2016 21:00 Operator: FJB
Sample : WG573990-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76715 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 21:22:50 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	725028	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	565784	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	309614	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	215407	27.6524 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.60%		
43) 1,2-Dichloroethane-d4	10.30	65	235972	28.2513 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 113.00%		
58) Toluene-d8	12.68	98	743592	25.1124 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.44%		
80) p-Bromofluorobenzene	16.08	95	325934	25.4234 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.68%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	636587	52.3691 ug/L	100
3) Chloromethane	3.62	50	336005	47.3540 ug/L	99
4) Vinyl Chloride	3.84	62	471297	55.9835 ug/L	99
5) 1,3-Butadiene	3.88	54	466509	66.0793 ug/L	94
6) Bromomethane	4.73	94	223807	44.2082 ug/L	96
7) Chloroethane	4.89	64	230630	49.7879 ug/L	97
8) Trichlorofluoromethane	5.37	101	914053	58.3521 ug/L	99
9) Diethyl ether	5.90	59	365966	97.8617 ug/L	97
10) Isoprene	5.94	67	528954	55.6063 ug/L	97
11) Acrolein	6.14	56	12820	38.2884 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	398018	54.0552 ug/L	94
13) Acetone	6.23	43	45416	55.6757 ug/L	96
14) 1,1-Dichloroethene	6.47	61	635976	54.2465 ug/L	98
15) Tert-Butyl Alcohol	6.58	59	52882	202.2989 ug/L	98
16) Dimethyl Sulfide	6.73	62	202068	48.2045 ug/L	99
17) Iodomethane	6.99	142	143986	44.5471 ug/L	100
18) Methyl acetate	7.00	43	125266	56.8107 ug/L	98
19) Methylene Chloride	7.25	84	374398	50.1818 ug/L	100
20) Carbon Disulfide	7.29	76	1363583	55.5787 ug/L	100
21) Acrylonitrile	7.43	53	52604	49.7020 ug/L	93
22) Methyl Tert Butyl Ether	7.46	73	871485	53.9704 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	566696	52.6143 ug/L	100
24) n-Hexane	7.78	57	459061	57.3974 ug/L	99
25) Diisopropyl ether	8.12	45	1678736	99.9895 ug/L	96
26) Vinyl Acetate	8.30	43	314225	40.8778 ug/L	100
27) 1,1-Dichloroethane	8.33	63	710629	53.1263 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1931789	107.3922 ug/L	98
29) 2-Butanone	8.88	43	57296	47.8066 ug/L	96
30) Propionitrile	8.98	54	34033	97.4427 ug/L	94
31) 2,2-Dichloropropane	9.10	77	868732	61.6292 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	432671	51.9888 ug/L	98
33) Chloroform	9.37	83	866433	54.8591 ug/L	100
34) 1-Bromopropane	9.51	122	73212	61.4154 ug/L	100
35) Bromochloromethane	9.61	130	227524	53.3132 ug/L	95
36) Tetrahydrofuran	9.63	42	69393	87.9098 ug/L	97
38) 1,1,1-Trichloroethane	9.91	97	883344	58.8810 ug/L	100
39) Cyclohexane	9.94	56	560595	53.9737 ug/L	97
40) 1,1-Dichloropropene	10.11	75	625468	54.6979 ug/L	100
41) Tert-Amyl-Methyl ether	10.21	73	1774358	108.6048 ug/L	100
42) Carbon Tetrachloride	10.25	117	798795	59.9616 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413192.D Vial: 3
Acq On : 23 Jun 2016 21:00 Operator: FJB
Sample : WG573990-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76715 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 21:22:50 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	592395	58.2757 ug/L		98
46)	Benzene	10.46	78	1539106	51.6786 ug/L		99
47)	Trichloroethene	11.21	130	432431	54.4401 ug/L		99
48)	Methylcyclohexane	11.30	83	686795	56.9140 ug/L		99
49)	1,2-Dichloropropane	11.43	63	327801	49.4432 ug/L		91
50)	Bromodichloromethane	11.73	83	655856	56.2842 ug/L		100
51)	1,4-Dioxane	11.72	88	6670	200.2779 ug/L		83
52)	Dibromomethane	11.81	93	198160	50.4924 ug/L		97
53)	2-Chloroethyl Vinyl Ether	12.02	63	128306	45.0262 ug/L		95
54)	4-Methyl-2-Pentanone	12.06	58	55902	48.0253 ug/L		91
55)	cis-1,3-Dichloropropene	12.36	75	645256	54.4029 ug/L		100
56)	Dimethyl Disulfide	12.63	79	358712	56.6642 ug/L		98
59)	Toluene	12.78	91	1659929	47.2580 ug/L		99
60)	Ethyl Methacrylate	12.88	69	327740	48.5859 ug/L		95
62)	trans-1,3-Dichloropropene	12.96	75	582725	49.5052 ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	253367	45.7129 ug/L		100
64)	2-Hexanone	13.11	58	49571	42.5602 ug/L	#	95
65)	1,3-Dichloropropane	13.49	76	457785	46.3909 ug/L		96
66)	Tetrachloroethene	13.60	164	374094	49.7104 ug/L		98
67)	Dibromochloromethane	13.87	129	402599	49.7473 ug/L		98
68)	1,2-Dibromoethane	14.13	107	263257	47.6577 ug/L		98
69)	1-Chlorohexane	14.21	91	606471	50.5817 ug/L		98
70)	Chlorobenzene	14.62	112	1116015	47.1177 ug/L		98
71)	1,1,1,2-Tetrachloroethane	14.65	131	455262	49.6136 ug/L		99
72)	Ethylbenzene	14.65	106	606126	46.7722 ug/L		99
73)	m-,p-Xylene	14.75	106	1464859	96.3703 ug/L		98
74)	o-Xylene	15.31	106	700366	47.1280 ug/L		96
75)	Styrene	15.35	104	1184000	48.5758 ug/L		95
76)	Bromoform	15.83	173	242179	50.4518 ug/L		99
77)	Isopropylbenzene	15.73	105	1964495	49.7609 ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	268196	43.1537 ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	85820	44.8426 ug/L		85
82)	trans-1,4-Dichloro-2-Buten	16.18	53	93736	48.0756 ug/L		75
83)	n-Propylbenzene	16.24	91	2331548	48.2690 ug/L		99
84)	Bromobenzene	16.37	156	478746	48.1858 ug/L		95
85)	1,3,5-Trimethylbenzene	16.42	105	1722684	48.9595 ug/L		99
86)	2-Chlorotoluene	16.51	91	1605346	47.6022 ug/L		99
87)	4-Chlorotoluene	16.56	91	1451412	47.6458 ug/L		100
88)	a-Methylstyrene	16.83	118	820053	49.1238 ug/L		100
89)	tert-Butylbenzene	16.90	134	321775	46.7449 ug/L		97
90)	1,2,4-Trimethylbenzene	16.94	105	1755727	48.5269 ug/L		100
91)	sec-Butylbenzene	17.17	105	1988839	48.0468 ug/L		99
92)	p-Isopropyltoluene	17.32	119	1708694	48.6162 ug/L		99
93)	1,3-Dichlorobenzene	17.52	146	921602	48.1730 ug/L		98
94)	1,4-Dichlorobenzene	17.64	146	907047	47.0277 ug/L		99
95)	n-Butylbenzene	17.85	91	1655056	47.6327 ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	790507	46.4592 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	55858	44.7749 ug/L		98
98)	1,2,4-Trichlorobenzene	20.28	180	587639	46.2043 ug/L		98
99)	Hexachlorobutadiene	20.43	225	291731	49.0927 ug/L		98
100)	Naphthalene	20.65	128	821061	43.4522 ug/L		98
101)	1,2,3-Trichlorobenzene	20.96	180	466895	43.5136 ug/L		99

(#) = qualifier out of range (m) = manual integration
8M413192.D 8260WT.M Mon Jun 27 12:30:01 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413192.D Vial: 3
Acq On : 23 Jun 2016 21:00 Operator: FJB
Sample : WG573990-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76715 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 21:22 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

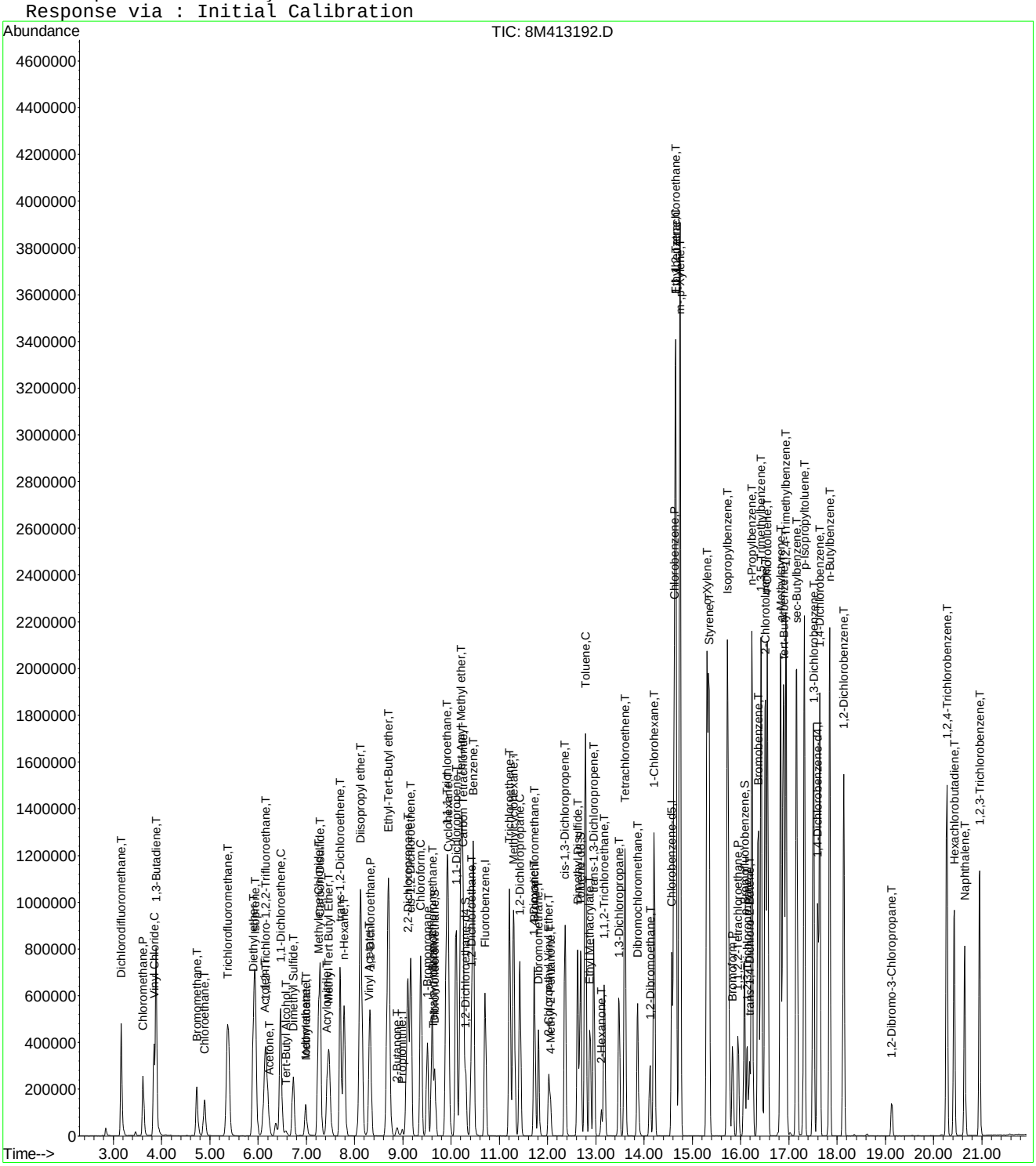

8M413192.D 8260WT.M Mon Jun 27 12:30:03 2016 Page 3

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413192.D Vial: 3
Acq On : 23 Jun 2016 21:00 Operator: FJB
Sample : WG573990-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76715 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	1.0000	1.0000	0.0	93	0.00
2	T	Dichlorodifluoromethane	0.4192	0.4390	-4.7	93	0.00
3	P	Chloromethane	0.2447	0.2317	5.3	90	0.00
4	C	Vinyl Chloride	0.2903	0.3250	-12.0	104	0.00
5	T	1,3-Butadiene	0.2434	0.3217	-32.2#	119	0.00
6	T	Bromomethane	0.1654	0.1543	6.7	86	0.00
7	T	Chloroethane	0.1597	0.1591	0.4	94	0.00
8	T	Trichlorofluoromethane	0.5401	0.6304	-16.7	109	0.00
9	T	Diethyl ether	0.1290	0.1262	2.1	94	0.00
10	T	Isoprene	0.3280	0.3648	-11.2	106	0.00
11	T	Acrolein	0.0116	0.0088	23.5	73	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	0.2539	0.2745	-8.1	103	0.00
13	T	Acetone	0.0281	0.0313	-11.3	99	-0.01
14	C	1,1-Dichloroethene	0.4043	0.4386	-8.5	103	0.00
15	T	Tert-Butyl Alcohol	0.0090	0.0091	-1.2	95	0.00
16	T	Dimethyl Sulfide	0.1445	0.1394	3.6	91	0.00
17	T	Iodomethane	0.0866	0.0993	-14.7	91	0.00
18	T	Methyl acetate	0.0760	0.0864	-13.6	109	0.00
19	T	Methylene Chloride	0.2573	0.2582	-0.4	96	0.00
20	T	Carbon Disulfide	0.8460	0.9404	-11.2	107	0.00
21	T	Acrylonitrile	0.0365	0.0363	0.6	88	0.00
22	T	Methyl Tert Butyl Ether	0.5568	0.6010	-7.9	97	0.00
23	T	trans-1,2-Dichloroethene	0.3714	0.3908	-5.2	99	0.00
24	T	n-Hexane	0.2758	0.3166	-14.8	109	0.00
25	T	Diisopropyl ether	0.5789	0.5788	0.0	94	0.00
26	T	Vinyl Acetate	0.2651	0.2167	18.2	73	0.00
27	P	1,1-Dichloroethane	0.4612	0.4901	-6.3	98	0.00
28	T	Ethyl-Tert-Butyl ether	0.6203	0.6661	-7.4	99	0.00
29	T	2-Butanone	0.0413	0.0395	4.4	86	0.00
30	T	Propionitrile	0.0120	0.0117	2.5	89	0.00
31	T	2,2-Dichloropropane	0.4860	0.5991	-23.3	113	0.00
32	T	cis-1,2-Dichloroethene	0.2870	0.2984	-4.0	98	0.00
33	C	Chloroform	0.5446	0.5975	-9.7	103	0.00
34		1-Bromopropane	0.0411	0.0505	-22.8	115	0.00
35	T	Bromochloromethane	0.1472	0.1569	-6.6	99	0.00
36	T	Tetrahydrofuran	0.0272	0.0239	12.1	87	0.00
37	S	Dibromofluoromethane	0.2686	0.2971	-10.6	102	0.00
38	T	1,1,1-Trichloroethane	0.5173	0.6092	-17.8	108	0.00
39	T	Cyclohexane	0.3581	0.3866	-7.9	105	0.00
40	T	1,1-Dichloropropene	0.3943	0.4313	-9.4	102	0.00
41	T	Tert-Amyl-Methyl ether	0.5634	0.6118	-8.6	100	0.00
42	T	Carbon Tetrachloride	0.4593	0.5509	-19.9	110	0.00
43	S	1,2-Dichloroethane-d4	0.2880	0.3255	-13.0	103	0.00
44		Heptane	0.0000	0.0000	0.0	0#	-2.54#
45	T	1,2-Dichloroethane	0.3505	0.4085	-16.5	106	0.00
46	T	Benzene	1.0269	1.0614	-3.4	96	0.00
47	T	Trichloroethene	0.2739	0.2982	-8.9	102	0.00
48	T	Methylcyclohexane	0.4161	0.4736	-13.8	108	0.00
49	C	1,2-Dichloropropane	0.2286	0.2261	1.1	93	0.00
50	T	Bromodichloromethane	0.4018	0.4523	-12.6	100	0.00
51	T	1,4-Dioxane	0.0012	0.0012	0.0	88	0.00
52	T	Dibromomethane	0.1353	0.1367	-1.0	95	0.00
53	T	2-Chloroethyl Vinyl Ether	0.0983	0.0885	10.0	79	0.00
54	T	4-Methyl-2-Pentanone	0.0401	0.0386	4.0	86	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413192.D Vial: 3
Acq On : 23 Jun 2016 21:00 Operator: FJB
Sample : WG573990-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76715 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	0.4090	0.4450	-8.8	97	0.00
56	T	Dimethyl Disulfide	0.2183	0.2474	-13.3	104	0.00
57	I	Chlorobenzene-d5	1.0000	1.0000	0.0	105	0.00
58	S	Toluene-d8	1.3084	1.3143	-0.5	103	0.00
59	C	Toluene	1.5520	1.4669	5.5	99	0.00
60	T	Ethyl Methacrylate	0.2981	0.2896	2.8	97	0.00
61		Paraldehyde	0.0000	0.0000	0.0	0#	-13.14#
62	T	trans-1,3-Dichloropropene	0.5201	0.5150	1.0	98	0.00
63	T	1,1,2-Trichloroethane	0.2449	0.2239	8.6	94	0.00
64	T	2-Hexanone	0.0515	0.0438	14.9	87	0.00
65	T	1,3-Dichloropropane	0.4360	0.4046	7.2	94	0.00
66	T	Tetrachloroethene	0.3325	0.3306	0.6	107	0.00
67	T	Dibromochloromethane	0.3576	0.3558	0.5	100	0.00
68	T	1,2-Dibromoethane	0.2441	0.2327	4.7	96	0.00
69	T	1-Chlorohexane	0.5298	0.5360	-1.2	108	0.00
70	P	Chlorobenzene	1.0466	0.9863	5.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	0.4055	0.4023	0.8	102	0.00
72	C	Ethylbenzene	0.5726	0.5356	6.5	101	0.00
73	T	m-,p-Xylene	0.6716	0.6473	3.6	101	0.00
74	T	o-Xylene	0.6566	0.6189	5.7	99	0.00
75	T	Styrene	1.0770	1.0463	2.8	98	0.00
76	P	Bromoform	0.2121	0.2140	-0.9	102	0.00
77	T	Isopropylbenzene	1.7444	1.7361	0.5	102	0.00
78	I	1,4-Dichlorobenzene-d4	1.0000	1.0000	0.0	107	0.00
79	P	1,1,2,2-Tetrachloroethane	0.5018	0.4331	13.7	91	0.00
80	S	p-Bromofluorobenzene	1.0352	1.0527	-1.7	111	0.00
81	T	1,2,3-Trichloropropane	0.1545	0.1386	10.3	96	0.00
82	T	trans-1,4-Dichloro-2-Butene	0.1376	0.1514	-10.0	108	0.00
83	T	n-Propylbenzene	3.9003	3.7653	3.5	102	0.00
84	T	Bromobenzene	0.8022	0.7731	3.6	104	0.00
85	T	1,3,5-Trimethylbenzene	2.8411	2.7820	2.1	104	0.00
86	T	2-Chlorotoluene	2.7231	2.5925	4.8	100	0.00
87	T	4-Chlorotoluene	2.4597	2.3439	4.7	108	0.00
88	T	a-Methylstyrene	1.3479	1.3243	1.8	106	0.00
89	T	tert-Butylbenzene	0.5558	0.5196	6.5	105	0.00
90	T	1,2,4-Trimethylbenzene	2.9214	2.8354	2.9	105	0.00
91	T	sec-Butylbenzene	3.3424	3.2118	3.9	103	0.00
92	T	p-Isopropyltoluene	2.8379	2.7594	2.8	105	0.00
93	T	1,3-Dichlorobenzene	1.5448	1.4883	3.7	104	0.00
94	T	1,4-Dichlorobenzene	1.5574	1.4648	5.9	104	0.00
95	T	n-Butylbenzene	2.8056	2.6728	4.7	103	0.00
96	T	1,2-Dichlorobenzene	1.3739	1.2766	7.1	103	0.00
97	T	1,2-Dibromo-3-Chloropropane	0.1007	0.0902	10.4	94	0.00
98	T	1,2,4-Trichlorobenzene	1.0269	0.9490	7.6	101	0.00
99	T	Hexachlorobutadiene	0.4798	0.4711	1.8	110	0.00
100	T	Naphthalene	1.5257	1.3259	13.1	92	0.00
101	T	1,2,3-Trichlorobenzene	0.8664	0.7540	13.0	98	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413192.D 8260WT.M Mon Jun 27 12:37:25 2016 Page 2

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413192.D Vial: 3
Acq On : 23 Jun 2016 21:00 Operator: FJB
Sample : WG573990-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76715 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	93	0.00
2	T	Dichlorodifluoromethane	50.0000	52.3691	-4.7	93	0.00
3	P	Chloromethane	50.0000	47.3540	5.3	90	0.00
4	C	Vinyl Chloride	50.0000	55.9835	-12.0	104	0.00
5	T	1,3-Butadiene	50.0000	66.0793	-32.2#	119	0.00
6	T	Bromomethane	50.0000	44.2082	11.6	86	0.00
7	T	Chloroethane	50.0000	49.7878	0.4	94	0.00
8	T	Trichlorofluoromethane	50.0000	58.3521	-16.7	109	0.00
9	T	Diethyl ether	100.0000	97.8617	2.1	94	0.00
10	T	Isoprene	50.0000	55.6063	-11.2	106	0.00
11	T	Acrolein	50.0000	38.2884	23.4	73	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	54.0552	-8.1	103	0.00
13	T	Acetone	50.0000	55.6757	-11.4	99	-0.01
14	C	1,1-Dichloroethene	50.0000	54.2465	-8.5	103	0.00
15	T	Tert-Butyl Alcohol	200.0000	202.2989	-1.1	95	0.00
16	T	Dimethyl Sulfide	50.0000	48.2045	3.6	91	0.00
17	T	Iodomethane	50.0000	44.5471	10.9	91	0.00
18	T	Methyl acetate	50.0000	56.8107	-13.6	109	0.00
19	T	Methylene Chloride	50.0000	50.1818	-0.4	96	0.00
20	T	Carbon Disulfide	50.0000	55.5787	-11.2	107	0.00
21	T	Acrylonitrile	50.0000	49.7020	0.6	88	0.00
22	T	Methyl Tert Butyl Ether	50.0000	53.9704	-7.9	97	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.6143	-5.2	99	0.00
24	T	n-Hexane	50.0000	57.3974	-14.8	109	0.00
25	T	Diisopropyl ether	100.0000	99.9895	0.0	94	0.00
26	T	Vinyl Acetate	50.0000	40.8778	18.2	73	0.00
27	P	1,1-Dichloroethane	50.0000	53.1264	-6.3	98	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	107.3922	-7.4	99	0.00
29	T	2-Butanone	50.0000	47.8066	4.4	86	0.00
30	T	Propionitrile	100.0000	97.4427	2.6	89	0.00
31	T	2,2-Dichloropropane	50.0000	61.6292	-23.3	113	0.00
32	T	cis-1,2-Dichloroethene	50.0000	51.9888	-4.0	98	0.00
33	C	Chloroform	50.0000	54.8591	-9.7	103	0.00
34		1-Bromopropane	50.0000	61.4154	-22.8	115	0.00
35	T	Bromochloromethane	50.0000	53.3132	-6.6	99	0.00
36	T	Tetrahydrofuran	100.0000	87.9098	12.1	87	0.00
37	S	Dibromofluoromethane	25.0000	27.6524	-10.6	102	0.00
38	T	1,1,1-Trichloroethane	50.0000	58.8810	-17.8	108	0.00
39	T	Cyclohexane	50.0000	53.9737	-7.9	105	0.00
40	T	1,1-Dichloropropene	50.0000	54.6979	-9.4	102	0.00
41	T	Tert-Amyl-Methyl ether	100.0000	108.6048	-8.6	100	0.00
42	T	Carbon Tetrachloride	50.0000	59.9616	-19.9	110	0.00
43	S	1,2-Dichloroethane-d4	25.0000	28.2513	-13.0	103	0.00
44		Heptane	-1.0000	0.0000	0.0	0	-2.54#
45	T	1,2-Dichloroethane	50.0000	58.2756	-16.6	106	0.00
46	T	Benzene	50.0000	51.6786	-3.4	96	0.00
47	T	Trichloroethene	50.0000	54.4400	-8.9	102	0.00
48	T	Methylcyclohexane	50.0000	56.9140	-13.8	108	0.00
49	C	1,2-Dichloropropane	50.0000	49.4432	1.1	93	0.00
50	T	Bromodichloromethane	50.0000	56.2841	-12.6	100	0.00
51	T	1,4-Dioxane	200.0000	200.2779	-0.1	88	0.00
52	T	Dibromomethane	50.0000	50.4924	-1.0	95	0.00
53	T	2-Chloroethyl Vinyl Ether	50.0000	45.0262	9.9	79	0.00
54	T	4-Methyl-2-Pentanone	50.0000	48.0253	3.9	86	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413192.D Vial: 3
Acq On : 23 Jun 2016 21:00 Operator: FJB
Sample : WG573990-02 50ug/L CCV 8260 Inst : HPMS8
Misc : 1,1 STD76715 Multiplr: 1.00
MS Integration Params: RTEINT.P

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	cis-1,3-Dichloropropene	50.0000	54.4029	-8.8	97	0.00
56	T	Dimethyl Disulfide	50.0000	56.6642	-13.3	104	0.00
57	I	Chlorobenzene-d5	25.0000	25.0000	0.0	105	0.00
58	S	Toluene-d8	25.0000	25.1124	-0.4	103	0.00
59	C	Toluene	50.0000	47.2580	5.5	99	0.00
60	T	Ethyl Methacrylate	50.0000	48.5859	2.8	97	0.00
61		Paraldehyde	-1.0000	0.0000	0.0	0	-13.14#
62	T	trans-1,3-Dichloropropene	50.0000	49.5052	1.0	98	0.00
63	T	1,1,2-Trichloroethane	50.0000	45.7129	8.6	94	0.00
64	T	2-Hexanone	50.0000	42.5602	14.9	87	0.00
65	T	1,3-Dichloropropane	50.0000	46.3909	7.2	94	0.00
66	T	Tetrachloroethene	50.0000	49.7104	0.6	107	0.00
67	T	Dibromochloromethane	50.0000	49.7473	0.5	100	0.00
68	T	1,2-Dibromoethane	50.0000	47.6577	4.7	96	0.00
69	T	1-Chlorohexane	50.0000	50.5817	-1.2	108	0.00
70	P	Chlorobenzene	50.0000	47.1177	5.8	100	0.00
71	T	1,1,1,2-Tetrachloroethane	50.0000	49.6136	0.8	102	0.00
72	C	Ethylbenzene	50.0000	46.7722	6.5	101	0.00
73	T	m-,p-Xylene	100.0000	96.3703	3.6	101	0.00
74	T	o-Xylene	50.0000	47.1280	5.7	99	0.00
75	T	Styrene	50.0000	48.5758	2.8	98	0.00
76	P	Bromoform	50.0000	50.4518	-0.9	102	0.00
77	T	Isopropylbenzene	50.0000	49.7609	0.5	102	0.00
78	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	107	0.00
79	P	1,1,2,2-Tetrachloroethane	50.0000	43.1537	13.7	91	0.00
80	S	p-Bromofluorobenzene	25.0000	25.4234	-1.7	111	0.00
81	T	1,2,3-Trichloropropane	50.0000	44.8426	10.3	96	0.00
82	T	trans-1,4-Dichloro-2-Butene	50.0000	48.0756	3.8	108	0.00
83	T	n-Propylbenzene	50.0000	48.2690	3.5	102	0.00
84	T	Bromobenzene	50.0000	48.1858	3.6	104	0.00
85	T	1,3,5-Trimethylbenzene	50.0000	48.9595	2.1	104	0.00
86	T	2-Chlorotoluene	50.0000	47.6022	4.8	100	0.00
87	T	4-Chlorotoluene	50.0000	47.6458	4.7	108	0.00
88	T	a-Methylstyrene	50.0000	49.1238	1.8	106	0.00
89	T	tert-Butylbenzene	50.0000	46.7449	6.5	105	0.00
90	T	1,2,4-Trimethylbenzene	50.0000	48.5269	2.9	105	0.00
91	T	sec-Butylbenzene	50.0000	48.0468	3.9	103	0.00
92	T	p-Isopropyltoluene	50.0000	48.6162	2.8	105	0.00
93	T	1,3-Dichlorobenzene	50.0000	48.1730	3.7	104	0.00
94	T	1,4-Dichlorobenzene	50.0000	47.0277	5.9	104	0.00
95	T	n-Butylbenzene	50.0000	47.6327	4.7	103	0.00
96	T	1,2-Dichlorobenzene	50.0000	46.4592	7.1	103	0.00
97	T	1,2-Dibromo-3-Chloropropane	50.0000	44.7749	10.5	94	0.00
98	T	1,2,4-Trichlorobenzene	50.0000	46.2043	7.6	101	0.00
99	T	Hexachlorobutadiene	50.0000	49.0927	1.8	110	0.00
100	T	Naphthalene	50.0000	43.4522	13.1	92	0.00
101	T	1,2,3-Trichlorobenzene	50.0000	43.5136	13.0	98	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
8M413192.D 8260WT.M Mon Jun 27 12:37:29 2016 Page 2

2.1.1.5 Raw QC Data

BFB

Data File : C:\MSDCHEM\2\DATA\051316\8M412218.D Vial: 3
Acq On : 13 May 2016 12:36 Operator: TMB
Sample : WG568561-01 50ng BFB STD 8260 Inst : HPMS8
Misc : 1,1 STD76034 Multiplr: 1.00
MS Integration Params: rteint.p
Method : C:\MSDCHEM\2\METHODS\BFB.M (RTE Integrator)
Title : SOP:OVL MSV01

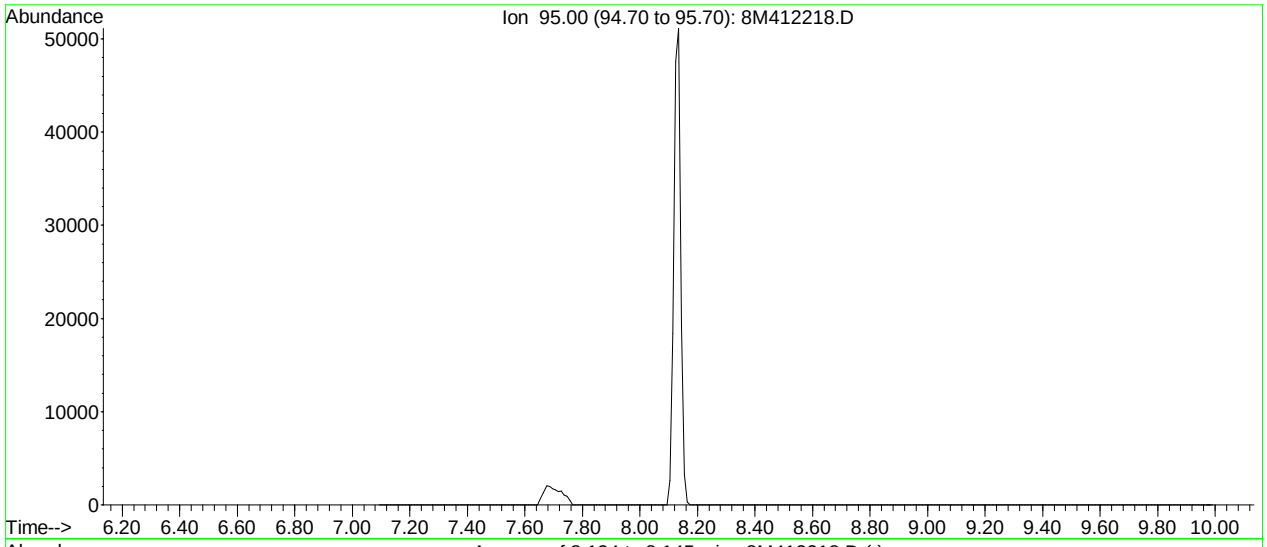

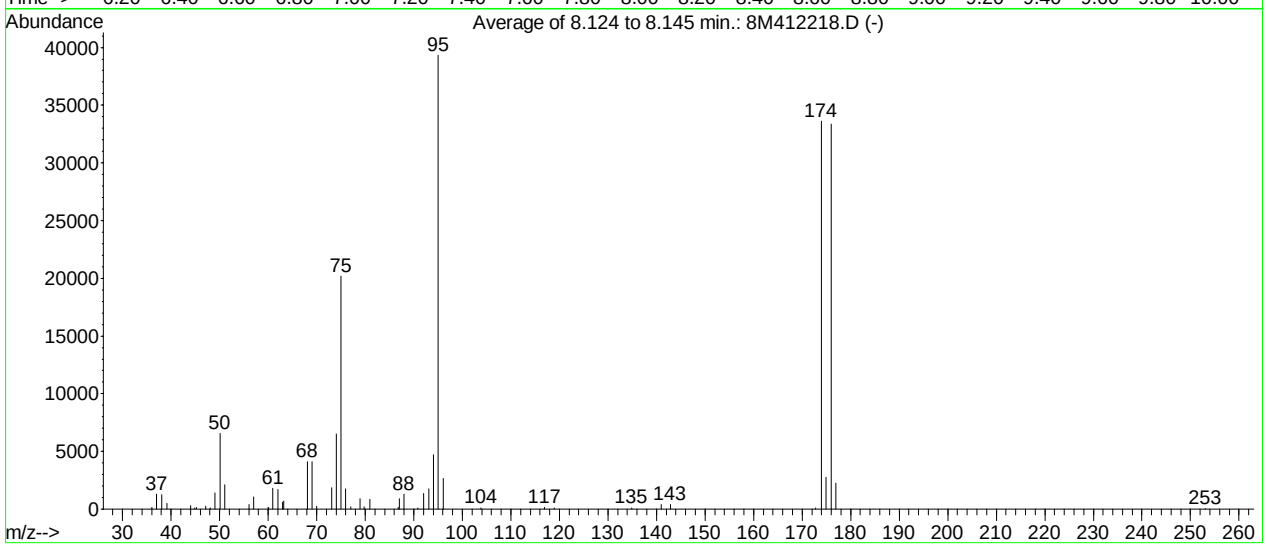

AutoFind: Scans 102, 103, 104; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	16.7	6575	PASS
75	95	30	60	51.3	20171	PASS
95	95	100	100	100.0	39312	PASS
96	95	5	9	6.7	2649	PASS
173	174	0.00	2	0.4	122	PASS
174	95	50	100	85.5	33616	PASS
175	174	5	9	8.2	2746	PASS
176	174	95	101	99.2	33360	PASS
177	176	5	9	6.8	2267	PASS

8M412218.D BFB.M Fri May 13 12:47:24 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062116\8M413124.D Vial: 1
Acq On    : 21 Jun 2016  17:23                        Operator: FJB
Sample    : WG573644-01 BFB 50ng 8260                 Inst    : HPMS8
Misc      : 1,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title     : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
```

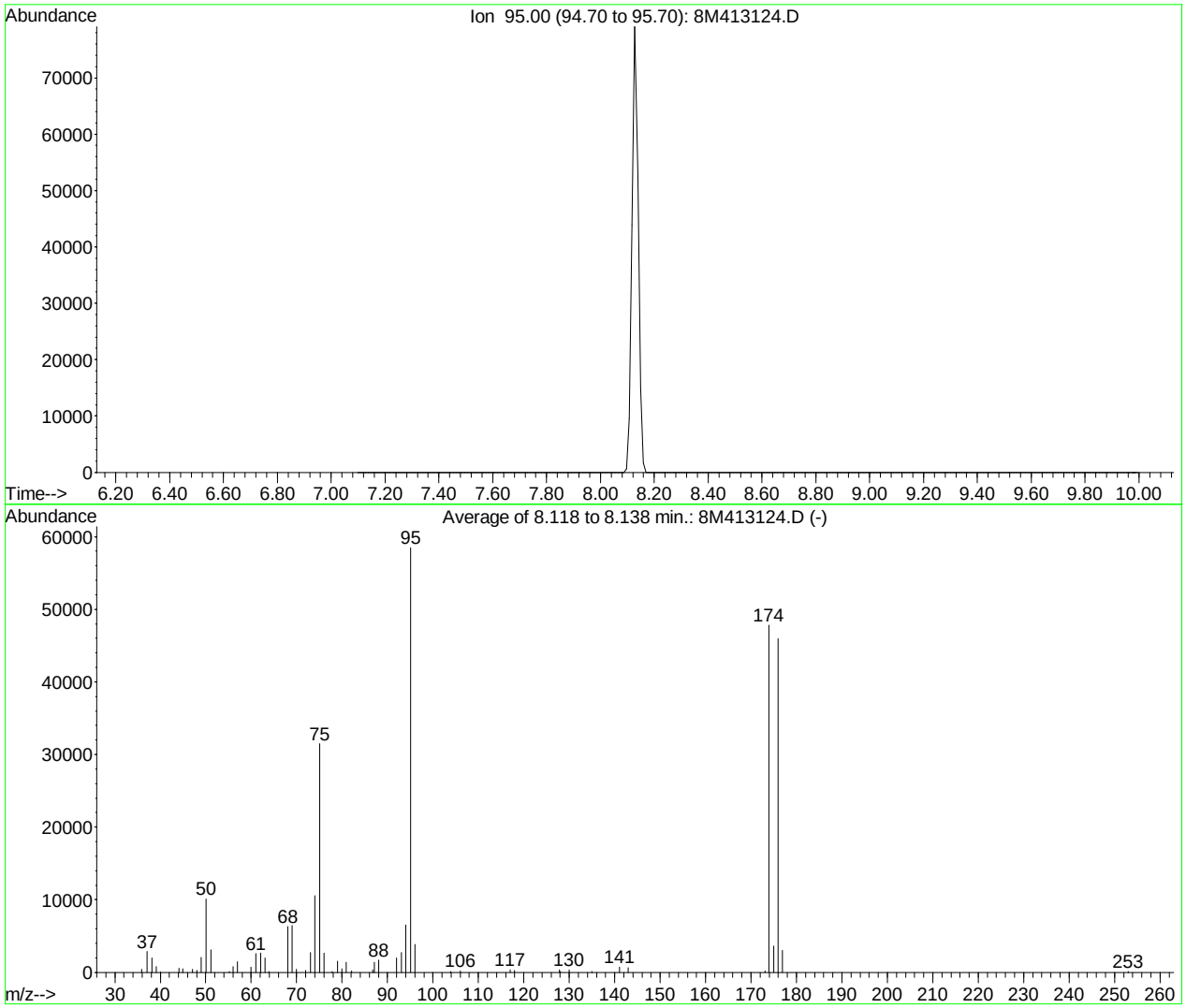

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 96

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	17.2	10071	PASS
75	95	30	60	53.8	31493	PASS
95	95	100	100	100.0	58490	PASS
96	95	5	9	6.5	3806	PASS
173	174	0.00	2	0.4	174	PASS
174	95	50	100	81.7	47778	PASS
175	174	5	9	7.6	3655	PASS
176	174	95	101	96.2	45946	PASS
177	176	5	9	6.5	3004	PASS

8M413124.D 8260WT.M Fri Jun 24 17:18:42 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062216\8M413161.D Vial: 1
Acq On    : 22 Jun 2016  14:38                        Operator: FJB
Sample    : WG573770-01 BFB 50ng 8260                 Inst    : HPMS8
Misc      : 1,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title     : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
```

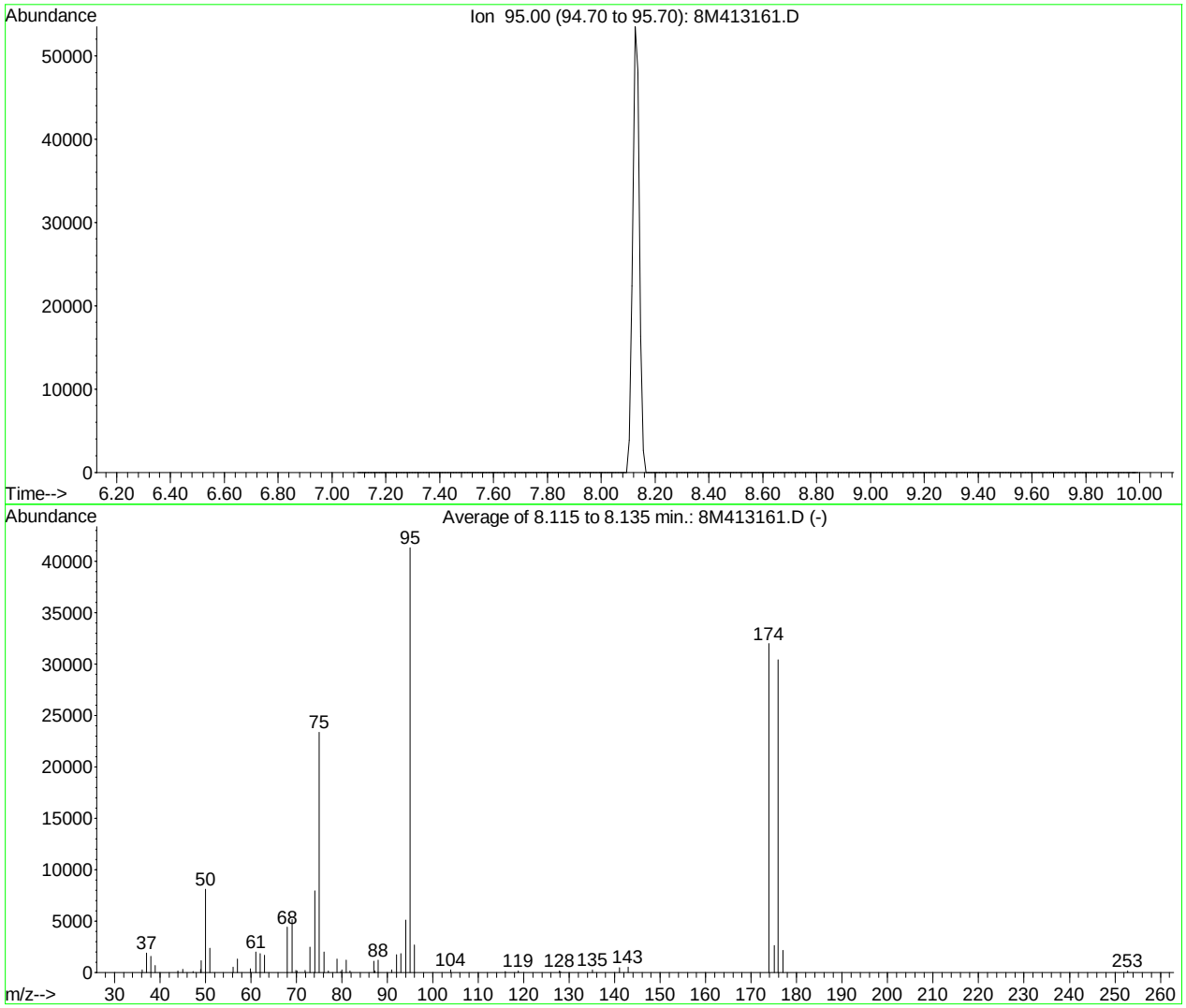

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 97

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.6	8091	PASS
75	95	30	60	56.5	23343	PASS
95	95	100	100	100.0	41328	PASS
96	95	5	9	6.4	2639	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	77.4	31974	PASS
175	174	5	9	8.2	2612	PASS
176	174	95	101	95.1	30422	PASS
177	176	5	9	7.1	2156	PASS

8M413161.D 8260WT.M Mon Jun 27 12:36:23 2016

BFB

```
Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413190.D Vial: 1
Acq On    : 23 Jun 2016  19:56                        Operator: FJB
Sample    : WG573990-01 BFB 50ng 8260                 Inst    : HPMS8
Misc      : 1,1 STD76496                              Multiplr: 1.00
MS Integration Params: RTEINT.P
Method    : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title     : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
```

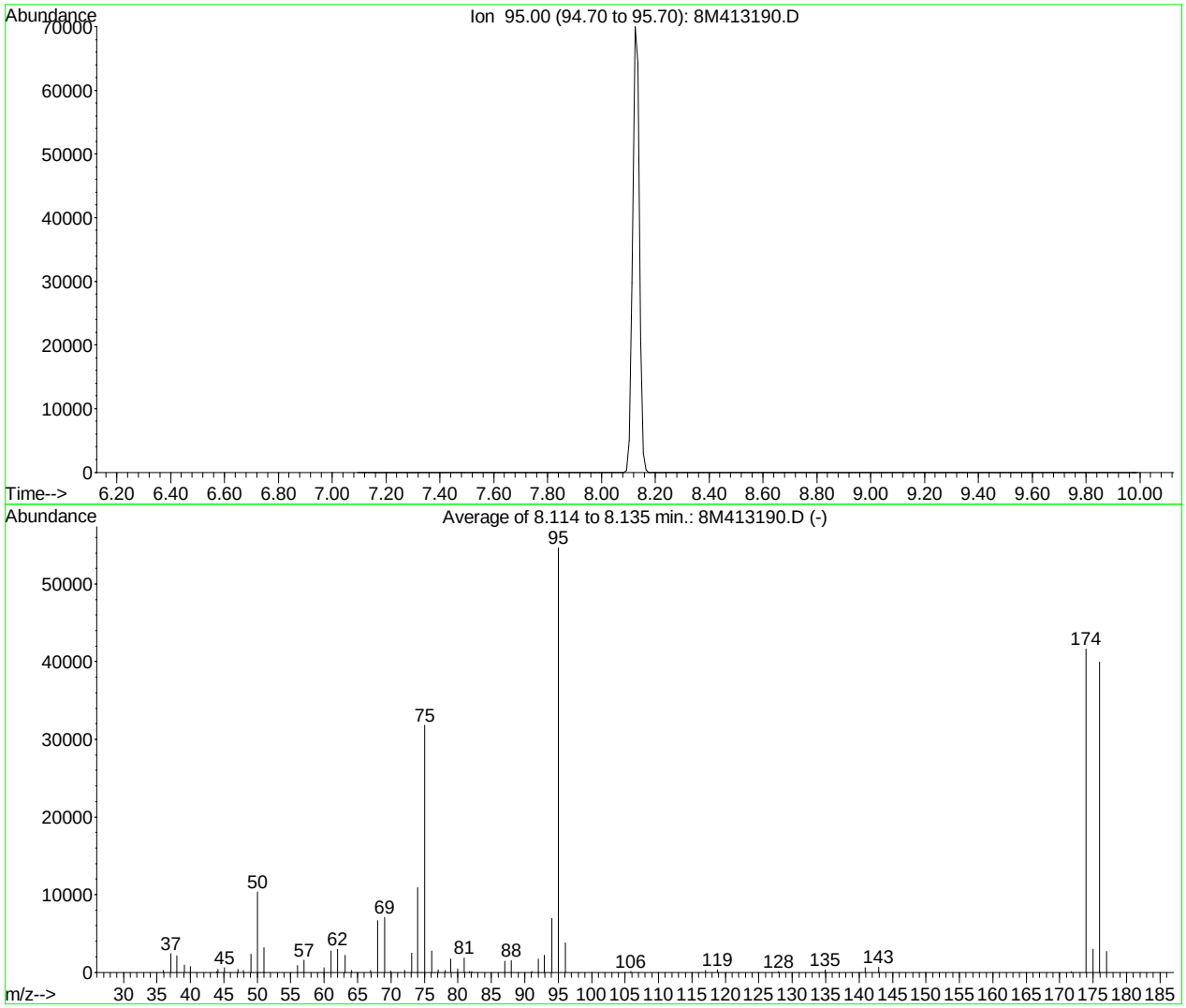

AutoFind: Scans 101, 102, 103; Background Corrected with Scan 96

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	19.0	10373	PASS
75	95	30	60	58.1	31797	PASS
95	95	100	100	100.0	54685	PASS
96	95	5	9	7.0	3803	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	76.1	41629	PASS
175	174	5	9	7.2	2991	PASS
176	174	95	101	95.9	39941	PASS
177	176	5	9	6.8	2702	PASS

8M413190.D 8260WT.M Mon Jun 27 12:37:11 2016

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062116\8M413128.D Vial: 5
Acq On : 21 Jun 2016 19:21 Operator: FJB
Sample : WG573645-01 BLANK 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 21 19:43:27 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	793415	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	605610	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	336359	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	237002	27.8022 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 111.20%		
43) 1,2-Dichloroethane-d4	10.30	65	251076	27.4686 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 109.88%		
58) Toluene-d8	12.68	98	831111	26.2223 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.88%		
80) p-Bromofluorobenzene	16.08	95	347372	24.9412 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.76%		
Target Compounds					Qvalue
36) Tetrahydrofuran	9.63	42	779	0.9018 ug/L #	80

(#) = qualifier out of range (m) = manual integration
8M413128.D 8260WT.M Fri Jun 24 17:20:01 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062116\8M413128.D Vial: 5
Acq On : 21 Jun 2016 19:21 Operator: FJB
Sample : WG573645-01 BLANK 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 21 19:43 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

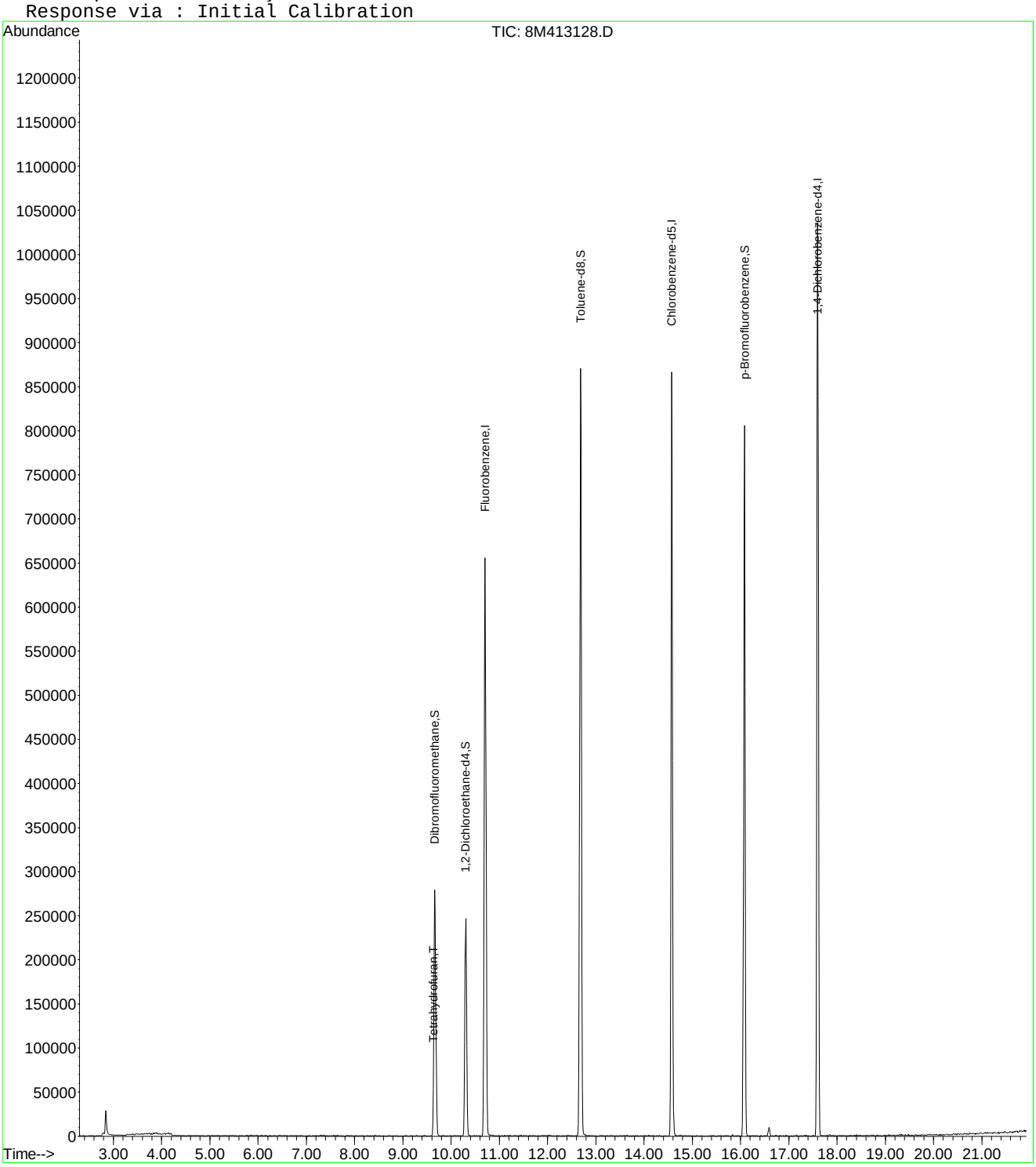

8M413128.D 8260WT.M Fri Jun 24 17:20:01 2016 Page 2

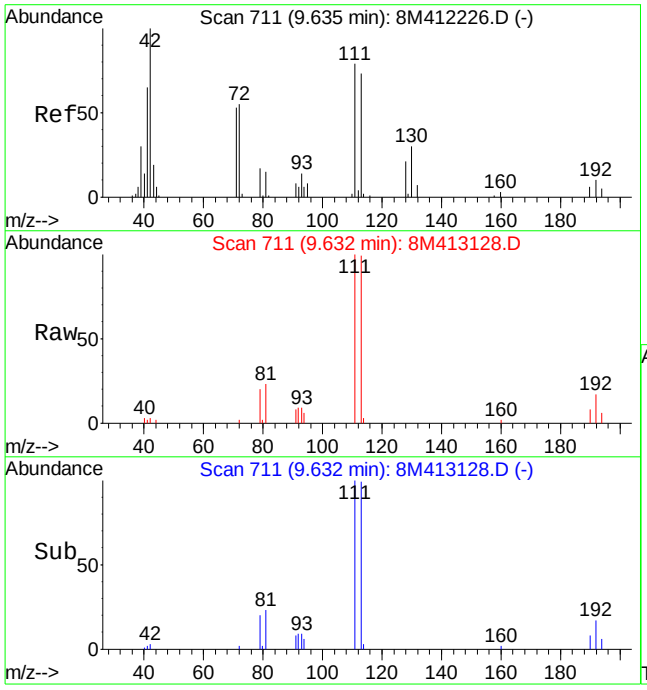

#36
Tetrahydrofuran
Concen: 0.90 ug/L
RT: 9.63 min Scan# 711
Delta R.T. -0.00 min
Lab File: 8M413128.D
Acq: 21 Jun 2016 19:21

Tgt Ion: 42 Resp: 779

Ion	Ratio	Lower	Upper
42	100		
72	62.8	33.8	78.8
71	30.2	32.0	74.8#

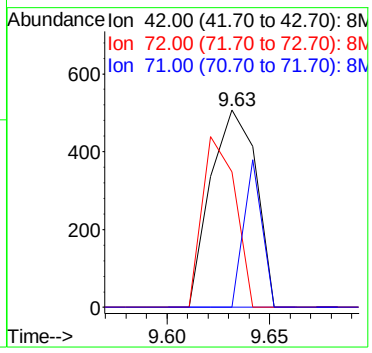

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062116\8M413128.D Vial: 5
Acq On : 21 Jun 2016 19:21 Operator: FJB
Sample : WG573645-01 BLANK 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 24 17:12:25 2016 Quant Results File: A9FOOWT.RES

Quant Method : K:\ORGANICS\V...\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 10:02:03 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	793415	25.00 ug/L	0.00
11) Chlorobenzene-d5	14.57	117	605610	25.00 ug/L	0.00
12) 1,4-Dichlorobenzene-d4	17.60	152	336359	25.00 ug/L	0.00

Target Compounds					Qvalue
13) Cyclohexanone	15.83	55	886	6.4403 ug/L #	43

(#) = qualifier out of range (m) = manual integration
8M413128.D A9FOOWT.M Fri Jun 24 17:12:27 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062116\8M413128.D Vial: 5
Acq On : 21 Jun 2016 19:21 Operator: FJB
Sample : WG573645-01 BLANK 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 24 17:12 2016 Quant Results File: A9FOOWT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\A9FOOWT.M (RTE Integrator)
Title : A9-FOO Water SOP:MSV01 05-17-16 HPMS8
Last Update : Thu May 19 10:02:03 2016
Response via : Initial Calibration

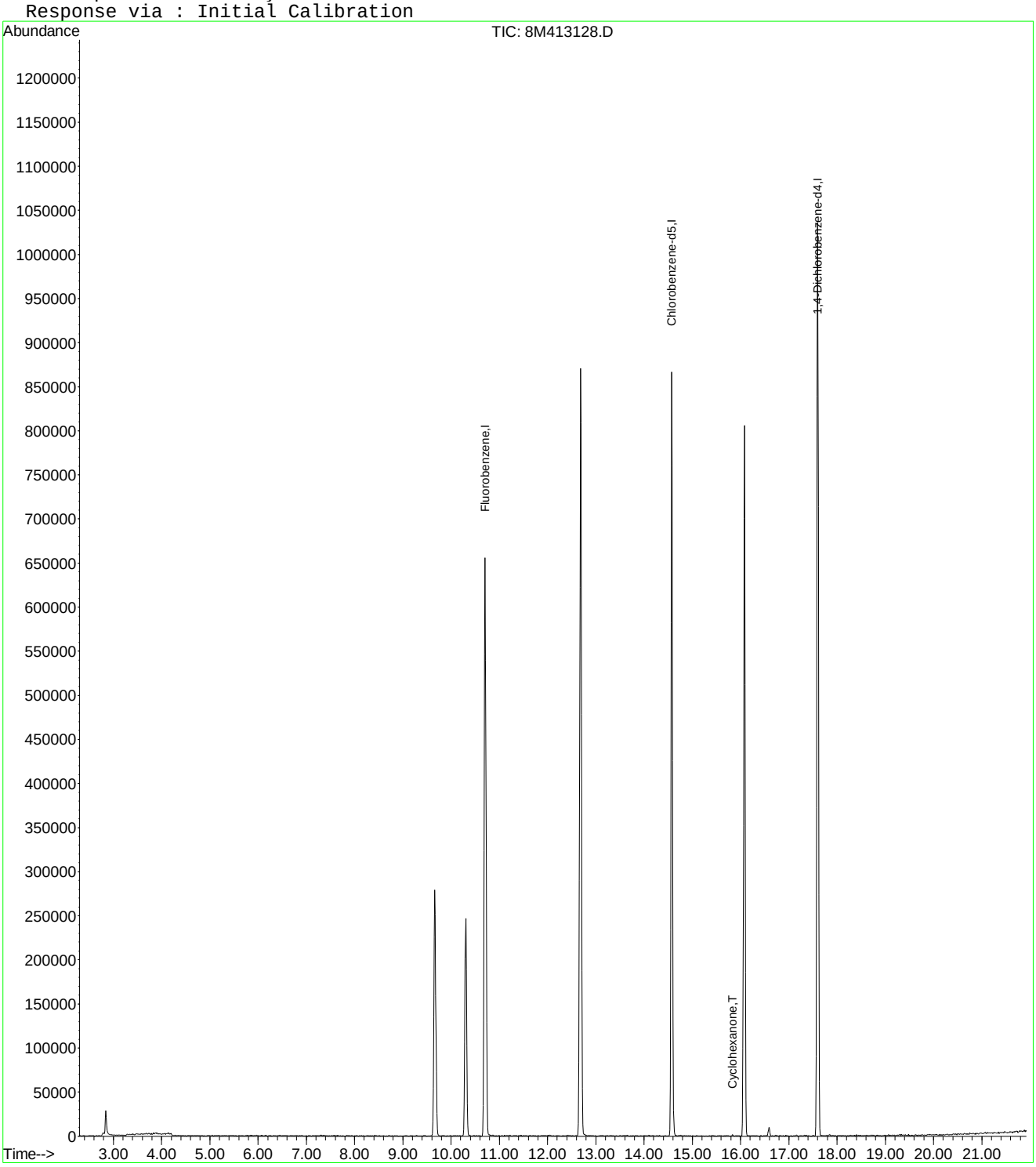

8M413128.D A9FOOWT.M Fri Jun 24 17:12:27 2016 Page 2

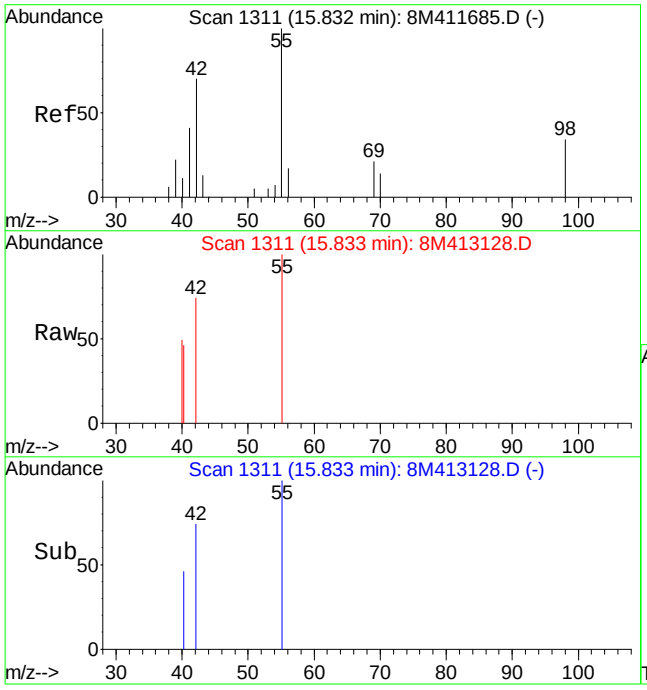

#13
Cyclohexanone
Concen: 6.44 ug/L
RT: 15.83 min Scan# 1311
Delta R.T. -0.00 min
Lab File: 8M413128.D
Acq: 21 Jun 2016 19:21

Tgt Ion: 55 Resp: 886

Ion	Ratio	Lower	Upper
55	100		
98	0.0	19.2	44.8#

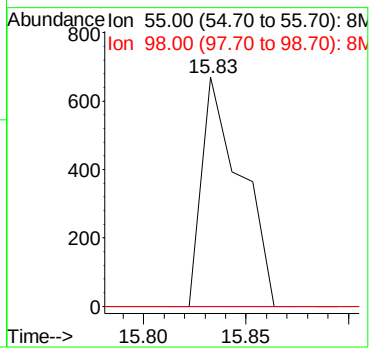

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062216\8M413165.D Vial: 5
Acq On : 22 Jun 2016 16:39 Operator: FJB
Sample : WG573771-01 BLANK 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 22 17:01:46 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	723354	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	554912	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	305326	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	207968	26.7592 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.04%		
43) 1,2-Dichloroethane-d4	10.30	65	231478	27.7774 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 111.12%		
58) Toluene-d8	12.68	98	755342	26.0090 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 104.04%		
80) p-Bromofluorobenzene	16.08	95	311112	24.6081 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.44%		
Target Compounds					Qvalue
36) Tetrahydrofuran	9.64	42	677	0.8596 ug/L #	24

(#) = qualifier out of range (m) = manual integration
8M413165.D 8260WT.M Mon Jun 27 12:39:56 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062216\8M413165.D Vial: 5
Acq On : 22 Jun 2016 16:39 Operator: FJB
Sample : WG573771-01 BLANK 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 22 17:01 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

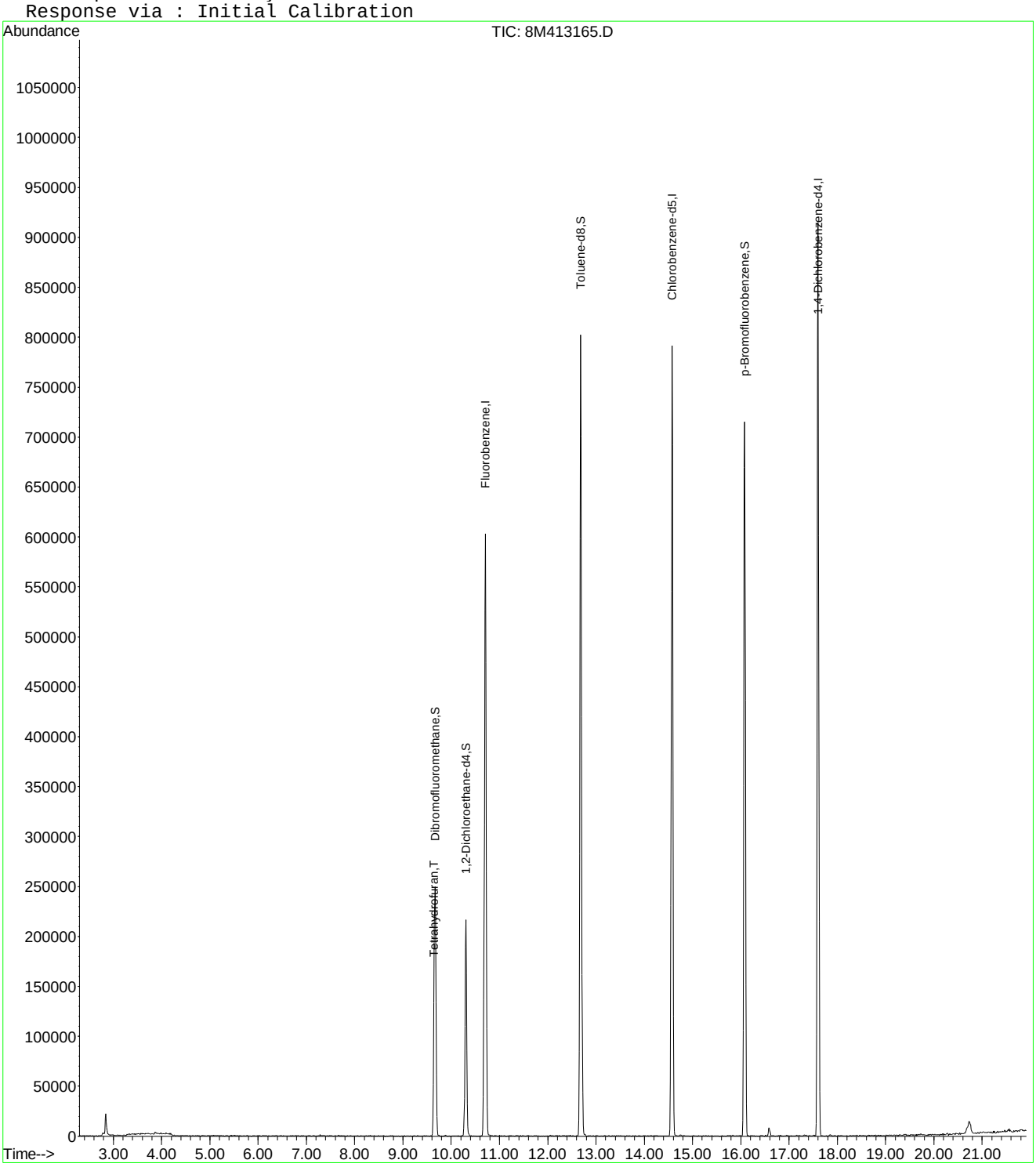

8M413165.D 8260WT.M Mon Jun 27 12:39:57 2016 Page 2

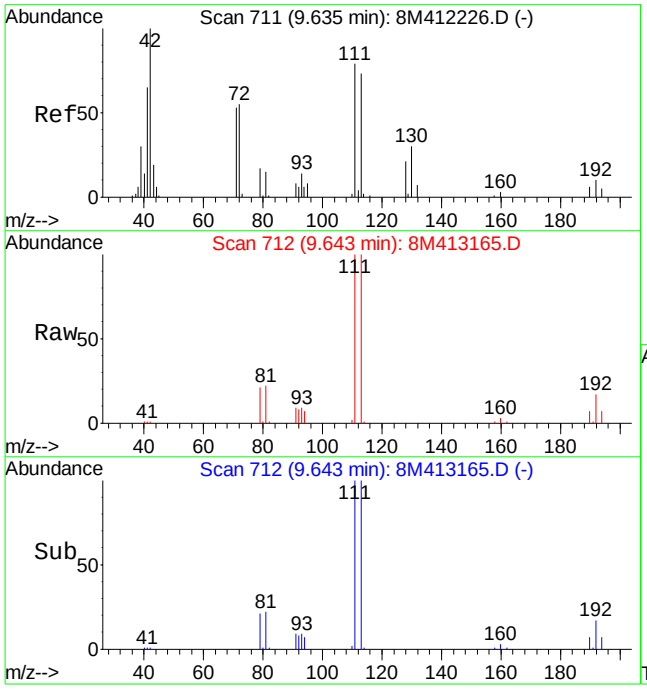

#36
Tetrahydrofuran
Concen: 0.86 ug/L
RT: 9.64 min Scan# 712
Delta R.T. 0.01 min
Lab File: 8M413165.D
Acq: 22 Jun 2016 16:39

Tgt Ion: 42 Resp: 677

Ion	Ratio	Lower	Upper
42	100		
72	0.0	33.8	78.8#
71	0.0	32.0	74.8#

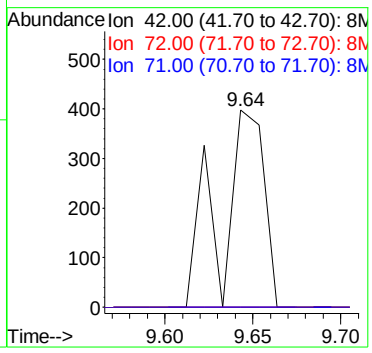

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413194.D Vial: 5
Acq On : 23 Jun 2016 21:59 Operator: FJB
Sample : WG573991-01 BLANK 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 22:21:08 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	695599	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	547838	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	300577	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	210658	28.1869 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 112.76%		
43) 1,2-Dichloroethane-d4	10.30	65	230039	28.7061 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 114.84%		
58) Toluene-d8	12.68	98	731476	25.5125 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.04%		
80) p-Bromofluorobenzene	16.08	95	315963	25.3867 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 101.56%		
Target Compounds					Qvalue
36) Tetrahydrofuran	9.62	42	624	0.8240 ug/L	82

(#) = qualifier out of range (m) = manual integration
8M413194.D 8260WT.M Mon Jun 27 12:41:31 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413194.D Vial: 5
Acq On : 23 Jun 2016 21:59 Operator: FJB
Sample : WG573991-01 BLANK 8260 Inst : HPMS8
Misc : 1,1 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 22:21 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

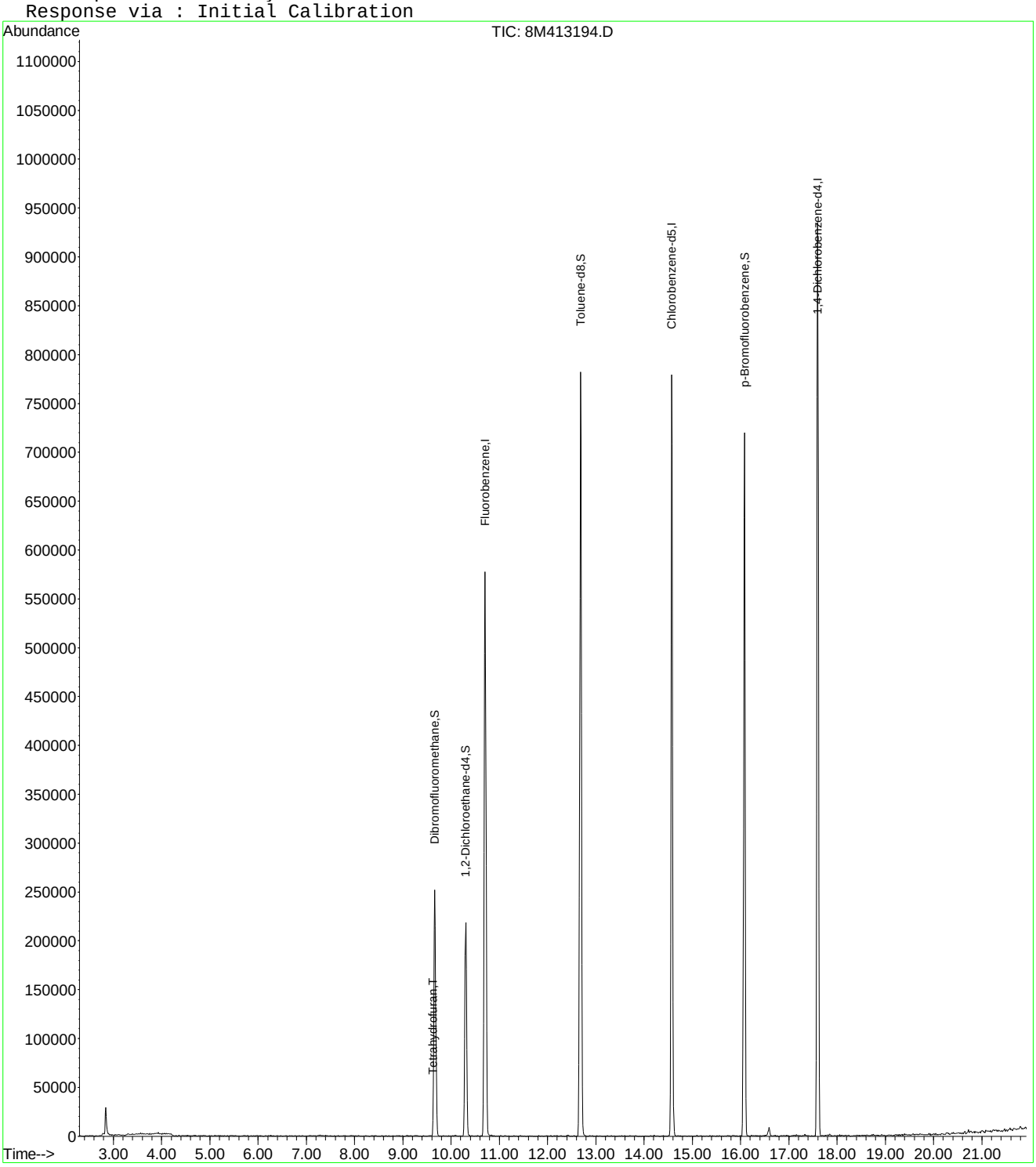

8M413194.D 8260WT.M Mon Jun 27 12:41:32 2016 Page 2

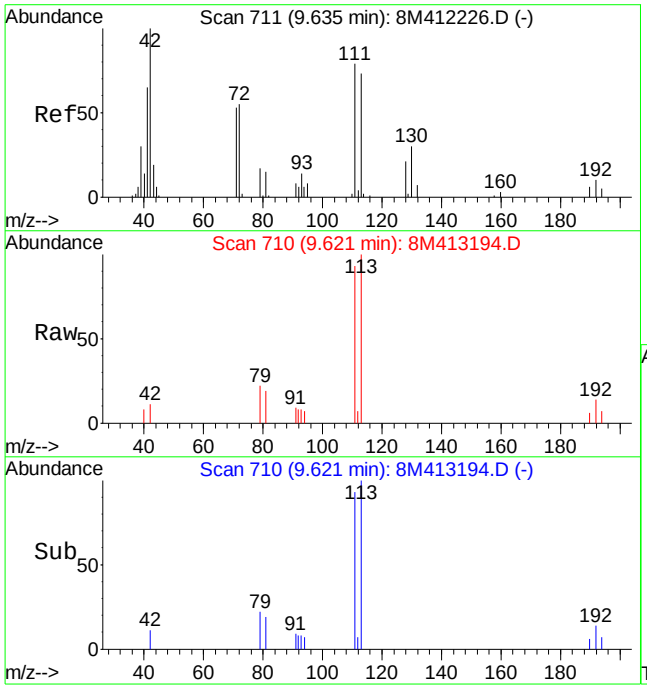

#36
Tetrahydrofuran
Concen: 0.82 ug/L
RT: 9.62 min Scan# 710
Delta R.T. -0.01 min
Lab File: 8M413194.D
Acq: 23 Jun 2016 21:59

Tgt Ion: 42 Resp: 624

Ion	Ratio	Lower	Upper
42	100		
72	65.5	33.8	78.8
71	70.5	32.0	74.8

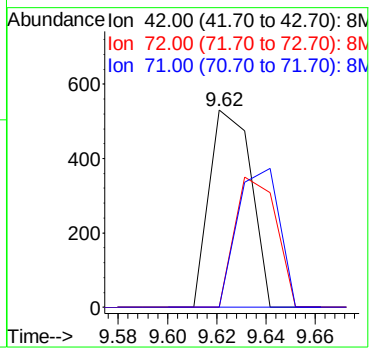

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062116\8M413129.D Vial: 6
Acq On : 21 Jun 2016 19:50 Operator: FJB
Sample : WG573645-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 21 20:12:25 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	813093	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	608259	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	338876	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	234764	26.8732 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.48%		
43) 1,2-Dichloroethane-d4	10.30	65	255637	27.2908 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 109.16%		
58) Toluene-d8	12.68	98	823364	25.8647 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.44%		
80) p-Bromofluorobenzene	16.08	95	343893	24.5080 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.04%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	385920	28.3093 ug/L	99
3) Chloromethane	3.62	50	189733	23.8434 ug/L	100
4) Vinyl Chloride	3.84	62	257972	27.3245 ug/L	99
5) 1,3-Butadiene	3.89	54	170429	21.5260 ug/L	98
6) Bromomethane	4.73	94	103832	18.9505 ug/L	98
7) Chloroethane	4.89	64	126869	24.4218 ug/L	97
8) Trichlorofluoromethane	5.37	101	429622	24.4560 ug/L	98
9) Diethyl ether	5.90	59	445162	106.1463 ug/L	98
10) Isoprene	5.94	67	269952	25.3050 ug/L	98
11) Acrolein	6.14	56	34375	91.5454 ug/L	96
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	196953	23.8513 ug/L	92
13) Acetone	6.23	43	18414	20.1289 ug/L	99
14) 1,1-Dichloroethene	6.47	61	292924	22.2792 ug/L	98
15) Tert-Butyl Alcohol	6.57	59	41436	141.3442 ug/L	99
16) Dimethyl Sulfide	6.73	62	182770	38.8785 ug/L	100
17) Iodomethane	6.99	142	54446	17.0625 ug/L	97
18) Methyl acetate	7.00	43	45533	18.4135 ug/L	99
19) Methylene Chloride	7.24	84	182767	21.8436 ug/L	97
20) Carbon Disulfide	7.29	76	600770	21.8348 ug/L	100
21) Acrylonitrile	7.43	53	24317	20.4871 ug/L	95
22) Methyl Tert Butyl Ether	7.46	73	413774	22.8493 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	273761	22.6642 ug/L	100
24) n-Hexane	7.78	57	207172	23.0976 ug/L	99
25) Diisopropyl ether	8.12	45	2021506	107.3647 ug/L	98
26) Vinyl Acetate	8.30	43	201601	23.3859 ug/L	99
27) 1,1-Dichloroethane	8.32	63	327791	21.8514 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	2130780	105.6249 ug/L	99
29) 2-Butanone	8.88	43	27143	20.1947 ug/L	94
30) Propionitrile	8.98	54	34357	87.7160 ug/L	94
31) 2,2-Dichloropropane	9.09	77	403710	25.5379 ug/L	100
32) cis-1,2-Dichloroethene	9.17	96	210713	22.5766 ug/L	100
33) Chloroform	9.37	83	399749	22.5692 ug/L	99
34) 1-Bromopropane	9.51	122	42874	32.0703 ug/L	98
35) Bromochloromethane	9.61	130	106778	22.3102 ug/L	95
36) Tetrahydrofuran	9.63	42	79690	90.0202 ug/L	99
38) 1,1,1-Trichloroethane	9.91	97	396102	23.5433 ug/L	98
39) Cyclohexane	9.94	56	263296	22.6043 ug/L	99
40) 1,1-Dichloropropene	10.11	75	291240	22.7108 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	2008618	109.6275 ug/L	100
42) Carbon Tetrachloride	10.25	117	356159	23.8394 ug/L	98

(#) = qualifier out of range (m) = manual integration
8M413129.D 8260WT.M Fri Jun 24 17:14:48 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062116\8M413129.D Vial: 6
Acq On : 21 Jun 2016 19:50 Operator: FJB
Sample : WG573645-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 21 20:12:25 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.42	62	272087	23.8670 ug/L	99
46)	Benzene	10.46	78	755460	22.6187 ug/L	99
47)	Trichloroethene	11.21	130	209527	23.5210 ug/L	99
48)	Methylcyclohexane	11.30	83	314343	23.2279 ug/L	99
49)	1,2-Dichloropropane	11.43	63	163555	21.9975 ug/L	96
50)	Bromodichloromethane	11.73	83	298750	22.8613 ug/L	100
51)	1,4-Dioxane	11.71	88	2412	64.5802 ug/L	85
52)	Dibromomethane	11.81	93	88284	20.0589 ug/L	96
53)	2-Chloroethyl Vinyl Ether	12.03	63	64637	20.2262 ug/L	96
54)	4-Methyl-2-Pentanone	12.05	58	28023	21.4670 ug/L	98
55)	cis-1,3-Dichloropropene	12.36	75	326532	24.5488 ug/L	97
56)	Dimethyl Disulfide	12.62	79	158616	22.3421 ug/L	94
59)	Toluene	12.78	91	794671	21.0444 ug/L	100
60)	Ethyl Methacrylate	12.88	69	153222	21.1283 ug/L	97
62)	trans-1,3-Dichloropropene	12.96	75	272048	21.4979 ug/L	99
63)	1,1,2-Trichloroethane	13.18	97	120470	20.2176 ug/L	99
64)	2-Hexanone	13.11	58	21435	17.1184 ug/L #	94
65)	1,3-Dichloropropane	13.48	76	228486	21.5374 ug/L	97
66)	Tetrachloroethene	13.60	164	174802	21.6060 ug/L	98
67)	Dibromochloromethane	13.87	129	179224	20.5994 ug/L	100
68)	1,2-Dibromoethane	14.13	107	120622	20.3115 ug/L	99
69)	1-Chlorohexane	14.21	91	272223	21.1188 ug/L	98
70)	Chlorobenzene	14.62	112	542483	21.3040 ug/L	100
71)	1,1,1,2-Tetrachloroethane	14.65	131	206850	20.9680 ug/L	97
72)	Ethylbenzene	14.65	106	278765	20.0090 ug/L	96
73)	m-,p-Xylene	14.75	106	703885	43.0736 ug/L	97
74)	o-Xylene	15.31	106	342035	21.4085 ug/L	99
75)	Styrene	15.35	104	556990	21.2558 ug/L	98
76)	Bromoform	15.83	173	103480	20.0520 ug/L	99
77)	Isopropylbenzene	15.73	105	938778	22.1188 ug/L	99
79)	1,1,2,2-Tetrachloroethane	15.95	83	121621	17.8795 ug/L	99
81)	1,2,3-Trichloropropane	16.14	110	40186	19.1848 ug/L	81
82)	trans-1,4-Dichloro-2-Buten	16.18	53	33643	16.1778 ug/L	95
83)	n-Propylbenzene	16.24	91	1119012	21.1660 ug/L	99
84)	Bromobenzene	16.37	156	217365	19.9887 ug/L	96
85)	1,3,5-Trimethylbenzene	16.42	105	813102	21.1133 ug/L	100
86)	2-Chlorotoluene	16.51	91	772842	20.9377 ug/L	99
87)	4-Chlorotoluene	16.56	91	686310	20.5842 ug/L	100
88)	a-Methylstyrene	16.82	118	388387	21.2566 ug/L	100
89)	tert-Butylbenzene	16.90	134	158309	21.0120 ug/L	95
90)	1,2,4-Trimethylbenzene	16.94	105	794341	20.0591 ug/L	99
91)	sec-Butylbenzene	17.17	105	940451	20.7578 ug/L	99
92)	p-Isopropyltoluene	17.32	119	796285	20.6998 ug/L	99
93)	1,3-Dichlorobenzene	17.51	146	427880	20.4344 ug/L	97
94)	1,4-Dichlorobenzene	17.64	146	430799	20.4070 ug/L	98
95)	n-Butylbenzene	17.85	91	752865	19.7966 ug/L	99
96)	1,2-Dichlorobenzene	18.14	146	371132	19.9285 ug/L	99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	24263	17.7694 ug/L	97
98)	1,2,4-Trichlorobenzene	20.28	180	273983	19.6823 ug/L	99
99)	Hexachlorobutadiene	20.43	225	138397	21.2785 ug/L	97
100)	Naphthalene	20.65	128	332733	16.0884 ug/L	99
101)	1,2,3-Trichlorobenzene	20.96	180	219276	18.6714 ug/L	96

(#) = qualifier out of range (m) = manual integration
8M413129.D 8260WT.M Fri Jun 24 17:14:48 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062116\8M413129.D Vial: 6
Acq On : 21 Jun 2016 19:50 Operator: FJB
Sample : WG573645-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 21 20:12 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

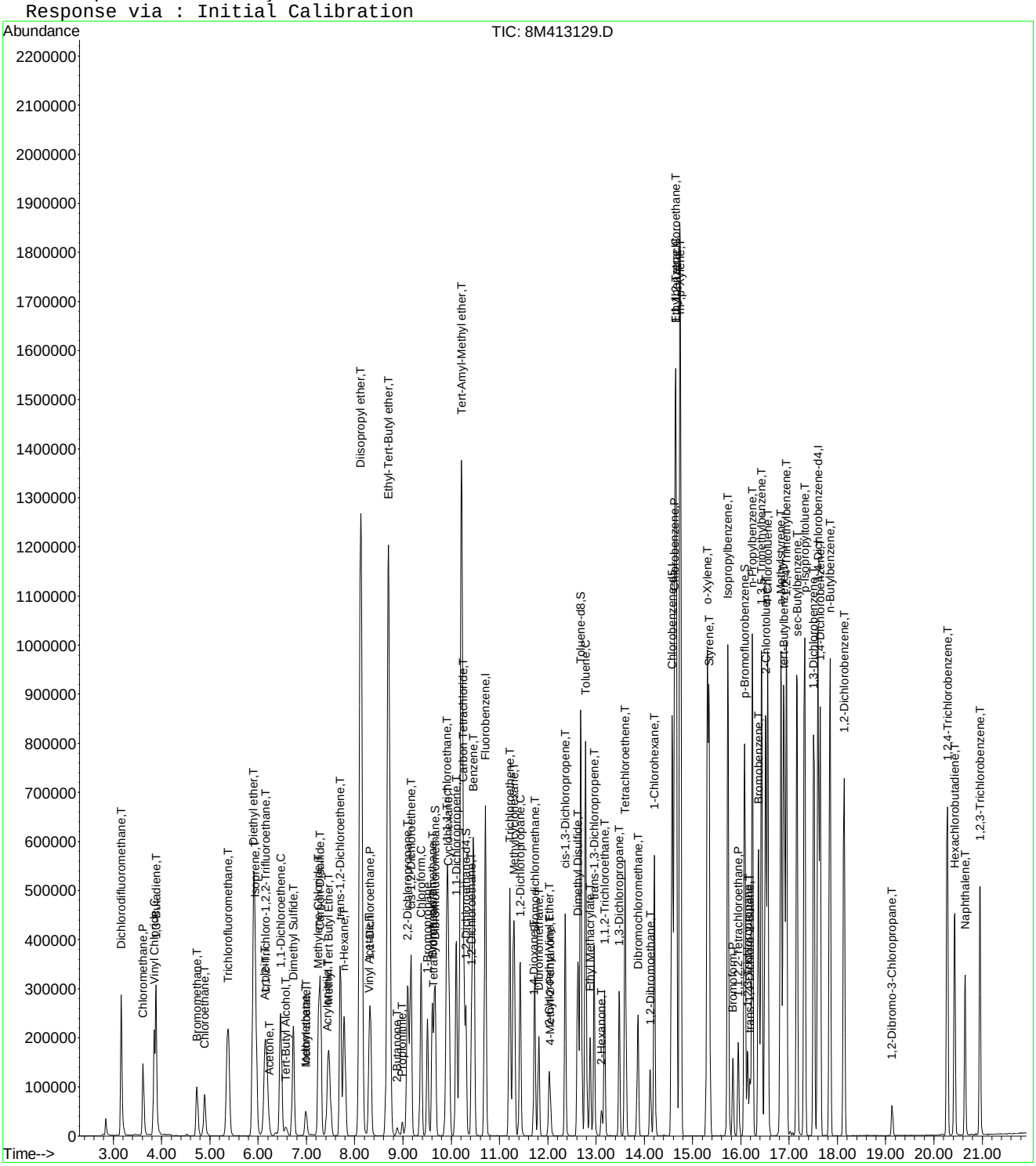

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062216\8M413166.D Vial: 6
Acq On : 22 Jun 2016 17:13 Operator: FJB
Sample : WG573771-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 22 17:35:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	717279	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	551241	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	303556	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	212482	27.5716 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 110.28%		
43) 1,2-Dichloroethane-d4	10.30	65	233548	28.2631 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 113.04%		
58) Toluene-d8	12.68	98	743229	25.7624 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.04%		
80) p-Bromofluorobenzene	16.08	95	322867	25.6868 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 102.76%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	367471	30.5567 ug/L	100
3) Chloromethane	3.62	50	168107	23.9477 ug/L	99
4) Vinyl Chloride	3.84	62	237940	28.5693 ug/L	99
5) 1,3-Butadiene	3.89	54	145361	20.8123 ug/L	96
6) Bromomethane	4.73	94	87164	18.0686 ug/L	97
7) Chloroethane	4.89	64	112178	24.4783 ug/L	98
8) Trichlorofluoromethane	5.37	101	396918	25.6125 ug/L	100
9) Diethyl ether	5.90	59	391516	105.8250 ug/L	97
10) Isoprene	5.94	67	240447	25.5501 ug/L	98
11) Acrolein	6.14	56	28422	85.8027 ug/L	97
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	174066	23.8955 ug/L	94
13) Acetone	6.24	43	17983	22.2836 ug/L	98
14) 1,1-Dichloroethene	6.47	61	262370	22.6210 ug/L	98
15) Tert-Butyl Alcohol	6.57	59	39305	151.9848 ug/L	99
16) Dimethyl Sulfide	6.73	62	156204	37.6659 ug/L	97
17) Iodomethane	6.99	142	37210	13.8558 ug/L	94
18) Methyl acetate	7.00	43	41812	19.1674 ug/L	99
19) Methylene Chloride	7.25	84	159561	21.6175 ug/L	98
20) Carbon Disulfide	7.29	76	530568	21.8592 ug/L	99
21) Acrylonitrile	7.43	53	21810	20.8294 ug/L	94
22) Methyl Tert Butyl Ether	7.46	73	374130	23.4199 ug/L	100
23) trans-1,2-Dichloroethene	7.70	61	238512	22.3836 ug/L	98
24) n-Hexane	7.78	57	175503	22.1806 ug/L	99
25) Diisopropyl ether	8.12	45	1743957	104.9964 ug/L	96
26) Vinyl Acetate	8.29	43	167340	22.0046 ug/L	100
27) 1,1-Dichloroethane	8.32	63	288871	21.8292 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1890531	106.2340 ug/L	98
29) 2-Butanone	8.88	43	24012	20.2516 ug/L	99
30) Propionitrile	8.99	54	33230	96.1714 ug/L	97
31) 2,2-Dichloropropane	9.10	77	369805	26.5179 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	185007	22.4702 ug/L	99
33) Chloroform	9.37	83	356893	22.8412 ug/L	100
34) 1-Bromopropane	9.51	122	38563	32.6989 ug/L	98
35) Bromochloromethane	9.61	130	90818	21.5103 ug/L	96
36) Tetrahydrofuran	9.63	42	66658	85.3573 ug/L	97
38) 1,1,1-Trichloroethane	9.91	97	365510	24.6270 ug/L	99
39) Cyclohexane	9.93	56	225900	21.9845 ug/L	99
40) 1,1-Dichloropropene	10.11	75	255902	22.6207 ug/L	100
41) Tert-Amyl-Methyl ether	10.21	73	1807896	111.8530 ug/L	100
42) Carbon Tetrachloride	10.25	117	323502	24.5460 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413166.D 8260WT.M Mon Jun 27 12:27:37 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062216\8M413166.D Vial: 6
Acq On : 22 Jun 2016 17:13 Operator: FJB
Sample : WG573771-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 22 17:35:52 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
45)	1,2-Dichloroethane	10.42	62	248337	24.6936 ug/L	99
46)	Benzene	10.46	78	661098	22.4375 ug/L	99
47)	Trichloroethene	11.21	130	184798	23.5161 ug/L	99
48)	Methylcyclohexane	11.30	83	272829	22.8533 ug/L	99
49)	1,2-Dichloropropane	11.43	63	142472	21.7216 ug/L	90
50)	Bromodichloromethane	11.73	83	271759	23.5737 ug/L	99
51)	1,4-Dioxane	11.72	88	2920	88.6251 ug/L	89
52)	Dibromomethane	11.81	93	80951	20.8496 ug/L	99
53)	2-Chloroethyl Vinyl Ether	12.02	63	55876	19.8203 ug/L	96
54)	4-Methyl-2-Pentanone	12.05	58	23648	20.5354 ug/L	96
55)	cis-1,3-Dichloropropene	12.36	75	290707	24.7749 ug/L	99
56)	Dimethyl Disulfide	12.63	79	138771	22.1579 ug/L	93
59)	Toluene	12.78	91	704595	20.5890 ug/L	99
60)	Ethyl Methacrylate	12.88	69	134164	20.4139 ug/L	100
62)	trans-1,3-Dichloropropene	12.96	75	248009	21.6254 ug/L	99
63)	1,1,2-Trichloroethane	13.18	97	107509	19.9087 ug/L	99
64)	2-Hexanone	13.11	58	19078	16.8120 ug/L #	88
65)	1,3-Dichloropropane	13.48	76	206231	21.4503 ug/L	97
66)	Tetrachloroethene	13.60	164	157755	21.5159 ug/L	96
67)	Dibromochloromethane	13.87	129	160851	20.4000 ug/L	100
68)	1,2-Dibromoethane	14.13	107	107833	20.0361 ug/L	98
69)	1-Chlorohexane	14.21	91	238474	20.4142 ug/L	99
70)	Chlorobenzene	14.62	112	475785	20.6174 ug/L	98
71)	1,1,1,2-Tetrachloroethane	14.65	131	187326	20.9530 ug/L	98
72)	Ethylbenzene	14.65	106	256653	20.3273 ug/L	98
73)	m-,p-Xylene	14.75	106	625804	42.2566 ug/L	94
74)	o-Xylene	15.31	106	304157	21.0069 ug/L	95
75)	Styrene	15.35	104	502553	21.1621 ug/L	96
76)	Bromoform	15.83	173	91459	19.5558 ug/L	99
77)	Isopropylbenzene	15.73	105	843877	21.9394 ug/L	100
79)	1,1,2,2-Tetrachloroethane	15.95	83	111182	18.2466 ug/L	99
81)	1,2,3-Trichloropropane	16.14	110	36636	19.5251 ug/L	78
82)	trans-1,4-Dichloro-2-Buten	16.18	53	31600	16.9336 ug/L	90
83)	n-Propylbenzene	16.24	91	1005131	21.2241 ug/L	99
84)	Bromobenzene	16.37	156	197914	20.3176 ug/L	95
85)	1,3,5-Trimethylbenzene	16.42	105	734640	21.2955 ug/L	99
86)	2-Chlorotoluene	16.51	91	676287	20.4537 ug/L	100
87)	4-Chlorotoluene	16.56	91	616450	20.6402 ug/L	99
88)	a-Methylstyrene	16.82	118	349834	21.3744 ug/L	98
89)	tert-Butylbenzene	16.89	134	137492	20.3723 ug/L	97
90)	1,2,4-Trimethylbenzene	16.94	105	722350	20.3636 ug/L	100
91)	sec-Butylbenzene	17.17	105	847665	20.8868 ug/L	100
92)	p-Isopropyltoluene	17.32	119	711448	20.6463 ug/L	100
93)	1,3-Dichlorobenzene	17.51	146	386130	20.5862 ug/L	99
94)	1,4-Dichlorobenzene	17.64	146	386877	20.4587 ug/L	100
95)	n-Butylbenzene	17.85	91	671169	19.7018 ug/L	100
96)	1,2-Dichlorobenzene	18.14	146	344448	20.6477 ug/L	98
97)	1,2-Dibromo-3-Chloropropan	19.13	75	21900	17.9051 ug/L	94
98)	1,2,4-Trichlorobenzene	20.28	180	240189	19.2623 ug/L	97
99)	Hexachlorobutadiene	20.43	225	124346	21.3426 ug/L	99
100)	Naphthalene	20.65	128	303563	16.3858 ug/L	99
101)	1,2,3-Trichlorobenzene	20.96	180	187462	17.8197 ug/L	99

(#) = qualifier out of range (m) = manual integration
8M413166.D 8260WT.M Mon Jun 27 12:27:37 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062216\8M413166.D Vial: 6
Acq On : 22 Jun 2016 17:13 Operator: FJB
Sample : WG573771-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 22 17:35 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

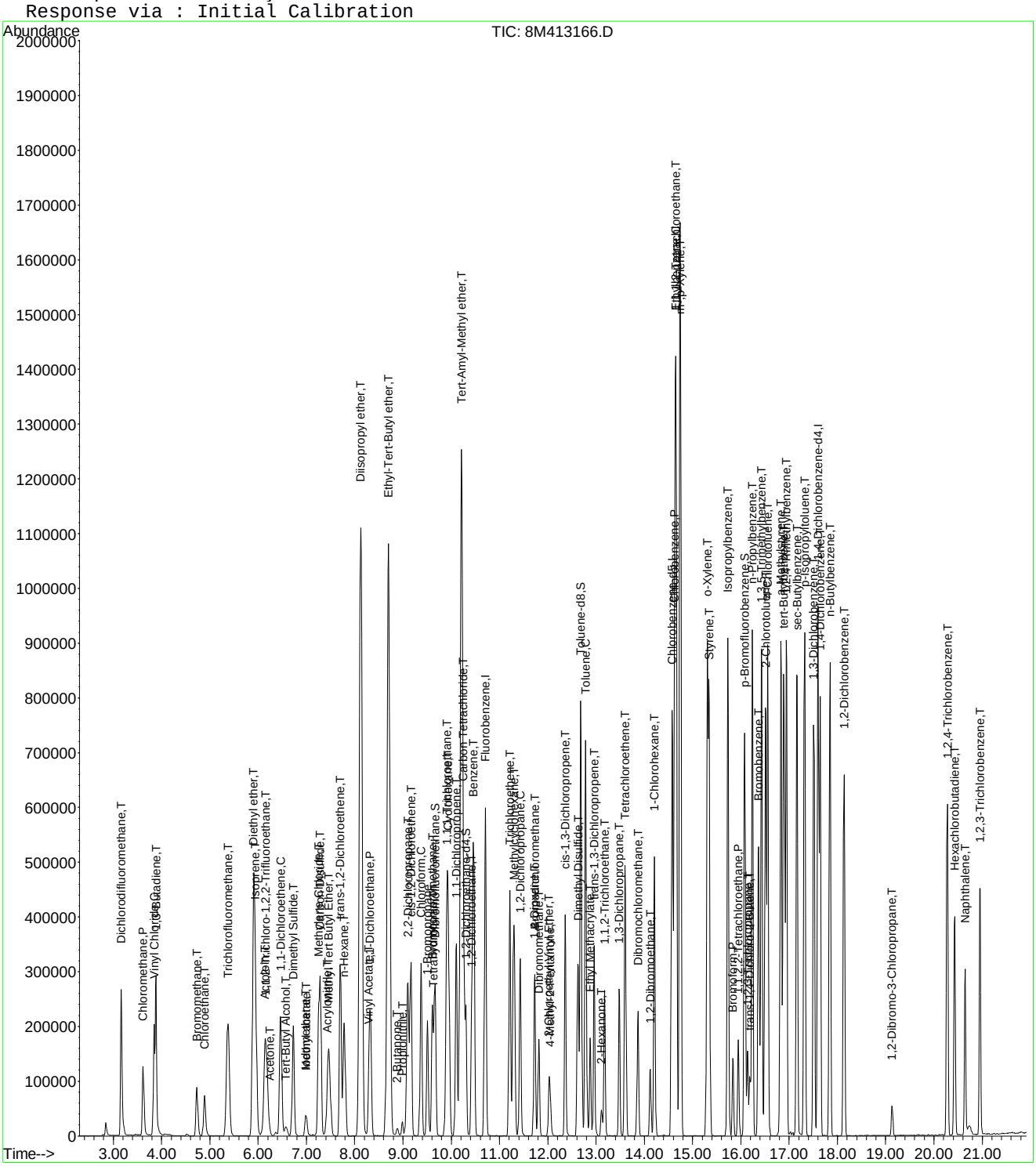

8M413166.D 8260WT.M Mon Jun 27 12:27:39 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413195.D Vial: 6
Acq On : 23 Jun 2016 22:28 Operator: FJB
Sample : WG573991-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 22:50:03 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	709070	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	541017	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	307359	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.66	111	209450	27.4928 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 109.96%		
43) 1,2-Dichloroethane-d4	10.31	65	229900	28.1438 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 112.56%		
58) Toluene-d8	12.68	98	729028	25.7477 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 103.00%		
80) p-Bromofluorobenzene	16.07	95	314680	24.7257 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.92%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	339836	28.5859 ug/L	99
3) Chloromethane	3.62	50	159886	23.0403 ug/L	100
4) Vinyl Chloride	3.84	62	229600	27.8871 ug/L	99
5) 1,3-Butadiene	3.88	54	140587	20.3618 ug/L	99
6) Bromomethane	4.72	94	81952	17.2192 ug/L	98
7) Chloroethane	4.89	64	105860	23.3671 ug/L	98
8) Trichlorofluoromethane	5.38	101	375940	24.5397 ug/L	99
9) Diethyl ether	5.90	59	379335	103.7196 ug/L	97
10) Isoprene	5.94	67	220602	23.7127 ug/L	96
11) Acrolein	6.13	56	25939	79.2134 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.15	101	164574	22.8540 ug/L	93
13) Acetone	6.24	43	19152	24.0069 ug/L	87
14) 1,1-Dichloroethene	6.46	61	256541	22.3745 ug/L	96
15) Tert-Butyl Alcohol	6.57	59	45376	177.4915 ug/L	96
16) Dimethyl Sulfide	6.73	62	153966	37.5561 ug/L	98
17) Iodomethane	6.98	142	63771	21.9232 ug/L	96
18) Methyl acetate	7.00	43	43450	20.1489 ug/L	98
19) Methylene Chloride	7.25	84	155667	21.3341 ug/L	99
20) Carbon Disulfide	7.29	76	500362	20.8534 ug/L	99
21) Acrylonitrile	7.43	53	20108	19.4263 ug/L	95
22) Methyl Tert Butyl Ether	7.46	73	358831	22.7223 ug/L	99
23) trans-1,2-Dichloroethene	7.70	61	233011	22.1205 ug/L	99
24) n-Hexane	7.78	57	168096	21.4904 ug/L	97
25) Diisopropyl ether	8.12	45	1709292	104.1008 ug/L	97
26) Vinyl Acetate	8.30	43	136128	18.1075 ug/L	99
27) 1,1-Dichloroethane	8.32	63	280479	21.4404 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	1832290	104.1533 ug/L	98
29) 2-Butanone	8.88	43	24883	21.2291 ug/L	100
30) Propionitrile	8.98	54	32526	95.2238 ug/L	98
31) 2,2-Dichloropropane	9.10	77	352384	25.5613 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	179136	22.0090 ug/L	95
33) Chloroform	9.38	83	351389	22.7493 ug/L	99
34) 1-Bromopropane	9.51	122	39005	33.4565 ug/L	91
35) Bromochloromethane	9.60	130	90313	21.6383 ug/L	94
36) Tetrahydrofuran	9.63	42	64447	83.4814 ug/L	94
38) 1,1,1-Trichloroethane	9.90	97	361985	24.6718 ug/L	99
39) Cyclohexane	9.94	56	211867	20.8575 ug/L	96
40) 1,1-Dichloropropene	10.10	75	243522	21.7756 ug/L	100
41) Tert-Amyl-Methyl ether	10.21	73	1748040	109.4019 ug/L	100
42) Carbon Tetrachloride	10.24	117	317988	24.4070 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413195.D Vial: 6
Acq On : 23 Jun 2016 22:28 Operator: FJB
Sample : WG573991-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 22:50:03 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	245331	24.6771 ug/L		98
46)	Benzene	10.46	78	636186	21.8420 ug/L		99
47)	Trichloroethene	11.21	130	181612	23.3782 ug/L		99
48)	Methylcyclohexane	11.30	83	258623	21.9142 ug/L		99
49)	1,2-Dichloropropane	11.43	63	139989	21.5901 ug/L		90
50)	Bromodichloromethane	11.72	83	266207	23.3595 ug/L		100
51)	1,4-Dioxane	11.72	88	2551	78.3219 ug/L		94
52)	Dibromomethane	11.81	93	79612	20.7422 ug/L		96
53)	2-Chloroethyl Vinyl Ether	12.02	63	54338	19.4979 ug/L		95
54)	4-Methyl-2-Pentanone	12.06	58	22608	19.8596 ug/L		96
55)	cis-1,3-Dichloropropene	12.36	75	284141	24.4957 ug/L		100
56)	Dimethyl Disulfide	12.62	79	134379	21.7050 ug/L		88
59)	Toluene	12.79	91	690554	20.5600 ug/L		99
60)	Ethyl Methacrylate	12.88	69	136325	21.1347 ug/L		100
62)	trans-1,3-Dichloropropene	12.96	75	238780	21.2141 ug/L		100
63)	1,1,2-Trichloroethane	13.18	97	101653	19.1800 ug/L		99
64)	2-Hexanone	13.11	58	19262	17.2949 ug/L	#	96
65)	1,3-Dichloropropane	13.48	76	201584	21.3632 ug/L		96
66)	Tetrachloroethene	13.60	164	150481	20.9116 ug/L		99
67)	Dibromochloromethane	13.86	129	157618	20.3677 ug/L		100
68)	1,2-Dibromoethane	14.12	107	104511	19.7859 ug/L		99
69)	1-Chlorohexane	14.21	91	228001	19.8866 ug/L		98
70)	Chlorobenzene	14.63	112	469098	20.7118 ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.66	131	183570	20.9209 ug/L		99
72)	Ethylbenzene	14.66	106	248486	20.0524 ug/L		96
73)	m-,p-Xylene	14.74	106	610436	41.9979 ug/L		96
74)	o-Xylene	15.31	106	301773	21.2361 ug/L		97
75)	Styrene	15.34	104	491214	21.0756 ug/L		97
76)	Bromoform	15.83	173	87737	19.1145 ug/L		98
77)	Isopropylbenzene	15.73	105	820778	21.7422 ug/L		100
79)	1,1,2,2-Tetrachloroethane	15.95	83	105306	17.0684 ug/L		100
81)	1,2,3-Trichloropropane	16.13	110	36317	19.1156 ug/L	#	31
82)	trans-1,4-Dichloro-2-Buten	16.19	53	29611	15.7173 ug/L	#	4
83)	n-Propylbenzene	16.24	91	1001969	20.8955 ug/L		99
84)	Bromobenzene	16.37	156	191590	19.4250 ug/L		97
85)	1,3,5-Trimethylbenzene	16.42	105	724823	20.7509 ug/L		98
86)	2-Chlorotoluene	16.51	91	616163	18.4047 ug/L		92
87)	4-Chlorotoluene	16.56	91	670668	22.1777 ug/L		91
88)	a-Methylstyrene	16.83	118	336395	20.2990 ug/L		98
89)	tert-Butylbenzene	16.89	134	136372	19.9564 ug/L		99
90)	1,2,4-Trimethylbenzene	16.94	105	714803	19.9015 ug/L		99
91)	sec-Butylbenzene	17.16	105	828940	20.1726 ug/L		99
92)	p-Isopropyltoluene	17.32	119	690041	19.7773 ug/L		99
93)	1,3-Dichlorobenzene	17.51	146	383600	20.1982 ug/L		98
94)	1,4-Dichlorobenzene	17.64	146	379062	19.7974 ug/L		100
95)	n-Butylbenzene	17.84	91	654053	18.9618 ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	327323	19.3784 ug/L		99
97)	1,2-Dibromo-3-Chloropropan	19.13	75	21199	17.1175 ug/L		94
98)	1,2,4-Trichlorobenzene	20.27	180	233503	18.4944 ug/L		98
99)	Hexachlorobutadiene	20.43	225	122070	20.6927 ug/L		98
100)	Naphthalene	20.64	128	285406	15.2151 ug/L		98
101)	1,2,3-Trichlorobenzene	20.95	180	185957	17.4579 ug/L		97

(#) = qualifier out of range (m) = manual integration
8M413195.D 8260WT.M Mon Jun 27 12:30:19 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062316\8M413195.D Vial: 6
Acq On : 23 Jun 2016 22:28 Operator: FJB
Sample : WG573991-02 20ug/L LCS 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 23 22:50 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

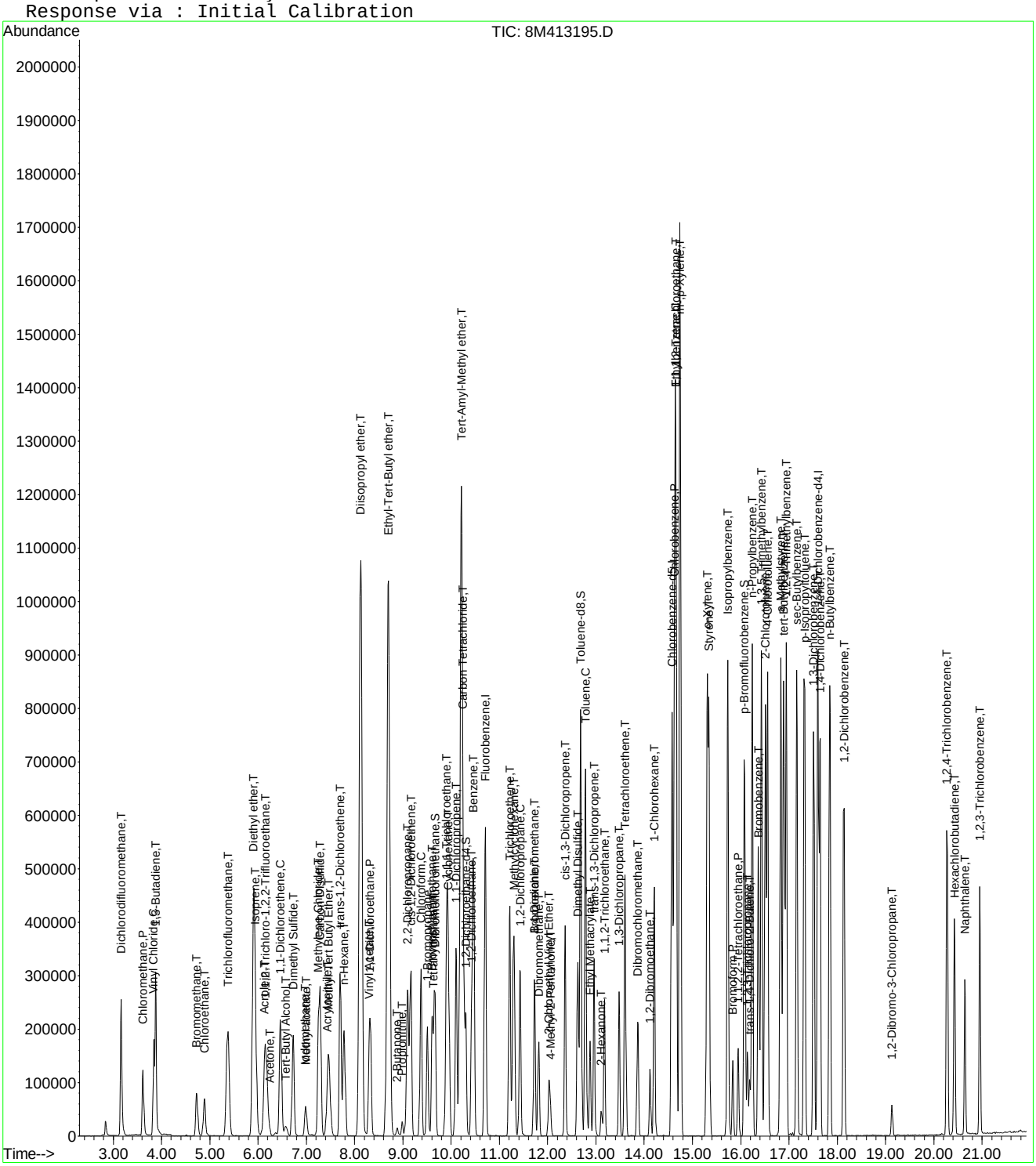

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062116\8M413130.D Vial: 7
Acq On : 21 Jun 2016 20:19 Operator: FJB
Sample : WG573645-03 20ug/L LCS2 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 21 20:41:24 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.71	96	801570	25.00 ug/L	0.00
57) Chlorobenzene-d5	14.57	117	606723	25.00 ug/L	0.00
78) 1,4-Dichlorobenzene-d4	17.60	152	337211	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.66	111	232312	26.9748 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 107.88%		
43) 1,2-Dichloroethane-d4	10.30	65	244814	26.5111 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 106.04%		
58) Toluene-d8	12.68	98	807456	25.4292 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.72%		
80) p-Bromofluorobenzene	16.08	95	345700	24.7584 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 99.04%		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.16	85	375654	27.9524 ug/L	99
3) Chloromethane	3.62	50	183223	23.3563 ug/L	99
4) Vinyl Chloride	3.84	62	251449	27.0165 ug/L	100
5) 1,3-Butadiene	3.88	54	171496	21.9722 ug/L	99
6) Bromomethane	4.73	94	99370	18.4182 ug/L	97
7) Chloroethane	4.89	64	120768	23.5816 ug/L	97
8) Trichlorofluoromethane	5.37	101	405508	23.4152 ug/L	99
9) Diethyl ether	5.90	59	429224	103.8172 ug/L	98
10) Isoprene	5.93	67	259996	24.7221 ug/L	98
11) Acrolein	6.13	56	33670	90.9570 ug/L	94
12) 1,1,2-Trichloro-1,2,2-Trif	6.16	101	190538	23.4061 ug/L	94
13) Acetone	6.24	43	19487	21.6080 ug/L	98
14) 1,1-Dichloroethene	6.46	61	284861	21.9774 ug/L	97
15) Tert-Butyl Alcohol	6.57	59	44593	154.2999 ug/L	96
16) Dimethyl Sulfide	6.73	62	172245	37.1664 ug/L	97
17) Iodomethane	6.99	142	67479	20.7087 ug/L	100
18) Methyl acetate	6.99	43	45353	18.6044 ug/L	99
19) Methylene Chloride	7.24	84	175900	21.3251 ug/L	97
20) Carbon Disulfide	7.29	76	574700	21.1876 ug/L	100
21) Acrylonitrile	7.43	53	23931	20.4517 ug/L	98
22) Methyl Tert Butyl Ether	7.46	73	395219	22.1384 ug/L	100
23) trans-1,2-Dichloroethene	7.70	61	264912	22.2469 ug/L	99
24) n-Hexane	7.78	57	204188	23.0922 ug/L	98
25) Diisopropyl ether	8.12	45	1967896	106.0199 ug/L	98
26) Vinyl Acetate	8.30	43	186340	21.9263 ug/L	99
27) 1,1-Dichloroethane	8.32	63	312098	21.1043 ug/L	100
28) Ethyl-Tert-Butyl ether	8.70	59	2048753	103.0187 ug/L	99
29) 2-Butanone	8.88	43	26114	19.7084 ug/L	96
30) Propionitrile	8.98	54	34706	89.8808 ug/L	96
31) 2,2-Dichloropropane	9.09	77	386993	24.8323 ug/L	98
32) cis-1,2-Dichloroethene	9.17	96	200847	21.8289 ug/L	97
33) Chloroform	9.37	83	383139	21.9424 ug/L	100
34) 1-Bromopropane	9.51	122	41941	31.8234 ug/L	100
35) Bromochloromethane	9.60	130	100661	21.3345 ug/L	95
36) Tetrahydrofuran	9.63	42	73556	84.2855 ug/L	99
38) 1,1,1-Trichloroethane	9.91	97	386918	23.3280 ug/L	100
39) Cyclohexane	9.94	56	252690	22.0057 ug/L	100
40) 1,1-Dichloropropene	10.11	75	282605	22.3542 ug/L	99
41) Tert-Amyl-Methyl ether	10.21	73	1942419	107.5385 ug/L	99
42) Carbon Tetrachloride	10.24	117	339027	23.0189 ug/L	100

(#) = qualifier out of range (m) = manual integration
8M413130.D 8260WT.M Fri Jun 24 17:14:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062116\8M413130.D Vial: 7
Acq On : 21 Jun 2016 20:19 Operator: FJB
Sample : WG573645-03 20ug/L LCS2 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 21 20:41:24 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\2\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit		Qvalue
45)	1,2-Dichloroethane	10.42	62	258437	22.9955	ug/L		99
46)	Benzene	10.46	78	728220	22.1166	ug/L		99
47)	Trichloroethene	11.21	130	203927	23.2215	ug/L		99
48)	Methylcyclohexane	11.30	83	305222	22.8782	ug/L		99
49)	1,2-Dichloropropane	11.43	63	160378	21.8803	ug/L		95
50)	Bromodichloromethane	11.73	83	286882	22.2687	ug/L		100
51)	1,4-Dioxane	11.72	88	4962	134.7651	ug/L		91
52)	Dibromomethane	11.81	93	86145	19.8542	ug/L		95
53)	2-Chloroethyl Vinyl Ether	12.02	63	61951	19.6644	ug/L		99
54)	4-Methyl-2-Pentanone	12.06	58	24431	18.9844	ug/L		93
55)	cis-1,3-Dichloropropene	12.36	75	314346	23.9724	ug/L		98
56)	Dimethyl Disulfide	12.62	79	151414	21.6343	ug/L		94
59)	Toluene	12.78	91	779721	20.7007	ug/L		98
60)	Ethyl Methacrylate	12.88	69	145866	20.1649	ug/L		98
62)	trans-1,3-Dichloropropene	12.96	75	259013	20.5196	ug/L		99
63)	1,1,2-Trichloroethane	13.18	97	114431	19.2527	ug/L		99
64)	2-Hexanone	13.11	58	22675	18.1545	ug/L	#	94
65)	1,3-Dichloropropane	13.48	76	220977	20.8823	ug/L		99
66)	Tetrachloroethene	13.60	164	173697	21.5238	ug/L		94
67)	Dibromochloromethane	13.87	129	173994	20.0489	ug/L		100
68)	1,2-Dibromoethane	14.12	107	116731	19.7061	ug/L		98
69)	1-Chlorohexane	14.21	91	262320	20.4021	ug/L		99
70)	Chlorobenzene	14.62	112	521869	20.5464	ug/L		99
71)	1,1,1,2-Tetrachloroethane	14.65	131	201136	20.4404	ug/L		99
72)	Ethylbenzene	14.65	106	275214	19.8041	ug/L		96
73)	m-,p-Xylene	14.75	106	679738	41.7013	ug/L		95
74)	o-Xylene	15.31	106	336370	21.1072	ug/L		99
75)	Styrene	15.35	104	545154	20.8568	ug/L		97
76)	Bromoform	15.83	173	98789	19.1915	ug/L		99
77)	Isopropylbenzene	15.73	105	925159	21.8531	ug/L		99
79)	1,1,2,2-Tetrachloroethane	15.95	83	117825	17.4069	ug/L		99
81)	1,2,3-Trichloropropane	16.14	110	40221	19.2963	ug/L		75
82)	trans-1,4-Dichloro-2-Buten	16.18	53	32499	15.7229	ug/L		94
83)	n-Propylbenzene	16.24	91	1101437	20.9364	ug/L		100
84)	Bromobenzene	16.37	156	214213	19.7961	ug/L		96
85)	1,3,5-Trimethylbenzene	16.42	105	798614	20.8395	ug/L		100
86)	2-Chlorotoluene	16.52	91	760317	20.7001	ug/L		99
87)	4-Chlorotoluene	16.56	91	661306	19.9322	ug/L		100
88)	a-Methylstyrene	16.83	118	382596	21.0431	ug/L		98
89)	tert-Butylbenzene	16.90	134	152707	20.3685	ug/L		97
90)	1,2,4-Trimethylbenzene	16.94	105	780583	19.8091	ug/L		99
91)	sec-Butylbenzene	17.16	105	925679	20.5326	ug/L		100
92)	p-Isopropyltoluene	17.32	119	770708	20.1338	ug/L		98
93)	1,3-Dichlorobenzene	17.52	146	423219	20.3116	ug/L		97
94)	1,4-Dichlorobenzene	17.64	146	424902	20.2270	ug/L		97
95)	n-Butylbenzene	17.85	91	740475	19.5669	ug/L		99
96)	1,2-Dichlorobenzene	18.14	146	360566	19.4567	ug/L		98
97)	1,2-Dibromo-3-Chloropropan	19.13	75	24053	17.7026	ug/L		99
98)	1,2,4-Trichlorobenzene	20.28	180	265360	19.1570	ug/L		98
99)	Hexachlorobutadiene	20.43	225	136867	21.1471	ug/L		100
100)	Naphthalene	20.65	128	338862	16.4656	ug/L		100
101)	1,2,3-Trichlorobenzene	20.96	180	216043	18.4869	ug/L		97

(#) = qualifier out of range (m) = manual integration
8M413130.D 8260WT.M Fri Jun 24 17:14:55 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : K:\ORGANICS\VOLATILE\HPMS8\DATA\062116\8M413130.D Vial: 7
Acq On : 21 Jun 2016 20:19 Operator: FJB
Sample : WG573645-03 20ug/L LCS2 8260 Inst : HPMS8
Misc : 1,1 STD76744 Multiplr: 1.00
MS Integration Params: RTEINT.P
Quant Time: Jun 21 20:41 2016 Quant Results File: 8260WT.RES

Method : K:\ORGANICS\VOLATILE\HPMS8\METHODS\8260WT.M (RTE Integrator)
Title : Method 8260B/624 WTR-SOP:OVLMSV01 05-13-16 HPMS 8
Last Update : Sat May 14 18:08:06 2016
Response via : Initial Calibration

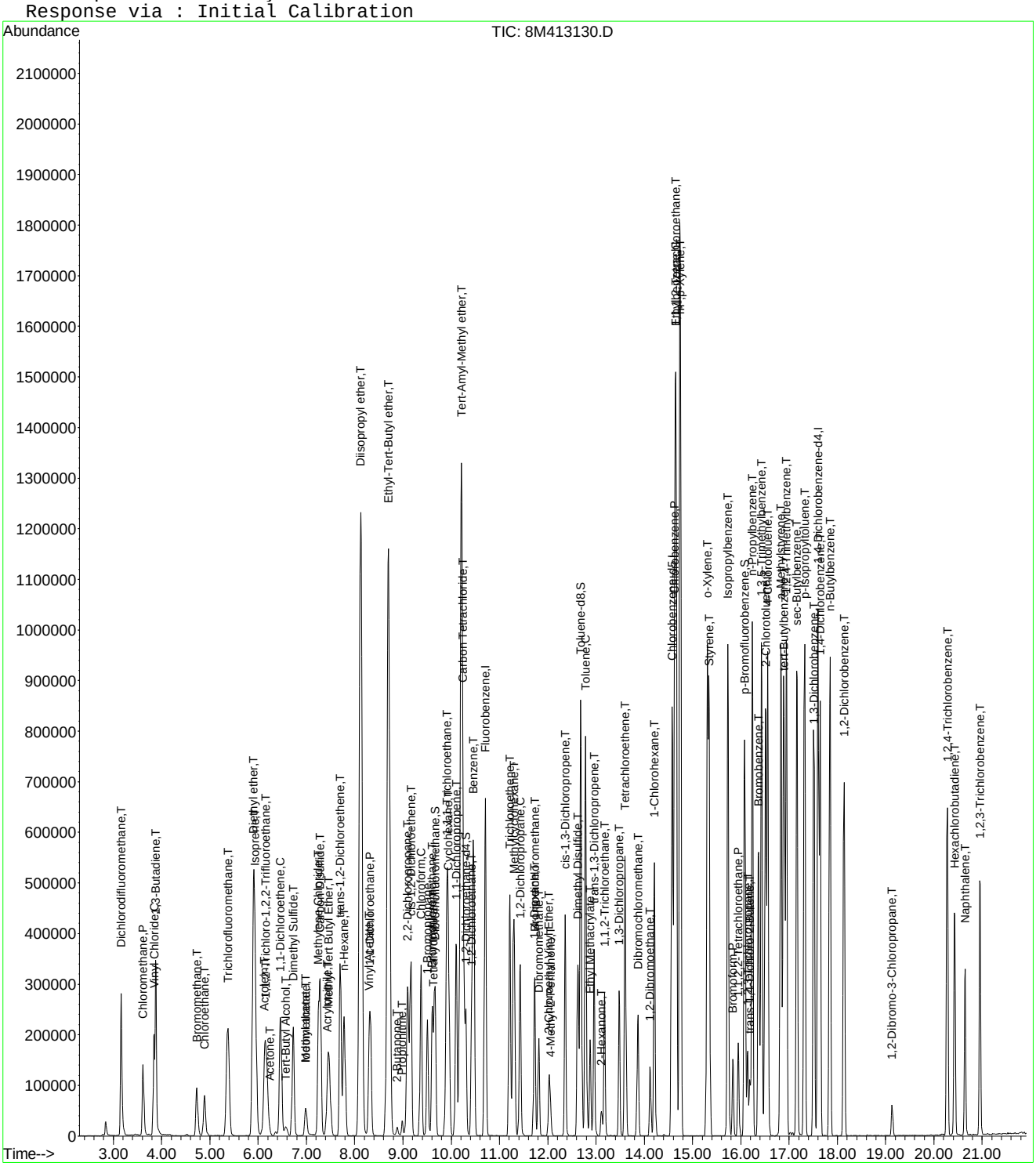

2.2 Semivolatiles Data

2.2.1 Semivolatiles GC/MS Data (Dioxane)

2.2.1.1 Summary Data

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060927-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW23SW-061516	**Prep Method:**	3520C	**Prep Date:**	06/21/2016 17:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573853	**Analyst:**	MES	**Run Date:**	06/23/2016 15:30
Collect Date:	06/15/2016 08:00	**Dilution:**	1	**File ID:**	15M18514
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	32.4	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060927-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW23-061516	**Prep Method:**	3520C	**Prep Date:**	06/21/2016 17:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573853	**Analyst:**	MES	**Run Date:**	06/23/2016 15:53
Collect Date:	06/15/2016 09:05	**Dilution:**	1	**File ID:**	15M18515
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	7.62	J	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	133	20	129	*

J	The reported result is an estimated value.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060927-02	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW23-061516	**Prep Method:**	3520C	**Prep Date:**	06/21/2016 17:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573853	**Analyst:**	MES	**Run Date:**	06/25/2016 12:46
Collect Date:	06/15/2016 09:05	**Dilution:**	10	**File ID:**	15M18553
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	8.02	J	20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	109	20	129	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060927-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW19SW-061516	**Prep Method:**	3520C	**Prep Date:**	06/21/2016 17:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573853	**Analyst:**	MES	**Run Date:**	06/23/2016 16:15
Collect Date:	06/15/2016 10:15	**Dilution:**	1	**File ID:**	15M18516
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	37.5	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060927-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	18CPTMW19-061516	**Prep Method:**	3520C	**Prep Date:**	06/21/2016 17:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573853	**Analyst:**	MES	**Run Date:**	06/23/2016 16:38
Collect Date:	06/15/2016 11:15	**Dilution:**	1	**File ID:**	15M18517
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	40.5	20	129	

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.2.1.2 QC Summary Data

Example 8270 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	1261197
Cis = Concentration of the specific internal standard (ug/mL)	40
Ais = Area of the characteristic ion of the specific internal standard	608044
Cx = Concentration of the compound in the standard being measured (ug/mL)	50
RF = Calculated Response Factor	**1.65935**

2.0 Calculating the concentration (C) of a compound in water using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Vi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Vi = Initial volume of sample extracted from prep log (mL)	1021
Cx = Concentration of the compound in the sample being measured (ug/mL)	0.016947
Cx = Concentration of the compound in the sample being measured (ug/L)	**16.947**

3.0 Calculating the concentration (C) of a compound in soil using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Wi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Wi = Initial weight of sample extracted (g) from prep log	30
Cx = Concentration of the compound in the sample being measured (ug/g)	0.576763
Cx = Concentration of the compound in the sample being measured (ug/kg)	**576.7627**

Dry weight correction:

Percent solids (PCT_S)	50
Cd = (Cx) (100)/PCT_S	**1153.525** ug/kg

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve plot

b = intercept from curve plot

Step 2: Calculate y from Quantitation Report

y = 16790/784838 = 0.02139

Step 3: Solve for x

x = (y - b)/m = [(0.02139 -(- 0.0435)]/ 0.0783 = 0.829

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.829) = 20.72 ug/L

Example Spreadsheet Calculation:

Slope from curve, m:	0.0783	
Intercept from curve, b:	-0.0435	
Area of analyte, Ax:	16790	
Area of Internal Standard , Ais:	784484	
Concentration of IS, Cis	25.00	ug/L
Response Ratio (y) :	0.021403	
Amount Ratio:	0.828897	
Concentration (Cx):	20.72241	ug/L

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**0.0259**	
Value of B from plot:	**0.0596**	
Value of C from plot:	**-0.0165**	
Area of analyte from quantitation report:	**203233**	
Area of IS from quantiation report:	**1425653**	
Response ratio, y:	**0.142554**	
C - y:	**-0.15905**	
Root 1 - Computed amount ratio , X1:	**-3.88278**	
Root 2 - Computed amount ratio , X2:	**1.581623**	use this solution
Concentration of IS, Cis:	**40.00**	
Concentration of analyte, Cx:	**63.26**	ug/L

Microbac Laboratories Inc.
Continuous Sample Extract Log

Workgroup: WG573299
Analyst: CPD
Spike Analyst: CPD
Method: 3520C
Run Date: 06/21/2016 17:01
SOP: EXB01 Revison 20
Spike Witness: JLD
Surr Solution: STD76628

TIME ON: 17:45 OFF: 12:10 ON: 16:00 OFF: 11:05

CH2CL2 Lot #: COA18982
sodium sulfate Lot #: COA18814
10N NaOH Lot #: RGT37076
1:1 H2SO4 Lot #: RGT36755

	SAMPLE #	Type	Reference	Prod	pH	Init Amnt	Surr Amnt	Spike Amnt	Spike Sol	Final Vol	Color
1	L16060927-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
2	L16060927-02	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
3	L16060927-03	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
4	L16060927-04	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
5	L16060930-03	SAMP		827-DIOX	<2>12	1000 mL	.05 mL			1 mL	Colored
6	L16060978-03	SAMP		827-DIOX	<2>12	800 mL	.05 mL			1 mL	Colored
7	L16060978-04	SAMP		827-DIOX	<2>12	890 mL	.05 mL			1 mL	Colored
8	L16061026-04	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
9	L16061026-05	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
10	L16061026-07	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
11	L16061055-04	SAMP		827-DIOX	<2>12	520 mL	.05 mL			1 mL	Colored
12	L16061055-07	SAMP		827-DIOX	<2>12	880 mL	.05 mL			1 mL	Colored
13	WG573299-01	BLANK		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
14	WG573299-02	LCS		827-DIOXANE	<2>12	1000 mL	.05 mL	.1 mL	STD75281	1 mL	Transparent
15	WG573299-03	LCS2		827-DIOXANE	<2>12	1000 mL	.05 mL	.1 mL	STD75281	1 mL	Transparent

Due to insufficient sample volume, this preparation batch failed to include the method prescribed MS and MSD.

Analyst: Chelsie Davis

Reviewer: Justin Hesson

EXTRACT - Modified 01/23/2009
PDF ID: 4819876
Report generated: 06/24/2016 10:45

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062116
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573365

Internal STD: STD76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: STD74214 MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18455	BAKEOUT	1	1		06/21/16 08:46
2	15M18456	WG573501-01 5PPM DFTPP STD	1	1	STD75016	06/21/16 09:05
3	15M18457	WG573501-01 5PPM DFTPP STD	1	1	STD75016	06/21/16 09:34
4	15M18458	WG573501-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 09:52
5	15M18459	WG573501-03 10 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 10:27
6	15M18460	WG573501-04 7.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 10:49
7	15M18461	WG573501-05 2.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:12
8	15M18462	WG573501-06 1 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:34
9	15M18463	WG573501-07 0.4 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:57
10	15M18464	WG573501-08 5PPM 1,4-DIOXANE ALT SRC	1	1	STD74214	06/21/16 12:20
11	15M18465	WG572806-01 BLANK 6/15	1	1		06/21/16 12:54
12	15M18466	WG572806-02 LCS 6/15	1	1		06/21/16 13:17
13	15M18467	WG572806-03 LCSDUP 6/15	1	1		06/21/16 13:40
14	15M18468	WG573008-01 BLANK 6/17	7	1	SOIL	06/21/16 14:03
15	15M18469	WG573008-02 LCS 6/17	7	1	SOIL	06/21/16 14:26
16	15M18470	WG573008-03 LCSDUP 6/17	7	1	SOIL	06/21/16 14:48
17	15M18471	L16060730-01	1	1		06/21/16 15:11
18	15M18472	L16060730-02	1	1		06/21/16 15:34
19	15M18473	L16060854-01	1	1		06/21/16 15:57
20	15M18474	L16060730-03	1	1		06/21/16 16:19
21	15M18475	L16060756-04 827-DIOX	1	1		06/21/16 16:46
22	15M18476	L16060822-01	1	1		06/21/16 17:08
23	15M18477	L16060822-03	1	1		06/21/16 17:31
24	15M18478	L16060822-04	1	1		06/21/16 17:54
25	15M18479	L16060822-05	1	1		06/21/16 18:17
26	15M18480	L16060823-01	1	1		06/21/16 18:40
27	15M18481	L16060823-03	1	1		06/21/16 19:02
28	15M18482	L16060823-04	1	1		06/21/16 19:25
29	15M18483	L16060809-03 827-DIOX	1	1		06/21/16 19:48
30	15M18484	L16060854-01 2X	1	2		06/21/16 20:10
31	15M18485	BAKEOUT	1	1		06/21/16 20:33
32	15M18486	BAKEOUT	1	1		06/21/16 20:55
33	15M18487	BAKEOUT	1	1		06/21/16 21:18

Page: 1 Approved: 22-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062116

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573365

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD: STD74214

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
	WG573501-01 5PPM DFTPP STD rerun DFTPP, pentachlorophenol tailing >2.			
14				
	WG573008-01 BLANK 6/17 DNR-not needed.			
15				
	WG573008-02 LCS DNR-not needed.			
16				
	WG573008-03 LCSDUP DNR-not needed.			
19	X	2	Over Calibration Range	
	L16060854-01			

Page: 2 Approved: 22-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062316
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573853

Internal STD: STD76627 Surrogate STD: NA Calibration STD
CCV STD: STD74784 LCS STD: MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18504	BAKEOUT	1	1		06/23/16 10:23
2	15M18505	WG573879-01 5PPM DFTPP STD	1	1	STD75016	06/23/16 10:43
3	15M18506	WG573879-01 5PPM DFTPP STD	1	1	STD75016	06/23/16 10:59
4	15M18507	WG573879-01 5PPM DFTPP STD	1	1	STD75016	06/23/16 12:04
5	15M18508	WG573879-01 5PPM DFTPP STD	1	1	STD75016	06/23/16 13:20
6	15M18509	WG573879-01 5PPM DFTPP STD	1	1	STD75016	06/23/16 13:42
7	15M18510	WG573879-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/23/16 13:59
8	15M18511	WG573299-01 BLANK 6/21	1	1		06/23/16 14:22
9	15M18512	WG573299-02 LCS 6/21	1	1		06/23/16 14:45
10	15M18513	WG573299-03 LCSDUP 6/21	1	1		06/23/16 15:07
11	15M18514	L16060927-01 827-DIOX	1	1		06/23/16 15:30
12	15M18515	L16060927-02 827-DIOX	1	1		06/23/16 15:53
13	15M18516	L16060927-03 827-DIOX	1	1		06/23/16 16:15
14	15M18517	L16060927-04 827-DIOX	1	1		06/23/16 16:38
15	15M18518	L16060930-03 827-DIOX	1	1		06/23/16 17:00
16	15M18519	L16060978-03 827-DIOX	1	1		06/23/16 17:23
17	15M18520	L16060978-04 827-DIOX	1	1		06/23/16 17:46
18	15M18521	L16061026-04 827-DIOX	1	1		06/23/16 18:08
19	15M18522	L16061026-05 827-DIOX	1	1		06/23/16 18:31
20	15M18523	L16061026-07 827-DIOX	1	1		06/23/16 18:54
21	15M18524	L16061055-04 827-DIOX	1	1		06/23/16 19:16
22	15M18525	L16061055-07 827-DIOX	1	1		06/23/16 19:39
23	15M18526	BAKEOUT	1	1		06/23/16 20:02
24	15M18527	BAKEOUT	1	1		06/23/16 20:24
25	15M18528	BAKEOUT	1	1		06/23/16 20:47

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
	Rerun DFTPP, degradation >20%.			
3				
	Rerun DFTPP, degradation >20%. Changing the liner.			
4				

Page: 1 Approved: 24-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062316

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573853

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
	Rerun DFTPP, degradation still >20%. Changing the gold seal.			
5				
	Rerun DFTPP, degradation still >20%. Clipping the column.			
12	X	10	Surrogate standard failure	
	L16060927-02 high surrogate due to SMI; reanalyzing at a dilution to confirm.			
16	X	10	Over Calibration Range	
	L16060978-03			
17	X	20	Over Calibration Range	
	L16060978-04			
19	X	20	Over Calibration Range	
	L16061026-05 high surrogate due to SMI.			
21	X	10	Over Calibration Range	
	L16061055-04 827-DIOX one high surrogate due to SMI.			
22	X	100	Over Calibration Range	
	L16061055-07 827-DIOX one low surrogate due to obvious SMI.			

Page: 2 Approved: 24-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062516

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574187,WG573853,WG574186

Internal STD: STD76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: MS/MSD STD:

Comments: The following may need re-extracted due to low LCS/LCSDUP recoveries:L16060637-02, 756-01 to -03,809-01,02,930-01,-02,1213,-01 to -06

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18543	BAKEOUT	1	1		06/25/16 09:07
2	15M18544	WG574029-01 5PPM DFTPP STD	1	1	STD75016	06/25/16 09:27
3	15M18545	WG574029-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/25/16 09:44
4	15M18546	WG573815-01 BLANK 6/23	7	1	SOIL	06/25/16 10:08
5	15M18547	WG573815-02 LCS 6/23	7	1	SOIL	06/25/16 10:30
6	15M18548	WG573815-03 LCSDUP 6/23	7	1	SOIL	06/25/16 10:53
7	15M18549	WG573975-01 BLANK 6/24	7	1	SOIL	06/25/16 11:16
8	15M18550	WG573975-02 LCS 6/24	7	1	SOIL	06/25/16 11:38
9	15M18551	WG573975-03 LCSDUP 6/24	7	1	SOIL	06/25/16 12:01
10	15M18552	L16061026-07 RR 827-DIOX	1	10		06/25/16 12:24
11	15M18553	L16060927-02 10X 827-DIOX	1	10		06/25/16 12:46
12	15M18554	L16060978-03 10X 827-DIOX	1	10		06/25/16 13:09
13	15M18555	L16061055-04 10X 827-DIOX	1	10		06/25/16 13:32
14	15M18556	L16060978-04 20X 827-DIOX	1	20		06/25/16 13:54
15	15M18557	L16061026-05 20X 827-DIOX	1	20		06/25/16 14:17
16	15M18558	L16061055-07 100X 827-DIOX	1	100		06/25/16 14:40
17	15M18559	L16060637-02 RE 827-DIOX	7	1	SOIL	06/25/16 15:02
18	15M18560	L16060756-01 RE 827-DIOX	7	1	SOIL	06/25/16 15:25
19	15M18561	L16060756-02 RE 827-DIOX	7	1	SOIL	06/25/16 15:47
20	15M18562	L16060756-03 RE 827-DIOX	7	1	SOIL	06/25/16 16:10
21	15M18563	L16060809-01 RE 827-DIOX	7	1	SOIL	06/25/16 16:33
22	15M18564	L16060809-02 RE 827-DIOX	7	1	SOIL	06/25/16 16:55
23	15M18565	L16060930-01 RE 827-DIOX	7	1	SOIL	06/25/16 17:18
24	15M18566	L16060930-02 RE 827-DIOX	7	1	SOIL	06/25/16 17:40
25	15M18567	L16060978-02 RE 2X 827-DIOX	7	2	SOIL	06/25/16 18:03
26	15M18568	L16061055-03 RE 827-DIOX	7	1	SOIL	06/25/16 18:26
27	15M18569	L16061055-05 RE 827-DIOX	7	1	SOIL	06/25/16 18:48
28	15M18570	L16061055-06 RE 827-DIOX	7	1	SOIL	06/25/16 19:11
29	15M18571	L16061213-01 827-DIOX	7	1	SOIL	06/25/16 19:34
30	15M18572	L16061213-02 827-DIOX	7	1	SOIL	06/25/16 19:56
31	15M18573	L16061213-03 827-DIOX	7	1	SOIL	06/25/16 20:19
32	15M18574	L16061213-04 827-DIOX	7	1	SOIL	06/25/16 20:42
33	15M18575	L16061213-05 5X 827-DIOX	7	5	SOIL	06/25/16 21:04

Page: 1 Approved: 27-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062516
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574187,WG573853,WG574186

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	15M18576	L16061213-06 5X 827-DIOX	7	5	SOIL	06/25/16 21:27
35	15M18577	BAKEOUT	1	1		06/25/16 21:49
36	15M18578	BAKEOUT	1	1		06/25/16 22:11
37	15M18579	BAKEOUT	1	1		06/25/16 22:34
38	15M18580	BAKEOUT	1	1		06/25/16 22:56
39	15M18581	BAKEOUT	1	1		06/25/16 23:19
40	15M18582	BAKEOUT	1	1		06/25/16 23:42
41	15M18583	BAKEOUT	1	1		06/26/16 00:04

Comments

Seq.	Rerun	Dil.	Reason	Analytes
5				
	WG573815-02 LCS 6/23 low remix and rerun.			
6				
	WG573815-03 LCSDUP 6/23 low remix and rerun.			
9				
	WG573975-03 LCSDUP 6/24 marginally low; rerun. Rerun was acceptable. Not report this run.			
10				
	L16061026-07 RR 827-DIOX DNR-confirms previous results.			
11				
	L16060927-02 10X 827-DIOX surrogate is good; indicates SMI in the straight run.			
13				
	L16061055-04 10X 827-DIOX surrogate is good; indicates SMI in the straight run.			
15	X	40	Over Calibration Range	
	L16061026-05 20X 827-DIOX DNR			
17				
	L16060637-02 RE 827-DIOX surrogate is good; does not confirm low surrogate in original extraction.			
18				
	L16060756-01 RE 827-DIOX low surrogate recovery; does not confirm original extraction. Needs re-extracted.			
33	X	1	Analyzed too dilute	
	L16061213-05 5X 827-DIOX DNR			
34	X	1	Analyzed too dilute	
	L16061213-06 5X 827-DIOX DNR			

Page: 2 Approved: 27-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 21-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75850
Analytical Workgroups: L16060730, 060756, 060809, 060822, 060823, 060854

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 22-JUN-2016

Secondary Reviewer: 22-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-22-2016 16:00:51

Microbac Laboratories Inc.

Data Checklist

Date: 23-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75899
Analytical Workgroups: L16060927,060930,060978,-061026,061055

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: Secondary Reviewer: 24-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-24-2016 14:48:11

Microbac Laboratories Inc.

Data Checklist

Date: 25-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75935
Analytical Workgroups: 060927, 06-978, 06-1055, 06-637, 06-756, 06-809, 06-930, 06-1213

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 27-JUN-2016

Secondary Reviewer: 27-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-27-2016 14:41:23

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8270D

AAB#: WG573853

Login Number: L16060927

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW23SW-061516	01	06/15/16					06/21/2016	6.4	7		06/23/16	1.9	40	
18CPTMW23-061516	02	06/15/16					06/21/2016	6.3	7		06/23/16	2	40	
18CPTMW23-061516	02	06/15/16					06/21/2016	6.3	7		06/25/16	3.8	40	
18CPTMW19SW-061516	03	06/15/16					06/21/2016	6.3	7		06/23/16	2	40	
18CPTMW19-061516	04	06/15/16					06/21/2016	6.2	7		06/23/16	2	40	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4822545
Report generated 06/28/2016 09:16

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16060927
Instrument Id: HPMS15
Workgroup (AAB#): WG573853

Method: 827-DIOXANE
CAL ID: HPMS15-21-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1
L16060927-01	1.00	01	32.4
L16060927-02	1.00	01	133
L16060927-02	10.0	DL01	109
L16060927-03	1.00	01	37.5
L16060927-04	1.00	01	40.5
WG573299-01	1.00	01	28.7
WG573299-02	1.00	01	37.8
WG573299-03	1.00	01	46.8

Surrogates	Surrogate Limits
1 - 1,4-Dioxane-d8	20 - 129

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4822553
Report generated: 06/28/2016 09:16

METHOD BLANK SUMMARY

Login Number: L16060927
Blank File ID: 15M18511
Prep Date: 06/21/16 17:01
Analyzed Date: 06/23/16 14:22
Analyst: MES

Work Group: WG573853
Blank Sample ID: WG573299-01
Instrument ID: HPMS15
Method: 8270D

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573299-02	15M18512	06/23/16 14:45	01
LCS2	WG573299-03	15M18513	06/23/16 15:07	01
18CPTMW23SW-061516	L16060927-01	15M18514	06/23/16 15:30	01
18CPTMW23-061516	L16060927-02	15M18515	06/23/16 15:53	01
18CPTMW19SW-061516	L16060927-03	15M18516	06/23/16 16:15	01
18CPTMW19-061516	L16060927-04	15M18517	06/23/16 16:38	01
18CPTMW23-061516	L16060927-02	15M18553	06/25/16 12:46	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4823844
Report generated 06/28/2016 09:16

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060927 Prep Date: 06/21/16 17:01 Sample ID: WG573299-01
Instrument ID: HPMS15 Run Date: 06/23/16 14:22 Prep Method: 3520C
File ID: 15M18511 Analyst: MES Method: 8270D
Workgroup (AAB#): WG573853 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS15-21-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
1,4-Dioxane	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	28.7	20 - 129	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4822546
28-JUN-2016 09:16

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060927 Analyst: MES Prep Method: 3520C
Instrument ID: HPMS15 Matrix: Water Method: 8270D
Workgroup (AAB#): WG573853 Units: ug/L
QC Key: DOD4 Lot #: STD75281

Sample ID: WG573299-02 LCS File ID: 15M18512 Run Date: 06/23/2016 14:45
Sample ID: WG573299-03 LCS2 File ID: 15M18513 Run Date: 06/23/2016 15:07

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,4-Dioxane	5.00	1.88	37.6	5.00	2.32	46.4	20.8	30 - 104	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,4-Dioxane-d8	37.8	46.8	20 - 129	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4822547
Report generated: 06/28/2016 09:16

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16060927
Instrument: HPMS15
Analyst: MES
Workgroup: WG573501

Tune ID: WG573501-01
Run Date: 06/21/2016
Run Time: 09:34
File ID: 15M18457
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	38.8	34488	PASS
68.0	69.0	0	2.00	1.36	500	PASS
69.0	198	0	100	41.4	36833	PASS
70.0	69.0	0	2.00	0.467	172	PASS
127	198	40.0	60.0	51.9	46131	PASS
197	198	0	1.00	0	0	PASS
198	198	100	100	100	88880	PASS
199	198	5.00	9.00	6.66	5918	PASS
275	198	10.0	30.0	24.9	22090	PASS
365	198	1.00	100	2.65	2358	PASS
441	443	0.0100	100	75.7	9586	PASS
442	198	40.0	100	73.4	65261	PASS
443	442	17.0	23.0	19.4	12659	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573501-02	STD-CCV	01	06/21/2016 09:52	
WG573501-03	STD	01	06/21/2016 10:27	
WG573501-04	STD	01	06/21/2016 10:49	
WG573501-05	STD	01	06/21/2016 11:12	
WG573501-06	STD	01	06/21/2016 11:34	
WG573501-07	STD	01	06/21/2016 11:57	
WG573501-08	SSCV	01	06/21/2016 12:20	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4822550
Report generated 06/28/2016 09:16

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16060927
Instrument: HPMS15
Analyst: MES
Workgroup: WG573879

Tune ID: WG573879-01
Run Date: 06/23/2016
Run Time: 13:42
File ID: 15M18509
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	37.0	43111	PASS
68.0	69.0	0	2.00	1.10	506	PASS
69.0	198	0	100	39.4	45795	PASS
70.0	69.0	0	2.00	0.157	72	PASS
127	198	40.0	60.0	51.3	59752	PASS
197	198	0	1.00	0	0	PASS
198	198	100	100	100	116364	PASS
199	198	5.00	9.00	7.09	8249	PASS
275	198	10.0	30.0	24.9	28968	PASS
365	198	1.00	100	2.82	3278	PASS
441	443	0.0100	100	79.2	13093	PASS
442	198	40.0	100	74.3	86464	PASS
443	442	17.0	23.0	19.1	16541	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573879-02	CCV	01	06/23/2016 13:59	
WG573299-01	BLANK	01	06/23/2016 14:22	
WG573299-02	LCS	01	06/23/2016 14:45	
WG573299-03	LCS2	01	06/23/2016 15:07	
L16060927-01	18CPTMW23SW-061516	01	06/23/2016 15:30	
L16060927-02	18CPTMW23-061516	01	06/23/2016 15:53	
L16060927-03	18CPTMW19SW-061516	01	06/23/2016 16:15	
L16060927-04	18CPTMW19-061516	01	06/23/2016 16:38	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4822550
Report generated 06/28/2016 09:16

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16060927
Instrument: HPMS15
Analyst: MES
Workgroup: WG574029

Tune ID: WG574029-01
Run Date: 06/25/2016
Run Time: 09:27
File ID: 15M18544
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	30.5	29885	PASS
68.0	69.0	0	2.00	1.68	556	PASS
69.0	198	0	100	33.9	33149	PASS
70.0	69.0	0	2.00	0.477	158	PASS
127	198	40.0	60.0	47.2	46146	PASS
197	198	0	1.00	0	0	PASS
198	198	100	100	100	97832	PASS
199	198	5.00	9.00	6.64	6499	PASS
275	198	10.0	30.0	26.5	25877	PASS
365	198	1.00	100	2.93	2871	PASS
441	443	0.0100	100	78.3	12355	PASS
442	198	40.0	100	85.7	83872	PASS
443	442	17.0	23.0	18.8	15788	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG574029-02	CCV	01	06/25/2016 09:44	
L16060927-02	18CPTMW23-061516	DL01	06/25/2016 12:46	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4822550
Report generated 06/28/2016 09:16

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060927
Analytical Method: 8270D
ICAL Workgroup: WG573501

Instrument ID: HPMS15
Initial Calibration Date: 21-JUN-16 11:57
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
1,4-Dioxane		0.3060	2.56		

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4822548
Report generated 06/28/2016 09:16

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060927
Analytical Method: 8270D

Instrument ID: HPMS15
Initial Calibration Date: 21-JUN-16 11:57
Column ID: F

Analyte	WG573501-02			WG573501-03			WG573501-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	5.00	60883.0000	0.3073	10.0	138820.000	0.3164	7.50	103182.000	0.3106

INT_CAL - Modified 03/06/2008
PDF File ID: 4822548
Report generated 06/28/2016 09:16

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060927
Analytical Method: 8270D

Instrument ID: HPMS15
Initial Calibration Date: 21-JUN-16 11:57
Column ID: F

Analyte	WG573501-05			WG573501-06			WG573501-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	2.50	26333.0000	0.2969	1.00	13250.0000	0.2966	0.400	5650.00000	0.3081

INT_CAL - Modified 03/06/2008
PDF File ID: 4822548
Report generated 06/28/2016 09:16

Calibration Table Report
Method: DIOXANE_D8.M
Title: OVD MSS01 SIM 1,4-dioxane ICAL 062116
Last Calibration: Tue Jun 21 12:51:17 2016
Curve:WG573501
Calibration Files

Compound	10 15M18459.D	7.5 15M18460.D	5 15M18458.D	2.5 15M18461.D	1 15M18462.D	0.4 15M18463.D	Avg	%RSD
1,4-Dichlorobenzene-d4	ISTD							
1,4-Dioxane	0.316	0.311	0.307	0.297	0.297	0.308	0.306	2.558
1,4-Dioxane-d8	0.426	0.418	0.417	0.402	0.395		0.411	3.044
Nitrobenzene-d5	1.202	1.173	1.128	1.002	0.927	0.906	1.056	12.163
2-Fluorobiphenyl	2.735	2.736	2.691	2.621	2.563	2.651	2.666	2.548
p-Terphenyl-d14	2.793	2.774	2.622	2.460	2.367	2.405	2.570	7.266

Wed Jun 22 12:17:33 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060927 Run Date: 06/21/2016 Sample ID: WG573501-08
Instrument ID: HPMS15 Run Time: 12:20 Method: 8270D
File ID: 15M18464 Analyst: MES QC Key: DOD4
ICal Workgroup: WG573501 Cal ID: HPMS15 - 21-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
1,4-Dioxane		5000	5050	ug/L	0.309	0.900	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4822549
Report generated 06/28/2016 09:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060927
Run Date: 06/23/2016
Sample ID: WG573879-02
Instrument ID: HPMS15
Run Time: 13:59
Method: 8270D
File ID: 15M18510
Analyst: MES
QC Key: DOD4
Workgroup (AAB#): WG573853
Cal ID: HPMS15 - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,4-Dioxane		5000	4530	ug/L	0.277	9.36	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4822551
Report generated 06/28/2016 09:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060927
Run Date: 06/25/2016
Sample ID: WG574029-02
Instrument ID: HPMS15
Run Time: 09:44
Method: 8270D
File ID: 15M18545
Analyst: MES
QC Key: DOD4
Workgroup (AAB#): WG573853
Cal ID: HPMS15 - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,4-Dioxane		5000	4170	ug/L	0.255	16.6	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4822551
Report generated 06/28/2016 09:16

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060927
Instrument ID: HPMS15
Workgroup (AAB#): WG573853

ICAL CCV Number: WG573501-02
CAL ID: HPMS15-21-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG573501-02	NA	NA	39637
Upper Limit	NA	NA	79274
Lower Limit	NA	NA	19819
L16060927-01	1.00	01	52572
L16060927-02	1.00	01	52222
L16060927-02	10.0	DL01	44449
L16060927-03	1.00	01	56209
L16060927-04	1.00	01	51577
WG573299-01	1.00	01	57608
WG573299-02	1.00	01	51597
WG573299-03	1.00	01	54701

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4822552
Report generated 06/28/2016 09:16

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16060927
Instrument ID: HPMS15
Workgroup (AAB#): WG573853

ICAL CCV Number: WG573501-02
CAL ID: HPMS15-21-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG573501-02	NA	NA	6.93
Upper Limit	NA	NA	7.43
Lower Limit	NA	NA	6.43
L16060927-01	1.00	01	6.933
L16060927-02	1.00	01	6.929
L16060927-02	10.0	DL01	6.896
L16060927-03	1.00	01	6.933
L16060927-04	1.00	01	6.933
WG573299-01	1.00	01	6.929
WG573299-02	1.00	01	6.929
WG573299-03	1.00	01	6.929

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4823845
Report generated: 06/28/2016 09:16

2.2.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18514.D
Acq On : 23 Jun 2016 15:30
Operator : MES
Sample : L16060927-01 827-DIOX
Misc : 1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 23 15:52:27 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	52572	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	35041	1.6198	ug/L	0.04
Spiked Amount 5.000			Recovery	=	32.40%	
4) Nitrobenzene-d5	7.431	82	2549	0.0459	ug/L	0.00
Spiked Amount 5.000			Recovery	=	1.00%	
5) 2-Fluorobiphenyl	8.919	172	664	0.0047	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.166	244	763	0.0056	ug/L	-0.02
Spiked Amount 5.000			Recovery	=	0.20%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18514.D
Acq On : 23 Jun 2016 15:30
Operator : MES
Sample : L16060927-01 827-DIOX
Misc : 1,1
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 23 15:52:27 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

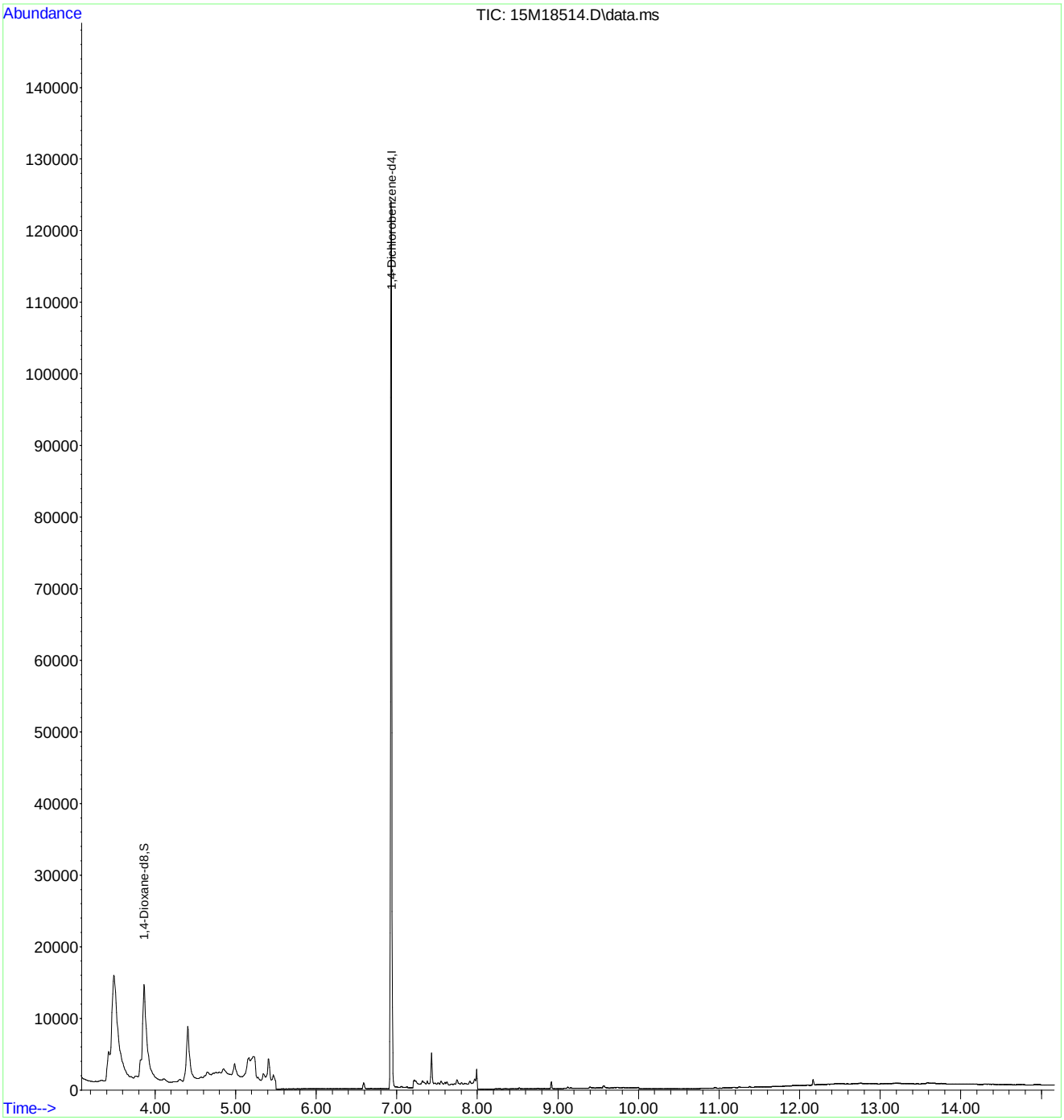

Quantitation Report (QT Reviewed)

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18515.D
Acq On : 23 Jun 2016 15:53
Operator : MES
Sample : L16060927-02 827-DIOX
Misc : 1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 24 10:29:50 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.929	152	52222	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.848	96	142971m	6.6534	ug/L	0.02
Spiked Amount 5.000			Recovery	= 133.00%		
4) Nitrobenzene-d5	7.431	82	3760	0.0682	ug/L	0.00
Spiked Amount 5.000			Recovery	= 1.40%		
5) 2-Fluorobiphenyl	8.919	172	1557	0.0112	ug/L	0.00
Spiked Amount 5.000			Recovery	= 0.20%		
6) p-Terphenyl-d14	12.166	244	949	0.0071	ug/L	-0.02
Spiked Amount 5.000			Recovery	= 0.20%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	121747	7.6196	ug/L	86

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18515.D
Acq On : 23 Jun 2016 15:53
Operator : MES
Sample : L16060927-02 827-DIOX
Misc : 1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 24 10:29:50 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

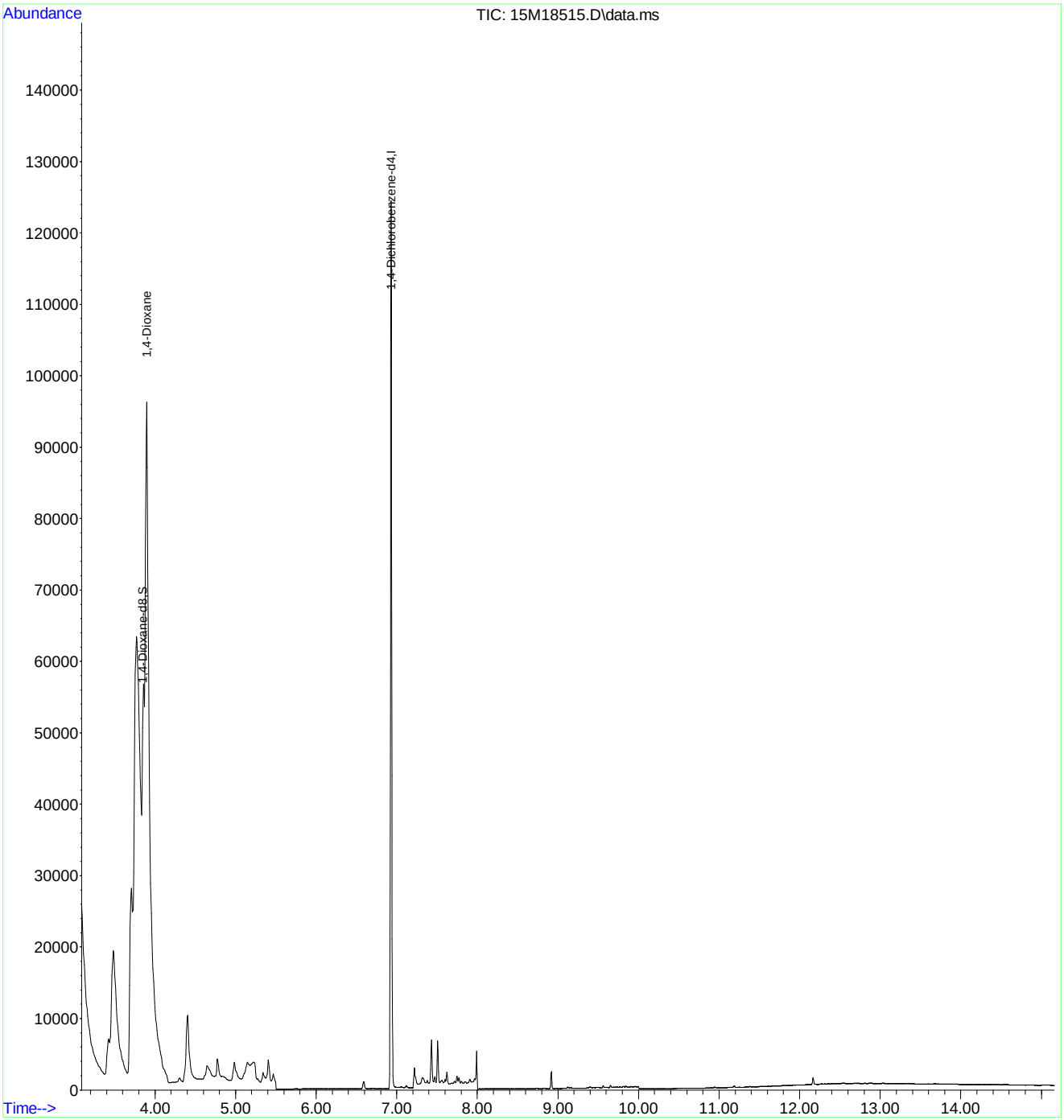

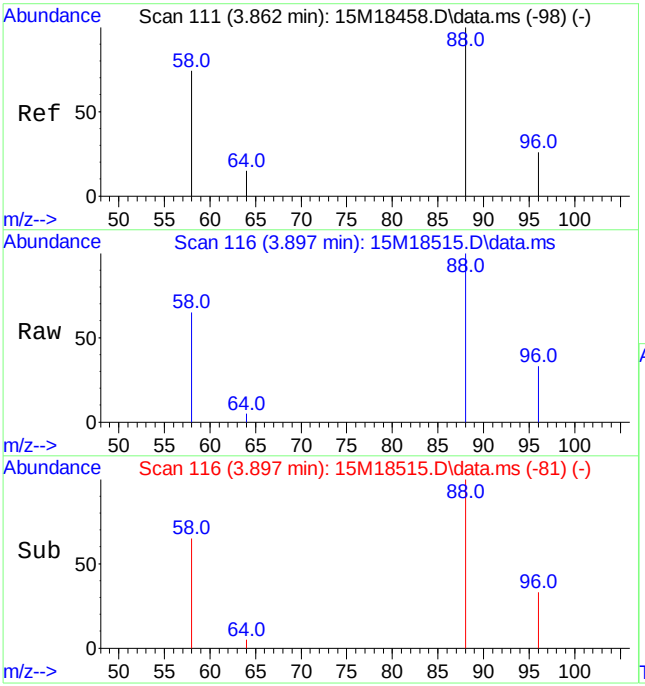

#2
1,4-Dioxane
Concen: 7.62 ug/L
RT: 3.897 min Scan# 116
Delta R.T. 0.035 min
Lab File: 15M18515.D
Acq: 23 Jun 2016 15:53

Tgt Ion: 58 Resp: 121747

Ion	Ratio	Lower	Upper
58	100		
88	152.0	103.1	240.7

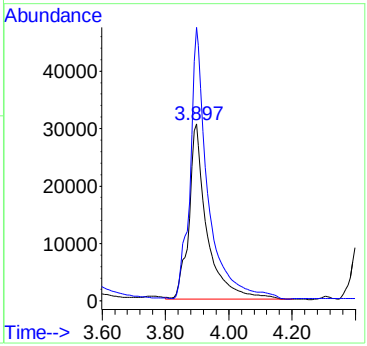

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18515.D
Acq On : 23 Jun 2016 15:53
Operator : MES
Sample : L16060927-02 827-DIOX
Misc : 1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 23 17:16:01 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

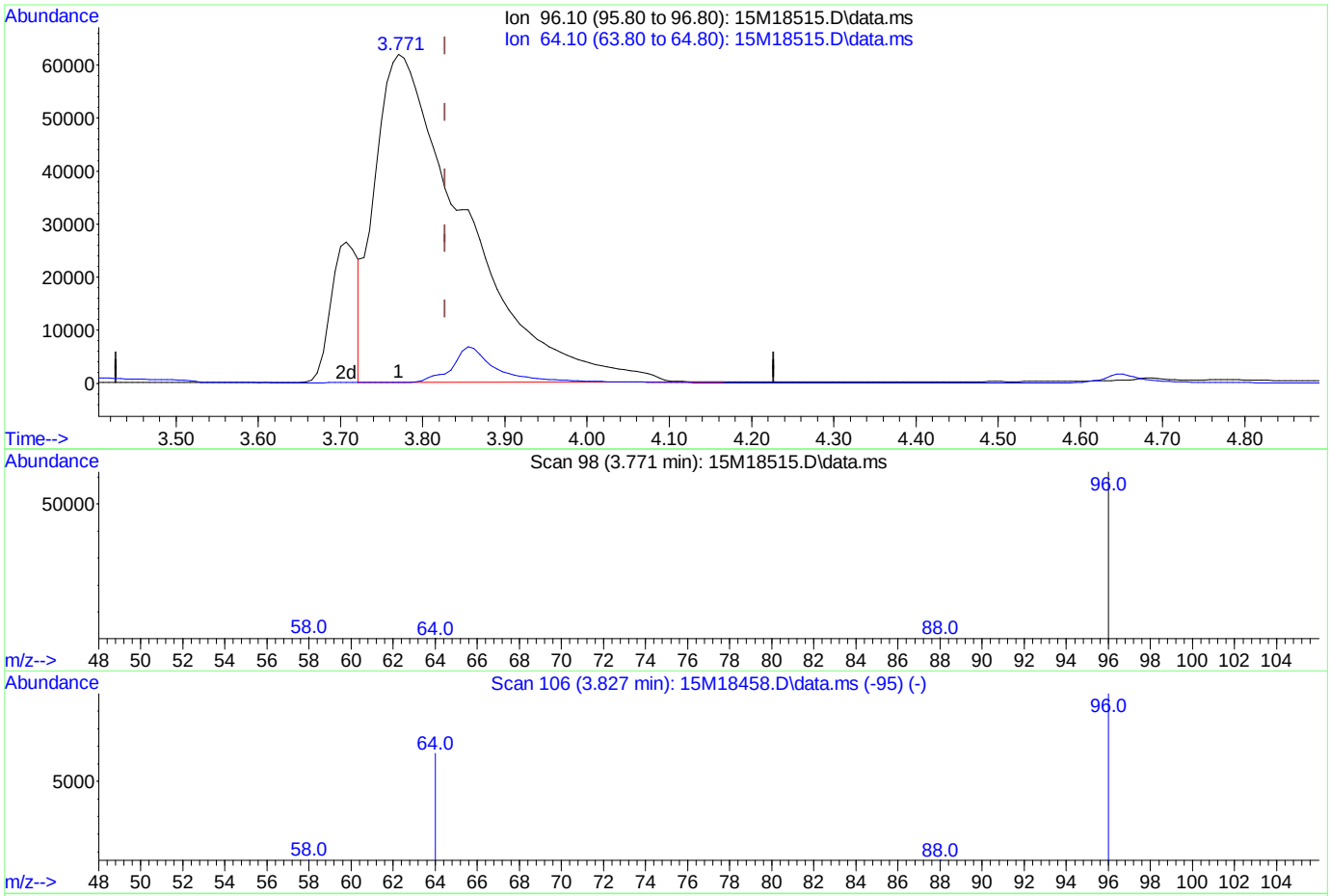

TIC: 15M18515.D\data.ms

(3) 1,4-Dioxane-d8 (S)

3.771min (-0.056) 21.96 ug/L

response 471929

Ion	Exp%	Act%
96.10	100.00	100.00
64.10	74.80	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18515.D
Acq On : 23 Jun 2016 15:53
Operator : MES
Sample : L16060927-02 827-DIOX
Misc : 1,1
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 23 17:16:01 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

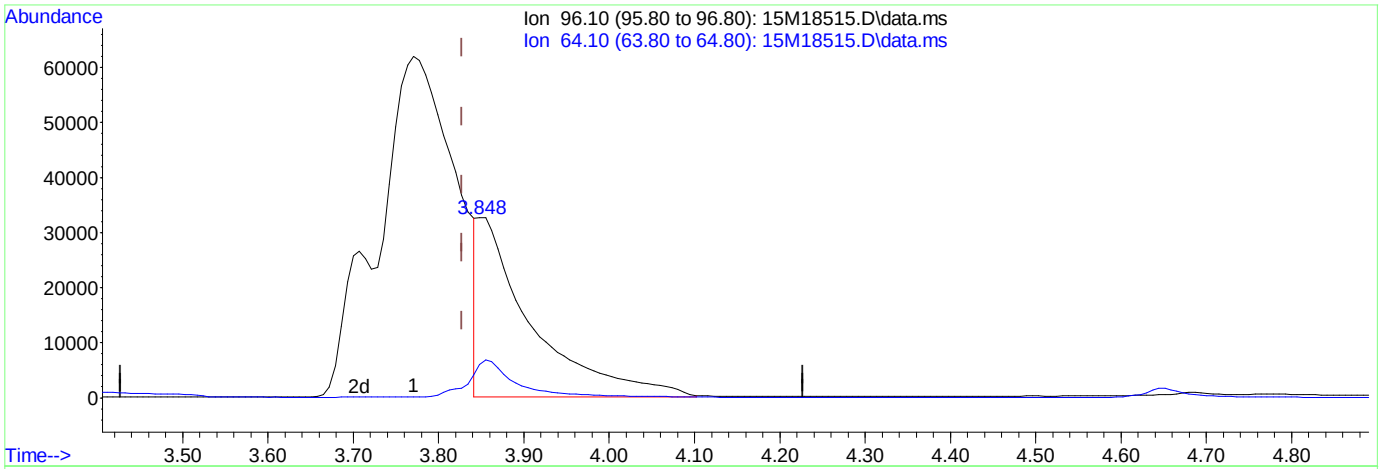

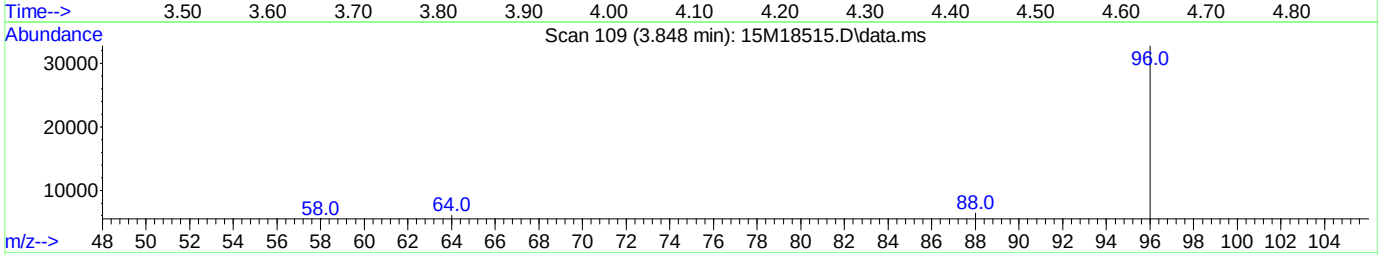

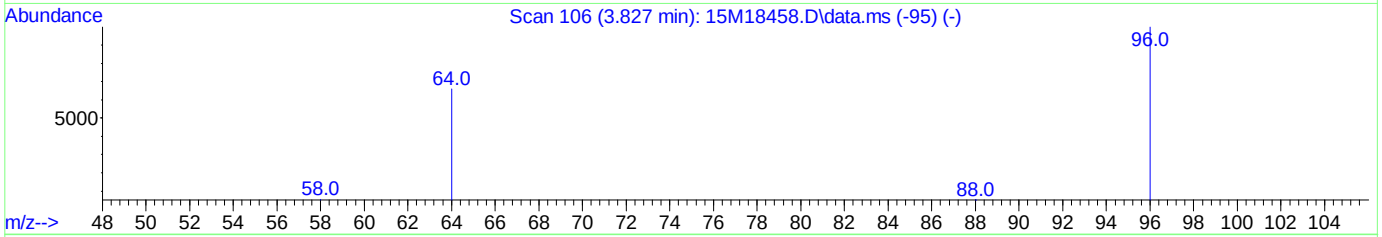

TIC: 15M18515.D\data.ms

(3) 1,4-Dioxane-d8 (S)

3.848min (+ 0.021) 6.65 ug/L mint

response 142971

Ion	Exp%	Act%
96.10	100.00	100.00
64.10	74.80	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

Analyst: 06/24/2016 12:00 Supervisor: 06/24/2016 14:34

#2 - Data system splits the peak incorrectly or integrates a false peak as a rider peak

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062516\
Data File : 15M18553.D
Acq On : 25 Jun 2016 12:46
Operator : MES
Sample : L16060927-02 10X 827-DIOX
Misc : 1,10
ALS Vial : 10 Sample Multiplier: 10

Quant Time: Jun 26 17:44:43 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.896	152	44449	1.0000	ug/mL	#-0.04
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.764	96	9927	5.4275	ug/L	-0.06
Spiked Amount 5.000			Recovery	=	108.60%	
4) Nitrobenzene-d5	7.404	82	289	0.0616	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	1.20%	
5) 2-Fluorobiphenyl	8.890	172	148	0.0125	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.20%	
6) p-Terphenyl-d14	12.085	244	5	0.0004	ug/L	-0.10
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.799	58	10910	0.8022	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062516\
Data File : 15M18553.D
Acq On : 25 Jun 2016 12:46
Operator : MES
Sample : L16060927-02 10X 827-DIOX
Misc : 1,10
ALS Vial : 10 Sample Multiplier: 10

Quant Time: Jun 26 17:44:43 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

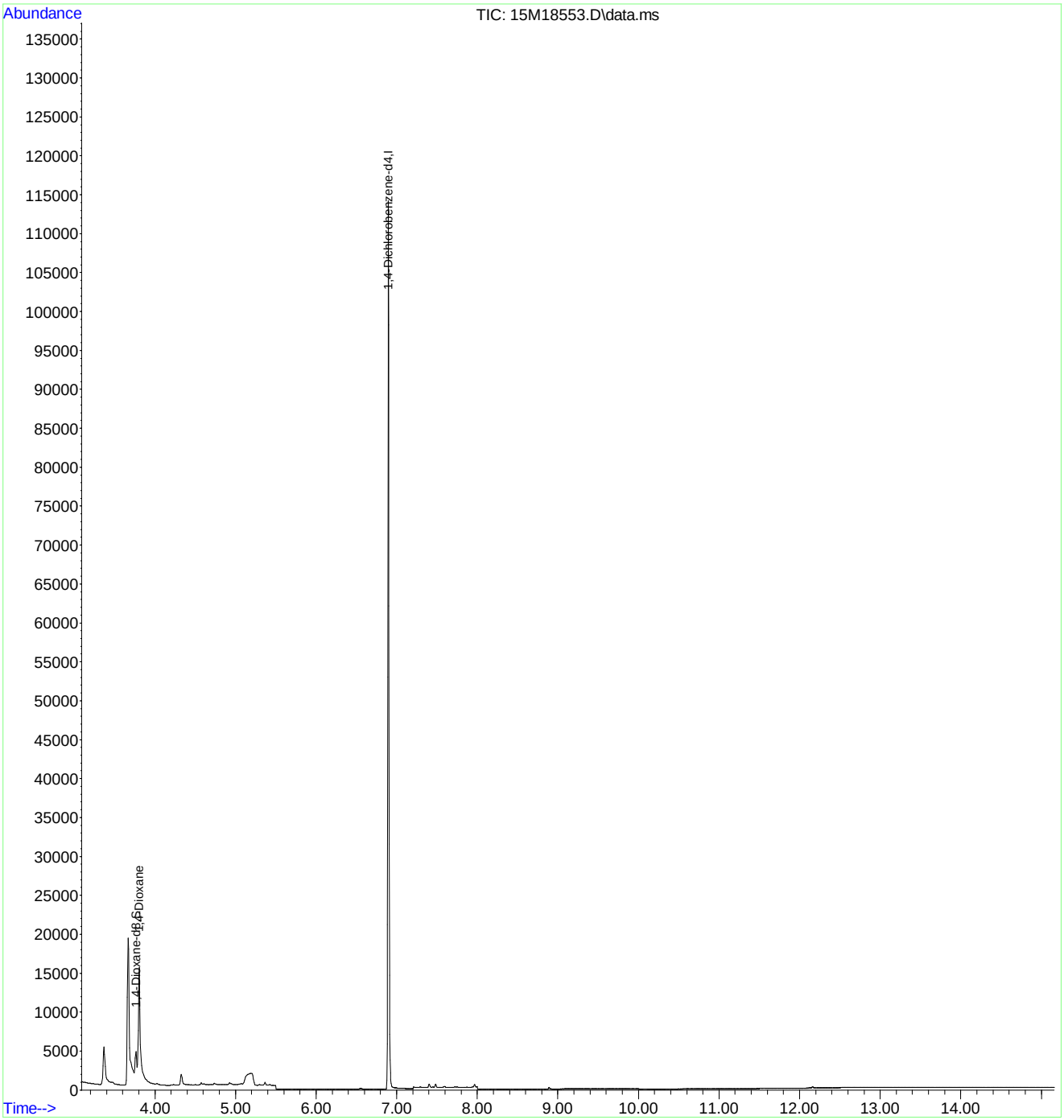

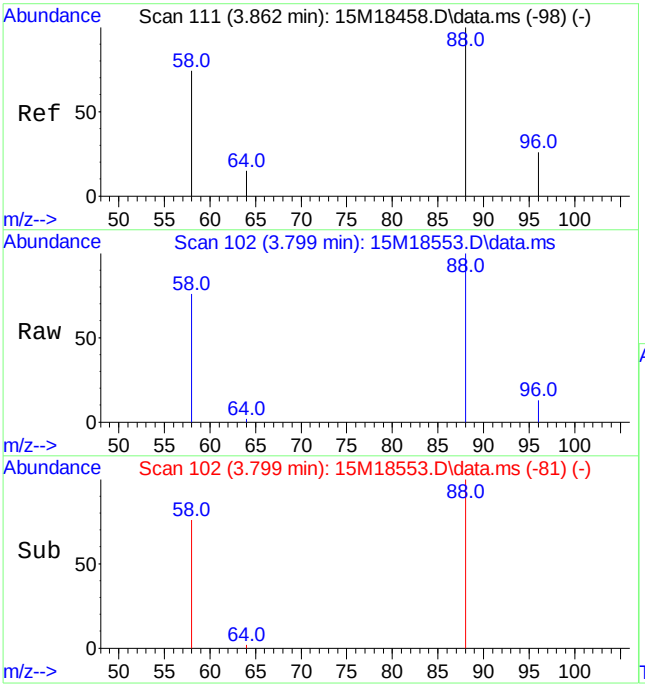

#2
1,4-Dioxane
Concen: 0.80 ug/L
RT: 3.799 min Scan# 102
Delta R.T. -0.063 min
Lab File: 15M18553.D
Acq: 25 Jun 2016 12:46

Tgt Ion: 58 Resp: 10910

Ion	Ratio	Lower	Upper
58	100		
88	149.2	103.1	240.7

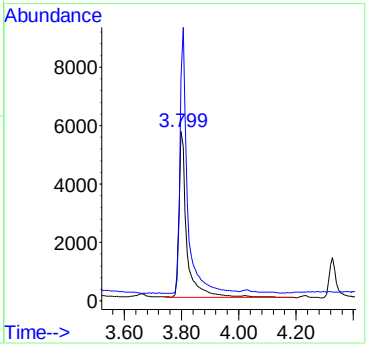

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18516.D
Acq On : 23 Jun 2016 16:15
Operator : MES
Sample : L16060927-03 827-DIOX
Misc : 1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 23 17:16:26 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	56209	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	43386	1.8758	ug/L	0.04
Spiked Amount 5.000			Recovery	=	37.60%	
4) Nitrobenzene-d5	7.431	82	3380	0.0569	ug/L	0.00
Spiked Amount 5.000			Recovery	=	1.20%	
5) 2-Fluorobiphenyl	8.919	172	1644	0.0110	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.20%	
6) p-Terphenyl-d14	12.166	244	2195	0.0152	ug/L	-0.02
Spiked Amount 5.000			Recovery	=	0.40%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18516.D
Acq On : 23 Jun 2016 16:15
Operator : MES
Sample : L16060927-03 827-DIOX
Misc : 1,1
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 23 17:16:26 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

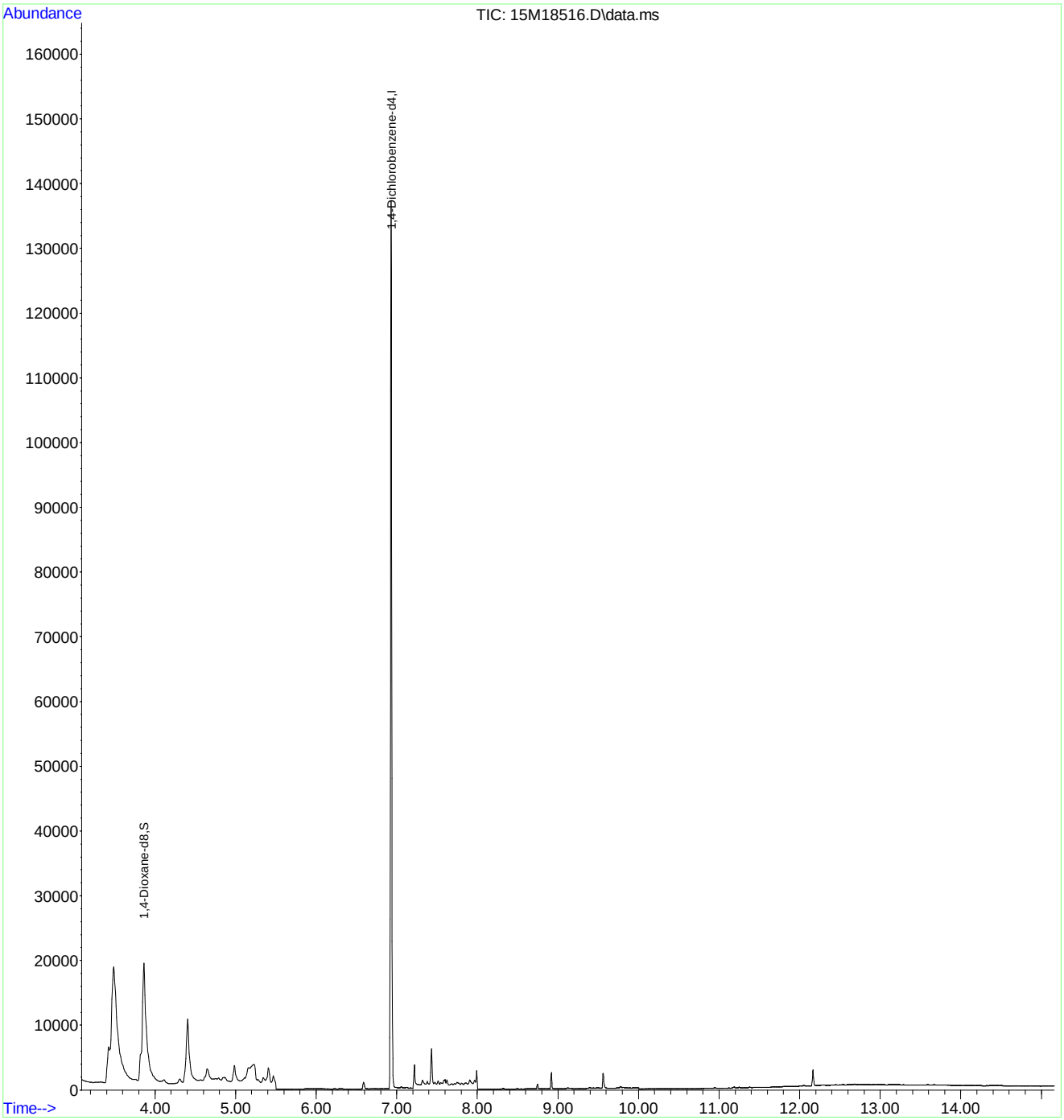

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18517.D
Acq On : 23 Jun 2016 16:38
Operator : MES
Sample : L16060927-04 827-DIOX
Misc : 1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 23 17:16:29 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	51577	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	42956	2.0240	ug/L	0.04
Spiked Amount 5.000			Recovery	=	40.40%	
4) Nitrobenzene-d5	7.216	82	1787	0.0328	ug/L	-0.21
Spiked Amount 5.000			Recovery	=	0.60%	
5) 2-Fluorobiphenyl	8.919	172	341	0.0025	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.166	244	2435	0.0184	ug/L	-0.02
Spiked Amount 5.000			Recovery	=	0.40%	

Target Compounds Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18517.D
Acq On : 23 Jun 2016 16:38
Operator : MES
Sample : L16060927-04 827-DIOX
Misc : 1,1
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jun 23 17:16:29 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

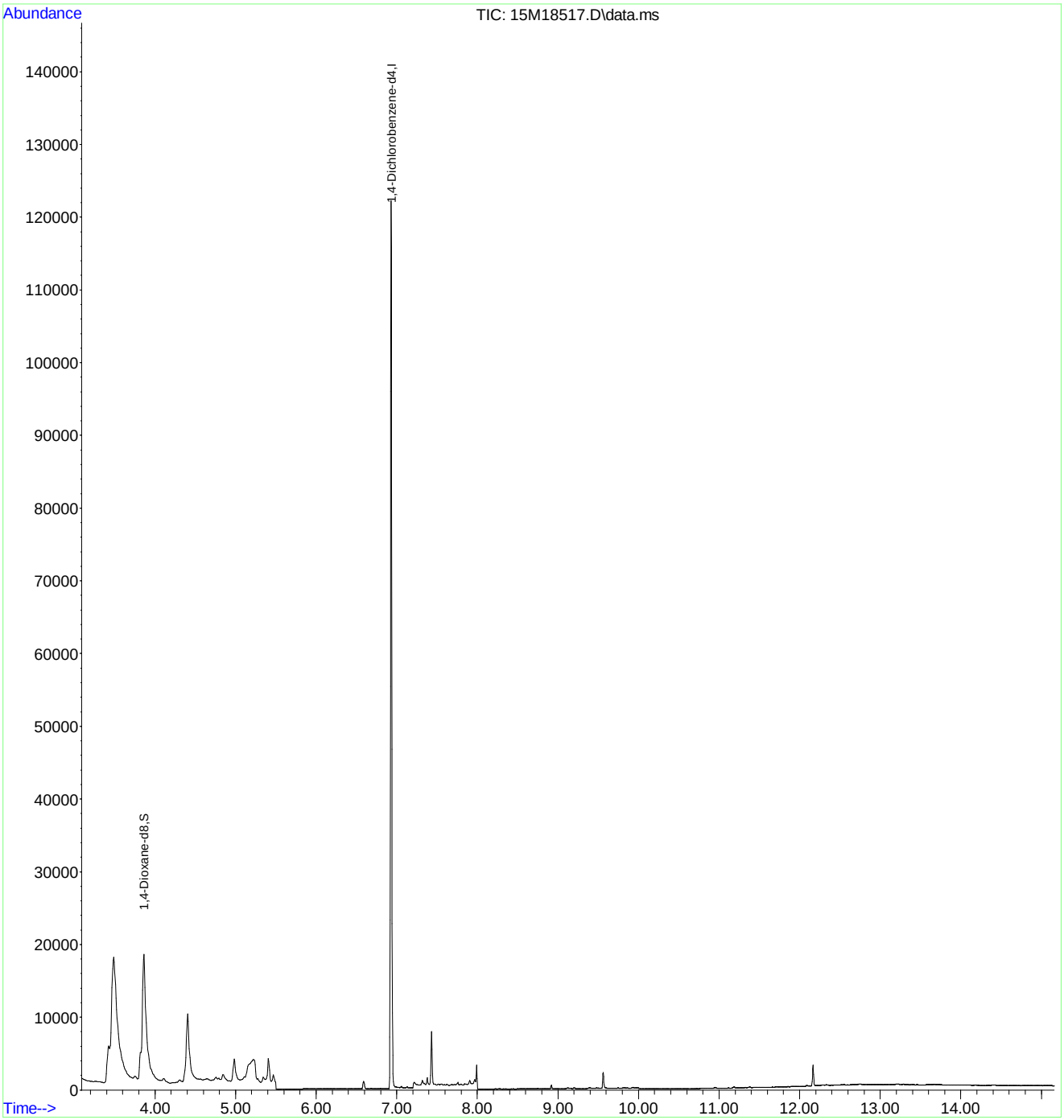

2.2.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 22 08:04:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	39637	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.827	96	82573	5.0627 ug/L	0.00
Spiked Amount 5.000			Recovery	= 101.20%	
4) Nitrobenzene-d5	7.431	82	223381	5.3353 ug/L	0.00
Spiked Amount 5.000			Recovery	= 106.80%	
5) 2-Fluorobiphenyl	8.922	172	533101	5.0444 ug/L	0.00
Spiked Amount 5.000			Recovery	= 100.80%	
6) p-Terphenyl-d14	12.184	244	519544	5.1003 ug/L	0.00
Spiked Amount 5.000			Recovery	= 102.00%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.862	58	60883	5.0202 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 22 08:04:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

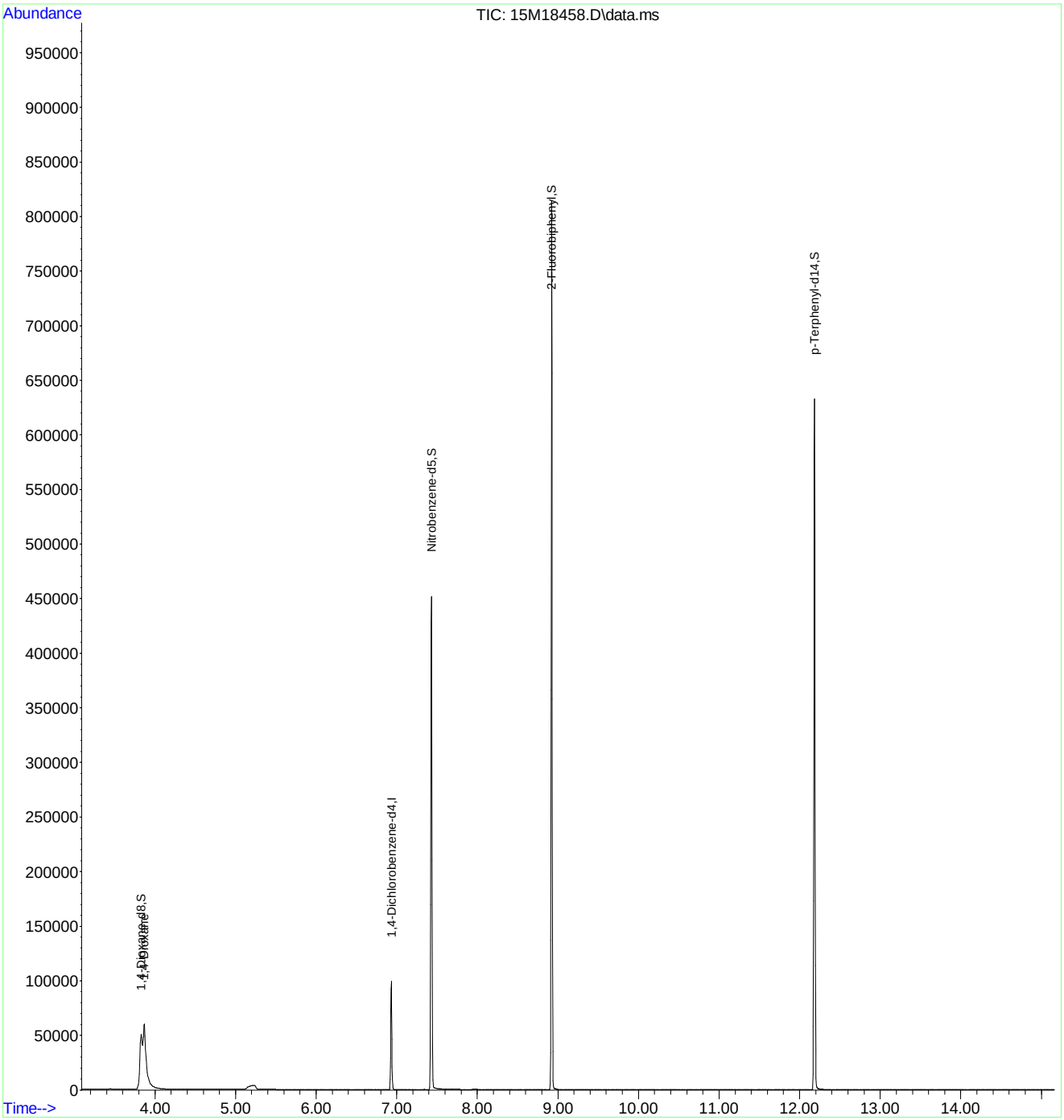

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18459.D
Acq On : 21 Jun 2016 10:27
Operator : MES
Sample : WG573501-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 22 08:04:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	43874	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	186767	10.3452	ug/L	0.00
Spiked Amount 5.000			Recovery = 207.00%			
4) Nitrobenzene-d5	7.431	82	527549	11.3834	ug/L	0.00
Spiked Amount 5.000			Recovery = 227.60%			
5) 2-Fluorobiphenyl	8.926	172	1199799	10.2565	ug/L	0.00
Spiked Amount 5.000			Recovery = 205.20%			
6) p-Terphenyl-d14	12.240	244	1225328	10.8672	ug/L	0.06
Spiked Amount 5.000			Recovery = 217.40%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	138820	10.3412	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18459.D
Acq On : 21 Jun 2016 10:27
Operator : MES
Sample : WG573501-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 22 08:04:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

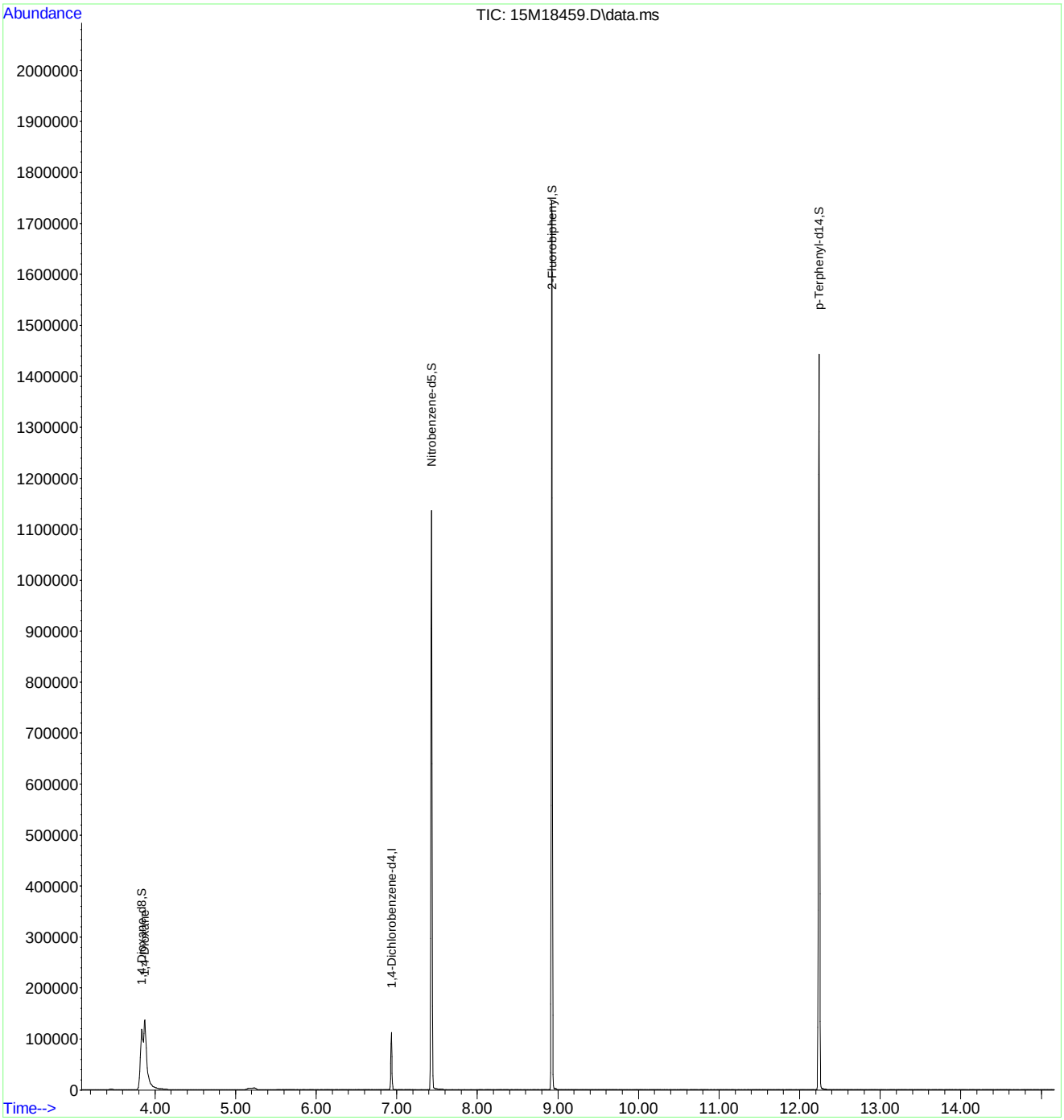

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18460.D
Acq On : 21 Jun 2016 10:49
Operator : MES
Sample : WG573501-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 22 08:04:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	44299	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	138833	7.6163	ug/L	0.00
Spiked Amount 5.000			Recovery	= 152.40%		
4) Nitrobenzene-d5	7.431	82	389810	8.3306	ug/L	0.00
Spiked Amount 5.000			Recovery	= 166.60%		
5) 2-Fluorobiphenyl	8.923	172	909050	7.6965	ug/L	0.00
Spiked Amount 5.000			Recovery	= 154.00%		
6) p-Terphenyl-d14	12.203	244	921380	8.0931	ug/L	0.02
Spiked Amount 5.000			Recovery	= 161.80%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.876	58	103182	7.6127	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18460.D
Acq On : 21 Jun 2016 10:49
Operator : MES
Sample : WG573501-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 22 08:04:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

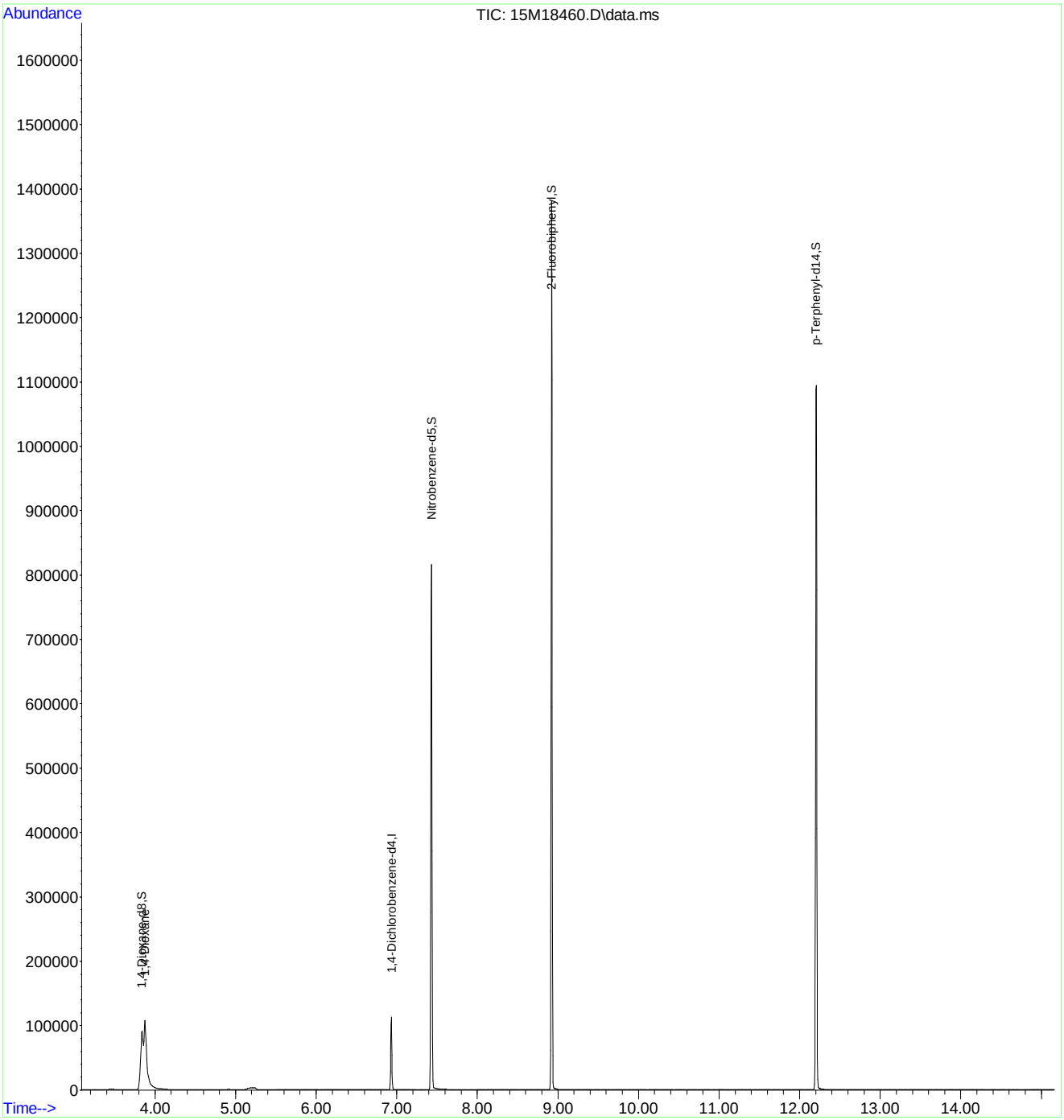

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18461.D
Acq On : 21 Jun 2016 11:12
Operator : MES
Sample : WG573501-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 22 08:04:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	35478	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.827	96	35630	2.4406	ug/L	0.00
Spiked Amount 5.000			Recovery = 48.80%			
4) Nitrobenzene-d5	7.431	82	88869	2.3714	ug/L	0.00
Spiked Amount 5.000			Recovery = 47.40%			
5) 2-Fluorobiphenyl	8.923	172	232500	2.4579	ug/L	0.00
Spiked Amount 5.000			Recovery = 49.20%			
6) p-Terphenyl-d14	12.199	244	218191	2.3930	ug/L	0.02
Spiked Amount 5.000			Recovery = 47.80%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.862	58	26333	2.4259	ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18461.D
Acq On : 21 Jun 2016 11:12
Operator : MES
Sample : WG573501-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 22 08:04:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

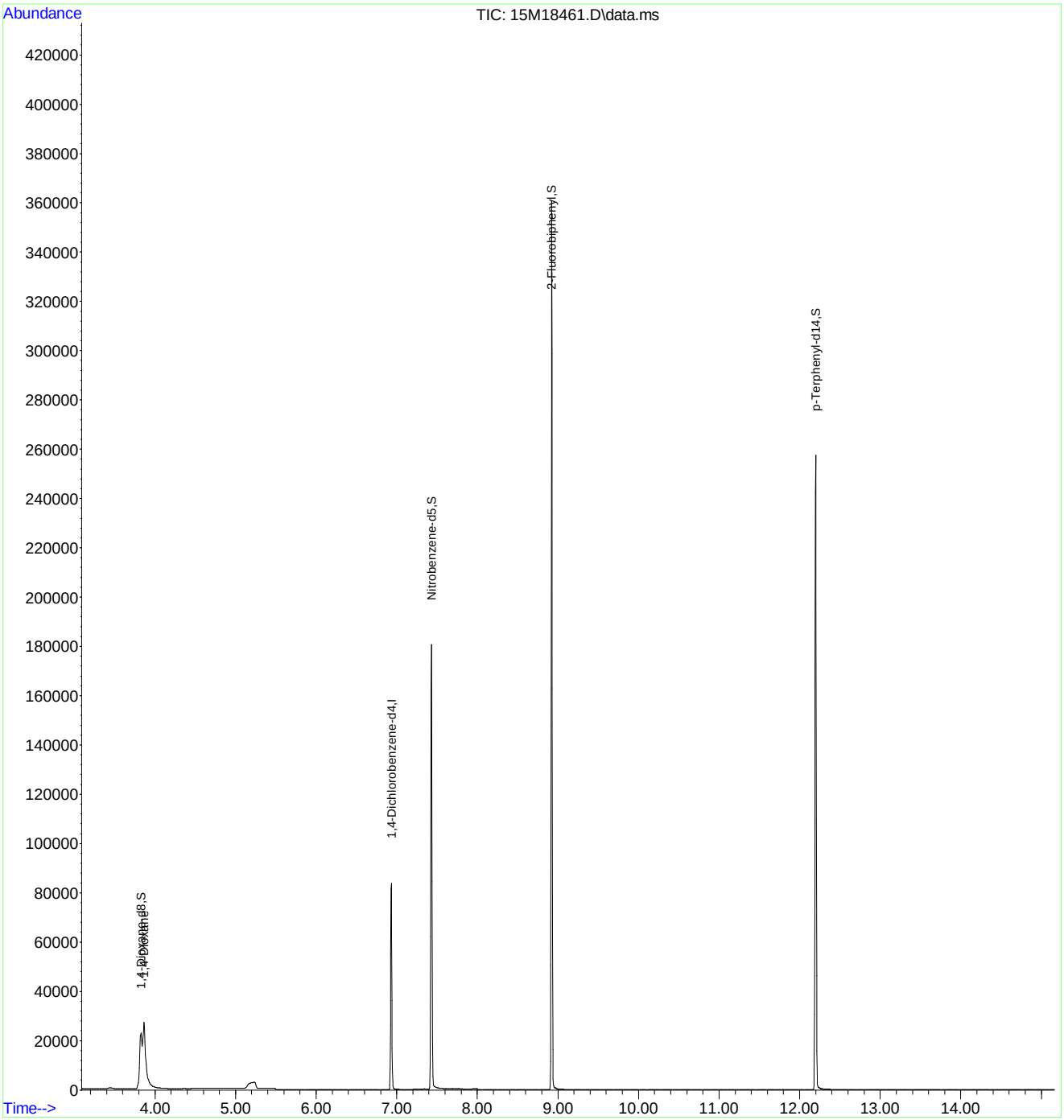

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18462.D
Acq On : 21 Jun 2016 11:34
Operator : MES
Sample : WG573501-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 22 08:04:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	44672	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.841	96	17660	0.9607 ug/L	0.01
Spiked Amount 5.000			Recovery	= 19.20%	
4) Nitrobenzene-d5	7.431	82	41409	0.8776 ug/L	0.00
Spiked Amount 5.000			Recovery	= 17.60%	
5) 2-Fluorobiphenyl	8.922	172	114491	0.9612 ug/L	0.00
Spiked Amount 5.000			Recovery	= 19.20%	
6) p-Terphenyl-d14	12.203	244	105713	0.9208 ug/L	0.02
Spiked Amount 5.000			Recovery	= 18.40%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.876	58	13250	0.9694 ug/L	82

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18462.D
Acq On : 21 Jun 2016 11:34
Operator : MES
Sample : WG573501-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 22 08:04:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

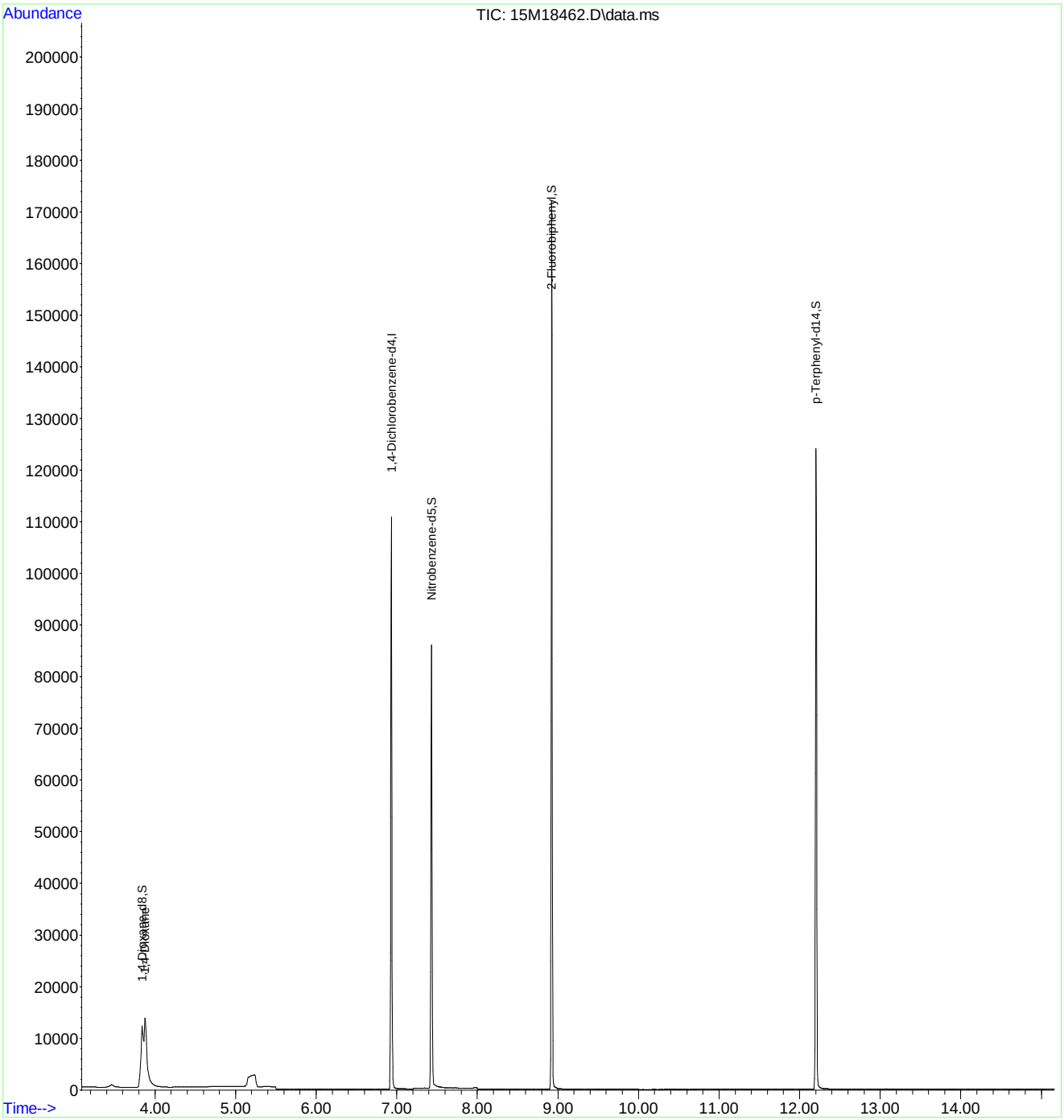

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18463.D
Acq On : 21 Jun 2016 11:57
Operator : MES
Sample : WG573501-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 22 08:04:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	45840	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.841	96	7629	0.4045	ug/L	0.01
Spiked Amount 5.000			Recovery	=	8.00%	
4) Nitrobenzene-d5	7.431	82	16604	0.3429	ug/L	0.00
Spiked Amount 5.000			Recovery	=	6.80%	
5) 2-Fluorobiphenyl	8.923	172	48617	0.3978	ug/L	0.00
Spiked Amount 5.000			Recovery	=	8.00%	
6) p-Terphenyl-d14	12.210	244	44097	0.3743	ug/L	0.03
Spiked Amount 5.000			Recovery	=	7.40%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.876	58	5650	0.4028	ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18463.D
Acq On : 21 Jun 2016 11:57
Operator : MES
Sample : WG573501-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 22 08:04:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

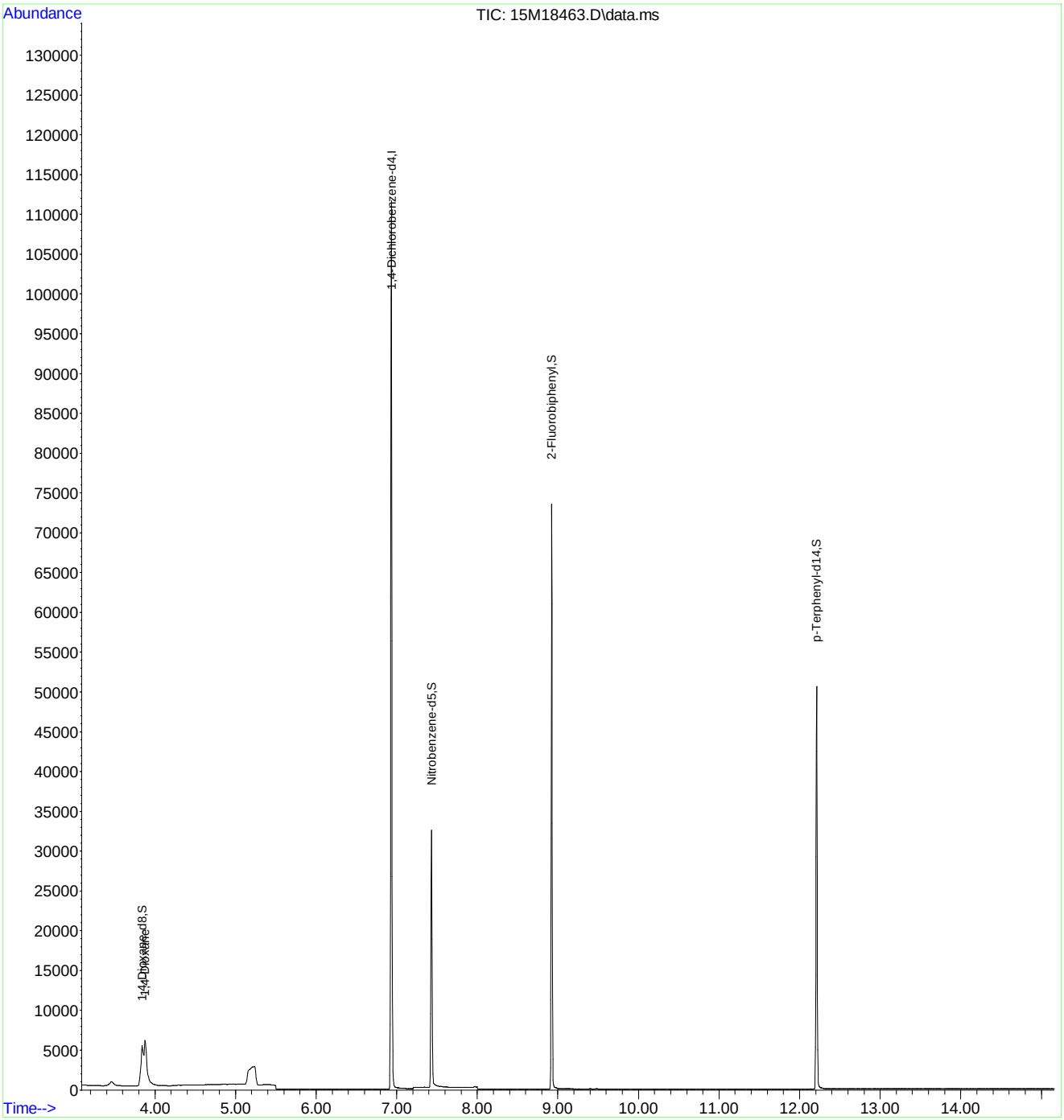

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	41944	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.792	96	22	0.0013	ug/L	-0.04
Spiked Amount 5.000			Recovery	=	0.00%	
4) Nitrobenzene-d5	7.436	82	56	0.0013	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
5) 2-Fluorobiphenyl	8.926	172	23	0.0002	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.214	244	128	0.0012	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	64750	5.0454	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

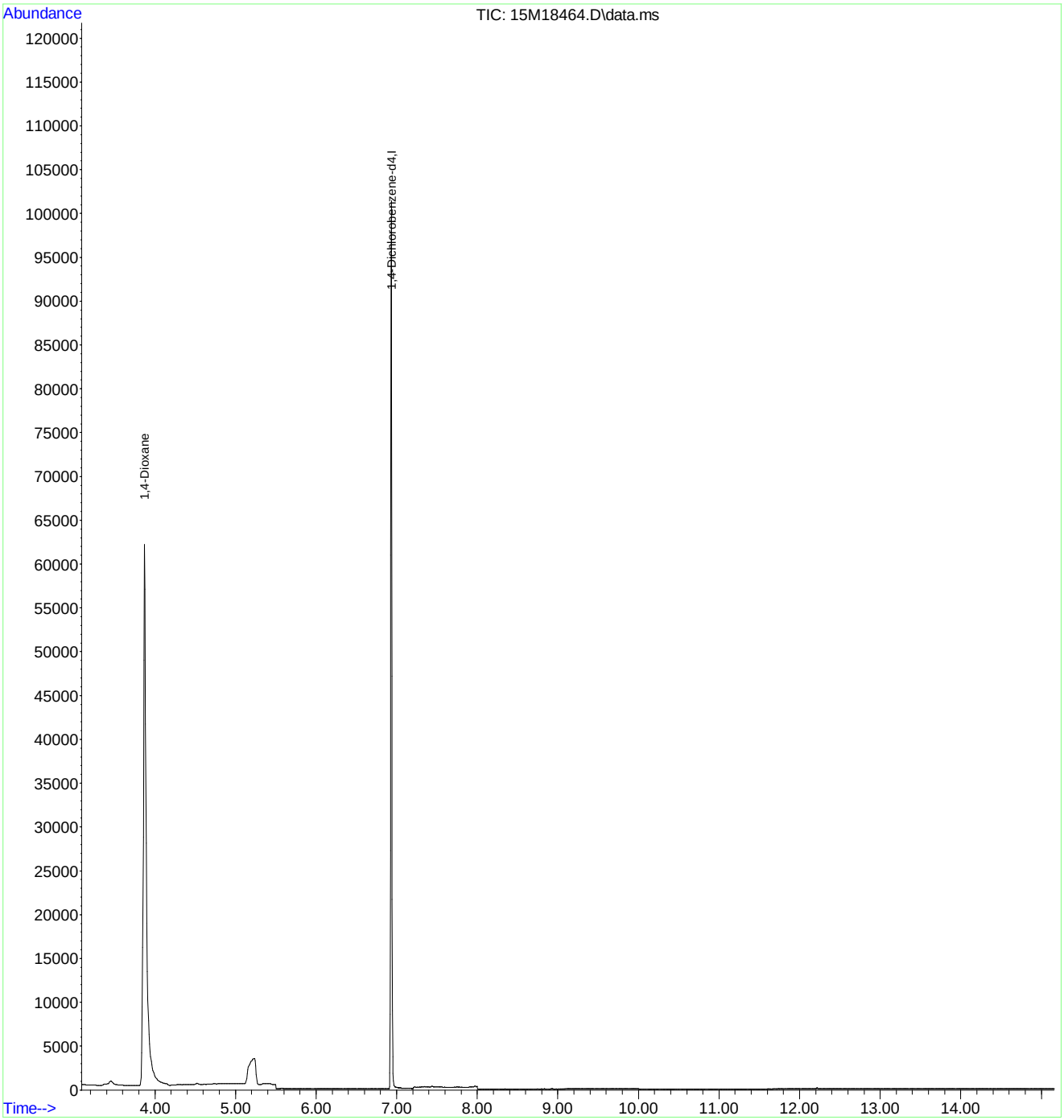

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	106	0.00
2	1,4-Dioxane	5.000	5.045	-0.9	106	0.00
3 S	1,4-Dioxane-d8	5.000	0.001	100.0#	0	-0.04
4 S	Nitrobenzene-d5	5.000	0.001	100.0#	0	0.00
5 S	2-Fluorobiphenyl	5.000	0.000	100.0#	0	0.00
6 S	p-Terphenyl-d14	5.000	0.001	100.0#	0	0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18510.D
Acq On : 23 Jun 2016 13:59
Operator : MES
Sample : WG573879-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 23 14:15:55 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.929	152	50565	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.848	96	96203	4.6237 ug/L	0.02
Spiked Amount 5.000			Recovery	= 92.40%	
4) Nitrobenzene-d5	7.426	82	280398	5.2498 ug/L	0.00
Spiked Amount 5.000			Recovery	= 105.00%	
5) 2-Fluorobiphenyl	8.919	172	664952	4.9322 ug/L	0.00
Spiked Amount 5.000			Recovery	= 98.60%	
6) p-Terphenyl-d14	12.155	244	665166	5.1186 ug/L	-0.03
Spiked Amount 5.000			Recovery	= 102.40%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.883	58	70119	4.5322 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18510.D
Acq On : 23 Jun 2016 13:59
Operator : MES
Sample : WG573879-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 23 14:15:55 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

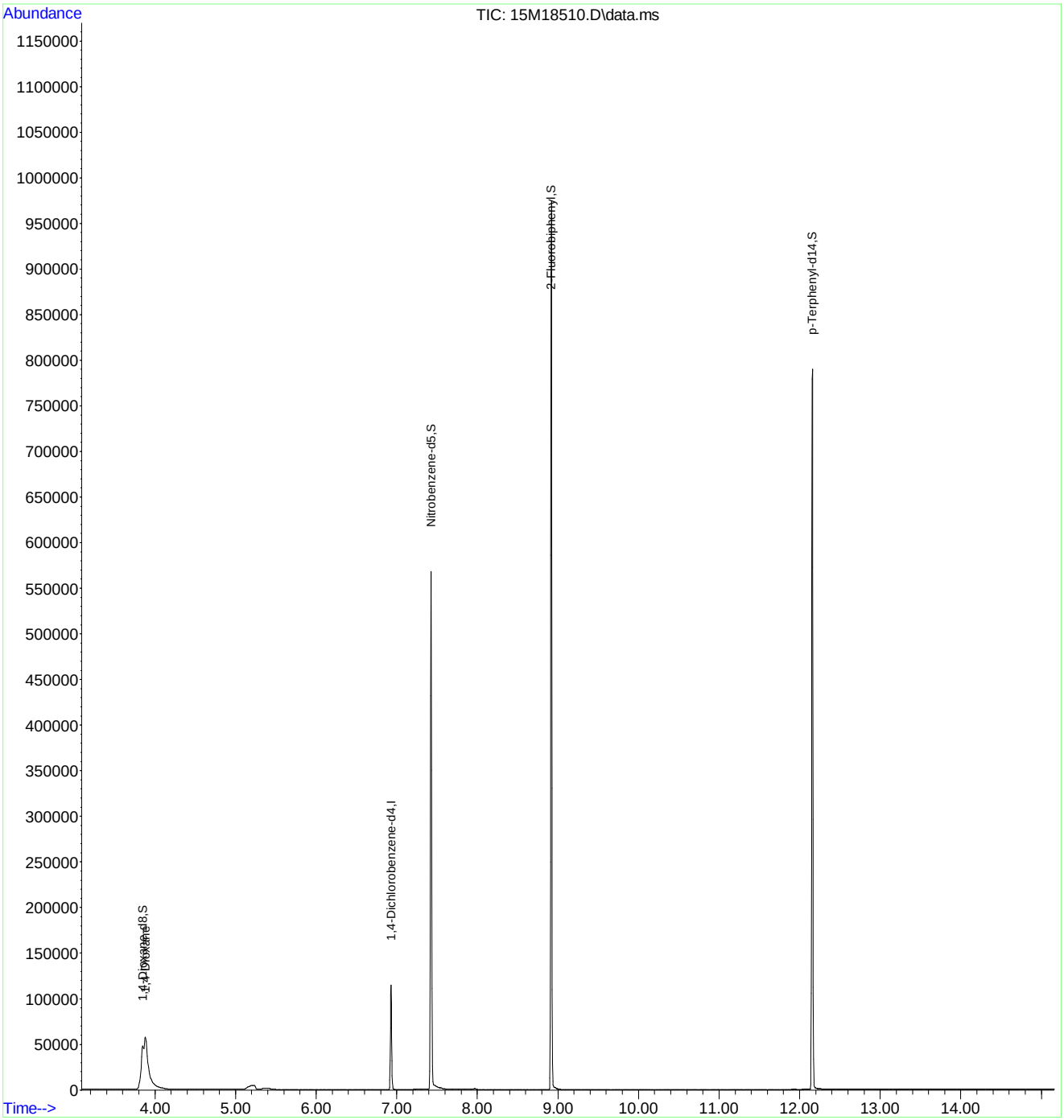

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18510.D
Acq On : 23 Jun 2016 13:59
Operator : MES
Sample : WG573879-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 23 14:15:55 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	128	0.00
2	1,4-Dioxane	0.306	0.277	9.5	115	0.02
3 S	1,4-Dioxane-d8	0.411	0.381	7.3	117	0.02
4 S	Nitrobenzene-d5	1.056	1.109	-5.0	126	0.00
5 S	2-Fluorobiphenyl	2.666	2.630	1.4	125	0.00
6 S	p-Terphenyl-d14	2.570	2.631	-2.4	128	-0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18510.D
Acq On : 23 Jun 2016 13:59
Operator : MES
Sample : WG573879-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 23 14:15:55 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	128	0.00
2	1,4-Dioxane	5.000	4.532	9.4	115	0.02
3 S	1,4-Dioxane-d8	5.000	4.624	7.5	117	0.02
4 S	Nitrobenzene-d5	5.000	5.250	-5.0	126	0.00
5 S	2-Fluorobiphenyl	5.000	4.932	1.4	125	0.00
6 S	p-Terphenyl-d14	5.000	5.119	-2.4	128	-0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062516\
Data File : 15M18545.D
Acq On : 25 Jun 2016 9:44
Operator : MES
Sample : WG574029-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 25 10:02:11 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.900	152	49570	1.0000 ug/mL	#-0.03
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.820	96	86328	4.2323 ug/L	0.00
Spiked Amount 5.000			Recovery	= 84.60%	
4) Nitrobenzene-d5	7.399	82	272067	5.1960 ug/L	-0.03
Spiked Amount 5.000			Recovery	= 104.00%	
5) 2-Fluorobiphenyl	8.889	172	614471	4.6492 ug/L	-0.03
Spiked Amount 5.000			Recovery	= 93.00%	
6) p-Terphenyl-d14	12.133	244	671949	5.2746 ug/L	-0.05
Spiked Amount 5.000			Recovery	= 105.40%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.855	58	63262	4.1711 ug/L	89

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062516\
Data File : 15M18545.D
Acq On : 25 Jun 2016 9:44
Operator : MES
Sample : WG574029-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 25 10:02:11 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

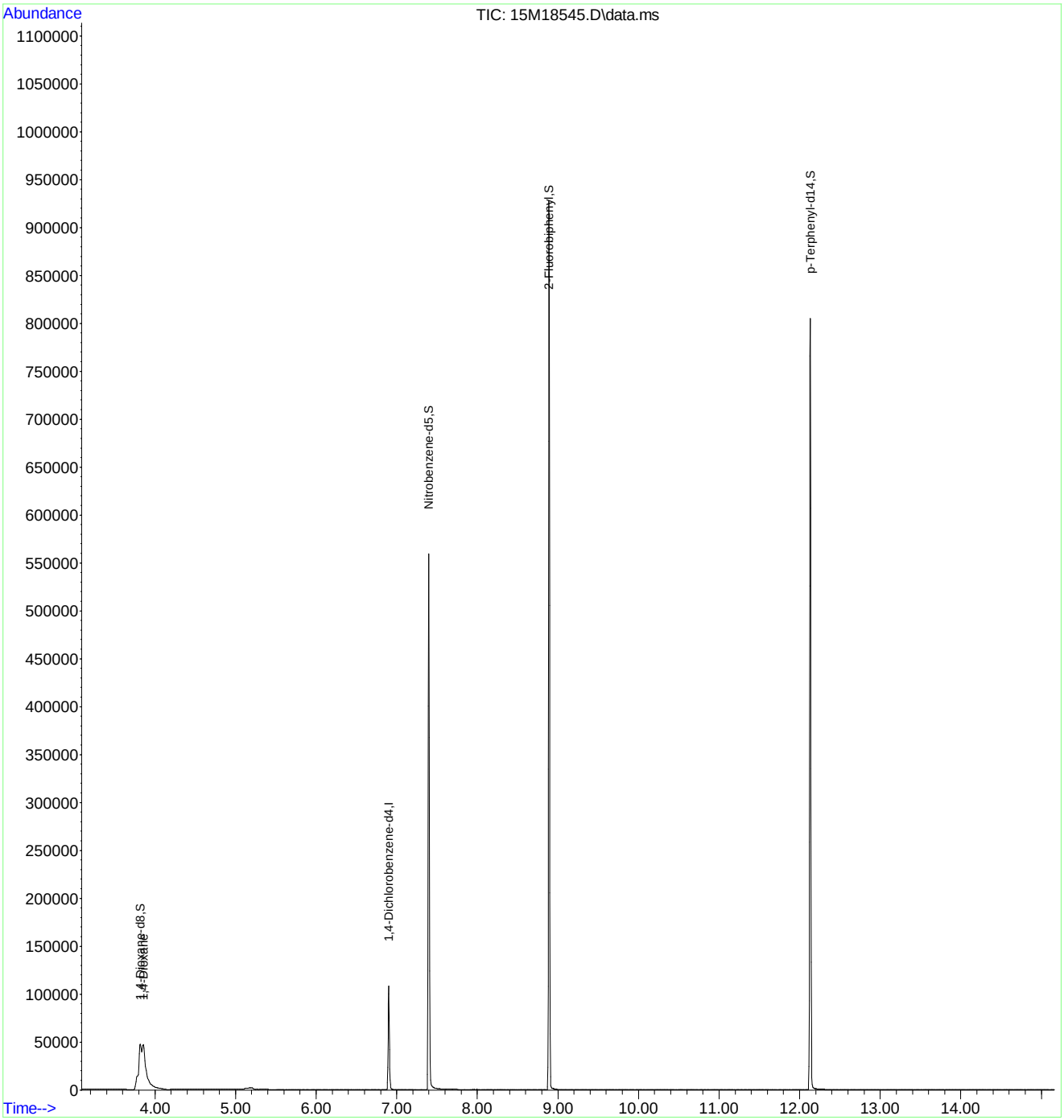

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062516\
Data File : 15M18545.D
Acq On : 25 Jun 2016 9:44
Operator : MES
Sample : WG574029-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 25 10:02:11 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	125	-0.03
2	1,4-Dioxane	0.306	0.255	16.7	104	0.00
3 S	1,4-Dioxane-d8	0.411	0.348	15.3	105	0.00
4 S	Nitrobenzene-d5	1.056	1.098	-4.0	122	-0.03
5 S	2-Fluorobiphenyl	2.666	2.479	7.0	115	-0.03
6 S	p-Terphenyl-d14	2.570	2.711	-5.5	129	-0.05

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062516\
Data File : 15M18545.D
Acq On : 25 Jun 2016 9:44
Operator : MES
Sample : WG574029-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 25 10:02:11 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	125	-0.03
2	1,4-Dioxane	5.000	4.171	16.6	104	0.00
3 S	1,4-Dioxane-d8	5.000	4.232	15.4	105	0.00
4 S	Nitrobenzene-d5	5.000	5.196	-3.9	122	-0.03
5 S	2-Fluorobiphenyl	5.000	4.649	7.0	115	-0.03
6 S	p-Terphenyl-d14	5.000	5.275	-5.5	129	-0.05

(#) = Out of Range SPCC's out = 0 CCC's out = 0

2.2.1.5 Raw QC Data

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

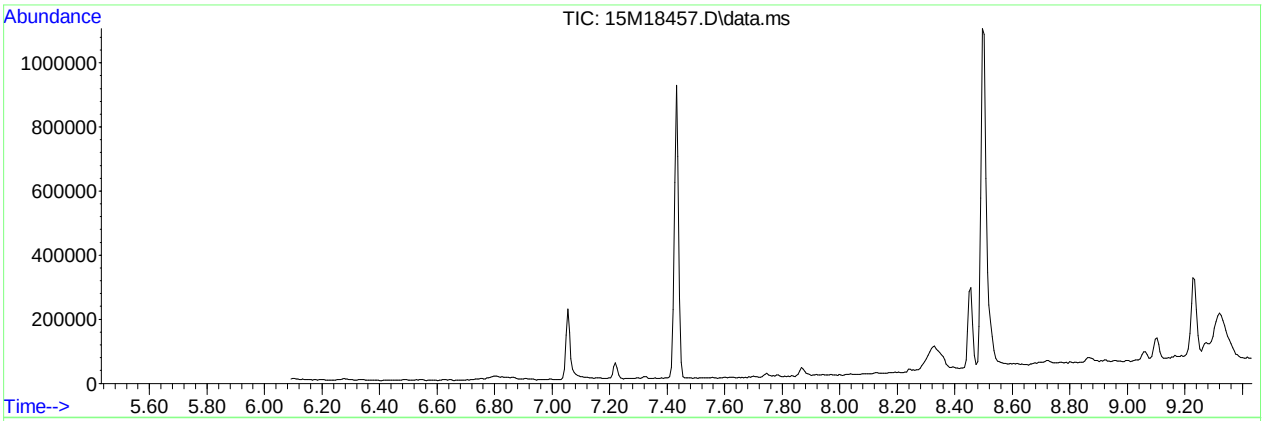

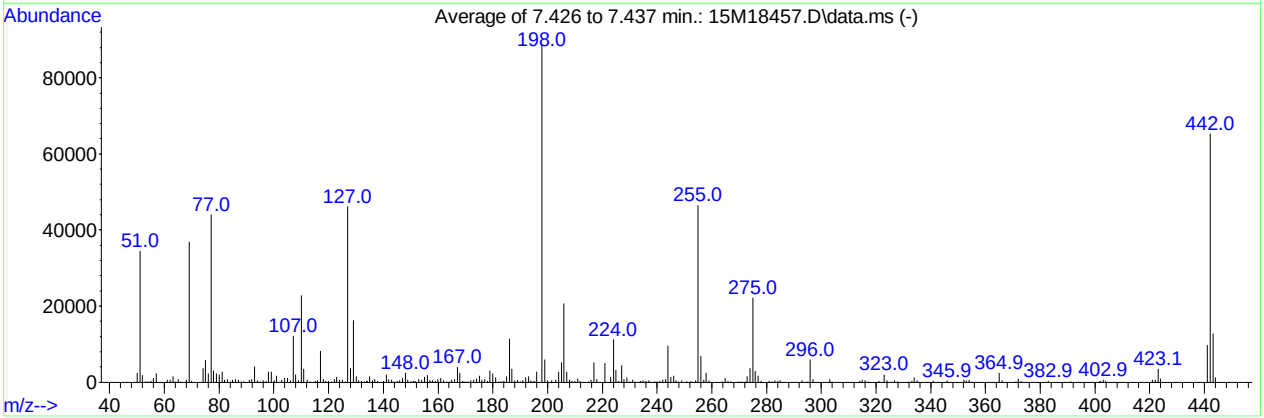

AutoFind: Scans 234, 235, 236; Background Corrected with Scan 228

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	38.8	34488	PASS
68	69	0.00	2	1.4	500	PASS
69	198	0.00	100	41.4	36833	PASS
70	69	0.00	2	0.5	172	PASS
127	198	40	60	51.9	46131	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	88880	PASS
199	198	5	9	6.7	5918	PASS
275	198	10	30	24.9	22090	PASS
365	198	1	100	2.7	2358	PASS
441	443	0.01	100	75.7	9586	PASS
442	198	40	100	73.4	65261	PASS
443	442	17	23	19.4	12659	PASS

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

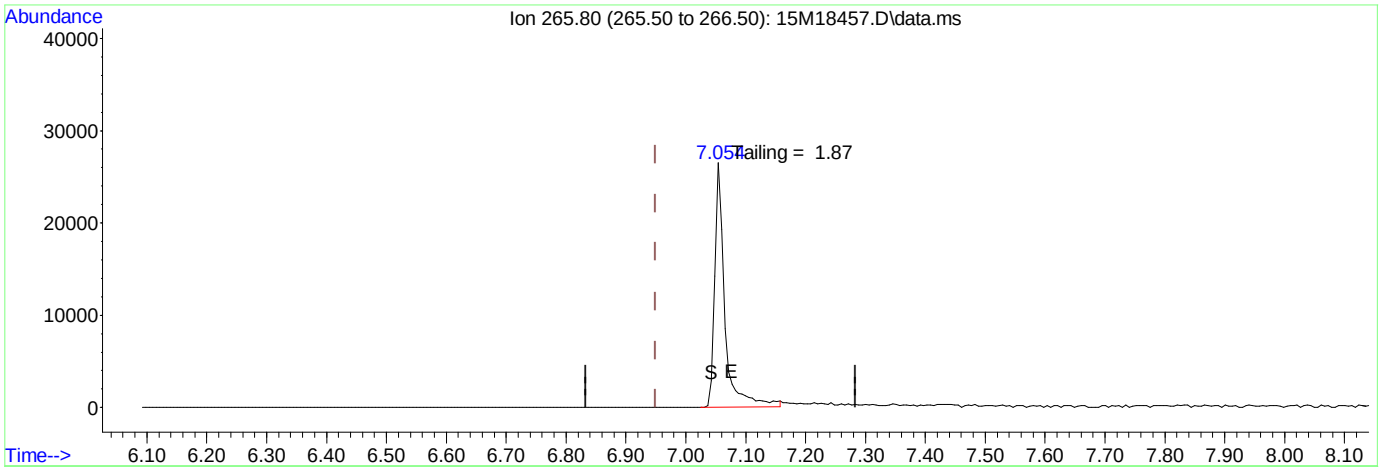

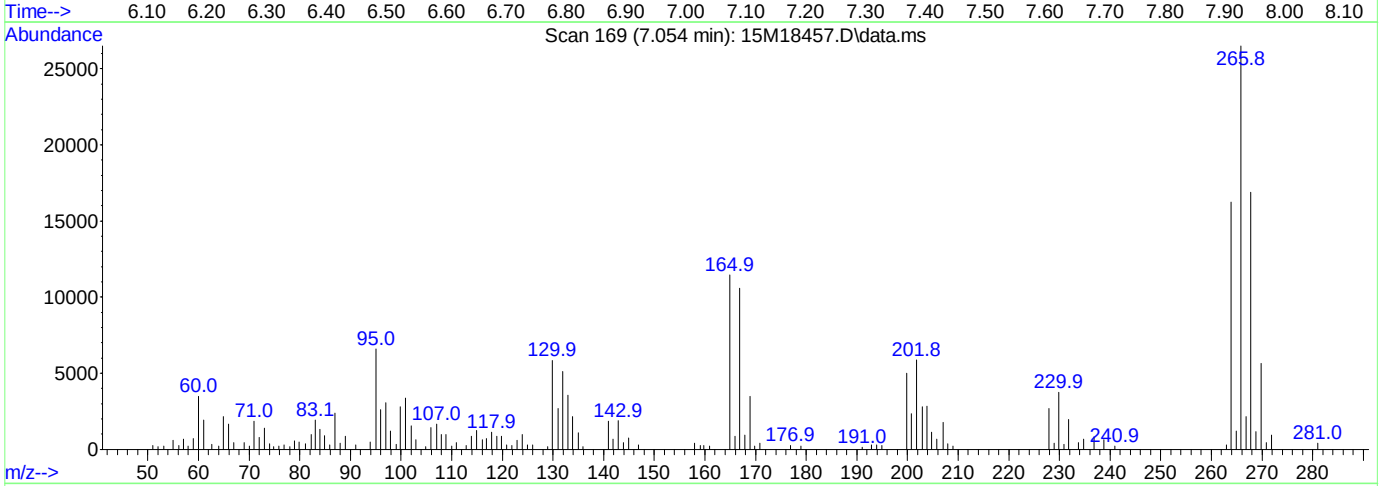

TIC: 15M18457.D\data.ms

(1) Pentachlorophenol

7.054min (+ 0.105) 0.00 ug/ml

response 30738

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

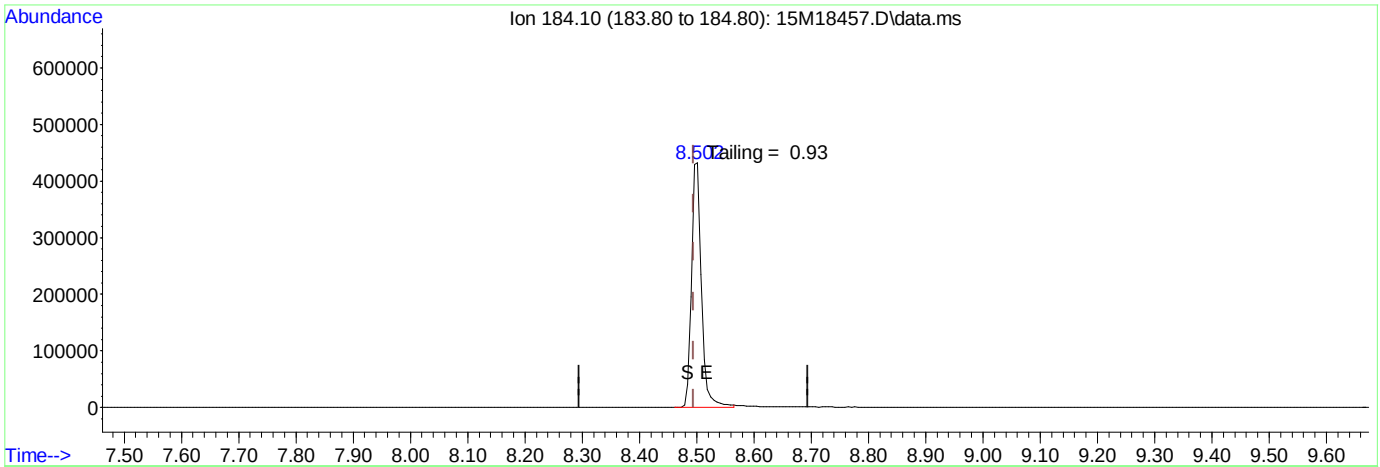

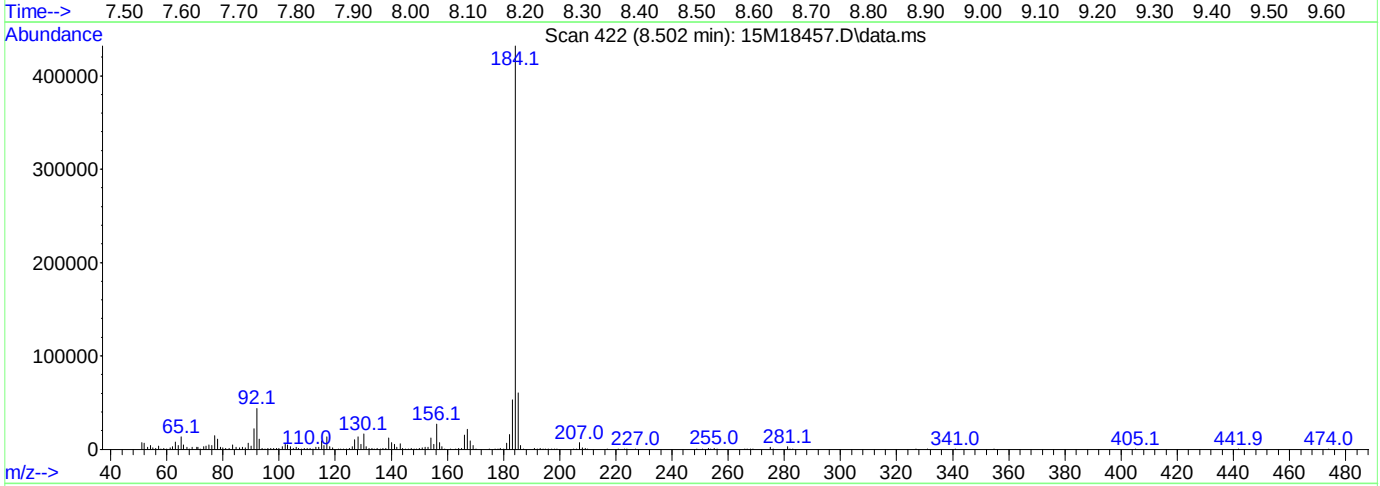

(2) Benzidine

8.502min (+ 0.008) 0.00 ug/ml

response 532770

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

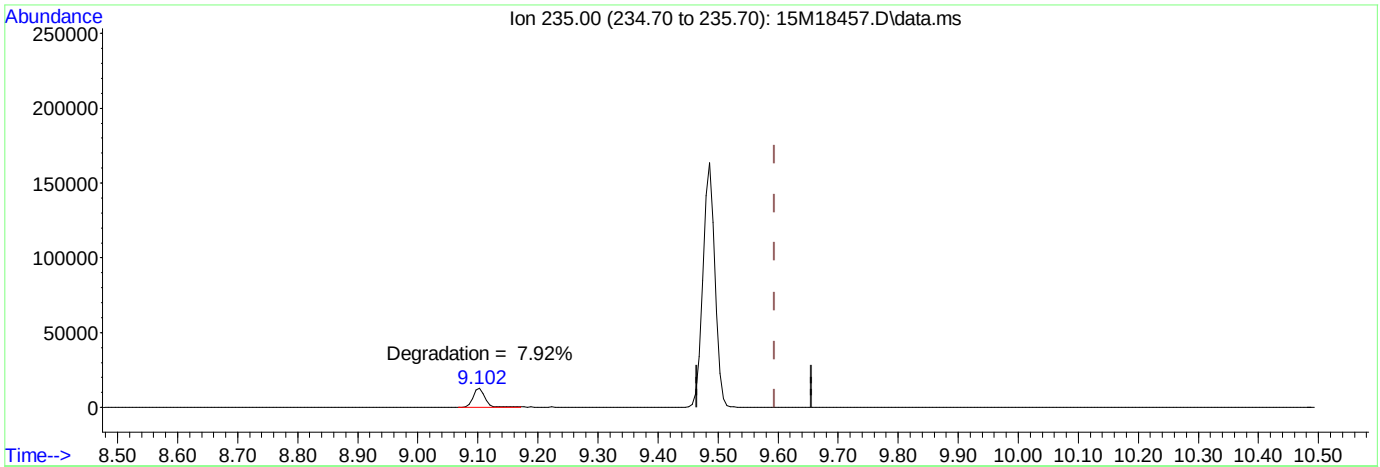

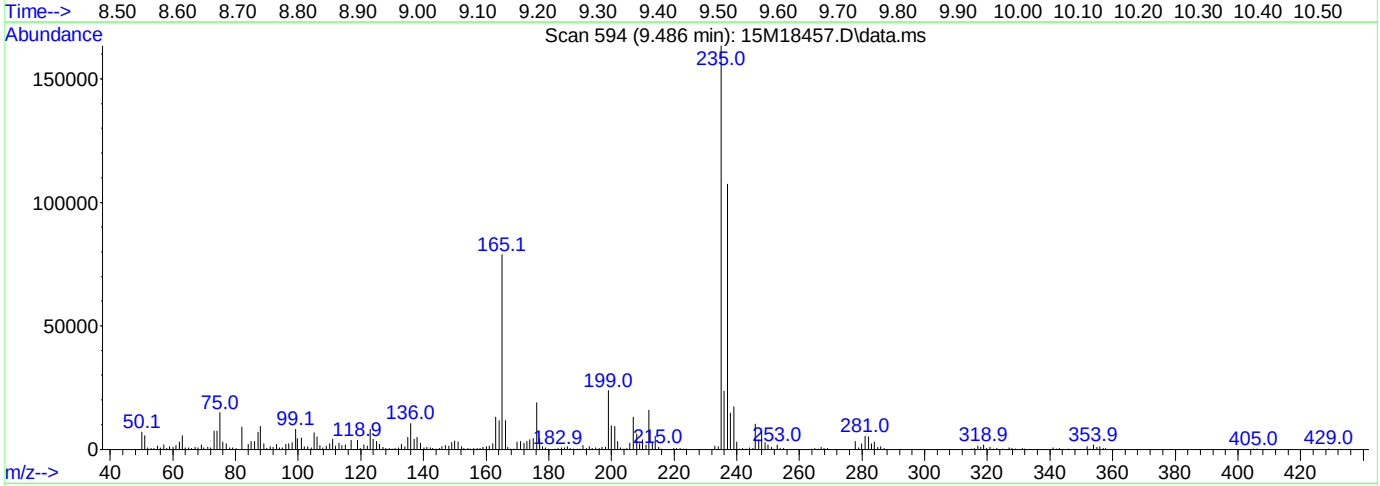

TIC: 15M18457.D\data.ms

(3) DDT

9.486min (-0.108) 0.00 ug/ml

response 180187

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18509.D
Acq On : 23 Jun 2016 13:42
Operator : MES
Sample : WG573879-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

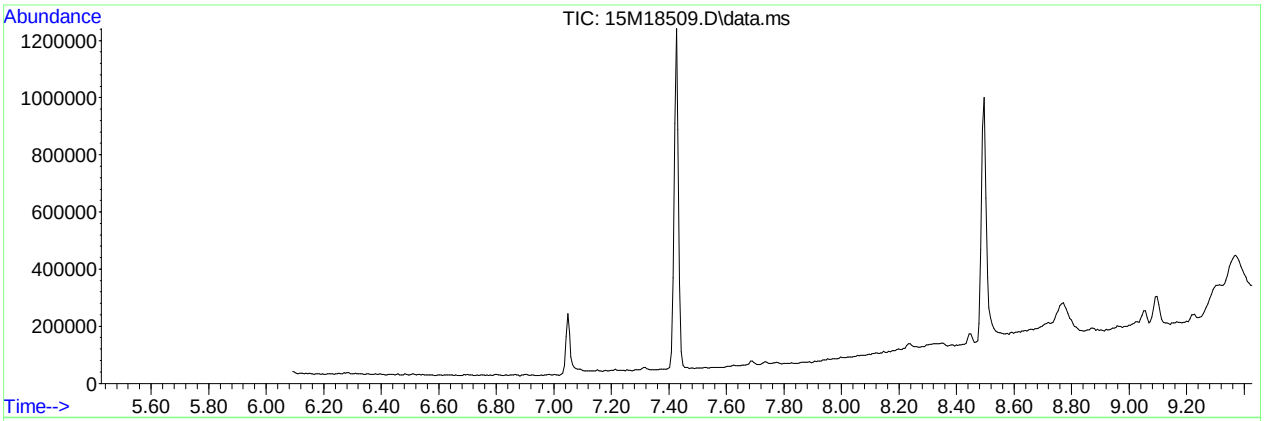

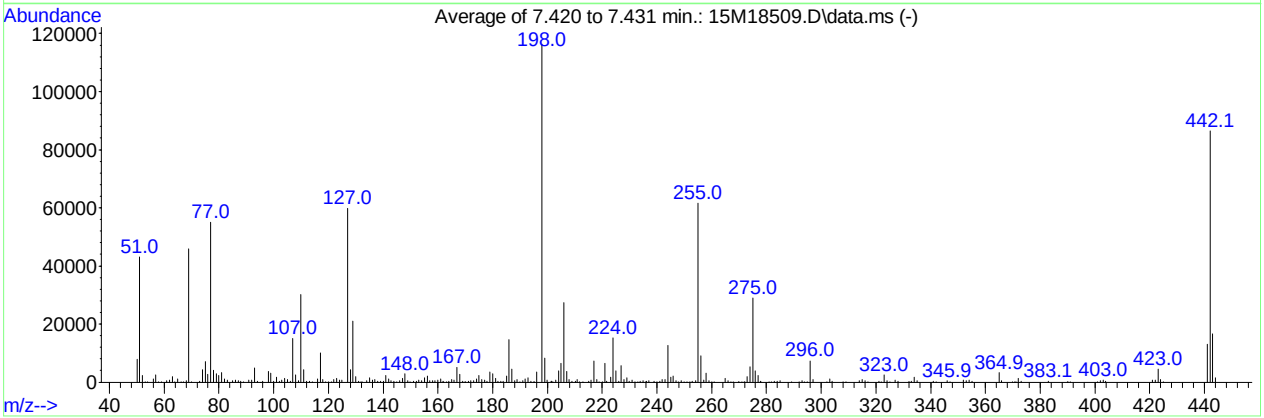

AutoFind: Scans 233, 234, 235; Background Corrected with Scan 227

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	37.0	43111	PASS
68	69	0.00	2	1.1	506	PASS
69	198	0.00	100	39.4	45795	PASS
70	69	0.00	2	0.2	72	PASS
127	198	40	60	51.3	59752	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	116364	PASS
199	198	5	9	7.1	8249	PASS
275	198	10	30	24.9	28968	PASS
365	198	1	100	2.8	3278	PASS
441	443	0.01	100	79.2	13093	PASS
442	198	40	100	74.3	86464	PASS
443	442	17	23	19.1	16541	PASS

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18509.D
Acq On : 23 Jun 2016 13:42
Operator : MES
Sample : WG573879-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 23 13:53:21 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

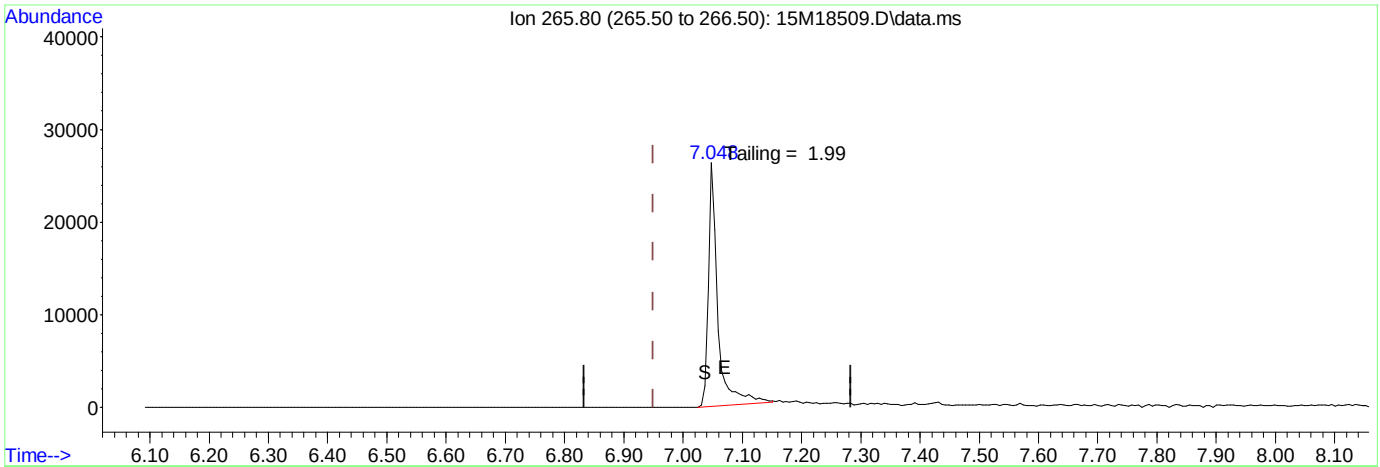

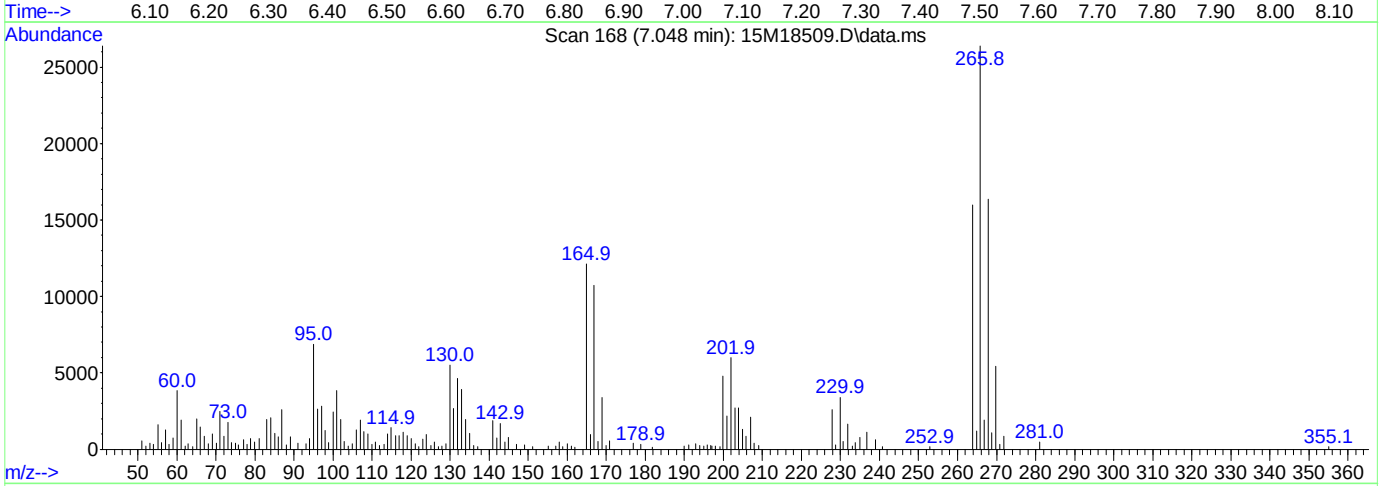

TIC: 15M18509.D\data.ms

(1) Pentachlorophenol

7.048min (+ 0.099) 0.00 ug/ml

response 32081

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18509.D
Acq On : 23 Jun 2016 13:42
Operator : MES
Sample : WG573879-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 23 13:53:21 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

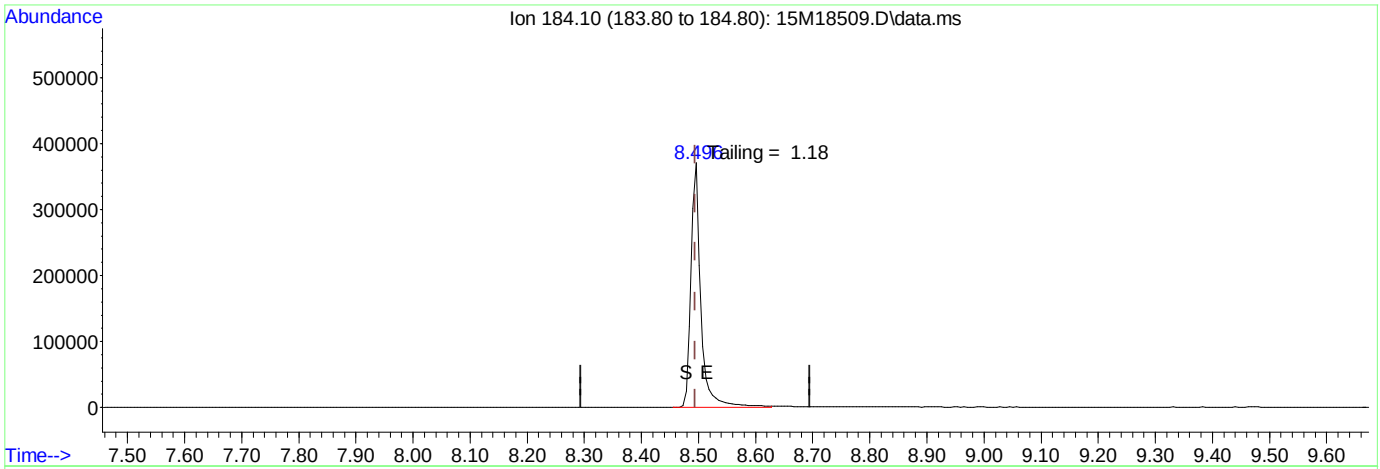

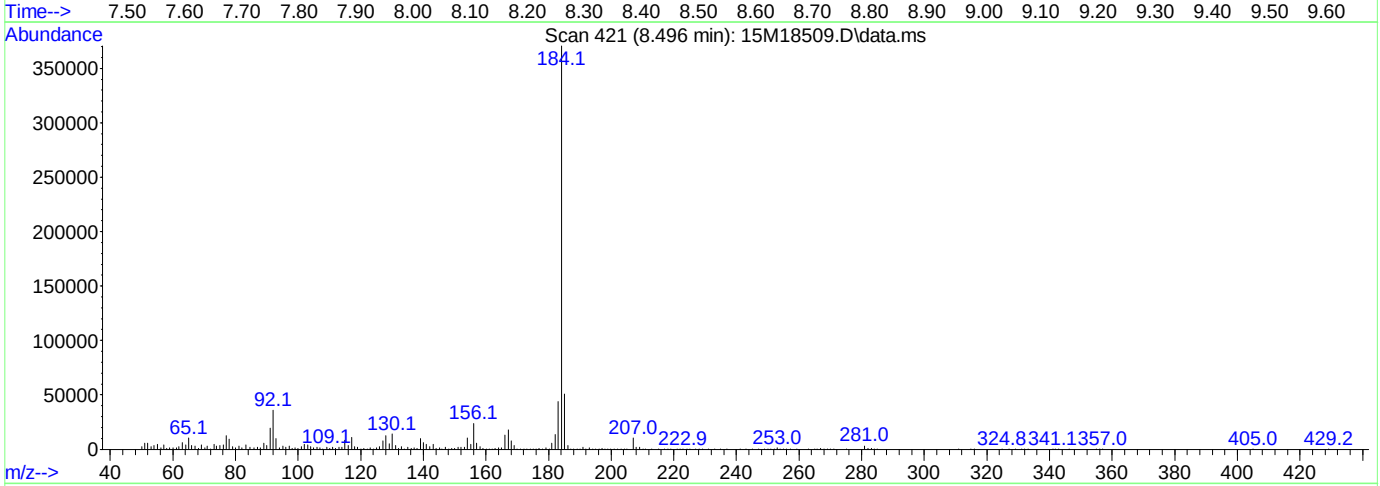

TIC: 15M18509.D\data.ms

(2) Benzidine

8.496min (+ 0.002) 0.00 ug/ml

response 452358

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18509.D
Acq On : 23 Jun 2016 13:42
Operator : MES
Sample : WG573879-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 23 13:53:21 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

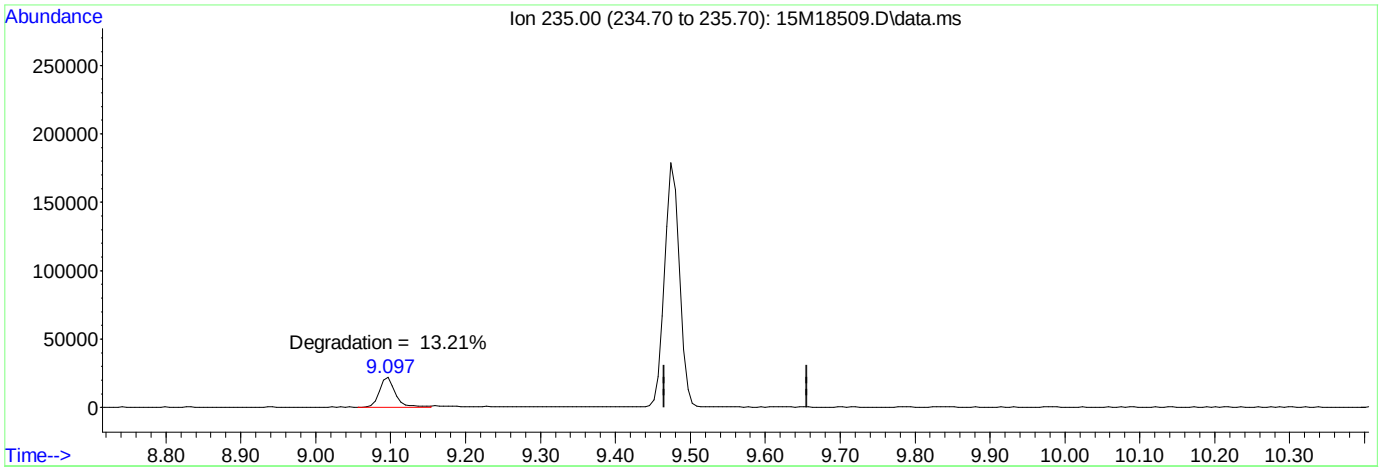

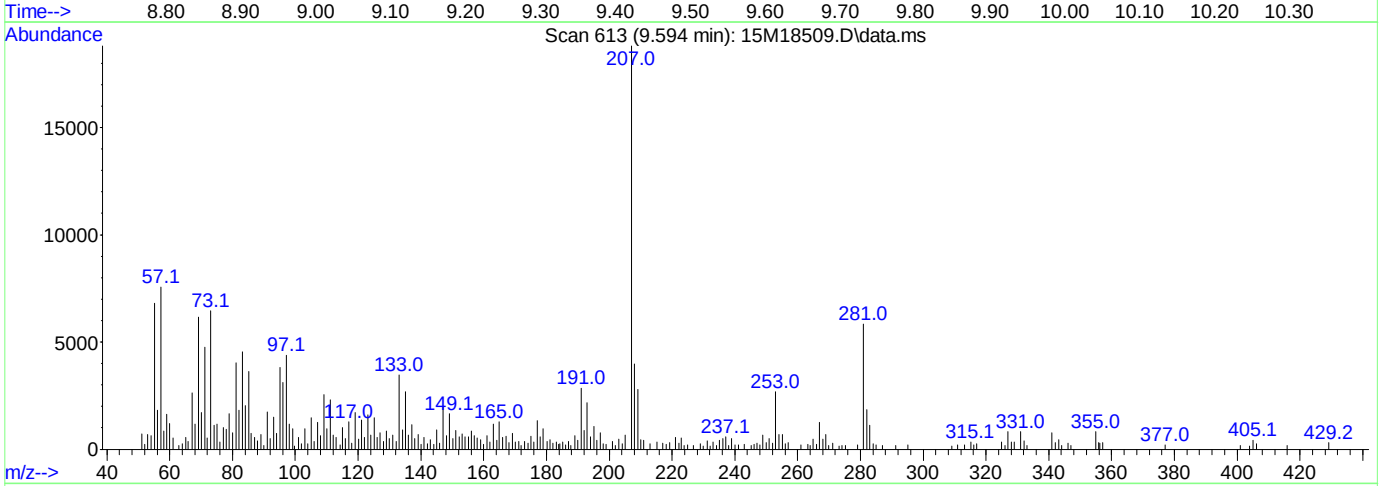

TIC: 15M18509.D\data.ms

(3) DDT

9.594min (-9.594) 0.00 ug/ml

response 0

Ion	Exp%	Act%
235.00	100.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062516\
Data File : 15M18544.D
Acq On : 25 Jun 2016 9:27
Operator : MES
Sample : WG574029-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

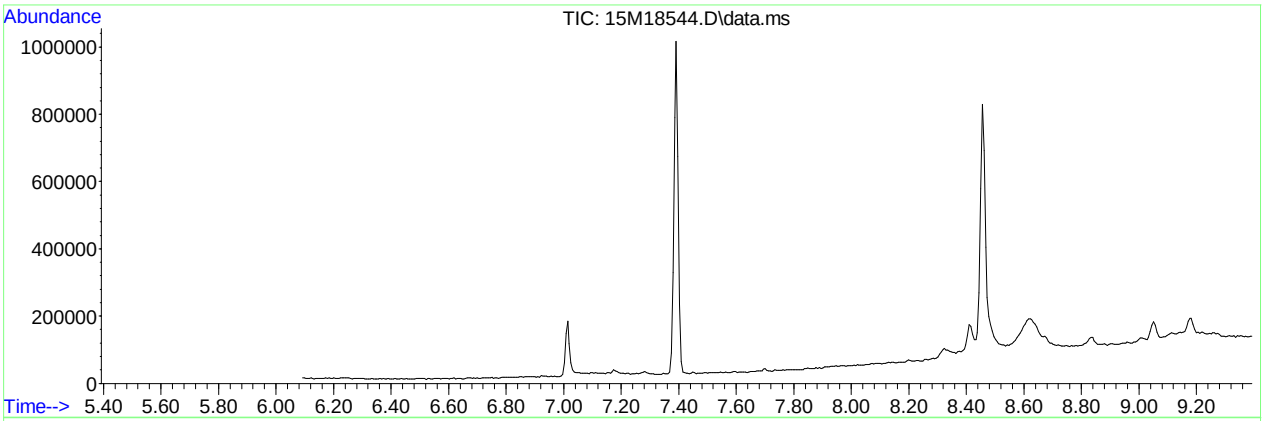

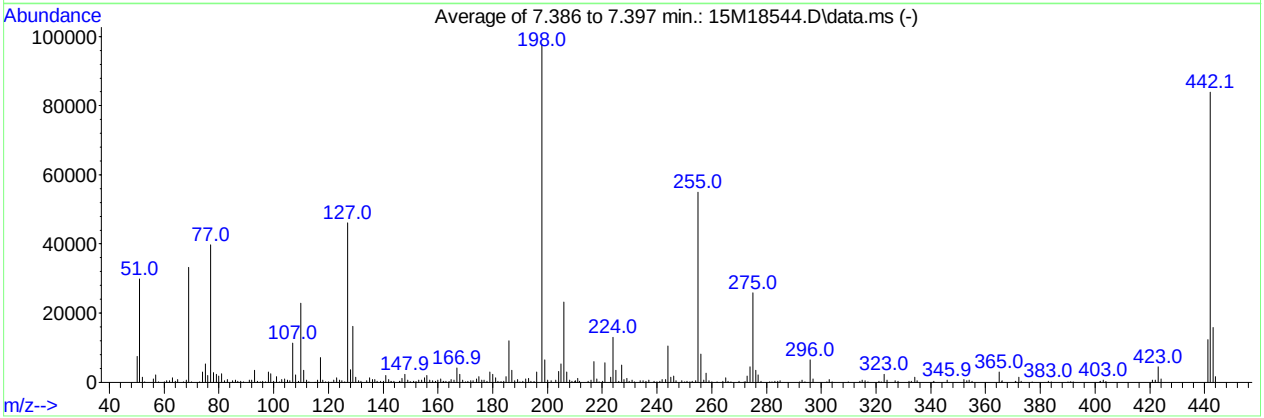

AutoFind: Scans 227, 228, 229; Background Corrected with Scan 221

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	30.5	29885	PASS
68	69	0.00	2	1.7	556	PASS
69	198	0.00	100	33.9	33149	PASS
70	69	0.00	2	0.5	158	PASS
127	198	40	60	47.2	46146	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	97832	PASS
199	198	5	9	6.6	6499	PASS
275	198	10	30	26.5	25877	PASS
365	198	1	100	2.9	2871	PASS
441	443	0.01	100	78.3	12355	PASS
442	198	40	100	85.7	83872	PASS
443	442	17	23	18.8	15788	PASS

Data Path : C:\msdchem\1\data\062516\
Data File : 15M18544.D
Acq On : 25 Jun 2016 9:27
Operator : MES
Sample : WG574029-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 25 09:38:05 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

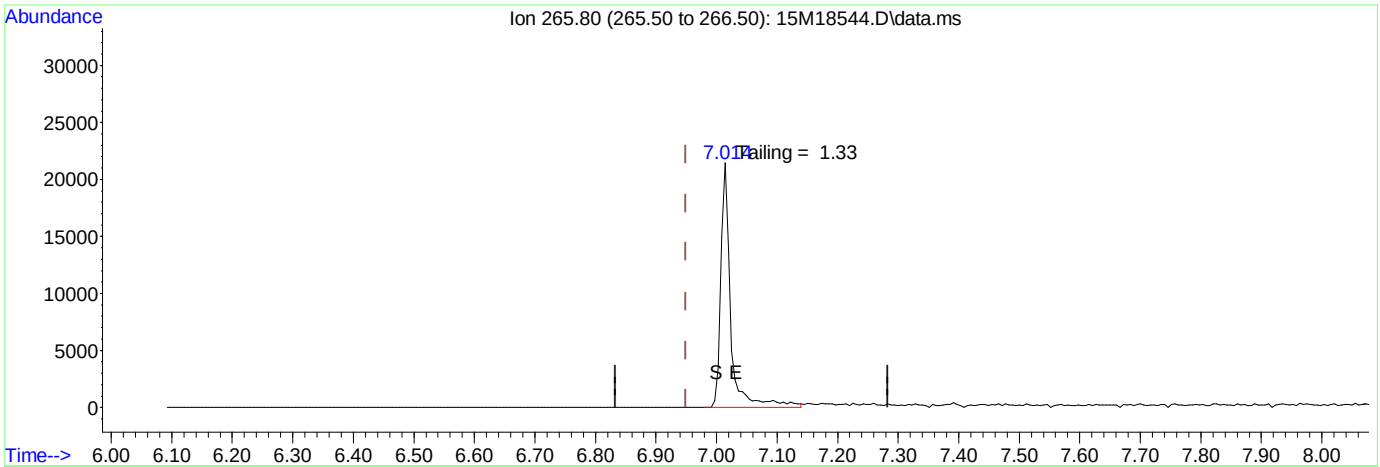

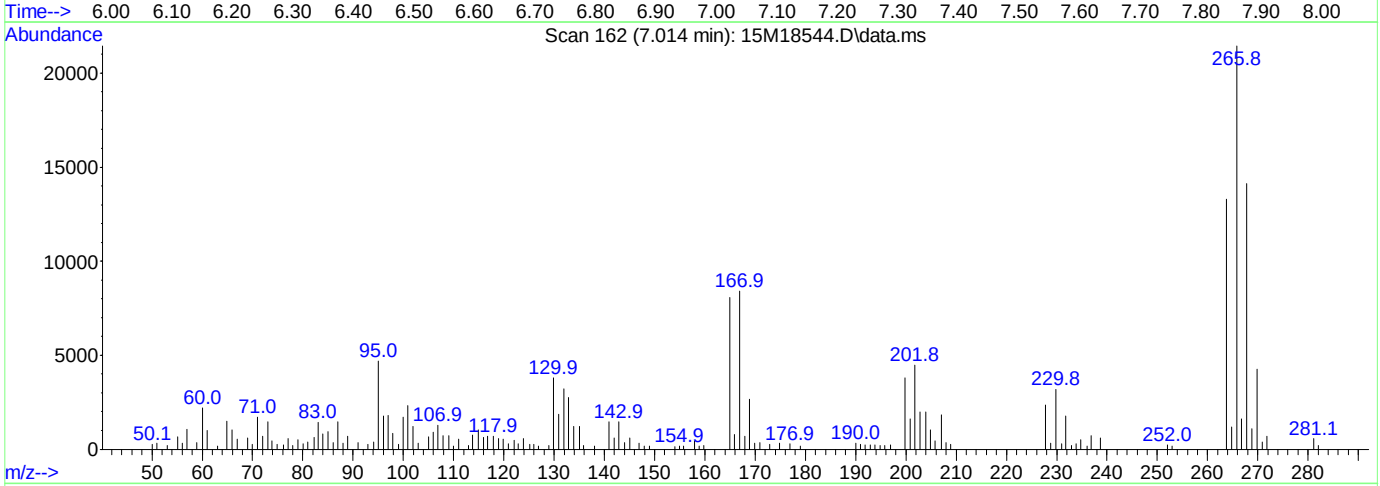

TIC: 15M18544.D\data.ms

(1) Pentachlorophenol

7.014min (+ 0.065) 0.00 ug/ml

response 23506

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062516\
Data File : 15M18544.D
Acq On : 25 Jun 2016 9:27
Operator : MES
Sample : WG574029-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 25 09:38:05 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

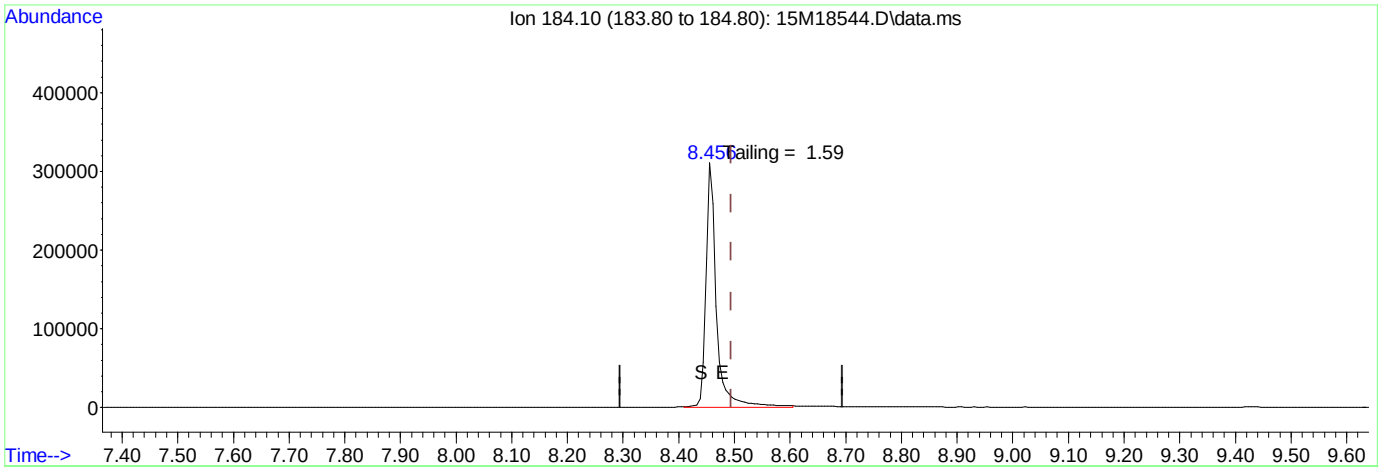

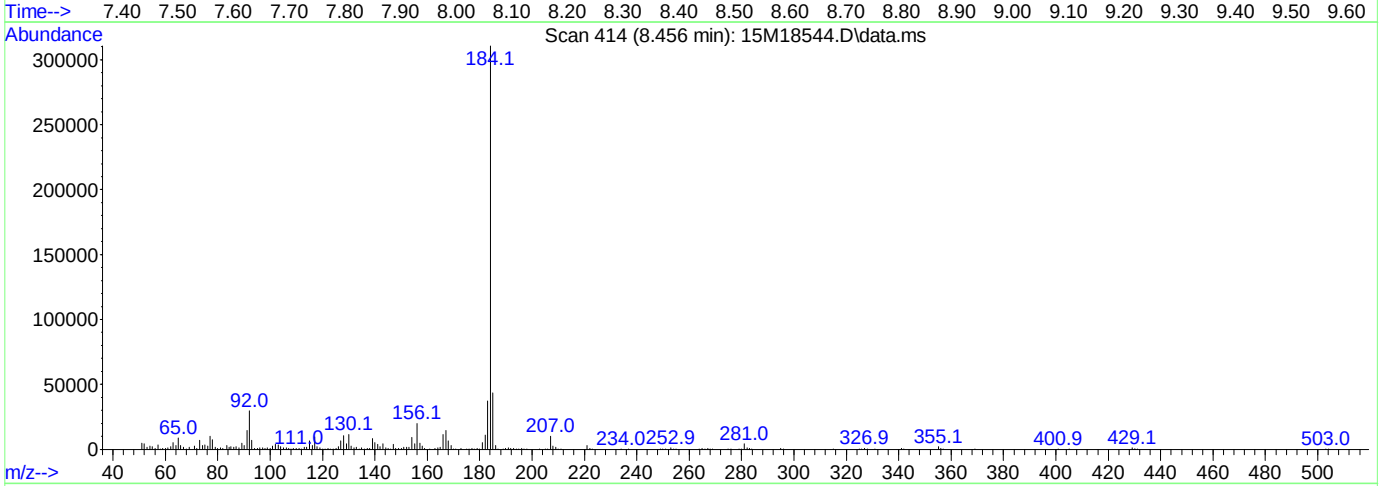

TIC: 15M18544.D\data.ms

(2) Benzidine

8.456min (-0.038) 0.00 ug/ml

response 410023

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data Path : C:\msdchem\1\data\062516\
Data File : 15M18544.D
Acq On : 25 Jun 2016 9:27
Operator : MES
Sample : WG574029-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 25 09:38:05 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

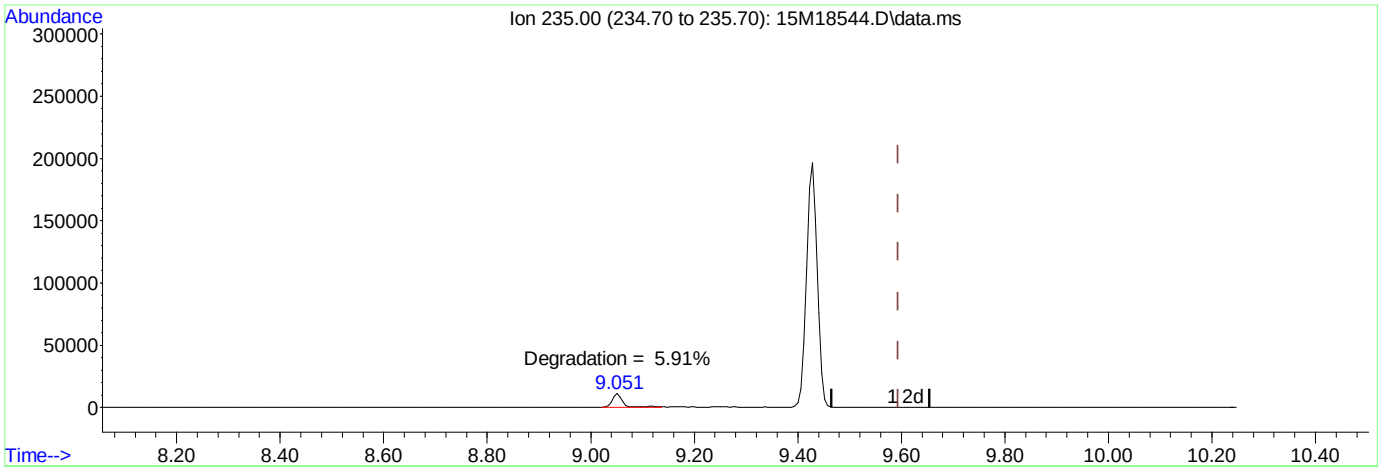

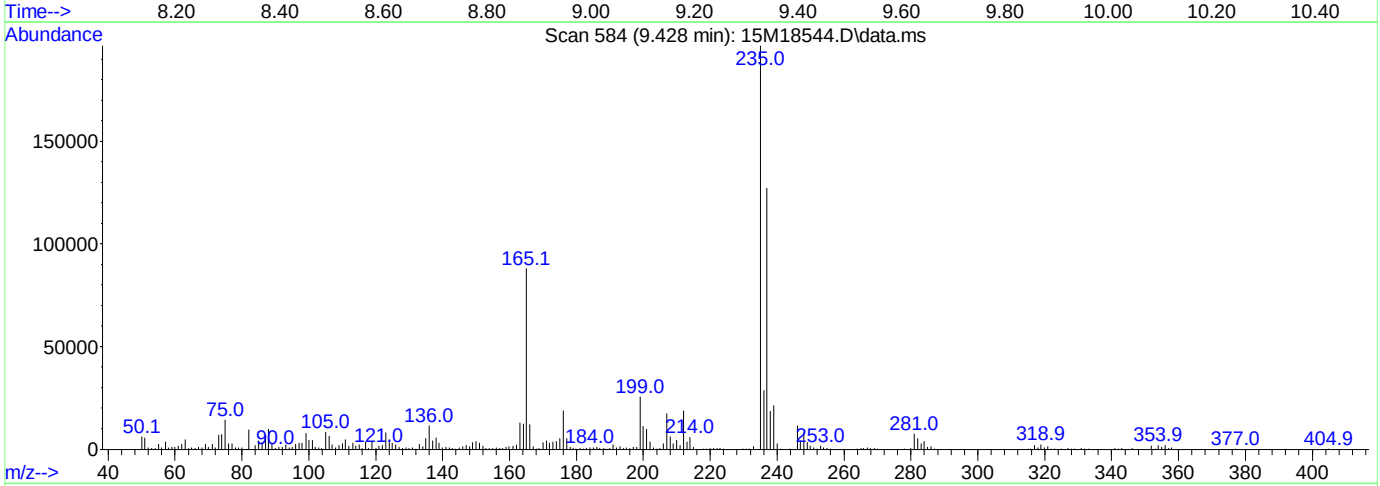

TIC: 15M18544.D\data.ms

(3) DDT

9.428min (-0.166) 0.00 ug/ml mint

response 292084

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18511.D
Acq On : 23 Jun 2016 14:22
Operator : MES
Sample : WG573299-01 BLANK 6/21
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 23 15:52:24 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.929	152	57608	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	33985	1.4337	ug/L	0.04
Spiked Amount 5.000			Recovery = 28.60%			
4) Nitrobenzene-d5	7.426	82	1290209	21.2028	ug/L	0.00
Spiked Amount 5.000			Recovery = 424.00%			
5) 2-Fluorobiphenyl	8.919	172	2634137	17.1496	ug/L	0.00
Spiked Amount 5.000			Recovery = 343.00%			
6) p-Terphenyl-d14	12.162	244	4420616	29.8588	ug/L	-0.02
Spiked Amount 5.000			Recovery = 597.20%			

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18511.D
Acq On : 23 Jun 2016 14:22
Operator : MES
Sample : WG573299-01 BLANK 6/21
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 23 15:52:24 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

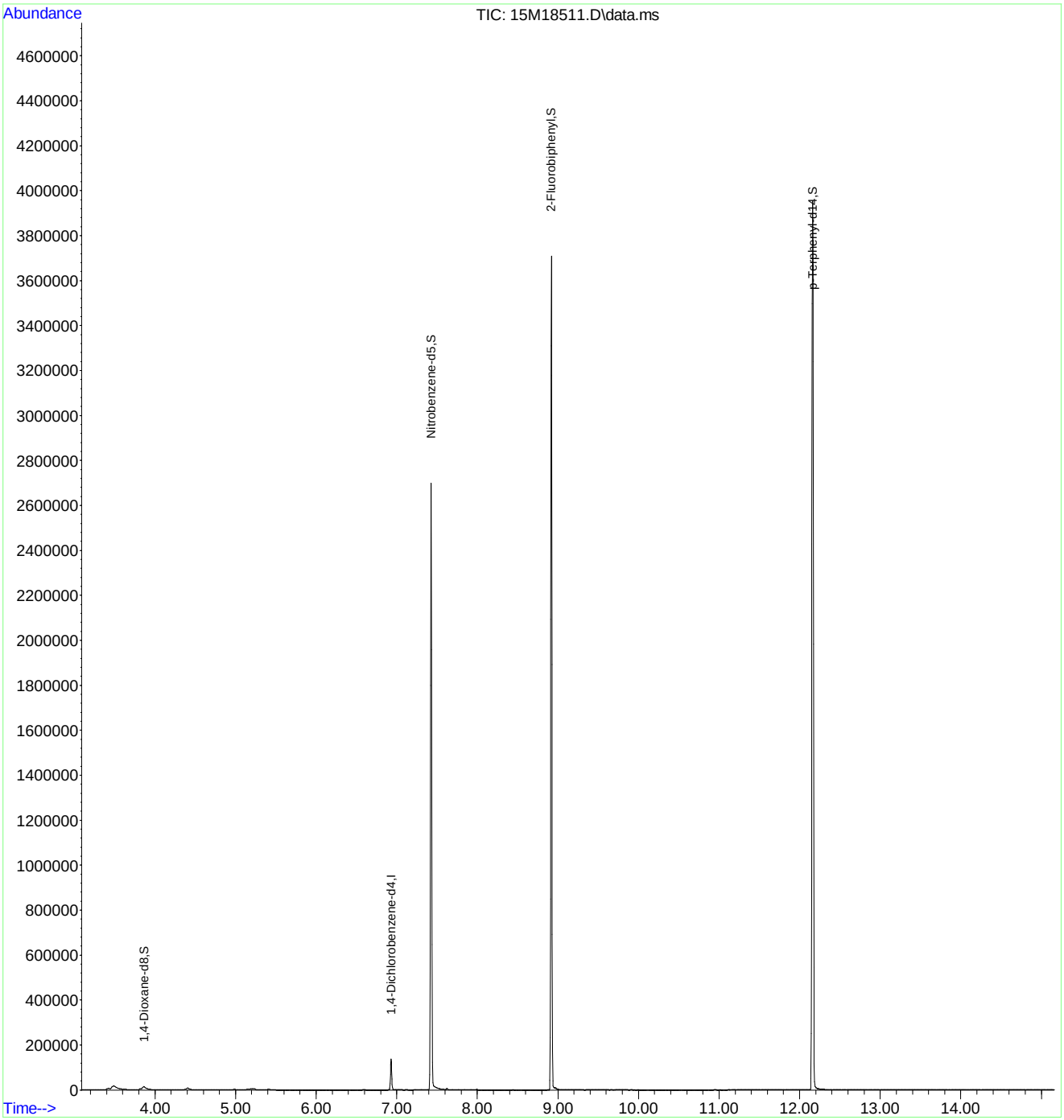

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18512.D
Acq On : 23 Jun 2016 14:45
Operator : MES
Sample : WG573299-02 LCS 6/21
Misc : 1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 23 15:52:38 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.929	152	51597	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	40084	1.8880	ug/L	0.04
Spiked Amount 5.000			Recovery	=	37.80%	
4) Nitrobenzene-d5	7.431	82	2991	0.0549	ug/L	0.00
Spiked Amount 5.000			Recovery	=	1.00%	
5) 2-Fluorobiphenyl	8.919	172	1228	0.0089	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.20%	
6) p-Terphenyl-d14	12.159	244	1342	0.0101	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	29708	1.8818	ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18512.D
Acq On : 23 Jun 2016 14:45
Operator : MES
Sample : WG573299-02 LCS 6/21
Misc : 1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 23 15:52:38 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

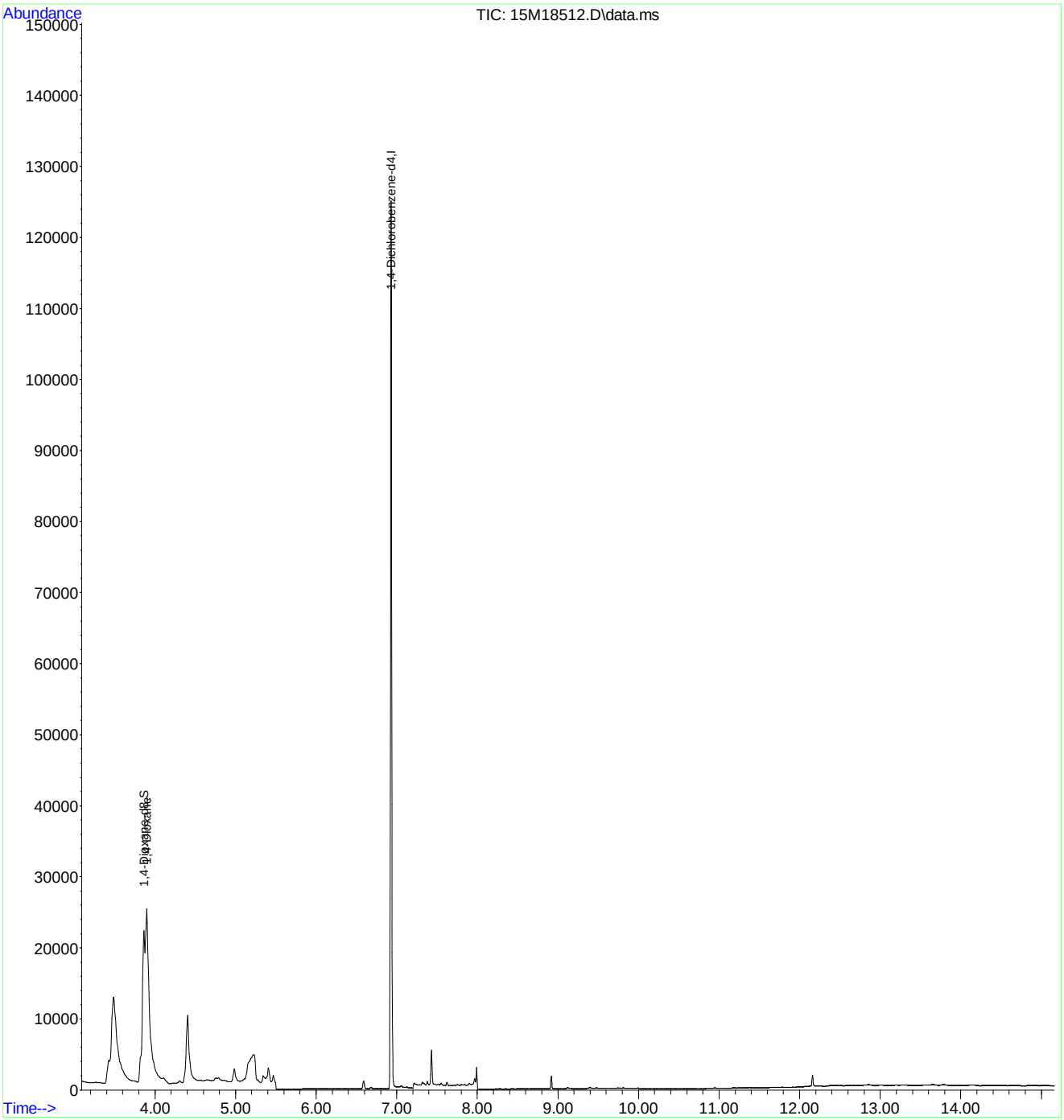

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18513.D
Acq On : 23 Jun 2016 15:07
Operator : MES
Sample : WG573299-03 LCSDUP 6/21
Misc : 1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 23 15:52:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.929	152	54701	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	52635	2.3384	ug/L	0.04
Spiked Amount 5.000			Recovery	=	46.80%	
4) Nitrobenzene-d5	7.431	82	5866	0.1015	ug/L	0.00
Spiked Amount 5.000			Recovery	=	2.00%	
5) 2-Fluorobiphenyl	8.919	172	4684	0.0321	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.60%	
6) p-Terphenyl-d14	12.151	244	1266	0.0090	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	38804	2.3185	ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18513.D
Acq On : 23 Jun 2016 15:07
Operator : MES
Sample : WG573299-03 LCSDUP 6/21
Misc : 1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 23 15:52:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

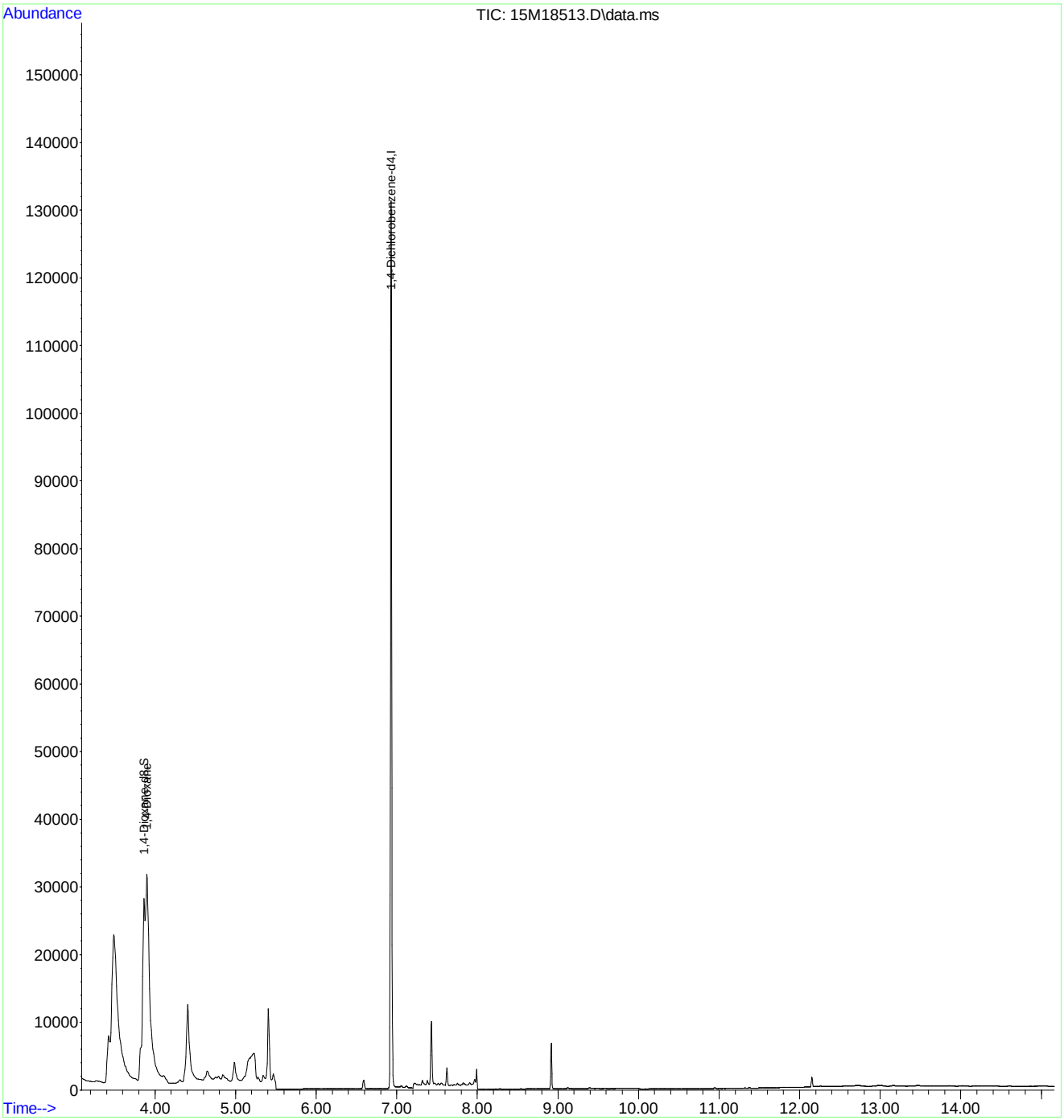

2.2 General Chromatography Data

2.2.2 6850 LC/MS Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16060927-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW23SW-061516	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 19:02
Collect Date:	06/15/2016 08:00	**Dilution:**	1	**File ID:**	1LM.LM35501
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	0.407		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16060927-02	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW23-061516	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 19:21
Collect Date:	06/15/2016 09:05	**Dilution:**	1000	**File ID:**	1LM.LM35502
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	2310		400	200	100

Certificate of Analysis

Sample #:	L16060927-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW19SW-061516	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/24/2016 23:18
Collect Date:	06/15/2016 10:15	**Dilution:**	1	**File ID:**	1LM.LM35473
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	1.25		0.400	0.200	0.100

Certificate of Analysis

Microbac

Lab Report #: L16060927
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Sample #:	L16060927-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18CPTMW19-061516	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/24/2016 23:37
Collect Date:	06/15/2016 11:15	**Dilution:**	1	**File ID:**	1LM.LM35474
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	5.31		0.400	0.200	0.100

2.2.2.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1380 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG574101-01 MCT	9,990.	
-02 Blank	0.33	
-03 LCS	0.48	
-04 LCS2	0.51	
L16060823-01	9,120.	
-03	7,440.	
-04	1,943.	
L16060927-01	750.	
-02	652.	
-03	446.	
-04	162.7	
L16061026-01	6,910.	
-03	238.	
-04	965.	
-05	1,526.	
-07	220.	
L16061142-01	165.3	
-02	81.1	
-04	83.1	
-06	728.	
-07	74.2	
L16061144-01	118.6	
-02	118.7	
-03	110.1	

Analyst: John Richards

Date/Time: 06/27/16 / 20:00

DCN#119317

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

Page: 1 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

Page: 2 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 062416_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG574101 (waters)

Internal STD: STD18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments: Samples initially analyzed at dilutions were done so based on their historical results. Samples tagged with (NR) did not conform to their historical results. These samples were reanalyzed on the end of the sequence as neat or at dilutions based on the results of their initial analysis.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35462	WG574102-01 CCB	1	1		06/24/16 19:50
2	1LM.LM35463	WG574102-02 CCV (1.0ug/L)	1	1	STD75510	06/24/16 20:09
3	1LM.LM35464	WG574101-05 MRL (0.2ug/L)	1	1	STD75510	06/24/16 20:28
4	1LM.LM35465	WG574101-01 MCT (0.2ug/L)	1	1	STD75512	06/24/16 20:47
5	1LM.LM35466	WG574101-02 BLANK	1	1		06/24/16 21:06
6	1LM.LM35467	WG574101-03 LCS (0.2ug/L)	1	1	STD75512	06/24/16 21:25
7	1LM.LM35468	L16060823-01	1	1		06/24/16 21:44
8	1LM.LM35469	L16060823-03	1	1		06/24/16 22:03
9	1LM.LM35470	L16060823-04 (10x)	1	10		06/24/16 22:22
10	1LM.LM35471	L16060927-01 (100x) (NR)	1	100		06/24/16 22:41
11	1LM.LM35472	L16060927-02 (100x) (NR)	1	100		06/24/16 23:00
12	1LM.LM35473	L16060927-03	1	1		06/24/16 23:18
13	1LM.LM35474	L16060927-04	1	1		06/24/16 23:37
14	1LM.LM35475	WG574102-03 CCV (1.0ug/L)	1	1	STD75510	06/24/16 23:56
15	1LM.LM35476	WG574101-06 MRL (0.2ug/L)	1	1	STD75510	06/25/16 00:15
16	1LM.LM35477	WG574102-04 CCB	1	1		06/25/16 00:34
17	1LM.LM35478	L16061026-01 (100x) (NR)	1	100		06/25/16 00:53
18	1LM.LM35479	L16061026-03 (100x)	1	100		06/25/16 01:12
19	1LM.LM35480	L16061026-04 (10,000x)	1	10000		06/25/16 01:31
20	1LM.LM35481	L16061026-05 (100,000x) (NR)	1	100000		06/25/16 01:50
21	1LM.LM35482	L16061026-07 (10x) (NR)	1	10		06/25/16 02:09
22	1LM.LM35483	L16061142-01	1	1		06/25/16 02:28
23	1LM.LM35484	L16061142-02	1	1		06/25/16 02:47
24	1LM.LM35485	L16061142-04	1	1		06/25/16 03:06
25	1LM.LM35486	L16061142-06 (10x) (NR)	1	10		06/25/16 03:25
26	1LM.LM35487	L16061142-07	1	1		06/25/16 03:44
27	1LM.LM35488	WG574102-05 CCV (1.0ug/L)	1	1	STD75510	06/25/16 04:03
28	1LM.LM35489	WG574101-07 MRL (0.2ug/L)	1	1	STD75510	06/25/16 04:22
29	1LM.LM35490	WG574102-06 CCB	1	1		06/25/16 04:40
30	1LM.LM35491	WG574101-04 LCS2 (0.2ug/L)	1	1	STD75512	06/25/16 04:59
31	1LM.LM35492	L16061144-01	1	1		06/25/16 05:18
32	1LM.LM35493	L16061144-02	1	1		06/25/16 05:37
33	1LM.LM35494	L16061144-03 (10x) (NR)	1	10		06/25/16 05:56

Page: 1 Approved: 28-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 062416_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG574101 (waters)

Internal STD: STD18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 NA

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM35495	WG574102-07 CCV (1.0ug/L)	1	1	STD75510	06/25/16 06:15
35	1LM.LM35496	WG574101-08 MRL (0.2ug/L)	1	1	STD75510	06/25/16 06:34
36	1LM.LM35497	WG574102-08 CCB	1	1		06/25/16 06:53
37	1LM.LM35498	WG574102-09 CCV (1.0ug/L)	1	1	STD75510	06/25/16 18:06
38	1LM.LM35499	WG574101-09 MRL (0.2ug/L)	1	1	STD75510	06/25/16 18:25
39	1LM.LM35500	WG574102-10 CCB	1	1		06/25/16 18:44
40	1LM.LM35501	L16060927-01 (RR Neat)	1	1		06/25/16 19:02
41	1LM.LM35502	L16060927-02 (RR 1000x)	1	1000		06/25/16 19:21
42	1LM.LM35503	L16061026-01 (RR Neat)	1	1		06/25/16 19:40
43	1LM.LM35504	L16061026-05 (RR 10,000x)	1	10000		06/25/16 19:59
44	1LM.LM35505	L16061026-07 (RR 50x)	1	50		06/25/16 20:18
45	1LM.LM35506	L16061142-06 (RR Neat)	1	1		06/25/16 20:37
46	1LM.LM35507	L16061144-03 (RR Neat)	1	1		06/25/16 20:56
47	1LM.LM35508	WG574102-11 CCV (1.0ug/L)	1	1	STD75510	06/25/16 21:15
48	1LM.LM35509	WG574101-10 MRL (0.2ug/L)	1	1	STD75510	06/25/16 21:34
49	1LM.LM35510	WG574102-12 CCB	1	1		06/25/16 21:53

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 2 Approved: 28-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: 04-MAY-2016 John Richards

Secondary Reviewer: 05-MAY-2016 Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 24-JUN-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 75960
Analytical Workgroups: L16060823, 0927, 1026, 1142, 1144

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
27-JUN-2016
John Richards

Secondary Reviewer:
28-JUN-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-28-2016 14:00:55

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG574101

Login Number: L16060927

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18CPTMW23SW-061516	01	06/15/16					06/24/2016	9.5	28		06/25/16	1	28	
18CPTMW23-061516	02	06/15/16					06/24/2016	9.4	28		06/25/16	1	28	
18CPTMW19SW-061516	03	06/15/16					06/24/2016	9.4	28		06/24/16	.2	28	
18CPTMW19-061516	04	06/15/16					06/24/2016	9.3	28		06/24/16	.2	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4827770
Report generated 06/28/2016 14:16

METHOD BLANK SUMMARY

Login Number: L16060927
Blank File ID: 1LM.LM35466
Prep Date: 06/24/16 19:00
Analyzed Date: 06/24/16 21:06
Analyst: JWR

Work Group: WG574101
Blank Sample ID: WG574101-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG574101-05	1LM.LM35464	06/24/16 20:28	01
MCT	WG574101-01	1LM.LM35465	06/24/16 20:47	01
LCS	WG574101-03	1LM.LM35467	06/24/16 21:25	01
18CPTMW19SW-061516	L16060927-03	1LM.LM35473	06/24/16 23:18	01
18CPTMW19-061516	L16060927-04	1LM.LM35474	06/24/16 23:37	01
QCMRL	WG574101-06	1LM.LM35476	06/25/16 00:15	01
QCMRL	WG574101-07	1LM.LM35489	06/25/16 04:22	01
LCS2	WG574101-04	1LM.LM35491	06/25/16 04:59	01
QCMRL	WG574101-08	1LM.LM35496	06/25/16 06:34	01
QCMRL	WG574101-09	1LM.LM35499	06/25/16 18:25	01
18CPTMW23SW-061516	L16060927-01	1LM.LM35501	06/25/16 19:02	01
18CPTMW23-061516	L16060927-02	1LM.LM35502	06/25/16 19:21	DL01
QCMRL	WG574101-10	1LM.LM35509	06/25/16 21:34	01

Report Name: BLANK_SUMMARY
PDF File ID: 4827771
Report generated 06/28/2016 14:16

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16060927 Prep Date: 06/24/16 19:00 Sample ID: WG574101-02
Instrument ID: LCMS1 Run Date: 06/24/16 21:06 Prep Method: 6850
File ID: 1LM.LM35466 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4827772
28-JUN-2016 14:16

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16060927 Analyst: JWR Prep Method: 6850
Instrument ID: LCMS1 Matrix: Water Method: 6850
Workgroup (AAB#): WG574101 Units: ug/L
QC Key: DOD4 Lot #: STD75512

Sample ID: WG574101-03 LCS File ID: 1LM.LM35467 Run Date: 06/24/2016 21:25
Sample ID: WG574101-04 LCS2 File ID: 1LM.LM35491 Run Date: 06/25/2016 04:59

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Perchlorate	0.200	0.208	104	0.200	0.213	107	2.38	80 - 120	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4827773
Report generated: 06/28/2016 14:16

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16060927
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4828715
Report generated 06/28/2016 14:16

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060927

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4828715
Report generated 06/28/2016 14:16

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060927

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4828715
Report generated 06/28/2016 14:16

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16060927

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008

PDF File ID: 4828715

Report generated 06/28/2016 14:16

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16060927 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4828716
Report generated 06/28/2016 14:16

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060927
Run Date: 06/24/2016
Sample ID: WG574102-01
Instrument ID: LCMS1
Run Time: 19:50
Method: 6850
File ID: 1LM.LM35462
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827776
Report generated 06/28/2016 14:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060927
Run Date: 06/25/2016
Sample ID: WG574102-04
Instrument ID: LCMS1
Run Time: 00:34
Method: 6850
File ID: 1LM.LM35477
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827776
Report generated 06/28/2016 14:16

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060927
Run Date: 06/25/2016
Sample ID: WG574102-06
Instrument ID: LCMS1
Run Time: 04:40
Method: 6850
File ID: 1LM.LM35490
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827776
Report generated 06/28/2016 14:16

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060927
Run Date: 06/25/2016
Sample ID: WG574102-08
Instrument ID: LCMS1
Run Time: 06:53
Method: 6850
File ID: 1LM.LM35497
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827776
Report generated 06/28/2016 14:16

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060927
Run Date: 06/25/2016
Sample ID: WG574102-10
Instrument ID: LCMS1
Run Time: 18:44
Method: 6850
File ID: 1LM.LM35500
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827776
Report generated 06/28/2016 14:16

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16060927
Run Date: 06/25/2016
Sample ID: WG574102-12
Instrument ID: LCMS1
Run Time: 21:53
Method: 6850
File ID: 1LM.LM35510
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827776
Report generated 06/28/2016 14:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060927
Run Date: 06/24/2016
Sample ID: WG574102-02
Instrument ID: LCMS1
Run Time: 20:09
Method: 6850
File ID: 1LM.LM35463
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.70	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827775
Report generated 06/28/2016 14:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060927
Run Date: 06/24/2016
Sample ID: WG574102-03
Instrument ID: LCMS1
Run Time: 23:56
Method: 6850
File ID: 1LM.LM35475
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.70	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827775
Report generated 06/28/2016 14:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060927
Run Date: 06/25/2016
Sample ID: WG574102-05
Instrument ID: LCMS1
Run Time: 04:03
Method: 6850
File ID: 1LM.LM35488
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.75	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827775
Report generated 06/28/2016 14:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060927
Run Date: 06/25/2016
Sample ID: WG574102-07
Instrument ID: LCMS1
Run Time: 06:15
Method: 6850
File ID: 1LM.LM35495
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.72	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827775
Report generated 06/28/2016 14:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060927
Run Date: 06/25/2016
Sample ID: WG574102-09
Instrument ID: LCMS1
Run Time: 18:06
Method: 6850
File ID: 1LM.LM35498
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.76	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827775
Report generated 06/28/2016 14:16

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16060927 Run Date: 06/25/2016 Sample ID: WG574102-11
Instrument ID: LCMS1 Run Time: 21:15 Method: 6850
File ID: 1LM.LM35508 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG574101 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.73	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827775
Report generated 06/28/2016 14:16

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060927 Run Date: 06/24/2016 Sample ID: WG574101-05
Instrument ID: LCMS1 Run Time: 20:28 Prep Method: 6850
File ID: 1LM.LM35464 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827774
Report generated 06/28/2016 14:16

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060927 Run Date: 06/25/2016 Sample ID: WG574101-06
Instrument ID: LCMS1 Run Time: 00:15 Prep Method: 6850
File ID: 1LM.LM35476 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.198	99.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827774
Report generated 06/28/2016 14:16

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060927 Run Date: 06/25/2016 Sample ID: WG574101-07
Instrument ID: LCMS1 Run Time: 04:22 Prep Method: 6850
File ID: 1LM.LM35489 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.211	106	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827774
Report generated 06/28/2016 14:16

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060927 Run Date: 06/25/2016 Sample ID: WG574101-08
Instrument ID: LCMS1 Run Time: 06:34 Prep Method: 6850
File ID: 1LM.LM35496 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.201	101	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827774
Report generated 06/28/2016 14:16

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060927 Run Date: 06/25/2016 Sample ID: WG574101-09
Instrument ID: LCMS1 Run Time: 18:25 Prep Method: 6850
File ID: 1LM.LM35499 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.207	104	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827774
Report generated 06/28/2016 14:16

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16060927 Run Date: 06/25/2016 Sample ID: WG574101-10
Instrument ID: LCMS1 Run Time: 21:34 Prep Method: 6850
File ID: 1LM.LM35509 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827774
Report generated 06/28/2016 14:16

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16060927
Instrument ID: LCMS1
Workgroup (AAB#): WG574101

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16060927-01	1.00	01	390000
L16060927-02	1000	DL01	471000
L16060927-03	1.00	01	418000
L16060927-04	1.00	01	463000
WG574101-02	1.00	01	443000
WG574101-03	1.00	01	444000
WG574101-04	1.00	01	526000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4827777
Report generated 06/28/2016 14:16

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**	6850	**Samplenum:**	L16060927-01
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35501
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 19:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	53800	19600	2.74	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**	6850	**Samplenum:**	L16060927-02
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35502
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 19:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	367000	129000	2.84	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**	6850	**Samplenum:**	L16060927-03
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35473
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 23:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	176000	61700	2.85	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**	6850	**Samplenum:**	L16060927-04
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35474
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 23:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	828000	283000	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**	6850	**Samplenum:**	WG574101-01
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35465
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 20:47	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	28100	10000	2.81	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**	6850	**Samplenum:**	WG574101-02
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35466
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 21:06	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**	6850	**Samplenum:**	WG574101-03
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35467
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 21:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	31600	11800	2.68	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**	6850	**Samplenum:**	WG574101-04
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35491
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 04:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38300	14000	2.74	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**	6850	**Samplenum:**	WG574101-05
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35464
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 20:28	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	31600	12100	2.61	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**	6850	**Samplenum:**	WG574101-06
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35476
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 00:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35000	13100	2.67	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**	6850	**Samplenum:**	WG574101-07
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35489
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 04:22	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38900	13400	2.90	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**	6850	**Samplenum:**	WG574101-08
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35496
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 06:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38000	14100	2.70	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**	6850	**Samplenum:**	WG574101-09
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35499
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 18:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32900	11500	2.86	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**	6850	**Samplenum:**	WG574101-10
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35509
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 21:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37900	14000	2.71	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**		**Samplenum:**	WG574102-01
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:50	**File ID:**	1LM.LM35462
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 19:50	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**		**Samplenum:**	WG574102-02
Instrument:	LCMS1	**Prep Date:**	06/24/2016 20:09	**File ID:**	1LM.LM35463
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 20:09	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	152000	55500	2.74	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**		**Samplenum:**	WG574102-03
Instrument:	LCMS1	**Prep Date:**	06/24/2016 23:56	**File ID:**	1LM.LM35475
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 23:56	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	170000	57500	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**		**Samplenum:**	WG574102-04
Instrument:	LCMS1	**Prep Date:**	06/25/2016 00:34	**File ID:**	1LM.LM35477
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 00:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	824	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**		**Samplenum:**	WG574102-05
Instrument:	LCMS1	**Prep Date:**	06/25/2016 04:03	**File ID:**	1LM.LM35488
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 04:03	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	179000	60200	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**		**Samplenum:**	WG574102-06
Instrument:	LCMS1	**Prep Date:**	06/25/2016 04:40	**File ID:**	1LM.LM35490
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 04:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**		**Samplenum:**	WG574102-07
Instrument:	LCMS1	**Prep Date:**	06/25/2016 06:15	**File ID:**	1LM.LM35495
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 06:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	189000	63400	2.98	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**		**Samplenum:**	WG574102-08
Instrument:	LCMS1	**Prep Date:**	06/25/2016 06:53	**File ID:**	1LM.LM35497
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 06:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	518	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**		**Samplenum:**	WG574102-09
Instrument:	LCMS1	**Prep Date:**	06/25/2016 18:06	**File ID:**	1LM.LM35498
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 18:06	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	161000	56700	2.84	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**		**Samplenum:**	WG574102-10
Instrument:	LCMS1	**Prep Date:**	06/25/2016 18:44	**File ID:**	1LM.LM35500
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 18:44	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**		**Samplenum:**	WG574102-11
Instrument:	LCMS1	**Prep Date:**	06/25/2016 21:15	**File ID:**	1LM.LM35508
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 21:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	176000	59300	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16060927	**Prep Method:**		**Samplenum:**	WG574102-12
Instrument:	LCMS1	**Prep Date:**	06/25/2016 21:53	**File ID:**	1LM.LM35510
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 21:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

2.2.2.3 Sample Data

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Data File	LM35501.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 7:02:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060927-01 (RR Neat)	**Injection Vial**	28.00
Data File	LM35501.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 7:02:57 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	L16060927-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.900e+05	9.36	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.380e+04	9.37	N/A	0.407
Perchlorate conf	1.960e+04	9.36	N/A	0.431

O18LP (Internal Standard)

RT (Exp. RT): 9.36(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

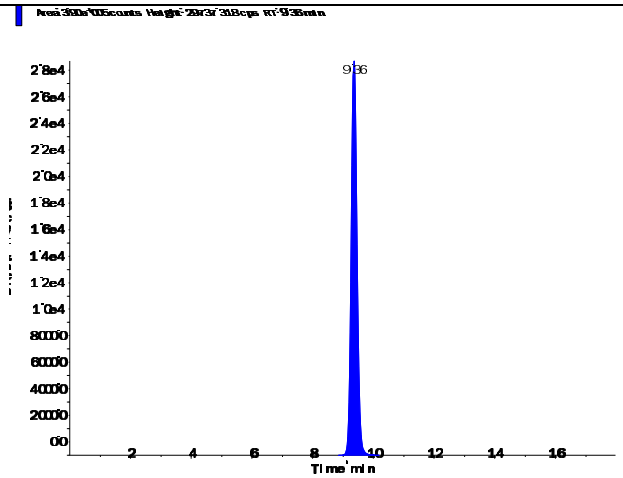

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.37 (9.84) min
Calculated conc:	0.407 ng/ml
Area Ratio:	0.138
Sample Type:	(Unknown)

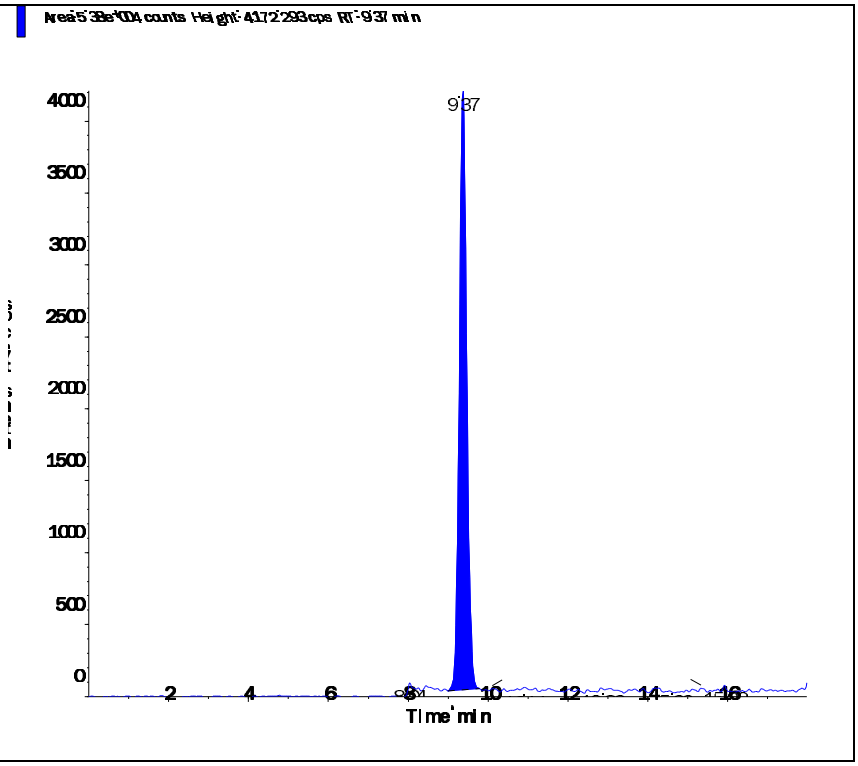

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.36 (9.84) min
Calculated conc:	0.431 ng/ml
Area Ratio:	0.05
Sample Type:	(Unknown)

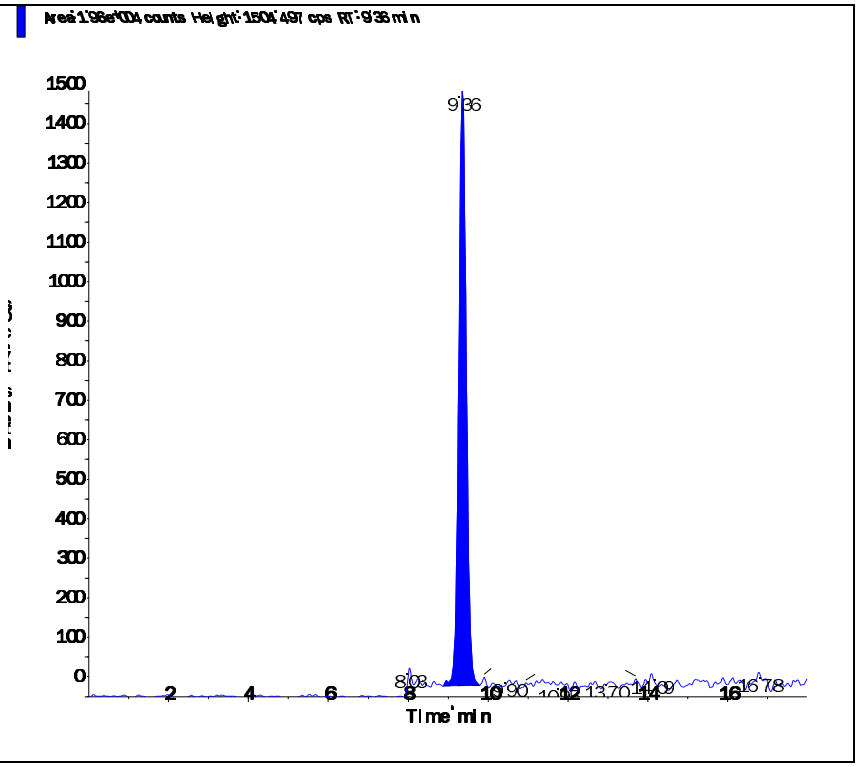

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Data File	LM35502.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 7:21:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060927-02 (RR 1000x)	**Injection Vial**	29.00
Data File	LM35502.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 7:21:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	L16060927-02	**Dilution Factor**	1.00
Sample Comment	11,000.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.710e+05	9.62	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.670e+05	9.63	N/A	2.31
Perchlorate conf	1.290e+05	9.62	N/A	2.44

O18LP (Internal Standard)

RT (Exp. RT): 9.62(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

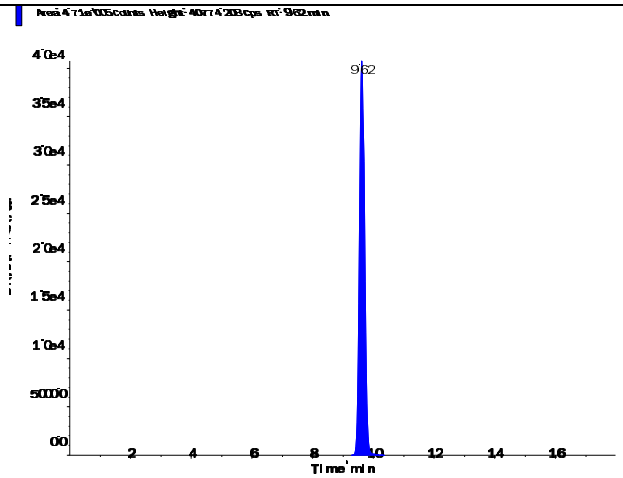

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.63 (9.84) min
Calculated conc:	2.31 ng/ml
Area Ratio:	0.779
Sample Type:	(Unknown)

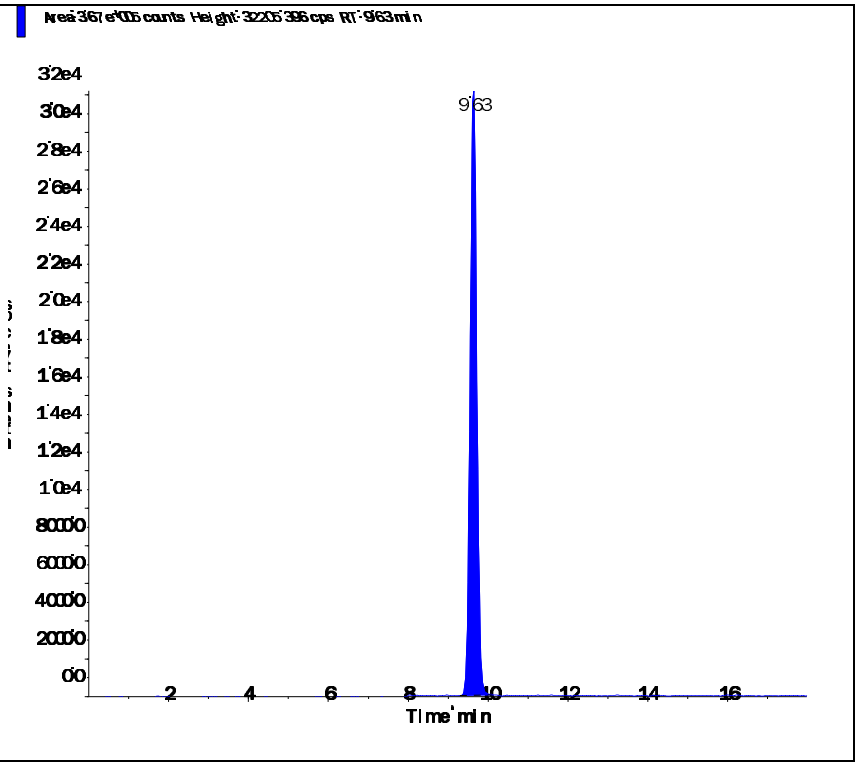

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.62 (9.84) min
Calculated conc:	2.44 ng/ml
Area Ratio:	0.274
Sample Type:	(Unknown)

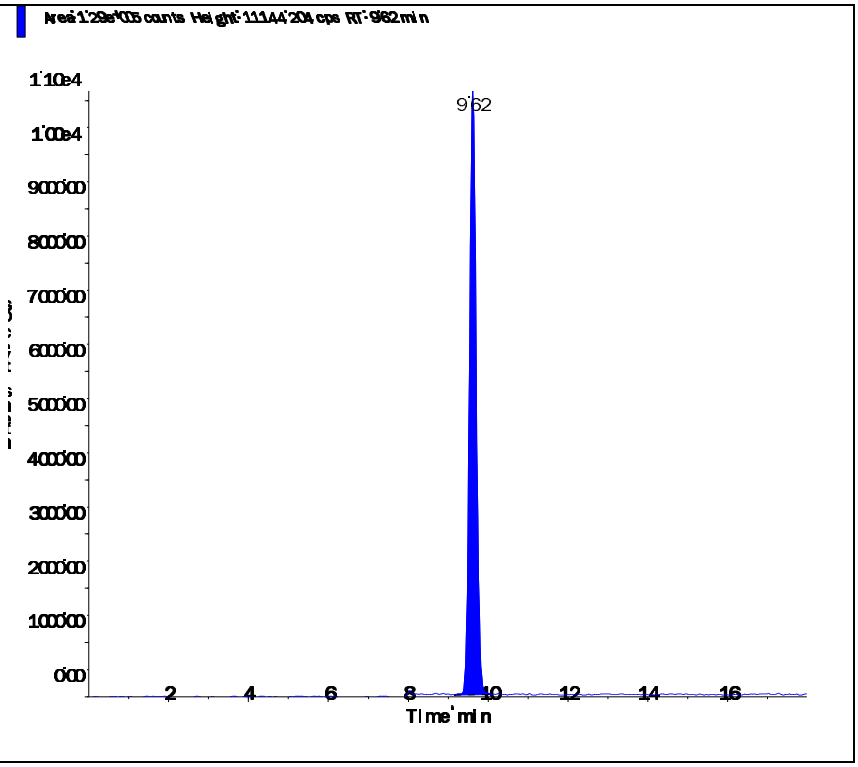

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Data File	LM35473.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 11:18:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060927-03	**Injection Vial**	13.00
Data File	LM35473.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 11:18:58 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	L16060927-03	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.180e+05	9.37	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.760e+05	9.38	N/A	1.25
Perchlorate conf	6.170e+04	9.37	N/A	1.30

O18LP (Internal Standard)

RT (Exp. RT): 9.37(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

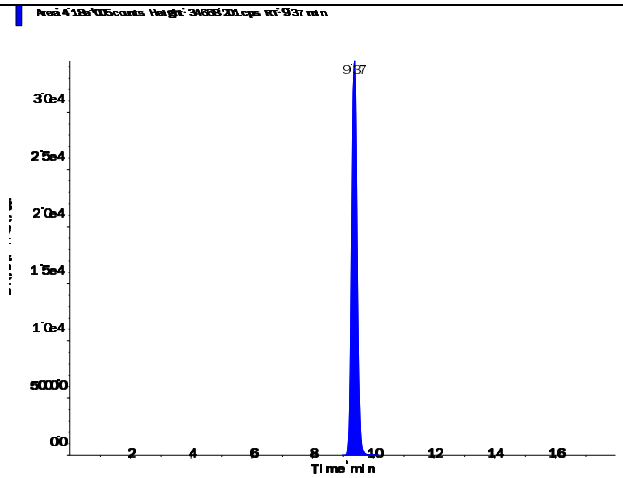

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	1.25 ng/ml
Area Ratio:	0.421
Sample Type:	(Unknown)

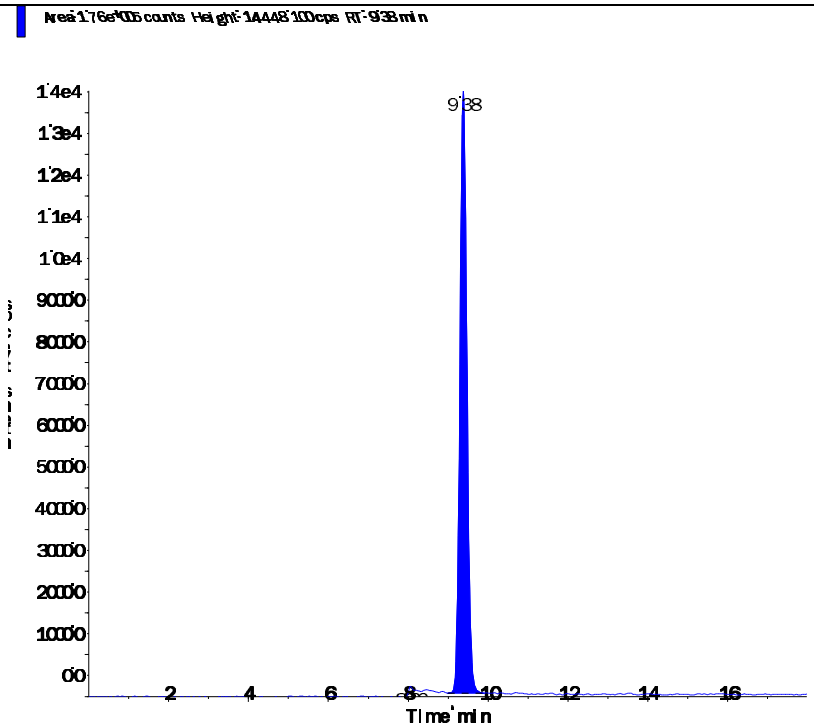

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.37 (9.84) min
Calculated conc:	1.30 ng/ml
Area Ratio:	0.147
Sample Type:	(Unknown)

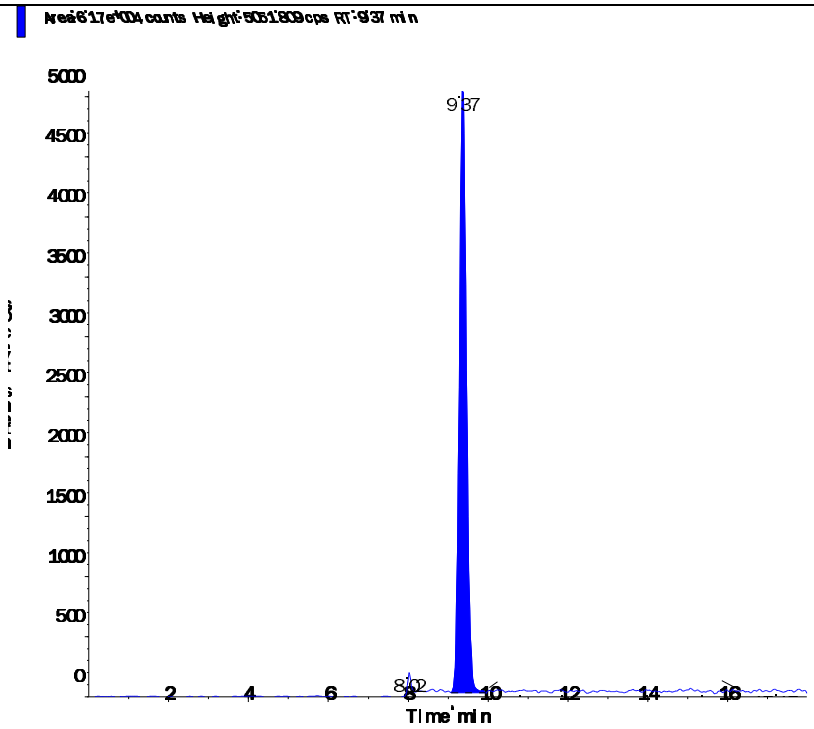

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Data File	LM35474.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 11:37:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16060927-04	**Injection Vial**	14.00
Data File	LM35474.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 11:37:53 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	L16060927-04	**Dilution Factor**	1.00
Sample Comment	1,1 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.630e+05	9.50	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.280e+05	9.51	N/A	5.31
Perchlorate conf	2.830e+05	9.50	N/A	5.46

O18LP (Internal Standard)

RT (Exp. RT): 9.50(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

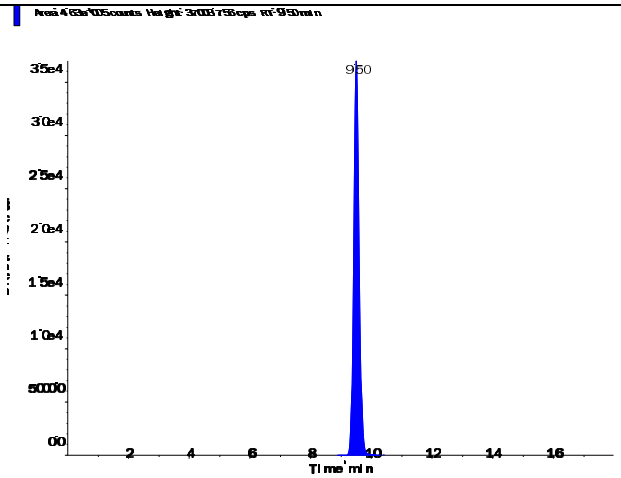

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.51 (9.84) min
Calculated conc:	5.31 ng/ml
Area Ratio:	1.787
Sample Type:	(Unknown)

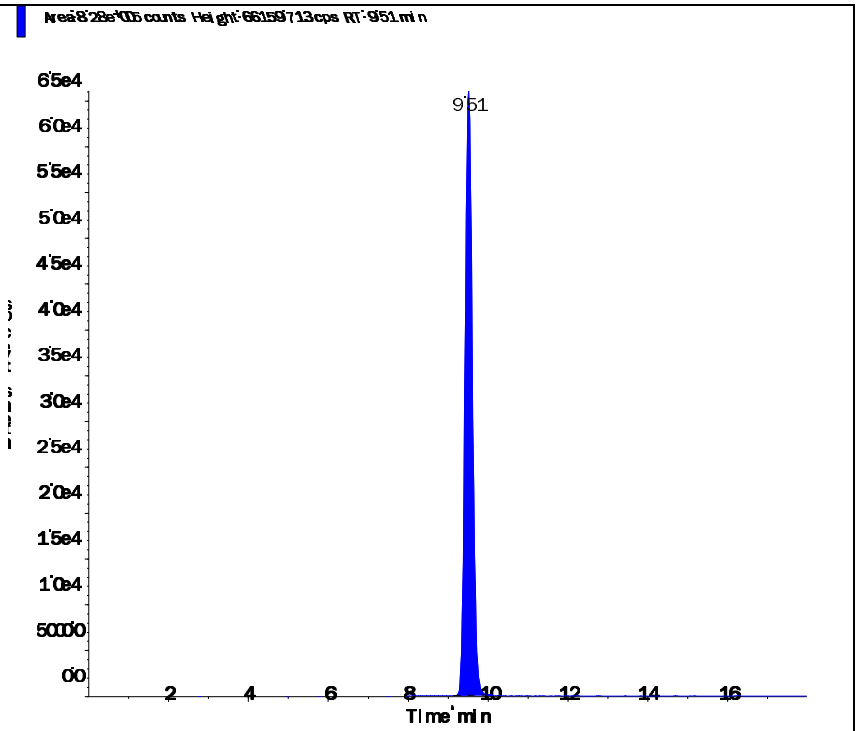

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.50 (9.84) min
Calculated conc:	5.46 ng/ml
Area Ratio:	0.612
Sample Type:	(Unknown)

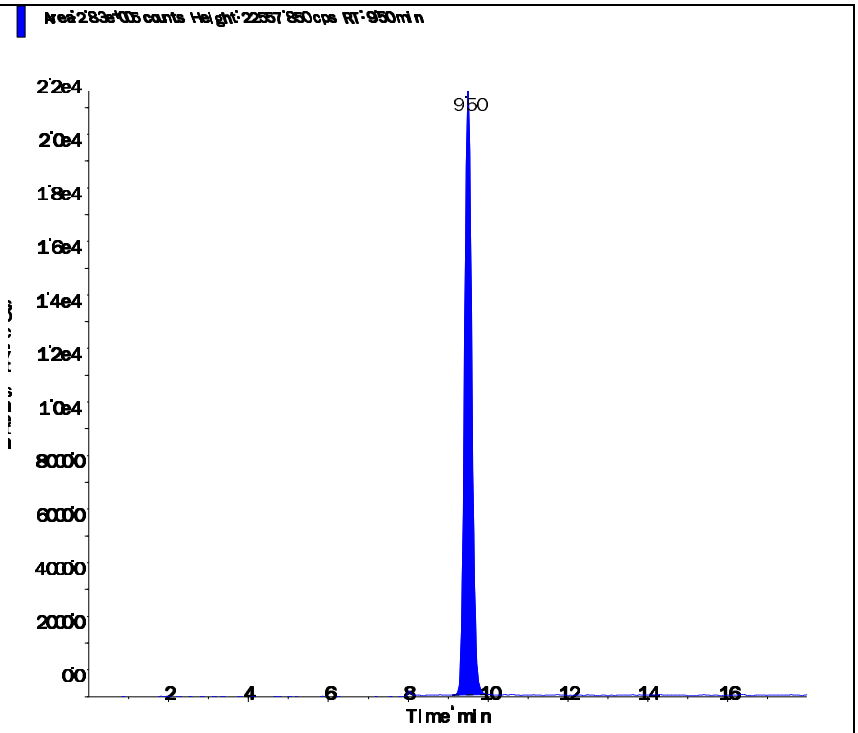

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2.2.2.4 Standards Data

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Data File	LM34686.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

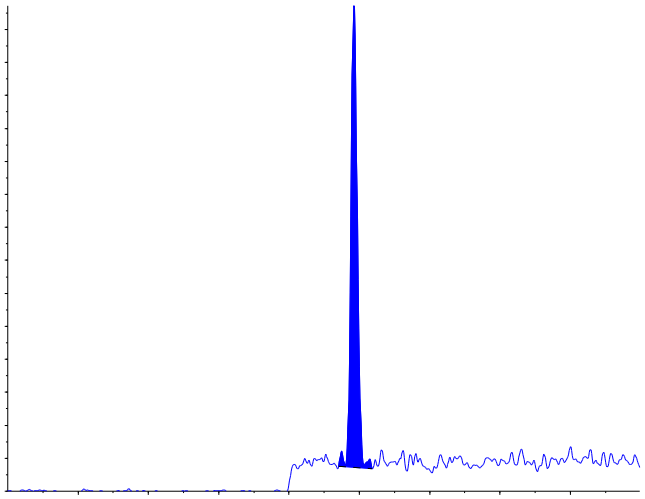

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	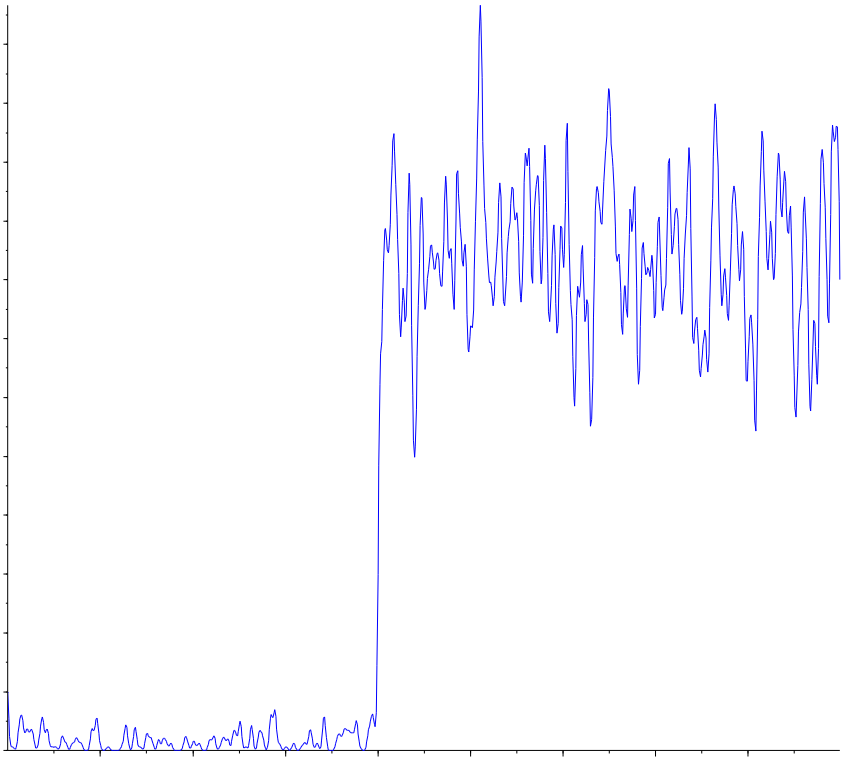
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	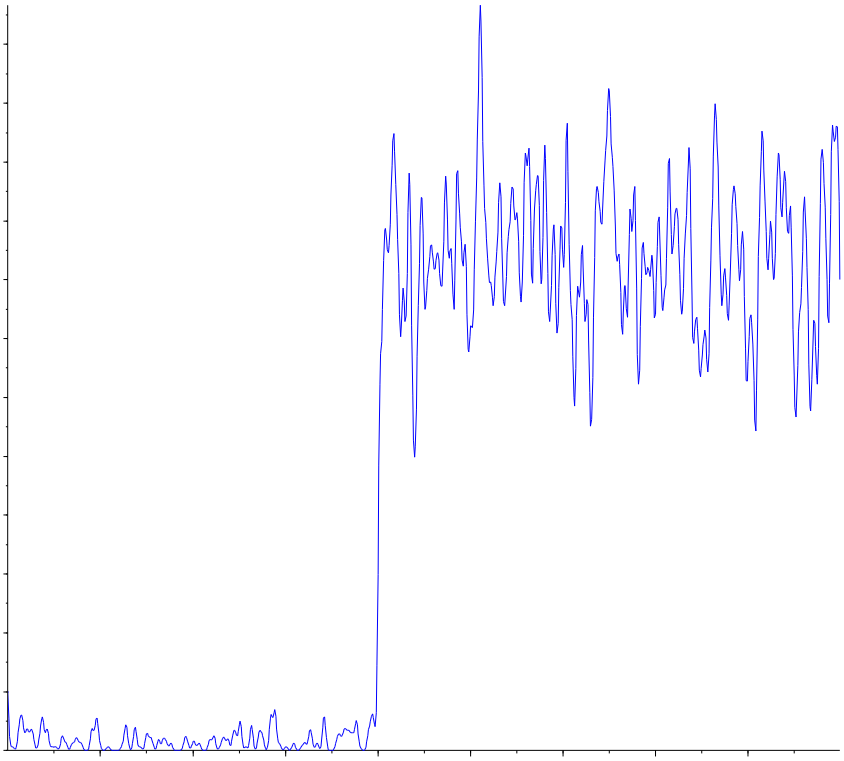

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Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

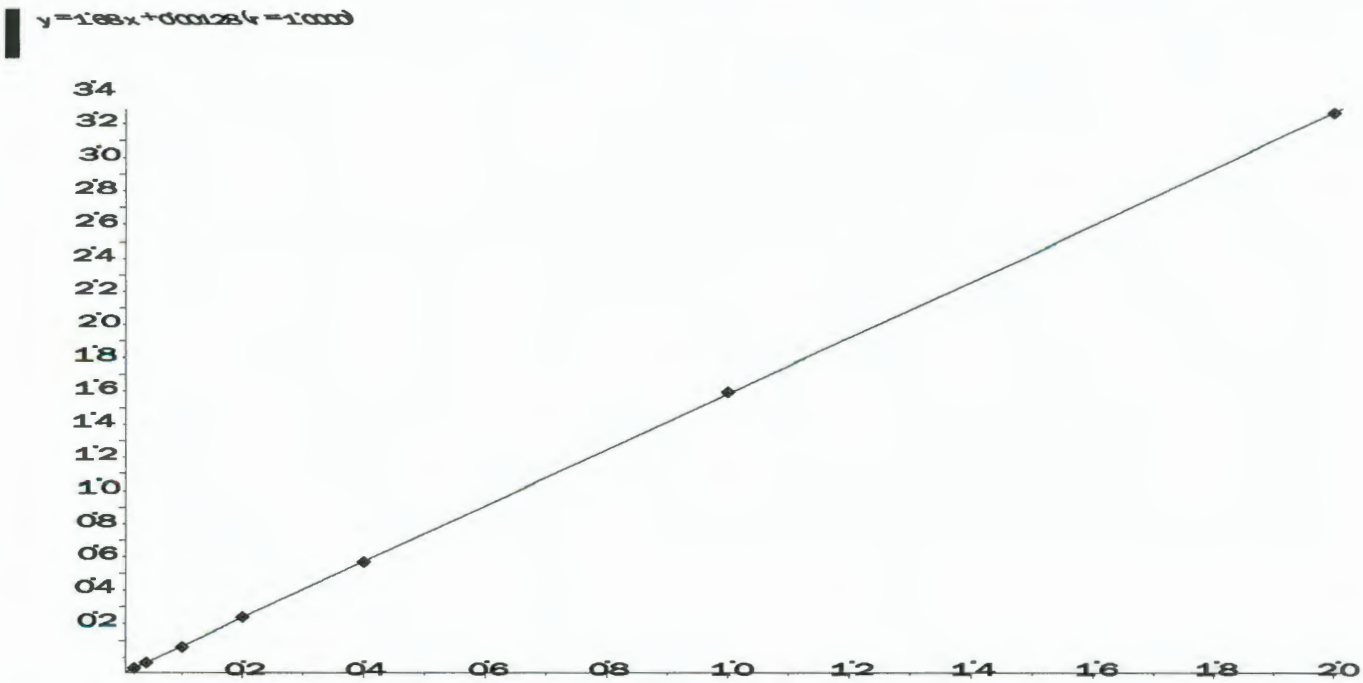

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Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

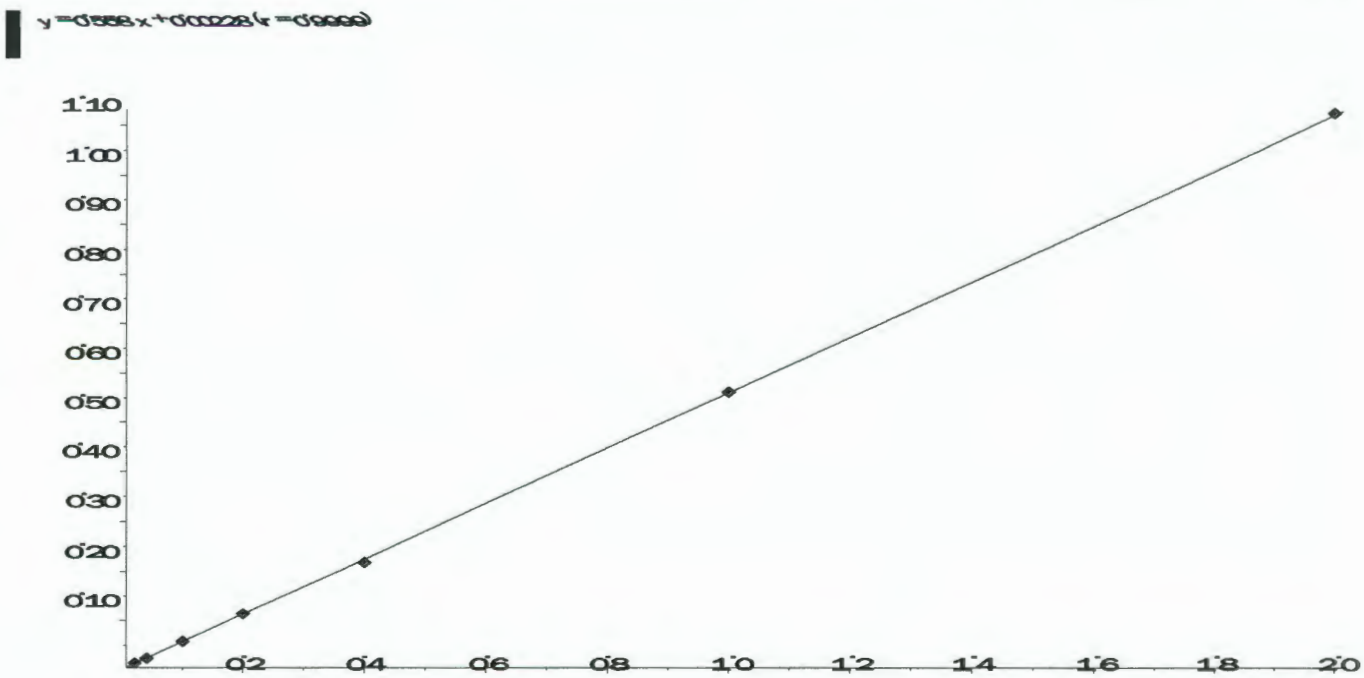

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Data File	LM34687.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

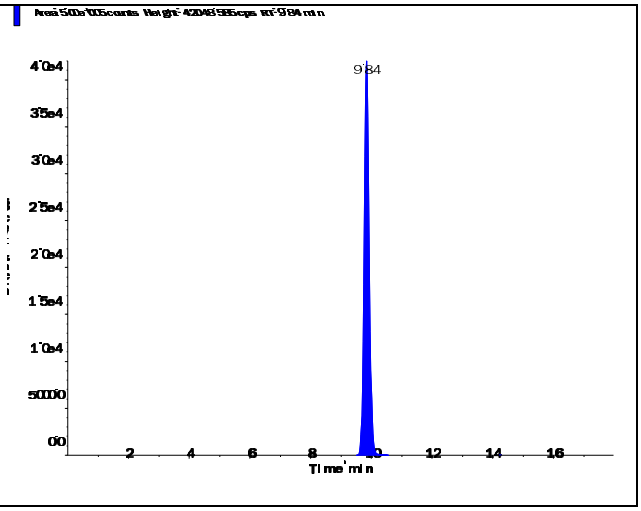

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.103 ng/ml
Area Ratio:	0.036
Sample Type:	(Standard)

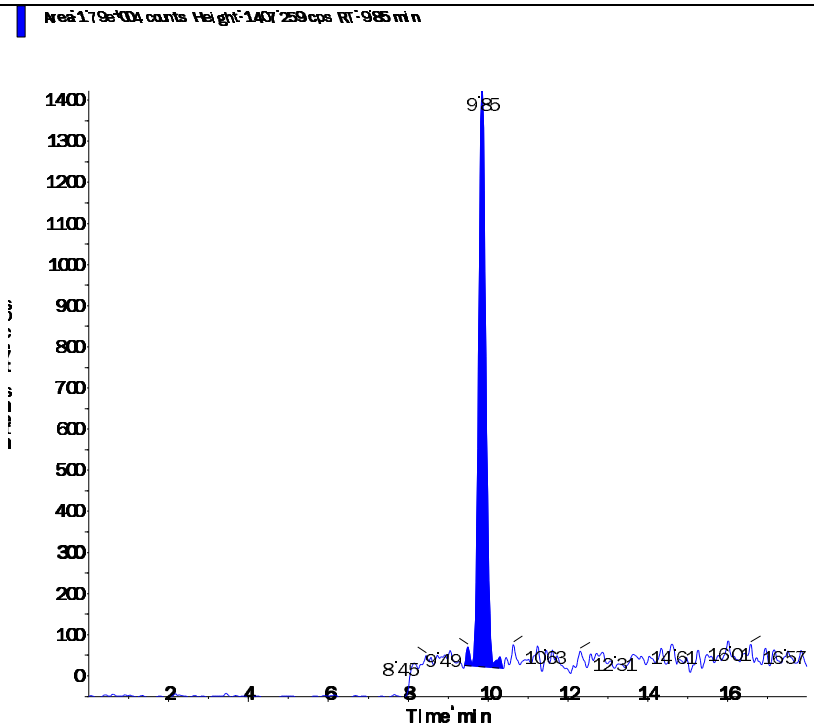

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.104 ng/ml
Area Ratio:	0.014
Sample Type:	(Standard)

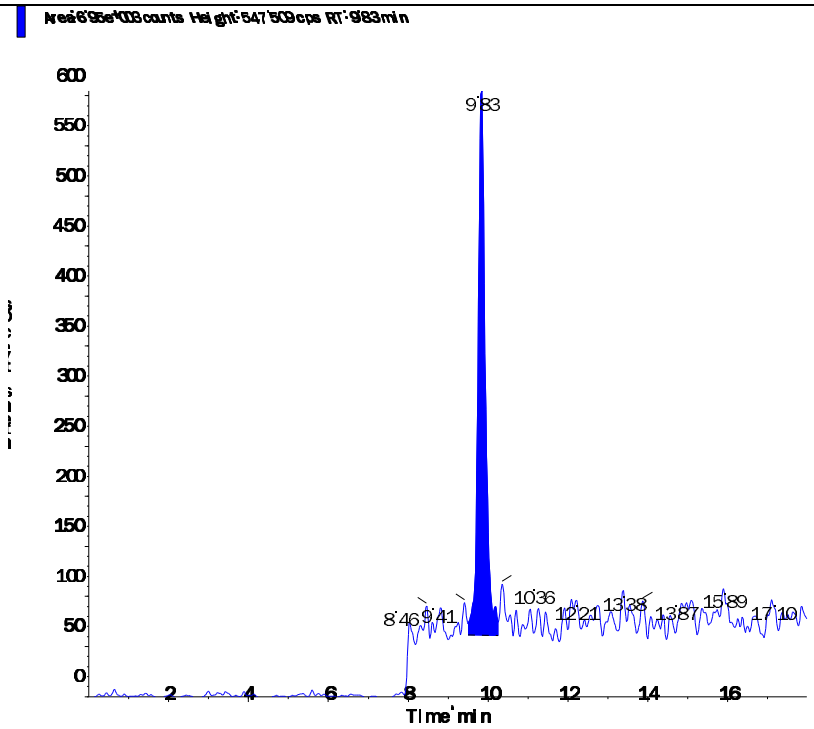

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Data File	LM34688.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

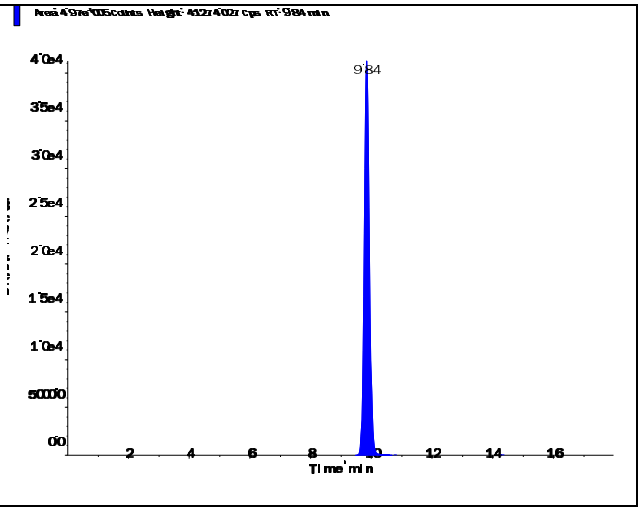

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

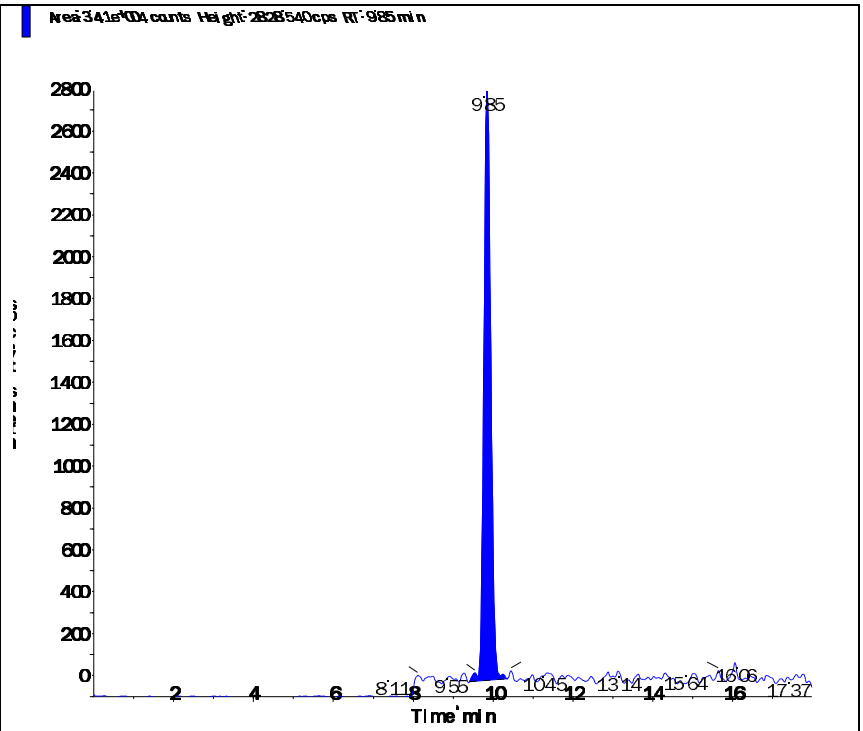

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

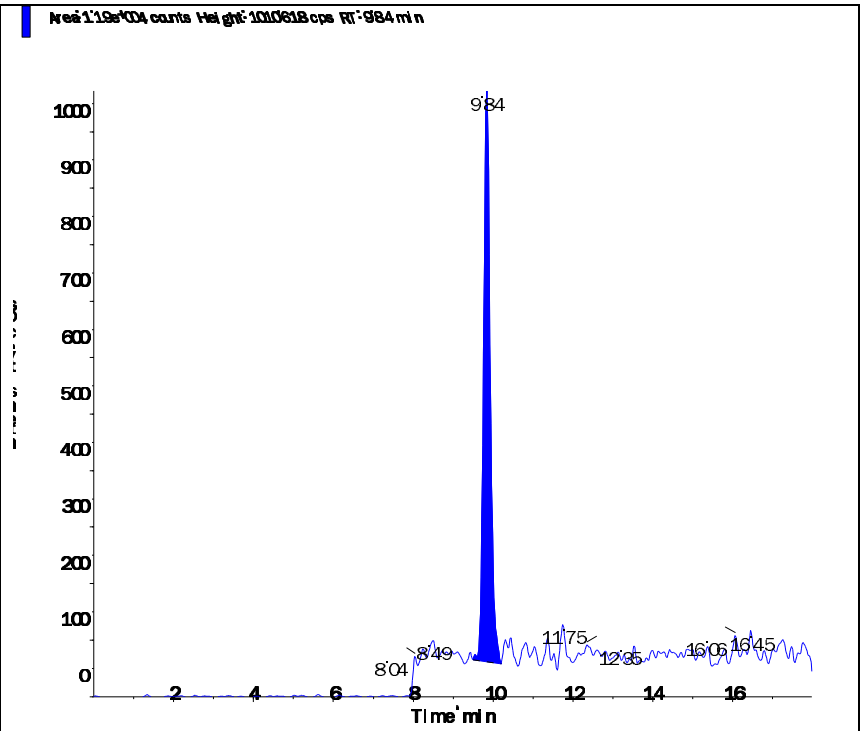

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Data File	LM34689.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

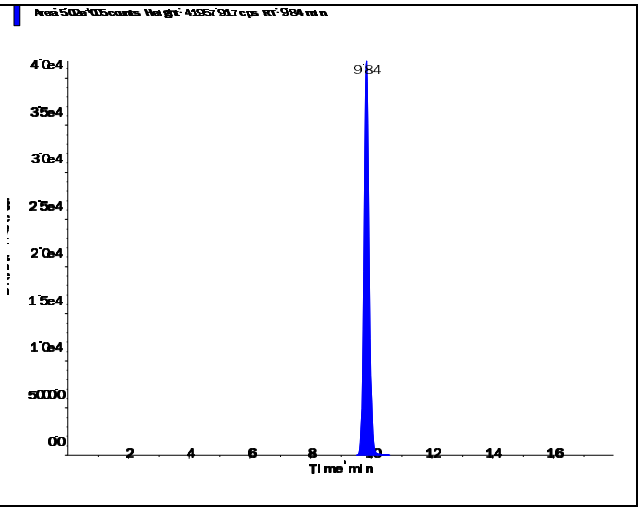

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.483 ng/ml
Area Ratio:	0.164
Sample Type:	(Standard)

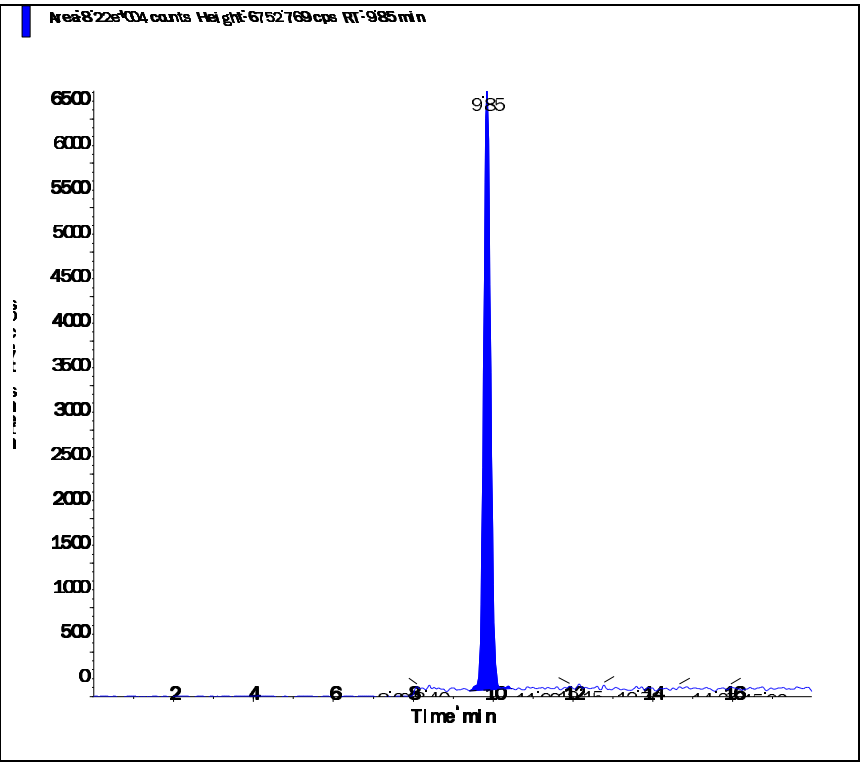

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.503 ng/ml
Area Ratio:	0.058
Sample Type:	(Standard)

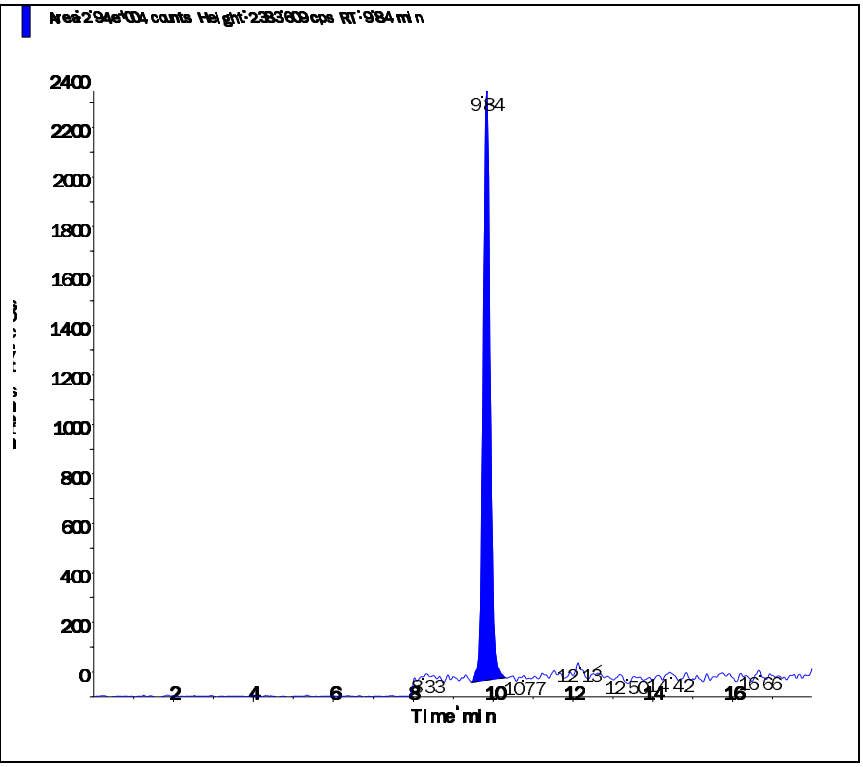

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Data File	LM34690.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

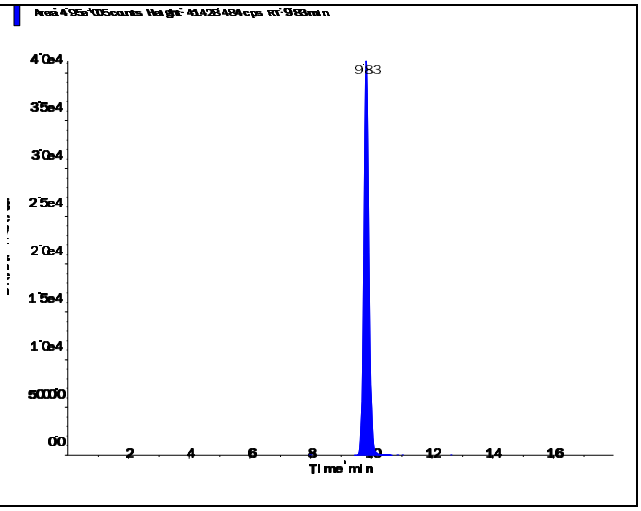

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

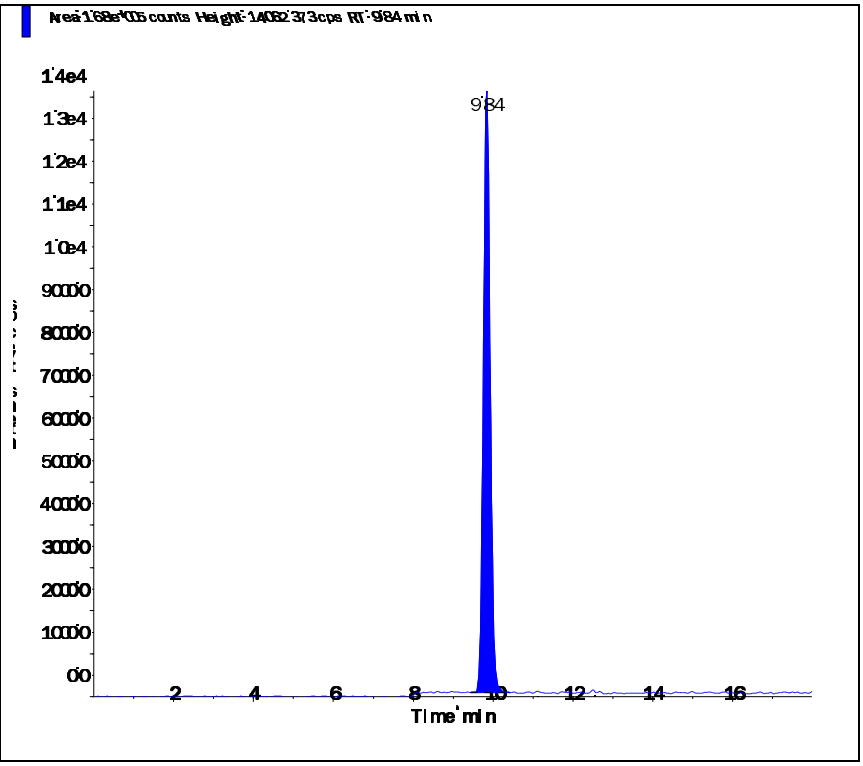

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

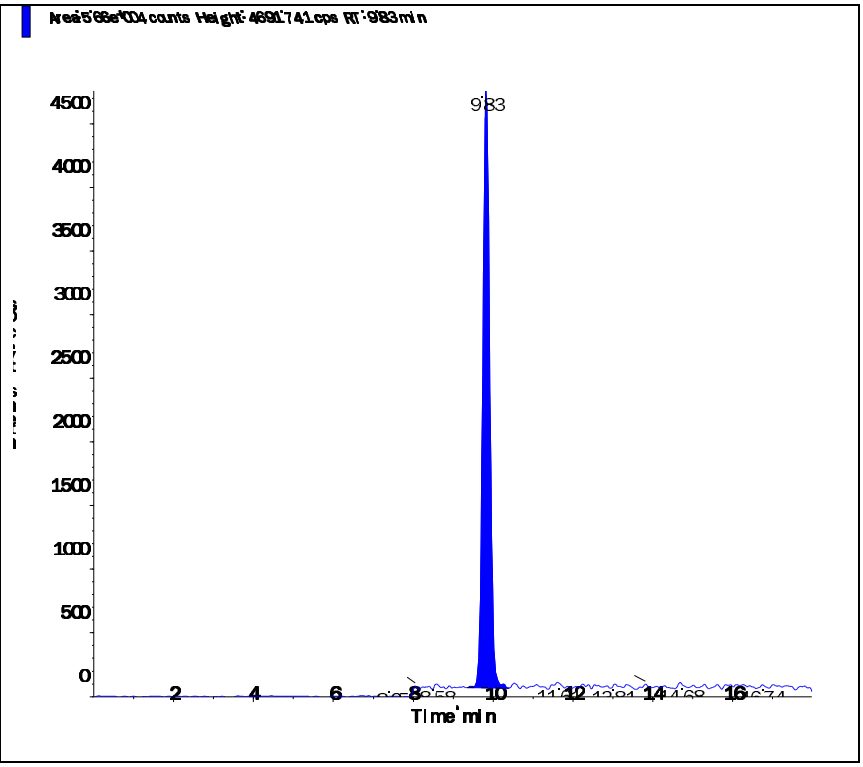

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Data File	LM34691.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

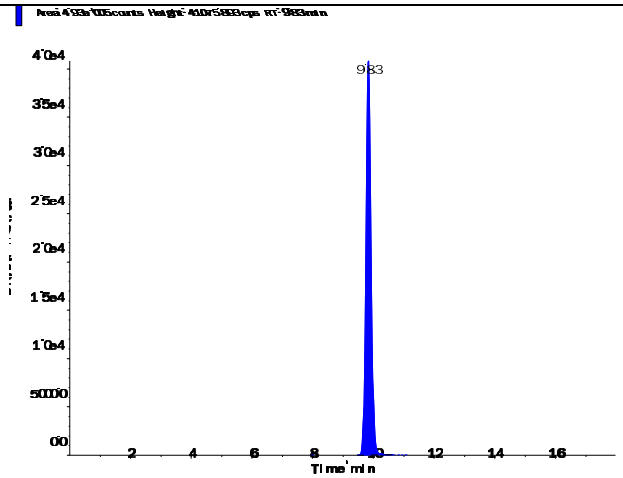

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.99 ng/ml
Area Ratio:	0.669
Sample Type:	(Standard)

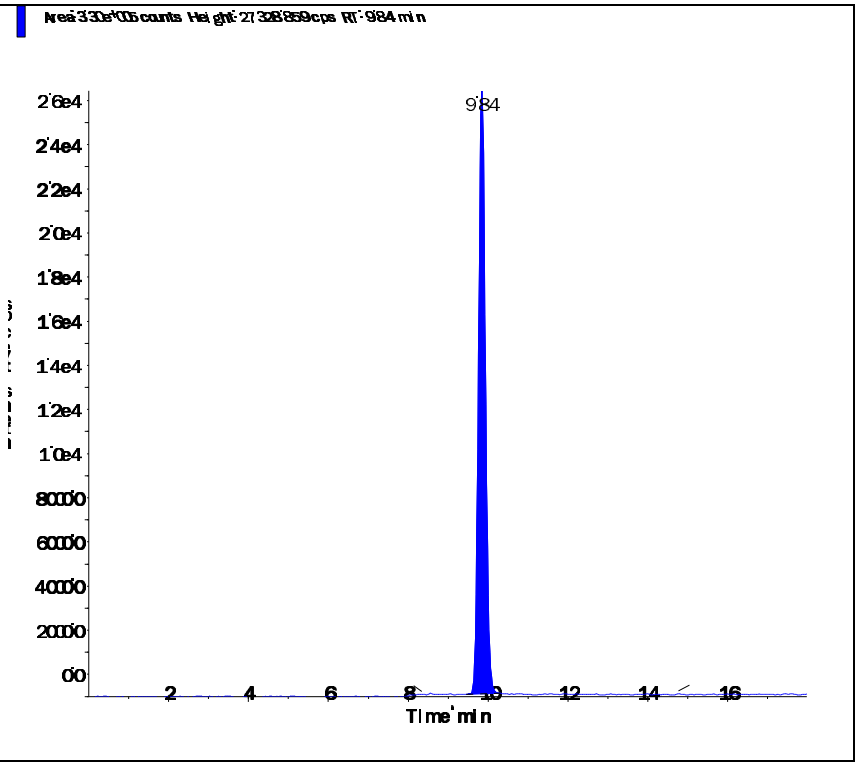

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.94 ng/ml
Area Ratio:	0.219
Sample Type:	(Standard)

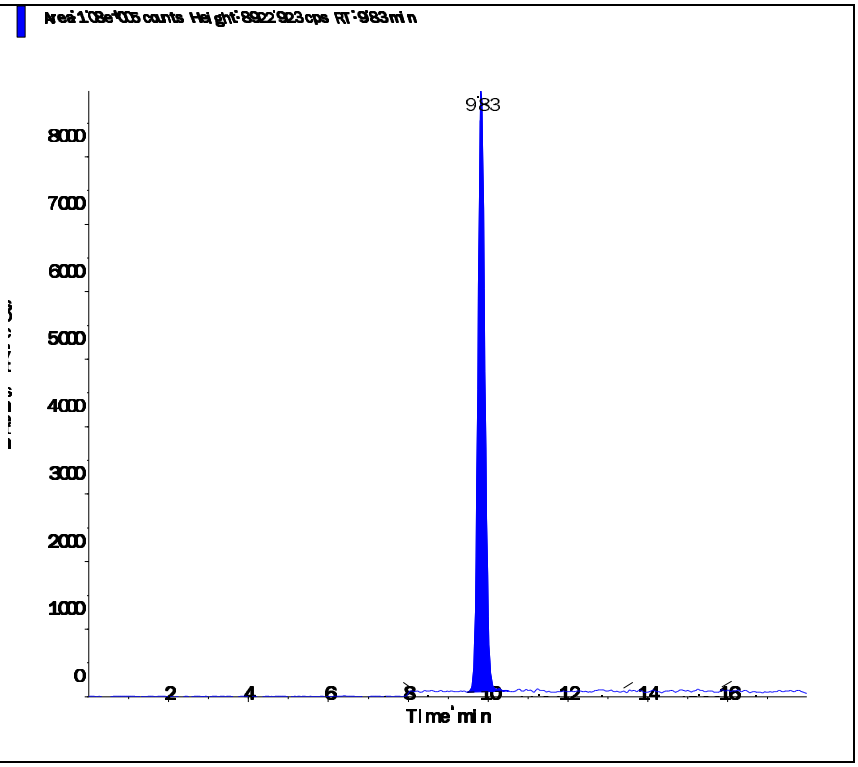

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Data File	LM34692.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

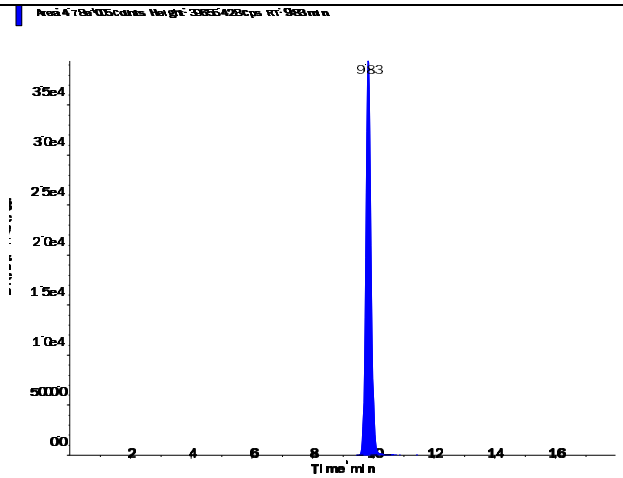

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

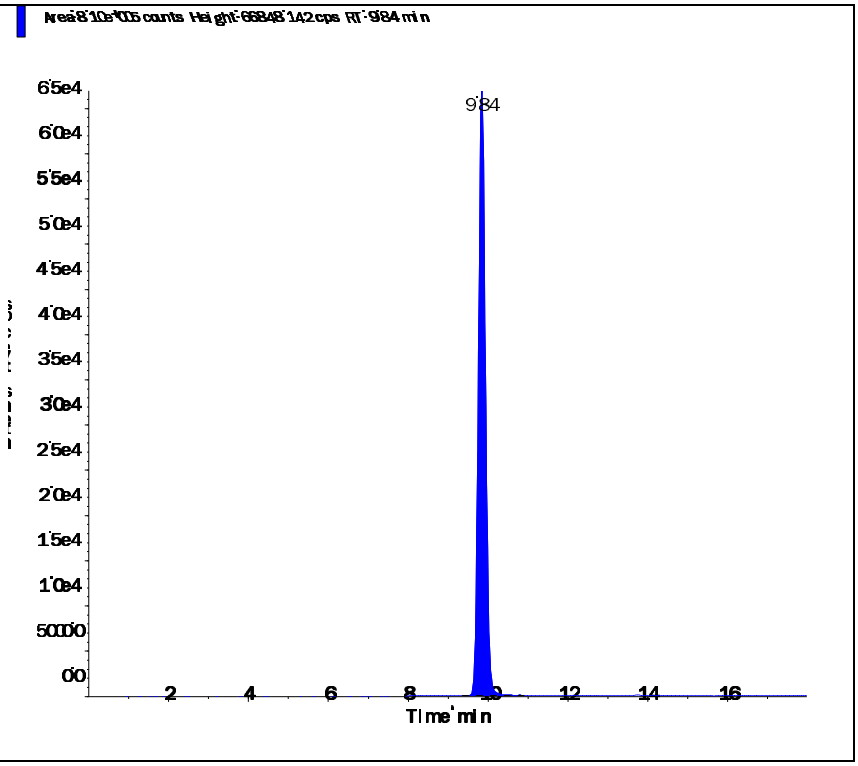

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

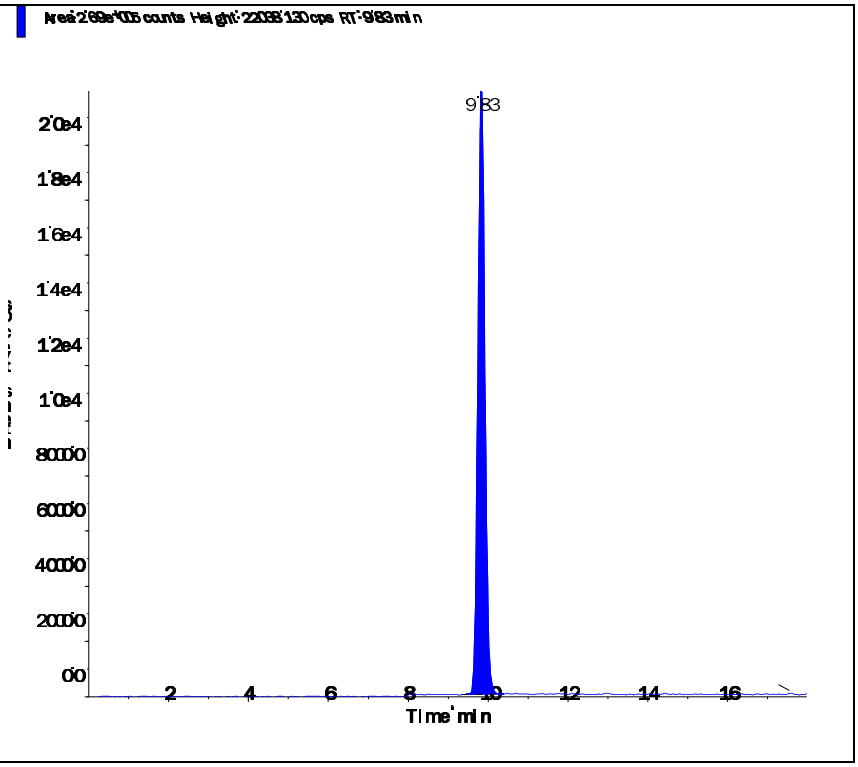

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Data File	LM34693.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

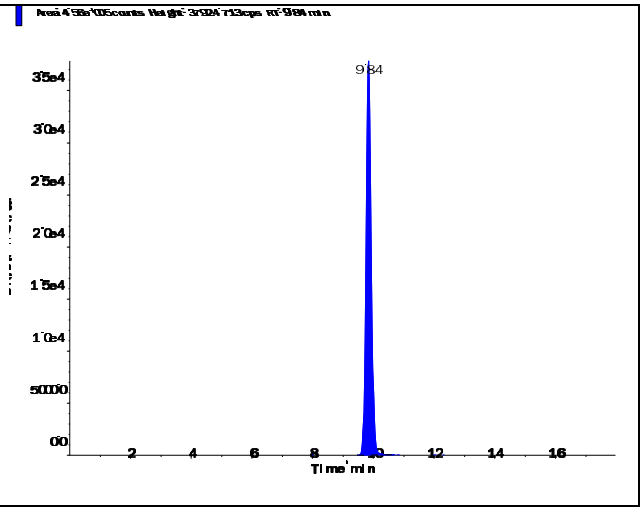

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	9.99 ng/ml
Area Ratio:	3.36
Sample Type:	(Standard)

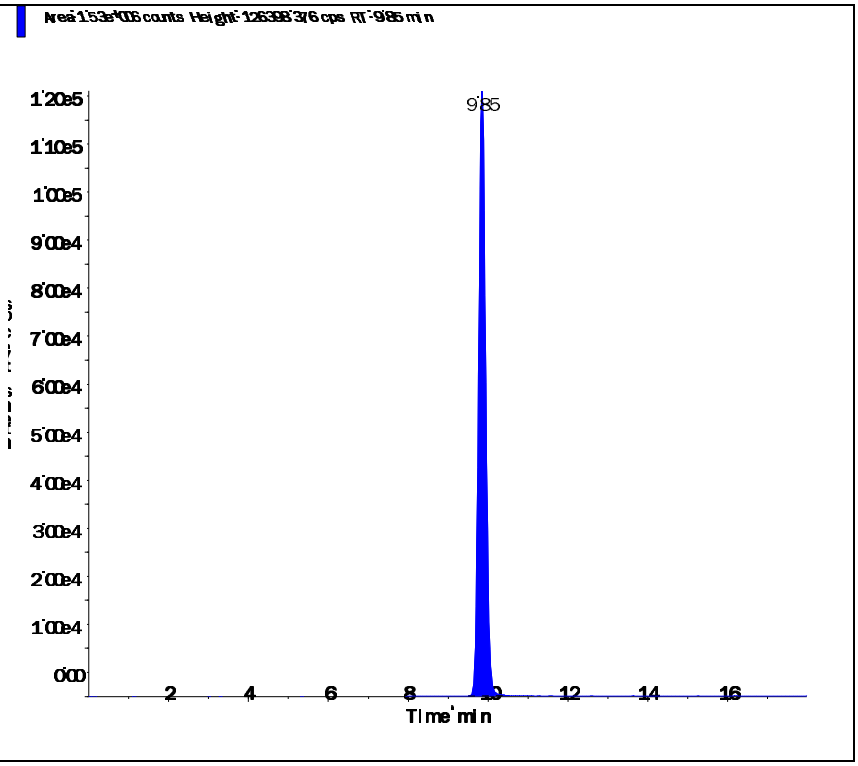

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	10.00 ng/ml
Area Ratio:	1.122
Sample Type:	(Standard)

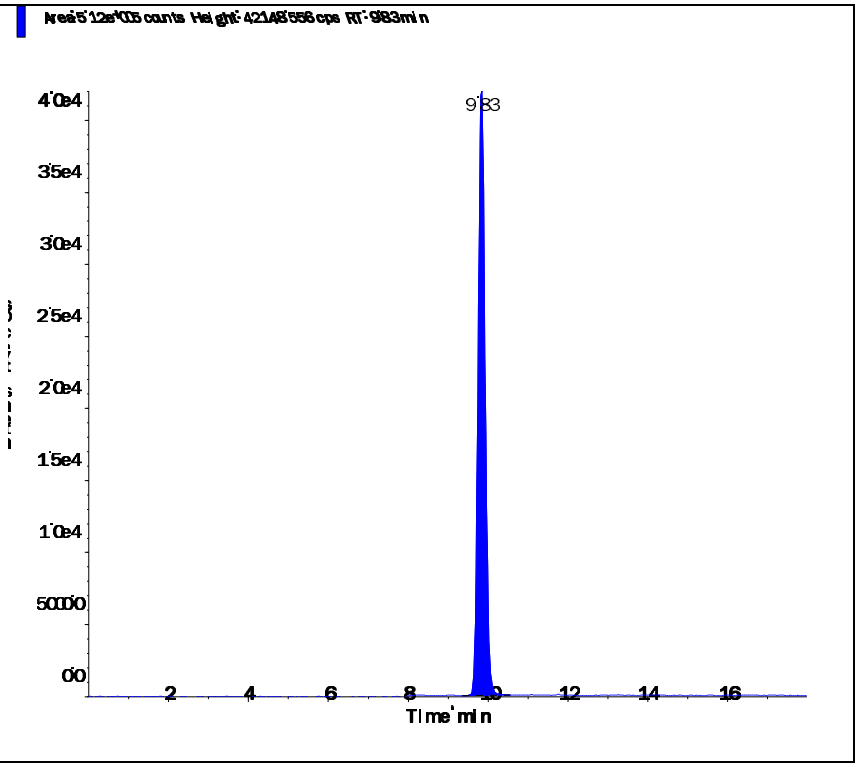

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Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

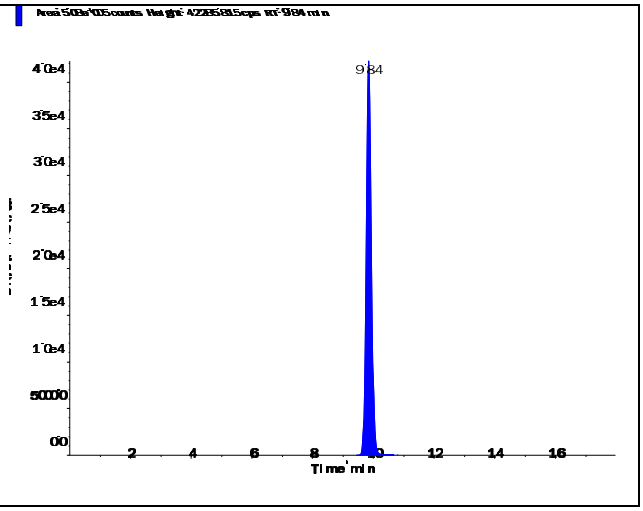

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.332
Sample Type:	(Quality Control)

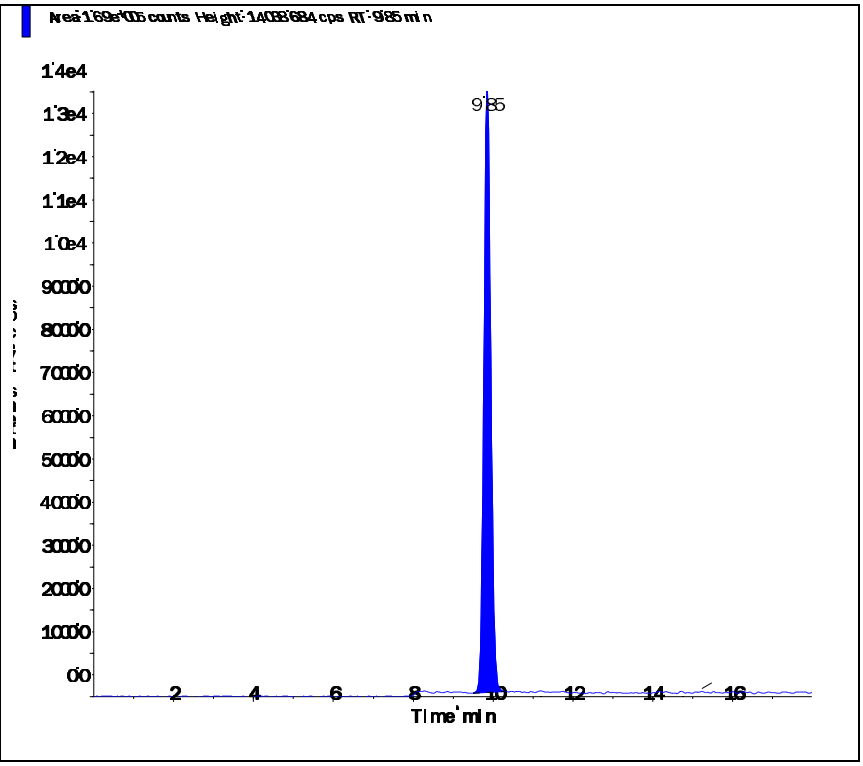

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

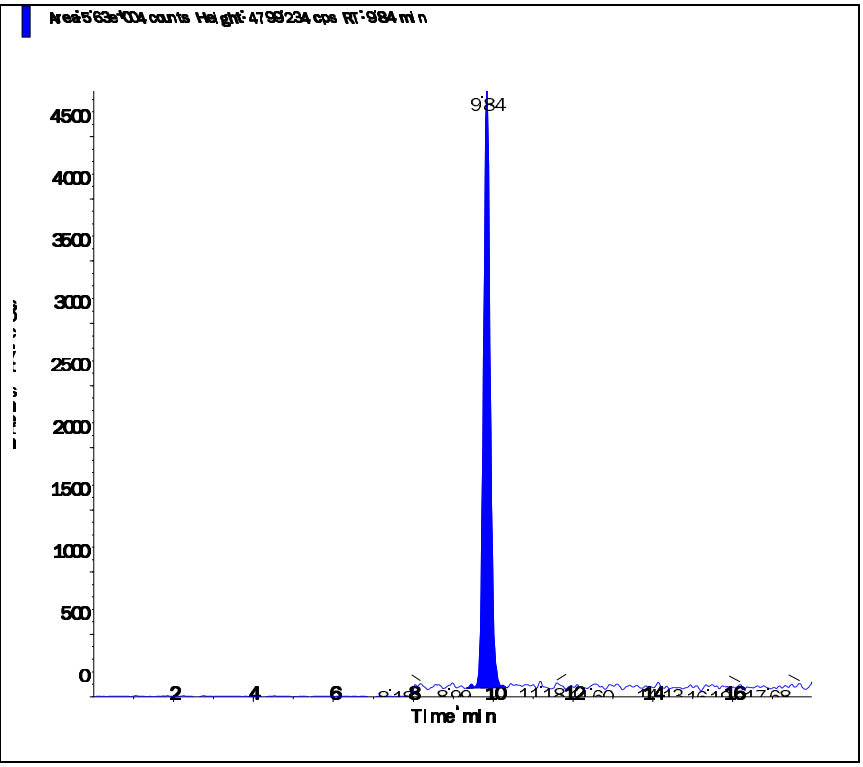

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Data File	LM35463.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 8:09:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35463.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 8:09:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.450e+05	9.34	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.520e+05	9.35	1.00	1.01
Perchlorate conf	5.550e+04	9.33	1.00	1.10

O18LP (Internal Standard)

RT (Exp. RT): 9.34(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

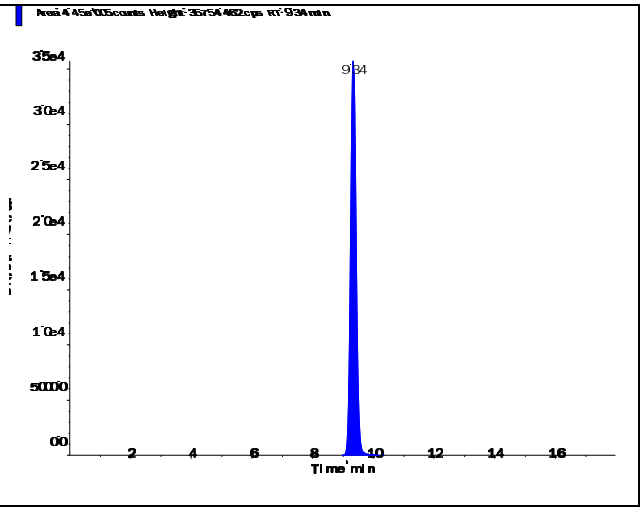

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.341
Sample Type:	(Quality Control)

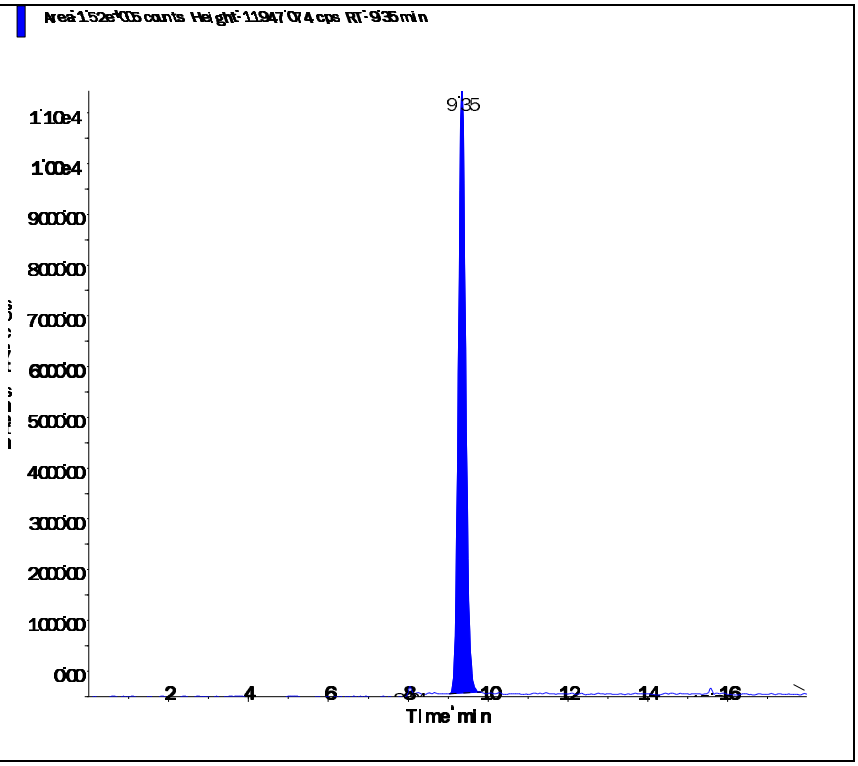

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.33 (9.84) min
Calculated conc:	1.10 ng/ml
Area Ratio:	0.125
Sample Type:	(Quality Control)

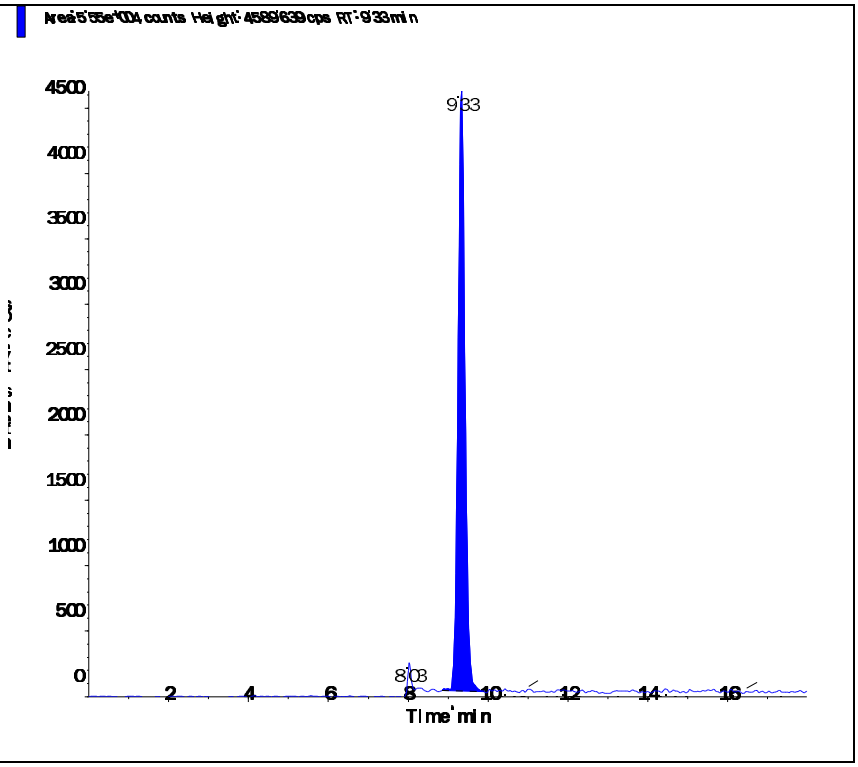

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Data File	LM35475.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 11:56:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35475.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 11:56:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.980e+05	9.32	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.700e+05	9.33	1.00	1.01
Perchlorate conf	5.750e+04	9.32	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.32(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

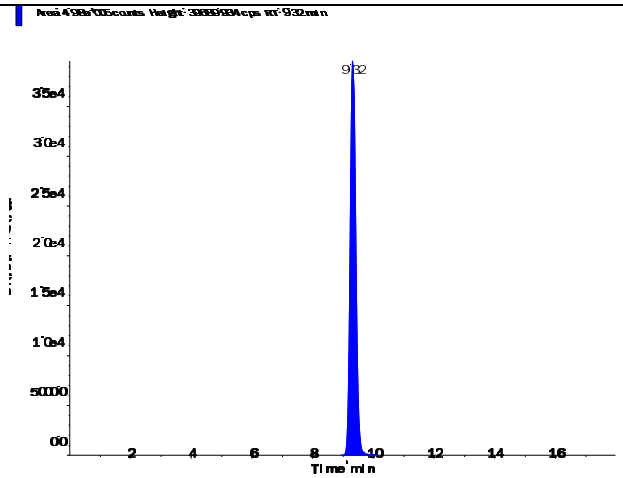

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.33 (9.84) min Calculated conc: 1.01 ng/ml Area Ratio: 0.34 Sample Type: (Quality Control)	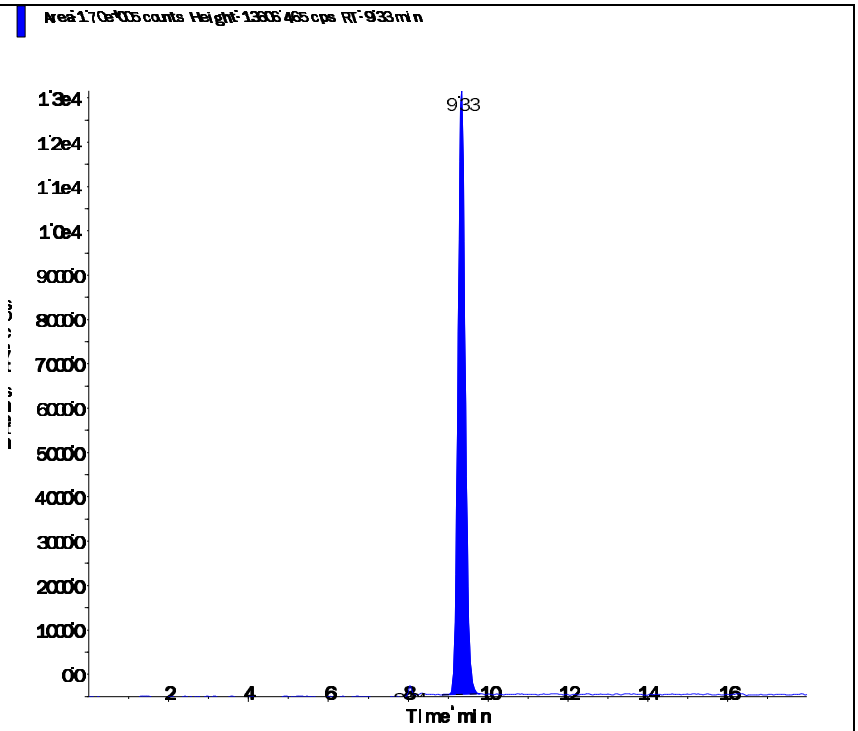
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.32 (9.84) min Calculated conc: 1.01 ng/ml Area Ratio: 0.115 Sample Type: (Quality Control)	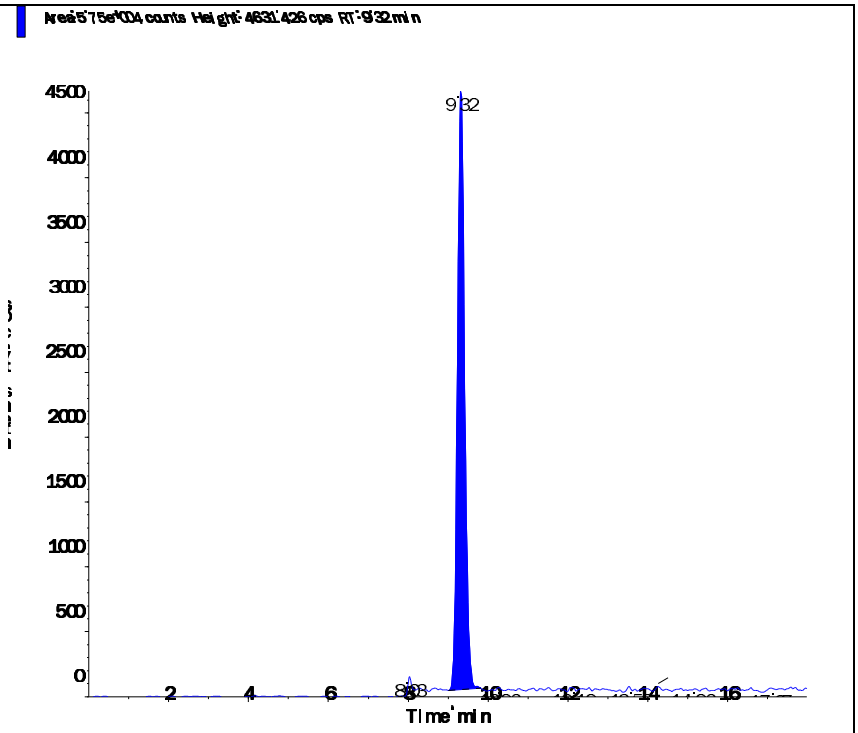

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Data File	LM35488.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 4:03:05 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35488.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 4:03:05 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.33	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+05	9.34	1.00	1.04
Perchlorate conf	6.020e+04	9.32	1.00	1.03

O18LP (Internal Standard)

RT (Exp. RT): 9.33(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

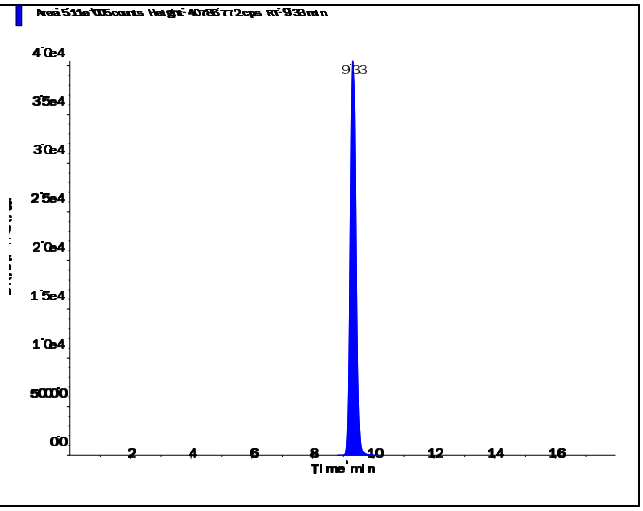

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.34 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.35
Sample Type:	(Quality Control)

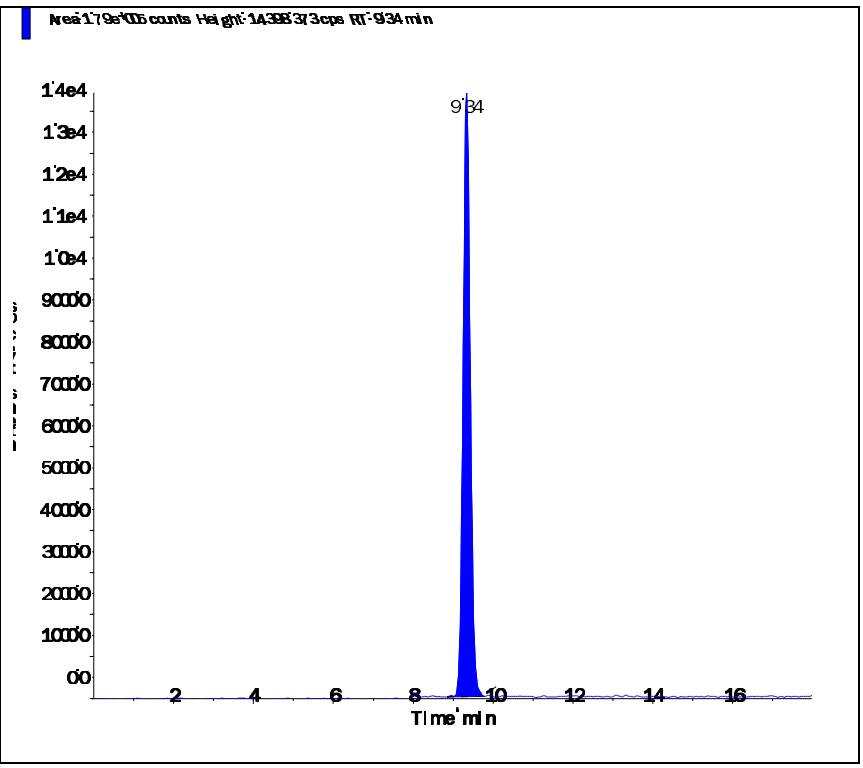

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.32 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.118
Sample Type:	(Quality Control)

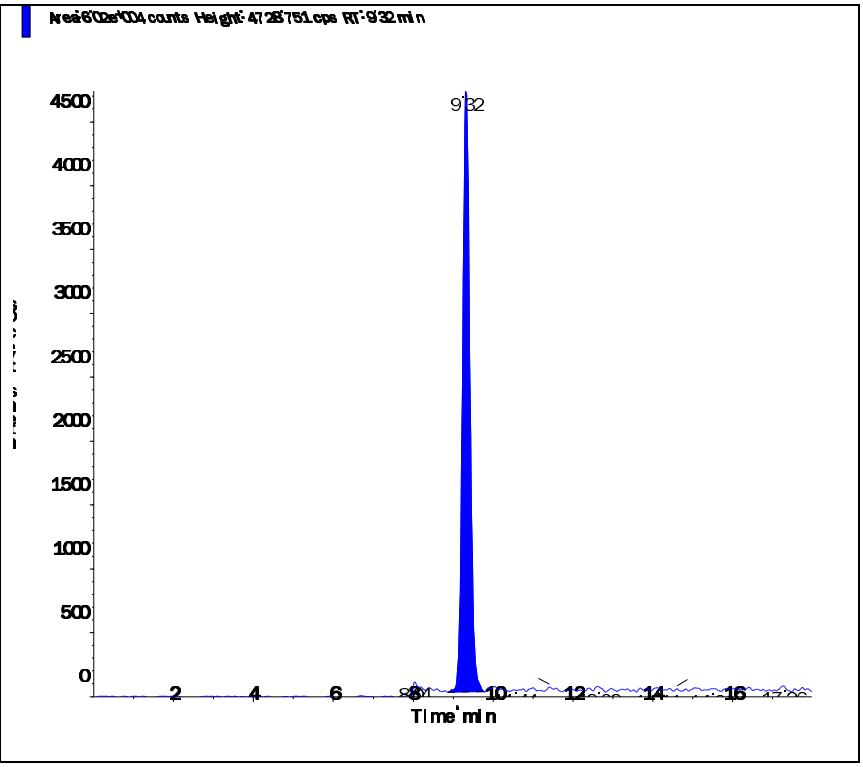

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Data File	LM35495.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:15:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35495.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:15:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.500e+05	9.33	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.890e+05	9.35	1.00	1.02
Perchlorate conf	6.340e+04	9.33	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.33(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

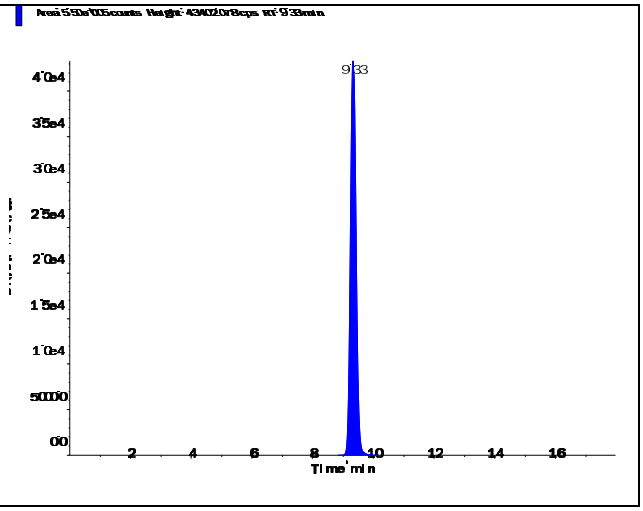

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.345
Sample Type:	(Quality Control)

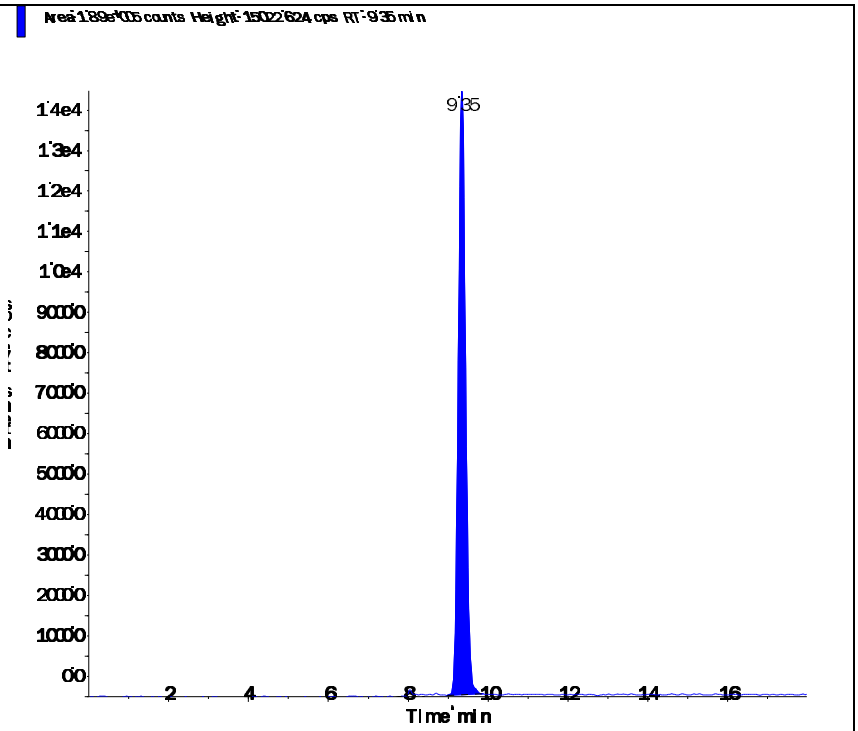

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.33 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.115
Sample Type:	(Quality Control)

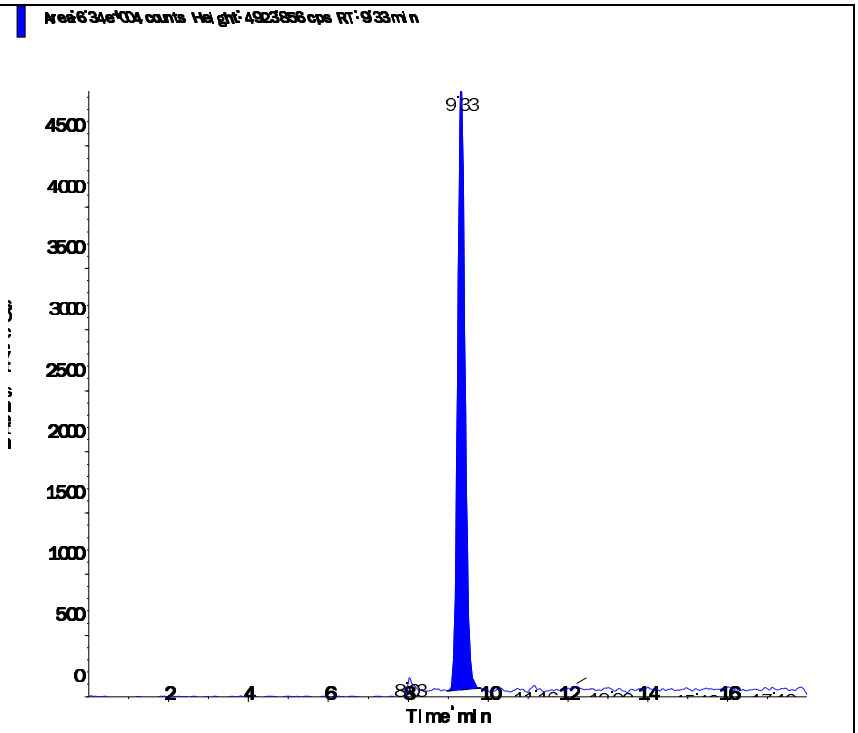

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Data File	LM35498.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:06:10 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35498.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:06:10 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.580e+05	9.34	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.610e+05	9.35	1.00	1.04
Perchlorate conf	5.670e+04	9.34	1.00	1.09

O18LP (Internal Standard)

RT (Exp. RT): 9.34(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

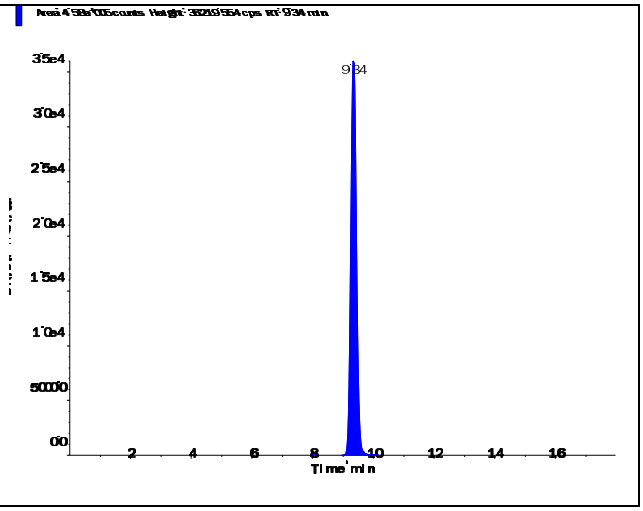

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.353
Sample Type:	(Quality Control)

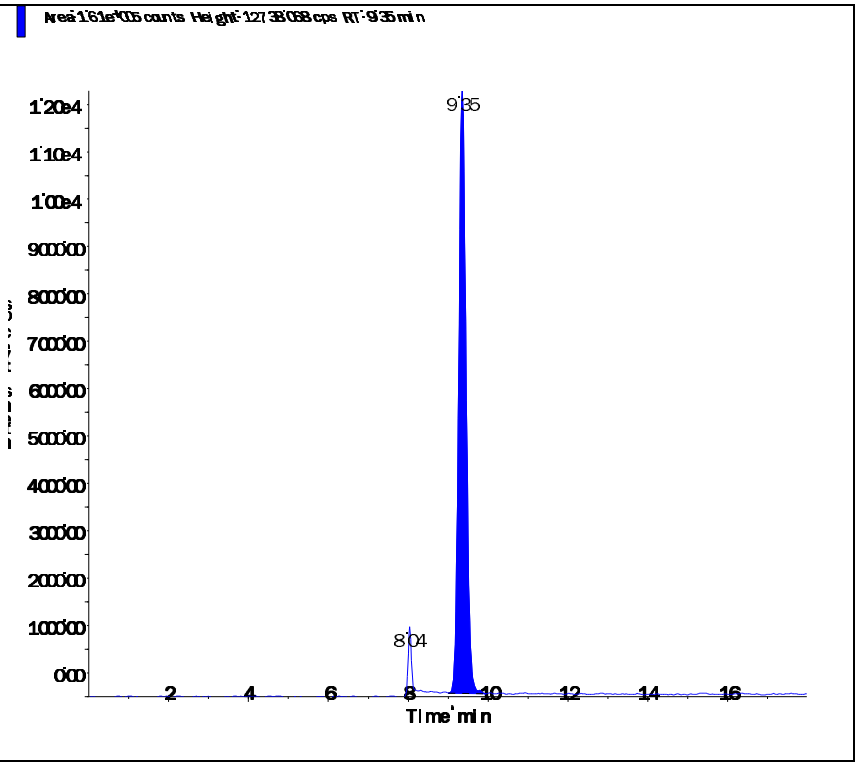

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.34 (9.84) min
Calculated conc:	1.09 ng/ml
Area Ratio:	0.124
Sample Type:	(Quality Control)

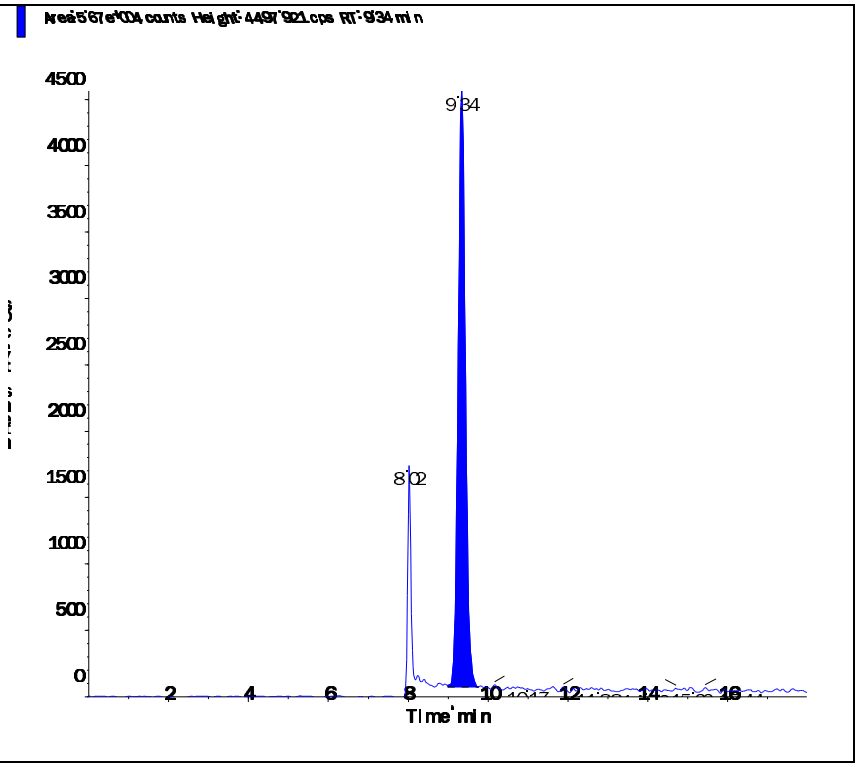

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Data File	LM35508.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 9:15:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-11 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35508.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 9:15:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.090e+05	9.35	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.760e+05	9.36	1.00	1.02
Perchlorate conf	5.930e+04	9.35	1.00	1.02

O18LP (Internal Standard)

RT (Exp. RT): 9.35(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

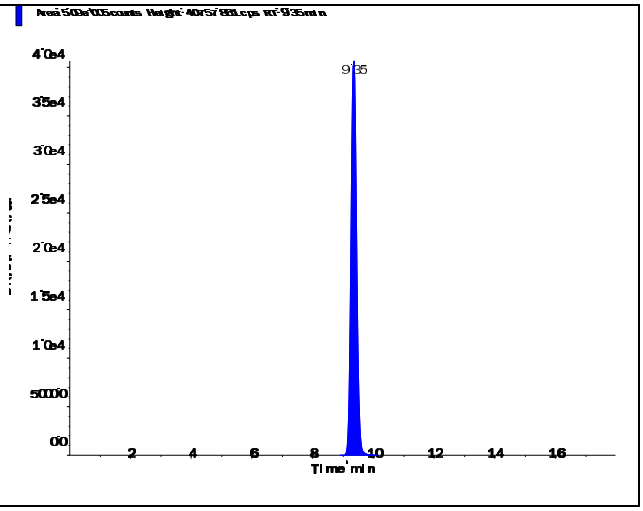

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.36 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.345
Sample Type:	(Quality Control)

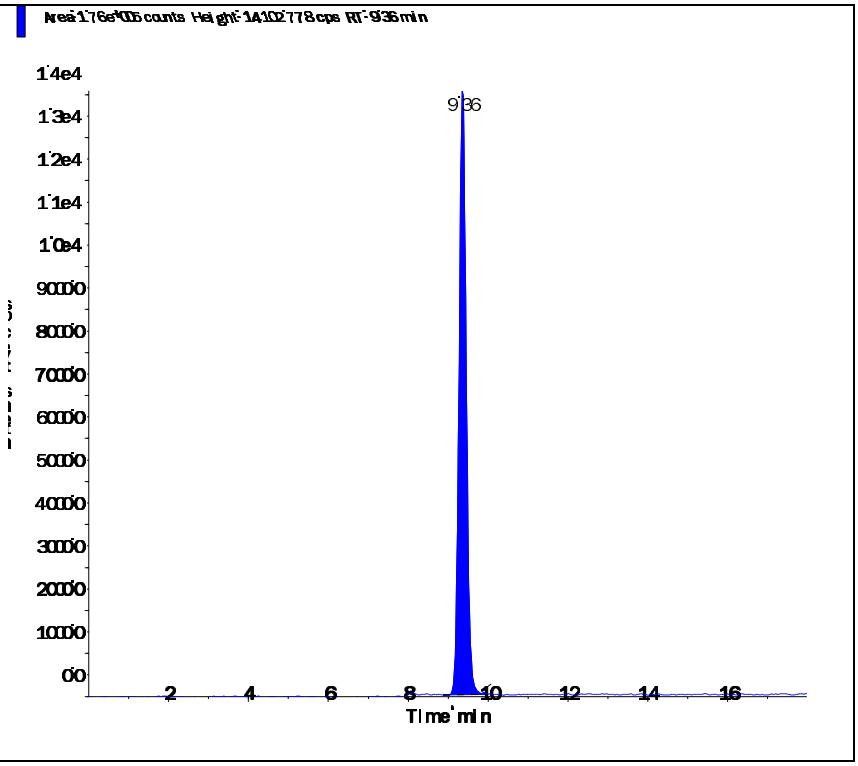

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.117
Sample Type:	(Quality Control)

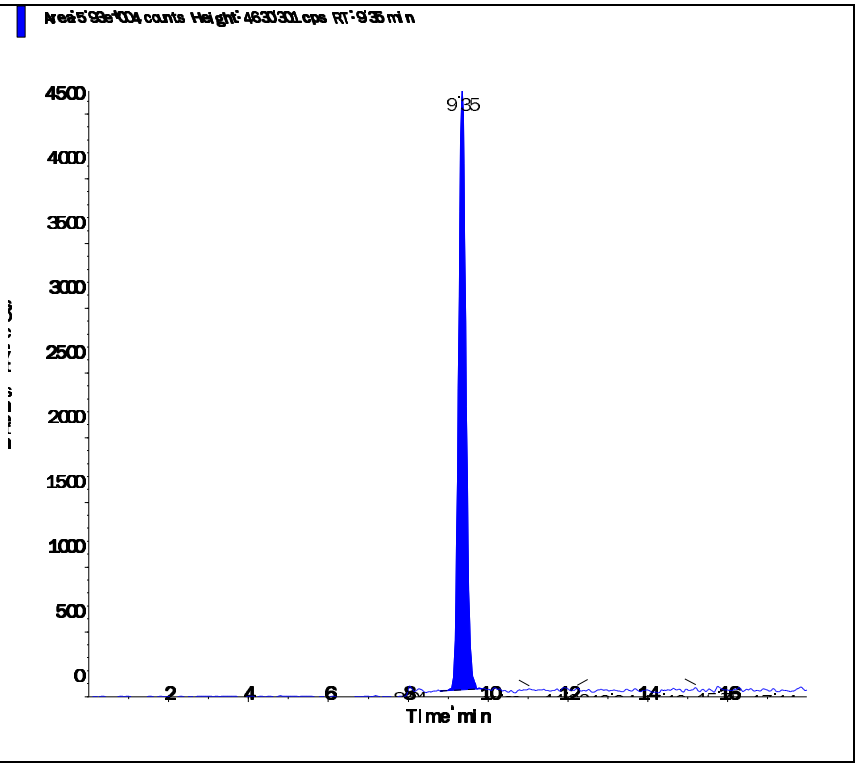

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Data File	LM35464.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 8:28:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-05 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35464.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 8:28:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.490e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.160e+04	9.40	N/A	0.206
Perchlorate conf	1.210e+04	9.37	N/A	0.222

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

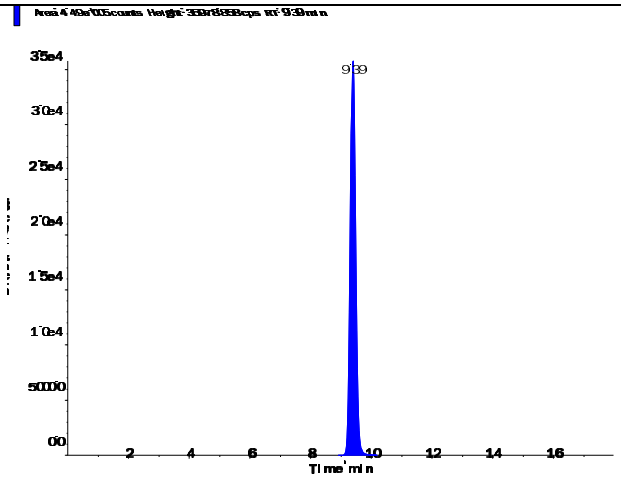

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

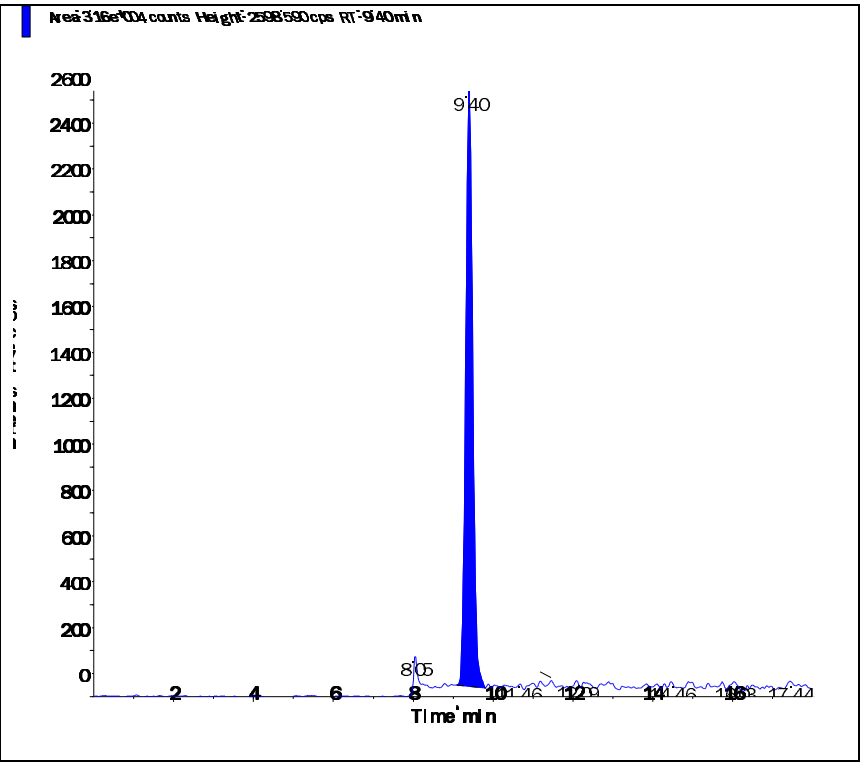

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.37 (9.84) min
Calculated conc:	0.222 ng/ml
Area Ratio:	0.027
Sample Type:	(Unknown)

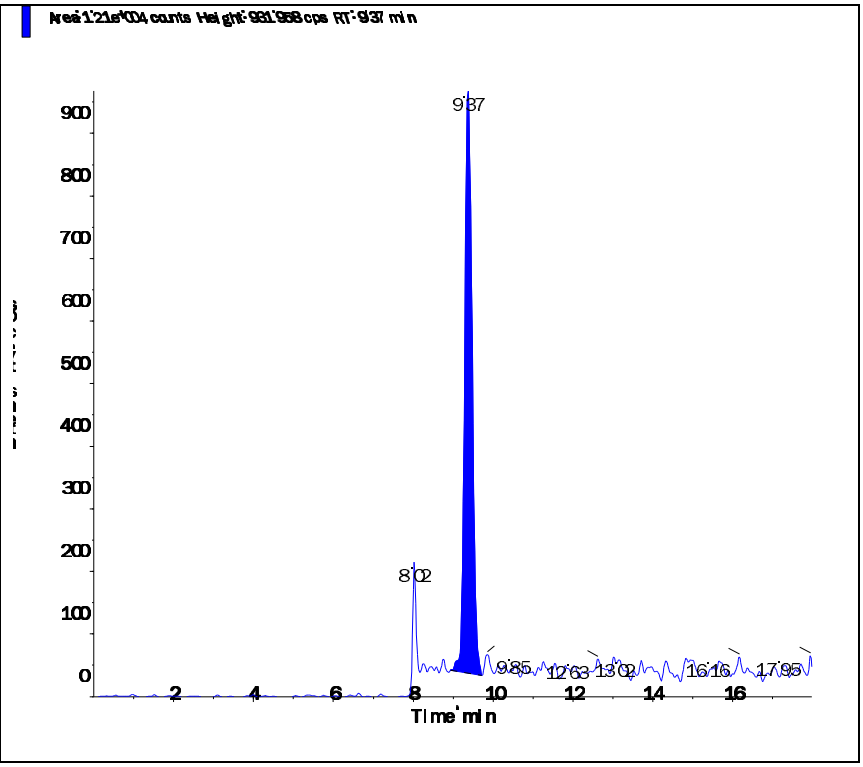

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Data File	LM35476.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 12:15:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-06 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35476.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 12:15:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.160e+05	9.36	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.500e+04	9.37	N/A	0.198
Perchlorate conf	1.310e+04	9.35	N/A	0.207

O18LP (Internal Standard)

RT (Exp. RT): 9.36(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

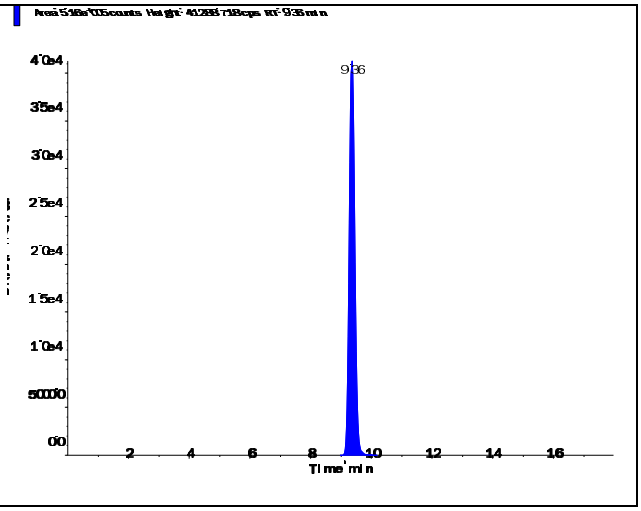

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.37 (9.84) min
Calculated conc:	0.198 ng/ml
Area Ratio:	0.068
Sample Type:	(Unknown)

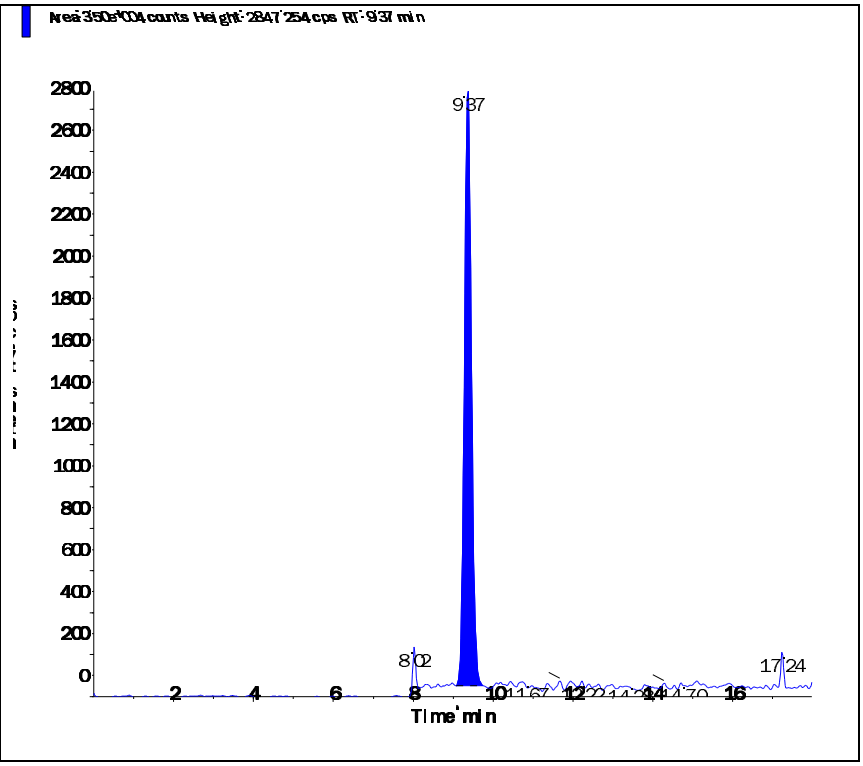

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

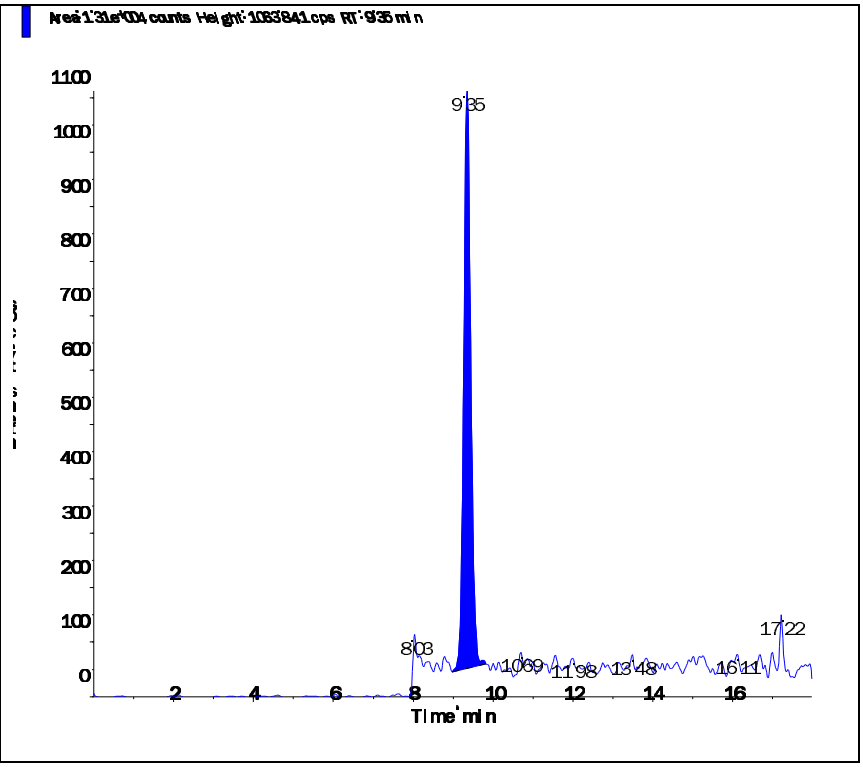

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Data File	LM35489.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 4:22:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35489.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 4:22:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.380e+05	9.37	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.890e+04	9.39	N/A	0.211
Perchlorate conf	1.340e+04	9.38	N/A	0.202

O18LP (Internal Standard)

RT (Exp. RT): 9.37(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

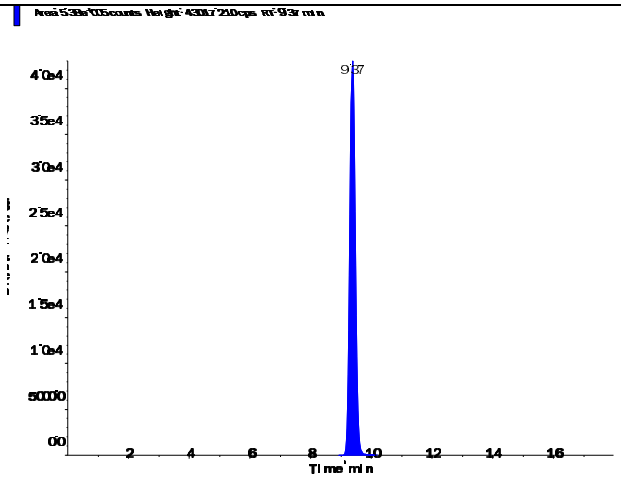

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	0.211 ng/ml
Area Ratio:	0.072
Sample Type:	(Unknown)

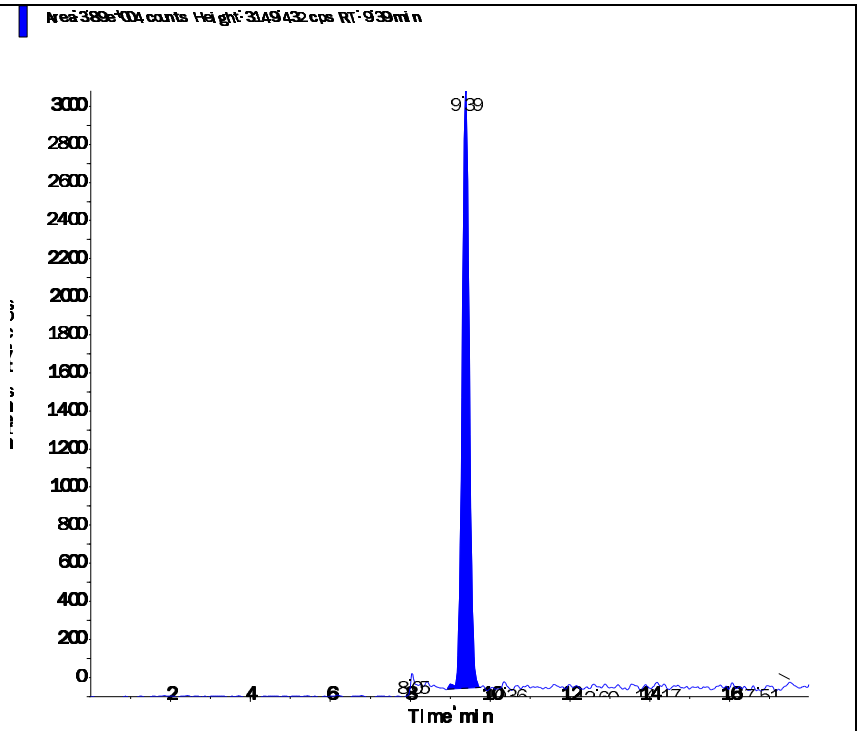

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	0.202 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

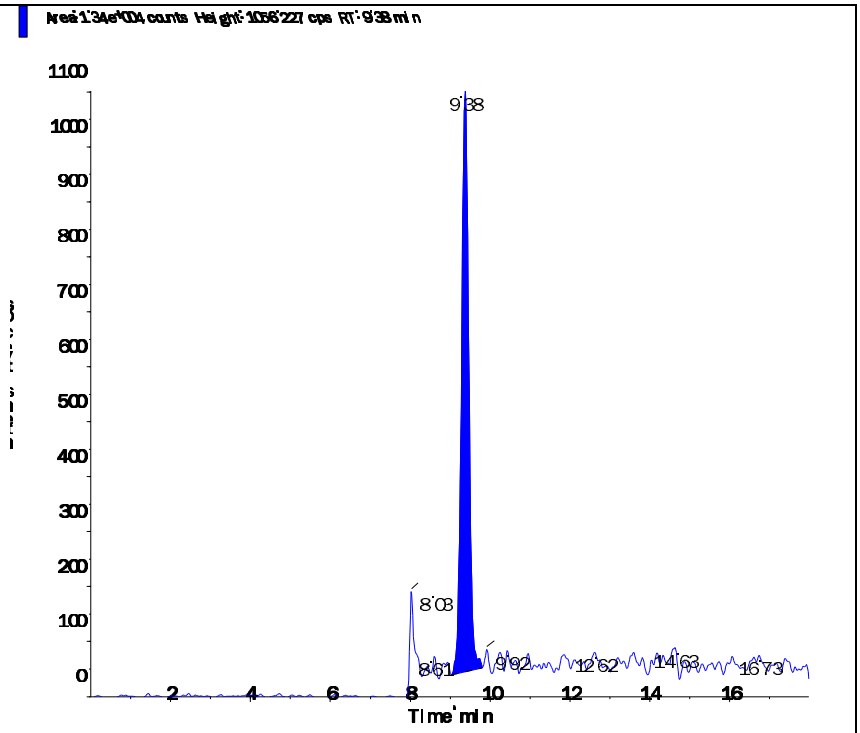

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Data File	LM35496.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:34:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-08 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35496.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:34:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.520e+05	9.38	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.800e+04	9.39	N/A	0.201
Perchlorate conf	1.410e+04	9.38	N/A	0.208

O18LP (Internal Standard)

RT (Exp. RT): 9.38(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

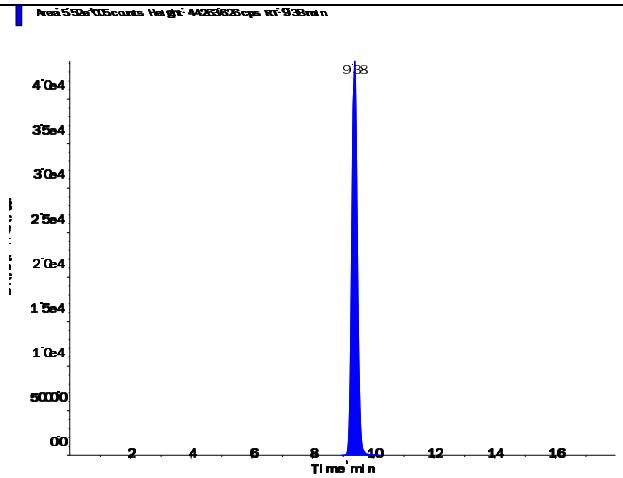

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

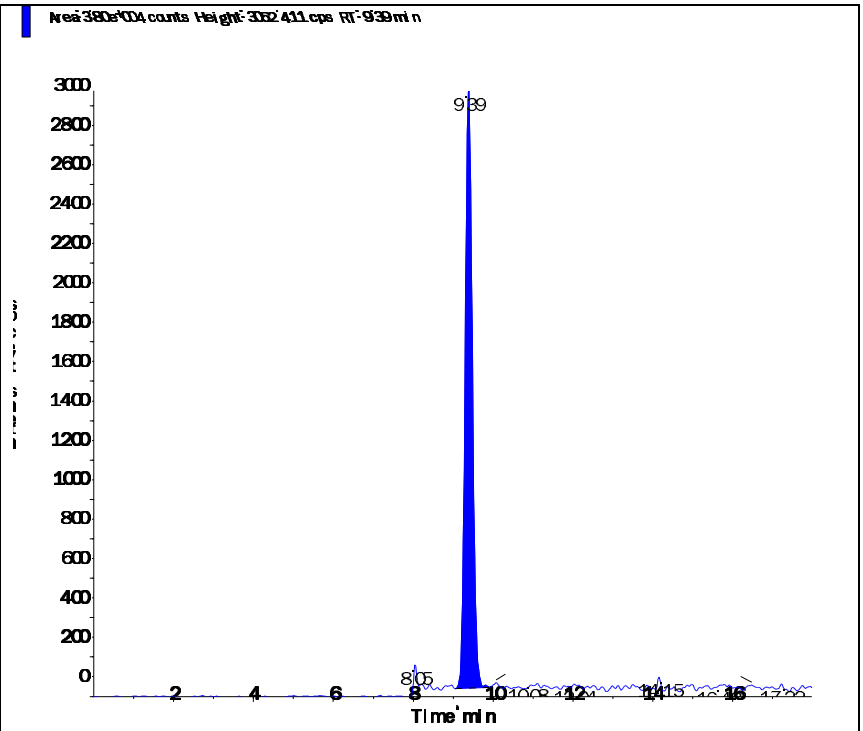

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	0.208 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

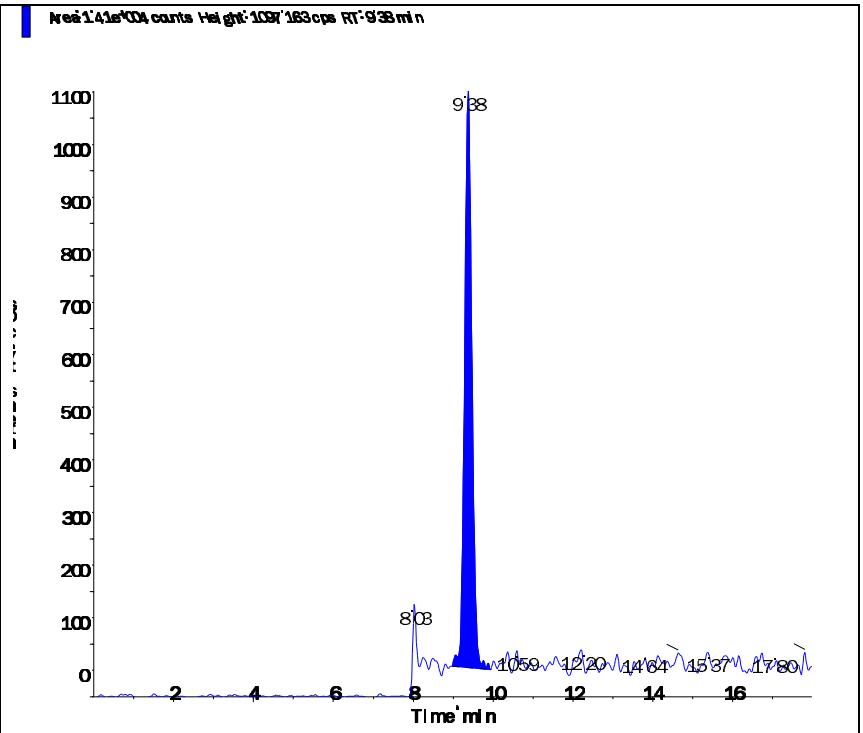

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Data File	LM35499.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:25:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-09 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35499.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:25:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.640e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.290e+04	9.40	N/A	0.207
Perchlorate conf	1.150e+04	9.38	N/A	0.201

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

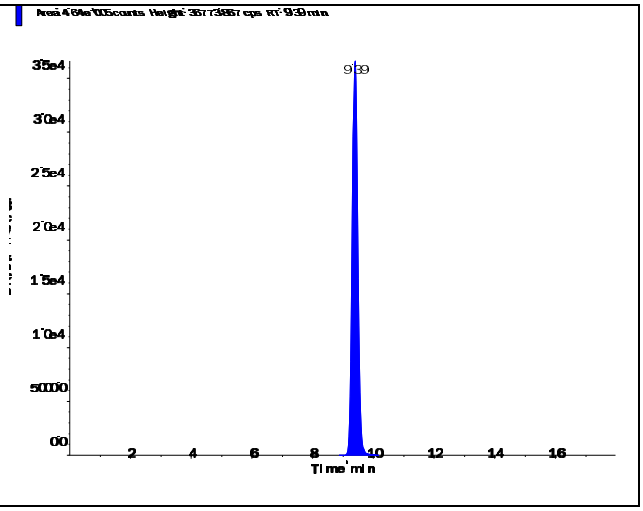

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

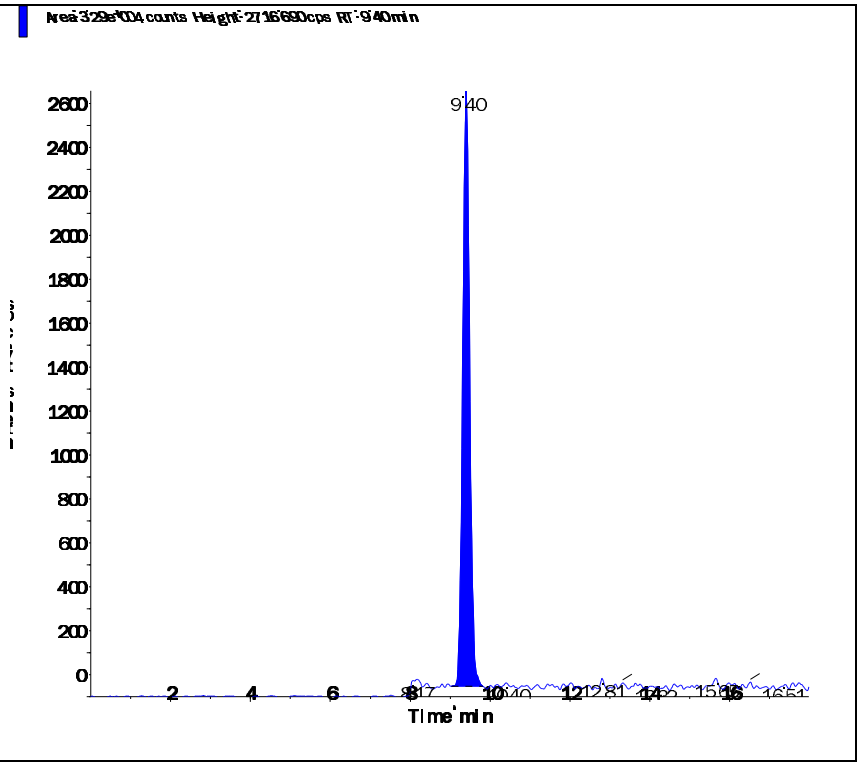

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

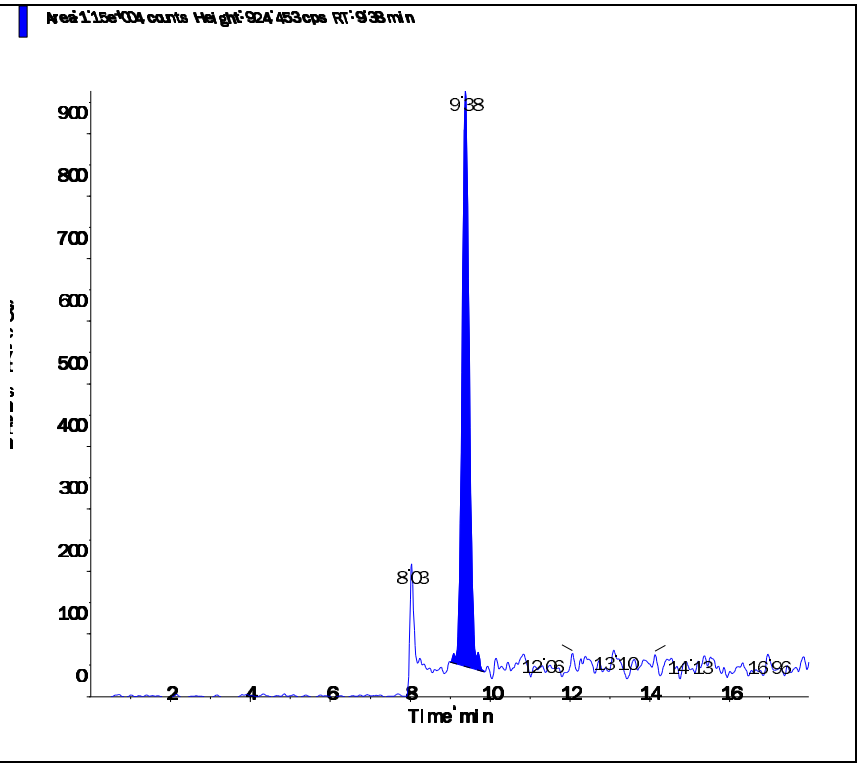

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Data File	LM35509.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 9:34:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-10 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35509.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 9:34:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-10	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.370e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.790e+04	9.40	N/A	0.206
Perchlorate conf	1.400e+04	9.39	N/A	0.214

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

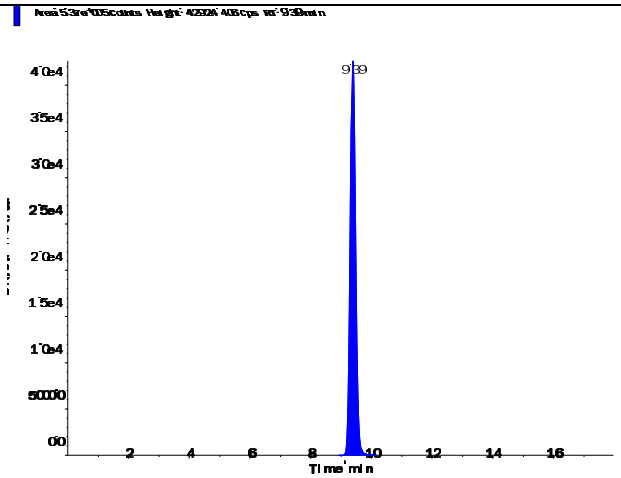

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

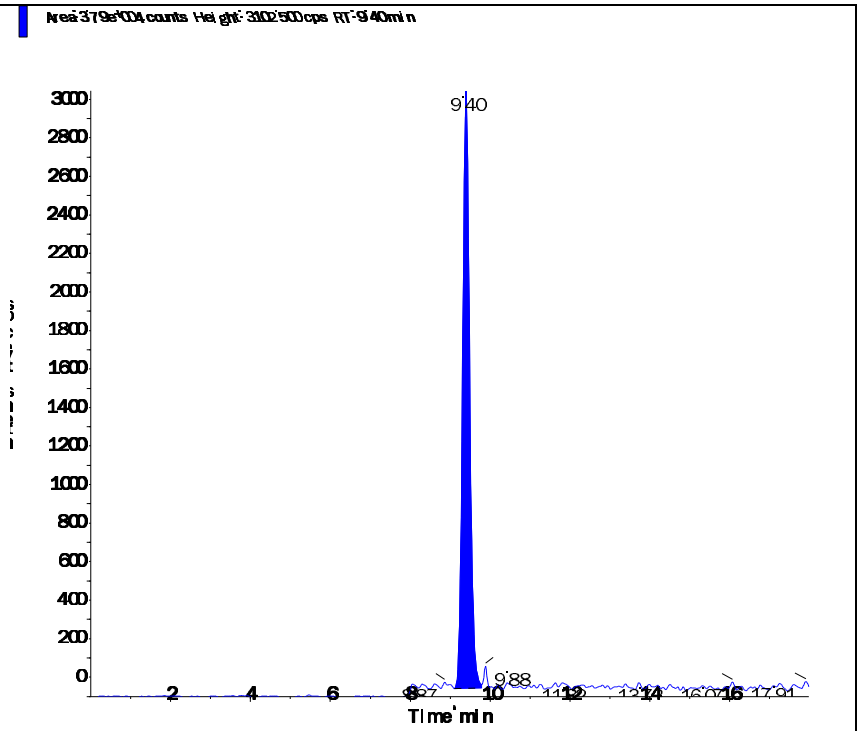

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	0.214 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

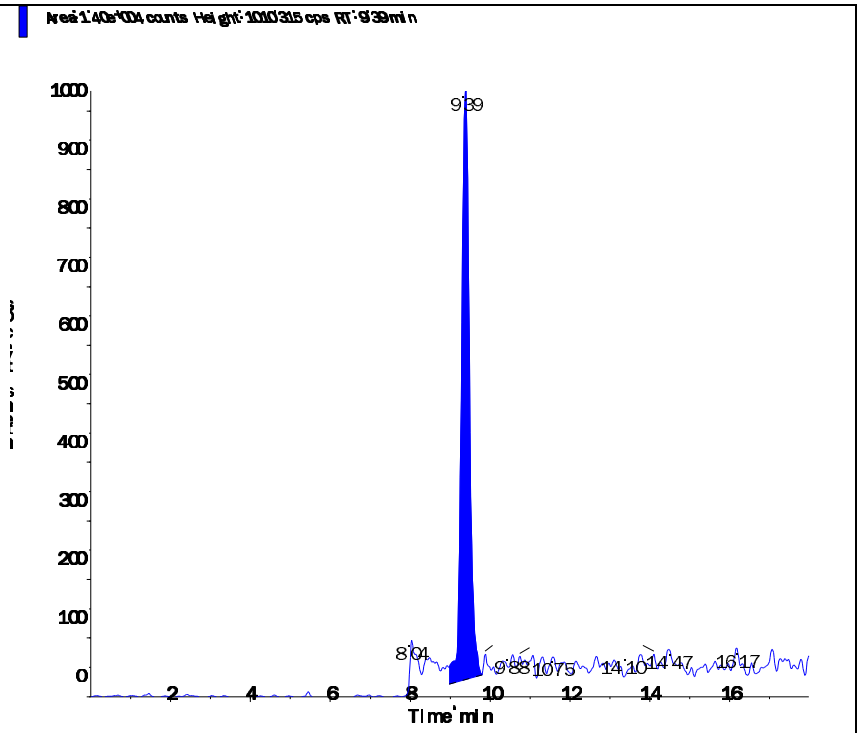

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Data File	LM35462.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 7:50:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-01 CCB	**Injection Vial**	1.00
Data File	LM35462.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 7:50:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.420e+05	9.58	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.58(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

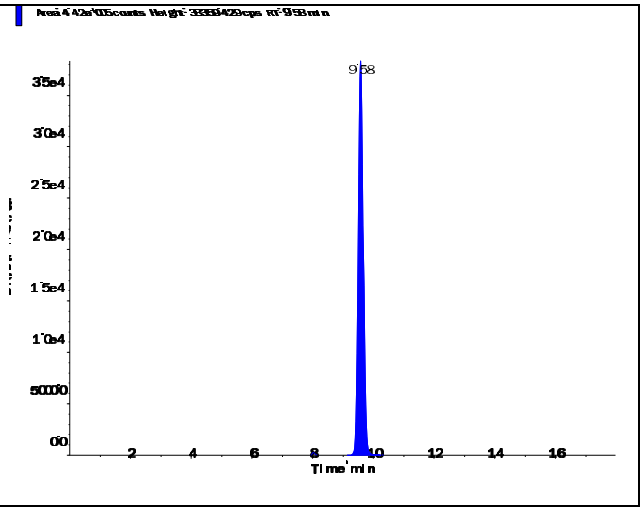

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	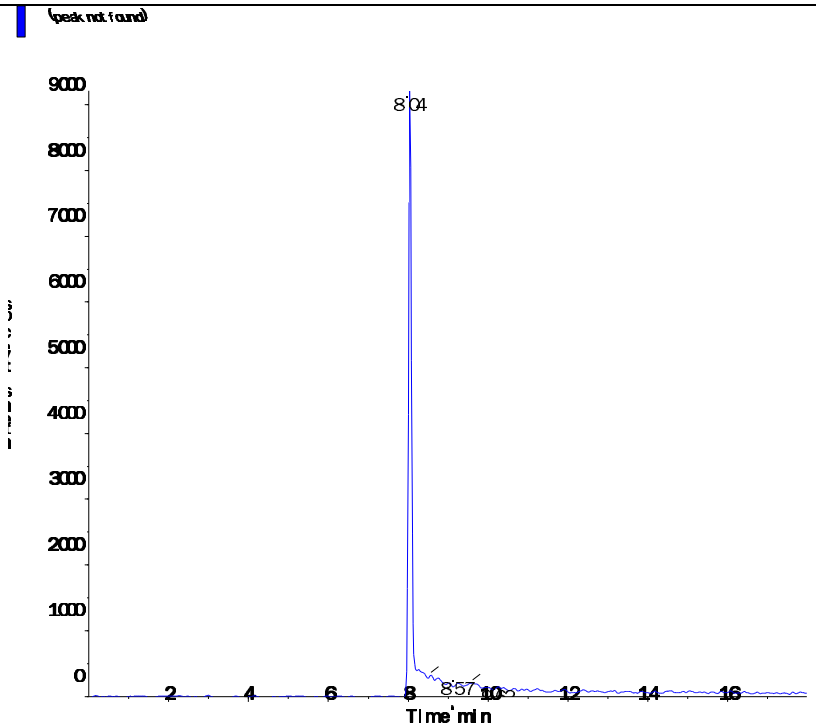
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	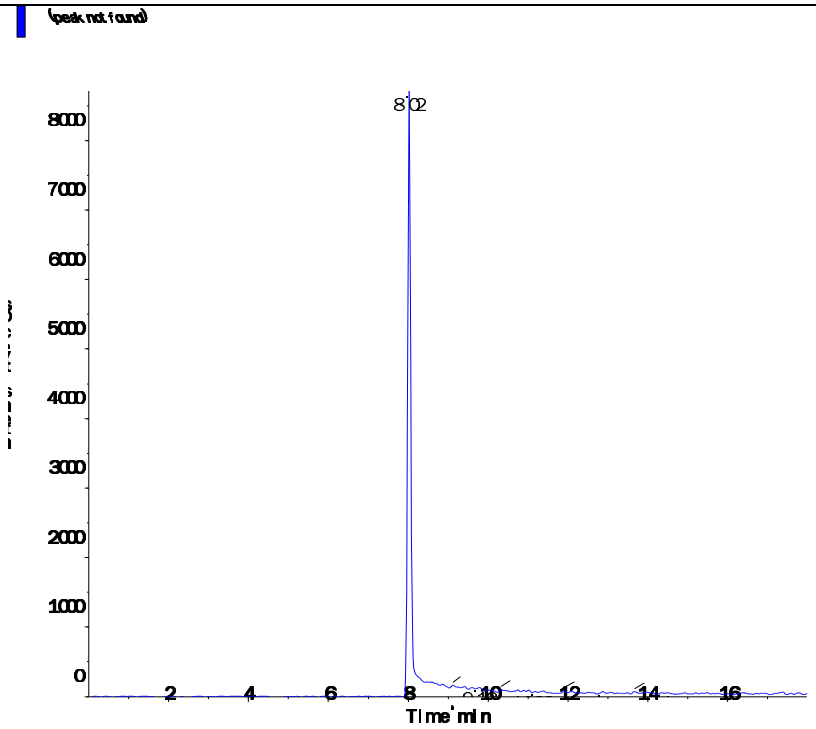

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Data File	LM35477.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 12:34:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-04 CCB	**Injection Vial**	1.00
Data File	LM35477.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 12:34:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.240e+05	9.57	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	8.240e+02	9.53	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.57(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

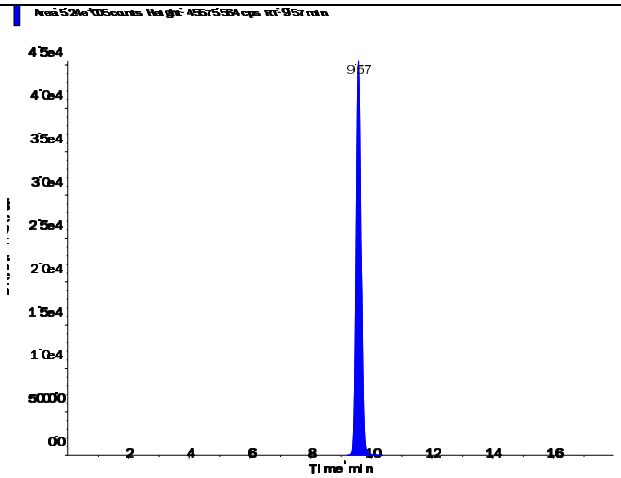

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	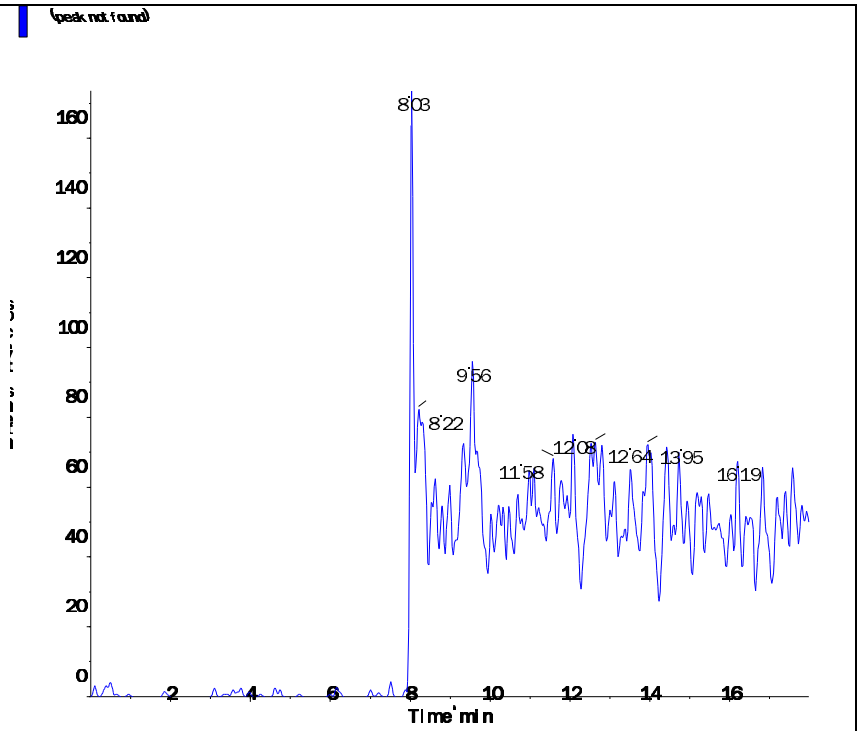
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.53 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.002 Sample Type: (Unknown)	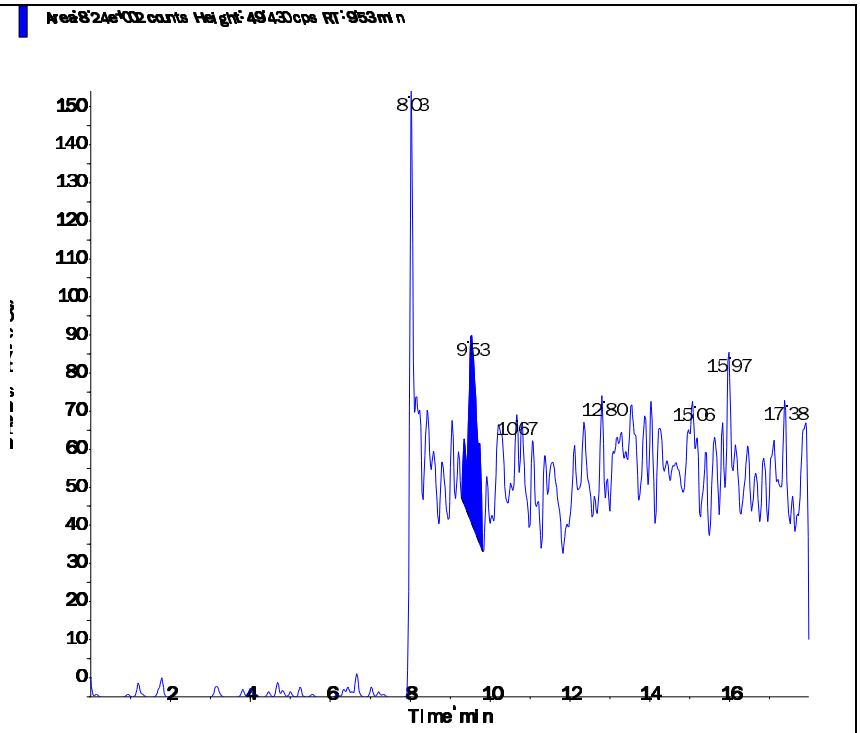

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Data File	LM35490.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 4:40:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-06 CCB	**Injection Vial**	1.00
Data File	LM35490.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 4:40:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.420e+05	9.59	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.59(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

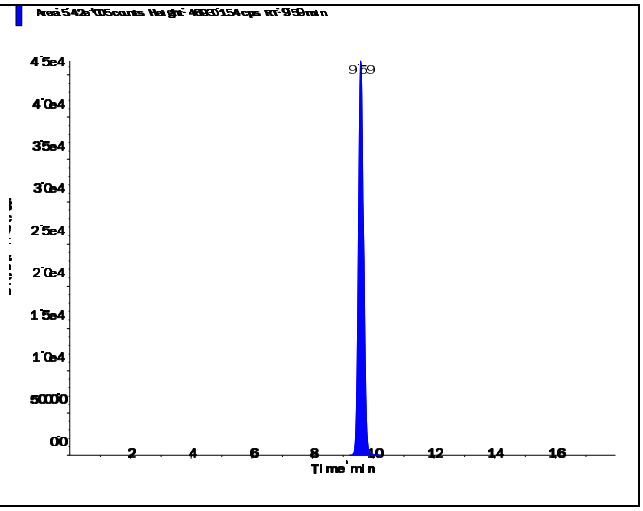

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

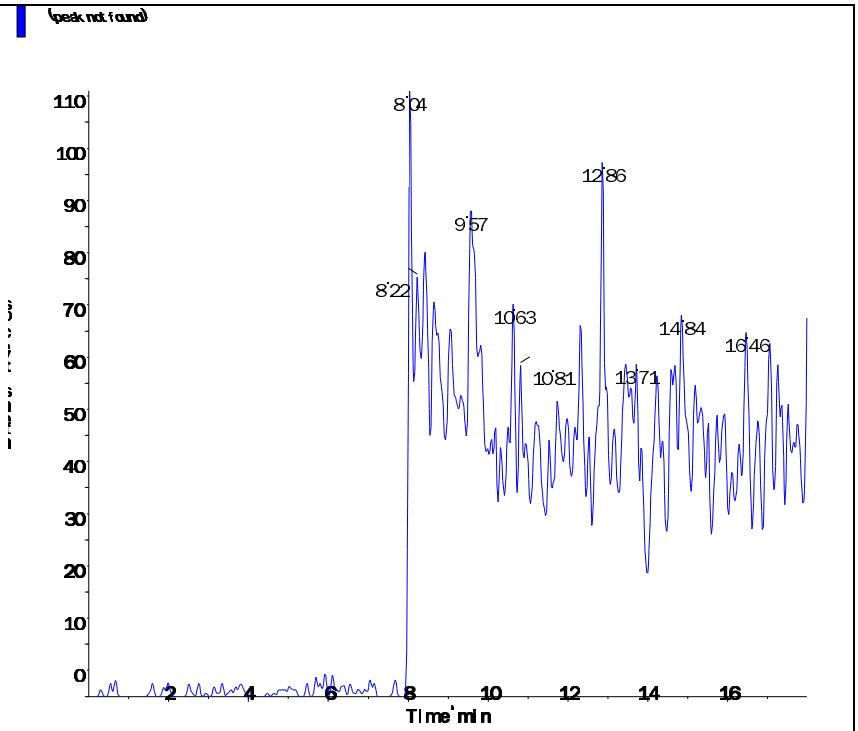

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

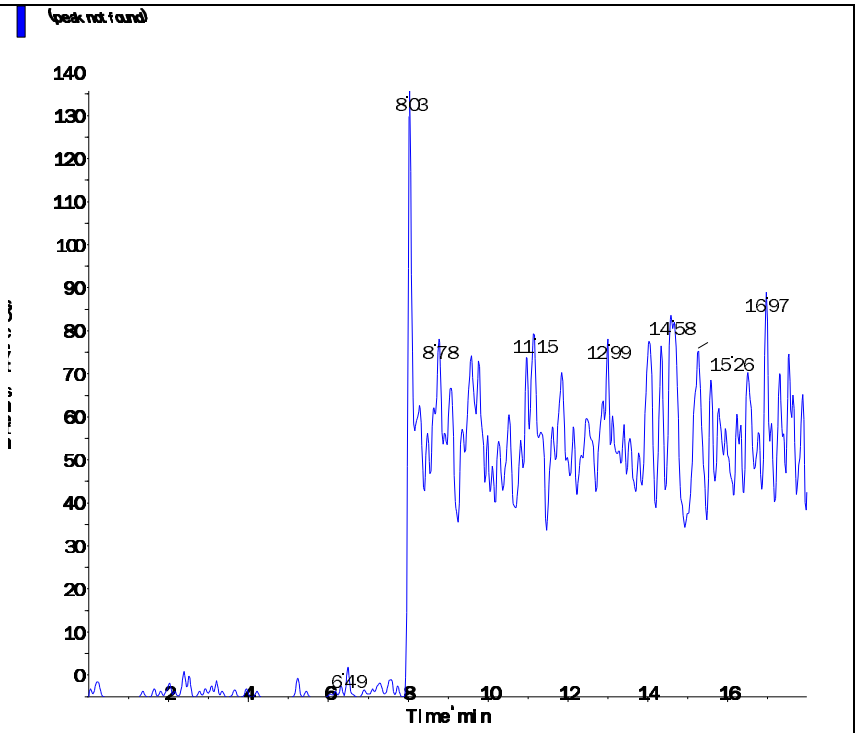

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Data File	LM35497.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:53:28 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-08 CCB	**Injection Vial**	1.00
Data File	LM35497.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:53:28 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.550e+05	9.59	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	5.180e+02	9.63	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.59(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

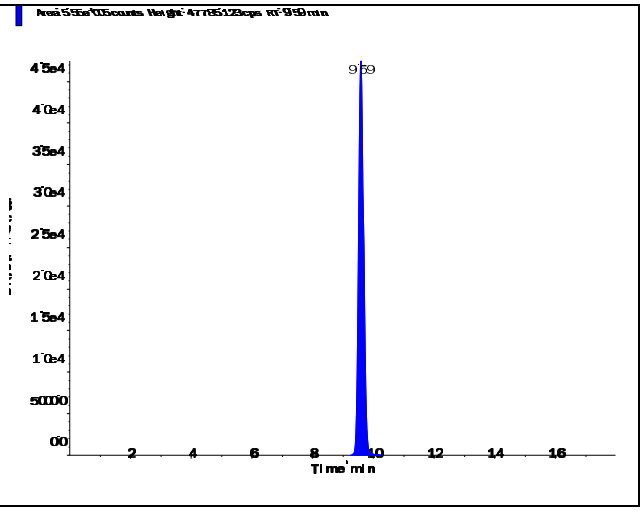

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	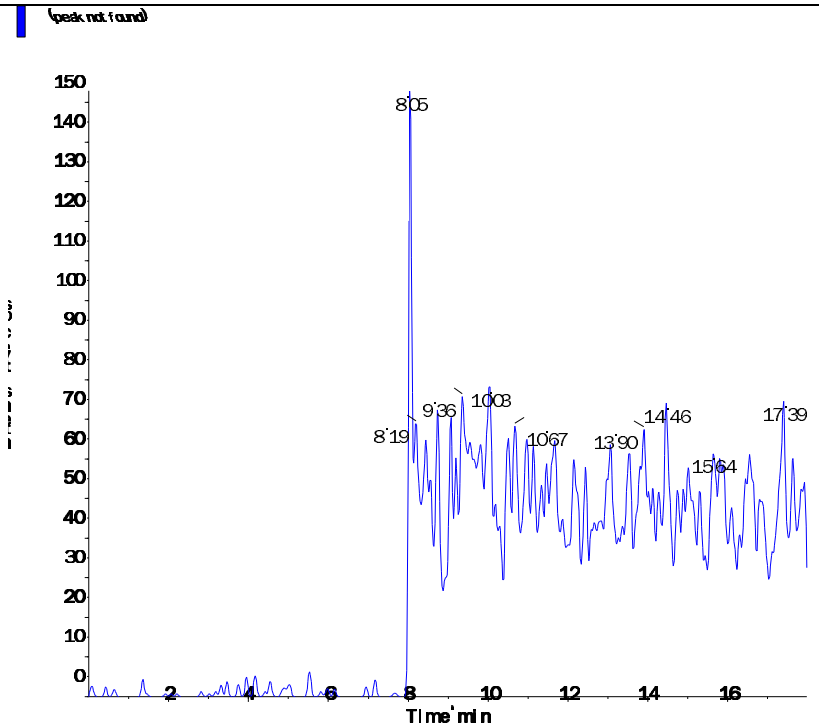
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.63 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	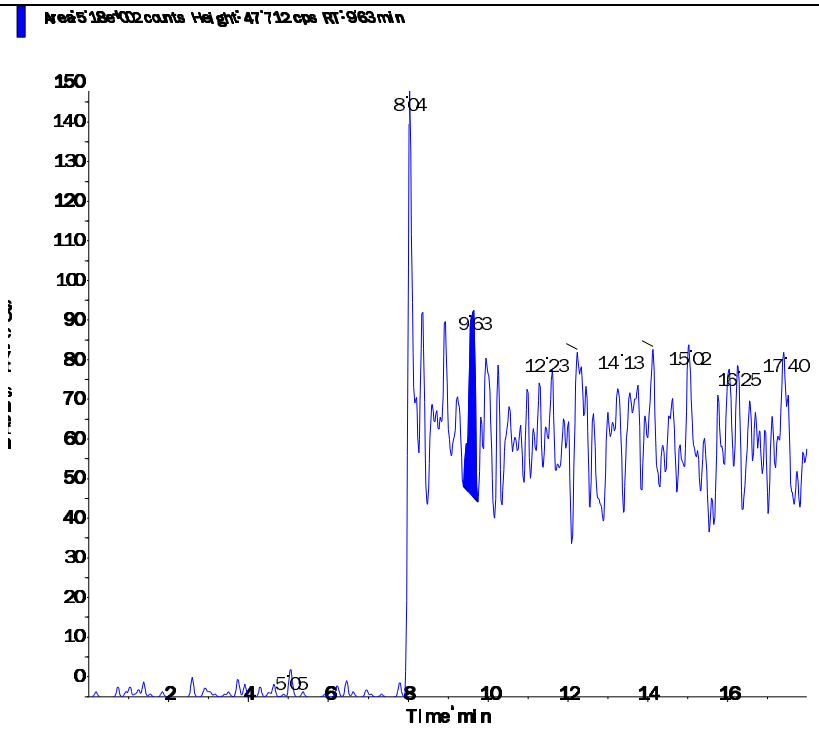

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:52 PM

Data File	LM35500.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:44:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-10 CCB	**Injection Vial**	1.00
Data File	LM35500.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:44:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.840e+05	9.61	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.61(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

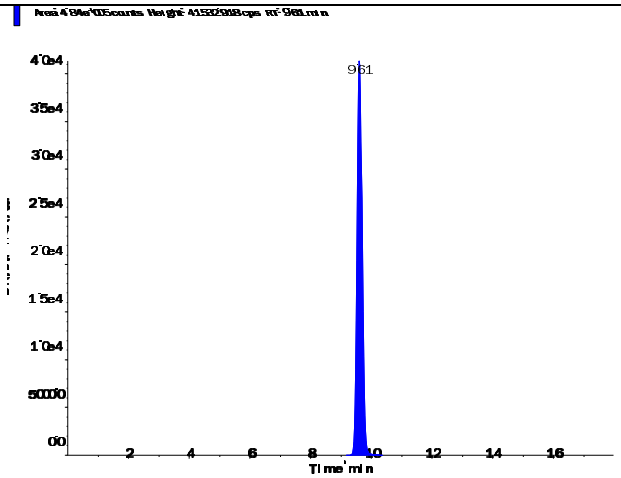

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Applied Biosystems | MDS SCIEX

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Printed: 6/27/2016 7:52 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	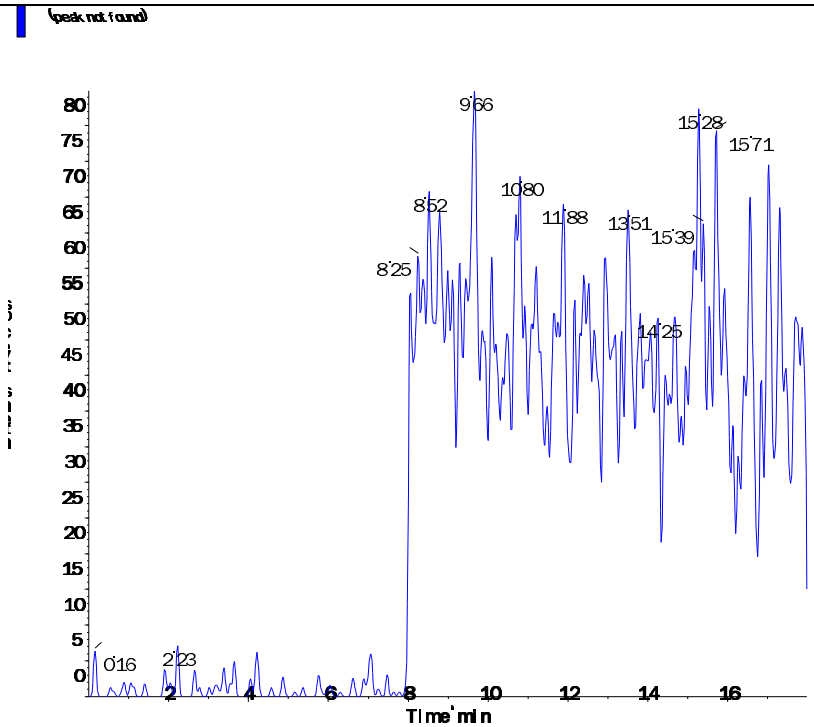
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	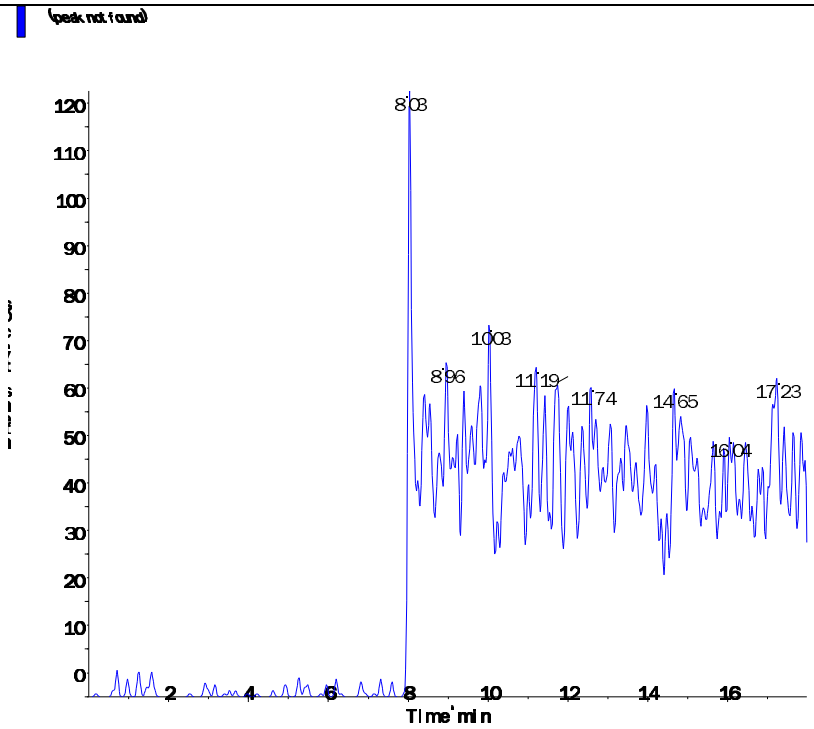

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Created with Analyst Reporter
Printed: 6/27/2016 7:56 PM

Data File	LM35510.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 9:53:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-12 CCB	**Injection Vial**	1.00
Data File	LM35510.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 9:53:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-12	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.380e+05	9.61	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.61(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

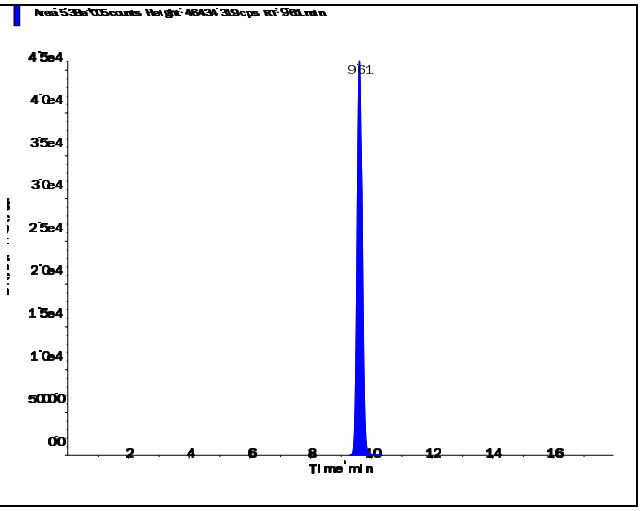

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

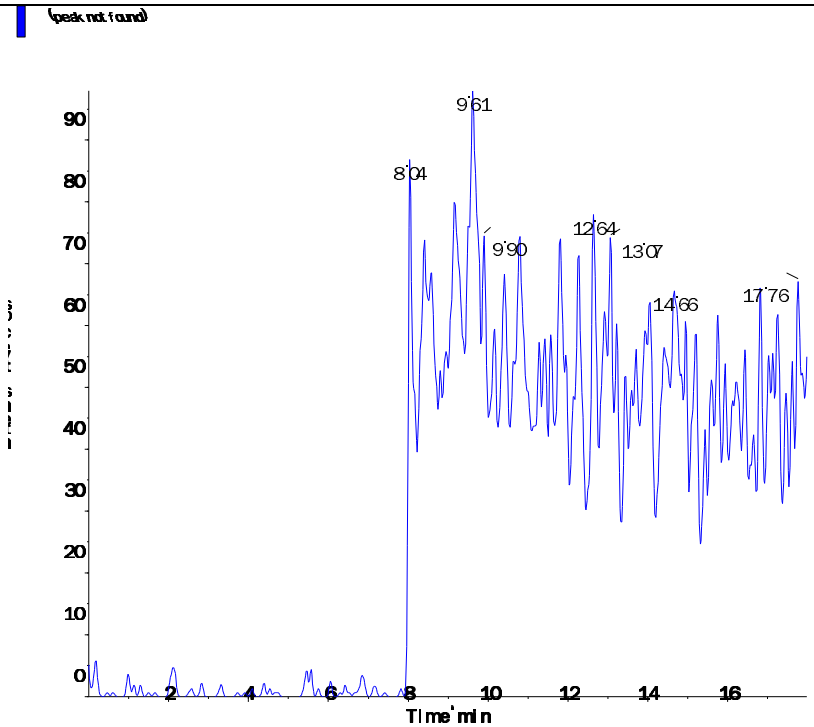

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

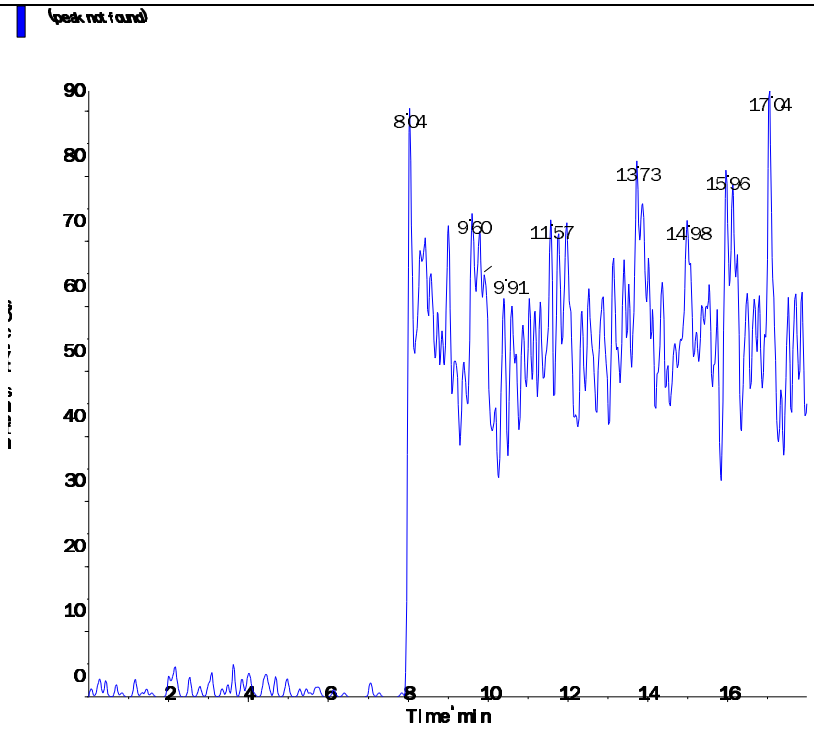

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Data File	LM35465.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 8:47:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM35465.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 8:47:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.320e+05	8.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.810e+04	8.97	N/A	0.19
Perchlorate conf	1.000e+04	8.95	N/A	0.188

O18LP (Internal Standard)

RT (Exp. RT): 8.95(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

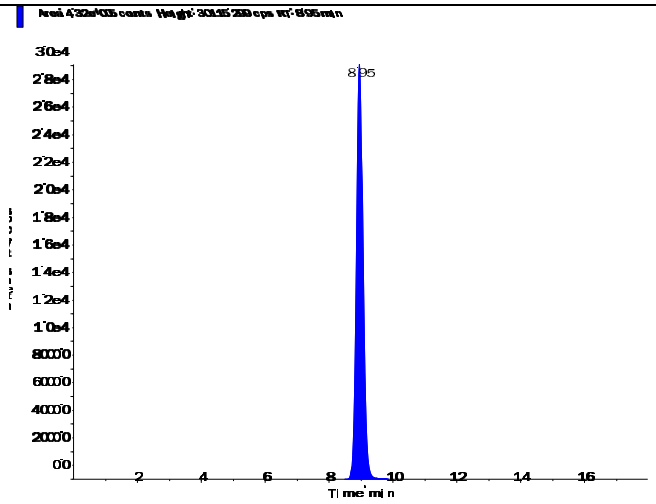

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	8.97 (9.84) min
Calculated conc:	0.19 ng/ml
Area Ratio:	0.065
Sample Type:	(Unknown)

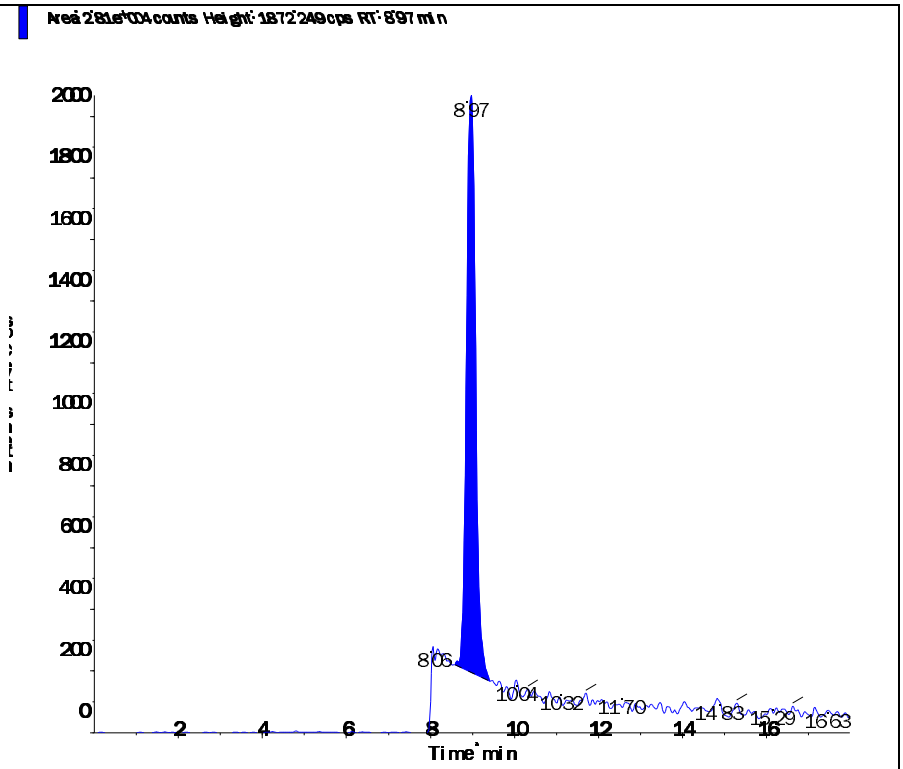

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	8.95 (9.84) min
Calculated conc:	0.188 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

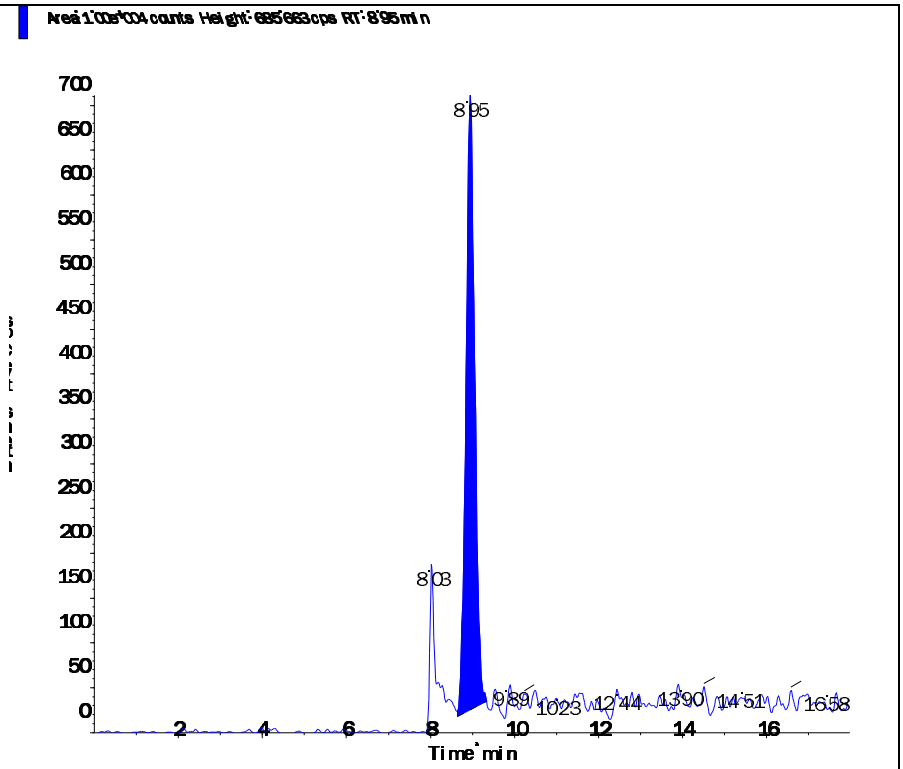

Printing Time: 4:34:28 PM
Printing Date: Saturday, June 25, 2016

Sample Name: "WG574101-01 MCT (0.2ug/L)" Sample ID: "WG574101-01" File: "LM35465.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.219 ug/L
Acq. Date:	6/24/2016
Acq. Time:	8:47:28 PM
Modified:	No
Proc. Algorithm:	Analyst Classic
Bunching Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Exp. Width:	0.20
Sep. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Valley
Retention Time:	8.97 min
Area:	3.23e+004 counts
Height:	1951.523 cps
Start Time:	8.526 min
End Time:	9.417 min

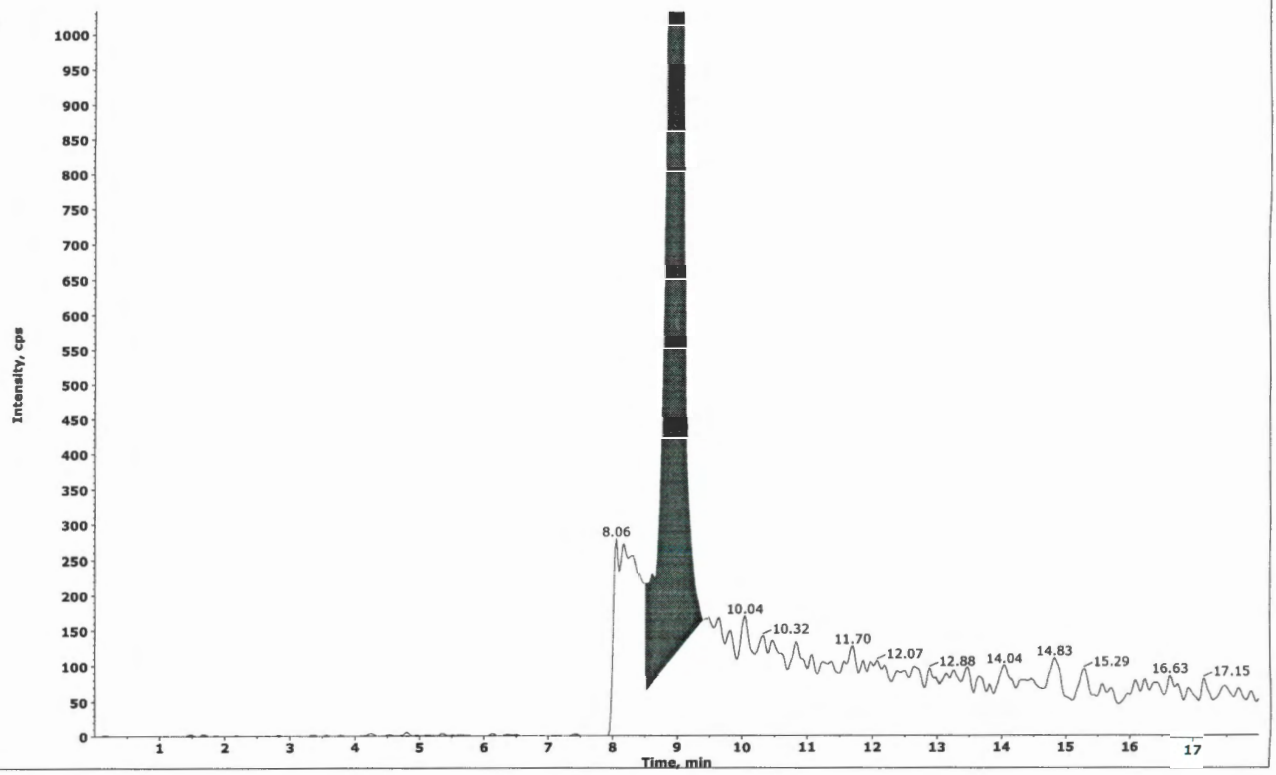

Collected by: N/A
Electronic Signature: no
Operator: lcmsl

Printing Time: 4:36:56 PM
Printing Date: Saturday, June 25, 2016

Sample Name: "WG574101-01 MCT (0.2ug/L)" Sample ID: "WG574101-01" File: "LM35465.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.190 ug/L
Acq. Date:	6/24/2016
Acq. Time:	8:47:28 PM
Modified:	Yes
Proc. Algorithm:	Analyst Classic
Smoothing Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Sep. Width:	0.20
Sep. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Manual
Retention Time:	8.97 min
Area:	2.81e+004 counts
Height:	1872.249 cps
Start Time:	8.587 min
End Time:	9.417 min

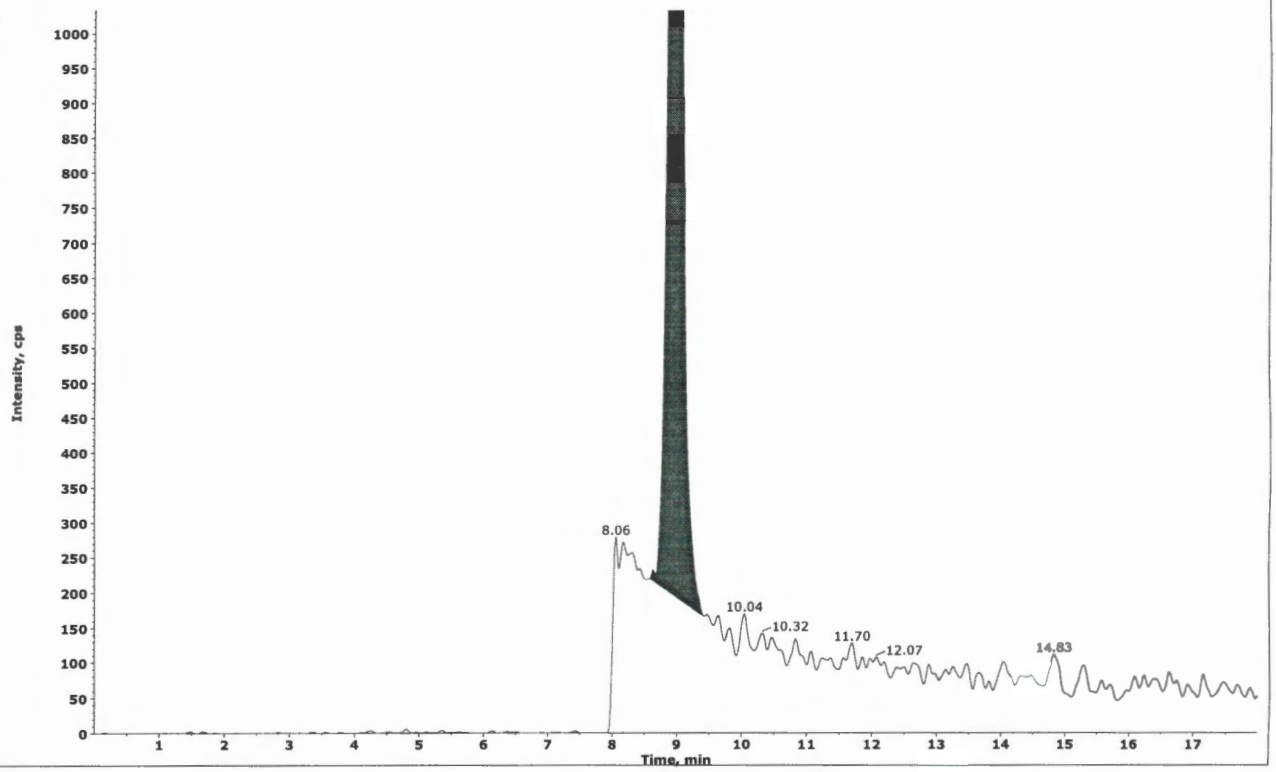

#4
JWR 06/25/16

✓ WTD
06-28-16

Collected by: N/A
Electronic Signature: no
Operator: lcms1

2.2.2.5 Raw QC Data

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Printed: 6/27/2016 7:40 PM

Data File	LM35466.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 9:06:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-02 BLANK	**Injection Vial**	5.00
Data File	LM35466.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 9:06:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.430e+05	9.50	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.50(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

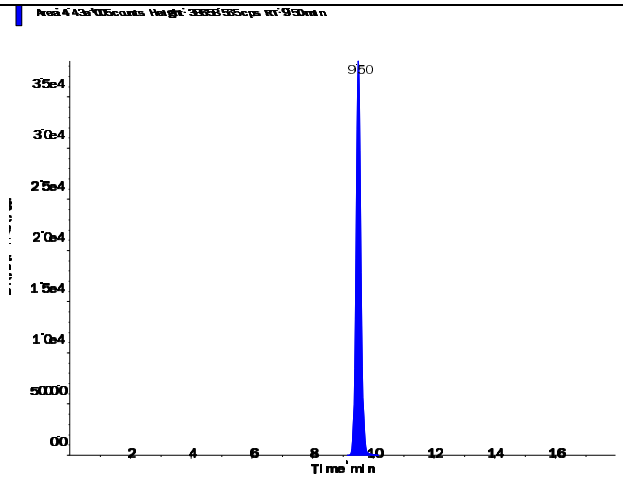

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Created with Analyst Reporter
Printed: 6/27/2016 7:40 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

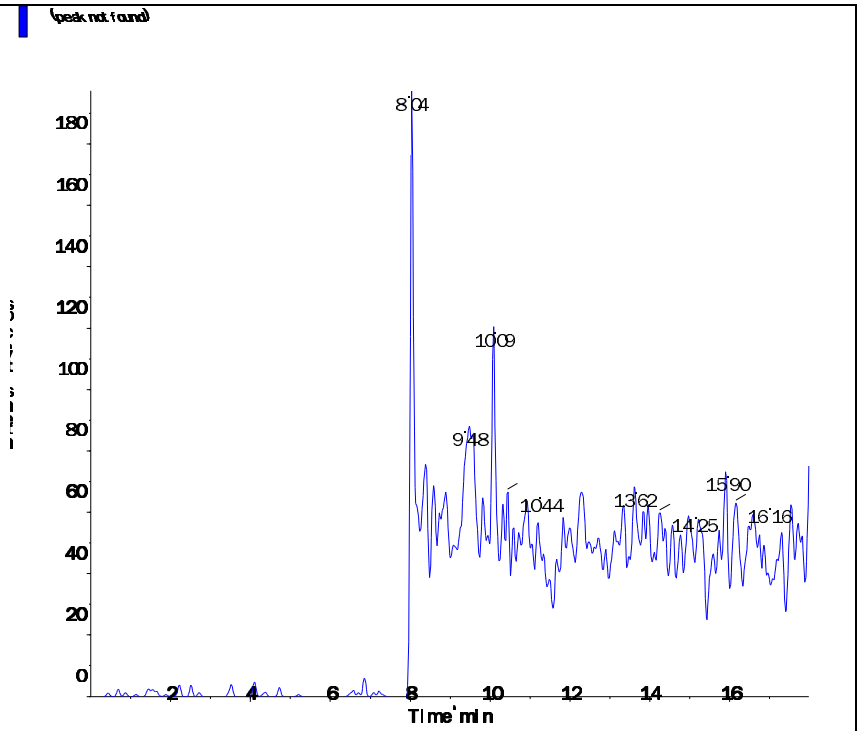

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

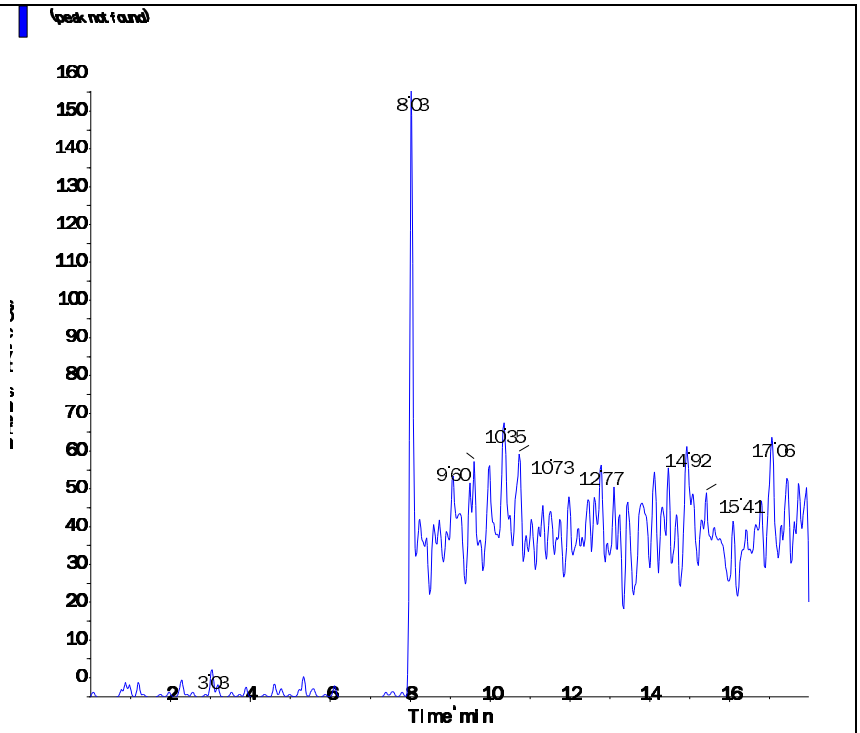

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Printed: 6/27/2016 7:40 PM

Data File	LM35467.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 9:25:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM35467.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 9:25:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.440e+05	9.53	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.160e+04	9.54	N/A	0.208
Perchlorate conf	1.180e+04	9.53	N/A	0.217

O18LP (Internal Standard)

RT (Exp. RT): 9.53(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

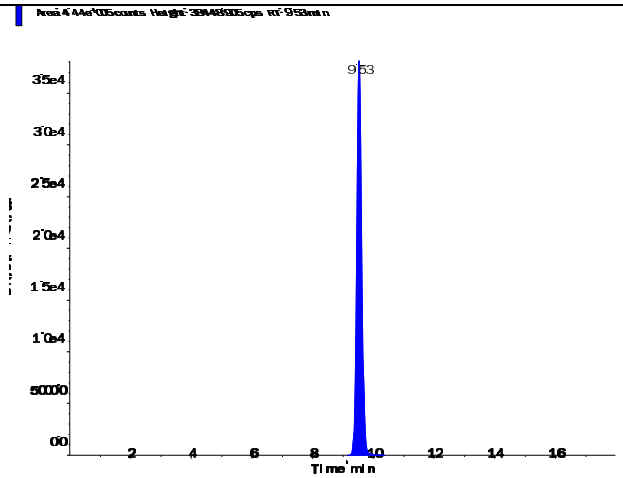

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Printed: 6/27/2016 7:40 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.54 (9.84) min
Calculated conc:	0.208 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

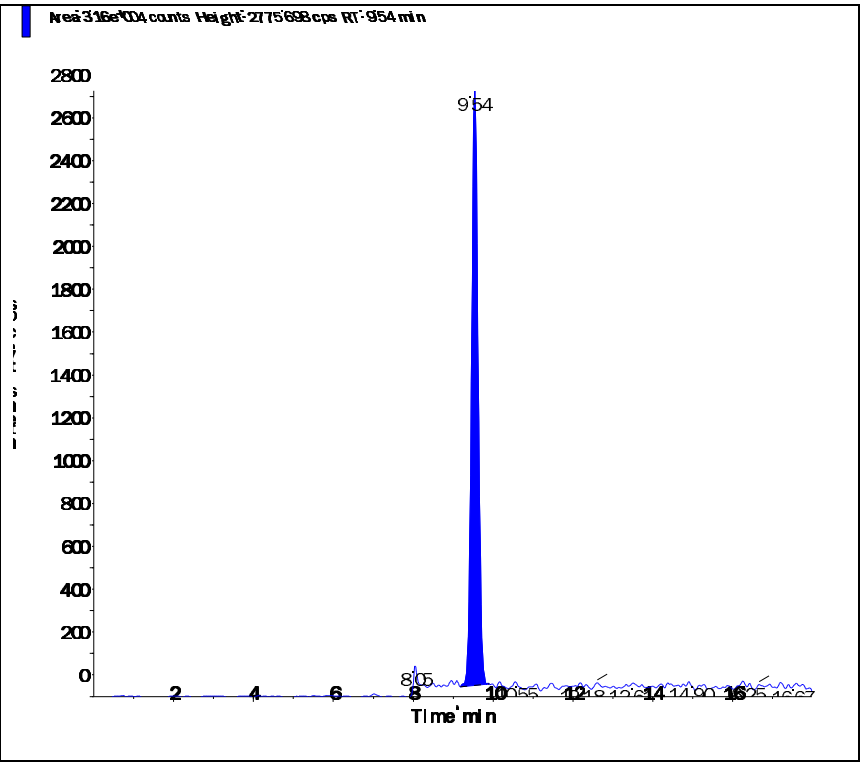

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.53 (9.84) min
Calculated conc:	0.217 ng/ml
Area Ratio:	0.027
Sample Type:	(Unknown)

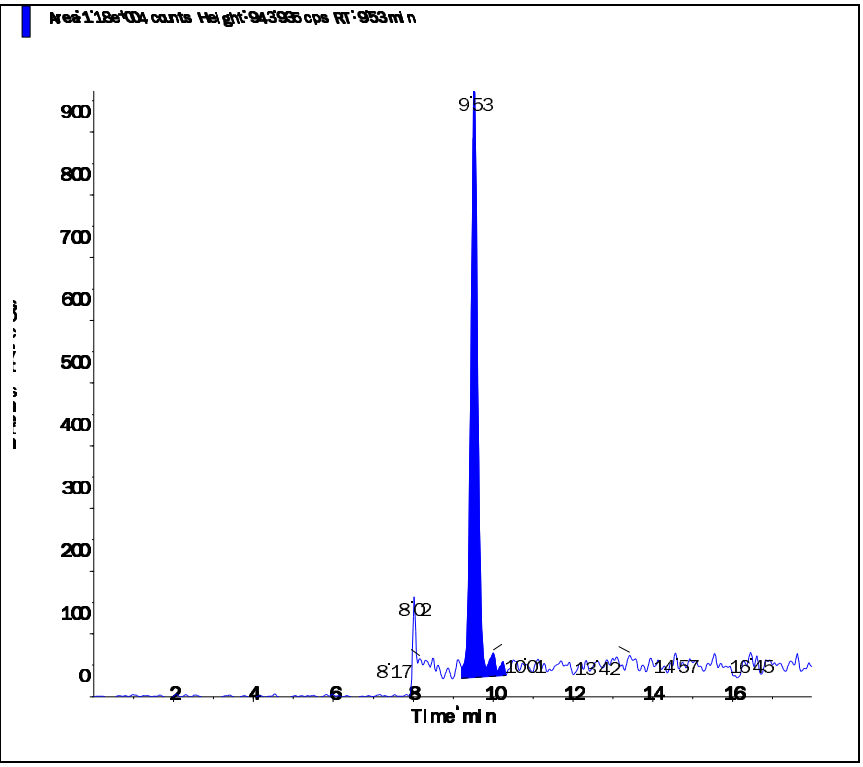

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Printed: 6/27/2016 7:48 PM

Data File	LM35491.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 4:59:54 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-04 LCS2 (0.2ug/L)	**Injection Vial**	7.00
Data File	LM35491.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 4:59:54 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.260e+05	9.57	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.830e+04	9.59	N/A	0.213
Perchlorate conf	1.400e+04	9.57	N/A	0.218

O18LP (Internal Standard)

RT (Exp. RT): 9.57(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

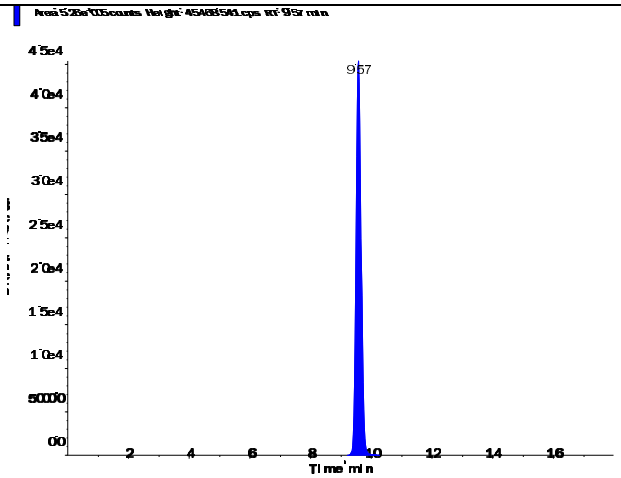

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Printed: 6/27/2016 7:48 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.59 (9.84) min
Calculated conc:	0.213 ng/ml
Area Ratio:	0.073
Sample Type:	(Unknown)

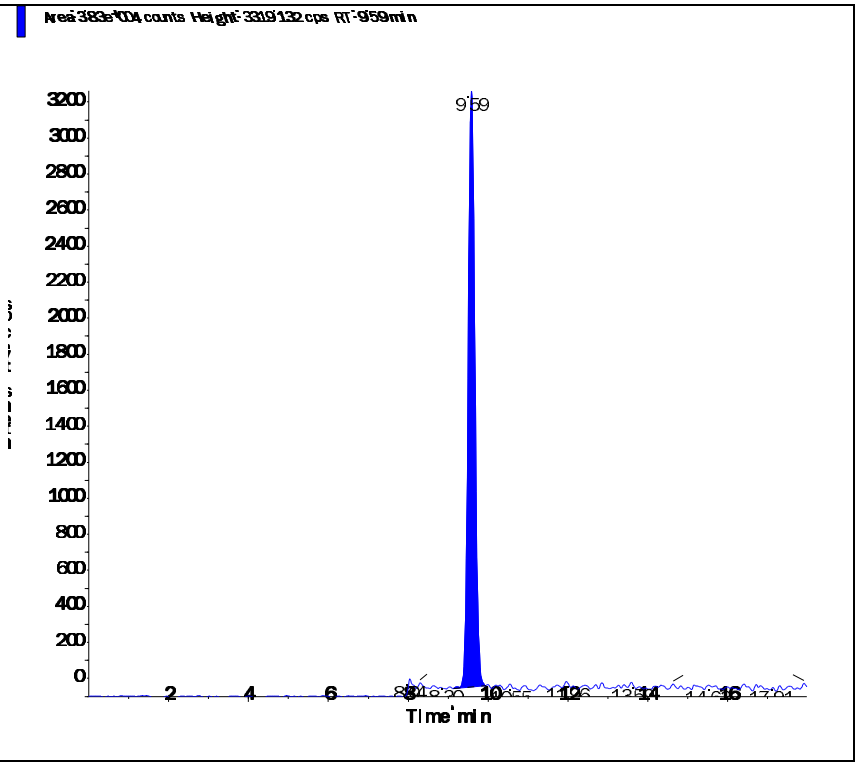

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.57 (9.84) min
Calculated conc:	0.218 ng/ml
Area Ratio:	0.027
Sample Type:	(Unknown)

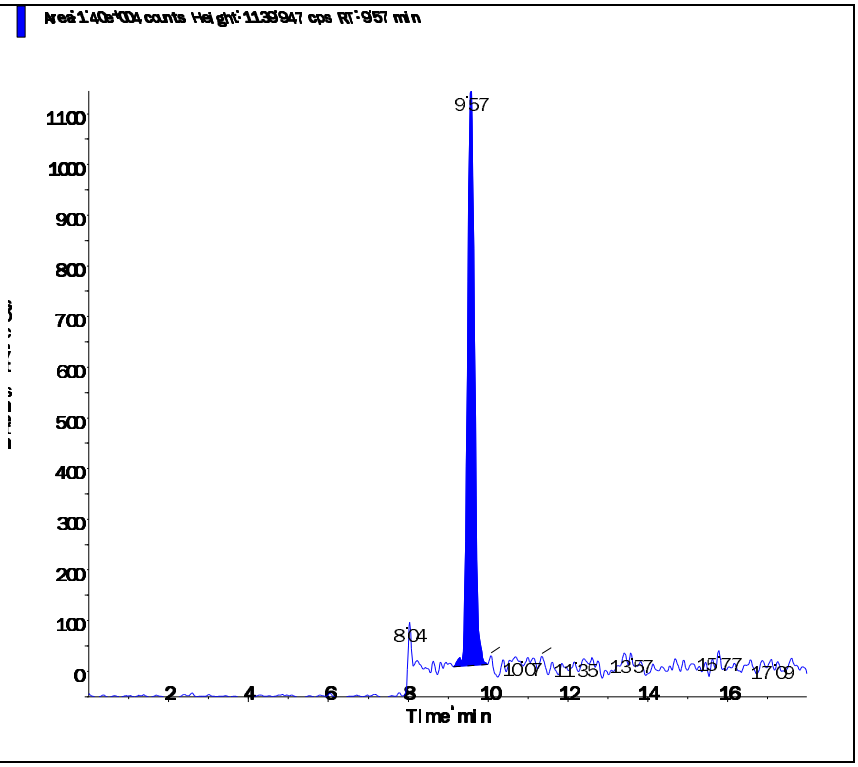

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3.0 Attachments

Microbac Laboratories Inc.
Ohio Valley Division Analyst List
July 6, 2016

001 - BIO-CHEM TESTING WVDEP 220
002 - REIC Consultants, Inc. WVDEP 060
003 - Sturm Environmental
004 - MICROBAC PITTSBURGH
005 - ES LABORATORIES
006 - ALCOSAN LABORATORIES
007 - ALS LABORATORIES
008 - BENCHMARK LABORATORIES
010 - MICROBAC CHICAGOLAND
AC - AMBER R. CARMICHAEL
ADC - ANTHONY D. CANTER
ADG - APRIL D. GREENE
AED - ALLEN E. DAVIS
ALS - ADRIANE L. STEED
AMA - ALEXANDRA M. ALFRED
AWE - ANDREW W. ESSIG
AZH - AFTER HOURS
BJO - BRIAN J. OGDEN
BKT - BRENDAN TORRENCE
BLG - BRENDA L. GREENWALT
BNB - Brandi N. Bentley
BRG - BRENDA R. GREGORY
CAA - CASSIE A. AUGENSTEIN
CAF - CHERYL A. FLOWERS
CEB - CHAD E. BARNES
CJQ - Cameron J. Quick
CJR - COURTNEY J. REXROAD
CLC - CHRYS L. CRAWFORD
CLS - CARA L. STRICKLER
CLW - CHARISSA L. WINTERS
CPD - CHAD P. DAVIS
CSH - CHRIS S. HILL
CV - Carl Volkman
DAK - DEAN A. KETELSEN
DCM - DAVID C. MERCKLE
DEV - DAVID E. VANDENBERG
DIH - DEANNA I. HESSON
DLB - DAVID L. BUMGARNER
DLP - DOROTHY L. PAYNE
DLW - DIANA L. WRIGHT
DSM - DAVID S. MOSSOR
ECL - ERIC C. LAWSON
EMW - ERIC M. WILKEN
ENY - EMILY N. YOAK
ERP - ERIN R. PORTER
FJB - FRANCES J. BOLDEN
JBK - JEREMY B. KINNEY
JDH - JUSTIN D. HESSON
JDS - JARED D. SMITH
JJS - JOHN J. STE MARIE
JKP - JACQUELINE K. PARSONS
JLD - JESSICA L. DELONG
JLL - JOHN L. LENT
JMW - JEANA M. WHITE
JTP - JOSHUA T. PEMBERTON
JWR - JOHN W. RICHARDS
JWS - JACK W. SHEAVES
JYH - JI Y. HU
KAJ - KELLIE A. JOHNSON
KAT - KATHY A. TUCKER
KDW - KATHRYN D. WELCH
KEB - KATIE E. BARNES
KHR - KIM H. RHODES
KKB - KERRI K. BUCK
KRA - KATHY R. ALBERTSON
KRB - KAELY R. BECKER
KRP - KATHY R. PARSONS
LEC - LAURA E. CARPENTER
LJH - Lacey J. Hendershot
LKN - LINDA K. NEDEFF
LLS - LARRY L. STEPHENS
LSB - LESLIE S. BUCINA
MAP - MARLA A. PORTER
MBK - MORGAN B. KNOWLTON
MDA - MIKE D. ALBERTSON
MDC - MIKE D. COCHRAN
MES - MARY E. SCHILLING
MLB - MEGAN L. BACHE
MMB - MAREN M. BEERY
MRT - MICHELLE R. TAYLOR
MSW - MATT S. WILSON
NPH - Natalie P. Hart
PDM - PIERCE D. MORRIS
PIT - MICROBAC WARRENDALE
PRL - PAIGE R. LAMB
PSW - PEGGY S. WEBB
QX - QIN XU
RAH - ROY A. HALSTEAD
REK - BOB E. KYER
RLB - BOB BUCHANAN
RM - RAYMOND MALEKE
RNP - RICK N. PETTY
RST - ROBIN S. TURNER
SAV - SARAH A. VANDENBERG
SCB - SARAH C. BOGOLIN
SDC - SHALYN D. CONLEY
SLM - STEPHANIE L. MOSSBURG
SLP - SHERI L. PFALZGRAF
TB - TODD BOYLE
TGF - TIM G. FELTON
TMB - TIFFANY M. BAILEY
TMM - TAMMY M. MORRIS
VC - VICKI COLLIER
WJB - WILL J. BEASLEY
WRR - WESLEY R. RICHARDS
WTD - WADE T. DELONG
XXX - UNAVAILABLE OR SUBCONTRACT

Microbac Laboratories Inc.
List of Valid Qualifiers
July 06, 2016

Qualkey: DOD

Qualifier	Description
*	Surrogate or spike compound out of range
+	Correlation coefficient for the MSA is less than 0.995
<	Result is less than the associated numerical value.
>	Greater than
A	See the report narrative
B	The reported result is associated with a contaminated method blank.
B,H1	Analyte present in method blank. Sample analysis performed past holding time.
B1	Target analyte detected in method blank at or above the method reporting limit
B3	Target analyte detected in calibration blank at or above the method reporting limit
B4	The BOD unseeded dilution water blank exceeded 0.2 mg/L
C	Confirmed by GC/MS
CG	Confluent growth
CT1	Cooler temperature at sample reciept exceeded regulatory limit.
DL	Surrogate or spike compound was diluted out
E	Estimated concentration due to sample matrix interference
E,CT1	Estimated results. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
EDL	Elevated sample reporting limits, presence of non-target analytes
EMPC	Estimated Maximum Possible Concentration
F, S	Estimated result below quantitation limit; method of standard additions(MSA)
F,CT1	Estimated value; the analyte concentration was less than the RL/LOQ. The cooler temperature at receipt exceeded regula
FL	Free Liquid
FP1	Did not ignite.
H1	Sample analysis performed past holding time.
H1,CT1	Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guidelines for reque
I	Semiquantitative result (out of instrument calibration range)
J	Estimated concentration; sample matrix interference.
J	Estimated value ; the analyte concentration was greater than the highest standard
J	Estimated value ; the analyte concentration was less than the LOQ.
J	The reported result is an estimated value.
J,B	Analyte detected in both the method blank and sample above the MDL.
J,CT1	Estimated value ; the analyte concentration was less than the LOQ. Cooler temperature at sample reciept exceeded regu
J,H1	Estimated value ; the analyte concentration was less than the LOQ. Sample analysis performed past holding time.
J,H1	The reported result is an estimated value. Sample was analyzed past holding time.
J,P	Estimate; columns don't agree to within 40%
J,S	Estimated concentration; analyzed by method of standard addition (MSA)
JB	The reported result is an estimated value. The reported result is also associated with a contaminated method blank.
JQ	The reported result is an estimated value and one or more quality control criteria failed. See narrative.
L	Sample reporting limits elevated due to matrix interference
L1	The associated blank spike (LCS) recovery was above the laboratory acceptance limits.
L2	The associated blank spike (LCS) recovery was below the laboratory acceptance limits.
M	Matrix effect; the concentration is an estimate due to matrix effect.
N	Nontarget analyte; the analyte is a tentativlely identified compound (TIC) by GC/MS
NA	Not applicable
ND	Not detected at or above the reporting limit (RL)
ND, B	Not detected at or above the reporting limit (RL). Analyte present in method blank.
ND, CT1	Analyte was not detected. The concentration is below the reported LOD. The cooler temperature at receipt exceeded reg
ND, L	Not detected; sample reporting limit (RL) elevated due to interference
ND, S	Not detected; analyzed by method of standard addition (MSA)
ND,H1	Not detected; Sample analysis performed past holding time.
ND,H1,CT1	Not detected; Sample analysis performed past holding time. The cooler temperature at receipt exceeded regulatory guide
NF	Not found by library search
NFL	No free liquid
NI	Non-ignitable
NR	Analyte is not required to be analyzed
NS	Not spiked
P	Concentrations >40% difference between the two GC columns
Q	One or more quality control criteria failed. See narrative.
Q,H1	One or more quality control criteria failed. Sample analyzed past holding time. See narrative.
QNS	Quantity of sample not sufficient to perform analysis
RA	Reanalysis confirms reported results
RE	Reanalysis confirms sample matrix interference
S	Analyzed by method of standard addition (MSA)
SMI	Sample matrix interference on surrogate
SP	Reported results are for spike compounds only
T5	Laboratory not licensed for this parameter
TIC	Library Search Compound
TNTC	Too numerous to count

Microbac Laboratories Inc.
List of Valid Qualifiers
July 06, 2016

Qualkey: DOD

TNTC, B	Too numerous to count. Analyte present in method blank.
TNTC,CT1	Too numerous to count. The cooler temperature at receipt exceeded regulatory guidelines for requested testing.
TNTC,H1	Too numerous to count. Sample analysis performed past holding time.
U	Analyte was not detected. The concentration is below the reported LOD.
U,CT1	Analyte was not detected. The concentration is below the reported LOD. Cooler temperature at sample reciept exceeded
U,H1	Not detected; Sample analysis performed past holding time.
UJ	Undetected; the MDL and RL are estimated due to quality control discrepancies.
UQ	Undetected; the analyte was analyzed for, but not detected.
W	Post-digestion spike for furnace AA out of control limits
X	Exceeds regulatory limit
X, S	Exceeds regulatory limit; method of standard additions (MSA)
Z	Cannot be resolved from isomer - see below

AECOM

Chain of Custody Record

COC Number:

Laboratory:	Microbac POC: Stephanie Mossburg	Project Manager:	Debra Richmann
Address:	158 Starlite Drive	Phone/Fax Number:	210-296-2000
	Marietta, OH 45750	Sampler (print):	Scott Beesinger
Phone:	1-800-373-4071		
Client:	AECOM	Signature:	Scott Beesinger
Address:	112 East Pecan Ste. 400		
	San Antonio, TX 78205		
Turn Around Time:	STANDARD	pH:	
Project Name/Location:	Longhorn		
Project Number:	60274185.0013BH 1824 MR10		

Mail to: Linda Raabe, 112 East Pecan STE. 400, San Antonio, TX 78205, 210-296-2000

Fed Ex Airbill No:

Program:

ERPIMS REQUIRED FIELDS

Site Name	Sample ID/Location ID	SBD	SED	Date	Time	Comp*	Grab	Matrix	Number of Containers	VOC	Perchlorate	Total Metals	1,4 - DIOXANE	SA CODE	Cooler ID	LOT CONTROL NUMBERS ABLOT	EBLOT	TBLOT
SITE 18/24	18CPTMW23SW-061516			6/15/16	0800		✓	W	6	✓	✓		✓					
	18CPTMW23-061516			6/15/16	0905		✓	W	6	✓	✓		✓					
	18CPTMW19SW-061516			6/15/16	1015		✓	W	6	✓	✓		✓					
	18CPTMW19-061516			6/15/16	1115		✓	W	6	✓	✓		✓					
	TRIP BLANK			6/15/16			✓	W	2	✓								

Comments: **STANDARD TAT**

	Date	Time		Date	Time	Relinquished by: (Signature)
Relinquished by: (Signature) Scott Beesinger	6/15/16	1545				
Relinquished by: (Signature)	Date	Time		Time	Remarks:	

Microbac OVD
Received: 06/16/2016 10:10
By: BRENDA GREENWALT
221000087284

Brenda Greenwalt ... Manager, Pink QA/QC Manager

*Homogenize all composite samples prior to analysis

00714660

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060927
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 27-JUN-2016

Samplenum	Container ID	Products
L16060927-01	761670	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-JUN-2016 15:16	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 07:41	AWE	CLS	
3	STORE	ORG4	A1	30-JUN-2016 16:12	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-JUN-2016 15:16	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 07:41	AWE	CLS	
3	STORE	ORG4	A1	30-JUN-2016 16:12	CLS	JST	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	ORG4	16-JUN-2016 15:16	CLS		
2	STORE	ORG4	A1	30-JUN-2016 16:12	CLS	JST	

Samplenum	Container ID	Products
L16060927-01	761671	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-JUN-2016 15:16	CLS		
2	PREP	W1	EXT	20-JUN-2016 16:36	CPD	BRG	
3	ANALYZ*	EXT	SEMI	23-JUN-2016 09:21	SCB	CPD	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-JUN-2016 15:16	CLS		
2	STORE	W1	A1	24-JUN-2016 08:22	BRG	BRG	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060927-01	761672	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-JUN-2016 15:16	CLS		
2	ANALYZ	W1	SEM	24-JUN-2016 12:12	JWR	BRG	
3	STORE	SEM	A1	29-JUN-2016 13:20	CLS	JWR	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060927
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 27-JUN-2016

Samplenum	Container ID	Products
L16060927-02	761673	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-JUN-2016 15:16	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 07:41	AWE	CLS	
3	STORE	ORG4	A1	30-JUN-2016 16:12	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-JUN-2016 15:16	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 07:41	AWE	CLS	
3	STORE	ORG4	A1	30-JUN-2016 16:12	CLS	JST	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-JUN-2016 15:16	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 07:41	AWE	CLS	
3	STORE	ORG4	A1	30-JUN-2016 16:12	CLS	JST	

Samplenum	Container ID	Products
L16060927-02	761674	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-JUN-2016 15:16	CLS		
2	PREP	W1	EXT	20-JUN-2016 16:36	CPD	BRG	
3	ANALYZ*	EXT	SEMI	23-JUN-2016 09:21	SCB	CPD	
4	DISP	EXT	DISP	24-JUN-2016 11:59	BJO	BJO	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-JUN-2016 15:16	CLS		
2	STORE	W1	A1	24-JUN-2016 08:22	BRG	BRG	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060927
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 27-JUN-2016

Samplenum	Container ID	Products
L16060927-02	761675	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-JUN-2016 15:16	CLS		
2	ANALYZ	W1	SEM	24-JUN-2016 12:12	JWR	BRG	
3	STORE	SEM	A1	29-JUN-2016 13:20	CLS	JWR	

Samplenum	Container ID	Products
L16060927-03	761676	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-JUN-2016 15:16	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 07:41	AWE	CLS	
3	STORE	ORG4	A1	30-JUN-2016 16:12	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-JUN-2016 15:16	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 07:41	AWE	CLS	
3	STORE	ORG4	A1	30-JUN-2016 16:12	CLS	JST	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	ORG4	16-JUN-2016 15:16	CLS		
2	STORE	ORG4	A1	30-JUN-2016 16:12	CLS	JST	

Samplenum	Container ID	Products
L16060927-03	761677	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-JUN-2016 15:16	CLS		
2	PREP	W1	EXT	20-JUN-2016 16:36	CPD	BRG	
3	ANALYZ*	EXT	SEMI	23-JUN-2016 09:21	SCB	CPD	
4	DISP	EXT	DISP	24-JUN-2016 11:59	BJO	BJO	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-JUN-2016 15:16	CLS		
2	STORE	W1	A1	24-JUN-2016 08:22	BRG	BRG	

Sample extract/digestate/leachate

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060927
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 27-JUN-2016

Samplenum	Container ID	Products
L16060927-03	761678	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-JUN-2016 15:16	CLS		
2	ANALYZ	W1	SEM	24-JUN-2016 12:12	JWR	BRG	
3	STORE	SEM	A1	29-JUN-2016 13:20	CLS	JWR	

Samplenum	Container ID	Products
L16060927-04	761679	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-JUN-2016 15:16	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 07:41	AWE	CLS	
3	STORE	ORG4	A1	30-JUN-2016 16:12	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-JUN-2016 15:16	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 07:41	AWE	CLS	
3	STORE	ORG4	A1	30-JUN-2016 16:12	CLS	JST	

Bottle: 3

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-JUN-2016 15:16	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 07:41	AWE	CLS	
3	STORE	ORG4	A1	30-JUN-2016 16:12	CLS	JST	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

Microbac Laboratories Inc.

Internal Chain of Custody Report

Login: L16060927
Account: 2551
Project: 2551.096
Samples: 5
Due Date: 27-JUN-2016

Samplenum	Container ID	Products
L16060927-04	761680	827-DIOXANE

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-JUN-2016 15:16	CLS		
2	PREP	W1	EXT	20-JUN-2016 16:36	CPD	BRG	
3	ANALYZ*	EXT	SEMI	23-JUN-2016 09:21	SCB	CPD	
4	DISP	EXT	DISP	24-JUN-2016 11:59	BJO	BJO	

Sample extract/digestate/leachate

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-JUN-2016 15:16	CLS		
2	STORE	W1	A1	24-JUN-2016 08:23	BRG	BRG	

Sample extract/digestate/leachate

Samplenum	Container ID	Products
L16060927-04	761681	6850

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	W1	16-JUN-2016 15:16	CLS		
2	ANALYZ	W1	SEM	24-JUN-2016 12:12	JWR	BRG	
3	STORE	SEM	A1	29-JUN-2016 13:20	CLS	JWR	

Samplenum	Container ID	Products
L16060927-05	761682	826-LOW

Bottle: 1

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-JUN-2016 15:16	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 07:41	AWE	CLS	
3	STORE	ORG4	A1	30-JUN-2016 16:12	CLS	JST	

Bottle: 2

Seq.	Purpose	From	To	Date/Time	Accept	Relinquish	pH
1	LOGIN	COOLER	V1	16-JUN-2016 15:16	CLS		
2	ANALYZ	V1	ORG4	17-JUN-2016 07:41	AWE	CLS	
3	STORE	ORG4	A1	30-JUN-2016 16:12	CLS	JST	

A1 - Sample Archive (COLD)
A2 - Sample Archive (AMBIENT)
F1 - Volatiles Freezer in Login
V1 - Volatiles Refrigerator in Login
W1 - Walkin Cooler in Login

NELAP Addendum - January 4, 2016

Non-NELAP LIMS Product and Description

The following is a list of those tests that are not included in the Microbac – OVD NELAP Scope of Accreditation:

Heat of Combustion (BTU)
Total Halide by Bomb Combustion (TX)
Particle Sizing - 200 Mesh (PS200)
Specific Gravity/Density (SPGRAV)
Total Residual Chlorine (CL-TRL)
Total Volatile Solids (all forms) (TVS)
Total Coliform Bacteria (all methods)
Fecal Coliform Bacteria (all methods)
Sulfite (SO3)
Propionaldehyde (HPLC-UV)

SOLID AND HAZARDOUS CHEMICALS
Nitrogen, Ammonia by Method 350.1
Chromium, Hexavalent, Leachable by SM3500 Cr-B 2009
Phenolics, Total by Method 420.1
ASTM D3987-06

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD HPLC02/HPLC-UV

Nitroglycerin
Acetic acid
Butyric acid
Lactic acid
Propionic acid
Pyruvic acid

OVD MSS01/GC-MS

1,4-Phenylenediamine
1-Methylnaphthalene
1,4-Dioxane
Atrazine
Benzaldehyde
Biphenyl
Caprolactam
Hexamethylphosphoramide (HMPA)
Pentachlorobenzene
Pentachloroethane

NELAP Accreditation by Laboratory SOP

NONPOTABLE WATER

OVD MSV01/GC-MS

1, 1, 2-Trichloro-1,2,2-trifluoroethane
1,3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
T-amylmethylether (TAME)
Tetrahydrofuran (THF)

OVD HPLC07/HPLC-MS-MS

Hexamethylphosphoramide (XMPA-LCMS)

OVD HPLC12/HPLC/UV

Acetate
Formate

OVD RSK01/GC-FID

Acetylene
Propane

OVD K9305/ISE

Fluoroborate

SOLID AND HAZARDOUS CHEMICALS

OVD MSS0I/GC-MS

1-Methylnaphthalene
Benzaldehyde
Biphenyl
Caprolactam
Pentachloroethane

NELAP Accreditation by Laboratory SOP

SOLID AND HAZARDOUS CHEMICALS

OVD MSV0I/GC-MS

1.3-Butadiene
Cyclohexane
Cyclohexanone
Dimethyl disulfide
Dimethylsulfide
Ethyl-t-butylether (ETBE)
Isoprene
Methylacetate
Methylcyclohexane
n-Hexane
T-amylmethylether (TAME)

Microbac

Laboratory Report Number: L16061026

Kayla Teague
AECOM Technical Services, Inc.
16000 Dallas Parkway
Dallas, TX 75248

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac's Ohio Valley Division (OVD). If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed below.

Laboratory Contact:
Michelle Taylor – Client Services Specialist
(740) 373-4071
Michelle.Taylor@microbac.com

I certify that all test results meet all of the requirements of the DoD QSM and other applicable contract terms and conditions. Any exceptions are attached to this cover page or addressed in the method narratives presented in the report. All results for soil samples are reported on a 'dry-weight' basis unless specified otherwise. Analytical results for water and wastes are reported on a 'as received' basis unless specified otherwise. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories, DoD ELAP certification number 2936.01. The reported results are related only to the samples analyzed as received.

This report was certified on July 12 2016

David Vandenberg – Managing Director

State of Origin: TX
Accrediting Authority: Texas Commission on Environmental Quality ID:T104704252-07-TX
QAPP: DOD Ver 4.1

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Record of Sample Receipt and Inspection

Comments/Discrepancies

This is the record of the shipment conditions and the inspection records for the samples received and reported as a sample delivery group (SDG). All of the samples were inspected and observed to conform to our receipt policies, except as noted below.

There were no discrepancies.

Discrepancy	Resolution

Coolers

Cooler #	Temperature Gun	Temperature	COC #	Airbill #	Temp Required?
0019780	H	5.0		J2317164975	X

Inspection Checklist

#	Question	Result
1	Were shipping coolers sealed?	Yes
2	Were custody seals intact?	Yes
3	Were cooler temperatures in range of 0-6?	Yes
4	Was ice present?	Yes
5	Were COC's received/information complete/signed and dated?	Yes
6	Were sample containers intact and match COC?	Yes
7	Were sample labels intact and match COC?	Yes
8	Were the correct containers and volumes received?	Yes
9	Were samples received within EPA hold times?	Yes
10	All samples were checked for pH and met the standard. Exceptions are noted above under discrepancy. (water only)	Yes
11	Were pH ranges acceptable? (voa's excluded)	Yes
12	Were VOA samples free of headspace (less than 6mm)?	Yes

Microbac Laboratories ● Ohio Valley Division
158 Starlite Drive, Marietta, OH 45750 ● T: (740)373-4071 F: (740)373-4835
www.microbac.com

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Samples Received

Client ID	Laboratory ID	Date Collected	Date Received
18WW16-061616	L16061026-01	06/16/2016 07:55	06/17/2016 09:48
18WW16F-061616	L16061026-02	06/16/2016 07:55	06/17/2016 09:48
102-061616	L16061026-03	06/16/2016 08:40	06/17/2016 09:48
129-061616	L16061026-04	06/16/2016 09:05	06/17/2016 09:48
120-061616	L16061026-05	06/16/2016 09:25	06/17/2016 09:48
120F-061616	L16061026-06	06/16/2016 09:25	06/17/2016 09:48
123-061616	L16061026-07	06/16/2016 09:55	06/17/2016 09:48
TRIP BLANK	L16061026-08	06/16/2016 00:01	06/17/2016 09:48

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Microbac REPORT L16061026
PREPARED FOR AECOM Technical Services, Inc.
WORK ID:

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Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	8260
Prep Batch Number(s):	573776,573953	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-29 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Sarah Vandenberg	Sarah Vandenberg		2016-06-29 20:07:04

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	8260
Prep Batch Number(s):	573776,573953	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-29 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	8260
Prep Batch Number(s):	573776,573953	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-29 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	8260
Prep Batch Number(s):	573776,573953	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-29 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			1
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

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Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	8260
Prep Batch Number(s):	573776,573953	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-29 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	8260
Prep Batch Number(s):	573776,573953	**Reviewer Name:**	Sarah Vandenberg
LRC Date:	2016-06-29 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1)Bromomethane and 2-Hexanone exceeded the UCL in the CCV analyzed 06/22/106 om HPMS11.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573299	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-29 00:00:00		

Laboratory Data Package Cover Page

X	R1	Field chain-of-custody documentation;
X	R2	Sample identification cross-reference;
X	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
X	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
X	R5	Test reports/summary forms for blank samples;
X	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
X	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
X	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
X	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
X	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Eric Lawson		Chemist III	2016-06-29 15:41:36

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573299	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-29 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?	X				
Were surrogate percent recoveries in all samples within the laboratory QC limits?	X				
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573299	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-29 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573299	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-29 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?			X		
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?			X		
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?			X		
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573299	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-29 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	827-DIOXANE
Prep Batch Number(s):	WG573299	**Reviewer Name:**	Eric Lawson
LRC Date:	2016-06-29 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574101	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Wade DeLong	Wade DeLong	Chemist I	2016-06-28 17:49:28

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574101	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports					
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?			X		
Were % moisture (or solids) reported for all soil and sediment samples?			X		
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples	X				
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574101	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?	X				
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?			X		
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574101	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?	X				
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?	X				
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574101	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	6850
Prep Batch Number(s):	WG574101	**Reviewer Name:**	Wade DeLong
LRC Date:	2016-06-28 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573656	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Maren Beery	Maren Beery	Metals Supervisor	2016-07-11 15:22:46

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573656	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				ER#1
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573656	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573656	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?			X		
Were ion abundance data within the method-required QC limits?			X		
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?			X		
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573656	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	6010
Prep Batch Number(s):	WG573656	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - Client sample 02 required dilution analysis in order to obtain results for calcium, iron, magnesium and sodium within the calibration range. Client samples 04 and 06 required dilution analyses in order to obtain results for sodium within the calibration range.

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG573548	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Maren Beery	Maren Beery	Metals Supervisor	2016-07-11 14:48:25

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG573548	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				ER#1
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?		X			ER#3
Laboratory control samples (LCS):					
Were all COCs included in the LCS?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG573548	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				ER#2
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG573548	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?		X			ER#4
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG573548	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

1. Items identified by the letter “R” must be included in the laboratory data package submitted in the TRRP-required report(s). Items identified by the letter “S” should be retained and made available upon request for the appropriate retention period;
2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

The Exception Report for each “No” or “Not Reviewed (NR)” item in Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory does not hold NELAC accreditation under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	6020
Prep Batch Number(s):	WG573548	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

ER#1 - Client sample 02 required dilution analysis in order to obtain results for chromium, cobalt, copper, manganese, and nickel within the calibration range. Client sample 04 required dilution analysis in order to obtain a result for barium within the calibration range.

ER#2 - Due to a result that was noncompliant on the negative side upon initial analysis, vanadium for client sample 02 was reported from a dilution analysis.

ER#3 - The method blank analyzed on 29-JUN-2016 yielded a result for manganese greater than the LOD and less than the LOQ. However, all client samples had manganese concentrations that were greater than ten times that of the method blank.

ER#4 - Due to continuing calibration verification failure for cobalt on 29-JUN-2016 at 13:25, all QA/QC and client samples were reanalyzed on a later calibration for cobalt. Due to low level continuing calibration verification failure for chromium on 05-Jul-2016 at 19:20, client sample 02 was reanalyzed on a later calibration which was compliant for chromium.

ER#5 - The CCB analyzed on 29-JUN-2016 at 13:29 yielded a result for manganese greater than the LOD and less than the LOQ. However, all client samples had manganese concentrations that were greater than ten times that of the calibration blank.

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG573569	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Laboratory Data Package Cover Page

	R1	Field chain-of-custody documentation;
	R2	Sample identification cross-reference;
	R3	Test reports (analytical data sheets) for each environmental sample that includes: (a) Items consistent with NELAC Chapter 5, (b) dilution factors, (c) preparation methods, (d) cleanup methods, and (e) a.if required for the project, tentatively identified compounds (TICs).
	R4	Surrogate recovery data including: (a) Calculated recovery (%R), and (b) the laboratory's surrogate QC limits.
	R5	Test reports/summary forms for blank samples;
	R6	Test reports/summary forms for laboratory control samples (LCSs) including: (a) LCS spiking amounts, (b) calculated %R for each analyte, and (c) the laboratory's LCS QC limits.
	R7	Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including: (a) samples associated with the MS/MSD clearly identified, (b) MS/MSD spiking compounds, (c) concentration of each MS/MSD analyte measured in the parent and spiked samples, (d) calculated %Rs and relative percent differences (RPDs), and (e) the laboratory's MS/MSD QC limits.
	R8	Laboratory analytical duplicate (if applicable) recovery and precision: (a) the amount of analyte measured in the duplicate, (b) the calculated RPD, and (c) the laboratory's QC limits for analytical duplicates.
	R9	List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix.
	R10	Other problems or anomalies.

Name (Printed)	Signature	Official Title (Printed)	Date
Maren Beery	Maren Beery	Metals Supervisor	2016-07-11 14:42:01

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG573569	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Description	Yes	No	NA	NR	ER#
Chain-of-custody (C-O-C)					
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	X				
Were all departures from standard conditions described in an exception report?	X				
Sample and quality control (QC) identification	X				
Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	X				
Are all laboratory ID numbers cross-referenced to the corresponding QC data?	X				
Test reports	X				
Were all samples prepared and analyzed within holding times?	X				
Other than those results < MQL, were all other raw values bracketed by calibration standards?	X				
Were calculations checked by a peer or supervisor?	X				
Were all analyte identifications checked by a peer or supervisor?	X				
Were sample detection limits reported for all analytes not detected?	X				
Were all results for soil and sediment samples reported on a dry weight basis?	X				
Were % moisture (or solids) reported for all soil and sediment samples?	X				
Were bulk soils/solids samples for volatile analysis extracted with methanol per SW846 Method 5035?			X		
If required for the project, are TICs reported?			X		
Surrogate recovery data					
Were surrogates added prior to extraction?			X		
Were surrogate percent recoveries in all samples within the laboratory QC limits?			X		
Test reports/summary forms for blank samples					
Were appropriate type(s) of blanks analyzed?	X				
Were blanks analyzed at the appropriate frequency?	X				
Were method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	X				
Were blank concentrations < MQL?	X				
Laboratory control samples (LCS):	X				
Were all COCs included in the LCS?	X				

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG573569	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	X				
Were LCSs analyzed at the required frequency?	X				
Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	X				
Does the detectability check sample data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	X				
Was the LCSD RPD within QC limits?			X		
Matrix spike (MS) and matrix spike duplicate (MSD) data					
Were the project/method specified analytes included in the MS and MSD?			X		
Were MS/MSD analyzed at the appropriate frequency?			X		
Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?			X		
Were MS/MSD RPDs within laboratory QC limits?			X		
Analytical duplicate data					
Were appropriate analytical duplicates analyzed for each matrix?			X		
Were analytical duplicates analyzed at the appropriate frequency?			X		
Were RPDs or relative standard deviations within the laboratory QC limits?			X		
Method quantitation limits (MQLs):					
Are the MQLs for each method analyte included in the laboratory data package?	X				
Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	X				
Are unadjusted MQLs and DCSs included in the laboratory data package?	X				
Other problems/anomalies					
Are all known problems/anomalies/special conditions noted in this LRC and ER?	X				
Was applicable and available technology used to lower the SDL to minimize the matrix interference effects on the sample results?	X				
Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	X				
Initial calibration (ICAL)					
Were response factors and/or relative response factors for each analyte within QC limits?	X				
Were percent RSDs or correlation coefficient criteria met?	X				

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG573569	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Was the number of standards recommended in the method used for all analytes?	X				
Were all points generated between the lowest and highest standard used to calculate the curve?					
Are ICAL data available for all instruments used?	X				
Has the initial calibration curve been verified using an appropriate second source standard?	X				
Initial and continuing calibration verification (ICCV and CCV) and continuing calibration blank (CCB):					
Was the CCV analyzed at the method-required frequency?	X				
Were percent differences for each analyte within the method-required QC limits?	X				
Was the ICAL curve verified for each analyte?	X				
Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
Mass spectral tuning					
Was the appropriate compound for the method used for tuning?	X				
Were ion abundance data within the method-required QC limits?	X				
Internal standards (IS)					
Were IS area counts and retention times within the method-required QC limits?	X				
Raw data (NELAC Section 5.5.10)					
Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
Were data associated with manual integrations flagged on the raw data?			X		
Dual column confirmation					
Did dual column confirmation results meet the method-required QC?			X		
Tentatively identified compounds (TICs)					
If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
Interference Check Sample (ICS) results					
Were percent recoveries within method QC limits?	X				
Serial dilutions, post digestion spikes, and method of standard additions					
Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
Method detection limit (MDL) studies					

Microbac

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG573569	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

Was a MDL study performed for each reported analyte?	X				
Is the MDL either adjusted or supported by the analysis of DCSs?	X				
Proficiency test reports					
Was the laboratory's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
Standards documentation					
Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
Compound/analyte identification procedures					
Are the procedures for compound/analyte identification documented?	X				
Demonstration of analyst competency (DOC)					
Was DOC conducted consistent with NELAC Chapter 5?	X				
Is documentation of the analyst's competency up-to-date and on file?	X				
Verification/validation documentation for methods (NELAC Chapter 5)					
Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
Laboratory standard operating procedures (SOPs)					
Are laboratory SOPs current and on file for each method performed	X				

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2. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable);
3. NA = Not applicable;
4. NR = Not reviewed;
5. ER# = Exception Report identification number (an Exception Report should be completed for an item if “NR” or “No” is checked).

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Release Statement: I am responsible for the release of this laboratory data package. This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with

Texas Risk Reduction Program (TRRP) Checklist

Laboratory Name:	Microbac OVD	**Laboratory Log Number:**	L16061026
Project Name:		**Method:**	7471
Prep Batch Number(s):	WG573569	**Reviewer Name:**	Maren Beery
LRC Date:	2016-07-11 00:00:00		

the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information affecting the quality of the data has been knowingly withheld.

Check, if applicable: [ ] This laboratory meets an exception under 30 TAC §25.6 and was last inspection by [ ] TCEQ or [ ] _____ on **(enter date of last inspection**). Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Exceptions Report

1.2 Certificate of Analysis

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	18WW16-061616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573776	**Analyst:**	JDS	**Run Date:**	06/23/2016 01:14
Collect Date:	06/16/2016 07:55	**Dilution:**	1	**File ID:**	11M12817
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	0.605	J	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	108	85	115	
1,2-Dichloroethane-d4	104	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	91.3	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW16-061616	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 19:40
Collect Date:	06/16/2016 07:55	**Dilution:**	1	**File ID:**	1LM.LM35503
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	5.76		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16061026-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW16F-061616	**Prep Method:**	3015	**Prep Date:**	06/22/2016 07:53
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 10:26
Workgroup #:	WG574214	**Analyst:**	JYH	**Run Date:**	06/27/2016 11:42
Collect Date:	06/16/2016 07:55	**Dilution:**	1	**File ID:**	T3.062716.114220
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.331		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Potassium, Total	7440-09-7	13.0		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW16F-061616	**Prep Method:**	3015	**Prep Date:**	06/22/2016 07:53
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 10:26
Workgroup #:	WG574214	**Analyst:**	JYH	**Run Date:**	06/27/2016 13:00
Collect Date:	06/16/2016 07:55	**Dilution:**	20	**File ID:**	T3.062716.130008
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	195		10.0	5.00	2.50
Iron, Total	7439-89-6	21.5		4.00	2.00	1.00
Magnesium, Total	7439-95-4	146		20.0	10.0	5.00
Sodium, Total	7440-23-5	587		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW16F-061616	**Prep Method:**	3015	**Prep Date:**	06/21/2016 11:18
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/29/2016 11:35
Workgroup #:	WG574572	**Analyst:**	BKT	**Run Date:**	06/29/2016 14:51
Collect Date:	06/16/2016 07:55	**Dilution:**	1	**File ID:**	NI.062916.145120
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00134	J	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00894		0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.186		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.00645		0.00120	0.000600	0.000300
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Zinc, Total	7440-66-6	0.158		0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW16F-061616	**Prep Method:**	3015	**Prep Date:**	06/21/2016 11:18
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/05/2016 09:36
Workgroup #:	WG574572	**Analyst:**	JYH	**Run Date:**	07/05/2016 16:05
Collect Date:	06/16/2016 07:55	**Dilution:**	20	**File ID:**	NI.070516.160533
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Cobalt, Total	7440-48-4	0.355		0.0400	0.0200	0.0100
Copper, Total	7440-50-8	0.828		0.0800	0.0400	0.0200
Manganese, Total	7439-96-5	3.12		0.0800	0.0400	0.0200
Vanadium, Total	7440-62-2	0.0200	U	0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW16F-061616	**Prep Method:**	3015	**Prep Date:**	06/21/2016 11:18
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/05/2016 09:36
Workgroup #:	WG574572	**Analyst:**	JYH	**Run Date:**	07/05/2016 16:08
Collect Date:	06/16/2016 07:55	**Dilution:**	200	**File ID:**	NI.070516.160845
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nickel, Total	7440-02-0	14.3		1.60	0.800	0.400

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW16F-061616	**Prep Method:**	3015	**Prep Date:**	06/21/2016 11:18
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/06/2016 09:17
Workgroup #:	WG574572	**Analyst:**	JYH	**Run Date:**	07/06/2016 15:27
Collect Date:	06/16/2016 07:55	**Dilution:**	200	**File ID:**	NI.070616.152752
Sample Tag:	DL03	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chromium, Total	7440-47-3	4.62		0.800	0.400	0.200

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-02	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	18WW16F-061616	**Prep Method:**	7470A	**Prep Date:**	06/21/2016 12:47
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/24/2016 11:43
Workgroup #:	WG573634	**Analyst:**	AMA	**Run Date:**	06/24/2016 12:18
Collect Date:	06/16/2016 07:55	**Dilution:**	1	**File ID:**	M7.062416.121852
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	102-061616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573776	**Analyst:**	JDS	**Run Date:**	06/22/2016 23:06
Collect Date:	06/16/2016 08:40	**Dilution:**	1	**File ID:**	11M12813
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	85	115	
1,2-Dichloroethane-d4	98.7	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	91.0	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	102-061616	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 01:12
Collect Date:	06/16/2016 08:40	**Dilution:**	100	**File ID:**	1LM.LM35479
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	107		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L16061026-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	129-061616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573776	**Analyst:**	JDS	**Run Date:**	06/23/2016 00:10
Collect Date:	06/16/2016 09:05	**Dilution:**	5	**File ID:**	11M12815
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	25.0	U	50.0	25.0	12.5
Benzene	71-43-2	1.25	U	5.00	1.25	0.625
Bromobenzene	108-86-1	1.25	U	5.00	1.25	0.625
Bromochloromethane	74-97-5	2.00	U	5.00	2.00	1.00
Bromodichloromethane	75-27-4	2.50	U	5.00	2.50	1.25
Bromoform	75-25-2	5.00	U	10.0	5.00	2.50
Bromomethane	74-83-9	5.00	Q	10.0	5.00	2.50
2-Butanone	78-93-3	25.0	U	50.0	25.0	12.5
n-Butylbenzene	104-51-8	2.50	U	5.00	2.50	1.25
sec-Butylbenzene	135-98-8	2.50	U	5.00	2.50	1.25
tert-Butylbenzene	98-06-6	2.50	U	5.00	2.50	1.25
Carbon disulfide	75-15-0	5.00	U	10.0	5.00	2.50
Carbon tetrachloride	56-23-5	2.50	U	5.00	2.50	1.25
Chlorobenzene	108-90-7	1.25	U	5.00	1.25	0.625
Chlorodibromomethane	124-48-1	2.50	U	5.00	2.50	1.25
Chloroethane	75-00-3	5.00	U	10.0	5.00	2.50
Chloroform	67-66-3	3.28	J	5.00	1.25	0.625
Chloromethane	74-87-3	5.00	U	10.0	5.00	2.50
2-Chlorotoluene	95-49-8	1.25	U	5.00	1.25	0.625
4-Chlorotoluene	106-43-4	2.50	U	5.00	2.50	1.25

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dibromo-3-chloropropane	96-12-8	10.0	U	25.0	10.0	5.00
1,2-Dibromoethane	106-93-4	2.50	U	5.00	2.50	1.25
Dibromomethane	74-95-3	2.50	U	5.00	2.50	1.25
1,2-Dichlorobenzene	95-50-1	1.25	U	5.00	1.25	0.625
1,3-Dichlorobenzene	541-73-1	2.50	U	5.00	2.50	1.25
1,4-Dichlorobenzene	106-46-7	1.25	U	5.00	1.25	0.625
Dichlorodifluoromethane	75-71-8	2.50	U	5.00	2.50	1.25
1,1-Dichloroethane	75-34-3	1.25	U	5.00	1.25	0.625
1,2-Dichloroethane	107-06-2	25.4		5.00	2.50	1.25
1,1-Dichloroethene	75-35-4	5.00	U	10.0	5.00	2.50
cis-1,2-Dichloroethene	156-59-2	5.02		5.00	2.50	1.25
trans-1,2-Dichloroethene	156-60-5	2.50	U	5.00	2.50	1.25
1,2-Dichloropropane	78-87-5	2.00	U	5.00	2.00	1.00
1,3-Dichloropropane	142-28-9	2.00	U	5.00	2.00	1.00
2,2-Dichloropropane	594-20-7	2.50	U	5.00	2.50	1.25
cis-1,3-Dichloropropene	10061-01-5	2.50	U	5.00	2.50	1.25
trans-1,3-Dichloropropene	10061-02-6	5.00	U	10.0	5.00	2.50
1,1-Dichloropropene	563-58-6	2.50	U	5.00	2.50	1.25
Ethylbenzene	100-41-4	2.50	U	5.00	2.50	1.25
2-Hexanone	591-78-6	25.0	Q	50.0	25.0	12.5
Hexachlorobutadiene	87-68-3	2.50	U	5.00	2.50	1.25
Isopropylbenzene	98-82-8	2.50	U	5.00	2.50	1.25
p-Isopropyltoluene	99-87-6	2.50	U	5.00	2.50	1.25
4-Methyl-2-pentanone	108-10-1	25.0	U	50.0	25.0	12.5
Methylene chloride	75-09-2	2.50	U	5.00	2.50	1.25
Naphthalene	91-20-3	2.00	U	5.00	2.00	1.00
n-Propylbenzene	103-65-1	1.25	U	5.00	1.25	0.625
Styrene	100-42-5	1.25	U	5.00	1.25	0.625
1,1,1,2-Tetrachloroethane	630-20-6	2.50	U	5.00	2.50	1.25
1,1,2,2-Tetrachloroethane	79-34-5	2.00	U	5.00	2.00	1.00
Tetrachloroethene	127-18-4	2.50	U	5.00	2.50	1.25
Toluene	108-88-3	2.50	U	5.00	2.50	1.25
1,2,3-Trichlorobenzene	87-61-6	1.50	U	5.00	1.50	0.750
1,2,4-Trichlorobenzene	120-82-1	2.00	U	5.00	2.00	1.00
1,1,1-Trichloroethane	71-55-6	2.50	U	5.00	2.50	1.25
1,1,2-Trichloroethane	79-00-5	2.50	U	5.00	2.50	1.25
Trichlorofluoromethane	75-69-4	2.50	U	5.00	2.50	1.25
1,2,3-Trichloropropane	96-18-4	5.00	U	10.0	5.00	2.50
1,2,4-Trimethylbenzene	95-63-6	2.50	U	5.00	2.50	1.25

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Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,3,5-Trimethylbenzene	108-67-8	2.50	U	5.00	2.50	1.25
Vinyl chloride	75-01-4	2.50	U	5.00	2.50	1.25
o-Xylene	95-47-6	2.50	U	5.00	2.50	1.25
m-,p-Xylene	179601-23-1	5.00	U	10.0	5.00	2.50

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	100	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	94.7	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	129-061616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573953	**Analyst:**	JDS	**Run Date:**	06/23/2016 19:11
Collect Date:	06/16/2016 09:05	**Dilution:**	20	**File ID:**	11M12835
Sample Tag:	DL02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Trichloroethene	79-01-6	1630		20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	94.7	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	129-061616	**Prep Method:**	3520C	**Prep Date:**	06/21/2016 17:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573853	**Analyst:**	MES	**Run Date:**	06/23/2016 18:08
Collect Date:	06/16/2016 09:05	**Dilution:**	1	**File ID:**	15M18521
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	6.52		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	115	20	129	

Certificate of Analysis

Sample #:	L16061026-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	129-061616	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 01:31
Collect Date:	06/16/2016 09:05	**Dilution:**	10000	**File ID:**	1LM.LM35480
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	8950		4000	2000	1000

Certificate of Analysis

Sample #:	L16061026-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	129-061616	**Prep Method:**	3015	**Prep Date:**	06/22/2016 07:53
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 10:26
Workgroup #:	WG574214	**Analyst:**	JYH	**Run Date:**	06/27/2016 11:46
Collect Date:	06/16/2016 09:05	**Dilution:**	1	**File ID:**	T3.062716.114614
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.644		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	13.2		0.500	0.250	0.125
Iron, Total	7439-89-6	1.18		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	10.4		1.00	0.500	0.250
Potassium, Total	7440-09-7	0.716	J	2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	129-061616	**Prep Method:**	3015	**Prep Date:**	06/22/2016 07:53
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 10:26
Workgroup #:	WG574214	**Analyst:**	JYH	**Run Date:**	06/27/2016 13:03
Collect Date:	06/16/2016 09:05	**Dilution:**	20	**File ID:**	T3.062716.130358
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sodium, Total	7440-23-5	146		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	129-061616	**Prep Method:**	3015	**Prep Date:**	06/21/2016 11:18
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/05/2016 09:36
Workgroup #:	WG574572	**Analyst:**	JYH	**Run Date:**	07/05/2016 16:11
Collect Date:	06/16/2016 09:05	**Dilution:**	1	**File ID:**	NI.070516.161156
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Cobalt, Total	7440-48-4	0.00182	J	0.00200	0.00100	0.000500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	129-061616	**Prep Method:**	3015	**Prep Date:**	06/21/2016 11:18
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/29/2016 11:35
Workgroup #:	WG574572	**Analyst:**	BKT	**Run Date:**	06/29/2016 14:54
Collect Date:	06/16/2016 09:05	**Dilution:**	1	**File ID:**	NI.062916.145431
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00110	J	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000383	J	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00415		0.00400	0.00200	0.00100
Copper, Total	7440-50-8	0.00173	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.000875	J	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.0478		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00956		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00246		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	129-061616	**Prep Method:**	3015	**Prep Date:**	06/21/2016 11:18
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/05/2016 09:36
Workgroup #:	WG574572	**Analyst:**	JYH	**Run Date:**	07/05/2016 16:15
Collect Date:	06/16/2016 09:05	**Dilution:**	20	**File ID:**	NI.070516.161508
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.293		0.120	0.0600	0.0300

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-04	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	129-061616	**Prep Method:**	7470A	**Prep Date:**	06/21/2016 12:47
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/24/2016 11:43
Workgroup #:	WG573634	**Analyst:**	AMA	**Run Date:**	06/24/2016 12:26
Collect Date:	06/16/2016 09:05	**Dilution:**	1	**File ID:**	M7.062416.122629
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	120-061616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573776	**Analyst:**	JDS	**Run Date:**	06/23/2016 00:42
Collect Date:	06/16/2016 09:25	**Dilution:**	100	**File ID:**	11M12816
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	500	U	1000	500	250
Benzene	71-43-2	25.0	U	100	25.0	12.5
Bromobenzene	108-86-1	25.0	U	100	25.0	12.5
Bromochloromethane	74-97-5	40.0	U	100	40.0	20.0
Bromodichloromethane	75-27-4	50.0	U	100	50.0	25.0
Bromoform	75-25-2	100	U	200	100	50.0
Bromomethane	74-83-9	100	Q	200	100	50.0
2-Butanone	78-93-3	500	U	1000	500	250
n-Butylbenzene	104-51-8	50.0	U	100	50.0	25.0
sec-Butylbenzene	135-98-8	50.0	U	100	50.0	25.0
tert-Butylbenzene	98-06-6	50.0	U	100	50.0	25.0
Carbon disulfide	75-15-0	100	U	200	100	50.0
Carbon tetrachloride	56-23-5	50.0	U	100	50.0	25.0
Chlorobenzene	108-90-7	25.0	U	100	25.0	12.5
Chlorodibromomethane	124-48-1	50.0	U	100	50.0	25.0
Chloroethane	75-00-3	100	U	200	100	50.0
Chloroform	67-66-3	38.0	J	100	25.0	12.5
Chloromethane	74-87-3	100	U	200	100	50.0
2-Chlorotoluene	95-49-8	25.0	U	100	25.0	12.5
4-Chlorotoluene	106-43-4	50.0	U	100	50.0	25.0
1,2-Dibromo-3-chloropropane	96-12-8	200	U	500	200	100
1,2-Dibromoethane	106-93-4	50.0	U	100	50.0	25.0
Dibromomethane	74-95-3	50.0	U	100	50.0	25.0
1,2-Dichlorobenzene	95-50-1	25.0	U	100	25.0	12.5
1,3-Dichlorobenzene	541-73-1	50.0	U	100	50.0	25.0
1,4-Dichlorobenzene	106-46-7	25.0	U	100	25.0	12.5
Dichlorodifluoromethane	75-71-8	50.0	U	100	50.0	25.0
1,1-Dichloroethane	75-34-3	25.0	U	100	25.0	12.5
1,2-Dichloroethane	107-06-2	32.1	J	100	50.0	25.0
1,1-Dichloroethene	75-35-4	134	J	200	100	50.0
cis-1,2-Dichloroethene	156-59-2	1510		100	50.0	25.0

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	50.0	U	100	50.0	25.0
1,2-Dichloropropane	78-87-5	40.0	U	100	40.0	20.0
1,3-Dichloropropane	142-28-9	40.0	U	100	40.0	20.0
2,2-Dichloropropane	594-20-7	50.0	U	100	50.0	25.0
cis-1,3-Dichloropropene	10061-01-5	50.0	U	100	50.0	25.0
trans-1,3-Dichloropropene	10061-02-6	100	U	200	100	50.0
1,1-Dichloropropene	563-58-6	50.0	U	100	50.0	25.0
Ethylbenzene	100-41-4	50.0	U	100	50.0	25.0
2-Hexanone	591-78-6	500	Q	1000	500	250
Hexachlorobutadiene	87-68-3	50.0	U	100	50.0	25.0
Isopropylbenzene	98-82-8	50.0	U	100	50.0	25.0
p-Isopropyltoluene	99-87-6	50.0	U	100	50.0	25.0
4-Methyl-2-pentanone	108-10-1	500	U	1000	500	250
Methylene chloride	75-09-2	50.0	U	100	50.0	25.0
Naphthalene	91-20-3	40.0	U	100	40.0	20.0
n-Propylbenzene	103-65-1	25.0	U	100	25.0	12.5
Styrene	100-42-5	25.0	U	100	25.0	12.5
1,1,1,2-Tetrachloroethane	630-20-6	50.0	U	100	50.0	25.0
1,1,2,2-Tetrachloroethane	79-34-5	40.0	U	100	40.0	20.0
Tetrachloroethene	127-18-4	50.0	U	100	50.0	25.0
Toluene	108-88-3	50.0	U	100	50.0	25.0
1,2,3-Trichlorobenzene	87-61-6	30.0	U	100	30.0	15.0
1,2,4-Trichlorobenzene	120-82-1	40.0	U	100	40.0	20.0
1,1,1-Trichloroethane	71-55-6	50.0	U	100	50.0	25.0
1,1,2-Trichloroethane	79-00-5	50.0	U	100	50.0	25.0
Trichloroethene	79-01-6	17100		100	50.0	25.0
Trichlorofluoromethane	75-69-4	50.0	U	100	50.0	25.0
1,2,3-Trichloropropane	96-18-4	100	U	200	100	50.0
1,2,4-Trimethylbenzene	95-63-6	50.0	U	100	50.0	25.0
1,3,5-Trimethylbenzene	108-67-8	50.0	U	100	50.0	25.0
Vinyl chloride	75-01-4	88.7	J	100	50.0	25.0
o-Xylene	95-47-6	50.0	U	100	50.0	25.0
m-,p-Xylene	179601-23-1	100	U	200	100	50.0

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	94.1	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	120-061616	**Prep Method:**	3520C	**Prep Date:**	06/21/2016 17:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573853	**Analyst:**	MES	**Run Date:**	06/27/2016 15:30
Collect Date:	06/16/2016 09:25	**Dilution:**	40	**File ID:**	15M18600
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	220		80.0	40.0	20.0

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	0.000	20	129	*

Certificate of Analysis

Sample #:	L16061026-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	120-061616	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 19:59
Collect Date:	06/16/2016 09:25	**Dilution:**	10000	**File ID:**	1LM.LM35504
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	32700		4000	2000	1000

Certificate of Analysis

Sample #:	L16061026-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	120F-061616	**Prep Method:**	3015	**Prep Date:**	06/22/2016 07:53
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 10:26
Workgroup #:	WG574214	**Analyst:**	JYH	**Run Date:**	06/27/2016 11:50
Collect Date:	06/16/2016 09:25	**Dilution:**	1	**File ID:**	T3.062716.115009
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	1.53		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	6.89		0.500	0.250	0.125
Iron, Total	7439-89-6	2.04		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	7.27		1.00	0.500	0.250
Potassium, Total	7440-09-7	1.55	J	2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	120F-061616	**Prep Method:**	3015	**Prep Date:**	06/22/2016 07:53
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 10:26
Workgroup #:	WG574214	**Analyst:**	JYH	**Run Date:**	06/27/2016 13:15
Collect Date:	06/16/2016 09:25	**Dilution:**	20	**File ID:**	T3.062716.131528
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sodium, Total	7440-23-5	303		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	120F-061616	**Prep Method:**	3015	**Prep Date:**	06/21/2016 11:18
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/29/2016 11:35
Workgroup #:	WG574572	**Analyst:**	BKT	**Run Date:**	06/29/2016 14:57
Collect Date:	06/16/2016 09:25	**Dilution:**	1	**File ID:**	NI.062916.145742
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00356		0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.0452		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.0120		0.00400	0.00200	0.00100
Copper, Total	7440-50-8	0.00476		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00162	J	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.186		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.0755		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.0105		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0659		0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	120F-061616	**Prep Method:**	3015	**Prep Date:**	06/21/2016 11:18
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/05/2016 09:36
Workgroup #:	WG574572	**Analyst:**	JYH	**Run Date:**	07/05/2016 16:30
Collect Date:	06/16/2016 09:25	**Dilution:**	1	**File ID:**	NI.070516.163034
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Cobalt, Total	7440-48-4	0.0151		0.00200	0.00100	0.000500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-06	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	120F-061616	**Prep Method:**	7470A	**Prep Date:**	06/21/2016 12:47
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/24/2016 11:43
Workgroup #:	WG573634	**Analyst:**	AMA	**Run Date:**	06/24/2016 12:31
Collect Date:	06/16/2016 09:25	**Dilution:**	1	**File ID:**	M7.062416.123133
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	123-061616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573776	**Analyst:**	JDS	**Run Date:**	06/22/2016 23:38
Collect Date:	06/16/2016 09:55	**Dilution:**	1	**File ID:**	11M12814
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.20		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	14.4		1.00	0.500	0.250

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	80.1		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	99.4	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	93.5	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	123-061616	**Prep Method:**	3520C	**Prep Date:**	06/21/2016 17:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573853	**Analyst:**	MES	**Run Date:**	06/23/2016 18:54
Collect Date:	06/16/2016 09:55	**Dilution:**	1	**File ID:**	15M18523
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	0.587	J	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	50.8	20	129	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	123-061616	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 20:18
Collect Date:	06/16/2016 09:55	**Dilution:**	50	**File ID:**	1LM.LM35505
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	105		20.0	10.0	5.00

Certificate of Analysis

Sample #:	L16061026-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	123-061616	**Prep Method:**	3015	**Prep Date:**	06/22/2016 07:53
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 10:26
Workgroup #:	WG574214	**Analyst:**	JYH	**Run Date:**	06/27/2016 11:54
Collect Date:	06/16/2016 09:55	**Dilution:**	1	**File ID:**	T3.062716.115400
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	1.42		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	8.16		0.500	0.250	0.125
Iron, Total	7439-89-6	1.66		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	4.83		1.00	0.500	0.250
Potassium, Total	7440-09-7	0.713	J	2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	26.0		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	123-061616	**Prep Method:**	3015	**Prep Date:**	06/21/2016 11:18
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/29/2016 11:35
Workgroup #:	WG574572	**Analyst:**	BKT	**Run Date:**	06/29/2016 15:00
Collect Date:	06/16/2016 09:55	**Dilution:**	1	**File ID:**	NI.062916.150054
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.000767	J	0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.136		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00177	J	0.00400	0.00200	0.00100
Copper, Total	7440-50-8	0.00142	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00104	J	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.0161		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00319	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00241		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	123-061616	**Prep Method:**	3015	**Prep Date:**	06/21/2016 11:18
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/05/2016 09:36
Workgroup #:	WG574572	**Analyst:**	JYH	**Run Date:**	07/05/2016 16:34
Collect Date:	06/16/2016 09:55	**Dilution:**	1	**File ID:**	NI.070516.163440
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Cobalt, Total	7440-48-4	0.00250		0.00200	0.00100	0.000500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-07	**PrePrep Method:**	N/A	**Instrument:**	CVAA1
Client ID:	123-061616	**Prep Method:**	7470A	**Prep Date:**	06/21/2016 12:47
Matrix:	Water	**Analytical Method:**	7470A	**Cal Date:**	06/24/2016 11:43
Workgroup #:	WG573634	**Analyst:**	AMA	**Run Date:**	06/24/2016 12:34
Collect Date:	06/16/2016 09:55	**Dilution:**	1	**File ID:**	M7.062416.123404
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Mercury	7439-97-6	0.000200	U	0.000400	0.000200	0.000100

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573776	**Analyst:**	JDS	**Run Date:**	06/22/2016 20:27
Collect Date:	06/16/2016 00:01	**Dilution:**	1	**File ID:**	11M12808
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	92.3	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	93.0	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

2.0 Full Sample Data Package

2.1 Volatiles Data

2.1.1 Volatiles GCMS Data (8260)

2.1.1.1 Summary Data

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-01	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	18WW16-061616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573776	**Analyst:**	JDS	**Run Date:**	06/23/2016 01:14
Collect Date:	06/16/2016 07:55	**Dilution:**	1	**File ID:**	11M12817
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	0.605	J	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	108	85	115	
1,2-Dichloroethane-d4	104	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	91.3	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-03	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	102-061616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573776	**Analyst:**	JDS	**Run Date:**	06/22/2016 23:06
Collect Date:	06/16/2016 08:40	**Dilution:**	1	**File ID:**	11M12813
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	105	85	115	
1,2-Dichloroethane-d4	98.7	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	91.0	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	129-061616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573776	**Analyst:**	JDS	**Run Date:**	06/23/2016 00:10
Collect Date:	06/16/2016 09:05	**Dilution:**	5	**File ID:**	11M12815
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	25.0	U	50.0	25.0	12.5
Benzene	71-43-2	1.25	U	5.00	1.25	0.625
Bromobenzene	108-86-1	1.25	U	5.00	1.25	0.625
Bromochloromethane	74-97-5	2.00	U	5.00	2.00	1.00
Bromodichloromethane	75-27-4	2.50	U	5.00	2.50	1.25
Bromoform	75-25-2	5.00	U	10.0	5.00	2.50
Bromomethane	74-83-9	5.00	Q	10.0	5.00	2.50
2-Butanone	78-93-3	25.0	U	50.0	25.0	12.5
n-Butylbenzene	104-51-8	2.50	U	5.00	2.50	1.25
sec-Butylbenzene	135-98-8	2.50	U	5.00	2.50	1.25
tert-Butylbenzene	98-06-6	2.50	U	5.00	2.50	1.25
Carbon disulfide	75-15-0	5.00	U	10.0	5.00	2.50
Carbon tetrachloride	56-23-5	2.50	U	5.00	2.50	1.25
Chlorobenzene	108-90-7	1.25	U	5.00	1.25	0.625
Chlorodibromomethane	124-48-1	2.50	U	5.00	2.50	1.25
Chloroethane	75-00-3	5.00	U	10.0	5.00	2.50
Chloroform	67-66-3	3.28	J	5.00	1.25	0.625
Chloromethane	74-87-3	5.00	U	10.0	5.00	2.50
2-Chlorotoluene	95-49-8	1.25	U	5.00	1.25	0.625
4-Chlorotoluene	106-43-4	2.50	U	5.00	2.50	1.25
1,2-Dibromo-3-chloropropane	96-12-8	10.0	U	25.0	10.0	5.00
1,2-Dibromoethane	106-93-4	2.50	U	5.00	2.50	1.25
Dibromomethane	74-95-3	2.50	U	5.00	2.50	1.25
1,2-Dichlorobenzene	95-50-1	1.25	U	5.00	1.25	0.625
1,3-Dichlorobenzene	541-73-1	2.50	U	5.00	2.50	1.25
1,4-Dichlorobenzene	106-46-7	1.25	U	5.00	1.25	0.625
Dichlorodifluoromethane	75-71-8	2.50	U	5.00	2.50	1.25
1,1-Dichloroethane	75-34-3	1.25	U	5.00	1.25	0.625
1,2-Dichloroethane	107-06-2	25.4		5.00	2.50	1.25
1,1-Dichloroethene	75-35-4	5.00	U	10.0	5.00	2.50
cis-1,2-Dichloroethene	156-59-2	5.02		5.00	2.50	1.25

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	2.50	U	5.00	2.50	1.25
1,2-Dichloropropane	78-87-5	2.00	U	5.00	2.00	1.00
1,3-Dichloropropane	142-28-9	2.00	U	5.00	2.00	1.00
2,2-Dichloropropane	594-20-7	2.50	U	5.00	2.50	1.25
cis-1,3-Dichloropropene	10061-01-5	2.50	U	5.00	2.50	1.25
trans-1,3-Dichloropropene	10061-02-6	5.00	U	10.0	5.00	2.50
1,1-Dichloropropene	563-58-6	2.50	U	5.00	2.50	1.25
Ethylbenzene	100-41-4	2.50	U	5.00	2.50	1.25
2-Hexanone	591-78-6	25.0	Q	50.0	25.0	12.5
Hexachlorobutadiene	87-68-3	2.50	U	5.00	2.50	1.25
Isopropylbenzene	98-82-8	2.50	U	5.00	2.50	1.25
p-Isopropyltoluene	99-87-6	2.50	U	5.00	2.50	1.25
4-Methyl-2-pentanone	108-10-1	25.0	U	50.0	25.0	12.5
Methylene chloride	75-09-2	2.50	U	5.00	2.50	1.25
Naphthalene	91-20-3	2.00	U	5.00	2.00	1.00
n-Propylbenzene	103-65-1	1.25	U	5.00	1.25	0.625
Styrene	100-42-5	1.25	U	5.00	1.25	0.625
1,1,1,2-Tetrachloroethane	630-20-6	2.50	U	5.00	2.50	1.25
1,1,2,2-Tetrachloroethane	79-34-5	2.00	U	5.00	2.00	1.00
Tetrachloroethene	127-18-4	2.50	U	5.00	2.50	1.25
Toluene	108-88-3	2.50	U	5.00	2.50	1.25
1,2,3-Trichlorobenzene	87-61-6	1.50	U	5.00	1.50	0.750
1,2,4-Trichlorobenzene	120-82-1	2.00	U	5.00	2.00	1.00
1,1,1-Trichloroethane	71-55-6	2.50	U	5.00	2.50	1.25
1,1,2-Trichloroethane	79-00-5	2.50	U	5.00	2.50	1.25
Trichlorofluoromethane	75-69-4	2.50	U	5.00	2.50	1.25
1,2,3-Trichloropropane	96-18-4	5.00	U	10.0	5.00	2.50
1,2,4-Trimethylbenzene	95-63-6	2.50	U	5.00	2.50	1.25
1,3,5-Trimethylbenzene	108-67-8	2.50	U	5.00	2.50	1.25
Vinyl chloride	75-01-4	2.50	U	5.00	2.50	1.25
o-Xylene	95-47-6	2.50	U	5.00	2.50	1.25
m-,p-Xylene	179601-23-1	5.00	U	10.0	5.00	2.50

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	100	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	94.7	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	129-061616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573953	**Analyst:**	JDS	**Run Date:**	06/23/2016 19:11
Collect Date:	06/16/2016 09:05	**Dilution:**	20	**File ID:**	11M12835
Sample Tag:	DL02	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Trichloroethene	79-01-6	1630		20.0	10.0	5.00

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	107	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	94.7	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.
Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	120-061616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573776	**Analyst:**	JDS	**Run Date:**	06/23/2016 00:42
Collect Date:	06/16/2016 09:25	**Dilution:**	100	**File ID:**	11M12816
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	500	U	1000	500	250
Benzene	71-43-2	25.0	U	100	25.0	12.5
Bromobenzene	108-86-1	25.0	U	100	25.0	12.5
Bromochloromethane	74-97-5	40.0	U	100	40.0	20.0
Bromodichloromethane	75-27-4	50.0	U	100	50.0	25.0
Bromoform	75-25-2	100	U	200	100	50.0
Bromomethane	74-83-9	100	Q	200	100	50.0
2-Butanone	78-93-3	500	U	1000	500	250
n-Butylbenzene	104-51-8	50.0	U	100	50.0	25.0
sec-Butylbenzene	135-98-8	50.0	U	100	50.0	25.0
tert-Butylbenzene	98-06-6	50.0	U	100	50.0	25.0
Carbon disulfide	75-15-0	100	U	200	100	50.0
Carbon tetrachloride	56-23-5	50.0	U	100	50.0	25.0
Chlorobenzene	108-90-7	25.0	U	100	25.0	12.5
Chlorodibromomethane	124-48-1	50.0	U	100	50.0	25.0
Chloroethane	75-00-3	100	U	200	100	50.0
Chloroform	67-66-3	38.0	J	100	25.0	12.5
Chloromethane	74-87-3	100	U	200	100	50.0
2-Chlorotoluene	95-49-8	25.0	U	100	25.0	12.5
4-Chlorotoluene	106-43-4	50.0	U	100	50.0	25.0
1,2-Dibromo-3-chloropropane	96-12-8	200	U	500	200	100
1,2-Dibromoethane	106-93-4	50.0	U	100	50.0	25.0
Dibromomethane	74-95-3	50.0	U	100	50.0	25.0
1,2-Dichlorobenzene	95-50-1	25.0	U	100	25.0	12.5
1,3-Dichlorobenzene	541-73-1	50.0	U	100	50.0	25.0
1,4-Dichlorobenzene	106-46-7	25.0	U	100	25.0	12.5
Dichlorodifluoromethane	75-71-8	50.0	U	100	50.0	25.0
1,1-Dichloroethane	75-34-3	25.0	U	100	25.0	12.5
1,2-Dichloroethane	107-06-2	32.1	J	100	50.0	25.0
1,1-Dichloroethene	75-35-4	134	J	200	100	50.0
cis-1,2-Dichloroethene	156-59-2	1510		100	50.0	25.0

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	50.0	U	100	50.0	25.0
1,2-Dichloropropane	78-87-5	40.0	U	100	40.0	20.0
1,3-Dichloropropane	142-28-9	40.0	U	100	40.0	20.0
2,2-Dichloropropane	594-20-7	50.0	U	100	50.0	25.0
cis-1,3-Dichloropropene	10061-01-5	50.0	U	100	50.0	25.0
trans-1,3-Dichloropropene	10061-02-6	100	U	200	100	50.0
1,1-Dichloropropene	563-58-6	50.0	U	100	50.0	25.0
Ethylbenzene	100-41-4	50.0	U	100	50.0	25.0
2-Hexanone	591-78-6	500	Q	1000	500	250
Hexachlorobutadiene	87-68-3	50.0	U	100	50.0	25.0
Isopropylbenzene	98-82-8	50.0	U	100	50.0	25.0
p-Isopropyltoluene	99-87-6	50.0	U	100	50.0	25.0
4-Methyl-2-pentanone	108-10-1	500	U	1000	500	250
Methylene chloride	75-09-2	50.0	U	100	50.0	25.0
Naphthalene	91-20-3	40.0	U	100	40.0	20.0
n-Propylbenzene	103-65-1	25.0	U	100	25.0	12.5
Styrene	100-42-5	25.0	U	100	25.0	12.5
1,1,1,2-Tetrachloroethane	630-20-6	50.0	U	100	50.0	25.0
1,1,2,2-Tetrachloroethane	79-34-5	40.0	U	100	40.0	20.0
Tetrachloroethene	127-18-4	50.0	U	100	50.0	25.0
Toluene	108-88-3	50.0	U	100	50.0	25.0
1,2,3-Trichlorobenzene	87-61-6	30.0	U	100	30.0	15.0
1,2,4-Trichlorobenzene	120-82-1	40.0	U	100	40.0	20.0
1,1,1-Trichloroethane	71-55-6	50.0	U	100	50.0	25.0
1,1,2-Trichloroethane	79-00-5	50.0	U	100	50.0	25.0
Trichloroethene	79-01-6	17100		100	50.0	25.0
Trichlorofluoromethane	75-69-4	50.0	U	100	50.0	25.0
1,2,3-Trichloropropane	96-18-4	100	U	200	100	50.0
1,2,4-Trimethylbenzene	95-63-6	50.0	U	100	50.0	25.0
1,3,5-Trimethylbenzene	108-67-8	50.0	U	100	50.0	25.0
Vinyl chloride	75-01-4	88.7	J	100	50.0	25.0
o-Xylene	95-47-6	50.0	U	100	50.0	25.0
m-,p-Xylene	179601-23-1	100	U	200	100	50.0

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	103	70	120	
Toluene-d8	102	85	120	
4-Bromofluorobenzene	94.1	75	120	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Q	One or more quality control criteria failed. See narrative.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	123-061616	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573776	**Analyst:**	JDS	**Run Date:**	06/22/2016 23:38
Collect Date:	06/16/2016 09:55	**Dilution:**	1	**File ID:**	11M12814
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	1.20		1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	14.4		1.00	0.500	0.250

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	80.1		1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	106	85	115	
1,2-Dichloroethane-d4	99.4	70	120	
Toluene-d8	100	85	120	
4-Bromofluorobenzene	93.5	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-08	**PrePrep Method:**	N/A	**Instrument:**	HPMS11
Client ID:	TRIP BLANK	**Prep Method:**	5030B/5030C/5035A	**Prep Date:**	N/A
Matrix:	Water	**Analytical Method:**	8260B	**Cal Date:**	05/13/2016 19:26
Workgroup #:	WG573776	**Analyst:**	JDS	**Run Date:**	06/22/2016 20:27
Collect Date:	06/16/2016 00:01	**Dilution:**	1	**File ID:**	11M12808
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Acetone	67-64-1	5.00	U	10.0	5.00	2.50
Benzene	71-43-2	0.250	U	1.00	0.250	0.125
Bromobenzene	108-86-1	0.250	U	1.00	0.250	0.125
Bromochloromethane	74-97-5	0.400	U	1.00	0.400	0.200
Bromodichloromethane	75-27-4	0.500	U	1.00	0.500	0.250
Bromoform	75-25-2	1.00	U	2.00	1.00	0.500
Bromomethane	74-83-9	1.00	Q	2.00	1.00	0.500
2-Butanone	78-93-3	5.00	U	10.0	5.00	2.50
n-Butylbenzene	104-51-8	0.500	U	1.00	0.500	0.250
sec-Butylbenzene	135-98-8	0.500	U	1.00	0.500	0.250
tert-Butylbenzene	98-06-6	0.500	U	1.00	0.500	0.250
Carbon disulfide	75-15-0	1.00	U	2.00	1.00	0.500
Carbon tetrachloride	56-23-5	0.500	U	1.00	0.500	0.250
Chlorobenzene	108-90-7	0.250	U	1.00	0.250	0.125
Chlorodibromomethane	124-48-1	0.500	U	1.00	0.500	0.250
Chloroethane	75-00-3	1.00	U	2.00	1.00	0.500
Chloroform	67-66-3	0.250	U	1.00	0.250	0.125
Chloromethane	74-87-3	1.00	U	2.00	1.00	0.500
2-Chlorotoluene	95-49-8	0.250	U	1.00	0.250	0.125
4-Chlorotoluene	106-43-4	0.500	U	1.00	0.500	0.250
1,2-Dibromo-3-chloropropane	96-12-8	2.00	U	5.00	2.00	1.00
1,2-Dibromoethane	106-93-4	0.500	U	1.00	0.500	0.250
Dibromomethane	74-95-3	0.500	U	1.00	0.500	0.250
1,2-Dichlorobenzene	95-50-1	0.250	U	1.00	0.250	0.125
1,3-Dichlorobenzene	541-73-1	0.500	U	1.00	0.500	0.250
1,4-Dichlorobenzene	106-46-7	0.250	U	1.00	0.250	0.125
Dichlorodifluoromethane	75-71-8	0.500	U	1.00	0.500	0.250
1,1-Dichloroethane	75-34-3	0.250	U	1.00	0.250	0.125
1,2-Dichloroethane	107-06-2	0.500	U	1.00	0.500	0.250
1,1-Dichloroethene	75-35-4	1.00	U	2.00	1.00	0.500
cis-1,2-Dichloroethene	156-59-2	0.500	U	1.00	0.500	0.250

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
trans-1,2-Dichloroethene	156-60-5	0.500	U	1.00	0.500	0.250
1,2-Dichloropropane	78-87-5	0.400	U	1.00	0.400	0.200
1,3-Dichloropropane	142-28-9	0.400	U	1.00	0.400	0.200
2,2-Dichloropropane	594-20-7	0.500	U	1.00	0.500	0.250
cis-1,3-Dichloropropene	10061-01-5	0.500	U	1.00	0.500	0.250
trans-1,3-Dichloropropene	10061-02-6	1.00	U	2.00	1.00	0.500
1,1-Dichloropropene	563-58-6	0.500	U	1.00	0.500	0.250
Ethylbenzene	100-41-4	0.500	U	1.00	0.500	0.250
2-Hexanone	591-78-6	5.00	Q	10.0	5.00	2.50
Hexachlorobutadiene	87-68-3	0.500	U	1.00	0.500	0.250
Isopropylbenzene	98-82-8	0.500	U	1.00	0.500	0.250
p-Isopropyltoluene	99-87-6	0.500	U	1.00	0.500	0.250
4-Methyl-2-pentanone	108-10-1	5.00	U	10.0	5.00	2.50
Methylene chloride	75-09-2	0.500	U	1.00	0.500	0.250
Naphthalene	91-20-3	0.400	U	1.00	0.400	0.200
n-Propylbenzene	103-65-1	0.250	U	1.00	0.250	0.125
Styrene	100-42-5	0.250	U	1.00	0.250	0.125
1,1,1,2-Tetrachloroethane	630-20-6	0.500	U	1.00	0.500	0.250
1,1,2,2-Tetrachloroethane	79-34-5	0.400	U	1.00	0.400	0.200
Tetrachloroethene	127-18-4	0.500	U	1.00	0.500	0.250
Toluene	108-88-3	0.500	U	1.00	0.500	0.250
1,2,3-Trichlorobenzene	87-61-6	0.300	U	1.00	0.300	0.150
1,2,4-Trichlorobenzene	120-82-1	0.400	U	1.00	0.400	0.200
1,1,1-Trichloroethane	71-55-6	0.500	U	1.00	0.500	0.250
1,1,2-Trichloroethane	79-00-5	0.500	U	1.00	0.500	0.250
Trichloroethene	79-01-6	0.500	U	1.00	0.500	0.250
Trichlorofluoromethane	75-69-4	0.500	U	1.00	0.500	0.250
1,2,3-Trichloropropane	96-18-4	1.00	U	2.00	1.00	0.500
1,2,4-Trimethylbenzene	95-63-6	0.500	U	1.00	0.500	0.250
1,3,5-Trimethylbenzene	108-67-8	0.500	U	1.00	0.500	0.250
Vinyl chloride	75-01-4	0.500	U	1.00	0.500	0.250
o-Xylene	95-47-6	0.500	U	1.00	0.500	0.250
m-,p-Xylene	179601-23-1	1.00	U	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
Dibromofluoromethane	103	85	115	
1,2-Dichloroethane-d4	92.3	70	120	
Toluene-d8	101	85	120	
4-Bromofluorobenzene	93.0	75	120	

Q	One or more quality control criteria failed. See narrative.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.1.1.2 QC Summary Data

Example 8260 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	3399156
Cis = Concentration of the specific internal standard (ug/mL)	25
Ais = Area of the characteristic ion of the specific internal standard	846471
Cx = Concentration of the compound in the standard being measured (ug/mL)	100
RF = Calculated Response Factor	**1.0039**

2.0 Calculating the concentration (C) of a compound in water using the average RF: *

Cx = [(Ax) (Cis) (Vn)(D)] / [(Ais) (RF) (Vs)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Vs = Purge volume of sample (mL)	**10**
Vn = Nominal purge volume of sample (mL) (10.0 mL)	**10**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

3.0 Calculating the concentration (C) of a compound in soil using the average RF: *

Cx = [(Ax) (Cis) (Wn)(D)] / [(Ais) (RF) (Ws)]

where:	**Example**
Ax = Area of the characteristic ion for the compound being measured	**3122498**
Cis = Concentration of the specific internal standard (ug/L)	**25**
D = Dilution factor for sample as a multiplier (10x = 10)	**1**
Ais = Area of the characteristic ion of the specific internal standard	**611048**
RF = Average RF from the ICAL	**1.004**
Ws = Weight of sample purged (g)	**5**
Wn = Nominal purge weight (g) (5.0 g)	**5**
Cx = Concentration of the compound in the sample being measured (ug/L)	**127.2428**

Dry weight correction:

Percent solids (PCT_S)	**50**
Cd = (Cx) (100)/PCT_S	**254.4856**

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve = 0.213

b = intercept from curve = - 0.00642

Step 2: Calculate y from Quantitation Report

y = 86550/593147 = 0.1459

Step 3: Solve for x

x = (y - b)/m = [(0.1459 -(- 0.00642)]/ 0.213 = 0.7152

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.7152) = 17.88

Example Spreadsheet Calculation:

Slope from curve, m:	**0.213**
Intercept from curve, b:	**-0.00642**
Area of analyte, Ax:	**86550**
Area of Internal Standard , Ais:	**593147**
Concentration of IS, Cis	**25.00**
Response Ratio:	**0.145917**
Amount Ratio:	**0.715195**
Concentration:	**17.87988**
Units of Internal Standard:	**ug/L**

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**-0.00629**	
Value of B from plot:	**0.511**	
Value of C from plot:	**-0.0276**	
Area of unknown from quantitation report:	**293821**	
Area of IS from quantiation report:	**784848**	
Response ratio, y:	**0.374367**	
C - y:	**-0.40197**	
Root 1 - Computed amount ratio , X1:	**80.44567**	
Root 2 - Computed amount ratio , X2:	**0.794396**	use this solution
Concentration of IS, Cis:	**25.00**	
Concentration of analyte, Cx:	**19.86**	ug/L

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 051316
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 / OVAP MSV01 Rev: 23 / 0
Method: 5030B/5030C/5035A SOP: PAT01 / OVAP PAT01 Rev: 18 / 0
Method: 624 SOP: MSV10 Rev: 14
Maintenance Log ID:

Internal Standard: STD76110 Surrogate Standard: STD75929
CCV: STD76127 LCS: STD76109 MS/MSD: NA

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG568769

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M11835	RINSE	NA	1	1		05/13/16 11:59
11M11836	WG568769-01 50ng BFB STD 8260	NA	1	1	STD76034	05/13/16 14:15
11M11837	WG568769-02 0.3ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 14:40
11M11838	WG568769-03 0.4ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 15:12
11M11839	WG568769-04 1.0ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 15:43
11M11840	WG568769-05 2.0ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 16:15
11M11841	WG568769-06 5.0ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 16:47
11M11842	WG568769-07 20ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 17:19
11M11843	WG568769-08 50ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 17:51
11M11844	WG568769-09 100ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 18:22
11M11845	WG568769-10 200ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 18:54
11M11846	WG568769-11 300ug/L ICAL STD 8260	NA	1	1	STD76127	05/13/16 19:26
11M11847	RINSE	NA	1	1		05/13/16 19:58
11M11848	WG568769-12 50ug/L ALT SRC STD 8260	NA	1	1	STD76109	05/13/16 20:30
11M11849	RINSE	NA	1	1		05/13/16 21:02
11M11850	RINSE	NA	1	1		05/13/16 21:34

Approved: May 23, 2016

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 062216
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 24
Method: 624 SOP: MSV10 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD76580 Surrogate Standard: STD76383
CCV: STD76405 LCS: STD76744 MS/MSD: STD76744

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG573776

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M12798	WG573773-01 50ng BFB STD 8260	NA	1	1	STD76496	06/22/16 14:52
11M12799	WG573773-02 50ug/L CCV STD 8260	NA	1	1	STD76405	06/22/16 15:16
11M12800	WG573773-02 50ug/L CCV STD 8260	NA	1	1	STD76405	06/22/16 15:49
11M12801	WG573773-02 50ug/L CCV STD 8260	NA	1	1	STD76405	06/22/16 16:43
11M12802	WGXXXXXX-01 100ug/L A9-CCV STD 826	NA	1	1	STDXXXXX	06/22/16 17:15
11M12803	WG573776-01 BLANK STD 8260	NA	1	1		06/22/16 17:47
11M12804	WG573776-02 20ug/L LCS STD 8260	NA	1	1	STD76744	06/22/16 18:19
11M12805	L16060974-09 A MS 2.5X 826-SPE	<2	1	2.5	STD76744	06/22/16 18:51
11M12806	L16060974-11 A MSD 2.5X 826-SPE	<2	1	2.5	STD76744	06/22/16 19:23
11M12807	L16060883-02 B D1 20X 826-SPE	<2	1	20		06/22/16 19:55
11M12808	L16061026-08 A TB 826-LOW	<2	1	1		06/22/16 20:27
11M12809	L16060974-01 A REF 2.5X 826-SPE	<2	1	2.5		06/22/16 20:59
11M12810	L16060974-03 A 826-SPE	<2	1	1		06/22/16 21:31
11M12811	L16060974-02 A 826-SPE	<2	1	1		06/22/16 22:03
11M12812	L16060974-04 A 826-SPE	<2	1	1		06/22/16 22:34
11M12813	L16061026-03 A 826-SPE	<2	1	1		06/22/16 23:06
11M12814	L16061026-07 A 826-SPE	<2	1	1		06/22/16 23:38
11M12815	L16061026-04 A 5X 826-LOW	<2	1	5		06/23/16 00:10
11M12816	L16061026-05 A 100X 826-LOW	<2	1	100		06/23/16 00:42
11M12817	L16061026-01 A 826-LOW	<2	1	1		06/23/16 01:14
11M12818	L16060974-05 A 826-SPE	<2	1	1		06/23/16 01:46
11M12819	L16060974-06 A 826-SPE	<2	1	1		06/23/16 02:18
11M12820	RINSE	NA	1	1		06/23/16 02:50
11M12821	WG573776-06 BLANK2 STD 624	NA	2	1		06/23/16 03:22
11M12822	L16061132-01 B 00 10X AF 624-SPE1	7	2	10		06/23/16 03:51
11M12823	L16061245-01 A 624-SPE	<2	2	1		06/23/16 04:23
11M12824	CCV	NA	1	1		06/23/16 04:55
11M12825	RINSE	NA	1	1		06/23/16 05:27
11M12826	RINSE	NA	1	1		06/23/16 05:59

Comments

Seq.	Rerun	Dil.	Reason	Analytes
3	X			

Approved: June 28, 2016

Sarah Vandenberg

Microbac

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 062216
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 24
Method: 624 SOP: MSV10 Rev: 15
Method: 5030B/5030C/5035A SOP: PAT01 Rev: 18
Maintenance Log ID:

Internal Standard: STD76580 Surrogate Standard: STD76383
CCV: STD76405 LCS: STD76744 MS/MSD: STD76744

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG573776

Comments:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
File ID: 11M12800				
	software error caused instrument data to be overwritten by snapshot data.			
8	X	1	Analyzed too dilute	
File ID: 11M12805				
	L16060974-09 MS			
9	X	1	Analyzed too dilute	
File ID: 11M12806				
	L16060974-11 MSD			
12	X	1	Analyzed too dilute	
File ID: 11M12809				
	L16060974-01 REF			
18	X	20	Over Calibration Range	trichloroethene
File ID: 11M12815				
	L16061026-04			
25				
File ID: 11M12822				
	L16061132-01 sample aborted by foam sensor. DNR			

Approved: June 28, 2016

Sarah Vandenberg

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS11 Dataset: 062316
Analyst1: JDS Analyst2: NA
Method: 8260B SOP: MSV01 Rev: 24
Method: 5030B/530C/5035A SOP: PAT01 Rev: 15

Maintenance Log ID: 53789

Internal Standard: STD76580 Surrogate Standard: STD76383
CCV: STD76781 LCS: STD76744 MS/MSD: STD76744

Column 1 ID: RTX502.2 Column 2 ID: NA
Workgroups: WG573953

Comments:

File ID	Sample Information	pH	Mat	Dil	Reference	Date/Time
11M12827	WG573951-01 50ng BFB STD 8260	NA	1	1	STD76496	06/23/16 15:00
11M12828	WG573951-02 50ug/L CCV STD 8260	NA	1	1	STD76781	06/23/16 15:25
11M12829	WG573951-02 50ug/L CCV STD 8260	NA	1	1	STD76781	06/23/16 15:59
11M12830	WGXXXXXX-01 100ug/L A9-CCV STD 826	NA	1	1	STDXXXXX	06/23/16 16:31
11M12831	WG573953-01 BLANK STD 8260	NA	1	1		06/23/16 17:03
11M12832	WG573953-02 20ug/L LCS STD 8260	NA	1	1	STD76744	06/23/16 17:35
11M12833	L16060974-09 B 00 MS 826-SPE	<2	1	1	STD76744	06/23/16 18:07
11M12834	L16060974-11 B 00 MSD 826-SPE	<2	1	1	STD76744	06/23/16 18:39
11M12835	L16061026-04 B D1 20X 826-LOW	<2	1	20		06/23/16 19:11
11M12836	L16060986-43 A TB 826-SPE	<2	1	1		06/23/16 19:43
11M12837	L16060974-01 B 00 REF 826-SPE	<2	1	1		06/23/16 20:15
11M12838	L16060986-39 A 826-SPE	<2	1	1		06/23/16 20:47
11M12839	L16060986-41 A 826-SPE	<2	1	1		06/23/16 21:19
11M12840	L16060986-44 A 826-SPE	<2	1	1		06/23/16 21:51
11M12841	L16060986-07 A 826-SPE	<2	1	1		06/23/16 22:22
11M12842	L16060986-09 A 826-SPE	<2	1	1		06/23/16 22:54
11M12843	L16060986-11 A 826-SPE	<2	1	1		06/23/16 23:26
11M12844	L16060986-17 A 826-SPE	<2	1	1		06/23/16 23:58
11M12845	L16060986-19 A 826-SPE	<2	1	1		06/24/16 00:30
11M12846	L16060986-25 A 826-SPE	<2	1	1		06/24/16 01:02
11M12847	L16060986-13 A 826-SPE	<2	1	1		06/24/16 01:34
11M12848	L16060986-27 A 826-SPE	<2	1	1		06/24/16 02:05
11M12849	L16060986-29 A 5X 826-SPE	<2	1	5		06/24/16 02:37
11M12850	CCV	NA	1	1		06/24/16 03:09
11M12851	RINSE	NA	1	1		06/24/16 03:41
11M12852	RINSE	NA	1	1		06/24/16 04:13

Approved: June 29, 2016
Sarah Vandenberg

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Microbac Laboratories Inc.

Data Checklist

Date: 13-MAY-2016
Analyst: JDS
Analyst: NA
Method: 8260B
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 75133
Analytical Workgroups: WG568769

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	X
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	X
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	FJB
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
23-MAY-2016

Secondary Reviewer:
23-MAY-2016

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-23-2016 15:39:32

Microbac Laboratories Inc.

Data Checklist

Date: 22-JUN-2016
Analyst: JDS
Analyst: NA
Method: 8260B
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 75958
Analytical Workgroups: WG573776

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	WTD
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	X
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
27-JUN-2016

Secondary Reviewer:
28-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-28-2016 12:52:44

Microbac Laboratories Inc.

Data Checklist

Date: 23-JUN-2016
Analyst: JDS
Analyst: NA
Method: 8260B
Instrument: HPMS11
Curve Workgroup: NA
Runlog ID: 76012
Analytical Workgroups: WG573953

System Performance Check	X
BFB	X
Initial Calibration	X
Average RF	X
Linear Reg or Higher Order Curve	X
Second Source standard % Difference	X
Continuing Calibration /Check Standards	X
Project/Client Specific Requirements	X
Special Standards	NA
Blanks	X
TCL's	X
Surrogates	X
LCS (Laboratory Control Sample)	X
Recoveries	X
Surrogates	X
MS/MSD/Duplicates	X
Samples	X
TCL Hits	X
Spectra of TCL Hits	WTD
Surrogates	X
Internal Standards Criteria	X
Library Searches	NA
Calculations & Correct Factors	X
Dilutions Run	X
Reruns	X
Manual Integrations	NA
Case Narrative	X
Results Reporting/Data Qualifiers	X
KOBRA Workgroup Data	X
Check for Completeness	X
Primary Reviewer	JDS
Secondary Reviewer	SAV
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Check the reasonableness of the results	X

Primary Reviewer:
29-JUN-2016

Secondary Reviewer:
29-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-29-2016 15:36:52

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG573776

Login Number: L16061026

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW16-061616	01	06/16/16					06/23/2016	6.7	14		06/23/16	6.7	14	
102-061616	03	06/16/16					06/22/2016	6.6	14		06/22/16	6.6	14	
129-061616	04	06/16/16					06/23/2016	6.6	14		06/23/16	6.6	14	
120-061616	05	06/16/16					06/23/2016	6.6	14		06/23/16	6.6	14	
123-061616	07	06/16/16					06/22/2016	6.6	14		06/22/16	6.6	14	
TRIP BLANK	08	06/16/16					06/22/2016	6.9	14		06/22/16	6.9	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4827747
Report generated 06/29/2016 16:05

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8260B

AAB#: WG573953

Login Number: L16061026

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
129-061616	04	06/16/16					06/23/2016	7.4	14		06/23/16	7.4	14	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4827747
Report generated 06/29/2016 16:05

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061026
Instrument Id: HPMS11
Workgroup (AAB#): WG573776

Method: 8260
CAL ID: HPMS11-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16061026-01	1.00	01	104	108	91.3	100
L16061026-03	1.00	01	98.7	105	91.0	101
L16061026-04	5.00	DL01	100	106	94.7	102
L16061026-05	100	DL01	103	106	94.1	102
L16061026-07	1.00	01	99.4	106	93.5	100
L16061026-08	1.00	01	92.3	103	93.0	101
WG573776-01	1.00	01	93.4	101	92.6	99.9
WG573776-02	1.00	01	92.9	104	93.0	101
WG573776-06	1.00	01	105	107	95.5	101

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4827755
Report generated: 06/29/2016 16:05

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061026
Instrument Id: HPMS11
Workgroup (AAB#): WG573953

Method: 8260
CAL ID: HPMS11-13-MAY-16
Matrix: Water

Sample Number	Dilution	Tag	1	2	3	4
L16061026-04	20.0	DL02	103	107	94.7	100
WG573953-01	1.00	01	100	104	93.8	100
WG573953-02	1.00	01	103	109	92.0	100

Surrogates	Surrogate Limits		
1 - 1,2-Dichloroethane-d4	70	-	120
2 - Dibromofluoromethane	85	-	115
3 - 4-Bromofluorobenzene	75	-	120
4 - Toluene-d8	85	-	120

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4827755
Report generated: 06/29/2016 16:05

METHOD BLANK SUMMARY

Login Number: L16061026
Blank File ID: 11M12803
Prep Date: 06/22/16 17:47
Analyzed Date: 06/22/16 17:47
Analyst: JDS

Work Group: WG573776
Blank Sample ID: WG573776-01
Instrument ID: HPMS11
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573776-02	11M12804	06/22/16 18:19	01
TRIP BLANK	L16061026-08	11M12808	06/22/16 20:27	01
102-061616	L16061026-03	11M12813	06/22/16 23:06	01
123-061616	L16061026-07	11M12814	06/22/16 23:38	01
129-061616	L16061026-04	11M12815	06/23/16 00:10	DL01
120-061616	L16061026-05	11M12816	06/23/16 00:42	DL01
18WW16-061616	L16061026-01	11M12817	06/23/16 01:14	01

Report Name: BLANK_SUMMARY
PDF File ID: 4827748
Report generated 06/29/2016 16:05

METHOD BLANK SUMMARY

Login Number: L16061026
Blank File ID: 11M12831
Prep Date: 06/23/16 17:03
Analyzed Date: 06/23/16 17:03
Analyst: JDS

Work Group: WG573953
Blank Sample ID: WG573953-01
Instrument ID: HPMS11
Method: 8260B

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573953-02	11M12832	06/23/16 17:35	01
129-061616	L16061026-04	11M12835	06/23/16 19:11	DL02

Report Name: BLANK_SUMMARY
PDF File ID: 4827748
Report generated 06/29/2016 16:05

Microbac Laboratories Inc.

METHOD BLANK REPORT

Login Number: L16061026 Prep Date: 06/22/16 17:47 Sample ID: WG573776-01
Instrument ID: HPMS11 Run Date: 06/22/16 17:47 Prep Method: 5030B/5030C/503
File ID: 11M12803 Analyst: JDS Method: 8260B
Workgroup (AAB#): WG573776 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Acetone	2.50	10.0	2.50	1	U
Benzene	0.125	1.00	0.125	1	U
Bromobenzene	0.125	1.00	0.125	1	U
Bromochloromethane	0.200	1.00	0.200	1	U
Bromodichloromethane	0.250	1.00	0.250	1	U
Bromoform	0.500	2.00	0.500	1	U
Bromomethane	0.500	2.00	0.500	1	U
2-Butanone	2.50	10.0	2.50	1	U
n-Butylbenzene	0.250	1.00	0.250	1	U
sec-Butylbenzene	0.250	1.00	0.250	1	U
tert-Butylbenzene	0.250	1.00	0.250	1	U
Carbon disulfide	0.500	2.00	0.500	1	U
Carbon tetrachloride	0.250	1.00	0.250	1	U
Chlorobenzene	0.125	1.00	0.125	1	U
Chlorodibromomethane	0.250	1.00	0.250	1	U
Chloroethane	0.500	2.00	0.500	1	U
Chloroform	0.125	1.00	0.125	1	U
Chloromethane	0.500	2.00	0.500	1	U
2-Chlorotoluene	0.125	1.00	0.125	1	U
4-Chlorotoluene	0.250	1.00	0.250	1	U
1,2-Dibromo-3-chloropropane	1.00	5.00	1.00	1	U
1,2-Dibromoethane	0.250	1.00	0.250	1	U
Dibromomethane	0.250	1.00	0.250	1	U
1,2-Dichlorobenzene	0.125	1.00	0.125	1	U
1,3-Dichlorobenzene	0.250	1.00	0.250	1	U
1,4-Dichlorobenzene	0.125	1.00	0.125	1	U
Dichlorodifluoromethane	0.250	1.00	0.250	1	U
1,1-Dichloroethane	0.125	1.00	0.125	1	U
1,2-Dichloroethane	0.250	1.00	0.250	1	U
1,1-Dichloroethene	0.500	2.00	0.500	1	U
cis-1,2-Dichloroethene	0.250	1.00	0.250	1	U
trans-1,2-Dichloroethene	0.250	1.00	0.250	1	U
1,2-Dichloropropane	0.200	1.00	0.200	1	U
1,3-Dichloropropane	0.200	1.00	0.200	1	U
2,2-Dichloropropane	0.250	1.00	0.250	1	U
cis-1,3-Dichloropropene	0.250	1.00	0.250	1	U
trans-1,3-Dichloropropene	0.500	2.00	0.500	1	U
1,1-Dichloropropene	0.250	1.00	0.250	1	U
Ethylbenzene	0.250	1.00	0.250	1	U
2-Hexanone	2.50	10.0	2.50	1	U
Hexachlorobutadiene	0.250	1.00	0.250	1	U
Isopropylbenzene	0.250	1.00	0.250	1	U

Report Name:BLANK
PDF ID: 4827749
29-JUN-2016 16:05

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061026 Prep Date: 06/22/16 17:47 Sample ID: WG573776-01
Instrument ID: HPMS11 Run Date: 06/22/16 17:47 Prep Method: 5030B/5030C/503
File ID: 11M12803 Analyst: JDS Method: 8260B
Workgroup (AAB#): WG573776 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
p-Isopropyltoluene	0.250	1.00	0.250	1	U
4-Methyl-2-pentanone	2.50	10.0	2.50	1	U
Methylene chloride	0.250	1.00	0.250	1	U
Naphthalene	0.200	1.00	0.200	1	U
n-Propylbenzene	0.125	1.00	0.125	1	U
Styrene	0.125	1.00	0.125	1	U
1,1,1,2-Tetrachloroethane	0.250	1.00	0.250	1	U
1,1,2,2-Tetrachloroethane	0.200	1.00	0.200	1	U
Tetrachloroethene	0.250	1.00	0.250	1	U
Toluene	0.250	1.00	0.250	1	U
1,2,3-Trichlorobenzene	0.150	1.00	0.150	1	U
1,2,4-Trichlorobenzene	0.200	1.00	0.200	1	U
1,1,1-Trichloroethane	0.250	1.00	0.250	1	U
1,1,2-Trichloroethane	0.250	1.00	0.250	1	U
Trichloroethene	0.250	1.00	0.250	1	U
Trichlorofluoromethane	0.250	1.00	0.250	1	U
1,2,3-Trichloropropane	0.500	2.00	0.500	1	U
1,2,4-Trimethylbenzene	0.250	1.00	0.250	1	U
1,3,5-Trimethylbenzene	0.250	1.00	0.250	1	U
Vinyl chloride	0.250	1.00	0.250	1	U
o-Xylene	0.250	1.00	0.250	1	U
m-,p-Xylene	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	101	85 - 115	PASS
1,2-Dichloroethane-d4	93.4	70 - 120	PASS
Toluene-d8	99.9	85 - 120	PASS
4-Bromofluorobenzene	92.6	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4827749
29-JUN-2016 16:05

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061026 Prep Date: 06/23/16 17:03 Sample ID: WG573953-01
Instrument ID: HPMS11 Run Date: 06/23/16 17:03 Prep Method: 5030B/5030C/503
File ID: 11M12831 Analyst: JDS Method: 8260B
Workgroup (AAB#): WG573953 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS11-13-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Trichloroethene	0.250	1.00	0.250	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	104	85 - 115	PASS
1,2-Dichloroethane-d4	100	70 - 120	PASS
Toluene-d8	100	85 - 120	PASS
4-Bromofluorobenzene	93.8	75 - 120	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4827749
29-JUN-2016 16:05

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061026 | Run Date: 06/22/2016 | Sample ID: WG573776-02
Instrument ID: HPMS11 | Run Time: 18:19 | Prep Method: 5030B/5030C/503
File ID: 11M12804 | Analyst: JDS | Method: 8260B
Workgroup (AAB#): WG573776 | Matrix: Water | Units: ug/L
QC Key: DOD4 | Lot#: STD76744 | Cal ID: HPMS11-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Acetone	20.0	18.2	90.8	40 - 140	
Benzene	20.0	19.2	95.9	80 - 120	
Bromobenzene	20.0	19.8	98.8	75 - 125	
Bromochloromethane	20.0	22.4	112	65 - 130	
Bromodichloromethane	20.0	19.6	98.0	75 - 120	
Bromoform	20.0	19.8	98.9	70 - 130	
Bromomethane	20.0	23.4	117	30 - 145	
2-Butanone	20.0	19.3	96.6	30 - 150	
n-Butylbenzene	20.0	17.3	86.7	70 - 135	
sec-Butylbenzene	20.0	18.9	94.6	70 - 125	
tert-Butylbenzene	20.0	20.0	99.8	70 - 130	
Carbon disulfide	20.0	18.5	92.4	35 - 160	
Carbon tetrachloride	20.0	18.2	91.2	65 - 140	
Chlorobenzene	20.0	20.2	101	80 - 120	
Chlorodibromomethane	20.0	20.4	102	60 - 135	
Chloroethane	20.0	20.9	104	60 - 135	
Chloroform	20.0	18.6	93.1	65 - 135	
Chloromethane	20.0	20.3	102	40 - 125	
2-Chlorotoluene	20.0	19.5	97.6	75 - 125	
4-Chlorotoluene	20.0	18.9	94.5	75 - 130	
1,2-Dibromo-3-chloropropane	20.0	16.9	84.6	50 - 130	
1,2-Dibromoethane	20.0	20.8	104	80 - 120	
Dibromomethane	20.0	19.7	98.4	75 - 125	
1,2-Dichlorobenzene	20.0	20.3	101	70 - 120	
1,3-Dichlorobenzene	20.0	19.7	98.7	75 - 125	
1,4-Dichlorobenzene	20.0	19.9	99.3	75 - 125	
Dichlorodifluoromethane	20.0	21.8	109	30 - 155	
1,1-Dichloroethane	20.0	17.9	89.4	70 - 135	
1,2-Dichloroethane	20.0	19.0	95.2	70 - 130	
1,1-Dichloroethene	20.0	17.0	84.8	70 - 130	
cis-1,2-Dichloroethene	20.0	20.8	104	70 - 125	
trans-1,2-Dichloroethene	20.0	19.9	99.6	60 - 140	
1,2-Dichloropropane	20.0	19.3	96.3	75 - 125	
1,3-Dichloropropane	20.0	21.3	106	75 - 125	
2,2-Dichloropropane	20.0	17.8	89.2	70 - 135	
cis-1,3-Dichloropropene	20.0	21.8	109	70 - 130	
trans-1,3-Dichloropropene	20.0	19.5	97.5	55 - 140	
1,1-Dichloropropene	20.0	18.4	92.0	75 - 130	
Ethylbenzene	20.0	19.2	95.9	75 - 125	
2-Hexanone	20.0	16.4	82.0	55 - 130	
Hexachlorobutadiene	20.0	16.6	82.8	50 - 140	

LCS - Modified 03/06/2008
PDF File ID: 4827750
Report generated: 06/29/2016 16:05

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061026 Run Date: 06/22/2016 Sample ID: WG573776-02
Instrument ID: HPMS11 Run Time: 18:19 Prep Method: 5030B/5030C/503
File ID: 11M12804 Analyst: JDS Method: 8260B
Workgroup (AAB#): WG573776 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD76744 Cal ID: HPMS11-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Isopropylbenzene	20.0	19.5	97.7	75 - 125	
p-Isopropyltoluene	20.0	18.8	94.1	75 - 130	
4-Methyl-2-pentanone	20.0	19.2	95.8	60 - 135	
Methylene chloride	20.0	20.4	102	55 - 140	
Naphthalene	20.0	18.1	90.5	55 - 140	
n-Propylbenzene	20.0	19.4	96.9	70 - 130	
Styrene	20.0	20.3	101	65 - 135	
1,1,1,2-Tetrachloroethane	20.0	19.7	98.5	80 - 130	
1,1,2,2-Tetrachloroethane	20.0	18.4	91.8	65 - 130	
Tetrachloroethene	20.0	19.3	96.7	45 - 150	
Toluene	20.0	19.5	97.7	75 - 120	
1,2,3-Trichlorobenzene	20.0	19.2	96.2	55 - 140	
1,2,4-Trichlorobenzene	20.0	19.5	97.5	65 - 135	
1,1,1-Trichloroethane	20.0	18.6	93.2	65 - 130	
1,1,2-Trichloroethane	20.0	20.9	104	75 - 125	
Trichloroethene	20.0	21.4	107	70 - 125	
Trichlorofluoromethane	20.0	18.6	92.9	60 - 145	
1,2,3-Trichloropropane	20.0	20.0	99.9	75 - 125	
1,2,4-Trimethylbenzene	20.0	19.3	96.5	75 - 130	
1,3,5-Trimethylbenzene	20.0	19.4	97.1	75 - 130	
Vinyl chloride	20.0	22.8	114	50 - 145	
o-Xylene	20.0	19.9	99.6	80 - 120	
m-,p-Xylene	40.0	38.9	97.3	75 - 130	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	104	85 - 115	PASS
1,2-Dichloroethane-d4	92.9	70 - 120	PASS
Toluene-d8	101	85 - 120	PASS
4-Bromofluorobenzene	93.0	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4827750
Report generated: 06/29/2016 16:05

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061026 Run Date: 06/23/2016 Sample ID: WG573953-02
Instrument ID: HPMS11 Run Time: 17:35 Prep Method: 5030B/5030C/503
File ID: 11M12832 Analyst: JDS Method: 8260B
Workgroup (AAB#): WG573953 Matrix: Water Units: ug/L
QC Key: DOD4 Lot#: STD76744 Cal ID: HPMS11-13-MAY-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Trichloroethene	20.0	22.7	113	70 - 125	

Surrogates	% Recovery	Surrogate Limits	Qualifier
Dibromofluoromethane	109	85 - 115	PASS
1,2-Dichloroethane-d4	103	70 - 120	PASS
Toluene-d8	100	85 - 120	PASS
4-Bromofluorobenzene	92.0	75 - 120	PASS

* EXCEEDS %REC LIMIT

LCS - Modified 03/06/2008
PDF File ID: 4827750
Report generated: 06/29/2016 16:05

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061026
Instrument: HPMS11
Analyst: JDS
Workgroup: WG568769

Tune ID: WG568769-01
Run Date: 05/13/2016
Run Time: 14:15
File ID: 11M11836
Cal ID: HPMS11 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	24.2	11638	PASS
75.0	95.0	30.0	60.0	50.2	24088	PASS
95.0	95.0	100	100	100	48016	PASS
96.0	95.0	5.00	9.00	6.26	3008	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	86.2	41402	PASS
175	174	5.00	9.00	8.26	3421	PASS
176	174	95.0	101	97.3	40288	PASS
177	176	5.00	9.00	6.92	2789	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG568769-02	STD	01	05/13/2016 14:40	
WG568769-03	STD	01	05/13/2016 15:12	
WG568769-04	STD	01	05/13/2016 15:43	
WG568769-05	STD	01	05/13/2016 16:15	
WG568769-06	STD	01	05/13/2016 16:47	
WG568769-07	STD	01	05/13/2016 17:19	
WG568769-08	STD-CCV	01	05/13/2016 17:51	
WG568769-09	STD	01	05/13/2016 18:22	
WG568769-10	STD	01	05/13/2016 18:54	
WG568769-11	STD	01	05/13/2016 19:26	
WG568769-12	SSCV	01	05/13/2016 20:30	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4827752
Report generated 06/29/2016 16:05

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061026
Instrument: HPMS11
Analyst: JDS
Workgroup: WG573773

Tune ID: WG573773-01
Run Date: 06/22/2016
Run Time: 14:52
File ID: 11M12798
Cal ID: HPMS11 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	20.4	9816	PASS
75.0	95.0	30.0	60.0	48.3	23186	PASS
95.0	95.0	100	100	100	48053	PASS
96.0	95.0	5.00	9.00	7.38	3544	PASS
173	174	0	2.00	0	0	PASS
174	95.0	50.0	100	89.6	43074	PASS
175	174	5.00	9.00	7.57	3259	PASS
176	174	95.0	101	100	43058	PASS
177	176	5.00	9.00	6.83	2940	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573773-02	CCV	01	06/22/2016 16:43	
WG573776-01	BLANK	01	06/22/2016 17:47	
WG573776-02	LCS	01	06/22/2016 18:19	
L16061026-08	TRIP BLANK	01	06/22/2016 20:27	
L16061026-03	102-061616	01	06/22/2016 23:06	
L16061026-07	123-061616	01	06/22/2016 23:38	
L16061026-04	129-061616	DL01	06/23/2016 00:10	
L16061026-05	120-061616	DL01	06/23/2016 00:42	
L16061026-01	18WW16-061616	01	06/23/2016 01:14	
WG573776-06	BLANK2	01	06/23/2016 03:22	*

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4827752
Report generated 06/29/2016 16:05

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

BFB

Login Number: L16061026
Instrument: HPMS11
Analyst: JDS
Workgroup: WG573951

Tune ID: WG573951-01
Run Date: 06/23/2016
Run Time: 15:00
File ID: 11M12827
Cal ID: HPMS11 - 13-MAY-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50.0	95.0	15.0	40.0	21.6	6638	PASS
75.0	95.0	30.0	60.0	51.9	15962	PASS
95.0	95.0	100	100	100	30738	PASS
96.0	95.0	5.00	9.00	6.62	2035	PASS
173	174	0	2.00	0.406	109	PASS
174	95.0	50.0	100	87.4	26851	PASS
175	174	5.00	9.00	7.85	2109	PASS
176	174	95.0	101	95.6	25668	PASS
177	176	5.00	9.00	7.02	1803	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573951-02	CCV	01	06/23/2016 15:59	
WG573953-01	BLANK	01	06/23/2016 17:03	
WG573953-02	LCS	01	06/23/2016 17:35	
L16061026-04	129-061616	DL02	06/23/2016 19:11	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4827752
Report generated 06/29/2016 16:05

Calibration Table Report
Method: 8260WT.M
Title: 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Calibration: Sat May 14 18:45:57 2016
Curve: WG568769
Calibration Files

	Compound	0.3 11M11837.D	0.4 11M11838.D	1 11M11839.D	2 11M11840.D	5 11M11841.D	20 11M11842.D	50 11M11843.D	100 11M11844.D	200 11M11845.D	300 11M11846.D	Avg	%RSD	Linear	Quadratic
I	Fluorobenzene	ISTD													
T	Dichlorodifluoromethane			0.345	0.368	0.326	0.431	0.400	0.424	0.417	0.424	0.392	10.308		
P	Chloromethane			0.348	0.363	0.289	0.310	0.276	0.296	0.305	0.324	0.314	9.474		
C	Vinyl Chloride		0.275	0.241	0.249	0.244	0.268	0.250	0.271	0.271	0.276	0.261	5.458		
T	1,3-Butadiene					0.242	0.284	0.269	0.264	0.256	0.240	0.259	6.530		
T	Bromomethane			0.167	0.174	0.164	0.180	0.165	0.182	0.194	0.206	0.179	8.292		
T	Chloroethane			0.164	0.165	0.151	0.174	0.161	0.171	0.173	0.181	0.167	5.524		
T	Trichlorofluoromethane		0.514	0.523	0.537	0.496	0.552	0.498	0.524	0.514	0.514	0.519	3.376		
T	Diethyl ether			0.189	0.191	0.195	0.196	0.188	0.193		0.192	0.192	1.552		
T	Isoprene					0.299	0.331	0.317	0.323	0.325	0.325	0.320	3.522		
T	Acrolein			0.013	0.022	0.024	0.024	0.024	0.025		0.027	0.023	19.436	0.999	
T	1,1,2-Trichloro-1,2,2-Trifluor			0.261	0.245	0.234	0.268	0.245	0.252	0.254	0.257	0.252	4.225		
T	Acetone					0.063	0.067	0.058	0.057	0.057	0.054	0.059	7.931		
C	1,1-Dichloroethene		0.459	0.452	0.460	0.429	0.492	0.441	0.464	0.461	0.461	0.458	3.810		
T	Tert-Butyl Alcohol			0.014	0.015	0.017	0.018	0.017	0.017		0.017	0.016	9.673		
T	Dimethyl Sulfide					0.169	0.185	0.186	0.185	0.188	0.184	0.183	3.765		
T	Iodomethane				0.043	0.072	0.164	0.206	0.217	0.219	0.208	0.162	45.603		0.999
T	Methyl acetate				0.182	0.317	0.215	0.178	0.176	0.169	0.168	0.201	26.745		1.000
T	Methylene Chloride			0.239	0.256	0.230	0.243	0.224	0.232	0.234	0.238	0.237	4.076		
T	Carbon Disulfide			0.737	0.762	0.714	0.798	0.783	0.783	0.782	0.770	0.766	3.624		
T	Acrylonitrile			0.072	0.069	0.075	0.085	0.081	0.085		0.090	0.080	9.576		
T	Methyl Tert Butyl Ether			0.568	0.546	0.564	0.650	0.585	0.606	0.612	0.595	0.591	5.543		
T	trans-1,2-Dichloroethene		0.288	0.230	0.264	0.229	0.263	0.242	0.251	0.254	0.260	0.253	7.263		
T	n-Hexane				0.424	0.377	0.450	0.431	0.426	0.424	0.422	0.422	5.186		
T	Diisopropyl ether			1.034	1.075	1.083	1.055	1.046	1.062		1.015	1.053	2.218		
T	Vinyl Acetate					0.235	0.391	0.393	0.395	0.430	0.431	0.379	19.260	0.999	
P	1,1-Dichloroethane		0.463	0.517	0.527	0.505	0.535	0.495	0.513	0.511	0.508	0.508	4.023		
T	Ethyl-Tert-Butyl ether			0.815	0.854	0.881	0.876	0.855	0.873		0.844	0.857	2.667		
T	2-Butanone					0.079	0.097	0.087	0.092	0.092	0.091	0.090	6.720		
T	Propionitrile			0.023	0.025	0.026	0.029	0.027	0.027		0.027	0.026	7.381		
T	2,2-Dichloropropane		0.325	0.372	0.435	0.395	0.406	0.386	0.422	0.418	0.419	0.398	8.479		
T	cis-1,2-Dichloroethene		0.276	0.266	0.289	0.269	0.294	0.271	0.280	0.284	0.285	0.279	3.456		
C	Chloroform	0.587	0.483	0.491	0.514	0.480	0.509	0.470	0.486	0.489	0.482	0.499	6.767		
T	1-Bromopropane			0.014	0.041	0.045	0.047	0.048	0.049	0.050	0.050	0.043	28.190	1.000	
T	Bromochloromethane		0.115	0.140	0.169	0.167	0.188	0.172	0.179	0.180	0.181	0.166	14.065		
T	Tetrahydrofuran			0.074	0.061	0.058	0.067	0.061	0.062		0.059	0.063	8.769		
S	Dibromofluoromethane				0.251	0.266	0.284	0.268	0.284	0.285	0.278	0.274	4.605		
T	1,1,1-Trichloroethane		0.475	0.478	0.508	0.471	0.515	0.477	0.502	0.499	0.495	0.491	3.293		
T	Cyclohexane		0.477	0.485	0.547	0.509	0.574	0.551	0.560	0.558	0.556	0.535	6.606		
T	1,1-Dichloropropene		0.342	0.350	0.346	0.332	0.370	0.339	0.358	0.359	0.362	0.351	3.562		
T	Carbon Tetrachloride		0.409	0.457	0.522	0.465	0.518	0.473	0.496	0.492	0.486	0.480	7.177		
T	Tert-Amyl-Methyl ether			0.565	0.596	0.603	0.611	0.588	0.605		0.6	0.59537	2.5818		
S	1,2-Dichloroethane-d4			0.315	0.304	0.32	0.326	0.303	0.319	0.31	0.298	0.31197	3.15125		
T	1,2-Dichloroethane		0.388	0.391	0.419	0.395	0.441	0.402	0.413	0.409	0.391	0.40536	4.2274		
T	Benzene		1.058	0.952	1.016	0.923	0.996	0.908	0.943	0.931	0.914	0.96002	5.38884		
T	Trichloroethene		0.308	0.317	0.329	0.306	0.322	0.294	0.313	0.309	0.311	0.31204	3.21019		
T	Methylcyclohexane		0.332	0.37	0.389	0.35	0.411	0.401	0.4	0.405	0.407	0.3851	7.28708		
C	1,2-Dichloropropane		0.259	0.262	0.273	0.254	0.276	0.257	0.268	0.27	0.273	0.26575	2.95636		
T	1,4-Dioxane				0.001	0.001	0.002	0.001	0.002		0.002	0.0014	19.4617	0.999	
T	Bromodichloromethane		0.346	0.346	0.373	0.362	0.4	0.369	0.387	0.389	0.385	0.37307	5.09783		
T	Dibromomethane		0.118	0.136	0.135	0.137	0.149	0.137	0.146	0.145	0.144	0.13848	6.69192		
T	2-Chloroethyl Vinyl Ether					0.112	0.138	0.128	0.136	0.138	0.135	0.13098	7.7176		
T	4-Methyl-2-Pentanone					0.06	0.08	0.073	0.076	0.077	0.077	0.07387	9.67651		
T	cis-1,3-Dichloropropene		0.326	0.338	0.358	0.357	0.406	0.379	0.395	0.401	0.399	0.37315	7.91395		
T	Dimethyl Disulfide					0.185	0.229	0.227	0.233	0.238	0.235	0.22454	8.74309		

I	Chlorobenzene-d5	ISTD												
S	Toluene-d8				1.101	1.093	1.115	1.056	1.103	1.092	1.044	1.08625	2.42896	
C	Toluene		1.309	1.253	1.287	1.269	1.347	1.249	1.287	1.241	1.149	1.2656	4.33323	
T	Ethyl Methacrylate			0.234	0.233	0.25	0.299	0.285	0.289	0.291	0.281	0.27024	9.93745	
T	trans-1,3-Dichloropropene			0.335	0.388	0.387	0.448	0.418	0.432	0.43	0.412	0.40623	8.82781	
T	1,1,2-Trichloroethane		0.222	0.201	0.243	0.21	0.246	0.221	0.228	0.227	0.221	0.22442	6.30977	
T	2-Hexanone					0.137	0.179	0.165	0.172	0.172	0.165	0.16482	8.91224	
T	1,3-Dichloropropane		0.337	0.338	0.351	0.355	0.396	0.361	0.374	0.373	0.358	0.36039	5.16222	
T	Tetrachloroethene		0.274	0.287	0.317	0.286	0.306	0.286	0.3	0.299	0.294	0.29431	4.41886	
T	Dibromochloromethane		0.283	0.297	0.336	0.33	0.378	0.354	0.372	0.372	0.359	0.3423	9.88235	
T	1,2-Dibromoethane		0.232	0.182	0.228	0.214	0.243	0.224	0.233	0.235	0.232	0.22485	7.92714	
T	1-Chlorohexane		0.37	0.399	0.414	0.391	0.442	0.429	0.44	0.438	0.432	0.41726	6.09034	
P	Chlorobenzene		0.927	0.917	0.998	0.932	0.976	0.909	0.93	0.902	0.853	0.92715	4.48215	
T	1,1,1,2-Tetrachloroethane		0.341	0.361	0.405	0.366	0.388	0.371	0.384	0.385	0.376	0.37515	4.87731	
C	Ethylbenzene		0.453	0.457	0.512	0.463	0.495	0.466	0.482	0.479	0.472	0.47542	3.94078	
T	m-,p-Xylene		0.619	0.583	0.605	0.564	0.604	0.568	0.579	0.559	0.522	0.57798	5.08853	
T	o-Xylene		0.539	0.549	0.574	0.539	0.6	0.561	0.574	0.57	0.557	0.56249	3.43829	
T	Styrene		0.865	0.848	0.897	0.918	1.018	0.955	0.985	0.959	0.917	0.92933	5.96246	
P	Bromoform			0.172	0.189	0.185	0.226	0.21	0.225	0.226	0.228	0.20747	10.9157	
T	Isopropylbenzene		1.515	1.456	1.567	1.46	1.592	1.493	1.534	1.449	1.323	1.48754	5.34769	
I	1,4-Dichlorobenzene-d4	ISTD												
P	1,1,2,2-Tetrachloroethane		0.288	0.357	0.369	0.371	0.441	0.396	0.412	0.428	0.442	0.38931	12.6902	
S	p-Bromofluorobenzene				0.772	0.784	0.794	0.716	0.767	0.789	0.773	0.77065	3.38935	
T	1,2,3-Trichloropropane			0.087	0.129	0.138	0.151	0.137	0.142	0.148	0.148	0.13515	15.3522	0.999
T	trans-1,4-Dichloro-2-Butene			0.105	0.117	0.124	0.177	0.178	0.184	0.192	0.193	0.15883	23.0996	0.999
T	n-Propylbenzene		2.87	2.8	3.077	2.949	3.134	2.886	2.979	2.836	2.526	2.89527	6.10377	
T	Bromobenzene	0.663	0.778	0.81	0.798	0.765	0.784	0.718	0.752	0.769	0.76	0.75973	5.57443	
T	1,3,5-Trimethylbenzene		2.338	2.056	2.263	2.172	2.357	2.166	2.252	2.223	2.059	2.20939	4.86261	
T	2-Chlorotoluene		2.158	2.096	2.122	2.033	2.128	1.936	2.002	1.954	1.82	2.0279	5.4704	
T	4-Chlorotoluene		1.782	1.755	1.937	1.808	1.916	1.763	1.832	1.838	1.717	1.8165	4.03452	
T	a-Methylstyrene			1	1.066	1.101	1.241	1.231	1.235	1.242	1.208	1.16555	8.18507	
T	tert-Butylbenzene		0.378	0.44	0.48	0.489	0.498	0.458	0.483	0.49	0.497	0.46809	8.31778	
T	1,2,4-Trimethylbenzene		2.159	2.195	2.274	2.295	2.472	2.234	2.309	2.244	2.067	2.24981	4.97706	
T	sec-Butylbenzene			2.593	2.734	2.647	2.87	2.634	2.723	2.617	2.404	2.65291	5.05975	
T	p-Isopropyltoluene			2.247	2.592	2.45	2.641	2.43	2.506	2.404	2.226	2.43674	6.05243	
T	1,3-Dichlorobenzene		1.487	1.488	1.538	1.46	1.53	1.398	1.451	1.446	1.406	1.46732	3.33475	
T	1,4-Dichlorobenzene	1.482	1.601	1.511	1.569	1.484	1.538	1.404	1.456	1.434	1.395	1.4873	4.59741	
T	n-Butylbenzene		2.048	2.099	2.295	2.049	2.32	2.134	2.224	2.136	2.021	2.14721	5.09289	
T	1,2-Dichlorobenzene	1.33	1.26	1.333	1.432	1.33	1.406	1.296	1.343	1.326	1.31	1.33665	3.71841	
T	1,2-Dibromo-3-Chloropropane				0.057	0.079	0.096	0.081	0.086	0.087	0.091	0.08248	15.3444	0.999
T	1,2,4-Trichlorobenzene		0.927	0.903	0.957	0.956	1.042	0.972	0.998	1.002	1.047	0.97808	4.96993	
T	Hexachlorobutadiene		0.393	0.381	0.451	0.418	0.447	0.415	0.441	0.442	0.49	0.43089	7.64497	
T	Naphthalene		1.885	1.633	1.765	1.712	2.026	1.824	1.878	1.821	1.794	1.81543	6.15168	
T	1,2,3-Trichlorobenzene	0.854	0.957	0.865	0.918	0.834	0.946	0.86	0.889	0.912	0.943	0.89764	4.8559	

Tue May 17 13:57:02 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061026 Run Date: 05/13/2016 Sample ID: WG568769-12
Instrument ID: HPMS11 Run Time: 20:30 Method: 8260B
File ID: 11M11848 Analyst: JDS QC Key: DOD4
ICal Workgroup: WG568769 Cal ID: HPMS11 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Chloroform	CCC	50.0	47.6	ug/L	0.475	4.80	20	
1,1-Dichloroethene	CCC	50.0	47.5	ug/L	0.435	4.90	20	
1,2-Dichloropropane	CCC	50.0	52.8	ug/L	0.281	5.60	20	
Ethylbenzene	CCC	50.0	52.4	ug/L	0.498	4.80	20	
Toluene	CCC	50.0	53.8	ug/L	1.36	7.50	20	
Vinyl Chloride	CCC	50.0	56.1	ug/L	0.292	12.2	20	
Bromoform	SPCC	50.0	49.8	ug/L	0.207	0.300	20	
Chlorobenzene	SPCC	50.0	53.3	ug/L	0.988	6.60	20	
Chloromethane	SPCC	50.0	55.1	ug/L	0.346	10.2	20	
1,1-Dichloroethane	SPCC	50.0	48.5	ug/L	0.493	3.00	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	54.9	ug/L	0.428	9.90	20	
Acetone		50.0	49.7	ug/L	0.0590	0.700	20	
Benzene		50.0	51.2	ug/L	0.983	2.40	20	
Bromobenzene		50.0	51.6	ug/L	0.785	3.30	20	
Bromochloromethane		50.0	53.9	ug/L	0.179	7.80	20	
Bromodichloromethane		50.0	49.5	ug/L	0.370	0.900	20	
Bromomethane		50.0	50.5	ug/L	0.181	1.00	20	
2-Butanone		50.0	50.3	ug/L	0.0904	0.700	20	
n-Butylbenzene		50.0	53.9	ug/L	2.31	7.80	20	
sec-Butylbenzene		50.0	55.9	ug/L	2.97	11.8	20	
tert-Butylbenzene		50.0	56.5	ug/L	0.529	13.1	20	
Carbon Disulfide		50.0	44.7	ug/L	0.685	10.6	20	
Carbon Tetrachloride		50.0	47.3	ug/L	0.454	5.30	20	
Dibromochloromethane		50.0	52.5	ug/L	0.360	5.10	20	
Chloroethane		50.0	58.9	ug/L	0.197	17.7	20	
2-Chlorotoluene		50.0	52.8	ug/L	2.14	5.50	20	
4-Chlorotoluene		50.0	55.4	ug/L	2.01	10.8	20	
1,2-Dibromo-3-Chloropropane		50.0	48.1	ug/L	0.0844	3.80	20	
1,2-Dibromoethane		50.0	52.6	ug/L	0.237	5.30	20	
Dibromomethane		50.0	48.0	ug/L	0.133	3.90	20	
1,2-Dichlorobenzene		50.0	53.6	ug/L	1.43	7.20	20	
1,3-Dichlorobenzene		50.0	52.7	ug/L	1.55	5.40	20	
1,4-Dichlorobenzene		50.0	53.0	ug/L	1.58	6.10	20	
Dichlorodifluoromethane		50.0	56.6	ug/L	0.443	13.2	20	
1,2-Dichloroethane		50.0	47.9	ug/L	0.388	4.20	20	
cis-1,2-Dichloroethene		50.0	53.2	ug/L	0.297	6.30	20	
trans-1,2-Dichloroethene		50.0	52.1	ug/L	0.264	4.30	20	
1,3-Dichloropropane		50.0	56.3	ug/L	0.406	12.6	20	
2,2-Dichloropropane		50.0	45.6	ug/L	0.362	8.90	20	
cis-1,3-Dichloropropene		50.0	57.6	ug/L	0.430	15.2	20	
trans-1,3-Dichloropropene		50.0	52.1	ug/L	0.423	4.20	20	
1,1-Dichloropropene		50.0	50.1	ug/L	0.352	0.200	20	

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4827751
Report generated 06/29/2016 16:05

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061026 Run Date: 05/13/2016 Sample ID: WG568769-12
Instrument ID: HPMS11 Run Time: 20:30 Method: 8260B
File ID: 11M11848 Analyst: JDS QC Key: DOD4
ICal Workgroup: WG568769 Cal ID: HPMS11 - 13-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
2-Hexanone		50.0	52.2	ug/L	0.172	4.40	20	
Hexachlorobutadiene		50.0	55.9	ug/L	0.482	11.8	20	
Isopropylbenzene		50.0	54.2	ug/L	1.61	8.50	20	
p-Isopropyltoluene		50.0	54.7	ug/L	2.67	9.40	20	
4-Methyl-2-Pentanone		50.0	52.6	ug/L	0.0777	5.10	20	
Methylene Chloride		50.0	52.0	ug/L	0.246	4.00	20	
Naphthalene		50.0	51.1	ug/L	1.86	2.30	20	
n-Propylbenzene		50.0	56.6	ug/L	3.28	13.2	20	
Styrene		50.0	55.0	ug/L	1.02	9.90	20	
1,1,1,2-Tetrachloroethane		50.0	51.0	ug/L	0.383	2.10	20	
Tetrachloroethene		50.0	52.2	ug/L	0.307	4.40	20	
1,2,3-Trichlorobenzene		50.0	54.1	ug/L	0.971	8.10	20	
1,2,4-Trichlorobenzene		50.0	55.4	ug/L	1.08	10.9	20	
1,1,1-Trichloroethane		50.0	48.1	ug/L	0.472	3.90	20	
1,1,2-Trichloroethane		50.0	52.8	ug/L	0.237	5.50	20	
Trichloroethene		50.0	52.3	ug/L	0.327	4.60	20	
Trichlorofluoromethane		50.0	47.5	ug/L	0.494	4.90	20	
1,2,3-Trichloropropane		50.0	50.1	ug/L	0.147	0.300	20	
1,2,4-Trimethylbenzene		50.0	53.8	ug/L	2.42	7.70	20	
1,3,5-Trimethylbenzene		50.0	55.1	ug/L	2.44	10.3	20	
o-Xylene		50.0	54.7	ug/L	0.615	9.40	20	
m-,p-Xylene		100	107	ug/L	0.620	7.20	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4827751
Report generated 06/29/2016 16:05

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026 Run Date: 06/22/2016 Sample ID: WG573773-02
Instrument ID: HPMS11 Run Time: 16:43 Method: 8260B
File ID: 11M12801 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG573776 Cal ID: HPMS11 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	48.8	ug/L	0.488	2.32	20	
1,1-Dichloroethene	CCC	50.0	49.6	ug/L	0.454	0.854	20	
1,2-Dichloropropane	CCC	50.0	49.9	ug/L	0.265	0.160	20	
Ethylbenzene	CCC	50.0	52.1	ug/L	0.495	4.11	20	
Toluene	CCC	50.0	52.7	ug/L	1.33	5.41	20	
Vinyl Chloride	CCC	50.0	56.5	ug/L	0.294	12.9	20	
Bromoform	SPCC	50.0	53.8	ug/L	0.223	7.54	20	
Chlorobenzene	SPCC	50.0	52.1	ug/L	0.966	4.14	20	
Chloromethane	SPCC	50.0	51.6	ug/L	0.324	3.17	20	
1,1-Dichloroethane	SPCC	50.0	49.9	ug/L	0.507	0.198	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	50.7	ug/L	0.395	1.35	20	
Xylenes		150	156	ug/L	0.592	3.81	20	
Acetone		50.0	40.8	ug/L	0.0484	18.5	20	
Benzene		50.0	51.2	ug/L	0.984	2.45	20	
Bromobenzene		50.0	52.3	ug/L	0.795	4.58	20	
Bromochloromethane		50.0	59.1	ug/L	0.196	18.2	20	
Bromodichloromethane		50.0	50.8	ug/L	0.379	1.57	20	
Bromomethane		50.0	60.5	ug/L	0.217	21.0	20	*
2-Butanone		50.0	41.0	ug/L	0.0735	18.1	20	
n-Butylbenzene		50.0	48.5	ug/L	2.08	2.97	20	
sec-Butylbenzene		50.0	50.7	ug/L	2.69	1.38	20	
tert-Butylbenzene		50.0	52.9	ug/L	0.495	5.77	20	
Carbon Disulfide		50.0	53.9	ug/L	0.826	7.79	20	
Carbon Tetrachloride		50.0	50.7	ug/L	0.486	1.33	20	
Dibromochloromethane		50.0	54.3	ug/L	0.372	8.63	20	
Chloroethane		50.0	54.4	ug/L	0.182	8.85	20	
2-Chlorotoluene		50.0	49.7	ug/L	2.02	0.598	20	
4-Chlorotoluene		50.0	49.3	ug/L	1.79	1.39	20	
1,2-Dibromo-3-Chloropropane		50.0	44.1	ug/L	0.0773	11.8	20	
1,2-Dibromoethane		50.0	52.5	ug/L	0.236	5.06	20	
Dibromomethane		50.0	51.4	ug/L	0.142	2.79	20	
1,2-Dichlorobenzene		50.0	50.8	ug/L	1.36	1.54	20	
1,3-Dichlorobenzene		50.0	51.3	ug/L	1.51	2.57	20	
1,4-Dichlorobenzene		50.0	50.4	ug/L	1.50	0.809	20	
Dichlorodifluoromethane		50.0	56.3	ug/L	0.441	12.7	20	
1,2-Dichloroethane		50.0	47.1	ug/L	0.382	5.81	20	
cis-1,2-Dichloroethene		50.0	53.4	ug/L	0.298	6.81	20	
trans-1,2-Dichloroethene		50.0	54.1	ug/L	0.274	8.15	20	
1,3-Dichloropropane		50.0	51.2	ug/L	0.369	2.33	20	
2,2-Dichloropropane		50.0	53.9	ug/L	0.429	7.88	20	
cis-1,3-Dichloropropene		50.0	53.4	ug/L	0.399	6.84	20	
trans-1,3-Dichloropropene		50.0	51.7	ug/L	0.420	3.38	20	

CCV - Modified 03/05/2008
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Report generated 06/29/2016 16:05

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026 Run Date: 06/22/2016 Sample ID: WG573773-02
Instrument ID: HPMS11 Run Time: 16:43 Method: 8260B
File ID: 11M12801 Analyst: JDS QC Key: DOD4
Workgroup (AAB#): WG573776 Cal ID: HPMS11 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,1-Dichloropropene		50.0	51.8	ug/L	0.364	3.68	20	
2-Hexanone		50.0	38.7	ug/L	0.127	22.7	20	*
Hexachlorobutadiene		50.0	49.5	ug/L	0.427	0.931	20	
Isopropylbenzene		50.0	51.2	ug/L	1.52	2.34	20	
p-Isopropyltoluene		50.0	51.0	ug/L	2.48	1.91	20	
4-Methyl-2-Pentanone		50.0	44.7	ug/L	0.0660	10.6	20	
Methylene Chloride		50.0	51.4	ug/L	0.244	2.89	20	
Naphthalene		50.0	50.1	ug/L	1.82	0.171	20	
n-Propylbenzene		50.0	51.1	ug/L	2.96	2.26	20	
Styrene		50.0	54.0	ug/L	1.00	7.94	20	
1,1,1,2-Tetrachloroethane		50.0	51.9	ug/L	0.390	3.90	20	
Tetrachloroethene		50.0	54.5	ug/L	0.321	9.08	20	
1,2,3-Trichlorobenzene		50.0	48.9	ug/L	0.878	2.20	20	
1,2,4-Trichlorobenzene		50.0	50.6	ug/L	0.990	1.23	20	
1,1,1-Trichloroethane		50.0	50.1	ug/L	0.493	0.290	20	
1,1,2-Trichloroethane		50.0	52.0	ug/L	0.234	4.06	20	
Trichloroethene		50.0	53.9	ug/L	0.337	7.86	20	
Trichlorofluoromethane		50.0	51.3	ug/L	0.533	2.70	20	
1,2,3-Trichloropropane		50.0	49.1	ug/L	0.143	1.82	20	
1,2,4-Trimethylbenzene		50.0	51.1	ug/L	2.30	2.11	20	
1,3,5-Trimethylbenzene		50.0	50.9	ug/L	2.25	1.81	20	
o-Xylene		50.0	51.8	ug/L	0.582	3.51	20	
m-,p-Xylene		100	104	ug/L	0.601	3.95	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4827753
Report generated 06/29/2016 16:05

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 06/23/2016
Sample ID: WG573951-02
Instrument ID: HPMS11
Run Time: 15:59
Method: 8260B
File ID: 11M12829
Analyst: JDS
QC Key: DOD4
Workgroup (AAB#): WG573953
Cal ID: HPMS11 - 13-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Chloroform	CCC	50.0	50.3	ug/L	0.502	0.640	20	
1,1-Dichloroethene	CCC	50.0	50.0	ug/L	0.458	0.000800	20	
1,2-Dichloropropane	CCC	50.0	49.0	ug/L	0.261	1.97	20	
Ethylbenzene	CCC	50.0	49.1	ug/L	0.467	1.79	20	
Toluene	CCC	50.0	49.3	ug/L	1.25	1.50	20	
Vinyl Chloride	CCC	50.0	57.5	ug/L	0.300	15.0	20	
Bromoform	SPCC	50.0	54.2	ug/L	0.225	8.31	20	
Chlorobenzene	SPCC	50.0	50.1	ug/L	0.929	0.231	20	
Chloromethane	SPCC	50.0	53.2	ug/L	0.334	6.45	20	
1,1-Dichloroethane	SPCC	50.0	49.6	ug/L	0.504	0.761	20	
1,1,2,2-Tetrachloroethane	SPCC	50.0	46.5	ug/L	0.362	6.94	20	
Trichloroethene		50.0	52.3	ug/L	0.326	4.56	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4827753
Report generated 06/29/2016 16:05

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061026
Instrument ID: HPMS11
Workgroup (AAB#): WG573776

ICAL CCV Number: WG568769-08
CAL ID: HPMS11-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568769-08	NA	NA	263885	438582	521583
Upper Limit	NA	NA	527770	877164	1043166
Lower Limit	NA	NA	131943	219291	260792
L16061026-01	1.00	01	262492	442694	496621
L16061026-03	1.00	01	286068	484683	555060
L16061026-04	5.00	DL01	276226	471668	534594
L16061026-05	100	DL01	269312	458713	517460
L16061026-07	1.00	01	285222	492737	557279
L16061026-08	1.00	01	313293	533935	611363
WG573776-01	1.00	01	320378	558566	634960
WG573776-02	1.00	01	335580	569515	650667

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4827754
Report generated 06/29/2016 16:05

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061026
Instrument ID: HPMS11
Workgroup (AAB#): WG573953

ICAL CCV Number: WG568769-08
CAL ID: HPMS11-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568769-08	NA	NA	263885	438582	521583
Upper Limit	NA	NA	527770	877164	1043166
Lower Limit	NA	NA	131943	219291	260792
L16061026-04	20.0	DL02	268568	457128	507627
WG573953-01	1.00	01	257668	439921	499965
WG573953-02	1.00	01	275615	445760	489086

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4827754
Report generated 06/29/2016 16:05

Microbac Laboratories Inc.
INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061026
Instrument ID: HPMS11
Workgroup (AAB#): WG573776

ICAL CCV Number: WG568769-08
CAL ID: HPMS11-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568769-08	NA	NA	17.06	14.25	10.61
Upper Limit	NA	NA	17.56	14.75	11.11
Lower Limit	NA	NA	16.56	13.75	10.11
L16061026-01	1.00	01	17.06	14.25	10.61
L16061026-03	1.00	01	17.06	14.25	10.61
L16061026-04	5.00	DL01	17.06	14.25	10.61
L16061026-05	100	DL01	17.06	14.25	10.61
L16061026-07	1.00	01	17.06	14.25	10.61
L16061026-08	1.00	01	17.06	14.25	10.61
WG573776-01	1.00	01	17.06	14.25	10.61
WG573776-02	1.00	01	17.06	14.25	10.61

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4827756
Report generated: 06/29/2016 16:05

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061026
Instrument ID: HPMS11
Workgroup (AAB#): WG573953

ICAL CCV Number: WG568769-08
CAL ID: HPMS11-13-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1	IS-2	IS-3
WG568769-08	NA	NA	17.06	14.25	10.61
Upper Limit	NA	NA	17.56	14.75	11.11
Lower Limit	NA	NA	16.56	13.75	10.11
L16061026-04	20.0	DL02	17.06	14.25	10.61
WG573953-01	1.00	01	17.06	14.25	10.61
WG573953-02	1.00	01	17.06	14.25	10.61

IS-1 - 1,4-Dichlorobenzene-d4
IS-2 - Chlorobenzene-d5
IS-3 - Fluorobenzene

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4827756
Report generated: 06/29/2016 16:05

2.1.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062216\11M12817.D Vial: 20
Acq On : 23 Jun 2016 1:14 Operator: JDS
Sample : L16061026-01 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 24 14:58:43 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	496621	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	442694	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	262492	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	147182	27.0799 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 108.32%		
43) 1,2-Dichloroethane-d4	10.24	65	161862	26.1184 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 104.48%		
57) Toluene-d8	12.47	98	483174	25.1194 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.48%		
78) p-Bromofluorobenzene	15.64	95	184611	22.8152 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 91.28%		

Target Compounds

					Qvalue
3) Chloromethane	3.72	50	3770	0.6050 ug/L	92
4) Vinyl Chloride	3.97	62	856	0.1654 ug/L #	44
13) Acetone	6.34	43	478	0.4053 ug/L #	49
46) Trichloroethene	11.09	130	1544	0.2491 ug/L	86

(#) = qualifier out of range (m) = manual integration
11M12817.D 8260WT.M Fri Jun 24 14:58:44 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062216\11M12817.D Vial: 20
Acq On : 23 Jun 2016 1:14 Operator: JDS
Sample : L16061026-01 A 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 24 14:58 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

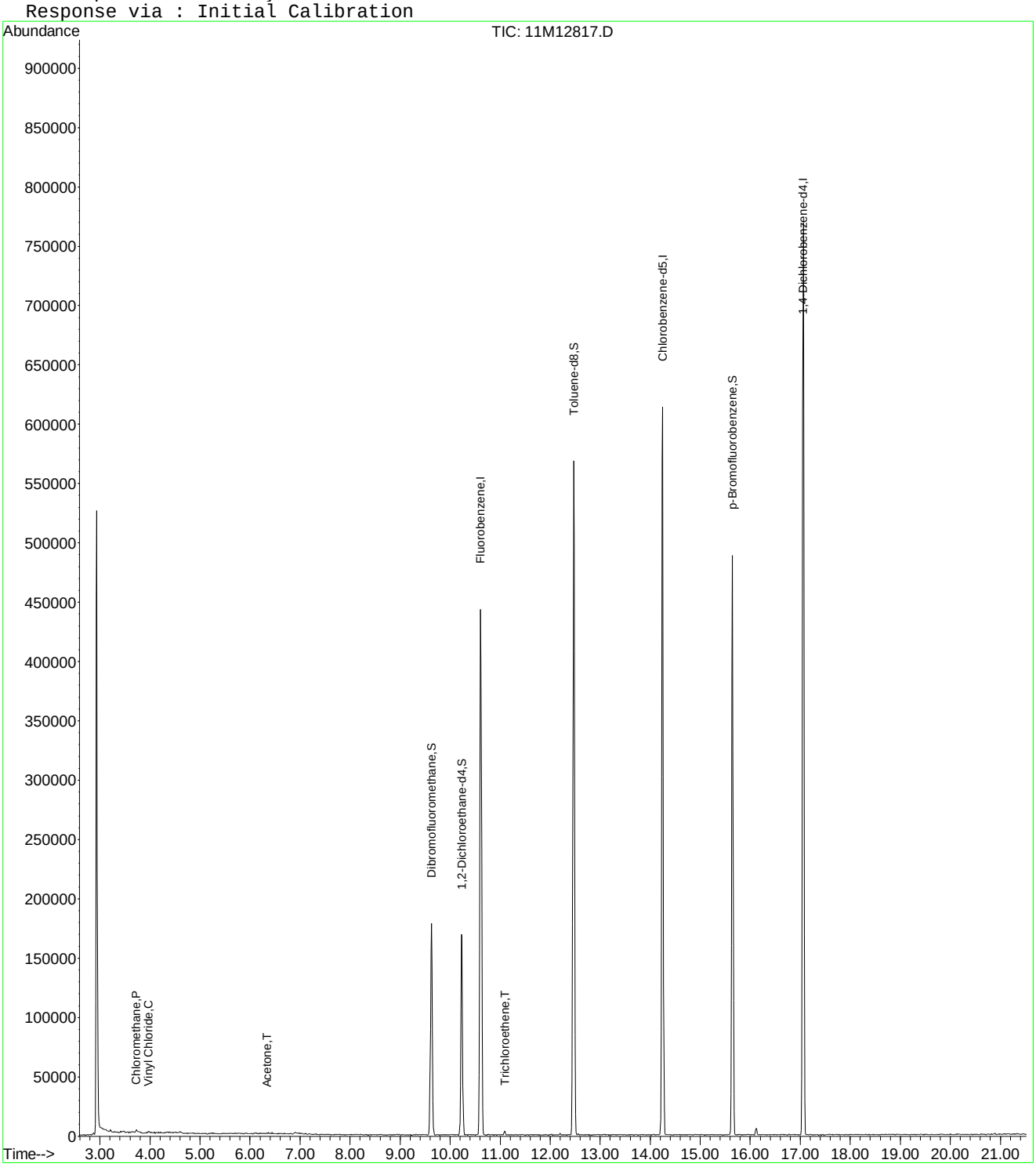

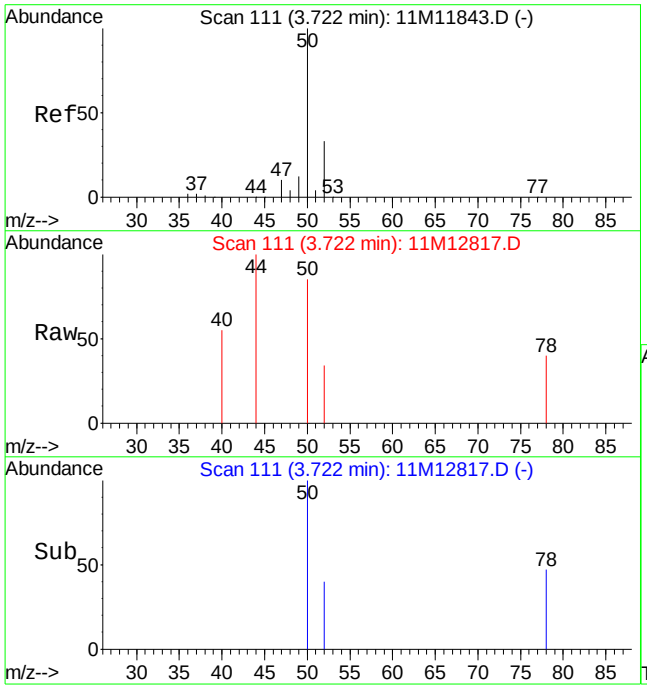

#3
Chloromethane
Concen: 0.60 ug/L
RT: 3.72 min Scan# 111
Delta R.T. 0.00 min
Lab File: 11M12817.D
Acq: 23 Jun 2016 1:14

Tgt Ion: 50 Resp: 3770

Ion	Ratio	Lower	Upper
50	100		
52	38.0	20.0	46.6

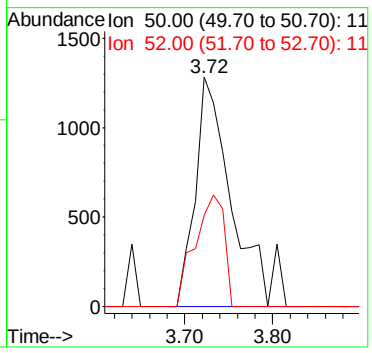

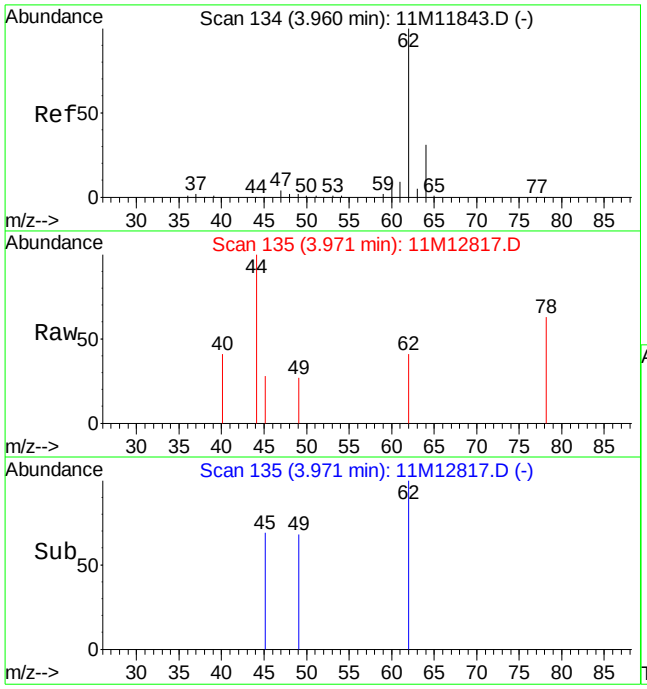

#4
Vinyl Chloride
Concen: 0.17 ug/L
RT: 3.97 min Scan# 135
Delta R.T. 0.01 min
Lab File: 11M12817.D
Acq: 23 Jun 2016 1:14

Tgt Ion: 62 Resp: 856

Ion	Ratio	Lower	Upper
62	100		
64	0.0	18.4	43.0#

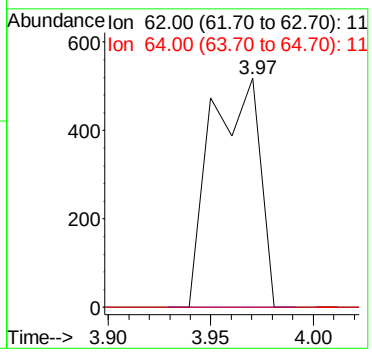

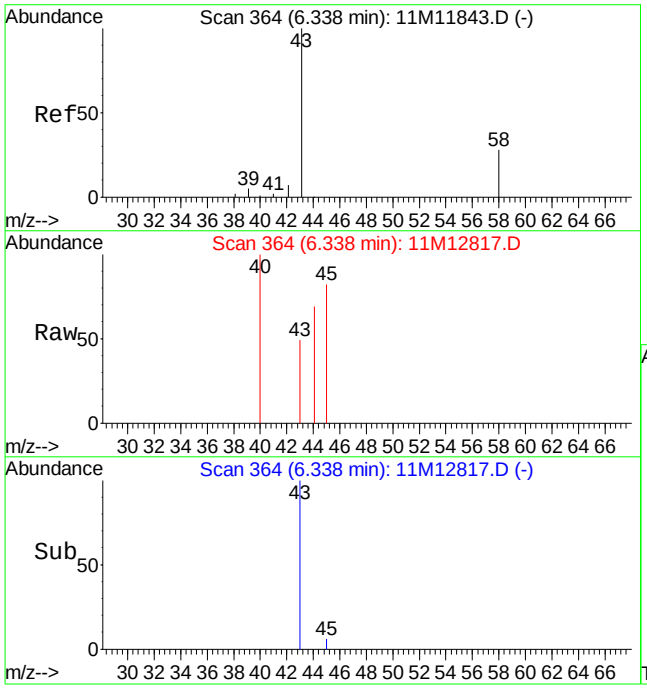

#13
Acetone
Concen: 0.41 ug/L
RT: 6.34 min Scan# 364
Delta R.T. 0.00 min
Lab File: 11M12817.D
Acq: 23 Jun 2016 1:14

Tgt Ion: 43 Resp: 478

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

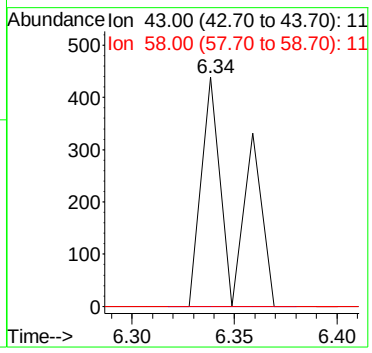

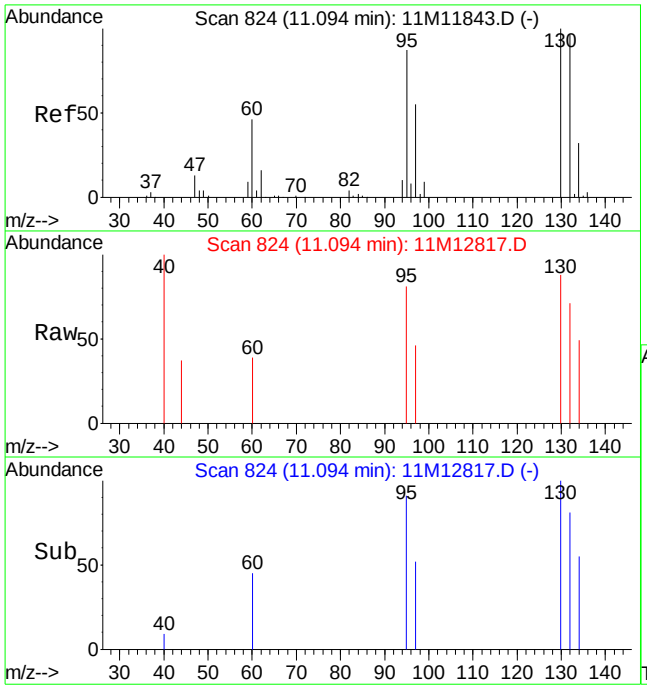

#46
Trichloroethene
Concen: 0.25 ug/L
RT: 11.09 min Scan# 824
Delta R.T. 0.00 min
Lab File: 11M12817.D
Acq: 23 Jun 2016 1:14

Tgt Ion:130 Resp: 1544

Ion	Ratio	Lower	Upper
130	100		
132	114.9	58.3	136.1
95	101.5	55.6	129.8

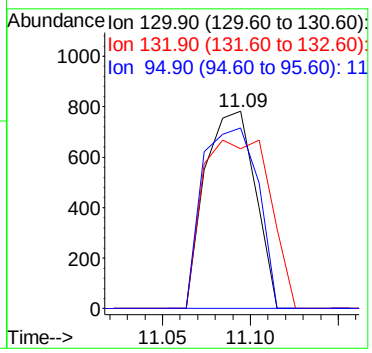

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062216\11M12813.D Vial: 16
Acq On : 22 Jun 2016 23:06 Operator: JDS
Sample : L16060974-03 A 826-SPE Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 24 14:58:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	555060	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	484683	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	286068	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	158938	26.1641 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.64%		
43) 1,2-Dichloroethane-d4	10.24	65	170923	24.6767 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 98.72%		
57) Toluene-d8	12.47	98	531603	25.2429 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.96%		
78) p-Bromofluorobenzene	15.64	95	200718	22.7614 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 91.04%		

Target Compounds					Qvalue
13) Acetone	6.33	43	793	0.6017 ug/L #	49

(#) = qualifier out of range (m) = manual integration
11M12813.D 8260WT.M Fri Jun 24 14:58:34 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062216\11M12813.D Vial: 16
Acq On : 22 Jun 2016 23:06 Operator: JDS
Sample : L16060974-03 A 826-SPE Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 24 14:58 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

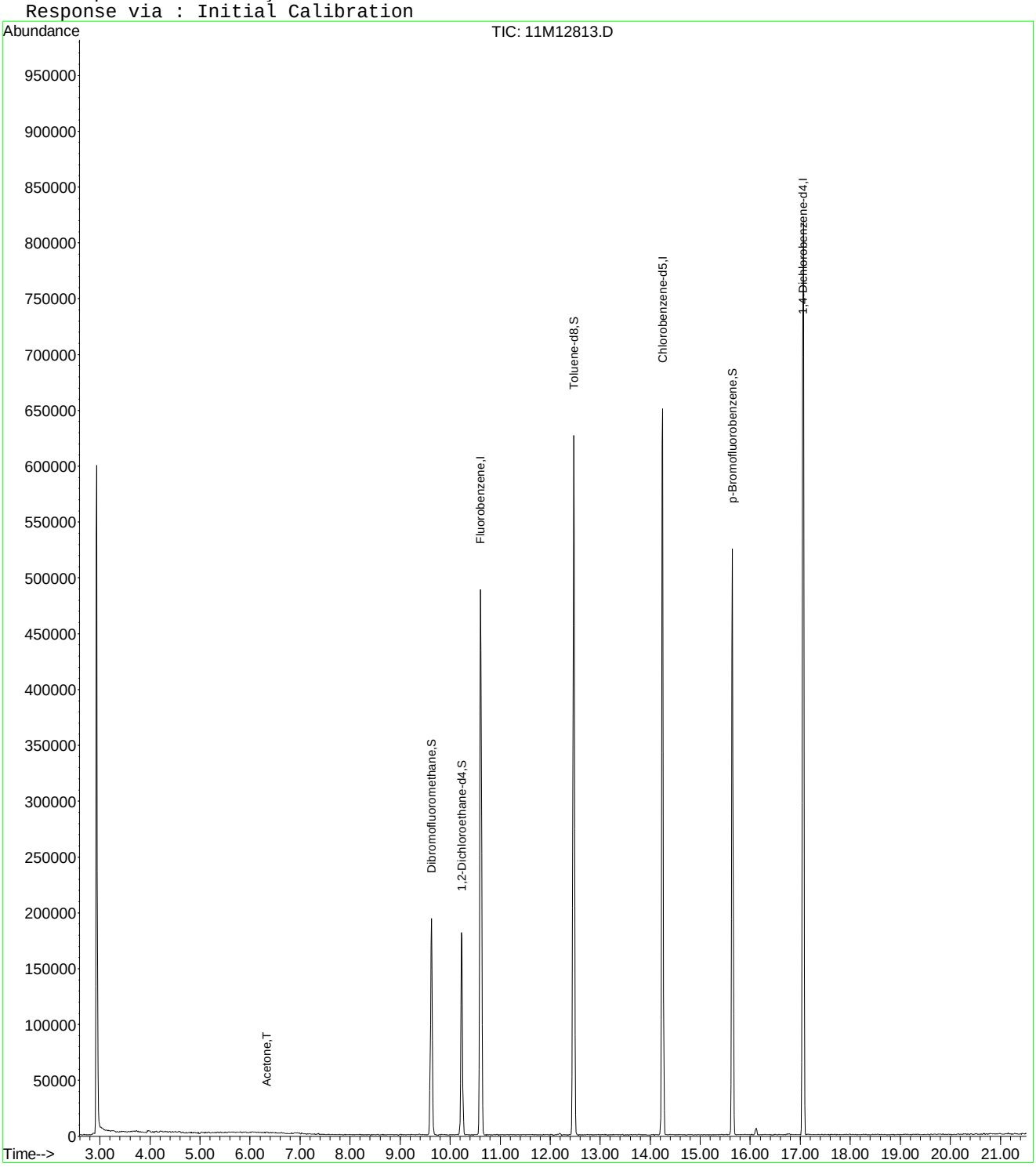

11M12813.D 8260WT.M Fri Jun 24 14:58:34 2016 Page 2

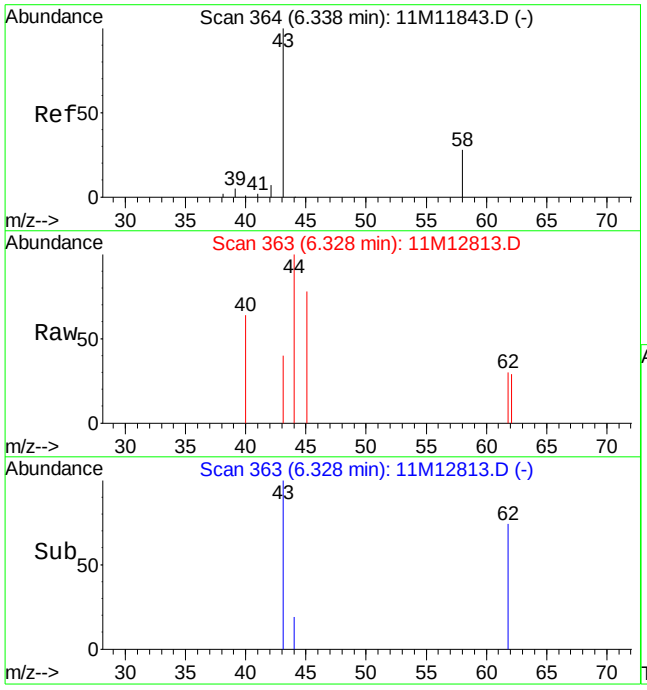

#13
Acetone
Concen: 0.60 ug/L
RT: 6.33 min Scan# 363
Delta R.T. -0.01 min
Lab File: 11M12813.D
Acq: 22 Jun 2016 23:06

Tgt Ion: 43 Resp: 793

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

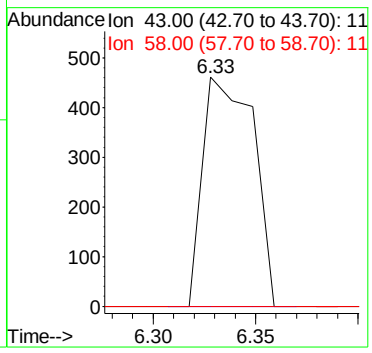

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062216\11M12815.D Vial: 18
Acq On : 23 Jun 2016 00:10 Operator: JDS
Sample : L16061026-04 A 5X 826-LOW Inst : hpms11
Misc : 1,5 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 24 14:58:38 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	534594	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	471668	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	276226	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	155657	26.6049 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.40%		
43) 1,2-Dichloroethane-d4	10.23	65	167579	25.1202 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.48%		
57) Toluene-d8	12.47	98	525050	25.6197 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 102.48%		
78) p-Bromofluorobenzene	15.64	95	201645	23.6813 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.72%		

Target Compounds

					Qvalue
12) 1,1,2-Trichloro-1,2,2-Trif	6.24	101	36649	6.8020 ug/L	95
13) Acetone	6.36	43	189	0.1489 ug/L #	49
14) 1,1-Dichloroethene	6.55	61	1475	0.1507 ug/L #	46
32) cis-1,2-Dichloroethene	9.15	96	5996	1.0040 ug/L	76
33) Chloroform	9.35	83	7004	0.6563 ug/L	96
36) Tetrahydrofuran	9.60	42	973	0.7180 ug/L #	66
44) 1,2-Dichloroethane	10.34	62	44118	5.0896 ug/L	88
46) Trichloroethene	11.09	130	2136212	320.1444 ug/L	98
47) Methylcyclohexane	11.08	83	21923	2.6622 ug/L #	1

(#) = qualifier out of range (m) = manual integration
11M12815.D 8260WT.M Fri Jun 24 14:58:39 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062216\11M12815.D Vial: 18
Acq On : 23 Jun 2016 00:10 Operator: JDS
Sample : L16061026-04 A 5X 826-LOW Inst : hpms11
Misc : 1,5 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 24 14:58 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

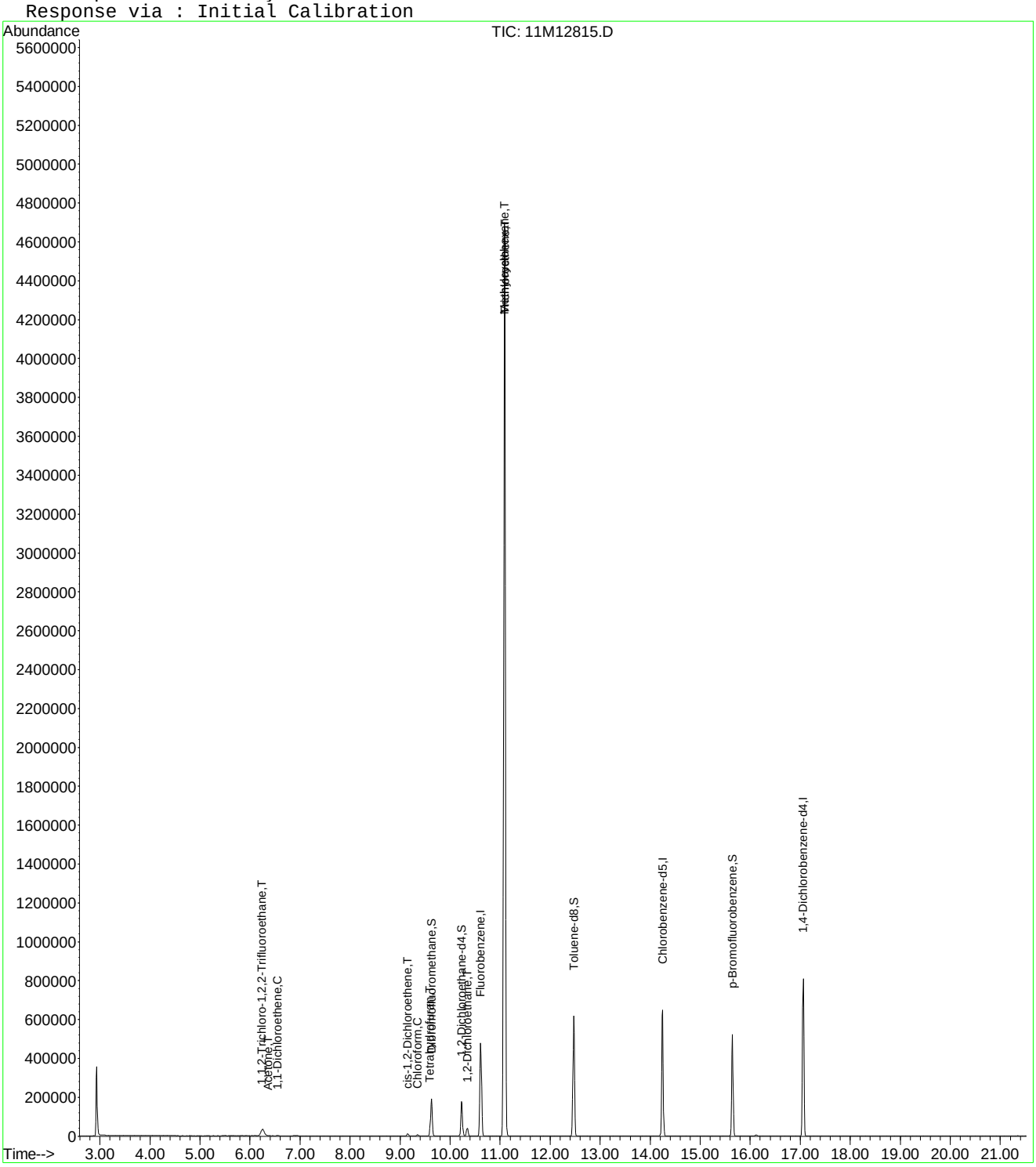

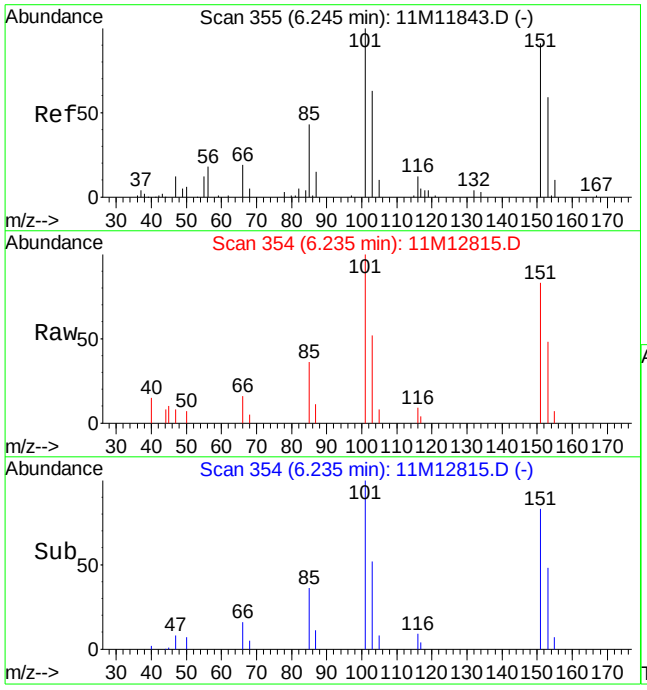

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 6.80 ug/L
RT: 6.24 min Scan# 354
Delta R.T. -0.01 min
Lab File: 11M12815.D
Acq: 23 Jun 2016 00:10

Tgt Ion:101 Resp: 36649

Ion	Ratio	Lower	Upper
101	100		
151	95.9	50.7	130.7

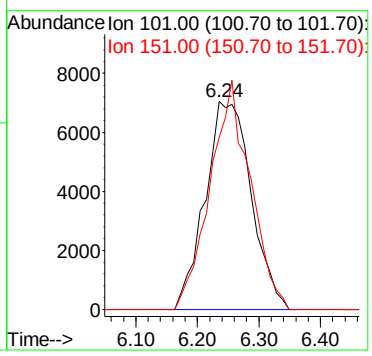

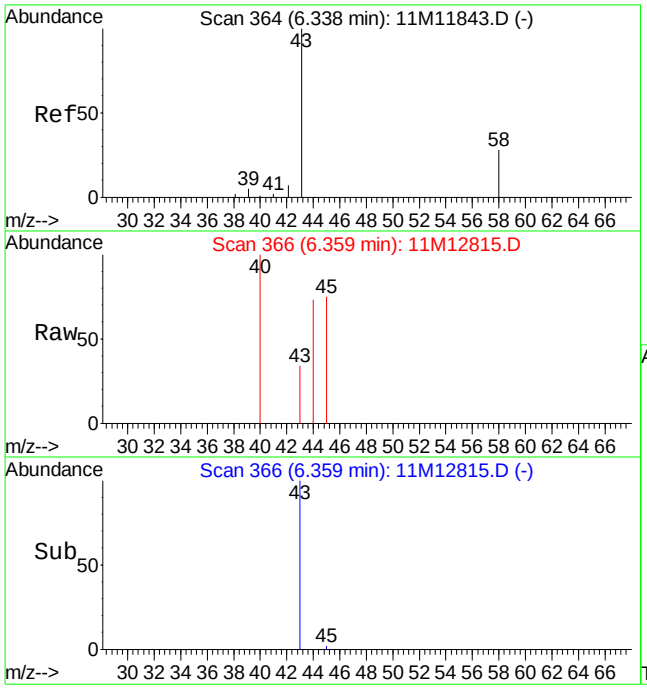

#13
Acetone
Concen: 0.15 ug/L
RT: 6.36 min Scan# 366
Delta R.T. 0.02 min
Lab File: 11M12815.D
Acq: 23 Jun 2016 00:10

Tgt Ion: 43 Resp: 189

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

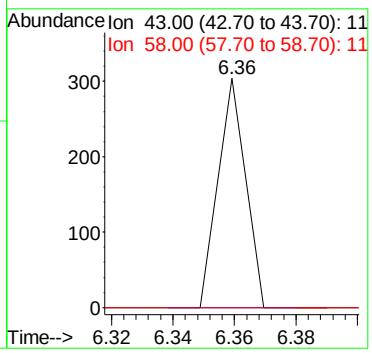

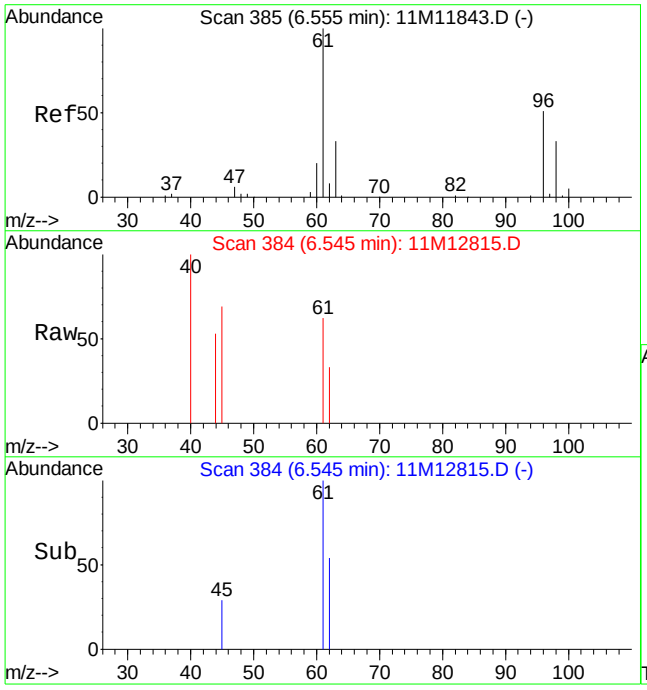

#14
1,1-Dichloroethene
Concen: 0.15 ug/L
RT: 6.55 min Scan# 384
Delta R.T. -0.01 min
Lab File: 11M12815.D
Acq: 23 Jun 2016 00:10

Tgt Ion: 61 Resp: 1475

Ion	Ratio	Lower	Upper
61	100		
96	13.2	30.1	70.3#

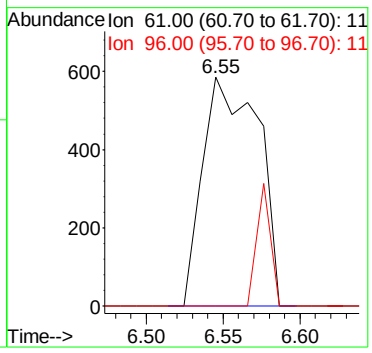

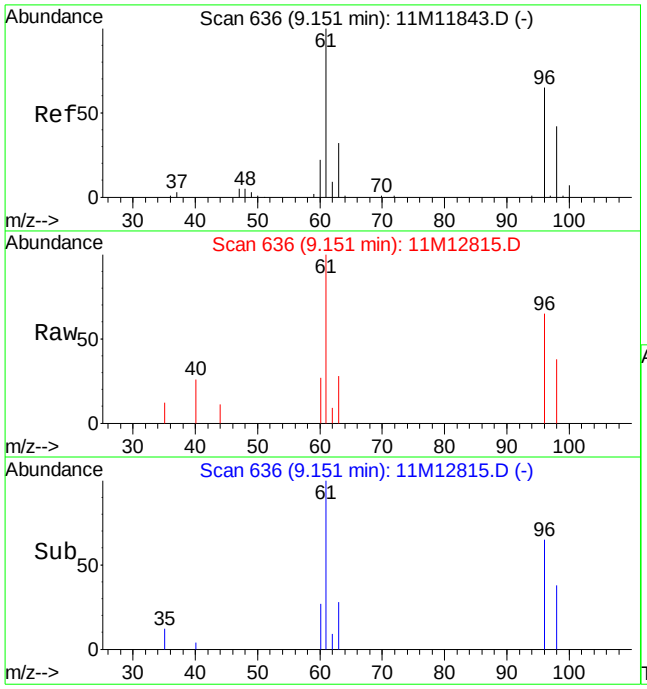

#32
cis-1,2-Dichloroethene
Concen: 1.00 ug/L
RT: 9.15 min Scan# 636
Delta R.T. 0.00 min
Lab File: 11M12815.D
Acq: 23 Jun 2016 00:10

Tgt Ion: 96 Resp: 5996

Ion	Ratio	Lower	Upper
96	100		
61	142.2	105.2	245.6

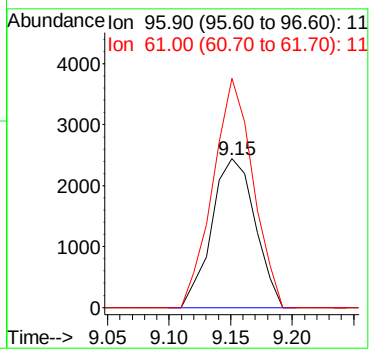

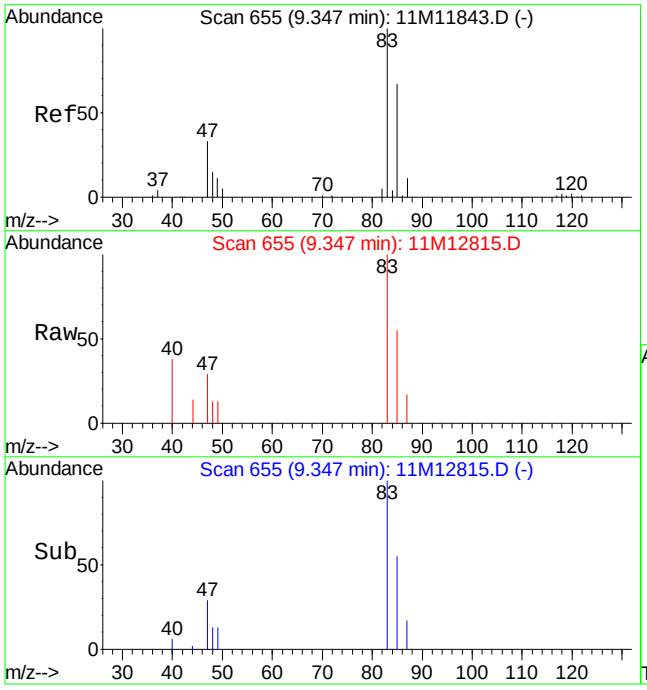

#33
Chloroform
Concen: 0.66 ug/L
RT: 9.35 min Scan# 655
Delta R.T. 0.00 min
Lab File: 11M12815.D
Acq: 23 Jun 2016 00:10

Tgt Ion: 83 Resp: 7004

Ion	Ratio	Lower	Upper
83	100		
85	62.3	39.2	91.4

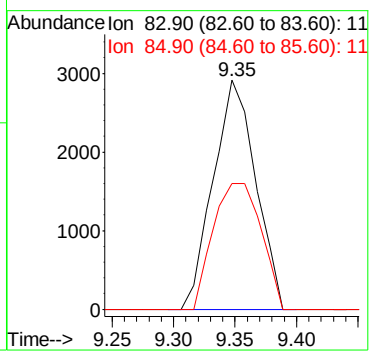

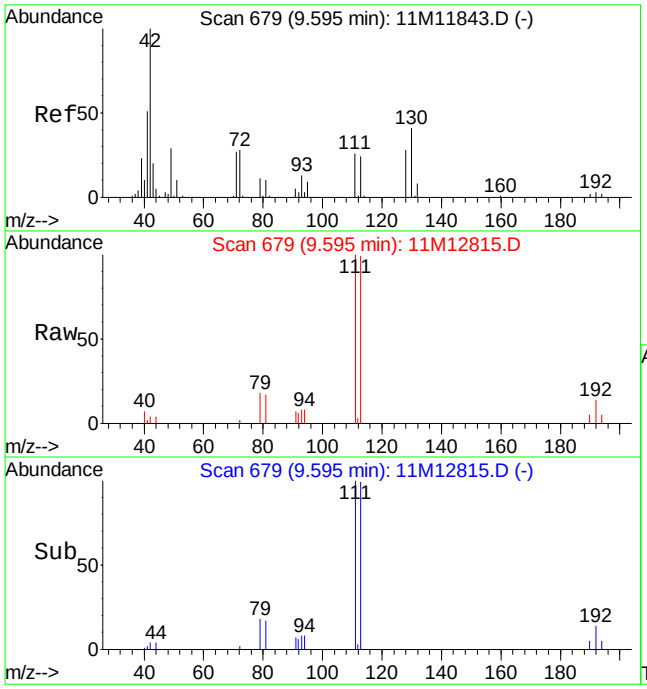

#36
Tetrahydrofuran
Concen: 0.72 ug/L
RT: 9.60 min Scan# 679
Delta R.T. 0.00 min
Lab File: 11M12815.D
Acq: 23 Jun 2016 00:10

Tgt Ion: 42 Resp: 973

Ion	Ratio	Lower	Upper
42	100		
71	0.0	16.4	38.2#
72	19.5	16.6	38.8

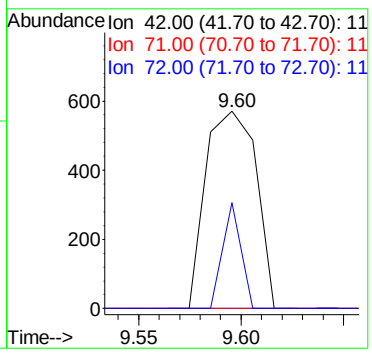

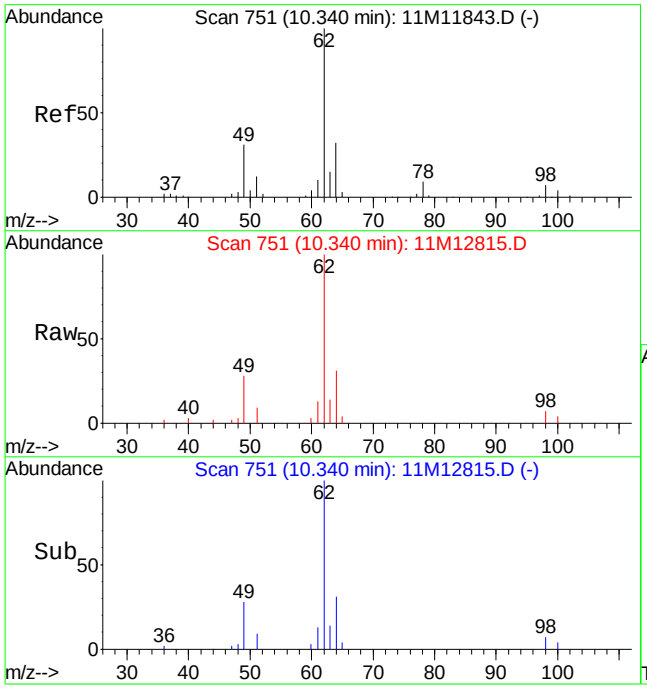

#44
1,2-Dichloroethane
Concen: 5.09 ug/L
RT: 10.34 min Scan# 751
Delta R.T. 0.00 min
Lab File: 11M12815.D
Acq: 23 Jun 2016 00:10

Tgt Ion: 62 Resp: 44118

Ion	Ratio	Lower	Upper
62	100		
64	29.1	18.7	43.7
49	26.3	22.3	52.1

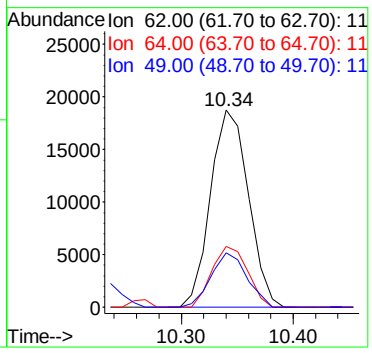

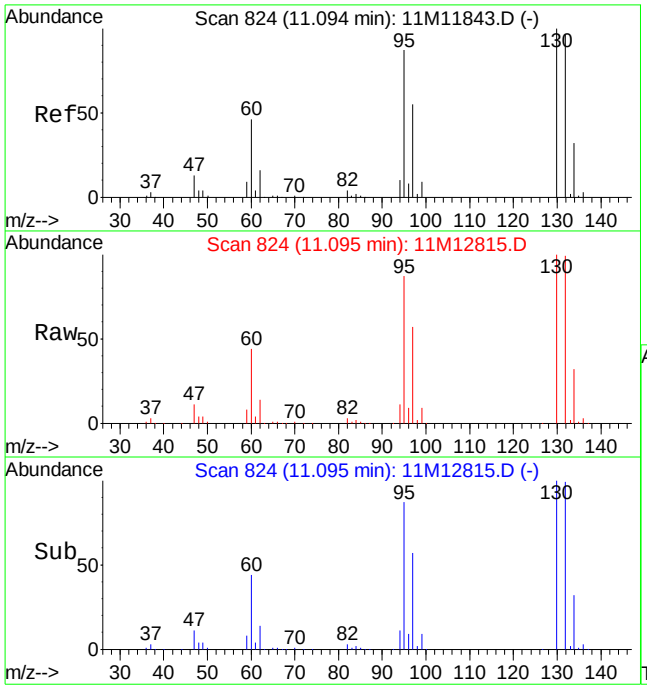

#46
Trichloroethene
Concen: 320.14 ug/L
RT: 11.09 min Scan# 824
Delta R.T. 0.00 min
Lab File: 11M12815.D
Acq: 23 Jun 2016 00:10

Tgt Ion:130 Resp: 2136212

Ion	Ratio	Lower	Upper
130	100		
132	96.8	58.3	136.1
95	89.6	55.6	129.8

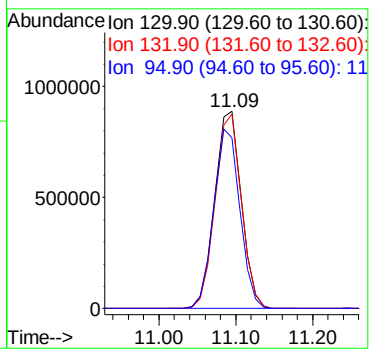

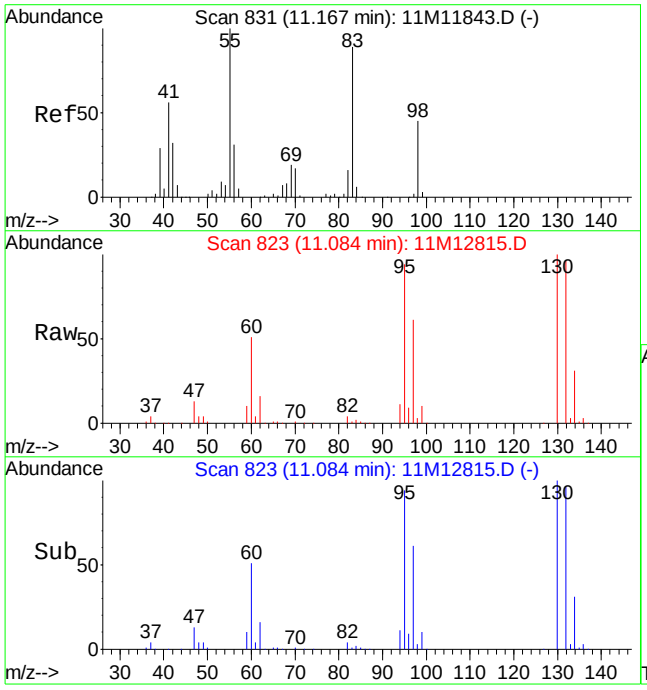

#47
Methylcyclohexane
Concen: 2.66 ug/L
RT: 11.08 min Scan# 823
Delta R.T. -0.08 min
Lab File: 11M12815.D
Acq: 23 Jun 2016 00:10

Tgt Ion: 83 Resp: 21923

Ion	Ratio	Lower	Upper
83	100		
55	0.0	66.5	155.1#
98	236.9	29.9	69.7#

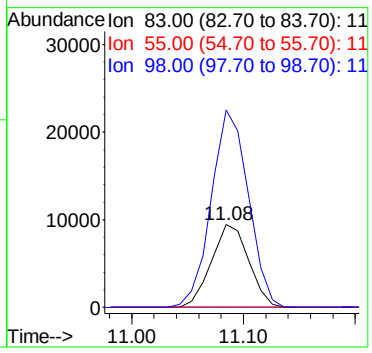

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062316\11M12835.D Vial: 9
Acq On : 23 Jun 2016 19:11 Operator: JDS
Sample : L16061026-04 B D1 20X 826-LOW Inst : hpms11
Misc : 1,20 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 24 15:00:33 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	507627	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	457128	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	268568	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	148019	26.6434 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.56%		
43) 1,2-Dichloroethane-d4	10.24	65	163290	25.7776 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 103.12%		
57) Toluene-d8	12.47	98	498634	25.1047 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.40%		
78) p-Bromofluorobenzene	15.64	95	195933	23.6666 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.68%		

Target Compounds

					Qvalue
3) Chloromethane	3.74	50	1416	0.2223 ug/L	97
6) Bromomethane	4.86	94	830	0.2282 ug/L	77
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	9036	1.7662 ug/L	96
13) Acetone	6.34	43	1216	1.0088 ug/L #	49
15) Tert-Butyl Alcohol	6.64	59	889	2.6663 ug/L #	56
17) Iodomethane	7.07	142	1039	2.4967 ug/L #	29
18) Methyl acetate	7.07	43	472	Below Cal #	71
20) Carbon Disulfide	7.36	76	2264	0.1455 ug/L #	75
29) 2-Butanone	8.87	43	280	0.1537 ug/L #	62
30) Propionitrile	8.99	54	676	1.2666 ug/L #	60
32) cis-1,2-Dichloroethene	9.15	96	1534	0.2705 ug/L	88
33) Chloroform	9.36	83	1713	0.1690 ug/L	71
36) Tetrahydrofuran	9.61	42	1610	1.2512 ug/L #	47
42) Tert-Amyl-Methyl ether	10.14	73	1878	0.1553 ug/L #	63
44) 1,2-Dichloroethane	10.34	62	10039	1.2197 ug/L	86
46) Trichloroethene	11.09	130	515068	81.2916 ug/L	97
47) Methylcyclohexane	11.08	83	4917	0.6288 ug/L #	1
62) 2-Hexanone	12.86	43	403	0.1337 ug/L #	34
64) Tetrachloroethene	13.34	164	809	0.1503 ug/L #	53
96) 1,2,4-Trichlorobenzene	19.54	180	1319	0.1255 ug/L #	43
98) Naphthalene	19.89	128	4993	0.2560 ug/L #	77
99) 1,2,3-Trichlorobenzene	20.18	180	1619	0.1679 ug/L #	63

(#) = qualifier out of range (m) = manual integration
11M12835.D 8260WT.M Fri Jun 24 15:00:35 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062316\11M12835.D Vial: 9
Acq On : 23 Jun 2016 19:11 Operator: JDS
Sample : L16061026-04 B D1 20X 826-LOW Inst : hpms11
Misc : 1,20 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 24 15:00 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

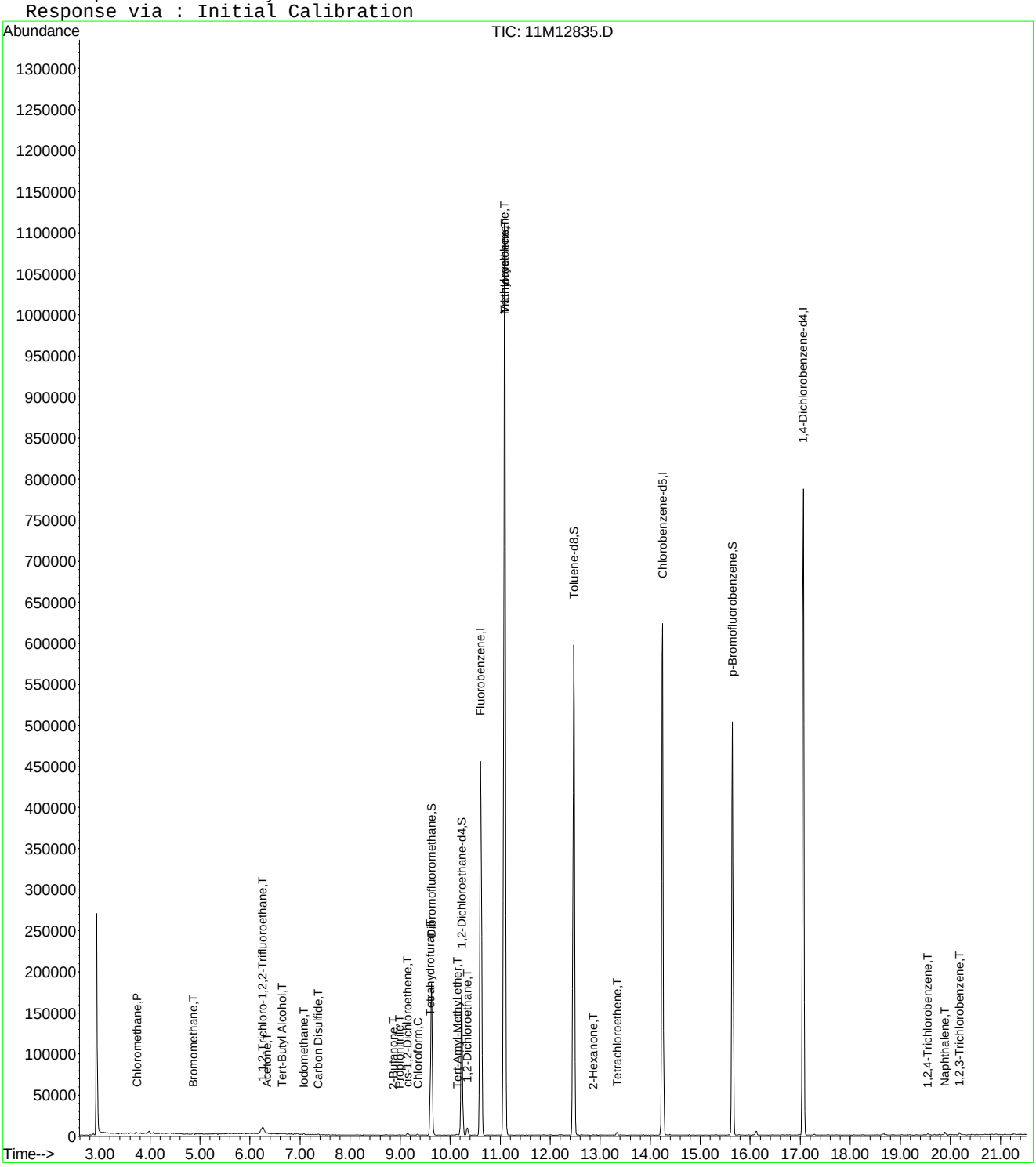

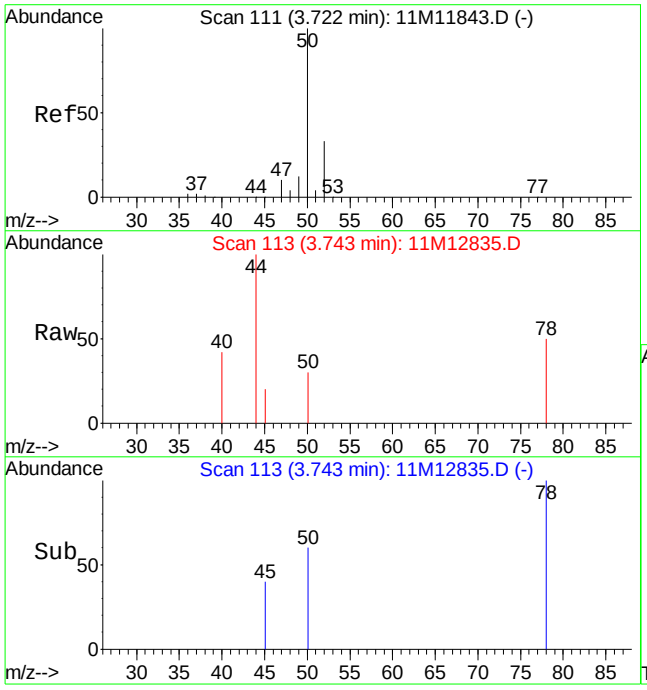

#3
Chloromethane
Concen: 0.22 ug/L
RT: 3.74 min Scan# 113
Delta R.T. 0.02 min
Lab File: 11M12835.D
Acq: 23 Jun 2016 19:11

Tgt Ion: 50 Resp: 1416

Ion	Ratio	Lower	Upper
50	100		
52	31.5	20.0	46.6

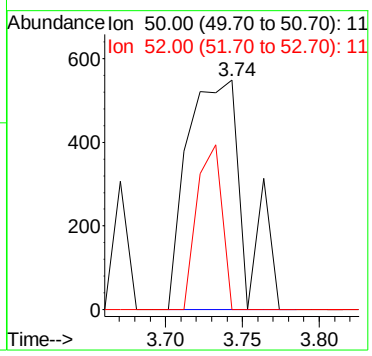

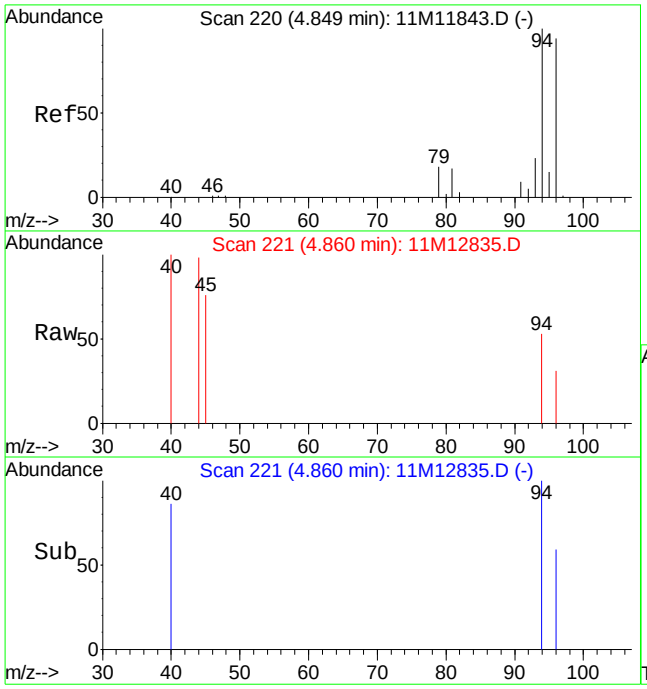

#6
Bromomethane
Concen: 0.23 ug/L
RT: 4.86 min Scan# 221
Delta R.T. 0.01 min
Lab File: 11M12835.D
Acq: 23 Jun 2016 19:11

Tgt Ion: 94 Resp: 830

Ion	Ratio	Lower	Upper
94	100		
96	71.9	56.5	131.9

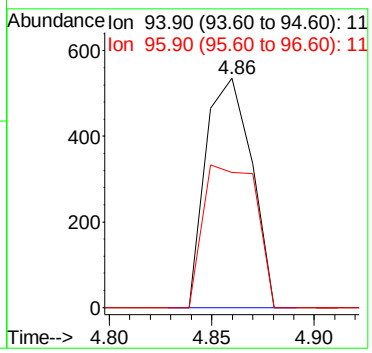

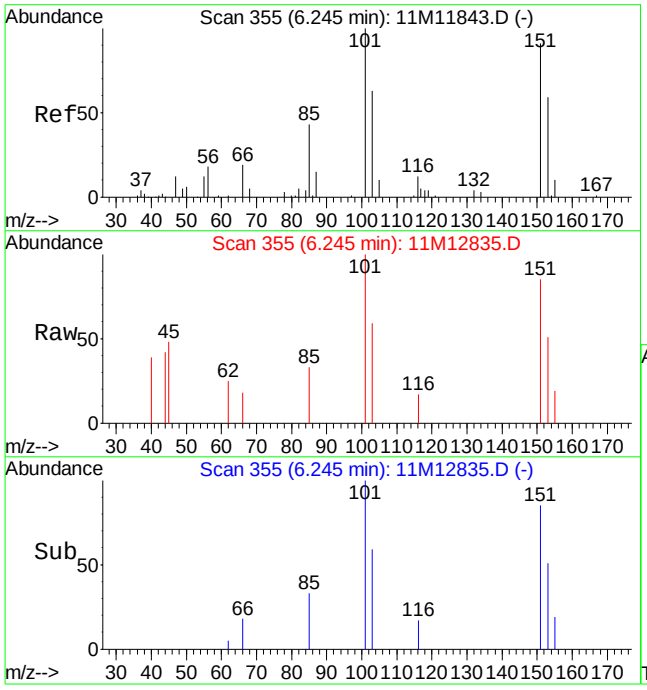

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 1.77 ug/L
RT: 6.25 min Scan# 355
Delta R.T. 0.00 min
Lab File: 11M12835.D
Acq: 23 Jun 2016 19:11

Tgt Ion:101 Resp: 9036

Ion	Ratio	Lower	Upper
101	100		
151	94.6	50.7	130.7

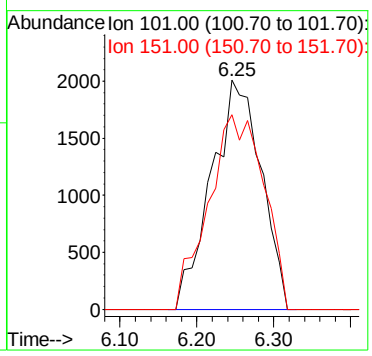

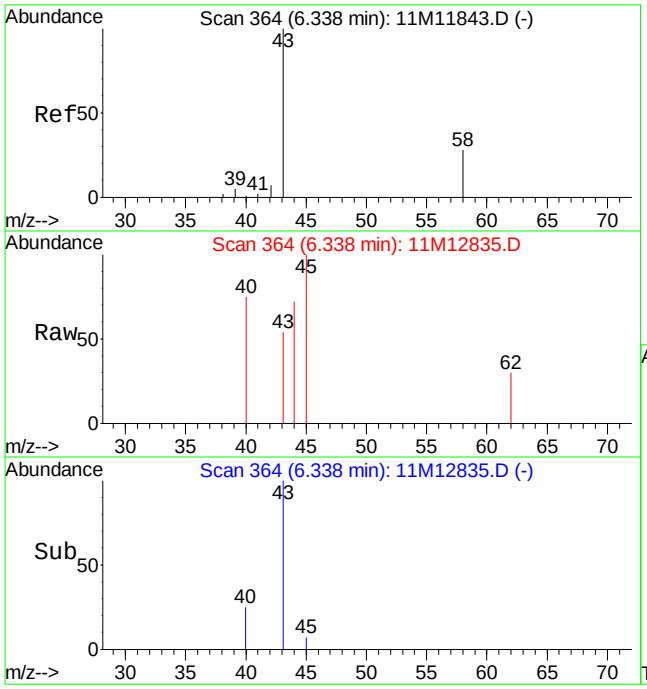

#13
Acetone
Concen: 1.01 ug/L
RT: 6.34 min Scan# 364
Delta R.T. 0.00 min
Lab File: 11M12835.D
Acq: 23 Jun 2016 19:11

Tgt Ion: 43 Resp: 1216

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

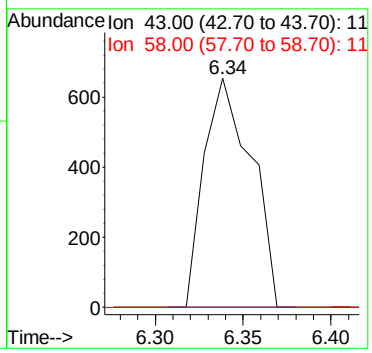

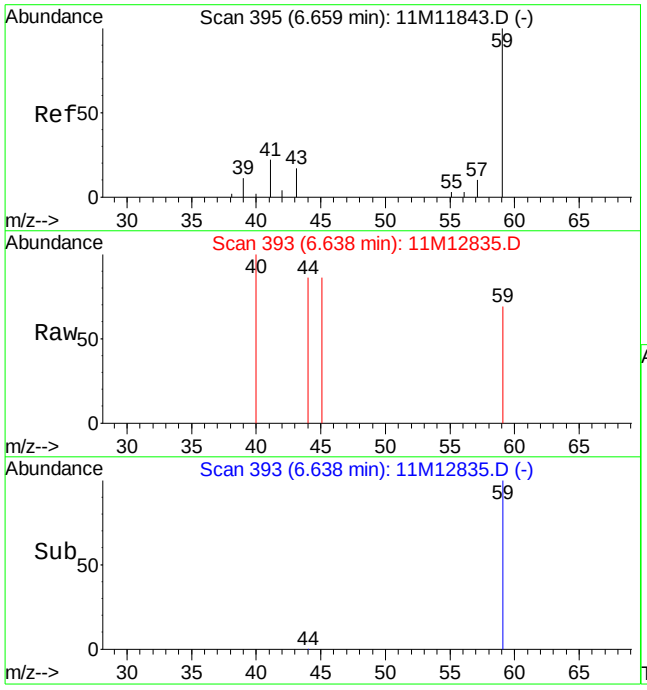

#15
Tert-Butyl Alcohol
Concen: 2.67 ug/L
RT: 6.64 min Scan# 393
Delta R.T. -0.02 min
Lab File: 11M12835.D
Acq: 23 Jun 2016 19:11

Tgt Ion: 59 Resp: 889

Ion	Ratio	Lower	Upper
59	100		
41	0.0	15.3	35.7#
57	0.0	6.2	14.4#

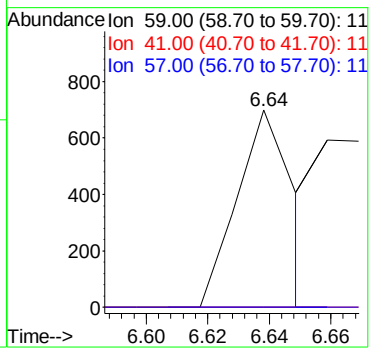

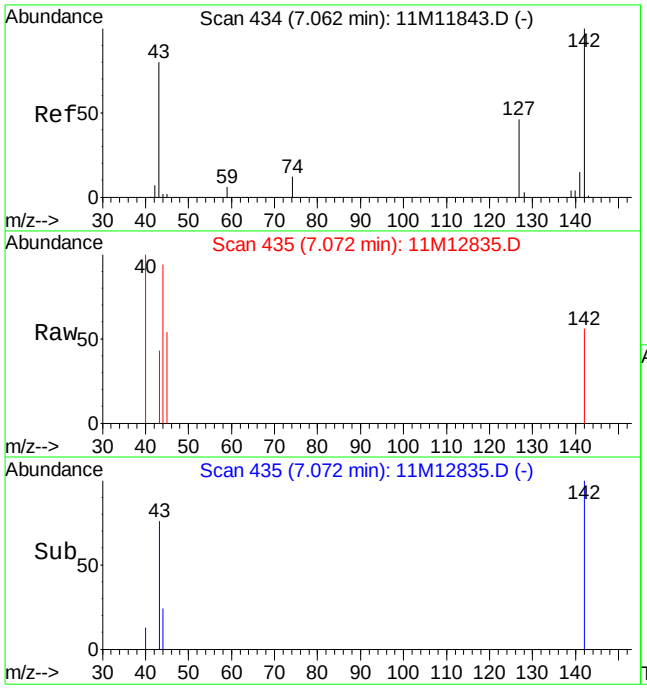

#17
Iodomethane
Concen: 2.50 ug/L
RT: 7.07 min Scan# 435
Delta R.T. 0.01 min
Lab File: 11M12835.D
Acq: 23 Jun 2016 19:11

Tgt Ion:142 Resp: 1039

Ion	Ratio	Lower	Upper
142	100		
127	0.0	29.0	67.6#

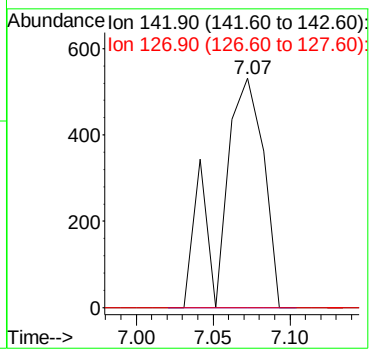

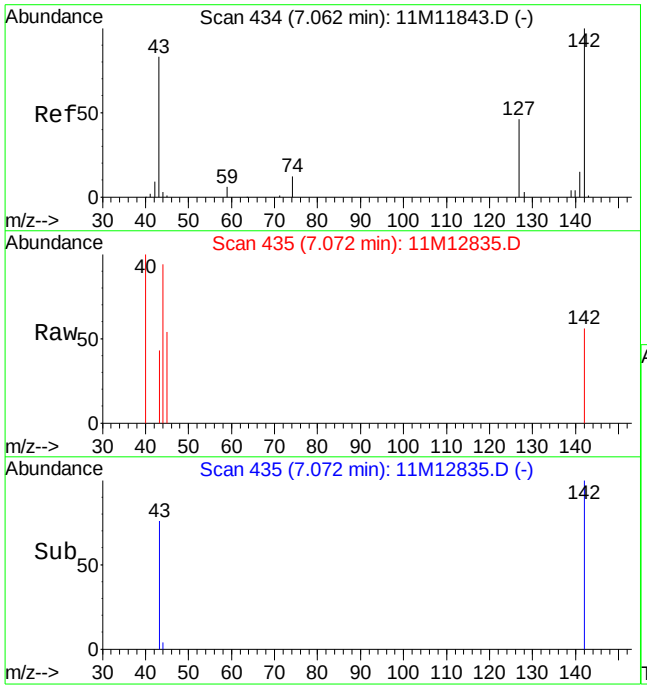

#18
Methyl acetate
Concen: Below Cal
RT: 7.07 min Scan# 435
Delta R.T. 0.01 min
Lab File: 11M12835.D
Acq: 23 Jun 2016 19:11

Tgt Ion: 43 Resp: 472

Ion	Ratio	Lower	Upper
43	100		
74	0.0	8.2	19.0#
59	0.0	3.9	9.1#

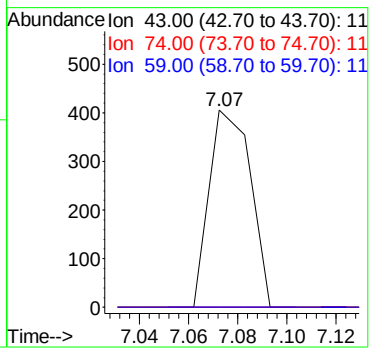

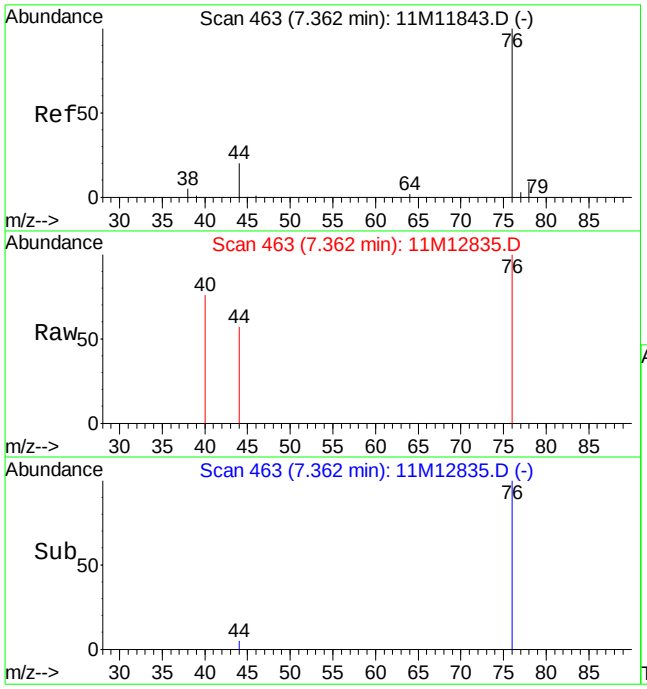

#20
Carbon Disulfide
Concen: 0.15 ug/L
RT: 7.36 min Scan# 463
Delta R.T. 0.00 min
Lab File: 11M12835.D
Acq: 23 Jun 2016 19:11

Tgt Ion: 76 Resp: 2264

Ion	Ratio	Lower	Upper
76	100		
78	0.0	5.5	12.9#

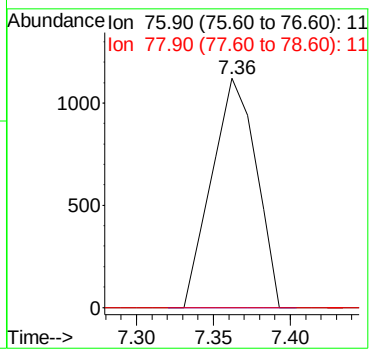

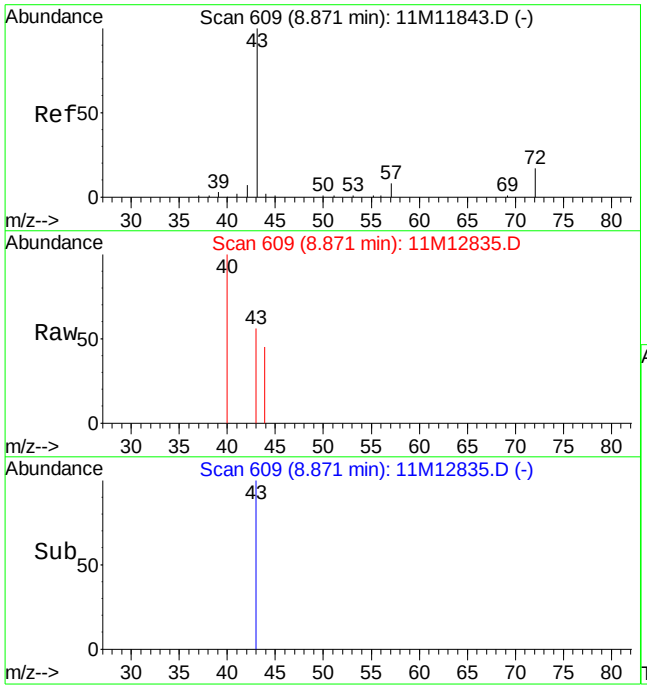

#29
2-Butanone
Concen: 0.15 ug/L
RT: 8.87 min Scan# 609
Delta R.T. 0.00 min
Lab File: 11M12835.D
Acq: 23 Jun 2016 19:11

Tgt Ion: 43 Resp: 280

Ion	Ratio	Lower	Upper
43	100		
72	0.0	9.6	22.4#

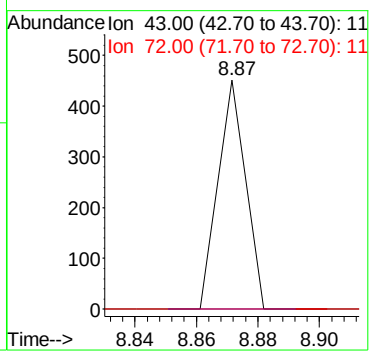

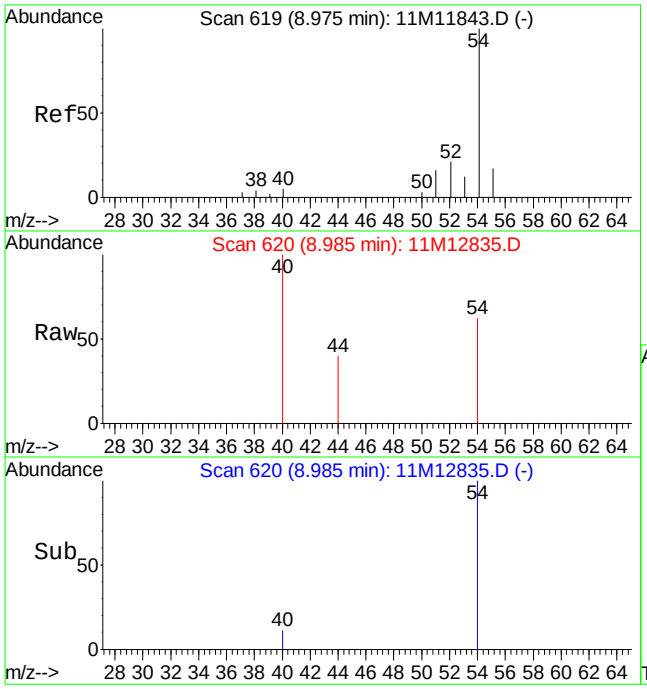

#30
Propionitrile
Concen: 1.27 ug/L
RT: 8.99 min Scan# 620
Delta R.T. 0.01 min
Lab File: 11M12835.D
Acq: 23 Jun 2016 19:11

Tgt Ion: 54 Resp: 676

Ion	Ratio	Lower	Upper
54	100		
55	0.0	10.3	24.1#

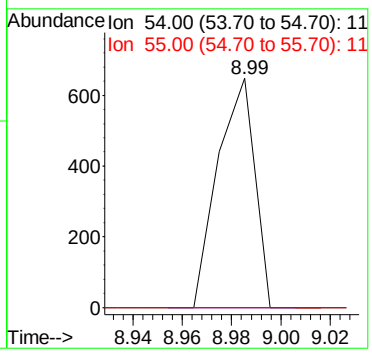

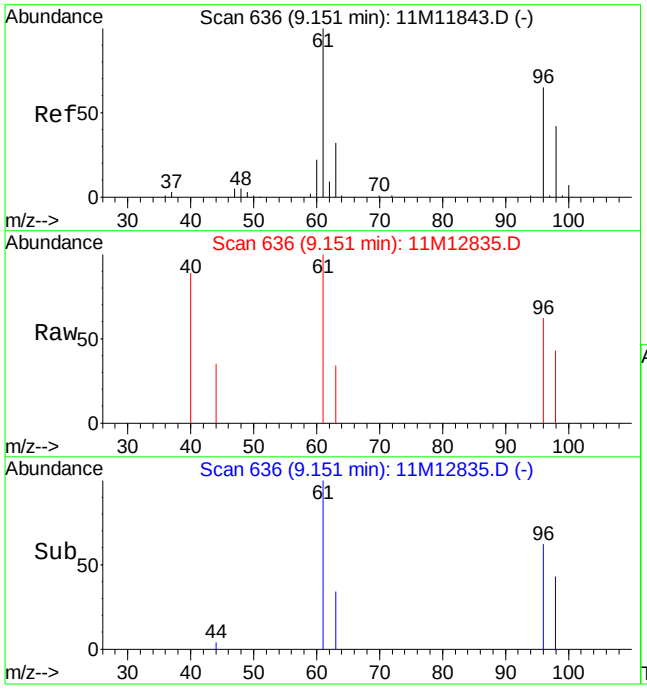

#32
cis-1,2-Dichloroethene
Concen: 0.27 ug/L
RT: 9.15 min Scan# 636
Delta R.T. 0.00 min
Lab File: 11M12835.D
Acq: 23 Jun 2016 19:11

Tgt Ion: 96 Resp: 1534

Ion	Ratio	Lower	Upper
96	100		
61	158.9	105.2	245.6

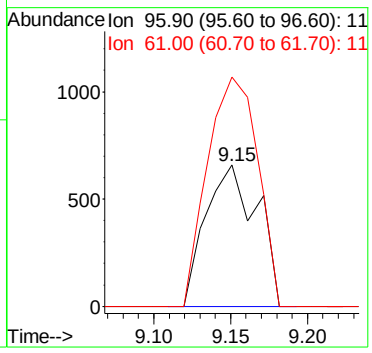

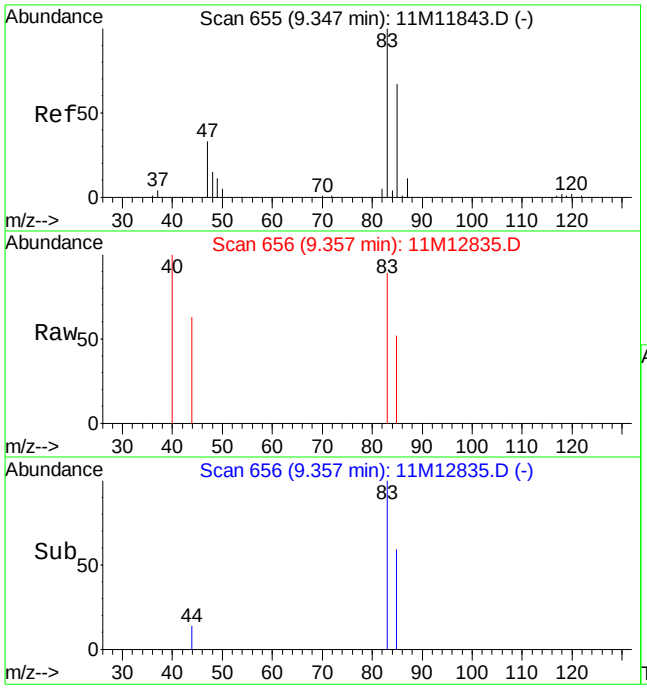

#33
Chloroform
Concen: 0.17 ug/L
RT: 9.36 min Scan# 656
Delta R.T. 0.01 min
Lab File: 11M12835.D
Acq: 23 Jun 2016 19:11

Tgt Ion: 83 Resp: 1713

Ion	Ratio	Lower	Upper
83	100		
85	42.5	39.2	91.4

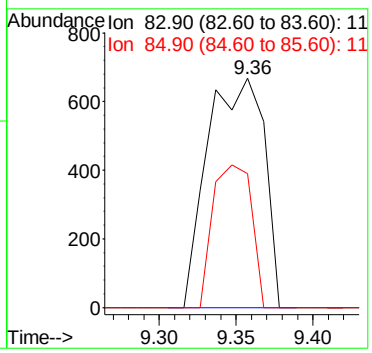

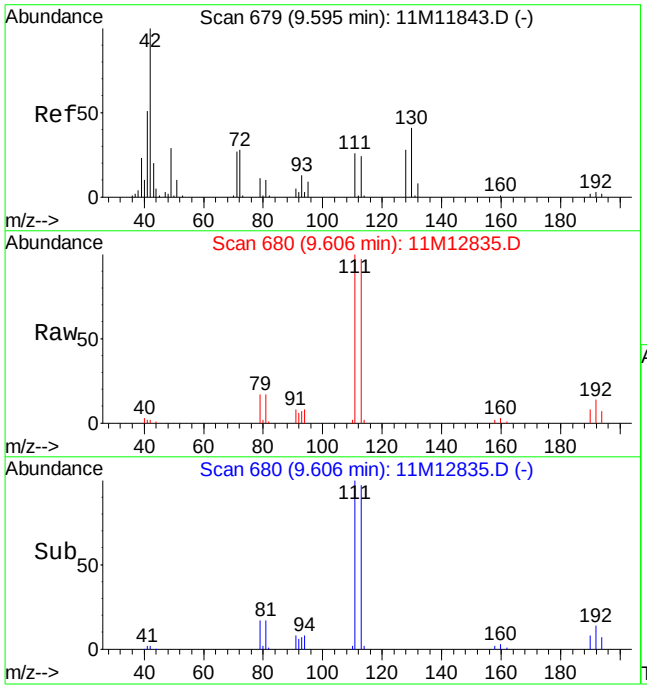

#36
Tetrahydrofuran
Concen: 1.25 ug/L
RT: 9.61 min Scan# 680
Delta R.T. 0.01 min
Lab File: 11M12835.D
Acq: 23 Jun 2016 19:11

Tgt Ion: 42 Resp: 1610

Ion	Ratio	Lower	Upper
42	100		
71	0.0	16.4	38.2#
72	0.0	16.6	38.8#

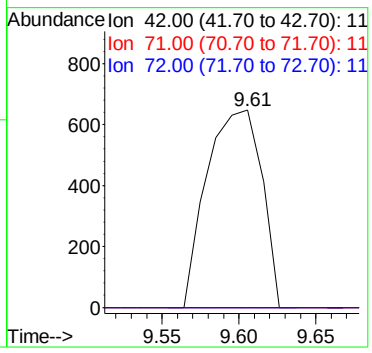

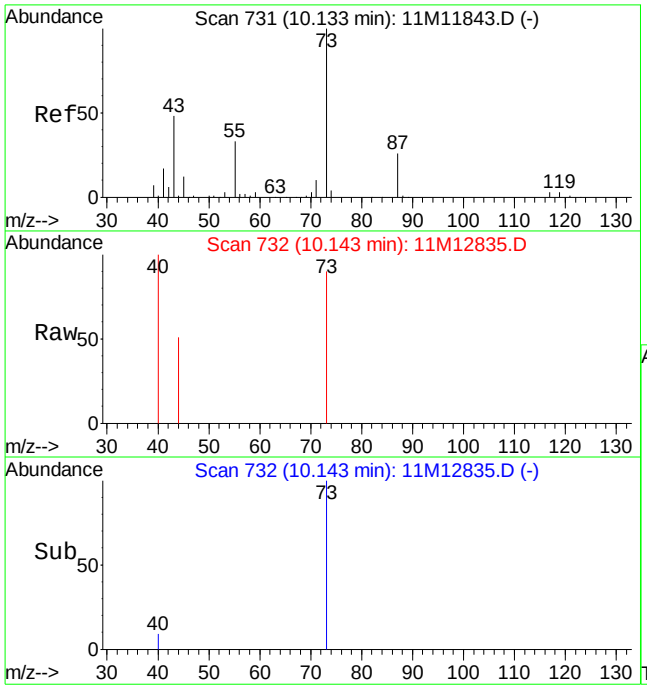

#42
Tert-Amyl-Methyl ether
Concen: 0.16 ug/L
RT: 10.14 min Scan# 732
Delta R.T. 0.01 min
Lab File: 11M12835.D
Acq: 23 Jun 2016 19:11

Tgt Ion: 73 Resp: 1878

Ion	Ratio	Lower	Upper
73	100		
55	11.1	20.1	46.9#
57	0.0	1.4	3.4#

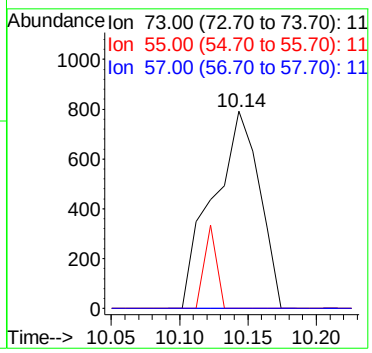

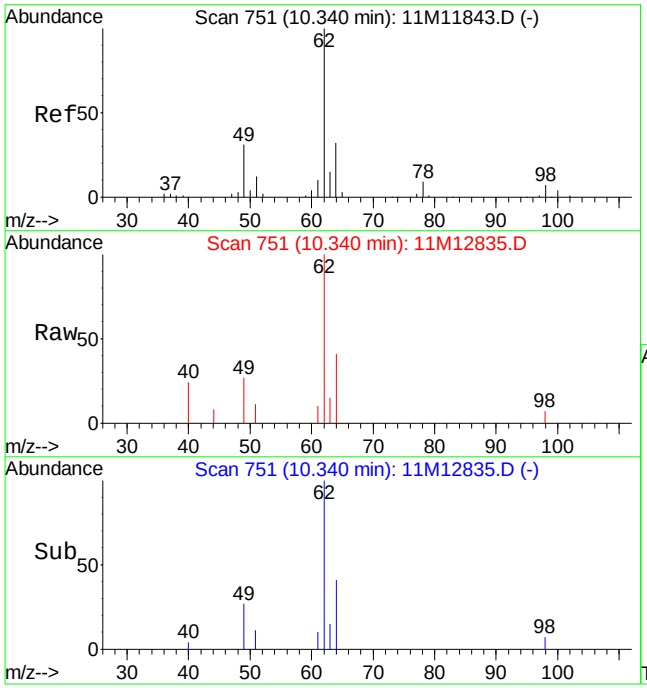

#44
1,2-Dichloroethane
Concen: 1.22 ug/L
RT: 10.34 min Scan# 751
Delta R.T. 0.00 min
Lab File: 11M12835.D
Acq: 23 Jun 2016 19:11

Tgt Ion: 62 Resp: 10039

Ion	Ratio	Lower	Upper
62	100		
64	35.4	18.7	43.7
49	25.2	22.3	52.1

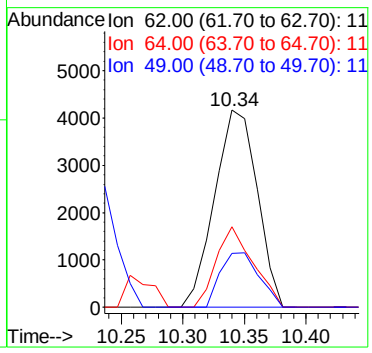

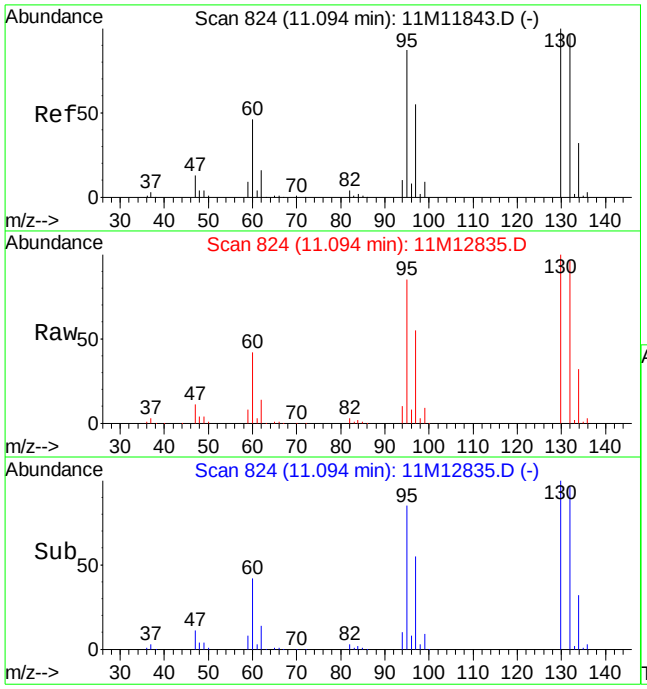

#46
Trichloroethene
Concen: 81.29 ug/L
RT: 11.09 min Scan# 824
Delta R.T. 0.00 min
Lab File: 11M12835.D
Acq: 23 Jun 2016 19:11

Tgt Ion:130 Resp: 515068

Ion	Ratio	Lower	Upper
130	100		
132	96.6	58.3	136.1
95	87.9	55.6	129.8

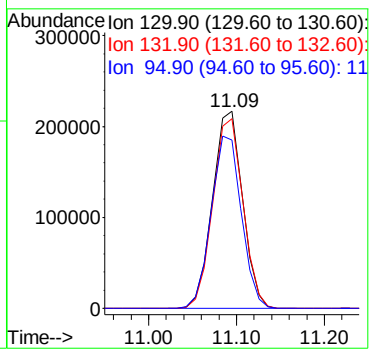

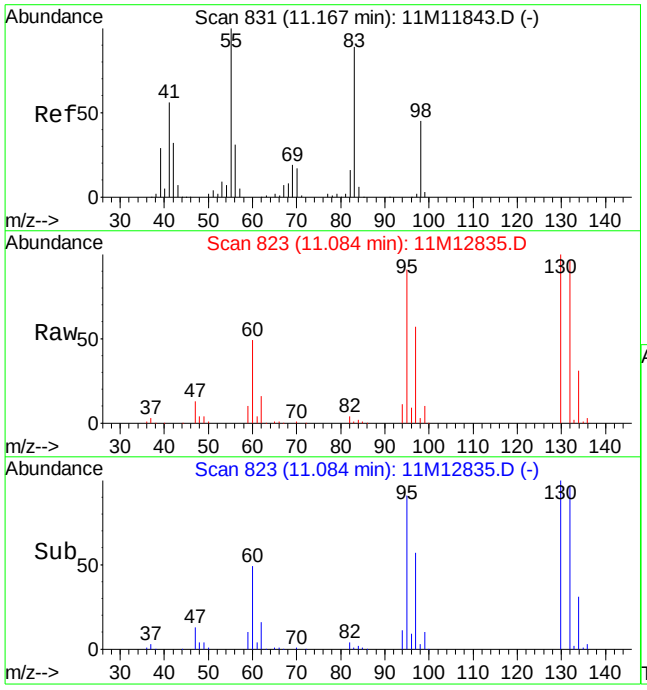

#47
Methylcyclohexane
Concen: 0.63 ug/L
RT: 11.08 min Scan# 823
Delta R.T. -0.08 min
Lab File: 11M12835.D
Acq: 23 Jun 2016 19:11

Tgt Ion: 83 Resp: 4917

Ion	Ratio	Lower	Upper
83	100		
55	0.0	66.5	155.1#
98	254.8	29.9	69.7#

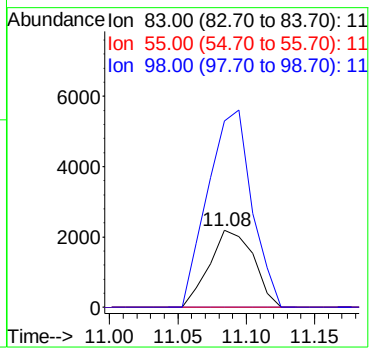

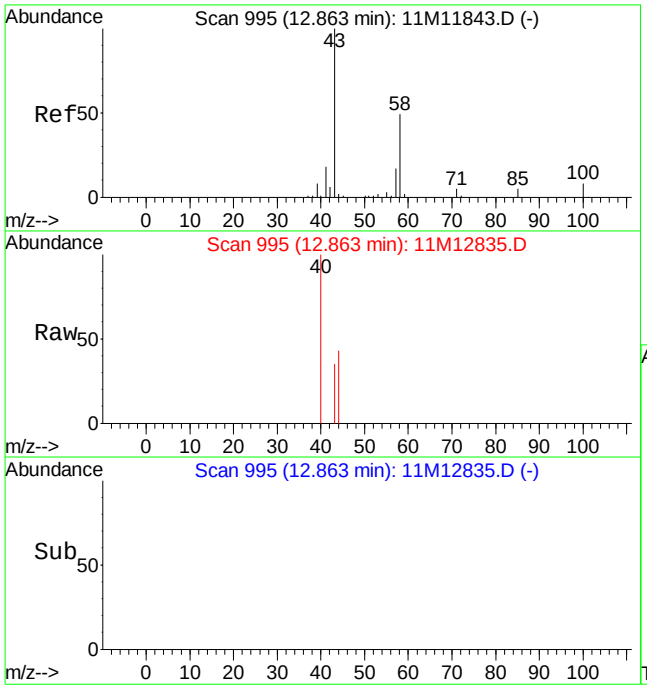

#62
2-Hexanone
Concen: 0.13 ug/L
RT: 12.86 min Scan# 995
Delta R.T. -0.00 min
Lab File: 11M12835.D
Acq: 23 Jun 2016 19:11

Tgt Ion: 43 Resp: 403

Ion	Ratio	Lower	Upper
43	100		
58	0.0	29.0	67.6#
85	0.0	3.2	7.6#

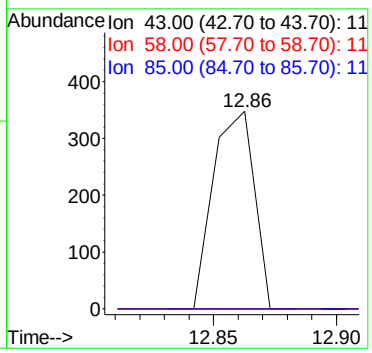

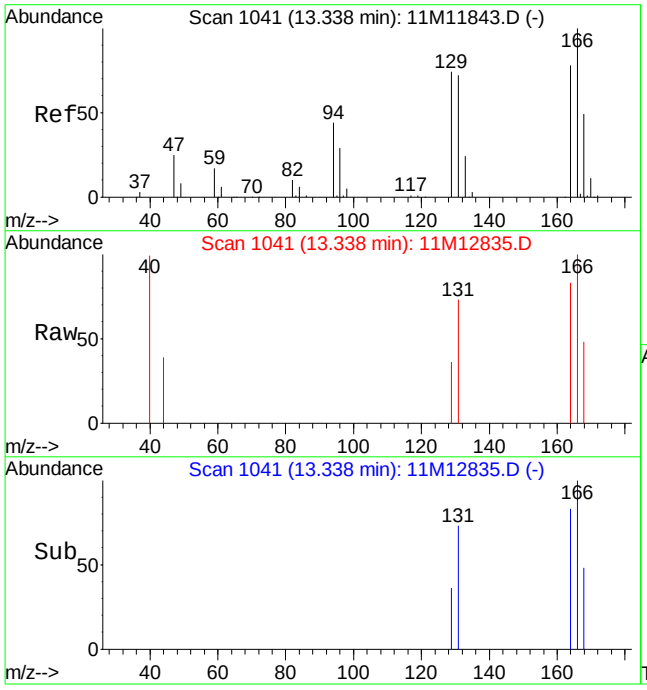

#64
Tetrachloroethene
Concen: 0.15 ug/L
RT: 13.34 min Scan# 1041
Delta R.T. 0.00 min
Lab File: 11M12835.D
Acq: 23 Jun 2016 19:11

Tgt Ion:164 Resp: 809

Ion	Ratio	Lower	Upper
164	100		
129	142.4	57.9	135.1#

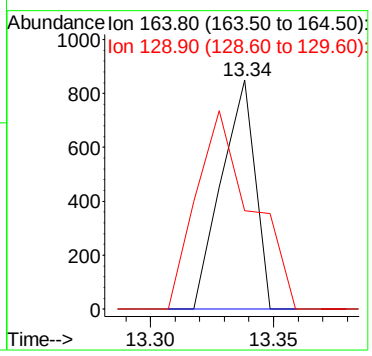

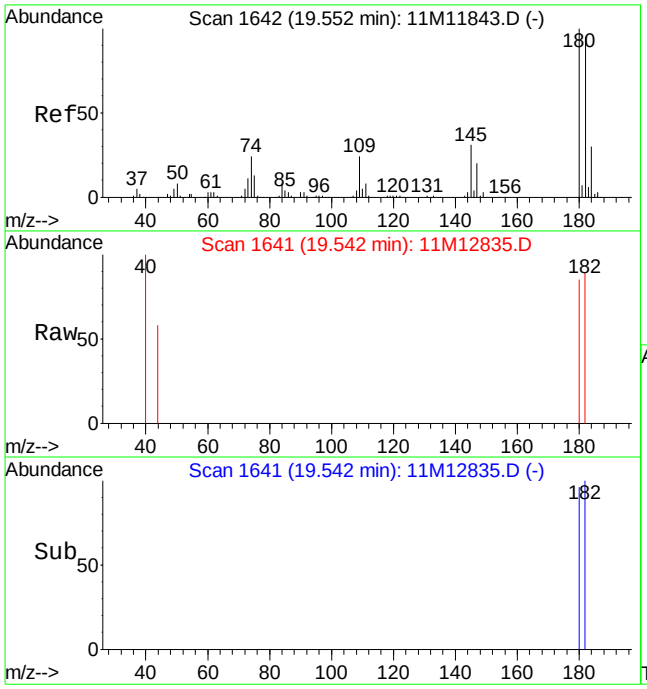

#96
1,2,4-Trichlorobenzene
Concen: 0.13 ug/L
RT: 19.54 min Scan# 1641
Delta R.T. -0.01 min
Lab File: 11M12835.D
Acq: 23 Jun 2016 19:11

Tgt Ion:180 Resp: 1319

Ion	Ratio	Lower	Upper
180	100		
145	0.0	19.1	44.7#

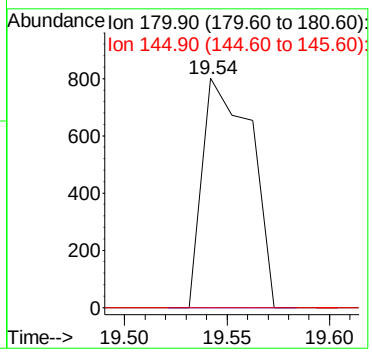

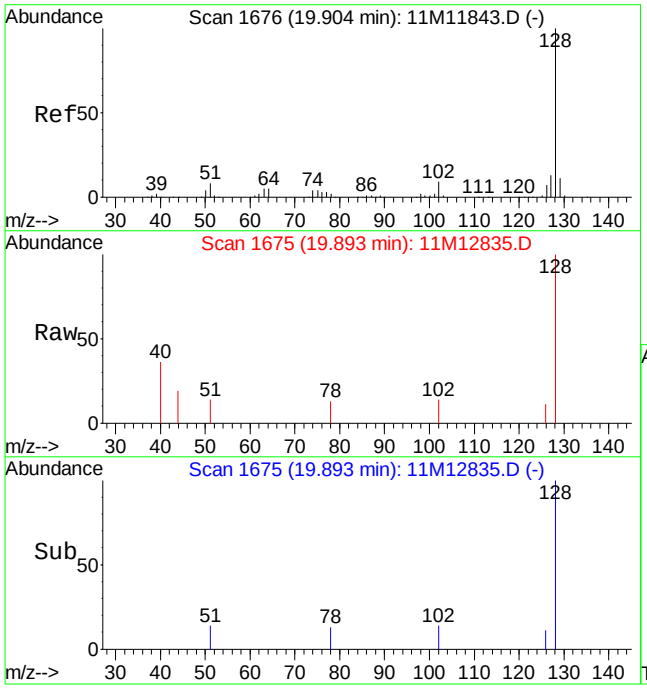

#98
Naphthalene
Concen: 0.26 ug/L
RT: 19.89 min Scan# 1675
Delta R.T. -0.01 min
Lab File: 11M12835.D
Acq: 23 Jun 2016 19:11

Tgt Ion:128 Resp: 4993

Ion	Ratio	Lower	Upper
128	100		
127	3.7	11.7	14.3#

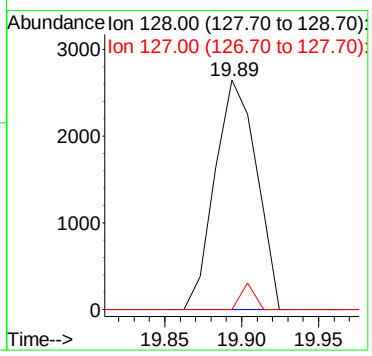

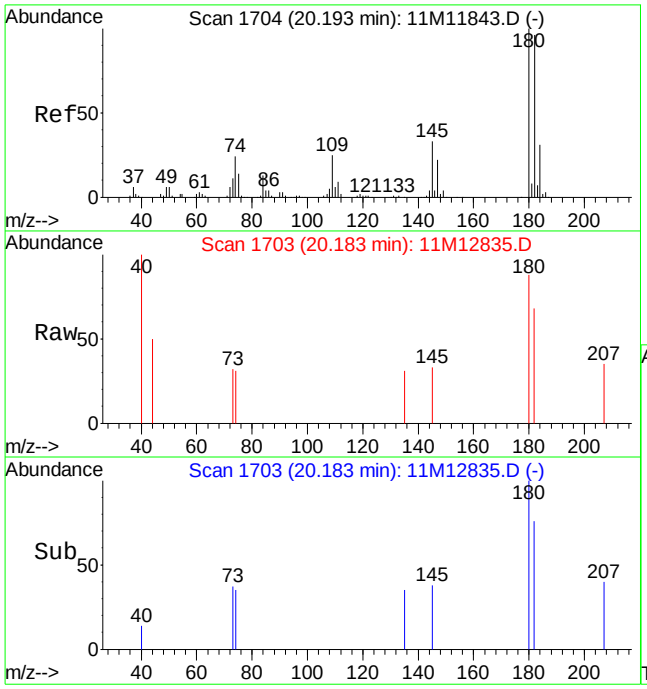

#99
1,2,3-Trichlorobenzene
Concen: 0.17 ug/L
RT: 20.18 min Scan# 1703
Delta R.T. -0.01 min
Lab File: 11M12835.D
Acq: 23 Jun 2016 19:11

Tgt Ion:180 Resp: 1619

Ion	Ratio	Lower	Upper
180	100		
145	12.5	20.3	47.3#

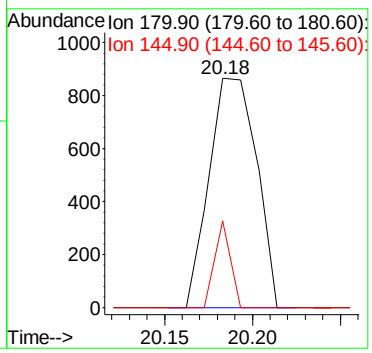

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062216\11M12816.D Vial: 19
Acq On : 23 Jun 2016 00:42 Operator: JDS
Sample : L16061026-05 A 100X 826-LOW Inst : hpms11
Misc : 1,100 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 24 14:58:40 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	517460	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	458713	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	269312	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	150082	26.5014 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.00%		
43) 1,2-Dichloroethane-d4	10.24	65	165759	25.6701 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 102.68%		
57) Toluene-d8	12.47	98	507453	25.4604 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.84%		
78) p-Bromofluorobenzene	15.64	95	195293	23.5241 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 94.08%		

Target Compounds

					Qvalue
4) Vinyl Chloride	3.96	62	4784	0.8872 ug/L #	77
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	2825	0.5417 ug/L	94
14) 1,1-Dichloroethene	6.56	61	12701	1.3408 ug/L	99
23) trans-1,2-Dichloroethene	7.74	96	796	0.1518 ug/L	92
27) 1,1-Dichloroethane	8.34	63	2267	0.2155 ug/L #	52
32) cis-1,2-Dichloroethene	9.15	96	87564	15.1476 ug/L	80
33) Chloroform	9.35	83	3921	0.3796 ug/L	96
36) Tetrahydrofuran	9.60	42	1032	0.7867 ug/L #	47
44) 1,2-Dichloroethane	10.34	62	2692	0.3208 ug/L #	76
46) Trichloroethene	11.09	130	1107013	171.3964 ug/L	98
47) Methylcyclohexane	11.09	83	11347	1.4235 ug/L #	1

(#) = qualifier out of range (m) = manual integration
11M12816.D 8260WT.M Fri Jun 24 14:58:41 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062216\11M12816.D Vial: 19
Acq On : 23 Jun 2016 00:42 Operator: JDS
Sample : L16061026-05 A 100X 826-LOW Inst : hpms11
Misc : 1,100 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 24 14:58 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

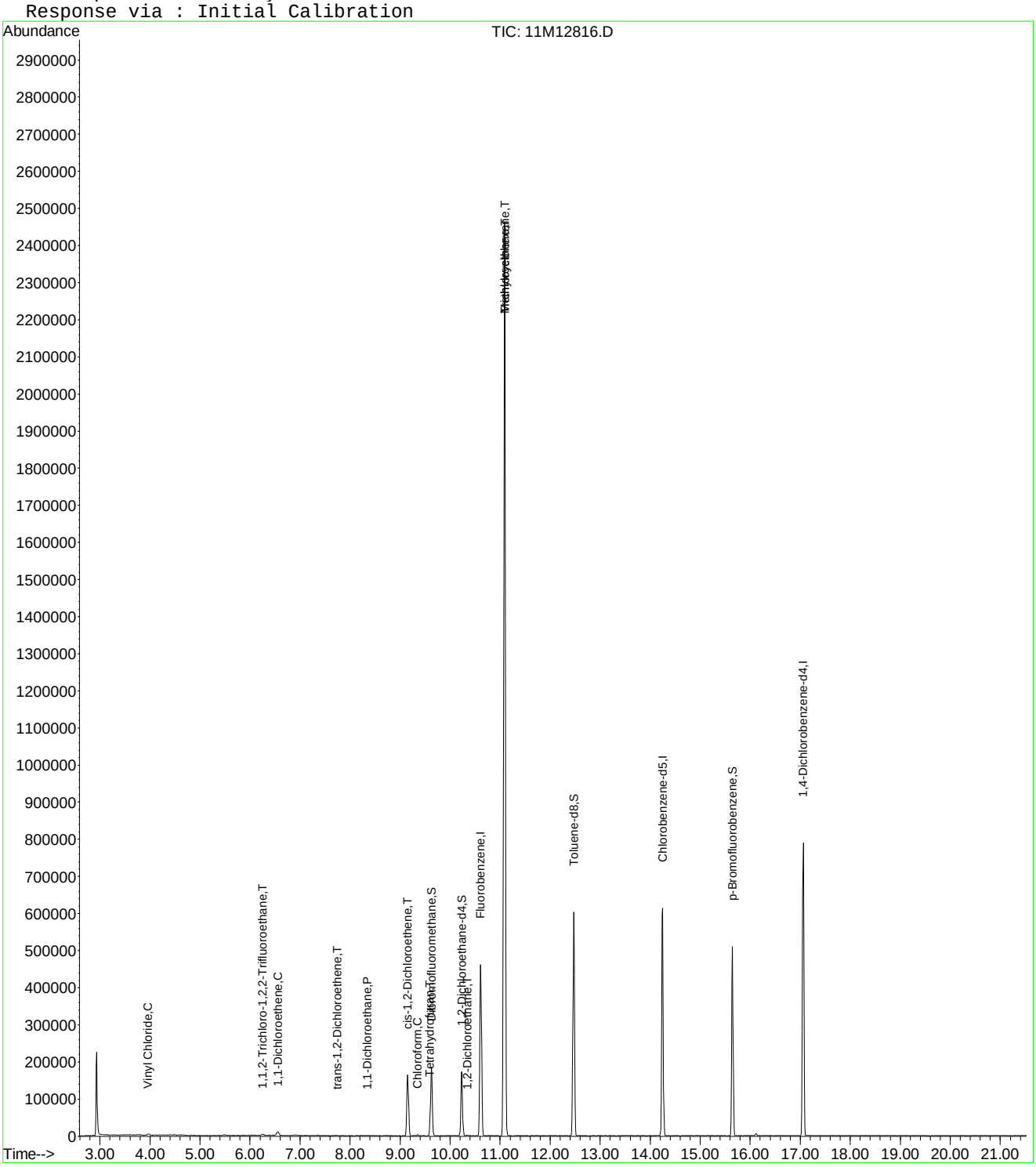

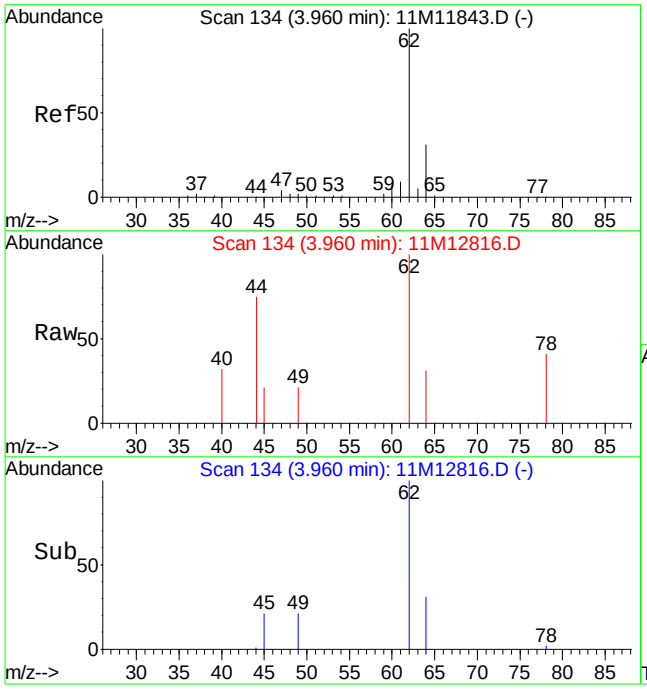

#4
Vinyl Chloride
Concen: 0.89 ug/L
RT: 3.96 min Scan# 134
Delta R.T. 0.00 min
Lab File: 11M12816.D
Acq: 23 Jun 2016 00:42

Tgt Ion: 62 Resp: 4784

Ion	Ratio	Lower	Upper
62	100		
64	18.1	18.4	43.0#

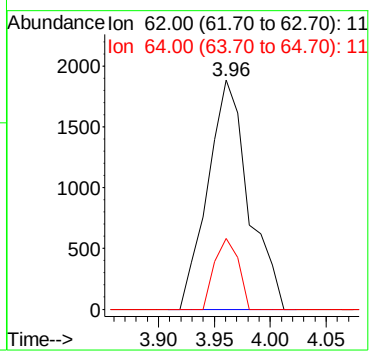

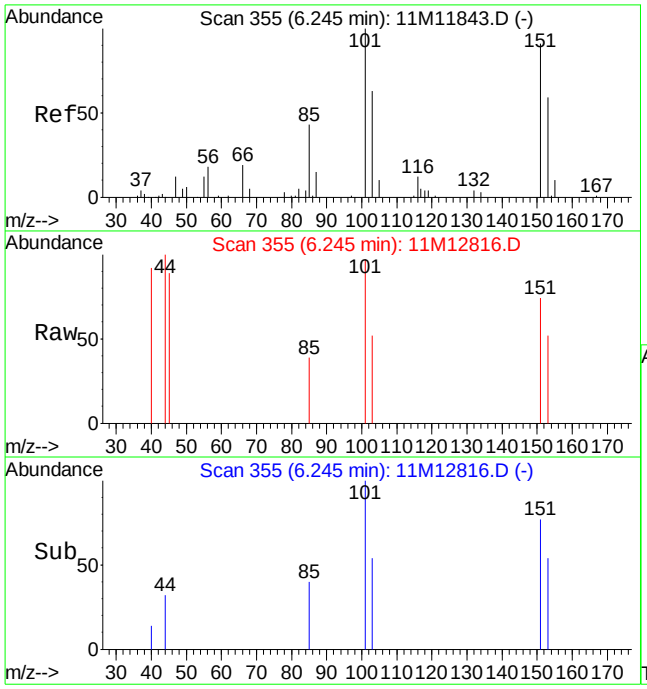

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 0.54 ug/L
RT: 6.25 min Scan# 355
Delta R.T. 0.00 min
Lab File: 11M12816.D
Acq: 23 Jun 2016 00:42

Tgt Ion:101 Resp: 2825

Ion	Ratio	Lower	Upper
101	100		
151	96.1	50.7	130.7

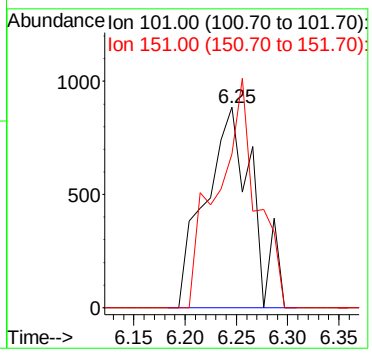

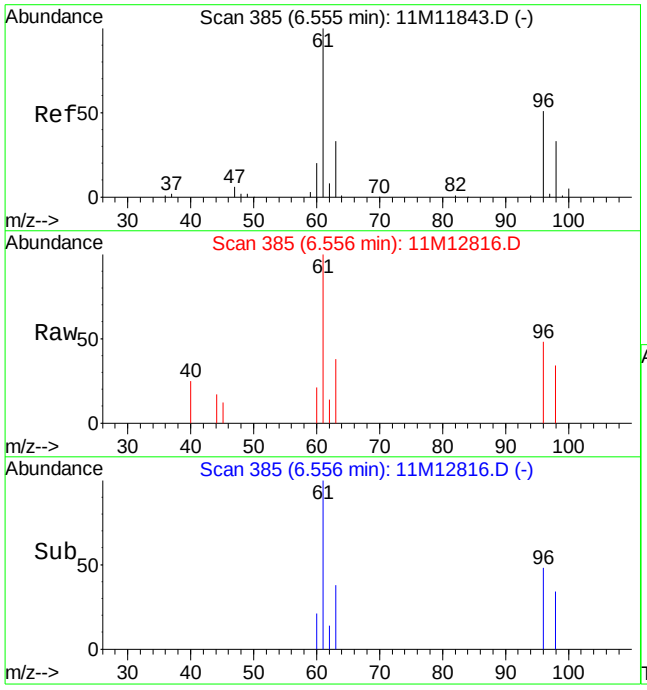

#14
1,1-Dichloroethene
Concen: 1.34 ug/L
RT: 6.56 min Scan# 385
Delta R.T. 0.00 min
Lab File: 11M12816.D
Acq: 23 Jun 2016 00:42

Tgt Ion: 61 Resp: 12701

Ion	Ratio	Lower	Upper
61	100		
96	49.6	30.1	70.3

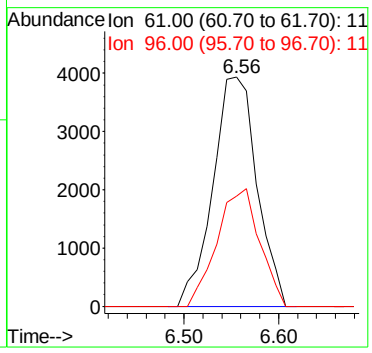

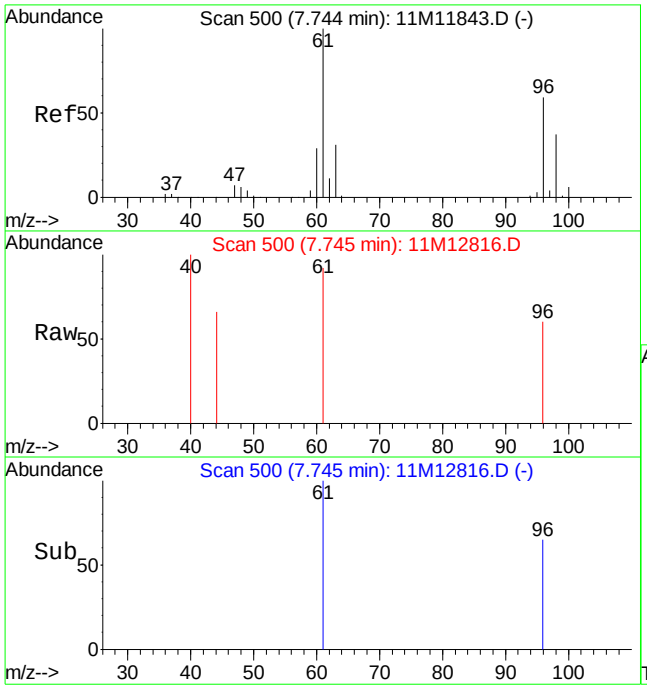

#23
trans-1,2-Dichloroethene
Concen: 0.15 ug/L
RT: 7.74 min Scan# 500
Delta R.T. 0.00 min
Lab File: 11M12816.D
Acq: 23 Jun 2016 00:42

Tgt Ion: 96 Resp: 796

Ion	Ratio	Lower	Upper
96	100		
61	178.0	100.6	234.6

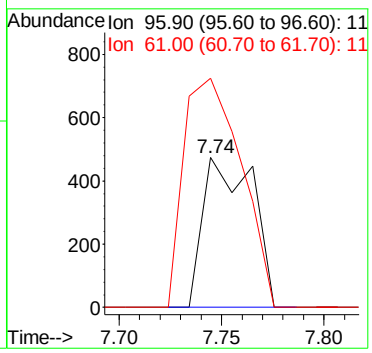

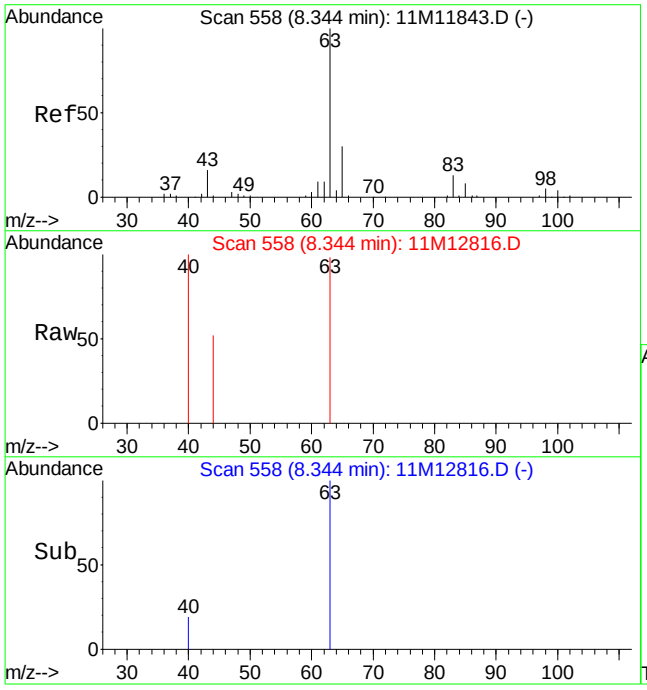

#27
1,1-Dichloroethane
Concen: 0.22 ug/L
RT: 8.34 min Scan# 558
Delta R.T. 0.00 min
Lab File: 11M12816.D
Acq: 23 Jun 2016 00:42

Tgt Ion: 63 Resp: 2267

Ion	Ratio	Lower	Upper
63	100		
65	0.0	17.8	41.6#
83	0.0	7.4	17.4#

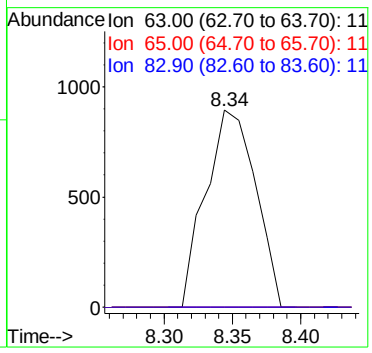

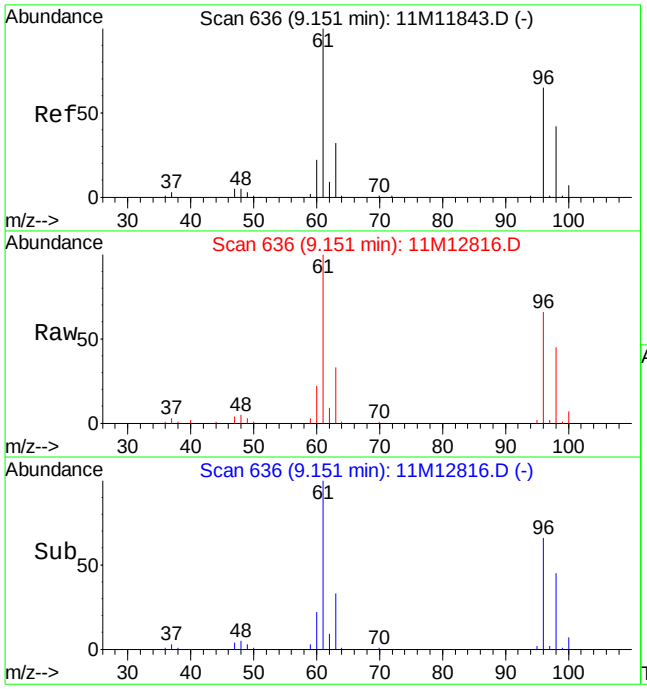

#32
cis-1,2-Dichloroethene
Concen: 15.15 ug/L
RT: 9.15 min Scan# 636
Delta R.T. 0.00 min
Lab File: 11M12816.D
Acq: 23 Jun 2016 00:42

Tgt Ion: 96 Resp: 87564

Ion	Ratio	Lower	Upper
96	100		
61	146.9	105.2	245.6

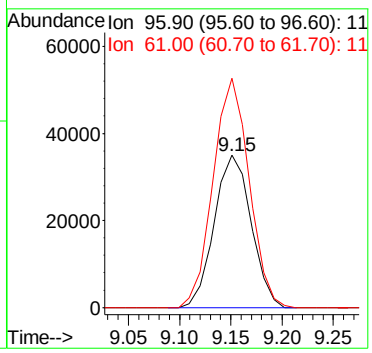

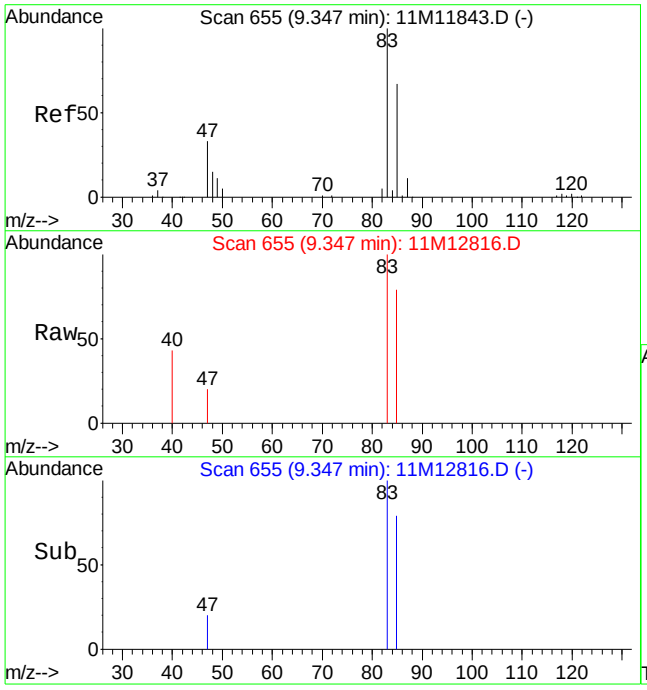

#33
Chloroform
Concen: 0.38 ug/L
RT: 9.35 min Scan# 655
Delta R.T. 0.00 min
Lab File: 11M12816.D
Acq: 23 Jun 2016 00:42

Tgt Ion: 83 Resp: 3921

Ion	Ratio	Lower	Upper
83	100		
85	68.1	39.2	91.4

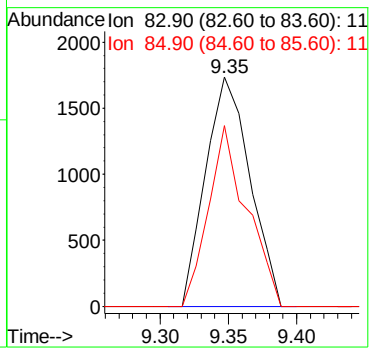

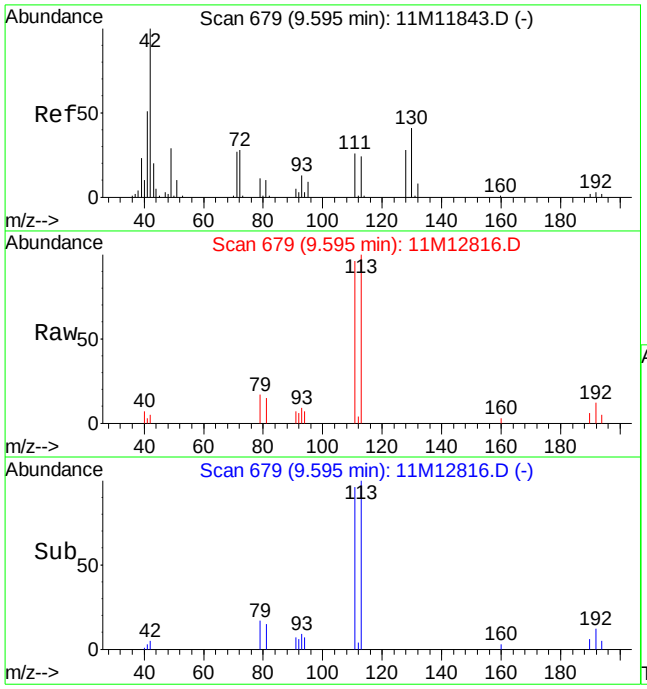

#36
Tetrahydrofuran
Concen: 0.79 ug/L
RT: 9.60 min Scan# 679
Delta R.T. 0.00 min
Lab File: 11M12816.D
Acq: 23 Jun 2016 00:42

Tgt Ion: 42 Resp: 1032

Ion	Ratio	Lower	Upper
42	100		
71	0.0	16.4	38.2#
72	0.0	16.6	38.8#

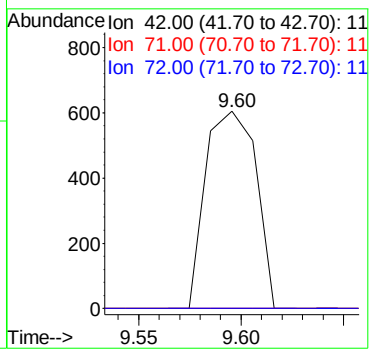

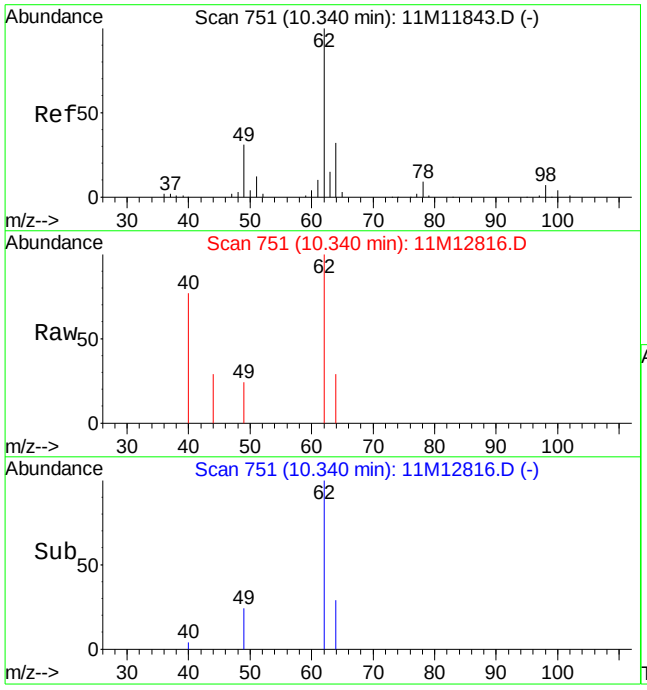

#44
1,2-Dichloroethane
Concen: 0.32 ug/L
RT: 10.34 min Scan# 751
Delta R.T. 0.00 min
Lab File: 11M12816.D
Acq: 23 Jun 2016 00:42

Tgt Ion: 62 Resp: 2692

Ion	Ratio	Lower	Upper
62	100		
64	24.6	18.7	43.7
49	16.6	22.3	52.1#

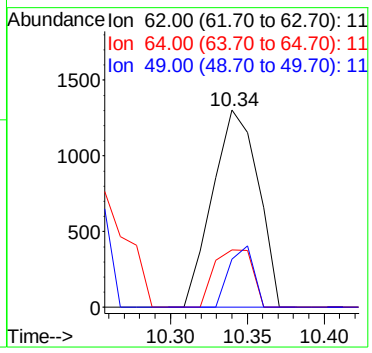

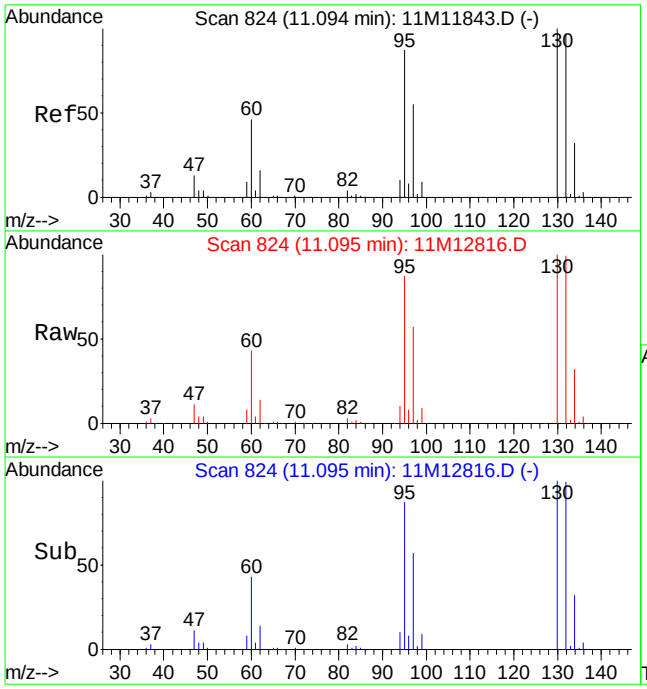

#46
Trichloroethene
Concen: 171.40 ug/L
RT: 11.09 min Scan# 824
Delta R.T. 0.00 min
Lab File: 11M12816.D
Acq: 23 Jun 2016 00:42

Tgt Ion:130 Resp: 1107013

Ion	Ratio	Lower	Upper
130	100		
132	98.0	58.3	136.1
95	89.6	55.6	129.8

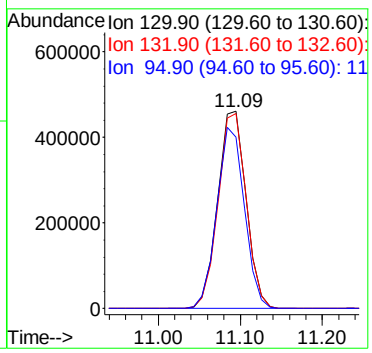

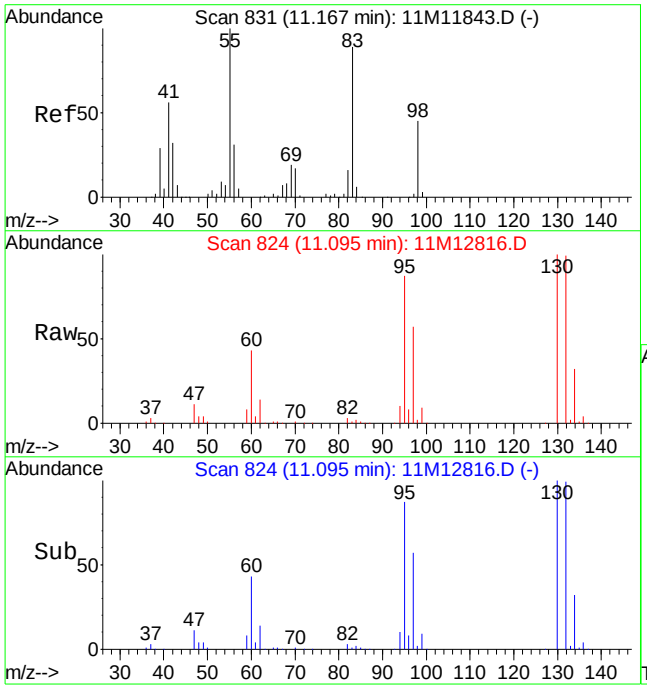

#47
Methylcyclohexane
Concen: 1.42 ug/L
RT: 11.09 min Scan# 824
Delta R.T. -0.07 min
Lab File: 11M12816.D
Acq: 23 Jun 2016 00:42

Tgt Ion: 83 Resp: 11347

Ion	Ratio	Lower	Upper
83	100		
55	0.0	66.5	155.1#
98	238.3	29.9	69.7#

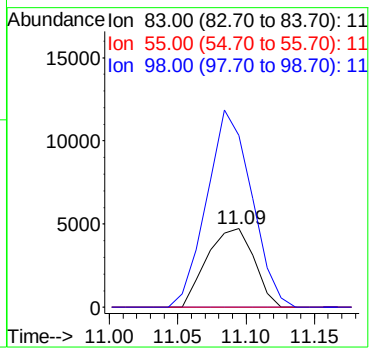

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062216\11M12814.D Vial: 17
Acq On : 22 Jun 2016 23:38 Operator: JDS
Sample : L16060974-07 A 826-SPE Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 24 14:58:35 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	557279	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	492737	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	285222	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	161635	26.5021 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.00%		
43) 1,2-Dichloroethane-d4	10.23	65	172830	24.8527 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 99.40%		
57) Toluene-d8	12.47	98	536215	25.0457 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.20%		
78) p-Bromofluorobenzene	15.64	95	205601	23.3843 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.52%		

Target Compounds

					Qvalue
3) Chloromethane	3.73	50	925	0.1323 ug/L #	41
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	9847	1.7532 ug/L	98
13) Acetone	6.36	43	380	0.2872 ug/L #	49
14) 1,1-Dichloroethene	6.56	61	1518	0.1488 ug/L #	27
32) cis-1,2-Dichloroethene	9.15	96	89484	14.3737 ug/L	75
44) 1,2-Dichloroethane	10.34	62	10814	1.1968 ug/L	92
46) Trichloroethene	11.09	130	556994	80.0762 ug/L	98
47) Methylcyclohexane	11.09	83	5328	0.6207 ug/L #	1

(#) = qualifier out of range (m) = manual integration
11M12814.D 8260WT.M Fri Jun 24 14:58:36 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062216\11M12814.D Vial: 17
Acq On : 22 Jun 2016 23:38 Operator: JDS
Sample : L16060974-07 A 826-SPE Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 24 14:58 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

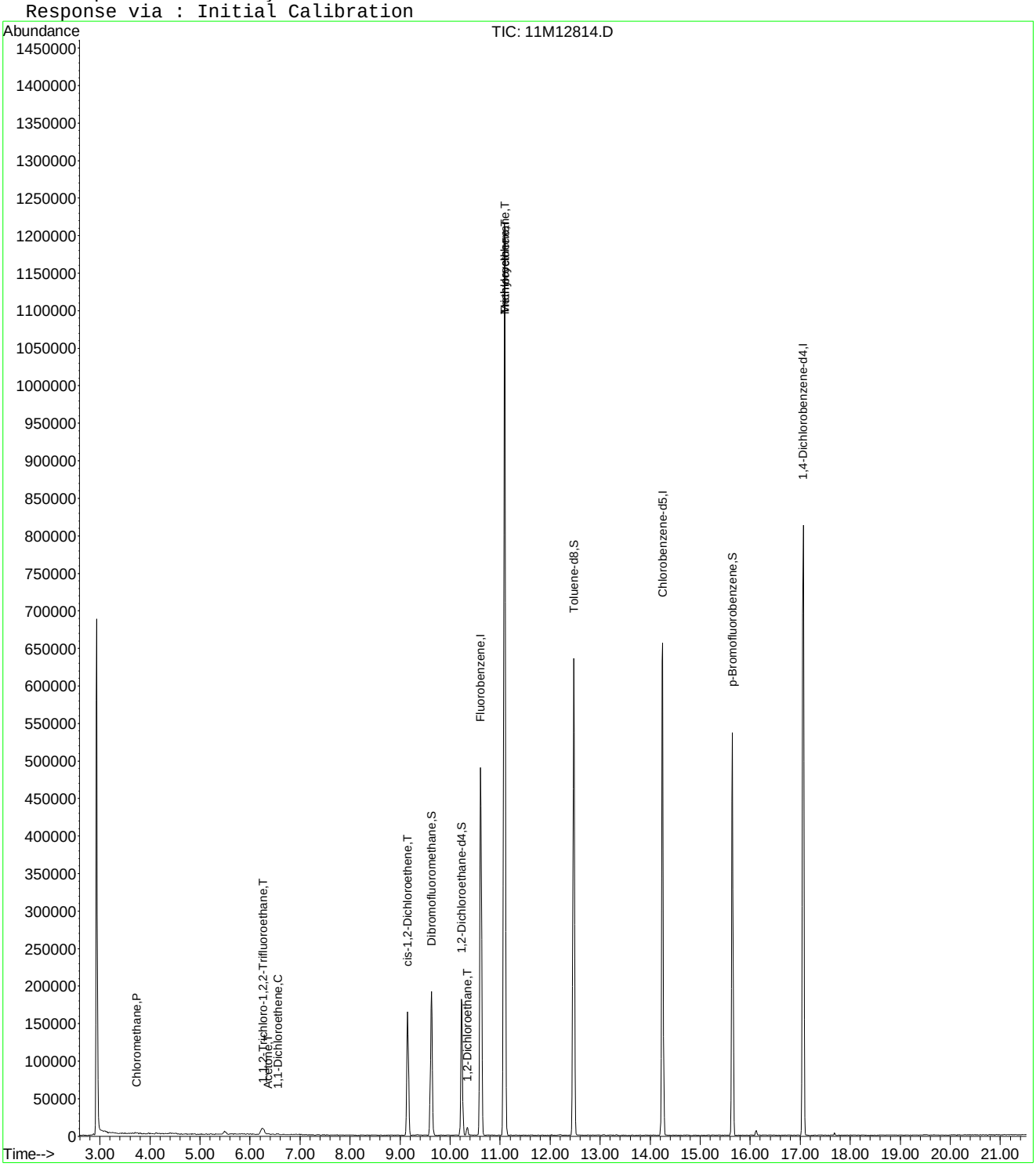

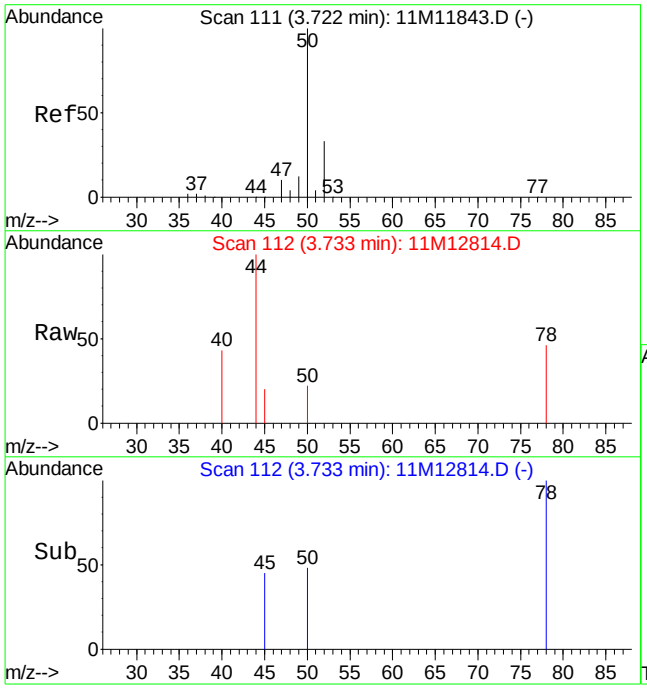

#3
Chloromethane
Concen: 0.13 ug/L
RT: 3.73 min Scan# 112
Delta R.T. 0.01 min
Lab File: 11M12814.D
Acq: 22 Jun 2016 23:38

Tgt Ion: 50 Resp: 925

Ion	Ratio	Lower	Upper
50	100		
52	0.0	20.0	46.6#

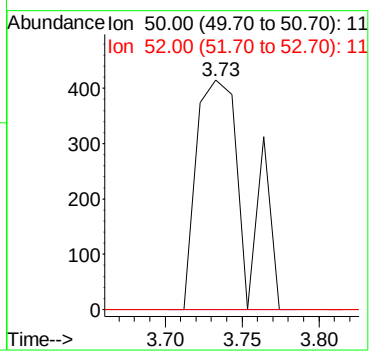

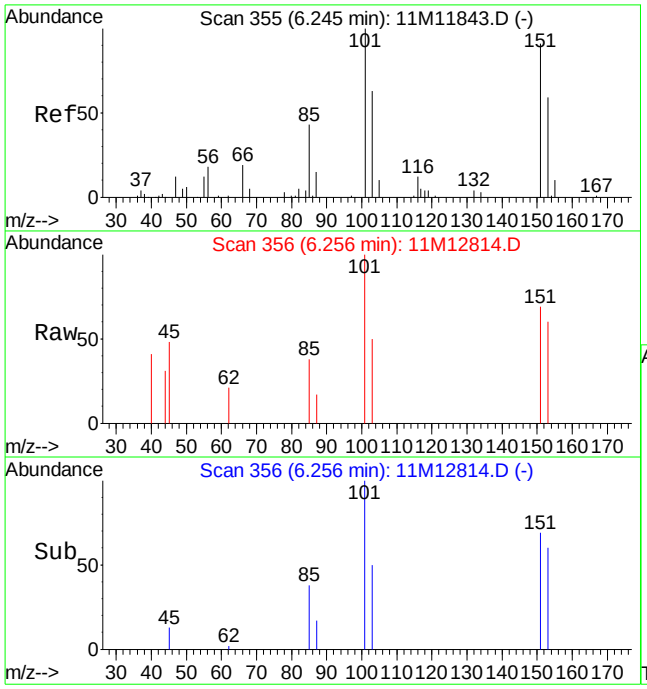

#12
1,1,2-Trichloro-1,2,2-Trifluoroethane
Concen: 1.75 ug/L
RT: 6.26 min Scan# 356
Delta R.T. 0.01 min
Lab File: 11M12814.D
Acq: 22 Jun 2016 23:38

Tgt Ion:101 Resp: 9847

Ion	Ratio	Lower	Upper
101	100		
151	89.0	50.7	130.7

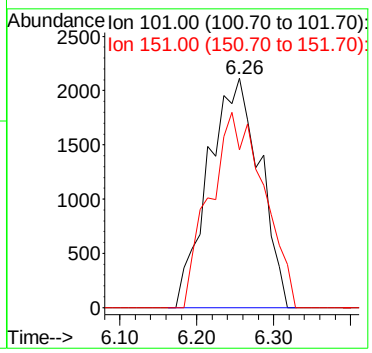

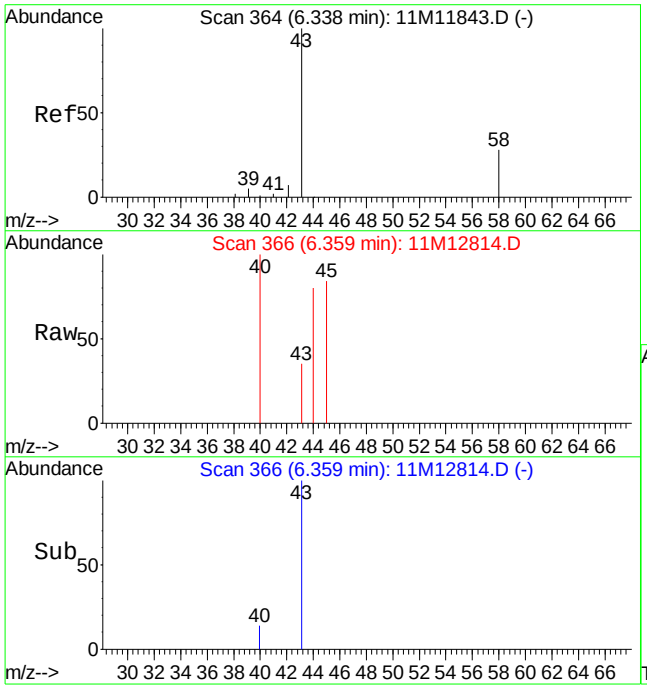

#13
Acetone
Concen: 0.29 ug/L
RT: 6.36 min Scan# 366
Delta R.T. 0.02 min
Lab File: 11M12814.D
Acq: 22 Jun 2016 23:38

Tgt Ion: 43 Resp: 380

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

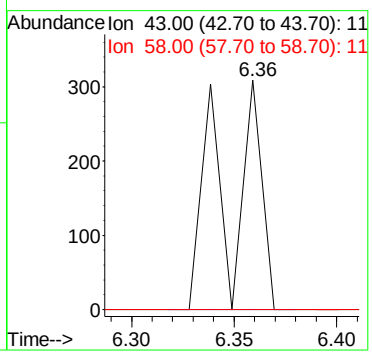

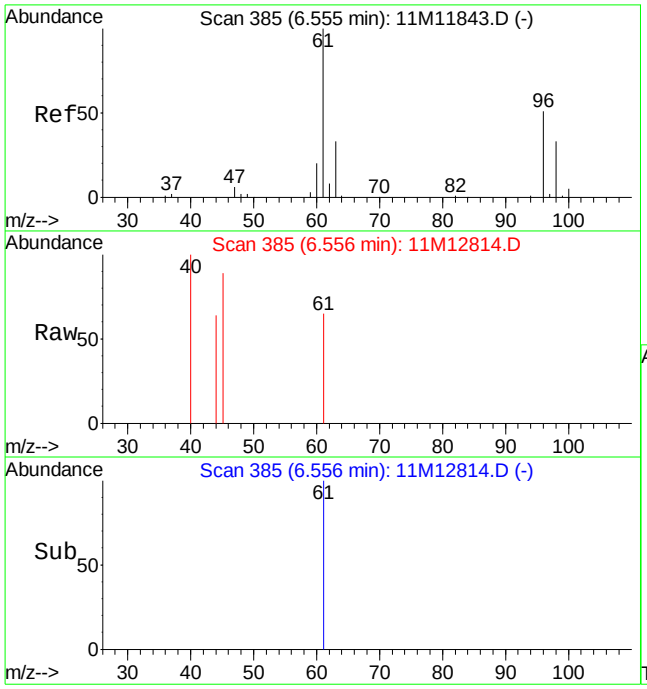

#14
1,1-Dichloroethene
Concen: 0.15 ug/L
RT: 6.56 min Scan# 385
Delta R.T. 0.00 min
Lab File: 11M12814.D
Acq: 22 Jun 2016 23:38

Tgt Ion: 61 Resp: 1518

Ion	Ratio	Lower	Upper
61	100		
96	0.0	30.1	70.3#

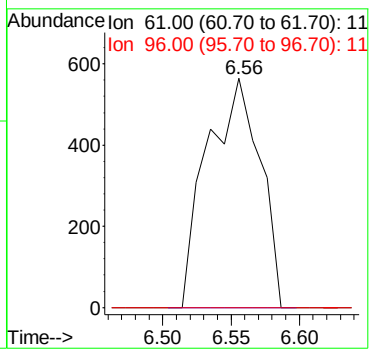

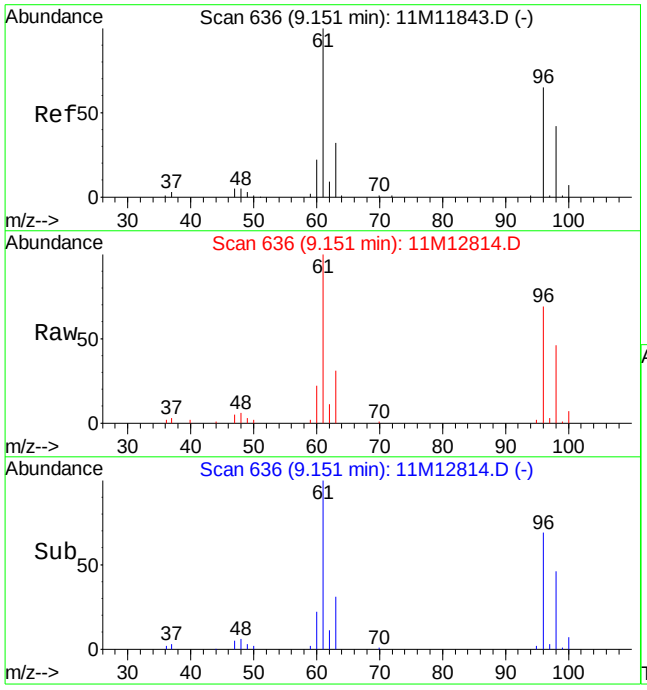

#32
cis-1,2-Dichloroethene
Concen: 14.37 ug/L
RT: 9.15 min Scan# 636
Delta R.T. 0.00 min
Lab File: 11M12814.D
Acq: 22 Jun 2016 23:38

Tgt Ion: 96 Resp: 89484

Ion	Ratio	Lower	Upper
96	100		
61	141.0	105.2	245.6

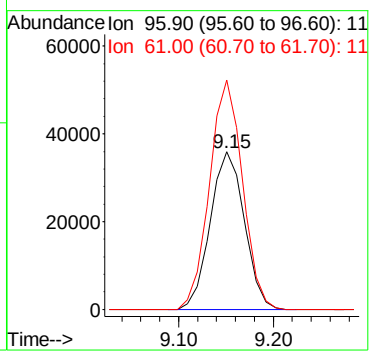

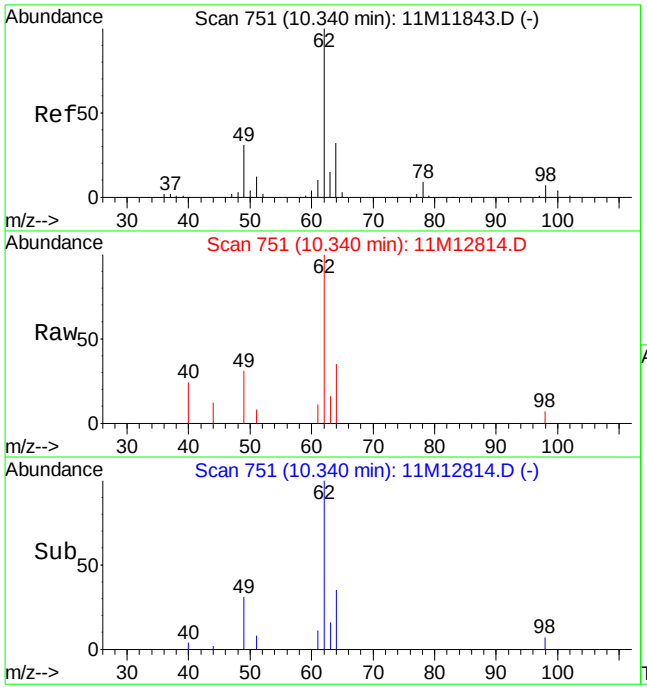

#44
1,2-Dichloroethane
Concen: 1.20 ug/L
RT: 10.34 min Scan# 751
Delta R.T. 0.00 min
Lab File: 11M12814.D
Acq: 22 Jun 2016 23:38

Tgt Ion: 62 Resp: 10814

Ion	Ratio	Lower	Upper
62	100		
64	31.0	18.7	43.7
49	28.3	22.3	52.1

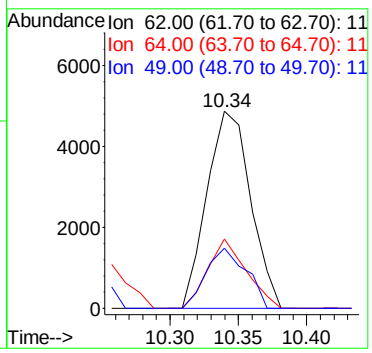

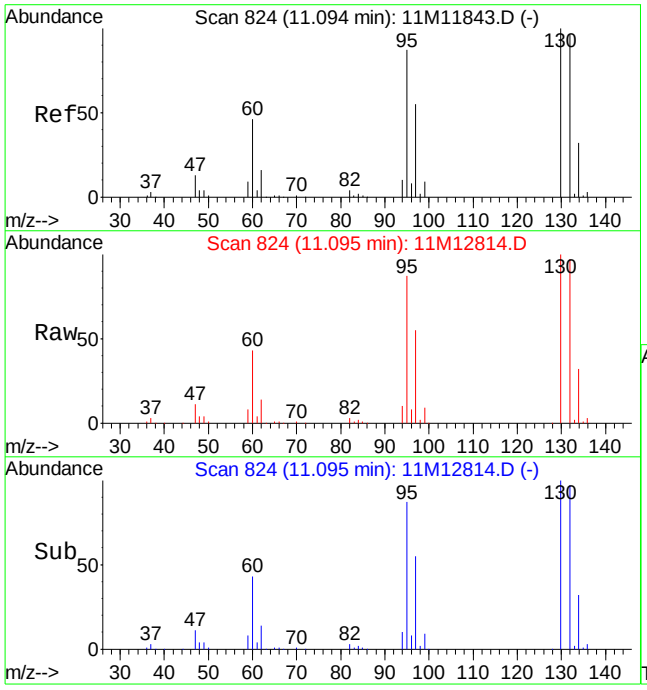

#46
Trichloroethene
Concen: 80.08 ug/L
RT: 11.09 min Scan# 824
Delta R.T. 0.00 min
Lab File: 11M12814.D
Acq: 22 Jun 2016 23:38

Tgt Ion:130 Resp: 556994

Ion	Ratio	Lower	Upper
130	100		
132	96.5	58.3	136.1
95	89.1	55.6	129.8

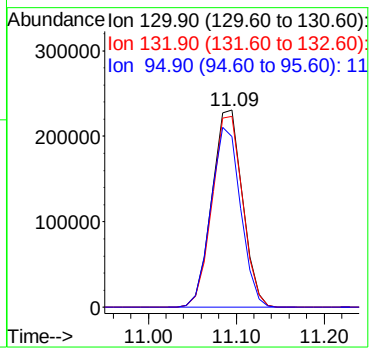

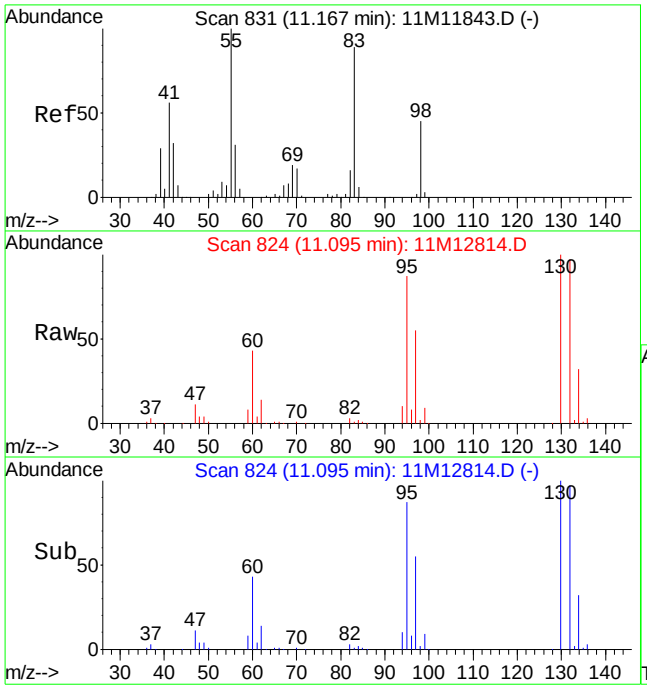

#47
Methylcyclohexane
Concen: 0.62 ug/L
RT: 11.09 min Scan# 824
Delta R.T. -0.07 min
Lab File: 11M12814.D
Acq: 22 Jun 2016 23:38

Tgt Ion: 83 Resp: 5328

Ion	Ratio	Lower	Upper
83	100		
55	0.0	66.5	155.1#
98	246.2	29.9	69.7#

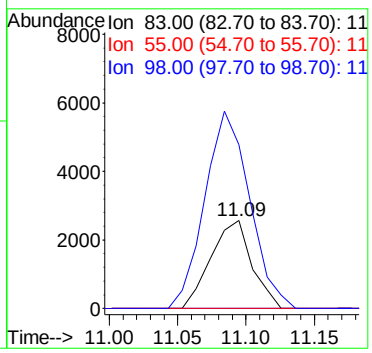

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062216\11M12808.D Vial: 11
Acq On : 22 Jun 2016 20:27 Operator: JDS
Sample : L16061026-08 A TB 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 24 14:58:21 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	611363	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	533935	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	313293	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	171569	25.6423 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 102.56%		
43) 1,2-Dichloroethane-d4	10.23	65	176032	23.0738 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 92.28%		
57) Toluene-d8	12.47	98	587180	25.3101 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 101.24%		
78) p-Bromofluorobenzene	15.64	95	224618	23.2582 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.04%		

Target Compounds

					Qvalue
3) Chloromethane	3.72	50	1080	0.1408 ug/L #	1
6) Bromomethane	4.86	94	701	0.1600 ug/L #	31
13) Acetone	6.35	43	697	0.4801 ug/L #	49
16) Dimethyl Sulfide	6.81	62	1450	0.3244 ug/L #	1
17) Iodomethane	7.07	142	414	2.3406 ug/L #	29
36) Tetrahydrofuran	9.60	42	2429	1.5673 ug/L	85
58) Toluene	12.56	91	4943	0.1829 ug/L	98
98) Naphthalene	19.89	128	3247	0.1427 ug/L #	67

(#) = qualifier out of range (m) = manual integration
11M12808.D 8260WT.M Fri Jun 24 14:58:22 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062216\11M12808.D Vial: 11
Acq On : 22 Jun 2016 20:27 Operator: JDS
Sample : L16061026-08 A TB 826-LOW Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 24 14:58 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

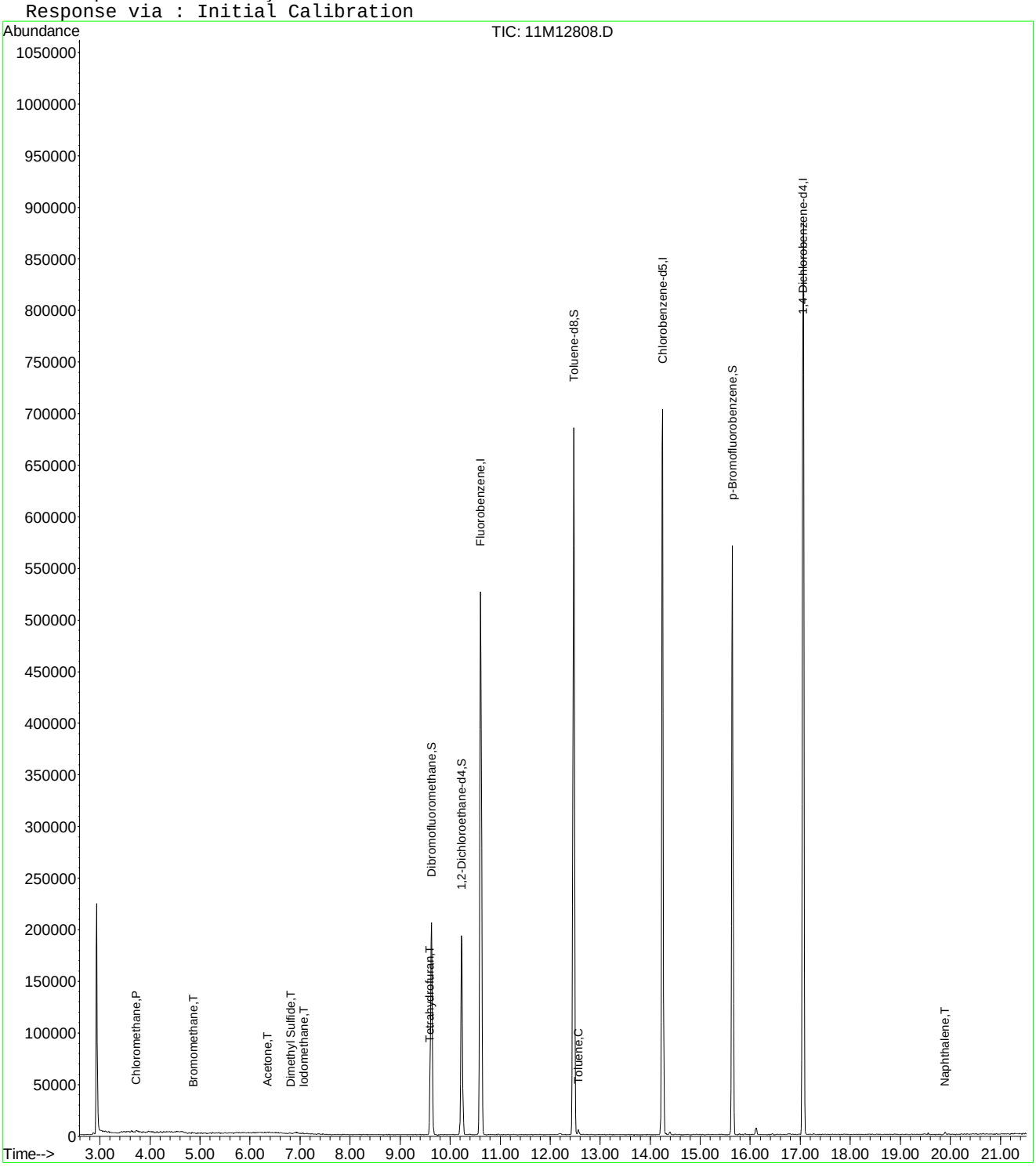

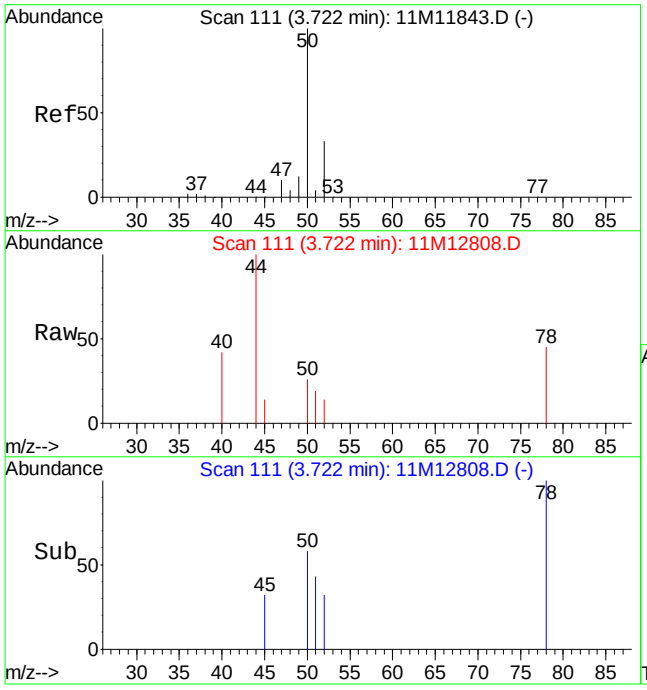

#3
Chloromethane
Concen: 0.14 ug/L
RT: 3.72 min Scan# 111
Delta R.T. 0.00 min
Lab File: 11M12808.D
Acq: 22 Jun 2016 20:27

Tgt Ion: 50 Resp: 1080

Ion	Ratio	Lower	Upper
50	100		
52	113.8	20.0	46.6#

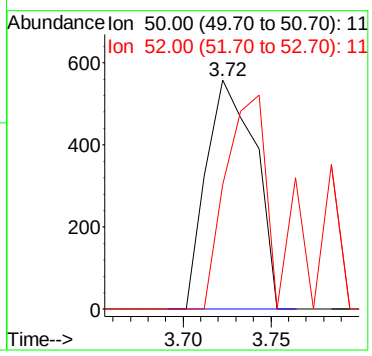

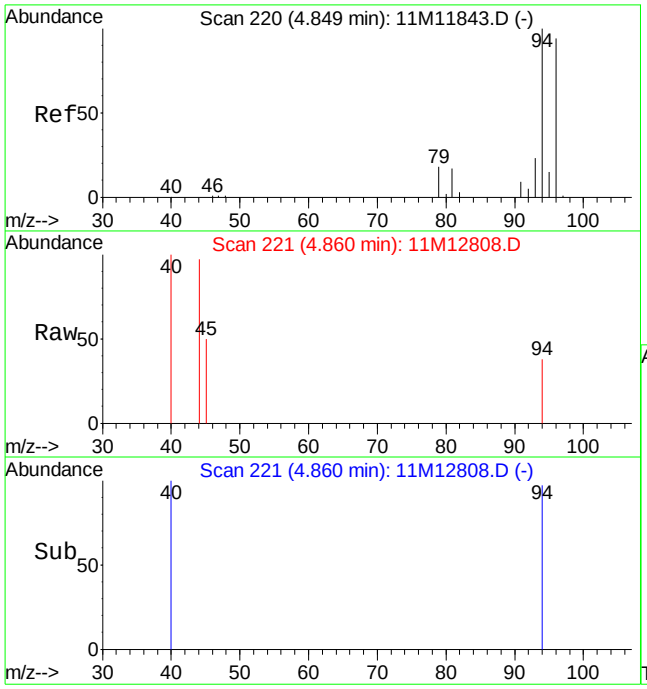

#6
Bromomethane
Concen: 0.16 ug/L
RT: 4.86 min Scan# 221
Delta R.T. 0.01 min
Lab File: 11M12808.D
Acq: 22 Jun 2016 20:27

Tgt Ion: 94 Resp: 701

Ion	Ratio	Lower	Upper
94	100		
96	27.1	56.5	131.9#

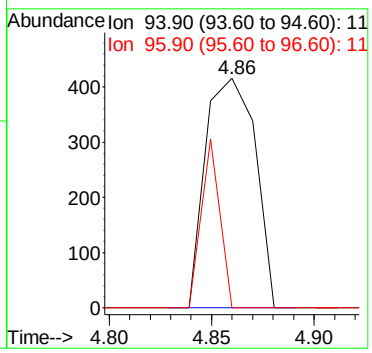

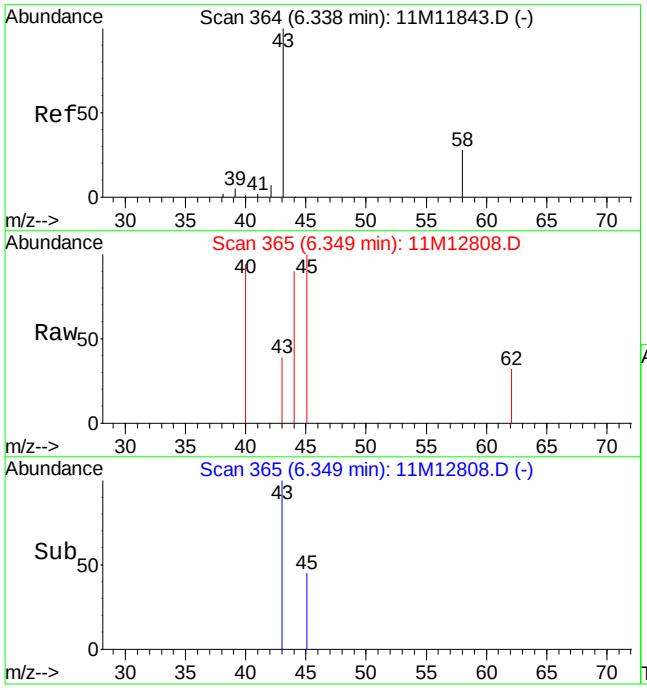

#13
Acetone
Concen: 0.48 ug/L
RT: 6.35 min Scan# 365
Delta R.T. 0.01 min
Lab File: 11M12808.D
Acq: 22 Jun 2016 20:27

Tgt Ion: 43 Resp: 697

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

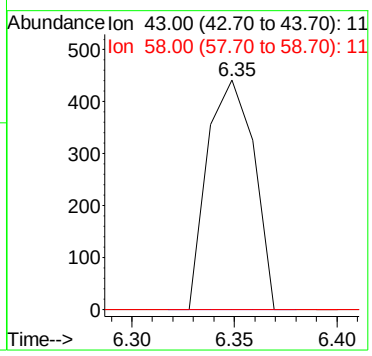

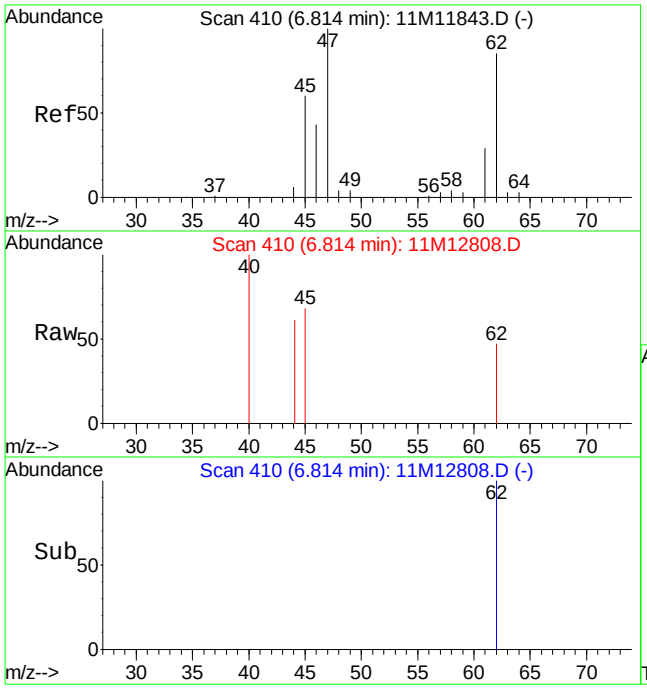

#16
Dimethyl Sulfide
Concen: 0.32 ug/L
RT: 6.81 min Scan# 410
Delta R.T. 0.00 min
Lab File: 11M12808.D
Acq: 22 Jun 2016 20:27

Tgt Ion: 62 Resp: 1450

Ion	Ratio	Lower	Upper
62	100		
47	0.0	73.4	171.2#

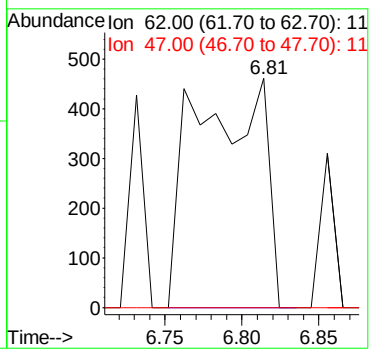

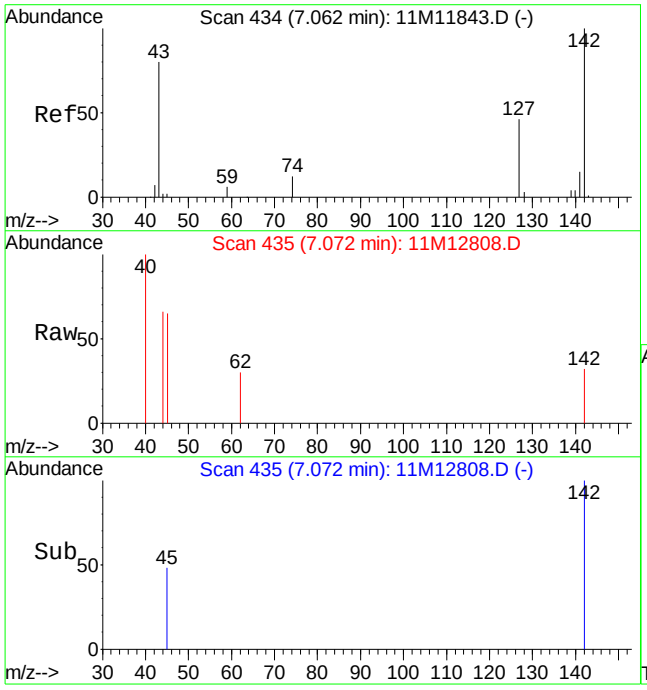

#17
Iodomethane
Concen: 2.34 ug/L
RT: 7.07 min Scan# 435
Delta R.T. 0.01 min
Lab File: 11M12808.D
Acq: 22 Jun 2016 20:27

Tgt Ion:142 Resp: 414

Ion	Ratio	Lower	Upper
142	100		
127	0.0	29.0	67.6#

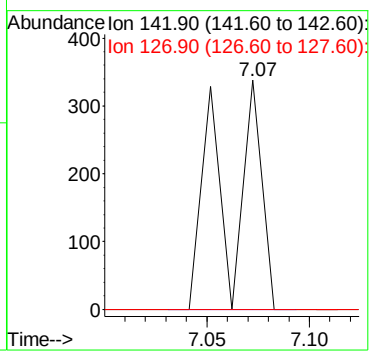

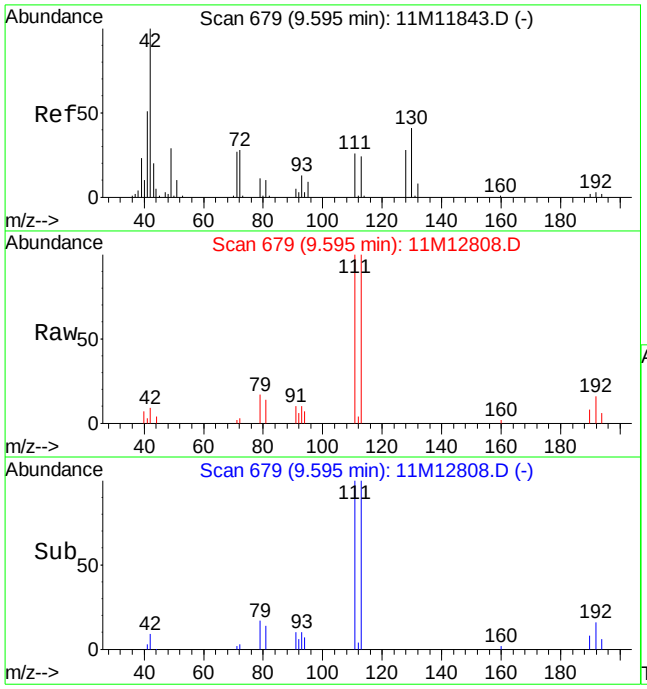

#36
Tetrahydrofuran
Concen: 1.57 ug/L
RT: 9.60 min Scan# 679
Delta R.T. 0.00 min
Lab File: 11M12808.D
Acq: 22 Jun 2016 20:27

Tgt Ion: 42 Resp: 2429

Ion	Ratio	Lower	Upper
42	100		
71	17.3	16.4	38.2
72	22.3	16.6	38.8

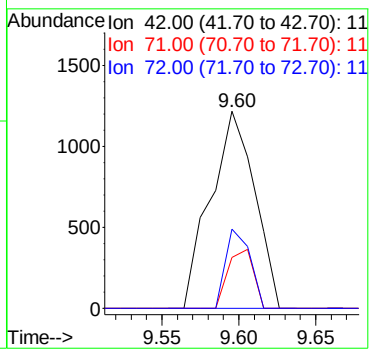

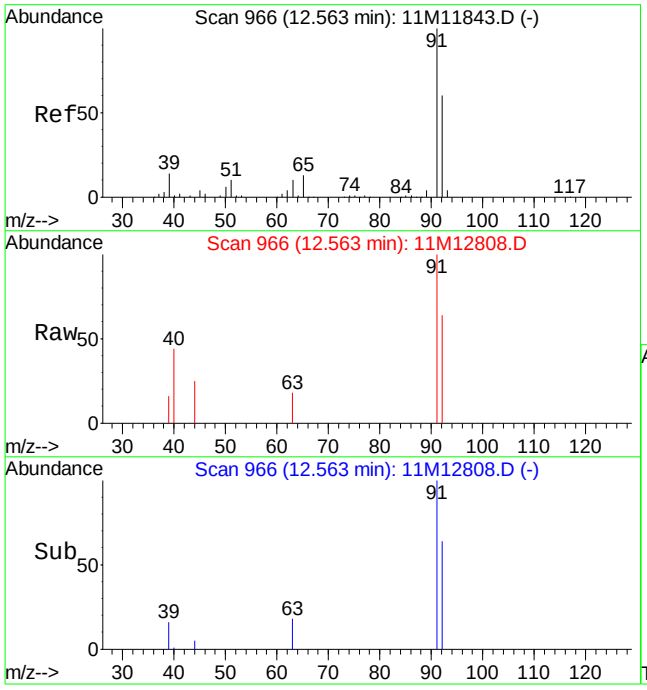

#58
Toluene
Concen: 0.18 ug/L
RT: 12.56 min Scan# 966
Delta R.T. 0.00 min
Lab File: 11M12808.D
Acq: 22 Jun 2016 20:27

Tgt Ion: 91 Resp: 4943

Ion	Ratio	Lower	Upper
91	100		
92	61.3	35.7	83.3

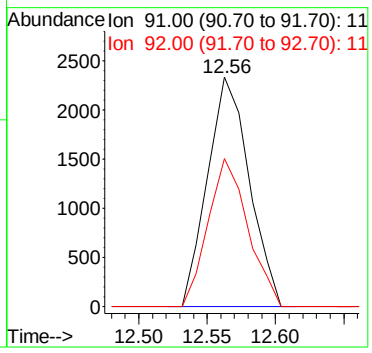

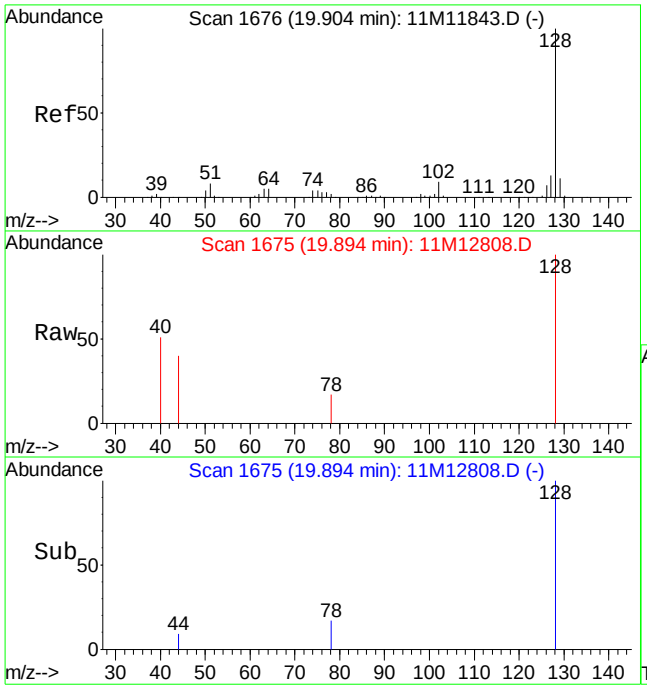

#98
Naphthalene
Concen: 0.14 ug/L
RT: 19.89 min Scan# 1675
Delta R.T. -0.01 min
Lab File: 11M12808.D
Acq: 22 Jun 2016 20:27

Tgt Ion:128 Resp: 3247

Ion	Ratio	Lower	Upper
128	100		
127	0.0	11.7	14.3#

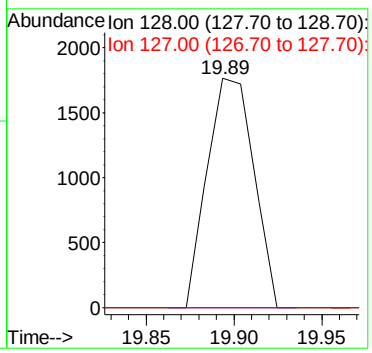

2.1.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:20 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	538041	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	450050	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	251600	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
57) Toluene-d8	12.47	98	210	0.0099 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.04%#	
78) p-Bromofluorobenzene	15.64	95	566	0.0689 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.28%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	2475	0.3135 ug/L #	66
3) Chloromethane	3.72	50	4639	0.6471 ug/L	91
4) Vinyl Chloride	3.96	62	1882	0.3288 ug/L #	44
5) 1,3-Butadiene	4.01	54	1564	0.2900 ug/L #	19
6) Bromomethane	4.84	94	1717	0.4723 ug/L	83
7) Chloroethane	5.00	64	616	0.1589 ug/L #	45
8) Trichlorofluoromethane	5.49	101	3531	0.3330 ug/L	97
10) Isoprene	6.04	67	1746	0.2381 ug/L	92
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	1344	0.2515 ug/L	96
13) Acetone	6.34	43	2389	1.4850 ug/L #	45
14) 1,1-Dichloroethene	6.56	61	3780	0.3817 ug/L	78
16) Dimethyl Sulfide	6.80	62	762	0.1697 ug/L	78
18) Methyl acetate	7.02	43	24685	4.4975 ug/L #	70
19) Methylene Chloride	7.31	84	1766	0.3184 ug/L	74
20) Carbon Disulfide	7.36	76	5848	0.3373 ug/L	92
22) Methyl Tert Butyl Ether	7.54	73	3068	0.2131 ug/L #	48
23) trans-1,2-Dichloroethene	7.75	96	1449	0.2556 ug/L	91
24) n-Hexane	7.82	57	3745	0.4031 ug/L #	73
26) Vinyl Acetate	8.30	43	2410	0.6995 ug/L #	78
27) 1,1-Dichloroethane	8.35	63	3312	0.2969 ug/L #	76
31) 2,2-Dichloropropane	9.10	77	2449	0.3040 ug/L #	42
32) cis-1,2-Dichloroethene	9.15	96	1729	0.2748 ug/L	96
33) Chloroform	9.35	83	3792	0.3639 ug/L	92
35) Bromochloromethane	9.56	130	948	0.2355 ug/L #	68
38) 1,1,1-Trichloroethane	9.85	97	3449	0.3423 ug/L #	79
39) Cyclohexane	9.88	56	3639	0.2986 ug/L #	84
40) 1,1-Dichloropropene	10.04	75	2365	0.3106 ug/L #	53
41) Carbon Tetrachloride	10.17	117	2613	0.2748 ug/L	87
44) 1,2-Dichloroethane	10.35	62	2493	0.2788 ug/L #	73
45) Benzene	10.38	78	7133	0.3275 ug/L	99
46) Trichloroethene	11.09	130	1973	0.2780 ug/L	93
47) Methylcyclohexane	11.17	83	2570	0.2986 ug/L	84
48) 1,2-Dichloropropane	11.29	63	1665	0.2692 ug/L	87
50) Bromodichloromethane	11.57	83	2418	0.2950 ug/L #	82
51) Dibromomethane	11.65	93	756	0.2331 ug/L	88
54) cis-1,3-Dichloropropene	12.17	75	1869	0.2166 ug/L #	82
55) Dimethyl Disulfide	12.42	79	1028	0.1910 ug/L	95
58) Toluene	12.57	91	7355	0.3156 ug/L	91
59) Ethyl Methacrylate	12.64	69	1041	0.1887 ug/L	88
60) trans-1,3-Dichloropropene	12.72	75	1951	0.2556 ug/L #	51

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:20 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
61)	1,1,2-Trichloroethane	12.92	97	1087	0.2492 ug/L		87
62)	2-Hexanone	12.86	43	687	0.1910 ug/L	#	29
63)	1,3-Dichloropropane	13.21	76	1673	0.2309 ug/L		94
64)	Tetrachloroethene	13.34	164	1703	0.3238 ug/L		94
65)	Dibromochloromethane	13.59	129	1515	0.2406 ug/L		92
66)	1,2-Dibromoethane	13.82	107	966	0.2181 ug/L		98
67)	1-Chlorohexane	13.89	91	2128	0.2784 ug/L		97
68)	Chlorobenzene	14.29	112	5248	0.3062 ug/L		99
69)	1,1,1,2-Tetrachloroethane	14.32	131	2025	0.3082 ug/L		98
70)	Ethylbenzene	14.31	106	2602	0.2992 ug/L		88
71)	m-,p-Xylene	14.40	106	6296	0.6083 ug/L		82
72)	o-Xylene	14.92	106	3032	0.2937 ug/L		95
73)	Styrene	14.95	104	4953	0.2828 ug/L		95
75)	Isopropylbenzene	15.31	105	7848	0.3006 ug/L		93
77)	1,1,2,2-Tetrachloroethane	15.52	83	1145	0.2759 ug/L		68
81)	n-Propylbenzene	15.79	91	9421	0.3332 ug/L		94
82)	Bromobenzene	15.92	156	2002	0.2551 ug/L		66
83)	1,3,5-Trimethylbenzene	15.95	105	6742	0.3138 ug/L		91
84)	2-Chlorotoluene	16.05	91	6735	0.3228 ug/L		96
85)	4-Chlorotoluene	16.09	91	6023	0.3518 ug/L		99
86)	a-Methylstyrene	16.34	118	2850	0.2387 ug/L		95
87)	tert-Butylbenzene	16.39	134	1197	0.2539 ug/L		64
88)	1,2,4-Trimethylbenzene	16.44	105	6992	0.3180 ug/L		88
89)	sec-Butylbenzene	16.65	105	8335	0.3278 ug/L		97
90)	p-Isopropyltoluene	16.79	119	7094	0.3065 ug/L		96
91)	1,3-Dichlorobenzene	16.98	146	4505	0.3090 ug/L		96
92)	1,4-Dichlorobenzene	17.10	146	4475	0.3006 ug/L	#	1
93)	n-Butylbenzene	17.28	91	7076	0.3396 ug/L	#	93
94)	1,2-Dichlorobenzene	17.56	146	4016	0.2922 ug/L		100
96)	1,2,4-Trichlorobenzene	19.55	180	2964	0.2902 ug/L		99
97)	Hexachlorobutadiene	19.69	225	1160	0.2796 ug/L	#	71
98)	Naphthalene	19.90	128	4679	0.2394 ug/L	#	93
99)	1,2,3-Trichlorobenzene	20.19	180	2578	0.2696 ug/L		87

(#) = qualifier out of range (m) = manual integration
11M11837.D 8260WT.M Fri May 13 17:04:21 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration

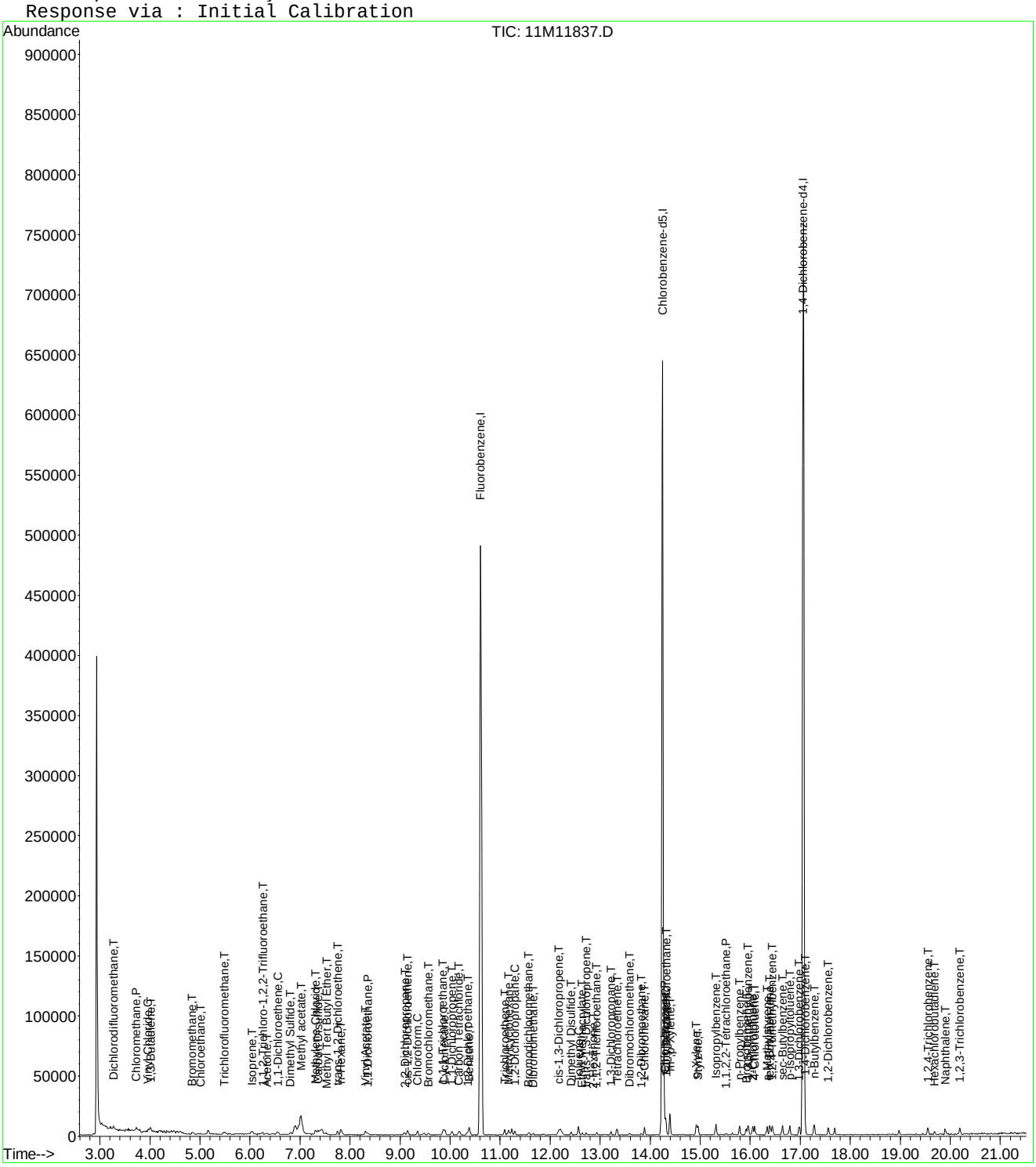

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:40:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	-1.0000	0.2936	0.0	0	0.00
3	P	Chloromethane	-1.0000	0.6871	0.0	0	0.00
4	C	Vinyl Chloride	-1.0000	0.3357	0.0	0	0.00
5	T	1,3-Butadiene	-1.0000	0.2805	0.0	0	0.01
6	T	Bromomethane	-1.0000	0.4454	0.0	0	-0.01
7	T	Chloroethane	-1.0000	0.1710	0.0	0	0.00
8	T	Trichlorofluoromethane	-1.0000	0.3160	0.0	0	0.01
9	T	Diethyl ether	-1.0000	0.0000	0.0	0	-6.01#
10	T	Isoprene	-1.0000	0.2535	0.0	0	0.00
11	T	Acrolein	-1.0000	0.0000	0.0	0	-6.23#
12	T	1,1,2-Trichloro-1,2,2-Trifl	-1.0000	0.2478	0.0	0	0.01
13	T	Acetone	-1.0000	1.8699	0.0	0	0.00
14	C	1,1-Dichloroethene	-1.0000	0.3838	0.0	0	0.00
15	T	Tert-Butyl Alcohol	-1.0000	0.0000	0.0	0	-6.66#
16	T	Dimethyl Sulfide	-1.0000	0.1937	0.0	0	-0.01
17	T	Iodomethane	-1.0000	0.0000	0.0	0	-7.06#
18	T	Methyl acetate	-1.0000	5.1442	0.0	0	-0.04
19	T	Methylene Chloride	-1.0000	0.3464	0.0	0	0.00
20	T	Carbon Disulfide	-1.0000	0.3546	0.0	0	0.00
21	T	Acrylonitrile	-1.0000	0.0000	0.0	0	-7.49#
22	T	Methyl Tert Butyl Ether	-1.0000	0.2413	0.0	0	0.02
23	T	trans-1,2-Dichloroethene	-1.0000	0.2658	0.0	0	0.01
24	T	n-Hexane	-1.0000	0.4125	0.0	0	0.00
25	T	Diisopropyl ether	-1.0000	0.0083	0.0	0	0.08
26	T	Vinyl Acetate	-1.0000	2.6933	0.0	0	-0.01
27	P	1,1-Dichloroethane	-1.0000	0.3028	0.0	0	0.01
28	T	Ethyl-Tert-Butyl ether	-1.0000	0.0000	0.0	0	-8.70#
29	T	2-Butanone	-1.0000	0.0000	0.0	0	-8.87#
30	T	Propionitrile	-1.0000	0.0000	0.0	0	-8.97#
31	T	2,2-Dichloropropane	-1.0000	0.2862	0.0	0	0.01
32	T	cis-1,2-Dichloroethene	-1.0000	0.2877	0.0	0	0.00
33	C	Chloroform	0.3000	0.3530	-17.7	100	0.00
34	T	1-Bromopropane	-1.0000	0.0000	0.0	0	-9.48#
35	T	Bromochloromethane	-1.0000	0.2656	0.0	0	-0.01
36	T	Tetrahydrofuran	-1.0000	0.0000	0.0	0	-9.60#
37	S	Dibromofluoromethane	-1.0000	0.0000	0.0	0	-9.63#
38	T	1,1,1-Trichloroethane	-1.0000	0.3263	0.0	0	0.00
39	T	Cyclohexane	-1.0000	0.3159	0.0	0	0.00
40	T	1,1-Dichloropropene	-1.0000	0.3134	0.0	0	0.00
41	T	Carbon Tetrachloride	-1.0000	0.2532	0.0	0	-0.01
42	T	Tert-Amyl-Methyl ether	-1.0000	0.0152	0.0	0	-0.09
43	S	1,2-Dichloroethane-d4	-1.0000	0.0000	0.0	0	-10.23#
44	T	1,2-Dichloroethane	-1.0000	0.2858	0.0	0	0.01
45	T	Benzene	-1.0000	0.3452	0.0	0	0.00
46	T	Trichloroethene	-1.0000	0.2938	0.0	0	0.00
47	T	Methylcyclohexane	-1.0000	0.3101	0.0	0	0.00
48	C	1,2-Dichloropropane	-1.0000	0.2911	0.0	0	0.00
49	T	1,4-Dioxane	-1.0000	0.0000	0.0	0	-11.55#
50	T	Bromodichloromethane	-1.0000	0.3012	0.0	0	0.00
51	T	Dibromomethane	-1.0000	0.2537	0.0	0	0.00
52	T	2-Chloroethyl Vinyl Ether	-1.0000	0.0000	0.0	0	-11.84#
53	T	4-Methyl-2-Pentanone	-1.0000	0.0000	0.0	0	-11.87#
54	T	cis-1,3-Dichloropropene	-1.0000	0.2327	0.0	0	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11837.D Vial: 3
Acq On : 13 May 2016 14:40 Operator: JDS
Sample : WG568769-02 0.3ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:40:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	-1.0000	0.2127	0.0	0	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	-1.0000	0.0107	0.0	0	0.00
58	C	Toluene	-1.0000	0.3228	0.0	0	0.01
59	T	Ethyl Methacrylate	-1.0000	0.2140	0.0	0	-0.01
60	T	trans-1,3-Dichloropropene	-1.0000	0.2668	0.0	0	-0.01
61	T	1,1,2-Trichloroethane	-1.0000	0.2691	0.0	0	-0.01
62	T	2-Hexanone	-1.0000	0.2315	0.0	0	0.00
63	T	1,3-Dichloropropane	-1.0000	0.2579	0.0	0	0.00
64	T	Tetrachloroethene	-1.0000	0.3214	0.0	0	0.00
65	T	Dibromochloromethane	-1.0000	0.2459	0.0	0	0.00
66	T	1,2-Dibromoethane	-1.0000	0.2387	0.0	0	0.00
67	T	1-Chlorohexane	-1.0000	0.2833	0.0	0	0.00
68	P	Chlorobenzene	-1.0000	0.3144	0.0	0	0.00
69	T	1,1,1,2-Tetrachloroethane	-1.0000	0.2998	0.0	0	0.00
70	C	Ethylbenzene	-1.0000	0.3040	0.0	0	0.00
71	T	m-,p-Xylene	-1.0000	0.6051	0.0	0	0.01
72	T	o-Xylene	-1.0000	0.2994	0.0	0	0.00
73	T	Styrene	-1.0000	0.2961	0.0	0	0.00
74	P	Bromoform	-1.0000	0.0798	0.0	0	-0.01
75	T	Isopropylbenzene	-1.0000	0.2931	0.0	0	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	-1.0000	0.2922	0.0	0	0.00
78	S	p-Bromofluorobenzene	-1.0000	0.0730	0.0	0	0.00
79	T	1,2,3-Trichloropropane	-1.0000	0.0000	0.0	0	-15.70#
80	T	trans-1,4-Dichloro-2-Butene	-1.0000	0.0000	0.0	0	-15.74#
81	T	n-Propylbenzene	-1.0000	0.3233	0.0	0	0.00
82	T	Bromobenzene	0.3000	0.2618	12.7	100	0.00
83	T	1,3,5-Trimethylbenzene	-1.0000	0.3032	0.0	0	-0.01
84	T	2-Chlorotoluene	-1.0000	0.3300	0.0	0	0.00
85	T	4-Chlorotoluene	-1.0000	0.3295	0.0	0	0.00
86	T	a-Methylstyrene	-1.0000	0.2430	0.0	0	0.00
87	T	tert-Butylbenzene	-1.0000	0.2541	0.0	0	-0.01
88	T	1,2,4-Trimethylbenzene	-1.0000	0.3088	0.0	0	0.00
89	T	sec-Butylbenzene	-1.0000	0.3122	0.0	0	0.00
90	T	p-Isopropyltoluene	-1.0000	0.2893	0.0	0	0.00
91	T	1,3-Dichlorobenzene	-1.0000	0.3051	0.0	0	0.00
92	T	1,4-Dichlorobenzene	0.3000	0.2990	0.3	100	0.00
93	T	n-Butylbenzene	-1.0000	0.3274	0.0	0	0.00
94	T	1,2-Dichlorobenzene	0.3000	0.2985	0.5	100	-0.01
95	T	1,2-Dibromo-3-Chloropropane	-1.0000	0.0000	0.0	0	-18.49#
96	T	1,2,4-Trichlorobenzene	-1.0000	0.3011	0.0	0	0.00
97	T	Hexachlorobutadiene	-1.0000	0.2675	0.0	0	0.00
98	T	Naphthalene	-1.0000	0.2561	0.0	0	0.00
99	T	1,2,3-Trichlorobenzene	0.3000	0.2854	4.9	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11837.D 8260WT.M Sat May 14 18:41:07 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11838.D Vial: 4
Acq On : 13 May 2016 15:12 Operator: JDS
Sample : WG568769-03 0.4ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:23 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	515473	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	435266	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	244818	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	0.00	111	0	0.0000 ug/L	
Spiked Amount 25.000	Range 86 - 118		Recovery =	0.00%#	
43) 1,2-Dichloroethane-d4	0.00	65	0	0.0000 ug/L	
Spiked Amount 25.000	Range 80 - 120		Recovery =	0.00%#	
57) Toluene-d8	0.00	98	0	0.0000 ug/L	
Spiked Amount 25.000	Range 88 - 110		Recovery =	0.00%#	
78) p-Bromofluorobenzene	15.64	95	236	0.0295 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	0.12%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	2765	0.3656 ug/L #	66
3) Chloromethane	3.72	50	4021	0.5854 ug/L #	77
4) Vinyl Chloride	3.96	62	2267	0.4134 ug/L #	64
5) 1,3-Butadiene	4.01	54	2044	0.3956 ug/L #	18
6) Bromomethane	4.85	94	1571	0.4511 ug/L	89
7) Chloroethane	5.01	64	1496	0.4029 ug/L #	45
8) Trichlorofluoromethane	5.49	101	4241	0.4175 ug/L	96
10) Isoprene	6.03	67	2394	0.3408 ug/L	90
12) 1,1,2-Trichloro-1,2,2-Trif	6.28	101	1439	0.2811 ug/L #	23
13) Acetone	6.33	43	1125	0.7299 ug/L #	45
14) 1,1-Dichloroethene	6.56	61	3786	0.3990 ug/L	77
16) Dimethyl Sulfide	6.80	62	1622	0.3769 ug/L	59
18) Methyl acetate	7.01	43	21364	4.0629 ug/L #	70
19) Methylene Chloride	7.32	84	2266	0.4265 ug/L	97
20) Carbon Disulfide	7.35	76	6628	0.3991 ug/L #	82
22) Methyl Tert Butyl Ether	7.52	73	4808	0.3486 ug/L #	74
23) trans-1,2-Dichloroethene	7.74	96	2372	0.4368 ug/L	93
24) n-Hexane	7.83	57	4212	0.4732 ug/L #	73
26) Vinyl Acetate	8.34	43	434	0.1315 ug/L #	78
27) 1,1-Dichloroethane	8.34	63	3822	0.3576 ug/L #	89
29) 2-Butanone	8.88	43	484	0.2099 ug/L #	60
31) 2,2-Dichloropropane	9.09	77	2680	0.3472 ug/L #	55
32) cis-1,2-Dichloroethene	9.15	96	2277	0.3777 ug/L	91
33) Chloroform	9.35	83	3981	0.3988 ug/L	89
35) Bromochloromethane	9.57	130	952	0.2468 ug/L	57
36) Tetrahydrofuran	9.59	42	212	0.1340 ug/L #	46
38) 1,1,1-Trichloroethane	9.85	97	3917	0.4058 ug/L #	84
39) Cyclohexane	9.88	56	3935	0.3371 ug/L #	80
40) 1,1-Dichloropropene	10.04	75	2817	0.3862 ug/L	82
41) Carbon Tetrachloride	10.18	117	3373	0.3702 ug/L #	88
44) 1,2-Dichloroethane	10.35	62	3201	0.3737 ug/L #	78
45) Benzene	10.39	78	8729	0.4184 ug/L	90
46) Trichloroethene	11.08	130	2537	0.3731 ug/L	93
47) Methylcyclohexane	11.17	83	2742	0.3325 ug/L	90
48) 1,2-Dichloropropane	11.29	63	2133	0.3600 ug/L	84
50) Bromodichloromethane	11.58	83	2857	0.3638 ug/L #	84
51) Dibromomethane	11.65	93	972	0.3128 ug/L	81
52) 2-Chloroethyl Vinyl Ether	11.85	63	791	0.2560 ug/L #	50
54) cis-1,3-Dichloropropene	12.17	75	2689	0.3253 ug/L	99
55) Dimethyl Disulfide	12.42	79	1113	0.2158 ug/L	74

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11838.D Vial: 4
Acq On : 13 May 2016 15:12 Operator: JDS
Sample : WG568769-03 0.4ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:23 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
58)	Toluene	12.56	91	9113	0.4043 ug/L		99
59)	Ethyl Methacrylate	12.65	69	1556	0.2916 ug/L		96
60)	trans-1,3-Dichloropropene	12.73	75	2303	0.3119 ug/L		86
61)	1,1,2-Trichloroethane	12.94	97	1549	0.3672 ug/L		85
62)	2-Hexanone	12.86	43	840	0.2415 ug/L	#	11
63)	1,3-Dichloropropane	13.21	76	2345	0.3346 ug/L		82
64)	Tetrachloroethene	13.34	164	1905	0.3745 ug/L		88
65)	Dibromochloromethane	13.59	129	1972	0.3238 ug/L		89
66)	1,2-Dibromoethane	13.82	107	1617	0.3776 ug/L		69
67)	1-Chlorohexane	13.89	91	2578	0.3487 ug/L		77
68)	Chlorobenzene	14.29	112	6458	0.3896 ug/L		93
69)	1,1,1,2-Tetrachloroethane	14.31	131	2374	0.3736 ug/L		98
70)	Ethylbenzene	14.31	106	3158	0.3754 ug/L		79
71)	m-,p-Xylene	14.39	106	8621	0.8613 ug/L		93
72)	o-Xylene	14.93	106	3752	0.3758 ug/L		96
73)	Styrene	14.95	104	6027	0.3558 ug/L		90
74)	Bromoform	15.44	173	931	0.2454 ug/L		87
75)	Isopropylbenzene	15.31	105	10551	0.4179 ug/L		95
77)	1,1,2,2-Tetrachloroethane	15.52	83	1129	0.2796 ug/L		84
79)	1,2,3-Trichloropropane	15.71	110	200	0.1341 ug/L	#	28
81)	n-Propylbenzene	15.79	91	11244	0.4087 ug/L		98
82)	Bromobenzene	15.91	156	3048	0.3991 ug/L		95
83)	1,3,5-Trimethylbenzene	15.96	105	9158	0.4381 ug/L		92
84)	2-Chlorotoluene	16.05	91	8455	0.4164 ug/L		96
85)	4-Chlorotoluene	16.09	91	6979	0.4189 ug/L		92
86)	a-Methylstyrene	16.34	118	4052	0.3488 ug/L		74
87)	tert-Butylbenzene	16.40	134	1479	0.3224 ug/L		63
88)	1,2,4-Trimethylbenzene	16.45	105	8457	0.3953 ug/L		95
89)	sec-Butylbenzene	16.65	105	10479	0.4236 ug/L		93
90)	p-Isopropyltoluene	16.79	119	9613	0.4269 ug/L		93
91)	1,3-Dichlorobenzene	16.98	146	5826	0.4107 ug/L		93
92)	1,4-Dichlorobenzene	17.10	146	6273	0.4331 ug/L	#	74
93)	n-Butylbenzene	17.28	91	8021	0.3956 ug/L	#	91
94)	1,2-Dichlorobenzene	17.57	146	4937	0.3691 ug/L		97
96)	1,2,4-Trichlorobenzene	19.55	180	3632	0.3655 ug/L		95
97)	Hexachlorobutadiene	19.69	225	1539	0.3812 ug/L		96
98)	Naphthalene	19.90	128	7383	0.3882 ug/L		97
99)	1,2,3-Trichlorobenzene	20.19	180	3748	0.4028 ug/L		84

(#) = qualifier out of range (m) = manual integration
11M11838.D 8260WT.M Fri May 13 17:04:24 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11838.D Vial: 4
Acq On : 13 May 2016 15:12 Operator: JDS
Sample : WG568769-03 0.4ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration

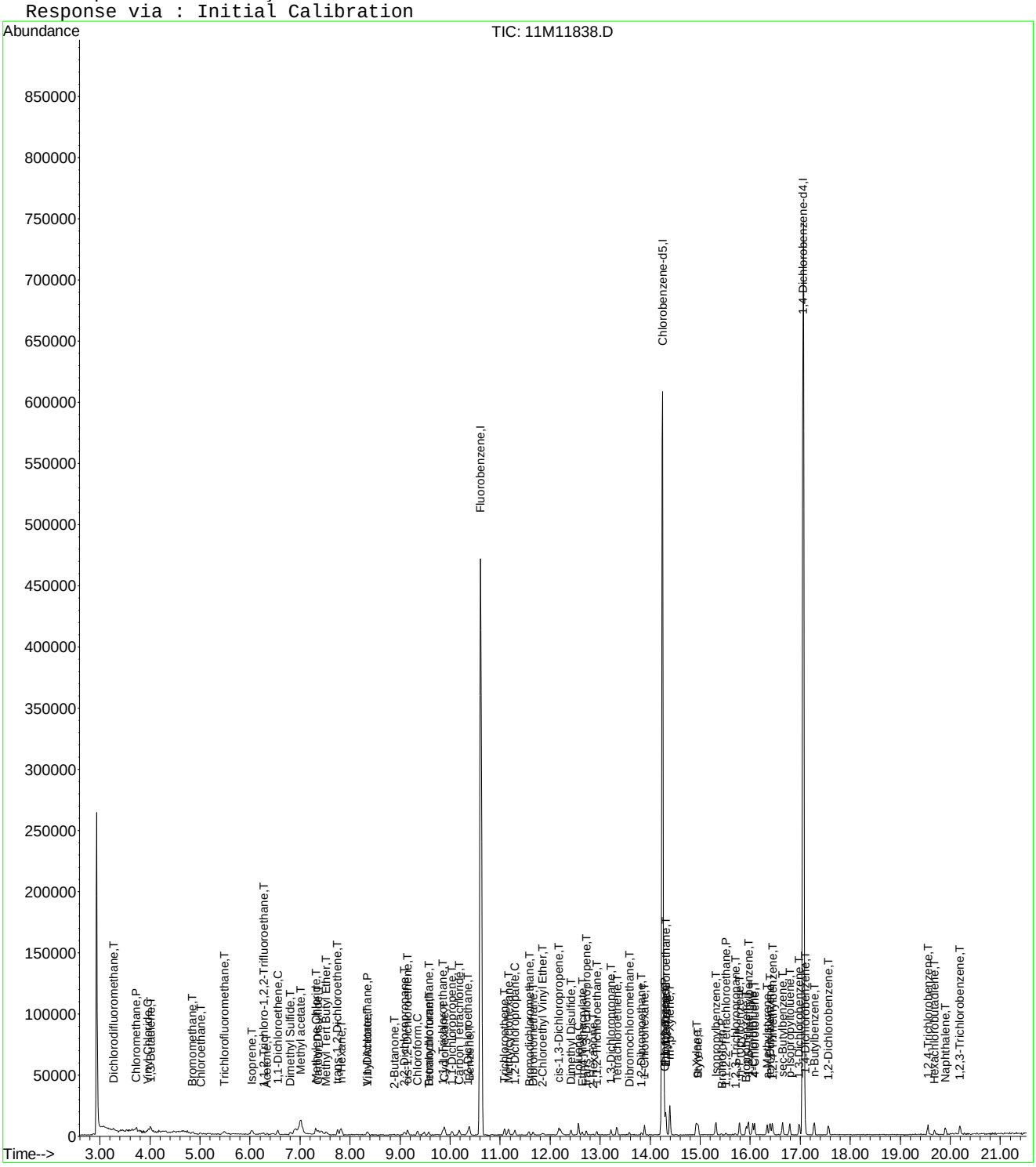

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:25 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	523425	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	440574	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	249989	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	1729	0.2910 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	1.16%#	
43) 1,2-Dichloroethane-d4	10.23	65	3301	0.4585 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	1.84%#	
57) Toluene-d8	12.47	98	9307	0.4494 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	1.80%#	
78) p-Bromofluorobenzene	15.64	95	4047	0.4956 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	2.00%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	7215	0.9394 ug/L	98
3) Chloromethane	3.72	50	7292	1.0455 ug/L	80
4) Vinyl Chloride	3.96	62	5040	0.9051 ug/L	92
5) 1,3-Butadiene	4.02	54	5876	1.1198 ug/L #	76
6) Bromomethane	4.85	94	3488	0.9862 ug/L	94
7) Chloroethane	4.99	64	3425	0.9083 ug/L #	57
8) Trichlorofluoromethane	5.49	101	10960	1.0625 ug/L	95
9) Diethyl ether	6.01	59	19830	4.2253 ug/L	90
10) Isoprene	6.04	67	6121	0.8582 ug/L	94
11) Acrolein	6.25	56	697	1.2730 ug/L	65
12) 1,1,2-Trichloro-1,2,2-Trif	6.27	101	5456	1.0497 ug/L	90
13) Acetone	6.34	43	1782	1.1386 ug/L #	45
14) 1,1-Dichloroethene	6.55	61	9456	0.9814 ug/L	91
15) Tert-Butyl Alcohol	6.67	59	2848	6.8484 ug/L #	67
16) Dimethyl Sulfide	6.80	62	3631	0.8310 ug/L	93
18) Methyl acetate	7.01	43	20953	3.9242 ug/L #	70
19) Methylene Chloride	7.31	84	5001	0.9270 ug/L	97
20) Carbon Disulfide	7.36	76	15438	0.9154 ug/L	99
21) Acrylonitrile	7.50	53	3780	1.8795 ug/L	89
22) Methyl Tert Butyl Ether	7.53	73	11891	0.8490 ug/L	90
23) trans-1,2-Dichloroethene	7.75	96	4815	0.8732 ug/L	95
24) n-Hexane	7.82	57	9213	1.0194 ug/L #	81
25) Diisopropyl ether	8.15	45	108233	4.5267 ug/L	99
26) Vinyl Acetate	8.31	43	1723	0.5141 ug/L #	78
27) 1,1-Dichloroethane	8.34	63	10818	0.9968 ug/L	95
28) Ethyl-Tert-Butyl ether	8.70	59	85288	4.3548 ug/L	99
29) 2-Butanone	8.88	43	1368	0.5844 ug/L #	60
30) Propionitrile	8.99	54	2406	3.5185 ug/L #	60
31) 2,2-Dichloropropane	9.09	77	7787	0.9935 ug/L	90
32) cis-1,2-Dichloroethene	9.15	96	5567	0.9095 ug/L	94
33) Chloroform	9.35	83	10278	1.0139 ug/L	96
34) 1-Bromopropane	9.48	122	295	0.2934 ug/L	49
35) Bromochloromethane	9.57	130	2941	0.7509 ug/L	88
36) Tetrahydrofuran	9.60	42	7790	4.8493 ug/L	92
38) 1,1,1-Trichloroethane	9.85	97	10000	1.0202 ug/L #	90
39) Cyclohexane	9.88	56	10164	0.8574 ug/L	98
40) 1,1-Dichloropropene	10.04	75	7321	0.9884 ug/L	92
41) Carbon Tetrachloride	10.18	117	9558	1.0331 ug/L	98
42) Tert-Amyl-Methyl ether	10.13	73	59107	4.2417 ug/L	97
44) 1,2-Dichloroethane	10.34	62	8181	0.9406 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:25 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
45)	Benzene	10.38	78	19924	0.9404 ug/L		95
46)	Trichloroethene	11.08	130	6636	0.9611 ug/L		92
47)	Methylcyclohexane	11.18	83	7740	0.9243 ug/L		94
48)	1,2-Dichloropropane	11.29	63	5477	0.9103 ug/L		99
49)	1,4-Dioxane	11.55	88	187	5.1264 ug/L	#	10
50)	Bromodichloromethane	11.57	83	7238	0.9076 ug/L		94
51)	Dibromomethane	11.65	93	2839	0.8997 ug/L		97
52)	2-Chloroethyl Vinyl Ether	11.84	63	1934	0.6164 ug/L	#	72
53)	4-Methyl-2-Pentanone	11.87	58	1016	0.5282 ug/L	#	42
54)	cis-1,3-Dichloropropene	12.17	75	7078	0.8432 ug/L		99
55)	Dimethyl Disulfide	12.42	79	3514	0.6710 ug/L		93
58)	Toluene	12.56	91	22074	0.9676 ug/L		96
59)	Ethyl Methacrylate	12.64	69	4130	0.7646 ug/L		88
60)	trans-1,3-Dichloropropene	12.73	75	5897	0.7891 ug/L		90
61)	1,1,2-Trichloroethane	12.94	97	3547	0.8307 ug/L		96
62)	2-Hexanone	12.87	43	2461	0.6990 ug/L	#	63
63)	1,3-Dichloropropane	13.21	76	5965	0.8410 ug/L		87
64)	Tetrachloroethene	13.34	164	5050	0.9809 ug/L		94
65)	Dibromochloromethane	13.59	129	5237	0.8497 ug/L		90
66)	1,2-Dibromoethane	13.82	107	3214	0.7414 ug/L		91
67)	1-Chlorohexane	13.89	91	7025	0.9387 ug/L		91
68)	Chlorobenzene	14.29	112	16160	0.9630 ug/L		95
69)	1,1,1,2-Tetrachloroethane	14.32	131	6361	0.9889 ug/L		97
70)	Ethylbenzene	14.31	106	8050	0.9455 ug/L		93
71)	m-,p-Xylene	14.39	106	20545	2.0278 ug/L		95
72)	o-Xylene	14.92	106	9683	0.9581 ug/L		96
73)	Styrene	14.96	104	14946	0.8716 ug/L		98
74)	Bromoform	15.43	173	3024	0.7876 ug/L		97
75)	Isopropylbenzene	15.31	105	25656	1.0039 ug/L		92
77)	1,1,2,2-Tetrachloroethane	15.52	83	3569	0.8655 ug/L		89
79)	1,2,3-Trichloropropane	15.71	110	872	0.5724 ug/L		84
80)	trans-1,4-Dichloro-2-Buten	15.74	53	1048	0.6163 ug/L	#	44
81)	n-Propylbenzene	15.79	91	27998	0.9967 ug/L		98
82)	Bromobenzene	15.92	156	8101	1.0388 ug/L		89
83)	1,3,5-Trimethylbenzene	15.96	105	20563	0.9633 ug/L		98
84)	2-Chlorotoluene	16.05	91	20962	1.0111 ug/L		96
85)	4-Chlorotoluene	16.09	91	17553	1.0318 ug/L		100
86)	a-Methylstyrene	16.34	118	10002	0.8431 ug/L		97
87)	tert-Butylbenzene	16.40	134	4396	0.9384 ug/L		84
88)	1,2,4-Trimethylbenzene	16.44	105	21945	1.0045 ug/L		96
89)	sec-Butylbenzene	16.65	105	25927	1.0263 ug/L		100
90)	p-Isopropyltoluene	16.79	119	22467	0.9771 ug/L		96
91)	1,3-Dichlorobenzene	16.98	146	14883	1.0274 ug/L		96
92)	1,4-Dichlorobenzene	17.10	146	15106	1.0213 ug/L	#	67
93)	n-Butylbenzene	17.28	91	20991	1.0139 ug/L		98
94)	1,2-Dichlorobenzene	17.57	146	13331	0.9762 ug/L		99
95)	1,2-Dibromo-3-Chloropropan	18.49	75	493	0.5750 ug/L		75
96)	1,2,4-Trichlorobenzene	19.55	180	9030	0.8899 ug/L		96
97)	Hexachlorobutadiene	19.69	225	3810	0.9242 ug/L		95
98)	Naphthalene	19.90	128	16333	0.8410 ug/L		99
99)	1,2,3-Trichlorobenzene	20.19	180	8645	0.9098 ug/L		88

(#) = qualifier out of range (m) = manual integration
11M11839.D 8260WT.M Fri May 13 17:04:25 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration

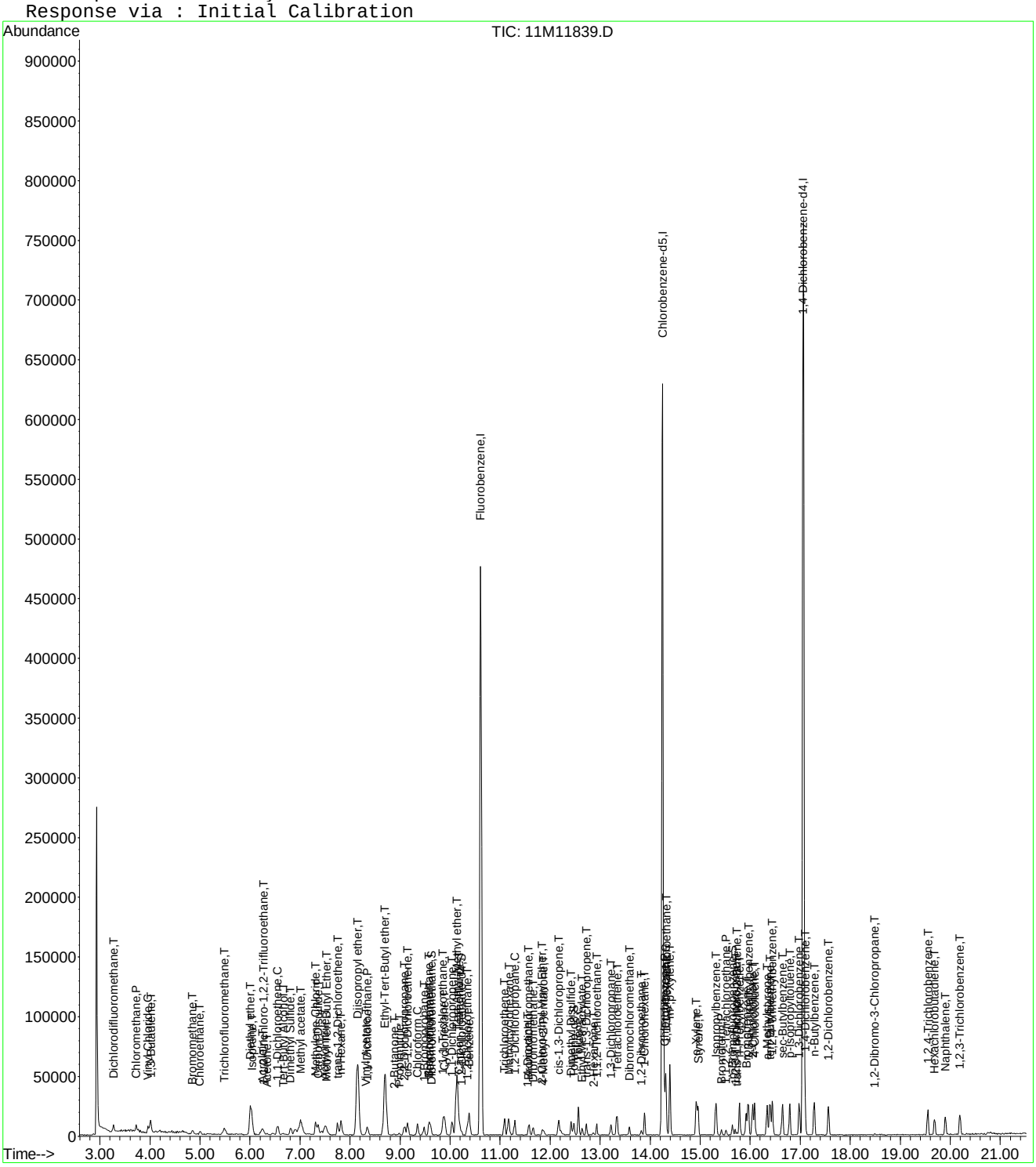

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:40:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	1.0000	0.8798	12.0	100	0.00
3	P	Chloromethane	1.0000	1.1102	-11.0	100	0.00
4	C	Vinyl Chloride	1.0000	0.9240	7.6	100	0.00
5	T	1,3-Butadiene	-1.0000	1.0834	0.0	100	0.02
6	T	Bromomethane	1.0000	0.9301	7.0	100	0.00
7	T	Chloroethane	1.0000	0.9773	2.3	100	-0.01
8	T	Trichlorofluoromethane	1.0000	1.0081	-0.8	100	0.01
9	T	Diethyl ether	5.0000	4.9318	1.4	100	0.00
10	T	Isoprene	-1.0000	0.9134	0.0	100	0.00
11	T	Acrolein	2.5000	2.7854	-11.4	100	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	1.0000	1.0342	-3.4	100	0.02
13	T	Acetone	-1.0000	1.4337	0.0	0	0.00
14	C	1,1-Dichloroethene	1.0000	0.9868	1.3	100	-0.01
15	T	Tert-Butyl Alcohol	10.0000	8.2841	17.2	100	0.01
16	T	Dimethyl Sulfide	-1.0000	0.9488	0.0	100	-0.01
17	T	Iodomethane	-1.0000	2.2962	0.0	0	0.01
18	T	Methyl acetate	-1.0000	4.2835	0.0	0	-0.05
19	T	Methylene Chloride	1.0000	1.0084	-0.8	100	0.00
20	T	Carbon Disulfide	1.0000	0.9624	3.8	100	0.00
21	T	Acrylonitrile	2.5000	2.2683	9.3	100	0.01
22	T	Methyl Tert Butyl Ether	1.0000	0.9614	3.9	100	0.01
23	T	trans-1,2-Dichloroethene	1.0000	0.9079	9.2	100	0.01
24	T	n-Hexane	-1.0000	1.0430	0.0	100	0.00
25	T	Diisopropyl ether	5.0000	4.9106	1.8	100	0.00
26	T	Vinyl Acetate	-1.0000	2.6242	0.0	0	0.00
27	P	1,1-Dichloroethane	1.0000	1.0166	-1.7	100	0.00
28	T	Ethyl-Tert-Butyl ether	5.0000	4.7543	4.9	100	0.00
29	T	2-Butanone	-1.0000	0.7280	0.0	0	0.01
30	T	Propionitrile	5.0000	4.3718	12.6	100	0.01
31	T	2,2-Dichloropropane	1.0000	0.9353	6.5	100	0.00
32	T	cis-1,2-Dichloroethene	1.0000	0.9520	4.8	100	0.00
33	C	Chloroform	1.0000	0.9836	1.6	100	0.00
34	T	1-Bromopropane	1.0000	0.9106	8.9	100	0.00
35	T	Bromochloromethane	1.0000	0.8469	15.3	100	0.00
36	T	Tetrahydrofuran	5.0000	5.8710	-17.4	100	0.00
37	S	Dibromofluoromethane	-1.0000	0.3018	0.0	100	0.00
38	T	1,1,1-Trichloroethane	1.0000	0.9725	2.8	100	0.00
39	T	Cyclohexane	1.0000	0.9069	9.3	100	0.00
40	T	1,1-Dichloropropene	1.0000	0.9971	0.3	100	0.00
41	T	Carbon Tetrachloride	1.0000	0.9518	4.8	100	0.00
42	T	Tert-Amyl-Methyl ether	5.0000	4.7417	5.2	100	0.00
43	S	1,2-Dichloroethane-d4	0.5000	0.5054	-1.1	100	0.00
44	T	1,2-Dichloroethane	1.0000	0.9639	3.6	100	0.00
45	T	Benzene	1.0000	0.9912	0.9	100	0.00
46	T	Trichloroethene	1.0000	1.0157	-1.6	100	-0.01
47	T	Methylcyclohexane	1.0000	0.9600	4.0	100	0.01
48	C	1,2-Dichloropropane	1.0000	0.9844	1.6	100	0.00
49	T	1,4-Dioxane	-1.0000	28.5532	0.0	0	0.00
50	T	Bromodichloromethane	1.0000	0.9266	7.3	100	0.00
51	T	Dibromomethane	1.0000	0.9792	2.1	100	0.00
52	T	2-Chloroethyl Vinyl Ether	-1.0000	0.7053	0.0	100	0.00
53	T	4-Methyl-2-Pentanone	-1.0000	0.6569	0.0	0	0.00
54	T	cis-1,3-Dichloropropene	1.0000	0.9060	9.4	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11839.D Vial: 5
Acq On : 13 May 2016 15:43 Operator: JDS
Sample : WG568769-04 1.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:40:10 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	-1.0000	0.7475	0.0	100	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	-1.0000	0.4862	0.0	100	0.00
58	C	Toluene	1.0000	0.9897	1.0	100	0.00
59	T	Ethyl Methacrylate	1.0000	0.8672	13.3	100	-0.01
60	T	trans-1,3-Dichloropropene	1.0000	0.8237	17.6	100	0.00
61	T	1,1,2-Trichloroethane	1.0000	0.8969	10.3	100	0.00
62	T	2-Hexanone	-1.0000	0.8473	0.0	100	0.01
63	T	1,3-Dichloropropane	1.0000	0.9392	6.1	100	0.00
64	T	Tetrachloroethene	1.0000	0.9737	2.6	100	0.00
65	T	Dibromochloromethane	1.0000	0.8681	13.2	100	0.00
66	T	1,2-Dibromoethane	1.0000	0.8111	18.9	100	0.00
67	T	1-Chlorohexane	1.0000	0.9554	4.5	100	0.00
68	P	Chlorobenzene	1.0000	0.9890	1.1	100	0.00
69	T	1,1,1,2-Tetrachloroethane	1.0000	0.9621	3.8	100	0.00
70	C	Ethylbenzene	1.0000	0.9608	3.9	100	0.00
71	T	m-,p-Xylene	2.0000	2.0170	-0.9	100	0.00
72	T	o-Xylene	1.0000	0.9768	2.3	100	0.00
73	T	Styrene	1.0000	0.9126	8.7	100	0.01
74	P	Bromoform	1.0000	0.8271	17.3	100	0.00
75	T	Isopropylbenzene	1.0000	0.9787	2.1	100	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	1.0000	0.9168	8.3	100	0.00
78	S	p-Bromofluorobenzene	-1.0000	0.5252	0.0	100	0.00
79	T	1,2,3-Trichloropropane	1.0000	0.9573	4.3	100	0.01
80	T	trans-1,4-Dichloro-2-Butene	1.0000	1.2934	-29.3#	100	0.00
81	T	n-Propylbenzene	1.0000	0.9671	3.3	100	0.00
82	T	Bromobenzene	1.0000	1.0663	-6.6	100	0.00
83	T	1,3,5-Trimethylbenzene	1.0000	0.9307	6.9	100	0.00
84	T	2-Chlorotoluene	1.0000	1.0337	-3.4	100	0.00
85	T	4-Chlorotoluene	1.0000	0.9664	3.4	100	0.00
86	T	a-Methylstyrene	1.0000	0.8582	14.2	100	0.00
87	T	tert-Butylbenzene	1.0000	0.9392	6.1	100	0.00
88	T	1,2,4-Trimethylbenzene	1.0000	0.9755	2.5	100	0.00
89	T	sec-Butylbenzene	1.0000	0.9774	2.3	100	0.00
90	T	p-Isopropyltoluene	1.0000	0.9221	7.8	100	0.00
91	T	1,3-Dichlorobenzene	1.0000	1.0144	-1.4	100	0.00
92	T	1,4-Dichlorobenzene	1.0000	1.0157	-1.6	100	0.00
93	T	n-Butylbenzene	1.0000	0.9776	2.2	100	0.00
94	T	1,2-Dichlorobenzene	1.0000	0.9974	0.3	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	-1.0000	1.1961	0.0	100	0.00
96	T	1,2,4-Trichlorobenzene	1.0000	0.9233	7.7	100	0.00
97	T	Hexachlorobutadiene	1.0000	0.8843	11.6	100	0.00
98	T	Naphthalene	1.0000	0.8997	10.0	100	0.00
99	T	1,2,3-Trichlorobenzene	1.0000	0.9631	3.7	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11839.D 8260WT.M Sat May 14 18:41:49 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:26 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	504626	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	418265	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	241104	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	5067	0.8846 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	3.52%#	
43) 1,2-Dichloroethane-d4	10.23	65	6143	0.8851 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	3.56%#	
57) Toluene-d8	12.47	98	18425	0.9371 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	3.76%#	
78) p-Bromofluorobenzene	15.64	95	7442	0.9449 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	3.76%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	14866	2.0077 ug/L	98
3) Chloromethane	3.72	50	14641	2.1775 ug/L	94
4) Vinyl Chloride	3.96	62	10045	1.8711 ug/L	99
5) 1,3-Butadiene	4.01	54	10590	2.0934 ug/L	82
6) Bromomethane	4.85	94	7024	2.0600 ug/L	94
7) Chloroethane	4.99	64	6661	1.8324 ug/L	97
8) Trichlorofluoromethane	5.49	101	21690	2.1811 ug/L	99
9) Diethyl ether	6.01	59	96350	21.2945 ug/L	97
10) Isoprene	6.04	67	12682	1.8443 ug/L	94
11) Acrolein	6.23	56	5531	10.4784 ug/L	91
12) 1,1,2-Trichloro-1,2,2-Trif	6.23	101	9909	1.9774 ug/L	96
13) Acetone	6.35	43	3346	2.2176 ug/L #	68
14) 1,1-Dichloroethene	6.56	61	18584	2.0007 ug/L	98
15) Tert-Butyl Alcohol	6.66	59	15203	37.9194 ug/L #	93
16) Dimethyl Sulfide	6.81	62	7308	1.7348 ug/L	98
17) Iodomethane	7.06	142	1747	0.4335 ug/L #	49
18) Methyl acetate	7.01	43	17794	3.4567 ug/L #	75
19) Methylene Chloride	7.31	84	10330	1.9861 ug/L	99
20) Carbon Disulfide	7.36	76	30745	1.8910 ug/L	99
21) Acrylonitrile	7.49	53	17499	9.0252 ug/L	91
22) Methyl Tert Butyl Ether	7.52	73	22031	1.6315 ug/L	97
23) trans-1,2-Dichloroethene	7.74	96	10660	2.0051 ug/L	95
24) n-Hexane	7.82	57	17125	1.9654 ug/L #	94
25) Diisopropyl ether	8.15	45	542272	23.5246 ug/L	99
26) Vinyl Acetate	8.31	43	6813	2.1084 ug/L #	84
27) 1,1-Dichloroethane	8.34	63	21278	2.0336 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	431080	22.8311 ug/L	100
29) 2-Butanone	8.87	43	3175	1.4068 ug/L #	60
30) Propionitrile	8.99	54	12529	19.0049 ug/L	98
31) 2,2-Dichloropropane	9.09	77	17576	2.3259 ug/L	94
32) cis-1,2-Dichloroethene	9.15	96	11652	1.9746 ug/L	96
33) Chloroform	9.35	83	20769	2.1252 ug/L	96
34) 1-Bromopropane	9.48	122	1648	1.7003 ug/L	70
35) Bromochloromethane	9.57	130	6812	1.8040 ug/L	100
36) Tetrahydrofuran	9.60	42	30834	19.9093 ug/L	96
38) 1,1,1-Trichloroethane	9.84	97	20518	2.1713 ug/L #	94
39) Cyclohexane	9.88	56	22087	1.9325 ug/L	98
40) 1,1-Dichloropropene	10.04	75	13954	1.9542 ug/L	98
41) Carbon Tetrachloride	10.18	117	21054	2.3604 ug/L	98
42) Tert-Amyl-Methyl ether	10.13	73	300593	22.3753 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04:26 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.34	62	16928	2.0188 ug/L	98
45) Benzene	10.38	78	41004	2.0075 ug/L	97
46) Trichloroethene	11.08	130	13283	1.9954 ug/L	96
47) Methylcyclohexane	11.17	83	15711	1.9461 ug/L	95
48) 1,2-Dichloropropane	11.29	63	11010	1.8980 ug/L	91
49) 1,4-Dioxane	11.55	88	898	25.5347 ug/L	88
50) Bromodichloromethane	11.57	83	15058	1.9584 ug/L	100
51) Dibromomethane	11.66	93	5461	1.7952 ug/L	97
52) 2-Chloroethyl Vinyl Ether	11.84	63	4894	1.6180 ug/L	83
53) 4-Methyl-2-Pentanone	11.87	58	2173	1.1717 ug/L #	65
54) cis-1,3-Dichloropropene	12.17	75	14440	1.7842 ug/L	91
55) Dimethyl Disulfide	12.42	79	7378	1.4613 ug/L	97
58) Toluene	12.56	91	43051	1.9877 ug/L	98
59) Ethyl Methacrylate	12.64	69	7792	1.5195 ug/L	95
60) trans-1,3-Dichloropropene	12.73	75	12991	1.8310 ug/L	98
61) 1,1,2-Trichloroethane	12.93	97	8138	2.0075 ug/L	91
62) 2-Hexanone	12.86	43	4715	1.4106 ug/L #	61
63) 1,3-Dichloropropane	13.21	76	11740	1.7434 ug/L	95
64) Tetrachloroethene	13.34	164	10610	2.1708 ug/L	90
65) Dibromochloromethane	13.59	129	11236	1.9202 ug/L	96
66) 1,2-Dibromoethane	13.82	107	7613	1.8499 ug/L	99
67) 1-Chlorohexane	13.89	91	13853	1.9499 ug/L	96
68) Chlorobenzene	14.29	112	33381	2.0954 ug/L	99
69) 1,1,1,2-Tetrachloroethane	14.32	131	13541	2.2175 ug/L	97
70) Ethylbenzene	14.31	106	17116	2.1175 ug/L	98
71) m-,p-Xylene	14.39	106	40469	4.2073 ug/L	95
72) o-Xylene	14.92	106	19196	2.0006 ug/L	99
73) Styrene	14.96	104	30019	1.8440 ug/L	92
74) Bromoform	15.43	173	6309	1.7308 ug/L	96
75) Isopropylbenzene	15.31	105	52419	2.1605 ug/L	98
77) 1,1,2,2-Tetrachloroethane	15.51	83	7118	1.7898 ug/L	100
79) 1,2,3-Trichloropropane	15.70	110	2487	1.6927 ug/L	98
80) trans-1,4-Dichloro-2-Buten	15.74	53	2265	1.3810 ug/L	68
81) n-Propylbenzene	15.79	91	59353	2.1908 ug/L	100
82) Bromobenzene	15.91	156	15393	2.0465 ug/L	97
83) 1,3,5-Trimethylbenzene	15.95	105	43641	2.1197 ug/L	98
84) 2-Chlorotoluene	16.05	91	40923	2.0467 ug/L	96
85) 4-Chlorotoluene	16.09	91	37360	2.2771 ug/L	97
86) a-Methylstyrene	16.34	118	20567	1.7976 ug/L	92
87) tert-Butylbenzene	16.40	134	9253	2.0481 ug/L	89
88) 1,2,4-Trimethylbenzene	16.44	105	43857	2.0815 ug/L	99
89) sec-Butylbenzene	16.65	105	52733	2.1643 ug/L	99
90) p-Isopropyltoluene	16.79	119	49990	2.2541 ug/L	98
91) 1,3-Dichlorobenzene	16.98	146	29674	2.1240 ug/L	99
92) 1,4-Dichlorobenzene	17.10	146	30258	2.1211 ug/L	87
93) n-Butylbenzene	17.28	91	44260	2.2167 ug/L	98
94) 1,2-Dichlorobenzene	17.57	146	27619	2.0969 ug/L	95
95) 1,2-Dibromo-3-Chloropropan	18.49	75	1094	1.3229 ug/L	60
96) 1,2,4-Trichlorobenzene	19.55	180	18455	1.8857 ug/L	98
97) Hexachlorobutadiene	19.69	225	8691	2.1858 ug/L	89
98) Naphthalene	19.90	128	34041	1.8174 ug/L #	95
99) 1,2,3-Trichlorobenzene	20.19	180	17703	1.9318 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:04 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 11:37:47 2016
Response via : Initial Calibration

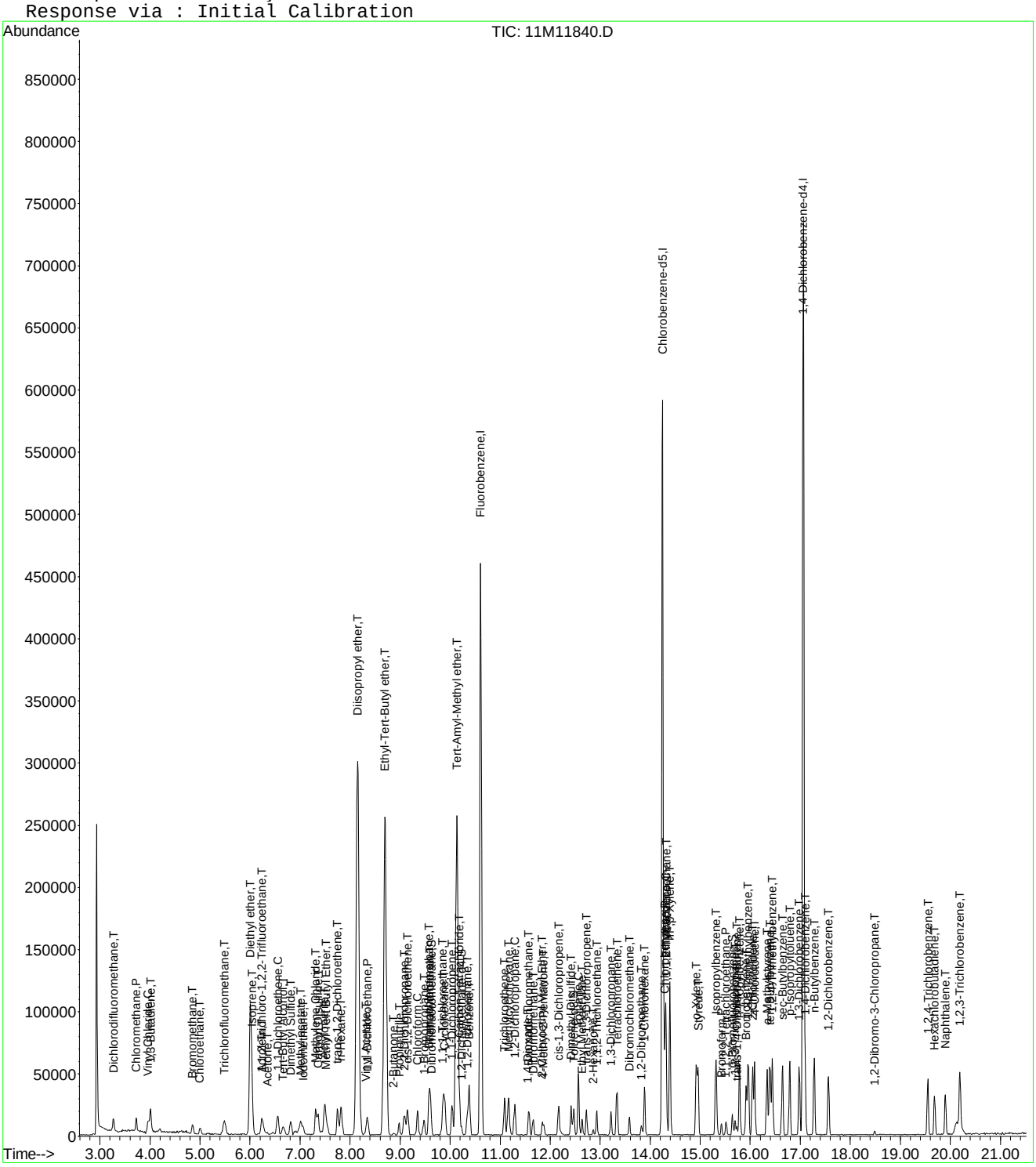

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	2.0000	1.8802	6.0	100	0.00
3	P	Chloromethane	2.0000	2.3121	-15.6	100	0.00
4	C	Vinyl Chloride	2.0000	1.9102	4.5	100	0.00
5	T	1,3-Butadiene	-1.0000	2.0253	0.0	100	0.01
6	T	Bromomethane	2.0000	1.9427	2.9	100	0.00
7	T	Chloroethane	2.0000	1.9714	1.4	100	-0.01
8	T	Trichlorofluoromethane	2.0000	2.0694	-3.5	100	0.01
9	T	Diethyl ether	25.0000	24.8555	0.6	100	0.00
10	T	Isoprene	-1.0000	1.9630	0.0	100	0.00
11	T	Acrolein	12.5000	12.0322	3.7	100	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	2.0000	1.9483	2.6	100	-0.01
13	T	Acetone	-1.0000	2.7924	0.0	100	0.01
14	C	1,1-Dichloroethene	2.0000	2.0117	-0.6	100	0.00
15	T	Tert-Butyl Alcohol	50.0000	45.8688	8.3	100	0.00
16	T	Dimethyl Sulfide	-1.0000	1.9809	0.0	100	0.00
17	T	Iodomethane	2.0000	2.6580	-32.9#	100	0.00
18	T	Methyl acetate	2.0000	0.8555	57.2#	100	0.00
19	T	Methylene Chloride	2.0000	2.1606	-8.0	100	0.00
20	T	Carbon Disulfide	2.0000	1.9879	0.6	100	0.00
21	T	Acrylonitrile	12.5000	10.8919	12.9	100	0.00
22	T	Methyl Tert Butyl Ether	2.0000	1.8475	7.6	100	0.00
23	T	trans-1,2-Dichloroethene	2.0000	2.0850	-4.2	100	0.00
24	T	n-Hexane	2.0000	2.0110	-0.6	100	0.00
25	T	Diisopropyl ether	25.0000	25.5200	-2.1	100	0.00
26	T	Vinyl Acetate	-1.0000	3.2184	0.0	100	0.00
27	P	1,1-Dichloroethane	2.0000	2.0741	-3.7	100	0.00
28	T	Ethyl-Tert-Butyl ether	25.0000	24.9254	0.3	100	0.00
29	T	2-Butanone	-1.0000	1.7527	0.0	0	0.00
30	T	Propionitrile	25.0000	23.6140	5.5	100	0.01
31	T	2,2-Dichloropropane	2.0000	2.1897	-9.5	100	0.00
32	T	cis-1,2-Dichloroethene	2.0000	2.0669	-3.3	100	0.00
33	C	Chloroform	2.0000	2.0616	-3.1	100	0.00
34	T	1-Bromopropane	2.0000	2.2551	-12.8	100	0.00
35	T	Bromochloromethane	2.0000	2.0347	-1.7	100	0.00
36	T	Tetrahydrofuran	25.0000	24.1040	3.6	100	0.00
37	S	Dibromofluoromethane	1.0000	0.9175	8.3	100	0.00
38	T	1,1,1-Trichloroethane	2.0000	2.0696	-3.5	100	-0.01
39	T	Cyclohexane	2.0000	2.0442	-2.2	100	0.00
40	T	1,1-Dichloropropene	2.0000	1.9713	1.4	100	0.00
41	T	Carbon Tetrachloride	2.0000	2.1748	-8.7	100	0.00
42	T	Tert-Amyl-Methyl ether	25.0000	25.0128	-0.1	100	0.00
43	S	1,2-Dichloroethane-d4	1.0000	0.9755	2.4	100	0.00
44	T	1,2-Dichloroethane	2.0000	2.0689	-3.4	100	0.00
45	T	Benzene	2.0000	2.1160	-5.8	100	0.00
46	T	Trichloroethene	2.0000	2.1089	-5.4	100	-0.01
47	T	Methylcyclohexane	2.0000	2.0212	-1.1	100	0.00
48	C	1,2-Dichloropropane	2.0000	2.0525	-2.6	100	0.00
49	T	1,4-Dioxane	50.0000	49.5313	0.9	100	0.00
50	T	Bromodichloromethane	2.0000	1.9996	0.0	100	0.00
51	T	Dibromomethane	2.0000	1.9537	2.3	100	0.01
52	T	2-Chloroethyl Vinyl Ether	-1.0000	1.8512	0.0	100	0.00
53	T	4-Methyl-2-Pentanone	-1.0000	1.4573	0.0	100	0.00
54	T	cis-1,3-Dichloropropene	2.0000	1.9172	4.1	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	-1.0000	1.6278	0.0	100	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	1.0000	1.0138	-1.4	100	0.00
58	C	Toluene	2.0000	2.0332	-1.7	100	0.00
59	T	Ethyl Methacrylate	2.0000	1.7234	13.8	100	-0.01
60	T	trans-1,3-Dichloropropene	2.0000	1.9114	4.4	100	0.00
61	T	1,1,2-Trichloroethane	2.0000	2.1674	-8.4	100	0.00
62	T	2-Hexanone	-1.0000	1.7098	0.0	100	0.00
63	T	1,3-Dichloropropane	2.0000	1.9471	2.6	100	0.00
64	T	Tetrachloroethene	2.0000	2.1547	-7.7	100	0.00
65	T	Dibromochloromethane	2.0000	1.9620	1.9	100	0.00
66	T	1,2-Dibromoethane	2.0000	2.0238	-1.2	100	0.00
67	T	1-Chlorohexane	2.0000	1.9844	0.8	100	0.00
68	P	Chlorobenzene	2.0000	2.1520	-7.6	100	0.00
69	T	1,1,1,2-Tetrachloroethane	2.0000	2.1574	-7.9	100	0.00
70	C	Ethylbenzene	2.0000	2.1518	-7.6	100	0.00
71	T	m-,p-Xylene	4.0000	4.1851	-4.6	100	0.00
72	T	o-Xylene	2.0000	2.0398	-2.0	100	0.00
73	T	Styrene	2.0000	1.9307	3.5	100	0.01
74	P	Bromoform	2.0000	1.8176	9.1	100	0.00
75	T	Isopropylbenzene	2.0000	2.1063	-5.3	100	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	2.0000	1.8958	5.2	100	-0.01
78	S	p-Bromofluorobenzene	1.0000	1.0013	-0.1	100	0.00
79	T	1,2,3-Trichloropropane	2.0000	2.1172	-5.9	100	0.00
80	T	trans-1,4-Dichloro-2-Butene	2.0000	1.9762	1.2	100	0.00
81	T	n-Propylbenzene	2.0000	2.1256	-6.3	100	0.00
82	T	Bromobenzene	2.0000	2.1009	-5.0	100	-0.01
83	T	1,3,5-Trimethylbenzene	2.0000	2.0481	-2.4	100	-0.01
84	T	2-Chlorotoluene	2.0000	2.0925	-4.6	100	0.00
85	T	4-Chlorotoluene	2.0000	2.1326	-6.6	100	0.00
86	T	a-Methylstyrene	2.0000	1.8297	8.5	100	0.00
87	T	tert-Butylbenzene	2.0000	2.0497	-2.5	100	0.00
88	T	1,2,4-Trimethylbenzene	2.0000	2.0213	-1.1	100	0.00
89	T	sec-Butylbenzene	2.0000	2.0611	-3.1	100	0.00
90	T	p-Isopropyltoluene	2.0000	2.1272	-6.4	100	0.00
91	T	1,3-Dichlorobenzene	2.0000	2.0970	-4.8	100	0.00
92	T	1,4-Dichlorobenzene	2.0000	2.1095	-5.5	100	0.00
93	T	n-Butylbenzene	2.0000	2.1373	-6.9	100	0.00
94	T	1,2-Dichlorobenzene	2.0000	2.1425	-7.1	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	2.0000	1.9175	4.1	100	0.00
96	T	1,2,4-Trichlorobenzene	2.0000	1.9565	2.2	100	0.00
97	T	Hexachlorobutadiene	2.0000	2.0914	-4.6	100	0.00
98	T	Naphthalene	2.0000	1.9443	2.8	100	0.00
99	T	1,2,3-Trichlorobenzene	2.0000	2.0449	-2.2	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11840.D 8260WT.M Sat May 14 18:46:53 2016 Page 2

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:46 2016 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Single Level Calibration

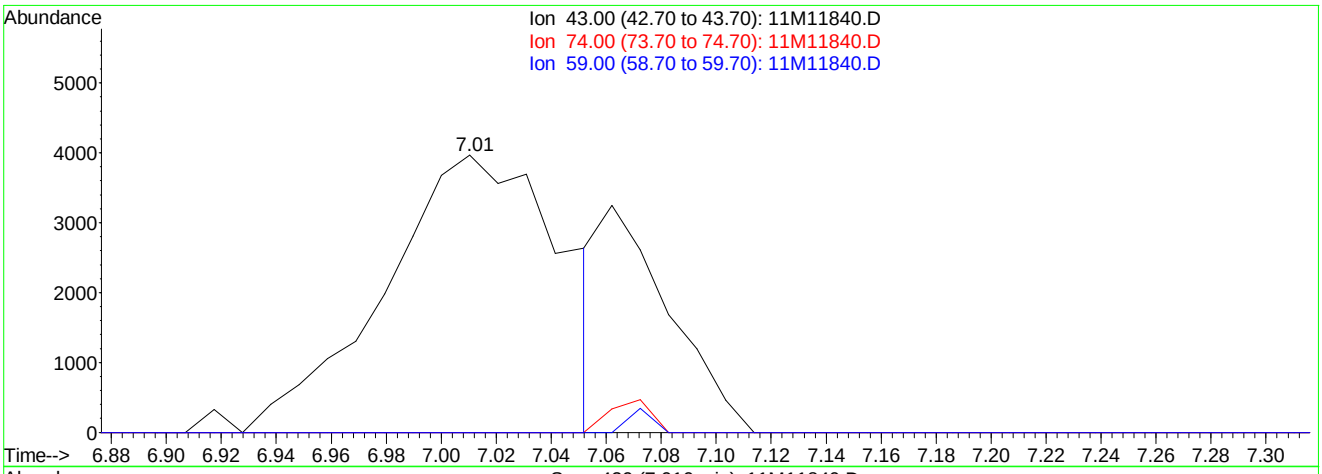

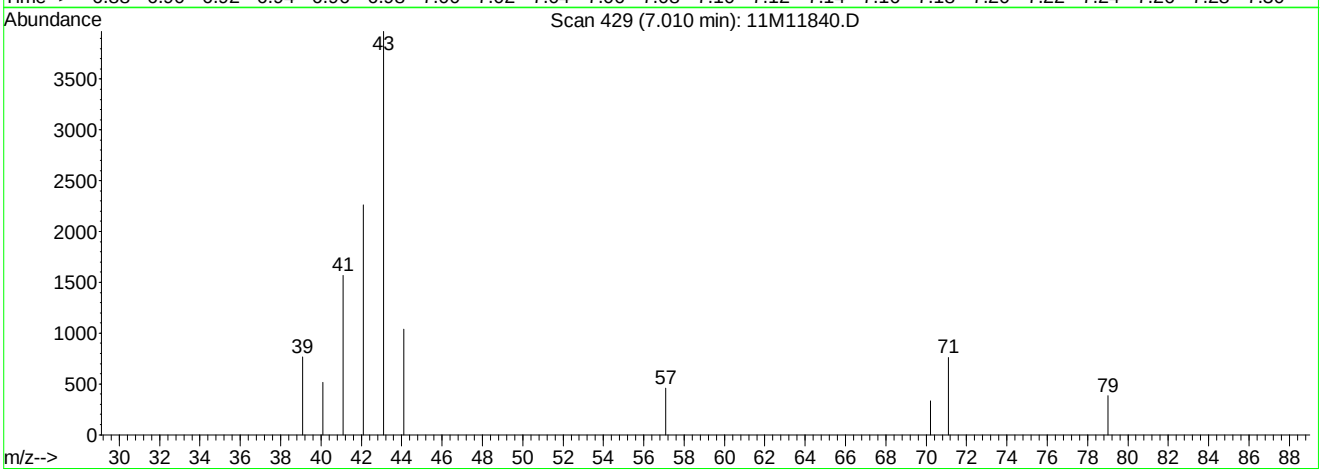

TIC: 11M11840.D

(18) Methyl acetate (T)

7.01min 3.69ug/L

response 17794

Ion	Exp%	Act%
43.00	100	100
74.00	13.60	2.82#
59.00	6.50	1.21#
0.00	0.00	0.00

11M11840.D 8260WT.M Sat May 14 18:46:34 2016

Quantitation Report (Qedit)

Data File : C:\MSDCHEM\1\DATA\051316\11M11840.D Vial: 6
Acq On : 13 May 2016 16:15 Operator: JDS
Sample : WG568769-05 2.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:46 2016 Quant Results File: temp.res

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Single Level Calibration

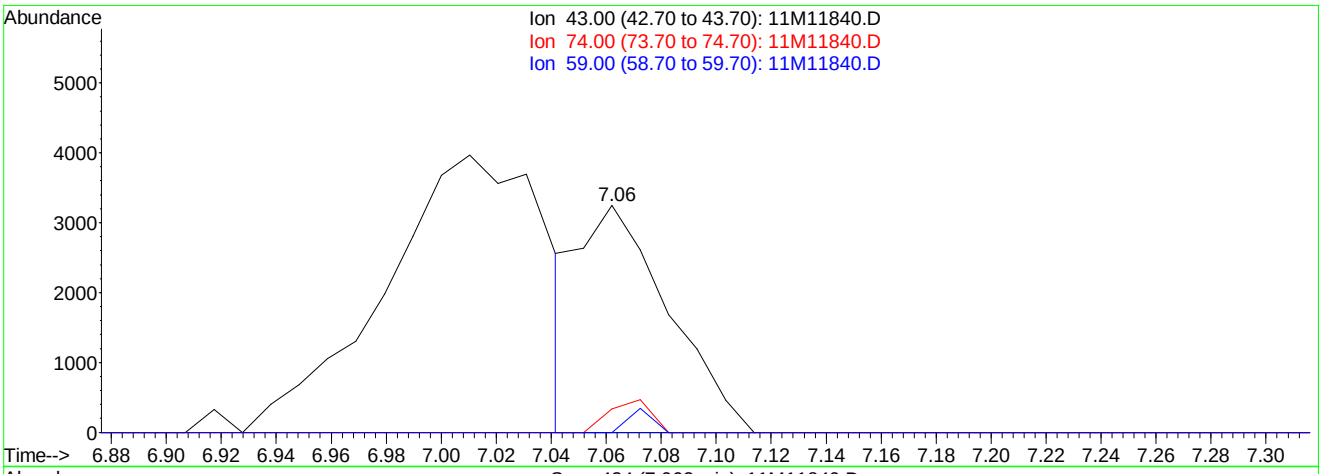

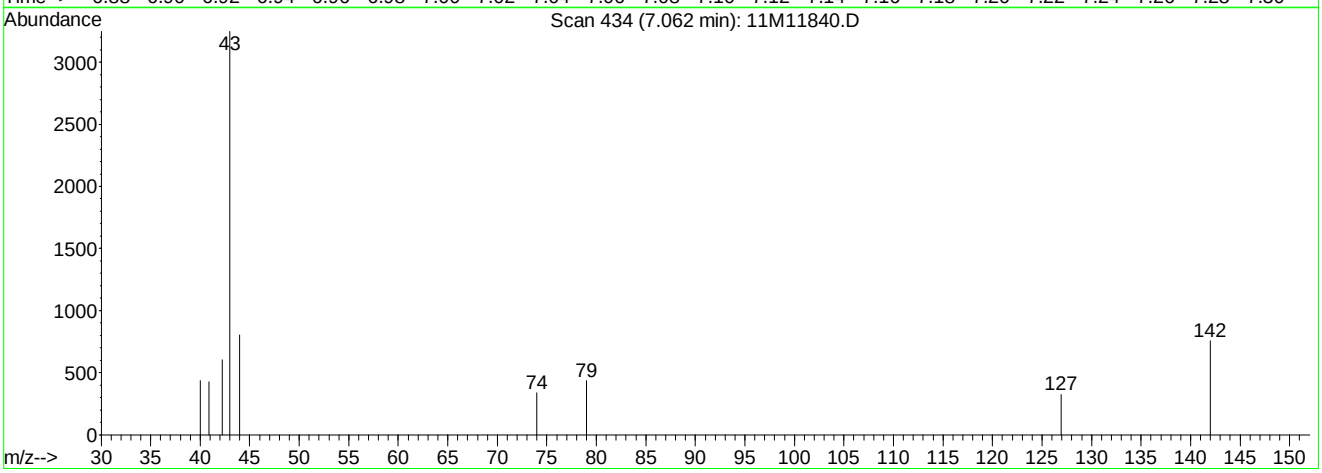

TIC: 11M11840.D

(18) Methyl acetate (T)

7.06min 0.86ug/L mint

response 7344

Ion	Exp%	Act%
43.00	100	100
74.00	13.60	6.84#
59.00	6.50	2.93#
0.00	0.00	0.00

11M11840.D 8260WT.M Sat May 14 18:46:39 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:12:58 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 17:07:56 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	510485	25.00 ug/L	-0.01
56) Chlorobenzene-d5	14.25	117	424113	25.00 ug/L	-0.01
76) 1,4-Dichlorobenzene-d4	17.06	152	244127	25.00 ug/L	-0.01

System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	13577	2.3093 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery =	9.24%#	
43) 1,2-Dichloroethane-d4	10.23	65	16340	2.3640 ug/L	-0.01
Spiked Amount 25.000	Range 80 - 120		Recovery =	9.44%#	
57) Toluene-d8	12.47	98	46369	2.3570 ug/L	-0.01
Spiked Amount 25.000	Range 88 - 110		Recovery =	9.44%#	
78) p-Bromofluorobenzene	15.64	95	19139	2.4218 ug/L	-0.01
Spiked Amount 25.000	Range 86 - 115		Recovery =	9.68%#	

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	33260	4.2909 ug/L	97
3) Chloromethane	3.72	50	29484	4.2588 ug/L	100
4) Vinyl Chloride	3.96	62	24947	4.6446 ug/L	98
5) 1,3-Butadiene	4.00	54	24704	4.8274 ug/L	87
6) Bromomethane	4.85	94	16794	4.7876 ug/L	96
7) Chloroethane	5.00	64	15417	4.1982 ug/L	96
8) Trichlorofluoromethane	5.48	101	50663	4.8750 ug/L	98
9) Diethyl ether	6.01	59	199353	45.0064 ug/L	100
10) Isoprene	6.04	67	30513	4.3864 ug/L	99
11) Acrolein	6.25	56	12345	23.3877 ug/L	87
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	23865	4.5585 ug/L	97
13) Acetone	6.35	43	6439	4.2186 ug/L	86
14) 1,1-Dichloroethene	6.56	61	43769	4.6158 ug/L	96
15) Tert-Butyl Alcohol	6.66	59	34212	87.4805 ug/L	100
16) Dimethyl Sulfide	6.81	62	17251	4.0482 ug/L	99
17) Iodomethane	7.06	142	7385	2.0684 ug/L	94
18) Methyl acetate	7.06	43	32363	5.4250 ug/L #	83
19) Methylene Chloride	7.31	84	23476	4.4707 ug/L	98
20) Carbon Disulfide	7.36	76	72931	4.4715 ug/L	98
21) Acrylonitrile	7.49	53	38039	20.0847 ug/L	96
22) Methyl Tert Butyl Ether	7.52	73	57597	4.3071 ug/L	98
23) trans-1,2-Dichloroethene	7.74	96	23369	4.3390 ug/L	99
24) n-Hexane	7.82	57	38507	4.3615 ug/L	99
25) Diisopropyl ether	8.15	45	1105208	48.2180 ug/L	99
26) Vinyl Acetate	8.31	43	24007	7.3442 ug/L	97
27) 1,1-Dichloroethane	8.34	63	51535	4.8316 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	899266	48.1312 ug/L	99
29) 2-Butanone	8.88	43	8098	3.5469 ug/L	98
30) Propionitrile	8.98	54	26204	41.2561 ug/L	97
31) 2,2-Dichloropropane	9.09	77	40285	5.2526 ug/L	97
32) cis-1,2-Dichloroethene	9.15	96	27456	4.6081 ug/L	91
33) Chloroform	9.35	83	48958	4.7306 ug/L	97
34) 1-Bromopropane	9.47	122	4632	4.9482 ug/L	88
35) Bromochloromethane	9.57	130	17073	4.6807 ug/L	99
36) Tetrahydrofuran	9.60	42	59638	39.6839 ug/L	99
38) 1,1,1-Trichloroethane	9.85	97	48123	4.8983 ug/L	100
39) Cyclohexane	9.88	56	51945	4.5931 ug/L	98
40) 1,1-Dichloropropene	10.04	75	33867	4.6344 ug/L	99
41) Carbon Tetrachloride	10.17	117	47434	5.0851 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	615710	46.3601 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M11841.D 8260WT.M Fri May 13 17:12:59 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:12:58 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 17:07:56 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	40281	4.6727 ug/L	99
45)	Benzene	10.38	78	94223	4.6151 ug/L	99
46)	Trichloroethene	11.08	130	31195	4.7740 ug/L	96
47)	Methylcyclohexane	11.17	83	35731	4.4100 ug/L	96
48)	1,2-Dichloropropane	11.29	63	25973	4.4921 ug/L	93
49)	1,4-Dioxane	11.56	88	2747	80.2363 ug/L	93
50)	Bromodichloromethane	11.57	83	36997	4.7467 ug/L	99
51)	Dibromomethane	11.65	93	13963	4.5774 ug/L	97
52)	2-Chloroethyl Vinyl Ether	11.84	63	11417	3.7313 ug/L	95
53)	4-Methyl-2-Pentanone	11.87	58	6133	3.2690 ug/L	90
54)	cis-1,3-Dichloropropene	12.17	75	36461	4.5343 ug/L	100
55)	Dimethyl Disulfide	12.42	79	18914	3.7032 ug/L	99
58)	Toluene	12.56	91	107617	4.9467 ug/L	100
59)	Ethyl Methacrylate	12.65	69	21187	4.1021 ug/L	99
60)	trans-1,3-Dichloropropene	12.73	75	32824	4.5778 ug/L	99
61)	1,1,2-Trichloroethane	12.94	97	17791	4.3060 ug/L	98
62)	2-Hexanone	12.86	43	11606	3.4244 ug/L	99
63)	1,3-Dichloropropane	13.21	76	30121	4.5460 ug/L	97
64)	Tetrachloroethene	13.33	164	24241	4.8819 ug/L	95
65)	Dibromochloromethane	13.59	129	27989	4.7024 ug/L	95
66)	1,2-Dibromoethane	13.82	107	18147	4.4382 ug/L	96
67)	1-Chlorohexane	13.89	91	33195	4.6591 ug/L	97
68)	Chlorobenzene	14.29	112	79059	4.9583 ug/L	98
69)	1,1,1,2-Tetrachloroethane	14.32	131	31047	4.8956 ug/L	97
70)	Ethylbenzene	14.31	106	39304	4.8168 ug/L	95
71)	m-,p-Xylene	14.39	106	95751	9.7273 ug/L	95
72)	o-Xylene	14.92	106	45759	4.7228 ug/L	96
73)	Styrene	14.95	104	77900	4.8227 ug/L	98
74)	Bromoform	15.43	173	15663	4.1856 ug/L	97
75)	Isopropylbenzene	15.31	105	123883	4.9827 ug/L	99
77)	1,1,2,2-Tetrachloroethane	15.51	83	18105	4.4049 ug/L	100
79)	1,2,3-Trichloropropane	15.70	110	6717	4.7266 ug/L	85
80)	trans-1,4-Dichloro-2-Buten	15.74	53	6067	3.6507 ug/L	69
81)	n-Propylbenzene	15.79	91	143972	5.2435 ug/L	99
82)	Bromobenzene	15.92	156	37345	4.9800 ug/L	93
83)	1,3,5-Trimethylbenzene	15.95	105	106030	5.0309 ug/L	100
84)	2-Chlorotoluene	16.05	91	99279	4.9734 ug/L	100
85)	4-Chlorotoluene	16.09	91	88275	5.1992 ug/L	98
86)	a-Methylstyrene	16.34	118	53766	4.7153 ug/L	98
87)	tert-Butylbenzene	16.39	134	23868	5.2956 ug/L	97
88)	1,2,4-Trimethylbenzene	16.44	105	112072	5.2401 ug/L	99
89)	sec-Butylbenzene	16.65	105	129249	5.1810 ug/L	99
90)	p-Isopropyltoluene	16.79	119	119605	5.2524 ug/L	98
91)	1,3-Dichlorobenzene	16.98	146	71265	5.0271 ug/L	99
92)	1,4-Dichlorobenzene	17.10	146	72437	5.0122 ug/L	96
93)	n-Butylbenzene	17.28	91	100062	4.9277 ug/L	99
94)	1,2-Dichlorobenzene	17.57	146	64925	4.9520 ug/L	98
95)	1,2-Dibromo-3-Chloropropan	18.49	75	3875	4.6567 ug/L	87
96)	1,2,4-Trichlorobenzene	19.55	180	46664	4.8629 ug/L	97
97)	Hexachlorobutadiene	19.69	225	20419	5.1319 ug/L	96
98)	Naphthalene	19.90	128	83612	4.4869 ug/L	99
99)	1,2,3-Trichlorobenzene	20.19	180	40714	4.5323 ug/L	98

(#) = qualifier out of range (m) = manual integration
11M11841.D 8260WT.M Fri May 13 17:12:59 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 13 17:12 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Fri May 13 17:07:56 2016
Response via : Initial Calibration

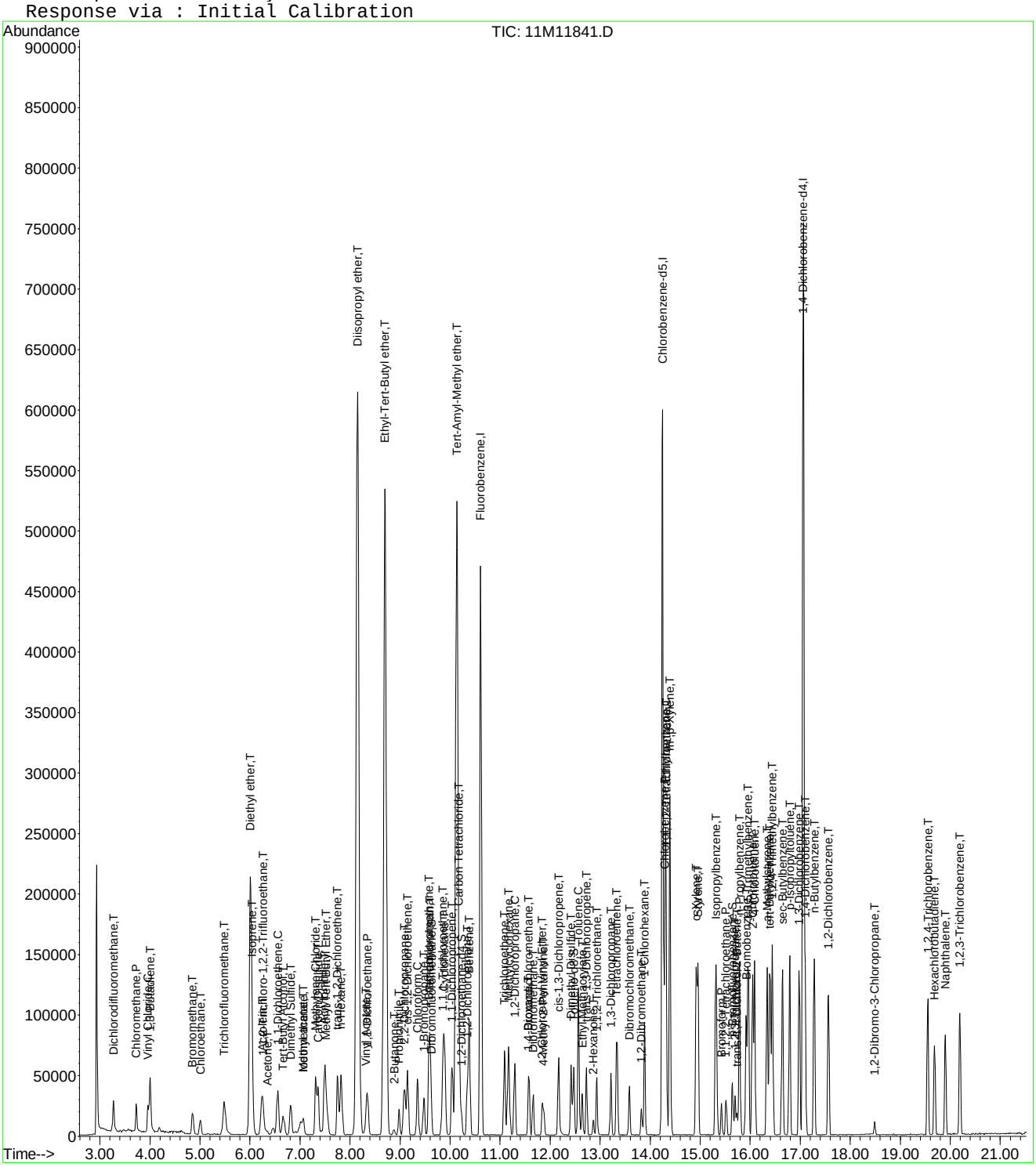

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	100	0.00
2	T	Dichlorodifluoromethane	5.0000	4.1584	16.8	100	0.00
3	P	Chloromethane	5.0000	4.6027	7.9	100	0.00
4	C	Vinyl Chloride	5.0000	4.6895	6.2	100	0.00
5	T	1,3-Butadiene	5.0000	4.6702	6.6	100	0.00
6	T	Bromomethane	5.0000	4.5915	8.2	100	0.00
7	T	Chloroethane	5.0000	4.5105	9.8	100	0.00
8	T	Trichlorofluoromethane	5.0000	4.7781	4.4	100	0.00
9	T	Diethyl ether	50.0000	50.8371	-1.7	100	0.00
10	T	Isoprene	5.0000	4.6688	6.6	100	0.00
11	T	Acrolein	25.0000	24.7297	1.1	100	0.01
12	T	1,1,2-Trichloro-1,2,2-Trifl	5.0000	4.6385	7.2	100	0.01
13	T	Acetone	5.0000	5.3120	-6.2	100	0.01
14	C	1,1-Dichloroethene	5.0000	4.6835	6.3	100	0.00
15	T	Tert-Butyl Alcohol	100.0000	102.0360	-2.0	100	0.00
16	T	Dimethyl Sulfide	5.0000	4.6223	7.6	100	0.00
17	T	Iodomethane	5.0000	3.9124	21.8	100	0.00
18	T	Methyl acetate	5.0000	7.5474	-50.9#	100	0.00
19	T	Methylene Chloride	5.0000	4.8539	2.9	100	0.00
20	T	Carbon Disulfide	5.0000	4.6615	6.8	100	0.00
21	T	Acrylonitrile	25.0000	23.4049	6.4	100	0.00
22	T	Methyl Tert Butyl Ether	5.0000	4.7747	4.5	100	0.00
23	T	trans-1,2-Dichloroethene	5.0000	4.5182	9.6	100	0.00
24	T	n-Hexane	5.0000	4.4700	10.6	100	0.00
25	T	Diisopropyl ether	50.0000	51.4154	-2.8	100	0.00
26	T	Vinyl Acetate	5.0000	5.1698	-3.4	100	0.00
27	P	1,1-Dichloroethane	5.0000	4.9658	0.7	100	0.00
28	T	Ethyl-Tert-Butyl ether	50.0000	51.3996	-2.8	100	0.00
29	T	2-Butanone	5.0000	4.4190	11.6	100	0.01
30	T	Propionitrile	50.0000	48.8210	2.4	100	0.00
31	T	2,2-Dichloropropane	5.0000	4.9614	0.8	100	0.00
32	T	cis-1,2-Dichloroethene	5.0000	4.8145	3.7	100	0.00
33	C	Chloroform	5.0000	4.8039	3.9	100	0.00
34	T	1-Bromopropane	5.0000	5.1449	-2.9	100	0.00
35	T	Bromochloromethane	5.0000	5.0410	-0.8	100	0.00
36	T	Tetrahydrofuran	50.0000	46.0861	7.8	100	0.00
37	S	Dibromofluoromethane	2.5000	2.4302	2.8	100	0.00
38	T	1,1,1-Trichloroethane	5.0000	4.7984	4.0	100	0.00
39	T	Cyclohexane	5.0000	4.7526	4.9	100	0.00
40	T	1,1-Dichloropropene	5.0000	4.7295	5.4	100	0.00
41	T	Carbon Tetrachloride	5.0000	4.8435	3.1	100	-0.01
42	T	Tert-Amyl-Methyl ether	50.0000	50.6462	-1.3	100	0.00
43	S	1,2-Dichloroethane-d4	2.5000	2.5650	-2.6	100	0.00
44	T	1,2-Dichloroethane	5.0000	4.8665	2.7	100	0.00
45	T	Benzene	5.0000	4.8065	3.9	100	0.00
46	T	Trichloroethene	5.0000	4.8959	2.1	100	-0.01
47	T	Methylcyclohexane	5.0000	4.5439	9.1	100	0.00
48	C	1,2-Dichloropropane	5.0000	4.7864	4.3	100	0.00
49	T	1,4-Dioxane	100.0000	102.6541	-2.7	100	0.01
50	T	Bromodichloromethane	5.0000	4.8566	2.9	100	0.00
51	T	Dibromomethane	5.0000	4.9379	1.2	100	0.00
52	T	2-Chloroethyl Vinyl Ether	5.0000	4.2689	14.6	100	0.00
53	T	4-Methyl-2-Pentanone	5.0000	4.0658	18.7	100	0.00
54	T	cis-1,3-Dichloropropene	5.0000	4.7853	4.3	100	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11841.D Vial: 7
Acq On : 13 May 2016 16:47 Operator: JDS
Sample : WG568769-06 5.0ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	5.0000	4.1252	17.5	100	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	100	0.00
57	S	Toluene-d8	2.5000	2.5163	-0.7	100	0.00
58	C	Toluene	5.0000	5.0124	-0.2	100	0.00
59	T	Ethyl Methacrylate	5.0000	4.6214	7.6	100	0.00
60	T	trans-1,3-Dichloropropene	5.0000	4.7629	4.7	100	0.00
61	T	1,1,2-Trichloroethane	5.0000	4.6730	6.5	100	0.00
62	T	2-Hexanone	5.0000	4.1507	17.0	100	0.00
63	T	1,3-Dichloropropane	5.0000	4.9267	1.5	100	0.00
64	T	Tetrachloroethene	5.0000	4.8551	2.9	100	-0.01
65	T	Dibromochloromethane	5.0000	4.8199	3.6	100	0.00
66	T	1,2-Dibromoethane	5.0000	4.7575	4.8	100	0.00
67	T	1-Chlorohexane	5.0000	4.6895	6.2	100	0.00
68	P	Chlorobenzene	5.0000	5.0264	-0.5	100	0.00
69	T	1,1,1,2-Tetrachloroethane	5.0000	4.8783	2.4	100	0.00
70	C	Ethylbenzene	5.0000	4.8732	2.5	100	0.00
71	T	m-,p-Xylene	10.0000	9.7654	2.3	100	0.00
72	T	o-Xylene	5.0000	4.7954	4.1	100	0.00
73	T	Styrene	5.0000	4.9411	1.2	100	0.00
74	P	Bromoform	5.0000	4.4503	11.0	100	0.00
75	T	Isopropylbenzene	5.0000	4.9091	1.8	100	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	100	0.00
77	P	1,1,2,2-Tetrachloroethane	5.0000	4.7624	4.8	100	-0.01
78	S	p-Bromofluorobenzene	2.5000	2.5432	-1.7	100	0.00
79	T	1,2,3-Trichloropropane	5.0000	5.0393	-0.8	100	0.00
80	T	trans-1,4-Dichloro-2-Butene	5.0000	4.0050	19.9	100	0.00
81	T	n-Propylbenzene	5.0000	5.0923	-1.8	100	0.00
82	T	Bromobenzene	5.0000	5.0338	-0.7	100	0.00
83	T	1,3,5-Trimethylbenzene	5.0000	4.9145	1.7	100	-0.01
84	T	2-Chlorotoluene	5.0000	5.0134	-0.3	100	0.00
85	T	4-Chlorotoluene	5.0000	4.9765	0.5	100	0.00
86	T	a-Methylstyrene	5.0000	4.7239	5.5	100	0.00
87	T	tert-Butylbenzene	5.0000	5.2217	-4.4	100	-0.01
88	T	1,2,4-Trimethylbenzene	5.0000	5.1012	-2.0	100	0.00
89	T	sec-Butylbenzene	5.0000	4.9892	0.2	100	0.00
90	T	p-Isopropyltoluene	5.0000	5.0265	-0.5	100	0.00
91	T	1,3-Dichlorobenzene	5.0000	4.9737	0.5	100	0.00
92	T	1,4-Dichlorobenzene	5.0000	4.9875	0.2	100	0.00
93	T	n-Butylbenzene	5.0000	4.7722	4.6	100	0.00
94	T	1,2-Dichlorobenzene	5.0000	4.9741	0.5	100	0.00
95	T	1,2-Dibromo-3-Chloropropane	5.0000	5.1051	-2.1	100	0.00
96	T	1,2,4-Trichlorobenzene	5.0000	4.8858	2.3	100	0.00
97	T	Hexachlorobutadiene	5.0000	4.8528	2.9	100	0.00
98	T	Naphthalene	5.0000	4.7164	5.7	100	0.00
99	T	1,2,3-Trichlorobenzene	5.0000	4.6448	7.1	100	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0
11M11841.D 8260WT.M Sat May 14 18:48:20 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11842.D Vial: 7
Acq On : 13 May 2016 17:19 Operator: JDS
Sample : WG568769-07 20ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:53 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	512017	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	433937	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	255524	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	58089	10.3664 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 41.48%#		
43) 1,2-Dichloroethane-d4	10.23	65	66804	10.4555 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 41.84%#		
57) Toluene-d8	12.47	98	193532	10.2645 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 41.04%#		
78) p-Bromofluorobenzene	15.64	95	81186	10.3070 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 41.24%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	176636	22.0179 ug/L	99
3) Chloromethane	3.72	50	126901	19.7510 ug/L	98
4) Vinyl Chloride	3.96	62	109592	20.5394 ug/L	98
5) 1,3-Butadiene	4.00	54	116317	21.9237 ug/L	96
6) Bromomethane	4.85	94	73878	20.1380 ug/L	93
7) Chloroethane	5.00	64	71103	20.7401 ug/L	100
8) Trichlorofluoromethane	5.49	101	225913	21.2425 ug/L	99
9) Diethyl ether	6.01	59	321203	81.6650 ug/L	99
10) Isoprene	6.04	67	135641	20.6925 ug/L	98
11) Acrolein	6.24	56	19366	37.8284 ug/L	95
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	109792	21.2757 ug/L	99
13) Acetone	6.34	43	27399	22.5356 ug/L	96
14) 1,1-Dichloroethene	6.56	61	201658	21.5139 ug/L	98
15) Tert-Butyl Alcohol	6.67	59	60081	178.6532 ug/L	99
16) Dimethyl Sulfide	6.81	62	75759	20.2383 ug/L	97
17) Iodomethane	7.06	142	67280	17.2594 ug/L	97
18) Methyl acetate	7.07	43	87945	22.4983 ug/L	96
19) Methylene Chloride	7.31	84	99453	20.5013 ug/L	100
20) Carbon Disulfide	7.36	76	327043	20.8410 ug/L	100
21) Acrylonitrile	7.49	53	69618	42.7070 ug/L	95
22) Methyl Tert Butyl Ether	7.52	73	266288	22.0086 ug/L	99
23) trans-1,2-Dichloroethene	7.75	96	107858	20.7912 ug/L	99
24) n-Hexane	7.82	57	184135	21.3111 ug/L	99
25) Diisopropyl ether	8.15	45	1729257	80.2062 ug/L	99
26) Vinyl Acetate	8.31	43	160029	20.6235 ug/L	99
27) 1,1-Dichloroethane	8.34	63	218994	21.0387 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1435318	81.7933 ug/L	100
29) 2-Butanone	8.87	43	39878	21.6958 ug/L	99
30) Propionitrile	8.97	54	47221	87.7149 ug/L	99
31) 2,2-Dichloropropane	9.09	77	166427	20.4352 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	120620	21.0877 ug/L	99
33) Chloroform	9.35	83	208615	20.4085 ug/L	99
34) 1-Bromopropane	9.48	122	19153	19.2424 ug/L	96
35) Bromochloromethane	9.57	130	77189	22.7226 ug/L	99
36) Tetrahydrofuran	9.60	42	109362	84.2581 ug/L	100
38) 1,1,1-Trichloroethane	9.85	97	210871	20.9631 ug/L	98
39) Cyclohexane	9.88	56	235071	21.4428 ug/L	99
40) 1,1-Dichloropropene	10.04	75	151682	21.1188 ug/L	99
41) Carbon Tetrachloride	10.17	117	212111	21.5941 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	1001790	82.1572 ug/L	100

(#) = qualifier out of range (m) = manual integration
11M11842.D 8260WT.M Sat May 14 18:50:54 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11842.D Vial: 7
Acq On : 13 May 2016 17:19 Operator: JDS
Sample : WG568769-07 20ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:53 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	180438	21.7339	ug/L	99
45)	Benzene	10.38	78	407777	20.7394	ug/L	100
46)	Trichloroethene	11.08	130	132094	20.6692	ug/L	99
47)	Methylcyclohexane	11.17	83	168355	21.3455	ug/L	98
48)	1,2-Dichloropropane	11.29	63	112875	20.7388	ug/L	99
49)	1,4-Dioxane	11.56	88	4948	165.8209	ug/L	99
50)	Bromodichloromethane	11.57	83	163762	21.4329	ug/L	98
51)	Dibromomethane	11.65	93	61028	21.5174	ug/L	98
52)	2-Chloroethyl Vinyl Ether	11.84	63	56664	21.1238	ug/L	99
53)	4-Methyl-2-Pentanone	11.87	58	32621	21.5609	ug/L	99
54)	cis-1,3-Dichloropropene	12.17	75	166399	21.7735	ug/L	100
55)	Dimethyl Disulfide	12.42	79	93808	20.3984	ug/L	99
58)	Toluene	12.56	91	467769	21.2936	ug/L	99
59)	Ethyl Methacrylate	12.64	69	103892	22.1484	ug/L	98
60)	trans-1,3-Dichloropropene	12.73	75	155661	22.0759	ug/L	100
61)	1,1,2-Trichloroethane	12.94	97	85297	21.8971	ug/L	100
62)	2-Hexanone	12.86	43	62113	21.7109	ug/L	99
63)	1,3-Dichloropropane	13.21	76	137448	21.9726	ug/L	98
64)	Tetrachloroethene	13.34	164	106368	20.8217	ug/L	99
65)	Dibromochloromethane	13.59	129	131143	22.0723	ug/L	99
66)	1,2-Dibromoethane	13.82	107	84381	21.6209	ug/L	99
67)	1-Chlorohexane	13.89	91	153420	21.1830	ug/L	100
68)	Chlorobenzene	14.29	112	338669	21.0446	ug/L	99
69)	1,1,1,2-Tetrachloroethane	14.32	131	134571	20.6660	ug/L	98
70)	Ethylbenzene	14.31	106	171752	20.8130	ug/L	97
71)	m-,p-Xylene	14.39	106	419228	41.7882	ug/L	99
72)	o-Xylene	14.92	106	208125	21.3170	ug/L	99
73)	Styrene	14.95	104	353452	21.9116	ug/L	98
74)	Bromoform	15.43	173	78592	21.8247	ug/L	100
75)	Isopropylbenzene	15.31	105	552747	21.4078	ug/L	99
77)	1,1,2,2-Tetrachloroethane	15.52	83	90122	22.6486	ug/L	98
79)	1,2,3-Trichloropropane	15.70	110	30969	20.9562	ug/L	97
80)	trans-1,4-Dichloro-2-Buten	15.74	53	36190	19.3325	ug/L	86
81)	n-Propylbenzene	15.79	91	640711	21.6512	ug/L	100
82)	Bromobenzene	15.92	156	160227	20.6340	ug/L	100
83)	1,3,5-Trimethylbenzene	15.95	105	481759	21.3337	ug/L	100
84)	2-Chlorotoluene	16.05	91	435100	20.9919	ug/L	99
85)	4-Chlorotoluene	16.09	91	391759	21.1004	ug/L	100
86)	a-Methylstyrene	16.34	118	253642	21.2911	ug/L	99
87)	tert-Butylbenzene	16.39	134	101859	21.2903	ug/L	99
88)	1,2,4-Trimethylbenzene	16.44	105	505239	21.9714	ug/L	98
89)	sec-Butylbenzene	16.65	105	586770	21.6398	ug/L	100
90)	p-Isopropyltoluene	16.79	119	539795	21.6735	ug/L	100
91)	1,3-Dichlorobenzene	16.98	146	312832	20.8591	ug/L	99
92)	1,4-Dichlorobenzene	17.10	146	314339	20.6779	ug/L	99
93)	n-Butylbenzene	17.28	91	474312	21.6121	ug/L	99
94)	1,2-Dichlorobenzene	17.57	146	287316	21.0305	ug/L	100
95)	1,2-Dibromo-3-Chloropropan	18.49	75	19607	22.2193	ug/L	89
96)	1,2,4-Trichlorobenzene	19.55	180	212916	21.2982	ug/L	100
97)	Hexachlorobutadiene	19.69	225	91388	20.7507	ug/L	99
98)	Naphthalene	19.90	128	414073	22.3154	ug/L	99
99)	1,2,3-Trichlorobenzene	20.19	180	193437	21.0836	ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11842.D Vial: 7
Acq On : 13 May 2016 17:19 Operator: JDS
Sample : WG568769-07 20ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

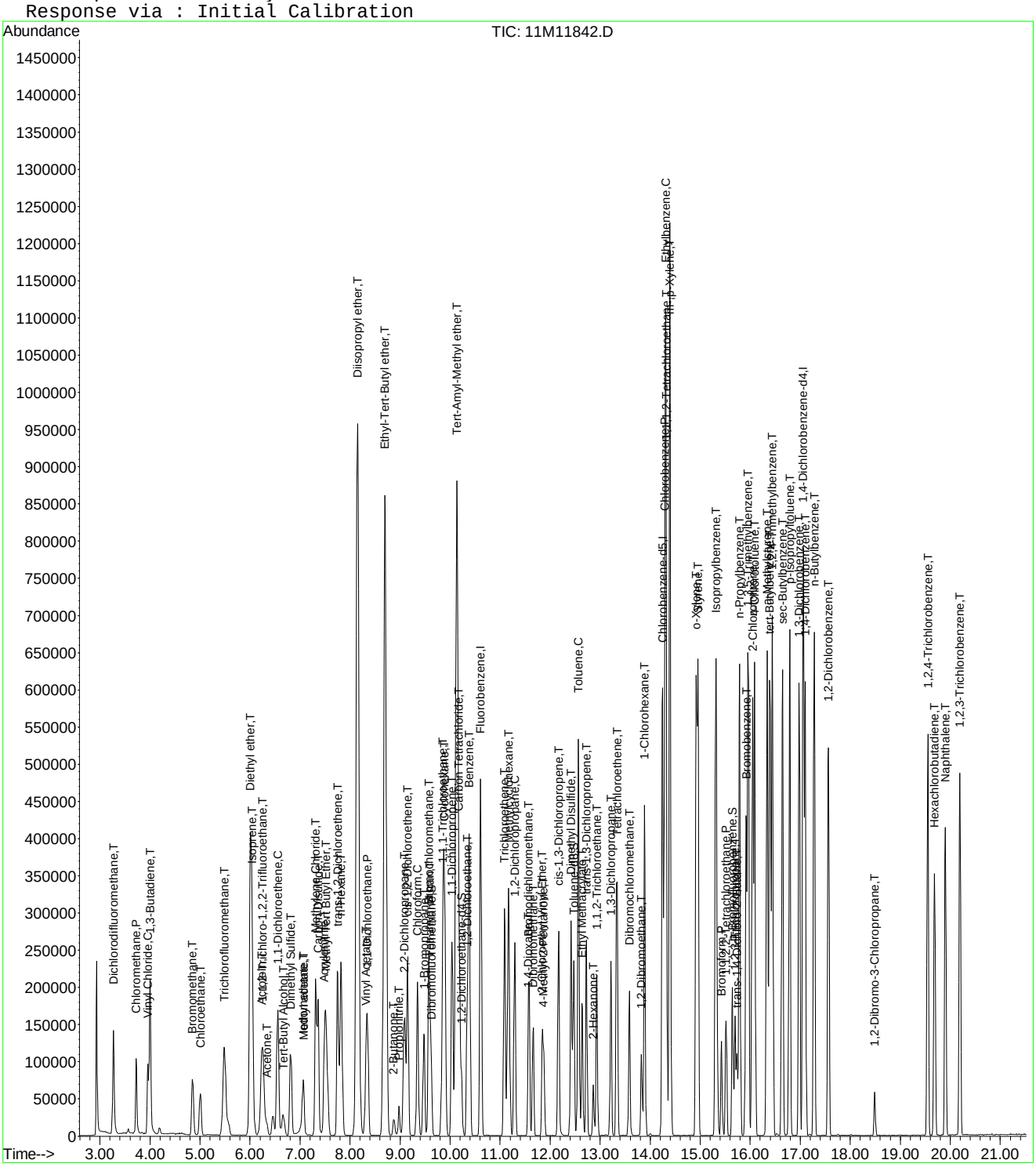

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11843.D Vial: 8
Acq On : 13 May 2016 17:51 Operator: JDS
Sample : WG568769-08 50ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:56 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	521583	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	438582	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	263885	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	139784	24.4879 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 97.96%		
43) 1,2-Dichloroethane-d4	10.23	65	158200	24.3058 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 97.24%		
57) Toluene-d8	12.47	98	462969	24.2947 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 97.16%		
78) p-Bromofluorobenzene	15.64	95	188875	23.2189 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.88%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	416971	51.0228 ug/L	100
3) Chloromethane	3.72	50	287508	43.9273 ug/L	100
4) Vinyl Chloride	3.96	62	261024	48.0232 ug/L	100
5) 1,3-Butadiene	4.00	54	280913	51.9760 ug/L	100
6) Bromomethane	4.85	94	172294	46.1032 ug/L	100
7) Chloroethane	5.00	64	167978	48.0991 ug/L	100
8) Trichlorofluoromethane	5.48	101	519806	47.9806 ug/L	100
9) Diethyl ether	6.01	59	391891	97.8098 ug/L	100
10) Isoprene	6.04	67	331169	49.5943 ug/L	100
11) Acrolein	6.23	56	25228	47.9550 ug/L	100
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	255341	48.5730 ug/L	100
13) Acetone	6.34	43	57896	46.7459 ug/L	98
14) 1,1-Dichloroethene	6.56	61	459793	48.1534 ug/L	100
15) Tert-Butyl Alcohol	6.66	59	69395	202.5643 ug/L	100
16) Dimethyl Sulfide	6.81	62	193959	50.8640 ug/L	100
17) Iodomethane	7.06	142	214554	49.3519 ug/L	100
18) Methyl acetate	7.06	43	185465	48.1983 ug/L	100
19) Methylene Chloride	7.31	84	233601	47.2715 ug/L	100
20) Carbon Disulfide	7.36	76	816514	51.0786 ug/L	100
21) Acrylonitrile	7.49	53	84821	51.0789 ug/L	100
22) Methyl Tert Butyl Ether	7.52	73	610666	49.5457 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	252405	47.7624 ug/L	100
24) n-Hexane	7.82	57	449694	51.0913 ug/L	100
25) Diisopropyl ether	8.15	45	2181723	99.3365 ug/L	100
26) Vinyl Acetate	8.31	43	410275	48.2141 ug/L	100
27) 1,1-Dichloroethane	8.34	63	516691	48.7281 ug/L	100
28) Ethyl-Tert-Butyl ether	8.70	59	1783350	99.7625 ug/L	100
29) 2-Butanone	8.87	43	91238	48.7281 ug/L	100
30) Propionitrile	8.97	54	56538	103.0954 ug/L	100
31) 2,2-Dichloropropane	9.09	77	402511	48.5170 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	282222	48.4353 ug/L	100
33) Chloroform	9.35	83	489993	47.0562 ug/L	100
34) 1-Bromopropane	9.48	122	50180	48.4991 ug/L	100
35) Bromochloromethane	9.57	130	179921	51.9932 ug/L	100
36) Tetrahydrofuran	9.60	42	127999	96.8083 ug/L	100
38) 1,1,1-Trichloroethane	9.85	97	497667	48.5667 ug/L	100
39) Cyclohexane	9.88	56	575045	51.4928 ug/L	100
40) 1,1-Dichloropropene	10.04	75	353148	48.2674 ug/L	100
41) Carbon Tetrachloride	10.18	117	493225	49.2921 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	1227500	98.8215 ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11843.D Vial: 8
Acq On : 13 May 2016 17:51 Operator: JDS
Sample : WG568769-08 50ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:56 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
44) 1,2-Dichloroethane	10.34	62	419000	49.5434	ug/L	100
45) Benzene	10.38	78	947514	47.3064	ug/L	100
46) Trichloroethene	11.09	130	307211	47.1888	ug/L	100
47) Methylcyclohexane	11.17	83	418631	52.1043	ug/L	100
48) 1,2-Dichloropropane	11.29	63	268423	48.4136	ug/L	100
49) 1,4-Dioxane	11.55	88	5866	189.1665	ug/L	100
50) Bromodichloromethane	11.57	83	385292	49.5015	ug/L	100
51) Dibromomethane	11.65	93	142910	49.4635	ug/L	100
52) 2-Chloroethyl Vinyl Ether	11.84	63	133225	48.7541	ug/L	100
53) 4-Methyl-2-Pentanone	11.87	58	75720	49.1295	ug/L	100
54) cis-1,3-Dichloropropene	12.17	75	394857	50.7199	ug/L	100
55) Dimethyl Disulfide	12.42	79	236984	50.5867	ug/L	100
58) Toluene	12.56	91	1095397	49.3360	ug/L	100
59) Ethyl Methacrylate	12.65	69	249821	52.6944	ug/L	100
60) trans-1,3-Dichloropropene	12.73	75	366443	51.4187	ug/L	100
61) 1,1,2-Trichloroethane	12.93	97	194150	49.3135	ug/L	100
62) 2-Hexanone	12.86	43	144364	49.9264	ug/L	100
63) 1,3-Dichloropropane	13.21	76	316783	50.1049	ug/L	100
64) Tetrachloroethene	13.34	164	251037	48.6205	ug/L	100
65) Dibromochloromethane	13.59	129	310662	51.7330	ug/L	100
66) 1,2-Dibromoethane	13.82	107	196704	49.8676	ug/L	100
67) 1-Chlorohexane	13.89	91	376690	51.4596	ug/L	100
68) Chlorobenzene	14.29	112	797442	49.0276	ug/L	100
69) 1,1,1,2-Tetrachloroethane	14.32	131	325801	49.5033	ug/L	100
70) Ethylbenzene	14.31	106	408749	49.0078	ug/L	100
71) m-,p-Xylene	14.39	106	996141	98.2427	ug/L	100
72) o-Xylene	14.92	106	492043	49.8632	ug/L	100
73) Styrene	14.95	104	838125	51.4077	ug/L	100
74) Bromoform	15.43	173	184100	50.5823	ug/L	100
75) Isopropylbenzene	15.31	105	1309383	50.1751	ug/L	100
77) 1,1,2,2-Tetrachloroethane	15.52	83	208930	50.8426	ug/L	100
79) 1,2,3-Trichloropropane	15.70	110	72411	46.9859	ug/L	100
80) trans-1,4-Dichloro-2-Buten	15.74	53	94075	47.5347	ug/L	100
81) n-Propylbenzene	15.79	91	1522917	49.8325	ug/L	100
82) Bromobenzene	15.92	156	379178	47.2834	ug/L	100
83) 1,3,5-Trimethylbenzene	15.96	105	1143246	49.0221	ug/L	100
84) 2-Chlorotoluene	16.05	91	1021921	47.7415	ug/L	100
85) 4-Chlorotoluene	16.09	91	930690	48.5394	ug/L	100
86) a-Methylstyrene	16.34	118	649847	52.8208	ug/L	100
87) tert-Butylbenzene	16.40	134	241955	48.9705	ug/L	100
88) 1,2,4-Trimethylbenzene	16.44	105	1178963	49.6454	ug/L	100
89) sec-Butylbenzene	16.65	105	1390388	49.6522	ug/L	100
90) p-Isopropyltoluene	16.79	119	1282252	49.8529	ug/L	100
91) 1,3-Dichlorobenzene	16.98	146	737967	47.6473	ug/L	100
92) 1,4-Dichlorobenzene	17.10	146	740977	47.1987	ug/L	100
93) n-Butylbenzene	17.28	91	1126170	49.6883	ug/L	100
94) 1,2-Dichlorobenzene	17.57	146	684016	48.4812	ug/L	100
95) 1,2-Dibromo-3-Chloropropan	18.49	75	42848	46.3023	ug/L	100
96) 1,2,4-Trichlorobenzene	19.55	180	512927	49.6830	ug/L	100
97) Hexachlorobutadiene	19.69	225	219129	48.1793	ug/L	100
98) Naphthalene	19.90	128	962852	50.2463	ug/L	100
99) 1,2,3-Trichlorobenzene	20.19	180	453828	47.8975	ug/L	100

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11843.D Vial: 8
Acq On : 13 May 2016 17:51 Operator: JDS
Sample : WG568769-08 50ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

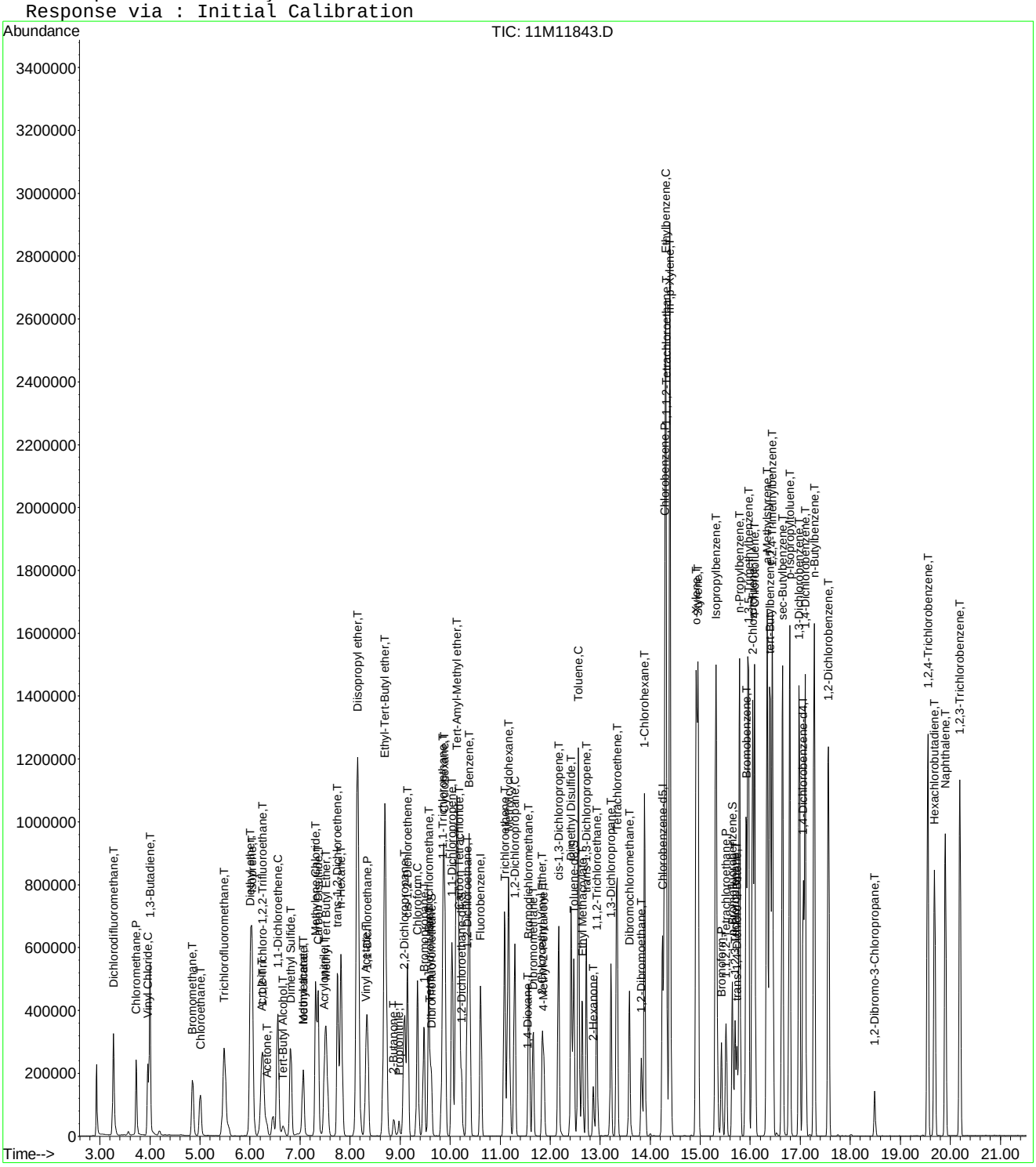

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11844.D Vial: 9
Acq On : 13 May 2016 18:22 Operator: JDS
Sample : WG568769-09 100ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:57 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	541540	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	458522	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	275719	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	307700	51.9175 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 207.68%#		
43) 1,2-Dichloroethane-d4	10.23	65	345779	51.1676 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 204.68%#		
57) Toluene-d8	12.47	98	1011334	50.7627 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 203.04%#		
78) p-Bromofluorobenzene	15.64	95	423157	49.7872 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 199.16%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	918088	108.2020 ug/L	100
3) Chloromethane	3.72	50	641242	94.3625 ug/L	99
4) Vinyl Chloride	3.95	62	586615	103.9481 ug/L	100
5) 1,3-Butadiene	3.99	54	571156	101.7838 ug/L	99
6) Bromomethane	4.85	94	394826	101.7560 ug/L	99
7) Chloroethane	5.00	64	370541	102.1913 ug/L	99
8) Trichlorofluoromethane	5.48	101	1135647	100.9627 ug/L	98
9) Diethyl ether	6.01	59	836495	201.0821 ug/L	99
10) Isoprene	6.04	67	699724	100.9257 ug/L	100
11) Acrolein	6.24	56	55228	99.4421 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.26	101	545013	99.8560 ug/L	100
13) Acetone	6.34	43	123799	96.2731 ug/L	95
14) 1,1-Dichloroethene	6.56	61	1004294	101.3022 ug/L	100
15) Tert-Butyl Alcohol	6.66	59	148134	416.4687 ug/L	98
16) Dimethyl Sulfide	6.81	62	401237	101.3432 ug/L	100
17) Iodomethane	7.06	142	471112	102.3553 ug/L	100
18) Methyl acetate	7.07	43	381031	98.0957 ug/L	99
19) Methylene Chloride	7.31	84	501609	97.7649 ug/L	99
20) Carbon Disulfide	7.36	76	1695322	102.1458 ug/L	100
21) Acrylonitrile	7.49	53	184461	106.9881 ug/L	99
22) Methyl Tert Butyl Ether	7.52	73	1312901	102.5951 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	542907	98.9478 ug/L	98
24) n-Hexane	7.82	57	921942	100.8849 ug/L	99
25) Diisopropyl ether	8.15	45	4599625	201.7086 ug/L	99
26) Vinyl Acetate	8.31	43	855488	94.3763 ug/L	99
27) 1,1-Dichloroethane	8.34	63	1111115	100.9254 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	3780769	203.7060 ug/L	100
29) 2-Butanone	8.87	43	198511	102.1130 ug/L	100
30) Propionitrile	8.98	54	118699	208.4678 ug/L	97
31) 2,2-Dichloropropane	9.09	77	914695	106.1904 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	606774	100.2977 ug/L	99
33) Chloroform	9.35	83	1053766	97.4685 ug/L	100
34) 1-Bromopropane	9.48	122	106914	98.8615 ug/L	100
35) Bromochloromethane	9.57	130	387239	107.7795 ug/L	100
36) Tetrahydrofuran	9.60	42	270148	196.7890 ug/L	99
38) 1,1,1-Trichloroethane	9.85	97	1088263	102.2884 ug/L	99
39) Cyclohexane	9.88	56	1213186	104.6320 ug/L	100
40) 1,1-Dichloropropene	10.04	75	775674	102.1101 ug/L	98
41) Carbon Tetrachloride	10.18	117	1074698	103.4456 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	2619501	203.1147 ug/L	99

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11844.D Vial: 9
Acq On : 13 May 2016 18:22 Operator: JDS
Sample : WG568769-09 100ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:57 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	895394	101.9714 ug/L	100
45)	Benzene	10.38	78	2041856	98.1867 ug/L	100
46)	Trichloroethene	11.08	130	677193	100.1861 ug/L	99
47)	Methylcyclohexane	11.17	83	867487	103.9915 ug/L	100
48)	1,2-Dichloropropane	11.29	63	580562	100.8530 ug/L	98
49)	1,4-Dioxane	11.56	88	13651	395.0901 ug/L	100
50)	Bromodichloromethane	11.57	83	837797	103.6717 ug/L	99
51)	Dibromomethane	11.65	93	315786	105.2707 ug/L	99
52)	2-Chloroethyl Vinyl Ether	11.84	63	293822	103.5626 ug/L	100
53)	4-Methyl-2-Pentanone	11.87	58	164890	103.0430 ug/L	98
54)	cis-1,3-Dichloropropene	12.17	75	854611	105.7305 ug/L	99
55)	Dimethyl Disulfide	12.42	79	505463	103.9202 ug/L	99
58)	Toluene	12.56	91	2361378	101.7300 ug/L	100
59)	Ethyl Methacrylate	12.65	69	529740	106.8782 ug/L	98
60)	trans-1,3-Dichloropropene	12.73	75	793063	106.4420 ug/L	99
61)	1,1,2-Trichloroethane	12.94	97	418327	101.6330 ug/L	99
62)	2-Hexanone	12.86	43	314588	104.0648 ug/L	99
63)	1,3-Dichloropropane	13.21	76	685844	103.7610 ug/L	100
64)	Tetrachloroethene	13.34	164	550335	101.9528 ug/L	99
65)	Dibromochloromethane	13.59	129	681591	108.5659 ug/L	100
66)	1,2-Dibromoethane	13.82	107	427945	103.7729 ug/L	99
67)	1-Chlorohexane	13.89	91	807177	105.4730 ug/L	98
68)	Chlorobenzene	14.29	112	1705646	100.3046 ug/L	99
69)	1,1,1,2-Tetrachloroethane	14.32	131	704959	102.4557 ug/L	100
70)	Ethylbenzene	14.31	106	883839	101.3614 ug/L	99
71)	m-,p-Xylene	14.39	106	2123651	200.3333 ug/L	98
72)	o-Xylene	14.92	106	1053682	102.1356 ug/L	100
73)	Styrene	14.95	104	1807222	106.0282 ug/L	99
74)	Bromoform	15.43	173	412378	108.3755 ug/L	100
75)	Isopropylbenzene	15.31	105	2813193	103.1127 ug/L	99
77)	1,1,2,2-Tetrachloroethane	15.52	83	454052	105.7501 ug/L	99
79)	1,2,3-Trichloropropane	15.70	110	156532	96.8210 ug/L	100
80)	trans-1,4-Dichloro-2-Buten	15.74	53	203327	97.5343 ug/L	96
81)	n-Propylbenzene	15.79	91	3285915	102.9061 ug/L	99
82)	Bromobenzene	15.92	156	828973	98.9359 ug/L	99
83)	1,3,5-Trimethylbenzene	15.96	105	2483230	101.9102 ug/L	100
84)	2-Chlorotoluene	16.05	91	2208423	98.7437 ug/L	100
85)	4-Chlorotoluene	16.09	91	2020827	100.8710 ug/L	100
86)	a-Methylstyrene	16.34	118	1361545	105.9190 ug/L	99
87)	tert-Butylbenzene	16.40	134	532522	103.1540 ug/L	98
88)	1,2,4-Trimethylbenzene	16.44	105	2546912	102.6457 ug/L	100
89)	sec-Butylbenzene	16.65	105	3003570	102.6569 ug/L	99
90)	p-Isopropyltoluene	16.79	119	2763313	102.8241 ug/L	99
91)	1,3-Dichlorobenzene	16.98	146	1600684	98.9134 ug/L	100
92)	1,4-Dichlorobenzene	17.10	146	1605475	97.8762 ug/L	100
93)	n-Butylbenzene	17.28	91	2452438	103.5609 ug/L	100
94)	1,2-Dichlorobenzene	17.57	146	1481276	100.4827 ug/L	100
95)	1,2-Dibromo-3-Chloropropan	18.49	75	95062	97.5959 ug/L	99
96)	1,2,4-Trichlorobenzene	19.55	180	1100416	102.0133 ug/L	100
97)	Hexachlorobutadiene	19.69	225	486893	102.4572 ug/L	100
98)	Naphthalene	19.90	128	2071229	103.4477 ug/L	100
99)	1,2,3-Trichlorobenzene	20.19	180	980181	99.0092 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M11844.D 8260WT.M Sat May 14 18:50:58 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11844.D Vial: 9
Acq On : 13 May 2016 18:22 Operator: JDS
Sample : WG568769-09 100ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

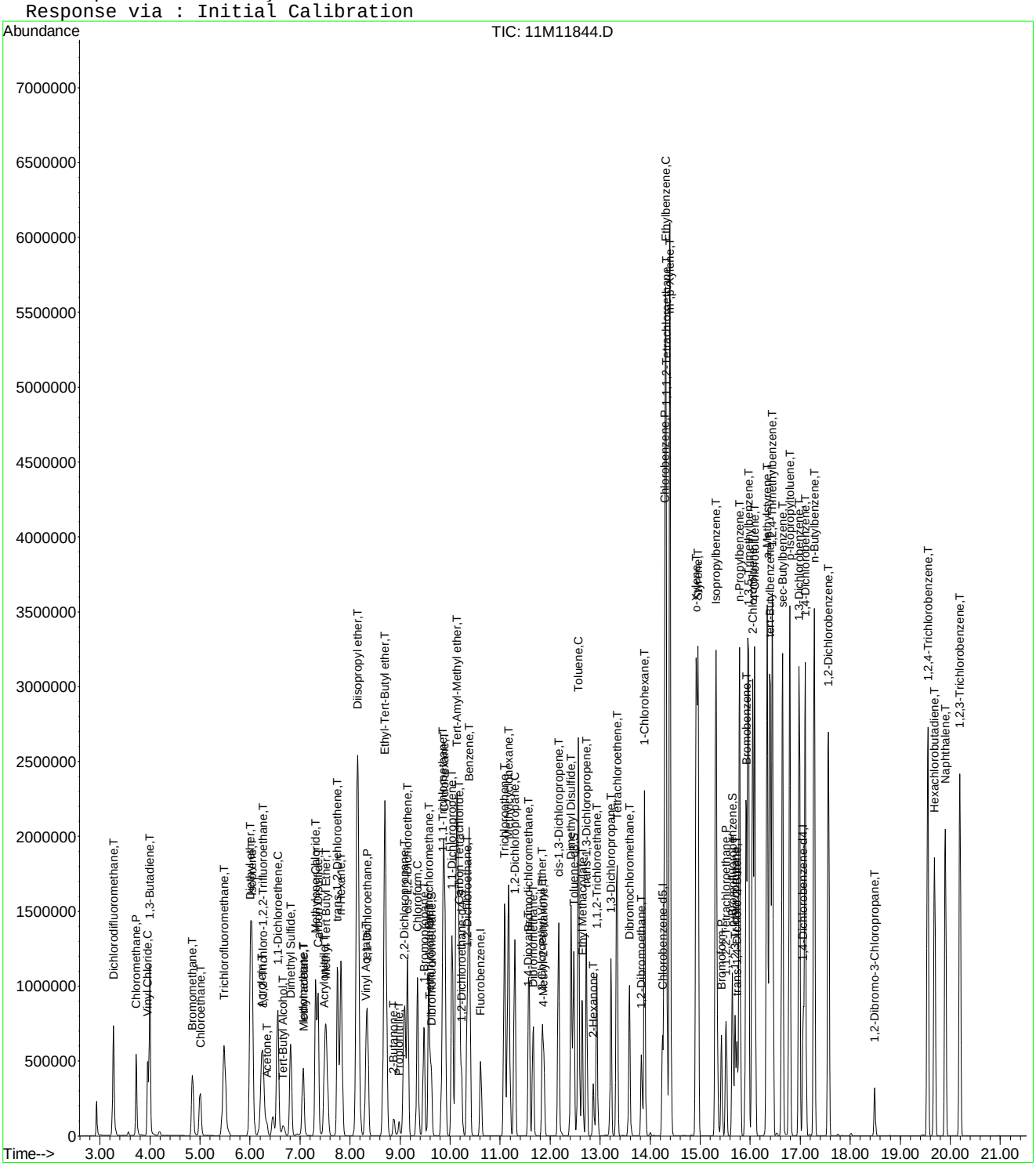

11M11844.D 8260WT.M Sat May 14 18:50:59 2016 Page 3

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11845.D Vial: 10
Acq On : 13 May 2016 18:54 Operator: JDS
Sample : WG568769-10 200ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:59 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	552905	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	473364	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	274188	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	629894	104.0960 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 416.40%#		
43) 1,2-Dichloroethane-d4	10.23	65	684792	99.2511 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 397.00%#		
57) Toluene-d8	12.47	98	2068111	100.5516 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 402.20%#		
78) p-Bromofluorobenzene	15.64	95	864999	102.3411 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 409.36%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	1843265	212.7741 ug/L	99
3) Chloromethane	3.72	50	1346993	194.1434 ug/L	100
4) Vinyl Chloride	3.95	62	1199147	208.1209 ug/L	100
5) 1,3-Butadiene	3.99	54	1131910	197.5677 ug/L	97
6) Bromomethane	4.85	94	859963	217.0771 ug/L	100
7) Chloroethane	5.00	64	764060	206.3883 ug/L	100
8) Trichlorofluoromethane	5.48	101	2275404	198.1327 ug/L	100
9) Diethyl ether	6.03	59	2592	0.6103 ug/L #	21
10) Isoprene	6.04	67	1435794	202.8369 ug/L	97
11) Acrolein	6.25	56	3061	6.8231 ug/L	88
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	1123889	201.6837 ug/L	99
13) Acetone	6.34	43	254053	193.5049 ug/L	96
14) 1,1-Dichloroethene	6.56	61	2040432	201.5858 ug/L	99
15) Tert-Butyl Alcohol	6.67	59	7729	21.2829 ug/L #	82
16) Dimethyl Sulfide	6.81	62	830179	205.3739 ug/L	99
17) Iodomethane	7.06	142	969857	206.1133 ug/L	99
18) Methyl acetate	7.07	43	749575	196.5068 ug/L	97
19) Methylene Chloride	7.31	84	1035656	197.7029 ug/L	97
20) Carbon Disulfide	7.36	76	3459748	204.1704 ug/L	99
21) Acrylonitrile	7.52	53	35662	20.2589 ug/L #	39
22) Methyl Tert Butyl Ether	7.52	73	2706665	207.1616 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	1121963	200.2808 ug/L	99
24) n-Hexane	7.82	57	1873652	200.8128 ug/L	99
25) Diisopropyl ether	8.16	45	16567	0.7116 ug/L #	87
26) Vinyl Acetate	8.31	43	1904053	202.8645 ug/L	100
27) 1,1-Dichloroethane	8.34	63	2261904	201.2314 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	9063	0.4783 ug/L	90
29) 2-Butanone	8.87	43	407543	205.3288 ug/L	99
30) Propionitrile	8.97	54	4182	7.1938 ug/L #	60
31) 2,2-Dichloropropane	9.09	77	1850091	210.3692 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	1257477	203.5843 ug/L	100
33) Chloroform	9.35	83	2160999	195.7739 ug/L	100
34) 1-Bromopropane	9.48	122	222798	201.1267 ug/L	98
35) Bromochloromethane	9.57	130	798076	217.5612 ug/L	99
36) Tetrahydrofuran	9.60	42	9110	6.4998 ug/L	97
38) 1,1,1-Trichloroethane	9.85	97	2208198	203.2875 ug/L	99
39) Cyclohexane	9.88	56	2467804	208.4625 ug/L	100
40) 1,1-Dichloropropene	10.04	75	1587009	204.6205 ug/L	99
41) Carbon Tetrachloride	10.18	117	2174730	205.0269 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	6538	0.4965 ug/L #	83

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11845.D Vial: 10
Acq On : 13 May 2016 18:54 Operator: JDS
Sample : WG568769-10 200ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50:59 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Compound	R.T.	QIon	Response	Conc Unit	Qvalue
44) 1,2-Dichloroethane	10.34	62	1808450	201.7209 ug/L	99
45) Benzene	10.38	78	4119227	194.0096 ug/L	99
46) Trichloroethene	11.09	130	1367103	198.0963 ug/L	100
47) Methylcyclohexane	11.17	83	1789256	210.0812 ug/L	99
48) 1,2-Dichloropropane	11.29	63	1196100	203.5109 ug/L	99
49) 1,4-Dioxane	11.57	88	2656	94.1370 ug/L #	31
50) Bromodichloromethane	11.58	83	1721733	208.6734 ug/L	99
51) Dibromomethane	11.66	93	641583	209.4825 ug/L	100
52) 2-Chloroethyl Vinyl Ether	11.84	63	608231	209.9748 ug/L	99
53) 4-Methyl-2-Pentanone	11.87	58	342251	209.4831 ug/L	99
54) cis-1,3-Dichloropropene	12.17	75	1772737	214.8108 ug/L	100
55) Dimethyl Disulfide	12.42	79	1052498	211.9395 ug/L	98
58) Toluene	12.56	91	4699240	196.0993 ug/L	98
59) Ethyl Methacrylate	12.65	69	1101451	215.2567 ug/L	97
60) trans-1,3-Dichloropropene	12.73	75	1627488	211.5866 ug/L	99
61) 1,1,2-Trichloroethane	12.93	97	860113	202.4133 ug/L	99
62) 2-Hexanone	12.86	43	651287	208.6888 ug/L	99
63) 1,3-Dichloropropane	13.21	76	1412360	206.9756 ug/L	99
64) Tetrachloroethene	13.34	164	1133410	203.3874 ug/L	99
65) Dibromochloromethane	13.59	129	1409248	217.4313 ug/L	99
66) 1,2-Dibromoethane	13.82	107	889951	209.0389 ug/L	99
67) 1-Chlorohexane	13.89	91	1659272	210.0173 ug/L	97
68) Chlorobenzene	14.29	112	3416597	194.6214 ug/L	98
69) 1,1,1,2-Tetrachloroethane	14.32	131	1457008	205.1158 ug/L	100
70) Ethylbenzene	14.31	106	1814385	201.5551 ug/L	91
71) m-,p-Xylene	14.39	106	4230307	386.5510 ug/L	85
72) o-Xylene	14.92	106	2156790	202.5071 ug/L	96
73) Styrene	14.96	104	3630570	206.3240 ug/L	98
74) Bromoform	15.43	173	854308	217.4778 ug/L	100
75) Isopropylbenzene	15.31	105	5485636	194.7621 ug/L	97
77) 1,1,2,2-Tetrachloroethane	15.52	83	939708	220.0830 ug/L	98
79) 1,2,3-Trichloropropane	15.70	110	325518	202.0716 ug/L	99
80) trans-1,4-Dichloro-2-Buten	15.74	53	421012	202.2796 ug/L	97
81) n-Propylbenzene	15.79	91	6220435	195.8952 ug/L	95
82) Bromobenzene	15.92	156	1685980	202.3412 ug/L	99
83) 1,3,5-Trimethylbenzene	15.96	105	4875063	201.1866 ug/L	97
84) 2-Chlorotoluene	16.05	91	4287026	192.7532 ug/L	98
85) 4-Chlorotoluene	16.09	91	4030756	202.3214 ug/L	98
86) a-Methylstyrene	16.34	118	2724122	213.1015 ug/L	98
87) tert-Butylbenzene	16.40	134	1075661	209.5280 ug/L	96
88) 1,2,4-Trimethylbenzene	16.44	105	4921395	199.4496 ug/L	97
89) sec-Butylbenzene	16.65	105	5740919	197.3104 ug/L	97
90) p-Isopropyltoluene	16.79	119	5274037	197.3451 ug/L	95
91) 1,3-Dichlorobenzene	16.98	146	3171808	197.0945 ug/L	99
92) 1,4-Dichlorobenzene	17.10	146	3145357	192.8244 ug/L	99
93) n-Butylbenzene	17.28	91	4684496	198.9203 ug/L	97
94) 1,2-Dichlorobenzene	17.57	146	2909224	198.4498 ug/L	99
95) 1,2-Dibromo-3-Chloropropan	18.49	75	191088	196.6217 ug/L	99
96) 1,2,4-Trichlorobenzene	19.55	180	2198003	204.9021 ug/L	99
97) Hexachlorobutadiene	19.69	225	969160	205.0797 ug/L	99
98) Naphthalene	19.90	128	3994903	200.6399 ug/L	98
99) 1,2,3-Trichlorobenzene	20.19	180	1999949	203.1452 ug/L	99

(#) = qualifier out of range (m) = manual integration
11M11845.D 8260WT.M Sat May 14 18:51:00 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11845.D Vial: 10
Acq On : 13 May 2016 18:54 Operator: JDS
Sample : WG568769-10 200ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:50 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

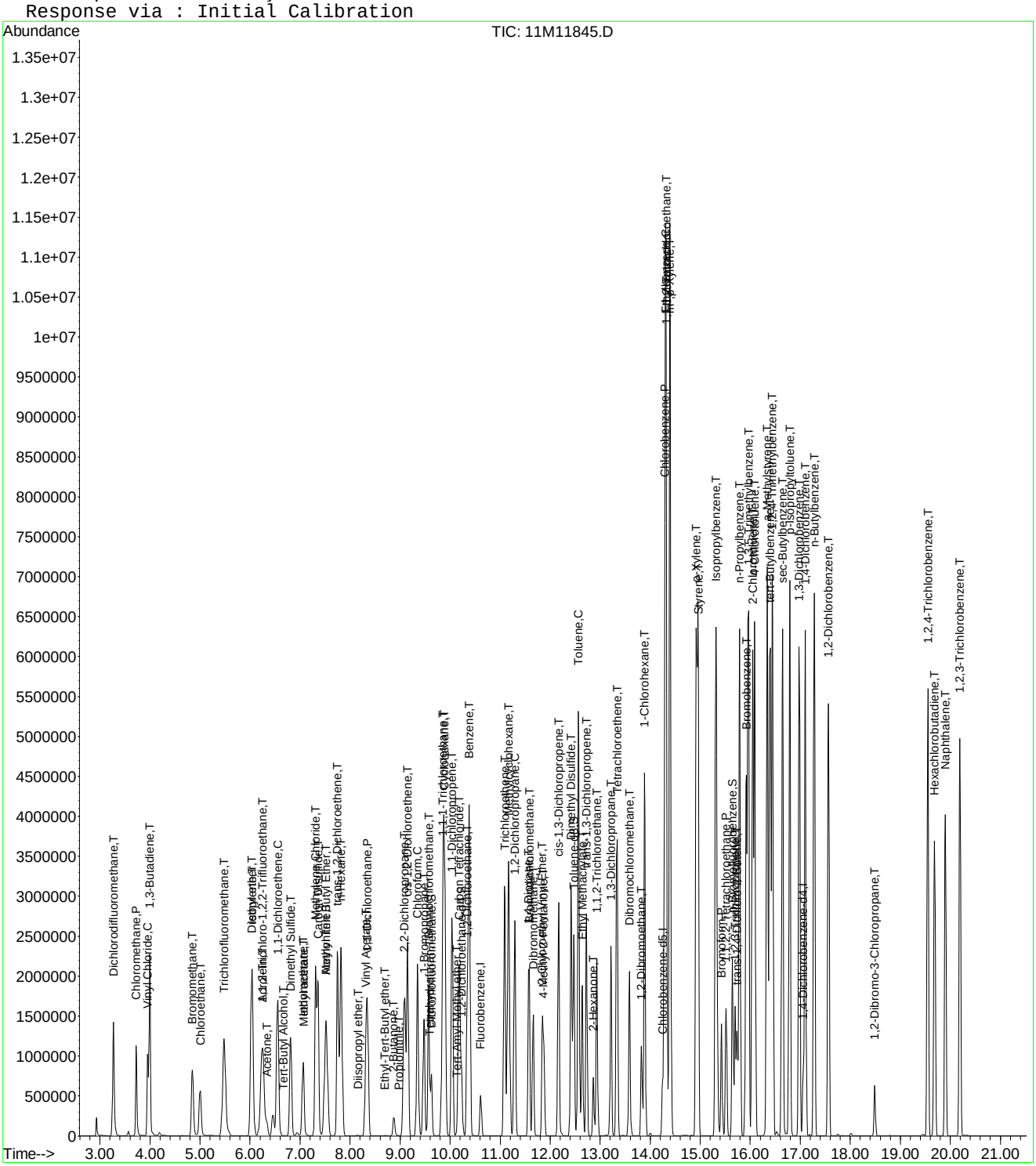

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11846.D Vial: 11
Acq On : 13 May 2016 19:26 Operator: JDS
Sample : WG568769-11 300ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:51:01 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	543599	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	479542	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	277309	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	905755	152.2472 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 609.00%#		
43) 1,2-Dichloroethane-d4	10.23	65	970758	143.1066 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 572.44%#		
57) Toluene-d8	12.47	98	3002456	144.0987 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 576.40%#		
78) p-Bromofluorobenzene	15.64	95	1285822	150.4179 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 601.68%#		

Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	2762707	324.3678 ug/L	99
3) Chloromethane	3.72	50	2113477	309.8323 ug/L	100
4) Vinyl Chloride	3.95	62	1802126	318.1269 ug/L	100
5) 1,3-Butadiene	3.99	54	1562377	277.3715 ug/L	98
6) Bromomethane	4.85	94	1341865	344.5204 ug/L	100
7) Chloroethane	5.00	64	1181546	324.6236 ug/L	100
8) Trichlorofluoromethane	5.48	101	3351045	296.7904 ug/L	99
9) Diethyl ether	6.01	59	1250668	299.5049 ug/L	97
10) Isoprene	6.04	67	2121830	304.8859 ug/L	97
11) Acrolein	6.23	56	87016	155.2272 ug/L	99
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	1679276	306.5076 ug/L	99
13) Acetone	6.34	43	352141	272.8074 ug/L	95
14) 1,1-Dichloroethene	6.56	61	3009080	302.3733 ug/L	98
15) Tert-Butyl Alcohol	6.67	59	227782	637.9680 ug/L	97
16) Dimethyl Sulfide	6.81	62	1199487	301.8151 ug/L	96
17) Iodomethane	7.06	142	1359092	295.3515 ug/L	96
18) Methyl acetate	7.07	43	1093862	303.3719 ug/L	97
19) Methylene Chloride	7.31	84	1550974	301.1438 ug/L	91
20) Carbon Disulfide	7.36	76	5025219	301.6304 ug/L	99
21) Acrylonitrile	7.49	53	292311	168.8994 ug/L	94
22) Methyl Tert Butyl Ether	7.52	73	3880019	302.0512 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	1693308	307.4459 ug/L	98
24) n-Hexane	7.82	57	2752540	300.0599 ug/L	99
25) Diisopropyl ether	8.15	45	6621718	289.2841 ug/L	99
26) Vinyl Acetate	8.31	43	2814279	303.7518 ug/L	99
27) 1,1-Dichloroethane	8.34	63	3313473	299.8312 ug/L	98
28) Ethyl-Tert-Butyl ether	8.70	59	5508427	295.6672 ug/L	99
29) 2-Butanone	8.87	43	590742	302.7235 ug/L	97
30) Propionitrile	8.99	54	177454	310.4771 ug/L	98
31) 2,2-Dichloropropane	9.09	77	2735421	316.3626 ug/L	99
32) cis-1,2-Dichloroethene	9.15	96	1856543	305.7181 ug/L	98
33) Chloroform	9.35	83	3144758	289.7739 ug/L	100
34) 1-Bromopropane	9.48	122	329211	301.9597 ug/L	98
35) Bromochloromethane	9.57	130	1179409	327.0194 ug/L	97
36) Tetrahydrofuran	9.60	42	386389	280.3985 ug/L	96
38) 1,1,1-Trichloroethane	9.85	97	3227247	302.1877 ug/L	99
39) Cyclohexane	9.88	56	3625895	311.5332 ug/L	99
40) 1,1-Dichloropropene	10.04	75	2360605	309.5743 ug/L	100
41) Carbon Tetrachloride	10.18	117	3172921	304.2542 ug/L	99
42) Tert-Amyl-Methyl ether	10.13	73	3912691	302.2388 ug/L	97

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11846.D Vial: 11
Acq On : 13 May 2016 19:26 Operator: JDS
Sample : WG568769-11 300ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:51:01 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc Unit		Qvalue
44)	1,2-Dichloroethane	10.34	62	2551762	289.5052 ug/L		98
45)	Benzene	10.38	78	5961793	285.5987 ug/L		97
46)	Trichloroethene	11.09	130	2025948	298.5901 ug/L		99
47)	Methylcyclohexane	11.17	83	2657028	317.3092 ug/L		98
48)	1,2-Dichloropropane	11.29	63	1781372	308.2809 ug/L		96
49)	1,4-Dioxane	11.56	88	21540	607.7372 ug/L		100
50)	Bromodichloromethane	11.57	83	2511276	309.5762 ug/L		100
51)	Dibromomethane	11.65	93	939605	312.0413 ug/L		99
52)	2-Chloroethyl Vinyl Ether	11.84	63	879534	308.8327 ug/L		100
53)	4-Methyl-2-Pentanone	11.87	58	505191	314.5081 ug/L		99
54)	cis-1,3-Dichloropropene	12.17	75	2604960	321.0589 ug/L		99
55)	Dimethyl Disulfide	12.42	79	1529785	313.3234 ug/L		99
58)	Toluene	12.56	91	6613670	272.4329 ug/L		95
59)	Ethyl Methacrylate	12.65	69	1618015	312.1351 ug/L		94
60)	trans-1,3-Dichloropropene	12.73	75	2369133	304.0383 ug/L		98
61)	1,1,2-Trichloroethane	12.93	97	1271039	295.2644 ug/L		98
62)	2-Hexanone	12.86	43	950079	300.5074 ug/L		97
63)	1,3-Dichloropropane	13.21	76	2062188	298.3119 ug/L		97
64)	Tetrachloroethene	13.34	164	1691190	299.5697 ug/L		98
65)	Dibromochloromethane	13.59	129	2065480	314.5750 ug/L		100
66)	1,2-Dibromoethane	13.82	107	1334668	309.4588 ug/L		99
67)	1-Chlorohexane	13.89	91	2483371	310.2757 ug/L		95
68)	Chlorobenzene	14.29	112	4911463	276.1698 ug/L		96
69)	1,1,1,2-Tetrachloroethane	14.32	131	2161701	300.4009 ug/L		100
70)	Ethylbenzene	14.31	106	2715675	297.7904 ug/L		79
71)	m-,p-Xylene	14.39	106	6004062	541.5626 ug/L		73
72)	o-Xylene	14.92	106	3202500	296.8179 ug/L		90
73)	Styrene	14.96	104	5278134	296.0902 ug/L		96
74)	Bromoform	15.43	173	1313245	330.0007 ug/L		100
75)	Isopropylbenzene	15.31	105	7610374	266.7178 ug/L		92
77)	1,1,2,2-Tetrachloroethane	15.52	83	1470787	340.5868 ug/L		97
79)	1,2,3-Trichloropropane	15.70	110	494041	303.0514 ug/L		98
80)	trans-1,4-Dichloro-2-Buten	15.74	53	640812	304.0444 ug/L		94
81)	n-Propylbenzene	15.79	91	8405785	261.7374 ug/L		88
82)	Bromobenzene	15.92	156	2530711	300.3025 ug/L		98
83)	1,3,5-Trimethylbenzene	15.96	105	6851753	279.5793 ug/L		93
84)	2-Chlorotoluene	16.05	91	6055423	269.1996 ug/L		95
85)	4-Chlorotoluene	16.09	91	5712933	283.5299 ug/L		94
86)	a-Methylstyrene	16.34	118	4020347	310.9625 ug/L		96
87)	tert-Butylbenzene	16.40	134	1654009	318.5583 ug/L		89
88)	1,2,4-Trimethylbenzene	16.44	105	6879061	275.6504 ug/L		91
89)	sec-Butylbenzene	16.65	105	7999374	271.8373 ug/L		92
90)	p-Isopropyltoluene	16.79	119	7406083	274.0036 ug/L		90
91)	1,3-Dichlorobenzene	16.98	146	4679194	287.4903 ug/L		97
92)	1,4-Dichlorobenzene	17.10	146	4642399	281.3967 ug/L		96
93)	n-Butylbenzene	17.28	91	6723928	282.3084 ug/L		93
94)	1,2-Dichlorobenzene	17.57	146	4360022	294.0672 ug/L		96
95)	1,2-Dibromo-3-Chloropropan	18.49	75	302346	307.2381 ug/L		100
96)	1,2,4-Trichlorobenzene	19.55	180	3482946	321.0328 ug/L		97
97)	Hexachlorobutadiene	19.69	225	1629665	340.9652 ug/L		98
98)	Naphthalene	19.90	128	5970381	296.4815 ug/L	#	96
99)	1,2,3-Trichlorobenzene	20.19	180	3137470	315.1025 ug/L		98

(#) = qualifier out of range (m) = manual integration

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11846.D Vial: 11
Acq On : 13 May 2016 19:26 Operator: JDS
Sample : WG568769-11 300ug/L ICAL STD 8260 Inst : hpms11
Misc : 1,1 STD76127 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:51 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

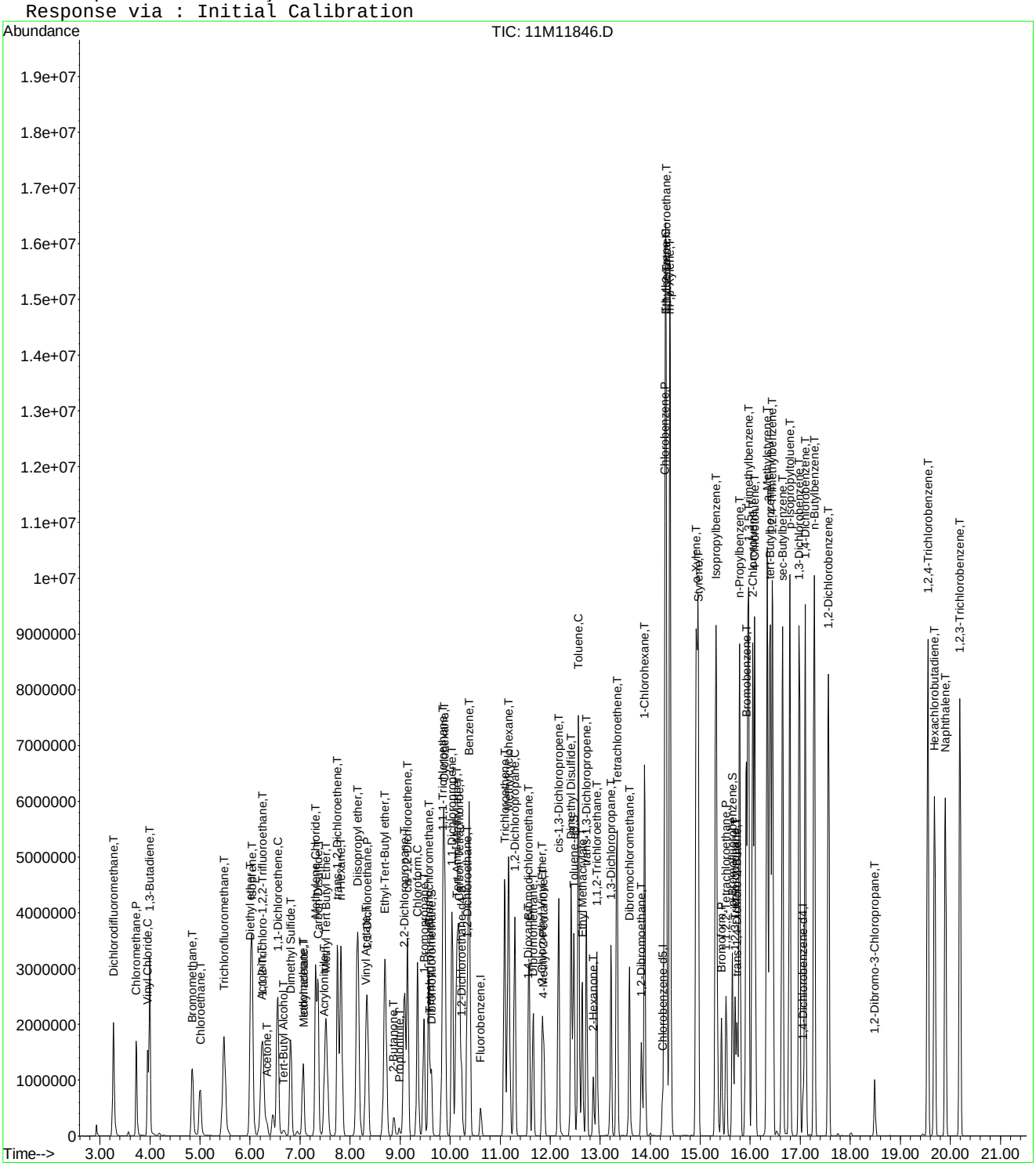

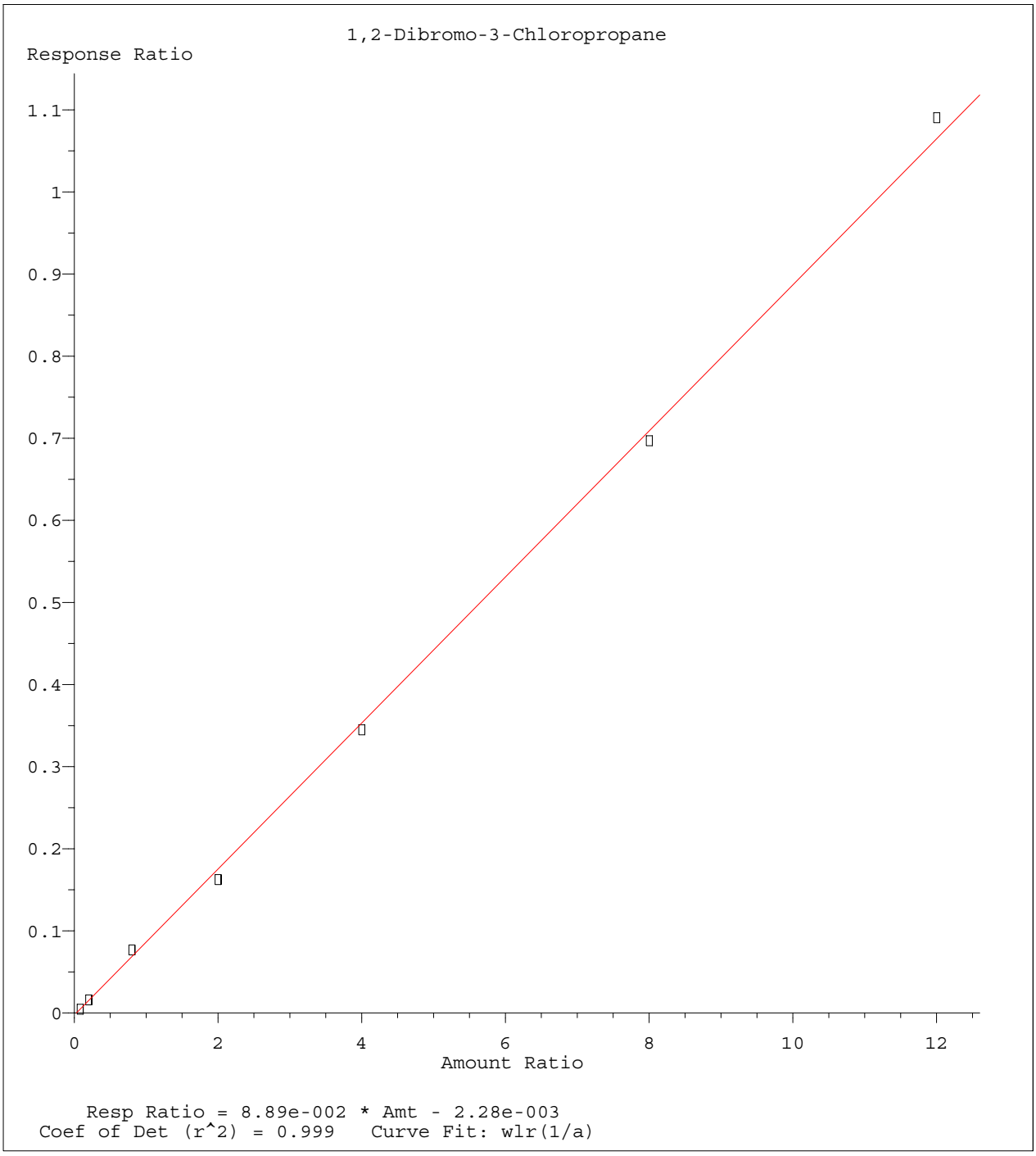

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

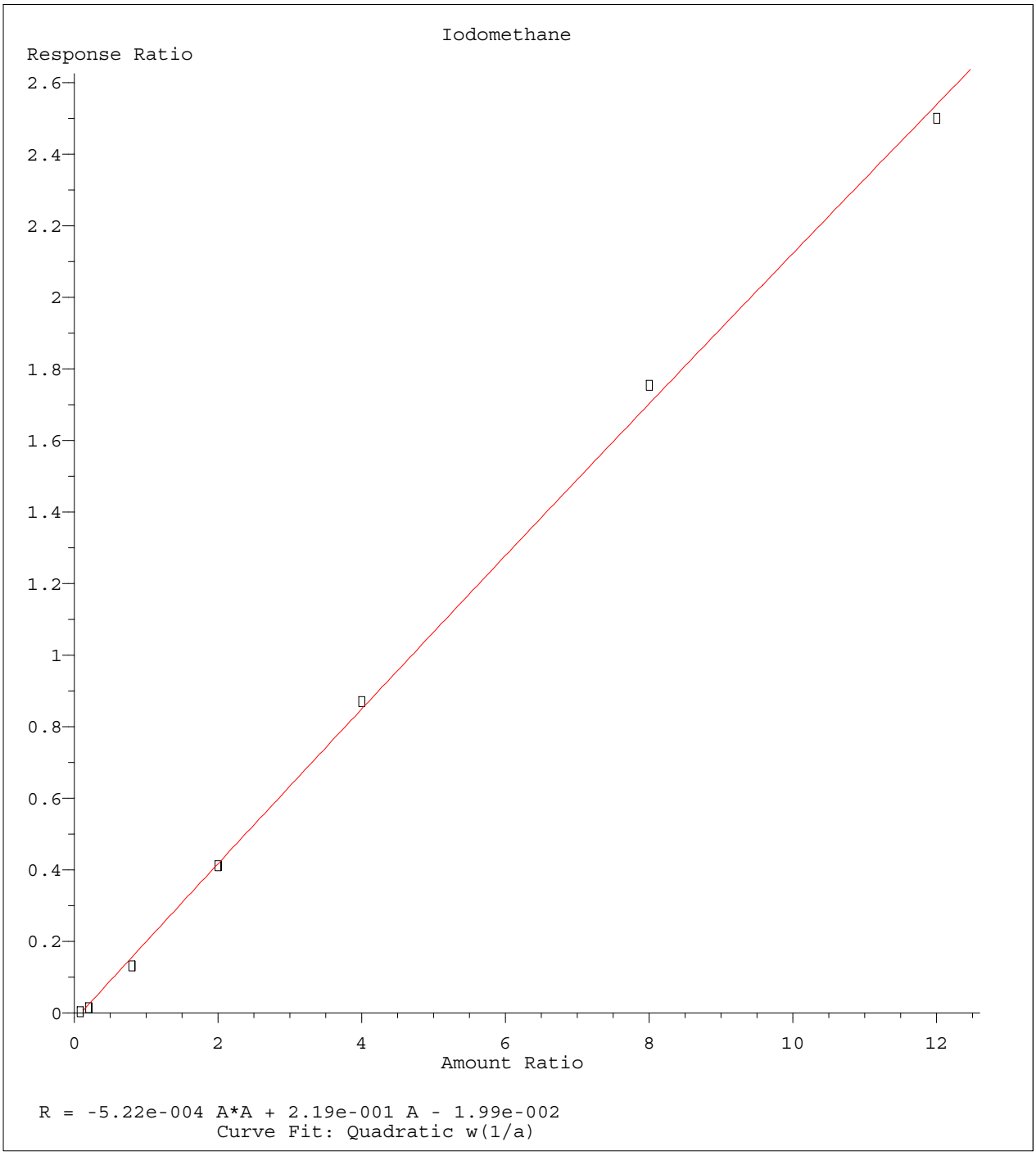

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

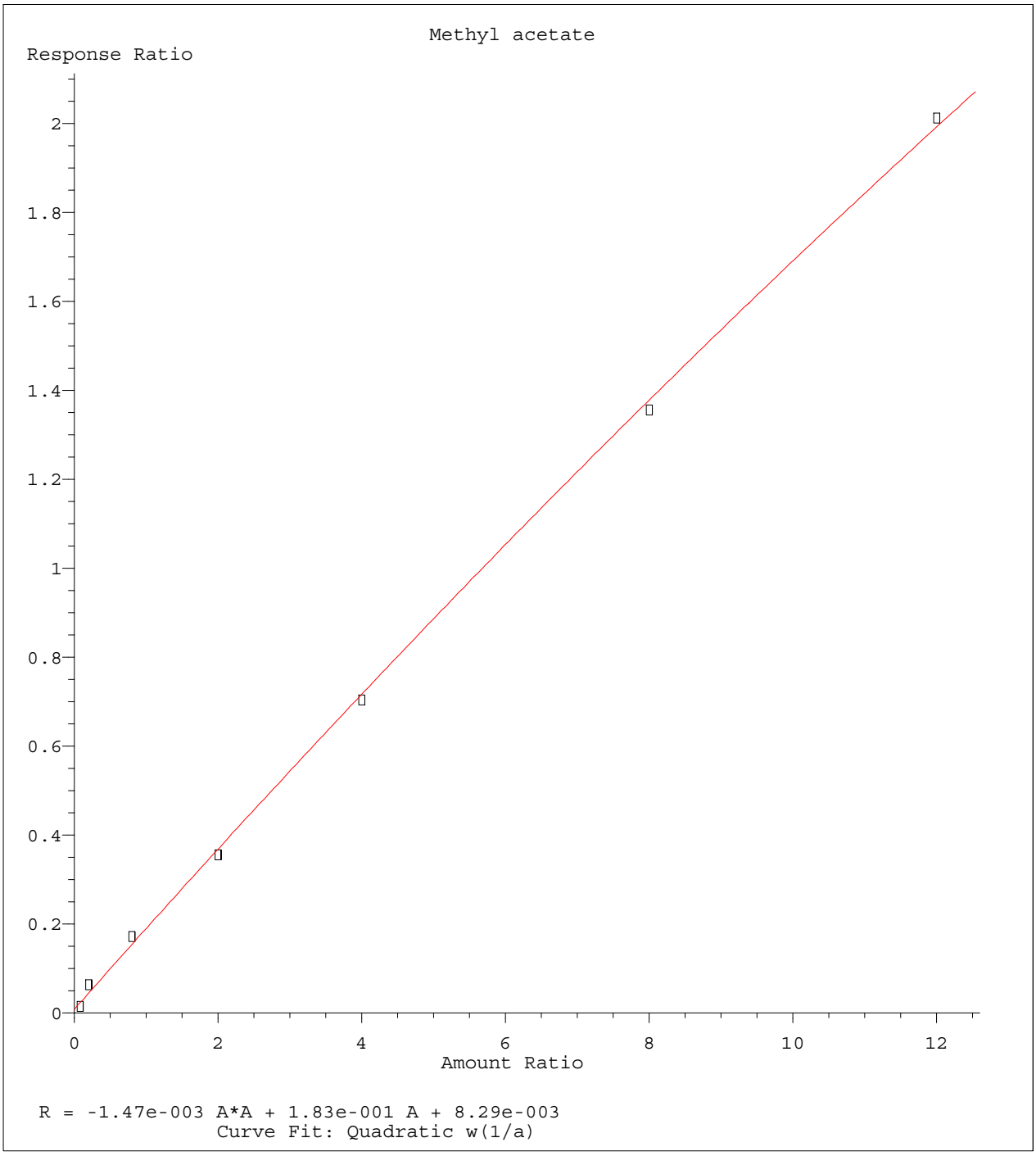

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

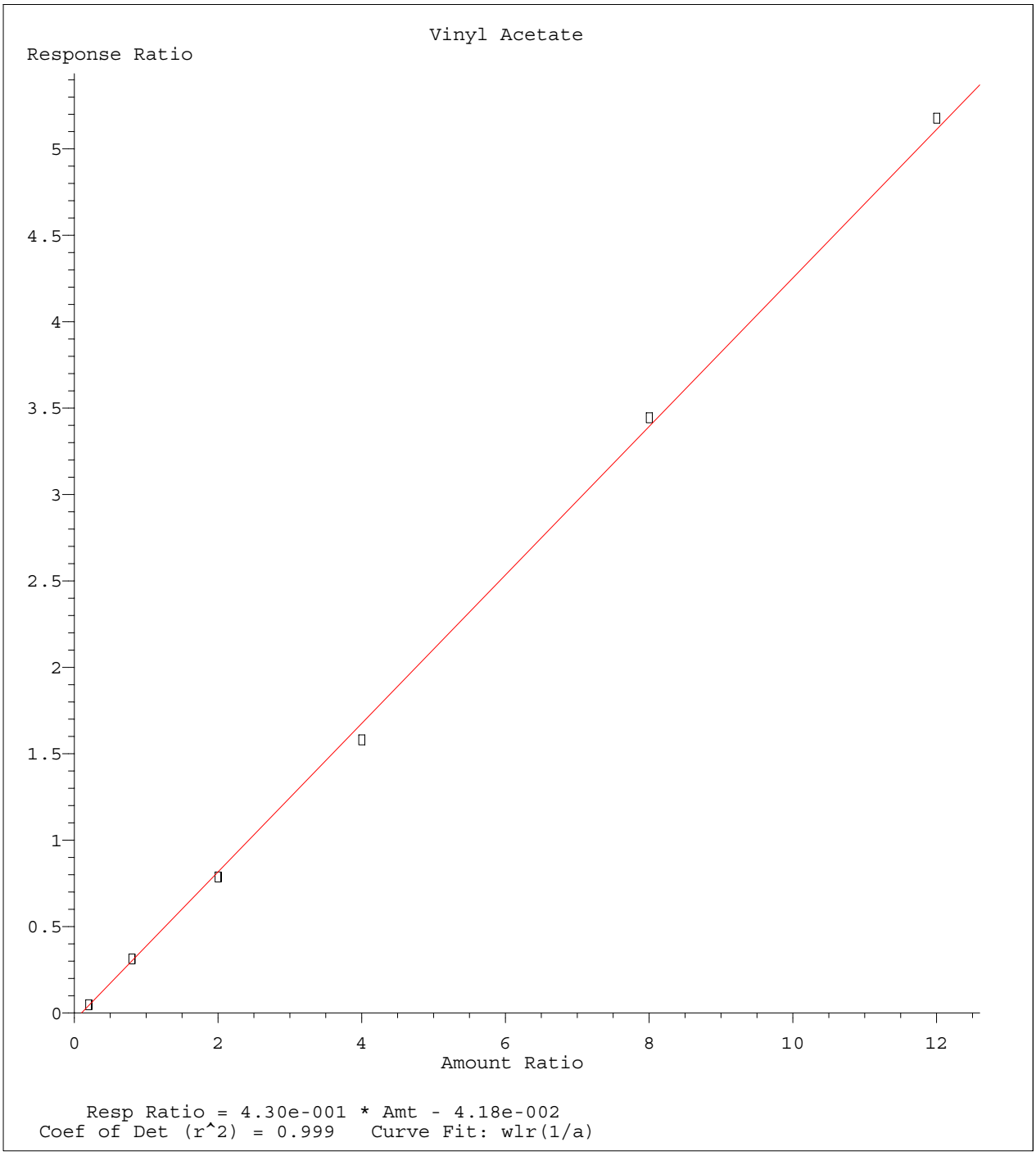

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

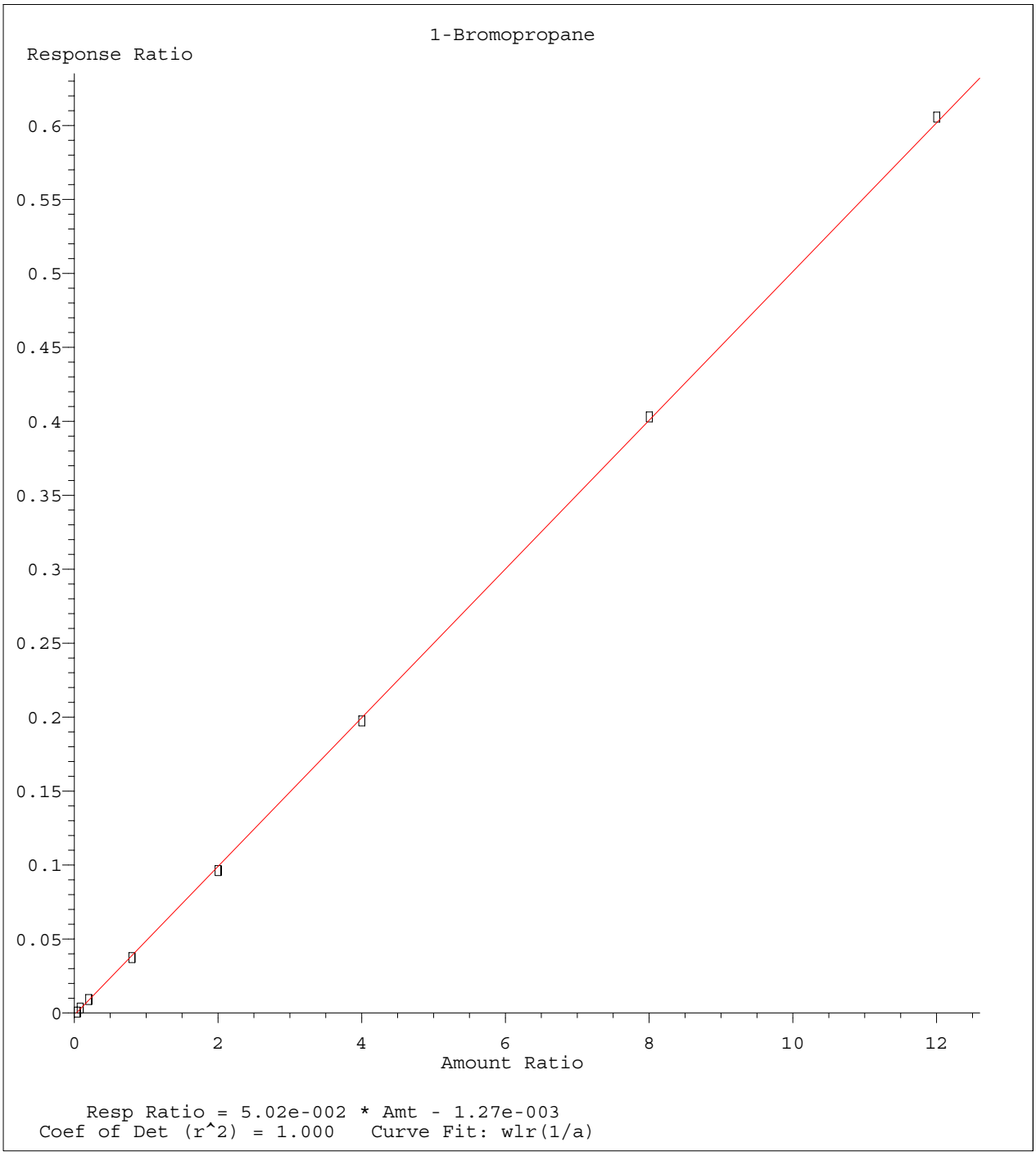

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

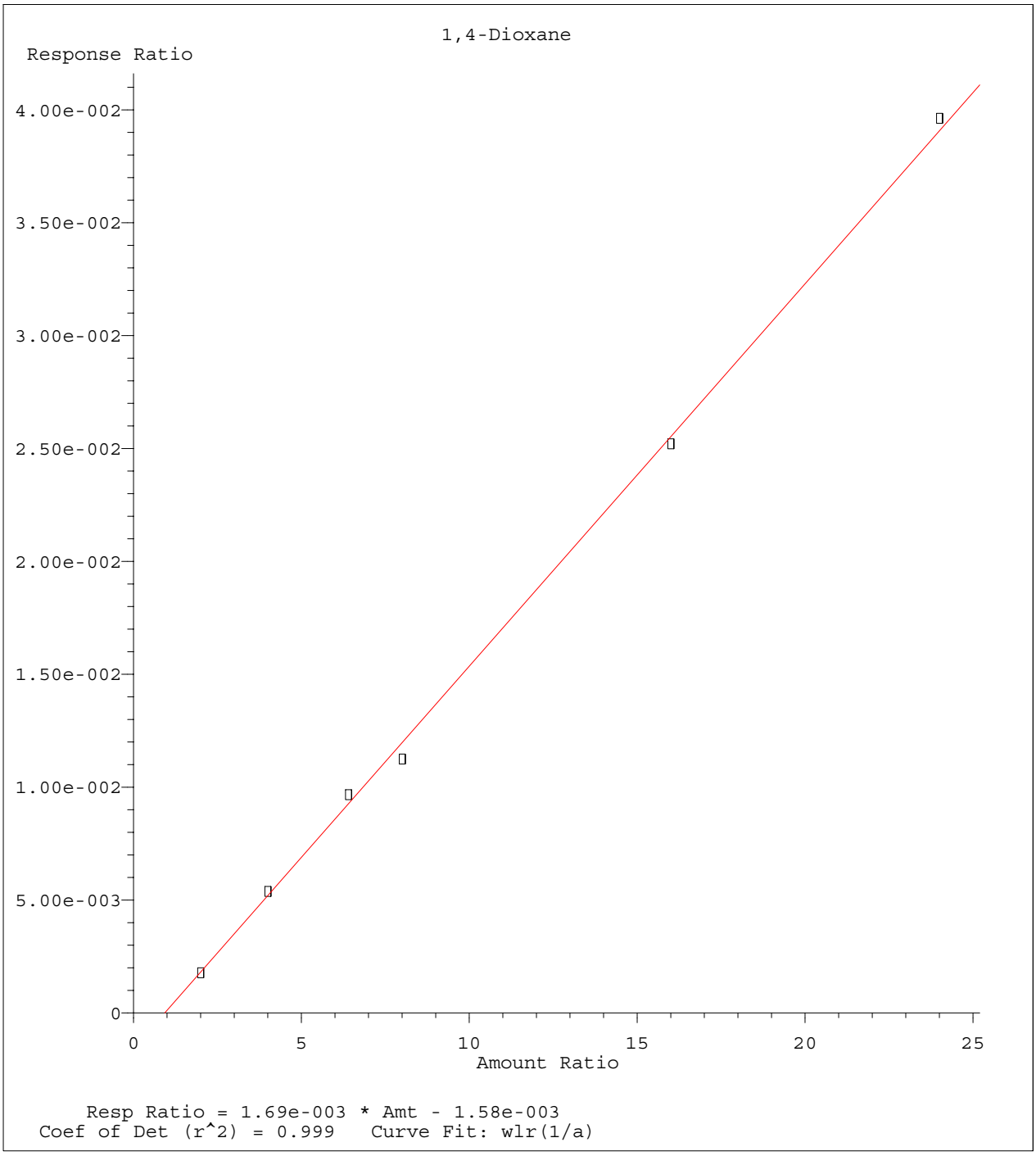

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

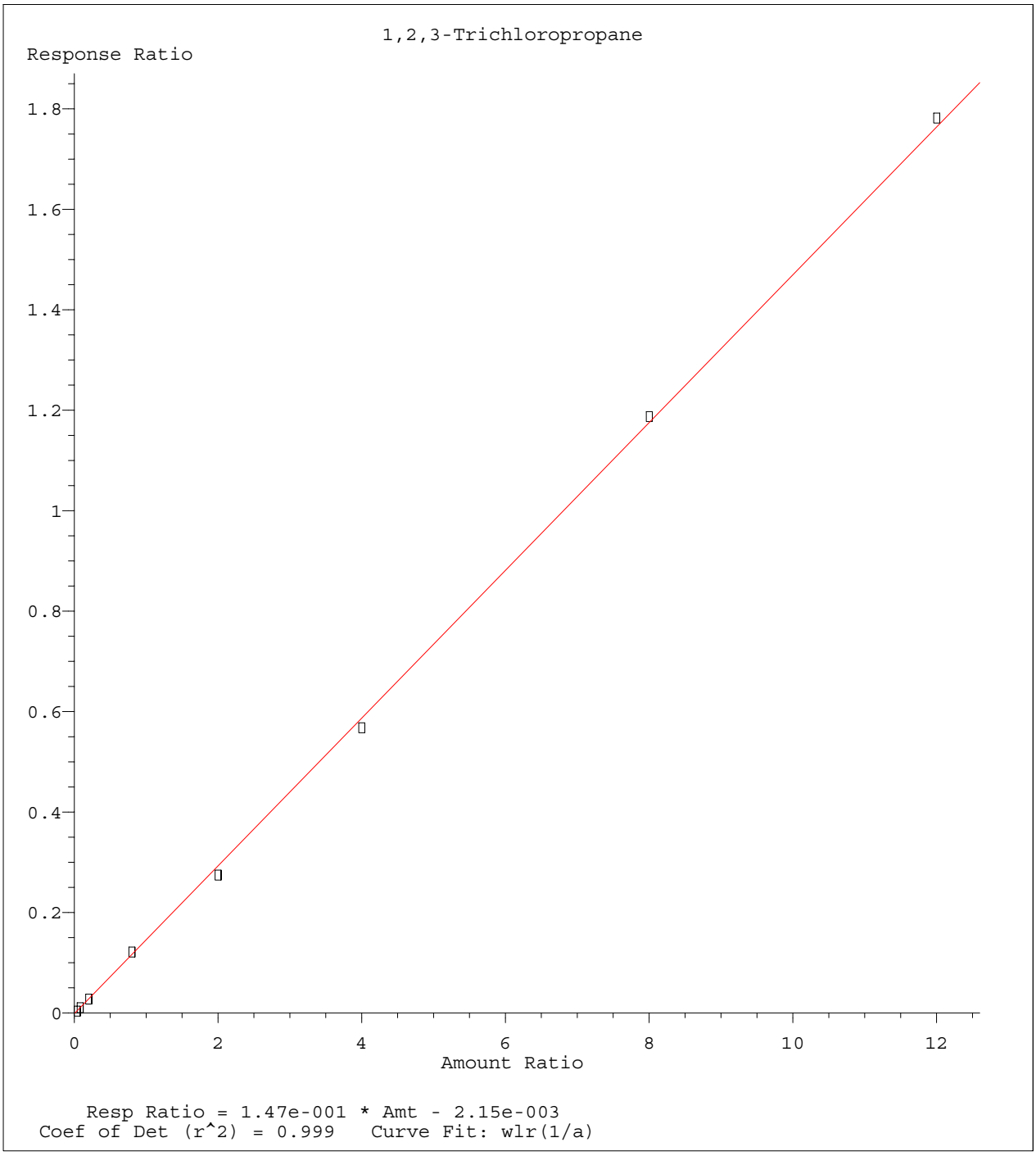

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

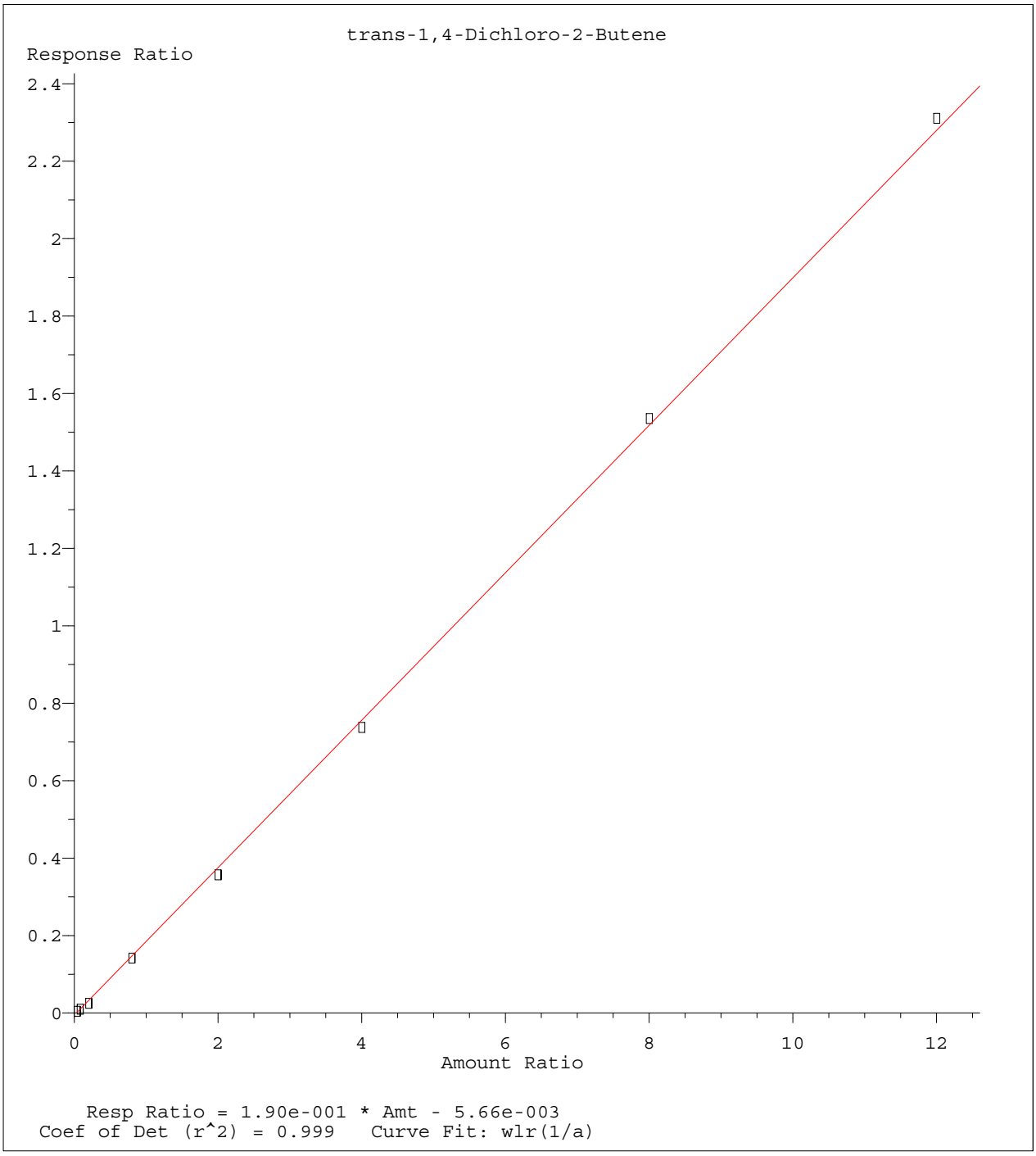

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

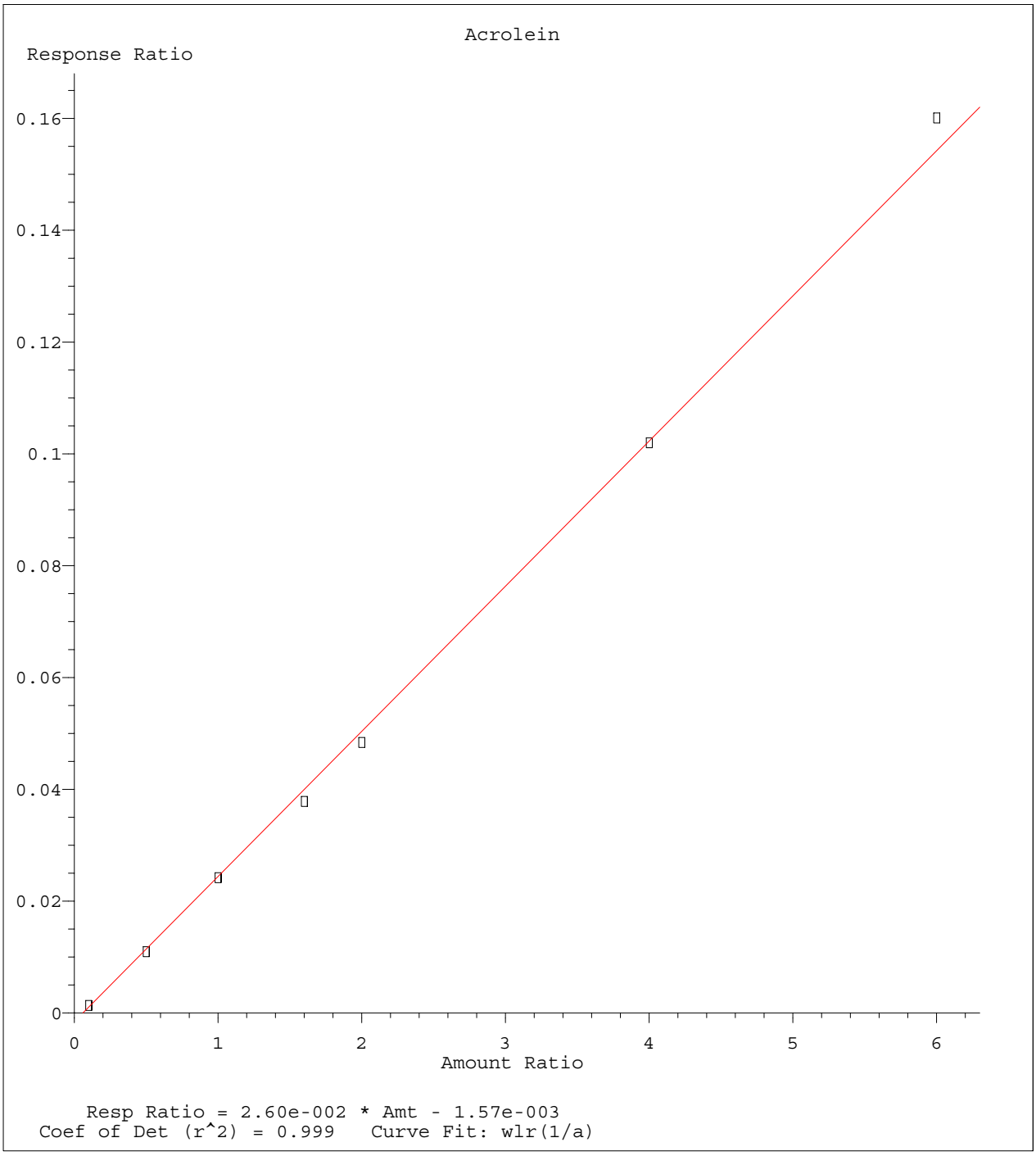

Method Name: C:\MSDCHEM\1\METHODS\8260WT.M
Calibration Table Last Updated: Sat May 14 18:45:57 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:47:09 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	559172	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	461765	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	267551	25.00 ug/L	0.00
System Monitoring Compounds					
37) Dibromofluoromethane	9.63	111	155853	25.4675 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.88%		
43) 1,2-Dichloroethane-d4	10.23	65	160000	22.9299 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 91.72%		
57) Toluene-d8	12.47	98	531547	26.4930 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 105.96%		
78) p-Bromofluorobenzene	15.64	95	203747	24.7040 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 98.80%		
Target Compounds					Qvalue
2) Dichlorodifluoromethane	3.27	85	495777	56.5878 ug/L	98
3) Chloromethane	3.72	50	386673	55.1069 ug/L	100
4) Vinyl Chloride	3.95	62	326996	56.1165 ug/L	100
5) 1,3-Butadiene	3.99	54	212443	36.6650 ug/L	98
6) Bromomethane	4.84	94	202280	50.4885 ug/L	99
7) Chloroethane	5.00	64	220373	58.8601 ug/L	99
8) Trichlorofluoromethane	5.48	101	552017	47.5286 ug/L	99
9) Diethyl ether	6.01	59	453011	105.4639 ug/L	97
10) Isoprene	6.04	67	388108	54.2141 ug/L	93
11) Acrolein	6.23	56	56029	97.7296 ug/L	98
12) 1,1,2-Trichloro-1,2,2-Trif	6.25	101	292836	51.9609 ug/L	99
13) Acetone	6.35	43	65954	49.6723 ug/L	97
14) 1,1-Dichloroethene	6.55	61	486567	47.5319 ug/L	96
15) Tert-Butyl Alcohol	6.67	59	79387	216.1534 ug/L	96
16) Dimethyl Sulfide	6.81	62	290204	70.9875 ug/L	94
17) Iodomethane	7.06	142	176766	38.4128 ug/L	92
18) Methyl acetate	7.07	43	200985	48.7416 ug/L	98
19) Methylene Chloride	7.31	84	275442	51.9916 ug/L	91
20) Carbon Disulfide	7.35	76	765803	44.6859 ug/L	99
21) Acrylonitrile	7.49	53	93674	52.6181 ug/L	100
22) Methyl Tert Butyl Ether	7.52	73	687029	51.9942 ug/L	100
23) trans-1,2-Dichloroethene	7.74	96	295337	52.1295 ug/L	97
24) n-Hexane	7.82	57	420811	44.5959 ug/L	99
25) Diisopropyl ether	8.15	45	2449232	104.0201 ug/L	98
26) Vinyl Acetate	8.31	43	395913	43.6417 ug/L	99
27) 1,1-Dichloroethane	8.34	63	551372	48.5033 ug/L	99
28) Ethyl-Tert-Butyl ether	8.70	59	1884917	98.3560 ug/L	99
29) 2-Butanone	8.87	43	101045	50.3380 ug/L	98
30) Propionitrile	8.99	54	62190	105.7785 ug/L	98
31) 2,2-Dichloropropane	9.09	77	405332	45.5727 ug/L	100
32) cis-1,2-Dichloroethene	9.15	96	332086	53.1618 ug/L	94
33) Chloroform	9.35	83	531122	47.5773 ug/L	100
34) 1-Bromopropane	9.48	122	76460	68.6656 ug/L	96
35) Bromochloromethane	9.57	130	199933	53.8923 ug/L	96
36) Tetrahydrofuran	9.60	42	131835	93.0068 ug/L	96
38) 1,1,1-Trichloroethane	9.85	97	527857	48.0501 ug/L	99
39) Cyclohexane	9.88	56	601180	50.2142 ug/L	99
40) 1,1-Dichloropropene	10.04	75	393057	50.1107 ug/L	100
41) Carbon Tetrachloride	10.18	117	507914	47.3479 ug/L	100
42) Tert-Amyl-Methyl ether	10.13	73	1406419	105.6143 ug/L	97

(#) = qualifier out of range (m) = manual integration
11M11848.D 8260WT.M Sat May 14 18:47:10 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:47:09 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

	Compound	R.T.	QIon	Response	Conc	Unit	Qvalue
44)	1,2-Dichloroethane	10.34	62	434117	47.8802	ug/L	99
45)	Benzene	10.38	78	1098993	51.1808	ug/L	100
46)	Trichloroethene	11.08	130	365193	52.3242	ug/L	99
47)	Methylcyclohexane	11.17	83	450581	52.3110	ug/L	97
48)	1,2-Dichloropropane	11.29	63	313901	52.8102	ug/L	94
49)	1,4-Dioxane	11.56	88	6366	191.2043	ug/L	95
50)	Bromodichloromethane	11.57	83	413329	49.5339	ug/L	99
51)	Dibromomethane	11.65	93	148822	48.0471	ug/L	97
52)	2-Chloroethyl Vinyl Ether	11.84	63	152083	51.9140	ug/L	99
53)	4-Methyl-2-Pentanone	11.87	58	86849	52.5623	ug/L	99
54)	cis-1,3-Dichloropropene	12.17	75	480729	57.5993	ug/L	99
55)	Dimethyl Disulfide	12.42	79	261188	52.0055	ug/L	96
58)	Toluene	12.56	91	1256481	53.7500	ug/L	100
59)	Ethyl Methacrylate	12.65	69	284944	57.0854	ug/L	90
60)	trans-1,3-Dichloropropene	12.73	75	391013	52.1118	ug/L	97
61)	1,1,2-Trichloroethane	12.93	97	218717	52.7643	ug/L	99
62)	2-Hexanone	12.86	43	158873	52.1857	ug/L	98
63)	1,3-Dichloropropane	13.21	76	374611	56.2767	ug/L	95
64)	Tetrachloroethene	13.34	164	283714	52.1906	ug/L	97
65)	Dibromochloromethane	13.59	129	332092	52.5252	ug/L	99
66)	1,2-Dibromoethane	13.82	107	218604	52.6373	ug/L	99
67)	1-Chlorohexane	13.89	91	420217	54.5237	ug/L	92
68)	Chlorobenzene	14.29	112	912650	53.2936	ug/L	100
69)	1,1,1,2-Tetrachloroethane	14.32	131	353663	51.0389	ug/L	98
70)	Ethylbenzene	14.31	106	460093	52.3943	ug/L	99
71)	m-,p-Xylene	14.39	106	1144896	107.2445	ug/L	98
72)	o-Xylene	14.92	106	568307	54.7003	ug/L	100
73)	Styrene	14.95	104	943635	54.9735	ug/L	98
74)	Bromoform	15.43	173	190959	49.8328	ug/L	99
75)	Isopropylbenzene	15.31	105	1490416	54.2449	ug/L	100
77)	1,1,2,2-Tetrachloroethane	15.52	83	228913	54.9422	ug/L	100
79)	1,2,3-Trichloropropane	15.70	110	78385	50.1407	ug/L	92
80)	trans-1,4-Dichloro-2-Buten	15.74	53	73730	36.9129	ug/L	62
81)	n-Propylbenzene	15.79	91	1753049	56.5769	ug/L	99
82)	Bromobenzene	15.92	156	419932	51.6479	ug/L	99
83)	1,3,5-Trimethylbenzene	15.95	105	1303495	55.1277	ug/L	99
84)	2-Chlorotoluene	16.05	91	1145029	52.7599	ug/L	99
85)	4-Chlorotoluene	16.09	91	1077116	55.4064	ug/L	99
86)	a-Methylstyrene	16.34	118	741671	59.4584	ug/L	99
87)	tert-Butylbenzene	16.40	134	283244	56.5417	ug/L	95
88)	1,2,4-Trimethylbenzene	16.44	105	1296091	53.8297	ug/L	99
89)	sec-Butylbenzene	16.65	105	1586978	55.8961	ug/L	100
90)	p-Isopropyltoluene	16.79	119	1426648	54.7069	ug/L	99
91)	1,3-Dichlorobenzene	16.98	146	827515	52.6969	ug/L	98
92)	1,4-Dichlorobenzene	17.10	146	844174	53.0354	ug/L	98
93)	n-Butylbenzene	17.28	91	1238500	53.8957	ug/L	99
94)	1,2-Dichlorobenzene	17.57	146	766416	53.5772	ug/L	98
95)	1,2-Dibromo-3-Chloropropan	18.49	75	45158	48.1046	ug/L	97
96)	1,2,4-Trichlorobenzene	19.55	180	580278	55.4365	ug/L	99
97)	Hexachlorobutadiene	19.69	225	257859	55.9180	ug/L	98
98)	Naphthalene	19.90	128	993390	51.1296	ug/L	100
99)	1,2,3-Trichlorobenzene	20.19	180	519374	54.0642	ug/L	99

(#) = qualifier out of range (m) = manual integration
11M11848.D 8260WT.M Sat May 14 18:47:10 2016 Page 2

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: May 14 18:47 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

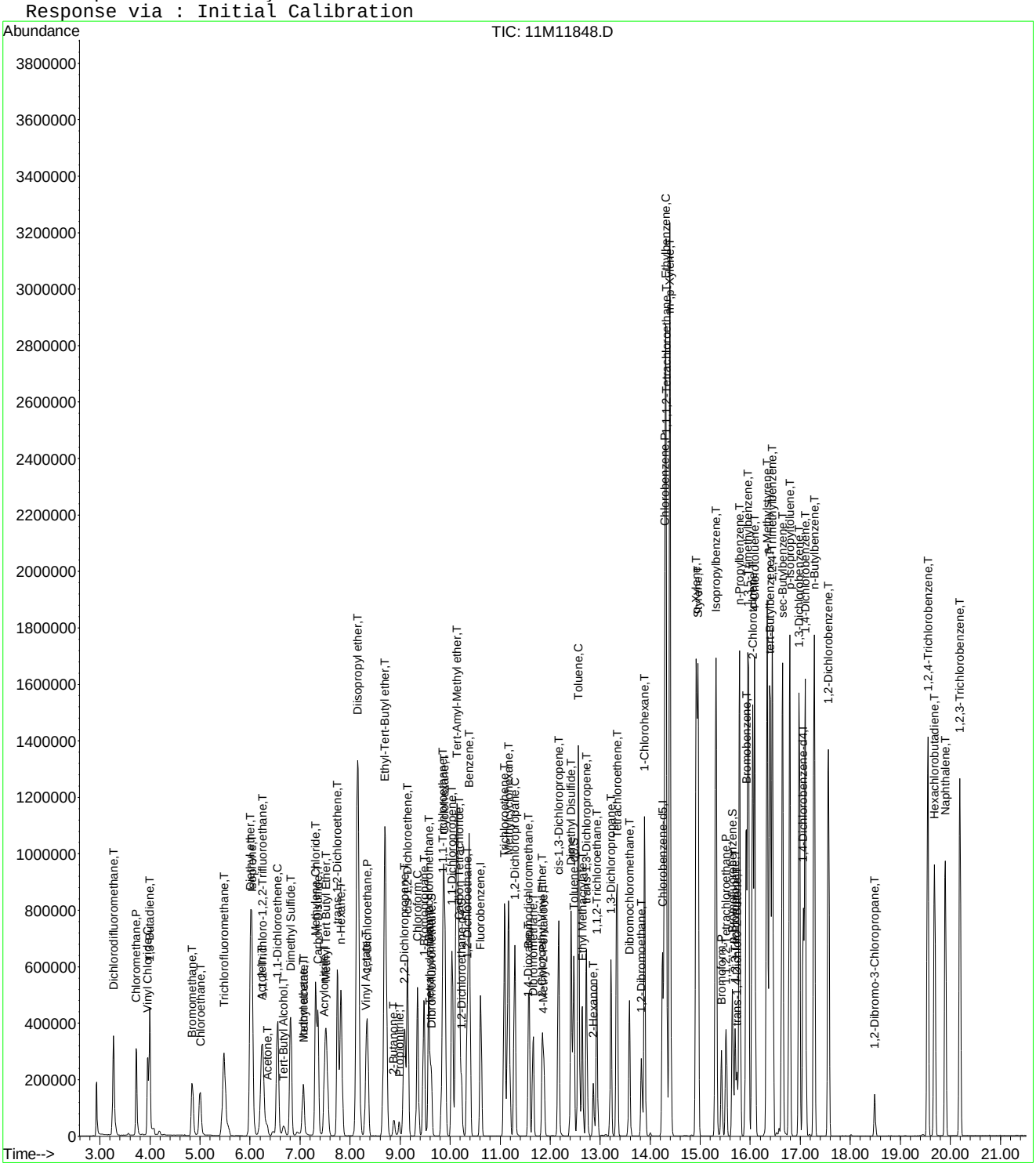

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	Fluorobenzene	25.0000	25.0000	0.0	107	0.00
2	T	Dichlorodifluoromethane	50.0000	56.5878	-13.2	119	0.00
3	P	Chloromethane	50.0000	55.1069	-10.2	134	0.00
4	C	Vinyl Chloride	50.0000	56.1165	-12.2	125	-0.01
5	T	1,3-Butadiene	50.0000	36.6650	26.7#	76	-0.01
6	T	Bromomethane	50.0000	50.4885	-1.0	117	-0.01
7	T	Chloroethane	50.0000	58.8601	-17.7	131	0.00
8	T	Trichlorofluoromethane	50.0000	47.5286	4.9	106	0.00
9	T	Diethyl ether	100.0000	105.4639	-5.5	116	0.00
10	T	Isoprene	50.0000	54.2141	-8.4	117	0.00
11	T	Acrolein	50.0000	97.7296	-95.5#	222	0.00
12	T	1,1,2-Trichloro-1,2,2-Trifl	50.0000	51.9609	-3.9	115	0.00
13	T	Acetone	50.0000	49.6723	0.7	110	0.01
14	C	1,1-Dichloroethene	50.0000	47.5320	4.9	106	-0.01
15	T	Tert-Butyl Alcohol	200.0000	216.1534	-8.1	114	0.01
16	T	Dimethyl Sulfide	50.0000	70.9875	-42.0#	150	0.00
17	T	Iodomethane	50.0000	38.4128	23.2	82	0.00
18	T	Methyl acetate	50.0000	48.7416	2.5	108	0.01
19	T	Methylene Chloride	50.0000	51.9916	-4.0	118	0.00
20	T	Carbon Disulfide	50.0000	44.6859	10.6	94	-0.01
21	T	Acrylonitrile	50.0000	52.6181	-5.2	110	0.00
22	T	Methyl Tert Butyl Ether	50.0000	51.9942	-4.0	113	0.00
23	T	trans-1,2-Dichloroethene	50.0000	52.1295	-4.3	117	0.00
24	T	n-Hexane	50.0000	44.5959	10.8	94	0.00
25	T	Diisopropyl ether	100.0000	104.0201	-4.0	112	0.00
26	T	Vinyl Acetate	50.0000	43.6417	12.7	96	0.00
27	P	1,1-Dichloroethane	50.0000	48.5033	3.0	107	0.00
28	T	Ethyl-Tert-Butyl ether	100.0000	98.3560	1.6	106	0.00
29	T	2-Butanone	50.0000	50.3381	-0.7	111	0.00
30	T	Propionitrile	100.0000	105.7786	-5.8	110	0.01
31	T	2,2-Dichloropropane	50.0000	45.5727	8.9	101	0.00
32	T	cis-1,2-Dichloroethene	50.0000	53.1618	-6.3	118	0.00
33	C	Chloroform	50.0000	47.5773	4.8	108	0.00
34	T	1-Bromopropane	50.0000	68.6656	-37.3#	152	0.00
35	T	Bromochloromethane	50.0000	53.8923	-7.8	111	0.00
36	T	Tetrahydrofuran	100.0000	93.0068	7.0	103	0.00
37	S	Dibromofluoromethane	25.0000	25.4675	-1.9	111	0.00
38	T	1,1,1-Trichloroethane	50.0000	48.0501	3.9	106	0.00
39	T	Cyclohexane	50.0000	50.2142	-0.4	105	0.00
40	T	1,1-Dichloropropene	50.0000	50.1107	-0.2	111	0.00
41	T	Carbon Tetrachloride	50.0000	47.3479	5.3	103	0.00
42	T	Tert-Amyl-Methyl ether	100.0000	105.6143	-5.6	115	0.00
43	S	1,2-Dichloroethane-d4	25.0000	22.9299	8.3	101	0.00
44	T	1,2-Dichloroethane	50.0000	47.8802	4.2	104	0.00
45	T	Benzene	50.0000	51.1809	-2.4	116	0.00
46	T	Trichloroethene	50.0000	52.3242	-4.6	119	-0.01
47	T	Methylcyclohexane	50.0000	52.3110	-4.6	108	0.00
48	C	1,2-Dichloropropane	50.0000	52.8102	-5.6	117	0.00
49	T	1,4-Dioxane	200.0000	191.2043	4.4	109	0.01
50	T	Bromodichloromethane	50.0000	49.5339	0.9	107	0.00
51	T	Dibromomethane	50.0000	48.0471	3.9	104	0.00
52	T	2-Chloroethyl Vinyl Ether	50.0000	51.9140	-3.8	114	0.00
53	T	4-Methyl-2-Pentanone	50.0000	52.5623	-5.1	115	0.00
54	T	cis-1,3-Dichloropropene	50.0000	57.5993	-15.2	122	0.00

(#) = Out of Range

Evaluate Continuing Calibration Report

Data File : C:\MSDCHEM\1\DATA\051316\11M11848.D Vial: 13
Acq On : 13 May 2016 20:30 Operator: JDS
Sample : WG568769-12 50ug/L ALT SRC STD 8260 Inst : hpms11
Misc : 1,1 STD76109 Multiplr: 1.00
MS Integration Params: rteint.p

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
55	T	Dimethyl Disulfide	50.0000	52.0055	-4.0	110	0.00
56	I	Chlorobenzene-d5	25.0000	25.0000	0.0	105	0.00
57	S	Toluene-d8	25.0000	26.4930	-6.0	115	0.00
58	C	Toluene	50.0000	53.7500	-7.5	115	0.00
59	T	Ethyl Methacrylate	50.0000	57.0854	-14.2	114	0.00
60	T	trans-1,3-Dichloropropene	50.0000	52.1118	-4.2	107	0.00
61	T	1,1,2-Trichloroethane	50.0000	52.7643	-5.5	113	0.00
62	T	2-Hexanone	50.0000	52.1857	-4.4	110	0.00
63	T	1,3-Dichloropropane	50.0000	56.2767	-12.6	118	0.00
64	T	Tetrachloroethene	50.0000	52.1906	-4.4	113	0.00
65	T	Dibromochloromethane	50.0000	52.5251	-5.1	107	0.00
66	T	1,2-Dibromoethane	50.0000	52.6373	-5.3	111	0.00
67	T	1-Chlorohexane	50.0000	54.5237	-9.0	112	0.00
68	P	Chlorobenzene	50.0000	53.2936	-6.6	114	0.00
69	T	1,1,1,2-Tetrachloroethane	50.0000	51.0388	-2.1	109	0.00
70	C	Ethylbenzene	50.0000	52.3943	-4.8	113	0.00
71	T	m-,p-Xylene	100.0000	107.2445	-7.2	115	0.00
72	T	o-Xylene	50.0000	54.7003	-9.4	115	0.00
73	T	Styrene	50.0000	54.9735	-9.9	113	0.00
74	P	Bromoform	50.0000	49.8327	0.3	104	0.00
75	T	Isopropylbenzene	50.0000	54.2449	-8.5	114	0.00
76	I	1,4-Dichlorobenzene-d4	25.0000	25.0000	0.0	101	0.00
77	P	1,1,2,2-Tetrachloroethane	50.0000	54.9422	-9.9	110	0.00
78	S	p-Bromofluorobenzene	25.0000	24.7040	1.2	108	0.00
79	T	1,2,3-Trichloropropane	50.0000	50.1407	-0.3	108	0.00
80	T	trans-1,4-Dichloro-2-Butene	50.0000	36.9129	26.2#	78	0.00
81	T	n-Propylbenzene	50.0000	56.5769	-13.2	115	0.00
82	T	Bromobenzene	50.0000	51.6479	-3.3	111	0.00
83	T	1,3,5-Trimethylbenzene	50.0000	55.1277	-10.3	114	-0.01
84	T	2-Chlorotoluene	50.0000	52.7599	-5.5	112	0.00
85	T	4-Chlorotoluene	50.0000	55.4064	-10.8	116	0.00
86	T	a-Methylstyrene	50.0000	59.4584	-18.9	114	0.00
87	T	tert-Butylbenzene	50.0000	56.5417	-13.1	117	0.00
88	T	1,2,4-Trimethylbenzene	50.0000	53.8297	-7.7	110	0.00
89	T	sec-Butylbenzene	50.0000	55.8961	-11.8	114	0.00
90	T	p-Isopropyltoluene	50.0000	54.7069	-9.4	111	0.00
91	T	1,3-Dichlorobenzene	50.0000	52.6969	-5.4	112	0.00
92	T	1,4-Dichlorobenzene	50.0000	53.0354	-6.1	114	0.00
93	T	n-Butylbenzene	50.0000	53.8957	-7.8	110	0.00
94	T	1,2-Dichlorobenzene	50.0000	53.5772	-7.2	112	0.00
95	T	1,2-Dibromo-3-Chloropropane	50.0000	48.1046	3.8	105	0.00
96	T	1,2,4-Trichlorobenzene	50.0000	55.4365	-10.9	113	0.00
97	T	Hexachlorobutadiene	50.0000	55.9180	-11.8	118	0.00
98	T	Naphthalene	50.0000	51.1296	-2.3	103	0.00
99	T	1,2,3-Trichlorobenzene	50.0000	54.0642	-8.1	114	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

2.1.1.5 Raw QC Data

BFB

```
Data File : C:\MSDCHEM\1\DATA\051316\11M11836.D          Vial: 2
Acq On    : 13 May 2016  14:15                        Operator: JDS
Sample    : WG568769-01 50ng BFB STD 8260             Inst    : hpms11
Misc      : 1,1 STD76034                              Multiplr: 1.00
MS Integration Params: rteint.p
Method    : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title     : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
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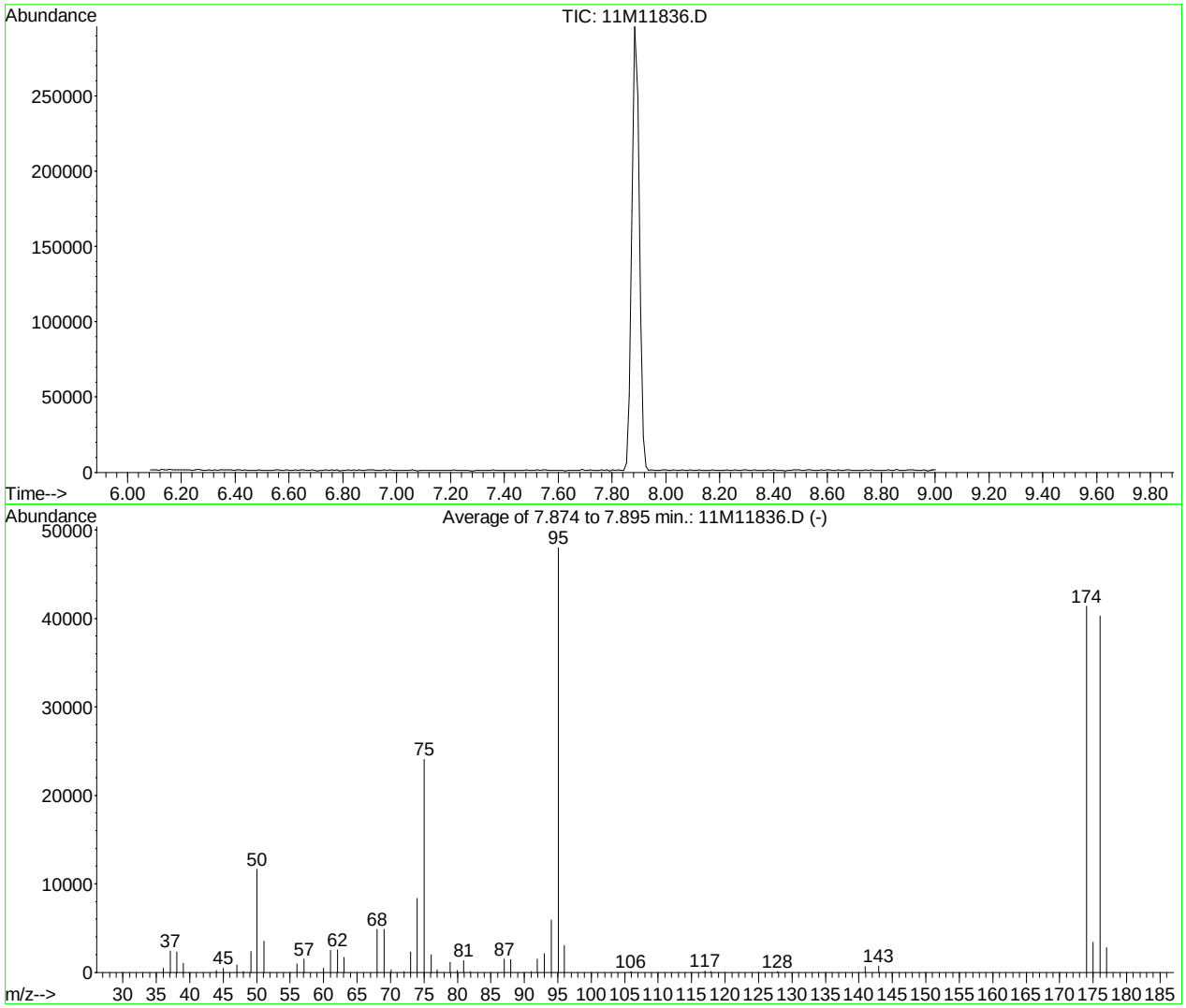

AutoFind: Scans 174, 175, 176; Background Corrected with Scan 169

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	15	40	24.2	11638	PASS
75	95	30	60	50.2	24088	PASS
95	95	100	100	100.0	48016	PASS
96	95	5	9	6.3	3008	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	100	86.2	41402	PASS
175	174	5	9	8.3	3421	PASS
176	174	95	101	97.3	40288	PASS
177	176	5	9	6.9	2789	PASS

11M11836.D 8260WT.M Tue May 17 14:18:03 2016

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062216\11M12803.D Vial: 6
Acq On : 22 Jun 2016 17:47 Operator: JDS
Sample : WG573776-01 BLANK STD 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 24 14:57:41 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	634960	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	558566	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	320378	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	175648	25.2763 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 101.12%		
43) 1,2-Dichloroethane-d4	10.23	65	185042	23.3535 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 93.40%		
57) Toluene-d8	12.47	98	606105	24.9737 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 99.88%		
78) p-Bromofluorobenzene	15.64	95	228605	23.1476 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 92.60%		

Target Compounds					Qvalue
3) Chloromethane	3.71	50	1290	0.1619 ug/L	100
6) Bromomethane	4.85	94	1156	0.2541 ug/L	88
13) Acetone	6.36	43	196	0.1300 ug/L #	49
16) Dimethyl Sulfide	6.81	62	689	0.1484 ug/L #	1
36) Tetrahydrofuran	9.60	42	1673	1.0394 ug/L #	63

(#) = qualifier out of range (m) = manual integration
11M12803.D 8260WT.M Fri Jun 24 14:57:42 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062216\11M12803.D Vial: 6
Acq On : 22 Jun 2016 17:47 Operator: JDS
Sample : WG573776-01 BLANK STD 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 24 14:57 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

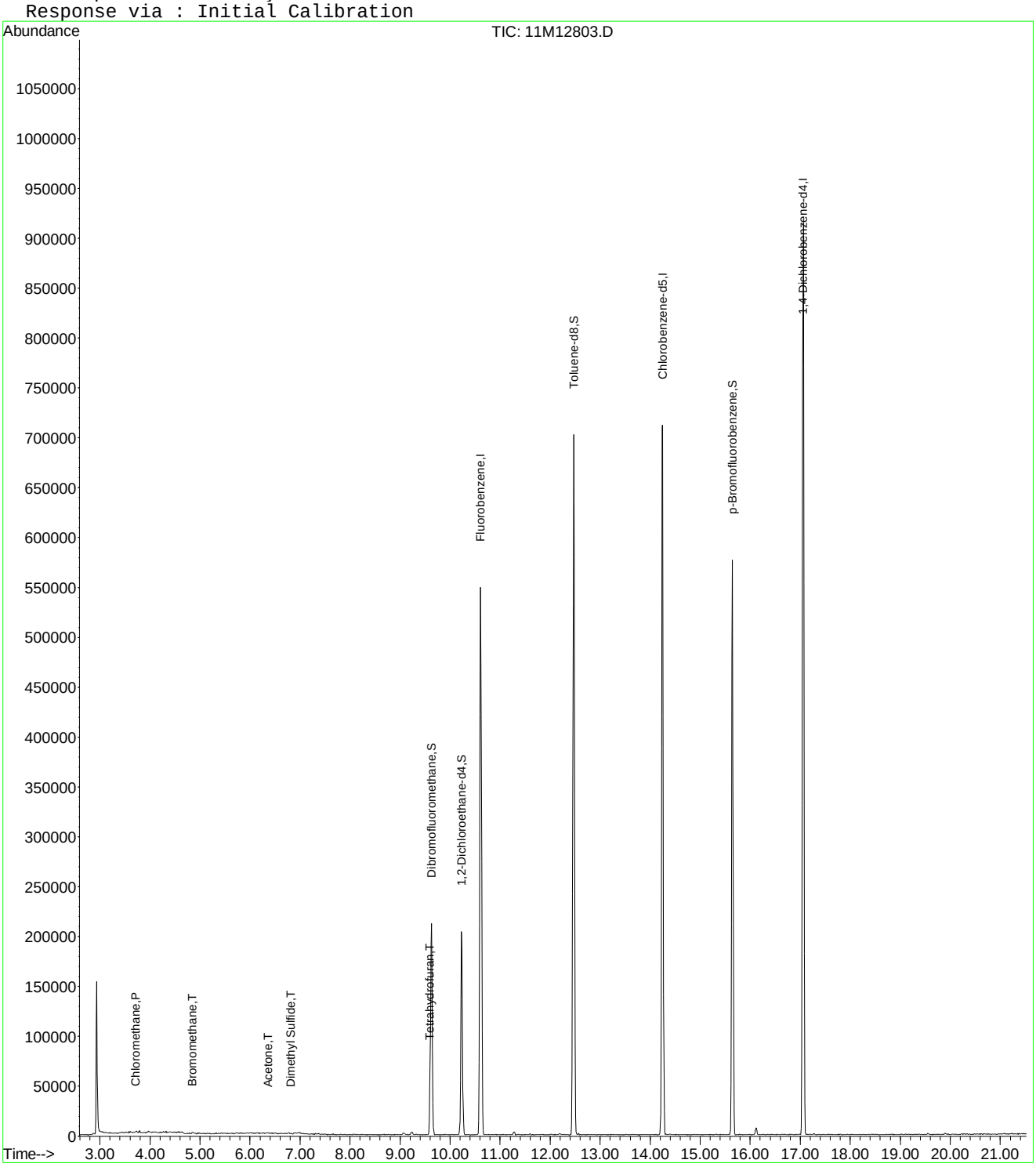

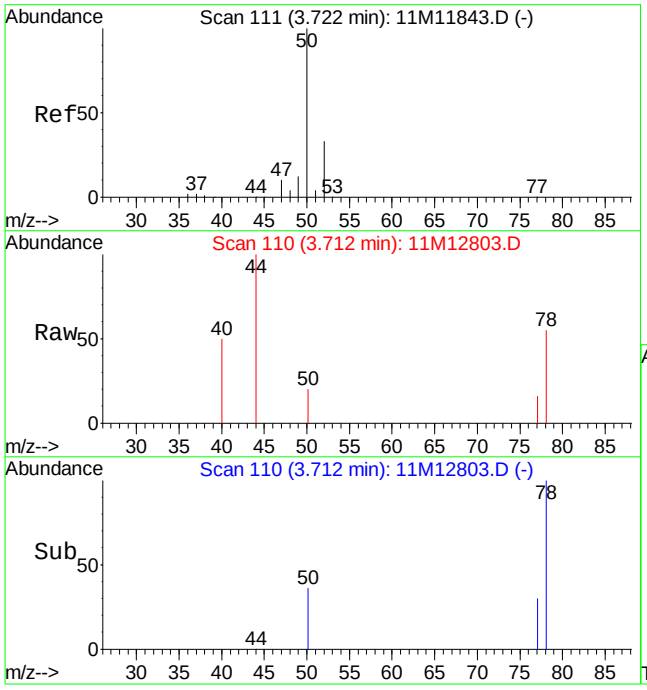

#3
Chloromethane
Concen: 0.16 ug/L
RT: 3.71 min Scan# 110
Delta R.T. -0.01 min
Lab File: 11M12803.D
Acq: 22 Jun 2016 17:47

Tgt Ion: 50 Resp: 1290

Ion	Ratio	Lower	Upper
50	100		
52	33.6	20.0	46.6

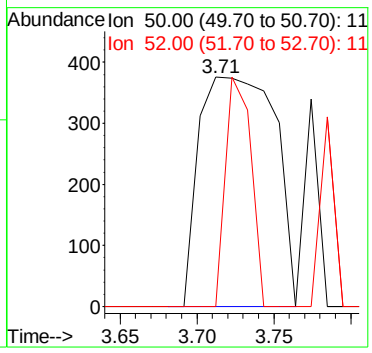

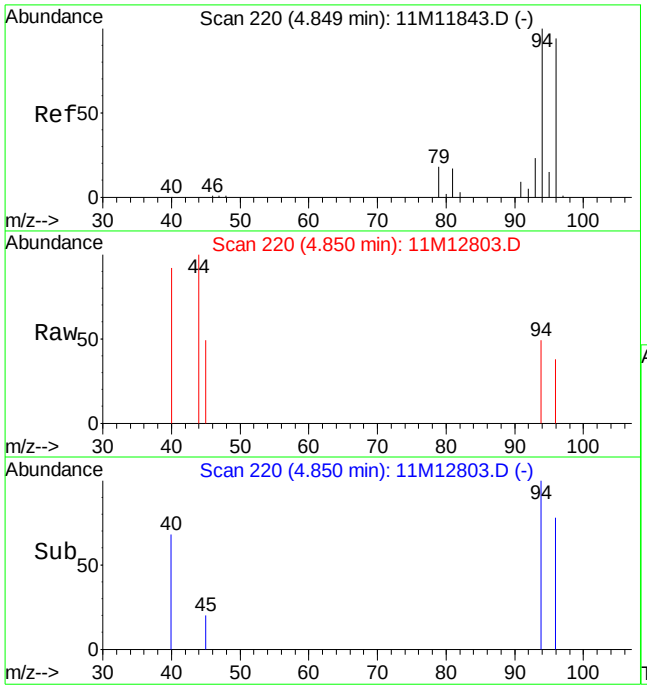

#6
Bromomethane
Concen: 0.25 ug/L
RT: 4.85 min Scan# 220
Delta R.T. 0.00 min
Lab File: 11M12803.D
Acq: 22 Jun 2016 17:47

Tgt Ion: 94 Resp: 1156

Ion	Ratio	Lower	Upper
94	100		
96	82.4	56.5	131.9

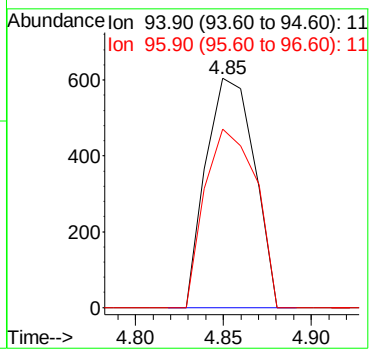

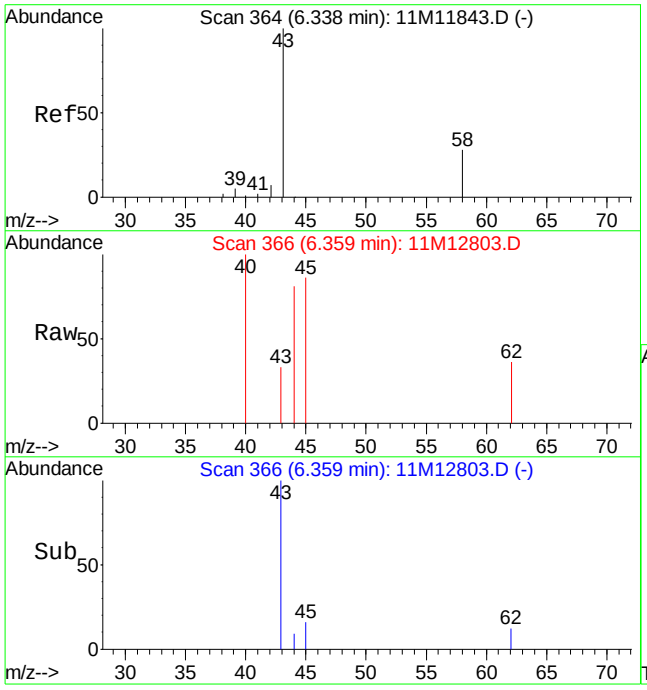

#13
Acetone
Concen: 0.13 ug/L
RT: 6.36 min Scan# 366
Delta R.T. 0.02 min
Lab File: 11M12803.D
Acq: 22 Jun 2016 17:47

Tgt Ion: 43 Resp: 196

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

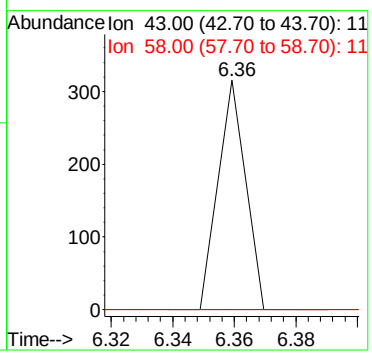

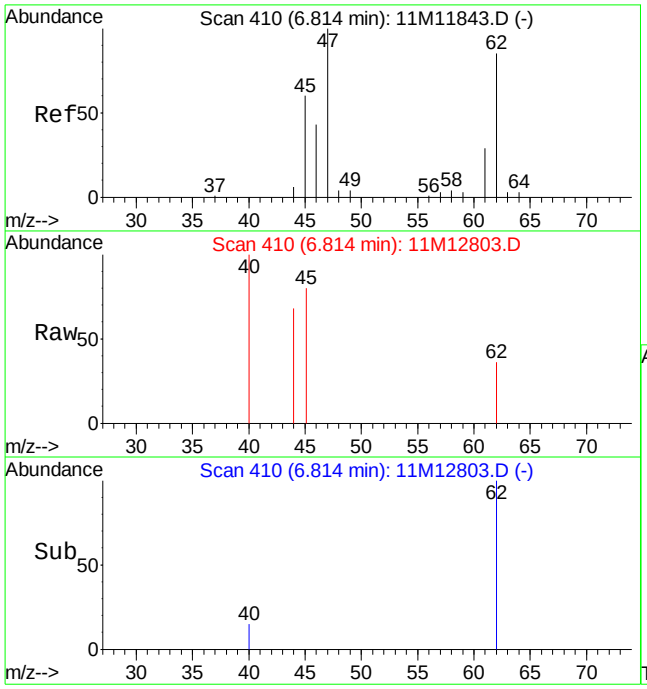

#16
Dimethyl Sulfide
Concen: 0.15 ug/L
RT: 6.81 min Scan# 410
Delta R.T. 0.00 min
Lab File: 11M12803.D
Acq: 22 Jun 2016 17:47

Tgt Ion: 62 Resp: 689

Ion	Ratio	Lower	Upper
62	100		
47	0.0	73.4	171.2#

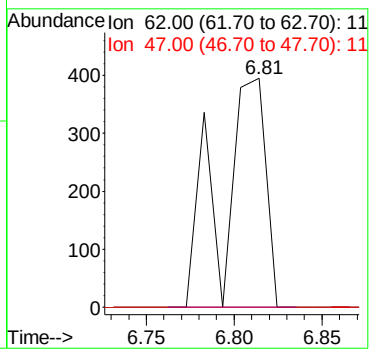

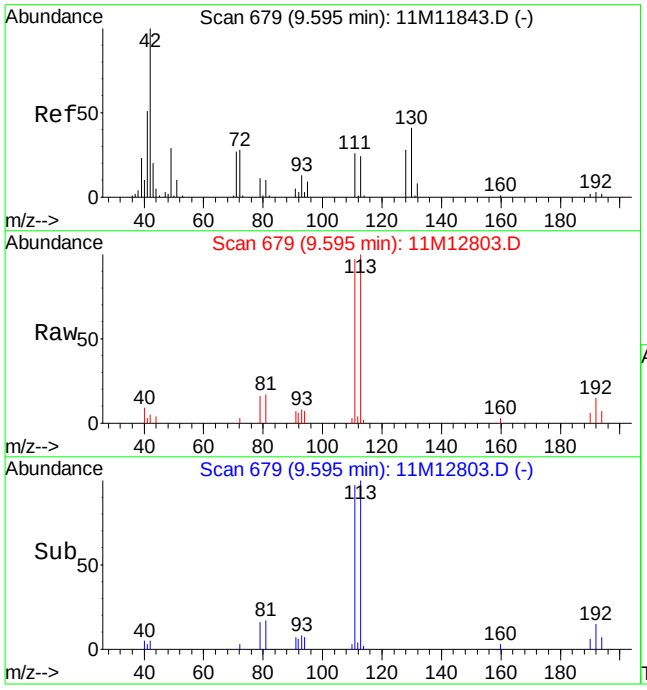

#36
Tetrahydrofuran
Concen: 1.04 ug/L
RT: 9.60 min Scan# 679
Delta R.T. 0.00 min
Lab File: 11M12803.D
Acq: 22 Jun 2016 17:47

Tgt Ion: 42 Resp: 1673

Ion	Ratio	Lower	Upper
42	100		
71	0.0	16.4	38.2#
72	16.3	16.6	38.8#

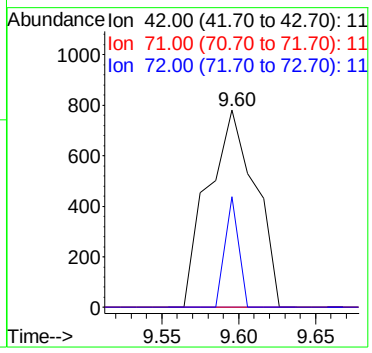

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062316\11M12831.D Vial: 5
Acq On : 23 Jun 2016 17:03 Operator: JDS
Sample : WG573953-01 BLANK STD 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 24 15:00:03 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	499965	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	439921	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	257668	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	142460	26.0358 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 104.16%		
43) 1,2-Dichloroethane-d4	10.23	65	155998	25.0038 ug/L	0.00
Spiked Amount 25.000	Range 80 - 120		Recovery = 100.00%		
57) Toluene-d8	12.47	98	478018	25.0080 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.04%		
78) p-Bromofluorobenzene	15.64	95	186251	23.4488 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 93.80%		

Target Compounds					Qvalue
13) Acetone	6.36	43	189	0.1592 ug/L #	49
36) Tetrahydrofuran	9.60	42	1570	1.2388 ug/L #	47

(#) = qualifier out of range (m) = manual integration
11M12831.D 8260WT.M Fri Jun 24 15:00:04 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062316\11M12831.D Vial: 5
Acq On : 23 Jun 2016 17:03 Operator: JDS
Sample : WG573953-01 BLANK STD 8260 Inst : hpms11
Misc : 1,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 24 15:00 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

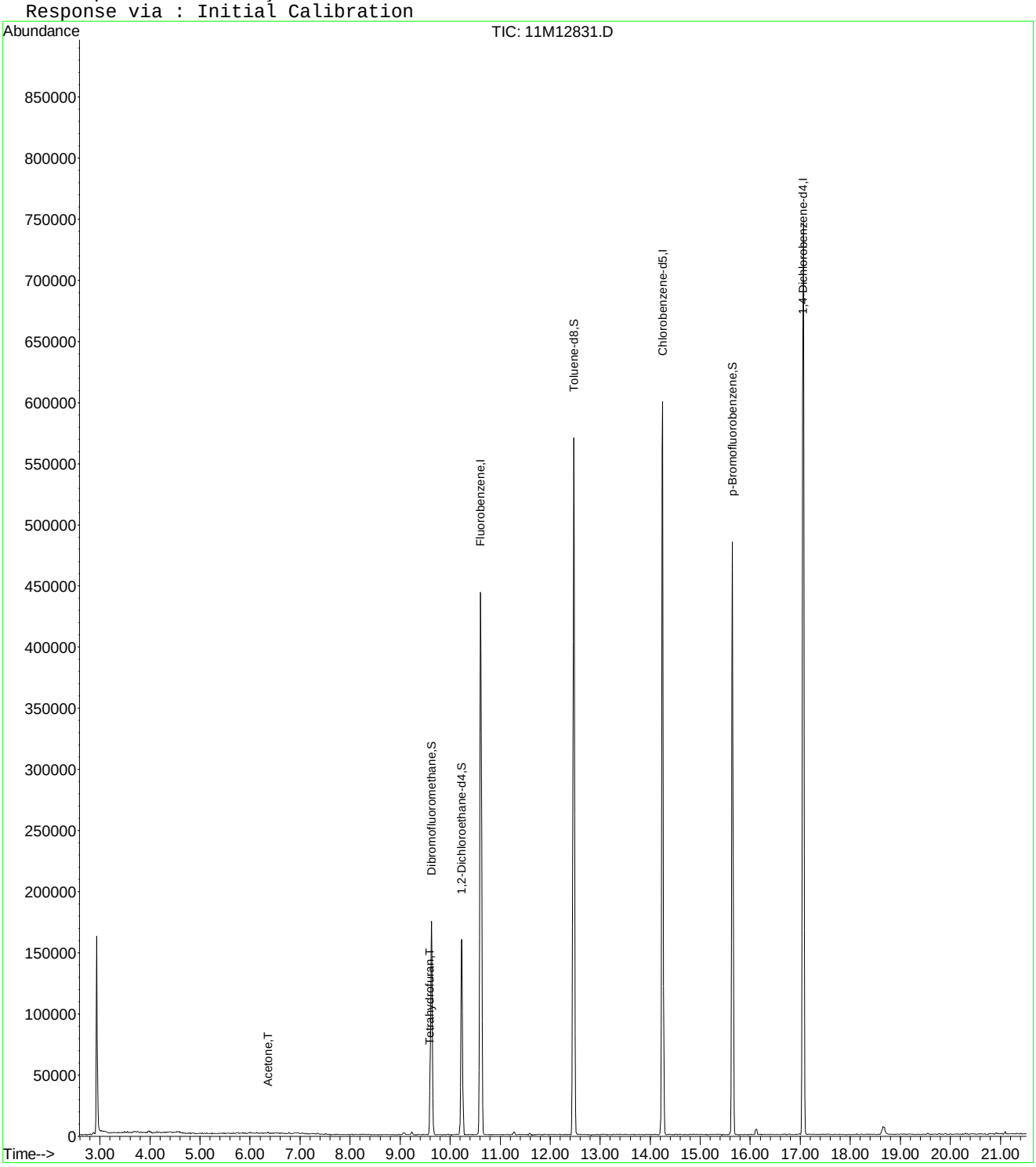

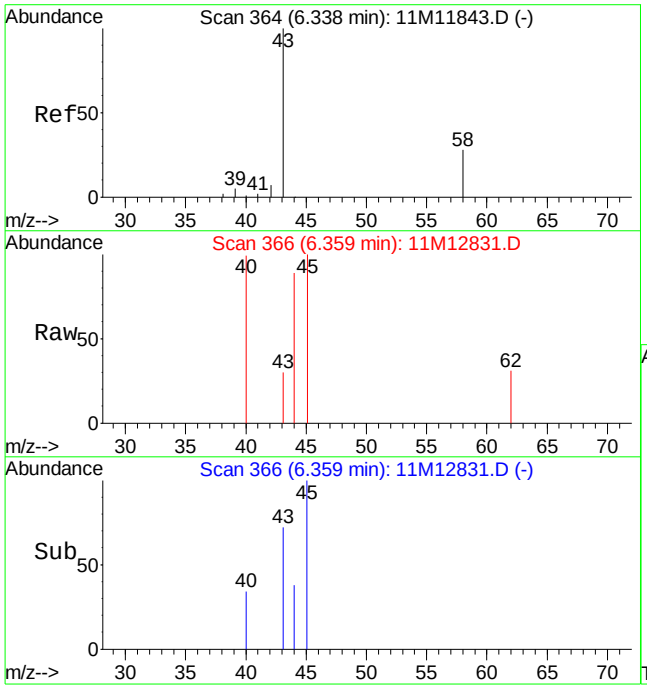

#13
Acetone
Concen: 0.16 ug/L
RT: 6.36 min Scan# 366
Delta R.T. 0.02 min
Lab File: 11M12831.D
Acq: 23 Jun 2016 17:03

Tgt Ion: 43 Resp: 189

Ion	Ratio	Lower	Upper
43	100		
58	0.0	15.8	36.8#

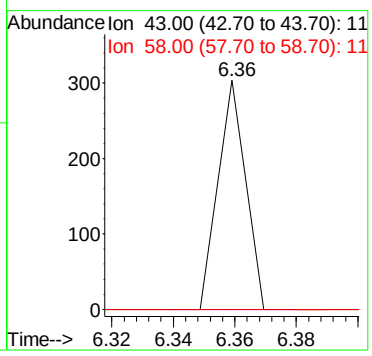

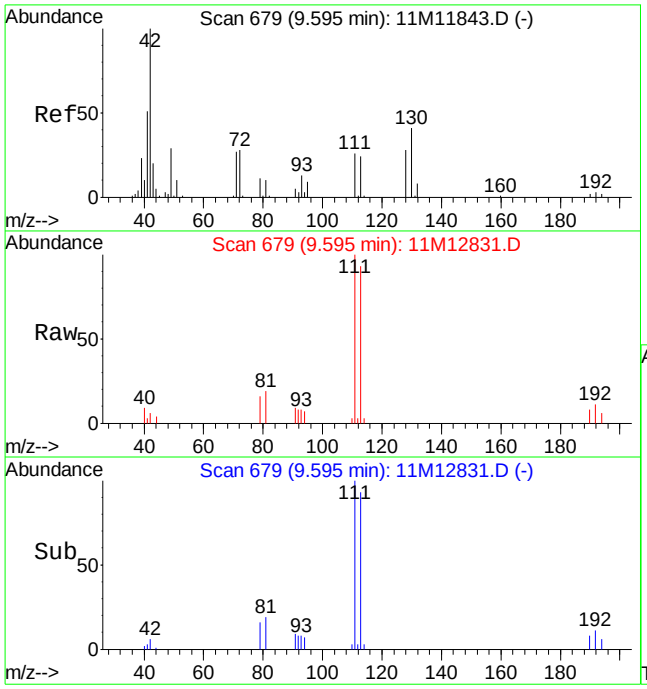

#36
Tetrahydrofuran
Concen: 1.24 ug/L
RT: 9.60 min Scan# 679
Delta R.T. 0.00 min
Lab File: 11M12831.D
Acq: 23 Jun 2016 17:03

Tgt Ion: 42 Resp: 1570

Ion	Ratio	Lower	Upper
42	100		
71	0.0	16.4	38.2#
72	0.0	16.6	38.8#

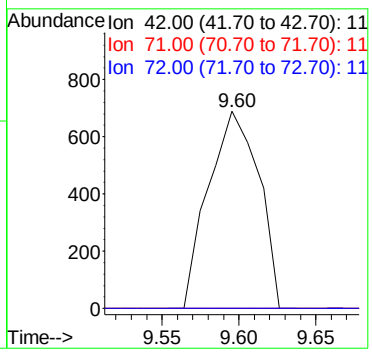

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062216\11M12821.D Vial: 24
Acq On : 23 Jun 2016 3:22 Operator: JDS
Sample : WG573776-06 BLANK2 STD 624 Inst : hpms11
Misc : 2,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 24 14:58:49 2016 Quant Results File: 8260WT.RES

Quant Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration
DataAcq Meth : 8260WT

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Fluorobenzene	10.61	96	472579	25.00 ug/L	0.00
56) Chlorobenzene-d5	14.25	117	423378	25.00 ug/L	0.00
76) 1,4-Dichlorobenzene-d4	17.06	152	244523	25.00 ug/L	0.00

System Monitoring Compounds

37) Dibromofluoromethane	9.63	111	137765	26.6368 ug/L	0.00
Spiked Amount 25.000	Range 86 - 118		Recovery = 106.56%		
43) 1,2-Dichloroethane-d4	10.24	65	154837	26.2559 ug/L	0.01
Spiked Amount 25.000	Range 80 - 120		Recovery = 105.04%		
57) Toluene-d8	12.47	98	463037	25.1708 ug/L	0.00
Spiked Amount 25.000	Range 88 - 110		Recovery = 100.68%		
78) p-Bromofluorobenzene	15.64	95	180039	23.8852 ug/L	0.00
Spiked Amount 25.000	Range 86 - 115		Recovery = 95.56%		

Target Compounds					Qvalue
36) Tetrahydrofuran	9.60	42	1098	0.9166 ug/L #	47

(#) = qualifier out of range (m) = manual integration
11M12821.D 8260WT.M Fri Jun 24 14:58:50 2016 Page 1

Quantitation Report (Not Reviewed)

Data File : C:\MSDCHEM\1\DATA\062216\11M12821.D Vial: 24
Acq On : 23 Jun 2016 3:22 Operator: JDS
Sample : WG573776-06 BLANK2 STD 624 Inst : hpms11
Misc : 2,1 Multiplr: 1.00
MS Integration Params: rteint.p
Quant Time: Jun 24 14:58 2016 Quant Results File: 8260WT.RES

Method : C:\MSDCHEM\1\METHODS\8260WT.M (RTE Integrator)
Title : 8260B/624 (SOP: OVL MSV01) Water 051316 HPMS11
Last Update : Sat May 14 18:45:57 2016
Response via : Initial Calibration

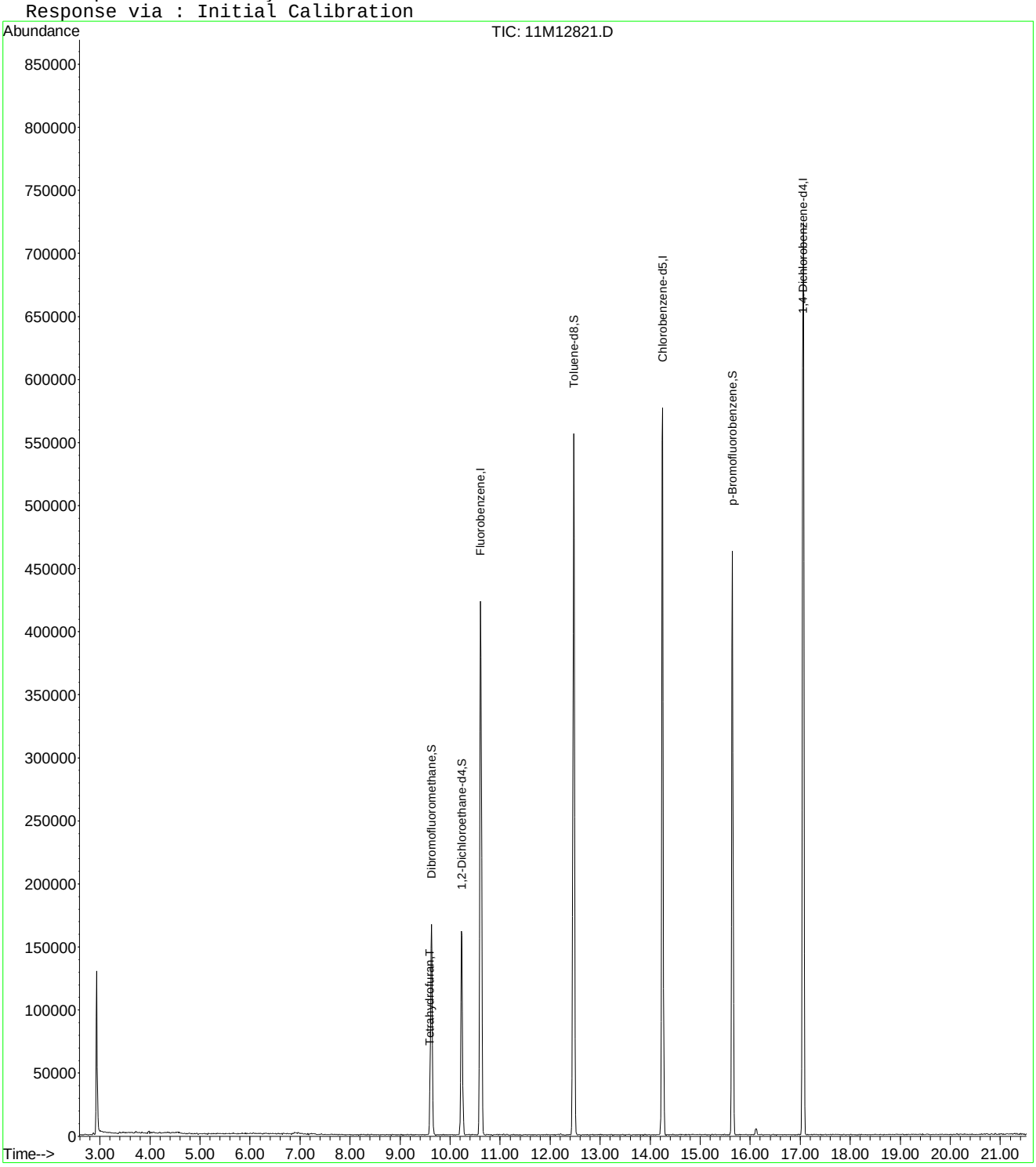

11M12821.D 8260WT.M Fri Jun 24 14:58:50 2016 Page 2

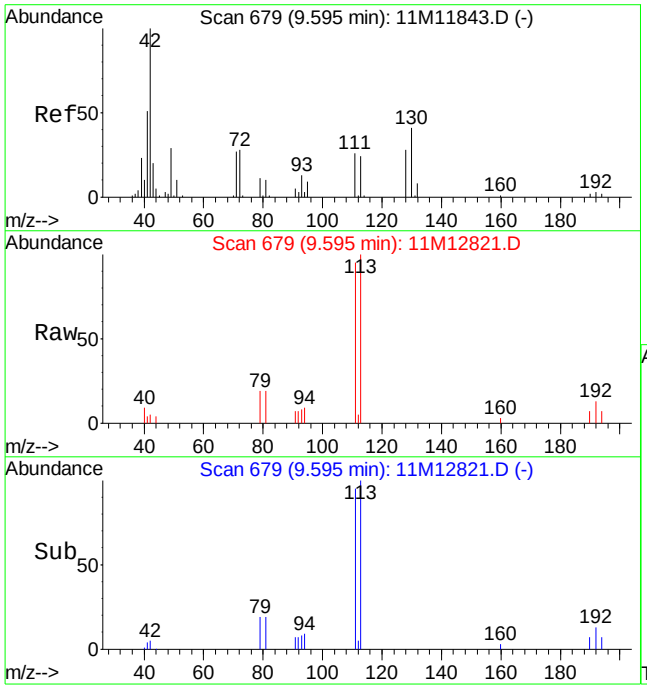

#36
Tetrahydrofuran
Concen: 0.92 ug/L
RT: 9.60 min Scan# 679
Delta R.T. 0.00 min
Lab File: 11M12821.D
Acq: 23 Jun 2016 3:22

Tgt Ion: 42 Resp: 1098

Ion	Ratio	Lower	Upper
42	100		
71	0.0	16.4	38.2#
72	0.0	16.6	38.8#

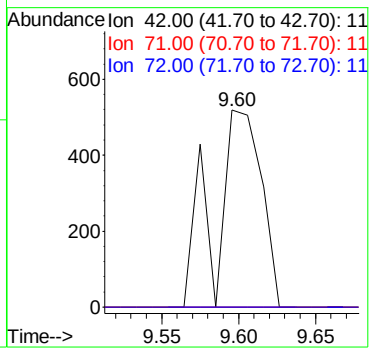

2.2 Semivolatiles Data

2.2.1 Semivolatiles GC/MS Data (Dioxane)

2.2.1.1 Summary Data

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-04	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	129-061616	**Prep Method:**	3520C	**Prep Date:**	06/21/2016 17:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573853	**Analyst:**	MES	**Run Date:**	06/23/2016 18:08
Collect Date:	06/16/2016 09:05	**Dilution:**	1	**File ID:**	15M18521
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	6.52		2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	115	20	129	

Certificate of Analysis

Sample #:	L16061026-05	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	120-061616	**Prep Method:**	3520C	**Prep Date:**	06/21/2016 17:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573853	**Analyst:**	MES	**Run Date:**	06/27/2016 15:30
Collect Date:	06/16/2016 09:25	**Dilution:**	40	**File ID:**	15M18600
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	220		80.0	40.0	20.0

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	0.000	20	129	*

Certificate of Analysis

Sample #:	L16061026-07	**PrePrep Method:**	N/A	**Instrument:**	HPMS15
Client ID:	123-061616	**Prep Method:**	3520C	**Prep Date:**	06/21/2016 17:01
Matrix:	Water	**Analytical Method:**	8270D	**Cal Date:**	06/21/2016 11:57
Workgroup #:	WG573853	**Analyst:**	MES	**Run Date:**	06/23/2016 18:54
Collect Date:	06/16/2016 09:55	**Dilution:**	1	**File ID:**	15M18523
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
1,4-Dioxane	123-91-1	0.587	J	2.00	1.00	0.500

Surrogate	Recovery	Lower Limit	Upper Limit	Q
1,4-Dioxane-d8	50.8	20	129	

J	Estimated value ; the analyte concentration was less than the LOQ.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.2.1.2 QC Summary Data

Example 8270 Calculations

1.0 Calculating the Response Factor (RF) from the initial calibration (ICAL) data:

RF = [(Ax) (Cis)] / [(Ais) (Cx)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured:	1261197
Cis = Concentration of the specific internal standard (ug/mL)	40
Ais = Area of the characteristic ion of the specific internal standard	608044
Cx = Concentration of the compound in the standard being measured (ug/mL)	50
RF = Calculated Response Factor	**1.65935**

2.0 Calculating the concentration (C) of a compound in water using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Vi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Vi = Initial volume of sample extracted from prep log (mL)	1021
Cx = Concentration of the compound in the sample being measured (ug/mL)	0.016947
Cx = Concentration of the compound in the sample being measured (ug/L)	**16.947**

3.0 Calculating the concentration (C) of a compound in soil using the data from the prep log and quantitation report: *

Cx = [(Ax) (Cis) (Vf) (D)] / [(Ais) (RF) (Wi)]

where:	Example
Ax = Area of the characteristic ion for the compound being measured	367250
Cis = Concentration of the specific internal standard (ug/mL)	40
Vf = Final volume of sample extract from prep log (mL)	1
D = Dilution factor for sample as a multiplier (10x = 10)	1
Ais = Area of the characteristic ion of the specific internal standard	511641
RF = Average RF from the ICAL	1.65935
Wi = Initial weight of sample extracted (g) from prep log	30
Cx = Concentration of the compound in the sample being measured (ug/g)	0.576763
Cx = Concentration of the compound in the sample being measured (ug/kg)	**576.7627**

Dry weight correction:

Percent solids (PCT_S)	50
Cd = (Cx) (100)/PCT_S	**1153.525** ug/kg

* Concentrations appearing on the instrument quantitation reports are on-column results and do not take into account initial volume, final volume, and the dilution factor.

4.0 Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of IS = Ax/Ais

x = amount ratio = concentration analyte/concentration internal standard = Cx / Cis

m = slope from curve plot

b = intercept from curve plot

Step 2: Calculate y from Quantitation Report

y = 16790/784838 = 0.02139

Step 3: Solve for x

x = (y - b)/m = [(0.02139 -(- 0.0435)]/ 0.0783 = 0.829

Step 4: Solve for analyte concentration Cx

Cx = Cis (x) = (25.0)(0.829) = 20.72 ug/L

Example Spreadsheet Calculation:

Slope from curve, m:	0.0783	
Intercept from curve, b:	-0.0435	
Area of analyte, Ax:	16790	
Area of Internal Standard , Ais:	784484	
Concentration of IS, Cis	25.00	ug/L
Response Ratio (y) :	0.021403	
Amount Ratio:	0.828897	
Concentration (Cx):	20.72241	ug/L

5.0 Concentration from Quadratic Regression

Step 1 - Retrieve Curve Data from Plot, y = Ax^2 + Bx + C
Where:
Ax^2 + Bx + (C - y) = 0
A, B, C = constants from the ICAL quadratic regression
y = Response ratio = Area of analyte/Area of internal standard (IS)
x = Amount ratio = Concentration of analyte/concentration of IS

Step 2: Calculate y from Quantitation Report

y = Ax/Ais

Step 3: Solve for x using the quadratic formula
Ax^2 + Bx + C - y = 0

$$x = \frac{b \pm \sqrt{\left(b^2 - 4a(c - y)\right)}}{2a}$$ (Two possible solutions)

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(Amount ratio)

Example Spreadsheet Calculation:

Value of A from plot:	**0.0259**	
Value of B from plot:	**0.0596**	
Value of C from plot:	**-0.0165**	
Area of analyte from quantitation report:	**203233**	
Area of IS from quantiation report:	**1425653**	
Response ratio, y:	**0.142554**	
C - y:	**-0.15905**	
Root 1 - Computed amount ratio , X1:	**-3.88278**	
Root 2 - Computed amount ratio , X2:	**1.581623**	use this solution
Concentration of IS, Cis:	**40.00**	
Concentration of analyte, Cx:	**63.26**	ug/L

Microbac Laboratories Inc.
Continuous Sample Extract Log

Workgroup: WG573299
Analyst: CPD
Spike Analyst: CPD
Method: 3520C
Run Date: 06/21/2016 17:01
SOP: EXB01 Revison 20
Spike Witness: JLD
Surr Solution: STD76628

TIME ON: 17:45 OFF: 12:10 ON: 16:00 OFF: 11:05

CH2CL2 Lot #: COA18982
sodium sulfate Lot #: COA18814
10N NaOH Lot #: RGT37076
1:1 H2SO4 Lot #: RGT36755

	SAMPLE #	Type	Reference	Prod	pH	Init Amnt	Surr Amnt	Spike Amnt	Spike Sol	Final Vol	Color
1	L16060927-01	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
2	L16060927-02	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
3	L16060927-03	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
4	L16060927-04	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
5	L16060930-03	SAMP		827-DIOX	<2>12	1000 mL	.05 mL			1 mL	Colored
6	L16060978-03	SAMP		827-DIOX	<2>12	800 mL	.05 mL			1 mL	Colored
7	L16060978-04	SAMP		827-DIOX	<2>12	890 mL	.05 mL			1 mL	Colored
8	L16061026-04	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
9	L16061026-05	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
10	L16061026-07	SAMP		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
11	L16061055-04	SAMP		827-DIOX	<2>12	520 mL	.05 mL			1 mL	Colored
12	L16061055-07	SAMP		827-DIOX	<2>12	880 mL	.05 mL			1 mL	Colored
13	WG573299-01	BLANK		827-DIOXANE	<2>12	1000 mL	.05 mL			1 mL	Transparent
14	WG573299-02	LCS		827-DIOXANE	<2>12	1000 mL	.05 mL	.1 mL	STD75281	1 mL	Transparent
15	WG573299-03	LCS2		827-DIOXANE	<2>12	1000 mL	.05 mL	.1 mL	STD75281	1 mL	Transparent

Due to insufficient sample volume, this preparation batch failed to include the method prescribed MS and MSD.

Analyst: Charlie Davis

Reviewer: Justin Hesson

EXTRACT - Modified 01/23/2009
PDF ID: 4819879
Report generated: 06/24/2016 10:45

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062116
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573365

Internal STD: STD76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: STD74214 MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18455	BAKEOUT	1	1		06/21/16 08:46
2	15M18456	WG573501-01 5PPM DFTPP STD	1	1	STD75016	06/21/16 09:05
3	15M18457	WG573501-01 5PPM DFTPP STD	1	1	STD75016	06/21/16 09:34
4	15M18458	WG573501-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 09:52
5	15M18459	WG573501-03 10 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 10:27
6	15M18460	WG573501-04 7.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 10:49
7	15M18461	WG573501-05 2.5 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:12
8	15M18462	WG573501-06 1 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:34
9	15M18463	WG573501-07 0.4 PPM 1,4-DIOXANE STD	1	1	STD74784	06/21/16 11:57
10	15M18464	WG573501-08 5PPM 1,4-DIOXANE ALT SRC	1	1	STD74214	06/21/16 12:20
11	15M18465	WG572806-01 BLANK 6/15	1	1		06/21/16 12:54
12	15M18466	WG572806-02 LCS 6/15	1	1		06/21/16 13:17
13	15M18467	WG572806-03 LCSDUP 6/15	1	1		06/21/16 13:40
14	15M18468	WG573008-01 BLANK 6/17	7	1	SOIL	06/21/16 14:03
15	15M18469	WG573008-02 LCS 6/17	7	1	SOIL	06/21/16 14:26
16	15M18470	WG573008-03 LCSDUP 6/17	7	1	SOIL	06/21/16 14:48
17	15M18471	L16060730-01	1	1		06/21/16 15:11
18	15M18472	L16060730-02	1	1		06/21/16 15:34
19	15M18473	L16060854-01	1	1		06/21/16 15:57
20	15M18474	L16060730-03	1	1		06/21/16 16:19
21	15M18475	L16060756-04 827-DIOX	1	1		06/21/16 16:46
22	15M18476	L16060822-01	1	1		06/21/16 17:08
23	15M18477	L16060822-03	1	1		06/21/16 17:31
24	15M18478	L16060822-04	1	1		06/21/16 17:54
25	15M18479	L16060822-05	1	1		06/21/16 18:17
26	15M18480	L16060823-01	1	1		06/21/16 18:40
27	15M18481	L16060823-03	1	1		06/21/16 19:02
28	15M18482	L16060823-04	1	1		06/21/16 19:25
29	15M18483	L16060809-03 827-DIOX	1	1		06/21/16 19:48
30	15M18484	L16060854-01 2X	1	2		06/21/16 20:10
31	15M18485	BAKEOUT	1	1		06/21/16 20:33
32	15M18486	BAKEOUT	1	1		06/21/16 20:55
33	15M18487	BAKEOUT	1	1		06/21/16 21:18

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062116

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573365

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD: STD74214

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
	WG573501-01 5PPM DFTPP STD rerun DFTPP, pentachlorophenol tailing >2.			
14				
	WG573008-01 BLANK 6/17 DNR-not needed.			
15				
	WG573008-02 LCS DNR-not needed.			
16				
	WG573008-03 LCSDUP DNR-not needed.			
19	X	2	Over Calibration Range	
	L16060854-01			

Page: 2 Approved: 22-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062316
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573853

Internal STD: STD76627 Surrogate STD: NA Calibration STD
CCV STD: STD74784 LCS STD: MS/MSD STD:

Comments:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18504	BAKEOUT	1	1		06/23/16 10:23
2	15M18505	WG573879-01 5PPM DFTPP STD	1	1	STD75016	06/23/16 10:43
3	15M18506	WG573879-01 5PPM DFTPP STD	1	1	STD75016	06/23/16 10:59
4	15M18507	WG573879-01 5PPM DFTPP STD	1	1	STD75016	06/23/16 12:04
5	15M18508	WG573879-01 5PPM DFTPP STD	1	1	STD75016	06/23/16 13:20
6	15M18509	WG573879-01 5PPM DFTPP STD	1	1	STD75016	06/23/16 13:42
7	15M18510	WG573879-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/23/16 13:59
8	15M18511	WG573299-01 BLANK 6/21	1	1		06/23/16 14:22
9	15M18512	WG573299-02 LCS 6/21	1	1		06/23/16 14:45
10	15M18513	WG573299-03 LCSDUP 6/21	1	1		06/23/16 15:07
11	15M18514	L16060927-01 827-DIOX	1	1		06/23/16 15:30
12	15M18515	L16060927-02 827-DIOX	1	1		06/23/16 15:53
13	15M18516	L16060927-03 827-DIOX	1	1		06/23/16 16:15
14	15M18517	L16060927-04 827-DIOX	1	1		06/23/16 16:38
15	15M18518	L16060930-03 827-DIOX	1	1		06/23/16 17:00
16	15M18519	L16060978-03 827-DIOX	1	1		06/23/16 17:23
17	15M18520	L16060978-04 827-DIOX	1	1		06/23/16 17:46
18	15M18521	L16061026-04 827-DIOX	1	1		06/23/16 18:08
19	15M18522	L16061026-05 827-DIOX	1	1		06/23/16 18:31
20	15M18523	L16061026-07 827-DIOX	1	1		06/23/16 18:54
21	15M18524	L16061055-04 827-DIOX	1	1		06/23/16 19:16
22	15M18525	L16061055-07 827-DIOX	1	1		06/23/16 19:39
23	15M18526	BAKEOUT	1	1		06/23/16 20:02
24	15M18527	BAKEOUT	1	1		06/23/16 20:24
25	15M18528	BAKEOUT	1	1		06/23/16 20:47

Comments

Seq.	Rerun	Dil.	Reason	Analytes
2				
	Rerun DFTPP, degradation >20%.			
3				
	Rerun DFTPP, degradation >20%. Changing the liner.			
4				

Page: 1 Approved: 24-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062316

Analyst1: MES Analyst2: NA

Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:

Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG573853

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD:

Comments

Seq.	Rerun	Dil.	Reason	Analytes
	Rerun DFTPP, degradation still >20%. Changing the gold seal.			
5				
	Rerun DFTPP, degradation still >20%. Clipping the column.			
12	X	10	Surrogate standard failure	
	L16060927-02 high surrogate due to SMI; reanalyzing at a dilution to confirm.			
16	X	10	Over Calibration Range	
	L16060978-03			
17	X	20	Over Calibration Range	
	L16060978-04			
19	X	20	Over Calibration Range	
	L16061026-05 high surrogate due to SMI.			
21	X	10	Over Calibration Range	
	L16061055-04 827-DIOX one high surrogate due to SMI.			
22	X	100	Over Calibration Range	
	L16061055-07 827-DIOX one low surrogate due to obvious SMI.			

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062716
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574301,WG574187,WG574186,WG573853

Internal STD: STD76627 Surrogate STD: NA Calibration STD

CCV STD: STD74784 LCS STD: MS/MSD STD:

Comments: All samples associated with extraction workgroup WG573815 are being re-extracted due to low LCSDUP recovery: L16060637-02,756-01 to-03,809-01 and -02,930-01 and -02, 1213-01 to -06.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	15M18584	BAKEOUT	1	1		06/27/16 08:21
13	15M18585	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 08:41
14	15M18586	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 08:58
2	15M18587	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 09:22
3	15M18588	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 09:38
4	15M18589	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 10:23
5	15M18590	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 11:15
6	15M18591	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 11:32
7	15M18592	WG574241-01 5PPM DFTPP STD	1	1	STD75016	06/27/16 12:20
8	15M18593	WG574241-02 5PPM 1,4-DIOXANE STD	1	1	STD74784	06/27/16 12:37
9	15M18594	WG573975-03 LCSDUP 6/24 RR	7	1	SOIL	06/27/16 13:15
10	15M18595	WG573815-02 LCS 6/23 RR	7	1	SOIL	06/27/16 13:37
11	15M18596	WG573815-03 LCSDUP 6/23 RR	7	1	SOIL	06/27/16 13:59
12	15M18597	WG573812-01 BLANK 6/22	1	1		06/27/16 14:22
15	15M18598	WG573812-02 LCS 6/22	1	1		06/27/16 14:45
16	15M18599	WG573812-03 LCSDUP 6/22	1	1		06/27/16 15:07
17	15M18600	L16061026-05 40X	1	40		06/27/16 15:30
18	15M18601	L16061213-05 827-DIOX	7	1	SOIL	06/27/16 15:52
19	15M18602	L16061213-06 827-DIOX	7	1		06/27/16 16:15
20	15M18603	L16061233-02 827-DIOX	1	1		06/27/16 16:38
21	15M18604	L16061124-01	1	1		06/27/16 17:01
22	15M18605	L16061142-01	1	1		06/27/16 17:23
23	15M18606	L16061142-06	1	1		06/27/16 17:46
24	15M18607	L16061142-07	1	1		06/27/16 18:09
25	15M18608	L16061144-01	1	1		06/27/16 18:31
26	15M18609	L16061144-02	1	1		06/27/16 18:54
27	15M18610	L16061144-03	1	1		06/27/16 19:17
28	15M18611	L16061227-01	1	1		06/27/16 19:39
29	15M18612	L16061227-06	1	1		06/27/16 20:02
30	15M18613	L16061227-07	1	1		06/27/16 20:25
31	15M18614	L16061124-01 2X	1	2		06/27/16 20:47
32	15M18615	BAKEOUT	1	1		06/27/16 21:10
33	15M18616	BAKEOUT	1	1		06/27/16 21:32

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: HPMS15 Dataset: 062716
Analyst1: MES Analyst2: NA
Method: 8270C/D SOP: MSS01 Rev: 27

Maintenance Log ID: Syringe Filter Lot#:
Eluent ID#:

Column 1 ID: RXI-5MS Column 2 ID: NA

Workgroups: WG574301,WG574187,WG574186,WG573853

Internal STD: STD76627 Surrogate STD: NA

CCV STD: STD74784 LCS STD:

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	15M18617	BAKEOUT	1	1		06/27/16 21:55

Comments

Seq.	Rerun	Dil.	Reason	Analytes
13				
	Rerun DFTPP, wrong standard was analyzed.			
14				
	Rerun DFTPP, wrong standard was analyzed.			
2				
	Rerun DFTPP, ion failures. Liner needs changed.			
3				
	Rerun DFTPP, degradation >20%.			
4				
	Rerun DFTPP, degradation >20%. Changed the gold seal.			
5				
	Rerun DFTPP, benzidine tailing >2.			
6				
	Rerun DFTPP, benzidine tailing >2. Clipped 5cm from the column.			
9				
	WG573975-03 LCSDUP 6/24 RR recovery is acceptable. Not reporting the run from 6/25/16.			
11				
	WG573815-03 LCSDUP 6/23 RR low recovery; confirms the original run.			
21	X	2	Over Calibration Range	
	L16061124-01			
28				
	L16061227-01 Needs re-extracted; surrogate recovery is low.			

Page: 2 Approved: 28-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 21-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75850
Analytical Workgroups: L16060730, 060756, 060809, 060822, 060823, 060854

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	X
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	NA
% D/% Drift	NA
Minimum response factors (MS)	NA
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	ECL

Primary Reviewer: 22-JUN-2016

Secondary Reviewer: 22-JUN-2016

CHECKLIST1 - Modified 03/05/2008

Generated: JUN-22-2016 16:00:51

Microbac Laboratories Inc.

Data Checklist

Date: 23-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75899
Analytical Workgroups: L16060927,060930,060978,-061026,061055

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	X
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer: Secondary Reviewer:
24-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-24-2016 14:48:11

Microbac Laboratories Inc.

Data Checklist

Date: 27-JUN-2016
Analyst: MES
Analyst: NA
Method: 827-DIOX
Instrument: HPMS15
Curve Workgroup: NA
Runlog ID: 75949
Analytical Workgroups: L16061026,061213,WG573956-LCSDUP RR,061124,1142,1144,1227,123

ANALYTICAL	
System Performance Check	X
DFTPP (MS)	X
Endrin/DDT breakdown (8081/MS)	X
Pentachlorophenol/benzidine tailing (MS)	X
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (MS)	X
Continuing calibration blank (CCB) (IC)	NA
Special standards	NA
Blanks	X
TCL hits	X
Surrogate recoveries	X
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	X
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	X
Surrogate recoveries	X
Internal standard areas (MS)	X
Library searches (MS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	NA
Check for completeness	X
Primary Reviewer	MES
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
28-JUN-2016

Secondary Reviewer:
28-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-28-2016 14:33:27

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 8270D

AAB#: WG573853

Login Number: L16061026

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
129-061616	04	06/16/16					06/21/2016	5.3	7		06/23/16	2	40	
120-061616	05	06/16/16					06/21/2016	5.3	7		06/27/16	5.9	40	
123-061616	07	06/16/16					06/21/2016	5.3	7		06/23/16	2.1	40	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4822554
Report generated 06/29/2016 08:21

Microbac Laboratories Inc.
SURROGATE STANDARDS

Login Number: L16061026
Instrument Id: HPMS15
Workgroup (AAB#): WG573853

Method: 827-DIOXANE
CAL ID: HPMS15-21-JUN-16
Matrix: Water

Sample Number	Dilution	Tag	1
L16061026-04	1.00	01	115
L16061026-05	40.0	DL01	DL
L16061026-07	1.00	01	50.8
WG573299-01	1.00	01	28.7
WG573299-02	1.00	01	37.8
WG573299-03	1.00	01	46.8

Surrogates	Surrogate Limits		
1 - 1,4-Dioxane-d8	20	-	129

Underline = Result out of surrogate limits

DL = surrogate diluted out
ND = surrogate not detected

SURROGATES - Modified 03/06/2008
PDF File ID: 4822562
Report generated: 06/29/2016 08:21

METHOD BLANK SUMMARY

Login Number: L16061026
Blank File ID: 15M18511
Prep Date: 06/21/16 17:01
Analyzed Date: 06/23/16 14:22
Analyst: MES

Work Group: WG573853
Blank Sample ID: WG573299-01
Instrument ID: HPMS15
Method: 8270D

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573299-02	15M18512	06/23/16 14:45	01
LCS2	WG573299-03	15M18513	06/23/16 15:07	01
129-061616	L16061026-04	15M18521	06/23/16 18:08	01
123-061616	L16061026-07	15M18523	06/23/16 18:54	01
120-061616	L16061026-05	15M18600	06/27/16 15:30	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4828845
Report generated 06/29/2016 08:21

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061026 Prep Date: 06/21/16 17:01 Sample ID: WG573299-01
Instrument ID: HPMS15 Run Date: 06/23/16 14:22 Prep Method: 3520C
File ID: 15M18511 Analyst: MES Method: 8270D
Workgroup (AAB#): WG573853 Matrix: Water Units: ug/L
Contract #: Cal ID: HPMS15-21-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
1,4-Dioxane	0.500	2.00	0.500	1	U

Surrogates	% Recovery	Surrogate Limits	Qualifier
1,4-Dioxane-d8	28.7	20 - 129	PASS

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4822555
29-JUN-2016 08:21

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061026 Analyst: MES Prep Method: 3520C
Instrument ID: HPMS15 Matrix: Water Method: 8270D
Workgroup (AAB#): WG573853 Units: ug/L
QC Key: DOD4 Lot #: STD75281

Sample ID: WG573299-02 LCS File ID: 15M18512 Run Date: 06/23/2016 14:45
Sample ID: WG573299-03 LCS2 File ID: 15M18513 Run Date: 06/23/2016 15:07

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
1,4-Dioxane	5.00	1.88	37.6	5.00	2.32	46.4	20.8	30 - 104	30	

Surogates	LCS	LCS2	Surrogate Limits	Qualifier
	% Recovery	% Recovery		
1,4-Dioxane-d8	37.8	46.8	20 - 129	PASS

* EXCEEDS %REC LIMIT

\# EXCEEDS RPD LIMIT

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4822556
Report generated: 06/29/2016 08:21

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16061026
Instrument: HPMS15
Analyst: MES
Workgroup: WG573501

Tune ID: WG573501-01
Run Date: 06/21/2016
Run Time: 09:34
File ID: 15M18457
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	38.8	34488	PASS
68.0	69.0	0	2.00	1.36	500	PASS
69.0	198	0	100	41.4	36833	PASS
70.0	69.0	0	2.00	0.467	172	PASS
127	198	40.0	60.0	51.9	46131	PASS
197	198	0	1.00	0	0	PASS
198	198	100	100	100	88880	PASS
199	198	5.00	9.00	6.66	5918	PASS
275	198	10.0	30.0	24.9	22090	PASS
365	198	1.00	100	2.65	2358	PASS
441	443	0.0100	100	75.7	9586	PASS
442	198	40.0	100	73.4	65261	PASS
443	442	17.0	23.0	19.4	12659	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573501-02	STD-CCV	01	06/21/2016 09:52	
WG573501-03	STD	01	06/21/2016 10:27	
WG573501-04	STD	01	06/21/2016 10:49	
WG573501-05	STD	01	06/21/2016 11:12	
WG573501-06	STD	01	06/21/2016 11:34	
WG573501-07	STD	01	06/21/2016 11:57	
WG573501-08	SSCV	01	06/21/2016 12:20	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4822559
Report generated 06/29/2016 08:21

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16061026
Instrument: HPMS15
Analyst: MES
Workgroup: WG573879

Tune ID: WG573879-01
Run Date: 06/23/2016
Run Time: 13:42
File ID: 15M18509
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	37.0	43111	PASS
68.0	69.0	0	2.00	1.10	506	PASS
69.0	198	0	100	39.4	45795	PASS
70.0	69.0	0	2.00	0.157	72	PASS
127	198	40.0	60.0	51.3	59752	PASS
197	198	0	1.00	0	0	PASS
198	198	100	100	100	116364	PASS
199	198	5.00	9.00	7.09	8249	PASS
275	198	10.0	30.0	24.9	28968	PASS
365	198	1.00	100	2.82	3278	PASS
441	443	0.0100	100	79.2	13093	PASS
442	198	40.0	100	74.3	86464	PASS
443	442	17.0	23.0	19.1	16541	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG573879-02	CCV	01	06/23/2016 13:59	
WG573299-01	BLANK	01	06/23/2016 14:22	
WG573299-02	LCS	01	06/23/2016 14:45	
WG573299-03	LCS2	01	06/23/2016 15:07	
L16061026-04	129-061616	01	06/23/2016 18:08	
L16061026-07	123-061616	01	06/23/2016 18:54	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4822559
Report generated 06/29/2016 08:21

Microbac Laboratories Inc.
ORGANIC INSTRUMENT CHECK

DFTPP

Login Number: L16061026
Instrument: HPMS15
Analyst: MES
Workgroup: WG574241

Tune ID: WG574241-01
Run Date: 06/27/2016
Run Time: 12:20
File ID: 15M18592
Cal ID: HPMS15 - 21-JUN-16

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51.0	198	30.0	60.0	33.2	31989	PASS
68.0	69.0	0	2.00	1.61	580	PASS
69.0	198	0	100	37.4	35954	PASS
70.0	69.0	0	2.00	0.617	222	PASS
127	198	40.0	60.0	50.4	48459	PASS
197	198	0	1.00	0.425	409	PASS
198	198	100	100	100	96232	PASS
199	198	5.00	9.00	6.65	6399	PASS
275	198	10.0	30.0	25.2	24236	PASS
365	198	1.00	100	2.50	2410	PASS
441	443	0.0100	100	75.7	10371	PASS
442	198	40.0	100	73.9	71133	PASS
443	442	17.0	23.0	19.3	13708	PASS

This check relates to the following samples:

Lab ID	Client ID	Tag	Date Analyzed	Q
WG574241-02	CCV	01	06/27/2016 12:37	
L16061026-05	120-061616	DL01	06/27/2016 15:30	

* Sample past 12 hour tune limit

TUNE - Modified 03/06/2008
PDF File ID: 4822559
Report generated 06/29/2016 08:21

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061026
Analytical Method: 8270D
ICAL Workgroup: WG573501

Instrument ID: HPMS15
Initial Calibration Date: 21-JUN-16 11:57
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
1,4-Dioxane		0.3060	2.56		

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4822557
Report generated 06/29/2016 08:21

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061026

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 21-JUN-16 11:57

Column ID: F

Analyte	WG573501-02			WG573501-03			WG573501-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	5.00	60883.0000	0.3073	10.0	138820.000	0.3164	7.50	103182.000	0.3106

INT_CAL - Modified 03/06/2008
PDF File ID: 4822557
Report generated 06/29/2016 08:21

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061026

Analytical Method: 8270D

Instrument ID: HPMS15

Initial Calibration Date: 21-JUN-16 11:57

Column ID: F

Analyte	WG573501-05			WG573501-06			WG573501-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
1,4-Dioxane	2.50	26333.0000	0.2969	1.00	13250.0000	0.2966	0.400	5650.00000	0.3081

INT_CAL - Modified 03/06/2008
PDF File ID: 4822557
Report generated 06/29/2016 08:21

Calibration Table Report
Method: DIOXANE_D8.M
Title: OVD MSS01 SIM 1,4-dioxane ICAL 062116
Last Calibration: Tue Jun 21 12:51:17 2016
Curve:WG573501
Calibration Files

Compound	10 15M18459.D	7.5 15M18460.D	5 15M18458.D	2.5 15M18461.D	1 15M18462.D	0.4 15M18463.D	Avg	%RSD
1,4-Dichlorobenzene-d4	ISTD							
1,4-Dioxane	0.316	0.311	0.307	0.297	0.297	0.308	0.306	2.558
1,4-Dioxane-d8	0.426	0.418	0.417	0.402	0.395		0.411	3.044
Nitrobenzene-d5	1.202	1.173	1.128	1.002	0.927	0.906	1.056	12.163
2-Fluorobiphenyl	2.735	2.736	2.691	2.621	2.563	2.651	2.666	2.548
p-Terphenyl-d14	2.793	2.774	2.622	2.460	2.367	2.405	2.570	7.266

Wed Jun 22 12:17:33 2016

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061026 Run Date: 06/21/2016 Sample ID: WG573501-08
Instrument ID: HPMS15 Run Time: 12:20 Method: 8270D
File ID: 15M18464 Analyst: MES QC Key: DOD4
ICal Workgroup: WG573501 Cal ID: HPMS15 - 21-JUN-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
1,4-Dioxane		5000	5050	ug/L	0.309	0.900	20	

* Exceeds %D Limit

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4822558
Report generated 06/29/2016 08:21

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 06/23/2016
Sample ID: WG573879-02
Instrument ID: HPMS15
Run Time: 13:59
Method: 8270D
File ID: 15M18510
Analyst: MES
QC Key: DOD4
Workgroup (AAB#): WG573853
Cal ID: HPMS15 - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,4-Dioxane		5000	4530	ug/L	0.277	9.36	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4822560
Report generated 06/29/2016 08:21

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 06/27/2016
Sample ID: WG574241-02
Instrument ID: HPMS15
Run Time: 12:37
Method: 8270D
File ID: 15M18593
Analyst: MES
QC Key: DOD4
Workgroup (AAB#): WG573853
Cal ID: HPMS15 - 21-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
1,4-Dioxane		5000	4360	ug/L	0.267	12.8	20	

* Exceeds %D Criteria

CCC Calibration Check Compounds
SPCC System Performance Check Compounds

CCV - Modified 03/05/2008
PDF File ID: 4822560
Report generated 06/29/2016 08:21

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061026
Instrument ID: HPMS15
Workgroup (AAB#): WG573853

ICAL CCV Number: WG573501-02
CAL ID: HPMS15-21-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG573501-02	NA	NA	39637
Upper Limit	NA	NA	79274
Lower Limit	NA	NA	19819
L16061026-04	1.00	01	55282
L16061026-05	40.0	DL01	46495
L16061026-07	1.00	01	44830
WG573299-01	1.00	01	57608
WG573299-02	1.00	01	51597
WG573299-03	1.00	01	54701

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_ICAL - Modified 03/06/2008
PDF File ID: 4822561
Report generated 06/29/2016 08:21

Microbac Laboratories Inc.

INTERNAL STANDARD RETENTION TIME SUMMARY
(COMPARED TO MIDPOINT OF ICAL)

Login Number: L16061026
Instrument ID: HPMS15
Workgroup (AAB#): WG573853

ICAL CCV Number: WG573501-02
CAL ID: HPMS15-21-JUN-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG573501-02	NA	NA	6.93
Upper Limit	NA	NA	7.43
Lower Limit	NA	NA	6.43
L16061026-04	1.00	01	6.929
L16061026-05	40.0	DL01	6.896
L16061026-07	1.00	01	6.929
WG573299-01	1.00	01	6.929
WG573299-02	1.00	01	6.929
WG573299-03	1.00	01	6.929

IS-1 - 1,4-Dichlorobenzene-d4

Underline = Response outside limits

INTERNAL_STD_RT_ICAL - Modified 03/06/2008
PDF File ID: 4828846
Report generated: 06/29/2016 08:21

2.2.1.3 Sample Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18521.D
Acq On : 23 Jun 2016 18:08
Operator : MES
Sample : L16061026-04 827-DIOX
Misc : 1,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jun 24 08:01:29 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.929	152	55282	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.771	96	130983	5.7581	ug/L	-0.06
Spiked Amount 5.000			Recovery	= 115.20%		
4) Nitrobenzene-d5	7.431	82	7452	0.1276	ug/L	0.00
Spiked Amount 5.000			Recovery	= 2.60%		
5) 2-Fluorobiphenyl	8.919	172	1842	0.0125	ug/L	0.00
Spiked Amount 5.000			Recovery	= 0.20%		
6) p-Terphenyl-d14	12.184	244	137	0.0010	ug/L	0.00
Spiked Amount 5.000			Recovery	= 0.00%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	110340	6.5234	ug/L	85

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18521.D
Acq On : 23 Jun 2016 18:08
Operator : MES
Sample : L16061026-04 827-DIOX
Misc : 1,1
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Jun 24 08:01:29 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

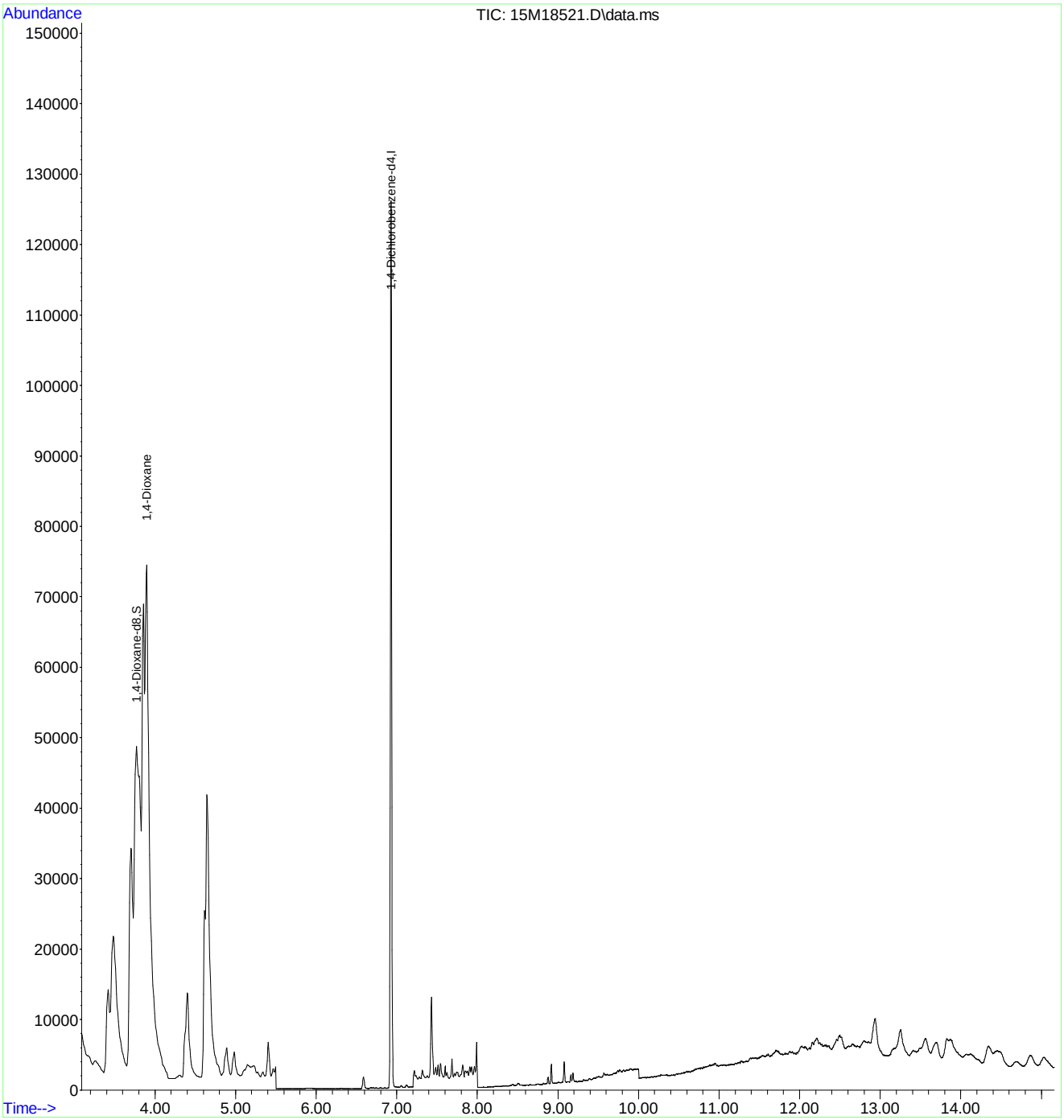

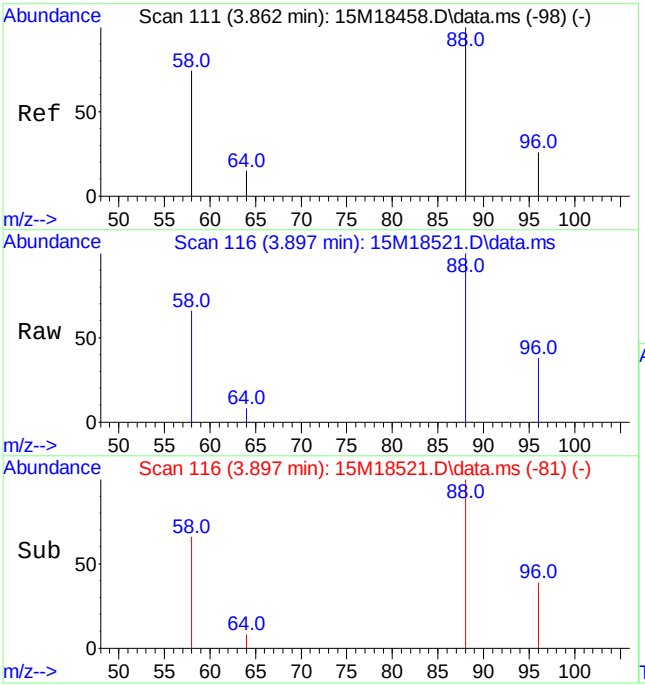

#2
1,4-Dioxane
Concen: 6.52 ug/L
RT: 3.897 min Scan# 116
Delta R.T. 0.035 min
Lab File: 15M18521.D
Acq: 23 Jun 2016 18:08

Tgt Ion: 58 Resp: 110340

Ion	Ratio	Lower	Upper
58	100		
88	151.6	103.1	240.7

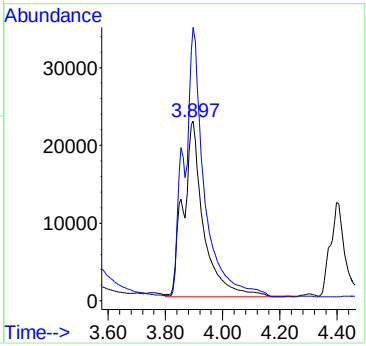

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18600.D
Acq On : 27 Jun 2016 15:30
Operator : MES
Sample : L16061026-05 40X
Misc : 1,40
ALS Vial : 9 Sample Multiplier: 40

Quant Time: Jun 27 17:44:13 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.896	152	46495	1.0000	ug/mL	#-0.04
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.665	96	84849	177.3975	ug/L	-0.16
Spiked Amount 5.000			Recovery	= 3548.00%		
4) Nitrobenzene-d5	7.404	82	94	0.0766	ug/L	-0.03
Spiked Amount 5.000			Recovery	= 1.60%		
5) 2-Fluorobiphenyl	8.889	172	85	0.0274	ug/L	-0.03
Spiked Amount 5.000			Recovery	= 0.60%		
6) p-Terphenyl-d14	12.103	244	3	0.0010	ug/L	-0.08
Spiked Amount 5.000			Recovery	= 0.00%		
Target Compounds						Qvalue
2) 1,4-Dioxane	3.799	58	78397	5.5109	ug/L	87

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18600.D
Acq On : 27 Jun 2016 15:30
Operator : MES
Sample : L16061026-05 40X
Misc : 1,40
ALS Vial : 9 Sample Multiplier: 40

Quant Time: Jun 27 17:44:13 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

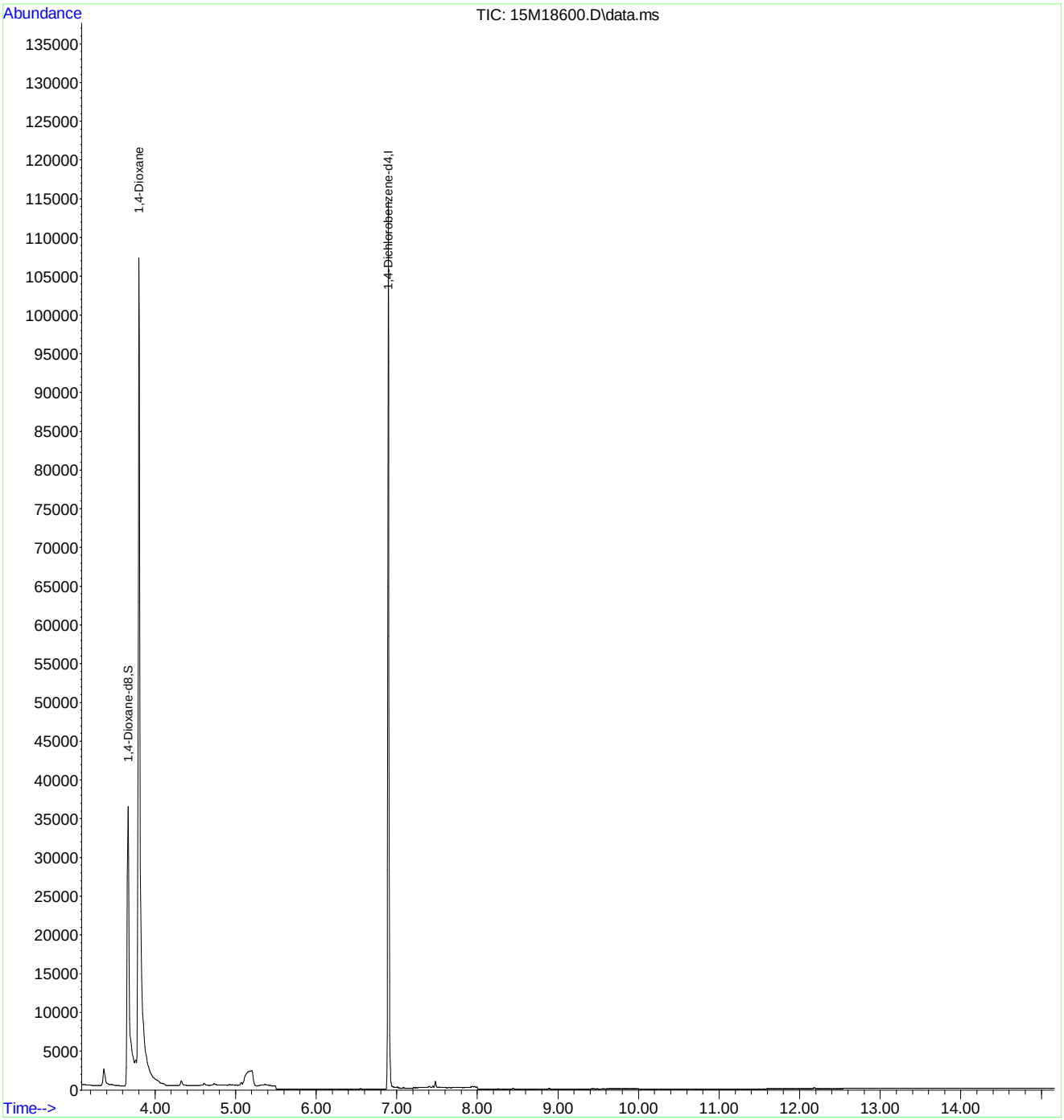

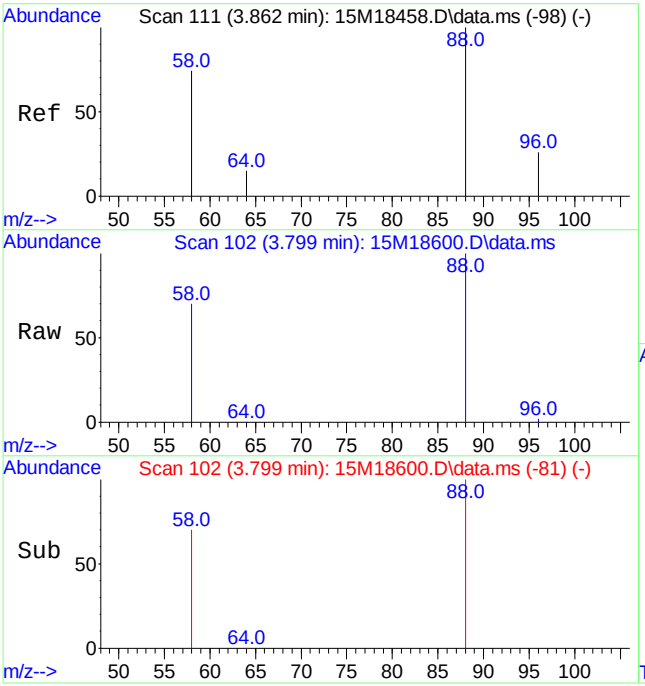

#2
1,4-Dioxane
Concen: 5.51 ug/L
RT: 3.799 min Scan# 102
Delta R.T. -0.063 min
Lab File: 15M18600.D
Acq: 27 Jun 2016 15:30

Tgt Ion: 58 Resp: 78397

Ion	Ratio	Lower	Upper
58	100		
88	154.3	103.1	240.7

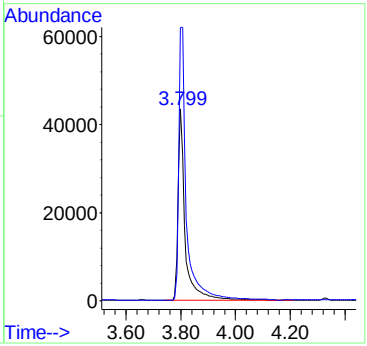

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18523.D
Acq On : 23 Jun 2016 18:54
Operator : MES
Sample : L16061026-07 827-DIOX
Misc : 1,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 24 08:01:35 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.929	152	44830	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.848	96	46839	2.5391	ug/L	0.02
Spiked Amount 5.000			Recovery	=	50.80%	
4) Nitrobenzene-d5	7.431	82	6116	0.1292	ug/L	0.00
Spiked Amount 5.000			Recovery	=	2.60%	
5) 2-Fluorobiphenyl	8.919	172	2445	0.0205	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.40%	
6) p-Terphenyl-d14	12.151	244	474	0.0041	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.883	58	8049	0.5868	ug/L	89

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18523.D
Acq On : 23 Jun 2016 18:54
Operator : MES
Sample : L16061026-07 827-DIOX
Misc : 1,1
ALS Vial : 15 Sample Multiplier: 1

Quant Time: Jun 24 08:01:35 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

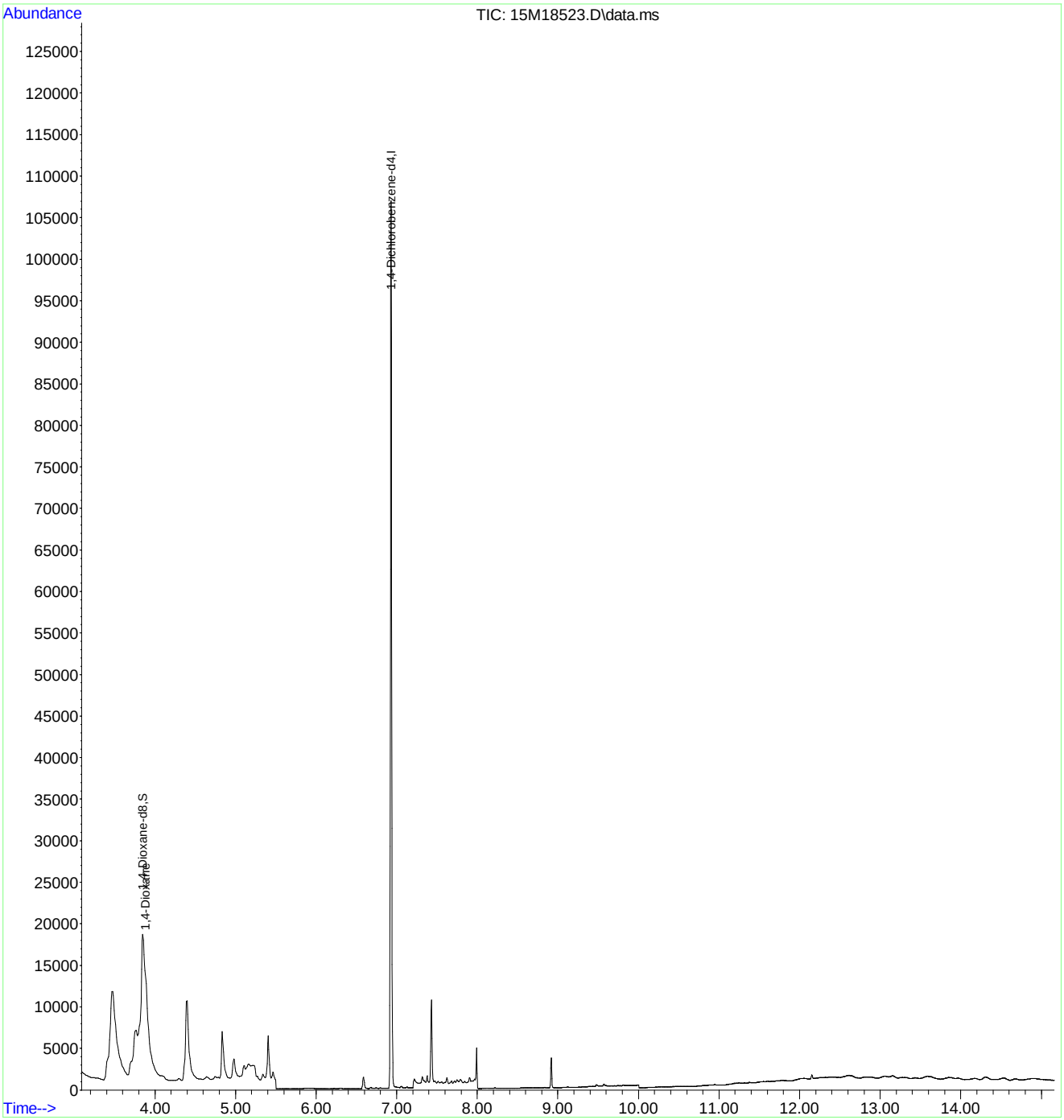

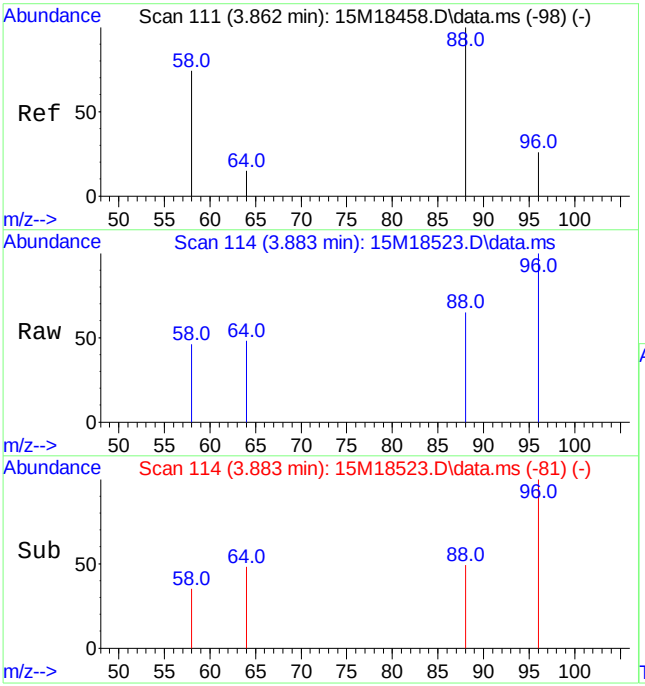

#2
1,4-Dioxane
Concen: 0.59 ug/L
RT: 3.883 min Scan# 114
Delta R.T. 0.021 min
Lab File: 15M18523.D
Acq: 23 Jun 2016 18:54

Tgt Ion: 58 Resp: 8049

Ion	Ratio	Lower	Upper
58	100		
88	156.7	103.1	240.7

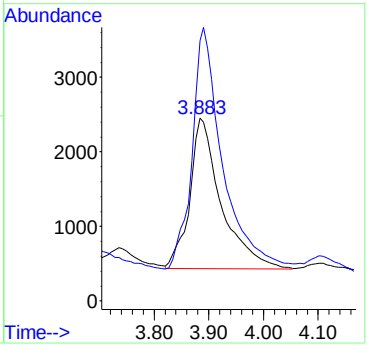

2.2.1.4 Standards Data

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 22 08:04:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	39637	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.827	96	82573	5.0627 ug/L	0.00
Spiked Amount 5.000			Recovery	= 101.20%	
4) Nitrobenzene-d5	7.431	82	223381	5.3353 ug/L	0.00
Spiked Amount 5.000			Recovery	= 106.80%	
5) 2-Fluorobiphenyl	8.922	172	533101	5.0444 ug/L	0.00
Spiked Amount 5.000			Recovery	= 100.80%	
6) p-Terphenyl-d14	12.184	244	519544	5.1003 ug/L	0.00
Spiked Amount 5.000			Recovery	= 102.00%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.862	58	60883	5.0202 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18458.D
Acq On : 21 Jun 2016 9:52
Operator : MES
Sample : WG573501-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 22 08:04:39 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

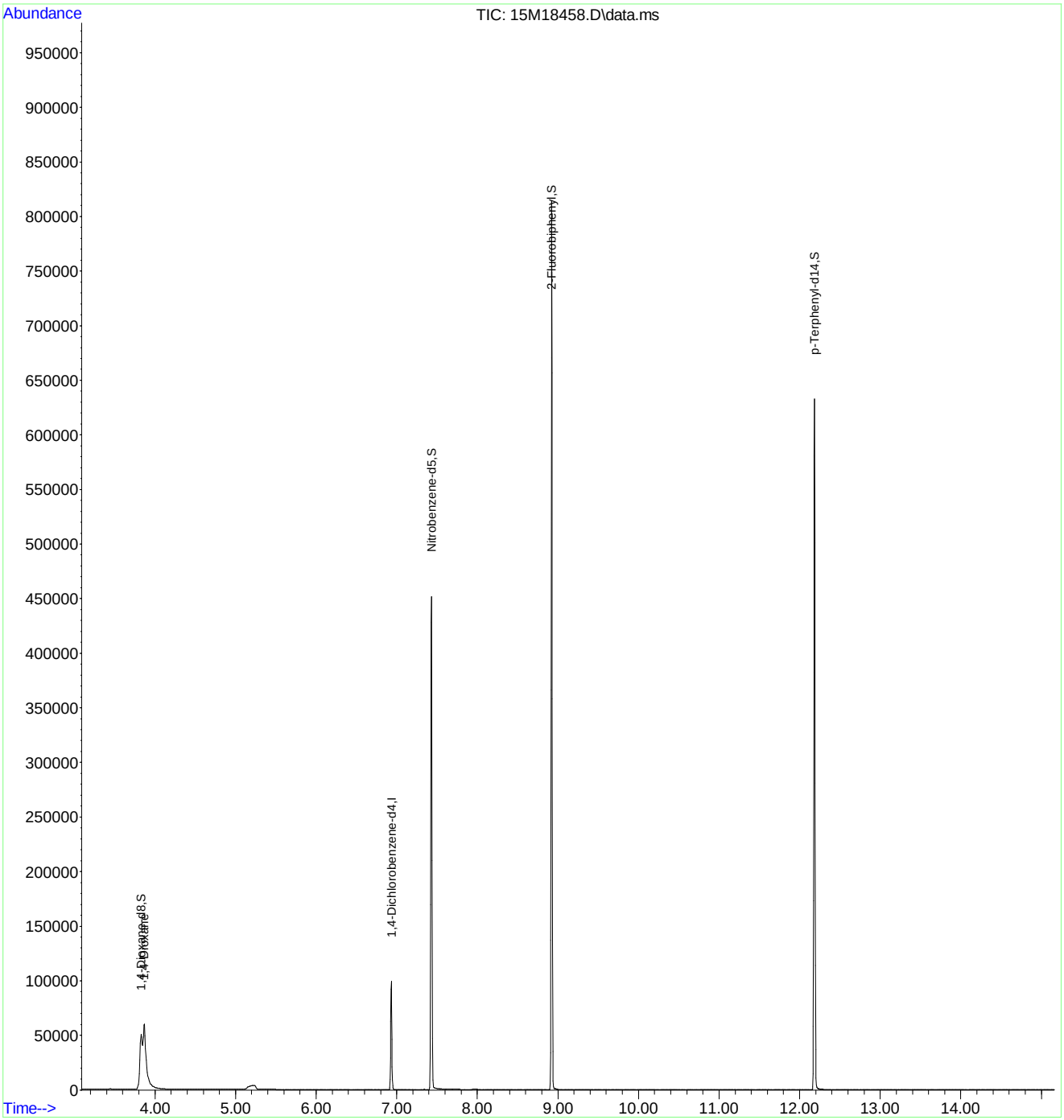

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18459.D
Acq On : 21 Jun 2016 10:27
Operator : MES
Sample : WG573501-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 22 08:04:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	43874	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.834	96	186767	10.3452	ug/L	0.00
Spiked Amount 5.000			Recovery = 207.00%			
4) Nitrobenzene-d5	7.431	82	527549	11.3834	ug/L	0.00
Spiked Amount 5.000			Recovery = 227.60%			
5) 2-Fluorobiphenyl	8.926	172	1199799	10.2565	ug/L	0.00
Spiked Amount 5.000			Recovery = 205.20%			
6) p-Terphenyl-d14	12.240	244	1225328	10.8672	ug/L	0.06
Spiked Amount 5.000			Recovery = 217.40%			
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	138820	10.3412	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18459.D
Acq On : 21 Jun 2016 10:27
Operator : MES
Sample : WG573501-03 10 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 22 08:04:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

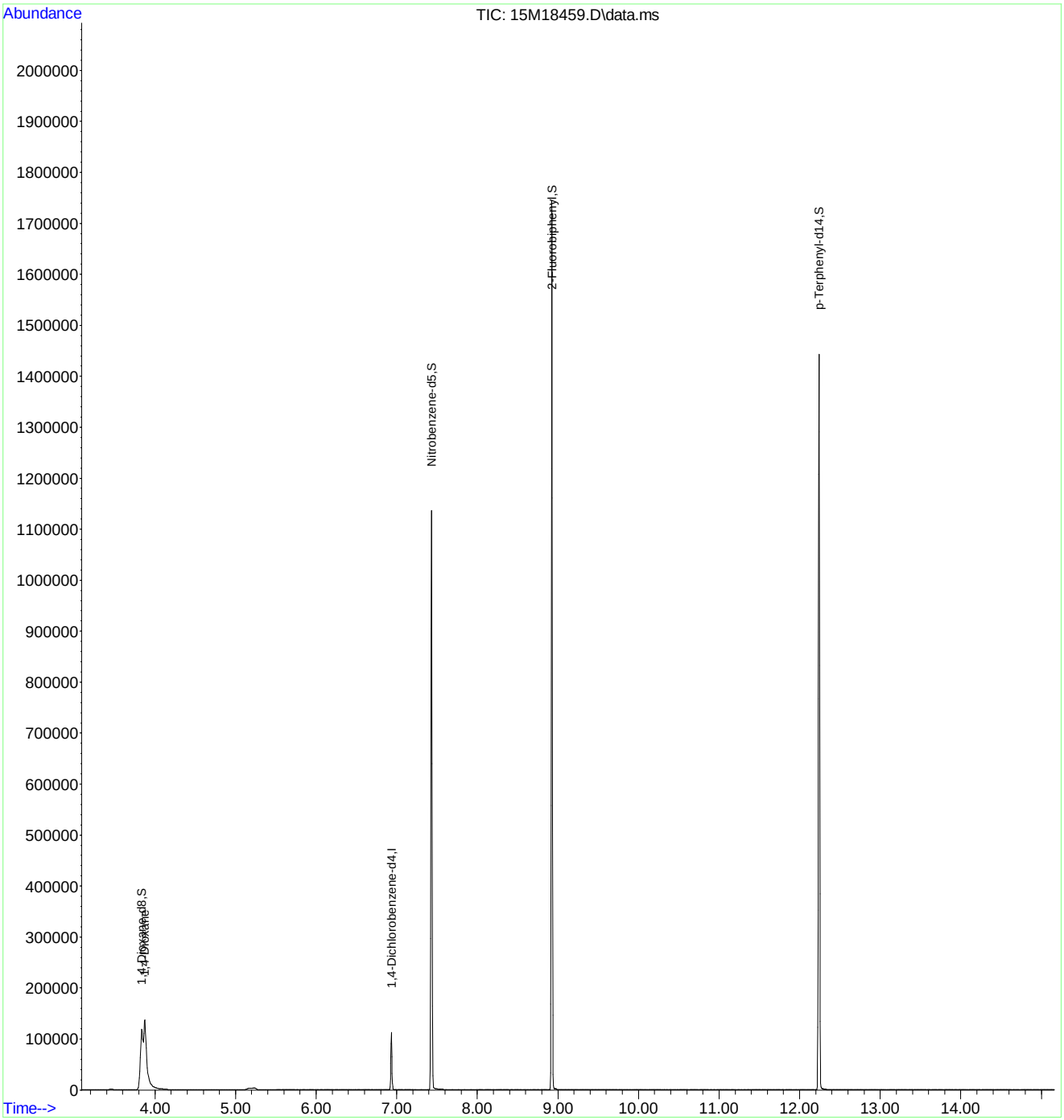

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18460.D
Acq On : 21 Jun 2016 10:49
Operator : MES
Sample : WG573501-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 22 08:04:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	44299	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.834	96	138833	7.6163 ug/L	0.00
Spiked Amount 5.000			Recovery	= 152.40%	
4) Nitrobenzene-d5	7.431	82	389810	8.3306 ug/L	0.00
Spiked Amount 5.000			Recovery	= 166.60%	
5) 2-Fluorobiphenyl	8.923	172	909050	7.6965 ug/L	0.00
Spiked Amount 5.000			Recovery	= 154.00%	
6) p-Terphenyl-d14	12.203	244	921380	8.0931 ug/L	0.02
Spiked Amount 5.000			Recovery	= 161.80%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.876	58	103182	7.6127 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18460.D
Acq On : 21 Jun 2016 10:49
Operator : MES
Sample : WG573501-04 7.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 22 08:04:45 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

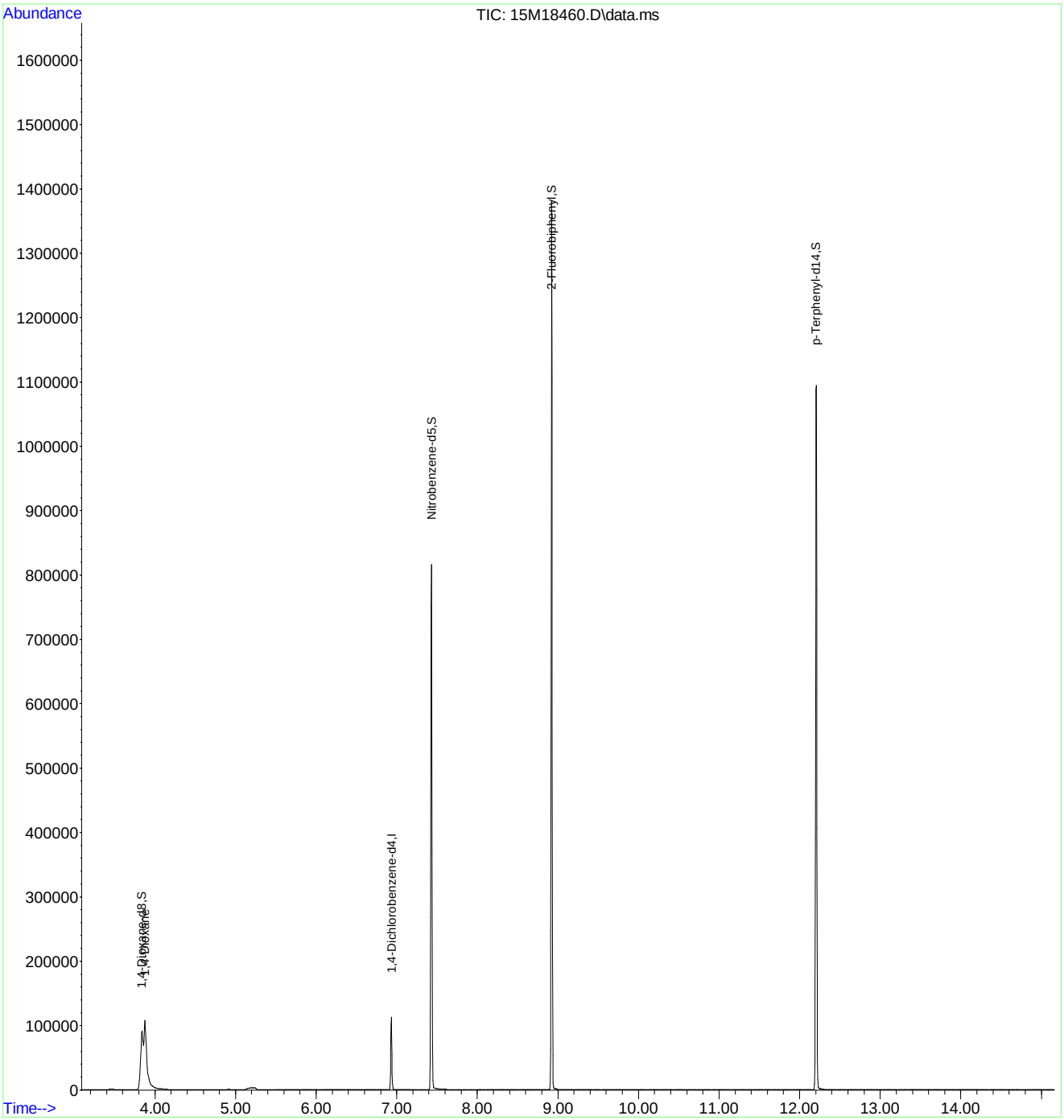

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18461.D
Acq On : 21 Jun 2016 11:12
Operator : MES
Sample : WG573501-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 22 08:04:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.933	152	35478	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.827	96	35630	2.4406 ug/L	0.00
Spiked Amount 5.000			Recovery	= 48.80%	
4) Nitrobenzene-d5	7.431	82	88869	2.3714 ug/L	0.00
Spiked Amount 5.000			Recovery	= 47.40%	
5) 2-Fluorobiphenyl	8.923	172	232500	2.4579 ug/L	0.00
Spiked Amount 5.000			Recovery	= 49.20%	
6) p-Terphenyl-d14	12.199	244	218191	2.3930 ug/L	0.02
Spiked Amount 5.000			Recovery	= 47.80%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.862	58	26333	2.4259 ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18461.D
Acq On : 21 Jun 2016 11:12
Operator : MES
Sample : WG573501-05 2.5 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 22 08:04:48 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

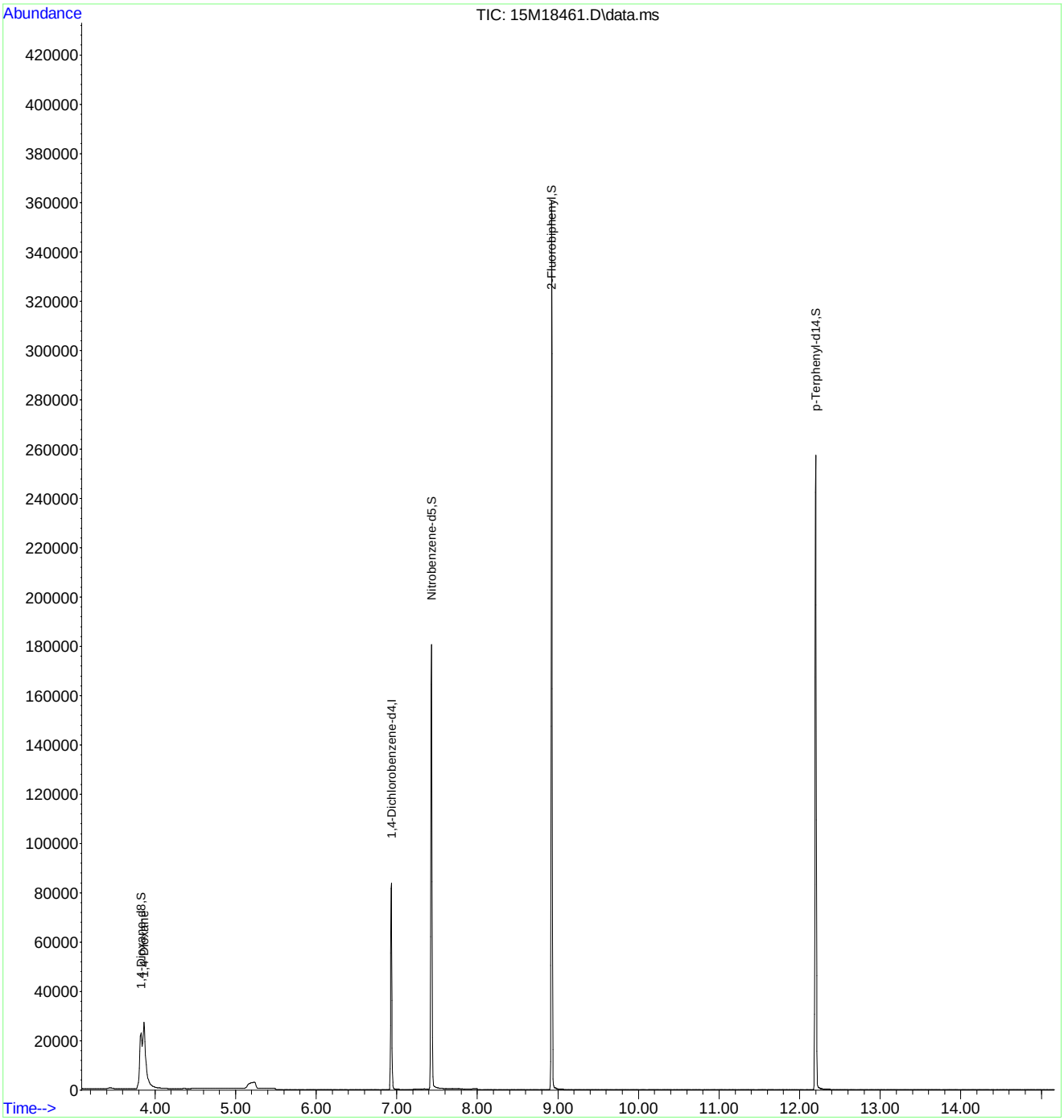

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18462.D
Acq On : 21 Jun 2016 11:34
Operator : MES
Sample : WG573501-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 22 08:04:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	44672	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.841	96	17660	0.9607	ug/L	0.01
Spiked Amount 5.000			Recovery	=	19.20%	
4) Nitrobenzene-d5	7.431	82	41409	0.8776	ug/L	0.00
Spiked Amount 5.000			Recovery	=	17.60%	
5) 2-Fluorobiphenyl	8.922	172	114491	0.9612	ug/L	0.00
Spiked Amount 5.000			Recovery	=	19.20%	
6) p-Terphenyl-d14	12.203	244	105713	0.9208	ug/L	0.02
Spiked Amount 5.000			Recovery	=	18.40%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.876	58	13250	0.9694	ug/L	82

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18462.D
Acq On : 21 Jun 2016 11:34
Operator : MES
Sample : WG573501-06 1 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 6 Sample Multiplier: 1

Quant Time: Jun 22 08:04:51 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

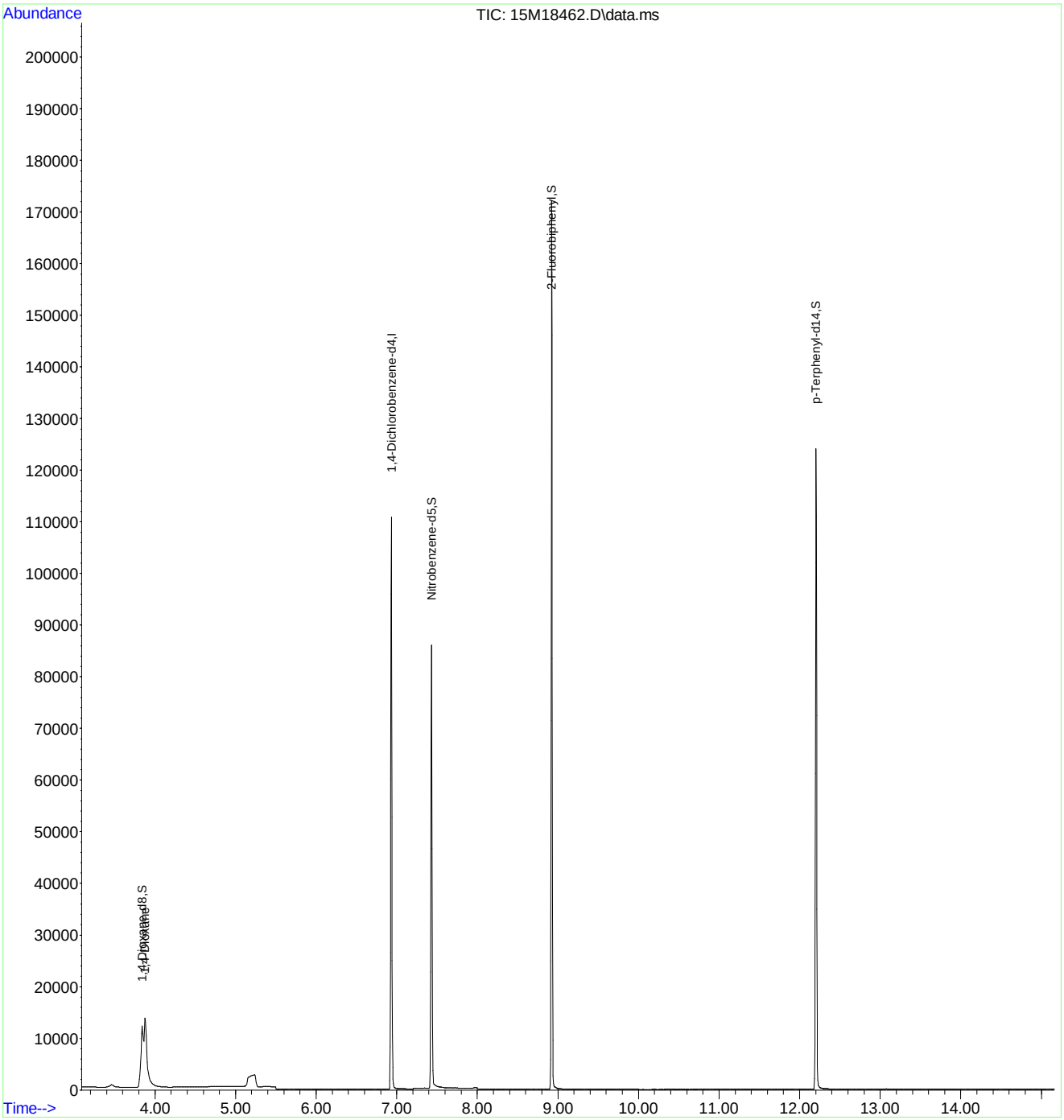

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18463.D
Acq On : 21 Jun 2016 11:57
Operator : MES
Sample : WG573501-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 22 08:04:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	45840	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.841	96	7629	0.4045	ug/L	0.01
Spiked Amount 5.000			Recovery	=	8.00%	
4) Nitrobenzene-d5	7.431	82	16604	0.3429	ug/L	0.00
Spiked Amount 5.000			Recovery	=	6.80%	
5) 2-Fluorobiphenyl	8.923	172	48617	0.3978	ug/L	0.00
Spiked Amount 5.000			Recovery	=	8.00%	
6) p-Terphenyl-d14	12.210	244	44097	0.3743	ug/L	0.03
Spiked Amount 5.000			Recovery	=	7.40%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.876	58	5650	0.4028	ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18463.D
Acq On : 21 Jun 2016 11:57
Operator : MES
Sample : WG573501-07 0.4 PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Jun 22 08:04:54 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

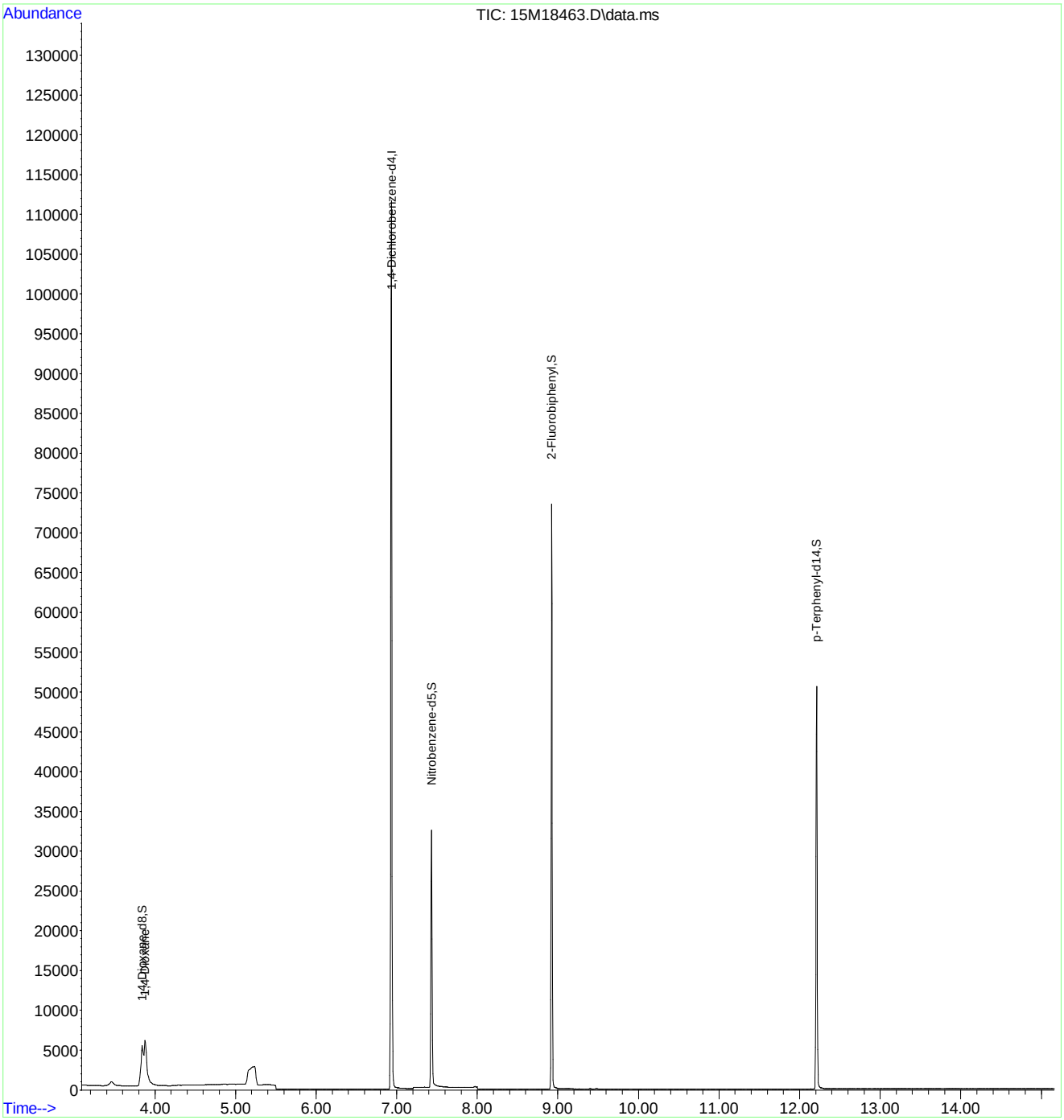

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.933	152	41944	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.792	96	22	0.0013	ug/L	-0.04
Spiked Amount 5.000			Recovery	=	0.00%	
4) Nitrobenzene-d5	7.436	82	56	0.0013	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
5) 2-Fluorobiphenyl	8.926	172	23	0.0002	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.00%	
6) p-Terphenyl-d14	12.214	244	128	0.0012	ug/L	0.03
Spiked Amount 5.000			Recovery	=	0.00%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.869	58	64750	5.0454	ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

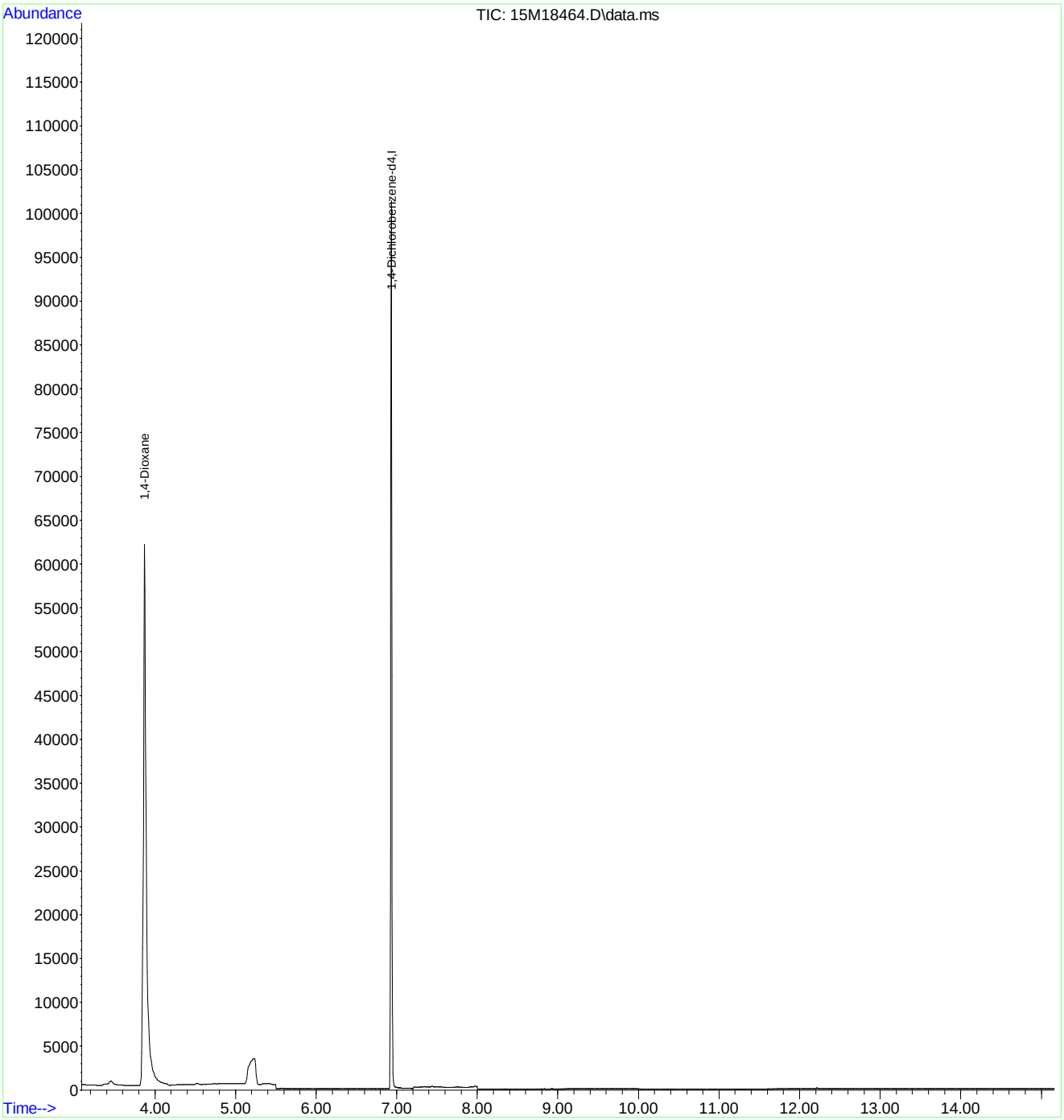

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18464.D
Acq On : 21 Jun 2016 12:20
Operator : MES
Sample : WG573501-08 5PPM 1,4-DIOXANE ALT SRC
Misc : 1,1 STD74214
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jun 22 08:04:57 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

		Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1	I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	106	0.00
2		1,4-Dioxane	5.000	5.045	-0.9	106	0.00
3	S	1,4-Dioxane-d8	5.000	0.001	100.0#	0	-0.04
4	S	Nitrobenzene-d5	5.000	0.001	100.0#	0	0.00
5	S	2-Fluorobiphenyl	5.000	0.000	100.0#	0	0.00
6	S	p-Terphenyl-d14	5.000	0.001	100.0#	0	0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18510.D
Acq On : 23 Jun 2016 13:59
Operator : MES
Sample : WG573879-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 23 14:15:55 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	6.929	152	50565	1.0000 ug/mL	# 0.00
System Monitoring Compounds					
3) 1,4-Dioxane-d8	3.848	96	96203	4.6237 ug/L	0.02
Spiked Amount 5.000			Recovery	= 92.40%	
4) Nitrobenzene-d5	7.426	82	280398	5.2498 ug/L	0.00
Spiked Amount 5.000			Recovery	= 105.00%	
5) 2-Fluorobiphenyl	8.919	172	664952	4.9322 ug/L	0.00
Spiked Amount 5.000			Recovery	= 98.60%	
6) p-Terphenyl-d14	12.155	244	665166	5.1186 ug/L	-0.03
Spiked Amount 5.000			Recovery	= 102.40%	
Target Compounds					Qvalue
2) 1,4-Dioxane	3.883	58	70119	4.5322 ug/L	84

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18510.D
Acq On : 23 Jun 2016 13:59
Operator : MES
Sample : WG573879-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 23 14:15:55 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

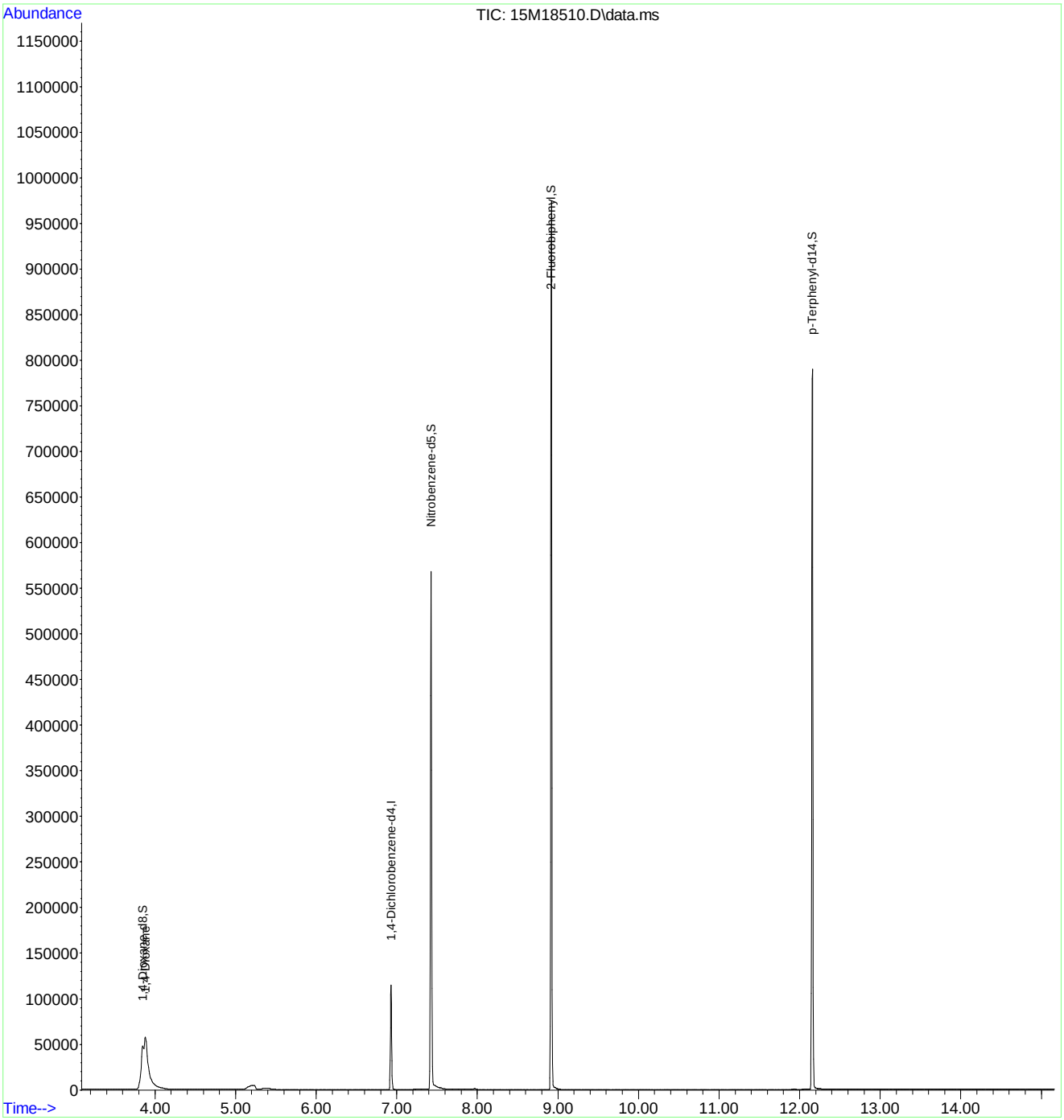

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18510.D
Acq On : 23 Jun 2016 13:59
Operator : MES
Sample : WG573879-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 23 14:15:55 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	128	0.00
2	1,4-Dioxane	0.306	0.277	9.5	115	0.02
3 S	1,4-Dioxane-d8	0.411	0.381	7.3	117	0.02
4 S	Nitrobenzene-d5	1.056	1.109	-5.0	126	0.00
5 S	2-Fluorobiphenyl	2.666	2.630	1.4	125	0.00
6 S	p-Terphenyl-d14	2.570	2.631	-2.4	128	-0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18510.D
Acq On : 23 Jun 2016 13:59
Operator : MES
Sample : WG573879-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 23 14:15:55 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	128	0.00
2	1,4-Dioxane	5.000	4.532	9.4	115	0.02
3 S	1,4-Dioxane-d8	5.000	4.624	7.5	117	0.02
4 S	Nitrobenzene-d5	5.000	5.250	-5.0	126	0.00
5 S	2-Fluorobiphenyl	5.000	4.932	1.4	125	0.00
6 S	p-Terphenyl-d14	5.000	5.119	-2.4	128	-0.03

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18593.D
Acq On : 27 Jun 2016 12:37
Operator : MES
Sample : WG574241-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 27 13:07:36 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.892	152	42974	1.0000	ug/mL	#-0.04
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.749	96	78711	4.4512	ug/L	-0.08
Spiked Amount 5.000			Recovery	=	89.00%	
4) Nitrobenzene-d5	7.393	82	235288	5.1833	ug/L	-0.04
Spiked Amount 5.000			Recovery	=	103.60%	
5) 2-Fluorobiphenyl	8.886	172	551093	4.8097	ug/L	-0.04
Spiked Amount 5.000			Recovery	=	96.20%	
6) p-Terphenyl-d14	12.170	244	561144	5.0809	ug/L	-0.01
Spiked Amount 5.000			Recovery	=	101.60%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.785	58	57358	4.3623	ug/L	88

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18593.D
Acq On : 27 Jun 2016 12:37
Operator : MES
Sample : WG574241-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 27 13:07:36 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

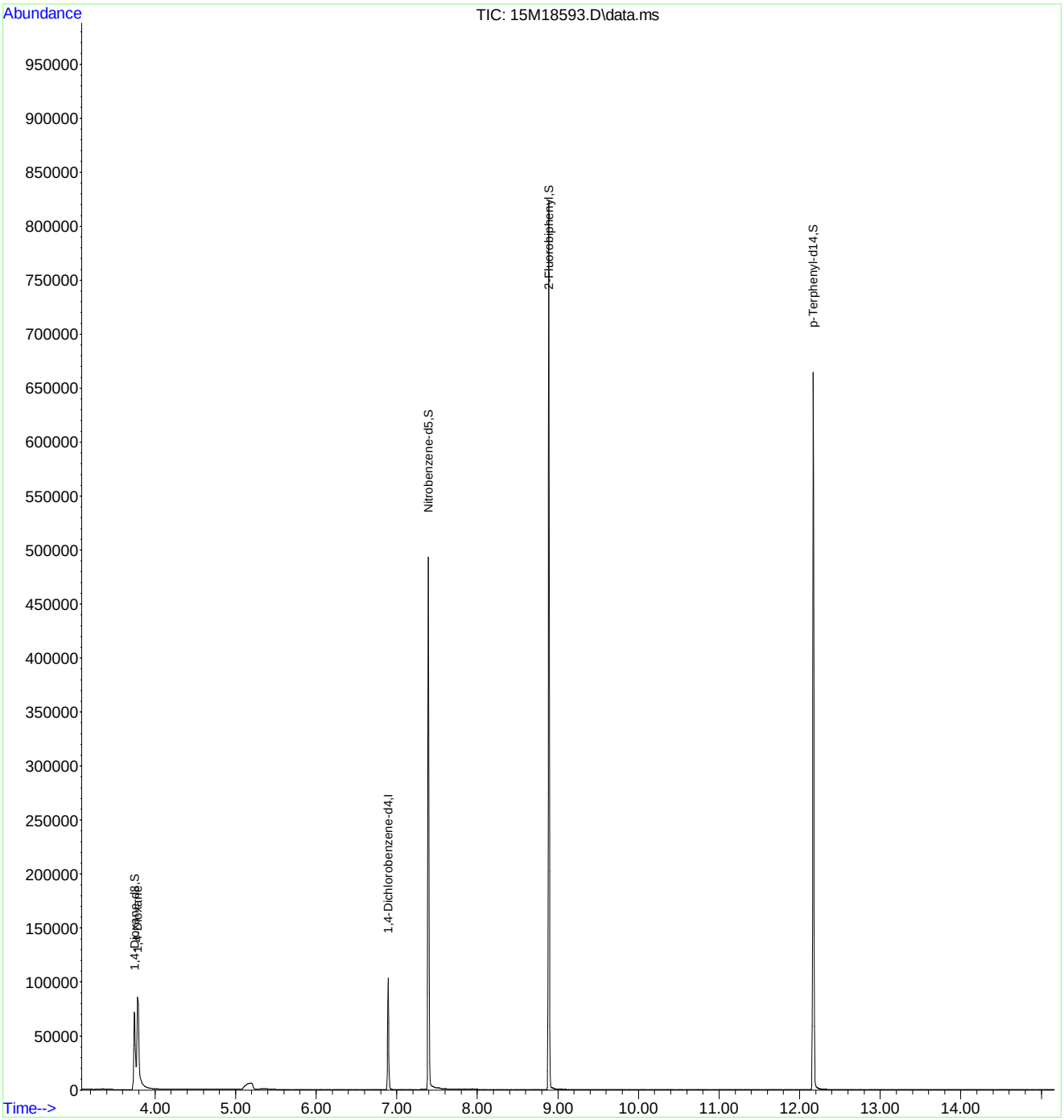

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18593.D
Acq On : 27 Jun 2016 12:37
Operator : MES
Sample : WG574241-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 27 13:07:36 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	108	-0.04
2	1,4-Dioxane	0.306	0.267	12.7	94	-0.08
3 S	1,4-Dioxane-d8	0.411	0.366	10.9	95	-0.08
4 S	Nitrobenzene-d5	1.056	1.095	-3.7	105	-0.04
5 S	2-Fluorobiphenyl	2.666	2.565	3.8	103	-0.04
6 S	p-Terphenyl-d14	2.570	2.612	-1.6	108	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Evaluate Continuing Calibration Report

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18593.D
Acq On : 27 Jun 2016 12:37
Operator : MES
Sample : WG574241-02 5PPM 1,4-DIOXANE STD
Misc : 1,1 STD74784
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Jun 27 13:07:36 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
Max. RRF Dev : 25% Max. Rel. Area : 150%

	Compound	Amount	Calc.	%Dev	Area%	Dev(min)
1 I	1,4-Dichlorobenzene-d4	1.000	1.000	0.0	108	-0.04
2	1,4-Dioxane	5.000	4.362	12.8	94	-0.08
3 S	1,4-Dioxane-d8	5.000	4.451	11.0	95	-0.08
4 S	Nitrobenzene-d5	5.000	5.183	-3.7	105	-0.04
5 S	2-Fluorobiphenyl	5.000	4.810	3.8	103	-0.04
6 S	p-Terphenyl-d14	5.000	5.081	-1.6	108	-0.01

(#) = Out of Range SPCC's out = 0 CCC's out = 0

2.2.1.5 Raw QC Data

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

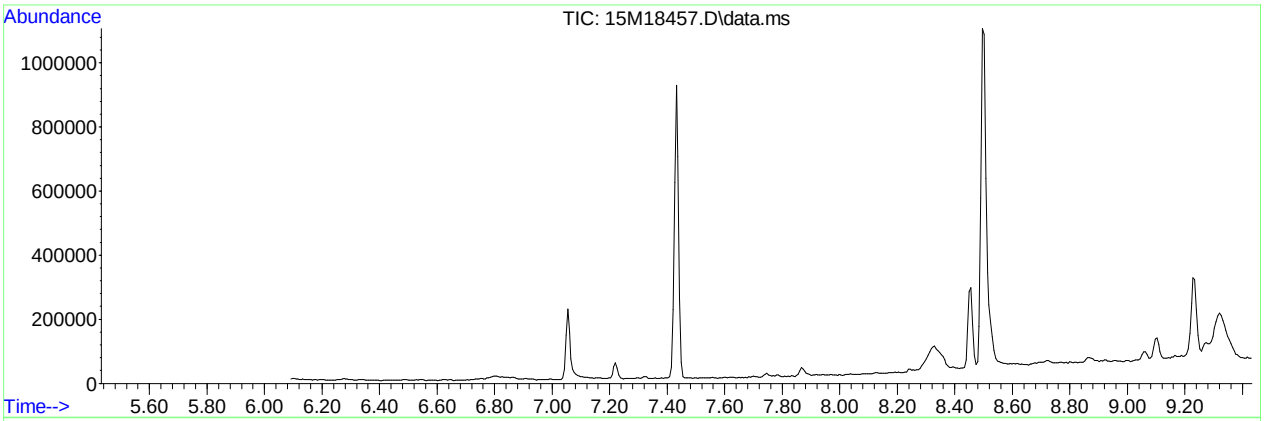

AutoFind: Scans 234, 235, 236; Background Corrected with Scan 228

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	38.8	34488	PASS
68	69	0.00	2	1.4	500	PASS
69	198	0.00	100	41.4	36833	PASS
70	69	0.00	2	0.5	172	PASS
127	198	40	60	51.9	46131	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	88880	PASS
199	198	5	9	6.7	5918	PASS
275	198	10	30	24.9	22090	PASS
365	198	1	100	2.7	2358	PASS
441	443	0.01	100	75.7	9586	PASS
442	198	40	100	73.4	65261	PASS
443	442	17	23	19.4	12659	PASS

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

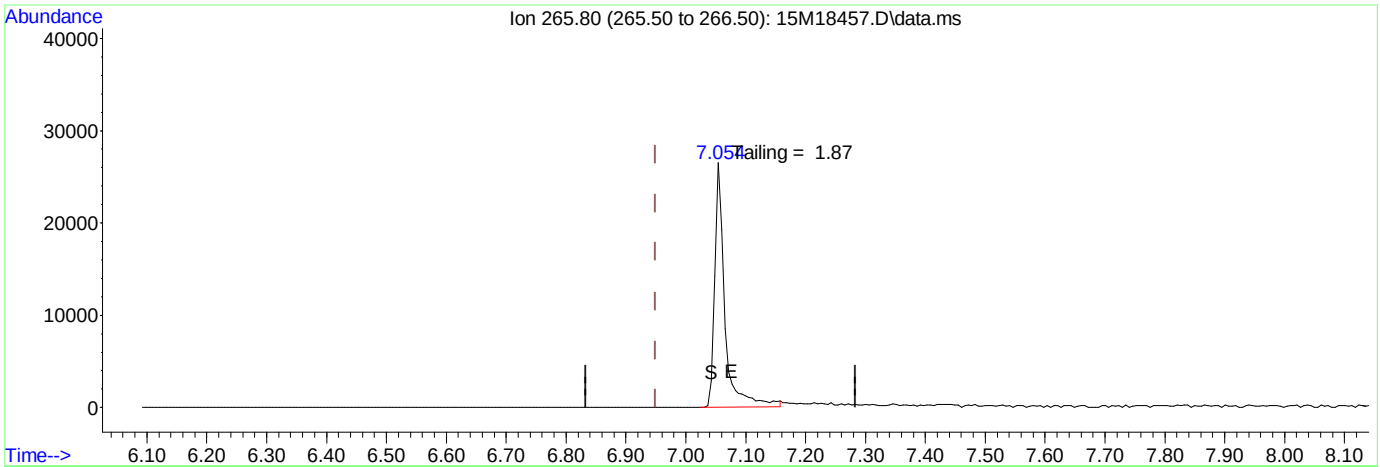

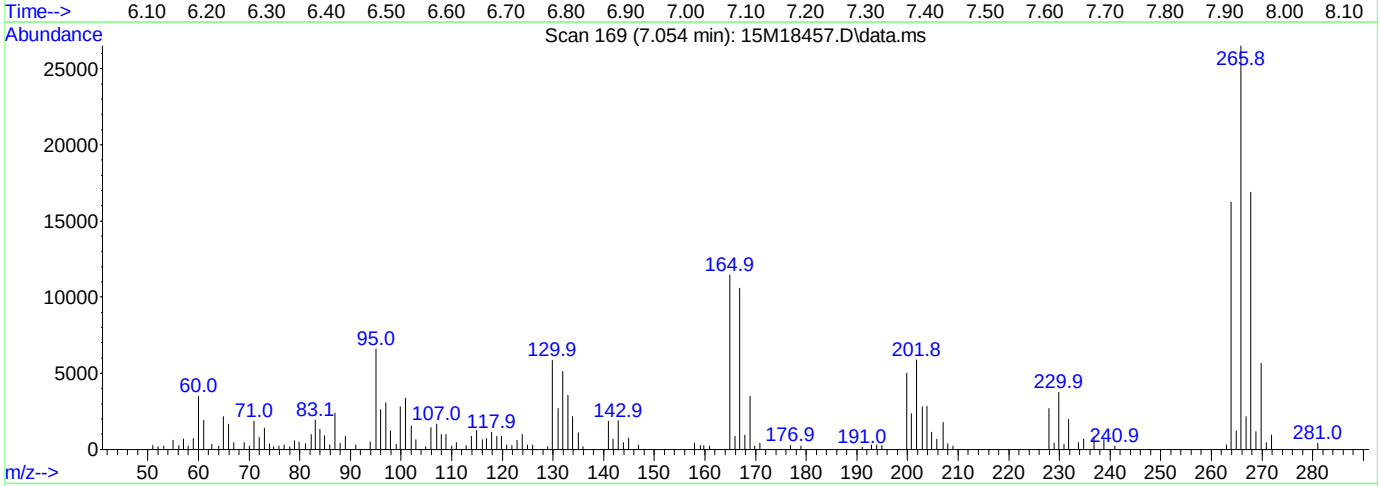

TIC: 15M18457.D\data.ms

(1) Pentachlorophenol

7.054min (+ 0.105) 0.00 ug/ml

response 30738

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

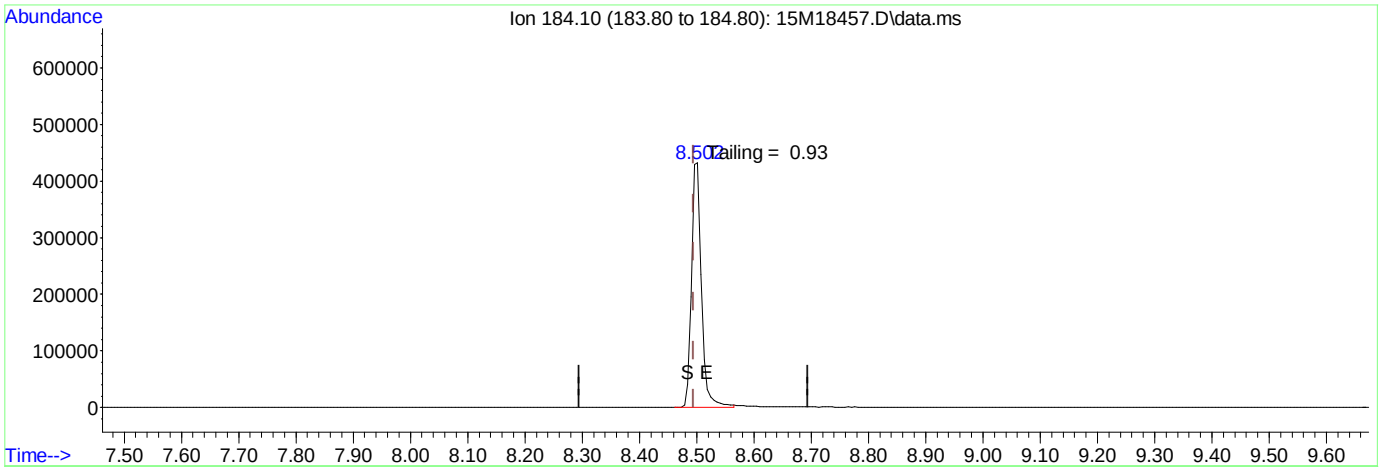

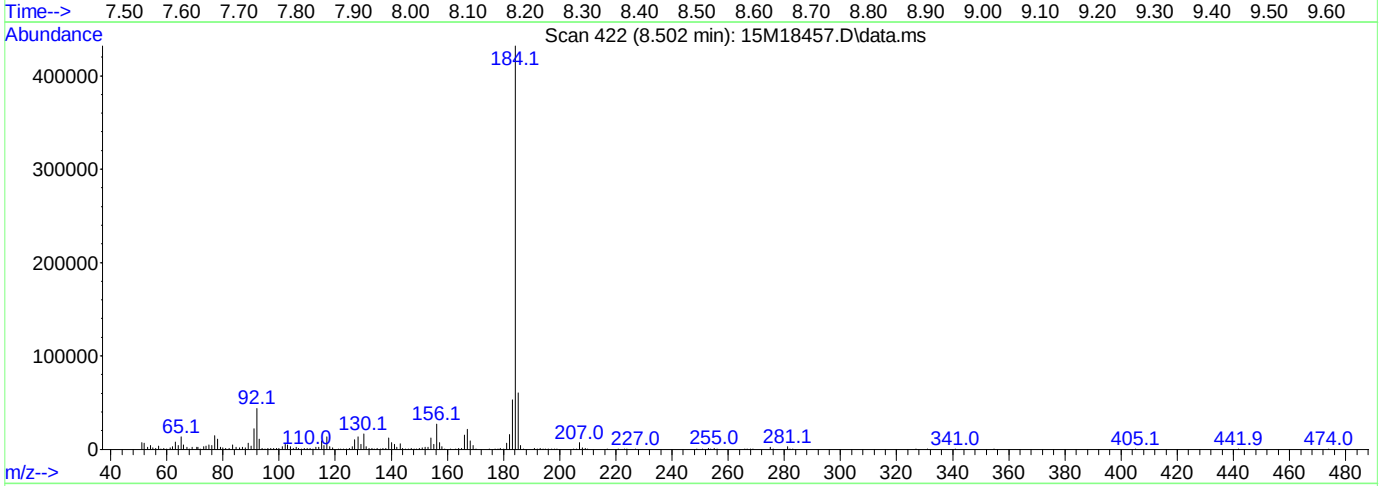

(2) Benzidine

8.502min (+ 0.008) 0.00 ug/ml

response 532770

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062116\
Data File : 15M18457.D
Acq On : 21 Jun 2016 9:34
Operator : MES
Sample : WG573501-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 21 09:47:12 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

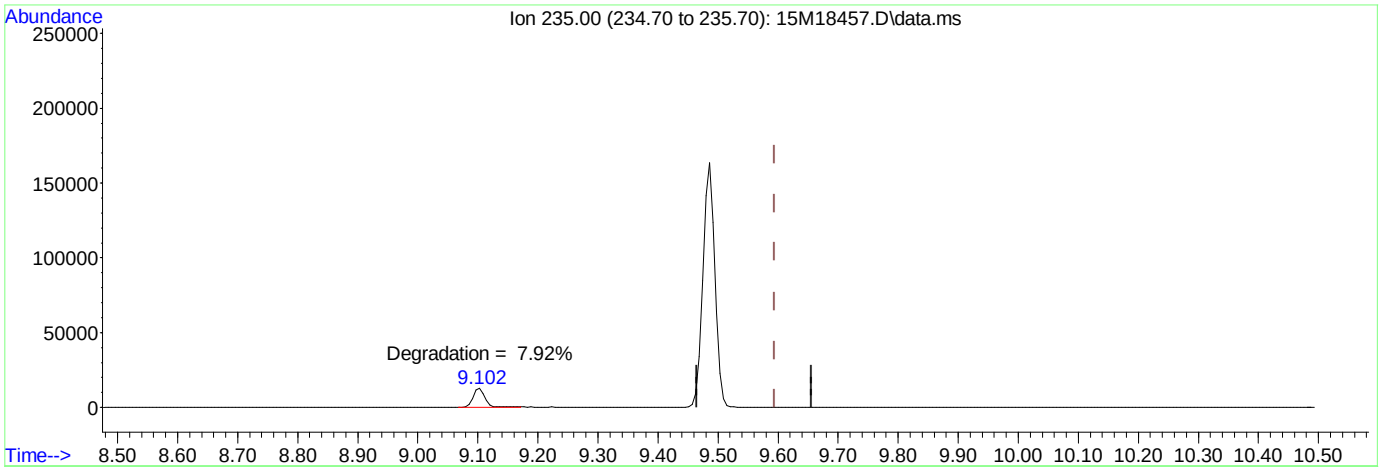

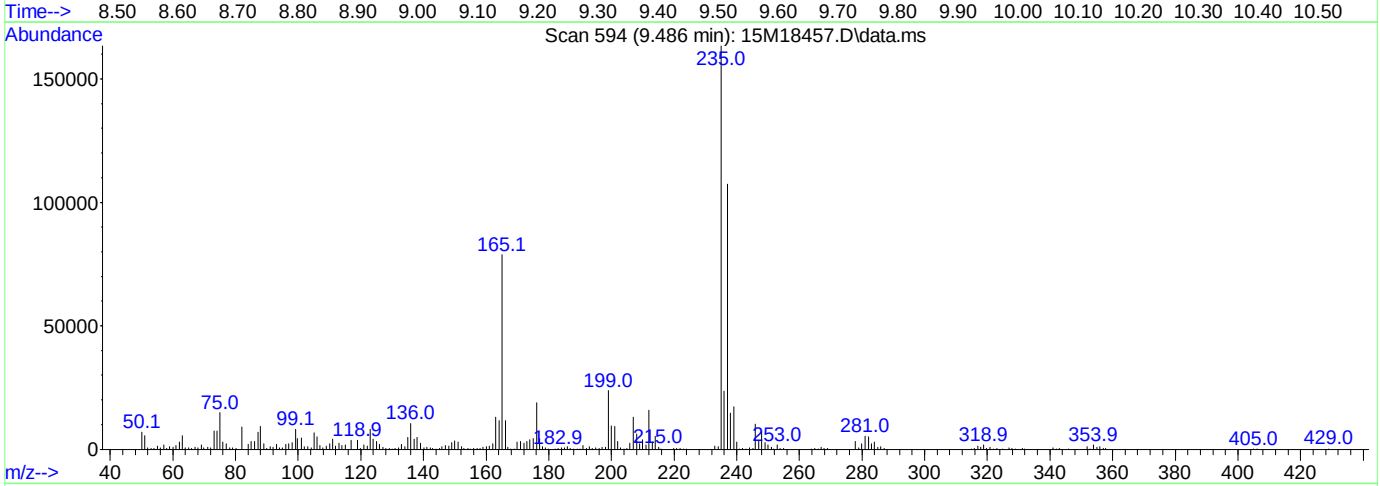

TIC: 15M18457.D\data.ms

(3) DDT

9.486min (-0.108) 0.00 ug/ml

response 180187

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18509.D
Acq On : 23 Jun 2016 13:42
Operator : MES
Sample : WG573879-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

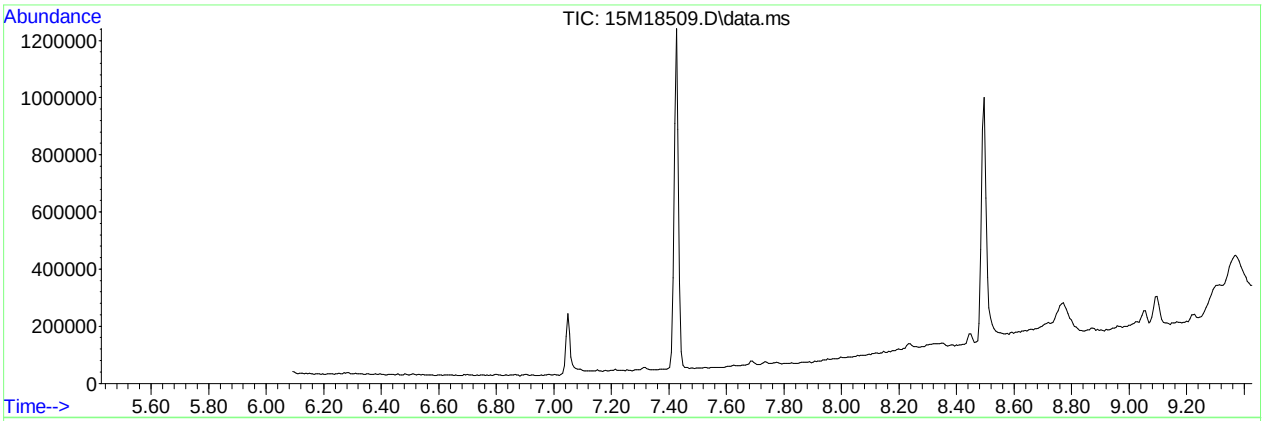

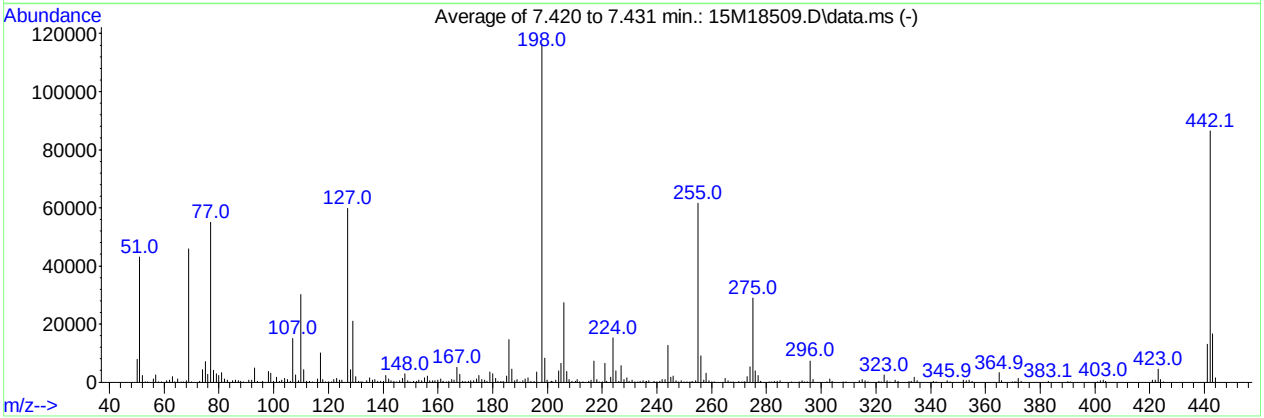

AutoFind: Scans 233, 234, 235; Background Corrected with Scan 227

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	37.0	43111	PASS
68	69	0.00	2	1.1	506	PASS
69	198	0.00	100	39.4	45795	PASS
70	69	0.00	2	0.2	72	PASS
127	198	40	60	51.3	59752	PASS
197	198	0.00	1	0.0	0	PASS
198	198	100	100	100.0	116364	PASS
199	198	5	9	7.1	8249	PASS
275	198	10	30	24.9	28968	PASS
365	198	1	100	2.8	3278	PASS
441	443	0.01	100	79.2	13093	PASS
442	198	40	100	74.3	86464	PASS
443	442	17	23	19.1	16541	PASS

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18509.D
Acq On : 23 Jun 2016 13:42
Operator : MES
Sample : WG573879-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 23 13:53:21 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

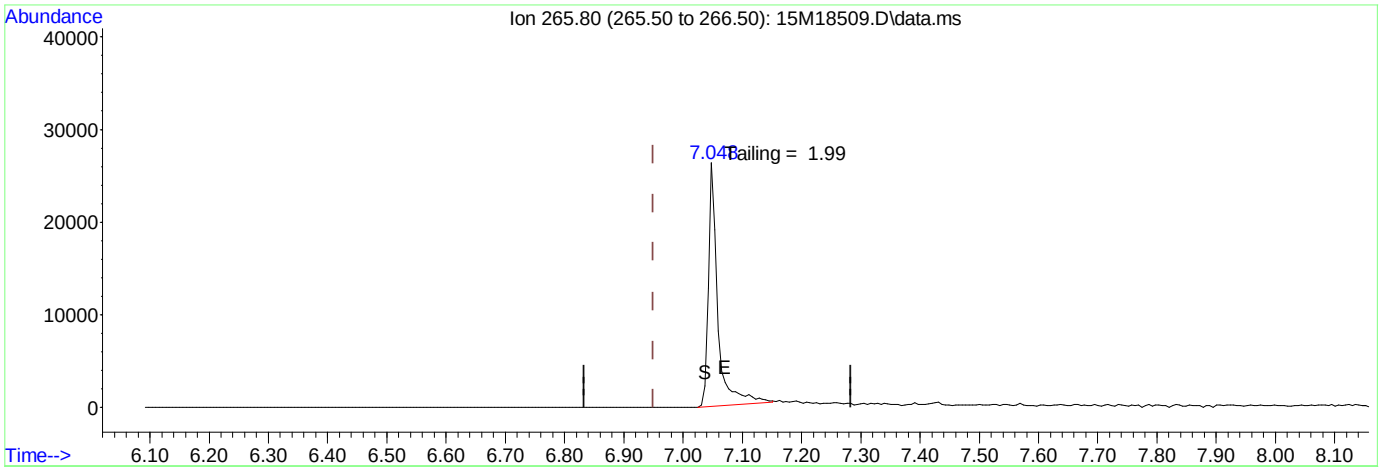

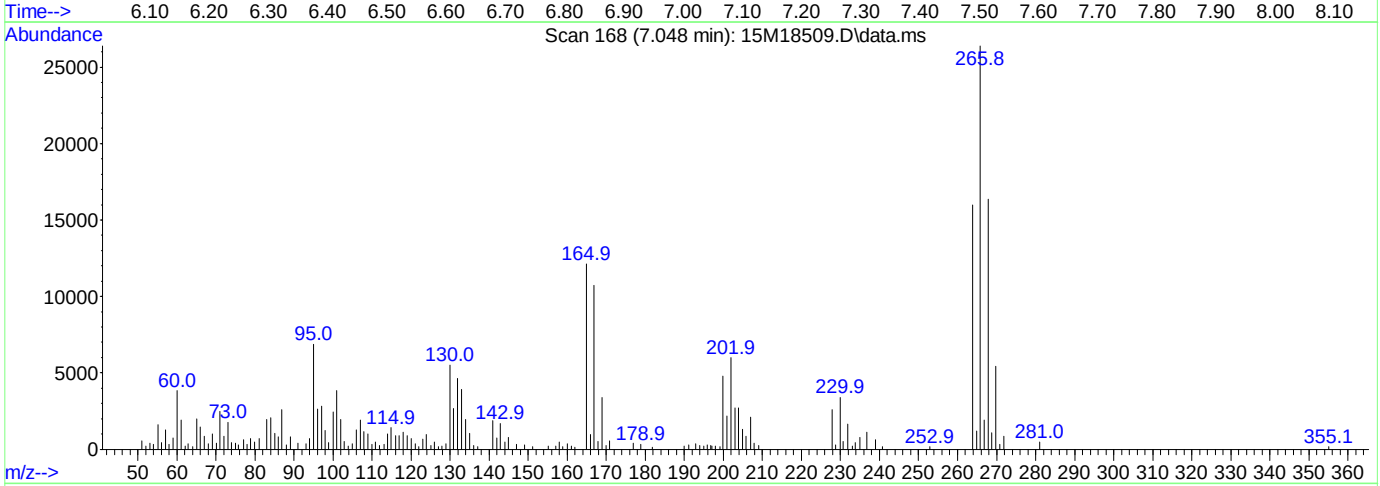

TIC: 15M18509.D\data.ms

(1) Pentachlorophenol

7.048min (+ 0.099) 0.00 ug/ml

response 32081

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18509.D
Acq On : 23 Jun 2016 13:42
Operator : MES
Sample : WG573879-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 23 13:53:21 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

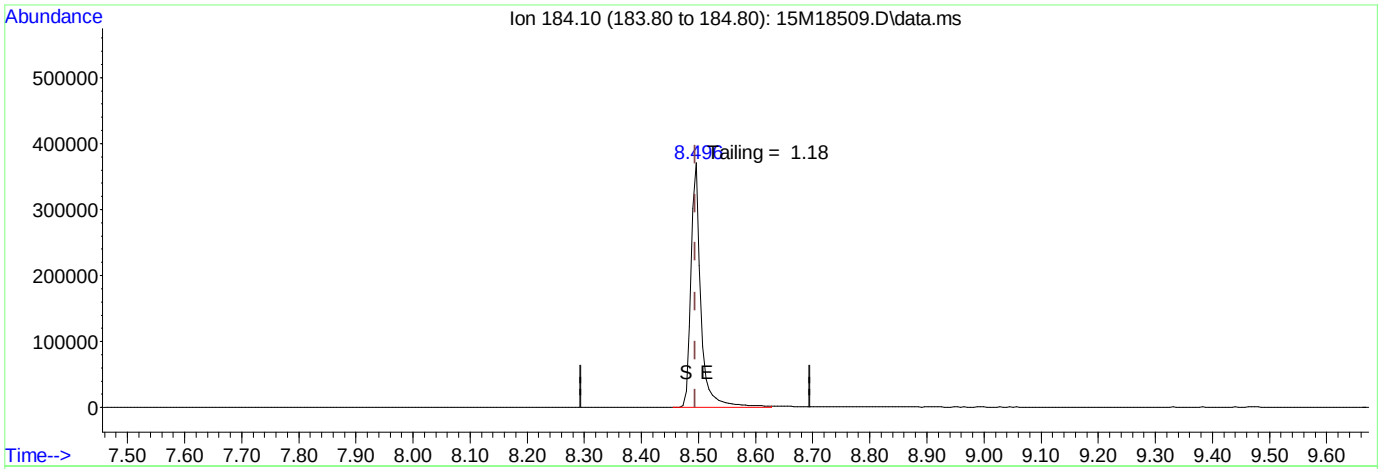

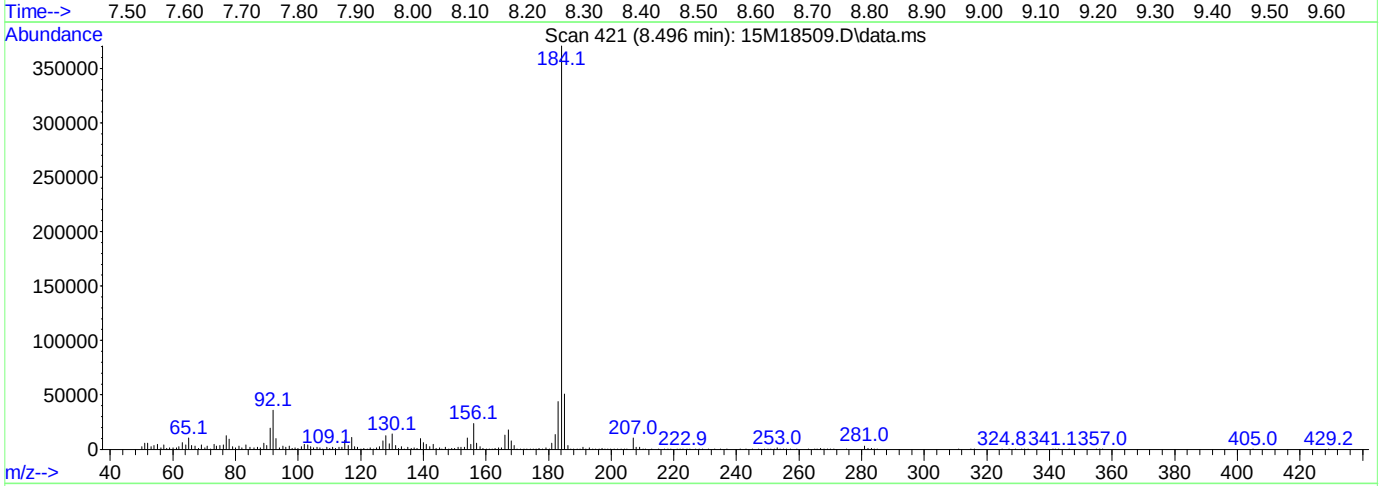

TIC: 15M18509.D\data.ms

(2) Benzidine

8.496min (+ 0.002) 0.00 ug/ml

response 452358

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18509.D
Acq On : 23 Jun 2016 13:42
Operator : MES
Sample : WG573879-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 23 13:53:21 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

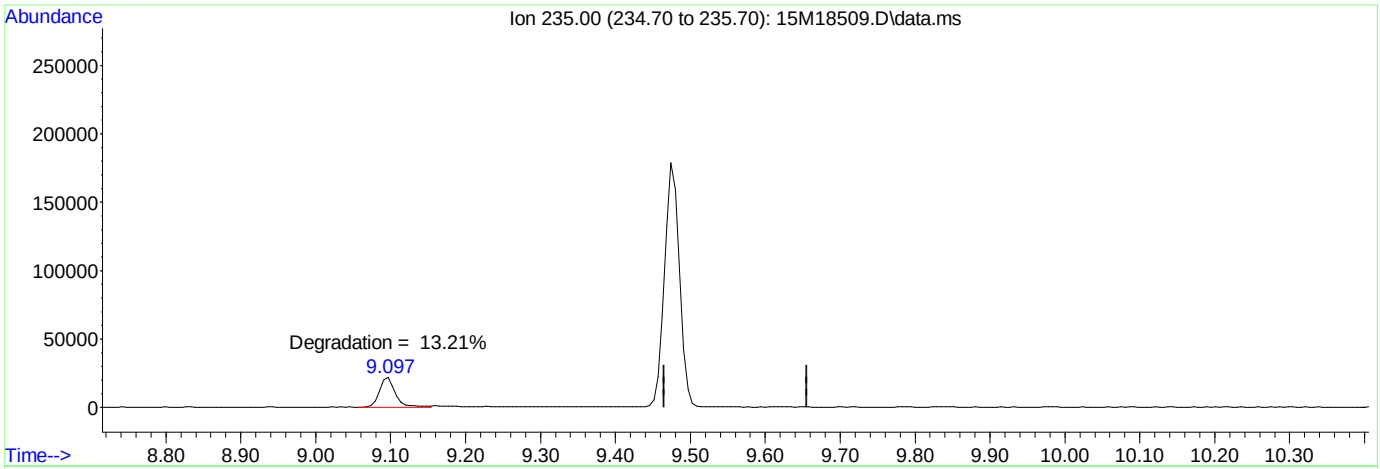

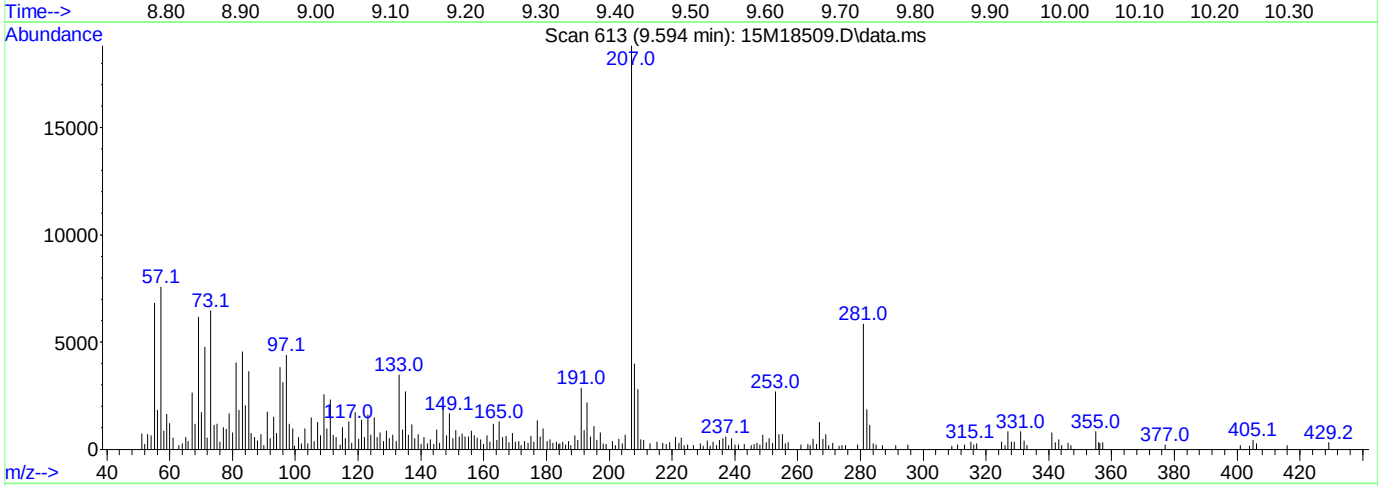

(3) DDT

9.594min (-9.594) 0.00 ug/ml

response 0

Ion	Exp%	Act%
235.00	100.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18592.D
Acq On : 27 Jun 2016 12:20
Operator : MES
Sample : WG574241-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Integration File: rteint.p

Method : C:\msdchem\1\methods\DFTPPQ.M
Title : DFTPP
Last Update : Mon Apr 27 13:16:06 2015

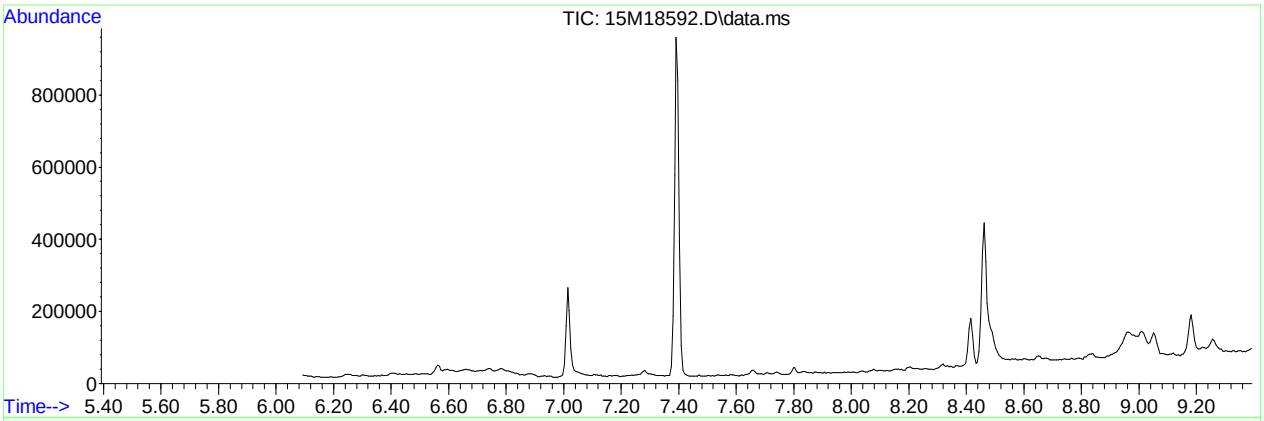

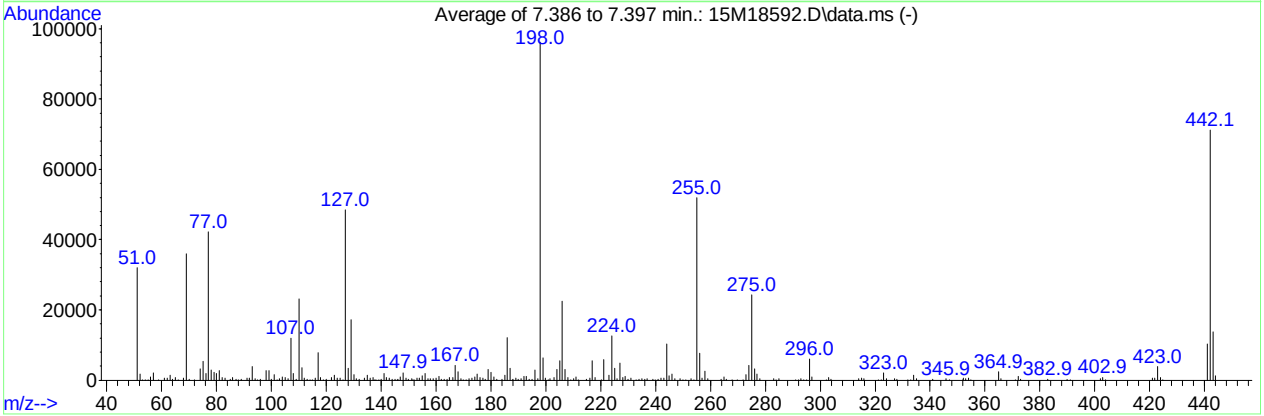

AutoFind: Scans 227, 228, 229; Background Corrected with Scan 221

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
51	198	30	60	33.2	31989	PASS
68	69	0.00	2	1.6	580	PASS
69	198	0.00	100	37.4	35954	PASS
70	69	0.00	2	0.6	222	PASS
127	198	40	60	50.4	48459	PASS
197	198	0.00	1	0.4	409	PASS
198	198	100	100	100.0	96232	PASS
199	198	5	9	6.6	6399	PASS
275	198	10	30	25.2	24236	PASS
365	198	1	100	2.5	2410	PASS
441	443	0.01	100	75.7	10371	PASS
442	198	40	100	73.9	71133	PASS
443	442	17	23	19.3	13708	PASS

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18592.D
Acq On : 27 Jun 2016 12:20
Operator : MES
Sample : WG574241-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 27 12:31:57 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

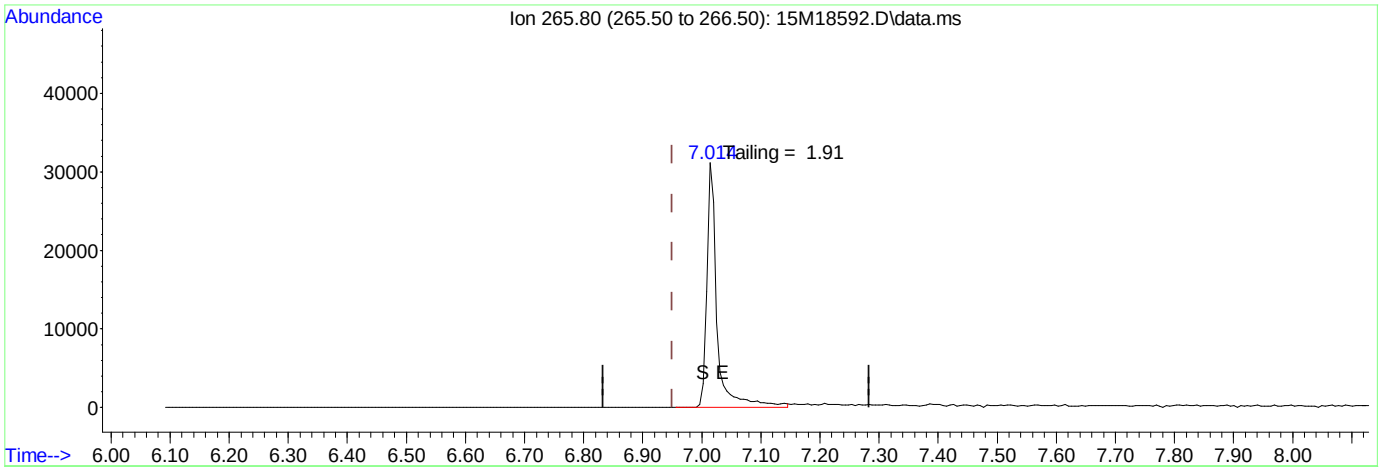

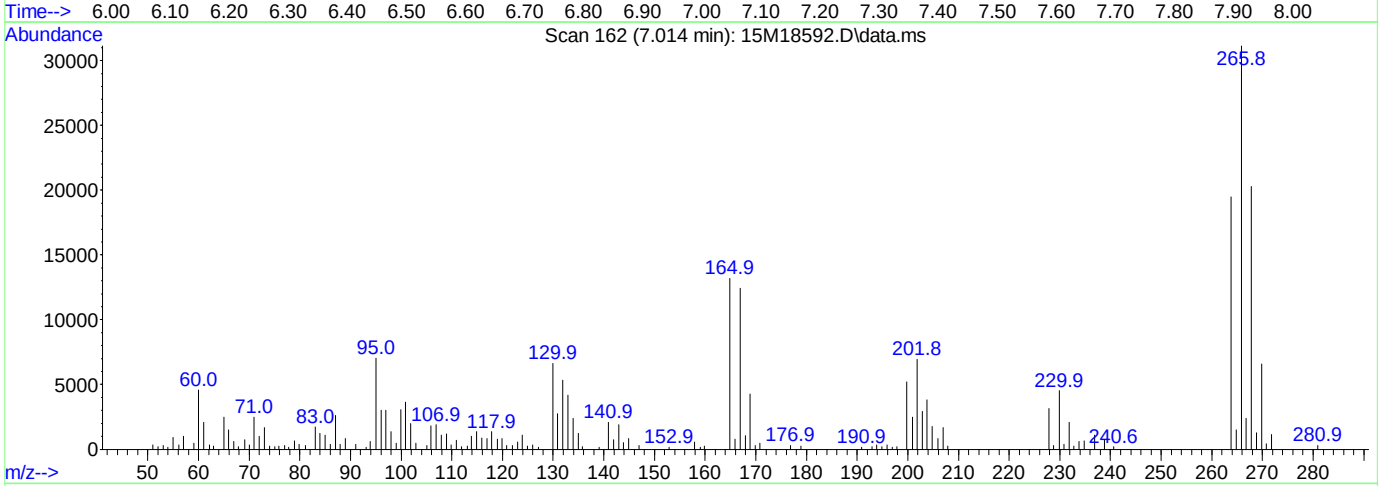

(1) Pentachlorophenol

7.014min (+ 0.065) 0.00 ug/ml

response 37276

Ion	Exp%	Act%
265.80	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18592.D
Acq On : 27 Jun 2016 12:20
Operator : MES
Sample : WG574241-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 27 12:31:57 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

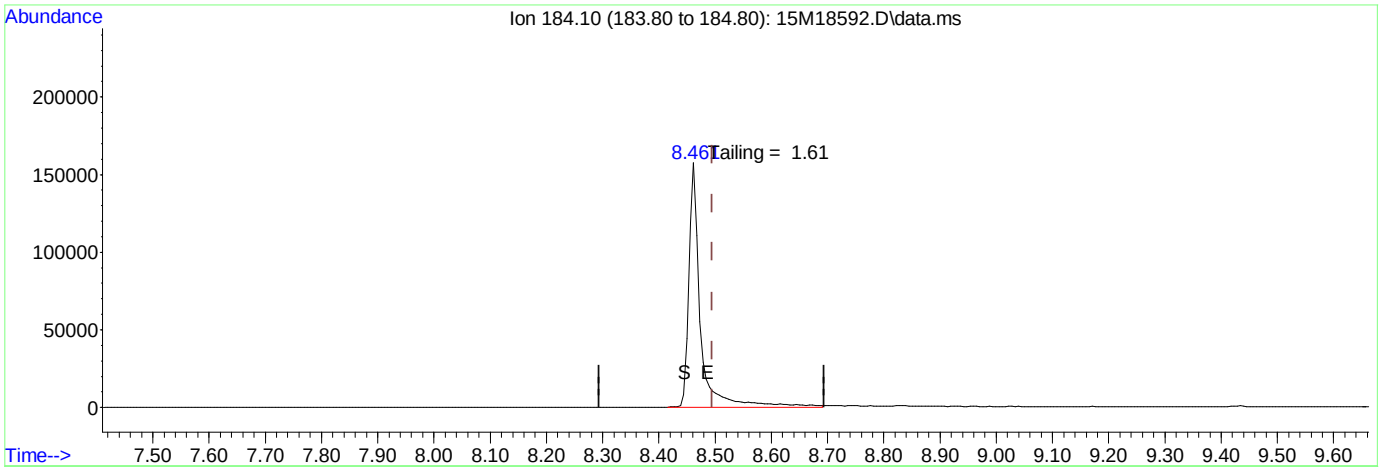

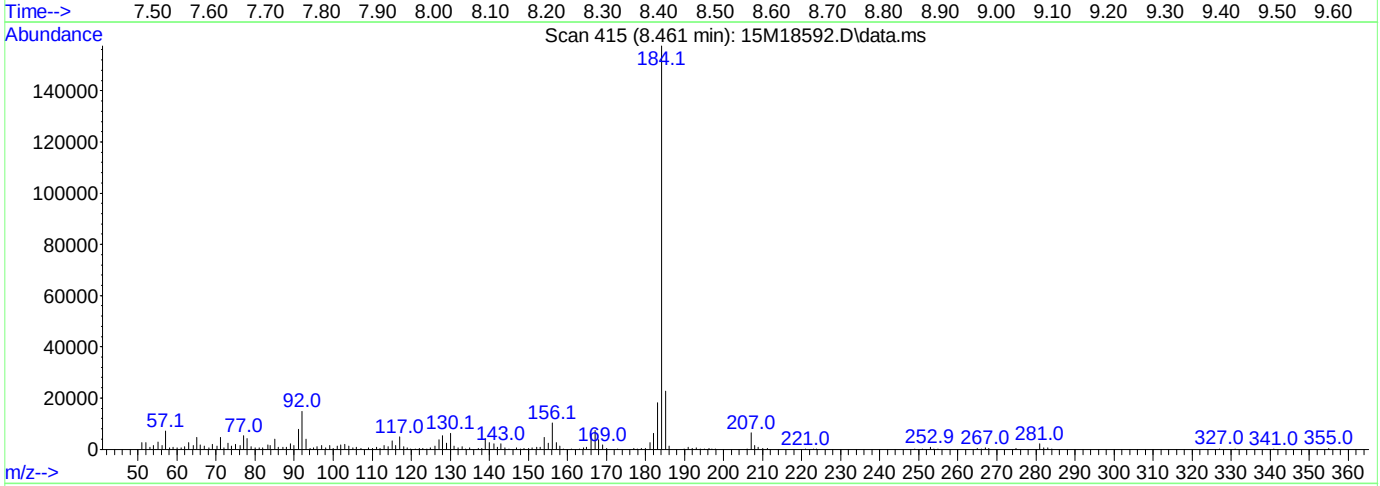

TIC: 15M18592.D\data.ms

(2) Benzidine

8.461min (-0.033) 0.00 ug/ml

response 225697

Ion	Exp%	Act%
184.10	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Data Path : C:\msdchem\1\data\062716\
Data File : 15M18592.D
Acq On : 27 Jun 2016 12:20
Operator : MES
Sample : WG574241-01 5PPM DFTPP STD
Misc : 1,1 STD75016
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Jun 27 12:31:57 2016
Quant Method : C:\msdchem\1\methods\DFTPPQ.M
Quant Title : DFTPP
QLast Update : Mon Apr 27 13:16:06 2015
Response via : Initial Calibration

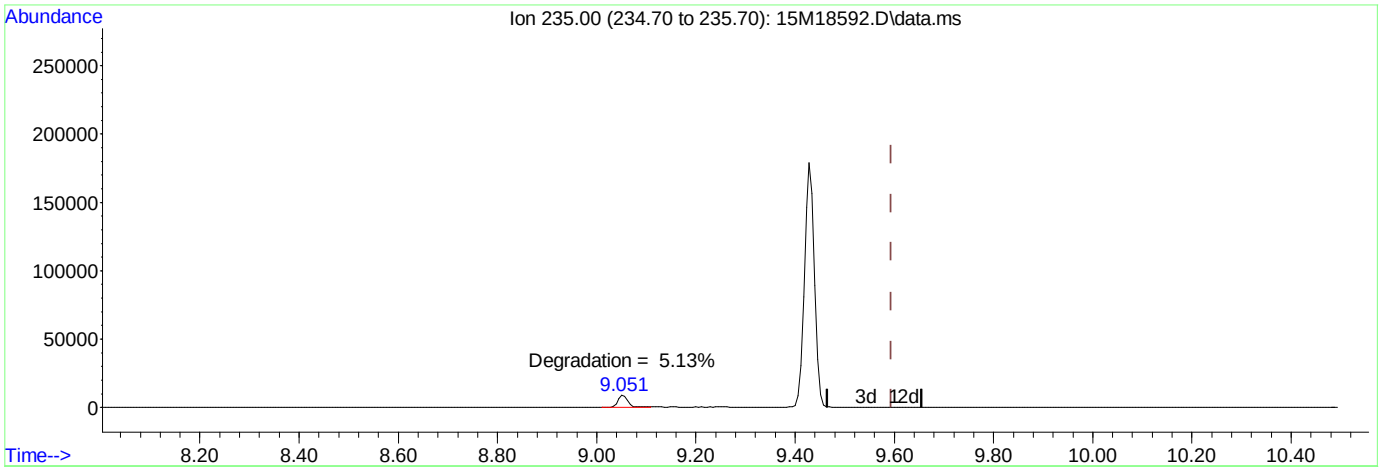

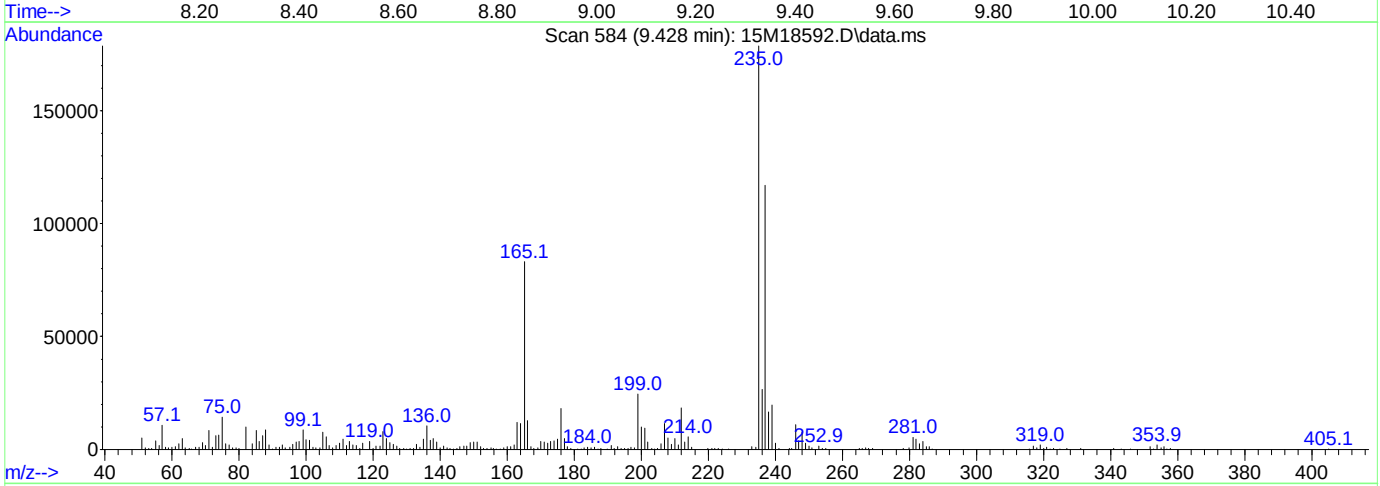

TIC: 15M18592.D\data.ms

(3) DDT

9.428min (-0.166) 0.00 ug/ml mint

response 273417

Ion	Exp%	Act%
235.00	100.00	100.00
0.00	0.00	0.00
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18511.D
Acq On : 23 Jun 2016 14:22
Operator : MES
Sample : WG573299-01 BLANK 6/21
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 23 15:52:24 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.929	152	57608	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	33985	1.4337	ug/L	0.04
Spiked Amount 5.000			Recovery = 28.60%			
4) Nitrobenzene-d5	7.426	82	1290209	21.2028	ug/L	0.00
Spiked Amount 5.000			Recovery = 424.00%			
5) 2-Fluorobiphenyl	8.919	172	2634137	17.1496	ug/L	0.00
Spiked Amount 5.000			Recovery = 343.00%			
6) p-Terphenyl-d14	12.162	244	4420616	29.8588	ug/L	-0.02
Spiked Amount 5.000			Recovery = 597.20%			

Target Compounds	Qvalue

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18511.D
Acq On : 23 Jun 2016 14:22
Operator : MES
Sample : WG573299-01 BLANK 6/21
Misc : 1,1
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Jun 23 15:52:24 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

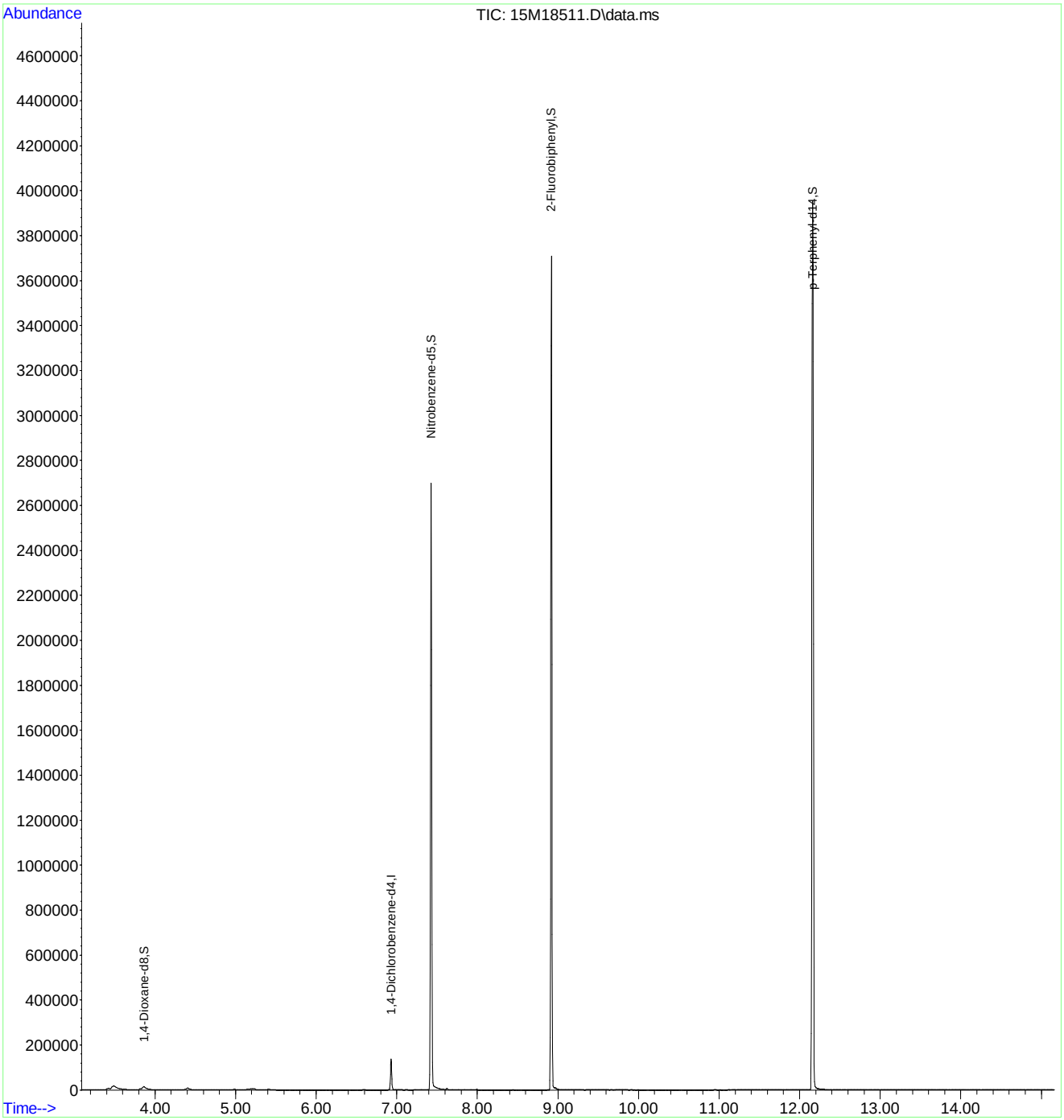

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18512.D
Acq On : 23 Jun 2016 14:45
Operator : MES
Sample : WG573299-02 LCS 6/21
Misc : 1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 23 15:52:38 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.929	152	51597	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	40084	1.8880	ug/L	0.04
Spiked Amount 5.000			Recovery	=	37.80%	
4) Nitrobenzene-d5	7.431	82	2991	0.0549	ug/L	0.00
Spiked Amount 5.000			Recovery	=	1.00%	
5) 2-Fluorobiphenyl	8.919	172	1228	0.0089	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.20%	
6) p-Terphenyl-d14	12.159	244	1342	0.0101	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	29708	1.8818	ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18512.D
Acq On : 23 Jun 2016 14:45
Operator : MES
Sample : WG573299-02 LCS 6/21
Misc : 1,1
ALS Vial : 4 Sample Multiplier: 1

Quant Time: Jun 23 15:52:38 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

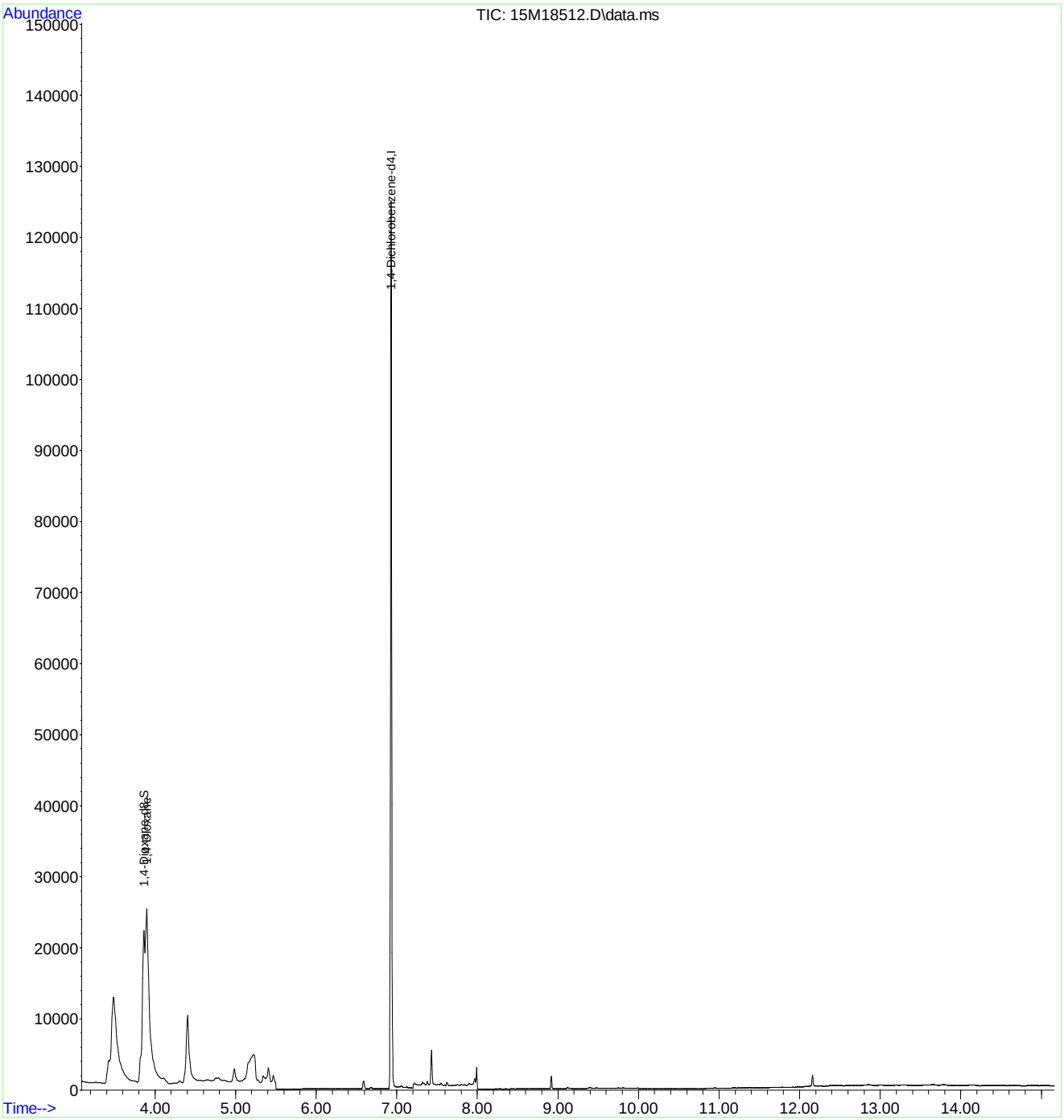

Quantitation Report (Not Reviewed)

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18513.D
Acq On : 23 Jun 2016 15:07
Operator : MES
Sample : WG573299-03 LCSDUP 6/21
Misc : 1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 23 15:52:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	6.929	152	54701	1.0000	ug/mL	# 0.00
System Monitoring Compounds						
3) 1,4-Dioxane-d8	3.862	96	52635	2.3384	ug/L	0.04
Spiked Amount 5.000			Recovery	=	46.80%	
4) Nitrobenzene-d5	7.431	82	5866	0.1015	ug/L	0.00
Spiked Amount 5.000			Recovery	=	2.00%	
5) 2-Fluorobiphenyl	8.919	172	4684	0.0321	ug/L	0.00
Spiked Amount 5.000			Recovery	=	0.60%	
6) p-Terphenyl-d14	12.151	244	1266	0.0090	ug/L	-0.03
Spiked Amount 5.000			Recovery	=	0.20%	
Target Compounds						Qvalue
2) 1,4-Dioxane	3.897	58	38804	2.3185	ug/L	83

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data Path : C:\msdchem\1\data\062316\
Data File : 15M18513.D
Acq On : 23 Jun 2016 15:07
Operator : MES
Sample : WG573299-03 LCSDUP 6/21
Misc : 1,1
ALS Vial : 5 Sample Multiplier: 1

Quant Time: Jun 23 15:52:42 2016
Quant Method : C:\msdchem\1\methods\DIOXANE_D8.M
Quant Title : OVD MSS01 SIM 1,4-dioxane ICAL 062116
QLast Update : Tue Jun 21 12:51:17 2016
Response via : Initial Calibration

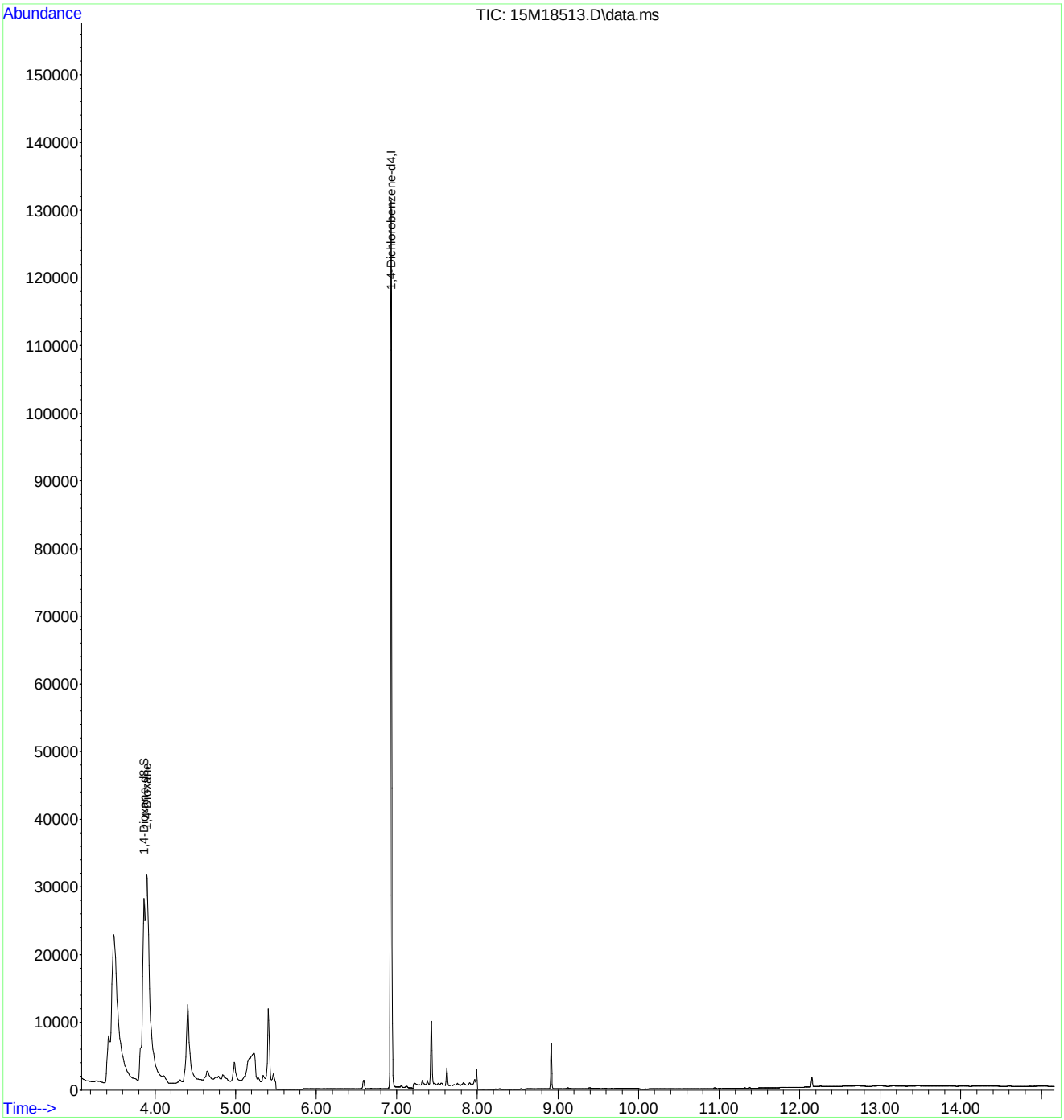

2.2 General Chromatography Data

2.2.2 6850 LC/MS Data

2.2.2.1 Summary Data

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-01	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	18WW16-061616	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 19:40
Collect Date:	06/16/2016 07:55	**Dilution:**	1	**File ID:**	1LM.LM35503
Sample Tag:	01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	5.76		0.400	0.200	0.100

Certificate of Analysis

Sample #:	L16061026-03	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	102-061616	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 01:12
Collect Date:	06/16/2016 08:40	**Dilution:**	100	**File ID:**	1LM.LM35479
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	107		40.0	20.0	10.0

Certificate of Analysis

Sample #:	L16061026-04	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	129-061616	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 01:31
Collect Date:	06/16/2016 09:05	**Dilution:**	10000	**File ID:**	1LM.LM35480
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	8950		4000	2000	1000

Certificate of Analysis

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Sample #:	L16061026-05	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	120-061616	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 19:59
Collect Date:	06/16/2016 09:25	**Dilution:**	10000	**File ID:**	1LM.LM35504
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	32700		4000	2000	1000

Certificate of Analysis

Sample #:	L16061026-07	**PrePrep Method:**	N/A	**Instrument:**	LCMS1
Client ID:	123-061616	**Prep Method:**	6850	**Prep Date:**	06/24/2016 19:00
Matrix:	Water	**Analytical Method:**	6850	**Cal Date:**	05/03/2016 17:18
Workgroup #:	WG574101	**Analyst:**	JWR	**Run Date:**	06/25/2016 20:18
Collect Date:	06/16/2016 09:55	**Dilution:**	50	**File ID:**	1LM.LM35505
Sample Tag:	DL01	**Units:**	ug/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Perchlorate	14797-73-0	105		20.0	10.0	5.00

2.2.2.2 QC Summary Data

Example Calculation 6850 - Perchlorate

Concentration from Linear Regression

Step 1: Retrieve Curve Data From Plot, y = mx + b

y = response ratio = response of analyte / response of internal standard (IS) = Rx/Ristd

x = amount ratio = concentration analyte/concentration internal standard (IS) = Cx / Cistd

m = slope from curve (1.45)

b = intercept from curve (-0.00242)

y = 1.45x + -0.00242

Step 2: Substitute the value for y

where y = 12600/226000 = 0.055752

Step 3: Solve for x

x = (y - b)/m = 0.0040119

Step 4: Solve for analyte concentration Cx

Cx = (Cis)(x) = (5 ug/L)(0.040119) = 0.200594 ug/L

Example Calculation - Water:

Slope from curve, m:	1.45
Intercept from curve, b:	-0.00242
Response of analyte, Rx:	12600
Response of Internal Standard , Ristd:	226000
Concentration of IS, Cistd (ug/L):	5.00
Response Ratio:	0.05575
Amount Ratio:	0.04012
Analyte Concentration, Cx (ug/L) :	0.200594

Example Calculation - Soil:

Analyte Concentration, Cx (ug/L):	0.20059
Amount of soil extracted (g):	5.00
Final volume of extract (mL):	50.00
Percent solids (Pct wt.)	100
Concentration in soil (ug/kg):	2.005938

Perchlorate Conductivity Check
(perchlorate1)

Conductivity Probe Calibration Check: 1380 /1410 µs/cm

Working MCT Level: 10,000 µs/cm

Sample	Conductivity (µs/cm)	Pretreatment or Dilution Needed
WG574101-01 MCT	9,990.	
-02 Blank	0.33	
-03 LCS	0.48	
-04 LCS2	0.51	
L16060823-01	9,120.	
-03	7,440.	
-04	1,943.	
L16060927-01	750.	
-02	652.	
-03	446.	
-04	162.7	
L16061026-01	6,910.	
-03	238.	
-04	965.	
-05	1,526.	
-07	220.	
L16061142-01	165.3	
-02	81.1	
-04	83.1	
-06	728.	
-07	74.2	
L16061144-01	118.6	
-02	118.7	
-03	110.1	

Analyst: John Richards

Date/Time: 06/27/16 / 20:00

DCN#119317

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: STD75512

Comments: ICAL WG567320 : Alternate Source STD75512
Analytical Column : RPPX 5um (250x4.6mm)
K'Prime S/N RPPX250-02115

Samples L16041363(-05 and -10) were analyzed at dilutions based on their pre-run screen results.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM34686	WG567320-01 CCB	1	1		05/03/16 15:06
2	1LM.LM34687	WG567320-02 STD (0.1 ug/L)	1	1	STD75510	05/03/16 15:25
3	1LM.LM34688	WG567320-03 STD (0.2 ug/L)	1	1	STD75510	05/03/16 15:43
4	1LM.LM34689	WG567320-04 STD (0.5 ug/L)	1	1	STD75510	05/03/16 16:02
5	1LM.LM34690	WG567320-05 STD (1.0 ug/L)	1	1	STD75510	05/03/16 16:21
6	1LM.LM34691	WG567320-06 STD (2.0 ug/L)	1	1	STD75510	05/03/16 16:40
7	1LM.LM34692	WG567320-07 STD (5.0 ug/L)	1	1	STD75510	05/03/16 16:59
8	1LM.LM34693	WG567320-08 STD (10 ug/L)	1	1	STD75510	05/03/16 17:18
9	1LM.LM34694	WG567320-09 SSCV (1.0 ug/L)	1	1	STD75512	05/03/16 17:37
10	1LM.LM34695	WG567321-01 CCB	1	1		05/03/16 17:56
11	1LM.LM34696	WG567321-02 CCV (1.0ug/L)	1	1	STD75510	05/03/16 18:15
12	1LM.LM34697	WG567013-07 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 18:34
13	1LM.LM34698	WG567013-01 MCT (2.0ug/kg)	7	1	STD75512	05/03/16 18:53
14	1LM.LM34699	WG567013-02 BLANK	7	1		05/03/16 19:12
15	1LM.LM34700	WG567013-03 LCS (2.0ug/kg)	7	1	STD75512	05/03/16 19:31
16	1LM.LM34701	L16041363-07 RS	7	1		05/03/16 19:50
17	1LM.LM34702	L16041363-08 MS	7	1	STD75512	05/03/16 20:09
18	1LM.LM34703	L16041363-09 MSD	7	1	STD75512	05/03/16 20:28
19	1LM.LM34704	L16041363-01	7	1		05/03/16 20:46
20	1LM.LM34705	L16041363-02	7	1		05/03/16 21:05
21	1LM.LM34706	L16041363-03	7	1		05/03/16 21:24
22	1LM.LM34707	L16041363-04	7	1		05/03/16 21:43
23	1LM.LM34708	WG567321-03 CCV (1.0ug/L)	1	1	STD75510	05/03/16 22:02
24	1LM.LM34709	WG567013-08 MRL (2.0ug/kg)	7	1	STD75510	05/03/16 22:21
25	1LM.LM34710	WG567321-04 CCB	1	1		05/03/16 22:40
26	1LM.LM34711	L16041363-05 (5x)	7	5		05/03/16 22:59
27	1LM.LM34712	L16041363-06	7	1		05/03/16 23:18
28	1LM.LM34713	L16041363-10 (5x)	7	5		05/03/16 23:37
29	1LM.LM34714	WG567321-05 CCV (1.0ug/L)	1	1	STD75510	05/03/16 23:56
30	1LM.LM34715	WG567013-09 MRL (2.0ug/kg)	7	1	STD75510	05/04/16 00:15
31	1LM.LM34716	WG567321-06 CCB	1	1		05/04/16 00:34

Comments

Page: 1 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 050316_JWR.TXT

Analyst1: JWR Analyst2: NA

Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254

Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG567013 (soils)

Internal STD: COA18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 STD75512

Comments

Seq.	Rerun	Dil.	Reason	Analytes
17				
	L16041363-08 MS : The MS %Rec is 129%. This is above the advisory limit of 120%. The parent sample to this MS had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MS %Rec would be 93.9%.			
18				
	L16041363-09 MSD : The MSD %Rec is 131%. This is above the advisory limit of 120%. The parent sample to this MSD had responses that passed the ion-ratio criteria, but had a quantified value below the method's detection limit, resulting in an assigned value of zero. If the quantified value for the parent sample were used in the %Rec calculation, the MSD %Rec would be 95.4%.			

Page: 2 Approved: 05-MAY-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 062416_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG574101 (waters)

Internal STD: STD18071 Surrogate STD: NA Calibration STD STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 MS/MSD STD: NA

Comments: Samples initially analyzed at dilutions were done so based on their historical results. Samples tagged with (NR) did not conform to their historical results. These samples were reanalyzed on the end of the sequence as neat or at dilutions based on the results of their initial analysis.

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
1	1LM.LM35462	WG574102-01 CCB	1	1		06/24/16 19:50
2	1LM.LM35463	WG574102-02 CCV (1.0ug/L)	1	1	STD75510	06/24/16 20:09
3	1LM.LM35464	WG574101-05 MRL (0.2ug/L)	1	1	STD75510	06/24/16 20:28
4	1LM.LM35465	WG574101-01 MCT (0.2ug/L)	1	1	STD75512	06/24/16 20:47
5	1LM.LM35466	WG574101-02 BLANK	1	1		06/24/16 21:06
6	1LM.LM35467	WG574101-03 LCS (0.2ug/L)	1	1	STD75512	06/24/16 21:25
7	1LM.LM35468	L16060823-01	1	1		06/24/16 21:44
8	1LM.LM35469	L16060823-03	1	1		06/24/16 22:03
9	1LM.LM35470	L16060823-04 (10x)	1	10		06/24/16 22:22
10	1LM.LM35471	L16060927-01 (100x) (NR)	1	100		06/24/16 22:41
11	1LM.LM35472	L16060927-02 (100x) (NR)	1	100		06/24/16 23:00
12	1LM.LM35473	L16060927-03	1	1		06/24/16 23:18
13	1LM.LM35474	L16060927-04	1	1		06/24/16 23:37
14	1LM.LM35475	WG574102-03 CCV (1.0ug/L)	1	1	STD75510	06/24/16 23:56
15	1LM.LM35476	WG574101-06 MRL (0.2ug/L)	1	1	STD75510	06/25/16 00:15
16	1LM.LM35477	WG574102-04 CCB	1	1		06/25/16 00:34
17	1LM.LM35478	L16061026-01 (100x) (NR)	1	100		06/25/16 00:53
18	1LM.LM35479	L16061026-03 (100x)	1	100		06/25/16 01:12
19	1LM.LM35480	L16061026-04 (10,000x)	1	10000		06/25/16 01:31
20	1LM.LM35481	L16061026-05 (100,000x) (NR)	1	100000		06/25/16 01:50
21	1LM.LM35482	L16061026-07 (10x) (NR)	1	10		06/25/16 02:09
22	1LM.LM35483	L16061142-01	1	1		06/25/16 02:28
23	1LM.LM35484	L16061142-02	1	1		06/25/16 02:47
24	1LM.LM35485	L16061142-04	1	1		06/25/16 03:06
25	1LM.LM35486	L16061142-06 (10x) (NR)	1	10		06/25/16 03:25
26	1LM.LM35487	L16061142-07	1	1		06/25/16 03:44
27	1LM.LM35488	WG574102-05 CCV (1.0ug/L)	1	1	STD75510	06/25/16 04:03
28	1LM.LM35489	WG574101-07 MRL (0.2ug/L)	1	1	STD75510	06/25/16 04:22
29	1LM.LM35490	WG574102-06 CCB	1	1		06/25/16 04:40
30	1LM.LM35491	WG574101-04 LCS2 (0.2ug/L)	1	1	STD75512	06/25/16 04:59
31	1LM.LM35492	L16061144-01	1	1		06/25/16 05:18
32	1LM.LM35493	L16061144-02	1	1		06/25/16 05:37
33	1LM.LM35494	L16061144-03 (10x) (NR)	1	10		06/25/16 05:56

Page: 1 Approved: 28-JUN-16

Microbac Laboratories Inc.

Instrument Run Log

Instrument: LCMS1 Dataset: 062416_JWR.TXT
Analyst1: JWR Analyst2: NA
Method: 6850 SOP: HPLC06 Rev: 8

Maintenance Log ID: Syringe Filter Lot#: 151125254
Eluent ID#:

Column 1 ID: KP-RPPX250 Column 2 ID: NA

Workgroups: Analytical WG574101 (waters)

Internal STD: STD18071 Surrogate STD: NA STD75510 (05/03/2016)

CCV STD: STD75510 LCS STD: STD75512 NA

Seq.	File ID	Sample Information	Mat	Dil	Reference	Date/Time
34	1LM.LM35495	WG574102-07 CCV (1.0ug/L)	1	1	STD75510	06/25/16 06:15
35	1LM.LM35496	WG574101-08 MRL (0.2ug/L)	1	1	STD75510	06/25/16 06:34
36	1LM.LM35497	WG574102-08 CCB	1	1		06/25/16 06:53
37	1LM.LM35498	WG574102-09 CCV (1.0ug/L)	1	1	STD75510	06/25/16 18:06
38	1LM.LM35499	WG574101-09 MRL (0.2ug/L)	1	1	STD75510	06/25/16 18:25
39	1LM.LM35500	WG574102-10 CCB	1	1		06/25/16 18:44
40	1LM.LM35501	L16060927-01 (RR Neat)	1	1		06/25/16 19:02
41	1LM.LM35502	L16060927-02 (RR 1000x)	1	1000		06/25/16 19:21
42	1LM.LM35503	L16061026-01 (RR Neat)	1	1		06/25/16 19:40
43	1LM.LM35504	L16061026-05 (RR 10,000x)	1	10000		06/25/16 19:59
44	1LM.LM35505	L16061026-07 (RR 50x)	1	50		06/25/16 20:18
45	1LM.LM35506	L16061142-06 (RR Neat)	1	1		06/25/16 20:37
46	1LM.LM35507	L16061144-03 (RR Neat)	1	1		06/25/16 20:56
47	1LM.LM35508	WG574102-11 CCV (1.0ug/L)	1	1	STD75510	06/25/16 21:15
48	1LM.LM35509	WG574101-10 MRL (0.2ug/L)	1	1	STD75510	06/25/16 21:34
49	1LM.LM35510	WG574102-12 CCB	1	1		06/25/16 21:53

Comments

Seq.	Rerun	Dil.	Reason	Analytes

Page: 2 Approved: 28-JUN-16

Microbac Laboratories Inc.

Data Checklist

Date: 03-MAY-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: WG567320
Runlog ID: 74891
Analytical Workgroups: L16041363 (SOILS)

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	X
Average RF	NA
Linear regression or higher order curve	X
Alternate source standard (ICV) % Difference	X
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	X
Recoveries	X
%RPD	X
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	NA
Reruns	NA
Manual integrations	NA
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
04-MAY-2016
John Richards

Secondary Reviewer:
05-MAY-2016
Wadei D

CHECKLIST1 - Modified 03/05/2008
Generated: MAY-05-2016 16:23:46

Microbac Laboratories Inc.

Data Checklist

Date: 24-JUN-2016
Analyst: JWR
Analyst: NA
Method: 6850
Instrument: LCMS1
Curve Workgroup: NA
Runlog ID: 75960
Analytical Workgroups: L16060823, 0927, 1026, 1142, 1144

ANALYTICAL	
System Performance Check	NA
DFTPP (GCMS)	NA
Endrin/DDT breakdown (8081/GCMS)	NA
Pentachlorophenol/benzidine tailing (GCMS)	NA
Eluent check (IC)/system pressure (HPLC)	NA
Window standard (FID)	NA
Initial Calibration	NA
Average RF	NA
Linear regression or higher order curve	NA
Alternate source standard (ICV) % Difference	NA
Continuing Calibration (CCV)	X
% D/% Drift	X
Minimum response factors (GCMS)	X
Continuing calibration blank (CCB) (IC/LCMS)	X
Limit of quantitation verification (LOQV) (LCMS)	X
Special standards	NA
Blanks	X
TCL hits	ND
Surrogate recoveries	NA
LCS/LCSD (Laboratory Control Sample)	X
Recoveries	X
Surrogate recoveries	NA
MS/MSD/Sample duplicates	NA
Recoveries	NA
%RPD	NA
Interference check sample (ICS) (LCMS)	MCT
Samples	X
TCL hits	X
Mass spectra (MS/HPLC)/2nd column confirmations (ECD/FID/HPLC)	NA
Surrogate recoveries	NA
Internal standard areas (MS)	X
Library searches (GCMS)	NA
Calculations & correct factors	X
Compounds above calibration range	X
Reruns	X
Manual integrations	MCT-ONLY
Project/client specific requirements	X
REPORTING	
Upload batch form	X
KOBRA workgroup data/forms/bench sheets	X
Case narratives	
Check for completeness	X
Primary Reviewer	JWR
SUPERVISORY/SECONDARY REVIEW	
Check for compliance with method and project specific requirements	X
Check the completeness/accuracy of reported information	X
Data qualifiers	X
Secondary Reviewer	WTD

Primary Reviewer:
27-JUN-2016

Secondary Reviewer:
28-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-28-2016 14:00:55

Microbac Laboratories Inc.

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6850 AAB#: WG574101

Login Number: L16061026

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW16-061616	01	06/16/16					06/24/2016	8.5	28		06/25/16	1	28	
102-061616	03	06/16/16					06/24/2016	8.4	28		06/25/16	.3	28	
129-061616	04	06/16/16					06/24/2016	8.4	28		06/25/16	.3	28	
120-061616	05	06/16/16					06/24/2016	8.4	28		06/25/16	1	28	
123-061616	07	06/16/16					06/24/2016	8.4	28		06/25/16	1.1	28	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4827778
Report generated 06/28/2016 14:17

METHOD BLANK SUMMARY

Login Number: L16061026
Blank File ID: 1LM.LM35466
Prep Date: 06/24/16 19:00
Analyzed Date: 06/24/16 21:06
Analyst: JWR

Work Group: WG574101
Blank Sample ID: WG574101-02
Instrument ID: LCMS1
Method: 6850

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
QCMRL	WG574101-05	1LM.LM35464	06/24/16 20:28	01
MCT	WG574101-01	1LM.LM35465	06/24/16 20:47	01
LCS	WG574101-03	1LM.LM35467	06/24/16 21:25	01
QCMRL	WG574101-06	1LM.LM35476	06/25/16 00:15	01
102-061616	L16061026-03	1LM.LM35479	06/25/16 01:12	DL01
129-061616	L16061026-04	1LM.LM35480	06/25/16 01:31	DL01
QCMRL	WG574101-07	1LM.LM35489	06/25/16 04:22	01
LCS2	WG574101-04	1LM.LM35491	06/25/16 04:59	01
QCMRL	WG574101-08	1LM.LM35496	06/25/16 06:34	01
QCMRL	WG574101-09	1LM.LM35499	06/25/16 18:25	01
18WW16-061616	L16061026-01	1LM.LM35503	06/25/16 19:40	01
120-061616	L16061026-05	1LM.LM35504	06/25/16 19:59	DL01
123-061616	L16061026-07	1LM.LM35505	06/25/16 20:18	DL01
QCMRL	WG574101-10	1LM.LM35509	06/25/16 21:34	01

Report Name: BLANK_SUMMARY
PDF File ID: 4827779
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061026 Prep Date: 06/24/16 19:00 Sample ID: WG574101-02
Instrument ID: LCMS1 Run Date: 06/24/16 21:06 Prep Method: 6850
File ID: 1LM.LM35466 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Perchlorate	0.100	0.400	0.100	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name:BLANK
PDF ID: 4827780
28-JUN-2016 14:17

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061026 Analyst: JWR Prep Method: 6850
Instrument ID: LCMS1 Matrix: Water Method: 6850
Workgroup (AAB#): WG574101 Units: ug/L
QC Key: DOD4 Lot #: STD75512

Sample ID: WG574101-03 LCS File ID: 1LM.LM35467 Run Date: 06/24/2016 21:25
Sample ID: WG574101-04 LCS2 File ID: 1LM.LM35491 Run Date: 06/25/2016 04:59

Analytes	LCS			LCS2			%RPD	%Rec Limits	RPD Lmt	Q
	Known	Found	% REC	Known	Found	% REC				
Perchlorate	0.200	0.208	104	0.200	0.213	107	2.38	80 - 120	15	

LCS_LCS2 - Modified 03/06/2008
PDF File ID: 4827781
Report generated: 06/28/2016 14:17

Microbac Laboratories Inc.

INITIAL CALIBRATION SUMMARY

Login Number: L16061026
Analytical Method: 6850
ICAL Workgroup: WG567320

Instrument ID: LCMS1
Initial Calibration Date: 03-MAY-16 17:18
Column ID: F

Analyte		AVG RF	% RSD	LINEAR (R)	QUAD (R^2)
Perchlorate		1.699	4.81	1.00000	

R = Correlation coefficient; 0.995 minimum
R^2 = Coefficient of determination; 0.99 minimum

INT_CAL - Modified 03/06/2008
PDF File ID: 4828717
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061026

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-02			WG567320-03			WG567320-04		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	0.100	17900.0000	1.792	0.200	34100.0000	1.718	0.500	82200.0000	1.637

INT_CAL - Modified 03/06/2008
PDF File ID: 4828717
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061026

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-05			WG567320-06			WG567320-07		
	CONC	RESP	RF	CONC	RESP	RF	CONC	RESP	RF
Perchlorate	1.00	168000.000	1.697	2.00	330000.000	1.672	5.00	810000.000	1.695

INT_CAL - Modified 03/06/2008
PDF File ID: 4828717
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

INITIAL CALIBRATION DATA

Login Number: L16061026

Analytical Method: 6850

Instrument ID: LCMS1

Initial Calibration Date: 03-MAY-16 17:18

Column ID: F

Analyte	WG567320-08		
	CONC	RESP	RF
Perchlorate	10.0	1530000.00	1.680

INT_CAL - Modified 03/06/2008
PDF File ID: 4828717
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.
ALTERNATE SOURCE CALIBRATION REPORT

Login Number: L16061026 Run Date: 05/03/2016 Sample ID: WG567320-09
Instrument ID: LCMS1 Run Time: 17:37 Method: 6850
File ID: 1LM.LM34694 Analyst: JWR QC Key: DOD4
ICal Workgroup: WG567320 Cal ID: LCMS1 - 03-MAY-16

Analyte		Expected	Found	Units	RF	%D	UCL	Q
Perchlorate		1.00	0.985	ug/L	1.66	1.50	15	

* Exceeds %D Limit

ALT - Modified 09/06/2007
Version 1.5 PDF File ID: 4828718
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 06/24/2016
Sample ID: WG574102-01
Instrument ID: LCMS1
Run Time: 19:50
Method: 6850
File ID: 1LM.LM35462
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827784
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 06/25/2016
Sample ID: WG574102-04
Instrument ID: LCMS1
Run Time: 00:34
Method: 6850
File ID: 1LM.LM35477
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827784
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 06/25/2016
Sample ID: WG574102-06
Instrument ID: LCMS1
Run Time: 04:40
Method: 6850
File ID: 1LM.LM35490
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827784
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 06/25/2016
Sample ID: WG574102-08
Instrument ID: LCMS1
Run Time: 06:53
Method: 6850
File ID: 1LM.LM35497
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827784
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 06/25/2016
Sample ID: WG574102-10
Instrument ID: LCMS1
Run Time: 18:44
Method: 6850
File ID: 1LM.LM35500
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827784
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 06/25/2016
Sample ID: WG574102-12
Instrument ID: LCMS1
Run Time: 21:53
Method: 6850
File ID: 1LM.LM35510
Analyst: JWR
Units: ug/L
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Perchlorate	0.100	0.400	0.100	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4827784
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026 Run Date: 06/24/2016 Sample ID: WG574102-02
Instrument ID: LCMS1 Run Time: 20:09 Method: 6850
File ID: 1LM.LM35463 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG574101 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.70	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827783
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 06/24/2016
Sample ID: WG574102-03
Instrument ID: LCMS1
Run Time: 23:56
Method: 6850
File ID: 1LM.LM35475
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.01	ug/L	1.70	1.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827783
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026 Run Date: 06/25/2016 Sample ID: WG574102-05
Instrument ID: LCMS1 Run Time: 04:03 Method: 6850
File ID: 1LM.LM35488 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG574101 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.75	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827783
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 06/25/2016
Sample ID: WG574102-07
Instrument ID: LCMS1
Run Time: 06:15
Method: 6850
File ID: 1LM.LM35495
Analyst: JWR
QC Key: DOD4
Workgroup (AAB#): WG574101
Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.72	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827783
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026 Run Date: 06/25/2016 Sample ID: WG574102-09
Instrument ID: LCMS1 Run Time: 18:06 Method: 6850
File ID: 1LM.LM35498 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG574101 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.04	ug/L	1.76	4.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827783
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026 Run Date: 06/25/2016 Sample ID: WG574102-11
Instrument ID: LCMS1 Run Time: 21:15 Method: 6850
File ID: 1LM.LM35508 Analyst: JWR QC Key: DOD4
Workgroup (AAB#): WG574101 Cal ID: LCMS1 - 03-MAY-16
Matrix: WATER

Analyte		Expected	Found	UNITS	RF	%D	UCL	Q
Perchlorate		1.00	1.02	ug/L	1.73	2.00	15	

* Exceeds %D Criteria

CCV - Modified 03/05/2008
PDF File ID: 4827783
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061026 Run Date: 06/24/2016 Sample ID: WG574101-05
Instrument ID: LCMS1 Run Time: 20:28 Prep Method: 6850
File ID: 1LM.LM35464 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827782
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061026 Run Date: 06/25/2016 Sample ID: WG574101-06
Instrument ID: LCMS1 Run Time: 00:15 Prep Method: 6850
File ID: 1LM.LM35476 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.198	99.0	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827782
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061026 Run Date: 06/25/2016 Sample ID: WG574101-07
Instrument ID: LCMS1 Run Time: 04:22 Prep Method: 6850
File ID: 1LM.LM35489 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.211	106	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827782
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061026 Run Date: 06/25/2016 Sample ID: WG574101-08
Instrument ID: LCMS1 Run Time: 06:34 Prep Method: 6850
File ID: 1LM.LM35496 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.201	101	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827782
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061026 Run Date: 06/25/2016 Sample ID: WG574101-09
Instrument ID: LCMS1 Run Time: 18:25 Prep Method: 6850
File ID: 1LM.LM35499 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.207	104	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827782
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

QCMRL SAMPLE

Login Number: L16061026 Run Date: 06/25/2016 Sample ID: WG574101-10
Instrument ID: LCMS1 Run Time: 21:34 Prep Method: 6850
File ID: 1LM.LM35509 Analyst: JWR Method: 6850
Workgroup (AAB#): WG574101 Matrix: Water Units: ug/L
Contract #: Cal ID: LCMS1-03-MAY-16

Analytes	Expected	Found	% Rec	Limits	Q
Perchlorate	0.200	0.206	103	70 - 130	

QCMRL - Modified 03/06/2007
PDF File ID: 4827782
Report generated 06/28/2016 14:17

Microbac Laboratories Inc.

INTERNAL STANDARD AREA SUMMARY
(COMPARED TO AVERAGE OF ICAL)

Login Number: L16061026
Instrument ID: LCMS1
Workgroup (AAB#): WG574101

ICAL CCV Number: WG567320-05
CAL ID: LCMS1-03-MAY-16
Matrix: WATER

Sample Number	Dilution	Tag	IS-1
WG567320	NA	NA	489000
Upper Limit	NA	NA	733500
Lower Limit	NA	NA	244500
L16061026-01	1.00	01	359000
L16061026-03	100	DL01	498000
L16061026-04	10000	DL01	491000
L16061026-05	10000	DL01	457000
L16061026-07	50.0	DL01	490000
WG574101-02	1.00	01	443000
WG574101-03	1.00	01	444000
WG574101-04	1.00	01	526000

IS-1 - O18LP

Underline = Response outside limits

INTERNAL_STD_AVG_ICAL - Modified 03/10/2010
PDF File ID: 4827785
Report generated 06/28/2016 14:17

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**	6850	**Samplenum:**	L16061026-01
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35503
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 19:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	697000	245000	2.84	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**	6850	**Samplenum:**	L16061026-03
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35479
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 01:12	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	180000	63800	2.82	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**	6850	**Samplenum:**	L16061026-04
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35480
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 01:31	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	148000	50500	2.93	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**	6850	**Samplenum:**	L16061026-05
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35504
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 19:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	504000	174000	2.90	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**	6850	**Samplenum:**	L16061026-07
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35505
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 20:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	348000	120000	2.90	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**		**Samplenum:**	WG567320-02
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34687
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 15:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	17900	6950	2.58	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**		**Samplenum:**	WG567320-03
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34688
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 15:43	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	34100	11900	2.87	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**		**Samplenum:**	WG567320-04
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34689
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 16:02	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	82200	29400	2.80	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**		**Samplenum:**	WG567320-05
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34690
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 16:21	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	168000	56600	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**		**Samplenum:**	WG567320-06
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34691
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 16:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	330000	108000	3.06	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**		**Samplenum:**	WG567320-07
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34692
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 16:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	810000	269000	3.01	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**		**Samplenum:**	WG567320-08
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34693
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 17:18	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	1530000	512000	2.99	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**		**Samplenum:**	WG567320-09
Instrument:	LCMS1	**Prep Date:**		**File ID:**	1LM.LM34694
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	05/03/2016 17:37	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	169000	56300	3.00	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**	6850	**Samplenum:**	WG574101-01
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35465
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 20:47	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	28100	10000	2.81	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**	6850	**Samplenum:**	WG574101-02
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35466
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 21:06	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**	6850	**Samplenum:**	WG574101-03
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35467
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 21:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	31600	11800	2.68	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**	6850	**Samplenum:**	WG574101-04
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35491
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 04:59	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38300	14000	2.74	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**	6850	**Samplenum:**	WG574101-05
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35464
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 20:28	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	31600	12100	2.61	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**	6850	**Samplenum:**	WG574101-06
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35476
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 00:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	35000	13100	2.67	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**	6850	**Samplenum:**	WG574101-07
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35489
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 04:22	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38900	13400	2.90	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**	6850	**Samplenum:**	WG574101-08
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35496
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 06:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	38000	14100	2.70	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**	6850	**Samplenum:**	WG574101-09
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35499
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 18:25	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	32900	11500	2.86	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**	6850	**Samplenum:**	WG574101-10
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:00	**File ID:**	1LM.LM35509
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 21:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	37900	14000	2.71	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**		**Samplenum:**	WG574102-01
Instrument:	LCMS1	**Prep Date:**	06/24/2016 19:50	**File ID:**	1LM.LM35462
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 19:50	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**		**Samplenum:**	WG574102-02
Instrument:	LCMS1	**Prep Date:**	06/24/2016 20:09	**File ID:**	1LM.LM35463
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 20:09	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	152000	55500	2.74	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**		**Samplenum:**	WG574102-03
Instrument:	LCMS1	**Prep Date:**	06/24/2016 23:56	**File ID:**	1LM.LM35475
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/24/2016 23:56	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	170000	57500	2.96	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**		**Samplenum:**	WG574102-04
Instrument:	LCMS1	**Prep Date:**	06/25/2016 00:34	**File ID:**	1LM.LM35477
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 00:34	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	824	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**		**Samplenum:**	WG574102-05
Instrument:	LCMS1	**Prep Date:**	06/25/2016 04:03	**File ID:**	1LM.LM35488
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 04:03	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	179000	60200	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**		**Samplenum:**	WG574102-06
Instrument:	LCMS1	**Prep Date:**	06/25/2016 04:40	**File ID:**	1LM.LM35490
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 04:40	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**		**Samplenum:**	WG574102-07
Instrument:	LCMS1	**Prep Date:**	06/25/2016 06:15	**File ID:**	1LM.LM35495
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 06:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	189000	63400	2.98	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**		**Samplenum:**	WG574102-08
Instrument:	LCMS1	**Prep Date:**	06/25/2016 06:53	**File ID:**	1LM.LM35497
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 06:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	518	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**		**Samplenum:**	WG574102-09
Instrument:	LCMS1	**Prep Date:**	06/25/2016 18:06	**File ID:**	1LM.LM35498
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 18:06	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	161000	56700	2.84	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**		**Samplenum:**	WG574102-10
Instrument:	LCMS1	**Prep Date:**	06/25/2016 18:44	**File ID:**	1LM.LM35500
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 18:44	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**		**Samplenum:**	WG574102-11
Instrument:	LCMS1	**Prep Date:**	06/25/2016 21:15	**File ID:**	1LM.LM35508
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 21:15	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	176000	59300	2.97	2.3	3.8	

Perchlorate Ion Ratios

Microbac Laboratories Inc.

Login #:	L16061026	**Prep Method:**		**Samplenum:**	WG574102-12
Instrument:	LCMS1	**Prep Date:**	06/25/2016 21:53	**File ID:**	1LM.LM35510
Analyst:	JWR	**Anal Method:**	6850	**Matrix:**	Water
Worknum:	WG574101	**Analysis Date:**	06/25/2016 21:53	**Units:**	ug/L

Analyte	Res #1	Res #2	Ratio	Lower	Upper	Q
PERCHLORATE	0.000	0.000	0.000	2.3	3.8	*

2.2.2.3 Sample Data

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:53 PM

Data File	LM35503.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 7:40:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061026-01 (RR Neat)	**Injection Vial**	30.00
Data File	LM35503.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 7:40:50 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	L16061026-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	3.590e+05	9.15	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	6.970e+05	9.16	N/A	5.76
Perchlorate conf	2.450e+05	9.14	N/A	6.10

O18LP (Internal Standard)

RT (Exp. RT): 9.15(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

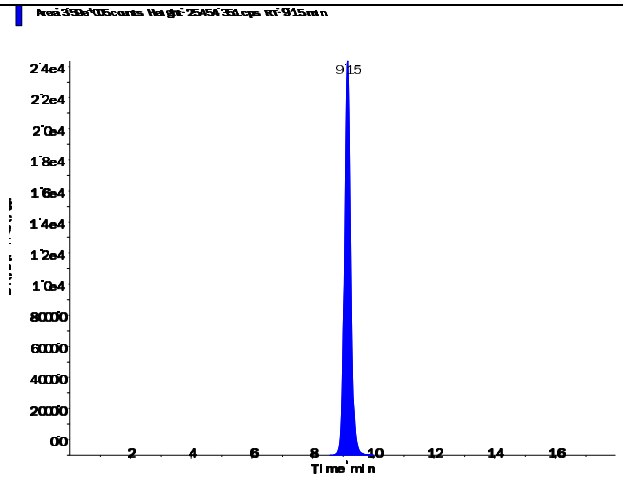

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Printed: 6/27/2016 7:53 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.16 (9.84) min Calculated conc: 5.76 ng/ml Area Ratio: 1.94 Sample Type: (Unknown)	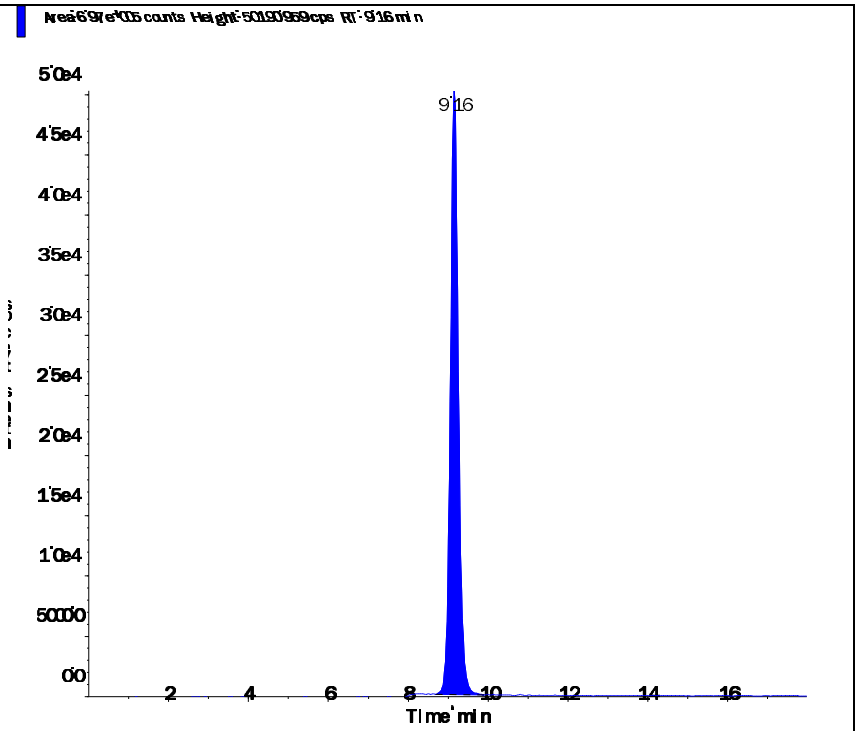
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.14 (9.84) min Calculated conc: 6.10 ng/ml Area Ratio: 0.683 Sample Type: (Unknown)	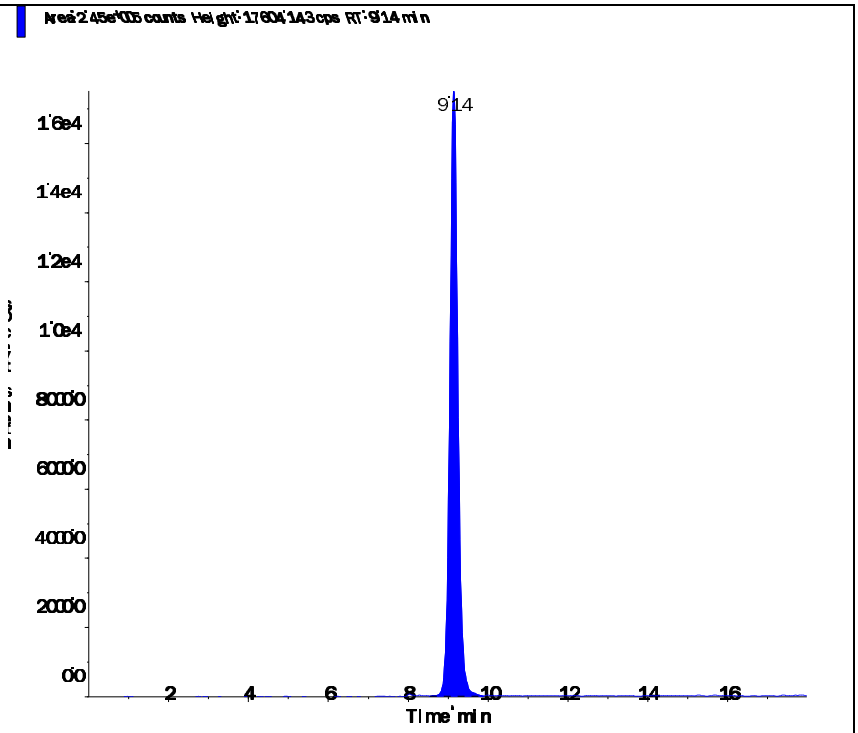

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Data File	LM35479.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 1:12:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061026-03 (100x)	**Injection Vial**	16.00
Data File	LM35479.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 1:12:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	L16061026-03	**Dilution Factor**	1.00
Sample Comment	1,100 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.980e+05	9.60	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.800e+05	9.62	N/A	1.07
Perchlorate conf	6.380e+04	9.60	N/A	1.13

O18LP (Internal Standard)

RT (Exp. RT): 9.60(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

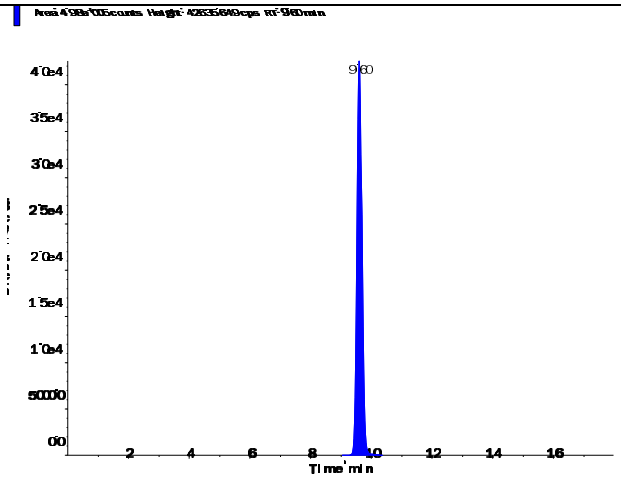

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.62 (9.84) min
Calculated conc:	1.07 ng/ml
Area Ratio:	0.362
Sample Type:	(Unknown)

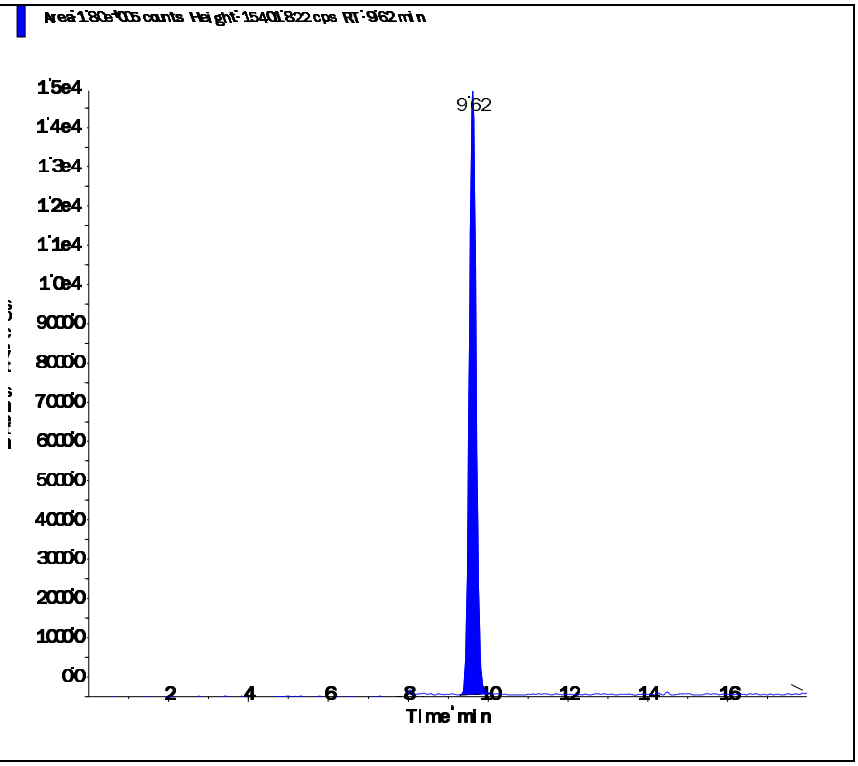

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.60 (9.84) min
Calculated conc:	1.13 ng/ml
Area Ratio:	0.128
Sample Type:	(Unknown)

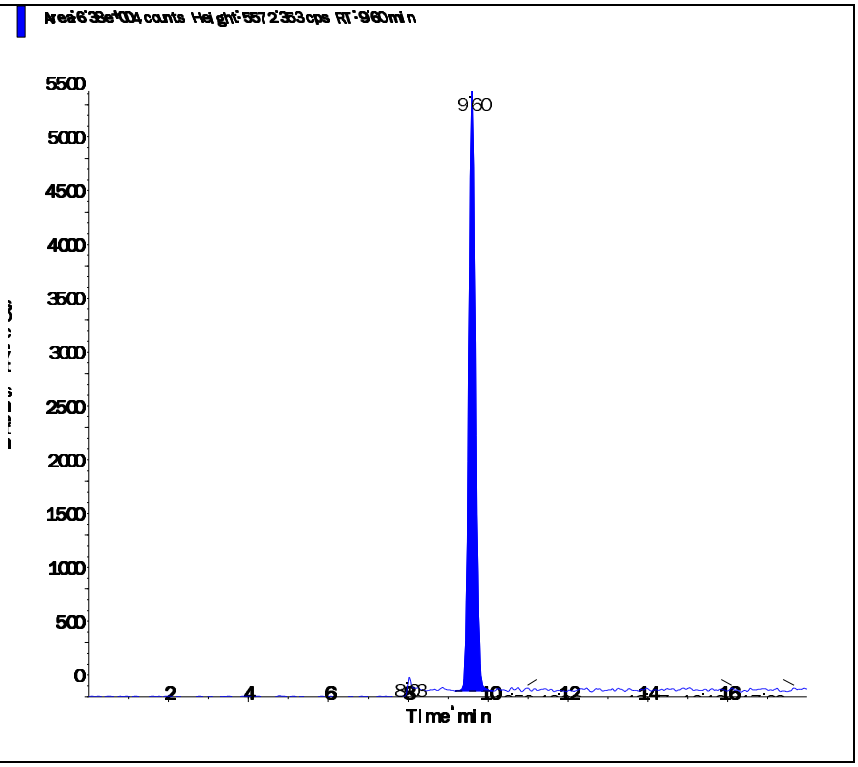

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Data File	LM35480.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 1:31:29 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061026-04 (10,000x)	**Injection Vial**	17.00
Data File	LM35480.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 1:31:29 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	L16061026-04	**Dilution Factor**	1.00
Sample Comment	1,10000 (Hist)	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.910e+05	9.61	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.480e+05	9.62	N/A	0.895
Perchlorate conf	5.050e+04	9.60	N/A	0.90

O18LP (Internal Standard)

RT (Exp. RT): 9.61(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

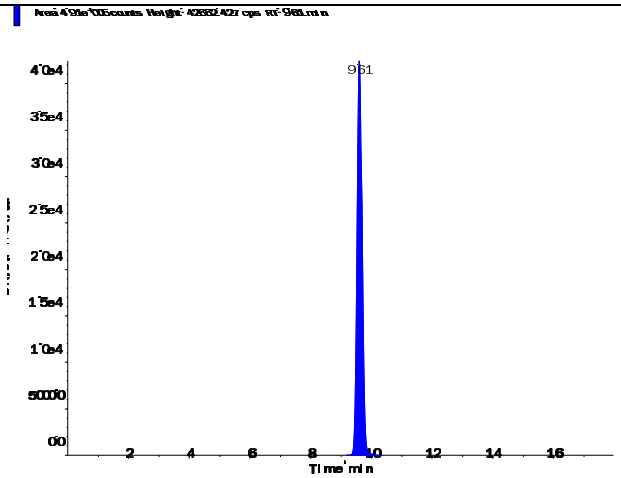

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.62 (9.84) min
Calculated conc:	0.895 ng/ml
Area Ratio:	0.302
Sample Type:	(Unknown)

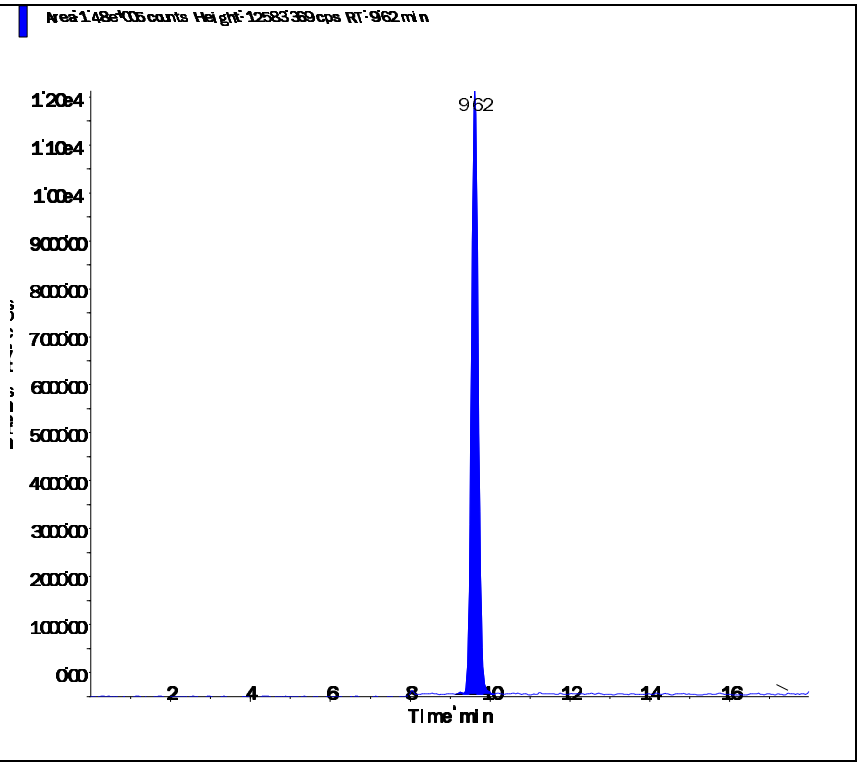

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.60 (9.84) min
Calculated conc:	0.90 ng/ml
Area Ratio:	0.103
Sample Type:	(Unknown)

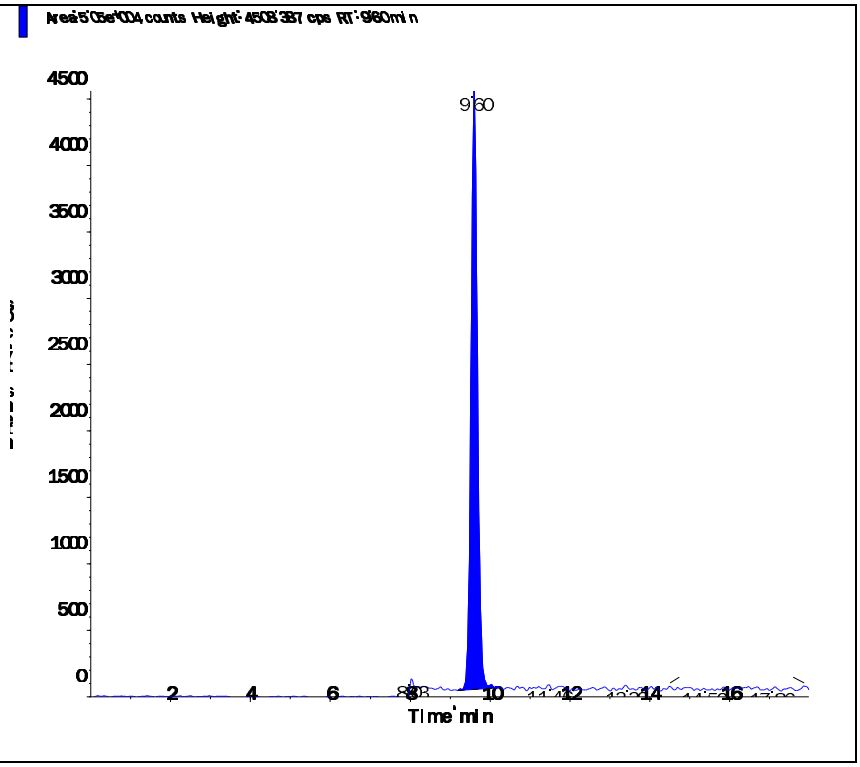

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Data File	LM35504.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 7:59:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061026-05 (RR 10,000x)	**Injection Vial**	31.00
Data File	LM35504.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 7:59:46 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	L16061026-05	**Dilution Factor**	1.00
Sample Comment	110,000.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.570e+05	9.62	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	5.040e+05	9.64	N/A	3.27
Perchlorate conf	1.740e+05	9.62	N/A	3.38

O18LP (Internal Standard)

RT (Exp. RT): 9.62(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

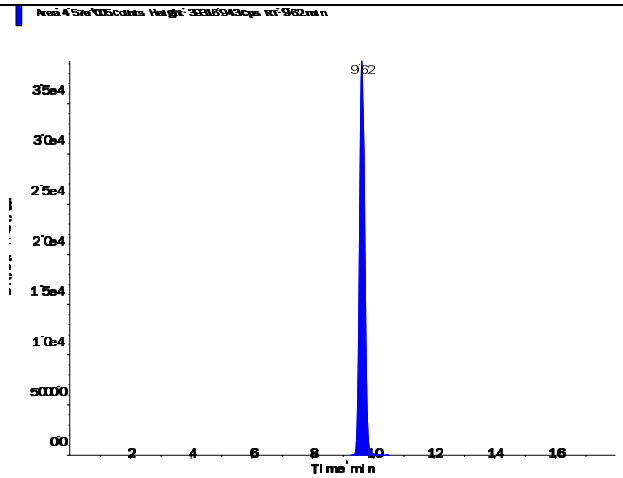

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.64 (9.84) min Calculated conc: 3.27 ng/ml Area Ratio: 1.101 Sample Type: (Unknown)	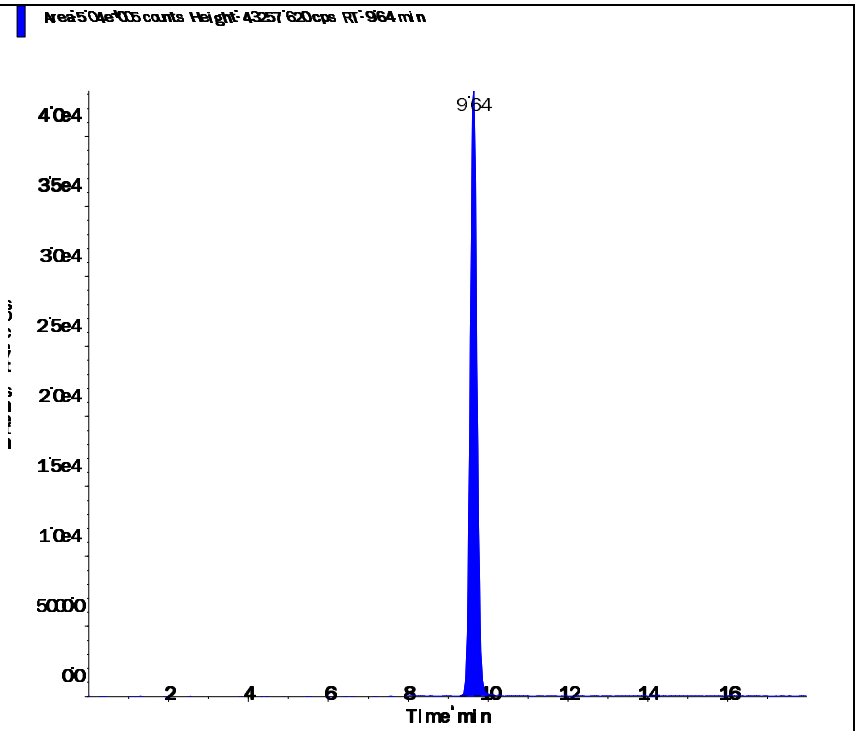
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.62 (9.84) min Calculated conc: 3.38 ng/ml Area Ratio: 0.38 Sample Type: (Unknown)	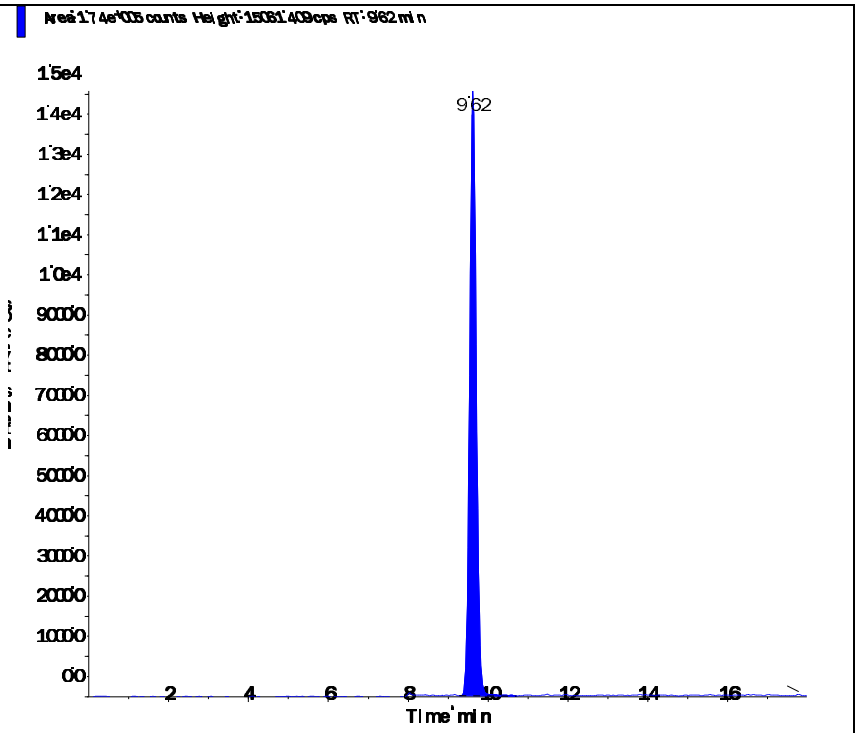

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Data File	LM35505.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 8:18:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	L16061026-07 (RR 50x)	**Injection Vial**	32.00
Data File	LM35505.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 8:18:43 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	L16061026-07	**Dilution Factor**	1.00
Sample Comment	150.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.900e+05	9.62	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.480e+05	9.64	N/A	2.10
Perchlorate conf	1.200e+05	9.62	N/A	2.18

O18LP (Internal Standard)

RT (Exp. RT): 9.62(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

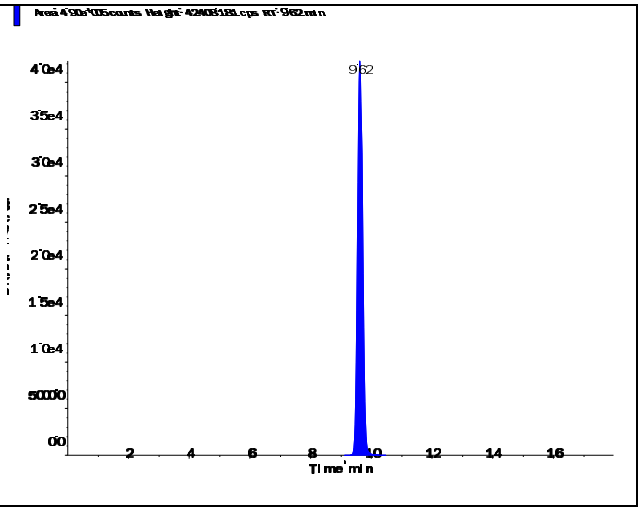

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.64 (9.84) min Calculated conc: 2.10 ng/ml Area Ratio: 0.709 Sample Type: (Unknown)	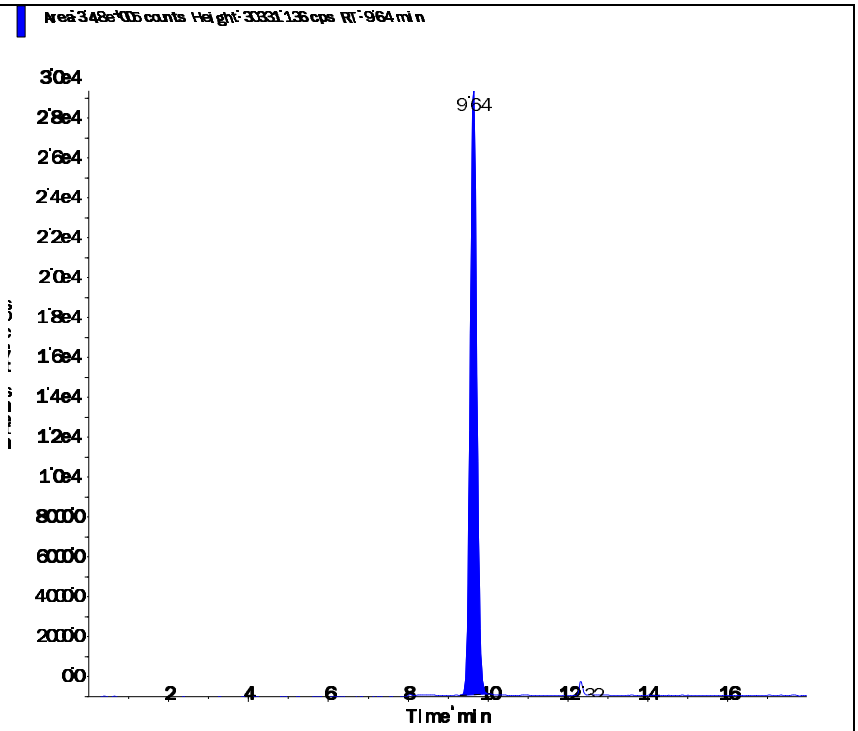
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.62 (9.84) min Calculated conc: 2.18 ng/ml Area Ratio: 0.245 Sample Type: (Unknown)	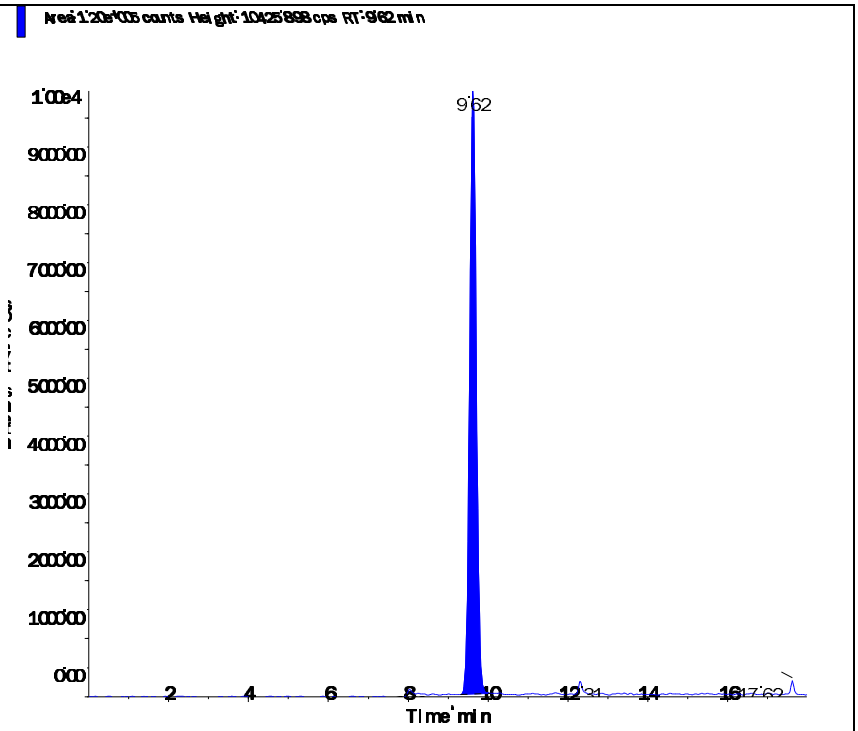

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2.2.2.4 Standards Data

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Data File	LM34686.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-01 CCB	**Injection Vial**	1.00
Data File	LM34686.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

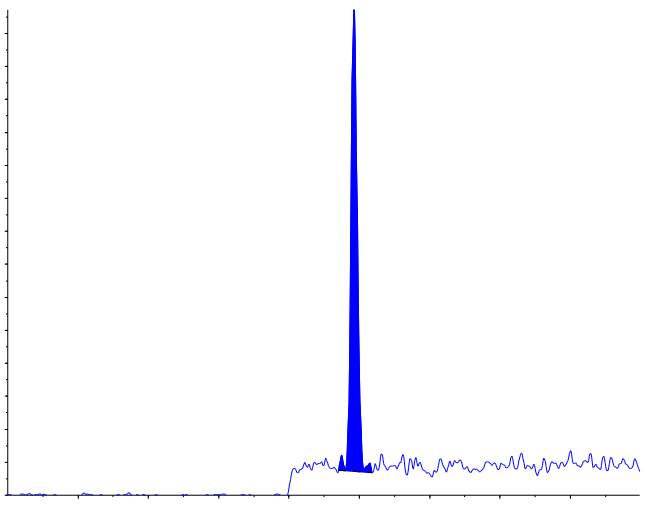

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	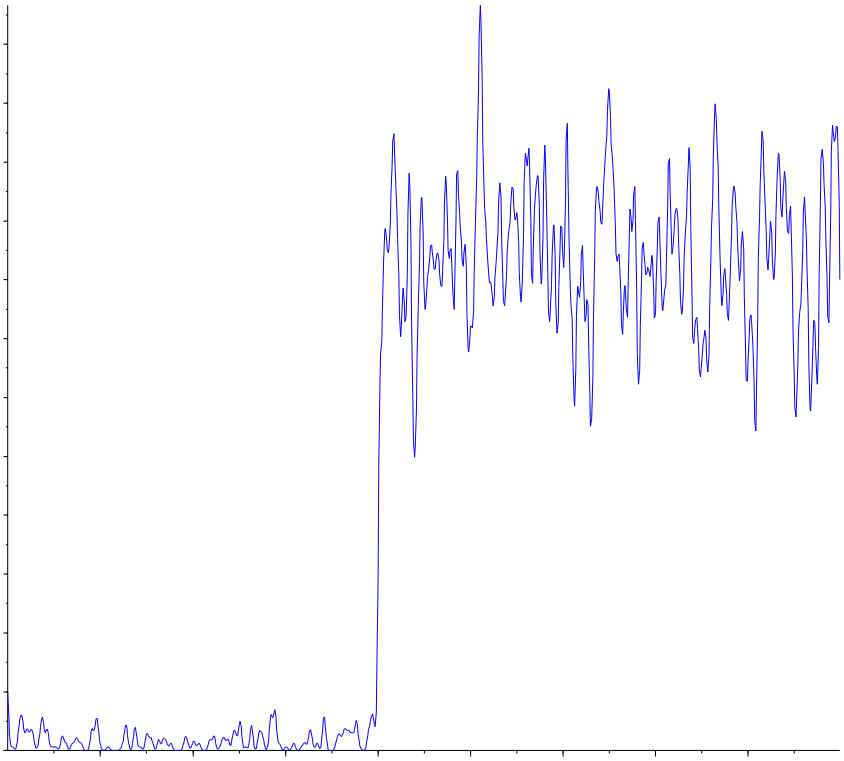
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	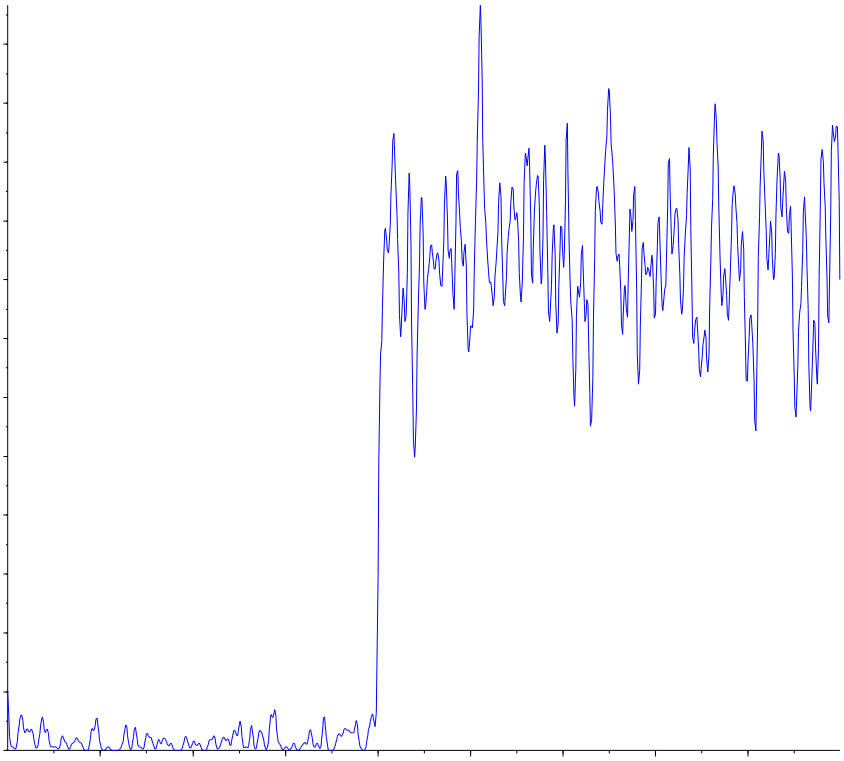

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Analyte Name: **Perchlorate**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 1.68 x + 0.00128 (r = 1.0000)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	102.8	N/A	N/A
0.20	1	0.20	100.3	N/A	N/A
0.50	1	0.48	96.6	N/A	N/A
1.00	1	1.01	100.5	N/A	N/A
2.00	1	1.99	99.3	N/A	N/A
5.00	1	5.04	100.7	N/A	N/A
10.00	1	9.99	99.9	N/A	N/A

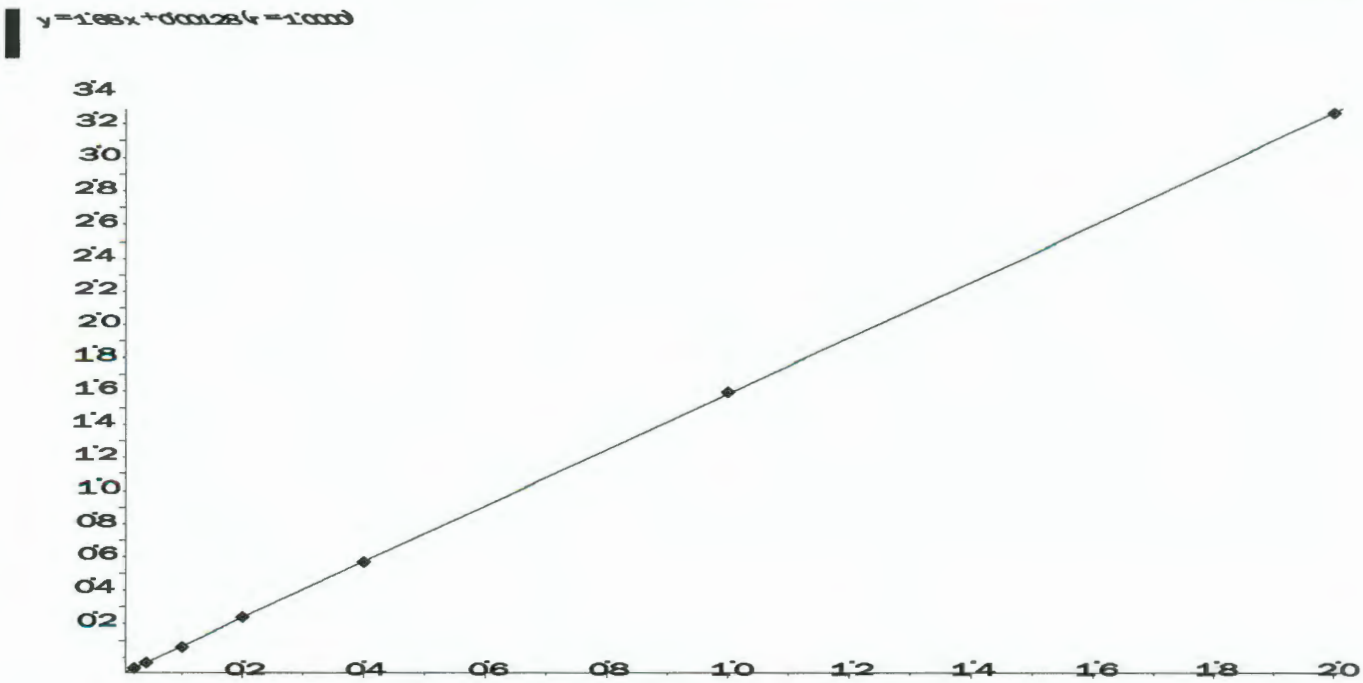

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Printed: 5/4/2016 1:20 PM

Analyte Name: **Perchlorate conf**
Internal Standard: O18LP

Data File	LM34686.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 3:06:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Regression Equation: y = 0.558 x + 0.00228 (r = 0.9999)

Expected Concentration	Number of Values	Mean Calculated Concentration	% Accuracy	Std. Deviation	%CV
0.10	1	0.10	104.3	N/A	N/A
0.20	1	0.19	96.8	N/A	N/A
0.50	1	0.50	100.6	N/A	N/A
1.00	1	1.00	100.5	N/A	N/A
2.00	1	1.94	97.2	N/A	N/A
5.00	1	5.02	100.4	N/A	N/A
10.00	1	10.03	100.3	N/A	N/A

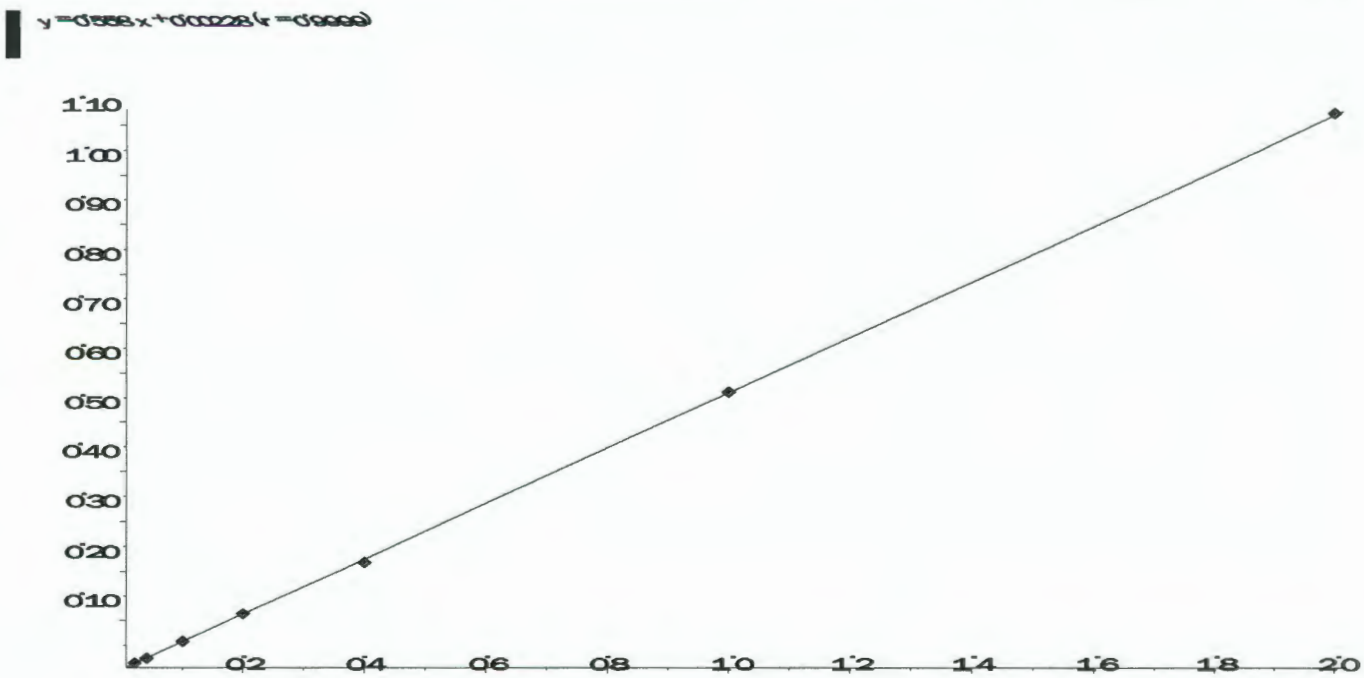

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Data File	LM34687.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-02 STD (0.1 ug/L)	**Injection Vial**	2.00
Data File	LM34687.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:25:04 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.000e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+04	9.85	0.10	0.103
Perchlorate conf	6.950e+03	9.83	0.10	0.104

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

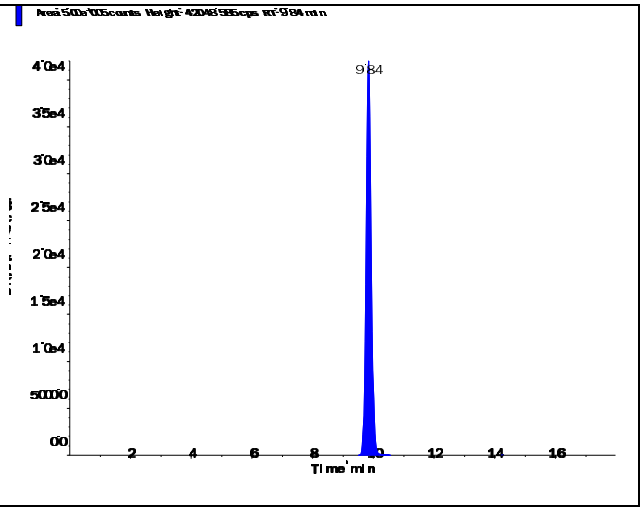

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.103 ng/ml
Area Ratio:	0.036
Sample Type:	(Standard)

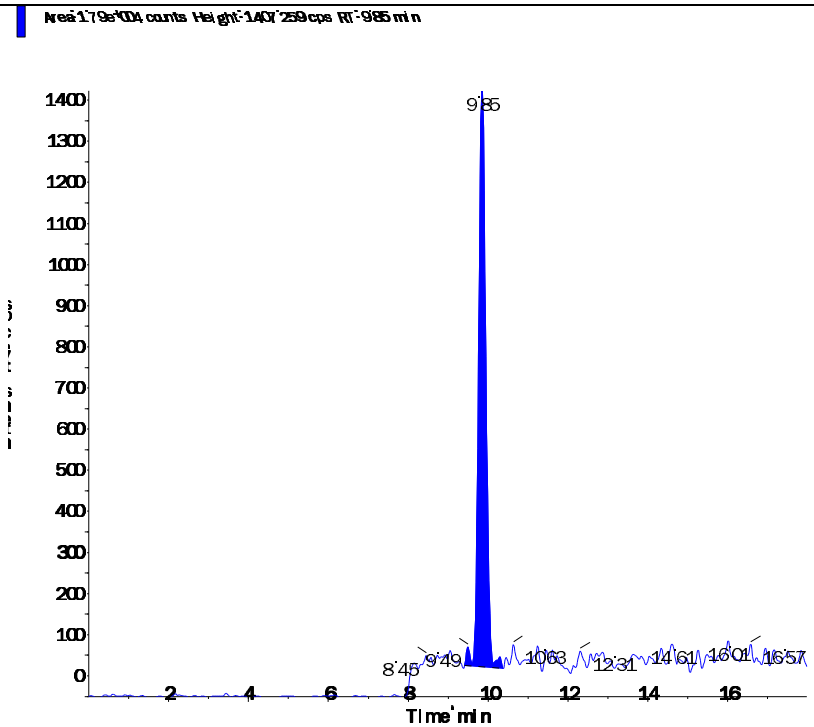

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	0.104 ng/ml
Area Ratio:	0.014
Sample Type:	(Standard)

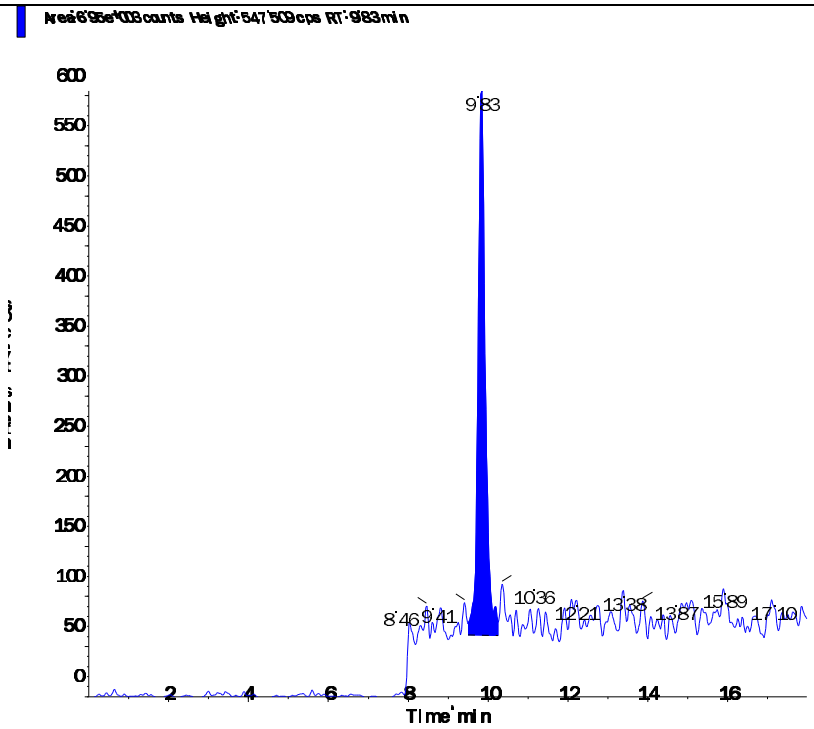

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Data File	LM34688.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-03 STD (0.2 ug/L)	**Injection Vial**	3.00
Data File	LM34688.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 3:43:59 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.970e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.410e+04	9.85	0.20	0.201
Perchlorate conf	1.190e+04	9.84	0.20	0.194

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

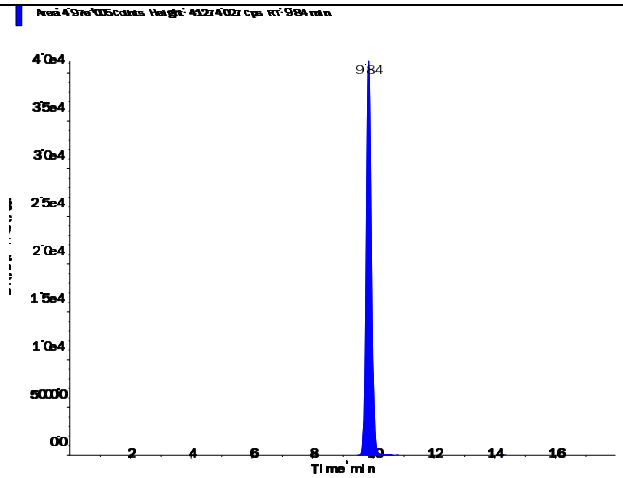

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Standard)

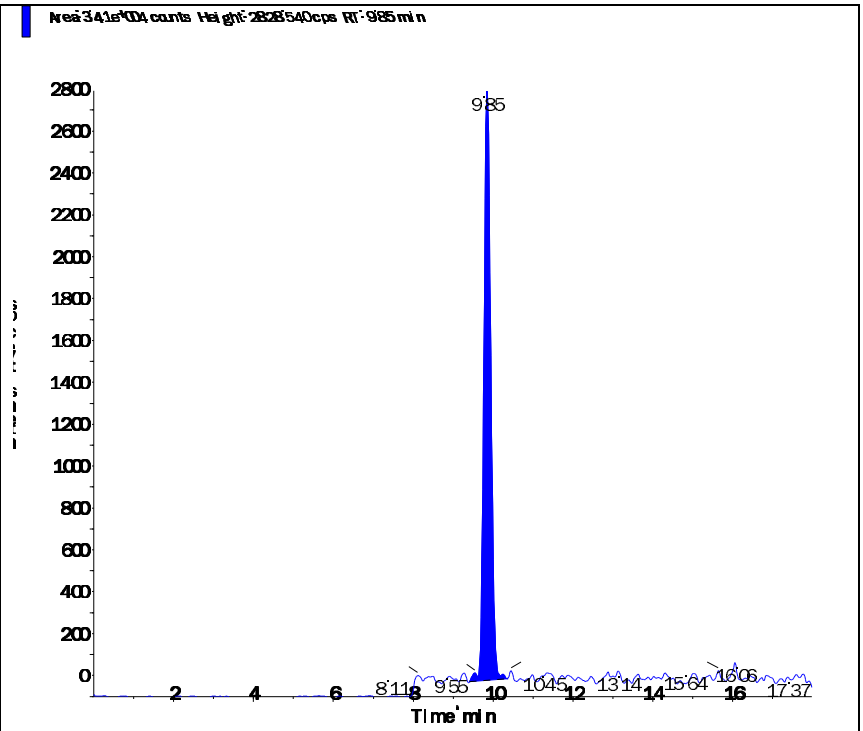

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.194 ng/ml
Area Ratio:	0.024
Sample Type:	(Standard)

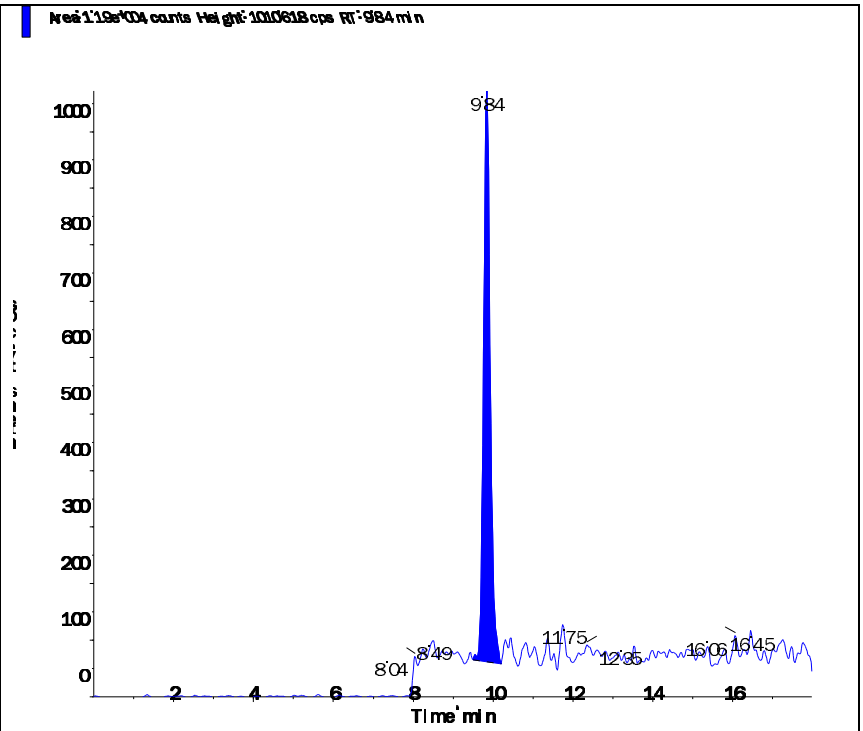

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Data File	LM34689.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-04 STD (0.5 ug/L)	**Injection Vial**	4.00
Data File	LM34689.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:02:52 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.020e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.220e+04	9.85	0.50	0.483
Perchlorate conf	2.940e+04	9.84	0.50	0.503

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

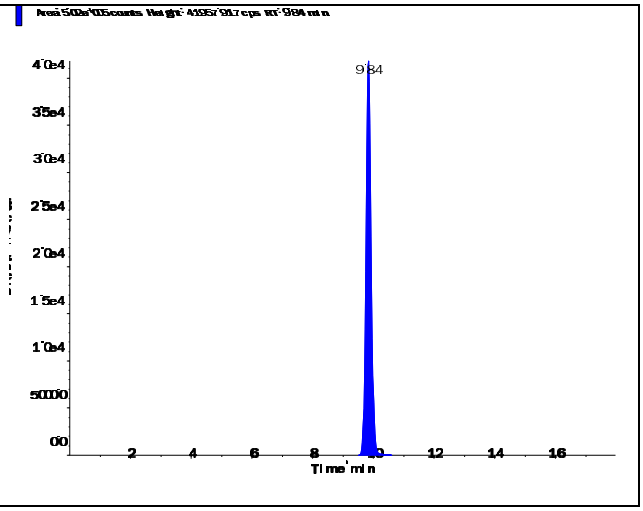

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.483 ng/ml
Area Ratio:	0.164
Sample Type:	(Standard)

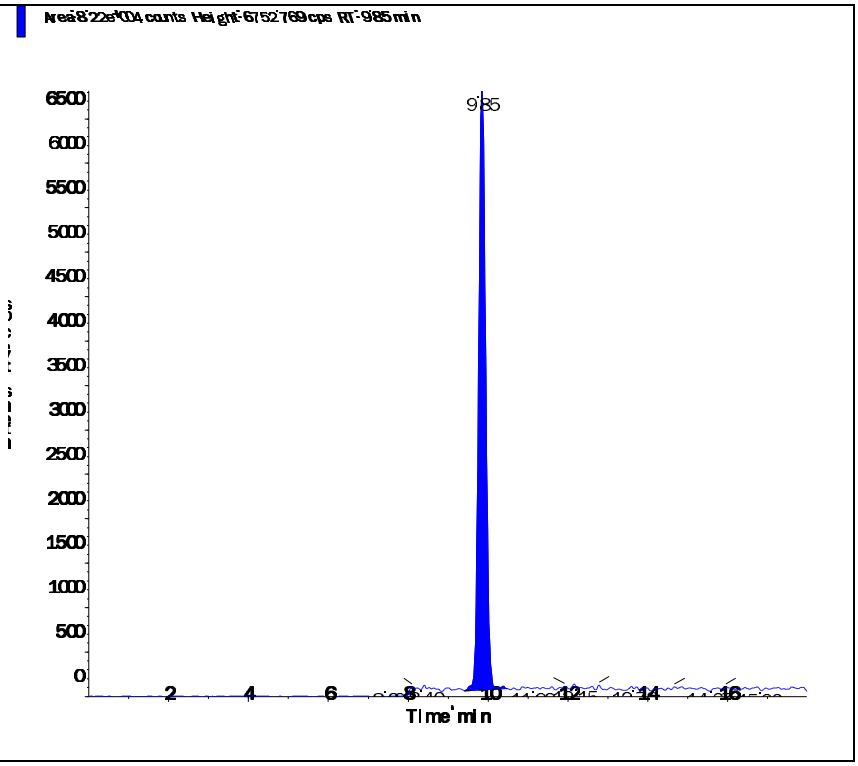

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.503 ng/ml
Area Ratio:	0.058
Sample Type:	(Standard)

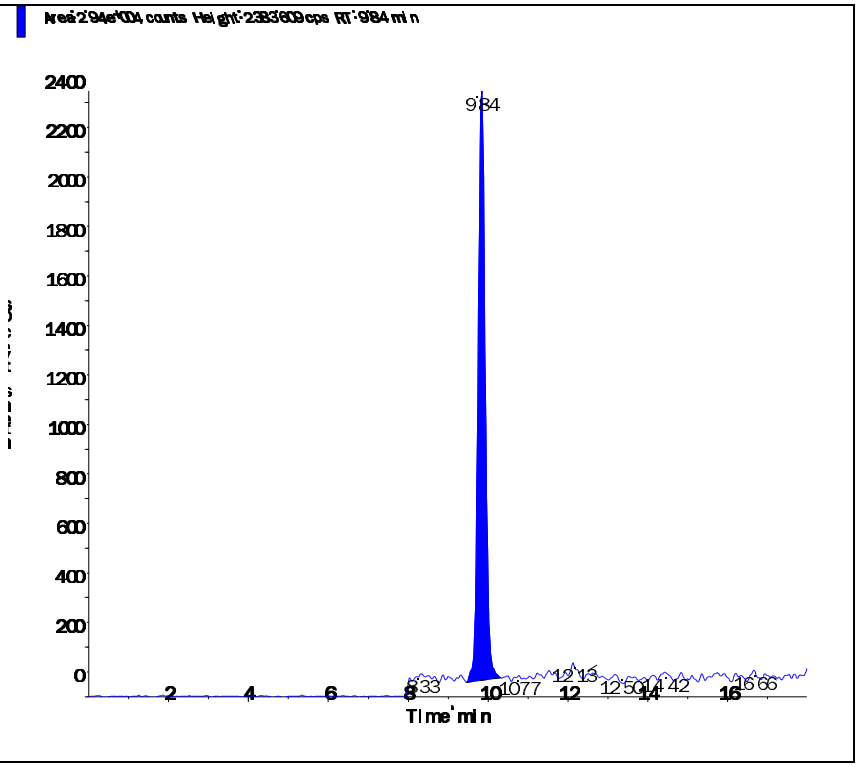

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Data File	LM34690.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-05 STD (1.0 ug/L)	**Injection Vial**	5.00
Data File	LM34690.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:21:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.950e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.680e+05	9.84	1.00	1.01
Perchlorate conf	5.660e+04	9.83	1.00	1.00

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

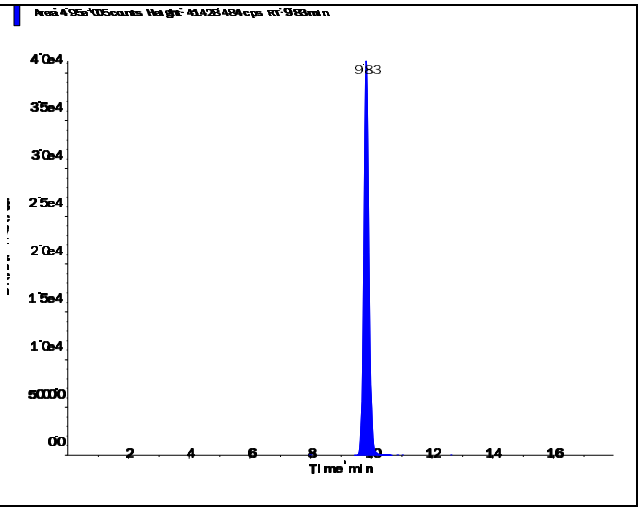

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.339
Sample Type:	(Standard)

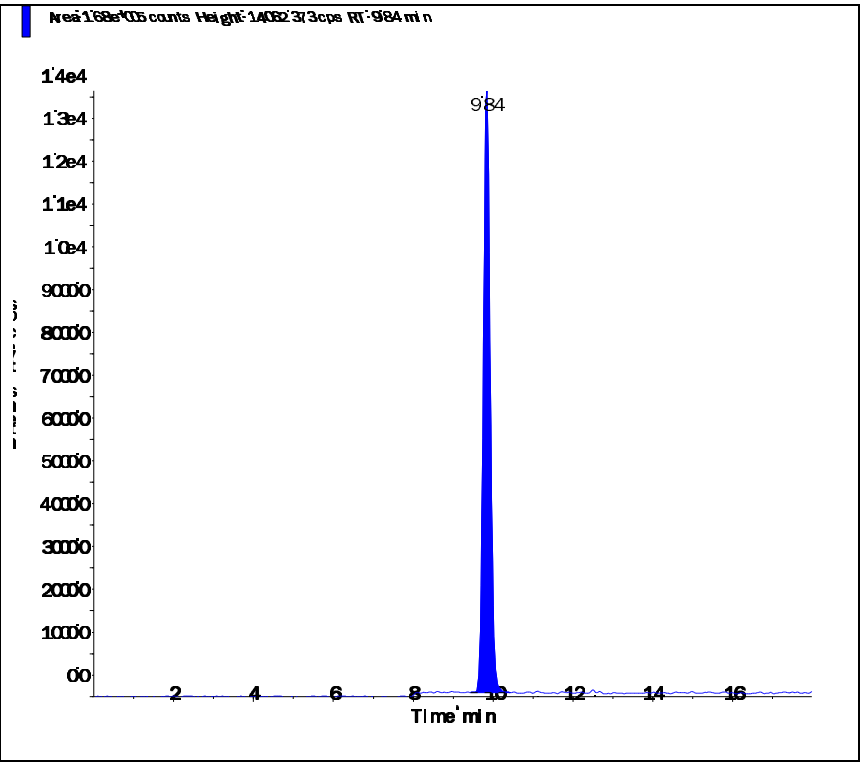

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.00 ng/ml
Area Ratio:	0.114
Sample Type:	(Standard)

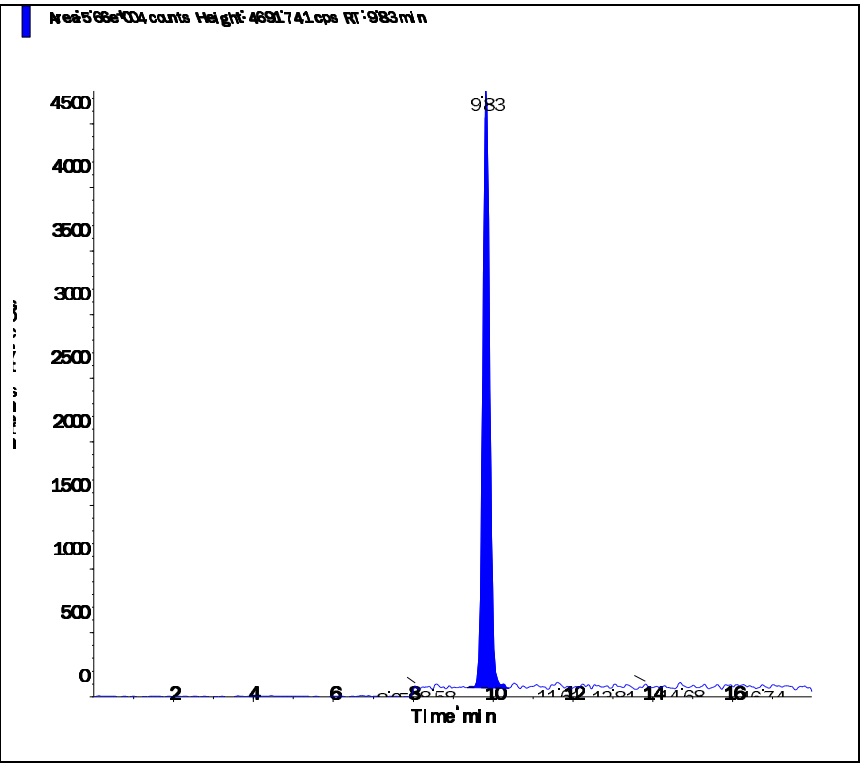

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Data File	LM34691.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-06 STD (2.0 ug/L)	**Injection Vial**	6.00
Data File	LM34691.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:40:45 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.930e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.300e+05	9.84	2.00	1.99
Perchlorate conf	1.080e+05	9.83	2.00	1.94

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

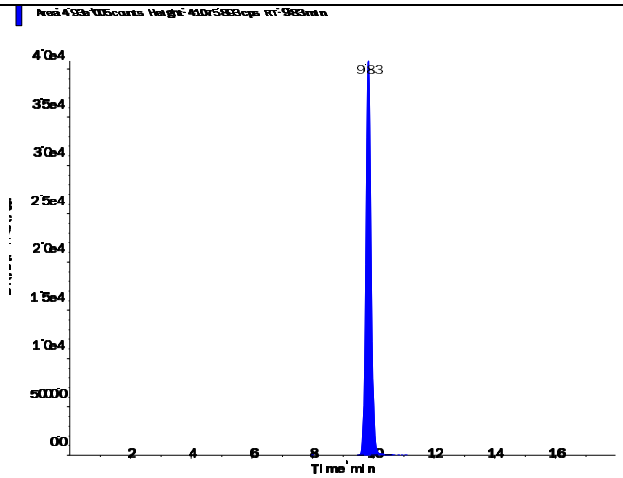

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	1.99 ng/ml
Area Ratio:	0.669
Sample Type:	(Standard)

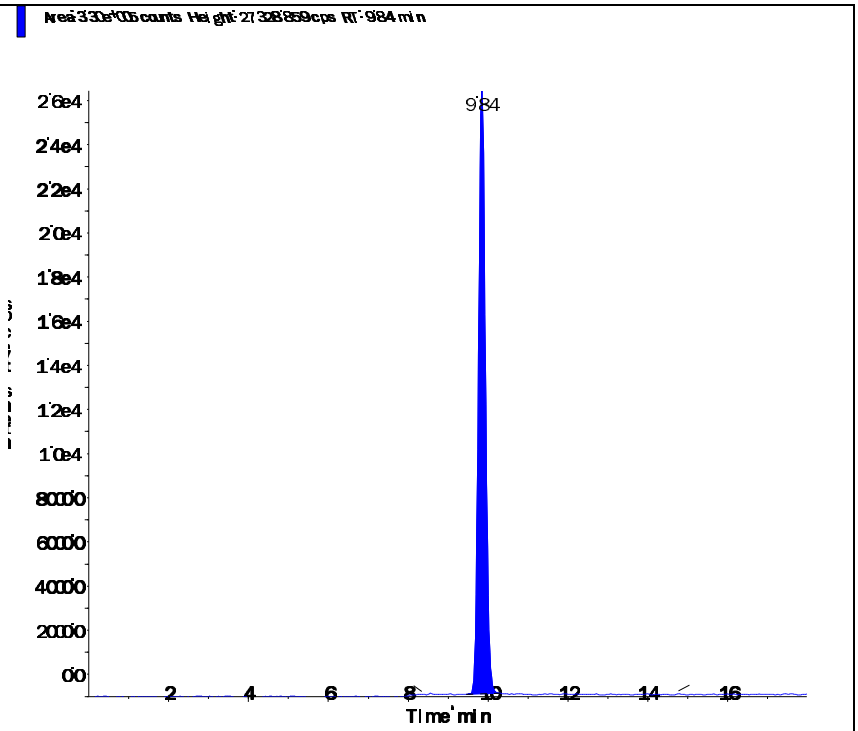

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	1.94 ng/ml
Area Ratio:	0.219
Sample Type:	(Standard)

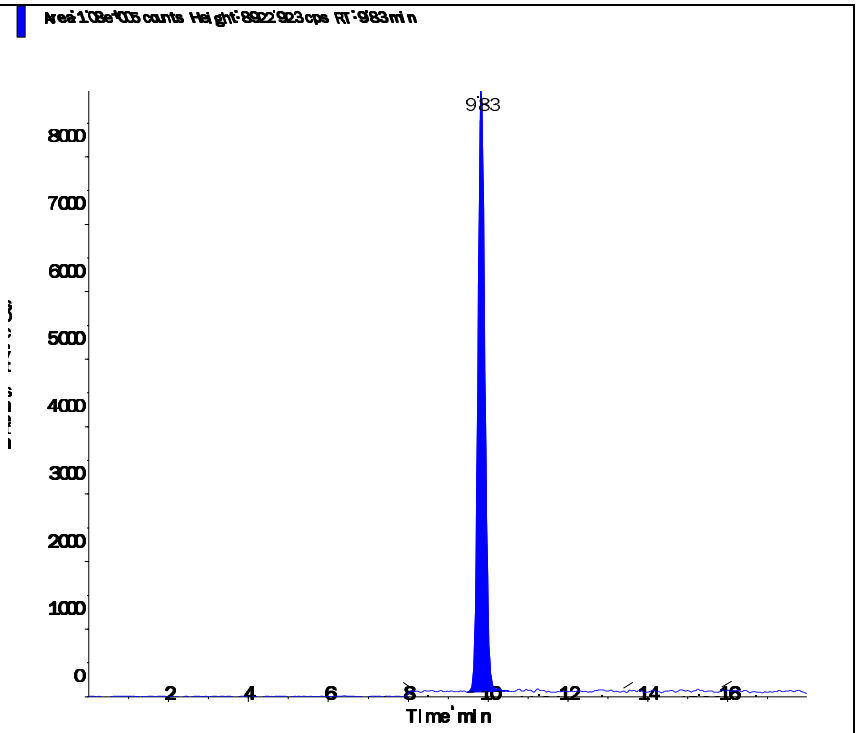

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Data File	LM34692.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-07 STD (5.0 ug/L)	**Injection Vial**	7.00
Data File	LM34692.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 4:59:42 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.780e+05	9.83	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	8.100e+05	9.84	5.00	5.04
Perchlorate conf	2.690e+05	9.83	5.00	5.02

O18LP (Internal Standard)

RT (Exp. RT): 9.83(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

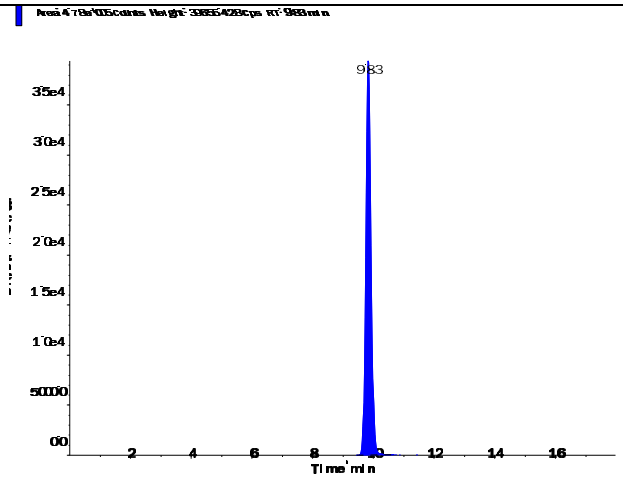

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	5.04 ng/ml
Area Ratio:	1.695
Sample Type:	(Standard)

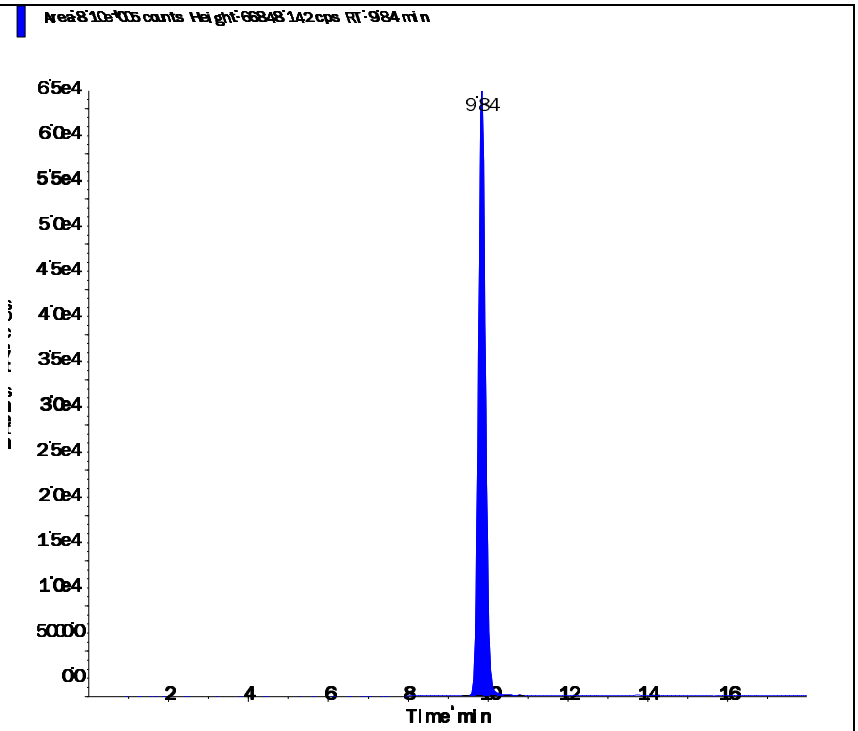

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	5.02 ng/ml
Area Ratio:	0.562
Sample Type:	(Standard)

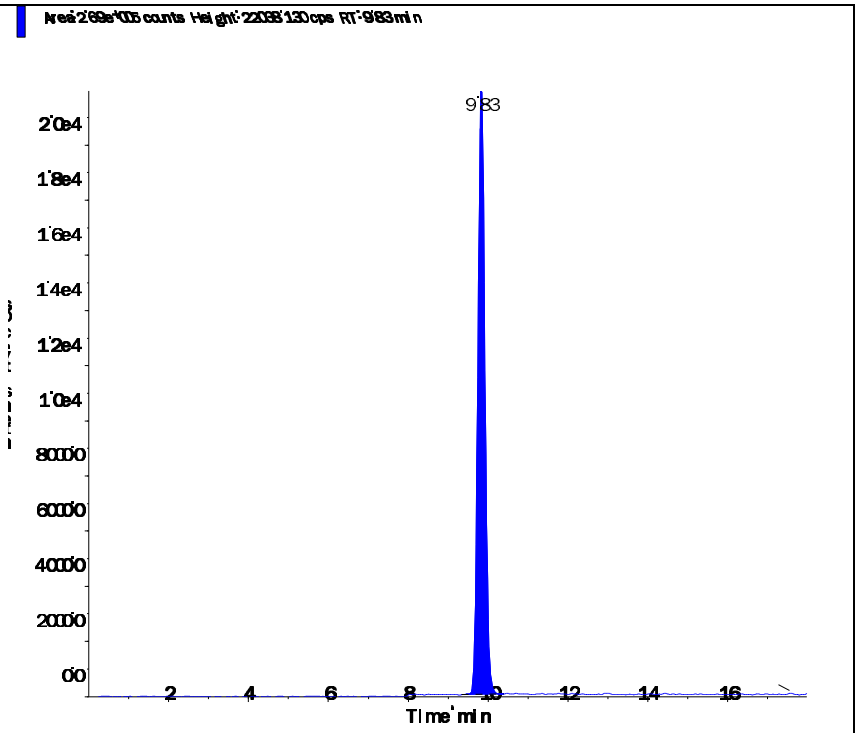

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Data File	LM34693.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-08 STD (10 ug/L)	**Injection Vial**	8.00
Data File	LM34693.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:18:37 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Standard
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG567320-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.560e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.530e+06	9.85	10.00	9.99
Perchlorate conf	5.120e+05	9.83	10.00	10.00

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Standard)

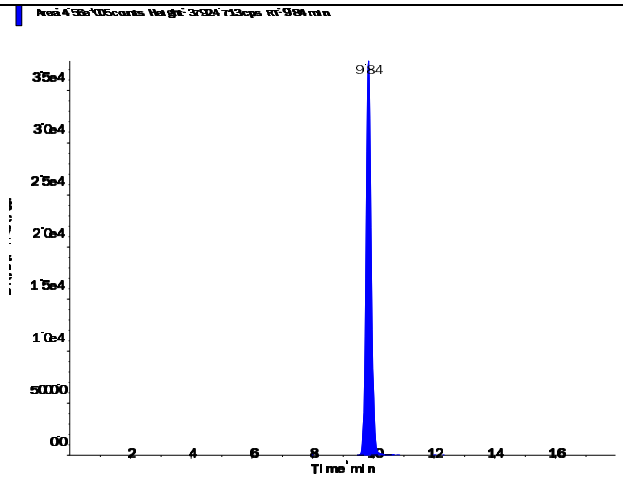

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	9.99 ng/ml
Area Ratio:	3.36
Sample Type:	(Standard)

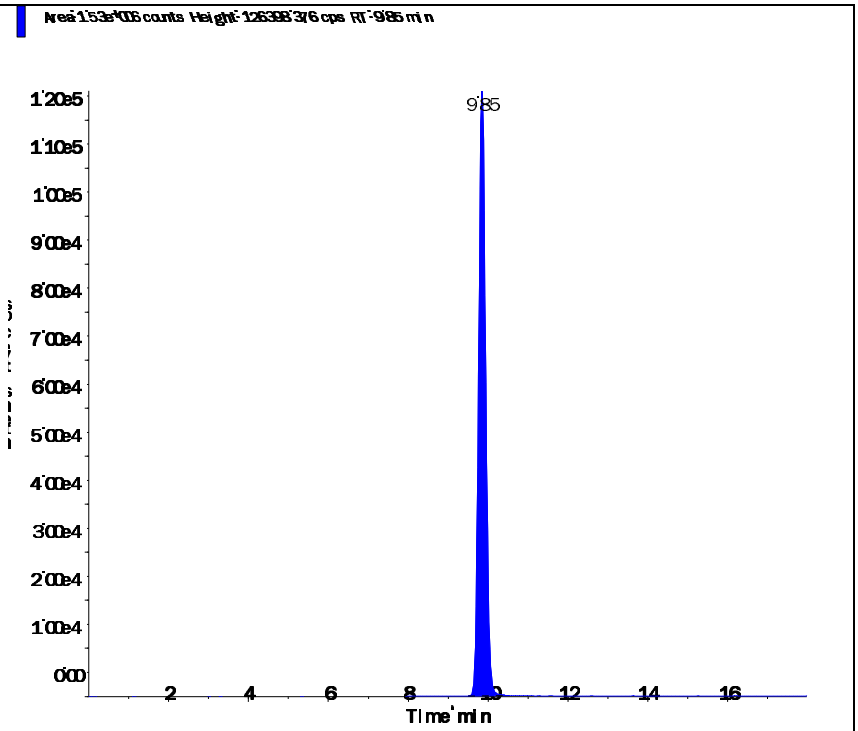

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.83 (9.84) min
Calculated conc:	10.00 ng/ml
Area Ratio:	1.122
Sample Type:	(Standard)

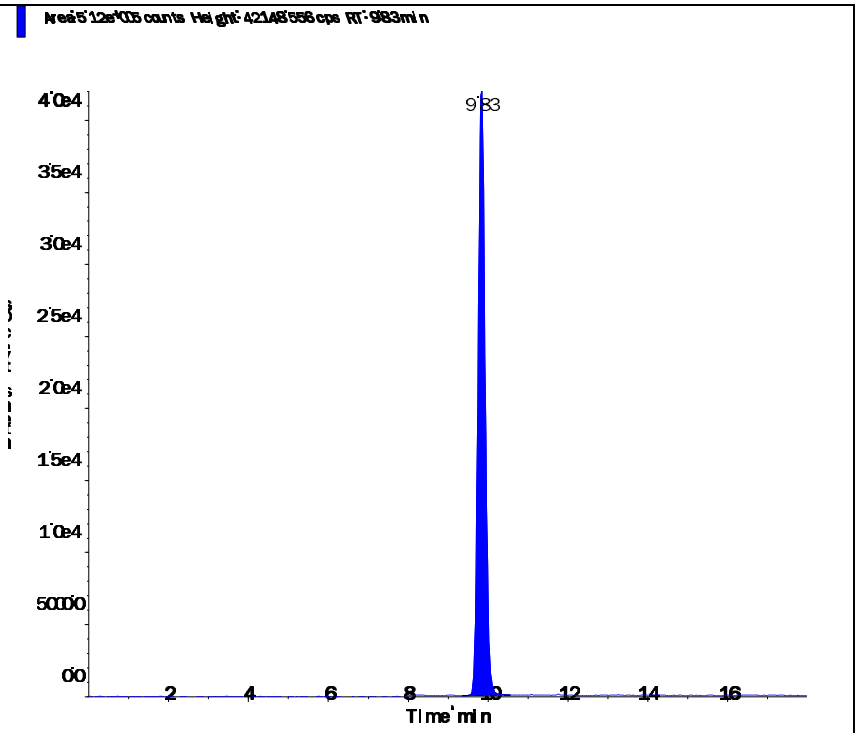

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Data File	LM34694.wiff	**Result Table**	050316_JWR.rdb
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG567320-09 SSCV (1.0 ug/L)	**Injection Vial**	9.00
Data File	LM34694.wiff	**Injection Volume**	10.00
Acquisition Date	5/3/2016 5:37:34 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	050316_JWR.rdb
Sample ID	WG567320-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.080e+05	9.84	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.690e+05	9.85	1.00	0.985
Perchlorate conf	5.630e+04	9.84	1.00	0.973

O18LP (Internal Standard)

RT (Exp. RT): 9.84(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

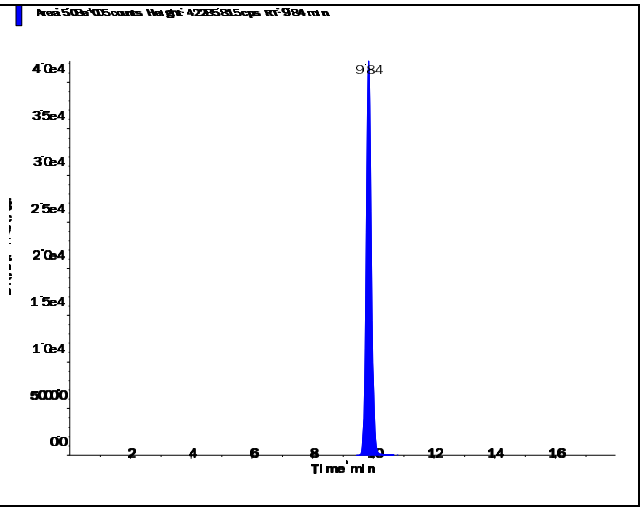

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.85 (9.84) min
Calculated conc:	0.985 ng/ml
Area Ratio:	0.332
Sample Type:	(Quality Control)

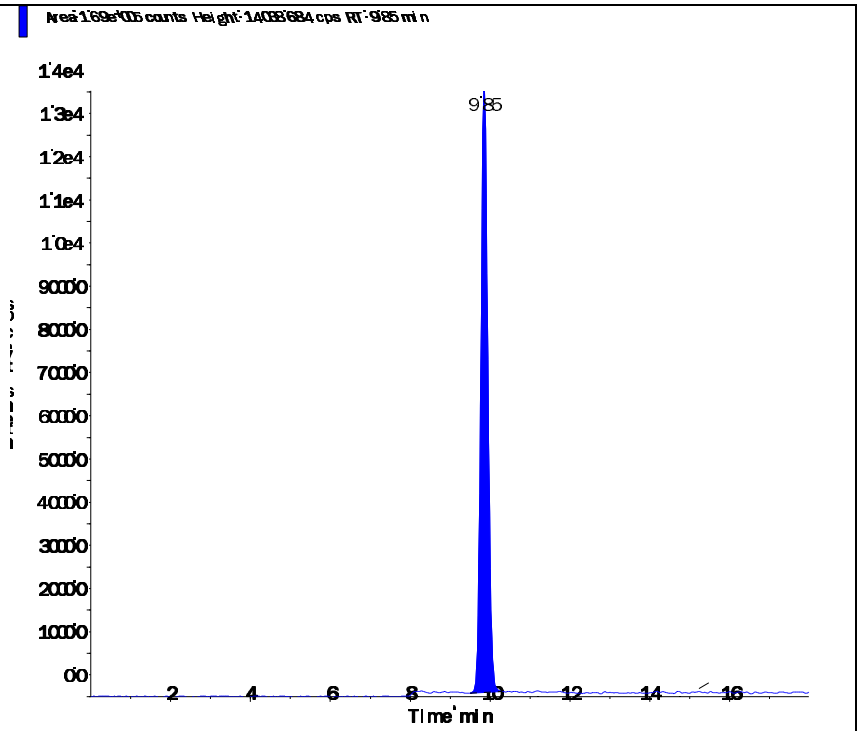

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.84 (9.84) min
Calculated conc:	0.973 ng/ml
Area Ratio:	0.111
Sample Type:	(Quality Control)

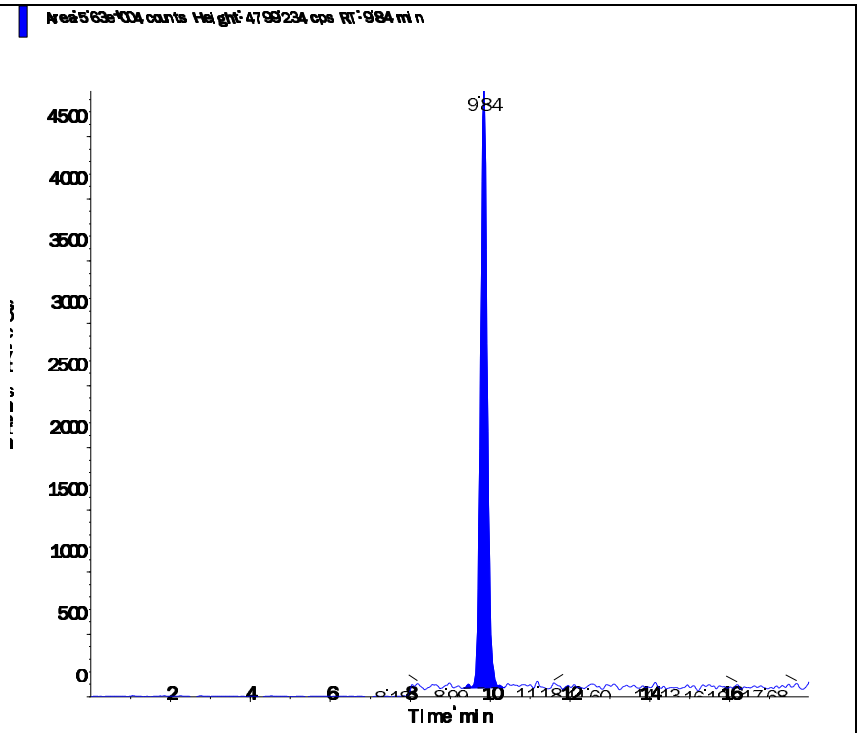

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Data File	LM35463.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 8:09:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-02 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35463.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 8:09:38 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-02	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.450e+05	9.34	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.520e+05	9.35	1.00	1.01
Perchlorate conf	5.550e+04	9.33	1.00	1.10

O18LP (Internal Standard)

RT (Exp. RT): 9.34(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

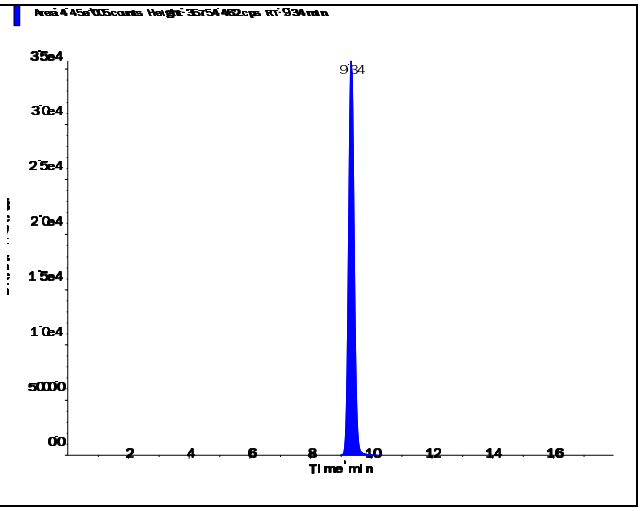

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.341
Sample Type:	(Quality Control)

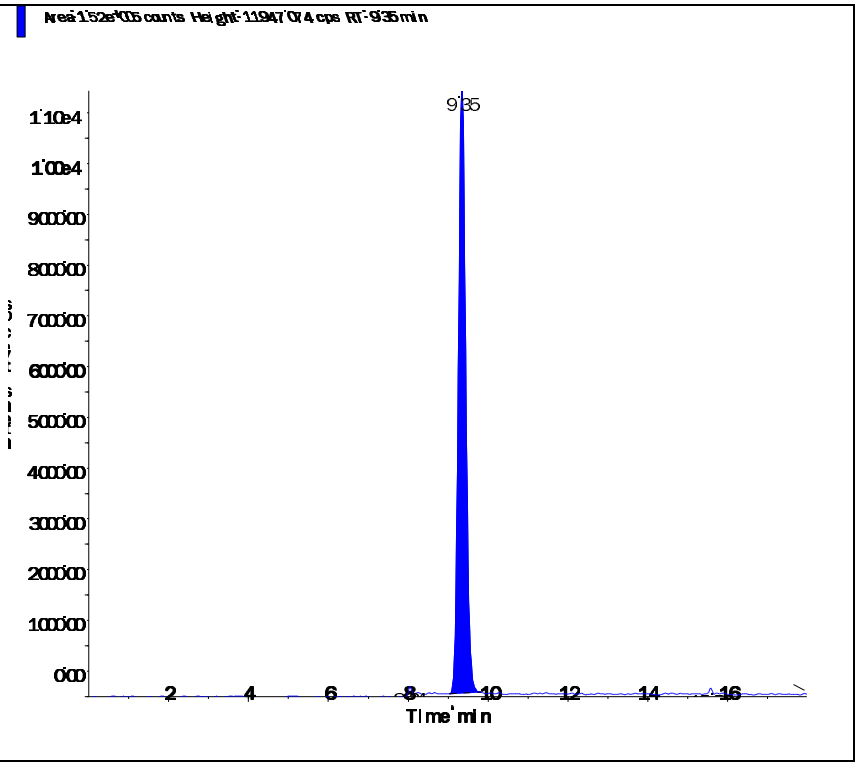

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.33 (9.84) min
Calculated conc:	1.10 ng/ml
Area Ratio:	0.125
Sample Type:	(Quality Control)

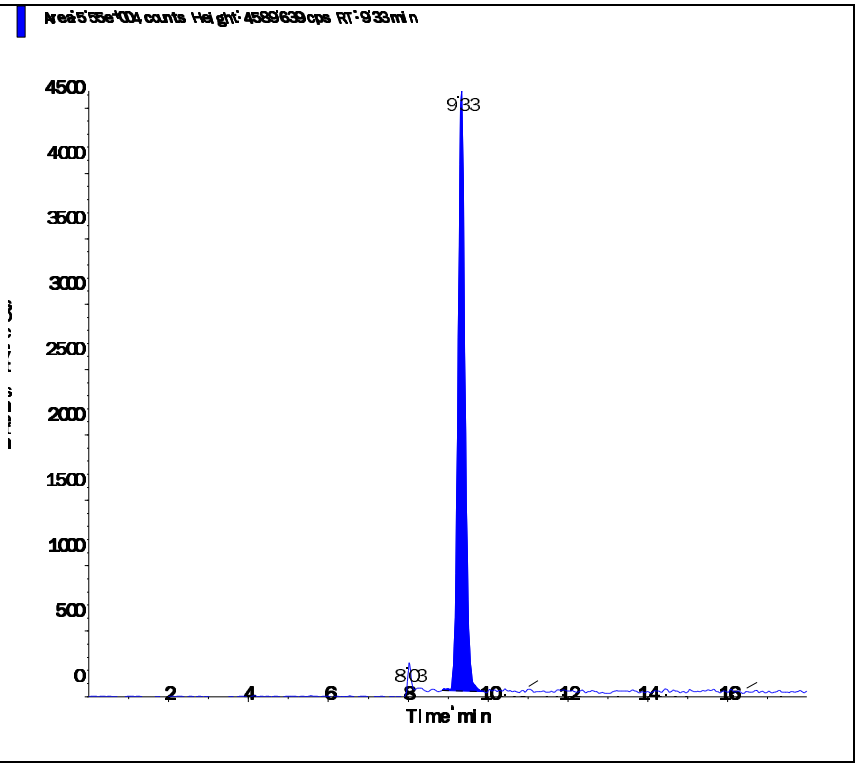

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Printed: 6/27/2016 7:43 PM

Data File	LM35475.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 11:56:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-03 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35475.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 11:56:49 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.980e+05	9.32	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.700e+05	9.33	1.00	1.01
Perchlorate conf	5.750e+04	9.32	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.32(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

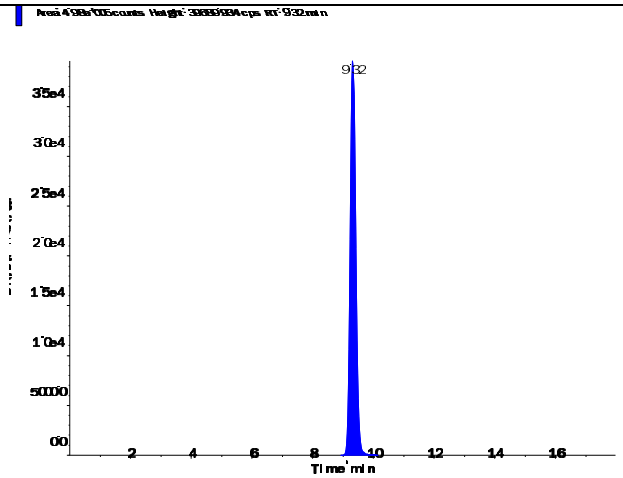

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.33 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.34
Sample Type:	(Quality Control)

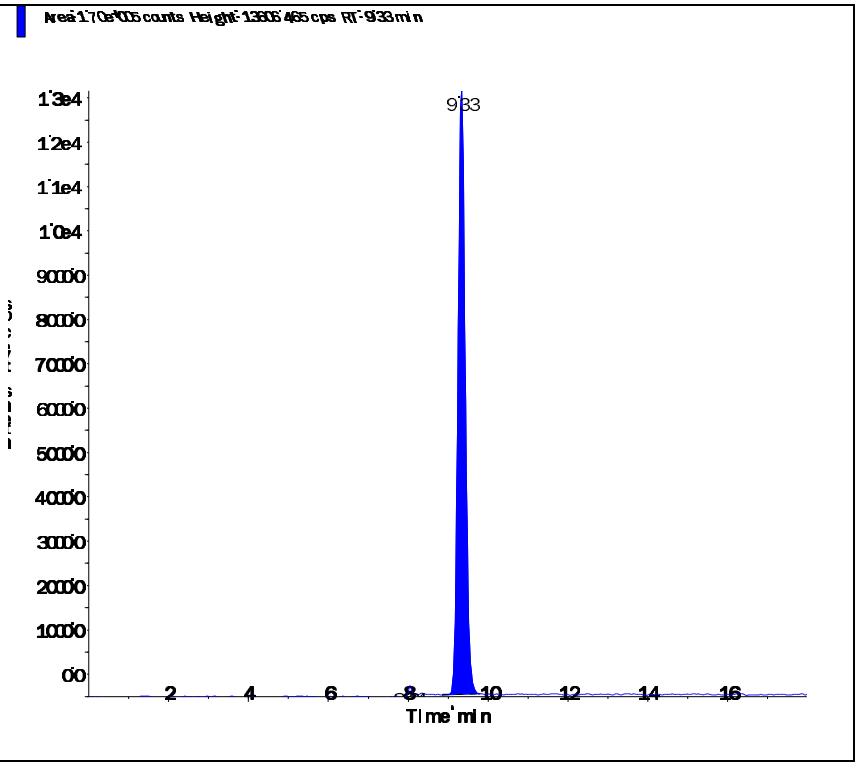

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.32 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.115
Sample Type:	(Quality Control)

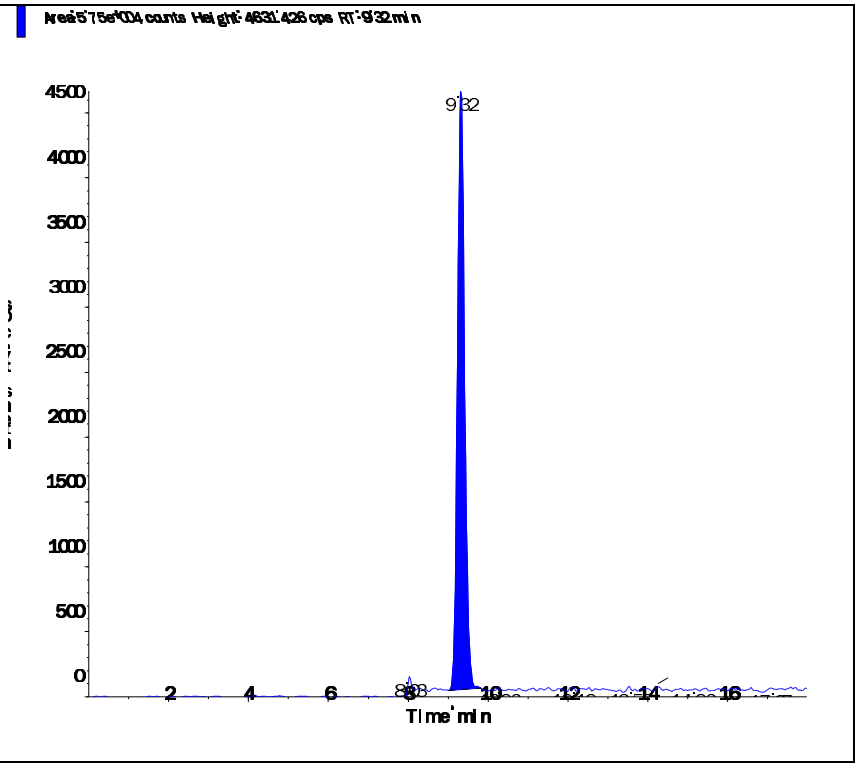

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Data File	LM35488.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 4:03:05 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-05 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35488.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 4:03:05 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.110e+05	9.33	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.790e+05	9.34	1.00	1.04
Perchlorate conf	6.020e+04	9.32	1.00	1.03

O18LP (Internal Standard)

RT (Exp. RT): 9.33(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

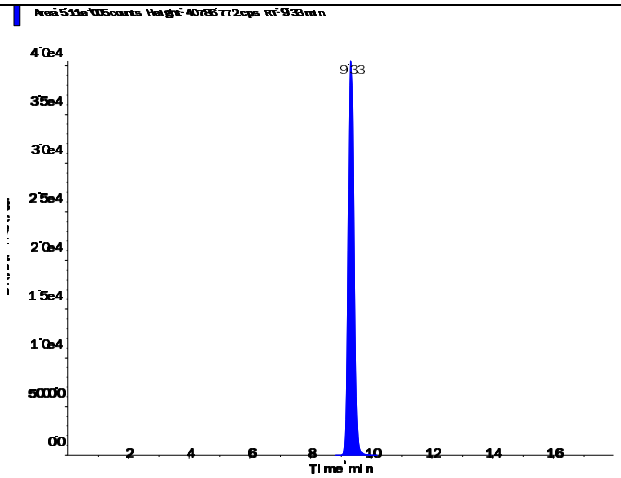

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.34 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.35
Sample Type:	(Quality Control)

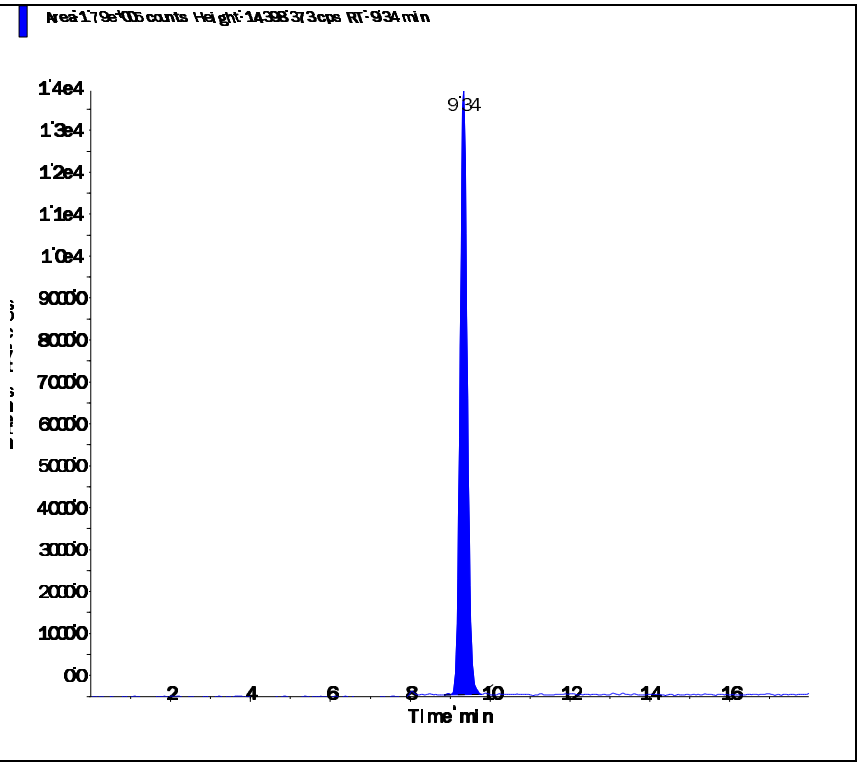

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.32 (9.84) min
Calculated conc:	1.03 ng/ml
Area Ratio:	0.118
Sample Type:	(Quality Control)

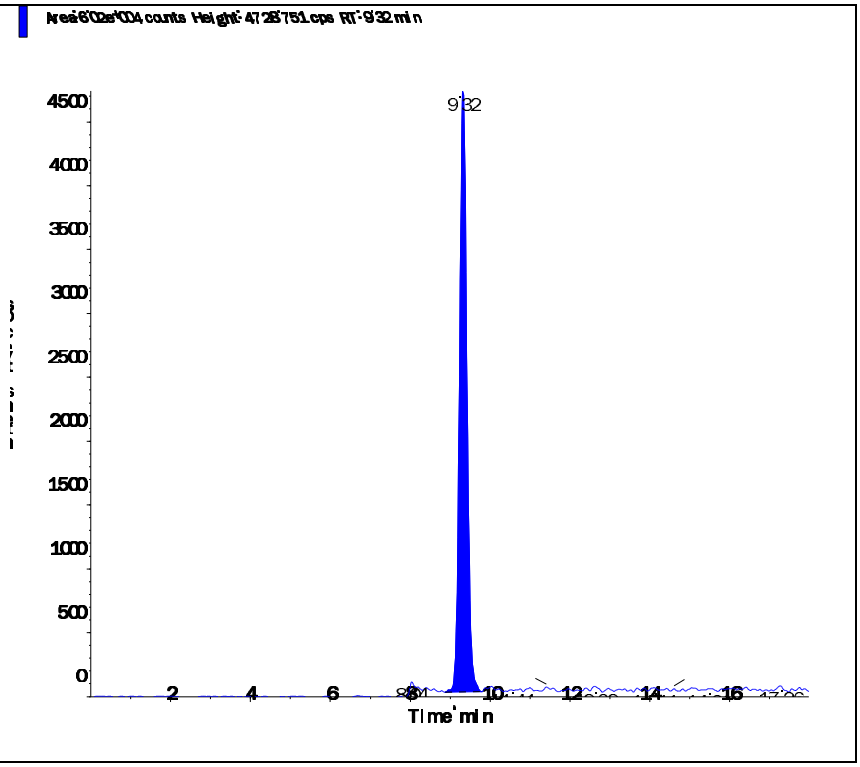

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Data File	LM35495.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:15:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-07 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35495.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:15:37 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.500e+05	9.33	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.890e+05	9.35	1.00	1.02
Perchlorate conf	6.340e+04	9.33	1.00	1.01

O18LP (Internal Standard)

RT (Exp. RT): 9.33(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

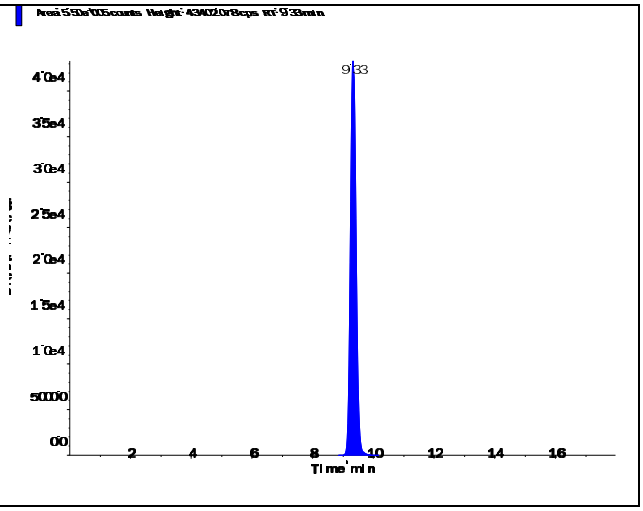

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.345
Sample Type:	(Quality Control)

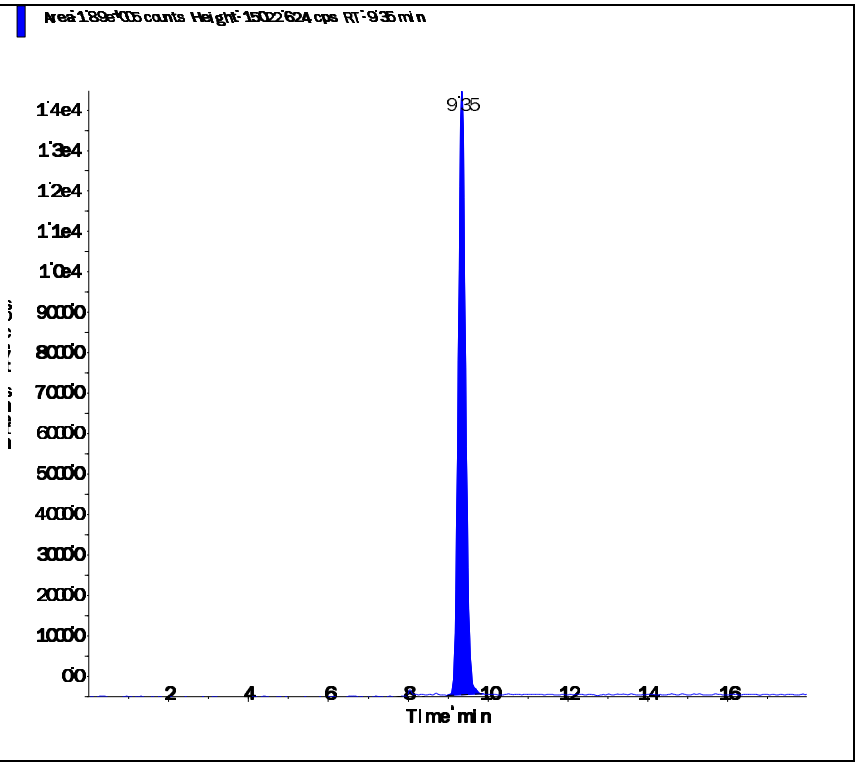

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.33 (9.84) min
Calculated conc:	1.01 ng/ml
Area Ratio:	0.115
Sample Type:	(Quality Control)

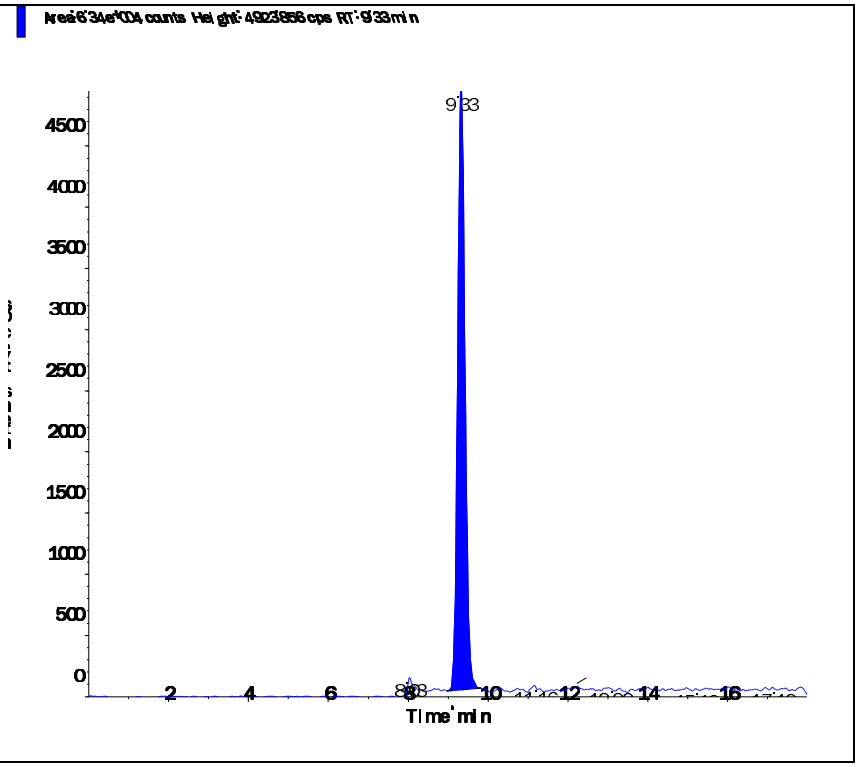

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Data File	LM35498.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:06:10 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-09 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35498.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:06:10 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.580e+05	9.34	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.610e+05	9.35	1.00	1.04
Perchlorate conf	5.670e+04	9.34	1.00	1.09

O18LP (Internal Standard)

RT (Exp. RT): 9.34(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

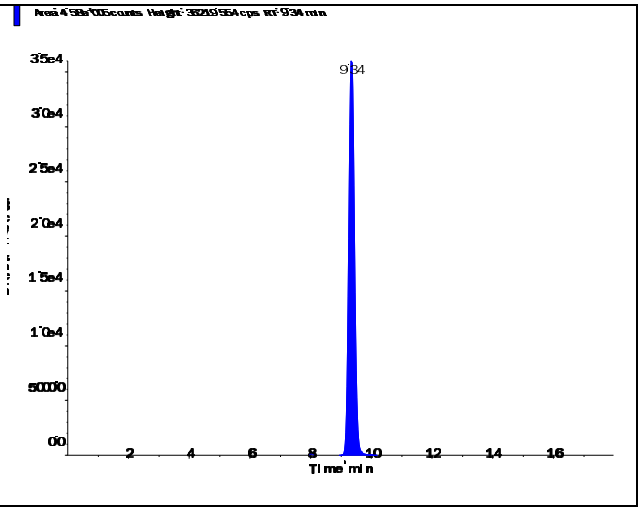

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	1.04 ng/ml
Area Ratio:	0.353
Sample Type:	(Quality Control)

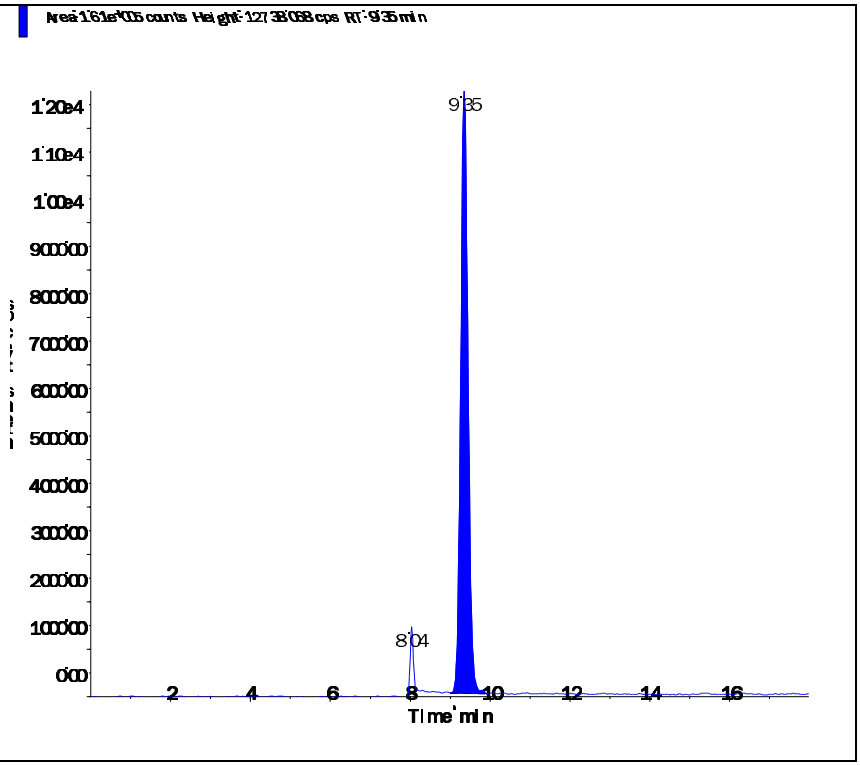

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.34 (9.84) min
Calculated conc:	1.09 ng/ml
Area Ratio:	0.124
Sample Type:	(Quality Control)

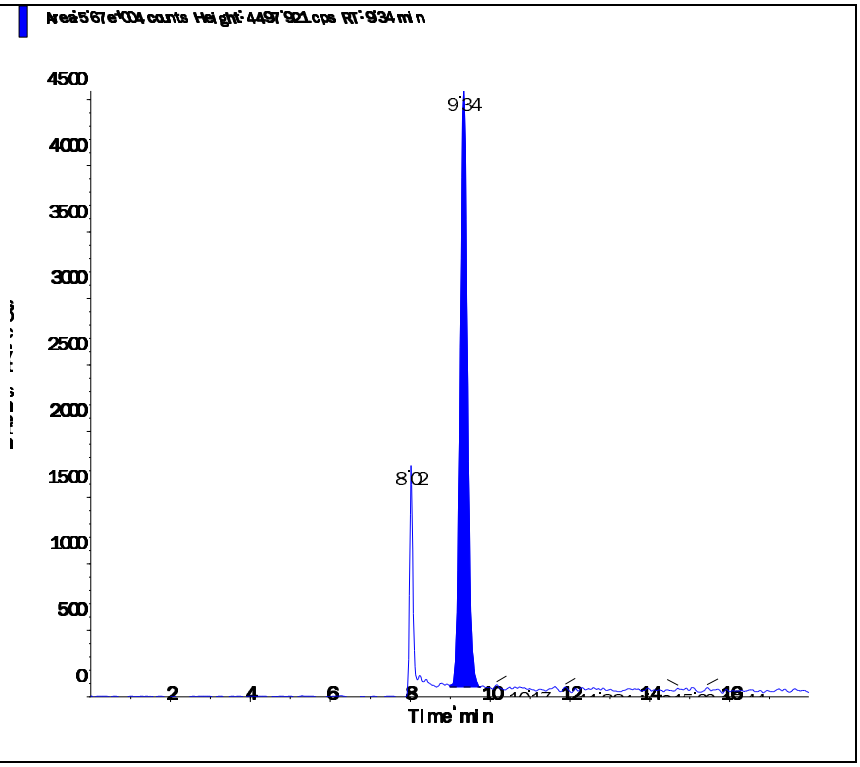

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Data File	LM35508.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 9:15:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-11 CCV (1.0ug/L)	**Injection Vial**	3.00
Data File	LM35508.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 9:15:29 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Quality Control
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-11	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.090e+05	9.35	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	1.760e+05	9.36	1.00	1.02
Perchlorate conf	5.930e+04	9.35	1.00	1.02

O18LP (Internal Standard)

RT (Exp. RT): 9.35(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Quality Control)

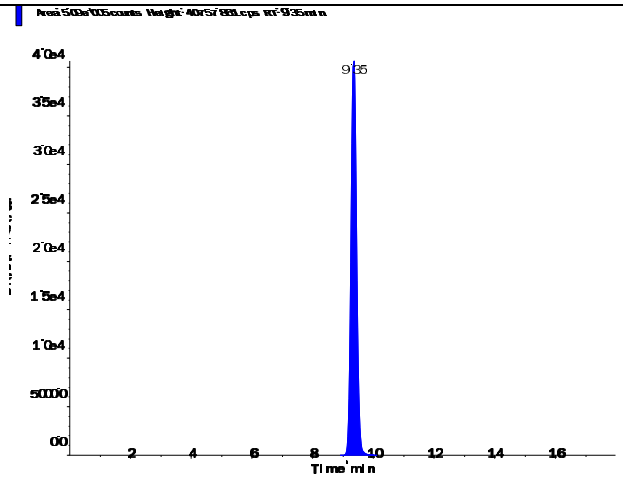

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.36 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.345
Sample Type:	(Quality Control)

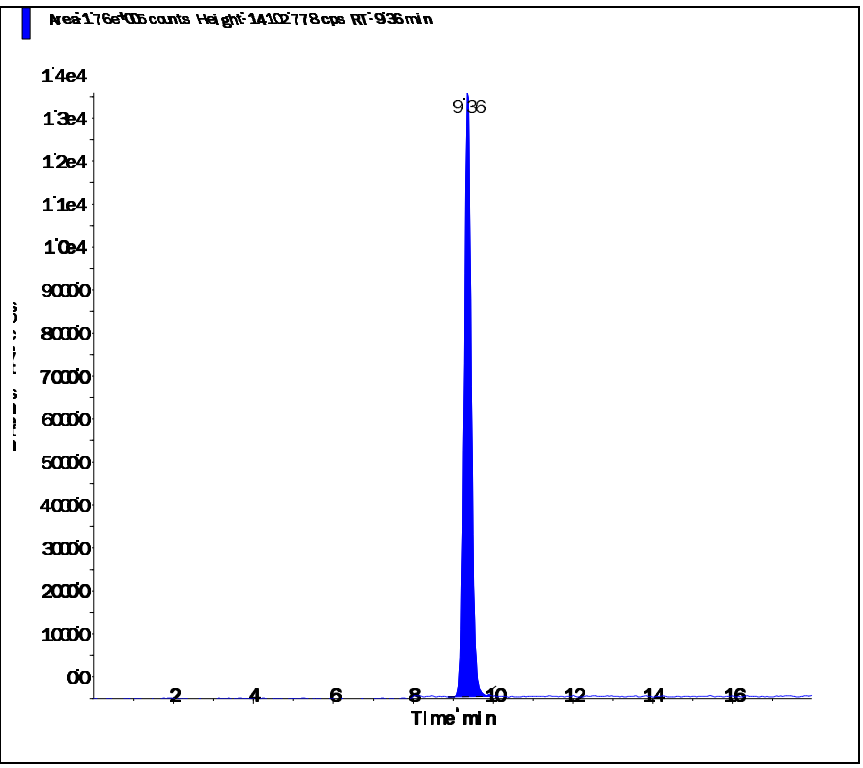

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	1.02 ng/ml
Area Ratio:	0.117
Sample Type:	(Quality Control)

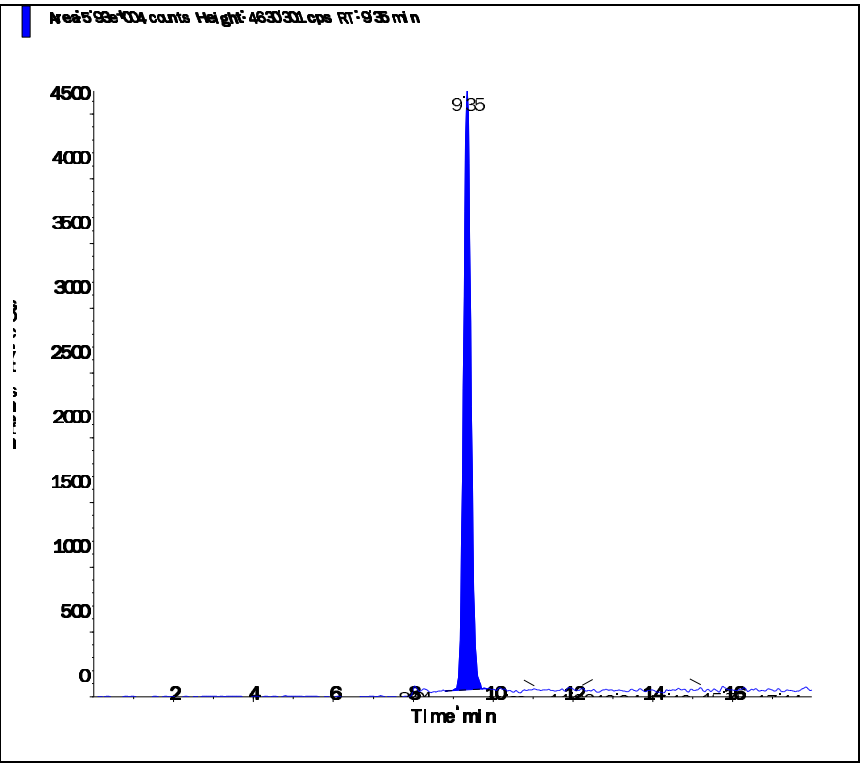

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Data File	LM35464.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 8:28:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-05 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35464.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 8:28:33 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-05	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.490e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.160e+04	9.40	N/A	0.206
Perchlorate conf	1.210e+04	9.37	N/A	0.222

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

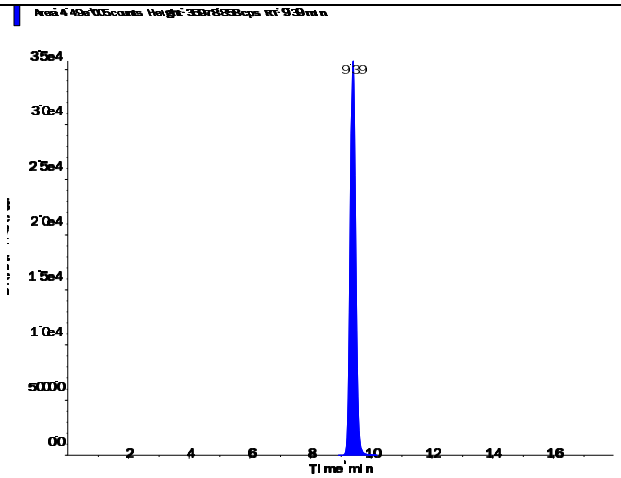

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	0.206 ng/ml
Area Ratio:	0.07
Sample Type:	(Unknown)

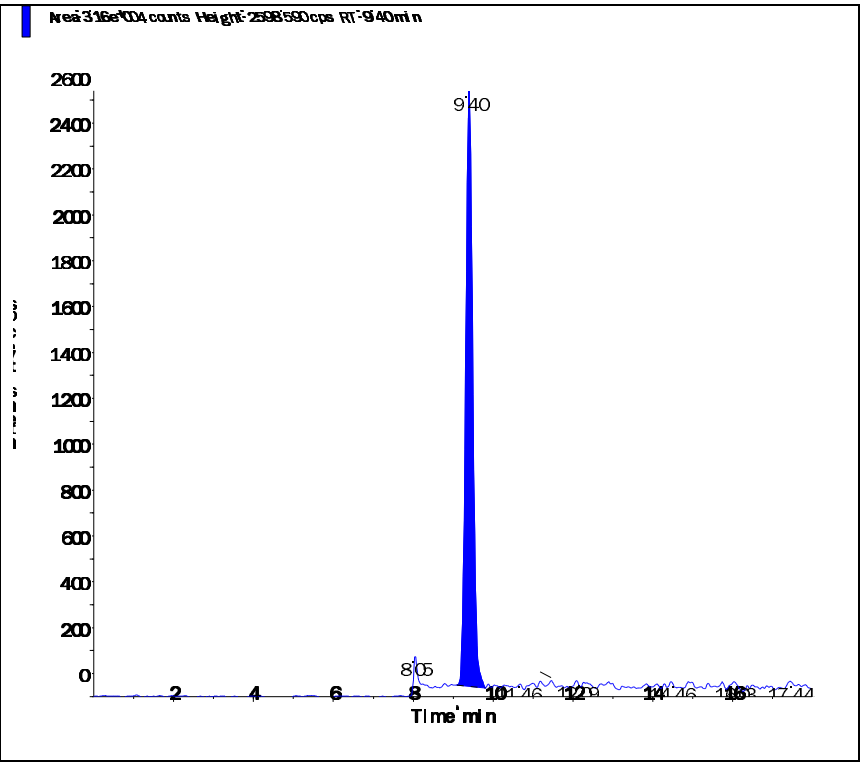

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.37 (9.84) min
Calculated conc:	0.222 ng/ml
Area Ratio:	0.027
Sample Type:	(Unknown)

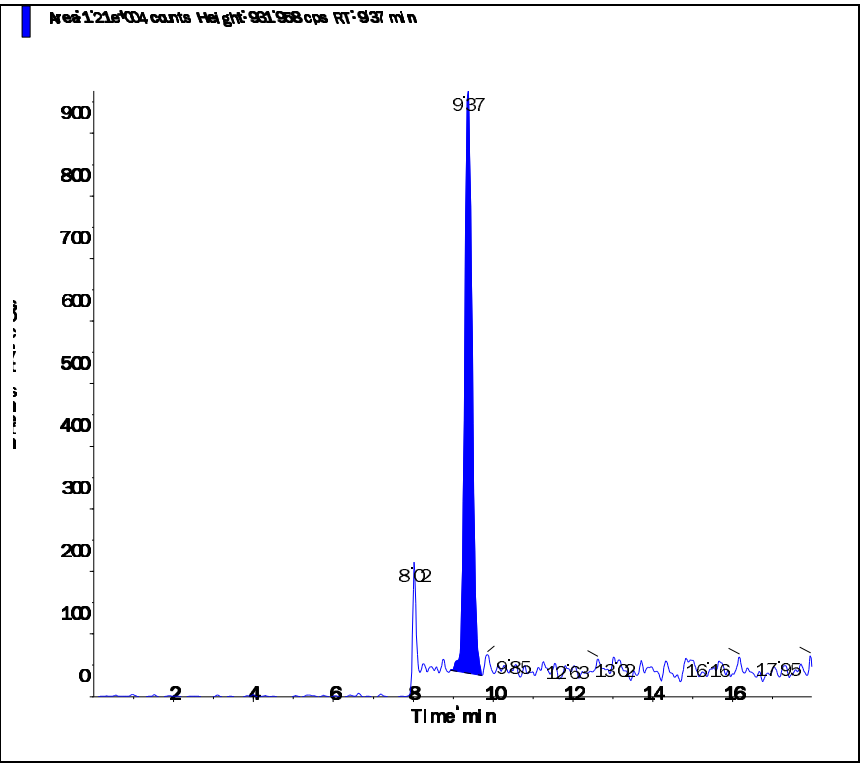

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Data File	LM35476.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 12:15:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-06 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35476.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 12:15:45 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-06	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.160e+05	9.36	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.500e+04	9.37	N/A	0.198
Perchlorate conf	1.310e+04	9.35	N/A	0.207

O18LP (Internal Standard)

RT (Exp. RT): 9.36(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

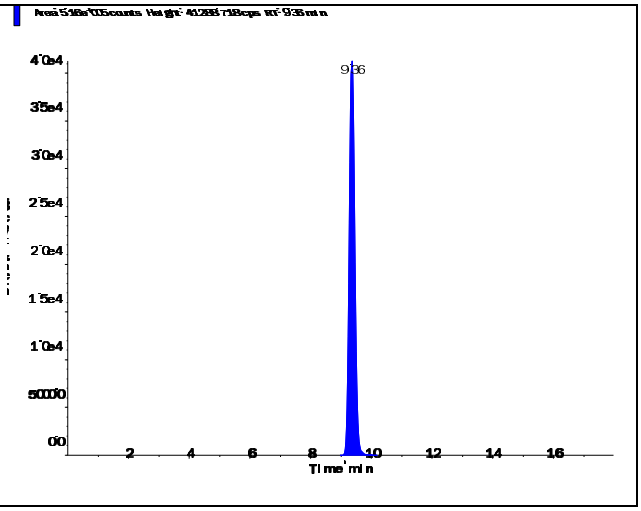

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.37 (9.84) min
Calculated conc:	0.198 ng/ml
Area Ratio:	0.068
Sample Type:	(Unknown)

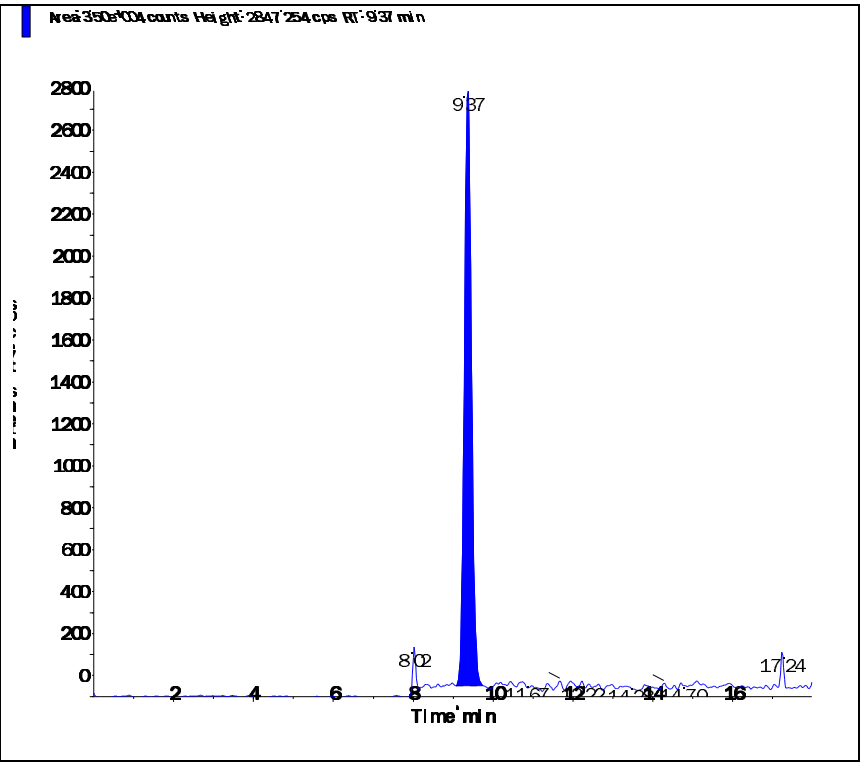

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.35 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

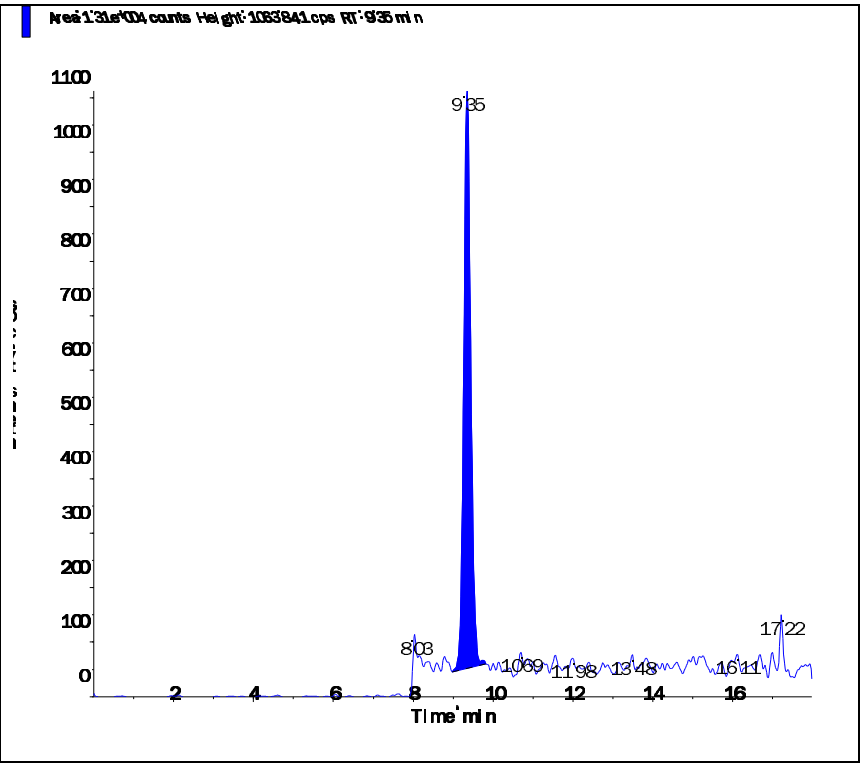

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Data File	LM35489.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 4:22:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-07 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35489.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 4:22:00 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-07	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.380e+05	9.37	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.890e+04	9.39	N/A	0.211
Perchlorate conf	1.340e+04	9.38	N/A	0.202

O18LP (Internal Standard)

RT (Exp. RT): 9.37(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

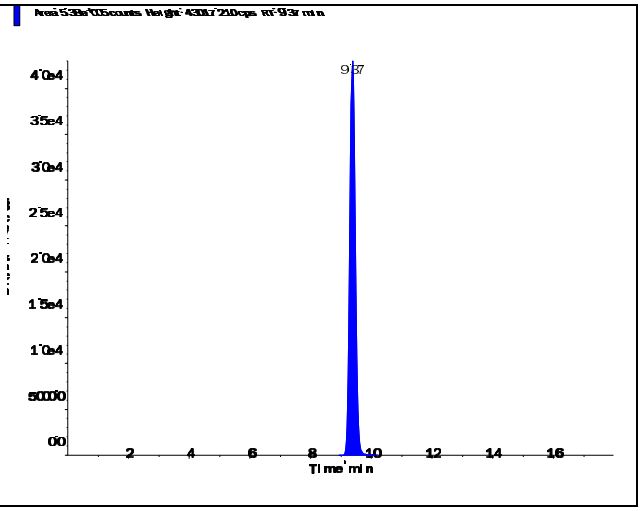

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.39 (9.84) min Calculated conc: 0.211 ng/ml Area Ratio: 0.072 Sample Type: (Unknown)	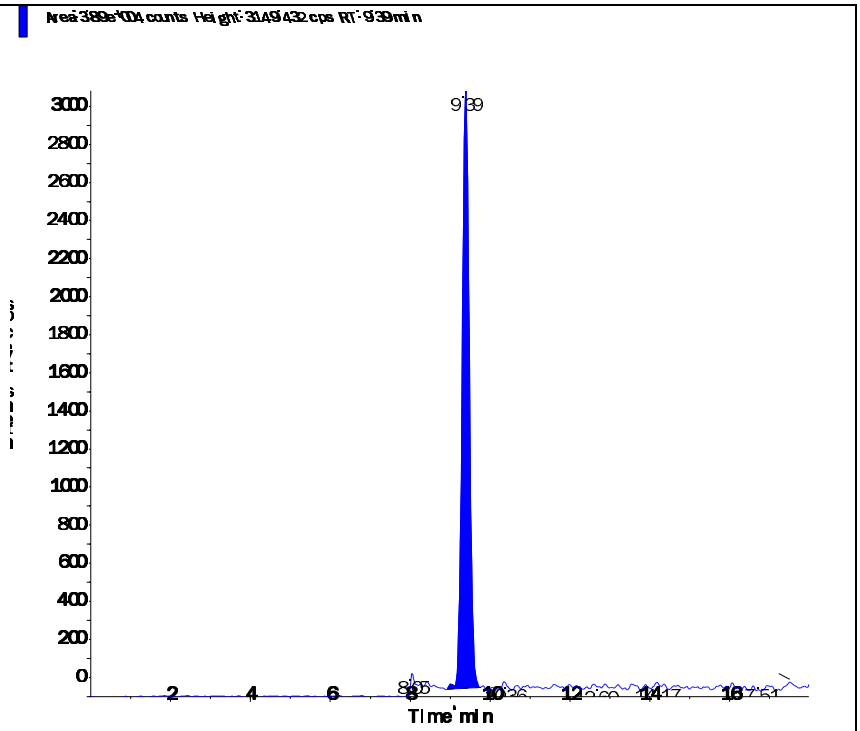
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.38 (9.84) min Calculated conc: 0.202 ng/ml Area Ratio: 0.025 Sample Type: (Unknown)	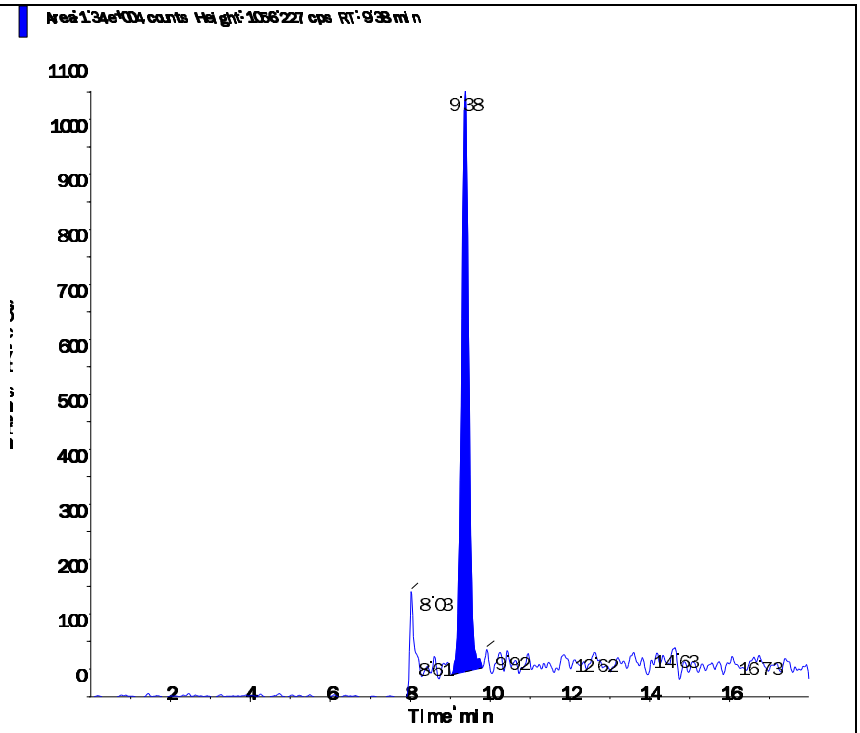

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Data File	LM35496.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:34:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-08 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35496.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:34:33 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-08	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.520e+05	9.38	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.800e+04	9.39	N/A	0.201
Perchlorate conf	1.410e+04	9.38	N/A	0.208

O18LP (Internal Standard)

RT (Exp. RT): 9.38(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

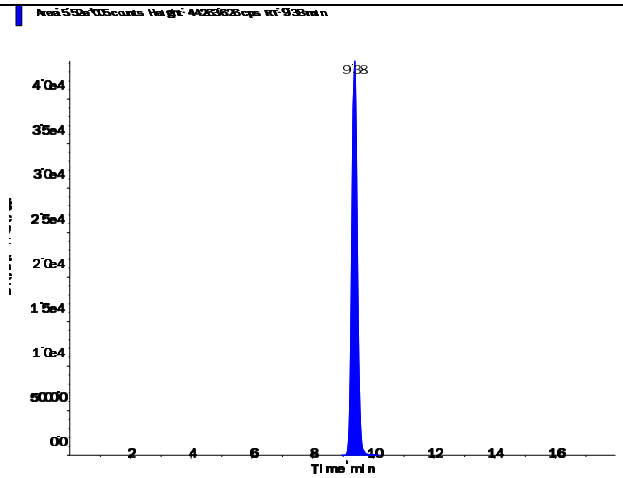

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.39 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.069
Sample Type:	(Unknown)

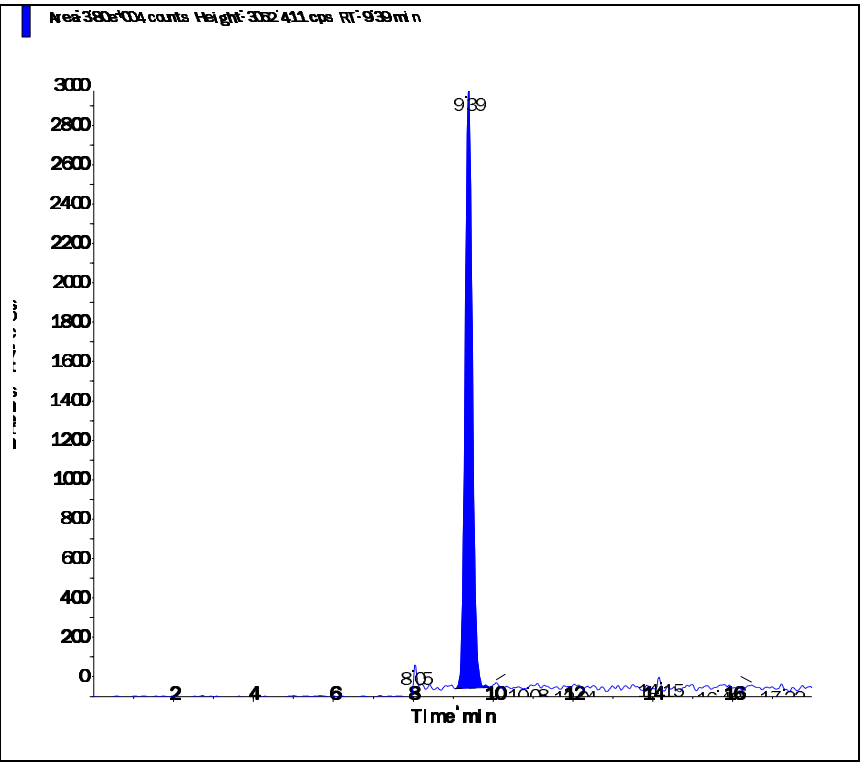

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	0.208 ng/ml
Area Ratio:	0.026
Sample Type:	(Unknown)

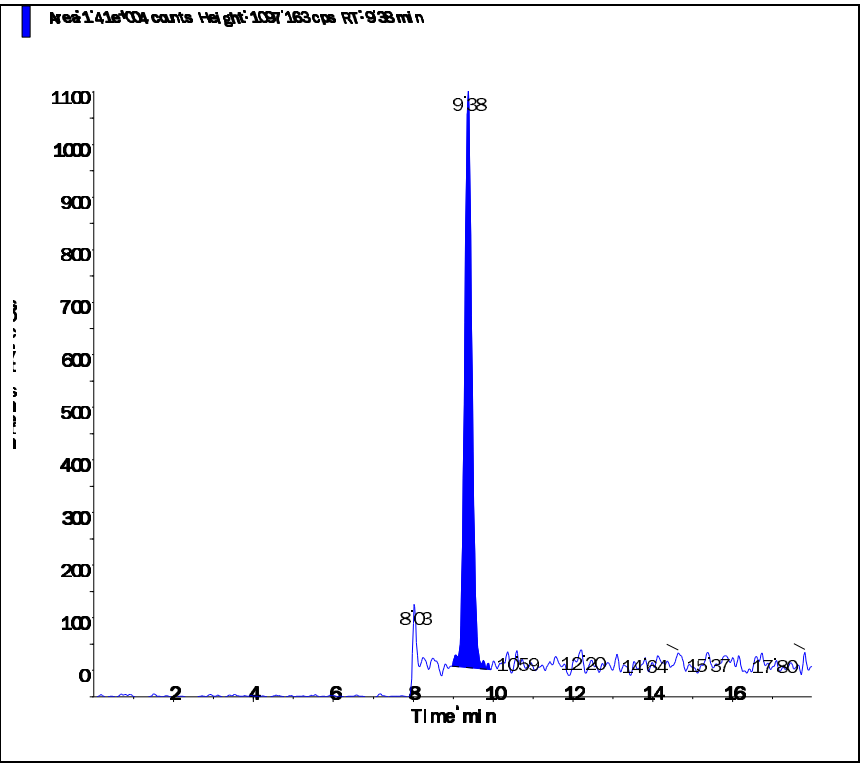

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Data File	LM35499.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:25:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-09 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35499.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:25:05 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-09	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.640e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.290e+04	9.40	N/A	0.207
Perchlorate conf	1.150e+04	9.38	N/A	0.201

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min
Concentration: 5.00 ug/L
Sample Type: (Unknown)

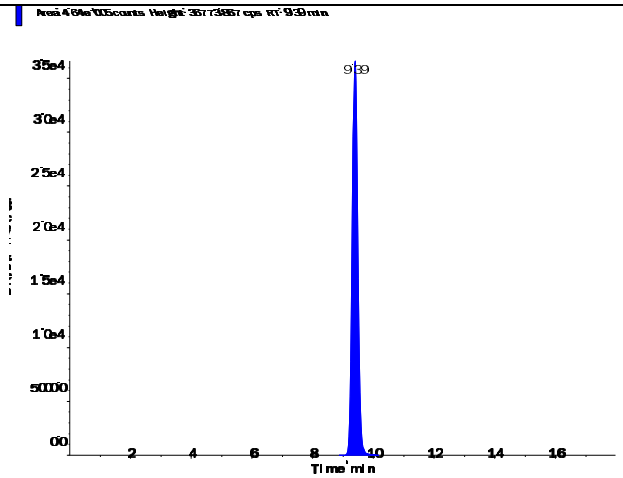

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.40 (9.84) min
Calculated conc:	0.207 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

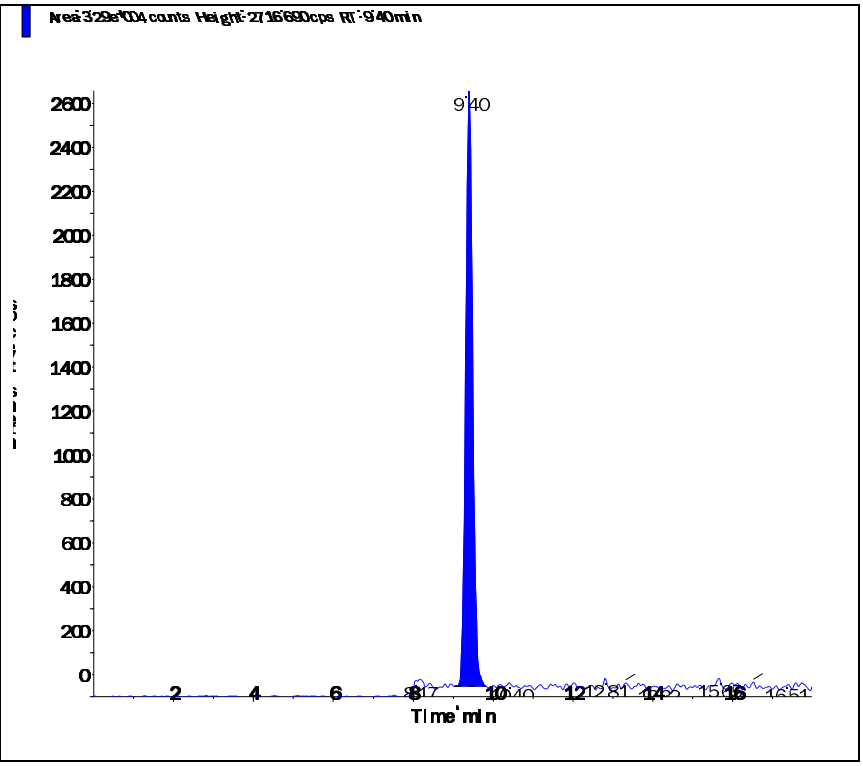

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.38 (9.84) min
Calculated conc:	0.201 ng/ml
Area Ratio:	0.025
Sample Type:	(Unknown)

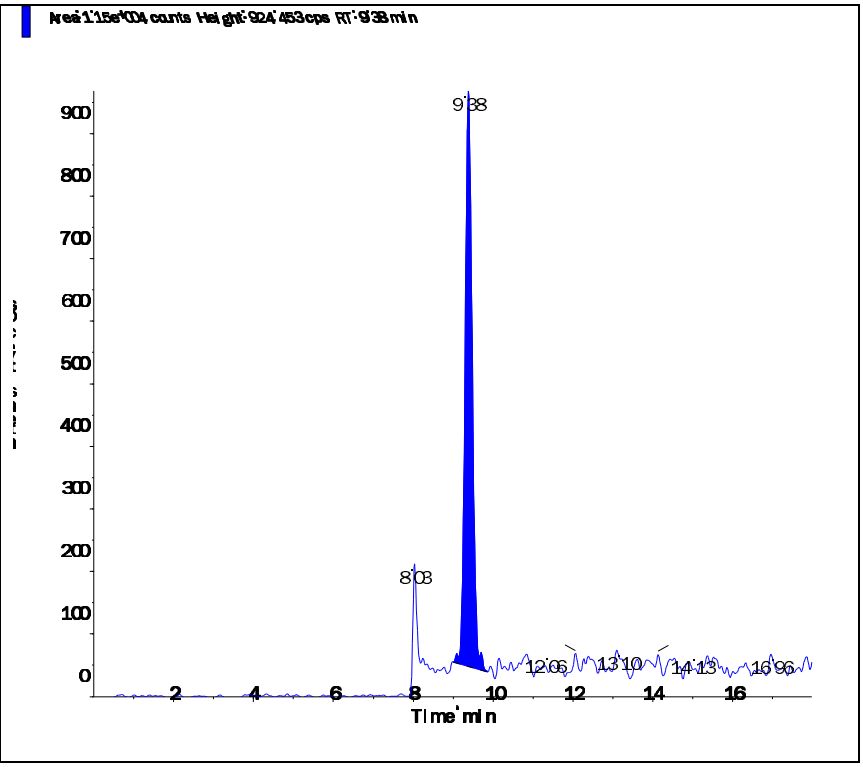

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Data File	LM35509.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 9:34:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-10 MRL (0.2ug/L)	**Injection Vial**	2.00
Data File	LM35509.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 9:34:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-10	**Dilution Factor**	1.00
Sample Comment	1,1 STD75510	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.370e+05	9.39	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.790e+04	9.40	N/A	0.206
Perchlorate conf	1.400e+04	9.39	N/A	0.214

O18LP (Internal Standard)

RT (Exp. RT): 9.39(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

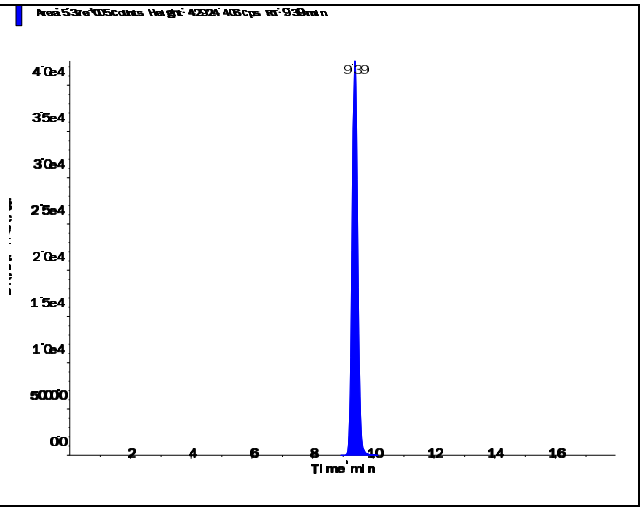

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 9.40 (9.84) min Calculated conc: 0.206 ng/ml Area Ratio: 0.071 Sample Type: (Unknown)	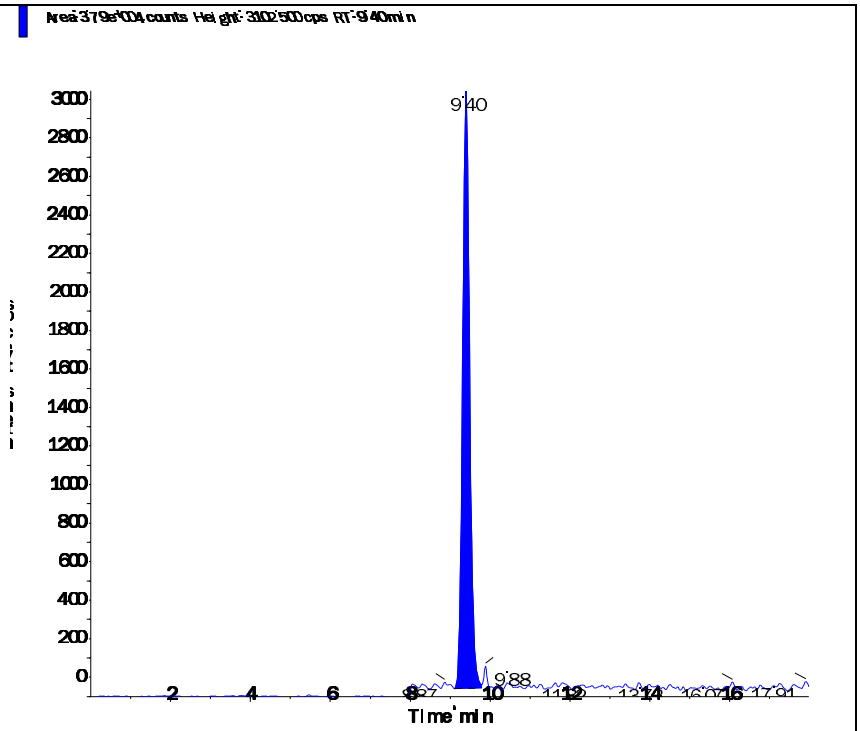
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.39 (9.84) min Calculated conc: 0.214 ng/ml Area Ratio: 0.026 Sample Type: (Unknown)	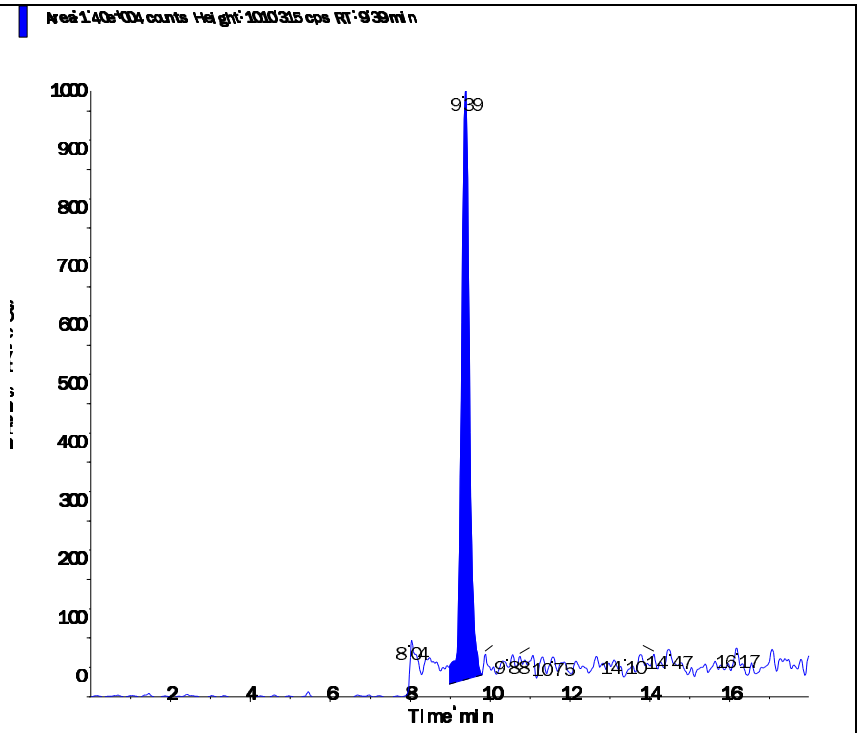

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Data File	LM35462.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 7:50:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-01 CCB	**Injection Vial**	1.00
Data File	LM35462.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 7:50:39 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-01	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.420e+05	9.58	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.58(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

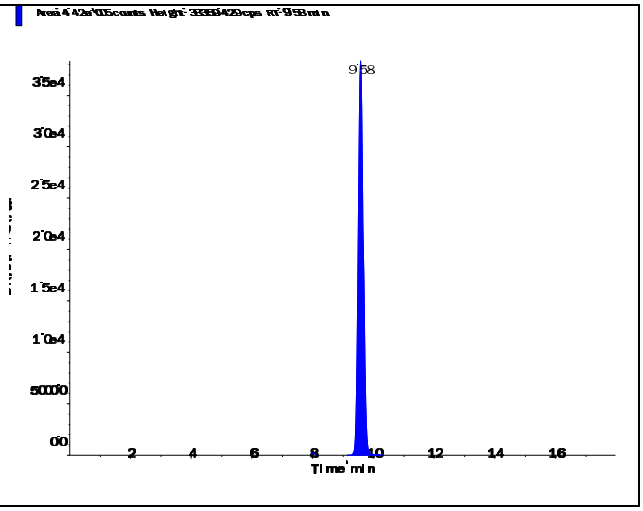

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	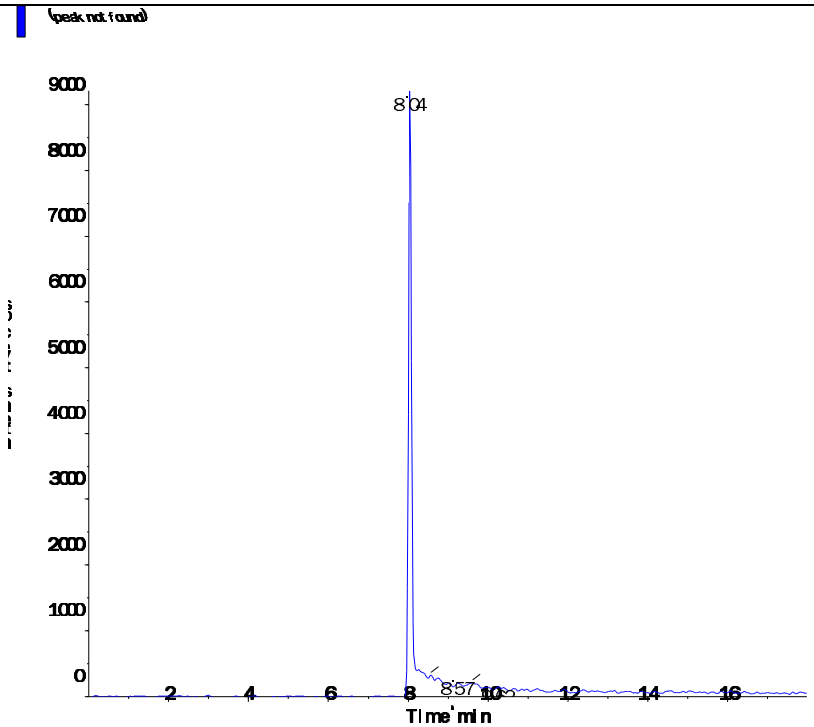
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	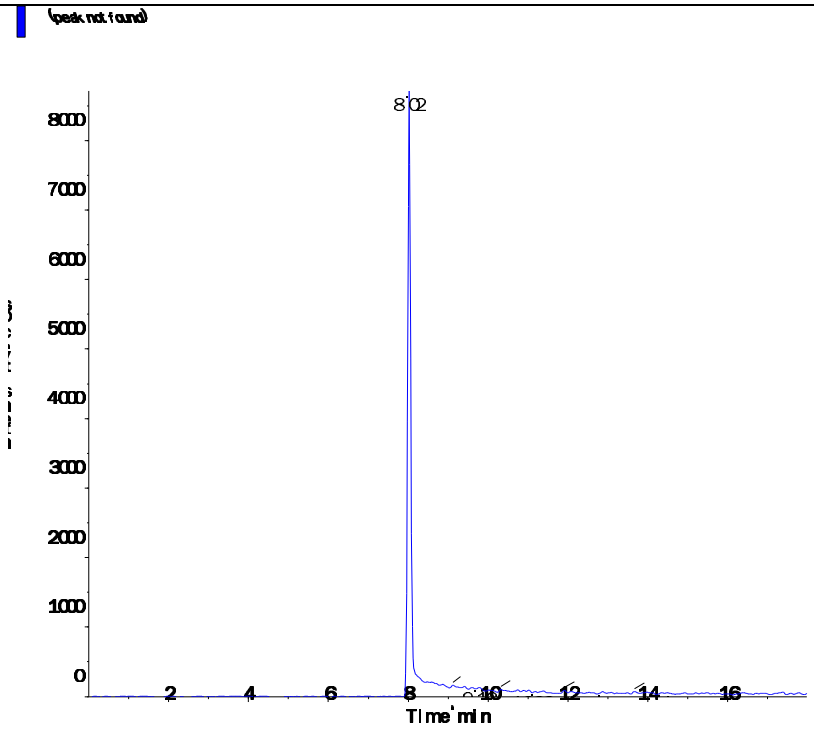

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Data File	LM35477.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 12:34:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-04 CCB	**Injection Vial**	1.00
Data File	LM35477.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 12:34:42 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-04	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.240e+05	9.57	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	8.240e+02	9.53	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.57(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

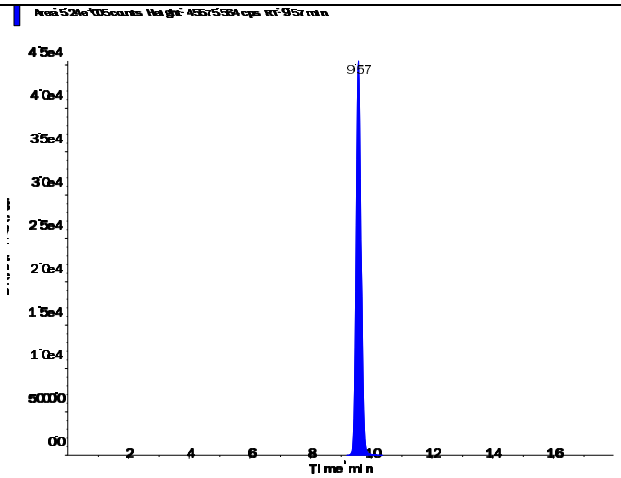

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

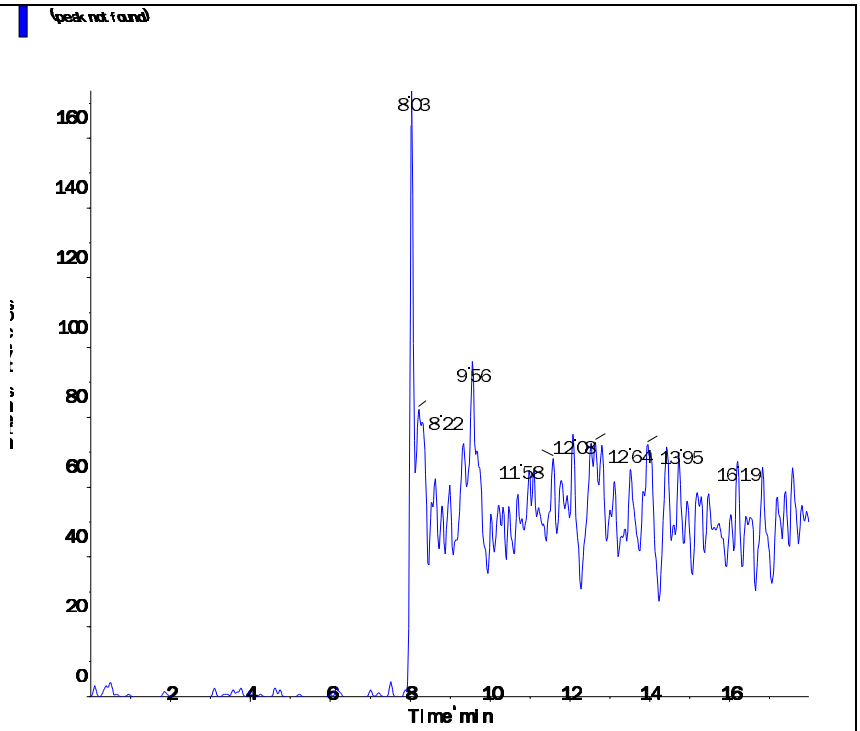

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.53 (9.84) min
Calculated conc:	< 0 ng/ml
Area Ratio:	0.002
Sample Type:	(Unknown)

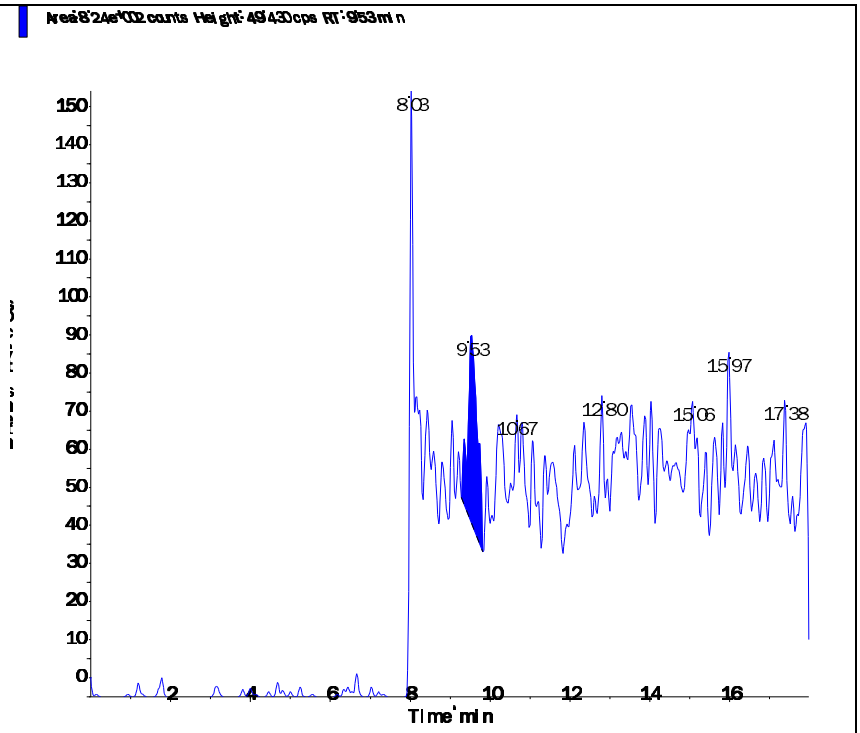

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Data File	LM35490.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 4:40:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-06 CCB	**Injection Vial**	1.00
Data File	LM35490.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 4:40:56 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-06	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.420e+05	9.59	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.59(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

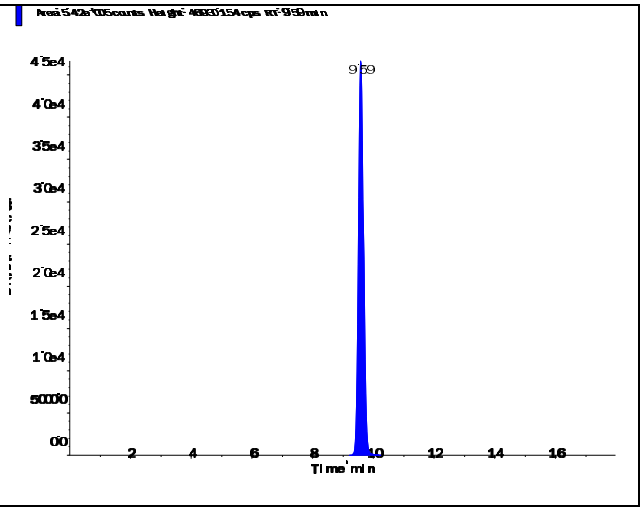

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Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

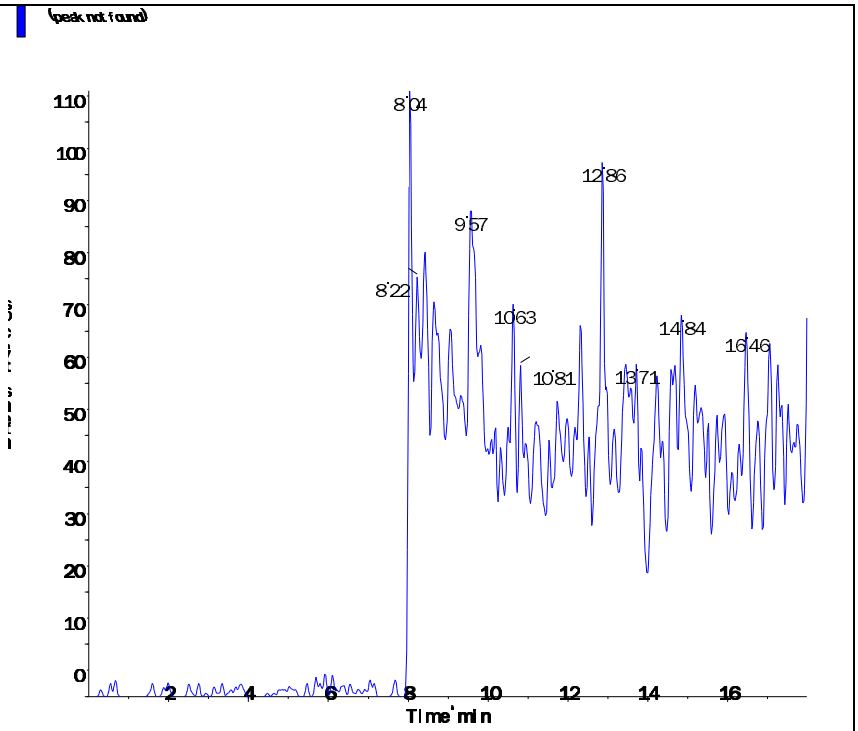

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

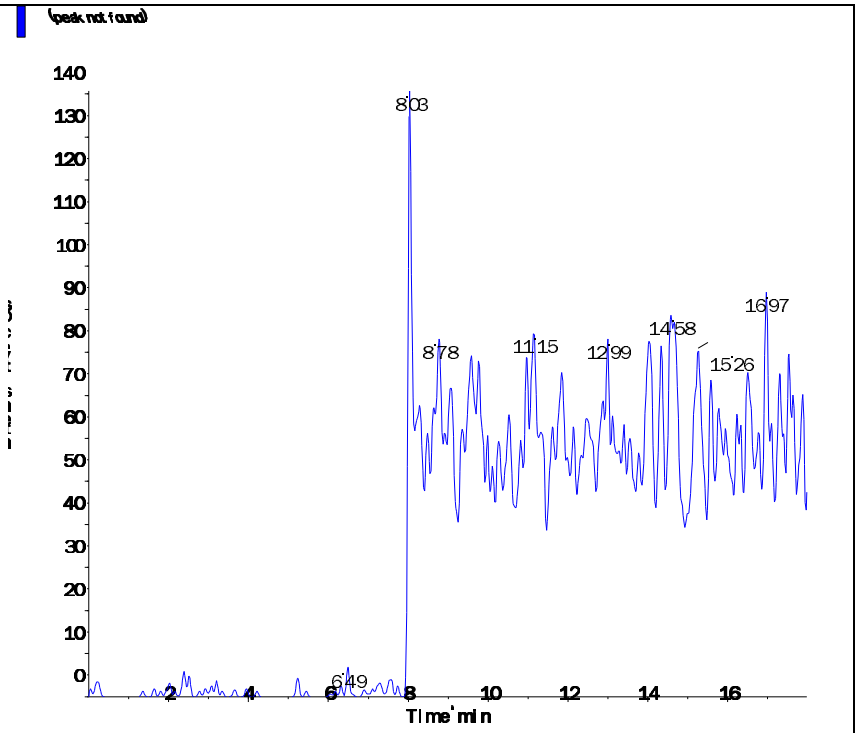

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Data File	LM35497.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:53:28 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-08 CCB	**Injection Vial**	1.00
Data File	LM35497.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:53:28 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-08	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.550e+05	9.59	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	5.180e+02	9.63	N/A	< 0

O18LP (Internal Standard)

RT (Exp. RT): 9.59(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

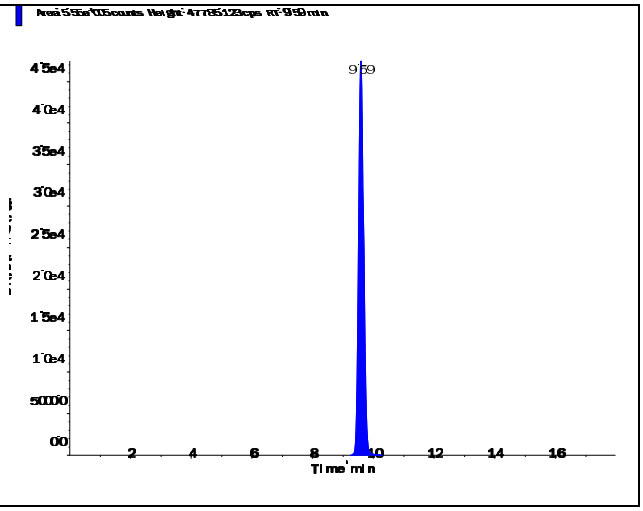

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Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	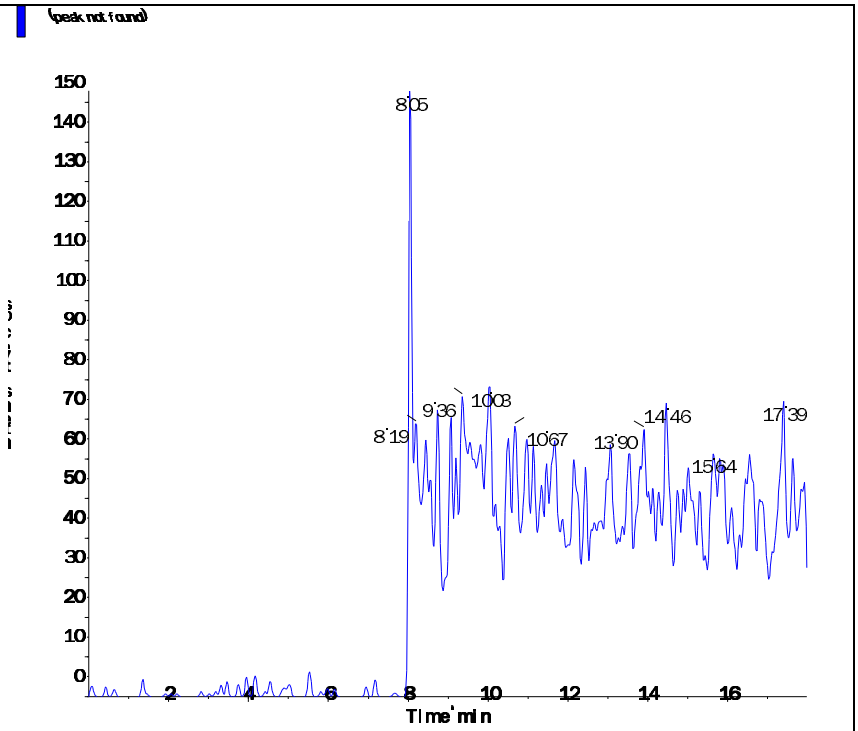
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 9.63 (9.84) min Calculated conc: < 0 ng/ml Area Ratio: 0.001 Sample Type: (Unknown)	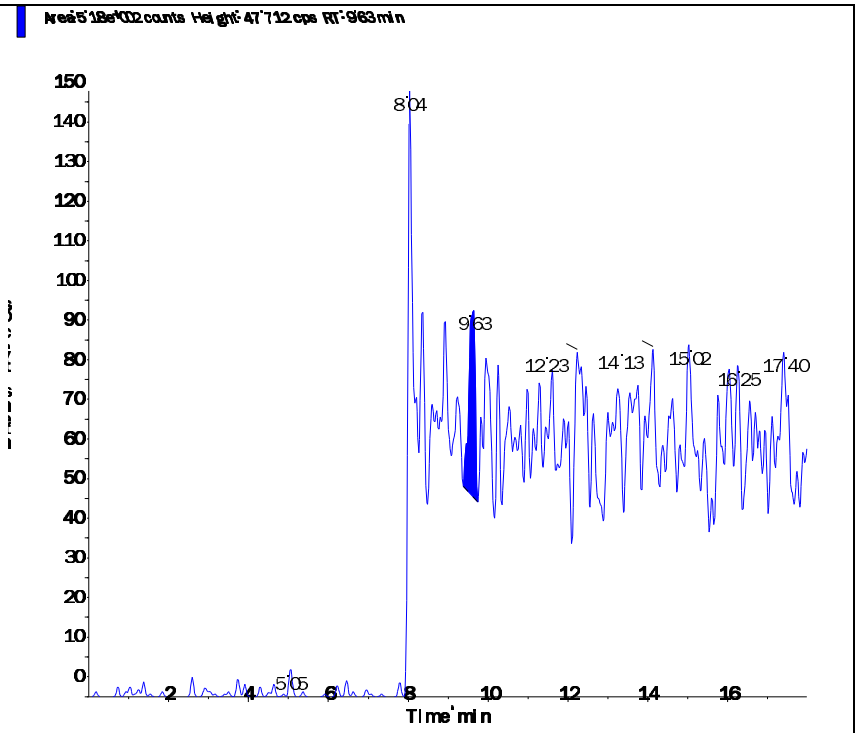

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Data File	LM35500.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 6:44:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-10 CCB	**Injection Vial**	1.00
Data File	LM35500.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 6:44:00 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-10	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.840e+05	9.61	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.61(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

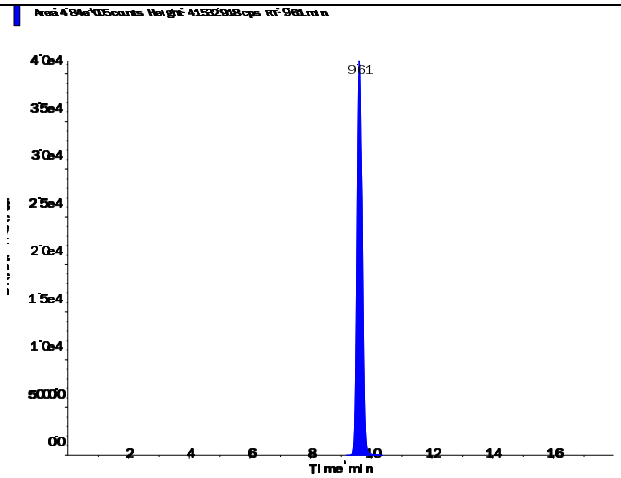

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Applied Biosystems | MDS SCIEX

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Printed: 6/27/2016 7:52 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	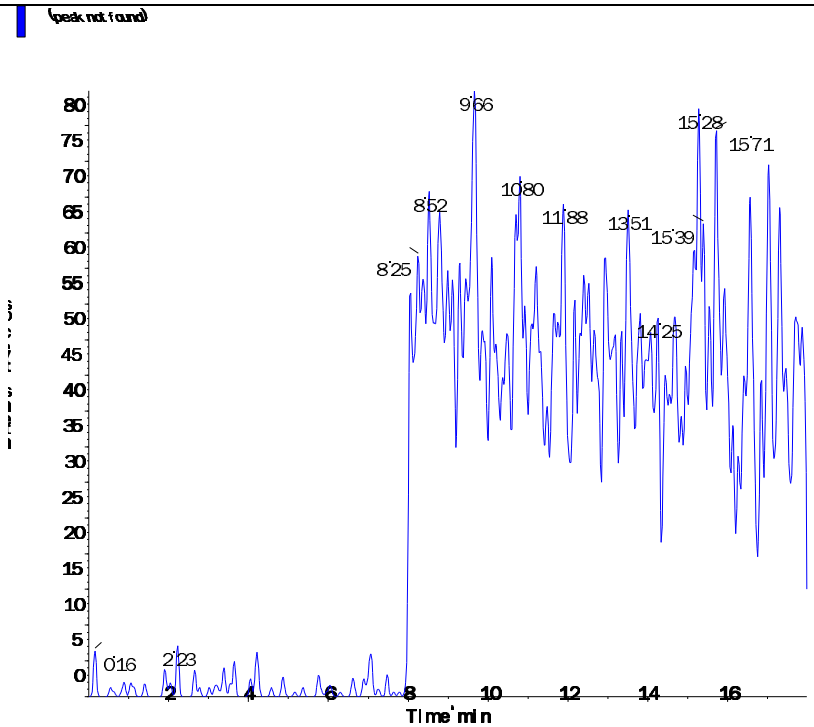
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	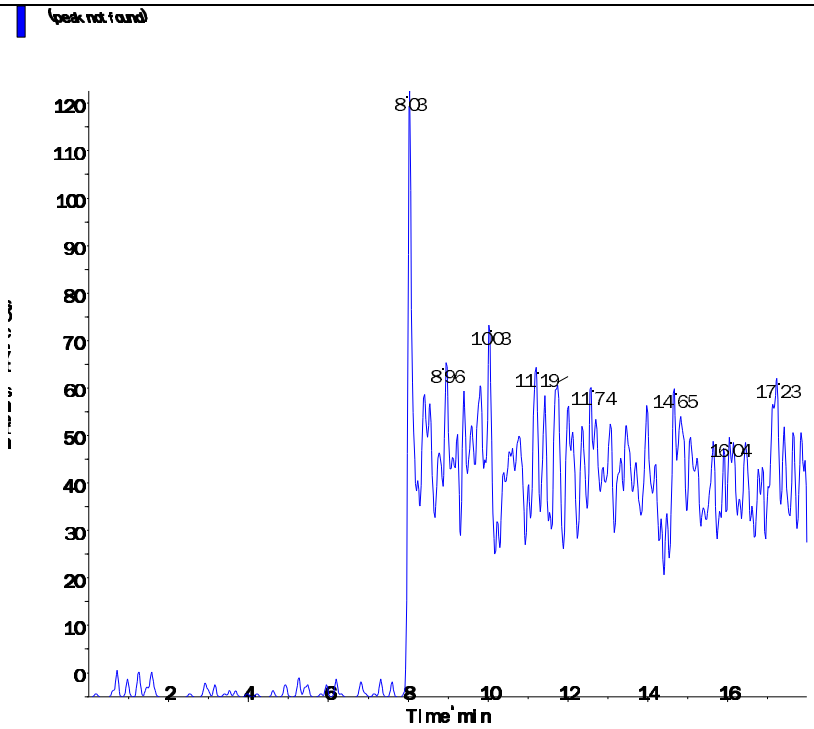

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:56 PM

Data File	LM35510.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 9:53:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574102-12 CCB	**Injection Vial**	1.00
Data File	LM35510.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 9:53:20 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574102-12	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.380e+05	9.61	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.61(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

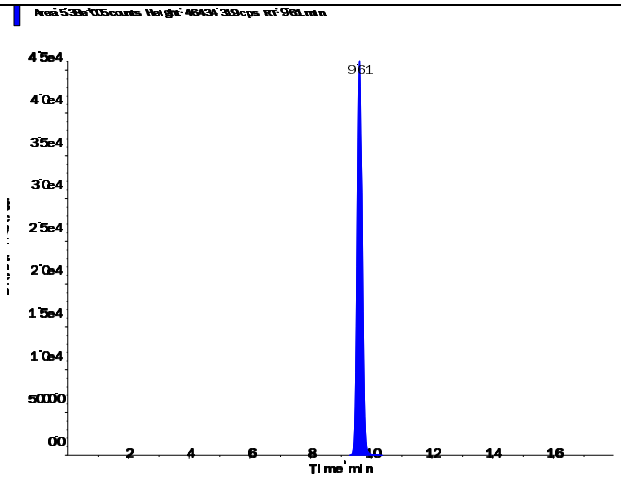

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

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Printed: 6/27/2016 7:56 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

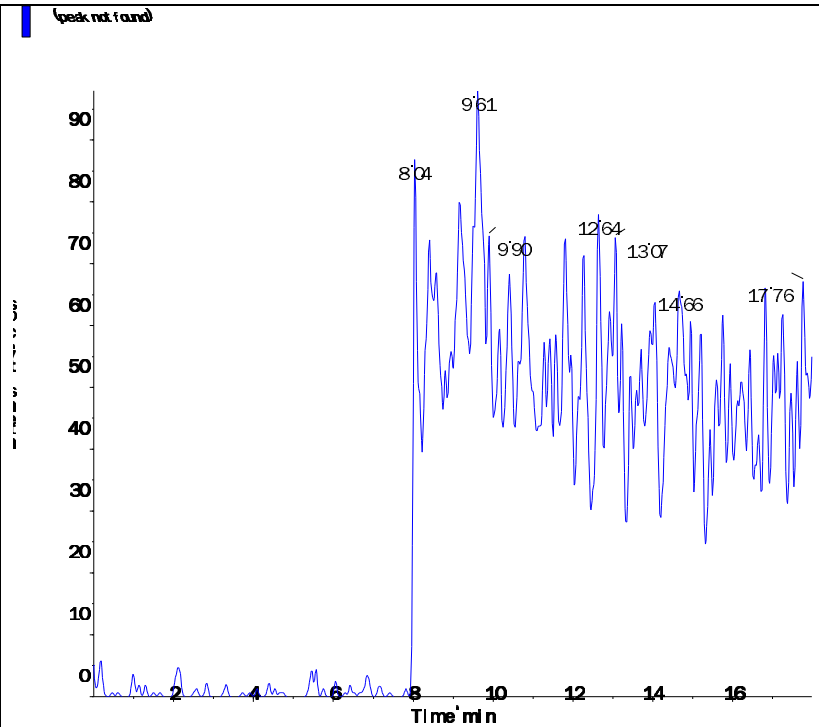

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	0.00 (9.84) min
Calculated conc:	No Peak ng/ml
Area Ratio:	0.00
Sample Type:	(Unknown)

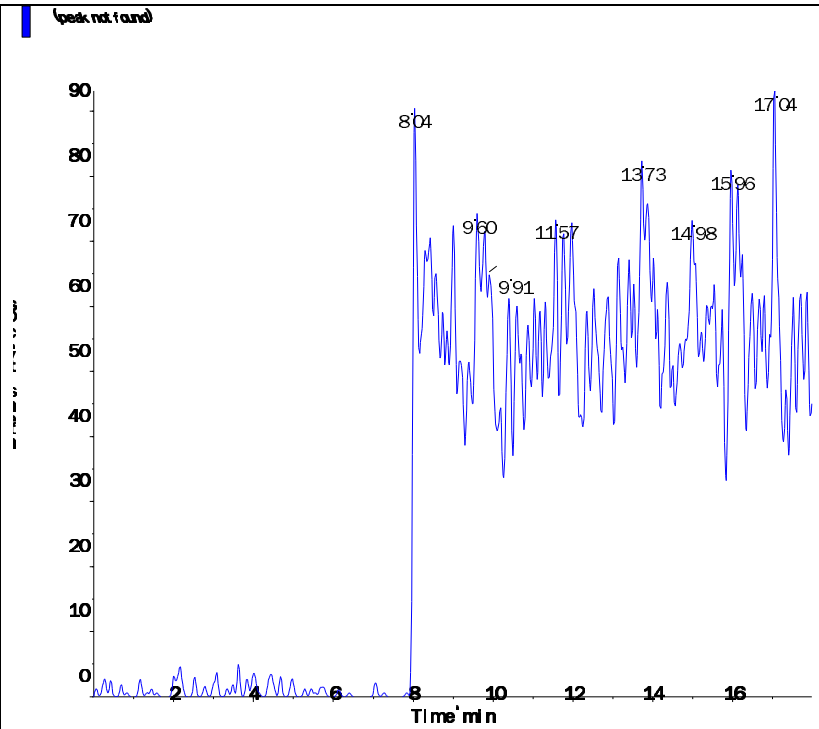

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:39 PM

Data File	LM35465.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 8:47:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-01 MCT (0.2ug/L)	**Injection Vial**	4.00
Data File	LM35465.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 8:47:28 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-01	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.320e+05	8.95	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	2.810e+04	8.97	N/A	0.19
Perchlorate conf	1.000e+04	8.95	N/A	0.188

O18LP (Internal Standard)

RT (Exp. RT): 8.95(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

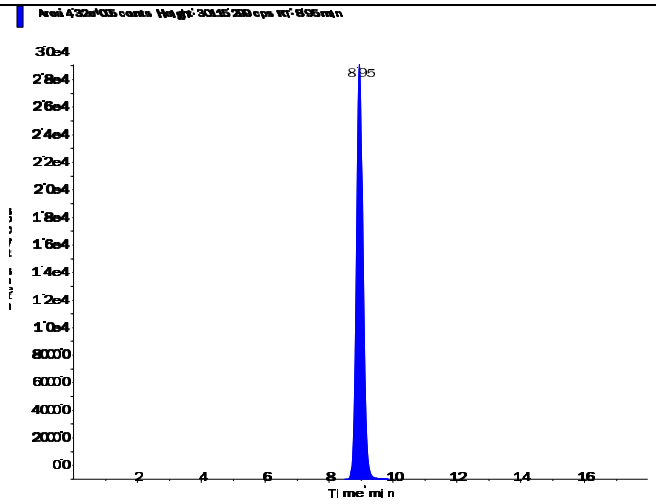

s.dataFile Page 1 of 2

Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:39 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	8.97 (9.84) min
Calculated conc:	0.19 ng/ml
Area Ratio:	0.065
Sample Type:	(Unknown)

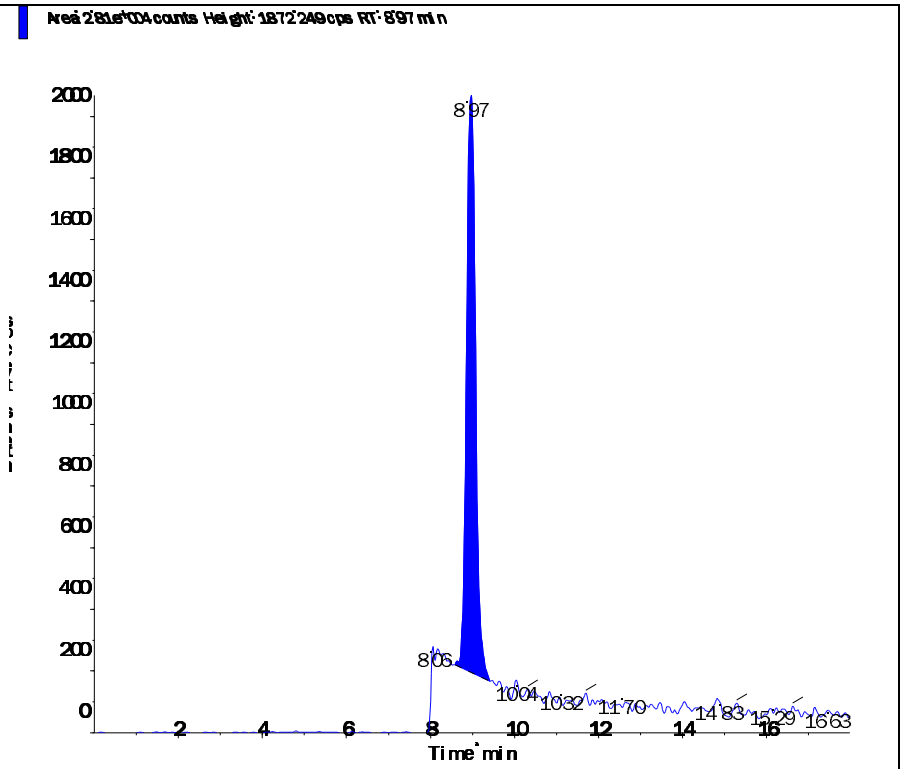

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	8.95 (9.84) min
Calculated conc:	0.188 ng/ml
Area Ratio:	0.023
Sample Type:	(Unknown)

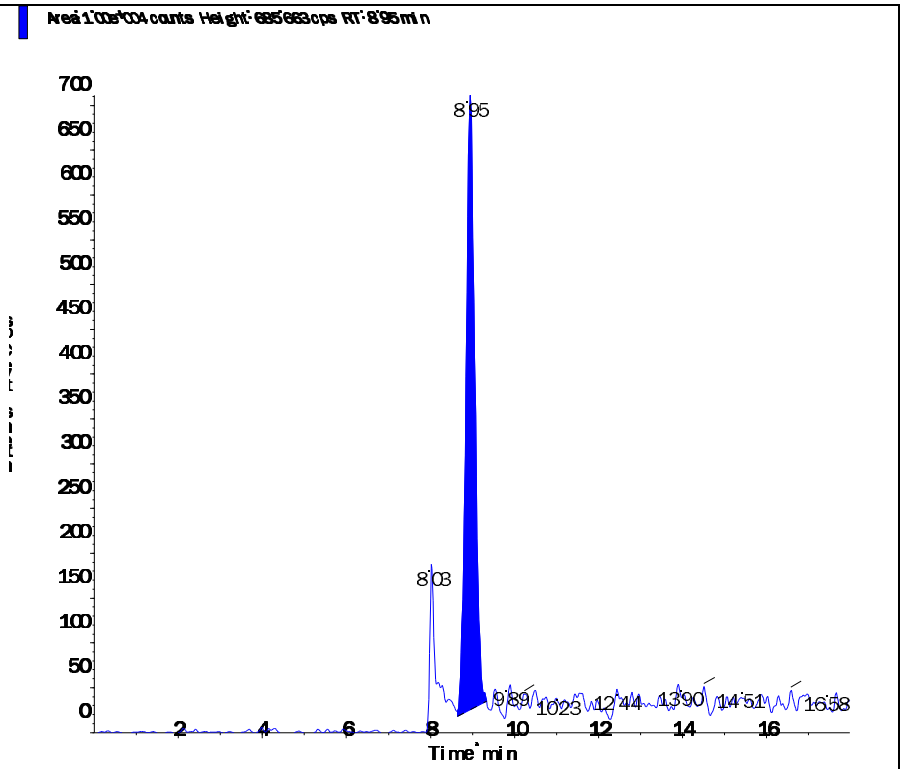

Printing Time: 4:34:28 PM
Printing Date: Saturday, June 25, 2016

Sample Name: "WG574101-01 MCT (0.2ug/L)" Sample ID: "WG574101-01" File: "LM35465.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index:	1
Sample Type:	Unknown
Concentration:	N/A
Calculated Conc:	0.219 ug/L
Acq. Date:	6/24/2016
Acq. Time:	8:47:28 PM
Modified:	No
Proc. Algorithm:	Analyst Classic
Bunching Factor:	2
Noise Threshold:	18.48 cps
Area Threshold:	92.40 cps
Num. Smooths:	5
Exp. Width:	0.20
Sep. Height:	0.01
Exp. Peak Ratio:	5.00
Exp. Adj. Ratio:	4.00
Exp. Val. Ratio:	3.00
RT Window:	30.000 sec
Expected RT:	9.84 min
Use Relative RT:	Yes
Int. Type:	Valley
Retention Time:	8.97 min
Area:	3.23e+004 counts
Height:	1951.523 cps
Start Time:	8.526 min
End Time:	9.417 min

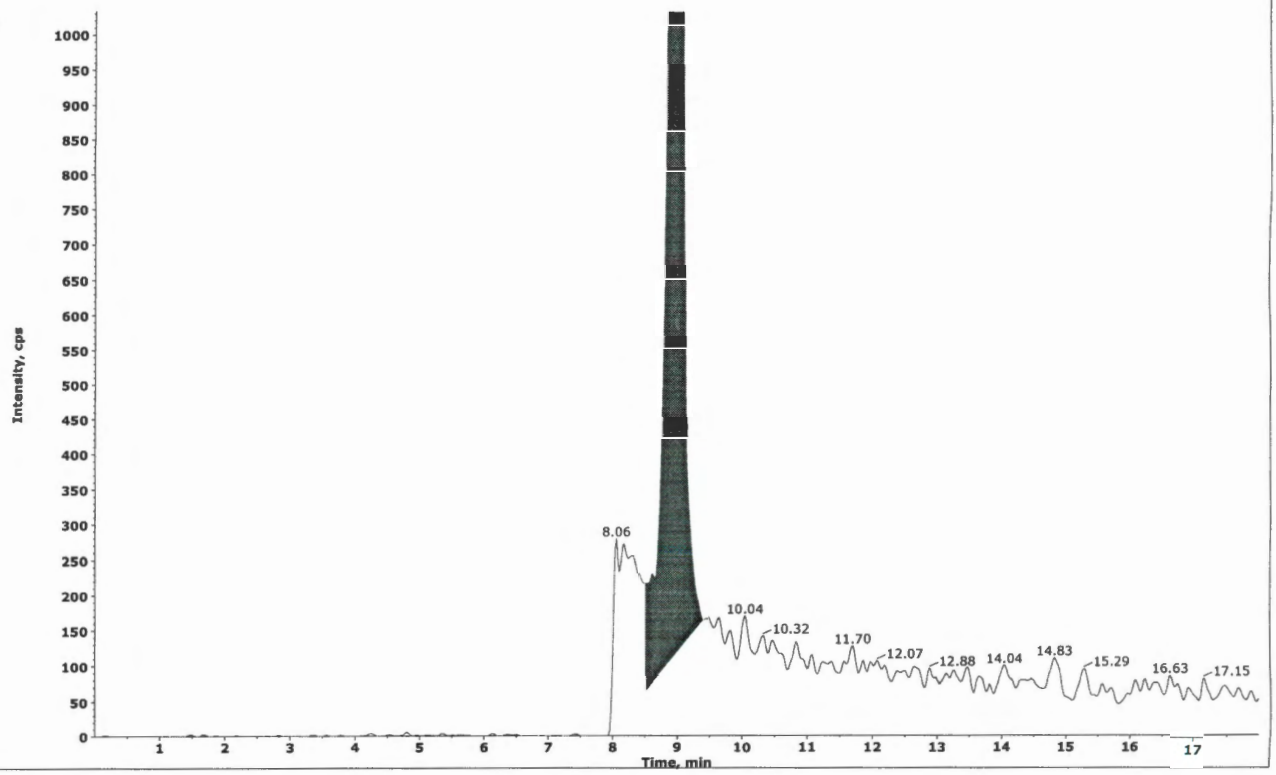

Collected by: N/A
Electronic Signature: no
Operator: lcmsl

Printing Time: 4:36:56 PM
Printing Date: Saturday, June 25, 2016

Sample Name: "WG574101-01 MCT (0.2ug/L)" Sample ID: "WG574101-01" File: "LM35465.wiff"
Peak Name: "Perchlorate" Mass(es): "98.8/83.3 amu"
Comment: "1,1 STD75512" Annotation: ""

Sample Index: 1
Sample Type: Unknown
Concentration: N/A
Calculated Conc: 0.190 ug/L
Acq. Date: 6/24/2016
Acq. Time: 8:47:28 PM

Modified: Yes
Proc. Algorithm: Analyst Classic
Smoothing Factor: 2
Noise Threshold: 18.48 cps
Area Threshold: 92.40 cps
Num. Smooths: 5
Sep. Width: 0.20
Sep. Height: 0.01
Exp. Peak Ratio: 5.00
Exp. Adj. Ratio: 4.00
Exp. Val. Ratio: 3.00
RT Window: 30.000 sec
Expected RT: 9.84 min
Use Relative RT: Yes

Int. Type: Manual
Retention Time: 8.97 min
Area: 2.81e+004 counts
Height: 1872.249 cps
Start Time: 8.587 min
End Time: 9.417 min

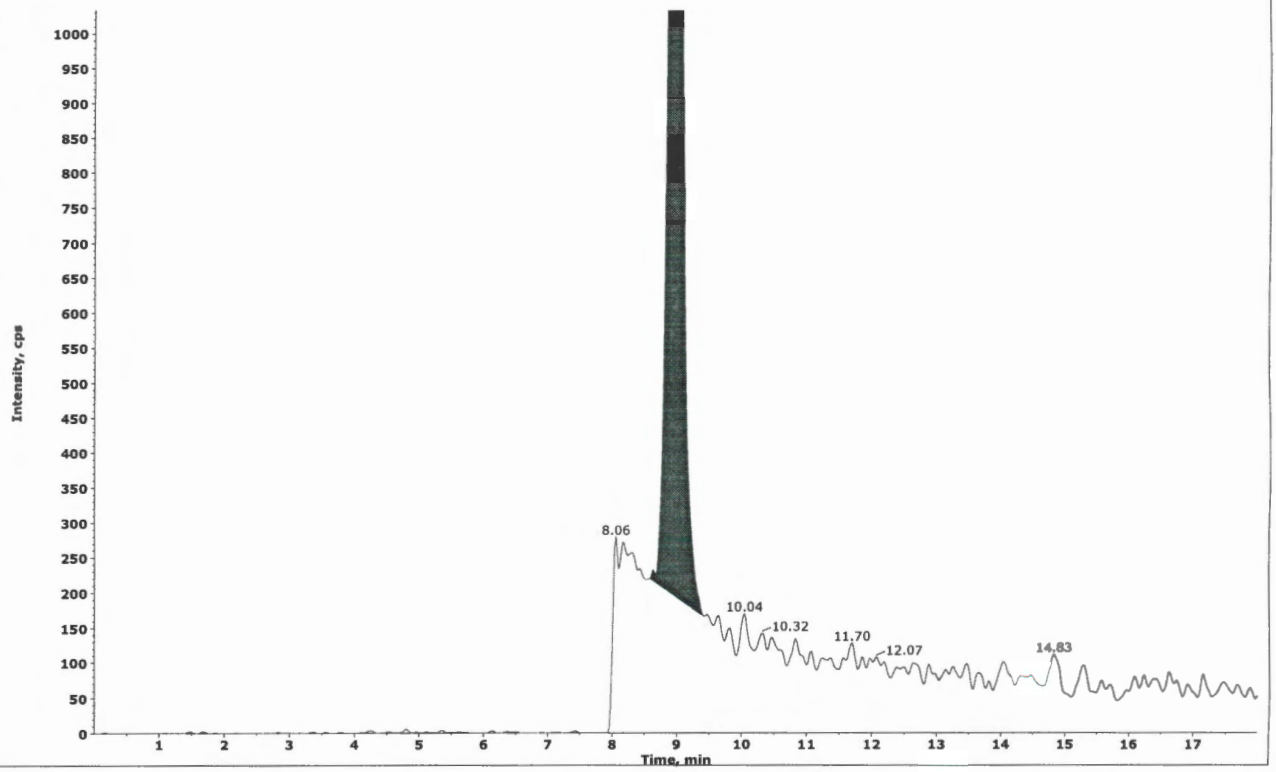

#4
JWR 06/25/16

✓ WTD
06-28-16

Collected by: N/A
Electronic Signature: no
Operator: lcms1

2.2.2.5 Raw QC Data

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Created with Analyst Reporter
Printed: 6/27/2016 7:40 PM

Data File	LM35466.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 9:06:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-02 BLANK	**Injection Vial**	5.00
Data File	LM35466.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 9:06:25 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-02	**Dilution Factor**	1.00
Sample Comment	11.00	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.430e+05	9.50	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	0.000e+00	0.00	N/A	No Peak
Perchlorate conf	0.000e+00	0.00	N/A	No Peak

O18LP (Internal Standard)

RT (Exp. RT): 9.50(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

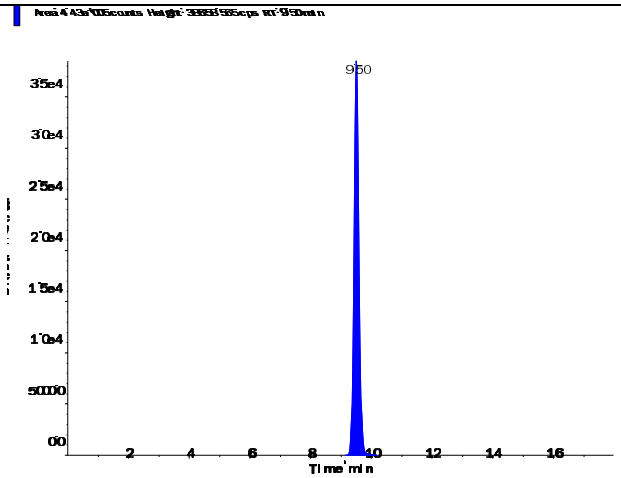

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:40 PM

Perchlorate (98.8/83.3 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	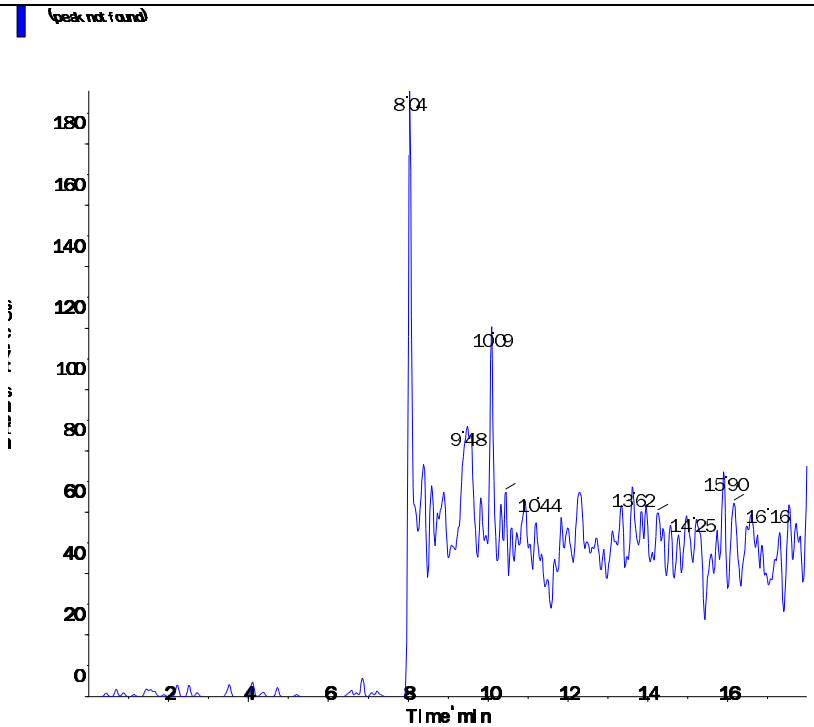
Perchlorate conf (100.8/85.2 amu) RT (Exp. RT): 0.00 (9.84) min Calculated conc: No Peak ng/ml Area Ratio: 0.00 Sample Type: (Unknown)	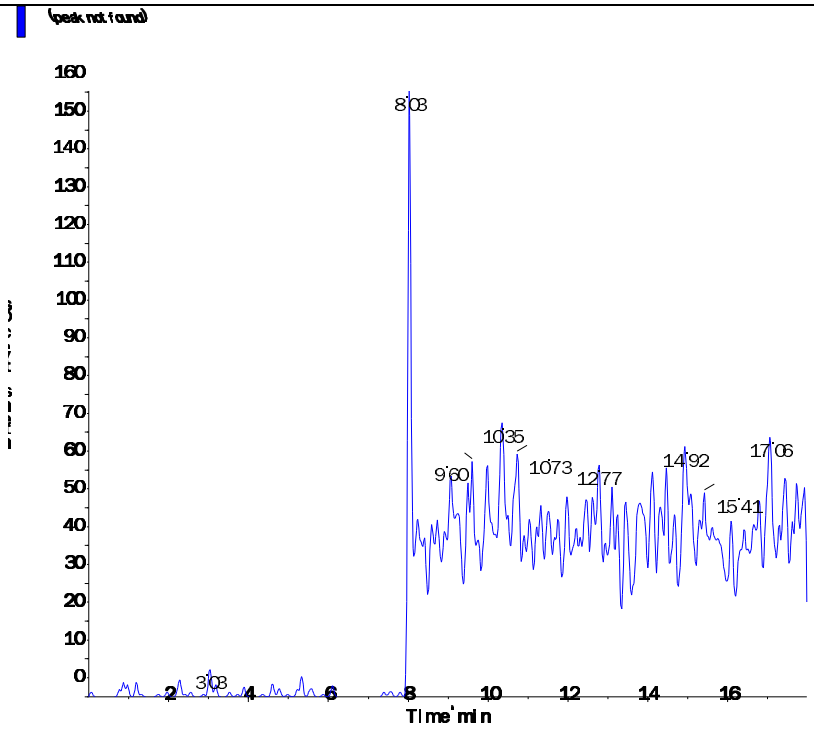

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Applied Biosystems | MDS SCIEX

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Printed: 6/27/2016 7:40 PM

Data File	LM35467.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/24/2016 9:25:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-03 LCS (0.2ug/L)	**Injection Vial**	6.00
Data File	LM35467.wiff	**Injection Volume**	10.00
Acquisition Date	6/24/2016 9:25:22 PM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-03	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	4.440e+05	9.53	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.160e+04	9.54	N/A	0.208
Perchlorate conf	1.180e+04	9.53	N/A	0.217

O18LP (Internal Standard)

RT (Exp. RT): 9.53(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

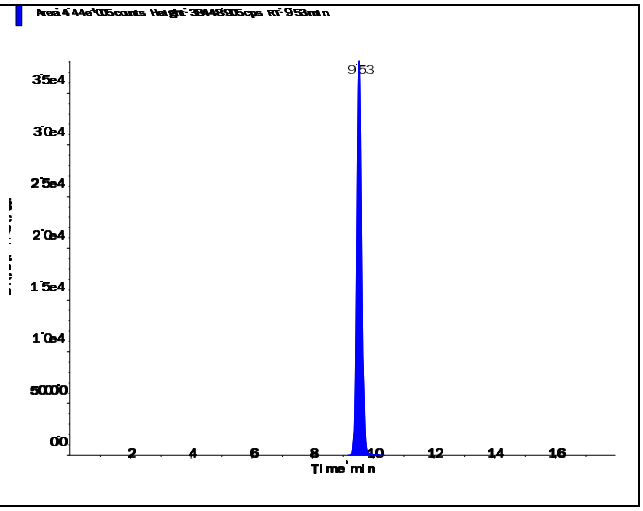

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Printed: 6/27/2016 7:40 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.54 (9.84) min
Calculated conc:	0.208 ng/ml
Area Ratio:	0.071
Sample Type:	(Unknown)

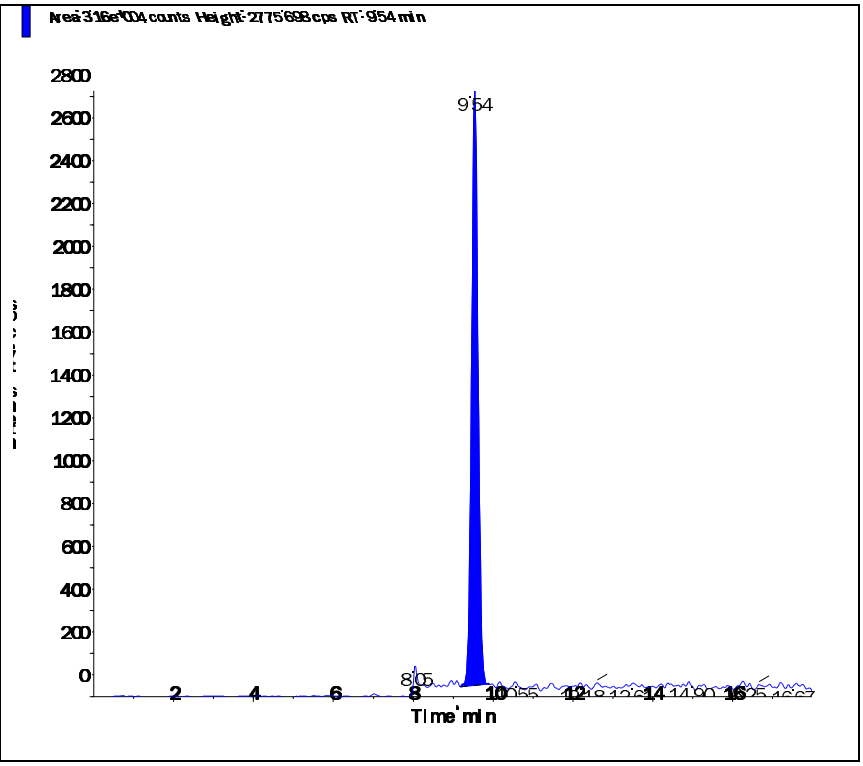

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.53 (9.84) min
Calculated conc:	0.217 ng/ml
Area Ratio:	0.027
Sample Type:	(Unknown)

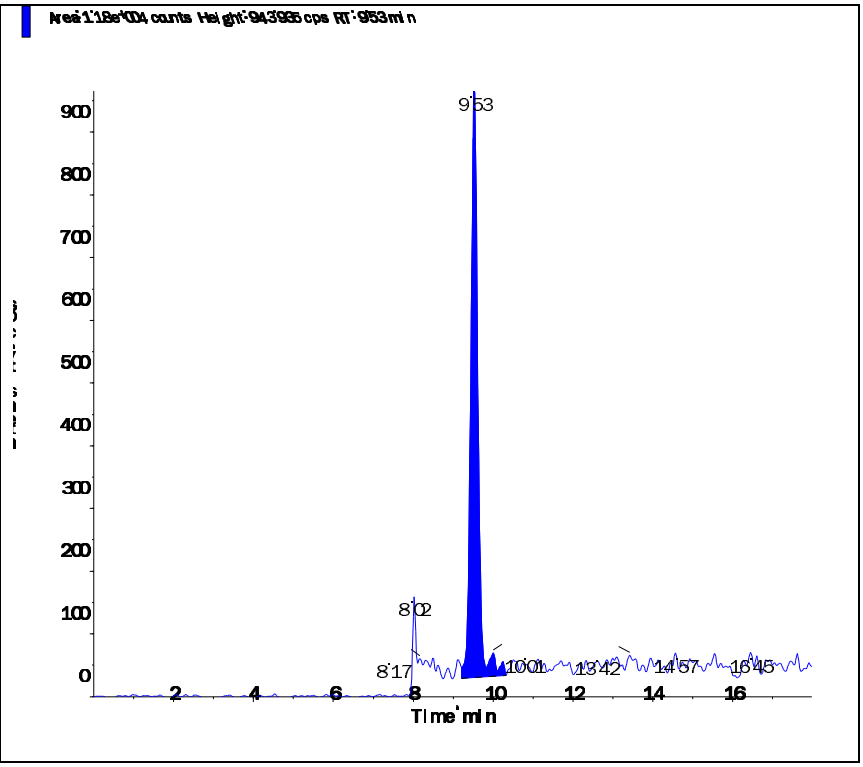

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:48 PM

Data File	LM35491.wiff	**Result Table**	062416_JWR.rdb
Acquisition Date	6/25/2016 4:59:54 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Instrument Name**	API 4000
Project	Perchlorate\2009_07_22		

Sample Name	WG574101-04 LCS2 (0.2ug/L)	**Injection Vial**	7.00
Data File	LM35491.wiff	**Injection Volume**	10.00
Acquisition Date	6/25/2016 4:59:54 AM	**Algorithm Used**	Analyst Classic
Acquisition Method	062911.dam	**Sample Type**	Unknown
Instrument Name	API 4000	**Result Table**	062416_JWR.rdb
Sample ID	WG574101-04	**Dilution Factor**	1.00
Sample Comment	1,1 STD75512	**Weight to Volume**	0.00

Internal Standard	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
O18LP	5.260e+05	9.57	5.00	-

Target Analyte	Area (cps)	RT (min)	Target conc. (ug/L)	Calc. Conc. (ug/L)
Perchlorate	3.830e+04	9.59	N/A	0.213
Perchlorate conf	1.400e+04	9.57	N/A	0.218

O18LP (Internal Standard)

RT (Exp. RT): 9.57(9.84) min

Concentration: 5.00 ug/L

Sample Type: (Unknown)

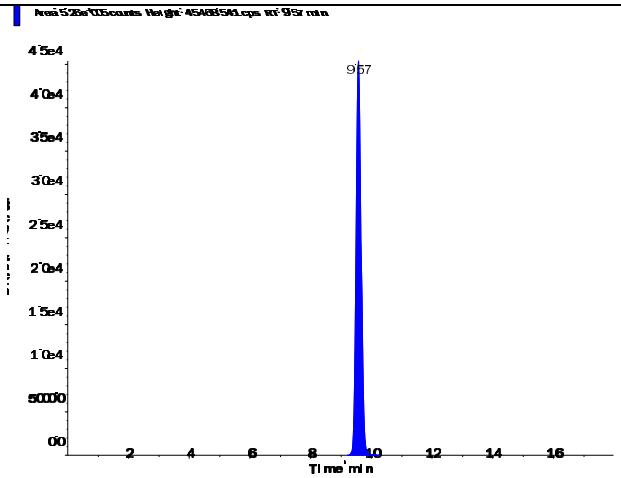

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Applied Biosystems | MDS SCIEX

Created with Analyst Reporter
Printed: 6/27/2016 7:48 PM

Perchlorate (98.8/83.3 amu)

RT (Exp. RT):	9.59 (9.84) min
Calculated conc:	0.213 ng/ml
Area Ratio:	0.073
Sample Type:	(Unknown)

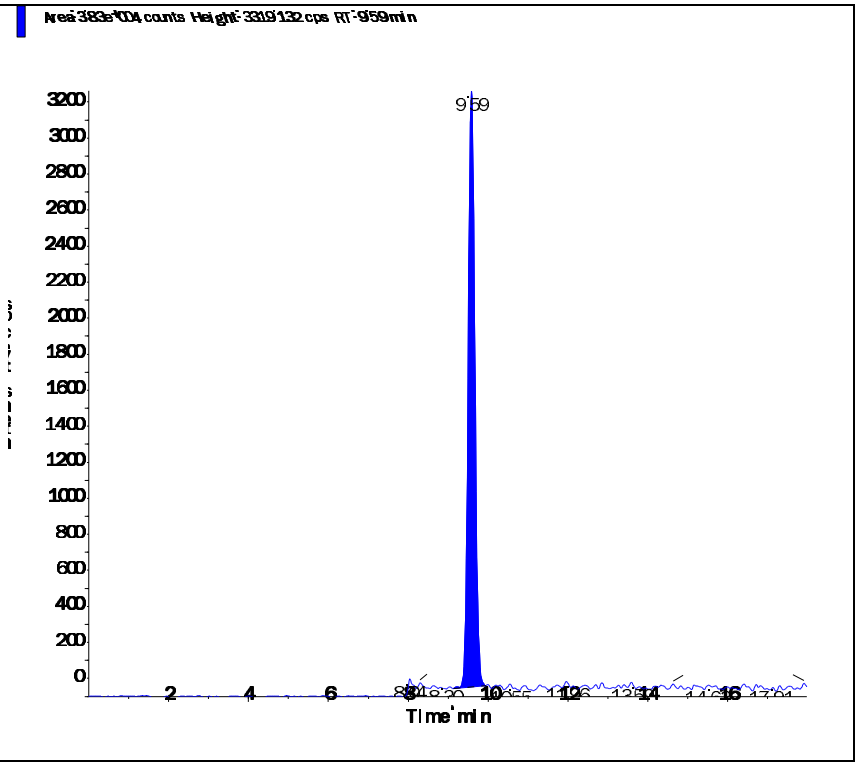

Perchlorate conf (100.8/85.2 amu)

RT (Exp. RT):	9.57 (9.84) min
Calculated conc:	0.218 ng/ml
Area Ratio:	0.027
Sample Type:	(Unknown)

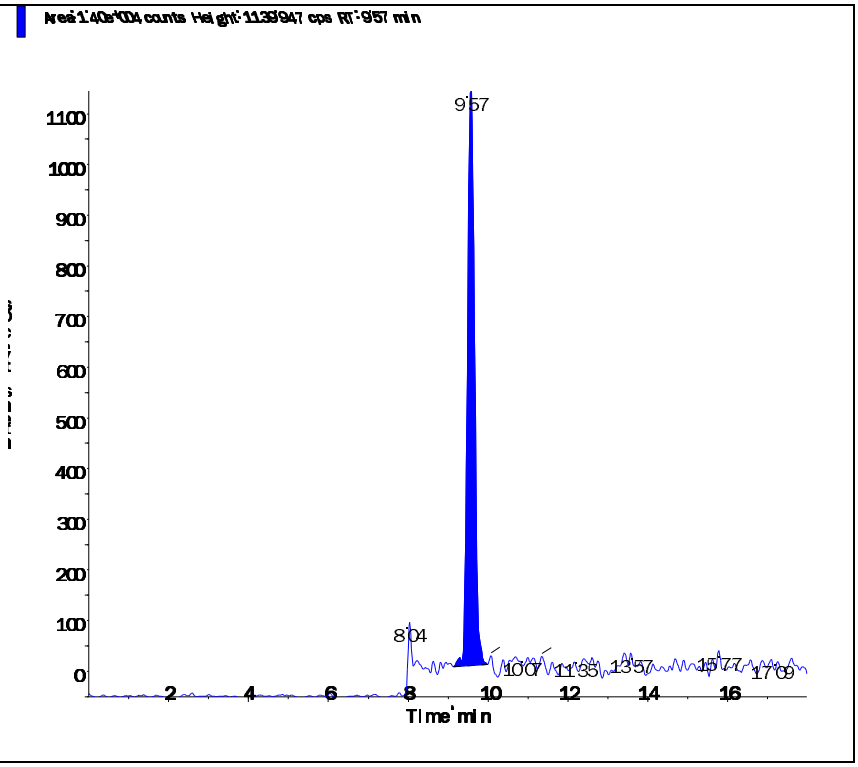

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2.3 Metals Data

2.3.1 Metals I C P Data

2.3.1.1 Summary Data

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW16F-061616	**Prep Method:**	3015	**Prep Date:**	06/22/2016 07:53
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 10:26
Workgroup #:	WG574214	**Analyst:**	JYH	**Run Date:**	06/27/2016 11:42
Collect Date:	06/16/2016 07:55	**Dilution:**	1	**File ID:**	T3.062716.114220
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.331		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Potassium, Total	7440-09-7	13.0		2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	18WW16F-061616	**Prep Method:**	3015	**Prep Date:**	06/22/2016 07:53
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 10:26
Workgroup #:	WG574214	**Analyst:**	JYH	**Run Date:**	06/27/2016 13:00
Collect Date:	06/16/2016 07:55	**Dilution:**	20	**File ID:**	T3.062716.130008
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Calcium, Total	7440-70-2	195		10.0	5.00	2.50
Iron, Total	7439-89-6	21.5		4.00	2.00	1.00
Magnesium, Total	7439-95-4	146		20.0	10.0	5.00
Sodium, Total	7440-23-5	587		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	129-061616	**Prep Method:**	3015	**Prep Date:**	06/22/2016 07:53
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 10:26
Workgroup #:	WG574214	**Analyst:**	JYH	**Run Date:**	06/27/2016 11:46
Collect Date:	06/16/2016 09:05	**Dilution:**	1	**File ID:**	T3.062716.114614
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	0.644		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	13.2		0.500	0.250	0.125
Iron, Total	7439-89-6	1.18		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	10.4		1.00	0.500	0.250
Potassium, Total	7440-09-7	0.716	J	2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	129-061616	**Prep Method:**	3015	**Prep Date:**	06/22/2016 07:53
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 10:26
Workgroup #:	WG574214	**Analyst:**	JYH	**Run Date:**	06/27/2016 13:03
Collect Date:	06/16/2016 09:05	**Dilution:**	20	**File ID:**	T3.062716.130358
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sodium, Total	7440-23-5	146		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	120F-061616	**Prep Method:**	3015	**Prep Date:**	06/22/2016 07:53
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 10:26
Workgroup #:	WG574214	**Analyst:**	JYH	**Run Date:**	06/27/2016 11:50
Collect Date:	06/16/2016 09:25	**Dilution:**	1	**File ID:**	T3.062716.115009
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	1.53		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	6.89		0.500	0.250	0.125
Iron, Total	7439-89-6	2.04		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	7.27		1.00	0.500	0.250
Potassium, Total	7440-09-7	1.55	J	2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	120F-061616	**Prep Method:**	3015	**Prep Date:**	06/22/2016 07:53
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 10:26
Workgroup #:	WG574214	**Analyst:**	JYH	**Run Date:**	06/27/2016 13:15
Collect Date:	06/16/2016 09:25	**Dilution:**	20	**File ID:**	T3.062716.131528
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Sodium, Total	7440-23-5	303		20.0	10.0	5.00

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-THERMO3
Client ID:	123-061616	**Prep Method:**	3015	**Prep Date:**	06/22/2016 07:53
Matrix:	Water	**Analytical Method:**	6010C	**Cal Date:**	06/27/2016 10:26
Workgroup #:	WG574214	**Analyst:**	JYH	**Run Date:**	06/27/2016 11:54
Collect Date:	06/16/2016 09:55	**Dilution:**	1	**File ID:**	T3.062716.115400
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Aluminum, Total	7429-90-5	1.42		0.200	0.100	0.0500
Beryllium, Total	7440-41-7	0.0100	U	0.0200	0.0100	0.00500
Calcium, Total	7440-70-2	8.16		0.500	0.250	0.125
Iron, Total	7439-89-6	1.66		0.200	0.100	0.0500
Magnesium, Total	7439-95-4	4.83		1.00	0.500	0.250
Potassium, Total	7440-09-7	0.713	J	2.00	1.00	0.500
Selenium, Total	7782-49-2	0.0100	U	0.0200	0.0100	0.00500
Sodium, Total	7440-23-5	26.0		1.00	0.500	0.250

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.1.2 QC Summary Data

Example 6010 Calculations
Thermo Scientific iCAP

1.0 Initial Calibration (ICAL) Parameters
For a multi-point calibration, the system performs linear regression from data consisting of a blank and four standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system in ug/mL (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial volume (mL)	50
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/mL (mg/L)	0.1

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (mg/L) (ppm)	0.1
Vf = Final volume (mL)	50
Vi = Initial weight (g)	1
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in ug/g (mg/kg)	5

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	5
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (mg/kg)	6.25

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG573656
Analyst: ERP
Spike Analyst: ERP
Run Date: 06/22/2016 07:53
Method: 3015
Balance: BAL019
Instrument: MW-4
Instrument Start: 06/22/2016 08:14

SOP: ME407 Revison 19
Spike Solution: STD76576
Spike Witness: VC
HNO3 Lot #: COA18905
HCL Lot #: COA18769
40 & 50 ML. DIGESTION TU COA18987
ICP Filters- fisher-Lot# RGT35619

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG573656-02	BLANK	1	40 mL	50 mL	206.478 g	206.475 g		
2	WG573656-03	LCS	1	40 mL	50 mL	213.551 g	213.556 g	5 mL	
3	L16060840-01	SAMP	1	40 mL	50 mL	205.261 g	205.248 g		06/29/16
4	L16060840-02	SAMP	1	40 mL	50 mL	205.378 g	205.365 g		06/29/16
5	L16060840-03	SAMP	1	40 mL	50 mL	206.649 g	206.637 g		06/29/16
6	L16060840-04	SAMP	1	40 mL	50 mL	205.952 g	205.94 g		06/29/16
7	L16060840-05	SAMP	1	40 mL	50 mL	204.164 g	204.152 g		06/29/16
8	L16060840-06	SAMP	1	40 mL	50 mL	204.89 g	204.875 g		06/29/16
9	WG573656-01	REF	1	40 mL	50 mL	205.243 g	205.233 g		
10	L16060996-01	RS01	1	40 mL	50 mL	205.243 g	205.233 g		07/01/16
11	WG573656-04	MS	1	40 mL	50 mL	209.524 g	209.507 g	5 mL	
12	L16060996-02	MS01	1	40 mL	50 mL	209.524 g	209.507 g	5 mL	07/01/16
13	WG573656-05	MSD	1	40 mL	50 mL	211.803 g	211.788 g	5 mL	
14	L16060996-03	SD01	1	40 mL	50 mL	211.803 g	211.788 g	5 mL	07/01/16
15	L16060996-04	SAMP	1	40 mL	50 mL	203.833 g	203.826 g		07/01/16
16	L16060996-05	SAMP	1	40 mL	50 mL	207.088 g	207.078 g		07/01/16
17	L16060996-06	SAMP	1	40 mL	50 mL	205.731 g	205.723 g		07/01/16
18	L16060996-07	SAMP	1	40 mL	50 mL	204.58 g	204.57 g		07/01/16
19	L16060996-08	SAMP	1	40 mL	50 mL	204.442 g	204.434 g		07/01/16
20	L16060996-09	SAMP	1	40 mL	50 mL	206.06 g	206.051 g		07/01/16
21	L16061026-02	SAMP	1	40 mL	50 mL	207.271 g	207.264 g		06/28/16
22	L16061026-04	SAMP	1	40 mL	50 mL	207.035 g	207.028 g		06/28/16
23	L16061026-06	SAMP	1	40 mL	50 mL	205.716 g	205.709 g		06/28/16
24	L16061026-07	SAMP	1	40 mL	50 mL	206.892 g	206.885 g		06/28/16
25	L16061116-23	SAMP	1	40 mL	50 mL	205.051 g	205.04 g		07/01/16
26	L16061116-24	SAMP	1	40 mL	50 mL	207.895 g	207.88 g		07/01/16
27	L16061179-01	SAMP	1	40 mL	50 mL	208.78 g	208.772 g		06/28/16

L16061026-06	filtered digestate
L16061026-07	filtered digestate

Analyst: Erin Potter

Reviewer: Vicki Collins

MW_DIG - Modified 09/30/2009
PDF ID: 4817590
Report generated: 06/22/2016 09:06

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062716T3.1R.TXT
Analyst1: JYH Analyst2: N/A
Method: 200.7/6010B/6010C SOP: ME600G Rev: 8
Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838
ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668
CCV: STD76511 LLCCV: STD76601 Tuning Sol :
Stannous : Hydroxylamine :

Workgroups: 574214,574076

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	T3.062716.101109	WG574382-01	Calibration Point		1		06/27/16 10:11
2	T3.062716.101506	WG574382-02	Calibration Point		1		06/27/16 10:15
3	T3.062716.101903	WG574382-03	Calibration Point		1		06/27/16 10:19
4	T3.062716.102300	WG574382-04	Calibration Point		1		06/27/16 10:23
5	T3.062716.102637	WG574382-05	Calibration Point		1		06/27/16 10:26
6	T3.062716.103013	WG574382-06	Initial Calibration Verification		1		06/27/16 10:30
7	T3.062716.103339	WG574382-07	Initial Calib Blank		1		06/27/16 10:33
8	T3.062716.103737	WG574382-08	Low Level Initial Calibration V		1		06/27/16 10:37
9	T3.062716.104131	WG574382-09	Interference Check		1		06/27/16 10:41
10	T3.062716.104522	WG574382-10	Interference Check		1		06/27/16 10:45
11	T3.062716.104904	WG574382-11	CCV		1		06/27/16 10:49
12	T3.062716.105241	WG574382-12	CCB		1		06/27/16 10:52
13	T3.062716.105639	WG573656-02	Method/Prep Blank	40/50	1		06/27/16 10:56
14	T3.062716.110423	WG573656-03	Laboratory Control S	40/50	1		06/27/16 11:04
15	T3.062716.110802	WG573656-01	Reference Sample		1	L16060996-01	06/27/16 11:08
16	T3.062716.111157	WG573656-04	Matrix Spike	40/50	1	L16060996-01	06/27/16 11:11
17	T3.062716.111535	WG573656-05	Matrix Spike Duplica	40/50	1	L16060996-01	06/27/16 11:15
18	T3.062716.111914	L16061179-01	13273-G06-WQ-W0218	40/50	1		06/27/16 11:19
19	T3.062716.112312	WG574214-01	Post Digestion Spike		1	L16061179-01	06/27/16 11:23
20	T3.062716.112651	WG574214-02	Serial Dilution		5	L16061179-01	06/27/16 11:26
21	T3.062716.113048	WG574214-02	Serial Dilution		25	L16061179-01	06/27/16 11:30
22	T3.062716.113445	WG574382-13	CCV		1		06/27/16 11:34
23	T3.062716.113822	WG574382-14	CCB		1		06/27/16 11:38
24	T3.062716.114220	L16061026-02	18WW16F-061616	40/50	1		06/27/16 11:42
25	T3.062716.114614	L16061026-04	129-061616	40/50	1		06/27/16 11:46
26	T3.062716.115009	L16061026-06	120F-061616	40/50	1		06/27/16 11:50
27	T3.062716.115400	L16061026-07	123-061616	40/50	1		06/27/16 11:54
28	T3.062716.115753	L16060840-01	MW-24-004R	40/50	1		06/27/16 11:57
29	T3.062716.120148	L16060840-02	MW-24-003R	40/50	1		06/27/16 12:01
30	T3.062716.120539	L16060840-03	FR-061416-24	40/50	1		06/27/16 12:05
31	T3.062716.120930	L16060840-04	MW-24-002R	40/50	1		06/27/16 12:09
32	T3.062716.121323	L16060840-05	MW-24-005	40/50	1		06/27/16 12:13
33	T3.062716.121733	L16060840-06	EB-LOW FLOW TUBING	40/50	1		06/27/16 12:17
34	T3.062716.122130	WG574382-15	CCV		1		06/27/16 12:21

Page: 1 Approved: June 28, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-THERMO3 Dataset: 062716T3.1R.TXT

Analyst1: JYH Analyst2: N/A

Method: 200.7/6010B/6010C SOP: ME600G Rev: 8

Maintenance Log ID:

Calibration Std: STD76513 ICV Std: STD76512 Post Spike: STD75838

ICSA: STD76382 ICSAB: STD76834 Int. Std: RGT31668

CCV: STD76511 LLCCV: STD76601 Tuning Sol :

Stannous : Hydroxylamine :

Workgroups: 574214,574076

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	T3.062716.122507	WG574382-16	CCB		1		06/27/16 12:25
36	T3.062716.122905	L16060996-04	MW-21-006	40/50	1		06/27/16 12:29
37	T3.062716.123259	L16060996-05	MW-21-002	40/50	1		06/27/16 12:32
38	T3.062716.123653	L16060996-06	FD-061516-21	40/50	1		06/27/16 12:36
39	T3.062716.124047	L16060996-07	MW-21-009	40/50	1		06/27/16 12:40
40	T3.062716.124440	L16060996-08	MW-21-005	40/50	1		06/27/16 12:44
41	T3.062716.124834	L16060996-09	MW-21-004	40/50	1		06/27/16 12:48
42	T3.062716.125227	L16061116-23	062016-PS-CB027	40/50	1		06/27/16 12:52
43	T3.062716.125618	L16061116-24	062016-PS-CB027	40/50	1		06/27/16 12:56
44	T3.062716.130008	L16061026-02	18WW16F-061616	40/50	20		06/27/16 13:00
45	T3.062716.130358	L16061026-04	129-061616	40/50	20		06/27/16 13:03
46	T3.062716.130753	WG574382-17	CCV		1		06/27/16 13:07
47	T3.062716.131130	WG574382-18	CCB		1		06/27/16 13:11
48	T3.062716.131528	L16061026-06	120F-061616	40/50	20		06/27/16 13:15
49	T3.062716.131923	L16061290-03	MW16F-062116	40/50	20		06/27/16 13:19
50	T3.062716.132320	WG574382-19	CCV		1		06/27/16 13:23
51	T3.062716.132646	WG574382-20	CCB		1		06/27/16 13:26
52	T3.062716.133045	WG574382-21	Low Level Continuing Calibra		1		06/27/16 13:30

Page: 2 Approved: June 28, 2016

Kim H. Rhoden

Microbac

Microbac Laboratories Inc.

Data Checklist

Date: 27-JUN-2016
Analyst: JYH
Analyst: NA
Method: 6010B/6010C/200.7
Instrument: ICP-THERMO3
Curve Workgroup: 574382
Runlog ID: 75950
Analytical Workgroups: 574656,574076

Add'l WG	
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	X
ICB/CCB	X
ICSA/ICSAB	X
CRI	X
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	840,996
Level 4	1026,1179,1290
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	KHR
Comments	

Primary Reviewer:

Secondary Reviewer:
28-JUN-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUN-28-2016 10:41:09

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6010C

AAB#: WG574214

Login Number: L16061026

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW16F-061616	02	06/16/16					06/22/2016	6	180		06/27/16	11.2	180	
18WW16F-061616	02	06/16/16					06/22/2016	6	180		06/27/16	11.2	180	
129-061616	04	06/16/16					06/22/2016	6	180		06/27/16	11.2	180	
129-061616	04	06/16/16					06/22/2016	6	180		06/27/16	11.1	180	
120F-061616	06	06/16/16					06/22/2016	5.9	180		06/27/16	11.2	180	
120F-061616	06	06/16/16					06/22/2016	5.9	180		06/27/16	11.1	180	
123-061616	07	06/16/16					06/22/2016	5.9	180		06/27/16	11.1	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4827991
Report generated 06/28/2016 09:31

METHOD BLANK SUMMARY

Login Number: L16061026
Blank File ID: T3.062716.105639
Prep Date: 06/22/16 07:53
Analyzed Date: 06/27/16 10:56
Analyst: JYH

Work Group: WG574214
Blank Sample ID: WG573656-02
Instrument ID: ICP-THERMO3
Method: 6010C

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573656-03	T3.062716.110423	06/27/16 11:04	01
18WW16F-061616	L16061026-02	T3.062716.114220	06/27/16 11:42	01
129-061616	L16061026-04	T3.062716.114614	06/27/16 11:46	01
120F-061616	L16061026-06	T3.062716.115009	06/27/16 11:50	01
123-061616	L16061026-07	T3.062716.115400	06/27/16 11:54	01
18WW16F-061616	L16061026-02	T3.062716.130008	06/27/16 13:00	DL01
129-061616	L16061026-04	T3.062716.130358	06/27/16 13:03	DL01
120F-061616	L16061026-06	T3.062716.131528	06/27/16 13:15	DL01

Report Name: BLANK_SUMMARY
PDF File ID: 4827992
Report generated 06/28/2016 09:31

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061026 Prep Date: 06/22/16 07:53 Sample ID: WG573656-02
Instrument ID: ICP-THERMO3 Run Date: 06/27/16 10:56 Prep Method: 3015
File ID: T3.062716.105639 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG574214 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-TH-27-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Aluminum, Total	0.0500	0.200	0.0500	1	U
Beryllium, Total	0.00500	0.0200	0.00500	1	U
Calcium, Total	0.125	0.500	0.125	1	U
Iron, Total	0.0500	0.200	0.0500	1	U
Magnesium, Total	0.250	1.00	0.250	1	U
Potassium, Total	0.500	2.00	0.500	1	U
Selenium, Total	0.00500	0.0200	-0.00914	1	U
Sodium, Total	0.250	1.00	0.250	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4827993
28-JUN-2016 09:31

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061026 Run Date: 06/27/2016 Sample ID: WG573656-03
Instrument ID: ICP-THERMO3 Run Time: 11:04 Prep Method: 3015
File ID: T3.062716.110423 Analyst: JYH Method: 6010C
Workgroup (AAB#): WG574214 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD76576 Cal ID: ICP-TH-27-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Aluminum, Total	6.25	5.90	94.4	80 - 120	
Beryllium, Total	0.0313	0.0292	93.4	80 - 120	
Calcium, Total	6.25	6.02	96.4	80 - 120	
Iron, Total	2.50	2.39	95.4	80 - 120	
Magnesium, Total	6.25	6.02	96.3	80 - 120	
Potassium, Total	31.3	29.8	95.4	80 - 120	
Selenium, Total	0.250	0.235	93.8	80 - 120	
Sodium, Total	31.3	30.2	96.6	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4827994
Report generated: 06/28/2016 09:31

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061026 Cal ID: ICP-THERMO3 - Worknum: WG574214
Instrument ID: ICP-THERMO3 Contract #: Method: 6010C
Parent ID: WG573656-01 File ID: T3.062716.110802 Dil: 1 Matrix: WATER
Sample ID: WG573656-04 MS File ID: T3.062716.111157 Dil: 1 Units: mg/L
Sample ID: WG573656-05 MSD File ID: T3.062716.111535 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Aluminum	ND	6.25	5.92	94.7	6.25	5.98	95.7	1.09	80 - 120	20	
Beryllium	ND	0.0313	0.0293	93.6	0.0313	0.0293	93.8	0.213	80 - 120	20	
Calcium	70.2	6.25	76.5	100	6.25	76.1	95.1	0.411	80 - 120	20	
Iron	ND	2.50	2.41	96.3	2.50	2.41	96.6	0.301	80 - 120	20	
Magnesium	28.5	6.25	34.1	89.6	6.25	34.1	89.2	0.0733	80 - 120	20	
Potassium	ND	31.3	30.2	96.6	31.3	30.2	96.7	0.0579	80 - 120	20	
Selenium	ND	0.250	0.228	91.3	0.250	0.236	94.3	3.28	80 - 120	20	
Sodium	5.16	31.3	35.4	96.6	31.3	35.3	96.4	0.212	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4827995
Report generated 06/28/2016 09:31

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16061026 **Worknum:** WG574214
Instrument: ICP-THERMO3 **Method:** 6010C
Serial Dil: WG574214-02 **File ID:** T3.062716.112651 **Dil:** 5 **Units:** ug/L
Sample: L16061179-01 **File ID:** T3.062716.111914 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Aluminum	20.8		ND	U		
Beryllium	ND	U	ND	U		
Calcium	186		98.0		47.20	E
Iron	29.3		101		243.00	E
Magnesium	74.1		ND	U		
Potassium	74.5		887		1090.00	E
Selenium	ND	U	ND	U		
Sodium	151		545		261.00	E

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 25 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 25 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4827989
06/28/2016 09:31

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061026 **Worknum:** WG574214
Instrument ID: ICP-THERMO3 **Method:** 6010C
Post Spike ID: WG574214-01 **File ID:** T3.062716.112312 **Dil:** 1 **Units:** ug/L
Sample ID: L16061179-01 **File ID:** T3.062716.111914 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ALUMINUM	4690		0	U	5000	93.9	75 - 125	
BERYLLIUM	23.0		0	U	25	92.1	75 - 125	
CALCIUM	4980		186	F	5000	96.2	75 - 125	
IRON	1910		0	U	2000	95.6	75 - 125	
MAGNESIUM	4720		0	U	5000	94.4	75 - 125	
POTASSIUM	23400		0	U	25000	93.7	75 - 125	
SELENIUM	179		0	U	200	89.7	75 - 125	
SODIUM	23800		0	U	25000	95.4	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4827990
Report generated: 06/28/2016 09:31

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061026	Workgroup (AAB#):	WG574214
Analytical Method:	6010C	Instrument ID:	ICP-THERMO3
ICAL Worknum:	WG574382	Initial Calibration Date:	27-JUN-2016 10:26

	WG574382-01		WG574382-02		WG574382-03		WG574382-04		WG574382-05			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ALUMINUM	0	0.000800	.1	0.00149	.2	0.00217	10	0.0861	20	0.161	.999541	
BERYLLIUM	0	0.000690	.0005	0.00111	.001	0.00148	.05	0.0508	.1	0.0959	.999682	
CALCIUM	0	0.00169	.1	0.00256	.2	0.00981	10	0.474	20	0.899	.998908	
IRON	0	0.0000700	.04	0.000210	.08	0.00147	4	0.0959	8	0.181	.998751	
MAGNESIUM	0	-0.0000400	NA	NA	.2	0.00164	10	0.0916	20	0.172	.999436	
POTASSIUM	0	-0.0166	.5	0.00590	1	0.0309	50	2.79	100	5.30	.999643	
SELENIUM	0	-0.000420	NA	NA	.008	-0.000340	.4	0.00633	.8	0.0123	.999365	
SODIUM	0	-0.0629	.5	0.0187	1	0.0937	50	9.16	100	17.5	.999663	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4827998
Report generated: 28-JUN-2016 09:31

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061026
Run Date: 06/27/2016
Sample ID: WG574382-07
Instrument ID: ICP-THERMO3
Run Time: 10:33
Method: 6010C
File ID: T3.062716.103339
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574214
Cal ID: ICP-THERI - 27-JUN-16
Matrix: WATER

Analytes	MDL	RDL	Concentration	Qualifier
ALUMINUM	.04	.16	.04	U
BERYLLIUM	.004	.016	.004	U
CALCIUM	.1	.4	.1	U
IRON	.04	.16	.04	U
MAGNESIUM	.2	.8	.2	U
POTASSIUM	.4	1.6	.4	U
SELENIUM	.004	.016	-.00421	F
SODIUM	.2	.8	.2	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4828000
Report generated 06/28/2016 09:31

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 06/27/2016
Sample ID: WG574382-12
Instrument ID: ICP-THERMO3
Run Time: 10:52
Method: 6010C
File ID: T3.062716.105241
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574214
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	-0.00430	F
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4828003
Report generated 06/28/2016 09:31

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 06/27/2016
Sample ID: WG574382-14
Instrument ID: ICP-THERMO3
Run Time: 11:38
Method: 6010C
File ID: T3.062716.113822
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574214
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4828003
Report generated 06/28/2016 09:31

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 06/27/2016
Sample ID: WG574382-16
Instrument ID: ICP-THERMO3
Run Time: 12:25
Method: 6010C
File ID: T3.062716.122507
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574214
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4828003
Report generated 06/28/2016 09:31

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 06/27/2016
Sample ID: WG574382-18
Instrument ID: ICP-THERMO3
Run Time: 13:11
Method: 6010C
File ID: T3.062716.131130
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574214
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4828003
Report generated 06/28/2016 09:31

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 06/27/2016
Sample ID: WG574382-20
Instrument ID: ICP-THERMO3
Run Time: 13:26
Method: 6010C
File ID: T3.062716.132646
Analyst: JYH
Units: mg/L
Workgroup (AAB#): WG574214
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Aluminum	0.0400	0.160	0.0400	U
Beryllium	0.00400	0.0160	0.00400	U
Calcium	0.100	0.400	0.100	U
Iron	0.0400	0.160	0.0400	U
Magnesium	0.200	0.800	0.200	U
Potassium	0.400	1.60	0.400	U
Selenium	0.00400	0.0160	0.00400	U
Sodium	0.200	0.800	0.200	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4828003
Report generated 06/28/2016 09:31

Microbac Laboratories Inc.
INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061026 Run Date: 06/27/2016 Sample ID: WG574382-06
Instrument ID: ICP-THERMO3 Run Time: 10:30 Method: 6010C
File ID: T3.062716.103013 Analyst: JYH Units: mg/L
Workgroup (AAB#): WG574214 Cal ID: ICP-TH - 27-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Aluminum		10	10.0	100	90 - 110	
Beryllium		.05	0.0495	99.0	90 - 110	
Calcium		10	9.89	98.9	90 - 110	
Iron		4	3.95	98.7	90 - 110	
Magnesium		10	10.0	100	90 - 110	
Potassium		50	49.5	99.0	90 - 110	
Selenium		.4	0.405	101	90 - 110	
Sodium		50	49.6	99.1	90 - 110	

* Exceeds LIMITS Limit

ICV - Modified 03/06/2008
PDF File ID: 4827999
Report generated 06/28/2016 09:31

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 06/27/2016
Sample ID: WG574382-11
Instrument ID: ICP-THERMO3
Run Time: 10:49
Method: 6010C
File ID: T3.062716.104904
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574214
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.7	mg/L	107	90 - 110		
Beryllium		0.0500	0.0516	mg/L	103	90 - 110		
Calcium		10.0	10.8	mg/L	108	90 - 110		
Iron		4.00	4.30	mg/L	108	90 - 110		
Magnesium		10.0	10.8	mg/L	108	90 - 110		
Potassium		50.0	51.5	mg/L	103	90 - 110		
Selenium		0.400	0.421	mg/L	105	90 - 110		
Sodium		50.0	51.6	mg/L	103	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4828002
Report generated 06/28/2016 09:31

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 06/27/2016
Sample ID: WG574382-13
Instrument ID: ICP-THERMO3
Run Time: 11:34
Method: 6010C
File ID: T3.062716.113445
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574214
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.3	mg/L	103	90 - 110		
Beryllium		0.0500	0.0508	mg/L	102	90 - 110		
Calcium		10.0	10.2	mg/L	102	90 - 110		
Iron		4.00	4.09	mg/L	102	90 - 110		
Magnesium		10.0	10.3	mg/L	103	90 - 110		
Potassium		50.0	50.8	mg/L	102	90 - 110		
Selenium		0.400	0.410	mg/L	103	90 - 110		
Sodium		50.0	51.2	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4828002
Report generated 06/28/2016 09:31

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 06/27/2016
Sample ID: WG574382-15
Instrument ID: ICP-THERMO3
Run Time: 12:21
Method: 6010C
File ID: T3.062716.122130
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574214
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	10.3	mg/L	103	90 - 110		
Beryllium		0.0500	0.0508	mg/L	102	90 - 110		
Calcium		10.0	10.9	mg/L	109	90 - 110		
Iron		4.00	4.34	mg/L	109	90 - 110		
Magnesium		10.0	10.8	mg/L	108	90 - 110		
Potassium		50.0	53.5	mg/L	107	90 - 110		
Selenium		0.400	0.416	mg/L	104	90 - 110		
Sodium		50.0	54.6	mg/L	109	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4828002
Report generated 06/28/2016 09:31

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 06/27/2016
Sample ID: WG574382-17
Instrument ID: ICP-THERMO3
Run Time: 13:07
Method: 6010C
File ID: T3.062716.130753
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574214
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.98	mg/L	99.8	90 - 110		
Beryllium		0.0500	0.0490	mg/L	97.9	90 - 110		
Calcium		10.0	9.54	mg/L	95.4	90 - 110		
Iron		4.00	3.77	mg/L	94.1	90 - 110		
Magnesium		10.0	9.47	mg/L	94.7	90 - 110		
Potassium		50.0	47.1	mg/L	94.2	90 - 110		
Selenium		0.400	0.421	mg/L	105	90 - 110		
Sodium		50.0	48.1	mg/L	96.2	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4828002
Report generated 06/28/2016 09:31

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 06/27/2016
Sample ID: WG574382-19
Instrument ID: ICP-THERMO3
Run Time: 13:23
Method: 6010C
File ID: T3.062716.132320
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574214
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		10.0	9.90	mg/L	99.0	90 - 110		
Beryllium		0.0500	0.0485	mg/L	97.0	90 - 110		
Calcium		10.0	9.79	mg/L	97.9	90 - 110		
Iron		4.00	3.90	mg/L	97.4	90 - 110		
Magnesium		10.0	9.50	mg/L	95.0	90 - 110		
Potassium		50.0	47.8	mg/L	95.6	90 - 110		
Selenium		0.400	0.409	mg/L	102	90 - 110		
Sodium		50.0	49.3	mg/L	98.7	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4828002
Report generated 06/28/2016 09:31

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061026
Run Date: 06/27/2016
Sample ID: WG574382-08
Instrument ID: ICP-THERMO3
Run Time: 10:37
Method: 6010C
File ID: T3.062716.103737
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574214
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.161	mg/L	101	70 - 130		
Beryllium		0.00160	0.00171	mg/L	107	70 - 130		
Calcium		0.400	0.413	mg/L	103	70 - 130		
Iron		0.0800	0.0618	mg/L	77.3	70 - 130		
Magnesium		0.400	0.370	mg/L	92.5	70 - 130		
Potassium		0.800	0.831	mg/L	104	70 - 130		
Selenium		0.0160	0.0156	mg/L	97.2	70 - 130		
Sodium		0.400	0.456	mg/L	114	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4828004
Report generated 06/28/2016 09:31

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061026
Run Date: 06/27/2016
Sample ID: WG574382-21
Instrument ID: ICP-THERMO3
Run Time: 13:30
Method: 6010C
File ID: T3.062716.133045
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574214
Cal ID: ICP-TH - 27-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Aluminum		0.160	0.168	mg/L	105	70 - 130		
Beryllium		0.00160	0.00157	mg/L	98.1	70 - 130		
Calcium		0.400	0.410	mg/L	102	70 - 130		
Iron		0.0800	0.0608	mg/L	76.0	70 - 130		
Magnesium		0.400	0.392	mg/L	98.0	70 - 130		
Potassium		0.800	0.912	mg/L	114	70 - 130		
Selenium		0.0160	0.0148	mg/L	92.2	70 - 130		
Sodium		0.400	0.499	mg/L	125	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4828004
Report generated 06/28/2016 09:31

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061026
Instrument ID: ICP-THERMO3
Sol. A : WG574382-09 **File ID:** T3.062716.104131
Sol. AB : WG574382-10 **File ID:** T3.062716.104522

Workgroup (AAB#): WG574214
Method: 6010C
Units: mg/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Aluminum	250	274	110	250	256	102	
Beryllium	NS	-0.0000500	NS	0.250	0.237	94.8	
Calcium	250	255	102	250	239	95.6	
Iron	100	101	101	100	93.5	93.5	
Magnesium	250	258	103	250	239	95.6	
Potassium	NS	-0.0902	NS	5.00	5.12	102	
Selenium	NS	-0.00510	NS	0.250	0.245	98.0	
Sodium	NS	0.0834	NS	5.00	5.19	104	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4828001
Report generated 06/28/2016 09:31

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061026 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	AG	AL	AS	B	BA
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000410	0	0	0
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0.0115	0	-0.0000800
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0.000260	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	-0.000289	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	-0.0000490	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.0000120	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0.0000300	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4827997
Report generated: 06/28/2016 09:31

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061026 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	BE	CA	CD	CO	CR
ALUMINUM	308.20	0	0	0	-0.000820	0
ANTIMONY	206.80	0	0	0	0	0.0200
ARSENIC	189.00	0	0	0	0	-0.00190
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0.00343	0
CADMIUM	228.80	0	0	0	-0.00390	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	-0.000200
COPPER	224.70	0	0	0	0.0000770	-0.00100
IRON	261.10	0	0	0	0	-0.00100
LEAD	220.30	0	0	0	-0.0000130	-0.000132
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.0000500
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	-0.000860	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0.00000500	0	0	0
THALLIUM	190.80	0	0	0	0.00240	0.000276
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	-0.00480
ZINC	206.20	0	0	0	0	-0.00180
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4827997
Report generated: 06/28/2016 09:31

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061026 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	CU	FE	K	LI	MG
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0.0000560	0	0	0
ARSENIC	189.00	0	-0.0000500	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0.000300	0	0	0
CADMIUM	228.80	0	-0.0000190	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000500	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0	0.00160	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0.000609	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0.00000300
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0.0000420	0	0	0
PHOSPHORUS	214.90	-0.323	0.000900	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000270	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000400	0	0	0
VANADIUM	292.40	0	0.00000700	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	-0.0000300	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4827997
Report generated: 06/28/2016 09:31

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061026 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	MN	MO	NA	NI	P
ALUMINUM	308.20	0	0.0163	0	0	0
ANTIMONY	206.80	0	-0.00310	0	-0.00350	0
ARSENIC	189.00	0	0.00120	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	-0.00190	0	0	0
CADMIUM	228.80	0	0.0000320	0	-0.000770	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0.000360	0	0	0	0
COBALT	228.60	0	-0.00200	0	0.000100	0
COPPER	224.70	0	0.00160	0	-0.0123	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	-0.00210	0	0.000110	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	-0.00290	-0.0230	0	0	0
MANGANESE	257.60	0	0.0000300	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0.00710	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0.000600	0.000580	0	0	0
SILICON	212.40	0	0.0187	0	0	0
SILVER	328.00	0	-0.0000430	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0.00100	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	-0.000153	0	0	0
VANADIUM	292.40	-0.000200	-0.00830	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061026 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	PB	SB	SE	SI	SN
ALUMINUM	308.20	0	0	0	0	0
ANTIMONY	206.80	0	0	0	0	-0.0220
ARSENIC	189.00	0	0	0	0	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	0	0	0	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0	0	0	0
COBALT	228.60	0	0	0	0	0
COPPER	224.70	0.00440	0	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	0	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	0	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	0	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	0	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	0	0	0	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	0	0	0	0
TIN	189.90	0	0	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
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Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061026 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	SR	TI	TL	V	ZN
ALUMINUM	308.20	0	0	0	0.0950	0
ANTIMONY	206.80	0	0.00110	0	-0.00360	0
ARSENIC	189.00	0	0	0	0.000107	0
BARIUM	455.40	0	0	0	0	0
BERYLLIUM	313.10	0	-0.00000700	0	0.000990	0
BORON	249.60	0	0	0	0	0
CADMIUM	228.80	0	0	0	0.000102	0
CALCIUM	422.60	0	0	0	0	0
CHROMIUM	267.70	0	0.0000550	0	0	0
COBALT	228.60	0	0.00210	0	0.0000200	0
COPPER	224.70	0	0.000269	0	0	0
IRON	261.10	0	0	0	0	0
LEAD	220.30	0	0	0	-0.000126	0
LITHIUM	670.70	0	0	0	0	0
MAGNESIUM	279.00	0	-0.00290	0	0	0
MANGANESE	257.60	0	0	0	0	0
MOLYBDENUM	202.00	0	0	0	-0.000110	0
NICKEL	231.60	0	0	0	0	0
PHOSPHORUS	214.90	0	0	0	-0.00100	0
POTASSIUM	766.40	0	0	0	0	0
SELENIUM	196.00	0	0	0	0	0
SILICON	212.40	0	0	0	0	0
SILVER	328.00	0	-0.000720	0	-0.000260	0
SODIUM	589.50	0	0	0	0	0
STRONTIUM	407.70	0	0	0	0	0
THALLIUM	190.80	0	-0.000800	0	-0.00490	0
TIN	189.90	0	-0.00190	0	0	0
TITANIUM	337.20	0	0	0	0	0
VANADIUM	292.40	0	0.000820	0	0	0
ZINC	206.20	0	0	0	0	0
ZIRCONIUM	339.10	0	0	0	0	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4827997
Report generated: 06/28/2016 09:31

Microbac Laboratories Inc.
INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Login Number: L16061026 **Date:** 01/04/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Wave Length	ZR
ALUMINUM	308.20	0
ANTIMONY	206.80	0
ARSENIC	189.00	0
BARIUM	455.40	0
BERYLLIUM	313.10	0
BORON	249.60	0
CADMIUM	228.80	0
CALCIUM	422.60	0
CHROMIUM	267.70	0
COBALT	228.60	0
COPPER	224.70	0
IRON	261.10	0
LEAD	220.30	0
LITHIUM	670.70	0
MAGNESIUM	279.00	0
MANGANESE	257.60	0
MOLYBDENUM	202.00	0
NICKEL	231.60	0
PHOSPHORUS	214.90	0
POTASSIUM	766.40	0
SELENIUM	196.00	0
SILICON	212.40	0
SILVER	328.00	0
SODIUM	589.50	0
STRONTIUM	407.70	0
THALLIUM	190.80	0
TIN	189.90	0
TITANIUM	337.20	0
VANADIUM	292.40	0
ZINC	206.20	0
ZIRCONIUM	339.10	0

CORR_FACTORS - Modified 03/05/2008
PDF File ID: 4827997
Report generated: 06/28/2016 09:31

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16061026 **Date:** 04/29/2016
Insturment ID: ICP-THERMO3 **Method:** 6010C

Analyte	Integration Time (Sec.)	Concentration (mg/L)
Aluminum	10.00	900.0
Antimony	20.00	45.0
Arsenic	10.00	45.0
Barium	10.00	45.0
Beryllium	10.00	1.8
Boron	20.00	45.0
Cadmium	20.00	4.5
Calcium	5.00	270.0
Chromium	20.00	36.0
Cobalt	20.00	45.0
Copper	20.00	180.0
Iron	5.00	720.0
Lead	20.00	225.0
Lithium	5.00	36.0
Magnesium	5.00	900.0
Manganese	10.00	36.0
Molybdenum	20.00	27.0
Nickel	20.00	90.0
Phosphorus	20.00	180.0
Potassium	5.00	450.0
Selenium	20.00	90.0
Silicon	20.00	36.0
Silver	10.00	9.0
Sodium	5.00	270.0
Strontium	5.00	9.0
Thallium	20.00	18.0
Tin	20.00	45.0
Titanium	5.00	36.0
Vanadium	20.00	27.0
Zinc	20.00	45.0
Zirconium	10.00	45.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4827996
Report generated: 06/28/2016 09:31

2.3.1.3 Raw Data

Element, Wavelength and Order	Date of Fit	Date of Cal.	Type of Fit	Weighting	A0	A1	A2	n (Exponent)
Ag 328.068 {103}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.000219	0.051332	0.000000	1.000000
Al 308.215 {109}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.000797	0.008110	0.000000	1.000000
As 189.042 {478}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.000055	0.023360	0.000000	1.000000
B 249.678 {135}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.000001	0.022663	0.000000	1.000000
Ba 455.403 { 74}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.055586	2.146038	0.000000	1.000000
Be 313.107 {108}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.000688	0.950408	0.000000	1.000000
Ca 422.673 { 80}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.001692	0.045598	0.000000	1.000000
Cd 228.802 {447}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.000094	0.563612	0.000000	1.000000
Co 228.616 {447}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.000104	0.359063	0.000000	1.000000
Cr 267.716 {126}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.000207	0.060248	0.000000	1.000000
Cu 224.700 {450}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.000063	0.126227	0.000000	1.000000
Fe 261.187 {129}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.000073	0.023032	0.000000	1.000000
K 766.490 { 44}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.016555	0.054237	0.000000	1.000000
Li 670.784 { 50}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.004397	1.544241	0.000000	1.000000
Mg 279.079 {121}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.000044	0.008813	0.000000	1.000000
Mn 257.610 {131}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.000249	0.281817	0.000000	1.000000
Mo 202.030 {467}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.000046	0.182222	0.000000	1.000000
Na 589.592 { 57}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.062909	0.178536	0.000000	1.000000
Ni 231.604 {446}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.000706	0.133269	0.000000	1.000000
P 214.914 {457}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.000179	0.013467	0.000000	1.000000
Pb 220.353 {453}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.000979	0.062395	0.000000	1.000000
Sb 206.833 {463}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.000288	0.029684	0.000000	1.000000
Se 196.090 {472}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.000416	0.016174	0.000000	1.000000
Si 212.412 {459}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.002457	0.038614	0.000000	1.000000
Sn 189.989 {477}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.000032	0.070434	0.000000	1.000000
Sr 407.771 { 83}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.000984	3.576768	0.000000	1.000000
Ti 337.280 {100}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.001213	0.097488	0.000000	1.000000
Tl 190.856 {477}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.000404	0.028714	0.000000	1.000000
V 292.402 {115}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.000025	0.070640	0.000000	1.000000
Y 224.306 {450}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 360.073 { 94}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Y 377.433 { 89}*	<not fit>	<Never Calibrated>	Linear	1/Conc	0.000000	0.000000	0.000000	1.000000
Zn 206.200 {463}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	0.000222	0.414339	0.000000	1.000000
Zr 339.198 { 99}	6/27/2016 11:02:26	6/27/2016 10:30:08	Linear	1/Conc	-0.004799	3.597030	0.000000	1.000000

Approved: June 28, 2016

Element, Wavelength and Order	Correlation	Std Error of Est	Predicted MDL	Predicted MQL	Status	Reslope		QC Norm	
						Slope	Y-int	Slope factor	Offset
Ag 328.068 {103}	0.999219	0.000005	0.002404	0.008013	OK.	1.000000	0.000000	1	0
Al 308.215 {109}	0.999541	0.000016	0.010486	0.034953	OK.	1.000000	0.000000	1	0
As 189.042 {478}	0.999717	0.000002	0.003514	0.011712	OK.	1.000000	0.000000	1	0
B 249.678 {135}	0.999559	0.000003	0.003229	0.010763	OK.	1.000000	0.000000	1	0
Ba 455.403 { 74}	0.999622	0.000374	0.001188	0.003959	OK.	1.000000	0.000000	1	0
Be 313.107 {108}	0.999682	0.000008	0.000105	0.000351	OK.	1.000000	0.000000	1	0
Ca 422.673 { 80}	0.998908	0.000135	0.046468	0.154893	OK.	1.000000	0.000000	1	0
Cd 228.802 {447}	0.999582	0.000006	0.000295	0.000984	OK.	1.000000	0.000000	1	0
Co 228.616 {447}	0.999651	0.000012	0.000445	0.001484	OK.	1.000000	0.000000	1	0
Cr 267.716 {126}	0.999210	0.000008	0.001312	0.004375	OK.	1.000000	0.000000	1	0
Cu 224.700 {450}	0.999350	0.000015	0.001489	0.004962	OK.	1.000000	0.000000	1	0
Fe 261.187 {129}	0.998751	0.000029	0.029643	0.098810	OK.	1.000000	0.000000	1	0
K 766.490 { 44}	0.999643	0.000460	0.132623	0.442075	OK.	1.000000	0.000000	1	0
Li 670.784 { 50}	0.999776	0.000321	0.004353	0.014511	OK.	1.000000	0.000000	1	0
Mg 279.079 {121}	0.999436	0.000029	0.087066	0.290220	OK.	1.000000	0.000000	1	0
Mn 257.610 {131}	0.999089	0.000038	0.002851	0.009505	OK.	1.000000	0.000000	1	0
Mo 202.030 {467}	0.999789	0.000024	0.000466	0.001553	OK.	1.000000	0.000000	1	0
Na 589.592 { 57}	0.999663	0.001472	0.035366	0.117888	OK.	1.000000	0.000000	1	0
Ni 231.604 {446}	0.999563	0.000013	0.001271	0.004238	OK.	1.000000	0.000000	1	0
P 214.914 {457}	0.999580	0.000024	0.007845	0.026150	OK.	1.000000	0.000000	1	0
Pb 220.353 {453}	0.998800	0.000010	0.003957	0.013189	OK.	1.000000	0.000000	1	0
Sb 206.833 {463}	0.999499	0.000007	0.004891	0.016304	OK.	1.000000	0.000000	1	0
Se 196.090 {472}	0.999365	0.000002	0.007423	0.024744	OK.	1.000000	0.000000	1	0
Si 212.412 {459}	0.999891	0.000018	0.002581	0.008604	OK.	1.000000	0.000000	1	0
Sn 189.989 {477}	0.999675	0.000011	0.000958	0.003192	OK.	1.000000	0.000000	1	0
Sr 407.771 { 83}	0.999546	0.000684	0.000493	0.001644	OK.	1.000000	0.000000	1	0
Ti 337.280 {100}	0.997531	0.000043	0.009062	0.030207	OK.	1.000000	0.000000	1	0
Tl 190.856 {477}	0.999388	0.000005	0.003390	0.011298	OK.	1.000000	0.000000	1	0
V 292.402 {115}	0.999660	0.000012	0.001079	0.003598	OK.	1.000000	0.000000	1	0
Y 224.306 {450}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 360.073 { 94}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Y 377.433 { 89}*	0.000000	0.000000	-1.000000	-1.000000	Warnin	1.000000	0.000000	1	0
Zn 206.200 {463}	0.999413	0.000090	0.000220	0.000735	OK.	1.000000	0.000000	1	0
Zr 339.198 { 99}	0.999407	0.000786	0.000564	0.001879	OK.	1.000000	0.000000	1	0

Approved: June 28, 2016

Sample Name: S0 Acquired: 6/27/2016 10:11:09 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00022**	**.00080**	**.00005**	**-.00000**	**.05558**	**.00069**	**.00169**
Stddev	.00009	.00005	.00001	.00001	.00343	.00010	.00171
%RSD	41.038	6.2901	19.225	757.31	6.1761	14.508	100.89
#1	-.00028	.00085	.00004	.00001	.05677	.00057	.00305
#2	-.00012	.00079	.00007	-.00001	.05827	.00074	-.00023
#3	-.00027	.00075	.00006	.00000	.05171	.00075	.00226

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00009**	**-.00010**	**.00021**	**.00006**	**.00007**	**-.01656**	**-.00440**
Stddev	.00009	.00008	.00005	.00012	.00021	.00039	.00634
%RSD	91.046	78.768	26.095	189.05	283.56	2.3394	144.17
#1	-.00005	-.00014	.00014	.00010	.00028	-.01656	.00211
#2	-.00019	-.00016	.00023	.00016	.00009	-.01694	-.00474
#3	-.00004	-.00001	.00024	-.00007	-.00014	-.01617	-.01056

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00004**	**.00025**	**-.00005**	**-.06293**	**-.00071**	**-.00018**	**-.00098**
Stddev	.00014	.00078	.00008	.01073	.00010	.00001	.00026
%RSD	309.31	312.25	167.27	17.052	14.737	6.2600	26.253
#1	-.00014	.00113	-.00005	-.06678	-.00074	-.00017	-.00122
#2	.00011	-.00035	.00003	-.05080	-.00079	-.00019	-.00101
#3	-.00010	-.00004	-.00012	-.07120	-.00059	-.00018	-.00071

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00029**	**-.00042**	**.00246**	**.00003**	**.00098**	**-.00121**	**-.00040**
Stddev	.00006	.00008	.00007	.00002	.00168	.00048	.00011
%RSD	21.252	20.303	2.7310	73.870	172.37	39.424	26.113
#1	.00028	-.00050	.00242	.00001	.00288	-.00094	-.00028
#2	.00035	-.00033	.00242	.00005	-.00031	-.00176	-.00045
#3	.00023	-.00042	.00253	.00003	.00036	-.00093	-.00047

Approved: June 28, 2016

Sample Name: S0 Acquired: 6/27/2016 10:11:09 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	**-.00002**	**.00022**	**-.00480**
Stddev	.00006	.00004	.00081
%RSD	232.69	19.281	16.811
#1	.00001	.00027	-.00516
#2	.00000	.00020	-.00387
#3	-.00009	.00019	-.00536
Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9360.7**	**56289.**	**2789.5**
Stddev	12.0	199.	9.9
%RSD	.12862	.35359	.35524
#1	9347.7	56429.	2778.2
#2	9362.8	56061.	2796.7
#3	9371.5	56376.	2793.6

Approved: June 28, 2016

Sample Name: S1 Acquired: 6/27/2016 10:15:06 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	Ba4554	Be3131	Ca4226	Cd2288	Co2286
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00002**	**.00149**	**.07501**	**.00111**	**.00256**	**.00019**	**.00048**
Stddev	.00004	.00003	.00130	.00003	.00054	.00000	.00012
%RSD	235.36	1.8291	1.7274	3.0313	21.065	2.0861	24.410
#1	.00003	.00146	.07531	.00115	.00264	.00019	.00036
#2	-.00003	.00151	.07359	.00111	.00199	.00019	.00059
#3	.00005	.00151	.07613	.00108	.00306	.00020	.00049

Elem	Cr2677	Cu2247	Fe2611	K_7664	Mn2576	Mo2020	Na5895
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**.00052**	**.00073**	**.00021**	**.00590**	**.00180**	**.00157**	**.01873**
Stddev	.00010	.00013	.00039	.00261	.00100	.00005	.00232
%RSD	18.633	17.713	184.86	44.235	55.870	3.0472	12.407
#1	.00062	.00086	.00004	.00630	.00167	.00152	.02125
#2	.00042	.00060	.00065	.00312	.00086	.00158	.01668
#3	.00052	.00074	-.00007	.00829	.00286	.00161	.01826

Elem	Ni2316	P_2149	Pb2203	Sb2068	Si2124	Sn1899	Sr4077
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00019**	**.00098**	**-.00091**	**.00069**	**.00415**	**.00064**	**.03417**
Stddev	.00010	.00003	.00038	.00011	.00003	.00003	.00071
%RSD	53.461	3.4756	41.630	15.291	.77728	4.6599	2.0672
#1	-.00029	.00101	-.00109	.00069	.00416	.00068	.03441
#2	-.00009	.00099	-.00047	.00080	.00418	.00063	.03337
#3	-.00018	.00095	-.00116	.00059	.00412	.00062	.03472

Elem	Ti3372	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S
Avg	**-.00142**	**.00056**	**.00379**	**.02139**
Stddev	.00038	.00006	.00002	.00234
%RSD	26.838	9.9829	.42124	10.947
#1	-.00118	.00061	.00377	.02369
#2	-.00121	.00058	.00380	.02146
#3	-.00186	.00050	.00379	.01901

Approved: June 28, 2016

Sample Name: S1 Acquired: 6/27/2016 10:15:06 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9406.4**	**56869.**	**2813.2**
Stddev	17.9	99.	5.4
%RSD	.18981	.17489	.19258
#1	9415.6	56895.	2818.5
#2	9417.7	56760.	2813.3
#3	9385.8	56954.	2807.7

Approved: June 28, 2016

Sample Name: S2 Acquired: 6/27/2016 10:19:03 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00019	.00217	.00019	.00017	.09097	.00148	.00981
Stddev	.00010	.00007	.00004	.00006	.00192	.00005	.00183
%RSD	52.118	3.1223	20.733	37.133	2.1077	3.6422	18.643
#1	.00022	.00221	.00022	.00021	.09288	.00154	.01182
#2	.00008	.00209	.00021	.00019	.09098	.00149	.00936
#3	.00027	.00220	.00015	.00010	.08905	.00143	.00824

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00046	.00101	.00085	.00125	.00147	.03094	.02040
Stddev	.00011	.00020	.00003	.00016	.00011	.00596	.00709
%RSD	24.286	20.196	3.9657	12.594	7.8265	19.261	34.737
#1	.00054	.00105	.00082	.00140	.00135	.03776	.02303
#2	.00050	.00119	.00084	.00127	.00157	.02830	.01238
#3	.00033	.00079	.00088	.00108	.00148	.02676	.02580

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00164	.00196	.00309	.09374	.00041	.00222	-.00046
Stddev	.00038	.00079	.00004	.01209	.00013	.00011	.00029
%RSD	23.225	40.222	1.2531	12.896	30.782	4.8080	63.126
#1	.00162	.00249	.00314	.08010	.00046	.00212	-.00025
#2	.00127	.00233	.00308	.09800	.00050	.00233	-.00079
#3	.00203	.00105	.00307	.10312	.00026	.00221	-.00034

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.00091	-.00034	.00573	.00119	.06491	.00017	-.00015
Stddev	.00010	.00006	.00002	.00005	.00081	.00072	.00004
%RSD	10.635	17.225	.29680	4.1503	1.2526	428.70	27.714
#1	.00083	-.00029	.00572	.00116	.06568	.00089	-.00012
#2	.00102	-.00033	.00575	.00125	.06406	-.00056	-.00013
#3	.00090	-.00040	.00572	.00117	.06500	.00018	-.00019

Approved: June 28, 2016

Sample Name: S2 Acquired: 6/27/2016 10:19:03 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S
Avg	.00120	.00738	.04944
Stddev	.00007	.00006	.00070
%RSD	5.6773	.87197	1.4116
#1	.00118	.00744	.05008
#2	.00114	.00738	.04954
#3	.00127	.00732	.04870

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9443.2	56709.	2845.2
Stddev	3.5	174.	6.8
%RSD	.03751	.30616	.23990
#1	9441.6	56633.	2837.4
#2	9447.3	56587.	2849.5
#3	9440.8	56908.	2848.9

Approved: June 28, 2016

Sample Name: S3 Acquired: 6/27/2016 10:23:00 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.02092	.08605	.00965	.01177	2.2814	.05082	.47399	.03171
Stddev	.00009	.00009	.00006	.00007	.0081	.00011	.00141	.00016
%RSD	.44413	.10972	.62223	.59949	.35348	.21174	.29780	.50827
#1	.02097	.08616	.00961	.01185	2.2766	.05071	.47378	.03182
#2	.02098	.08602	.00972	.01174	2.2908	.05092	.47550	.03179
#3	.02081	.08598	.00962	.01172	2.2769	.05085	.47271	.03153

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.07428	.03147	.06632	.09593	2.7929	1.5861	.09155	.14801
Stddev	.00025	.00009	.00009	.00042	.0165	.0024	.00035	.00046
%RSD	.34137	.28140	.13410	.43596	.58971	.15475	.37815	.31281
#1	.07440	.03141	.06640	.09607	2.7817	1.5848	.09185	.14757
#2	.07444	.03143	.06635	.09545	2.8118	1.5890	.09164	.14849
#3	.07398	.03157	.06622	.09625	2.7852	1.5847	.09117	.14798

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.18692	9.1586	.06869	.13735	.03188	.03618	.00633	.19982
Stddev	.00095	.0246	.00038	.00018	.00005	.00008	.00006	.00030
%RSD	.50865	.26851	.55910	.13312	.14375	.21004	.95433	.15185
#1	.18754	9.1579	.06868	.13721	.03187	.03616	.00627	.19957
#2	.18740	9.1836	.06909	.13756	.03193	.03626	.00639	.20015
#3	.18583	9.1344	.06832	.13729	.03184	.03611	.00632	.19973

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.07280	3.7149	.09996	.01331	.07292	.43380	3.7667
Stddev	.00018	.0060	.00049	.00007	.00019	.00078	.0189
%RSD	.24836	.16167	.49462	.49011	.25771	.17890	.50287
#1	.07265	3.7109	.09960	.01337	.07280	.43456	3.7451
#2	.07300	3.7218	.09976	.01324	.07314	.43381	3.7806
#3	.07274	3.7121	.10052	.01332	.07283	.43301	3.7744

Approved: June 28, 2016

Sample Name: S3 Acquired: 6/27/2016 10:23:00 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9721.9**	**58099.**	**2930.8**
Stddev	18.9	74.	10.9
%RSD	.19470	.12678	.37352
#1	9743.1	58020.	2942.5
#2	9706.5	58111.	2920.7
#3	9716.1	58166.	2929.2

Approved: June 28, 2016

Sample Name: S4 Acquired: 6/27/2016 10:26:37 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.03974	.16089	.01833	.02213	4.2645	.09586	.89929	.06038
Stddev	.00005	.00019	.00006	.00006	.0077	.00012	.00503	.00018
%RSD	.11654	.11956	.34341	.25502	.18096	.12203	.55878	.29985
#1	.03968	.16079	.01837	.02214	4.2575	.09600	.89526	.06018
#2	.03976	.16111	.01826	.02207	4.2633	.09579	.89769	.06053
#3	.03977	.16076	.01837	.02218	4.2728	.09580	.90492	.06045

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.14063	.05916	.12449	.18125	5.3047	3.0377	.17177	.27547
Stddev	.00052	.00006	.00037	.00104	.0273	.0084	.00079	.00147
%RSD	.37329	.09570	.29429	.57556	.51409	.27796	.45809	.53422
#1	.14021	.05914	.12420	.18098	5.2909	3.0280	.17115	.27390
#2	.14121	.05922	.12491	.18037	5.2872	3.0420	.17150	.27568
#3	.14045	.05912	.12437	.18241	5.3361	3.0431	.17265	.27682

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.35921	17.472	.12976	.25968	.06042	.06915	.01227	.38616
Stddev	.00077	.044	.00041	.00013	.00014	.00023	.00002	.00037
%RSD	.21360	.25231	.31950	.04942	.23319	.32893	.13923	.09489
#1	.35987	17.454	.12931	.25960	.06034	.06889	.01229	.38588
#2	.35938	17.440	.13013	.25983	.06033	.06932	.01226	.38658
#3	.35837	17.522	.12985	.25962	.06058	.06923	.01226	.38603

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S	Cts/S
Avg	.13808	7.0066	.19048	.02529	.13828	.80821	7.0194
Stddev	.00024	.0219	.00266	.00011	.00020	.00129	.0190
%RSD	.17717	.31279	1.3974	.43280	.14820	.16017	.27028
#1	.13814	6.9980	.18870	.02521	.13848	.80908	7.0103
#2	.13829	6.9903	.18921	.02525	.13830	.80882	7.0066
#3	.13781	7.0315	.19354	.02541	.13807	.80672	7.0412

Approved: June 28, 2016

Sample Name: S4 Acquired: 6/27/2016 10:26:37 Type: Cal
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: IR Corr. Factor: 1.000000
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9771.3**	**58546.**	**2991.1**
Stddev	5.3	169.	6.3
%RSD	.05411	.28803	.21196
#1	9765.6	58357.	2985.0
#2	9776.0	58602.	2997.6
#3	9772.3	58680.	2990.8

Approved: June 28, 2016

Sample Name: ICV Acquired: 6/27/2016 10:30:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39656	9.9968	.39605	.49913	.99354	.04949	9.8900	.04960
Stddev	.00038	.0168	.00361	.00130	.00797	.00012	.1192	.00034
%RSD	.09463	.16774	.91201	.26037	.80254	.24834	1.2050	.67893
#1	.39683	10.016	.39921	.49920	.99329	.04957	9.8437	.04996
#2	.39672	9.9871	.39211	.49780	1.0016	.04955	10.025	.04956
#3	.39613	9.9872	.39682	.50040	.98569	.04935	9.8010	.04929
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19960	.49616	.50076	3.9491	49.503	.98788	10.028	.49846
Stddev	.00072	.00107	.00153	.0174	.377	.01095	.058	.00163
%RSD	.36296	.21613	.30576	.43969	.76139	1.1083	.57412	.32766
#1	.20035	.49503	.50215	3.9291	49.521	.98444	9.9746	.49786
#2	.19954	.49627	.49912	3.9607	49.871	1.0001	10.089	.50030
#3	.19890	.49717	.50101	3.9574	49.117	.97907	10.020	.49721
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.98929	49.553	.50008	9.9383	.49711	1.1842	.40491	4.9048
Stddev	.00695	.361	.00310	.0420	.00341	.0012	.00380	.0152
%RSD	.70230	.72857	.61963	.42238	.68619	.10088	.93725	.30954
#1	.99664	49.590	.50317	9.9837	.49981	1.1844	.40809	4.9217
#2	.98842	49.894	.50009	9.9303	.49824	1.1853	.40593	4.9005
#3	.98282	49.175	.49697	9.9009	.49328	1.1829	.40071	4.8922
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 28, 2016

Sample Name: ICV Acquired: 6/27/2016 10:30:13 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.99382**	**.99081**	**.99014**	**.50327**	**.99007**	**1.0044**	**.99998**
Stddev	.00477	.00901	.00242	.00334	.00183	.0042	.00712
%RSD	.47986	.90979	.24468	.66313	.18511	.41413	.71179
#1	.99906	.99161	.99266	.50658	.98958	1.0088	1.0007
#2	.99266	.99939	.98992	.50331	.99209	1.0036	1.0067
#3	.98974	.98142	.98783	.49991	.98852	1.0006	.99254
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9944.5**	**59548.**	**3007.2**
Stddev	7.0	104.	19.1
%RSD	.07028	.17468	.63490
#1	9939.5	59668.	3013.8
#2	9941.5	59493.	2985.7
#3	9952.5	59483.	3022.1

Approved: June 28, 2016

Sample Name: ICB Acquired: 6/27/2016 10:33:39 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00174	.00806	-.00035	.00524	.00096	.00003	.04488
Stddev	.00255	.00339	.00155	.00316	.00054	.00006	.03416
%RSD	146.61	42.061	438.03	60.356	56.377	169.93	76.128
#1	.00413	.01096	-.00078	.00453	.00153	.00002	.04662
#2	-.00095	.00889	-.00165	.00869	.00045	-.00001	.07814
#3	.00204	.00433	.00137	.00249	.00091	.00010	.00988
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00026	.00021	.00264	.00138	-.01027	.11431	-.00187
Stddev	.00023	.00025	.00090	.00135	.02697	.10019	.00400
%RSD	90.076	117.41	34.187	98.005	262.67	87.648	214.31
#1	.00019	.00011	.00242	.00087	.02024	.22955	-.00367
#2	.00007	.00003	.00363	.00292	-.02010	.06552	-.00465
#3	.00052	.00050	.00186	.00036	-.03093	.04786	.00272
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.07897	.00101	.00510	.11885	-.00064	F .01147	-.00335
Stddev	.04472	.00084	.00024	.04616	.00013	.00517	.00352
%RSD	56.634	82.917	4.6972	38.837	20.205	45.049	105.12
#1	-.03785	.00103	.00483	.16190	-.00071	.01200	-.00401
#2	-.12658	.00016	.00517	.12455	-.00049	.01635	.00046
#3	-.07246	.00185	.00530	.07011	-.00073	.00606	-.00650
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						.01000	
Low Limit						-.01000	

Approved: June 28, 2016

Sample Name: ICB Acquired: 6/27/2016 10:33:39 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00383	-.00421	.01837	.00133	.00214	-.00619	.00159
Stddev	.00530	.00215	.00326	.00121	.00026	.00445	.00067
%RSD	138.24	51.159	17.738	90.647	12.024	71.914	42.141
#1	.00877	-.00203	.02032	.00237	.00238	-.00553	.00121
#2	-.00176	-.00633	.02019	.00162	.00218	-.01094	.00119
#3	.00449	-.00427	.01461	.00001	.00187	-.00211	.00236
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00117	.00107	.00150
Stddev	.00040	.00023	.00032
%RSD	33.968	21.646	21.450
#1	.00144	.00132	.00117
#2	.00136	.00103	.00151
#3	.00071	.00086	.00182
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9485.8	56960.	2827.2
Stddev	22.7	62.	13.4
%RSD	.23928	.10801	.47261
#1	9462.0	57031.	2842.2
#2	9488.3	56934.	2822.9
#3	9507.2	56917.	2816.6

Approved: June 28, 2016

Sample Name: LLICV Acquired: 6/27/2016 10:37:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00811	.16107	.00546	.08342	.00820	.00171	.41320	.00104
Stddev	.00154	.00831	.00174	.00283	.00174	.00005	.05309	.00032
%RSD	18.985	5.1608	31.869	3.3900	21.229	3.2040	12.848	30.976
#1	.00877	.17043	.00450	.08566	.00976	.00165	.44800	.00137
#2	.00635	.15823	.00748	.08024	.00632	.00173	.35210	.00072
#3	.00921	.15456	.00442	.08437	.00853	.00175	.43951	.00104
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00385	.00622	.00454	.06184	.83144	.08347	.36989	.00868
Stddev	.00035	.00111	.00053	.00835	.03960	.00277	.07407	.00380
%RSD	9.1544	17.869	11.677	13.497	4.7632	3.3221	20.024	43.760
#1	.00354	.00567	.00393	.06716	.81243	.08203	.29122	.00933
#2	.00376	.00549	.00491	.06614	.87696	.08170	.38018	.00459
#3	.00423	.00750	.00478	.05222	.80492	.08666	.43828	.01210
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00933	.45563	.01629	.80974	.00826	.08707	.01555	.84594
Stddev	.00021	.01951	.00128	.00898	.00183	.00241	.00253	.00721
%RSD	2.2323	4.2816	7.8796	1.1092	22.131	2.7708	16.251	.85208
#1	.00915	.46087	.01543	.81937	.00648	.08622	.01843	.85233
#2	.00956	.43404	.01777	.80827	.01013	.08979	.01372	.84735
#3	.00929	.47199	.01568	.80159	.00817	.08519	.01449	.83813
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: LLICV Acquired: 6/27/2016 10:37:37 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41453**	**.04310**	**.02153**	**.15768**	**.00889**	**.01738**	**.04625**
Stddev	.00755	.00023	.00874	.00411	.00040	.00018	.00135
%RSD	1.8207	.53307	40.597	2.6083	4.5428	1.0465	2.9262
#1	.41925	.04320	.01815	.15896	.00867	.01736	.04544
#2	.41852	.04284	.03146	.16100	.00865	.01758	.04550
#3	.40583	.04326	.01499	.15308	.00936	.01721	.04781
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9608.8**	**58008.**	**2882.7**
Stddev	13.9	202.	11.3
%RSD	.14503	.34866	.39311
#1	9595.5	57793.	2870.0
#2	9607.5	58037.	2891.6
#3	9623.3	58195.	2886.6

Approved: June 28, 2016

Sample Name: ICSA Acquired: 6/27/2016 10:41:31 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00348**	**274.46**	**-.00360**	**-.01905**	**-.00118**	**-.00005**	**255.24**	**-.00047**
Stddev	.00080	.12	.00424	.00363	.00140	.00007	.64	.00022
%RSD	22.958	.04489	117.79	19.069	118.85	159.46	.24922	45.496
#1	-.00266	274.32	-.00283	-.01618	-.00225	-.00002	254.54	-.00071
#2	-.00425	274.55	-.00817	-.01785	-.00168	-.00013	255.78	-.00029
#3	-.00353	274.52	.00020	-.02314	.00040	.00001	255.40	-.00042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00138**	**.00013**	**.00026**	**100.86**	**-.09019**	**.00712**	**258.19**	**-.00082**
Stddev	.00020	.00043	.00219	.24	.06234	.00564	.51	.00449
%RSD	14.369	328.27	851.02	.23590	69.125	79.115	.19632	546.94
#1	-.00121	.00037	.00206	100.59	-.14551	.00643	257.65	-.00388
#2	-.00133	-.00036	.00088	100.95	-.02263	.00187	258.26	-.00293
#3	-.00159	.00038	-.00218	101.04	-.10243	.01307	258.66	.00434
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00009**	**.08336**	**-.00068**	**.02055**	**.00062**	**-.00085**	**-.00510**	**-.01322**
Stddev	.00049	.00057	.00126	.01032	.00616	.00460	.00665	.00103
%RSD	550.79	.68258	185.29	50.215	988.12	543.87	130.28	7.7725
#1	-.00016	.08380	-.00213	.03143	-.00603	.00410	-.01192	-.01441
#2	.00065	.08356	.00000	.01933	.00179	-.00500	.00136	-.01264
#3	-.00023	.08271	.00009	.01090	.00611	-.00163	-.00475	-.01262
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: ICSA Acquired: 6/27/2016 10:41:31 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	.00072	.00255	-.00142	-.00297	-.00684	-.00350
Stddev	.00092	.00022	.00227	.00469	.00113	.00030	.00043
%RSD	104.29	30.744	88.699	331.16	38.033	4.3723	12.250
#1	.00194	.00091	.00433	-.00152	-.00422	-.00699	-.00322
#2	.00027	.00078	.00000	-.00606	-.00263	-.00650	-.00330
#3	.00043	.00048	.00332	.00333	-.00204	-.00704	-.00400
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9003.1	53741.	2830.1
Stddev	29.5	88.	13.2
%RSD	.32793	.16418	.46682
#1	8969.0	53843.	2836.5
#2	9019.7	53686.	2838.9
#3	9020.6	53695.	2814.9

Approved: June 28, 2016

Sample Name: ICSAB Acquired: 6/27/2016 10:45:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.49885	256.39	.25252	-.01918	.24309	.23676	239.36	.48503
Stddev	.00077	.65	.00502	.00271	.00045	.00050	.30	.00068
%RSD	.15367	.25216	1.9898	14.136	.18678	.21093	.12664	.14053
#1	.49899	255.73	.25330	-.01721	.24333	.23629	239.67	.48508
#2	.49802	256.43	.25711	-.01805	.24256	.23671	239.35	.48569
#3	.49953	257.02	.24715	-.02227	.24337	.23729	239.06	.48433
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.23429	.24086	.24530	93.507	5.1189	.00241	239.40	.23738
Stddev	.00111	.00266	.00136	.226	.0691	.00187	.35	.00351
%RSD	.47486	1.1032	.55335	.24199	1.3498	77.806	.14736	1.4794
#1	.23518	.23891	.24433	93.596	5.0482	.00227	239.45	.24113
#2	.23465	.24388	.24472	93.675	5.1223	.00060	239.72	.23418
#3	.23304	.23978	.24685	93.249	5.1863	.00434	239.02	.23682
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00053	5.1902	.46938	.09211	.47966	.49223	.24503	-.02683
Stddev	.00007	.0094	.00026	.00814	.00226	.00746	.00251	.00281
%RSD	13.615	.18091	.05557	8.8363	.47050	1.5148	1.0231	10.477
#1	-.00046	5.1797	.46968	.08370	.48227	.49724	.24688	-.02680
#2	-.00060	5.1978	.46920	.09995	.47849	.49580	.24602	-.02404
#3	-.00052	5.1931	.46926	.09267	.47824	.48366	.24217	-.02966
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: ICSAB Acquired: 6/27/2016 10:45:22 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	.00073	-.00122	.45265	.24279	.46530	-.00351
Stddev	.00042	.00033	.00788	.00412	.00036	.00116	.00030
%RSD	67.531	45.343	645.29	.90940	.14968	.24968	8.4247
#1	.00101	.00064	-.00686	.45617	.24254	.46493	-.00322
#2	.00071	.00109	.00778	.44813	.24320	.46660	-.00349
#3	.00017	.00045	-.00458	.45366	.24261	.46437	-.00381
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9451.1	56687.	2980.7
Stddev	12.7	235.	6.1
%RSD	.13402	.41481	.20363
#1	9456.2	56956.	2985.6
#2	9436.6	56517.	2982.5
#3	9460.3	56590.	2973.9

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 10:49:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41238**	**10.669**	**.41191**	**.52005**	**1.0384**	**.05158**	**10.784**	**.05227**
Stddev	.00183	.046	.00331	.00113	.0055	.00021	.067	.00041
%RSD	.44263	.42702	.80236	.21781	.53089	.39861	.62379	.77509
#1	.41421	10.697	.41543	.52118	1.0324	.05173	10.736	.05274
#2	.41056	10.694	.40887	.52006	1.0433	.05167	10.860	.05201
#3	.41238	10.617	.41143	.51892	1.0395	.05134	10.754	.05206
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20803**	**.51861**	**.51945**	**4.3037**	**51.532**	**1.0319**	**10.785**	**.52164**
Stddev	.00094	.00265	.00200	.0480	.292	.0030	.169	.00151
%RSD	.45047	.51067	.38573	1.1144	.56743	.29472	1.5692	.28971
#1	.20905	.51951	.52105	4.2715	51.286	1.0285	10.755	.52005
#2	.20720	.52068	.51721	4.3588	51.855	1.0344	10.967	.52182
#3	.20783	.51562	.52010	4.2807	51.456	1.0328	10.633	.52306
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0260**	**51.605**	**.52017**	**10.355**	**.51948**	**1.2287**	**.42141**	**5.0896**
Stddev	.0062	.392	.00213	.026	.00211	.0063	.00578	.0141
%RSD	.60581	.75948	.40961	.24947	.40593	.51662	1.3721	.27654
#1	1.0327	51.153	.52203	10.384	.52081	1.2352	.42600	5.1052
#2	1.0247	51.808	.51785	10.341	.52057	1.2225	.42332	5.0779
#3	1.0205	51.853	.52065	10.339	.51705	1.2285	.41492	5.0858
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 10:49:04 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0329**	**1.0366**	**1.0326**	**.52078**	**1.0290**	**1.0446**	**1.0377**
Stddev	.0036	.0061	.0096	.00149	.0042	.0040	.0092
%RSD	.34765	.58644	.92987	.28568	.40577	.38739	.89149
#1	1.0370	1.0299	1.0217	.52198	1.0329	1.0493	1.0281
#2	1.0312	1.0418	1.0361	.52124	1.0295	1.0419	1.0386
#3	1.0304	1.0380	1.0399	.51911	1.0246	1.0427	1.0465
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9679.9**	**58019.**	**2940.7**
Stddev	31.4	99.	31.3
%RSD	.32391	.17011	1.0639
#1	9650.4	58117.	2973.3
#2	9676.5	57919.	2937.9
#3	9712.8	58020.	2910.9

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 10:52:41 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00082	.03709	-.00042	.00235	.00221	.00011	.02800	.00010
Stddev	.00285	.00947	.00333	.00050	.00064	.00007	.06022	.00006
%RSD	347.74	25.544	801.20	21.057	29.249	66.828	215.11	60.876
#1	.00282	.04765	-.00314	.00195	.00194	.00016	.00724	.00009
#2	.00208	.02934	.00330	.00220	.00174	.00014	.09585	.00005
#3	-.00244	.03428	-.00140	.00291	.00294	.00003	-.01910	.00017
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00002	.00256	-.00018	.01123	.17852	-.00287	.01155	.00102
Stddev	.00023	.00130	.00111	.02322	.06304	.00388	.06528	.00239
%RSD	1385.9	50.913	614.81	206.72	35.311	135.30	565.34	235.33
#1	-.00006	.00365	-.00083	-.00086	.24920	-.00008	.05161	.00372
#2	.00023	.00291	.00111	.03801	.15825	-.00730	.04682	.00017
#3	-.00022	.00112	-.00082	-.00345	.12812	-.00122	-.06378	-.00084
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00391	.11054	-.00006	.00936	-.00106	.00780	-.00430	.01094
Stddev	.00026	.02224	.00106	.00259	.00450	.00116	.00727	.00205
%RSD	6.5484	20.121	1773.4	27.704	423.55	14.865	169.26	18.686
#1	.00386	.10773	-.00045	.01132	-.00217	.00693	-.00997	.01182
#2	.00368	.13405	.00114	.01035	.00389	.00735	.00390	.00861
#3	.00419	.08984	-.00087	.00642	-.00490	.00911	-.00683	.01240
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 10:52:41 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00074**	**.00171**	**-.00592**	**.00236**	**.00119**	**.00045**	**.00147**
Stddev	.00073	.00018	.00639	.00105	.00056	.00012	.00032
%RSD	97.462	10.324	107.89	44.349	47.225	27.229	21.897
#1	.00158	.00178	-.00302	.00218	.00104	.00058	.00181
#2	.00028	.00184	-.01324	.00141	.00182	.00042	.00143
#3	.00037	.00151	-.00150	.00348	.00072	.00034	.00117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9210.0**	**55620.**	**2799.3**
Stddev	17.9	95.	5.4
%RSD	.19389	.17128	.19191
#1	9214.9	55547.	2802.8
#2	9190.2	55728.	2793.2
#3	9224.9	55585.	2802.1

Approved: June 28, 2016

Sample Name: PBW AD Acquired: 6/27/2016 10:56:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573656-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00014	-.00551	-.00164	.00133	-.00255	.00001	-.02140	.00006
Stddev	.00131	.00261	.00242	.00099	.00017	.00008	.01807	.00008
%RSD	918.94	47.461	147.34	73.999	6.7565	679.86	84.478	126.18
#1	.00002	-.00708	-.00377	.00068	-.00272	-.00003	-.02206	-.00001
#2	-.00152	-.00249	.00099	.00085	-.00237	.00011	-.00300	.00014
#3	.00108	-.00696	-.00214	.00247	-.00257	-.00004	-.03913	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00013	.00044	-.00011	-.01481	.08157	-.00450	-.05709	-.00127
Stddev	.00038	.00059	.00174	.01969	.08524	.00309	.05809	.00048
%RSD	282.02	134.36	1518.6	132.89	104.49	68.616	101.75	38.034
#1	-.00023	.00035	.00020	.00330	.03640	-.00806	-.03041	-.00111
#2	.00028	-.00010	.00145	-.03577	.17989	-.00289	-.01713	-.00088
#3	-.00045	.00107	-.00199	-.01198	.02843	-.00255	-.12373	-.00181
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00120	.12315	-.00007	.00271	.00049	-.00196	-.00731	-.02994
Stddev	.00005	.02063	.00058	.00658	.00069	.00072	.00330	.00107
%RSD	4.3907	16.754	814.35	242.50	141.11	36.905	45.123	3.5596
#1	.00125	.13009	.00059	.01030	.00122	-.00130	-.00403	-.02923
#2	.00120	.13943	-.00033	-.00131	.00041	-.00184	-.01063	-.02942
#3	.00114	.09994	-.00048	-.00086	-.00016	-.00274	-.00728	-.03117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Approved: June 28, 2016

Sample Name: PBW AD Acquired: 6/27/2016 10:56:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573656-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.00122	.00010	.00267	.00012	.00086	.00027
Stddev	.00021	.00039	.00337	.00318	.00091	.00006	.00046
%RSD	418.85	32.122	3386.6	119.01	765.24	7.0777	171.03
#1	.00014	.00104	-.00194	.00621	.00001	.00079	.00037
#2	-.00019	.00095	.00399	.00178	.00108	.00091	.00068
#3	.00020	.00167	-.00175	.00003	-.00073	.00089	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10078.	61154.	3066.5
Stddev	38.	65.	16.3
%RSD	.37265	.10633	.53272
#1	10035.	61205.	3085.2
#2	10105.	61081.	3054.8
#3	10094.	61176.	3059.6

Approved: June 28, 2016

Sample Name: PBW AD Acquired: 6/27/2016 10:56:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573656-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**-.00551**	**-.00164**	**.00133**	**-.00255**	**.00001**	**-.02140**	**.00006**
Stddev	.00131	.00261	.00242	.00099	.00017	.00008	.01807	.00008
%RSD	907.10	47.461	147.33	74.064	6.7565	679.87	84.478	126.16
#1	.00002	-.00708	-.00377	.00068	-.00272	-.00003	-.02206	-.00001
#2	-.00153	-.00249	.00099	.00085	-.00237	.00011	-.00300	.00014
#3	.00108	-.00696	-.00214	.00247	-.00257	-.00004	-.03913	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00013**	**.00044**	**-.00011**	**-.01686**	**.08157**	**-.00450**	**-.05709**	**-.00127**
Stddev	.00038	.00059	.00176	.02442	.08524	.00309	.05809	.00048
%RSD	282.05	134.26	1612.9	144.86	104.49	68.616	101.75	38.034
#1	-.00023	.00035	.00021	-.00014	.03640	-.00806	-.03041	-.00111
#2	.00028	-.00010	.00147	-.04488	.17989	-.00289	-.01713	-.00088
#3	-.00045	.00107	-.00200	-.00555	.02843	-.00255	-.12373	-.00181
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00120**	**.12315**	**-.00007**	**.00272**	**.00049**	**-.00196**	**-.00731**	**-.02994**
Stddev	.00005	.02063	.00058	.00658	.00069	.00072	.00330	.00107
%RSD	4.3907	16.754	815.45	242.20	141.11	36.924	45.121	3.5596
#1	.00125	.13009	.00059	.01031	.00122	-.00130	-.00403	-.02923
#2	.00120	.13943	-.00033	-.00129	.00041	-.00184	-.01062	-.02942
#3	.00114	.09994	-.00048	-.00087	-.00016	-.00274	-.00727	-.03117
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: PBW AD Acquired: 6/27/2016 10:56:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v976) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573656-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00005	.00122	.00009	.00267	.00012	.00086	.00027
Stddev	.00021	.00039	.00336	.00318	.00091	.00006	.00046
%RSD	419.00	32.122	3582.0	119.01	765.15	7.0777	170.99
#1	.00014	.00104	-.00194	.00621	.00001	.00079	.00037
#2	-.00019	.00095	.00397	.00178	.00108	.00091	.00068
#3	.00020	.00167	-.00175	.00003	-.00073	.00089	-.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10078.	61154.	3066.5
Stddev	38.	65.	16.3
%RSD	.37265	.10633	.53272
#1	10035.	61205.	3085.2
#2	10105.	61081.	3054.8
#3	10094.	61176.	3059.6

Approved: June 28, 2016

Sample Name: LCSW AD Acquired: 6/27/2016 11:04:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573656-03

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18930**	**4.7185**	**.19003**	**.93469**	**.47985**	**.02336**	**4.8179**	**.02393**
Stddev	.00264	.0066	.00083	.00065	.00055	.00013	.0255	.00027
%RSD	1.3934	.14053	.43752	.06932	.11364	.56886	.52848	1.1239
#1	.18653	4.7163	.19007	.93542	.48039	.02321	4.8423	.02405
#2	.19179	4.7132	.19083	.93448	.47985	.02342	4.7915	.02363
#3	.18958	4.7259	.18917	.93418	.47930	.02346	4.8198	.02412
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09659**	**.23846**	**.24088**	**1.9086**	**23.854**	**.48243**	**4.8127**	**.24088**
Stddev	.00021	.00006	.00176	.0299	.024	.00111	.0520	.00346
%RSD	.21848	.02654	.72986	1.5671	.09958	.22942	1.0798	1.4373
#1	.09683	.23854	.24210	1.8741	23.834	.48253	4.8448	.24488
#2	.09652	.23842	.24168	1.9261	23.880	.48128	4.7527	.23902
#3	.09642	.23843	.23887	1.9256	23.848	.48349	4.8404	.23875
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48317**	**24.148**	**.24158**	**4.6577**	**.24353**	**.56968**	**.18766**	**2.2805**
Stddev	.00185	.055	.00273	.0177	.00404	.00132	.00193	.0062
%RSD	.38336	.22645	1.1294	.38107	1.6575	.23248	1.0271	.27261
#1	.48319	24.206	.24282	4.6549	.24677	.56938	.18565	2.2798
#2	.48502	24.139	.24347	4.6766	.24481	.56853	.18785	2.2870
#3	.48131	24.098	.23845	4.6414	.23901	.57113	.18949	2.2746
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: LCSW AD Acquired: 6/27/2016 11:04:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573656-03

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.47831	.48449	.47945	.24451	.47571	.47996	.00474
Stddev	.00220	.00031	.00246	.00024	.00157	.00168	.00104
%RSD	.46005	.06434	.51251	.09744	.33103	.35074	21.927
#1	.47940	.48464	.47744	.24424	.47543	.48089	.00375
#2	.47976	.48413	.48219	.24467	.47429	.48098	.00463
#3	.47578	.48470	.47872	.24462	.47740	.47802	.00582
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10036.	60667.	3061.3
Stddev	16.	132.	7.4
%RSD	.15906	.21753	.24216
#1	10038.	60818.	3054.0
#2	10019.	60573.	3061.1
#3	10050.	60609.	3068.8

Approved: June 28, 2016

Sample Name: L1606099601 Acquired: 6/27/2016 11:08:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573656-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00124	.00326	-.00134	.00556	.00464	-.00007	56.162	.00040
Stddev	.00178	.00987	.00131	.00195	.00069	.00003	.529	.00030
%RSD	144.06	302.41	98.032	35.136	14.856	45.396	.94107	74.669
#1	.00220	.00071	.00016	.00782	.00529	-.00003	55.776	.00007
#2	.00234	.01416	-.00191	.00447	.00392	-.00009	55.945	.00048
#3	-.00082	-.00508	-.00226	.00439	.00472	-.00008	56.764	.00066
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00030	.00191	.00098	.00705	.36876	-.00116	22.804	.00093
Stddev	.00019	.00044	.00158	.01150	.11856	.00128	.343	.00214
%RSD	64.737	23.037	160.94	163.08	32.150	110.47	1.5021	228.81
#1	-.00024	.00235	.00067	.01641	.45961	-.00058	22.504	.00325
#2	-.00052	.00191	.00270	-.00578	.41204	-.00262	23.177	-.00096
#3	-.00015	.00147	-.00042	.01053	.23465	-.00027	22.730	.00051
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00111	4.1289	.00028	.00948	.00046	.00145	.00097	2.9475
Stddev	.00031	.0524	.00074	.00210	.00339	.00155	.00585	.0217
%RSD	27.978	1.2680	265.78	22.177	735.63	107.03	604.94	.73695
#1	.00110	4.0702	-.00001	.00869	.00432	.00119	-.00275	2.9626
#2	.00081	4.1708	.00111	.00789	-.00092	.00310	.00771	2.9573
#3	.00143	4.1456	-.00027	.01186	-.00202	.00004	-.00206	2.9226
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606099601 Acquired: 6/27/2016 11:08:02 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573656-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00048	.08076	-.01280	.00056	.00130	.00146	-.00019
Stddev	.00029	.00049	.00307	.00274	.00086	.00015	.00072
%RSD	60.177	.60538	24.011	488.83	65.984	10.053	371.62
#1	.00039	.08032	-.01635	-.00058	.00183	.00138	-.00101
#2	.00024	.08128	-.01096	.00369	.00175	.00163	.00038
#3	.00080	.08066	-.01109	-.00142	.00031	.00137	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10059.	60827.	3058.7
Stddev	29.	228.	2.0
%RSD	.29168	.37466	.06551
#1	10025.	60569.	3056.7
#2	10081.	61002.	3058.5
#3	10070.	60909.	3060.7

Approved: June 28, 2016

Sample Name: L1606099602S Acquired: 6/27/2016 11:11:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573656-04

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.18813**	**4.7350**	**.18948**	**.94279**	**.48703**	**.02341**	**61.170**	**.02398**
Stddev	.00277	.0076	.00172	.00254	.00188	.00011	.164	.00007
%RSD	1.4748	.16161	.90580	.26991	.38499	.47028	.26817	.30979
#1	.18980	4.7388	.19100	.94494	.48912	.02350	61.264	.02400
#2	.18493	4.7400	.18981	.93998	.48647	.02346	61.266	.02403
#3	.18966	4.7262	.18762	.94345	.48550	.02329	60.981	.02389
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.09458**	**.23494**	**.23535**	**1.9256**	**24.153**	**.48381**	**27.282**	**.23869**
Stddev	.00063	.00040	.00037	.0171	.111	.00423	.196	.00329
%RSD	.66218	.16824	.15837	.88843	.45831	.87512	.71904	1.3801
#1	.09454	.23528	.23512	1.9446	24.042	.48848	27.445	.23993
#2	.09522	.23450	.23515	1.9207	24.263	.48274	27.064	.24118
#3	.09397	.23504	.23578	1.9114	24.153	.48021	27.336	.23495
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.48631**	**28.289**	**.23480**	**4.7714**	**.23561**	**.57505**	**.18257**	**5.2951**
Stddev	.00099	.078	.00097	.0059	.00124	.00076	.00243	.0024
%RSD	.20421	.27704	.41396	.12448	.52582	.13199	1.3292	.04484
#1	.48717	28.373	.23464	4.7777	.23525	.57420	.18377	5.2952
#2	.48654	28.219	.23585	4.7707	.23699	.57531	.17978	5.2974
#3	.48523	28.274	.23393	4.7659	.23459	.57565	.18417	5.2926
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606099602S Acquired: 6/27/2016 11:11:57 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573656-04

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47604**	**.56589**	**.46385**	**.24049**	**.47449**	**.47286**	**.00122**
Stddev	.00004	.00229	.00771	.00260	.00102	.00053	.00044
%RSD	.00866	.40463	1.6627	1.0819	.21533	.11153	35.825
#1	.47602	.56845	.46505	.24323	.47561	.47256	.00081
#2	.47609	.56517	.45561	.23806	.47362	.47346	.00118
#3	.47602	.56404	.47090	.24019	.47423	.47254	.00168
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9956.7**	**60350.**	**3056.9**
Stddev	32.2	88.	8.3
%RSD	.32388	.14559	.27133
#1	9988.9	60290.	3047.9
#2	9924.4	60310.	3058.6
#3	9956.7	60451.	3064.2

Approved: June 28, 2016

Sample Name: L1606099603SD Acquired: 6/27/2016 11:15:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573656-06

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.19028	4.7868	.19269	.94867	.48722	.02346	60.919	.02406
Stddev	.00212	.0181	.00136	.00219	.00189	.00006	.253	.00014
%RSD	1.1126	.37744	.70818	.23039	.38720	.26793	.41487	.57233
#1	.19148	4.7722	.19359	.94673	.48507	.02353	60.675	.02401
#2	.18784	4.8070	.19112	.95104	.48802	.02344	60.902	.02395
#3	.19154	4.7811	.19336	.94824	.48858	.02341	61.180	.02421
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09518	.23692	.23715	1.9314	24.167	.48716	27.262	.23905
Stddev	.00047	.00079	.00143	.0184	.183	.00439	.044	.00192
%RSD	.49502	.33520	.60154	.95364	.75718	.90103	.16297	.80434
#1	.09469	.23782	.23571	1.9395	23.964	.48436	27.211	.23873
#2	.09522	.23634	.23856	1.9445	24.216	.48492	27.285	.23730
#3	.09563	.23660	.23717	1.9104	24.319	.49222	27.291	.24111
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.48886	28.229	.23606	4.7975	.24121	.57136	.18866	5.3330
Stddev	.00146	.184	.00176	.0017	.00169	.00269	.01260	.0141
%RSD	.29961	.65348	.74735	.03493	.70048	.47096	6.6800	.26466
#1	.49043	28.016	.23710	4.7973	.24241	.57255	.18833	5.3193
#2	.48863	28.338	.23706	4.7959	.24195	.57324	.20142	5.3475
#3	.48753	28.333	.23402	4.7993	.23928	.56827	.17622	5.3323
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606099603SD Acquired: 6/27/2016 11:15:35 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG573656-06

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47890**	**.56537**	**.47324**	**.24435**	**.47813**	**.47683**	**.00060**
Stddev	.00286	.00273	.01175	.00100	.00128	.00077	.00020
%RSD	.59645	.48334	2.4839	.40879	.26843	.16191	32.886
#1	.48155	.56309	.46094	.24471	.47955	.47751	.00072
#2	.47926	.56463	.47442	.24512	.47781	.47699	.00071
#3	.47587	.56840	.48436	.24322	.47704	.47599	.00037
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9937.3**	**60391.**	**3077.2**
Stddev	14.8	124.	21.3
%RSD	.14891	.20584	.69260
#1	9920.4	60281.	3101.8
#2	9943.6	60366.	3065.2
#3	9947.9	60526.	3064.6

Approved: June 28, 2016

Sample Name: L1606117901 Acquired: 6/27/2016 11:19:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00072	.02080	-.00015	.00912	-.00135	-.00001	.18554	.00009
Stddev	.00163	.01061	.00134	.00085	.00073	.00009	.03244	.00025
%RSD	227.50	50.989	907.80	9.2958	53.948	957.01	17.482	271.74
#1	.00097	.03252	.00133	.00831	-.00071	.00008	.19286	-.00017
#2	.00220	.01803	-.00129	.01000	-.00120	-.00010	.15007	.00033
#3	-.00102	.01186	-.00049	.00904	-.00214	-.00001	.21370	.00011
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00031	.00195	.00009	.02926	.07448	-.00083	.07412	.00218
Stddev	.00030	.00118	.00112	.04525	.16774	.00245	.02265	.00214
%RSD	96.395	60.268	1181.8	154.65	225.20	294.22	30.559	98.076
#1	-.00038	.00143	-.00002	-.01797	-.07824	-.00029	.04822	.00395
#2	.00002	.00330	.00126	.03352	.04769	.00130	.09021	.00278
#3	-.00058	.00112	-.00096	.07223	.25401	-.00351	.08393	-.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00089	.15073	.00024	.00759	-.00104	.00154	-.00041	-.01205
Stddev	.00034	.03848	.00074	.00602	.00153	.00314	.00173	.00267
%RSD	38.727	25.532	313.77	79.298	146.52	204.07	419.45	22.167
#1	.00069	.14959	-.00056	.01447	.00072	.00196	.00111	-.00897
#2	.00069	.18977	.00089	.00499	-.00186	.00444	-.00229	-.01372
#3	.00129	.11282	.00038	.00331	-.00200	-.00179	-.00006	-.01346
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606117901 Acquired: 6/27/2016 11:19:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00000	.00123	-.00396	-.00083	.00060	.00107	-.00024
Stddev	.00073	.00029	.00070	.00214	.00012	.00021	.00050
%RSD	69743.	23.931	17.704	257.74	20.309	19.961	205.14
#1	.00084	.00157	-.00320	.00160	.00049	.00130	-.00015
#2	-.00035	.00106	-.00411	-.00168	.00073	.00102	-.00078
#3	-.00049	.00105	-.00458	-.00242	.00059	.00088	.00020
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10211.	62110.	3089.5
Stddev	13.	186.	5.8
%RSD	.12645	.29961	.18789
#1	10203.	62198.	3083.6
#2	10225.	61896.	3095.2
#3	10204.	62236.	3089.7

Approved: June 28, 2016

Sample Name: L1606117901PS Acquired: 6/27/2016 11:23:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574214-01

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.18751	4.6924	.18741	.92180	.47420	.02302	4.9755	.02354
Stddev	.00138	.0184	.00060	.00040	.00158	.00005	.0105	.00025
%RSD	.73597	.39242	.32238	.04391	.33360	.22042	.21030	1.0799
#1	.18888	4.7119	.18682	.92179	.47602	.02303	4.9647	.02334
#2	.18612	4.6753	.18739	.92141	.47324	.02296	4.9856	.02383
#3	.18752	4.6899	.18803	.92222	.47333	.02306	4.9762	.02345
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.09588	.23472	.23888	1.9126	23.415	.47894	4.7182	.23827
Stddev	.00035	.00100	.00116	.0071	.048	.00290	.0903	.00057
%RSD	.36630	.42739	.48450	.37295	.20447	.60570	1.9132	.24122
#1	.09598	.23575	.23947	1.9074	23.375	.48172	4.6611	.23837
#2	.09616	.23375	.23962	1.9096	23.402	.47593	4.6712	.23766
#3	.09549	.23467	.23755	1.9207	23.468	.47917	4.8222	.23879
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.47661	23.842	.23804	4.6066	.23860	.55603	.17930	2.2773
Stddev	.00152	.022	.00175	.0111	.00481	.00366	.00848	.0068
%RSD	.31904	.09402	.73670	.24161	2.0142	.65792	4.7280	.29846
#1	.47744	23.817	.23835	4.6121	.23447	.55198	.16952	2.2796
#2	.47754	23.847	.23962	4.6139	.24387	.55702	.18392	2.2826
#3	.47486	23.861	.23616	4.5938	.23746	.55910	.18447	2.2696
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606117901PS Acquired: 6/27/2016 11:23:12 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment: WG574214-01

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.47165**	**.47956**	**.47085**	**.24029**	**.46670**	**.47457**	**.00055**
Stddev	.00140	.00029	.00956	.00263	.00189	.00170	.00039
%RSD	.29768	.06000	2.0311	1.0939	.40453	.35895	71.804
#1	.47125	.47964	.47754	.23905	.46790	.47446	.00081
#2	.47321	.47924	.47511	.23851	.46452	.47633	.00075
#3	.47048	.47980	.45990	.24331	.46767	.47292	.00010
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10135.**	**61356.**	**3086.5**
Stddev	4.	169.	6.2
%RSD	.04127	.27468	.20041
#1	10138.	61169.	3079.4
#2	10130.	61496.	3090.6
#3	10136.	61402.	3089.5

Approved: June 28, 2016

Sample Name: L1606117901SDL Acquired: 6/27/2016 11:26:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574214-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00182	-.00876	-.00158	.00420	-.00145	-.00006	.01959	.00013
Stddev	.00139	.00831	.00054	.00197	.00159	.00007	.02852	.00015
%RSD	76.113	94.876	34.316	46.949	109.92	115.61	145.60	111.05
#1	.00305	.00028	-.00125	.00647	-.00089	.00000	.04998	.00030
#2	.00209	-.01048	-.00128	.00316	-.00021	-.00005	.01539	.00002
#3	.00032	-.01607	-.00220	.00296	-.00325	-.00013	-.00660	.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00024	.00078	.00077	.02010	.17744	-.00181	-.00514	.00019
Stddev	.00029	.00095	.00050	.00816	.07146	.00342	.03381	.00246
%RSD	124.09	121.80	65.402	40.597	40.275	189.49	657.34	1314.0
#1	-.00049	.00179	.00026	.01194	.25402	.00022	-.02869	.00024
#2	-.00029	-.00010	.00079	.02826	.11253	-.00576	-.02034	-.00230
#3	.00008	.00065	.00126	.02009	.16576	.00012	.03360	.00262
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00092	.10897	.00042	.00853	-.00135	.00022	-.00397	-.02369
Stddev	.00009	.00391	.00083	.00771	.00206	.00158	.00375	.00072
%RSD	9.7431	3.5859	195.85	90.342	152.42	719.67	94.434	3.0224
#1	.00096	.10458	.00127	.00472	.00097	.00168	-.00530	-.02420
#2	.00082	.11027	-.00039	.00348	-.00298	-.00146	.00026	-.02287
#3	.00099	.11207	.00039	.01741	-.00204	.00043	-.00687	-.02400
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606117901SDL Acquired: 6/27/2016 11:26:51 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 5 Custom ID2: Custom ID3:
Comment: WG574214-02

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00095	.00206	.00175	.00023	.00090	-.00011
Stddev	.00081	.00029	.00575	.00174	.00011	.00015	.00028
%RSD	447.31	30.155	279.47	99.665	49.179	16.523	251.35
#1	-.00057	.00062	.00863	.00026	.00024	.00096	-.00037
#2	.00104	.00111	-.00043	.00367	.00012	.00101	-.00014
#3	.00008	.00112	-.00203	.00132	.00035	.00073	.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10479.	63800.	3157.1
Stddev	55.	94.	17.6
%RSD	.52430	.14744	.55775
#1	10534.	63713.	3156.5
#2	10480.	63899.	3175.0
#3	10424.	63787.	3139.8

Approved: June 28, 2016

Sample Name: L1606117901SDL Acquired: 6/27/2016 11:30:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574214-02

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00005**	**-.01463**	**-.00147**	**.00136**	**-.00217**	**-.00007**	**-.02052**
Stddev	.00223	.00395	.00125	.00151	.00072	.00009	.04242
%RSD	4811.9	27.034	84.817	111.15	33.177	132.09	206.74
#1	-.00198	-.01008	-.00234	.00035	-.00228	-.00011	.02000
#2	-.00031	-.01726	-.00004	.00309	-.00284	.00003	-.06461
#3	.00243	-.01654	-.00202	.00064	-.00141	-.00012	-.01694
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00016**	**-.00005**	**.00100**	**-.00041**	F **-.02087**	**.05390**	**-.00380**
Stddev	.00014	.00044	.00061	.00080	.02667	.11692	.00540
%RSD	89.389	864.20	61.266	196.75	127.82	216.92	141.87
#1	.00015	-.00056	.00069	-.00020	-.05130	-.07225	-.00999
#2	.00002	.00022	.00171	.00027	-.00157	.15862	-.00007
#3	.00030	.00019	.00061	-.00129	-.00972	.07533	-.00135
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass
High Limit					720.00		
Low Limit					-.02000		

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.03363**	**.00221**	**.00046**	**.04075**	**-.00021**	**.00528**	**-.00228**
Stddev	.02463	.00034	.00014	.01938	.00110	.00417	.00173
%RSD	73.257	15.401	29.515	47.560	531.64	78.936	75.715
#1	.00529	.00248	.00060	.03410	.00021	.00120	-.00371
#2	.04992	.00232	.00047	.02557	-.00145	.00953	-.00036
#3	.04568	.00183	.00032	.06258	.00062	.00510	-.00278
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 28, 2016

Sample Name: L1606117901SDL Acquired: 6/27/2016 11:30:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 25 Custom ID2: Custom ID3:
Comment: WG574214-02

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00148**	**.00052**	**-.02939**	**-.00005**	**.00027**	**-.00175**	**.00170**
Stddev	.00281	.00262	.00025	.00021	.00036	.00601	.00037
%RSD	189.85	505.51	.84423	394.19	132.35	344.06	22.015
#1	-.00270	.00158	-.02920	-.00027	.00047	-.00069	.00166
#2	-.00348	-.00246	-.02967	.00015	-.00014	.00367	.00209
#3	.00173	.00244	-.02930	-.00004	.00049	-.00822	.00134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	**-.00042**	**.00042**	**-.00030**
Stddev	.00063	.00012	.00034
%RSD	149.80	28.720	112.76
#1	-.00114	.00032	-.00062
#2	.00002	.00038	-.00036
#3	-.00014	.00055	.00006
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10431.**	**63091.**	**3111.2**
Stddev	16.	252.	21.2
%RSD	.15804	.39869	.68135
#1	10444.	63211.	3098.3
#2	10438.	63260.	3135.7
#3	10413.	62802.	3099.7

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 11:34:45 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.41029**	**10.314**	**.41311**	**.51300**	**1.0292**	**.05084**	**10.180**	**.05150**
Stddev	.00136	.009	.00246	.00180	.0068	.00017	.038	.00051
%RSD	.33182	.09125	.59569	.35017	.65999	.32692	.37198	.99887
#1	.40919	10.310	.41560	.51161	1.0232	.05065	10.141	.05186
#2	.40986	10.307	.41306	.51237	1.0366	.05092	10.217	.05173
#3	.41181	10.325	.41068	.51503	1.0278	.05095	10.182	.05091
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20710**	**.51032**	**.52099**	**4.0892**	**50.815**	**1.0221**	**10.252**	**.51220**
Stddev	.00166	.00085	.00175	.0040	.318	.0029	.037	.00281
%RSD	.80235	.16676	.33637	.09673	.62496	.28272	.36345	.54826
#1	.20850	.50937	.52285	4.0847	50.552	1.0201	10.295	.50976
#2	.20755	.51102	.52076	4.0921	51.168	1.0255	10.238	.51527
#3	.20526	.51055	.51937	4.0908	50.726	1.0208	10.224	.51156
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0210**	**51.237**	**.51895**	**10.296**	**.51615**	**1.2226**	**.41042**	**5.0648**
Stddev	.0077	.306	.00211	.030	.00345	.0091	.00397	.0173
%RSD	.75227	.59797	.40704	.29113	.66809	.74330	.96773	.34141
#1	1.0285	50.954	.52109	10.330	.51651	1.2329	.41221	5.0786
#2	1.0215	51.563	.51889	10.286	.51254	1.2195	.41319	5.0704
#3	1.0131	51.194	.51687	10.272	.51941	1.2156	.40587	5.0454
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 11:34:45 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0301**	**1.0276**	**1.0224**	**.52111**	**1.0183**	**1.0425**	**1.0206**
Stddev	.0050	.0038	.0117	.00210	.0025	.0036	.0032
%RSD	.48419	.37352	1.1487	.40271	.24354	.34135	.30940
#1	1.0346	1.0244	1.0153	.52324	1.0181	1.0453	1.0170
#2	1.0309	1.0319	1.0359	.52105	1.0159	1.0436	1.0231
#3	1.0247	1.0267	1.0159	.51905	1.0209	1.0385	1.0217
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9545.4**	**57355.**	**2920.6**
Stddev	16.0	98.	12.9
%RSD	.16742	.17123	.44036
#1	9535.4	57468.	2935.4
#2	9537.0	57297.	2914.0
#3	9563.8	57299.	2912.3

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 11:38:22 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00042**	**.00504**	**-.00201**	**.00368**	**.00256**	**.00009**	**.01404**
Stddev	.00219	.00642	.00250	.00148	.00163	.00009	.04911
%RSD	527.90	127.30	124.48	40.110	63.751	100.94	349.75
#1	.00239	.00398	.00030	.00311	.00407	.00018	.06082
#2	-.00194	.01193	-.00166	.00536	.00276	.00009	.01840
#3	.00080	-.00078	-.00467	.00258	.00083	.00000	-.03710
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00012**	**-.00005**	**.00229**	**.00038**	**.02444**	**.20214**	**-.00177**
Stddev	.00013	.00037	.00132	.00078	.03885	.05544	.00386
%RSD	111.48	696.52	57.782	205.08	158.97	27.426	217.74
#1	-.00023	.00007	.00222	.00101	.05224	.16080	.00022
#2	.00003	-.00047	.00100	.00062	-.01995	.26514	-.00622
#3	-.00016	.00024	.00364	-.00049	.04104	.18047	.00068
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.03023**	**.00028**	**.00420**	**.13919**	**-.00004**	F **.01462**	**.00241**
Stddev	.11455	.00120	.00024	.02048	.00017	.00305	.00207
%RSD	378.91	434.05	5.6517	14.715	417.93	20.859	86.062
#1	-.03575	.00137	.00447	.15454	-.00014	.01761	.00384
#2	-.14193	-.00101	.00411	.11593	.00015	.01475	.00003
#3	.08698	.00047	.00403	.14709	-.00013	.01151	.00335
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						.01000	
Low Limit						-.01000	

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 11:38:22 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00518	-.00119	.01136	.00155	.00215	-.00792	.00076
Stddev	.00420	.00357	.00200	.00064	.00047	.00257	.00569
%RSD	81.176	299.26	17.574	41.045	21.906	32.387	751.91
#1	.00995	-.00456	.01333	.00222	.00256	-.00563	-.00271
#2	.00206	.00254	.01141	.00146	.00225	-.01069	-.00235
#3	.00351	-.00155	.00934	.00096	.00164	-.00745	.00733
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00124	.00038	.00159
Stddev	.00096	.00031	.00019
%RSD	76.994	82.329	11.704
#1	.00222	.00051	.00138
#2	.00031	.00062	.00166
#3	.00119	.00002	.00173
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9358.9	56547.	2794.8
Stddev	20.4	165.	12.6
%RSD	.21850	.29146	.44991
#1	9359.7	56591.	2780.9
#2	9338.0	56684.	2805.3
#3	9378.9	56364.	2798.2

Approved: June 28, 2016

Sample Name: L1606102602 Acquired: 6/27/2016 11:42:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00041**	**.26453**	**-.00232**	**.01137**	**.14455**	**.00168**	**156.80**
Stddev	.00213	.00553	.00315	.00190	.00153	.00005	.86
%RSD	514.79	2.0924	135.85	16.713	1.0603	2.7135	.54868
#1	.00257	.27024	-.00572	.00947	.14575	.00166	157.76
#2	.00036	.26416	-.00174	.01139	.14507	.00165	156.58
#3	-.00169	.25919	.00050	.01327	.14282	.00174	156.08
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00793**	**.29026**	**4.1463**	**.79834**	**18.146**	**10.415**	**.14997**
Stddev	.00013	.00197	.0069	.00546	.096	.012	.00155
%RSD	1.6398	.67726	.16696	.68358	.52983	.11605	1.0303
#1	.00806	.29105	4.1518	.80306	18.217	10.402	.15171
#2	.00780	.29171	4.1487	.79960	18.185	10.426	.14875
#3	.00793	.28803	4.1385	.79237	18.036	10.416	.14945
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**117.35**	**2.7508**	**.04403**	F **463.92**	**11.613**	**.23944**	**.00538**
Stddev	.19	.0034	.00069	5.22	.075	.00408	.00236
%RSD	.16323	.12385	1.5776	1.1254	.64419	1.7056	43.762
#1	117.53	2.7538	.04451	469.94	11.676	.23503	.00518
#2	117.15	2.7516	.04435	460.70	11.634	.24308	.00783
#3	117.37	2.7471	.04323	461.11	11.530	.24022	.00313
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass
High Limit				270.00			
Low Limit				-.50000			

Approved: June 28, 2016

Sample Name: L1606102602 Acquired: 6/27/2016 11:42:20 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	F -.03604	.00167	21.855	-.00030	2.7919	-.02523	.00328
Stddev	.00078	.00175	.048	.00077	.0132	.01080	.00542
%RSD	2.1519	104.78	.21795	256.83	.47315	42.798	165.41
#1	-.03690	.00316	21.910	-.00045	2.8052	-.02849	.00549
#2	-.03581	.00211	21.837	.00053	2.7919	-.03401	-.00290
#3	-.03540	-.00026	21.820	-.00099	2.7788	-.01317	.00724
Check ?	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit	45.000						
Low Limit	-.02000						

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	-.00181	.12543	-.00203
Stddev	.00054	.00077	.00044
%RSD	29.945	.61364	21.462
#1	-.00127	.12603	-.00164
#2	-.00180	.12571	-.00195
#3	-.00236	.12456	-.00250
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9341.9	56331.	2987.1
Stddev	32.3	177.	26.1
%RSD	.34579	.31360	.87222
#1	9359.2	56340.	2957.6
#2	9362.0	56151.	2996.7
#3	9304.7	56503.	3007.0

Approved: June 28, 2016

Sample Name: L1606102604 Acquired: 6/27/2016 11:46:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.51537	-.00135	.04849	.25692	.00002	10.597	.00065
Stddev	.00097	.00417	.00160	.00232	.00117	.00006	.071	.00028
%RSD	119.61	.80856	118.17	4.7769	.45645	334.00	.67436	43.209
#1	.00084	.51600	-.00179	.04829	.25614	.00001	10.599	.00088
#2	.00178	.51092	-.00268	.05091	.25827	-.00004	10.668	.00073
#3	-.00017	.51918	.00042	.04629	.25636	.00009	10.525	.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00143	.00804	.00219	.94506	.57282	.01957	8.3432	.04056
Stddev	.00025	.00118	.00070	.02358	.17090	.00552	.1393	.00132
%RSD	17.728	14.672	31.807	2.4955	29.835	28.200	1.6694	3.2511
#1	.00136	.00921	.00247	.92684	.76429	.02561	8.4862	.03904
#2	.00171	.00806	.00270	.97170	.43570	.01479	8.3352	.04139
#3	.00122	.00685	.00140	.93664	.51849	.01831	8.2080	.04125
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00079	111.22	.01184	.05038	.00139	.00283	-.00142	30.099
Stddev	.00005	.58	.00193	.00219	.00224	.00277	.00860	.182
%RSD	6.3443	.52474	16.326	4.3492	161.71	98.192	607.40	.60408
#1	.00082	110.78	.01373	.04932	.00371	.00258	-.00365	30.191
#2	.00082	111.88	.01193	.05290	.00122	.00018	-.00868	30.217
#3	.00073	111.00	.00987	.04892	-.00077	.00571	.00808	29.890
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606102604 Acquired: 6/27/2016 11:46:14 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00070	.21272	.00487	.00126	.00108	.00766	.00061
Stddev	.00022	.00072	.00311	.00378	.00014	.00024	.00054
%RSD	31.509	.33665	63.798	300.82	12.513	3.1489	89.018
#1	.00046	.21236	.00741	.00517	.00119	.00770	.00081
#2	.00077	.21354	.00140	.00095	.00112	.00788	.00102
#3	.00089	.21225	.00580	-.00236	.00093	.00740	-.00001
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9804.0	59120.	3006.8
Stddev	14.0	114.	4.7
%RSD	.14307	.19206	.15632
#1	9819.7	59017.	3005.4
#2	9792.7	59241.	3002.9
#3	9799.5	59101.	3012.0

Approved: June 28, 2016

Sample Name: L1606102606 Acquired: 6/27/2016 11:50:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00012	1.2239	-.00174	.01161	.03727	.00027	5.5157
Stddev	.00080	.0104	.00223	.00250	.00221	.00006	.1070
%RSD	652.80	.85109	128.19	21.558	5.9287	21.417	1.9394
#1	.00092	1.2359	.00079	.01170	.03931	.00028	5.6257
#2	.00014	1.2178	-.00341	.00906	.03758	.00032	5.4120
#3	-.00069	1.2180	-.00260	.01407	.03493	.00021	5.5094
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.01245	.00844	.00357	1.6333	1.2394	.06022
Stddev	.00012	.00034	.00111	.00096	.0776	.0714	.00425
%RSD	29.771	2.7570	13.173	26.915	4.7517	5.7615	7.0639
#1	.00032	.01223	.00839	.00440	1.7197	1.3197	.06065
#2	.00055	.01228	.00957	.00252	1.5695	1.2156	.06423
#3	.00036	.01285	.00735	.00380	1.6107	1.1830	.05576
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	5.8139	.13811	.00206	248.44	.05729	.26089	.00094
Stddev	.1184	.00127	.00026	6.69	.00127	.00873	.00227
%RSD	2.0371	.91838	12.474	2.6922	2.2255	3.3451	240.98
#1	5.8695	.13935	.00185	255.89	.05875	.25082	.00120
#2	5.8943	.13817	.00234	242.94	.05639	.26617	-.00144
#3	5.6779	.13682	.00197	246.50	.05673	.26568	.00307
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Approved: June 28, 2016

Sample Name: L1606102606 Acquired: 6/27/2016 11:50:09 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00049	.00105	F 36.384	.00024	.10851	.01712	-.00030
Stddev	.00500	.00476	.192	.00071	.00323	.00573	.00124
%RSD	1024.8	454.95	.52638	293.29	2.9813	33.469	416.21
#1	.00624	-.00445	36.500	-.00042	.11191	.02347	-.00061
#2	-.00191	.00369	36.488	.00015	.10548	.01232	-.00135
#3	-.00286	.00389	36.163	.00100	.10813	.01557	.00107
Check ?	Chk Pass	Chk Pass	Chk Fail	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit			36.000				
Low Limit			-1.0000				

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00535	.16936	.00138
Stddev	.00042	.00122	.00039
%RSD	7.7851	.71943	28.035
#1	.00578	.16980	.00152
#2	.00533	.17029	.00168
#3	.00495	.16798	.00094
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9626.3	57886.	2983.8
Stddev	18.3	261.	74.6
%RSD	.19058	.45101	2.5006
#1	9647.5	57585.	2901.3
#2	9616.7	58049.	3046.6
#3	9614.8	58025.	3003.6

Approved: June 28, 2016

Sample Name: L1606102607 Acquired: 6/27/2016 11:54:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00031	1.1323	-.00238	.04660	.10958	.00010	6.5258	.00037
Stddev	.00080	.0175	.00050	.00030	.00243	.00010	.0579	.00010
%RSD	257.95	1.5429	20.924	.64173	2.2156	104.38	.88676	26.723
#1	-.00092	1.1127	-.00240	.04687	.10738	.00021	6.4875	.00037
#2	.00060	1.1463	-.00188	.04628	.10917	.00010	6.4976	.00027
#3	-.00061	1.1378	-.00287	.04666	.11218	-.00000	6.5924	.00047
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00187	.00297	.00159	1.3290	.57069	.00275	3.8665	.01222
Stddev	.00009	.00021	.00046	.0290	.04032	.00285	.0619	.00283
%RSD	4.6234	7.1037	28.704	2.1787	7.0656	103.56	1.6015	23.182
#1	.00187	.00273	.00106	1.3104	.54271	.00511	3.8437	.01540
#2	.00178	.00310	.00180	1.3143	.61691	.00356	3.8192	.00998
#3	.00195	.00309	.00189	1.3624	.55245	-.00042	3.9366	.01126
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00103	20.808	.00171	.02360	-.00106	.00153	.00040	8.8461
Stddev	.00018	.091	.00048	.00800	.00292	.00392	.00140	.1098
%RSD	17.429	.43937	27.803	33.897	275.11	256.50	351.43	1.2414
#1	.00085	20.802	.00191	.01627	-.00308	.00603	-.00121	8.9294
#2	.00103	20.719	.00205	.03214	.00229	-.00117	.00118	8.8872
#3	.00121	20.902	.00117	.02239	-.00240	-.00027	.00122	8.7216
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606102607 Acquired: 6/27/2016 11:54:00 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00017	.12250	.01094	.00018	.00267	.07442	.00061
Stddev	.00032	.00081	.00149	.00374	.00039	.00117	.00047
%RSD	181.48	.65945	13.593	2023.2	14.549	1.5745	76.234
#1	-.00005	.12246	.01133	-.00363	.00276	.07517	.00038
#2	.00054	.12171	.01218	.00033	.00300	.07502	.00115
#3	.00004	.12332	.00929	.00385	.00224	.07307	.00031
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9791.2	59635.	2975.2
Stddev	8.5	18.	25.1
%RSD	.08713	.02982	.84202
#1	9783.0	59652.	2959.7
#2	9790.4	59616.	3004.1
#3	9800.1	59637.	2961.9

Approved: June 28, 2016

Sample Name: L1606084001 Acquired: 6/27/2016 11:57:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00102	.00453	-.00231	.01392	.03067	-.00008	53.120	.00080
Stddev	.00088	.01618	.00071	.00201	.00012	.00007	.441	.00016
%RSD	86.051	357.15	30.592	14.417	.38086	81.244	.83058	20.432
#1	.00104	-.00250	-.00154	.01565	.03054	-.00015	53.330	.00085
#2	.00013	-.00695	-.00246	.01439	.03076	-.00007	53.418	.00062
#3	.00188	.02304	-.00294	.01172	.03072	-.00002	52.613	.00093
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00081	.00170	.00123	.32459	1.0265	-.00206	12.392	.94460
Stddev	.00013	.00072	.00102	.00668	.0613	.00244	.121	.00127
%RSD	16.603	42.489	83.413	2.0577	5.9742	118.69	.97455	.13438
#1	.00096	.00095	.00005	.31956	1.0133	-.00472	12.401	.94427
#2	.00077	.00177	.00186	.33217	.97280	-.00155	12.267	.94353
#3	.00070	.00239	.00178	.32204	1.0933	.00009	12.508	.94600
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00065	5.1723	.00021	.01672	-.00134	-.00196	.00063	4.1375
Stddev	.00018	.0275	.00068	.00105	.00210	.00242	.00481	.0318
%RSD	28.323	.53205	318.26	6.3027	156.43	123.76	761.62	.76821
#1	.00086	5.1913	.00009	.01551	.00023	.00018	.00452	4.1074
#2	.00051	5.1849	-.00040	.01723	-.00053	-.00459	.00212	4.1343
#3	.00057	5.1407	.00095	.01742	-.00372	-.00146	-.00475	4.1707
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606084001 Acquired: 6/27/2016 11:57:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00070**	**.24263**	**-.01886**	**-.00031**	**-.00033**	**.01399**	**-.00001**
Stddev	.00032	.00045	.00470	.00047	.00081	.00026	.00028
%RSD	46.464	.18625	24.915	152.40	243.31	1.8674	2189.7
#1	-.00052	.24229	-.02136	-.00072	-.00123	.01369	-.00029
#2	-.00050	.24315	-.01344	-.00041	.00034	.01408	-.00002
#3	-.00107	.24246	-.02177	.00020	-.00011	.01419	.00027
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9610.5**	**58693.**	**2932.5**
Stddev	88.7	624.	9.6
%RSD	.92300	1.0624	.32835
#1	9677.1	58033.	2921.5
#2	9644.5	59272.	2936.8
#3	9509.8	58775.	2939.2

Approved: June 28, 2016

Sample Name: L1606084002 Acquired: 6/27/2016 12:01:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00128	-.00139	.00224	.08634	.09552	-.00002	120.61	.00014
Stddev	.00250	.00876	.00171	.00338	.00036	.00006	.69	.00026
%RSD	194.67	631.07	76.296	3.9175	.37645	245.45	.57215	192.80
#1	-.00402	-.01109	.00064	.08244	.09586	.00004	119.84	.00033
#2	-.00069	.00593	.00204	.08824	.09555	-.00007	121.15	-.00016
#3	.00087	.00100	.00403	.08835	.09514	-.00004	120.85	.00023
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00063	.00077	.00147	43.081	4.5386	.00310	11.268	.67312
Stddev	.00017	.00005	.00320	.235	.0338	.00167	.145	.00147
%RSD	26.964	6.9558	217.13	.54506	.74492	54.079	1.2833	.21851
#1	-.00075	.00072	.00503	42.809	4.5769	.00120	11.171	.67359
#2	-.00043	.00076	.00055	43.216	4.5263	.00372	11.198	.67430
#3	-.00069	.00082	-.00116	43.216	4.5127	.00437	11.434	.67147
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00116	5.4244	.00012	.11801	.00233	.00183	-.00652	7.6403
Stddev	.00020	.0386	.00089	.00434	.00125	.00095	.00211	.1136
%RSD	17.017	.71102	759.90	3.6803	53.783	51.671	32.377	1.4866
#1	.00110	5.3838	-.00060	.11342	.00098	.00292	-.00818	7.7661
#2	.00100	5.4288	.00111	.11857	.00255	.00144	-.00414	7.6097
#3	.00138	5.4605	-.00016	.12205	.00346	.00115	-.00724	7.5452
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606084002 Acquired: 6/27/2016 12:01:48 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00059**	**.68115**	**.00149**	**.00003**	**.00035**	**.00200**	**-.00075**
Stddev	.00013	.00063	.00809	.00250	.00042	.00020	.00050
%RSD	21.360	.09243	543.95	9778.5	119.63	9.8337	66.242
#1	.00061	.68055	.00036	-.00281	-.00013	.00223	-.00067
#2	.00046	.68181	-.00598	.00096	.00057	.00186	-.00128
#3	.00071	.68110	.01008	.00193	.00063	.00192	-.00029
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9739.0**	**57938.**	**2928.4**
Stddev	102.1	129.	16.1
%RSD	1.0478	.22223	.54818
#1	9622.7	57791.	2946.0
#2	9781.2	57992.	2924.9
#3	9813.3	58031.	2914.5

Approved: June 28, 2016

Sample Name: L1606084003 Acquired: 6/27/2016 12:05:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00121	.08071	.00172	.09081	.09959	-.00012	123.30	.00045
Stddev	.00149	.00384	.00171	.00145	.00117	.00007	1.07	.00020
%RSD	122.93	4.7551	99.258	1.5948	1.1749	56.220	.86783	45.782
#1	.00002	.08463	.00369	.09156	.09973	-.00020	122.33	.00068
#2	.00073	.07696	.00088	.08914	.10068	-.00009	124.45	.00031
#3	.00288	.08054	.00059	.09174	.09835	-.00007	123.11	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00069	.00087	.00289	43.973	4.6960	.00430	11.675	.66419
Stddev	.00015	.00041	.00047	.300	.1683	.00551	.133	.00687
%RSD	21.226	47.747	16.160	.68244	3.5840	127.88	1.1395	1.0342
#1	-.00071	.00059	.00238	43.670	4.7091	-.00204	11.575	.65887
#2	-.00082	.00134	.00298	44.270	4.8574	.00712	11.826	.67195
#3	-.00053	.00067	.00330	43.978	4.5216	.00783	11.625	.66177
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00136	5.5885	.00111	.13500	.00082	.00343	-.00607	7.9482
Stddev	.00015	.0707	.00031	.00464	.00148	.00147	.00397	.0520
%RSD	10.645	1.2649	27.924	3.4356	181.08	42.697	65.305	.65412
#1	.00123	5.5076	.00132	.14035	.00252	.00509	-.00876	7.9966
#2	.00152	5.6384	.00075	.13201	-.00018	.00231	-.00152	7.9546
#3	.00135	5.6196	.00126	.13265	.00012	.00290	-.00794	7.8933
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606084003 Acquired: 6/27/2016 12:05:39 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00054	.69838	.00629	.00178	-.00059	.00222	-.00084
Stddev	.00157	.00675	.00940	.00291	.00056	.00018	.00039
%RSD	291.19	.96596	149.56	163.25	95.098	8.3166	46.054
#1	-.00069	.69240	.00543	.00493	-.00119	.00201	-.00053
#2	.00110	.70570	.01609	.00124	-.00007	.00234	-.00128
#3	-.00203	.69705	-.00266	-.00082	-.00052	.00232	-.00072
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9762.2	58678.	2957.0
Stddev	32.4	138.	19.3
%RSD	.33194	.23584	.65148
#1	9726.5	58612.	2972.9
#2	9770.6	58584.	2935.6
#3	9789.6	58837.	2962.6

Approved: June 28, 2016

Sample Name: L1606084004 Acquired: 6/27/2016 12:09:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00340	.57839	.00309	.04986	.07128	-.00014	78.157	.00024
Stddev	.00231	.00473	.00177	.00231	.00149	.00006	.489	.00016
%RSD	67.902	.81696	57.428	4.6304	2.0875	41.855	.62597	66.282
#1	.00236	.58363	.00106	.04772	.07297	-.00021	78.703	.00036
#2	.00179	.57447	.00437	.05231	.07070	-.00013	77.759	.00006
#3	.00604	.57706	.00382	.04954	.07017	-.00009	78.008	.00030
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00073	.00268	.00209	13.902	2.3115	.00063	10.947	6.5059
Stddev	.00048	.00131	.00044	.065	.1653	.00105	.167	.0351
%RSD	65.715	48.910	20.939	.46649	7.1526	166.23	1.5274	.53929
#1	.00027	.00338	.00167	13.930	2.4961	.00110	10.946	6.5456
#2	.00070	.00349	.00255	13.949	2.1770	.00137	10.779	6.4928
#3	.00124	.00117	.00206	13.828	2.2613	-.00057	11.114	6.4792
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00088	6.4050	.00124	.08236	.00411	-.00373	.00110	7.1748
Stddev	.00021	.0135	.00010	.00949	.00291	.00074	.00066	.0315
%RSD	24.174	.21060	7.7642	11.522	70.779	19.789	59.906	.43949
#1	.00092	6.4182	.00133	.09095	.00714	-.00298	.00137	7.1943
#2	.00065	6.3912	.00123	.08397	.00386	-.00375	.00158	7.1917
#3	.00106	6.4055	.00114	.07217	.00134	-.00446	.00035	7.1384
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606084004 Acquired: 6/27/2016 12:09:30 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00046**	**.46037**	**.01892**	**-.00148**	**.00190**	**.00560**	**.00084**
Stddev	.00044	.00319	.00662	.00110	.00051	.00012	.00070
%RSD	94.473	.69285	34.994	74.711	26.966	2.1834	83.839
#1	-.00082	.46398	.02521	-.00240	.00240	.00568	.00094
#2	.00003	.45792	.01952	-.00177	.00138	.00566	.00149
#3	-.00060	.45920	.01202	-.00026	.00192	.00546	.00009
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9834.1**	**59607.**	**3008.2**
Stddev	10.8	123.	8.6
%RSD	.10933	.20604	.28680
#1	9822.0	59582.	3001.2
#2	9842.6	59499.	3017.8
#3	9837.6	59741.	3005.5

Approved: June 28, 2016

Sample Name: L1606084005 Acquired: 6/27/2016 12:13:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	.00668	-.00213	.05778	.13125	-.00012	73.966	.00069
Stddev	.00063	.00810	.00246	.00044	.00094	.00005	.524	.00019
%RSD	961.46	121.37	115.65	.76854	.71462	44.545	.70822	27.315
#1	.00045	.01321	-.00423	.05814	.13220	-.00015	74.552	.00072
#2	.00012	-.00239	-.00273	.05791	.13032	-.00015	73.804	.00085
#3	-.00077	.00921	.00058	.05728	.13121	-.00006	73.542	.00048
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.00184	.00120	7.9376	2.7914	-.00180	9.2146	6.0686
Stddev	.00052	.00037	.00060	.0230	.0535	.00432	.1741	.0460
%RSD	124.87	20.296	50.060	.29024	1.9151	239.98	1.8892	.75859
#1	.00002	.00226	.00162	7.9508	2.7329	-.00167	9.4003	6.1216
#2	.00100	.00155	.00148	7.9110	2.8376	.00245	9.1881	6.0382
#3	.00022	.00171	.00051	7.9510	2.8038	-.00619	9.0552	6.0461
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00401	5.5235	.00009	.03809	.00162	.00315	.00025	5.3185
Stddev	.00034	.0158	.00120	.00432	.00281	.00219	.00692	.0583
%RSD	8.3556	.28595	1268.4	11.330	173.81	69.373	2730.8	1.0955
#1	.00384	5.5412	-.00129	.03382	.00477	.00067	-.00567	5.2569
#2	.00440	5.5110	.00065	.04245	-.00066	.00477	-.00143	5.3727
#3	.00379	5.5181	.00092	.03799	.00075	.00402	.00786	5.3258
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606084005 Acquired: 6/27/2016 12:13:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.43025	-.01337	.00358	.00145	.00273	.00046
Stddev	.00078	.00329	.00402	.00506	.00034	.00007	.00083
%RSD	245.46	.76446	30.110	141.13	23.301	2.6980	182.02
#1	-.00058	.43394	-.01623	-.00199	.00115	.00271	.00009
#2	.00069	.42916	-.00876	.00789	.00138	.00281	-.00013
#3	.00083	.42764	-.01510	.00485	.00182	.00266	.00141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9841.4	59195.	3025.3
Stddev	94.8	297.	10.0
%RSD	.96296	.50136	.33059
#1	9950.6	59537.	3015.3
#2	9781.1	59011.	3035.3
#3	9792.5	59037.	3025.3

Approved: June 28, 2016

Sample Name: L1606084006 Acquired: 6/27/2016 12:17:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00164	-.00719	-.00434	.00375	-.00054	.00002	.11974	.00043
Stddev	.00261	.00725	.00073	.00189	.00054	.00006	.00960	.00020
%RSD	159.01	100.86	16.872	50.405	100.03	227.54	8.0185	45.897
#1	-.00010	-.00070	-.00454	.00485	-.00005	-.00000	.11624	.00065
#2	.00465	-.00585	-.00353	.00157	-.00045	-.00001	.13060	.00028
#3	.00038	-.01502	-.00495	.00483	-.00112	.00009	.11238	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00015	.00229	.00265	-.00130	.02514	-.00449	.04252	.00721
Stddev	.00026	.00051	.00063	.00266	.08048	.00083	.04044	.00181
%RSD	173.46	22.403	23.726	203.56	320.08	18.531	95.099	25.105
#1	.00029	.00183	.00312	-.00319	.11298	-.00545	.04311	.00535
#2	.00032	.00284	.00289	.00173	-.04506	-.00414	.00179	.00897
#3	-.00015	.00218	.00193	-.00246	.00751	-.00389	.08265	.00733
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.18897	.00020	-.00594	-.00252	-.00088	-.00520	-.00198
Stddev	.00048	.00835	.00100	.00884	.00248	.00457	.00518	.00107
%RSD	253.64	4.4186	510.98	148.75	98.389	518.63	99.733	53.864
#1	-.00019	.19627	-.00072	.00197	-.00532	.00083	-.00935	-.00093
#2	.00002	.17986	.00004	-.01549	-.00162	.00258	.00061	-.00194
#3	.00073	.19077	.00127	-.00432	-.00061	-.00606	-.00686	-.00307
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606084006 Acquired: 6/27/2016 12:17:33 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00085	.00072	-.00045	-.00026	.00094	.00173	-.00031
Stddev	.00035	.00028	.00524	.00154	.00035	.00024	.00032
%RSD	41.281	38.237	1171.4	600.81	37.636	13.582	100.73
#1	.00126	.00102	-.00580	.00038	.00116	.00170	-.00050
#2	.00070	.00048	.00466	-.00202	.00112	.00152	-.00049
#3	.00061	.00067	-.00020	.00086	.00053	.00198	.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9745.8	60648.	2978.8
Stddev	99.8	834.	31.6
%RSD	1.0242	1.3759	1.0602
#1	9633.7	61604.	2998.6
#2	9778.5	60275.	2942.3
#3	9825.2	60065.	2995.3

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 12:21:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40982**	**10.326**	**.41213**	**.51242**	**1.0926**	**.05082**	**10.880**	**.05201**
Stddev	.00878	.252	.01063	.01050	.0236	.00138	.223	.00114
%RSD	2.1419	2.4371	2.5798	2.0490	2.1601	2.7195	2.0480	2.1946
#1	.40490	10.191	.41289	.50779	1.1037	.04992	11.005	.05241
#2	.41995	10.616	.40114	.52444	1.0655	.05241	10.623	.05073
#3	.40460	10.170	.42237	.50503	1.1087	.05012	11.012	.05290
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.20803**	**.50919**	**.52134**	**4.3447**	**53.527**	**1.0805**	**10.776**	**.54239**
Stddev	.00484	.01280	.01202	.1267	1.095	.0260	.268	.00962
%RSD	2.3249	2.5137	2.3048	2.9152	2.0452	2.4085	2.4916	1.7730
#1	.20997	.50240	.52340	4.3706	54.097	1.0939	10.816	.54819
#2	.20252	.52396	.50843	4.2071	52.265	1.0505	10.489	.53129
#3	.21159	.50123	.53220	4.4564	54.220	1.0971	11.021	.54769
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0267**	**54.607**	**.52138**	**10.371**	**.52185**	**1.2269**	**.41575**	**5.0879**
Stddev	.0227	1.123	.01426	.241	.01274	.0284	.01189	.1164
%RSD	2.2055	2.0562	2.7346	2.3230	2.4413	2.3136	2.8599	2.2884
#1	1.0360	55.161	.52713	10.417	.52334	1.2314	.41415	5.1192
#2	1.0009	53.314	.50515	10.110	.50843	1.1965	.40474	4.9590
#3	1.0433	55.345	.53187	10.585	.53378	1.2528	.42836	5.1854
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 12:21:30 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0336**	**1.0901**	**1.0684**	**.51892**	**1.0206**	**1.0509**	**1.0769**
Stddev	.0240	.0234	.0198	.00908	.0266	.0248	.0112
%RSD	2.3229	2.1457	1.8498	1.7494	2.6067	2.3611	1.0424
#1	1.0429	1.1002	1.0762	.52256	1.0058	1.0571	1.0826
#2	1.0064	1.0633	1.0460	.50859	1.0513	1.0236	1.0640
#3	1.0516	1.1067	1.0831	.52561	1.0046	1.0721	1.0842
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9564.4**	**57358.**	**2776.3**
Stddev	173.7	1171.	41.5
%RSD	1.8165	2.0418	1.4935
#1	9502.6	58080.	2762.2
#2	9760.6	56007.	2823.0
#3	9430.0	57987.	2743.8

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 12:25:07 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00018	.00801	-.00103	.00276	.00212	.00010	.01237
Stddev	.00054	.00191	.00555	.00165	.00059	.00005	.02593
%RSD	305.81	23.874	537.57	59.553	27.793	47.886	209.61
#1	-.00026	.00966	.00519	.00338	.00190	.00007	.02126
#2	.00001	.00845	-.00548	.00401	.00279	.00007	.03268
#3	.00077	.00592	-.00281	.00090	.00167	.00015	-.01683
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00009	-.00008	.00176	.00058	-.00953	.07351	-.00534
Stddev	.00020	.00028	.00092	.00111	.01699	.12532	.00361
%RSD	218.62	347.28	52.557	191.12	178.34	170.47	67.695
#1	-.00011	-.00011	.00227	.00172	-.02080	.11336	-.00262
#2	.00029	.00021	.00069	.00051	-.01780	.17407	-.00944
#3	.00010	-.00035	.00231	-.00049	.01002	-.06689	-.00396
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.03981	.00109	.00405	.14258	-.00036	F .01086	-.00169
Stddev	.10294	.00213	.00039	.04484	.00148	.00691	.00374
%RSD	258.57	194.73	9.6251	31.448	414.81	63.624	221.75
#1	.05401	.00259	.00446	.16898	.00116	.01849	-.00130
#2	-.06949	-.00134	.00368	.16795	-.00043	.00505	.00185
#3	.13492	.00203	.00401	.09081	-.00180	.00903	-.00561
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						.01000	
Low Limit						-.01000	

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 12:25:07 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00417	-.00073	.01248	.00092	.00175	-.00304	-.00057
Stddev	.00221	.00348	.00144	.00071	.00054	.00973	.00215
%RSD	53.083	478.32	11.507	77.419	30.591	319.59	377.76
#1	.00663	.00318	.01101	.00084	.00217	.00790	.00142
#2	.00236	-.00349	.01254	.00166	.00193	-.00634	-.00285
#3	.00351	-.00187	.01388	.00025	.00115	-.01070	-.00028
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00062	.00044	.00126
Stddev	.00058	.00021	.00081
%RSD	93.624	46.980	64.473
#1	.00079	.00067	.00217
#2	-.00003	.00035	.00059
#3	.00109	.00029	.00103
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9088.4	55797.	2803.9
Stddev	32.8	363.	16.7
%RSD	.36063	.64995	.59502
#1	9123.1	56185.	2793.2
#2	9058.0	55741.	2823.1
#3	9084.0	55466.	2795.3

Approved: June 28, 2016

Sample Name: L1606099604 Acquired: 6/27/2016 12:29:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00019	.00580	.00190	.08139	.16840	-.00013	103.32	.00028
Stddev	.00128	.00535	.00228	.00254	.00185	.00011	.61	.00017
%RSD	659.73	92.321	120.00	3.1234	1.1007	81.225	.59136	59.820
#1	-.00019	.00495	.00330	.08419	.17029	-.00020	104.00	.00042
#2	.00163	.00092	-.00073	.08076	.16658	-.00019	103.14	.00010
#3	-.00085	.01152	.00315	.07922	.16832	-.00001	102.82	.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00208	.00210	.00220	6.9135	5.7572	.00318	22.797	1.3714
Stddev	.00011	.00106	.00087	.0506	.1417	.00514	.164	.0068
%RSD	5.4227	50.496	39.640	.73143	2.4607	161.87	.71742	.49651
#1	.00195	.00113	.00136	6.9709	5.9167	.00682	22.816	1.3781
#2	.00218	.00193	.00214	6.8940	5.7092	-.00270	22.951	1.3717
#3	.00210	.00323	.00310	6.8755	5.6458	.00541	22.625	1.3644
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00150	62.898	.00398	.00777	.00038	.00178	-.00471	6.2512
Stddev	.00040	.352	.00112	.00125	.00232	.00142	.00311	.1087
%RSD	26.641	.56029	28.045	16.108	606.93	79.640	66.020	1.7380
#1	.00104	63.287	.00289	.00700	.00207	.00015	-.00636	6.1377
#2	.00168	62.806	.00392	.00922	.00135	.00276	-.00666	6.3542
#3	.00178	62.600	.00512	.00710	-.00227	.00244	-.00112	6.2616
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606099604 Acquired: 6/27/2016 12:29:05 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00021**	**.65534**	**-.02030**	**.00255**	**.00033**	**.00193**	**.00063**
Stddev	.00084	.00661	.00061	.00162	.00088	.00009	.00010
%RSD	408.85	1.0090	3.0257	63.401	268.16	4.7892	15.595
#1	.00026	.66296	-.01985	.00143	.00108	.00204	.00054
#2	.00030	.65206	-.02005	.00182	-.00064	.00187	.00073
#3	-.00118	.65102	-.02100	.00441	.00055	.00188	.00063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9558.4**	**57612.**	**2936.4**
Stddev	116.5	315.	16.4
%RSD	1.2191	.54701	.55800
#1	9690.7	57619.	2920.8
#2	9471.2	57923.	2953.4
#3	9513.3	57293.	2935.0

Approved: June 28, 2016

Sample Name: L1606099605 Acquired: 6/27/2016 12:32:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00062	.00440	.00035	.08600	.15334	-.00004	92.678	.00021
Stddev	.00208	.00968	.00234	.00157	.00545	.00009	2.912	.00015
%RSD	334.34	219.84	676.18	1.8291	3.5523	214.26	3.1425	70.670
#1	-.00176	.01391	-.00219	.08664	.15180	.00006	91.339	.00015
#2	-.00188	.00474	.00081	.08715	.14883	-.00009	90.677	.00010
#3	.00178	-.00544	.00241	.08421	.15939	-.00010	96.020	.00038
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00365	.00086	.00243	6.0484	5.7709	.00063	31.503	.66090
Stddev	.00047	.00042	.00069	.1770	.1598	.00208	1.094	.02168
%RSD	12.764	48.920	28.484	2.9268	2.7695	327.96	3.4720	3.2802
#1	.00403	.00109	.00318	5.9427	5.7426	.00246	30.808	.65326
#2	.00379	.00111	.00182	5.9498	5.6271	.00107	30.938	.64407
#3	.00313	.00037	.00230	6.2528	5.9430	-.00163	32.764	.68536
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00159	61.738	.00237	.01553	-.00133	-.00075	.00297	7.5875
Stddev	.00014	1.868	.00046	.00404	.00513	.00268	.00109	.0444
%RSD	9.1322	3.0264	19.551	26.021	385.98	357.61	36.581	.58550
#1	.00174	60.825	.00241	.01740	.00350	-.00313	.00247	7.6172
#2	.00145	60.502	.00188	.01089	-.00672	.00216	.00422	7.5364
#3	.00158	63.888	.00280	.01829	-.00077	-.00128	.00222	7.6088
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606099605 Acquired: 6/27/2016 12:32:59 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00035	.55768	-.01630	.00067	-.00017	.00329	-.00008
Stddev	.00043	.01691	.00417	.00102	.00046	.00006	.00023
%RSD	123.49	3.0323	25.549	153.35	265.30	1.7576	273.28
#1	-.00015	.55046	-.02083	.00130	.00034	.00334	.00017
#2	.00059	.54557	-.01263	.00121	-.00055	.00330	-.00027
#3	.00062	.57700	-.01545	-.00051	-.00031	.00322	-.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9505.0	58408.	2954.9
Stddev	81.9	1154.	71.1
%RSD	.86161	1.9755	2.4052
#1	9512.0	57442.	2997.1
#2	9583.1	58096.	2994.7
#3	9419.8	59685.	2872.8

Approved: June 28, 2016

Sample Name: L1606099606 Acquired: 6/27/2016 12:36:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00021	-.00165	-.00025	.08564	.14629	-.00000	89.804	.00032
Stddev	.00112	.01113	.00212	.00090	.00530	.00004	2.055	.00020
%RSD	524.99	674.83	853.55	1.0466	3.6261	1039.4	2.2878	63.164
#1	-.00107	-.01404	-.00260	.08522	.14152	-.00005	87.909	.00022
#2	.00100	.00748	.00036	.08503	.14536	.00003	89.515	.00019
#3	.00071	.00161	.00150	.08667	.15200	.00000	91.988	.00055
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00381	.00210	.00165	5.4359	5.6681	.00480	30.776	.64316
Stddev	.00033	.00040	.00014	.1393	.3324	.00308	.659	.01538
%RSD	8.6138	18.872	8.4193	2.5628	5.8637	64.199	2.1405	2.3911
#1	.00416	.00166	.00181	5.3390	5.2912	.00550	30.170	.63168
#2	.00374	.00222	.00155	5.3732	5.9193	.00143	30.682	.63716
#3	.00352	.00242	.00160	5.5956	5.7937	.00748	31.477	.66063
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00113	59.640	.00253	.00574	-.00082	.00120	-.00418	7.2856
Stddev	.00018	1.339	.00036	.00490	.00097	.00213	.00105	.0742
%RSD	16.247	2.2447	14.289	85.380	118.02	177.90	25.030	1.0179
#1	.00127	58.460	.00258	.00918	-.00191	.00329	-.00447	7.3494
#2	.00120	59.366	.00286	.00013	-.00009	.00129	-.00505	7.3032
#3	.00092	61.095	.00214	.00790	-.00046	-.00098	-.00302	7.2042
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606099606 Acquired: 6/27/2016 12:36:53 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00071	.54135	-.01376	.00040	-.00120	.00295	.00019
Stddev	.00026	.01206	.01048	.00370	.00038	.00007	.00031
%RSD	36.596	2.2286	76.185	932.18	31.665	2.5208	166.02
#1	.00092	.53114	-.02355	-.00349	-.00076	.00294	.00053
#2	.00079	.53824	-.01502	.00080	-.00140	.00303	.00011
#3	.00042	.55466	-.00270	.00387	-.00144	.00288	-.00008
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9559.9	57603.	2976.2
Stddev	50.2	882.	41.3
%RSD	.52468	1.5319	1.3891
#1	9523.1	58519.	3014.9
#2	9539.5	56758.	2981.1
#3	9617.0	57532.	2932.6

Approved: June 28, 2016

Sample Name: L1606099607 Acquired: 6/27/2016 12:40:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00065	.02230	-.00450	.01108	.02439	-.00009	66.480	.00028
Stddev	.00090	.00160	.00101	.00392	.00092	.00006	.638	.00009
%RSD	138.75	7.1527	22.436	35.403	3.7818	65.215	.95998	33.028
#1	.00137	.02347	-.00529	.01551	.02514	-.00011	66.633	.00038
#2	.00095	.02049	-.00484	.00964	.02466	-.00015	67.029	.00020
#3	-.00037	.02295	-.00336	.00808	.02336	-.00003	65.780	.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00008	.00261	.00143	.00596	.78106	-.00208	22.738	.00477
Stddev	.00016	.00097	.00054	.00364	.04317	.00124	.231	.00310
%RSD	209.97	37.223	38.069	61.110	5.5276	59.612	1.0158	65.020
#1	.00010	.00357	.00150	.00834	.79239	-.00102	22.748	.00706
#2	-.00014	.00263	.00194	.00177	.73335	-.00177	22.964	.00601
#3	-.00020	.00163	.00085	.00778	.81744	-.00344	22.502	.00124
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00133	37.923	-.00023	.01749	-.00363	.00068	-.00604	3.0026
Stddev	.00021	.357	.00012	.00610	.00208	.00469	.01001	.0238
%RSD	15.717	.94215	53.708	34.863	57.244	691.11	165.66	.79333
#1	.00125	38.024	-.00022	.01463	-.00430	.00280	.00439	3.0290
#2	.00117	38.219	-.00036	.02449	-.00528	.00393	-.00694	2.9963
#3	.00157	37.526	-.00011	.01335	-.00130	-.00469	-.01558	2.9826
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606099607 Acquired: 6/27/2016 12:40:47 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00021**	**.18785**	**-.01422**	**.00080**	**-.00056**	**.00150**	**.00005**
Stddev	.00064	.00221	.01247	.00073	.00042	.00008	.00019
%RSD	298.26	1.1744	87.668	90.724	75.529	5.2164	388.21
#1	-.00057	.18821	-.01454	-.00004	-.00039	.00152	.00027
#2	-.00060	.18986	-.00160	.00120	-.00025	.00158	-.00007
#3	.00052	.18549	-.02652	.00124	-.00105	.00142	-.00005
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9625.0**	**57772.**	**2941.4**
Stddev	36.2	586.	22.1
%RSD	.37614	1.0139	.75110
#1	9589.4	58436.	2946.1
#2	9661.8	57328.	2917.4
#3	9623.9	57553.	2960.8

Approved: June 28, 2016

Sample Name: L1606099608 Acquired: 6/27/2016 12:44:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00027	-.00400	-.00422	.02442	.03822	-.00001	83.891	.00034
Stddev	.00221	.00770	.00245	.00158	.00186	.00003	2.002	.00031
%RSD	807.22	192.30	58.014	6.4809	4.8795	554.60	2.3863	89.786
#1	.00167	.00126	-.00362	.02390	.03905	.00003	85.735	.00061
#2	.00143	-.01284	-.00691	.02619	.03952	-.00002	84.176	.00001
#3	-.00228	-.00043	-.00212	.02316	.03608	-.00003	81.762	.00040
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00047	.00209	-.00003	-.01556	1.4704	.00084	27.649	.00085
Stddev	.00056	.00083	.00024	.04252	.1367	.00339	.634	.00109
%RSD	120.26	39.828	718.46	273.26	9.2945	402.48	2.2947	127.95
#1	-.00029	.00113	.00015	.01609	1.6204	-.00304	28.230	.00203
#2	-.00110	.00260	.00006	-.06389	1.3530	.00320	27.744	-.00012
#3	-.00002	.00253	-.00031	.00112	1.4378	.00237	26.972	.00065
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00059	14.025	.00030	.00574	-.00047	.00142	-.00271	4.1744
Stddev	.00012	.309	.00096	.00391	.00392	.00326	.00511	.0659
%RSD	19.654	2.2009	321.09	68.078	840.14	229.87	188.88	1.5797
#1	.00046	14.291	-.00049	.00124	.00385	-.00144	-.00858	4.2497
#2	.00065	14.097	.00137	.00774	-.00380	.00496	.00078	4.1468
#3	.00067	13.687	.00002	.00825	-.00145	.00073	-.00032	4.1267
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606099608 Acquired: 6/27/2016 12:44:40 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00084	.27436	-.01978	.00108	-.00021	.00139	.00004
Stddev	.00051	.00737	.00167	.00298	.00020	.00042	.00088
%RSD	60.476	2.6846	8.4580	276.35	96.056	30.038	2176.4
#1	.00048	.28120	-.02080	-.00127	-.00011	.00096	-.00045
#2	.00143	.27533	-.02070	.00007	-.00045	.00179	-.00049
#3	.00062	.26656	-.01785	.00444	-.00007	.00143	.00105
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9658.7	58755.	2964.1
Stddev	91.6	479.	46.2
%RSD	.94862	.81444	1.5591
#1	9554.0	59299.	2924.6
#2	9698.2	58563.	2952.9
#3	9724.0	58402.	3014.9

Approved: June 28, 2016

Sample Name: L1606099609 Acquired: 6/27/2016 12:48:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00016	-.00165	-.00164	.02800	.04080	-.00005	79.419	.00020
Stddev	.00144	.01010	.00345	.00084	.00081	.00005	.294	.00013
%RSD	904.18	610.85	210.58	3.0153	1.9890	101.31	.37081	67.386
#1	-.00165	-.00621	.00217	.02847	.04012	-.00005	79.151	.00012
#2	-.00005	-.00866	-.00254	.02851	.04170	-.00010	79.371	.00035
#3	.00122	.00992	-.00454	.02703	.04060	-.00000	79.734	.00012
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00006	.00217	.00166	1.5879	2.0306	-.00104	26.930	.09297
Stddev	.00011	.00067	.00041	.0178	.0539	.00177	.185	.00101
%RSD	198.11	31.130	24.824	1.1212	2.6567	169.28	.68530	1.0817
#1	-.00004	.00198	.00182	1.5969	2.0012	-.00243	26.817	.09181
#2	.00003	.00160	.00198	1.5673	2.0929	.00095	26.831	.09351
#3	.00018	.00291	.00120	1.5993	1.9978	-.00165	27.143	.09359
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00378	15.834	.00047	.00185	-.00068	.00054	-.00357	4.8185
Stddev	.00016	.099	.00142	.00274	.00173	.00291	.00711	.0240
%RSD	4.2873	.62302	302.36	147.91	253.19	536.20	199.32	.49750
#1	.00360	15.733	.00204	.00453	-.00160	.00292	-.01102	4.8453
#2	.00391	15.841	-.00074	.00196	-.00175	.00142	-.00283	4.8113
#3	.00382	15.930	.00011	-.00094	.00131	-.00271	.00315	4.7990
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606099609 Acquired: 6/27/2016 12:48:34 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00041**	**.50689**	**-.01603**	**-.00012**	**.00024**	**.00132**	**.00004**
Stddev	.00051	.00207	.00331	.00296	.00071	.00015	.00003
%RSD	122.28	.40838	20.614	2431.3	295.76	11.101	65.300
#1	-.00086	.50564	-.01656	.00002	.00084	.00147	.00001
#2	-.00052	.50575	-.01250	-.00315	-.00055	.00118	.00004
#3	.00014	.50928	-.01905	.00276	.00043	.00130	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9626.1**	**58293.**	**2964.2**
Stddev	20.6	405.	2.4
%RSD	.21356	.69449	.08122
#1	9613.0	58609.	2962.4
#2	9649.8	58434.	2966.9
#3	9615.6	57837.	2963.3

Approved: June 28, 2016

Sample Name: L1606111623 Acquired: 6/27/2016 12:52:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00147	.01556	.00438	.34960	.01944	.00464	21.262	.00011
Stddev	.00220	.00714	.00244	.00217	.00139	.00008	.175	.00026
%RSD	150.19	45.914	55.653	.61929	7.1373	1.6984	.82515	246.93
#1	.00261	.02114	.00269	.35205	.01916	.00470	21.452	.00033
#2	-.00107	.01803	.00328	.34794	.02095	.00467	21.229	.00017
#3	.00286	.00751	.00718	.34880	.01822	.00455	21.106	-.00018
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	.00359	.00308	.01919	4.9518	.00186	9.2859	.00223
Stddev	.00020	.00096	.00072	.01132	.0871	.00204	.0483	.00253
%RSD	26.204	26.861	23.462	58.996	1.7581	109.65	.51972	113.63
#1	.00052	.00359	.00285	.02309	4.8522	.00180	9.2359	.00360
#2	.00086	.00263	.00390	.00644	4.9899	.00393	9.3323	-.00069
#3	.00087	.00455	.00250	.02805	5.0133	-.00015	9.2894	.00377
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.2853	142.47	.00504	.05255	-.00148	-.00027	.00638	3.3753
Stddev	.0046	.05	.00090	.00619	.00245	.00321	.00461	.0181
%RSD	.36184	.03676	17.858	11.771	165.71	1172.5	72.258	.53501
#1	1.2812	142.46	.00437	.04543	-.00416	.00001	.00525	3.3544
#2	1.2904	142.53	.00606	.05561	-.00095	-.00361	.00244	3.3867
#3	1.2843	142.43	.00468	.05661	.00066	.00278	.01145	3.3846
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606111623 Acquired: 6/27/2016 12:52:27 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00063	.17063	-.00486	.10658	2.7863	.00832	.00293
Stddev	.00042	.00034	.00551	.00239	.0072	.00022	.00040
%RSD	65.420	.19950	113.37	2.2436	.25677	2.6012	13.547
#1	.00097	.17024	-.00043	.10882	2.7881	.00807	.00261
#2	.00017	.17079	-.00312	.10406	2.7784	.00847	.00281
#3	.00077	.17087	-.01102	.10687	2.7923	.00842	.00338
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9640.9	57918.	2931.6
Stddev	63.9	253.	5.2
%RSD	.66309	.43737	.17860
#1	9706.3	57711.	2937.4
#2	9637.9	58200.	2927.2
#3	9578.6	57841.	2930.2

Approved: June 28, 2016

Sample Name: L1606111624 Acquired: 6/27/2016 12:56:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00035	-.00937	.00229	.34841	.01823	.00462	20.849	.00020
Stddev	.00272	.00762	.00155	.00132	.00111	.00006	.357	.00036
%RSD	778.23	81.308	67.611	.37972	6.0899	1.2421	1.7140	175.16
#1	.00231	-.00854	.00224	.34926	.01889	.00469	20.690	.00048
#2	-.00024	-.00220	.00077	.34688	.01695	.00458	20.599	-.00020
#3	-.00312	-.01737	.00386	.34907	.01886	.00460	21.258	.00033
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00094	.00358	.00241	.00141	4.9328	-.00143	8.9933	.00088
Stddev	.00039	.00084	.00071	.01661	.0286	.00191	.2621	.00152
%RSD	41.102	23.367	29.333	1179.3	.58066	133.79	2.9139	171.80
#1	.00128	.00441	.00275	.00238	4.9523	-.00291	8.7732	.00227
#2	.00104	.00274	.00288	.01751	4.9000	.00073	8.9236	.00111
#3	.00052	.00360	.00159	-.01567	4.9463	-.00209	9.2832	-.00074
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.3099	139.68	.00458	.05064	.00100	.00160	.00511	3.3994
Stddev	.0115	1.69	.00119	.00399	.00202	.00134	.01025	.0147
%RSD	.87517	1.2074	26.070	7.8709	201.03	83.535	200.37	.43322
#1	1.3217	138.45	.00428	.05313	.00056	.00152	.01443	3.4160
#2	1.3093	138.98	.00357	.04605	-.00076	.00031	-.00586	3.3942
#3	1.2988	141.60	.00590	.05276	.00320	.00298	.00677	3.3879
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606111624 Acquired: 6/27/2016 12:56:18 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00004**	**.16713**	**-.01305**	**.10902**	**2.8061**	**.00565**	**.00181**
Stddev	.00110	.00200	.00201	.00362	.0198	.00017	.00047
%RSD	2965.9	1.1939	15.396	3.3176	.70560	3.0758	26.191
#1	.00109	.16647	-.01124	.11271	2.8277	.00557	.00141
#2	-.00111	.16554	-.01521	.10886	2.8016	.00554	.00169
#3	-.00010	.16937	-.01269	.10548	2.7889	.00585	.00234
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9621.1**	**58104.**	**2981.3**
Stddev	30.0	389.	29.4
%RSD	.31156	.66925	.98702
#1	9591.7	57688.	2988.3
#2	9651.6	58165.	3006.6
#3	9620.1	58458.	2949.0

Approved: June 28, 2016

Sample Name: L1606102602 Acquired: 6/27/2016 13:00:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00022	.00205	-.00136	.00107	.00338	-.00000	7.7827	.00040
Stddev	.00107	.00744	.00195	.00235	.00045	.00005	.1451	.00005
%RSD	486.55	362.63	143.73	219.19	13.467	1020.0	1.8641	13.006
#1	-.00007	.00972	-.00084	.00337	.00386	-.00001	7.6418	.00039
#2	-.00067	-.00514	.00028	.00118	.00331	.00005	7.9316	.00045
#3	.00141	.00158	-.00351	-.00133	.00296	-.00005	7.7745	.00035
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.01549	.21171	.04406	.85896	.46778	.00399	5.8381	.13373
Stddev	.00042	.00465	.00090	.03523	.09590	.00226	.2053	.00527
%RSD	2.6989	2.1945	2.0404	4.1009	20.502	56.710	3.5163	3.9399
#1	.01595	.21640	.04347	.85962	.49628	.00152	5.6471	.12924
#2	.01537	.20711	.04509	.89386	.36085	.00448	6.0552	.13953
#3	.01514	.21162	.04361	.82342	.54620	.00596	5.8120	.13242
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00408	23.497	.65304	.01847	-.00152	-.00473	.00137	1.1130
Stddev	.00023	.589	.00091	.00293	.00244	.00451	.00512	.0018
%RSD	5.7186	2.5087	.13863	15.888	160.52	95.318	373.36	.15722
#1	.00432	22.966	.65370	.01509	-.00185	-.00890	.00472	1.1127
#2	.00405	24.132	.65201	.01989	.00107	-.00537	.00391	1.1149
#3	.00386	23.394	.65342	.02042	-.00378	.00006	-.00452	1.1114
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606102602 Acquired: 6/27/2016 13:00:08 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00017	.13845	-.00360	.00164	.00318	.00781	-.00040
Stddev	.00028	.00342	.01364	.00088	.00009	.00014	.00006
%RSD	162.07	2.4708	378.91	53.643	2.7914	1.8499	16.297
#1	-.00041	.13497	.01208	.00068	.00319	.00794	-.00047
#2	.00013	.14180	-.01270	.00183	.00309	.00785	-.00038
#3	-.00024	.13857	-.01018	.00241	.00326	.00765	-.00034
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10522.	63691.	3160.7
Stddev	147.	1450.	56.7
%RSD	1.3981	2.2767	1.7935
#1	10388.	62026.	3208.2
#2	10501.	64677.	3097.9
#3	10679.	64370.	3176.0

Approved: June 28, 2016

Sample Name: L1606102604 Acquired: 6/27/2016 13:03:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00120	.02320	-.00068	.00317	.01081	-.00005	.53402	.00002
Stddev	.00006	.00903	.00370	.00080	.00173	.00015	.04625	.00007
%RSD	4.8840	38.933	545.28	25.090	16.044	287.43	8.6606	360.15
#1	.00115	.03309	.00318	.00228	.01279	-.00004	.54280	.00007
#2	.00120	.01539	-.00419	.00343	.01009	.00009	.57525	.00005
#3	.00127	.02113	-.00102	.00380	.00955	-.00021	.48401	-.00006
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00010	.00131	-.00136	.02682	.04953	-.00210	.41888	.00169
Stddev	.00009	.00024	.00075	.02522	.04733	.00367	.07583	.00236
%RSD	89.070	18.283	55.333	94.024	95.563	174.33	18.102	140.13
#1	-.00016	.00148	-.00209	.01757	.00624	-.00538	.50346	.00180
#2	.00000	.00141	-.00059	.00754	.04227	.00186	.35699	.00399
#3	-.00016	.00104	-.00138	.05537	.10006	-.00279	.39619	-.00073
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00091	5.8344	.00024	.00937	-.00078	-.00008	-.00087	1.5329
Stddev	.00017	.1289	.00146	.00288	.00160	.00208	.00351	.0177
%RSD	18.772	2.2091	603.01	30.760	204.78	2500.1	404.55	1.1558
#1	.00104	5.9515	.00088	.00698	-.00120	.00230	-.00352	1.5130
#2	.00098	5.6963	-.00143	.01257	.00098	-.00158	.00311	1.5385
#3	.00072	5.8554	.00127	.00855	-.00212	-.00096	-.00220	1.5471
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606102604 Acquired: 6/27/2016 13:03:58 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.01129**	**-.00425**	**.00453**	**.00073**	**.00062**	**-.00033**
Stddev	.00016	.00049	.00124	.00218	.00029	.00001	.00040
%RSD	168.17	4.3032	29.246	48.226	39.627	1.7802	124.10
#1	-.00024	.01184	-.00555	.00662	.00044	.00062	-.00011
#2	.00008	.01092	-.00308	.00226	.00073	.00061	-.00008
#3	-.00014	.01111	-.00410	.00470	.00102	.00063	-.00079
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10264.**	**61770.**	**3063.1**
Stddev	82.	1823.	36.6
%RSD	.80048	2.9515	1.1947
#1	10355.	59854.	3033.0
#2	10241.	61974.	3103.8
#3	10196.	63483.	3052.5

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 13:07:53 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39855	9.9772	.42046	.50344	.95772	.04895	9.5448	.05172
Stddev	.00683	.1980	.00527	.01093	.00739	.00095	.0947	.00030
%RSD	1.7128	1.9841	1.2532	2.1714	.77178	1.9362	.99206	.57149
#1	.39069	9.7501	.42628	.49084	.95811	.04786	9.4971	.05193
#2	.40204	10.069	.41910	.50905	.95015	.04942	9.4833	.05186
#3	.40294	10.113	.41601	.51043	.96492	.04957	9.6538	.05138
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20728	.49174	.52427	3.7658	47.113	.95130	9.4667	.47419
Stddev	.00145	.01084	.00292	.0457	.314	.00824	.2111	.00912
%RSD	.70027	2.2054	.55705	1.2121	.66610	.86617	2.2300	1.9228
#1	.20870	.48004	.52679	3.7302	47.107	.95111	9.2849	.48066
#2	.20735	.49371	.52495	3.7499	46.802	.94315	9.4170	.46377
#3	.20580	.50146	.52107	3.8173	47.430	.95963	9.6982	.47816
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	1.0270	48.116	.52240	10.440	.51931	1.2424	.42085	5.1300
Stddev	.0100	.448	.00357	.065	.00444	.0023	.00479	.0296
%RSD	.97214	.93093	.68267	.62704	.85492	.18669	1.1372	.57801
#1	1.0357	48.131	.52517	10.496	.52062	1.2397	.42531	5.1539
#2	1.0293	47.660	.52366	10.455	.52295	1.2439	.42146	5.1394
#3	1.0161	48.555	.51838	10.368	.51436	1.2434	.41579	5.0968
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 13:07:53 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**1.0297**	**.95746**	**.93834**	**.51847**	**.98130**	**1.0528**	**.95999**
Stddev	.0063	.00952	.01582	.00063	.02074	.0067	.01007
%RSD	.61354	.99395	1.6856	.12159	2.1136	.63322	1.0495
#1	1.0359	.95765	.94753	.51819	.95739	1.0591	.95621
#2	1.0300	.94785	.92008	.51919	.99197	1.0533	.95235
#3	1.0233	.96688	.94742	.51802	.99452	1.0458	.97141
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9551.0**	**58673.**	**3085.7**
Stddev	21.5	957.	26.3
%RSD	.22509	1.6314	.85238
#1	9526.7	59766.	3082.4
#2	9558.6	58271.	3113.4
#3	9567.7	57983.	3061.2

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 13:11:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00014**	**-.00445**	**-.00119**	**.00208**	**-.00135**	**-.00001**	**-.01457**	**.00003**
Stddev	.00236	.00341	.00067	.00250	.00099	.00005	.05566	.00031
%RSD	1640.9	76.698	56.614	120.45	73.479	318.32	382.09	1088.0
#1	-.00287	-.00801	-.00141	.00100	-.00037	-.00003	.02640	.00026
#2	.00127	-.00415	-.00043	.00029	-.00133	.00004	-.07794	.00015
#3	.00117	-.00120	-.00172	.00493	-.00235	-.00005	.00784	-.00032
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00027**	**.00199**	**-.00040**	**-.00353**	**.17000**	**-.00171**	**.00538**	**.00159**
Stddev	.00010	.00055	.00131	.03844	.02716	.00277	.06978	.00187
%RSD	35.764	27.862	324.55	1087.7	15.978	162.37	1297.3	117.63
#1	.00032	.00216	.00054	.04081	.15267	-.00456	-.00664	.00232
#2	.00016	.00244	-.00190	-.02729	.20130	.00098	-.05761	.00298
#3	.00034	.00137	.00015	-.02412	.15602	-.00155	.08039	-.00053
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00379**	**.14492**	**.00033**	**.00576**	**-.00060**	**.00422**	**.00182**	**.00473**
Stddev	.00034	.01572	.00035	.01026	.00051	.00038	.00185	.00216
%RSD	8.8594	10.849	107.73	177.93	84.779	8.9533	101.57	45.720
#1	.00391	.14066	.00063	-.00473	-.00071	.00432	.00390	.00674
#2	.00406	.16233	-.00006	.00626	-.00004	.00454	.00119	.00499
#3	.00342	.13177	.00041	.01577	-.00103	.00380	.00036	.00244
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 13:11:30 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00075	.00183	-.00426	.00298	.00111	.00029	.00146
Stddev	.00071	.00019	.00560	.00028	.00120	.00009	.00044
%RSD	94.654	10.537	131.40	9.4307	107.69	30.310	30.073
#1	-.00003	.00189	-.00424	.00272	.00097	.00036	.00109
#2	.00137	.00161	.00133	.00328	.00238	.00032	.00194
#3	.00091	.00198	-.00988	.00294	-.00001	.00019	.00134
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9906.1	59989.	3002.2
Stddev	128.4	1165.	36.0
%RSD	1.2959	1.9425	1.1986
#1	9929.8	60699.	2993.2
#2	9767.5	58645.	2971.6
#3	10021.	60625.	3041.8

Approved: June 28, 2016

Sample Name: L1606102606 Acquired: 6/27/2016 13:15:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00116	.04310	-.00091	.00135	-.00138	-.00011	.24063	-.00005
Stddev	.00111	.00627	.00105	.00334	.00056	.00005	.02008	.00033
%RSD	96.010	14.536	114.92	247.26	40.605	47.397	8.3444	670.72
#1	.00206	.03718	.00029	.00008	-.00171	-.00017	.26380	-.00039
#2	-.00008	.04246	-.00143	.00513	-.00073	-.00009	.22972	.00028
#3	.00149	.04966	-.00159	-.00117	-.00170	-.00007	.22837	-.00004
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00041	.00158	.00015	.07506	.12658	-.00200	.31903	.00533
Stddev	.00016	.00116	.00212	.01437	.08050	.00181	.11842	.00296
%RSD	39.271	73.288	1442.2	19.147	63.596	90.890	37.118	55.433
#1	.00059	.00233	.00165	.06693	.20692	-.00396	.40405	.00527
#2	.00032	.00216	.00107	.09165	.12692	-.00037	.18378	.00241
#3	.00031	.00025	-.00228	.06659	.04591	-.00166	.36926	.00832
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00102	12.138	.00292	.01735	-.00104	-.00224	-.00069	1.7912
Stddev	.00024	.512	.00070	.00389	.00235	.00340	.00256	.0299
%RSD	23.803	4.2149	24.131	22.406	225.03	151.77	368.24	1.6684
#1	.00119	12.592	.00310	.01880	-.00327	.00006	.00221	1.7616
#2	.00113	11.584	.00351	.02030	-.00127	-.00063	-.00261	1.7906
#3	.00074	12.237	.00214	.01294	.00141	-.00615	-.00168	1.8214
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606102606 Acquired: 6/27/2016 13:15:28 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00038**	**.00523**	**-.00029**	**.00262**	**.00035**	**.00896**	**.00010**
Stddev	.00061	.00027	.00252	.00323	.00155	.00029	.00031
%RSD	158.35	5.1856	883.43	123.20	444.62	3.2537	301.10
#1	-.00031	.00523	.00262	.00309	-.00004	.00869	.00034
#2	-.00102	.00496	-.00161	-.00082	-.00097	.00891	.00022
#3	.00019	.00550	-.00187	.00560	.00206	.00927	-.00025
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**10417.**	**62883.**	**3149.1**
Stddev	112.	932.	103.0
%RSD	1.0779	1.4828	3.2700
#1	10511.	63478.	3064.6
#2	10447.	63364.	3263.8
#3	10293.	61809.	3118.8

Approved: June 28, 2016

Sample Name: L1606129003 Acquired: 6/27/2016 13:19:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	-.00007	-.00490	-.00263	.00116	.01488	-.00005	.94835	.00015
Stddev	.00069	.00784	.00207	.00095	.00153	.00008	.04705	.00024
%RSD	1049.5	159.97	78.911	82.431	10.267	159.57	4.9610	155.58
#1	.00007	.00408	-.00489	.00009	.01319	-.00005	.89413	.00038
#2	-.00081	-.01036	-.00082	.00191	.01529	-.00014	.97836	-.00009
#3	.00054	-.00843	-.00217	.00147	.01616	.00003	.97256	.00016
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00020	.00029	-.00021	1.5518	.25213	-.00855	.61811	.02470
Stddev	.00039	.00089	.00104	.0399	.11756	.00244	.10475	.00149
%RSD	197.27	311.51	508.66	2.5733	46.628	28.589	16.946	6.0350
#1	.00030	-.00038	.00014	1.5114	.14886	-.01109	.56411	.02301
#2	.00052	-.00006	-.00138	1.5912	.22746	-.00621	.73884	.02584
#3	-.00023	.00130	.00062	1.5527	.38007	-.00834	.55139	.02525
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00028	5.6687	.00119	.01042	-.00074	.00208	.00052	.41967
Stddev	.00026	.1634	.00066	.00843	.00287	.00220	.00352	.01113
%RSD	90.448	2.8821	55.491	80.953	390.80	105.66	671.07	2.6529
#1	.00015	5.4801	.00181	.00715	.00094	.00366	-.00340	.42637
#2	.00058	5.7661	.00050	.00411	-.00406	-.00043	.00157	.42582
#3	.00012	5.7600	.00125	.02000	.00091	.00301	.00340	.40682
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: L1606129003 Acquired: 6/27/2016 13:19:23 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: 20 Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00032	.02183	.00273	.00216	.00029	.00131	-.00013
Stddev	.00047	.00102	.00597	.00367	.00048	.00011	.00029
%RSD	147.15	4.6769	218.71	169.95	165.96	8.6066	231.95
#1	.00006	.02065	.00326	.00621	.00084	.00127	.00001
#2	.00004	.02241	-.00349	-.00095	.00002	.00123	-.00046
#3	.00086	.02242	.00842	.00122	.00000	.00144	.00007
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	10192.	62198.	3074.6
Stddev	151.	896.	60.3
%RSD	1.4841	1.4413	1.9622
#1	10087.	63037.	3142.4
#2	10123.	62304.	3026.8
#3	10365.	61254.	3054.7

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 13:23:20 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.39466	9.8952	.40043	.50143	.97919	.04849	9.7927	.05038
Stddev	.01306	.3836	.01000	.02169	.00739	.00183	.0660	.00133
%RSD	3.3098	3.8763	2.4963	4.3256	.75498	3.7815	.67452	2.6465
#1	.38704	9.6439	.40978	.48959	.97741	.04728	9.8281	.05184
#2	.38719	9.7049	.40160	.48825	.98731	.04758	9.8334	.05005
#3	.40974	10.337	.38990	.52647	.97285	.05060	9.7165	.04923
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.20069	.48650	.50460	3.8975	47.776	.97248	9.4955	.48926
Stddev	.00441	.01900	.01134	.0630	.388	.00867	.0671	.00174
%RSD	2.1979	3.9054	2.2474	1.6171	.81251	.89105	.70691	.35652
#1	.20508	.47470	.51551	3.8721	47.744	.97251	9.4735	.48919
#2	.20071	.47638	.50543	3.9692	48.180	.98114	9.5709	.49104
#3	.19626	.50842	.49287	3.8510	47.405	.96381	9.4422	.48755
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99535	49.328	.50566	10.124	.50743	1.2005	.40926	4.9655
Stddev	.02398	.381	.01095	.218	.01442	.0269	.00502	.1016
%RSD	2.4097	.77333	2.1647	2.1554	2.8422	2.2416	1.2268	2.0468
#1	1.0203	49.197	.51675	10.351	.52175	1.2284	.41424	5.0701
#2	.99336	49.758	.50537	10.104	.50763	1.1982	.40933	4.9591
#3	.97242	49.030	.49486	9.9158	.49291	1.1748	.40420	4.8672
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value								
Range								

Approved: June 28, 2016

Sample Name: CCV Acquired: 6/27/2016 13:23:20 Type: QC
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.99630	.97913	.95380	.50300	.97315	1.0214	.97706
Stddev	.02300	.00787	.00906	.01053	.03812	.0240	.00719
%RSD	2.3082	.80329	.94947	2.0942	3.9168	2.3493	.73581
#1	1.0198	.97521	.96013	.51368	.94863	1.0450	.97116
#2	.99534	.98818	.95783	.50269	.95376	1.0222	.97495
#3	.97380	.97399	.94342	.49262	1.0171	.99699	.98507
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
Value							
Range							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9660.1	58486.	3001.0
Stddev	163.9	1564.	9.9
%RSD	1.6964	2.6746	.32945
#1	9505.7	59464.	2995.2
#2	9642.7	59312.	2995.4
#3	9832.0	56682.	3012.5

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 13:26:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**-.00010**	**.00303**	**-.00373**	**.00500**	**-.00055**	**-.00003**	**.00393**
Stddev	.00170	.00499	.00268	.00031	.00065	.00008	.03122
%RSD	1689.8	164.71	71.961	6.1638	118.06	299.30	794.56
#1	.00106	.00037	-.00375	.00491	-.00130	.00001	-.03094
#2	.00068	-.00007	-.00103	.00474	-.00008	.00003	.01342
#3	-.00205	.00879	-.00640	.00534	-.00028	-.00012	.02931
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Cd2288	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.00015**	**.00015**	**.00156**	**-.00015**	**-.01189**	**.13544**	**-.00177**
Stddev	.00011	.00034	.00096	.00093	.01157	.09102	.00528
%RSD	70.413	226.11	61.816	600.89	97.339	67.203	297.58
#1	.00003	.00039	.00064	-.00100	-.00558	.20922	-.00741
#2	.00018	-.00024	.00149	-.00030	-.02525	.03373	.00306
#3	.00025	.00029	.00256	.00084	-.00484	.16338	-.00097
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	Mg2790	Mn2576	Mo2020	Na5895	Ni2316	P_2149	Pb2203
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.01205**	**.00050**	**.00395**	**.16416**	**.00017**	F **.01114**	**-.00270**
Stddev	.01807	.00205	.00042	.03616	.00046	.00174	.00166
%RSD	150.01	409.81	10.590	22.026	265.71	15.573	61.523
#1	.02884	.00064	.00398	.19851	-.00024	.01014	-.00178
#2	-.00708	.00248	.00436	.12643	.00066	.01014	-.00462
#3	.01438	-.00162	.00352	.16753	.00010	.01315	-.00170
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Fail	Chk Pass
High Limit						.01000	
Low Limit						-.01000	

Approved: June 28, 2016

Sample Name: CCB Acquired: 6/27/2016 13:26:46 Type: Blank
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sb2068	Se1960	Si2124	Sn1899	Sr4077	Ti3372	Tl1908
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00393	.00112	.00872	.00073	.00181	.01167	.00102
Stddev	.00151	.00746	.00139	.00019	.00058	.00506	.00117
%RSD	38.515	664.39	15.940	25.365	32.293	43.335	115.09
#1	.00316	-.00100	.00967	.00052	.00245	.00931	.00206
#2	.00567	.00941	.00935	.00088	.00131	.00823	.00126
#3	.00295	-.00504	.00712	.00078	.00166	.01748	-.00026
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Elem	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm
Avg	.00126	.00021	.00147
Stddev	.00076	.00021	.00080
%RSD	60.083	103.19	54.681
#1	.00163	.00042	.00075
#2	.00039	.00020	.00233
#3	.00175	-.00000	.00132
Check ?	Chk Pass	Chk Pass	Chk Pass
High Limit			
Low Limit			

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	9947.5	59758.	3010.4
Stddev	96.7	1863.	52.9
%RSD	.97166	3.1170	1.7571
#1	10052.	59475.	3024.7
#2	9862.1	61746.	2951.8
#3	9928.1	58053.	3054.7

Approved: June 28, 2016

Sample Name: LLCCV Acquired: 6/27/2016 13:30:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Ag3280	Al3082	As1890	B_2496	Ba4554	Be3131	Ca4226	Cd2288
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00878	.16766	.00389	.08557	.00677	.00157	.40977	.00073
Stddev	.00207	.00346	.00021	.00327	.00081	.00006	.02595	.00024
%RSD	23.531	2.0622	5.4293	3.8191	11.914	3.9744	6.3339	33.165
#1	.01068	.16888	.00391	.08931	.00721	.00156	.38214	.00070
#2	.00908	.17034	.00409	.08409	.00584	.00164	.41351	.00098
#3	.00658	.16376	.00367	.08329	.00727	.00151	.43365	.00050
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Co2286	Cr2677	Cu2247	Fe2611	K_7664	Li6707	Mg2790	Mn2576
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00384	.00587	.00477	.06082	.91229	.08113	.39200	.00719
Stddev	.00038	.00131	.00041	.02730	.02861	.00171	.10933	.00172
%RSD	9.8067	22.365	8.5727	44.890	3.1359	2.1106	27.890	23.950
#1	.00418	.00493	.00504	.05726	.93538	.08181	.26640	.00586
#2	.00392	.00737	.00430	.03548	.92120	.07919	.44374	.00914
#3	.00343	.00531	.00496	.08973	.88029	.08240	.46585	.00658
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Elem	Mo2020	Na5895	Ni2316	P_2149	Pb2203	Sb2068	Se1960	Si2124
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	.00867	.49948	.01573	.80363	.00797	.08206	.01475	.83298
Stddev	.00028	.02628	.00123	.00471	.00119	.00489	.00371	.00454
%RSD	3.1854	5.2609	7.8331	.58570	14.963	5.9538	25.165	.54557
#1	.00835	.47045	.01523	.80835	.00800	.08756	.01866	.83750
#2	.00881	.52163	.01713	.80362	.00915	.08036	.01127	.83302
#3	.00884	.50635	.01482	.79893	.00677	.07824	.01432	.82841
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit								
Low Limit								

Approved: June 28, 2016

Sample Name: LLCCV Acquired: 6/27/2016 13:30:45 Type: Unk
Method: ICP-THERMO3_6010_200.7WATER_3YLINES(v977) Mode: CONC Corr. Factor: 1.00000(
User: JYH Custom ID1: Custom ID2: Custom ID3:
Comment:

Elem	Sn1899	Sr4077	Ti3372	Tl1908	V_2924	Zn2062	Zr3391
Units	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Avg	**.40284**	**.04313**	**.02333**	**.15595**	**.00848**	**.01704**	**.04589**
Stddev	.00545	.00068	.00788	.00367	.00039	.00004	.00162
%RSD	1.3539	1.5742	33.792	2.3562	4.5484	.25639	3.5272
#1	.40779	.04330	.03084	.15591	.00827	.01709	.04451
#2	.40373	.04238	.02402	.15965	.00892	.01703	.04548
#3	.39699	.04370	.01512	.15230	.00824	.01701	.04767
Check ?	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass	Chk Pass
High Limit							
Low Limit							

Int. Std.	Y_2243	Y_3600	Y_3774
Units	Cts/S	Cts/S	Cts/S
Avg	**9797.4**	**58651.**	**2881.8**
Stddev	19.7	674.	40.9
%RSD	.20082	1.1484	1.4200
#1	9782.0	58269.	2909.3
#2	9819.6	58255.	2901.4
#3	9790.6	59429.	2834.8

Approved: June 28, 2016

2.3.2 Metals ICP-MS Data

2.3.2.1 Summary Data

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW16F-061616	**Prep Method:**	3015	**Prep Date:**	06/21/2016 11:18
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/29/2016 11:35
Workgroup #:	WG574572	**Analyst:**	BKT	**Run Date:**	06/29/2016 14:51
Collect Date:	06/16/2016 07:55	**Dilution:**	1	**File ID:**	NI.062916.145120
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00134	J	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00894		0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.186		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.00645		0.00120	0.000600	0.000300
Lead, Total	7439-92-1	0.00100	U	0.00200	0.00100	0.000500
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Zinc, Total	7440-66-6	0.158		0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW16F-061616	**Prep Method:**	3015	**Prep Date:**	06/21/2016 11:18
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/05/2016 09:36
Workgroup #:	WG574572	**Analyst:**	JYH	**Run Date:**	07/05/2016 16:05
Collect Date:	06/16/2016 07:55	**Dilution:**	20	**File ID:**	NI.070516.160533
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Cobalt, Total	7440-48-4	0.355		0.0400	0.0200	0.0100
Copper, Total	7440-50-8	0.828		0.0800	0.0400	0.0200
Manganese, Total	7439-96-5	3.12		0.0800	0.0400	0.0200
Vanadium, Total	7440-62-2	0.0200	U	0.0400	0.0200	0.0100

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW16F-061616	**Prep Method:**	3015	**Prep Date:**	06/21/2016 11:18
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/06/2016 09:17
Workgroup #:	WG574572	**Analyst:**	JYH	**Run Date:**	07/06/2016 15:27
Collect Date:	06/16/2016 07:55	**Dilution:**	200	**File ID:**	NI.070616.152752
Sample Tag:	DL03	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Chromium, Total	7440-47-3	4.62		0.800	0.400	0.200

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-02	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	18WW16F-061616	**Prep Method:**	3015	**Prep Date:**	06/21/2016 11:18
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/05/2016 09:36
Workgroup #:	WG574572	**Analyst:**	JYH	**Run Date:**	07/05/2016 16:08
Collect Date:	06/16/2016 07:55	**Dilution:**	200	**File ID:**	NI.070516.160845
Sample Tag:	DL02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Nickel, Total	7440-02-0	14.3		1.60	0.800	0.400

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	129-061616	**Prep Method:**	3015	**Prep Date:**	06/21/2016 11:18
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/29/2016 11:35
Workgroup #:	WG574572	**Analyst:**	BKT	**Run Date:**	06/29/2016 14:54
Collect Date:	06/16/2016 09:05	**Dilution:**	1	**File ID:**	NI.062916.145431
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00110	J	0.00200	0.00100	0.000500
Cadmium, Total	7440-43-9	0.000383	J	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00415		0.00400	0.00200	0.00100
Copper, Total	7440-50-8	0.00173	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.000875	J	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.0478		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00956		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00246		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	129-061616	**Prep Method:**	3015	**Prep Date:**	06/21/2016 11:18
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/05/2016 09:36
Workgroup #:	WG574572	**Analyst:**	JYH	**Run Date:**	07/05/2016 16:11
Collect Date:	06/16/2016 09:05	**Dilution:**	1	**File ID:**	NI.070516.161156
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Cobalt, Total	7440-48-4	0.00182	J	0.00200	0.00100	0.000500

J	Estimated value ; the analyte concentration was less than the LOQ.
J	Estimated value ; the analyte concentration was greater than the highest standard
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-04	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	129-061616	**Prep Method:**	3015	**Prep Date:**	06/21/2016 11:18
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/05/2016 09:36
Workgroup #:	WG574572	**Analyst:**	JYH	**Run Date:**	07/05/2016 16:15
Collect Date:	06/16/2016 09:05	**Dilution:**	20	**File ID:**	NI.070516.161508
Sample Tag:	DL01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Barium, Total	7440-39-3	0.293		0.120	0.0600	0.0300

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	120F-061616	**Prep Method:**	3015	**Prep Date:**	06/21/2016 11:18
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/29/2016 11:35
Workgroup #:	WG574572	**Analyst:**	BKT	**Run Date:**	06/29/2016 14:57
Collect Date:	06/16/2016 09:25	**Dilution:**	1	**File ID:**	NI.062916.145742
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.00356		0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.0452		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.0120		0.00400	0.00200	0.00100
Copper, Total	7440-50-8	0.00476		0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00162	J	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.186		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.0755		0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.0105		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0659		0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-06	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	120F-061616	**Prep Method:**	3015	**Prep Date:**	06/21/2016 11:18
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/05/2016 09:36
Workgroup #:	WG574572	**Analyst:**	JYH	**Run Date:**	07/05/2016 16:30
Collect Date:	06/16/2016 09:25	**Dilution:**	1	**File ID:**	NI.070516.163034
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Cobalt, Total	7440-48-4	0.0151		0.00200	0.00100	0.000500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	123-061616	**Prep Method:**	3015	**Prep Date:**	06/21/2016 11:18
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	07/05/2016 09:36
Workgroup #:	WG574572	**Analyst:**	JYH	**Run Date:**	07/05/2016 16:34
Collect Date:	06/16/2016 09:55	**Dilution:**	1	**File ID:**	NI.070516.163440
Sample Tag:	02	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Cobalt, Total	7440-48-4	0.00250		0.00200	0.00100	0.000500

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

Certificate of Analysis

Sample #:	L16061026-07	**PrePrep Method:**	N/A	**Instrument:**	ICP-MS2
Client ID:	123-061616	**Prep Method:**	3015	**Prep Date:**	06/21/2016 11:18
Matrix:	Water	**Analytical Method:**	6020A	**Cal Date:**	06/29/2016 11:35
Workgroup #:	WG574572	**Analyst:**	BKT	**Run Date:**	06/29/2016 15:00
Collect Date:	06/16/2016 09:55	**Dilution:**	1	**File ID:**	NI.062916.150054
Sample Tag:	01	**Units:**	mg/L		

Analyte	CAS #	Result	Qual	LOQ	LOD	DL
Antimony, Total	7440-36-0	0.00100	U	0.00200	0.00100	0.000500
Arsenic, Total	7440-38-2	0.000767	J	0.00200	0.00100	0.000500
Barium, Total	7440-39-3	0.136		0.00600	0.00300	0.00150
Cadmium, Total	7440-43-9	0.000600	U	0.00120	0.000600	0.000300
Chromium, Total	7440-47-3	0.00177	J	0.00400	0.00200	0.00100
Copper, Total	7440-50-8	0.00142	J	0.00400	0.00200	0.00100
Lead, Total	7439-92-1	0.00104	J	0.00200	0.00100	0.000500
Manganese, Total	7439-96-5	0.0161		0.00400	0.00200	0.00100
Nickel, Total	7440-02-0	0.00319	J	0.00800	0.00400	0.00200
Silver, Total	7440-22-4	0.00100	U	0.00200	0.00100	0.000500
Thallium, Total	7440-28-0	0.000200	U	0.000400	0.000200	0.000100
Vanadium, Total	7440-62-2	0.00241		0.00200	0.00100	0.000500
Zinc, Total	7440-66-6	0.0250	U	0.0500	0.0250	0.0125

J	Estimated value ; the analyte concentration was less than the LOQ.
U	Analyte was not detected. The concentration is below the reported LOD.

Microbac

Lab Report #: L16061026
Lab Project #: 2551.096
Project Name: Longhorn Army Ammunition
Lab Contact: Michelle Taylor

2.3.2.2 QC Summary Data

Example 6020 Calculations
Perkin Elmer NexION 300X

1.0 Initial Calibration (ICAL) Parameters
The system performs linear regression from data consisting of a blank and three standards.

2.0 Calculating the concentration (C) of an element in water using data from prep log, run log, and quantitation report (note:the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	100
Vi = Initial volume	40
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/L)	0.25

3.0 Calculating the concentration (C) of an element in soil using data from prep log, run log, and quantitation report (note: the data system performs this calculation automatically when correction factors have been entered):

$$Cx = Cs \times \frac{Vf}{Vi} \times D$$

Where:	**Example:**
Cs = Concentration computed by the data system (ug/L)	0.1
Vf = Final volume	200
Vi = Initial volume	0.5
D = Dilution factor as a multiplier (10X = 10)	1
Cx = Concentration of element in (ug/kg)	40

4.0 Adjusting the concentration to dry weight:

$$Cdry = \frac{Cx \times 100}{Px}$$

Where:	**Example:**
Cx = Concentration calculated as received (wet basis)	40
Px = Percent solids of sample (%wt)	80
$Cdry$ = Concentration calculated as dry weight (ug/kg)	50

50 ug/kg = 0.050 mg/kg

Perkin Elmer NexION ICP/MS

STANDARDS KEY

QC Std 1 - ICV
QC Std 2 - ICB
QC Std 3 - LLICV
QC Std 4 - ICSA
QC Std 5 - ICSAB
QC Std 6 - CCV
QC Std 7 - CCB
QC Std 8 - LLCCV

Calibration Solutions

Analyte	Stock Conc. (mg/L)	S1 (mg/L)	S2 (mg/L)	S3 (mg/L)	S4 (mg/L)
Al	10	0	0.00005	0.05	0.1
Sb	10	0	0.00005	0.05	0.1
As	10	0	0.00005	0.05	0.1
Ba	10	0	0.00005	0.05	0.1
Be	10	0	0.00005	0.05	0.1
Ca	1000	0	0.005	5	10
Cd	10	0	0.0005	0.05	0.1
Cr	10	0	0.0005	0.05	0.1
Co	10	0	0.0005	0.05	0.1
Cu	10	0	0.0005	0.05	0.1
Fe	1000	0	0.005	5	10
Pb	10	0	0.00005	0.05	0.1
Mg	1000	0	0.005	5	10
Mn	10	0	0.00005	0.05	0.1
Ni	10	0	0.00005	0.05	0.1
K	1000	0	0.005	5	10
Se	10	0	0.00005	0.05	0.1
Ag	10	0	0.00005	0.05	0.1
Na	1000	0	0.005	5	10
Tl	10	0	0.00005	0.05	0.1
V	10	0	0.00005	0.05	0.1
U	1000	0	0.00005	0.05	0.1
Zn	10	0	0.00005	0.05	0.1

Microbac Laboratories Inc.
Microwave Digestion Log

Workgroup: WG573548
Analyst: VC
Spike Analyst: VC
Run Date: 06/21/2016 11:18
Method: 3015
Balance: BAL016
Instrument: MW-4
Instrument Start: 06/21/2016 11:33

SOP: ME407 Revison 19
Spike Solution: STD75998
Spike Witness: ERP
40 & 50 ML. DIGESTION TU COA18987
HNO3 Lot #: COA18905
MS Filters- fisher-Lot#R RGT35621

	SAMPLE #	Type	Matrix	Initial Amount	Final Volume	Initial Vessel Wt	Final Vessel Wt	Spike Amount	Due Date
1	WG573548-02	BLANK	1	20 mL	50 mL	181.353 g	181.33 g		
2	WG573548-03	LCS	1	20 mL	50 mL	182.64 g	182.591 g	.25 mL	
3	L16060986-01	SAMP	1	20 mL	50 mL	183.712 g	183.69 g		06/27/16
4	L16060986-03	SAMP	1	20 mL	50 mL	184.065 g	184.038 g		06/27/16
5	L16060986-05	SAMP	1	20 mL	50 mL	184.546 g	184.518 g		06/27/16
6	L16060986-07	SAMP	1	20 mL	50 mL	183.279 g	183.251 g		06/27/16
7	L16060986-09	SAMP	1	20 mL	50 mL	180.961 g	180.921 g		06/27/16
8	L16060986-11	SAMP	1	20 mL	50 mL	183.322 g	183.289 g		06/27/16
9	L16060986-13	SAMP	1	20 mL	50 mL	182.911 g	182.887 g		06/27/16
10	L16060986-15	SAMP	1	20 mL	50 mL	180.852 g	180.836 g		06/27/16
11	L16060986-17	SAMP	1	20 mL	50 mL	184.362 g	184.347 g		06/27/16
12	L16060986-19	SAMP	1	20 mL	50 mL	181.353 g	181.343 g		06/27/16
13	WG573548-01	REF	1	20 mL	50 mL	182.733 g	182.717 g		
14	L16060986-23	RS03	1	20 mL	50 mL	182.733 g	182.717 g		06/27/16
15	L16060986-25	SAMP	1	20 mL	50 mL	183.941 g	183.923 g		06/27/16
16	L16060986-27	SAMP	1	20 mL	50 mL	180.794 g	180.793 g		06/27/16
17	L16060986-29	SAMP	1	20 mL	50 mL	182.177 g	182.161 g		06/27/16
18	WG573548-04	MS	1	20 mL	50 mL	182.271 g	182.257 g	.25 mL	
19	L16060986-35	MS03	1	20 mL	50 mL	182.271 g	182.257 g	.25 mL	06/27/16
20	WG573548-05	MSD	1	20 mL	50 mL	184.375 g	184.35 g	.25 mL	
21	L16060986-37	SD03	1	20 mL	50 mL	184.375 g	184.35 g	.25 mL	06/27/16
22	L16060986-39	SAMP	1	20 mL	50 mL	181.551 g	181.533 g		06/27/16
23	L16060986-41	SAMP	1	20 mL	50 mL	184.38 g	184.379 g		06/27/16
24	L16061026-02	SAMP	1	20 mL	50 mL	182.267 g	182.259 g		06/28/16
25	L16061026-04	SAMP	1	20 mL	50 mL	182.882 g	182.893 g		06/28/16
26	L16061026-06	SAMP	1	20 mL	50 mL	180.796 g	180.773 g		06/28/16
27	L16061026-07	SAMP	1	20 mL	50 mL	181.26 g	181.246 g		06/28/16

L16060986-01	FILTERED DIGESTATE
L16060986-09	FILTERED DIGESTATE
L16060986-13	FILTERED DIGESTATE
L16060986-15	FILTERED DIGESTATE
L16060986-25	FILTERED DIGESTATE
L16060986-27	FILTERED DIGESTATE
L16060986-29	FILTERED DIGESTATE

MW_DIG - Modified 09/30/2009
PDF ID: 4816619
Report generated: 06/21/2016 12:51

Microbac Laboratories Inc.
Microwave Digestion Log

Analyst: Vicki Collins

SOP:
Spike Solution:
Reviewer: Sam Potter
Spike Witness:

Method:
Balance:
Instrument:
Instrument Start:

MW_DIG - Modified 09/30/2009
PDF ID: 4816619
Report generated: 06/21/2016 12:51

Microbac

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062916A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573722,574570,574572,573717,574688,574690,573790

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.062916.112234	Blank	Blank		1		06/29/16 11:22
2	NI.062916.112545	WG574676-01	Calibration Point		1		06/29/16 11:25
3	NI.062916.112857	WG574676-02	Calibration Point		1		06/29/16 11:28
4	NI.062916.113208	WG574676-03	Calibration Point		1		06/29/16 11:32
5	NI.062916.113520	WG574676-04	Calibration Point		1		06/29/16 11:35
6	NI.062916.113833	WG574676-05	Initial Calibration Verification		1		06/29/16 11:38
7	NI.062916.114146	WG574676-06	Initial Calib Blank		1		06/29/16 11:41
8	NI.062916.114653	WG574676-07	Low Level Initial Calibration V		1		06/29/16 11:46
9	NI.062916.115053	WG574676-08	Interference Check		1		06/29/16 11:50
10	NI.062916.115447	WG574676-09	Interference Check		1		06/29/16 11:54
11	NI.062916.120010	WG574676-10	CCV		1		06/29/16 12:00
12	NI.062916.120734	WG574676-11	CCB		1		06/29/16 12:07
13	NI.062916.121215	L16060661-06	US23SS02502A	.253/100	1		06/29/16 12:12
14	NI.062916.121526	L16060661-07	US23SS02505A	.257/100	1		06/29/16 12:15
15	NI.062916.121838	L16060661-08	US23SS02602A	.257/100	1		06/29/16 12:18
16	NI.062916.122149	L16060661-09	US23SS02605A	.25/100	1		06/29/16 12:21
17	NI.062916.122501	L16060822-03	18CPTMW04SW-061416	20/50	10		06/29/16 12:25
18	NI.062916.122812	L16060823-02	126F-061416	20/50	50		06/29/16 12:28
19	NI.062916.123124	L16060823-03	C08-061416	20/50	50		06/29/16 12:31
20	NI.062916.123435	L16060823-04	C03-061416	20/50	50		06/29/16 12:34
21	NI.062916.123748	WG574676-12	CCV		1		06/29/16 12:37
22	NI.062916.124059	WG574676-13	CCB		1		06/29/16 12:40
23	NI.062916.124412	WG574676-14	Low Level Continuing Calibra		1		06/29/16 12:44
24	NI.062916.125354	WG573548-02	Method/Prep Blank	20/50	1		06/29/16 12:53
25	NI.062916.125705	WG573548-03	Laboratory Control S	20/50	1		06/29/16 12:57
26	NI.062916.130017	WG573548-01	Reference Sample		1	L16060986-23	06/29/16 13:00
27	NI.062916.130328	WG573548-04	Matrix Spike	20/50	1	L16060986-23	06/29/16 13:03
28	NI.062916.130639	WG573548-05	Matrix Spike Duplica	20/50	1	L16060986-23	06/29/16 13:06
29	NI.062916.130951	L16060986-01	MW-07-04	20/50	1		06/29/16 13:09
30	NI.062916.131302	L16060986-03	MW-01-10	20/50	1		06/29/16 13:13
31	NI.062916.131614	WG574572-01	Post Digestion Spike		1	L16060986-03	06/29/16 13:16
32	NI.062916.131925	WG574572-02	Serial Dilution		5	L16060986-03	06/29/16 13:19
33	NI.062916.132237	WG574572-02	Serial Dilution		25	L16060986-03	06/29/16 13:22
34	NI.062916.132550	WG574676-15	CCV		1		06/29/16 13:25

Page: 1 Approved: July 05, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062916A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573722,574570,574572,573717,574688,574690,573790

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.062916.132901	WG574676-16	CCB		1		06/29/16 13:29
36	NI.062916.133214	L16060986-05	MW-03-12	20/50	1		06/29/16 13:32
37	NI.062916.133526	L16060986-07	MW-01-07	20/50	1		06/29/16 13:35
38	NI.062916.133837	L16060986-09	MW-03-11	20/50	1		06/29/16 13:38
39	NI.062916.134150	L16060986-11	MW-01-01	20/50	1		06/29/16 13:41
40	NI.062916.134502	L16060986-13	MW-03-09	20/50	1		06/29/16 13:45
41	NI.062916.134813	L16060986-15	MW-01-08	20/50	1		06/29/16 13:48
42	NI.062916.135125	L16060986-17	MW-03-06	20/50	1		06/29/16 13:51
43	NI.062916.135436	L16060986-19	MW-03-05	20/50	1		06/29/16 13:54
44	NI.062916.135748	L16060986-25	MW-01-02	20/50	1		06/29/16 13:57
45	NI.062916.140059	L16060986-27	DUP 1	20/50	1		06/29/16 14:00
46	NI.062916.140412	WG574676-17	CCV		1		06/29/16 14:04
47	NI.062916.140723	WG574676-18	CCB		1		06/29/16 14:07
48	NI.062916.141036	L16060986-29	DUP 2	20/50	1		06/29/16 14:10
49	NI.062916.141347	L16060986-39	EQUIP BLANK 1	20/50	1		06/29/16 14:13
50	NI.062916.141659	L16060986-41	EQUIP BLANK 2	20/50	1		06/29/16 14:16
51	NI.062916.145120	L16061026-02	18WW16F-061616	20/50	1		06/29/16 14:51
52	NI.062916.145431	L16061026-04	129-061616	20/50	1		06/29/16 14:54
53	NI.062916.145742	L16061026-06	120F-061616	20/50	1		06/29/16 14:57
54	NI.062916.150054	L16061026-07	123-061616	20/50	1		06/29/16 15:00
55	NI.062916.150407	WG574676-19	CCV		1		06/29/16 15:04
56	NI.062916.150718	WG574676-20	CCB		1		06/29/16 15:07
57	NI.062916.151032	WG573099-02	Method/Prep Blank	.25/100	1		06/29/16 15:10
58	NI.062916.151343	WG573099-03	Laboratory Control S	.25/100	1		06/29/16 15:13
59	NI.062916.151655	WG573099-01	Reference Sample		10	L16060888-03	06/29/16 15:16
60	NI.062916.152006	WG573099-04	Matrix Spike	.255/100	10	L16060888-03	06/29/16 15:20
61	NI.062916.152318	WG573099-05	Matrix Spike Duplica	.254/100	10	L16060888-03	06/29/16 15:23
62	NI.062916.152629	L16060883-01	WC01	.252/100	1		06/29/16 15:26
63	NI.062916.152941	L16060912-01	WH8011	.25/100	1		06/29/16 15:29
64	NI.062916.153252	WG573717-03	Post Digestion Spike		1	L16060912-01	06/29/16 15:32
65	NI.062916.153604	WG573717-04	Serial Dilution		5	L16060912-01	06/29/16 15:36
66	NI.062916.153915	WG573717-04	Serial Dilution		25	L16060912-01	06/29/16 15:39
67	NI.062916.154228	WG574676-21	CCV		1		06/29/16 15:42
68	NI.062916.154540	WG574676-22	CCB		1		06/29/16 15:45

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062916A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573722,574570,574572,573717,574688,574690,573790

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.062916.154853	WG574001-04	Method/Prep Blank	20/50	1		06/29/16 15:48
70	NI.062916.155204	WG574001-05	Laboratory Control S	20/50	1		06/29/16 15:52
71	NI.062916.155516	WG574001-01	Reference Sample		1	L16061247-02	06/29/16 15:55
72	NI.062916.155827	WG574001-06	Duplicate	20/50	1	L16061247-02	06/29/16 15:58
73	NI.062916.160139	WG574001-02	Reference Sample		1	L16061265-01	06/29/16 16:01
74	NI.062916.160450	WG574001-07	Matrix Spike	20/50	1	L16061265-01	06/29/16 16:04
75	NI.062916.160802	WG574001-08	Matrix Spike Duplica	20/50	1	L16061265-01	06/29/16 16:08
76	NI.062916.161113	L16061247-01	WMB09	20/50	1		06/29/16 16:11
77	NI.062916.161425	WG574688-01	Post Digestion Spike		1	L16061247-01	06/29/16 16:14
78	NI.062916.161736	WG574688-02	Serial Dilution		5	L16061247-01	06/29/16 16:17
79	NI.062916.162049	WG574676-23	CCV		1		06/29/16 16:20
80	NI.062916.162401	WG574676-24	CCB		1		06/29/16 16:24
81	NI.062916.162713	WG574688-02	Serial Dilution		25	L16061247-01	06/29/16 16:27
82	NI.062916.163025	L16061265-04	SS007MWOB16-007	20/50	1		06/29/16 16:30
83	NI.062916.163336	L16061265-05	SS007MWOB21-007	20/50	1		06/29/16 16:33
84	NI.062916.163648	L16061265-06	FQC-RB06211601-CC	20/50	1		06/29/16 16:36
85	NI.062916.163959	L16061266-01	ST008MW0805-007	20/50	1		06/29/16 16:39
86	NI.062916.164310	L16061269-01	FT002MW0204-007	20/50	1		06/29/16 16:43
87	NI.062916.164622	L16061272-01	SS007MW0B18-007	20/50	1		06/29/16 16:46
88	NI.062916.164933	L16061272-02	SS007MWN752-007	20/50	1		06/29/16 16:49
89	NI.062916.165245	L16061279-01	XU936TW007A	20/50	1		06/29/16 16:52
90	NI.062916.165556	L16061279-01	XU936TW007A	20/50	50		06/29/16 16:55
91	NI.062916.165909	WG574676-25	CCV		1		06/29/16 16:59
92	NI.062916.170220	WG574676-26	CCB		1		06/29/16 17:02
93	NI.062916.170533	WG574001-03	Reference Sample		1	L16061279-02	06/29/16 17:05
94	NI.062916.170845	WG574001-03	Reference Sample		50	L16061279-02	06/29/16 17:08
95	NI.062916.171156	WG574001-09	Matrix Spike	20/50	1	L16061279-02	06/29/16 17:11
96	NI.062916.171508	WG574001-09	Matrix Spike	20/50	50	L16061279-02	06/29/16 17:15
97	NI.062916.171819	WG574001-10	Matrix Spike Duplica	20/50	1	L16061279-02	06/29/16 17:18
98	NI.062916.172131	WG574001-10	Matrix Spike Duplica	20/50	50	L16061279-02	06/29/16 17:21
99	NI.062916.172442	L16061279-05	XU936TW019A	20/50	1		06/29/16 17:24
100	NI.062916.172754	L16061279-05	XU936TW019A	20/50	50		06/29/16 17:27
101	NI.062916.173105	L16061281-01	J6F0803-01	20/50	1		06/29/16 17:31
102	NI.062916.173419	WG574676-27	CCV		1		06/29/16 17:34

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062916A.REP
Analyst1: BKT Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705
ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607
CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345
Stannous : Hydroxylamine :

Workgroups: 573722,574570,574572,573717,574688,574690,573790

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.062916.173730	WG574676-28	CCB		1		06/29/16 17:37
104	NI.062916.174043	L16061294-03	EB01	20/50	1		06/29/16 17:40
105	NI.062916.174355	L16061294-03	EB01	20/50	50		06/29/16 17:43
106	NI.062916.174706	L16061296-01	OUTFALL 002/COMP	20/50	1		06/29/16 17:47
107	NI.062916.175019	WG574676-29	Interference Check		1		06/29/16 17:50
108	NI.062916.175331	WG574676-30	Interference Check		1		06/29/16 17:53
109	NI.062916.175644	WG574676-31	CCV		1		06/29/16 17:56
110	NI.062916.175955	WG574676-32	CCB		1		06/29/16 17:59
111	NI.062916.180308	WG574676-33	Low Level Continuing Calibra		1		06/29/16 18:03
112	NI.062916.180621	WG574192-02	Method/Prep Blank	.25/100	1		06/29/16 18:06
113	NI.062916.180932	WG574192-03	Laboratory Control S	.25/100	1		06/29/16 18:09
114	NI.062916.181244	WG574192-01	Reference Sample		1	L16061206-01	06/29/16 18:12
115	NI.062916.181555	L16061206-02	LF003SD0311-007 DUP	.251/100	1		06/29/16 18:15
116	NI.062916.181907	WG574192-04	Matrix Spike	.25/100	1	L16061206-01	06/29/16 18:19
117	NI.062916.182218	WG574192-05	Matrix Spike Duplica	.253/100	1	L16061206-01	06/29/16 18:22
118	NI.062916.182530	L16061206-05	LF003SD0312-007	.25/100	1		06/29/16 18:25
119	NI.062916.182841	WG574690-01	Post Digestion Spike		1	L16061206-05	06/29/16 18:28
120	NI.062916.183153	WG574690-02	Serial Dilution		5	L16061206-05	06/29/16 18:31
121	NI.062916.183504	WG574690-02	Serial Dilution		25	L16061206-05	06/29/16 18:35
122	NI.062916.183818	WG574676-34	CCV		1		06/29/16 18:38
123	NI.062916.184129	WG574676-35	CCB		1		06/29/16 18:41
124	NI.062916.184442	L16061207-01	SS007SD0709-007	.251/100	1		06/29/16 18:44
125	NI.062916.184754	L16061207-02	SS007SD0710-007	.25/100	1		06/29/16 18:47
126	NI.062916.185105	L16061208-01	DP005SD0513-007	.252/100	1		06/29/16 18:51
127	NI.062916.185417	L16061208-02	DP005SD0514-007	.251/100	1		06/29/16 18:54
128	NI.062916.185728	L16061291-01	V6F0270-01	.253/100	1		06/29/16 18:57
129	NI.062916.190040	L16061381-01	XU936DS00500A	.254/100	1		06/29/16 19:00
130	NI.062916.190351	L16061381-01	XU936DS00500A	.254/100	50		06/29/16 19:03
131	NI.062916.190703	L16061381-02	XU936DS00505A	.258/100	1		06/29/16 19:07
132	NI.062916.191014	L16061381-02	XU936DS00505A	.258/100	50		06/29/16 19:10
133	NI.062916.191327	WG574676-36	CCV		1		06/29/16 19:13
134	NI.062916.191639	WG574676-37	CCB		1		06/29/16 19:16
135	NI.062916.191952	L16061381-03	XU936DS00300A	.252/100	1		06/29/16 19:19
136	NI.062916.192303	L16061381-03	XU936DS00300A	.252/100	50		06/29/16 19:23

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 062916A.REP

Analyst1: BKT Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD76147 ICV Std: STD76279 Post Spike: STD73705

ICSA: STD76453 ICSAB: STD76213 Int. Std: RGT36607

CCV: STD75971 LLCCV: STD76223 Tuning Sol : STD76345

Stannous : Hydroxylamine :

Workgroups: 573722,574570,574572,573717,574688,574690,573790

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	NI.062916.192615	L16061381-04	XU936DS00305A	.25/100	1		06/29/16 19:26
138	NI.062916.192926	L16061381-04	XU936DS00305A	.25/100	50		06/29/16 19:29
139	NI.062916.193237	L16061381-05	XU936DS00305C	.253/100	1		06/29/16 19:32
140	NI.062916.193550	L16061381-05	XU936DS00305C	.253/100	50		06/29/16 19:35
141	NI.062916.193901	L16061381-07	XU936DS00400A	.252/100	1		06/29/16 19:39
142	NI.062916.194213	L16061381-07	XU936DS00400A	.252/100	50		06/29/16 19:42
143	NI.062916.194524	L16061384-02	BFB-16-019	.253/100	1		06/29/16 19:45
144	NI.062916.194835	L16061384-04	BFB-16-020	.253/100	1		06/29/16 19:48
145	NI.062916.195149	WG574676-38	CCV		1		06/29/16 19:51
146	NI.062916.195500	WG574676-39	CCB		1		06/29/16 19:55
147	NI.062916.195813	L16061384-06	BFB-16-021	.253/100	1		06/29/16 19:58
148	NI.062916.200124	L16061384-08	BFB-16-022	.251/100	1		06/29/16 20:01
149	NI.062916.200436	L16061384-10	BFB-16-023	.254/100	1		06/29/16 20:04
150	NI.062916.200747	L16061384-12	BFB-16-024	.254/100	1		06/29/16 20:07
151	NI.062916.201101	WG574676-40	CCV		1		06/29/16 20:11
152	NI.062916.201412	WG574676-41	CCB		1		06/29/16 20:14
153	NI.062916.201726	WG573291-03	Method/Prep Blank	20/50	1		06/29/16 20:17
154	NI.062916.202037	WG573291-04	Laboratory Control S	20/50	1		06/29/16 20:20
155	NI.062916.202348	WG573291-01	Reference Sample		1	L16060974-01	06/29/16 20:23
156	NI.062916.202700	WG573291-05	Matrix Spike	20/50	1	L16060974-01	06/29/16 20:27
157	NI.062916.203011	WG573291-06	Matrix Spike Duplica	20/50	1	L16060974-01	06/29/16 20:30
158	NI.062916.203323	WG573790-03	Post Digestion Spike		1	L16060974-01	06/29/16 20:33
159	NI.062916.203634	WG573790-04	Serial Dilution		5	L16060974-01	06/29/16 20:36
160	NI.062916.203946	WG573790-04	Serial Dilution		25	L16060974-01	06/29/16 20:39
161	NI.062916.204259	WG574676-42	CCV		1		06/29/16 20:42
162	NI.062916.204611	WG574676-43	CCB		1		06/29/16 20:46

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070516A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD76567
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76989
Stannous : Hydroxylamine :

Workgroups: 575049,575057,575052,575054,574236,574690,574572,575217

Comments: Additional Workgroup: 574822

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.070516.092352	Blank	Blank		1		07/05/16 09:23
2	NI.070516.092704	WG575179-01	Calibration Point		1		07/05/16 09:27
3	NI.070516.093015	WG575179-02	Calibration Point		1		07/05/16 09:30
4	NI.070516.093327	WG575179-03	Calibration Point		1		07/05/16 09:33
5	NI.070516.093638	WG575179-04	Calibration Point		1		07/05/16 09:36
6	NI.070516.093952	WG575179-05	ICV		1		07/05/16 09:39
7	NI.070516.094305	WG575179-06	ICB		1		07/05/16 09:43
8	NI.070516.094618	WG575179-07	LLICV		1		07/05/16 09:46
9	NI.070516.095016	WG575179-08	Initial Calibration Verification		1		07/05/16 09:50
10	NI.070516.095329	WG575179-09	Initial Calib Blank		1		07/05/16 09:53
11	NI.070516.095642	WG575179-10	Low Level Initial Calibration V		1		07/05/16 09:56
12	NI.070516.095958	WG575179-11	Interference Check		1		07/05/16 09:59
13	NI.070516.100317	WG575179-12	Interference Check		1		07/05/16 10:03
14	NI.070516.100630	WG575179-13	CCV		1		07/05/16 10:06
15	NI.070516.100941	WG575179-14	CCB		1		07/05/16 10:09
16	NI.070516.101530	WG574663-02	Method/Prep Blank	.25/100	1		07/05/16 10:15
17	NI.070516.101841	WG574663-03	Laboratory Control S	.25/100	1		07/05/16 10:18
18	NI.070516.102152	WG574663-01	Reference Sample		1	L16061451-06	07/05/16 10:21
19	NI.070516.102504	WG574663-04	Matrix Spike	.252/100	1	L16061451-06	07/05/16 10:25
20	NI.070516.102815	WG574663-05	Matrix Spike Duplica	.253/100	1	L16061451-06	07/05/16 10:28
21	NI.070516.103127	L16061451-01	GS165SS062016S-ES	.254/100	1		07/05/16 10:31
22	NI.070516.103438	L16061451-02	GS159SS062116G-ES	.251/100	1		07/05/16 10:34
23	NI.070516.103750	WG575049-01	Post Digestion Spike		1	L16061451-02	07/05/16 10:37
24	NI.070516.104101	WG575049-02	Serial Dilution		5	L16061451-02	07/05/16 10:41
25	NI.070516.104413	WG575049-02	Serial Dilution		25	L16061451-02	07/05/16 10:44
26	NI.070516.104726	WG575179-15	CCV		1		07/05/16 10:47
27	NI.070516.105037	WG575179-16	CCB		1		07/05/16 10:50
28	NI.070516.105350	L16061451-03	GS164SS062116S-ES	.252/100	1		07/05/16 10:53
29	NI.070516.105702	L16061451-04	GS164SS062116P-ES	.257/100	1		07/05/16 10:57
30	NI.070516.110013	L16061451-05	GS154SS062316X-ES	.252/100	1		07/05/16 11:00
31	NI.070516.110324	L16061451-07	GS153SS0622316X-ES	.256/100	1		07/05/16 11:03
32	NI.070516.110636	L16061451-08	GS153SS062316X-ESD	.256/100	1		07/05/16 11:06
33	NI.070516.110948	L16061445-03	TS935DS00800A	.255/100	1		07/05/16 11:09
34	NI.070516.111259	L16061445-07	TS935DS00900A		1		07/05/16 11:12

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070516A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD76567
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76989
Stannous : Hydroxylamine :

Workgroups: 575049,575057,575052,575054,574236,574690,574572,575217

Comments: Additional Workgroup: 574822

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.070516.111611	L16061445-08	TS935DS00905A	.255/100	1		07/05/16 11:16
36	NI.070516.111922	L16061445-09	TS935DS00905C	.256/100	1		07/05/16 11:19
37	NI.070516.112234	L16061445-10	TS935DS01000A	.256/100	1		07/05/16 11:22
38	NI.070516.112546	WG575179-17	CCV		1		07/05/16 11:25
39	NI.070516.112857	WG575179-18	CCB		1		07/05/16 11:28
40	NI.070516.113210	L16061445-11	TS935DS01005A	.256/100	1		07/05/16 11:32
41	NI.070516.113521	L16061445-12	TS935DS01205A	.254/100	1		07/05/16 11:35
42	NI.070516.113833	L16061451-01	GS165SS062016S-ES	.251/100	10		07/05/16 11:38
43	NI.070516.114144	L16061451-02	GS159SS062116G-ES	.25/100	10		07/05/16 11:41
44	NI.070516.114455	WG575057-01	Post Digestion Spike		10	L16061451-02	07/05/16 11:44
45	NI.070516.114807	WG575057-02	Serial Dilution		50	L16061451-02	07/05/16 11:48
46	NI.070516.115118	L16061451-03	GS164SS062116S-ES	.251/100	10		07/05/16 11:51
47	NI.070516.115430	L16061451-04	GS164SS062116P-ES	.253/100	10		07/05/16 11:54
48	NI.070516.115741	L16061451-05	GS154SS062316X-ES		10		07/05/16 11:57
49	NI.070516.120052	WG574521-02	Reference Sample		10	L16061451-06	07/05/16 12:00
50	NI.070516.120406	WG575179-19	CCV		1		07/05/16 12:04
51	NI.070516.120717	WG575179-20	CCB		1		07/05/16 12:07
52	NI.070516.121030	L16061451-07	GS153SS0622316X-ES	.253/100	10		07/05/16 12:10
53	NI.070516.121342	L16061451-08	GS153SS062316X-ESD	.256/100	10		07/05/16 12:13
54	NI.070516.121654	WG574521-07	Matrix Spike	.258/100	10	L16061451-06	07/05/16 12:16
55	NI.070516.122005	WG574521-08	Matrix Spike Duplica	.256/100	10	L16061451-06	07/05/16 12:20
56	NI.070516.122318	WG575179-21	CCV		1		07/05/16 12:23
57	NI.070516.122629	WG575179-22	CCB		1		07/05/16 12:26
58	NI.070516.122942	WG574664-02	Method/Prep Blank	20/50	1		07/05/16 12:29
59	NI.070516.123254	WG574664-03	Laboratory Control S	20/50	1		07/05/16 12:32
60	NI.070516.123605	WG574664-01	Reference Sample		1	L16061548-01	07/05/16 12:36
61	NI.070516.123917	WG574664-04	Duplicate	20/50	1	L16061548-01	07/05/16 12:39
62	NI.070516.124228	WG574664-05	Matrix Spike	20/50	1	L16061548-01	07/05/16 12:42
63	NI.070516.124540	WG574664-06	Matrix Spike Duplica	20/50	1	L16061548-01	07/05/16 12:45
64	NI.070516.124851	L16061544-01	S6F0335-01	20/50	1		07/05/16 12:48
65	NI.070516.125203	WG575052-01	Post Digestion Spike		1	L16061544-01	07/05/16 12:52
66	NI.070516.125514	WG575052-02	Serial Dilution		5	L16061544-01	07/05/16 12:55
67	NI.070516.125826	WG575052-02	Serial Dilution		25	L16061544-01	07/05/16 12:58
68	NI.070516.130139	WG575179-23	CCV		1		07/05/16 13:01

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070516A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD76567
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76989
Stannous : Hydroxylamine :

Workgroups: 575049,575057,575052,575054,574236,574690,574572,575217

Comments: Additional Workgroup: 574822

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.070516.130450	WG575179-24	CCB		1		07/05/16 13:04
70	NI.070516.130802	L16061546-01	S6F0336-01	20/50	1		07/05/16 13:08
71	NI.070516.131114	L16061547-01	S6F0337-01	20/50	1		07/05/16 13:11
72	NI.070516.131425	L16061313-02	MW-5	20/50	1		07/05/16 13:14
73	NI.070516.131737	L16061313-03	MW-5	20/50	1		07/05/16 13:17
74	NI.070516.132050	WG575179-25	CCV		1		07/05/16 13:20
75	NI.070516.132401	WG575179-26	CCB		1		07/05/16 13:24
76	NI.070516.132714	WG574733-02	Method/Prep Blank	20/50	1		07/05/16 13:27
77	NI.070516.133026	WG574733-03	Laboratory Control S	20/50	1		07/05/16 13:30
78	NI.070516.133337	WG574733-01	Reference Sample		1	L16061556-06	07/05/16 13:33
79	NI.070516.133649	WG574733-04	Duplicate	20/50	1	L16061556-06	07/05/16 13:36
80	NI.070516.134000	WG574733-05	Matrix Spike	20/50	1	L16061556-06	07/05/16 13:40
81	NI.070516.134312	WG574733-06	Matrix Spike Duplica	20/50	1	L16061556-06	07/05/16 13:43
82	NI.070516.134623	L16061644-01	OUTFALL 002/COMP	20/50	1		07/05/16 13:46
83	NI.070516.134935	WG575054-01	Post Digestion Spike		1	L16061644-01	07/05/16 13:49
84	NI.070516.135246	WG575054-02	Serial Dilution		5	L16061644-01	07/05/16 13:52
85	NI.070516.135719	L16061445-07	TS935DS00900A	.25/100	10		07/05/16 13:57
86	NI.070516.140031	WG575179-27	CCV		1		07/05/16 14:00
87	NI.070516.140343	WG575179-28	CCB		1		07/05/16 14:03
88	NI.070516.140655	L16061559-01	LH18/24-SP650-6374-GRAB	20/50	1		07/05/16 14:06
89	NI.070516.141021	L16061559-02	LH18/24-SP650-6374-COMP	20/50	1		07/05/16 14:10
90	NI.070516.141332	L16061581-03	OUTFALL 203		1		07/05/16 14:13
91	NI.070516.141644	WG574664-01	Reference Sample		2	L16061548-01	07/05/16 14:16
92	NI.070516.141955	WG574664-04	Duplicate	20/50	2	L16061548-01	07/05/16 14:19
93	NI.070516.142314	WG574664-05	Matrix Spike	20/50	2	L16061548-01	07/05/16 14:23
94	NI.070516.142626	WG574664-06	Matrix Spike Duplica	20/50	2	L16061548-01	07/05/16 14:26
95	NI.070516.142939	WG575179-29	CCV		1		07/05/16 14:29
96	NI.070516.143251	WG575179-30	CCB		1		07/05/16 14:32
97	NI.070516.143603	WG575179-31	Low Level Continuing Calibra		1		07/05/16 14:36
98	NI.070516.143943	WG573653-03	Method/Prep Blank	20/50	1		07/05/16 14:39
99	NI.070516.144254	WG573653-04	Laboratory Control S	20/50	1		07/05/16 14:42
100	NI.070516.144606	WG573653-01	Reference Sample		1	L16060764-04	07/05/16 14:46
101	NI.070516.144917	WG573653-05	Matrix Spike	20/50	1	L16060764-04	07/05/16 14:49
102	NI.070516.145229	WG573653-06	Matrix Spike Duplica	20/50	1	L16060764-04	07/05/16 14:52

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070516A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD76567
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76989
Stannous : Hydroxylamine :

Workgroups: 575049,575057,575052,575054,574236,574690,574572,575217

Comments: Additional Workgroup: 574822

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.070516.145558	L16060840-01	MW-24-004R	20/50	1		07/05/16 14:55
104	NI.070516.145909	L16060840-02	MW-24-003R	20/50	1		07/05/16 14:59
105	NI.070516.150221	WG574236-03	Post Digestion Spike		1	L16060840-02	07/05/16 15:02
106	NI.070516.150532	WG574236-04	Serial Dilution		5	L16060840-02	07/05/16 15:05
107	NI.070516.150843	L16061581-03	OUTFALL 203	20/50	1000		07/05/16 15:08
108	NI.070516.151157	WG575179-32	CCV		1		07/05/16 15:11
109	NI.070516.151517	WG575179-33	CCB		1		07/05/16 15:15
110	NI.070516.151839	L16060840-03	FR-061416-24	20/50	1		07/05/16 15:18
111	NI.070516.152150	L16060840-04	MW-24-002R	20/50	1		07/05/16 15:21
112	NI.070516.152502	L16060840-05	MW-24-005	20/50	1		07/05/16 15:25
113	NI.070516.152813	L16060840-06	EB-LOW FLOW TUBING	20/50	1		07/05/16 15:28
114	NI.070516.153125	L16061291-01	V6F0270-01	.253/100	50		07/05/16 15:31
115	NI.070516.153436	L16061533-04	EB05	20/50	1		07/05/16 15:34
116	NI.070516.153748	L16061533-05	EB04	20/50	1		07/05/16 15:37
117	NI.070516.154100	WG575179-34	CCV		1		07/05/16 15:41
118	NI.070516.154411	WG575179-35	CCB		1		07/05/16 15:44
119	NI.070516.154936	WG573548-02	Method/Prep Blank	20/50	1		07/05/16 15:49
120	NI.070516.155247	WG573548-03	Laboratory Control S	20/50	1		07/05/16 15:52
121	NI.070516.155559	WG573548-01	Reference Sample		1	L16060986-23	07/05/16 15:55
122	NI.070516.155910	WG573548-04	Matrix Spike	20/50	1	L16060986-23	07/05/16 15:59
123	NI.070516.160221	WG573548-05	Matrix Spike Duplica	20/50	1	L16060986-23	07/05/16 16:02
124	NI.070516.160533	L16061026-02	18WW16F-061616	20/50	20		07/05/16 16:05
125	NI.070516.160845	L16061026-02	18WW16F-061616	20/50	200		07/05/16 16:08
126	NI.070516.161156	L16061026-04	129-061616	20/50	1		07/05/16 16:11
127	NI.070516.161508	L16061026-04	129-061616	20/50	20		07/05/16 16:15
128	NI.070516.161820	WG575179-36	CCV		1		07/05/16 16:18
129	NI.070516.162132	WG575179-37	CCB		1		07/05/16 16:21
130	NI.070516.163034	L16061026-06	120F-061616	20/50	1		07/05/16 16:30
131	NI.070516.163440	L16061026-07	123-061616	20/50	1		07/05/16 16:34
132	NI.070516.163751	WG574572-03	Post Digestion Spike		1	L16061026-07	07/05/16 16:37
133	NI.070516.164103	WG574572-04	Serial Dilution		5	L16061026-07	07/05/16 16:41
134	NI.070516.164414	WG574572-04	Serial Dilution		25	L16061026-07	07/05/16 16:44
135	NI.070516.164727	WG575179-38	CCV		1		07/05/16 16:47
136	NI.070516.165039	WG575179-39	CCB		1		07/05/16 16:50

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Instrument Run Log

Instrument: ICP-MS2 Dataset: 070516A.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD76567
ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76989
Stannous : Hydroxylamine :

Workgroups: 575049,575057,575052,575054,574236,574690,574572,575217

Comments: Additional Workgroup: 574822

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	NI.070516.165352	WG575144-02	Method/Prep Blank	.25/100	1		07/05/16 16:53
138	NI.070516.165703	WG575144-03	Laboratory Control S	.25/100	1		07/05/16 16:57
139	NI.070516.170015	WG575144-01	Reference Sample		1	L16070088-01	07/05/16 17:00
140	NI.070516.170326	WG575144-04	Matrix Spike	.255/100	1	L16070088-01	07/05/16 17:03
141	NI.070516.170638	WG575144-05	Matrix Spike Duplica	.252/100	1	L16070088-01	07/05/16 17:06
142	NI.070516.170949	WG575217-01	Post Digestion Spike		1	L16070088-01	07/05/16 17:09
143	NI.070516.171301	WG575217-02	Serial Dilution		5	L16070088-01	07/05/16 17:13
144	NI.070516.171612	WG575217-02	Serial Dilution		25	L16070088-01	07/05/16 17:16
145	NI.070516.171925	WG575179-40	CCV		1		07/05/16 17:19
146	NI.070516.172236	WG575179-41	CCB		1		07/05/16 17:22
147	NI.070516.172549	WG573662-03	Method/Prep Blank	20/50	1		07/05/16 17:25
148	NI.070516.172901	WG573662-04	Laboratory Control S	20/50	1		07/05/16 17:29
149	NI.070516.173212	L16060907-01	MW21-061516	20/50	50		07/05/16 17:32
150	NI.070516.173523	L16060907-02	MW21-061516	20/50	50		07/05/16 17:35
151	NI.070516.173835	L16060907-04	MW35-061516	20/50	1		07/05/16 17:38
152	NI.070516.174147	L16060907-05	MW35-061516	20/50	1		07/05/16 17:41
153	NI.070516.174458	L16060907-07	MW11S-061516	20/50	1		07/05/16 17:44
154	NI.070516.174810	WG574822-01	Post Digestion Spike		1	L16060907-07	07/05/16 17:48
155	NI.070516.175121	L16060907-07	MW11S-061516		5		07/05/16 17:51
156	NI.070516.175433	WG574822-02	Serial Dilution		25	L16060907-07	07/05/16 17:54
157	NI.070516.175746	WG575179-42	CCV		1		07/05/16 17:57
158	NI.070516.180057	WG575179-43	CCB		1		07/05/16 18:00
159	NI.070516.180410	L16060907-08	MW11S-061516		1		07/05/16 18:04
160	NI.070516.180721	L16060907-10	DUP-GW-061516		1		07/05/16 18:07
161	NI.070516.181033	L16060907-11	DUP-GW-061516		1		07/05/16 18:10
162	NI.070516.181344	L16060907-12	MW31-061516		50		07/05/16 18:13
163	NI.070516.181656	L16060907-13	MW31-061516		50		07/05/16 18:16
164	NI.070516.182008	WG573662-01	Reference Sample		1	L16060907-14	07/05/16 18:20
165	NI.070516.182319	WG573662-02	Reference Sample		1	L16060907-15	07/05/16 18:23
166	NI.070516.182631	WG573662-05	Matrix Spike	20/50	1	L16060907-14	07/05/16 18:26
167	NI.070516.182942	WG573662-07	Matrix Spike	20/50	1	L16060907-15	07/05/16 18:29
168	NI.070516.183254	WG573662-06	Matrix Spike Duplica	20/50	1	L16060907-14	07/05/16 18:32
169	NI.070516.183607	WG575179-44	CCV		1		07/05/16 18:36
170	NI.070516.183919	WG575179-45	CCB		1		07/05/16 18:39

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070516A.REP

Analyst1: JYH Analyst2: N/A

Method: 6020/6020A/200.8 SOP: ME700A Rev: 2

Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD76567

ICSA: STD76453 ICSAB: STD76573 Int. Std: RGT36607

CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76989

Stannous : Hydroxylamine :

Workgroups: 575049,575057,575052,575054,574236,574690,574572,575217

Comments: Additional Workgroup: 574822

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
171	NI.070516.184232	WG573662-08	Matrix Spike Duplica	20/50	1	L16060907-15	07/05/16 18:42
172	NI.070516.184543	L16060907-21	MW36-061516	20/50	1		07/05/16 18:45
173	NI.070516.184855	L16060907-22	MW36-061516	20/50	1		07/05/16 18:48
174	NI.070516.185206	L16061128-01	MW-23-104	20/50	1		07/05/16 18:52
175	NI.070516.185518	L16061128-02	MW-23-103	20/50	1		07/05/16 18:55
176	NI.070516.185829	L16061128-03	FD062016	20/50	1		07/05/16 18:58
177	NI.070516.190141	L16061128-04	EB WATER A	20/50	1		07/05/16 19:01
178	NI.070516.190452	L16061128-04	EB WATER A		100		07/05/16 19:04
179	NI.070516.190804	WG575179-46	Interference Check		1		07/05/16 19:08
180	NI.070516.191116	WG575179-47	Interference Check		1		07/05/16 19:11
181	NI.070516.191429	WG575179-48	CCV		1		07/05/16 19:14
182	NI.070516.191740	WG575179-49	CCB		1		07/05/16 19:17
183	NI.070516.192053	WG575179-50	Low Level Continuing Calibra		1		07/05/16 19:20

Comments

Seq.	Rerun	Dil.	Reason	Analytes
7			Rerun to verify. JYH	
45			Wrong dilution factor. JYH	
90			Wrong sample label. JYH	
100			Seq. 100-102: wrong WG numbers. JYH	
159			Wrong sample label. JYH	

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070616B.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD77006 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76989
Stannous : Hydroxylamine :

Workgroups: 574825,575052,575023,574822,574572,574573,574824,574688

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
1	NI.070616.090452	Blank	Blank		1		07/06/16 09:04
2	NI.070616.090803	WG575370-01	Calibration Point		1		07/06/16 09:08
3	NI.070616.091115	WG575370-02	Calibration Point		1		07/06/16 09:11
4	NI.070616.091426	WG575370-03	Calibration Point		1		07/06/16 09:14
5	NI.070616.091738	WG575370-04	Calibration Point		1		07/06/16 09:17
6	NI.070616.092051	WG575370-05	Initial Calibration Verification		1		07/06/16 09:20
7	NI.070616.092404	WG575370-06	Initial Calib Blank		1		07/06/16 09:24
8	NI.070616.092717	WG575370-07	Low Level Initial Calibration V		1		07/06/16 09:27
9	NI.070616.093029	WG575370-08	Interference Check		1		07/06/16 09:30
10	NI.070616.093340	WG575370-09	Interference Check		1		07/06/16 09:33
11	NI.070616.093653	WG575370-10	CCV		1		07/06/16 09:36
12	NI.070616.094005	WG575370-11	CCB		1		07/06/16 09:40
13	NI.070616.094317	WG574195-02	Method/Prep Blank	.25/100	1		07/06/16 09:43
14	NI.070616.094629	WG574195-03	Laboratory Control S	.25/100	1		07/06/16 09:46
15	NI.070616.094940	WG574195-01	Reference Sample		1	L16061294-11	07/06/16 09:49
16	NI.070616.095252	WG574195-04	Matrix Spike	.257/100	1	L16061294-11	07/06/16 09:52
17	NI.070616.095603	WG574195-05	Matrix Spike Duplica	.252/100	1	L16061294-11	07/06/16 09:56
18	NI.070616.095915	L16061294-01	XU936DS00700A	.255/100	1		07/06/16 09:59
19	NI.070616.100226	L16061294-02	XU936DS00705A	.251/100	1		07/06/16 10:02
20	NI.070616.100538	WG574825-01	Post Digestion Spike		1	L16061294-02	07/06/16 10:05
21	NI.070616.100849	WG574825-02	Serial Dilution		5	L16061294-02	07/06/16 10:08
22	NI.070616.101201	WG574825-02	Serial Dilution		25	L16061294-02	07/06/16 10:12
23	NI.070616.101514	WG575370-12	CCV		1		07/06/16 10:15
24	NI.070616.101825	WG575370-13	CCB		1		07/06/16 10:18
25	NI.070616.102139	L16061294-04	XU936DS01100A	.25/100	1		07/06/16 10:21
26	NI.070616.102450	L16061294-05	XU936DS01105A	.252/100	1		07/06/16 10:24
27	NI.070616.102802	L16061294-06	XU936DS01500A	.25/100	1		07/06/16 10:28
28	NI.070616.103113	L16061294-07	XU936DS01505A	.25/100	1		07/06/16 10:31
29	NI.070616.103425	L16061294-08	XU936DS01505C	.255/100	1		07/06/16 10:34
30	NI.070616.103737	L16061294-09	XU936DS01900A	.256/100	1		07/06/16 10:37
31	NI.070616.104048	L16061294-10	XU936DS01905A	.251/100	1		07/06/16 10:40
32	NI.070616.104400	L16061294-14	XU936DS00200A	.256/100	1		07/06/16 10:44
33	NI.070616.104711	L16061294-15	XU936DS00205A	.251/100	1		07/06/16 10:47
34	NI.070616.105023	L16061381-08	XU936DS00405A	.256/100	1		07/06/16 10:50

Page: 1 Approved: July 07, 2016

Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070616B.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD77006 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76989
Stannous : Hydroxylamine :

Workgroups: 574825,575052,575023,574822,574572,574573,574824,574688

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
35	NI.070616.105336	WG575370-14	CCV		1		07/06/16 10:53
36	NI.070616.114231	WG575370-15	CCB		1		07/06/16 11:42
37	NI.070616.114547	WG575370-16	CCV		1		07/06/16 11:45
38	NI.070616.114858	WG575370-17	CCB		1		07/06/16 11:48
39	NI.070616.115343	WG574195-01	Reference Sample		50	L16061294-11	07/06/16 11:53
40	NI.070616.115654	WG574195-04	Matrix Spike	.257/100	50	L16061294-11	07/06/16 11:56
41	NI.070616.120005	WG574195-05	Matrix Spike Duplica	.252/100	50	L16061294-11	07/06/16 12:00
42	NI.070616.120317	L16061294-01	XU936DS00700A	.255/100	50		07/06/16 12:03
43	NI.070616.120628	L16061294-02	XU936DS00705A	.251/100	50		07/06/16 12:06
44	NI.070616.120940	WG574825-01	Post Digestion Spike		50	L16061294-02	07/06/16 12:09
45	NI.070616.121251	WG574825-02	Serial Dilution		250	L16061294-02	07/06/16 12:12
46	NI.070616.121603	L16061294-04	XU936DS01100A	.25/100	50		07/06/16 12:16
47	NI.070616.121914	L16061294-05	XU936DS01105A	.252/100	50		07/06/16 12:19
48	NI.070616.122225	L16061294-06	XU936DS01500A	.25/100	50		07/06/16 12:22
49	NI.070616.122538	WG575370-18	CCV		1		07/06/16 12:25
50	NI.070616.122850	WG575370-19	CCB		1		07/06/16 12:28
51	NI.070616.123202	L16061294-07	XU936DS01505A	.25/100	50		07/06/16 12:32
52	NI.070616.123514	L16061294-08	XU936DS01505C	.255/100	50		07/06/16 12:35
53	NI.070616.123825	L16061294-09	XU936DS01900A	.256/100	50		07/06/16 12:38
54	NI.070616.124137	L16061294-10	XU936DS01905A	.251/100	50		07/06/16 12:41
55	NI.070616.124448	L16061294-14	XU936DS00200A	.256/100	50		07/06/16 12:44
56	NI.070616.124759	L16061294-15	XU936DS00205A	.251/100	50		07/06/16 12:47
57	NI.070616.125111	L16061381-08	XU936DS00405A	.256/100	50		07/06/16 12:51
58	NI.070616.125423	WG575370-20	CCV		1		07/06/16 12:54
59	NI.070616.125735	WG575370-21	CCB		1		07/06/16 12:57
60	NI.070616.130440	L16061313-06	MW-4	20/50	1		07/06/16 13:04
61	NI.070616.130752	L16061313-07	MW-4	20/50	1		07/06/16 13:07
62	NI.070616.131103	L16061313-08	MW-3	20/50	1		07/06/16 13:11
63	NI.070616.131415	L16061313-09	MW-3	20/50	1		07/06/16 13:14
64	NI.070616.131726	L16061313-10	DUPLICATE	20/50	1		07/06/16 13:17
65	NI.070616.132037	L16061313-11	DUPLICATE	20/50	1		07/06/16 13:20
66	NI.070616.132349	L16061313-12	MW-2D	20/50	1		07/06/16 13:23
67	NI.070616.132700	L16061313-13	MW-2D	20/50	1		07/06/16 13:27
68	NI.070616.133012	L16061313-14	EQ-RINSE	20/50	1		07/06/16 13:30

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070616B.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD77006 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76989
Stannous : Hydroxylamine :

Workgroups: 574825,575052,575023,574822,574572,574573,574824,574688

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
69	NI.070616.133325	WG575370-22	CCV		1		07/06/16 13:33
70	NI.070616.133636	WG575370-23	CCB		1		07/06/16 13:36
71	NI.070616.134017	WG574881-02	Method/Prep Blank	.25/100	1		07/06/16 13:40
72	NI.070616.134329	WG574881-03	Laboratory Control S	.25/100	1		07/06/16 13:43
73	NI.070616.134640	WG574881-01	Reference Sample		1	L16061533-03	07/06/16 13:46
74	NI.070616.134951	WG574881-04	Matrix Spike	.25/100	1	L16061533-03	07/06/16 13:49
75	NI.070616.135303	WG574881-05	Matrix Spike Duplica	.254/100	1	L16061533-03	07/06/16 13:53
76	NI.070616.135614	L16061488-01	NV79-01	.25/100	1		07/06/16 13:56
77	NI.070616.135926	L16061488-02	NV79-02	.258/100	1		07/06/16 13:59
78	NI.070616.140318	WG575023-01	Post Digestion Spike		1	L16061488-02	07/06/16 14:03
79	NI.070616.140630	WG575023-02	Serial Dilution		5	L16061488-02	07/06/16 14:06
80	NI.070616.140941	WG575023-02	Serial Dilution		25	L16061488-02	07/06/16 14:09
81	NI.070616.141254	WG575370-24	CCV		1		07/06/16 14:12
82	NI.070616.141606	WG575370-25	CCB		1		07/06/16 14:16
83	NI.070616.142024	L16061488-03	NV79-03	.259/100	1		07/06/16 14:20
84	NI.070616.142336	L16061488-04	NV79-04	.257/100	1		07/06/16 14:23
85	NI.070616.142647	L16061533-01	TS935DS01100A	.253/100	1		07/06/16 14:26
86	NI.070616.142958	L16061533-02	TS935DS01100C	.255/100	1		07/06/16 14:29
87	NI.070616.143310	L16061643-01	V6F0315-01	.254/100	1		07/06/16 14:33
88	NI.070616.143621	L16061643-02	V6F0315-02	.253/100	1		07/06/16 14:36
89	NI.070616.143933	L16061687-01	TR0059	.252/100	1		07/06/16 14:39
90	NI.070616.144244	L16061296-01	OUTFALL 002/COMP		1		07/06/16 14:42
91	NI.070616.144556	L16061313-08	MW-3	20/50	10		07/06/16 14:45
92	NI.070616.144907	L16061313-10	DUPLICATE	20/50	10		07/06/16 14:49
93	NI.070616.145220	WG575370-26	CCV		1		07/06/16 14:52
94	NI.070616.145531	WG575370-27	CCB		1		07/06/16 14:55
95	NI.070616.150731	L16060907-08	MW11S-061516	20/50	100		07/06/16 15:07
96	NI.070616.151042	L16060907-10	DUP-GW-061516	20/50	100		07/06/16 15:10
97	NI.070616.151354	L16060907-11	DUP-GW-061516	20/50	100		07/06/16 15:13
98	NI.070616.151705	L16060907-12	MW31-061516	20/50	1		07/06/16 15:17
99	NI.070616.152017	L16060907-13	MW31-061516	20/50	1		07/06/16 15:20
100	NI.070616.152328	L16061026-02	18WW16F-061616		1		07/06/16 15:23
101	NI.070616.152752	L16061026-02	18WW16F-061616	20/50	200		07/06/16 15:27
102	NI.070616.153105	WG575370-28	CCV		1		07/06/16 15:31

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070616B.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD77006 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76989
Stannous : Hydroxylamine :

Workgroups: 574825,575052,575023,574822,574572,574573,574824,574688

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
103	NI.070616.153417	WG575370-29	CCB		1		07/06/16 15:34
104	NI.070616.155033	WG574306-02	Method/Prep Blank	.25/100	1		07/06/16 15:50
105	NI.070616.155345	WG574306-03	Laboratory Control S	.25/100	1		07/06/16 15:53
106	NI.070616.155656	L16061297-01	XU936DS01805A	.259/100	1		07/06/16 15:56
107	NI.070616.160008	L16061297-02	XU936DS01800A	.25/100	1		07/06/16 16:00
108	NI.070616.160319	L16061297-03	XU936DS01405A	.256/100	1		07/06/16 16:03
109	NI.070616.160631	L16061297-04	XU936DS01405C	.258/100	1		07/06/16 16:06
110	NI.070616.160942	L16061297-05	XU936DS02005A	.25/100	1		07/06/16 16:09
111	NI.070616.161318	L16061297-06	XU936DS01605A	.258/100	1		07/06/16 16:13
112	NI.070616.161629	WG574573-03	Post Digestion Spike		1	L16061297-06	07/06/16 16:16
113	NI.070616.161940	WG574573-04	Serial Dilution		5	L16061297-06	07/06/16 16:19
114	NI.070616.162253	WG575370-30	CCV		1		07/06/16 16:22
115	NI.070616.162605	WG575370-31	CCB		1		07/06/16 16:26
116	NI.070616.162917	WG574306-01	Reference Sample		1	L16061297-07	07/06/16 16:29
117	NI.070616.163229	WG574306-04	Matrix Spike	.253/100	1	L16061297-07	07/06/16 16:32
118	NI.070616.163540	WG574306-05	Matrix Spike Duplica	.255/100	1	L16061297-07	07/06/16 16:35
119	NI.070616.163852	L16061297-10	XU936DS01705A	.254/100	1		07/06/16 16:38
120	NI.070616.164203	L16061297-11	XU936DS01305A	.253/100	1		07/06/16 16:42
121	NI.070616.164515	L16061297-12	XU936DS01205A	.251/100	1		07/06/16 16:45
122	NI.070616.164826	L16061297-13	XU936DS00800A	.252/100	1		07/06/16 16:48
123	NI.070616.165137	L16061297-14	XU936DS00805A	.25/100	1		07/06/16 16:51
124	NI.070616.165449	L16061297-15	XU936DS00900A	.259/100	1		07/06/16 16:54
125	NI.070616.165800	L16061297-16	XU936DS00905A	.256/100	1		07/06/16 16:58
126	NI.070616.170113	WG575370-32	CCV		1		07/06/16 17:01
127	NI.070616.170425	WG575370-33	CCB		1		07/06/16 17:04
128	NI.070616.170737	L16061297-17	XU936DS00905C	.25/100	1		07/06/16 17:07
129	NI.070616.171049	L16061297-18	XU936DS01005A	.255/100	1		07/06/16 17:10
130	NI.070616.171400	L16061297-19	XU936DS00600A	.258/100	1		07/06/16 17:14
131	NI.070616.171712	L16061297-20	XU936DS00605A	.259/100	1		07/06/16 17:17
132	NI.070616.172023	L16061297-01	XU936DS01805A	.259/100	50		07/06/16 17:20
133	NI.070616.172334	L16061297-02	XU936DS01800A	.25/100	50		07/06/16 17:23
134	NI.070616.172646	L16061297-03	XU936DS01405A	.256/100	50		07/06/16 17:26
135	NI.070616.172957	L16061297-04	XU936DS01405C	.258/100	50		07/06/16 17:29
136	NI.070616.173309	L16061297-05	XU936DS02005A	.25/100	50		07/06/16 17:33

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Microbac Laboratories Inc.

Instrument Run Log

Instrument: ICP-MS2 Dataset: 070616B.REP
Analyst1: JYH Analyst2: N/A
Method: 6020/6020A/200.8 SOP: ME700A Rev: 2
Maintenance Log ID:

Calibration Std: STD76710 ICV Std: STD76906 Post Spike: STD73705
ICSA: STD77006 ICSAB: STD76573 Int. Std: RGT36607
CCV: STD76905 LLCCV: STD76908 Tuning Sol : STD76989
Stannous : Hydroxylamine :

Workgroups: 574825,575052,575023,574822,574572,574573,574824,574688

Comments:

Seq.	File ID	Sample	ID	Prep	Dil	Reference	Date/Time
137	NI.070616.173620	L16061297-06	XU936DS01605A	.258/100	50		07/06/16 17:36
138	NI.070616.173934	WG575370-34	CCV		1		07/06/16 17:39
139	NI.070616.174245	WG575370-35	CCB		1		07/06/16 17:42
140	NI.070616.174559	WG574573-03	Post Digestion Spike		50	L16061297-06	07/06/16 17:45
141	NI.070616.174910	WG574573-04	Serial Dilution		250	L16061297-06	07/06/16 17:49
142	NI.070616.175222	WG574306-01	Reference Sample		50	L16061297-07	07/06/16 17:52
143	NI.070616.175533	WG574306-04	Matrix Spike	.253/100	50	L16061297-07	07/06/16 17:55
144	NI.070616.175844	WG574306-05	Matrix Spike Duplica	.255/100	50	L16061297-07	07/06/16 17:58
145	NI.070616.180156	L16061297-10	XU936DS01705A	.254/100	50		07/06/16 18:01
146	NI.070616.180507	L16061297-11	XU936DS01305A	.253/100	50		07/06/16 18:05
147	NI.070616.180818	L16061297-12	XU936DS01205A	.251/100	50		07/06/16 18:08
148	NI.070616.181130	L16061297-13	XU936DS00800A	.252/100	50		07/06/16 18:11
149	NI.070616.181441	L16061297-14	XU936DS00805A	.25/100	50		07/06/16 18:14
150	NI.070616.181755	WG575370-36	CCV		1		07/06/16 18:17
151	NI.070616.182106	WG575370-37	CCB		1		07/06/16 18:21
152	NI.070616.182419	L16061297-15	XU936DS00900A	.259/100	50		07/06/16 18:24
153	NI.070616.182731	L16061297-16	XU936DS00905A	.256/100	50		07/06/16 18:27
154	NI.070616.183042	L16061297-17	XU936DS00905C	.25/100	50		07/06/16 18:30
155	NI.070616.183353	L16061297-18	XU936DS01005A	.255/100	50		07/06/16 18:33
156	NI.070616.183705	L16061297-19	XU936DS00600A	.258/100	50		07/06/16 18:37
157	NI.070616.184016	L16061297-20	XU936DS00605A	.259/100	50		07/06/16 18:40
158	NI.070616.184328	L16061452-01	18CPTMW12SW-062416	20/50	50		07/06/16 18:43
159	NI.070616.184639	L16061453-01	MW2-062416	20/50	50		07/06/16 18:46
160	NI.070616.184952	WG575370-38	CCV		1		07/06/16 18:49
161	NI.070616.185304	WG575370-39	CCB		1		07/06/16 18:53
162	NI.070616.185616	L16061453-03	18CPTMW01SW-062416	20/50	50		07/06/16 18:56
163	NI.070616.185928	L16061296-01	OUTFALL 002/COMP	20/50	1		07/06/16 18:59
164	NI.070616.190239	L16061453-03	18CPTMW01SW-062416		500		07/06/16 19:02
165	NI.070616.190551	WG575370-40	Interference Check		1		07/06/16 19:05
166	NI.070616.190902	WG575370-41	Interference Check		1		07/06/16 19:09
167	NI.070616.191215	WG575370-42	CCV		1		07/06/16 19:12
168	NI.070616.191526	WG575370-43	CCB		1		07/06/16 19:15
169	NI.070616.191839	WG575370-44	Low Level Continuing Calibra		1		07/06/16 19:18

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Microbac Laboratories Inc.

Data Checklist

Date: 29-JUN-2016
Analyst: BKT
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 574676
Runlog ID: 76013
Analytical Workgroups: 573722,574570,574572,573717,574688,574690,573790

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1279,1294,1381,1384
Level 4	661,822,823,883,912,974,986,1026
Level 4	1206,1207,1208,1265,1266,1269,1272
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	BKT
Secondary Reviewer	JYH
Comments	

Primary Reviewer:
04-JUL-2016

Secondary Reviewer:
05-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-05-2016 12:36:33

Microbac Laboratories Inc.

Data Checklist

Date: 05-JUL-2016
Analyst: JYH
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 575179
Runlog ID: 76106
Analytical Workgroups: 575049,575057,575052,575054,574236,574690,574572,575217

Additional Workgroup	574822
STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1445,1533,1128
Level 4	1451,1559,840,1026,088,907
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	BKT
Comments	

Primary Reviewer:
06-JUL-2016

Secondary Reviewer:
06-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-06-2016 20:27:37

Microbac Laboratories Inc.

Data Checklist

Date: 06-JUL-2016
Analyst: JYH
Analyst: NA
Method: 6020/6020A/200.8
Instrument: ICP-MS2
Curve Workgroup: 575370
Runlog ID: 76130
Analytical Workgroups: 574825,575052,575023,574822,574572,574573,574824,574688

STD ID#s on Runlog	X
Calibration/Linearity	X
ICV/CCV	X
ICV RSD < 3% (EPA 200.7 only)	
ICB/CCB	X
ICSA/ICSAB	X
CRI	
Blank/LCS	X
MS/MSD	X
Post Spike/Serial Dilution	X
Upload Results	X
Data Qualifiers	
Generate PDF Instrument Data	X
Sign/Annotate PDF Data	X
Upload Curve Data	X
Workgroup Forms	X
Case Narrative	X
Client Forms	X
Level X	
Level 3	1294,1533,1297
Level 4	1687,907,1026,1452,1453
Check for compliance with method and project specific requirements	X
Check the completeness of reported information	X
Check the information for the report narrative	X
Primary Reviewer	JYH
Secondary Reviewer	BKT
Comments	

Primary Reviewer:
07-JUL-2016

Secondary Reviewer:
07-JUL-2016

CHECKLIST1 - Modified 03/05/2008
Generated: JUL-07-2016 15:29:19

HOLDING TIMES
EQUIVALENT TO AFCEE FORM 9

Analytical Method: 6020A

AAB#: WG574572

Login Number: L16061026

Client ID	ID	Date Collected	TCLP Date	Time Held	Max Hold	Q	Extract Date	Time Held	Max Hold	Q	Run Date	Time Held	Max Hold	Q
18WW16F-061616	02	06/16/16					06/21/2016	5.1	180		07/06/16	20.3	180	
18WW16F-061616	02	06/16/16					06/21/2016	5.1	180		07/05/16	19.3	180	
18WW16F-061616	02	06/16/16					06/21/2016	5.1	180		06/29/16	13.3	180	
18WW16F-061616	02	06/16/16					06/21/2016	5.1	180		07/05/16	19.3	180	
129-061616	04	06/16/16					06/21/2016	5.1	180		07/05/16	19.3	180	
129-061616	04	06/16/16					06/21/2016	5.1	180		07/05/16	19.3	180	
129-061616	04	06/16/16					06/21/2016	5.1	180		06/29/16	13.2	180	
120F-061616	06	06/16/16					06/21/2016	5.1	180		06/29/16	13.2	180	
120F-061616	06	06/16/16					06/21/2016	5.1	180		07/05/16	19.3	180	
123-061616	07	06/16/16					06/21/2016	5.1	180		06/29/16	13.2	180	
123-061616	07	06/16/16					06/21/2016	5.1	180		07/05/16	19.3	180	

* = SEE PROJECT QAPP REQUIREMENTS

HOLD_TIMES - Modified 03/06/2008
PDF File ID: 4832316
Report generated 07/07/2016 08:33

METHOD BLANK SUMMARY

Login Number: L16061026
Blank File ID: NI.062916.125354
Prep Date: 06/21/16 11:18
Analyzed Date: 06/29/16 12:53
Analyst: BKT

Work Group: WG574572
Blank Sample ID: WG573548-02
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573548-03	NI.062916.125705	06/29/16 12:57	01
18WW16F-061616	L16061026-02	NI.062916.145120	06/29/16 14:51	01
129-061616	L16061026-04	NI.062916.145431	06/29/16 14:54	01
120F-061616	L16061026-06	NI.062916.145742	06/29/16 14:57	01
123-061616	L16061026-07	NI.062916.150054	06/29/16 15:00	01
LCS	WG573548-03	NI.070516.155247	07/05/16 15:52	02
18WW16F-061616	L16061026-02	NI.070516.160533	07/05/16 16:05	DL01
18WW16F-061616	L16061026-02	NI.070516.160845	07/05/16 16:08	DL02
129-061616	L16061026-04	NI.070516.161156	07/05/16 16:11	02
129-061616	L16061026-04	NI.070516.161508	07/05/16 16:15	DL01
120F-061616	L16061026-06	NI.070516.163034	07/05/16 16:30	02
123-061616	L16061026-07	NI.070516.163440	07/05/16 16:34	02
18WW16F-061616	L16061026-02	NI.070616.152752	07/06/16 15:27	DL03

Report Name: BLANK_SUMMARY
PDF File ID: 4832317
Report generated 07/07/2016 08:33

METHOD BLANK SUMMARY

Login Number: L16061026
Blank File ID: NI.070516.154936
Prep Date: 06/21/16 11:18
Analyzed Date: 07/05/16 15:49
Analyst: JYH

Work Group: WG574572
Blank Sample ID: WG573548-02
Instrument ID: ICP-MS2
Method: 6020A

This Method Blank Applies To The Following Samples:

Client ID	Lab Sample ID	Lab File ID	Time Analyzed	TAG
LCS	WG573548-03	NI.062916.125705	06/29/16 12:57	01
18WW16F-061616	L16061026-02	NI.062916.145120	06/29/16 14:51	01
129-061616	L16061026-04	NI.062916.145431	06/29/16 14:54	01
120F-061616	L16061026-06	NI.062916.145742	06/29/16 14:57	01
123-061616	L16061026-07	NI.062916.150054	06/29/16 15:00	01
LCS	WG573548-03	NI.070516.155247	07/05/16 15:52	02
18WW16F-061616	L16061026-02	NI.070516.160533	07/05/16 16:05	DL01
18WW16F-061616	L16061026-02	NI.070516.160845	07/05/16 16:08	DL02
129-061616	L16061026-04	NI.070516.161156	07/05/16 16:11	02
129-061616	L16061026-04	NI.070516.161508	07/05/16 16:15	DL01
120F-061616	L16061026-06	NI.070516.163034	07/05/16 16:30	02
123-061616	L16061026-07	NI.070516.163440	07/05/16 16:34	02
18WW16F-061616	L16061026-02	NI.070616.152752	07/06/16 15:27	DL03

Report Name: BLANK_SUMMARY
PDF File ID: 4832317
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061026 Prep Date: 06/21/16 11:18 Sample ID: WG573548-02
Instrument ID: ICP-MS2 Run Date: 06/29/16 12:53 Prep Method: 3015
File ID: NI.062916.125354 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG574572 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-29-JUN-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Antimony, Total	0.000500	0.00200	0.000500	1	U
Arsenic, Total	0.000500	0.00200	0.000500	1	U
Barium, Total	0.00150	0.00600	0.00150	1	U
Cadmium, Total	0.000300	0.00120	0.000300	1	U
Chromium, Total	0.00100	0.00400	0.00100	1	U
Copper, Total	0.00100	0.00400	0.00100	1	U
Lead, Total	0.000500	0.00200	0.000500	1	U
Manganese, Total	0.00100	0.00400	0.00239	1	*
Nickel, Total	0.00200	0.00800	0.00200	1	U
Silver, Total	0.000500	0.00200	0.000589	1	J
Thallium, Total	0.000100	0.000400	0.000100	1	U
Vanadium, Total	0.000500	0.00200	0.000500	1	U
Zinc, Total	0.0125	0.0500	0.0125	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4832318
07-JUL-2016 08:33

Microbac Laboratories Inc.
METHOD BLANK REPORT

Login Number: L16061026 Prep Date: 06/21/16 11:18 Sample ID: WG573548-02
Instrument ID: ICP-MS2 Run Date: 07/05/16 15:49 Prep Method: 3015
File ID: NI.070516.154936 Analyst: JYH Method: 6020A
Workgroup (AAB#): WG574572 Matrix: Water Units: mg/L
Contract #: Cal ID: ICP-MS-05-JUL-16

Analytes	DL	LOQ	Concentration	Dilution	Qualifier
Cobalt, Total	0.000500	0.00200	0.000500	1	U

DL Method Detection Limit
LOQ Reporting/Practical Quantitation Limit
ND Analyte Not detected at or above reporting limit
* |Analyte concentration| > 1/2 RL

Report Name: BLANK
PDF ID: 4832318
07-JUL-2016 08:33

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061026 Run Date: 06/29/2016 Sample ID: WG573548-03
Instrument ID: ICP-MS2 Run Time: 12:57 Prep Method: 3015
File ID: NI.062916.125705 Analyst: BKT Method: 6020A
Workgroup (AAB#): WG574572 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD75998 Cal ID: ICP-MS-29-JUN-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Antimony, Total	0.125	0.118	94.4	80 - 120	
Arsenic, Total	0.125	0.122	97.5	80 - 120	
Barium, Total	0.125	0.121	97.0	80 - 120	
Cadmium, Total	0.125	0.121	96.8	80 - 120	
Chromium, Total	0.125	0.130	104	80 - 120	
Copper, Total	0.125	0.131	105	80 - 120	
Lead, Total	0.125	0.123	98.3	80 - 120	
Manganese, Total	0.125	0.136	109	80 - 120	
Nickel, Total	0.125	0.129	104	80 - 120	
Silver, Total	0.125	0.123	98.7	80 - 120	
Thallium, Total	0.125	0.123	98.1	80 - 120	
Vanadium, Total	0.125	0.127	102	80 - 120	
Zinc, Total	0.125	0.134	107	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4832319
Report generated: 07/07/2016 08:33

Microbac Laboratories Inc.
LABORATORY CONTROL SAMPLE (LCS)

Login Number: L16061026 Run Date: 07/05/2016 Sample ID: WG573548-03
Instrument ID: ICP-MS2 Run Time: 15:52 Prep Method: 3015
File ID: NI.070516.155247 Analyst: JYH Method: 6020A
Workgroup (AAB#): WG574572 Matrix: Water Units: mg/L
QC Key: DOD4 Lot#: STD75998 Cal ID: ICP-MS-05-JUL-16

Analytes	Expected	Found	% Rec	LCS Limits	Q
Cobalt, Total	0.125	0.115	91.6	80 - 120	

LCS - Modified 03/06/2008
PDF File ID: 4832319
Report generated: 07/07/2016 08:33

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061026 Cal ID: ICP-MS2- Worknum: WG574572
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG573548-01 File ID: NI.062916.130017 Dil: 1 Matrix: WATER
Sample ID: WG573548-04 MS File ID: NI.062916.130328 Dil: 1 Units: mg/L
Sample ID: WG573548-05 MSD File ID: NI.062916.130639 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Antimony	0.000929	0.125	0.123	97.5	0.125	0.126	100	2.42	80 - 120	20	
Arsenic	0.00184	0.125	0.137	108	0.125	0.136	108	0.245	80 - 120	20	
Barium	0.0277	0.125	0.147	95.5	0.125	0.149	96.9	1.17	80 - 120	20	
Cadmium	ND	0.125	0.121	96.7	0.125	0.123	98.3	1.66	80 - 120	20	
Chromium	0.00161	0.125	0.127	100	0.125	0.125	98.5	1.86	80 - 120	20	
Copper	0.0278	0.125	0.160	106	0.125	0.135	85.4	17.4	80 - 120	20	
Lead	ND	0.125	0.125	99.9	0.125	0.129	103	3.34	80 - 120	20	
Manganese	0.572	0.125	0.687	92.1	0.125	0.694	97.6	0.980	80 - 120	20	
Nickel	0.00762	0.125	0.130	97.9	0.125	0.130	97.8	0.0660	80 - 120	20	
Silver	ND	0.125	0.0534	42.7	0.125	0.0494	39.5	7.77	80 - 120	20	*
Thallium	ND	0.125	0.125	100	0.125	0.126	101	0.495	80 - 120	20	
Vanadium	ND	0.125	0.133	106	0.125	0.134	107	0.902	80 - 120	20	
Zinc	0.0139	0.125	0.143	104	0.125	0.133	95.7	7.23	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4832320
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
MATRIX SPIKE AND MATRIX SPIKE DUP (MS/MSD)

Loginnum: L16061026 Cal ID: ICP-MS2 - Worknum: WG574572
Instrument ID: ICP-MS2 Contract #: Method: 6020A
Parent ID: WG573548-01 File ID: NI.070516.155559 Dil: 1 Matrix: WATER
Sample ID: WG573548-04 MS File ID: NI.070516.155910 Dil: 1 Units: mg/L
Sample ID: WG573548-05 MSD File ID: NI.070516.160221 Dil: 1

Analyte	Parent	MS Spiked	MS Found	MS %Rec	MSD Spiked	MSD Found	MSD %Rec	%RPD	%Rec Limits	RPD Limit	Q
Cobalt	0.000653	0.125	0.122	97.1	0.125	0.118	94.0	3.22	80 - 120	20	

* FAILS %REC LIMIT

FAILS RPD LIMIT

NOTE: This is an internal quality control sample.

WG_MS_MSD_DRYWT - Modified 05/26/2011
PDF File ID: 4832320
Report generated 07/07/2016 08:33

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16061026 **Worknum:** WG574572
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG574572-02 **File ID:** NI.062916.131925 **Dil:** 5 **Units:** ug/L
Sample: L16060986-03 **File ID:** NI.062916.131302 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	ND	U	2.02	F	1290.00	
Arsenic	1.45	X	1.60	F	10.50	
Barium	11.5	X	11.5	F	0.05	
Cadmium	ND	U	ND	U		
Chromium	0.585	F	ND	U		
Cobalt	2.82	X	2.79	F	1.29	
Copper	8.96	X	9.10	X	1.62	
Lead	ND	U	ND	U		
Manganese	1780		1750		1.52	
Nickel	6.40	X	6.54	F	2.06	
Silver	ND	U	ND	U		
Thallium	ND	U	ND	U		
Vanadium	0.203	F	ND	U		
Zinc	22.4	X	27.8	F	24.50	

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4832314
07/07/2016 08:33

Microbac Laboratories Inc.
Serial Dilution Report

Login: L16061026 **Worknum:** WG574572
Instrument: ICP-MS2 **Method:** 6020A
Serial Dil: WG574572-04 **File ID:** NI.070516.164103 **Dil:** 5 **Units:** ug/L
Sample: L16061026-07 **File ID:** NI.070516.163440 **Dil:** 1

Analyte	Sample	Qual	Serial Dil	Qual	% Diff	Q
Antimony	ND	U	1.70	F	1140.00	
Arsenic	0.283	F	ND	U		
Barium	49.6	X	54.2	X	9.24	
Cadmium	ND	U	ND	U		
Chromium	0.588	F	ND	U		
Cobalt	1.00	X	1.09	F	9.13	
Copper	0.617	F	ND	U		
Lead	0.406	F	ND	U		
Manganese	5.52	X	5.72	F	3.64	
Nickel	0.977	F	ND	U		
Silver	ND	U	ND	U		
Thallium	ND	U	ND	U		
Vanadium	0.831	X	ND	U		
Zinc	ND	U	ND	U		

U = Result is below MDL.
F = Result is greater than or equal to MDL and less than the RL.
X = Result is greater than or equal to RL and less than 100 times the MDL.
E = %D exceeds control limit of 10% and initial sample result is greater than or equal to 100 times the MDL.

SERIAL_DIL - Modified 09/22/2008
PDF File ID: 4832314
07/07/2016 08:33

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061026 **Worknum:** WG574572
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG574572-01 **File ID:** NI.062916.131614 **Dil:** 1 **Units:** ug/L
Sample ID: L16060986-03 **File ID:** NI.062916.131302 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	49.8		0	U	50	99.5	75 - 125	
ARSENIC	56.4		1.45		50	109.9	75 - 125	
BARIUM	59.4		11.5		50	95.9	75 - 125	
CADMIUM	50.9		0	U	50	101.9	75 - 125	
CHROMIUM	52.3		0.585	F	50	103.5	75 - 125	
COBALT	61.7		2.82		50	117.8	75 - 125	
COPPER	58.9		8.96		50	100.0	75 - 125	
LEAD	52.9		0	U	50	105.9	75 - 125	
MANGANESE	1830		1780		50	91.5	75 - 125	
NICKEL	56.4		6.40		50	100.0	75 - 125	
SILVER	49.7		0	U	50	99.5	75 - 125	
THALLIUM	52.3		0	U	50	104.6	75 - 125	
VANADIUM	56.0		0.203	F	50	111.6	75 - 125	
ZINC	73.9		22.4		50	103.0	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4832315
Report generated: 07/07/2016 08:33

Microbac Laboratories Inc.
POST SPIKE REPORT

Sample Login ID: L16061026 **Worknum:** WG574572
Instrument ID: ICP-MS2 **Method:** 6020A
Post Spike ID: WG574572-03 **File ID:** NI.070516.163751 **Dil:** 1 **Units:** ug/L
Sample ID: L16061026-07 **File ID:** NI.070516.163440 **Dil:** 1 **Matrix:** Water

Analyte	Post Spike Result	C	Sample Result	C	Spike Added(SA)	% R	Control Limit %R	Q
ANTIMONY	47.9		0	U	50	95.8	75 - 125	
ARSENIC	48.7		0.283	F	50	96.8	75 - 125	
BARIUM	95.8		49.6		50	92.3	75 - 125	
CADMIUM	48.2		0	U	50	96.5	75 - 125	
CHROMIUM	47.4		0.588	F	50	93.6	75 - 125	
COBALT	49.1		1.00		50	96.2	75 - 125	
COPPER	48.5		0.617	F	50	95.8	75 - 125	
LEAD	50.1		0.406	F	50	99.3	75 - 125	
MANGANESE	51.9		5.52		50	92.8	75 - 125	
NICKEL	48.0		0.977	F	50	94.0	75 - 125	
SILVER	47.2		0	U	50	94.4	75 - 125	
THALLIUM	47.8		0	U	50	95.6	75 - 125	
VANADIUM	47.9		0.831		50	94.1	75 - 125	
ZINC	52.8		0	U	50	105.7	75 - 125	

N = % Recovery exceeds control limits
F = Result is between MDL and RL
U = Sample result is below MDL. A value of zero is used in the calculation

POST_SPIKE - Modified 03/06/2008
PDF File ID: 4832315
Report generated: 07/07/2016 08:33

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061026	Workgroup (AAB#):	WG574572
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG574676	Initial Calibration Date:	29-JUN-2016 11:35

	WG574676-01		WG574676-02		WG574676-03		WG574676-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	28.2	.4	255	50	227000	100	448000	.999981	
ARSENIC	0	-40.0	.4	-10.4	50	57000	100	110000	.999904	
BARIUM	0	25.3	.4	136	50	99600	100	196000	.999974	
CADMIUM	0	1.30	.4	122	50	102000	100	200000	.999946	
CHROMIUM	0	7540	.4	7930	50	379000	100	748000	.999997	
COBALT	0	239	.4	575	50	337000	100	648000	.99988	
COPPER	0	103	.4	285	50	94300	100	184000	.999979	
LEAD	0	873	.4	2280	50	926000	100	1830000	.999949	
MANGANESE	0	784	.4	1380	50	355000	100	686000	.999925	
NICKEL	0	221	.4	324	50	94600	100	186000	.999991	
SILVER	0	86.3	.4	412	50	318000	100	624000	.999961	
THALLIUM	0	1.70	.4	417	50	406000	100	804000	.999963	
VANADIUM	0	1430	.4	1850	50	385000	100	745000	.999935	
ZINC	0	365	.4	549	50	56000	100	108000	.999932	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4832323
Report generated: 07-JUL-2016 08:33

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061026	Workgroup (AAB#):	WG574572
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG575179	Initial Calibration Date:	05-JUL-2016 09:36

	WG575179-01		WG575179-02		WG575179-03		WG575179-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	109	.4	306	50	221000	100	451000	.999882	
ARSENIC	0	-83.8	.4	-2.10	50	57500	100	112000	.99994	
BARIUM	0	34.0	.4	149	50	99900	100	193000	.999924	
CADMIUM	0	3.00	.4	116	50	106000	100	204000	.999881	
CHROMIUM	0	6920	.4	7550	50	368000	100	707000	.999922	
COBALT	0	156	.4	528	50	345000	100	669000	.999911	
COPPER	0	141	.4	251	50	95800	100	184000	.999865	
LEAD	0	731	.4	1810	50	908000	100	1770000	.999981	
MANGANESE	0	831	.4	1190	50	322000	100	624000	.999917	
NICKEL	0	385	.4	484	50	95600	100	184000	.999886	
SILVER	0	67.3	.4	421	50	337000	100	642000	.999841	
THALLIUM	0	4.30	.4	436	50	404000	100	778000	.999935	
VANADIUM	0	1410	.4	1710	50	367000	100	713000	.99994	
ZINC	0	188	.4	239	50	56400	100	109000	.999877	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4832323
Report generated: 07-JUL-2016 08:33

Microbac Laboratories Inc.
Initial Calibration Summary

Login:	L16061026	Workgroup (AAB#):	WG574572
Analytical Method:	6020A	Instrument ID:	ICP-MS2
ICAL Worknum:	WG575370	Initial Calibration Date:	06-JUL-2016 09:17

	WG575370-01		WG575370-02		WG575370-03		WG575370-04			
	Conc	INT	Conc	INT	Conc	INT	Conc	INT	R	Q
ANTIMONY	0	280	.4	308	50	202000	100	429000	.999223	
ARSENIC	0	-74.4	.4	-50.4	50	52000	100	105000	1	
BARIUM	0	25.7	.4	66.7	50	92500	100	184000	.999984	
CADMIUM	0	4.30	.4	21.6	50	97200	100	190000	.999996	
CHROMIUM	0	6680	.4	6770	50	353000	100	705000	.999996	
COBALT	0	226	.4	269	50	306000	100	609000	.999959	
COPPER	0	110	.4	106	50	84100	100	171000	1	
LEAD	0	774	.4	923	50	894000	100	1760000	.999728	
MANGANESE	0	812	.4	892	50	312000	100	615000	.999906	
NICKEL	0	364	.4	348	50	84600	100	171000	1	
SILVER	0	71.3	.4	172	50	300000	100	609000	.99988	
THALLIUM	0	9.70	.4	134	50	381000	100	759000	.999873	
VANADIUM	0	1280	.4	1370	50	354000	100	719000	.999998	
ZINC	0	186	.4	165	50	50700	100	103000	.999997	

INT = Instrument intensity
R = Coefficient of correlation
Q = Data Qualifier
*** = Out of Compliance; R < 0.995**

INT_CAL_ICP - Modified 03/06/2008
PDF File ID: 4832323
Report generated: 07-JUL-2016 08:33

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061026
Instrument ID: ICP-MS2
File ID: NI.062916.114146
Workgroup (AAB#): WG574572
Matrix: WATER

Run Date: 06/29/2016
Run Time: 11:41
Analyst: BKT
Cal ID: ICP-MS2 - 29-JUN-16

Sample ID: WG574676-06
Method: 6020A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
COPPER	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.335	F
THALLIUM	.04	.16	.04	U
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4832325
Report generated 07/07/2016 08:34

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061026
Instrument ID: ICP-MS2
File ID: NI.070516.095329
Workgroup (AAB#): WG574572
Matrix: WATER

Run Date: 07/05/2016
Run Time: 09:53
Analyst: JYH
Cal ID: ICP-MS2 - 05-JUL-16

Sample ID: WG575179-09
Method: 6020A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
COPPER	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.2	U
THALLIUM	.04	.16	.04	U
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4832325
Report generated 07/07/2016 08:34

Microbac Laboratories Inc.
INITIAL CALIBRATION BLANK (ICB)

Login Number: L16061026
Instrument ID: ICP-MS2
File ID: NI.070616.092404
Workgroup (AAB#): WG574572
Matrix: WATER

Run Date: 07/06/2016
Run Time: 09:24
Analyst: JYH
Cal ID: ICP-MS2 - 06-JUL-16

Sample ID: WG575370-06
Method: 6020A
Units: ug/L

Analytes	MDL	RDL	Concentration	Qualifier
SILVER	.2	.8	.2	U
ARSENIC	.2	.8	.2	U
BARIUM	.6	2.4	.6	U
CADMIUM	.12	.48	.12	U
COBALT	.2	.8	.2	U
CHROMIUM	.4	1.6	.4	U
COPPER	.4	1.6	.4	U
MANGANESE	.4	1.6	.4	U
NICKEL	.8	3.2	.8	U
LEAD	.2	.8	.2	U
ANTIMONY	.2	.8	.236	F
THALLIUM	.04	.16	.0496	F
VANADIUM	.2	.8	.2	U
ZINC	5	20	5	U

U = Result is less than 2 x MDL

F = Result is between MDL and 2 x MDL

* = Result is above 2 x MDL

ICB - Modified 07/14/2009
PDF File ID: 4832325
Report generated 07/07/2016 08:34

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 06/29/2016
Sample ID: WG574676-11
Instrument ID: ICP-MS2
Run Time: 12:07
Method: 6020A
File ID: NI.062916.120734
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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PDF File ID: 4832328
Report generated 07/07/2016 08:34

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 06/29/2016
Sample ID: WG574676-13
Instrument ID: ICP-MS2
Run Time: 12:40
Method: 6020A
File ID: NI.062916.124059
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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PDF File ID: 4832328
Report generated 07/07/2016 08:34

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 06/29/2016
Sample ID: WG574676-16
Instrument ID: ICP-MS2
Run Time: 13:29
Method: 6020A
File ID: NI.062916.132901
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.834	F
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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PDF File ID: 4832328
Report generated 07/07/2016 08:34

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 06/29/2016
Sample ID: WG574676-18
Instrument ID: ICP-MS2
Run Time: 14:07
Method: 6020A
File ID: NI.062916.140723
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Report generated 07/07/2016 08:34

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 06/29/2016
Sample ID: WG574676-20
Instrument ID: ICP-MS2
Run Time: 15:07
Method: 6020A
File ID: NI.062916.150718
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Report generated 07/07/2016 08:34

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 06/29/2016
Sample ID: WG574676-28
Instrument ID: ICP-MS2
Run Time: 17:37
Method: 6020A
File ID: NI.062916.173730
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4832328
Report generated 07/07/2016 08:34

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 06/29/2016
Sample ID: WG574676-32
Instrument ID: ICP-MS2
Run Time: 17:59
Method: 6020A
File ID: NI.062916.175955
Analyst: BKT
Units: ug/L
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.439	F
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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PDF File ID: 4832328
Report generated 07/07/2016 08:34

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 07/05/2016
Sample ID: WG575179-14
Instrument ID: ICP-MS2
Run Time: 10:09
Method: 6020A
File ID: NI.070516.100941
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 05-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.322	F
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4832328
Report generated 07/07/2016 08:34

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 07/05/2016
Sample ID: WG575179-35
Instrument ID: ICP-MS2
Run Time: 15:44
Method: 6020A
File ID: NI.070516.154411
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 05-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4832328
Report generated 07/07/2016 08:34

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 07/05/2016
Sample ID: WG575179-37
Instrument ID: ICP-MS2
Run Time: 16:21
Method: 6020A
File ID: NI.070516.162132
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 05-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4832328
Report generated 07/07/2016 08:34

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 07/05/2016
Sample ID: WG575179-39
Instrument ID: ICP-MS2
Run Time: 16:50
Method: 6020A
File ID: NI.070516.165039
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 05-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.217	F
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

CCB - Modified 03/05/2008
PDF File ID: 4832328
Report generated 07/07/2016 08:34

Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 07/05/2016
Sample ID: WG575179-45
Instrument ID: ICP-MS2
Run Time: 18:39
Method: 6020A
File ID: NI.070516.183919
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 05-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Login Number: L16061026
Run Date: 07/05/2016
Sample ID: WG575179-49
Instrument ID: ICP-MS2
Run Time: 19:17
Method: 6020A
File ID: NI.070516.191740
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 05-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0400	U
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 07/06/2016
Sample ID: WG575370-11
Instrument ID: ICP-MS2
Run Time: 09:40
Method: 6020A
File ID: NI.070616.094005
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 06-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.361	F
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0461	F
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Microbac Laboratories Inc.
CONTINUING CALIBRATION BLANK (CCB)

Login Number: L16061026
Run Date: 07/06/2016
Sample ID: WG575370-27
Instrument ID: ICP-MS2
Run Time: 14:55
Method: 6020A
File ID: NI.070616.145531
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 06-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.418	F
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0458	F
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Login Number: L16061026
Run Date: 07/06/2016
Sample ID: WG575370-29
Instrument ID: ICP-MS2
Run Time: 15:34
Method: 6020A
File ID: NI.070616.153417
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 06-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0477	F
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Login Number: L16061026
Run Date: 07/06/2016
Sample ID: WG575370-39
Instrument ID: ICP-MS2
Run Time: 18:53
Method: 6020A
File ID: NI.070616.185304
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 06-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.200	U
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0424	F
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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Login Number: L16061026
Run Date: 07/06/2016
Sample ID: WG575370-43
Instrument ID: ICP-MS2
Run Time: 19:15
Method: 6020A
File ID: NI.070616.191526
Analyst: JYH
Units: ug/L
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 06-JUL-16
Matrix: WATER
QAPP: DOD4

Analytes	MDL	RDL	Concentration	Qualifier
Antimony	0.200	0.800	0.298	F
Arsenic	0.200	0.800	0.200	U
Barium	0.600	2.40	0.600	U
Cadmium	0.120	0.480	0.120	U
Chromium	0.400	1.60	0.400	U
Cobalt	0.200	0.800	0.200	U
Copper	0.400	1.60	0.400	U
Lead	0.200	0.800	0.200	U
Manganese	0.400	1.60	0.400	U
Nickel	0.800	3.20	0.800	U
Silver	0.200	0.800	0.200	U
Thallium	0.0400	0.160	0.0490	F
Vanadium	0.200	0.800	0.200	U
Zinc	5.00	20.0	5.00	U

U = Result is less than MDL.
F = Result is between MDL and RL.
* = Result is above RL.

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INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061026 Run Date: 07/06/2016 Sample ID: WG575370-05
Instrument ID: ICP-MS2 Run Time: 09:20 Method: 6020A
File ID: NI.070616.092051 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG574572 Cal ID: ICP-MS - 06-JUL-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	51.8	104	90 - 110	
Arsenic		50	50.2	100	90 - 110	
Barium		50	51.1	102	90 - 110	
Cadmium		50	50.8	102	90 - 110	
Chromium		50	50.2	100	90 - 110	
Cobalt		50	50.7	101	90 - 110	
Copper		50	50.0	100	90 - 110	
Lead		50	50.8	102	90 - 110	
Manganese		50	50.7	101	90 - 110	
Nickel		50	49.7	99.4	90 - 110	
Silver		50	50.9	102	90 - 110	
Thallium		50	50.3	101	90 - 110	
Vanadium		50	50.7	101	90 - 110	
Zinc		50	50.3	101	90 - 110	

* Exceeds LIMITS Limit

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Microbac Laboratories Inc.

INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061026 Run Date: 06/29/2016 Sample ID: WG574676-05
Instrument ID: ICP-MS2 Run Time: 11:38 Method: 6020A
File ID: NI.062916.113833 Analyst: BKT Units: ug/L
Workgroup (AAB#): WG574572 Cal ID: ICP-MS - 29-JUN-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	49.8	99.7	90 - 110	
Arsenic		50	50.9	102	90 - 110	
Barium		50	49.9	99.9	90 - 110	
Cadmium		50	50.3	101	90 - 110	
Chromium		50	50.0	100	90 - 110	
Cobalt		50	50.4	101	90 - 110	
Copper		50	50.8	102	90 - 110	
Lead		50	51.0	102	90 - 110	
Manganese		50	51.9	104	90 - 110	
Nickel		50	50.6	101	90 - 110	
Silver		50	50.9	102	90 - 110	
Thallium		50	50.7	101	90 - 110	
Vanadium		50	51.2	102	90 - 110	
Zinc		50	52.1	104	90 - 110	

* Exceeds LIMITS Limit

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Microbac Laboratories Inc.
INITIAL CALIBRATION VERIFICATION (ICV)
(Alternate Source)

Login Number: L16061026 Run Date: 07/05/2016 Sample ID: WG575179-08
Instrument ID: ICP-MS2 Run Time: 09:50 Method: 6020A
File ID: NI.070516.095016 Analyst: JYH Units: ug/L
Workgroup (AAB#): WG574572 Cal ID: ICP-MS - 05-JUL-16
QC Key: DOD4

Analyte		Expected	Found	%REC	LIMITS	Q
Antimony		50	49.1	98.2	90 - 110	
Arsenic		50	47.5	95.1	90 - 110	
Barium		50	47.9	95.8	90 - 110	
Cadmium		50	47.9	95.8	90 - 110	
Chromium		50	48.0	96.0	90 - 110	
Cobalt		50	48.4	96.8	90 - 110	
Copper		50	48.0	96.1	90 - 110	
Lead		50	48.1	96.1	90 - 110	
Manganese		50	48.1	96.3	90 - 110	
Nickel		50	48.0	96.0	90 - 110	
Silver		50	48.0	95.9	90 - 110	
Thallium		50	48.0	96.0	90 - 110	
Vanadium		50	48.2	96.3	90 - 110	
Zinc		50	48.3	96.6	90 - 110	

* Exceeds LIMITS Limit

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 06/29/2016
Sample ID: WG574676-10
Instrument ID: ICP-MS2
Run Time: 12:00
Method: 6020A
File ID: NI.062916.120010
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0508	mg/L	102	90 - 110		
Arsenic		0.0500	0.0514	mg/L	103	90 - 110		
Barium		0.0500	0.0505	mg/L	101	90 - 110		
Cadmium		0.0500	0.0516	mg/L	103	90 - 110		
Chromium		0.0500	0.0504	mg/L	101	90 - 110		
Cobalt		0.0500	0.0538	mg/L	108	90 - 110		
Copper		0.0500	0.0507	mg/L	101	90 - 110		
Lead		0.0500	0.0529	mg/L	106	90 - 110		
Manganese		0.0500	0.0534	mg/L	107	90 - 110		
Nickel		0.0500	0.0502	mg/L	100	90 - 110		
Silver		0.0500	0.0508	mg/L	102	90 - 110		
Thallium		0.0500	0.0519	mg/L	104	90 - 110		
Vanadium		0.0500	0.0516	mg/L	103	90 - 110		
Zinc		0.0500	0.0510	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 06/29/2016
Sample ID: WG574676-12
Instrument ID: ICP-MS2
Run Time: 12:37
Method: 6020A
File ID: NI.062916.123748
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0505	mg/L	101	90 - 110		
Arsenic		0.0500	0.0498	mg/L	99.6	90 - 110		
Barium		0.0500	0.0499	mg/L	99.8	90 - 110		
Cadmium		0.0500	0.0506	mg/L	101	90 - 110		
Chromium		0.0500	0.0489	mg/L	97.8	90 - 110		
Cobalt		0.0500	0.0506	mg/L	101	90 - 110		
Copper		0.0500	0.0500	mg/L	99.9	90 - 110		
Lead		0.0500	0.0499	mg/L	99.7	90 - 110		
Manganese		0.0500	0.0500	mg/L	99.9	90 - 110		
Nickel		0.0500	0.0491	mg/L	98.2	90 - 110		
Silver		0.0500	0.0505	mg/L	101	90 - 110		
Thallium		0.0500	0.0497	mg/L	99.4	90 - 110		
Vanadium		0.0500	0.0503	mg/L	101	90 - 110		
Zinc		0.0500	0.0498	mg/L	99.7	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 06/29/2016
Sample ID: WG574676-15
Instrument ID: ICP-MS2
Run Time: 13:25
Method: 6020A
File ID: NI.062916.132550
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0490	mg/L	98.1	90 - 110		
Arsenic		0.0500	0.0501	mg/L	100	90 - 110		
Barium		0.0500	0.0473	mg/L	94.6	90 - 110		
Cadmium		0.0500	0.0490	mg/L	98.0	90 - 110		
Chromium		0.0500	0.0489	mg/L	97.9	90 - 110		
Cobalt		0.0500	0.0557	mg/L	111	90 - 110		*
Copper		0.0500	0.0491	mg/L	98.3	90 - 110		
Lead		0.0500	0.0505	mg/L	101	90 - 110		
Manganese		0.0500	0.0508	mg/L	102	90 - 110		
Nickel		0.0500	0.0487	mg/L	97.5	90 - 110		
Silver		0.0500	0.0499	mg/L	99.7	90 - 110		
Thallium		0.0500	0.0494	mg/L	98.8	90 - 110		
Vanadium		0.0500	0.0520	mg/L	104	90 - 110		
Zinc		0.0500	0.0498	mg/L	99.6	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026 Run Date: 06/29/2016 Sample ID: WG574676-17
Instrument ID: ICP-MS2 Run Time: 14:04 Method: 6020A
File ID: NI.062916.140412 Analyst: BKT QC Key: DOD4
Workgroup (AAB#): WG574572 Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0501	mg/L	100	90 - 110		
Arsenic		0.0500	0.0523	mg/L	105	90 - 110		
Barium		0.0500	0.0474	mg/L	94.8	90 - 110		
Cadmium		0.0500	0.0492	mg/L	98.4	90 - 110		
Chromium		0.0500	0.0510	mg/L	102	90 - 110		
Cobalt		0.0500	0.0568	mg/L	114	90 - 110		*
Copper		0.0500	0.0515	mg/L	103	90 - 110		
Lead		0.0500	0.0511	mg/L	102	90 - 110		
Manganese		0.0500	0.0517	mg/L	103	90 - 110		
Nickel		0.0500	0.0509	mg/L	102	90 - 110		
Silver		0.0500	0.0508	mg/L	102	90 - 110		
Thallium		0.0500	0.0506	mg/L	101	90 - 110		
Vanadium		0.0500	0.0539	mg/L	108	90 - 110		
Zinc		0.0500	0.0522	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026 Run Date: 06/29/2016 Sample ID: WG574676-19
Instrument ID: ICP-MS2 Run Time: 15:04 Method: 6020A
File ID: NI.062916.150407 Analyst: BKT QC Key: DOD4
Workgroup (AAB#): WG574572 Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0495	mg/L	98.9	90 - 110		
Arsenic		0.0500	0.0504	mg/L	101	90 - 110		
Barium		0.0500	0.0484	mg/L	96.9	90 - 110		
Cadmium		0.0500	0.0498	mg/L	99.6	90 - 110		
Chromium		0.0500	0.0505	mg/L	101	90 - 110		
Cobalt		0.0500	0.0552	mg/L	110	90 - 110		
Copper		0.0500	0.0505	mg/L	101	90 - 110		
Lead		0.0500	0.0526	mg/L	105	90 - 110		
Manganese		0.0500	0.0531	mg/L	106	90 - 110		
Nickel		0.0500	0.0503	mg/L	101	90 - 110		
Silver		0.0500	0.0501	mg/L	100	90 - 110		
Thallium		0.0500	0.0509	mg/L	102	90 - 110		
Vanadium		0.0500	0.0523	mg/L	105	90 - 110		
Zinc		0.0500	0.0512	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 06/29/2016
Sample ID: WG574676-27
Instrument ID: ICP-MS2
Run Time: 17:34
Method: 6020A
File ID: NI.062916.173419
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0486	mg/L	97.2	90 - 110		
Arsenic		0.0500	0.0488	mg/L	97.6	90 - 110		
Barium		0.0500	0.0466	mg/L	93.2	90 - 110		
Cadmium		0.0500	0.0485	mg/L	97.1	90 - 110		
Chromium		0.0500	0.0491	mg/L	98.2	90 - 110		
Cobalt		0.0500	0.0513	mg/L	103	90 - 110		
Copper		0.0500	0.0491	mg/L	98.1	90 - 110		
Lead		0.0500	0.0503	mg/L	101	90 - 110		
Manganese		0.0500	0.0482	mg/L	96.4	90 - 110		
Nickel		0.0500	0.0489	mg/L	97.8	90 - 110		
Silver		0.0500	0.0493	mg/L	98.6	90 - 110		
Thallium		0.0500	0.0491	mg/L	98.2	90 - 110		
Vanadium		0.0500	0.0503	mg/L	101	90 - 110		
Zinc		0.0500	0.0491	mg/L	98.1	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 06/29/2016
Sample ID: WG574676-31
Instrument ID: ICP-MS2
Run Time: 17:56
Method: 6020A
File ID: NI.062916.175644
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0502	mg/L	100	90 - 110		
Arsenic		0.0500	0.0511	mg/L	102	90 - 110		
Barium		0.0500	0.0484	mg/L	96.9	90 - 110		
Cadmium		0.0500	0.0504	mg/L	101	90 - 110		
Chromium		0.0500	0.0524	mg/L	105	90 - 110		
Cobalt		0.0500	0.0556	mg/L	111	90 - 110		*
Copper		0.0500	0.0514	mg/L	103	90 - 110		
Lead		0.0500	0.0535	mg/L	107	90 - 110		
Manganese		0.0500	0.0515	mg/L	103	90 - 110		
Nickel		0.0500	0.0517	mg/L	103	90 - 110		
Silver		0.0500	0.0504	mg/L	101	90 - 110		
Thallium		0.0500	0.0525	mg/L	105	90 - 110		
Vanadium		0.0500	0.0529	mg/L	106	90 - 110		
Zinc		0.0500	0.0512	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4832327
Report generated 07/07/2016 08:34

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 07/05/2016
Sample ID: WG575179-13
Instrument ID: ICP-MS2
Run Time: 10:06
Method: 6020A
File ID: NI.070516.100630
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 05-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0520	mg/L	104	90 - 110		
Arsenic		0.0500	0.0487	mg/L	97.3	90 - 110		
Barium		0.0500	0.0490	mg/L	98.0	90 - 110		
Cadmium		0.0500	0.0495	mg/L	99.1	90 - 110		
Chromium		0.0500	0.0494	mg/L	98.9	90 - 110		
Cobalt		0.0500	0.0498	mg/L	99.6	90 - 110		
Copper		0.0500	0.0491	mg/L	98.3	90 - 110		
Lead		0.0500	0.0502	mg/L	100	90 - 110		
Manganese		0.0500	0.0491	mg/L	98.3	90 - 110		
Nickel		0.0500	0.0496	mg/L	99.2	90 - 110		
Silver		0.0500	0.0494	mg/L	98.8	90 - 110		
Thallium		0.0500	0.0500	mg/L	100	90 - 110		
Vanadium		0.0500	0.0498	mg/L	99.6	90 - 110		
Zinc		0.0500	0.0497	mg/L	99.4	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4832327
Report generated 07/07/2016 08:34

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 07/05/2016
Sample ID: WG575179-34
Instrument ID: ICP-MS2
Run Time: 15:41
Method: 6020A
File ID: NI.070516.154100
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 05-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0493	mg/L	98.6	90 - 110		
Arsenic		0.0500	0.0472	mg/L	94.5	90 - 110		
Barium		0.0500	0.0462	mg/L	92.3	90 - 110		
Cadmium		0.0500	0.0473	mg/L	94.6	90 - 110		
Chromium		0.0500	0.0464	mg/L	92.8	90 - 110		
Cobalt		0.0500	0.0480	mg/L	96.0	90 - 110		
Copper		0.0500	0.0471	mg/L	94.2	90 - 110		
Lead		0.0500	0.0499	mg/L	99.7	90 - 110		
Manganese		0.0500	0.0452	mg/L	90.4	90 - 110		
Nickel		0.0500	0.0467	mg/L	93.3	90 - 110		
Silver		0.0500	0.0474	mg/L	94.8	90 - 110		
Thallium		0.0500	0.0478	mg/L	95.5	90 - 110		
Vanadium		0.0500	0.0465	mg/L	93.0	90 - 110		
Zinc		0.0500	0.0502	mg/L	100	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4832327
Report generated 07/07/2016 08:34

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 07/05/2016
Sample ID: WG575179-36
Instrument ID: ICP-MS2
Run Time: 16:18
Method: 6020A
File ID: NI.070516.161820
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 05-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0477	mg/L	95.4	90 - 110		
Arsenic		0.0500	0.0479	mg/L	95.8	90 - 110		
Barium		0.0500	0.0456	mg/L	91.2	90 - 110		
Cadmium		0.0500	0.0471	mg/L	94.3	90 - 110		
Chromium		0.0500	0.0473	mg/L	94.7	90 - 110		
Cobalt		0.0500	0.0491	mg/L	98.2	90 - 110		
Copper		0.0500	0.0478	mg/L	95.5	90 - 110		
Lead		0.0500	0.0505	mg/L	101	90 - 110		
Manganese		0.0500	0.0463	mg/L	92.7	90 - 110		
Nickel		0.0500	0.0472	mg/L	94.3	90 - 110		
Silver		0.0500	0.0467	mg/L	93.4	90 - 110		
Thallium		0.0500	0.0479	mg/L	95.7	90 - 110		
Vanadium		0.0500	0.0470	mg/L	94.1	90 - 110		
Zinc		0.0500	0.0491	mg/L	98.1	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Report generated 07/07/2016 08:34

Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 07/05/2016
Sample ID: WG575179-38
Instrument ID: ICP-MS2
Run Time: 16:47
Method: 6020A
File ID: NI.070516.164727
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 05-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0516	mg/L	103	90 - 110		
Arsenic		0.0500	0.0499	mg/L	99.8	90 - 110		
Barium		0.0500	0.0480	mg/L	95.9	90 - 110		
Cadmium		0.0500	0.0496	mg/L	99.3	90 - 110		
Chromium		0.0500	0.0492	mg/L	98.4	90 - 110		
Cobalt		0.0500	0.0503	mg/L	101	90 - 110		
Copper		0.0500	0.0492	mg/L	98.3	90 - 110		
Lead		0.0500	0.0521	mg/L	104	90 - 110		
Manganese		0.0500	0.0483	mg/L	96.6	90 - 110		
Nickel		0.0500	0.0490	mg/L	98.0	90 - 110		
Silver		0.0500	0.0492	mg/L	98.5	90 - 110		
Thallium		0.0500	0.0500	mg/L	100	90 - 110		
Vanadium		0.0500	0.0488	mg/L	97.6	90 - 110		
Zinc		0.0500	0.0510	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 07/05/2016
Sample ID: WG575179-44
Instrument ID: ICP-MS2
Run Time: 18:36
Method: 6020A
File ID: NI.070516.183607
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 05-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0534	mg/L	107	90 - 110		
Arsenic		0.0500	0.0512	mg/L	102	90 - 110		
Barium		0.0500	0.0500	mg/L	100	90 - 110		
Cadmium		0.0500	0.0514	mg/L	103	90 - 110		
Chromium		0.0500	0.0508	mg/L	102	90 - 110		
Cobalt		0.0500	0.0523	mg/L	105	90 - 110		
Copper		0.0500	0.0510	mg/L	102	90 - 110		
Lead		0.0500	0.0546	mg/L	109	90 - 110		
Manganese		0.0500	0.0500	mg/L	100	90 - 110		
Nickel		0.0500	0.0513	mg/L	103	90 - 110		
Silver		0.0500	0.0508	mg/L	102	90 - 110		
Thallium		0.0500	0.0521	mg/L	104	90 - 110		
Vanadium		0.0500	0.0503	mg/L	101	90 - 110		
Zinc		0.0500	0.0529	mg/L	106	90 - 110		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 07/05/2016
Sample ID: WG575179-48
Instrument ID: ICP-MS2
Run Time: 19:14
Method: 6020A
File ID: NI.070516.191429
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 05-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0500	mg/L	100	90 - 110		
Arsenic		0.0500	0.0478	mg/L	95.5	90 - 110		
Barium		0.0500	0.0462	mg/L	92.3	90 - 110		
Cadmium		0.0500	0.0476	mg/L	95.3	90 - 110		
Chromium		0.0500	0.0470	mg/L	94.0	90 - 110		
Cobalt		0.0500	0.0486	mg/L	97.3	90 - 110		
Copper		0.0500	0.0475	mg/L	94.9	90 - 110		
Lead		0.0500	0.0507	mg/L	101	90 - 110		
Manganese		0.0500	0.0465	mg/L	92.9	90 - 110		
Nickel		0.0500	0.0472	mg/L	94.3	90 - 110		
Silver		0.0500	0.0472	mg/L	94.3	90 - 110		
Thallium		0.0500	0.0484	mg/L	96.8	90 - 110		
Vanadium		0.0500	0.0472	mg/L	94.4	90 - 110		
Zinc		0.0500	0.0491	mg/L	98.2	90 - 110		

* Exceeds LIMITS Criteria

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CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 07/06/2016
Sample ID: WG575370-10
Instrument ID: ICP-MS2
Run Time: 09:36
Method: 6020A
File ID: NI.070616.093653
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 06-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0511	mg/L	102	90 - 110		
Arsenic		0.0500	0.0505	mg/L	101	90 - 110		
Barium		0.0500	0.0490	mg/L	97.9	90 - 110		
Cadmium		0.0500	0.0493	mg/L	98.7	90 - 110		
Chromium		0.0500	0.0505	mg/L	101	90 - 110		
Cobalt		0.0500	0.0509	mg/L	102	90 - 110		
Copper		0.0500	0.0504	mg/L	101	90 - 110		
Lead		0.0500	0.0511	mg/L	102	90 - 110		
Manganese		0.0500	0.0513	mg/L	103	90 - 110		
Nickel		0.0500	0.0502	mg/L	100	90 - 110		
Silver		0.0500	0.0493	mg/L	98.6	90 - 110		
Thallium		0.0500	0.0505	mg/L	101	90 - 110		
Vanadium		0.0500	0.0507	mg/L	101	90 - 110		
Zinc		0.0500	0.0507	mg/L	101	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Report generated 07/07/2016 08:34

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 07/06/2016
Sample ID: WG575370-26
Instrument ID: ICP-MS2
Run Time: 14:52
Method: 6020A
File ID: NI.070616.145220
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 06-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0512	mg/L	102	90 - 110		
Arsenic		0.0500	0.0508	mg/L	102	90 - 110		
Barium		0.0500	0.0499	mg/L	99.8	90 - 110		
Cadmium		0.0500	0.0508	mg/L	102	90 - 110		
Chromium		0.0500	0.0519	mg/L	104	90 - 110		
Cobalt		0.0500	0.0506	mg/L	101	90 - 110		
Copper		0.0500	0.0515	mg/L	103	90 - 110		
Lead		0.0500	0.0525	mg/L	105	90 - 110		
Manganese		0.0500	0.0530	mg/L	106	90 - 110		
Nickel		0.0500	0.0518	mg/L	104	90 - 110		
Silver		0.0500	0.0499	mg/L	99.7	90 - 110		
Thallium		0.0500	0.0508	mg/L	102	90 - 110		
Vanadium		0.0500	0.0504	mg/L	101	90 - 110		
Zinc		0.0500	0.0512	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4832327
Report generated 07/07/2016 08:34

Microbac Laboratories Inc.
CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 07/06/2016
Sample ID: WG575370-28
Instrument ID: ICP-MS2
Run Time: 15:31
Method: 6020A
File ID: NI.070616.153105
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 06-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0504	mg/L	101	90 - 110		
Arsenic		0.0500	0.0512	mg/L	102	90 - 110		
Barium		0.0500	0.0495	mg/L	99.0	90 - 110		
Cadmium		0.0500	0.0505	mg/L	101	90 - 110		
Chromium		0.0500	0.0523	mg/L	105	90 - 110		
Cobalt		0.0500	0.0520	mg/L	104	90 - 110		
Copper		0.0500	0.0523	mg/L	105	90 - 110		
Lead		0.0500	0.0529	mg/L	106	90 - 110		
Manganese		0.0500	0.0537	mg/L	107	90 - 110		
Nickel		0.0500	0.0525	mg/L	105	90 - 110		
Silver		0.0500	0.0502	mg/L	100	90 - 110		
Thallium		0.0500	0.0513	mg/L	103	90 - 110		
Vanadium		0.0500	0.0512	mg/L	102	90 - 110		
Zinc		0.0500	0.0519	mg/L	104	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 07/06/2016
Sample ID: WG575370-38
Instrument ID: ICP-MS2
Run Time: 18:49
Method: 6020A
File ID: NI.070616.184952
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 06-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0496	mg/L	99.2	90 - 110		
Arsenic		0.0500	0.0503	mg/L	101	90 - 110		
Barium		0.0500	0.0491	mg/L	98.3	90 - 110		
Cadmium		0.0500	0.0501	mg/L	100	90 - 110		
Chromium		0.0500	0.0517	mg/L	103	90 - 110		
Cobalt		0.0500	0.0499	mg/L	99.8	90 - 110		
Copper		0.0500	0.0514	mg/L	103	90 - 110		
Lead		0.0500	0.0522	mg/L	104	90 - 110		
Manganese		0.0500	0.0527	mg/L	105	90 - 110		
Nickel		0.0500	0.0516	mg/L	103	90 - 110		
Silver		0.0500	0.0490	mg/L	98.0	90 - 110		
Thallium		0.0500	0.0508	mg/L	102	90 - 110		
Vanadium		0.0500	0.0496	mg/L	99.2	90 - 110		
Zinc		0.0500	0.0512	mg/L	102	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
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Microbac Laboratories Inc.

CONTINUING CALIBRATION VERIFICATION (CCV)

Login Number: L16061026
Run Date: 07/06/2016
Sample ID: WG575370-42
Instrument ID: ICP-MS2
Run Time: 19:12
Method: 6020A
File ID: NI.070616.191215
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 06-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.0500	0.0526	mg/L	105	90 - 110		
Arsenic		0.0500	0.0506	mg/L	101	90 - 110		
Barium		0.0500	0.0495	mg/L	99.0	90 - 110		
Cadmium		0.0500	0.0507	mg/L	101	90 - 110		
Chromium		0.0500	0.0517	mg/L	103	90 - 110		
Cobalt		0.0500	0.0513	mg/L	103	90 - 110		
Copper		0.0500	0.0513	mg/L	103	90 - 110		
Lead		0.0500	0.0521	mg/L	104	90 - 110		
Manganese		0.0500	0.0530	mg/L	106	90 - 110		
Nickel		0.0500	0.0514	mg/L	103	90 - 110		
Silver		0.0500	0.0501	mg/L	100	90 - 110		
Thallium		0.0500	0.0512	mg/L	102	90 - 110		
Vanadium		0.0500	0.0506	mg/L	101	90 - 110		
Zinc		0.0500	0.0513	mg/L	103	90 - 110		

* Exceeds LIMITS Criteria

CCV - Modified 03/05/2008
PDF File ID: 4832327
Report generated 07/07/2016 08:34

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061026
Run Date: 06/29/2016
Sample ID: WG574676-07
Instrument ID: ICP-MS2
Run Time: 11:46
Method: 6020A
File ID: NI.062916.114653
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.456	ug/L	114	70 - 130		
Arsenic		0.400	0.429	ug/L	107	70 - 130		
Barium		0.750	0.733	ug/L	97.8	70 - 130		
Cadmium		0.240	0.237	ug/L	98.5	70 - 130		
Chromium		0.800	0.739	ug/L	92.4	70 - 130		
Cobalt		0.400	0.414	ug/L	103	70 - 130		
Copper		0.800	0.768	ug/L	96.0	70 - 130		
Lead		0.200	0.181	ug/L	90.3	70 - 130		
Manganese		0.500	0.468	ug/L	93.6	70 - 130		
Nickel		1.60	1.56	ug/L	97.7	70 - 130		
Silver		0.400	0.390	ug/L	97.5	70 - 130		
Thallium		0.0800	0.0871	ug/L	109	70 - 130		
Vanadium		0.400	0.382	ug/L	95.5	70 - 130		
Zinc		6.25	6.64	ug/L	106	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4832329
Report generated 07/07/2016 08:34

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061026
Run Date: 06/29/2016
Sample ID: WG574676-14
Instrument ID: ICP-MS2
Run Time: 12:44
Method: 6020A
File ID: NI.062916.124412
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.401	ug/L	100	70 - 130		
Arsenic		0.400	0.394	ug/L	98.6	70 - 130		
Barium		0.750	0.718	ug/L	95.7	70 - 130		
Cadmium		0.240	0.227	ug/L	94.7	70 - 130		
Chromium		0.800	0.768	ug/L	96.0	70 - 130		
Cobalt		0.400	0.405	ug/L	101	70 - 130		
Copper		0.800	0.751	ug/L	93.9	70 - 130		
Lead		0.200	0.179	ug/L	89.4	70 - 130		
Manganese		0.500	0.469	ug/L	93.8	70 - 130		
Nickel		1.60	1.53	ug/L	95.6	70 - 130		
Silver		0.400	0.383	ug/L	95.7	70 - 130		
Thallium		0.0800	0.0809	ug/L	101	70 - 130		
Vanadium		0.400	0.370	ug/L	92.4	70 - 130		
Zinc		6.25	6.89	ug/L	110	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4832329
Report generated 07/07/2016 08:34

Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061026
Run Date: 06/29/2016
Sample ID: WG574676-33
Instrument ID: ICP-MS2
Run Time: 18:03
Method: 6020A
File ID: NI.062916.180308
Analyst: BKT
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 29-JUN-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.445	ug/L	111	70 - 130		
Arsenic		0.400	0.497	ug/L	124	70 - 130		
Barium		0.750	0.689	ug/L	91.9	70 - 130		
Cadmium		0.240	0.226	ug/L	94.3	70 - 130		
Chromium		0.800	0.764	ug/L	95.5	70 - 130		
Cobalt		0.400	0.420	ug/L	105	70 - 130		
Copper		0.800	0.807	ug/L	101	70 - 130		
Lead		0.200	0.187	ug/L	93.5	70 - 130		
Manganese		0.500	0.444	ug/L	88.8	70 - 130		
Nickel		1.60	1.62	ug/L	101	70 - 130		
Silver		0.400	0.401	ug/L	100	70 - 130		
Thallium		0.0800	0.0936	ug/L	117	70 - 130		
Vanadium		0.400	0.389	ug/L	97.4	70 - 130		
Zinc		6.25	6.56	ug/L	105	70 - 130		

* Exceeds LIMITS Criteria

LLCCV - Modified 1/7/2010
PDF File ID: 4832329
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Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061026
Run Date: 07/05/2016
Sample ID: WG575179-10
Instrument ID: ICP-MS2
Run Time: 09:56
Method: 6020A
File ID: NI.070516.095642
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 05-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.365	ug/L	91.1	70 - 130		
Arsenic		0.400	0.341	ug/L	85.2	70 - 130		
Barium		0.750	0.667	ug/L	88.9	70 - 130		
Cadmium		0.240	0.221	ug/L	92.2	70 - 130		
Chromium		0.800	0.612	ug/L	76.5	70 - 130		
Cobalt		0.400	0.364	ug/L	90.9	70 - 130		
Copper		0.800	0.720	ug/L	90.0	70 - 130		
Lead		0.200	0.178	ug/L	88.8	70 - 130		
Manganese		0.500	0.427	ug/L	85.4	70 - 130		
Nickel		1.60	1.39	ug/L	87.1	70 - 130		
Silver		0.400	0.360	ug/L	90.0	70 - 130		
Thallium		0.0800	0.0696	ug/L	87.0	70 - 130		
Vanadium		0.400	0.325	ug/L	81.2	70 - 130		
Zinc		6.25	6.36	ug/L	102	70 - 130		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061026
Run Date: 07/05/2016
Sample ID: WG575179-31
Instrument ID: ICP-MS2
Run Time: 14:36
Method: 6020A
File ID: NI.070516.143603
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 05-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.367	ug/L	91.8	70 - 130		
Arsenic		0.400	0.475	ug/L	119	70 - 130		
Barium		0.750	0.629	ug/L	83.8	70 - 130		
Cadmium		0.240	0.213	ug/L	88.6	70 - 130		
Chromium		0.800	0.664	ug/L	83.0	70 - 130		
Cobalt		0.400	0.365	ug/L	91.3	70 - 130		
Copper		0.800	0.937	ug/L	117	70 - 130		
Lead		0.200	0.182	ug/L	91.0	70 - 130		
Manganese		0.500	0.362	ug/L	72.4	70 - 130		
Nickel		1.60	1.44	ug/L	89.8	70 - 130		
Silver		0.400	0.358	ug/L	89.4	70 - 130		
Thallium		0.0800	0.0750	ug/L	93.8	70 - 130		
Vanadium		0.400	0.396	ug/L	99.0	70 - 130		
Zinc		6.25	6.51	ug/L	104	70 - 130		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061026
Run Date: 07/05/2016
Sample ID: WG575179-50
Instrument ID: ICP-MS2
Run Time: 19:20
Method: 6020A
File ID: NI.070516.192053
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 05-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.370	ug/L	92.5	70 - 130		
Arsenic		0.400	0.371	ug/L	92.7	70 - 130		
Barium		0.750	0.628	ug/L	83.7	70 - 130		
Cadmium		0.240	0.215	ug/L	89.5	70 - 130		
Chromium		0.800	0.520	ug/L	65.0	70 - 130		*
Cobalt		0.400	0.363	ug/L	90.7	70 - 130		
Copper		0.800	0.679	ug/L	84.9	70 - 130		
Lead		0.200	0.185	ug/L	92.4	70 - 130		
Manganese		0.500	0.423	ug/L	84.6	70 - 130		
Nickel		1.60	1.32	ug/L	82.4	70 - 130		
Silver		0.400	0.342	ug/L	85.4	70 - 130		
Thallium		0.0800	0.0766	ug/L	95.8	70 - 130		
Vanadium		0.400	0.317	ug/L	79.3	70 - 130		
Zinc		6.25	5.99	ug/L	95.9	70 - 130		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061026
Run Date: 07/06/2016
Sample ID: WG575370-07
Instrument ID: ICP-MS2
Run Time: 09:27
Method: 6020A
File ID: NI.070616.092717
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 06-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.435	ug/L	109	70 - 130		
Arsenic		0.400	0.418	ug/L	105	70 - 130		
Barium		0.750	0.739	ug/L	98.5	70 - 130		
Cadmium		0.240	0.274	ug/L	114	70 - 130		
Chromium		0.800	0.743	ug/L	92.9	70 - 130		
Cobalt		0.400	0.423	ug/L	106	70 - 130		
Copper		0.800	0.816	ug/L	102	70 - 130		
Lead		0.200	0.240	ug/L	120	70 - 130		
Manganese		0.500	0.495	ug/L	99.0	70 - 130		
Nickel		1.60	1.57	ug/L	98.4	70 - 130		
Silver		0.400	0.428	ug/L	107	70 - 130		
Thallium		0.0800	0.120	ug/L	150	70 - 130		*
Vanadium		0.400	0.398	ug/L	99.5	70 - 130		
Zinc		6.25	6.43	ug/L	103	70 - 130		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.
LOW LEVEL CALIBRATION VERIFICATION

Login Number: L16061026
Run Date: 07/06/2016
Sample ID: WG575370-44
Instrument ID: ICP-MS2
Run Time: 19:18
Method: 6020A
File ID: NI.070616.191839
Analyst: JYH
QC Key: DOD4
Workgroup (AAB#): WG574572
Cal ID: ICP-MS - 06-JUL-16
Matrix: WATER

Analyte		Expected	Found	UNITS	%REC	LIMITS		Q
Antimony		0.400	0.451	ug/L	113	70 - 130		
Arsenic		0.400	0.437	ug/L	109	70 - 130		
Barium		0.750	0.726	ug/L	96.8	70 - 130		
Cadmium		0.240	0.283	ug/L	118	70 - 130		
Chromium		0.800	0.809	ug/L	101	70 - 130		
Cobalt		0.400	0.419	ug/L	105	70 - 130		
Copper		0.800	0.837	ug/L	105	70 - 130		
Lead		0.200	0.243	ug/L	121	70 - 130		
Manganese		0.500	0.498	ug/L	99.7	70 - 130		
Nickel		1.60	1.57	ug/L	98.0	70 - 130		
Silver		0.400	0.418	ug/L	105	70 - 130		
Thallium		0.0800	0.113	ug/L	142	70 - 130		*
Vanadium		0.400	0.395	ug/L	98.8	70 - 130		
Zinc		6.25	6.69	ug/L	107	70 - 130		

* Exceeds LIMITS Criteria

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Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061026
Instrument ID: ICP-MS2
Sol. A : WG574676-08 **File ID:** NI.062916.115053
Sol. AB : WG574676-09 **File ID:** NI.062916.115447

Workgroup (AAB#): WG574572
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.0658	NS	100	100	100	
Arsenic	NS	0.0161	NS	100	105	105	
Barium	NS	0.303	NS	100	98.4	98.4	
Cadmium	NS	-0.103	NS	100	101	101	
Chromium	NS	0.0680	NS	100	101	101	
Cobalt	NS	0.0292	NS	100	105	105	
Copper	NS	0.245	NS	100	100	100	
Lead	NS	0.0174	NS	100	102	102	
Manganese	NS	0.0629	NS	100	105	105	
Nickel	NS	0.331	NS	100	100	100	
Silver	NS	0.0271	NS	100	95.3	95.3	
Thallium	NS	0.0271	NS	100	100	100	
Vanadium	NS	0.0706	NS	100	103	103	
Zinc	NS	1.14	NS	100	104	104	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4832326
Report generated 07/07/2016 08:34

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061026
Instrument ID: ICP-MS2
Sol. A : WG575179-11 **File ID:** NI.070516.095958
Sol. AB : WG575179-12 **File ID:** NI.070516.100317

Workgroup (AAB#): WG574572
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.133	NS	100	96.1	96.1	
Arsenic	NS	-0.00770	NS	100	97.9	97.9	
Barium	NS	0.724	NS	100	94.5	94.5	
Cadmium	NS	-0.0970	NS	100	96.4	96.4	
Chromium	NS	0.0752	NS	100	94.6	94.6	
Cobalt	NS	0.0303	NS	100	94.9	94.9	
Copper	NS	0.309	NS	100	94.8	94.8	
Lead	NS	0.112	NS	100	96.0	96.0	
Manganese	NS	0.227	NS	100	96.2	96.2	
Nickel	NS	0.346	NS	100	94.6	94.6	
Silver	NS	0.0320	NS	100	83.4	83.4	
Thallium	NS	0.0119	NS	100	95.8	95.8	
Vanadium	NS	0.0220	NS	100	95.9	95.9	
Zinc	NS	1.07	NS	100	98.0	98.0	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4832326
Report generated 07/07/2016 08:34

Microbac Laboratories Inc.
INTERFERENCE CHECK SAMPLES

Login number: L16061026
Instrument ID: ICP-MS2
Sol. A : WG575370-08 **File ID:** NI.070616.093029
Sol. AB : WG575370-09 **File ID:** NI.070616.093340

Workgroup (AAB#): WG574572
Method: 6020A
Units: ug/L
Matrix: Water

	Sol. A			Sol. AB			
ANALYTE	True	Found	%Recovery	True	Found	%Recovery	Q
Antimony	NS	0.462	NS	100	101	101	
Arsenic	NS	0.0530	NS	100	103	103	
Barium	NS	0.0414	NS	100	101	101	
Cadmium	NS	-0.0508	NS	100	101	101	
Chromium	NS	-0.0525	NS	100	101	101	
Cobalt	NS	0.0720	NS	100	101	101	
Copper	NS	0.326	NS	100	102	102	
Lead	NS	0.0662	NS	100	103	103	
Manganese	NS	0.305	NS	100	102	102	
Nickel	NS	0.313	NS	100	100	100	
Silver	NS	0.0592	NS	100	85.4	85.4	
Thallium	NS	0.0459	NS	100	101	101	
Vanadium	NS	0.0677	NS	100	102	102	
Zinc	NS	0.776	NS	100	103	103	

NS = Not spiked
*** = Recovery of spiked element is outside acceptance limit of 80% - 120% of true value.**
 # = Result for unspiked element is outside the acceptance limits of (+/-) the project reporting limit (RL).
+ = Result for unspiked element is outside the acceptance limits of (+/-) 2 times the project method detection limit (MDL). This criteria is only applicable to specific QAPPs.

ICS - Modified 03/06/2008
PDF File ID: 4832326
Report generated 07/07/2016 08:34

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16061026 **Analytical Method:** 6020
Analytical Workgroup: WG574572 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** BKT
ICAL Date: 29-JUN-2016 11:25

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16060986-03	SAMP	29-JUN-2016 13:13	102.451	99.817	104.214
L16061026-02	SAMP	29-JUN-2016 14:51	89.212	92.118	89.05
L16061026-04	SAMP	29-JUN-2016 14:54	99.491	100.426	97.933
L16061026-06	SAMP	29-JUN-2016 14:57	98.597	101.416	102.107
L16061026-07	SAMP	29-JUN-2016 15:00	108.185	110.897	107.172
WG573548-02	BLANK	29-JUN-2016 12:53	99.243	102.336	95.817
WG573548-03	LCS	29-JUN-2016 12:57	101.717	99.767	101.133
WG574572-01	PSPK	29-JUN-2016 13:16	103.227	99.758	103.895
WG574572-02	SERIAL	29-JUN-2016 13:19	110.008	107.762	106.72
WG574676-05	ICV	29-JUN-2016 11:38	98.257	100.661	96.465
WG574676-06	ICB	29-JUN-2016 11:41	98.914	99.091	98.14
WG574676-07	LLICV	29-JUN-2016 11:46	95.79	95.394	93.877
WG574676-08	ICS	29-JUN-2016 11:50	98.596	98.274	96.165
WG574676-09	ICS	29-JUN-2016 11:54	97.891	98.362	95.991
WG574676-10	CCV	29-JUN-2016 12:00	96.559	97.448	96.281
WG574676-11	CCB	29-JUN-2016 12:07	98.969	97.431	96.855
WG574676-12	CCV	29-JUN-2016 12:37	99.303	102.045	96.376
WG574676-13	CCB	29-JUN-2016 12:40	100.991	102.01	98.548
WG574676-14	LLCCV	29-JUN-2016 12:44	96.535	95.69	95.451
WG574676-15	CCV	29-JUN-2016 13:25	106.544	103.387	103.323
WG574676-16	CCB	29-JUN-2016 13:29	108.277	104.697	104.925
WG574676-17	CCV	29-JUN-2016 14:04	103.528	99.024	101.746
WG574676-18	CCB	29-JUN-2016 14:07	101.206	96.624	98.764
WG574676-19	CCV	29-JUN-2016 15:04	105.397	108.57	106.703
WG574676-20	CCB	29-JUN-2016 15:07	110.064	109.03	109.199
WG574676-27	CCV	29-JUN-2016 17:34	108.39	111.131	108.951
WG574676-28	CCB	29-JUN-2016 17:37	111.551	108.396	114.225
WG574676-29	ICS	29-JUN-2016 17:50	108.567	109.96	110.029
WG574676-30	ICS	29-JUN-2016 17:53	107.111	107.985	110.615
WG574676-31	CCV	29-JUN-2016 17:56	107.683	109.755	111.533
WG574676-32	CCB	29-JUN-2016 17:59	109.386	111.783	111.184
WG574676-33	LLCCV	29-JUN-2016 18:03	109.42	106.253	110.95

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4832322
Report generated: 07/07/2016 08:33

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16061026 **Analytical Method:** 6020
Analytical Workgroup: WG574572 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** JYH
ICAL Date: 05-JUL-2016 09:27

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16061026-02	SAMP	05-JUL-2016 16:05	94.287	91.198	89.78
L16061026-02	SAMP	05-JUL-2016 16:08	97.897	93.356	92.167
L16061026-04	SAMP	05-JUL-2016 16:11	91.832	92.14	89.87
L16061026-04	SAMP	05-JUL-2016 16:15	97.428	92.369	91.144
L16061026-06	SAMP	05-JUL-2016 16:30	95.394	97.869	94.043
L16061026-07	SAMP	05-JUL-2016 16:34	102.173	100.031	99.495
WG573548-02	BLANK	05-JUL-2016 15:49	103.53	101.565	100.369
WG573548-03	LCS	05-JUL-2016 15:52	105.736	104.394	102.796
WG574572-03	PSPK	05-JUL-2016 16:37	102.672	100.652	98.295
WG574572-04	SERIAL	05-JUL-2016 16:41	92.841	89.382	87.188
WG575179-08	ICV	05-JUL-2016 09:50	102.945	104.163	101.103
WG575179-09	ICB	05-JUL-2016 09:53	106.273	107.834	104.639
WG575179-10	LLICV	05-JUL-2016 09:56	103.717	103.348	100.336
WG575179-11	ICS	05-JUL-2016 09:59	100.676	104.095	100.563
WG575179-12	ICS	05-JUL-2016 10:03	104.334	104.793	101.346
WG575179-13	CCV	05-JUL-2016 10:06	100.487	101.459	98.934
WG575179-14	CCB	05-JUL-2016 10:09	106.259	106.237	103.837
WG575179-31	LLCCV	05-JUL-2016 14:36	104.64	97.001	97.387
WG575179-34	CCV	05-JUL-2016 15:41	102.603	101.933	100.295
WG575179-35	CCB	05-JUL-2016 15:44	103.599	100.34	100.262
WG575179-36	CCV	05-JUL-2016 16:18	102.519	101.09	100.867
WG575179-37	CCB	05-JUL-2016 16:21	103.756	100.989	100.122
WG575179-38	CCV	05-JUL-2016 16:47	99.118	97.387	96.41
WG575179-39	CCB	05-JUL-2016 16:50	103.672	101.386	99.679
WG575179-44	CCV	05-JUL-2016 18:36	93.79	92.321	90.717
WG575179-45	CCB	05-JUL-2016 18:39	95.372	91.574	91.3
WG575179-46	ICS	05-JUL-2016 19:08	96.603	92.626	90.775
WG575179-47	ICS	05-JUL-2016 19:11	100.276	99.569	98.291
WG575179-48	CCV	05-JUL-2016 19:14	98.609	96.908	96.301
WG575179-49	CCB	05-JUL-2016 19:17	99.252	96.583	95.361
WG575179-50	LLCCV	05-JUL-2016 19:20	97.791	94.181	93.271

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4832322
Report generated: 07/07/2016 08:33

Microbac Laboratories Inc.

INTERNAL STANDARD REPORT

Login: L16061026 **Analytical Method:** 6020
Analytical Workgroup: WG574572 **Matrix:** 1
Instrument: ICP-MS2 **Analyst:** JYH
ICAL Date: 06-JUL-2016 09:08

			BISMUTH	GERMANIUM	INDIUM
Sample	Type	Run Date	% Rec	% Rec	% Rec
L16061026-02	SAMP	06-JUL-2016 15:27	98.394	99.815	95.637
WG575370-05	ICV	06-JUL-2016 09:20	100.585	102.463	96.381
WG575370-06	ICB	06-JUL-2016 09:24	100.788	98.692	102.109
WG575370-07	LLICV	06-JUL-2016 09:27	102.41	100.394	95.13
WG575370-08	ICS	06-JUL-2016 09:30	96.414	92.465	92.27
WG575370-09	ICS	06-JUL-2016 09:33	98.737	100.154	96.13
WG575370-10	CCV	06-JUL-2016 09:36	99.702	100.07	99.191
WG575370-11	CCB	06-JUL-2016 09:40	101.529	104.208	96.95
WG575370-26	CCV	06-JUL-2016 14:52	100.655	107.561	102.626
WG575370-27	CCB	06-JUL-2016 14:55	101.918	106.69	102.86
WG575370-28	CCV	06-JUL-2016 15:31	102.288	107.867	104.707
WG575370-29	CCB	06-JUL-2016 15:34	102.911	105.994	103.202
WG575370-38	CCV	06-JUL-2016 18:49	99.508	108.232	103.152
WG575370-39	CCB	06-JUL-2016 18:53	99.139	106.573	101.58
WG575370-40	ICS	06-JUL-2016 19:05	91.725	95.835	90.284
WG575370-41	ICS	06-JUL-2016 19:09	97.884	104.251	99.368
WG575370-42	CCV	06-JUL-2016 19:12	98.906	104.728	100.841
WG575370-43	CCB	06-JUL-2016 19:15	98.402	104.006	99.572
WG575370-44	LLCCV	06-JUL-2016 19:18	98.022	101.982	97.937

Acceptance criteria: 30% - 120% Underlined recoveries are out of range
Acceptance criteria for CCVs and CCBs for method SW846-6020: 80% - 120%

INT_STD_ICPMS - Modified 07/28/2010
PDF File ID: 4832322
Report generated: 07/07/2016 08:33

Microbac Laboratories Inc.
LINEAR RANGE (QUARTERLY)

Login Number: L16061026 **Date:** 04/19/2016
Insturment ID: ICP-MS2 **Method:** 6020A

Analyte	Integration Time (Sec.)	Concentration (ug/L)
Antimony	1.00	100.0
Arsenic	1.00	100.0
Barium	1.00	100.0
Cadmium	1.00	100.0
Chromium	1.00	100.0
Cobalt	1.00	100.0
Copper	1.00	100.0
Lead	1.00	100.0
Manganese	1.00	100.0
Nickel	1.00	100.0
Selenium	1.00	100.0
Silver	1.00	100.0
Thallium	1.00	100.0
Uranium	1.00	100.0
Vanadium	1.00	100.0
Zinc	1.00	100.0

Comments:
All analytes passed acceptance criteria at the specified concentration.

LINEAR_RANGE - Modified 03/06/2008
PDF File ID: 4832321
Report generated: 07/07/2016 08:33

2.3.2.3 Raw Data

MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Wednesday, June 29, 2016 09:50:03

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	6.975	1323	2024	0.699	
Mg	23.985	23.975	4506	2020	0.705	
Co	58.933	58.975	11694	2022	0.697	
In	114.904	114.925	22865	2028	0.690	
U	238.050	238.025	47450	2043	0.688	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	9.254
5.575	1.459
5.625	2.417
5.675	3.442
5.725	2.231
5.775	2.296
5.825	3.784
5.875	3.197
5.925	2.400
5.975	1.087
6.025	1.670
6.075	3.521
6.125	2.277
6.175	2.559
6.225	20.588
6.275	74.689
6.325	108.327
6.375	83.853
6.425	69.722
6.475	32.808
6.525	10.642
6.575	8.985
6.625	1.429
6.675	0.941
6.725	0.857
6.775	3.333
6.825	0.822

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6.875	1.277
6.925	1.899
6.975	1.561
7.025	1.195
7.075	1.059
7.125	1.545
7.175	1.743
7.225	3.248
7.275	8.142
7.325	57.701
7.375	91.287
7.425	51.602
7.475	55.902
7.525	100.000
7.575	69.869
7.625	81.441
7.675	81.441
7.725	70.711
7.775	55.902
7.825	59.266
7.875	49.793
7.925	104.583
7.975	98.543
8.025	94.786
8.075	223.607
8.125	81.441
8.175	84.265
8.225	61.237
8.275	81.312
8.325	81.441
8.375	91.287
8.425	82.402
8.475	22.822
22.525	149.071
22.575	52.705
22.625	46.771
22.675	48.627
22.725	39.087
22.775	18.109
22.825	22.048
22.875	36.422
22.925	32.723
22.975	82.685
23.025	39.239
23.075	25.529
23.125	43.064
23.175	21.317

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23.225	22.232
23.275	15.408
23.325	42.127
23.375	37.172
23.425	24.296
23.475	14.668
23.525	3.807
23.575	1.593
23.625	2.258
23.675	1.180
23.725	1.542
23.775	1.943
23.825	1.185
23.875	1.595
23.925	1.324
23.975	1.055
24.025	1.809
24.075	1.103
24.125	1.249
24.175	0.652
24.225	1.203
24.275	3.614
24.325	39.316
24.375	52.355
24.425	20.738
24.475	5.001
24.525	5.067
24.575	0.930
24.625	1.241
24.675	0.972
24.725	1.552
24.775	0.581
24.825	0.736
24.875	1.684
24.925	0.952
24.975	1.395
25.025	0.762
25.075	1.498
25.125	1.418
25.175	1.145
25.225	6.288
25.275	44.605
25.325	50.990
25.375	73.823
25.425	57.334
25.475	7.010
57.525	8.193

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57.575	3.609
57.625	2.367
57.675	3.747
57.725	3.869
57.775	3.226
57.825	1.406
57.875	2.220
57.925	2.049
57.975	2.397
58.025	3.045
58.075	0.897
58.125	1.397
58.175	1.608
58.225	1.481
58.275	5.244
58.325	6.996
58.375	14.816
58.425	39.994
58.475	18.390
58.525	7.862
58.575	1.876
58.625	1.684
58.675	0.757
58.725	2.431
58.775	2.139
58.825	2.293
58.875	1.987
58.925	2.134
58.975	1.760
59.025	2.893
59.075	1.855
59.125	4.126
59.175	3.545
59.225	2.980
59.275	6.918
59.325	57.198
59.375	79.057
59.425	39.123
59.475	32.983
59.525	7.337
59.575	10.704
59.625	4.888
59.675	5.230
59.725	3.575
59.775	2.279
59.825	3.495
59.875	0.859

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59.925	2.164
59.975	4.187
60.025	3.749
60.075	1.767
60.125	4.373
60.175	1.581
60.225	1.647
60.275	29.768
60.325	42.377
60.375	71.261
60.425	71.261
60.475	69.722
113.525	10.800
113.575	6.260
113.625	1.672
113.675	1.646
113.725	1.420
113.775	2.281
113.825	1.446
113.875	0.820
113.925	1.607
113.975	1.407
114.025	1.046
114.075	2.403
114.125	2.090
114.175	3.331
114.225	5.316
114.275	12.354
114.325	37.872
114.375	26.082
114.425	15.800
114.475	3.831
114.525	4.062
114.575	1.808
114.625	2.980
114.675	3.272
114.725	2.895
114.775	1.904
114.825	1.941
114.875	1.809
114.925	0.906
114.975	0.414
115.025	2.617
115.075	0.808
115.125	1.618
115.175	2.428
115.225	3.339

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115.275	5.459
115.325	14.203
115.375	69.869
115.425	66.254
115.475	26.966
115.525	18.235
115.575	7.589
115.625	3.788
115.675	2.661
115.725	3.661
115.775	2.867
115.825	3.952
115.875	6.794
115.925	4.558
115.975	5.421
116.025	1.319
116.075	4.928
116.125	7.259
116.175	4.689
116.225	9.289
116.275	22.491
116.325	26.307
116.375	26.146
116.425	67.711
116.475	40.825
236.525	
236.575	13.258
236.625	39.219
236.675	66.333
236.725	37.815
236.775	20.039
236.825	39.510
236.875	22.934
236.925	27.407
236.975	8.537
237.025	28.853
237.075	45.928
237.125	41.937
237.175	36.377
237.225	26.058
237.275	27.285
237.325	43.196
237.375	45.018
237.425	23.111
237.475	20.908
237.525	26.413
237.575	10.671

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237.625	6.558
237.675	4.584
237.725	2.707
237.775	1.019
237.825	0.867
237.875	0.837
237.925	1.315
237.975	0.556
238.025	1.099
238.075	0.473
238.125	0.980
238.175	0.943
238.225	1.564
238.275	1.714
238.325	1.785
238.375	2.057
238.425	2.571
238.475	6.163
238.525	10.798
238.575	23.407
238.625	35.493
238.675	33.171
238.725	15.721
238.775	9.421
238.825	23.516
238.875	27.721
238.925	14.417
238.975	30.010
239.025	24.993
239.075	29.933
239.125	17.678
239.175	38.433
239.225	46.981
239.275	15.215
239.325	48.601
239.375	50.659
239.425	23.570
239.475	38.955

Approved: July 04, 2016

SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 6/29/2016 10:01:57 AM
End Time: 6/29/2016 10:04:08 AM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 4651.78
        Obtained Intensity (Mg 23.985): 162439.88
        Obtained Intensity (In 114.904): 66202.13
        Obtained Intensity (U 238.05): 140216.56
        Obtained Intensity (Bkgd 220): 0.33
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.018 (=3640.50 / 205153.73)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.004 (=909.89 / 205153.73)
```

Report Date/Time: Wednesday, June 29, 2016 10:04:08
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SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 6/29/2016 10:01:57 AM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 4651.78
                Obtained Intensity (Mg 23.985): 162439.88
                Obtained Intensity (In 114.904): 66202.13
                Obtained Intensity (U 238.05): 140216.56
                Obtained Intensity (Bkgd 220): 0.33
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.018 (=3640.50 / 205153.73)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.004 (=909.89 / 205153.73)
[Passed]  Optimum value(s): N/A

End Time: 6/29/2016 10:04:08 AM
```


Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Wednesday, June 29, 2016 11:22:34
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74698.8	3.1				ug/L		Standard
	Be	9	8.3	124.9				ug/L		Standard
	Al	27	1493.4	9.1				ug/L		Standard
	Sc	45	61029.4	2.9				ug/L		Standard
	Ti	47	35.0	12.5				ug/L		Standard
	V	51	1434.8	4.3				ug/L		Standard
	Cr	52	7634.6	2.5				ug/L		Standard
	Cr	53	363.3	0.8				ug/L		Standard
	Mn	55	747.0	1.6				ug/L		Standard
	Co	59	233.7	7.1				ug/L		Standard
	Ni	60	214.7	3.5				ug/L		Standard
	Cu	65	104.0	12.0				ug/L		Standard
	Zn	66	363.0	3.8				ug/L		Standard
>	**Ge**	72	495142.3	1.3				ug/L		Standard
	As	75	-49.8	7.8				ug/L		Standard
	Se	82	13.7	23.9				ug/L		Standard
	Se-1	77	42.3	9.8				ug/L		Standard
>	**Ga**	71	41.7	25.0				mg/L		Standard
	Rb	85	16.7	91.7				ug/L		Standard
	Y	89	417098.4	0.9				ug/L		Standard
>	**Rh**	103	13.3	86.6				ug/L		Standard
	Mo	98	10.7	10.9				ug/L		Standard
	Ag	107	68.0	6.4				ug/L		Standard
	Cd	111	2.3	24.9				mg/L		Standard
	Cd	114	11.7	106.5				ug/L		Standard
>	**In**	115	587441.1	0.5				ug/L		Standard
	Sn	118	496.7	9.7				ug/L		Standard
	Sb	123	77.7	34.7				ug/L		Standard
	Ba	135	24.3	19.4				ug/L		Standard
	Ce	140	25.0	20.0				ug/L		Standard
>	**Tb**	159	939701.0	1.8				ug/L		Standard
	Ho	165	10.0	50.0				ug/L		Standard
	Tl	203	4.0	25.0				ug/L		Standard
	Tl	205	1.7	173.2				ug/L		Standard
	Pb	206	239.7	3.6				ug/L		Standard
	Pb	207	197.7	3.9				ug/L		Standard
	Pb	208	883.3	3.3				ug/L		Standard
	U	238	3.3	17.3				ug/L		Standard
>	**Bi**	209	523984.5	1.3				ug/L		Standard

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	Na	23	0.0		mg/L	Standard
	Mg	24	36.7	55.1	mg/L	Standard
	K	39	38.3	52.7	mg/L	Standard
	Ca	43	10.0	50.0	mg/L	Standard
	Fe	54	179.1	14.9	mg/L	Standard
	Fe	57	335.0	10.3	mg/L	Standard
>	**Sc-1**	45	61029.4	2.9	mg/L	Standard
	Cl	35	20194.8	0.8	ug/L	Standard
	Kr	83	4.3	70.5	ug/L	Standard
	Br	81	1546.7	2.4	ug/L	Standard
	P	31	15286.0	3.7	ug/L	Standard
	S	34	1571.7	2.7	ug/L	Standard
	Sr	88	73.3	3.9	ug/L	Standard
	C	12	63.3	24.1	mg/L	Standard
	N	14	0.0		mg/L	Standard
	Hg	202	3.3	173.2	mg/L	Standard
	Dy	164	6.0	187.1	mg/L	Standard
	Ho-1	165	10.0	50.0	mg/L	Standard
	Er	166	13.3	86.6	mg/L	Standard
	I	127	1391.7	17.5	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Blank
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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Wednesday, June 29, 2016 11:25:45
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75658.5	2.0				ug/L	74699	Standard
	Be	9	1.7	173.2				ug/L	8	Standard
	Al	27	1555.1	3.1				ug/L	1493	Standard
	Sc	45	60145.9	2.9				ug/L	61029	Standard
	Ti	47	32.7	4.7				ug/L	35	Standard
	V	51	1434.9	4.0				ug/L	1435	Standard
	Cr	52	7544.5	2.5				ug/L	7635	Standard
	Cr	53	365.0	18.0				ug/L	363	Standard
	Mn	55	783.7	0.8				ug/L	747	Standard
	Co	59	239.0	2.9				ug/L	234	Standard
	Ni	60	220.7	1.8				ug/L	215	Standard
	Cu	65	103.0	8.3				ug/L	104	Standard
	Zn	66	365.0	4.1				ug/L	363	Standard
>	**Ge**	72	495351.7	2.1				ug/L	495142	Standard
	As	75	-40.0	8.7				ug/L	-50	Standard
	Se	82	19.1	38.4				ug/L	14	Standard
	Se-1	77	47.3	15.6				ug/L	42	Standard
>	**Ga**	71	53.3	47.2				mg/L	42	Standard
	Rb	85	15.0	88.2				ug/L	17	Standard
	Y	89	427717.4	1.6				ug/L	417098	Standard
>	**Rh**	103	8.3	34.6				ug/L	13	Standard
	Mo	98	11.1	31.8				ug/L	11	Standard
	Ag	107	86.3	19.8				ug/L	68	Standard
	Cd	111	1.3	43.8				mg/L	2	Standard
	Cd	114	3.6	152.7				ug/L	12	Standard
>	**In**	115	599155.0	1.0				ug/L	587441	Standard
	Sn	118	486.7	3.3				ug/L	497	Standard
	Sb	123	28.2	25.8				ug/L	78	Standard
	Ba	135	25.3	13.9				ug/L	24	Standard
	Ce	140	31.7	59.8				ug/L	25	Standard
>	**Tb**	159	985563.2	0.5				ug/L	939701	Standard
	Ho	165	6.7	86.6				ug/L	10	Standard
	Tl	203	1.7	91.7				ug/L	4	Standard
	Tl	205	0.0					ug/L	2	Standard
	Pb	206	249.7	4.0				ug/L	240	Standard
	Pb	207	216.0	2.0				ug/L	198	Standard
	Pb	208	873.0	4.1				ug/L	883	Standard
	U	238	3.3	34.6				ug/L	3	Standard
>	**Bi**	209	535312.9	0.6				ug/L	523984	Standard

Sample ID: Standard 1
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Na	23	3.3	173.2	mg/L	0	Standard
Mg	24	31.7	18.2	mg/L	37	Standard
K	39	26.7	28.6	mg/L	38	Standard
Ca	43	35.0	24.7	mg/L	10	Standard
Fe	54	130.8	15.0	mg/L	179	Standard
Fe	57	305.0	2.8	mg/L	335	Standard
Sc-1	45	60145.9	2.9	mg/L	61029	Standard
Cl	35	20341.6	1.8	ug/L	20195	Standard
Kr	83	3.0	33.3	ug/L	4	Standard
Br	81	1546.7	10.4	ug/L	1547	Standard
P	31	15145.9	1.8	ug/L	15286	Standard
S	34	1610.1	6.1	ug/L	1572	Standard
Sr	88	86.7	14.5	ug/L	73	Standard
C	12	60.0	28.9	mg/L	63	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	0.0		mg/L	3	Standard
Dy	164	5.7	108.5	mg/L	6	Standard
Ho-1	165	6.7	86.6	mg/L	10	Standard
Er	166	20.0	50.0	mg/L	13	Standard
I	127	1368.4	7.8	mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Wednesday, June 29, 2016 11:28:57
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73081.0	3.5				ug/L	74699	Standard
	Be	9	36.7	56.8				ug/L	8	Standard
	Al	27	9102.7	2.7				ug/L	1493	Standard
	Sc	45	58226.8	3.4				ug/L	61029	Standard
	Ti	47	79.0	2.2				ug/L	35	Standard
	V	51	1848.7	2.3				ug/L	1435	Standard
	Cr	52	7933.1	1.4				ug/L	7635	Standard
	Cr	53	350.0	15.1				ug/L	363	Standard
	Mn	55	1375.4	4.6				ug/L	747	Standard
	Co	59	574.7	5.8				ug/L	234	Standard
	Ni	60	324.3	7.6				ug/L	215	Standard
	Cu	65	285.0	4.9				ug/L	104	Standard
	Zn	66	549.3	0.4				ug/L	363	Standard
>	**Ge**	72	493663.5	1.5				ug/L	495142	Standard
	As	75	-10.4	282.1				ug/L	-50	Standard
	Se	82	20.6	18.5				ug/L	14	Standard
	Se-1	77	49.0	19.5				ug/L	42	Standard
>	**Ga**	71	58.3	27.6				mg/L	42	Standard
	Rb	85	25.0	60.0				ug/L	17	Standard
	Y	89	437555.0	0.8				ug/L	417098	Standard
>	**Rh**	103	25.0	34.6				ug/L	13	Standard
	Mo	98	283.4	4.8				ug/L	11	Standard
	Ag	107	412.3	3.2				ug/L	68	Standard
	Cd	111	121.8	9.1				mg/L	2	Standard
	Cd	114	268.9	5.0				ug/L	12	Standard
>	**In**	115	590951.3	0.9				ug/L	587441	Standard
	Sn	118	850.0	6.4				ug/L	497	Standard
	Sb	123	254.5	2.7				ug/L	78	Standard
	Ba	135	136.0	15.7				ug/L	24	Standard
	Ce	140	18.3	56.8				ug/L	25	Standard
>	**Tb**	159	941723.8	1.9				ug/L	939701	Standard
	Ho	165	3.3	86.6				ug/L	10	Standard
	Tl	203	417.3	5.5				ug/L	4	Standard
	Tl	205	348.3	7.4				ug/L	2	Standard
	Pb	206	633.0	0.8				ug/L	240	Standard
	Pb	207	557.0	2.2				ug/L	198	Standard
	Pb	208	2275.4	1.7				ug/L	883	Standard
	U	238	366.3	0.7				ug/L	3	Standard
>	**Bi**	209	512414.5	1.5				ug/L	523984	Standard

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	Na	23	0.0		mg/L	0	Standard
	Mg	24	51.7	24.4	mg/L	37	Standard
	K	39	51.7	24.4	mg/L	38	Standard
	Ca	43	38.3	19.9	mg/L	10	Standard
	Fe	54	160.9	17.5	mg/L	179	Standard
	Fe	57	303.3	9.1	mg/L	335	Standard
>	**Sc-1**	45	58226.8	3.4	mg/L	61029	Standard
	Cl	35	20887.7	1.1	ug/L	20195	Standard
	Kr	83	2.3	107.9	ug/L	4	Standard
	Br	81	1533.4	9.8	ug/L	1547	Standard
	P	31	14952.4	2.3	ug/L	15286	Standard
	S	34	1701.8	4.5	ug/L	1572	Standard
	Sr	88	66.7	31.2	ug/L	73	Standard
	C	12	46.7	65.5	mg/L	63	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	0.0		mg/L	3	Standard
	Dy	164	12.7	89.9	mg/L	6	Standard
	Ho-1	165	3.3	86.6	mg/L	10	Standard
	Er	166	13.3	43.3	mg/L	13	Standard
	I	127	1343.4	21.4	mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

Sample ID: Standard 2
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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 2
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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Wednesday, June 29, 2016 11:32:08
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70836.9	0.7				ug/L	74699	Standard
	Be	9	41495.2	4.9	**50.0000**	2.291	4.6	ug/L	8	Standard
	Al	27	6913642.3	1.4	**50.0000**	0.333	0.7	ug/L	1493	Standard
	Sc	45	58109.6	1.6				ug/L	61029	Standard
	Ti	47	38024.7	0.9	**100.0000**	1.896	1.9	ug/L	35	Standard
	V	51	385028.2	1.3	**50.0000**	1.023	2.0	ug/L	1435	Standard
	Cr	52	378864.5	0.8	**50.0000**	0.813	1.6	ug/L	7635	Standard
	Cr	53	46780.4	0.7	**50.0000**	0.853	1.7	ug/L	363	Standard
	Mn	55	354877.0	1.3	**50.0000**	1.137	2.3	ug/L	747	Standard
	Co	59	336932.8	1.2	**50.0000**	1.027	2.1	ug/L	234	Standard
	Ni	60	94633.6	0.8	**50.0000**	0.638	1.3	ug/L	215	Standard
	Cu	65	94252.3	1.0	**50.0000**	0.913	1.8	ug/L	104	Standard
	Zn	66	55983.3	1.5	**50.0000**	1.110	2.2	ug/L	363	Standard
>	**Ge**	72	497274.4	1.0				ug/L	495142	Standard
	As	75	56952.3	0.9	**50.0000**	0.907	1.8	ug/L	-50	Standard
	Se	82	5614.6	2.5	**50.0000**	1.630	3.3	ug/L	14	Standard
	Se-1	77	3760.8	2.5	**50.0000**	1.757	3.5	ug/L	42	Standard
>	**Ga**	71	60.0	22.0				mg/L	42	Standard
	Rb	85	735.0	7.4				ug/L	17	Standard
	Y	89	413691.0	2.8				ug/L	417098	Standard
>	**Rh**	103	28.3	27.0				ug/L	13	Standard
	Mo	98	261684.0	1.3	**100.0000**	1.411	1.4	ug/L	11	Standard
	Ag	107	317580.7	1.1	**50.0000**	0.030	0.1	ug/L	68	Standard
	Cd	111	102024.7	1.3	**50.0000**	0.465	0.9	mg/L	2	Standard
	Cd	114	251691.0	1.5	**50.0000**	1.089	2.2	ug/L	12	Standard
>	**In**	115	567339.3	1.1				ug/L	587441	Standard
	Sn	118	284919.2	1.1	**50.0000**	0.694	1.4	ug/L	497	Standard
	Sb	123	226852.6	0.2	**50.0000**	0.610	1.2	ug/L	78	Standard
	Ba	135	99575.8	0.1	**50.0000**	0.595	1.2	ug/L	24	Standard
	Ce	140	83.3	34.6				ug/L	25	Standard
>	**Tb**	159	932165.5	0.9				ug/L	939701	Standard
	Ho	165	13.3	21.7				ug/L	10	Standard
	Tl	203	405993.6	0.4	**50.0000**	0.749	1.5	ug/L	4	Standard
	Tl	205	349857.0	1.5	**50.0000**	0.282	0.6	ug/L	2	Standard
	Pb	206	265201.9	0.6	**50.0000**	0.817	1.6	ug/L	240	Standard
	Pb	207	235754.7	0.6	**50.0000**	0.829	1.7	ug/L	198	Standard
	Pb	208	926203.5	0.6	**50.0000**	0.626	1.3	ug/L	883	Standard
	U	238	337413.2	1.0	**50.0000**	0.543	1.1	ug/L	3	Standard
>	**Bi**	209	511781.8	1.3				ug/L	523984	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	3782.1	6.2	**5.0000**	0.388	7.8	mg/L	37	Standard
K	39	2271.8	5.5	**5.0000**	0.254	5.1	mg/L	38	Standard
Ca	43	120.0	23.2	**5.0000**	1.671	33.4	mg/L	10	Standard
Fe	54	5877.0	6.9	**5.0000**	0.418	8.4	mg/L	179	Standard
Fe	57	1703.4	4.4	**5.0000**	0.228	4.6	mg/L	335	Standard
> **Sc-1**	45	58109.6	1.6				mg/L	61029	Standard
Cl	35	22061.4	1.9				ug/L	20195	Standard
Kr	83	2.7	94.4				ug/L	4	Standard
Br	81	1433.4	2.5				ug/L	1547	Standard
P	31	17349.9	2.8				ug/L	15286	Standard
S	34	2026.8	6.8				ug/L	1572	Standard
Sr	88	76.7	26.4				ug/L	73	Standard
C	12	43.3	48.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	33.0	63.6				mg/L	6	Standard
Ho-1	165	13.3	21.7				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	1500.1	14.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Wednesday, June 29, 2016 11:35:20
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	70562.3	0.6				ug/L	74699	Standard
	Be	9	83650.3	2.2	**100.5872**	1.689	1.7	ug/L	8	Standard
	Al	27	13996690.0	1.6	**100.8115**	1.548	1.5	ug/L	1493	Standard
	Sc	45	58977.9	1.4				ug/L	61029	Standard
	Ti	47	75710.7	1.4	**200.4046**	3.310	1.7	ug/L	35	Standard
	V	51	745374.0	1.7	**98.8583**	0.465	0.5	ug/L	1435	Standard
	Cr	52	747654.3	1.6	**100.2327**	0.593	0.6	ug/L	7635	Standard
	Cr	53	92243.3	0.8	**99.8509**	0.489	0.5	ug/L	363	Standard
	Mn	55	686210.3	1.7	**98.7774**	1.044	1.1	ug/L	747	Standard
	Co	59	647972.6	0.9	**98.4550**	0.479	0.5	ug/L	234	Standard
	Ni	60	186003.6	1.6	**99.5867**	0.367	0.4	ug/L	215	Standard
	Cu	65	184421.8	1.6	**99.3502**	0.739	0.7	ug/L	104	Standard
	Zn	66	108058.7	1.7	**98.8348**	0.723	0.7	ug/L	363	Standard
>	Ge	72	493312.7	1.3				ug/L	495142	Standard
	As	75	109996.7	2.4	**98.6160**	1.152	1.2	ug/L	-50	Standard
	Se	82	10772.1	0.2	**98.3851**	1.295	1.3	ug/L	14	Standard
	Se-1	77	7226.7	2.3	**98.6814**	1.085	1.1	ug/L	42	Standard
>	Ga	71	88.3	19.9				mg/L	42	Standard
	Rb	85	1528.4	8.2				ug/L	17	Standard
	Y	89	411133.1	2.0				ug/L	417098	Standard
>	Rh	103	50.0	20.0				ug/L	13	Standard
	Mo	98	506691.6	2.0	**196.6866**	6.239	3.2	ug/L	11	Standard
	Ag	107	624459.9	0.9	**99.1146**	1.822	1.8	ug/L	68	Standard
	Cd	111	200021.3	0.6	**98.9639**	1.657	1.7	mg/L	2	Standard
	Cd	114	487602.9	1.3	**98.3617**	2.136	2.2	ug/L	12	Standard
>	In	115	567890.6	1.1				ug/L	587441	Standard
	Sn	118	560558.1	0.7	**99.1782**	1.388	1.4	ug/L	497	Standard
	Sb	123	448476.6	1.3	**99.3779**	2.340	2.4	ug/L	78	Standard
	Ba	135	196432.8	0.6	**99.2744**	1.775	1.8	ug/L	24	Standard
	Ce	140	161.7	46.3				ug/L	25	Standard
>	Tb	159	938936.1	1.2				ug/L	939701	Standard
	Ho	165	10.0					ug/L	10	Standard
	Tl	203	803908.2	0.6	**99.1382**	1.002	1.0	ug/L	4	Standard
	Tl	205	702848.2	0.9	**99.8673**	1.348	1.3	ug/L	2	Standard
	Pb	206	517801.9	1.0	**98.4705**	1.644	1.7	ug/L	240	Standard
	Pb	207	459764.9	1.8	**98.4124**	2.372	2.4	ug/L	198	Standard
	Pb	208	1827348.6	0.4	**98.9940**	0.966	1.0	ug/L	883	Standard
	U	238	674609.9	0.9	**99.6270**	1.321	1.3	ug/L	3	Standard
>	Bi	209	515462.4	0.6				ug/L	523984	Standard

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Na	23	1.7	173.2	**19.9850**	34.606	173.2	mg/L	0	Standard
Mg	24	7435.2	2.2	**9.8676**	0.257	2.6	mg/L	37	Standard
K	39	4282.3	4.3	**9.6823**	0.481	5.0	mg/L	38	Standard
Ca	43	178.3	18.2	**9.1297**	2.109	23.1	mg/L	10	Standard
Fe	54	11328.6	1.8	**9.8033**	0.307	3.1	mg/L	179	Standard
Fe	57	3145.3	5.1	**9.9880**	0.532	5.3	mg/L	335	Standard
Sc-1	45	58977.9	1.4				mg/L	61029	Standard
Cl	35	21244.2	2.5				ug/L	20195	Standard
Kr	83	1.7	34.6				ug/L	4	Standard
Br	81	1583.4	3.9				ug/L	1547	Standard
P	31	17550.2	2.6				ug/L	15286	Standard
S	34	2090.1	3.5				ug/L	1572	Standard
Sr	88	83.3	42.6				ug/L	73	Standard
C	12	56.7	62.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	22.9	66.8				mg/L	6	Standard
Ho-1	165	10.0					mg/L	10	Standard
Er	166	10.0					mg/L	13	Standard
I	127	1638.4	19.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: Standard 4
Report Date/Time: Wednesday, June 29, 2016 11:37:37
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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998
Corr. Coef.	Ca	43	Correlation coefficient < 0.998

Sample ID: Standard 4
Report Date/Time: Wednesday, June 29, 2016 11:37:37
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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Wednesday, June 29, 2016 11:38:33
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	69383.6	2.2				ug/L	74699	Standard
	Be	9	41665.5	1.0	**50.9761**	1.262	2.5	ug/L	8	Standard
	Al	27	7007266.1	0.7	**51.3351**	1.064	2.1	ug/L	1493	Standard
	Sc	45	57040.5	0.5				ug/L	61029	Standard
	Ti	47	39782.2	0.5	**104.1738**	1.427	1.4	ug/L	35	Standard
	V	51	390724.1	1.4	**51.2089**	1.334	2.6	ug/L	1435	Standard
	Cr	52	380689.4	0.9	**50.0149**	1.033	2.1	ug/L	7635	Standard
	Cr	53	46596.6	2.0	**49.7615**	1.193	2.4	ug/L	363	Standard
	Mn	55	364452.5	1.9	**51.8606**	1.232	2.4	ug/L	747	Standard
	Co	59	335357.4	2.0	**50.4145**	0.943	1.9	ug/L	234	Standard
	Ni	60	95528.2	0.6	**50.5685**	0.768	1.5	ug/L	215	Standard
	Cu	65	95355.8	0.8	**50.7995**	0.891	1.8	ug/L	104	Standard
	Zn	66	57795.4	0.9	**52.1095**	0.303	0.6	ug/L	363	Standard
>	Ge	72	498415.5	1.2				ug/L	495142	Standard
	As	75	57290.2	0.4	**50.8755**	0.674	1.3	ug/L	-50	Standard
	Se	82	5486.5	1.1	**49.5278**	0.838	1.7	ug/L	14	Standard
	Se-1	77	3797.8	2.0	**51.0456**	1.569	3.1	ug/L	42	Standard
>	Ga	71	88.3	43.2				mg/L	42	Standard
	Rb	85	576.7	2.8				ug/L	17	Standard
	Y	89	413113.3	1.2				ug/L	417098	Standard
>	Rh	103	26.7	92.5				ug/L	13	Standard
	Mo	98	275236.9	1.8	**107.0386**	1.474	1.4	ug/L	11	Standard
	Ag	107	320241.4	0.9	**50.9276**	0.747	1.5	ug/L	68	Standard
	Cd	111	101502.5	0.4	**50.3185**	0.332	0.7	mg/L	2	Standard
	Cd	114	248344.9	2.5	**50.2016**	1.511	3.0	ug/L	12	Standard
>	In	115	566676.1	0.5				ug/L	587441	Standard
	Sn	118	310270.4	1.9	**54.9671**	1.097	2.0	ug/L	497	Standard
	Sb	123	224427.6	0.4	**49.8273**	0.118	0.2	ug/L	78	Standard
	Ba	135	98607.5	0.6	**49.9289**	0.574	1.1	ug/L	24	Standard
	Ce	140	138.3	11.0				ug/L	25	Standard
>	Tb	159	931841.4	1.3				ug/L	939701	Standard
	Ho	165	10.0	86.6				ug/L	10	Standard
	Tl	203	410286.1	0.9	**50.6578**	0.710	1.4	ug/L	4	Standard
	Tl	205	350970.1	0.3	**49.9294**	0.473	0.9	ug/L	2	Standard
	Pb	206	272426.4	0.6	**51.8371**	0.812	1.6	ug/L	240	Standard
	Pb	207	234103.7	0.5	**50.1331**	0.525	1.0	ug/L	198	Standard
	Pb	208	940824.8	0.3	**50.9948**	0.649	1.3	ug/L	883	Standard
	U	238	333596.8	0.3	**49.3228**	0.442	0.9	ug/L	3	Standard
>	Bi	209	514849.0	1.0				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3822.1	2.3	**5.2142**	0.148	2.8	mg/L	37	Standard
K	39	2126.8	6.1	**4.9163**	0.328	6.7	mg/L	38	Standard
Ca	43	118.3	24.4	**5.4681**	1.919	35.1	mg/L	10	Standard
Fe	54	5948.1	0.7	**5.2575**	0.061	1.2	mg/L	179	Standard
Fe	57	1791.8	1.9	**5.4420**	0.142	2.6	mg/L	335	Standard
> **Sc-1**	45	57040.5	0.5				mg/L	61029	Standard
Cl	35	20895.1	0.7				ug/L	20195	Standard
Kr	83	2.7	57.3				ug/L	4	Standard
Br	81	1520.1	6.3				ug/L	1547	Standard
P	31	17665.3	1.6				ug/L	15286	Standard
S	34	2033.5	1.7				ug/L	1572	Standard
Sr	88	80.0	10.8				ug/L	73	Standard
C	12	70.0	24.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	23.0	24.5				mg/L	6	Standard
Ho-1	165	10.0	86.6				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	1353.4	28.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	101.952		
Al	27	102.670		
Sc	45			
Ti	47	104.174		
V	51	102.418		
Cr	52	100.030		
Cr	53			
Mn	55	103.721		
Co	59	100.829		
Ni	60	101.137		
Cu	65	101.599		
Zn	66	104.219		
> Ge	72		100.661	
As	75	101.751		
Se	82	99.056		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	107.039		
Ag	107	101.855		
Cd	111	100.637		
Cd	114			
In	115		96.465	
Sn	118	109.934		
Sb	123	99.655		
Ba	135	99.858		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.316		
Tl	205			
Pb	206	103.674		
Pb	207	100.266		
Pb	208	101.990		
U	238	98.646		
Bi	209		98.257	
Na	23	0.100		
Mg	24	104.283		
K	39	98.326		
Ca	43	109.361		
Fe	54	105.151		
Fe	57	108.840		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Wednesday, June 29, 2016 11:41:46
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	70378.1	2.5				ug/L	74699	Standard
	Be	9	20.0	25.0	**0.0316**	0.005	17.2	ug/L	8	Standard
	Al	27	2221.8	11.1	**0.0027**	0.002	62.7	ug/L	1493	Standard
	Sc	45	58138.1	3.2				ug/L	61029	Standard
	Ti	47	47.0	20.3	**0.0161**	0.026	158.4	ug/L	35	Standard
	V	51	1216.9	5.3	**-0.0330**	0.008	24.4	ug/L	1435	Standard
	Cr	52	6478.4	1.5	**-0.1416**	0.009	6.0	ug/L	7635	Standard
	Cr	53	358.3	10.7	**0.0617**	0.046	74.0	ug/L	363	Standard
	Mn	55	785.0	2.1	**-0.0343**	0.003	7.5	ug/L	747	Standard
	Co	59	292.7	8.2	**0.0075**	0.004	50.2	ug/L	234	Standard
	Ni	60	209.7	4.3	**-0.0109**	0.006	51.3	ug/L	215	Standard
	Cu	65	121.0	5.8	**-0.0381**	0.003	8.4	ug/L	104	Standard
	Zn	66	398.3	6.4	**-0.0865**	0.023	26.3	ug/L	363	Standard
>	**Ge**	72	490643.1	1.0				ug/L	495142	Standard
	As	75	-2.3	851.2	**0.0577**	0.017	30.2	ug/L	-50	Standard
	Se	82	15.9	39.8	**0.0087**	0.059	680.3	ug/L	14	Standard
	Se-1	77	51.3	11.1	**0.0869**	0.077	88.1	ug/L	42	Standard
>	**Ga**	71	46.7	16.4				mg/L	42	Standard
	Rb	85	33.3	45.8				ug/L	17	Standard
	Y	89	424498.7	1.6				ug/L	417098	Standard
>	**Rh**	103	10.0	50.0				ug/L	13	Standard
	Mo	98	405.0	23.6	**0.1487**	0.033	22.3	ug/L	11	Standard
	Ag	107	128.3	5.2	**0.0071**	0.001	8.6	ug/L	68	Standard
	Cd	111	15.0	38.7	**-0.0006**	0.003	474.1	mg/L	2	Standard
	Cd	114	47.2	8.1	**0.0073**	0.001	11.6	ug/L	12	Standard
>	**In**	115	576512.9	2.1				ug/L	587441	Standard
	Sn	118	851.7	19.9	**0.0543**	0.032	58.8	ug/L	497	Standard
	Sb	123	1550.0	28.1	**0.3352**	0.100	29.7	ug/L	78	Standard
	Ba	135	36.7	23.2	**0.0022**	0.004	189.8	ug/L	24	Standard
	Ce	140	21.7	93.3				ug/L	25	Standard
>	**Tb**	159	924023.3	3.2				ug/L	939701	Standard
	Ho	165	10.0	100.0				ug/L	10	Standard
	Tl	203	60.7	18.1	**0.0057**	0.001	22.9	ug/L	4	Standard
	Tl	205	61.7	61.4	**0.0089**	0.005	59.3	ug/L	2	Standard
	Pb	206	271.3	7.0	**-0.0198**	0.004	19.8	ug/L	240	Standard
	Pb	207	237.3	7.1	**-0.0194**	0.004	21.0	ug/L	198	Standard
	Pb	208	1028.3	6.0	**-0.0187**	0.003	15.4	ug/L	883	Standard
	U	238	47.7	28.5	**0.0026**	0.002	78.0	ug/L	3	Standard
>	**Bi**	209	518292.4	0.9				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	35.0	42.9	**-0.0179**	0.019	107.8	mg/L	37	Standard
K	39	36.7	39.4	**-0.0284**	0.035	124.9	mg/L	38	Standard
Ca	43	25.0	40.0	**-0.8569**	0.683	79.6	mg/L	10	Standard
Fe	54	125.6	8.4	**-0.0262**	0.013	49.1	mg/L	179	Standard
Fe	57	296.7	4.9	**-0.0150**	0.061	408.2	mg/L	335	Standard
> **Sc-1**	45	58138.1	3.2				mg/L	61029	Standard
Cl	35	20966.5	2.9				ug/L	20195	Standard
Kr	83	2.3	89.2				ug/L	4	Standard
Br	81	1540.1	1.7				ug/L	1547	Standard
P	31	17027.9	2.4				ug/L	15286	Standard
S	34	1976.8	0.6				ug/L	1572	Standard
Sr	88	85.0	5.9				ug/L	73	Standard
C	12	30.0	33.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	6.3	86.9				mg/L	6	Standard
Ho-1	165	10.0	100.0				mg/L	10	Standard
Er	166	6.7	173.2				mg/L	13	Standard
I	127	1458.4	25.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.091	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.140
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.914
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Sb	123	
QC Std 2	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Wednesday, June 29, 2016 11:46:53
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	66549.2	2.6				ug/L	74699	Standard
	Be	9	181.7	3.2	**0.2393**	0.009	3.6	ug/L	8	Standard
	Al	27	1430.1	59.0	**-0.0024**	0.007	267.2	ug/L	1493	Standard
	Sc	45	54693.6	2.6				ug/L	61029	Standard
	Ti	47	40.3	11.5	**0.0025**	0.013	506.9	ug/L	35	Standard
	V	51	4161.2	3.6	**0.3819**	0.016	4.1	ug/L	1435	Standard
	Cr	52	12463.1	1.9	**0.7390**	0.018	2.5	ug/L	7635	Standard
	Cr	53	996.7	1.0	**0.8006**	0.013	1.6	ug/L	363	Standard
	Mn	55	4091.6	2.3	**0.4679**	0.008	1.8	ug/L	747	Standard
	Co	59	2840.6	1.4	**0.4137**	0.010	2.4	ug/L	234	Standard
	Ni	60	3014.0	1.2	**1.5638**	0.035	2.2	ug/L	215	Standard
	Cu	65	1546.7	1.4	**0.7676**	0.020	2.7	ug/L	104	Standard
	Zn	66	7394.5	0.3	**6.6420**	0.044	0.7	ug/L	363	Standard
>	**Ge**	72	472336.8	0.9				ug/L	495142	Standard
	As	75	394.7	6.3	**0.4290**	0.024	5.7	ug/L	-50	Standard
	Se	82	54.4	27.0	**0.3818**	0.143	37.5	ug/L	14	Standard
	Se-1	77	75.3	14.2	**0.4599**	0.162	35.3	ug/L	42	Standard
>	**Ga**	71	58.3	44.0				mg/L	42	Standard
	Rb	85	8.3	34.6				ug/L	17	Standard
	Y	89	402582.8	1.9				ug/L	417098	Standard
>	**Rh**	103	5.0	100.0				ug/L	13	Standard
	Mo	98	114.4	34.0	**0.0400**	0.016	39.3	ug/L	11	Standard
	Ag	107	2464.9	1.7	**0.3900**	0.008	2.1	ug/L	68	Standard
	Cd	111	479.8	5.6	**0.2365**	0.013	5.7	mg/L	2	Standard
	Cd	114	1217.0	2.5	**0.2507**	0.007	2.6	ug/L	12	Standard
>	**In**	115	551471.6	0.4				ug/L	587441	Standard
	Sn	118	548.3	23.3	**0.0053**	0.024	443.1	ug/L	497	Standard
	Sb	123	2017.6	6.1	**0.4562**	0.029	6.4	ug/L	78	Standard
	Ba	135	1439.7	3.7	**0.7333**	0.029	4.0	ug/L	24	Standard
	Ce	140	11.7	49.5				ug/L	25	Standard
>	**Tb**	159	887425.9	1.8				ug/L	939701	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	701.7	6.6	**0.0871**	0.005	5.3	ug/L	4	Standard
	Tl	205	588.3	14.1	**0.0861**	0.013	15.2	ug/L	2	Standard
	Pb	206	1333.4	2.9	**0.1894**	0.006	3.1	ug/L	240	Standard
	Pb	207	1083.0	1.4	**0.1683**	0.005	3.1	ug/L	198	Standard
	Pb	208	4575.3	2.2	**0.1806**	0.004	2.0	ug/L	883	Standard
	U	238	2677.9	3.2	**0.4017**	0.012	2.9	ug/L	3	Standard
>	**Bi**	209	501924.0	1.5				ug/L	523984	Standard

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Na	23	1.7	173.2	**21.9523**	38.014	173.2	mg/L	0	Standard
Mg	24	43.3	29.0	**-0.0023**	0.020	841.8	mg/L	37	Standard
K	39	33.3	37.7	**-0.0317**	0.032	101.1	mg/L	38	Standard
Ca	43	46.7	12.4	**0.7738**	0.482	62.2	mg/L	10	Standard
Fe	54	100.7	18.6	**-0.0432**	0.016	36.6	mg/L	179	Standard
Fe	57	325.0	8.1	**0.1578**	0.085	53.5	mg/L	335	Standard
> **Sc-1**	45	54693.6	2.6				mg/L	61029	Standard
Cl	35	21199.5	1.6				ug/L	20195	Standard
Kr	83	3.3	17.3				ug/L	4	Standard
Br	81	1403.4	5.3				ug/L	1547	Standard
P	31	11833.0	1.6				ug/L	15286	Standard
S	34	2000.1	8.0				ug/L	1572	Standard
Sr	88	93.3	20.3				ug/L	73	Standard
C	12	56.7	10.2				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	13.0	89.8				mg/L	6	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	1430.1	34.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	119.656		
Al	27	-0.244		
Sc	45			
Ti	47			
V	51	95.473		
Cr	52	92.381		
Cr	53			
Mn	55	93.583		
Co	59	103.429		
Ni	60	97.737		
Cu	65	95.951		
Zn	66	106.273		
> Ge	72		95.394	
As	75	107.259		
Se	82	95.456		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	97.496		
Cd	111	98.556		
Cd	114			
> In	115			93.877
Sn	118			
Sb	123	114.045		
Ba	135	97.779		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	108.827		
Tl	205			
Pb	206			
Pb	207			
Pb	208	90.316		
U	238	100.429		
> Bi	209			95.790
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Wednesday, June 29, 2016 11:50:53
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	71628.9	1.8				ug/L	74699	Standard
	Be	9	13.3	43.3	**0.0235**	0.007	30.3	ug/L	8	Standard
	Al	27	7079214.4	1.4	**50.2405**	1.571	3.1	ug/L	1493	Standard
	Sc	45	57092.4	1.6				ug/L	61029	Standard
	Ti	47	41841.7	1.2	**112.2257**	1.296	1.2	ug/L	35	Standard
	V	51	1975.7	11.7	**0.0706**	0.031	44.3	ug/L	1435	Standard
	Cr	52	7951.4	1.4	**0.0680**	0.015	21.7	ug/L	7635	Standard
	Cr	53	3292.0	3.5	**3.2946**	0.126	3.8	ug/L	363	Standard
	Mn	55	1443.4	4.1	**0.0629**	0.009	13.6	ug/L	747	Standard
	Co	59	431.3	5.1	**0.0292**	0.003	11.6	ug/L	234	Standard
	Ni	60	837.4	1.6	**0.3312**	0.007	2.2	ug/L	215	Standard
	Cu	65	638.0	4.2	**0.2451**	0.015	6.0	ug/L	104	Standard
	Zn	66	1716.8	2.4	**1.1448**	0.039	3.4	ug/L	363	Standard
>	Ge	72	486594.7	0.0				ug/L	495142	Standard
	As	75	-47.8	111.3	**0.0161**	0.048	300.1	ug/L	-50	Standard
	Se	82	12.5	17.3	**-0.0221**	0.020	90.2	ug/L	14	Standard
	Se-1	77	285.3	3.8	**3.3530**	0.150	4.5	ug/L	42	Standard
>	Ga	71	146.7	5.2				mg/L	42	Standard
	Rb	85	1056.7	1.8				ug/L	17	Standard
	Y	89	409909.2	0.2				ug/L	417098	Standard
>	Rh	103	11.7	99.0				ug/L	13	Standard
	Mo	98	258876.2	1.4	**101.0110**	2.466	2.4	ug/L	11	Standard
	Ag	107	250.7	8.2	**0.0271**	0.004	13.5	ug/L	68	Standard
	Cd	111	-191.4	6.3	**-0.1031**	0.005	5.1	mg/L	2	Standard
	Cd	114	476.2	9.0	**0.0945**	0.009	9.4	ug/L	12	Standard
>	In	115	564912.9	1.1				ug/L	587441	Standard
	Sn	118	765.0	2.0	**0.0415**	0.002	5.8	ug/L	497	Standard
	Sb	123	314.8	31.7	**0.0658**	0.022	32.8	ug/L	78	Standard
	Ba	135	628.0	0.0	**0.3031**	0.004	1.2	ug/L	24	Standard
	Ce	140	243.3	10.5				ug/L	25	Standard
>	Tb	159	934364.8	1.3				ug/L	939701	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	234.7	3.6	**0.0271**	0.001	3.8	ug/L	4	Standard
	Tl	205	175.0	22.3	**0.0250**	0.006	22.8	ug/L	2	Standard
	Pb	206	514.7	3.8	**0.0265**	0.004	16.6	ug/L	240	Standard
	Pb	207	427.7	5.6	**0.0214**	0.005	22.5	ug/L	198	Standard
	Pb	208	1691.4	2.8	**0.0174**	0.002	11.4	ug/L	883	Standard
	U	238	20.7	10.1	**-0.0014**	0.000	22.7	ug/L	3	Standard
>	Bi	209	516629.8	0.9				ug/L	523984	Standard

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Na	23	8.3	34.6	**102.8074**	36.030	35.0	mg/L	0	Standard
Mg	24	9604.7	1.9	**13.1909**	0.366	2.8	mg/L	37	Standard
K	39	2033.5	6.6	**4.6893**	0.286	6.1	mg/L	38	Standard
Ca	43	250.0	4.0	**14.3615**	0.772	5.4	mg/L	10	Standard
Fe	54	14441.1	1.7	**12.9538**	0.416	3.2	mg/L	179	Standard
Fe	57	3845.5	3.6	**12.9047**	0.714	5.5	mg/L	335	Standard
Sc-1	45	57092.4	1.6				mg/L	61029	Standard
Cl	35	20428.4	2.1				ug/L	20195	Standard
Kr	83	3.0	57.7				ug/L	4	Standard
Br	81	1493.4	8.7				ug/L	1547	Standard
P	31	15903.3	2.0				ug/L	15286	Standard
S	34	1818.4	8.5				ug/L	1572	Standard
Sr	88	70.0	35.7				ug/L	73	Standard
C	12	136.7	22.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	86.6				mg/L	3	Standard
Dy	164	12.2	93.4				mg/L	6	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	23.3	24.7				mg/L	13	Standard
I	127	2226.8	19.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27	1.005		
Sc	45			
Ti	47	112.226		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.274	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	101.011		
Ag	107			
Cd	111			
Cd	114			
> In	115		96.165	
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209		98.596	
Na	23	822.459		
Mg	24	263.819		
K	39	93.787		
Ca	43	95.743		
Fe	54	103.630		
Fe	57	103.238		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	

Sample ID: QC Std 4
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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Wednesday, June 29, 2016 11:54:47
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	72764.4	2.4				ug/L	74699	Standard
	Be	9	86093.9	0.6	**100.4334**	2.352	2.3	ug/L	8	Standard
	Al	27	7577089.0	1.5	**52.9410**	1.751	3.3	ug/L	1493	Standard
	Sc	45	54926.1	3.1				ug/L	61029	Standard
	Ti	47	43156.4	1.1	**115.6496**	0.651	0.6	ug/L	35	Standard
	V	51	767037.5	0.7	**103.0563**	0.476	0.5	ug/L	1435	Standard
	Cr	52	743370.8	0.7	**100.9527**	0.091	0.1	ug/L	7635	Standard
	Cr	53	95736.5	0.4	**104.9834**	0.488	0.5	ug/L	363	Standard
	Mn	55	719673.0	1.2	**104.9487**	1.961	1.9	ug/L	747	Standard
	Co	59	684381.8	1.6	**105.3392**	2.464	2.3	ug/L	234	Standard
	Ni	60	184775.9	0.8	**100.2112**	0.878	0.9	ug/L	215	Standard
	Cu	65	183945.6	0.7	**100.3790**	1.285	1.3	ug/L	104	Standard
	Zn	66	111716.4	0.5	**103.5231**	0.465	0.4	ug/L	363	Standard
>	**Ge**	72	487033.1	0.8				ug/L	495142	Standard
	As	75	115123.8	0.6	**104.5507**	0.234	0.2	ug/L	-50	Standard
	Se	82	11162.3	1.3	**103.2681**	1.937	1.9	ug/L	14	Standard
	Se-1	77	7790.3	1.4	**107.8133**	0.940	0.9	ug/L	42	Standard
>	**Ga**	71	155.0	24.4				mg/L	42	Standard
	Rb	85	853.4	12.0				ug/L	17	Standard
	Y	89	414937.1	1.1				ug/L	417098	Standard
>	**Rh**	103	48.3	21.5				ug/L	13	Standard
	Mo	98	271334.5	0.2	**106.0489**	0.711	0.7	ug/L	11	Standard
	Ag	107	596492.9	1.3	**95.3413**	1.752	1.8	ug/L	68	Standard
	Cd	111	202245.3	1.2	**100.7713**	1.934	1.9	mg/L	2	Standard
	Cd	114	489634.1	0.4	**99.4602**	0.649	0.7	ug/L	12	Standard
>	**In**	115	563893.1	0.8				ug/L	587441	Standard
	Sn	118	898.4	12.5	**0.0654**	0.019	28.7	ug/L	497	Standard
	Sb	123	448934.9	1.4	**100.1777**	2.039	2.0	ug/L	78	Standard
	Ba	135	193320.5	0.8	**98.3885**	1.494	1.5	ug/L	24	Standard
	Ce	140	68.3	16.9				ug/L	25	Standard
>	**Tb**	159	922182.5	1.6				ug/L	939701	Standard
	Ho	165	15.0	57.7				ug/L	10	Standard
	Tl	203	808287.0	0.7	**100.1763**	1.478	1.5	ug/L	4	Standard
	Tl	205	710155.2	1.4	**101.4182**	2.560	2.5	ug/L	2	Standard
	Pb	206	542765.1	0.5	**103.7300**	0.986	1.0	ug/L	240	Standard
	Pb	207	466015.8	1.0	**100.2432**	1.559	1.6	ug/L	198	Standard
	Pb	208	1879754.6	0.3	**102.3429**	1.262	1.2	ug/L	883	Standard
	U	238	673426.3	1.1	**99.9548**	2.202	2.2	ug/L	3	Standard
>	**Bi**	209	512933.6	1.2				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	10138.4	1.8	**14.4874**	0.596	4.1	mg/L	37	Standard
K	39	2125.1	3.3	**5.1060**	0.147	2.9	mg/L	38	Standard
Ca	43	265.0	8.2	**16.1201**	2.142	13.3	mg/L	10	Standard
Fe	54	14876.0	0.8	**13.8828**	0.353	2.5	mg/L	179	Standard
Fe	57	3958.9	4.0	**13.8986**	1.069	7.7	mg/L	335	Standard
> **Sc-1**	45	54926.1	3.1				mg/L	61029	Standard
Cl	35	20351.0	1.2				ug/L	20195	Standard
Kr	83	1.7	91.7				ug/L	4	Standard
Br	81	1600.1	9.2				ug/L	1547	Standard
P	31	14895.7	0.4				ug/L	15286	Standard
S	34	1618.4	8.3				ug/L	1572	Standard
Sr	88	85.0	10.2				ug/L	73	Standard
C	12	116.7	71.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	16.2	38.3				mg/L	6	Standard
Ho-1	165	15.0	57.7				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	1496.7	25.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	100.433		
Al	27	1.059		
Sc	45			
Ti	47	115.650		
V	51	103.056		
Cr	52	100.953		
Cr	53			
Mn	55	104.949		
Co	59	105.339		
Ni	60	100.211		
Cu	65	100.379		
Zn	66	103.523		
> Ge	72		98.362	
As	75	104.551		
Se	82	103.268		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	106.049		
Ag	107	95.341		
Cd	111	100.771		
Cd	114			
> In	115		95.991	
Sn	118			
Sb	123	100.178		
Ba	135	98.389		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	100.176		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.343		
U	238	99.955		
> Bi	209		97.891	
Na	23	0.040		
Mg	24	289.748		
K	39	102.121		
Ca	43	107.468		
Fe	54	111.063		
Fe	57	111.189		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 12:00:10
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	74127.8	4.1				ug/L	74699	Standard
	Be	9	44057.3	2.0	**50.4723**	1.532	3.0	ug/L	8	Standard
	Al	27	7182862.5	0.8	**49.2846**	1.691	3.4	ug/L	1493	Standard
	Sc	45	54972.9	1.9				ug/L	61029	Standard
	Ti	47	37035.5	1.0	**100.2235**	3.375	3.4	ug/L	35	Standard
	V	51	380987.7	1.2	**51.6037**	1.920	3.7	ug/L	1435	Standard
	Cr	52	371095.9	0.5	**50.3905**	1.647	3.3	ug/L	7635	Standard
	Cr	53	45648.7	0.9	**50.3715**	0.927	1.8	ug/L	363	Standard
	Mn	55	362758.6	1.1	**53.3556**	2.033	3.8	ug/L	747	Standard
	Co	59	346170.1	1.6	**53.7955**	2.203	4.1	ug/L	234	Standard
	Ni	60	91822.1	1.5	**50.2407**	2.119	4.2	ug/L	215	Standard
	Cu	65	92043.5	2.0	**50.6873**	2.359	4.7	ug/L	104	Standard
	Zn	66	54708.9	1.1	**50.9762**	1.937	3.8	ug/L	363	Standard
>	Ge	72	482505.9	2.7				ug/L	495142	Standard
	As	75	56019.2	1.2	**51.4117**	1.775	3.5	ug/L	-50	Standard
	Se	82	5615.5	1.4	**52.4035**	2.100	4.0	ug/L	14	Standard
	Se-1	77	3787.5	1.5	**52.6293**	2.112	4.0	ug/L	42	Standard
>	Ga	71	63.3	9.1				mg/L	42	Standard
	Rb	85	771.7	5.9				ug/L	17	Standard
	Y	89	419939.4	2.7				ug/L	417098	Standard
>	Rh	103	31.7	9.1				ug/L	13	Standard
	Mo	98	262674.3	2.0	**102.5093**	6.034	5.9	ug/L	11	Standard
	Ag	107	318557.4	0.8	**50.8058**	2.007	4.0	ug/L	68	Standard
	Cd	111	103808.6	0.6	**51.6156**	2.157	4.2	mg/L	2	Standard
	Cd	114	253134.5	2.1	**51.2889**	1.034	2.0	ug/L	12	Standard
>	In	115	565595.5	4.0				ug/L	587441	Standard
	Sn	118	290084.1	1.0	**51.5381**	2.174	4.2	ug/L	497	Standard
	Sb	123	228198.9	1.3	**50.8307**	2.651	5.2	ug/L	78	Standard
	Ba	135	99366.1	0.6	**50.4579**	1.943	3.9	ug/L	24	Standard
	Ce	140	78.3	13.3				ug/L	25	Standard
>	Tb	159	913248.6	2.6				ug/L	939701	Standard
	Ho	165	3.3	86.6				ug/L	10	Standard
	Tl	203	413066.5	1.0	**51.9084**	1.016	2.0	ug/L	4	Standard
	Tl	205	363184.8	0.9	**52.5982**	1.678	3.2	ug/L	2	Standard
	Pb	206	268800.2	0.8	**52.0649**	1.553	3.0	ug/L	240	Standard
	Pb	207	239468.7	1.2	**52.2107**	1.790	3.4	ug/L	198	Standard
	Pb	208	958802.6	0.9	**52.9068**	1.662	3.1	ug/L	883	Standard
	U	238	349772.5	0.2	**52.6413**	1.317	2.5	ug/L	3	Standard
>	Bi	209	505954.2	2.3				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3805.5	5.3	**5.3881**	0.260	4.8	mg/L	37	Standard
K	39	2106.8	1.9	**5.0574**	0.179	3.5	mg/L	38	Standard
Ca	43	101.7	5.7	**4.6110**	0.501	10.9	mg/L	10	Standard
Fe	54	5879.5	1.7	**5.3975**	0.172	3.2	mg/L	179	Standard
Fe	57	1785.1	7.3	**5.6694**	0.625	11.0	mg/L	335	Standard
> **Sc-1**	45	54972.9	1.9				mg/L	61029	Standard
Cl	35	21821.7	0.9				ug/L	20195	Standard
Kr	83	2.0	0.0				ug/L	4	Standard
Br	81	1470.1	4.5				ug/L	1547	Standard
P	31	16677.5	6.0				ug/L	15286	Standard
S	34	1955.1	4.5				ug/L	1572	Standard
Sr	88	73.3	14.2				ug/L	73	Standard
C	12	80.0	66.1				mg/L	63	Standard
N	14	6.7	86.6				mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	15.9	32.3				mg/L	6	Standard
Ho-1	165	3.3	86.6				mg/L	10	Standard
Er	166	16.7	124.9				mg/L	13	Standard
I	127	1668.4	28.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	100.945		
Al	27	98.569		
Sc	45			
Ti	47	100.224		
V	51	103.207		
Cr	52	100.781		
Cr	53			
Mn	55	106.711		
Co	59	107.591		
Ni	60	100.481		
Cu	65	101.375		
Zn	66	101.952		
> Ge	72		97.448	
As	75	102.823		
Se	82	104.807		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	102.509		
Ag	107	101.612		
Cd	111	103.231		
Cd	114			
> In	115		96.281	
Sn	118	103.076		
Sb	123	101.661		
Ba	135	100.916		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	103.817		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.814		
U	238	105.283		
> Bi	209		96.559	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 12:07:34
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74348.6	1.0				ug/L	74699	Standard
	Be	9	21.7	26.6	**0.0324**	0.007	20.7	ug/L	8	Standard
	Al	27	1840.1	21.7	**-0.0008**	0.003	358.1	ug/L	1493	Standard
	Sc	45	56396.5	2.8				ug/L	61029	Standard
	Ti	47	36.7	15.0	**-0.0098**	0.014	147.0	ug/L	35	Standard
	V	51	1326.6	5.0	**-0.0153**	0.008	51.0	ug/L	1435	Standard
	Cr	52	6702.5	2.0	**-0.0955**	0.015	16.1	ug/L	7635	Standard
	Cr	53	393.3	15.3	**0.1070**	0.067	63.0	ug/L	363	Standard
	Mn	55	742.7	5.5	**-0.0386**	0.005	13.8	ug/L	747	Standard
	Co	59	250.3	1.5	**0.0016**	0.000	18.8	ug/L	234	Standard
	Ni	60	195.0	9.2	**-0.0170**	0.010	58.7	ug/L	215	Standard
	Cu	65	108.7	1.4	**-0.0438**	0.000	1.1	ug/L	104	Standard
	Zn	66	377.3	7.3	**-0.1000**	0.024	24.2	ug/L	363	Standard
>	**Ge**	72	482419.6	0.7				ug/L	495142	Standard
	As	75	-16.3	122.1	**0.0447**	0.018	40.8	ug/L	-50	Standard
	Se	82	12.2	10.1	**-0.0240**	0.012	49.4	ug/L	14	Standard
	Se-1	77	52.7	12.2	**0.1177**	0.089	75.6	ug/L	42	Standard
>	**Ga**	71	61.7	33.8				mg/L	42	Standard
	Rb	85	30.0	50.0				ug/L	17	Standard
	Y	89	414790.7	2.9				ug/L	417098	Standard
>	**Rh**	103	1.7	173.2				ug/L	13	Standard
	Mo	98	135.9	9.5	**0.0469**	0.005	10.2	ug/L	11	Standard
	Ag	107	96.3	7.3	**0.0024**	0.001	45.2	ug/L	68	Standard
	Cd	111	7.4	43.0	**-0.0042**	0.002	37.1	mg/L	2	Standard
	Cd	114	24.8	51.6	**0.0029**	0.003	88.9	ug/L	12	Standard
>	**In**	115	568967.0	0.5				ug/L	587441	Standard
	Sn	118	628.3	16.1	**0.0164**	0.018	110.8	ug/L	497	Standard
	Sb	123	617.2	40.6	**0.1324**	0.056	42.3	ug/L	78	Standard
	Ba	135	30.7	16.1	**-0.0005**	0.003	469.7	ug/L	24	Standard
	Ce	140	23.3	68.9				ug/L	25	Standard
>	**Tb**	159	918183.5	1.2				ug/L	939701	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	30.3	14.9	**0.0020**	0.001	31.1	ug/L	4	Standard
	Tl	205	23.3	24.7	**0.0035**	0.001	22.2	ug/L	2	Standard
	Pb	206	259.3	0.6	**-0.0221**	0.001	4.2	ug/L	240	Standard
	Pb	207	198.7	1.6	**-0.0277**	0.001	4.0	ug/L	198	Standard
	Pb	208	894.0	2.8	**-0.0259**	0.002	7.7	ug/L	883	Standard
	U	238	15.0	35.3	**-0.0022**	0.001	35.0	ug/L	3	Standard
>	**Bi**	209	518580.7	1.8				ug/L	523984	Standard

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Na	23	1.7	173.2	**20.6253**	35.715	173.2	mg/L	0	Standard
Mg	24	31.7	32.9	**-0.0207**	0.015	73.7	mg/L	37	Standard
K	39	51.7	24.4	**0.0090**	0.027	299.1	mg/L	38	Standard
Ca	43	33.3	31.2	**-0.2319**	0.781	336.6	mg/L	10	Standard
Fe	54	140.8	7.6	**-0.0093**	0.006	67.4	mg/L	179	Standard
Fe	57	256.7	18.9	**-0.1295**	0.180	138.6	mg/L	335	Standard
Sc-1	45	56396.5	2.8				mg/L	61029	Standard
Cl	35	21372.4	1.3				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	1540.1	8.8				ug/L	1547	Standard
P	31	15931.7	0.9				ug/L	15286	Standard
S	34	1863.4	1.4				ug/L	1572	Standard
Sr	88	58.3	17.8				ug/L	73	Standard
C	12	56.7	27.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	6.2	186.6				mg/L	6	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	10.0					mg/L	13	Standard
I	127	1518.4	26.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		97.431	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.855
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.969
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606066106
Sample Date/Time: Wednesday, June 29, 2016 12:12:15
Number of Replicates: 3
Autosampler Position: 301
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78301.9	3.0				ug/L	74699	Standard
	Be	9	591.7	15.8	**0.6482**	0.094	14.5	ug/L	8	Standard
	Al	27	14033022.6	1.2	**91.1117**	1.566	1.7	ug/L	1493	Standard
	Sc	45	64031.7	1.2				ug/L	61029	Standard
	Ti	47	6936.9	1.2	**18.7002**	0.397	2.1	ug/L	35	Standard
	V	51	136379.5	0.6	**18.3618**	0.342	1.9	ug/L	1435	Standard
	Cr	52	135090.6	0.2	**17.7119**	0.504	2.8	ug/L	7635	Standard
	Cr	53	16100.2	3.4	**17.5840**	1.043	5.9	ug/L	363	Standard
	Mn	55	2727656.7	0.9	**402.5207**	10.967	2.7	ug/L	747	Standard
	Co	59	46530.0	0.2	**7.2050**	0.195	2.7	ug/L	234	Standard
	Ni	60	31243.2	1.0	**17.0295**	0.585	3.4	ug/L	215	Standard
	Cu	65	40278.5	0.5	**22.1396**	0.604	2.7	ug/L	104	Standard
	Zn	66	62615.1	0.3	**58.4626**	1.558	2.7	ug/L	363	Standard
>	**Ge**	72	481946.2	2.4				ug/L	495142	Standard
	As	75	4644.7	1.4	**4.3222**	0.154	3.6	ug/L	-50	Standard
	Se	82	54.0	14.6	**0.3688**	0.086	23.4	ug/L	14	Standard
	Se-1	77	96.0	5.2	**0.7275**	0.040	5.5	ug/L	42	Standard
>	**Ga**	71	12810.4	4.6				mg/L	42	Standard
	Rb	85	116256.0	0.7				ug/L	17	Standard
	Y	89	585719.0	1.0				ug/L	417098	Standard
>	**Rh**	103	45.0	33.3				ug/L	13	Standard
	Mo	98	935.2	3.6	**0.3550**	0.010	2.8	ug/L	11	Standard
	Ag	107	931.4	1.2	**0.1340**	0.001	0.5	ug/L	68	Standard
	Cd	111	782.7	0.6	**0.3771**	0.007	1.8	mg/L	2	Standard
	Cd	114	1959.7	7.4	**0.3906**	0.025	6.5	ug/L	12	Standard
>	**In**	115	571359.2	1.2				ug/L	587441	Standard
	Sn	118	1011.7	7.7	**0.0833**	0.012	14.7	ug/L	497	Standard
	Sb	123	336.5	28.9	**0.0698**	0.021	29.4	ug/L	78	Standard
	Ba	135	394959.7	1.6	**198.3814**	1.476	0.7	ug/L	24	Standard
	Ce	140	893729.8	1.7				ug/L	25	Standard
>	**Tb**	159	948738.0	1.3				ug/L	939701	Standard
	Ho	165	15724.8	2.6				ug/L	10	Standard
	Tl	203	658.0	2.7	**0.0791**	0.002	2.2	ug/L	4	Standard
	Tl	205	583.3	11.6	**0.0828**	0.010	12.2	ug/L	2	Standard
	Pb	206	370590.1	1.2	**70.2116**	0.816	1.2	ug/L	240	Standard
	Pb	207	304396.4	0.8	**64.9093**	0.988	1.5	ug/L	198	Standard
	Pb	208	1254498.7	1.7	**67.7133**	1.716	2.5	ug/L	883	Standard
	U	238	3382.4	2.2	**0.4935**	0.016	3.3	ug/L	3	Standard
>	**Bi**	209	517229.2	1.1				ug/L	523984	Standard

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Na	23	3.3	173.2	**36.6019**	63.388	173.2	mg/L	0	Standard
Mg	24	128.3	15.7	**0.0927**	0.024	25.5	mg/L	37	Standard
K	39	566.7	14.3	**1.0807**	0.180	16.7	mg/L	38	Standard
Ca	43	418.3	12.7	**22.6893**	3.491	15.4	mg/L	10	Standard
Fe	54	12793.3	3.0	**10.1983**	0.198	1.9	mg/L	179	Standard
Fe	57	3678.8	1.9	**10.8461**	0.363	3.4	mg/L	335	Standard
> **Sc-1**	45	64031.7	1.2				mg/L	61029	Standard
Cl	35	22050.7	1.1				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	2173.5	11.7				ug/L	1547	Standard
P	31	16252.1	5.4				ug/L	15286	Standard
S	34	2065.1	4.4				ug/L	1572	Standard
Sr	88	140.0	9.4				ug/L	73	Standard
C	12	143.3	22.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	203.3	10.2				mg/L	3	Standard
Dy	164	25060.4	3.8				mg/L	6	Standard
Ho-1	165	15724.8	2.6				mg/L	10	Standard
Er	166	13529.4	4.1				mg/L	13	Standard
I	127	8297.3	2.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.824	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.335	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.262
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.711
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606066107
Sample Date/Time: Wednesday, June 29, 2016 12:15:26
Number of Replicates: 3
Autosampler Position: 302
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79855.0	3.3				ug/L	74699	Standard
	Be	9	765.0	6.8	**0.8219**	0.077	9.4	ug/L	8	Standard
	Al	27	26230756.6	0.7	**167.0452**	4.333	2.6	ug/L	1493	Standard
	Sc	45	64585.8	4.1				ug/L	61029	Standard
	Ti	47	7966.1	1.8	**21.8574**	0.352	1.6	ug/L	35	Standard
	V	51	155637.7	1.4	**21.3440**	0.459	2.1	ug/L	1435	Standard
	Cr	52	137713.7	0.8	**18.3989**	0.313	1.7	ug/L	7635	Standard
	Cr	53	16806.0	3.9	**18.6780**	0.841	4.5	ug/L	363	Standard
	Mn	55	4726467.2	1.1	**709.3402**	2.876	0.4	ug/L	747	Standard
	Co	59	64550.2	0.1	**10.1794**	0.081	0.8	ug/L	234	Standard
	Ni	60	42709.8	0.1	**23.7183**	0.226	1.0	ug/L	215	Standard
	Cu	65	23683.8	1.0	**13.1970**	0.251	1.9	ug/L	104	Standard
	Zn	66	44795.8	1.0	**42.4101**	0.817	1.9	ug/L	363	Standard
>	Ge	72	473762.9	0.9				ug/L	495142	Standard
	As	75	7180.0	1.6	**6.7588**	0.066	1.0	ug/L	-50	Standard
	Se	82	142.2	5.2	**1.2157**	0.067	5.5	ug/L	14	Standard
	Se-1	77	110.3	7.6	**0.9569**	0.126	13.2	ug/L	42	Standard
>	Ga	71	17858.9	0.4				mg/L	42	Standard
	Rb	85	152815.2	1.7				ug/L	17	Standard
	Y	89	630725.5	1.5				ug/L	417098	Standard
>	Rh	103	41.7	25.0				ug/L	13	Standard
	Mo	98	1176.0	1.0	**0.4476**	0.010	2.2	ug/L	11	Standard
	Ag	107	471.0	1.7	**0.0613**	0.002	3.5	ug/L	68	Standard
	Cd	111	231.8	9.8	**0.1061**	0.013	12.1	mg/L	2	Standard
	Cd	114	548.2	12.6	**0.1078**	0.015	13.9	ug/L	12	Standard
>	In	115	571871.5	1.5				ug/L	587441	Standard
	Sn	118	1063.4	7.5	**0.0923**	0.015	16.1	ug/L	497	Standard
	Sb	123	198.5	41.2	**0.0396**	0.018	46.2	ug/L	78	Standard
	Ba	135	410562.2	0.2	**206.0643**	2.723	1.3	ug/L	24	Standard
	Ce	140	1020863.3	0.8				ug/L	25	Standard
>	Tb	159	935971.5	1.4				ug/L	939701	Standard
	Ho	165	18616.4	1.9				ug/L	10	Standard
	Tl	203	969.7	3.1	**0.1217**	0.006	4.6	ug/L	4	Standard
	Tl	205	781.7	5.1	**0.1148**	0.005	4.1	ug/L	2	Standard
	Pb	206	74583.8	0.8	**14.5751**	0.129	0.9	ug/L	240	Standard
	Pb	207	60293.4	1.5	**13.2552**	0.050	0.4	ug/L	198	Standard
	Pb	208	253434.0	0.7	**14.1059**	0.309	2.2	ug/L	883	Standard
	U	238	4763.7	0.8	**0.7216**	0.012	1.7	ug/L	3	Standard
>	Bi	209	499544.2	1.5				ug/L	523984	Standard

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Na	23	8.3	34.6	**90.1824**	29.248	32.4	mg/L	0	Standard
Mg	24	323.3	10.9	**0.3294**	0.041	12.6	mg/L	37	Standard
K	39	788.4	10.3	**1.5298**	0.110	7.2	mg/L	38	Standard
Ca	43	663.3	6.3	**37.0621**	1.711	4.6	mg/L	10	Standard
Fe	54	18630.5	1.2	**14.8018**	0.561	3.8	mg/L	179	Standard
Fe	57	5110.9	3.8	**15.3724**	1.217	7.9	mg/L	335	Standard
Sc-1	45	64585.8	4.1				mg/L	61029	Standard
Cl	35	22235.6	2.9				ug/L	20195	Standard
Kr	83	0.7	173.2				ug/L	4	Standard
Br	81	23104.3	4.2				ug/L	1547	Standard
P	31	15829.9	2.1				ug/L	15286	Standard
S	34	2033.5	3.2				ug/L	1572	Standard
Sr	88	161.7	12.5				ug/L	73	Standard
C	12	96.7	41.8				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	31177.2	1.6				mg/L	6	Standard
Ho-1	165	18616.4	1.9				mg/L	10	Standard
Er	166	16976.2	1.7				mg/L	13	Standard
I	127	9242.8	4.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		106.903	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.682	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.350
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.336
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606066107
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Method 6020 - Summary Report

Sample ID: L1606066108
Sample Date/Time: Wednesday, June 29, 2016 12:18:38
Number of Replicates: 3
Autosampler Position: 303
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77986.9	1.5				ug/L	74699	Standard
	Be	9	848.4	8.3	**0.9313**	0.087	9.4	ug/L	8	Standard
	Al	27	17300686.4	1.1	**112.7510**	0.475	0.4	ug/L	1493	Standard
	Sc	45	64965.7	2.0				ug/L	61029	Standard
	Ti	47	6993.9	0.6	**18.3803**	0.198	1.1	ug/L	35	Standard
	V	51	170039.3	0.3	**22.3624**	0.095	0.4	ug/L	1435	Standard
	Cr	52	135852.7	1.1	**17.3429**	0.173	1.0	ug/L	7635	Standard
	Cr	53	16400.5	1.1	**17.4496**	0.150	0.9	ug/L	363	Standard
	Mn	55	3732645.2	0.8	**537.0232**	5.661	1.1	ug/L	747	Standard
	Co	59	59499.9	1.1	**8.9910**	0.146	1.6	ug/L	234	Standard
	Ni	60	38977.4	1.0	**20.7345**	0.185	0.9	ug/L	215	Standard
	Cu	65	32324.4	0.5	**17.2976**	0.098	0.6	ug/L	104	Standard
	Zn	66	55484.7	0.8	**50.4392**	0.445	0.9	ug/L	363	Standard
>	**Ge**	72	494184.7	0.5				ug/L	495142	Standard
	As	75	5935.1	0.6	**5.3688**	0.057	1.1	ug/L	-50	Standard
	Se	82	56.5	10.0	**0.3782**	0.052	13.7	ug/L	14	Standard
	Se-1	77	118.0	0.8	**0.9965**	0.019	1.9	ug/L	42	Standard
>	**Ga**	71	16687.5	1.9				mg/L	42	Standard
	Rb	85	157851.4	1.2				ug/L	17	Standard
	Y	89	635672.9	1.6				ug/L	417098	Standard
>	**Rh**	103	68.3	27.7				ug/L	13	Standard
	Mo	98	1214.1	0.7	**0.4777**	0.002	0.4	ug/L	11	Standard
	Ag	107	767.0	3.0	**0.1120**	0.004	3.7	ug/L	68	Standard
	Cd	111	562.6	3.0	**0.2776**	0.008	3.0	mg/L	2	Standard
	Cd	114	1264.6	12.4	**0.2596**	0.032	12.4	ug/L	12	Standard
>	**In**	115	553515.9	0.3				ug/L	587441	Standard
	Sn	118	763.4	11.0	**0.0440**	0.015	34.7	ug/L	497	Standard
	Sb	123	242.9	15.0	**0.0510**	0.008	16.4	ug/L	78	Standard
	Ba	135	429181.6	1.6	**222.5293**	3.912	1.8	ug/L	24	Standard
	Ce	140	1102655.1	2.3				ug/L	25	Standard
>	**Tb**	159	923824.1	1.4				ug/L	939701	Standard
	Ho	165	18663.2	2.9				ug/L	10	Standard
	Tl	203	782.7	3.6	**0.0981**	0.005	5.3	ug/L	4	Standard
	Tl	205	701.7	8.6	**0.1034**	0.010	10.1	ug/L	2	Standard
	Pb	206	213507.8	0.5	**41.9534**	0.898	2.1	ug/L	240	Standard
	Pb	207	175202.2	0.5	**38.7416**	0.683	1.8	ug/L	198	Standard
	Pb	208	727362.3	0.6	**40.7140**	1.033	2.5	ug/L	883	Standard
	U	238	4175.6	1.0	**0.6335**	0.018	2.9	ug/L	3	Standard
>	**Bi**	209	498479.4	1.9				ug/L	523984	Standard

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Na	23	1.7	173.2	**18.0364**	31.231	173.2	mg/L	0	Standard
Mg	24	140.0	21.7	**0.1047**	0.037	35.2	mg/L	37	Standard
K	39	708.4	12.8	**1.3550**	0.168	12.4	mg/L	38	Standard
Ca	43	508.3	5.0	**27.6291**	0.895	3.2	mg/L	10	Standard
Fe	54	15324.4	1.1	**12.0707**	0.309	2.6	mg/L	179	Standard
Fe	57	4262.3	3.3	**12.5338**	0.279	2.2	mg/L	335	Standard
> **Sc-1**	45	64965.7	2.0				mg/L	61029	Standard
Cl	35	21927.9	1.6				ug/L	20195	Standard
Kr	83	2.7	78.1				ug/L	4	Standard
Br	81	2823.6	3.3				ug/L	1547	Standard
P	31	16612.4	1.0				ug/L	15286	Standard
S	34	2085.1	7.7				ug/L	1572	Standard
Sr	88	245.0	14.1				ug/L	73	Standard
C	12	116.7	27.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	93.3	49.5				mg/L	3	Standard
Dy	164	30954.0	1.2				mg/L	6	Standard
Ho-1	165	18663.2	2.9				mg/L	10	Standard
Er	166	16615.8	2.6				mg/L	13	Standard
I	127	11766.2	5.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.402	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.807	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.225
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.132
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606066109
Sample Date/Time: Wednesday, June 29, 2016 12:21:49
Number of Replicates: 3
Autosampler Position: 304
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77037.0	1.5				ug/L	74699	Standard
	Be	9	378.3	6.2	**0.4242**	0.022	5.2	ug/L	8	Standard
	Al	27	13254869.5	1.3	**87.4672**	2.449	2.8	ug/L	1493	Standard
	Sc	45	63133.0	3.0				ug/L	61029	Standard
	Ti	47	8144.2	1.7	**21.2616**	0.854	4.0	ug/L	35	Standard
	V	51	109381.5	1.5	**14.2029**	0.301	2.1	ug/L	1435	Standard
	Cr	52	127693.7	2.3	**16.1132**	0.755	4.7	ug/L	7635	Standard
	Cr	53	15149.2	3.9	**15.9774**	1.000	6.3	ug/L	363	Standard
	Mn	55	3010101.1	0.9	**429.7771**	13.412	3.1	ug/L	747	Standard
	Co	59	32158.1	0.7	**4.8045**	0.098	2.0	ug/L	234	Standard
	Ni	60	23283.5	0.8	**12.2424**	0.383	3.1	ug/L	215	Standard
	Cu	65	9940.9	0.4	**5.2071**	0.131	2.5	ug/L	104	Standard
	Zn	66	24785.3	0.2	**22.1054**	0.470	2.1	ug/L	363	Standard
>	**Ge**	72	498160.0	2.3				ug/L	495142	Standard
	As	75	2943.4	0.7	**2.6727**	0.077	2.9	ug/L	-50	Standard
	Se	82	39.1	13.2	**0.2170**	0.054	24.7	ug/L	14	Standard
	Se-1	77	75.7	11.2	**0.4068**	0.103	25.3	ug/L	42	Standard
>	**Ga**	71	9034.4	2.0				mg/L	42	Standard
	Rb	85	68682.0	2.5				ug/L	17	Standard
	Y	89	539979.1	1.9				ug/L	417098	Standard
>	**Rh**	103	11.7	24.7				ug/L	13	Standard
	Mo	98	3058.1	1.5	**1.1809**	0.018	1.5	ug/L	11	Standard
	Ag	107	334.3	34.2	**0.0400**	0.017	43.3	ug/L	68	Standard
	Cd	111	137.9	39.4	**0.0601**	0.026	43.1	mg/L	2	Standard
	Cd	114	340.6	39.5	**0.0664**	0.026	39.4	ug/L	12	Standard
>	**In**	115	568023.6	1.3				ug/L	587441	Standard
	Sn	118	973.4	3.3	**0.0776**	0.003	4.4	ug/L	497	Standard
	Sb	123	217.2	33.7	**0.0438**	0.016	35.6	ug/L	78	Standard
	Ba	135	138215.3	1.3	**69.8220**	0.106	0.2	ug/L	24	Standard
	Ce	140	545871.5	1.0				ug/L	25	Standard
>	**Tb**	159	946980.1	0.3				ug/L	939701	Standard
	Ho	165	11547.7	1.8				ug/L	10	Standard
	Tl	203	458.7	30.8	**0.0539**	0.017	31.9	ug/L	4	Standard
	Tl	205	360.0	14.1	**0.0505**	0.007	14.1	ug/L	2	Standard
	Pb	206	30575.5	1.0	**5.6549**	0.063	1.1	ug/L	240	Standard
	Pb	207	24590.3	1.3	**5.1132**	0.071	1.4	ug/L	198	Standard
	Pb	208	101567.1	0.7	**5.3447**	0.038	0.7	ug/L	883	Standard
	U	238	5591.0	1.3	**0.8082**	0.011	1.4	ug/L	3	Standard
>	**Bi**	209	523773.4	0.1				ug/L	523984	Standard

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Na	23	1.7	173.2	**19.1528**	33.165	173.2	mg/L	0	Standard
Mg	24	88.3	26.1	**0.0447**	0.026	57.5	mg/L	37	Standard
K	39	410.0	24.0	**0.7638**	0.217	28.4	mg/L	38	Standard
Ca	43	368.3	13.4	**20.0310**	3.643	18.2	mg/L	10	Standard
Fe	54	11096.4	1.9	**8.9581**	0.101	1.1	mg/L	179	Standard
Fe	57	2985.3	3.6	**8.7334**	0.110	1.3	mg/L	335	Standard
> **Sc-1**	45	63133.0	3.0				mg/L	61029	Standard
Cl	35	21859.8	1.0				ug/L	20195	Standard
Kr	83	1.0	0.0				ug/L	4	Standard
Br	81	1696.8	5.1				ug/L	1547	Standard
P	31	15684.8	2.6				ug/L	15286	Standard
S	34	1883.5	4.2				ug/L	1572	Standard
Sr	88	116.7	19.3				ug/L	73	Standard
C	12	100.0	26.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	18768.7	3.5				mg/L	6	Standard
Ho-1	165	11547.7	1.8				mg/L	10	Standard
Er	166	10790.5	1.6				mg/L	13	Standard
I	127	6703.2	5.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.130	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.609	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.695
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.960
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606082203
Sample Date/Time: Wednesday, June 29, 2016 12:25:01
Number of Replicates: 3
Autosampler Position: 305
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75246.5	2.8				ug/L	74699	Standard
	Be	9	6.7	114.6	**0.0150**	0.008	55.4	ug/L	8	Standard
	Al	27	1140453.8	1.3	**7.6935**	0.186	2.4	ug/L	1493	Standard
	Sc	45	58880.9	1.2				ug/L	61029	Standard
	Ti	47	77.7	5.2	**0.0982**	0.010	10.0	ug/L	35	Standard
	V	51	1502.7	7.0	**0.0058**	0.017	290.5	ug/L	1435	Standard
	Cr	52	10404.9	0.3	**0.3964**	0.023	5.7	ug/L	7635	Standard
	Cr	53	878.4	11.3	**0.6323**	0.120	19.0	ug/L	363	Standard
	Mn	55	64288.8	1.0	**9.1920**	0.174	1.9	ug/L	747	Standard
	Co	59	1249.1	3.1	**0.1540**	0.006	4.1	ug/L	234	Standard
	Ni	60	673.3	4.1	**0.2398**	0.011	4.6	ug/L	215	Standard
	Cu	65	229.7	8.0	**0.0211**	0.010	48.0	ug/L	104	Standard
	Zn	66	2146.2	1.5	**1.5328**	0.038	2.5	ug/L	363	Standard
>	**Ge**	72	489582.8	1.5				ug/L	495142	Standard
	As	75	99.3	9.7	**0.1492**	0.008	5.6	ug/L	-50	Standard
	Se	82	43.5	22.3	**0.2617**	0.085	32.3	ug/L	14	Standard
	Se-1	77	67.7	6.2	**0.3148**	0.059	18.8	ug/L	42	Standard
>	**Ga**	71	61.7	40.8				mg/L	42	Standard
	Rb	85	88606.7	2.0				ug/L	17	Standard
	Y	89	430024.7	1.6				ug/L	417098	Standard
>	**Rh**	103	28.3	50.9				ug/L	13	Standard
	Mo	98	81.5	16.2	**0.0249**	0.005	20.1	ug/L	11	Standard
	Ag	107	97.7	18.1	**0.0021**	0.003	124.3	ug/L	68	Standard
	Cd	111	13.9	57.3	**-0.0013**	0.004	291.1	mg/L	2	Standard
	Cd	114	23.0	35.9	**0.0024**	0.002	67.9	ug/L	12	Standard
>	**In**	115	586341.4	0.7				ug/L	587441	Standard
	Sn	118	508.3	13.9	**-0.0076**	0.011	151.7	ug/L	497	Standard
	Sb	123	156.7	24.2	**0.0294**	0.008	27.7	ug/L	78	Standard
	Ba	135	76489.9	1.2	**37.4252**	0.302	0.8	ug/L	24	Standard
	Ce	140	665.0	13.3				ug/L	25	Standard
>	**Tb**	159	934158.4	1.1				ug/L	939701	Standard
	Ho	165	15.0	66.7				ug/L	10	Standard
	Tl	203	113.7	11.3	**0.0121**	0.002	13.7	ug/L	4	Standard
	Tl	205	93.3	44.6	**0.0133**	0.006	44.3	ug/L	2	Standard
	Pb	206	362.0	5.5	**-0.0029**	0.004	131.1	ug/L	240	Standard
	Pb	207	281.3	6.6	**-0.0103**	0.004	38.7	ug/L	198	Standard
	Pb	208	1197.0	7.1	**-0.0098**	0.005	49.2	ug/L	883	Standard
	U	238	25.0	34.9	**-0.0008**	0.001	168.5	ug/L	3	Standard
>	**Bi**	209	520173.1	0.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	3547.1	5.1	**4.6793**	0.186	4.0	mg/L	37	Standard
K	39	1096.7	1.1	**2.3987**	0.055	2.3	mg/L	38	Standard
Ca	43	51.7	27.9	**0.8562**	0.931	108.7	mg/L	10	Standard
Fe	54	433.8	1.2	**0.2430**	0.009	3.5	mg/L	179	Standard
Fe	57	376.7	13.8	**0.2532**	0.189	74.5	mg/L	335	Standard
Sc-1	45	58880.9	1.2				mg/L	61029	Standard
Cl	35	22906.6	0.4				ug/L	20195	Standard
Kr	83	2.3	65.5				ug/L	4	Standard
Br	81	9496.3	3.0				ug/L	1547	Standard
P	31	16589.1	2.9				ug/L	15286	Standard
S	34	2071.8	1.6				ug/L	1572	Standard
Sr	88	118.3	17.1				ug/L	73	Standard
C	12	53.3	10.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	19.0	47.5				mg/L	6	Standard
Ho-1	165	15.0	66.7				mg/L	10	Standard
Er	166	20.0	100.0				mg/L	13	Standard
I	127	14315.1	5.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		100.733	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		98.877	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.813
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.273
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606082302
Sample Date/Time: Wednesday, June 29, 2016 12:28:12
Number of Replicates: 3
Autosampler Position: 306
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75794.1	0.6				ug/L	74699	Standard
	Be	9	13.3	21.7	**0.0225**	0.003	14.2	ug/L	8	Standard
	Al	27	2805598.0	0.7	**18.8025**	0.242	1.3	ug/L	1493	Standard
	Sc	45	59848.0	1.2				ug/L	61029	Standard
	Ti	47	42.3	20.1	**0.0017**	0.021	1272.3	ug/L	35	Standard
	V	51	1764.1	8.5	**0.0361**	0.018	49.9	ug/L	1435	Standard
	Cr	52	8282.9	3.5	**0.0853**	0.037	43.4	ug/L	7635	Standard
	Cr	53	906.7	14.2	**0.6437**	0.138	21.5	ug/L	363	Standard
	Mn	55	61274.7	1.5	**8.5848**	0.068	0.8	ug/L	747	Standard
	Co	59	3907.8	2.1	**0.5500**	0.015	2.7	ug/L	234	Standard
	Ni	60	654.7	3.9	**0.2231**	0.012	5.6	ug/L	215	Standard
	Cu	65	222.3	1.8	**0.0148**	0.001	8.1	ug/L	104	Standard
	Zn	66	2204.5	3.0	**1.5481**	0.054	3.5	ug/L	363	Standard
>	**Ge**	72	498979.3	0.8				ug/L	495142	Standard
	As	75	72.7	46.8	**0.1239**	0.030	24.0	ug/L	-50	Standard
	Se	82	52.0	6.1	**0.3317**	0.029	8.6	ug/L	14	Standard
	Se-1	77	105.0	8.3	**0.8037**	0.108	13.5	ug/L	42	Standard
>	**Ga**	71	56.7	13.5				mg/L	42	Standard
	Rb	85	343.3	5.1				ug/L	17	Standard
	Y	89	428520.0	1.9				ug/L	417098	Standard
>	**Rh**	103	38.3	27.2				ug/L	13	Standard
	Mo	98	38.4	23.3	**0.0089**	0.004	39.5	ug/L	11	Standard
	Ag	107	77.7	2.7	**-0.0008**	0.000	47.2	ug/L	68	Standard
	Cd	111	5.6	57.3	**-0.0052**	0.002	30.1	mg/L	2	Standard
	Cd	114	18.7	97.5	**0.0016**	0.004	227.0	ug/L	12	Standard
>	**In**	115	580343.3	0.7				ug/L	587441	Standard
	Sn	118	485.0	23.2	**-0.0106**	0.020	190.8	ug/L	497	Standard
	Sb	123	114.5	31.8	**0.0207**	0.008	39.1	ug/L	78	Standard
	Ba	135	150889.3	1.2	**74.6061**	0.512	0.7	ug/L	24	Standard
	Ce	140	123.3	15.3				ug/L	25	Standard
>	**Tb**	159	936316.1	1.2				ug/L	939701	Standard
	Ho	165	18.3	31.5				ug/L	10	Standard
	Tl	203	189.0	9.5	**0.0214**	0.002	8.8	ug/L	4	Standard
	Tl	205	161.7	6.4	**0.0230**	0.002	7.6	ug/L	2	Standard
	Pb	206	327.3	6.0	**-0.0093**	0.004	47.2	ug/L	240	Standard
	Pb	207	269.3	8.1	**-0.0127**	0.005	36.6	ug/L	198	Standard
	Pb	208	1102.3	4.7	**-0.0147**	0.003	21.5	ug/L	883	Standard
	U	238	62.7	10.4	**0.0048**	0.001	17.9	ug/L	3	Standard
>	**Bi**	209	519166.0	1.5				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	5325.9	0.2	**6.9463**	0.099	1.4	mg/L	37	Standard
K	39	75.0	37.1	**0.0544**	0.061	111.8	mg/L	38	Standard
Ca	43	86.7	3.3	**3.0583**	0.130	4.3	mg/L	10	Standard
Fe	54	170.8	11.8	**0.0094**	0.018	186.9	mg/L	179	Standard
Fe	57	311.7	10.3	**0.0068**	0.121	1775.6	mg/L	335	Standard
> **Sc-1**	45	59848.0	1.2				mg/L	61029	Standard
Cl	35	23747.3	1.3				ug/L	20195	Standard
Kr	83	2.7	78.1				ug/L	4	Standard
Br	81	11654.5	4.8				ug/L	1547	Standard
P	31	16051.8	4.0				ug/L	15286	Standard
S	34	1918.5	1.8				ug/L	1572	Standard
Sr	88	140.0	9.4				ug/L	73	Standard
C	12	53.3	39.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	12.2	186.8				mg/L	6	Standard
Ho-1	165	18.3	31.5				mg/L	10	Standard
Er	166	23.3	24.7				mg/L	13	Standard
I	127	13899.7	5.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.466	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.775	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		98.792
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.080
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606082303
Sample Date/Time: Wednesday, June 29, 2016 12:31:24
Number of Replicates: 3
Autosampler Position: 307
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76244.7	1.6				ug/L	74699	Standard
	Be	9	10.0	50.0	**0.0187**	0.005	28.8	ug/L	8	Standard
	Al	27	1789441.8	2.2	**11.9153**	0.077	0.6	ug/L	1493	Standard
	Sc	45	61370.7	1.9				ug/L	61029	Standard
	Ti	47	59.7	11.8	**0.0448**	0.018	40.0	ug/L	35	Standard
	V	51	1976.3	1.1	**0.0601**	0.005	8.2	ug/L	1435	Standard
	Cr	52	8828.6	1.1	**0.1403**	0.016	11.5	ug/L	7635	Standard
	Cr	53	945.0	0.5	**0.6692**	0.006	1.0	ug/L	363	Standard
	Mn	55	180374.5	2.7	**25.1617**	0.439	1.7	ug/L	747	Standard
	Co	59	619.0	3.1	**0.0543**	0.004	7.0	ug/L	234	Standard
	Ni	60	405.7	6.0	**0.0878**	0.011	12.8	ug/L	215	Standard
	Cu	65	208.0	10.3	**0.0056**	0.012	222.0	ug/L	104	Standard
	Zn	66	6989.3	1.3	**5.7979**	0.130	2.2	ug/L	363	Standard
>	**Ge**	72	506777.4	1.1				ug/L	495142	Standard
	As	75	17.4	166.6	**0.0747**	0.025	33.6	ug/L	-50	Standard
	Se	82	43.0	5.9	**0.2447**	0.022	8.9	ug/L	14	Standard
	Se-1	77	89.0	9.0	**0.5677**	0.097	17.0	ug/L	42	Standard
>	**Ga**	71	55.0	18.2				mg/L	42	Standard
	Rb	85	226.7	20.8				ug/L	17	Standard
	Y	89	430230.4	1.6				ug/L	417098	Standard
>	**Rh**	103	23.3	12.4				ug/L	13	Standard
	Mo	98	43.4	8.2	**0.0107**	0.002	14.5	ug/L	11	Standard
	Ag	107	80.3	9.2	**-0.0005**	0.001	248.5	ug/L	68	Standard
	Cd	111	11.9	16.8	**-0.0022**	0.001	43.2	mg/L	2	Standard
	Cd	114	28.1	50.1	**0.0034**	0.003	82.8	ug/L	12	Standard
>	**In**	115	584282.7	1.3				ug/L	587441	Standard
	Sn	118	445.0	7.0	**-0.0181**	0.005	24.8	ug/L	497	Standard
	Sb	123	113.1	24.2	**0.0201**	0.006	28.5	ug/L	78	Standard
	Ba	135	83408.3	1.0	**40.9596**	0.601	1.5	ug/L	24	Standard
	Ce	140	301.7	22.6				ug/L	25	Standard
>	**Tb**	159	946714.8	0.6				ug/L	939701	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	182.7	3.3	**0.0205**	0.001	3.9	ug/L	4	Standard
	Tl	205	160.0	30.8	**0.0227**	0.007	30.9	ug/L	2	Standard
	Pb	206	288.0	1.3	**-0.0170**	0.001	5.3	ug/L	240	Standard
	Pb	207	270.7	6.0	**-0.0126**	0.003	25.4	ug/L	198	Standard
	Pb	208	1097.0	10.5	**-0.0153**	0.006	38.6	ug/L	883	Standard
	U	238	866.7	1.0	**0.1222**	0.001	0.8	ug/L	3	Standard
>	**Bi**	209	520921.7	0.5				ug/L	523984	Standard

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Na	23	1.7	173.2	**19.3655**	33.533	173.2	mg/L	0	Standard
Mg	24	4915.8	1.0	**6.2466**	0.131	2.1	mg/L	37	Standard
K	39	50.0	20.0	**-0.0042**	0.023	541.6	mg/L	38	Standard
Ca	43	65.0	0.0	**1.5606**	0.079	5.0	mg/L	10	Standard
Fe	54	160.0	11.0	**-0.0035**	0.013	359.3	mg/L	179	Standard
Fe	57	281.7	9.1	**-0.1230**	0.068	55.3	mg/L	335	Standard
Sc-1	45	61370.7	1.9				mg/L	61029	Standard
Cl	35	23872.8	0.3				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	8675.8	8.1				ug/L	1547	Standard
P	31	16263.7	3.0				ug/L	15286	Standard
S	34	1945.1	6.6				ug/L	1572	Standard
Sr	88	130.0	24.0				ug/L	73	Standard
C	12	46.7	44.6				mg/L	63	Standard
N	14	6.7	86.6				mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	19.0	57.5				mg/L	6	Standard
Ho-1	165	8.3	34.6				mg/L	10	Standard
Er	166	20.0	100.0				mg/L	13	Standard
I	127	19577.6	2.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		102.070	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		102.350	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.462
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.415
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606082304
Sample Date/Time: Wednesday, June 29, 2016 12:34:35
Number of Replicates: 3
Autosampler Position: 308
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76966.7	2.1				ug/L	74699	Standard
	Be	9	8.3	91.7	**0.0169**	0.009	50.5	ug/L	8	Standard
	Al	27	441491.6	0.4	**2.9030**	0.060	2.1	ug/L	1493	Standard
	Sc	45	60155.9	2.7				ug/L	61029	Standard
	Ti	47	44.0	12.0	**0.0058**	0.013	219.4	ug/L	35	Standard
	V	51	1675.2	9.7	**0.0239**	0.019	79.8	ug/L	1435	Standard
	Cr	52	8137.2	4.7	**0.0630**	0.039	62.0	ug/L	7635	Standard
	Cr	53	611.7	11.7	**0.3248**	0.069	21.3	ug/L	363	Standard
	Mn	55	105254.7	1.8	**14.8182**	0.156	1.1	ug/L	747	Standard
	Co	59	259.7	5.8	**0.0017**	0.003	156.1	ug/L	234	Standard
	Ni	60	230.0	4.9	**-0.0022**	0.007	321.8	ug/L	215	Standard
	Cu	65	165.3	1.5	**-0.0157**	0.002	12.9	ug/L	104	Standard
	Zn	66	2212.5	1.5	**1.5507**	0.010	0.6	ug/L	363	Standard
>	**Ge**	72	500132.0	1.1				ug/L	495142	Standard
	As	75	21.8	38.4	**0.0789**	0.008	9.6	ug/L	-50	Standard
	Se	82	26.9	8.6	**0.1047**	0.023	22.2	ug/L	14	Standard
	Se-1	77	64.0	26.1	**0.2460**	0.230	93.4	ug/L	42	Standard
>	**Ga**	71	55.0	41.7				mg/L	42	Standard
	Rb	85	421.7	18.5				ug/L	17	Standard
	Y	89	429897.2	1.0				ug/L	417098	Standard
>	**Rh**	103	6.7	43.3				ug/L	13	Standard
	Mo	98	29.2	13.0	**0.0052**	0.001	25.4	ug/L	11	Standard
	Ag	107	87.7	6.3	**0.0005**	0.001	182.2	ug/L	68	Standard
	Cd	111	7.0	28.7	**-0.0046**	0.001	19.4	mg/L	2	Standard
	Cd	114	21.6	74.7	**0.0021**	0.003	150.8	ug/L	12	Standard
>	**In**	115	589054.0	1.8				ug/L	587441	Standard
	Sn	118	438.3	5.7	**-0.0199**	0.003	16.6	ug/L	497	Standard
	Sb	123	106.2	8.9	**0.0185**	0.002	12.5	ug/L	78	Standard
	Ba	135	25689.8	1.2	**12.5057**	0.379	3.0	ug/L	24	Standard
	Ce	140	65.0	26.6				ug/L	25	Standard
>	**Tb**	159	953435.2	1.7				ug/L	939701	Standard
	Ho	165	13.3	43.3				ug/L	10	Standard
	Tl	203	91.7	10.9	**0.0091**	0.001	12.8	ug/L	4	Standard
	Tl	205	101.7	11.4	**0.0141**	0.002	11.0	ug/L	2	Standard
	Pb	206	281.0	2.2	**-0.0197**	0.001	5.9	ug/L	240	Standard
	Pb	207	219.0	9.1	**-0.0248**	0.004	16.3	ug/L	198	Standard
	Pb	208	999.0	3.0	**-0.0219**	0.001	6.3	ug/L	883	Standard
	U	238	2.7	21.7	**-0.0040**	0.000	2.0	ug/L	3	Standard
>	**Bi**	209	535313.4	0.3				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	1101.7	8.8	**1.3766**	0.099	7.2	mg/L	37	Standard
K	39	50.0	26.5	**-0.0017**	0.031	1783.7	mg/L	38	Standard
Ca	43	43.3	17.6	**0.2622**	0.555	211.4	mg/L	10	Standard
Fe	54	1079.1	4.5	**0.7903**	0.045	5.7	mg/L	179	Standard
Fe	57	550.0	4.8	**0.8245**	0.134	16.2	mg/L	335	Standard
> **Sc-1**	45	60155.9	2.7				mg/L	61029	Standard
Cl	35	23751.9	0.9				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	3913.8	0.4				ug/L	1547	Standard
P	31	16552.4	4.0				ug/L	15286	Standard
S	34	1948.5	5.9				ug/L	1572	Standard
Sr	88	68.3	30.5				ug/L	73	Standard
C	12	63.3	36.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	19.7	135.8				mg/L	6	Standard
Ho-1	165	13.3	43.3				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	5207.6	8.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.036	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.008	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.275
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.162
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 12:37:48
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	72653.8	1.6				ug/L	74699	Standard
	Be	9	42693.4	2.4	**49.8778**	1.581	3.2	ug/L	8	Standard
	Al	27	7018269.3	1.5	**49.0877**	0.211	0.4	ug/L	1493	Standard
	Sc	45	58700.2	1.7				ug/L	61029	Standard
	Ti	47	37360.7	1.5	**96.4941**	1.122	1.2	ug/L	35	Standard
	V	51	389361.0	0.6	**50.3345**	0.950	1.9	ug/L	1435	Standard
	Cr	52	377308.6	0.5	**48.8761**	0.835	1.7	ug/L	7635	Standard
	Cr	53	46063.3	3.3	**48.5325**	2.229	4.6	ug/L	363	Standard
	Mn	55	355991.7	2.4	**49.9570**	0.746	1.5	ug/L	747	Standard
	Co	59	341523.2	1.7	**50.6452**	0.528	1.0	ug/L	234	Standard
	Ni	60	94080.5	0.6	**49.1230**	0.490	1.0	ug/L	215	Standard
	Cu	65	95078.4	0.9	**49.9689**	1.178	2.4	ug/L	104	Standard
	Zn	66	56040.5	0.8	**49.8274**	0.722	1.4	ug/L	363	Standard
>	Ge	72	505267.2	1.6				ug/L	495142	Standard
	As	75	56871.7	1.3	**49.8175**	0.372	0.7	ug/L	-50	Standard
	Se	82	5593.2	2.1	**49.8004**	0.347	0.7	ug/L	14	Standard
	Se-1	77	3775.1	1.7	**50.0311**	0.568	1.1	ug/L	42	Standard
>	Ga	71	75.0	13.3				mg/L	42	Standard
	Rb	85	800.0	10.3				ug/L	17	Standard
	Y	89	408700.7	0.8				ug/L	417098	Standard
>	Rh	103	18.3	41.7				ug/L	13	Standard
	Mo	98	257910.1	1.9	**100.4657**	4.126	4.1	ug/L	11	Standard
	Ag	107	316989.6	1.3	**50.4692**	0.906	1.8	ug/L	68	Standard
	Cd	111	101914.0	1.0	**50.5948**	1.545	3.1	mg/L	2	Standard
	Cd	114	242699.9	2.4	**49.1311**	2.013	4.1	ug/L	12	Standard
>	In	115	566154.7	2.7				ug/L	587441	Standard
	Sn	118	281464.1	1.7	**49.9153**	1.113	2.2	ug/L	497	Standard
	Sb	123	227316.6	0.8	**50.5420**	1.534	3.0	ug/L	78	Standard
	Ba	135	98379.4	0.9	**49.8785**	1.233	2.5	ug/L	24	Standard
	Ce	140	113.3	20.8				ug/L	25	Standard
>	Tb	159	932106.1	1.1				ug/L	939701	Standard
	Ho	165	8.3	91.7				ug/L	10	Standard
	Tl	203	406761.4	0.1	**49.7003**	0.911	1.8	ug/L	4	Standard
	Tl	205	354916.5	2.0	**49.9771**	1.877	3.8	ug/L	2	Standard
	Pb	206	263562.6	0.6	**49.6234**	0.874	1.8	ug/L	240	Standard
	Pb	207	235278.4	0.8	**49.8612**	1.016	2.0	ug/L	198	Standard
	Pb	208	929662.3	0.8	**49.8673**	1.247	2.5	ug/L	883	Standard
	U	238	336021.4	1.5	**49.1730**	1.579	3.2	ug/L	3	Standard
>	Bi	209	520331.8	1.7				ug/L	523984	Standard

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Na	23	1.7	173.2	**19.5945**	33.930	173.2	mg/L	0	Standard
Mg	24	3858.8	4.6	**5.1144**	0.246	4.8	mg/L	37	Standard
K	39	2055.1	3.6	**4.6098**	0.203	4.4	mg/L	38	Standard
Ca	43	130.0	23.4	**5.9979**	1.898	31.6	mg/L	10	Standard
Fe	54	5737.9	3.9	**4.9227**	0.278	5.7	mg/L	179	Standard
Fe	57	1583.4	3.8	**4.5245**	0.301	6.7	mg/L	335	Standard
Sc-1	45	58700.2	1.7				mg/L	61029	Standard
Cl	35	23099.6	1.9				ug/L	20195	Standard
Kr	83	2.3	65.5				ug/L	4	Standard
Br	81	1760.1	10.8				ug/L	1547	Standard
P	31	17002.9	0.9				ug/L	15286	Standard
S	34	2305.2	8.6				ug/L	1572	Standard
Sr	88	76.7	10.0				ug/L	73	Standard
C	12	60.0	33.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	9.0	191.6				mg/L	6	Standard
Ho-1	165	8.3	91.7				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	2030.1	31.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	99.756		
Al	27	98.175		
Sc	45			
Ti	47	96.494		
V	51	100.669		
Cr	52	97.752		
Cr	53			
Mn	55	99.914		
Co	59	101.290		
Ni	60	98.246		
Cu	65	99.938		
Zn	66	99.655		
Ge	72		102.045	
As	75	99.635		
Se	82	99.601		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	100.466		
Ag	107	100.938		
Cd	111	101.190		
Cd	114			
> In	115			96.376
Sn	118	99.831		
Sb	123	101.084		
Ba	135	99.757		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	99.401		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.735		
U	238	98.346		
> Bi	209			99.303
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 12:40:59
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	73745.7	1.0				ug/L	74699	Standard
	Be	9	45.0	86.8	**0.0596**	0.045	76.2	ug/L	8	Standard
	Al	27	10763.7	138.2	**0.0612**	0.103	168.8	ug/L	1493	Standard
	Sc	45	59794.4	0.5				ug/L	61029	Standard
	Ti	47	63.7	40.2	**0.0565**	0.070	123.9	ug/L	35	Standard
	V	51	1309.0	5.1	**-0.0256**	0.009	36.2	ug/L	1435	Standard
	Cr	52	7144.0	4.7	**-0.0780**	0.064	81.5	ug/L	7635	Standard
	Cr	53	391.7	5.2	**0.0859**	0.030	34.5	ug/L	363	Standard
	Mn	55	2203.3	114.3	**0.1667**	0.364	218.6	ug/L	747	Standard
	Co	59	375.0	36.8	**0.0187**	0.022	116.6	ug/L	234	Standard
	Ni	60	226.7	25.3	**-0.0048**	0.033	679.9	ug/L	215	Standard
	Cu	65	137.7	45.7	**-0.0307**	0.035	113.4	ug/L	104	Standard
	Zn	66	391.7	8.9	**-0.1025**	0.038	37.5	ug/L	363	Standard
>	**Ge**	72	505094.9	1.9				ug/L	495142	Standard
	As	75	-30.0	135.0	**0.0336**	0.035	105.0	ug/L	-50	Standard
	Se	82	18.1	21.6	**0.0240**	0.035	145.0	ug/L	14	Standard
	Se-1	77	51.7	16.7	**0.0700**	0.104	148.9	ug/L	42	Standard
>	**Ga**	71	55.0	27.3				mg/L	42	Standard
	Rb	85	30.0	72.6				ug/L	17	Standard
	Y	89	416389.1	0.5				ug/L	417098	Standard
>	**Rh**	103	18.3	56.8				ug/L	13	Standard
	Mo	98	292.6	24.5	**0.1060**	0.029	27.7	ug/L	11	Standard
	Ag	107	123.7	36.8	**0.0063**	0.007	108.0	ug/L	68	Standard
	Cd	111	19.1	60.5	**0.0013**	0.005	411.5	mg/L	2	Standard
	Cd	114	51.4	75.2	**0.0080**	0.007	93.3	ug/L	12	Standard
>	**In**	115	578912.4	1.7				ug/L	587441	Standard
	Sn	118	756.7	23.6	**0.0364**	0.029	79.3	ug/L	497	Standard
	Sb	123	391.4	30.7	**0.0806**	0.025	30.9	ug/L	78	Standard
	Ba	135	64.3	74.2	**0.0157**	0.023	147.1	ug/L	24	Standard
	Ce	140	98.3	142.4				ug/L	25	Standard
>	**Tb**	159	938659.9	2.1				ug/L	939701	Standard
	Ho	165	16.7	45.8				ug/L	10	Standard
	Tl	203	80.3	33.4	**0.0079**	0.003	39.1	ug/L	4	Standard
	Tl	205	263.3	142.0	**0.0362**	0.051	140.6	ug/L	2	Standard
	Pb	206	290.0	20.9	**-0.0175**	0.011	60.1	ug/L	240	Standard
	Pb	207	255.0	4.1	**-0.0168**	0.002	14.3	ug/L	198	Standard
	Pb	208	1806.4	80.0	**0.0207**	0.074	360.4	ug/L	883	Standard
	U	238	234.3	149.2	**0.0289**	0.049	171.5	ug/L	3	Standard
>	**Bi**	209	529175.1	1.6				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	48.3	47.8	**-0.0014**	0.030	2108.5	mg/L	37	Standard
K	39	68.3	15.2	**0.0400**	0.023	56.9	mg/L	38	Standard
Ca	43	21.7	74.2	**-1.1227**	1.047	93.2	mg/L	10	Standard
Fe	54	169.2	23.1	**0.0081**	0.034	414.8	mg/L	179	Standard
Fe	57	310.0	16.4	**0.0019**	0.182	9789.6	mg/L	335	Standard
> **Sc-1**	45	59794.4	0.5				mg/L	61029	Standard
Cl	35	23378.7	0.4				ug/L	20195	Standard
Kr	83	4.3	58.1				ug/L	4	Standard
Br	81	1630.1	3.1				ug/L	1547	Standard
P	31	16767.6	2.6				ug/L	15286	Standard
S	34	2153.5	8.8				ug/L	1572	Standard
Sr	88	65.0	27.7				ug/L	73	Standard
C	12	66.7	17.3				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	9.4	186.5				mg/L	6	Standard
Ho-1	165	16.7	45.8				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	1680.1	29.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.010	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.548	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.991	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Wednesday, June 29, 2016 12:44:12
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71218.7	0.8				ug/L	74699	Standard
	Be	9	178.3	13.3	**0.2201**	0.029	13.2	ug/L	8	Standard
	Al	27	1766.8	29.5	**-0.0008**	0.004	458.8	ug/L	1493	Standard
	Sc	45	56025.1	1.1				ug/L	61029	Standard
	Ti	47	28.0	7.1	**-0.0318**	0.007	20.5	ug/L	35	Standard
	V	51	4079.9	5.1	**0.3696**	0.041	11.2	ug/L	1435	Standard
	Cr	52	12699.0	0.7	**0.7676**	0.041	5.4	ug/L	7635	Standard
	Cr	53	1050.0	6.6	**0.8579**	0.085	9.9	ug/L	363	Standard
	Mn	55	4110.2	0.9	**0.4692**	0.021	4.5	ug/L	747	Standard
	Co	59	2790.3	0.6	**0.4045**	0.014	3.5	ug/L	234	Standard
	Ni	60	2962.3	1.6	**1.5299**	0.023	1.5	ug/L	215	Standard
	Cu	65	1521.1	1.5	**0.7509**	0.034	4.5	ug/L	104	Standard
	Zn	66	7672.3	2.1	**6.8861**	0.035	0.5	ug/L	363	Standard
>	**Ge**	72	473802.8	2.6				ug/L	495142	Standard
	As	75	358.5	4.9	**0.3943**	0.021	5.3	ug/L	-50	Standard
	Se	82	48.3	16.1	**0.3230**	0.086	26.5	ug/L	14	Standard
	Se-1	77	78.0	9.0	**0.4927**	0.075	15.2	ug/L	42	Standard
>	**Ga**	71	35.0	24.7				mg/L	42	Standard
	Rb	85	21.7	35.3				ug/L	17	Standard
	Y	89	406616.3	2.6				ug/L	417098	Standard
>	**Rh**	103	13.3	43.3				ug/L	13	Standard
	Mo	98	80.8	10.7	**0.0260**	0.003	11.1	ug/L	11	Standard
	Ag	107	2461.5	2.7	**0.3827**	0.004	1.0	ug/L	68	Standard
	Cd	111	469.2	3.6	**0.2272**	0.006	2.5	mg/L	2	Standard
	Cd	114	1121.7	10.1	**0.2273**	0.026	11.5	ug/L	12	Standard
>	**In**	115	560717.1	1.7				ug/L	587441	Standard
	Sn	118	496.7	12.6	**-0.0055**	0.012	217.4	ug/L	497	Standard
	Sb	123	1804.7	2.2	**0.4010**	0.016	3.9	ug/L	78	Standard
	Ba	135	1433.1	2.6	**0.7176**	0.020	2.8	ug/L	24	Standard
	Ce	140	53.3	43.3				ug/L	25	Standard
>	**Tb**	159	901191.9	2.3				ug/L	939701	Standard
	Ho	165	5.0	0.0				ug/L	10	Standard
	Tl	203	658.3	6.7	**0.0809**	0.005	6.0	ug/L	4	Standard
	Tl	205	580.0	6.7	**0.0841**	0.005	5.7	ug/L	2	Standard
	Pb	206	1314.1	4.2	**0.1836**	0.008	4.1	ug/L	240	Standard
	Pb	207	1090.4	5.0	**0.1679**	0.009	5.1	ug/L	198	Standard
	Pb	208	4577.3	1.3	**0.1788**	0.005	3.0	ug/L	883	Standard
	U	238	2625.2	2.7	**0.3906**	0.007	1.9	ug/L	3	Standard
>	**Bi**	209	505831.0	1.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	40.0	12.5	**-0.0088**	0.007	78.9	mg/L	37	Standard
K	39	38.3	19.9	**-0.0218**	0.018	84.6	mg/L	38	Standard
Ca	43	36.7	75.1	**-0.0119**	1.877	15817.5	mg/L	10	Standard
Fe	54	97.1	24.3	**-0.0484**	0.023	47.3	mg/L	179	Standard
Fe	57	295.0	11.9	**0.0175**	0.123	699.1	mg/L	335	Standard
Sc-1	45	56025.1	1.1				mg/L	61029	Standard
Cl	35	22767.8	1.3				ug/L	20195	Standard
Kr	83	2.7	57.3				ug/L	4	Standard
Br	81	1303.4	5.0				ug/L	1547	Standard
P	31	11956.4	1.3				ug/L	15286	Standard
S	34	2061.8	6.1				ug/L	1572	Standard
Sr	88	80.0	22.5				ug/L	73	Standard
C	12	80.0	33.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	0.0					mg/L	6	Standard
Ho-1	165	5.0	0.0				mg/L	10	Standard
Er	166	0.0					mg/L	13	Standard
I	127	1360.1	35.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	110.075		
Al	27			
Sc	45			
Ti	47			
V	51	92.400		
Cr	52	95.955		
Cr	53			
Mn	55	93.844		
Co	59	101.134		
Ni	60	95.616		
Cu	65	93.867		
Zn	66	110.178		
Ge	72		95.690	
As	75	98.586		
Se	82	80.738		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	95.685		
Cd	111	94.646		
Cd	114			
> In	115			95.451
Sn	118			
Sb	123	100.239		
Ba	135	95.683		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	101.186		
Tl	205			
Pb	206			
Pb	207			
Pb	208	89.410		
U	238	97.655		
> Bi	209			96.535
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 8
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Method 6020 - Summary Report

Sample ID: PBW 7 WG573548-02
Sample Date/Time: Wednesday, June 29, 2016 12:53:54
Number of Replicates: 3
Autosampler Position: 309
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	74857.8	1.6				ug/L	74699	Standard
	Be	9	16.7	75.5	**0.0264**	0.014	53.3	ug/L	8	Standard
	Al	27	80794.9	2.0	**0.5353**	0.014	2.5	ug/L	1493	Standard
	Sc	45	58461.0	3.0				ug/L	61029	Standard
	Ti	47	78.0	5.9	**0.0921**	0.013	14.5	ug/L	35	Standard
	V	51	1804.8	0.8	**0.0380**	0.004	11.0	ug/L	1435	Standard
	Cr	52	9792.5	0.9	**0.2676**	0.021	7.7	ug/L	7635	Standard
	Cr	53	633.3	5.7	**0.3397**	0.038	11.1	ug/L	363	Standard
	Mn	55	7868.0	0.9	**0.9563**	0.019	2.0	ug/L	747	Standard
	Co	59	389.7	6.7	**0.0204**	0.003	16.2	ug/L	234	Standard
	Ni	60	396.3	4.2	**0.0829**	0.008	9.4	ug/L	215	Standard
	Cu	65	182.0	8.2	**-0.0081**	0.009	109.2	ug/L	104	Standard
	Zn	66	1432.4	5.9	**0.8274**	0.087	10.5	ug/L	363	Standard
>	**Ge**	72	506709.7	1.0				ug/L	495142	Standard
	As	75	61.7	54.0	**0.1136**	0.029	25.8	ug/L	-50	Standard
	Se	82	57.7	7.0	**0.3762**	0.040	10.6	ug/L	14	Standard
	Se-1	77	48.3	5.2	**0.0243**	0.031	128.3	ug/L	42	Standard
>	**Ga**	71	106.7	35.5				mg/L	42	Standard
	Rb	85	413.3	4.9				ug/L	17	Standard
	Y	89	414741.4	0.4				ug/L	417098	Standard
>	**Rh**	103	15.0	100.0				ug/L	13	Standard
	Mo	98	46.5	23.9	**0.0125**	0.004	33.5	ug/L	11	Standard
	Ag	107	1549.7	3.3	**0.2354**	0.012	5.1	ug/L	68	Standard
	Cd	111	17.2	8.9	**0.0007**	0.001	113.7	mg/L	2	Standard
	Cd	114	63.6	36.2	**0.0109**	0.005	44.4	ug/L	12	Standard
>	**In**	115	562869.1	1.7				ug/L	587441	Standard
	Sn	118	736.7	11.6	**0.0370**	0.017	44.6	ug/L	497	Standard
	Sb	123	216.9	10.9	**0.0443**	0.006	12.6	ug/L	78	Standard
	Ba	135	906.0	5.8	**0.4461**	0.030	6.6	ug/L	24	Standard
	Ce	140	1735.1	5.3				ug/L	25	Standard
>	**Tb**	159	918530.3	1.8				ug/L	939701	Standard
	Ho	165	31.7	32.9				ug/L	10	Standard
	Tl	203	89.3	15.5	**0.0092**	0.002	18.3	ug/L	4	Standard
	Tl	205	86.7	13.3	**0.0124**	0.002	13.0	ug/L	2	Standard
	Pb	206	378.0	4.1	**0.0001**	0.003	2503.4	ug/L	240	Standard
	Pb	207	310.7	3.7	**-0.0040**	0.002	56.8	ug/L	198	Standard
	Pb	208	1268.7	1.9	**-0.0059**	0.001	22.1	ug/L	883	Standard
	U	238	52.0	18.9	**0.0032**	0.001	44.2	ug/L	3	Standard
>	**Bi**	209	520017.2	0.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	98.3	32.7	**0.0678**	0.045	67.0	mg/L	37	Standard
K	39	61.7	9.4	**0.0281**	0.012	42.4	mg/L	38	Standard
Ca	43	31.7	55.5	**-0.4154**	1.202	289.4	mg/L	10	Standard
Fe	54	153.7	8.4	**-0.0024**	0.007	308.5	mg/L	179	Standard
Fe	57	316.7	15.8	**0.0490**	0.173	353.8	mg/L	335	Standard
> **Sc-1**	45	58461.0	3.0				mg/L	61029	Standard
Cl	35	22819.8	1.0				ug/L	20195	Standard
Kr	83	3.7	31.5				ug/L	4	Standard
Br	81	12281.6	4.1				ug/L	1547	Standard
P	31	15094.2	2.5				ug/L	15286	Standard
S	34	1958.5	7.0				ug/L	1572	Standard
Sr	88	78.3	19.5				ug/L	73	Standard
C	12	96.7	21.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	48.1	42.1				mg/L	6	Standard
Ho-1	165	31.7	32.9				mg/L	10	Standard
Er	166	40.0	25.0				mg/L	13	Standard
I	127	2060.1	27.3				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		100.213	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		102.336	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.817
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.243
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 7 WG573548-03
Sample Date/Time: Wednesday, June 29, 2016 12:57:05
Number of Replicates: 3
Autosampler Position: 310
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	75779.1	1.4				ug/L	74699	Standard
	Be	9	44266.3	2.0	**49.5806**	1.413	2.8	ug/L	8	Standard
	Al	27	95277.1	2.2	**0.6259**	0.022	3.5	ug/L	1493	Standard
	Sc	45	60008.6	1.7				ug/L	61029	Standard
	Ti	47	61.3	19.5	**0.0533**	0.033	61.1	ug/L	35	Standard
	V	51	383994.5	1.5	**50.7641**	0.334	0.7	ug/L	1435	Standard
	Cr	52	391642.5	1.8	**51.9470**	0.996	1.9	ug/L	7635	Standard
	Cr	53	48176.5	1.3	**51.9174**	0.408	0.8	ug/L	363	Standard
	Mn	55	379234.4	0.1	**54.4505**	0.406	0.7	ug/L	747	Standard
	Co	59	337441.4	0.9	**51.1841**	0.650	1.3	ug/L	234	Standard
	Ni	60	96944.2	1.6	**51.7745**	0.652	1.3	ug/L	215	Standard
	Cu	65	97447.4	0.9	**52.3759**	0.338	0.6	ug/L	104	Standard
	Zn	66	58710.9	1.4	**53.4195**	0.683	1.3	ug/L	363	Standard
>	Ge	72	493989.7	0.8				ug/L	495142	Standard
	As	75	54420.0	2.0	**48.7560**	0.745	1.5	ug/L	-50	Standard
	Se	82	5499.8	2.1	**50.0913**	1.110	2.2	ug/L	14	Standard
	Se-1	77	3757.5	2.3	**50.9460**	1.277	2.5	ug/L	42	Standard
>	Ga	71	331.7	6.3				mg/L	42	Standard
	Rb	85	1905.1	7.7				ug/L	17	Standard
	Y	89	430193.5	2.2				ug/L	417098	Standard
>	Rh	103	21.7	13.3				ug/L	13	Standard
	Mo	98	200.3	5.0	**0.0686**	0.004	5.6	ug/L	11	Standard
	Ag	107	325181.2	0.5	**49.3255**	0.456	0.9	ug/L	68	Standard
	Cd	111	102382.7	0.7	**48.4138**	0.589	1.2	mg/L	2	Standard
	Cd	114	246010.3	1.2	**47.4297**	0.453	1.0	ug/L	12	Standard
>	In	115	594099.2	0.9				ug/L	587441	Standard
	Sn	118	733.4	7.5	**0.0295**	0.010	35.4	ug/L	497	Standard
	Sb	123	222790.7	0.6	**47.1842**	0.681	1.4	ug/L	78	Standard
	Ba	135	100456.3	0.7	**48.5175**	0.574	1.2	ug/L	24	Standard
	Ce	140	3297.0	2.9				ug/L	25	Standard
>	Tb	159	953975.0	2.3				ug/L	939701	Standard
	Ho	165	81.7	3.5				ug/L	10	Standard
	Tl	203	411383.7	1.0	**49.0691**	0.983	2.0	ug/L	4	Standard
	Tl	205	358822.0	2.1	**49.3118**	1.192	2.4	ug/L	2	Standard
	Pb	206	272876.4	0.6	**50.1549**	0.805	1.6	ug/L	240	Standard
	Pb	207	232281.8	1.2	**48.0517**	0.976	2.0	ug/L	198	Standard
	Pb	208	938885.2	1.2	**49.1601**	1.120	2.3	ug/L	883	Standard
	U	238	337957.9	0.3	**48.2703**	0.691	1.4	ug/L	3	Standard
>	Bi	209	532979.3	1.2				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	40.0	12.5	**-0.0126**	0.007	52.7	mg/L	37	Standard
K	39	58.3	21.6	**0.0173**	0.030	174.9	mg/L	38	Standard
Ca	43	60.0	16.7	**1.3313**	0.636	47.7	mg/L	10	Standard
Fe	54	427.3	5.7	**0.2300**	0.018	7.6	mg/L	179	Standard
Fe	57	393.3	4.8	**0.2864**	0.089	31.1	mg/L	335	Standard
> **Sc-1**	45	60008.6	1.7				mg/L	61029	Standard
Cl	35	22904.0	1.4				ug/L	20195	Standard
Kr	83	0.7	86.6				ug/L	4	Standard
Br	81	1933.5	11.4				ug/L	1547	Standard
P	31	15693.1	2.0				ug/L	15286	Standard
S	34	1913.5	5.4				ug/L	1572	Standard
Sr	88	85.0	21.2				ug/L	73	Standard
C	12	106.7	37.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	149.3	43.4				mg/L	6	Standard
Ho-1	165	81.7	3.5				mg/L	10	Standard
Er	166	83.3	45.4				mg/L	13	Standard
I	127	1690.1	32.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		101.446	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.767	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.133
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.717
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606098623 WG573548-01
Sample Date/Time: Wednesday, June 29, 2016 13:00:17
Number of Replicates: 3
Autosampler Position: 311
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85536.1	4.6				ug/L	74699	Standard
	Be	9	131.7	4.4	**0.1385**	0.009	6.7	ug/L	8	Standard
	Al	27	51229429.5	1.9	**304.6734**	8.454	2.8	ug/L	1493	Standard
	Sc	45	58156.4	0.7				ug/L	61029	Standard
	Ti	47	291.7	4.0	**0.6976**	0.027	3.9	ug/L	35	Standard
	V	51	2731.2	8.5	**0.1837**	0.035	19.3	ug/L	1435	Standard
	Cr	52	11798.6	2.2	**0.6453**	0.034	5.3	ug/L	7635	Standard
	Cr	53	1541.7	10.7	**1.4199**	0.200	14.1	ug/L	363	Standard
	Mn	55	1519614.4	1.3	**228.6645**	1.850	0.8	ug/L	747	Standard
	Co	59	1958.8	0.9	**0.2737**	0.000	0.1	ug/L	234	Standard
	Ni	60	5664.7	1.6	**3.0483**	0.071	2.3	ug/L	215	Standard
	Cu	65	19925.4	0.1	**11.1201**	0.082	0.7	ug/L	104	Standard
	Zn	66	6263.0	2.6	**5.5559**	0.126	2.3	ug/L	363	Standard
>	**Ge**	72	472304.7	0.8				ug/L	495142	Standard
	As	75	721.9	3.2	**0.7353**	0.022	3.1	ug/L	-50	Standard
	Se	82	400.4	3.0	**3.6870**	0.142	3.9	ug/L	14	Standard
	Se-1	77	187.0	7.2	**2.0610**	0.173	8.4	ug/L	42	Standard
>	**Ga**	71	100.0	8.7				mg/L	42	Standard
	Rb	85	5192.6	2.9				ug/L	17	Standard
	Y	89	424150.6	2.5				ug/L	417098	Standard
>	**Rh**	103	291.7	21.8				ug/L	13	Standard
	Mo	98	1037.1	3.0	**0.3904**	0.016	4.1	ug/L	11	Standard
	Ag	107	150.3	11.8	**0.0106**	0.003	25.5	ug/L	68	Standard
	Cd	111	86.5	9.0	**0.0342**	0.004	11.5	mg/L	2	Standard
	Cd	114	235.1	23.0	**0.0445**	0.010	23.2	ug/L	12	Standard
>	**In**	115	577173.5	1.1				ug/L	587441	Standard
	Sn	118	1115.0	2.8	**0.0996**	0.004	4.3	ug/L	497	Standard
	Sb	123	1725.9	23.2	**0.3715**	0.084	22.5	ug/L	78	Standard
	Ba	135	22344.1	0.8	**11.0965**	0.201	1.8	ug/L	24	Standard
	Ce	140	1543.4	4.9				ug/L	25	Standard
>	**Tb**	159	936227.5	1.2				ug/L	939701	Standard
	Ho	165	78.3	35.2				ug/L	10	Standard
	Tl	203	240.0	4.8	**0.0287**	0.001	5.1	ug/L	4	Standard
	Tl	205	171.7	9.4	**0.0253**	0.002	9.3	ug/L	2	Standard
	Pb	206	666.7	6.9	**0.0592**	0.009	15.2	ug/L	240	Standard
	Pb	207	558.7	0.1	**0.0529**	0.000	0.3	ug/L	198	Standard
	Pb	208	2267.7	0.3	**0.0522**	0.000	0.9	ug/L	883	Standard
	U	238	28225.3	0.9	**4.2785**	0.042	1.0	ug/L	3	Standard
>	**Bi**	209	501665.1	0.1				ug/L	523984	Standard

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Na	23	13.3	43.3	**161.5718**	71.131	44.0	mg/L	0	Standard
Mg	24	24900.4	1.1	**33.6647**	0.149	0.4	mg/L	37	Standard
K	39	1233.4	1.4	**2.7469**	0.062	2.2	mg/L	38	Standard
Ca	43	1560.1	5.5	**100.8648**	4.911	4.9	mg/L	10	Standard
Fe	54	167.1	25.8	**0.0105**	0.039	372.7	mg/L	179	Standard
Fe	57	958.4	6.3	**2.3440**	0.212	9.0	mg/L	335	Standard
Sc-1	45	58156.4	0.7				mg/L	61029	Standard
Cl	35	40465.3	2.5				ug/L	20195	Standard
Kr	83	2.7	57.3				ug/L	4	Standard
Br	81	58241.9	4.1				ug/L	1547	Standard
P	31	17453.4	1.6				ug/L	15286	Standard
S	34	1810.1	8.9				ug/L	1572	Standard
Sr	88	1313.4	8.1				ug/L	73	Standard
C	12	273.3	15.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	3	Standard
Dy	164	89.3	16.3				mg/L	6	Standard
Ho-1	165	78.3	35.2				mg/L	10	Standard
Er	166	83.3	18.3				mg/L	13	Standard
I	127	135078.2	7.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		114.508	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.388	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.252
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.740
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606098623 WG573548-01
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Method 6020 - Summary Report

Sample ID: L1606098635S WG573548-04
Sample Date/Time: Wednesday, June 29, 2016 13:03:28
Number of Replicates: 3
Autosampler Position: 312
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	96645.6	0.2				ug/L	74699	Standard
	Be	9	56332.9	2.6	**49.4619**	1.222	2.5	ug/L	8	Standard
	Al	27	56565131.5	1.0	**297.4859**	3.609	1.2	ug/L	1493	Standard
	Sc	45	58999.8	4.0				ug/L	61029	Standard
	Ti	47	369.0	11.5	**0.8968**	0.108	12.0	ug/L	35	Standard
	V	51	390242.6	0.5	**53.2266**	0.984	1.8	ug/L	1435	Standard
	Cr	52	371857.5	2.1	**50.8419**	0.408	0.8	ug/L	7635	Standard
	Cr	53	46974.4	2.3	**52.2114**	1.040	2.0	ug/L	363	Standard
	Mn	55	1851169.7	0.3	**274.7367**	3.654	1.3	ug/L	747	Standard
	Co	59	350457.1	0.5	**54.8326**	0.988	1.8	ug/L	234	Standard
	Ni	60	94372.4	2.0	**51.9777**	0.274	0.5	ug/L	215	Standard
	Cu	65	115580.4	2.6	**64.0828**	0.734	1.1	ug/L	104	Standard
	Zn	66	61118.4	0.5	**57.3902**	0.612	1.1	ug/L	363	Standard
>	**Ge**	72	478993.7	1.6				ug/L	495142	Standard
	As	75	59122.1	0.8	**54.6260**	0.454	0.8	ug/L	-50	Standard
	Se	82	6294.5	0.9	**59.1515**	0.578	1.0	ug/L	14	Standard
	Se-1	77	4101.2	2.7	**57.4162**	0.662	1.2	ug/L	42	Standard
>	**Ga**	71	100.0	18.0				mg/L	42	Standard
	Rb	85	5364.3	1.3				ug/L	17	Standard
	Y	89	423648.2	2.3				ug/L	417098	Standard
>	**Rh**	103	290.0	15.8				ug/L	13	Standard
	Mo	98	1231.1	6.2	**0.4537**	0.027	5.8	ug/L	11	Standard
	Ag	107	140053.7	1.3	**21.3673**	0.341	1.6	ug/L	68	Standard
	Cd	111	101619.5	1.1	**48.3438**	0.154	0.3	mg/L	2	Standard
	Cd	114	248812.6	0.3	**48.2667**	0.577	1.2	ug/L	12	Standard
>	**In**	115	590497.7	1.3				ug/L	587441	Standard
	Sn	118	1276.7	2.9	**0.1227**	0.007	5.6	ug/L	497	Standard
	Sb	123	230648.9	1.4	**49.1452**	0.703	1.4	ug/L	78	Standard
	Ba	135	121100.4	1.0	**58.8551**	1.255	2.1	ug/L	24	Standard
	Ce	140	1580.1	12.1				ug/L	25	Standard
>	**Tb**	159	967679.2	1.8				ug/L	939701	Standard
	Ho	165	70.0	12.4				ug/L	10	Standard
	Tl	203	411213.8	0.9	**50.0486**	0.144	0.3	ug/L	4	Standard
	Tl	205	371375.3	1.6	**52.0881**	1.342	2.6	ug/L	2	Standard
	Pb	206	271184.0	0.3	**50.8655**	0.565	1.1	ug/L	240	Standard
	Pb	207	230172.1	0.3	**48.5918**	0.740	1.5	ug/L	198	Standard
	Pb	208	934549.0	0.8	**49.9358**	0.874	1.8	ug/L	883	Standard
	U	238	386476.6	1.1	**56.3336**	1.024	1.8	ug/L	3	Standard
>	**Bi**	209	522269.6	1.2				ug/L	523984	Standard

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Na	23	8.3	91.7	**99.7813**	89.869	90.1	mg/L	0	Standard
Mg	24	26446.4	1.6	**35.2703**	0.863	2.4	mg/L	37	Standard
K	39	1201.7	4.6	**2.6333**	0.063	2.4	mg/L	38	Standard
Ca	43	1648.4	4.4	**105.1755**	1.490	1.4	mg/L	10	Standard
Fe	54	207.2	35.2	**0.0431**	0.061	140.9	mg/L	179	Standard
Fe	57	976.7	6.7	**2.3580**	0.131	5.6	mg/L	335	Standard
> **Sc-1**	45	58999.8	4.0				mg/L	61029	Standard
Cl	35	42664.0	0.9				ug/L	20195	Standard
Kr	83	3.0	33.3				ug/L	4	Standard
Br	81	62512.1	2.5				ug/L	1547	Standard
P	31	18094.1	2.0				ug/L	15286	Standard
S	34	1855.1	3.1				ug/L	1572	Standard
Sr	88	1376.7	4.2				ug/L	73	Standard
C	12	206.7	24.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	73.5	28.0				mg/L	6	Standard
Ho-1	165	70.0	12.4				mg/L	10	Standard
Er	166	66.7	34.6				mg/L	13	Standard
I	127	146421.6	4.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.380	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.739	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	100.520
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.673
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606098637SD WG573548-05
Sample Date/Time: Wednesday, June 29, 2016 13:06:39
Number of Replicates: 3
Autosampler Position: 313
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	99478.9	1.8				ug/L	74699	Standard
	Be	9	55809.3	1.7	**47.6121**	0.679	1.4	ug/L	8	Standard
	Al	27	57079276.5	2.7	**291.6498**	6.801	2.3	ug/L	1493	Standard
	Sc	45	56220.8	1.7				ug/L	61029	Standard
	Ti	47	357.7	29.4	**0.8728**	0.310	35.5	ug/L	35	Standard
	V	51	392795.1	0.3	**53.7087**	1.385	2.6	ug/L	1435	Standard
	Cr	52	364211.2	1.2	**49.9063**	1.054	2.1	ug/L	7635	Standard
	Cr	53	45092.0	2.6	**50.2220**	0.967	1.9	ug/L	363	Standard
	Mn	55	1864825.2	1.1	**277.4410**	6.534	2.4	ug/L	747	Standard
	Co	59	357216.6	1.3	**56.0166**	0.665	1.2	ug/L	234	Standard
	Ni	60	94064.4	0.7	**51.9434**	1.099	2.1	ug/L	215	Standard
	Cu	65	96872.1	1.3	**53.8290**	0.581	1.1	ug/L	104	Standard
	Zn	66	56756.1	1.1	**53.3877**	0.715	1.3	ug/L	363	Standard
>	**Ge**	72	477920.9	2.4				ug/L	495142	Standard
	As	75	58834.8	0.8	**54.4924**	0.918	1.7	ug/L	-50	Standard
	Se	82	6411.7	0.6	**60.4029**	1.057	1.7	ug/L	14	Standard
	Se-1	77	4156.6	3.0	**58.3446**	1.540	2.6	ug/L	42	Standard
>	**Ga**	71	126.7	16.4				mg/L	42	Standard
	Rb	85	5344.3	1.7				ug/L	17	Standard
	Y	89	425761.1	0.9				ug/L	417098	Standard
>	**Rh**	103	338.3	14.4				ug/L	13	Standard
	Mo	98	943.7	3.1	**0.3564**	0.013	3.7	ug/L	11	Standard
	Ag	107	126054.2	0.9	**19.7696**	0.296	1.5	ug/L	68	Standard
	Cd	111	100507.1	1.6	**49.1528**	0.361	0.7	mg/L	2	Standard
	Cd	114	240725.5	3.1	**47.9933**	0.862	1.8	ug/L	12	Standard
>	**In**	115	574417.4	1.5				ug/L	587441	Standard
	Sn	118	1058.4	4.2	**0.0905**	0.005	5.8	ug/L	497	Standard
	Sb	123	229849.5	0.5	**50.3475**	0.456	0.9	ug/L	78	Standard
	Ba	135	119199.1	0.7	**59.5474**	0.534	0.9	ug/L	24	Standard
	Ce	140	1411.7	10.5				ug/L	25	Standard
>	**Tb**	159	946510.5	1.0				ug/L	939701	Standard
	Ho	165	61.7	32.8				ug/L	10	Standard
	Tl	203	404314.5	1.0	**50.2968**	0.720	1.4	ug/L	4	Standard
	Tl	205	368989.1	0.6	**52.8952**	1.157	2.2	ug/L	2	Standard
	Pb	206	274418.5	1.5	**52.6043**	0.331	0.6	ug/L	240	Standard
	Pb	207	233408.5	1.0	**50.3596**	0.394	0.8	ug/L	198	Standard
	Pb	208	945417.2	0.6	**51.6312**	0.704	1.4	ug/L	883	Standard
	U	238	390395.6	1.2	**58.1569**	0.854	1.5	ug/L	3	Standard
>	**Bi**	209	511024.4	1.7				ug/L	523984	Standard

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Na	23	13.3	21.7	**167.0389**	37.375	22.4	mg/L	0	Standard
Mg	24	26820.4	2.0	**37.5161**	0.222	0.6	mg/L	37	Standard
K	39	1165.0	5.8	**2.6799**	0.118	4.4	mg/L	38	Standard
Ca	43	1491.7	10.9	**99.7885**	11.256	11.3	mg/L	10	Standard
Fe	54	157.1	11.5	**0.0062**	0.015	238.1	mg/L	179	Standard
Fe	57	1011.7	5.7	**2.6573**	0.164	6.2	mg/L	335	Standard
Sc-1	45	56220.8	1.7				mg/L	61029	Standard
Cl	35	42892.6	1.5				ug/L	20195	Standard
Kr	83	2.7	43.3				ug/L	4	Standard
Br	81	62984.0	1.3				ug/L	1547	Standard
P	31	17081.3	3.0				ug/L	15286	Standard
S	34	1805.1	2.7				ug/L	1572	Standard
Sr	88	1383.4	10.5				ug/L	73	Standard
C	12	180.0	14.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	124.6	33.0				mg/L	6	Standard
Ho-1	165	61.7	32.8				mg/L	10	Standard
Er	166	43.3	35.3				mg/L	13	Standard
I	127	140810.4	4.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		133.173	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.522	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.783
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.527
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606098637SD WG573548-05
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Method 6020 - Summary Report

Sample ID: L1606098601
Sample Date/Time: Wednesday, June 29, 2016 13:09:51
Number of Replicates: 3
Autosampler Position: 314
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	102324.4	1.8				ug/L	74699	Standard
	Be	9	88.3	32.2	**0.0810**	0.024	30.0	ug/L	8	Standard
	Al	27	5114148.7	1.9	**25.3952**	0.605	2.4	ug/L	1493	Standard
	Sc	45	60191.0	1.9				ug/L	61029	Standard
	Ti	47	2779.9	0.6	**7.0936**	0.108	1.5	ug/L	35	Standard
	V	51	5111.4	5.6	**0.4688**	0.033	7.0	ug/L	1435	Standard
	Cr	52	13420.3	3.5	**0.7542**	0.051	6.8	ug/L	7635	Standard
	Cr	53	1458.4	3.3	**1.2196**	0.051	4.2	ug/L	363	Standard
	Mn	55	181173.8	0.3	**25.4046**	0.180	0.7	ug/L	747	Standard
	Co	59	2348.5	2.0	**0.3119**	0.007	2.1	ug/L	234	Standard
	Ni	60	2310.5	3.1	**1.0878**	0.031	2.9	ug/L	215	Standard
	Cu	65	2308.5	3.6	**1.1141**	0.034	3.0	ug/L	104	Standard
	Zn	66	22662.3	0.5	**19.9177**	0.090	0.4	ug/L	363	Standard
>	**Ge**	72	504254.4	0.9				ug/L	495142	Standard
	As	75	859.1	5.1	**0.8126**	0.036	4.5	ug/L	-50	Standard
	Se	82	56.8	14.9	**0.3708**	0.079	21.2	ug/L	14	Standard
	Se-1	77	87.3	17.2	**0.5507**	0.190	34.5	ug/L	42	Standard
>	**Ga**	71	526.7	8.3				mg/L	42	Standard
	Rb	85	16517.3	5.3				ug/L	17	Standard
	Y	89	430302.4	1.6				ug/L	417098	Standard
>	**Rh**	103	86.7	33.8				ug/L	13	Standard
	Mo	98	1898.6	1.4	**0.7136**	0.022	3.1	ug/L	11	Standard
	Ag	107	115.3	8.0	**0.0050**	0.001	29.0	ug/L	68	Standard
	Cd	111	60.8	33.2	**0.0215**	0.010	47.6	mg/L	2	Standard
	Cd	114	128.6	20.8	**0.0232**	0.005	20.9	ug/L	12	Standard
>	**In**	115	581907.5	1.7				ug/L	587441	Standard
	Sn	118	1231.7	10.8	**0.1183**	0.024	20.7	ug/L	497	Standard
	Sb	123	520.8	14.7	**0.1084**	0.016	15.1	ug/L	78	Standard
	Ba	135	41346.0	0.9	**20.3791**	0.217	1.1	ug/L	24	Standard
	Ce	140	23020.8	2.4				ug/L	25	Standard
>	**Tb**	159	964144.3	1.8				ug/L	939701	Standard
	Ho	165	513.3	9.3				ug/L	10	Standard
	Tl	203	211.3	12.7	**0.0234**	0.003	14.7	ug/L	4	Standard
	Tl	205	253.3	62.3	**0.0350**	0.022	63.0	ug/L	2	Standard
	Pb	206	1500.1	2.6	**0.2039**	0.008	4.0	ug/L	240	Standard
	Pb	207	1190.0	4.0	**0.1756**	0.010	5.7	ug/L	198	Standard
	Pb	208	4936.0	2.0	**0.1838**	0.008	4.3	ug/L	883	Standard
	U	238	2034.5	10.8	**0.2852**	0.034	11.8	ug/L	3	Standard
>	**Bi**	209	535012.0	1.1				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	50263.2	0.4	**65.7389**	1.477	2.2	mg/L	37	Standard
K	39	250.0	7.2	**0.4466**	0.047	10.5	mg/L	38	Standard
Ca	43	233.3	8.9	**12.4104**	1.127	9.1	mg/L	10	Standard
Fe	54	825.5	3.8	**0.5718**	0.038	6.7	mg/L	179	Standard
Fe	57	516.7	4.4	**0.7058**	0.045	6.4	mg/L	335	Standard
> **Sc-1**	45	60191.0	1.9				mg/L	61029	Standard
Cl	35	28383.9	2.7				ug/L	20195	Standard
Kr	83	2.0	0.0				ug/L	4	Standard
Br	81	8439.0	2.4				ug/L	1547	Standard
P	31	17857.2	2.8				ug/L	15286	Standard
S	34	1791.8	4.6				ug/L	1572	Standard
Sr	88	506.7	4.7				ug/L	73	Standard
C	12	153.3	22.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	893.4	9.1				mg/L	6	Standard
Ho-1	165	513.3	9.3				mg/L	10	Standard
Er	166	416.7	13.2				mg/L	13	Standard
I	127	18778.3	7.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		136.983	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.840	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	99.058	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	102.105	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606098603
Sample Date/Time: Wednesday, June 29, 2016 13:13:02
Number of Replicates: 3
Autosampler Position: 315
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	106961.3	1.6				ug/L	74699	Standard
	Be	9	178.3	7.1	**0.1492**	0.012	8.2	ug/L	8	Standard
	Al	27	64490531.4	4.4	**306.3886**	9.864	3.2	ug/L	1493	Standard
	Sc	45	59811.2	2.1				ug/L	61029	Standard
	Ti	47	416.0	0.2	**0.9910**	0.025	2.5	ug/L	35	Standard
	V	51	3004.3	2.1	**0.2029**	0.003	1.2	ug/L	1435	Standard
	Cr	52	11901.7	1.5	**0.5854**	0.019	3.3	ug/L	7635	Standard
	Cr	53	991.7	2.3	**0.7459**	0.050	6.7	ug/L	363	Standard
	Mn	55	12370472.2	4.2	**1779.3602**	31.656	1.8	ug/L	747	Standard
	Co	59	18875.4	5.7	**2.8249**	0.100	3.5	ug/L	234	Standard
	Ni	60	12202.3	4.0	**6.4037**	0.114	1.8	ug/L	215	Standard
	Cu	65	16836.0	2.8	**8.9582**	0.039	0.4	ug/L	104	Standard
	Zn	66	24869.4	2.3	**22.3549**	0.039	0.2	ug/L	363	Standard
>	**Ge**	72	494237.2	2.4				ug/L	495142	Standard
	As	75	1554.4	6.7	**1.4489**	0.061	4.2	ug/L	-50	Standard
	Se	82	71.5	7.7	**0.5142**	0.037	7.1	ug/L	14	Standard
	Se-1	77	63.0	12.4	**0.2431**	0.119	49.1	ug/L	42	Standard
>	**Ga**	71	356.7	10.3				mg/L	42	Standard
	Rb	85	9309.5	2.8				ug/L	17	Standard
	Y	89	460268.8	4.1				ug/L	417098	Standard
>	**Rh**	103	310.0	9.7				ug/L	13	Standard
	Mo	98	1407.8	3.5	**0.5012**	0.005	1.0	ug/L	11	Standard
	Ag	107	101.3	22.9	**0.0020**	0.003	151.7	ug/L	68	Standard
	Cd	111	246.3	7.9	**0.1051**	0.008	7.2	mg/L	2	Standard
	Cd	114	605.6	11.0	**0.1111**	0.009	8.4	ug/L	12	Standard
>	**In**	115	612194.6	4.4				ug/L	587441	Standard
	Sn	118	1470.1	15.0	**0.1461**	0.027	18.7	ug/L	497	Standard
	Sb	123	727.1	5.4	**0.1452**	0.003	2.2	ug/L	78	Standard
	Ba	135	24533.2	4.5	**11.4855**	0.055	0.5	ug/L	24	Standard
	Ce	140	44839.6	2.7				ug/L	25	Standard
>	**Tb**	159	1002318.5	3.7				ug/L	939701	Standard
	Ho	165	778.4	7.8				ug/L	10	Standard
	Tl	203	123.7	14.4	**0.0129**	0.002	13.5	ug/L	4	Standard
	Tl	205	116.7	9.9	**0.0161**	0.001	9.2	ug/L	2	Standard
	Pb	206	819.0	5.9	**0.0785**	0.008	10.4	ug/L	240	Standard
	Pb	207	658.0	2.8	**0.0655**	0.007	10.9	ug/L	198	Standard
	Pb	208	2733.4	3.4	**0.0682**	0.002	2.2	ug/L	883	Standard
	U	238	29463.0	4.0	**4.1728**	0.071	1.7	ug/L	3	Standard
>	**Bi**	209	536825.9	2.9				ug/L	523984	Standard

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Na	23	18.3	31.5	**216.6166**	73.255	33.8	mg/L	0	Standard
Mg	24	7246.7	2.5	**9.4794**	0.084	0.9	mg/L	37	Standard
K	39	393.3	11.0	**0.7727**	0.091	11.8	mg/L	38	Standard
Ca	43	1938.5	3.9	**122.4130**	4.002	3.3	mg/L	10	Standard
Fe	54	1213.7	6.6	**0.9123**	0.078	8.6	mg/L	179	Standard
Fe	57	1360.1	3.5	**3.6434**	0.167	4.6	mg/L	335	Standard
> **Sc-1**	45	59811.2	2.1				mg/L	61029	Standard
Cl	35	41831.0	3.4				ug/L	20195	Standard
Kr	83	1.7	91.7				ug/L	4	Standard
Br	81	8062.1	5.5				ug/L	1547	Standard
P	31	19340.7	4.7				ug/L	15286	Standard
S	34	2026.8	7.6				ug/L	1572	Standard
Sr	88	1283.4	13.4				ug/L	73	Standard
C	12	153.3	19.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	1258.4	10.3				mg/L	6	Standard
Ho-1	165	778.4	7.8				mg/L	10	Standard
Er	166	800.0	9.9				mg/L	13	Standard
I	127	76815.4	9.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		143.190	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.817	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.214
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.451
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606098603PS WG574572-01
Sample Date/Time: Wednesday, June 29, 2016 13:16:14
Number of Replicates: 3
Autosampler Position: 316
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	107768.6	1.4				ug/L	74699	Standard
	Be	9	63154.7	2.1	**49.7293**	0.735	1.5	ug/L	8	Standard
	Al	27	62883924.9	0.4	**296.6156**	4.197	1.4	ug/L	1493	Standard
	Sc	45	60669.6	1.7				ug/L	61029	Standard
	Ti	47	431.3	11.1	**1.0313**	0.120	11.7	ug/L	35	Standard
	V	51	423481.5	0.7	**56.0150**	0.782	1.4	ug/L	1435	Standard
	Cr	52	394353.4	1.0	**52.3183**	0.613	1.2	ug/L	7635	Standard
	Cr	53	48385.5	1.4	**52.1545**	1.086	2.1	ug/L	363	Standard
	Mn	55	12676353.0	0.9	**1825.0939**	28.984	1.6	ug/L	747	Standard
	Co	59	406698.1	0.5	**61.7025**	0.702	1.1	ug/L	234	Standard
	Ni	60	105609.8	0.7	**56.4229**	0.793	1.4	ug/L	215	Standard
	Cu	65	109624.8	0.4	**58.9403**	0.355	0.6	ug/L	104	Standard
	Zn	66	80974.1	1.0	**73.8592**	1.163	1.6	ug/L	363	Standard
>	Ge	72	493944.8	0.7				ug/L	495142	Standard
	As	75	62963.2	0.4	**56.4099**	0.584	1.0	ug/L	-50	Standard
	Se	82	6528.2	1.4	**59.4919**	1.250	2.1	ug/L	14	Standard
	Se-1	77	4208.9	2.0	**57.1456**	1.224	2.1	ug/L	42	Standard
>	Ga	71	341.7	3.7				mg/L	42	Standard
	Rb	85	9437.9	2.3				ug/L	17	Standard
	Y	89	453637.5	2.0				ug/L	417098	Standard
>	Rh	103	333.3	4.8				ug/L	13	Standard
	Mo	98	1406.8	1.9	**0.5023**	0.008	1.6	ug/L	11	Standard
	Ag	107	336751.7	1.1	**49.7241**	0.838	1.7	ug/L	68	Standard
	Cd	111	110645.7	0.7	**50.9305**	0.669	1.3	mg/L	2	Standard
	Cd	114	268194.0	0.5	**50.3333**	0.438	0.9	ug/L	12	Standard
>	In	115	610323.2	0.7				ug/L	587441	Standard
	Sn	118	1538.4	2.3	**0.1588**	0.006	3.5	ug/L	497	Standard
	Sb	123	241381.6	1.1	**49.7617**	0.807	1.6	ug/L	78	Standard
	Ba	135	126394.4	1.4	**59.4274**	1.193	2.0	ug/L	24	Standard
	Ce	140	44334.8	0.8				ug/L	25	Standard
>	Tb	159	999714.8	1.0				ug/L	939701	Standard
	Ho	165	786.7	10.3				ug/L	10	Standard
	Tl	203	445077.8	1.6	**52.3048**	0.918	1.8	ug/L	4	Standard
	Tl	205	409895.5	2.2	**55.5017**	1.265	2.3	ug/L	2	Standard
	Pb	206	293321.0	0.4	**53.1218**	0.228	0.4	ug/L	240	Standard
	Pb	207	252054.7	0.9	**51.3779**	0.617	1.2	ug/L	198	Standard
	Pb	208	1026149.4	0.5	**52.9396**	0.195	0.4	ug/L	883	Standard
	U	238	420484.7	1.6	**59.1737**	0.984	1.7	ug/L	3	Standard
>	Bi	209	540895.8	0.3				ug/L	523984	Standard

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Na	23	16.7	45.8	**192.4294**	85.849	44.6	mg/L	0	Standard
Mg	24	7256.7	2.5	**9.3609**	0.349	3.7	mg/L	37	Standard
K	39	406.7	8.6	**0.7894**	0.064	8.1	mg/L	38	Standard
Ca	43	1853.4	4.6	**115.2974**	6.640	5.8	mg/L	10	Standard
Fe	54	1091.3	5.4	**0.7921**	0.036	4.5	mg/L	179	Standard
Fe	57	1315.1	6.5	**3.4198**	0.224	6.6	mg/L	335	Standard
> **Sc-1**	45	60669.6	1.7				mg/L	61029	Standard
Cl	35	43150.7	2.4				ug/L	20195	Standard
Kr	83	2.3	49.5				ug/L	4	Standard
Br	81	7932.1	5.6				ug/L	1547	Standard
P	31	18981.9	3.1				ug/L	15286	Standard
S	34	1910.1	1.6				ug/L	1572	Standard
Sr	88	1396.7	9.1				ug/L	73	Standard
C	12	166.7	22.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	1221.7	7.2				mg/L	6	Standard
Ho-1	165	786.7	10.3				mg/L	10	Standard
Er	166	800.0	7.6				mg/L	13	Standard
I	127	76722.5	5.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		144.271	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.758	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.895
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.227
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606098603SDL WG574572-02
Sample Date/Time: Wednesday, June 29, 2016 13:19:25
Number of Replicates: 3
Autosampler Position: 317
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	109627.0	2.2				ug/L	74699	Standard
	Be	9	55.0	32.8	**0.0501**	0.014	27.0	ug/L	8	Standard
	Al	27	13052757.9	2.1	**60.5215**	1.604	2.7	ug/L	1493	Standard
	Sc	45	62358.1	1.0				ug/L	61029	Standard
	Ti	47	123.0	14.7	**0.1926**	0.050	25.7	ug/L	35	Standard
	V	51	2451.6	1.0	**0.1057**	0.008	7.9	ug/L	1435	Standard
	Cr	52	10290.8	1.8	**0.2648**	0.008	2.8	ug/L	7635	Standard
	Cr	53	588.3	10.7	**0.2610**	0.063	24.3	ug/L	363	Standard
	Mn	55	2629853.6	1.6	**350.4744**	10.232	2.9	ug/L	747	Standard
	Co	59	4233.3	3.1	**0.5577**	0.018	3.3	ug/L	234	Standard
	Ni	60	2886.6	1.8	**1.3071**	0.037	2.8	ug/L	215	Standard
	Cu	65	3859.5	1.6	**1.8207**	0.021	1.2	ug/L	104	Standard
	Zn	66	7087.3	1.2	**5.5680**	0.153	2.7	ug/L	363	Standard
>	**Ge**	72	533577.2	1.8				ug/L	495142	Standard
	As	75	314.5	3.2	**0.3203**	0.010	3.2	ug/L	-50	Standard
	Se	82	28.2	16.0	**0.1004**	0.037	37.2	ug/L	14	Standard
	Se-1	77	51.7	9.9	**0.0349**	0.075	214.8	ug/L	42	Standard
>	**Ga**	71	153.3	21.0				mg/L	42	Standard
	Rb	85	1916.8	2.5				ug/L	17	Standard
	Y	89	457911.1	1.7				ug/L	417098	Standard
>	**Rh**	103	73.3	17.2				ug/L	13	Standard
	Mo	98	334.8	7.8	**0.1120**	0.009	8.5	ug/L	11	Standard
	Ag	107	142.0	14.1	**0.0075**	0.003	37.0	ug/L	68	Standard
	Cd	111	78.8	16.1	**0.0274**	0.006	20.4	mg/L	2	Standard
	Cd	114	171.7	29.4	**0.0293**	0.009	31.0	ug/L	12	Standard
>	**In**	115	626915.6	0.6				ug/L	587441	Standard
	Sn	118	618.3	15.8	**0.0044**	0.015	338.7	ug/L	497	Standard
	Sb	123	2031.6	21.7	**0.4032**	0.086	21.3	ug/L	78	Standard
	Ba	135	5054.8	0.4	**2.2983**	0.024	1.0	ug/L	24	Standard
	Ce	140	9302.9	0.9				ug/L	25	Standard
>	**Tb**	159	1014481.9	2.3				ug/L	939701	Standard
	Ho	165	175.0	2.9				ug/L	10	Standard
	Tl	203	125.0	17.4	**0.0120**	0.002	18.4	ug/L	4	Standard
	Tl	205	85.0	15.6	**0.0110**	0.002	15.7	ug/L	2	Standard
	Pb	206	501.3	9.2	**0.0141**	0.008	53.2	ug/L	240	Standard
	Pb	207	392.0	5.3	**0.0051**	0.005	98.5	ug/L	198	Standard
	Pb	208	1534.0	5.0	**0.0003**	0.005	1457.8	ug/L	883	Standard
	U	238	6033.2	1.4	**0.7925**	0.020	2.5	ug/L	3	Standard
>	**Bi**	209	576425.9	1.5				ug/L	523984	Standard

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Na	23	3.3	173.2	**37.9583**	65.737	173.2	mg/L	0	Standard
Mg	24	1580.1	4.3	**1.9318**	0.105	5.4	mg/L	37	Standard
K	39	138.3	24.1	**0.1853**	0.073	39.3	mg/L	38	Standard
Ca	43	413.3	5.7	**23.0292**	1.446	6.3	mg/L	10	Standard
Fe	54	367.9	5.4	**0.1671**	0.019	11.4	mg/L	179	Standard
Fe	57	475.0	7.9	**0.5062**	0.132	26.1	mg/L	335	Standard
Sc-1	45	62358.1	1.0				mg/L	61029	Standard
Cl	35	34619.5	1.5				ug/L	20195	Standard
Kr	83	1.3	86.6				ug/L	4	Standard
Br	81	3197.0	3.6				ug/L	1547	Standard
P	31	18749.9	1.5				ug/L	15286	Standard
S	34	2010.1	3.0				ug/L	1572	Standard
Sr	88	305.0	20.5				ug/L	73	Standard
C	12	113.3	31.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	348.8	17.3				mg/L	6	Standard
Ho-1	165	175.0	2.9				mg/L	10	Standard
Er	166	163.3	52.8				mg/L	13	Standard
I	127	19115.4	2.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		146.759	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.762	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.720
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.008
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606098603SDL WG574572-02
Sample Date/Time: Wednesday, June 29, 2016 13:22:37
Number of Replicates: 3
Autosampler Position: 318
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	107882.7	0.8				ug/L	74699	Standard
	Be	9	30.0	44.1	**0.0312**	0.010	32.7	ug/L	8	Standard
	Al	27	2675117.5	0.8	**12.5917**	0.213	1.7	ug/L	1493	Standard
	Sc	45	65760.7	1.1				ug/L	61029	Standard
	Ti	47	48.3	10.6	**0.0072**	0.012	160.2	ug/L	35	Standard
	V	51	2266.6	5.1	**0.0781**	0.015	19.5	ug/L	1435	Standard
	Cr	52	10143.4	2.6	**0.2243**	0.020	8.9	ug/L	7635	Standard
	Cr	53	413.3	17.1	**0.0775**	0.065	83.8	ug/L	363	Standard
	Mn	55	539662.1	1.4	**70.5366**	0.569	0.8	ug/L	747	Standard
	Co	59	1015.0	2.6	**0.1030**	0.006	5.9	ug/L	234	Standard
	Ni	60	769.4	2.6	**0.2509**	0.010	4.1	ug/L	215	Standard
	Cu	65	948.0	4.2	**0.3607**	0.016	4.4	ug/L	104	Standard
	Zn	66	2642.9	1.7	**1.7518**	0.018	1.1	ug/L	363	Standard
>	**Ge**	72	543000.4	1.8				ug/L	495142	Standard
	As	75	12.5	225.4	**0.0698**	0.023	32.5	ug/L	-50	Standard
	Se	82	15.8	49.7	**-0.0063**	0.066	1051.8	ug/L	14	Standard
	Se-1	77	45.3	17.1	**-0.0563**	0.096	170.3	ug/L	42	Standard
>	**Ga**	71	85.0	15.6				mg/L	42	Standard
	Rb	85	428.3	11.2				ug/L	17	Standard
	Y	89	460200.9	1.8				ug/L	417098	Standard
>	**Rh**	103	35.0	24.7				ug/L	13	Standard
	Mo	98	83.6	11.1	**0.0226**	0.003	14.3	ug/L	11	Standard
	Ag	107	112.7	14.2	**0.0027**	0.002	80.0	ug/L	68	Standard
	Cd	111	20.9	22.0	**0.0011**	0.002	176.9	mg/L	2	Standard
	Cd	114	53.5	39.5	**0.0073**	0.004	50.6	ug/L	12	Standard
>	**In**	115	649578.1	0.2				ug/L	587441	Standard
	Sn	118	553.3	9.5	**-0.0090**	0.008	92.4	ug/L	497	Standard
	Sb	123	558.9	31.9	**0.1041**	0.035	33.4	ug/L	78	Standard
	Ba	135	1064.4	0.7	**0.4543**	0.003	0.7	ug/L	24	Standard
	Ce	140	1928.5	4.3				ug/L	25	Standard
>	**Tb**	159	1049822.6	1.3				ug/L	939701	Standard
	Ho	165	40.0	33.1				ug/L	10	Standard
	Tl	203	40.7	35.8	**0.0026**	0.002	59.7	ug/L	4	Standard
	Tl	205	45.0	38.5	**0.0057**	0.002	36.9	ug/L	2	Standard
	Pb	206	372.0	6.6	**-0.0102**	0.004	38.7	ug/L	240	Standard
	Pb	207	294.7	6.9	**-0.0156**	0.004	25.6	ug/L	198	Standard
	Pb	208	1159.4	2.3	**-0.0199**	0.001	7.3	ug/L	883	Standard
	U	238	1206.0	0.9	**0.1490**	0.002	1.2	ug/L	3	Standard
>	**Bi**	209	598311.7	0.5				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.6400**	30.545	173.2	mg/L	0	Standard
Mg	24	363.3	29.0	**0.3711**	0.131	35.3	mg/L	37	Standard
K	39	63.3	27.7	**0.0157**	0.035	226.7	mg/L	38	Standard
Ca	43	110.0	12.0	**3.9202**	0.707	18.0	mg/L	10	Standard
Fe	54	190.5	10.6	**0.0117**	0.017	142.3	mg/L	179	Standard
Fe	57	268.3	12.0	**-0.2271**	0.110	48.6	mg/L	335	Standard
> **Sc-1**	45	65760.7	1.1				mg/L	61029	Standard
Cl	35	34122.4	1.0				ug/L	20195	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	2286.8	8.5				ug/L	1547	Standard
P	31	19529.2	1.3				ug/L	15286	Standard
S	34	2301.8	4.6				ug/L	1572	Standard
Sr	88	130.0	32.9				ug/L	73	Standard
C	12	83.3	6.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	60.8	35.4				mg/L	6	Standard
Ho-1	165	40.0	33.1				mg/L	10	Standard
Er	166	53.3	28.6				mg/L	13	Standard
I	127	5874.5	8.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		144.424	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.666	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.578
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		114.185
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 13:25:50
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	96295.4	4.3				ug/L	74699	Standard
	Be	9	56739.5	4.7	**50.0144**	1.617	3.2	ug/L	8	Standard
	Al	27	8198811.7	1.9	**43.2979**	1.271	2.9	ug/L	1493	Standard
	Sc	45	60020.3	2.0				ug/L	61029	Standard
	Ti	47	38068.4	0.4	**97.0435**	0.523	0.5	ug/L	35	Standard
	V	51	407671.2	1.0	**52.0137**	0.145	0.3	ug/L	1435	Standard
	Cr	52	382711.8	0.9	**48.9253**	0.135	0.3	ug/L	7635	Standard
	Cr	53	47653.2	2.5	**49.5394**	1.027	2.1	ug/L	363	Standard
	Mn	55	366963.7	3.6	**50.8236**	1.362	2.7	ug/L	747	Standard
	Co	59	380449.1	2.9	**55.6813**	1.097	2.0	ug/L	234	Standard
	Ni	60	94585.7	1.1	**48.7401**	0.435	0.9	ug/L	215	Standard
	Cu	65	94763.8	1.5	**49.1432**	0.553	1.1	ug/L	104	Standard
	Zn	66	56752.8	2.3	**49.7949**	0.707	1.4	ug/L	363	Standard
>	Ge	72	511914.0	0.9				ug/L	495142	Standard
	As	75	57985.2	1.9	**50.1285**	0.568	1.1	ug/L	-50	Standard
	Se	82	5989.4	2.5	**52.6418**	0.964	1.8	ug/L	14	Standard
	Se-1	77	3921.2	2.5	**51.3010**	0.802	1.6	ug/L	42	Standard
>	Ga	71	220.0	19.4				mg/L	42	Standard
	Rb	85	765.0	2.0				ug/L	17	Standard
	Y	89	446724.4	3.3				ug/L	417098	Standard
>	Rh	103	20.0	43.3				ug/L	13	Standard
	Mo	98	280984.3	2.1	**102.0498**	2.098	2.1	ug/L	11	Standard
	Ag	107	335763.8	0.9	**49.8677**	1.010	2.0	ug/L	68	Standard
	Cd	111	105816.2	1.8	**48.9835**	0.569	1.2	mg/L	2	Standard
	Cd	114	257781.1	1.6	**48.6563**	0.589	1.2	ug/L	12	Standard
>	In	115	606960.1	2.8				ug/L	587441	Standard
	Sn	118	295693.2	2.0	**48.9061**	0.749	1.5	ug/L	497	Standard
	Sb	123	236523.1	0.9	**49.0438**	0.901	1.8	ug/L	78	Standard
	Ba	135	99992.2	1.5	**47.2781**	0.609	1.3	ug/L	24	Standard
	Ce	140	91.7	6.3				ug/L	25	Standard
>	Tb	159	985978.7	1.6				ug/L	939701	Standard
	Ho	165	11.7	89.2				ug/L	10	Standard
	Tl	203	433708.5	1.0	**49.3829**	0.257	0.5	ug/L	4	Standard
	Tl	205	391770.8	1.1	**51.3967**	0.163	0.3	ug/L	2	Standard
	Pb	206	284957.7	0.7	**50.0002**	0.477	1.0	ug/L	240	Standard
	Pb	207	255175.6	1.7	**50.3910**	0.211	0.4	ug/L	198	Standard
	Pb	208	1010912.5	1.9	**50.5251**	0.466	0.9	ug/L	883	Standard
	U	238	378758.8	0.6	**51.6451**	0.416	0.8	ug/L	3	Standard
>	Bi	209	558275.4	1.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4168.9	2.3	**5.4065**	0.021	0.4	mg/L	37	Standard
K	39	1983.5	2.5	**4.3432**	0.044	1.0	mg/L	38	Standard
Ca	43	106.7	26.7	**4.3258**	1.829	42.3	mg/L	10	Standard
Fe	54	6165.0	5.0	**5.1771**	0.265	5.1	mg/L	179	Standard
Fe	57	1720.1	9.9	**4.8644**	0.466	9.6	mg/L	335	Standard
> **Sc-1**	45	60020.3	2.0				mg/L	61029	Standard
Cl	35	28213.0	5.7				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	1853.5	23.0				ug/L	1547	Standard
P	31	20223.5	3.5				ug/L	15286	Standard
S	34	2575.2	6.1				ug/L	1572	Standard
Sr	88	78.3	26.6				ug/L	73	Standard
C	12	100.0	34.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	9.2	116.5				mg/L	6	Standard
Ho-1	165	11.7	89.2				mg/L	10	Standard
Er	166	16.7	91.7				mg/L	13	Standard
I	127	2436.9	25.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	100.029		
Al	27	86.596		
Sc	45			
Ti	47	97.044		
V	51	104.027		
Cr	52	97.851		
Cr	53			
Mn	55	101.647		
Co	59	111.363		
Ni	60	97.480		
Cu	65	98.286		
Zn	66	99.590		
> Ge	72		103.387	
As	75	100.257		
Se	82	105.284		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	102.050		
Ag	107	99.735		
Cd	111	97.967		
Cd	114			
In	115		103.323	
Sn	118	97.812		
Sb	123	98.088		
Ba	135	94.556		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.766		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.050		
U	238	103.290		
Bi	209		106.544	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	
QC Std 6	Co	59	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 13:29:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	94691.7	1.8				ug/L	74699	Standard
	Be	9	76.7	106.2	**0.0755**	0.071	94.2	ug/L	8	Standard
	Al	27	36843.1	136.1	**0.1814**	0.263	145.0	ug/L	1493	Standard
	Sc	45	60632.8	2.3				ug/L	61029	Standard
	Ti	47	43.0	36.1	**-0.0010**	0.038	3637.8	ug/L	35	Standard
	V	51	1519.7	11.1	**-0.0035**	0.019	532.9	ug/L	1435	Standard
	Cr	52	7045.6	5.2	**-0.1157**	0.044	37.8	ug/L	7635	Standard
	Cr	53	391.7	11.6	**0.0747**	0.044	59.2	ug/L	363	Standard
	Mn	55	7226.9	125.7	**0.8342**	1.228	147.2	ug/L	747	Standard
	Co	59	517.7	90.4	**0.0371**	0.066	179.1	ug/L	234	Standard
	Ni	60	246.3	39.3	**0.0014**	0.048	3317.1	ug/L	215	Standard
	Cu	65	191.7	56.6	**-0.0057**	0.054	949.5	ug/L	104	Standard
	Zn	66	417.3	10.8	**-0.0898**	0.036	40.1	ug/L	363	Standard
>	**Ge**	72	518398.0	1.4				ug/L	495142	Standard
	As	75	-30.5	76.0	**0.0334**	0.020	59.9	ug/L	-50	Standard
	Se	82	13.4	12.4	**-0.0212**	0.016	76.0	ug/L	14	Standard
	Se-1	77	53.3	15.9	**0.0746**	0.106	141.7	ug/L	42	Standard
>	**Ga**	71	155.0	18.0				mg/L	42	Standard
	Rb	85	21.7	93.3				ug/L	17	Standard
	Y	89	436745.4	0.7				ug/L	417098	Standard
>	**Rh**	103	15.0	33.3				ug/L	13	Standard
	Mo	98	315.2	32.1	**0.1069**	0.036	33.6	ug/L	11	Standard
	Ag	107	222.7	75.6	**0.0196**	0.025	125.0	ug/L	68	Standard
	Cd	111	57.8	114.5	**0.0184**	0.030	163.6	mg/L	2	Standard
	Cd	114	159.0	130.1	**0.0274**	0.038	140.1	ug/L	12	Standard
>	**In**	115	616374.3	0.2				ug/L	587441	Standard
	Sn	118	845.0	17.1	**0.0432**	0.024	55.2	ug/L	497	Standard
	Sb	123	593.6	13.2	**0.1170**	0.016	13.9	ug/L	78	Standard
	Ba	135	102.7	102.4	**0.0317**	0.049	153.8	ug/L	24	Standard
	Ce	140	58.3	55.8				ug/L	25	Standard
>	**Tb**	159	995160.6	1.6				ug/L	939701	Standard
	Ho	165	15.0	100.0				ug/L	10	Standard
	Tl	203	219.0	114.2	**0.0226**	0.028	122.3	ug/L	4	Standard
	Tl	205	381.7	141.6	**0.0491**	0.069	140.6	ug/L	2	Standard
	Pb	206	388.0	38.6	**-0.0042**	0.025	597.1	ug/L	240	Standard
	Pb	207	336.0	35.9	**-0.0047**	0.023	485.4	ug/L	198	Standard
	Pb	208	2012.1	79.6	**0.0246**	0.078	315.7	ug/L	883	Standard
	U	238	395.3	145.1	**0.0482**	0.076	157.9	ug/L	3	Standard
>	**Bi**	209	567355.9	1.2				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	58.3	34.6	**0.0111**	0.028	248.5	mg/L	37	Standard
K	39	40.0	12.5	**-0.0251**	0.012	46.0	mg/L	38	Standard
Ca	43	31.7	9.1	**-0.5078**	0.213	41.9	mg/L	10	Standard
Fe	54	155.5	6.6	**-0.0056**	0.009	155.5	mg/L	179	Standard
Fe	57	230.0	7.8	**-0.2862**	0.078	27.3	mg/L	335	Standard
> **Sc-1**	45	60632.8	2.3				mg/L	61029	Standard
Cl	35	27178.4	0.6				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	1736.8	2.2				ug/L	1547	Standard
P	31	19502.5	1.8				ug/L	15286	Standard
S	34	2301.8	3.7				ug/L	1572	Standard
Sr	88	75.0	26.7				ug/L	73	Standard
C	12	86.7	17.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	12.7	93.2				mg/L	6	Standard
Ho-1	165	15.0	100.0				mg/L	10	Standard
Er	166	13.3	86.6				mg/L	13	Standard
I	127	1935.1	25.0				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		104.697	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.925
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.277
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Mn	55	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606098605
Sample Date/Time: Wednesday, June 29, 2016 13:32:14
Number of Replicates: 3
Autosampler Position: 319
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	93251.1	1.7				ug/L	74699	Standard
	Be	9	326.7	10.4	**0.3052**	0.035	11.6	ug/L	8	Standard
	Al	27	19740200.2	0.7	**107.5996**	1.185	1.1	ug/L	1493	Standard
	Sc	45	60365.1	2.3				ug/L	61029	Standard
	Ti	47	450.3	3.0	**1.0603**	0.030	2.8	ug/L	35	Standard
	V	51	4644.9	8.0	**0.4097**	0.047	11.5	ug/L	1435	Standard
	Cr	52	12104.2	0.3	**0.5838**	0.010	1.7	ug/L	7635	Standard
	Cr	53	928.4	3.1	**0.6586**	0.026	3.9	ug/L	363	Standard
	Mn	55	98559.3	4.8	**13.7841**	0.650	4.7	ug/L	747	Standard
	Co	59	3296.0	4.6	**0.4539**	0.021	4.7	ug/L	234	Standard
	Ni	60	3163.0	1.8	**1.5389**	0.038	2.4	ug/L	215	Standard
	Cu	65	32310.7	0.8	**16.9827**	0.169	1.0	ug/L	104	Standard
	Zn	66	47105.4	0.5	**41.9893**	0.365	0.9	ug/L	363	Standard
>	**Ge**	72	503086.3	0.5				ug/L	495142	Standard
	As	75	294.8	15.7	**0.3186**	0.040	12.5	ug/L	-50	Standard
	Se	82	52.3	21.7	**0.3309**	0.101	30.6	ug/L	14	Standard
	Se-1	77	70.7	11.4	**0.3303**	0.114	34.4	ug/L	42	Standard
>	**Ga**	71	295.0	9.0				mg/L	42	Standard
	Rb	85	9109.4	3.7				ug/L	17	Standard
	Y	89	448266.6	2.2				ug/L	417098	Standard
>	**Rh**	103	83.3	28.4				ug/L	13	Standard
	Mo	98	1843.0	5.2	**0.6500**	0.034	5.3	ug/L	11	Standard
	Ag	107	226.3	74.5	**0.0200**	0.024	121.9	ug/L	68	Standard
	Cd	111	104.1	84.7	**0.0392**	0.040	101.3	mg/L	2	Standard
	Cd	114	254.7	74.3	**0.0449**	0.035	77.3	ug/L	12	Standard
>	**In**	115	619535.9	1.6				ug/L	587441	Standard
	Sn	118	1750.1	13.2	**0.1895**	0.038	20.1	ug/L	497	Standard
	Sb	123	790.9	17.9	**0.1564**	0.028	18.0	ug/L	78	Standard
	Ba	135	72683.9	1.3	**33.6664**	0.969	2.9	ug/L	24	Standard
	Ce	140	5139.2	3.4				ug/L	25	Standard
>	**Tb**	159	985815.7	2.2				ug/L	939701	Standard
	Ho	165	223.3	9.3				ug/L	10	Standard
	Tl	203	317.0	96.7	**0.0353**	0.035	100.6	ug/L	4	Standard
	Tl	205	193.3	47.9	**0.0263**	0.012	46.4	ug/L	2	Standard
	Pb	206	1382.4	8.3	**0.1795**	0.018	10.0	ug/L	240	Standard
	Pb	207	1152.7	10.0	**0.1653**	0.022	13.1	ug/L	198	Standard
	Pb	208	4722.3	7.7	**0.1699**	0.018	10.3	ug/L	883	Standard
	U	238	9861.9	3.5	**1.3841**	0.043	3.1	ug/L	3	Standard
>	**Bi**	209	540670.7	1.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	6986.6	1.5	**9.0573**	0.310	3.4	mg/L	37	Standard
K	39	308.3	17.9	**0.5733**	0.109	19.0	mg/L	38	Standard
Ca	43	606.7	4.1	**36.2577**	2.485	6.9	mg/L	10	Standard
Fe	54	348.6	15.4	**0.1605**	0.045	28.3	mg/L	179	Standard
Fe	57	585.0	8.4	**0.9378**	0.194	20.7	mg/L	335	Standard
> **Sc-1**	45	60365.1	2.3				mg/L	61029	Standard
Cl	35	31561.5	3.4				ug/L	20195	Standard
Kr	83	0.7	173.2				ug/L	4	Standard
Br	81	4964.2	11.3				ug/L	1547	Standard
P	31	20053.3	1.8				ug/L	15286	Standard
S	34	2155.2	4.8				ug/L	1572	Standard
Sr	88	343.3	18.3				ug/L	73	Standard
C	12	163.3	34.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	294.3	16.7				mg/L	6	Standard
Ho-1	165	223.3	9.3				mg/L	10	Standard
Er	166	120.0	16.7				mg/L	13	Standard
I	127	9371.2	3.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		124.836	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.604	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	105.463
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	103.184
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606098607
Sample Date/Time: Wednesday, June 29, 2016 13:35:26
Number of Replicates: 3
Autosampler Position: 320
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	96566.8	1.9				ug/L	74699	Standard
	Be	9	85.0	29.4	**0.0821**	0.021	25.7	ug/L	8	Standard
	Al	27	20333697.9	3.0	**107.0230**	2.931	2.7	ug/L	1493	Standard
	Sc	45	62230.9	2.2				ug/L	61029	Standard
	Ti	47	287.7	7.2	**0.6119**	0.056	9.2	ug/L	35	Standard
	V	51	3941.3	2.6	**0.3001**	0.017	5.7	ug/L	1435	Standard
	Cr	52	11512.0	2.6	**0.4518**	0.053	11.8	ug/L	7635	Standard
	Cr	53	838.4	4.6	**0.5317**	0.044	8.4	ug/L	363	Standard
	Mn	55	502202.8	0.8	**68.3542**	0.721	1.1	ug/L	747	Standard
	Co	59	4570.7	1.4	**0.6201**	0.010	1.6	ug/L	234	Standard
	Ni	60	3293.0	0.7	**1.5464**	0.014	0.9	ug/L	215	Standard
	Cu	65	6694.1	1.0	**3.3123**	0.070	2.1	ug/L	104	Standard
	Zn	66	11579.4	0.2	**9.6129**	0.092	1.0	ug/L	363	Standard
>	**Ge**	72	521399.1	1.0				ug/L	495142	Standard
	As	75	65.2	31.2	**0.1148**	0.017	14.9	ug/L	-50	Standard
	Se	82	28.9	16.0	**0.1117**	0.041	36.5	ug/L	14	Standard
	Se-1	77	63.7	8.1	**0.2056**	0.068	33.2	ug/L	42	Standard
>	**Ga**	71	136.7	35.5				mg/L	42	Standard
	Rb	85	5054.2	2.4				ug/L	17	Standard
	Y	89	452894.0	2.8				ug/L	417098	Standard
>	**Rh**	103	165.0	28.9				ug/L	13	Standard
	Mo	98	1211.0	1.7	**0.4303**	0.008	1.9	ug/L	11	Standard
	Ag	107	106.3	11.0	**0.0028**	0.002	64.6	ug/L	68	Standard
	Cd	111	72.3	5.5	**0.0253**	0.002	7.2	mg/L	2	Standard
	Cd	114	189.4	18.5	**0.0333**	0.006	19.3	ug/L	12	Standard
>	**In**	115	612132.4	0.4				ug/L	587441	Standard
	Sn	118	1080.0	6.7	**0.0827**	0.012	15.0	ug/L	497	Standard
	Sb	123	567.1	13.2	**0.1124**	0.015	13.5	ug/L	78	Standard
	Ba	135	35457.1	0.1	**16.6089**	0.050	0.3	ug/L	24	Standard
	Ce	140	1880.1	4.7				ug/L	25	Standard
>	**Tb**	159	996852.4	0.7				ug/L	939701	Standard
	Ho	165	58.3	17.8				ug/L	10	Standard
	Tl	203	60.0	16.9	**0.0051**	0.001	23.4	ug/L	4	Standard
	Tl	205	60.0	16.7	**0.0081**	0.001	15.8	ug/L	2	Standard
	Pb	206	636.0	0.7	**0.0415**	0.001	3.4	ug/L	240	Standard
	Pb	207	529.0	3.2	**0.0355**	0.003	9.7	ug/L	198	Standard
	Pb	208	2291.4	2.0	**0.0416**	0.003	7.7	ug/L	883	Standard
	U	238	20180.8	2.1	**2.7702**	0.079	2.9	ug/L	3	Standard
>	**Bi**	209	553749.9	0.8				ug/L	523984	Standard

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Na	23	5.0	100.0	**57.0696**	57.922	101.5	mg/L	0	Standard
Mg	24	5551.0	3.6	**6.9630**	0.244	3.5	mg/L	37	Standard
K	39	316.7	11.2	**0.5727**	0.081	14.1	mg/L	38	Standard
Ca	43	636.7	7.9	**36.9594**	3.698	10.0	mg/L	10	Standard
Fe	54	176.9	14.5	**0.0085**	0.018	212.8	mg/L	179	Standard
Fe	57	531.7	3.6	**0.6989**	0.084	12.0	mg/L	335	Standard
> **Sc-1**	45	62230.9	2.2				mg/L	61029	Standard
Cl	35	31386.5	1.7				ug/L	20195	Standard
Kr	83	2.3	89.2				ug/L	4	Standard
Br	81	3093.6	2.6				ug/L	1547	Standard
P	31	20912.8	5.9				ug/L	15286	Standard
S	34	2228.5	4.5				ug/L	1572	Standard
Sr	88	703.3	5.1				ug/L	73	Standard
C	12	126.7	40.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	102.2	30.1				mg/L	6	Standard
Ho-1	165	58.3	17.8				mg/L	10	Standard
Er	166	93.3	6.2				mg/L	13	Standard
I	127	29892.9	5.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.275	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.303	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.203
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.681
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606098609
Sample Date/Time: Wednesday, June 29, 2016 13:38:37
Number of Replicates: 3
Autosampler Position: 321
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	96550.0	0.2				ug/L	74699	Standard
	Be	9	53.3	14.3	**0.0545**	0.007	12.5	ug/L	8	Standard
	Al	27	22878376.4	1.6	**120.4307**	1.945	1.6	ug/L	1493	Standard
	Sc	45	62031.7	0.8				ug/L	61029	Standard
	Ti	47	1850.4	1.6	**4.6226**	0.192	4.2	ug/L	35	Standard
	V	51	5461.8	0.6	**0.5052**	0.022	4.3	ug/L	1435	Standard
	Cr	52	13396.9	1.2	**0.7280**	0.058	8.0	ug/L	7635	Standard
	Cr	53	1881.8	4.3	**1.6444**	0.138	8.4	ug/L	363	Standard
	Mn	55	79733.3	1.7	**10.9451**	0.135	1.2	ug/L	747	Standard
	Co	59	2496.2	2.4	**0.3289**	0.007	2.0	ug/L	234	Standard
	Ni	60	4821.8	0.8	**2.3714**	0.068	2.9	ug/L	215	Standard
	Cu	65	4208.3	2.7	**2.0873**	0.088	4.2	ug/L	104	Standard
	Zn	66	20900.1	0.5	**18.0858**	0.567	3.1	ug/L	363	Standard
>	**Ge**	72	511251.4	2.6				ug/L	495142	Standard
	As	75	201.6	14.3	**0.2338**	0.023	9.7	ug/L	-50	Standard
	Se	82	54.1	5.4	**0.3394**	0.016	4.7	ug/L	14	Standard
	Se-1	77	103.0	11.2	**0.7418**	0.124	16.8	ug/L	42	Standard
>	**Ga**	71	510.0	8.0				mg/L	42	Standard
	Rb	85	13392.6	2.9				ug/L	17	Standard
	Y	89	437578.5	1.9				ug/L	417098	Standard
>	**Rh**	103	115.0	21.7				ug/L	13	Standard
	Mo	98	379.6	2.6	**0.1321**	0.004	2.9	ug/L	11	Standard
	Ag	107	107.7	0.5	**0.0031**	0.000	8.0	ug/L	68	Standard
	Cd	111	160.7	1.3	**0.0664**	0.001	1.0	mg/L	2	Standard
	Cd	114	395.9	2.3	**0.0726**	0.002	3.0	ug/L	12	Standard
>	**In**	115	607119.7	1.0				ug/L	587441	Standard
	Sn	118	1270.1	2.5	**0.1157**	0.007	5.8	ug/L	497	Standard
	Sb	123	941.4	6.3	**0.1909**	0.012	6.2	ug/L	78	Standard
	Ba	135	18081.1	0.3	**8.5321**	0.064	0.8	ug/L	24	Standard
	Ce	140	9564.7	2.3				ug/L	25	Standard
>	**Tb**	159	994932.9	1.3				ug/L	939701	Standard
	Ho	165	368.3	5.1				ug/L	10	Standard
	Tl	203	147.3	4.5	**0.0153**	0.001	4.3	ug/L	4	Standard
	Tl	205	150.0	15.3	**0.0202**	0.003	16.2	ug/L	2	Standard
	Pb	206	1807.1	1.2	**0.2512**	0.001	0.3	ug/L	240	Standard
	Pb	207	1489.4	1.7	**0.2291**	0.005	2.2	ug/L	198	Standard
	Pb	208	6035.1	2.4	**0.2326**	0.004	1.7	ug/L	883	Standard
	U	238	2872.6	2.3	**0.3933**	0.005	1.2	ug/L	3	Standard
>	**Bi**	209	549776.1	1.1				ug/L	523984	Standard

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Na	23	6.7	114.6	**75.5001**	86.744	114.9	mg/L	0	Standard
Mg	24	5847.8	3.3	**7.3629**	0.301	4.1	mg/L	37	Standard
K	39	155.0	19.6	**0.2229**	0.066	29.5	mg/L	38	Standard
Ca	43	803.4	3.4	**47.4095**	2.024	4.3	mg/L	10	Standard
Fe	54	459.0	5.6	**0.2447**	0.024	9.9	mg/L	179	Standard
Fe	57	691.7	11.1	**1.2400**	0.273	22.0	mg/L	335	Standard
> **Sc-1**	45	62031.7	0.8				mg/L	61029	Standard
Cl	35	35055.2	1.5				ug/L	20195	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	8335.6	0.3				ug/L	1547	Standard
P	31	19207.2	4.0				ug/L	15286	Standard
S	34	2091.8	7.3				ug/L	1572	Standard
Sr	88	440.0	15.9				ug/L	73	Standard
C	12	146.7	7.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	580.9	19.4				mg/L	6	Standard
Ho-1	165	368.3	5.1				mg/L	10	Standard
Er	166	330.0	13.9				mg/L	13	Standard
I	127	13649.5	1.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.252	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.253	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.350
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	104.922
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606098609
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Method 6020 - Summary Report

Sample ID: L1606098611
Sample Date/Time: Wednesday, June 29, 2016 13:41:50
Number of Replicates: 3
Autosampler Position: 322
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	94928.2	1.7				ug/L	74699	Standard
	Be	9	611.7	2.1	**0.5543**	0.002	0.4	ug/L	8	Standard
	Al	27	35531075.2	1.8	**190.3104**	6.477	3.4	ug/L	1493	Standard
	Sc	45	58926.0	1.1				ug/L	61029	Standard
	Ti	47	1221.7	3.3	**3.0767**	0.071	2.3	ug/L	35	Standard
	V	51	7317.6	1.4	**0.7622**	0.017	2.2	ug/L	1435	Standard
	Cr	52	16086.9	1.7	**1.1219**	0.012	1.1	ug/L	7635	Standard
	Cr	53	9996.6	2.0	**10.3612**	0.096	0.9	ug/L	363	Standard
	Mn	55	583301.8	0.5	**82.6724**	0.812	1.0	ug/L	747	Standard
	Co	59	14960.7	0.8	**2.2024**	0.031	1.4	ug/L	234	Standard
	Ni	60	6882.6	4.3	**3.5089**	0.114	3.2	ug/L	215	Standard
	Cu	65	67223.1	1.5	**35.5977**	0.129	0.4	ug/L	104	Standard
	Zn	66	37202.6	1.0	**33.2122**	0.242	0.7	ug/L	363	Standard
>	**Ge**	72	500908.0	1.1				ug/L	495142	Standard
	As	75	1307.8	5.6	**1.2134**	0.054	4.4	ug/L	-50	Standard
	Se	82	362.7	2.0	**3.1282**	0.043	1.4	ug/L	14	Standard
	Se-1	77	555.0	5.1	**6.8873**	0.307	4.5	ug/L	42	Standard
>	**Ga**	71	435.0	11.9				mg/L	42	Standard
	Rb	85	18344.4	2.4				ug/L	17	Standard
	Y	89	436166.7	1.7				ug/L	417098	Standard
>	**Rh**	103	445.0	7.4				ug/L	13	Standard
	Mo	98	3054.9	0.8	**1.1522**	0.023	2.0	ug/L	11	Standard
	Ag	107	121.7	12.3	**0.0060**	0.002	41.3	ug/L	68	Standard
	Cd	111	41.7	14.4	**0.0123**	0.003	24.8	mg/L	2	Standard
	Cd	114	142.6	14.6	**0.0260**	0.004	14.4	ug/L	12	Standard
>	**In**	115	581588.5	1.2				ug/L	587441	Standard
	Sn	118	2201.8	2.3	**0.2861**	0.011	3.9	ug/L	497	Standard
	Sb	123	1347.5	5.7	**0.2874**	0.019	6.6	ug/L	78	Standard
	Ba	135	63997.2	1.5	**31.5730**	0.849	2.7	ug/L	24	Standard
	Ce	140	22939.0	3.1				ug/L	25	Standard
>	**Tb**	159	946929.2	0.6				ug/L	939701	Standard
	Ho	165	348.3	12.2				ug/L	10	Standard
	Tl	203	270.7	7.5	**0.0312**	0.002	6.9	ug/L	4	Standard
	Tl	205	231.7	2.5	**0.0327**	0.001	2.0	ug/L	2	Standard
	Pb	206	3400.0	1.8	**0.5672**	0.008	1.4	ug/L	240	Standard
	Pb	207	2794.6	0.7	**0.5207**	0.008	1.5	ug/L	198	Standard
	Pb	208	11397.0	1.2	**0.5356**	0.008	1.6	ug/L	883	Standard
	U	238	7265.4	1.1	**1.0543**	0.007	0.7	ug/L	3	Standard
>	**Bi**	209	522379.2	0.9				ug/L	523984	Standard

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Na	23	10.0	50.0	**119.8009**	60.997	50.9	mg/L	0	Standard
Mg	24	10421.9	2.0	**13.8711**	0.425	3.1	mg/L	37	Standard
K	39	453.3	5.1	**0.9237**	0.053	5.7	mg/L	38	Standard
Ca	43	1046.7	6.1	**65.9862**	4.937	7.5	mg/L	10	Standard
Fe	54	728.6	2.4	**0.5015**	0.016	3.2	mg/L	179	Standard
Fe	57	860.0	12.2	**1.9559**	0.399	20.4	mg/L	335	Standard
> **Sc-1**	45	58926.0	1.1				mg/L	61029	Standard
Cl	35	32129.4	1.2				ug/L	20195	Standard
Kr	83	1.0	0.0				ug/L	4	Standard
Br	81	75514.4	2.1				ug/L	1547	Standard
P	31	20090.0	4.4				ug/L	15286	Standard
S	34	2098.5	7.9				ug/L	1572	Standard
Sr	88	1583.4	4.7				ug/L	73	Standard
C	12	130.0	7.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	561.0	7.3				mg/L	6	Standard
Ho-1	165	348.3	12.2				mg/L	10	Standard
Er	166	256.7	6.0				mg/L	13	Standard
I	127	84570.2	9.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		127.081	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		101.164	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.004
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.694
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606098613
Sample Date/Time: Wednesday, June 29, 2016 13:45:02
Number of Replicates: 3
Autosampler Position: 323
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	101811.1	2.5				ug/L	74699	Standard
	Be	9	780.0	6.8	**0.6573**	0.030	4.5	ug/L	8	Standard
	Al	27	69460342.3	2.9	**346.7492**	1.873	0.5	ug/L	1493	Standard
	Sc	45	66852.2	1.8				ug/L	61029	Standard
	Ti	47	16395.2	2.4	**40.4139**	0.750	1.9	ug/L	35	Standard
	V	51	44929.4	0.9	**5.3782**	0.102	1.9	ug/L	1435	Standard
	Cr	52	38038.0	1.4	**3.7847**	0.045	1.2	ug/L	7635	Standard
	Cr	53	5357.6	0.6	**5.1013**	0.082	1.6	ug/L	363	Standard
	Mn	55	1205027.8	2.1	**162.0424**	5.610	3.5	ug/L	747	Standard
	Co	59	15267.0	2.9	**2.1291**	0.080	3.8	ug/L	234	Standard
	Ni	60	13379.6	2.6	**6.5697**	0.065	1.0	ug/L	215	Standard
	Cu	65	74766.0	1.3	**37.5331**	0.708	1.9	ug/L	104	Standard
	Zn	66	182914.0	1.7	**156.4214**	2.327	1.5	ug/L	363	Standard
>	**Ge**	72	528583.9	2.0				ug/L	495142	Standard
	As	75	2539.4	2.2	**2.1832**	0.013	0.6	ug/L	-50	Standard
	Se	82	108.7	5.6	**0.7905**	0.071	9.0	ug/L	14	Standard
	Se-1	77	150.3	9.2	**1.3050**	0.161	12.3	ug/L	42	Standard
>	**Ga**	71	5017.5	0.9				mg/L	42	Standard
	Rb	85	95755.1	2.6				ug/L	17	Standard
	Y	89	484844.4	1.2				ug/L	417098	Standard
>	**Rh**	103	451.7	17.2				ug/L	13	Standard
	Mo	98	2711.0	1.7	**0.9675**	0.010	1.1	ug/L	11	Standard
	Ag	107	547.0	8.0	**0.0673**	0.005	7.7	ug/L	68	Standard
	Cd	111	100.9	10.4	**0.0383**	0.005	14.0	mg/L	2	Standard
	Cd	114	263.2	6.1	**0.0470**	0.003	5.8	ug/L	12	Standard
>	**In**	115	613966.8	2.2				ug/L	587441	Standard
	Sn	118	1991.8	3.6	**0.2317**	0.015	6.6	ug/L	497	Standard
	Sb	123	971.4	9.0	**0.1947**	0.014	7.1	ug/L	78	Standard
	Ba	135	97214.2	0.8	**45.4386**	0.665	1.5	ug/L	24	Standard
	Ce	140	163522.7	0.6				ug/L	25	Standard
>	**Tb**	159	1011575.1	2.5				ug/L	939701	Standard
	Ho	165	4682.4	4.2				ug/L	10	Standard
	Tl	203	573.7	3.0	**0.0642**	0.003	4.6	ug/L	4	Standard
	Tl	205	525.0	7.2	**0.0698**	0.005	7.8	ug/L	2	Standard
	Pb	206	15938.7	1.8	**2.7562**	0.018	0.6	ug/L	240	Standard
	Pb	207	13053.6	0.6	**2.5367**	0.043	1.7	ug/L	198	Standard
	Pb	208	53401.0	1.9	**2.6245**	0.013	0.5	ug/L	883	Standard
	U	238	38818.0	2.5	**5.3391**	0.057	1.1	ug/L	3	Standard
>	**Bi**	209	553002.2	2.3				ug/L	523984	Standard

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Na	23	8.3	34.6	**88.0394**	31.556	35.8	mg/L	0	Standard
Mg	24	10193.4	4.3	**11.9448**	0.378	3.2	mg/L	37	Standard
K	39	798.4	2.0	**1.4974**	0.060	4.0	mg/L	38	Standard
Ca	43	1498.4	4.4	**83.9112**	4.508	5.4	mg/L	10	Standard
Fe	54	4251.3	3.0	**3.1535**	0.141	4.5	mg/L	179	Standard
Fe	57	1956.8	0.6	**4.9983**	0.081	1.6	mg/L	335	Standard
> **Sc-1**	45	66852.2	1.8				mg/L	61029	Standard
Cl	35	38555.7	1.3				ug/L	20195	Standard
Kr	83	2.7	78.1				ug/L	4	Standard
Br	81	16405.6	4.1				ug/L	1547	Standard
P	31	22243.0	1.3				ug/L	15286	Standard
S	34	1961.8	3.3				ug/L	1572	Standard
Sr	88	2096.8	8.9				ug/L	73	Standard
C	12	170.0	21.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	107.9				mg/L	3	Standard
Dy	164	7687.7	5.1				mg/L	6	Standard
Ho-1	165	4682.4	4.2				mg/L	10	Standard
Er	166	4197.2	1.1				mg/L	13	Standard
I	127	34873.4	0.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		136.295	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.754	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.515
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.538
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Zn 66 Upper, S, EEE	Zn	66

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Method 6020 - Summary Report

Sample ID: L1606098615
Sample Date/Time: Wednesday, June 29, 2016 13:48:13
Number of Replicates: 3
Autosampler Position: 324
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	104439.3	4.8				ug/L	74699	Standard
	Be	9	536.7	12.4	**0.4427**	0.037	8.4	ug/L	8	Standard
	Al	27	77862989.2	8.3	**378.5121**	14.291	3.8	ug/L	1493	Standard
	Sc	45	58982.2	11.3				ug/L	61029	Standard
	Ti	47	2461.2	11.7	**6.5990**	0.434	6.6	ug/L	35	Standard
	V	51	4945.2	8.0	**0.4817**	0.017	3.5	ug/L	1435	Standard
	Cr	52	13134.4	7.3	**0.8107**	0.065	8.0	ug/L	7635	Standard
	Cr	53	1810.1	8.3	**1.6977**	0.117	6.9	ug/L	363	Standard
	Mn	55	1145096.1	8.2	**169.9719**	4.564	2.7	ug/L	747	Standard
	Co	59	4019.2	11.3	**0.5913**	0.032	5.4	ug/L	234	Standard
	Ni	60	7177.1	13.9	**3.8310**	0.314	8.2	ug/L	215	Standard
	Cu	65	41403.8	8.7	**22.8999**	0.588	2.6	ug/L	104	Standard
	Zn	66	43831.2	7.7	**41.0562**	0.750	1.8	ug/L	363	Standard
>	**Ge**	72	478398.7	6.6				ug/L	495142	Standard
	As	75	638.2	9.5	**0.6495**	0.045	6.9	ug/L	-50	Standard
	Se	82	102.9	17.3	**0.8353**	0.172	20.6	ug/L	14	Standard
	Se-1	77	94.0	19.4	**0.7027**	0.185	26.4	ug/L	42	Standard
>	**Ga**	71	463.3	11.0				mg/L	42	Standard
	Rb	85	23055.9	7.7				ug/L	17	Standard
	Y	89	432649.5	7.6				ug/L	417098	Standard
>	**Rh**	103	1188.4	10.3				ug/L	13	Standard
	Mo	98	1350.9	6.9	**0.5044**	0.013	2.5	ug/L	11	Standard
	Ag	107	139.0	6.4	**0.0086**	0.002	19.3	ug/L	68	Standard
	Cd	111	44.6	6.8	**0.0137**	0.002	16.4	mg/L	2	Standard
	Cd	114	129.2	31.8	**0.0237**	0.010	43.4	ug/L	12	Standard
>	**In**	115	583863.5	7.1				ug/L	587441	Standard
	Sn	118	2513.5	5.1	**0.3387**	0.012	3.5	ug/L	497	Standard
	Sb	123	705.1	6.8	**0.1478**	0.002	1.6	ug/L	78	Standard
	Ba	135	26452.2	7.2	**12.9866**	0.138	1.1	ug/L	24	Standard
	Ce	140	27398.2	9.1				ug/L	25	Standard
>	**Tb**	159	958605.6	6.1				ug/L	939701	Standard
	Ho	165	645.0	4.0				ug/L	10	Standard
	Tl	203	134.0	9.5	**0.0146**	0.001	7.1	ug/L	4	Standard
	Tl	205	118.3	6.5	**0.0169**	0.002	13.2	ug/L	2	Standard
	Pb	206	2508.9	7.1	**0.4009**	0.002	0.4	ug/L	240	Standard
	Pb	207	1976.5	6.7	**0.3487**	0.007	2.0	ug/L	198	Standard
	Pb	208	8160.9	6.7	**0.3634**	0.004	1.2	ug/L	883	Standard
	U	238	17292.6	7.2	**2.5205**	0.006	0.2	ug/L	3	Standard
>	**Bi**	209	521380.1	7.3				ug/L	523984	Standard

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Na	23	15.0	57.7	**176.9361**	92.757	52.4	mg/L	0	Standard
Mg	24	28440.1	8.6	**38.0068**	1.323	3.5	mg/L	37	Standard
K	39	673.3	1.9	**1.4418**	0.213	14.8	mg/L	38	Standard
Ca	43	1596.8	5.0	**102.4296**	8.312	8.1	mg/L	10	Standard
Fe	54	1077.2	5.0	**0.8118**	0.070	8.7	mg/L	179	Standard
Fe	57	1203.4	10.1	**3.1714**	0.327	10.3	mg/L	335	Standard
> **Sc-1**	45	58982.2	11.3				mg/L	61029	Standard
Cl	35	41482.2	7.1				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	15648.1	7.3				ug/L	1547	Standard
P	31	20014.9	6.8				ug/L	15286	Standard
S	34	1913.5	9.5				ug/L	1572	Standard
Sr	88	5429.3	11.3				ug/L	73	Standard
C	12	203.3	27.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	3	Standard
Dy	164	1127.2	20.3				mg/L	6	Standard
Ho-1	165	645.0	4.0				mg/L	10	Standard
Er	166	546.7	6.4				mg/L	13	Standard
I	127	112969.0	6.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		139.814	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.618	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		99.391
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.503
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606098615
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Method 6020 - Summary Report

Sample ID: L1606098617
Sample Date/Time: Wednesday, June 29, 2016 13:51:25
Number of Replicates: 3
Autosampler Position: 325
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	95101.0	2.9				ug/L	74699	Standard
	Be	9	61.7	9.4	**0.0626**	0.004	5.8	ug/L	8	Standard
	Al	27	16761639.5	0.8	**89.6118**	1.975	2.2	ug/L	1493	Standard
	Sc	45	53828.8	0.6				ug/L	61029	Standard
	Ti	47	756.4	12.3	**2.0144**	0.253	12.6	ug/L	35	Standard
	V	51	3040.4	3.6	**0.2328**	0.013	5.5	ug/L	1435	Standard
	Cr	52	11892.0	0.9	**0.6842**	0.022	3.3	ug/L	7635	Standard
	Cr	53	1066.7	2.7	**0.8986**	0.036	4.1	ug/L	363	Standard
	Mn	55	57447.7	1.9	**8.6332**	0.089	1.0	ug/L	747	Standard
	Co	59	1276.7	2.2	**0.1685**	0.005	2.7	ug/L	234	Standard
	Ni	60	2114.5	5.4	**1.0778**	0.056	5.2	ug/L	215	Standard
	Cu	65	5578.0	1.5	**3.0859**	0.022	0.7	ug/L	104	Standard
	Zn	66	8715.8	0.2	**8.0380**	0.061	0.8	ug/L	363	Standard
>	**Ge**	72	465226.7	0.9				ug/L	495142	Standard
	As	75	386.7	5.7	**0.4269**	0.018	4.2	ug/L	-50	Standard
	Se	82	42.7	8.0	**0.2761**	0.036	13.2	ug/L	14	Standard
	Se-1	77	67.0	16.1	**0.3532**	0.150	42.5	ug/L	42	Standard
>	**Ga**	71	183.3	18.2				mg/L	42	Standard
	Rb	85	8882.6	2.7				ug/L	17	Standard
	Y	89	409246.0	2.8				ug/L	417098	Standard
>	**Rh**	103	295.0	13.6				ug/L	13	Standard
	Mo	98	1514.9	3.6	**0.5995**	0.027	4.5	ug/L	11	Standard
	Ag	107	86.3	3.5	**0.0012**	0.001	48.9	ug/L	68	Standard
	Cd	111	45.4	6.6	**0.0152**	0.002	11.0	mg/L	2	Standard
	Cd	114	119.3	31.2	**0.0227**	0.008	33.9	ug/L	12	Standard
>	**In**	115	551838.0	2.1				ug/L	587441	Standard
	Sn	118	896.7	9.3	**0.0688**	0.017	24.4	ug/L	497	Standard
	Sb	123	476.3	5.5	**0.1045**	0.008	7.8	ug/L	78	Standard
	Ba	135	51101.0	1.7	**26.5634**	0.162	0.6	ug/L	24	Standard
	Ce	140	4162.2	9.3				ug/L	25	Standard
>	**Tb**	159	892953.9	1.2				ug/L	939701	Standard
	Ho	165	111.7	20.2				ug/L	10	Standard
	Tl	203	71.0	9.8	**0.0072**	0.001	12.5	ug/L	4	Standard
	Tl	205	50.0	10.0	**0.0075**	0.001	10.0	ug/L	2	Standard
	Pb	206	834.7	3.9	**0.0918**	0.006	7.0	ug/L	240	Standard
	Pb	207	668.0	3.0	**0.0768**	0.004	5.0	ug/L	198	Standard
	Pb	208	2813.8	1.3	**0.0825**	0.002	2.7	ug/L	883	Standard
	U	238	2276.2	2.7	**0.3405**	0.008	2.4	ug/L	3	Standard
>	**Bi**	209	502274.9	0.4				ug/L	523984	Standard

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Na	23	1.7	173.2	**21.6273**	37.451	173.2	mg/L	0	Standard
Mg	24	11037.4	4.7	**16.0863**	0.689	4.3	mg/L	37	Standard
K	39	470.0	10.1	**1.0642**	0.126	11.9	mg/L	38	Standard
Ca	43	383.3	8.5	**24.9281**	2.309	9.3	mg/L	10	Standard
Fe	54	307.3	17.1	**0.1571**	0.051	32.4	mg/L	179	Standard
Fe	57	490.0	5.4	**0.8143**	0.108	13.3	mg/L	335	Standard
Sc-1	45	53828.8	0.6				mg/L	61029	Standard
Cl	35	29673.0	1.2				ug/L	20195	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	4564.0	9.2				ug/L	1547	Standard
P	31	17653.6	5.5				ug/L	15286	Standard
S	34	1876.8	5.1				ug/L	1572	Standard
Sr	88	1206.7	6.6				ug/L	73	Standard
C	12	186.7	18.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	3	Standard
Dy	164	173.0	22.9				mg/L	6	Standard
Ho-1	165	111.7	20.2				mg/L	10	Standard
Er	166	76.7	30.1				mg/L	13	Standard
I	127	8810.9	16.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		127.313	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.958	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	93.939
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	95.857
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606098619
Sample Date/Time: Wednesday, June 29, 2016 13:54:36
Number of Replicates: 3
Autosampler Position: 326
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	96013.3	1.6				ug/L	74699	Standard
	Be	9	225.0	13.5	**0.2062**	0.024	11.6	ug/L	8	Standard
	Al	27	3833929.3	1.4	**20.2847**	0.231	1.1	ug/L	1493	Standard
	Sc	45	56757.9	4.8				ug/L	61029	Standard
	Ti	47	657.0	3.0	**1.6551**	0.023	1.4	ug/L	35	Standard
	V	51	6468.0	2.1	**0.6763**	0.022	3.3	ug/L	1435	Standard
	Cr	52	12143.2	0.5	**0.6446**	0.043	6.7	ug/L	7635	Standard
	Cr	53	1533.4	8.3	**1.3595**	0.147	10.8	ug/L	363	Standard
	Mn	55	41319.9	1.1	**5.8936**	0.094	1.6	ug/L	747	Standard
	Co	59	1041.4	1.4	**0.1233**	0.005	3.8	ug/L	234	Standard
	Ni	60	1381.7	2.6	**0.6272**	0.001	0.2	ug/L	215	Standard
	Cu	65	22006.0	2.1	**11.9309**	0.100	0.8	ug/L	104	Standard
	Zn	66	12936.5	1.8	**11.6003**	0.101	0.9	ug/L	363	Standard
>	**Ge**	72	486496.6	2.4				ug/L	495142	Standard
	As	75	1429.3	4.7	**1.3578**	0.030	2.2	ug/L	-50	Standard
	Se	82	368.2	2.0	**3.2780**	0.104	3.2	ug/L	14	Standard
	Se-1	77	166.3	2.4	**1.6971**	0.106	6.2	ug/L	42	Standard
>	**Ga**	71	256.7	8.8				mg/L	42	Standard
	Rb	85	6678.1	5.5				ug/L	17	Standard
	Y	89	411615.1	2.5				ug/L	417098	Standard
>	**Rh**	103	45.0	40.1				ug/L	13	Standard
	Mo	98	2416.6	3.5	**0.9418**	0.055	5.8	ug/L	11	Standard
	Ag	107	106.0	14.6	**0.0040**	0.002	49.0	ug/L	68	Standard
	Cd	111	306.3	1.8	**0.1451**	0.002	1.4	mg/L	2	Standard
	Cd	114	658.6	9.3	**0.1319**	0.011	8.6	ug/L	12	Standard
>	**In**	115	562685.3	3.0				ug/L	587441	Standard
	Sn	118	1296.7	5.8	**0.1370**	0.009	6.5	ug/L	497	Standard
	Sb	123	1866.5	3.1	**0.4132**	0.007	1.8	ug/L	78	Standard
	Ba	135	49124.5	1.8	**25.0474**	0.324	1.3	ug/L	24	Standard
	Ce	140	4487.3	4.7				ug/L	25	Standard
>	**Tb**	159	930596.3	3.6				ug/L	939701	Standard
	Ho	165	203.3	14.2				ug/L	10	Standard
	Tl	203	145.3	15.0	**0.0163**	0.002	14.2	ug/L	4	Standard
	Tl	205	131.7	4.4	**0.0191**	0.000	1.8	ug/L	2	Standard
	Pb	206	1800.8	1.2	**0.2755**	0.007	2.5	ug/L	240	Standard
	Pb	207	1451.7	2.6	**0.2445**	0.002	0.8	ug/L	198	Standard
	Pb	208	5832.1	0.4	**0.2459**	0.009	3.7	ug/L	883	Standard
	U	238	34205.2	1.0	**5.1077**	0.154	3.0	ug/L	3	Standard
>	**Bi**	209	509656.0	3.1				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	92209.8	1.7	**128.1856**	8.381	6.5	mg/L	37	Standard
K	39	298.3	3.5	**0.5957**	0.033	5.6	mg/L	38	Standard
Ca	43	80.0	6.3	**2.9252**	0.551	18.8	mg/L	10	Standard
Fe	54	254.0	14.7	**0.0930**	0.030	32.4	mg/L	179	Standard
Fe	57	333.3	5.3	**0.1453**	0.073	50.0	mg/L	335	Standard
> **Sc-1**	45	56757.9	4.8				mg/L	61029	Standard
Cl	35	31152.7	1.5				ug/L	20195	Standard
Kr	83	0.7	86.6				ug/L	4	Standard
Br	81	53109.7	4.4				ug/L	1547	Standard
P	31	17403.3	2.0				ug/L	15286	Standard
S	34	1883.5	7.3				ug/L	1572	Standard
Sr	88	213.3	3.6				ug/L	73	Standard
C	12	256.7	12.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	288.4	16.8				mg/L	6	Standard
Ho-1	165	203.3	14.2				mg/L	10	Standard
Er	166	173.3	23.3				mg/L	13	Standard
I	127	470221.1	5.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.534	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.254	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	95.786
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	97.265
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606098625
Sample Date/Time: Wednesday, June 29, 2016 13:57:48
Number of Replicates: 3
Autosampler Position: 327
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	102613.0	0.8				ug/L	74699	Standard
	Be	9	78.3	9.8	**0.0724**	0.006	8.8	ug/L	8	Standard
	Al	27	33905192.3	1.5	**167.9500**	3.413	2.0	ug/L	1493	Standard
	Sc	45	63494.4	0.7				ug/L	61029	Standard
	Ti	47	6149.2	2.1	**15.7581**	0.447	2.8	ug/L	35	Standard
	V	51	12969.6	1.6	**1.4837**	0.027	1.8	ug/L	1435	Standard
	Cr	52	17892.2	0.6	**1.3372**	0.031	2.3	ug/L	7635	Standard
	Cr	53	3548.7	0.7	**3.4248**	0.009	0.3	ug/L	363	Standard
	Mn	55	3105877.1	1.7	**436.1197**	10.576	2.4	ug/L	747	Standard
	Co	59	6022.9	2.6	**0.8547**	0.030	3.5	ug/L	234	Standard
	Ni	60	6318.7	1.1	**3.1764**	0.053	1.7	ug/L	215	Standard
	Cu	65	5119.5	1.0	**2.5860**	0.011	0.4	ug/L	104	Standard
	Zn	66	19836.6	0.9	**17.3044**	0.276	1.6	ug/L	363	Standard
>	**Ge**	72	506357.7	0.8				ug/L	495142	Standard
	As	75	1090.3	6.9	**1.0117**	0.071	7.0	ug/L	-50	Standard
	Se	82	334.6	3.6	**2.8439**	0.125	4.4	ug/L	14	Standard
	Se-1	77	270.0	7.0	**2.9935**	0.272	9.1	ug/L	42	Standard
>	**Ga**	71	1363.4	8.0				mg/L	42	Standard
	Rb	85	42725.2	0.9				ug/L	17	Standard
	Y	89	453938.8	1.4				ug/L	417098	Standard
>	**Rh**	103	198.3	19.1				ug/L	13	Standard
	Mo	98	1348.4	1.8	**0.4789**	0.005	1.1	ug/L	11	Standard
	Ag	107	259.3	4.5	**0.0252**	0.002	7.6	ug/L	68	Standard
	Cd	111	351.0	2.3	**0.1529**	0.002	1.6	mg/L	2	Standard
	Cd	114	808.7	5.9	**0.1490**	0.010	6.6	ug/L	12	Standard
>	**In**	115	613191.6	0.9				ug/L	587441	Standard
	Sn	118	795.0	1.9	**0.0357**	0.003	9.4	ug/L	497	Standard
	Sb	123	319.9	2.9	**0.0614**	0.002	3.0	ug/L	78	Standard
	Ba	135	112678.5	1.7	**52.7237**	0.702	1.3	ug/L	24	Standard
	Ce	140	37260.8	2.0				ug/L	25	Standard
>	**Tb**	159	1001354.7	0.4				ug/L	939701	Standard
	Ho	165	1051.7	3.8				ug/L	10	Standard
	Tl	203	322.7	6.7	**0.0353**	0.003	7.6	ug/L	4	Standard
	Tl	205	283.3	17.7	**0.0376**	0.006	16.6	ug/L	2	Standard
	Pb	206	8100.8	1.1	**1.3649**	0.025	1.8	ug/L	240	Standard
	Pb	207	6526.4	1.1	**1.2323**	0.027	2.2	ug/L	198	Standard
	Pb	208	27115.2	0.7	**1.2953**	0.018	1.4	ug/L	883	Standard
	U	238	26591.0	2.4	**3.6542**	0.116	3.2	ug/L	3	Standard
>	**Bi**	209	553363.8	1.0				ug/L	523984	Standard

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Na	23	5.0	100.0	**55.1859**	55.233	100.1	mg/L	0	Standard
Mg	24	8027.1	0.4	**9.8947**	0.087	0.9	mg/L	37	Standard
K	39	523.3	14.3	**0.9970**	0.152	15.2	mg/L	38	Standard
Ca	43	861.7	11.2	**49.8050**	6.018	12.1	mg/L	10	Standard
Fe	54	1108.4	4.4	**0.7648**	0.035	4.5	mg/L	179	Standard
Fe	57	975.0	10.7	**2.1112**	0.341	16.2	mg/L	335	Standard
> **Sc-1**	45	63494.4	0.7				mg/L	61029	Standard
Cl	35	33805.7	1.3				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	35418.0	3.4				ug/L	1547	Standard
P	31	20113.3	1.1				ug/L	15286	Standard
S	34	2053.5	4.6				ug/L	1572	Standard
Sr	88	896.7	5.2				ug/L	73	Standard
C	12	130.0	35.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	1595.5	8.0				mg/L	6	Standard
Ho-1	165	1051.7	3.8				mg/L	10	Standard
Er	166	1000.0	4.0				mg/L	13	Standard
I	127	43091.5	8.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		137.369	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		102.265	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.384
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	105.607
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606098627
Sample Date/Time: Wednesday, June 29, 2016 14:00:59
Number of Replicates: 3
Autosampler Position: 328
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	98891.7	1.0				ug/L	74699	Standard
	Be	9	638.3	5.3	**0.5552**	0.024	4.3	ug/L	8	Standard
	Al	27	63228292.3	2.4	**324.9422**	4.583	1.4	ug/L	1493	Standard
	Sc	45	59185.4	3.1				ug/L	61029	Standard
	Ti	47	12099.8	1.5	**31.9570**	0.495	1.6	ug/L	35	Standard
	V	51	31610.6	0.8	**4.0089**	0.089	2.2	ug/L	1435	Standard
	Cr	52	29501.7	2.0	**2.9745**	0.066	2.2	ug/L	7635	Standard
	Cr	53	4110.6	4.5	**4.1359**	0.142	3.4	ug/L	363	Standard
	Mn	55	939161.3	0.8	**135.3408**	0.783	0.6	ug/L	747	Standard
	Co	59	11927.7	1.5	**1.7769**	0.013	0.7	ug/L	234	Standard
	Ni	60	10174.7	1.2	**5.3344**	0.025	0.5	ug/L	215	Standard
	Cu	65	63138.6	0.6	**33.9717**	0.415	1.2	ug/L	104	Standard
	Zn	66	96624.1	0.5	**88.3979**	1.021	1.2	ug/L	363	Standard
>	**Ge**	72	492984.7	1.4				ug/L	495142	Standard
	As	75	1814.9	1.7	**1.6870**	0.014	0.9	ug/L	-50	Standard
	Se	82	95.5	0.5	**0.7363**	0.016	2.2	ug/L	14	Standard
	Se-1	77	118.3	17.1	**1.0027**	0.256	25.5	ug/L	42	Standard
>	**Ga**	71	3340.4	1.3				mg/L	42	Standard
	Rb	85	72434.4	1.9				ug/L	17	Standard
	Y	89	474043.5	0.9				ug/L	417098	Standard
>	**Rh**	103	386.7	16.4				ug/L	13	Standard
	Mo	98	2396.5	0.7	**0.9091**	0.018	1.9	ug/L	11	Standard
	Ag	107	338.3	4.7	**0.0399**	0.003	6.7	ug/L	68	Standard
	Cd	111	101.2	9.9	**0.0414**	0.005	12.6	mg/L	2	Standard
	Cd	114	230.2	21.2	**0.0435**	0.009	20.9	ug/L	12	Standard
>	**In**	115	577417.6	1.2				ug/L	587441	Standard
	Sn	118	1793.4	6.6	**0.2178**	0.023	10.5	ug/L	497	Standard
	Sb	123	600.3	4.8	**0.1267**	0.008	6.1	ug/L	78	Standard
	Ba	135	70114.5	1.5	**34.8357**	0.414	1.2	ug/L	24	Standard
	Ce	140	125576.7	1.8				ug/L	25	Standard
>	**Tb**	159	953741.7	1.0				ug/L	939701	Standard
	Ho	165	3755.5	3.8				ug/L	10	Standard
	Tl	203	452.7	12.3	**0.0539**	0.006	11.6	ug/L	4	Standard
	Tl	205	385.0	10.1	**0.0548**	0.005	9.0	ug/L	2	Standard
	Pb	206	12183.9	0.5	**2.2443**	0.020	0.9	ug/L	240	Standard
	Pb	207	9920.2	0.8	**2.0519**	0.018	0.9	ug/L	198	Standard
	Pb	208	42107.7	1.6	**2.2055**	0.026	1.2	ug/L	883	Standard
	U	238	36138.4	1.7	**5.3249**	0.032	0.6	ug/L	3	Standard
>	**Bi**	209	516181.2	1.2				ug/L	523984	Standard

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Na	23	8.3	91.7	**99.8498**	90.493	90.6	mg/L	0	Standard
Mg	24	9524.7	1.9	**12.6179**	0.315	2.5	mg/L	37	Standard
K	39	723.4	10.8	**1.5367**	0.198	12.9	mg/L	38	Standard
Ca	43	1308.4	8.3	**82.6186**	4.814	5.8	mg/L	10	Standard
Fe	54	3102.8	2.2	**2.5749**	0.034	1.3	mg/L	179	Standard
Fe	57	1665.1	3.0	**4.7616**	0.022	0.5	mg/L	335	Standard
> **Sc-1**	45	59185.4	3.1				mg/L	61029	Standard
Cl	35	38114.5	0.9				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	13185.7	5.6				ug/L	1547	Standard
P	31	20465.5	3.4				ug/L	15286	Standard
S	34	1960.1	7.7				ug/L	1572	Standard
Sr	88	1940.1	7.4				ug/L	73	Standard
C	12	216.7	23.7				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	3	Standard
Dy	164	5933.6	2.4				mg/L	6	Standard
Ho-1	165	3755.5	3.8				mg/L	10	Standard
Er	166	3430.4	0.6				mg/L	13	Standard
I	127	31850.1	1.9				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		132.387	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		99.564	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	98.294
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	98.511
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 14:04:12
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	95022.8	6.4				ug/L	74699	Standard
	Be	9	57413.6	2.5	**51.3575**	1.980	3.9	ug/L	8	Standard
	Al	27	7949888.2	1.3	**42.6051**	2.208	5.2	ug/L	1493	Standard
	Sc	45	58088.0	4.8				ug/L	61029	Standard
	Ti	47	37651.4	1.9	**100.2698**	3.249	3.2	ug/L	35	Standard
	V	51	404346.6	1.8	**53.8882**	0.844	1.6	ug/L	1435	Standard
	Cr	52	381698.1	1.1	**51.0223**	1.642	3.2	ug/L	7635	Standard
	Cr	53	47042.9	0.3	**51.1128**	1.842	3.6	ug/L	363	Standard
	Mn	55	357326.2	3.2	**51.6830**	0.417	0.8	ug/L	747	Standard
	Co	59	371699.6	2.5	**56.8155**	0.522	0.9	ug/L	234	Standard
	Ni	60	94541.7	1.4	**50.9011**	1.597	3.1	ug/L	215	Standard
	Cu	65	94983.8	1.5	**51.4773**	2.133	4.1	ug/L	104	Standard
	Zn	66	56900.0	0.7	**52.1829**	1.541	3.0	ug/L	363	Standard
>	Ge	72	490310.3	3.4				ug/L	495142	Standard
	As	75	57867.9	1.8	**52.2509**	0.921	1.8	ug/L	-50	Standard
	Se	82	5817.8	2.4	**53.4067**	0.847	1.6	ug/L	14	Standard
	Se-1	77	4012.5	1.4	**54.8814**	1.095	2.0	ug/L	42	Standard
>	Ga	71	80.0	6.3				mg/L	42	Standard
	Rb	85	831.7	8.5				ug/L	17	Standard
	Y	89	423000.5	2.4				ug/L	417098	Standard
>	Rh	103	26.7	57.3				ug/L	13	Standard
	Mo	98	279510.1	1.2	**103.0732**	1.481	1.4	ug/L	11	Standard
	Ag	107	337025.9	0.7	**50.8187**	0.653	1.3	ug/L	68	Standard
	Cd	111	104719.9	1.6	**49.2197**	0.492	1.0	mg/L	2	Standard
	Cd	114	254484.5	1.8	**48.7789**	1.357	2.8	ug/L	12	Standard
>	In	115	597695.8	1.6				ug/L	587441	Standard
	Sn	118	297589.5	3.3	**49.9660**	0.932	1.9	ug/L	497	Standard
	Sb	123	237800.4	0.6	**50.0611**	0.480	1.0	ug/L	78	Standard
	Ba	135	98785.4	1.3	**47.4247**	0.676	1.4	ug/L	24	Standard
	Ce	140	118.3	6.5				ug/L	25	Standard
>	Tb	159	962162.8	1.8				ug/L	939701	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	431721.7	1.4	**50.5906**	0.299	0.6	ug/L	4	Standard
	Tl	205	386667.7	1.8	**52.2055**	0.331	0.6	ug/L	2	Standard
	Pb	206	286495.7	0.6	**51.7458**	1.032	2.0	ug/L	240	Standard
	Pb	207	254256.8	1.2	**51.6830**	0.707	1.4	ug/L	198	Standard
	Pb	208	993731.8	1.4	**51.1193**	0.294	0.6	ug/L	883	Standard
	U	238	371822.3	1.0	**52.1805**	0.682	1.3	ug/L	3	Standard
>	Bi	209	542470.6	1.9				ug/L	523984	Standard

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Na	23	1.7	173.2	**20.6892**	35.826	173.2	mg/L	0	Standard
Mg	24	4115.6	5.8	**5.5148**	0.066	1.2	mg/L	37	Standard
K	39	1971.8	1.5	**4.4711**	0.214	4.8	mg/L	38	Standard
Ca	43	71.7	16.1	**2.2502**	0.891	39.6	mg/L	10	Standard
Fe	54	5897.1	1.5	**5.1229**	0.272	5.3	mg/L	179	Standard
Fe	57	1798.4	2.6	**5.3592**	0.387	7.2	mg/L	335	Standard
> **Sc-1**	45	58088.0	4.8				mg/L	61029	Standard
Cl	35	26443.8	4.7				ug/L	20195	Standard
Kr	83	1.0	0.0				ug/L	4	Standard
Br	81	1943.5	9.9				ug/L	1547	Standard
P	31	18503.0	1.3				ug/L	15286	Standard
S	34	2213.5	3.2				ug/L	1572	Standard
Sr	88	76.7	10.0				ug/L	73	Standard
C	12	120.0	43.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	2.9	217.0				mg/L	6	Standard
Ho-1	165	8.3	34.6				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	3483.8	25.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	102.715		
Al	27	85.210		
Sc	45			
Ti	47	100.270		
V	51	107.776		
Cr	52	102.045		
Cr	53			
Mn	55	103.366		
Co	59	113.631		
Ni	60	101.802		
Cu	65	102.955		
Zn	66	104.366		
> Ge	72		99.024	
As	75	104.502		
Se	82	106.813		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	103.073		
Ag	107	101.637		
Cd	111	98.439		
Cd	114			
In	115		101.746	
Sn	118	99.932		
Sb	123	100.122		
Ba	135	94.849		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.181		
Tl	205			
Pb	206			
Pb	207			
Pb	208	102.239		
U	238	104.361		
Bi	209		103.528	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	
QC Std 6	Co	59	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 14:07:23
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	87483.9	4.7				ug/L	74699	Standard
	Be	9	21.7	96.1	**0.0292**	0.021	73.0	ug/L	8	Standard
	Al	27	18230.8	94.8	**0.0950**	0.107	112.2	ug/L	1493	Standard
	Sc	45	56471.8	3.5				ug/L	61029	Standard
	Ti	47	36.0	46.7	**-0.0098**	0.050	510.8	ug/L	35	Standard
	V	51	1334.8	2.3	**-0.0125**	0.010	80.4	ug/L	1435	Standard
	Cr	52	6684.1	1.9	**-0.0897**	0.031	35.0	ug/L	7635	Standard
	Cr	53	393.3	6.4	**0.1115**	0.043	38.6	ug/L	363	Standard
	Mn	55	1346.4	57.0	**0.0546**	0.123	224.6	ug/L	747	Standard
	Co	59	278.3	17.3	**0.0065**	0.009	139.3	ug/L	234	Standard
	Ni	60	177.0	5.9	**-0.0261**	0.004	17.0	ug/L	215	Standard
	Cu	65	145.0	10.8	**-0.0230**	0.009	41.3	ug/L	104	Standard
	Zn	66	399.3	2.4	**-0.0757**	0.021	28.0	ug/L	363	Standard
>	**Ge**	72	478426.6	3.3				ug/L	495142	Standard
	As	75	-39.3	49.9	**0.0231**	0.019	81.6	ug/L	-50	Standard
	Se	82	16.5	11.7	**0.0181**	0.023	124.9	ug/L	14	Standard
	Se-1	77	38.7	26.9	**-0.0773**	0.131	170.1	ug/L	42	Standard
>	**Ga**	71	66.7	15.6				mg/L	42	Standard
	Rb	85	18.3	41.7				ug/L	17	Standard
	Y	89	416242.9	2.8				ug/L	417098	Standard
>	**Rh**	103	15.0	57.7				ug/L	13	Standard
	Mo	98	272.1	23.3	**0.0976**	0.024	24.4	ug/L	11	Standard
	Ag	107	106.0	6.8	**0.0036**	0.001	28.2	ug/L	68	Standard
	Cd	111	10.2	22.2	**-0.0030**	0.001	37.6	mg/L	2	Standard
	Cd	114	31.6	53.8	**0.0041**	0.003	80.7	ug/L	12	Standard
>	**In**	115	580179.3	0.7				ug/L	587441	Standard
	Sn	118	746.7	16.1	**0.0348**	0.022	62.5	ug/L	497	Standard
	Sb	123	368.4	24.4	**0.0758**	0.020	26.4	ug/L	78	Standard
	Ba	135	41.0	10.6	**0.0043**	0.002	51.4	ug/L	24	Standard
	Ce	140	38.3	61.6				ug/L	25	Standard
>	**Tb**	159	945404.9	0.5				ug/L	939701	Standard
	Ho	165	6.7	43.3				ug/L	10	Standard
	Tl	203	65.7	8.7	**0.0061**	0.001	8.8	ug/L	4	Standard
	Tl	205	95.0	45.9	**0.0133**	0.006	45.0	ug/L	2	Standard
	Pb	206	276.0	7.9	**-0.0202**	0.003	15.8	ug/L	240	Standard
	Pb	207	258.0	12.6	**-0.0163**	0.006	36.3	ug/L	198	Standard
	Pb	208	1134.3	12.6	**-0.0143**	0.008	56.7	ug/L	883	Standard
	U	238	91.0	75.8	**0.0087**	0.010	115.9	ug/L	3	Standard
>	**Bi**	209	530301.2	1.8				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	46.7	81.1	**0.0007**	0.054	7923.6	mg/L	37	Standard
K	39	40.0	45.1	**-0.0194**	0.039	202.6	mg/L	38	Standard
Ca	43	28.3	20.4	**-0.5841**	0.427	73.1	mg/L	10	Standard
Fe	54	129.2	39.5	**-0.0191**	0.049	258.2	mg/L	179	Standard
Fe	57	241.7	27.6	**-0.1803**	0.270	149.7	mg/L	335	Standard
> **Sc-1**	45	56471.8	3.5				mg/L	61029	Standard
Cl	35	26027.0	1.3				ug/L	20195	Standard
Kr	83	3.0	57.7				ug/L	4	Standard
Br	81	1783.4	6.5				ug/L	1547	Standard
P	31	18152.5	2.7				ug/L	15286	Standard
S	34	2168.5	1.2				ug/L	1572	Standard
Sr	88	56.7	27.0				ug/L	73	Standard
C	12	93.3	24.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	6.5	86.7				mg/L	6	Standard
Ho-1	165	6.7	43.3				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	2606.9	21.7				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		96.624	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	98.764	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	101.206	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606098629
Sample Date/Time: Wednesday, June 29, 2016 14:10:36
Number of Replicates: 3
Autosampler Position: 329
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	98303.0	2.6				ug/L	74699	Standard
	Be	9	480.0	19.8	**0.4216**	0.078	18.5	ug/L	8	Standard
	Al	27	74581592.0	2.0	**385.7852**	11.899	3.1	ug/L	1493	Standard
	Sc	45	57877.0	1.4				ug/L	61029	Standard
	Ti	47	6572.4	2.9	**18.4374**	0.321	1.7	ug/L	35	Standard
	V	51	8784.7	0.2	**1.0487**	0.019	1.8	ug/L	1435	Standard
	Cr	52	16164.0	1.7	**1.3092**	0.018	1.4	ug/L	7635	Standard
	Cr	53	2105.1	0.9	**2.1070**	0.052	2.5	ug/L	363	Standard
	Mn	55	1145494.2	1.1	**175.8506**	2.171	1.2	ug/L	747	Standard
	Co	59	6198.3	3.2	**0.9668**	0.035	3.6	ug/L	234	Standard
	Ni	60	8328.3	2.3	**4.6339**	0.069	1.5	ug/L	215	Standard
	Cu	65	39558.9	1.3	**22.6316**	0.139	0.6	ug/L	104	Standard
	Zn	66	37507.0	2.0	**36.2726**	0.401	1.1	ug/L	363	Standard
>	**Ge**	72	462898.1	1.3				ug/L	495142	Standard
	As	75	729.1	4.9	**0.7559**	0.035	4.6	ug/L	-50	Standard
	Se	82	97.9	9.3	**0.8168**	0.100	12.2	ug/L	14	Standard
	Se-1	77	92.7	14.7	**0.7365**	0.213	29.0	ug/L	42	Standard
>	**Ga**	71	1238.4	2.6				mg/L	42	Standard
	Rb	85	36981.8	1.6				ug/L	17	Standard
	Y	89	423750.9	0.9				ug/L	417098	Standard
>	**Rh**	103	1170.0	7.1				ug/L	13	Standard
	Mo	98	1333.1	1.3	**0.5111**	0.005	0.9	ug/L	11	Standard
	Ag	107	159.7	2.8	**0.0124**	0.001	8.3	ug/L	68	Standard
	Cd	111	50.7	12.0	**0.0171**	0.003	15.0	mg/L	2	Standard
	Cd	114	154.3	14.1	**0.0289**	0.004	13.0	ug/L	12	Standard
>	**In**	115	568573.6	2.1				ug/L	587441	Standard
	Sn	118	2385.2	8.8	**0.3269**	0.032	9.8	ug/L	497	Standard
	Sb	123	701.5	2.0	**0.1511**	0.004	2.9	ug/L	78	Standard
	Ba	135	49620.1	0.4	**25.0380**	0.447	1.8	ug/L	24	Standard
	Ce	140	69524.2	1.7				ug/L	25	Standard
>	**Tb**	159	941672.2	2.5				ug/L	939701	Standard
	Ho	165	1511.7	2.5				ug/L	10	Standard
	Tl	203	215.3	8.2	**0.0254**	0.002	6.7	ug/L	4	Standard
	Tl	205	171.7	4.4	**0.0251**	0.001	2.6	ug/L	2	Standard
	Pb	206	5244.6	2.1	**0.9485**	0.002	0.2	ug/L	240	Standard
	Pb	207	4168.9	1.9	**0.8423**	0.008	0.9	ug/L	198	Standard
	Pb	208	17565.0	0.7	**0.8990**	0.013	1.4	ug/L	883	Standard
	U	238	17410.3	1.3	**2.6228**	0.019	0.7	ug/L	3	Standard
>	**Bi**	209	504494.7	1.9				ug/L	523984	Standard

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Na	23	13.3	78.1	**161.6266**	126.012	78.0	mg/L	0	Standard
Mg	24	27959.1	0.6	**37.9939**	0.282	0.7	mg/L	37	Standard
K	39	733.4	5.5	**1.5946**	0.079	5.0	mg/L	38	Standard
Ca	43	1693.4	2.8	**110.2950**	4.030	3.7	mg/L	10	Standard
Fe	54	1507.3	3.7	**1.2090**	0.035	2.9	mg/L	179	Standard
Fe	57	1286.7	5.0	**3.5362**	0.177	5.0	mg/L	335	Standard
> **Sc-1**	45	57877.0	1.4				mg/L	61029	Standard
Cl	35	39812.2	0.7				ug/L	20195	Standard
Kr	83	2.3	24.7				ug/L	4	Standard
Br	81	15855.0	0.8				ug/L	1547	Standard
P	31	19874.7	1.1				ug/L	15286	Standard
S	34	1861.8	8.3				ug/L	1572	Standard
Sr	88	5489.3	0.8				ug/L	73	Standard
C	12	143.3	29.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	2426.6	8.1				mg/L	6	Standard
Ho-1	165	1511.7	2.5				mg/L	10	Standard
Er	166	1466.7	15.1				mg/L	13	Standard
I	127	114010.2	6.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		131.599	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.488	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	96.788
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	96.280
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606098639
Sample Date/Time: Wednesday, June 29, 2016 14:13:47
Number of Replicates: 3
Autosampler Position: 330
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	95709.8	2.9				ug/L	74699	Standard
	Be	9	26.7	92.5	**0.0314**	0.022	70.9	ug/L	8	Standard
	Al	27	47777.1	19.3	**0.2396**	0.041	17.2	ug/L	1493	Standard
	Sc	45	57199.5	2.6				ug/L	61029	Standard
	Ti	47	140.3	60.7	**0.2633**	0.227	86.2	ug/L	35	Standard
	V	51	2113.6	5.5	**0.0856**	0.015	17.8	ug/L	1435	Standard
	Cr	52	11519.7	1.7	**0.5382**	0.024	4.4	ug/L	7635	Standard
	Cr	53	731.7	8.2	**0.4658**	0.068	14.5	ug/L	363	Standard
	Mn	55	10046.3	0.4	**1.3019**	0.003	0.2	ug/L	747	Standard
	Co	59	277.3	4.9	**0.0049**	0.002	38.1	ug/L	234	Standard
	Ni	60	403.7	2.5	**0.0928**	0.006	6.6	ug/L	215	Standard
	Cu	65	2594.2	1.0	**1.2969**	0.011	0.8	ug/L	104	Standard
	Zn	66	5488.0	1.5	**4.5940**	0.065	1.4	ug/L	363	Standard
>	**Ge**	72	492746.6	0.5				ug/L	495142	Standard
	As	75	-23.9	159.7	**0.0381**	0.034	90.0	ug/L	-50	Standard
	Se	82	16.9	42.3	**0.0162**	0.065	398.3	ug/L	14	Standard
	Se-1	77	44.7	15.2	**-0.0080**	0.091	1136.4	ug/L	42	Standard
>	**Ga**	71	35.0	24.7				mg/L	42	Standard
	Rb	85	228.3	6.7				ug/L	17	Standard
	Y	89	426313.2	2.4				ug/L	417098	Standard
>	**Rh**	103	20.0	66.1				ug/L	13	Standard
	Mo	98	146.2	8.6	**0.0487**	0.005	10.8	ug/L	11	Standard
	Ag	107	84.7	10.6	**-0.0000**	0.001	3427.7	ug/L	68	Standard
	Cd	111	14.4	26.2	**-0.0011**	0.002	163.5	mg/L	2	Standard
	Cd	114	36.0	7.5	**0.0048**	0.001	11.2	ug/L	12	Standard
>	**In**	115	592771.3	1.1				ug/L	587441	Standard
	Sn	118	1206.7	2.0	**0.1101**	0.007	6.0	ug/L	497	Standard
	Sb	123	2747.6	2.7	**0.5790**	0.016	2.8	ug/L	78	Standard
	Ba	135	327.7	1.8	**0.1426**	0.002	1.3	ug/L	24	Standard
	Ce	140	215.0	46.7				ug/L	25	Standard
>	**Tb**	159	942434.8	1.8				ug/L	939701	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	30.7	28.5	**0.0019**	0.001	54.2	ug/L	4	Standard
	Tl	205	31.7	59.8	**0.0045**	0.003	57.0	ug/L	2	Standard
	Pb	206	347.7	8.5	**-0.0077**	0.005	63.4	ug/L	240	Standard
	Pb	207	296.0	3.8	**-0.0091**	0.002	22.4	ug/L	198	Standard
	Pb	208	1207.0	5.0	**-0.0113**	0.003	23.3	ug/L	883	Standard
	U	238	16.7	21.1	**-0.0021**	0.000	23.4	ug/L	3	Standard
>	**Bi**	209	536687.4	0.8				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	78.3	9.8	**0.0427**	0.008	19.8	mg/L	37	Standard
K	39	33.3	56.8	**-0.0347**	0.047	136.1	mg/L	38	Standard
Ca	43	38.3	27.2	**0.0551**	0.672	1218.0	mg/L	10	Standard
Fe	54	152.5	13.6	**-0.0001**	0.021	24429.9	mg/L	179	Standard
Fe	57	270.0	10.3	**-0.0961**	0.083	86.0	mg/L	335	Standard
> **Sc-1**	45	57199.5	2.6				mg/L	61029	Standard
Cl	35	30633.6	0.6				ug/L	20195	Standard
Kr	83	2.7	78.1				ug/L	4	Standard
Br	81	2093.5	12.2				ug/L	1547	Standard
P	31	17446.7	2.4				ug/L	15286	Standard
S	34	1971.8	2.9				ug/L	1572	Standard
Sr	88	48.3	26.0				ug/L	73	Standard
C	12	116.7	34.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	9.0	108.0				mg/L	6	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	4304.0	50.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.128	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.516	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.907
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.424
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606098641
Sample Date/Time: Wednesday, June 29, 2016 14:16:59
Number of Replicates: 3
Autosampler Position: 331
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	87267.4	3.2				ug/L	74699	Standard
	Be	9	11.7	49.5	**0.0189**	0.005	28.8	ug/L	8	Standard
	Al	27	605511.0	1.7	**3.5149**	0.083	2.4	ug/L	1493	Standard
	Sc	45	54390.8	2.9				ug/L	61029	Standard
	Ti	47	93.0	12.4	**0.1442**	0.032	22.4	ug/L	35	Standard
	V	51	1794.1	5.9	**0.0496**	0.015	30.2	ug/L	1435	Standard
	Cr	52	10365.2	1.5	**0.4195**	0.024	5.7	ug/L	7635	Standard
	Cr	53	613.3	8.2	**0.3551**	0.058	16.5	ug/L	363	Standard
	Mn	55	4513.0	1.6	**0.5208**	0.012	2.3	ug/L	747	Standard
	Co	59	310.3	5.3	**0.0112**	0.002	21.0	ug/L	234	Standard
	Ni	60	490.0	6.7	**0.1461**	0.017	11.6	ug/L	215	Standard
	Cu	65	1018.0	2.6	**0.4608**	0.017	3.7	ug/L	104	Standard
	Zn	66	3968.5	2.5	**3.2944**	0.091	2.8	ug/L	363	Standard
>	**Ge**	72	479837.7	0.4				ug/L	495142	Standard
	As	75	-18.8	39.3	**0.0423**	0.007	15.9	ug/L	-50	Standard
	Se	82	16.1	20.6	**0.0139**	0.032	229.1	ug/L	14	Standard
	Se-1	77	51.0	14.8	**0.0980**	0.104	105.7	ug/L	42	Standard
>	**Ga**	71	46.7	22.3				mg/L	42	Standard
	Rb	85	2146.8	6.0				ug/L	17	Standard
	Y	89	405082.7	1.5				ug/L	417098	Standard
>	**Rh**	103	10.0	86.6				ug/L	13	Standard
	Mo	98	183.9	8.1	**0.0672**	0.006	9.5	ug/L	11	Standard
	Ag	107	85.0	8.5	**0.0009**	0.001	123.2	ug/L	68	Standard
	Cd	111	58.3	9.8	**0.0215**	0.003	12.3	mg/L	2	Standard
	Cd	114	162.0	10.0	**0.0312**	0.003	9.6	ug/L	12	Standard
>	**In**	115	556306.9	1.6				ug/L	587441	Standard
	Sn	118	983.4	6.5	**0.0831**	0.013	16.0	ug/L	497	Standard
	Sb	123	290.8	14.6	**0.0617**	0.011	17.2	ug/L	78	Standard
	Ba	135	1301.4	2.0	**0.6554**	0.007	1.1	ug/L	24	Standard
	Ce	140	1251.7	2.7				ug/L	25	Standard
>	**Tb**	159	894371.7	2.0				ug/L	939701	Standard
	Ho	165	23.3	61.9				ug/L	10	Standard
	Tl	203	26.7	21.3	**0.0015**	0.001	46.3	ug/L	4	Standard
	Tl	205	18.3	68.6	**0.0028**	0.002	63.1	ug/L	2	Standard
	Pb	206	368.7	5.0	**-0.0008**	0.004	496.5	ug/L	240	Standard
	Pb	207	301.3	5.5	**-0.0052**	0.004	82.3	ug/L	198	Standard
	Pb	208	1198.4	1.5	**-0.0089**	0.002	20.6	ug/L	883	Standard
	U	238	7.7	32.8	**-0.0033**	0.000	11.3	ug/L	3	Standard
>	**Bi**	209	513924.4	1.5				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	638.3	13.6	**0.8624**	0.151	17.5	mg/L	37	Standard
K	39	86.7	3.3	**0.1010**	0.012	12.3	mg/L	38	Standard
Ca	43	31.7	48.2	**-0.2871**	1.074	374.0	mg/L	10	Standard
Fe	54	129.1	21.5	**-0.0150**	0.029	192.4	mg/L	179	Standard
Fe	57	250.0	12.2	**-0.1181**	0.141	119.7	mg/L	335	Standard
Sc-1	45	54390.8	2.9				mg/L	61029	Standard
Cl	35	28123.4	3.1				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	1706.8	4.2				ug/L	1547	Standard
P	31	17456.7	1.2				ug/L	15286	Standard
S	34	1960.1	4.3				ug/L	1572	Standard
Sr	88	86.7	3.3				ug/L	73	Standard
C	12	86.7	35.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	22.9	67.6				mg/L	6	Standard
Ho-1	165	23.3	61.9				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	6631.5	5.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		116.826	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		96.909	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.700
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.080
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606102602
Sample Date/Time: Wednesday, June 29, 2016 14:51:20
Number of Replicates: 3
Autosampler Position: 332
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	98959.1	4.1				ug/L	74699	Standard
	Be	9	893.4	7.1	**0.7730**	0.024	3.1	ug/L	8	Standard
	Al	27	86838575.1	3.0	**446.1622**	5.675	1.3	ug/L	1493	Standard
	Sc	45	59841.3	1.2				ug/L	61029	Standard
	Ti	47	724.7	2.7	**1.9675**	0.086	4.4	ug/L	35	Standard
	V	51	-99401.9	27.0	**-14.4927**	3.863	26.7	ug/L	1435	Standard
	Cr	52	14286817.6	0.7	**2092.1702**	38.595	1.8	ug/L	7635	Standard
	Cr	53	1819264.9	1.0	**2136.8631**	30.527	1.4	ug/L	363	Standard
	Mn	55	9369393.8	2.3	**1460.7209**	18.166	1.2	ug/L	747	Standard
	Co	59	953653.0	0.8	**156.7618**	2.325	1.5	ug/L	234	Standard
	Ni	60	10094931.6	0.5	**5854.0954**	89.919	1.5	ug/L	215	Standard
	Cu	65	555284.9	0.4	**323.8508**	6.370	2.0	ug/L	104	Standard
	Zn	66	64094.6	1.0	**63.2545**	1.058	1.7	ug/L	363	Standard
>	**Ge**	72	456115.5	1.9				ug/L	495142	Standard
	As	75	3627.2	1.9	**3.5767**	0.135	3.8	ug/L	-50	Standard
	Se	82	1754.2	3.0	**17.2111**	0.289	1.7	ug/L	14	Standard
	Se-1	77	3450.1	4.6	**50.7001**	3.400	6.7	ug/L	42	Standard
>	**Ga**	71	493.3	9.8				mg/L	42	Standard
	Rb	85	15579.7	1.3				ug/L	17	Standard
	Y	89	510259.3	1.5				ug/L	417098	Standard
>	**Rh**	103	536.7	10.8				ug/L	13	Standard
	Mo	98	52406.3	2.2	**22.0721**	0.200	0.9	ug/L	11	Standard
	Ag	107	797.7	2.2	**0.1246**	0.004	3.1	ug/L	68	Standard
	Cd	111	4820.0	1.8	**2.5808**	0.025	1.0	mg/L	2	Standard
	Cd	114	11654.3	2.8	**2.5494**	0.039	1.5	ug/L	12	Standard
>	**In**	115	523117.8	1.3				ug/L	587441	Standard
	Sn	118	2368.5	5.4	**0.3606**	0.023	6.4	ug/L	497	Standard
	Sb	123	2240.5	1.3	**0.5347**	0.001	0.2	ug/L	78	Standard
	Ba	135	135783.1	0.9	**74.4848**	0.361	0.5	ug/L	24	Standard
	Ce	140	104687.1	1.1				ug/L	25	Standard
>	**Tb**	159	898543.7	0.7				ug/L	939701	Standard
	Ho	165	6684.8	2.2				ug/L	10	Standard
	Tl	203	178.0	4.1	**0.0225**	0.001	5.6	ug/L	4	Standard
	Tl	205	203.3	37.2	**0.0321**	0.012	38.4	ug/L	2	Standard
	Pb	206	1304.4	5.0	**0.2026**	0.016	8.1	ug/L	240	Standard
	Pb	207	1055.7	2.5	**0.1793**	0.004	2.5	ug/L	198	Standard
	Pb	208	4341.2	2.0	**0.1854**	0.004	2.0	ug/L	883	Standard
	U	238	4585.0	0.8	**0.7423**	0.007	0.9	ug/L	3	Standard
>	**Bi**	209	467454.5	1.3				ug/L	523984	Standard

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Na	23	5.0	0.0	**58.7812**	0.729	1.2	mg/L	0	Standard
Mg	24	188890.8	2.9	**248.6881**	10.353	4.2	mg/L	37	Standard
K	39	2185.2	4.4	**4.8106**	0.175	3.6	mg/L	38	Standard
Ca	43	1135.0	6.5	**70.5642**	3.873	5.5	mg/L	10	Standard
Fe	54	9878.2	4.8	**8.4031**	0.399	4.8	mg/L	179	Standard
Fe	57	3267.0	5.5	**10.2558**	0.748	7.3	mg/L	335	Standard
Sc-1	45	59841.3	1.2				mg/L	61029	Standard
Cl	35	28240.3	1.1				ug/L	20195	Standard
Kr	83	2.7	142.0				ug/L	4	Standard
Br	81	339155.5	2.6				ug/L	1547	Standard
P	31	29607.2	0.7				ug/L	15286	Standard
S	34	2378.5	1.9				ug/L	1572	Standard
Sr	88	1895.1	7.4				ug/L	73	Standard
C	12	120.0	28.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	86.7	35.3				mg/L	3	Standard
Dy	164	9299.8	2.7				mg/L	6	Standard
Ho-1	165	6684.8	2.2				mg/L	10	Standard
Er	166	6331.3	1.7				mg/L	13	Standard
I	127	153619.9	12.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.478	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.118	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		89.050
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		89.212
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
V 51 Lower	V	51	

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Cr 52 Upper, S, EEE	Cr	52
Cr 53 Upper, S, EEE	Cr	53
Mn 55 Upper, S, EEE	Mn	55
Co 59 Upper, S, EEE	Co	59
Ni 60 Upper, S, EEE	Ni	60
Cu 65 Upper, S, EEE	Cu	65

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Method 6020 - Summary Report

Sample ID: L1606102604
Sample Date/Time: Wednesday, June 29, 2016 14:54:31
Number of Replicates: 3
Autosampler Position: 333
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82386.8	1.6				ug/L	74699	Standard
	Be	9	41.7	50.0	**0.0505**	0.021	41.9	ug/L	8	Standard
	Al	27	6418180.7	1.0	**39.5946**	1.017	2.6	ug/L	1493	Standard
	Sc	45	68191.6	3.4				ug/L	61029	Standard
	Ti	47	2431.5	5.8	**6.2763**	0.263	4.2	ug/L	35	Standard
	V	51	8932.1	2.8	**0.9822**	0.034	3.4	ug/L	1435	Standard
	Cr	52	19971.2	5.8	**1.6585**	0.113	6.8	ug/L	7635	Standard
	Cr	53	16018.5	1.2	**16.9336**	0.479	2.8	ug/L	363	Standard
	Mn	55	134583.1	0.5	**19.1035**	0.326	1.7	ug/L	747	Standard
	Co	59	5374.0	2.6	**0.7730**	0.008	1.1	ug/L	234	Standard
	Ni	60	7430.2	8.6	**3.8249**	0.274	7.2	ug/L	215	Standard
	Cu	65	1488.1	5.9	**0.6921**	0.035	5.0	ug/L	104	Standard
	Zn	66	5451.0	0.8	**4.5156**	0.102	2.3	ug/L	363	Standard
>	**Ge**	72	497254.0	1.7				ug/L	495142	Standard
	As	75	427.8	16.4	**0.4399**	0.063	14.3	ug/L	-50	Standard
	Se	82	161.6	5.9	**1.3278**	0.065	4.9	ug/L	14	Standard
	Se-1	77	695.3	4.1	**8.8552**	0.225	2.5	ug/L	42	Standard
>	**Ga**	71	420.0	2.4				mg/L	42	Standard
	Rb	85	8292.3	2.6				ug/L	17	Standard
	Y	89	430205.9	2.4				ug/L	417098	Standard
>	**Rh**	103	40.0	12.5				ug/L	13	Standard
	Mo	98	177.9	8.2	**0.0624**	0.005	8.3	ug/L	11	Standard
	Ag	107	97.3	5.7	**0.0023**	0.001	38.0	ug/L	68	Standard
	Cd	111	330.0	5.3	**0.1533**	0.008	5.4	mg/L	2	Standard
	Cd	114	777.4	4.0	**0.1527**	0.007	4.3	ug/L	12	Standard
>	**In**	115	575297.3	2.0				ug/L	587441	Standard
	Sn	118	1836.8	3.5	**0.2263**	0.005	2.3	ug/L	497	Standard
	Sb	123	541.3	2.5	**0.1143**	0.005	4.2	ug/L	78	Standard
	Ba	135	259403.2	1.0	**129.4148**	1.250	1.0	ug/L	24	Standard
	Ce	140	48153.1	1.6				ug/L	25	Standard
>	**Tb**	159	953820.3	0.6				ug/L	939701	Standard
	Ho	165	763.4	3.9				ug/L	10	Standard
	Tl	203	147.7	11.5	**0.0162**	0.002	12.5	ug/L	4	Standard
	Tl	205	135.0	25.9	**0.0192**	0.005	26.2	ug/L	2	Standard
	Pb	206	2333.8	1.6	**0.3679**	0.004	1.0	ug/L	240	Standard
	Pb	207	1897.5	1.5	**0.3318**	0.006	1.8	ug/L	198	Standard
	Pb	208	7911.8	1.2	**0.3500**	0.006	1.7	ug/L	883	Standard
	U	238	272.0	3.5	**0.0353**	0.002	4.3	ug/L	3	Standard
>	**Bi**	209	521315.2	0.9				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	45454.8	3.6	**52.4459**	0.539	1.0	mg/L	37	Standard
K	39	88.3	3.3	**0.0609**	0.011	18.4	mg/L	38	Standard
Ca	43	100.0	8.7	**3.1440**	0.659	21.0	mg/L	10	Standard
Fe	54	556.2	7.6	**0.2841**	0.037	12.9	mg/L	179	Standard
Fe	57	410.0	16.9	**0.1734**	0.212	122.1	mg/L	335	Standard
> **Sc-1**	45	68191.6	3.4				mg/L	61029	Standard
Cl	35	26725.6	1.1				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	35244.3	3.6				ug/L	1547	Standard
P	31	35015.4	1.7				ug/L	15286	Standard
S	34	2091.8	5.9				ug/L	1572	Standard
Sr	88	225.0	20.0				ug/L	73	Standard
C	12	103.3	39.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	93.3	12.4				mg/L	3	Standard
Dy	164	1034.1	12.7				mg/L	6	Standard
Ho-1	165	763.4	3.9				mg/L	10	Standard
Er	166	680.0	15.4				mg/L	13	Standard
I	127	80476.5	1.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.292	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.426	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.933
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		99.491
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606102606
Sample Date/Time: Wednesday, June 29, 2016 14:57:42
Number of Replicates: 3
Autosampler Position: 334
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	93356.7	0.9				ug/L	74699	Standard
	Be	9	136.7	43.6	**0.1318**	0.054	40.9	ug/L	8	Standard
	Al	27	4727947.0	2.8	**25.7324**	0.870	3.4	ug/L	1493	Standard
	Sc	45	71265.6	1.4				ug/L	61029	Standard
	Ti	47	7167.7	1.1	**18.5395**	0.116	0.6	ug/L	35	Standard
	V	51	33631.6	0.4	**4.1963**	0.093	2.2	ug/L	1435	Standard
	Cr	52	43684.3	3.9	**4.7878**	0.170	3.6	ug/L	7635	Standard
	Cr	53	18915.1	0.4	**19.8540**	0.330	1.7	ug/L	363	Standard
	Mn	55	527300.2	1.1	**74.5358**	0.480	0.6	ug/L	747	Standard
	Co	59	47125.2	1.5	**6.9996**	0.016	0.2	ug/L	234	Standard
	Ni	60	57578.9	1.0	**30.2025**	0.274	0.9	ug/L	215	Standard
	Cu	65	3787.5	1.8	**1.9028**	0.007	0.4	ug/L	104	Standard
	Zn	66	29686.7	1.5	**26.3448**	0.262	1.0	ug/L	363	Standard
>	**Ge**	72	502153.4	1.7				ug/L	495142	Standard
	As	75	1552.5	5.8	**1.4257**	0.058	4.0	ug/L	-50	Standard
	Se	82	328.6	4.9	**2.8136**	0.101	3.6	ug/L	14	Standard
	Se-1	77	866.0	3.6	**11.0672**	0.235	2.1	ug/L	42	Standard
>	**Ga**	71	2006.8	3.5				mg/L	42	Standard
	Rb	85	28431.7	2.8				ug/L	17	Standard
	Y	89	467809.8	1.5				ug/L	417098	Standard
>	**Rh**	103	28.3	36.7				ug/L	13	Standard
	Mo	98	2788.7	2.4	**1.0189**	0.018	1.8	ug/L	11	Standard
	Ag	107	187.0	8.5	**0.0152**	0.002	14.7	ug/L	68	Standard
	Cd	111	184.5	8.6	**0.0785**	0.007	8.5	mg/L	2	Standard
	Cd	114	502.9	12.6	**0.0940**	0.013	13.9	ug/L	12	Standard
>	**In**	115	599816.0	1.2				ug/L	587441	Standard
	Sn	118	1385.1	2.5	**0.1375**	0.003	2.2	ug/L	497	Standard
	Sb	123	315.5	7.5	**0.0620**	0.005	7.5	ug/L	78	Standard
	Ba	135	37805.8	2.1	**18.0728**	0.162	0.9	ug/L	24	Standard
	Ce	140	83749.2	1.1				ug/L	25	Standard
>	**Tb**	159	971524.4	1.2				ug/L	939701	Standard
	Ho	165	1393.4	2.1				ug/L	10	Standard
	Tl	203	289.7	7.1	**0.0339**	0.002	6.5	ug/L	4	Standard
	Tl	205	258.3	11.0	**0.0368**	0.004	11.7	ug/L	2	Standard
	Pb	206	3853.2	1.2	**0.6604**	0.004	0.6	ug/L	240	Standard
	Pb	207	3010.0	1.5	**0.5732**	0.009	1.6	ug/L	198	Standard
	Pb	208	13337.3	2.3	**0.6473**	0.013	1.9	ug/L	883	Standard
	U	238	859.0	4.4	**0.1221**	0.005	4.0	ug/L	3	Standard
>	**Bi**	209	516635.2	0.9				ug/L	523984	Standard

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Na	23	1.7	173.2	**16.3563**	28.321	173.2	mg/L	0	Standard
Mg	24	103702.1	2.0	**114.5988**	3.552	3.1	mg/L	37	Standard
K	39	251.7	12.0	**0.3627**	0.062	17.2	mg/L	38	Standard
Ca	43	61.7	26.1	**0.8208**	0.922	112.4	mg/L	10	Standard
Fe	54	1412.4	2.3	**0.8871**	0.015	1.7	mg/L	179	Standard
Fe	57	645.0	2.8	**0.8030**	0.026	3.3	mg/L	335	Standard
Sc-1	45	71265.6	1.4				mg/L	61029	Standard
Cl	35	28407.3	0.4				ug/L	20195	Standard
Kr	83	1.7	34.6				ug/L	4	Standard
Br	81	49253.3	3.6				ug/L	1547	Standard
P	31	41409.9	2.5				ug/L	15286	Standard
S	34	2068.5	4.4				ug/L	1572	Standard
Sr	88	155.0	22.6				ug/L	73	Standard
C	12	133.3	34.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	57.3				mg/L	3	Standard
Dy	164	2353.9	2.8				mg/L	6	Standard
Ho-1	165	1393.4	2.1				mg/L	10	Standard
Er	166	1453.4	9.2				mg/L	13	Standard
I	127	3067238.7	11.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		124.978	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		101.416	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.107	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.597	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Sample ID: L1606102606
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Method 6020 - Summary Report

Sample ID: L1606102607
Sample Date/Time: Wednesday, June 29, 2016 15:00:54
Number of Replicates: 3
Autosampler Position: 335
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86025.2	1.8				ug/L	74699	Standard
	Be	9	83.3	29.6	**0.0901**	0.026	28.3	ug/L	8	Standard
	Al	27	3430436.9	1.2	**20.2582**	0.272	1.3	ug/L	1493	Standard
	Sc	45	67818.2	2.7				ug/L	61029	Standard
	Ti	47	2650.2	2.1	**6.1960**	0.095	1.5	ug/L	35	Standard
	V	51	9706.1	1.4	**0.9634**	0.025	2.6	ug/L	1435	Standard
	Cr	52	14237.0	2.0	**0.7086**	0.035	4.9	ug/L	7635	Standard
	Cr	53	2521.9	11.8	**2.1295**	0.275	12.9	ug/L	363	Standard
	Mn	55	50752.2	3.1	**6.4246**	0.167	2.6	ug/L	747	Standard
	Co	59	8541.7	4.1	**1.1290**	0.040	3.6	ug/L	234	Standard
	Ni	60	2905.6	5.8	**1.2753**	0.074	5.8	ug/L	215	Standard
	Cu	65	1384.7	3.1	**0.5672**	0.017	3.0	ug/L	104	Standard
	Zn	66	5145.2	1.6	**3.7928**	0.039	1.0	ug/L	363	Standard
>	**Ge**	72	549096.7	0.7				ug/L	495142	Standard
	As	75	307.3	24.2	**0.3069**	0.059	19.1	ug/L	-50	Standard
	Se	82	131.2	8.7	**0.9395**	0.088	9.3	ug/L	14	Standard
	Se-1	77	177.7	11.5	**1.5705**	0.241	15.4	ug/L	42	Standard
>	**Ga**	71	765.0	18.4				mg/L	42	Standard
	Rb	85	11574.4	1.2				ug/L	17	Standard
	Y	89	476523.2	1.2				ug/L	417098	Standard
>	**Rh**	103	40.0	54.5				ug/L	13	Standard
	Mo	98	552.0	3.2	**0.1876**	0.008	4.1	ug/L	11	Standard
	Ag	107	103.3	5.6	**0.0019**	0.001	51.8	ug/L	68	Standard
	Cd	111	131.7	9.5	**0.0509**	0.006	12.0	mg/L	2	Standard
	Cd	114	303.7	9.9	**0.0531**	0.005	10.1	ug/L	12	Standard
>	**In**	115	629575.3	1.6				ug/L	587441	Standard
	Sn	118	1851.8	1.5	**0.2011**	0.002	0.9	ug/L	497	Standard
	Sb	123	475.2	2.5	**0.0908**	0.004	4.2	ug/L	78	Standard
	Ba	135	119108.2	2.3	**54.2912**	1.481	2.7	ug/L	24	Standard
	Ce	140	65755.7	1.8				ug/L	25	Standard
>	**Tb**	159	1004571.7	2.5				ug/L	939701	Standard
	Ho	165	1471.7	8.7				ug/L	10	Standard
	Tl	203	123.3	5.2	**0.0121**	0.001	4.7	ug/L	4	Standard
	Tl	205	98.3	10.6	**0.0129**	0.002	11.8	ug/L	2	Standard
	Pb	206	2854.9	1.5	**0.4229**	0.014	3.4	ug/L	240	Standard
	Pb	207	2325.8	2.5	**0.3831**	0.018	4.6	ug/L	198	Standard
	Pb	208	9906.6	0.9	**0.4144**	0.011	2.7	ug/L	883	Standard
	U	238	660.3	1.2	**0.0843**	0.002	2.3	ug/L	3	Standard
>	**Bi**	209	566874.3	1.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	9059.4	5.1	**10.4668**	0.674	6.4	mg/L	37	Standard
K	39	175.0	7.6	**0.2337**	0.017	7.4	mg/L	38	Standard
Ca	43	76.7	10.0	**1.8315**	0.359	19.6	mg/L	10	Standard
Fe	54	778.8	6.8	**0.4564**	0.046	10.1	mg/L	179	Standard
Fe	57	450.0	7.8	**0.3039**	0.129	42.4	mg/L	335	Standard
> **Sc-1**	45	67818.2	2.7				mg/L	61029	Standard
Cl	35	27265.2	1.0				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	4797.4	2.1				ug/L	1547	Standard
P	31	22328.1	2.9				ug/L	15286	Standard
S	34	1868.4	11.0				ug/L	1572	Standard
Sr	88	170.0	23.0				ug/L	73	Standard
C	12	116.7	4.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	2276.8	3.2				mg/L	6	Standard
Ho-1	165	1471.7	8.7				mg/L	10	Standard
Er	166	1323.4	4.9				mg/L	13	Standard
I	127	142556.3	31.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.163	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.897	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.172
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.185
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 15:04:07
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83434.4	4.1				ug/L	74699	Standard
	Be	9	52151.3	1.6	**53.0799**	1.438	2.7	ug/L	8	Standard
	Al	27	8001829.5	1.2	**48.7762**	1.563	3.2	ug/L	1493	Standard
	Sc	45	63472.7	2.1				ug/L	61029	Standard
	Ti	47	41544.5	0.5	**100.8598**	1.507	1.5	ug/L	35	Standard
	V	51	430823.0	0.6	**52.3478**	0.567	1.1	ug/L	1435	Standard
	Cr	52	414183.8	1.0	**50.4520**	0.020	0.0	ug/L	7635	Standard
	Cr	53	51435.5	2.1	**50.9262**	0.597	1.2	ug/L	363	Standard
	Mn	55	402509.0	2.2	**53.1108**	1.647	3.1	ug/L	747	Standard
	Co	59	395807.1	0.7	**55.1753**	0.902	1.6	ug/L	234	Standard
	Ni	60	102515.7	1.1	**50.3079**	0.215	0.4	ug/L	215	Standard
	Cu	65	102297.5	1.1	**50.5232**	0.685	1.4	ug/L	104	Standard
	Zn	66	61288.7	1.4	**51.2272**	0.860	1.7	ug/L	363	Standard
>	Ge	72	537577.7	1.0				ug/L	495142	Standard
	As	75	61234.0	0.5	**50.4168**	0.738	1.5	ug/L	-50	Standard
	Se	82	6132.0	1.1	**51.3300**	1.089	2.1	ug/L	14	Standard
	Se-1	77	4299.6	0.9	**53.6055**	0.977	1.8	ug/L	42	Standard
>	Ga	71	78.3	42.5				mg/L	42	Standard
	Rb	85	866.7	7.4				ug/L	17	Standard
	Y	89	460058.1	1.7				ug/L	417098	Standard
>	Rh	103	33.3	31.2				ug/L	13	Standard
	Mo	98	295506.5	0.5	**103.9241**	2.114	2.0	ug/L	11	Standard
	Ag	107	348188.0	0.5	**50.0657**	0.748	1.5	ug/L	68	Standard
	Cd	111	111062.0	1.3	**49.7777**	0.346	0.7	mg/L	2	Standard
	Cd	114	271614.5	0.9	**49.6432**	0.990	2.0	ug/L	12	Standard
>	In	115	626816.0	1.9				ug/L	587441	Standard
	Sn	118	313548.1	1.3	**50.2246**	1.384	2.8	ug/L	497	Standard
	Sb	123	246409.0	0.1	**49.4692**	0.867	1.8	ug/L	78	Standard
	Ba	135	105775.6	0.8	**48.4328**	1.255	2.6	ug/L	24	Standard
	Ce	140	66.7	48.8				ug/L	25	Standard
>	Tb	159	996778.4	1.8				ug/L	939701	Standard
	Ho	165	16.7	34.6				ug/L	10	Standard
	Tl	203	442598.6	0.7	**50.9461**	0.764	1.5	ug/L	4	Standard
	Tl	205	402531.2	1.7	**53.3816**	0.705	1.3	ug/L	2	Standard
	Pb	206	287928.0	0.2	**51.0713**	0.393	0.8	ug/L	240	Standard
	Pb	207	257921.1	0.2	**51.4941**	0.566	1.1	ug/L	198	Standard
	Pb	208	1040092.9	0.4	**52.5571**	0.545	1.0	ug/L	883	Standard
	U	238	381264.5	1.2	**52.5495**	0.479	0.9	ug/L	3	Standard
>	Bi	209	552262.9	0.9				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4305.6	5.5	**5.2771**	0.213	4.0	mg/L	37	Standard
K	39	2275.2	2.4	**4.7239**	0.217	4.6	mg/L	38	Standard
Ca	43	126.7	42.6	**5.1579**	3.228	62.6	mg/L	10	Standard
Fe	54	6415.2	4.5	**5.0956**	0.328	6.4	mg/L	179	Standard
Fe	57	1851.8	4.1	**4.9827**	0.373	7.5	mg/L	335	Standard
> **Sc-1**	45	63472.7	2.1				mg/L	61029	Standard
Cl	35	28119.4	1.3				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	2310.2	13.5				ug/L	1547	Standard
P	31	19991.5	1.1				ug/L	15286	Standard
S	34	2273.5	5.1				ug/L	1572	Standard
Sr	88	71.7	10.7				ug/L	73	Standard
C	12	66.7	8.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	8.6	116.8				mg/L	6	Standard
Ho-1	165	16.7	34.6				mg/L	10	Standard
Er	166	30.0	0.0				mg/L	13	Standard
I	127	25116.6	23.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	106.160		
Al	27	97.552		
Sc	45			
Ti	47	100.860		
V	51	104.696		
Cr	52	100.904		
Cr	53			
Mn	55	106.222		
Co	59	110.351		
Ni	60	100.616		
Cu	65	101.046		
Zn	66	102.454		
> Ge	72		108.570	
As	75	100.834		
Se	82	102.660		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	103.924		
Ag	107	100.131		
Cd	111	99.555		
Cd	114			
In	115		106.703	
Sn	118	100.449		
Sb	123	98.938		
Ba	135	96.866		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.892		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.114		
U	238	105.099		
Bi	209		105.397	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Co	59	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 15:07:18
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	85012.9	2.0				ug/L	74699	Standard
	Be	9	28.3	27.0	**0.0359**	0.008	21.1	ug/L	8	Standard
	Al	27	3885.6	39.7	**0.0100**	0.010	97.9	ug/L	1493	Standard
	Sc	45	66216.1	1.0				ug/L	61029	Standard
	Ti	47	42.3	11.2	**-0.0066**	0.011	167.9	ug/L	35	Standard
	V	51	1610.8	4.5	**0.0001**	0.010	18188.0	ug/L	1435	Standard
	Cr	52	7733.0	4.2	**-0.0667**	0.042	62.7	ug/L	7635	Standard
	Cr	53	656.7	7.6	**0.3218**	0.049	15.4	ug/L	363	Standard
	Mn	55	934.4	2.8	**-0.0250**	0.004	15.9	ug/L	747	Standard
	Co	59	270.3	16.3	**0.0003**	0.006	2278.1	ug/L	234	Standard
	Ni	60	353.0	46.0	**0.0492**	0.080	162.9	ug/L	215	Standard
	Cu	65	160.7	5.6	**-0.0245**	0.004	18.2	ug/L	104	Standard
	Zn	66	427.3	1.4	**-0.0957**	0.006	6.2	ug/L	363	Standard
>	Ge	72	539852.0	0.5				ug/L	495142	Standard
	As	75	-35.2	72.3	**0.0308**	0.021	67.1	ug/L	-50	Standard
	Se	82	23.4	13.4	**0.0577**	0.027	47.1	ug/L	14	Standard
	Se-1	77	65.0	15.6	**0.1944**	0.131	67.4	ug/L	42	Standard
>	Ga	71	48.3	15.8				mg/L	42	Standard
	Rb	85	13.3	21.7				ug/L	17	Standard
	Y	89	460334.1	1.4				ug/L	417098	Standard
>	Rh	103	15.0	57.7				ug/L	13	Standard
	Mo	98	325.6	30.7	**0.1063**	0.035	33.0	ug/L	11	Standard
	Ag	107	121.0	14.9	**0.0041**	0.003	62.9	ug/L	68	Standard
	Cd	111	13.2	31.2	**-0.0021**	0.002	85.0	mg/L	2	Standard
	Cd	114	51.9	43.2	**0.0072**	0.004	56.5	ug/L	12	Standard
>	In	115	641477.2	0.6				ug/L	587441	Standard
	Sn	118	860.0	23.5	**0.0400**	0.031	77.0	ug/L	497	Standard
	Sb	123	396.3	20.9	**0.0735**	0.016	21.4	ug/L	78	Standard
	Ba	135	45.3	20.4	**0.0043**	0.004	99.1	ug/L	24	Standard
	Ce	140	36.7	15.7				ug/L	25	Standard
>	Tb	159	1015779.3	0.6				ug/L	939701	Standard
	Ho	165	5.0	100.0				ug/L	10	Standard
	Tl	203	76.0	35.5	**0.0066**	0.003	43.8	ug/L	4	Standard
	Tl	205	63.3	18.2	**0.0082**	0.001	17.5	ug/L	2	Standard
	Pb	206	309.7	4.7	**-0.0185**	0.002	12.2	ug/L	240	Standard
	Pb	207	263.0	6.6	**-0.0197**	0.003	14.7	ug/L	198	Standard
	Pb	208	1081.0	8.8	**-0.0217**	0.004	19.1	ug/L	883	Standard
	U	238	55.3	39.0	**0.0029**	0.003	97.3	ug/L	3	Standard
>	Bi	209	576716.4	0.8				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.8612**	30.928	173.2	mg/L	0	Standard
Mg	24	48.3	39.2	**-0.0075**	0.023	309.1	mg/L	37	Standard
K	39	65.0	38.5	**0.0181**	0.050	275.9	mg/L	38	Standard
Ca	43	31.7	9.1	**-0.6795**	0.172	25.4	mg/L	10	Standard
Fe	54	165.7	15.0	**-0.0089**	0.019	210.6	mg/L	179	Standard
Fe	57	258.3	12.9	**-0.2654**	0.099	37.5	mg/L	335	Standard
Sc-1	45	66216.1	1.0				mg/L	61029	Standard
Cl	35	27856.9	0.3				ug/L	20195	Standard
Kr	83	4.0	43.3				ug/L	4	Standard
Br	81	1983.5	3.1				ug/L	1547	Standard
P	31	20308.6	3.1				ug/L	15286	Standard
S	34	2271.8	3.7				ug/L	1572	Standard
Sr	88	51.7	22.3				ug/L	73	Standard
C	12	73.3	34.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	20.0	86.6				mg/L	6	Standard
Ho-1	165	5.0	100.0				mg/L	10	Standard
Er	166	0.0					mg/L	13	Standard
I	127	13137.4	11.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		109.030	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.199
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.064
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Wednesday, June 29, 2016 15:09:35
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Method 6020 - Summary Report

Sample ID: PBS M5 WG573099-02
Sample Date/Time: Wednesday, June 29, 2016 15:10:32
Number of Replicates: 3
Autosampler Position: 336
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82837.5	1.4				ug/L	74699	Standard
	Be	9	20.0	75.0	**0.0280**	0.015	53.9	ug/L	8	Standard
	Al	27	15988.5	12.5	**0.0848**	0.014	16.0	ug/L	1493	Standard
	Sc	45	64671.1	2.4				ug/L	61029	Standard
	Ti	47	45.0	20.0	**-0.0015**	0.023	1562.0	ug/L	35	Standard
	V	51	1647.0	1.8	**0.0017**	0.004	236.7	ug/L	1435	Standard
	Cr	52	11218.5	4.3	**0.3456**	0.052	15.0	ug/L	7635	Standard
	Cr	53	1063.4	5.0	**0.7116**	0.068	9.6	ug/L	363	Standard
	Mn	55	1756.1	5.1	**0.0801**	0.011	14.2	ug/L	747	Standard
	Co	59	312.3	6.3	**0.0055**	0.003	48.1	ug/L	234	Standard
	Ni	60	1377.4	15.3	**0.5415**	0.099	18.4	ug/L	215	Standard
	Cu	65	261.7	8.1	**0.0235**	0.011	45.2	ug/L	104	Standard
	Zn	66	1613.1	3.7	**0.8814**	0.040	4.6	ug/L	363	Standard
>	**Ge**	72	547319.5	1.5				ug/L	495142	Standard
	As	75	-42.5	100.6	**0.0255**	0.034	133.0	ug/L	-50	Standard
	Se	82	18.0	18.7	**0.0100**	0.027	272.2	ug/L	14	Standard
	Se-1	77	65.0	16.6	**0.1841**	0.145	78.6	ug/L	42	Standard
>	**Ga**	71	66.7	22.9				mg/L	42	Standard
	Rb	85	36.7	56.8				ug/L	17	Standard
	Y	89	450480.7	0.9				ug/L	417098	Standard
>	**Rh**	103	26.7	10.8				ug/L	13	Standard
	Mo	98	139.4	1.7	**0.0435**	0.001	2.2	ug/L	11	Standard
	Ag	107	102.7	18.1	**0.0019**	0.003	140.0	ug/L	68	Standard
	Cd	111	13.1	71.9	**-0.0020**	0.004	209.6	mg/L	2	Standard
	Cd	114	24.5	136.0	**0.0024**	0.006	256.9	ug/L	12	Standard
>	**In**	115	624818.4	0.5				ug/L	587441	Standard
	Sn	118	765.0	2.8	**0.0284**	0.003	12.0	ug/L	497	Standard
	Sb	123	189.1	20.4	**0.0339**	0.008	23.4	ug/L	78	Standard
	Ba	135	83.0	7.9	**0.0221**	0.003	14.0	ug/L	24	Standard
	Ce	140	301.7	18.8				ug/L	25	Standard
>	**Tb**	159	992078.8	0.6				ug/L	939701	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	40.0	57.5	**0.0027**	0.003	94.2	ug/L	4	Standard
	Tl	205	43.3	29.0	**0.0058**	0.002	28.5	ug/L	2	Standard
	Pb	206	319.7	11.1	**-0.0160**	0.006	36.6	ug/L	240	Standard
	Pb	207	262.0	4.6	**-0.0191**	0.002	12.7	ug/L	198	Standard
	Pb	208	1094.7	2.8	**-0.0202**	0.002	8.1	ug/L	883	Standard
	U	238	22.0	58.0	**-0.0015**	0.002	114.9	ug/L	3	Standard
>	**Bi**	209	568214.1	0.6				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	43.3	17.6	**-0.0124**	0.008	67.7	mg/L	37	Standard
K	39	35.0	51.5	**-0.0416**	0.036	86.5	mg/L	38	Standard
Ca	43	30.0	28.9	**-0.7286**	0.543	74.5	mg/L	10	Standard
Fe	54	174.1	18.8	**0.0014**	0.029	2030.6	mg/L	179	Standard
Fe	57	266.7	22.0	**-0.2161**	0.204	94.4	mg/L	335	Standard
> **Sc-1**	45	64671.1	2.4				mg/L	61029	Standard
Cl	35	28617.0	1.0				ug/L	20195	Standard
Kr	83	2.0	100.0				ug/L	4	Standard
Br	81	1953.5	6.4				ug/L	1547	Standard
P	31	19132.1	3.4				ug/L	15286	Standard
S	34	2278.5	6.0				ug/L	1572	Standard
Sr	88	68.3	29.6				ug/L	73	Standard
C	12	83.3	13.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	15.5	39.0				mg/L	6	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	23.3	49.5				mg/L	13	Standard
I	127	8569.1	14.4				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		110.895	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		110.538	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.363
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.441
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSS M5 WG573099-03
Sample Date/Time: Wednesday, June 29, 2016 15:13:43
Number of Replicates: 3
Autosampler Position: 337
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83551.5	2.3				ug/L	74699	Standard
	Be	9	25751.9	2.9	**26.1593**	0.514	2.0	ug/L	8	Standard
	Al	27	17496.8	6.9	**0.0930**	0.006	6.2	ug/L	1493	Standard
	Sc	45	66115.6	1.8				ug/L	61029	Standard
	Ti	47	52.7	14.3	**0.0175**	0.016	92.6	ug/L	35	Standard
	V	51	220707.2	1.1	**26.4464**	0.390	1.5	ug/L	1435	Standard
	Cr	52	221818.0	0.7	**26.2660**	0.546	2.1	ug/L	7635	Standard
	Cr	53	27359.7	0.9	**26.6591**	0.406	1.5	ug/L	363	Standard
	Mn	55	204818.9	1.5	**26.6717**	0.451	1.7	ug/L	747	Standard
	Co	59	196776.0	1.4	**27.1279**	0.304	1.1	ug/L	234	Standard
	Ni	60	55651.4	0.4	**26.9765**	0.492	1.8	ug/L	215	Standard
	Cu	65	54836.4	0.8	**26.7594**	0.556	2.1	ug/L	104	Standard
	Zn	66	32934.1	1.1	**27.0387**	0.809	3.0	ug/L	363	Standard
>	**Ge**	72	543210.6	2.2				ug/L	495142	Standard
	As	75	31720.5	1.5	**25.8765**	0.351	1.4	ug/L	-50	Standard
	Se	82	3103.9	1.9	**25.6428**	0.383	1.5	ug/L	14	Standard
	Se-1	77	2231.2	2.7	**27.2211**	0.278	1.0	ug/L	42	Standard
>	**Ga**	71	55.0	47.2				mg/L	42	Standard
	Rb	85	35.0	42.9				ug/L	17	Standard
	Y	89	467716.3	0.8				ug/L	417098	Standard
>	**Rh**	103	13.3	43.3				ug/L	13	Standard
	Mo	98	194.8	10.9	**0.0603**	0.008	12.8	ug/L	11	Standard
	Ag	107	10349.2	1.8	**1.4201**	0.038	2.7	ug/L	68	Standard
	Cd	111	56717.0	1.5	**24.4699**	0.504	2.1	mg/L	2	Standard
	Cd	114	136634.8	1.7	**24.0382**	0.506	2.1	ug/L	12	Standard
>	**In**	115	651063.9	0.8				ug/L	587441	Standard
	Sn	118	761.7	5.5	**0.0229**	0.007	28.6	ug/L	497	Standard
	Sb	123	128047.0	1.0	**24.7441**	0.436	1.8	ug/L	78	Standard
	Ba	135	54350.3	0.9	**23.9455**	0.395	1.6	ug/L	24	Standard
	Ce	140	61.7	26.1				ug/L	25	Standard
>	**Tb**	159	1033159.0	0.5				ug/L	939701	Standard
	Ho	165	16.7	17.3				ug/L	10	Standard
	Tl	203	227266.1	0.5	**24.7175**	0.218	0.9	ug/L	4	Standard
	Tl	205	203485.9	1.6	**25.5015**	0.511	2.0	ug/L	2	Standard
	Pb	206	152382.5	0.6	**25.5050**	0.255	1.0	ug/L	240	Standard
	Pb	207	130131.8	0.7	**24.5130**	0.243	1.0	ug/L	198	Standard
	Pb	208	530327.1	0.9	**25.2835**	0.262	1.0	ug/L	883	Standard
	U	238	189200.1	1.2	**24.6397**	0.334	1.4	ug/L	3	Standard
>	**Bi**	209	584433.1	0.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	41.7	36.7	**-0.0156**	0.017	112.1	mg/L	37	Standard
K	39	38.3	52.7	**-0.0354**	0.042	119.1	mg/L	38	Standard
Ca	43	25.0	52.9	**-1.0705**	0.758	70.8	mg/L	10	Standard
Fe	54	141.4	21.3	**-0.0274**	0.025	92.5	mg/L	179	Standard
Fe	57	241.7	15.7	**-0.3151**	0.126	40.1	mg/L	335	Standard
> **Sc-1**	45	66115.6	1.8				mg/L	61029	Standard
Cl	35	28385.2	0.6				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	2056.8	1.5				ug/L	1547	Standard
P	31	18911.8	2.1				ug/L	15286	Standard
S	34	2256.8	4.9				ug/L	1572	Standard
Sr	88	70.0	39.8				ug/L	73	Standard
C	12	60.0	66.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	9.5	5.0				mg/L	6	Standard
Ho-1	165	16.7	17.3				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	6019.5	14.1				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		111.851	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		109.708	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.831
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		111.536
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606088803 WG573099-01
Sample Date/Time: Wednesday, June 29, 2016 15:16:55
Number of Replicates: 3
Autosampler Position: 338
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	87864.2	2.8				ug/L	74699	Standard
	Be	9	1871.8	7.3	**1.8142**	0.100	5.5	ug/L	8	Standard
	Al	27	17464438.5	2.2	**101.0382**	1.686	1.7	ug/L	1493	Standard
	Sc	45	88916.8	1.0				ug/L	61029	Standard
	Ti	47	8105.2	1.6	**20.2503**	0.364	1.8	ug/L	35	Standard
	V	51	266665.9	0.8	**33.4185**	0.188	0.6	ug/L	1435	Standard
	Cr	52	308197.4	0.8	**38.5684**	0.415	1.1	ug/L	7635	Standard
	Cr	53	37658.4	2.2	**38.4602**	0.742	1.9	ug/L	363	Standard
	Mn	55	19789542.3	0.8	**2705.9402**	31.717	1.2	ug/L	747	Standard
	Co	59	276278.5	0.6	**39.7944**	0.401	1.0	ug/L	234	Standard
	Ni	60	160372.4	1.4	**81.4241**	1.275	1.6	ug/L	215	Standard
	Cu	65	107769.0	1.4	**55.0229**	0.902	1.6	ug/L	104	Standard
	Zn	66	213527.8	0.7	**185.6475**	1.406	0.8	ug/L	363	Standard
>	**Ge**	72	520092.2	0.4				ug/L	495142	Standard
	As	75	6170.4	1.0	**5.3042**	0.070	1.3	ug/L	-50	Standard
	Se	82	90.8	2.7	**0.6494**	0.023	3.5	ug/L	14	Standard
	Se-1	77	157.7	4.9	**1.4330**	0.106	7.4	ug/L	42	Standard
>	**Ga**	71	47343.9	1.1				mg/L	42	Standard
	Rb	85	380728.2	1.5				ug/L	17	Standard
	Y	89	1106618.3	0.2				ug/L	417098	Standard
>	**Rh**	103	63.3	24.1				ug/L	13	Standard
	Mo	98	980.4	3.2	**0.3366**	0.010	3.0	ug/L	11	Standard
	Ag	107	955.0	6.8	**0.1236**	0.011	9.1	ug/L	68	Standard
	Cd	111	2225.7	2.0	**0.9829**	0.017	1.8	mg/L	2	Standard
	Cd	114	5479.9	1.8	**0.9924**	0.001	0.1	ug/L	12	Standard
>	**In**	115	631161.9	1.7				ug/L	587441	Standard
	Sn	118	413.3	14.8	**-0.0289**	0.009	31.0	ug/L	497	Standard
	Sb	123	370.7	34.4	**0.0695**	0.025	35.4	ug/L	78	Standard
	Ba	135	385428.4	1.0	**175.2729**	2.367	1.4	ug/L	24	Standard
	Ce	140	2007459.4	3.6				ug/L	25	Standard
>	**Tb**	159	1048778.2	1.5				ug/L	939701	Standard
	Ho	165	53168.1	1.9				ug/L	10	Standard
	Tl	203	2332.8	1.5	**0.2668**	0.007	2.6	ug/L	4	Standard
	Tl	205	2056.8	1.1	**0.2730**	0.001	0.5	ug/L	2	Standard
	Pb	206	102474.4	0.3	**18.1326**	0.189	1.0	ug/L	240	Standard
	Pb	207	82544.6	1.5	**16.4326**	0.141	0.9	ug/L	198	Standard
	Pb	208	353310.3	0.4	**17.8060**	0.180	1.0	ug/L	883	Standard
	U	238	9355.9	0.7	**1.2854**	0.017	1.3	ug/L	3	Standard
>	**Bi**	209	552227.6	1.4				ug/L	523984	Standard

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Na	23	1.7	173.2	**13.3403**	23.097	173.1	mg/L	0	Standard
Mg	24	320.0	5.6	**0.2185**	0.016	7.5	mg/L	37	Standard
K	39	1080.0	10.5	**1.5233**	0.156	10.2	mg/L	38	Standard
Ca	43	916.7	12.0	**37.2112**	4.625	12.4	mg/L	10	Standard
Fe	54	75887.5	2.1	**44.0256**	1.050	2.4	mg/L	179	Standard
Fe	57	19502.5	1.2	**44.4256**	0.652	1.5	mg/L	335	Standard
> **Sc-1**	45	88916.8	1.0				mg/L	61029	Standard
Cl	35	27513.6	0.5				ug/L	20195	Standard
Kr	83	0.3	173.2				ug/L	4	Standard
Br	81	3467.1	2.9				ug/L	1547	Standard
P	31	21865.8	2.4				ug/L	15286	Standard
S	34	2631.9	4.0				ug/L	1572	Standard
Sr	88	220.0	6.0				ug/L	73	Standard
C	12	66.7	37.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	36.7	15.7				mg/L	3	Standard
Dy	164	86599.4	2.5				mg/L	6	Standard
Ho-1	165	53168.1	1.9				mg/L	10	Standard
Er	166	47260.3	0.7				mg/L	13	Standard
I	127	6809.9	9.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		117.625	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.039	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.443
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.390
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606088803S WG573099-04
Sample Date/Time: Wednesday, June 29, 2016 15:20:06
Number of Replicates: 3
Autosampler Position: 339
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88784.5	2.9				ug/L	74699	Standard
	Be	9	27508.3	0.4	**26.3080**	0.631	2.4	ug/L	8	Standard
	Al	27	20794150.5	3.6	**119.0173**	0.902	0.8	ug/L	1493	Standard
	Sc	45	96992.9	2.3				ug/L	61029	Standard
	Ti	47	11606.4	2.4	**28.2553**	0.997	3.5	ug/L	35	Standard
	V	51	594819.7	3.2	**72.7593**	3.186	4.4	ug/L	1435	Standard
	Cr	52	602098.1	1.8	**74.2282**	2.325	3.1	ug/L	7635	Standard
	Cr	53	74295.1	1.5	**74.1206**	1.783	2.4	ug/L	363	Standard
	Mn	55	28090211.5	1.2	**3736.5671**	85.696	2.3	ug/L	747	Standard
	Co	59	552502.8	1.4	**77.4533**	1.929	2.5	ug/L	234	Standard
	Ni	60	270132.5	1.6	**133.5117**	3.898	2.9	ug/L	215	Standard
	Cu	65	201432.2	2.2	**100.1412**	3.335	3.3	ug/L	104	Standard
	Zn	66	320182.0	2.8	**271.0655**	11.001	4.1	ug/L	363	Standard
>	**Ge**	72	534719.5	1.4				ug/L	495142	Standard
	As	75	41934.7	2.3	**34.7370**	1.197	3.4	ug/L	-50	Standard
	Se	82	2480.2	1.5	**20.7934**	0.607	2.9	ug/L	14	Standard
	Se-1	77	1799.1	2.3	**22.1951**	0.836	3.8	ug/L	42	Standard
>	**Ga**	71	63861.1	4.0				mg/L	42	Standard
	Rb	85	554637.9	1.8				ug/L	17	Standard
	Y	89	1250941.0	3.4				ug/L	417098	Standard
>	**Rh**	103	88.3	8.6				ug/L	13	Standard
	Mo	98	1454.1	4.8	**0.5217**	0.033	6.4	ug/L	11	Standard
	Ag	107	4814.4	4.1	**0.7006**	0.018	2.6	ug/L	68	Standard
	Cd	111	56224.0	1.3	**25.9728**	0.111	0.4	mg/L	2	Standard
	Cd	114	138439.7	3.6	**26.0717**	0.493	1.9	ug/L	12	Standard
>	**In**	115	608045.3	1.7				ug/L	587441	Standard
	Sn	118	518.3	2.0	**-0.0090**	0.001	16.4	ug/L	497	Standard
	Sb	123	2325.7	1.7	**0.4771**	0.008	1.7	ug/L	78	Standard
	Ba	135	587827.7	1.5	**277.4602**	0.795	0.3	ug/L	24	Standard
	Ce	140	2927642.8	0.6				ug/L	25	Standard
>	**Tb**	159	1033681.4	2.7				ug/L	939701	Standard
	Ho	165	68191.4	0.6				ug/L	10	Standard
	Tl	203	212892.3	0.8	**25.4932**	0.083	0.3	ug/L	4	Standard
	Tl	205	191048.7	1.2	**26.3598**	0.091	0.3	ug/L	2	Standard
	Pb	206	260602.6	2.5	**48.0843**	0.971	2.0	ug/L	240	Standard
	Pb	207	216580.3	1.8	**44.9759**	0.652	1.4	ug/L	198	Standard
	Pb	208	918219.8	1.2	**48.2652**	0.290	0.6	ug/L	883	Standard
	U	238	196774.7	2.4	**28.2131**	0.460	1.6	ug/L	3	Standard
>	**Bi**	209	530811.0	1.1				ug/L	523984	Standard

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Na	23	1.7	173.2	**12.2205**	21.158	173.1	mg/L	0	Standard
Mg	24	365.0	3.6	**0.2314**	0.007	3.2	mg/L	37	Standard
K	39	1516.7	5.6	**1.9963**	0.137	6.9	mg/L	38	Standard
Ca	43	726.7	5.8	**26.3770**	1.992	7.6	mg/L	10	Standard
Fe	54	108682.6	3.2	**57.8341**	0.799	1.4	mg/L	179	Standard
Fe	57	27718.7	1.4	**58.2169**	0.892	1.5	mg/L	335	Standard
Sc-1	45	96992.9	2.3				mg/L	61029	Standard
Cl	35	26216.7	4.4				ug/L	20195	Standard
Kr	83	3.0	33.3				ug/L	4	Standard
Br	81	4344.0	8.1				ug/L	1547	Standard
P	31	22273.0	3.2				ug/L	15286	Standard
S	34	2523.5	5.1				ug/L	1572	Standard
Sr	88	263.3	11.4				ug/L	73	Standard
C	12	56.7	10.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	52.9				mg/L	3	Standard
Dy	164	111985.6	3.7				mg/L	6	Standard
Ho-1	165	68191.4	0.6				mg/L	10	Standard
Er	166	57569.3	4.1				mg/L	13	Standard
I	127	6513.1	8.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.857	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.993	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.507
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.303
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	

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Cu 65 Upper, S, EEE	Cu	65
Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606088803SD WG573099-05
Sample Date/Time: Wednesday, June 29, 2016 15:23:18
Number of Replicates: 3
Autosampler Position: 340
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86779.6	2.9				ug/L	74699	Standard
	Be	9	26783.7	4.5	**26.1889**	0.607	2.3	ug/L	8	Standard
	Al	27	17495490.1	2.1	**102.4852**	1.702	1.7	ug/L	1493	Standard
	Sc	45	84971.1	3.4				ug/L	61029	Standard
	Ti	47	11032.7	2.5	**25.6633**	0.769	3.0	ug/L	35	Standard
	V	51	492228.0	0.7	**57.5050**	0.764	1.3	ug/L	1435	Standard
	Cr	52	556079.4	1.4	**65.4064**	1.154	1.8	ug/L	7635	Standard
	Cr	53	67044.7	1.2	**63.8916**	0.827	1.3	ug/L	363	Standard
	Mn	55	16288704.5	1.7	**2071.2097**	47.470	2.3	ug/L	747	Standard
	Co	59	487642.9	2.1	**65.3439**	1.764	2.7	ug/L	234	Standard
	Ni	60	230286.3	2.0	**108.7653**	2.155	2.0	ug/L	215	Standard
	Cu	65	186555.0	1.4	**88.6352**	1.512	1.7	ug/L	104	Standard
	Zn	66	269449.8	1.5	**217.9309**	3.745	1.7	ug/L	363	Standard
>	**Ge**	72	559301.6	0.7				ug/L	495142	Standard
	As	75	32569.4	2.0	**25.8033**	0.648	2.5	ug/L	-50	Standard
	Se	82	2764.3	2.2	**22.1623**	0.630	2.8	ug/L	14	Standard
	Se-1	77	1950.8	4.1	**23.0256**	1.042	4.5	ug/L	42	Standard
>	**Ga**	71	55862.8	2.2				mg/L	42	Standard
	Rb	85	472783.4	2.1				ug/L	17	Standard
	Y	89	931018.8	1.5				ug/L	417098	Standard
>	**Rh**	103	36.7	47.9				ug/L	13	Standard
	Mo	98	833.5	3.5	**0.3003**	0.015	5.0	ug/L	11	Standard
	Ag	107	3972.2	0.3	**0.5833**	0.011	1.9	ug/L	68	Standard
	Cd	111	54996.2	0.6	**25.7204**	0.316	1.2	mg/L	2	Standard
	Cd	114	133681.6	2.4	**25.4888**	0.206	0.8	ug/L	12	Standard
>	**In**	115	600647.8	1.6				ug/L	587441	Standard
	Sn	118	466.7	16.3	**-0.0167**	0.012	70.0	ug/L	497	Standard
	Sb	123	3387.1	2.7	**0.7053**	0.008	1.2	ug/L	78	Standard
	Ba	135	467382.4	1.0	**223.3343**	2.175	1.0	ug/L	24	Standard
	Ce	140	1516729.6	1.2				ug/L	25	Standard
>	**Tb**	159	1007426.2	2.1				ug/L	939701	Standard
	Ho	165	39640.1	1.9				ug/L	10	Standard
	Tl	203	211811.1	1.3	**24.5598**	0.357	1.5	ug/L	4	Standard
	Tl	205	187359.9	1.8	**25.0339**	0.597	2.4	ug/L	2	Standard
	Pb	206	219015.7	1.1	**39.1225**	0.790	2.0	ug/L	240	Standard
	Pb	207	182856.8	0.5	**36.7608**	0.679	1.8	ug/L	198	Standard
	Pb	208	768036.7	1.8	**39.0813**	0.960	2.5	ug/L	883	Standard
	U	238	187429.9	1.2	**26.0258**	0.546	2.1	ug/L	3	Standard
>	**Bi**	209	548237.3	1.8				ug/L	523984	Standard

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Na	23	6.7	43.3	**55.5842**	25.460	45.8	mg/L	0	Standard
Mg	24	348.3	15.5	**0.2571**	0.039	15.2	mg/L	37	Standard
K	39	1421.7	3.5	**2.1441**	0.098	4.5	mg/L	38	Standard
Ca	43	383.3	17.4	**14.9477**	3.560	23.8	mg/L	10	Standard
Fe	54	86673.1	2.4	**52.6645**	1.510	2.9	mg/L	179	Standard
Fe	57	21795.7	3.1	**52.2085**	3.369	6.5	mg/L	335	Standard
> **Sc-1**	45	84971.1	3.4				mg/L	61029	Standard
Cl	35	24892.4	3.3				ug/L	20195	Standard
Kr	83	2.3	65.5				ug/L	4	Standard
Br	81	3257.0	4.5				ug/L	1547	Standard
P	31	20836.0	2.5				ug/L	15286	Standard
S	34	2406.9	4.4				ug/L	1572	Standard
Sr	88	191.7	46.0				ug/L	73	Standard
C	12	76.7	15.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	20.0				mg/L	3	Standard
Dy	164	63526.1	1.7				mg/L	6	Standard
Ho-1	165	39640.1	1.9				mg/L	10	Standard
Er	166	35224.2	2.0				mg/L	13	Standard
I	127	5139.2	9.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		116.173	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		112.958	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	102.248
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	104.629
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	

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Zn 66 Upper, S, EEE	Zn	66
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606088301
Sample Date/Time: Wednesday, June 29, 2016 15:26:29
Number of Replicates: 3
Autosampler Position: 341
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84384.4	1.7				ug/L	74699	Standard
	Be	9	1073.4	1.5	**1.0872**	0.032	3.0	ug/L	8	Standard
	Al	27	11940771.9	2.8	**71.9363**	2.792	3.9	ug/L	1493	Standard
	Sc	45	76626.6	1.2				ug/L	61029	Standard
	Ti	47	4374.3	2.0	**10.2834**	0.247	2.4	ug/L	35	Standard
	V	51	162703.8	1.0	**19.2014**	0.098	0.5	ug/L	1435	Standard
	Cr	52	132016.8	1.7	**15.0167**	0.347	2.3	ug/L	7635	Standard
	Cr	53	16153.6	0.8	**15.4073**	0.063	0.4	ug/L	363	Standard
	Mn	55	3262876.5	0.6	**421.8414**	5.005	1.2	ug/L	747	Standard
	Co	59	67832.8	0.7	**9.2120**	0.089	1.0	ug/L	234	Standard
	Ni	60	42623.2	1.3	**20.3743**	0.274	1.3	ug/L	215	Standard
	Cu	65	31205.8	0.3	**14.9935**	0.149	1.0	ug/L	104	Standard
	Zn	66	53134.7	1.9	**43.3429**	0.711	1.6	ug/L	363	Standard
>	**Ge**	72	549915.9	0.8				ug/L	495142	Standard
	As	75	3335.6	3.0	**2.7409**	0.080	2.9	ug/L	-50	Standard
	Se	82	46.6	19.0	**0.2449**	0.076	30.9	ug/L	14	Standard
	Se-1	77	111.7	5.1	**0.7542**	0.066	8.8	ug/L	42	Standard
>	**Ga**	71	17852.2	2.1				mg/L	42	Standard
	Rb	85	173572.1	2.0				ug/L	17	Standard
	Y	89	703667.4	2.2				ug/L	417098	Standard
>	**Rh**	103	33.3	34.6				ug/L	13	Standard
	Mo	98	357.4	3.8	**0.1158**	0.007	6.2	ug/L	11	Standard
	Ag	107	550.0	6.6	**0.0636**	0.007	11.1	ug/L	68	Standard
	Cd	111	273.3	3.2	**0.1105**	0.006	5.2	mg/L	2	Standard
	Cd	114	617.1	4.0	**0.1069**	0.006	5.7	ug/L	12	Standard
>	**In**	115	648944.8	3.3				ug/L	587441	Standard
	Sn	118	606.7	6.6	**-0.0008**	0.003	418.3	ug/L	497	Standard
	Sb	123	137.4	14.1	**0.0224**	0.003	13.8	ug/L	78	Standard
	Ba	135	318337.1	2.2	**140.8176**	2.386	1.7	ug/L	24	Standard
	Ce	140	1211648.5	1.9				ug/L	25	Standard
>	**Tb**	159	1041543.0	2.5				ug/L	939701	Standard
	Ho	165	19666.1	3.2				ug/L	10	Standard
	Tl	203	1035.0	3.0	**0.1143**	0.004	3.7	ug/L	4	Standard
	Tl	205	953.4	8.0	**0.1233**	0.009	7.5	ug/L	2	Standard
	Pb	206	127279.7	1.1	**21.9443**	0.442	2.0	ug/L	240	Standard
	Pb	207	103046.6	1.5	**19.9907**	0.426	2.1	ug/L	198	Standard
	Pb	208	441148.5	1.4	**21.6612**	0.196	0.9	ug/L	883	Standard
	U	238	5034.2	0.5	**0.6713**	0.005	0.8	ug/L	3	Standard
>	**Bi**	209	567168.2	1.1				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	340.0	3.9	**0.2844**	0.011	3.7	mg/L	37	Standard
K	39	688.3	2.3	**1.0975**	0.019	1.8	mg/L	38	Standard
Ca	43	145.0	15.8	**4.7718**	1.160	24.3	mg/L	10	Standard
Fe	54	17324.9	3.4	**11.5598**	0.337	2.9	mg/L	179	Standard
Fe	57	4550.7	3.6	**11.2444**	0.399	3.5	mg/L	335	Standard
Sc-1	45	76626.6	1.2				mg/L	61029	Standard
Cl	35	25558.2	1.3				ug/L	20195	Standard
Kr	83	0.7	173.2				ug/L	4	Standard
Br	81	2263.5	8.1				ug/L	1547	Standard
P	31	20323.6	0.9				ug/L	15286	Standard
S	34	2258.5	1.1				ug/L	1572	Standard
Sr	88	101.7	10.2				ug/L	73	Standard
C	12	116.7	13.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	49.5				mg/L	3	Standard
Dy	164	32996.6	2.0				mg/L	6	Standard
Ho-1	165	19666.1	3.2				mg/L	10	Standard
Er	166	17349.9	3.1				mg/L	13	Standard
I	127	11507.7	1.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		112.966	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		111.062	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	110.470
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	108.241
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606091201
Sample Date/Time: Wednesday, June 29, 2016 15:29:41
Number of Replicates: 3
Autosampler Position: 342
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84277.1	1.0				ug/L	74699	Standard
	Be	9	1593.4	6.0	**1.6114**	0.083	5.1	ug/L	8	Standard
	Al	27	15243679.1	1.9	**91.9299**	1.967	2.1	ug/L	1493	Standard
	Sc	45	83538.1	3.1				ug/L	61029	Standard
	Ti	47	10307.8	1.1	**23.4331**	0.360	1.5	ug/L	35	Standard
	V	51	410563.1	0.8	**46.8597**	0.438	0.9	ug/L	1435	Standard
	Cr	52	261972.4	0.3	**29.5747**	0.180	0.6	ug/L	7635	Standard
	Cr	53	32057.2	1.7	**29.6933**	0.417	1.4	ug/L	363	Standard
	Mn	55	12908980.1	3.2	**1604.9549**	58.354	3.6	ug/L	747	Standard
	Co	59	181241.6	3.1	**23.7226**	0.846	3.6	ug/L	234	Standard
	Ni	60	66685.8	0.9	**30.7063**	0.259	0.8	ug/L	215	Standard
	Cu	65	73374.2	0.7	**34.0220**	0.398	1.2	ug/L	104	Standard
	Zn	66	143517.2	0.9	**113.2755**	1.322	1.2	ug/L	363	Standard
>	**Ge**	72	572023.7	0.5				ug/L	495142	Standard
	As	75	16668.5	2.4	**12.9416**	0.353	2.7	ug/L	-50	Standard
	Se	82	187.7	6.4	**1.3421**	0.095	7.1	ug/L	14	Standard
	Se-1	77	232.0	7.5	**2.1278**	0.217	10.2	ug/L	42	Standard
>	**Ga**	71	37605.0	3.4				mg/L	42	Standard
	Rb	85	431124.7	1.0				ug/L	17	Standard
	Y	89	907846.1	0.7				ug/L	417098	Standard
>	**Rh**	103	28.3	27.0				ug/L	13	Standard
	Mo	98	1317.8	2.4	**0.4515**	0.009	1.9	ug/L	11	Standard
	Ag	107	1338.4	1.8	**0.1770**	0.004	2.5	ug/L	68	Standard
	Cd	111	803.3	6.8	**0.3473**	0.022	6.2	mg/L	2	Standard
	Cd	114	1888.8	7.2	**0.3384**	0.023	6.7	ug/L	12	Standard
>	**In**	115	635240.6	1.1				ug/L	587441	Standard
	Sn	118	608.3	2.5	**0.0016**	0.002	109.2	ug/L	497	Standard
	Sb	123	242.0	3.6	**0.0438**	0.002	4.9	ug/L	78	Standard
	Ba	135	645480.7	0.7	**291.6323**	1.817	0.6	ug/L	24	Standard
	Ce	140	2459220.7	0.8				ug/L	25	Standard
>	**Tb**	159	1043691.8	1.6				ug/L	939701	Standard
	Ho	165	34592.8	2.2				ug/L	10	Standard
	Tl	203	3164.7	1.5	**0.3540**	0.007	2.0	ug/L	4	Standard
	Tl	205	2843.6	5.4	**0.3684**	0.020	5.4	ug/L	2	Standard
	Pb	206	325793.2	0.7	**56.4391**	0.926	1.6	ug/L	240	Standard
	Pb	207	262124.0	0.3	**51.1005**	0.344	0.7	ug/L	198	Standard
	Pb	208	1122453.0	1.2	**55.3927**	1.161	2.1	ug/L	883	Standard
	U	238	18503.6	0.6	**2.4863**	0.037	1.5	ug/L	3	Standard
>	**Bi**	209	565563.6	0.9				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	148.3	19.2	**0.0751**	0.029	38.8	mg/L	37	Standard
K	39	1071.7	2.8	**1.6167**	0.038	2.4	mg/L	38	Standard
Ca	43	301.7	16.4	**11.4520**	2.661	23.2	mg/L	10	Standard
Fe	54	45977.7	1.1	**28.3556**	0.839	3.0	mg/L	179	Standard
Fe	57	11742.9	4.0	**28.0839**	0.746	2.7	mg/L	335	Standard
Sc-1	45	83538.1	3.1				mg/L	61029	Standard
Cl	35	25586.9	0.8				ug/L	20195	Standard
Kr	83	2.3	65.5				ug/L	4	Standard
Br	81	3940.5	1.8				ug/L	1547	Standard
P	31	20170.1	2.1				ug/L	15286	Standard
S	34	2405.2	3.2				ug/L	1572	Standard
Sr	88	111.7	6.8				ug/L	73	Standard
C	12	316.7	15.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	146.7	35.0				mg/L	3	Standard
Dy	164	57194.9	2.2				mg/L	6	Standard
Ho-1	165	34592.8	2.2				mg/L	10	Standard
Er	166	32892.3	1.1				mg/L	13	Standard
I	127	48256.8	4.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.823	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		115.527	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.137
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.935
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606091201PS WG573717-03
Sample Date/Time: Wednesday, June 29, 2016 15:32:52
Number of Replicates: 3
Autosampler Position: 343
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	84925.7	1.3				ug/L	74699	Standard
	Be	9	54409.2	0.5	**54.3741**	0.919	1.7	ug/L	8	Standard
	Al	27	15619580.7	1.4	**93.4869**	2.147	2.3	ug/L	1493	Standard
	Sc	45	84914.0	2.3				ug/L	61029	Standard
	Ti	47	10489.6	2.4	**24.7035**	0.475	1.9	ug/L	35	Standard
	V	51	847646.1	0.7	**100.4344**	1.074	1.1	ug/L	1435	Standard
	Cr	52	696222.3	1.3	**83.2031**	0.580	0.7	ug/L	7635	Standard
	Cr	53	86425.9	2.6	**83.5032**	1.546	1.9	ug/L	363	Standard
	Mn	55	12964778.0	1.1	**1669.4256**	16.996	1.0	ug/L	747	Standard
	Co	59	568224.0	0.4	**77.1151**	0.744	1.0	ug/L	234	Standard
	Ni	60	176707.0	1.9	**84.4902**	0.918	1.1	ug/L	215	Standard
	Cu	65	181984.3	1.8	**87.5571**	0.864	1.0	ug/L	104	Standard
	Zn	66	208968.8	1.8	**171.0579**	1.957	1.1	ug/L	363	Standard
>	Ge	72	552256.5	0.8				ug/L	495142	Standard
	As	75	82371.4	1.6	**65.9929**	0.953	1.4	ug/L	-50	Standard
	Se	82	6597.3	1.6	**53.7542**	0.590	1.1	ug/L	14	Standard
	Se-1	77	4584.4	1.6	**55.6563**	1.034	1.9	ug/L	42	Standard
>	Ga	71	37593.3	1.5				mg/L	42	Standard
	Rb	85	428376.8	2.4				ug/L	17	Standard
	Y	89	890825.8	0.7				ug/L	417098	Standard
>	Rh	103	50.0	10.0				ug/L	13	Standard
	Mo	98	1335.6	2.9	**0.4503**	0.014	3.2	ug/L	11	Standard
	Ag	107	364007.1	1.3	**50.8126**	0.330	0.6	ug/L	68	Standard
	Cd	111	115695.5	1.2	**50.3468**	0.384	0.8	mg/L	2	Standard
	Cd	114	280904.1	1.9	**49.8365**	0.143	0.3	ug/L	12	Standard
>	In	115	645589.3	1.8				ug/L	587441	Standard
	Sn	118	755.0	4.3	**0.0229**	0.003	13.2	ug/L	497	Standard
	Sb	123	254065.1	1.3	**49.5173**	0.623	1.3	ug/L	78	Standard
	Ba	135	752068.0	1.2	**334.3566**	2.055	0.6	ug/L	24	Standard
	Ce	140	2468196.2	1.3				ug/L	25	Standard
>	Tb	159	1069312.5	1.3				ug/L	939701	Standard
	Ho	165	35102.3	1.1				ug/L	10	Standard
	Tl	203	458369.6	1.1	**50.4504**	0.349	0.7	ug/L	4	Standard
	Tl	205	409805.1	0.9	**51.9806**	1.259	2.4	ug/L	2	Standard
	Pb	206	619020.9	0.8	**105.0729**	1.076	1.0	ug/L	240	Standard
	Pb	207	511972.0	0.6	**97.8107**	1.381	1.4	ug/L	198	Standard
	Pb	208	2150459.1	0.4	**103.9876**	1.211	1.2	ug/L	883	Standard
	U	238	395808.0	0.4	**52.1735**	0.789	1.5	ug/L	3	Standard
>	Bi	209	577539.6	1.5				ug/L	523984	Standard

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Na	23	6.7	43.3	**54.9152**	22.487	40.9	mg/L	0	Standard
Mg	24	118.3	17.1	**0.0444**	0.016	36.3	mg/L	37	Standard
K	39	1026.7	7.6	**1.5167**	0.116	7.6	mg/L	38	Standard
Ca	43	296.7	14.3	**10.9789**	2.237	20.4	mg/L	10	Standard
Fe	54	45524.1	0.4	**27.6104**	0.565	2.0	mg/L	179	Standard
Fe	57	12291.7	1.9	**28.9717**	1.259	4.3	mg/L	335	Standard
> **Sc-1**	45	84914.0	2.3				mg/L	61029	Standard
Cl	35	25819.3	0.8				ug/L	20195	Standard
Kr	83	2.0	0.0				ug/L	4	Standard
Br	81	3963.9	6.7				ug/L	1547	Standard
P	31	20629.0	3.4				ug/L	15286	Standard
S	34	2280.2	5.7				ug/L	1572	Standard
Sr	88	103.3	12.2				ug/L	73	Standard
C	12	333.3	17.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	140.0	7.1				mg/L	3	Standard
Dy	164	56592.8	3.3				mg/L	6	Standard
Ho-1	165	35102.3	1.1				mg/L	10	Standard
Er	166	32397.9	1.1				mg/L	13	Standard
I	127	48815.3	4.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.691	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.535	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.899
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.221
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
V 51 Upper, S, EEE	V	51	
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135
Pb 206 Upper, S, EEE	Pb	206
Pb 208 Upper, S, EEE	Pb	208

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Sample ID: L1606091201SDL WG573717-04
Sample Date/Time: Wednesday, June 29, 2016 15:36:04
Number of Replicates: 3
Autosampler Position: 344
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83450.9	2.1				ug/L	74699	Standard
	Be	9	378.3	16.7	**0.3916**	0.058	14.9	ug/L	8	Standard
	Al	27	3082760.3	2.5	**18.7625**	0.099	0.5	ug/L	1493	Standard
	Sc	45	72303.8	2.1				ug/L	61029	Standard
	Ti	47	2033.1	4.6	**4.7237**	0.243	5.1	ug/L	35	Standard
	V	51	79797.1	0.9	**9.3216**	0.052	0.6	ug/L	1435	Standard
	Cr	52	57744.9	2.6	**5.9945**	0.158	2.6	ug/L	7635	Standard
	Cr	53	6483.1	2.8	**5.9884**	0.155	2.6	ug/L	363	Standard
	Mn	55	2512242.8	1.3	**324.8710**	1.825	0.6	ug/L	747	Standard
	Co	59	34712.7	2.2	**4.6975**	0.071	1.5	ug/L	234	Standard
	Ni	60	13460.0	2.9	**6.3513**	0.158	2.5	ug/L	215	Standard
	Cu	65	15009.4	2.6	**7.1598**	0.141	2.0	ug/L	104	Standard
	Zn	66	29256.2	2.4	**23.6692**	0.389	1.6	ug/L	363	Standard
>	**Ge**	72	549686.2	0.8				ug/L	495142	Standard
	As	75	3156.6	2.0	**2.5979**	0.033	1.3	ug/L	-50	Standard
	Se	82	47.1	17.6	**0.2490**	0.070	28.2	ug/L	14	Standard
	Se-1	77	77.0	11.9	**0.3268**	0.106	32.4	ug/L	42	Standard
>	**Ga**	71	7136.7	1.1				mg/L	42	Standard
	Rb	85	84221.8	1.7				ug/L	17	Standard
	Y	89	569587.4	0.8				ug/L	417098	Standard
>	**Rh**	103	25.0	91.7				ug/L	13	Standard
	Mo	98	271.1	6.9	**0.0847**	0.006	6.6	ug/L	11	Standard
	Ag	107	378.0	10.8	**0.0387**	0.005	13.9	ug/L	68	Standard
	Cd	111	185.8	10.3	**0.0712**	0.009	12.3	mg/L	2	Standard
	Cd	114	406.5	6.5	**0.0684**	0.004	6.4	ug/L	12	Standard
>	**In**	115	660230.6	1.0				ug/L	587441	Standard
	Sn	118	501.7	8.5	**-0.0183**	0.006	32.3	ug/L	497	Standard
	Sb	123	1797.9	20.8	**0.3384**	0.070	20.8	ug/L	78	Standard
	Ba	135	129725.4	1.6	**56.3802**	0.972	1.7	ug/L	24	Standard
	Ce	140	480517.5	2.7				ug/L	25	Standard
>	**Tb**	159	1042248.3	0.8				ug/L	939701	Standard
	Ho	165	6823.2	4.6				ug/L	10	Standard
	Tl	203	727.7	7.7	**0.0794**	0.006	7.1	ug/L	4	Standard
	Tl	205	616.7	4.2	**0.0795**	0.002	2.4	ug/L	2	Standard
	Pb	206	64359.4	2.2	**11.0114**	0.128	1.2	ug/L	240	Standard
	Pb	207	51665.3	2.6	**9.9429**	0.134	1.3	ug/L	198	Standard
	Pb	208	222946.4	0.6	**10.8660**	0.247	2.3	ug/L	883	Standard
	U	238	3701.1	2.3	**0.4902**	0.006	1.1	ug/L	3	Standard
>	**Bi**	209	569638.6	2.0				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	61.7	28.5	**0.0019**	0.018	942.5	mg/L	37	Standard
K	39	203.3	18.5	**0.2649**	0.067	25.4	mg/L	38	Standard
Ca	43	75.0	26.7	**1.4632**	0.987	67.5	mg/L	10	Standard
Fe	54	9325.9	3.5	**6.5358**	0.204	3.1	mg/L	179	Standard
Fe	57	2630.2	2.1	**6.4718**	0.055	0.8	mg/L	335	Standard
> **Sc-1**	45	72303.8	2.1				mg/L	61029	Standard
Cl	35	24972.6	0.9				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	2286.8	8.4				ug/L	1547	Standard
P	31	19043.6	4.4				ug/L	15286	Standard
S	34	2180.2	1.2				ug/L	1572	Standard
Sr	88	81.7	35.9				ug/L	73	Standard
C	12	93.3	22.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	57.3				mg/L	3	Standard
Dy	164	11677.0	2.4				mg/L	6	Standard
Ho-1	165	6823.2	4.6				mg/L	10	Standard
Er	166	6424.7	2.9				mg/L	13	Standard
I	127	12089.8	7.2				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		111.717	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		111.016	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.391
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.713
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606091201SDL WG573717-04
Sample Date/Time: Wednesday, June 29, 2016 15:39:15
Number of Replicates: 3
Autosampler Position: 345
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80082.8	1.5				ug/L	74699	Standard
	Be	9	80.0	10.8	**0.0924**	0.009	10.2	ug/L	8	Standard
	Al	27	638793.5	0.9	**4.0416**	0.057	1.4	ug/L	1493	Standard
	Sc	45	66977.8	2.5				ug/L	61029	Standard
	Ti	47	422.3	5.3	**0.8899**	0.044	4.9	ug/L	35	Standard
	V	51	17807.2	0.8	**1.9190**	0.038	2.0	ug/L	1435	Standard
	Cr	52	18051.7	1.5	**1.1605**	0.015	1.3	ug/L	7635	Standard
	Cr	53	1846.8	4.0	**1.4619**	0.067	4.6	ug/L	363	Standard
	Mn	55	540671.4	1.9	**69.4959**	1.549	2.2	ug/L	747	Standard
	Co	59	7520.2	3.3	**0.9841**	0.038	3.8	ug/L	234	Standard
	Ni	60	2912.3	1.6	**1.2710**	0.019	1.5	ug/L	215	Standard
	Cu	65	3203.0	1.2	**1.4395**	0.003	0.2	ug/L	104	Standard
	Zn	66	8550.1	1.3	**6.5648**	0.083	1.3	ug/L	363	Standard
>	**Ge**	72	552153.4	1.0				ug/L	495142	Standard
	As	75	624.0	5.3	**0.5591**	0.024	4.4	ug/L	-50	Standard
	Se	82	21.8	25.1	**0.0396**	0.043	108.7	ug/L	14	Standard
	Se-1	77	57.0	8.0	**0.0772**	0.050	64.2	ug/L	42	Standard
>	**Ga**	71	1470.1	2.9				mg/L	42	Standard
	Rb	85	17425.0	3.8				ug/L	17	Standard
	Y	89	497203.9	1.3				ug/L	417098	Standard
>	**Rh**	103	10.0	50.0				ug/L	13	Standard
	Mo	98	65.7	10.1	**0.0165**	0.003	15.8	ug/L	11	Standard
	Ag	107	156.7	8.7	**0.0087**	0.002	18.0	ug/L	68	Standard
	Cd	111	38.9	11.8	**0.0089**	0.002	23.3	mg/L	2	Standard
	Cd	114	108.8	14.4	**0.0170**	0.003	15.1	ug/L	12	Standard
>	**In**	115	651862.8	1.7				ug/L	587441	Standard
	Sn	118	480.0	4.2	**-0.0206**	0.003	16.7	ug/L	497	Standard
	Sb	123	490.3	31.4	**0.0908**	0.031	34.3	ug/L	78	Standard
	Ba	135	26415.7	0.1	**11.6170**	0.204	1.8	ug/L	24	Standard
	Ce	140	98329.7	0.4				ug/L	25	Standard
>	**Tb**	159	1007324.2	1.5				ug/L	939701	Standard
	Ho	165	1405.1	5.7				ug/L	10	Standard
	Tl	203	169.0	1.6	**0.0177**	0.000	0.8	ug/L	4	Standard
	Tl	205	175.0	8.6	**0.0234**	0.002	8.3	ug/L	2	Standard
	Pb	206	13505.0	1.4	**2.3274**	0.057	2.5	ug/L	240	Standard
	Pb	207	10900.6	1.3	**2.1089**	0.044	2.1	ug/L	198	Standard
	Pb	208	47029.6	1.3	**2.3051**	0.014	0.6	ug/L	883	Standard
	U	238	743.4	3.4	**0.0980**	0.002	2.1	ug/L	3	Standard
>	**Bi**	209	552389.3	1.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	33.3	17.3	**-0.0260**	0.006	22.5	mg/L	37	Standard
K	39	50.0	36.1	**-0.0133**	0.037	281.6	mg/L	38	Standard
Ca	43	41.7	48.5	**-0.1354**	1.146	846.9	mg/L	10	Standard
Fe	54	2020.3	1.1	**1.4233**	0.051	3.6	mg/L	179	Standard
Fe	57	728.4	10.0	**1.1787**	0.168	14.2	mg/L	335	Standard
> **Sc-1**	45	66977.8	2.5				mg/L	61029	Standard
Cl	35	24720.8	1.1				ug/L	20195	Standard
Kr	83	2.7	43.3				ug/L	4	Standard
Br	81	1860.1	4.8				ug/L	1547	Standard
P	31	18349.4	1.0				ug/L	15286	Standard
S	34	1845.1	4.4				ug/L	1572	Standard
Sr	88	65.0	27.7				ug/L	73	Standard
C	12	66.7	31.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	2304.6	5.8				mg/L	6	Standard
Ho-1	165	1405.1	5.7				mg/L	10	Standard
Er	166	1370.1	4.1				mg/L	13	Standard
I	127	4489.0	15.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.208	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.514	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.966
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.421
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 15:42:28
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79858.3	1.9				ug/L	74699	Standard
	Be	9	50198.1	2.5	**53.3484**	1.401	2.6	ug/L	8	Standard
	Al	27	8066966.3	0.3	**51.3427**	0.865	1.7	ug/L	1493	Standard
	Sc	45	68357.2	2.3				ug/L	61029	Standard
	Ti	47	43587.6	0.3	**105.7066**	1.724	1.6	ug/L	35	Standard
	V	51	433103.8	0.8	**52.5653**	0.576	1.1	ug/L	1435	Standard
	Cr	52	431112.3	0.9	**52.4990**	0.789	1.5	ug/L	7635	Standard
	Cr	53	52653.0	1.0	**52.0862**	0.689	1.3	ug/L	363	Standard
	Mn	55	405815.5	1.7	**53.4827**	1.214	2.3	ug/L	747	Standard
	Co	59	390955.7	1.0	**54.4418**	1.354	2.5	ug/L	234	Standard
	Ni	60	105213.1	1.7	**51.5742**	0.488	0.9	ug/L	215	Standard
	Cu	65	104377.6	0.2	**51.4980**	0.905	1.8	ug/L	104	Standard
	Zn	66	61654.9	0.7	**51.4853**	1.289	2.5	ug/L	363	Standard
>	**Ge**	72	538231.7	1.8				ug/L	495142	Standard
	As	75	61802.6	0.2	**50.8282**	0.881	1.7	ug/L	-50	Standard
	Se	82	6211.6	1.2	**51.9313**	0.364	0.7	ug/L	14	Standard
	Se-1	77	4323.6	2.0	**53.8508**	1.659	3.1	ug/L	42	Standard
>	**Ga**	71	60.0	28.9				mg/L	42	Standard
	Rb	85	955.0	5.2				ug/L	17	Standard
	Y	89	475770.1	1.3				ug/L	417098	Standard
>	**Rh**	103	25.0	34.6				ug/L	13	Standard
	Mo	98	290643.5	0.8	**97.6712**	0.653	0.7	ug/L	11	Standard
	Ag	107	354998.2	1.8	**48.7852**	1.288	2.6	ug/L	68	Standard
	Cd	111	115105.3	1.2	**49.3038**	0.151	0.3	mg/L	2	Standard
	Cd	114	278592.4	1.8	**48.6531**	0.360	0.7	ug/L	12	Standard
>	**In**	115	655825.0	1.0				ug/L	587441	Standard
	Sn	118	319548.2	1.2	**48.9035**	0.256	0.5	ug/L	497	Standard
	Sb	123	249456.0	1.2	**47.8604**	0.919	1.9	ug/L	78	Standard
	Ba	135	108215.4	0.8	**47.3455**	0.546	1.2	ug/L	24	Standard
	Ce	140	256.7	76.3				ug/L	25	Standard
>	**Tb**	159	1025574.2	1.9				ug/L	939701	Standard
	Ho	165	15.0	0.0				ug/L	10	Standard
	Tl	203	443897.9	1.2	**50.1327**	1.058	2.1	ug/L	4	Standard
	Tl	205	398087.0	0.7	**51.8003**	0.814	1.6	ug/L	2	Standard
	Pb	206	280554.3	0.5	**48.8226**	0.728	1.5	ug/L	240	Standard
	Pb	207	249585.9	0.6	**48.8846**	0.533	1.1	ug/L	198	Standard
	Pb	208	1026713.8	0.6	**50.9050**	1.131	2.2	ug/L	883	Standard
	U	238	372550.1	0.8	**50.3866**	1.127	2.2	ug/L	3	Standard
>	**Bi**	209	562933.7	1.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4292.3	1.6	**4.8821**	0.035	0.7	mg/L	37	Standard
K	39	2345.2	3.1	**4.5133**	0.080	1.8	mg/L	38	Standard
Ca	43	103.3	10.1	**3.3018**	0.528	16.0	mg/L	10	Standard
Fe	54	6681.2	2.2	**4.9206**	0.153	3.1	mg/L	179	Standard
Fe	57	1928.5	4.0	**4.7824**	0.344	7.2	mg/L	335	Standard
> **Sc-1**	45	68357.2	2.3				mg/L	61029	Standard
Cl	35	26753.6	0.7				ug/L	20195	Standard
Kr	83	3.3	45.8				ug/L	4	Standard
Br	81	1833.4	8.1				ug/L	1547	Standard
P	31	20395.4	2.2				ug/L	15286	Standard
S	34	2408.5	8.3				ug/L	1572	Standard
Sr	88	85.0	25.6				ug/L	73	Standard
C	12	53.3	28.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	15.2	35.5				mg/L	6	Standard
Ho-1	165	15.0	0.0				mg/L	10	Standard
Er	166	30.0	57.7				mg/L	13	Standard
I	127	2536.9	16.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	106.697		
Al	27	102.685		
Sc	45			
Ti	47	105.707		
V	51	105.131		
Cr	52	104.998		
Cr	53			
Mn	55	106.965		
Co	59	108.884		
Ni	60	103.148		
Cu	65	102.996		
Zn	66	102.971		
> Ge	72		108.702	
As	75	101.656		
Se	82	103.863		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	97.671		
Ag	107	97.570		
Cd	111	98.608		
Cd	114			
In	115			111.641
Sn	118	97.807		
Sb	123	95.721		
Ba	135	94.691		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.265		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.810		
U	238	100.773		
Bi	209			107.433
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 15:45:40
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	76618.3	2.3				ug/L	74699	Standard
	Be	9	25.0	40.0	**0.0352**	0.010	29.8	ug/L	8	Standard
	Al	27	2451.9	23.9	**0.0029**	0.004	131.5	ug/L	1493	Standard
	Sc	45	64234.2	1.5				ug/L	61029	Standard
	Ti	47	38.0	9.5	**-0.0165**	0.010	60.4	ug/L	35	Standard
	V	51	1363.5	4.5	**-0.0292**	0.006	19.9	ug/L	1435	Standard
	Cr	52	7102.3	0.4	**-0.1401**	0.016	11.4	ug/L	7635	Standard
	Cr	53	373.3	16.1	**0.0429**	0.063	148.1	ug/L	363	Standard
	Mn	55	1097.0	20.0	**-0.0025**	0.031	1279.7	ug/L	747	Standard
	Co	59	247.3	6.4	**-0.0027**	0.003	101.3	ug/L	234	Standard
	Ni	60	180.3	4.0	**-0.0351**	0.003	7.6	ug/L	215	Standard
	Cu	65	132.0	9.2	**-0.0382**	0.007	18.6	ug/L	104	Standard
	Zn	66	415.3	4.4	**-0.1038**	0.019	18.2	ug/L	363	Standard
>	Ge	72	537099.7	1.7				ug/L	495142	Standard
	As	75	-44.5	23.9	**0.0230**	0.008	35.8	ug/L	-50	Standard
	Se	82	14.3	4.3	**-0.0180**	0.004	23.6	ug/L	14	Standard
	Se-1	77	59.7	7.9	**0.1303**	0.047	35.8	ug/L	42	Standard
>	Ga	71	51.7	29.6				mg/L	42	Standard
	Rb	85	35.0	0.0				ug/L	17	Standard
	Y	89	479758.9	0.4				ug/L	417098	Standard
>	Rh	103	8.3	34.6				ug/L	13	Standard
	Mo	98	277.2	29.2	**0.0885**	0.026	29.3	ug/L	11	Standard
	Ag	107	131.7	17.8	**0.0055**	0.003	58.6	ug/L	68	Standard
	Cd	111	17.2	29.5	**-0.0005**	0.002	465.0	mg/L	2	Standard
	Cd	114	40.7	69.7	**0.0051**	0.005	98.6	ug/L	12	Standard
>	In	115	646048.6	1.6				ug/L	587441	Standard
	Sn	118	843.4	4.5	**0.0366**	0.007	19.0	ug/L	497	Standard
	Sb	123	501.9	29.2	**0.0939**	0.030	32.1	ug/L	78	Standard
	Ba	135	52.0	15.0	**0.0071**	0.003	45.6	ug/L	24	Standard
	Ce	140	70.0	58.5				ug/L	25	Standard
>	Tb	159	979678.9	1.9				ug/L	939701	Standard
	Ho	165	13.3	114.6				ug/L	10	Standard
	Tl	203	68.0	38.6	**0.0062**	0.003	47.0	ug/L	4	Standard
	Tl	205	56.7	27.0	**0.0078**	0.002	25.4	ug/L	2	Standard
	Pb	206	311.7	5.0	**-0.0149**	0.002	16.8	ug/L	240	Standard
	Pb	207	257.0	6.3	**-0.0177**	0.002	12.3	ug/L	198	Standard
	Pb	208	1140.4	10.1	**-0.0154**	0.005	31.9	ug/L	883	Standard
	U	238	55.7	48.1	**0.0033**	0.004	107.8	ug/L	3	Standard
>	Bi	209	542619.7	2.4				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.9504**	31.082	173.2	mg/L	0	Standard
Mg	24	40.0	54.5	**-0.0162**	0.026	161.8	mg/L	37	Standard
K	39	53.3	59.5	**-0.0020**	0.067	3445.3	mg/L	38	Standard
Ca	43	18.3	103.3	**-1.4157**	1.156	81.6	mg/L	10	Standard
Fe	54	130.7	11.8	**-0.0329**	0.014	41.5	mg/L	179	Standard
Fe	57	301.7	9.1	**-0.1005**	0.081	80.3	mg/L	335	Standard
> **Sc-1**	45	64234.2	1.5				mg/L	61029	Standard
Cl	35	26295.5	2.8				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	1633.4	7.7				ug/L	1547	Standard
P	31	19669.4	2.1				ug/L	15286	Standard
S	34	2230.2	5.1				ug/L	1572	Standard
Sr	88	70.0	21.4				ug/L	73	Standard
C	12	46.7	61.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	12.2	49.4				mg/L	6	Standard
Ho-1	165	13.3	114.6				mg/L	10	Standard
Er	166	23.3	107.9				mg/L	13	Standard
I	127	1980.1	22.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.474	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.977
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.556
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Wednesday, June 29, 2016 15:47:57
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Method 6020 - Summary Report

Sample ID: PBW 60 WG574001-04
Sample Date/Time: Wednesday, June 29, 2016 15:48:53
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79282.0	2.9				ug/L	74699	Standard
	Be	9	31.7	134.3	**0.0407**	0.044	108.3	ug/L	8	Standard
	Al	27	19345.2	59.5	**0.1093**	0.069	63.4	ug/L	1493	Standard
	Sc	45	67500.3	4.8				ug/L	61029	Standard
	Ti	47	51.7	27.5	**0.0181**	0.032	177.8	ug/L	35	Standard
	V	51	1877.4	33.1	**0.0362**	0.072	198.6	ug/L	1435	Standard
	Cr	52	9295.2	4.7	**0.1500**	0.032	21.3	ug/L	7635	Standard
	Cr	53	908.4	6.4	**0.5905**	0.063	10.7	ug/L	363	Standard
	Mn	55	10971.3	111.8	**1.3060**	1.603	122.8	ug/L	747	Standard
	Co	59	555.3	78.4	**0.0407**	0.060	146.5	ug/L	234	Standard
	Ni	60	485.3	47.2	**0.1173**	0.109	92.6	ug/L	215	Standard
	Cu	65	307.3	25.1	**0.0504**	0.035	70.1	ug/L	104	Standard
	Zn	66	1901.5	5.5	**1.1744**	0.056	4.8	ug/L	363	Standard
>	**Ge**	72	528898.5	2.0				ug/L	495142	Standard
	As	75	-0.1	63053.1	**0.0590**	0.043	73.0	ug/L	-50	Standard
	Se	82	20.7	41.6	**0.0373**	0.070	187.2	ug/L	14	Standard
	Se-1	77	69.7	5.4	**0.2713**	0.061	22.4	ug/L	42	Standard
>	**Ga**	71	70.0	75.3				mg/L	42	Standard
	Rb	85	391.7	126.9				ug/L	17	Standard
	Y	89	488721.1	2.3				ug/L	417098	Standard
>	**Rh**	103	16.7	105.4				ug/L	13	Standard
	Mo	98	140.7	71.4	**0.0402**	0.032	80.6	ug/L	11	Standard
	Ag	107	241.3	88.8	**0.0193**	0.028	147.0	ug/L	68	Standard
	Cd	111	97.4	139.8	**0.0324**	0.056	173.4	mg/L	2	Standard
	Cd	114	250.4	134.1	**0.0402**	0.057	140.7	ug/L	12	Standard
>	**In**	115	673056.2	1.0				ug/L	587441	Standard
	Sn	118	918.4	10.7	**0.0424**	0.014	32.3	ug/L	497	Standard
	Sb	123	377.5	33.3	**0.0663**	0.023	34.5	ug/L	78	Standard
	Ba	135	710.7	130.6	**0.2849**	0.392	137.5	ug/L	24	Standard
	Ce	140	2190.4	144.6				ug/L	25	Standard
>	**Tb**	159	1033072.6	2.9				ug/L	939701	Standard
	Ho	165	46.7	118.0				ug/L	10	Standard
	Tl	203	354.0	129.7	**0.0375**	0.050	134.0	ug/L	4	Standard
	Tl	205	175.0	119.3	**0.0226**	0.026	116.3	ug/L	2	Standard
	Pb	206	584.7	65.9	**0.0302**	0.064	211.0	ug/L	240	Standard
	Pb	207	508.0	67.6	**0.0291**	0.064	219.9	ug/L	198	Standard
	Pb	208	1976.7	53.7	**0.0238**	0.049	207.9	ug/L	883	Standard
	U	238	147.7	117.1	**0.0152**	0.023	148.4	ug/L	3	Standard
>	**Bi**	209	558931.4	2.9				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	38.3	32.8	**-0.0206**	0.014	67.5	mg/L	37	Standard
K	39	46.7	37.6	**-0.0214**	0.032	149.6	mg/L	38	Standard
Ca	43	20.0	0.0	**-1.3794**	0.055	4.0	mg/L	10	Standard
Fe	54	191.0	21.0	**0.0073**	0.024	325.9	mg/L	179	Standard
Fe	57	261.7	19.2	**-0.2718**	0.132	48.6	mg/L	335	Standard
> **Sc-1**	45	67500.3	4.8				mg/L	61029	Standard
Cl	35	25962.2	2.0				ug/L	20195	Standard
Kr	83	3.0	33.3				ug/L	4	Standard
Br	81	2216.8	6.9				ug/L	1547	Standard
P	31	19524.2	2.3				ug/L	15286	Standard
S	34	2248.5	4.1				ug/L	1572	Standard
Sr	88	73.3	27.6				ug/L	73	Standard
C	12	46.7	44.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	67.1	124.3				mg/L	6	Standard
Ho-1	165	46.7	118.0				mg/L	10	Standard
Er	166	60.0	130.2				mg/L	13	Standard
I	127	1978.5	35.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.136	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.817	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.574
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.669
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 60 WG574001-05
Sample Date/Time: Wednesday, June 29, 2016 15:52:04
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78008.7	2.7				ug/L	74699	Standard
	Be	9	49798.4	3.1	**54.1693**	0.583	1.1	ug/L	8	Standard
	Al	27	8265.6	3.2	**0.0405**	0.001	2.7	ug/L	1493	Standard
	Sc	45	64878.8	4.3				ug/L	61029	Standard
	Ti	47	43.0	16.3	**-0.0042**	0.019	444.7	ug/L	35	Standard
	V	51	424123.5	0.9	**51.5862**	0.653	1.3	ug/L	1435	Standard
	Cr	52	430096.1	0.4	**52.4970**	1.185	2.3	ug/L	7635	Standard
	Cr	53	53307.0	1.3	**52.8599**	1.230	2.3	ug/L	363	Standard
	Mn	55	405428.0	0.3	**53.5518**	1.000	1.9	ug/L	747	Standard
	Co	59	387903.4	0.1	**54.1349**	1.154	2.1	ug/L	234	Standard
	Ni	60	106395.6	1.4	**52.2826**	1.359	2.6	ug/L	215	Standard
	Cu	65	107418.5	1.1	**53.1215**	1.283	2.4	ug/L	104	Standard
	Zn	66	63602.2	0.4	**53.2433**	1.221	2.3	ug/L	363	Standard
>	**Ge**	72	537059.3	2.0				ug/L	495142	Standard
	As	75	62286.8	1.3	**51.3419**	1.295	2.5	ug/L	-50	Standard
	Se	82	6132.0	1.6	**51.3807**	0.931	1.8	ug/L	14	Standard
	Se-1	77	4215.6	1.2	**52.6015**	0.951	1.8	ug/L	42	Standard
>	**Ga**	71	76.7	32.8				mg/L	42	Standard
	Rb	85	50.0	36.1				ug/L	17	Standard
	Y	89	473307.8	1.1				ug/L	417098	Standard
>	**Rh**	103	23.3	75.3				ug/L	13	Standard
	Mo	98	59.9	20.8	**0.0148**	0.004	26.5	ug/L	11	Standard
	Ag	107	358191.0	0.9	**50.3679**	1.706	3.4	ug/L	68	Standard
	Cd	111	112882.0	2.3	**49.4684**	1.332	2.7	mg/L	2	Standard
	Cd	114	273909.8	1.0	**48.9526**	1.484	3.0	ug/L	12	Standard
>	**In**	115	641215.1	2.7				ug/L	587441	Standard
	Sn	118	785.0	7.1	**0.0286**	0.011	37.9	ug/L	497	Standard
	Sb	123	249794.4	1.0	**49.0383**	1.564	3.2	ug/L	78	Standard
	Ba	135	107708.9	1.4	**48.2176**	1.451	3.0	ug/L	24	Standard
	Ce	140	101.7	27.1				ug/L	25	Standard
>	**Tb**	159	990038.9	2.7				ug/L	939701	Standard
	Ho	165	11.7	99.0				ug/L	10	Standard
	Tl	203	439976.8	0.4	**51.4932**	0.969	1.9	ug/L	4	Standard
	Tl	205	398605.3	0.6	**53.7491**	0.791	1.5	ug/L	2	Standard
	Pb	206	290681.6	0.4	**52.4241**	0.636	1.2	ug/L	240	Standard
	Pb	207	247225.7	0.4	**50.1841**	0.852	1.7	ug/L	198	Standard
	Pb	208	1030904.4	0.6	**52.9701**	1.178	2.2	ug/L	883	Standard
	U	238	368133.3	0.5	**51.5924**	0.851	1.6	ug/L	3	Standard
>	**Bi**	209	543222.2	1.6				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	35.0	28.6	**-0.0227**	0.012	52.0	mg/L	37	Standard
K	39	28.3	50.9	**-0.0559**	0.027	48.5	mg/L	38	Standard
Ca	43	35.0	28.6	**-0.4579**	0.506	110.5	mg/L	10	Standard
Fe	54	138.7	22.6	**-0.0277**	0.025	88.8	mg/L	179	Standard
Fe	57	243.3	16.6	**-0.2916**	0.161	55.3	mg/L	335	Standard
> **Sc-1**	45	64878.8	4.3				mg/L	61029	Standard
Cl	35	24949.9	2.3				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	1880.1	6.1				ug/L	1547	Standard
P	31	18362.8	1.6				ug/L	15286	Standard
S	34	2046.8	4.1				ug/L	1572	Standard
Sr	88	70.0	18.9				ug/L	73	Standard
C	12	56.7	56.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	2.2	249.0				mg/L	6	Standard
Ho-1	165	11.7	99.0				mg/L	10	Standard
Er	166	23.3	49.5				mg/L	13	Standard
I	127	1781.8	25.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.431	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.466	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.154
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.671
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606124702 WG574001-01
Sample Date/Time: Wednesday, June 29, 2016 15:55:16
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	134635.3	6.0				ug/L	74699	Standard
	Be	9	80.0	18.8	**0.0585**	0.013	21.4	ug/L	8	Standard
	Al	27	38117257.0	1.5	**144.1796**	7.359	5.1	ug/L	1493	Standard
	Sc	45	57575.9	1.8				ug/L	61029	Standard
	Ti	47	164.0	8.6	**0.3117**	0.039	12.5	ug/L	35	Standard
	V	51	2694.7	7.4	**0.1512**	0.027	17.7	ug/L	1435	Standard
	Cr	52	13340.2	1.7	**0.7256**	0.017	2.4	ug/L	7635	Standard
	Cr	53	1556.7	8.2	**1.3078**	0.145	11.1	ug/L	363	Standard
	Mn	55	855520.0	4.5	**119.2592**	4.647	3.9	ug/L	747	Standard
	Co	59	4433.3	4.9	**0.6151**	0.027	4.4	ug/L	234	Standard
	Ni	60	11360.3	1.4	**5.7737**	0.123	2.1	ug/L	215	Standard
	Cu	65	4582.0	1.3	**2.2889**	0.015	0.7	ug/L	104	Standard
	Zn	66	3866.8	1.4	**2.9861**	0.052	1.7	ug/L	363	Standard
>	**Ge**	72	509457.0	0.7				ug/L	495142	Standard
	As	75	332.4	10.8	**0.3479**	0.030	8.6	ug/L	-50	Standard
	Se	82	161.9	7.9	**1.2952**	0.108	8.4	ug/L	14	Standard
	Se-1	77	102.3	14.4	**0.7391**	0.192	26.0	ug/L	42	Standard
>	**Ga**	71	95.0	18.2				mg/L	42	Standard
	Rb	85	141592.2	2.6				ug/L	17	Standard
	Y	89	417616.8	3.6				ug/L	417098	Standard
>	**Rh**	103	198.3	13.9				ug/L	13	Standard
	Mo	98	173.0	3.6	**0.0623**	0.003	5.6	ug/L	11	Standard
	Ag	107	339.3	7.8	**0.0417**	0.005	13.0	ug/L	68	Standard
	Cd	111	139.7	8.2	**0.0622**	0.007	10.5	mg/L	2	Standard
	Cd	114	358.4	9.8	**0.0712**	0.009	12.2	ug/L	12	Standard
>	**In**	115	560534.9	2.1				ug/L	587441	Standard
	Sn	118	620.0	5.6	**0.0166**	0.008	49.6	ug/L	497	Standard
	Sb	123	641.7	15.5	**0.1401**	0.024	17.2	ug/L	78	Standard
	Ba	135	5098.9	2.7	**2.5958**	0.100	3.9	ug/L	24	Standard
	Ce	140	815.0	33.2				ug/L	25	Standard
>	**Tb**	159	928792.3	1.3				ug/L	939701	Standard
	Ho	165	11.7	65.5				ug/L	10	Standard
	Tl	203	1143.7	8.4	**0.1440**	0.014	9.4	ug/L	4	Standard
	Tl	205	1088.4	7.4	**0.1600**	0.012	7.4	ug/L	2	Standard
	Pb	206	578.7	9.2	**0.0425**	0.010	23.1	ug/L	240	Standard
	Pb	207	493.0	9.5	**0.0393**	0.012	31.8	ug/L	198	Standard
	Pb	208	1938.4	3.0	**0.0345**	0.004	12.8	ug/L	883	Standard
	U	238	1219.0	4.3	**0.1816**	0.009	5.1	ug/L	3	Standard
>	**Bi**	209	499083.1	3.3				ug/L	523984	Standard

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Na	23	20.0	43.3	**245.3647**	110.079	44.9	mg/L	0	Standard
Mg	24	80086.1	0.7	**109.5385**	2.239	2.0	mg/L	37	Standard
K	39	1376.7	6.5	**3.1098**	0.163	5.2	mg/L	38	Standard
Ca	43	2828.6	6.5	**186.7611**	8.963	4.8	mg/L	10	Standard
Fe	54	188.7	25.7	**0.0318**	0.047	146.5	mg/L	179	Standard
Fe	57	1751.8	4.9	**5.2348**	0.203	3.9	mg/L	335	Standard
> **Sc-1**	45	57575.9	1.8				mg/L	61029	Standard
Cl	35	65110.3	1.2				ug/L	20195	Standard
Kr	83	3.7	68.6				ug/L	4	Standard
Br	81	22346.5	6.5				ug/L	1547	Standard
P	31	17116.3	3.4				ug/L	15286	Standard
S	34	2223.5	6.9				ug/L	1572	Standard
Sr	88	836.7	13.9				ug/L	73	Standard
C	12	76.7	74.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	52.1	77.4				mg/L	6	Standard
Ho-1	165	11.7	65.5				mg/L	10	Standard
Er	166	26.7	57.3				mg/L	13	Standard
I	127	41219.6	7.8				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		180.238	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		102.891	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.420
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		95.248
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606124702DP WG574001-06
Sample Date/Time: Wednesday, June 29, 2016 15:58:27
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	151702.5	2.0				ug/L	74699	Standard
	Be	9	51.7	59.1	**0.0368**	0.018	48.5	ug/L	8	Standard
	Al	27	41839885.7	0.1	**140.2128**	2.854	2.0	ug/L	1493	Standard
	Sc	45	56811.4	3.1				ug/L	61029	Standard
	Ti	47	131.7	6.1	**0.2545**	0.026	10.2	ug/L	35	Standard
	V	51	2376.3	9.9	**0.1332**	0.026	19.9	ug/L	1435	Standard
	Cr	52	12951.9	1.5	**0.8048**	0.052	6.4	ug/L	7635	Standard
	Cr	53	1565.1	1.7	**1.4417**	0.042	2.9	ug/L	363	Standard
	Mn	55	867683.1	1.0	**130.2493**	3.502	2.7	ug/L	747	Standard
	Co	59	4344.6	3.7	**0.6509**	0.022	3.4	ug/L	234	Standard
	Ni	60	12342.7	0.7	**6.7729**	0.126	1.9	ug/L	215	Standard
	Cu	65	4552.0	1.4	**2.4548**	0.036	1.5	ug/L	104	Standard
	Zn	66	4125.6	2.3	**3.4960**	0.055	1.6	ug/L	363	Standard
>	**Ge**	72	473381.7	2.0				ug/L	495142	Standard
	As	75	389.2	1.9	**0.4231**	0.002	0.6	ug/L	-50	Standard
	Se	82	181.1	4.2	**1.5888**	0.099	6.2	ug/L	14	Standard
	Se-1	77	106.3	18.0	**0.8981**	0.248	27.6	ug/L	42	Standard
>	**Ga**	71	78.3	22.4				mg/L	42	Standard
	Rb	85	147149.5	0.7				ug/L	17	Standard
	Y	89	405581.1	1.8				ug/L	417098	Standard
>	**Rh**	103	178.3	29.5				ug/L	13	Standard
	Mo	98	220.6	12.3	**0.0817**	0.013	15.7	ug/L	11	Standard
	Ag	107	177.0	68.0	**0.0160**	0.020	127.1	ug/L	68	Standard
	Cd	111	65.9	51.9	**0.0256**	0.018	71.0	mg/L	2	Standard
	Cd	114	151.1	49.7	**0.0291**	0.016	55.4	ug/L	12	Standard
>	**In**	115	557347.0	2.4				ug/L	587441	Standard
	Sn	118	766.7	0.4	**0.0437**	0.004	8.6	ug/L	497	Standard
	Sb	123	305.8	17.0	**0.0650**	0.013	20.6	ug/L	78	Standard
	Ba	135	5047.2	3.4	**2.5853**	0.149	5.7	ug/L	24	Standard
	Ce	140	491.7	100.3				ug/L	25	Standard
>	**Tb**	159	935324.5	2.7				ug/L	939701	Standard
	Ho	165	18.3	103.3				ug/L	10	Standard
	Tl	203	947.0	9.8	**0.1179**	0.014	11.5	ug/L	4	Standard
	Tl	205	846.7	27.0	**0.1237**	0.035	28.6	ug/L	2	Standard
	Pb	206	418.3	37.6	**0.0106**	0.032	302.9	ug/L	240	Standard
	Pb	207	351.7	32.0	**0.0074**	0.026	354.3	ug/L	198	Standard
	Pb	208	1404.0	30.0	**0.0041**	0.025	608.6	ug/L	883	Standard
	U	238	972.4	9.3	**0.1427**	0.016	11.1	ug/L	3	Standard
>	**Bi**	209	503603.8	1.5				ug/L	523984	Standard

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Na	23	25.0	34.6	**311.2656**	112.939	36.3	mg/L	0	Standard
Mg	24	85343.0	0.9	**118.3682**	4.384	3.7	mg/L	37	Standard
K	39	1298.4	2.9	**2.9712**	0.147	4.9	mg/L	38	Standard
Ca	43	2830.3	7.5	**189.4839**	12.043	6.4	mg/L	10	Standard
Fe	54	146.6	14.0	**-0.0044**	0.021	483.2	mg/L	179	Standard
Fe	57	1698.4	7.8	**5.1376**	0.623	12.1	mg/L	335	Standard
Sc-1	45	56811.4	3.1				mg/L	61029	Standard
Cl	35	65999.5	1.4				ug/L	20195	Standard
Kr	83	1.3	114.6				ug/L	4	Standard
Br	81	22520.1	6.6				ug/L	1547	Standard
P	31	16799.3	3.7				ug/L	15286	Standard
S	34	2040.1	3.0				ug/L	1572	Standard
Sr	88	920.0	8.9				ug/L	73	Standard
C	12	83.3	25.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	173.2				mg/L	3	Standard
Dy	164	32.1	98.6				mg/L	6	Standard
Ho-1	165	18.3	103.3				mg/L	10	Standard
Er	166	26.7	43.3				mg/L	13	Standard
I	127	45859.6	7.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		203.086	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		95.605	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.877
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.110
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606124702DP WG574001-06
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Method 6020 - Summary Report

Sample ID: L1606126501 WG574001-02
Sample Date/Time: Wednesday, June 29, 2016 16:01:39
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	112017.9	3.5				ug/L	74699	Standard
	Be	9	21.7	35.3	**0.0242**	0.006	26.3	ug/L	8	Standard
	Al	27	58851331.1	1.0	**267.2037**	7.701	2.9	ug/L	1493	Standard
	Sc	45	63265.2	2.1				ug/L	61029	Standard
	Ti	47	314.3	6.0	**0.7250**	0.050	6.9	ug/L	35	Standard
	V	51	84379.6	0.6	**11.0401**	0.098	0.9	ug/L	1435	Standard
	Cr	52	25344.2	1.7	**2.4155**	0.065	2.7	ug/L	7635	Standard
	Cr	53	30644.3	3.7	**33.0161**	1.295	3.9	ug/L	363	Standard
	Mn	55	3058.3	0.3	**0.2937**	0.003	0.9	ug/L	747	Standard
	Co	59	981.4	1.2	**0.1122**	0.002	1.4	ug/L	234	Standard
	Ni	60	4598.7	1.8	**2.3463**	0.051	2.2	ug/L	215	Standard
	Cu	65	1226.7	2.1	**0.5592**	0.015	2.8	ug/L	104	Standard
	Zn	66	2978.0	3.2	**2.2873**	0.091	4.0	ug/L	363	Standard
>	**Ge**	72	492356.2	0.3				ug/L	495142	Standard
	As	75	3467.1	5.3	**3.1728**	0.175	5.5	ug/L	-50	Standard
	Se	82	1561.8	3.2	**14.1732**	0.483	3.4	ug/L	14	Standard
	Se-1	77	3085.3	7.4	**41.8633**	3.228	7.7	ug/L	42	Standard
>	**Ga**	71	63.3	27.7				mg/L	42	Standard
	Rb	85	9206.1	3.0				ug/L	17	Standard
	Y	89	442169.1	3.5				ug/L	417098	Standard
>	**Rh**	103	255.0	11.9				ug/L	13	Standard
	Mo	98	5205.2	3.3	**1.8993**	0.033	1.7	ug/L	11	Standard
	Ag	107	803.7	5.3	**0.1074**	0.005	4.8	ug/L	68	Standard
	Cd	111	45.0	9.2	**0.0131**	0.002	16.6	mg/L	2	Standard
	Cd	114	163.3	22.8	**0.0289**	0.007	22.9	ug/L	12	Standard
>	**In**	115	602229.8	3.0				ug/L	587441	Standard
	Sn	118	683.3	9.8	**0.0193**	0.009	45.4	ug/L	497	Standard
	Sb	123	210.7	19.8	**0.0397**	0.008	19.9	ug/L	78	Standard
	Ba	135	21407.4	0.7	**10.1914**	0.253	2.5	ug/L	24	Standard
	Ce	140	328.3	10.1				ug/L	25	Standard
>	**Tb**	159	984916.0	0.2				ug/L	939701	Standard
	Ho	165	35.0	24.7				ug/L	10	Standard
	Tl	203	94.3	9.0	**0.0098**	0.001	12.0	ug/L	4	Standard
	Tl	205	65.0	40.7	**0.0094**	0.004	40.6	ug/L	2	Standard
	Pb	206	401.3	3.0	**0.0049**	0.001	28.2	ug/L	240	Standard
	Pb	207	354.0	5.2	**0.0056**	0.003	55.2	ug/L	198	Standard
	Pb	208	1436.0	3.5	**0.0035**	0.003	74.9	ug/L	883	Standard
	U	238	31993.4	1.5	**4.7067**	0.092	1.9	ug/L	3	Standard
>	**Bi**	209	517006.9	1.2				ug/L	523984	Standard

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Na	23	5.0	100.0	**55.9813**	56.756	101.4	mg/L	0	Standard
Mg	24	180057.1	1.6	**224.1644**	1.858	0.8	mg/L	37	Standard
K	39	641.7	5.8	**1.2549**	0.096	7.6	mg/L	38	Standard
Ca	43	708.3	7.0	**40.6474**	3.060	7.5	mg/L	10	Standard
Fe	54	157.9	5.8	**-0.0091**	0.008	86.4	mg/L	179	Standard
Fe	57	550.0	17.3	**0.7314**	0.333	45.5	mg/L	335	Standard
> **Sc-1**	45	63265.2	2.1				mg/L	61029	Standard
Cl	35	33676.1	1.7				ug/L	20195	Standard
Kr	83	0.3	173.2				ug/L	4	Standard
Br	81	48808.6	5.5				ug/L	1547	Standard
P	31	23084.3	3.5				ug/L	15286	Standard
S	34	2106.8	4.3				ug/L	1572	Standard
Sr	88	1195.0	6.7				ug/L	73	Standard
C	12	130.0	40.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	9.0	113.3				mg/L	6	Standard
Ho-1	165	35.0	24.7				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	49504.2	3.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		149.959	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.437	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.517
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.668
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606126502S WG574001-07
Sample Date/Time: Wednesday, June 29, 2016 16:04:50
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	109865.8	4.5				ug/L	74699	Standard
	Be	9	61395.8	1.0	**47.4912**	2.348	4.9	ug/L	8	Standard
	Al	27	61297739.1	1.7	**284.0961**	17.361	6.1	ug/L	1493	Standard
	Sc	45	64222.6	2.9				ug/L	61029	Standard
	Ti	47	334.7	6.1	**0.7462**	0.065	8.7	ug/L	35	Standard
	V	51	514269.3	0.9	**65.7128**	0.488	0.7	ug/L	1435	Standard
	Cr	52	414721.1	1.2	**53.1400**	0.316	0.6	ug/L	7635	Standard
	Cr	53	79122.8	2.2	**82.5246**	0.802	1.0	ug/L	363	Standard
	Mn	55	379075.2	0.4	**52.5566**	0.801	1.5	ug/L	747	Standard
	Co	59	375122.1	1.7	**54.9533**	1.379	2.5	ug/L	234	Standard
	Ni	60	98886.4	1.8	**50.9941**	0.435	0.9	ug/L	215	Standard
	Cu	65	94781.9	0.9	**49.1885**	0.428	0.9	ug/L	104	Standard
	Zn	66	59708.1	1.0	**52.4531**	0.349	0.7	ug/L	363	Standard
>	Ge	72	511580.8	1.5				ug/L	495142	Standard
	As	75	64226.1	0.6	**55.5617**	0.582	1.0	ug/L	-50	Standard
	Se	82	7637.7	1.0	**67.2251**	1.117	1.7	ug/L	14	Standard
	Se-1	77	7177.4	2.9	**94.4764**	1.329	1.4	ug/L	42	Standard
>	Ga	71	96.7	7.9				mg/L	42	Standard
	Rb	85	9571.4	0.6				ug/L	17	Standard
	Y	89	459795.2	1.7				ug/L	417098	Standard
>	Rh	103	293.3	12.0				ug/L	13	Standard
	Mo	98	5421.1	3.7	**1.9704**	0.066	3.4	ug/L	11	Standard
	Ag	107	318338.0	1.0	**47.4485**	0.356	0.8	ug/L	68	Standard
	Cd	111	104991.2	1.0	**48.7852**	0.464	1.0	mg/L	2	Standard
	Cd	114	250399.7	1.5	**47.4405**	0.760	1.6	ug/L	12	Standard
>	In	115	604563.1	0.3				ug/L	587441	Standard
	Sn	118	798.4	4.4	**0.0381**	0.006	16.0	ug/L	497	Standard
	Sb	123	240747.3	1.0	**50.1002**	0.397	0.8	ug/L	78	Standard
	Ba	135	122571.5	0.3	**58.1746**	0.379	0.7	ug/L	24	Standard
	Ce	140	328.3	0.9				ug/L	25	Standard
>	Tb	159	981221.4	1.4				ug/L	939701	Standard
	Ho	165	28.3	44.4				ug/L	10	Standard
	Tl	203	414235.7	0.7	**51.0974**	0.645	1.3	ug/L	4	Standard
	Tl	205	378219.2	0.6	**53.7534**	0.090	0.2	ug/L	2	Standard
	Pb	206	277784.6	0.1	**52.8053**	0.305	0.6	ug/L	240	Standard
	Pb	207	237018.9	0.5	**50.7105**	0.514	1.0	ug/L	198	Standard
	Pb	208	965977.0	0.4	**52.3096**	0.506	1.0	ug/L	883	Standard
	U	238	407586.9	0.7	**60.2072**	0.700	1.2	ug/L	3	Standard
>	Bi	209	515321.0	0.6				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.6720**	30.600	173.2	mg/L	0	Standard
Mg	24	189285.1	1.3	**232.3057**	9.548	4.1	mg/L	37	Standard
K	39	641.7	6.1	**1.2328**	0.045	3.6	mg/L	38	Standard
Ca	43	760.0	12.3	**43.0240**	4.391	10.2	mg/L	10	Standard
Fe	54	185.4	16.8	**0.0114**	0.028	245.2	mg/L	179	Standard
Fe	57	630.0	4.2	**0.9612**	0.087	9.0	mg/L	335	Standard
> **Sc-1**	45	64222.6	2.9				mg/L	61029	Standard
Cl	35	34933.6	1.5				ug/L	20195	Standard
Kr	83	2.7	114.6				ug/L	4	Standard
Br	81	53306.9	1.0				ug/L	1547	Standard
P	31	23740.3	1.4				ug/L	15286	Standard
S	34	2118.5	3.3				ug/L	1572	Standard
Sr	88	1145.0	3.3				ug/L	73	Standard
C	12	140.0	21.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	28.6	38.4				mg/L	6	Standard
Ho-1	165	28.3	44.4				mg/L	10	Standard
Er	166	30.0	66.7				mg/L	13	Standard
I	127	81496.0	7.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		147.078	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.320	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.915	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.347	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606126503SD WG574001-08
Sample Date/Time: Wednesday, June 29, 2016 16:08:02
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	108017.3	3.5				ug/L	74699	Standard
	Be	9	61104.9	5.2	**47.9870**	0.846	1.8	ug/L	8	Standard
	Al	27	60436124.3	2.1	**284.5445**	9.073	3.2	ug/L	1493	Standard
	Sc	45	65195.1	3.6				ug/L	61029	Standard
	Ti	47	321.3	5.9	**0.6738**	0.054	8.0	ug/L	35	Standard
	V	51	521782.6	1.8	**63.5667**	1.206	1.9	ug/L	1435	Standard
	Cr	52	431117.5	0.3	**52.6702**	0.983	1.9	ug/L	7635	Standard
	Cr	53	81998.0	1.1	**81.5509**	0.729	0.9	ug/L	363	Standard
	Mn	55	379421.8	1.7	**50.1647**	1.838	3.7	ug/L	747	Standard
	Co	59	378746.6	2.0	**52.9167**	2.098	4.0	ug/L	234	Standard
	Ni	60	101643.5	0.7	**49.9872**	1.144	2.3	ug/L	215	Standard
	Cu	65	96036.4	1.2	**47.5169**	0.455	1.0	ug/L	104	Standard
	Zn	66	60629.4	1.5	**50.7689**	0.479	0.9	ug/L	363	Standard
>	**Ge**	72	536566.5	1.9				ug/L	495142	Standard
	As	75	65668.7	0.7	**54.1701**	0.796	1.5	ug/L	-50	Standard
	Se	82	7769.6	1.1	**65.2136**	1.970	3.0	ug/L	14	Standard
	Se-1	77	7316.4	1.6	**91.8340**	1.824	2.0	ug/L	42	Standard
>	**Ga**	71	56.7	22.2				mg/L	42	Standard
	Rb	85	9684.8	3.9				ug/L	17	Standard
	Y	89	458590.9	3.1				ug/L	417098	Standard
>	**Rh**	103	275.0	12.6				ug/L	13	Standard
	Mo	98	5397.9	1.9	**1.9792**	0.040	2.0	ug/L	11	Standard
	Ag	107	315299.7	0.9	**47.4082**	1.008	2.1	ug/L	68	Standard
	Cd	111	105649.0	0.5	**49.5183**	0.751	1.5	mg/L	2	Standard
	Cd	114	256574.5	1.5	**49.0334**	1.028	2.1	ug/L	12	Standard
>	**In**	115	599465.1	2.0				ug/L	587441	Standard
	Sn	118	820.0	11.4	**0.0428**	0.015	34.4	ug/L	497	Standard
	Sb	123	245153.5	0.2	**51.4644**	0.950	1.8	ug/L	78	Standard
	Ba	135	122768.4	0.8	**58.7829**	1.524	2.6	ug/L	24	Standard
	Ce	140	333.3	10.5				ug/L	25	Standard
>	**Tb**	159	983758.7	0.8				ug/L	939701	Standard
	Ho	165	18.3	41.7				ug/L	10	Standard
	Tl	203	416470.0	0.7	**50.8907**	0.470	0.9	ug/L	4	Standard
	Tl	205	377588.7	0.1	**53.1619**	0.172	0.3	ug/L	2	Standard
	Pb	206	279930.3	0.5	**52.7144**	0.351	0.7	ug/L	240	Standard
	Pb	207	238634.3	0.7	**50.5762**	0.275	0.5	ug/L	198	Standard
	Pb	208	958199.8	1.0	**51.4011**	0.688	1.3	ug/L	883	Standard
	U	238	405052.0	0.8	**59.2716**	0.671	1.1	ug/L	3	Standard
>	**Bi**	209	520189.0	0.3				ug/L	523984	Standard

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Na	23	5.0	173.2	**51.9909**	90.042	173.2	mg/L	0	Standard
Mg	24	184795.4	2.1	**223.5320**	12.550	5.6	mg/L	37	Standard
K	39	668.3	13.7	**1.2668**	0.164	13.0	mg/L	38	Standard
Ca	43	725.0	7.3	**40.3567**	2.975	7.4	mg/L	10	Standard
Fe	54	151.4	21.3	**-0.0183**	0.024	132.3	mg/L	179	Standard
Fe	57	623.3	16.5	**0.9045**	0.268	29.6	mg/L	335	Standard
> **Sc-1**	45	65195.1	3.6				mg/L	61029	Standard
Cl	35	33686.7	1.5				ug/L	20195	Standard
Kr	83	1.7	91.7				ug/L	4	Standard
Br	81	51370.3	3.2				ug/L	1547	Standard
P	31	23124.3	1.4				ug/L	15286	Standard
S	34	2101.8	2.3				ug/L	1572	Standard
Sr	88	1251.7	9.6				ug/L	73	Standard
C	12	163.3	19.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	9.4	104.3				mg/L	6	Standard
Ho-1	165	18.3	41.7				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	90519.1	8.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		144.604	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.366	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	102.047	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	99.276	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Sample ID: L1606126503SD WG574001-08
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Method 6020 - Summary Report

Sample ID: L1606124701
Sample Date/Time: Wednesday, June 29, 2016 16:11:13
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	160464.4	3.8				ug/L	74699	Standard
	Be	9	12485.1	1.8	**6.6126**	0.132	2.0	ug/L	8	Standard
	Al	27	129371635.5	1.7	**410.0067**	8.683	2.1	ug/L	1493	Standard
	Sc	45	97873.5	2.0				ug/L	61029	Standard
	Ti	47	12940.2	2.9	**32.4229**	1.439	4.4	ug/L	35	Standard
	V	51	62587.9	0.8	**7.6988**	0.173	2.3	ug/L	1435	Standard
	Cr	52	130472.4	1.2	**15.7449**	0.176	1.1	ug/L	7635	Standard
	Cr	53	17299.9	2.8	**17.4949**	0.102	0.6	ug/L	363	Standard
	Mn	55	53885293.3	1.0	**7372.4056**	142.217	1.9	ug/L	747	Standard
	Co	59	1486809.2	2.0	**214.4609**	6.754	3.1	ug/L	234	Standard
	Ni	60	953927.1	1.9	**485.1518**	7.673	1.6	ug/L	215	Standard
	Cu	65	14021.8	2.7	**7.0705**	0.048	0.7	ug/L	104	Standard
	Zn	66	1250022.8	1.4	**1089.5042**	11.046	1.0	ug/L	363	Standard
>	**Ge**	72	519921.5	2.2				ug/L	495142	Standard
	As	75	2369.9	1.5	**2.0748**	0.031	1.5	ug/L	-50	Standard
	Se	82	334.2	2.8	**2.7639**	0.140	5.1	ug/L	14	Standard
	Se-1	77	477.7	9.4	**5.6016**	0.492	8.8	ug/L	42	Standard
>	**Ga**	71	3503.7	1.4				mg/L	42	Standard
	Rb	85	155749.9	1.6				ug/L	17	Standard
	Y	89	3051185.4	0.7				ug/L	417098	Standard
>	**Rh**	103	200.0	9.0				ug/L	13	Standard
	Mo	98	648.1	0.8	**0.2277**	0.002	1.0	ug/L	11	Standard
	Ag	107	406.3	10.5	**0.0469**	0.006	13.8	ug/L	68	Standard
	Cd	111	4037.2	2.2	**1.8458**	0.056	3.0	mg/L	2	Standard
	Cd	114	10321.7	4.5	**1.9292**	0.065	3.4	ug/L	12	Standard
>	**In**	115	612067.4	1.8				ug/L	587441	Standard
	Sn	118	936.7	6.3	**0.0593**	0.012	20.5	ug/L	497	Standard
	Sb	123	674.3	5.8	**0.1344**	0.006	4.1	ug/L	78	Standard
	Ba	135	15717.8	1.3	**7.3556**	0.136	1.8	ug/L	24	Standard
	Ce	140	2639736.8	0.7				ug/L	25	Standard
>	**Tb**	159	1213429.7	1.8				ug/L	939701	Standard
	Ho	165	212831.1	0.7				ug/L	10	Standard
	Tl	203	2423.5	3.4	**0.2853**	0.011	3.9	ug/L	4	Standard
	Tl	205	2225.2	6.3	**0.3038**	0.017	5.8	ug/L	2	Standard
	Pb	206	7086.3	0.1	**1.2240**	0.010	0.8	ug/L	240	Standard
	Pb	207	5547.0	2.2	**1.0710**	0.022	2.1	ug/L	198	Standard
	Pb	208	23218.6	1.0	**1.1348**	0.005	0.5	ug/L	883	Standard
	U	238	25740.2	1.8	**3.6463**	0.044	1.2	ug/L	3	Standard
>	**Bi**	209	536711.9	0.7				ug/L	523984	Standard

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Na	23	40.0	57.3	**285.3574**	160.270	56.2	mg/L	0	Standard
Mg	24	87773.6	1.9	**70.5914**	1.090	1.5	mg/L	37	Standard
K	39	1211.7	2.8	**1.5562**	0.053	3.4	mg/L	38	Standard
Ca	43	3308.7	4.2	**127.7939**	4.640	3.6	mg/L	10	Standard
Fe	54	180981.2	2.7	**95.5321**	0.892	0.9	mg/L	179	Standard
Fe	57	48873.8	3.4	**102.4969**	2.098	2.0	mg/L	335	Standard
Sc-1	45	97873.5	2.0				mg/L	61029	Standard
Cl	35	64420.7	1.3				ug/L	20195	Standard
Kr	83	1.3	86.6				ug/L	4	Standard
Br	81	26873.8	3.7				ug/L	1547	Standard
P	31	52208.1	1.4				ug/L	15286	Standard
S	34	1956.8	2.0				ug/L	1572	Standard
Sr	88	1171.7	10.6				ug/L	73	Standard
C	12	126.7	46.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	329920.1	1.3				mg/L	6	Standard
Ho-1	165	212831.1	0.7				mg/L	10	Standard
Er	166	185158.1	1.8				mg/L	13	Standard
I	127	88143.1	6.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		214.815	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		105.004	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.192
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.429
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Co 59 Upper, S, EEE	Co	59
Ni 60 Upper, S, EEE	Ni	60
Zn 66 Upper, S, EEE	Zn	66

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Method 6020 - Summary Report

Sample ID: L1606124701PS WG574688-01
Sample Date/Time: Wednesday, June 29, 2016 16:14:25
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	166369.0	3.1				ug/L	74699	Standard
	Be	9	78228.1	1.5	**39.9183**	0.744	1.9	ug/L	8	Standard
	Al	27	127858501.0	1.9	**390.7420**	6.863	1.8	ug/L	1493	Standard
	Sc	45	95075.8	2.0				ug/L	61029	Standard
	Ti	47	12076.5	3.4	**30.6847**	0.840	2.7	ug/L	35	Standard
	V	51	487373.4	0.7	**62.1823**	0.880	1.4	ug/L	1435	Standard
	Cr	52	506749.0	0.5	**65.0704**	0.602	0.9	ug/L	7635	Standard
	Cr	53	63546.3	1.7	**66.1298**	1.201	1.8	ug/L	363	Standard
	Mn	55	53730576.4	0.3	**7459.5309**	74.503	1.0	ug/L	747	Standard
	Co	59	1866113.9	0.2	**273.1251**	3.396	1.2	ug/L	234	Standard
	Ni	60	1009610.1	0.8	**521.0961**	4.502	0.9	ug/L	215	Standard
	Cu	65	102190.2	1.2	**52.9646**	0.037	0.1	ug/L	104	Standard
	Zn	66	1265218.7	0.3	**1119.1475**	11.121	1.0	ug/L	363	Standard
>	**Ge**	72	512284.2	1.2				ug/L	495142	Standard
	As	75	65072.9	0.3	**56.2148**	0.511	0.9	ug/L	-50	Standard
	Se	82	7179.2	1.0	**63.0878**	0.484	0.8	ug/L	14	Standard
	Se-1	77	4836.8	0.7	**63.3901**	0.749	1.2	ug/L	42	Standard
>	**Ga**	71	3398.7	7.2				mg/L	42	Standard
	Rb	85	158551.9	0.5				ug/L	17	Standard
	Y	89	3079691.2	1.3				ug/L	417098	Standard
>	**Rh**	103	243.3	6.3				ug/L	13	Standard
	Mo	98	610.5	4.6	**0.2160**	0.008	3.7	ug/L	11	Standard
	Ag	107	329069.5	0.6	**48.8691**	0.577	1.2	ug/L	68	Standard
	Cd	111	109320.3	0.2	**50.6101**	0.459	0.9	mg/L	2	Standard
	Cd	114	265491.9	0.4	**50.1152**	0.608	1.2	ug/L	12	Standard
>	**In**	115	606831.5	1.0				ug/L	587441	Standard
	Sn	118	1098.4	5.9	**0.0874**	0.012	14.0	ug/L	497	Standard
	Sb	123	240923.7	1.8	**49.9558**	1.171	2.3	ug/L	78	Standard
	Ba	135	113288.6	0.8	**53.5705**	0.782	1.5	ug/L	24	Standard
	Ce	140	2588807.2	1.1				ug/L	25	Standard
>	**Tb**	159	1203377.0	1.6				ug/L	939701	Standard
	Ho	165	210409.6	1.8				ug/L	10	Standard
	Tl	203	437720.2	1.4	**52.3305**	0.744	1.4	ug/L	4	Standard
	Tl	205	404409.4	0.6	**55.7069**	0.222	0.4	ug/L	2	Standard
	Pb	206	295264.9	0.3	**54.4023**	0.212	0.4	ug/L	240	Standard
	Pb	207	250626.5	0.1	**51.9726**	0.335	0.6	ug/L	198	Standard
	Pb	208	1033784.3	0.4	**54.2614**	0.547	1.0	ug/L	883	Standard
	U	238	423217.8	0.6	**60.5919**	0.666	1.1	ug/L	3	Standard
>	**Bi**	209	531687.2	0.6				ug/L	523984	Standard

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Na	23	31.7	32.9	**235.3667**	80.946	34.4	mg/L	0	Standard
Mg	24	88559.7	0.9	**73.3333**	1.498	2.0	mg/L	37	Standard
K	39	1311.7	6.5	**1.7460**	0.092	5.3	mg/L	38	Standard
Ca	43	3437.1	1.4	**136.8797**	3.742	2.7	mg/L	10	Standard
Fe	54	183063.9	0.7	**99.5077**	1.370	1.4	mg/L	179	Standard
Fe	57	49900.4	2.7	**107.8438**	4.358	4.0	mg/L	335	Standard
Sc-1	45	95075.8	2.0				mg/L	61029	Standard
Cl	35	63889.8	1.2				ug/L	20195	Standard
Kr	83	1.7	34.6				ug/L	4	Standard
Br	81	26186.0	7.9				ug/L	1547	Standard
P	31	52633.0	2.3				ug/L	15286	Standard
S	34	1903.5	2.7				ug/L	1572	Standard
Sr	88	1258.4	8.1				ug/L	73	Standard
C	12	153.3	16.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	3	Standard
Dy	164	329580.7	1.9				mg/L	6	Standard
Ho-1	165	210409.6	1.8				mg/L	10	Standard
Er	166	182077.6	1.3				mg/L	13	Standard
I	127	87547.6	5.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		222.720	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.462	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.301
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	101.470
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Co 59 Upper, S, EEE	Co	59
Ni 60 Upper, S, EEE	Ni	60
Zn 66 Upper, S, EEE	Zn	66

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Method 6020 - Summary Report

Sample ID: L1606124701SDL WG574688-02
Sample Date/Time: Wednesday, June 29, 2016 16:17:36
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	115043.6	2.7				ug/L	74699	Standard
	Be	9	2510.2	6.0	**1.8579**	0.064	3.4	ug/L	8	Standard
	Al	27	26603666.2	1.3	**117.5773**	3.118	2.7	ug/L	1493	Standard
	Sc	45	70520.4	2.0				ug/L	61029	Standard
	Ti	47	2655.2	2.4	**6.2496**	0.159	2.5	ug/L	35	Standard
	V	51	13651.6	1.3	**1.4451**	0.028	2.0	ug/L	1435	Standard
	Cr	52	32029.5	0.6	**2.9000**	0.113	3.9	ug/L	7635	Standard
	Cr	53	4062.2	6.0	**3.6565**	0.147	4.0	ug/L	363	Standard
	Mn	55	11326454.5	1.3	**1476.9710**	52.700	3.6	ug/L	747	Standard
	Co	59	315829.2	0.8	**43.3845**	1.293	3.0	ug/L	234	Standard
	Ni	60	206220.6	0.5	**99.8677**	2.554	2.6	ug/L	215	Standard
	Cu	65	3227.7	3.3	**1.4714**	0.087	5.9	ug/L	104	Standard
	Zn	66	276031.8	0.8	**228.9686**	6.765	3.0	ug/L	363	Standard
>	**Ge**	72	545622.5	2.3				ug/L	495142	Standard
	As	75	529.0	5.1	**0.4886**	0.031	6.3	ug/L	-50	Standard
	Se	82	109.8	7.8	**0.7692**	0.061	7.9	ug/L	14	Standard
	Se-1	77	127.7	10.6	**0.9669**	0.203	21.0	ug/L	42	Standard
>	**Ga**	71	896.7	4.3				mg/L	42	Standard
	Rb	85	33246.4	0.8				ug/L	17	Standard
	Y	89	1035711.2	2.7				ug/L	417098	Standard
>	**Rh**	103	68.3	33.0				ug/L	13	Standard
	Mo	98	137.2	4.4	**0.0416**	0.001	3.0	ug/L	11	Standard
	Ag	107	193.7	13.0	**0.0144**	0.003	20.5	ug/L	68	Standard
	Cd	111	922.1	1.5	**0.3978**	0.011	2.7	mg/L	2	Standard
	Cd	114	2202.4	8.0	**0.3929**	0.032	8.2	ug/L	12	Standard
>	**In**	115	638835.9	2.4				ug/L	587441	Standard
	Sn	118	601.7	4.7	**-0.0000**	0.004	76937.0	ug/L	497	Standard
	Sb	123	1960.6	22.3	**0.3834**	0.095	24.7	ug/L	78	Standard
	Ba	135	3410.7	1.0	**1.5171**	0.049	3.2	ug/L	24	Standard
	Ce	140	553030.9	1.0				ug/L	25	Standard
>	**Tb**	159	1064988.1	1.7				ug/L	939701	Standard
	Ho	165	44299.7	1.5				ug/L	10	Standard
	Tl	203	596.3	8.1	**0.0662**	0.006	8.4	ug/L	4	Standard
	Tl	205	613.3	10.1	**0.0808**	0.008	10.1	ug/L	2	Standard
	Pb	206	1759.1	0.5	**0.2383**	0.002	0.8	ug/L	240	Standard
	Pb	207	1407.7	5.3	**0.2088**	0.015	7.2	ug/L	198	Standard
	Pb	208	5898.4	2.6	**0.2216**	0.008	3.7	ug/L	883	Standard
	U	238	5357.3	1.2	**0.7271**	0.010	1.3	ug/L	3	Standard
>	**Bi**	209	557502.4	0.2				ug/L	523984	Standard

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Na	23	11.7	89.2	**117.5100**	105.501	89.8	mg/L	0	Standard
Mg	24	18105.8	1.6	**20.1624**	0.144	0.7	mg/L	37	Standard
K	39	321.7	3.6	**0.5016**	0.035	6.9	mg/L	38	Standard
Ca	43	733.4	8.9	**37.5359**	2.964	7.9	mg/L	10	Standard
Fe	54	38163.2	2.6	**27.8607**	0.186	0.7	mg/L	179	Standard
Fe	57	10221.8	1.3	**28.9959**	0.316	1.1	mg/L	335	Standard
> **Sc-1**	45	70520.4	2.0				mg/L	61029	Standard
Cl	35	31180.1	1.1				ug/L	20195	Standard
Kr	83	2.3	89.2				ug/L	4	Standard
Br	81	7325.1	3.6				ug/L	1547	Standard
P	31	24873.7	0.5				ug/L	15286	Standard
S	34	1646.8	8.5				ug/L	1572	Standard
Sr	88	296.7	11.0				ug/L	73	Standard
C	12	96.7	53.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	69181.7	2.0				mg/L	6	Standard
Ho-1	165	44299.7	1.5				mg/L	10	Standard
Er	166	39063.6	1.3				mg/L	13	Standard
I	127	21375.1	3.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		154.010	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.195	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.749
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.397
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Zn 66 Upper, S, EEE	Zn	66

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 16:20:49
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	104492.8	3.9				ug/L	74699	Standard
	Be	9	63869.3	1.0	**51.9084**	1.516	2.9	ug/L	8	Standard
	Al	27	9148865.9	2.6	**44.5067**	0.724	1.6	ug/L	1493	Standard
	Sc	45	68447.7	3.2				ug/L	61029	Standard
	Ti	47	43923.6	1.6	**106.2047**	1.334	1.3	ug/L	35	Standard
	V	51	454775.2	0.5	**55.0469**	0.468	0.8	ug/L	1435	Standard
	Cr	52	431898.3	0.6	**52.4410**	0.316	0.6	ug/L	7635	Standard
	Cr	53	53343.8	2.8	**52.6203**	1.459	2.8	ug/L	363	Standard
	Mn	55	427711.0	4.2	**56.2006**	1.985	3.5	ug/L	747	Standard
	Co	59	425402.4	1.1	**59.0619**	0.614	1.0	ug/L	234	Standard
	Ni	60	106741.4	0.9	**52.1773**	0.185	0.4	ug/L	215	Standard
	Cu	65	106457.4	0.4	**52.3703**	0.176	0.3	ug/L	104	Standard
	Zn	66	63607.9	0.7	**52.9682**	0.530	1.0	ug/L	363	Standard
>	Ge	72	539725.1	0.7				ug/L	495142	Standard
	As	75	63945.9	1.5	**52.4378**	1.123	2.1	ug/L	-50	Standard
	Se	82	6584.0	0.6	**54.8988**	0.684	1.2	ug/L	14	Standard
	Se-1	77	4386.3	1.4	**54.4772**	1.111	2.0	ug/L	42	Standard
>	Ga	71	80.0	16.5				mg/L	42	Standard
	Rb	85	970.0	8.8				ug/L	17	Standard
	Y	89	494238.2	2.5				ug/L	417098	Standard
>	Rh	103	45.0	11.1				ug/L	13	Standard
	Mo	98	317512.9	0.8	**102.4795**	1.834	1.8	ug/L	11	Standard
	Ag	107	378789.7	0.9	**49.9860**	0.591	1.2	ug/L	68	Standard
	Cd	111	119686.6	0.4	**49.2403**	0.865	1.8	mg/L	2	Standard
	Cd	114	291890.5	1.4	**48.9669**	1.322	2.7	ug/L	12	Standard
>	In	115	682927.0	1.5				ug/L	587441	Standard
	Sn	118	338721.1	0.8	**49.7884**	0.723	1.5	ug/L	497	Standard
	Sb	123	263759.6	1.2	**48.5931**	0.331	0.7	ug/L	78	Standard
	Ba	135	111614.3	0.7	**46.9010**	0.972	2.1	ug/L	24	Standard
	Ce	140	1265.1	98.5				ug/L	25	Standard
>	Tb	159	1064058.1	1.0				ug/L	939701	Standard
	Ho	165	88.3	85.2				ug/L	10	Standard
	Tl	203	475263.7	0.7	**51.4258**	1.211	2.4	ug/L	4	Standard
	Tl	205	438160.3	0.4	**54.6297**	1.400	2.6	ug/L	2	Standard
	Pb	206	306629.0	0.6	**51.1326**	1.396	2.7	ug/L	240	Standard
	Pb	207	272793.9	0.3	**51.2040**	1.495	2.9	ug/L	198	Standard
	Pb	208	1100211.2	0.6	**52.2716**	1.709	3.3	ug/L	883	Standard
	U	238	414469.5	0.5	**53.7134**	1.693	3.2	ug/L	3	Standard
>	Bi	209	587705.0	2.9				ug/L	523984	Standard

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Na	23	3.3	173.2	**35.5299**	61.531	173.2	mg/L	0	Standard
Mg	24	4809.1	8.0	**5.4678**	0.353	6.5	mg/L	37	Standard
K	39	2090.1	1.6	**4.0082**	0.167	4.2	mg/L	38	Standard
Ca	43	111.7	10.3	**3.7837**	0.862	22.8	mg/L	10	Standard
Fe	54	7082.4	2.6	**5.2191**	0.217	4.1	mg/L	179	Standard
Fe	57	2040.1	4.3	**5.1108**	0.267	5.2	mg/L	335	Standard
Sc-1	45	68447.7	3.2				mg/L	61029	Standard
Cl	35	25830.7	1.4				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	2190.2	6.5				ug/L	1547	Standard
P	31	18406.2	0.9				ug/L	15286	Standard
S	34	1965.1	6.7				ug/L	1572	Standard
Sr	88	71.7	21.3				ug/L	73	Standard
C	12	103.3	29.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	152.5	102.6				mg/L	6	Standard
Ho-1	165	88.3	85.2				mg/L	10	Standard
Er	166	86.7	74.2				mg/L	13	Standard
I	127	2766.9	21.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	103.817		
Al	27	89.013		
Sc	45			
Ti	47	106.205		
V	51	110.094		
Cr	52	104.882		
Cr	53			
Mn	55	112.401		
Co	59	118.124		
Ni	60	104.355		
Cu	65	104.741		
Zn	66	105.936		
Ge	72		109.004	
As	75	104.876		
Se	82	109.798		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	102.479		
Ag	107	99.972		
Cd	111	98.481		
Cd	114			
In	115		116.255	
Sn	118	99.577		
Sb	123	97.186		
Ba	135	93.802		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.852		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.543		
U	238	107.427		
Bi	209		112.161	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Al	27	
QC Std 6	V	51	
QC Std 6	Mn	55	

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QC Std 6	Co	59

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 16:24:01
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	100067.7	1.3				ug/L	74699	Standard
	Be	9	36.7	7.9	**0.0387**	0.002	5.2	ug/L	8	Standard
	Al	27	10153.6	30.4	**0.0381**	0.015	39.5	ug/L	1493	Standard
	Sc	45	67434.8	2.7				ug/L	61029	Standard
	Ti	47	38.3	21.7	**-0.0212**	0.020	92.7	ug/L	35	Standard
	V	51	1502.7	1.2	**-0.0231**	0.006	25.9	ug/L	1435	Standard
	Cr	52	7451.2	2.4	**-0.1523**	0.012	7.6	ug/L	7635	Standard
	Cr	53	503.3	11.6	**0.1429**	0.063	44.4	ug/L	363	Standard
	Mn	55	3693.5	26.8	**0.3137**	0.134	42.8	ug/L	747	Standard
	Co	59	358.3	10.7	**0.0099**	0.006	62.4	ug/L	234	Standard
	Ni	60	209.7	4.9	**-0.0268**	0.006	22.7	ug/L	215	Standard
	Cu	65	198.7	7.2	**-0.0110**	0.009	80.7	ug/L	104	Standard
	Zn	66	532.3	5.7	**-0.0316**	0.034	106.3	ug/L	363	Standard
>	**Ge**	72	571298.3	2.3				ug/L	495142	Standard
	As	75	-12.4	42.9	**0.0499**	0.004	8.8	ug/L	-50	Standard
	Se	82	23.5	9.9	**0.0476**	0.021	43.8	ug/L	14	Standard
	Se-1	77	58.7	7.7	**0.0749**	0.069	91.8	ug/L	42	Standard
>	**Ga**	71	75.0	26.7				mg/L	42	Standard
	Rb	85	36.7	55.1				ug/L	17	Standard
	Y	89	500557.3	2.5				ug/L	417098	Standard
>	**Rh**	103	30.0	44.1				ug/L	13	Standard
	Mo	98	301.0	26.9	**0.0924**	0.026	27.9	ug/L	11	Standard
	Ag	107	165.0	21.0	**0.0091**	0.004	49.2	ug/L	68	Standard
	Cd	111	19.8	28.3	**0.0003**	0.002	699.6	mg/L	2	Standard
	Cd	114	46.5	85.8	**0.0058**	0.007	116.4	ug/L	12	Standard
>	**In**	115	675355.4	0.8				ug/L	587441	Standard
	Sn	118	876.7	18.6	**0.0359**	0.025	69.7	ug/L	497	Standard
	Sb	123	599.5	22.8	**0.1076**	0.026	24.3	ug/L	78	Standard
	Ba	135	42.7	23.9	**0.0021**	0.004	201.6	ug/L	24	Standard
	Ce	140	140.0	34.4				ug/L	25	Standard
>	**Tb**	159	1044716.9	1.2				ug/L	939701	Standard
	Ho	165	20.0	50.0				ug/L	10	Standard
	Tl	203	103.0	21.9	**0.0094**	0.003	27.0	ug/L	4	Standard
	Tl	205	70.0	58.5	**0.0089**	0.005	57.1	ug/L	2	Standard
	Pb	206	338.7	4.4	**-0.0148**	0.002	16.0	ug/L	240	Standard
	Pb	207	277.7	9.1	**-0.0179**	0.005	28.1	ug/L	198	Standard
	Pb	208	1213.0	9.6	**-0.0165**	0.006	36.1	ug/L	883	Standard
	U	238	62.0	33.9	**0.0036**	0.003	76.1	ug/L	3	Standard
>	**Bi**	209	588682.5	1.2				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.0278**	29.484	173.2	mg/L	0	Standard
Mg	24	56.7	20.4	**0.0014**	0.015	1120.4	mg/L	37	Standard
K	39	36.7	28.4	**-0.0407**	0.021	51.2	mg/L	38	Standard
Ca	43	26.7	28.6	**-1.0029**	0.415	41.4	mg/L	10	Standard
Fe	54	187.4	12.0	**0.0055**	0.017	304.1	mg/L	179	Standard
Fe	57	261.7	6.1	**-0.2681**	0.071	26.5	mg/L	335	Standard
Sc-1	45	67434.8	2.7				mg/L	61029	Standard
Cl	35	26219.3	0.7				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	2243.5	3.0				ug/L	1547	Standard
P	31	19277.3	3.9				ug/L	15286	Standard
S	34	2016.8	11.3				ug/L	1572	Standard
Sr	88	70.0	35.7				ug/L	73	Standard
C	12	120.0	25.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	49.4	87.7				mg/L	6	Standard
Ho-1	165	20.0	50.0				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	2125.2	22.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		115.381	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.966
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		112.347
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606124701SDL WG574688-02
Sample Date/Time: Wednesday, June 29, 2016 16:27:13
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	105717.5	0.5				ug/L	74699	Standard
	Be	9	553.3	1.4	**0.4517**	0.004	0.8	ug/L	8	Standard
	Al	27	5662006.5	2.5	**27.2120**	0.787	2.9	ug/L	1493	Standard
	Sc	45	72131.5	3.8				ug/L	61029	Standard
	Ti	47	604.0	7.1	**1.2783**	0.109	8.5	ug/L	35	Standard
	V	51	3941.0	1.4	**0.2585**	0.002	0.9	ug/L	1435	Standard
	Cr	52	12715.3	2.3	**0.4691**	0.023	4.9	ug/L	7635	Standard
	Cr	53	1340.1	9.1	**0.9313**	0.103	11.1	ug/L	363	Standard
	Mn	55	2452895.1	0.8	**306.4368**	3.099	1.0	ug/L	747	Standard
	Co	59	67057.1	0.2	**8.7998**	0.112	1.3	ug/L	234	Standard
	Ni	60	46732.3	0.4	**21.5970**	0.233	1.1	ug/L	215	Standard
	Cu	65	904.0	6.3	**0.3188**	0.021	6.7	ug/L	104	Standard
	Zn	66	62660.6	1.1	**49.4618**	0.122	0.2	ug/L	363	Standard
>	**Ge**	72	569030.6	1.4				ug/L	495142	Standard
	As	75	59.1	19.2	**0.1055**	0.009	8.4	ug/L	-50	Standard
	Se	82	34.4	3.8	**0.1350**	0.014	10.1	ug/L	14	Standard
	Se-1	77	82.7	11.5	**0.3621**	0.106	29.4	ug/L	42	Standard
>	**Ga**	71	288.3	19.2				mg/L	42	Standard
	Rb	85	7325.1	4.9				ug/L	17	Standard
	Y	89	616528.9	0.8				ug/L	417098	Standard
>	**Rh**	103	13.3	78.1				ug/L	13	Standard
	Mo	98	112.4	8.7	**0.0298**	0.003	9.5	ug/L	11	Standard
	Ag	107	122.3	20.4	**0.0029**	0.003	108.6	ug/L	68	Standard
	Cd	111	198.8	14.6	**0.0723**	0.012	16.2	mg/L	2	Standard
	Cd	114	516.3	5.9	**0.0829**	0.006	6.9	ug/L	12	Standard
>	**In**	115	696026.2	0.9				ug/L	587441	Standard
	Sn	118	760.0	4.7	**0.0151**	0.006	37.2	ug/L	497	Standard
	Sb	123	350.2	21.1	**0.0592**	0.014	23.4	ug/L	78	Standard
	Ba	135	775.0	6.3	**0.3035**	0.019	6.3	ug/L	24	Standard
	Ce	140	119180.2	0.3				ug/L	25	Standard
>	**Tb**	159	1103880.2	1.1				ug/L	939701	Standard
	Ho	165	9261.2	2.5				ug/L	10	Standard
	Tl	203	155.7	9.5	**0.0145**	0.001	9.9	ug/L	4	Standard
	Tl	205	156.7	24.4	**0.0191**	0.005	23.7	ug/L	2	Standard
	Pb	206	668.3	5.9	**0.0368**	0.005	14.8	ug/L	240	Standard
	Pb	207	530.0	3.8	**0.0264**	0.004	13.6	ug/L	198	Standard
	Pb	208	2281.7	2.6	**0.0309**	0.002	6.9	ug/L	883	Standard
	U	238	1160.7	2.8	**0.1411**	0.004	2.6	ug/L	3	Standard
>	**Bi**	209	607087.1	0.9				ug/L	523984	Standard

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Na	23	1.7	173.2	**16.5008**	28.572	173.2	mg/L	0	Standard
Mg	24	3728.8	3.6	**4.0090**	0.135	3.4	mg/L	37	Standard
K	39	85.0	42.4	**0.0464**	0.073	156.7	mg/L	38	Standard
Ca	43	183.3	11.4	**7.2814**	1.162	16.0	mg/L	10	Standard
Fe	54	8713.3	2.8	**6.1146**	0.148	2.4	mg/L	179	Standard
Fe	57	2506.9	1.7	**6.1424**	0.321	5.2	mg/L	335	Standard
> **Sc-1**	45	72131.5	3.8				mg/L	61029	Standard
Cl	35	26208.6	1.1				ug/L	20195	Standard
Kr	83	2.7	21.7				ug/L	4	Standard
Br	81	3227.0	4.8				ug/L	1547	Standard
P	31	20363.7	0.5				ug/L	15286	Standard
S	34	1863.4	4.5				ug/L	1572	Standard
Sr	88	105.0	21.8				ug/L	73	Standard
C	12	56.7	36.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	14855.4	4.1				mg/L	6	Standard
Ho-1	165	9261.2	2.5				mg/L	10	Standard
Er	166	8048.8	4.7				mg/L	13	Standard
I	127	5796.1	1.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		141.525	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.923	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	118.484
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	115.860
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606124701SDL WG574688-02
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Method 6020 - Summary Report

Sample ID: L1606126504
Sample Date/Time: Wednesday, June 29, 2016 16:30:25
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	101552.6	1.9				ug/L	74699	Standard
	Be	9	25.0	72.1	**0.0287**	0.016	54.3	ug/L	8	Standard
	Al	27	16250197.0	1.8	**81.3578**	2.887	3.5	ug/L	1493	Standard
	Sc	45	67044.7	1.9				ug/L	61029	Standard
	Ti	47	394.3	10.9	**0.8437**	0.094	11.2	ug/L	35	Standard
	V	51	39093.2	1.3	**4.5488**	0.169	3.7	ug/L	1435	Standard
	Cr	52	19068.3	2.3	**1.3348**	0.101	7.6	ug/L	7635	Standard
	Cr	53	5326.0	20.8	**4.9620**	1.165	23.5	ug/L	363	Standard
	Mn	55	6239.0	2.5	**0.6731**	0.027	4.0	ug/L	747	Standard
	Co	59	851.0	2.5	**0.0808**	0.004	4.5	ug/L	234	Standard
	Ni	60	1951.8	2.1	**0.8314**	0.029	3.5	ug/L	215	Standard
	Cu	65	1321.1	4.3	**0.5464**	0.014	2.5	ug/L	104	Standard
	Zn	66	5985.8	0.6	**4.5673**	0.118	2.6	ug/L	363	Standard
>	**Ge**	72	540512.2	2.5				ug/L	495142	Standard
	As	75	1446.2	5.5	**1.2419**	0.041	3.3	ug/L	-50	Standard
	Se	82	841.6	2.6	**6.8893**	0.246	3.6	ug/L	14	Standard
	Se-1	77	609.0	15.5	**7.0254**	1.243	17.7	ug/L	42	Standard
>	**Ga**	71	105.0	12.6				mg/L	42	Standard
	Rb	85	1541.7	7.2				ug/L	17	Standard
	Y	89	489017.5	2.4				ug/L	417098	Standard
>	**Rh**	103	70.0	18.9				ug/L	13	Standard
	Mo	98	501.8	4.3	**0.1636**	0.005	2.9	ug/L	11	Standard
	Ag	107	97.0	7.4	**0.0005**	0.001	200.8	ug/L	68	Standard
	Cd	111	26.4	23.0	**0.0035**	0.003	79.3	mg/L	2	Standard
	Cd	114	74.1	18.4	**0.0109**	0.002	21.9	ug/L	12	Standard
>	**In**	115	652860.7	1.6				ug/L	587441	Standard
	Sn	118	840.0	9.7	**0.0347**	0.012	35.4	ug/L	497	Standard
	Sb	123	289.8	10.9	**0.0517**	0.007	12.7	ug/L	78	Standard
	Ba	135	17710.3	0.6	**7.7715**	0.161	2.1	ug/L	24	Standard
	Ce	140	1525.1	0.6				ug/L	25	Standard
>	**Tb**	159	1031518.0	1.9				ug/L	939701	Standard
	Ho	165	43.3	24.0				ug/L	10	Standard
	Tl	203	163.3	10.6	**0.0174**	0.002	9.6	ug/L	4	Standard
	Tl	205	133.3	16.9	**0.0182**	0.003	18.7	ug/L	2	Standard
	Pb	206	441.3	2.3	**0.0087**	0.001	8.9	ug/L	240	Standard
	Pb	207	362.0	4.8	**0.0037**	0.003	70.2	ug/L	198	Standard
	Pb	208	1549.4	2.6	**0.0058**	0.001	11.8	ug/L	883	Standard
	U	238	23538.3	0.9	**3.3015**	0.086	2.6	ug/L	3	Standard
>	**Bi**	209	542188.4	2.1				ug/L	523984	Standard

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Na	23	3.3	173.2	**35.7447**	61.903	173.2	mg/L	0	Standard
Mg	24	119069.4	0.9	**139.8814**	3.117	2.2	mg/L	37	Standard
K	39	143.3	11.2	**0.1739**	0.028	15.9	mg/L	38	Standard
Ca	43	463.3	1.6	**24.1242**	0.657	2.7	mg/L	10	Standard
Fe	54	197.6	4.4	**0.0142**	0.006	45.1	mg/L	179	Standard
Fe	57	435.0	13.1	**0.2738**	0.196	71.7	mg/L	335	Standard
> **Sc-1**	45	67044.7	1.9				mg/L	61029	Standard
Cl	35	31470.7	2.7				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	73323.9	4.5				ug/L	1547	Standard
P	31	23608.4	2.5				ug/L	15286	Standard
S	34	1800.1	6.6				ug/L	1572	Standard
Sr	88	293.3	6.9				ug/L	73	Standard
C	12	193.3	41.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	86.5	19.9				mg/L	6	Standard
Ho-1	165	43.3	24.0				mg/L	10	Standard
Er	166	73.3	34.3				mg/L	13	Standard
I	127	54762.3	5.8				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		135.949	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		109.163	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.136
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.474
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606126505
Sample Date/Time: Wednesday, June 29, 2016 16:33:36
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	99450.4	1.4				ug/L	74699	Standard
	Be	9	58.3	30.1	**0.0575**	0.016	27.1	ug/L	8	Standard
	Al	27	32118811.5	1.4	**164.1461**	0.108	0.1	ug/L	1493	Standard
	Sc	45	70749.8	1.3				ug/L	61029	Standard
	Ti	47	642.0	2.2	**1.4252**	0.030	2.1	ug/L	35	Standard
	V	51	8228.7	11.8	**0.7915**	0.119	15.1	ug/L	1435	Standard
	Cr	52	11308.2	2.8	**0.3584**	0.044	12.4	ug/L	7635	Standard
	Cr	53	3712.1	10.4	**3.3091**	0.391	11.8	ug/L	363	Standard
	Mn	55	3368829.0	1.1	**438.1329**	6.772	1.5	ug/L	747	Standard
	Co	59	3400.7	28.1	**0.4294**	0.132	30.8	ug/L	234	Standard
	Ni	60	4538.7	3.1	**2.0720**	0.077	3.7	ug/L	215	Standard
	Cu	65	1589.1	4.3	**0.6697**	0.036	5.3	ug/L	104	Standard
	Zn	66	6182.6	5.7	**4.6729**	0.311	6.7	ug/L	363	Standard
>	**Ge**	72	546665.5	0.5				ug/L	495142	Standard
	As	75	6156.5	0.5	**5.0379**	0.006	0.1	ug/L	-50	Standard
	Se	82	164.0	1.8	**1.2151**	0.026	2.2	ug/L	14	Standard
	Se-1	77	258.7	9.7	**2.5862**	0.322	12.5	ug/L	42	Standard
>	**Ga**	71	188.3	13.1				mg/L	42	Standard
	Rb	85	1378.4	10.6				ug/L	17	Standard
	Y	89	484009.6	2.1				ug/L	417098	Standard
>	**Rh**	103	118.3	6.5				ug/L	13	Standard
	Mo	98	286.3	31.1	**0.0925**	0.030	32.6	ug/L	11	Standard
	Ag	107	183.3	43.5	**0.0128**	0.011	86.7	ug/L	68	Standard
	Cd	111	248.2	17.8	**0.1006**	0.018	18.1	mg/L	2	Standard
	Cd	114	590.9	17.2	**0.1032**	0.017	16.3	ug/L	12	Standard
>	**In**	115	642069.8	1.9				ug/L	587441	Standard
	Sn	118	836.7	5.6	**0.0365**	0.010	26.8	ug/L	497	Standard
	Sb	123	288.3	29.8	**0.0524**	0.017	32.5	ug/L	78	Standard
	Ba	135	131296.8	1.0	**58.6819**	0.595	1.0	ug/L	24	Standard
	Ce	140	6513.1	10.5				ug/L	25	Standard
>	**Tb**	159	1012113.9	1.4				ug/L	939701	Standard
	Ho	165	216.7	7.1				ug/L	10	Standard
	Tl	203	185.3	61.4	**0.0202**	0.013	66.8	ug/L	4	Standard
	Tl	205	276.7	88.2	**0.0379**	0.033	87.8	ug/L	2	Standard
	Pb	206	891.4	31.8	**0.0916**	0.052	56.6	ug/L	240	Standard
	Pb	207	748.7	30.8	**0.0839**	0.048	56.6	ug/L	198	Standard
	Pb	208	3050.1	30.7	**0.0846**	0.049	57.6	ug/L	883	Standard
	U	238	21997.6	2.6	**3.1135**	0.091	2.9	ug/L	3	Standard
>	**Bi**	209	537104.2	0.4				ug/L	523984	Standard

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Na	23	13.3	57.3	**132.8617**	77.017	58.0	mg/L	0	Standard
Mg	24	104917.1	1.8	**116.7540**	0.597	0.5	mg/L	37	Standard
K	39	116.7	8.9	**0.1082**	0.018	16.4	mg/L	38	Standard
Ca	43	916.7	6.0	**47.4532**	3.610	7.6	mg/L	10	Standard
Fe	54	3013.9	2.4	**2.0666**	0.083	4.0	mg/L	179	Standard
Fe	57	1381.7	4.1	**2.9770**	0.162	5.4	mg/L	335	Standard
> **Sc-1**	45	70749.8	1.3				mg/L	61029	Standard
Cl	35	30215.4	1.0				ug/L	20195	Standard
Kr	83	1.3	114.6				ug/L	4	Standard
Br	81	35768.9	2.6				ug/L	1547	Standard
P	31	25429.7	2.5				ug/L	15286	Standard
S	34	2313.5	0.3				ug/L	1572	Standard
Sr	88	551.7	8.2				ug/L	73	Standard
C	12	433.3	25.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	3	Standard
Dy	164	279.9	12.3				mg/L	6	Standard
Ho-1	165	216.7	7.1				mg/L	10	Standard
Er	166	280.0	18.9				mg/L	13	Standard
I	127	794211.5	6.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		133.135	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.406	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	109.299
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	102.504
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606126506
Sample Date/Time: Wednesday, June 29, 2016 16:36:48
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	100252.3	1.1				ug/L	74699	Standard
	Be	9	26.7	39.0	**0.0303**	0.009	29.8	ug/L	8	Standard
	Al	27	69444.0	4.9	**0.3387**	0.017	5.1	ug/L	1493	Standard
	Sc	45	71205.3	1.8				ug/L	61029	Standard
	Ti	47	113.0	20.9	**0.1414**	0.055	38.5	ug/L	35	Standard
	V	51	2901.2	2.9	**0.1267**	0.013	10.0	ug/L	1435	Standard
	Cr	52	23756.9	1.1	**1.6651**	0.003	0.2	ug/L	7635	Standard
	Cr	53	2710.2	4.1	**2.1308**	0.127	5.9	ug/L	363	Standard
	Mn	55	7460.8	10.3	**0.7511**	0.098	13.0	ug/L	747	Standard
	Co	59	456.0	8.6	**0.0207**	0.006	26.8	ug/L	234	Standard
	Ni	60	2497.2	2.2	**0.9949**	0.023	2.3	ug/L	215	Standard
	Cu	65	984.0	1.2	**0.3398**	0.007	2.0	ug/L	104	Standard
	Zn	66	8303.3	0.9	**5.9218**	0.058	1.0	ug/L	363	Standard
>	**Ge**	72	590298.4	1.1				ug/L	495142	Standard
	As	75	7.9	237.8	**0.0655**	0.014	21.6	ug/L	-50	Standard
	Se	82	27.7	14.2	**0.0742**	0.032	43.2	ug/L	14	Standard
	Se-1	77	72.3	15.2	**0.2091**	0.134	63.9	ug/L	42	Standard
>	**Ga**	71	91.7	20.7				mg/L	42	Standard
	Rb	85	308.3	4.1				ug/L	17	Standard
	Y	89	498995.2	1.7				ug/L	417098	Standard
>	**Rh**	103	21.7	48.0				ug/L	13	Standard
	Mo	98	716.7	9.5	**0.2259**	0.023	10.1	ug/L	11	Standard
	Ag	107	155.3	16.4	**0.0076**	0.003	44.6	ug/L	68	Standard
	Cd	111	44.4	12.9	**0.0104**	0.002	21.8	mg/L	2	Standard
	Cd	114	117.5	18.7	**0.0177**	0.004	21.5	ug/L	12	Standard
>	**In**	115	682064.0	0.6				ug/L	587441	Standard
	Sn	118	4689.1	2.4	**0.5966**	0.013	2.3	ug/L	497	Standard
	Sb	123	228.7	11.3	**0.0380**	0.005	12.5	ug/L	78	Standard
	Ba	135	1034.0	4.7	**0.4191**	0.020	4.8	ug/L	24	Standard
	Ce	140	486.7	14.8				ug/L	25	Standard
>	**Tb**	159	1056147.0	0.9				ug/L	939701	Standard
	Ho	165	8.3	69.3				ug/L	10	Standard
	Tl	203	43.7	26.0	**0.0029**	0.001	43.8	ug/L	4	Standard
	Tl	205	50.0	26.5	**0.0063**	0.002	26.5	ug/L	2	Standard
	Pb	206	665.7	3.1	**0.0376**	0.003	7.4	ug/L	240	Standard
	Pb	207	542.7	5.2	**0.0299**	0.006	20.6	ug/L	198	Standard
	Pb	208	2227.4	4.5	**0.0297**	0.006	20.4	ug/L	883	Standard
	U	238	38.7	20.9	**0.0005**	0.001	221.1	ug/L	3	Standard
>	**Bi**	209	599996.8	1.5				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	216.7	5.8	**0.1745**	0.010	5.5	mg/L	37	Standard
K	39	46.7	49.5	**-0.0257**	0.044	170.8	mg/L	38	Standard
Ca	43	30.0	16.7	**-0.8971**	0.290	32.3	mg/L	10	Standard
Fe	54	200.7	16.8	**0.0076**	0.025	326.7	mg/L	179	Standard
Fe	57	248.3	11.1	**-0.3516**	0.067	19.2	mg/L	335	Standard
> **Sc-1**	45	71205.3	1.8				mg/L	61029	Standard
Cl	35	31458.6	1.1				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	3110.3	10.8				ug/L	1547	Standard
P	31	21037.9	1.6				ug/L	15286	Standard
S	34	2263.5	3.0				ug/L	1572	Standard
Sr	88	58.3	27.6				ug/L	73	Standard
C	12	113.3	13.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	38.9	27.0				mg/L	6	Standard
Ho-1	165	8.3	69.3				mg/L	10	Standard
Er	166	23.3	65.5				mg/L	13	Standard
I	127	20210.2	61.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		134.209	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		119.218	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	116.108
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	114.507
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606126601
Sample Date/Time: Wednesday, June 29, 2016 16:39:59
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	101321.2	3.1				ug/L	74699	Standard
	Be	9	18.3	56.8	**0.0228**	0.008	36.0	ug/L	8	Standard
	Al	27	44431569.1	0.7	**222.9926**	5.415	2.4	ug/L	1493	Standard
	Sc	45	71310.8	2.2				ug/L	61029	Standard
	Ti	47	275.3	6.3	**0.5272**	0.047	8.9	ug/L	35	Standard
	V	51	27907.2	1.9	**3.0387**	0.030	1.0	ug/L	1435	Standard
	Cr	52	13580.1	0.8	**0.5803**	0.015	2.6	ug/L	7635	Standard
	Cr	53	2821.9	2.8	**2.3430**	0.081	3.4	ug/L	363	Standard
	Mn	55	153037.1	1.2	**19.0926**	0.078	0.4	ug/L	747	Standard
	Co	59	1012.0	1.5	**0.0969**	0.001	1.5	ug/L	234	Standard
	Ni	60	4370.3	2.4	**1.9194**	0.048	2.5	ug/L	215	Standard
	Cu	65	751.7	5.3	**0.2499**	0.020	8.0	ug/L	104	Standard
	Zn	66	3518.1	1.4	**2.3650**	0.050	2.1	ug/L	363	Standard
>	**Ge**	72	565652.8	1.1				ug/L	495142	Standard
	As	75	1269.0	4.3	**1.0512**	0.035	3.4	ug/L	-50	Standard
	Se	82	382.5	3.3	**2.9130**	0.125	4.3	ug/L	14	Standard
	Se-1	77	193.3	14.8	**1.6975**	0.369	21.7	ug/L	42	Standard
>	**Ga**	71	66.7	18.9				mg/L	42	Standard
	Rb	85	2323.5	7.7				ug/L	17	Standard
	Y	89	480038.2	1.2				ug/L	417098	Standard
>	**Rh**	103	150.0	3.3				ug/L	13	Standard
	Mo	98	638.7	4.4	**0.2084**	0.010	5.0	ug/L	11	Standard
	Ag	107	92.0	14.1	**-0.0003**	0.002	569.4	ug/L	68	Standard
	Cd	111	195.2	3.6	**0.0755**	0.003	3.5	mg/L	2	Standard
	Cd	114	469.8	19.5	**0.0797**	0.016	19.7	ug/L	12	Standard
>	**In**	115	657497.5	0.6				ug/L	587441	Standard
	Sn	118	753.4	8.5	**0.0205**	0.010	48.9	ug/L	497	Standard
	Sb	123	222.8	13.6	**0.0384**	0.006	15.3	ug/L	78	Standard
	Ba	135	100054.6	0.7	**43.6617**	0.503	1.2	ug/L	24	Standard
	Ce	140	173.3	6.0				ug/L	25	Standard
>	**Tb**	159	1045560.4	1.5				ug/L	939701	Standard
	Ho	165	40.0	25.0				ug/L	10	Standard
	Tl	203	129.3	1.6	**0.0127**	0.000	3.7	ug/L	4	Standard
	Tl	205	133.3	20.7	**0.0174**	0.003	20.0	ug/L	2	Standard
	Pb	206	412.3	3.7	**0.0001**	0.002	2456.7	ug/L	240	Standard
	Pb	207	343.7	8.9	**-0.0032**	0.005	165.7	ug/L	198	Standard
	Pb	208	1432.7	1.3	**-0.0035**	0.002	56.3	ug/L	883	Standard
	U	238	43636.7	0.7	**5.8505**	0.120	2.1	ug/L	3	Standard
>	**Bi**	209	567479.2	1.8				ug/L	523984	Standard

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Na	23	5.0	100.0	**48.6438**	48.507	99.7	mg/L	0	Standard
Mg	24	35550.0	1.9	**39.2140**	0.699	1.8	mg/L	37	Standard
K	39	165.0	24.1	**0.1975**	0.071	36.0	mg/L	38	Standard
Ca	43	596.7	5.4	**29.7553**	2.186	7.3	mg/L	10	Standard
Fe	54	190.1	10.6	**-0.0004**	0.014	3403.7	mg/L	179	Standard
Fe	57	555.0	7.7	**0.5391**	0.093	17.2	mg/L	335	Standard
> **Sc-1**	45	71310.8	2.2				mg/L	61029	Standard
Cl	35	33374.1	0.9				ug/L	20195	Standard
Kr	83	2.0	132.3				ug/L	4	Standard
Br	81	77209.6	1.2				ug/L	1547	Standard
P	31	24828.7	1.5				ug/L	15286	Standard
S	34	2263.5	4.7				ug/L	1572	Standard
Sr	88	591.7	14.4				ug/L	73	Standard
C	12	253.3	22.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	25.0				mg/L	3	Standard
Dy	164	40.1	59.8				mg/L	6	Standard
Ho-1	165	40.0	25.0				mg/L	10	Standard
Er	166	66.7	37.7				mg/L	13	Standard
I	127	2058609.0	7.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		135.640	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.240	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.926
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.301
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606126901
Sample Date/Time: Wednesday, June 29, 2016 16:43:10
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	97179.0	1.2				ug/L	74699	Standard
	Be	9	23.3	44.6	**0.0281**	0.009	33.4	ug/L	8	Standard
	Al	27	25054309.4	1.7	**131.0332**	1.604	1.2	ug/L	1493	Standard
	Sc	45	69363.5	2.7				ug/L	61029	Standard
	Ti	47	323.3	2.8	**0.6992**	0.021	2.9	ug/L	35	Standard
	V	51	12024.0	2.6	**1.3128**	0.037	2.9	ug/L	1435	Standard
	Cr	52	11840.6	1.6	**0.4900**	0.025	5.0	ug/L	7635	Standard
	Cr	53	2901.9	3.9	**2.6451**	0.119	4.5	ug/L	363	Standard
	Mn	55	490032.6	0.8	**66.5395**	0.816	1.2	ug/L	747	Standard
	Co	59	931.7	2.1	**0.0964**	0.003	3.3	ug/L	234	Standard
	Ni	60	2217.5	3.2	**0.9981**	0.030	3.0	ug/L	215	Standard
	Cu	65	599.0	3.0	**0.2013**	0.011	5.4	ug/L	104	Standard
	Zn	66	4806.1	1.2	**3.7141**	0.039	1.0	ug/L	363	Standard
>	**Ge**	72	522601.4	0.6				ug/L	495142	Standard
	As	75	2361.3	3.3	**2.0571**	0.073	3.5	ug/L	-50	Standard
	Se	82	593.9	4.2	**4.9896**	0.230	4.6	ug/L	14	Standard
	Se-1	77	179.7	2.8	**1.7086**	0.076	4.5	ug/L	42	Standard
>	**Ga**	71	105.0	9.5				mg/L	42	Standard
	Rb	85	2805.3	2.5				ug/L	17	Standard
	Y	89	474068.5	3.1				ug/L	417098	Standard
>	**Rh**	103	81.7	12.7				ug/L	13	Standard
	Mo	98	305.2	1.9	**0.0985**	0.004	4.4	ug/L	11	Standard
	Ag	107	99.7	12.7	**0.0010**	0.002	153.4	ug/L	68	Standard
	Cd	111	19.2	16.0	**0.0004**	0.001	278.0	mg/L	2	Standard
	Cd	114	49.5	42.7	**0.0067**	0.004	59.0	ug/L	12	Standard
>	**In**	115	645532.6	2.3				ug/L	587441	Standard
	Sn	118	888.4	9.9	**0.0435**	0.010	24.0	ug/L	497	Standard
	Sb	123	240.8	4.4	**0.0427**	0.002	4.3	ug/L	78	Standard
	Ba	135	155622.1	0.5	**69.2020**	1.756	2.5	ug/L	24	Standard
	Ce	140	928.4	7.9				ug/L	25	Standard
>	**Tb**	159	1004174.2	1.0				ug/L	939701	Standard
	Ho	165	23.3	32.7				ug/L	10	Standard
	Tl	203	115.7	10.5	**0.0121**	0.001	11.5	ug/L	4	Standard
	Tl	205	128.3	22.2	**0.0179**	0.004	22.0	ug/L	2	Standard
	Pb	206	395.0	0.9	**0.0016**	0.001	57.1	ug/L	240	Standard
	Pb	207	323.3	6.0	**-0.0029**	0.004	138.0	ug/L	198	Standard
	Pb	208	1415.7	2.0	**0.0002**	0.001	432.7	ug/L	883	Standard
	U	238	7265.7	2.0	**1.0348**	0.023	2.2	ug/L	3	Standard
>	**Bi**	209	532226.3	0.6				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.4177**	30.160	173.2	mg/L	0	Standard
Mg	24	119202.1	1.4	**135.3768**	3.695	2.7	mg/L	37	Standard
K	39	220.0	8.2	**0.3143**	0.042	13.4	mg/L	38	Standard
Ca	43	398.3	4.4	**19.6130**	0.698	3.6	mg/L	10	Standard
Fe	54	252.1	18.1	**0.0493**	0.029	59.6	mg/L	179	Standard
Fe	57	418.3	9.7	**0.1785**	0.138	77.4	mg/L	335	Standard
> **Sc-1**	45	69363.5	2.7				mg/L	61029	Standard
Cl	35	32454.7	1.8				ug/L	20195	Standard
Kr	83	1.0	173.2				ug/L	4	Standard
Br	81	137582.4	3.7				ug/L	1547	Standard
P	31	24828.7	1.5				ug/L	15286	Standard
S	34	2306.8	3.7				ug/L	1572	Standard
Sr	88	291.7	6.0				ug/L	73	Standard
C	12	323.3	19.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	15.2	73.1				mg/L	6	Standard
Ho-1	165	23.3	32.7				mg/L	10	Standard
Er	166	30.0	33.3				mg/L	13	Standard
I	127	310633.7	2.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		130.094	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.546	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.889
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		101.573
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606127201
Sample Date/Time: Wednesday, June 29, 2016 16:46:22
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	94337.9	2.3				ug/L	74699	Standard
	Be	9	23.3	53.9	**0.0288**	0.012	40.8	ug/L	8	Standard
	Al	27	2978340.1	2.2	**16.0395**	0.522	3.3	ug/L	1493	Standard
	Sc	45	67137.0	4.7				ug/L	61029	Standard
	Ti	47	236.7	18.3	**0.4520**	0.099	21.9	ug/L	35	Standard
	V	51	33734.3	0.8	**3.8201**	0.030	0.8	ug/L	1435	Standard
	Cr	52	13200.4	3.0	**0.5779**	0.062	10.7	ug/L	7635	Standard
	Cr	53	1396.7	5.5	**1.0289**	0.077	7.5	ug/L	363	Standard
	Mn	55	5810.0	55.0	**0.6034**	0.416	68.9	ug/L	747	Standard
	Co	59	597.0	23.2	**0.0441**	0.019	43.4	ug/L	234	Standard
	Ni	60	839.7	12.2	**0.2798**	0.055	19.7	ug/L	215	Standard
	Cu	65	499.7	4.1	**0.1378**	0.013	9.3	ug/L	104	Standard
	Zn	66	1881.8	10.3	**1.0958**	0.181	16.5	ug/L	363	Standard
>	**Ge**	72	550779.1	1.5				ug/L	495142	Standard
	As	75	823.5	3.7	**0.7205**	0.021	2.9	ug/L	-50	Standard
	Se	82	534.3	3.8	**4.2403**	0.211	5.0	ug/L	14	Standard
	Se-1	77	394.7	5.2	**4.2338**	0.183	4.3	ug/L	42	Standard
>	**Ga**	71	76.7	13.6				mg/L	42	Standard
	Rb	85	1120.0	6.4				ug/L	17	Standard
	Y	89	478775.5	2.0				ug/L	417098	Standard
>	**Rh**	103	33.3	52.7				ug/L	13	Standard
	Mo	98	1510.8	4.0	**0.5152**	0.028	5.4	ug/L	11	Standard
	Ag	107	155.0	42.6	**0.0091**	0.010	106.9	ug/L	68	Standard
	Cd	111	66.6	64.6	**0.0216**	0.019	89.7	mg/L	2	Standard
	Cd	114	188.5	50.4	**0.0319**	0.018	55.0	ug/L	12	Standard
>	**In**	115	639482.4	2.0				ug/L	587441	Standard
	Sn	118	738.4	13.9	**0.0215**	0.017	79.5	ug/L	497	Standard
	Sb	123	301.8	22.4	**0.0554**	0.014	26.0	ug/L	78	Standard
	Ba	135	10964.6	1.7	**4.9054**	0.035	0.7	ug/L	24	Standard
	Ce	140	728.4	65.5				ug/L	25	Standard
>	**Tb**	159	995838.4	2.1				ug/L	939701	Standard
	Ho	165	55.0	78.7				ug/L	10	Standard
	Tl	203	165.3	64.1	**0.0175**	0.012	69.7	ug/L	4	Standard
	Tl	205	88.3	34.1	**0.0121**	0.004	34.3	ug/L	2	Standard
	Pb	206	371.3	17.5	**-0.0043**	0.012	275.3	ug/L	240	Standard
	Pb	207	297.3	13.9	**-0.0098**	0.008	82.9	ug/L	198	Standard
	Pb	208	1253.7	10.6	**-0.0098**	0.007	68.1	ug/L	883	Standard
	U	238	7715.3	1.4	**1.0741**	0.027	2.5	ug/L	3	Standard
>	**Bi**	209	544657.1	1.1				ug/L	523984	Standard

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Na	23	8.3	34.6	**87.3928**	30.523	34.9	mg/L	0	Standard
Mg	24	56818.0	2.0	**66.6625**	1.829	2.7	mg/L	37	Standard
K	39	118.3	28.8	**0.1220**	0.059	48.6	mg/L	38	Standard
Ca	43	173.3	14.2	**7.4463**	1.537	20.6	mg/L	10	Standard
Fe	54	200.1	8.9	**0.0164**	0.019	116.3	mg/L	179	Standard
Fe	57	341.7	12.8	**-0.0156**	0.156	997.8	mg/L	335	Standard
> **Sc-1**	45	67137.0	4.7				mg/L	61029	Standard
Cl	35	31870.8	2.6				ug/L	20195	Standard
Kr	83	0.7	173.2				ug/L	4	Standard
Br	81	13232.4	3.4				ug/L	1547	Standard
P	31	22137.8	2.1				ug/L	15286	Standard
S	34	2160.2	8.0				ug/L	1572	Standard
Sr	88	146.7	24.2				ug/L	73	Standard
C	12	170.0	10.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	64.3	100.4				mg/L	6	Standard
Ho-1	165	55.0	78.7				mg/L	10	Standard
Er	166	50.0	60.0				mg/L	13	Standard
I	127	62898.8	4.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		126.291	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.237	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.859
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.945
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606127202
Sample Date/Time: Wednesday, June 29, 2016 16:49:33
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	98788.0	4.1				ug/L	74699	Standard
	Be	9	13.3	57.3	**0.0192**	0.007	36.1	ug/L	8	Standard
	Al	27	43121483.9	2.2	**221.9923**	5.444	2.5	ug/L	1493	Standard
	Sc	45	66930.9	3.1				ug/L	61029	Standard
	Ti	47	1039.7	26.4	**2.4141**	0.661	27.4	ug/L	35	Standard
	V	51	49957.2	0.9	**5.8910**	0.067	1.1	ug/L	1435	Standard
	Cr	52	18344.1	1.8	**1.2538**	0.038	3.0	ug/L	7635	Standard
	Cr	53	24960.6	4.5	**24.5202**	1.080	4.4	ug/L	363	Standard
	Mn	55	17873.9	4.1	**2.2143**	0.103	4.7	ug/L	747	Standard
	Co	59	1405.4	6.7	**0.1586**	0.013	8.4	ug/L	234	Standard
	Ni	60	3876.2	1.9	**1.7810**	0.032	1.8	ug/L	215	Standard
	Cu	65	1407.4	2.7	**0.5921**	0.020	3.4	ug/L	104	Standard
	Zn	66	4623.4	0.6	**3.4401**	0.014	0.4	ug/L	363	Standard
>	**Ge**	72	538103.3	0.3				ug/L	495142	Standard
	As	75	2665.5	0.4	**2.2493**	0.008	0.3	ug/L	-50	Standard
	Se	82	859.9	5.4	**7.0717**	0.401	5.7	ug/L	14	Standard
	Se-1	77	1900.1	5.6	**23.3152**	1.302	5.6	ug/L	42	Standard
>	**Ga**	71	205.0	14.8				mg/L	42	Standard
	Rb	85	12111.5	1.9				ug/L	17	Standard
	Y	89	447538.5	3.5				ug/L	417098	Standard
>	**Rh**	103	186.7	5.6				ug/L	13	Standard
	Mo	98	4087.3	1.0	**1.4942**	0.026	1.7	ug/L	11	Standard
	Ag	107	258.7	10.6	**0.0259**	0.004	14.5	ug/L	68	Standard
	Cd	111	70.2	15.3	**0.0250**	0.005	21.6	mg/L	2	Standard
	Cd	114	224.5	9.2	**0.0407**	0.004	8.7	ug/L	12	Standard
>	**In**	115	600654.0	1.1				ug/L	587441	Standard
	Sn	118	765.0	14.6	**0.0335**	0.020	60.1	ug/L	497	Standard
	Sb	123	166.1	4.9	**0.0306**	0.002	5.1	ug/L	78	Standard
	Ba	135	52090.1	1.0	**24.8744**	0.038	0.2	ug/L	24	Standard
	Ce	140	4474.0	3.6				ug/L	25	Standard
>	**Tb**	159	974974.5	0.9				ug/L	939701	Standard
	Ho	165	80.0	27.2				ug/L	10	Standard
	Tl	203	82.0	10.0	**0.0082**	0.001	13.1	ug/L	4	Standard
	Tl	205	63.3	43.5	**0.0090**	0.004	42.2	ug/L	2	Standard
	Pb	206	1123.7	3.1	**0.1383**	0.006	4.7	ug/L	240	Standard
	Pb	207	914.0	2.3	**0.1218**	0.004	3.1	ug/L	198	Standard
	Pb	208	3779.9	2.5	**0.1267**	0.006	5.0	ug/L	883	Standard
	U	238	23648.8	1.1	**3.4170**	0.057	1.7	ug/L	3	Standard
>	**Bi**	209	526202.0	0.7				ug/L	523984	Standard

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Na	23	5.0	100.0	**53.6294**	53.947	100.6	mg/L	0	Standard
Mg	24	113104.0	1.5	**133.1465**	4.642	3.5	mg/L	37	Standard
K	39	478.3	11.2	**0.8485**	0.082	9.7	mg/L	38	Standard
Ca	43	695.0	6.9	**37.5535**	3.460	9.2	mg/L	10	Standard
Fe	54	250.5	4.6	**0.0553**	0.004	6.4	mg/L	179	Standard
Fe	57	631.7	3.6	**0.8833**	0.015	1.7	mg/L	335	Standard
> **Sc-1**	45	66930.9	3.1				mg/L	61029	Standard
Cl	35	32927.1	2.7				ug/L	20195	Standard
Kr	83	2.7	57.3				ug/L	4	Standard
Br	81	41968.1	3.2				ug/L	1547	Standard
P	31	23413.1	2.8				ug/L	15286	Standard
S	34	2041.8	4.5				ug/L	1572	Standard
Sr	88	750.0	13.9				ug/L	73	Standard
C	12	126.7	19.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	103.6	24.2				mg/L	6	Standard
Ho-1	165	80.0	27.2				mg/L	10	Standard
Er	166	63.3	32.9				mg/L	13	Standard
I	127	36619.2	2.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		132.248	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.676	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.249
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.423
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	

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Method 6020 - Summary Report

Sample ID: L1606127901
Sample Date/Time: Wednesday, June 29, 2016 16:52:45
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	94669.8	0.8				ug/L	74699	Standard
	Be	9	153.3	14.7	**0.1451**	0.021	14.4	ug/L	8	Standard
	Al	27	36828943.8	1.6	**197.7220**	2.539	1.3	ug/L	1493	Standard
	Sc	45	72494.8	2.9				ug/L	61029	Standard
	Ti	47	9823.2	1.5	**22.6070**	0.583	2.6	ug/L	35	Standard
	V	51	40160.9	1.2	**4.4642**	0.016	0.4	ug/L	1435	Standard
	Cr	52	82051.3	1.3	**8.6794**	0.190	2.2	ug/L	7635	Standard
	Cr	53	10588.7	4.0	**9.7108**	0.425	4.4	ug/L	363	Standard
	Mn	55	3156665.4	1.9	**397.2480**	11.605	2.9	ug/L	747	Standard
	Co	59	13202.1	1.7	**1.7150**	0.048	2.8	ug/L	234	Standard
	Ni	60	14584.3	1.0	**6.7029**	0.116	1.7	ug/L	215	Standard
	Cu	65	6796.9	2.1	**3.0972**	0.099	3.2	ug/L	104	Standard
	Zn	66	29601.9	0.7	**23.2962**	0.407	1.7	ug/L	363	Standard
>	**Ge**	72	565029.1	1.1				ug/L	495142	Standard
	As	75	1169.4	2.0	**0.9746**	0.024	2.5	ug/L	-50	Standard
	Se	82	54.4	2.8	**0.2964**	0.014	4.6	ug/L	14	Standard
	Se-1	77	95.3	8.8	**0.5209**	0.088	16.8	ug/L	42	Standard
>	**Ga**	71	2745.3	10.7				mg/L	42	Standard
	Rb	85	40779.8	2.2				ug/L	17	Standard
	Y	89	501434.2	0.6				ug/L	417098	Standard
>	**Rh**	103	116.7	40.7				ug/L	13	Standard
	Mo	98	6510.4	0.7	**2.1843**	0.030	1.4	ug/L	11	Standard
	Ag	107	146.0	1.2	**0.0072**	0.000	3.6	ug/L	68	Standard
	Cd	111	54.1	19.4	**0.0153**	0.004	28.2	mg/L	2	Standard
	Cd	114	169.8	20.2	**0.0276**	0.006	22.4	ug/L	12	Standard
>	**In**	115	655252.5	1.2				ug/L	587441	Standard
	Sn	118	1435.1	4.4	**0.1255**	0.007	5.6	ug/L	497	Standard
	Sb	123	419.8	7.1	**0.0764**	0.005	6.8	ug/L	78	Standard
	Ba	135	167537.6	1.4	**73.3690**	0.619	0.8	ug/L	24	Standard
	Ce	140	144147.5	0.8				ug/L	25	Standard
>	**Tb**	159	1041877.9	1.3				ug/L	939701	Standard
	Ho	165	2731.9	2.9				ug/L	10	Standard
	Tl	203	237.3	5.5	**0.0244**	0.001	5.3	ug/L	4	Standard
	Tl	205	228.3	8.3	**0.0292**	0.002	8.4	ug/L	2	Standard
	Pb	206	7357.1	0.9	**1.1818**	0.018	1.5	ug/L	240	Standard
	Pb	207	5920.5	2.7	**1.0648**	0.026	2.5	ug/L	198	Standard
	Pb	208	25273.6	1.1	**1.1521**	0.016	1.4	ug/L	883	Standard
	U	238	16614.4	0.8	**2.1915**	0.022	1.0	ug/L	3	Standard
>	**Bi**	209	575969.2	0.6				ug/L	523984	Standard

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Na	23	3.3	86.6	**32.3968**	28.087	86.7	mg/L	0	Standard
Mg	24	3568.8	4.7	**3.8119**	0.091	2.4	mg/L	37	Standard
K	39	285.0	24.6	**0.4167**	0.132	31.6	mg/L	38	Standard
Ca	43	908.4	6.1	**45.7783**	2.516	5.5	mg/L	10	Standard
Fe	54	3605.6	1.3	**2.4364**	0.072	2.9	mg/L	179	Standard
Fe	57	1446.7	0.5	**3.0674**	0.109	3.5	mg/L	335	Standard
Sc-1	45	72494.8	2.9				mg/L	61029	Standard
Cl	35	31293.6	1.2				ug/L	20195	Standard
Kr	83	2.3	49.5				ug/L	4	Standard
Br	81	8015.5	4.3				ug/L	1547	Standard
P	31	26808.7	3.1				ug/L	15286	Standard
S	34	2353.5	0.9				ug/L	1572	Standard
Sr	88	506.7	5.4				ug/L	73	Standard
C	12	183.3	20.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	3	Standard
Dy	164	4522.3	4.2				mg/L	6	Standard
Ho-1	165	2731.9	2.9				mg/L	10	Standard
Er	166	2333.5	8.8				mg/L	13	Standard
I	127	38263.4	7.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		126.735	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		114.114	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.544
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.921
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606127901
Sample Date/Time: Wednesday, June 29, 2016 16:55:56
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	94757.1	0.6				ug/L	74699	Standard
	Be	9	16.7	34.6	**0.0226**	0.005	23.2	ug/L	8	Standard
	Al	27	809583.1	0.4	**4.3294**	0.010	0.2	ug/L	1493	Standard
	Sc	45	70063.3	2.2				ug/L	61029	Standard
	Ti	47	239.7	2.8	**0.4418**	0.016	3.7	ug/L	35	Standard
	V	51	2635.2	3.3	**0.1083**	0.010	9.6	ug/L	1435	Standard
	Cr	52	10594.0	0.1	**0.2214**	0.004	1.7	ug/L	7635	Standard
	Cr	53	1061.7	10.6	**0.6708**	0.107	16.0	ug/L	363	Standard
	Mn	55	69843.0	1.9	**8.5894**	0.152	1.8	ug/L	747	Standard
	Co	59	472.7	1.3	**0.0251**	0.001	3.3	ug/L	234	Standard
	Ni	60	497.3	0.6	**0.1075**	0.002	1.4	ug/L	215	Standard
	Cu	65	314.7	2.4	**0.0436**	0.003	7.6	ug/L	104	Standard
	Zn	66	3346.7	3.2	**2.2142**	0.089	4.0	ug/L	363	Standard
>	**Ge**	72	568460.2	0.3				ug/L	495142	Standard
	As	75	-20.7	45.1	**0.0435**	0.007	16.6	ug/L	-50	Standard
	Se	82	18.3	17.6	**0.0072**	0.025	350.3	ug/L	14	Standard
	Se-1	77	58.0	6.2	**0.0694**	0.043	62.2	ug/L	42	Standard
>	**Ga**	71	123.3	16.9				mg/L	42	Standard
	Rb	85	875.0	6.6				ug/L	17	Standard
	Y	89	490331.7	1.2				ug/L	417098	Standard
>	**Rh**	103	16.7	45.8				ug/L	13	Standard
	Mo	98	175.2	3.1	**0.0513**	0.001	2.5	ug/L	11	Standard
	Ag	107	187.0	5.8	**0.0120**	0.001	10.3	ug/L	68	Standard
	Cd	111	8.4	36.2	**-0.0044**	0.001	27.6	mg/L	2	Standard
	Cd	114	20.0	63.9	**0.0013**	0.002	167.4	ug/L	12	Standard
>	**In**	115	676596.2	0.9				ug/L	587441	Standard
	Sn	118	621.7	13.0	**-0.0023**	0.012	549.8	ug/L	497	Standard
	Sb	123	148.0	17.5	**0.0233**	0.005	19.5	ug/L	78	Standard
	Ba	135	3597.4	2.3	**1.5099**	0.025	1.6	ug/L	24	Standard
	Ce	140	3133.7	5.7				ug/L	25	Standard
>	**Tb**	159	1053037.0	0.7				ug/L	939701	Standard
	Ho	165	73.3	37.6				ug/L	10	Standard
	Tl	203	38.7	9.8	**0.0024**	0.000	14.0	ug/L	4	Standard
	Tl	205	30.0	57.7	**0.0039**	0.002	55.8	ug/L	2	Standard
	Pb	206	500.3	0.4	**0.0113**	0.001	11.7	ug/L	240	Standard
	Pb	207	394.7	10.5	**0.0033**	0.008	256.3	ug/L	198	Standard
	Pb	208	1728.4	3.9	**0.0071**	0.003	37.0	ug/L	883	Standard
	U	238	362.3	7.5	**0.0420**	0.004	8.9	ug/L	3	Standard
>	**Bi**	209	594905.3	1.7				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.1214**	29.647	173.2	mg/L	0	Standard
Mg	24	156.7	18.1	**0.1107**	0.028	25.7	mg/L	37	Standard
K	39	30.0	60.1	**-0.0567**	0.034	59.1	mg/L	38	Standard
Ca	43	53.3	5.4	**0.4139**	0.213	51.5	mg/L	10	Standard
Fe	54	254.1	20.9	**0.0493**	0.038	78.1	mg/L	179	Standard
Fe	57	286.7	7.0	**-0.2249**	0.071	31.4	mg/L	335	Standard
> **Sc-1**	45	70063.3	2.2				mg/L	61029	Standard
Cl	35	33357.3	0.7				ug/L	20195	Standard
Kr	83	2.3	89.2				ug/L	4	Standard
Br	81	2703.6	11.1				ug/L	1547	Standard
P	31	21573.7	6.4				ug/L	15286	Standard
S	34	2518.5	1.8				ug/L	1572	Standard
Sr	88	90.0	20.0				ug/L	73	Standard
C	12	76.7	7.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	3	Standard
Dy	164	206.2	21.0				mg/L	6	Standard
Ho-1	165	73.3	37.6				mg/L	10	Standard
Er	166	80.0	12.5				mg/L	13	Standard
I	127	6318.0	20.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		126.852	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.807	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		115.177
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		113.535
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 16:59:09
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92097.4	0.2				ug/L	74699	Standard
	Be	9	59332.7	2.3	**54.6708**	1.340	2.5	ug/L	8	Standard
	Al	27	8920018.4	1.0	**49.2175**	0.589	1.2	ug/L	1493	Standard
	Sc	45	68374.0	2.7				ug/L	61029	Standard
	Ti	47	44746.6	0.7	**103.2626**	1.432	1.4	ug/L	35	Standard
	V	51	467593.6	0.9	**54.0107**	0.396	0.7	ug/L	1435	Standard
	Cr	52	444978.1	1.4	**51.5506**	1.111	2.2	ug/L	7635	Standard
	Cr	53	54491.2	2.0	**51.2973**	1.411	2.7	ug/L	363	Standard
	Mn	55	420710.6	2.8	**52.7641**	1.799	3.4	ug/L	747	Standard
	Co	59	425350.8	2.7	**56.3649**	1.831	3.2	ug/L	234	Standard
	Ni	60	109363.3	1.2	**51.0215**	0.971	1.9	ug/L	215	Standard
	Cu	65	108714.3	1.3	**51.0413**	1.018	2.0	ug/L	104	Standard
	Zn	66	63872.0	1.2	**50.7455**	1.020	2.0	ug/L	363	Standard
>	**Ge**	72	565538.7	0.9				ug/L	495142	Standard
	As	75	65590.6	1.0	**51.3298**	0.623	1.2	ug/L	-50	Standard
	Se	82	6676.5	1.4	**53.1245**	0.865	1.6	ug/L	14	Standard
	Se-1	77	4570.7	2.8	**54.1793**	1.989	3.7	ug/L	42	Standard
>	**Ga**	71	90.0	25.5				mg/L	42	Standard
	Rb	85	980.0	1.8				ug/L	17	Standard
	Y	89	481101.3	1.3				ug/L	417098	Standard
>	**Rh**	103	36.7	20.8				ug/L	13	Standard
	Mo	98	317636.1	2.3	**106.0178**	2.920	2.8	ug/L	11	Standard
	Ag	107	377887.3	1.0	**51.5689**	0.593	1.2	ug/L	68	Standard
	Cd	111	119799.3	1.9	**50.9674**	1.189	2.3	mg/L	2	Standard
	Cd	114	291345.5	1.8	**50.5384**	1.150	2.3	ug/L	12	Standard
>	**In**	115	660345.6	0.5				ug/L	587441	Standard
	Sn	118	333887.3	1.0	**50.7546**	0.756	1.5	ug/L	497	Standard
	Sb	123	263770.3	1.5	**50.2579**	0.987	2.0	ug/L	78	Standard
	Ba	135	110751.0	1.4	**48.1238**	0.926	1.9	ug/L	24	Standard
	Ce	140	100.0	13.2				ug/L	25	Standard
>	**Tb**	159	1027328.3	1.0				ug/L	939701	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	469667.3	0.3	**51.2282**	0.784	1.5	ug/L	4	Standard
	Tl	205	432915.4	1.7	**54.4135**	1.621	3.0	ug/L	2	Standard
	Pb	206	304012.7	1.3	**51.1045**	1.311	2.6	ug/L	240	Standard
	Pb	207	269196.3	1.3	**50.9328**	1.301	2.6	ug/L	198	Standard
	Pb	208	1105976.1	1.5	**52.9652**	1.506	2.8	ug/L	883	Standard
	U	238	408284.4	0.8	**53.3305**	1.093	2.0	ug/L	3	Standard
>	**Bi**	209	582837.4	1.3				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4664.1	3.2	**5.3139**	0.299	5.6	mg/L	37	Standard
K	39	2066.8	2.7	**3.9658**	0.176	4.4	mg/L	38	Standard
Ca	43	83.3	3.5	**2.1752**	0.111	5.1	mg/L	10	Standard
Fe	54	7259.4	3.7	**5.3547**	0.102	1.9	mg/L	179	Standard
Fe	57	2016.8	2.5	**5.0496**	0.304	6.0	mg/L	335	Standard
Sc-1	45	68374.0	2.7				mg/L	61029	Standard
Cl	35	31290.3	2.5				ug/L	20195	Standard
Kr	83	2.3	65.5				ug/L	4	Standard
Br	81	2203.5	6.4				ug/L	1547	Standard
P	31	22518.4	0.7				ug/L	15286	Standard
S	34	2795.3	6.4				ug/L	1572	Standard
Sr	88	58.3	13.1				ug/L	73	Standard
C	12	70.0	37.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	25.1	45.0				mg/L	6	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	33.3	34.6				mg/L	13	Standard
I	127	4404.0	17.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	109.342		
Al	27	98.435		
Sc	45			
Ti	47	103.263		
V	51	108.021		
Cr	52	103.101		
Cr	53			
Mn	55	105.528		
Co	59	112.730		
Ni	60	102.043		
Cu	65	102.083		
Zn	66	101.491		
Ge	72		114.217	
As	75	102.660		
Se	82	106.249		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	106.018		
Ag	107	103.138		
Cd	111	101.935		
Cd	114			
In	115		112.411	
Sn	118	101.509		
Sb	123	100.516		
Ba	135	96.248		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.456		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.930		
U	238	106.661		
Bi	209		111.232	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Co	59	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 17:02:20
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92622.3	1.7				ug/L	74699	Standard
	Be	9	38.3	64.3	**0.0426**	0.023	52.8	ug/L	8	Standard
	Al	27	23370.4	151.2	**0.1159**	0.196	168.9	ug/L	1493	Standard
	Sc	45	68951.6	1.3				ug/L	61029	Standard
	Ti	47	40.3	21.1	**-0.0139**	0.019	138.6	ug/L	35	Standard
	V	51	1665.7	22.9	**0.0015**	0.044	2840.4	ug/L	1435	Standard
	Cr	52	7712.6	2.1	**-0.0923**	0.036	39.5	ug/L	7635	Standard
	Cr	53	583.3	10.9	**0.2339**	0.049	21.0	ug/L	363	Standard
	Mn	55	4624.3	138.3	**0.4433**	0.816	184.2	ug/L	747	Standard
	Co	59	398.3	65.9	**0.0165**	0.035	212.9	ug/L	234	Standard
	Ni	60	246.3	49.7	**-0.0062**	0.058	932.9	ug/L	215	Standard
	Cu	65	154.7	27.9	**-0.0294**	0.020	68.5	ug/L	104	Standard
	Zn	66	470.3	19.7	**-0.0693**	0.075	107.9	ug/L	363	Standard
>	**Ge**	72	553538.3	2.4				ug/L	495142	Standard
	As	75	-38.0	63.4	**0.0295**	0.019	62.8	ug/L	-50	Standard
	Se	82	20.6	12.7	**0.0307**	0.026	83.7	ug/L	14	Standard
	Se-1	77	63.0	12.0	**0.1490**	0.085	57.3	ug/L	42	Standard
>	**Ga**	71	71.7	14.5				mg/L	42	Standard
	Rb	85	25.0	0.0				ug/L	17	Standard
	Y	89	484828.2	0.4				ug/L	417098	Standard
>	**Rh**	103	11.7	65.5				ug/L	13	Standard
	Mo	98	326.7	26.1	**0.0989**	0.027	26.9	ug/L	11	Standard
	Ag	107	215.0	76.0	**0.0152**	0.021	139.6	ug/L	68	Standard
	Cd	111	16.1	49.4	**-0.0013**	0.003	242.1	mg/L	2	Standard
	Cd	114	45.0	78.6	**0.0054**	0.006	109.2	ug/L	12	Standard
>	**In**	115	687277.7	0.8				ug/L	587441	Standard
	Sn	118	931.7	18.6	**0.0418**	0.027	63.5	ug/L	497	Standard
	Sb	123	489.1	40.1	**0.0853**	0.036	41.8	ug/L	78	Standard
	Ba	135	52.0	47.0	**0.0057**	0.010	177.6	ug/L	24	Standard
	Ce	140	81.7	78.0				ug/L	25	Standard
>	**Tb**	159	1059717.9	1.6				ug/L	939701	Standard
	Ho	165	6.7	86.6				ug/L	10	Standard
	Tl	203	97.3	80.9	**0.0086**	0.008	97.3	ug/L	4	Standard
	Tl	205	126.7	77.5	**0.0158**	0.012	76.4	ug/L	2	Standard
	Pb	206	434.7	47.9	**0.0006**	0.034	5998.1	ug/L	240	Standard
	Pb	207	327.7	41.4	**-0.0091**	0.025	275.6	ug/L	198	Standard
	Pb	208	1259.4	26.8	**-0.0148**	0.016	107.4	ug/L	883	Standard
	U	238	94.7	104.8	**0.0077**	0.013	165.1	ug/L	3	Standard
>	**Bi**	209	593862.7	2.1				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	88.3	93.4	**0.0352**	0.093	262.9	mg/L	37	Standard
K	39	41.7	30.2	**-0.0325**	0.025	77.1	mg/L	38	Standard
Ca	43	21.7	58.1	**-1.3088**	0.708	54.1	mg/L	10	Standard
Fe	54	169.3	10.4	**-0.0113**	0.012	105.6	mg/L	179	Standard
Fe	57	255.0	7.1	**-0.3067**	0.061	20.0	mg/L	335	Standard
> **Sc-1**	45	68951.6	1.3				mg/L	61029	Standard
Cl	35	30862.1	1.0				ug/L	20195	Standard
Kr	83	3.7	31.5				ug/L	4	Standard
Br	81	2130.2	6.5				ug/L	1547	Standard
P	31	22533.4	1.3				ug/L	15286	Standard
S	34	2576.9	2.2				ug/L	1572	Standard
Sr	88	61.7	20.4				ug/L	73	Standard
C	12	70.0	62.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	15.1	95.9				mg/L	6	Standard
Ho-1	165	6.7	86.6				mg/L	10	Standard
Er	166	33.3	69.3				mg/L	13	Standard
I	127	3348.7	10.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.794	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		116.995
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		113.336
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Mn	55	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606127902 WG574001-03
Sample Date/Time: Wednesday, June 29, 2016 17:05:33
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	97844.9	1.2				ug/L	74699	Standard
	Be	9	628.3	5.4	**0.5525**	0.030	5.3	ug/L	8	Standard
	Al	27	67592650.7	0.8	**351.1766**	6.777	1.9	ug/L	1493	Standard
	Sc	45	76196.2	3.2				ug/L	61029	Standard
	Ti	47	35031.5	1.8	**85.4603**	1.454	1.7	ug/L	35	Standard
	V	51	127107.8	0.4	**15.3856**	0.087	0.6	ug/L	1435	Standard
	Cr	52	144594.0	0.9	**17.0395**	0.185	1.1	ug/L	7635	Standard
	Cr	53	17708.7	3.4	**17.4084**	0.576	3.3	ug/L	363	Standard
	Mn	55	9638149.6	0.5	**1281.4698**	6.113	0.5	ug/L	747	Standard
	Co	59	44221.4	1.1	**6.1626**	0.079	1.3	ug/L	234	Standard
	Ni	60	29440.2	0.7	**14.4336**	0.102	0.7	ug/L	215	Standard
	Cu	65	18715.2	1.1	**9.2058**	0.118	1.3	ug/L	104	Standard
	Zn	66	49911.7	1.0	**41.8483**	0.443	1.1	ug/L	363	Standard
>	**Ge**	72	534821.8	0.2				ug/L	495142	Standard
	As	75	5363.3	0.7	**4.4926**	0.039	0.9	ug/L	-50	Standard
	Se	82	81.7	4.2	**0.5509**	0.030	5.5	ug/L	14	Standard
	Se-1	77	90.0	5.1	**0.5184**	0.056	10.8	ug/L	42	Standard
>	**Ga**	71	10246.8	1.6				mg/L	42	Standard
	Rb	85	128176.6	1.2				ug/L	17	Standard
	Y	89	611826.2	1.2				ug/L	417098	Standard
>	**Rh**	103	203.3	5.1				ug/L	13	Standard
	Mo	98	8459.2	1.1	**2.8837**	0.063	2.2	ug/L	11	Standard
	Ag	107	335.7	32.7	**0.0339**	0.015	43.7	ug/L	68	Standard
	Cd	111	167.4	13.2	**0.0649**	0.009	13.6	mg/L	2	Standard
	Cd	114	471.4	29.4	**0.0814**	0.024	29.1	ug/L	12	Standard
>	**In**	115	645352.1	1.1				ug/L	587441	Standard
	Sn	118	2433.5	1.0	**0.2845**	0.006	2.0	ug/L	497	Standard
	Sb	123	747.2	5.1	**0.1415**	0.006	4.4	ug/L	78	Standard
	Ba	135	186708.8	1.1	**83.0208**	0.490	0.6	ug/L	24	Standard
	Ce	140	555105.9	0.4				ug/L	25	Standard
>	**Tb**	159	1017797.9	1.6				ug/L	939701	Standard
	Ho	165	10682.1	1.8				ug/L	10	Standard
	Tl	203	801.4	12.7	**0.0906**	0.011	12.4	ug/L	4	Standard
	Tl	205	726.7	5.1	**0.0967**	0.005	5.6	ug/L	2	Standard
	Pb	206	28687.5	0.5	**5.0315**	0.023	0.5	ug/L	240	Standard
	Pb	207	23046.8	1.0	**4.5438**	0.005	0.1	ug/L	198	Standard
	Pb	208	100519.8	0.6	**5.0199**	0.074	1.5	ug/L	883	Standard
	U	238	32058.9	0.6	**4.4211**	0.050	1.1	ug/L	3	Standard
>	**Bi**	209	551473.5	0.9				ug/L	523984	Standard

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Na	23	16.7	17.3	**153.4719**	22.118	14.4	mg/L	0	Standard
Mg	24	8050.5	4.4	**8.2571**	0.176	2.1	mg/L	37	Standard
K	39	990.0	1.3	**1.6393**	0.041	2.5	mg/L	38	Standard
Ca	43	1383.4	8.1	**67.3924**	3.470	5.1	mg/L	10	Standard
Fe	54	12019.5	0.9	**8.0301**	0.303	3.8	mg/L	179	Standard
Fe	57	3888.8	1.5	**9.5221**	0.470	4.9	mg/L	335	Standard
Sc-1	45	76196.2	3.2				mg/L	61029	Standard
Cl	35	38282.3	2.8				ug/L	20195	Standard
Kr	83	1.7	124.9				ug/L	4	Standard
Br	81	9239.5	4.1				ug/L	1547	Standard
P	31	33428.5	3.8				ug/L	15286	Standard
S	34	2046.8	10.4				ug/L	1572	Standard
Sr	88	885.0	8.4				ug/L	73	Standard
C	12	223.3	22.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	3	Standard
Dy	164	18454.9	2.8				mg/L	6	Standard
Ho-1	165	10682.1	1.8				mg/L	10	Standard
Er	166	9956.6	4.7				mg/L	13	Standard
I	127	65381.5	9.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		130.986	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		108.014	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606127902 WG574001-03
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.858
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.246
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606127902 WG574001-03
Sample Date/Time: Wednesday, June 29, 2016 17:08:45
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	97333.3	1.1				ug/L	74699	Standard
	Be	9	23.3	32.7	**0.0279**	0.007	23.3	ug/L	8	Standard
	Al	27	1471688.9	2.0	**7.6717**	0.099	1.3	ug/L	1493	Standard
	Sc	45	68584.9	0.8				ug/L	61029	Standard
	Ti	47	736.0	3.1	**1.5714**	0.076	4.9	ug/L	35	Standard
	V	51	4360.2	2.0	**0.3040**	0.018	5.9	ug/L	1435	Standard
	Cr	52	10891.2	1.4	**0.2475**	0.011	4.5	ug/L	7635	Standard
	Cr	53	901.7	3.1	**0.5139**	0.018	3.4	ug/L	363	Standard
	Mn	55	209342.7	1.0	**25.8667**	0.657	2.5	ug/L	747	Standard
	Co	59	1184.0	8.5	**0.1180**	0.016	13.3	ug/L	234	Standard
	Ni	60	823.4	2.4	**0.2566**	0.015	5.7	ug/L	215	Standard
	Cu	65	604.0	5.8	**0.1771**	0.017	9.7	ug/L	104	Standard
	Zn	66	3536.4	2.1	**2.3459**	0.038	1.6	ug/L	363	Standard
>	**Ge**	72	572433.6	1.6				ug/L	495142	Standard
	As	75	56.5	19.8	**0.1032**	0.008	8.2	ug/L	-50	Standard
	Se	82	22.7	8.9	**0.0409**	0.015	36.5	ug/L	14	Standard
	Se-1	77	56.3	3.7	**0.0451**	0.032	71.6	ug/L	42	Standard
>	**Ga**	71	286.7	20.8				mg/L	42	Standard
	Rb	85	2816.9	8.1				ug/L	17	Standard
	Y	89	483993.7	0.1				ug/L	417098	Standard
>	**Rh**	103	11.7	65.5				ug/L	13	Standard
	Mo	98	255.8	9.6	**0.0784**	0.008	10.6	ug/L	11	Standard
	Ag	107	215.7	39.7	**0.0161**	0.012	72.2	ug/L	68	Standard
	Cd	111	33.2	125.7	**0.0061**	0.018	290.4	mg/L	2	Standard
	Cd	114	83.8	140.0	**0.0123**	0.020	164.2	ug/L	12	Standard
>	**In**	115	670122.5	0.4				ug/L	587441	Standard
	Sn	118	730.0	9.6	**0.0149**	0.011	73.4	ug/L	497	Standard
	Sb	123	198.5	22.7	**0.0331**	0.009	26.1	ug/L	78	Standard
	Ba	135	4104.6	4.5	**1.7422**	0.086	5.0	ug/L	24	Standard
	Ce	140	11919.7	3.4				ug/L	25	Standard
>	**Tb**	159	1040073.5	0.3				ug/L	939701	Standard
	Ho	165	248.3	25.2				ug/L	10	Standard
	Tl	203	119.3	122.5	**0.0111**	0.016	142.6	ug/L	4	Standard
	Tl	205	45.0	44.4	**0.0058**	0.003	43.8	ug/L	2	Standard
	Pb	206	1027.4	11.1	**0.0985**	0.020	20.7	ug/L	240	Standard
	Pb	207	828.0	1.8	**0.0839**	0.004	4.9	ug/L	198	Standard
	Pb	208	3389.1	2.4	**0.0853**	0.005	6.3	ug/L	883	Standard
	U	238	690.0	3.8	**0.0840**	0.004	4.3	ug/L	3	Standard
>	**Bi**	209	594228.5	1.0				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	215.0	6.2	**0.1819**	0.016	8.8	mg/L	37	Standard
K	39	53.3	14.3	**-0.0093**	0.014	153.2	mg/L	38	Standard
Ca	43	48.3	15.8	**0.1914**	0.411	214.9	mg/L	10	Standard
Fe	54	443.5	15.8	**0.1966**	0.055	28.1	mg/L	179	Standard
Fe	57	323.3	11.7	**-0.0960**	0.118	122.9	mg/L	335	Standard
> **Sc-1**	45	68584.9	0.8				mg/L	61029	Standard
Cl	35	29711.8	0.5				ug/L	20195	Standard
Kr	83	0.7	173.2				ug/L	4	Standard
Br	81	2166.8	7.4				ug/L	1547	Standard
P	31	19419.1	3.8				ug/L	15286	Standard
S	34	2206.8	3.0				ug/L	1572	Standard
Sr	88	96.7	19.6				ug/L	73	Standard
C	12	46.7	49.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	390.3	4.3				mg/L	6	Standard
Ho-1	165	248.3	25.2				mg/L	10	Standard
Er	166	203.3	36.3				mg/L	13	Standard
I	127	5617.8	25.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		130.301	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		115.610	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.075
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		113.406
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606127903S WG574001-09
Sample Date/Time: Wednesday, June 29, 2016 17:11:56
Number of Replicates: 3
Autosampler Position: 227
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	103734.0	1.8				ug/L	74699	Standard
	Be	9	62659.4	2.5	**51.2580**	0.858	1.7	ug/L	8	Standard
	Al	27	65559814.6	2.9	**321.3254**	12.360	3.8	ug/L	1493	Standard
	Sc	45	78765.9	1.8				ug/L	61029	Standard
	Ti	47	33652.0	1.4	**81.0287**	2.211	2.7	ug/L	35	Standard
	V	51	549023.7	0.9	**66.2300**	1.368	2.1	ug/L	1435	Standard
	Cr	52	510507.6	0.8	**61.9303**	1.817	2.9	ug/L	7635	Standard
	Cr	53	62490.3	1.3	**61.4602**	1.770	2.9	ug/L	363	Standard
	Mn	55	9311676.0	0.4	**1221.9970**	25.998	2.1	ug/L	747	Standard
	Co	59	420012.9	0.8	**58.0870**	1.492	2.6	ug/L	234	Standard
	Ni	60	121605.8	1.9	**59.2404**	2.250	3.8	ug/L	215	Standard
	Cu	65	110409.9	1.5	**54.1128**	1.822	3.4	ug/L	104	Standard
	Zn	66	101498.2	0.9	**84.4641**	2.491	2.9	ug/L	363	Standard
>	**Ge**	72	542031.1	2.4				ug/L	495142	Standard
	As	75	66455.1	1.4	**54.2648**	0.548	1.0	ug/L	-50	Standard
	Se	82	6239.8	1.8	**51.8120**	1.305	2.5	ug/L	14	Standard
	Se-1	77	4136.2	2.8	**51.1231**	1.591	3.1	ug/L	42	Standard
>	**Ga**	71	10863.9	0.3				mg/L	42	Standard
	Rb	85	119392.1	2.4				ug/L	17	Standard
	Y	89	586391.1	1.2				ug/L	417098	Standard
>	**Rh**	103	175.0	15.1				ug/L	13	Standard
	Mo	98	5740.7	2.3	**1.9719**	0.058	3.0	ug/L	11	Standard
	Ag	107	333249.6	2.0	**46.9378**	1.203	2.6	ug/L	68	Standard
	Cd	111	109090.4	0.8	**47.8987**	0.737	1.5	mg/L	2	Standard
	Cd	114	263561.8	0.5	**47.1881**	0.999	2.1	ug/L	12	Standard
>	**In**	115	639905.2	1.9				ug/L	587441	Standard
	Sn	118	1925.1	5.8	**0.2078**	0.017	8.3	ug/L	497	Standard
	Sb	123	124661.9	1.5	**24.5159**	0.713	2.9	ug/L	78	Standard
	Ba	135	268706.4	1.4	**120.5245**	2.161	1.8	ug/L	24	Standard
	Ce	140	538323.1	0.7				ug/L	25	Standard
>	**Tb**	159	1045169.0	2.0				ug/L	939701	Standard
	Ho	165	11317.6	5.4				ug/L	10	Standard
	Tl	203	438870.4	1.4	**49.1992**	0.166	0.3	ug/L	4	Standard
	Tl	205	398898.5	1.5	**51.5243**	0.281	0.5	ug/L	2	Standard
	Pb	206	314887.1	0.5	**54.4073**	0.494	0.9	ug/L	240	Standard
	Pb	207	267442.5	0.8	**52.0088**	0.664	1.3	ug/L	198	Standard
	Pb	208	1101699.4	1.8	**54.2208**	0.536	1.0	ug/L	883	Standard
	U	238	415059.0	1.7	**55.7208**	0.743	1.3	ug/L	3	Standard
>	**Bi**	209	566992.1	1.1				ug/L	523984	Standard

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Na	23	8.3	69.3	**74.8950**	52.957	70.7	mg/L	0	Standard
Mg	24	7490.2	5.9	**7.4319**	0.549	7.4	mg/L	37	Standard
K	39	995.0	6.5	**1.5912**	0.134	8.4	mg/L	38	Standard
Ca	43	1293.4	1.8	**60.7979**	1.957	3.2	mg/L	10	Standard
Fe	54	10550.1	1.1	**6.7940**	0.164	2.4	mg/L	179	Standard
Fe	57	3448.7	1.2	**8.0106**	0.227	2.8	mg/L	335	Standard
> **Sc-1**	45	78765.9	1.8				mg/L	61029	Standard
Cl	35	36168.5	1.3				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	7995.5	8.9				ug/L	1547	Standard
P	31	34405.7	2.4				ug/L	15286	Standard
S	34	1880.1	7.8				ug/L	1572	Standard
Sr	88	881.7	7.6				ug/L	73	Standard
C	12	140.0	46.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	3	Standard
Dy	164	18849.9	4.6				mg/L	6	Standard
Ho-1	165	11317.6	5.4				mg/L	10	Standard
Er	166	9863.2	2.6				mg/L	13	Standard
I	127	61177.5	10.8				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		138.870	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		109.470	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	108.931
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	108.208
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606127903S WG574001-09
Sample Date/Time: Wednesday, June 29, 2016 17:15:08
Number of Replicates: 3
Autosampler Position: 228
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	100014.2	2.8				ug/L	74699	Standard
	Be	9	1316.7	11.4	**1.1231**	0.100	8.9	ug/L	8	Standard
	Al	27	1420391.6	2.6	**7.2057**	0.041	0.6	ug/L	1493	Standard
	Sc	45	65355.8	3.5				ug/L	61029	Standard
	Ti	47	751.7	2.2	**1.7435**	0.043	2.4	ug/L	35	Standard
	V	51	12553.2	2.5	**1.3568**	0.030	2.2	ug/L	1435	Standard
	Cr	52	18458.6	1.1	**1.3028**	0.035	2.7	ug/L	7635	Standard
	Cr	53	1771.8	3.3	**1.4619**	0.098	6.7	ug/L	363	Standard
	Mn	55	203580.1	1.5	**27.1635**	0.320	1.2	ug/L	747	Standard
	Co	59	9135.1	1.0	**1.2550**	0.021	1.7	ug/L	234	Standard
	Ni	60	2779.3	1.4	**1.2628**	0.031	2.5	ug/L	215	Standard
	Cu	65	2563.2	1.7	**1.1828**	0.027	2.3	ug/L	104	Standard
	Zn	66	4447.0	0.1	**3.3488**	0.082	2.5	ug/L	363	Standard
>	**Ge**	72	530183.0	2.3				ug/L	495142	Standard
	As	75	1256.2	4.8	**1.1077**	0.065	5.9	ug/L	-50	Standard
	Se	82	144.5	11.0	**1.0936**	0.160	14.6	ug/L	14	Standard
	Se-1	77	149.3	5.6	**1.2873**	0.101	7.8	ug/L	42	Standard
>	**Ga**	71	291.7	12.0				mg/L	42	Standard
	Rb	85	2473.5	8.7				ug/L	17	Standard
	Y	89	480063.9	1.1				ug/L	417098	Standard
>	**Rh**	103	18.3	15.7				ug/L	13	Standard
	Mo	98	168.4	5.0	**0.0496**	0.003	5.9	ug/L	11	Standard
	Ag	107	7406.8	1.4	**0.9815**	0.012	1.2	ug/L	68	Standard
	Cd	111	2324.9	2.0	**0.9649**	0.013	1.3	mg/L	2	Standard
	Cd	114	5499.5	2.5	**0.9362**	0.028	2.9	ug/L	12	Standard
>	**In**	115	671407.0	1.0				ug/L	587441	Standard
	Sn	118	800.0	6.0	**0.0251**	0.007	29.1	ug/L	497	Standard
	Sb	123	3310.0	4.5	**0.6160**	0.025	4.0	ug/L	78	Standard
	Ba	135	5738.4	0.8	**2.4371**	0.009	0.4	ug/L	24	Standard
	Ce	140	11352.6	1.4				ug/L	25	Standard
>	**Tb**	159	1030086.3	0.3				ug/L	939701	Standard
	Ho	165	295.0	7.8				ug/L	10	Standard
	Tl	203	9225.5	0.2	**0.9995**	0.013	1.3	ug/L	4	Standard
	Tl	205	8459.0	5.0	**1.0575**	0.041	3.9	ug/L	2	Standard
	Pb	206	6958.9	0.8	**1.0943**	0.025	2.3	ug/L	240	Standard
	Pb	207	5899.8	0.2	**1.0421**	0.014	1.4	ug/L	198	Standard
	Pb	208	25022.5	1.7	**1.1197**	0.025	2.3	ug/L	883	Standard
	U	238	8748.9	2.2	**1.1326**	0.025	2.2	ug/L	3	Standard
>	**Bi**	209	585775.3	1.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	185.0	5.4	**0.1579**	0.009	5.9	mg/L	37	Standard
K	39	46.7	32.7	**-0.0170**	0.035	202.9	mg/L	38	Standard
Ca	43	53.3	5.4	**0.6286**	0.271	43.1	mg/L	10	Standard
Fe	54	400.2	11.9	**0.1796**	0.048	26.7	mg/L	179	Standard
Fe	57	335.0	9.8	**-0.0119**	0.080	674.7	mg/L	335	Standard
Sc-1	45	65355.8	3.5				mg/L	61029	Standard
Cl	35	29320.3	1.0				ug/L	20195	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	2030.1	9.5				ug/L	1547	Standard
P	31	19806.3	2.6				ug/L	15286	Standard
S	34	2145.2	0.2				ug/L	1572	Standard
Sr	88	86.7	23.3				ug/L	73	Standard
C	12	80.0	66.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	379.6	21.3				mg/L	6	Standard
Ho-1	165	295.0	7.8				mg/L	10	Standard
Er	166	216.7	11.6				mg/L	13	Standard
I	127	5157.6	28.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		133.890	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		107.077	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	114.294
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	111.792
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606127904SD WG574001-10
Sample Date/Time: Wednesday, June 29, 2016 17:18:19
Number of Replicates: 3
Autosampler Position: 229
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	100168.4	0.8				ug/L	74699	Standard
	Be	9	61913.0	2.3	**52.4502**	1.133	2.2	ug/L	8	Standard
	Al	27	66193036.9	1.4	**335.9039**	6.576	2.0	ug/L	1493	Standard
	Sc	45	75343.6	2.4				ug/L	61029	Standard
	Ti	47	40945.9	1.4	**103.9053**	1.926	1.9	ug/L	35	Standard
	V	51	552663.1	1.5	**70.2550**	1.056	1.5	ug/L	1435	Standard
	Cr	52	495290.7	1.7	**63.3235**	1.419	2.2	ug/L	7635	Standard
	Cr	53	60987.5	1.0	**63.2038**	0.948	1.5	ug/L	363	Standard
	Mn	55	9453870.8	1.1	**1307.2105**	20.907	1.6	ug/L	747	Standard
	Co	59	421300.3	0.1	**61.3867**	0.363	0.6	ug/L	234	Standard
	Ni	60	119269.8	2.5	**61.2106**	1.745	2.9	ug/L	215	Standard
	Cu	65	106997.2	1.7	**55.2474**	1.210	2.2	ug/L	104	Standard
	Zn	66	101243.5	1.4	**88.7847**	1.659	1.9	ug/L	363	Standard
>	**Ge**	72	514295.3	0.5				ug/L	495142	Standard
	As	75	64887.3	0.7	**55.8337**	0.652	1.2	ug/L	-50	Standard
	Se	82	6128.3	0.4	**53.6210**	0.432	0.8	ug/L	14	Standard
	Se-1	77	4025.2	1.7	**52.4403**	1.142	2.2	ug/L	42	Standard
>	**Ga**	71	13474.3	0.3				mg/L	42	Standard
	Rb	85	148814.4	3.2				ug/L	17	Standard
	Y	89	590511.6	1.2				ug/L	417098	Standard
>	**Rh**	103	170.0	19.3				ug/L	13	Standard
	Mo	98	5249.8	1.8	**1.8847**	0.047	2.5	ug/L	11	Standard
	Ag	107	319729.4	0.9	**47.0680**	0.306	0.7	ug/L	68	Standard
	Cd	111	105379.0	1.4	**48.3587**	0.323	0.7	mg/L	2	Standard
	Cd	114	254720.6	1.7	**47.6605**	0.543	1.1	ug/L	12	Standard
>	**In**	115	612131.8	1.0				ug/L	587441	Standard
	Sn	118	2201.8	4.9	**0.2670**	0.017	6.2	ug/L	497	Standard
	Sb	123	135513.9	0.7	**27.8528**	0.396	1.4	ug/L	78	Standard
	Ba	135	276700.5	0.9	**129.7213**	0.066	0.1	ug/L	24	Standard
	Ce	140	594096.9	1.6				ug/L	25	Standard
>	**Tb**	159	982831.9	0.9				ug/L	939701	Standard
	Ho	165	12233.3	1.6				ug/L	10	Standard
	Tl	203	424338.5	0.5	**50.3728**	0.553	1.1	ug/L	4	Standard
	Tl	205	393687.9	2.5	**53.8449**	1.302	2.4	ug/L	2	Standard
	Pb	206	310823.5	0.5	**56.8661**	0.171	0.3	ug/L	240	Standard
	Pb	207	265328.4	0.5	**54.6347**	0.327	0.6	ug/L	198	Standard
	Pb	208	1090751.7	0.6	**56.8486**	0.519	0.9	ug/L	883	Standard
	U	238	409441.4	1.4	**58.2033**	0.887	1.5	ug/L	3	Standard
>	**Bi**	209	535481.7	0.7				ug/L	523984	Standard

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Na	23	6.7	86.6	**61.5240**	53.288	86.6	mg/L	0	Standard
Mg	24	7358.5	1.6	**7.6312**	0.188	2.5	mg/L	37	Standard
K	39	1028.4	3.5	**1.7267**	0.031	1.8	mg/L	38	Standard
Ca	43	1340.1	2.9	**66.0398**	1.115	1.7	mg/L	10	Standard
Fe	54	11628.0	2.4	**7.8474**	0.058	0.7	mg/L	179	Standard
Fe	57	3898.8	5.2	**9.6559**	0.353	3.7	mg/L	335	Standard
Sc-1	45	75343.6	2.4				mg/L	61029	Standard
Cl	35	34624.2	2.4				ug/L	20195	Standard
Kr	83	1.7	34.6				ug/L	4	Standard
Br	81	10260.1	1.8				ug/L	1547	Standard
P	31	37270.8	0.5				ug/L	15286	Standard
S	34	1845.1	3.3				ug/L	1572	Standard
Sr	88	923.4	9.7				ug/L	73	Standard
C	12	203.3	29.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	3	Standard
Dy	164	20358.1	1.7				mg/L	6	Standard
Ho-1	165	12233.3	1.6				mg/L	10	Standard
Er	166	11334.2	2.0				mg/L	13	Standard
I	127	62766.8	7.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		134.096	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.868	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		104.203
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.194
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Ti 47 Upper, S, EEE	Ti	47	

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Mn 55 Upper, S, EEE	Mn	55
Ba 135 Upper, S, EEE	Ba	135

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606127904SD WG574001-10
Sample Date/Time: Wednesday, June 29, 2016 17:21:31
Number of Replicates: 3
Autosampler Position: 230
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	96610.6	3.3				ug/L	74699	Standard
	Be	9	1288.4	4.7	**1.1394**	0.049	4.3	ug/L	8	Standard
	Al	27	1461113.0	0.9	**7.6780**	0.187	2.4	ug/L	1493	Standard
	Sc	45	62711.5	6.5				ug/L	61029	Standard
	Ti	47	920.7	1.4	**2.1467**	0.013	0.6	ug/L	35	Standard
	V	51	13378.9	3.6	**1.4502**	0.085	5.9	ug/L	1435	Standard
	Cr	52	18691.9	1.7	**1.3185**	0.044	3.3	ug/L	7635	Standard
	Cr	53	1716.8	3.7	**1.3959**	0.091	6.5	ug/L	363	Standard
	Mn	55	207917.4	1.7	**27.5865**	0.619	2.2	ug/L	747	Standard
	Co	59	9044.0	2.3	**1.2346**	0.031	2.5	ug/L	234	Standard
	Ni	60	2824.3	2.7	**1.2771**	0.044	3.5	ug/L	215	Standard
	Cu	65	2601.9	3.8	**1.1945**	0.050	4.2	ug/L	104	Standard
	Zn	66	4831.1	2.2	**3.6537**	0.142	3.9	ug/L	363	Standard
>	Ge	72	533228.6	1.6				ug/L	495142	Standard
	As	75	1337.8	3.9	**1.1692**	0.061	5.2	ug/L	-50	Standard
	Se	82	140.1	2.8	**1.0475**	0.027	2.6	ug/L	14	Standard
	Se-1	77	133.7	3.0	**1.0773**	0.056	5.2	ug/L	42	Standard
>	Ga	71	393.3	11.4				mg/L	42	Standard
	Rb	85	3227.0	1.4				ug/L	17	Standard
	Y	89	450037.4	1.9				ug/L	417098	Standard
>	Rh	103	18.3	87.7				ug/L	13	Standard
	Mo	98	147.9	13.7	**0.0463**	0.009	18.8	ug/L	11	Standard
	Ag	107	7379.1	1.6	**1.0451**	0.031	3.0	ug/L	68	Standard
	Cd	111	2296.2	2.5	**1.0190**	0.058	5.7	mg/L	2	Standard
	Cd	114	5492.1	3.4	**0.9981**	0.024	2.4	ug/L	12	Standard
>	In	115	629018.5	3.2				ug/L	587441	Standard
	Sn	118	580.0	12.2	**-0.0020**	0.010	499.8	ug/L	497	Standard
	Sb	123	3693.7	7.1	**0.7349**	0.053	7.2	ug/L	78	Standard
	Ba	135	5980.2	1.6	**2.7136**	0.046	1.7	ug/L	24	Standard
	Ce	140	12665.3	1.3				ug/L	25	Standard
>	Tb	159	1007879.7	3.3				ug/L	939701	Standard
	Ho	165	265.0	7.5				ug/L	10	Standard
	Tl	203	9323.2	2.1	**1.0256**	0.019	1.8	ug/L	4	Standard
	Tl	205	8567.4	1.0	**1.0883**	0.033	3.0	ug/L	2	Standard
	Pb	206	7313.4	2.1	**1.1727**	0.042	3.6	ug/L	240	Standard
	Pb	207	6050.9	2.1	**1.0885**	0.043	4.0	ug/L	198	Standard
	Pb	208	24824.3	2.0	**1.1284**	0.015	1.4	ug/L	883	Standard
	U	238	8436.0	2.0	**1.1088**	0.013	1.2	ug/L	3	Standard
>	Bi	209	577014.5	3.2				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	200.0	10.9	**0.1869**	0.033	17.5	mg/L	37	Standard
K	39	61.7	46.1	**0.0210**	0.066	315.1	mg/L	38	Standard
Ca	43	46.7	12.4	**0.3502**	0.375	107.1	mg/L	10	Standard
Fe	54	378.5	13.7	**0.1751**	0.049	28.1	mg/L	179	Standard
Fe	57	365.0	16.4	**0.1419**	0.250	175.9	mg/L	335	Standard
> **Sc-1**	45	62711.5	6.5				mg/L	61029	Standard
Cl	35	27760.1	3.1				ug/L	20195	Standard
Kr	83	3.3	45.8				ug/L	4	Standard
Br	81	2080.1	7.5				ug/L	1547	Standard
P	31	18322.7	2.7				ug/L	15286	Standard
S	34	1913.5	2.4				ug/L	1572	Standard
Sr	88	98.3	10.6				ug/L	73	Standard
C	12	103.3	31.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	615.8	1.7				mg/L	6	Standard
Ho-1	165	265.0	7.5				mg/L	10	Standard
Er	166	296.7	10.3				mg/L	13	Standard
I	127	5109.3	32.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		129.334	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.692	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.078
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.121
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606127905
Sample Date/Time: Wednesday, June 29, 2016 17:24:42
Number of Replicates: 3
Autosampler Position: 231
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	98923.6	1.9				ug/L	74699	Standard
	Be	9	425.0	5.1	**0.3722**	0.020	5.4	ug/L	8	Standard
	Al	27	40729181.9	0.9	**209.2967**	3.040	1.5	ug/L	1493	Standard
	Sc	45	74965.2	4.5				ug/L	61029	Standard
	Ti	47	31002.7	2.7	**78.7018**	1.731	2.2	ug/L	35	Standard
	V	51	100570.7	0.4	**12.6354**	0.094	0.7	ug/L	1435	Standard
	Cr	52	71317.5	0.6	**8.2486**	0.021	0.3	ug/L	7635	Standard
	Cr	53	8882.6	3.6	**8.9299**	0.295	3.3	ug/L	363	Standard
	Mn	55	1183907.3	1.1	**163.7014**	1.986	1.2	ug/L	747	Standard
	Co	59	16826.7	0.9	**2.4180**	0.026	1.1	ug/L	234	Standard
	Ni	60	14706.8	1.9	**7.4444**	0.110	1.5	ug/L	215	Standard
	Cu	65	7822.7	1.1	**3.9461**	0.031	0.8	ug/L	104	Standard
	Zn	66	28811.4	1.3	**24.9594**	0.201	0.8	ug/L	363	Standard
>	**Ge**	72	513872.0	0.5				ug/L	495142	Standard
	As	75	2302.8	2.2	**2.0406**	0.054	2.6	ug/L	-50	Standard
	Se	82	647.6	3.3	**5.5477**	0.199	3.6	ug/L	14	Standard
	Se-1	77	492.7	1.9	**5.8772**	0.106	1.8	ug/L	42	Standard
>	**Ga**	71	9201.1	2.2				mg/L	42	Standard
	Rb	85	118130.4	0.8				ug/L	17	Standard
	Y	89	544220.1	0.8				ug/L	417098	Standard
>	**Rh**	103	83.3	19.3				ug/L	13	Standard
	Mo	98	4972.1	0.8	**1.6995**	0.011	0.6	ug/L	11	Standard
	Ag	107	221.0	6.7	**0.0181**	0.002	11.5	ug/L	68	Standard
	Cd	111	99.4	11.4	**0.0355**	0.005	13.9	mg/L	2	Standard
	Cd	114	258.8	15.4	**0.0440**	0.007	16.4	ug/L	12	Standard
>	**In**	115	642627.7	0.7				ug/L	587441	Standard
	Sn	118	4954.1	4.3	**0.6806**	0.035	5.1	ug/L	497	Standard
	Sb	123	697.4	10.3	**0.1324**	0.015	11.0	ug/L	78	Standard
	Ba	135	175907.0	0.9	**78.5481**	0.493	0.6	ug/L	24	Standard
	Ce	140	308696.3	0.2				ug/L	25	Standard
>	**Tb**	159	1018138.8	1.9				ug/L	939701	Standard
	Ho	165	5902.8	0.8				ug/L	10	Standard
	Tl	203	694.0	1.8	**0.0782**	0.000	0.4	ug/L	4	Standard
	Tl	205	615.0	15.7	**0.0817**	0.011	14.1	ug/L	2	Standard
	Pb	206	15714.8	1.1	**2.7233**	0.017	0.6	ug/L	240	Standard
	Pb	207	12858.1	1.8	**2.5034**	0.026	1.0	ug/L	198	Standard
	Pb	208	54664.4	0.6	**2.6954**	0.031	1.2	ug/L	883	Standard
	U	238	8998.7	0.4	**1.2376**	0.021	1.7	ug/L	3	Standard
>	**Bi**	209	551643.9	1.7				ug/L	523984	Standard

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Na	23	5.0	100.0	**46.3980**	45.060	97.1	mg/L	0	Standard
Mg	24	7338.4	2.5	**7.6542**	0.303	4.0	mg/L	37	Standard
K	39	668.3	6.0	**1.0889**	0.064	5.9	mg/L	38	Standard
Ca	43	676.7	13.4	**32.4506**	6.121	18.9	mg/L	10	Standard
Fe	54	6512.7	2.4	**4.3601**	0.118	2.7	mg/L	179	Standard
Fe	57	2150.2	3.4	**4.8854**	0.383	7.8	mg/L	335	Standard
Sc-1	45	74965.2	4.5				mg/L	61029	Standard
Cl	35	28544.2	1.7				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	11494.4	5.7				ug/L	1547	Standard
P	31	34679.6	1.6				ug/L	15286	Standard
S	34	2073.5	2.2				ug/L	1572	Standard
Sr	88	356.7	8.9				ug/L	73	Standard
C	12	163.3	55.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	3	Standard
Dy	164	9835.4	4.4				mg/L	6	Standard
Ho-1	165	5902.8	0.8				mg/L	10	Standard
Er	166	5037.5	9.2				mg/L	13	Standard
I	127	62917.2	4.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		132.430	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		103.783	
As	75			
Se	82			
Se-1	77			
Ga	71			

Sample ID: L1606127905
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.394
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.279
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606127905
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Method 6020 - Summary Report

Sample ID: L1606127905
Sample Date/Time: Wednesday, June 29, 2016 17:27:54
Number of Replicates: 3
Autosampler Position: 232
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	95902.7	2.3				ug/L	74699	Standard
	Be	9	26.7	54.1	**0.0312**	0.013	41.0	ug/L	8	Standard
	Al	27	866639.8	0.6	**4.5819**	0.130	2.8	ug/L	1493	Standard
	Sc	45	64717.9	1.3				ug/L	61029	Standard
	Ti	47	665.3	5.2	**1.4927**	0.099	6.6	ug/L	35	Standard
	V	51	3898.6	6.9	**0.2752**	0.030	11.1	ug/L	1435	Standard
	Cr	52	9682.4	1.6	**0.1679**	0.023	13.9	ug/L	7635	Standard
	Cr	53	670.0	10.3	**0.3316**	0.072	21.7	ug/L	363	Standard
	Mn	55	29584.3	8.9	**3.7268**	0.331	8.9	ug/L	747	Standard
	Co	59	652.3	12.4	**0.0528**	0.011	20.6	ug/L	234	Standard
	Ni	60	547.0	3.7	**0.1426**	0.010	7.1	ug/L	215	Standard
	Cu	65	341.3	5.6	**0.0636**	0.011	17.0	ug/L	104	Standard
	Zn	66	2764.3	3.0	**1.8532**	0.047	2.5	ug/L	363	Standard
>	**Ge**	72	542890.6	1.0				ug/L	495142	Standard
	As	75	11.1	320.4	**0.0688**	0.029	42.5	ug/L	-50	Standard
	Se	82	31.5	11.6	**0.1237**	0.032	26.0	ug/L	14	Standard
	Se-1	77	57.7	24.7	**0.0971**	0.173	178.1	ug/L	42	Standard
>	**Ga**	71	253.3	16.8				mg/L	42	Standard
	Rb	85	2388.5	2.4				ug/L	17	Standard
	Y	89	480185.0	1.7				ug/L	417098	Standard
>	**Rh**	103	16.7	34.6				ug/L	13	Standard
	Mo	98	144.5	13.4	**0.0432**	0.007	17.2	ug/L	11	Standard
	Ag	107	273.0	44.6	**0.0250**	0.018	70.2	ug/L	68	Standard
	Cd	111	17.1	70.4	**-0.0005**	0.005	1058.7	mg/L	2	Standard
	Cd	114	57.8	101.1	**0.0081**	0.010	129.1	ug/L	12	Standard
>	**In**	115	652419.9	1.9				ug/L	587441	Standard
	Sn	118	705.0	11.1	**0.0141**	0.014	98.8	ug/L	497	Standard
	Sb	123	247.5	32.3	**0.0437**	0.016	37.3	ug/L	78	Standard
	Ba	135	3842.5	3.8	**1.6750**	0.079	4.7	ug/L	24	Standard
	Ce	140	6778.2	3.5				ug/L	25	Standard
>	**Tb**	159	1017174.6	0.9				ug/L	939701	Standard
	Ho	165	125.0	20.8				ug/L	10	Standard
	Tl	203	149.7	88.3	**0.0148**	0.015	98.5	ug/L	4	Standard
	Tl	205	133.3	80.1	**0.0172**	0.014	79.0	ug/L	2	Standard
	Pb	206	748.0	16.8	**0.0568**	0.021	37.3	ug/L	240	Standard
	Pb	207	613.7	10.2	**0.0482**	0.012	24.5	ug/L	198	Standard
	Pb	208	2588.8	11.0	**0.0521**	0.014	26.1	ug/L	883	Standard
	U	238	255.3	28.9	**0.0295**	0.010	33.0	ug/L	3	Standard
>	**Bi**	209	573070.1	0.3				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.8927**	30.982	173.2	mg/L	0	Standard
Mg	24	208.3	5.5	**0.1886**	0.017	8.9	mg/L	37	Standard
K	39	35.0	14.3	**-0.0411**	0.011	27.7	mg/L	38	Standard
Ca	43	31.7	18.2	**-0.6344**	0.363	57.2	mg/L	10	Standard
Fe	54	281.0	17.0	**0.0865**	0.040	45.9	mg/L	179	Standard
Fe	57	258.3	4.5	**-0.2461**	0.039	15.8	mg/L	335	Standard
> **Sc-1**	45	64717.9	1.3				mg/L	61029	Standard
Cl	35	29516.1	1.1				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	2206.8	1.5				ug/L	1547	Standard
P	31	18893.4	3.4				ug/L	15286	Standard
S	34	2140.2	7.5				ug/L	1572	Standard
Sr	88	85.0	23.5				ug/L	73	Standard
C	12	63.3	39.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	226.9	17.7				mg/L	6	Standard
Ho-1	165	125.0	20.8				mg/L	10	Standard
Er	166	133.3	38.5				mg/L	13	Standard
I	127	4113.9	27.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		128.386	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.643	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.061
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.368
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606128101
Sample Date/Time: Wednesday, June 29, 2016 17:31:05
Number of Replicates: 3
Autosampler Position: 233
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	95248.6	2.8				ug/L	74699	Standard
	Be	9	20.0	25.0	**0.0254**	0.004	15.8	ug/L	8	Standard
	Al	27	13040665.4	1.7	**69.5953**	1.139	1.6	ug/L	1493	Standard
	Sc	45	60164.2	2.0				ug/L	61029	Standard
	Ti	47	192.7	16.8	**0.4120**	0.087	21.1	ug/L	35	Standard
	V	51	8357.2	4.3	**0.9387**	0.048	5.1	ug/L	1435	Standard
	Cr	52	21860.8	2.2	**2.0003**	0.082	4.1	ug/L	7635	Standard
	Cr	53	28106.1	2.4	**30.8448**	0.828	2.7	ug/L	363	Standard
	Mn	55	35106.1	13.3	**5.0193**	0.674	13.4	ug/L	747	Standard
	Co	59	6553.8	6.0	**0.9799**	0.056	5.7	ug/L	234	Standard
	Ni	60	21271.9	1.7	**11.5228**	0.221	1.9	ug/L	215	Standard
	Cu	65	394730.4	1.5	**217.3087**	4.048	1.9	ug/L	104	Standard
	Zn	66	2800.3	3.3	**2.1735**	0.095	4.3	ug/L	363	Standard
>	**Ge**	72	483031.9	0.6				ug/L	495142	Standard
	As	75	2746.8	5.9	**2.5735**	0.152	5.9	ug/L	-50	Standard
	Se	82	892.7	0.7	**8.1998**	0.096	1.2	ug/L	14	Standard
	Se-1	77	2323.2	2.5	**31.9871**	0.998	3.1	ug/L	42	Standard
>	**Ga**	71	476.7	6.4				mg/L	42	Standard
	Rb	85	346107.5	1.7				ug/L	17	Standard
	Y	89	415017.7	1.3				ug/L	417098	Standard
>	**Rh**	103	195.0	26.0				ug/L	13	Standard
	Mo	98	2991.9	3.1	**1.1870**	0.038	3.2	ug/L	11	Standard
	Ag	107	283.3	10.3	**0.0333**	0.004	13.4	ug/L	68	Standard
	Cd	111	47.5	106.4	**0.0162**	0.025	157.7	mg/L	2	Standard
	Cd	114	106.7	47.6	**0.0200**	0.010	52.0	ug/L	12	Standard
>	**In**	115	552878.2	0.7				ug/L	587441	Standard
	Sn	118	3292.0	3.2	**0.5041**	0.021	4.2	ug/L	497	Standard
	Sb	123	2817.9	0.9	**0.6371**	0.010	1.5	ug/L	78	Standard
	Ba	135	115236.2	0.6	**59.8088**	0.708	1.2	ug/L	24	Standard
	Ce	140	265.0	80.7				ug/L	25	Standard
>	**Tb**	159	913633.5	1.5				ug/L	939701	Standard
	Ho	165	16.7	45.8				ug/L	10	Standard
	Tl	203	132.0	58.6	**0.0163**	0.011	65.5	ug/L	4	Standard
	Tl	205	136.7	39.5	**0.0217**	0.009	39.6	ug/L	2	Standard
	Pb	206	460.3	26.2	**0.0258**	0.026	100.0	ug/L	240	Standard
	Pb	207	366.3	38.5	**0.0169**	0.034	199.7	ug/L	198	Standard
	Pb	208	1427.4	18.1	**0.0116**	0.016	136.8	ug/L	883	Standard
	U	238	88.7	86.2	**0.0101**	0.013	124.4	ug/L	3	Standard
>	**Bi**	209	465790.3	0.8				ug/L	523984	Standard

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Na	23	8.3	69.3	**97.9562**	69.038	70.5	mg/L	0	Standard
Mg	24	359246.1	3.7	**470.2454**	9.358	2.0	mg/L	37	Standard
K	39	24917.1	2.4	**55.7677**	1.861	3.3	mg/L	38	Standard
Ca	43	1330.1	6.9	**82.7516**	6.716	8.1	mg/L	10	Standard
Fe	54	200.7	20.7	**0.0339**	0.032	94.4	mg/L	179	Standard
Fe	57	1015.0	10.0	**2.4309**	0.415	17.1	mg/L	335	Standard
> **Sc-1**	45	60164.2	2.0				mg/L	61029	Standard
Cl	35	38169.4	0.5				ug/L	20195	Standard
Kr	83	1.0	0.0				ug/L	4	Standard
Br	81	223802.3	3.7				ug/L	1547	Standard
P	31	18462.9	1.8				ug/L	15286	Standard
S	34	2156.8	3.7				ug/L	1572	Standard
Sr	88	483.3	16.2				ug/L	73	Standard
C	12	163.3	15.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	24.7				mg/L	3	Standard
Dy	164	32.2	122.0				mg/L	6	Standard
Ho-1	165	16.7	45.8				mg/L	10	Standard
Er	166	23.3	99.0				mg/L	13	Standard
I	127	949274.2	9.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		127.510	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.554	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		94.116
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		88.894
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cu 65 Upper, S, EEE	Cu	65	

Sample ID: L1606128101
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 17:34:19
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	89879.3	3.0				ug/L	74699	Standard
	Be	9	54419.2	2.1	**51.4171**	2.152	4.2	ug/L	8	Standard
	Al	27	8256861.3	1.5	**46.7135**	1.756	3.8	ug/L	1493	Standard
	Sc	45	65086.2	2.0				ug/L	61029	Standard
	Ti	47	41554.9	1.2	**98.5544**	1.167	1.2	ug/L	35	Standard
	V	51	424002.3	1.3	**50.3253**	0.743	1.5	ug/L	1435	Standard
	Cr	52	412948.6	1.6	**49.1234**	1.130	2.3	ug/L	7635	Standard
	Cr	53	52872.1	1.4	**51.1473**	0.096	0.2	ug/L	363	Standard
	Mn	55	374015.3	1.0	**48.1957**	0.700	1.5	ug/L	747	Standard
	Co	59	377049.8	1.0	**51.3472**	0.802	1.6	ug/L	234	Standard
	Ni	60	101943.5	0.6	**48.8763**	0.675	1.4	ug/L	215	Standard
	Cu	65	101706.9	0.4	**49.0730**	0.490	1.0	ug/L	104	Standard
	Zn	66	60100.6	1.2	**49.0556**	0.165	0.3	ug/L	363	Standard
>	Ge	72	550256.1	1.3				ug/L	495142	Standard
	As	75	60702.3	2.0	**48.8234**	0.606	1.2	ug/L	-50	Standard
	Se	82	6059.9	1.5	**49.5453**	0.269	0.5	ug/L	14	Standard
	Se-1	77	4264.3	0.7	**51.9185**	0.539	1.0	ug/L	42	Standard
>	Ga	71	80.0	16.5				mg/L	42	Standard
	Rb	85	943.4	9.9				ug/L	17	Standard
	Y	89	456697.4	1.9				ug/L	417098	Standard
>	Rh	103	31.7	32.9				ug/L	13	Standard
	Mo	98	286840.3	1.0	**98.7855**	2.014	2.0	ug/L	11	Standard
	Ag	107	350242.5	1.1	**49.3132**	0.224	0.5	ug/L	68	Standard
	Cd	111	110565.3	0.7	**48.5306**	0.244	0.5	mg/L	2	Standard
	Cd	114	270182.5	3.7	**48.3546**	1.830	3.8	ug/L	12	Standard
>	In	115	640022.5	1.2				ug/L	587441	Standard
	Sn	118	309740.9	1.1	**48.5773**	0.779	1.6	ug/L	497	Standard
	Sb	123	247251.7	1.0	**48.6061**	0.525	1.1	ug/L	78	Standard
	Ba	135	103942.0	1.5	**46.5980**	0.695	1.5	ug/L	24	Standard
	Ce	140	81.7	18.7				ug/L	25	Standard
>	Tb	159	1011086.0	0.8				ug/L	939701	Standard
	Ho	165	13.3	94.4				ug/L	10	Standard
	Tl	203	438780.7	1.5	**49.1134**	0.474	1.0	ug/L	4	Standard
	Tl	205	398617.2	2.3	**51.4045**	0.522	1.0	ug/L	2	Standard
	Pb	206	284136.3	1.1	**49.0127**	0.824	1.7	ug/L	240	Standard
	Pb	207	252190.2	0.9	**48.9661**	0.976	2.0	ug/L	198	Standard
	Pb	208	1023481.0	1.1	**50.2926**	0.682	1.4	ug/L	883	Standard
	U	238	380510.7	2.1	**50.9985**	0.305	0.6	ug/L	3	Standard
>	Bi	209	567945.0	2.2				ug/L	523984	Standard

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Na	23	1.7	173.2	**18.3524**	31.779	173.2	mg/L	0	Standard
Mg	24	4450.7	2.4	**5.3249**	0.232	4.3	mg/L	37	Standard
K	39	2040.1	4.0	**4.1161**	0.223	5.4	mg/L	38	Standard
Ca	43	101.7	19.9	**3.5019**	1.219	34.8	mg/L	10	Standard
Fe	54	6522.9	1.9	**5.0481**	0.108	2.1	mg/L	179	Standard
Fe	57	1916.8	5.3	**5.0325**	0.229	4.6	mg/L	335	Standard
Sc-1	45	65086.2	2.0				mg/L	61029	Standard
Cl	35	28870.1	1.5				ug/L	20195	Standard
Kr	83	2.7	43.3				ug/L	4	Standard
Br	81	3490.4	22.1				ug/L	1547	Standard
P	31	20260.2	3.0				ug/L	15286	Standard
S	34	2420.2	2.6				ug/L	1572	Standard
Sr	88	90.0	19.2				ug/L	73	Standard
C	12	86.7	6.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	9.5	5.0				mg/L	6	Standard
Ho-1	165	13.3	94.4				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	23970.8	64.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	102.834		
Al	27	93.427		
Sc	45			
Ti	47	98.554		
V	51	100.651		
Cr	52	98.247		
Cr	53			
Mn	55	96.391		
Co	59	102.694		
Ni	60	97.753		
Cu	65	98.146		
Zn	66	98.111		
Ge	72		111.131	
As	75	97.647		
Se	82	99.091		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	98.786		
Ag	107	98.626		
Cd	111	97.061		
Cd	114			
> In	115		108.951	
Sn	118	97.155		
Sb	123	97.212		
Ba	135	93.196		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	98.227		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.585		
U	238	101.997		
> Bi	209		108.390	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 17:37:30
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90192.8	3.2				ug/L	74699	Standard
	Be	9	55.0	102.4	**0.0584**	0.051	86.9	ug/L	8	Standard
	Al	27	41697.2	123.7	**0.2160**	0.280	129.5	ug/L	1493	Standard
	Sc	45	66865.6	0.3				ug/L	61029	Standard
	Ti	47	70.3	63.0	**0.0618**	0.107	173.0	ug/L	35	Standard
	V	51	1545.5	1.7	**-0.0068**	0.004	62.6	ug/L	1435	Standard
	Cr	52	7551.9	5.0	**-0.0837**	0.044	52.6	ug/L	7635	Standard
	Cr	53	1056.7	15.9	**0.7243**	0.162	22.4	ug/L	363	Standard
	Mn	55	2100.5	33.7	**0.1299**	0.092	71.2	ug/L	747	Standard
	Co	59	307.3	14.8	**0.0056**	0.006	108.6	ug/L	234	Standard
	Ni	60	288.7	41.6	**0.0182**	0.059	321.7	ug/L	215	Standard
	Cu	65	326.7	64.3	**0.0580**	0.103	178.3	ug/L	104	Standard
	Zn	66	465.0	14.2	**-0.0620**	0.054	86.6	ug/L	363	Standard
>	**Ge**	72	536712.4	0.6				ug/L	495142	Standard
	As	75	-14.2	293.5	**0.0478**	0.034	71.9	ug/L	-50	Standard
	Se	82	26.6	3.7	**0.0859**	0.008	9.9	ug/L	14	Standard
	Se-1	77	71.3	25.4	**0.2781**	0.225	81.0	ug/L	42	Standard
>	**Ga**	71	51.7	22.3				mg/L	42	Standard
	Rb	85	111.7	73.6				ug/L	17	Standard
	Y	89	476031.3	1.1				ug/L	417098	Standard
>	**Rh**	103	26.7	47.2				ug/L	13	Standard
	Mo	98	310.3	31.4	**0.0963**	0.033	33.9	ug/L	11	Standard
	Ag	107	196.3	41.5	**0.0135**	0.011	82.4	ug/L	68	Standard
	Cd	111	44.4	76.9	**0.0108**	0.014	134.5	mg/L	2	Standard
	Cd	114	106.2	73.2	**0.0161**	0.013	83.2	ug/L	12	Standard
>	**In**	115	671001.8	0.7				ug/L	587441	Standard
	Sn	118	950.0	11.1	**0.0476**	0.015	31.2	ug/L	497	Standard
	Sb	123	463.6	17.0	**0.0827**	0.014	17.2	ug/L	78	Standard
	Ba	135	113.3	53.3	**0.0326**	0.026	80.4	ug/L	24	Standard
	Ce	140	100.0	52.9				ug/L	25	Standard
>	**Tb**	159	1042844.6	0.4				ug/L	939701	Standard
	Ho	165	21.7	53.3				ug/L	10	Standard
	Tl	203	169.7	59.1	**0.0166**	0.011	64.7	ug/L	4	Standard
	Tl	205	136.7	25.7	**0.0173**	0.004	24.8	ug/L	2	Standard
	Pb	206	350.0	21.1	**-0.0125**	0.012	95.5	ug/L	240	Standard
	Pb	207	292.7	21.7	**-0.0148**	0.012	78.6	ug/L	198	Standard
	Pb	208	1272.0	10.4	**-0.0133**	0.006	44.8	ug/L	883	Standard
	U	238	124.3	70.3	**0.0117**	0.011	96.0	ug/L	3	Standard
>	**Bi**	209	584508.5	0.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	165.0	89.4	**0.1290**	0.173	134.2	mg/L	37	Standard
K	39	35.0	14.3	**-0.0435**	0.010	22.9	mg/L	38	Standard
Ca	43	33.3	22.9	**-0.6014**	0.442	73.5	mg/L	10	Standard
Fe	54	222.3	16.4	**0.0337**	0.028	82.1	mg/L	179	Standard
Fe	57	293.3	1.0	**-0.1642**	0.011	6.9	mg/L	335	Standard
> **Sc-1**	45	66865.6	0.3				mg/L	61029	Standard
Cl	35	28993.0	1.1				ug/L	20195	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	2536.9	15.9				ug/L	1547	Standard
P	31	21593.7	3.8				ug/L	15286	Standard
S	34	2441.9	4.5				ug/L	1572	Standard
Sr	88	71.7	39.7				ug/L	73	Standard
C	12	43.3	53.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	2.2	286.4				mg/L	6	Standard
Ho-1	165	21.7	53.3				mg/L	10	Standard
Er	166	23.3	65.5				mg/L	13	Standard
I	127	6326.4	22.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.396	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.225
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		111.551
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606129403
Sample Date/Time: Wednesday, June 29, 2016 17:40:43
Number of Replicates: 3
Autosampler Position: 234
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	91138.4	2.1				ug/L	74699	Standard
	Be	9	18.3	31.5	**0.0246**	0.005	20.1	ug/L	8	Standard
	Al	27	19782.9	2.5	**0.0970**	0.003	3.0	ug/L	1493	Standard
	Sc	45	69032.0	3.0				ug/L	61029	Standard
	Ti	47	54.0	3.2	**0.0194**	0.002	12.6	ug/L	35	Standard
	V	51	1966.3	6.5	**0.0390**	0.011	28.1	ug/L	1435	Standard
	Cr	52	10805.9	1.1	**0.2915**	0.043	14.7	ug/L	7635	Standard
	Cr	53	2143.5	1.8	**1.7623**	0.077	4.4	ug/L	363	Standard
	Mn	55	3844.5	2.2	**0.3500**	0.018	5.0	ug/L	747	Standard
	Co	59	327.3	8.7	**0.0074**	0.003	41.0	ug/L	234	Standard
	Ni	60	356.0	5.4	**0.0475**	0.008	16.5	ug/L	215	Standard
	Cu	65	696.0	2.6	**0.2337**	0.014	6.0	ug/L	104	Standard
	Zn	66	2205.8	3.0	**1.3661**	0.024	1.8	ug/L	363	Standard
>	**Ge**	72	549152.6	2.2				ug/L	495142	Standard
	As	75	-29.6	63.4	**0.0356**	0.015	42.9	ug/L	-50	Standard
	Se	82	23.9	20.2	**0.0586**	0.040	68.9	ug/L	14	Standard
	Se-1	77	94.7	7.0	**0.5478**	0.105	19.2	ug/L	42	Standard
>	**Ga**	71	51.7	14.8				mg/L	42	Standard
	Rb	85	138.3	25.6				ug/L	17	Standard
	Y	89	465979.4	3.6				ug/L	417098	Standard
>	**Rh**	103	13.3	21.7				ug/L	13	Standard
	Mo	98	5139.1	1.4	**1.7220**	0.056	3.3	ug/L	11	Standard
	Ag	107	110.0	6.9	**0.0022**	0.001	48.4	ug/L	68	Standard
	Cd	111	15.0	26.6	**-0.0015**	0.002	117.9	mg/L	2	Standard
	Cd	114	55.2	20.3	**0.0075**	0.002	25.2	ug/L	12	Standard
>	**In**	115	655841.8	1.8				ug/L	587441	Standard
	Sn	118	1048.4	10.6	**0.0659**	0.015	22.6	ug/L	497	Standard
	Sb	123	219.8	14.7	**0.0379**	0.005	14.5	ug/L	78	Standard
	Ba	135	307.7	5.8	**0.1187**	0.008	7.0	ug/L	24	Standard
	Ce	140	120.0	27.3				ug/L	25	Standard
>	**Tb**	159	1025647.2	2.3				ug/L	939701	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	102.7	26.3	**0.0095**	0.003	29.3	ug/L	4	Standard
	Tl	205	93.3	17.2	**0.0120**	0.002	17.6	ug/L	2	Standard
	Pb	206	348.0	5.5	**-0.0123**	0.003	25.6	ug/L	240	Standard
	Pb	207	291.0	7.0	**-0.0146**	0.003	21.1	ug/L	198	Standard
	Pb	208	1220.0	1.5	**-0.0152**	0.002	10.4	ug/L	883	Standard
	U	238	43.7	3.5	**0.0013**	0.000	20.2	ug/L	3	Standard
>	**Bi**	209	579311.4	1.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	70.0	14.3	**0.0151**	0.014	91.8	mg/L	37	Standard
K	39	41.7	36.7	**-0.0323**	0.032	98.5	mg/L	38	Standard
Ca	43	23.3	24.7	**-1.2220**	0.307	25.1	mg/L	10	Standard
Fe	54	180.7	18.1	**-0.0033**	0.021	642.1	mg/L	179	Standard
Fe	57	228.3	18.9	**-0.3899**	0.112	28.8	mg/L	335	Standard
Sc-1	45	69032.0	3.0				mg/L	61029	Standard
Cl	35	29393.1	0.1				ug/L	20195	Standard
Kr	83	3.7	41.7				ug/L	4	Standard
Br	81	2280.2	16.1				ug/L	1547	Standard
P	31	20889.4	5.8				ug/L	15286	Standard
S	34	2440.2	2.2				ug/L	1572	Standard
Sr	88	78.3	9.8				ug/L	73	Standard
C	12	90.0	19.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	5.2	126.6				mg/L	6	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	30.0	66.7				mg/L	13	Standard
I	127	4447.3	11.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		122.008	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		110.908	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.644
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.559
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606129403
Sample Date/Time: Wednesday, June 29, 2016 17:43:55
Number of Replicates: 3
Autosampler Position: 235
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89753.4	1.3				ug/L	74699	Standard
	Be	9	13.3	43.3	**0.0203**	0.006	27.7	ug/L	8	Standard
	Al	27	7761551.3	2.6	**43.9444**	1.176	2.7	ug/L	1493	Standard
	Sc	45	64855.2	1.4				ug/L	61029	Standard
	Ti	47	206.0	13.1	**0.3915**	0.063	16.1	ug/L	35	Standard
	V	51	6651.8	1.7	**0.6159**	0.016	2.5	ug/L	1435	Standard
	Cr	52	10534.3	3.3	**0.2860**	0.045	15.8	ug/L	7635	Standard
	Cr	53	2358.5	8.3	**2.0219**	0.206	10.2	ug/L	363	Standard
	Mn	55	48108.9	1.2	**6.2182**	0.039	0.6	ug/L	747	Standard
	Co	59	779.0	1.7	**0.0714**	0.002	2.2	ug/L	234	Standard
	Ni	60	2066.1	2.9	**0.8928**	0.027	3.0	ug/L	215	Standard
	Cu	65	1897.5	0.8	**0.8356**	0.011	1.4	ug/L	104	Standard
	Zn	66	4161.9	4.0	**3.0555**	0.122	4.0	ug/L	363	Standard
>	**Ge**	72	537411.3	0.6				ug/L	495142	Standard
	As	75	1930.1	2.9	**1.6472**	0.048	2.9	ug/L	-50	Standard
	Se	82	65.9	12.2	**0.4151**	0.071	17.1	ug/L	14	Standard
	Se-1	77	143.0	7.4	**1.1820**	0.141	12.0	ug/L	42	Standard
>	**Ga**	71	281.7	11.8				mg/L	42	Standard
	Rb	85	9322.9	0.6				ug/L	17	Standard
	Y	89	483828.6	0.3				ug/L	417098	Standard
>	**Rh**	103	65.0	35.3				ug/L	13	Standard
	Mo	98	2420.2	2.2	**0.8025**	0.008	1.0	ug/L	11	Standard
	Ag	107	86.7	9.0	**-0.0011**	0.001	98.3	ug/L	68	Standard
	Cd	111	21.1	19.4	**0.0011**	0.002	172.0	mg/L	2	Standard
	Cd	114	57.2	8.0	**0.0078**	0.001	8.8	ug/L	12	Standard
>	**In**	115	659947.0	1.4				ug/L	587441	Standard
	Sn	118	1036.7	2.5	**0.0632**	0.002	2.8	ug/L	497	Standard
	Sb	123	514.2	4.3	**0.0939**	0.005	5.0	ug/L	78	Standard
	Ba	135	42292.6	1.8	**18.3786**	0.354	1.9	ug/L	24	Standard
	Ce	140	906.7	5.0				ug/L	25	Standard
>	**Tb**	159	1004743.5	1.0				ug/L	939701	Standard
	Ho	165	30.0	33.3				ug/L	10	Standard
	Tl	203	321.7	3.2	**0.0348**	0.001	3.5	ug/L	4	Standard
	Tl	205	263.3	19.0	**0.0346**	0.006	17.3	ug/L	2	Standard
	Pb	206	528.0	6.8	**0.0212**	0.005	24.5	ug/L	240	Standard
	Pb	207	478.3	8.2	**0.0244**	0.009	35.8	ug/L	198	Standard
	Pb	208	1973.7	3.1	**0.0244**	0.005	18.6	ug/L	883	Standard
	U	238	903.7	2.1	**0.1184**	0.002	1.8	ug/L	3	Standard
>	**Bi**	209	560080.8	1.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	9985.0	3.9	**12.0618**	0.357	3.0	mg/L	37	Standard
K	39	420.0	7.4	**0.7593**	0.061	8.1	mg/L	38	Standard
Ca	43	263.3	2.9	**13.1350**	0.654	5.0	mg/L	10	Standard
Fe	54	210.7	11.6	**0.0297**	0.017	57.3	mg/L	179	Standard
Fe	57	393.3	9.5	**0.1838**	0.119	64.8	mg/L	335	Standard
> **Sc-1**	45	64855.2	1.4				mg/L	61029	Standard
Cl	35	32877.0	2.8				ug/L	20195	Standard
Kr	83	0.7	86.6				ug/L	4	Standard
Br	81	8902.6	4.1				ug/L	1547	Standard
P	31	19829.6	4.1				ug/L	15286	Standard
S	34	2240.2	4.2				ug/L	1572	Standard
Sr	88	221.7	14.7				ug/L	73	Standard
C	12	126.7	4.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	64.1	36.5				mg/L	6	Standard
Ho-1	165	30.0	33.3				mg/L	10	Standard
Er	166	53.3	21.7				mg/L	13	Standard
I	127	24610.0	6.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		120.154	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		108.537	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606129403
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.343
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.889
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606129601
Sample Date/Time: Wednesday, June 29, 2016 17:47:06
Number of Replicates: 3
Autosampler Position: 236
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89414.7	0.8				ug/L	74699	Standard
	Be	9	18.3	41.7	**0.0250**	0.007	28.7	ug/L	8	Standard
	Al	27	159581.9	4.0	**0.8936**	0.029	3.3	ug/L	1493	Standard
	Sc	45	67088.2	1.1				ug/L	61029	Standard
	Ti	47	35.7	1.6	**-0.0268**	0.002	7.8	ug/L	35	Standard
	V	51	2172.9	6.2	**0.0559**	0.017	29.8	ug/L	1435	Standard
	Cr	52	9358.6	1.2	**0.0800**	0.026	32.1	ug/L	7635	Standard
	Cr	53	761.7	7.6	**0.3908**	0.063	16.2	ug/L	363	Standard
	Mn	55	2132.8	0.4	**0.1197**	0.005	4.4	ug/L	747	Standard
	Co	59	232.7	3.6	**-0.0065**	0.001	22.5	ug/L	234	Standard
	Ni	60	263.3	7.3	**-0.0009**	0.011	1213.2	ug/L	215	Standard
	Cu	65	215.7	8.8	**-0.0024**	0.009	395.1	ug/L	104	Standard
	Zn	66	2535.5	4.0	**1.5735**	0.060	3.8	ug/L	363	Standard
>	**Ge**	72	566628.0	1.5				ug/L	495142	Standard
	As	75	0.7	2838.5	**0.0602**	0.015	24.5	ug/L	-50	Standard
	Se	82	16.5	13.6	**-0.0062**	0.020	325.1	ug/L	14	Standard
	Se-1	77	57.7	30.4	**0.0671**	0.205	305.9	ug/L	42	Standard
>	**Ga**	71	65.0	35.3				mg/L	42	Standard
	Rb	85	218.3	8.7				ug/L	17	Standard
	Y	89	474347.0	1.6				ug/L	417098	Standard
>	**Rh**	103	16.7	45.8				ug/L	13	Standard
	Mo	98	108.8	9.6	**0.0309**	0.003	10.7	ug/L	11	Standard
	Ag	107	170.0	11.0	**0.0105**	0.003	26.1	ug/L	68	Standard
	Cd	111	6.5	32.0	**-0.0051**	0.001	17.0	mg/L	2	Standard
	Cd	114	10.6	76.1	**-0.0002**	0.001	576.3	ug/L	12	Standard
>	**In**	115	655393.1	1.0				ug/L	587441	Standard
	Sn	118	536.7	6.3	**-0.0123**	0.006	49.5	ug/L	497	Standard
	Sb	123	179.2	10.0	**0.0302**	0.004	12.2	ug/L	78	Standard
	Ba	135	901.0	1.9	**0.3786**	0.012	3.1	ug/L	24	Standard
	Ce	140	38.3	52.7				ug/L	25	Standard
>	**Tb**	159	1019773.4	1.2				ug/L	939701	Standard
	Ho	165	10.0	50.0				ug/L	10	Standard
	Tl	203	34.7	13.6	**0.0021**	0.001	27.9	ug/L	4	Standard
	Tl	205	33.3	52.7	**0.0044**	0.002	51.3	ug/L	2	Standard
	Pb	206	333.0	5.0	**-0.0144**	0.003	23.5	ug/L	240	Standard
	Pb	207	282.3	6.2	**-0.0157**	0.004	25.6	ug/L	198	Standard
	Pb	208	1187.0	2.0	**-0.0164**	0.002	10.6	ug/L	883	Standard
	U	238	27.0	25.9	**-0.0009**	0.001	108.4	ug/L	3	Standard
>	**Bi**	209	574894.3	1.4				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.3542**	30.050	173.2	mg/L	0	Standard
Mg	24	255.0	18.0	**0.2345**	0.054	23.2	mg/L	37	Standard
K	39	41.7	36.7	**-0.0306**	0.030	98.0	mg/L	38	Standard
Ca	43	31.7	18.2	**-0.7022**	0.343	48.8	mg/L	10	Standard
Fe	54	182.6	4.3	**0.0025**	0.004	177.8	mg/L	179	Standard
Fe	57	238.3	19.9	**-0.3363**	0.155	46.0	mg/L	335	Standard
Sc-1	45	67088.2	1.1				mg/L	61029	Standard
Cl	35	32679.2	0.8				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	2083.5	4.4				ug/L	1547	Standard
P	31	19699.5	2.2				ug/L	15286	Standard
S	34	2248.5	3.2				ug/L	1572	Standard
Sr	88	70.0	56.7				ug/L	73	Standard
C	12	60.0	76.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	42.4	37.5				mg/L	6	Standard
Ho-1	165	10.0	50.0				mg/L	10	Standard
Er	166	20.0	86.6				mg/L	13	Standard
I	127	3452.1	27.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		119.700	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		114.437	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.567
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.716
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Wednesday, June 29, 2016 17:50:19
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	88962.1	0.9				ug/L	74699	Standard
	Be	9	13.3	43.3	**0.0204**	0.006	27.5	ug/L	8	Standard
	Al	27	8687475.6	2.0	**49.6312**	1.401	2.8	ug/L	1493	Standard
	Sc	45	67439.8	1.2				ug/L	61029	Standard
	Ti	47	49495.1	1.8	**118.6714**	2.776	2.3	ug/L	35	Standard
	V	51	2497.1	11.5	**0.1050**	0.033	31.3	ug/L	1435	Standard
	Cr	52	8893.6	0.7	**0.0677**	0.012	17.4	ug/L	7635	Standard
	Cr	53	8300.6	3.8	**7.8359**	0.175	2.2	ug/L	363	Standard
	Mn	55	1506.4	1.9	**0.0487**	0.003	6.1	ug/L	747	Standard
	Co	59	411.3	2.2	**0.0194**	0.002	11.4	ug/L	234	Standard
	Ni	60	986.0	7.4	**0.3548**	0.029	8.2	ug/L	215	Standard
	Cu	65	754.7	3.5	**0.2650**	0.009	3.4	ug/L	104	Standard
	Zn	66	1997.5	3.6	**1.2085**	0.053	4.4	ug/L	363	Standard
>	Ge	72	544457.7	1.7				ug/L	495142	Standard
	As	75	-43.8	164.6	**0.0238**	0.058	245.3	ug/L	-50	Standard
	Se	82	18.8	19.8	**0.0181**	0.034	186.0	ug/L	14	Standard
	Se-1	77	455.0	4.4	**5.0437**	0.245	4.9	ug/L	42	Standard
>	Ga	71	186.7	17.4				mg/L	42	Standard
	Rb	85	1130.0	9.7				ug/L	17	Standard
	Y	89	464215.3	1.7				ug/L	417098	Standard
>	Rh	103	10.0	100.0				ug/L	13	Standard
	Mo	98	300673.2	0.9	**102.5347**	1.457	1.4	ug/L	11	Standard
	Ag	107	252.3	6.3	**0.0223**	0.003	12.6	ug/L	68	Standard
	Cd	111	-194.8	14.0	**-0.0926**	0.012	12.9	mg/L	2	Standard
	Cd	114	577.1	3.2	**0.1002**	0.004	4.2	ug/L	12	Standard
>	In	115	646355.5	1.8				ug/L	587441	Standard
	Sn	118	791.7	5.4	**0.0285**	0.006	21.5	ug/L	497	Standard
	Sb	123	195.6	12.5	**0.0338**	0.004	11.9	ug/L	78	Standard
	Ba	135	712.0	4.0	**0.3001**	0.008	2.7	ug/L	24	Standard
	Ce	140	246.7	7.1				ug/L	25	Standard
>	Tb	159	1024202.6	1.1				ug/L	939701	Standard
	Ho	165	23.3	61.9				ug/L	10	Standard
	Tl	203	122.3	9.8	**0.0119**	0.001	11.8	ug/L	4	Standard
	Tl	205	90.0	11.1	**0.0118**	0.001	10.5	ug/L	2	Standard
	Pb	206	533.7	2.0	**0.0208**	0.002	10.5	ug/L	240	Standard
	Pb	207	414.7	3.2	**0.0105**	0.002	21.4	ug/L	198	Standard
	Pb	208	1800.4	3.2	**0.0144**	0.003	21.4	ug/L	883	Standard
	U	238	18.7	20.3	**-0.0019**	0.001	26.8	ug/L	3	Standard
>	Bi	209	568876.5	0.5				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	11507.7	5.3	**13.3841**	0.868	6.5	mg/L	37	Standard
K	39	2163.5	5.0	**4.2129**	0.203	4.8	mg/L	38	Standard
Ca	43	273.3	20.1	**13.1286**	3.349	25.5	mg/L	10	Standard
Fe	54	17120.6	2.5	**12.9991**	0.385	3.0	mg/L	179	Standard
Fe	57	4470.7	3.8	**12.6745**	0.387	3.1	mg/L	335	Standard
> **Sc-1**	45	67439.8	1.2				mg/L	61029	Standard
Cl	35	28777.3	2.0				ug/L	20195	Standard
Kr	83	1.7	91.7				ug/L	4	Standard
Br	81	2086.8	10.9				ug/L	1547	Standard
P	31	20233.5	1.2				ug/L	15286	Standard
S	34	2398.5	7.6				ug/L	1572	Standard
Sr	88	63.3	35.6				ug/L	73	Standard
C	12	173.3	8.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	80.0	69.6				mg/L	3	Standard
Dy	164	11.6	52.9				mg/L	6	Standard
Ho-1	165	23.3	61.9				mg/L	10	Standard
Er	166	36.7	56.8				mg/L	13	Standard
I	127	2830.3	21.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27	0.993		
Sc	45			
Ti	47	118.671		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.960	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	102.535		
Ag	107			
Cd	111			
Cd	114			
> In	115			110.029
Sn	118			
Sb	123			
Ba	135			
Ce	140			
> Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
> Bi	209			108.567
Na	23	0.040		
Mg	24	267.683		
K	39	84.259		
Ca	43	87.524		
Fe	54	103.992		
Fe	57	101.396		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Na	23	
QC Std 4	Mg	24	

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Wednesday, June 29, 2016 17:53:31
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88668.7	1.6				ug/L	74699	Standard
	Be	9	115505.6	3.3	**110.5278**	2.817	2.5	ug/L	8	Standard
	Al	27	8938177.8	2.5	**51.2202**	0.471	0.9	ug/L	1493	Standard
	Sc	45	65087.9	3.1				ug/L	61029	Standard
	Ti	47	50197.4	1.2	**122.5394**	1.491	1.2	ug/L	35	Standard
	V	51	859522.7	1.3	**105.1949**	1.380	1.3	ug/L	1435	Standard
	Cr	52	831098.2	2.0	**102.8267**	1.943	1.9	ug/L	7635	Standard
	Cr	53	106911.0	2.3	**106.7884**	2.096	2.0	ug/L	363	Standard
	Mn	55	780341.4	1.6	**103.6433**	1.453	1.4	ug/L	747	Standard
	Co	59	785536.0	0.5	**110.1234**	0.547	0.5	ug/L	234	Standard
	Ni	60	203753.2	2.0	**100.6522**	1.808	1.8	ug/L	215	Standard
	Cu	65	201732.1	0.8	**100.2703**	0.833	0.8	ug/L	104	Standard
	Zn	66	122540.9	0.7	**103.4323**	0.376	0.4	ug/L	363	Standard
>	**Ge**	72	534677.6	0.4				ug/L	495142	Standard
	As	75	124456.8	0.2	**102.9556**	0.389	0.4	ug/L	-50	Standard
	Se	82	12596.7	0.4	**106.1488**	0.433	0.4	ug/L	14	Standard
	Se-1	77	8794.6	0.8	**110.8893**	1.382	1.2	ug/L	42	Standard
>	**Ga**	71	163.3	10.8				mg/L	42	Standard
	Rb	85	966.7	4.8				ug/L	17	Standard
	Y	89	476525.6	1.7				ug/L	417098	Standard
>	**Rh**	103	56.7	53.9				ug/L	13	Standard
	Mo	98	309227.9	0.6	**104.8818**	1.132	1.1	ug/L	11	Standard
	Ag	107	592523.9	2.1	**82.1821**	1.932	2.4	ug/L	68	Standard
	Cd	111	228625.7	1.0	**98.8467**	0.904	0.9	mg/L	2	Standard
	Cd	114	551600.1	1.5	**97.2335**	1.523	1.6	ug/L	12	Standard
>	**In**	115	649797.8	0.6				ug/L	587441	Standard
	Sn	118	1576.7	4.2	**0.1493**	0.011	7.5	ug/L	497	Standard
	Sb	123	495027.3	1.9	**95.8585**	2.358	2.5	ug/L	78	Standard
	Ba	135	210763.3	1.3	**93.0830**	1.687	1.8	ug/L	24	Standard
	Ce	140	70.0	24.7				ug/L	25	Standard
>	**Tb**	159	1005734.4	0.5				ug/L	939701	Standard
	Ho	165	11.7	49.5				ug/L	10	Standard
	Tl	203	893894.1	1.2	**101.2389**	0.317	0.3	ug/L	4	Standard
	Tl	205	815034.2	0.6	**106.3608**	0.654	0.6	ug/L	2	Standard
	Pb	206	583528.7	0.9	**101.9143**	0.243	0.2	ug/L	240	Standard
	Pb	207	499626.1	1.2	**98.2110**	0.372	0.4	ug/L	198	Standard
	Pb	208	2105185.2	0.8	**104.7451**	0.431	0.4	ug/L	883	Standard
	U	238	779429.7	1.7	**105.7078**	0.634	0.6	ug/L	3	Standard
>	**Bi**	209	561247.5	1.2				ug/L	523984	Standard

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Na	23	1.7	173.2	**18.1880**	31.494	173.2	mg/L	0	Standard
Mg	24	12009.8	3.1	**14.4710**	0.020	0.1	mg/L	37	Standard
K	39	2150.2	4.2	**4.3456**	0.256	5.9	mg/L	38	Standard
Ca	43	251.7	12.1	**12.4083**	2.087	16.8	mg/L	10	Standard
Fe	54	17836.2	2.6	**14.0504**	0.592	4.2	mg/L	179	Standard
Fe	57	4537.3	4.4	**13.3981**	0.845	6.3	mg/L	335	Standard
> **Sc-1**	45	65087.9	3.1				mg/L	61029	Standard
Cl	35	27559.7	2.9				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	1986.8	4.8				ug/L	1547	Standard
P	31	19052.0	2.9				ug/L	15286	Standard
S	34	2286.8	6.3				ug/L	1572	Standard
Sr	88	50.0	10.0				ug/L	73	Standard
C	12	120.0	54.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	3	Standard
Dy	164	6.0	200.7				mg/L	6	Standard
Ho-1	165	11.7	49.5				mg/L	10	Standard
Er	166	13.3	86.6				mg/L	13	Standard
I	127	2065.1	25.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	110.528		
Al	27	1.024		
Sc	45			
Ti	47	122.539		
V	51	105.195		
Cr	52	102.827		
Cr	53			
Mn	55	103.643		
Co	59	110.123		
Ni	60	100.652		
Cu	65	100.270		
Zn	66	103.432		
> Ge	72		107.985	
As	75	102.956		
Se	82	106.149		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	104.882		
Ag	107	82.182		
Cd	111	98.847		
Cd	114			
In	115		110.615	
Sn	118			
Sb	123	95.858		
Ba	135	93.083		
Ce	140			
Tb	159			
Ho	165			
Tl	203	101.239		
Tl	205			
Pb	206			
Pb	207			
Pb	208	104.745		
U	238	105.708		
Bi	209		107.111	
Na	23	145.504		
Mg	24	289.419		
K	39	86.911		
Ca	43	82.722		
Fe	54	112.403		
Fe	57	107.185		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Ti	47	
QC Std 5	Na	23	

Sample ID: QC Std 5
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QC Std 5	Mg	24

Sample ID: QC Std 5
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 17:56:44
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88001.7	3.8				ug/L	74699	Standard
	Be	9	58491.1	3.4	**56.4121**	0.807	1.4	ug/L	8	Standard
	Al	27	8741223.1	1.9	**50.5126**	1.685	3.3	ug/L	1493	Standard
	Sc	45	66566.0	2.9				ug/L	61029	Standard
	Ti	47	44065.3	0.6	**105.8464**	2.393	2.3	ug/L	35	Standard
	V	51	439728.9	0.9	**52.8674**	1.388	2.6	ug/L	1435	Standard
	Cr	52	434693.1	0.1	**52.4281**	0.919	1.8	ug/L	7635	Standard
	Cr	53	53735.1	1.4	**52.6541**	1.206	2.3	ug/L	363	Standard
	Mn	55	394255.2	1.0	**51.4522**	0.719	1.4	ug/L	747	Standard
	Co	59	403494.7	0.9	**55.6456**	1.136	2.0	ug/L	234	Standard
	Ni	60	106493.3	0.2	**51.7076**	0.770	1.5	ug/L	215	Standard
	Cu	65	105229.8	0.3	**51.4208**	1.011	2.0	ug/L	104	Standard
	Zn	66	61955.4	1.5	**51.2322**	1.156	2.3	ug/L	363	Standard
>	**Ge**	72	543443.2	1.7				ug/L	495142	Standard
	As	75	62757.8	1.3	**51.1208**	1.290	2.5	ug/L	-50	Standard
	Se	82	6411.0	0.6	**53.0945**	1.065	2.0	ug/L	14	Standard
	Se-1	77	4401.6	1.7	**54.2995**	1.443	2.7	ug/L	42	Standard
>	**Ga**	71	61.7	12.4				mg/L	42	Standard
	Rb	85	943.4	4.4				ug/L	17	Standard
	Y	89	472814.1	2.0				ug/L	417098	Standard
>	**Rh**	103	31.7	36.5				ug/L	13	Standard
	Mo	98	301859.8	0.5	**101.5547**	1.508	1.5	ug/L	11	Standard
	Ag	107	366041.5	1.2	**50.3642**	1.561	3.1	ug/L	68	Standard
	Cd	111	117544.4	1.3	**50.4048**	0.748	1.5	mg/L	2	Standard
	Cd	114	286950.2	2.0	**50.1688**	0.955	1.9	ug/L	12	Standard
>	**In**	115	655193.6	1.9				ug/L	587441	Standard
	Sn	118	333959.0	1.2	**51.1818**	1.510	3.0	ug/L	497	Standard
	Sb	123	261510.0	1.1	**50.2357**	1.515	3.0	ug/L	78	Standard
	Ba	135	110572.3	0.3	**48.4318**	0.852	1.8	ug/L	24	Standard
	Ce	140	81.7	46.0				ug/L	25	Standard
>	**Tb**	159	1009652.9	1.9				ug/L	939701	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	466012.5	0.6	**52.5145**	1.216	2.3	ug/L	4	Standard
	Tl	205	428260.1	0.9	**55.6109**	1.642	3.0	ug/L	2	Standard
	Pb	206	294247.5	0.8	**51.0977**	1.194	2.3	ug/L	240	Standard
	Pb	207	260542.8	0.7	**50.9223**	1.007	2.0	ug/L	198	Standard
	Pb	208	1081629.9	0.8	**53.5152**	1.532	2.9	ug/L	883	Standard
	U	238	403586.7	0.9	**54.4635**	1.402	2.6	ug/L	3	Standard
>	**Bi**	209	564239.9	2.1				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4549.0	2.0	**5.3196**	0.066	1.2	mg/L	37	Standard
K	39	2091.8	2.6	**4.1250**	0.021	0.5	mg/L	38	Standard
Ca	43	106.7	9.8	**3.6589**	0.645	17.6	mg/L	10	Standard
Fe	54	6853.2	4.1	**5.1952**	0.357	6.9	mg/L	179	Standard
Fe	57	1901.8	4.2	**4.8507**	0.081	1.7	mg/L	335	Standard
> **Sc-1**	45	66566.0	2.9				mg/L	61029	Standard
Cl	35	28481.4	2.6				ug/L	20195	Standard
Kr	83	3.3	75.5				ug/L	4	Standard
Br	81	1840.1	18.3				ug/L	1547	Standard
P	31	20427.1	5.4				ug/L	15286	Standard
S	34	2438.5	6.3				ug/L	1572	Standard
Sr	88	80.0	32.5				ug/L	73	Standard
C	12	76.7	7.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	3	Standard
Dy	164	6.5	86.7				mg/L	6	Standard
Ho-1	165	8.3	34.6				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	2150.2	26.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	112.824		
Al	27	101.025		
Sc	45			
Ti	47	105.846		
V	51	105.735		
Cr	52	104.856		
Cr	53			
Mn	55	102.904		
Co	59	111.291		
Ni	60	103.415		
Cu	65	102.842		
Zn	66	102.464		
> Ge	72		109.755	
As	75	102.242		
Se	82	106.189		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	101.555		
Ag	107	100.728		
Cd	111	100.810		
Cd	114			
> In	115			111.533
Sn	118	102.364		
Sb	123	100.471		
Ba	135	96.864		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	105.029		
Tl	205			
Pb	206			
Pb	207			
Pb	208	107.030		
U	238	108.927		
> Bi	209			107.683
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Co	59	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 17:59:55
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86353.7	1.4				ug/L	74699	Standard
	Be	9	83.3	67.4	**0.0891**	0.054	60.5	ug/L	8	Standard
	Al	27	42873.5	92.7	**0.2376**	0.231	97.1	ug/L	1493	Standard
	Sc	45	65305.4	1.2				ug/L	61029	Standard
	Ti	47	79.7	51.6	**0.0788**	0.097	123.4	ug/L	35	Standard
	V	51	1461.2	4.4	**-0.0225**	0.008	34.9	ug/L	1435	Standard
	Cr	52	7626.9	6.9	**-0.1029**	0.066	64.1	ug/L	7635	Standard
	Cr	53	760.0	14.8	**0.4057**	0.109	26.8	ug/L	363	Standard
	Mn	55	4546.9	137.2	**0.4388**	0.807	183.9	ug/L	747	Standard
	Co	59	626.0	93.3	**0.0478**	0.080	167.0	ug/L	234	Standard
	Ni	60	409.0	51.9	**0.0715**	0.102	142.7	ug/L	215	Standard
	Cu	65	272.7	44.7	**0.0274**	0.059	215.3	ug/L	104	Standard
	Zn	66	514.0	23.7	**-0.0335**	0.100	300.2	ug/L	363	Standard
>	**Ge**	72	553485.6	1.3				ug/L	495142	Standard
	As	75	-6.7	474.8	**0.0545**	0.025	45.9	ug/L	-50	Standard
	Se	82	20.4	10.3	**0.0278**	0.015	55.0	ug/L	14	Standard
	Se-1	77	66.3	4.4	**0.1906**	0.046	24.0	ug/L	42	Standard
>	**Ga**	71	50.0	10.0				mg/L	42	Standard
	Rb	85	45.0	48.4				ug/L	17	Standard
	Y	89	474090.9	1.7				ug/L	417098	Standard
>	**Rh**	103	18.3	41.7				ug/L	13	Standard
	Mo	98	533.3	54.8	**0.1739**	0.097	56.0	ug/L	11	Standard
	Ag	107	205.7	25.6	**0.0154**	0.007	45.9	ug/L	68	Standard
	Cd	111	43.3	79.3	**0.0106**	0.015	137.7	mg/L	2	Standard
	Cd	114	160.8	66.0	**0.0260**	0.018	70.8	ug/L	12	Standard
>	**In**	115	653140.9	0.6				ug/L	587441	Standard
	Sn	118	840.0	19.7	**0.0347**	0.026	74.7	ug/L	497	Standard
	Sb	123	1054.2	24.1	**0.1991**	0.050	25.2	ug/L	78	Standard
	Ba	135	82.0	54.8	**0.0199**	0.020	97.9	ug/L	24	Standard
	Ce	140	78.3	62.0				ug/L	25	Standard
>	**Tb**	159	1021325.7	0.5				ug/L	939701	Standard
	Ho	165	20.0	66.1				ug/L	10	Standard
	Tl	203	163.0	50.8	**0.0163**	0.009	56.1	ug/L	4	Standard
	Tl	205	543.4	156.5	**0.0696**	0.109	156.0	ug/L	2	Standard
	Pb	206	336.7	16.7	**-0.0136**	0.010	70.5	ug/L	240	Standard
	Pb	207	309.7	12.8	**-0.0104**	0.008	73.2	ug/L	198	Standard
	Pb	208	2162.1	83.2	**0.0313**	0.088	280.1	ug/L	883	Standard
	U	238	524.4	153.4	**0.0652**	0.107	163.8	ug/L	3	Standard
>	**Bi**	209	573163.8	0.1				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.8448**	30.899	173.2	mg/L	0	Standard
Mg	24	123.3	127.6	**0.0829**	0.188	227.1	mg/L	37	Standard
K	39	30.0	66.7	**-0.0524**	0.041	77.8	mg/L	38	Standard
Ca	43	21.7	35.3	**-1.2409**	0.467	37.7	mg/L	10	Standard
Fe	54	185.6	27.6	**0.0086**	0.039	460.9	mg/L	179	Standard
Fe	57	268.3	10.3	**-0.2224**	0.079	35.7	mg/L	335	Standard
Sc-1	45	65305.4	1.2				mg/L	61029	Standard
Cl	35	28806.0	1.7				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	1900.1	3.3				ug/L	1547	Standard
P	31	20240.2	2.7				ug/L	15286	Standard
S	34	2435.2	7.1				ug/L	1572	Standard
Sr	88	65.0	20.4				ug/L	73	Standard
C	12	60.0					mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	25.5	84.0				mg/L	6	Standard
Ho-1	165	20.0	66.1				mg/L	10	Standard
Er	166	23.3	65.5				mg/L	13	Standard
I	127	1926.8	28.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		111.783	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.184
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.386
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Mn	55	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: QC Std 8
Sample Date/Time: Wednesday, June 29, 2016 18:03:08
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84590.6	2.3				ug/L	74699	Standard
	Be	9	260.0	12.0	**0.2687**	0.034	12.7	ug/L	8	Standard
	Al	27	3603.8	43.5	**0.0082**	0.009	110.1	ug/L	1493	Standard
	Sc	45	65034.3	0.9				ug/L	61029	Standard
	Ti	47	43.7	32.9	**-0.0008**	0.035	4199.9	ug/L	35	Standard
	V	51	4694.6	2.2	**0.3894**	0.008	2.0	ug/L	1435	Standard
	Cr	52	14076.2	0.6	**0.7639**	0.008	1.0	ug/L	7635	Standard
	Cr	53	1435.1	6.7	**1.1315**	0.098	8.6	ug/L	363	Standard
	Mn	55	4379.0	3.5	**0.4438**	0.017	3.9	ug/L	747	Standard
	Co	59	3208.0	4.2	**0.4198**	0.015	3.5	ug/L	234	Standard
	Ni	60	3464.1	1.9	**1.6175**	0.036	2.2	ug/L	215	Standard
	Cu	65	1802.1	7.0	**0.8073**	0.055	6.8	ug/L	104	Standard
	Zn	66	8137.9	1.9	**6.5566**	0.074	1.1	ug/L	363	Standard
>	**Ge**	72	526101.8	0.9				ug/L	495142	Standard
	As	75	520.8	10.5	**0.4970**	0.042	8.4	ug/L	-50	Standard
	Se	82	68.5	3.0	**0.4490**	0.013	3.0	ug/L	14	Standard
	Se-1	77	97.0	14.4	**0.6266**	0.169	26.9	ug/L	42	Standard
>	**Ga**	71	35.0	42.9				mg/L	42	Standard
	Rb	85	53.3	5.4				ug/L	17	Standard
	Y	89	462050.3	3.1				ug/L	417098	Standard
>	**Rh**	103	11.7	24.7				ug/L	13	Standard
	Mo	98	178.6	39.2	**0.0548**	0.024	44.0	ug/L	11	Standard
	Ag	107	2989.6	2.3	**0.4006**	0.011	2.7	ug/L	68	Standard
	Cd	111	543.3	9.6	**0.2264**	0.024	10.6	mg/L	2	Standard
	Cd	114	1493.6	11.4	**0.2605**	0.031	12.1	ug/L	12	Standard
>	**In**	115	651766.1	0.6				ug/L	587441	Standard
	Sn	118	551.7	10.5	**-0.0096**	0.009	97.6	ug/L	497	Standard
	Sb	123	2328.3	1.4	**0.4453**	0.009	1.9	ug/L	78	Standard
	Ba	135	1600.4	3.6	**0.6889**	0.030	4.3	ug/L	24	Standard
	Ce	140	6.7	86.6				ug/L	25	Standard
>	**Tb**	159	1010895.5	0.8				ug/L	939701	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	860.7	17.5	**0.0936**	0.016	16.7	ug/L	4	Standard
	Tl	205	718.4	10.6	**0.0918**	0.008	8.5	ug/L	2	Standard
	Pb	206	1533.1	9.5	**0.1909**	0.020	10.6	ug/L	240	Standard
	Pb	207	1247.1	5.1	**0.1700**	0.007	4.3	ug/L	198	Standard
	Pb	208	5357.0	3.3	**0.1870**	0.005	2.6	ug/L	883	Standard
	U	238	3040.0	2.0	**0.3994**	0.014	3.4	ug/L	3	Standard
>	**Bi**	209	573346.3	2.5				ug/L	523984	Standard

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Na	23	1.7	173.2	**18.2178**	31.546	173.2	mg/L	0	Standard
Mg	24	50.0	50.0	**-0.0044**	0.031	706.6	mg/L	37	Standard
K	39	35.0	24.7	**-0.0415**	0.018	44.0	mg/L	38	Standard
Ca	43	26.7	43.3	**-0.9446**	0.676	71.5	mg/L	10	Standard
Fe	54	105.0	32.5	**-0.0546**	0.028	51.3	mg/L	179	Standard
Fe	57	230.0	24.7	**-0.3395**	0.189	55.5	mg/L	335	Standard
Sc-1	45	65034.3	0.9				mg/L	61029	Standard
Cl	35	27747.4	0.7				ug/L	20195	Standard
Kr	83	1.0	0.0				ug/L	4	Standard
Br	81	1776.8	9.7				ug/L	1547	Standard
P	31	14345.1	1.0				ug/L	15286	Standard
S	34	2316.8	2.0				ug/L	1572	Standard
Sr	88	78.3	41.5				ug/L	73	Standard
C	12	70.0	28.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	6.0	100.4				mg/L	6	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	1788.4	30.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	134.333		
Al	27			
Sc	45			
Ti	47			
V	51	97.347		
Cr	52	95.485		
Cr	53			
Mn	55	88.762		
Co	59	104.961		
Ni	60	101.093		
Cu	65	100.908		
Zn	66	104.906		
Ge	72		106.253	
As	75	124.241		
Se	82	112.254		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	100.142		
Cd	111	94.325		
Cd	114			
> In	115			110.950
Sn	118			
Sb	123	111.327		
Ba	135	91.848		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	116.967		
Tl	205			
Pb	206			
Pb	207			
Pb	208	93.500		
U	238	99.844		
> Bi	209			109.420
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 8	Be	9	

Sample ID: QC Std 8
Report Date/Time: Wednesday, June 29, 2016 18:05:25
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Method 6020 - Summary Report

Sample ID: PBS M9 WG574192-02
Sample Date/Time: Wednesday, June 29, 2016 18:06:21
Number of Replicates: 3
Autosampler Position: 237
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84464.8	1.8				ug/L	74699	Standard
	Be	9	13.3	94.4	**0.0212**	0.013	60.4	ug/L	8	Standard
	Al	27	11484.4	1.6	**0.0557**	0.001	1.2	ug/L	1493	Standard
	Sc	45	65588.4	2.6				ug/L	61029	Standard
	Ti	47	51.3	20.8	**0.0150**	0.026	174.5	ug/L	35	Standard
	V	51	1499.5	1.3	**-0.0137**	0.003	18.5	ug/L	1435	Standard
	Cr	52	8909.3	1.2	**0.0773**	0.005	6.6	ug/L	7635	Standard
	Cr	53	853.4	5.0	**0.5155**	0.034	6.6	ug/L	363	Standard
	Mn	55	1324.4	4.8	**0.0262**	0.011	41.6	ug/L	747	Standard
	Co	59	237.0	9.4	**-0.0044**	0.004	80.7	ug/L	234	Standard
	Ni	60	317.3	8.0	**0.0315**	0.014	46.0	ug/L	215	Standard
	Cu	65	277.0	2.0	**0.0327**	0.005	14.4	ug/L	104	Standard
	Zn	66	2117.5	3.0	**1.3211**	0.055	4.2	ug/L	363	Standard
>	**Ge**	72	540634.9	1.6				ug/L	495142	Standard
	As	75	-19.3	191.5	**0.0441**	0.030	68.3	ug/L	-50	Standard
	Se	82	22.9	30.4	**0.0532**	0.060	113.4	ug/L	14	Standard
	Se-1	77	66.3	3.1	**0.2096**	0.028	13.1	ug/L	42	Standard
>	**Ga**	71	40.0	45.1				mg/L	42	Standard
	Rb	85	45.0	40.1				ug/L	17	Standard
	Y	89	495113.6	1.2				ug/L	417098	Standard
>	**Rh**	103	20.0	50.0				ug/L	13	Standard
	Mo	98	103.4	4.5	**0.0285**	0.002	7.3	ug/L	11	Standard
	Ag	107	105.3	22.1	**0.0013**	0.003	227.8	ug/L	68	Standard
	Cd	111	14.8	35.7	**-0.0017**	0.002	127.2	mg/L	2	Standard
	Cd	114	30.3	51.7	**0.0031**	0.003	86.4	ug/L	12	Standard
>	**In**	115	666604.9	1.7				ug/L	587441	Standard
	Sn	118	860.0	2.1	**0.0351**	0.004	11.7	ug/L	497	Standard
	Sb	123	400.3	27.4	**0.0716**	0.022	30.7	ug/L	78	Standard
	Ba	135	277.0	2.3	**0.1032**	0.001	0.8	ug/L	24	Standard
	Ce	140	75.0	20.0				ug/L	25	Standard
>	**Tb**	159	1002064.8	2.5				ug/L	939701	Standard
	Ho	165	13.3	21.7				ug/L	10	Standard
	Tl	203	23.7	14.8	**0.0009**	0.000	40.1	ug/L	4	Standard
	Tl	205	18.3	56.8	**0.0026**	0.001	51.0	ug/L	2	Standard
	Pb	206	383.3	7.2	**-0.0041**	0.004	93.5	ug/L	240	Standard
	Pb	207	304.7	4.5	**-0.0100**	0.002	23.2	ug/L	198	Standard
	Pb	208	1385.4	1.0	**-0.0050**	0.001	21.8	ug/L	883	Standard
	U	238	16.0	18.8	**-0.0023**	0.000	16.8	ug/L	3	Standard
>	**Bi**	209	560531.0	1.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	51.7	11.2	**-0.0029**	0.008	286.8	mg/L	37	Standard
K	39	28.3	27.0	**-0.0560**	0.015	26.7	mg/L	38	Standard
Ca	43	25.0	34.6	**-1.0611**	0.483	45.5	mg/L	10	Standard
Fe	54	209.4	8.6	**0.0268**	0.012	44.3	mg/L	179	Standard
Fe	57	206.7	9.2	**-0.4211**	0.048	11.4	mg/L	335	Standard
> **Sc-1**	45	65588.4	2.6				mg/L	61029	Standard
Cl	35	29295.6	1.0				ug/L	20195	Standard
Kr	83	1.7	91.7				ug/L	4	Standard
Br	81	3250.3	3.7				ug/L	1547	Standard
P	31	19926.4	1.7				ug/L	15286	Standard
S	34	2431.9	7.4				ug/L	1572	Standard
Sr	88	63.3	32.9				ug/L	73	Standard
C	12	60.0	16.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	23.2	64.8				mg/L	6	Standard
Ho-1	165	13.3	21.7				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	1665.1	25.5				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		113.074	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		109.188	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.476
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.975
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSS M9 WG574192-03
Sample Date/Time: Wednesday, June 29, 2016 18:09:32
Number of Replicates: 3
Autosampler Position: 238
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83350.4	2.2				ug/L	74699	Standard
	Be	9	28323.1	1.8	**28.8492**	0.865	3.0	ug/L	8	Standard
	Al	27	10196.8	1.6	**0.0488**	0.002	4.6	ug/L	1493	Standard
	Sc	45	65183.2	0.6				ug/L	61029	Standard
	Ti	47	95.7	13.6	**0.1113**	0.027	24.3	ug/L	35	Standard
	V	51	224256.1	0.6	**25.7588**	0.522	2.0	ug/L	1435	Standard
	Cr	52	224696.6	1.0	**25.4792**	0.636	2.5	ug/L	7635	Standard
	Cr	53	27321.3	1.7	**25.5112**	0.743	2.9	ug/L	363	Standard
	Mn	55	202745.7	1.5	**25.3082**	0.750	3.0	ug/L	747	Standard
	Co	59	203564.8	2.3	**26.9126**	1.011	3.8	ug/L	234	Standard
	Ni	60	54379.7	0.7	**25.2634**	0.489	1.9	ug/L	215	Standard
	Cu	65	53975.6	1.0	**25.2465**	0.617	2.4	ug/L	104	Standard
	Zn	66	33582.8	1.1	**26.4199**	0.666	2.5	ug/L	363	Standard
>	**Ge**	72	566570.7	1.5				ug/L	495142	Standard
	As	75	31915.6	1.0	**24.9643**	0.450	1.8	ug/L	-50	Standard
	Se	82	3210.1	2.6	**25.4315**	0.960	3.8	ug/L	14	Standard
	Se-1	77	2232.8	4.1	**26.1060**	1.397	5.4	ug/L	42	Standard
>	**Ga**	71	91.7	13.7				mg/L	42	Standard
	Rb	85	96.7	31.2				ug/L	17	Standard
	Y	89	463441.3	2.1				ug/L	417098	Standard
>	**Rh**	103	25.0	40.0				ug/L	13	Standard
	Mo	98	76.3	5.4	**0.0207**	0.001	6.1	ug/L	11	Standard
	Ag	107	186996.6	1.0	**26.4732**	0.339	1.3	ug/L	68	Standard
	Cd	111	58916.9	1.6	**26.0048**	0.541	2.1	mg/L	2	Standard
	Cd	114	141808.0	1.8	**25.5238**	0.616	2.4	ug/L	12	Standard
>	**In**	115	636399.6	0.6				ug/L	587441	Standard
	Sn	118	665.0	9.8	**0.0103**	0.010	94.1	ug/L	497	Standard
	Sb	123	127977.1	1.2	**25.3000**	0.453	1.8	ug/L	78	Standard
	Ba	135	55490.8	0.9	**25.0111**	0.350	1.4	ug/L	24	Standard
	Ce	140	61.7	36.6				ug/L	25	Standard
>	**Tb**	159	977939.2	1.1				ug/L	939701	Standard
	Ho	165	5.0	100.0				ug/L	10	Standard
	Tl	203	232757.9	0.8	**26.2994**	0.658	2.5	ug/L	4	Standard
	Tl	205	213539.2	0.1	**27.8001**	0.582	2.1	ug/L	2	Standard
	Pb	206	150898.4	0.7	**26.2407**	0.649	2.5	ug/L	240	Standard
	Pb	207	129115.2	1.2	**25.2720**	0.800	3.2	ug/L	198	Standard
	Pb	208	547777.7	0.6	**27.1359**	0.615	2.3	ug/L	883	Standard
	U	238	197609.3	0.3	**26.7341**	0.481	1.8	ug/L	3	Standard
>	**Bi**	209	562718.9	2.0				ug/L	523984	Standard

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Na	23	3.3	86.6	**35.9815**	31.158	86.6	mg/L	0	Standard
Mg	24	53.3	23.6	**-0.0007**	0.015	2138.9	mg/L	37	Standard
K	39	36.7	90.8	**-0.0380**	0.070	183.0	mg/L	38	Standard
Ca	43	26.7	28.6	**-0.9444**	0.462	48.9	mg/L	10	Standard
Fe	54	149.2	16.7	**-0.0198**	0.020	102.0	mg/L	179	Standard
Fe	57	258.3	10.7	**-0.2518**	0.092	36.6	mg/L	335	Standard
> **Sc-1**	45	65183.2	0.6				mg/L	61029	Standard
Cl	35	28068.6	2.1				ug/L	20195	Standard
Kr	83	2.0	0.0				ug/L	4	Standard
Br	81	1853.4	3.5				ug/L	1547	Standard
P	31	20221.8	1.7				ug/L	15286	Standard
S	34	2256.8	4.8				ug/L	1572	Standard
Sr	88	75.0	24.0				ug/L	73	Standard
C	12	113.3	53.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	2.9	203.0				mg/L	6	Standard
Ho-1	165	5.0	100.0				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	1621.8	26.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.582	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.426	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.334
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.392
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606120601 WG574192-01
Sample Date/Time: Wednesday, June 29, 2016 18:12:44
Number of Replicates: 3
Autosampler Position: 239
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89463.4	1.2				ug/L	74699	Standard
	Be	9	386.7	13.6	**0.3740**	0.046	12.2	ug/L	8	Standard
	Al	27	7605562.2	1.6	**43.1976**	0.340	0.8	ug/L	1493	Standard
	Sc	45	72243.5	1.6				ug/L	61029	Standard
	Ti	47	9362.6	0.8	**21.8169**	0.679	3.1	ug/L	35	Standard
	V	51	123334.5	1.4	**14.2946**	0.165	1.2	ug/L	1435	Standard
	Cr	52	107034.1	1.6	**11.7966**	0.478	4.1	ug/L	7635	Standard
	Cr	53	12683.6	2.9	**11.8556**	0.642	5.4	ug/L	363	Standard
	Mn	55	2726083.5	2.1	**347.2409**	2.026	0.6	ug/L	747	Standard
	Co	59	29531.4	3.0	**3.9299**	0.043	1.1	ug/L	234	Standard
	Ni	60	23196.4	0.4	**10.8725**	0.312	2.9	ug/L	215	Standard
	Cu	65	77156.3	0.7	**36.6848**	0.692	1.9	ug/L	104	Standard
	Zn	66	748003.6	1.6	**607.1548**	7.539	1.2	ug/L	363	Standard
>	**Ge**	72	558122.4	2.5				ug/L	495142	Standard
	As	75	3312.8	2.4	**2.6835**	0.016	0.6	ug/L	-50	Standard
	Se	82	112.5	6.7	**0.7726**	0.083	10.8	ug/L	14	Standard
	Se-1	77	130.7	4.7	**0.9656**	0.087	9.0	ug/L	42	Standard
>	**Ga**	71	7793.7	3.0				mg/L	42	Standard
	Rb	85	97459.1	1.1				ug/L	17	Standard
	Y	89	585281.5	2.1				ug/L	417098	Standard
>	**Rh**	103	56.7	13.5				ug/L	13	Standard
	Mo	98	1826.8	4.5	**0.5887**	0.034	5.8	ug/L	11	Standard
	Ag	107	1189.0	7.2	**0.1453**	0.012	8.4	ug/L	68	Standard
	Cd	111	5739.0	1.3	**2.3714**	0.004	0.2	mg/L	2	Standard
	Cd	114	13674.5	3.2	**2.3090**	0.056	2.4	ug/L	12	Standard
>	**In**	115	677670.9	1.2				ug/L	587441	Standard
	Sn	118	2238.5	6.9	**0.2377**	0.027	11.3	ug/L	497	Standard
	Sb	123	1060.8	22.9	**0.1924**	0.043	22.3	ug/L	78	Standard
	Ba	135	275486.3	0.7	**116.6679**	1.279	1.1	ug/L	24	Standard
	Ce	140	521396.3	0.5				ug/L	25	Standard
>	**Tb**	159	1067665.8	1.0				ug/L	939701	Standard
	Ho	165	8012.1	4.7				ug/L	10	Standard
	Tl	203	658.7	5.9	**0.0698**	0.004	5.8	ug/L	4	Standard
	Tl	205	588.3	7.1	**0.0738**	0.005	7.2	ug/L	2	Standard
	Pb	206	280687.1	0.1	**46.9821**	0.294	0.6	ug/L	240	Standard
	Pb	207	217657.6	0.6	**40.9978**	0.453	1.1	ug/L	198	Standard
	Pb	208	937818.9	1.0	**44.7144**	0.652	1.5	ug/L	883	Standard
	U	238	5450.3	0.5	**0.7046**	0.003	0.4	ug/L	3	Standard
>	**Bi**	209	585148.7	0.6				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	733.4	5.7	**0.7343**	0.035	4.8	mg/L	37	Standard
K	39	401.7	1.9	**0.6360**	0.019	3.0	mg/L	38	Standard
Ca	43	643.3	17.5	**31.7962**	5.845	18.4	mg/L	10	Standard
Fe	54	8818.1	2.4	**6.1777**	0.130	2.1	mg/L	179	Standard
Fe	57	2673.6	4.7	**6.5999**	0.243	3.7	mg/L	335	Standard
Sc-1	45	72243.5	1.6				mg/L	61029	Standard
Cl	35	29798.6	1.4				ug/L	20195	Standard
Kr	83	0.7	86.6				ug/L	4	Standard
Br	81	3707.1	5.8				ug/L	1547	Standard
P	31	20168.4	2.0				ug/L	15286	Standard
S	34	2373.5	6.9				ug/L	1572	Standard
Sr	88	256.7	13.8				ug/L	73	Standard
C	12	350.0	7.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	130.0	53.3				mg/L	3	Standard
Dy	164	13278.3	0.5				mg/L	6	Standard
Ho-1	165	8012.1	4.7				mg/L	10	Standard
Er	166	7608.6	3.8				mg/L	13	Standard
I	127	89948.0	2.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		119.765	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		112.720	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	115.360
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	111.673
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606120601 WG574192-01
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Method 6020 - Summary Report

Sample ID: L1606120602
Sample Date/Time: Wednesday, June 29, 2016 18:15:55
Number of Replicates: 3
Autosampler Position: 240
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88784.4	1.1				ug/L	74699	Standard
	Be	9	281.7	5.7	**0.2767**	0.013	4.7	ug/L	8	Standard
	Al	27	7005404.7	2.4	**40.0898**	0.625	1.6	ug/L	1493	Standard
	Sc	45	70594.2	3.3				ug/L	61029	Standard
	Ti	47	10155.7	1.6	**24.3492**	0.468	1.9	ug/L	35	Standard
	V	51	153110.0	0.2	**18.3086**	0.101	0.6	ug/L	1435	Standard
	Cr	52	102957.6	0.7	**11.6568**	0.092	0.8	ug/L	7635	Standard
	Cr	53	11732.9	3.0	**11.2567**	0.305	2.7	ug/L	363	Standard
	Mn	55	2052735.8	1.1	**268.9604**	2.146	0.8	ug/L	747	Standard
	Co	59	33492.3	1.4	**4.5921**	0.057	1.2	ug/L	234	Standard
	Ni	60	26642.1	0.7	**12.8642**	0.053	0.4	ug/L	215	Standard
	Cu	65	40463.3	0.7	**19.7403**	0.183	0.9	ug/L	104	Standard
	Zn	66	608360.3	0.1	**507.8962**	1.599	0.3	ug/L	363	Standard
>	**Ge**	72	542468.6	0.4				ug/L	495142	Standard
	As	75	4231.0	2.7	**3.5076**	0.102	2.9	ug/L	-50	Standard
	Se	82	256.2	4.5	**1.9932**	0.099	5.0	ug/L	14	Standard
	Se-1	77	208.7	7.7	**1.9860**	0.210	10.6	ug/L	42	Standard
>	**Ga**	71	5872.8	1.9				mg/L	42	Standard
	Rb	85	68412.5	1.5				ug/L	17	Standard
	Y	89	570393.2	0.3				ug/L	417098	Standard
>	**Rh**	103	206.7	25.4				ug/L	13	Standard
	Mo	98	11374.8	0.4	**3.8637**	0.075	1.9	ug/L	11	Standard
	Ag	107	1353.7	2.3	**0.1754**	0.001	0.8	ug/L	68	Standard
	Cd	111	5491.2	1.2	**2.3732**	0.046	1.9	mg/L	2	Standard
	Cd	114	13400.9	1.9	**2.3668**	0.045	1.9	ug/L	12	Standard
>	**In**	115	648040.3	1.6				ug/L	587441	Standard
	Sn	118	1990.1	9.0	**0.2145**	0.033	15.4	ug/L	497	Standard
	Sb	123	589.0	13.2	**0.1100**	0.013	12.1	ug/L	78	Standard
	Ba	135	226861.9	1.0	**100.4795**	2.067	2.1	ug/L	24	Standard
	Ce	140	495305.9	0.7				ug/L	25	Standard
>	**Tb**	159	1028084.3	0.7				ug/L	939701	Standard
	Ho	165	7586.9	1.7				ug/L	10	Standard
	Tl	203	574.7	1.8	**0.0640**	0.002	2.9	ug/L	4	Standard
	Tl	205	501.7	7.3	**0.0663**	0.004	6.1	ug/L	2	Standard
	Pb	206	2490204.6	1.0	**439.6443**	9.561	2.2	ug/L	240	Standard
	Pb	207	1941338.7	1.0	**385.7578**	8.533	2.2	ug/L	198	Standard
	Pb	208	8788859.7	0.3	**442.0013**	4.418	1.0	ug/L	883	Standard
	U	238	27264.2	0.8	**3.7315**	0.055	1.5	ug/L	3	Standard
>	**Bi**	209	555601.8	1.3				ug/L	523984	Standard

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Na	23	15.0	66.7	**151.5495**	103.438	68.3	mg/L	0	Standard
Mg	24	875.0	7.4	**0.9112**	0.062	6.8	mg/L	37	Standard
K	39	308.3	17.3	**0.4774**	0.118	24.7	mg/L	38	Standard
Ca	43	2528.5	1.9	**135.7080**	7.063	5.2	mg/L	10	Standard
Fe	54	8423.7	4.4	**6.0457**	0.457	7.6	mg/L	179	Standard
Fe	57	3312.0	6.3	**8.6682**	0.763	8.8	mg/L	335	Standard
> **Sc-1**	45	70594.2	3.3				mg/L	61029	Standard
Cl	35	33743.5	0.4				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	4283.9	2.2				ug/L	1547	Standard
P	31	21890.8	1.3				ug/L	15286	Standard
S	34	2663.6	6.3				ug/L	1572	Standard
Sr	88	533.3	8.7				ug/L	73	Standard
C	12	600.0	5.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	100.0	26.5				mg/L	3	Standard
Dy	164	11590.5	1.3				mg/L	6	Standard
Ho-1	165	7586.9	1.7				mg/L	10	Standard
Er	166	6698.1	4.4				mg/L	13	Standard
I	127	108507.7	4.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.857	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.558	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	110.316
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	106.034
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1606120603S WG574192-04
Sample Date/Time: Wednesday, June 29, 2016 18:19:07
Number of Replicates: 3
Autosampler Position: 241
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86561.6	0.8				ug/L	74699	Standard
	Be	9	28455.1	4.4	**27.8947**	1.031	3.7	ug/L	8	Standard
	Al	27	11326081.2	0.4	**66.4980**	0.812	1.2	ug/L	1493	Standard
	Sc	45	74033.8	1.5				ug/L	61029	Standard
	Ti	47	13830.6	1.3	**31.7218**	0.771	2.4	ug/L	35	Standard
	V	51	404083.1	0.7	**46.4723**	0.823	1.8	ug/L	1435	Standard
	Cr	52	396378.6	0.5	**45.6257**	0.448	1.0	ug/L	7635	Standard
	Cr	53	48917.2	0.9	**45.8335**	0.539	1.2	ug/L	363	Standard
	Mn	55	3610519.8	1.3	**452.1326**	4.314	1.0	ug/L	747	Standard
	Co	59	243070.7	1.0	**32.0670**	0.356	1.1	ug/L	234	Standard
	Ni	60	87954.6	1.3	**40.8489**	0.598	1.5	ug/L	215	Standard
	Cu	65	138890.7	1.2	**64.9805**	0.614	0.9	ug/L	104	Standard
	Zn	66	982893.1	0.9	**784.3980**	13.633	1.7	ug/L	363	Standard
>	**Ge**	72	567734.3	1.2				ug/L	495142	Standard
	As	75	35264.6	1.3	**27.5210**	0.578	2.1	ug/L	-50	Standard
	Se	82	3103.1	1.8	**24.5237**	0.601	2.4	ug/L	14	Standard
	Se-1	77	2151.2	2.8	**25.0663**	0.745	3.0	ug/L	42	Standard
>	**Ga**	71	14508.6	3.6				mg/L	42	Standard
	Rb	85	180073.9	1.5				ug/L	17	Standard
	Y	89	616764.0	1.9				ug/L	417098	Standard
>	**Rh**	103	85.0	11.8				ug/L	13	Standard
	Mo	98	3441.4	2.1	**1.1615**	0.033	2.8	ug/L	11	Standard
	Ag	107	170180.4	0.7	**23.5897**	0.078	0.3	ug/L	68	Standard
	Cd	111	63817.8	1.8	**27.5852**	0.736	2.7	mg/L	2	Standard
	Cd	114	155790.6	2.3	**27.4604**	0.877	3.2	ug/L	12	Standard
>	**In**	115	649912.7	0.9				ug/L	587441	Standard
	Sn	118	2755.3	3.8	**0.3317**	0.018	5.5	ug/L	497	Standard
	Sb	123	11515.0	1.7	**2.2251**	0.028	1.3	ug/L	78	Standard
	Ba	135	420339.6	0.5	**185.6246**	2.179	1.2	ug/L	24	Standard
	Ce	140	771001.7	1.2				ug/L	25	Standard
>	**Tb**	159	1033151.8	0.5				ug/L	939701	Standard
	Ho	165	11344.2	1.5				ug/L	10	Standard
	Tl	203	220759.0	0.5	**24.6088**	0.113	0.5	ug/L	4	Standard
	Tl	205	203485.6	0.4	**26.1371**	0.140	0.5	ug/L	2	Standard
	Pb	206	518067.3	0.6	**89.0511**	0.447	0.5	ug/L	240	Standard
	Pb	207	415032.4	0.7	**80.2896**	0.537	0.7	ug/L	198	Standard
	Pb	208	1813547.0	1.2	**88.8061**	1.200	1.4	ug/L	883	Standard
	U	238	196913.8	1.4	**26.2850**	0.405	1.5	ug/L	3	Standard
>	**Bi**	209	570191.4	0.2				ug/L	523984	Standard

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Na	23	6.7	43.3	**63.0881**	26.284	41.7	mg/L	0	Standard
Mg	24	761.7	8.6	**0.7448**	0.057	7.6	mg/L	37	Standard
K	39	698.3	9.3	**1.1574**	0.103	8.9	mg/L	38	Standard
Ca	43	761.7	2.5	**37.1357**	0.619	1.7	mg/L	10	Standard
Fe	54	13661.1	2.3	**9.4129**	0.352	3.7	mg/L	179	Standard
Fe	57	3945.5	4.9	**9.9839**	0.617	6.2	mg/L	335	Standard
> **Sc-1**	45	74033.8	1.5				mg/L	61029	Standard
Cl	35	29672.4	3.3				ug/L	20195	Standard
Kr	83	0.7	86.6				ug/L	4	Standard
Br	81	5120.9	2.8				ug/L	1547	Standard
P	31	21184.8	2.3				ug/L	15286	Standard
S	34	2585.2	3.6				ug/L	1572	Standard
Sr	88	278.3	7.3				ug/L	73	Standard
C	12	453.3	23.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	180.0	28.9				mg/L	3	Standard
Dy	164	18295.9	3.4				mg/L	6	Standard
Ho-1	165	11344.2	1.5				mg/L	10	Standard
Er	166	10350.2	2.2				mg/L	13	Standard
I	127	155575.8	4.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		115.881	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.661	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.635
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.818
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606120604SD WG574192-05
Sample Date/Time: Wednesday, June 29, 2016 18:22:18
Number of Replicates: 3
Autosampler Position: 242
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88318.4	2.5				ug/L	74699	Standard
	Be	9	28910.9	0.8	**27.7911**	0.552	2.0	ug/L	8	Standard
	Al	27	11678142.6	0.8	**67.2186**	1.350	2.0	ug/L	1493	Standard
	Sc	45	75929.8	1.2				ug/L	61029	Standard
	Ti	47	15202.6	0.9	**34.3685**	0.367	1.1	ug/L	35	Standard
	V	51	408247.6	0.9	**46.2682**	0.632	1.4	ug/L	1435	Standard
	Cr	52	411599.1	1.0	**46.7151**	0.586	1.3	ug/L	7635	Standard
	Cr	53	50226.5	2.4	**46.3783**	0.843	1.8	ug/L	363	Standard
	Mn	55	4064951.2	0.1	**501.7134**	5.151	1.0	ug/L	747	Standard
	Co	59	242783.8	0.7	**31.5662**	0.473	1.5	ug/L	234	Standard
	Ni	60	92537.7	0.8	**42.3583**	0.203	0.5	ug/L	215	Standard
	Cu	65	135365.1	1.4	**62.4070**	0.241	0.4	ug/L	104	Standard
	Zn	66	1025151.4	1.0	**806.2133**	6.015	0.7	ug/L	363	Standard
>	**Ge**	72	576071.4	1.0				ug/L	495142	Standard
	As	75	35892.9	0.1	**27.6040**	0.298	1.1	ug/L	-50	Standard
	Se	82	2975.5	0.8	**23.1647**	0.155	0.7	ug/L	14	Standard
	Se-1	77	2118.1	0.7	**24.3051**	0.149	0.6	ug/L	42	Standard
>	**Ga**	71	16053.5	1.5				mg/L	42	Standard
	Rb	85	192660.5	0.7				ug/L	17	Standard
	Y	89	633758.5	0.9				ug/L	417098	Standard
>	**Rh**	103	91.7	22.7				ug/L	13	Standard
	Mo	98	2104.9	2.7	**0.6926**	0.023	3.3	ug/L	11	Standard
	Ag	107	176068.8	0.4	**23.8725**	0.248	1.0	ug/L	68	Standard
	Cd	111	64701.8	0.7	**27.3512**	0.177	0.6	mg/L	2	Standard
	Cd	114	157399.0	1.1	**27.1310**	0.176	0.6	ug/L	12	Standard
>	**In**	115	664480.0	1.2				ug/L	587441	Standard
	Sn	118	2676.9	2.8	**0.3105**	0.015	4.8	ug/L	497	Standard
	Sb	123	10363.1	2.2	**1.9584**	0.055	2.8	ug/L	78	Standard
	Ba	135	439420.6	0.3	**189.8023**	2.264	1.2	ug/L	24	Standard
	Ce	140	842883.5	1.0				ug/L	25	Standard
>	**Tb**	159	1049787.1	1.3				ug/L	939701	Standard
	Ho	165	12211.6	1.7				ug/L	10	Standard
	Tl	203	222058.4	0.3	**24.4396**	0.316	1.3	ug/L	4	Standard
	Tl	205	202828.8	1.6	**25.7185**	0.095	0.4	ug/L	2	Standard
	Pb	206	574235.7	0.3	**97.4667**	1.839	1.9	ug/L	240	Standard
	Pb	207	457211.7	0.6	**87.3408**	1.861	2.1	ug/L	198	Standard
	Pb	208	1979847.3	0.4	**95.7233**	1.171	1.2	ug/L	883	Standard
	U	238	197274.4	0.9	**26.0018**	0.641	2.5	ug/L	3	Standard
>	**Bi**	209	577596.9	1.6				ug/L	523984	Standard

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Na	23	5.0	0.0	**46.3267**	0.533	1.2	mg/L	0	Standard
Mg	24	961.7	5.5	**0.9325**	0.047	5.0	mg/L	37	Standard
K	39	738.4	15.4	**1.1991**	0.216	18.0	mg/L	38	Standard
Ca	43	858.4	11.4	**41.0973**	5.443	13.2	mg/L	10	Standard
Fe	54	16143.5	2.3	**10.8618**	0.122	1.1	mg/L	179	Standard
Fe	57	4519.0	2.4	**11.2744**	0.427	3.8	mg/L	335	Standard
> **Sc-1**	45	75929.8	1.2				mg/L	61029	Standard
Cl	35	29136.0	1.4				ug/L	20195	Standard
Kr	83	1.0	0.0				ug/L	4	Standard
Br	81	5384.3	8.1				ug/L	1547	Standard
P	31	20994.5	3.6				ug/L	15286	Standard
S	34	2526.9	1.1				ug/L	1572	Standard
Sr	88	265.0	8.2				ug/L	73	Standard
C	12	466.7	15.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	193.3	16.6				mg/L	3	Standard
Dy	164	19678.1	2.3				mg/L	6	Standard
Ho-1	165	12211.6	1.7				mg/L	10	Standard
Er	166	11454.3	2.8				mg/L	13	Standard
I	127	133210.9	5.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		118.233	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		116.345	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.114
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.232
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

Sample ID: L1606120604SD WG574192-05
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Method 6020 - Summary Report

Sample ID: L1606120605
Sample Date/Time: Wednesday, June 29, 2016 18:25:30
Number of Replicates: 3
Autosampler Position: 243
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	90694.1	2.2				ug/L	74699	Standard
	Be	9	526.7	6.5	**0.5004**	0.031	6.1	ug/L	8	Standard
	Al	27	8237088.6	1.8	**46.1607**	0.953	2.1	ug/L	1493	Standard
	Sc	45	76241.4	2.3				ug/L	61029	Standard
	Ti	47	9939.3	1.0	**23.0163**	0.554	2.4	ug/L	35	Standard
	V	51	146708.3	2.5	**16.9369**	0.672	4.0	ug/L	1435	Standard
	Cr	52	214286.2	1.5	**24.4749**	0.700	2.9	ug/L	7635	Standard
	Cr	53	25651.7	1.8	**24.1415**	0.427	1.8	ug/L	363	Standard
	Mn	55	2369893.5	2.4	**300.0787**	12.076	4.0	ug/L	747	Standard
	Co	59	42091.1	2.2	**5.5844**	0.210	3.8	ug/L	234	Standard
	Ni	60	29674.7	1.4	**13.8532**	0.382	2.8	ug/L	215	Standard
	Cu	65	80108.6	1.5	**37.8555**	1.188	3.1	ug/L	104	Standard
	Zn	66	402296.4	1.3	**324.3434**	9.485	2.9	ug/L	363	Standard
>	**Ge**	72	561626.1	1.7				ug/L	495142	Standard
	As	75	4613.8	0.6	**3.6915**	0.048	1.3	ug/L	-50	Standard
	Se	82	73.3	11.4	**0.4501**	0.057	12.7	ug/L	14	Standard
	Se-1	77	107.3	9.4	**0.6736**	0.125	18.5	ug/L	42	Standard
>	**Ga**	71	10595.4	4.5				mg/L	42	Standard
	Rb	85	117987.7	1.5				ug/L	17	Standard
	Y	89	650208.5	0.3				ug/L	417098	Standard
>	**Rh**	103	85.0	38.6				ug/L	13	Standard
	Mo	98	1074.4	2.1	**0.3404**	0.008	2.3	ug/L	11	Standard
	Ag	107	1521.7	2.8	**0.1876**	0.005	2.8	ug/L	68	Standard
	Cd	111	14943.9	2.9	**6.1278**	0.124	2.0	mg/L	2	Standard
	Cd	114	36335.4	1.3	**6.0807**	0.042	0.7	ug/L	12	Standard
>	**In**	115	684218.1	1.0				ug/L	587441	Standard
	Sn	118	4600.7	0.6	**0.5815**	0.007	1.3	ug/L	497	Standard
	Sb	123	346.8	6.2	**0.0596**	0.003	5.7	ug/L	78	Standard
	Ba	135	305952.3	0.8	**128.3272**	1.108	0.9	ug/L	24	Standard
	Ce	140	926252.0	0.8				ug/L	25	Standard
>	**Tb**	159	1067500.9	0.3				ug/L	939701	Standard
	Ho	165	12695.3	1.4				ug/L	10	Standard
	Tl	203	780.0	9.1	**0.0850**	0.009	10.5	ug/L	4	Standard
	Tl	205	700.0	0.7	**0.0898**	0.001	1.1	ug/L	2	Standard
	Pb	206	317389.9	0.7	**54.3657**	1.082	2.0	ug/L	240	Standard
	Pb	207	249270.6	1.1	**48.0507**	1.100	2.3	ug/L	198	Standard
	Pb	208	1104553.9	2.1	**53.8955**	1.488	2.8	ug/L	883	Standard
	U	238	5524.0	2.1	**0.7309**	0.022	3.0	ug/L	3	Standard
>	**Bi**	209	572007.3	1.4				ug/L	523984	Standard

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Na	23	8.3	34.6	**77.0658**	27.245	35.4	mg/L	0	Standard
Mg	24	545.0	4.9	**0.4986**	0.038	7.7	mg/L	37	Standard
K	39	528.3	15.8	**0.8195**	0.134	16.4	mg/L	38	Standard
Ca	43	966.7	6.0	**46.3930**	3.592	7.7	mg/L	10	Standard
Fe	54	12851.8	4.3	**8.5861**	0.399	4.6	mg/L	179	Standard
Fe	57	3822.2	7.3	**9.3402**	1.007	10.8	mg/L	335	Standard
> **Sc-1**	45	76241.4	2.3				mg/L	61029	Standard
Cl	35	29717.8	2.2				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	3207.0	9.1				ug/L	1547	Standard
P	31	20467.1	0.8				ug/L	15286	Standard
S	34	2505.2	3.0				ug/L	1572	Standard
Sr	88	263.3	8.6				ug/L	73	Standard
C	12	196.7	5.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	123.3	46.8				mg/L	3	Standard
Dy	164	19864.2	0.8				mg/L	6	Standard
Ho-1	165	12695.3	1.4				mg/L	10	Standard
Er	166	11821.3	4.6				mg/L	13	Standard
I	127	41200.9	0.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		121.413	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		113.427	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		116.474
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.165
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606120605PS WG574690-01
Sample Date/Time: Wednesday, June 29, 2016 18:28:41
Number of Replicates: 3
Autosampler Position: 244
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	85371.5	1.3				ug/L	74699	Standard
	Be	9	57838.5	0.7	**57.4989**	0.995	1.7	ug/L	8	Standard
	Al	27	8190235.3	0.9	**48.7593**	1.052	2.2	ug/L	1493	Standard
	Sc	45	74174.5	1.1				ug/L	61029	Standard
	Ti	47	9905.9	1.1	**22.7993**	0.140	0.6	ug/L	35	Standard
	V	51	615589.0	1.1	**71.2575**	1.604	2.3	ug/L	1435	Standard
	Cr	52	662720.1	2.0	**77.3523**	0.990	1.3	ug/L	7635	Standard
	Cr	53	81212.1	1.6	**76.6855**	0.228	0.3	ug/L	363	Standard
	Mn	55	2850355.8	1.2	**358.7372**	7.553	2.1	ug/L	747	Standard
	Co	59	453959.9	1.8	**60.2304**	1.747	2.9	ug/L	234	Standard
	Ni	60	139316.4	1.9	**65.0924**	0.607	0.9	ug/L	215	Standard
	Cu	65	189057.7	1.5	**88.9267**	0.405	0.5	ug/L	104	Standard
	Zn	66	476114.4	1.0	**381.6097**	5.307	1.4	ug/L	363	Standard
>	Ge	72	564919.1	1.3				ug/L	495142	Standard
	As	75	71672.0	0.5	**56.1469**	0.522	0.9	ug/L	-50	Standard
	Se	82	6681.0	0.4	**53.2203**	0.482	0.9	ug/L	14	Standard
	Se-1	77	4575.0	1.8	**54.2855**	1.161	2.1	ug/L	42	Standard
>	Ga	71	10925.6	2.3				mg/L	42	Standard
	Rb	85	119128.2	1.4				ug/L	17	Standard
	Y	89	658944.3	2.5				ug/L	417098	Standard
>	Rh	103	98.3	24.0				ug/L	13	Standard
	Mo	98	1073.3	2.3	**0.3534**	0.015	4.1	ug/L	11	Standard
	Ag	107	364831.9	0.7	**49.9049**	1.416	2.8	ug/L	68	Standard
	Cd	111	132655.1	1.4	**56.5569**	1.029	1.8	mg/L	2	Standard
	Cd	114	321468.3	0.7	**55.8946**	1.680	3.0	ug/L	12	Standard
>	In	115	659074.5	2.5				ug/L	587441	Standard
	Sn	118	1318.4	1.7	**0.1066**	0.008	7.5	ug/L	497	Standard
	Sb	123	258576.1	0.4	**49.3799**	1.200	2.4	ug/L	78	Standard
	Ba	135	409891.1	0.5	**178.5483**	4.068	2.3	ug/L	24	Standard
	Ce	140	929186.0	0.4				ug/L	25	Standard
>	Tb	159	1023915.1	1.8				ug/L	939701	Standard
	Ho	165	12935.5	3.1				ug/L	10	Standard
	Tl	203	455240.8	0.8	**52.4471**	0.837	1.6	ug/L	4	Standard
	Tl	205	420642.4	0.2	**55.8346**	0.392	0.7	ug/L	2	Standard
	Pb	206	614831.5	0.9	**109.2366**	1.843	1.7	ug/L	240	Standard
	Pb	207	503849.3	0.9	**100.7500**	1.617	1.6	ug/L	198	Standard
	Pb	208	2170185.0	1.2	**109.8441**	2.227	2.0	ug/L	883	Standard
	U	238	393858.5	1.0	**54.3381**	1.023	1.9	ug/L	3	Standard
>	Bi	209	551780.7	0.8				ug/L	523984	Standard

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Na	23	10.0	86.6	**95.2332**	83.153	87.3	mg/L	0	Standard
Mg	24	453.3	5.6	**0.4164**	0.027	6.4	mg/L	37	Standard
K	39	480.0	7.5	**0.7589**	0.067	8.8	mg/L	38	Standard
Ca	43	940.0	10.6	**46.3668**	5.650	12.2	mg/L	10	Standard
Fe	54	12349.5	1.2	**8.4763**	0.023	0.3	mg/L	179	Standard
Fe	57	3702.1	2.7	**9.2777**	0.167	1.8	mg/L	335	Standard
Sc-1	45	74174.5	1.1				mg/L	61029	Standard
Cl	35	30087.8	0.9				ug/L	20195	Standard
Kr	83	2.7	43.3				ug/L	4	Standard
Br	81	3260.4	2.1				ug/L	1547	Standard
P	31	20787.6	1.7				ug/L	15286	Standard
S	34	2500.2	2.8				ug/L	1572	Standard
Sr	88	245.0	12.4				ug/L	73	Standard
C	12	160.0	54.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	103.3	22.3				mg/L	3	Standard
Dy	164	20338.3	3.5				mg/L	6	Standard
Ho-1	165	12935.5	3.1				mg/L	10	Standard
Er	166	11817.9	3.9				mg/L	13	Standard
I	127	39775.5	3.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		114.288	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		114.092	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	112.194
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	105.305
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1606120605SDL WG574690-02
Sample Date/Time: Wednesday, June 29, 2016 18:31:53
Number of Replicates: 3
Autosampler Position: 245
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	84476.5	1.1				ug/L	74699	Standard
	Be	9	178.3	18.7	**0.1869**	0.035	18.6	ug/L	8	Standard
	Al	27	1736036.7	3.1	**10.4319**	0.283	2.7	ug/L	1493	Standard
	Sc	45	72059.3	1.7				ug/L	61029	Standard
	Ti	47	2123.5	6.6	**4.6249**	0.308	6.7	ug/L	35	Standard
	V	51	32734.7	3.8	**3.4666**	0.135	3.9	ug/L	1435	Standard
	Cr	52	51911.1	1.7	**4.8949**	0.101	2.1	ug/L	7635	Standard
	Cr	53	5774.4	3.1	**4.9492**	0.156	3.2	ug/L	363	Standard
	Mn	55	492914.2	2.0	**59.6732**	1.219	2.0	ug/L	747	Standard
	Co	59	9193.8	6.0	**1.1391**	0.070	6.1	ug/L	234	Standard
	Ni	60	6665.5	3.0	**2.8840**	0.083	2.9	ug/L	215	Standard
	Cu	65	17774.1	0.7	**7.9654**	0.025	0.3	ug/L	104	Standard
	Zn	66	87339.7	0.8	**67.1049**	0.286	0.4	ug/L	363	Standard
>	Ge	72	585998.9	0.5				ug/L	495142	Standard
	As	75	970.2	5.1	**0.7914**	0.035	4.4	ug/L	-50	Standard
	Se	82	25.1	35.6	**0.0547**	0.068	124.2	ug/L	14	Standard
	Se-1	77	82.0	5.6	**0.3262**	0.050	15.4	ug/L	42	Standard
>	Ga	71	2373.5	5.4				mg/L	42	Standard
	Rb	85	23598.4	1.4				ug/L	17	Standard
	Y	89	515408.4	0.8				ug/L	417098	Standard
>	Rh	103	21.7	35.3				ug/L	13	Standard
	Mo	98	369.9	37.1	**0.1174**	0.046	39.0	ug/L	11	Standard
	Ag	107	699.0	38.5	**0.0822**	0.037	44.7	ug/L	68	Standard
	Cd	111	3080.1	3.0	**1.2985**	0.040	3.1	mg/L	2	Standard
	Cd	114	7389.1	5.7	**1.2756**	0.072	5.6	ug/L	12	Standard
>	In	115	662403.8	0.2				ug/L	587441	Standard
	Sn	118	660.0	13.5	**0.0055**	0.013	245.5	ug/L	497	Standard
	Sb	123	2141.2	12.8	**0.4025**	0.052	13.0	ug/L	78	Standard
	Ba	135	63716.0	0.4	**27.5914**	0.127	0.5	ug/L	24	Standard
	Ce	140	193219.3	1.3				ug/L	25	Standard
>	Tb	159	1027182.9	1.4				ug/L	939701	Standard
	Ho	165	2611.9	6.2				ug/L	10	Standard
	Tl	203	353.7	43.7	**0.0374**	0.017	46.4	ug/L	4	Standard
	Tl	205	421.7	67.1	**0.0541**	0.036	67.5	ug/L	2	Standard
	Pb	206	67035.7	2.8	**11.3788**	0.381	3.4	ug/L	240	Standard
	Pb	207	53097.6	2.6	**10.1377**	0.324	3.2	ug/L	198	Standard
	Pb	208	229986.8	1.7	**11.1165**	0.256	2.3	ug/L	883	Standard
	U	238	1351.4	18.8	**0.1748**	0.035	19.9	ug/L	3	Standard
>	Bi	209	574350.4	0.6				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	130.0	13.3	**0.0772**	0.020	26.0	mg/L	37	Standard
K	39	128.3	6.0	**0.1263**	0.018	14.2	mg/L	38	Standard
Ca	43	216.7	23.7	**9.0911**	2.889	31.8	mg/L	10	Standard
Fe	54	2661.6	0.9	**1.7733**	0.039	2.2	mg/L	179	Standard
Fe	57	965.0	5.3	**1.7027**	0.101	5.9	mg/L	335	Standard
> **Sc-1**	45	72059.3	1.7				mg/L	61029	Standard
Cl	35	30260.9	1.5				ug/L	20195	Standard
Kr	83	0.3	173.2				ug/L	4	Standard
Br	81	2210.2	10.2				ug/L	1547	Standard
P	31	20780.9	2.4				ug/L	15286	Standard
S	34	2430.2	2.3				ug/L	1572	Standard
Sr	88	83.3	13.9				ug/L	73	Standard
C	12	56.7	40.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	17.3				mg/L	3	Standard
Dy	164	4484.9	5.6				mg/L	6	Standard
Ho-1	165	2611.9	6.2				mg/L	10	Standard
Er	166	2556.9	13.6				mg/L	13	Standard
I	127	10483.6	6.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.090	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		118.350	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.761
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.612
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606120605SDL WG574690-02
Sample Date/Time: Wednesday, June 29, 2016 18:35:04
Number of Replicates: 3
Autosampler Position: 246
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83239.9	3.6				ug/L	74699	Standard
	Be	9	38.3	32.8	**0.0467**	0.013	27.9	ug/L	8	Standard
	Al	27	353337.7	1.0	**2.1460**	0.078	3.6	ug/L	1493	Standard
	Sc	45	70061.7	2.7				ug/L	61029	Standard
	Ti	47	444.3	5.4	**0.9019**	0.065	7.2	ug/L	35	Standard
	V	51	7638.3	1.2	**0.6761**	0.009	1.3	ug/L	1435	Standard
	Cr	52	17382.6	1.1	**0.9981**	0.034	3.5	ug/L	7635	Standard
	Cr	53	1533.4	2.6	**1.0999**	0.009	0.8	ug/L	363	Standard
	Mn	55	100723.4	1.5	**12.3208**	0.101	0.8	ug/L	747	Standard
	Co	59	1988.5	0.8	**0.2223**	0.008	3.5	ug/L	234	Standard
	Ni	60	1493.7	0.8	**0.5638**	0.012	2.1	ug/L	215	Standard
	Cu	65	3674.4	3.3	**1.5981**	0.060	3.8	ug/L	104	Standard
	Zn	66	19238.9	1.8	**14.7255**	0.173	1.2	ug/L	363	Standard
>	**Ge**	72	574541.2	2.2				ug/L	495142	Standard
	As	75	156.2	2.1	**0.1799**	0.005	2.7	ug/L	-50	Standard
	Se	82	23.9	29.5	**0.0491**	0.053	108.8	ug/L	14	Standard
	Se-1	77	58.0	21.2	**0.0603**	0.130	215.1	ug/L	42	Standard
>	**Ga**	71	518.3	4.3				mg/L	42	Standard
	Rb	85	4807.4	2.9				ug/L	17	Standard
	Y	89	501442.7	1.9				ug/L	417098	Standard
>	**Rh**	103	25.0	20.0				ug/L	13	Standard
	Mo	98	84.6	15.3	**0.0217**	0.004	18.8	ug/L	11	Standard
	Ag	107	254.3	9.6	**0.0208**	0.003	15.4	ug/L	68	Standard
	Cd	111	620.8	2.0	**0.2487**	0.004	1.5	mg/L	2	Standard
	Cd	114	1552.7	9.2	**0.2596**	0.025	9.8	ug/L	12	Standard
>	**In**	115	679737.8	0.5				ug/L	587441	Standard
	Sn	118	525.0	13.7	**-0.0171**	0.010	60.3	ug/L	497	Standard
	Sb	123	593.1	26.9	**0.1056**	0.030	28.3	ug/L	78	Standard
	Ba	135	12802.7	1.3	**5.3901**	0.099	1.8	ug/L	24	Standard
	Ce	140	39412.9	3.5				ug/L	25	Standard
>	**Tb**	159	1032176.9	1.0				ug/L	939701	Standard
	Ho	165	550.0	19.7				ug/L	10	Standard
	Tl	203	66.7	15.4	**0.0056**	0.001	20.8	ug/L	4	Standard
	Tl	205	78.3	41.0	**0.0102**	0.004	40.5	ug/L	2	Standard
	Pb	206	13522.4	0.6	**2.2309**	0.023	1.0	ug/L	240	Standard
	Pb	207	10801.2	2.0	**1.9994**	0.022	1.1	ug/L	198	Standard
	Pb	208	47468.1	0.8	**2.2283**	0.042	1.9	ug/L	883	Standard
	U	238	258.3	8.4	**0.0297**	0.002	8.2	ug/L	3	Standard
>	**Bi**	209	576211.7	1.3				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	46.7	16.4	**-0.0125**	0.009	74.1	mg/L	37	Standard
K	39	58.3	35.7	**-0.0022**	0.039	1787.9	mg/L	38	Standard
Ca	43	95.0	32.0	**2.7333**	1.777	65.0	mg/L	10	Standard
Fe	54	697.3	2.7	**0.3769**	0.020	5.3	mg/L	179	Standard
Fe	57	380.0	7.9	**0.0519**	0.104	201.0	mg/L	335	Standard
> **Sc-1**	45	70061.7	2.7				mg/L	61029	Standard
Cl	35	30787.9	1.4				ug/L	20195	Standard
Kr	83	2.3	107.9				ug/L	4	Standard
Br	81	2130.1	1.6				ug/L	1547	Standard
P	31	20966.2	4.2				ug/L	15286	Standard
S	34	2485.2	3.8				ug/L	1572	Standard
Sr	88	90.0	33.3				ug/L	73	Standard
C	12	40.0	66.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	3	Standard
Dy	164	970.4	12.1				mg/L	6	Standard
Ho-1	165	550.0	19.7				mg/L	10	Standard
Er	166	480.0	14.6				mg/L	13	Standard
I	127	3620.4	13.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.434	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		116.036	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		115.712
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.967
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 18:38:18
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	82768.9	2.2				ug/L	74699	Standard
	Be	9	55586.8	2.9	**56.9851**	0.437	0.8	ug/L	8	Standard
	Al	27	8619622.5	1.7	**52.9268**	0.666	1.3	ug/L	1493	Standard
	Sc	45	69535.9	1.6				ug/L	61029	Standard
	Ti	47	45959.0	2.5	**108.3957**	2.700	2.5	ug/L	35	Standard
	V	51	452339.2	1.9	**53.3985**	1.095	2.1	ug/L	1435	Standard
	Cr	52	452917.5	1.6	**53.6621**	0.813	1.5	ug/L	7635	Standard
	Cr	53	54972.9	2.4	**52.8966**	1.385	2.6	ug/L	363	Standard
	Mn	55	414134.0	1.2	**53.0785**	0.725	1.4	ug/L	747	Standard
	Co	59	411024.9	0.5	**55.6590**	0.257	0.5	ug/L	234	Standard
	Ni	60	111206.0	1.9	**53.0242**	0.984	1.9	ug/L	215	Standard
	Cu	65	110023.1	1.1	**52.7940**	0.716	1.4	ug/L	104	Standard
	Zn	66	64745.4	0.8	**52.5833**	0.259	0.5	ug/L	363	Standard
>	Ge	72	553341.4	0.3				ug/L	495142	Standard
	As	75	65551.1	0.4	**52.4265**	0.227	0.4	ug/L	-50	Standard
	Se	82	6664.4	1.0	**54.1963**	0.405	0.7	ug/L	14	Standard
	Se-1	77	4501.0	1.7	**54.5222**	0.959	1.8	ug/L	42	Standard
>	Ga	71	63.3	38.9				mg/L	42	Standard
	Rb	85	948.4	4.5				ug/L	17	Standard
	Y	89	490323.1	1.2				ug/L	417098	Standard
>	Rh	103	18.3	41.7				ug/L	13	Standard
	Mo	98	304786.5	0.3	**99.6729**	0.315	0.3	ug/L	11	Standard
	Ag	107	371315.6	1.3	**49.6520**	0.733	1.5	ug/L	68	Standard
	Cd	111	119443.2	1.0	**49.7891**	0.404	0.8	mg/L	2	Standard
	Cd	114	290803.0	0.5	**49.4253**	0.213	0.4	ug/L	12	Standard
>	In	115	673907.8	0.2				ug/L	587441	Standard
	Sn	118	339134.4	2.1	**50.5123**	1.079	2.1	ug/L	497	Standard
	Sb	123	262026.6	0.8	**48.9184**	0.455	0.9	ug/L	78	Standard
	Ba	135	111822.5	0.7	**47.6088**	0.434	0.9	ug/L	24	Standard
	Ce	140	206.7	14.6				ug/L	25	Standard
>	Tb	159	1024624.4	0.5				ug/L	939701	Standard
	Ho	165	8.3	34.6				ug/L	10	Standard
	Tl	203	457896.5	0.3	**51.5737**	0.953	1.8	ug/L	4	Standard
	Tl	205	420019.2	1.0	**54.5041**	0.795	1.5	ug/L	2	Standard
	Pb	206	290158.6	1.2	**50.3552**	0.541	1.1	ug/L	240	Standard
	Pb	207	256755.7	1.2	**50.1530**	0.630	1.3	ug/L	198	Standard
	Pb	208	1071548.3	0.3	**52.9883**	1.261	2.4	ug/L	883	Standard
	U	238	389229.1	0.1	**52.5000**	1.135	2.2	ug/L	3	Standard
>	Bi	209	564495.9	2.1				ug/L	523984	Standard

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Na	23	1.7	173.2	**16.7614**	29.023	173.2	mg/L	0	Standard
Mg	24	4642.4	0.2	**5.1955**	0.100	1.9	mg/L	37	Standard
K	39	2168.5	2.0	**4.0939**	0.144	3.5	mg/L	38	Standard
Ca	43	86.7	35.3	**2.2659**	1.624	71.7	mg/L	10	Standard
Fe	54	7113.4	2.2	**5.1545**	0.030	0.6	mg/L	179	Standard
Fe	57	2041.8	2.3	**5.0193**	0.241	4.8	mg/L	335	Standard
> **Sc-1**	45	69535.9	1.6				mg/L	61029	Standard
Cl	35	30041.8	1.0				ug/L	20195	Standard
Kr	83	1.3	86.6				ug/L	4	Standard
Br	81	1843.4	4.1				ug/L	1547	Standard
P	31	21683.8	2.5				ug/L	15286	Standard
S	34	2823.6	5.0				ug/L	1572	Standard
Sr	88	53.3	39.0				ug/L	73	Standard
C	12	53.3	78.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	12.9	179.7				mg/L	6	Standard
Ho-1	165	8.3	34.6				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	2093.5	24.6				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	113.970		
	Al	27	105.854		
	Sc	45			
	Ti	47	108.396		
	V	51	106.797		
	Cr	52	107.324		
	Cr	53			
	Mn	55	106.157		
	Co	59	111.318		
	Ni	60	106.048		
	Cu	65	105.588		
	Zn	66	105.167		
>	Ge	72		111.754	
	As	75	104.853		
	Se	82	108.393		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	99.673		
Ag	107	99.304		
Cd	111	99.578		
Cd	114			
In	115		114.719	
Sn	118	101.025		
Sb	123	97.837		
Ba	135	95.218		
Ce	140			
Tb	159			
Ho	165			
Tl	203	103.147		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.977		
U	238	105.000		
Bi	209		107.731	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Co	59	

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 18:41:29
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83048.8	2.8				ug/L	74699	Standard
	Be	9	23.3	68.9	**0.0313**	0.016	52.2	ug/L	8	Standard
	Al	27	3078.7	25.1	**0.0054**	0.004	78.6	ug/L	1493	Standard
	Sc	45	71367.7	1.6				ug/L	61029	Standard
	Ti	47	35.3	33.5	**-0.0277**	0.025	91.3	ug/L	35	Standard
	V	51	1419.9	5.2	**-0.0309**	0.006	18.5	ug/L	1435	Standard
	Cr	52	7844.0	0.2	**-0.0958**	0.021	21.7	ug/L	7635	Standard
	Cr	53	443.3	5.7	**0.0910**	0.034	37.3	ug/L	363	Standard
	Mn	55	990.7	12.0	**-0.0236**	0.012	50.6	ug/L	747	Standard
	Co	59	281.0	9.0	**-0.0000**	0.003	39793.0	ug/L	234	Standard
	Ni	60	196.7	7.3	**-0.0319**	0.005	14.4	ug/L	215	Standard
	Cu	65	145.3	12.4	**-0.0353**	0.007	21.2	ug/L	104	Standard
	Zn	66	464.0	9.4	**-0.0826**	0.026	32.0	ug/L	363	Standard
>	**Ge**	72	564975.6	2.4				ug/L	495142	Standard
	As	75	-39.3	63.0	**0.0286**	0.020	68.3	ug/L	-50	Standard
	Se	82	26.6	20.4	**0.0737**	0.038	51.8	ug/L	14	Standard
	Se-1	77	58.7	15.8	**0.0805**	0.100	124.7	ug/L	42	Standard
>	**Ga**	71	41.7	25.0				mg/L	42	Standard
	Rb	85	35.0	75.6				ug/L	17	Standard
	Y	89	486175.7	0.9				ug/L	417098	Standard
>	**Rh**	103	21.7	58.1				ug/L	13	Standard
	Mo	98	275.2	23.2	**0.0821**	0.020	24.6	ug/L	11	Standard
	Ag	107	144.3	16.7	**0.0059**	0.003	51.4	ug/L	68	Standard
	Cd	111	18.2	29.8	**-0.0005**	0.002	416.8	mg/L	2	Standard
	Cd	114	40.0	61.5	**0.0045**	0.004	89.7	ug/L	12	Standard
>	**In**	115	690622.1	0.6				ug/L	587441	Standard
	Sn	118	806.7	10.4	**0.0228**	0.013	56.6	ug/L	497	Standard
	Sb	123	553.4	29.9	**0.0967**	0.030	31.3	ug/L	78	Standard
	Ba	135	70.0	42.9	**0.0130**	0.012	94.6	ug/L	24	Standard
	Ce	140	61.7	54.0				ug/L	25	Standard
>	**Tb**	159	1047202.6	1.6				ug/L	939701	Standard
	Ho	165	16.7	34.6				ug/L	10	Standard
	Tl	203	75.3	48.5	**0.0063**	0.004	58.9	ug/L	4	Standard
	Tl	205	73.3	27.6	**0.0093**	0.002	26.3	ug/L	2	Standard
	Pb	206	333.0	14.3	**-0.0156**	0.007	42.7	ug/L	240	Standard
	Pb	207	293.0	14.2	**-0.0150**	0.006	43.1	ug/L	198	Standard
	Pb	208	1234.7	14.5	**-0.0154**	0.007	47.2	ug/L	883	Standard
	U	238	61.3	33.0	**0.0035**	0.002	69.2	ug/L	3	Standard
>	**Bi**	209	587080.9	2.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	38.3	15.1	**-0.0227**	0.007	30.4	mg/L	37	Standard
K	39	33.3	22.9	**-0.0512**	0.014	27.0	mg/L	38	Standard
Ca	43	28.3	50.9	**-0.9868**	0.802	81.3	mg/L	10	Standard
Fe	54	132.7	11.9	**-0.0421**	0.011	25.9	mg/L	179	Standard
Fe	57	280.0	10.7	**-0.2593**	0.100	38.4	mg/L	335	Standard
Sc-1	45	71367.7	1.6				mg/L	61029	Standard
Cl	35	29768.6	1.4				ug/L	20195	Standard
Kr	83	1.3	173.2				ug/L	4	Standard
Br	81	2106.8	7.7				ug/L	1547	Standard
P	31	21775.6	2.2				ug/L	15286	Standard
S	34	2523.5	3.0				ug/L	1572	Standard
Sr	88	70.0	49.5				ug/L	73	Standard
C	12	66.7	48.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	19.2	48.3				mg/L	6	Standard
Ho-1	165	16.7	34.6				mg/L	10	Standard
Er	166	16.7	91.7				mg/L	13	Standard
I	127	1905.1	33.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		114.104	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		117.564
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		112.042
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
Report Date/Time: Wednesday, June 29, 2016 18:43:46
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Method 6020 - Summary Report

Sample ID: L1606120701
Sample Date/Time: Wednesday, June 29, 2016 18:44:42
Number of Replicates: 3
Autosampler Position: 247
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82529.2	0.7				ug/L	74699	Standard
	Be	9	748.4	11.5	**0.7773**	0.092	11.9	ug/L	8	Standard
	Al	27	5186124.5	1.1	**31.9282**	0.368	1.2	ug/L	1493	Standard
	Sc	45	73214.8	0.3				ug/L	61029	Standard
	Ti	47	12465.8	1.5	**28.7779**	0.271	0.9	ug/L	35	Standard
	V	51	254152.3	1.7	**29.3595**	0.344	1.2	ug/L	1435	Standard
	Cr	52	145419.2	1.0	**16.2106**	0.127	0.8	ug/L	7635	Standard
	Cr	53	17483.4	2.8	**16.2818**	0.208	1.3	ug/L	363	Standard
	Mn	55	3993207.5	1.0	**503.6001**	3.344	0.7	ug/L	747	Standard
	Co	59	68748.0	1.0	**9.1067**	0.083	0.9	ug/L	234	Standard
	Ni	60	27938.1	3.3	**12.9787**	0.214	1.6	ug/L	215	Standard
	Cu	65	24664.7	1.5	**11.5352**	0.050	0.4	ug/L	104	Standard
	Zn	66	148101.8	1.7	**118.6204**	0.288	0.2	ug/L	363	Standard
>	**Ge**	72	563786.2	1.7				ug/L	495142	Standard
	As	75	6453.5	1.8	**5.1196**	0.031	0.6	ug/L	-50	Standard
	Se	82	62.5	2.1	**0.3624**	0.012	3.2	ug/L	14	Standard
	Se-1	77	114.0	16.7	**0.7504**	0.247	32.9	ug/L	42	Standard
>	**Ga**	71	11409.3	2.4				mg/L	42	Standard
	Rb	85	132848.2	0.6				ug/L	17	Standard
	Y	89	719521.7	0.4				ug/L	417098	Standard
>	**Rh**	103	43.3	43.7				ug/L	13	Standard
	Mo	98	809.7	3.4	**0.2640**	0.011	4.2	ug/L	11	Standard
	Ag	107	5298.9	1.5	**0.7088**	0.004	0.5	ug/L	68	Standard
	Cd	111	3980.4	2.6	**1.6822**	0.055	3.3	mg/L	2	Standard
	Cd	114	9713.7	1.4	**1.6793**	0.030	1.8	ug/L	12	Standard
>	**In**	115	661793.4	1.1				ug/L	587441	Standard
	Sn	118	911.7	2.8	**0.0439**	0.005	10.9	ug/L	497	Standard
	Sb	123	350.1	17.1	**0.0624**	0.012	19.0	ug/L	78	Standard
	Ba	135	341983.5	0.6	**148.3035**	0.748	0.5	ug/L	24	Standard
	Ce	140	2710163.1	0.4				ug/L	25	Standard
>	**Tb**	159	1034801.7	0.1				ug/L	939701	Standard
	Ho	165	19319.0	1.7				ug/L	10	Standard
	Tl	203	872.7	2.5	**0.0967**	0.002	2.5	ug/L	4	Standard
	Tl	205	843.4	5.5	**0.1098**	0.006	5.6	ug/L	2	Standard
	Pb	206	283131.4	1.0	**49.2257**	0.472	1.0	ug/L	240	Standard
	Pb	207	230315.5	1.3	**45.0642**	0.519	1.2	ug/L	198	Standard
	Pb	208	999318.0	0.9	**49.4947**	0.507	1.0	ug/L	883	Standard
	U	238	4899.8	1.7	**0.6576**	0.010	1.6	ug/L	3	Standard
>	**Bi**	209	563366.5	0.2				ug/L	523984	Standard

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Na	23	5.0	0.0	**48.0405**	0.159	0.3	mg/L	0	Standard
Mg	24	875.0	7.7	**0.8766**	0.075	8.6	mg/L	37	Standard
K	39	536.7	5.1	**0.8747**	0.054	6.2	mg/L	38	Standard
Ca	43	571.7	16.7	**27.5670**	4.925	17.9	mg/L	10	Standard
Fe	54	14788.8	1.9	**10.3138**	0.228	2.2	mg/L	179	Standard
Fe	57	4073.9	8.9	**10.4697**	1.059	10.1	mg/L	335	Standard
> **Sc-1**	45	73214.8	0.3				mg/L	61029	Standard
Cl	35	28264.3	0.5				ug/L	20195	Standard
Kr	83	2.0	0.0				ug/L	4	Standard
Br	81	3023.6	7.8				ug/L	1547	Standard
P	31	20599.0	2.2				ug/L	15286	Standard
S	34	2595.2	1.7				ug/L	1572	Standard
Sr	88	203.3	16.4				ug/L	73	Standard
C	12	130.0	40.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	150.0	43.7				mg/L	3	Standard
Dy	164	31532.4	1.2				mg/L	6	Standard
Ho-1	165	19319.0	1.7				mg/L	10	Standard
Er	166	17720.4	2.1				mg/L	13	Standard
I	127	25842.0	0.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.483	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		113.863	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	112.657
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	107.516
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606120702
Sample Date/Time: Wednesday, June 29, 2016 18:47:54
Number of Replicates: 3
Autosampler Position: 248
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85381.8	3.5				ug/L	74699	Standard
	Be	9	623.3	3.3	**0.6272**	0.018	2.8	ug/L	8	Standard
	Al	27	4620203.8	1.9	**27.5041**	0.647	2.4	ug/L	1493	Standard
	Sc	45	75576.5	3.2				ug/L	61029	Standard
	Ti	47	6206.6	0.5	**14.3105**	0.192	1.3	ug/L	35	Standard
	V	51	134133.3	1.8	**15.4410**	0.153	1.0	ug/L	1435	Standard
	Cr	52	96500.3	0.7	**10.4416**	0.108	1.0	ug/L	7635	Standard
	Cr	53	11224.2	2.7	**10.3669**	0.448	4.3	ug/L	363	Standard
	Mn	55	3577332.4	1.7	**452.2740**	8.609	1.9	ug/L	747	Standard
	Co	59	47345.9	1.4	**6.2757**	0.086	1.4	ug/L	234	Standard
	Ni	60	24689.4	1.0	**11.4869**	0.101	0.9	ug/L	215	Standard
	Cu	65	29948.9	2.1	**14.0640**	0.244	1.7	ug/L	104	Standard
	Zn	66	164514.2	1.7	**132.1464**	1.033	0.8	ug/L	363	Standard
>	**Ge**	72	562390.3	1.6				ug/L	495142	Standard
	As	75	2776.0	3.7	**2.2412**	0.056	2.5	ug/L	-50	Standard
	Se	82	106.3	15.9	**0.7139**	0.124	17.3	ug/L	14	Standard
	Se-1	77	132.3	11.0	**0.9743**	0.190	19.5	ug/L	42	Standard
>	**Ga**	71	12940.5	1.1				mg/L	42	Standard
	Rb	85	250383.8	1.2				ug/L	17	Standard
	Y	89	695657.2	0.8				ug/L	417098	Standard
>	**Rh**	103	35.0	62.3				ug/L	13	Standard
	Mo	98	1645.8	3.3	**0.5188**	0.023	4.4	ug/L	11	Standard
	Ag	107	671.7	7.7	**0.0746**	0.007	9.4	ug/L	68	Standard
	Cd	111	2017.5	2.8	**0.8116**	0.028	3.5	mg/L	2	Standard
	Cd	114	4822.6	1.0	**0.7964**	0.005	0.7	ug/L	12	Standard
>	**In**	115	691832.3	1.1				ug/L	587441	Standard
	Sn	118	616.7	6.1	**-0.0050**	0.006	126.3	ug/L	497	Standard
	Sb	123	493.2	8.1	**0.0855**	0.008	9.1	ug/L	78	Standard
	Ba	135	281871.8	0.7	**116.9321**	1.732	1.5	ug/L	24	Standard
	Ce	140	1017603.0	1.2				ug/L	25	Standard
>	**Tb**	159	1062512.9	1.9				ug/L	939701	Standard
	Ho	165	14416.9	1.8				ug/L	10	Standard
	Tl	203	1059.0	3.0	**0.1166**	0.005	4.1	ug/L	4	Standard
	Tl	205	896.7	14.9	**0.1158**	0.019	16.8	ug/L	2	Standard
	Pb	206	100858.6	1.2	**17.3191**	0.532	3.1	ug/L	240	Standard
	Pb	207	81475.8	1.0	**15.7413**	0.458	2.9	ug/L	198	Standard
	Pb	208	356757.6	0.9	**17.4487**	0.446	2.6	ug/L	883	Standard
	U	238	6683.8	3.5	**0.8902**	0.048	5.4	ug/L	3	Standard
>	**Bi**	209	569106.4	1.9				ug/L	523984	Standard

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Na	23	3.3	86.6	**31.5301**	27.313	86.6	mg/L	0	Standard
Mg	24	745.0	7.0	**0.7121**	0.061	8.5	mg/L	37	Standard
K	39	773.4	6.0	**1.2683**	0.120	9.5	mg/L	38	Standard
Ca	43	171.7	3.4	**6.2441**	0.546	8.7	mg/L	10	Standard
Fe	54	10724.1	1.5	**7.2104**	0.318	4.4	mg/L	179	Standard
Fe	57	2831.9	1.0	**6.7023**	0.187	2.8	mg/L	335	Standard
> **Sc-1**	45	75576.5	3.2				mg/L	61029	Standard
Cl	35	27596.4	1.5				ug/L	20195	Standard
Kr	83	4.0	66.1				ug/L	4	Standard
Br	81	8432.3	2.7				ug/L	1547	Standard
P	31	20674.1	3.5				ug/L	15286	Standard
S	34	2360.2	7.8				ug/L	1572	Standard
Sr	88	120.0	18.2				ug/L	73	Standard
C	12	350.0	15.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	106.7	43.3				mg/L	3	Standard
Dy	164	23142.4	1.5				mg/L	6	Standard
Ho-1	165	14416.9	1.8				mg/L	10	Standard
Er	166	13422.6	4.3				mg/L	13	Standard
I	127	174464.7	3.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.301	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		113.582	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	117.770
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	108.611
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606120801
Sample Date/Time: Wednesday, June 29, 2016 18:51:05
Number of Replicates: 3
Autosampler Position: 249
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83030.4	3.3				ug/L	74699	Standard
	Be	9	1115.0	11.0	**1.1453**	0.091	8.0	ug/L	8	Standard
	Al	27	17314833.4	0.9	**106.0421**	2.666	2.5	ug/L	1493	Standard
	Sc	45	77183.1	5.1				ug/L	61029	Standard
	Ti	47	40548.2	1.5	**95.7436**	2.793	2.9	ug/L	35	Standard
	V	51	251782.0	1.4	**29.6946**	1.634	5.5	ug/L	1435	Standard
	Cr	52	243737.7	2.0	**28.4388**	0.710	2.5	ug/L	7635	Standard
	Cr	53	29872.8	2.3	**28.6239**	0.690	2.4	ug/L	363	Standard
	Mn	55	3685844.9	1.5	**474.5740**	27.736	5.8	ug/L	747	Standard
	Co	59	66271.6	1.6	**8.9620**	0.528	5.9	ug/L	234	Standard
	Ni	60	46026.2	2.6	**21.8948**	0.433	2.0	ug/L	215	Standard
	Cu	65	42002.8	1.5	**20.1164**	0.608	3.0	ug/L	104	Standard
	Zn	66	111824.0	2.6	**91.2379**	1.710	1.9	ug/L	363	Standard
>	**Ge**	72	553103.7	4.4				ug/L	495142	Standard
	As	75	5557.5	3.1	**4.5033**	0.093	2.1	ug/L	-50	Standard
	Se	82	102.2	5.1	**0.6977**	0.072	10.3	ug/L	14	Standard
	Se-1	77	134.3	12.1	**1.0314**	0.270	26.2	ug/L	42	Standard
>	**Ga**	71	24266.1	1.0				mg/L	42	Standard
	Rb	85	181545.0	2.7				ug/L	17	Standard
	Y	89	698995.8	3.0				ug/L	417098	Standard
>	**Rh**	103	88.3	6.5				ug/L	13	Standard
	Mo	98	2397.1	2.7	**0.8492**	0.049	5.8	ug/L	11	Standard
	Ag	107	1012.7	3.0	**0.1348**	0.009	6.5	ug/L	68	Standard
	Cd	111	911.2	3.1	**0.4060**	0.012	2.9	mg/L	2	Standard
	Cd	114	2080.2	4.3	**0.3830**	0.011	2.9	ug/L	12	Standard
>	**In**	115	618664.5	3.1				ug/L	587441	Standard
	Sn	118	1240.1	3.1	**0.1071**	0.013	12.0	ug/L	497	Standard
	Sb	123	1640.7	2.7	**0.3299**	0.019	5.8	ug/L	78	Standard
	Ba	135	534847.9	1.0	**248.3132**	9.882	4.0	ug/L	24	Standard
	Ce	140	1227932.9	1.4				ug/L	25	Standard
>	**Tb**	159	991058.9	3.3				ug/L	939701	Standard
	Ho	165	19152.1	0.5				ug/L	10	Standard
	Tl	203	1084.7	2.8	**0.1294**	0.004	2.8	ug/L	4	Standard
	Tl	205	976.7	6.4	**0.1361**	0.004	2.8	ug/L	2	Standard
	Pb	206	122644.8	1.6	**22.8364**	1.340	5.9	ug/L	240	Standard
	Pb	207	98294.5	1.0	**20.5914**	1.111	5.4	ug/L	198	Standard
	Pb	208	423360.3	0.4	**22.4444**	1.000	4.5	ug/L	883	Standard
	U	238	7556.2	1.8	**1.0902**	0.045	4.1	ug/L	3	Standard
>	**Bi**	209	526041.8	4.3				ug/L	523984	Standard

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Na	23	10.0	50.0	**92.8331**	50.540	54.4	mg/L	0	Standard
Mg	24	373.3	13.0	**0.3164**	0.050	15.9	mg/L	37	Standard
K	39	846.7	3.0	**1.3673**	0.064	4.7	mg/L	38	Standard
Ca	43	1881.8	8.7	**91.3781**	4.657	5.1	mg/L	10	Standard
Fe	54	16605.4	3.8	**11.0236**	0.942	8.5	mg/L	179	Standard
Fe	57	5247.6	6.9	**13.0290**	0.645	4.9	mg/L	335	Standard
Sc-1	45	77183.1	5.1				mg/L	61029	Standard
Cl	35	28165.5	0.9				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	3540.4	14.7				ug/L	1547	Standard
P	31	23239.5	5.6				ug/L	15286	Standard
S	34	2426.9	3.5				ug/L	1572	Standard
Sr	88	415.0	11.5				ug/L	73	Standard
C	12	173.3	6.7				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	66.7	60.6				mg/L	3	Standard
Dy	164	30988.1	3.0				mg/L	6	Standard
Ho-1	165	19152.1	0.5				mg/L	10	Standard
Er	166	17717.0	2.5				mg/L	13	Standard
I	127	27493.3	1.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		111.154	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.706	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	105.315
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	100.393
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606120802
Sample Date/Time: Wednesday, June 29, 2016 18:54:17
Number of Replicates: 3
Autosampler Position: 250
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88923.6	2.8				ug/L	74699	Standard
	Be	9	661.7	11.4	**0.6387**	0.067	10.5	ug/L	8	Standard
	Al	27	15492795.6	1.0	**88.5762**	1.812	2.0	ug/L	1493	Standard
	Sc	45	80386.0	1.0				ug/L	61029	Standard
	Ti	47	20524.2	1.6	**45.7756**	1.470	3.2	ug/L	35	Standard
	V	51	220306.5	1.3	**24.5176**	0.534	2.2	ug/L	1435	Standard
	Cr	52	643370.5	1.6	**72.5457**	2.733	3.8	ug/L	7635	Standard
	Cr	53	78035.6	3.0	**71.2237**	3.200	4.5	ug/L	363	Standard
	Mn	55	3332205.3	1.0	**405.3306**	7.931	2.0	ug/L	747	Standard
	Co	59	49008.5	0.3	**6.2510**	0.159	2.5	ug/L	234	Standard
	Ni	60	36936.6	2.2	**16.5952**	0.689	4.2	ug/L	215	Standard
	Cu	65	48506.2	1.8	**21.9786**	0.680	3.1	ug/L	104	Standard
	Zn	66	431997.7	0.4	**334.6356**	8.273	2.5	ug/L	363	Standard
>	**Ge**	72	584593.6	2.3				ug/L	495142	Standard
	As	75	4706.8	0.7	**3.6196**	0.063	1.8	ug/L	-50	Standard
	Se	82	170.0	3.4	**1.1737**	0.017	1.5	ug/L	14	Standard
	Se-1	77	180.7	11.7	**1.4743**	0.259	17.6	ug/L	42	Standard
>	**Ga**	71	19881.4	1.3				mg/L	42	Standard
	Rb	85	200103.0	1.8				ug/L	17	Standard
	Y	89	657665.4	0.6				ug/L	417098	Standard
>	**Rh**	103	171.7	7.3				ug/L	13	Standard
	Mo	98	1216.9	1.5	**0.3934**	0.011	2.8	ug/L	11	Standard
	Ag	107	1006.0	3.7	**0.1221**	0.007	5.4	ug/L	68	Standard
	Cd	111	4519.9	2.1	**1.8818**	0.049	2.6	mg/L	2	Standard
	Cd	114	11256.2	1.6	**1.9163**	0.030	1.6	ug/L	12	Standard
>	**In**	115	672127.4	1.5				ug/L	587441	Standard
	Sn	118	1105.0	15.3	**0.0707**	0.026	36.7	ug/L	497	Standard
	Sb	123	229.1	10.3	**0.0387**	0.005	12.5	ug/L	78	Standard
	Ba	135	361495.2	1.1	**154.3886**	3.928	2.5	ug/L	24	Standard
	Ce	140	936346.8	0.9				ug/L	25	Standard
>	**Tb**	159	1070983.4	3.2				ug/L	939701	Standard
	Ho	165	13711.2	2.1				ug/L	10	Standard
	Tl	203	1023.7	3.8	**0.1103**	0.006	5.8	ug/L	4	Standard
	Tl	205	995.0	4.8	**0.1256**	0.007	5.2	ug/L	2	Standard
	Pb	206	1451242.4	0.5	**244.9779**	5.608	2.3	ug/L	240	Standard
	Pb	207	1189055.7	0.7	**225.9168**	5.756	2.5	ug/L	198	Standard
	Pb	208	5216722.9	1.2	**250.8847**	7.037	2.8	ug/L	883	Standard
	U	238	9013.7	1.2	**1.1768**	0.034	2.9	ug/L	3	Standard
>	**Bi**	209	581076.6	1.9				ug/L	523984	Standard

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Na	23	6.7	173.2	**57.8631**	100.213	173.2	mg/L	0	Standard
Mg	24	553.3	14.7	**0.4776**	0.083	17.4	mg/L	37	Standard
K	39	1005.0	9.9	**1.5724**	0.167	10.6	mg/L	38	Standard
Ca	43	1240.1	6.3	**56.9237**	3.160	5.6	mg/L	10	Standard
Fe	54	17498.7	0.5	**11.1262**	0.159	1.4	mg/L	179	Standard
Fe	57	5124.2	2.5	**12.1481**	0.285	2.3	mg/L	335	Standard
Sc-1	45	80386.0	1.0				mg/L	61029	Standard
Cl	35	28790.7	0.3				ug/L	20195	Standard
Kr	83	3.0	33.3				ug/L	4	Standard
Br	81	8875.9	6.3				ug/L	1547	Standard
P	31	20292.0	8.4				ug/L	15286	Standard
S	34	2478.5	4.1				ug/L	1572	Standard
Sr	88	438.3	2.4				ug/L	73	Standard
C	12	323.3	22.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	136.7	34.6				mg/L	3	Standard
Dy	164	22618.6	1.5				mg/L	6	Standard
Ho-1	165	13711.2	2.1				mg/L	10	Standard
Er	166	12578.6	1.5				mg/L	13	Standard
I	127	73652.8	8.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		119.043	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		118.066	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		114.416
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.896
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ba 135 Upper, S, EEE	Ba	135	

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Pb 206 Upper, S, EEE	Pb	206
Pb 207 Upper, S, EEE	Pb	207
Pb 208 Upper, S, EEE	Pb	208

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606129101
Sample Date/Time: Wednesday, June 29, 2016 18:57:28
Number of Replicates: 3
Autosampler Position: 251
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89580.8	1.7				ug/L	74699	Standard
	Be	9	360.0	14.7	**0.3489**	0.053	15.3	ug/L	8	Standard
	Al	27	3187676.8	1.0	**18.0772**	0.341	1.9	ug/L	1493	Standard
	Sc	45	73445.9	1.6				ug/L	61029	Standard
	Ti	47	23807.7	6.7	**54.3513**	2.712	5.0	ug/L	35	Standard
	V	51	62405.7	2.9	**6.9715**	0.072	1.0	ug/L	1435	Standard
	Cr	52	100378.5	1.9	**10.7261**	0.052	0.5	ug/L	7635	Standard
	Cr	53	11571.1	3.7	**10.5314**	0.357	3.4	ug/L	363	Standard
	Mn	55	3995310.3	0.7	**497.7426**	6.886	1.4	ug/L	747	Standard
	Co	59	12689.3	1.5	**1.6298**	0.018	1.1	ug/L	234	Standard
	Ni	60	15702.5	1.8	**7.1516**	0.026	0.4	ug/L	215	Standard
	Cu	65	1030601.6	2.5	**480.2115**	2.610	0.5	ug/L	104	Standard
	Zn	66	647092.9	2.6	**513.3926**	3.363	0.7	ug/L	363	Standard
>	**Ge**	72	570780.0	2.0				ug/L	495142	Standard
	As	75	23305.2	1.3	**18.1104**	0.138	0.8	ug/L	-50	Standard
	Se	82	481.4	2.5	**3.6678**	0.121	3.3	ug/L	14	Standard
	Se-1	77	377.3	9.1	**3.8600**	0.402	10.4	ug/L	42	Standard
>	**Ga**	71	43582.7	4.5				mg/L	42	Standard
	Rb	85	26201.0	3.0				ug/L	17	Standard
	Y	89	551000.5	1.0				ug/L	417098	Standard
>	**Rh**	103	178.3	18.7				ug/L	13	Standard
	Mo	98	21134.4	1.3	**6.6476**	0.191	2.9	ug/L	11	Standard
	Ag	107	15204.6	2.3	**1.9441**	0.032	1.6	ug/L	68	Standard
	Cd	111	1466.1	5.3	**0.5801**	0.025	4.4	mg/L	2	Standard
	Cd	114	3712.7	3.5	**0.6050**	0.007	1.1	ug/L	12	Standard
>	**In**	115	700391.9	2.5				ug/L	587441	Standard
	Sn	118	18187.6	2.5	**2.5189**	0.131	5.2	ug/L	497	Standard
	Sb	123	7709.0	2.8	**1.3807**	0.022	1.6	ug/L	78	Standard
	Ba	135	971846.2	1.7	**398.2918**	4.112	1.0	ug/L	24	Standard
	Ce	140	138638.2	1.7				ug/L	25	Standard
>	**Tb**	159	1070571.9	3.6				ug/L	939701	Standard
	Ho	165	2720.2	8.8				ug/L	10	Standard
	Tl	203	657.3	30.6	**0.0422**	0.014	32.0	ug/L	4	Standard
	Tl	205	563.3	26.0	**0.0436**	0.011	26.1	ug/L	2	Standard
	Pb	206	89328.6	2.2	**9.1434**	0.147	1.6	ug/L	240	Standard
	Pb	207	72922.4	1.4	**8.3969**	0.107	1.3	ug/L	198	Standard
	Pb	208	316979.9	0.6	**9.2432**	0.217	2.4	ug/L	883	Standard
	U	238	78871.8	1.7	**6.3120**	0.222	3.5	ug/L	3	Standard
>	**Bi**	209	950965.0	2.0				ug/L	523984	Standard

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Na	23	5.0	173.2	**48.7719**	84.467	173.2	mg/L	0	Standard
Mg	24	613.3	9.8	**0.5934**	0.073	12.3	mg/L	37	Standard
K	39	323.3	7.3	**0.4798**	0.044	9.2	mg/L	38	Standard
Ca	43	198.3	14.8	**7.8949**	1.614	20.4	mg/L	10	Standard
Fe	54	8830.8	5.5	**6.0856**	0.392	6.4	mg/L	179	Standard
Fe	57	2530.2	2.9	**6.0730**	0.228	3.8	mg/L	335	Standard
Sc-1	45	73445.9	1.6				mg/L	61029	Standard
Cl	35	25952.9	0.3				ug/L	20195	Standard
Kr	83	2.0	100.0				ug/L	4	Standard
Br	81	8005.5	5.5				ug/L	1547	Standard
P	31	19060.3	1.8				ug/L	15286	Standard
S	34	1756.8	1.0				ug/L	1572	Standard
Sr	88	518.3	2.8				ug/L	73	Standard
C	12	1226.7	9.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	1270.1	11.0				mg/L	3	Standard
Dy	164	4157.3	8.4				mg/L	6	Standard
Ho-1	165	2720.2	8.8				mg/L	10	Standard
Er	166	2643.6	8.4				mg/L	13	Standard
I	127	191520.8	4.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		119.923	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		115.276	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		119.228
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		181.487
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Cu 65 Upper, S, EEE	Cu	65	
Zn 66 Upper, S, EEE	Zn	66	

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Ba 135 Upper, S, EEE	Ba	135	
Bi 209 Int Std for sample	Bi	209	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606138101
Sample Date/Time: Wednesday, June 29, 2016 19:00:40
Number of Replicates: 3
Autosampler Position: 252
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	96098.8	1.2				ug/L	74699	Standard
	Be	9	1650.1	8.9	**1.4642**	0.124	8.5	ug/L	8	Standard
	Al	27	23502208.7	0.7	**124.3024**	1.056	0.8	ug/L	1493	Standard
	Sc	45	81510.4	1.4				ug/L	61029	Standard
	Ti	47	9357.2	0.5	**21.1737**	0.376	1.8	ug/L	35	Standard
	V	51	257600.4	1.3	**29.2098**	0.781	2.7	ug/L	1435	Standard
	Cr	52	224787.2	0.6	**25.1231**	0.400	1.6	ug/L	7635	Standard
	Cr	53	27600.1	3.0	**25.4059**	0.410	1.6	ug/L	363	Standard
	Mn	55	5543699.6	0.4	**686.2289**	8.924	1.3	ug/L	747	Standard
	Co	59	117640.6	0.9	**15.3216**	0.399	2.6	ug/L	234	Standard
	Ni	60	64249.3	0.8	**29.4562**	0.340	1.2	ug/L	215	Standard
	Cu	65	57365.7	1.4	**26.4629**	0.232	0.9	ug/L	104	Standard
	Zn	66	103406.0	1.2	**81.1457**	1.055	1.3	ug/L	363	Standard
>	**Ge**	72	574477.7	1.7				ug/L	495142	Standard
	As	75	12246.4	0.5	**9.4841**	0.110	1.2	ug/L	-50	Standard
	Se	82	125.1	3.5	**0.8446**	0.024	2.8	ug/L	14	Standard
	Se-1	77	164.3	2.5	**1.3176**	0.070	5.3	ug/L	42	Standard
>	**Ga**	71	29587.2	2.2				mg/L	42	Standard
	Rb	85	313937.1	2.6				ug/L	17	Standard
	Y	89	822636.0	0.8				ug/L	417098	Standard
>	**Rh**	103	38.3	49.4				ug/L	13	Standard
	Mo	98	757.2	4.8	**0.2454**	0.010	4.2	ug/L	11	Standard
	Ag	107	953.4	1.4	**0.1164**	0.003	2.3	ug/L	68	Standard
	Cd	111	1588.5	0.6	**0.6638**	0.009	1.4	mg/L	2	Standard
	Cd	114	3783.2	0.8	**0.6501**	0.009	1.4	ug/L	12	Standard
>	**In**	115	664448.0	1.0				ug/L	587441	Standard
	Sn	118	643.3	5.2	**0.0026**	0.004	152.2	ug/L	497	Standard
	Sb	123	269.8	13.5	**0.0469**	0.007	15.6	ug/L	78	Standard
	Ba	135	662128.9	0.5	**286.0118**	2.987	1.0	ug/L	24	Standard
	Ce	140	1687892.1	1.1				ug/L	25	Standard
>	**Tb**	159	1062435.8	0.8				ug/L	939701	Standard
	Ho	165	27182.7	2.2				ug/L	10	Standard
	Tl	203	1364.1	4.3	**0.1521**	0.007	4.3	ug/L	4	Standard
	Tl	205	1335.1	6.0	**0.1737**	0.010	5.7	ug/L	2	Standard
	Pb	206	284182.0	0.3	**49.3998**	0.214	0.4	ug/L	240	Standard
	Pb	207	234533.7	1.0	**45.8828**	0.448	1.0	ug/L	198	Standard
	Pb	208	1023299.4	0.1	**50.6751**	0.295	0.6	ug/L	883	Standard
	U	238	6312.3	2.1	**0.8483**	0.014	1.7	ug/L	3	Standard
>	**Bi**	209	563477.4	0.7				ug/L	523984	Standard

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Na	23	3.3	86.6	**28.8214**	24.963	86.6	mg/L	0	Standard
Mg	24	151.7	18.2	**0.0816**	0.027	33.5	mg/L	37	Standard
K	39	1206.7	9.1	**1.8839**	0.198	10.5	mg/L	38	Standard
Ca	43	230.0	38.1	**8.3188**	4.002	48.1	mg/L	10	Standard
Fe	54	27991.0	1.6	**17.6350**	0.523	3.0	mg/L	179	Standard
Fe	57	7366.8	1.7	**17.6771**	0.511	2.9	mg/L	335	Standard
Sc-1	45	81510.4	1.4				mg/L	61029	Standard
Cl	35	28359.2	2.3				ug/L	20195	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	4510.7	3.7				ug/L	1547	Standard
P	31	20567.3	1.1				ug/L	15286	Standard
S	34	2398.5	2.1				ug/L	1572	Standard
Sr	88	138.3	12.7				ug/L	73	Standard
C	12	220.0	4.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	113.3	35.7				mg/L	3	Standard
Dy	164	44981.5	2.0				mg/L	6	Standard
Ho-1	165	27182.7	2.2				mg/L	10	Standard
Er	166	24606.7	4.9				mg/L	13	Standard
I	127	24668.4	3.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		128.648	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		116.023	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	113.109
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	107.537
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606138101
Sample Date/Time: Wednesday, June 29, 2016 19:03:51
Number of Replicates: 3
Autosampler Position: 253
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89738.3	1.4				ug/L	74699	Standard
	Be	9	41.7	6.9	**0.0470**	0.003	6.5	ug/L	8	Standard
	Al	27	505536.2	3.8	**2.8498**	0.087	3.1	ug/L	1493	Standard
	Sc	45	72476.3	1.0				ug/L	61029	Standard
	Ti	47	238.7	3.3	**0.4178**	0.015	3.5	ug/L	35	Standard
	V	51	6994.4	2.1	**0.5793**	0.021	3.7	ug/L	1435	Standard
	Cr	52	13067.6	0.8	**0.4515**	0.011	2.5	ug/L	7635	Standard
	Cr	53	1060.0	5.3	**0.6298**	0.052	8.3	ug/L	363	Standard
	Mn	55	117506.1	2.5	**13.9721**	0.301	2.2	ug/L	747	Standard
	Co	59	2633.2	1.9	**0.2964**	0.006	2.1	ug/L	234	Standard
	Ni	60	1579.1	3.6	**0.5819**	0.030	5.1	ug/L	215	Standard
	Cu	65	1415.4	1.9	**0.5327**	0.017	3.2	ug/L	104	Standard
	Zn	66	4415.0	0.5	**2.9272**	0.025	0.9	ug/L	363	Standard
>	**Ge**	72	591804.3	0.7				ug/L	495142	Standard
	As	75	188.6	12.3	**0.2004**	0.017	8.4	ug/L	-50	Standard
	Se	82	17.7	38.3	**-0.0030**	0.051	1669.1	ug/L	14	Standard
	Se-1	77	53.3	24.5	**-0.0120**	0.145	1206.4	ug/L	42	Standard
>	**Ga**	71	651.7	3.8				mg/L	42	Standard
	Rb	85	6646.5	2.9				ug/L	17	Standard
	Y	89	496582.4	1.4				ug/L	417098	Standard
>	**Rh**	103	10.0	86.6				ug/L	13	Standard
	Mo	98	63.7	13.0	**0.0149**	0.003	17.4	ug/L	11	Standard
	Ag	107	138.0	7.0	**0.0054**	0.001	21.7	ug/L	68	Standard
	Cd	111	41.6	25.2	**0.0093**	0.004	47.8	mg/L	2	Standard
	Cd	114	78.4	6.5	**0.0111**	0.001	8.0	ug/L	12	Standard
>	**In**	115	680653.4	0.9				ug/L	587441	Standard
	Sn	118	558.3	7.0	**-0.0122**	0.005	43.2	ug/L	497	Standard
	Sb	123	143.1	16.8	**0.0222**	0.004	19.8	ug/L	78	Standard
	Ba	135	14129.9	0.6	**5.9423**	0.035	0.6	ug/L	24	Standard
	Ce	140	36747.8	1.4				ug/L	25	Standard
>	**Tb**	159	1046560.0	0.5				ug/L	939701	Standard
	Ho	165	620.0	6.6				ug/L	10	Standard
	Tl	203	40.7	9.9	**0.0027**	0.000	16.9	ug/L	4	Standard
	Tl	205	38.3	19.9	**0.0050**	0.001	18.8	ug/L	2	Standard
	Pb	206	6390.7	0.3	**1.0069**	0.002	0.2	ug/L	240	Standard
	Pb	207	5305.6	1.7	**0.9374**	0.017	1.8	ug/L	198	Standard
	Pb	208	22358.8	1.4	**1.0005**	0.020	2.0	ug/L	883	Standard
	U	238	147.3	10.0	**0.0149**	0.002	12.5	ug/L	3	Standard
>	**Bi**	209	581458.5	0.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	36.7	41.7	**-0.0251**	0.017	67.5	mg/L	37	Standard
K	39	73.3	27.6	**0.0225**	0.038	170.4	mg/L	38	Standard
Ca	43	25.0	40.0	**-1.1927**	0.538	45.1	mg/L	10	Standard
Fe	54	777.1	4.9	**0.4166**	0.030	7.2	mg/L	179	Standard
Fe	57	423.3	1.8	**0.1373**	0.012	9.1	mg/L	335	Standard
> **Sc-1**	45	72476.3	1.0				mg/L	61029	Standard
Cl	35	26907.2	2.4				ug/L	20195	Standard
Kr	83	1.7	124.9				ug/L	4	Standard
Br	81	2140.2	2.1				ug/L	1547	Standard
P	31	19854.7	4.5				ug/L	15286	Standard
S	34	2031.8	8.8				ug/L	1572	Standard
Sr	88	61.7	24.8				ug/L	73	Standard
C	12	66.7	82.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	1031.0	18.9				mg/L	6	Standard
Ho-1	165	620.0	6.6				mg/L	10	Standard
Er	166	536.7	12.4				mg/L	13	Standard
I	127	3175.3	27.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		120.134	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		119.522	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		115.868
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.969
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample

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Method 6020 - Summary Report

Sample ID: L1606138102
Sample Date/Time: Wednesday, June 29, 2016 19:07:03
Number of Replicates: 3
Autosampler Position: 254
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	93009.7	1.6				ug/L	74699	Standard
	Be	9	1248.4	3.0	**1.1470**	0.051	4.5	ug/L	8	Standard
	Al	27	40124336.3	0.4	**219.2936**	2.793	1.3	ug/L	1493	Standard
	Sc	45	83437.5	1.7				ug/L	61029	Standard
	Ti	47	9733.8	0.5	**22.4436**	0.290	1.3	ug/L	35	Standard
	V	51	219254.4	2.3	**25.2954**	0.490	1.9	ug/L	1435	Standard
	Cr	52	167385.2	0.7	**18.8093**	0.105	0.6	ug/L	7635	Standard
	Cr	53	20240.2	3.5	**18.8976**	0.529	2.8	ug/L	363	Standard
	Mn	55	6543259.4	1.4	**825.1579**	15.855	1.9	ug/L	747	Standard
	Co	59	86492.3	2.3	**11.4640**	0.252	2.2	ug/L	234	Standard
	Ni	60	58233.4	1.3	**27.1864**	0.121	0.4	ug/L	215	Standard
	Cu	65	35144.1	1.8	**16.4764**	0.210	1.3	ug/L	104	Standard
	Zn	66	61921.6	1.7	**49.3206**	0.509	1.0	ug/L	363	Standard
>	**Ge**	72	563884.1	0.9				ug/L	495142	Standard
	As	75	5876.5	0.9	**4.6669**	0.080	1.7	ug/L	-50	Standard
	Se	82	62.7	20.2	**0.3638**	0.101	27.7	ug/L	14	Standard
	Se-1	77	116.3	8.0	**0.7757**	0.099	12.7	ug/L	42	Standard
>	**Ga**	71	24224.4	1.6				mg/L	42	Standard
	Rb	85	231886.4	1.9				ug/L	17	Standard
	Y	89	788603.8	0.2				ug/L	417098	Standard
>	**Rh**	103	76.7	50.7				ug/L	13	Standard
	Mo	98	590.2	6.7	**0.1909**	0.011	6.0	ug/L	11	Standard
	Ag	107	590.3	14.1	**0.0675**	0.010	15.2	ug/L	68	Standard
	Cd	111	402.0	10.7	**0.1627**	0.016	9.9	mg/L	2	Standard
	Cd	114	896.6	5.0	**0.1531**	0.007	4.5	ug/L	12	Standard
>	**In**	115	661468.7	1.5				ug/L	587441	Standard
	Sn	118	563.3	17.0	**-0.0090**	0.016	173.2	ug/L	497	Standard
	Sb	123	168.4	11.6	**0.0279**	0.004	15.0	ug/L	78	Standard
	Ba	135	766980.0	0.9	**332.7995**	3.011	0.9	ug/L	24	Standard
	Ce	140	1513996.2	0.9				ug/L	25	Standard
>	**Tb**	159	1057537.7	1.8				ug/L	939701	Standard
	Ho	165	25513.1	1.6				ug/L	10	Standard
	Tl	203	1321.7	3.8	**0.1489**	0.005	3.2	ug/L	4	Standard
	Tl	205	1201.7	6.5	**0.1579**	0.009	5.7	ug/L	2	Standard
	Pb	206	69846.7	2.1	**12.2126**	0.140	1.1	ug/L	240	Standard
	Pb	207	56032.1	2.8	**11.0205**	0.188	1.7	ug/L	198	Standard
	Pb	208	243026.5	0.6	**12.1032**	0.059	0.5	ug/L	883	Standard
	U	238	7981.8	0.7	**1.0851**	0.004	0.3	ug/L	3	Standard
>	**Bi**	209	557709.9	1.1				ug/L	523984	Standard

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Na	23	6.7	86.6	**56.4197**	48.874	86.6	mg/L	0	Standard
Mg	24	238.3	32.7	**0.1607**	0.077	48.1	mg/L	37	Standard
K	39	688.3	8.8	**0.9980**	0.083	8.3	mg/L	38	Standard
Ca	43	911.7	12.3	**39.6249**	5.390	13.6	mg/L	10	Standard
Fe	54	20800.6	0.9	**12.7625**	0.173	1.4	mg/L	179	Standard
Fe	57	6012.9	2.1	**13.8749**	0.248	1.8	mg/L	335	Standard
Sc-1	45	83437.5	1.7				mg/L	61029	Standard
Cl	35	29332.4	1.9				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	2603.6	11.5				ug/L	1547	Standard
P	31	21632.1	2.1				ug/L	15286	Standard
S	34	2746.9	3.7				ug/L	1572	Standard
Sr	88	253.3	10.9				ug/L	73	Standard
C	12	116.7	27.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	33.3	45.8				mg/L	3	Standard
Dy	164	42471.8	1.0				mg/L	6	Standard
Ho-1	165	25513.1	1.6				mg/L	10	Standard
Er	166	22212.9	0.4				mg/L	13	Standard
I	127	23259.5	0.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		124.513	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		113.883	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.602
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.436
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	

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Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606138102
Sample Date/Time: Wednesday, June 29, 2016 19:10:14
Number of Replicates: 3
Autosampler Position: 255
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85837.5	1.0				ug/L	74699	Standard
	Be	9	38.3	19.9	**0.0455**	0.007	16.1	ug/L	8	Standard
	Al	27	829500.0	3.1	**4.8979**	0.105	2.1	ug/L	1493	Standard
	Sc	45	72806.2	1.9				ug/L	61029	Standard
	Ti	47	228.0	6.2	**0.3999**	0.033	8.1	ug/L	35	Standard
	V	51	5937.2	2.5	**0.4694**	0.017	3.6	ug/L	1435	Standard
	Cr	52	11356.6	1.4	**0.2725**	0.020	7.2	ug/L	7635	Standard
	Cr	53	790.0	13.9	**0.3928**	0.096	24.5	ug/L	363	Standard
	Mn	55	140399.5	1.1	**16.9108**	0.252	1.5	ug/L	747	Standard
	Co	59	1986.1	4.2	**0.2171**	0.011	4.8	ug/L	234	Standard
	Ni	60	1398.7	1.4	**0.5081**	0.009	1.8	ug/L	215	Standard
	Cu	65	887.4	6.1	**0.2997**	0.027	8.9	ug/L	104	Standard
	Zn	66	3530.4	0.8	**2.2796**	0.035	1.5	ug/L	363	Standard
>	**Ge**	72	585343.3	0.6				ug/L	495142	Standard
	As	75	60.2	40.7	**0.1052**	0.019	17.9	ug/L	-50	Standard
	Se	82	19.5	23.7	**0.0127**	0.037	290.2	ug/L	14	Standard
	Se-1	77	54.0	19.3	**0.0032**	0.122	3775.1	ug/L	42	Standard
>	**Ga**	71	611.7	10.2				mg/L	42	Standard
	Rb	85	4939.1	4.6				ug/L	17	Standard
	Y	89	509652.0	1.0				ug/L	417098	Standard
>	**Rh**	103	5.0	100.0				ug/L	13	Standard
	Mo	98	44.1	7.7	**0.0084**	0.001	14.8	ug/L	11	Standard
	Ag	107	136.0	8.3	**0.0049**	0.002	33.6	ug/L	68	Standard
	Cd	111	13.6	15.2	**-0.0024**	0.001	32.7	mg/L	2	Standard
	Cd	114	34.6	39.9	**0.0036**	0.002	62.3	ug/L	12	Standard
>	**In**	115	689569.5	1.2				ug/L	587441	Standard
	Sn	118	635.0	8.5	**-0.0021**	0.008	369.1	ug/L	497	Standard
	Sb	123	120.9	7.4	**0.0179**	0.002	10.7	ug/L	78	Standard
	Ba	135	16312.1	1.7	**6.7731**	0.043	0.6	ug/L	24	Standard
	Ce	140	31461.0	1.2				ug/L	25	Standard
>	**Tb**	159	1048084.0	0.7				ug/L	939701	Standard
	Ho	165	503.3	20.9				ug/L	10	Standard
	Tl	203	28.0	9.4	**0.0013**	0.000	21.0	ug/L	4	Standard
	Tl	205	13.3	21.7	**0.0019**	0.000	19.6	ug/L	2	Standard
	Pb	206	1789.4	1.9	**0.2333**	0.006	2.6	ug/L	240	Standard
	Pb	207	1416.1	2.7	**0.2012**	0.009	4.3	ug/L	198	Standard
	Pb	208	6428.2	1.8	**0.2375**	0.004	1.7	ug/L	883	Standard
	U	238	157.3	5.4	**0.0164**	0.001	7.5	ug/L	3	Standard
>	**Bi**	209	576421.5	0.5				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	65.0	13.3	**0.0052**	0.008	161.5	mg/L	37	Standard
K	39	56.7	10.2	**-0.0092**	0.009	98.8	mg/L	38	Standard
Ca	43	46.7	16.4	**-0.0469**	0.452	963.7	mg/L	10	Standard
Fe	54	615.5	5.2	**0.2993**	0.025	8.2	mg/L	179	Standard
Fe	57	410.0	10.0	**0.0928**	0.096	103.4	mg/L	335	Standard
> **Sc-1**	45	72806.2	1.9				mg/L	61029	Standard
Cl	35	29355.1	3.4				ug/L	20195	Standard
Kr	83	2.3	24.7				ug/L	4	Standard
Br	81	1910.1	15.3				ug/L	1547	Standard
P	31	20493.9	2.3				ug/L	15286	Standard
S	34	2463.5	6.9				ug/L	1572	Standard
Sr	88	83.3	42.1				ug/L	73	Standard
C	12	50.0	34.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	991.0	1.5				mg/L	6	Standard
Ho-1	165	503.3	20.9				mg/L	10	Standard
Er	166	466.7	4.5				mg/L	13	Standard
I	127	2401.9	23.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		114.911	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		118.217	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		117.385
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.007
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 19:13:27
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	83999.1	3.6				ug/L	74699	Standard
	Be	9	57157.7	3.6	**57.7443**	0.451	0.8	ug/L	8	Standard
	Al	27	8858742.4	2.0	**53.6133**	0.921	1.7	ug/L	1493	Standard
	Sc	45	70122.0	3.5				ug/L	61029	Standard
	Ti	47	47445.5	0.9	**109.3528**	3.353	3.1	ug/L	35	Standard
	V	51	471838.1	3.0	**54.4025**	0.466	0.9	ug/L	1435	Standard
	Cr	52	466548.5	1.7	**54.0130**	1.261	2.3	ug/L	7635	Standard
	Cr	53	57204.5	1.8	**53.7881**	1.637	3.0	ug/L	363	Standard
	Mn	55	422873.4	1.8	**52.9497**	1.131	2.1	ug/L	747	Standard
	Co	59	420575.5	1.8	**55.6399**	1.134	2.0	ug/L	234	Standard
	Ni	60	114954.2	1.8	**53.5507**	1.121	2.1	ug/L	215	Standard
	Cu	65	113826.7	2.0	**53.3592**	1.065	2.0	ug/L	104	Standard
	Zn	66	66150.5	1.8	**52.4882**	1.217	2.3	ug/L	363	Standard
>	Ge	72	566689.7	3.9				ug/L	495142	Standard
	As	75	66474.1	0.9	**51.9549**	1.668	3.2	ug/L	-50	Standard
	Se	82	6669.2	0.5	**53.0020**	1.808	3.4	ug/L	14	Standard
	Se-1	77	4569.4	1.3	**54.0883**	1.963	3.6	ug/L	42	Standard
>	Ga	71	60.0	25.0				mg/L	42	Standard
	Rb	85	973.4	4.9				ug/L	17	Standard
	Y	89	482055.4	0.8				ug/L	417098	Standard
>	Rh	103	21.7	35.3				ug/L	13	Standard
	Mo	98	311127.6	1.9	**101.8685**	1.475	1.4	ug/L	11	Standard
	Ag	107	381455.1	1.8	**51.0679**	0.625	1.2	ug/L	68	Standard
	Cd	111	122240.5	1.1	**51.0178**	0.254	0.5	mg/L	2	Standard
	Cd	114	297421.0	1.0	**50.6157**	0.803	1.6	ug/L	12	Standard
>	In	115	673075.7	0.6				ug/L	587441	Standard
	Sn	118	341770.5	1.5	**50.9666**	0.480	0.9	ug/L	497	Standard
	Sb	123	266115.5	1.9	**49.7407**	0.724	1.5	ug/L	78	Standard
	Ba	135	114468.8	0.7	**48.7952**	0.078	0.2	ug/L	24	Standard
	Ce	140	298.3	40.9				ug/L	25	Standard
>	Tb	159	1044481.4	1.5				ug/L	939701	Standard
	Ho	165	18.3	83.3				ug/L	10	Standard
	Tl	203	467319.7	1.5	**52.0663**	0.128	0.2	ug/L	4	Standard
	Tl	205	421316.6	1.5	**54.0865**	0.384	0.7	ug/L	2	Standard
	Pb	206	294059.2	2.1	**50.4836**	0.259	0.5	ug/L	240	Standard
	Pb	207	260305.8	2.4	**50.2976**	0.406	0.8	ug/L	198	Standard
	Pb	208	1086866.5	0.8	**53.1659**	0.550	1.0	ug/L	883	Standard
	U	238	395799.2	0.7	**52.8135**	0.760	1.4	ug/L	3	Standard
>	Bi	209	570529.8	1.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4777.4	3.9	**5.3091**	0.347	6.5	mg/L	37	Standard
K	39	2250.2	3.7	**4.2173**	0.198	4.7	mg/L	38	Standard
Ca	43	128.3	12.5	**4.5532**	1.080	23.7	mg/L	10	Standard
Fe	54	7377.7	1.8	**5.3086**	0.144	2.7	mg/L	179	Standard
Fe	57	2055.1	1.5	**5.0082**	0.127	2.5	mg/L	335	Standard
> **Sc-1**	45	70122.0	3.5				mg/L	61029	Standard
Cl	35	30001.0	0.9				ug/L	20195	Standard
Kr	83	1.7	91.7				ug/L	4	Standard
Br	81	2183.5	6.8				ug/L	1547	Standard
P	31	22995.8	1.5				ug/L	15286	Standard
S	34	2830.3	2.9				ug/L	1572	Standard
Sr	88	66.7	24.1				ug/L	73	Standard
C	12	80.0	50.0				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	9.0	108.0				mg/L	6	Standard
Ho-1	165	18.3	83.3				mg/L	10	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	1968.5	24.7				mg/L	1392	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	115.489		
	Al	27	107.227		
	Sc	45			
	Ti	47	109.353		
	V	51	108.805		
	Cr	52	108.026		
	Cr	53			
	Mn	55	105.899		
	Co	59	111.280		
	Ni	60	107.101		
	Cu	65	106.718		
	Zn	66	104.976		
>	Ge	72		114.450	
	As	75	103.910		
	Se	82	106.004		
	Se-1	77			
>	Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.868		
Ag	107	102.136		
Cd	111	102.036		
Cd	114			
In	115		114.578	
Sn	118	101.933		
Sb	123	99.481		
Ba	135	97.590		
Ce	140			
Tb	159			
Ho	165			
Tl	203	104.133		
Tl	205			
Pb	206			
Pb	207			
Pb	208	106.332		
U	238	105.627		
Bi	209		108.883	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Co	59	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 19:16:39
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	83692.3	2.8				ug/L	74699	Standard
	Be	9	18.3	15.7	**0.0263**	0.003	12.9	ug/L	8	Standard
	Al	27	3213.7	25.4	**0.0061**	0.004	71.9	ug/L	1493	Standard
	Sc	45	70726.5	3.0				ug/L	61029	Standard
	Ti	47	41.0	12.2	**-0.0158**	0.012	73.1	ug/L	35	Standard
	V	51	1525.1	1.9	**-0.0214**	0.005	22.4	ug/L	1435	Standard
	Cr	52	7659.9	0.9	**-0.1324**	0.015	11.0	ug/L	7635	Standard
	Cr	53	410.0	16.0	**0.0526**	0.061	116.5	ug/L	363	Standard
	Mn	55	997.7	7.3	**-0.0244**	0.010	41.0	ug/L	747	Standard
	Co	59	260.3	1.6	**-0.0033**	0.000	10.0	ug/L	234	Standard
	Ni	60	195.0	3.6	**-0.0341**	0.004	11.2	ug/L	215	Standard
	Cu	65	140.7	10.7	**-0.0385**	0.007	19.0	ug/L	104	Standard
	Zn	66	386.7	3.7	**-0.1493**	0.008	5.7	ug/L	363	Standard
>	**Ge**	72	574185.4	0.9				ug/L	495142	Standard
	As	75	-49.3	11.6	**0.0216**	0.004	19.9	ug/L	-50	Standard
	Se	82	18.5	26.4	**0.0072**	0.039	544.3	ug/L	14	Standard
	Se-1	77	51.3	18.1	**-0.0155**	0.115	739.5	ug/L	42	Standard
>	**Ga**	71	41.7	30.2				mg/L	42	Standard
	Rb	85	33.3	22.9				ug/L	17	Standard
	Y	89	508899.9	2.4				ug/L	417098	Standard
>	**Rh**	103	10.0	50.0				ug/L	13	Standard
	Mo	98	287.2	24.5	**0.0857**	0.020	22.8	ug/L	11	Standard
	Ag	107	140.0	24.8	**0.0054**	0.004	76.0	ug/L	68	Standard
	Cd	111	18.8	30.5	**-0.0003**	0.002	828.9	mg/L	2	Standard
	Cd	114	42.6	5.3	**0.0050**	0.000	2.5	ug/L	12	Standard
>	**In**	115	688571.2	3.6				ug/L	587441	Standard
	Sn	118	896.7	13.9	**0.0365**	0.020	55.6	ug/L	497	Standard
	Sb	123	419.7	28.4	**0.0731**	0.025	33.8	ug/L	78	Standard
	Ba	135	58.0	33.3	**0.0081**	0.008	93.7	ug/L	24	Standard
	Ce	140	43.3	17.6				ug/L	25	Standard
>	**Tb**	159	1032903.3	2.1				ug/L	939701	Standard
	Ho	165	11.7	24.7				ug/L	10	Standard
	Tl	203	69.3	37.1	**0.0059**	0.003	47.0	ug/L	4	Standard
	Tl	205	78.3	57.2	**0.0101**	0.006	55.2	ug/L	2	Standard
	Pb	206	303.3	6.2	**-0.0195**	0.003	14.1	ug/L	240	Standard
	Pb	207	260.7	8.9	**-0.0200**	0.005	24.1	ug/L	198	Standard
	Pb	208	1157.4	6.9	**-0.0179**	0.003	17.6	ug/L	883	Standard
	U	238	52.0	46.8	**0.0024**	0.003	129.1	ug/L	3	Standard
>	**Bi**	209	575232.2	1.3				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	36.7	28.4	**-0.0241**	0.012	50.4	mg/L	37	Standard
K	39	50.0	26.5	**-0.0190**	0.023	121.8	mg/L	38	Standard
Ca	43	26.7	39.0	**-1.0625**	0.584	55.0	mg/L	10	Standard
Fe	54	147.5	7.0	**-0.0305**	0.005	15.7	mg/L	179	Standard
Fe	57	216.7	8.1	**-0.4394**	0.033	7.6	mg/L	335	Standard
Sc-1	45	70726.5	3.0				mg/L	61029	Standard
Cl	35	29273.6	1.2				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	2073.5	10.2				ug/L	1547	Standard
P	31	23289.7	10.5				ug/L	15286	Standard
S	34	2535.2	3.8				ug/L	1572	Standard
Sr	88	68.3	37.5				ug/L	73	Standard
C	12	66.7	22.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	16.3	126.2				mg/L	6	Standard
Ho-1	165	11.7	24.7				mg/L	10	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	1766.8	31.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		115.964	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		117.215
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.780
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606138103
Sample Date/Time: Wednesday, June 29, 2016 19:19:52
Number of Replicates: 3
Autosampler Position: 256
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	88921.9	2.3				ug/L	74699	Standard
	Be	9	1191.7	0.9	**1.1451**	0.025	2.2	ug/L	8	Standard
	Al	27	19716870.1	2.2	**112.7701**	5.073	4.5	ug/L	1493	Standard
	Sc	45	82006.5	3.2				ug/L	61029	Standard
	Ti	47	8807.2	1.6	**20.0178**	0.269	1.3	ug/L	35	Standard
	V	51	208539.0	1.3	**23.7197**	0.153	0.6	ug/L	1435	Standard
	Cr	52	166877.0	1.1	**18.4795**	0.081	0.4	ug/L	7635	Standard
	Cr	53	19956.5	0.7	**18.3731**	0.126	0.7	ug/L	363	Standard
	Mn	55	4948296.7	1.6	**615.4227**	6.037	1.0	ug/L	747	Standard
	Co	59	82754.8	2.1	**10.8165**	0.154	1.4	ug/L	234	Standard
	Ni	60	51698.7	0.5	**23.7942**	0.298	1.3	ug/L	215	Standard
	Cu	65	48855.0	1.6	**22.6321**	0.340	1.5	ug/L	104	Standard
	Zn	66	105467.2	1.2	**83.1726**	0.384	0.5	ug/L	363	Standard
>	**Ge**	72	571655.8	0.7				ug/L	495142	Standard
	As	75	9636.9	0.9	**7.5116**	0.042	0.6	ug/L	-50	Standard
	Se	82	70.5	8.3	**0.4184**	0.042	10.1	ug/L	14	Standard
	Se-1	77	129.0	9.9	**0.9077**	0.153	16.9	ug/L	42	Standard
>	**Ga**	71	22341.5	2.4				mg/L	42	Standard
	Rb	85	210691.8	1.9				ug/L	17	Standard
	Y	89	776017.6	0.9				ug/L	417098	Standard
>	**Rh**	103	61.7	24.8				ug/L	13	Standard
	Mo	98	1324.4	9.6	**0.4208**	0.045	10.6	ug/L	11	Standard
	Ag	107	918.4	2.4	**0.1080**	0.004	3.7	ug/L	68	Standard
	Cd	111	891.1	4.2	**0.3578**	0.020	5.5	mg/L	2	Standard
	Cd	114	2180.6	6.0	**0.3625**	0.017	4.8	ug/L	12	Standard
>	**In**	115	684819.6	1.2				ug/L	587441	Standard
	Sn	118	1785.1	3.5	**0.1674**	0.006	3.8	ug/L	497	Standard
	Sb	123	354.4	3.1	**0.0609**	0.003	4.6	ug/L	78	Standard
	Ba	135	461342.5	1.4	**193.3434**	2.631	1.4	ug/L	24	Standard
	Ce	140	1368480.3	1.7				ug/L	25	Standard
>	**Tb**	159	1075718.6	2.2				ug/L	939701	Standard
	Ho	165	22026.0	1.7				ug/L	10	Standard
	Tl	203	1135.0	2.0	**0.1247**	0.001	0.6	ug/L	4	Standard
	Tl	205	1093.4	11.6	**0.1404**	0.014	10.2	ug/L	2	Standard
	Pb	206	147882.6	1.3	**25.3549**	0.415	1.6	ug/L	240	Standard
	Pb	207	119862.3	0.6	**23.1268**	0.424	1.8	ug/L	198	Standard
	Pb	208	520445.5	2.0	**25.4242**	0.898	3.5	ug/L	883	Standard
	U	238	4663.1	0.9	**0.6178**	0.006	0.9	ug/L	3	Standard
>	**Bi**	209	570570.9	1.5				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	126.7	27.7	**0.0563**	0.032	56.3	mg/L	37	Standard
K	39	878.4	3.1	**1.3326**	0.091	6.9	mg/L	38	Standard
Ca	43	426.7	4.7	**17.5293**	0.460	2.6	mg/L	10	Standard
Fe	54	21094.2	3.4	**13.1896**	0.865	6.6	mg/L	179	Standard
Fe	57	5826.1	1.4	**13.6721**	0.491	3.6	mg/L	335	Standard
> **Sc-1**	45	82006.5	3.2				mg/L	61029	Standard
Cl	35	28772.6	2.0				ug/L	20195	Standard
Kr	83	3.0	66.7				ug/L	4	Standard
Br	81	3580.4	3.6				ug/L	1547	Standard
P	31	21750.6	1.3				ug/L	15286	Standard
S	34	2703.6	0.6				ug/L	1572	Standard
Sr	88	178.3	13.8				ug/L	73	Standard
C	12	233.3	9.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	96.7	36.3				mg/L	3	Standard
Dy	164	37298.5	1.0				mg/L	6	Standard
Ho-1	165	22026.0	1.7				mg/L	10	Standard
Er	166	20383.7	1.3				mg/L	13	Standard
I	127	19701.1	3.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.041	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		115.453	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		116.577
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.891
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606138103
Sample Date/Time: Wednesday, June 29, 2016 19:23:03
Number of Replicates: 3
Autosampler Position: 257
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82351.7	3.3				ug/L	74699	Standard
	Be	9	43.3	24.0	**0.0523**	0.011	20.3	ug/L	8	Standard
	Al	27	430174.7	3.0	**2.6419**	0.016	0.6	ug/L	1493	Standard
	Sc	45	73040.6	1.2				ug/L	61029	Standard
	Ti	47	215.7	6.2	**0.3839**	0.033	8.6	ug/L	35	Standard
	V	51	5937.3	2.7	**0.4853**	0.017	3.5	ug/L	1435	Standard
	Cr	52	11052.0	1.3	**0.2679**	0.017	6.2	ug/L	7635	Standard
	Cr	53	723.4	5.6	**0.3480**	0.038	11.0	ug/L	363	Standard
	Mn	55	109527.8	0.6	**13.4774**	0.102	0.8	ug/L	747	Standard
	Co	59	1998.1	1.8	**0.2248**	0.006	2.5	ug/L	234	Standard
	Ni	60	1283.7	2.7	**0.4700**	0.016	3.4	ug/L	215	Standard
	Cu	65	1177.7	1.9	**0.4444**	0.009	2.1	ug/L	104	Standard
	Zn	66	4258.3	1.3	**2.9218**	0.029	1.0	ug/L	363	Standard
>	**Ge**	72	571680.5	0.6				ug/L	495142	Standard
	As	75	130.4	5.6	**0.1604**	0.006	3.7	ug/L	-50	Standard
	Se	82	14.1	16.1	**-0.0268**	0.018	65.5	ug/L	14	Standard
	Se-1	77	58.0	6.9	**0.0653**	0.044	66.8	ug/L	42	Standard
>	**Ga**	71	521.7	4.0				mg/L	42	Standard
	Rb	85	4554.0	2.0				ug/L	17	Standard
	Y	89	512515.9	2.6				ug/L	417098	Standard
>	**Rh**	103	11.7	24.7				ug/L	13	Standard
	Mo	98	90.4	4.4	**0.0229**	0.001	6.5	ug/L	11	Standard
	Ag	107	144.3	4.6	**0.0058**	0.001	16.1	ug/L	68	Standard
	Cd	111	21.8	34.6	**0.0009**	0.003	335.6	mg/L	2	Standard
	Cd	114	67.8	46.0	**0.0090**	0.005	55.6	ug/L	12	Standard
>	**In**	115	696556.9	1.5				ug/L	587441	Standard
	Sn	118	640.0	3.6	**-0.0023**	0.005	204.9	ug/L	497	Standard
	Sb	123	182.0	15.1	**0.0287**	0.006	19.2	ug/L	78	Standard
	Ba	135	9992.3	2.7	**4.1009**	0.069	1.7	ug/L	24	Standard
	Ce	140	29587.2	2.0				ug/L	25	Standard
>	**Tb**	159	1058949.6	2.5				ug/L	939701	Standard
	Ho	165	493.3	6.5				ug/L	10	Standard
	Tl	203	41.7	21.8	**0.0028**	0.001	37.1	ug/L	4	Standard
	Tl	205	43.3	54.5	**0.0057**	0.003	52.4	ug/L	2	Standard
	Pb	206	3583.8	1.2	**0.5358**	0.012	2.2	ug/L	240	Standard
	Pb	207	2855.9	1.4	**0.4744**	0.011	2.4	ug/L	198	Standard
	Pb	208	12510.0	0.4	**0.5295**	0.006	1.1	ug/L	883	Standard
	U	238	110.3	6.2	**0.0101**	0.001	8.0	ug/L	3	Standard
>	**Bi**	209	579224.4	1.1				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	51.7	29.6	**-0.0092**	0.017	184.4	mg/L	37	Standard
K	39	41.7	61.6	**-0.0375**	0.047	124.3	mg/L	38	Standard
Ca	43	26.7	10.8	**-1.1162**	0.146	13.1	mg/L	10	Standard
Fe	54	584.0	15.6	**0.2752**	0.062	22.7	mg/L	179	Standard
Fe	57	388.3	5.2	**0.0289**	0.063	219.5	mg/L	335	Standard
> **Sc-1**	45	73040.6	1.2				mg/L	61029	Standard
Cl	35	28933.6	1.8				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	2263.5	5.9				ug/L	1547	Standard
P	31	20116.7	3.4				ug/L	15286	Standard
S	34	2530.2	7.0				ug/L	1572	Standard
Sr	88	75.0	23.1				ug/L	73	Standard
C	12	66.7	56.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	963.7	4.1				mg/L	6	Standard
Ho-1	165	493.3	6.5				mg/L	10	Standard
Er	166	410.0	6.5				mg/L	13	Standard
I	127	2373.5	31.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.245	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		115.458	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		118.575
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.542
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606138104
Sample Date/Time: Wednesday, June 29, 2016 19:26:15
Number of Replicates: 3
Autosampler Position: 258
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	85261.0	2.3				ug/L	74699	Standard
	Be	9	1065.0	16.2	**1.0661**	0.158	14.8	ug/L	8	Standard
	Al	27	15142099.3	1.2	**90.2750**	1.228	1.4	ug/L	1493	Standard
	Sc	45	77933.3	2.2				ug/L	61029	Standard
	Ti	47	7118.0	1.5	**16.2707**	0.118	0.7	ug/L	35	Standard
	V	51	161044.2	0.8	**18.4034**	0.196	1.1	ug/L	1435	Standard
	Cr	52	146045.2	0.2	**16.1669**	0.325	2.0	ug/L	7635	Standard
	Cr	53	17793.8	1.2	**16.4664**	0.462	2.8	ug/L	363	Standard
	Mn	55	4299510.8	1.0	**538.5113**	8.104	1.5	ug/L	747	Standard
	Co	59	67815.8	1.0	**8.9211**	0.182	2.0	ug/L	234	Standard
	Ni	60	46536.4	1.1	**21.5551**	0.152	0.7	ug/L	215	Standard
	Cu	65	28919.6	1.2	**13.4506**	0.294	2.2	ug/L	104	Standard
	Zn	66	52781.1	1.6	**41.6917**	0.739	1.8	ug/L	363	Standard
>	**Ge**	72	567729.5	1.7				ug/L	495142	Standard
	As	75	4550.5	2.3	**3.6043**	0.141	3.9	ug/L	-50	Standard
	Se	82	43.5	41.5	**0.2091**	0.148	70.8	ug/L	14	Standard
	Se-1	77	118.3	4.0	**0.7906**	0.045	5.7	ug/L	42	Standard
>	**Ga**	71	21335.0	2.6				mg/L	42	Standard
	Rb	85	199689.0	1.1				ug/L	17	Standard
	Y	89	717025.3	1.7				ug/L	417098	Standard
>	**Rh**	103	53.3	39.0				ug/L	13	Standard
	Mo	98	750.2	3.3	**0.2455**	0.003	1.3	ug/L	11	Standard
	Ag	107	572.7	8.1	**0.0655**	0.005	7.5	ug/L	68	Standard
	Cd	111	313.3	5.6	**0.1259**	0.007	5.6	mg/L	2	Standard
	Cd	114	729.6	4.4	**0.1250**	0.007	5.3	ug/L	12	Standard
>	**In**	115	657920.1	2.1				ug/L	587441	Standard
	Sn	118	513.3	6.6	**-0.0162**	0.005	32.2	ug/L	497	Standard
	Sb	123	156.7	10.3	**0.0258**	0.004	14.3	ug/L	78	Standard
	Ba	135	278778.0	0.4	**121.6374**	2.867	2.4	ug/L	24	Standard
	Ce	140	1205012.6	0.9				ug/L	25	Standard
>	**Tb**	159	1028655.6	1.0				ug/L	939701	Standard
	Ho	165	19245.5	0.5				ug/L	10	Standard
	Tl	203	1022.7	4.2	**0.1168**	0.004	3.6	ug/L	4	Standard
	Tl	205	930.0	6.2	**0.1244**	0.008	6.1	ug/L	2	Standard
	Pb	206	75172.7	1.1	**13.3810**	0.239	1.8	ug/L	240	Standard
	Pb	207	60753.2	0.6	**12.1662**	0.152	1.3	ug/L	198	Standard
	Pb	208	268421.8	0.9	**13.6089**	0.053	0.4	ug/L	883	Standard
	U	238	4956.8	1.6	**0.6840**	0.014	2.1	ug/L	3	Standard
>	**Bi**	209	548179.9	0.7				ug/L	523984	Standard

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Na	23	3.3	173.2	**29.7760**	51.565	173.2	mg/L	0	Standard
Mg	24	116.7	8.9	**0.0527**	0.008	15.2	mg/L	37	Standard
K	39	606.7	4.1	**0.9368**	0.065	7.0	mg/L	38	Standard
Ca	43	223.3	26.5	**8.5548**	3.074	35.9	mg/L	10	Standard
Fe	54	18758.0	3.4	**12.3136**	0.167	1.4	mg/L	179	Standard
Fe	57	5059.2	5.4	**12.3881**	0.534	4.3	mg/L	335	Standard
Sc-1	45	77933.3	2.2				mg/L	61029	Standard
Cl	35	27511.6	2.5				ug/L	20195	Standard
Kr	83	4.0	50.0				ug/L	4	Standard
Br	81	2450.2	6.4				ug/L	1547	Standard
P	31	19838.0	2.4				ug/L	15286	Standard
S	34	2438.5	4.0				ug/L	1572	Standard
Sr	88	130.0	10.2				ug/L	73	Standard
C	12	76.7	41.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	124.9				mg/L	3	Standard
Dy	164	31319.3	1.6				mg/L	6	Standard
Ho-1	165	19245.5	0.5				mg/L	10	Standard
Er	166	17009.5	2.0				mg/L	13	Standard
I	127	14255.0	0.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		114.140	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		114.660	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	111.998
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	104.618
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606138104
Sample Date/Time: Wednesday, June 29, 2016 19:29:26
Number of Replicates: 3
Autosampler Position: 259
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81019.4	0.7				ug/L	74699	Standard
	Be	9	41.7	18.3	**0.0512**	0.008	15.3	ug/L	8	Standard
	Al	27	329954.8	1.9	**2.0568**	0.044	2.2	ug/L	1493	Standard
	Sc	45	70853.8	4.4				ug/L	61029	Standard
	Ti	47	170.0	4.8	**0.2650**	0.022	8.2	ug/L	35	Standard
	V	51	4919.9	1.5	**0.3475**	0.009	2.6	ug/L	1435	Standard
	Cr	52	11144.8	0.5	**0.2299**	0.010	4.3	ug/L	7635	Standard
	Cr	53	798.4	9.1	**0.3907**	0.073	18.6	ug/L	363	Standard
	Mn	55	93006.7	2.2	**10.9903**	0.351	3.2	ug/L	747	Standard
	Co	59	1669.1	4.9	**0.1734**	0.010	5.5	ug/L	234	Standard
	Ni	60	1239.4	3.4	**0.4280**	0.019	4.5	ug/L	215	Standard
	Cu	65	783.4	0.7	**0.2472**	0.006	2.3	ug/L	104	Standard
	Zn	66	3223.7	4.0	**2.0065**	0.120	6.0	ug/L	363	Standard
>	**Ge**	72	593953.7	1.0				ug/L	495142	Standard
	As	75	25.6	116.2	**0.0786**	0.022	28.0	ug/L	-50	Standard
	Se	82	15.5	11.3	**-0.0201**	0.014	71.9	ug/L	14	Standard
	Se-1	77	55.7	3.7	**0.0130**	0.019	145.3	ug/L	42	Standard
>	**Ga**	71	496.7	9.6				mg/L	42	Standard
	Rb	85	4318.9	1.6				ug/L	17	Standard
	Y	89	493099.4	1.2				ug/L	417098	Standard
>	**Rh**	103	8.3	91.7				ug/L	13	Standard
	Mo	98	63.8	10.3	**0.0154**	0.002	13.8	ug/L	11	Standard
	Ag	107	130.3	15.7	**0.0047**	0.003	56.8	ug/L	68	Standard
	Cd	111	7.2	21.0	**-0.0049**	0.001	12.8	mg/L	2	Standard
	Cd	114	27.0	44.7	**0.0025**	0.002	80.8	ug/L	12	Standard
>	**In**	115	665068.2	0.5				ug/L	587441	Standard
	Sn	118	545.0	15.7	**-0.0123**	0.013	107.4	ug/L	497	Standard
	Sb	123	150.6	9.1	**0.0243**	0.003	11.0	ug/L	78	Standard
	Ba	135	6015.5	0.5	**2.5800**	0.016	0.6	ug/L	24	Standard
	Ce	140	25678.4	3.6				ug/L	25	Standard
>	**Tb**	159	1023204.1	0.9				ug/L	939701	Standard
	Ho	165	420.0	5.5				ug/L	10	Standard
	Tl	203	37.3	22.8	**0.0024**	0.001	40.1	ug/L	4	Standard
	Tl	205	30.0	50.0	**0.0040**	0.002	46.9	ug/L	2	Standard
	Pb	206	1995.8	4.0	**0.2734**	0.016	6.0	ug/L	240	Standard
	Pb	207	1576.4	5.4	**0.2364**	0.019	8.0	ug/L	198	Standard
	Pb	208	6805.9	1.7	**0.2606**	0.003	1.1	ug/L	883	Standard
	U	238	99.3	2.5	**0.0089**	0.000	2.4	ug/L	3	Standard
>	**Bi**	209	568219.3	0.9				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	30.0	66.7	**-0.0312**	0.023	74.2	mg/L	37	Standard
K	39	65.0	30.8	**0.0108**	0.043	395.4	mg/L	38	Standard
Ca	43	20.0	0.0	**-1.4338**	0.047	3.3	mg/L	10	Standard
Fe	54	499.3	4.0	**0.2265**	0.010	4.2	mg/L	179	Standard
Fe	57	346.7	6.8	**-0.0592**	0.056	94.8	mg/L	335	Standard
> **Sc-1**	45	70853.8	4.4				mg/L	61029	Standard
Cl	35	26917.9	3.4				ug/L	20195	Standard
Kr	83	2.0	0.0				ug/L	4	Standard
Br	81	1996.8	2.8				ug/L	1547	Standard
P	31	19530.9	2.5				ug/L	15286	Standard
S	34	2235.2	2.4				ug/L	1572	Standard
Sr	88	70.0	18.9				ug/L	73	Standard
C	12	83.3	38.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	818.0	9.1				mg/L	6	Standard
Ho-1	165	420.0	5.5				mg/L	10	Standard
Er	166	390.0	11.8				mg/L	13	Standard
I	127	1930.1	32.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.461	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		119.956	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.214
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.442
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606138105
Sample Date/Time: Wednesday, June 29, 2016 19:32:37
Number of Replicates: 3
Autosampler Position: 260
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	86630.3	1.6				ug/L	74699	Standard
	Be	9	1345.1	15.8	**1.3230**	0.188	14.2	ug/L	8	Standard
	Al	27	25518871.0	0.5	**149.7364**	2.025	1.4	ug/L	1493	Standard
	Sc	45	82793.9	1.1				ug/L	61029	Standard
	Ti	47	9047.0	1.1	**21.0343**	0.216	1.0	ug/L	35	Standard
	V	51	241144.8	2.1	**28.0828**	0.136	0.5	ug/L	1435	Standard
	Cr	52	185820.6	3.2	**21.1812**	0.417	2.0	ug/L	7635	Standard
	Cr	53	22667.0	3.7	**21.3886**	0.515	2.4	ug/L	363	Standard
	Mn	55	5666490.2	1.7	**720.7034**	2.244	0.3	ug/L	747	Standard
	Co	59	89984.1	1.6	**12.0322**	0.097	0.8	ug/L	234	Standard
	Ni	60	57928.9	2.2	**27.2782**	0.178	0.7	ug/L	215	Standard
	Cu	65	41127.1	3.0	**19.4650**	0.281	1.4	ug/L	104	Standard
	Zn	66	70831.6	3.1	**56.9699**	0.880	1.5	ug/L	363	Standard
>	**Ge**	72	559032.2	1.6				ug/L	495142	Standard
	As	75	9088.7	3.2	**7.2452**	0.123	1.7	ug/L	-50	Standard
	Se	82	66.3	23.6	**0.3960**	0.117	29.7	ug/L	14	Standard
	Se-1	77	130.0	4.3	**0.9538**	0.045	4.7	ug/L	42	Standard
>	**Ga**	71	25715.1	2.4				mg/L	42	Standard
	Rb	85	243499.9	2.1				ug/L	17	Standard
	Y	89	766854.2	0.5				ug/L	417098	Standard
>	**Rh**	103	51.7	5.6				ug/L	13	Standard
	Mo	98	760.8	5.6	**0.2496**	0.019	7.7	ug/L	11	Standard
	Ag	107	727.0	8.3	**0.0869**	0.010	11.3	ug/L	68	Standard
	Cd	111	420.9	5.2	**0.1721**	0.013	7.6	mg/L	2	Standard
	Cd	114	1021.1	15.6	**0.1761**	0.030	17.3	ug/L	12	Standard
>	**In**	115	657583.1	2.2				ug/L	587441	Standard
	Sn	118	706.7	9.4	**0.0135**	0.012	91.4	ug/L	497	Standard
	Sb	123	160.0	3.9	**0.0265**	0.002	7.0	ug/L	78	Standard
	Ba	135	489546.4	1.0	**213.7510**	6.703	3.1	ug/L	24	Standard
	Ce	140	1473172.3	0.9				ug/L	25	Standard
>	**Tb**	159	1043758.3	1.4				ug/L	939701	Standard
	Ho	165	23187.7	0.9				ug/L	10	Standard
	Tl	203	1287.4	7.3	**0.1458**	0.012	8.5	ug/L	4	Standard
	Tl	205	1168.4	5.5	**0.1545**	0.010	6.8	ug/L	2	Standard
	Pb	206	110607.4	2.3	**19.4839**	0.695	3.6	ug/L	240	Standard
	Pb	207	89635.8	2.2	**17.7667**	0.631	3.6	ug/L	198	Standard
	Pb	208	392577.0	0.9	**19.6965**	0.434	2.2	ug/L	883	Standard
	U	238	8119.8	0.8	**1.1095**	0.020	1.8	ug/L	3	Standard
>	**Bi**	209	554986.0	1.4				ug/L	523984	Standard

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Na	23	5.0	100.0	**42.5482**	42.299	99.4	mg/L	0	Standard
Mg	24	165.0	16.0	**0.0921**	0.027	29.3	mg/L	37	Standard
K	39	870.0	2.5	**1.3032**	0.021	1.6	mg/L	38	Standard
Ca	43	623.3	6.5	**26.5121**	2.122	8.0	mg/L	10	Standard
Fe	54	24836.5	3.4	**15.3836**	0.500	3.3	mg/L	179	Standard
Fe	57	6766.5	3.6	**15.8771**	0.513	3.2	mg/L	335	Standard
Sc-1	45	82793.9	1.1				mg/L	61029	Standard
Cl	35	27591.1	0.8				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	2510.2	7.0				ug/L	1547	Standard
P	31	20592.3	2.0				ug/L	15286	Standard
S	34	2640.2	1.7				ug/L	1572	Standard
Sr	88	220.0	6.0				ug/L	73	Standard
C	12	86.7	24.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46.7	44.6				mg/L	3	Standard
Dy	164	40115.6	1.1				mg/L	6	Standard
Ho-1	165	23187.7	0.9				mg/L	10	Standard
Er	166	21645.5	1.0				mg/L	13	Standard
I	127	13629.5	5.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		115.973	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		112.903	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.940
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.916
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606138105
Sample Date/Time: Wednesday, June 29, 2016 19:35:50
Number of Replicates: 3
Autosampler Position: 401
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81775.3	3.6				ug/L	74699	Standard
	Be	9	45.0	11.1	**0.0544**	0.006	11.5	ug/L	8	Standard
	Al	27	547945.2	2.8	**3.3933**	0.048	1.4	ug/L	1493	Standard
	Sc	45	73444.3	1.5				ug/L	61029	Standard
	Ti	47	212.7	8.9	**0.3795**	0.037	9.9	ug/L	35	Standard
	V	51	6482.3	2.1	**0.5523**	0.015	2.6	ug/L	1435	Standard
	Cr	52	11556.7	2.9	**0.3347**	0.014	4.0	ug/L	7635	Standard
	Cr	53	865.0	10.6	**0.4848**	0.072	14.9	ug/L	363	Standard
	Mn	55	123099.8	1.9	**15.2575**	0.218	1.4	ug/L	747	Standard
	Co	59	2101.5	1.5	**0.2401**	0.008	3.5	ug/L	234	Standard
	Ni	60	1463.7	4.5	**0.5572**	0.024	4.3	ug/L	215	Standard
	Cu	65	1004.0	2.5	**0.3664**	0.012	3.3	ug/L	104	Standard
	Zn	66	6132.9	2.2	**4.4370**	0.037	0.8	ug/L	363	Standard
>	**Ge**	72	568314.4	1.9				ug/L	495142	Standard
	As	75	135.4	21.1	**0.1651**	0.024	14.5	ug/L	-50	Standard
	Se	82	20.1	25.4	**0.0217**	0.043	197.6	ug/L	14	Standard
	Se-1	77	47.3	2.4	**-0.0575**	0.019	32.3	ug/L	42	Standard
>	**Ga**	71	615.0	5.6				mg/L	42	Standard
	Rb	85	5134.2	2.0				ug/L	17	Standard
	Y	89	506159.2	1.9				ug/L	417098	Standard
>	**Rh**	103	11.7	107.9				ug/L	13	Standard
	Mo	98	50.7	18.0	**0.0105**	0.003	28.3	ug/L	11	Standard
	Ag	107	125.7	10.6	**0.0035**	0.002	48.0	ug/L	68	Standard
	Cd	111	10.9	48.5	**-0.0035**	0.002	62.7	mg/L	2	Standard
	Cd	114	42.4	34.4	**0.0049**	0.002	48.6	ug/L	12	Standard
>	**In**	115	689821.8	0.4				ug/L	587441	Standard
	Sn	118	595.0	5.8	**-0.0080**	0.005	59.8	ug/L	497	Standard
	Sb	123	118.9	14.7	**0.0175**	0.003	18.8	ug/L	78	Standard
	Ba	135	10423.6	1.2	**4.3208**	0.035	0.8	ug/L	24	Standard
	Ce	140	31651.4	0.9				ug/L	25	Standard
>	**Tb**	159	1043112.5	1.4				ug/L	939701	Standard
	Ho	165	500.0	7.2				ug/L	10	Standard
	Tl	203	34.0	12.8	**0.0020**	0.000	23.2	ug/L	4	Standard
	Tl	205	20.0	66.1	**0.0027**	0.002	61.7	ug/L	2	Standard
	Pb	206	2645.2	1.4	**0.3784**	0.005	1.3	ug/L	240	Standard
	Pb	207	2160.5	2.6	**0.3433**	0.011	3.1	ug/L	198	Standard
	Pb	208	9496.8	0.4	**0.3858**	0.004	1.1	ug/L	883	Standard
	U	238	183.7	2.7	**0.0198**	0.001	4.5	ug/L	3	Standard
>	**Bi**	209	577076.9	1.0				ug/L	523984	Standard

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Na	23	1.7	173.2	**15.9398**	27.600	173.2	mg/L	0	Standard
Mg	24	31.7	39.7	**-0.0310**	0.014	45.0	mg/L	37	Standard
K	39	75.0	17.6	**0.0236**	0.024	101.0	mg/L	38	Standard
Ca	43	45.0	44.4	**-0.1502**	1.087	724.0	mg/L	10	Standard
Fe	54	679.1	0.8	**0.3402**	0.010	2.9	mg/L	179	Standard
Fe	57	390.0	9.7	**0.0271**	0.102	376.6	mg/L	335	Standard
Sc-1	45	73444.3	1.5				mg/L	61029	Standard
Cl	35	27695.3	0.4				ug/L	20195	Standard
Kr	83	1.3	114.6				ug/L	4	Standard
Br	81	2046.8	15.0				ug/L	1547	Standard
P	31	20195.1	3.7				ug/L	15286	Standard
S	34	2511.9	7.3				ug/L	1572	Standard
Sr	88	68.3	42.9				ug/L	73	Standard
C	12	50.0	40.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	3	Standard
Dy	164	1042.0	9.5				mg/L	6	Standard
Ho-1	165	500.0	7.2				mg/L	10	Standard
Er	166	446.7	15.2				mg/L	13	Standard
I	127	1841.8	32.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		109.473	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		114.778	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		117.428
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.132
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606138107
Sample Date/Time: Wednesday, June 29, 2016 19:39:01
Number of Replicates: 3
Autosampler Position: 402
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	84183.2	0.7				ug/L	74699	Standard
	Be	9	1125.0	5.6	**1.1418**	0.071	6.2	ug/L	8	Standard
	Al	27	16362118.1	1.0	**98.7783**	0.357	0.4	ug/L	1493	Standard
	Sc	45	80079.5	2.6				ug/L	61029	Standard
	Ti	47	5684.7	1.2	**13.0248**	0.178	1.4	ug/L	35	Standard
	V	51	193164.5	0.6	**22.2022**	0.395	1.8	ug/L	1435	Standard
	Cr	52	144926.2	1.3	**16.0993**	0.107	0.7	ug/L	7635	Standard
	Cr	53	17089.6	2.1	**15.8598**	0.165	1.0	ug/L	363	Standard
	Mn	55	4945150.4	1.2	**621.8545**	12.591	2.0	ug/L	747	Standard
	Co	59	79442.1	0.4	**10.4972**	0.101	1.0	ug/L	234	Standard
	Ni	60	48759.0	0.6	**22.6802**	0.156	0.7	ug/L	215	Standard
	Cu	65	44548.4	1.0	**20.8546**	0.085	0.4	ug/L	104	Standard
	Zn	66	116987.3	1.0	**93.3289**	1.249	1.3	ug/L	363	Standard
>	**Ge**	72	565487.8	1.3				ug/L	495142	Standard
	As	75	12786.6	1.5	**10.0557**	0.155	1.5	ug/L	-50	Standard
	Se	82	93.9	6.5	**0.6112**	0.058	9.6	ug/L	14	Standard
	Se-1	77	134.7	12.3	**0.9941**	0.220	22.1	ug/L	42	Standard
>	**Ga**	71	20750.9	1.1				mg/L	42	Standard
	Rb	85	229576.4	1.2				ug/L	17	Standard
	Y	89	760564.3	0.9				ug/L	417098	Standard
>	**Rh**	103	26.7	39.0				ug/L	13	Standard
	Mo	98	714.7	6.9	**0.2279**	0.017	7.3	ug/L	11	Standard
	Ag	107	706.7	2.8	**0.0816**	0.003	4.3	ug/L	68	Standard
	Cd	111	991.8	3.3	**0.4053**	0.015	3.7	mg/L	2	Standard
	Cd	114	2256.1	2.3	**0.3810**	0.005	1.2	ug/L	12	Standard
>	**In**	115	674434.0	1.0				ug/L	587441	Standard
	Sn	118	836.7	10.4	**0.0300**	0.012	41.1	ug/L	497	Standard
	Sb	123	542.0	6.0	**0.0969**	0.005	5.6	ug/L	78	Standard
	Ba	135	363437.5	1.5	**154.6607**	2.916	1.9	ug/L	24	Standard
	Ce	140	1323769.8	0.4				ug/L	25	Standard
>	**Tb**	159	1046974.9	0.8				ug/L	939701	Standard
	Ho	165	21420.1	0.8				ug/L	10	Standard
	Tl	203	1015.7	4.2	**0.1138**	0.005	4.5	ug/L	4	Standard
	Tl	205	906.7	2.2	**0.1191**	0.002	2.0	ug/L	2	Standard
	Pb	206	225485.9	0.9	**39.5300**	0.272	0.7	ug/L	240	Standard
	Pb	207	184080.5	0.2	**36.3178**	0.069	0.2	ug/L	198	Standard
	Pb	208	811320.1	0.8	**40.5199**	0.434	1.1	ug/L	883	Standard
	U	238	5280.9	2.0	**0.7154**	0.017	2.3	ug/L	3	Standard
>	**Bi**	209	558508.9	0.3				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	105.0	49.7	**0.0390**	0.054	139.2	mg/L	37	Standard
K	39	875.0	3.0	**1.3597**	0.017	1.3	mg/L	38	Standard
Ca	43	123.3	10.2	**3.4107**	0.543	15.9	mg/L	10	Standard
Fe	54	18540.3	2.4	**11.8486**	0.489	4.1	mg/L	179	Standard
Fe	57	5050.8	2.1	**12.0198**	0.614	5.1	mg/L	335	Standard
> **Sc-1**	45	80079.5	2.6				mg/L	61029	Standard
Cl	35	26211.3	2.3				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	4010.5	1.9				ug/L	1547	Standard
P	31	18821.7	2.8				ug/L	15286	Standard
S	34	2180.2	5.1				ug/L	1572	Standard
Sr	88	100.0	25.0				ug/L	73	Standard
C	12	166.7	30.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	70.0	28.6				mg/L	3	Standard
Dy	164	35314.8	2.4				mg/L	6	Standard
Ho-1	165	21420.1	0.8				mg/L	10	Standard
Er	166	18965.2	4.5				mg/L	13	Standard
I	127	21211.5	3.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		112.697	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.207	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	114.809
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	106.589
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606138107
Sample Date/Time: Wednesday, June 29, 2016 19:42:13
Number of Replicates: 3
Autosampler Position: 403
Sample Description: 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79962.1	1.1				ug/L	74699	Standard
	Be	9	35.0	37.8	**0.0449**	0.015	32.4	ug/L	8	Standard
	Al	27	348986.4	2.3	**2.2050**	0.043	1.9	ug/L	1493	Standard
	Sc	45	69050.4	2.1				ug/L	61029	Standard
	Ti	47	147.7	4.0	**0.2190**	0.009	4.2	ug/L	35	Standard
	V	51	5537.0	5.1	**0.4222**	0.040	9.5	ug/L	1435	Standard
	Cr	52	11219.2	0.9	**0.2513**	0.015	5.8	ug/L	7635	Standard
	Cr	53	801.7	3.8	**0.4006**	0.025	6.2	ug/L	363	Standard
	Mn	55	101661.8	3.0	**12.1540**	0.524	4.3	ug/L	747	Standard
	Co	59	1813.1	5.5	**0.1941**	0.015	7.9	ug/L	234	Standard
	Ni	60	1251.7	0.2	**0.4392**	0.009	2.1	ug/L	215	Standard
	Cu	65	1098.7	4.3	**0.3937**	0.026	6.7	ug/L	104	Standard
	Zn	66	4663.4	1.9	**3.1415**	0.081	2.6	ug/L	363	Standard
>	**Ge**	72	587910.1	1.4				ug/L	495142	Standard
	As	75	208.3	5.8	**0.2162**	0.008	3.9	ug/L	-50	Standard
	Se	82	14.6	52.1	**-0.0264**	0.056	213.9	ug/L	14	Standard
	Se-1	77	58.3	15.6	**0.0509**	0.111	217.0	ug/L	42	Standard
>	**Ga**	71	483.3	11.4				mg/L	42	Standard
	Rb	85	4672.4	3.2				ug/L	17	Standard
	Y	89	494582.5	2.5				ug/L	417098	Standard
>	**Rh**	103	10.0	50.0				ug/L	13	Standard
	Mo	98	50.9	2.1	**0.0113**	0.001	5.2	ug/L	11	Standard
	Ag	107	137.0	5.3	**0.0059**	0.001	14.4	ug/L	68	Standard
	Cd	111	22.2	22.2	**0.0016**	0.002	123.1	mg/L	2	Standard
	Cd	114	55.9	25.6	**0.0077**	0.003	34.0	ug/L	12	Standard
>	**In**	115	657881.3	1.7				ug/L	587441	Standard
	Sn	118	586.7	15.6	**-0.0052**	0.012	239.2	ug/L	497	Standard
	Sb	123	130.5	4.0	**0.0208**	0.001	5.8	ug/L	78	Standard
	Ba	135	7584.6	1.4	**3.2933**	0.054	1.6	ug/L	24	Standard
	Ce	140	27601.8	1.0				ug/L	25	Standard
>	**Tb**	159	1004279.0	0.4				ug/L	939701	Standard
	Ho	165	470.0	12.8				ug/L	10	Standard
	Tl	203	31.3	21.7	**0.0018**	0.001	42.5	ug/L	4	Standard
	Tl	205	38.3	39.8	**0.0052**	0.002	37.2	ug/L	2	Standard
	Pb	206	5039.5	2.9	**0.8074**	0.036	4.5	ug/L	240	Standard
	Pb	207	4082.6	3.5	**0.7312**	0.039	5.3	ug/L	198	Standard
	Pb	208	17367.6	1.6	**0.7884**	0.025	3.2	ug/L	883	Standard
	U	238	118.3	14.2	**0.0116**	0.002	21.2	ug/L	3	Standard
>	**Bi**	209	562827.5	1.3				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	41.7	6.9	**-0.0175**	0.004	24.7	mg/L	37	Standard
K	39	65.0	46.8	**0.0126**	0.058	464.1	mg/L	38	Standard
Ca	43	20.0	66.1	**-1.4118**	0.719	50.9	mg/L	10	Standard
Fe	54	548.6	17.9	**0.2728**	0.072	26.3	mg/L	179	Standard
Fe	57	318.3	8.7	**-0.1165**	0.103	88.6	mg/L	335	Standard
> **Sc-1**	45	69050.4	2.1				mg/L	61029	Standard
Cl	35	24683.4	2.1				ug/L	20195	Standard
Kr	83	3.0	33.3				ug/L	4	Standard
Br	81	2036.8	6.4				ug/L	1547	Standard
P	31	17868.9	0.9				ug/L	15286	Standard
S	34	1880.1	5.1				ug/L	1572	Standard
Sr	88	70.0	32.7				ug/L	73	Standard
C	12	63.3	32.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	851.3	21.1				mg/L	6	Standard
Ho-1	165	470.0	12.8				mg/L	10	Standard
Er	166	460.0	19.0				mg/L	13	Standard
I	127	2083.5	32.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		107.046	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		118.736	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.991
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.413
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606138402
Sample Date/Time: Wednesday, June 29, 2016 19:45:24
Number of Replicates: 3
Autosampler Position: 404
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78829.6	2.0				ug/L	74699	Standard
	Be	9	476.7	4.8	**0.5211**	0.034	6.6	ug/L	8	Standard
	Al	27	790696.4	0.9	**5.0858**	0.055	1.1	ug/L	1493	Standard
	Sc	45	79546.6	1.7				ug/L	61029	Standard
	Ti	47	5657.7	0.8	**12.8152**	0.349	2.7	ug/L	35	Standard
	V	51	106854.5	1.6	**12.0511**	0.193	1.6	ug/L	1435	Standard
	Cr	52	263051.4	1.4	**29.7045**	0.729	2.5	ug/L	7635	Standard
	Cr	53	32229.3	4.0	**29.8443**	0.696	2.3	ug/L	363	Standard
	Mn	55	1259215.6	0.6	**156.4341**	3.728	2.4	ug/L	747	Standard
	Co	59	45647.0	0.6	**5.9475**	0.157	2.6	ug/L	234	Standard
	Ni	60	134444.3	1.6	**62.0317**	0.857	1.4	ug/L	215	Standard
	Cu	65	50137.5	0.5	**23.2180**	0.523	2.3	ug/L	104	Standard
	Zn	66	191528.7	0.9	**151.3328**	2.746	1.8	ug/L	363	Standard
>	**Ge**	72	572152.6	2.7				ug/L	495142	Standard
	As	75	5700.3	1.6	**4.4645**	0.048	1.1	ug/L	-50	Standard
	Se	82	330.0	4.2	**2.4632**	0.049	2.0	ug/L	14	Standard
	Se-1	77	314.7	3.0	**3.1071**	0.115	3.7	ug/L	42	Standard
>	**Ga**	71	3685.4	1.6				mg/L	42	Standard
	Rb	85	41053.9	1.7				ug/L	17	Standard
	Y	89	1388727.0	1.6				ug/L	417098	Standard
>	**Rh**	103	25.0	0.0				ug/L	13	Standard
	Mo	98	3897.2	2.0	**1.2782**	0.019	1.5	ug/L	11	Standard
	Ag	107	551.3	5.8	**0.0614**	0.003	5.7	ug/L	68	Standard
	Cd	111	1240.5	0.7	**0.5131**	0.007	1.4	mg/L	2	Standard
	Cd	114	2915.5	4.4	**0.4970**	0.020	4.1	ug/L	12	Standard
>	**In**	115	669008.5	1.2				ug/L	587441	Standard
	Sn	118	676.7	8.2	**0.0070**	0.008	114.7	ug/L	497	Standard
	Sb	123	186.6	3.8	**0.0309**	0.001	3.8	ug/L	78	Standard
	Ba	135	221251.7	0.3	**94.9139**	1.345	1.4	ug/L	24	Standard
	Ce	140	471655.7	0.9				ug/L	25	Standard
>	**Tb**	159	1067869.0	0.9				ug/L	939701	Standard
	Ho	165	47698.3	1.5				ug/L	10	Standard
	Tl	203	1397.7	2.5	**0.1543**	0.005	3.4	ug/L	4	Standard
	Tl	205	1176.7	6.0	**0.1515**	0.008	5.0	ug/L	2	Standard
	Pb	206	21429.5	1.2	**3.6210**	0.069	1.9	ug/L	240	Standard
	Pb	207	15728.2	0.6	**2.9798**	0.021	0.7	ug/L	198	Standard
	Pb	208	70387.8	1.2	**3.3811**	0.084	2.5	ug/L	883	Standard
	U	238	18087.1	1.2	**2.4141**	0.054	2.2	ug/L	3	Standard
>	**Bi**	209	569388.1	1.3				ug/L	523984	Standard

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Na	23	5.0	173.2	**43.9188**	76.061	173.2	mg/L	0	Standard
Mg	24	210.0	6.3	**0.1429**	0.013	9.0	mg/L	37	Standard
K	39	275.0	8.3	**0.3521**	0.037	10.4	mg/L	38	Standard
Ca	43	148.3	19.8	**4.6742**	1.471	31.5	mg/L	10	Standard
Fe	54	12478.7	2.5	**7.9817**	0.313	3.9	mg/L	179	Standard
Fe	57	3430.4	4.1	**7.8688**	0.221	2.8	mg/L	335	Standard
> **Sc-1**	45	79546.6	1.7				mg/L	61029	Standard
Cl	35	26111.8	0.7				ug/L	20195	Standard
Kr	83	1.3	43.3				ug/L	4	Standard
Br	81	2043.5	3.5				ug/L	1547	Standard
P	31	19195.5	2.0				ug/L	15286	Standard
S	34	2368.5	5.4				ug/L	1572	Standard
Sr	88	153.3	13.2				ug/L	73	Standard
C	12	70.0	14.3				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	140.0	18.9				mg/L	3	Standard
Dy	164	65719.4	1.8				mg/L	6	Standard
Ho-1	165	47698.3	1.5				mg/L	10	Standard
Er	166	45979.7	1.2				mg/L	13	Standard
I	127	5242.6	1.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.530	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		115.553	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.885
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.665
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1606138404
Sample Date/Time: Wednesday, June 29, 2016 19:48:35
Number of Replicates: 3
Autosampler Position: 405
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	80955.8	1.9				ug/L	74699	Standard
	Be	9	880.0	13.6	**0.9302**	0.126	13.6	ug/L	8	Standard
	Al	27	4591606.5	1.6	**28.8172**	0.235	0.8	ug/L	1493	Standard
	Sc	45	81773.4	1.2				ug/L	61029	Standard
	Ti	47	8450.7	1.8	**19.2499**	0.245	1.3	ug/L	35	Standard
	V	51	185955.1	1.6	**21.1827**	0.308	1.5	ug/L	1435	Standard
	Cr	52	431888.4	0.7	**49.5778**	0.407	0.8	ug/L	7635	Standard
	Cr	53	54036.2	1.9	**50.4433**	1.377	2.7	ug/L	363	Standard
	Mn	55	1979621.7	0.4	**246.7487**	3.142	1.3	ug/L	747	Standard
	Co	59	89211.3	2.3	**11.6929**	0.262	2.2	ug/L	234	Standard
	Ni	60	241828.7	1.1	**112.0223**	0.265	0.2	ug/L	215	Standard
	Cu	65	79842.9	1.5	**37.1424**	0.248	0.7	ug/L	104	Standard
	Zn	66	363879.1	1.7	**288.7674**	1.874	0.6	ug/L	363	Standard
>	**Ge**	72	570278.1	1.3				ug/L	495142	Standard
	As	75	11266.0	1.4	**8.7923**	0.037	0.4	ug/L	-50	Standard
	Se	82	562.8	1.7	**4.3149**	0.122	2.8	ug/L	14	Standard
	Se-1	77	468.7	10.3	**4.9506**	0.587	11.9	ug/L	42	Standard
>	**Ga**	71	6996.6	2.8				mg/L	42	Standard
	Rb	85	75201.3	3.4				ug/L	17	Standard
	Y	89	1637404.7	1.2				ug/L	417098	Standard
>	**Rh**	103	40.0	12.5				ug/L	13	Standard
	Mo	98	6065.7	2.4	**2.0076**	0.060	3.0	ug/L	11	Standard
	Ag	107	921.4	1.6	**0.1122**	0.003	2.7	ug/L	68	Standard
	Cd	111	1933.3	0.9	**0.8101**	0.015	1.9	mg/L	2	Standard
	Cd	114	4671.7	0.8	**0.8037**	0.006	0.7	ug/L	12	Standard
>	**In**	115	664089.4	1.0				ug/L	587441	Standard
	Sn	118	708.3	7.1	**0.0125**	0.007	53.2	ug/L	497	Standard
	Sb	123	171.2	9.0	**0.0282**	0.003	10.1	ug/L	78	Standard
	Ba	135	217409.8	1.0	**93.9488**	0.914	1.0	ug/L	24	Standard
	Ce	140	744689.2	0.9				ug/L	25	Standard
>	**Tb**	159	1077211.2	1.7				ug/L	939701	Standard
	Ho	165	62662.7	1.1				ug/L	10	Standard
	Tl	203	2865.3	1.3	**0.3204**	0.004	1.2	ug/L	4	Standard
	Tl	205	2535.2	5.2	**0.3286**	0.016	4.9	ug/L	2	Standard
	Pb	206	40598.7	0.9	**6.9743**	0.127	1.8	ug/L	240	Standard
	Pb	207	29975.3	2.2	**5.7854**	0.186	3.2	ug/L	198	Standard
	Pb	208	132785.8	0.6	**6.4904**	0.091	1.4	ug/L	883	Standard
	U	238	27584.4	0.2	**3.7106**	0.059	1.6	ug/L	3	Standard
>	**Bi**	209	565317.9	1.5				ug/L	523984	Standard

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Na	23	1.7	173.2	**14.1527**	24.505	173.1	mg/L	0	Standard
Mg	24	243.3	11.7	**0.1691**	0.025	14.5	mg/L	37	Standard
K	39	461.7	5.5	**0.6478**	0.049	7.5	mg/L	38	Standard
Ca	43	205.0	4.9	**7.1444**	0.559	7.8	mg/L	10	Standard
Fe	54	23854.6	1.3	**14.9557**	0.059	0.4	mg/L	179	Standard
Fe	57	6316.3	1.9	**14.9472**	0.123	0.8	mg/L	335	Standard
> **Sc-1**	45	81773.4	1.2				mg/L	61029	Standard
Cl	35	26395.0	1.0				ug/L	20195	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	8435.7	8.5				ug/L	1547	Standard
P	31	20819.3	1.9				ug/L	15286	Standard
S	34	2495.2	1.6				ug/L	1572	Standard
Sr	88	186.7	12.1				ug/L	73	Standard
C	12	26.7	21.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	520.0	8.4				mg/L	3	Standard
Dy	164	85733.4	1.4				mg/L	6	Standard
Ho-1	165	62662.7	1.1				mg/L	10	Standard
Er	166	61347.3	2.7				mg/L	13	Standard
I	127	12962.2	2.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.376	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		115.175	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.048
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.888
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ni 60 Upper, S, EEE	Ni	60	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1606138404
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 19:51:49
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79632.1	2.5				ug/L	74699	Standard
	Be	9	53037.7	1.9	**56.5448**	1.909	3.4	ug/L	8	Standard
	Al	27	8288547.2	1.5	**52.9043**	0.899	1.7	ug/L	1493	Standard
	Sc	45	68251.7	0.4				ug/L	61029	Standard
	Ti	47	44871.7	1.2	**102.9405**	2.024	2.0	ug/L	35	Standard
	V	51	450952.2	1.7	**51.7787**	1.350	2.6	ug/L	1435	Standard
	Cr	52	441674.6	0.8	**50.8503**	0.824	1.6	ug/L	7635	Standard
	Cr	53	54163.4	3.4	**50.6767**	1.716	3.4	ug/L	363	Standard
	Mn	55	408648.7	3.2	**50.9466**	2.025	4.0	ug/L	747	Standard
	Co	59	404996.9	2.1	**53.3495**	1.595	3.0	ug/L	234	Standard
	Ni	60	109209.9	1.2	**50.6487**	1.081	2.1	ug/L	215	Standard
	Cu	65	108068.7	1.0	**50.4372**	0.990	2.0	ug/L	104	Standard
	Zn	66	63914.2	1.2	**50.4711**	0.538	1.1	ug/L	363	Standard
>	Ge	72	568913.3	1.0				ug/L	495142	Standard
	As	75	64596.5	1.7	**50.2573**	1.198	2.4	ug/L	-50	Standard
	Se	82	6434.6	2.8	**50.8949**	1.678	3.3	ug/L	14	Standard
	Se-1	77	4404.6	0.9	**51.8699**	0.916	1.8	ug/L	42	Standard
>	Ga	71	81.7	19.7				mg/L	42	Standard
	Rb	85	868.4	8.5				ug/L	17	Standard
	Y	89	484608.1	0.7				ug/L	417098	Standard
>	Rh	103	25.0	40.0				ug/L	13	Standard
	Mo	98	300990.3	2.1	**101.3882**	1.976	1.9	ug/L	11	Standard
	Ag	107	359716.1	0.6	**49.5455**	0.289	0.6	ug/L	68	Standard
	Cd	111	115140.5	0.5	**49.4382**	0.205	0.4	mg/L	2	Standard
	Cd	114	277323.3	2.2	**48.5511**	1.074	2.2	ug/L	12	Standard
>	In	115	654244.8	0.1				ug/L	587441	Standard
	Sn	118	326410.3	0.9	**50.0768**	0.438	0.9	ug/L	497	Standard
	Sb	123	257734.5	0.6	**49.5626**	0.244	0.5	ug/L	78	Standard
	Ba	135	107937.1	0.2	**47.3350**	0.075	0.2	ug/L	24	Standard
	Ce	140	156.7	33.8				ug/L	25	Standard
>	Tb	159	993573.1	1.0				ug/L	939701	Standard
	Ho	165	18.3	41.7				ug/L	10	Standard
	Tl	203	442343.3	0.6	**51.3703**	0.497	1.0	ug/L	4	Standard
	Tl	205	397679.6	3.2	**53.2177**	1.929	3.6	ug/L	2	Standard
	Pb	206	282572.7	0.8	**50.5712**	0.781	1.5	ug/L	240	Standard
	Pb	207	252130.0	1.0	**50.7898**	0.969	1.9	ug/L	198	Standard
	Pb	208	1034503.8	1.3	**52.7468**	1.180	2.2	ug/L	883	Standard
	U	238	372072.1	1.5	**51.7486**	1.271	2.5	ug/L	3	Standard
>	Bi	209	547364.2	0.9				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.1101**	29.627	173.2	mg/L	0	Standard
Mg	24	4437.3	1.9	**5.0568**	0.105	2.1	mg/L	37	Standard
K	39	2166.8	4.9	**4.1677**	0.193	4.6	mg/L	38	Standard
Ca	43	105.0	40.7	**3.4097**	2.426	71.2	mg/L	10	Standard
Fe	54	6964.2	0.4	**5.1415**	0.037	0.7	mg/L	179	Standard
Fe	57	2053.5	5.5	**5.1659**	0.318	6.1	mg/L	335	Standard
> **Sc-1**	45	68251.7	0.4				mg/L	61029	Standard
Cl	35	27215.8	2.7				ug/L	20195	Standard
Kr	83	2.0	86.6				ug/L	4	Standard
Br	81	1920.1	6.9				ug/L	1547	Standard
P	31	20039.9	1.0				ug/L	15286	Standard
S	34	2546.9	7.4				ug/L	1572	Standard
Sr	88	71.7	29.0				ug/L	73	Standard
C	12	70.0	24.7				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	11.7	100.8				mg/L	6	Standard
Ho-1	165	18.3	41.7				mg/L	10	Standard
Er	166	33.3	34.6				mg/L	13	Standard
I	127	1696.8	22.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	113.090		
Al	27	105.809		
Sc	45			
Ti	47	102.941		
V	51	103.557		
Cr	52	101.701		
Cr	53			
Mn	55	101.893		
Co	59	106.699		
Ni	60	101.297		
Cu	65	100.874		
Zn	66	100.942		
> Ge	72		114.899	
As	75	100.515		
Se	82	101.790		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	101.388		
Ag	107	99.091		
Cd	111	98.876		
Cd	114			
In	115		111.372	
Sn	118	100.154		
Sb	123	99.125		
Ba	135	94.670		
Ce	140			
Tb	159			
Ho	165			
Tl	203	102.741		
Tl	205			
Pb	206			
Pb	207			
Pb	208	105.494		
U	238	103.497		
Bi	209		104.462	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 19:55:00
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78377.2	0.9				ug/L	74699	Standard
	Be	9	16.7	17.3	**0.0256**	0.003	11.6	ug/L	8	Standard
	Al	27	3955.5	8.5	**0.0123**	0.002	16.7	ug/L	1493	Standard
	Sc	45	70123.6	2.1				ug/L	61029	Standard
	Ti	47	44.3	19.2	**-0.0067**	0.022	331.3	ug/L	35	Standard
	V	51	1494.9	5.1	**-0.0231**	0.005	19.5	ug/L	1435	Standard
	Cr	52	7869.7	1.7	**-0.0976**	0.038	39.0	ug/L	7635	Standard
	Cr	53	438.3	4.0	**0.0839**	0.027	31.8	ug/L	363	Standard
	Mn	55	1323.4	11.3	**0.0175**	0.017	96.4	ug/L	747	Standard
	Co	59	292.0	15.1	**0.0012**	0.005	416.2	ug/L	234	Standard
	Ni	60	231.7	5.0	**-0.0160**	0.006	40.4	ug/L	215	Standard
	Cu	65	142.7	7.1	**-0.0369**	0.003	9.0	ug/L	104	Standard
	Zn	66	477.7	7.4	**-0.0736**	0.020	26.8	ug/L	363	Standard
>	**Ge**	72	568079.4	2.5				ug/L	495142	Standard
	As	75	-36.3	34.6	**0.0313**	0.010	31.8	ug/L	-50	Standard
	Se	82	17.1	26.2	**-0.0026**	0.033	1282.0	ug/L	14	Standard
	Se-1	77	54.3	9.3	**0.0268**	0.068	253.5	ug/L	42	Standard
>	**Ga**	71	40.0	12.5				mg/L	42	Standard
	Rb	85	38.3	19.9				ug/L	17	Standard
	Y	89	483139.1	0.9				ug/L	417098	Standard
>	**Rh**	103	11.7	99.0				ug/L	13	Standard
	Mo	98	291.7	36.0	**0.0908**	0.037	40.3	ug/L	11	Standard
	Ag	107	161.3	21.3	**0.0089**	0.005	57.1	ug/L	68	Standard
	Cd	111	21.8	28.2	**0.0012**	0.002	201.3	mg/L	2	Standard
	Cd	114	48.0	10.4	**0.0061**	0.001	15.7	ug/L	12	Standard
>	**In**	115	669206.2	1.8				ug/L	587441	Standard
	Sn	118	881.7	18.2	**0.0375**	0.022	58.1	ug/L	497	Standard
	Sb	123	447.3	19.7	**0.0797**	0.015	18.9	ug/L	78	Standard
	Ba	135	111.0	14.0	**0.0316**	0.007	21.6	ug/L	24	Standard
	Ce	140	185.0	42.5				ug/L	25	Standard
>	**Tb**	159	1027080.2	0.9				ug/L	939701	Standard
	Ho	165	28.3	10.2				ug/L	10	Standard
	Tl	203	102.0	27.3	**0.0095**	0.003	32.1	ug/L	4	Standard
	Tl	205	76.7	13.6	**0.0100**	0.001	13.1	ug/L	2	Standard
	Pb	206	326.3	10.0	**-0.0155**	0.005	35.3	ug/L	240	Standard
	Pb	207	292.3	4.6	**-0.0139**	0.002	17.4	ug/L	198	Standard
	Pb	208	1226.7	4.7	**-0.0145**	0.003	18.0	ug/L	883	Standard
	U	238	78.7	31.6	**0.0060**	0.003	54.4	ug/L	3	Standard
>	**Bi**	209	574845.6	0.5				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	46.7	34.4	**-0.0124**	0.019	155.4	mg/L	37	Standard
K	39	46.7	44.6	**-0.0238**	0.042	178.2	mg/L	38	Standard
Ca	43	26.7	57.3	**-1.0457**	0.868	83.0	mg/L	10	Standard
Fe	54	161.1	25.9	**-0.0190**	0.033	173.6	mg/L	179	Standard
Fe	57	251.7	19.3	**-0.3314**	0.129	38.8	mg/L	335	Standard
Sc-1	45	70123.6	2.1				mg/L	61029	Standard
Cl	35	27868.9	0.6				ug/L	20195	Standard
Kr	83	0.7	86.6				ug/L	4	Standard
Br	81	2040.1	1.8				ug/L	1547	Standard
P	31	20417.1	4.9				ug/L	15286	Standard
S	34	2425.2	3.5				ug/L	1572	Standard
Sr	88	45.0	40.1				ug/L	73	Standard
C	12	50.0	52.9				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	11.9	129.9				mg/L	6	Standard
Ho-1	165	28.3	10.2				mg/L	10	Standard
Er	166	30.0	57.7				mg/L	13	Standard
I	127	1460.1	42.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		114.731	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.919
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.707
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606138406
Sample Date/Time: Wednesday, June 29, 2016 19:58:13
Number of Replicates: 3
Autosampler Position: 406
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77039.0	4.7				ug/L	74699	Standard
	Be	9	588.3	14.0	**0.6548**	0.074	11.3	ug/L	8	Standard
	Al	27	832772.7	0.7	**5.4883**	0.227	4.1	ug/L	1493	Standard
	Sc	45	75047.3	4.1				ug/L	61029	Standard
	Ti	47	6368.7	0.7	**14.6522**	0.311	2.1	ug/L	35	Standard
	V	51	122665.5	0.9	**14.0720**	0.287	2.0	ug/L	1435	Standard
	Cr	52	293324.5	0.5	**33.7422**	0.348	1.0	ug/L	7635	Standard
	Cr	53	35827.3	1.9	**33.7165**	0.271	0.8	ug/L	363	Standard
	Mn	55	1790039.2	2.5	**225.6481**	2.955	1.3	ug/L	747	Standard
	Co	59	59513.4	2.6	**7.8774**	0.097	1.2	ug/L	234	Standard
	Ni	60	162230.6	1.1	**75.9835**	0.734	1.0	ug/L	215	Standard
	Cu	65	58756.0	0.7	**27.6257**	0.286	1.0	ug/L	104	Standard
	Zn	66	213240.6	1.5	**171.0057**	1.221	0.7	ug/L	363	Standard
>	**Ge**	72	563753.3	1.5				ug/L	495142	Standard
	As	75	6354.9	1.3	**5.0439**	0.138	2.7	ug/L	-50	Standard
	Se	82	268.5	3.3	**2.0114**	0.102	5.1	ug/L	14	Standard
	Se-1	77	256.0	4.1	**2.4577**	0.168	6.8	ug/L	42	Standard
>	**Ga**	71	4010.5	2.8				mg/L	42	Standard
	Rb	85	39651.9	3.3				ug/L	17	Standard
	Y	89	1622063.0	2.1				ug/L	417098	Standard
>	**Rh**	103	33.3	8.7				ug/L	13	Standard
	Mo	98	4372.5	0.7	**1.4952**	0.034	2.3	ug/L	11	Standard
	Ag	107	608.3	2.2	**0.0725**	0.003	3.7	ug/L	68	Standard
	Cd	111	1369.4	3.4	**0.5916**	0.033	5.6	mg/L	2	Standard
	Cd	114	3220.4	7.1	**0.5731**	0.054	9.4	ug/L	12	Standard
>	**In**	115	642314.3	2.8				ug/L	587441	Standard
	Sn	118	866.7	3.3	**0.0411**	0.007	16.9	ug/L	497	Standard
	Sb	123	475.1	9.4	**0.0890**	0.010	11.7	ug/L	78	Standard
	Ba	135	210364.7	1.0	**94.0146**	1.722	1.8	ug/L	24	Standard
	Ce	140	620778.1	1.3				ug/L	25	Standard
>	**Tb**	159	1035282.0	2.1				ug/L	939701	Standard
	Ho	165	58499.4	0.8				ug/L	10	Standard
	Tl	203	1670.8	3.4	**0.1930**	0.007	3.5	ug/L	4	Standard
	Tl	205	1583.4	5.7	**0.2129**	0.013	6.3	ug/L	2	Standard
	Pb	206	23886.1	1.1	**4.2252**	0.039	0.9	ug/L	240	Standard
	Pb	207	17508.1	0.9	**3.4746**	0.041	1.2	ug/L	198	Standard
	Pb	208	79776.0	1.1	**4.0140**	0.064	1.6	ug/L	883	Standard
	U	238	22400.5	0.6	**3.1225**	0.026	0.8	ug/L	3	Standard
>	**Bi**	209	545342.1	0.8				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	190.0	5.3	**0.1344**	0.009	6.3	mg/L	37	Standard
K	39	241.7	12.5	**0.3203**	0.051	16.0	mg/L	38	Standard
Ca	43	168.3	3.4	**6.1267**	0.214	3.5	mg/L	10	Standard
Fe	54	12517.1	3.0	**8.4992**	0.364	4.3	mg/L	179	Standard
Fe	57	3428.7	4.4	**8.4118**	0.531	6.3	mg/L	335	Standard
> **Sc-1**	45	75047.3	4.1				mg/L	61029	Standard
Cl	35	26434.4	2.8				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	2270.2	3.9				ug/L	1547	Standard
P	31	19440.8	0.5				ug/L	15286	Standard
S	34	2256.8	6.7				ug/L	1572	Standard
Sr	88	170.0	33.4				ug/L	73	Standard
C	12	76.7	54.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	300.0	18.6				mg/L	3	Standard
Dy	164	81135.2	0.1				mg/L	6	Standard
Ho-1	165	58499.4	0.8				mg/L	10	Standard
Er	166	56983.6	0.5				mg/L	13	Standard
I	127	5462.7	4.2				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.133	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		113.857	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	109.341
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	104.076
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1606138408
Sample Date/Time: Wednesday, June 29, 2016 20:01:24
Number of Replicates: 3
Autosampler Position: 407
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79667.3	1.9				ug/L	74699	Standard
	Be	9	540.0	10.4	**0.5836**	0.070	11.9	ug/L	8	Standard
	Al	27	892686.6	1.0	**5.6842**	0.164	2.9	ug/L	1493	Standard
	Sc	45	78111.0	3.7				ug/L	61029	Standard
	Ti	47	6171.3	0.9	**13.8487**	0.141	1.0	ug/L	35	Standard
	V	51	131186.8	0.8	**14.6946**	0.149	1.0	ug/L	1435	Standard
	Cr	52	291322.4	2.4	**32.6724**	0.743	2.3	ug/L	7635	Standard
	Cr	53	35120.7	4.3	**32.2467**	1.471	4.6	ug/L	363	Standard
	Mn	55	2233691.8	2.2	**274.8758**	6.127	2.2	ug/L	747	Standard
	Co	59	65245.2	1.7	**8.4325**	0.147	1.7	ug/L	234	Standard
	Ni	60	190260.1	2.2	**86.9887**	2.023	2.3	ug/L	215	Standard
	Cu	65	66483.6	1.3	**30.5171**	0.399	1.3	ug/L	104	Standard
	Zn	66	187493.0	1.2	**146.6893**	2.307	1.6	ug/L	363	Standard
>	**Ge**	72	577612.7	0.6				ug/L	495142	Standard
	As	75	6445.8	1.9	**4.9929**	0.116	2.3	ug/L	-50	Standard
	Se	82	222.3	2.5	**1.5982**	0.037	2.3	ug/L	14	Standard
	Se-1	77	243.0	1.1	**2.2298**	0.039	1.8	ug/L	42	Standard
>	**Ga**	71	4360.6	1.0				mg/L	42	Standard
	Rb	85	41170.9	1.0				ug/L	17	Standard
	Y	89	1636669.5	0.9				ug/L	417098	Standard
>	**Rh**	103	33.3	22.9				ug/L	13	Standard
	Mo	98	4750.5	1.5	**1.5922**	0.009	0.6	ug/L	11	Standard
	Ag	107	651.7	5.1	**0.0767**	0.003	4.5	ug/L	68	Standard
	Cd	111	1476.5	1.8	**0.6252**	0.009	1.4	mg/L	2	Standard
	Cd	114	3537.9	6.1	**0.6161**	0.029	4.7	ug/L	12	Standard
>	**In**	115	655238.7	1.5				ug/L	587441	Standard
	Sn	118	965.0	3.4	**0.0534**	0.004	7.7	ug/L	497	Standard
	Sb	123	268.7	11.3	**0.0474**	0.005	10.8	ug/L	78	Standard
	Ba	135	196413.8	1.6	**86.0176**	0.137	0.2	ug/L	24	Standard
	Ce	140	596487.3	1.9				ug/L	25	Standard
>	**Tb**	159	1073225.5	1.0				ug/L	939701	Standard
	Ho	165	61178.3	1.7				ug/L	10	Standard
	Tl	203	2456.5	1.8	**0.2718**	0.001	0.3	ug/L	4	Standard
	Tl	205	2150.2	4.8	**0.2763**	0.017	6.1	ug/L	2	Standard
	Pb	206	24200.3	1.9	**4.0880**	0.010	0.3	ug/L	240	Standard
	Pb	207	17656.3	0.7	**3.3464**	0.078	2.3	ug/L	198	Standard
	Pb	208	79187.0	3.1	**3.8025**	0.046	1.2	ug/L	883	Standard
	U	238	22940.4	1.4	**3.0557**	0.038	1.2	ug/L	3	Standard
>	**Bi**	209	570736.3	2.0				ug/L	523984	Standard

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Na	23	3.3	173.2	**28.7877**	49.853	173.2	mg/L	0	Standard
Mg	24	161.7	15.3	**0.0975**	0.019	19.1	mg/L	37	Standard
K	39	273.3	12.8	**0.3583**	0.064	17.7	mg/L	38	Standard
Ca	43	191.7	9.9	**6.9329**	0.825	11.9	mg/L	10	Standard
Fe	54	12889.7	4.6	**8.4015**	0.298	3.5	mg/L	179	Standard
Fe	57	3420.4	5.7	**8.0292**	0.829	10.3	mg/L	335	Standard
> **Sc-1**	45	78111.0	3.7				mg/L	61029	Standard
Cl	35	25108.8	1.1				ug/L	20195	Standard
Kr	83	1.0	173.2				ug/L	4	Standard
Br	81	1990.1	4.1				ug/L	1547	Standard
P	31	18960.2	2.1				ug/L	15286	Standard
S	34	2216.8	7.1				ug/L	1572	Standard
Sr	88	153.3	28.5				ug/L	73	Standard
C	12	110.0	9.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	313.3	12.9				mg/L	3	Standard
Dy	164	83986.8	2.5				mg/L	6	Standard
Ho-1	165	61178.3	1.7				mg/L	10	Standard
Er	166	57776.6	0.9				mg/L	13	Standard
I	127	4875.8	1.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.651	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		116.656	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	111.541
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	108.922
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1606138410
Sample Date/Time: Wednesday, June 29, 2016 20:04:36
Number of Replicates: 3
Autosampler Position: 408
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	82222.6	2.1				ug/L	74699	Standard
	Be	9	466.7	0.6	**0.4893**	0.010	2.0	ug/L	8	Standard
	Al	27	798979.6	1.9	**4.9264**	0.080	1.6	ug/L	1493	Standard
	Sc	45	79640.5	1.7				ug/L	61029	Standard
	Ti	47	5792.4	2.5	**13.1770**	0.593	4.5	ug/L	35	Standard
	V	51	95139.7	1.4	**10.7518**	0.246	2.3	ug/L	1435	Standard
	Cr	52	279542.5	2.0	**31.7533**	0.664	2.1	ug/L	7635	Standard
	Cr	53	34038.2	1.3	**31.6794**	0.880	2.8	ug/L	363	Standard
	Mn	55	1053790.0	0.3	**131.3975**	3.080	2.3	ug/L	747	Standard
	Co	59	35027.1	0.6	**4.5723**	0.080	1.8	ug/L	234	Standard
	Ni	60	156240.8	1.2	**72.3985**	1.638	2.3	ug/L	215	Standard
	Cu	65	48550.0	0.3	**22.5657**	0.405	1.8	ug/L	104	Standard
	Zn	66	257712.2	0.3	**204.5897**	4.503	2.2	ug/L	363	Standard
>	**Ge**	72	569889.2	2.0				ug/L	495142	Standard
	As	75	6132.6	2.6	**4.8186**	0.190	4.0	ug/L	-50	Standard
	Se	82	361.1	9.2	**2.7244**	0.314	11.5	ug/L	14	Standard
	Se-1	77	331.7	7.4	**3.3212**	0.233	7.0	ug/L	42	Standard
>	**Ga**	71	4152.2	2.1				mg/L	42	Standard
	Rb	85	52623.0	3.5				ug/L	17	Standard
	Y	89	1425089.1	0.3				ug/L	417098	Standard
>	**Rh**	103	33.3	8.7				ug/L	13	Standard
	Mo	98	3927.9	0.3	**1.2648**	0.018	1.4	ug/L	11	Standard
	Ag	107	467.0	2.9	**0.0489**	0.003	5.2	ug/L	68	Standard
	Cd	111	1169.0	3.4	**0.4740**	0.011	2.3	mg/L	2	Standard
	Cd	114	2891.7	1.0	**0.4840**	0.007	1.5	ug/L	12	Standard
>	**In**	115	681463.1	1.2				ug/L	587441	Standard
	Sn	118	755.0	5.0	**0.0168**	0.007	41.1	ug/L	497	Standard
	Sb	123	219.3	13.0	**0.0363**	0.005	13.2	ug/L	78	Standard
	Ba	135	73803.3	1.7	**31.0670**	0.270	0.9	ug/L	24	Standard
	Ce	140	554709.1	1.1				ug/L	25	Standard
>	**Tb**	159	1094015.2	1.4				ug/L	939701	Standard
	Ho	165	50373.6	1.6				ug/L	10	Standard
	Tl	203	1120.7	1.3	**0.1214**	0.002	2.0	ug/L	4	Standard
	Tl	205	941.7	7.2	**0.1194**	0.008	6.7	ug/L	2	Standard
	Pb	206	24028.0	1.2	**4.0020**	0.045	1.1	ug/L	240	Standard
	Pb	207	17504.4	0.3	**3.2701**	0.054	1.6	ug/L	198	Standard
	Pb	208	78967.6	0.8	**3.7402**	0.091	2.4	ug/L	883	Standard
	U	238	25248.7	0.7	**3.3178**	0.077	2.3	ug/L	3	Standard
>	**Bi**	209	578682.9	1.6				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	188.3	33.0	**0.1211**	0.061	50.1	mg/L	37	Standard
K	39	248.3	3.1	**0.3067**	0.020	6.4	mg/L	38	Standard
Ca	43	173.3	7.3	**5.8747**	0.743	12.6	mg/L	10	Standard
Fe	54	14056.9	1.9	**8.9942**	0.034	0.4	mg/L	179	Standard
Fe	57	3822.2	6.9	**8.8892**	0.835	9.4	mg/L	335	Standard
Sc-1	45	79640.5	1.7				mg/L	61029	Standard
Cl	35	25424.6	1.4				ug/L	20195	Standard
Kr	83	1.3	114.6				ug/L	4	Standard
Br	81	2053.5	6.1				ug/L	1547	Standard
P	31	20016.5	1.3				ug/L	15286	Standard
S	34	2301.8	5.1				ug/L	1572	Standard
Sr	88	141.7	32.0				ug/L	73	Standard
C	12	56.7	36.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	133.3	11.5				mg/L	3	Standard
Dy	164	72545.2	2.7				mg/L	6	Standard
Ho-1	165	50373.6	1.6				mg/L	10	Standard
Er	166	47160.0	0.9				mg/L	13	Standard
I	127	6799.9	2.8				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		110.072	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		115.096	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		116.005
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.439
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

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Method 6020 - Summary Report

Sample ID: L1606138412
Sample Date/Time: Wednesday, June 29, 2016 20:07:47
Number of Replicates: 3
Autosampler Position: 409
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81391.5	3.4				ug/L	74699	Standard
	Be	9	565.0	6.9	**0.5962**	0.020	3.4	ug/L	8	Standard
	Al	27	802320.4	2.6	**4.9984**	0.082	1.6	ug/L	1493	Standard
	Sc	45	77871.4	3.1				ug/L	61029	Standard
	Ti	47	8431.3	2.1	**19.3525**	0.252	1.3	ug/L	35	Standard
	V	51	136034.9	0.6	**15.5641**	0.178	1.1	ug/L	1435	Standard
	Cr	52	292890.6	0.7	**33.5584**	0.660	2.0	ug/L	7635	Standard
	Cr	53	35682.0	1.9	**33.4491**	0.599	1.8	ug/L	363	Standard
	Mn	55	2260782.0	0.5	**283.9966**	5.862	2.1	ug/L	747	Standard
	Co	59	82153.8	0.1	**10.8487**	0.184	1.7	ug/L	234	Standard
	Ni	60	172794.1	1.0	**80.6313**	1.536	1.9	ug/L	215	Standard
	Cu	65	63565.7	0.4	**29.7801**	0.432	1.5	ug/L	104	Standard
	Zn	66	251019.4	0.8	**200.6145**	2.591	1.3	ug/L	363	Standard
>	**Ge**	72	565970.9	1.7				ug/L	495142	Standard
	As	75	7636.9	2.3	**6.0250**	0.142	2.4	ug/L	-50	Standard
	Se	82	426.3	0.8	**3.2611**	0.084	2.6	ug/L	14	Standard
	Se-1	77	381.7	1.3	**3.9506**	0.115	2.9	ug/L	42	Standard
>	**Ga**	71	4992.5	2.6				mg/L	42	Standard
	Rb	85	46121.8	0.5				ug/L	17	Standard
	Y	89	1754842.6	1.7				ug/L	417098	Standard
>	**Rh**	103	43.3	35.3				ug/L	13	Standard
	Mo	98	5382.6	1.1	**1.7465**	0.044	2.5	ug/L	11	Standard
	Ag	107	637.3	4.9	**0.0719**	0.004	5.2	ug/L	68	Standard
	Cd	111	1430.5	6.2	**0.5853**	0.028	4.9	mg/L	2	Standard
	Cd	114	3407.8	7.3	**0.5746**	0.047	8.2	ug/L	12	Standard
>	**In**	115	677210.7	1.5				ug/L	587441	Standard
	Sn	118	780.0	4.5	**0.0212**	0.006	30.1	ug/L	497	Standard
	Sb	123	243.4	9.9	**0.0411**	0.005	12.6	ug/L	78	Standard
	Ba	135	199262.8	0.6	**84.4450**	1.189	1.4	ug/L	24	Standard
	Ce	140	678125.1	0.7				ug/L	25	Standard
>	**Tb**	159	1071624.9	1.1				ug/L	939701	Standard
	Ho	165	67051.4	0.5				ug/L	10	Standard
	Tl	203	1859.8	4.4	**0.2096**	0.007	3.5	ug/L	4	Standard
	Tl	205	1828.4	5.2	**0.2396**	0.011	4.7	ug/L	2	Standard
	Pb	206	33182.6	0.6	**5.7494**	0.057	1.0	ug/L	240	Standard
	Pb	207	24419.7	0.3	**4.7511**	0.035	0.7	ug/L	198	Standard
	Pb	208	111320.6	0.3	**5.4889**	0.050	0.9	ug/L	883	Standard
	U	238	25349.9	1.3	**3.4462**	0.014	0.4	ug/L	3	Standard
>	**Bi**	209	559224.1	1.0				ug/L	523984	Standard

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Na	23	3.3	86.6	**30.2574**	26.235	86.7	mg/L	0	Standard
Mg	24	168.3	9.1	**0.1052**	0.014	12.9	mg/L	37	Standard
K	39	280.0	6.4	**0.3709**	0.027	7.3	mg/L	38	Standard
Ca	43	176.7	27.2	**6.2736**	2.632	42.0	mg/L	10	Standard
Fe	54	15625.1	2.7	**10.2448**	0.046	0.4	mg/L	179	Standard
Fe	57	4357.3	3.7	**10.5343**	0.341	3.2	mg/L	335	Standard
> **Sc-1**	45	77871.4	3.1				mg/L	61029	Standard
Cl	35	26050.4	2.2				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	2310.2	5.7				ug/L	1547	Standard
P	31	19966.5	2.1				ug/L	15286	Standard
S	34	2301.8	1.2				ug/L	1572	Standard
Sr	88	181.7	8.4				ug/L	73	Standard
C	12	60.0	66.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	466.7	15.8				mg/L	3	Standard
Dy	164	94635.2	0.7				mg/L	6	Standard
Ho-1	165	67051.4	0.5				mg/L	10	Standard
Er	166	62943.8	1.5				mg/L	13	Standard
I	127	6689.8	6.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		108.960	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.305	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		115.281
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.725
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	

Sample ID: L1606138412
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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 20:11:01
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	78720.7	2.9				ug/L	74699	Standard
	Be	9	53925.8	1.9	**58.1477**	1.206	2.1	ug/L	8	Standard
	Al	27	8443805.5	1.2	**54.5410**	1.847	3.4	ug/L	1493	Standard
	Sc	45	68074.4	3.5				ug/L	61029	Standard
	Ti	47	45146.2	1.1	**105.2966**	1.372	1.3	ug/L	35	Standard
	V	51	452407.6	0.9	**52.8112**	0.533	1.0	ug/L	1435	Standard
	Cr	52	439865.6	0.2	**51.4989**	0.494	1.0	ug/L	7635	Standard
	Cr	53	55131.8	1.5	**52.4610**	1.191	2.3	ug/L	363	Standard
	Mn	55	411766.6	1.7	**52.1886**	1.083	2.1	ug/L	747	Standard
	Co	59	411137.6	1.8	**55.0576**	1.090	2.0	ug/L	234	Standard
	Ni	60	108563.6	1.0	**51.1869**	0.633	1.2	ug/L	215	Standard
	Cu	65	108514.2	0.8	**51.4879**	0.273	0.5	ug/L	104	Standard
	Zn	66	63813.1	1.5	**51.2390**	0.656	1.3	ug/L	363	Standard
>	Ge	72	559563.9	0.9				ug/L	495142	Standard
	As	75	65025.3	0.7	**51.4299**	0.351	0.7	ug/L	-50	Standard
	Se	82	6607.2	0.8	**53.1327**	0.267	0.5	ug/L	14	Standard
	Se-1	77	4509.3	0.5	**54.0117**	0.383	0.7	ug/L	42	Standard
>	Ga	71	68.3	11.2				mg/L	42	Standard
	Rb	85	971.7	11.9				ug/L	17	Standard
	Y	89	484276.8	2.3				ug/L	417098	Standard
>	Rh	103	33.3	52.7				ug/L	13	Standard
	Mo	98	305352.5	1.7	**102.8803**	2.601	2.5	ug/L	11	Standard
	Ag	107	366186.0	1.2	**50.4411**	0.533	1.1	ug/L	68	Standard
	Cd	111	118185.8	1.5	**50.7502**	0.681	1.3	mg/L	2	Standard
	Cd	114	288421.2	1.0	**50.5001**	0.711	1.4	ug/L	12	Standard
>	In	115	654225.0	1.4				ug/L	587441	Standard
	Sn	118	325668.1	1.2	**49.9654**	0.174	0.3	ug/L	497	Standard
	Sb	123	260726.4	2.1	**50.1401**	0.797	1.6	ug/L	78	Standard
	Ba	135	109583.9	1.3	**48.0616**	0.591	1.2	ug/L	24	Standard
	Ce	140	191.7	20.9				ug/L	25	Standard
>	Tb	159	983539.2	1.4				ug/L	939701	Standard
	Ho	165	21.7	13.3				ug/L	10	Standard
	Tl	203	449254.6	0.7	**52.6820**	0.493	0.9	ug/L	4	Standard
	Tl	205	410287.0	1.8	**55.4353**	1.032	1.9	ug/L	2	Standard
	Pb	206	287176.7	1.5	**51.8952**	0.724	1.4	ug/L	240	Standard
	Pb	207	254226.6	1.1	**51.7082**	0.492	1.0	ug/L	198	Standard
	Pb	208	1062593.6	0.7	**54.7051**	0.438	0.8	ug/L	883	Standard
	U	238	383746.1	0.8	**53.8863**	0.314	0.6	ug/L	3	Standard
>	Bi	209	542059.3	0.3				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.9421**	31.068	173.2	mg/L	0	Standard
Mg	24	4572.4	3.8	**5.2291**	0.219	4.2	mg/L	37	Standard
K	39	2235.2	5.1	**4.3138**	0.121	2.8	mg/L	38	Standard
Ca	43	108.3	35.8	**3.6601**	2.380	65.0	mg/L	10	Standard
Fe	54	7126.2	2.9	**5.2851**	0.313	5.9	mg/L	179	Standard
Fe	57	2081.8	4.0	**5.2741**	0.321	6.1	mg/L	335	Standard
> **Sc-1**	45	68074.4	3.5				mg/L	61029	Standard
Cl	35	27726.7	0.9				ug/L	20195	Standard
Kr	83	0.7	86.6				ug/L	4	Standard
Br	81	1910.1	6.0				ug/L	1547	Standard
P	31	20502.2	2.0				ug/L	15286	Standard
S	34	2426.9	4.0				ug/L	1572	Standard
Sr	88	50.0	26.5				ug/L	73	Standard
C	12	73.3	20.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	15.9	37.3				mg/L	6	Standard
Ho-1	165	21.7	13.3				mg/L	10	Standard
Er	166	16.7	34.6				mg/L	13	Standard
I	127	1525.1	31.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	116.295		
Al	27	109.082		
Sc	45			
Ti	47	105.297		
V	51	105.622		
Cr	52	102.998		
Cr	53			
Mn	55	104.377		
Co	59	110.115		
Ni	60	102.374		
Cu	65	102.976		
Zn	66	102.478		
> Ge	72		113.011	
As	75	102.860		
Se	82	106.265		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	102.880		
Ag	107	100.882		
Cd	111	101.500		
Cd	114			
In	115		111.369	
Sn	118	99.931		
Sb	123	100.280		
Ba	135	96.123		
Ce	140			
Tb	159			
Ho	165			
Tl	203	105.364		
Tl	205			
Pb	206			
Pb	207			
Pb	208	109.410		
U	238	107.773		
Bi	209		103.450	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Co	59	

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 20:14:12
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	79194.8	0.3				ug/L	74699	Standard
	Be	9	31.7	9.1	**0.0415**	0.003	7.4	ug/L	8	Standard
	Al	27	5331.0	39.7	**0.0208**	0.013	64.7	ug/L	1493	Standard
	Sc	45	70443.5	2.7				ug/L	61029	Standard
	Ti	47	45.0	15.6	**-0.0077**	0.016	206.1	ug/L	35	Standard
	V	51	1613.4	5.4	**-0.0133**	0.013	95.3	ug/L	1435	Standard
	Cr	52	7981.4	3.6	**-0.1047**	0.047	45.2	ug/L	7635	Standard
	Cr	53	418.3	25.3	**0.0570**	0.103	180.4	ug/L	363	Standard
	Mn	55	1741.1	30.3	**0.0658**	0.068	103.0	ug/L	747	Standard
	Co	59	378.7	17.0	**0.0117**	0.009	74.2	ug/L	234	Standard
	Ni	60	306.7	29.3	**0.0162**	0.043	265.9	ug/L	215	Standard
	Cu	65	193.0	22.7	**-0.0150**	0.021	143.0	ug/L	104	Standard
	Zn	66	576.0	19.1	**-0.0039**	0.093	2387.7	ug/L	363	Standard
>	**Ge**	72	580508.2	1.5				ug/L	495142	Standard
	As	75	-17.3	276.0	**0.0468**	0.036	77.6	ug/L	-50	Standard
	Se	82	19.7	47.6	**0.0162**	0.076	468.0	ug/L	14	Standard
	Se-1	77	62.3	8.8	**0.1062**	0.073	68.4	ug/L	42	Standard
>	**Ga**	71	43.3	24.0				mg/L	42	Standard
	Rb	85	53.3	27.1				ug/L	17	Standard
	Y	89	466004.6	0.7				ug/L	417098	Standard
>	**Rh**	103	18.3	41.7				ug/L	13	Standard
	Mo	98	326.5	17.1	**0.1045**	0.019	18.6	ug/L	11	Standard
	Ag	107	195.7	20.5	**0.0141**	0.005	38.2	ug/L	68	Standard
	Cd	111	49.8	49.3	**0.0134**	0.010	76.8	mg/L	2	Standard
	Cd	114	97.6	30.0	**0.0150**	0.005	33.6	ug/L	12	Standard
>	**In**	115	653349.0	0.9				ug/L	587441	Standard
	Sn	118	958.4	16.5	**0.0527**	0.023	43.7	ug/L	497	Standard
	Sb	123	468.2	24.3	**0.0858**	0.021	24.7	ug/L	78	Standard
	Ba	135	169.0	53.9	**0.0580**	0.039	67.5	ug/L	24	Standard
	Ce	140	383.3	72.7				ug/L	25	Standard
>	**Tb**	159	1008003.3	2.5				ug/L	939701	Standard
	Ho	165	33.3	56.8				ug/L	10	Standard
	Tl	203	138.0	27.1	**0.0136**	0.004	29.9	ug/L	4	Standard
	Tl	205	128.3	47.6	**0.0167**	0.008	47.6	ug/L	2	Standard
	Pb	206	364.7	12.5	**-0.0084**	0.008	93.5	ug/L	240	Standard
	Pb	207	321.7	11.0	**-0.0076**	0.006	84.7	ug/L	198	Standard
	Pb	208	1298.7	10.5	**-0.0103**	0.007	67.0	ug/L	883	Standard
	U	238	121.3	35.3	**0.0118**	0.006	48.9	ug/L	3	Standard
>	**Bi**	209	569222.6	0.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	31.7	50.8	**-0.0295**	0.019	63.3	mg/L	37	Standard
K	39	58.3	13.1	**-0.0021**	0.017	817.3	mg/L	38	Standard
Ca	43	26.7	28.6	**-1.0586**	0.442	41.7	mg/L	10	Standard
Fe	54	154.2	11.8	**-0.0252**	0.011	43.9	mg/L	179	Standard
Fe	57	258.3	4.9	**-0.3125**	0.056	18.0	mg/L	335	Standard
Sc-1	45	70443.5	2.7				mg/L	61029	Standard
Cl	35	27476.9	1.3				ug/L	20195	Standard
Kr	83	1.3	86.6				ug/L	4	Standard
Br	81	1946.8	3.9				ug/L	1547	Standard
P	31	20592.3	4.9				ug/L	15286	Standard
S	34	2348.5	2.8				ug/L	1572	Standard
Sr	88	75.0	46.7				ug/L	73	Standard
C	12	43.3	13.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	74.1	39.2				mg/L	6	Standard
Ho-1	165	33.3	56.8				mg/L	10	Standard
Er	166	53.3	71.0				mg/L	13	Standard
I	127	1293.4	30.4				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		117.241	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.219
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.633
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: PBW 43 WG573291-03
Sample Date/Time: Wednesday, June 29, 2016 20:17:26
Number of Replicates: 3
Autosampler Position: 410
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	78266.6	1.0				ug/L	74699	Standard
	Be	9	21.7	58.1	**0.0312**	0.014	44.4	ug/L	8	Standard
	Al	27	32901.2	14.4	**0.2003**	0.031	15.3	ug/L	1493	Standard
	Sc	45	68990.1	1.1				ug/L	61029	Standard
	Ti	47	59.7	25.6	**0.0271**	0.036	131.8	ug/L	35	Standard
	V	51	1740.6	13.9	**0.0036**	0.029	816.2	ug/L	1435	Standard
	Cr	52	10743.1	2.3	**0.2282**	0.033	14.5	ug/L	7635	Standard
	Cr	53	856.7	10.0	**0.4710**	0.086	18.2	ug/L	363	Standard
	Mn	55	4965.9	44.9	**0.4694**	0.280	59.7	ug/L	747	Standard
	Co	59	438.7	27.8	**0.0202**	0.016	81.0	ug/L	234	Standard
	Ni	60	464.7	17.9	**0.0906**	0.040	44.1	ug/L	215	Standard
	Cu	65	288.0	10.4	**0.0300**	0.015	49.7	ug/L	104	Standard
	Zn	66	2615.6	1.4	**1.6135**	0.041	2.5	ug/L	363	Standard
>	**Ge**	72	573366.1	0.8				ug/L	495142	Standard
	As	75	-37.9	81.3	**0.0303**	0.024	78.8	ug/L	-50	Standard
	Se	82	11.3	32.8	**-0.0488**	0.029	60.5	ug/L	14	Standard
	Se-1	77	61.0	9.1	**0.0990**	0.067	67.3	ug/L	42	Standard
>	**Ga**	71	31.7	9.1				mg/L	42	Standard
	Rb	85	100.0	26.5				ug/L	17	Standard
	Y	89	479627.1	2.2				ug/L	417098	Standard
>	**Rh**	103	1.7	173.2				ug/L	13	Standard
	Mo	98	155.9	47.8	**0.0477**	0.025	52.9	ug/L	11	Standard
	Ag	107	191.7	76.1	**0.0140**	0.020	145.7	ug/L	68	Standard
	Cd	111	21.5	58.8	**0.0014**	0.005	377.2	mg/L	2	Standard
	Cd	114	53.4	80.4	**0.0074**	0.008	102.3	ug/L	12	Standard
>	**In**	115	641242.2	1.6				ug/L	587441	Standard
	Sn	118	930.0	4.7	**0.0512**	0.008	15.1	ug/L	497	Standard
	Sb	123	286.5	19.6	**0.0520**	0.011	21.3	ug/L	78	Standard
	Ba	135	402.7	93.5	**0.1636**	0.167	102.4	ug/L	24	Standard
	Ce	140	951.7	120.0				ug/L	25	Standard
>	**Tb**	159	992014.1	1.0				ug/L	939701	Standard
	Ho	165	68.3	105.1				ug/L	10	Standard
	Tl	203	138.0	108.8	**0.0140**	0.017	122.9	ug/L	4	Standard
	Tl	205	136.7	67.7	**0.0182**	0.012	67.1	ug/L	2	Standard
	Pb	206	481.7	43.4	**0.0137**	0.037	272.5	ug/L	240	Standard
	Pb	207	395.0	43.8	**0.0084**	0.035	416.2	ug/L	198	Standard
	Pb	208	1692.0	26.2	**0.0108**	0.023	209.9	ug/L	883	Standard
	U	238	120.3	76.5	**0.0121**	0.013	104.7	ug/L	3	Standard
>	**Bi**	209	557465.1	0.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	46.7	43.3	**-0.0120**	0.023	188.7	mg/L	37	Standard
K	39	41.7	73.3	**-0.0331**	0.059	178.0	mg/L	38	Standard
Ca	43	16.7	45.8	**-1.5897**	0.437	27.5	mg/L	10	Standard
Fe	54	190.8	15.9	**0.0047**	0.022	466.7	mg/L	179	Standard
Fe	57	281.7	18.5	**-0.2277**	0.154	67.5	mg/L	335	Standard
> **Sc-1**	45	68990.1	1.1				mg/L	61029	Standard
Cl	35	27241.8	2.0				ug/L	20195	Standard
Kr	83	3.3	34.6				ug/L	4	Standard
Br	81	1960.1	2.7				ug/L	1547	Standard
P	31	19042.0	2.0				ug/L	15286	Standard
S	34	2271.8	2.5				ug/L	1572	Standard
Sr	88	70.0	14.3				ug/L	73	Standard
C	12	93.3	12.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	57.4	72.5				mg/L	6	Standard
Ho-1	165	68.3	105.1				mg/L	10	Standard
Er	166	53.3	75.8				mg/L	13	Standard
I	127	1241.7	37.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.776	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		115.798	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.159
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.390
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 43 WG573291-04
Sample Date/Time: Wednesday, June 29, 2016 20:20:37
Number of Replicates: 3
Autosampler Position: 411
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	79286.9	1.2				ug/L	74699	Standard
	Be	9	55518.2	1.7	**59.4178**	0.565	1.0	ug/L	8	Standard
	Al	27	18234.3	3.1	**0.1035**	0.005	4.4	ug/L	1493	Standard
	Sc	45	71925.5	3.7				ug/L	61029	Standard
	Ti	47	66.7	12.9	**0.0416**	0.023	54.2	ug/L	35	Standard
	V	51	464385.2	1.4	**52.3659**	1.151	2.2	ug/L	1435	Standard
	Cr	52	468709.1	0.6	**53.0500**	1.578	3.0	ug/L	7635	Standard
	Cr	53	57400.2	0.6	**52.7689**	1.471	2.8	ug/L	363	Standard
	Mn	55	425738.4	0.7	**52.1249**	1.035	2.0	ug/L	747	Standard
	Co	59	411335.9	1.2	**53.2163**	1.483	2.8	ug/L	234	Standard
	Ni	60	114540.7	1.0	**52.1842**	1.705	3.3	ug/L	215	Standard
	Cu	65	115424.0	0.4	**52.9151**	1.312	2.5	ug/L	104	Standard
	Zn	66	68318.0	0.2	**53.0163**	1.377	2.6	ug/L	363	Standard
>	Ge	72	579422.8	2.7				ug/L	495142	Standard
	As	75	63888.1	1.5	**48.8227**	1.412	2.9	ug/L	-50	Standard
	Se	82	6548.4	1.5	**50.8872**	2.152	4.2	ug/L	14	Standard
	Se-1	77	4570.0	2.1	**52.8570**	0.847	1.6	ug/L	42	Standard
>	Ga	71	68.3	27.7				mg/L	42	Standard
	Rb	85	96.7	7.9				ug/L	17	Standard
	Y	89	471340.1	1.5				ug/L	417098	Standard
>	Rh	103	33.3	52.7				ug/L	13	Standard
	Mo	98	1844.9	1.6	**0.6204**	0.021	3.4	ug/L	11	Standard
	Ag	107	386699.9	0.4	**53.6468**	1.108	2.1	ug/L	68	Standard
	Cd	111	120754.4	0.7	**52.2256**	1.320	2.5	mg/L	2	Standard
	Cd	114	290744.9	1.2	**51.2713**	1.454	2.8	ug/L	12	Standard
>	In	115	649724.4	1.8				ug/L	587441	Standard
	Sn	118	890.0	5.4	**0.0430**	0.007	15.1	ug/L	497	Standard
	Sb	123	259622.2	1.1	**50.2896**	1.419	2.8	ug/L	78	Standard
	Ba	135	113320.2	1.2	**50.0586**	1.415	2.8	ug/L	24	Standard
	Ce	140	216.7	24.0				ug/L	25	Standard
>	Tb	159	1024515.0	4.0				ug/L	939701	Standard
	Ho	165	13.3	57.3				ug/L	10	Standard
	Tl	203	467714.3	0.2	**50.8953**	1.428	2.8	ug/L	4	Standard
	Tl	205	419104.4	1.0	**52.5470**	1.541	2.9	ug/L	2	Standard
	Pb	206	302725.5	0.9	**50.7682**	1.716	3.4	ug/L	240	Standard
	Pb	207	257785.2	0.8	**48.6571**	1.672	3.4	ug/L	198	Standard
	Pb	208	1092150.5	0.9	**52.1642**	0.990	1.9	ug/L	883	Standard
	U	238	389261.3	0.3	**50.7252**	1.507	3.0	ug/L	3	Standard
>	Bi	209	584427.6	2.7				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	56.7	20.4	**-0.0027**	0.015	535.8	mg/L	37	Standard
K	39	35.0	42.9	**-0.0491**	0.026	52.4	mg/L	38	Standard
Ca	43	18.3	15.7	**-1.5405**	0.154	10.0	mg/L	10	Standard
Fe	54	173.6	39.1	**-0.0145**	0.044	301.9	mg/L	179	Standard
Fe	57	231.7	7.6	**-0.4064**	0.037	9.2	mg/L	335	Standard
Sc-1	45	71925.5	3.7				mg/L	61029	Standard
Cl	35	25598.9	2.5				ug/L	20195	Standard
Kr	83	1.0	100.0				ug/L	4	Standard
Br	81	1866.8	9.1				ug/L	1547	Standard
P	31	19263.9	1.4				ug/L	15286	Standard
S	34	2041.8	5.6				ug/L	1572	Standard
Sr	88	55.0	27.3				ug/L	73	Standard
C	12	76.7	37.7				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	6.7	173.2				mg/L	3	Standard
Dy	164	19.2	93.9				mg/L	6	Standard
Ho-1	165	13.3	57.3				mg/L	10	Standard
Er	166	16.7	124.9				mg/L	13	Standard
I	127	1405.1	22.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		106.142	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		117.021	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
In	115		110.602
Sn	118		
Sb	123		
Ba	135		
Ce	140		
Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
Bi	209		111.535
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606097401 WG573291-01
Sample Date/Time: Wednesday, June 29, 2016 20:23:48
Number of Replicates: 3
Autosampler Position: 412
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	81548.9	1.6				ug/L	74699	Standard
	Be	9	36.7	15.7	**0.0457**	0.006	12.1	ug/L	8	Standard
	Al	27	11596363.1	1.3	**72.2698**	0.564	0.8	ug/L	1493	Standard
	Sc	45	73884.7	1.3				ug/L	61029	Standard
	Ti	47	344.7	7.0	**0.7127**	0.059	8.2	ug/L	35	Standard
	V	51	2330.4	3.5	**0.0834**	0.015	17.8	ug/L	1435	Standard
	Cr	52	13306.8	2.8	**0.5995**	0.076	12.7	ug/L	7635	Standard
	Cr	53	1323.4	7.3	**0.9647**	0.110	11.4	ug/L	363	Standard
	Mn	55	1766896.9	0.7	**229.1909**	3.866	1.7	ug/L	747	Standard
	Co	59	11800.3	0.6	**1.5775**	0.021	1.4	ug/L	234	Standard
	Ni	60	3337.7	1.4	**1.4870**	0.026	1.7	ug/L	215	Standard
	Cu	65	729.0	2.5	**0.2502**	0.002	1.0	ug/L	104	Standard
	Zn	66	5843.1	1.1	**4.3791**	0.046	1.0	ug/L	363	Standard
>	**Ge**	72	548022.2	2.0				ug/L	495142	Standard
	As	75	368.2	8.1	**0.3569**	0.029	8.2	ug/L	-50	Standard
	Se	82	62.0	10.3	**0.3726**	0.060	16.1	ug/L	14	Standard
	Se-1	77	77.3	2.7	**0.3344**	0.023	6.7	ug/L	42	Standard
>	**Ga**	71	126.7	17.8				mg/L	42	Standard
	Rb	85	31524.4	1.4				ug/L	17	Standard
	Y	89	492847.4	3.2				ug/L	417098	Standard
>	**Rh**	103	60.0	14.4				ug/L	13	Standard
	Mo	98	169.7	8.5	**0.0488**	0.006	11.4	ug/L	11	Standard
	Ag	107	132.7	27.4	**0.0046**	0.005	112.7	ug/L	68	Standard
	Cd	111	39.0	30.5	**0.0081**	0.005	64.3	mg/L	2	Standard
	Cd	114	83.8	14.7	**0.0119**	0.002	19.5	ug/L	12	Standard
>	**In**	115	686408.4	2.0				ug/L	587441	Standard
	Sn	118	1350.1	6.2	**0.1033**	0.015	14.9	ug/L	497	Standard
	Sb	123	1853.5	25.3	**0.3348**	0.082	24.4	ug/L	78	Standard
	Ba	135	131659.9	0.9	**55.0560**	1.555	2.8	ug/L	24	Standard
	Ce	140	2260.2	0.8				ug/L	25	Standard
>	**Tb**	159	1046624.7	1.4				ug/L	939701	Standard
	Ho	165	75.0	29.1				ug/L	10	Standard
	Tl	203	216.3	9.4	**0.0226**	0.002	8.3	ug/L	4	Standard
	Tl	205	203.3	8.6	**0.0265**	0.002	7.2	ug/L	2	Standard
	Pb	206	535.3	4.4	**0.0217**	0.002	11.2	ug/L	240	Standard
	Pb	207	421.7	4.6	**0.0124**	0.003	25.0	ug/L	198	Standard
	Pb	208	1891.4	2.2	**0.0194**	0.001	4.1	ug/L	883	Standard
	U	238	92.7	15.8	**0.0080**	0.002	21.9	ug/L	3	Standard
>	**Bi**	209	565094.9	1.8				ug/L	523984	Standard

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Na	23	1.7	173.2	**16.0814**	27.845	173.2	mg/L	0	Standard
Mg	24	5874.5	4.9	**6.2016**	0.379	6.1	mg/L	37	Standard
K	39	696.7	5.3	**1.1574**	0.052	4.5	mg/L	38	Standard
Ca	43	108.3	19.2	**3.1206**	1.021	32.7	mg/L	10	Standard
Fe	54	752.2	10.4	**0.3885**	0.054	13.9	mg/L	179	Standard
Fe	57	410.0	11.6	**0.0774**	0.139	179.8	mg/L	335	Standard
Sc-1	45	73884.7	1.3				mg/L	61029	Standard
Cl	35	27603.8	2.8				ug/L	20195	Standard
Kr	83	3.0	66.7				ug/L	4	Standard
Br	81	11711.2	8.2				ug/L	1547	Standard
P	31	22032.7	3.4				ug/L	15286	Standard
S	34	2200.2	1.4				ug/L	1572	Standard
Sr	88	218.3	6.6				ug/L	73	Standard
C	12	103.3	43.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	3	Standard
Dy	164	96.2	10.7				mg/L	6	Standard
Ho-1	165	75.0	29.1				mg/L	10	Standard
Er	166	80.0	33.1				mg/L	13	Standard
I	127	173019.2	10.3				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		109.170	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		110.680	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		116.847
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.846
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

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Method 6020 - Summary Report

Sample ID: L1606097409S WG573291-05
Sample Date/Time: Wednesday, June 29, 2016 20:27:00
Number of Replicates: 3
Autosampler Position: 413
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77620.1	3.1				ug/L	74699	Standard
	Be	9	53947.6	2.9	**58.9852**	0.884	1.5	ug/L	8	Standard
	Al	27	10156417.9	2.3	**66.5068**	0.592	0.9	ug/L	1493	Standard
	Sc	45	69663.2	3.3				ug/L	61029	Standard
	Ti	47	217.3	7.1	**0.4124**	0.032	7.7	ug/L	35	Standard
	V	51	458159.6	2.1	**55.0030**	1.779	3.2	ug/L	1435	Standard
	Cr	52	452840.8	0.8	**54.5717**	1.179	2.2	ug/L	7635	Standard
	Cr	53	56488.5	2.6	**55.2901**	2.221	4.0	ug/L	363	Standard
	Mn	55	2082250.4	1.8	**271.9842**	8.205	3.0	ug/L	747	Standard
	Co	59	416796.8	1.5	**57.3937**	1.632	2.8	ug/L	234	Standard
	Ni	60	112326.5	0.8	**54.4621**	1.176	2.2	ug/L	215	Standard
	Cu	65	110417.6	0.6	**53.8701**	0.759	1.4	ug/L	104	Standard
	Zn	66	70959.5	1.2	**58.6468**	1.068	1.8	ug/L	363	Standard
>	**Ge**	72	544304.5	1.4				ug/L	495142	Standard
	As	75	66583.4	2.1	**54.1492**	1.789	3.3	ug/L	-50	Standard
	Se	82	6605.0	1.3	**54.6200**	1.423	2.6	ug/L	14	Standard
	Se-1	77	4636.4	0.8	**57.1316**	0.988	1.7	ug/L	42	Standard
>	**Ga**	71	90.0	19.2				mg/L	42	Standard
	Rb	85	30654.3	2.7				ug/L	17	Standard
	Y	89	497057.5	2.9				ug/L	417098	Standard
>	**Rh**	103	38.3	52.7				ug/L	13	Standard
	Mo	98	163.0	7.4	**0.0487**	0.002	4.2	ug/L	11	Standard
	Ag	107	371099.4	2.0	**50.7567**	1.341	2.6	ug/L	68	Standard
	Cd	111	118377.9	2.8	**50.4636**	1.124	2.2	mg/L	2	Standard
	Cd	114	281427.9	1.4	**48.9324**	1.490	3.0	ug/L	12	Standard
>	**In**	115	659308.0	4.2				ug/L	587441	Standard
	Sn	118	1090.0	7.1	**0.0721**	0.019	25.7	ug/L	497	Standard
	Sb	123	259620.0	1.8	**49.5761**	1.212	2.4	ug/L	78	Standard
	Ba	135	232712.5	1.7	**101.3728**	3.182	3.1	ug/L	24	Standard
	Ce	140	941.7	8.0				ug/L	25	Standard
>	**Tb**	159	982549.7	3.5				ug/L	939701	Standard
	Ho	165	31.7	24.1				ug/L	10	Standard
	Tl	203	453507.3	1.5	**53.4353**	0.634	1.2	ug/L	4	Standard
	Tl	205	415041.8	2.5	**56.3402**	0.862	1.5	ug/L	2	Standard
	Pb	206	296774.5	1.1	**53.8916**	0.589	1.1	ug/L	240	Standard
	Pb	207	252251.9	1.7	**51.5506**	0.378	0.7	ug/L	198	Standard
	Pb	208	1071354.8	2.3	**55.4200**	1.065	1.9	ug/L	883	Standard
	U	238	381907.7	2.6	**53.8787**	0.717	1.3	ug/L	3	Standard
>	**Bi**	209	539522.1	2.0				ug/L	523984	Standard

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Na	23	1.7	173.2	**17.4920**	30.288	173.2	mg/L	0	Standard
Mg	24	5339.3	3.4	**5.9734**	0.106	1.8	mg/L	37	Standard
K	39	681.7	10.6	**1.2038**	0.100	8.3	mg/L	38	Standard
Ca	43	128.3	25.3	**4.6217**	2.038	44.1	mg/L	10	Standard
Fe	54	542.4	5.6	**0.2649**	0.028	10.4	mg/L	179	Standard
Fe	57	371.7	15.7	**0.0334**	0.176	526.0	mg/L	335	Standard
> **Sc-1**	45	69663.2	3.3				mg/L	61029	Standard
Cl	35	28661.1	2.0				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	10680.4	5.1				ug/L	1547	Standard
P	31	21703.9	3.0				ug/L	15286	Standard
S	34	2123.5	4.7				ug/L	1572	Standard
Sr	88	153.3	22.2				ug/L	73	Standard
C	12	123.3	28.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	57.6	48.4				mg/L	6	Standard
Ho-1	165	31.7	24.1				mg/L	10	Standard
Er	166	50.0	91.7				mg/L	13	Standard
I	127	154285.8	7.0				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.911	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.929	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.234
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		102.965
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Approved: July 04, 2016

Method 6020 - Summary Report

Sample ID: L1606097411SD WG573291-06
Sample Date/Time: Wednesday, June 29, 2016 20:30:11
Number of Replicates: 3
Autosampler Position: 414
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77405.6	1.5				ug/L	74699	Standard
	Be	9	55655.4	2.7	**61.0164**	1.576	2.6	ug/L	8	Standard
	Al	27	12086433.4	1.6	**79.3694**	1.985	2.5	ug/L	1493	Standard
	Sc	45	69212.8	2.6				ug/L	61029	Standard
	Ti	47	325.0	3.5	**0.6412**	0.031	4.8	ug/L	35	Standard
	V	51	466207.8	0.7	**53.8111**	1.021	1.9	ug/L	1435	Standard
	Cr	52	460631.7	1.4	**53.3535**	1.026	1.9	ug/L	7635	Standard
	Cr	53	56936.8	2.6	**53.5625**	1.349	2.5	ug/L	363	Standard
	Mn	55	2273187.5	1.8	**285.5286**	8.405	2.9	ug/L	747	Standard
	Co	59	417957.8	1.5	**55.3411**	1.481	2.7	ug/L	234	Standard
	Ni	60	114539.0	0.3	**53.3968**	0.715	1.3	ug/L	215	Standard
	Cu	65	111050.1	0.5	**52.0971**	0.842	1.6	ug/L	104	Standard
	Zn	66	69817.2	1.2	**55.4674**	1.299	2.3	ug/L	363	Standard
>	**Ge**	72	566018.8	1.2				ug/L	495142	Standard
	As	75	67402.1	1.8	**52.7097**	1.486	2.8	ug/L	-50	Standard
	Se	82	6620.3	2.0	**52.6418**	1.659	3.2	ug/L	14	Standard
	Se-1	77	4557.0	3.8	**53.9777**	2.700	5.0	ug/L	42	Standard
>	**Ga**	71	128.3	43.8				mg/L	42	Standard
	Rb	85	32409.6	0.5				ug/L	17	Standard
	Y	89	470382.0	1.0				ug/L	417098	Standard
>	**Rh**	103	61.7	24.8				ug/L	13	Standard
	Mo	98	196.1	5.9	**0.0618**	0.004	5.9	ug/L	11	Standard
	Ag	107	374581.1	0.3	**52.7275**	0.291	0.6	ug/L	68	Standard
	Cd	111	118658.6	1.5	**52.0656**	0.397	0.8	mg/L	2	Standard
	Cd	114	286274.0	2.6	**51.2138**	0.959	1.9	ug/L	12	Standard
>	**In**	115	640194.5	0.7				ug/L	587441	Standard
	Sn	118	1251.7	9.2	**0.1018**	0.017	16.3	ug/L	497	Standard
	Sb	123	263336.7	0.4	**51.7531**	0.327	0.6	ug/L	78	Standard
	Ba	135	250997.3	0.8	**112.5129**	0.934	0.8	ug/L	24	Standard
	Ce	140	2000.1	6.5				ug/L	25	Standard
>	**Tb**	159	984120.1	1.6				ug/L	939701	Standard
	Ho	165	48.3	11.9				ug/L	10	Standard
	Tl	203	459854.1	0.1	**53.6772**	0.823	1.5	ug/L	4	Standard
	Tl	205	414544.5	0.5	**55.7557**	1.089	2.0	ug/L	2	Standard
	Pb	206	298100.5	1.1	**53.6266**	1.109	2.1	ug/L	240	Standard
	Pb	207	253941.0	0.3	**51.4145**	0.875	1.7	ug/L	198	Standard
	Pb	208	1061848.2	0.5	**54.4146**	0.782	1.4	ug/L	883	Standard
	U	238	385197.1	0.6	**53.8449**	1.070	2.0	ug/L	3	Standard
>	**Bi**	209	544631.3	1.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	5929.5	2.1	**6.6847**	0.075	1.1	mg/L	37	Standard
K	39	801.7	4.2	**1.4479**	0.027	1.8	mg/L	38	Standard
Ca	43	125.0	31.2	**4.4423**	2.177	49.0	mg/L	10	Standard
Fe	54	841.7	6.4	**0.4916**	0.050	10.2	mg/L	179	Standard
Fe	57	441.7	5.4	**0.2489**	0.040	15.9	mg/L	335	Standard
> **Sc-1**	45	69212.8	2.6				mg/L	61029	Standard
Cl	35	28869.5	0.9				ug/L	20195	Standard
Kr	83	3.7	56.8				ug/L	4	Standard
Br	81	12511.8	0.5				ug/L	1547	Standard
P	31	22511.8	6.4				ug/L	15286	Standard
S	34	2320.2	4.3				ug/L	1572	Standard
Sr	88	170.0	8.8				ug/L	73	Standard
C	12	80.0	25.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	3	Standard
Dy	164	93.8	22.7				mg/L	6	Standard
Ho-1	165	48.3	11.9				mg/L	10	Standard
Er	166	60.0	57.7				mg/L	13	Standard
I	127	186712.7	7.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.624	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.314	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.980
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.940
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606097401PS WG573790-03
Sample Date/Time: Wednesday, June 29, 2016 20:33:23
Number of Replicates: 3
Autosampler Position: 415
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77767.4	1.4				ug/L	74699	Standard
	Be	9	54620.0	3.0	**59.5914**	1.002	1.7	ug/L	8	Standard
	Al	27	11452990.5	1.0	**74.8575**	1.594	2.1	ug/L	1493	Standard
	Sc	45	70666.1	1.7				ug/L	61029	Standard
	Ti	47	337.7	3.5	**0.6996**	0.031	4.4	ug/L	35	Standard
	V	51	448357.3	1.6	**53.6764**	0.056	0.1	ug/L	1435	Standard
	Cr	52	455460.2	1.4	**54.7521**	0.846	1.5	ug/L	7635	Standard
	Cr	53	57375.1	1.7	**56.0052**	0.200	0.4	ug/L	363	Standard
	Mn	55	2154709.7	0.5	**280.7294**	3.122	1.1	ug/L	747	Standard
	Co	59	404569.2	0.4	**55.5661**	0.653	1.2	ug/L	234	Standard
	Ni	60	112633.8	1.0	**54.4757**	0.921	1.7	ug/L	215	Standard
	Cu	65	109355.9	1.1	**53.2239**	1.011	1.9	ug/L	104	Standard
	Zn	66	70498.3	1.6	**58.1166**	0.789	1.4	ug/L	363	Standard
>	**Ge**	72	545627.2	1.6				ug/L	495142	Standard
	As	75	64850.8	0.9	**52.6029**	0.345	0.7	ug/L	-50	Standard
	Se	82	6485.5	1.8	**53.4847**	0.149	0.3	ug/L	14	Standard
	Se-1	77	4411.0	1.9	**54.1848**	0.787	1.5	ug/L	42	Standard
>	**Ga**	71	161.7	1.8				mg/L	42	Standard
	Rb	85	30524.1	1.7				ug/L	17	Standard
	Y	89	474875.4	0.7				ug/L	417098	Standard
>	**Rh**	103	60.0	16.7				ug/L	13	Standard
	Mo	98	163.5	8.5	**0.0491**	0.004	8.3	ug/L	11	Standard
	Ag	107	365805.1	1.5	**50.1795**	1.312	2.6	ug/L	68	Standard
	Cd	111	117534.8	0.9	**50.2525**	0.249	0.5	mg/L	2	Standard
	Cd	114	285376.1	1.5	**49.7475**	0.497	1.0	ug/L	12	Standard
>	**In**	115	657058.7	1.4				ug/L	587441	Standard
	Sn	118	1523.4	8.4	**0.1383**	0.017	12.1	ug/L	497	Standard
	Sb	123	259036.8	1.0	**49.6101**	1.139	2.3	ug/L	78	Standard
	Ba	135	239792.4	1.1	**104.7386**	1.629	1.6	ug/L	24	Standard
	Ce	140	2208.5	2.2				ug/L	25	Standard
>	**Tb**	159	1019758.9	1.4				ug/L	939701	Standard
	Ho	165	71.7	21.3				ug/L	10	Standard
	Tl	203	456925.9	1.0	**51.8248**	0.434	0.8	ug/L	4	Standard
	Tl	205	410087.8	1.3	**53.5969**	1.082	2.0	ug/L	2	Standard
	Pb	206	289464.5	1.3	**50.5998**	1.170	2.3	ug/L	240	Standard
	Pb	207	248071.4	0.9	**48.8073**	1.130	2.3	ug/L	198	Standard
	Pb	208	1050860.8	0.8	**52.3325**	1.144	2.2	ug/L	883	Standard
	U	238	380364.0	0.7	**51.6678**	1.019	2.0	ug/L	3	Standard
>	**Bi**	209	560465.1	1.6				ug/L	523984	Standard

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Na	23	1.7	173.2	**16.2901**	28.207	173.2	mg/L	0	Standard
Mg	24	5812.8	3.2	**6.4153**	0.191	3.0	mg/L	37	Standard
K	39	706.7	5.8	**1.2347**	0.072	5.8	mg/L	38	Standard
Ca	43	108.3	32.4	**3.3848**	1.922	56.8	mg/L	10	Standard
Fe	54	723.0	16.6	**0.3920**	0.096	24.5	mg/L	179	Standard
Fe	57	435.0	5.7	**0.2027**	0.073	35.8	mg/L	335	Standard
> **Sc-1**	45	70666.1	1.7				mg/L	61029	Standard
Cl	35	28625.7	0.6				ug/L	20195	Standard
Kr	83	1.7	34.6				ug/L	4	Standard
Br	81	11964.7	4.0				ug/L	1547	Standard
P	31	22167.9	1.3				ug/L	15286	Standard
S	34	2268.5	2.8				ug/L	1572	Standard
Sr	88	201.7	11.5				ug/L	73	Standard
C	12	93.3	34.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	3	Standard
Dy	164	120.1	22.8				mg/L	6	Standard
Ho-1	165	71.7	21.3				mg/L	10	Standard
Er	166	66.7	60.6				mg/L	13	Standard
I	127	179600.9	7.9				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.108	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.196	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		111.851
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.962
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606097401SDL WG573790-04
Sample Date/Time: Wednesday, June 29, 2016 20:36:34
Number of Replicates: 3
Autosampler Position: 416
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	77070.7	3.6				ug/L	74699	Standard
	Be	9	45.0	33.3	**0.0568**	0.015	26.1	ug/L	8	Standard
	Al	27	2260304.8	1.2	**14.9037**	0.448	3.0	ug/L	1493	Standard
	Sc	45	68278.6	3.1				ug/L	61029	Standard
	Ti	47	83.0	9.9	**0.0892**	0.019	21.8	ug/L	35	Standard
	V	51	2192.5	3.4	**0.0673**	0.008	12.3	ug/L	1435	Standard
	Cr	52	10144.1	1.9	**0.2156**	0.020	9.5	ug/L	7635	Standard
	Cr	53	686.7	4.8	**0.3429**	0.034	10.1	ug/L	363	Standard
	Mn	55	355711.8	1.3	**46.1130**	0.456	1.0	ug/L	747	Standard
	Co	59	2492.2	1.8	**0.3045**	0.007	2.2	ug/L	234	Standard
	Ni	60	828.7	2.9	**0.2769**	0.011	3.8	ug/L	215	Standard
	Cu	65	280.0	0.7	**0.0325**	0.001	2.6	ug/L	104	Standard
	Zn	66	2517.5	2.7	**1.6325**	0.059	3.6	ug/L	363	Standard
>	**Ge**	72	546825.8	0.3				ug/L	495142	Standard
	As	75	65.5	45.7	**0.1126**	0.024	21.6	ug/L	-50	Standard
	Se	82	28.6	15.9	**0.0977**	0.038	38.5	ug/L	14	Standard
	Se-1	77	61.3	12.0	**0.1380**	0.090	65.2	ug/L	42	Standard
>	**Ga**	71	98.3	5.9				mg/L	42	Standard
	Rb	85	6301.3	2.8				ug/L	17	Standard
	Y	89	489576.3	2.2				ug/L	417098	Standard
>	**Rh**	103	21.7	48.0				ug/L	13	Standard
	Mo	98	47.0	21.8	**0.0100**	0.004	35.1	ug/L	11	Standard
	Ag	107	179.0	15.1	**0.0115**	0.004	30.5	ug/L	68	Standard
	Cd	111	35.6	11.4	**0.0072**	0.002	22.2	mg/L	2	Standard
	Cd	114	102.0	28.8	**0.0155**	0.005	31.8	ug/L	12	Standard
>	**In**	115	661161.0	0.8				ug/L	587441	Standard
	Sn	118	795.0	15.7	**0.0261**	0.018	68.8	ug/L	497	Standard
	Sb	123	2322.3	23.7	**0.4382**	0.107	24.4	ug/L	78	Standard
	Ba	135	26230.7	1.3	**11.3705**	0.051	0.4	ug/L	24	Standard
	Ce	140	480.0	13.3				ug/L	25	Standard
>	**Tb**	159	1000122.3	1.4				ug/L	939701	Standard
	Ho	165	26.7	10.8				ug/L	10	Standard
	Tl	203	156.0	22.9	**0.0163**	0.004	24.4	ug/L	4	Standard
	Tl	205	150.0	15.3	**0.0202**	0.003	14.3	ug/L	2	Standard
	Pb	206	403.0	8.6	**0.0007**	0.006	871.4	ug/L	240	Standard
	Pb	207	342.3	5.9	**-0.0013**	0.004	288.2	ug/L	198	Standard
	Pb	208	1497.0	5.1	**0.0020**	0.004	181.5	ug/L	883	Standard
	U	238	114.0	13.2	**0.0113**	0.002	17.4	ug/L	3	Standard
>	**Bi**	209	549941.1	1.0				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	1213.4	3.4	**1.3365**	0.084	6.3	mg/L	37	Standard
K	39	180.0	11.1	**0.2425**	0.050	20.5	mg/L	38	Standard
Ca	43	46.7	22.3	**0.1064**	0.547	514.2	mg/L	10	Standard
Fe	54	286.0	10.0	**0.0782**	0.017	21.6	mg/L	179	Standard
Fe	57	306.7	10.9	**-0.1437**	0.079	55.0	mg/L	335	Standard
> **Sc-1**	45	68278.6	3.1				mg/L	61029	Standard
Cl	35	28506.1	0.3				ug/L	20195	Standard
Kr	83	1.7	34.6				ug/L	4	Standard
Br	81	3947.2	6.9				ug/L	1547	Standard
P	31	19479.2	3.3				ug/L	15286	Standard
S	34	2088.5	5.3				ug/L	1572	Standard
Sr	88	101.7	24.8				ug/L	73	Standard
C	12	60.0	60.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	3	Standard
Dy	164	52.5	9.9				mg/L	6	Standard
Ho-1	165	26.7	10.8				mg/L	10	Standard
Er	166	16.7	69.3				mg/L	13	Standard
I	127	39316.0	2.7				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.175	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.438	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		112.549
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.954
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606097401SDL WG573790-04
Sample Date/Time: Wednesday, June 29, 2016 20:39:46
Number of Replicates: 3
Autosampler Position: 417
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	76547.9	2.1				ug/L	74699	Standard
	Be	9	28.3	27.0	**0.0389**	0.008	20.5	ug/L	8	Standard
	Al	27	465099.1	0.7	**3.0756**	0.044	1.4	ug/L	1493	Standard
	Sc	45	68169.7	0.9				ug/L	61029	Standard
	Ti	47	36.7	6.9	**-0.0243**	0.006	24.2	ug/L	35	Standard
	V	51	2063.3	3.2	**0.0438**	0.007	16.8	ug/L	1435	Standard
	Cr	52	9662.1	0.8	**0.1188**	0.007	6.3	ug/L	7635	Standard
	Cr	53	523.3	10.2	**0.1664**	0.051	30.7	ug/L	363	Standard
	Mn	55	72938.2	2.1	**9.0325**	0.175	1.9	ug/L	747	Standard
	Co	59	731.7	15.3	**0.0598**	0.015	24.7	ug/L	234	Standard
	Ni	60	309.0	4.2	**0.0207**	0.006	30.5	ug/L	215	Standard
	Cu	65	310.7	4.3	**0.0426**	0.006	14.7	ug/L	104	Standard
	Zn	66	2601.2	2.1	**1.6324**	0.044	2.7	ug/L	363	Standard
>	**Ge**	72	565002.4	0.2				ug/L	495142	Standard
	As	75	-33.8	92.8	**0.0331**	0.025	74.3	ug/L	-50	Standard
	Se	82	20.9	22.0	**0.0285**	0.036	128.0	ug/L	14	Standard
	Se-1	77	57.7	17.5	**0.0697**	0.122	174.5	ug/L	42	Standard
>	**Ga**	71	58.3	9.9				mg/L	42	Standard
	Rb	85	1335.1	7.2				ug/L	17	Standard
	Y	89	490772.8	1.5				ug/L	417098	Standard
>	**Rh**	103	15.0	57.7				ug/L	13	Standard
	Mo	98	24.2	10.4	**0.0025**	0.001	32.4	ug/L	11	Standard
	Ag	107	143.3	39.3	**0.0071**	0.008	112.3	ug/L	68	Standard
	Cd	111	11.6	65.7	**-0.0029**	0.003	116.5	mg/L	2	Standard
	Cd	114	25.4	61.7	**0.0024**	0.003	115.9	ug/L	12	Standard
>	**In**	115	647709.2	0.5				ug/L	587441	Standard
	Sn	118	543.3	5.3	**-0.0103**	0.004	42.8	ug/L	497	Standard
	Sb	123	784.5	24.6	**0.1481**	0.037	24.8	ug/L	78	Standard
	Ba	135	5327.9	0.7	**2.3449**	0.015	0.6	ug/L	24	Standard
	Ce	140	110.0	7.9				ug/L	25	Standard
>	**Tb**	159	986009.2	0.5				ug/L	939701	Standard
	Ho	165	10.0	100.0				ug/L	10	Standard
	Tl	203	50.7	34.9	**0.0041**	0.002	51.6	ug/L	4	Standard
	Tl	205	46.7	71.3	**0.0064**	0.005	70.3	ug/L	2	Standard
	Pb	206	376.3	19.7	**-0.0043**	0.014	323.1	ug/L	240	Standard
	Pb	207	290.7	20.1	**-0.0119**	0.012	103.4	ug/L	198	Standard
	Pb	208	1284.0	11.0	**-0.0091**	0.008	86.4	ug/L	883	Standard
	U	238	44.0	79.9	**0.0017**	0.005	294.8	ug/L	3	Standard
>	**Bi**	209	552760.9	1.2				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	246.7	9.1	**0.2201**	0.028	12.6	mg/L	37	Standard
K	39	50.0	40.0	**-0.0154**	0.039	250.4	mg/L	38	Standard
Ca	43	20.0	43.3	**-1.3952**	0.477	34.2	mg/L	10	Standard
Fe	54	182.5	25.5	**0.0004**	0.036	9653.1	mg/L	179	Standard
Fe	57	256.7	8.8	**-0.2933**	0.068	23.1	mg/L	335	Standard
Sc-1	45	68169.7	0.9				mg/L	61029	Standard
Cl	35	28987.0	1.4				ug/L	20195	Standard
Kr	83	1.7	69.3				ug/L	4	Standard
Br	81	2360.2	9.1				ug/L	1547	Standard
P	31	19090.4	2.0				ug/L	15286	Standard
S	34	2190.2	0.6				ug/L	1572	Standard
Sr	88	73.3	27.6				ug/L	73	Standard
C	12	46.7	44.6				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	22.7	102.4				mg/L	6	Standard
Ho-1	165	10.0	100.0				mg/L	10	Standard
Er	166	13.3	114.6				mg/L	13	Standard
I	127	10453.6	7.5				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		102.475	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		114.109	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		110.259
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.492
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Wednesday, June 29, 2016 20:42:59
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	73968.6	3.7				ug/L	74699	Standard
	Be	9	51786.8	4.7	**59.3953**	0.618	1.0	ug/L	8	Standard
	Al	27	8138418.2	2.1	**55.9353**	1.016	1.8	ug/L	1493	Standard
	Sc	45	66422.0	2.7				ug/L	61029	Standard
	Ti	47	44367.5	1.4	**105.9251**	2.261	2.1	ug/L	35	Standard
	V	51	448161.7	0.9	**53.5504**	0.563	1.1	ug/L	1435	Standard
	Cr	52	438098.2	0.5	**52.5206**	0.674	1.3	ug/L	7635	Standard
	Cr	53	53648.2	1.8	**52.2574**	1.658	3.2	ug/L	363	Standard
	Mn	55	415062.2	0.8	**53.8560**	1.244	2.3	ug/L	747	Standard
	Co	59	407202.7	0.3	**55.8201**	1.033	1.9	ug/L	234	Standard
	Ni	60	107214.7	0.8	**51.7442**	0.748	1.4	ug/L	215	Standard
	Cu	65	106835.8	1.9	**51.8884**	1.090	2.1	ug/L	104	Standard
	Zn	66	63121.9	0.7	**51.8882**	0.831	1.6	ug/L	363	Standard
>	Ge	72	546729.2	1.7				ug/L	495142	Standard
	As	75	63950.8	1.3	**51.7792**	1.311	2.5	ug/L	-50	Standard
	Se	82	6522.2	2.4	**53.7001**	1.978	3.7	ug/L	14	Standard
	Se-1	77	4462.7	1.0	**54.7224**	0.944	1.7	ug/L	42	Standard
>	Ga	71	48.3	11.9				mg/L	42	Standard
	Rb	85	921.7	10.0				ug/L	17	Standard
	Y	89	469877.0	1.2				ug/L	417098	Standard
>	Rh	103	31.7	45.6				ug/L	13	Standard
	Mo	98	306064.1	0.6	**105.7488**	1.650	1.6	ug/L	11	Standard
	Ag	107	358011.4	0.7	**50.5757**	0.461	0.9	ug/L	68	Standard
	Cd	111	116953.2	1.0	**51.5035**	0.389	0.8	mg/L	2	Standard
	Cd	114	288128.0	0.1	**51.7395**	0.785	1.5	ug/L	12	Standard
>	In	115	637946.0	1.6				ug/L	587441	Standard
	Sn	118	327214.8	2.0	**51.4831**	0.238	0.5	ug/L	497	Standard
	Sb	123	254525.5	0.5	**50.2034**	0.722	1.4	ug/L	78	Standard
	Ba	135	108828.5	1.0	**48.9489**	0.332	0.7	ug/L	24	Standard
	Ce	140	90.0	29.4				ug/L	25	Standard
>	Tb	159	958314.6	1.8				ug/L	939701	Standard
	Ho	165	11.7	49.5				ug/L	10	Standard
	Tl	203	447416.0	0.6	**53.4811**	1.019	1.9	ug/L	4	Standard
	Tl	205	409322.9	1.6	**56.3810**	1.712	3.0	ug/L	2	Standard
	Pb	206	283417.6	0.7	**52.2045**	0.689	1.3	ug/L	240	Standard
	Pb	207	252263.1	0.7	**52.2984**	0.513	1.0	ug/L	198	Standard
	Pb	208	1062273.6	1.1	**55.7538**	1.546	2.8	ug/L	883	Standard
	U	238	385444.7	0.9	**55.1725**	1.082	2.0	ug/L	3	Standard
>	Bi	209	531871.1	1.6				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	4377.3	2.2	**5.1285**	0.149	2.9	mg/L	37	Standard
K	39	2180.2	1.8	**4.3148**	0.109	2.5	mg/L	38	Standard
Ca	43	118.3	10.6	**4.3366**	0.588	13.6	mg/L	10	Standard
Fe	54	6990.5	4.3	**5.3088**	0.233	4.4	mg/L	179	Standard
Fe	57	2083.5	2.8	**5.4386**	0.352	6.5	mg/L	335	Standard
> **Sc-1**	45	66422.0	2.7				mg/L	61029	Standard
Cl	35	29309.7	0.2				ug/L	20195	Standard
Kr	83	2.3	24.7				ug/L	4	Standard
Br	81	2156.8	3.9				ug/L	1547	Standard
P	31	21223.2	2.6				ug/L	15286	Standard
S	34	2665.2	2.0				ug/L	1572	Standard
Sr	88	71.7	8.1				ug/L	73	Standard
C	12	56.7	40.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	19.8	1.4				mg/L	6	Standard
Ho-1	165	11.7	49.5				mg/L	10	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	2623.6	23.6				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	118.791		
Al	27	111.871		
Sc	45			
Ti	47	105.925		
V	51	107.101		
Cr	52	105.041		
Cr	53			
Mn	55	107.712		
Co	59	111.640		
Ni	60	103.488		
Cu	65	103.777		
Zn	66	103.776		
> Ge	72		110.419	
As	75	103.558		
Se	82	107.400		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	105.749		
Ag	107	101.151		
Cd	111	103.007		
Cd	114			
In	115		108.597	
Sn	118	102.966		
Sb	123	100.407		
Ba	135	97.898		
Ce	140			
Tb	159			
Ho	165			
Tl	203	106.962		
Tl	205			
Pb	206			
Pb	207			
Pb	208	111.508		
U	238	110.345		
Bi	209		101.505	
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 6	Be	9	
QC Std 6	Al	27	
QC Std 6	Co	59	

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QC Std 6	Pb	208
QC Std 6	U	238

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Wednesday, June 29, 2016 20:46:11
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: BKT Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	75383.8	1.3				ug/L	74699	Standard
	Be	9	28.3	20.4	**0.0395**	0.006	15.9	ug/L	8	Standard
	Al	27	2638.6	20.0	**0.0044**	0.003	78.6	ug/L	1493	Standard
	Sc	45	68713.9	3.5				ug/L	61029	Standard
	Ti	47	37.7	13.4	**-0.0232**	0.011	49.4	ug/L	35	Standard
	V	51	1533.2	3.6	**-0.0202**	0.008	41.3	ug/L	1435	Standard
	Cr	52	7879.4	2.2	**-0.1054**	0.029	27.9	ug/L	7635	Standard
	Cr	53	448.3	16.3	**0.0885**	0.063	71.1	ug/L	363	Standard
	Mn	55	901.4	5.8	**-0.0363**	0.007	18.9	ug/L	747	Standard
	Co	59	283.3	10.0	**-0.0002**	0.004	1542.3	ug/L	234	Standard
	Ni	60	186.3	2.6	**-0.0379**	0.003	8.3	ug/L	215	Standard
	Cu	65	132.7	3.4	**-0.0421**	0.001	3.4	ug/L	104	Standard
	Zn	66	415.3	5.4	**-0.1263**	0.014	10.9	ug/L	363	Standard
>	**Ge**	72	573402.3	1.2				ug/L	495142	Standard
	As	75	-34.2	13.3	**0.0332**	0.003	10.5	ug/L	-50	Standard
	Se	82	17.2	23.7	**-0.0025**	0.031	1279.2	ug/L	14	Standard
	Se-1	77	54.3	12.3	**0.0204**	0.082	402.5	ug/L	42	Standard
>	**Ga**	71	35.0	37.8				mg/L	42	Standard
	Rb	85	30.0	28.9				ug/L	17	Standard
	Y	89	465691.4	1.8				ug/L	417098	Standard
>	**Rh**	103	6.7	43.3				ug/L	13	Standard
	Mo	98	268.8	25.2	**0.0874**	0.025	29.0	ug/L	11	Standard
	Ag	107	132.7	5.0	**0.0058**	0.001	22.7	ug/L	68	Standard
	Cd	111	15.2	35.4	**-0.0012**	0.003	209.6	mg/L	2	Standard
	Cd	114	58.4	20.0	**0.0084**	0.002	23.7	ug/L	12	Standard
>	**In**	115	638175.3	2.2				ug/L	587441	Standard
	Sn	118	866.7	15.8	**0.0416**	0.019	45.6	ug/L	497	Standard
	Sb	123	616.5	30.1	**0.1169**	0.034	29.1	ug/L	78	Standard
	Ba	135	50.7	18.3	**0.0068**	0.005	67.0	ug/L	24	Standard
	Ce	140	28.3	27.0				ug/L	25	Standard
>	**Tb**	159	990005.2	3.0				ug/L	939701	Standard
	Ho	165	6.7	86.6				ug/L	10	Standard
	Tl	203	92.0	24.5	**0.0086**	0.003	32.5	ug/L	4	Standard
	Tl	205	76.7	43.4	**0.0102**	0.005	44.4	ug/L	2	Standard
	Pb	206	305.7	10.6	**-0.0179**	0.007	38.8	ug/L	240	Standard
	Pb	207	274.7	5.9	**-0.0162**	0.004	23.3	ug/L	198	Standard
	Pb	208	1058.7	7.3	**-0.0216**	0.005	23.5	ug/L	883	Standard
	U	238	60.3	25.7	**0.0037**	0.002	61.2	ug/L	3	Standard
>	**Bi**	209	564302.2	2.4				ug/L	523984	Standard

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Na	23	0.0		**0.0050**	0.000	0.0	mg/L	0	Standard
Mg	24	35.0	37.8	**-0.0253**	0.014	54.1	mg/L	37	Standard
K	39	45.0	19.2	**-0.0261**	0.014	54.4	mg/L	38	Standard
Ca	43	26.7	39.0	**-1.0220**	0.608	59.5	mg/L	10	Standard
Fe	54	162.5	17.8	**-0.0163**	0.018	110.8	mg/L	179	Standard
Fe	57	258.3	8.1	**-0.2948**	0.047	15.9	mg/L	335	Standard
> **Sc-1**	45	68713.9	3.5				mg/L	61029	Standard
Cl	35	28935.6	0.2				ug/L	20195	Standard
Kr	83	2.0	50.0				ug/L	4	Standard
Br	81	1740.1	12.2				ug/L	1547	Standard
P	31	21446.8	2.8				ug/L	15286	Standard
S	34	2463.5	5.1				ug/L	1572	Standard
Sr	88	71.7	17.6				ug/L	73	Standard
C	12	43.3	13.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	3	Standard
Dy	164	12.9	115.2				mg/L	6	Standard
Ho-1	165	6.7	86.6				mg/L	10	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	2023.5	28.1				mg/L	1392	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		115.806	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.636
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.694
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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MassCal File Name

Mass Calibration File Name Default.tun
MassCal File Path C:\NexIONData\MassCal\Default.tun
Peak Search Window: 1.00

Sample Information

Sample Date/Time: Tuesday, July 05, 2016 09:04:54

Mass Calibration and Resolution

Analyte	E Mass	Meas Mass	Mass C DAC Val	Res DAC Value	Meas Peak W	Custom Res
Li	7.016	6.975	1321	2024	0.708	
Mg	23.985	23.975	4501	2020	0.692	
Co	58.933	58.925	11690	2022	0.690	
In	114.904	114.925	22863	2028	0.687	
U	238.050	238.075	47461	2043	0.681	

Relative Std. Dev.

Mass	Meas. Intens. RSD
5.525	4.916
5.575	6.266
5.625	2.810
5.675	3.120
5.725	3.210
5.775	1.700
5.825	3.914
5.875	4.024
5.925	2.609
5.975	1.860
6.025	2.733
6.075	1.681
6.125	3.202
6.175	4.353
6.225	8.355
6.275	67.748
6.325	136.931
6.375	108.327
6.425	81.650
6.475	34.993
6.525	7.996
6.575	6.006
6.625	4.810
6.675	2.293
6.725	1.911
6.775	1.582
6.825	2.290

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6.875	1.932
6.925	2.048
6.975	1.464
7.025	2.377
7.075	1.360
7.125	1.136
7.175	1.498
7.225	2.429
7.275	4.978
7.325	12.811
7.375	50.000
7.425	43.853
7.475	59.266
7.525	60.858
7.575	71.261
7.625	59.266
7.675	37.268
7.725	71.261
7.775	61.237
7.825	46.481
7.875	119.523
7.925	70.711
7.975	63.888
8.025	141.421
8.075	70.711
8.125	104.583
8.175	59.266
8.225	37.268
8.275	39.123
8.325	20.328
8.375	70.711
8.425	72.436
8.475	37.268
22.525	223.607
22.575	67.420
22.625	59.894
22.675	54.149
22.725	52.322
22.775	28.395
22.825	9.448
22.875	13.869
22.925	29.601
22.975	15.049
23.025	24.549
23.075	52.605
23.125	27.664
23.175	25.514

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23.225	34.035
23.275	38.083
23.325	53.452
23.375	19.218
23.425	19.357
23.475	24.628
23.525	2.185
23.575	1.481
23.625	1.660
23.675	1.271
23.725	1.432
23.775	1.289
23.825	0.651
23.875	1.352
23.925	1.696
23.975	2.349
24.025	2.044
24.075	1.668
24.125	1.409
24.175	1.436
24.225	1.673
24.275	2.430
24.325	13.116
24.375	42.127
24.425	47.222
24.475	3.626
24.525	3.161
24.575	4.479
24.625	0.720
24.675	2.084
24.725	1.446
24.775	0.782
24.825	1.059
24.875	0.986
24.925	1.507
24.975	1.323
25.025	0.995
25.075	1.253
25.125	1.235
25.175	0.877
25.225	3.966
25.275	6.789
25.325	68.148
25.375	62.630
25.425	18.054
25.475	22.592
57.525	8.108

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57.575	5.819
57.625	3.555
57.675	1.890
57.725	0.683
57.775	1.819
57.825	0.687
57.875	2.247
57.925	1.417
57.975	0.754
58.025	1.690
58.075	1.590
58.125	2.082
58.175	1.933
58.225	2.633
58.275	11.735
58.325	28.571
58.375	45.644
58.425	13.451
58.475	8.093
58.525	7.046
58.575	2.359
58.625	1.975
58.675	1.980
58.725	2.667
58.775	1.582
58.825	1.860
58.875	1.841
58.925	1.155
58.975	1.132
59.025	2.557
59.075	1.177
59.125	2.415
59.175	1.508
59.225	2.089
59.275	23.436
59.325	97.183
59.375	43.241
59.425	44.628
59.475	17.563
59.525	9.370
59.575	3.904
59.625	4.547
59.675	4.189
59.725	1.832
59.775	1.847
59.825	3.828
59.875	2.178

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59.925	2.815
59.975	2.630
60.025	3.394
60.075	2.243
60.125	2.466
60.175	2.169
60.225	6.650
60.275	28.144
60.325	47.507
60.375	26.307
60.425	117.656
60.475	54.294
113.525	7.903
113.575	5.232
113.625	3.878
113.675	1.766
113.725	3.345
113.775	1.670
113.825	2.803
113.875	1.444
113.925	2.208
113.975	1.811
114.025	2.067
114.075	3.273
114.125	1.543
114.175	2.410
114.225	3.081
114.275	5.715
114.325	11.478
114.375	31.623
114.425	20.012
114.475	14.173
114.525	2.838
114.575	2.225
114.625	2.421
114.675	2.092
114.725	1.273
114.775	1.395
114.825	1.091
114.875	1.993
114.925	1.636
114.975	1.467
115.025	2.093
115.075	0.811
115.125	1.853
115.175	2.044
115.225	2.848

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115.275	5.340
115.325	14.538
115.375	66.144
115.425	53.926
115.475	49.311
115.525	13.098
115.575	6.772
115.625	6.176
115.675	6.649
115.725	2.929
115.775	2.384
115.825	1.377
115.875	2.818
115.925	2.791
115.975	4.600
116.025	1.704
116.075	3.015
116.125	5.054
116.175	3.417
116.225	10.059
116.275	14.933
116.325	39.316
116.375	80.889
116.425	63.738
116.475	62.828
236.525	223.607
236.575	24.686
236.625	26.702
236.675	26.438
236.725	35.460
236.775	14.582
236.825	54.128
236.875	30.292
236.925	43.971
236.975	45.138
237.025	21.123
237.075	22.356
237.125	16.110
237.175	24.491
237.225	31.558
237.275	15.972
237.325	39.891
237.375	21.066
237.425	11.877
237.475	32.439
237.525	35.561
237.575	11.436

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237.625	7.182
237.675	3.176
237.725	2.457
237.775	0.976
237.825	2.661
237.875	0.713
237.925	0.911
237.975	1.333
238.025	0.816
238.075	1.224
238.125	0.903
238.175	1.478
238.225	1.941
238.275	0.792
238.325	1.379
238.375	3.447
238.425	0.475
238.475	3.931
238.525	11.732
238.575	20.719
238.625	22.306
238.675	43.706
238.725	36.490
238.775	23.923
238.825	31.545
238.875	16.330
238.925	42.133
238.975	30.764
239.025	25.693
239.075	19.543
239.125	24.601
239.175	37.268
239.225	6.428
239.275	13.608
239.325	25.529
239.375	23.967
239.425	42.822
239.475	26.438

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SmartTune Wizard - Summary

```
Optimization Summary

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Start Time: 7/5/2016 9:09:35 AM
End Time: 7/5/2016 9:11:50 AM

Daily Performance Check - [Passed]  Optimum value(s): N/A
        Obtained Intensity (Be 9.0122): 5395.56
        Obtained Intensity (Mg 23.985): 243827.68
        Obtained Intensity (In 114.904): 70583.16
        Obtained Intensity (U 238.05): 142756.33
        Obtained Intensity (Bkgd 220): 0.20
        Obtained Formula (CeO 155.9 / Ce 139.905): 0.020 (=4055.54 / 204395.37)
        Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.011 (=2346.65 / 204395.37)
```

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SmartTune Wizard - Details

```
Optimization Details

SmartTune file: C:\NexIONData\Wizard\SmartTune\ESI SmartTune Fullmicrobac.swz

Optimization Status

Start Time: 7/5/2016 9:09:35 AM

Daily Performance Check
        Optimization Settings:
                Method: C:\NexIONData\Method\ESI Daily Performance.mth.
                Intensity Criterion: Be 9.0122 > 2000
                Intensity Criterion: Mg 23.985 > 15000
                Intensity Criterion: In 114.904 > 40000
                Intensity Criterion: U 238.05 > 30000
                Intensity Criterion: Bkgd 220 <= 5
                Formula Criterion: CeO 155.9 / Ce 139.905 <= 0.025
                Formula Criterion: Ce++ 69.9527 / Ce 139.905 <= 0.03

        Optimization Results:
        Initial Try
                Obtained Intensity (Be 9.0122): 5395.56
                Obtained Intensity (Mg 23.985): 243827.68
                Obtained Intensity (In 114.904): 70583.16
                Obtained Intensity (U 238.05): 142756.33
                Obtained Intensity (Bkgd 220): 0.20
                Obtained Formula (CeO 155.9 / Ce 139.905): 0.020 (=4055.54 / 204395.37)
                Obtained Formula (Ce++ 69.9527 / Ce 139.905): 0.011 (=2346.65 / 204395.37)
[Passed]  Optimum value(s): N/A

End Time: 7/5/2016 9:11:50 AM
```


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Method 6020 - Summary Report

Sample ID: Blank
Sample Date/Time: Tuesday, July 05, 2016 09:23:52
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59516.7	3.0				ug/L		Standard
	Be	9	10.0	50.0				ug/L		Standard
	Al	27	1871.8	6.0				ug/L		Standard
	Sc	45	26715.2	1.7				ug/L		Standard
	Ti	47	53.7	10.6				ug/L		Standard
	V	51	1419.3	5.4				ug/L		Standard
	Cr	52	7059.3	2.4				ug/L		Standard
	Cr	53	398.3	5.9				ug/L		Standard
	Mn	55	824.4	4.6				ug/L		Standard
	Co	59	166.7	12.5				ug/L		Standard
	Ni	60	391.3	3.3				ug/L		Standard
	Cu	65	147.0	7.8				ug/L		Standard
	Zn	66	183.7	12.0				ug/L		Standard
>	**Ge**	72	422997.6	2.0				ug/L		Standard
	As	75	-58.4	17.2				ug/L		Standard
	Se	82	14.9	7.9				ug/L		Standard
	Se-1	77	57.7	18.5				ug/L		Standard
>	**Ga**	71	113.3	5.1				mg/L		Standard
	Rb	85	26.7	21.7				ug/L		Standard
	Y	89	383780.2	1.3				ug/L		Standard
>	**Rh**	103	18.3	41.7				ug/L		Standard
	Mo	98	30.6	11.5				ug/L		Standard
	Ag	107	83.7	25.8				ug/L		Standard
	Cd	111	3.9	25.5				mg/L		Standard
	Cd	114	15.3	95.4				ug/L		Standard
>	**In**	115	515399.7	1.8				ug/L		Standard
	Sn	118	1043.4	21.4				ug/L		Standard
	Sb	123	226.5	22.8				ug/L		Standard
	Ba	135	30.7	16.1				ug/L		Standard
	Ce	140	120.0	28.9				ug/L		Standard
>	**Tb**	159	785817.3	2.8				ug/L		Standard
	Ho	165	6.7	86.6				ug/L		Standard
	Tl	203	5.7	53.9				ug/L		Standard
	Tl	205	8.3	69.3				ug/L		Standard
	Pb	206	200.7	7.0				ug/L		Standard
	Pb	207	176.7	10.5				ug/L		Standard
	Pb	208	721.7	1.4				ug/L		Standard
	U	238	7.7	74.2				ug/L		Standard
>	**Bi**	209	444562.8	2.6				ug/L		Standard

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	Na	23	0.0		mg/L	Standard
	Mg	24	38.3	32.8	mg/L	Standard
	K	39	33.3	77.0	mg/L	Standard
	Ca	43	48.3	26.0	mg/L	Standard
	Fe	54	130.9	15.4	mg/L	Standard
	Fe	57	153.3	25.3	mg/L	Standard
>	**Sc-1**	45	26715.2	1.7	mg/L	Standard
	Cl	35	102686.2	2.0	ug/L	Standard
	Kr	83	1.7	91.7	ug/L	Standard
	Br	81	1896.8	8.1	ug/L	Standard
	P	31	18491.3	3.9	ug/L	Standard
	S	34	3733.8	4.4	ug/L	Standard
	Sr	88	46.7	22.3	ug/L	Standard
	C	12	63.3	18.2	mg/L	Standard
	N	14	0.0		mg/L	Standard
	Hg	202	23.3	89.2	mg/L	Standard
	Dy	164	22.7	67.5	mg/L	Standard
	Ho-1	165	6.7	86.6	mg/L	Standard
	Er	166	13.3	43.3	mg/L	Standard
	I	127	12398.4	3.2	mg/L	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 1
Sample Date/Time: Tuesday, July 05, 2016 09:27:04
Number of Replicates: 3
Autosampler Position: 1
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59608.8	3.4				ug/L	59517	Standard
	Be	9	11.7	99.0				ug/L	10	Standard
	Al	27	1765.1	2.2				ug/L	1872	Standard
	Sc	45	26738.6	3.0				ug/L	26715	Standard
	Ti	47	56.0	10.9				ug/L	54	Standard
	V	51	1412.8	3.0				ug/L	1419	Standard
	Cr	52	6923.2	1.6				ug/L	7059	Standard
	Cr	53	398.3	10.8				ug/L	398	Standard
	Mn	55	831.4	1.9				ug/L	824	Standard
	Co	59	156.3	6.7				ug/L	167	Standard
	Ni	60	385.3	6.4				ug/L	391	Standard
	Cu	65	141.0	6.8				ug/L	147	Standard
	Zn	66	188.3	20.5				ug/L	184	Standard
>	**Ge**	72	430414.5	1.6				ug/L	422998	Standard
	As	75	-83.8	26.9				ug/L	-58	Standard
	Se	82	11.6	23.6				ug/L	15	Standard
	Se-1	77	58.3	8.8				ug/L	58	Standard
>	**Ga**	71	106.7	5.4				mg/L	113	Standard
	Rb	85	20.0	43.3				ug/L	27	Standard
	Y	89	380199.7	3.4				ug/L	383780	Standard
>	**Rh**	103	21.7	35.3				ug/L	18	Standard
	Mo	98	21.9	39.1				ug/L	31	Standard
	Ag	107	67.3	14.3				ug/L	84	Standard
	Cd	111	3.0	67.2				mg/L	4	Standard
	Cd	114	12.1	77.3				ug/L	15	Standard
>	**In**	115	507604.1	0.9				ug/L	515400	Standard
	Sn	118	1040.0	33.5				ug/L	1043	Standard
	Sb	123	109.1	24.9				ug/L	227	Standard
	Ba	135	34.0	11.8				ug/L	31	Standard
	Ce	140	93.3	17.2				ug/L	120	Standard
>	**Tb**	159	780753.8	1.6				ug/L	785817	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	4.3	13.3				ug/L	6	Standard
	Tl	205	5.0	100.0				ug/L	8	Standard
	Pb	206	190.3	10.9				ug/L	201	Standard
	Pb	207	165.3	4.7				ug/L	177	Standard
	Pb	208	731.3	6.4				ug/L	722	Standard
	U	238	4.3	93.3				ug/L	8	Standard
>	**Bi**	209	442740.5	1.3				ug/L	444563	Standard

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Na	23	1.7	173.2	mg/L	0	Standard
Mg	24	41.7	36.7	mg/L	38	Standard
K	39	20.0	43.3	mg/L	33	Standard
Ca	43	45.0	22.2	mg/L	48	Standard
Fe	54	134.3	13.6	mg/L	131	Standard
Fe	57	140.0	27.9	mg/L	153	Standard
> **Sc-1**	45	26738.6	3.0	mg/L	26715	Standard
Cl	35	100953.2	1.4	ug/L	102686	Standard
Kr	83	3.0	33.3	ug/L	2	Standard
Br	81	1896.8	10.3	ug/L	1897	Standard
P	31	18573.1	4.4	ug/L	18491	Standard
S	34	3695.5	3.9	ug/L	3734	Standard
Sr	88	35.0	37.8	ug/L	47	Standard
C	12	80.0	33.1	mg/L	63	Standard
N	14	0.0		mg/L	0	Standard
Hg	202	33.3	45.8	mg/L	23	Standard
Dy	164	5.7	101.5	mg/L	23	Standard
Ho-1	165	5.0	100.0	mg/L	7	Standard
Er	166	20.0	50.0	mg/L	13	Standard
I	127	12588.6	2.6	mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: Standard 1
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Method 6020 - Summary Report

Sample ID: Standard 2
Sample Date/Time: Tuesday, July 05, 2016 09:30:15
Number of Replicates: 3
Autosampler Position: 2
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60323.2	1.6				ug/L	59517	Standard
	Be	9	71.7	28.2				ug/L	10	Standard
	Al	27	9626.4	1.5				ug/L	1872	Standard
	Sc	45	27469.9	2.0				ug/L	26715	Standard
	Ti	47	85.3	2.4				ug/L	54	Standard
	V	51	1714.1	1.7				ug/L	1419	Standard
	Cr	52	7550.9	1.7				ug/L	7059	Standard
	Cr	53	423.3	16.8				ug/L	398	Standard
	Mn	55	1185.4	1.3				ug/L	824	Standard
	Co	59	528.0	1.7				ug/L	167	Standard
	Ni	60	484.0	2.5				ug/L	391	Standard
	Cu	65	250.7	2.8				ug/L	147	Standard
	Zn	66	239.0	6.2				ug/L	184	Standard
>	Ge	72	437972.2	1.6				ug/L	422998	Standard
	As	75	-2.1	857.6				ug/L	-58	Standard
	Se	82	31.1	5.9				ug/L	15	Standard
	Se-1	77	56.3	13.4				ug/L	58	Standard
>	Ga	71	63.3	27.7				mg/L	113	Standard
	Rb	85	15.0	66.7				ug/L	27	Standard
	Y	89	387008.6	2.3				ug/L	383780	Standard
>	Rh	103	20.0	25.0				ug/L	18	Standard
	Mo	98	291.7	4.3				ug/L	31	Standard
	Ag	107	421.0	6.2				ug/L	84	Standard
	Cd	111	116.1	3.2				mg/L	4	Standard
	Cd	114	283.7	10.5				ug/L	15	Standard
>	In	115	519547.9	2.4				ug/L	515400	Standard
	Sn	118	1351.7	28.3				ug/L	1043	Standard
	Sb	123	306.2	6.2				ug/L	227	Standard
	Ba	135	149.3	0.4				ug/L	31	Standard
	Ce	140	90.0	34.7				ug/L	120	Standard
>	Tb	159	809068.9	3.1				ug/L	785817	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	436.3	1.5				ug/L	6	Standard
	Tl	205	401.7	14.9				ug/L	8	Standard
	Pb	206	484.0	2.3				ug/L	201	Standard
	Pb	207	448.3	6.0				ug/L	177	Standard
	Pb	208	1813.0	1.7				ug/L	722	Standard
	U	238	366.7	3.7				ug/L	8	Standard
>	Bi	209	452738.0	3.1				ug/L	444563	Standard

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	Na	23	0.0		mg/L	0	Standard
	Mg	24	31.7	71.2	mg/L	38	Standard
	K	39	31.7	32.9	mg/L	33	Standard
	Ca	43	38.3	54.3	mg/L	48	Standard
	Fe	54	154.4	34.0	mg/L	131	Standard
	Fe	57	161.7	7.1	mg/L	153	Standard
>	**Sc-1**	45	27469.9	2.0	mg/L	26715	Standard
	Cl	35	102529.8	1.1	ug/L	102686	Standard
	Kr	83	2.0	86.6	ug/L	2	Standard
	Br	81	2006.8	8.1	ug/L	1897	Standard
	P	31	18007.4	3.0	ug/L	18491	Standard
	S	34	3722.1	4.1	ug/L	3734	Standard
	Sr	88	36.7	34.3	ug/L	47	Standard
	C	12	66.7	31.2	mg/L	63	Standard
	N	14	0.0		mg/L	0	Standard
	Hg	202	20.0	50.0	mg/L	23	Standard
	Dy	164	16.3	72.3	mg/L	23	Standard
	Ho-1	165	6.7	114.6	mg/L	7	Standard
	Er	166	6.7	86.6	mg/L	13	Standard
	I	127	12276.6	1.8	mg/L	12398	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72			
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 3
Sample Date/Time: Tuesday, July 05, 2016 09:33:27
Number of Replicates: 3
Autosampler Position: 3
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	57281.5	3.4				ug/L	59517	Standard
	Be	9	42113.5	3.7	**50.0000**	0.890	1.8	ug/L	10	Standard
	Al	27	7411475.5	3.0	**50.0000**	0.930	1.9	ug/L	1872	Standard
	Sc	45	26479.8	2.2				ug/L	26715	Standard
	Ti	47	23890.5	1.1	**100.0000**	1.454	1.5	ug/L	54	Standard
	V	51	367062.7	0.8	**50.0000**	0.623	1.2	ug/L	1419	Standard
	Cr	52	367921.4	0.8	**50.0000**	0.612	1.2	ug/L	7059	Standard
	Cr	53	45347.8	2.4	**50.0000**	1.443	2.9	ug/L	398	Standard
	Mn	55	322217.3	2.0	**50.0000**	1.201	2.4	ug/L	824	Standard
	Co	59	345404.6	2.7	**50.0000**	1.575	3.2	ug/L	167	Standard
	Ni	60	95595.3	0.9	**50.0000**	0.634	1.3	ug/L	391	Standard
	Cu	65	95818.0	0.3	**50.0000**	0.238	0.5	ug/L	147	Standard
	Zn	66	56390.7	0.6	**50.0000**	0.243	0.5	ug/L	184	Standard
>	Ge	72	424214.4	0.4				ug/L	422998	Standard
	As	75	57453.1	0.7	**50.0000**	0.400	0.8	ug/L	-58	Standard
	Se	82	5987.9	1.8	**50.0000**	0.997	2.0	ug/L	15	Standard
	Se-1	77	3928.8	1.0	**50.0000**	0.491	1.0	ug/L	58	Standard
>	Ga	71	106.7	18.9				mg/L	113	Standard
	Rb	85	830.0	5.8				ug/L	27	Standard
	Y	89	376829.6	1.9				ug/L	383780	Standard
>	Rh	103	41.7	50.0				ug/L	18	Standard
	Mo	98	260891.0	0.5	**100.0000**	0.431	0.4	ug/L	31	Standard
	Ag	107	336697.0	1.4	**50.0000**	0.799	1.6	ug/L	84	Standard
	Cd	111	106142.8	0.9	**50.0000**	0.551	1.1	mg/L	4	Standard
	Cd	114	257891.1	2.0	**50.0000**	1.111	2.2	ug/L	15	Standard
>	In	115	505888.2	0.3				ug/L	515400	Standard
	Sn	118	283890.2	1.3	**50.0000**	0.797	1.6	ug/L	1043	Standard
	Sb	123	221275.8	2.3	**50.0000**	1.243	2.5	ug/L	227	Standard
	Ba	135	99917.1	1.9	**50.0000**	0.986	2.0	ug/L	31	Standard
	Ce	140	75.0	11.5				ug/L	120	Standard
>	Tb	159	787467.6	1.4				ug/L	785817	Standard
	Ho	165	11.7	65.5				ug/L	7	Standard
	Tl	203	403541.2	1.3	**50.0000**	0.368	0.7	ug/L	6	Standard
	Tl	205	348997.5	1.4	**50.0000**	0.411	0.8	ug/L	8	Standard
	Pb	206	249753.6	0.4	**50.0000**	0.480	1.0	ug/L	201	Standard
	Pb	207	226687.6	0.5	**50.0000**	0.605	1.2	ug/L	177	Standard
	Pb	208	907607.7	0.4	**50.0000**	0.234	0.5	ug/L	722	Standard
	U	238	342418.7	0.3	**50.0000**	0.445	0.9	ug/L	8	Standard
>	Bi	209	443560.9	0.8				ug/L	444563	Standard

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Na	23	0.0					mg/L	0	Standard
Mg	24	4067.2	1.5	**5.0000**	0.180	3.6	mg/L	38	Standard
K	39	1208.4	5.6	**5.0000**	0.216	4.3	mg/L	33	Standard
Ca	43	65.0	13.3	**5.0000**	1.694	33.9	mg/L	48	Standard
Fe	54	6344.5	2.9	**5.0000**	0.255	5.1	mg/L	131	Standard
Fe	57	1803.4	5.9	**5.0000**	0.400	8.0	mg/L	153	Standard
> **Sc-1**	45	26479.8	2.2				mg/L	26715	Standard
Cl	35	106266.8	1.7				ug/L	102686	Standard
Kr	83	3.0	0.0				ug/L	2	Standard
Br	81	1793.4	10.4				ug/L	1897	Standard
P	31	20133.4	2.6				ug/L	18491	Standard
S	34	4464.0	2.3				ug/L	3734	Standard
Sr	88	53.3	30.1				ug/L	47	Standard
C	12	56.7	10.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	3.0	201.4				mg/L	23	Standard
Ho-1	165	11.7	65.5				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	13	Standard
I	127	20156.7	3.1				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72			
As	75			
Se	82			
Se-1	77			
> Ga	71			

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⌊	Rb	85
⌈	Y	89
⌊>	Rh	103
⌈	Mo	98
|	Ag	107
|	Cd	111
|	Cd	114
|>	In	115
|	Sn	118
|	Sb	123
⌊	Ba	135
⌈	Ce	140
⌊>	Tb	159
⌈	Ho	165
|	Tl	203
|	Tl	205
|	Pb	206
|	Pb	207
|	Pb	208
|	U	238
⌊>	Bi	209
⌈	Na	23
|	Mg	24
|	K	39
|	Ca	43
|	Fe	54
|	Fe	57
⌊>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: Standard 4
Sample Date/Time: Tuesday, July 05, 2016 09:36:38
Number of Replicates: 3
Autosampler Position: 4
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	57177.7	2.3				ug/L	59517	Standard
	Be	9	83060.5	2.4	**99.4055**	0.082	0.1	ug/L	10	Standard
	Al	27	14427511.1	3.4	**98.7777**	5.601	5.7	ug/L	1872	Standard
	Sc	45	26401.3	1.0				ug/L	26715	Standard
	Ti	47	47521.1	2.0	**200.1084**	5.056	2.5	ug/L	54	Standard
	V	51	713200.7	1.1	**98.9035**	1.288	1.3	ug/L	1419	Standard
	Cr	52	707310.9	1.3	**98.7506**	1.789	1.8	ug/L	7059	Standard
	Cr	53	88258.2	3.7	**99.1029**	4.182	4.2	ug/L	398	Standard
	Mn	55	623978.6	0.6	**98.7110**	0.856	0.9	ug/L	824	Standard
	Co	59	668953.9	1.1	**98.6636**	0.987	1.0	ug/L	167	Standard
	Ni	60	184177.7	1.1	**98.4903**	1.424	1.4	ug/L	391	Standard
	Cu	65	184335.6	1.0	**98.3606**	1.396	1.4	ug/L	147	Standard
	Zn	66	108556.5	1.3	**98.4331**	1.767	1.8	ug/L	184	Standard
>	Ge	72	421989.5	0.5				ug/L	422998	Standard
	As	75	111881.9	1.6	**98.9050**	1.625	1.6	ug/L	-58	Standard
	Se	82	11551.8	0.8	**98.5578**	0.398	0.4	ug/L	15	Standard
	Se-1	77	7465.5	2.6	**98.0156**	2.561	2.6	ug/L	58	Standard
>	Ga	71	106.7	9.8				mg/L	113	Standard
	Rb	85	1656.8	1.9				ug/L	27	Standard
	Y	89	377045.5	0.7				ug/L	383780	Standard
>	Rh	103	60.0	30.0				ug/L	18	Standard
	Mo	98	516282.8	1.1	**200.0976**	4.353	2.2	ug/L	31	Standard
	Ag	107	642362.7	1.8	**98.2175**	1.938	2.0	ug/L	84	Standard
	Cd	111	203500.3	0.9	**98.4606**	1.356	1.4	mg/L	4	Standard
	Cd	114	493153.4	2.5	**98.3306**	2.664	2.7	ug/L	15	Standard
>	In	115	500187.8	1.5				ug/L	515400	Standard
	Sn	118	565406.4	0.3	**100.4534**	1.261	1.3	ug/L	1043	Standard
	Sb	123	451037.5	1.1	**101.5325**	2.258	2.2	ug/L	227	Standard
	Ba	135	192700.4	0.7	**98.7674**	1.578	1.6	ug/L	31	Standard
	Ce	140	151.7	19.0				ug/L	120	Standard
>	Tb	159	778055.5	0.3				ug/L	785817	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	777662.3	0.5	**98.8652**	1.045	1.1	ug/L	6	Standard
	Tl	205	682449.5	1.4	**99.5981**	1.807	1.8	ug/L	8	Standard
	Pb	206	486716.7	1.0	**99.4428**	1.465	1.5	ug/L	201	Standard
	Pb	207	438279.6	1.0	**99.0466**	1.369	1.4	ug/L	177	Standard
	Pb	208	1766496.8	0.2	**99.3804**	0.506	0.5	ug/L	722	Standard
	U	238	675732.3	0.9	**100.0490**	1.332	1.3	ug/L	8	Standard
>	Bi	209	437245.8	0.6				ug/L	444563	Standard

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Na	23	1.7	173.2	**19.9850**	34.606	173.2	mg/L	0	Standard
Mg	24	7703.6	2.1	**9.7561**	0.217	2.2	mg/L	38	Standard
K	39	2193.5	1.4	**9.5883**	0.205	2.1	mg/L	33	Standard
Ca	43	106.7	17.7	**11.0903**	2.878	26.0	mg/L	48	Standard
Fe	54	12288.8	3.6	**9.9066**	0.331	3.3	mg/L	131	Standard
Fe	57	3242.0	5.1	**9.6801**	0.435	4.5	mg/L	153	Standard
Sc-1	45	26401.3	1.0				mg/L	26715	Standard
Cl	35	104664.3	1.8				ug/L	102686	Standard
Kr	83	2.3	65.5				ug/L	2	Standard
Br	81	1870.1	15.3				ug/L	1897	Standard
P	31	20584.0	1.0				ug/L	18491	Standard
S	34	4714.1	1.1				ug/L	3734	Standard
Sr	88	46.7	34.4				ug/L	47	Standard
C	12	53.3	65.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	23	Standard
Dy	164	6.0	187.1				mg/L	23	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	13	Standard
I	127	2513.5	5.2				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72			
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85
	Y	89
>	Rh	103
	Mo	98
	Ag	107
	Cd	111
	Cd	114
>	In	115
	Sn	118
	Sb	123
	Ba	135
	Ce	140
>	Tb	159
	Ho	165
	Tl	203
	Tl	205
	Pb	206
	Pb	207
	Pb	208
	U	238
>	Bi	209
	Na	23
	Mg	24
	K	39
	Ca	43
	Fe	54
	Fe	57
>	Sc-1	45
	Cl	35
	Kr	83
	Br	81
	P	31
	S	34
	Sr	88
	C	12
	N	14
	Hg	202
	Dy	164
	Ho-1	165
	Er	166
	I	127

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Corr. Coef.	Na	23	Correlation coefficient < 0.998
Corr. Coef.	Ca	43	Correlation coefficient < 0.998

Sample ID: Standard 4
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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Tuesday, July 05, 2016 09:39:52
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	53835.5	1.3				ug/L	59517	Standard
	Be	9	41558.6	3.6	**52.8023**	1.315	2.5	ug/L	10	Standard
	Al	27	7307731.0	1.7	**53.0856**	0.399	0.8	ug/L	1872	Standard
	Sc	45	25019.0	1.3				ug/L	26715	Standard
	Ti	47	23741.9	0.8	**105.4666**	0.518	0.5	ug/L	54	Standard
	V	51	361047.7	1.2	**52.7948**	0.251	0.5	ug/L	1419	Standard
	Cr	52	363213.6	1.6	**53.1053**	0.333	0.6	ug/L	7059	Standard
	Cr	53	44986.7	2.2	**53.1545**	1.109	2.1	ug/L	398	Standard
	Mn	55	313201.8	0.7	**52.2689**	0.422	0.8	ug/L	824	Standard
	Co	59	335791.2	0.4	**52.2971**	0.377	0.7	ug/L	167	Standard
	Ni	60	94287.8	0.7	**53.1623**	0.658	1.2	ug/L	391	Standard
	Cu	65	93679.1	0.8	**52.7602**	0.861	1.6	ug/L	147	Standard
	Zn	66	56044.1	0.6	**53.6021**	0.933	1.7	ug/L	184	Standard
>	Ge	72	399555.8	1.1				ug/L	422998	Standard
	As	75	55787.2	0.6	**52.1110**	0.279	0.5	ug/L	-58	Standard
	Se	82	5765.3	1.8	**51.8507**	0.353	0.7	ug/L	15	Standard
	Se-1	77	3764.5	1.9	**51.8829**	0.395	0.8	ug/L	58	Standard
>	Ga	71	83.3	6.9				mg/L	113	Standard
	Rb	85	805.0	6.3				ug/L	27	Standard
	Y	89	346814.9	1.4				ug/L	383780	Standard
>	Rh	103	33.3	45.8				ug/L	18	Standard
	Mo	98	255667.8	1.2	**103.8817**	3.429	3.3	ug/L	31	Standard
	Ag	107	326245.9	1.0	**52.2934**	1.513	2.9	ug/L	84	Standard
	Cd	111	104309.3	0.8	**52.9007**	0.886	1.7	mg/L	4	Standard
	Cd	114	252291.0	1.4	**52.7265**	0.923	1.8	ug/L	15	Standard
>	In	115	477243.7	2.4				ug/L	515400	Standard
	Sn	118	285175.5	1.0	**53.0339**	1.593	3.0	ug/L	1043	Standard
	Sb	123	227297.1	0.9	**53.6358**	1.767	3.3	ug/L	227	Standard
	Ba	135	97510.4	0.5	**52.3806**	1.184	2.3	ug/L	31	Standard
	Ce	140	70.0	25.8				ug/L	120	Standard
>	Tb	159	738225.1	1.8				ug/L	785817	Standard
	Ho	165	15.0	33.3				ug/L	7	Standard
	Tl	203	396474.4	1.1	**52.8617**	0.678	1.3	ug/L	6	Standard
	Tl	205	345053.4	1.1	**52.8086**	0.248	0.5	ug/L	8	Standard
	Pb	206	245442.3	1.4	**52.5746**	1.060	2.0	ug/L	201	Standard
	Pb	207	222933.5	0.8	**52.8178**	0.762	1.4	ug/L	177	Standard
	Pb	208	899249.4	0.4	**53.0368**	0.329	0.6	ug/L	722	Standard
	U	238	340452.5	0.4	**52.8663**	0.560	1.1	ug/L	8	Standard
>	Bi	209	416909.4	1.0				ug/L	444563	Standard

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Na	23	3.3	86.6	**41.6409**	36.067	86.6	mg/L	0	Standard
Mg	24	4005.5	5.7	**5.3372**	0.289	5.4	mg/L	38	Standard
K	39	1045.0	2.9	**4.7561**	0.149	3.1	mg/L	33	Standard
Ca	43	70.0	14.3	**5.8755**	1.572	26.8	mg/L	48	Standard
Fe	54	6522.2	2.4	**5.4988**	0.200	3.6	mg/L	131	Standard
Fe	57	1745.1	3.0	**5.2936**	0.243	4.6	mg/L	153	Standard
> **Sc-1**	45	25019.0	1.3				mg/L	26715	Standard
Cl	35	101421.7	1.2				ug/L	102686	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	1796.8	11.2				ug/L	1897	Standard
P	31	20091.6	1.5				ug/L	18491	Standard
S	34	4492.3	1.8				ug/L	3734	Standard
Sr	88	45.0	19.2				ug/L	47	Standard
C	12	46.7	75.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	5.7	94.7				mg/L	23	Standard
Ho-1	165	15.0	33.3				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	13	Standard
I	127	16966.2	1.4				mg/L	12398	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9	105.605		
	Al	27	106.171		
	Sc	45			
	Ti	47	105.467		
	V	51	105.590		
	Cr	52	106.211		
	Cr	53			
	Mn	55	104.538		
	Co	59	104.594		
	Ni	60	106.325		
	Cu	65	105.520		
	Zn	66	107.204		
>	Ge	72		94.458	
	As	75	104.222		
	Se	82	103.701		
	Se-1	77			
>	Ga	71			

Sample ID: QC Std 1
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Rb	85			
Y	89			
> Rh	103			
Mo	98	103.882		
Ag	107	104.587		
Cd	111	105.801		
Cd	114			
> In	115		92.597	
Sn	118	106.068		
Sb	123	107.272		
Ba	135	104.761		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	105.723		
Tl	205			
Pb	206	105.149		
Pb	207	105.636		
Pb	208	106.074		
U	238	105.733		
> Bi	209		93.780	
Na	23	832.818		
Mg	24	106.744		
K	39	95.121		
Ca	43	117.511		
Fe	54	109.976		
Fe	57	105.873		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Tuesday, July 05, 2016 09:43:05
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	56789.7	3.8				ug/L	59517	Standard
	Be	9	30.0	88.2	**0.0057**	0.034	592.0	ug/L	10	Standard
	Al	27	4072.2	25.4	**0.0156**	0.007	44.7	ug/L	1872	Standard
	Sc	45	26544.9	1.0				ug/L	26715	Standard
	Ti	47	56.0	5.4	**-0.0095**	0.012	131.0	ug/L	54	Standard
	V	51	1171.6	3.3	**-0.0159**	0.006	36.7	ug/L	1419	Standard
	Cr	52	6250.0	0.8	**-0.0905**	0.015	16.3	ug/L	7059	Standard
	Cr	53	385.0	13.7	**0.0257**	0.057	222.8	ug/L	398	Standard
	Mn	55	2770.3	4.9	**0.3100**	0.021	6.9	ug/L	824	Standard
	Co	59	278.3	16.3	**0.0162**	0.007	42.4	ug/L	167	Standard
	Ni	60	392.3	4.9	**0.0114**	0.011	92.8	ug/L	391	Standard
	Cu	65	169.0	8.4	**0.0117**	0.008	68.8	ug/L	147	Standard
	Zn	66	12934.5	0.1	**11.6450**	0.106	0.9	ug/L	184	Standard
>	**Ge**	72	419946.1	0.8				ug/L	422998	Standard
	As	75	-19.0	138.3	**0.0348**	0.023	67.0	ug/L	-58	Standard
	Se	82	20.1	22.5	**-0.0330**	0.040	122.3	ug/L	15	Standard
	Se-1	77	54.7	17.6	**0.0573**	0.124	216.2	ug/L	58	Standard
>	**Ga**	71	73.3	10.4				mg/L	113	Standard
	Rb	85	16.7	17.3				ug/L	27	Standard
	Y	89	372487.8	2.2				ug/L	383780	Standard
>	**Rh**	103	16.7	96.4				ug/L	18	Standard
	Mo	98	327.7	10.6	**0.1179**	0.015	12.4	ug/L	31	Standard
	Ag	107	169.7	22.8	**0.0139**	0.006	43.9	ug/L	84	Standard
	Cd	111	29.4	39.1	**0.0101**	0.006	55.8	mg/L	4	Standard
	Cd	114	75.2	27.2	**0.0104**	0.004	39.7	ug/L	15	Standard
>	**In**	115	501312.6	1.2				ug/L	515400	Standard
	Sn	118	1608.4	30.0	**0.1044**	0.084	80.4	ug/L	1043	Standard
	Sb	123	948.7	24.4	**0.1968**	0.052	26.4	ug/L	227	Standard
	Ba	135	97.7	19.3	**0.0263**	0.010	38.8	ug/L	31	Standard
	Ce	140	30.0	16.7				ug/L	120	Standard
>	**Tb**	159	766439.3	3.0				ug/L	785817	Standard
	Ho	165	1.7	173.2				ug/L	7	Standard
	Tl	203	130.3	29.7	**0.0128**	0.005	39.8	ug/L	6	Standard
	Tl	205	98.3	56.2	**0.0075**	0.008	109.1	ug/L	8	Standard
	Pb	206	365.3	8.6	**0.0283**	0.008	26.9	ug/L	201	Standard
	Pb	207	309.0	15.5	**0.0213**	0.012	55.8	ug/L	177	Standard
	Pb	208	1295.7	7.5	**0.0236**	0.007	28.3	ug/L	722	Standard
	U	238	108.0	28.7	**0.0134**	0.005	35.7	ug/L	8	Standard
>	**Bi**	209	442314.8	1.9				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	23.3	53.9	**-0.0040**	0.016	402.6	mg/L	38	Standard
K	39	36.7	7.9	**0.0323**	0.013	39.7	mg/L	33	Standard
Ca	43	40.0	33.1	**0.4592**	2.104	458.2	mg/L	48	Standard
Fe	54	162.7	1.8	**0.0154**	0.001	9.5	mg/L	131	Standard
Fe	57	140.0	18.9	**-0.0460**	0.079	170.9	mg/L	153	Standard
> **Sc-1**	45	26544.9	1.0				mg/L	26715	Standard
Cl	35	101376.8	2.0				ug/L	102686	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1840.1	4.8				ug/L	1897	Standard
P	31	19113.7	2.8				ug/L	18491	Standard
S	34	4273.9	2.9				ug/L	3734	Standard
Sr	88	53.3	51.6				ug/L	47	Standard
C	12	53.3	21.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	23	Standard
Dy	164	6.3	93.2				mg/L	23	Standard
Ho-1	165	1.7	173.2				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	11554.4	2.8				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.279	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	97.267
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	99.494
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Zn	66	
QC Std 2	Ca	43	

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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Tuesday, July 05, 2016 09:46:18
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	54322.3	4.4				ug/L	59517	Standard
	Be	9	135.0	16.1	**0.1399**	0.033	23.7	ug/L	10	Standard
	Al	27	1825.1	5.2	**0.0007**	0.001	96.2	ug/L	1872	Standard
	Sc	45	25576.6	3.2				ug/L	26715	Standard
	Ti	47	54.0		**-0.0134**	0.004	31.4	ug/L	54	Standard
	V	51	3677.6	2.6	**0.3442**	0.009	2.5	ug/L	1419	Standard
	Cr	52	11611.8	1.6	**0.7019**	0.005	0.7	ug/L	7059	Standard
	Cr	53	1015.0	5.3	**0.7630**	0.070	9.2	ug/L	398	Standard
	Mn	55	3542.4	1.4	**0.4443**	0.018	4.0	ug/L	824	Standard
	Co	59	2671.6	0.4	**0.3789**	0.007	1.9	ug/L	167	Standard
	Ni	60	3156.7	2.5	**1.5345**	0.073	4.7	ug/L	391	Standard
	Cu	65	1505.7	2.6	**0.7455**	0.036	4.8	ug/L	147	Standard
	Zn	66	7058.0	1.6	**6.4127**	0.220	3.4	ug/L	184	Standard
>	Ge	72	411736.9	1.8				ug/L	422998	Standard
	As	75	374.7	7.0	**0.3910**	0.024	6.1	ug/L	-58	Standard
	Se	82	56.6	11.5	**0.2895**	0.047	16.4	ug/L	15	Standard
	Se-1	77	76.7	8.7	**0.3701**	0.085	23.1	ug/L	58	Standard
>	Ga	71	63.3	31.9				mg/L	113	Standard
	Rb	85	23.3	53.9				ug/L	27	Standard
	Y	89	359086.1	1.7				ug/L	383780	Standard
>	Rh	103	23.3	32.7				ug/L	18	Standard
	Mo	98	119.6	23.9	**0.0392**	0.011	28.9	ug/L	31	Standard
	Ag	107	2559.5	2.0	**0.3941**	0.005	1.3	ug/L	84	Standard
	Cd	111	480.1	3.9	**0.2368**	0.004	1.9	mg/L	4	Standard
	Cd	114	1176.2	1.3	**0.2388**	0.002	0.9	ug/L	15	Standard
>	In	115	482062.0	2.1				ug/L	515400	Standard
	Sn	118	1013.4	35.3	**0.0066**	0.068	1039.3	ug/L	1043	Standard
	Sb	123	1750.5	1.7	**0.3926**	0.006	1.5	ug/L	227	Standard
	Ba	135	1380.7	4.6	**0.7107**	0.031	4.4	ug/L	31	Standard
	Ce	140	10.0					ug/L	120	Standard
>	Tb	159	750015.0	1.7				ug/L	785817	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	633.0	3.0	**0.0778**	0.004	4.6	ug/L	6	Standard
	Tl	205	506.7	19.9	**0.0679**	0.014	20.8	ug/L	8	Standard
	Pb	206	1185.4	4.9	**0.1994**	0.013	6.7	ug/L	201	Standard
	Pb	207	1006.4	3.4	**0.1822**	0.011	6.3	ug/L	177	Standard
	Pb	208	4150.2	2.4	**0.1875**	0.002	0.9	ug/L	722	Standard
	U	238	2538.5	1.5	**0.3776**	0.011	3.0	ug/L	8	Standard
>	Bi	209	432540.0	1.8				ug/L	444563	Standard

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Na	23	1.7	173.2	**19.7989**	34.284	173.2	mg/L	0	Standard
Mg	24	25.0	34.6	**-0.0006**	0.012	1975.3	mg/L	38	Standard
K	39	28.3	10.2	**0.0001**	0.010	8097.2	mg/L	33	Standard
Ca	43	40.0	25.0	**0.6800**	1.556	228.8	mg/L	48	Standard
Fe	54	117.2	44.0	**-0.0169**	0.047	277.9	mg/L	131	Standard
Fe	57	171.7	7.3	**0.0745**	0.055	73.8	mg/L	153	Standard
> **Sc-1**	45	25576.6	3.2				mg/L	26715	Standard
Cl	35	98276.4	0.6				ug/L	102686	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	1690.1	6.4				ug/L	1897	Standard
P	31	13502.7	0.8				ug/L	18491	Standard
S	34	4085.6	1.8				ug/L	3734	Standard
Sr	88	66.7	26.3				ug/L	47	Standard
C	12	76.7	41.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	114.6				mg/L	23	Standard
Dy	164	5.7	202.4				mg/L	23	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	20.0	50.0				mg/L	13	Standard
I	127	1623.4	6.5				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	69.930		
Al	27	0.072		
Sc	45			
Ti	47			
V	51	86.043		
Cr	52	87.740		
Cr	53			
Mn	55	88.869		
Co	59	94.737		
Ni	60	95.908		
Cu	65	93.188		
Zn	66	102.603		
> Ge	72		97.338	
As	75	97.743		
Se	82	72.386		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	98.529		
Cd	111	98.678		
Cd	114			
> In	115			93.532
Sn	118			
Sb	123	98.139		
Ba	135	94.758		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	97.225		
Tl	205			
Pb	206			
Pb	207			
Pb	208	93.760		
U	238	94.395		
> Bi	209			97.296
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Be	9	
QC Std 3	Al	27	

Sample ID: QC Std 3
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Method 6020 - Summary Report

Sample ID: QC Std 1
Sample Date/Time: Tuesday, July 05, 2016 09:50:16
Number of Replicates: 3
Autosampler Position: 201
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58169.8	2.1				ug/L	59517	Standard
	Be	9	41368.1	1.5	**48.6540**	0.517	1.1	ug/L	10	Standard
	Al	27	7290991.8	1.0	**49.0258**	0.636	1.3	ug/L	1872	Standard
	Sc	45	27236.1	0.9				ug/L	26715	Standard
	Ti	47	24092.5	1.0	**97.0294**	0.687	0.7	ug/L	54	Standard
	V	51	363336.2	1.3	**48.1642**	0.610	1.3	ug/L	1419	Standard
	Cr	52	362571.6	0.5	**47.9815**	0.112	0.2	ug/L	7059	Standard
	Cr	53	45230.8	1.6	**48.4251**	0.571	1.2	ug/L	398	Standard
	Mn	55	318203.0	1.3	**48.1419**	0.321	0.7	ug/L	824	Standard
	Co	59	342610.9	1.0	**48.3824**	0.165	0.3	ug/L	167	Standard
	Ni	60	93896.7	0.3	**47.9869**	0.223	0.5	ug/L	391	Standard
	Cu	65	94104.0	0.8	**48.0490**	0.164	0.3	ug/L	147	Standard
	Zn	66	55724.3	0.3	**48.3106**	0.453	0.9	ug/L	184	Standard
>	**Ge**	72	440608.2	0.7				ug/L	422998	Standard
	As	75	56127.2	1.3	**47.5458**	0.447	0.9	ug/L	-58	Standard
	Se	82	5821.4	0.5	**47.4627**	0.137	0.3	ug/L	15	Standard
	Se-1	77	3826.5	3.3	**47.7694**	1.288	2.7	ug/L	58	Standard
>	**Ga**	71	96.7	16.6				mg/L	113	Standard
	Rb	85	805.0	10.8				ug/L	27	Standard
	Y	89	385514.8	0.9				ug/L	383780	Standard
>	**Rh**	103	40.0	12.5				ug/L	18	Standard
	Mo	98	257542.0	0.9	**95.7910**	0.867	0.9	ug/L	31	Standard
	Ag	107	326830.8	0.5	**47.9581**	0.259	0.5	ug/L	84	Standard
	Cd	111	103201.3	0.9	**47.9228**	0.449	0.9	mg/L	4	Standard
	Cd	114	256440.4	0.5	**49.0734**	0.209	0.4	ug/L	15	Standard
>	**In**	115	521082.8	0.1				ug/L	515400	Standard
	Sn	118	282756.0	1.5	**48.1210**	0.666	1.4	ug/L	1043	Standard
	Sb	123	227361.0	1.0	**49.1107**	0.551	1.1	ug/L	227	Standard
	Ba	135	97385.0	0.8	**47.8931**	0.346	0.7	ug/L	31	Standard
	Ce	140	93.3	13.5				ug/L	120	Standard
>	**Tb**	159	801308.4	1.6				ug/L	785817	Standard
	Ho	165	5.0	100.0				ug/L	7	Standard
	Tl	203	395362.2	0.5	**48.0233**	0.556	1.2	ug/L	6	Standard
	Tl	205	344540.9	1.9	**48.0428**	1.206	2.5	ug/L	8	Standard
	Pb	206	246479.1	0.9	**48.0951**	0.873	1.8	ug/L	201	Standard
	Pb	207	223686.9	1.1	**48.2810**	1.143	2.4	ug/L	177	Standard
	Pb	208	894445.5	0.5	**48.0575**	0.742	1.5	ug/L	722	Standard
	U	238	335748.7	0.7	**47.4954**	0.465	1.0	ug/L	8	Standard
>	**Bi**	209	457654.3	1.5				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	3785.5	3.0	**4.6294**	0.144	3.1	mg/L	38	Standard
K	39	1143.4	3.2	**4.7796**	0.115	2.4	mg/L	33	Standard
Ca	43	73.3	10.4	**5.4487**	1.278	23.5	mg/L	48	Standard
Fe	54	6420.9	3.1	**4.9595**	0.123	2.5	mg/L	131	Standard
Fe	57	1733.4	5.4	**4.7880**	0.327	6.8	mg/L	153	Standard
Sc-1	45	27236.1	0.9				mg/L	26715	Standard
Cl	35	104987.2	0.9				ug/L	102686	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	1720.1	6.9				ug/L	1897	Standard
P	31	20764.2	1.5				ug/L	18491	Standard
S	34	4507.3	5.1				ug/L	3734	Standard
Sr	88	68.3	15.2				ug/L	47	Standard
C	12	60.0	33.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	23	Standard
Dy	164	2.7	204.8				mg/L	23	Standard
Ho-1	165	5.0	100.0				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	13	Standard
I	127	18129.2	1.8				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	97.308		
Al	27	98.052		
Sc	45			
Ti	47	97.029		
V	51	96.328		
Cr	52	95.963		
Cr	53			
Mn	55	96.284		
Co	59	96.765		
Ni	60	95.974		
Cu	65	96.098		
Zn	66	96.621		
Ge	72		104.163	
As	75	95.092		
Se	82	94.925		
Se-1	77			
Ga	71			

Sample ID: QC Std 1
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Rb	85			
Y	89			
> Rh	103			
Mo	98	95.791		
Ag	107	95.916		
Cd	111	95.846		
Cd	114			
> In	115		101.103	
Sn	118	96.242		
Sb	123	98.221		
Ba	135	95.786		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	96.047		
Tl	205			
Pb	206	96.190		
Pb	207	96.562		
Pb	208	96.115		
U	238	94.991		
> Bi	209		102.945	
Na	23	0.100		
Mg	24	92.588		
K	39	95.592		
Ca	43	108.974		
Fe	54	99.191		
Fe	57	95.761		
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 1	Na	23	
QC Std 1	Ca	43	

Sample ID: QC Std 1
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Method 6020 - Summary Report

Sample ID: QC Std 2
Sample Date/Time: Tuesday, July 05, 2016 09:53:29
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59412.9	1.2				ug/L	59517	Standard
	Be	9	20.0	25.0	-0.0081	0.006	68.9	ug/L	10	Standard
	Al	27	2121.8	7.7	0.0015	0.001	60.2	ug/L	1872	Standard
	Sc	45	28268.0	1.9				ug/L	26715	Standard
	Ti	47	48.3	20.7	-0.0579	0.042	71.8	ug/L	54	Standard
	V	51	1136.5	4.4	-0.0333	0.007	20.2	ug/L	1419	Standard
	Cr	52	6308.6	1.2	-0.1530	0.019	12.3	ug/L	7059	Standard
	Cr	53	343.3	8.0	-0.0523	0.026	48.8	ug/L	398	Standard
	Mn	55	813.0	4.5	-0.0118	0.005	39.4	ug/L	824	Standard
	Co	59	237.3	8.5	0.0073	0.003	35.7	ug/L	167	Standard
	Ni	60	355.7	3.7	-0.0236	0.005	21.0	ug/L	391	Standard
	Cu	65	128.0	8.9	-0.0157	0.007	42.7	ug/L	147	Standard
	Zn	66	246.7	1.0	0.0480	0.006	11.5	ug/L	184	Standard
>	Ge	72	456136.8	1.7				ug/L	422998	Standard
	As	75	-59.5	37.3	0.0031	0.018	584.9	ug/L	-58	Standard
	Se	82	16.8	17.9	-0.0733	0.024	32.6	ug/L	15	Standard
	Se-1	77	52.7	26.9	-0.0225	0.185	821.1	ug/L	58	Standard
>	Ga	71	86.7	16.7				mg/L	113	Standard
	Rb	85	21.7	26.6				ug/L	27	Standard
	Y	89	400244.6	1.1				ug/L	383780	Standard
>	Rh	103	33.3	31.2				ug/L	18	Standard
	Mo	98	228.4	8.4	0.0733	0.009	11.9	ug/L	31	Standard
	Ag	107	125.0	9.2	0.0057	0.001	22.2	ug/L	84	Standard
	Cd	111	13.3	49.0	0.0018	0.003	158.0	mg/L	4	Standard
	Cd	114	43.3	20.3	0.0035	0.002	53.2	ug/L	15	Standard
>	In	115	539308.9	3.0				ug/L	515400	Standard
	Sn	118	1368.4	33.9	0.0448	0.074	166.2	ug/L	1043	Standard
	Sb	123	874.6	30.5	0.1667	0.057	34.0	ug/L	227	Standard
	Ba	135	48.0	24.0	-0.0010	0.005	512.8	ug/L	31	Standard
	Ce	140	23.3	24.7				ug/L	120	Standard
>	Tb	159	818055.2	1.1				ug/L	785817	Standard
	Ho	165	3.3	173.2				ug/L	7	Standard
	Tl	203	69.0	24.1	0.0045	0.002	42.7	ug/L	6	Standard
	Tl	205	78.3	3.7	0.0038	0.000	10.6	ug/L	8	Standard
	Pb	206	261.0	2.0	0.0038	0.001	27.1	ug/L	201	Standard
	Pb	207	226.0	8.6	-0.0006	0.004	641.6	ug/L	177	Standard
	Pb	208	908.7	7.8	-0.0013	0.003	268.8	ug/L	722	Standard
	U	238	59.7	23.5	0.0057	0.002	33.6	ug/L	8	Standard
>	Bi	209	472449.6	0.6				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	48.3	41.8	**0.0240**	0.025	103.6	mg/L	38	Standard
K	39	30.0	44.1	**-0.0053**	0.055	1036.6	mg/L	33	Standard
Ca	43	26.7	39.0	**-1.8930**	1.609	85.0	mg/L	48	Standard
Fe	54	145.8	1.7	**-0.0055**	0.000	4.8	mg/L	131	Standard
Fe	57	115.0	11.5	**-0.1455**	0.035	23.7	mg/L	153	Standard
Sc-1	45	28268.0	1.9				mg/L	26715	Standard
Cl	35	105093.2	1.1				ug/L	102686	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	1796.8	3.9				ug/L	1897	Standard
P	31	20867.7	1.2				ug/L	18491	Standard
S	34	4170.6	0.8				ug/L	3734	Standard
Sr	88	55.0	47.2				ug/L	47	Standard
C	12	50.0	40.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	23	Standard
Dy	164	6.3	173.2				mg/L	23	Standard
Ho-1	165	3.3	173.2				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	13	Standard
I	127	12480.1	2.6				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		107.834	
As	75			
Se	82			
Se-1	77			
Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	104.639
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	106.273
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 2	Ca	43	
QC Std 2	Fe	57	

Sample ID: QC Std 2
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Method 6020 - Summary Report

Sample ID: QC Std 3
Sample Date/Time: Tuesday, July 05, 2016 09:56:42
Number of Replicates: 3
Autosampler Position: 202
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	57425.3	1.0				ug/L	59517	Standard
	Be	9	171.7	14.4	**0.1737**	0.031	17.8	ug/L	10	Standard
	Al	27	1671.8	5.4	**-0.0010**	0.001	48.6	ug/L	1872	Standard
	Sc	45	27112.6	0.1				ug/L	26715	Standard
	Ti	47	37.3	13.7	**-0.0946**	0.023	24.4	ug/L	54	Standard
	V	51	3759.7	2.7	**0.3249**	0.017	5.4	ug/L	1419	Standard
	Cr	52	11667.8	2.0	**0.6122**	0.040	6.6	ug/L	7059	Standard
	Cr	53	990.0	3.0	**0.6672**	0.029	4.4	ug/L	398	Standard
	Mn	55	3647.8	3.0	**0.4270**	0.022	5.2	ug/L	824	Standard
	Co	59	2727.9	0.6	**0.3635**	0.006	1.7	ug/L	167	Standard
	Ni	60	3080.3	0.9	**1.3935**	0.015	1.1	ug/L	391	Standard
	Cu	65	1549.1	0.7	**0.7196**	0.012	1.6	ug/L	147	Standard
	Zn	66	7437.5	2.3	**6.3635**	0.253	4.0	ug/L	184	Standard
>	**Ge**	72	437157.7	1.7				ug/L	422998	Standard
	As	75	339.2	5.7	**0.3409**	0.013	3.8	ug/L	-58	Standard
	Se	82	54.1	10.9	**0.2403**	0.041	17.2	ug/L	15	Standard
	Se-1	77	89.3	5.2	**0.4718**	0.063	13.4	ug/L	58	Standard
>	**Ga**	71	75.0	50.3				mg/L	113	Standard
	Rb	85	26.7	47.2				ug/L	27	Standard
	Y	89	385694.7	1.5				ug/L	383780	Standard
>	**Rh**	103	21.7	13.3				ug/L	18	Standard
	Mo	98	78.3	0.7	**0.0204**	0.000	1.9	ug/L	31	Standard
	Ag	107	2513.9	3.9	**0.3598**	0.013	3.6	ug/L	84	Standard
	Cd	111	481.5	2.2	**0.2212**	0.006	2.8	mg/L	4	Standard
	Cd	114	1238.9	8.8	**0.2343**	0.020	8.3	ug/L	15	Standard
>	**In**	115	517133.7	0.6				ug/L	515400	Standard
	Sn	118	976.7	49.7	**-0.0132**	0.082	623.9	ug/L	1043	Standard
	Sb	123	1749.4	2.7	**0.3645**	0.008	2.2	ug/L	227	Standard
	Ba	135	1392.1	0.8	**0.6665**	0.005	0.7	ug/L	31	Standard
	Ce	140	8.3	34.6				ug/L	120	Standard
>	**Tb**	159	792688.6	1.9				ug/L	785817	Standard
	Ho	165	6.7	173.2				ug/L	7	Standard
	Tl	203	607.3	6.1	**0.0696**	0.005	7.2	ug/L	6	Standard
	Tl	205	523.3	13.0	**0.0656**	0.009	13.3	ug/L	8	Standard
	Pb	206	1216.0	1.0	**0.1901**	0.001	0.3	ug/L	201	Standard
	Pb	207	968.4	6.5	**0.1597**	0.013	8.4	ug/L	177	Standard
	Pb	208	4236.9	1.2	**0.1776**	0.005	3.1	ug/L	722	Standard
	U	238	2521.2	2.7	**0.3516**	0.013	3.6	ug/L	8	Standard
>	**Bi**	209	461086.3	1.2				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	28.3	20.4	**0.0014**	0.007	496.5	mg/L	38	Standard
K	39	25.0	40.0	**-0.0214**	0.043	200.9	mg/L	33	Standard
Ca	43	43.3	17.6	**0.8409**	1.190	141.6	mg/L	48	Standard
Fe	54	94.1	29.6	**-0.0419**	0.022	52.6	mg/L	131	Standard
Fe	57	151.7	13.3	**-0.0190**	0.061	320.9	mg/L	153	Standard
> **Sc-1**	45	27112.6	0.1				mg/L	26715	Standard
Cl	35	101496.2	0.7				ug/L	102686	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1850.1	6.5				ug/L	1897	Standard
P	31	14078.2	0.9				ug/L	18491	Standard
S	34	4153.9	5.8				ug/L	3734	Standard
Sr	88	56.7	27.0				ug/L	47	Standard
C	12	53.3	43.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	0.0					mg/L	23	Standard
Dy	164	6.3	99.7				mg/L	23	Standard
Ho-1	165	6.7	173.2				mg/L	7	Standard
Er	166	6.7	173.2				mg/L	13	Standard
I	127	1555.1	12.5				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	86.835		
Al	27	-0.105		
Sc	45			
Ti	47			
V	51	81.222		
Cr	52	76.528		
Cr	53			
Mn	55	85.397		
Co	59	90.866		
Ni	60	87.096		
Cu	65	89.951		
Zn	66	101.816		
> Ge	72		103.348	
As	75	85.222		
Se	82	60.067		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98			
Ag	107	89.940		
Cd	111	92.173		
Cd	114			
> In	115			100.336
Sn	118			
Sb	123	91.126		
Ba	135	88.861		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	87.048		
Tl	205			
Pb	206			
Pb	207			
Pb	208	88.795		
U	238	87.897		
> Bi	209			103.717
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 3	Al	27	
QC Std 3	Se	82	

Sample ID: QC Std 3
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Method 6020 - Summary Report

Sample ID: QC Std 4
Sample Date/Time: Tuesday, July 05, 2016 09:59:58
Number of Replicates: 3
Autosampler Position: 203
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58373.9	2.3				ug/L	59517	Standard
	Be	9	16.7	34.6	**-0.0116**	0.007	57.1	ug/L	10	Standard
	Al	27	7244731.4	2.0	**48.5385**	0.251	0.5	ug/L	1872	Standard
	Sc	45	27491.6	2.6				ug/L	26715	Standard
	Ti	47	26462.4	1.5	**106.6713**	1.834	1.7	ug/L	54	Standard
	V	51	1512.6	18.0	**0.0220**	0.037	166.8	ug/L	1419	Standard
	Cr	52	7779.3	1.8	**0.0752**	0.021	28.0	ug/L	7059	Standard
	Cr	53	3347.0	3.9	**3.2061**	0.142	4.4	ug/L	398	Standard
	Mn	55	2353.2	59.7	**0.2265**	0.214	94.5	ug/L	824	Standard
	Co	59	391.7	3.0	**0.0303**	0.002	5.2	ug/L	167	Standard
	Ni	60	1062.7	4.3	**0.3458**	0.022	6.4	ug/L	391	Standard
	Cu	65	758.4	1.9	**0.3091**	0.008	2.6	ug/L	147	Standard
	Zn	66	1411.1	5.3	**1.0687**	0.063	5.9	ug/L	184	Standard
>	**Ge**	72	440319.5	0.2				ug/L	422998	Standard
	As	75	-70.0	30.8	**-0.0077**	0.018	238.3	ug/L	-58	Standard
	Se	82	13.4	27.6	**-0.0963**	0.031	31.8	ug/L	15	Standard
	Se-1	77	311.3	6.7	**3.2753**	0.257	7.8	ug/L	58	Standard
>	**Ga**	71	173.3	16.9				mg/L	113	Standard
	Rb	85	1570.1	11.6				ug/L	27	Standard
	Y	89	383720.2	1.1				ug/L	383780	Standard
>	**Rh**	103	15.0	57.7				ug/L	18	Standard
	Mo	98	259304.7	1.5	**96.9732**	2.021	2.1	ug/L	31	Standard
	Ag	107	298.3	7.6	**0.0320**	0.004	11.1	ug/L	84	Standard
	Cd	111	-198.8	8.2	**-0.0970**	0.008	8.4	mg/L	4	Standard
	Cd	114	476.2	6.6	**0.0871**	0.006	6.8	ug/L	15	Standard
>	**In**	115	518299.5	0.7				ug/L	515400	Standard
	Sn	118	1570.1	18.5	**0.0885**	0.048	54.2	ug/L	1043	Standard
	Sb	123	688.1	37.0	**0.1329**	0.054	40.8	ug/L	227	Standard
	Ba	135	1511.7	5.2	**0.7243**	0.044	6.1	ug/L	31	Standard
	Ce	140	441.7	2.4				ug/L	120	Standard
>	**Tb**	159	798601.3	0.6				ug/L	785817	Standard
	Ho	165	18.3	68.6				ug/L	7	Standard
	Tl	203	124.7	7.6	**0.0119**	0.001	10.4	ug/L	6	Standard
	Tl	205	96.7	29.9	**0.0070**	0.004	60.2	ug/L	8	Standard
	Pb	206	820.0	2.3	**0.1182**	0.005	4.3	ug/L	201	Standard
	Pb	207	695.3	3.3	**0.1057**	0.006	5.6	ug/L	177	Standard
	Pb	208	2917.4	0.3	**0.1118**	0.001	0.9	ug/L	722	Standard
	U	238	38.0	26.7	**0.0030**	0.001	47.3	ug/L	8	Standard
>	**Bi**	209	447566.5	0.9				ug/L	444563	Standard

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Na	23	5.0	100.0	**57.7254**	58.680	101.7	mg/L	0	Standard
Mg	24	9931.6	2.3	**12.0868**	0.062	0.5	mg/L	38	Standard
K	39	1073.4	8.0	**4.4334**	0.273	6.2	mg/L	33	Standard
Ca	43	115.0	28.5	**11.7193**	4.981	42.5	mg/L	48	Standard
Fe	54	15793.8	2.5	**12.2551**	0.022	0.2	mg/L	131	Standard
Fe	57	4364.0	4.8	**12.6536**	0.356	2.8	mg/L	153	Standard
Sc-1	45	27491.6	2.6				mg/L	26715	Standard
Cl	35	106721.4	2.5				ug/L	102686	Standard
Kr	83	1.7	69.3				ug/L	2	Standard
Br	81	2000.1	10.4				ug/L	1897	Standard
P	31	19956.5	2.7				ug/L	18491	Standard
S	34	3973.9	6.5				ug/L	3734	Standard
Sr	88	75.0	13.3				ug/L	47	Standard
C	12	136.7	4.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	80.0	0.0				mg/L	23	Standard
Dy	164	14.8	39.1				mg/L	23	Standard
Ho-1	165	18.3	68.6				mg/L	7	Standard
Er	166	40.0					mg/L	13	Standard
I	127	2396.9	6.0				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27	0.971		
Sc	45			
Ti	47	106.671		
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		104.095	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	96.973		
Ag	107			
Cd	111			
Cd	114			
In	115			100.563
Sn	118			
Sb	123			
Ba	135			
Ce	140			
Tb	159			
Ho	165			
Tl	203			
Tl	205			
Pb	206			
Pb	207			
Pb	208			
U	238			
Bi	209			100.676
Na	23	461.803		
Mg	24	241.737		
K	39	88.667		
Ca	43	78.129		
Fe	54	98.041		
Fe	57	101.229		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 4	Al	27	
QC Std 4	Ba	135	
QC Std 4	Na	23	

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QC Std 4	Mg	24
QC Std 4	Ca	43

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Method 6020 - Summary Report

Sample ID: QC Std 5
Sample Date/Time: Tuesday, July 05, 2016 10:03:17
Number of Replicates: 3
Autosampler Position: 204
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	58993.0	1.3				ug/L	59517	Standard
	Be	9	85001.2	1.9	**98.6019**	1.685	1.7	ug/L	10	Standard
	Al	27	6321358.0	0.5	**41.9099**	0.712	1.7	ug/L	1872	Standard
	Sc	45	26818.7	3.0				ug/L	26715	Standard
	Ti	47	22236.0	1.7	**88.9928**	1.339	1.5	ug/L	54	Standard
	V	51	726317.3	0.4	**95.8788**	0.488	0.5	ug/L	1419	Standard
	Cr	52	712141.9	0.8	**94.6051**	0.860	0.9	ug/L	7059	Standard
	Cr	53	90801.3	1.1	**97.0401**	1.065	1.1	ug/L	398	Standard
	Mn	55	638561.6	0.4	**96.1618**	0.252	0.3	ug/L	824	Standard
	Co	59	676060.4	0.2	**94.9228**	0.023	0.0	ug/L	167	Standard
	Ni	60	185772.6	0.1	**94.5619**	0.177	0.2	ug/L	391	Standard
	Cu	65	186681.3	0.3	**94.8225**	0.204	0.2	ug/L	147	Standard
	Zn	66	113558.3	0.9	**98.0179**	0.939	1.0	ug/L	184	Standard
>	Ge	72	443273.1	0.2				ug/L	422998	Standard
	As	75	116279.2	0.3	**97.8554**	0.264	0.3	ug/L	-58	Standard
	Se	82	11822.1	0.5	**96.0160**	0.269	0.3	ug/L	15	Standard
	Se-1	77	8046.5	0.6	**100.5862**	0.536	0.5	ug/L	58	Standard
>	Ga	71	176.7	16.3				mg/L	113	Standard
	Rb	85	743.4	11.5				ug/L	27	Standard
	Y	89	387252.6	1.9				ug/L	383780	Standard
>	Rh	103	36.7	43.8				ug/L	18	Standard
	Mo	98	221408.4	1.2	**82.1531**	1.082	1.3	ug/L	31	Standard
	Ag	107	569943.8	0.4	**83.4398**	0.317	0.4	ug/L	84	Standard
	Cd	111	208059.9	0.8	**96.3891**	1.070	1.1	mg/L	4	Standard
	Cd	114	504841.5	1.1	**96.3794**	0.834	0.9	ug/L	15	Standard
>	In	115	522337.6	0.3				ug/L	515400	Standard
	Sn	118	1488.4	20.9	**0.0727**	0.053	72.5	ug/L	1043	Standard
	Sb	123	445991.9	2.4	**96.1170**	2.148	2.2	ug/L	227	Standard
	Ba	135	192476.2	0.4	**94.4542**	0.161	0.2	ug/L	31	Standard
	Ce	140	63.3	29.9				ug/L	120	Standard
>	Tb	159	807206.6	0.7				ug/L	785817	Standard
	Ho	165	13.3	21.7				ug/L	7	Standard
	Tl	203	799136.9	1.1	**95.7679**	0.378	0.4	ug/L	6	Standard
	Tl	205	701248.1	0.9	**96.4717**	0.388	0.4	ug/L	8	Standard
	Pb	206	509858.8	0.7	**98.2043**	1.552	1.6	ug/L	201	Standard
	Pb	207	446077.7	0.5	**95.0325**	1.252	1.3	ug/L	177	Standard
	Pb	208	1809334.4	0.4	**95.9604**	1.210	1.3	ug/L	722	Standard
	U	238	675199.0	0.6	**94.2439**	1.346	1.4	ug/L	8	Standard
>	Bi	209	463829.2	0.9				ug/L	444563	Standard

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Na	23	8.3	34.6	**97.7411**	35.296	36.1	mg/L	0	Standard
Mg	24	8068.8	2.4	**10.0676**	0.439	4.4	mg/L	38	Standard
K	39	913.4	6.3	**3.8609**	0.369	9.6	mg/L	33	Standard
Ca	43	135.0	3.7	**15.3007**	1.074	7.0	mg/L	48	Standard
Fe	54	13362.2	3.2	**10.6210**	0.522	4.9	mg/L	131	Standard
Fe	57	3627.1	4.9	**10.7240**	0.749	7.0	mg/L	153	Standard
> **Sc-1**	45	26818.7	3.0				mg/L	26715	Standard
Cl	35	104227.4	2.6				ug/L	102686	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1820.1	4.5				ug/L	1897	Standard
P	31	17890.6	5.0				ug/L	18491	Standard
S	34	3797.1	2.3				ug/L	3734	Standard
Sr	88	56.7	31.0				ug/L	47	Standard
C	12	103.3	40.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0					mg/L	23	Standard
Dy	164	16.3	36.2				mg/L	23	Standard
Ho-1	165	13.3	21.7				mg/L	7	Standard
Er	166	6.7	86.6				mg/L	13	Standard
I	127	9746.5	1.1				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	98.602		
Al	27	0.838		
Sc	45			
Ti	47	88.993		
V	51	95.879		
Cr	52	94.605		
Cr	53			
Mn	55	96.162		
Co	59	94.923		
Ni	60	94.562		
Cu	65	94.823		
Zn	66	98.018		
> Ge	72		104.793	
As	75	97.855		
Se	82	96.016		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	82.153		
Ag	107	83.440		
Cd	111	96.389		
Cd	114			
In	115		101.346	
Sn	118			
Sb	123	96.117		
Ba	135	94.454		
Ce	140			
Tb	159			
Ho	165			
Tl	203	95.768		
Tl	205			
Pb	206			
Pb	207			
Pb	208	95.960		
U	238	94.244		
Bi	209		104.334	
Na	23	781.929		
Mg	24	201.352		
K	39	77.218		
Ca	43	102.004		
Fe	54	84.968		
Fe	57	85.792		
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 5	Al	27	
QC Std 5	Na	23	
QC Std 5	Mg	24	

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QC Std 5	K	39

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, July 05, 2016 10:06:30
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59831.3	2.1				ug/L	59517	Standard
	Be	9	43026.0	1.6	**49.2010**	0.807	1.6	ug/L	10	Standard
	Al	27	7352971.0	1.7	**48.0862**	1.810	3.8	ug/L	1872	Standard
	Sc	45	26534.9	2.7				ug/L	26715	Standard
	Ti	47	23836.7	1.1	**98.5966**	2.873	2.9	ug/L	54	Standard
	V	51	365784.8	1.3	**49.8014**	1.375	2.8	ug/L	1419	Standard
	Cr	52	363613.1	1.2	**49.4443**	1.281	2.6	ug/L	7059	Standard
	Cr	53	45628.6	1.6	**50.1882**	1.671	3.3	ug/L	398	Standard
	Mn	55	316216.3	1.1	**49.1365**	1.378	2.8	ug/L	824	Standard
	Co	59	343483.3	1.1	**49.8130**	1.198	2.4	ug/L	167	Standard
	Ni	60	94484.0	0.6	**49.5915**	1.019	2.1	ug/L	391	Standard
	Cu	65	93736.1	0.4	**49.1473**	0.729	1.5	ug/L	147	Standard
	Zn	66	55817.0	1.0	**49.6877**	0.390	0.8	ug/L	184	Standard
>	**Ge**	72	429169.2	1.8				ug/L	422998	Standard
	As	75	55939.1	0.5	**48.6605**	1.008	2.1	ug/L	-58	Standard
	Se	82	5820.2	1.0	**48.7343**	1.077	2.2	ug/L	15	Standard
	Se-1	77	3847.5	1.4	**49.3499**	1.185	2.4	ug/L	58	Standard
>	**Ga**	71	81.7	19.7				mg/L	113	Standard
	Rb	85	806.7	1.3				ug/L	27	Standard
	Y	89	373583.7	1.6				ug/L	383780	Standard
>	**Rh**	103	21.7	35.3				ug/L	18	Standard
	Mo	98	257231.3	1.0	**97.8031**	2.633	2.7	ug/L	31	Standard
	Ag	107	329273.0	1.1	**49.3919**	1.374	2.8	ug/L	84	Standard
	Cd	111	104357.1	0.5	**49.5334**	1.014	2.0	mg/L	4	Standard
	Cd	114	256663.0	0.5	**50.2059**	1.112	2.2	ug/L	15	Standard
>	**In**	115	509906.4	1.8				ug/L	515400	Standard
	Sn	118	281156.4	0.7	**48.9072**	0.530	1.1	ug/L	1043	Standard
	Sb	123	235448.6	1.7	**51.9870**	1.471	2.8	ug/L	227	Standard
	Ba	135	97479.2	0.7	**49.0045**	1.165	2.4	ug/L	31	Standard
	Ce	140	83.3	25.0				ug/L	120	Standard
>	**Tb**	159	786134.9	1.0				ug/L	785817	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	401970.1	0.5	**50.0255**	0.983	2.0	ug/L	6	Standard
	Tl	205	351161.4	1.1	**50.1638**	0.887	1.8	ug/L	8	Standard
	Pb	206	252778.5	0.6	**50.5367**	1.059	2.1	ug/L	201	Standard
	Pb	207	228467.0	0.4	**50.5201**	0.932	1.8	ug/L	177	Standard
	Pb	208	912205.7	0.8	**50.2139**	0.866	1.7	ug/L	722	Standard
	U	238	344223.3	0.4	**49.8915**	0.966	1.9	ug/L	8	Standard
>	**Bi**	209	446729.0	1.8				ug/L	444563	Standard

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Na	23	1.7	173.2	**19.5061**	33.777	173.2	mg/L	0	Standard
Mg	24	3785.5	6.4	**4.7554**	0.343	7.2	mg/L	38	Standard
K	39	1055.0	7.5	**4.5194**	0.293	6.5	mg/L	33	Standard
Ca	43	73.3	14.2	**5.7764**	1.991	34.5	mg/L	48	Standard
Fe	54	6345.3	4.0	**5.0384**	0.324	6.4	mg/L	131	Standard
Fe	57	1775.1	7.3	**5.0532**	0.317	6.3	mg/L	153	Standard
> **Sc-1**	45	26534.9	2.7				mg/L	26715	Standard
Cl	35	105006.0	1.0				ug/L	102686	Standard
Kr	83	3.0	57.7				ug/L	2	Standard
Br	81	1946.8	18.0				ug/L	1897	Standard
P	31	19901.4	4.7				ug/L	18491	Standard
S	34	4455.7	5.1				ug/L	3734	Standard
Sr	88	60.0	28.9				ug/L	47	Standard
C	12	70.0	28.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	57.3				mg/L	23	Standard
Dy	164	8.9	8.2				mg/L	23	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	23.3	65.5				mg/L	13	Standard
I	127	17641.9	1.6				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	98.402		
Al	27	96.172		
Sc	45			
Ti	47	98.597		
V	51	99.603		
Cr	52	98.889		
Cr	53			
Mn	55	98.273		
Co	59	99.626		
Ni	60	99.183		
Cu	65	98.295		
Zn	66	99.375		
> Ge	72		101.459	
As	75	97.321		
Se	82	97.469		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	97.803		
Ag	107	98.784		
Cd	111	99.067		
Cd	114			
In	115			98.934
Sn	118	97.814		
Sb	123	103.974		
Ba	135	98.009		
Ce	140			
Tb	159			
Ho	165			
Tl	203	100.051		
Tl	205			
Pb	206			
Pb	207			
Pb	208	100.428		
U	238	99.783		
Bi	209			100.487
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, July 05, 2016 10:09:41
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	62071.9	1.7				ug/L	59517	Standard
	Be	9	35.0	51.5	**0.0075**	0.020	267.5	ug/L	10	Standard
	Al	27	2741.9	25.6	**0.0048**	0.004	85.5	ug/L	1872	Standard
	Sc	45	27962.5	1.7				ug/L	26715	Standard
	Ti	47	42.3	20.6	**-0.0795**	0.031	39.5	ug/L	54	Standard
	V	51	1176.3	5.4	**-0.0258**	0.011	44.1	ug/L	1419	Standard
	Cr	52	6381.0	4.6	**-0.1306**	0.051	39.1	ug/L	7059	Standard
	Cr	53	451.7	12.2	**0.0676**	0.052	77.5	ug/L	398	Standard
	Mn	55	787.0	8.0	**-0.0137**	0.012	85.3	ug/L	824	Standard
	Co	59	275.7	10.8	**0.0132**	0.005	37.0	ug/L	167	Standard
	Ni	60	330.7	7.5	**-0.0333**	0.015	45.2	ug/L	391	Standard
	Cu	65	144.0	10.8	**-0.0068**	0.008	120.9	ug/L	147	Standard
	Zn	66	236.7	2.7	**0.0425**	0.003	6.1	ug/L	184	Standard
>	Ge	72	449380.2	2.1				ug/L	422998	Standard
	As	75	-11.5	135.8	**0.0423**	0.013	30.5	ug/L	-58	Standard
	Se	82	19.1	0.9	**-0.0525**	0.004	7.6	ug/L	15	Standard
	Se-1	77	63.7	8.7	**0.1212**	0.053	43.4	ug/L	58	Standard
>	Ga	71	75.0	17.6				mg/L	113	Standard
	Rb	85	21.7	48.0				ug/L	27	Standard
	Y	89	395093.7	1.1				ug/L	383780	Standard
>	Rh	103	18.3	15.7				ug/L	18	Standard
	Mo	98	300.7	7.3	**0.1000**	0.009	8.7	ug/L	31	Standard
	Ag	107	169.0	33.1	**0.0122**	0.008	67.3	ug/L	84	Standard
	Cd	111	19.2	19.5	**0.0045**	0.002	38.8	mg/L	4	Standard
	Cd	114	50.2	53.0	**0.0048**	0.005	104.8	ug/L	15	Standard
>	In	115	535175.7	0.7				ug/L	515400	Standard
	Sn	118	1420.1	24.7	**0.0550**	0.057	103.3	ug/L	1043	Standard
	Sb	123	1609.3	30.2	**0.3217**	0.100	31.0	ug/L	227	Standard
	Ba	135	59.3	37.5	**0.0048**	0.011	229.7	ug/L	31	Standard
	Ce	140	16.7	34.6				ug/L	120	Standard
>	Tb	159	823938.4	1.2				ug/L	785817	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	100.0	27.0	**0.0082**	0.003	40.2	ug/L	6	Standard
	Tl	205	80.0	33.1	**0.0040**	0.004	89.7	ug/L	8	Standard
	Pb	206	276.7	12.2	**0.0068**	0.007	100.8	ug/L	201	Standard
	Pb	207	246.3	11.5	**0.0037**	0.006	173.1	ug/L	177	Standard
	Pb	208	996.0	14.6	**0.0033**	0.008	242.0	ug/L	722	Standard
	U	238	87.3	28.4	**0.0095**	0.004	37.1	ug/L	8	Standard
>	Bi	209	472387.3	0.9				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	36.7	64.4	**0.0106**	0.029	269.8	mg/L	38	Standard
K	39	26.7	65.8	**-0.0169**	0.075	445.3	mg/L	33	Standard
Ca	43	41.7	38.6	**0.4058**	2.515	619.8	mg/L	48	Standard
Fe	54	174.3	5.6	**0.0177**	0.009	50.0	mg/L	131	Standard
Fe	57	146.7	18.8	**-0.0473**	0.086	181.6	mg/L	153	Standard
> **Sc-1**	45	27962.5	1.7				mg/L	26715	Standard
Cl	35	108546.2	2.2				ug/L	102686	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1846.8	4.6				ug/L	1897	Standard
P	31	19873.0	3.3				ug/L	18491	Standard
S	34	4410.6	6.9				ug/L	3734	Standard
Sr	88	48.3	26.0				ug/L	47	Standard
C	12	56.7	27.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	23	Standard
Dy	164	13.2	44.9				mg/L	23	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	12096.5	1.7				mg/L	12398	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6			
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		106.237	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.837
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.259
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBS H4 WG574663-02
Sample Date/Time: Tuesday, July 05, 2016 10:15:30
Number of Replicates: 3
Autosampler Position: 205
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65491.6	6.6				ug/L	59517	Standard
	Be	9	23.3	61.9	**-0.0073**	0.013	179.3	ug/L	10	Standard
	Al	27	9262.8	2.6	**0.0430**	0.002	5.0	ug/L	1872	Standard
	Sc	45	24905.5	0.4				ug/L	26715	Standard
	Ti	47	53.3	7.8	**-0.0067**	0.012	180.4	ug/L	54	Standard
	V	51	11580.0	21.4	**1.5451**	0.402	26.0	ug/L	1419	Standard
	Cr	52	18550.7	4.4	**1.8221**	0.199	10.9	ug/L	7059	Standard
	Cr	53	97195.7	8.9	**116.9078**	13.389	11.5	ug/L	398	Standard
	Mn	55	1234.7	4.6	**0.0783**	0.015	19.1	ug/L	824	Standard
	Co	59	246.7	10.0	**0.0138**	0.003	20.5	ug/L	167	Standard
	Ni	60	434.0	10.2	**0.0483**	0.018	37.4	ug/L	391	Standard
	Cu	65	264.0	13.4	**0.0713**	0.016	22.6	ug/L	147	Standard
	Zn	66	1357.1	2.0	**1.1577**	0.014	1.2	ug/L	184	Standard
>	Ge	72	394957.5	2.8				ug/L	422998	Standard
	As	75	-546.0	81.6	**-0.4703**	0.431	91.6	ug/L	-58	Standard
	Se	82	15.8	32.0	**-0.0604**	0.050	82.1	ug/L	15	Standard
	Se-1	77	8179.9	4.9	**115.0215**	8.790	7.6	ug/L	58	Standard
>	Ga	71	223.3	20.1				mg/L	113	Standard
	Rb	85	35.0	49.5				ug/L	27	Standard
	Y	89	345203.4	1.0				ug/L	383780	Standard
>	Rh	103	43.3	24.0				ug/L	18	Standard
	Mo	98	105.6	9.9	**0.0361**	0.005	12.5	ug/L	31	Standard
	Ag	107	267.0	48.1	**0.0327**	0.021	63.5	ug/L	84	Standard
	Cd	111	26.4	86.0	**0.0098**	0.012	120.1	mg/L	4	Standard
	Cd	114	74.6	104.8	**0.0116**	0.017	144.1	ug/L	15	Standard
>	In	115	454743.1	1.5				ug/L	515400	Standard
	Sn	118	1131.7	22.3	**0.0409**	0.052	125.9	ug/L	1043	Standard
	Sb	123	654.9	20.0	**0.1461**	0.034	23.5	ug/L	227	Standard
	Ba	135	108.3	26.2	**0.0372**	0.015	40.4	ug/L	31	Standard
	Ce	140	33.3	31.2				ug/L	120	Standard
>	Tb	159	780570.0	1.6				ug/L	785817	Standard
	Ho	165	6.7	43.3				ug/L	7	Standard
	Tl	203	134.0	57.5	**0.0133**	0.009	69.9	ug/L	6	Standard
	Tl	205	101.7	22.7	**0.0080**	0.003	40.1	ug/L	8	Standard
	Pb	206	393.0	10.4	**0.0347**	0.006	18.5	ug/L	201	Standard
	Pb	207	345.0	7.6	**0.0301**	0.004	13.7	ug/L	177	Standard
	Pb	208	1343.4	6.1	**0.0270**	0.003	10.4	ug/L	722	Standard
	U	238	18.7	52.6	**0.0003**	0.001	518.1	ug/L	8	Standard
>	Bi	209	437101.4	2.3				ug/L	444563	Standard

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Na	23	1.7	173.2	**20.8779**	36.153	173.2	mg/L	0	Standard
Mg	24	110.0	27.6	**0.1144**	0.040	35.4	mg/L	38	Standard
K	39	45.0	40.1	**0.0823**	0.086	104.1	mg/L	33	Standard
Ca	43	33.3	17.3	**-0.2499**	0.998	399.5	mg/L	48	Standard
Fe	54	118.6	27.5	**-0.0140**	0.029	204.1	mg/L	131	Standard
Fe	57	198.3	7.3	**0.1771**	0.046	26.0	mg/L	153	Standard
> **Sc-1**	45	24905.5	0.4				mg/L	26715	Standard
Cl	35	97454.4	0.7				ug/L	102686	Standard
Kr	83	2.3	99.0				ug/L	2	Standard
Br	81	1743.4	11.3				ug/L	1897	Standard
P	31	13639.5	3.1				ug/L	18491	Standard
S	34	4730.7	2.7				ug/L	3734	Standard
Sr	88	56.7	43.5				ug/L	47	Standard
C	12	106.7	42.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	22.7	48.4				mg/L	23	Standard
Ho-1	165	6.7	43.3				mg/L	7	Standard
Er	166	13.3	86.6				mg/L	13	Standard
I	127	28009.2	1.2				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.039	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		93.371	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	88.231	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	98.322	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Cr 53 Upper, S, EEE	Cr	53	
As 75 Lower	As	75	
Se-1 77 Upper, S, EEE	Se-1	77	

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Method 6020 - Summary Report

Sample ID: LCSS H4 WG574663-03
Sample Date/Time: Tuesday, July 05, 2016 10:18:41
Number of Replicates: 3
Autosampler Position: 206
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	89097.9	0.4				ug/L	59517	Standard
	Be	9	24382.9	0.9	**18.7020**	0.205	1.1	ug/L	10	Standard
	Al	27	19215.5	6.6	**0.0719**	0.005	7.4	ug/L	1872	Standard
	Sc	45	28077.7	3.6				ug/L	26715	Standard
	Ti	47	145.3	57.1	**0.3700**	0.343	92.8	ug/L	54	Standard
	V	51	212579.4	2.3	**29.6977**	1.062	3.6	ug/L	1419	Standard
	Cr	52	232740.8	1.5	**32.2112**	0.384	1.2	ug/L	7059	Standard
	Cr	53	248774.5	1.9	**283.2488**	5.159	1.8	ug/L	398	Standard
	Mn	55	174578.1	1.0	**27.8390**	0.323	1.2	ug/L	824	Standard
	Co	59	176300.5	0.7	**26.2811**	0.174	0.7	ug/L	167	Standard
	Ni	60	50092.7	0.4	**26.9485**	0.274	1.0	ug/L	391	Standard
	Cu	65	49677.3	1.4	**26.7504**	0.101	0.4	ug/L	147	Standard
	Zn	66	29338.0	0.9	**26.7882**	0.120	0.4	ug/L	184	Standard
>	**Ge**	72	417245.0	1.3				ug/L	422998	Standard
	As	75	27983.7	1.6	**25.0585**	0.389	1.6	ug/L	-58	Standard
	Se	82	2946.4	0.9	**25.2742**	0.435	1.7	ug/L	15	Standard
	Se-1	77	22278.7	1.2	**297.1877**	3.709	1.2	ug/L	58	Standard
>	**Ga**	71	496.7	11.8				mg/L	113	Standard
	Rb	85	156.7	9.2				ug/L	27	Standard
	Y	89	374825.2	1.4				ug/L	383780	Standard
>	**Rh**	103	63.3	39.7				ug/L	18	Standard
	Mo	98	1114.0	2.7	**0.4346**	0.005	1.1	ug/L	31	Standard
	Ag	107	170515.1	0.3	**26.7795**	0.381	1.4	ug/L	84	Standard
	Cd	111	51574.1	1.2	**25.6346**	0.385	1.5	mg/L	4	Standard
	Cd	114	125467.5	1.3	**25.6992**	0.368	1.4	ug/L	15	Standard
>	**In**	115	486841.8	1.7				ug/L	515400	Standard
	Sn	118	1626.8	27.1	**0.1157**	0.076	65.3	ug/L	1043	Standard
	Sb	123	109667.4	0.5	**25.3502**	0.343	1.4	ug/L	227	Standard
	Ba	135	52113.8	0.4	**27.4265**	0.446	1.6	ug/L	31	Standard
	Ce	140	126.7	16.4				ug/L	120	Standard
>	**Tb**	159	858869.4	0.8				ug/L	785817	Standard
	Ho	165	6.7	114.6				ug/L	7	Standard
	Tl	203	211401.4	1.2	**24.7568**	0.524	2.1	ug/L	6	Standard
	Tl	205	170864.7	0.8	**22.9661**	0.319	1.4	ug/L	8	Standard
	Pb	206	143557.2	0.8	**26.9866**	0.422	1.6	ug/L	201	Standard
	Pb	207	123747.0	1.0	**25.7254**	0.260	1.0	ug/L	177	Standard
	Pb	208	456532.1	0.8	**23.6244**	0.409	1.7	ug/L	722	Standard
	U	238	172264.4	0.6	**23.4936**	0.257	1.1	ug/L	8	Standard
>	**Bi**	209	474657.3	0.9				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	180.0	21.0	**0.1822**	0.050	27.7	mg/L	38	Standard
K	39	40.0	33.1	**0.0364**	0.051	141.0	mg/L	33	Standard
Ca	43	40.0	25.0	**0.1510**	1.720	1138.4	mg/L	48	Standard
Fe	54	176.5	29.4	**0.0183**	0.038	205.6	mg/L	131	Standard
Fe	57	171.7	8.9	**0.0243**	0.045	185.8	mg/L	153	Standard
Sc-1	45	28077.7	3.6				mg/L	26715	Standard
Cl	35	107579.9	0.5				ug/L	102686	Standard
Kr	83	2.3	99.0				ug/L	2	Standard
Br	81	1966.8	7.4				ug/L	1897	Standard
P	31	24441.4	1.4				ug/L	18491	Standard
S	34	5606.0	4.1				ug/L	3734	Standard
Sr	88	85.0	15.6				ug/L	47	Standard
C	12	93.3	52.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	13.3	86.6				mg/L	23	Standard
Dy	164	25.4	55.4				mg/L	23	Standard
Ho-1	165	6.7	114.6				mg/L	7	Standard
Er	166	26.7	94.4				mg/L	13	Standard
I	127	15756.5	2.7				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		149.702	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.640	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	94.459
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	106.769
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cr 53 Upper, S, EEE	Cr	53	
Se-1 77 Upper, S, EEE	Se-1	77	

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Method 6020 - Summary Report

Sample ID: L1606145106 WG574663-01
Sample Date/Time: Tuesday, July 05, 2016 10:21:52
Number of Replicates: 3
Autosampler Position: 207
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	84418.1	3.8				ug/L	59517	Standard
	Be	9	1016.7	0.6	**0.7941**	0.034	4.3	ug/L	10	Standard
	Al	27	3563578.5	0.9	**16.5127**	0.485	2.9	ug/L	1872	Standard
	Sc	45	35351.2	2.6				ug/L	26715	Standard
	Ti	47	21288.6	2.1	**83.6919**	1.223	1.5	ug/L	54	Standard
	V	51	514875.3	0.7	**66.7274**	1.014	1.5	ug/L	1419	Standard
	Cr	52	156424.1	1.5	**19.6513**	0.300	1.5	ug/L	7059	Standard
	Cr	53	138593.1	3.1	**145.7297**	4.567	3.1	ug/L	398	Standard
	Mn	55	1832238.2	1.2	**271.3443**	4.602	1.7	ug/L	824	Standard
	Co	59	25524.2	1.7	**3.4972**	0.081	2.3	ug/L	167	Standard
	Ni	60	42103.8	1.2	**20.9006**	0.103	0.5	ug/L	391	Standard
	Cu	65	102546.6	1.4	**51.1390**	0.631	1.2	ug/L	147	Standard
	Zn	66	89291.0	1.4	**75.6836**	0.517	0.7	ug/L	184	Standard
>	Ge	72	451173.5	0.8				ug/L	422998	Standard
	As	75	16334.4	0.4	**13.5506**	0.097	0.7	ug/L	-58	Standard
	Se	82	503.0	2.3	**3.8161**	0.087	2.3	ug/L	15	Standard
	Se-1	77	10945.0	5.9	**134.6658**	8.375	6.2	ug/L	58	Standard
>	Ga	71	11064.0	1.9				mg/L	113	Standard
	Rb	85	36604.2	2.2				ug/L	27	Standard
	Y	89	859178.3	2.1				ug/L	383780	Standard
>	Rh	103	75.0	11.5				ug/L	18	Standard
	Mo	98	11321.5	2.3	**4.2188**	0.152	3.6	ug/L	31	Standard
	Ag	107	875.0	4.4	**0.1169**	0.006	4.9	ug/L	84	Standard
	Cd	111	4512.3	2.4	**2.0988**	0.038	1.8	mg/L	4	Standard
	Cd	114	11115.0	3.9	**2.1311**	0.107	5.0	ug/L	15	Standard
>	In	115	519235.1	1.6				ug/L	515400	Standard
	Sn	118	6929.9	4.0	**1.0075**	0.060	5.9	ug/L	1043	Standard
	Sb	123	4873.8	13.1	**1.0406**	0.140	13.5	ug/L	227	Standard
	Ba	135	276651.4	2.3	**136.6046**	3.722	2.7	ug/L	31	Standard
	Ce	140	1457468.2	2.4				ug/L	120	Standard
>	Tb	159	896312.5	0.8				ug/L	785817	Standard
	Ho	165	34457.5	1.6				ug/L	7	Standard
	Tl	203	1627.4	1.2	**0.1812**	0.001	0.3	ug/L	6	Standard
	Tl	205	1371.7	7.8	**0.1721**	0.016	9.1	ug/L	8	Standard
	Pb	206	182170.6	0.3	**33.2179**	0.218	0.7	ug/L	201	Standard
	Pb	207	150468.5	0.3	**30.3435**	0.324	1.1	ug/L	177	Standard
	Pb	208	590890.8	1.2	**29.6618**	0.348	1.2	ug/L	722	Standard
	U	238	21543.6	1.1	**2.8472**	0.058	2.0	ug/L	8	Standard
>	Bi	209	489471.3	0.9				ug/L	444563	Standard

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Na	23	3.3	86.6	**29.9651**	25.947	86.6	mg/L	0	Standard
Mg	24	515.0	3.5	**0.4556**	0.029	6.3	mg/L	38	Standard
K	39	155.0	11.6	**0.3827**	0.046	11.9	mg/L	33	Standard
Ca	43	225.0	7.7	**20.9177**	2.599	12.4	mg/L	48	Standard
Fe	54	21358.0	2.6	**12.9039**	0.625	4.8	mg/L	131	Standard
Fe	57	5671.1	3.2	**12.8045**	0.603	4.7	mg/L	153	Standard
> **Sc-1**	45	35351.2	2.6				mg/L	26715	Standard
Cl	35	120813.8	1.3				ug/L	102686	Standard
Kr	83	1.0	0.0				ug/L	2	Standard
Br	81	5834.5	10.0				ug/L	1897	Standard
P	31	21410.1	2.6				ug/L	18491	Standard
S	34	5474.3	2.0				ug/L	3734	Standard
Sr	88	166.7	9.2				ug/L	47	Standard
C	12	1330.1	1.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	456.7	16.1				mg/L	23	Standard
Dy	164	52163.9	2.2				mg/L	23	Standard
Ho-1	165	34457.5	1.6				mg/L	7	Standard
Er	166	33219.7	1.7				mg/L	13	Standard
I	127	71483.4	4.2				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		141.839	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.661	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		100.744
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.102
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

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Se-1 77 Upper, S, EEE	Se-1	77
Ba 135 Upper, S, EEE	Ba	135

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606145109S WG574663-04
Sample Date/Time: Tuesday, July 05, 2016 10:25:04
Number of Replicates: 3
Autosampler Position: 208
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	91812.3	0.3				ug/L	59517	Standard
	Be	9	25788.6	3.5	19.1948	0.629	3.3	ug/L	10	Standard
	Al	27	3689674.2	1.8	15.7082	0.304	1.9	ug/L	1872	Standard
	Sc	45	36654.3	1.2				ug/L	26715	Standard
	Ti	47	24746.9	1.9	95.2339	5.236	5.5	ug/L	54	Standard
	V	51	715478.9	2.3	90.7635	4.466	4.9	ug/L	1419	Standard
	Cr	52	364867.0	2.4	46.1080	2.802	6.1	ug/L	7059	Standard
	Cr	53	188822.7	1.2	194.3702	9.132	4.7	ug/L	398	Standard
	Mn	55	1803183.7	0.9	261.2009	11.281	4.3	ug/L	824	Standard
	Co	59	203800.3	1.3	27.4874	1.345	4.9	ug/L	167	Standard
	Ni	60	94872.8	0.3	46.3061	1.796	3.9	ug/L	391	Standard
	Cu	65	156908.3	1.1	76.5505	1.942	2.5	ug/L	147	Standard
	Zn	66	122522.4	0.6	101.6191	3.306	3.3	ug/L	184	Standard
>	Ge	72	461699.8	3.6				ug/L	422998	Standard
	As	75	44548.3	1.1	36.0611	1.478	4.1	ug/L	-58	Standard
	Se	82	3806.4	2.0	29.5786	1.649	5.6	ug/L	15	Standard
	Se-1	77	15638.4	1.1	188.4429	7.560	4.0	ug/L	58	Standard
>	Ga	71	12923.8	3.5				mg/L	113	Standard
	Rb	85	41130.8	2.5				ug/L	27	Standard
	Y	89	883461.3	1.6				ug/L	383780	Standard
>	Rh	103	81.7	36.9				ug/L	18	Standard
	Mo	98	11119.1	1.0	4.0936	0.201	4.9	ug/L	31	Standard
	Ag	107	169437.6	1.6	24.6587	1.344	5.5	ug/L	84	Standard
	Cd	111	57906.2	2.1	26.6733	1.497	5.6	mg/L	4	Standard
	Cd	114	139942.6	2.0	26.5678	1.569	5.9	ug/L	15	Standard
>	In	115	526017.9	3.9				ug/L	515400	Standard
	Sn	118	7243.4	3.7	1.0452	0.032	3.1	ug/L	1043	Standard
	Sb	123	117714.8	1.6	25.2129	1.285	5.1	ug/L	227	Standard
	Ba	135	327366.2	0.8	159.7393	7.528	4.7	ug/L	31	Standard
	Ce	140	1537481.7	1.2				ug/L	120	Standard
>	Tb	159	931910.0	4.2				ug/L	785817	Standard
	Ho	165	36582.4	1.2				ug/L	7	Standard
	Tl	203	213475.7	0.7	23.8226	1.044	4.4	ug/L	6	Standard
	Tl	205	175419.7	0.7	22.4638	0.769	3.4	ug/L	8	Standard
	Pb	206	334845.6	1.3	60.0496	2.994	5.0	ug/L	201	Standard
	Pb	207	283040.3	0.6	56.1331	2.483	4.4	ug/L	177	Standard
	Pb	208	1085063.5	0.5	53.5671	2.289	4.3	ug/L	722	Standard
	U	238	197136.0	1.2	25.6127	0.785	3.1	ug/L	8	Standard
>	Bi	209	498598.6	3.8				ug/L	444563	Standard

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Na	23	3.3	86.6	**28.6197**	24.784	86.6	mg/L	0	Standard
Mg	24	646.7	16.9	**0.5579**	0.096	17.3	mg/L	38	Standard
K	39	175.0	20.0	**0.4284**	0.106	24.7	mg/L	33	Standard
Ca	43	210.0	17.2	**18.2405**	4.420	24.2	mg/L	48	Standard
Fe	54	20289.2	3.6	**11.8012**	0.292	2.5	mg/L	131	Standard
Fe	57	5335.9	2.2	**11.5671**	0.115	1.0	mg/L	153	Standard
Sc-1	45	36654.3	1.2				mg/L	26715	Standard
Cl	35	125111.1	0.6				ug/L	102686	Standard
Kr	83	2.7	43.3				ug/L	2	Standard
Br	81	6341.3	3.8				ug/L	1897	Standard
P	31	21325.0	1.2				ug/L	18491	Standard
S	34	5641.1	1.7				ug/L	3734	Standard
Sr	88	180.0	12.1				ug/L	47	Standard
C	12	1503.4	2.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	426.7	15.6				mg/L	23	Standard
Dy	164	55395.5	2.5				mg/L	23	Standard
Ho-1	165	36582.4	1.2				mg/L	7	Standard
Er	166	35110.6	0.4				mg/L	13	Standard
I	127	69658.4	5.3				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		154.263	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		109.150	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.060
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		112.155
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606145109S WG574663-04
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Zn 66 Upper, S, EEE	Zn	66
Se-1 77 Upper, S, EEE	Se-1	77
Ba 135 Upper, S, EEE	Ba	135

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606145110SD WG574663-05
Sample Date/Time: Tuesday, July 05, 2016 10:28:15
Number of Replicates: 3
Autosampler Position: 209
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92567.3	4.4				ug/L	59517	Standard
	Be	9	27448.2	1.3	**20.2975**	1.096	5.4	ug/L	10	Standard
	Al	27	3947408.5	1.4	**16.6926**	0.844	5.1	ug/L	1872	Standard
	Sc	45	37227.4	2.9				ug/L	26715	Standard
	Ti	47	22470.7	1.4	**85.5564**	0.807	0.9	ug/L	54	Standard
	V	51	787499.3	2.0	**98.9258**	2.683	2.7	ug/L	1419	Standard
	Cr	52	377991.5	1.4	**47.2948**	0.737	1.6	ug/L	7059	Standard
	Cr	53	186356.2	2.4	**189.9303**	6.848	3.6	ug/L	398	Standard
	Mn	55	2224101.6	2.0	**318.9399**	2.166	0.7	ug/L	824	Standard
	Co	59	213001.6	2.9	**28.4300**	0.204	0.7	ug/L	167	Standard
	Ni	60	102452.9	1.6	**49.5228**	0.586	1.2	ug/L	391	Standard
	Cu	65	168431.6	2.1	**81.3787**	0.641	0.8	ug/L	147	Standard
	Zn	66	130918.9	1.6	**107.5275**	0.961	0.9	ug/L	184	Standard
>	**Ge**	72	465960.3	2.2				ug/L	422998	Standard
	As	75	50506.2	2.6	**40.4629**	0.279	0.7	ug/L	-58	Standard
	Se	82	3972.9	1.3	**30.5627**	0.577	1.9	ug/L	15	Standard
	Se-1	77	15238.3	0.9	**181.8181**	4.788	2.6	ug/L	58	Standard
>	**Ga**	71	12636.9	5.1				mg/L	113	Standard
	Rb	85	34183.6	3.8				ug/L	27	Standard
	Y	89	934981.2	1.9				ug/L	383780	Standard
>	**Rh**	103	91.7	39.5				ug/L	18	Standard
	Mo	98	12089.5	2.1	**4.3684**	0.052	1.2	ug/L	31	Standard
	Ag	107	177713.5	0.9	**25.3798**	0.139	0.5	ug/L	84	Standard
	Cd	111	59831.1	3.0	**27.0406**	0.556	2.1	mg/L	4	Standard
	Cd	114	145986.8	3.5	**27.1872**	0.590	2.2	ug/L	15	Standard
>	**In**	115	535307.0	1.4				ug/L	515400	Standard
	Sn	118	7665.3	2.9	**1.0941**	0.052	4.8	ug/L	1043	Standard
	Sb	123	122141.1	0.8	**25.6760**	0.292	1.1	ug/L	227	Standard
	Ba	135	357831.6	1.4	**171.3677**	1.173	0.7	ug/L	31	Standard
	Ce	140	1664011.1	2.6				ug/L	120	Standard
>	**Tb**	159	942853.7	0.8				ug/L	785817	Standard
	Ho	165	39693.6	2.5				ug/L	7	Standard
	Tl	203	219374.2	1.1	**24.1748**	0.193	0.8	ug/L	6	Standard
	Tl	205	181310.6	2.9	**22.9312**	0.490	2.1	ug/L	8	Standard
	Pb	206	361102.5	1.7	**63.9442**	1.161	1.8	ug/L	201	Standard
	Pb	207	305063.7	1.7	**59.7456**	0.803	1.3	ug/L	177	Standard
	Pb	208	1165074.5	1.1	**56.8063**	0.948	1.7	ug/L	722	Standard
	U	238	205870.2	2.0	**26.4212**	0.390	1.5	ug/L	8	Standard
>	**Bi**	209	504359.6	1.0				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	641.7	11.4	**0.5457**	0.076	14.0	mg/L	38	Standard
K	39	143.3	14.1	**0.3220**	0.071	22.1	mg/L	33	Standard
Ca	43	233.3	16.2	**20.4787**	4.301	21.0	mg/L	48	Standard
Fe	54	23912.6	2.6	**13.7191**	0.336	2.5	mg/L	131	Standard
Fe	57	6194.6	4.8	**13.2925**	0.564	4.2	mg/L	153	Standard
> **Sc-1**	45	37227.4	2.9				mg/L	26715	Standard
Cl	35	124605.9	2.8				ug/L	102686	Standard
Kr	83	3.3	91.7				ug/L	2	Standard
Br	81	5787.8	8.8				ug/L	1897	Standard
P	31	22254.7	1.1				ug/L	18491	Standard
S	34	5691.1	4.1				ug/L	3734	Standard
Sr	88	145.0	18.2				ug/L	47	Standard
C	12	1630.1	3.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	570.0	14.4				mg/L	23	Standard
Dy	164	60514.1	3.8				mg/L	23	Standard
Ho-1	165	39693.6	2.5				mg/L	7	Standard
Er	166	38986.8	3.0				mg/L	13	Standard
I	127	74084.4	5.7				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		155.531	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.157	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.862
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		113.451
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606145110SD WG574663-05
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Zn 66 Upper, S, EEE	Zn	66
Se-1 77 Upper, S, EEE	Se-1	77
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606145101
Sample Date/Time: Tuesday, July 05, 2016 10:31:27
Number of Replicates: 3
Autosampler Position: 210
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	96300.3	3.4				ug/L	59517	Standard
	Be	9	420.0	9.7	**0.2670**	0.019	7.0	ug/L	10	Standard
	Al	27	2367758.4	2.6	**9.6073**	0.083	0.9	ug/L	1872	Standard
	Sc	45	34126.7	0.7				ug/L	26715	Standard
	Ti	47	24224.4	0.8	**90.6734**	1.027	1.1	ug/L	54	Standard
	V	51	134625.6	3.4	**16.4696**	0.495	3.0	ug/L	1419	Standard
	Cr	52	100176.0	5.2	**11.5973**	0.644	5.5	ug/L	7059	Standard
	Cr	53	218029.7	14.7	**218.3883**	31.900	14.6	ug/L	398	Standard
	Mn	55	1246069.6	1.4	**175.6002**	3.333	1.9	ug/L	824	Standard
	Co	59	19635.0	1.5	**2.5539**	0.052	2.0	ug/L	167	Standard
	Ni	60	16067.5	1.5	**7.4648**	0.122	1.6	ug/L	391	Standard
	Cu	65	20297.6	1.6	**9.5712**	0.209	2.2	ug/L	147	Standard
	Zn	66	90111.9	1.7	**72.7009**	1.609	2.2	ug/L	184	Standard
>	**Ge**	72	474008.2	0.5				ug/L	422998	Standard
	As	75	10729.1	3.7	**8.4913**	0.334	3.9	ug/L	-58	Standard
	Se	82	74.1	24.9	**0.3575**	0.139	39.0	ug/L	15	Standard
	Se-1	77	15628.8	13.6	**183.2190**	24.701	13.5	ug/L	58	Standard
>	**Ga**	71	9844.9	2.3				mg/L	113	Standard
	Rb	85	75058.9	2.6				ug/L	27	Standard
	Y	89	496613.8	1.6				ug/L	383780	Standard
>	**Rh**	103	38.3	7.5				ug/L	18	Standard
	Mo	98	2422.5	2.0	**0.8423**	0.021	2.5	ug/L	31	Standard
	Ag	107	431.0	5.5	**0.0478**	0.004	7.4	ug/L	84	Standard
	Cd	111	826.3	3.8	**0.3584**	0.015	4.2	mg/L	4	Standard
	Cd	114	2066.0	2.3	**0.3689**	0.010	2.7	ug/L	15	Standard
>	**In**	115	551668.5	0.5				ug/L	515400	Standard
	Sn	118	6988.3	4.5	**0.9465**	0.045	4.8	ug/L	1043	Standard
	Sb	123	2722.2	8.4	**0.5392**	0.045	8.3	ug/L	227	Standard
	Ba	135	112861.5	0.6	**52.4311**	0.519	1.0	ug/L	31	Standard
	Ce	140	740222.4	0.5				ug/L	120	Standard
>	**Tb**	159	940061.7	0.9				ug/L	785817	Standard
	Ho	165	5439.3	2.8				ug/L	7	Standard
	Tl	203	855.0	6.5	**0.0902**	0.006	6.2	ug/L	6	Standard
	Tl	205	756.7	7.3	**0.0885**	0.006	7.2	ug/L	8	Standard
	Pb	206	282348.8	0.2	**49.7501**	0.303	0.6	ug/L	201	Standard
	Pb	207	237157.4	0.8	**46.2181**	0.627	1.4	ug/L	177	Standard
	Pb	208	908660.4	1.0	**44.0818**	0.650	1.5	ug/L	722	Standard
	U	238	4636.0	1.4	**0.5898**	0.010	1.7	ug/L	8	Standard
>	**Bi**	209	506760.7	0.6				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	138.3	17.1	**0.1024**	0.024	23.2	mg/L	38	Standard
K	39	191.7	24.1	**0.5278**	0.160	30.2	mg/L	33	Standard
Ca	43	85.0	15.6	**4.5864**	1.562	34.1	mg/L	48	Standard
Fe	54	11199.1	3.0	**6.9495**	0.163	2.4	mg/L	131	Standard
Fe	57	3090.3	4.2	**7.0129**	0.282	4.0	mg/L	153	Standard
Sc-1	45	34126.7	0.7				mg/L	26715	Standard
Cl	35	119518.9	0.7				ug/L	102686	Standard
Kr	83	2.7	86.6				ug/L	2	Standard
Br	81	2663.6	2.8				ug/L	1897	Standard
P	31	22528.4	3.2				ug/L	18491	Standard
S	34	6091.2	2.3				ug/L	3734	Standard
Sr	88	101.7	67.9				ug/L	47	Standard
C	12	383.3	9.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	170.0	10.2				mg/L	23	Standard
Dy	164	9346.6	4.0				mg/L	23	Standard
Ho-1	165	5439.3	2.8				mg/L	7	Standard
Er	166	5214.2	8.3				mg/L	13	Standard
I	127	32424.7	3.2				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		161.804	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		112.059	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		107.037
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		113.991
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

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Se-1 77 Upper, S, EEE Se-1 77

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Method 6020 - Summary Report

Sample ID: L1606145102
Sample Date/Time: Tuesday, July 05, 2016 10:34:38
Number of Replicates: 3
Autosampler Position: 211
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	95455.0	3.3				ug/L	59517	Standard
	Be	9	488.3	3.1	**0.3196**	0.023	7.1	ug/L	10	Standard
	Al	27	6729800.5	2.4	**27.5831**	0.993	3.6	ug/L	1872	Standard
	Sc	45	34343.9	3.1				ug/L	26715	Standard
	Ti	47	29782.6	2.0	**108.4368**	3.647	3.4	ug/L	54	Standard
	V	51	174788.9	3.0	**20.8308**	0.425	2.0	ug/L	1419	Standard
	Cr	52	146605.1	2.1	**16.9125**	0.463	2.7	ug/L	7059	Standard
	Cr	53	152022.1	9.9	**147.9448**	15.301	10.3	ug/L	398	Standard
	Mn	55	3975518.2	1.1	**544.8987**	11.406	2.1	ug/L	824	Standard
	Co	59	48242.3	0.2	**6.1346**	0.107	1.7	ug/L	167	Standard
	Ni	60	31076.2	1.0	**14.2120**	0.312	2.2	ug/L	391	Standard
	Cu	65	69088.5	0.2	**31.8512**	0.503	1.6	ug/L	147	Standard
	Zn	66	196946.8	0.4	**154.6413**	2.812	1.8	ug/L	184	Standard
>	**Ge**	72	487665.0	1.6				ug/L	422998	Standard
	As	75	10052.7	3.3	**7.7360**	0.126	1.6	ug/L	-58	Standard
	Se	82	100.5	8.6	**0.5373**	0.060	11.1	ug/L	15	Standard
	Se-1	77	12181.3	9.4	**138.6940**	13.419	9.7	ug/L	58	Standard
>	**Ga**	71	13002.2	3.0				mg/L	113	Standard
	Rb	85	139400.1	1.8				ug/L	27	Standard
	Y	89	543498.9	1.3				ug/L	383780	Standard
>	**Rh**	103	58.3	39.6				ug/L	18	Standard
	Mo	98	7908.6	2.5	**2.7773**	0.110	4.0	ug/L	31	Standard
	Ag	107	560.7	7.4	**0.0660**	0.006	9.8	ug/L	84	Standard
	Cd	111	885.6	4.5	**0.3854**	0.020	5.2	mg/L	4	Standard
	Cd	114	2255.4	2.1	**0.4043**	0.015	3.8	ug/L	15	Standard
>	**In**	115	550414.6	1.7				ug/L	515400	Standard
	Sn	118	10740.5	2.1	**1.5560**	0.019	1.2	ug/L	1043	Standard
	Sb	123	3508.6	7.0	**0.7010**	0.040	5.6	ug/L	227	Standard
	Ba	135	233884.5	1.0	**108.9317**	0.716	0.7	ug/L	31	Standard
	Ce	140	773942.7	0.2				ug/L	120	Standard
>	**Tb**	159	936947.5	1.0				ug/L	785817	Standard
	Ho	165	8690.8	1.9				ug/L	7	Standard
	Tl	203	1666.8	1.8	**0.1776**	0.007	3.7	ug/L	6	Standard
	Tl	205	1376.7	2.2	**0.1650**	0.005	3.0	ug/L	8	Standard
	Pb	206	174591.5	0.7	**30.4684**	0.696	2.3	ug/L	201	Standard
	Pb	207	143512.1	0.5	**27.6966**	0.652	2.4	ug/L	177	Standard
	Pb	208	564015.7	0.3	**27.0940**	0.434	1.6	ug/L	722	Standard
	U	238	10234.5	2.1	**1.2931**	0.032	2.5	ug/L	8	Standard
>	**Bi**	209	511498.1	1.9				ug/L	444563	Standard

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Na	23	3.3	86.6	**30.4304**	26.386	86.7	mg/L	0	Standard
Mg	24	231.7	12.6	**0.1933**	0.035	18.1	mg/L	38	Standard
K	39	413.3	26.3	**1.2849**	0.411	32.0	mg/L	33	Standard
Ca	43	188.3	14.6	**17.1374**	2.792	16.3	mg/L	48	Standard
Fe	54	21089.1	1.4	**13.1129**	0.341	2.6	mg/L	131	Standard
Fe	57	5754.4	1.9	**13.4013**	0.686	5.1	mg/L	153	Standard
Sc-1	45	34343.9	3.1				mg/L	26715	Standard
Cl	35	127275.9	2.5				ug/L	102686	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	3720.5	3.8				ug/L	1897	Standard
P	31	23304.6	0.3				ug/L	18491	Standard
S	34	6324.7	3.4				ug/L	3734	Standard
Sr	88	123.3	18.7				ug/L	47	Standard
C	12	446.7	26.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	176.7	14.2				mg/L	23	Standard
Dy	164	15071.2	2.7				mg/L	23	Standard
Ho-1	165	8690.8	1.9				mg/L	7	Standard
Er	166	8282.3	3.5				mg/L	13	Standard
I	127	47730.2	4.6				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		160.383	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		115.288	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	106.794
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	115.056
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
Cr 53 Upper, S, EEE	Cr	53	

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Mn 55 Upper, S, EEE	Mn	55
Zn 66 Upper, S, EEE	Zn	66
Se-1 77 Upper, S, EEE	Se-1	77
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606145102PS WG575049-01
Sample Date/Time: Tuesday, July 05, 2016 10:37:50
Number of Replicates: 3
Autosampler Position: 212
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	92486.5	2.1				ug/L	59517	Standard
	Be	9	54039.6	2.5	**39.9902**	1.823	4.6	ug/L	10	Standard
	Al	27	6702719.9	3.6	**28.3315**	0.431	1.5	ug/L	1872	Standard
	Sc	45	33709.2	4.7				ug/L	26715	Standard
	Ti	47	29540.8	1.2	**111.4556**	1.217	1.1	ug/L	54	Standard
	V	51	606531.6	1.7	**75.3912**	0.314	0.4	ug/L	1419	Standard
	Cr	52	567176.4	1.3	**70.7450**	0.671	0.9	ug/L	7059	Standard
	Cr	53	188806.4	3.0	**190.4660**	3.113	1.6	ug/L	398	Standard
	Mn	55	4291846.8	1.5	**609.6425**	8.461	1.4	ug/L	824	Standard
	Co	59	434604.6	0.9	**57.4977**	1.668	2.9	ug/L	167	Standard
	Ni	60	139210.3	1.0	**66.7060**	0.799	1.2	ug/L	391	Standard
	Cu	65	178227.9	1.0	**85.2934**	1.566	1.8	ug/L	147	Standard
	Zn	66	258120.8	0.5	**210.1308**	4.737	2.3	ug/L	184	Standard
>	**Ge**	72	470547.5	2.2				ug/L	422998	Standard
	As	75	75543.5	1.9	**59.9211**	1.340	2.2	ug/L	-58	Standard
	Se	82	6892.2	1.4	**52.6663**	1.888	3.6	ug/L	15	Standard
	Se-1	77	15541.0	0.3	**183.6099**	3.476	1.9	ug/L	58	Standard
>	**Ga**	71	13265.8	1.7				mg/L	113	Standard
	Rb	85	137203.4	0.8				ug/L	27	Standard
	Y	89	529720.9	2.4				ug/L	383780	Standard
>	**Rh**	103	63.3	25.4				ug/L	18	Standard
	Mo	98	7951.5	2.9	**2.8798**	0.055	1.9	ug/L	31	Standard
	Ag	107	369070.7	0.4	**52.9279**	2.054	3.9	ug/L	84	Standard
	Cd	111	116570.1	1.0	**52.8942**	1.790	3.4	mg/L	4	Standard
	Cd	114	281010.1	0.2	**52.5513**	1.895	3.6	ug/L	15	Standard
>	**In**	115	533710.9	3.8				ug/L	515400	Standard
	Sn	118	10321.9	4.2	**1.5405**	0.022	1.5	ug/L	1043	Standard
	Sb	123	239957.0	1.1	**50.6654**	2.386	4.7	ug/L	227	Standard
	Ba	135	339166.4	0.2	**163.0629**	6.024	3.7	ug/L	31	Standard
	Ce	140	757093.0	0.6				ug/L	120	Standard
>	**Tb**	159	918140.9	2.3				ug/L	785817	Standard
	Ho	165	8654.1	3.7				ug/L	7	Standard
	Tl	203	466157.4	0.4	**51.0161**	1.276	2.5	ug/L	6	Standard
	Tl	205	384400.8	1.5	**48.2945**	1.556	3.2	ug/L	8	Standard
	Pb	206	473813.5	0.3	**83.3316**	2.208	2.6	ug/L	201	Standard
	Pb	207	406320.4	0.2	**79.0456**	2.340	3.0	ug/L	177	Standard
	Pb	208	1553678.1	1.6	**75.2238**	1.416	1.9	ug/L	722	Standard
	U	238	393828.7	1.0	**50.1983**	1.449	2.9	ug/L	8	Standard
>	**Bi**	209	508141.7	3.0				ug/L	444563	Standard

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Na	23	3.3	86.6	**31.0869**	27.005	86.9	mg/L	0	Standard
Mg	24	198.3	18.6	**0.1637**	0.035	21.4	mg/L	38	Standard
K	39	406.7	10.5	**1.2854**	0.179	13.9	mg/L	33	Standard
Ca	43	155.0	8.5	**13.4861**	1.915	14.2	mg/L	48	Standard
Fe	54	21393.9	2.9	**13.5718**	0.780	5.7	mg/L	131	Standard
Fe	57	5667.7	4.9	**13.4360**	0.276	2.1	mg/L	153	Standard
> **Sc-1**	45	33709.2	4.7				mg/L	26715	Standard
Cl	35	122143.7	1.1				ug/L	102686	Standard
Kr	83	2.7	108.3				ug/L	2	Standard
Br	81	3353.7	7.7				ug/L	1897	Standard
P	31	23266.2	1.4				ug/L	18491	Standard
S	34	5949.5	2.7				ug/L	3734	Standard
Sr	88	78.3	36.9				ug/L	47	Standard
C	12	416.7	6.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	156.7	3.7				mg/L	23	Standard
Dy	164	14716.3	3.4				mg/L	23	Standard
Ho-1	165	8654.1	3.7				mg/L	7	Standard
Er	166	7888.7	4.0				mg/L	13	Standard
I	127	47038.1	6.2				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		155.396	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		111.241	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	103.553
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	114.301
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
Cr 53 Upper, S, EEE	Cr	53	

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Mn 55 Upper, S, EEE	Mn	55
Zn 66 Upper, S, EEE	Zn	66
Se-1 77 Upper, S, EEE	Se-1	77
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606145102SDL WG575049-02
Sample Date/Time: Tuesday, July 05, 2016 10:41:01
Number of Replicates: 3
Autosampler Position: 213
Sample Description: 5
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	57964.0	0.6				ug/L	59517	Standard
	Be	9	111.7	2.6	**0.1008**	0.003	2.9	ug/L	10	Standard
	Al	27	1095254.7	1.1	**7.3789**	0.033	0.5	ug/L	1872	Standard
	Sc	45	28546.9	1.5				ug/L	26715	Standard
	Ti	47	5496.3	1.3	**22.0763**	0.684	3.1	ug/L	54	Standard
	V	51	31405.8	2.5	**4.0242**	0.171	4.3	ug/L	1419	Standard
	Cr	52	30164.7	1.1	**3.1202**	0.057	1.8	ug/L	7059	Standard
	Cr	53	40515.8	1.3	**43.5878**	1.037	2.4	ug/L	398	Standard
	Mn	55	729144.7	0.3	**111.1254**	2.253	2.0	ug/L	824	Standard
	Co	59	8726.8	1.1	**1.2153**	0.041	3.4	ug/L	167	Standard
	Ni	60	6092.9	0.9	**2.9447**	0.045	1.5	ug/L	391	Standard
	Cu	65	13417.3	0.9	**6.8221**	0.107	1.6	ug/L	147	Standard
	Zn	66	41065.9	1.2	**35.7658**	0.867	2.4	ug/L	184	Standard
>	Ge	72	438215.2	2.3				ug/L	422998	Standard
	As	75	1917.2	6.6	**1.6850**	0.145	8.6	ug/L	-58	Standard
	Se	82	32.6	6.4	**0.0620**	0.014	22.6	ug/L	15	Standard
	Se-1	77	2564.6	2.2	**31.9793**	0.528	1.7	ug/L	58	Standard
>	Ga	71	2510.2	5.3				mg/L	113	Standard
	Rb	85	24840.3	1.6				ug/L	27	Standard
	Y	89	392893.1	1.7				ug/L	383780	Standard
>	Rh	103	16.7	75.5				ug/L	18	Standard
	Mo	98	1401.8	4.4	**0.5331**	0.032	5.9	ug/L	31	Standard
	Ag	107	213.7	10.6	**0.0206**	0.003	15.1	ug/L	84	Standard
	Cd	111	183.9	9.9	**0.0845**	0.008	9.5	mg/L	4	Standard
	Cd	114	476.8	11.7	**0.0901**	0.010	10.7	ug/L	15	Standard
>	In	115	501582.7	1.5				ug/L	515400	Standard
	Sn	118	2480.2	11.4	**0.2597**	0.056	21.6	ug/L	1043	Standard
	Sb	123	2141.9	24.9	**0.4649**	0.123	26.4	ug/L	227	Standard
	Ba	135	42972.9	0.5	**21.9469**	0.425	1.9	ug/L	31	Standard
	Ce	140	142041.1	0.9				ug/L	120	Standard
>	Tb	159	806653.6	1.4				ug/L	785817	Standard
	Ho	165	1461.7	2.6				ug/L	7	Standard
	Tl	203	382.7	6.2	**0.0423**	0.003	6.3	ug/L	6	Standard
	Tl	205	305.0	24.1	**0.0352**	0.010	27.4	ug/L	8	Standard
	Pb	206	31166.7	1.0	**5.9721**	0.086	1.4	ug/L	201	Standard
	Pb	207	25233.3	0.5	**5.3414**	0.081	1.5	ug/L	177	Standard
	Pb	208	105054.1	1.2	**5.5370**	0.086	1.5	ug/L	722	Standard
	U	238	1882.1	5.1	**0.2607**	0.013	4.9	ug/L	8	Standard
>	Bi	209	462925.1	1.5				ug/L	444563	Standard

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Na	23	3.3	86.6	**36.5066**	31.621	86.6	mg/L	0	Standard
Mg	24	40.0	45.1	**0.0136**	0.022	160.1	mg/L	38	Standard
K	39	98.3	19.3	**0.2737**	0.078	28.6	mg/L	33	Standard
Ca	43	73.3	10.4	**4.9246**	1.170	23.8	mg/L	48	Standard
Fe	54	3790.7	3.4	**2.7433**	0.104	3.8	mg/L	131	Standard
Fe	57	1205.0	3.0	**3.0135**	0.147	4.9	mg/L	153	Standard
> **Sc-1**	45	28546.9	1.5				mg/L	26715	Standard
Cl	35	102927.1	0.4				ug/L	102686	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1773.4	4.3				ug/L	1897	Standard
P	31	8959.3	0.9				ug/L	18491	Standard
S	34	4902.5	3.1				ug/L	3734	Standard
Sr	88	51.7	24.4				ug/L	47	Standard
C	12	66.7	31.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	40.0	25.0				mg/L	23	Standard
Dy	164	2723.5	4.1				mg/L	23	Standard
Ho-1	165	1461.7	2.6				mg/L	7	Standard
Er	166	1393.4	9.5				mg/L	13	Standard
I	127	36296.8	0.9				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		97.391	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.598	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	97.319	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	104.130	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	

Sample ID: L1606145102SDL WG575049-02
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Method 6020 - Summary Report

Sample ID: L1606145102SDL WG575049-02
Sample Date/Time: Tuesday, July 05, 2016 10:44:13
Number of Replicates: 3
Autosampler Position: 214
Sample Description: 25
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	49243.3	3.3				ug/L	59517	Standard
	Be	9	26.7	39.0	**0.0058**	0.014	237.4	ug/L	10	Standard
	Al	27	212721.3	1.3	**1.6783**	0.042	2.5	ug/L	1872	Standard
	Sc	45	27433.2	2.0				ug/L	26715	Standard
	Ti	47	1107.7	3.1	**4.2771**	0.178	4.2	ug/L	54	Standard
	V	51	7348.6	1.8	**0.8095**	0.030	3.7	ug/L	1419	Standard
	Cr	52	10131.1	1.7	**0.4074**	0.025	6.1	ug/L	7059	Standard
	Cr	53	15222.6	3.6	**16.2080**	0.438	2.7	ug/L	398	Standard
	Mn	55	145385.2	0.9	**22.1749**	0.340	1.5	ug/L	824	Standard
	Co	59	1900.8	1.5	**0.2465**	0.003	1.3	ug/L	167	Standard
	Ni	60	1466.7	0.8	**0.5613**	0.007	1.2	ug/L	391	Standard
	Cu	65	2781.6	1.2	**1.3599**	0.036	2.7	ug/L	147	Standard
	Zn	66	9116.1	1.1	**7.8588**	0.045	0.6	ug/L	184	Standard
>	Ge	72	435735.1	1.6				ug/L	422998	Standard
	As	75	307.5	38.6	**0.3158**	0.105	33.4	ug/L	-58	Standard
	Se	82	18.6	74.4	**-0.0509**	0.117	229.4	ug/L	15	Standard
	Se-1	77	847.4	3.1	**10.1822**	0.435	4.3	ug/L	58	Standard
>	Ga	71	563.3	8.2				mg/L	113	Standard
	Rb	85	5184.2	0.5				ug/L	27	Standard
	Y	89	384411.6	4.5				ug/L	383780	Standard
>	Rh	103	16.7	45.8				ug/L	18	Standard
	Mo	98	334.4	9.1	**0.1194**	0.009	7.2	ug/L	31	Standard
	Ag	107	118.0	13.2	**0.0059**	0.003	44.4	ug/L	84	Standard
	Cd	111	48.7	10.3	**0.0193**	0.003	15.4	mg/L	4	Standard
	Cd	114	106.3	20.1	**0.0164**	0.004	25.0	ug/L	15	Standard
>	In	115	504541.4	2.8				ug/L	515400	Standard
	Sn	118	885.0	33.3	**-0.0256**	0.047	184.8	ug/L	1043	Standard
	Sb	123	1059.7	23.7	**0.2192**	0.050	22.7	ug/L	227	Standard
	Ba	135	8479.0	0.7	**4.2871**	0.116	2.7	ug/L	31	Standard
	Ce	140	27329.6	0.4				ug/L	120	Standard
>	Tb	159	780954.8	2.4				ug/L	785817	Standard
	Ho	165	301.7	20.5				ug/L	7	Standard
	Tl	203	128.7	11.8	**0.0125**	0.002	16.3	ug/L	6	Standard
	Tl	205	91.7	30.0	**0.0064**	0.004	63.8	ug/L	8	Standard
	Pb	206	6174.9	1.4	**1.1929**	0.007	0.6	ug/L	201	Standard
	Pb	207	5019.5	1.1	**1.0657**	0.013	1.2	ug/L	177	Standard
	Pb	208	21403.9	1.3	**1.1335**	0.003	0.3	ug/L	722	Standard
	U	238	365.7	5.3	**0.0506**	0.003	5.0	ug/L	8	Standard
>	Bi	209	445597.3	1.1				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	31.7	18.2	**0.0051**	0.007	142.5	mg/L	38	Standard
K	39	48.3	15.8	**0.0770**	0.034	44.2	mg/L	33	Standard
Ca	43	46.7	34.4	**1.2487**	2.341	187.5	mg/L	48	Standard
Fe	54	833.8	6.6	**0.5377**	0.035	6.5	mg/L	131	Standard
Fe	57	361.7	13.3	**0.6103**	0.152	25.0	mg/L	153	Standard
> **Sc-1**	45	27433.2	2.0				mg/L	26715	Standard
Cl	35	99619.1	1.7				ug/L	102686	Standard
Kr	83	3.0	115.5				ug/L	2	Standard
Br	81	1573.4	5.8				ug/L	1897	Standard
P	31	6636.5	4.3				ug/L	18491	Standard
S	34	4434.0	1.9				ug/L	3734	Standard
Sr	88	80.0	16.5				ug/L	47	Standard
C	12	73.3	20.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	114.6				mg/L	23	Standard
Dy	164	495.0	12.2				mg/L	23	Standard
Ho-1	165	301.7	20.5				mg/L	7	Standard
Er	166	313.3	4.9				mg/L	13	Standard
I	127	34170.2	2.9				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		82.739	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		103.011	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	97.893	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	100.233	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, July 05, 2016 10:47:26
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	51443.9	2.3				ug/L	59517	Standard
	Be	9	39172.3	3.7	52.1373	3.047	5.8	ug/L	10	Standard
	Al	27	7091306.9	1.3	53.9261	1.288	2.4	ug/L	1872	Standard
	Sc	45	29433.6	6.4				ug/L	26715	Standard
	Ti	47	25883.1	1.7	99.6649	1.934	1.9	ug/L	54	Standard
	V	51	378476.2	1.5	47.9762	1.568	3.3	ug/L	1419	Standard
	Cr	52	388291.0	1.7	49.1588	1.543	3.1	ug/L	7059	Standard
	Cr	53	51136.2	2.2	52.3946	2.154	4.1	ug/L	398	Standard
	Mn	55	339015.4	1.1	49.0540	1.615	3.3	ug/L	824	Standard
	Co	59	351131.2	0.8	47.4186	1.464	3.1	ug/L	167	Standard
	Ni	60	101735.2	1.9	49.7282	1.809	3.6	ug/L	391	Standard
	Cu	65	100071.5	2.1	48.8595	1.575	3.2	ug/L	147	Standard
	Zn	66	58828.3	1.8	48.7660	1.404	2.9	ug/L	184	Standard
>	Ge	72	461081.6	3.6				ug/L	422998	Standard
	As	75	58960.5	1.4	47.7594	1.382	2.9	ug/L	-58	Standard
	Se	82	5982.2	1.4	46.6329	1.288	2.8	ug/L	15	Standard
	Se-1	77	4323.3	1.9	51.6659	1.569	3.0	ug/L	58	Standard
>	Ga	71	116.7	13.1				mg/L	113	Standard
	Rb	85	950.0	7.1				ug/L	27	Standard
	Y	89	397802.5	3.0				ug/L	383780	Standard
>	Rh	103	41.7	25.0				ug/L	18	Standard
	Mo	98	260548.4	1.4	95.0668	1.820	1.9	ug/L	31	Standard
	Ag	107	334433.8	1.0	48.1515	1.472	3.1	ug/L	84	Standard
	Cd	111	106832.0	0.8	48.6756	1.420	2.9	mg/L	4	Standard
	Cd	114	266119.3	1.2	49.9600	1.063	2.1	ug/L	15	Standard
>	In	115	531351.4	2.8				ug/L	515400	Standard
	Sn	118	290753.5	1.2	48.5577	1.676	3.5	ug/L	1043	Standard
	Sb	123	235402.2	0.6	49.8905	1.407	2.8	ug/L	227	Standard
	Ba	135	99526.5	0.7	48.0193	1.003	2.1	ug/L	31	Standard
	Ce	140	1210.1	40.8				ug/L	120	Standard
>	Tb	159	803321.7	2.7				ug/L	785817	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	401152.8	0.4	48.9599	1.820	3.7	ug/L	6	Standard
	Tl	205	347377.0	0.4	48.6673	1.791	3.7	ug/L	8	Standard
	Pb	206	247960.2	0.4	48.6117	1.723	3.5	ug/L	201	Standard
	Pb	207	226113.7	0.4	49.0328	1.786	3.6	ug/L	177	Standard
	Pb	208	918814.9	0.9	49.6084	2.095	4.2	ug/L	722	Standard
	U	238	341289.7	0.5	48.5107	1.791	3.7	ug/L	8	Standard
>	Bi	209	455797.4	3.3				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	3965.5	1.6	**4.4967**	0.254	5.6	mg/L	38	Standard
K	39	1118.4	8.8	**4.3111**	0.182	4.2	mg/L	33	Standard
Ca	43	58.3	48.7	**2.3697**	3.619	152.7	mg/L	48	Standard
Fe	54	6650.7	1.6	**4.7651**	0.377	7.9	mg/L	131	Standard
Fe	57	1871.8	6.0	**4.7828**	0.034	0.7	mg/L	153	Standard
Sc-1	45	29433.6	6.4				mg/L	26715	Standard
Cl	35	115258.8	1.3				ug/L	102686	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	1830.1	3.9				ug/L	1897	Standard
P	31	20310.3	0.3				ug/L	18491	Standard
S	34	5012.5	2.8				ug/L	3734	Standard
Sr	88	66.7	15.6				ug/L	47	Standard
C	12	40.0	43.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	23	Standard
Dy	164	19.2	47.1				mg/L	23	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	16.7	124.9				mg/L	13	Standard
I	127	17883.9	1.0				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	104.275		
Al	27	107.852		
Sc	45			
Ti	47	99.665		
V	51	95.952		
Cr	52	98.318		
Cr	53			
Mn	55	98.108		
Co	59	94.837		
Ni	60	99.456		
Cu	65	97.719		
Zn	66	97.532		
Ge	72		109.003	
As	75	95.519		
Se	82	93.266		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	95.067		
Ag	107	96.303		
Cd	111	97.351		
Cd	114			
> In	115			103.095
Sn	118	97.115		
Sb	123	99.781		
Ba	135	96.039		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	97.920		
Tl	205			
Pb	206			
Pb	207			
Pb	208	99.217		
U	238	97.021		
> Bi	209			102.527
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, July 05, 2016 10:50:37
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	52763.4	0.9				ug/L	59517	Standard
	Be	9	23.3	32.7	-0.0008	0.010	1314.7	ug/L	10	Standard
	Al	27	2333.5	18.2	0.0049	0.003	66.6	ug/L	1872	Standard
	Sc	45	28528.5	2.4				ug/L	26715	Standard
	Ti	47	36.7	23.8	-0.1009	0.036	35.4	ug/L	54	Standard
	V	51	1557.6	15.5	0.0243	0.029	119.3	ug/L	1419	Standard
	Cr	52	6897.2	1.6	-0.0594	0.009	15.4	ug/L	7059	Standard
	Cr	53	3362.0	2.2	3.1623	0.052	1.6	ug/L	398	Standard
	Mn	55	915.7	8.9	0.0057	0.010	183.1	ug/L	824	Standard
	Co	59	250.7	19.1	0.0098	0.006	65.3	ug/L	167	Standard
	Ni	60	310.0	6.8	-0.0432	0.013	29.5	ug/L	391	Standard
	Cu	65	150.0	9.3	-0.0036	0.006	170.0	ug/L	147	Standard
	Zn	66	266.0	3.4	0.0684	0.006	9.3	ug/L	184	Standard
>	Ge	72	447686.1	1.3				ug/L	422998	Standard
	As	75	-73.6	46.7	-0.0095	0.028	297.5	ug/L	-58	Standard
	Se	82	14.3	31.0	-0.0912	0.035	38.2	ug/L	15	Standard
	Se-1	77	251.3	11.2	2.4627	0.338	13.7	ug/L	58	Standard
>	Ga	71	81.7	9.4				mg/L	113	Standard
	Rb	85	30.0	33.3				ug/L	27	Standard
	Y	89	389776.6	0.4				ug/L	383780	Standard
>	Rh	103	15.0	33.3				ug/L	18	Standard
	Mo	98	215.1	11.9	0.0702	0.008	11.1	ug/L	31	Standard
	Ag	107	131.7	9.6	0.0071	0.002	22.0	ug/L	84	Standard
	Cd	111	19.9	27.5	0.0050	0.002	46.8	mg/L	4	Standard
	Cd	114	56.2	23.6	0.0061	0.002	38.5	ug/L	15	Standard
>	In	115	526258.8	2.4				ug/L	515400	Standard
	Sn	118	1383.4	28.2	0.0542	0.072	133.2	ug/L	1043	Standard
	Sb	123	1040.9	27.2	0.2074	0.065	31.6	ug/L	227	Standard
	Ba	135	56.7	43.3	0.0037	0.011	305.2	ug/L	31	Standard
	Ce	140	378.3	12.3				ug/L	120	Standard
>	Tb	159	796142.1	1.4				ug/L	785817	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	119.0	10.2	0.0108	0.001	13.7	ug/L	6	Standard
	Tl	205	113.3	12.7	0.0090	0.002	20.6	ug/L	8	Standard
	Pb	206	279.3	17.7	0.0088	0.009	102.9	ug/L	201	Standard
	Pb	207	222.7	25.2	0.0001	0.012	15025.6	ug/L	177	Standard
	Pb	208	993.7	11.3	0.0047	0.006	116.9	ug/L	722	Standard
	U	238	65.3	18.5	0.0067	0.002	24.2	ug/L	8	Standard
>	Bi	209	458480.9	1.1				ug/L	444563	Standard

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Na	23	1.7	173.2	**17.8060**	30.832	173.2	mg/L	0	Standard
Mg	24	28.3	10.2	**-0.0003**	0.003	905.5	mg/L	38	Standard
K	39	18.3	15.7	**-0.0541**	0.011	21.2	mg/L	33	Standard
Ca	43	31.7	9.1	**-1.2176**	0.312	25.6	mg/L	48	Standard
Fe	54	164.2	17.0	**0.0077**	0.023	303.7	mg/L	131	Standard
Fe	57	215.0	6.2	**0.1423**	0.047	33.2	mg/L	153	Standard
> **Sc-1**	45	28528.5	2.4				mg/L	26715	Standard
Cl	35	113758.1	0.6				ug/L	102686	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1780.1	3.7				ug/L	1897	Standard
P	31	19746.2	1.4				ug/L	18491	Standard
S	34	4789.1	3.4				ug/L	3734	Standard
Sr	88	75.0	23.1				ug/L	47	Standard
C	12	56.7	44.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	23	Standard
Dy	164	9.0	9.2				mg/L	23	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	20.0	86.6				mg/L	13	Standard
I	127	11247.5	2.2				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.837	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: QC Std 7
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.107
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.131
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
QC Std 7	Sb	123	

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606145103
Sample Date/Time: Tuesday, July 05, 2016 10:53:50
Number of Replicates: 3
Autosampler Position: 215
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	96135.7	0.5				ug/L	59517	Standard
	Be	9	441.7	15.3	**0.2835**	0.050	17.5	ug/L	10	Standard
	Al	27	1899414.0	2.6	**7.7171**	0.235	3.0	ug/L	1872	Standard
	Sc	45	31502.7	2.3				ug/L	26715	Standard
	Ti	47	25531.2	2.1	**98.1864**	1.662	1.7	ug/L	54	Standard
	V	51	134345.2	6.2	**16.8817**	0.847	5.0	ug/L	1419	Standard
	Cr	52	120049.7	5.6	**14.4950**	0.617	4.3	ug/L	7059	Standard
	Cr	53	180887.5	11.3	**185.8515**	17.788	9.6	ug/L	398	Standard
	Mn	55	1694571.4	1.2	**245.3954**	5.740	2.3	ug/L	824	Standard
	Co	59	21225.2	1.9	**2.8384**	0.001	0.0	ug/L	167	Standard
	Ni	60	17246.1	2.6	**8.2498**	0.065	0.8	ug/L	391	Standard
	Cu	65	22767.1	1.8	**11.0388**	0.017	0.2	ug/L	147	Standard
	Zn	66	119572.4	2.0	**99.1503**	1.607	1.6	ug/L	184	Standard
>	**Ge**	72	461460.7	1.9				ug/L	422998	Standard
	As	75	5444.8	8.1	**4.4484**	0.294	6.6	ug/L	-58	Standard
	Se	82	77.6	3.9	**0.4009**	0.019	4.7	ug/L	15	Standard
	Se-1	77	15105.3	13.8	**181.6526**	21.923	12.1	ug/L	58	Standard
>	**Ga**	71	10466.9	3.1				mg/L	113	Standard
	Rb	85	79449.5	2.0				ug/L	27	Standard
	Y	89	453913.1	1.4				ug/L	383780	Standard
>	**Rh**	103	45.0	48.4				ug/L	18	Standard
	Mo	98	4163.6	3.0	**1.5365**	0.022	1.4	ug/L	31	Standard
	Ag	107	565.7	36.6	**0.0706**	0.029	40.7	ug/L	84	Standard
	Cd	111	905.2	6.7	**0.4152**	0.022	5.2	mg/L	4	Standard
	Cd	114	2285.7	5.6	**0.4318**	0.017	4.0	ug/L	15	Standard
>	**In**	115	522134.8	1.7				ug/L	515400	Standard
	Sn	118	11225.8	3.7	**1.7327**	0.054	3.1	ug/L	1043	Standard
	Sb	123	3009.2	12.2	**0.6318**	0.069	10.9	ug/L	227	Standard
	Ba	135	100468.8	2.1	**49.3104**	0.570	1.2	ug/L	31	Standard
	Ce	140	633585.7	1.9				ug/L	120	Standard
>	**Tb**	159	901421.0	1.9				ug/L	785817	Standard
	Ho	165	4162.2	5.6				ug/L	7	Standard
	Tl	203	1260.4	18.2	**0.1368**	0.025	18.0	ug/L	6	Standard
	Tl	205	1115.0	20.8	**0.1358**	0.029	21.0	ug/L	8	Standard
	Pb	206	328394.9	1.1	**58.8063**	0.550	0.9	ug/L	201	Standard
	Pb	207	271769.4	2.1	**53.8221**	0.890	1.7	ug/L	177	Standard
	Pb	208	1036625.3	1.0	**51.1073**	0.173	0.3	ug/L	722	Standard
	U	238	4954.8	7.4	**0.6405**	0.043	6.8	ug/L	8	Standard
>	**Bi**	209	498699.5	0.7				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	125.0	10.6	**0.0998**	0.017	17.3	mg/L	38	Standard
K	39	251.7	8.0	**0.8046**	0.062	7.7	mg/L	33	Standard
Ca	43	71.7	26.4	**3.6957**	2.561	69.3	mg/L	48	Standard
Fe	54	13368.3	3.5	**9.0209**	0.197	2.2	mg/L	131	Standard
Fe	57	3707.1	6.7	**9.2583**	0.592	6.4	mg/L	153	Standard
> **Sc-1**	45	31502.7	2.3				mg/L	26715	Standard
Cl	35	112834.0	1.9				ug/L	102686	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	2756.9	3.6				ug/L	1897	Standard
P	31	21984.3	2.1				ug/L	18491	Standard
S	34	5467.7	1.7				ug/L	3734	Standard
Sr	88	96.7	3.0				ug/L	47	Standard
C	12	416.7	23.1				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	136.7	27.7				mg/L	23	Standard
Dy	164	7702.9	4.4				mg/L	23	Standard
Ho-1	165	4162.2	5.6				mg/L	7	Standard
Er	166	4157.2	5.4				mg/L	13	Standard
I	127	34517.7	6.7				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		161.527	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		109.093	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.307
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		112.178
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

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Se-1 77 Upper, S, EEE Se-1 77

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Method 6020 - Summary Report

Sample ID: L1606145104
Sample Date/Time: Tuesday, July 05, 2016 10:57:02
Number of Replicates: 3
Autosampler Position: 216
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	91292.6	2.2				ug/L	59517	Standard
	Be	9	395.0	1.3	**0.2652**	0.010	3.9	ug/L	10	Standard
	Al	27	9819055.1	1.7	**42.0648**	0.383	0.9	ug/L	1872	Standard
	Sc	45	32252.6	1.6				ug/L	26715	Standard
	Ti	47	24196.3	0.3	**91.9481**	1.097	1.2	ug/L	54	Standard
	V	51	123723.8	2.5	**15.3573**	0.518	3.4	ug/L	1419	Standard
	Cr	52	104402.9	2.1	**12.3305**	0.473	3.8	ug/L	7059	Standard
	Cr	53	109957.5	19.5	**111.8418**	23.600	21.1	ug/L	398	Standard
	Mn	55	1745235.6	1.8	**249.6939**	1.366	0.5	ug/L	824	Standard
	Co	59	28619.0	1.2	**3.7905**	0.016	0.4	ug/L	167	Standard
	Ni	60	20456.1	0.9	**9.7078**	0.231	2.4	ug/L	391	Standard
	Cu	65	24146.9	2.2	**11.5780**	0.428	3.7	ug/L	147	Standard
	Zn	66	125347.7	0.8	**102.7332**	2.027	2.0	ug/L	184	Standard
>	**Ge**	72	466950.8	1.4				ug/L	422998	Standard
	As	75	5697.4	7.9	**4.5993**	0.326	7.1	ug/L	-58	Standard
	Se	82	78.7	8.4	**0.4018**	0.048	11.8	ug/L	15	Standard
	Se-1	77	9103.1	13.7	**108.2312**	16.582	15.3	ug/L	58	Standard
>	**Ga**	71	9131.1	1.4				mg/L	113	Standard
	Rb	85	76169.3	1.3				ug/L	27	Standard
	Y	89	475112.5	1.9				ug/L	383780	Standard
>	**Rh**	103	20.0	25.0				ug/L	18	Standard
	Mo	98	5031.6	1.4	**1.8226**	0.023	1.3	ug/L	31	Standard
	Ag	107	458.7	20.3	**0.0539**	0.013	25.0	ug/L	84	Standard
	Cd	111	769.3	2.5	**0.3456**	0.014	4.0	mg/L	4	Standard
	Cd	114	1978.5	10.3	**0.3661**	0.041	11.1	ug/L	15	Standard
>	**In**	115	532524.4	1.6				ug/L	515400	Standard
	Sn	118	8263.9	7.0	**1.1996**	0.075	6.2	ug/L	1043	Standard
	Sb	123	2736.8	8.9	**0.5620**	0.046	8.1	ug/L	227	Standard
	Ba	135	96479.9	0.9	**46.4314**	0.314	0.7	ug/L	31	Standard
	Ce	140	630403.5	2.4				ug/L	120	Standard
>	**Tb**	159	908285.0	0.8				ug/L	785817	Standard
	Ho	165	5554.4	1.9				ug/L	7	Standard
	Tl	203	1548.1	7.1	**0.1672**	0.009	5.6	ug/L	6	Standard
	Tl	205	1266.7	3.2	**0.1537**	0.003	1.9	ug/L	8	Standard
	Pb	206	242583.9	0.2	**43.0094**	0.811	1.9	ug/L	201	Standard
	Pb	207	201849.3	0.6	**39.5807**	0.878	2.2	ug/L	177	Standard
	Pb	208	795835.1	0.9	**38.8431**	0.400	1.0	ug/L	722	Standard
	U	238	5579.0	1.8	**0.7146**	0.002	0.3	ug/L	8	Standard
>	**Bi**	209	503660.9	1.9				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	111.7	18.1	**0.0826**	0.022	26.5	mg/L	38	Standard
K	39	205.0	10.6	**0.6134**	0.067	10.9	mg/L	33	Standard
Ca	43	158.3	25.3	**14.7113**	4.889	33.2	mg/L	48	Standard
Fe	54	14301.5	1.7	**9.4348**	0.276	2.9	mg/L	131	Standard
Fe	57	4067.2	3.4	**9.9615**	0.502	5.0	mg/L	153	Standard
> **Sc-1**	45	32252.6	1.6				mg/L	26715	Standard
Cl	35	125056.7	0.7				ug/L	102686	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	2540.2	11.1				ug/L	1897	Standard
P	31	21291.6	1.9				ug/L	18491	Standard
S	34	5712.7	2.7				ug/L	3734	Standard
Sr	88	96.7	7.9				ug/L	47	Standard
C	12	350.0	10.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	123.3	54.0				mg/L	23	Standard
Dy	164	9524.0	2.9				mg/L	23	Standard
Ho-1	165	5554.4	1.9				mg/L	7	Standard
Er	166	5130.9	3.9				mg/L	13	Standard
I	127	29181.4	3.9				mg/L	12398	Standard

QC Calculated Values

	Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
>	Li	6		153.390	
	Be	9			
	Al	27			
	Sc	45			
	Ti	47			
	V	51			
	Cr	52			
	Cr	53			
	Mn	55			
	Co	59			
	Ni	60			
	Cu	65			
	Zn	66			
>	Ge	72		110.391	
	As	75			
	Se	82			
	Se-1	77			
>	Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.323
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		113.294
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Cr 53 Upper, S, EEE	Cr	53	
Mn 55 Upper, S, EEE	Mn	55	

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Zn 66 Upper, S, EEE	Zn	66
Se-1 77 Upper, S, EEE	Se-1	77

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Method 6020 - Summary Report

Sample ID: L1606145105
Sample Date/Time: Tuesday, July 05, 2016 11:00:13
Number of Replicates: 3
Autosampler Position: 217
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	108631.5	1.8				ug/L	59517	Standard
	Be	9	5212.6	1.8	**3.2539**	0.069	2.1	ug/L	10	Standard
	Al	27	3122829.6	1.3	**11.2336**	0.101	0.9	ug/L	1872	Standard
	Sc	45	39190.6	1.9				ug/L	26715	Standard
	Ti	47	137469.5	1.0	**500.3092**	6.619	1.3	ug/L	54	Standard
	V	51	366725.2	5.0	**43.8169**	2.017	4.6	ug/L	1419	Standard
	Cr	52	689707.4	1.9	**83.0086**	1.642	2.0	ug/L	7059	Standard
	Cr	53	253610.4	10.0	**246.6117**	25.946	10.5	ug/L	398	Standard
	Mn	55	865524.6	0.8	**118.2866**	1.664	1.4	ug/L	824	Standard
	Co	59	64362.7	0.2	**8.1759**	0.061	0.7	ug/L	167	Standard
	Ni	60	60072.2	0.5	**27.6005**	0.122	0.4	ug/L	391	Standard
	Cu	65	69465.5	0.6	**31.9592**	0.188	0.6	ug/L	147	Standard
	Zn	66	222603.4	0.9	**174.4424**	1.635	0.9	ug/L	184	Standard
>	**Ge**	72	488604.3	0.9				ug/L	422998	Standard
	As	75	19640.7	4.5	**15.0437**	0.806	5.4	ug/L	-58	Standard
	Se	82	157.4	9.5	**0.9557**	0.102	10.6	ug/L	15	Standard
	Se-1	77	19281.7	11.6	**219.5886**	27.202	12.4	ug/L	58	Standard
>	**Ga**	71	30325.3	1.1				mg/L	113	Standard
	Rb	85	276639.3	0.4				ug/L	27	Standard
	Y	89	687710.0	0.9				ug/L	383780	Standard
>	**Rh**	103	48.3	11.9				ug/L	18	Standard
	Mo	98	11816.3	1.1	**4.2765**	0.072	1.7	ug/L	31	Standard
	Ag	107	1411.4	4.5	**0.1899**	0.008	4.0	ug/L	84	Standard
	Cd	111	1971.0	1.8	**0.8883**	0.019	2.1	mg/L	4	Standard
	Cd	114	4664.8	1.8	**0.8659**	0.021	2.5	ug/L	15	Standard
>	**In**	115	534504.1	1.2				ug/L	515400	Standard
	Sn	118	9728.1	2.5	**1.4395**	0.057	3.9	ug/L	1043	Standard
	Sb	123	5858.1	3.7	**1.2180**	0.055	4.5	ug/L	227	Standard
	Ba	135	343595.4	0.9	**164.8188**	3.343	2.0	ug/L	31	Standard
	Ce	140	904246.5	1.5				ug/L	120	Standard
>	**Tb**	159	929077.6	1.4				ug/L	785817	Standard
	Ho	165	20382.0	1.9				ug/L	7	Standard
	Tl	203	8751.5	1.5	**0.9686**	0.028	2.9	ug/L	6	Standard
	Tl	205	7040.0	1.3	**0.8909**	0.012	1.3	ug/L	8	Standard
	Pb	206	269096.1	1.0	**48.0135**	0.893	1.9	ug/L	201	Standard
	Pb	207	224906.7	1.1	**44.3862**	1.110	2.5	ug/L	177	Standard
	Pb	208	846557.7	1.0	**41.5955**	1.382	3.3	ug/L	722	Standard
	U	238	16518.0	1.0	**2.1348**	0.065	3.0	ug/L	8	Standard
>	**Bi**	209	500556.2	2.5				ug/L	444563	Standard

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Na	23	1.7	173.2	**13.2844**	23.001	173.1	mg/L	0	Standard
Mg	24	855.0	4.6	**0.6981**	0.024	3.5	mg/L	38	Standard
K	39	1165.0	4.5	**3.3481**	0.167	5.0	mg/L	33	Standard
Ca	43	118.3	2.4	**6.8217**	0.520	7.6	mg/L	48	Standard
Fe	54	77319.8	1.6	**42.3823**	1.246	2.9	mg/L	131	Standard
Fe	57	19831.3	1.4	**41.4206**	1.327	3.2	mg/L	153	Standard
Sc-1	45	39190.6	1.9				mg/L	26715	Standard
Cl	35	125192.6	2.4				ug/L	102686	Standard
Kr	83	2.3	89.2				ug/L	2	Standard
Br	81	3120.3	1.7				ug/L	1897	Standard
P	31	27561.7	1.5				ug/L	18491	Standard
S	34	6189.6	2.3				ug/L	3734	Standard
Sr	88	120.0	20.8				ug/L	47	Standard
C	12	446.7	27.6				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	183.3	22.0				mg/L	23	Standard
Dy	164	32276.2	0.2				mg/L	23	Standard
Ho-1	165	20382.0	1.9				mg/L	7	Standard
Er	166	19766.2	2.6				mg/L	13	Standard
I	127	39155.6	4.6				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		182.523	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		115.510	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.707
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		112.595
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
Cr 53 Upper, S, EEE	Cr	53	

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Mn 55 Upper, S, EEE	Mn	55
Zn 66 Upper, S, EEE	Zn	66
Se-1 77 Upper, S, EEE	Se-1	77
Ba 135 Upper, S, EEE	Ba	135

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Method 6020 - Summary Report

Sample ID: L1606145107
Sample Date/Time: Tuesday, July 05, 2016 11:03:24
Number of Replicates: 3
Autosampler Position: 218
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	109709.1	1.5				ug/L	59517	Standard
	Be	9	3635.4	4.4	**2.2384**	0.131	5.8	ug/L	10	Standard
	Al	27	7905627.2	2.0	**28.1821**	0.827	2.9	ug/L	1872	Standard
	Sc	45	37616.6	1.4				ug/L	26715	Standard
	Ti	47	69388.6	1.8	**240.1521**	3.763	1.6	ug/L	54	Standard
	V	51	342535.6	1.2	**38.9308**	0.728	1.9	ug/L	1419	Standard
	Cr	52	390616.2	0.7	**44.2829**	0.338	0.8	ug/L	7059	Standard
	Cr	53	194072.8	8.7	**179.4677**	16.874	9.4	ug/L	398	Standard
	Mn	55	1910553.9	1.2	**248.5998**	4.612	1.9	ug/L	824	Standard
	Co	59	51087.0	1.5	**6.1690**	0.115	1.9	ug/L	167	Standard
	Ni	60	52765.4	1.2	**23.0352**	0.256	1.1	ug/L	391	Standard
	Cu	65	52726.9	0.4	**23.0606**	0.120	0.5	ug/L	147	Standard
	Zn	66	190722.6	1.0	**142.1825**	0.962	0.7	ug/L	184	Standard
>	Ge	72	513489.2	0.8				ug/L	422998	Standard
	As	75	71231.2	0.5	**51.7747**	0.529	1.0	ug/L	-58	Standard
	Se	82	249.5	6.5	**1.5478**	0.127	8.2	ug/L	15	Standard
	Se-1	77	16454.6	7.9	**178.1501**	15.353	8.6	ug/L	58	Standard
>	Ga	71	24666.7	1.8				mg/L	113	Standard
	Rb	85	164243.8	1.0				ug/L	27	Standard
	Y	89	634729.6	2.2				ug/L	383780	Standard
>	Rh	103	63.3	18.2				ug/L	18	Standard
	Mo	98	18846.0	0.8	**6.4893**	0.189	2.9	ug/L	31	Standard
	Ag	107	937.0	2.7	**0.1155**	0.004	3.8	ug/L	84	Standard
	Cd	111	4443.5	1.2	**1.9084**	0.039	2.0	mg/L	4	Standard
	Cd	114	10909.6	4.9	**1.9304**	0.098	5.1	ug/L	15	Standard
>	In	115	562417.7	2.6				ug/L	515400	Standard
	Sn	118	8864.3	5.2	**1.2219**	0.059	4.9	ug/L	1043	Standard
	Sb	123	9482.0	2.9	**1.8820**	0.030	1.6	ug/L	227	Standard
	Ba	135	193348.9	0.6	**88.1570**	2.232	2.5	ug/L	31	Standard
	Ce	140	806506.2	0.9				ug/L	120	Standard
>	Tb	159	968120.2	0.9				ug/L	785817	Standard
	Ho	165	15471.2	1.3				ug/L	7	Standard
	Tl	203	20732.5	0.4	**2.2137**	0.018	0.8	ug/L	6	Standard
	Tl	205	17249.8	1.3	**2.1112**	0.041	1.9	ug/L	8	Standard
	Pb	206	299572.9	0.3	**51.4663**	0.481	0.9	ug/L	201	Standard
	Pb	207	250580.1	0.2	**47.6121**	0.366	0.8	ug/L	177	Standard
	Pb	208	967157.6	0.8	**45.7453**	0.329	0.7	ug/L	722	Standard
	U	238	14798.9	1.7	**1.8407**	0.030	1.6	ug/L	8	Standard
>	Bi	209	519770.6	0.7				ug/L	444563	Standard

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Na	23	1.7	173.2	**13.9090**	24.082	173.1	mg/L	0	Standard
Mg	24	353.3	20.5	**0.2817**	0.067	23.7	mg/L	38	Standard
K	39	568.3	15.8	**1.6404**	0.302	18.4	mg/L	33	Standard
Ca	43	153.3	18.5	**11.2881**	3.405	30.2	mg/L	48	Standard
Fe	54	42628.9	0.4	**24.2898**	0.303	1.2	mg/L	131	Standard
Fe	57	10755.5	0.6	**23.1886**	0.357	1.5	mg/L	153	Standard
Sc-1	45	37616.6	1.4				mg/L	26715	Standard
Cl	35	132874.8	0.7				ug/L	102686	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	2566.9	8.8				ug/L	1897	Standard
P	31	28668.8	3.4				ug/L	18491	Standard
S	34	6544.7	2.9				ug/L	3734	Standard
Sr	88	140.0	9.4				ug/L	47	Standard
C	12	416.7	10.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	306.7	21.0				mg/L	23	Standard
Dy	164	23970.0	2.2				mg/L	23	Standard
Ho-1	165	15471.2	1.3				mg/L	7	Standard
Er	166	14964.1	1.6				mg/L	13	Standard
I	127	23219.5	5.4				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		184.333	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		121.393	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.123
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		116.917
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
Cr 53 Upper, S, EEE	Cr	53	

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Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ge 72 Int Std for sample	Ge	72	Rerun sample
Se-1 77 Upper, S, EEE	Se-1	77	

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Method 6020 - Summary Report

Sample ID: L1606145108
Sample Date/Time: Tuesday, July 05, 2016 11:06:36
Number of Replicates: 3
Autosampler Position: 219
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	115300.4	0.2				ug/L	59517	Standard
	Be	9	6846.5	2.1	**4.0334**	0.075	1.9	ug/L	10	Standard
	Al	27	8044256.6	3.1	**27.2779**	0.787	2.9	ug/L	1872	Standard
	Sc	45	43786.5	0.7				ug/L	26715	Standard
	Ti	47	177713.0	1.7	**608.3997**	18.233	3.0	ug/L	54	Standard
	V	51	562128.8	0.9	**63.2529**	0.893	1.4	ug/L	1419	Standard
	Cr	52	668635.3	1.5	**75.5984**	1.722	2.3	ug/L	7059	Standard
	Cr	53	233924.5	2.8	**213.7912**	6.209	2.9	ug/L	398	Standard
	Mn	55	1784049.0	0.8	**229.4141**	3.151	1.4	ug/L	824	Standard
	Co	59	94382.8	1.3	**11.2859**	0.270	2.4	ug/L	167	Standard
	Ni	60	90035.4	0.6	**38.9880**	0.661	1.7	ug/L	391	Standard
	Cu	65	75578.4	1.1	**32.7069**	0.789	2.4	ug/L	147	Standard
	Zn	66	263196.7	0.4	**193.9978**	2.967	1.5	ug/L	184	Standard
>	Ge	72	519575.6	1.4				ug/L	422998	Standard
	As	75	71823.8	0.7	**51.6006**	0.994	1.9	ug/L	-58	Standard
	Se	82	246.5	4.2	**1.5052**	0.047	3.1	ug/L	15	Standard
	Se-1	77	19182.2	5.3	**205.2715**	10.844	5.3	ug/L	58	Standard
>	Ga	71	40878.4	0.4				mg/L	113	Standard
	Rb	85	376160.7	0.9				ug/L	27	Standard
	Y	89	769310.7	0.4				ug/L	383780	Standard
>	Rh	103	66.7	15.6				ug/L	18	Standard
	Mo	98	18968.5	1.1	**6.5743**	0.126	1.9	ug/L	31	Standard
	Ag	107	1476.7	1.7	**0.1902**	0.005	2.7	ug/L	84	Standard
	Cd	111	4714.0	0.8	**2.0384**	0.033	1.6	mg/L	4	Standard
	Cd	114	11218.9	3.2	**1.9988**	0.074	3.7	ug/L	15	Standard
>	In	115	558549.2	0.9				ug/L	515400	Standard
	Sn	118	11075.7	4.1	**1.5838**	0.058	3.7	ug/L	1043	Standard
	Sb	123	9782.9	0.8	**1.9557**	0.004	0.2	ug/L	227	Standard
	Ba	135	356713.7	1.4	**163.7164**	1.201	0.7	ug/L	31	Standard
	Ce	140	1269887.9	0.3				ug/L	120	Standard
>	Tb	159	974069.9	0.7				ug/L	785817	Standard
	Ho	165	26974.0	1.7				ug/L	7	Standard
	Tl	203	25905.1	1.0	**2.7627**	0.008	0.3	ug/L	6	Standard
	Tl	205	21091.3	2.3	**2.5788**	0.054	2.1	ug/L	8	Standard
	Pb	206	399454.5	0.5	**68.5395**	0.825	1.2	ug/L	201	Standard
	Pb	207	334755.6	0.1	**63.5277**	0.561	0.9	ug/L	177	Standard
	Pb	208	1275635.6	0.2	**60.2624**	0.374	0.6	ug/L	722	Standard
	U	238	26668.1	0.9	**3.3141**	0.030	0.9	ug/L	8	Standard
>	Bi	209	520549.4	0.8				ug/L	444563	Standard

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Na	23	1.7	173.2	**11.9257**	20.647	173.1	mg/L	0	Standard
Mg	24	778.4	9.2	**0.5628**	0.056	10.0	mg/L	38	Standard
K	39	1511.7	6.0	**3.9097**	0.271	6.9	mg/L	33	Standard
Ca	43	190.0	22.9	**12.3692**	4.209	34.0	mg/L	48	Standard
Fe	54	91363.6	2.2	**44.8185**	1.085	2.4	mg/L	131	Standard
Fe	57	24494.8	2.4	**45.8301**	1.415	3.1	mg/L	153	Standard
Sc-1	45	43786.5	0.7				mg/L	26715	Standard
Cl	35	129997.3	0.9				ug/L	102686	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2873.6	6.2				ug/L	1897	Standard
P	31	27894.0	1.7				ug/L	18491	Standard
S	34	6764.8	2.2				ug/L	3734	Standard
Sr	88	176.7	8.6				ug/L	47	Standard
C	12	480.0	3.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	253.3	11.4				mg/L	23	Standard
Dy	164	41874.4	2.0				mg/L	23	Standard
Ho-1	165	26974.0	1.7				mg/L	7	Standard
Er	166	26029.0	1.2				mg/L	13	Standard
I	127	24075.8	5.6				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		193.728	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		122.832	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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	Rb	85	
	Y	89	
>	Rh	103	
	Mo	98	
	Ag	107	
	Cd	111	
	Cd	114	
>	In	115	108.372
	Sn	118	
	Sb	123	
	Ba	135	
	Ce	140	
>	Tb	159	
	Ho	165	
	Tl	203	
	Tl	205	
	Pb	206	
	Pb	207	
	Pb	208	
	U	238	
>	Bi	209	117.092
	Na	23	
	Mg	24	
	K	39	
	Ca	43	
	Fe	54	
	Fe	57	
>	Sc-1	45	
	Cl	35	
	Kr	83	
	Br	81	
	P	31	
	S	34	
	Sr	88	
	C	12	
	N	14	
	Hg	202	
	Dy	164	
	Ho-1	165	
	Er	166	
	I	127	

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Ti 47 Upper, S, EEE	Ti	47	
Cr 53 Upper, S, EEE	Cr	53	

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Mn 55 Upper, S, EEE	Mn	55	
Zn 66 Upper, S, EEE	Zn	66	
Ge 72 Int Std for sample	Ge	72	Rerun sample
Se-1 77 Upper, S, EEE	Se-1	77	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144503
Sample Date/Time: Tuesday, July 05, 2016 11:09:48
Number of Replicates: 3
Autosampler Position: 220
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	58967.9	1.9				ug/L	59517	Standard
	Be	9	735.0	5.3	**0.8229**	0.062	7.6	ug/L	10	Standard
	Al	27	8232717.6	1.5	**54.6151**	1.353	2.5	ug/L	1872	Standard
	Sc	45	35428.0	1.7				ug/L	26715	Standard
	Ti	47	5309.9	4.9	**19.4712**	0.822	4.2	ug/L	54	Standard
	V	51	177759.2	1.9	**21.5762**	0.278	1.3	ug/L	1419	Standard
	Cr	52	136308.2	1.7	**15.9537**	0.088	0.6	ug/L	7059	Standard
	Cr	53	31922.0	7.2	**31.2822**	2.011	6.4	ug/L	398	Standard
	Mn	55	3732711.4	1.4	**520.8023**	7.726	1.5	ug/L	824	Standard
	Co	59	63826.5	0.6	**8.2713**	0.128	1.5	ug/L	167	Standard
	Ni	60	35407.0	2.7	**16.5140**	0.389	2.4	ug/L	391	Standard
	Cu	65	27552.0	1.2	**12.8834**	0.152	1.2	ug/L	147	Standard
	Zn	66	68317.0	1.3	**54.5023**	0.739	1.4	ug/L	184	Standard
>	Ge	72	478996.0	1.2				ug/L	422998	Standard
	As	75	5507.3	2.6	**4.3379**	0.061	1.4	ug/L	-58	Standard
	Se	82	121.2	14.5	**0.7065**	0.126	17.8	ug/L	15	Standard
	Se-1	77	1211.4	12.1	**13.4294**	1.589	11.8	ug/L	58	Standard
>	Ga	71	17138.0	3.8				mg/L	113	Standard
	Rb	85	215157.6	2.6				ug/L	27	Standard
	Y	89	624025.0	0.8				ug/L	383780	Standard
>	Rh	103	36.7	7.9				ug/L	18	Standard
	Mo	98	1681.9	2.9	**0.5857**	0.019	3.2	ug/L	31	Standard
	Ag	107	636.7	2.8	**0.0768**	0.003	3.9	ug/L	84	Standard
	Cd	111	2696.7	0.8	**1.1861**	0.014	1.2	mg/L	4	Standard
	Cd	114	6661.2	1.4	**1.2069**	0.011	0.9	ug/L	15	Standard
>	In	115	548315.1	0.7				ug/L	515400	Standard
	Sn	118	1376.7	21.9	**0.0427**	0.050	117.8	ug/L	1043	Standard
	Sb	123	763.4	20.5	**0.1405**	0.033	23.4	ug/L	227	Standard
	Ba	135	486005.6	0.2	**227.2373**	1.036	0.5	ug/L	31	Standard
	Ce	140	1188503.1	0.8				ug/L	120	Standard
>	Tb	159	857273.9	0.6				ug/L	785817	Standard
	Ho	165	16704.2	0.6				ug/L	7	Standard
	Tl	203	934.4	4.2	**0.1071**	0.005	4.5	ug/L	6	Standard
	Tl	205	773.4	8.3	**0.0984**	0.009	8.7	ug/L	8	Standard
	Pb	206	181321.2	0.4	**34.4939**	0.134	0.4	ug/L	201	Standard
	Pb	207	149581.4	0.5	**31.4697**	0.185	0.6	ug/L	177	Standard
	Pb	208	642010.8	0.6	**33.6279**	0.141	0.4	ug/L	722	Standard
	U	238	4887.1	1.4	**0.6719**	0.010	1.4	ug/L	8	Standard
>	Bi	209	469171.3	0.1				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	676.7	5.7	**0.6075**	0.045	7.3	mg/L	38	Standard
K	39	433.3	12.0	**1.3035**	0.195	15.0	mg/L	33	Standard
Ca	43	71.7	28.2	**2.6014**	2.240	86.1	mg/L	48	Standard
Fe	54	18412.4	3.1	**11.0733**	0.150	1.4	mg/L	131	Standard
Fe	57	4905.8	1.8	**10.9803**	0.097	0.9	mg/L	153	Standard
> **Sc-1**	45	35428.0	1.7				mg/L	26715	Standard
Cl	35	115274.9	1.1				ug/L	102686	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	11237.5	4.2				ug/L	1897	Standard
P	31	20882.7	1.3				ug/L	18491	Standard
S	34	4217.3	1.1				ug/L	3734	Standard
Sr	88	130.0	43.3				ug/L	47	Standard
C	12	230.0	19.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	103.3	20.1				mg/L	23	Standard
Dy	164	28748.7	1.3				mg/L	23	Standard
Ho-1	165	16704.2	0.6				mg/L	7	Standard
Er	166	15588.0	1.5				mg/L	13	Standard
I	127	43800.0	5.4				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.078	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		113.238	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.386
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.535
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144507
Sample Date/Time: Tuesday, July 05, 2016 11:12:59
Number of Replicates: 3
Autosampler Position: 221
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	61389.1	1.3				ug/L	59517	Standard
	Be	9	801.7	3.5	**0.8629**	0.035	4.1	ug/L	10	Standard
	Al	27	16239193.8	1.3	**103.4670**	0.803	0.8	ug/L	1872	Standard
	Sc	45	33152.9	3.9				ug/L	26715	Standard
	Ti	47	3309.7	4.9	**12.7358**	0.436	3.4	ug/L	54	Standard
	V	51	154376.9	1.5	**19.7873**	0.570	2.9	ug/L	1419	Standard
	Cr	52	182451.6	0.6	**22.9734**	0.662	2.9	ug/L	7059	Standard
	Cr	53	30803.0	5.1	**31.9028**	1.278	4.0	ug/L	398	Standard
	Mn	55	3250036.0	0.9	**479.1339**	10.524	2.2	ug/L	824	Standard
	Co	59	64709.9	0.9	**8.8615**	0.150	1.7	ug/L	167	Standard
	Ni	60	45396.2	0.8	**22.4433**	0.365	1.6	ug/L	391	Standard
	Cu	65	45400.6	1.0	**22.4890**	0.351	1.6	ug/L	147	Standard
	Zn	66	103172.4	0.9	**87.0675**	1.942	2.2	ug/L	184	Standard
>	Ge	72	453421.2	2.2				ug/L	422998	Standard
	As	75	13039.3	1.1	**10.7771**	0.263	2.4	ug/L	-58	Standard
	Se	82	76.6	11.2	**0.4031**	0.068	16.8	ug/L	15	Standard
	Se-1	77	615.7	11.8	**6.9006**	0.798	11.6	ug/L	58	Standard
>	Ga	71	18160.9	1.8				mg/L	113	Standard
	Rb	85	189390.0	2.2				ug/L	27	Standard
	Y	89	636710.9	1.2				ug/L	383780	Standard
>	Rh	103	33.3	37.7				ug/L	18	Standard
	Mo	98	518.6	4.6	**0.1814**	0.008	4.7	ug/L	31	Standard
	Ag	107	598.0	13.5	**0.0746**	0.012	15.4	ug/L	84	Standard
	Cd	111	1869.2	2.7	**0.8523**	0.022	2.6	mg/L	4	Standard
	Cd	114	4708.0	1.7	**0.8844**	0.008	0.9	ug/L	15	Standard
>	In	115	528155.1	0.8				ug/L	515400	Standard
	Sn	118	1220.1	19.5	**0.0245**	0.039	159.2	ug/L	1043	Standard
	Sb	123	1538.9	3.7	**0.3117**	0.012	3.7	ug/L	227	Standard
	Ba	135	375687.6	0.3	**182.3635**	1.875	1.0	ug/L	31	Standard
	Ce	140	1225726.9	0.7				ug/L	120	Standard
>	Tb	159	833959.3	0.9				ug/L	785817	Standard
	Ho	165	19961.5	2.9				ug/L	7	Standard
	Tl	203	1398.7	7.3	**0.1660**	0.011	6.5	ug/L	6	Standard
	Tl	205	1258.4	2.0	**0.1685**	0.005	3.1	ug/L	8	Standard
	Pb	206	525459.7	0.9	**102.4626**	1.464	1.4	ug/L	201	Standard
	Pb	207	445735.9	0.6	**96.1318**	0.540	0.6	ug/L	177	Standard
	Pb	208	1863328.7	0.5	**100.0487**	1.095	1.1	ug/L	722	Standard
	U	238	3947.2	5.3	**0.5551**	0.024	4.4	ug/L	8	Standard
>	Bi	209	458154.8	1.0				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	113.3	12.7	**0.0814**	0.018	22.3	mg/L	38	Standard
K	39	460.0	10.0	**1.4976**	0.203	13.6	mg/L	33	Standard
Ca	43	71.7	29.0	**3.1501**	2.246	71.3	mg/L	48	Standard
Fe	54	16348.2	2.7	**10.5068**	0.225	2.1	mg/L	131	Standard
Fe	57	4519.0	5.9	**10.7959**	0.248	2.3	mg/L	153	Standard
Sc-1	45	33152.9	3.9				mg/L	26715	Standard
Cl	35	115120.4	1.5				ug/L	102686	Standard
Kr	83	3.3	45.8				ug/L	2	Standard
Br	81	3303.7	5.2				ug/L	1897	Standard
P	31	19818.0	2.4				ug/L	18491	Standard
S	34	4165.6	2.5				ug/L	3734	Standard
Sr	88	96.7	35.2				ug/L	47	Standard
C	12	176.7	16.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	163.3	19.7				mg/L	23	Standard
Dy	164	34130.8	0.6				mg/L	23	Standard
Ho-1	165	19961.5	2.9				mg/L	7	Standard
Er	166	17316.6	3.2				mg/L	13	Standard
I	127	24820.3	3.3				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		103.146	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.192	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.475
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.057
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Pb 206 Upper, S, EEE	Pb	206
Pb 208 Upper, S, EEE	Pb	208

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Method 6020 - Summary Report

Sample ID: L1606144508
Sample Date/Time: Tuesday, July 05, 2016 11:16:11
Number of Replicates: 3
Autosampler Position: 222
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	64903.7	0.9				ug/L	59517	Standard
	Be	9	825.0	11.8	**0.8387**	0.099	11.8	ug/L	10	Standard
	Al	27	23443690.4	1.1	**141.2975**	2.619	1.9	ug/L	1872	Standard
	Sc	45	34385.7	2.0				ug/L	26715	Standard
	Ti	47	4006.5	1.7	**14.9742**	0.331	2.2	ug/L	54	Standard
	V	51	161428.6	1.6	**20.0296**	0.394	2.0	ug/L	1419	Standard
	Cr	52	127935.9	0.6	**15.2771**	0.113	0.7	ug/L	7059	Standard
	Cr	53	19500.9	1.4	**19.4010**	0.396	2.0	ug/L	398	Standard
	Mn	55	3729725.9	0.2	**532.2377**	3.503	0.7	ug/L	824	Standard
	Co	59	67689.2	0.4	**8.9734**	0.082	0.9	ug/L	167	Standard
	Ni	60	45008.4	0.7	**21.5312**	0.145	0.7	ug/L	391	Standard
	Cu	65	24847.7	1.2	**11.8778**	0.197	1.7	ug/L	147	Standard
	Zn	66	45863.0	0.8	**37.3734**	0.528	1.4	ug/L	184	Standard
>	**Ge**	72	468315.2	0.6				ug/L	422998	Standard
	As	75	4552.8	1.0	**3.6764**	0.042	1.1	ug/L	-58	Standard
	Se	82	52.7	20.8	**0.1995**	0.082	41.3	ug/L	15	Standard
	Se-1	77	367.7	2.8	**3.7114**	0.142	3.8	ug/L	58	Standard
>	**Ga**	71	18396.2	3.7				mg/L	113	Standard
	Rb	85	184872.8	1.2				ug/L	27	Standard
	Y	89	657495.0	1.5				ug/L	383780	Standard
>	**Rh**	103	23.3	107.9				ug/L	18	Standard
	Mo	98	421.2	2.4	**0.1440**	0.004	2.8	ug/L	31	Standard
	Ag	107	473.7	4.3	**0.0559**	0.004	7.1	ug/L	84	Standard
	Cd	111	178.9	4.3	**0.0769**	0.004	5.1	mg/L	4	Standard
	Cd	114	422.3	1.9	**0.0743**	0.003	3.6	ug/L	15	Standard
>	**In**	115	534021.2	1.6				ug/L	515400	Standard
	Sn	118	1095.0	20.4	**0.0013**	0.035	2649.2	ug/L	1043	Standard
	Sb	123	466.4	31.4	**0.0817**	0.030	36.1	ug/L	227	Standard
	Ba	135	398222.1	0.7	**191.1971**	2.894	1.5	ug/L	31	Standard
	Ce	140	1354005.7	1.4				ug/L	120	Standard
>	**Tb**	159	854017.5	2.4				ug/L	785817	Standard
	Ho	165	21572.0	2.2				ug/L	7	Standard
	Tl	203	941.4	4.7	**0.1100**	0.008	7.0	ug/L	6	Standard
	Tl	205	776.7	3.5	**0.1008**	0.006	5.9	ug/L	8	Standard
	Pb	206	58153.4	1.0	**11.2275**	0.288	2.6	ug/L	201	Standard
	Pb	207	47609.7	0.2	**10.1602**	0.203	2.0	ug/L	177	Standard
	Pb	208	201890.5	1.1	**10.7270**	0.171	1.6	ug/L	722	Standard
	U	238	3940.5	1.1	**0.5508**	0.015	2.6	ug/L	8	Standard
>	**Bi**	209	461184.9	2.1				ug/L	444563	Standard

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Na	23	1.7	173.2	**15.5379**	26.904	173.1	mg/L	0	Standard
Mg	24	121.7	4.7	**0.0850**	0.003	3.8	mg/L	38	Standard
K	39	315.0	16.5	**0.9413**	0.167	17.7	mg/L	33	Standard
Ca	43	193.3	4.0	**17.7553**	0.524	3.0	mg/L	48	Standard
Fe	54	18303.5	2.1	**11.3469**	0.178	1.6	mg/L	131	Standard
Fe	57	4834.1	0.4	**11.1587**	0.275	2.5	mg/L	153	Standard
Sc-1	45	34385.7	2.0				mg/L	26715	Standard
Cl	35	119520.9	0.7				ug/L	102686	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	2616.9	5.8				ug/L	1897	Standard
P	31	20876.0	2.0				ug/L	18491	Standard
S	34	4800.8	3.6				ug/L	3734	Standard
Sr	88	108.3	17.5				ug/L	47	Standard
C	12	63.3	36.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	30.0	57.7				mg/L	23	Standard
Dy	164	36615.9	1.3				mg/L	23	Standard
Ho-1	165	21572.0	2.2				mg/L	7	Standard
Er	166	18658.1	0.8				mg/L	13	Standard
I	127	15055.8	3.2				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.051	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.713	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.613
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		103.739
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144509
Sample Date/Time: Tuesday, July 05, 2016 11:19:22
Number of Replicates: 3
Autosampler Position: 223
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	65787.5	0.7				ug/L	59517	Standard
	Be	9	766.7	15.6	**0.7672**	0.129	16.8	ug/L	10	Standard
	Al	27	21794353.3	0.8	**129.5855**	1.775	1.4	ug/L	1872	Standard
	Sc	45	34634.5	1.6				ug/L	26715	Standard
	Ti	47	3670.1	1.4	**13.7771**	0.357	2.6	ug/L	54	Standard
	V	51	118166.5	2.8	**14.6961**	0.323	2.2	ug/L	1419	Standard
	Cr	52	108824.5	1.7	**12.9319**	0.457	3.5	ug/L	7059	Standard
	Cr	53	15558.0	2.2	**15.4900**	0.610	3.9	ug/L	398	Standard
	Mn	55	2951295.7	0.2	**423.5613**	6.271	1.5	ug/L	824	Standard
	Co	59	53986.3	0.5	**7.1934**	0.139	1.9	ug/L	167	Standard
	Ni	60	38514.6	0.8	**18.5039**	0.332	1.8	ug/L	391	Standard
	Cu	65	19658.7	0.7	**9.4358**	0.198	2.1	ug/L	147	Standard
	Zn	66	37941.1	1.0	**31.0660**	0.222	0.7	ug/L	184	Standard
>	Ge	72	465689.2	1.7				ug/L	422998	Standard
	As	75	2790.3	2.8	**2.2853**	0.026	1.1	ug/L	-58	Standard
	Se	82	47.9	14.3	**0.1646**	0.047	28.5	ug/L	15	Standard
	Se-1	77	281.7	4.7	**2.7044**	0.105	3.9	ug/L	58	Standard
>	Ga	71	15155.9	4.1				mg/L	113	Standard
	Rb	85	146035.6	2.2				ug/L	27	Standard
	Y	89	640430.1	0.5				ug/L	383780	Standard
>	Rh	103	13.3	114.6				ug/L	18	Standard
	Mo	98	435.9	5.3	**0.1454**	0.008	5.4	ug/L	31	Standard
	Ag	107	423.3	4.0	**0.0472**	0.003	6.1	ug/L	84	Standard
	Cd	111	141.5	5.8	**0.0584**	0.003	5.5	mg/L	4	Standard
	Cd	114	357.3	12.2	**0.0605**	0.008	12.7	ug/L	15	Standard
>	In	115	547325.2	0.9				ug/L	515400	Standard
	Sn	118	1031.7	23.6	**-0.0131**	0.040	306.0	ug/L	1043	Standard
	Sb	123	468.3	21.2	**0.0800**	0.020	25.5	ug/L	227	Standard
	Ba	135	313028.8	1.1	**146.6280**	2.686	1.8	ug/L	31	Standard
	Ce	140	1077990.0	0.6				ug/L	120	Standard
>	Tb	159	866335.0	0.7				ug/L	785817	Standard
	Ho	165	18498.0	3.4				ug/L	7	Standard
	Tl	203	739.0	2.9	**0.0840**	0.002	2.3	ug/L	6	Standard
	Tl	205	630.0	4.4	**0.0789**	0.003	4.2	ug/L	8	Standard
	Pb	206	48931.2	1.6	**9.2769**	0.123	1.3	ug/L	201	Standard
	Pb	207	40058.9	0.6	**8.3945**	0.072	0.9	ug/L	177	Standard
	Pb	208	170404.7	0.4	**8.8920**	0.075	0.8	ug/L	722	Standard
	U	238	3169.3	0.8	**0.4349**	0.007	1.5	ug/L	8	Standard
>	Bi	209	469087.4	0.9				ug/L	444563	Standard

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Na	23	1.7	173.2	**14.8872**	25.777	173.1	mg/L	0	Standard
Mg	24	100.0	8.7	**0.0633**	0.010	15.8	mg/L	38	Standard
K	39	288.3	8.9	**0.8451**	0.097	11.5	mg/L	33	Standard
Ca	43	228.3	7.0	**21.8553**	2.204	10.1	mg/L	48	Standard
Fe	54	12940.1	2.9	**7.9291**	0.195	2.5	mg/L	131	Standard
Fe	57	3518.7	6.8	**7.9289**	0.582	7.3	mg/L	153	Standard
> **Sc-1**	45	34634.5	1.6				mg/L	26715	Standard
Cl	35	121307.7	0.9				ug/L	102686	Standard
Kr	83	2.3	107.9				ug/L	2	Standard
Br	81	2903.6	6.8				ug/L	1897	Standard
P	31	22823.9	6.4				ug/L	18491	Standard
S	34	4914.1	1.7				ug/L	3734	Standard
Sr	88	120.0	4.2				ug/L	47	Standard
C	12	103.3	20.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	53.3	10.8				mg/L	23	Standard
Dy	164	30605.6	2.0				mg/L	23	Standard
Ho-1	165	18498.0	3.4				mg/L	7	Standard
Er	166	16288.8	5.4				mg/L	13	Standard
I	127	15886.7	2.1				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		110.536	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		110.093	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.194
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.517
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Al 27 Upper, S, EEE	Al	27	
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144510
Sample Date/Time: Tuesday, July 05, 2016 11:22:34
Number of Replicates: 3
Autosampler Position: 224
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	67285.8	1.4				ug/L	59517	Standard
	Be	9	843.4	7.9	**0.8264**	0.056	6.8	ug/L	10	Standard
	Al	27	10707433.3	0.6	**62.2417**	0.536	0.9	ug/L	1872	Standard
	Sc	45	34009.8	1.5				ug/L	26715	Standard
	Ti	47	1897.1	4.0	**6.8476**	0.267	3.9	ug/L	54	Standard
	V	51	117452.5	1.9	**14.2941**	0.209	1.5	ug/L	1419	Standard
	Cr	52	118454.6	1.4	**13.8375**	0.081	0.6	ug/L	7059	Standard
	Cr	53	17269.8	2.1	**16.8637**	0.557	3.3	ug/L	398	Standard
	Mn	55	2195267.9	0.8	**308.3614**	5.595	1.8	ug/L	824	Standard
	Co	59	52932.6	0.2	**6.9030**	0.145	2.1	ug/L	167	Standard
	Ni	60	34129.4	1.7	**16.0212**	0.170	1.1	ug/L	391	Standard
	Cu	65	23297.6	1.1	**10.9570**	0.125	1.1	ug/L	147	Standard
	Zn	66	52962.1	1.1	**42.5081**	0.637	1.5	ug/L	184	Standard
>	Ge	72	475774.6	2.0				ug/L	422998	Standard
	As	75	5685.9	1.4	**4.5079**	0.046	1.0	ug/L	-58	Standard
	Se	82	64.1	10.5	**0.2807**	0.056	19.9	ug/L	15	Standard
	Se-1	77	294.7	9.5	**2.7856**	0.306	11.0	ug/L	58	Standard
>	Ga	71	14221.7	0.8				mg/L	113	Standard
	Rb	85	144167.6	0.3				ug/L	27	Standard
	Y	89	628491.7	3.5				ug/L	383780	Standard
>	Rh	103	33.3	17.3				ug/L	18	Standard
	Mo	98	776.2	4.0	**0.2609**	0.006	2.5	ug/L	31	Standard
	Ag	107	453.7	0.9	**0.0503**	0.001	1.9	ug/L	84	Standard
	Cd	111	445.2	5.4	**0.1890**	0.006	3.4	mg/L	4	Standard
	Cd	114	1054.3	3.5	**0.1840**	0.003	1.4	ug/L	15	Standard
>	In	115	557481.8	2.3				ug/L	515400	Standard
	Sn	118	1206.7	15.4	**0.0122**	0.034	277.1	ug/L	1043	Standard
	Sb	123	933.4	7.3	**0.1724**	0.018	10.2	ug/L	227	Standard
	Ba	135	291889.8	0.6	**134.2623**	2.822	2.1	ug/L	31	Standard
	Ce	140	1070488.0	1.6				ug/L	120	Standard
>	Tb	159	874195.5	1.1				ug/L	785817	Standard
	Ho	165	17550.2	0.3				ug/L	7	Standard
	Tl	203	711.0	2.4	**0.0784**	0.001	1.7	ug/L	6	Standard
	Tl	205	633.3	4.3	**0.0771**	0.003	4.1	ug/L	8	Standard
	Pb	206	222719.4	0.9	**41.2710**	0.449	1.1	ug/L	201	Standard
	Pb	207	185657.2	0.3	**38.0499**	0.491	1.3	ug/L	177	Standard
	Pb	208	785337.8	0.7	**40.0697**	0.390	1.0	ug/L	722	Standard
	U	238	3434.4	1.7	**0.4590**	0.005	1.1	ug/L	8	Standard
>	Bi	209	481789.4	1.1				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	61.7	24.8	**0.0271**	0.015	54.1	mg/L	38	Standard
K	39	261.7	14.3	**0.7713**	0.137	17.8	mg/L	33	Standard
Ca	43	70.0	37.8	**2.8074**	3.379	120.4	mg/L	48	Standard
Fe	54	12695.2	1.8	**7.9239**	0.243	3.1	mg/L	131	Standard
Fe	57	3348.7	2.0	**7.6685**	0.126	1.6	mg/L	153	Standard
> **Sc-1**	45	34009.8	1.5				mg/L	26715	Standard
Cl	35	112652.2	3.4				ug/L	102686	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	3233.7	0.9				ug/L	1897	Standard
P	31	19951.5	2.1				ug/L	18491	Standard
S	34	4202.3	4.9				ug/L	3734	Standard
Sr	88	98.3	19.3				ug/L	47	Standard
C	12	130.0	38.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	106.7	23.6				mg/L	23	Standard
Dy	164	30540.8	1.1				mg/L	23	Standard
Ho-1	165	17550.2	0.3				mg/L	7	Standard
Er	166	16245.4	1.0				mg/L	13	Standard
I	127	22099.4	2.8				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		113.054	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		112.477	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.165
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.374
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, July 05, 2016 11:25:46
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	62194.1	1.8				ug/L	59517	Standard
	Be	9	43385.4	0.9	**47.7293**	0.929	1.9	ug/L	10	Standard
	Al	27	7477094.9	1.1	**47.0246**	0.891	1.9	ug/L	1872	Standard
	Sc	45	29181.4	0.5				ug/L	26715	Standard
	Ti	47	25259.4	0.6	**96.0196**	0.868	0.9	ug/L	54	Standard
	V	51	376869.1	1.4	**47.1482**	0.392	0.8	ug/L	1419	Standard
	Cr	52	384616.4	0.9	**48.0425**	0.261	0.5	ug/L	7059	Standard
	Cr	53	49186.4	1.2	**49.7150**	0.294	0.6	ug/L	398	Standard
	Mn	55	329550.8	1.8	**47.0561**	0.547	1.2	ug/L	824	Standard
	Co	59	355041.7	2.0	**47.3232**	0.832	1.8	ug/L	167	Standard
	Ni	60	99023.6	1.6	**47.7629**	0.456	1.0	ug/L	391	Standard
	Cu	65	98958.8	1.7	**47.6895**	0.531	1.1	ug/L	147	Standard
	Zn	66	57970.7	1.3	**47.4325**	0.569	1.2	ug/L	184	Standard
>	Ge	72	466810.9	0.7				ug/L	422998	Standard
	As	75	58770.3	0.9	**46.9912**	0.219	0.5	ug/L	-58	Standard
	Se	82	6074.8	1.7	**46.7458**	0.794	1.7	ug/L	15	Standard
	Se-1	77	4177.6	1.2	**49.2498**	0.363	0.7	ug/L	58	Standard
>	Ga	71	68.3	22.4				mg/L	113	Standard
	Rb	85	1025.0	3.4				ug/L	27	Standard
	Y	89	407133.1	2.5				ug/L	383780	Standard
>	Rh	103	30.0	50.0				ug/L	18	Standard
	Mo	98	261587.0	1.0	**93.3540**	0.443	0.5	ug/L	31	Standard
	Ag	107	336725.6	1.2	**47.4083**	0.372	0.8	ug/L	84	Standard
	Cd	111	107984.0	1.0	**48.1146**	0.618	1.3	mg/L	4	Standard
	Cd	114	261565.4	1.4	**48.0258**	0.382	0.8	ug/L	15	Standard
>	In	115	543076.2	0.7				ug/L	515400	Standard
	Sn	118	288798.7	1.9	**47.1544**	0.692	1.5	ug/L	1043	Standard
	Sb	123	237278.6	1.2	**49.1762**	0.361	0.7	ug/L	227	Standard
	Ba	135	100307.0	1.3	**47.3315**	0.378	0.8	ug/L	31	Standard
	Ce	140	1143.4	23.0				ug/L	120	Standard
>	Tb	159	834060.6	0.6				ug/L	785817	Standard
	Ho	165	38.3	66.9				ug/L	7	Standard
	Tl	203	401949.2	0.6	**47.6074**	0.186	0.4	ug/L	6	Standard
	Tl	205	352686.4	1.3	**47.9509**	0.567	1.2	ug/L	8	Standard
	Pb	206	252819.9	0.4	**48.1023**	0.359	0.7	ug/L	201	Standard
	Pb	207	231007.5	1.0	**48.6132**	0.251	0.5	ug/L	177	Standard
	Pb	208	933186.5	0.6	**48.8922**	0.682	1.4	ug/L	722	Standard
	U	238	345826.5	1.6	**47.7023**	0.615	1.3	ug/L	8	Standard
>	Bi	209	469300.9	0.9				ug/L	444563	Standard

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Na	23	1.7	173.2	**17.8640**	30.933	173.2	mg/L	0	Standard
Mg	24	4187.2	5.4	**4.7809**	0.274	5.7	mg/L	38	Standard
K	39	1096.7	4.6	**4.2663**	0.210	4.9	mg/L	33	Standard
Ca	43	81.7	15.4	**5.8840**	1.786	30.3	mg/L	48	Standard
Fe	54	6549.3	3.2	**4.7166**	0.160	3.4	mg/L	131	Standard
Fe	57	1873.4	8.2	**4.8332**	0.452	9.4	mg/L	153	Standard
> **Sc-1**	45	29181.4	0.5				mg/L	26715	Standard
Cl	35	119636.5	1.3				ug/L	102686	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1663.4	6.0				ug/L	1897	Standard
P	31	21340.0	3.4				ug/L	18491	Standard
S	34	4732.4	6.1				ug/L	3734	Standard
Sr	88	73.3	15.7				ug/L	47	Standard
C	12	30.0	88.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	0.0				mg/L	23	Standard
Dy	164	62.1	82.6				mg/L	23	Standard
Ho-1	165	38.3	66.9				mg/L	7	Standard
Er	166	26.7	21.7				mg/L	13	Standard
I	127	16135.3	1.1				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6			
Be	9	95.459		
Al	27	94.049		
Sc	45			
Ti	47	96.020		
V	51	94.296		
Cr	52	96.085		
Cr	53			
Mn	55	94.112		
Co	59	94.646		
Ni	60	95.526		
Cu	65	95.379		
Zn	66	94.865		
> Ge	72		110.358	
As	75	93.982		
Se	82	93.492		
Se-1	77			
> Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	93.354		
Ag	107	94.817		
Cd	111	96.229		
Cd	114			
> In	115			105.370
Sn	118	94.309		
Sb	123	98.352		
Ba	135	94.663		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	95.215		
Tl	205			
Pb	206			
Pb	207			
Pb	208	97.784		
U	238	95.405		
> Bi	209			105.565
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 6
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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, July 05, 2016 11:28:57
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63732.2	2.7				ug/L	59517	Standard
	Be	9	26.7	88.6	**-0.0024**	0.025	1040.4	ug/L	10	Standard
	Al	27	2688.6	20.4	**0.0040**	0.003	74.8	ug/L	1872	Standard
	Sc	45	29386.8	0.7				ug/L	26715	Standard
	Ti	47	34.3	8.9	**-0.1156**	0.010	8.7	ug/L	54	Standard
	V	51	1576.2	14.1	**0.0190**	0.026	137.2	ug/L	1419	Standard
	Cr	52	6976.9	2.0	**-0.0841**	0.007	8.6	ug/L	7059	Standard
	Cr	53	2505.2	1.2	**2.1511**	0.054	2.5	ug/L	398	Standard
	Mn	55	857.4	8.3	**-0.0078**	0.010	125.2	ug/L	824	Standard
	Co	59	217.3	4.9	**0.0040**	0.002	39.4	ug/L	167	Standard
	Ni	60	264.3	5.7	**-0.0714**	0.008	11.4	ug/L	391	Standard
	Cu	65	128.7	12.6	**-0.0167**	0.008	46.4	ug/L	147	Standard
	Zn	66	266.3	2.6	**0.0601**	0.007	11.2	ug/L	184	Standard
>	**Ge**	72	465388.3	1.2				ug/L	422998	Standard
	As	75	-51.1	37.1	**0.0106**	0.015	145.5	ug/L	-58	Standard
	Se	82	22.1	29.5	**-0.0350**	0.049	139.9	ug/L	15	Standard
	Se-1	77	178.7	5.4	**1.4737**	0.126	8.6	ug/L	58	Standard
>	**Ga**	71	40.0	50.0				mg/L	113	Standard
	Rb	85	43.3	52.0				ug/L	27	Standard
	Y	89	408149.9	1.3				ug/L	383780	Standard
>	**Rh**	103	11.7	24.7				ug/L	18	Standard
	Mo	98	203.4	7.9	**0.0631**	0.006	9.3	ug/L	31	Standard
	Ag	107	114.7	16.5	**0.0040**	0.003	64.7	ug/L	84	Standard
	Cd	111	14.6	11.7	**0.0023**	0.001	32.8	mg/L	4	Standard
	Cd	114	40.7	36.1	**0.0028**	0.003	94.1	ug/L	15	Standard
>	**In**	115	547595.3	0.4				ug/L	515400	Standard
	Sn	118	1465.1	25.8	**0.0571**	0.061	106.2	ug/L	1043	Standard
	Sb	123	769.9	30.2	**0.1419**	0.048	33.5	ug/L	227	Standard
	Ba	135	72.0	30.3	**0.0100**	0.010	102.5	ug/L	31	Standard
	Ce	140	465.0	17.8				ug/L	120	Standard
>	**Tb**	159	844940.1	1.4				ug/L	785817	Standard
	Ho	165	11.7	24.7				ug/L	7	Standard
	Tl	203	76.7	27.6	**0.0053**	0.002	47.5	ug/L	6	Standard
	Tl	205	68.3	48.7	**0.0023**	0.004	192.3	ug/L	8	Standard
	Pb	206	292.0	9.4	**0.0086**	0.005	60.7	ug/L	201	Standard
	Pb	207	248.7	4.3	**0.0032**	0.003	80.4	ug/L	177	Standard
	Pb	208	1010.7	9.0	**0.0031**	0.005	162.3	ug/L	722	Standard
	U	238	53.7	17.2	**0.0047**	0.001	26.0	ug/L	8	Standard
>	**Bi**	209	481410.0	0.8				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	35.0	62.3	**0.0064**	0.025	389.8	mg/L	38	Standard
K	39	21.7	35.3	**-0.0431**	0.030	69.7	mg/L	33	Standard
Ca	43	46.7	16.4	**0.7976**	1.093	137.1	mg/L	48	Standard
Fe	54	162.7	14.3	**0.0027**	0.018	653.5	mg/L	131	Standard
Fe	57	175.0	12.5	**0.0107**	0.058	546.2	mg/L	153	Standard
Sc-1	45	29386.8	0.7				mg/L	26715	Standard
Cl	35	118618.5	0.7				ug/L	102686	Standard
Kr	83	1.7	34.6				ug/L	2	Standard
Br	81	1786.8	0.6				ug/L	1897	Standard
P	31	20450.5	2.2				ug/L	18491	Standard
S	34	4707.4	8.1				ug/L	3734	Standard
Sr	88	51.7	14.8				ug/L	47	Standard
C	12	60.0	44.1				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	26.7	57.3				mg/L	23	Standard
Dy	164	35.4	117.1				mg/L	23	Standard
Ho-1	165	11.7	24.7				mg/L	7	Standard
Er	166	26.7	86.6				mg/L	13	Standard
I	127	10532.0	3.8				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		110.022	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.247
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.288
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606144511
Sample Date/Time: Tuesday, July 05, 2016 11:32:10
Number of Replicates: 3
Autosampler Position: 225
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	71021.2	3.7				ug/L	59517	Standard
	Be	9	871.7	8.6	**0.8097**	0.079	9.7	ug/L	10	Standard
	Al	27	12365222.8	2.8	**68.1084**	0.606	0.9	ug/L	1872	Standard
	Sc	45	34019.8	2.2				ug/L	26715	Standard
	Ti	47	2851.9	2.3	**10.3787**	0.373	3.6	ug/L	54	Standard
	V	51	136898.6	0.8	**16.6248**	0.202	1.2	ug/L	1419	Standard
	Cr	52	136908.1	0.6	**16.0816**	0.420	2.6	ug/L	7059	Standard
	Cr	53	18659.8	2.6	**18.1733**	0.240	1.3	ug/L	398	Standard
	Mn	55	3135205.7	0.4	**438.7022**	7.424	1.7	ug/L	824	Standard
	Co	59	69995.3	0.7	**9.0990**	0.118	1.3	ug/L	167	Standard
	Ni	60	42554.0	1.2	**19.9463**	0.236	1.2	ug/L	391	Standard
	Cu	65	26902.5	1.3	**12.6149**	0.241	1.9	ug/L	147	Standard
	Zn	66	77600.9	1.5	**62.1081**	0.974	1.6	ug/L	184	Standard
>	**Ge**	72	477668.6	2.0				ug/L	422998	Standard
	As	75	5139.4	0.7	**4.0643**	0.087	2.1	ug/L	-58	Standard
	Se	82	62.8	26.5	**0.2674**	0.120	44.8	ug/L	15	Standard
	Se-1	77	243.3	4.2	**2.1725**	0.065	3.0	ug/L	58	Standard
>	**Ga**	71	19127.1	0.7				mg/L	113	Standard
	Rb	85	198995.0	1.0				ug/L	27	Standard
	Y	89	649207.2	0.7				ug/L	383780	Standard
>	**Rh**	103	41.7	36.7				ug/L	18	Standard
	Mo	98	449.9	10.5	**0.1460**	0.016	10.7	ug/L	31	Standard
	Ag	107	632.0	3.3	**0.0739**	0.003	3.9	ug/L	84	Standard
	Cd	111	1171.9	1.1	**0.4997**	0.007	1.4	mg/L	4	Standard
	Cd	114	2756.6	4.8	**0.4838**	0.022	4.6	ug/L	15	Standard
>	**In**	115	562900.2	0.4				ug/L	515400	Standard
	Sn	118	1318.4	30.9	**0.0274**	0.064	232.7	ug/L	1043	Standard
	Sb	123	667.8	32.9	**0.1172**	0.044	37.3	ug/L	227	Standard
	Ba	135	585914.6	0.3	**266.8564**	1.879	0.7	ug/L	31	Standard
	Ce	140	1276381.6	0.5				ug/L	120	Standard
>	**Tb**	159	888751.2	0.9				ug/L	785817	Standard
	Ho	165	19744.5	3.6				ug/L	7	Standard
	Tl	203	1090.7	3.8	**0.1214**	0.004	3.5	ug/L	6	Standard
	Tl	205	1000.0	10.3	**0.1248**	0.014	10.9	ug/L	8	Standard
	Pb	206	500976.8	0.6	**92.3093**	1.215	1.3	ug/L	201	Standard
	Pb	207	419232.3	0.8	**85.4378**	0.957	1.1	ug/L	177	Standard
	Pb	208	1756286.6	0.3	**89.1076**	0.893	1.0	ug/L	722	Standard
	U	238	4139.9	1.2	**0.5503**	0.004	0.7	ug/L	8	Standard
>	**Bi**	209	484824.6	0.8				ug/L	444563	Standard

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Na	23	6.7	114.6	**60.6851**	68.539	112.9	mg/L	0	Standard
Mg	24	133.3	31.2	**0.0981**	0.042	42.4	mg/L	38	Standard
K	39	321.7	9.1	**0.9771**	0.107	10.9	mg/L	33	Standard
Ca	43	76.7	16.4	**3.5760**	1.345	37.6	mg/L	48	Standard
Fe	54	18043.1	2.5	**11.3093**	0.428	3.8	mg/L	131	Standard
Fe	57	4782.4	4.7	**11.1647**	0.761	6.8	mg/L	153	Standard
> **Sc-1**	45	34019.8	2.2				mg/L	26715	Standard
Cl	35	111550.6	1.9				ug/L	102686	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	3117.0	6.2				ug/L	1897	Standard
P	31	19804.6	0.2				ug/L	18491	Standard
S	34	4103.9	4.3				ug/L	3734	Standard
Sr	88	130.0	6.7				ug/L	47	Standard
C	12	120.0	16.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	60.0	28.9				mg/L	23	Standard
Dy	164	33281.5	0.5				mg/L	23	Standard
Ho-1	165	19744.5	3.6				mg/L	7	Standard
Er	166	18307.7	1.1				mg/L	13	Standard
I	127	22428.3	4.6				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		119.330	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		112.925	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		109.216
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		109.057
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606144512
Sample Date/Time: Tuesday, July 05, 2016 11:35:21
Number of Replicates: 3
Autosampler Position: 226
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	71958.9	2.4				ug/L	59517	Standard
	Be	9	838.4	13.6	0.7678	0.123	16.0	ug/L	10	Standard
	Al	27	17699628.7	1.5	96.2224	1.478	1.5	ug/L	1872	Standard
	Sc	45	34681.3	2.5				ug/L	26715	Standard
	Ti	47	2998.3	2.5	10.8517	0.290	2.7	ug/L	54	Standard
	V	51	152944.2	1.3	18.4758	0.186	1.0	ug/L	1419	Standard
	Cr	52	107693.1	0.8	12.3552	0.145	1.2	ug/L	7059	Standard
	Cr	53	15069.2	1.0	14.5056	0.122	0.8	ug/L	398	Standard
	Mn	55	2049605.2	0.5	284.9255	0.634	0.2	ug/L	824	Standard
	Co	59	61986.5	0.5	8.0040	0.033	0.4	ug/L	167	Standard
	Ni	60	40334.6	0.6	18.7759	0.110	0.6	ug/L	391	Standard
	Cu	65	23405.4	0.8	10.8951	0.130	1.2	ug/L	147	Standard
	Zn	66	41678.2	0.7	33.0739	0.237	0.7	ug/L	184	Standard
>	Ge	72	480619.9	0.4				ug/L	422998	Standard
	As	75	4243.8	1.5	3.3439	0.060	1.8	ug/L	-58	Standard
	Se	82	52.0	15.0	0.1844	0.060	32.5	ug/L	15	Standard
	Se-1	77	217.0	7.2	1.8498	0.173	9.3	ug/L	58	Standard
>	Ga	71	16040.2	1.7				mg/L	113	Standard
	Rb	85	153835.4	1.2				ug/L	27	Standard
	Y	89	653034.0	1.2				ug/L	383780	Standard
>	Rh	103	31.7	9.1				ug/L	18	Standard
	Mo	98	421.3	2.5	0.1368	0.005	3.9	ug/L	31	Standard
	Ag	107	442.0	6.1	0.0483	0.003	6.0	ug/L	84	Standard
	Cd	111	237.2	8.6	0.0982	0.008	7.9	mg/L	4	Standard
	Cd	114	490.5	1.5	0.0827	0.002	2.6	ug/L	15	Standard
>	In	115	560411.2	1.6				ug/L	515400	Standard
	Sn	118	975.0	33.7	-0.0256	0.054	212.3	ug/L	1043	Standard
	Sb	123	548.8	20.4	0.0941	0.024	25.1	ug/L	227	Standard
	Ba	135	225197.1	1.5	103.0102	1.156	1.1	ug/L	31	Standard
	Ce	140	1202275.9	0.9				ug/L	120	Standard
>	Tb	159	880063.7	3.4				ug/L	785817	Standard
	Ho	165	19287.3	1.8				ug/L	7	Standard
	Tl	203	813.0	1.7	0.0888	0.002	2.7	ug/L	6	Standard
	Tl	205	713.4	9.0	0.0863	0.009	9.9	ug/L	8	Standard
	Pb	206	102726.4	1.2	18.7176	0.074	0.4	ug/L	201	Standard
	Pb	207	86210.6	1.8	17.3695	0.202	1.2	ug/L	177	Standard
	Pb	208	361707.3	1.0	18.1456	0.252	1.4	ug/L	722	Standard
	U	238	4018.9	1.5	0.5293	0.011	2.0	ug/L	8	Standard
>	Bi	209	489289.8	0.8				ug/L	444563	Standard

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Na	23	1.7	173.2	**14.6402**	25.349	173.1	mg/L	0	Standard
Mg	24	108.3	14.1	**0.0713**	0.017	23.1	mg/L	38	Standard
K	39	311.7	16.1	**0.9211**	0.163	17.7	mg/L	33	Standard
Ca	43	93.3	17.2	**5.4689**	2.175	39.8	mg/L	48	Standard
Fe	54	14438.9	2.6	**8.8562**	0.446	5.0	mg/L	131	Standard
Fe	57	3728.8	4.6	**8.4284**	0.631	7.5	mg/L	153	Standard
Sc-1	45	34681.3	2.5				mg/L	26715	Standard
Cl	35	113693.7	1.3				ug/L	102686	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	2510.2	3.5				ug/L	1897	Standard
P	31	19771.2	2.0				ug/L	18491	Standard
S	34	4267.3	5.1				ug/L	3734	Standard
Sr	88	83.3	61.6				ug/L	47	Standard
C	12	126.7	45.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	43.3	48.0				mg/L	23	Standard
Dy	164	32527.2	3.4				mg/L	23	Standard
Ho-1	165	19287.3	1.8				mg/L	7	Standard
Er	166	17176.4	4.0				mg/L	13	Standard
I	127	11282.5	1.3				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		120.905	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		113.622	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.733
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		110.061
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mn 55 Upper, S, EEE	Mn	55	
Ba 135 Upper, S, EEE	Ba	135	

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Method 6020 - Summary Report

Sample ID: L1606145101
Sample Date/Time: Tuesday, July 05, 2016 11:38:33
Number of Replicates: 3
Autosampler Position: 227
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	63086.2	3.9				ug/L	59517	Standard
	Be	9	48.3	58.8	**0.0207**	0.028	137.5	ug/L	10	Standard
	Al	27	187174.4	2.2	**1.1487**	0.023	2.0	ug/L	1872	Standard
	Sc	45	27850.6	4.7				ug/L	26715	Standard
	Ti	47	1001.4	3.2	**3.7116**	0.114	3.1	ug/L	54	Standard
	V	51	8090.4	4.8	**0.8746**	0.054	6.2	ug/L	1419	Standard
	Cr	52	11362.3	1.1	**0.5262**	0.019	3.6	ug/L	7059	Standard
	Cr	53	3108.7	1.2	**2.8761**	0.047	1.6	ug/L	398	Standard
	Mn	55	100253.9	1.0	**14.7608**	0.214	1.5	ug/L	824	Standard
	Co	59	1542.4	2.3	**0.1883**	0.004	2.2	ug/L	167	Standard
	Ni	60	1461.7	3.0	**0.5345**	0.020	3.7	ug/L	391	Standard
	Cu	65	1964.5	1.4	**0.9047**	0.018	2.0	ug/L	147	Standard
	Zn	66	8628.5	2.2	**7.1884**	0.148	2.1	ug/L	184	Standard
>	Ge	72	450022.4	0.4				ug/L	422998	Standard
	As	75	1048.0	2.6	**0.9200**	0.025	2.7	ug/L	-58	Standard
	Se	82	19.3	39.7	**-0.0513**	0.062	119.9	ug/L	15	Standard
	Se-1	77	150.3	2.5	**1.1949**	0.040	3.4	ug/L	58	Standard
>	Ga	71	646.7	5.1				mg/L	113	Standard
	Rb	85	4570.7	3.6				ug/L	27	Standard
	Y	89	391279.7	0.8				ug/L	383780	Standard
>	Rh	103	1.7	173.2				ug/L	18	Standard
	Mo	98	193.8	15.4	**0.0628**	0.012	18.9	ug/L	31	Standard
	Ag	107	106.3	6.0	**0.0035**	0.001	30.1	ug/L	84	Standard
	Cd	111	83.3	6.9	**0.0343**	0.002	6.3	mg/L	4	Standard
	Cd	114	206.4	14.3	**0.0347**	0.006	17.6	ug/L	15	Standard
>	In	115	524420.4	1.4				ug/L	515400	Standard
	Sn	118	508.3	21.2	**-0.0945**	0.019	20.6	ug/L	1043	Standard
	Sb	123	392.1	21.6	**0.0680**	0.019	28.3	ug/L	227	Standard
	Ba	135	9400.9	1.4	**4.5731**	0.093	2.0	ug/L	31	Standard
	Ce	140	55810.9	1.2				ug/L	120	Standard
>	Tb	159	818644.4	1.6				ug/L	785817	Standard
	Ho	165	396.7	1.5				ug/L	7	Standard
	Tl	203	74.0	20.2	**0.0052**	0.002	32.8	ug/L	6	Standard
	Tl	205	78.3	13.3	**0.0039**	0.001	34.4	ug/L	8	Standard
	Pb	206	23804.4	0.6	**4.5052**	0.016	0.3	ug/L	201	Standard
	Pb	207	19941.1	0.2	**4.1691**	0.037	0.9	ug/L	177	Standard
	Pb	208	83297.6	0.7	**4.3367**	0.052	1.2	ug/L	722	Standard
	U	238	385.3	3.7	**0.0509**	0.002	4.1	ug/L	8	Standard
>	Bi	209	467495.4	0.9				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	41.7	56.7	**0.0172**	0.029	170.4	mg/L	38	Standard
K	39	41.7	30.2	**0.0444**	0.045	101.3	mg/L	33	Standard
Ca	43	20.0	50.0	**-2.8724**	1.432	49.8	mg/L	48	Standard
Fe	54	717.3	6.4	**0.4381**	0.026	5.9	mg/L	131	Standard
Fe	57	350.0	22.0	**0.5664**	0.274	48.3	mg/L	153	Standard
> **Sc-1**	45	27850.6	4.7				mg/L	26715	Standard
Cl	35	101597.5	0.2				ug/L	102686	Standard
Kr	83	3.7	56.8				ug/L	2	Standard
Br	81	1566.7	0.7				ug/L	1897	Standard
P	31	7351.8	5.4				ug/L	18491	Standard
S	34	3560.4	3.1				ug/L	3734	Standard
Sr	88	83.3	54.1				ug/L	47	Standard
C	12	73.3	15.7				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	30.0	33.3				mg/L	23	Standard
Dy	164	819.3	12.4				mg/L	23	Standard
Ho-1	165	396.7	1.5				mg/L	7	Standard
Er	166	433.3	1.3				mg/L	13	Standard
I	127	25947.2	1.1				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.997	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.389	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.750
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.158
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606145102
Sample Date/Time: Tuesday, July 05, 2016 11:41:44
Number of Replicates: 3
Autosampler Position: 228
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	61941.5	4.6				ug/L	59517	Standard
	Be	9	58.3	9.9	**0.0335**	0.008	23.1	ug/L	10	Standard
	Al	27	397101.0	1.9	**2.4976**	0.075	3.0	ug/L	1872	Standard
	Sc	45	27464.9	1.3				ug/L	26715	Standard
	Ti	47	1832.8	2.5	**7.0385**	0.120	1.7	ug/L	54	Standard
	V	51	14851.8	2.2	**1.7665**	0.058	3.3	ug/L	1419	Standard
	Cr	52	16937.1	0.9	**1.2760**	0.042	3.3	ug/L	7059	Standard
	Cr	53	3678.8	5.9	**3.5022**	0.267	7.6	ug/L	398	Standard
	Mn	55	333369.6	0.1	**49.6668**	0.486	1.0	ug/L	824	Standard
	Co	59	4435.3	0.3	**0.5920**	0.006	1.0	ug/L	167	Standard
	Ni	60	2891.6	2.6	**1.2612**	0.037	2.9	ug/L	391	Standard
	Cu	65	5814.1	0.3	**2.8489**	0.035	1.2	ug/L	147	Standard
	Zn	66	20833.6	1.1	**17.6837**	0.331	1.9	ug/L	184	Standard
>	Ge	72	447514.4	1.0				ug/L	422998	Standard
	As	75	928.7	4.0	**0.8257**	0.039	4.7	ug/L	-58	Standard
	Se	82	23.8	9.6	**-0.0141**	0.020	145.1	ug/L	15	Standard
	Se-1	77	153.3	7.5	**1.2422**	0.127	10.2	ug/L	58	Standard
>	Ga	71	1306.7	7.7				mg/L	113	Standard
	Rb	85	13222.4	2.0				ug/L	27	Standard
	Y	89	388639.7	0.5				ug/L	383780	Standard
>	Rh	103	13.3	78.1				ug/L	18	Standard
	Mo	98	448.8	3.5	**0.1576**	0.004	2.6	ug/L	31	Standard
	Ag	107	124.3	5.2	**0.0062**	0.001	18.2	ug/L	84	Standard
	Cd	111	98.1	12.8	**0.0413**	0.006	13.6	mg/L	4	Standard
	Cd	114	206.1	2.6	**0.0348**	0.001	4.0	ug/L	15	Standard
>	In	115	522465.9	1.3				ug/L	515400	Standard
	Sn	118	518.3	40.3	**-0.0928**	0.035	37.3	ug/L	1043	Standard
	Sb	123	307.8	24.2	**0.0500**	0.016	31.6	ug/L	227	Standard
	Ba	135	21685.8	0.0	**10.6194**	0.135	1.3	ug/L	31	Standard
	Ce	140	63251.8	1.4				ug/L	120	Standard
>	Tb	159	805776.3	2.0				ug/L	785817	Standard
	Ho	165	756.7	9.4				ug/L	7	Standard
	Tl	203	171.7	5.0	**0.0170**	0.001	7.0	ug/L	6	Standard
	Tl	205	131.7	12.2	**0.0113**	0.002	20.2	ug/L	8	Standard
	Pb	206	15597.4	1.2	**2.9590**	0.060	2.0	ug/L	201	Standard
	Pb	207	12686.3	1.2	**2.6552**	0.046	1.7	ug/L	177	Standard
	Pb	208	54000.2	0.6	**2.8156**	0.019	0.7	ug/L	722	Standard
	U	238	900.4	1.8	**0.1232**	0.003	2.7	ug/L	8	Standard
>	Bi	209	463997.6	0.9				ug/L	444563	Standard

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Na	23	3.3	86.6	**37.9829**	32.899	86.6	mg/L	0	Standard
Mg	24	41.7	36.7	**0.0174**	0.019	110.5	mg/L	38	Standard
K	39	38.3	61.6	**0.0342**	0.101	294.9	mg/L	33	Standard
Ca	43	43.3	35.3	**0.7488**	2.326	310.6	mg/L	48	Standard
Fe	54	1680.0	5.2	**1.2006**	0.065	5.4	mg/L	131	Standard
Fe	57	590.0	9.0	**1.2966**	0.165	12.8	mg/L	153	Standard
> **Sc-1**	45	27464.9	1.3				mg/L	26715	Standard
Cl	35	103666.1	1.2				ug/L	102686	Standard
Kr	83	3.3	45.8				ug/L	2	Standard
Br	81	1920.1	6.8				ug/L	1897	Standard
P	31	7571.9	4.4				ug/L	18491	Standard
S	34	3707.1	3.8				ug/L	3734	Standard
Sr	88	76.7	43.4				ug/L	47	Standard
C	12	83.3	61.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	23	Standard
Dy	164	1215.4	9.0				mg/L	23	Standard
Ho-1	165	756.7	9.4				mg/L	7	Standard
Er	166	723.4	7.6				mg/L	13	Standard
I	127	26428.0	1.1				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		104.074	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		105.796	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.371
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.372
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606145102PS WG575057-01
Sample Date/Time: Tuesday, July 05, 2016 11:44:55
Number of Replicates: 3
Autosampler Position: 229
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	62697.9	4.2				ug/L	59517	Standard
	Be	9	44294.7	3.5	**48.3430**	1.008	2.1	ug/L	10	Standard
	Al	27	380968.8	3.5	**2.3649**	0.024	1.0	ug/L	1872	Standard
	Sc	45	27576.7	2.5				ug/L	26715	Standard
	Ti	47	1757.8	3.6	**6.6590**	0.216	3.3	ug/L	54	Standard
	V	51	369561.9	0.1	**47.6704**	0.227	0.5	ug/L	1419	Standard
	Cr	52	375004.1	0.6	**48.2990**	0.392	0.8	ug/L	7059	Standard
	Cr	53	47950.8	1.0	**49.9721**	0.632	1.3	ug/L	398	Standard
	Mn	55	624219.2	1.1	**92.0208**	0.683	0.7	ug/L	824	Standard
	Co	59	331225.4	0.7	**45.5157**	0.136	0.3	ug/L	167	Standard
	Ni	60	98193.5	1.1	**48.8356**	0.402	0.8	ug/L	391	Standard
	Cu	65	103660.4	1.5	**51.5103**	0.662	1.3	ug/L	147	Standard
	Zn	66	82546.9	0.1	**69.7085**	0.295	0.4	ug/L	184	Standard
>	Ge	72	452783.9	0.5				ug/L	422998	Standard
	As	75	61959.6	0.0	**51.0727**	0.255	0.5	ug/L	-58	Standard
	Se	82	6718.1	0.6	**53.3265**	0.486	0.9	ug/L	15	Standard
	Se-1	77	4447.3	1.5	**54.1235**	1.057	2.0	ug/L	58	Standard
>	Ga	71	1278.4	1.3				mg/L	113	Standard
	Rb	85	12908.8	1.4				ug/L	27	Standard
	Y	89	401631.9	0.4				ug/L	383780	Standard
>	Rh	103	31.7	50.8				ug/L	18	Standard
	Mo	98	450.5	1.2	**0.1549**	0.001	1.0	ug/L	31	Standard
	Ag	107	331680.1	0.3	**47.5704**	0.222	0.5	ug/L	84	Standard
	Cd	111	108869.6	0.6	**49.4140**	0.475	1.0	mg/L	4	Standard
	Cd	114	263950.9	0.6	**49.3701**	0.312	0.6	ug/L	15	Standard
>	In	115	533128.8	0.5				ug/L	515400	Standard
	Sn	118	636.7	25.1	**-0.0747**	0.026	35.4	ug/L	1043	Standard
	Sb	123	196248.0	6.3	**41.4359**	2.744	6.6	ug/L	227	Standard
	Ba	135	117350.4	0.6	**56.4148**	0.661	1.2	ug/L	31	Standard
	Ce	140	61538.1	0.5				ug/L	120	Standard
>	Tb	159	822948.5	0.5				ug/L	785817	Standard
	Ho	165	756.7	6.0				ug/L	7	Standard
	Tl	203	396729.2	0.3	**46.1565**	0.208	0.4	ug/L	6	Standard
	Tl	205	348011.4	0.7	**46.4767**	0.241	0.5	ug/L	8	Standard
	Pb	206	267711.4	0.3	**50.0339**	0.138	0.3	ug/L	201	Standard
	Pb	207	232867.9	0.4	**48.1364**	0.017	0.0	ug/L	177	Standard
	Pb	208	960047.3	0.6	**49.4056**	0.263	0.5	ug/L	722	Standard
	U	238	326850.5	0.2	**44.2871**	0.244	0.6	ug/L	8	Standard
>	Bi	209	477758.5	0.4				ug/L	444563	Standard

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Na	23	1.7	173.2	**18.9251**	32.771	173.2	mg/L	0	Standard
Mg	24	38.3	27.2	**0.0131**	0.013	98.6	mg/L	38	Standard
K	39	41.7	18.3	**0.0472**	0.029	62.1	mg/L	33	Standard
Ca	43	43.3	40.5	**0.7741**	2.837	366.4	mg/L	48	Standard
Fe	54	1650.4	2.6	**1.1722**	0.005	0.4	mg/L	131	Standard
Fe	57	556.7	10.4	**1.1920**	0.207	17.4	mg/L	153	Standard
> **Sc-1**	45	27576.7	2.5				mg/L	26715	Standard
Cl	35	103188.9	0.2				ug/L	102686	Standard
Kr	83	2.3	89.2				ug/L	2	Standard
Br	81	1846.8	10.9				ug/L	1897	Standard
P	31	7151.7	0.7				ug/L	18491	Standard
S	34	3632.1	3.8				ug/L	3734	Standard
Sr	88	60.0	30.0				ug/L	47	Standard
C	12	90.0	66.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	23.3	49.5				mg/L	23	Standard
Dy	164	1235.3	9.5				mg/L	23	Standard
Ho-1	165	756.7	6.0				mg/L	7	Standard
Er	166	656.7	24.8				mg/L	13	Standard
I	127	26660.1	0.7				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		105.345	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		107.042	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		103.440
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		107.467
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606145102SDL WG575057-02
Sample Date/Time: Tuesday, July 05, 2016 11:48:07
Number of Replicates: 3
Autosampler Position: 230
Sample Description: ~~10~~ 50
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	54039.6	3.1				ug/L	59517	Standard
	Be	9	48.3	58.8	**0.0295**	0.034	115.5	ug/L	10	Standard
	Al	27	89003.2	15.7	**0.6307**	0.086	13.6	ug/L	1872	Standard
	Sc	45	23686.8	0.3				ug/L	26715	Standard
	Ti	47	378.0	5.6	**1.4703**	0.090	6.2	ug/L	54	Standard
	V	51	4224.3	4.5	**0.4528**	0.023	5.1	ug/L	1419	Standard
	Cr	52	7865.0	4.3	**0.2187**	0.042	19.2	ug/L	7059	Standard
	Cr	53	2401.9	6.7	**2.5065**	0.166	6.6	ug/L	398	Standard
	Mn	55	67918.0	3.7	**11.4603**	0.319	2.8	ug/L	824	Standard
	Co	59	1167.7	13.0	**0.1604**	0.022	13.8	ug/L	167	Standard
	Ni	60	836.0	11.2	**0.2826**	0.050	17.8	ug/L	391	Standard
	Cu	65	1282.4	2.5	**0.6589**	0.017	2.6	ug/L	147	Standard
	Zn	66	5007.5	2.9	**4.7407**	0.108	2.3	ug/L	184	Standard
>	**Ge**	72	391606.9	1.0				ug/L	422998	Standard
	As	75	174.6	23.0	**0.2178**	0.037	17.2	ug/L	-58	Standard
	Se	82	20.5	32.2	**-0.0173**	0.060	344.9	ug/L	15	Standard
	Se-1	77	133.3	1.9	**1.2312**	0.056	4.5	ug/L	58	Standard
>	**Ga**	71	268.3	15.1				mg/L	113	Standard
	Rb	85	2626.9	3.6				ug/L	27	Standard
	Y	89	337426.2	1.1				ug/L	383780	Standard
>	**Rh**	103	15.0	66.7				ug/L	18	Standard
	Mo	98	156.5	9.3	**0.0577**	0.006	10.6	ug/L	31	Standard
	Ag	107	191.0	71.7	**0.0200**	0.023	113.4	ug/L	84	Standard
	Cd	111	50.3	69.4	**0.0225**	0.018	81.1	mg/L	4	Standard
	Cd	114	171.3	36.7	**0.0329**	0.013	40.7	ug/L	15	Standard
>	**In**	115	455091.8	1.2				ug/L	515400	Standard
	Sn	118	385.0	19.7	**-0.1055**	0.016	14.9	ug/L	1043	Standard
	Sb	123	2217.5	20.0	**0.5330**	0.115	21.6	ug/L	227	Standard
	Ba	135	4570.0	8.0	**2.5499**	0.181	7.1	ug/L	31	Standard
	Ce	140	13090.7	6.8				ug/L	120	Standard
>	**Tb**	159	708958.3	1.6				ug/L	785817	Standard
	Ho	165	178.3	12.6				ug/L	7	Standard
	Tl	203	212.3	44.0	**0.0250**	0.012	49.8	ug/L	6	Standard
	Tl	205	268.3	50.7	**0.0348**	0.021	60.0	ug/L	8	Standard
	Pb	206	3361.7	9.7	**0.6843**	0.068	10.0	ug/L	201	Standard
	Pb	207	2820.3	6.6	**0.6295**	0.043	6.8	ug/L	177	Standard
	Pb	208	12064.2	11.5	**0.6727**	0.080	12.0	ug/L	722	Standard
	U	238	331.0	42.4	**0.0495**	0.022	44.0	ug/L	8	Standard
>	**Bi**	209	411532.0	0.4				ug/L	444563	Standard

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Na	23	1.7	173.2	**21.9603**	38.028	173.2	mg/L	0	Standard
Mg	24	35.0	65.5	**0.0159**	0.032	203.8	mg/L	38	Standard
K	39	50.0	40.0	**0.1177**	0.099	84.4	mg/L	33	Standard
Ca	43	31.7	50.8	**-0.2632**	2.835	1077.0	mg/L	48	Standard
Fe	54	367.4	21.7	**0.2172**	0.072	32.9	mg/L	131	Standard
Fe	57	280.0	18.8	**0.4969**	0.187	37.7	mg/L	153	Standard
> **Sc-1**	45	23686.8	0.3				mg/L	26715	Standard
Cl	35	99858.7	1.1				ug/L	102686	Standard
Kr	83	1.3	86.6				ug/L	2	Standard
Br	81	1640.1	12.5				ug/L	1897	Standard
P	31	5642.7	5.7				ug/L	18491	Standard
S	34	3278.7	2.2				ug/L	3734	Standard
Sr	88	75.0	11.5				ug/L	47	Standard
C	12	36.7	15.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	23	Standard
Dy	164	282.5	17.5				mg/L	23	Standard
Ho-1	165	178.3	12.6				mg/L	7	Standard
Er	166	156.7	35.2				mg/L	13	Standard
I	127	28024.2	2.4				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		90.797	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		92.579	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		88.299
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		92.570
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606145102SDL WG575057-02
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Method 6020 - Summary Report

Sample ID: L1606145103
Sample Date/Time: Tuesday, July 05, 2016 11:51:18
Number of Replicates: 3
Autosampler Position: 231
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	58994.6	1.3				ug/L	59517	Standard
	Be	9	38.3	37.7	**0.0135**	0.017	129.1	ug/L	10	Standard
	Al	27	155374.4	1.4	**1.0179**	0.018	1.7	ug/L	1872	Standard
	Sc	45	25635.0	4.0				ug/L	26715	Standard
	Ti	47	1269.4	0.7	**5.1547**	0.113	2.2	ug/L	54	Standard
	V	51	9899.5	0.9	**1.2086**	0.027	2.2	ug/L	1419	Standard
	Cr	52	12883.1	0.5	**0.8572**	0.024	2.9	ug/L	7059	Standard
	Cr	53	2881.9	5.1	**2.8672**	0.116	4.0	ug/L	398	Standard
	Mn	55	158042.5	3.0	**25.1279**	0.371	1.5	ug/L	824	Standard
	Co	59	1946.5	3.1	**0.2647**	0.005	2.0	ug/L	167	Standard
	Ni	60	1707.1	5.4	**0.7229**	0.038	5.3	ug/L	391	Standard
	Cu	65	2308.8	1.9	**1.1652**	0.014	1.2	ug/L	147	Standard
	Zn	66	13053.3	0.7	**11.8043**	0.102	0.9	ug/L	184	Standard
>	**Ge**	72	418173.0	1.6				ug/L	422998	Standard
	As	75	531.5	13.1	**0.5253**	0.059	11.1	ug/L	-58	Standard
	Se	82	22.2	54.0	**-0.0153**	0.101	659.9	ug/L	15	Standard
	Se-1	77	136.3	5.9	**1.1512**	0.127	11.0	ug/L	58	Standard
>	**Ga**	71	790.0	11.2				mg/L	113	Standard
	Rb	85	6226.3	6.4				ug/L	27	Standard
	Y	89	366669.1	1.2				ug/L	383780	Standard
>	**Rh**	103	28.3	36.7				ug/L	18	Standard
	Mo	98	322.8	6.1	**0.1172**	0.008	6.8	ug/L	31	Standard
	Ag	107	106.3	3.9	**0.0044**	0.001	11.5	ug/L	84	Standard
	Cd	111	101.0	5.1	**0.0452**	0.002	4.9	mg/L	4	Standard
	Cd	114	217.0	6.1	**0.0390**	0.002	5.6	ug/L	15	Standard
>	**In**	115	496031.9	1.1				ug/L	515400	Standard
	Sn	118	485.0	36.9	**-0.0941**	0.031	33.0	ug/L	1043	Standard
	Sb	123	1006.7	28.3	**0.2117**	0.062	29.3	ug/L	227	Standard
	Ba	135	10215.4	2.6	**5.2559**	0.079	1.5	ug/L	31	Standard
	Ce	140	49659.6	2.7				ug/L	120	Standard
>	**Tb**	159	759583.5	0.8				ug/L	785817	Standard
	Ho	165	383.3	14.1				ug/L	7	Standard
	Tl	203	121.0	13.0	**0.0117**	0.002	16.0	ug/L	6	Standard
	Tl	205	131.7	7.9	**0.0123**	0.002	12.8	ug/L	8	Standard
	Pb	206	31584.6	1.8	**6.3716**	0.110	1.7	ug/L	201	Standard
	Pb	207	26494.8	0.6	**5.9067**	0.071	1.2	ug/L	177	Standard
	Pb	208	110332.0	2.1	**6.1238**	0.088	1.4	ug/L	722	Standard
	U	238	469.3	1.2	**0.0666**	0.001	1.3	ug/L	8	Standard
>	**Bi**	209	439883.7	0.8				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	30.0	72.6	**0.0064**	0.030	478.1	mg/L	38	Standard
K	39	40.0	37.5	**0.0525**	0.064	121.8	mg/L	33	Standard
Ca	43	33.3	34.6	**-0.3638**	2.049	563.3	mg/L	48	Standard
Fe	54	1092.3	3.6	**0.8011**	0.010	1.2	mg/L	131	Standard
Fe	57	438.3	6.9	**0.9374**	0.154	16.4	mg/L	153	Standard
> **Sc-1**	45	25635.0	4.0				mg/L	26715	Standard
Cl	35	101103.6	1.2				ug/L	102686	Standard
Kr	83	1.7	91.7				ug/L	2	Standard
Br	81	1673.4	12.5				ug/L	1897	Standard
P	31	7090.0	4.6				ug/L	18491	Standard
S	34	3425.4	0.4				ug/L	3734	Standard
Sr	88	58.3	27.6				ug/L	47	Standard
C	12	70.0	62.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	100.0				mg/L	23	Standard
Dy	164	602.6	18.5				mg/L	23	Standard
Ho-1	165	383.3	14.1				mg/L	7	Standard
Er	166	363.3	8.4				mg/L	13	Standard
I	127	30303.6	1.9				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.123	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		98.859	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.242
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.947
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Approved: July 06, 2016

Method 6020 - Summary Report

Sample ID: L1606145104
Sample Date/Time: Tuesday, July 05, 2016 11:54:30
Number of Replicates: 3
Autosampler Position: 232
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	59640.5	2.3				ug/L	59517	Standard
	Be	9	51.7	14.8	**0.0282**	0.009	32.9	ug/L	10	Standard
	Al	27	651313.8	1.1	**4.2602**	0.050	1.2	ug/L	1872	Standard
	Sc	45	27301.3	2.9				ug/L	26715	Standard
	Ti	47	1316.1	3.5	**5.0645**	0.163	3.2	ug/L	54	Standard
	V	51	8314.8	1.0	**0.9265**	0.012	1.3	ug/L	1419	Standard
	Cr	52	12316.3	0.6	**0.6864**	0.002	0.3	ug/L	7059	Standard
	Cr	53	2606.9	2.8	**2.4032**	0.063	2.6	ug/L	398	Standard
	Mn	55	151787.5	0.5	**22.8881**	0.145	0.6	ug/L	824	Standard
	Co	59	2591.6	1.2	**0.3410**	0.005	1.4	ug/L	167	Standard
	Ni	60	1900.5	2.9	**0.7750**	0.023	3.0	ug/L	391	Standard
	Cu	65	2716.6	1.1	**1.3098**	0.008	0.6	ug/L	147	Standard
	Zn	66	12752.4	1.0	**10.9286**	0.144	1.3	ug/L	184	Standard
>	Ge	72	440774.5	0.5				ug/L	422998	Standard
	As	75	461.4	9.2	**0.4420**	0.038	8.6	ug/L	-58	Standard
	Se	82	21.9	26.2	**-0.0264**	0.048	180.8	ug/L	15	Standard
	Se-1	77	123.7	10.6	**0.8972**	0.173	19.2	ug/L	58	Standard
>	Ga	71	743.4	6.6				mg/L	113	Standard
	Rb	85	5377.6	4.8				ug/L	27	Standard
	Y	89	383304.5	0.0				ug/L	383780	Standard
>	Rh	103	15.0	57.7				ug/L	18	Standard
	Mo	98	416.2	6.8	**0.1460**	0.012	8.5	ug/L	31	Standard
	Ag	107	96.0	9.5	**0.0021**	0.001	69.4	ug/L	84	Standard
	Cd	111	76.9	16.8	**0.0316**	0.006	19.0	mg/L	4	Standard
	Cd	114	202.2	26.9	**0.0341**	0.010	30.5	ug/L	15	Standard
>	In	115	521154.6	1.3				ug/L	515400	Standard
	Sn	118	476.7	10.6	**-0.0995**	0.010	9.8	ug/L	1043	Standard
	Sb	123	713.8	30.5	**0.1382**	0.049	35.3	ug/L	227	Standard
	Ba	135	9897.2	1.6	**4.8465**	0.129	2.7	ug/L	31	Standard
	Ce	140	49096.1	2.3				ug/L	120	Standard
>	Tb	159	791948.4	0.3				ug/L	785817	Standard
	Ho	165	413.3	12.2				ug/L	7	Standard
	Tl	203	144.0	10.8	**0.0137**	0.002	14.1	ug/L	6	Standard
	Tl	205	81.7	40.8	**0.0045**	0.005	102.1	ug/L	8	Standard
	Pb	206	24670.1	1.4	**4.7209**	0.060	1.3	ug/L	201	Standard
	Pb	207	20384.7	1.5	**4.3087**	0.070	1.6	ug/L	177	Standard
	Pb	208	86971.8	0.8	**4.5787**	0.029	0.6	ug/L	722	Standard
	U	238	541.0	5.2	**0.0732**	0.004	5.7	ug/L	8	Standard
>	Bi	209	462557.2	0.3				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	28.3	97.2	**0.0015**	0.034	2280.0	mg/L	38	Standard
K	39	41.7	25.0	**0.0492**	0.045	91.0	mg/L	33	Standard
Ca	43	28.3	10.2	**-1.5191**	0.388	25.5	mg/L	48	Standard
Fe	54	952.3	2.4	**0.6352**	0.036	5.6	mg/L	131	Standard
Fe	57	405.0	3.3	**0.7465**	0.048	6.5	mg/L	153	Standard
Sc-1	45	27301.3	2.9				mg/L	26715	Standard
Cl	35	106909.4	2.8				ug/L	102686	Standard
Kr	83	2.7	78.1				ug/L	2	Standard
Br	81	1606.8	7.6				ug/L	1897	Standard
P	31	7366.8	2.0				ug/L	18491	Standard
S	34	3655.4	3.4				ug/L	3734	Standard
Sr	88	70.0	21.4				ug/L	47	Standard
C	12	70.0	37.8				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	13.3	43.3				mg/L	23	Standard
Dy	164	731.8	10.6				mg/L	23	Standard
Ho-1	165	413.3	12.2				mg/L	7	Standard
Er	166	450.0	12.4				mg/L	13	Standard
I	127	29051.2	0.4				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6		100.208	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		104.203	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		101.117
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		104.048
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606145105
Sample Date/Time: Tuesday, July 05, 2016 11:57:41
Number of Replicates: 3
Autosampler Position: 233
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	58588.2	3.7				ug/L	59517	Standard
	Be	9	116.7	31.0	**0.1053**	0.042	40.2	ug/L	10	Standard
	Al	27	92826.9	1.9	**0.6081**	0.031	5.1	ug/L	1872	Standard
	Sc	45	26227.7	1.7				ug/L	26715	Standard
	Ti	47	3936.5	2.1	**16.3111**	0.457	2.8	ug/L	54	Standard
	V	51	10928.0	1.0	**1.3351**	0.013	1.0	ug/L	1419	Standard
	Cr	52	17058.9	1.2	**1.4233**	0.022	1.6	ug/L	7059	Standard
	Cr	53	3093.7	6.6	**3.0693**	0.235	7.6	ug/L	398	Standard
	Mn	55	27000.7	1.1	**4.1360**	0.069	1.7	ug/L	824	Standard
	Co	59	1487.4	1.9	**0.1938**	0.005	2.4	ug/L	167	Standard
	Ni	60	1703.4	3.2	**0.7106**	0.025	3.5	ug/L	391	Standard
	Cu	65	2105.5	2.7	**1.0428**	0.036	3.5	ug/L	147	Standard
	Zn	66	8804.9	1.4	**7.8184**	0.158	2.0	ug/L	184	Standard
>	Ge	72	423003.0	0.7				ug/L	422998	Standard
	As	75	1338.6	0.3	**1.2315**	0.007	0.6	ug/L	-58	Standard
	Se	82	21.3	5.1	**-0.0243**	0.011	43.4	ug/L	15	Standard
	Se-1	77	132.3	4.8	**1.0768**	0.084	7.8	ug/L	58	Standard
>	Ga	71	1020.0	4.5				mg/L	113	Standard
	Rb	85	5507.7	0.7				ug/L	27	Standard
	Y	89	373045.0	0.6				ug/L	383780	Standard
>	Rh	103	11.7	137.8				ug/L	18	Standard
	Mo	98	262.3	6.0	**0.0924**	0.006	6.9	ug/L	31	Standard
	Ag	107	109.7	1.4	**0.0047**	0.000	6.0	ug/L	84	Standard
	Cd	111	109.5	5.6	**0.0487**	0.003	5.7	mg/L	4	Standard
	Cd	114	282.5	31.4	**0.0516**	0.018	34.4	ug/L	15	Standard
>	In	115	501649.9	0.3				ug/L	515400	Standard
	Sn	118	526.7	18.7	**-0.0875**	0.018	20.2	ug/L	1043	Standard
	Sb	123	586.8	28.7	**0.1154**	0.038	32.8	ug/L	227	Standard
	Ba	135	9884.6	1.2	**5.0283**	0.069	1.4	ug/L	31	Standard
	Ce	140	26367.9	3.0				ug/L	120	Standard
>	Tb	159	777177.3	0.4				ug/L	785817	Standard
	Ho	165	535.0	9.5				ug/L	7	Standard
	Tl	203	451.3	3.8	**0.0526**	0.002	3.9	ug/L	6	Standard
	Tl	205	398.3	22.1	**0.0502**	0.012	24.8	ug/L	8	Standard
	Pb	206	14523.0	1.7	**2.8646**	0.053	1.9	ug/L	201	Standard
	Pb	207	12095.5	2.0	**2.6327**	0.025	0.9	ug/L	177	Standard
	Pb	208	50729.4	1.8	**2.7505**	0.048	1.8	ug/L	722	Standard
	U	238	404.3	2.6	**0.0562**	0.001	2.3	ug/L	8	Standard
>	Bi	209	446032.8	1.0				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	43.3	29.0	**0.0218**	0.016	73.7	mg/L	38	Standard
K	39	43.3	46.6	**0.0650**	0.094	144.6	mg/L	33	Standard
Ca	43	41.7	48.5	**0.7656**	3.153	411.9	mg/L	48	Standard
Fe	54	1227.0	6.0	**0.8915**	0.073	8.2	mg/L	131	Standard
Fe	57	510.0	2.9	**1.1274**	0.028	2.4	mg/L	153	Standard
> **Sc-1**	45	26227.7	1.7				mg/L	26715	Standard
Cl	35	106266.0	1.0				ug/L	102686	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	1563.4	5.4				ug/L	1897	Standard
P	31	7021.6	1.0				ug/L	18491	Standard
S	34	3633.8	1.6				ug/L	3734	Standard
Sr	88	80.0	16.5				ug/L	47	Standard
C	12	60.0	28.9				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	23	Standard
Dy	164	911.9	3.4				mg/L	23	Standard
Ho-1	165	535.0	9.5				mg/L	7	Standard
Er	166	516.7	15.8				mg/L	13	Standard
I	127	29779.2	1.7				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.440	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.001	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		97.332
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.331
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606145106 WG574521-02
Sample Date/Time: Tuesday, July 05, 2016 12:00:52
Number of Replicates: 3
Autosampler Position: 234
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	58452.6	3.5				ug/L	59517	Standard
	Be	9	111.7	38.1	**0.1002**	0.053	52.4	ug/L	10	Standard
	Al	27	318919.9	0.7	**2.1238**	0.084	4.0	ug/L	1872	Standard
	Sc	45	25932.2	2.7				ug/L	26715	Standard
	Ti	47	2048.1	2.1	**8.3389**	0.301	3.6	ug/L	54	Standard
	V	51	42887.2	0.5	**5.7438**	0.096	1.7	ug/L	1419	Standard
	Cr	52	18270.0	1.2	**1.5847**	0.044	2.8	ug/L	7059	Standard
	Cr	53	3193.7	2.4	**3.1683**	0.035	1.1	ug/L	398	Standard
	Mn	55	163898.4	0.6	**25.6789**	0.411	1.6	ug/L	824	Standard
	Co	59	2641.9	0.7	**0.3624**	0.009	2.3	ug/L	167	Standard
	Ni	60	4286.3	1.6	**2.0837**	0.070	3.4	ug/L	391	Standard
	Cu	65	9810.8	2.0	**5.1286**	0.077	1.5	ug/L	147	Standard
	Zn	66	10912.9	1.2	**9.6933**	0.179	1.9	ug/L	184	Standard
>	Ge	72	424537.0	1.5				ug/L	422998	Standard
	As	75	1501.2	0.8	**1.3704**	0.029	2.1	ug/L	-58	Standard
	Se	82	59.7	8.9	**0.3007**	0.039	12.8	ug/L	15	Standard
	Se-1	77	144.7	3.1	**1.2324**	0.051	4.1	ug/L	58	Standard
>	Ga	71	1151.7	10.0				mg/L	113	Standard
	Rb	85	4672.4	3.9				ug/L	27	Standard
	Y	89	398677.4	1.0				ug/L	383780	Standard
>	Rh	103	15.0	57.7				ug/L	18	Standard
	Mo	98	790.9	3.3	**0.2985**	0.008	2.7	ug/L	31	Standard
	Ag	107	125.7	19.7	**0.0073**	0.004	55.8	ug/L	84	Standard
	Cd	111	462.9	4.3	**0.2204**	0.007	3.2	mg/L	4	Standard
	Cd	114	1087.2	1.9	**0.2129**	0.007	3.2	ug/L	15	Standard
>	In	115	498713.7	1.6				ug/L	515400	Standard
	Sn	118	418.3	38.7	**-0.1061**	0.029	27.6	ug/L	1043	Standard
	Sb	123	472.2	20.4	**0.0905**	0.023	25.5	ug/L	227	Standard
	Ba	135	25027.3	1.0	**12.8465**	0.328	2.6	ug/L	31	Standard
	Ce	140	130403.8	0.7				ug/L	120	Standard
>	Tb	159	771205.1	1.2				ug/L	785817	Standard
	Ho	165	3028.6	4.1				ug/L	7	Standard
	Tl	203	207.7	5.7	**0.0222**	0.002	8.0	ug/L	6	Standard
	Tl	205	175.0	8.6	**0.0181**	0.002	10.2	ug/L	8	Standard
	Pb	206	15751.2	1.0	**3.0986**	0.069	2.2	ug/L	201	Standard
	Pb	207	12955.9	1.0	**2.8124**	0.021	0.8	ug/L	177	Standard
	Pb	208	54935.0	0.7	**2.9710**	0.057	1.9	ug/L	722	Standard
	U	238	1866.8	0.6	**0.2674**	0.002	0.6	ug/L	8	Standard
>	Bi	209	447795.4	1.2				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	55.0	45.5	**0.0381**	0.034	90.2	mg/L	38	Standard
K	39	46.7	6.2	**0.0812**	0.011	13.6	mg/L	33	Standard
Ca	43	58.3	44.0	**3.5989**	4.167	115.8	mg/L	48	Standard
Fe	54	1895.3	8.2	**1.4582**	0.136	9.3	mg/L	131	Standard
Fe	57	635.0	15.0	**1.5414**	0.262	17.0	mg/L	153	Standard
> **Sc-1**	45	25932.2	2.7				mg/L	26715	Standard
Cl	35	108583.1	2.1				ug/L	102686	Standard
Kr	83	1.3	43.3				ug/L	2	Standard
Br	81	1816.8	6.6				ug/L	1897	Standard
P	31	6998.3	6.1				ug/L	18491	Standard
S	34	3810.5	8.5				ug/L	3734	Standard
Sr	88	85.0	31.1				ug/L	47	Standard
C	12	120.0	14.4				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	50.0	69.3				mg/L	23	Standard
Dy	164	4605.9	7.9				mg/L	23	Standard
Ho-1	165	3028.6	4.1				mg/L	7	Standard
Er	166	2883.6	1.7				mg/L	13	Standard
I	127	29842.7	3.4				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		98.212	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.364	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.763
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.727
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, July 05, 2016 12:04:06
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	60838.6	1.2				ug/L	59517	Standard
	Be	9	44458.5	3.7	**50.0051**	2.323	4.6	ug/L	10	Standard
	Al	27	7478556.5	0.9	**48.0750**	0.433	0.9	ug/L	1872	Standard
	Sc	45	27386.4	1.8				ug/L	26715	Standard
	Ti	47	24816.6	1.5	**98.0648**	2.630	2.7	ug/L	54	Standard
	V	51	373142.7	0.9	**48.5325**	1.162	2.4	ug/L	1419	Standard
	Cr	52	381682.9	1.3	**49.5899**	1.284	2.6	ug/L	7059	Standard
	Cr	53	47979.2	0.5	**50.4138**	0.911	1.8	ug/L	398	Standard
	Mn	55	322593.6	1.6	**47.8905**	1.516	3.2	ug/L	824	Standard
	Co	59	347219.3	0.9	**48.1099**	1.187	2.5	ug/L	167	Standard
	Ni	60	99038.0	0.9	**49.6579**	0.386	0.8	ug/L	391	Standard
	Cu	65	98421.7	1.1	**49.3072**	1.146	2.3	ug/L	147	Standard
	Zn	66	57845.9	1.6	**49.2090**	1.532	3.1	ug/L	184	Standard
>	Ge	72	449181.6	1.5				ug/L	422998	Standard
	As	75	58659.0	1.3	**48.7545**	1.341	2.8	ug/L	-58	Standard
	Se	82	6000.6	1.4	**48.0056**	1.419	3.0	ug/L	15	Standard
	Se-1	77	3982.5	2.4	**48.8000**	1.663	3.4	ug/L	58	Standard
>	Ga	71	66.7	30.3				mg/L	113	Standard
	Rb	85	848.4	4.3				ug/L	27	Standard
	Y	89	388308.0	0.4				ug/L	383780	Standard
>	Rh	103	30.0	44.1				ug/L	18	Standard
	Mo	98	262276.3	0.9	**97.3335**	1.845	1.9	ug/L	31	Standard
	Ag	107	337726.1	1.6	**49.4532**	1.538	3.1	ug/L	84	Standard
	Cd	111	106537.8	1.8	**49.3683**	1.580	3.2	mg/L	4	Standard
	Cd	114	262775.5	1.0	**50.1687**	0.512	1.0	ug/L	15	Standard
>	In	115	522341.5	1.5				ug/L	515400	Standard
	Sn	118	289720.6	1.1	**49.2050**	1.308	2.7	ug/L	1043	Standard
	Sb	123	236187.5	1.8	**50.9109**	1.664	3.3	ug/L	227	Standard
	Ba	135	100057.6	0.8	**49.0989**	0.970	2.0	ug/L	31	Standard
	Ce	140	940.0	28.0				ug/L	120	Standard
>	Tb	159	807561.5	2.6				ug/L	785817	Standard
	Ho	165	11.7	89.2				ug/L	7	Standard
	Tl	203	403024.9	0.6	**49.1853**	1.084	2.2	ug/L	6	Standard
	Tl	205	356934.0	1.2	**50.0059**	1.362	2.7	ug/L	8	Standard
	Pb	206	253041.9	0.6	**49.6088**	1.160	2.3	ug/L	201	Standard
	Pb	207	229060.5	0.3	**49.6682**	0.925	1.9	ug/L	177	Standard
	Pb	208	939880.6	0.5	**50.7375**	1.077	2.1	ug/L	722	Standard
	U	238	345721.3	0.9	**49.1404**	1.276	2.6	ug/L	8	Standard
>	Bi	209	455564.3	1.7				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	3965.5	5.0	**4.8257**	0.272	5.6	mg/L	38	Standard
K	39	1005.0	6.7	**4.1666**	0.359	8.6	mg/L	33	Standard
Ca	43	63.3	9.1	**3.8479**	0.938	24.4	mg/L	48	Standard
Fe	54	6135.9	3.5	**4.7078**	0.127	2.7	mg/L	131	Standard
Fe	57	1786.8	2.7	**4.9214**	0.241	4.9	mg/L	153	Standard
Sc-1	45	27386.4	1.8				mg/L	26715	Standard
Cl	35	124070.0	1.6				ug/L	102686	Standard
Kr	83	2.7	21.7				ug/L	2	Standard
Br	81	1790.1	12.7				ug/L	1897	Standard
P	31	20143.4	2.1				ug/L	18491	Standard
S	34	4897.5	4.4				ug/L	3734	Standard
Sr	88	80.0	21.7				ug/L	47	Standard
C	12	53.3	60.3				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	34.6				mg/L	23	Standard
Dy	164	15.7	36.8				mg/L	23	Standard
Ho-1	165	11.7	89.2				mg/L	7	Standard
Er	166	20.0	0.0				mg/L	13	Standard
I	127	15040.8	3.6				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	100.010		
Al	27	96.150		
Sc	45			
Ti	47	98.065		
V	51	97.065		
Cr	52	99.180		
Cr	53			
Mn	55	95.781		
Co	59	96.220		
Ni	60	99.316		
Cu	65	98.614		
Zn	66	98.418		
Ge	72		106.190	
As	75	97.509		
Se	82	96.011		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
Rh	103			
Mo	98	97.333		
Ag	107	98.906		
Cd	111	98.737		
Cd	114			
In	115			101.347
Sn	118	98.410		
Sb	123	101.822		
Ba	135	98.198		
Ce	140			
Tb	159			
Ho	165			
Tl	203	98.371		
Tl	205			
Pb	206			
Pb	207			
Pb	208	101.475		
U	238	98.281		
Bi	209			102.475
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, July 05, 2016 12:07:17
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	61857.7	0.8				ug/L	59517	Standard
	Be	9	23.3	32.7	**-0.0053**	0.008	157.3	ug/L	10	Standard
	Al	27	2840.3	34.2	**0.0055**	0.006	108.9	ug/L	1872	Standard
	Sc	45	27840.6	2.2				ug/L	26715	Standard
	Ti	47	28.3	35.5	**-0.1363**	0.042	30.8	ug/L	54	Standard
	V	51	1397.2	2.3	**-0.0010**	0.005	459.1	ug/L	1419	Standard
	Cr	52	6780.5	1.1	**-0.0969**	0.030	31.3	ug/L	7059	Standard
	Cr	53	1530.1	2.9	**1.1752**	0.029	2.5	ug/L	398	Standard
	Mn	55	835.7	22.7	**-0.0088**	0.031	346.9	ug/L	824	Standard
	Co	59	241.0	5.7	**0.0076**	0.003	35.3	ug/L	167	Standard
	Ni	60	285.7	9.1	**-0.0592**	0.012	21.0	ug/L	391	Standard
	Cu	65	133.3	2.2	**-0.0136**	0.002	16.8	ug/L	147	Standard
	Zn	66	252.0	10.0	**0.0514**	0.026	50.7	ug/L	184	Standard
>	Ge	72	459148.3	2.5				ug/L	422998	Standard
	As	75	-67.2	62.8	**-0.0030**	0.034	1129.6	ug/L	-58	Standard
	Se	82	15.4	38.4	**-0.0850**	0.045	52.5	ug/L	15	Standard
	Se-1	77	99.7	5.5	**0.5426**	0.061	11.3	ug/L	58	Standard
>	Ga	71	61.7	33.8				mg/L	113	Standard
	Rb	85	38.3	32.8				ug/L	27	Standard
	Y	89	400704.7	0.8				ug/L	383780	Standard
>	Rh	103	5.0	0.0				ug/L	18	Standard
	Mo	98	193.4	7.3	**0.0598**	0.006	10.8	ug/L	31	Standard
	Ag	107	117.3	17.2	**0.0045**	0.003	70.6	ug/L	84	Standard
	Cd	111	16.0	42.5	**0.0030**	0.003	106.1	mg/L	4	Standard
	Cd	114	42.8	62.4	**0.0033**	0.005	152.1	ug/L	15	Standard
>	In	115	546361.8	2.1				ug/L	515400	Standard
	Sn	118	1136.7	26.0	**0.0036**	0.044	1221.9	ug/L	1043	Standard
	Sb	123	943.1	28.8	**0.1773**	0.052	29.4	ug/L	227	Standard
	Ba	135	71.7	32.3	**0.0101**	0.012	115.1	ug/L	31	Standard
	Ce	140	466.7	35.0				ug/L	120	Standard
>	Tb	159	826410.9	2.5				ug/L	785817	Standard
	Ho	165	8.3	34.6				ug/L	7	Standard
	Tl	203	76.3	25.3	**0.0054**	0.003	46.7	ug/L	6	Standard
	Tl	205	55.0	15.7	**0.0006**	0.001	215.3	ug/L	8	Standard
	Pb	206	285.0	11.5	**0.0082**	0.008	92.1	ug/L	201	Standard
	Pb	207	244.3	6.4	**0.0031**	0.005	146.8	ug/L	177	Standard
	Pb	208	1017.7	17.3	**0.0044**	0.011	242.9	ug/L	722	Standard
	U	238	60.3	24.4	**0.0058**	0.002	38.8	ug/L	8	Standard
>	Bi	209	474436.7	2.5				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	23.3	44.6	**-0.0056**	0.012	214.0	mg/L	38	Standard
K	39	30.0	76.4	**-0.0044**	0.094	2156.6	mg/L	33	Standard
Ca	43	30.0	28.9	**-1.3278**	1.429	107.6	mg/L	48	Standard
Fe	54	129.2	16.9	**-0.0167**	0.016	96.0	mg/L	131	Standard
Fe	57	226.7	12.5	**0.1931**	0.097	50.1	mg/L	153	Standard
Sc-1	45	27840.6	2.2				mg/L	26715	Standard
Cl	35	120675.4	1.5				ug/L	102686	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	1633.4	7.0				ug/L	1897	Standard
P	31	20031.6	3.6				ug/L	18491	Standard
S	34	4719.1	2.8				ug/L	3734	Standard
Sr	88	66.7	37.0				ug/L	47	Standard
C	12	66.7	31.2				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	16.7	91.7				mg/L	23	Standard
Dy	164	22.9	91.6				mg/L	23	Standard
Ho-1	165	8.3	34.6				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	9609.7	3.4				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		108.546	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		106.007
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		106.720
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: L1606145107
Sample Date/Time: Tuesday, July 05, 2016 12:10:30
Number of Replicates: 3
Autosampler Position: 235
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59463.2	2.0				ug/L	59517	Standard
	Be	9	271.7	10.1	**0.2818**	0.034	12.0	ug/L	10	Standard
	Al	27	563585.4	1.6	**3.6964**	0.112	3.0	ug/L	1872	Standard
	Sc	45	25695.1	4.1				ug/L	26715	Standard
	Ti	47	9216.8	0.7	**38.2822**	0.331	0.9	ug/L	54	Standard
	V	51	30052.2	0.8	**3.9605**	0.059	1.5	ug/L	1419	Standard
	Cr	52	32999.6	0.8	**3.6372**	0.036	1.0	ug/L	7059	Standard
	Cr	53	5007.5	5.3	**5.1872**	0.291	5.6	ug/L	398	Standard
	Mn	55	126812.5	1.1	**19.7882**	0.336	1.7	ug/L	824	Standard
	Co	59	4650.7	2.1	**0.6552**	0.013	2.0	ug/L	167	Standard
	Ni	60	4558.7	2.3	**2.2223**	0.061	2.8	ug/L	391	Standard
	Cu	65	5570.0	2.4	**2.8700**	0.046	1.6	ug/L	147	Standard
	Zn	66	19959.8	1.3	**17.8147**	0.249	1.4	ug/L	184	Standard
>	**Ge**	72	425585.2	0.8				ug/L	422998	Standard
	As	75	6588.1	2.5	**5.8230**	0.127	2.2	ug/L	-58	Standard
	Se	82	41.3	9.5	**0.1439**	0.033	22.7	ug/L	15	Standard
	Se-1	77	123.7	16.8	**0.9511**	0.259	27.2	ug/L	58	Standard
>	**Ga**	71	2348.5	2.9				mg/L	113	Standard
	Rb	85	18669.8	1.9				ug/L	27	Standard
	Y	89	385954.3	1.2				ug/L	383780	Standard
>	**Rh**	103	13.3	57.3				ug/L	18	Standard
	Mo	98	1308.2	3.9	**0.5002**	0.028	5.6	ug/L	31	Standard
	Ag	107	158.0	10.6	**0.0123**	0.003	23.1	ug/L	84	Standard
	Cd	111	419.5	1.3	**0.1996**	0.006	3.1	mg/L	4	Standard
	Cd	114	991.1	7.1	**0.1939**	0.017	8.5	ug/L	15	Standard
>	**In**	115	498311.6	1.9				ug/L	515400	Standard
	Sn	118	643.3	30.4	**-0.0660**	0.035	53.4	ug/L	1043	Standard
	Sb	123	717.3	29.3	**0.1456**	0.047	32.4	ug/L	227	Standard
	Ba	135	21850.8	2.4	**11.2195**	0.221	2.0	ug/L	31	Standard
	Ce	140	70835.2	0.9				ug/L	120	Standard
>	**Tb**	159	773727.5	1.8				ug/L	785817	Standard
	Ho	165	1485.1	8.6				ug/L	7	Standard
	Tl	203	2063.5	3.9	**0.2523**	0.006	2.2	ug/L	6	Standard
	Tl	205	1733.4	7.2	**0.2399**	0.013	5.6	ug/L	8	Standard
	Pb	206	29512.4	0.5	**5.8409**	0.134	2.3	ug/L	201	Standard
	Pb	207	24603.3	0.8	**5.3801**	0.114	2.1	ug/L	177	Standard
	Pb	208	103716.4	1.5	**5.6481**	0.155	2.8	ug/L	722	Standard
	U	238	1387.7	4.4	**0.1979**	0.007	3.5	ug/L	8	Standard
>	**Bi**	209	448200.2	2.0				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	50.0	10.0	**0.0319**	0.009	27.3	mg/L	38	Standard
K	39	66.7	8.7	**0.1752**	0.038	21.6	mg/L	33	Standard
Ca	43	35.0	51.5	**-0.1982**	2.805	1415.4	mg/L	48	Standard
Fe	54	4006.8	3.7	**3.2418**	0.015	0.5	mg/L	131	Standard
Fe	57	1298.4	5.5	**3.7102**	0.376	10.1	mg/L	153	Standard
> **Sc-1**	45	25695.1	4.1				mg/L	26715	Standard
Cl	35	106066.0	0.7				ug/L	102686	Standard
Kr	83	2.0	132.3				ug/L	2	Standard
Br	81	1646.8	11.5				ug/L	1897	Standard
P	31	7333.4	1.7				ug/L	18491	Standard
S	34	4165.6	0.6				ug/L	3734	Standard
Sr	88	95.0	29.3				ug/L	47	Standard
C	12	50.0	105.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	6.7	86.6				mg/L	23	Standard
Dy	164	2350.0	8.7				mg/L	23	Standard
Ho-1	165	1485.1	8.6				mg/L	7	Standard
Er	166	1396.7	6.1				mg/L	13	Standard
I	127	27097.6	2.5				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		99.910	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		100.612	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		96.684
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		100.818
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606145108
Sample Date/Time: Tuesday, July 05, 2016 12:13:42
Number of Replicates: 3
Autosampler Position: 236
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	56130.6	4.3				ug/L	59517	Standard
	Be	9	390.0	2.6	**0.4454**	0.033	7.3	ug/L	10	Standard
	Al	27	714616.0	1.9	**4.9765**	0.305	6.1	ug/L	1872	Standard
	Sc	45	24990.6	1.8				ug/L	26715	Standard
	Ti	47	10313.5	2.7	**44.3310**	0.816	1.8	ug/L	54	Standard
	V	51	31216.7	3.2	**4.2666**	0.094	2.2	ug/L	1419	Standard
	Cr	52	51017.4	1.8	**6.3994**	0.132	2.1	ug/L	7059	Standard
	Cr	53	7175.0	5.9	**7.8784**	0.311	4.0	ug/L	398	Standard
	Mn	55	144939.4	1.4	**23.4138**	0.562	2.4	ug/L	824	Standard
	Co	59	5125.2	1.4	**0.7502**	0.006	0.8	ug/L	167	Standard
	Ni	60	5278.3	2.9	**2.6996**	0.049	1.8	ug/L	391	Standard
	Cu	65	5093.2	3.7	**2.7090**	0.062	2.3	ug/L	147	Standard
	Zn	66	20594.0	1.5	**19.0178**	0.238	1.3	ug/L	184	Standard
>	Ge	72	411597.6	2.1				ug/L	422998	Standard
	As	75	6186.0	2.4	**5.6554**	0.089	1.6	ug/L	-58	Standard
	Se	82	33.8	9.8	**0.0904**	0.033	36.9	ug/L	15	Standard
	Se-1	77	117.7	7.9	**0.9285**	0.158	17.0	ug/L	58	Standard
>	Ga	71	2496.9	1.1				mg/L	113	Standard
	Rb	85	21094.7	1.3				ug/L	27	Standard
	Y	89	375854.5	2.2				ug/L	383780	Standard
>	Rh	103	15.0	57.7				ug/L	18	Standard
	Mo	98	1308.0	3.2	**0.5065**	0.011	2.2	ug/L	31	Standard
	Ag	107	178.3	7.1	**0.0157**	0.002	11.1	ug/L	84	Standard
	Cd	111	460.5	9.7	**0.2223**	0.019	8.6	mg/L	4	Standard
	Cd	114	1153.3	11.3	**0.2291**	0.024	10.6	ug/L	15	Standard
>	In	115	491828.9	1.4				ug/L	515400	Standard
	Sn	118	501.7	18.7	**-0.0903**	0.016	17.3	ug/L	1043	Standard
	Sb	123	553.0	26.0	**0.1100**	0.031	28.5	ug/L	227	Standard
	Ba	135	25357.2	2.2	**13.1943**	0.148	1.1	ug/L	31	Standard
	Ce	140	83605.1	1.4				ug/L	120	Standard
>	Tb	159	755464.3	0.3				ug/L	785817	Standard
	Ho	165	1738.4	1.8				ug/L	7	Standard
	Tl	203	2133.2	1.5	**0.2671**	0.002	0.9	ug/L	6	Standard
	Tl	205	1770.1	6.4	**0.2511**	0.016	6.3	ug/L	8	Standard
	Pb	206	27937.7	1.6	**5.6556**	0.062	1.1	ug/L	201	Standard
	Pb	207	23353.0	1.5	**5.2233**	0.017	0.3	ug/L	177	Standard
	Pb	208	97617.9	2.7	**5.4374**	0.163	3.0	ug/L	722	Standard
	U	238	1483.4	1.0	**0.2168**	0.005	2.4	ug/L	8	Standard
>	Bi	209	437967.3	1.5				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	60.0	14.4	**0.0469**	0.012	24.6	mg/L	38	Standard
K	39	86.7	13.3	**0.2770**	0.061	22.1	mg/L	33	Standard
Ca	43	38.3	19.9	**0.5772**	1.345	233.0	mg/L	48	Standard
Fe	54	4538.8	2.5	**3.7943**	0.055	1.4	mg/L	131	Standard
Fe	57	1466.7	10.1	**4.3719**	0.419	9.6	mg/L	153	Standard
> **Sc-1**	45	24990.6	1.8				mg/L	26715	Standard
Cl	35	105965.3	1.5				ug/L	102686	Standard
Kr	83	2.3	49.5				ug/L	2	Standard
Br	81	1653.4	9.8				ug/L	1897	Standard
P	31	7376.8	0.4				ug/L	18491	Standard
S	34	4207.3	3.6				ug/L	3734	Standard
Sr	88	85.0	29.4				ug/L	47	Standard
C	12	80.0	12.5				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	50.0				mg/L	23	Standard
Dy	164	2392.9	8.1				mg/L	23	Standard
Ho-1	165	1738.4	1.8				mg/L	7	Standard
Er	166	1543.4	17.7				mg/L	13	Standard
I	127	28022.6	5.3				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.311	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		97.305	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.427
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		98.516
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606145109S WG574521-07
Sample Date/Time: Tuesday, July 05, 2016 12:16:54
Number of Replicates: 3
Autosampler Position: 237
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	56190.8	4.9				ug/L	59517	Standard
	Be	9	2413.5	4.5	**2.9148**	0.218	7.5	ug/L	10	Standard
	Al	27	371125.2	2.4	**2.5768**	0.177	6.9	ug/L	1872	Standard
	Sc	45	26199.3	1.2				ug/L	26715	Standard
	Ti	47	2656.2	3.1	**10.9848**	0.609	5.5	ug/L	54	Standard
	V	51	72353.8	1.8	**9.9011**	0.444	4.5	ug/L	1419	Standard
	Cr	52	39238.4	2.3	**4.5718**	0.251	5.5	ug/L	7059	Standard
	Cr	53	5817.8	5.6	**6.1713**	0.535	8.7	ug/L	398	Standard
	Mn	55	194686.5	0.9	**30.7906**	1.037	3.4	ug/L	824	Standard
	Co	59	20292.2	0.6	**2.9764**	0.090	3.0	ug/L	167	Standard
	Ni	60	10310.8	3.5	**5.3414**	0.313	5.9	ug/L	391	Standard
	Cu	65	16805.3	3.2	**8.9219**	0.495	5.5	ug/L	147	Standard
	Zn	66	16269.4	2.6	**14.6606**	0.774	5.3	ug/L	184	Standard
>	Ge	72	421107.8	2.7				ug/L	422998	Standard
	As	75	4858.7	2.3	**4.3571**	0.207	4.7	ug/L	-58	Standard
	Se	82	413.1	4.8	**3.3379**	0.258	7.7	ug/L	15	Standard
	Se-1	77	370.0	5.4	**4.2398**	0.392	9.3	ug/L	58	Standard
>	Ga	71	1511.7	8.6				mg/L	113	Standard
	Rb	85	5796.1	4.4				ug/L	27	Standard
	Y	89	409247.1	1.2				ug/L	383780	Standard
>	Rh	103	13.3	21.7				ug/L	18	Standard
	Mo	98	1013.4	3.4	**0.3905**	0.021	5.5	ug/L	31	Standard
	Ag	107	16993.5	2.1	**2.6302**	0.114	4.3	ug/L	84	Standard
	Cd	111	6180.4	3.0	**3.0365**	0.151	5.0	mg/L	4	Standard
	Cd	114	14740.9	0.9	**2.9837**	0.103	3.4	ug/L	15	Standard
>	In	115	492243.2	2.7				ug/L	515400	Standard
	Sn	118	545.0	27.7	**-0.0819**	0.030	36.9	ug/L	1043	Standard
	Sb	123	1618.1	8.4	**0.3542**	0.036	10.2	ug/L	227	Standard
	Ba	135	34944.9	1.6	**18.1908**	0.739	4.1	ug/L	31	Standard
	Ce	140	160735.2	2.9				ug/L	120	Standard
>	Tb	159	765593.4	3.7				ug/L	785817	Standard
	Ho	165	3587.1	5.4				ug/L	7	Standard
	Tl	203	20903.4	1.2	**2.6653**	0.086	3.2	ug/L	6	Standard
	Tl	205	17982.3	0.6	**2.6285**	0.058	2.2	ug/L	8	Standard
	Pb	206	32329.5	2.4	**6.5920**	0.298	4.5	ug/L	201	Standard
	Pb	207	27598.8	3.1	**6.2208**	0.340	5.5	ug/L	177	Standard
	Pb	208	115863.4	1.6	**6.5015**	0.254	3.9	ug/L	722	Standard
	U	238	19080.3	2.2	**2.8353**	0.131	4.6	ug/L	8	Standard
>	Bi	209	435586.5	2.4				ug/L	444563	Standard

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Na	23	1.7	173.2	**19.6496**	34.025	173.2	mg/L	0	Standard
Mg	24	65.0	35.3	**0.0496**	0.029	59.3	mg/L	38	Standard
K	39	51.7	31.1	**0.1009**	0.069	68.2	mg/L	33	Standard
Ca	43	33.3	37.7	**-0.5368**	2.007	373.9	mg/L	48	Standard
Fe	54	2186.8	2.4	**1.6814**	0.065	3.9	mg/L	131	Standard
Fe	57	733.4	12.3	**1.8375**	0.311	16.9	mg/L	153	Standard
> **Sc-1**	45	26199.3	1.2				mg/L	26715	Standard
Cl	35	108414.5	1.1				ug/L	102686	Standard
Kr	83	2.0	50.0				ug/L	2	Standard
Br	81	2523.5	7.7				ug/L	1897	Standard
P	31	7423.5	1.0				ug/L	18491	Standard
S	34	4045.5	5.1				ug/L	3734	Standard
Sr	88	93.3	15.5				ug/L	47	Standard
C	12	136.7	8.4				mg/L	63	Standard
N	14	3.3	173.2				mg/L	0	Standard
Hg	202	43.3	35.3				mg/L	23	Standard
Dy	164	5441.4	1.3				mg/L	23	Standard
Ho-1	165	3587.1	5.4				mg/L	7	Standard
Er	166	3540.4	2.6				mg/L	13	Standard
I	127	33304.9	1.8				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		94.412	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		99.553	
As	75			
Se	82			
Se-1	77			
> Ga	71			

Sample ID: L1606145109S WG574521-07
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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		95.507
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		97.981
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: L1606145109S WG574521-07
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Method 6020 - Summary Report

Sample ID: L1606145110SD WG574521-08
Sample Date/Time: Tuesday, July 05, 2016 12:20:05
Number of Replicates: 3
Autosampler Position: 238
Sample Description: 10
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	Li	6	54180.1	3.9				ug/L	59517	Standard
	Be	9	2170.2	6.2	**2.7136**	0.200	7.4	ug/L	10	Standard
	Al	27	298363.5	2.5	**2.1427**	0.042	2.0	ug/L	1872	Standard
	Sc	45	25074.1	0.3				ug/L	26715	Standard
	Ti	47	1478.7	2.7	**6.1802**	0.101	1.6	ug/L	54	Standard
	V	51	60367.5	1.2	**8.4684**	0.144	1.7	ug/L	1419	Standard
	Cr	52	33902.9	0.8	**3.9533**	0.111	2.8	ug/L	7059	Standard
	Cr	53	5007.5	1.8	**5.4111**	0.136	2.5	ug/L	398	Standard
	Mn	55	162958.4	1.0	**26.4853**	0.261	1.0	ug/L	824	Standard
	Co	59	18000.0	1.4	**2.7132**	0.050	1.8	ug/L	167	Standard
	Ni	60	8905.3	1.3	**4.7202**	0.058	1.2	ug/L	391	Standard
	Cu	65	14460.9	1.0	**7.8846**	0.181	2.3	ug/L	147	Standard
	Zn	66	12677.6	1.2	**11.7127**	0.193	1.6	ug/L	184	Standard
>	Ge	72	409283.0	1.5				ug/L	422998	Standard
	As	75	3802.4	1.1	**3.5163**	0.084	2.4	ug/L	-58	Standard
	Se	82	363.9	1.2	**3.0022**	0.084	2.8	ug/L	15	Standard
	Se-1	77	342.0	2.1	**3.9927**	0.069	1.7	ug/L	58	Standard
>	Ga	71	1035.0	4.6				mg/L	113	Standard
	Rb	85	2341.8	7.3				ug/L	27	Standard
	Y	89	387313.8	1.7				ug/L	383780	Standard
>	Rh	103	11.7	24.7				ug/L	18	Standard
	Mo	98	998.1	4.5	**0.3934**	0.015	3.9	ug/L	31	Standard
	Ag	107	14925.7	0.6	**2.3624**	0.029	1.2	ug/L	84	Standard
	Cd	111	5660.9	2.7	**2.8461**	0.121	4.3	mg/L	4	Standard
	Cd	114	13763.6	2.5	**2.8510**	0.106	3.7	ug/L	15	Standard
>	In	115	480835.3	1.7				ug/L	515400	Standard
	Sn	118	533.3	22.2	**-0.0824**	0.020	24.5	ug/L	1043	Standard
	Sb	123	3307.7	1.1	**0.7582**	0.005	0.6	ug/L	227	Standard
	Ba	135	29372.8	0.5	**15.6422**	0.331	2.1	ug/L	31	Standard
	Ce	140	135459.5	0.9				ug/L	120	Standard
>	Tb	159	748567.3	2.0				ug/L	785817	Standard
	Ho	165	3172.0	2.9				ug/L	7	Standard
	Tl	203	18739.2	0.5	**2.4241**	0.040	1.7	ug/L	6	Standard
	Tl	205	16330.5	1.2	**2.4221**	0.055	2.3	ug/L	8	Standard
	Pb	206	29114.6	1.1	**6.0183**	0.074	1.2	ug/L	201	Standard
	Pb	207	24724.2	0.6	**5.6484**	0.087	1.5	ug/L	177	Standard
	Pb	208	103982.3	1.0	**5.9154**	0.098	1.6	ug/L	722	Standard
	U	238	17333.6	0.9	**2.6126**	0.027	1.0	ug/L	8	Standard
>	Bi	209	429156.7	1.9				ug/L	444563	Standard

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Na	23	1.7	173.2	**20.8696**	36.139	173.2	mg/L	0	Standard
Mg	24	55.0	68.6	**0.0400**	0.051	126.7	mg/L	38	Standard
K	39	21.7	58.1	**-0.0281**	0.059	208.8	mg/L	33	Standard
Ca	43	45.0	33.3	**1.6609**	2.492	150.0	mg/L	48	Standard
Fe	54	1724.9	4.1	**1.3647**	0.058	4.3	mg/L	131	Standard
Fe	57	648.3	11.4	**1.6582**	0.244	14.7	mg/L	153	Standard
> **Sc-1**	45	25074.1	0.3				mg/L	26715	Standard
Cl	35	110353.2	2.0				ug/L	102686	Standard
Kr	83	2.3	24.7				ug/L	2	Standard
Br	81	2023.5	8.7				ug/L	1897	Standard
P	31	7188.4	0.9				ug/L	18491	Standard
S	34	4012.2	5.7				ug/L	3734	Standard
Sr	88	96.7	10.8				ug/L	47	Standard
C	12	146.7	19.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	53.3	39.0				mg/L	23	Standard
Dy	164	4874.9	7.0				mg/L	23	Standard
Ho-1	165	3172.0	2.9				mg/L	7	Standard
Er	166	3047.0	8.4				mg/L	13	Standard
I	127	30377.1	0.5				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		91.033	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		96.758	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		93.294
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		96.535
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 6
Sample Date/Time: Tuesday, July 05, 2016 12:23:18
Number of Replicates: 3
Autosampler Position: 101
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	61936.3	1.0				ug/L	59517	Standard
	Be	9	44060.7	4.1	**48.6681**	2.073	4.3	ug/L	10	Standard
	Al	27	7421017.2	0.9	**46.8624**	0.837	1.8	ug/L	1872	Standard
	Sc	45	27840.6	0.8				ug/L	26715	Standard
	Ti	47	24780.2	1.3	**94.1129**	1.402	1.5	ug/L	54	Standard
	V	51	374015.7	2.5	**46.7546**	1.361	2.9	ug/L	1419	Standard
	Cr	52	381449.2	1.0	**47.5991**	0.617	1.3	ug/L	7059	Standard
	Cr	53	48109.6	1.3	**48.5792**	0.817	1.7	ug/L	398	Standard
	Mn	55	323449.1	1.4	**46.1470**	0.763	1.7	ug/L	824	Standard
	Co	59	353958.9	1.7	**47.1411**	0.942	2.0	ug/L	167	Standard
	Ni	60	99916.4	1.4	**48.1579**	0.828	1.7	ug/L	391	Standard
	Cu	65	98273.1	2.2	**47.3222**	1.174	2.5	ug/L	147	Standard
	Zn	66	58263.5	2.1	**47.6343**	1.129	2.4	ug/L	184	Standard
>	**Ge**	72	467206.7	0.4				ug/L	422998	Standard
	As	75	58897.6	1.9	**47.0555**	1.055	2.2	ug/L	-58	Standard
	Se	82	6005.7	2.7	**46.1739**	1.361	2.9	ug/L	15	Standard
	Se-1	77	4137.9	0.2	**48.7349**	0.165	0.3	ug/L	58	Standard
>	**Ga**	71	86.7	12.0				mg/L	113	Standard
	Rb	85	898.4	11.7				ug/L	27	Standard
	Y	89	406260.6	1.7				ug/L	383780	Standard
>	**Rh**	103	20.0	25.0				ug/L	18	Standard
	Mo	98	265996.1	0.8	**93.3198**	1.560	1.7	ug/L	31	Standard
	Ag	107	339646.5	1.4	**47.0210**	1.585	3.4	ug/L	84	Standard
	Cd	111	108529.1	1.3	**47.5497**	1.671	3.5	mg/L	4	Standard
	Cd	114	269565.9	1.7	**48.6723**	1.830	3.8	ug/L	15	Standard
>	**In**	115	552561.7	2.2				ug/L	515400	Standard
	Sn	118	291910.6	1.5	**46.8625**	1.419	3.0	ug/L	1043	Standard
	Sb	123	238681.8	1.8	**48.6440**	1.842	3.8	ug/L	227	Standard
	Ba	135	100767.3	0.6	**46.7520**	1.319	2.8	ug/L	31	Standard
	Ce	140	696.7	32.8				ug/L	120	Standard
>	**Tb**	159	836664.0	1.8				ug/L	785817	Standard
	Ho	165	10.0	50.0				ug/L	7	Standard
	Tl	203	408219.9	0.5	**47.9579**	0.937	2.0	ug/L	6	Standard
	Tl	205	353779.4	0.6	**47.7113**	1.066	2.2	ug/L	8	Standard
	Pb	206	254575.9	0.6	**48.0435**	1.017	2.1	ug/L	201	Standard
	Pb	207	231354.7	0.8	**48.2933**	1.083	2.2	ug/L	177	Standard
	Pb	208	942309.5	0.6	**48.9650**	0.796	1.6	ug/L	722	Standard
	U	238	347285.7	0.5	**47.5170**	0.991	2.1	ug/L	8	Standard
>	**Bi**	209	473225.0	1.6				ug/L	444563	Standard

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Na	23	3.3	173.2	**37.3364**	64.660	173.2	mg/L	0	Standard
Mg	24	3865.5	1.1	**4.6244**	0.043	0.9	mg/L	38	Standard
K	39	880.0	4.1	**3.5668**	0.125	3.5	mg/L	33	Standard
Ca	43	60.0	38.2	**3.1652**	3.408	107.7	mg/L	48	Standard
Fe	54	6324.7	4.0	**4.7753**	0.185	3.9	mg/L	131	Standard
Fe	57	1893.5	4.7	**5.1469**	0.235	4.6	mg/L	153	Standard
Sc-1	45	27840.6	0.8				mg/L	26715	Standard
Cl	35	126370.8	0.7				ug/L	102686	Standard
Kr	83	1.3	114.6				ug/L	2	Standard
Br	81	1893.5	8.0				ug/L	1897	Standard
P	31	21593.7	1.8				ug/L	18491	Standard
S	34	4702.4	6.9				ug/L	3734	Standard
Sr	88	61.7	20.4				ug/L	47	Standard
C	12	43.3	66.6				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	23	Standard
Dy	164	19.4	1.4				mg/L	23	Standard
Ho-1	165	10.0	50.0				mg/L	7	Standard
Er	166	13.3	43.3				mg/L	13	Standard
I	127	14653.8	2.4				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9	97.336		
Al	27	93.725		
Sc	45			
Ti	47	94.113		
V	51	93.509		
Cr	52	95.198		
Cr	53			
Mn	55	92.294		
Co	59	94.282		
Ni	60	96.316		
Cu	65	94.644		
Zn	66	95.269		
Ge	72		110.451	
As	75	94.111		
Se	82	92.348		
Se-1	77			
Ga	71			

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Rb	85			
Y	89			
> Rh	103			
Mo	98	93.320		
Ag	107	94.042		
Cd	111	95.099		
Cd	114			
> In	115			107.210
Sn	118	93.725		
Sb	123	97.288		
Ba	135	93.504		
Ce	140			
> Tb	159			
Ho	165			
Tl	203	95.916		
Tl	205			
Pb	206			
Pb	207			
Pb	208	97.930		
U	238	95.034		
> Bi	209			106.447
Na	23			
Mg	24			
K	39			
Ca	43			
Fe	54			
Fe	57			
> Sc-1	45			
Cl	35			
Kr	83			
Br	81			
P	31			
S	34			
Sr	88			
C	12			
N	14			
Hg	202			
Dy	164			
Ho-1	165			
Er	166			
I	127			

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: QC Std 7
Sample Date/Time: Tuesday, July 05, 2016 12:26:29
Number of Replicates: 3
Autosampler Position: 102
Sample Description:
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	63303.6	1.3				ug/L	59517	Standard
	Be	9	18.3	31.5	**-0.0113**	0.006	52.7	ug/L	10	Standard
	Al	27	2235.2	14.5	**0.0014**	0.002	134.0	ug/L	1872	Standard
	Sc	45	28122.8	2.8				ug/L	26715	Standard
	Ti	47	35.3	21.2	**-0.1115**	0.029	25.7	ug/L	54	Standard
	V	51	1439.5	6.3	**0.0020**	0.010	505.5	ug/L	1419	Standard
	Cr	52	6652.8	0.6	**-0.1246**	0.005	3.6	ug/L	7059	Standard
	Cr	53	1205.0	5.1	**0.8226**	0.054	6.5	ug/L	398	Standard
	Mn	55	652.7	4.2	**-0.0371**	0.004	11.7	ug/L	824	Standard
	Co	59	238.3	13.0	**0.0068**	0.004	58.9	ug/L	167	Standard
	Ni	60	288.0	2.5	**-0.0598**	0.004	7.2	ug/L	391	Standard
	Cu	65	129.3	6.7	**-0.0163**	0.004	26.3	ug/L	147	Standard
	Zn	66	468.0	81.2	**0.2258**	0.312	138.0	ug/L	184	Standard
>	**Ge**	72	464917.0	0.8				ug/L	422998	Standard
	As	75	-45.4	55.4	**0.0153**	0.020	130.4	ug/L	-58	Standard
	Se	82	16.5	14.7	**-0.0781**	0.020	25.1	ug/L	15	Standard
	Se-1	77	95.3	12.3	**0.4748**	0.132	27.9	ug/L	58	Standard
>	**Ga**	71	45.0	11.1				mg/L	113	Standard
	Rb	85	6.7	114.6				ug/L	27	Standard
	Y	89	398203.8	1.4				ug/L	383780	Standard
>	**Rh**	103	16.7	75.5				ug/L	18	Standard
	Mo	98	228.0	6.8	**0.0700**	0.006	7.9	ug/L	31	Standard
	Ag	107	151.7	7.6	**0.0087**	0.001	16.7	ug/L	84	Standard
	Cd	111	23.3	21.2	**0.0059**	0.002	35.0	mg/L	4	Standard
	Cd	114	47.2	54.5	**0.0038**	0.005	118.3	ug/L	15	Standard
>	**In**	115	560315.0	0.7				ug/L	515400	Standard
	Sn	118	1160.0	23.8	**0.0035**	0.045	1275.6	ug/L	1043	Standard
	Sb	123	862.8	32.5	**0.1573**	0.057	36.4	ug/L	227	Standard
	Ba	135	48.3	39.2	**-0.0016**	0.009	518.6	ug/L	31	Standard
	Ce	140	270.0	27.3				ug/L	120	Standard
>	**Tb**	159	838378.6	1.5				ug/L	785817	Standard
	Ho	165	8.3	69.3				ug/L	7	Standard
	Tl	203	88.7	16.3	**0.0066**	0.002	26.0	ug/L	6	Standard
	Tl	205	103.3	19.6	**0.0069**	0.003	39.7	ug/L	8	Standard
	Pb	206	274.3	2.4	**0.0053**	0.002	28.7	ug/L	201	Standard
	Pb	207	254.3	11.1	**0.0042**	0.006	142.5	ug/L	177	Standard
	Pb	208	1025.0	7.9	**0.0037**	0.004	117.5	ug/L	722	Standard
	U	238	84.0	17.2	**0.0088**	0.002	22.6	ug/L	8	Standard
>	**Bi**	209	482466.6	0.6				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	31.7	39.7	**0.0042**	0.015	355.9	mg/L	38	Standard
K	39	13.3	21.7	**-0.0736**	0.013	17.7	mg/L	33	Standard
Ca	43	35.0	37.8	**-0.6810**	1.859	273.0	mg/L	48	Standard
Fe	54	177.9	22.8	**0.0196**	0.030	154.7	mg/L	131	Standard
Fe	57	193.3	5.4	**0.0870**	0.025	28.9	mg/L	153	Standard
Sc-1	45	28122.8	2.8				mg/L	26715	Standard
Cl	35	120247.5	2.4				ug/L	102686	Standard
Kr	83	1.0	100.0				ug/L	2	Standard
Br	81	1830.1	19.2				ug/L	1897	Standard
P	31	19964.8	2.8				ug/L	18491	Standard
S	34	4852.4	0.8				ug/L	3734	Standard
Sr	88	66.7	26.3				ug/L	47	Standard
C	12	46.7	24.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	10.0	100.0				mg/L	23	Standard
Dy	164	12.1	46.8				mg/L	23	Standard
Ho-1	165	8.3	69.3				mg/L	7	Standard
Er	166	26.7	21.7				mg/L	13	Standard
I	127	9206.1	5.5				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
Li	6			
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
Ge	72		109.910	
As	75			
Se	82			
Se-1	77			
Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		108.715
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		108.526
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

Sample ID: QC Std 7
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Method 6020 - Summary Report

Sample ID: PBW 47 WG574664-02
Sample Date/Time: Tuesday, July 05, 2016 12:29:42
Number of Replicates: 3
Autosampler Position: 239
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	59871.5	4.0				ug/L	59517	Standard
	Be	9	6.7	43.3	**-0.0234**	0.004	15.2	ug/L	10	Standard
	Al	27	12456.8	2.4	**0.0691**	0.005	6.6	ug/L	1872	Standard
	Sc	45	27523.3	1.6				ug/L	26715	Standard
	Ti	47	32.3	13.9	**-0.1197**	0.014	12.0	ug/L	54	Standard
	V	51	1305.7	3.6	**-0.0099**	0.010	97.1	ug/L	1419	Standard
	Cr	52	6140.6	3.6	**-0.1672**	0.039	23.5	ug/L	7059	Standard
	Cr	53	1243.4	4.3	**0.8981**	0.022	2.5	ug/L	398	Standard
	Mn	55	617.3	2.7	**-0.0396**	0.005	12.1	ug/L	824	Standard
	Co	59	190.3	8.7	**0.0011**	0.002	157.0	ug/L	167	Standard
	Ni	60	299.7	5.8	**-0.0500**	0.005	10.2	ug/L	391	Standard
	Cu	65	104.3	13.0	**-0.0271**	0.005	19.7	ug/L	147	Standard
	Zn	66	938.4	4.5	**0.6361**	0.020	3.2	ug/L	184	Standard
>	**Ge**	72	452000.7	2.7				ug/L	422998	Standard
	As	75	-37.9	44.5	**0.0202**	0.014	71.0	ug/L	-58	Standard
	Se	82	21.4	23.5	**-0.0353**	0.038	107.7	ug/L	15	Standard
	Se-1	77	95.0	8.2	**0.5057**	0.120	23.7	ug/L	58	Standard
>	**Ga**	71	61.7	55.2				mg/L	113	Standard
	Rb	85	61.7	63.0				ug/L	27	Standard
	Y	89	383844.6	4.6				ug/L	383780	Standard
>	**Rh**	103	16.7	62.4				ug/L	18	Standard
	Mo	98	58.1	14.0	**0.0123**	0.003	24.7	ug/L	31	Standard
	Ag	107	98.7	12.2	**0.0022**	0.001	67.2	ug/L	84	Standard
	Cd	111	6.2	18.7	**-0.0013**	0.000	37.2	mg/L	4	Standard
	Cd	114	12.2	59.3	**-0.0023**	0.001	58.0	ug/L	15	Standard
>	**In**	115	530438.2	1.8				ug/L	515400	Standard
	Sn	118	538.3	32.7	**-0.0902**	0.031	34.7	ug/L	1043	Standard
	Sb	123	351.2	29.3	**0.0584**	0.023	39.1	ug/L	227	Standard
	Ba	135	46.7	10.8	**-0.0012**	0.003	218.5	ug/L	31	Standard
	Ce	140	28.3	27.0				ug/L	120	Standard
>	**Tb**	159	800722.5	2.4				ug/L	785817	Standard
	Ho	165	10.0	86.6				ug/L	7	Standard
	Tl	203	29.3	16.1	**-0.0001**	0.001	445.6	ug/L	6	Standard
	Tl	205	23.3	12.4	**-0.0036**	0.000	12.1	ug/L	8	Standard
	Pb	206	240.3	5.2	**0.0004**	0.002	629.1	ug/L	201	Standard
	Pb	207	208.0	3.0	**-0.0039**	0.002	44.8	ug/L	177	Standard
	Pb	208	841.7	5.2	**-0.0043**	0.002	44.4	ug/L	722	Standard
	U	238	14.0	68.9	**-0.0006**	0.001	234.7	ug/L	8	Standard
>	**Bi**	209	467504.2	1.5				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	53.3	39.0	**0.0315**	0.026	81.1	mg/L	38	Standard
K	39	35.0	14.3	**0.0193**	0.019	100.6	mg/L	33	Standard
Ca	43	35.0	62.3	**-0.5485**	3.269	595.9	mg/L	48	Standard
Fe	54	71.0	17.5	**-0.0609**	0.011	17.4	mg/L	131	Standard
Fe	57	210.0	20.8	**0.1492**	0.127	85.3	mg/L	153	Standard
> **Sc-1**	45	27523.3	1.6				mg/L	26715	Standard
Cl	35	115000.8	0.9				ug/L	102686	Standard
Kr	83	3.3	17.3				ug/L	2	Standard
Br	81	1716.8	6.3				ug/L	1897	Standard
P	31	10060.0	0.4				ug/L	18491	Standard
S	34	4250.6	0.2				ug/L	3734	Standard
Sr	88	78.3	35.2				ug/L	47	Standard
C	12	50.0	60.0				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	3.3	173.2				mg/L	23	Standard
Dy	164	16.5	34.2				mg/L	23	Standard
Ho-1	165	10.0	86.6				mg/L	7	Standard
Er	166	3.3	173.2				mg/L	13	Standard
I	127	30261.9	2.1				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		100.596	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		106.857	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		102.918
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		105.160
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: LCSW 47 WG574664-03
Sample Date/Time: Tuesday, July 05, 2016 12:32:54
Number of Replicates: 3
Autosampler Position: 240
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	65246.9	2.0				ug/L	59517	Standard
	Be	9	46762.1	3.0	**49.0452**	1.926	3.9	ug/L	10	Standard
	Al	27	44563.8	0.6	**0.2548**	0.006	2.5	ug/L	1872	Standard
	Sc	45	30629.3	1.5				ug/L	26715	Standard
	Ti	47	44.3	11.4	**-0.0870**	0.018	21.0	ug/L	54	Standard
	V	51	398706.7	0.9	**47.1611**	0.503	1.1	ug/L	1419	Standard
	Cr	52	402929.8	0.7	**47.5752**	0.314	0.7	ug/L	7059	Standard
	Cr	53	50942.2	2.0	**48.6729**	0.969	2.0	ug/L	398	Standard
	Mn	55	340311.5	1.3	**45.9416**	0.689	1.5	ug/L	824	Standard
	Co	59	368600.5	1.2	**46.4505**	0.590	1.3	ug/L	167	Standard
	Ni	60	105667.5	0.5	**48.1911**	0.349	0.7	ug/L	391	Standard
	Cu	65	105736.0	0.1	**48.1783**	0.085	0.2	ug/L	147	Standard
	Zn	66	62571.9	0.2	**48.4073**	0.147	0.3	ug/L	184	Standard
>	**Ge**	72	493746.6	0.2				ug/L	422998	Standard
	As	75	59667.0	0.6	**45.1083**	0.343	0.8	ug/L	-58	Standard
	Se	82	6250.7	2.7	**45.4697**	1.307	2.9	ug/L	15	Standard
	Se-1	77	4227.3	3.1	**47.0907**	1.560	3.3	ug/L	58	Standard
>	**Ga**	71	66.7	31.2				mg/L	113	Standard
	Rb	85	78.3	22.4				ug/L	27	Standard
	Y	89	424353.4	1.9				ug/L	383780	Standard
>	**Rh**	103	36.7	28.4				ug/L	18	Standard
	Mo	98	134.7	32.1	**0.0357**	0.014	39.5	ug/L	31	Standard
	Ag	107	360462.2	0.7	**47.1341**	0.722	1.5	ug/L	84	Standard
	Cd	111	113353.9	0.4	**46.9047**	0.457	1.0	mg/L	4	Standard
	Cd	114	279249.8	1.2	**47.6153**	0.234	0.5	ug/L	15	Standard
>	**In**	115	584793.6	0.8				ug/L	515400	Standard
	Sn	118	960.0	13.6	**-0.0349**	0.019	53.8	ug/L	1043	Standard
	Sb	123	237563.0	2.7	**45.7303**	1.578	3.4	ug/L	227	Standard
	Ba	135	104306.2	0.9	**45.7095**	0.565	1.2	ug/L	31	Standard
	Ce	140	296.7	4.2				ug/L	120	Standard
>	**Tb**	159	866062.9	1.5				ug/L	785817	Standard
	Ho	165	3.3	86.6				ug/L	7	Standard
	Tl	203	425365.2	0.8	**46.8787**	0.704	1.5	ug/L	6	Standard
	Tl	205	372084.4	1.9	**47.0695**	0.914	1.9	ug/L	8	Standard
	Pb	206	272101.6	0.2	**48.1711**	0.565	1.2	ug/L	201	Standard
	Pb	207	237609.6	0.1	**46.5246**	0.434	0.9	ug/L	177	Standard
	Pb	208	985435.4	0.3	**48.0373**	0.629	1.3	ug/L	722	Standard
	U	238	354468.6	0.9	**45.4982**	0.828	1.8	ug/L	8	Standard
>	**Bi**	209	504390.3	1.0				ug/L	444563	Standard

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Na	23	0.0		**0.0050**			mg/L	0	Standard
Mg	24	61.7	23.4	**0.0338**	0.015	44.2	mg/L	38	Standard
K	39	23.3	24.7	**-0.0399**	0.024	59.1	mg/L	33	Standard
Ca	43	16.7	17.3	**-3.5928**	0.386	10.8	mg/L	48	Standard
Fe	54	151.8	6.9	**-0.0099**	0.006	58.6	mg/L	131	Standard
Fe	57	213.3	7.5	**0.0947**	0.045	47.9	mg/L	153	Standard
Sc-1	45	30629.3	1.5				mg/L	26715	Standard
Cl	35	120894.8	3.6				ug/L	102686	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	2070.1	13.4				ug/L	1897	Standard
P	31	20357.0	2.5				ug/L	18491	Standard
S	34	4440.7	0.6				ug/L	3734	Standard
Sr	88	60.0	30.0				ug/L	47	Standard
C	12	76.7	52.7				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	20.0	86.6				mg/L	23	Standard
Dy	164	9.5	100.0				mg/L	23	Standard
Ho-1	165	3.3	86.6				mg/L	7	Standard
Er	166	10.0	100.0				mg/L	13	Standard
I	127	13719.5	2.2				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		109.628	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		116.726	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115		113.464
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209		113.458
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message

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Method 6020 - Summary Report

Sample ID: L1606154801 WG574664-01
Sample Date/Time: Tuesday, July 05, 2016 12:36:05
Number of Replicates: 3
Autosampler Position: 241
Sample Description: 1
Method File: C:\NexIONData\Method\6020a.mth
Aliquot Volume (mL):
Diluted to Volume (mL):
User Name: JYH Nexion300X
Cumulative Autodilution Factor: 1
Nexion-ICP 200.8\6020

Concentration Results

IS	Analyte	Mass	Intensity	RSD	Conc.	SD	RSD	Units	Blank Intens.	Mode
>	**Li**	6	101093.0	3.4				ug/L	59517	Standard
	Be	9	26.7	47.2	**-0.0129**	0.009	69.7	ug/L	10	Standard
	Al	27	15764897.5	3.2	**60.9930**	0.494	0.8	ug/L	1872	Standard
	Sc	45	25396.3	0.5				ug/L	26715	Standard
	Ti	47	381.0	19.5	**1.4374**	0.310	21.6	ug/L	54	Standard
	V	51	10322.0	23.0	**1.3240**	0.330	24.9	ug/L	1419	Standard
	Cr	52	36599.2	1.9	**4.4410**	0.074	1.7	ug/L	7059	Standard
	Cr	53	7855.4	8.4	**8.8922**	0.858	9.6	ug/L	398	Standard
	Mn	55	58243.1	3.0	**9.5536**	0.209	2.2	ug/L	824	Standard
	Co	59	136740.3	0.6	**21.1553**	0.343	1.6	ug/L	167	Standard
	Ni	60	17985.7	2.0	**9.9179**	0.207	2.1	ug/L	391	Standard
	Cu	65	22289.7	4.5	**12.4217**	0.684	5.5	ug/L	147	Standard
	Zn	66	13262.5	12.7	**12.4971**	1.725	13.8	ug/L	184	Standard
>	**Ge**	72	401960.2	1.1				ug/L	422998	Standard
	As	75	3907.1	11.9	**3.6786**	0.462	12.6	ug/L	-58	Standard
	Se	82	615.4	34.1	**5.3299**	1.924	36.1	ug/L	15	Standard
	Se-1	77	661.0	2.3	**8.5068**	0.302	3.5	ug/L	58	Standard
>	**Ga**	71	613.3	13.7				mg/L	113	Standard
	Rb	85	101468.6	0.2				ug/L	27	Standard
	Y	89	358743.7	2.3				ug/L	383780	Standard
>	**Rh**	103	656.7	8.9				ug/L	18	Standard
	Mo	98	621498.0	0.6	**252.9469**	1.767	0.7	ug/L	31	Standard
	Ag	107	884.0	1.7	**0.1300**	0.001	1.1	ug/L	84	Standard
	Cd	111	-527.1	11.1	**-0.2720**	0.031	11.2	mg/L	4	Standard
	Cd	114	1047.3	9.2	**0.2148**	0.021	9.8	ug/L	15	Standard
>	**In**	115	476239.8	0.7				ug/L	515400	Standard
	Sn	118	1531.7	13.3	**0.1054**	0.039	36.6	ug/L	1043	Standard
	Sb	123	4658.8	15.4	**1.0855**	0.172	15.9	ug/L	227	Standard
	Ba	135	48256.7	1.3	**25.9565**	0.334	1.3	ug/L	31	Standard
	Ce	140	1745.1	3.3				ug/L	120	Standard
>	**Tb**	159	757695.3	0.6				ug/L	785817	Standard
	Ho	165	68.3	15.2				ug/L	7	Standard
	Tl	203	1028.7	11.8	**0.1420**	0.019	13.5	ug/L	6	Standard
	Tl	205	291.7	15.6	**0.0405**	0.007	16.3	ug/L	8	Standard
	Pb	206	906.0	6.6	**0.1605**	0.016	10.3	ug/L	201	Standard
	Pb	207	745.0	1.5	**0.1394**	0.005	3.8	ug/L	177	Standard
	Pb	208	3119.1	1.8	**0.1466**	0.007	4.5	ug/L	722	Standard
	U	238	2596.2	1.6	**0.4249**	0.005	1.2	ug/L	8	Standard
>	**Bi**	209	393304.8	1.6				ug/L	444563	Standard

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Na	23	10.0	86.6	**123.4506**	106.909	86.6	mg/L	0	Standard
Mg	24	794897.3	1.3	**1050.0047**	9.072	0.9	mg/L	38	Standard
K	39	486.7	3.6	**2.1119**	0.082	3.9	mg/L	33	Standard
Ca	43	845.0	8.8	**134.0603**	12.912	9.6	mg/L	48	Standard
Fe	54	201.7	10.6	**0.0544**	0.017	32.1	mg/L	131	Standard
Fe	57	1541.7	1.1	**4.5430**	0.038	0.8	mg/L	153	Standard
> **Sc-1**	45	25396.3	0.5				mg/L	26715	Standard
Cl	35	1547201.8	0.4				ug/L	102686	Standard
Kr	83	3.0	33.3				ug/L	2	Standard
Br	81	45893.0	7.7				ug/L	1897	Standard
P	31	19874.7	3.1				ug/L	18491	Standard
S	34	5197.6	3.2				ug/L	3734	Standard
Sr	88	513.3	8.1				ug/L	47	Standard
C	12	96.7	15.8				mg/L	63	Standard
N	14	0.0					mg/L	0	Standard
Hg	202	46210.2	25.9				mg/L	23	Standard
Dy	164	93.3	34.8				mg/L	23	Standard
Ho-1	165	68.3	15.2				mg/L	7	Standard
Er	166	70.0	24.7				mg/L	13	Standard
I	127	59535.4	6.6				mg/L	12398	Standard

QC Calculated Values

Analyte	Mass	QC Std % Recovery	Int Std % Recovery	Spike % Recovery
> Li	6		169.857	
Be	9			
Al	27			
Sc	45			
Ti	47			
V	51			
Cr	52			
Cr	53			
Mn	55			
Co	59			
Ni	60			
Cu	65			
Zn	66			
> Ge	72		95.027	
As	75			
Se	82			
Se-1	77			
> Ga	71			

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Rb	85		
Y	89		
> Rh	103		
Mo	98		
Ag	107		
Cd	111		
Cd	114		
> In	115	92.402	
Sn	118		
Sb	123		
Ba	135		
Ce	140		
> Tb	159		
Ho	165		
Tl	203		
Tl	205		
Pb	206		
Pb	207		
Pb	208		
U	238		
> Bi	209	88.470	
Na	23		
Mg	24		
K	39		
Ca	43		
Fe	54		
Fe	57		
> Sc-1	45		
Cl	35		
Kr	83		
Br	81		
P	31		
S	34		
Sr	88		
C	12		
N	14		
Hg	202		
Dy	164		
Ho-1	165		
Er	166		
I	127		

QC Out of Limits

Measurement Type	Analyte	Mass	Out of Limits Message
Li 6 Int Std for sample	Li	6	Rerun sample
Mo 98 Upper, S, EEE	Mo	98	
Cd 111 Lower	Cd	111	

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